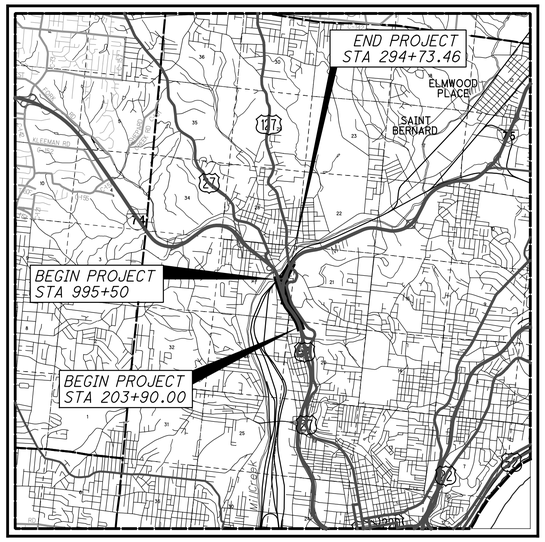

LOCATION MAP

LATITUDE: 39° 09′ 03″ LONGITUDE: -84° 32′ 24″

SCALE IN MILES
0 1 2 3 4

N

PORTION TO BE IMPROVED
INTERSTATE HIGHWAY
FEDERAL ROUTES
STATE ROUTES
COUNTY & TOWNSHIP ROADS
OTHER ROADS

STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

HAM-75-3.84
HAM-74-1840/1852/1892
(BU-3)

HAMILTON COUNTY
CITY OF CINCINNATI

DESIGN DESIGNATION

	IR 75 SOUTH OF MITCHELL	IR 75 SOUTH OF IR 74	IR 74 WEST OF BEEKMAN	IR 74 EAST OF BEEKMAN	DIRECTIONAL ROADWAY IR 75 NB TO IR 74 WB	DIRECTIONAL ROADWAY IR 74 EB TO IR 75 SB
CURRENT ADT (2010)	149,400	152,100	75,000	88,300	25,300	25,300
DESIGN YEAR ADT (2030)	174,300	179,200	89,300	102,000	29,800	29,800
DESIGN HOURLY VOLUME (2030)	14,640	15,050	8,040	9,180	4,100	4,380
DIRECTIONAL DISTRIBUTION	0.54	0.70	0.72	0.73	1.00	1.00
TRUCKS (24 HOUR B&C)	0.16	0.13	0.15	0.13	0.03	0.08
DESIGN SPEED	60 MPH	60 MPH	60 MPH	60 MPH	50 MPH	50 MPH
LEGAL SPEED	55 MPH	55 MPH	55 MPH	55 MPH	50 MPH	50 MPH
DESIGN FUNCTIONAL CLASSIFICATION:	03 URBAN INTERSTATE	03 URBAN INTERSTATE	03 URBAN INTERSTATE	03 URBAN INTERSTATE	03 URBAN INTERSTATE	03 URBAN INTERSTATE
NHS PROJECT	YES					

DESIGN EXCEPTIONS

DESIGN FEATURE	APPROVAL DATES	SHEET NUMBERS
STOP. SIGHT DIST. - SB IR 75 (CURVE 6)	4/6/18	SEE BU-14
SHOULDER WIDTH - IR 74-1892R BRIDGE	4/10/18	
SHOULDER WIDTH - RAMP P 1908S BRIDGE	4/11/18	
CURVE RADIUS - RAMP P 1908S BRIDGE	4/11/18	
STOP. SIGHT DIST. - RAMP P 1908S BRIDGE	4/11/18	
S.E. RATE - IR 74 EB CURVE 13, 1908R BRIDGE	4/26/18	

INDEX OF SHEETS:

ENGINEERS SEAL:

FOR ENTIRE PLAN EXCEPT STRUCTURES OVER 20′

STATE OF OHIO
BRUCE FRASER
E-59019
REGISTERED
PROFESSIONAL ENGINEER

SIGNED: Bruce Fraser
DATE: 1/30/19

ENGINEERS SEAL:

FOR STRUCTURES OVER 20′

STATE OF OHIO
CHRISTOPHER L. BETTINGER
E-69366
REGISTERED
PROFESSIONAL ENGINEER

SIGNED: Christopher L Bettinger
DATE: 1/30/19

STANDARD CONSTRUCTION DRAWINGS

BP-1.1	7/28/00	DM-1.1	7/21/17	RM-4.5	7/21/17	HL-20.21	1/19/18	MT-98.11	1/20/17	TC-21.20	1/19/18
BP-2.1	7/17/15	DM-1.2	1/18/13	RM-4.6	7/19/13	HL-20.24	1/19/18	MT-98.20	7/18/14	TC-21.50	7/15/16
BP-2.2	7/18/08	DM-1.3	7/18/14			HL-30.11	1/19/18	MT-98.21	7/18/14	TC-22.10	10/18/13
BP-2.3	7/18/14	DM-2.1	1/18/13	A-1-69	7/19/02	HL-30.21	1/17/14	MT-98.29	1/20/17	TC-22.20	1/17/14
BP-2.4	7/19/13	DM-4.1	1/15/16	AS-1-15	7/17/15	HL-30.22	1/17/14	MT-98.30	7/21/17	TC-41.30	10/18/13
BP-3.1	7/18/14	DM-4.2	7/20/12	AS-2-15	1/19/18	HL-30.31	1/17/14	MT-99.30	1/19/18	TC-42.10	10/18/13
BP-6.1	7/19/13	DM-4.3	1/15/16	EXJ-4-87	1/19/18	HL-30.32	1/17/14	MT-99.60	7/15/16	TC-42.20	10/18/13
BP-8.1	7/18/08	DM-4.4	1/15/16	GSD-1-96	7/19/02	HL-30.33	1/17/14	MT-101.70	1/17/14	TC-52.10	10/18/13
				PCB-91	1/18/13	HL-30.41	1/19/18	MT-101.75	7/15/16	TC-52.20	1/19/18
CB-1.1	1/15/16	MGS-1.1	1/19/18	PSID-1-13	7/15/16	HL-40.10	1/20/17	MT-101.80	1/16/18	TC-61.30	1/20/17
CB-1.2	1/15/16	MGS-2.1	1/19/18	RB-1-55	7/19/13	HL-40.20	1/20/17	MT-101.90	7/21/17	TC-65.10	1/17/14
CB-1.3	1/15/16	MGS-3.1	1/19/18	SBR-1-13	1/14/14	HL-50.11	1/16/15	MT-102.10	1/20/17	TC-65.11	7/21/17
CB-2.1	1/15/16	MGS-3.2	1/18/13	SBR-2-13	1/14/14	HL-50.21	1/19/18	MT-102.20	7/18/14	TC-71.10	1/19/18
CB-2.2	1/15/16	MGS-4.2	7/19/13	SICD-1-96	7/18/14	HL-60.12	7/15/16	MT-103.10	1/19/18	TC-72.20	7/15/16
CB-2.3	1/15/16	MGS-4.3	1/18/13	SICD-2-14	7/18/14	HL-60.21	1/16/15	MT-104.10	10/16/15	TC-73.20	7/21/17
CB-3.1	1/15/16	MGS-5.2	7/15/16	VPF-1-90	1/19/18	HL-60.31	7/21/17	MT-105.10	7/19/13		
CB-3.3	1/15/16	MGS-5.3	7/15/16							ITS-13.10	7/17/15
		MGS-6.1	1/19/18	HL-10.11	1/19/18	MT-95.30	7/21/17	TC-7.65	1/15/16	ITS-14.10	7/17/15
I-2.1	1/15/16			HL-10.12	1/20/17	MT-95.31	7/21/17	TC-9.10	1/19/18	ITS-14.11	7/17/15
I-2.2	1/15/16			HL-10.13	1/20/17	MT-95.32	7/21/17	TC-9.30	1/19/18	ITS-15.10	7/17/15
I-2.3	1/15/16	RM-1.1	7/18/14	HL-10.15	7/17/15	MT-95.50	7/21/17	TC-12.30	1/19/18	ITS-15.11	7/17/15
I-2.4	1/15/16	RM-4.1	7/21/17	HL-10.31	1/19/18	MT-95.45	7/21/17	TC-15.115	10/18/13	ITS-50.10	1/19/18
		RM-4.3	7/18/14	HL-20.11	4/21/17	MT-95.73	1/19/18	TC-16.21	1/19/18		
MH-1.2	1/15/16	RM-4.4	7/21/17	HL-20.13	1/19/18	MT-98.10	1/20/17	TC-21.10	7/21/17		

SUPPLEMENTAL SPECIFICATIONS	
800-2016	1/19/18
804	1/15/16
806	3/2/15
808	10/16/15
809	1/19/18
814	7/15/16
821	4/20/12
832	1/17/14
839	7/17/15
840	7/20/18
866	4/21/17
867	4/15/16
902	12/31/12
904	7/15/16
908	10/20/17
914	7/15/16
921	4/20/12
939	7/17/15

SPECIAL PROVISIONS

PLAN PREPARED BY:
AMERICAN STRUCTUREPOINT INC.
2550 CORPORATE EXCHANGE DR, STE 300
COLUMBUS, OH 43231
TEL 614.901.2235 FAX 614.901.2236
www.structurepoint.com

PROJECT DESCRIPTION

THIS IS PHASE 5A OF THE HAMILTON 75 CORRIDOR PROJECTS (MCE). THE PROJECT ADDS A LANE TO IR 75 SB, PROVIDES 4-LANE CONTINUITY NB, AND RECONFIGURES IR 74 EB RAMPS TO IR 75. THE PROJECT ALSO INCLUDES SURFACE COURSE AND ADDITIONAL PAVEMENT WORK TO THE SOUTH AND IMPROVEMENTS TO RAMP A AT THE HOPPLE ST INTERCHANGE.

BUILDABLE UNIT 3 DESCRIPTION

THIS BUILDABLE UNIT INCLUDES THE CONSTRUCTION OF THE HAM-74-1840/1852/1892 BRIDGE REHABILITATION WORK.

LIMITED ACCESS

THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE OHIO REVISED CODE.

2016 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PLANS AND CHANGES LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

APPROVED

FOR CONSTRUCTION

The DBT confirms that the record drawings have been updated to incorporate all red-lined changes and have been approved by the appropriate parties. These updated drawings represent the final and accurate record of the buildable unit's design and construction.

STATE OF OHIO
CHRISTOPHER L. BETTINGER
E-69366
REGISTERED
PROFESSIONAL ENGINEER
11/16/2023

RELEASED FOR CONSTRUCTION
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UNDERGROUND UTILITIES

CONTACT BOTH SERVICES TWO WORKING DAYS **BEFORE YOU DIG.**

OHIO Utilities Protection SERVICE
Call Before You Dig
1-800-362-2764
(Non-members must be called directly)

OIL & GAS PRODUCERS UNDERGROUND PROTECTION SERVICE
1-800-925-0988

FEDERAL PROJECT NO. E170 (713)
PID NO. 104667
CONSTRUCTION PROJECT NO. 183000
RAILROAD INVOLVEMENT CSXT (CSX OP# OH1179) NORFOLK SOUTHERN
HAM-75-3.84
1 120

jsoltesz
1/30/2019 9:24:29 AM
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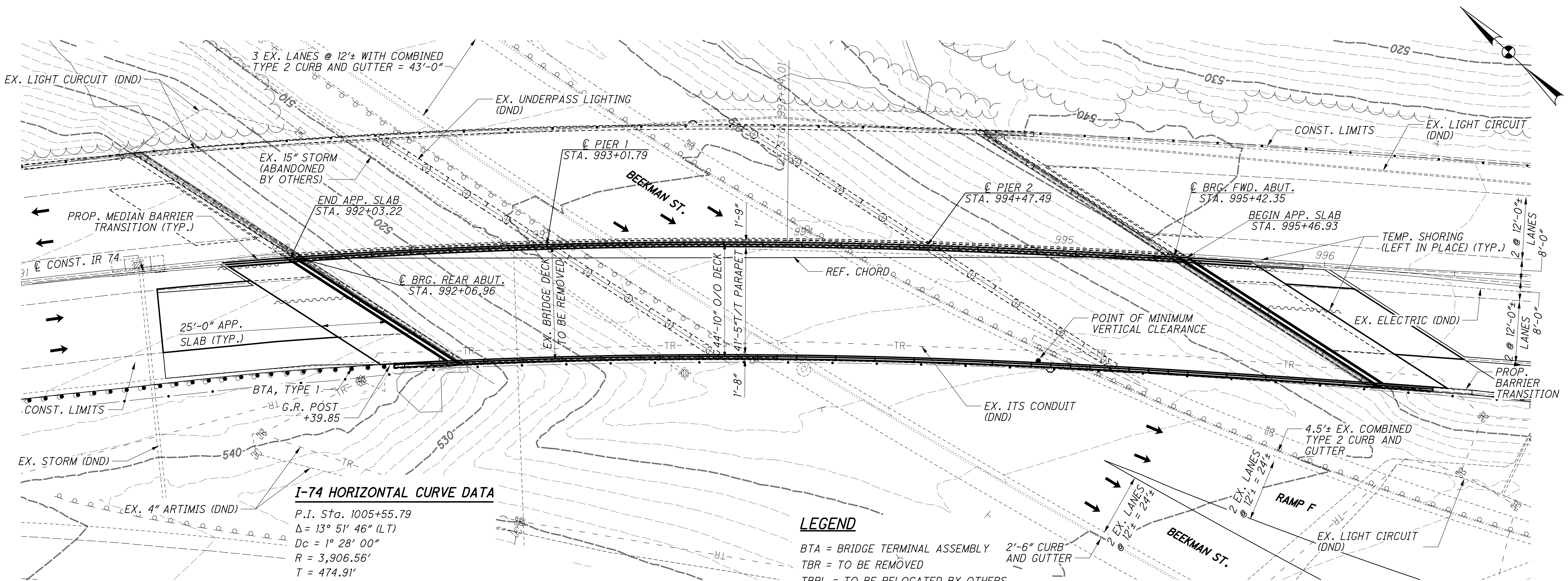


