

E2790
West Road Culvert Replacement and Related Work
Clarksburg, Massachusetts

ADDENDUM #2
September 25, 2026

The Original Bid Documents, including the Contract Documents, Specifications and Plans, are hereby amended as noted in this Addendum No. 2, dated September 25, 2026. Contractor shall acknowledge receipt of this addendum by inserting its number and date in the space provided in the Bid Documents.

1. *Question: The scale on Plan Set 1_6-24-26 C-15-010 Approved Plans is not correct. Could you please reissue these plans with the corrected scales?*

Answer: Please use the attached plans that are to scale when printed on 24"x36" D-size sheets.

2. *Question: The time of year in-water work restriction runs from October 1st to June 30th. This means that the allowable working time for in-water work starts on July 1st and extends to September 30th. Can you confirm In Water Work, includes both installation of water controls and removal of water controls?*

Answer: Yes, in-stream work includes both the installation of water controls and removal of water controls.

U.S. Army Corps of Engineers, Pre-Construction Notification (PCN) was filed to request for in-stream work outside the Time of Year (TOY) work window, but has not yet been received. The base bid shall include the TOY in-stream work restriction (In-stream work only allowed from July 1 through September 30th).

A Deduct Alternate Bid Price shall be included on the attached Revised Bid Form for if in-stream work outside the TOY work window is permitted (Work permitted from October 1st to June 30th). The permit will be provided to the Contractor if obtained.

3. *Question: The contractor is to supply PE Stamped Designs for Reinforced Concrete. Can you please confirm that this is only for the precast rigid frame and not the previously designed cast in place concrete footings, wingwalls, copings and approach slabs?*

Answer: PE stamped Design Plans and Calculations for the precast rigid frame only.

4. *Question: MassDOT's 2026 Standard Specifications does not contain a Section number 967. Can you please confirm Membrane Waterproofing shall be in conformance with Section 965 of MassDOT's 2026 Standard Specifications?*

Answer: Yes. Section 965.

5. *Question: Could you please clarify the limits of Item 3 Unclassified Excavation? The bid quantity is 3,000 CY. The description of what is to be included under paragraph 4.2 includes:*

- a. *Pavement Excavation*
- b. *Grading to Subgrade*
- c. *Finish grades*
- d. *Cuts*
- e. *Fills*
- f. *Embankments*
- g. *Stripping of Topsoil*
- h. *Removing excess topsoil*
- i. *Removal of unsuitable materials below proposed bridge / culvert.*

Item 11 – Channel Paving, includes excavation, but it seems it would be covered under grading to subgrade.

Item 14 – Three Sided Open Bottom Reinforced Concrete Box Culvert, CIP Wingwalls and CIP Footings does not include excavation work, but it is not included under Item 3. Maybe it is covered under Grading to subgrade. If the excavation for the new Three Sided Open Bottom Reinforced Concrete Box Culvert, CIP Wingwalls and CIP Footings is covered under item 3, what are the limits of this excavation? Would the limits of this excavation be vertical limits located 12” outside of the footings or would this limit include safe slopes to reach the bottom of the excavation?

Answer: Item 3 estimated quantity and payment is based on 1:1 slopes from the bottom of the excavation for the rigid frame structure and 12” outside of the CIP wingwall footings. Item 3 also includes excavation for crane access and precast bridge frame sections installation. Any additional excavation greater than 1:1, benching, crew or equipment access, etc. shall be considered incidental.

Item 11 includes excavation that is not included under Item 3. I.e. channel paving excavation that is outside the limits described above.

6. *Question: NOTE 1.0 on Drawing Sheet 1 of 9 states Bid Item for Bridge Structure Shall Include all labor, materials for the estimated removal and excavation of up to 35CY of Class B Rock Excavation along the base of all rigid frame and wingwalls footing founded on bedrock – See Sheets 3 & 4. Sheet 3 includes boring information. Sheet 4 is a general plan and cross section. The bid form includes 150CY of Class B Rock Excavation Item 4. Are the bidders to carry 150CY of Class B Rock Excavation under item 4 AND 35CY under item 14 (Bid Item for Bridge Structure)?*

Answer: Yes, please carry 150 CY under Item 4 and 35 CY under Item 14.

7. *Question: Item 11 Channel Paving has a quantity of 250SY. Item 12 Natural Substrate & Stream Bottom also has a quantity of 250SY. The details for the restoration of Bear Swamp Brook includes 36” of Riprap Channel Paving overlain with a 24” thick layer of Natural Stream Channel Bottom. We are assuming the 36” thick layer of Riprap Channel Paving (and the incidental 8” thick layer of crushed stone) are covered under item 11 Channel Paving and the 24” thick layer of Natural Stream Bottom (and incidental large boulders) are covered under item 12 Natural Substrate & Stream Bottom. If this is not correct, could you please let us know what change should be made to these assumptions?*

Answer: Correct assumptions.

8. *Question: Item 12 Natural Substrate & Stream Bottom seem to include two layers. These two layers seem to be the following:*

- a. *Natural Substrate*
- b. *Stream Bottom*

The stream bottom material seems to be the 24" thick layer of Natural Stream Bottom (and the incidental large boulders). What is the Natural Substrate material?

Answer: Item 12 includes a complete stream channel bottom with various substrate materials (24" thick). As stated on the plans: "NATURAL STREAM CHANNEL BOTTOM (M1.03.0 TYPE A MIXED WITH NATURAL MATERIAL, COMPACTED & CONSOLIDATED/WASHED WITH FINES). See Sheet C-1, Natural Streambed Material Gradation table for additional details. The note in table reads: USE 10% FINES, 20% M1.03.0 TYPE A, AND 70% NATURAL STREAMBED MATERIAL AS SPECIFIED. CONFIRM FINAL GRADATION WITH TOWN & ENGINEER. Item 12 also includes shaping the stream bottom to create a low flow channel and banks to match existing conditions. As stated on the plans, Item 12 also includes: PROPOSED LARGE BOULDERS (2'-4'Ø) & COBBLES (1'-2'Ø), EMBEDDED, TO MATCH EXISTING CONDITIONS.

9. *Question: At the site walk the Vermont State was discussed as a line we cannot cross with our work / excavations. Could you please locate this state line on the drawings?*

Answer: Please see the Site Context Plan inset on the attached revised Sheet C-2.

10. *Question: At the site walk the town representative mentioned a steel plate is buried in the roadway. Could you please let us know the size, approximate location and depth of this plate?*

Answer: The ½" thick steel plate is approximately 4-feet x 3-feet and is located on the downstream side of the culvert.

11. *Question: Will Item 16, Temporary Utility Relocation be adjusted to an allowance and not a lump sum? The phone company will have to perform this work, and you can't get a quote prior to the bid.*

Answer: This Item includes coordination with the utility company and the Town for the temporary utility relocation. It is assumed that it is the utility companies' responsibility to relocate the poles and wires for the Contractor to perform the work. Please provide a lump sum price for coordination under Item 16. Tree removal and trimming for utility relocation shall be considered incidental under Item 1, Clearing & Grubbing.

12. The date and time of the bid opening remains Monday, October 5, 2026 at 5:00 PM at Clarksburg Town Hall, 111 River Road, Clarksburg, MA 01247.

13. Please acknowledge receipt of this Addendum #2 on the Bid Proposal Form.

REVISED BID FORM
WEST ROAD CULVERT REPLACEMENT & RELATED WORK

ITEM NO.	QUANTITY	ITEM WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE DOLLARS & CENTS	AMOUNT DOLLARS & CENTS
1	1 LS	Clearing & Grubbing at _____ per Lump Sum		
2	1 LS	Culvert Demolition at _____ per Lump Sum		
3	3,000 CY	Unclassified Excavation at _____ per Cubic Yard		
4	150 CY*	Class B Rock Excavation* at _____ per Cubic Yard (*Indeterminate quantity assumed for comparison of bids)		
5	50 CY	Processed Gravel for Roadway at _____ per Cubic Yard		
6	90 CY	Gravel Borrow for Roadway at _____ per Cubic Yard		
7	1,750 CY	Gravel Borrow for Backfilling Structures & Pipes at _____ per Cubic Yard		
8	230 CY	Crushed Stone at _____ per Cubic Yard		
9	20 CY	Dense Graded Crushed Stone for Shoulders at _____ per Cubic Yard		
10	290 CY	Riprap at _____ per Cubic Yard		
11	250 SY	Channel Paving at _____ per Square Yard		
12	250 SY	Natural Substrate & Stream Bottom at _____ per Square Yard		
13	70 SFFA	Stone Boulder Wall at _____ per Square Foot Face Area		
14	1 LS	3-sided Open Bottom Reinforced Precast Concrete Box Culvert, CIP Wingwalls, & CIP Footings at _____ per Lump Sum		
15	100 SY	Concrete Approach Slab at _____ per Square Yard		
16	1 LS	Temporary Utility Relocation at _____ per Lump Sum		

Town of Clarksburg
West Road Culvert Replacement & Related Work
Bid Opening: October 5, 2026

Contractor: _____
(Please Print)

Date: _____

REVISED BID FORM
WEST ROAD CULVERT REPLACEMENT & RELATED WORK

ITEM NO.	QUANTITY	ITEM WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE DOLLARS & CENTS	AMOUNT DOLLARS & CENTS
17	150 FT	Guardrail, TL-2 (Single Faced) at _____ per Foot		
18	2 EA	Guardrail Tangent End Treatment, TL-2 at _____ per Each		
19	2 EA	Guardrail Trailing Anchorage, TL-2 at _____ per Each		
20	1 LS	Control of Water at _____ per Lump Sum		
21	1 LS	Erosion, Sedimentation & Dust Control at _____ per Lump Sum		
22	1 LS	Loam, Seed, Straw Mulch & Cleanup at _____ per Lump Sum		
23	1 LS	Safety Controls for Construction Operations at _____ per Lump Sum		
24	1 ALLOW	Traffic Police Services at <u>Five Thousand Dollars and Zero Cents</u> per Allowance	\$5,000.00	\$5,000.00
25	1 ALLOW	Testing Services at <u>Five Thousand Dollars and Zero Cents</u> per Allowance	\$5,000.00	\$5,000.00
TOTAL:				

TOTAL OF BASE BID IN WORDS:

DEDUCT ALTERNATE BID:

ITEM NO.	QUANTITY	ITEM WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE DOLLARS & CENTS	AMOUNT DOLLARS & CENTS
A-1	1 LS	In-Stream Work permitted during TOY Restriction (October 1 st to June 30 th) at _____ per Lump Sum		
TOTAL:				

Town of Clarksburg
West Road Culvert Replacement & Related Work
Bid Opening: October 5, 2026