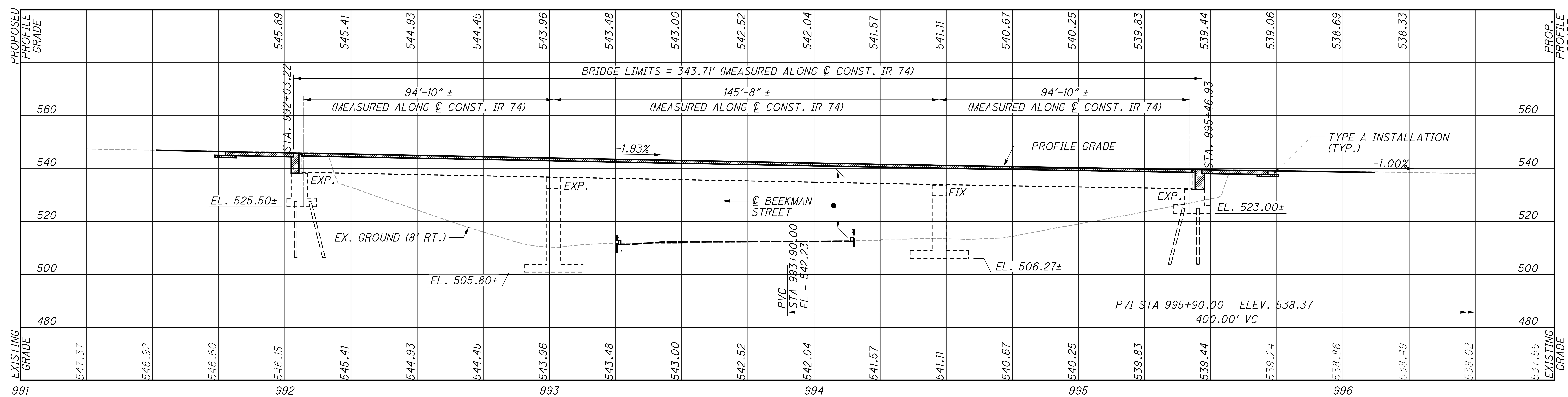
PLAN

I-74 HORIZONTAL CURVE DATA

P.I. Sta. 1005+55.79
Δ = 13° 51' 46" (LT)
Dc = 1° 28' 00"
R = 3,906.56'
T = 474.91'
L = 945.19'
E = 28.76'
C = 942.89'
C.B. = S 45° 47' 56" E

LEGEND

BTA = BRIDGE TERMINAL ASSEMBLY
TBR = TO BE REMOVED
TBRL = TO BE RELOCATED BY OTHERS
DND = DO NOT DISTURB
● 14'-6" REQUIRED MINIMUM VERTICAL CLEARANCE
15'-3"± PROVIDED MINIMUM VERTICAL CLEARANCE



PROFILE

ELEVATION ALONG ℄ CONST. IR 74

NOTE:

FOR ADDITIONAL SITE PLAN INFORMATION, SEE SHEET 2/41.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	CHECKED	DRAWN	REVISED	REVIEWED	DATE	STRUCTURE FILE NUMBER
SJF	CLB	DSH		MDS	09/12/18	3115526

HAMILTON COUNTY
STA. 992+03.22
STA. 995+46.93

SITE PLAN
BRIDGE NO. HAM-74-1840 L/R
OVER BEEKMAN ST. (U.S.27) & RAMP F

HAM-75-3.84
PID No. 104667

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11/16/2023
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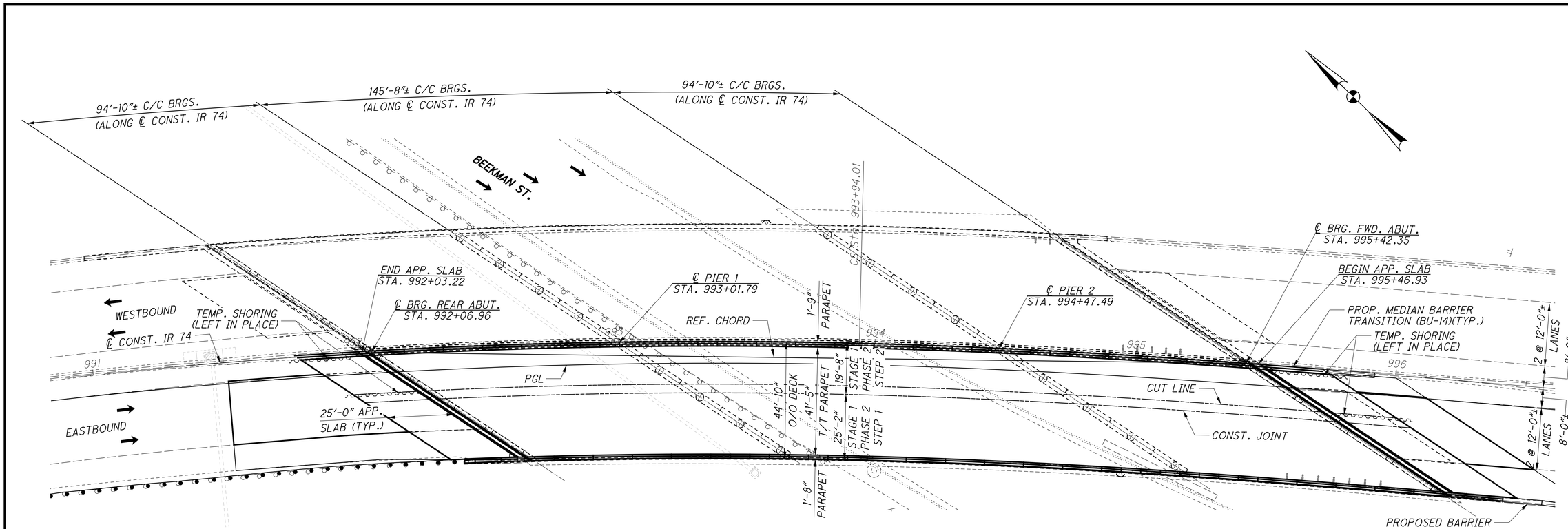
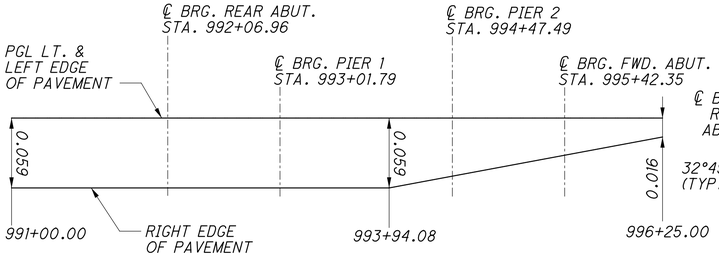
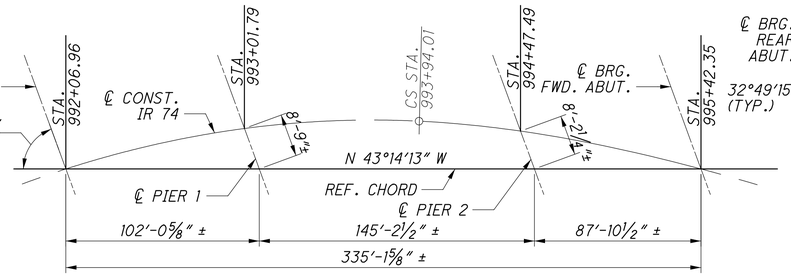


GENERAL PLAN

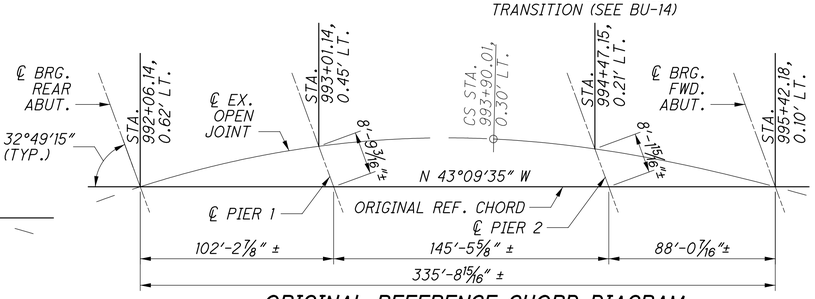


SUPERELEVATION TRANSITION DIAGRAM

RIGHT BRIDGE



REFERENCE CHORD DIAGRAM



ORIGINAL REFERENCE CHORD DIAGRAM

BENCHMARK DATA

REFER TO BU-14 FOR BENCHMARK DATA.

NOTES

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.

DESIGN TRAFFIC:
2010 ADT = 75,000 2010 ADTT = 11,250
2030 ADT = 89,300 2030 ADTT = 13,395
DIRECTIONAL DISTRIBUTION = 0.72

EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL PLATE GIRDERS WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE

SPANS: 94'-10"±, 145'-8"±, 94'-10"± C/C BRGS.

ROADWAY: 41-10"± TOE/TOE PARAPET

LOADING: HS20-44 AND THE ALTERNATE MILITARY LOADING

SKEW: 57°10'44"± RF WITH RESPECT TO REF CHORD

APPROACH SLABS: AS-1-67 (25'-0"±)

ALIGNMENT: 2°30'00"± CURVE RIGHT AND SPIRAL

CROWN: VARIES, 0.059± FT/FT MAX.

STRUCTURAL FILE NUMBER: 3115526

DATE BUILT: 1973

WEARING SURFACE: 2"± ASPHALT CONCRETE OVERLAY
1¾"± SDC OVERLAY

DISPOSITION: REHABILITATION

PROPOSED STRUCTURE

TYPE: RIGHT BRIDGE (EB)
REPLACE DECK WITH COMPOSITE DECK, REPLACE EXPANSION JOINTS, REPLACE ABUTMENT BEARINGS WITH ELASTOMERIC BEARINGS, REMOVE AND REPLACE BACKWALL TO TOP OF BEAM SEAT, REPLACE APPROACH SLABS, PATCH EX. SUBSTRUCTURE, FIBER WRAP PIER 2 COLUMNS

LEFT BRIDGE (WB)
REPLACE ABUTMENT BEARINGS WITH ELASTOMERIC BEARINGS

SPANS: 94'-10"±, 145'-8"±, 94'-10"± C/C BRGS.

ROADWAY: 41'-5" TOE/TOE PARAPET

LOADING: HS20-44 AND THE ALTERNATE MILITARY LOADING

SKEW: 57°10'44"± RF WITH RESPECT TO REF CHORD

APPROACH SLABS: 25' LONG (AS-1-15 & AS-2-15)

ALIGNMENT: 2°30'00" CURVE RIGHT AND SPIRAL

SUPERELEVATION: VARIES, 0.059 FT/FT MAX.

WEARING SURFACE: 1" MONOLITHIC CONCRETE

COORDINATES: LATITUDE N39°09'42"
LONGITUDE W84°33'06"

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DESIGN AGENCY
STRUCTUREPOINT LLC
2550 CORPORATE EXCHANGE DR. STE 200
COLUMBUS, OH 43231
TEL: 614.901.7900 FAX: 614.901.7901
www.structurepoint.com

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	09/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115526	

GENERAL PLAN
BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84
PID No. 104667

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWINGS:

AS-1-15 REVISED 07-17-15
AS-2-15 REVISED 01-19-18
EXJ-4-87 REVISED 01-19-18
GSD-1-96 REVISED 07-19-02
PCB-91 REVISED 01-18-13
SBR-1-13 REVISED 07-20-18
SBR-2-13 REVISED 07-20-18

AND TO THE FOLLOWING PROPOSAL NOTES:

519 COMPOSITE FIBER WRAP SYSTEM REVISED 07-21-17

DESIGN SPECIFICATIONS:

THE PROPOSED WORK CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 17TH EDITION, AND THE 2004 ODOT BRIDGE DESIGN MANUAL.

DESIGN LOADING:

DESIGN LOADING: HS20-44, CASE I AND THE ALTERNATE MILITARY LOADING.

FUTURE WEARING SURFACE (FWS) OF 60 PSF

DESIGN DATA:

QC/QA CONCRETE, CLASS QC3 - COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE)

CONCRETE, CLASS QC3 - COMPRESSIVE STRENGTH 4000 PSI (SUBSTRUCTURE)

REINFORCING STEEL - MINIMUM YIELD STRENGTH 75,000 PSI (DECK)

REINFORCING STEEL - MINIMUM YIELD STRENGTH 60,000 PSI (SUBSTRUCTURE & PARAPETS)

STRUCTURAL STEEL - ASTM A709 GRADE 50 - YIELD STRENGTH 50 KSI (BEARINGS)

DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL

2½" CONCRETE COVER

MONOLITHIC WEARING SURFACE:

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1 INCH THICK.

EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05 AND 105.02.

BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS THAT HAVE BEEN VERIFIED IN THE FIELD.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN:

DESCRIPTION:
ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AS SHOWN IN THE PLANS AND AS PER CMS 202.

CUTLINE CONSTRUCTION JOINT PREPARATION: THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH, BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

SUBSTRUCTURE CONCRETE REMOVAL: REMOVE CONCRETE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

DECK REMOVAL: PERFORM WORK CAREFULLY DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. THE USE OF EXPLOSIVES OR HEADACHE BALLS IS PROHIBITED. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05.

REMOVAL METHODS: REMOVAL METHODS OVER STRUCTURAL MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING THE PRIMARY STRUCTURAL MEMBERS. REPLACE OR REPAIR STRUCTURAL MEMBERS DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE DIRECTOR. OBTAIN THE DIRECTOR'S APPROVAL BEFORE PERFORMING REPAIR.
EXISTING WELDED ATTACHMENTS: REMOVE EXISTING WELDED ATTACHMENTS (E.G., FINISHING MACHINE AND FORM SUPPORTS; SUPPORTS FOR SCUPPERS AND BULB ANGLES WHICH ARE TO BE REMOVED; AND LIGHTING SUPPORTS) LOCATED IN THE DESIGNATED TENSION PORTIONS OF THE TOP FLANGES OF EXISTING STEEL MEMBERS AND GRIND THE FLANGE SURFACES SMOOTH. CAREFULLY GRIND PARALLEL TO THE FLANGES.

ITEM 510 - DOWEL HOLES WITH NONSHRINK NONMETALLIC GROUT, AS PER PLAN:

DRILL DOWEL HOLES WHERE SHOWN IN THE PLANS. INSTALL REINFORCING STEEL ACCORDING TO ITEM 510 USING EPOXY GROUT, 705.20. PRIOR TO DRILLING DOWEL HOLES, LOCATE ALL EXISTING REINFORCING STEEL BARS IN THE AREA OF THE HOLE WITH THE AID OF A REINFORCING STEEL BAR LOCATOR (PACHOMETER). IF AN EXISTING BAR IS ENCOUNTERED AT THE SAME LOCATION AS A PROPOSED DOWEL HOLE, MOVE THE DOWEL HOLE TO EITHER SIDE OF THE EXISTING BAR.

ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN:

PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING.

ITEM 519 - PATCHING OF CONCRETE STRUCTURES IS A UNIT PRICE PAY ITEM (LINE 0032).

CLASS QC3 CONCRETE WITH QC/QA, SUBSTRUCTURE, AS PER PLAN

THIS ITEM MODIFIES THE STANDARD 511 CONCRETE FOR STRUCTURES SPECIFICATION TO INCLUDE MACRO-SYNTHETIC INTO THE SUBSTRUCTURE CONCRETE. THIS ITEM SHALL CONFORM TO CMS 511 WITH THE FOLLOWING CONDITIONS AND REVISIONS:

PROVIDE MATERIALS CONFORMING TO 511.02 EXCEPT AS MODIFIED BELOW:
PORTLAND CEMENT CONCRETE - 499.03, CLASS QC 3 MEETING A DESIGN STRENGTH OF 4,000 PSI, WITH MACRO-SYNTHETIC FIBERS WITH MODIFICATION PER 511.02.
FIBERS FOR CONCRETE - ASTM C 1116, TYPE III

THE CLASS QC3 CONCRETE FOR THE SUBSTRUCTURE SHALL MEET THE FOLLOWING CRITERIA: WATER/CEMENT RATIO = 0.40 MAXIMUM; MINIMUM 4 LBS/CY MACRO-SYNTHETIC FIBERS (1.5 IN. MIN. TO 2.5 IN. MAX.) MEETING ASTM C1116 TYPE III SHALL BE ADDED TO THE MIX.

THE MACRO-SYNTHETIC FIBERS SHALL BE INCORPORATED INTO THE MIX IN SUCH A WAY THAT NO 'BALLING' OCCURS. UPON INSPECTION OF THE MIX AT THE TIME OF PLACEMENT, IF ANY 'BALLING' OCCURS, THE ENGINEER SHALL REJECT THE REMAINDER OF THE LOAD AT ANY TIME DURING THE POUR. IT IS IMPORTANT TO FOLLOW INDUSTRY STANDARDS AND ASTM SPECIFICATIONS ON THE PREMIXING OF THE CEMENT, AGGREGATE, AND MACRO-SYNTHETICFIBERS PRIOR TO THE ADDITION OF WATER AND ADMIXTURES. PROVIDE MACRO-SYNTHETIC FIBERS THAT ARE MONOFILAMENT FIBERS MADE FROM VIRGIN POLYPROPYLENE, POLYETHYLENE, OR CO-POLYMERS THAT ARE INERT TO ALKALI ATTACK. ENSURE THE MACRO-SYNTHETIC FIBERS HAVE A MINIMUM TENSILE STRENGTH OF 70 KSI, A MINIMUM MODULUS OF ELASTICITY OF 800 KSI, A MINIMUM FILAMENT DIAMETER OF 0.012 INCHES, AND ASPECT RATIO BETWEEN 60 AND 100, AND ARE BETWEEN 1.5 AND 2.5 INCHES IN LENGTH. STORE THE MACRO-SYNTHETIC FIBERS ACCORDING TO THE MANUFACTURE'S RECOMMENDATION AND KEEP THE MATERIAL FREE FROM DUST, DIRT AND MOISTURE.

USE A MINIMUM DOSAGE RATE OF MACRO-SYNTHETIC FIBERS OF 4.0 LBS/CY OF CONCRETE. DETERMINE THE FINAL PROPOSED DOSAGE RATE THROUGH MIX TESTING. ENSURE THE FIBER REINFORCED CONCRETE MEETS OR EXCEEDS A MINIMUM EQUIVALENT FLEXURAL STRENGTH RATIO OF 25% ACCORDING TO ASTM C 1609. MACRO-SYNTHETIC FIBERS IS TO BE USED AS AN ADMIXTURE TO CONTROL CRACKING AND IS NOT TO BE USED TO SUPPLEMENT OR REPLACE REINFORCING STEEL IN THE DESIGN. ENSURE THE FINAL PROPOSED MIX IS WORKABLE AND ABLE TO BE PRODUCED SUCH THAT BALLING OR CLUMPING OF THE FIBERS IS NOT A PROBLEM AS DETERMINED BY THE ENGINEER. UTILIZE A LABORATORY REGULARLY INSPECTED BY THE CEMENT AND CONCRETE REFERENCE LABORATORY (CCRL) OF THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, OR OTHER APPROVED REFERENCE LABORATORY, TO PERFORM THE TESTING. BEFORE USE, SUBMIT DOCUMENTATION TO THE PROJECT ENGINEER CERTIFYING BOTH THE MACRO-SYNTHETIC FIBERS AND THE MIX MEET OR EXCEED THE REQUIRED PROPERTIES. SAMPLING WILL BE ALLOWED FOR TESTING PURPOSES. A DEMONSTRATION OF THE MIX PRODUCTION OR TRIAL MIX, MAY BE REQUIRED BY THE ENGINEER PRIOR TO PLACING ANY OF THE MIX ON THE PROJECT.

THE BATCH WEIGHTS SHALL BE CORRECTED TO COMPENSATE FOR THE MOISTURE CONTAINED IN THE AGGREGATE AT THE TIME OF USE. A CHEMICAL ADMIXTURE (705.12, TYPE A OR D) SHALL BE USED.

CONCRETE SUPPLIERS SHOULD RECOGNIZE THAT ADMIXTURES MAY HAVE AN EFFECT ON STRENGTH, ENTRAINED AIR CONTENT, WORKABILITY, ETC. OF THEIR CONCRETE MIXES. THE CONCRETE SUPPLIER'S CHOICE OF ADMIXTURES DOES NOT ALLEVIATE MEETING DESIGN REQUIREMENTS.

CLASS QC3 CONCRETE WITH QC/QA, SUPERSTRUCTURE, AS PER PLAN

THIS ITEM MODIFIES THE STANDARD 511 CONCRETE FOR STRUCTURES SPECIFICATION TO INCLUDE MACRO-SYNTHETICINTO THE SUPERSTRUCTURE CONCRETE. THIS ITEM SHALL CONFORM TO CMS 511 WITH THE FOLLOWING CONDITIONS AND REVISIONS:

PROVIDE MATERIALS CONFORMING TO 511.02 EXCEPT AS MODIFIED BELOW:
PORTLAND CEMENT CONCRETE - 499.03, CLASS QC 3 MEETING A DESIGN STRENGTH OF 4,500 PSI, WITH MACRO-SYNTHETIC FIBERS WITH MODIFICATION PER 511.02
FIBERS FOR CONCRETE - ASTM C 1116, TYPE III

THE CLASS QC3 CONCRETE FOR THE SUPERSTRUCTURE SHALL MEET THE FOLLOWING CRITERIA: WATER/CEMENT RATIO = 0.40 MAXIMUM; MINIMUM 4 LBS/CY MACRO-SYNTHETIC FIBERS (1.5 IN. MIN. TO 2.5 IN. MAX.) MEETING ASTM C1116 TYPE III SHALL BE ADDED TO THE MIX.

THE MACRO-SYNTHETIC FIBERS SHALL BE INCORPORATED INTO THE MIX IN SUCH A WAY THAT NO 'BALLING' OCCURS. UPON INSPECTION OF THE MIX AT THE TIME OF PLACEMENT, IF ANY 'BALLING' OCCURS, THE ENGINEER SHALL REJECT THE REMAINDER OF THE LOAD AT ANY TIME DURING THE POUR. IT IS IMPORTANT TO FOLLOW INDUSTRY STANDARDS AND ASTM SPECIFICATIONS ON THE PREMIXING OF THE CEMENT, AGGREGATE, AND MACRO-SYNTHETIC FIBERS PRIOR TO THE ADDITION OF WATER AND ADMIXTURES. PROVIDE MACRO-SYNTHETIC FIBERS THAT ARE MONOFILAMENT FIBERS MADE FROM VIRGIN POLYPROPYLENE, POLYETHYLENE, OR CO-POLYMERS THAT ARE INERT TO ALKALI ATTACK. ENSURE THE MACRO-SYNTHETIC FIBERS HAVE A MINIMUM TENSILE STRENGTH OF 70 KSI, A MINIMUM MODULUS OF ELASTICITY OF 800 KSI, A MINIMUM FILAMENT DIAMETER OF 0.012 INCHES, AND ASPECT RATIO BETWEEN 60 AND 100, AND ARE BETWEEN 1.5 AND 2.5 INCHES IN LENGTH. STORE THE MACRO-SYNTHETIC FIBERS ACCORDING TO THE MANUFACTURE'S RECOMMENDATION AND KEEP THE MATERIAL FREE FROM DUST, DIRT AND MOISTURE.