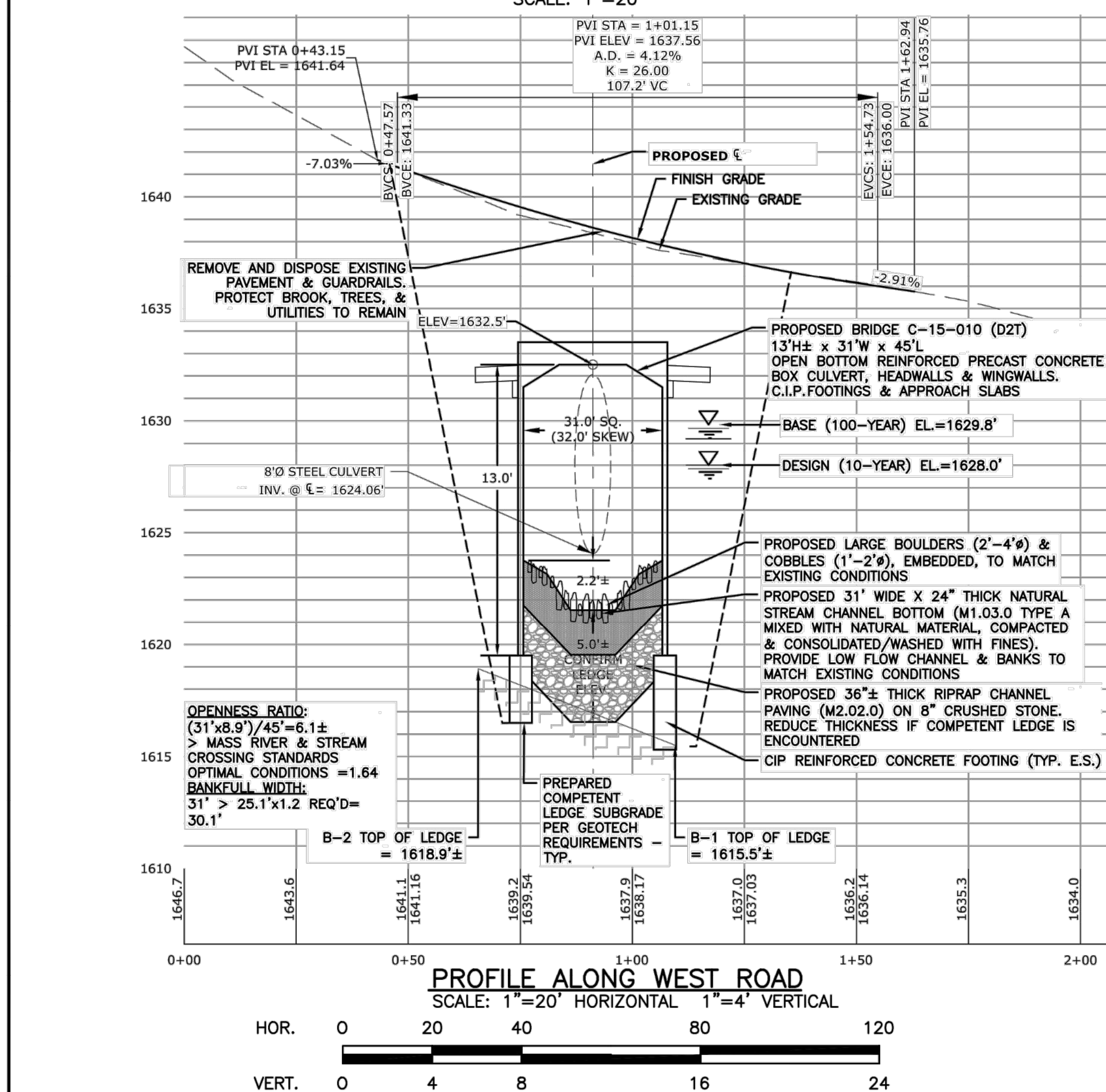
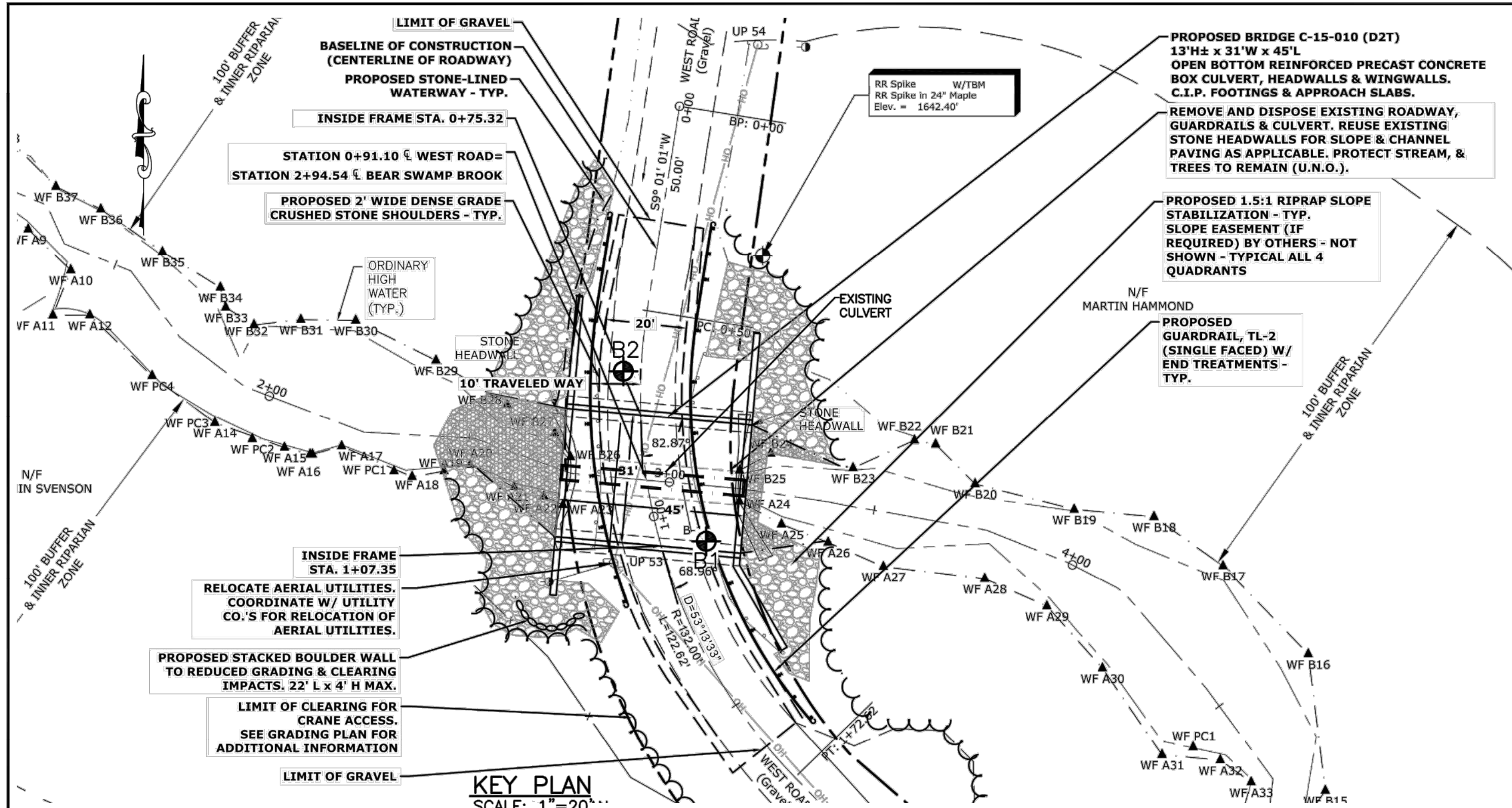
Contractor: _____
(Please Print)

Date: _____

REVISED BID FORM
WEST ROAD CULVERT REPLACEMENT & RELATED WORK

TOTAL OF DEDUCT ALTERNATE BID IN WORDS:

TOTAL OF BASE BID & DEDUCT ALTERNATE BID: _____

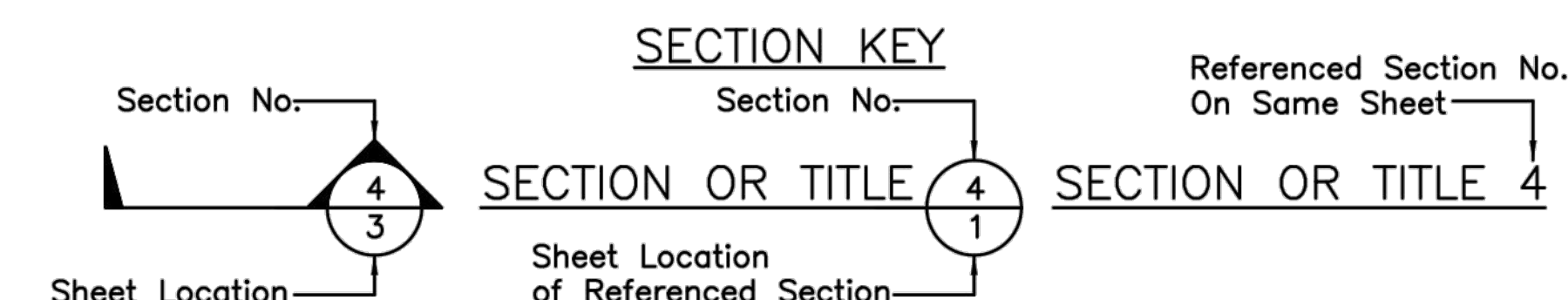
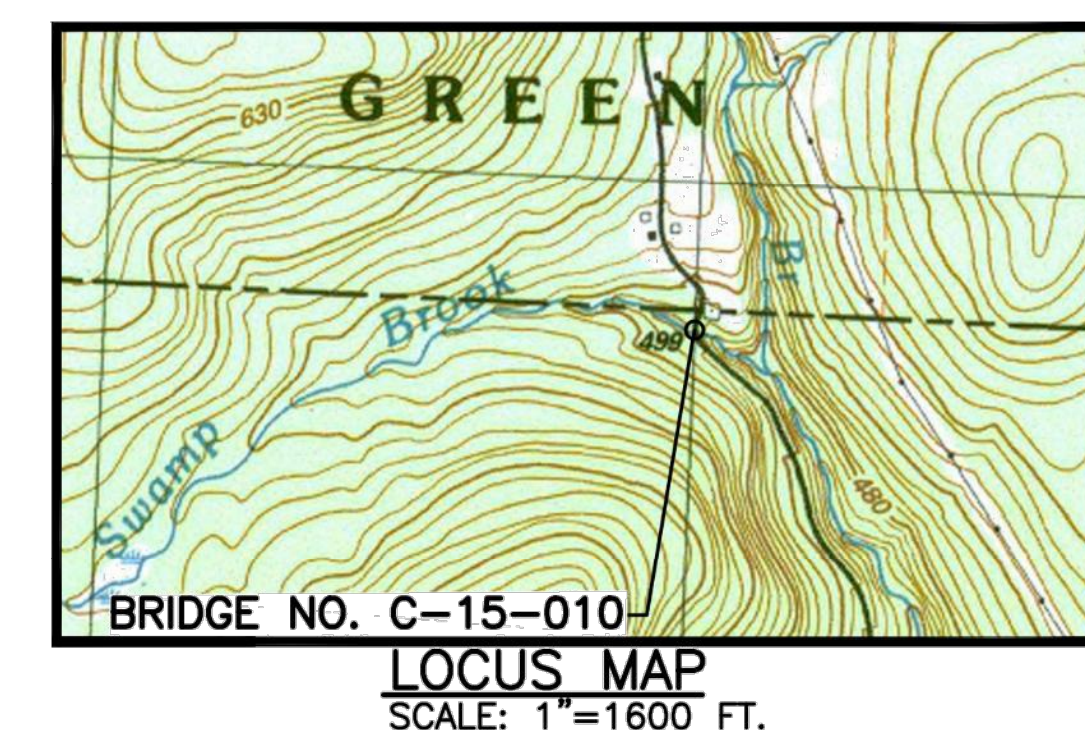


SHEET INDEX

- 1 KEY PLAN, PROFILE, LOCUS, ESTIMATED QUANTITIES AND INDEX
- 2 GENERAL NOTES AND HYDRAULIC DATA
- 3 BORING LOGS
- 4 GENERAL PLAN AND CROSS SECTION
- 5 FOUNDATION PLAN, FRAMING PLAN AND ELEVATIONS
- 6 PRECAST DETAILS
- 7 PRECAST & CAST-IN-PLACE CONCRETE DETAILS
- 8 ADDITIONAL WINGWALL & FOUNDATION PLANS AND DETAILS
- 9 MISCELLANEOUS DETAILS

ESTIMATED UNIT QUANTITIES (NOT GUARANTEED)	
DESCRIPTION	QUANTITY
DEMOLITION OF EXISTING CULVERT	1 LS
UNCLASSIFIED EXCAVATION	NOTE 2
PROCESSED GRAVEL BORROW FOR ROADWAY	NOTE 2
GRAVEL BORROW FOR ROADWAY	NOTE 2
GRAVEL BORROW FOR BACKFILLING STRUCTURES & PIPES	NOTE 2
CRUSHED STONE	NOTE 2
HOT MIX ASPHALT	NOTE 2
GUARDRAIL, TL-2 (SINGLE FACED)	NOTE 2
GUARDRAIL TANGENT END TREATMENT, TL-2	NOTE 2
CONTROL OF WATER-STRUCTURE NO. C-15-010	1 LS
BRIDGE STRUCTURE, BRIDGE NO. C-15-010 - SEE NOTE 1 BELOW	1 LS

- NOTES:
- 1.0 BID ITEM FOR BRIDGE STRUCTURE SHALL INCLUDE ALL LABOR, MATERIALS FOR THE ESTIMATED REMOVAL AND EXCAVATION OF UP TO 35 CY OF CLASS B ROCK EXCAVATION ALONG THE BASE OF ALL RIGID FRAME AND WINGWALLS FOOTINGS FOUNDED ON BEDROCK-SEE SHEETS 3 & 4.
 - 2.0 REFER TO HIGHWAY PLANS BY OTHERS FOR ADD'L. INFORMATION PERTAINING TO DESIGN, QUANTITIES EXCLUSIVE OF BRIDGE DESIGN FOUND THROUGHOUT SHEETS 1 TO 9 SHOWN HEREIN.



06.01.26 DATE	ISSUED FOR CHAPTER 85 REVIEW ONLY ACCEPTED FOR CONSTRUCTION
	PROPOSED BRIDGE CLARKSBURG WEST ROAD OVER BEAR SWAMP BROOK TOWN OF CLARKSBURG HIGHWAY DEPARTMENT
JDB Consulting Engineers, Inc. 835 Samoset Rd., Eastham, MA 02642	

COMMONWEALTH OF MASSACHUSETTS
MassDOT, Highway Division
CONCEPTUAL DESIGN IS ACCEPTABLE
TO MASSDOT FOR CONTRACTING
6/24/2026
DATE

GENERAL NOTES

DESIGN REVIEW AND APPROVALS – CHAPTER 85 SECTION 35:

IN ACCORDANCE AND COMPLIANCE WITH THE REQUIREMENTS OF CHAPTER 85 SECTION 35 OF MASSACHUSETTS GENERAL LAWS, THE CONTRACTOR SHALL SUBMIT TO THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION ALL CONSTRUCTION DRAWINGS AND DESIGN CALCULATIONS THAT SHALL BE USED TO FABRICATE AND CONSTRUCT THE PRECAST RIGID FRAME STRUCTURE DENOTED ON THESE PLANS FOR REVIEW AND APPROVAL. THIS APPROVAL SHALL CONSTITUTE THE FINAL APPROVAL AS STIPULATED BY CHAPTER 85 SECTION 35 OF THE MASSACHUSETTS GENERAL LAWS.

REVISIONS TO THE APPROVED PLANS SHALL ALSO BE SUBMITTED TO JDB CONSULTING ENGINEERS INC. AND MASSDOT FOR APPROVAL.

DESIGN:

IN ACCORDANCE WITH THE 2024 (10th EDITION) AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS LRFD BRIDGE DESIGN SPECIFICATIONS FOR HL–93 LOADING.

GENERAL:

WORK PERFORMED AND MATERIALS TO BE PROVIDED AS SPECIFIED HEREIN SHALL CONFORM TO AND BE INSTALLED ACCORDING TO THE COMMONWEALTH OF MASSACHUSETTS MASSDOT "STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES"

ALL DIMENSIONS, SECTIONS, DETAILS AND TYPICAL DETAILS SHOWN ON DRAWINGS SHOWN SHALL GOVERN CONSTRUCTION FOR ALL SIMILAR CONDITIONS UNLESS NOTED OTHERWISE. SECTIONS AND DETAILS SHOWN SHALL BE CONSIDERED TYPICAL FOR ALL SIMILAR CONDITIONS.

(E) AND (N) DENOTES EXISTING AND NEWLY PROPOSED CONSTRUCTION RESPECTIVELY.

BENCHMARK:

VERTICAL DATUM IS BASED AND PROVIDED BY SURVEY PERFORMED BY FORESIGHT LAND SERVICES INC. IS NGVD 83 AND IS REFERENCED AS A EXISTING CONDITION FOUND IN SURVEY NOTEBOOK, COPIES OF SURVEY FILES MAY BE OBTAINED FROM FORESIGHT LAND SERVICES, INC. A TEMPORARY BENCHMARK WAS ESTABLISHED ON SITE, TBM A, RAILROAD SPIKE ELEVATION: 1642.40 FT.

DATE:

TO BE PLACED AND CENTERED ON THE NORTH AND SOUTH CAST-IN-PLACE CONCRETE HEADWALLS–SEE SHEET 5. 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 HEADWALLS ARE CONSTRUCTED.

SURVEY NOTEBOOKS:

SURVEY PERFORMED BY FORESIGHT LAND SERVICES INC. FIELD NOTEBOOKS SHALL BE OBTAINED FROM FORESIGHT LAND SERVICES, INC., PITTSFIELD, MA.