USE A MINIMUM DOSAGE RATE OF MACRO-SYNTHETIC FIBERS OF 4.0 LBS/CY OF CONCRETE. DETERMINE THE FINAL PROPOSED DOSAGE RATE THROUGH MIX TESTING. ENSURE THE FIBER REINFORCED CONCRETE MEETS OR EXCEEDS A MINIMUM EQUIVALENT FLEXURAL STRENGTH RATIO OF 25% ACCORDING TO ASTM C 1609. MACRO-SYNTHETIC FIBERS IS TO BE USED AS AN ADMIXTURE TO CONTROL CRACKING AND IS NOT TO BE USED TO SUPPLEMENT OR REPLACE REINFORCING STEEL IN THE DESIGN. ENSURE THE FINAL PROPOSED MIX IS WORKABLE AND ABLE TO BE PRODUCED SUCH THAT BALLING OR CLUMPING OF THE FIBERS IS NOT A PROBLEM AS DETERMINED BY THE ENGINEER. UTILIZE A LABORATORY REGULARLY INSPECTED BY THE CEMENT AND CONCRETE REFERENCE LABORATORY (CCRL) OF THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, OR OTHER APPROVED REFERENCE LABORATORY, TO PERFORM THE TESTING. BEFORE USE, SUBMIT DOCUMENTATION TO THE PROJECT ENGINEER CERTIFYING BOTH THE MACRO-SYNTHETIC FIBERS AND THE MIX MEET OR EXCEED THE REQUIRED PROPERTIES. SAMPLING WILL BE ALLOWED FOR TESTING PURPOSES. A DEMONSTRATION OF THE MIX PRODUCTION OR TRIAL MIX, MAY BE REQUIRED BY THE ENGINEER PRIOR TO PLACING ANY OF THE MIX ON THE PROJECT.

THE BATCH WEIGHTS SHALL BE CORRECTED TO COMPENSATE FOR THE MOISTURE CONTAINED IN THE AGGREGATE AT THE TIME OF USE. A CHEMICAL ADMIXTURE (705.12, TYPE A OR D) SHALL BE USED.

CONCRETE SUPPLIERS SHOULD RECOGNIZE THAT ADMIXTURES MAY HAVE AN EFFECT ON STRENGTH, ENTRAINED AIR CONTENT, WORKABILITY, ETC. OF THEIR CONCRETE MIXES. THE CONCRETE SUPPLIER'S CHOICE OF ADMIXTURES DOES NOT ALLEVIATE MEETING DESIGN REQUIREMENTS.

DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/16/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115526	

GENERAL NOTES - 1
BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84
PID No. 104667

CLASS QC3 CONCRETE WITH QC/QA, SUPERSTRUCTURE, AS PER PLAN (CONT.)

APPROACH SLABS, DIAPHRAGMS, AND BRIDGE RAILING CONCRETE ARE TO USE THE SAME MIX DESIGN AS THE BRIDGE DECK (WHEN APPLICABLE). USE SELF-COMPACTING CONCRETE ON DECORATIVE RAILING SIMILAR TO TEXAS RAILING AND MACRO-SYNTHETIC CONCRETE PER THIS SPECIFICATION ON TRADITIONAL CONCRETE RAILING WHEN APPLICABLE.

THE PLACING OF THE DECK AND THE APPROACH SLABS IN THE SAME CONCRETE POUR IS NOT PERMITTED.

DECK PLACEMENT DESIGN ASSUMPTIONS:

DECK PLACEMENT DESIGN ASSUMPTIONS:
THE FOLLOWING ASSUMPTIONS OF CONSTRUCTION MEANS AND METHODS WERE MADE FOR THE ANALYSIS AND DESIGN OF THE SUPERSTRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE FALSEWORK SUPPORT SYSTEM WITHIN THESE PARAMETERS AND WILL ASSUME RESPONSIBILITY FOR SUPERSTRUCTURE ANALYSIS FOR DEVIATION FROM THESE DESIGN ASSUMPTIONS.

AN EIGHT WHEEL FINISHING MACHINE WITH A MAXIMUM WHEEL LOAD OF 2.27 KIPS.

A MINIMUM OUT-TO-OUT WHEEL SPACING AT EACH END OF THE MACHINE OF 103".

A MAXIMUM SPACING OF OVERHANG FALSEWORK BRACKETS OF 48 IN.

A MAXIMUM DISTANCE FROM THE CENTERLINE OF THE FASCIA GIRDER TO THE FACE OF THE SAFETY HANDRAIL OF 65".

MECHANICAL CONNECTORS:

MECHANICAL CONNECTORS SHALL BE CAPABLE OF DEVELOPING 125 PERCENT OF THE YIELD STRENGTH OF THE CONNECTED BARS. FOR CONNECTORS WITH THREADED BAR ENDS, IN ORDER TO OFFSET THE EFFECT OF AREA REDUCTION ON THE STRENGTH OF THE BAR AND STILL MEET THE REQUIREMENTS OF ASTM A615, USE THE NEXT LARGER DIAMETER BAR OR A HIGHER GRADE OF STEEL BAR.

ITEM 514 - FIELD PAINTING, MISC.: MAIN AND SECONDARY MEMBERS:

THIS ITEM SHALL INCLUDE PAINTING AS WELL AS THE SURFACE PREPARATION OF THE MAIN AND SECONDARY MEMBERS IN THE FIELD WITH PRIME, INTERMEDIATE AND SURFACE COATS AS DIRECTED BY THE ENGINEER AT LOCATIONS WHERE THE EXISTING COATING IS DAMAGED. THE PAINT MAY BE APPLIED BY BRUSH ACCORDING TO 514.17E. SOLVENT CLEAN THE MAIN AND SECONDARY MEMBERS AS PER SSPC-SP 1 AND SSPC-SP 2, RESPECTIVELY, PRIOR TO PAINTING ACCORDING TO ITEM 514.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR SELECTING THE FINISH COAT TO MATCH THE EXISTING AS CLOSE AS POSSIBLE AND SHALL RECIEVE APPROVAL FROM THE ENGINEER.

ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN:

THIS WORK CONSISTS OF RAISING OR REPOSITIONING EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

SUBMIT CONSTRUCTION PLANS IN ACCORDANCE WITH CMS 501.05.

IF, DURING THE JACKING OPERATIONS, DAMAGE TO THE STRUCTURE IS VISUALLY OBSERVED, IMMEDIATELY CEASE THE JACKING OPERATION AND INSTALL SUPPORTS TO THE SATISFACTION OF THE ENGINEER. ANALYZE THE DAMAGE AND SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. THE BRIDGE BEARINGS SHALL BE FULLY SEATED AT ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUBMIT A REPAIR PLAN TO THE ENGINEER. THE DEPARTMENT WILL NOT PAY FOR THE REPAIR COSTS TO ENSURE FULL SEATING ON BEARINGS.

CONCRETE SEALER:

CHEMMASTERS SAFE CURE AND SEAL EPX (EPOXY) AND DURAGUARD 310 CRU (URETHANE) USED FOR SEALING OF CONCRETE SURFACES (EPOXY-URETHANE).

PROPOSED WORK (RIGHT BRIDGE):

- REMOVE AND REPLACE EXISTING CONCRETE DECK WITH COMPOSITE DECK
- REMOVE AND REPLACE EXISTING CONCRETE PARAPETS
- REMOVE AND REPLACE ABUTMENT BACKWALLS
- REPLACE ABUTMENT BEARINGS WITH ELASTOMERIC BEARINGS (LEFT & RIGHT BRIDGE)
- REPLACE APPROACH SLABS
- REPLACE STRIP SEAL EXPANSION JOINTS
- ADD SEISMIC PEDETALS TO REAR ABUTMENT
- FIBER WRAP PIER 2 COLUMNS
- PATCH EXISTING SUBSTRUCTURE UNITS
- SEAL CONCRETE

BUILDABLE UNIT REFERENCES:

REFERENCE THE FOLLOWING BUILDABLE UNITS FOR ADDITIONAL INFORMATION, DETAILS, AND SPECIFICATIONS:
ROADWAY AND DRAINAGE - BU-14
MAINTENANCE OF TRAFFIC - BU-04 AND BU-23
LIGHTING, STRIPING, PAVEMENT MARKINGS, ITS - BU-19

UTILITY LINES

THE UTILITY(IES) SHALL BORE ALL EXPENSE INVOLVED IN RELOCATING (INSTALLING) THE AFFECTED UTILITY LINES. THE CONTRACTOR AND UTILITY(IES) ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

ABBREVIATION LIST:

THE FOLLOWING STANDARD ABBREVIATIONS ARE USED THROUGHOUT THE BRIDGE PLANS.

ABUT.	= ABUTMENT
ACT.	= ACTUAL
APP.	= APPROACH
BRG.	= BEARING
BOT.	= BOTTOM
BTW.	= BETWEEN
CB	= CATCH BASIN
C.I.P.	= CAST-IN-PLACE
C.J.	= CONSTRUCTION JOINT
CLR.	= CLEARANCE
CONST	= CONSTRUCTION
CONT.	= CONTINUOUS
DIA.	= DIAMETER
DIM.	= DIMENSION
DWG.	= DRAWING
E.S.	= EACH SIDE
EL.	= ELEVATION
EQ.	= EQUAL
EST.	= ESTIMATED
EX.	= EXISTING
EXP.	= EXPANSION
F.A.	= FORWARD ABUTMENT
F.D.S.	= FINAL DECK SURFACE
F.S.	= FAR SIDE
FTG.	= FOOTING
FWD.	= FORWARD
GR.	= GUARDRAIL
HMWM	= HIGH MOLECULAR WEIGHT METHACRYLATE
INT.	= INTERIOR
INV.	= INVERT
NPCCP	= NON-PERFORATED CORRUGATED PLASTIC PIPE
N.S.	= NEAR SIDE
O.C.J.	= OPTIONAL CONSTRUCTION JOINT
PCCP	= PERFORATED CORRUGATED PLASTIC PIPE
PEJF	= PREFORMED EXPANSION JOINT FILLER
PERP.	= PERPENDICULAR
PROP.	= PROPOSED
PT.	= POINT
R.A.	= REAR ABUTMENT
REQD.	= REQUIRED
SER.	= SERIES
SHLD.	= SHOULDER
SPA.	= SPACES
STA.	= STATION
STD.	= STANDARD
STM	= STORM SEWER LINE
T&B	= TOP AND BOTTOM
T.O.H.	= TOP OF HAUNCH
T/S	= TOP OF SLOPE
TYP.	= TYPICAL
U.N.	= UNLESS NOTED

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED SJF | CHECKED CLB | DRAWN DSH | REVISED | REVIEWED MDS | DATE 11/12/18 | STRUCTURE FILE NUMBER 3115526

GENERAL NOTES - 2
BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84
PID No. 104667

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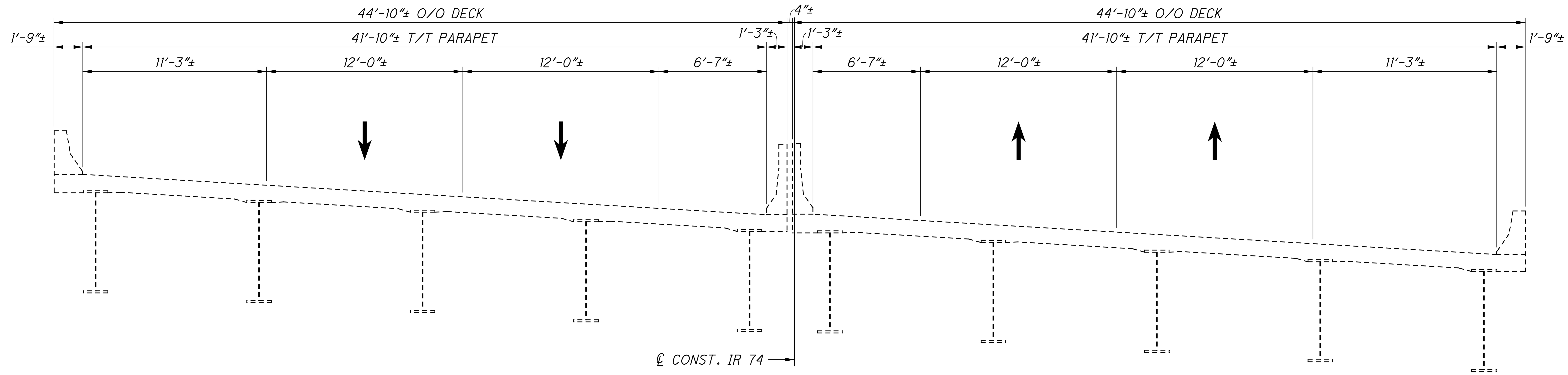
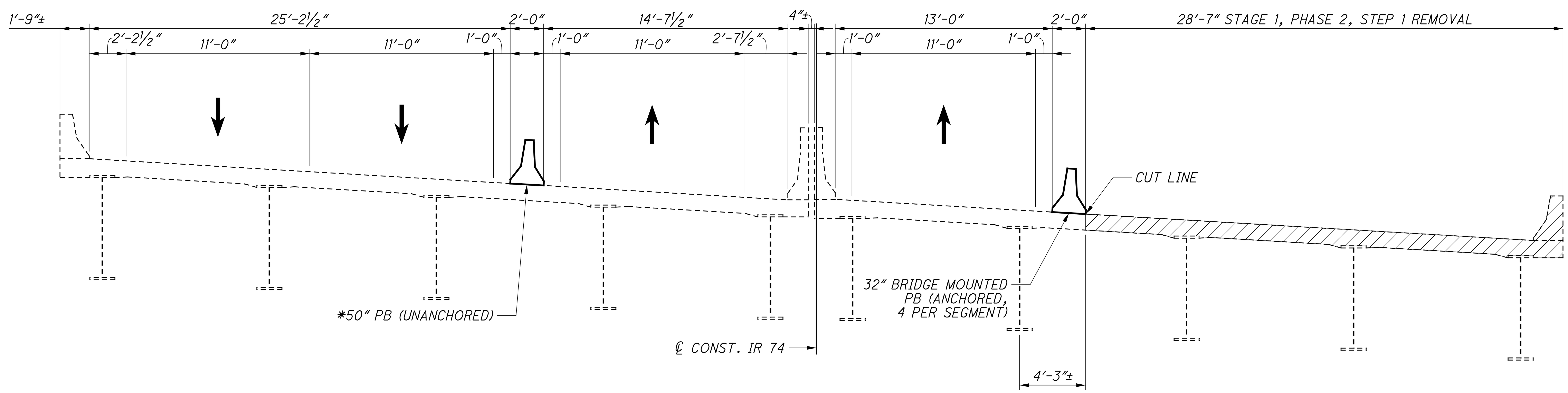
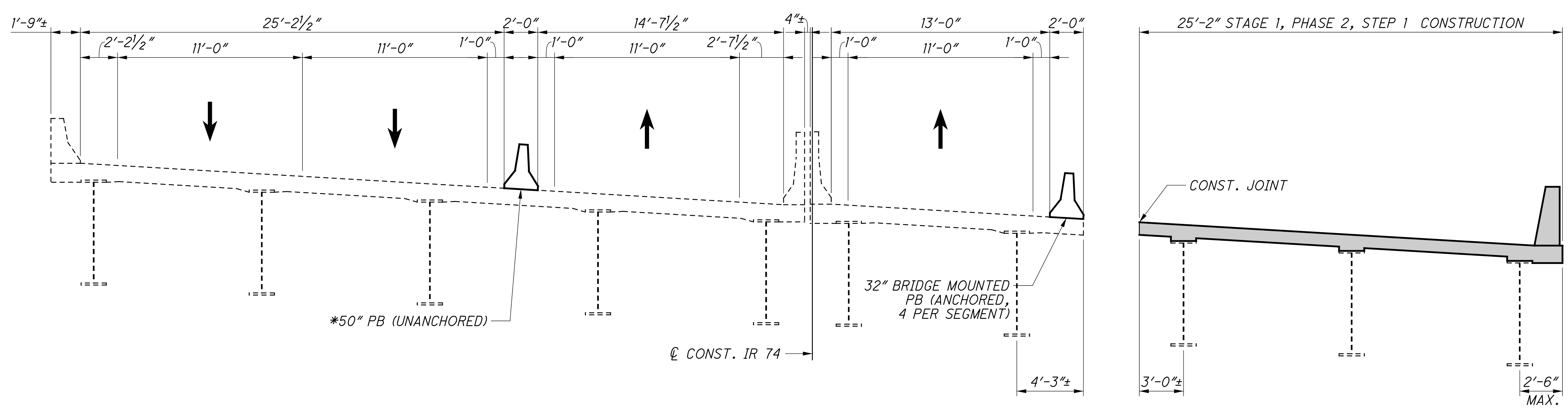


EXISTING TRANSVERSE SECTION



STAGE 1, PHASE 2, STEP 1 REMOVAL



STAGE 1, PHASE 2, STEP 1 CONSTRUCTION

SEQUENCE OF CONSTRUCTION

STAGE 1/ PHASE 2/ STEP 1

1. INSTALL PB AS SHOWN IN BU-04 & BU-23 PLANS.
2. MAINTAIN TRAFFIC AS SHOWN.
3. INSTALL TEMP. SHORING.
4. REMOVE STAGE 1/ PHASE 2/ STEP 1 PORTIONS OF RIGHT BRIDGE.
5. CONSTRUCT STAGE 1/ PHASE 2/ STEP 1 PORTIONS OF RIGHT BRIDGE.

* 32" PB WITH GLARE SCREEN MAY BE USED AS AN ALTERNATE

LEGEND

LIMITS OF REMOVAL PER ITEM 202 - STRUCTURE REMOVED, OVER 20 FOOT SPAN

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	BMP	MDS	9/12/18

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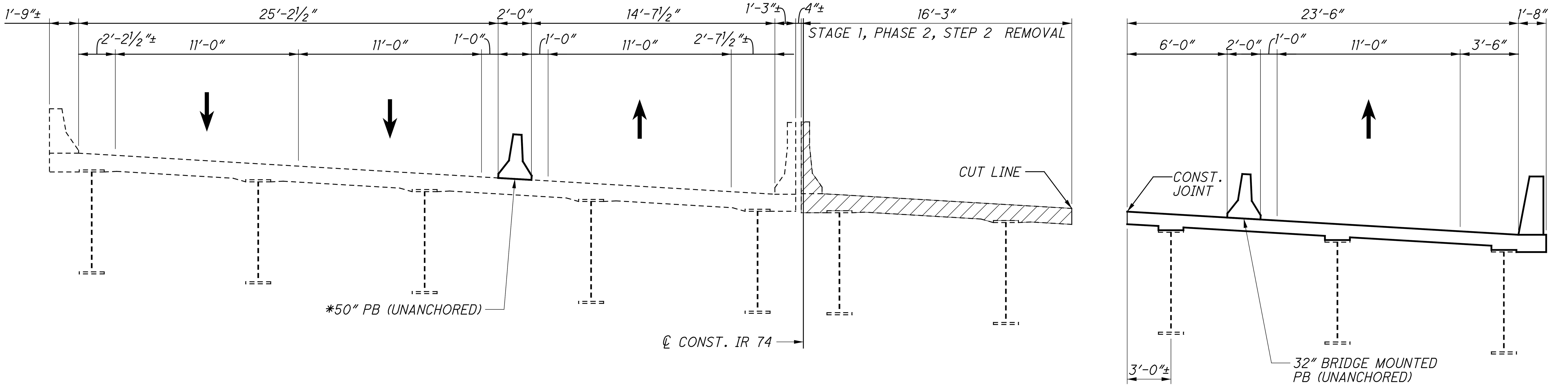
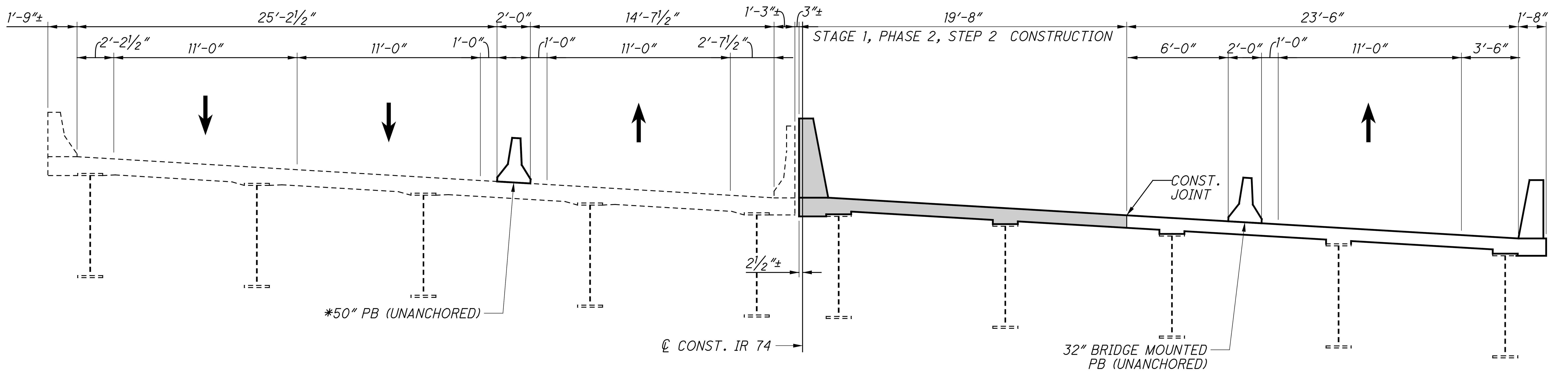
PHASE CONSTRUCTION DETAILS - 1
BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

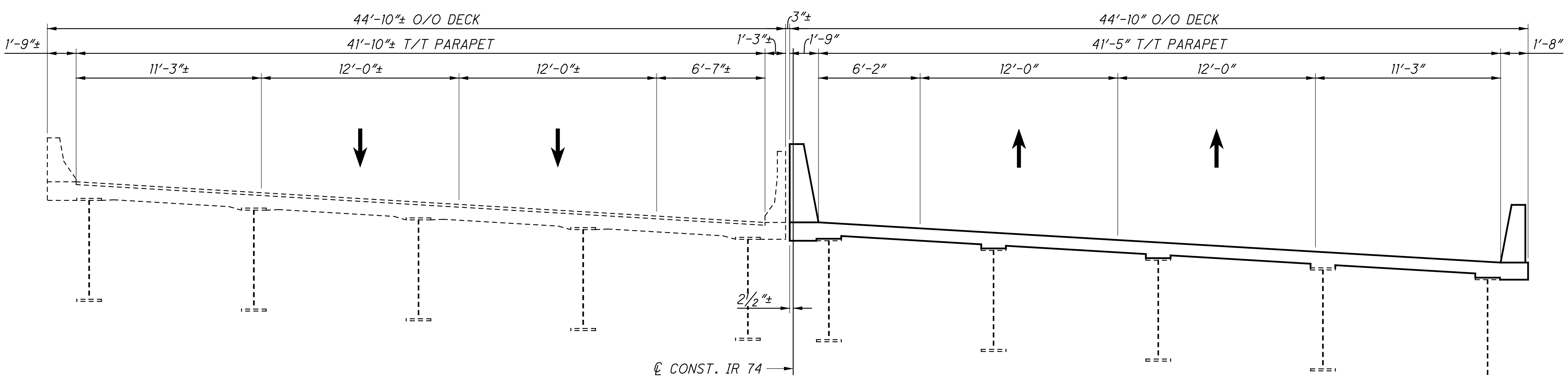
HAM-75-3.84
PID No. 104667



STAGE 1, PHASE 2, STEP 2 REMOVAL



STAGE 1, PHASE 2, STEP 2 CONSTRUCTION



PROPOSED TRANSVERSE SECTION

SEQUENCE OF CONSTRUCTION

STAGE 1/ PHASE 2/ STEP 2

1. RELOCATE PB AS SHOWN IN BU-04 & BU-23 PLANS.
2. MAINTAIN TRAFFIC AS SHOWN.
3. INSTALL TEMP. SHORING.
4. REMOVE STAGE 1/ PHASE 2/ STEP 2 PORTIONS OF RIGHT BRIDGE.
5. CONSTRUCT STAGE 1/ PHASE 2/ STEP 2 PORTIONS OF RIGHT BRIDGE.