FOUNDATIONS:

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

UNSUITABLE MATERIAL:

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

SEISMIC GROUND SHAKING HAZARD:

Am=0.095
S_{ps}=0.1
S_{o1}=0.033
SITE CLASS=A
SEISMIC DESIGN CATEGORY (SDC)=A

GEOTECHNICAL REPORT:

REFER TO GEOTECHNCIAL REPORT DATED AUGUST 11, 2025 PREPARED BY JDB CONSULTING ENGINEERS INC.

HYDRAULIC REPORT:

REFER TO HYDRAULIC REPORT DATED OCTOBER 2025, PREPARED BY FORESIGHT LAND SERVICES, INC.

REINFORCEMENT:

REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 31, GRADE 60. EPOXY COATED REINFORCING BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 284. UNLESS OTHERWISE NOTED ON THE CONSTRUCTION DRAWINGS, ALL BARS SHALL BE LAPPED AS FOLLOWS:

MODIFICATION CONDITION	#4 BARS	#5 BARS
1. NONE	21"	26"
2. 12" OF CONCRETE BELOW BAR	29"	36"
3. COATED BARS, COVER < 3db, OR CLEAR SPACING < 6db	31"	39"
4. COATED BARS, ALL OTHER CASES	25"	31"
5. CONDITION 2. AND 3.	35"	44"
6. CONDITION 2. AND 4.	34"	43"

IF THE ABOVE BARS ARE SPACED 6" OR MORE ON CENTER, THE LAP LENGTH SHALL BE 80% OF THE LAP LENGTH GIVEN ABOVE. ALL OTHER BARS SHALL BE LAPPED AS SHOWN ON THE CONSTRUCTION DRAWINGS.

CONSTRUCTION REQUIREMENTS AND PROCEDURES:

THE EXISTING BRIDGE TO BE REPLACED IS TO REMAIN CLOSED DURING CONSTRUCTION OF THE NEW BRIDGE REPLACEMENT. ADDITIONALLY THE CONTRACTOR SHALL TAKE THE PROPER PRECAUTIONS TO ENSURE THE STABILITY AND SAFE PERFORMANCE OF ALL STRUCTURAL ELEMENTS DURING DEMOLITION, CONSTRUCTION AND NEW BRIDGE ERECTION.

EXISTING CONSTRUCTION:

DIMENSIONS SHOWN ARE TAKEN FROM SURVEY, ORIGINAL DESIGN DRAWINGS AND VARIOUS FIELD MEASUREMENTS AND ARE NOT GUARANTEED. THE CONTRACTOR SHALL DETERMINE AND ESTABLISH ALL DIMENSIONS AND DETAILS NECESSARY FOR COMPLETION OF ALL WORK BY FIELD MEASUREMENT AND SURVEY. THE CONTRACTOR SHALL BE RESPONSIBLE AND NOT ORDER ANY MATERIAL OR COMMENCE ANY FABRICATION UNTIL HE HAS MADE THE REQUIRED MEASUREMENTS ON THE ACTUAL STRUCTURE AND THE EXTENT OF THE PROPOSED WORK HAS BEEN APPROVED BY THE ENGINEER.

DOWEL BAR SPLICERS:

DOWEL BAR SPLICERS SHALL HAVE THE SAME COATINGS AS THE REINFORCING BARS THEY ARE SPLICING.

CONCRETE MIXES:

THE FOLLOWING CONCRETE MIX UNLESS NOTED ELSEWHERE ARE TO BE USED:
5000 PSI. ¾ IN, 685 HP CEMENT CONCRETE.

UTILITIES:

AS ENCOUNTERED THE CONTRACTOR SHALL LOCATE, NOT DAMAGE AND PROTECT ALL UTILITIES, POLES ETC. WHEN LOCATING, TEMPORARILY RELOCATING AND PERMANENTLY RECONSTRUCTING ALL EXISTING AND NEWLY CONSTRUCTED UTILITIES AS NOTED HEREIN THROUGHOUT CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE WITH RESPECTIVE UTILITY OWNERS ALL UTILITIES THAT ARE TO BE TEMPORARILY OR PERMANENTLY RELOCATED DURING ALL PHASES OF BRIDGE REPLACEMENT CONSTRUCTION.

AREAS SURROUNDING THE CONSTRUCTION SITE AND UTILITIES OUTSIDE THE LIMITS OF PROPOSED WORK DISRUPTED BY THE CONTRACTORS OPERATIONS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT THE CONTRACTORS EXPENSE.

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
PROJECT FILE NO.			

GENERAL NOTES
AND HYDRAULIC DATA

HYDRAULIC DESIGN FLOOD (HDF) DATA	
DRAINAGE AREA (SQ. MILES)	1.80
HDF DISCHARGE (CFS)	373
HDF FREQUENCY (YEARS)	10
HDF VELOCITY (F.P.S.)	6.9
HDF ELEVATION (FEET, NAVD, UPSTREAM)	1628.0
BASE (100–YEAR) FLOOD DATA	
BASE FLOOD DISCHARGE (C.F.S.)	835
BASE FLOOD ELEVATION (FEET, NAVD, UPSTREAM)	1629.8
SCOUR DESIGN FLOOD (SDF) EVENT DATA	
SDF EVENT FREQUENCY (YEARS)	25
SDF ELEVATION (FEET, NAVD, UNDER BRIDGE)	1619.3
SDF TOTAL SCOUR DEPTH AT ABUTMENT (FEET)	4.3
SDF TOTAL SCOUR DEPTH AT PIER (FEET)	N/A
SCOUR CHECK FLOOD (SCF) EVENT DATA	
SCF EVENT FREQUENCY (YEARS)	50
SCF ELEVATION (FEET, NAVD, UNDER BRIDGE)	1618.4
SCF TOTAL SCOUR DEPTH AT ABUTMENT (FEET)	5.2
SCF TOTAL SCOUR DEPTH AT PIER (FEET)	N/A
FLOOD OF RECORD	
DISCHARGE (C.F.S.)	UNKNOWN
FREQUENCY (IF KNOWN, YEARS)	UNKNOWN
MAXIMUM ELEVATION (FEET, NAVD)	UNKNOWN
DATE (MM/YYYY)	UNKNOWN
HISTORY OF ICE FLOES	UNKNOWN
EVIDENCE OF SCOUR OR EROSION	NONE OBSERVED
TEMPORARY WATER CONTROL DESIGN DATA	
DESIGN FLOOD DISCHARGE (C.F.S.)	152
DESIGN FLOOD FREQUENCY (YEARS)	2
DESIGN FLOOD VELOCITY (F.P.S.)	5.5
DESIGN FLOOD ELEVATION (FEET, NAVD)	1626.5

COMMONWEALTH OF MASSACHUSETTS
MassDOT, Highway Division
CONCEPTUAL DESIGN IS ACCEPTABLE
TO MASSDOT FOR CONTRACTING

STATE BRIDGE ENGINEER

6/24/2026
DATE

	ISSUED FOR BID ONLY
	REVISED
06.01.26	ISSUED FOR CHAPTER 85 REVIEW ONLY
DATE	DESCRIPTION
USE ONLY PRINTS OF LATEST DATE	

BORING NOTES:

1. LOCATION OF BORINGS SHOWN ON THE PLAN THUS:
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 1 3/8" I.D. SPLIT SPOON SAMPLER 6" USING A 140 POUND WEIGHT FALLING 30".

5. BORING SAMPLES ARE STORED AT JDB CONSULTING ENGINEERS, INC. AT 835 SAMOSET ROAD IN EASTHAM, MA. THE CONTRACTOR MAY EXAMINE THE SOIL AND ROCK SAMPLES, IF APPLICABLE, BY CONTACTING JDB CONSULTING ENGINEERS, INC. AT (508) 255-1422
6. ALL BORINGS WERE MADE IN JUNE 2025.
7. BORINGS WERE MADE BY NEW ENGLAND BORING CONTRACTORS, INC.
8. THE NORTH AMERICAN VERTICAL DATUM (NAVD88) USED THROUGHOUT.

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
PROJECT FILE NO.			

BORING LOGS

BORING B1
STATION: 1+04.92
OFFSET: 9.50' RIGHT
GROUND ELEVATION: 1,637.5'

BORING B2
STATION: 0+64.59
OFFSET: 3.00' LEFT
GROUND ELEVATION: 1,639.7'

JDB CONSULTING ENGINEERS, INC.
835 SAMOSET ROAD • EASTHAM, MA

SUBSURFACE SOIL PROFILE LOG

SHEET: 1 OF 2

PROJECT NO. 02504-061-02

CLIENT: Town of Clarksburg

HOLE NO. B-1

LOCATION: West Road Bridge, Clarksburg, MA

CLIENT PROJECT NO. Not Applicable

SURF. ELEV. 1637.0

CONTRACTOR: N. E. Boring Contractors, Inc.

PROJECT NAME: West Road Bridge over Bear Swamp Brook

DRILLER: Mike St. John

GROUND WATER OBSERVATIONS

At: 14'-6" @ Completion Hours

Type

Size I.D.

Hammer Wt.

Hammer Fall

CASING

HW

S/S

NQ

CORE BAR

Start

Complete

Boring Foreman

Inspector / Engineer

DATE

06.09.25

06.09.25

Mike St. John

Joe Bianchi

LOCATION OF BORING

Southern Boring: 11.00 ft. East C.L. West Rd. & 12.00' South C.L. Bear Swamp Brook

Depth	No.	Sample Depths From - To	Blows per 6" on Sampler				Moisture Density or Consistency	Strata Change Elev./ Depth	SOIL OR ROCK IDENTIFICATION Remarks include color, gradation, type of soil etc. Rock-color, type, condition, hardness, drilling time, seams, etc.	SAMPLE		
			From	6-12	12-18	18-24				No.	Pen.	Rec.
	1	1 - 3'	13	12	8	9						12"
5'	2	5' - 7'	6	7	6	7						10"
10'	3	10' - 11-6'	15	25	100				Br. F.C. Sand, Some F.C. Gravel, Little Silt, Some Cobbles and Boulders			9"
15'	4	15' - 17"	21	80	28	50						10"
20'	5	20' - 20'-10"	10	100/4"								7"
25'								22'	Cored Run #1 @ 22'- 27' Rec. 52" Cored: 22'-27' Granite			
30'									Cored Run #2 @ 27'- 32' Rec. 50" Cored: 27'-32' Granite			
35'									EOB @ 32' Water @ 14'-6"			

GROUND SURFACE TO 32'

USED HW

CASING: THEN Revert S/S

Sample Type
D = Drive C = Cored W = Washed
UP = Fixed Piston UT = Shelby Tube
TP = Test Pit A = Auger
OE = Open End Rod

Proportions Used
trace 0 to 10%
little 10 to 20%
some 20 to 35%
and 35 to 50%

140 lb. Wt. fall on 2" O.D. Sampler
Cohesionless Density Cohesive Consistency
0 - 10 Loose 0 - 4 Soft 30 + Hard
10 - 30 Med. Dense 4 - 8 M./Stiff
30 - 50 Dense 8 - 15 Stiff

SUMMARY:
Earth Boring 1'-22'
Rock Coring 22'-32'
Samples

HOLE NO. B-1

JDB CONSULTING ENGINEERS, INC.
835 SAMOSET ROAD • EASTHAM, MA

SUBSURFACE SOIL PROFILE LOG

SHEET: 2 OF 2

PROJECT NO. 02504-061-02

CLIENT: Town of Clarksburg

HOLE NO. B-2

LOCATION: West Road Bridge, Clarksburg, MA

CLIENT PROJECT NO. Not Applicable

SURF. ELEV. 1740.0

CONTRACTOR: N. E. Boring Contractors, Inc.

PROJECT NAME: West Road Bridge over Bear Swamp Brook

DRILLER: Mike St. John

GROUND WATER OBSERVATIONS

At: 14'-0" @ Completion Hours

Type

Size I.D.

Hammer Wt.

Hammer Fall

CASING

HW

S/S

NQ

CORE BAR

Start

Complete

Boring Foreman

Inspector / Engineer

DATE

06.10.25

06.10.25

Mike St. John

Joe Bianchi

LOCATION OF BORING

Northern Boring: 8.00 ft. West C.L. West Rd. & 25.00' North C.L. Bear Swamp Brook

Depth	No.	Sample Depths From - To	Blows per 6" on Sampler				Moisture Density or Consistency	Strata Change Elev./ Depth	SOIL OR ROCK IDENTIFICATION Remarks include color, gradation, type of soil etc. Rock-color, type, condition, hardness, drilling time, seams, etc.	SAMPLE		
			From	6-12	12-18	18-24				No.	Pen.	Rec.
	1	1 - 3'	14	15	22	11						12"
5'	2	5' - 7'	8	13	15	27						14"
10'	3	10' - 11'	29	100					Br. F.C. Sand, Some F.C. Gravel, Some Cobbles, Boulders and Some Silt			6"
15'	4	15' - 15'-3"	100/3"									3"
20'								21'				
25'								23'	Top of Bedrock @ 21' Rolled 2" @ 23'			
30'									Cored Run #1 @ 25'- 28' Rec. 51" Cored: 25'-28' Granite			
35'									Cored Run #2 @ 28'- 33' Rec. 60" Cored: 28'-33' Granite			
									EOB @ 33' Water @ 14'-0"			

GROUND SURFACE TO 33'

USED HW

CASING: THEN Revert S/S

Sample Type
D = Drive C = Cored W = Washed
UP = Fixed Piston UT = Shelby Tube
TP = Test Pit A = Auger
OE = Open End Rod

Proportions Used
trace 0 to 10%
little 10 to 20%
some 20 to 35%
and 35 to 50%

140 lb. Wt. fall on 2" O.D. Sampler
Cohesionless Density Cohesive Consistency
0 - 10 Loose 0 - 4 Soft 30 + Hard
10 - 30 Med. Dense 4 - 8 M./Stiff
30 - 50 Dense 8 - 15 Stiff

SUMMARY:
Earth Boring 1'-21"
Rock Coring 21'-33'
Samples

HOLE NO. B-2



B1 & B2 BORING CORE BOX

B1: TOP TO BOTTOM: 22' TO 27', 27' TO 31'
B2: TOP TO BOTTOM: 25' TO 28', 28' TO 33'