* 32" PB WITH GLARE SCREEN MAY BE USED AS AN ALTERNATE

LEGEND

LIMITS OF REMOVAL PER ITEM 202 - STRUCTURE REMOVED, OVER 20 FOOT SPAN

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	CHECKED	DRAWN	REVISED	REVIEWED	DATE	STRUCTURE FILE NUMBER
SJF	CLB	BMP		MDS	9/12/18	3115526

PHASE CONSTRUCTION DETAILS - 2

BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84
PID No. 104667

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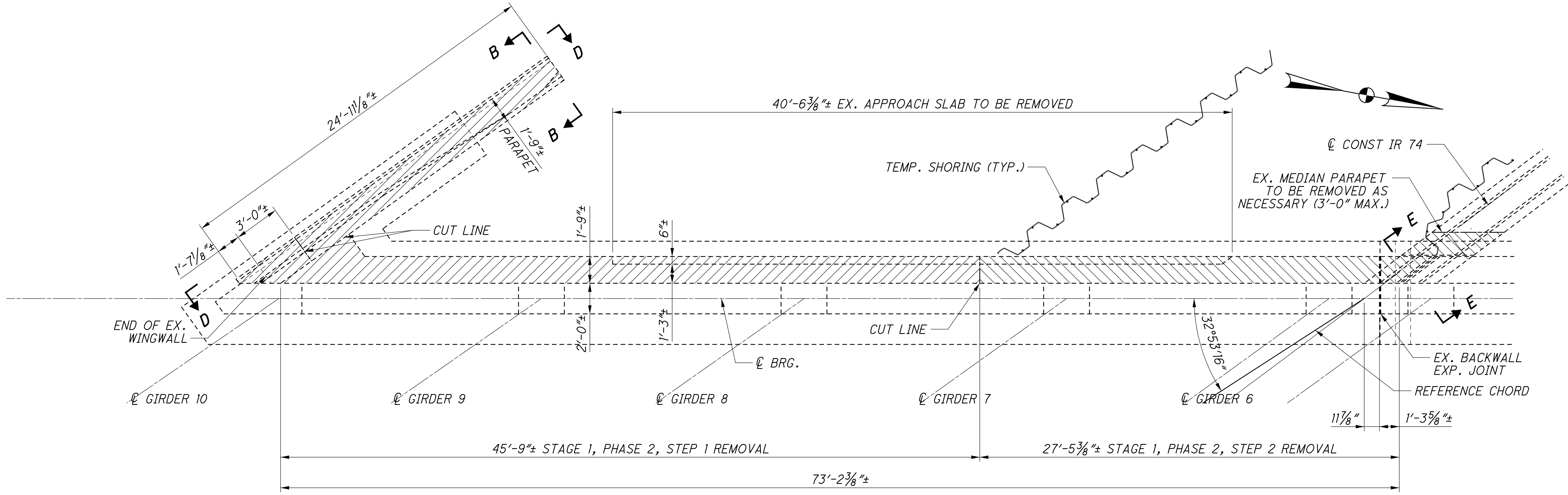
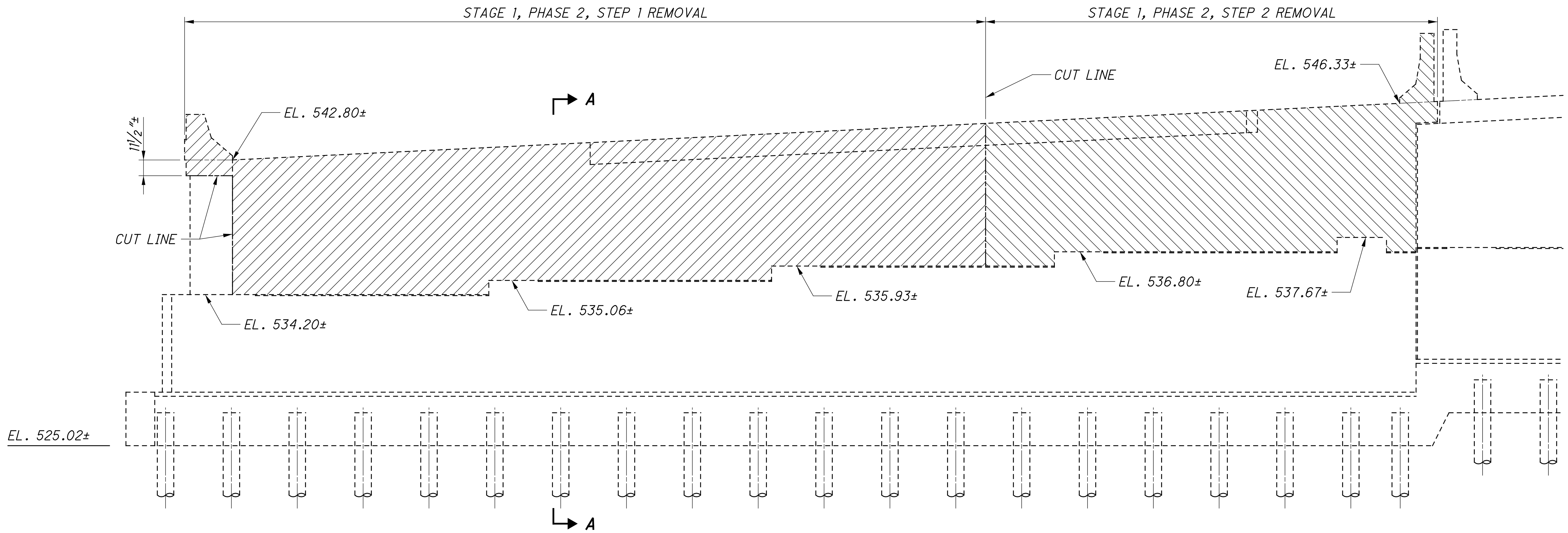


PLAN - REAR ABUTMENT



ELEVATION - REAR ABUTMENT

LEGEND

LIMITS OF REMOVAL PER ITEM 202

NOTES:

FOR SECTIONS A-A, B-B AND E-E, AND VIEW D-D, SEE SHEET 9/41.

DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
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CLB	CLB	3115526	

ABUTMENT REMOVAL DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84
PID No. 104667

7/41

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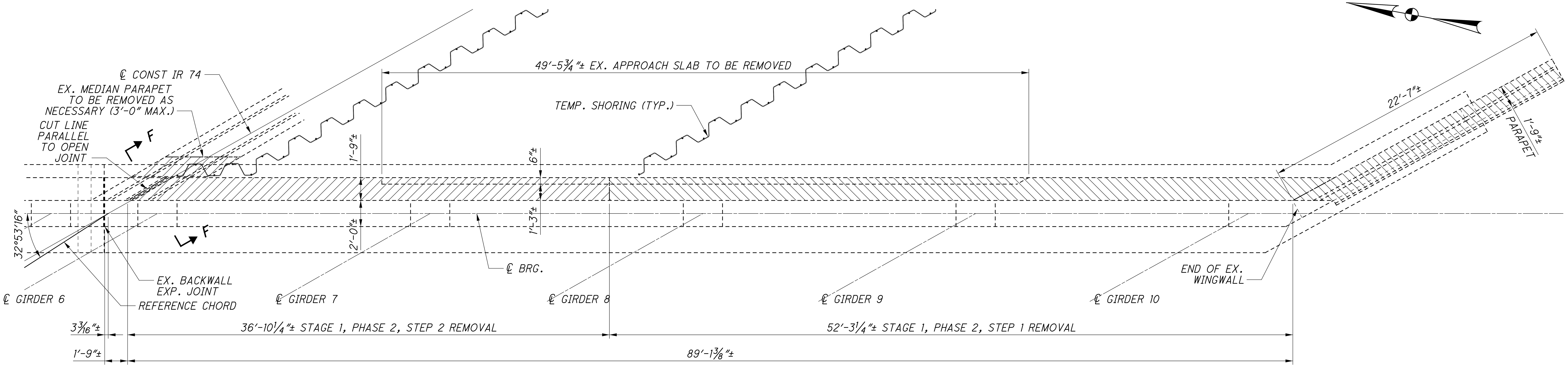
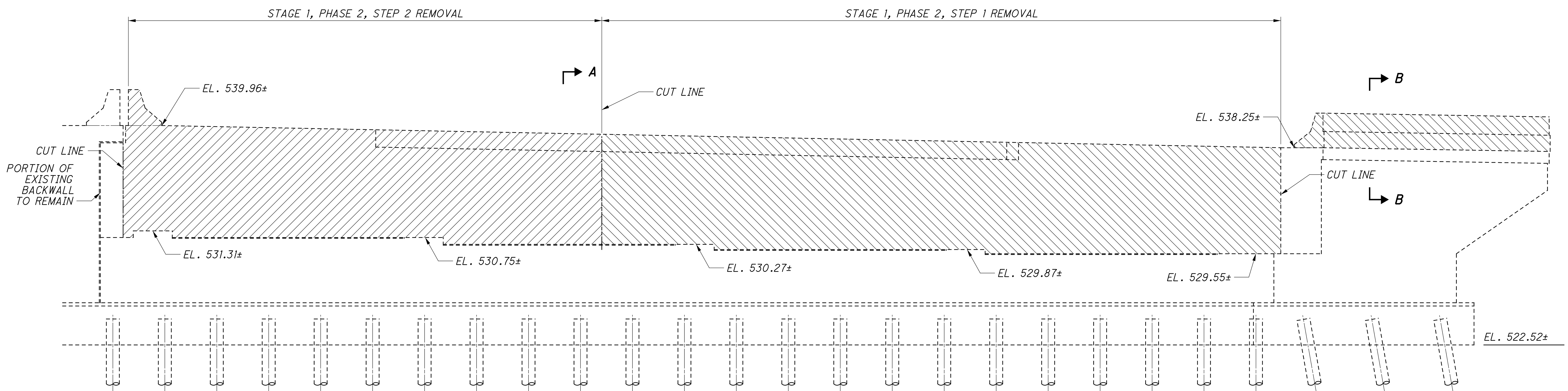


PLAN - FORWARD ABUTMENT



ELEVATION - FORWARD ABUTMENT

LEGEND

LIMITS OF REMOVAL PER ITEM 202

NOTES:

FOR SECTIONS A-A, B-B AND F-F, SEE SHEET 9/41.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
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ABUTMENT REMOVAL DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1840 L/R
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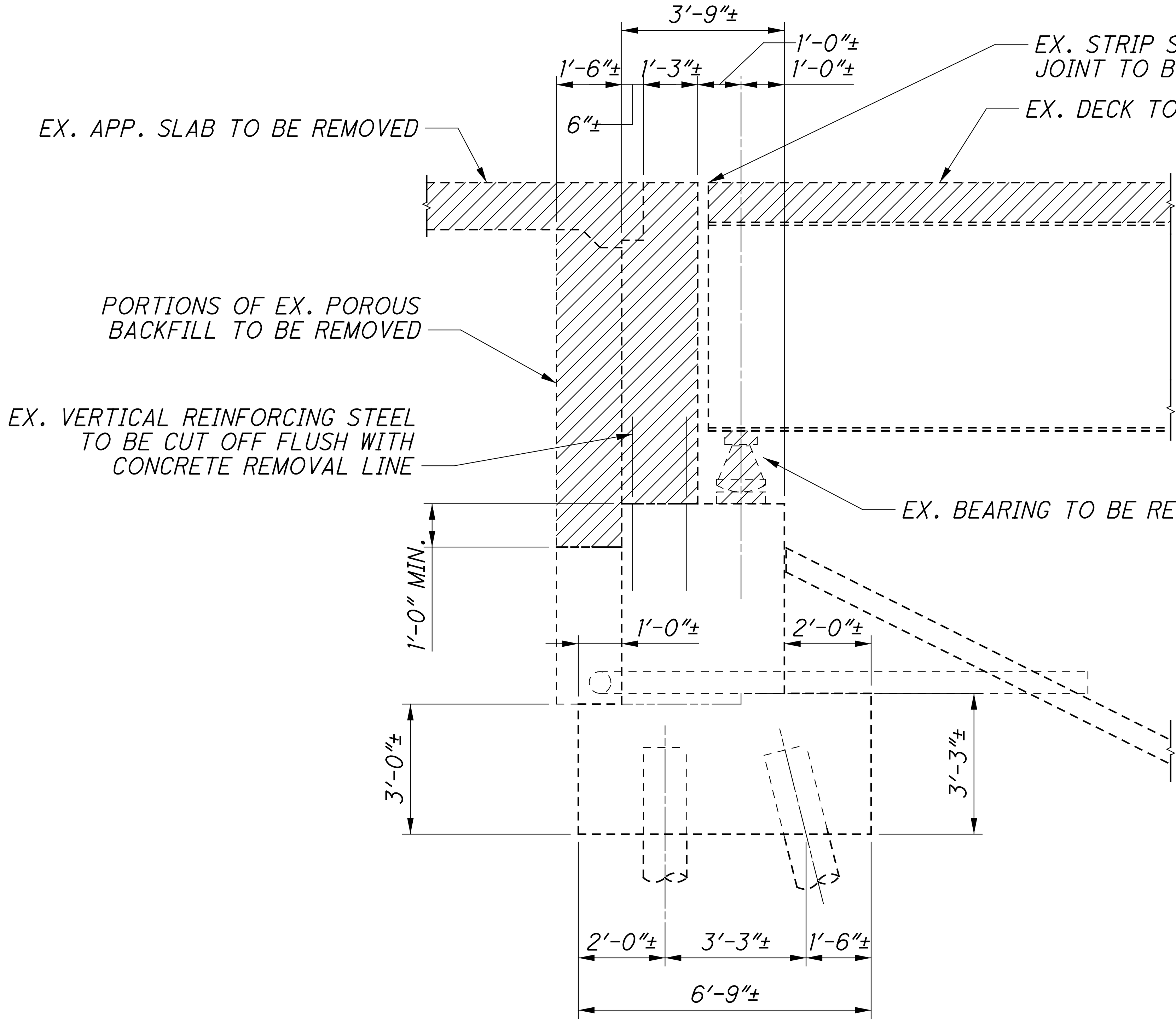
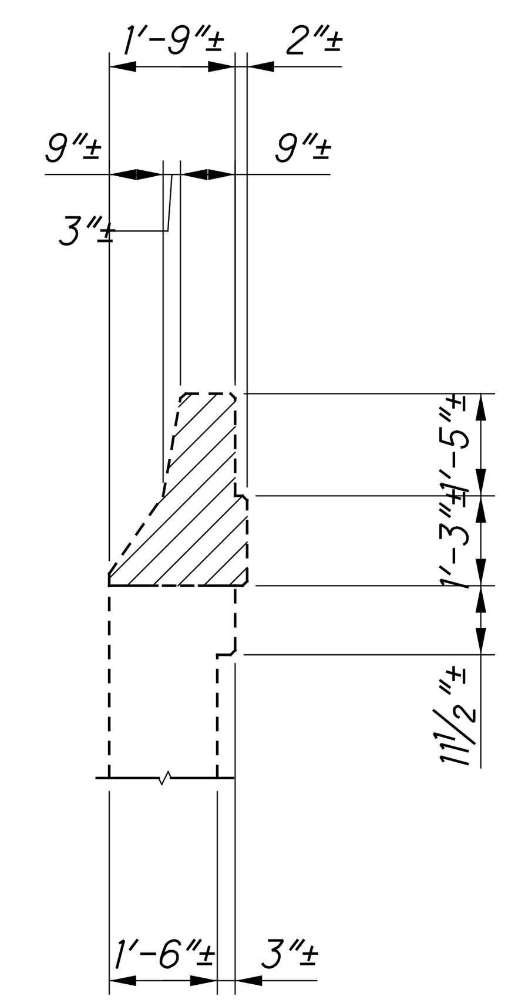
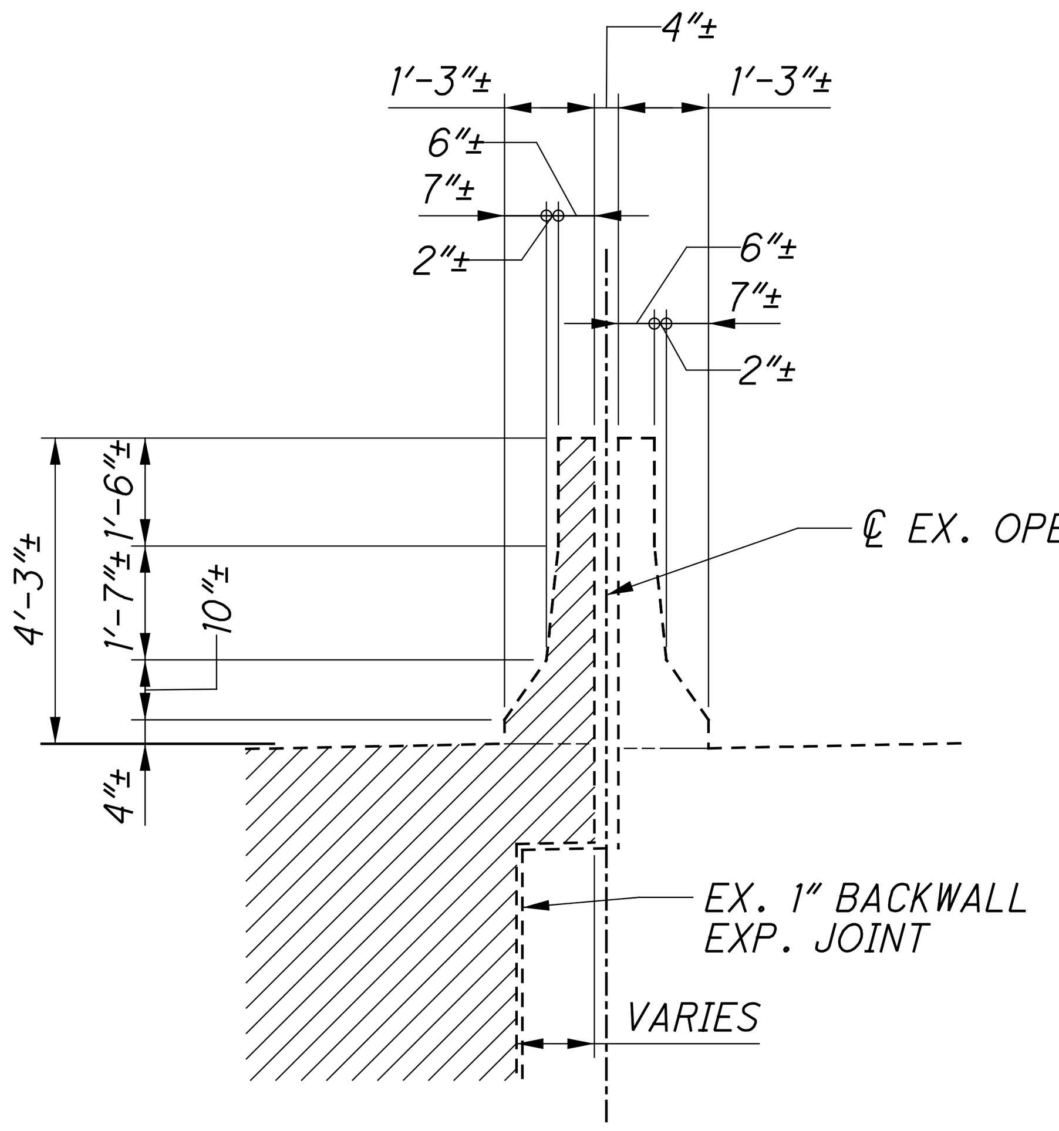
HAM-75-3.84
PID No. 104667