COMMONWEALTH OF MASSACHUSETTS
MassDOT, Highway Division

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DATE

6/24/2026

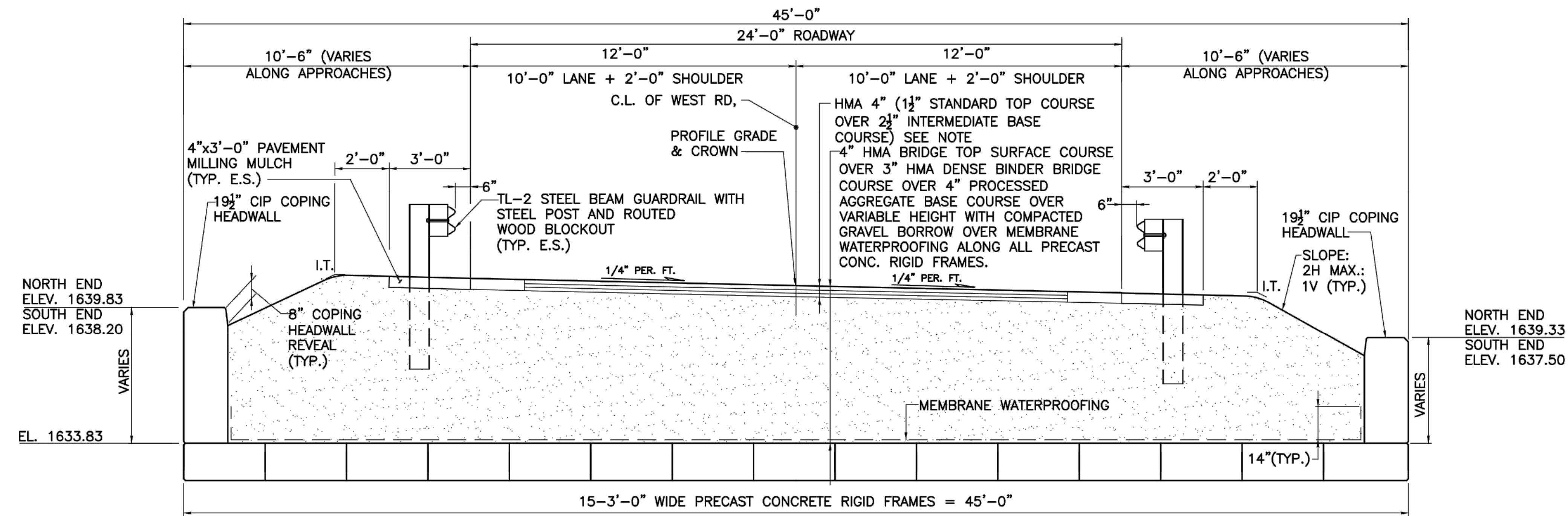
STATE BRIDGE ENGINEER

DATE

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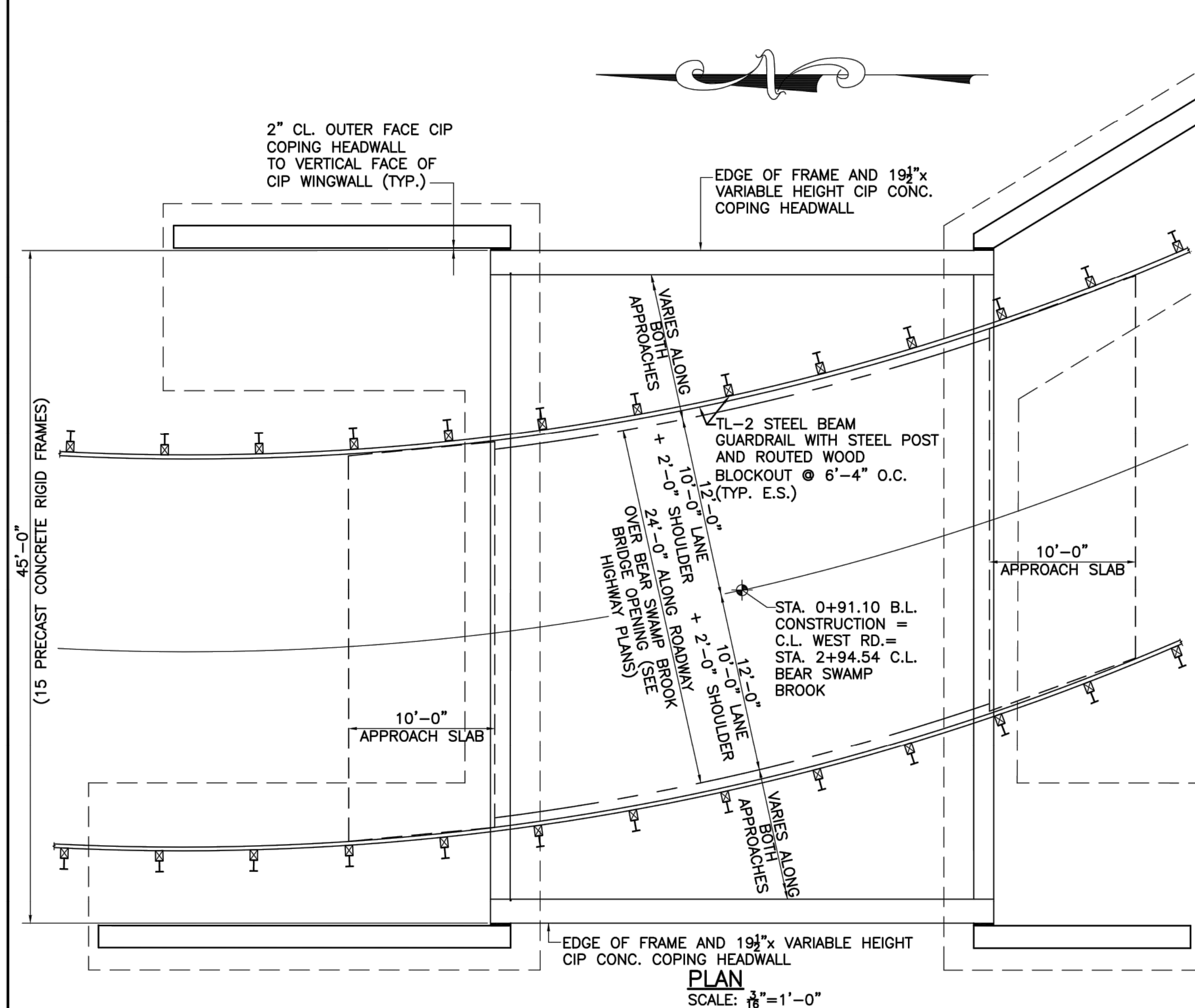
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
PROJECT FILE NO.			

GENERAL PLAN AND
CROSS SECTION

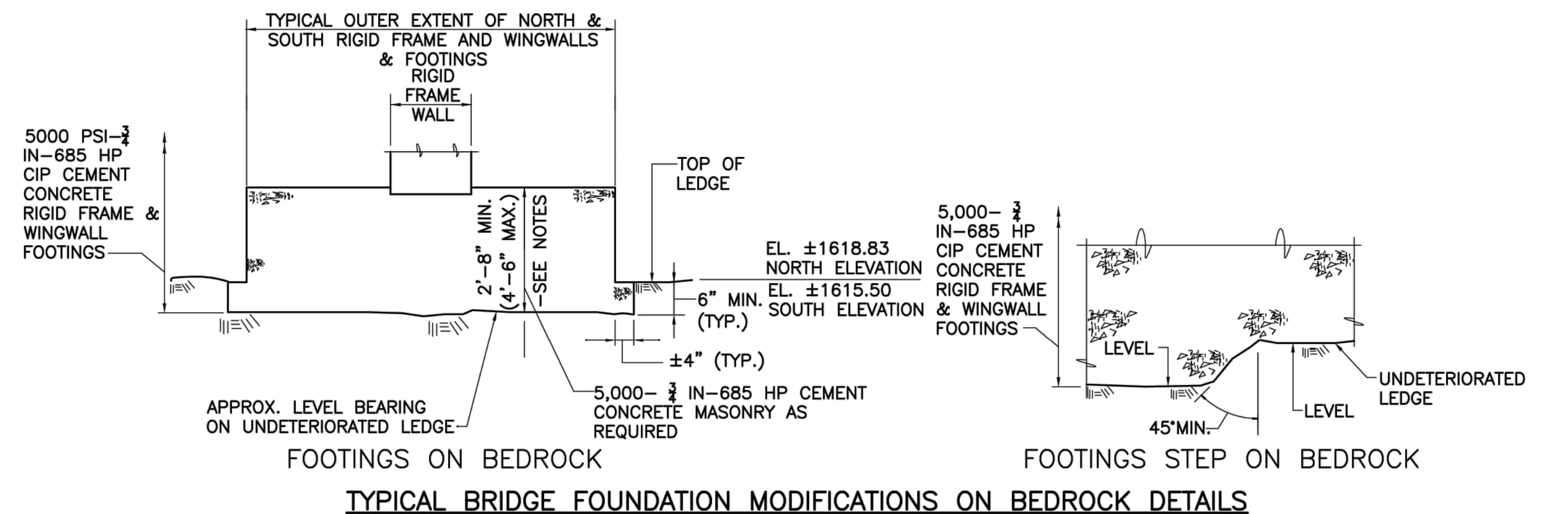


TYPICAL SOUTH BRIDGE CROSS SECTION
(LOOKING NORTH)
AT CENTERLINE BEAR SWAMP BROOK

NOTE: SCALE: $\frac{1}{8}$ "=1'-0"
20 FT. WIDE 4" HMA TOP SURFACE COURSE OVER CONCRETE RIGID FRAME VARIES ALONG EACH ROADWAY APPROACH-SEE HIGHWAY PLANS.



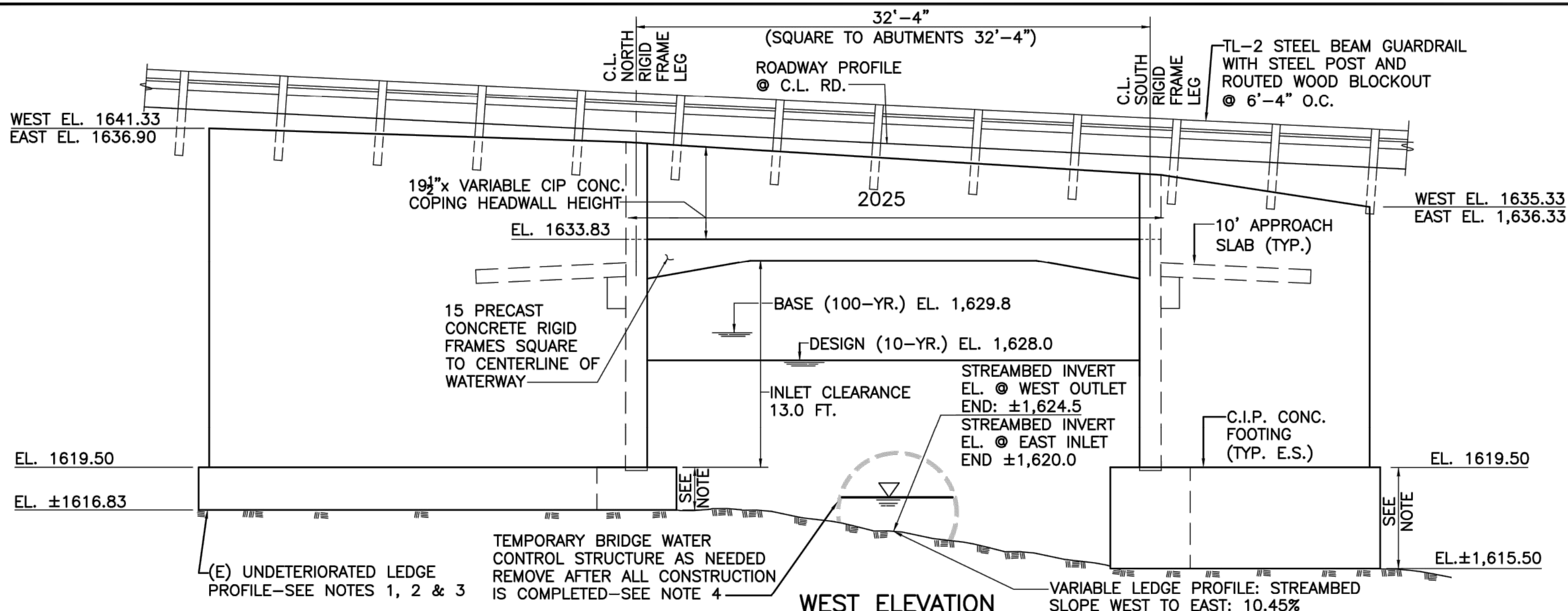
PLAN
SCALE: $\frac{1}{16}$ "=1'-0"



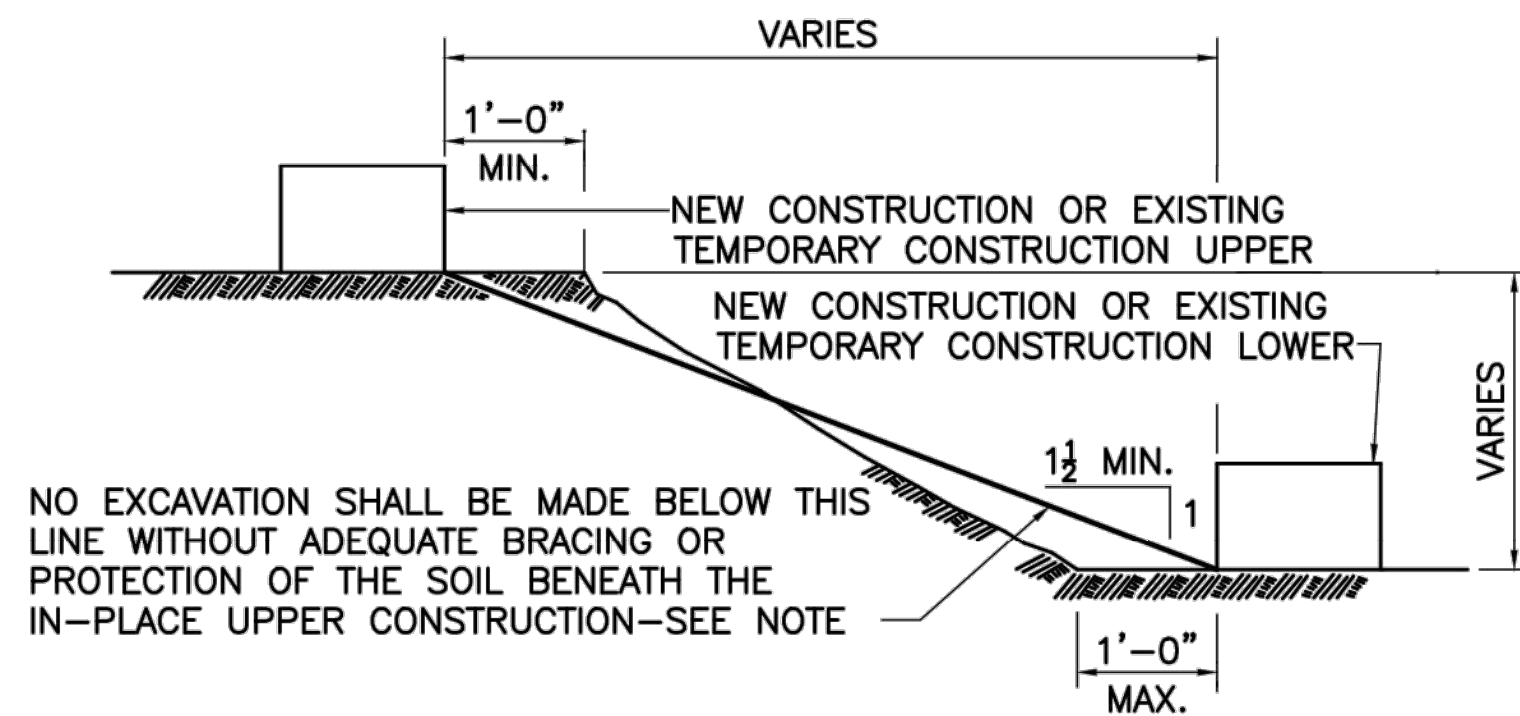
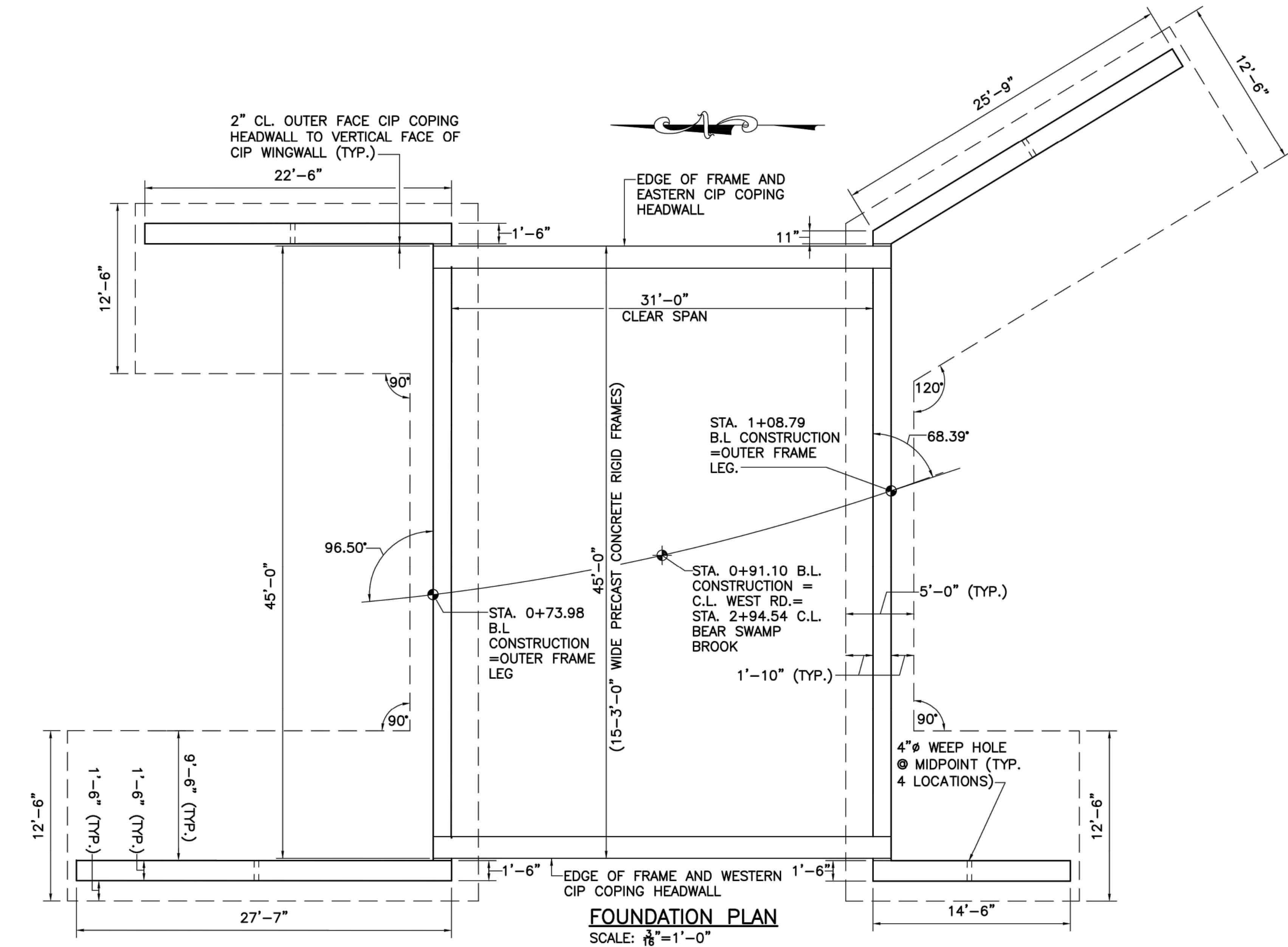
- NOTES:
- LEDGE EXCAVATION ALONG ALL NORTHERN AND SOUTHERN RIGID FRAME AND WINGWALL FOOTINGS WILL REQUIRE THE REMOVAL OF APPROXIMATELY ± 0.5 FT. OF EXISTING LEDGE EXCAVATION AND TO MAINTAIN A MINIMUM 2'-8" FOOTING DEPTH.
 - DESIGN ENGINEER TO REVISE DRAWING(S) WITH FINAL AS BUILT CONDITIONS TO CONFIRM FOR FUTURE MAINTENANCE, REPAIR AND/OR REPLACEMENT OF THE SPREAD FOOTINGS BUILT ON BEDROCK OR OTHER SUBSURFACE FOUNDATION SUPPORT CONDITIONS THAT MAY BE ENCOUNTERED DURING CONSTRUCTION.

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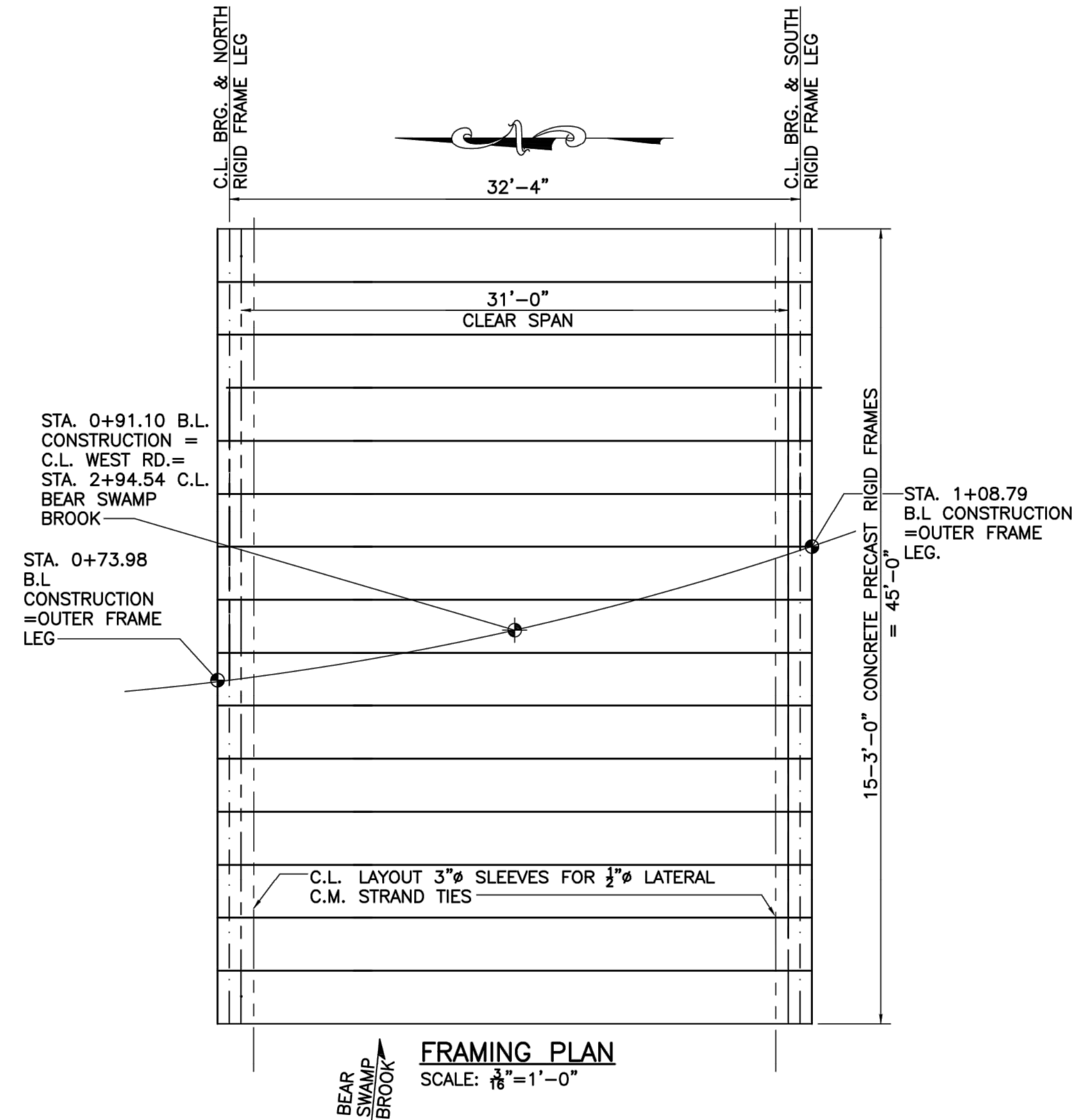


- NOTES:
- 1.0 HEIGHT OF FOOTING ON UNDETERIORATED VARIES SEE "TYPICAL BRIDGE FOUNDATION MODIFICATIONS ON BEDROCK DETAILS ON SHEET 4".
 - 2.0 SEE "TYPICAL BRIDGE FOUNDATION MODIFICATIONS ON BEDROCK DETAILS" ON SHEET 4 FOR ADD'L. INFORMATION.
 - 3.0 CHANNEL RIP-RAP AND ALL LEVELING AREAS IF REQUIRED UNDER FOOTINGS NOT SHOWN FOR CLARITY SEE SHEETS 4 AND 9 FOR ADD'L. INFORM.
 - 4.0 ALL WATER-CONTROL MEASURES NEEDED DURING THE ENTIRE CONSTRUCTION OF THIS BRIDGE IS THE RESPONSIBILITY OF THE CONTRACTOR AND OTHERS.



SLOPE BETWEEN NEW CONSTRUCTION AND EXISTING CONSTRUCTION

NOTE: NO SCALE
TEMPORARY BRACING, WALLS ETC. SYSTEMS SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER.



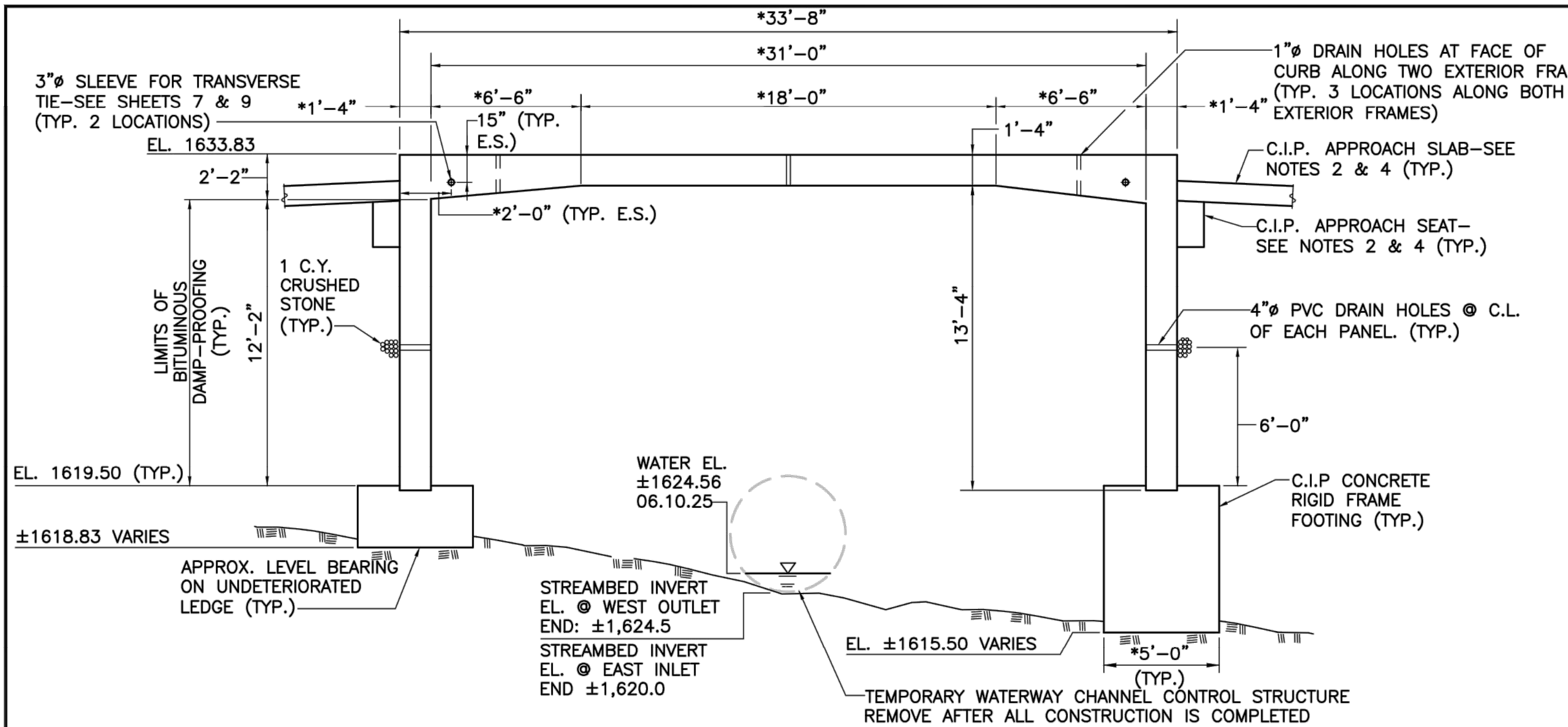
RIGID FRAME CONSTRUCTION SEQUENCE NOTES

1. AFTER ALL RIGID FRAMES HAVE BEEN ERECTED, TENSION EACH TRANSVERSE TIE TO 5 KIPS.
2. FILL ALL KEYWAYS ALONG ALL RIGID FRAME LEGS SOLID WITH MORTAR (M4.04.0) AFTERWARDS FILL ALL KEYWAYS ALONG ALL RIGID FRAME SLABS SOLID WITH MORTAR (M4.04.0). IF THE KEYWAYS ARE NOT FILLED WITHIN FIVE (5) DAYS AFTER THE RIGID FRAMES ARE ERECTED, THE CONTRACTOR SHALL COVER AND PROTECT THE KEYWAYS FROM WEATHER AND DEBRIS UNTIL THEY ARE FILLED.
3. AFTER THE MORTAR HAS CURED (24 HOURS MINIMUM), TENSION EACH TRANSVERSE TIE TO 44 KIPS.
4. NO TRAFFIC OR HEAVY EQUIPMENT WILL BE PERMITTED ON THE BRIDGE UNTIL ALL TRANSVERSE TIES HAVE BEEN PROPERLY TENSIONED ACCORDING TO STEPS 1 THROUGH 3 ABOVE.
5. INSTALL APPROACH SLAB SEATS & SLABS AFTER SEQUENCES 1 THROUGH 4 ARE COMPLETED.

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SHEET 5 OF 9 SHEETS BRIDGE NO. C-15-010 (D2T)



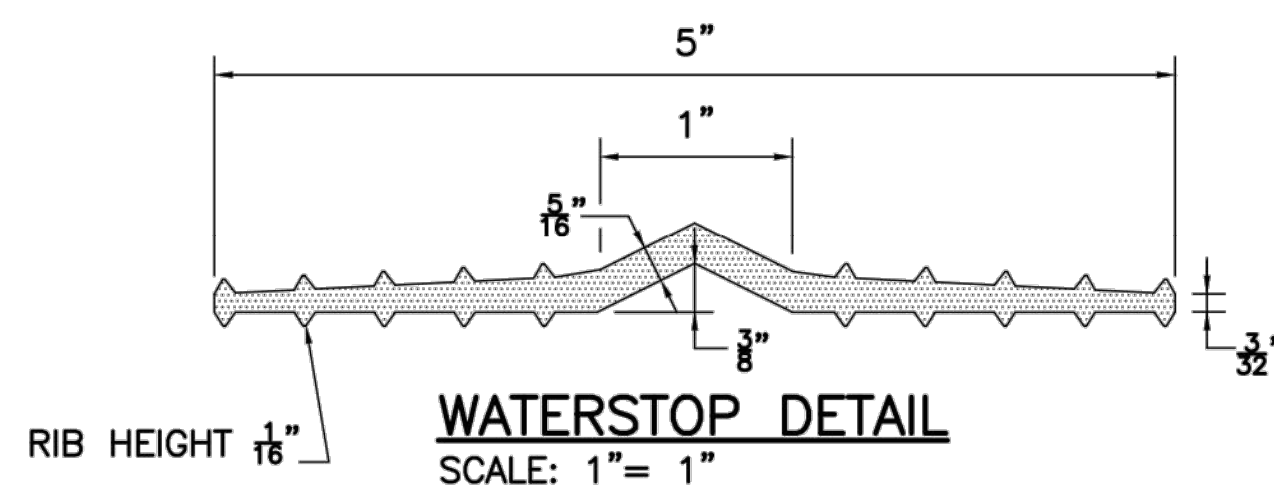
WEST ELEVATION TYPICAL RIGID FRAME SECTION

- NOTES: SCALE: $\frac{1}{4}$ "=1'-0"
- 1.0 * DENOTES SQUARE DIMENSION.
 - 2.0 SEE "TYPICAL RIGID FRAME" FOR ADD'L. INFORMATION SHEET 7.
 - 3.0 SEE "SHELF DETAIL FOR APPROACH SLAB AND SEAT" SHEET 7.
 - 4.0 SEE "RIGID FRAME CONSTRUCTION SEQUENCE NOTES" THIS SHEET.
 - 5.0 SEE "WEST ELEVATION" SHEET 5 FOR ADD'L. INFORMATION.

PRECAST RIGID FRAME NOTES

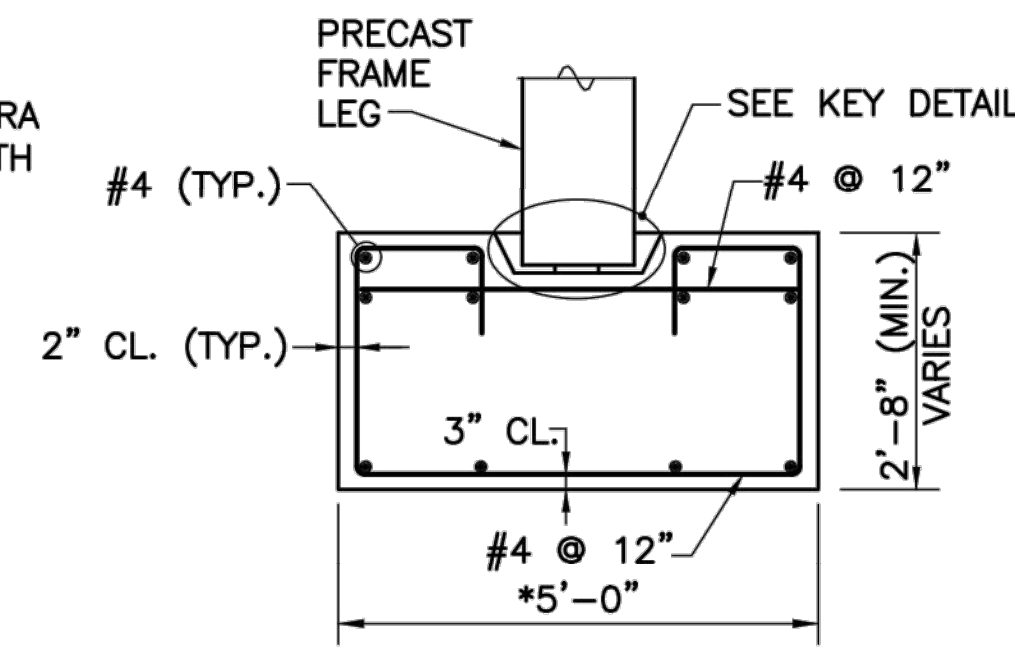
1. CONTRACTOR SHALL PROVIDE A RIGID FRAME DESIGN (AS SHOWN AND SPECIFIED ON SHEETS 6 & 7 "WEST ELEVATION TYPICAL ELEVATION RIGID FRAME SECTION" & "TYPICAL RIGID FRAME") OR A OPTIONAL ALTERNATE DESIGN WHILE MAINTAINING THE INTERIOR VERTICAL AND HORIZONTAL HYDRAULIC CLEARANCE DIMENSIONS AS SHOWN AT NO ADDITIONAL COMPENSATION ADHERING TO THE NOTE: BELOW AND ALL PROVISIONS AND INFORMATION AS SHOWN THROUGHOUT ALL THE CONTRACT PLAN SHEETS PROVIDED.
 2. DESIGN AND CONSTRUCTION OF ALL RIGID FRAME STRUCTURAL ELEMENTS SHALL COMPLY WITH: DESIGN REVIEW AND APPROVALS - CHAPTER 85 SECTION 35 - SEE GENERAL NOTES SHEET 2 OF 9.
- THE CONTRACTOR SHALL SUBMIT DESIGN CALCULATIONS PREPARED IN ACCORDANCE WITH THE LATEST AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS AND THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION'S LRFD BRIDGE DESIGN MANUAL FOR HL-93 TRUCK LOADING FOR APPROVAL OF THE ENGINEER. THE DESIGN COMPUTATIONS SHALL CONSIDER ALL LOADINGS AS ARE APPROPRIATE DURING FABRICATION, SHIPMENT, ERECTION INCLUDING THE EFFECTS OF ALL LIFTING DEVICES NEEDED THROUGHOUT CONSTRUCTION AND UPON COMPLETION OF CONSTRUCTION BASED UPON THESE CONSTRUCTION DRAWINGS.
- FINAL SHOP DRAWINGS AND COMPUTATIONS DETAILING THE PROPOSED RIGID FRAME DESIGN SHALL BE SEALED AND SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE COMMONWEALTH OF MASSACHUSETTS FOR FINAL CHAPTER 85 SECTION 35 REVIEW AND APPROVAL. ALL FINAL SHOP DRAWINGS AND DESIGN CALCULATIONS SHALL BE SUBMITTED TO THE ENGINEER AND MASSDOT FOR FINAL APPROVAL, ONCE APPROVED THE SHOP DRAWINGS SHALL BE AFFIXED WITH THE FOLLOWING STAMPED SEAL:
3. ALL OVERALL FRAME DIMENSIONS INCLUDING THE SIZE AND SPACING OF STEEL REINFORCEMENT PROVIDED AND SHOWN ON THE CONTRACT PLANS ARE SHOWN TO ESTABLISH THE MINIMUM SIZES (WIDTHS AND DEPTHS) FOR ALL PROPOSED MEMBER SIZES, HYDRAULIC WATERWAY OPENING & BRIDGE TYPE. THE WIDTH'S AND THICKNESS OF ALL PRECAST CONCRETE ELEMENTS SHALL NOT VARY AND ARE TO BE PARALLEL AND ALIGNED WITH THE CONSTRUCTION BASELINE AS SHOWN ON THESE CONSTRUCTION DRAWINGS.
 4. PRECAST ELEMENTS: THE FABRICATOR IS RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF LIFT HOOKS FOR ALL PRECAST ELEMENTS, PLANS PROVIDING SPACING AND LOCATION OF LIFTING DEVICES AND HANDLING STRESS CALCULATIONS, DESIGNED AND STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN MASSACHUSETTS FOR REVIEW AND APPROVAL. REINFORCING STEEL SHOWN ON AND ALONG THE RIGID FRAME MEMBERS SHALL NOT BE USED TO LIFT THE PRECAST ELEMENTS.
 5. PRECAST CONCRETE FRAME UNITS SHALL CONFORM TO THE APPLICABLE PARTS OF THE SECTION 930 OF THE SPECIFICATIONS. ALL FOOTINGS, WINGWALLS, AND BRIDGE RAILING HEADWALLS SHALL BE CAST IN PLACE AS SHOWN ON THE PLANS.
 6. THE DESIGN OF THE FOOTINGS DETAILED HEREIN WAS BASED UPON THE GEOMETRY OF THE FRAME SHOWN.
 7. CONCRETE FOR ALL PRECAST RIGID FRAME UNITS SHALL BE 5,000 PSI, $\frac{3}{4}$ IN., 685 HP CEMENT CONCRETE.
 8. FOOTINGS: THE PRECAST CONCRETE RIGID FRAME UNITS SHALL BE INSTALLED ON CAST-IN-PLACE CONCRETE FOOTINGS SEATED ON EXISTING BEDROCK OF THE MINIMUM SIZES SHOWN THROUGHOUT ALL THE CONTRACT PLANS SHEETS. THE RESISTANCE FACTOR DESIGN METHOD WITH THE FOLLOWING SERVICE LOADS:
-VERTICAL DEAD LOAD = 10 KIPS PER FOOT FRAME LEG SEATED ON RIGID FRAME FOOTING
-VERTICAL LIVE LOAD = 9 KIPS PER FOOT FRAME LEG SEATED ON RIGID FRAME FOOTING

IF THESE ACTUAL LOADS DEVIATE FROM THE FINAL RIGID FRAME LOADS, THE ENGINEER WILL PROVIDE NEW FOOTING DESIGN DRAWINGS DETAILING THE PROPOSED FOOTINGS TO ACCOMMODATE THE FINAL RIGID FRAME DESIGN PROVIDED BY THE CONTRACTOR.



WATERSTOP DETAIL

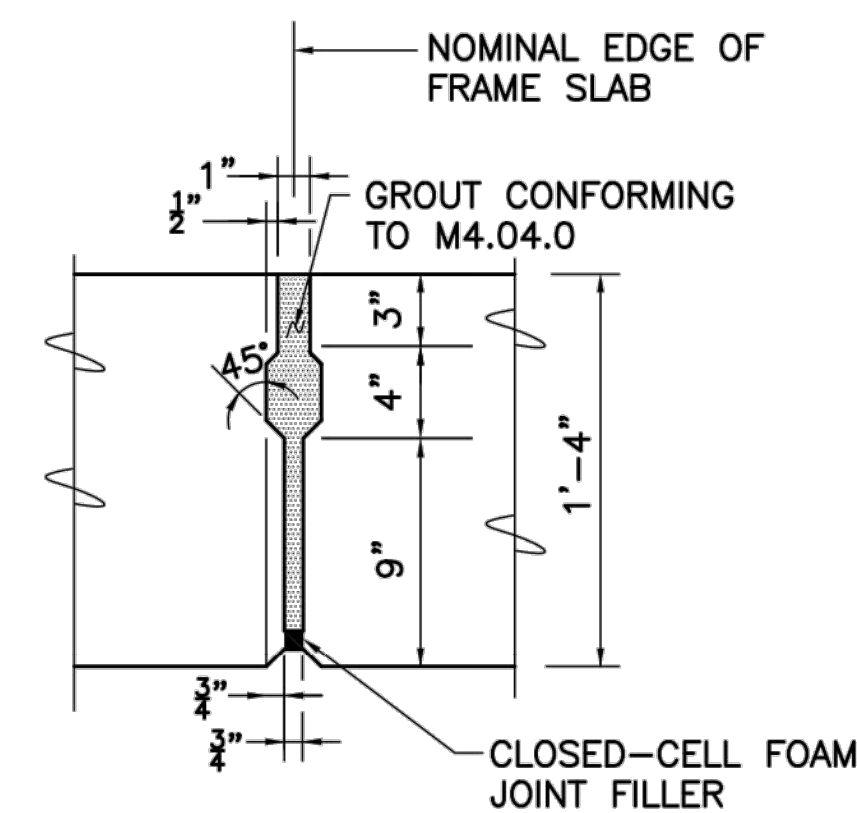
SCALE: 1"= 1"



RIGID FRAME FOOTING DETAIL

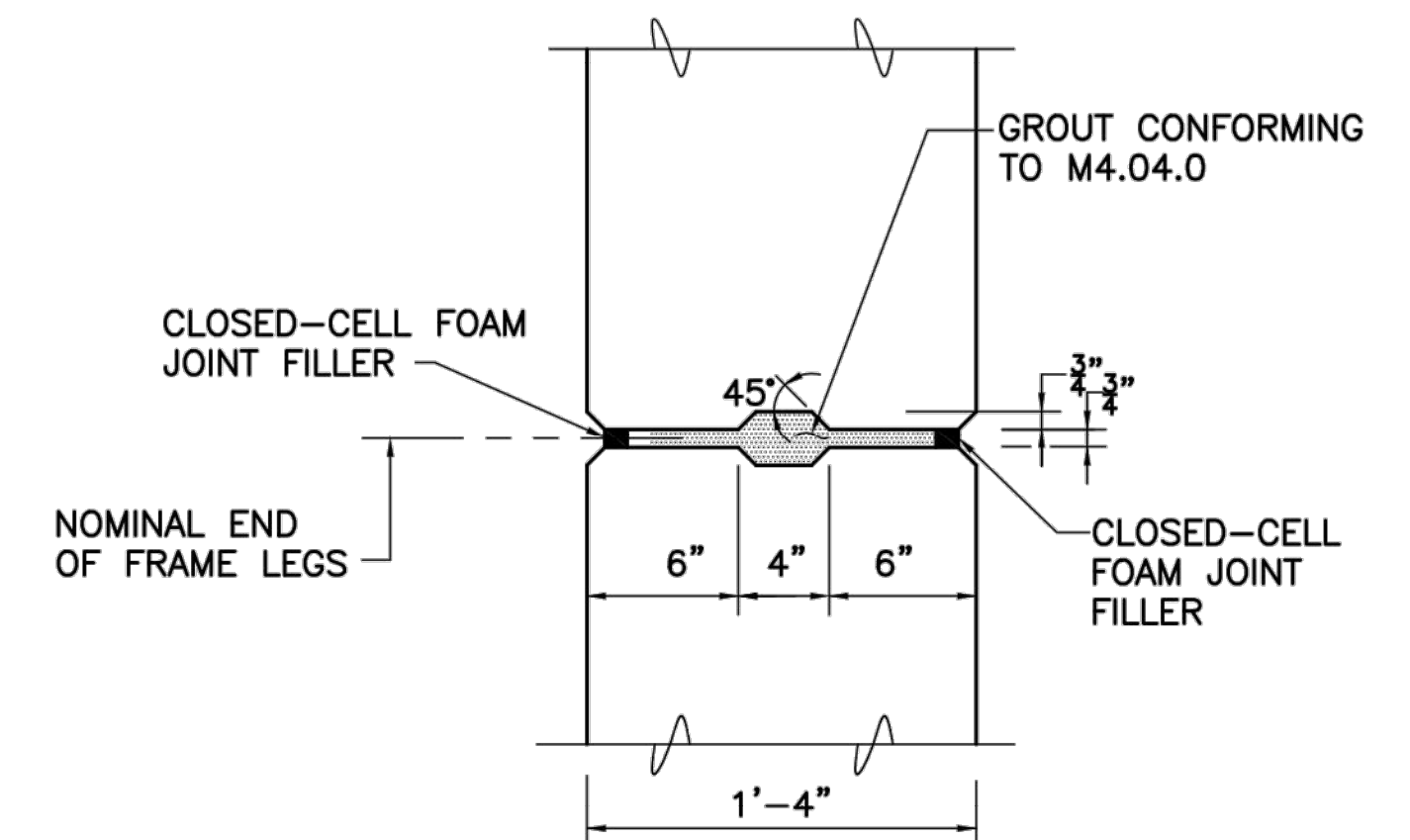
SCALE: $\frac{1}{2}$ "=1'-0"

- NOTES:
- 1.0 * DENOTES SQUARE DIMENSION.
 - 2.0 SEE "SHELF DETAIL FOR APPROACH SLAB AND SEAT" SHEET 7.



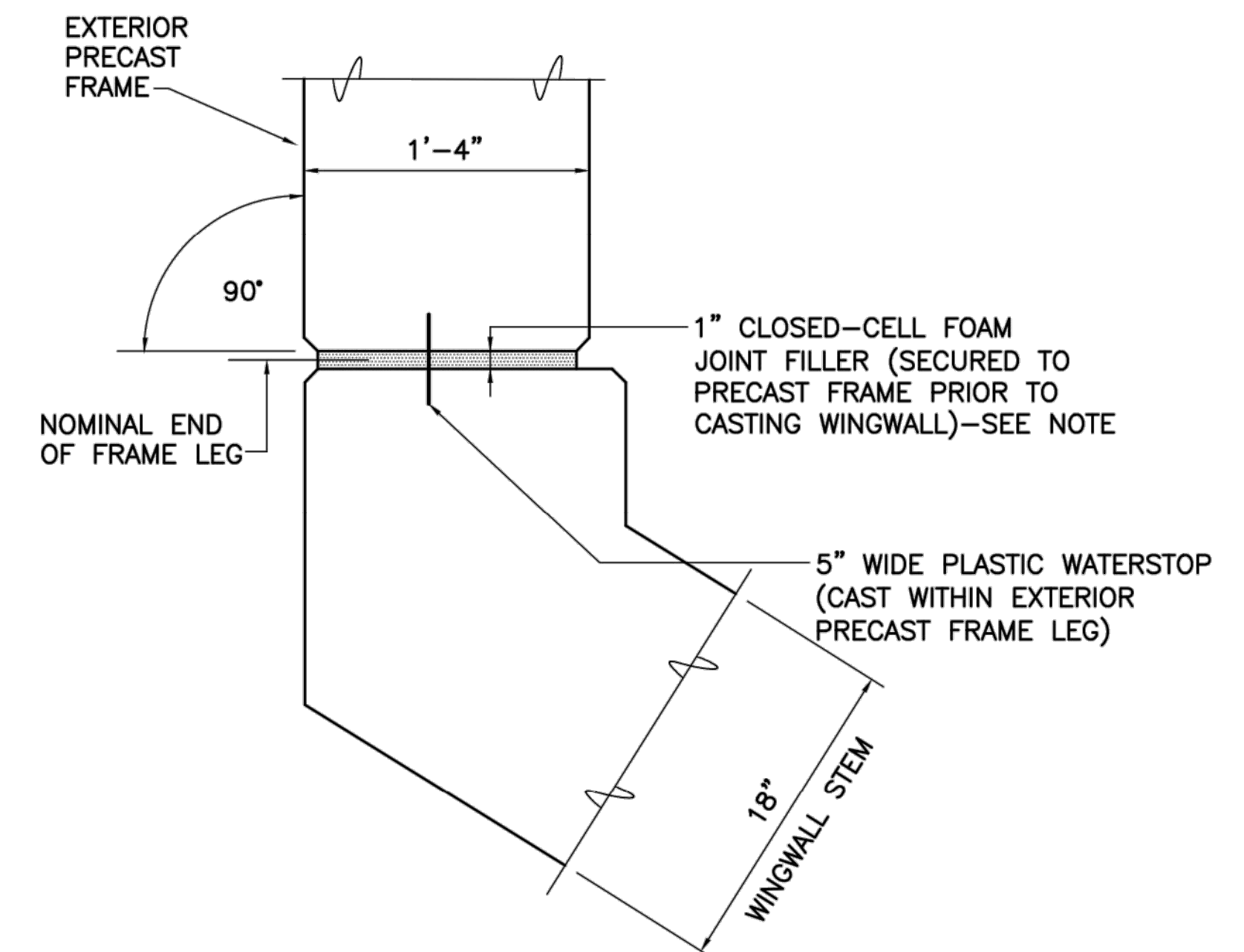
TYPICAL JOINT DETAIL: FRAME SLAB-FRAME SLAB

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



TYPICAL JOINT DETAIL: FRAME LEG-FRAME LEG

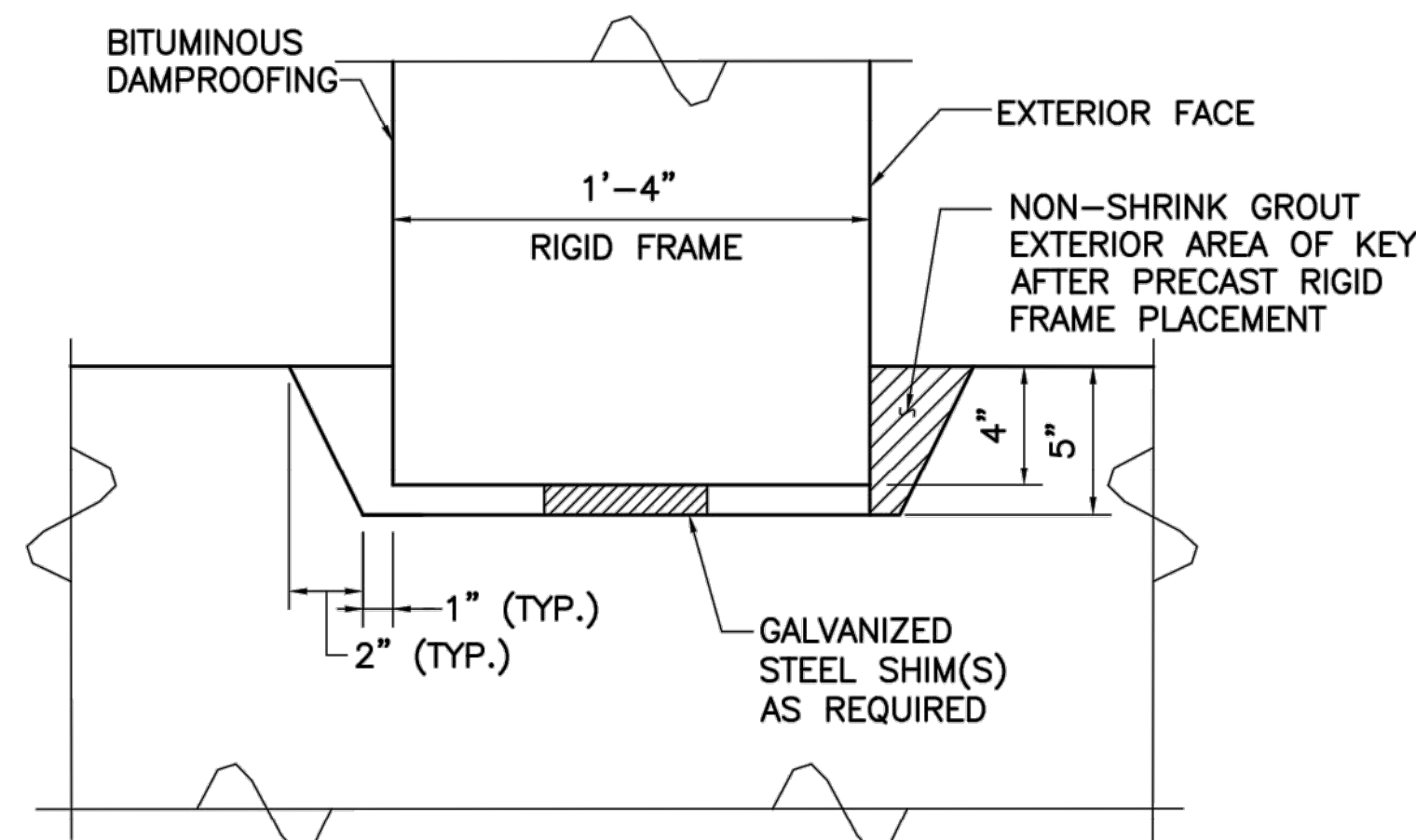
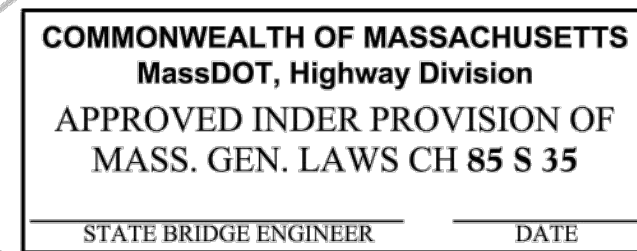
SCALE: $1\frac{1}{2}$ "=1'-0"



TYPICAL NORTH & SOUTH JOINTS DETAIL: TWO EXTERIOR VERTICAL FRAME LEGS ALONG ALL WINGWALLS

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

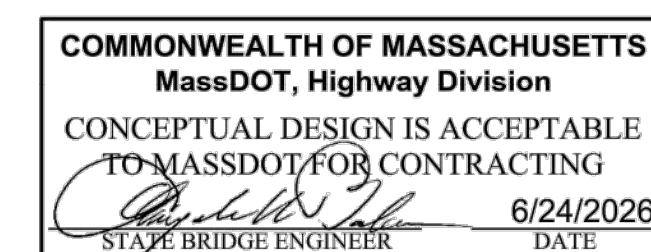
NOTE:
OMIT CLOSED CELL FOAM ALONG RIGID FRAME SLAB AND COAT VERTICAL PRECAST CONCRETE SLAB FACE WITH BIT. BOND BREAKER PRIOR TO CASTING WINGWALL STEM.



KEY DETAIL

SCALE: 2"=1'-0"

- NOTES:
1. FILL ENTIRE HORIZONTAL VOID ALONG KEY SOLID WITH NON-SHRINK GROUT.
 2. THIS DETAIL MAY BE MODIFIED SUBJECT TO THE APPROVAL OF THE ENGINEER.

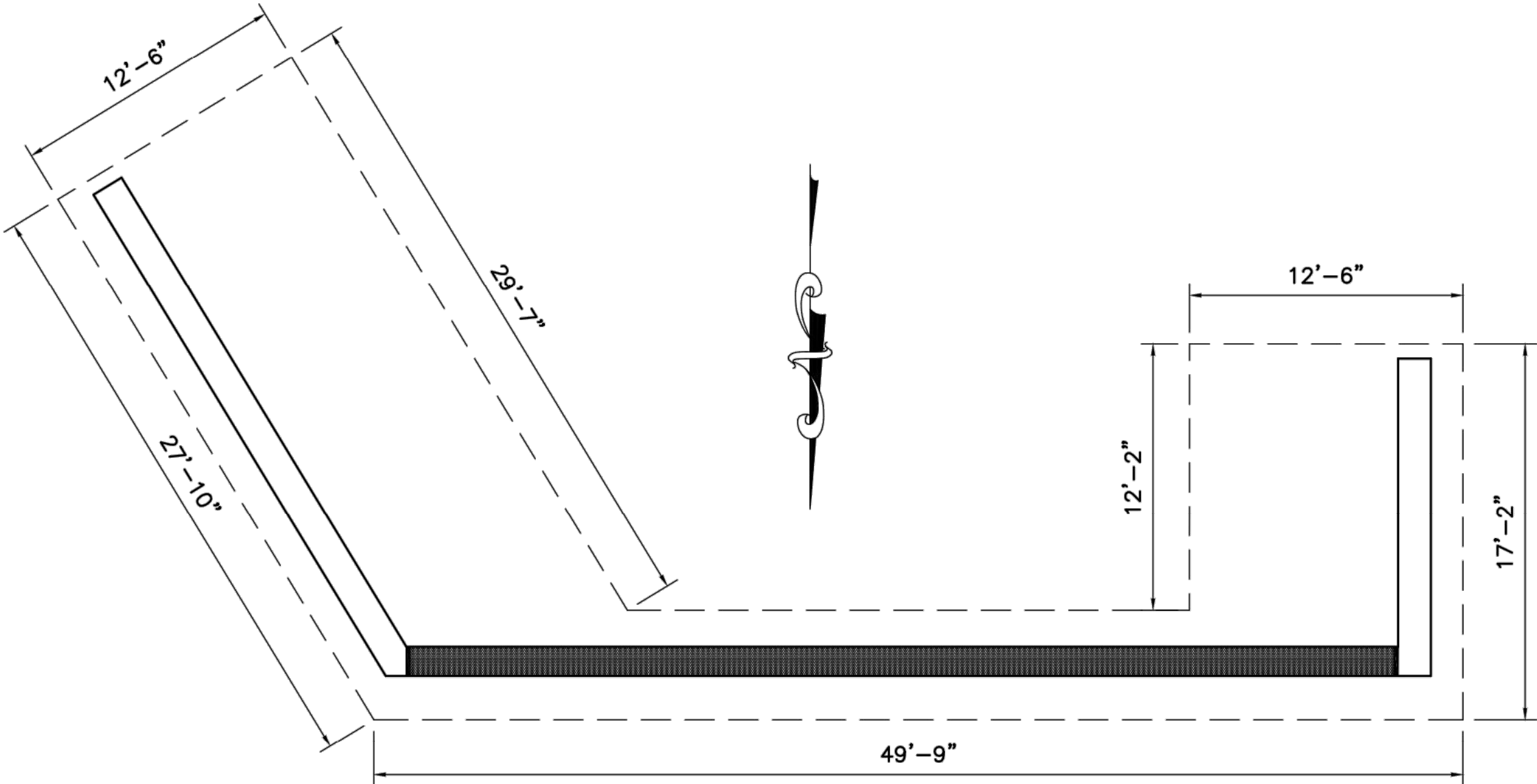


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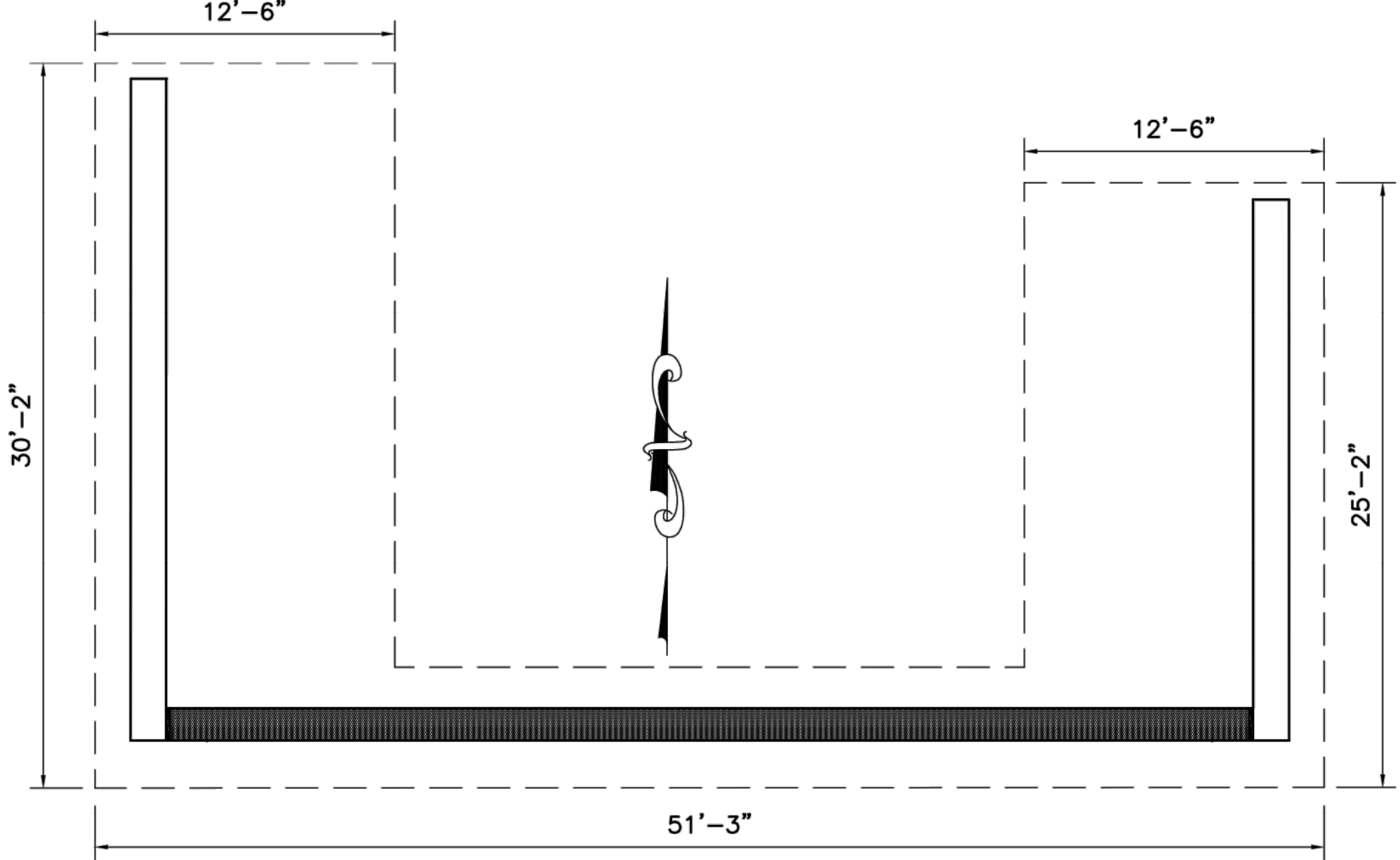
SHEET 6 OF 9 SHEETS BRIDGE NO. C-15-010 (D2T)

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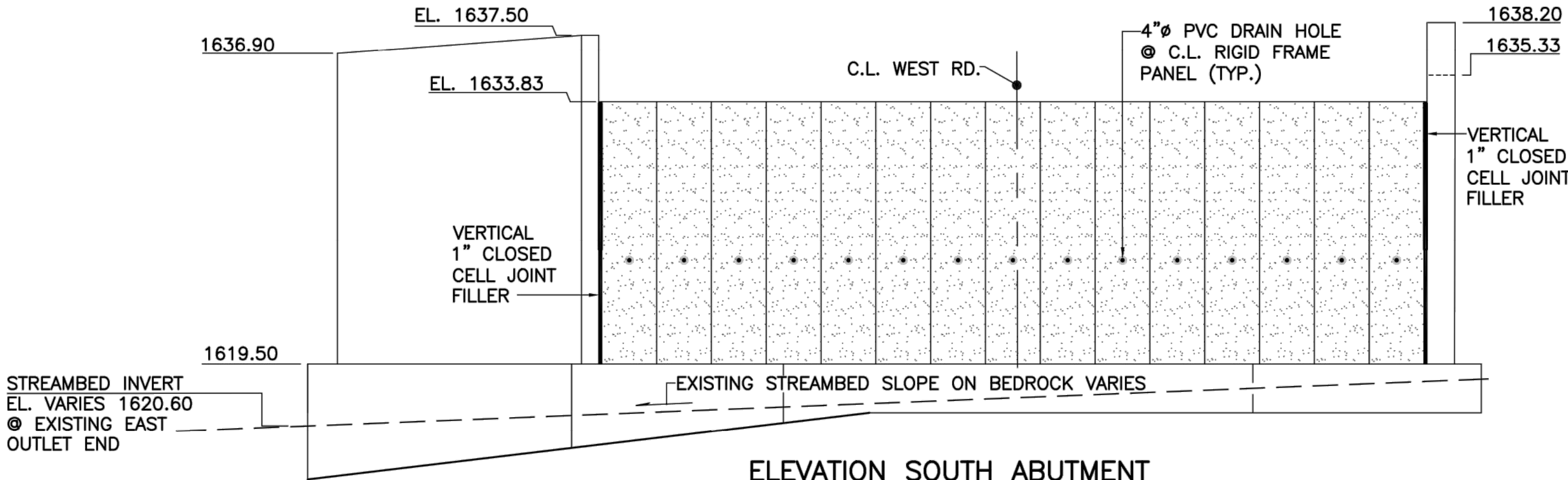
ADDITIONAL WINGWALL &
FOUNDATION PLANS
AND ELEVATION DETAILS



PLAN SOUTH ABUTMENT
SCALE: $\frac{1}{16}$ "=1'-0"

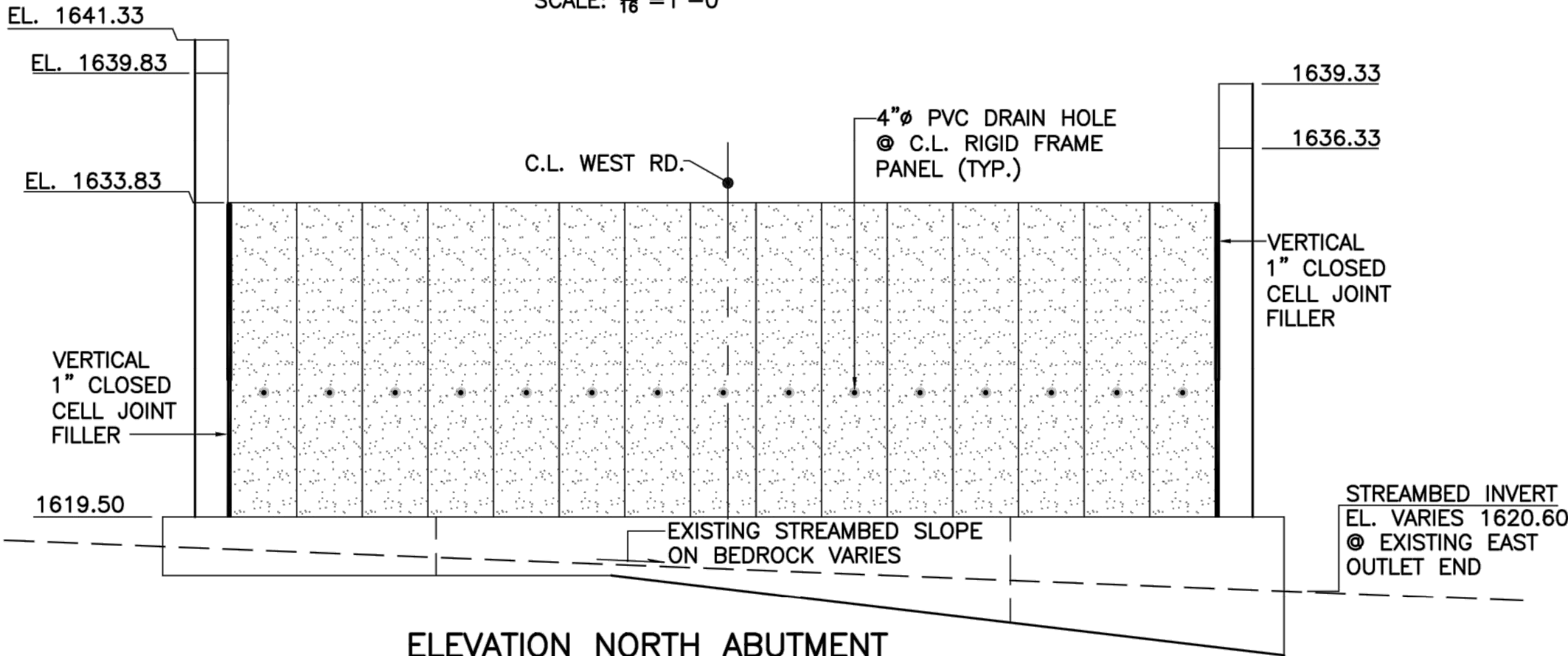


PLAN NORTH ABUTMENT
SCALE: $\frac{1}{16}$ "=1'-0"



ELEVATION SOUTH ABUTMENT
SCALE: $\frac{1}{16}$ "=1'-0"

NOTE:
RIGID FRAME SHOWN SHADED AND STEEL BEAM
GUARD RAILINGS & COPING HEADWALLS NOT SHOWN FOR CLARITY.



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

NOTE:
RIGID FRAME SHOWN SHADED AND STEEL BEAM
GUARD RAILINGS & COPING HEADWALLS NOT SHOWN FOR CLARITY.

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