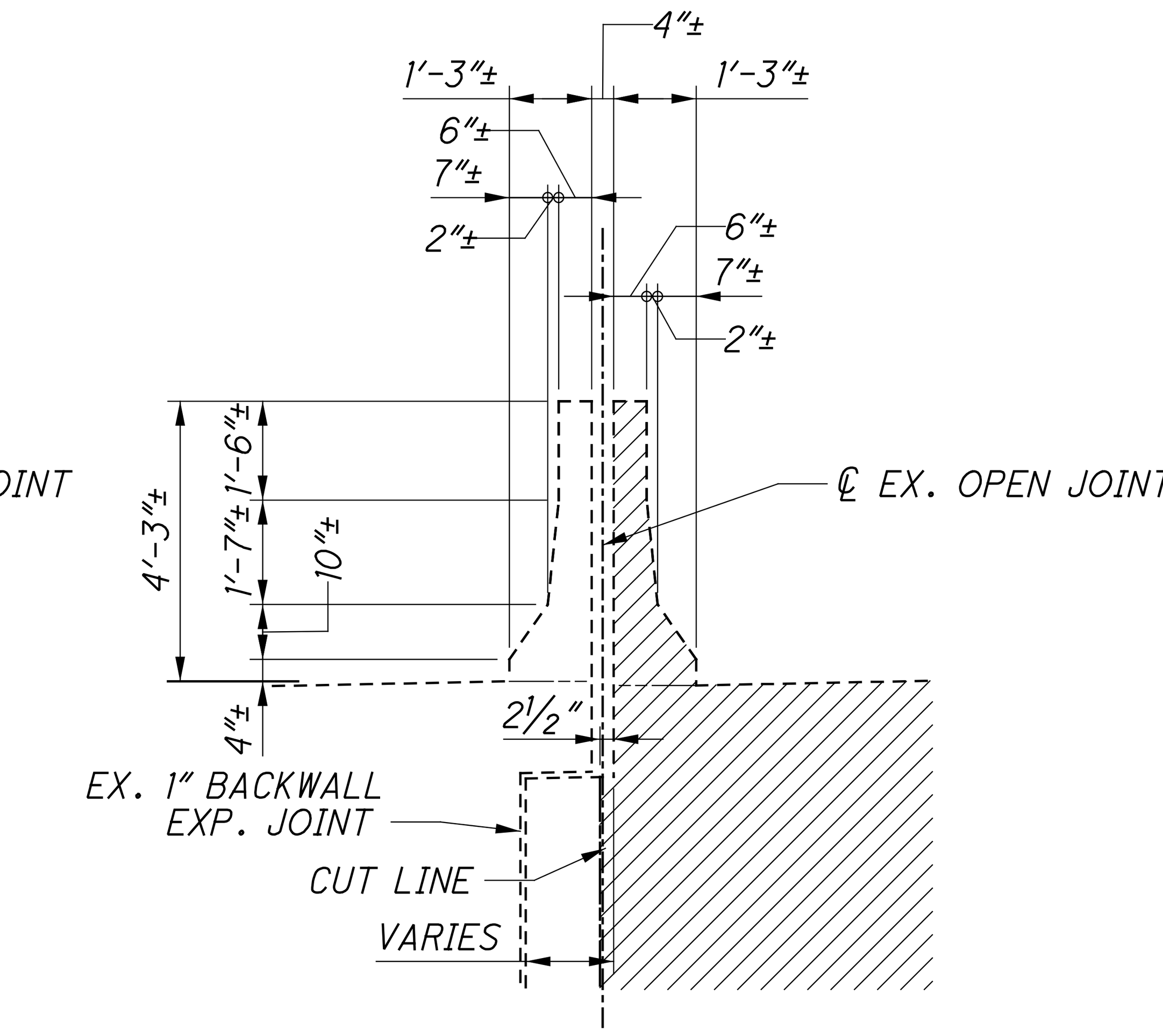
SECTION A-A



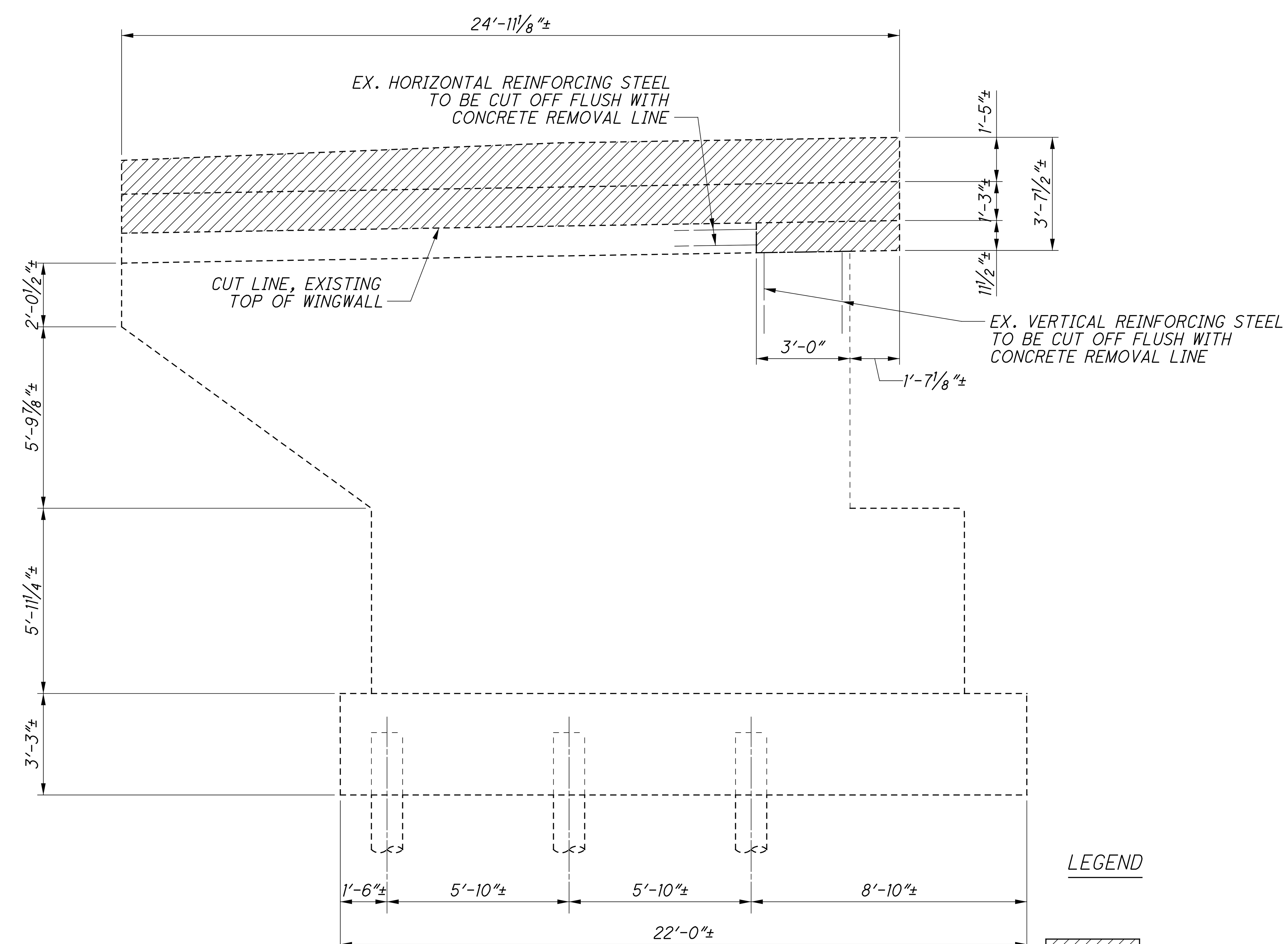
SECTION B-B



SECTION E-E



SECTION F-F



VIEW D-D

LEGEND

LIMITS OF REMOVAL PER ITEM 202

DESIGN AGENCY STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
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ABUTMENT REMOVAL DETAILS (RIGHT BRIDGE)

BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

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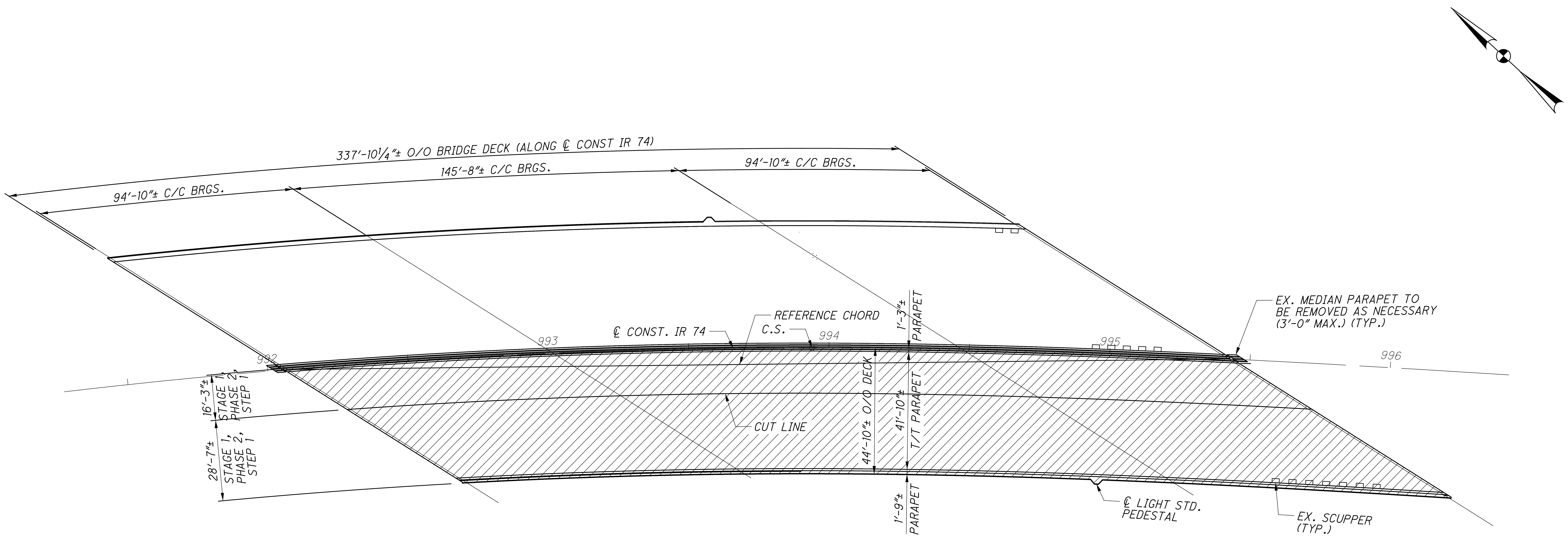

PLAN

LEGEND

LIMITS OF REMOVAL PER ITEM 202

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
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SUPERSTRUCTURE REMOVAL DETAILS (RIGHT BRIDGE)

BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

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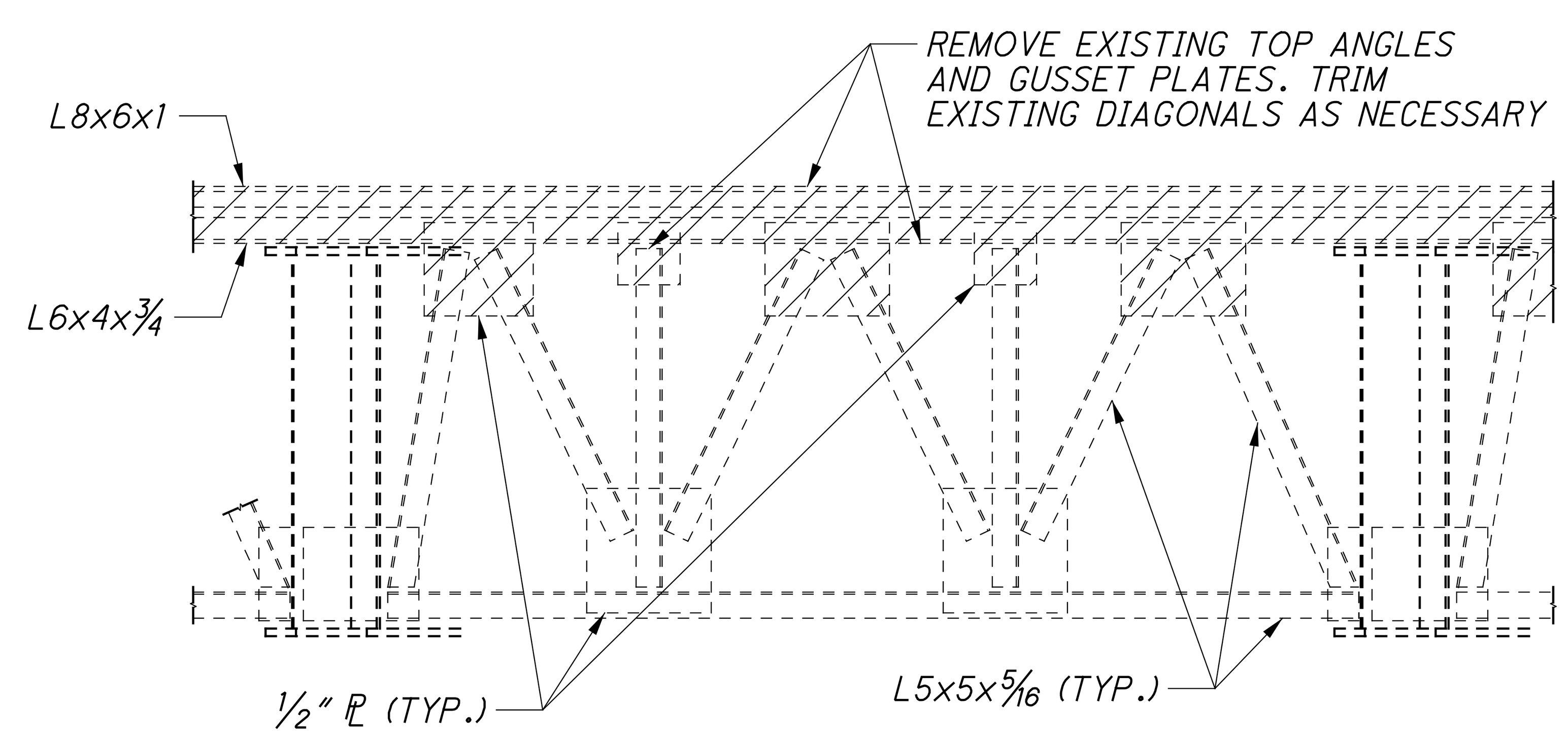

END CROSS FRAME REMOVAL DETAIL

SUPERSTRUCTURE REMOVAL DETAILS
BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		311526	

DESIGN AGENCY
STRUCTUREPOINT

HAM-75-3.84
PID No. 104667

11/41

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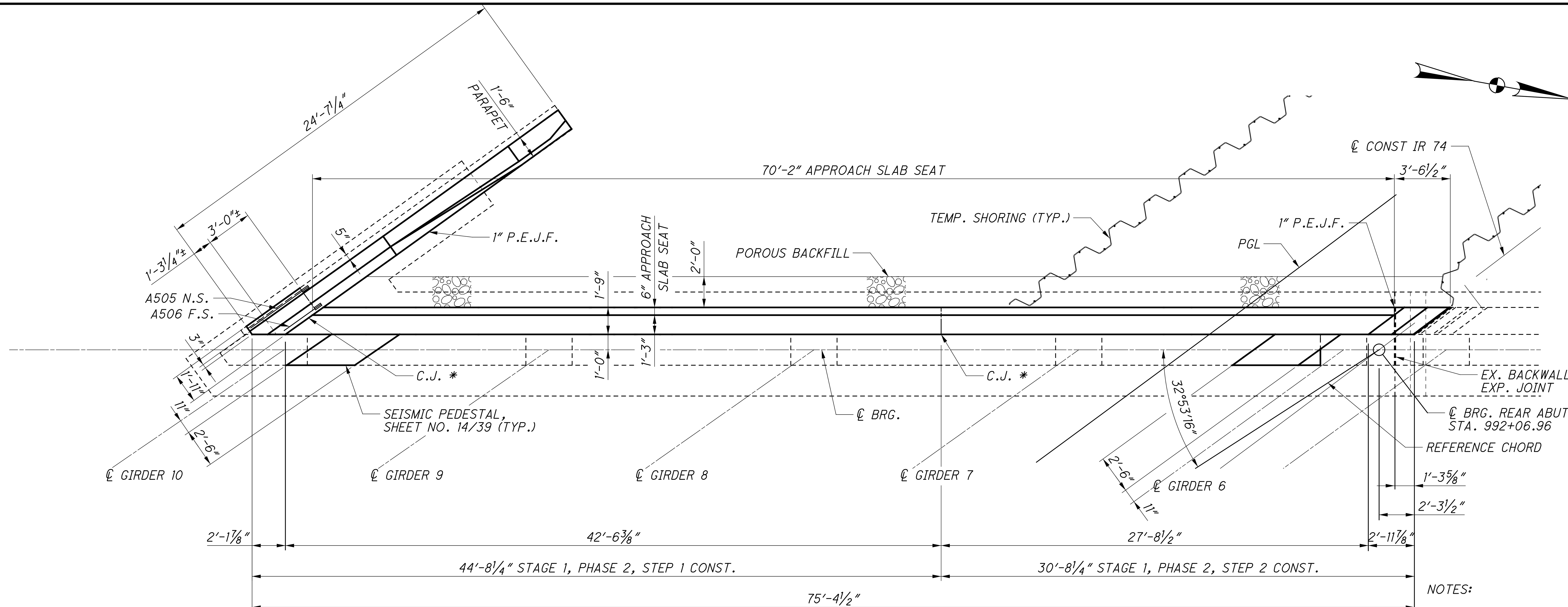
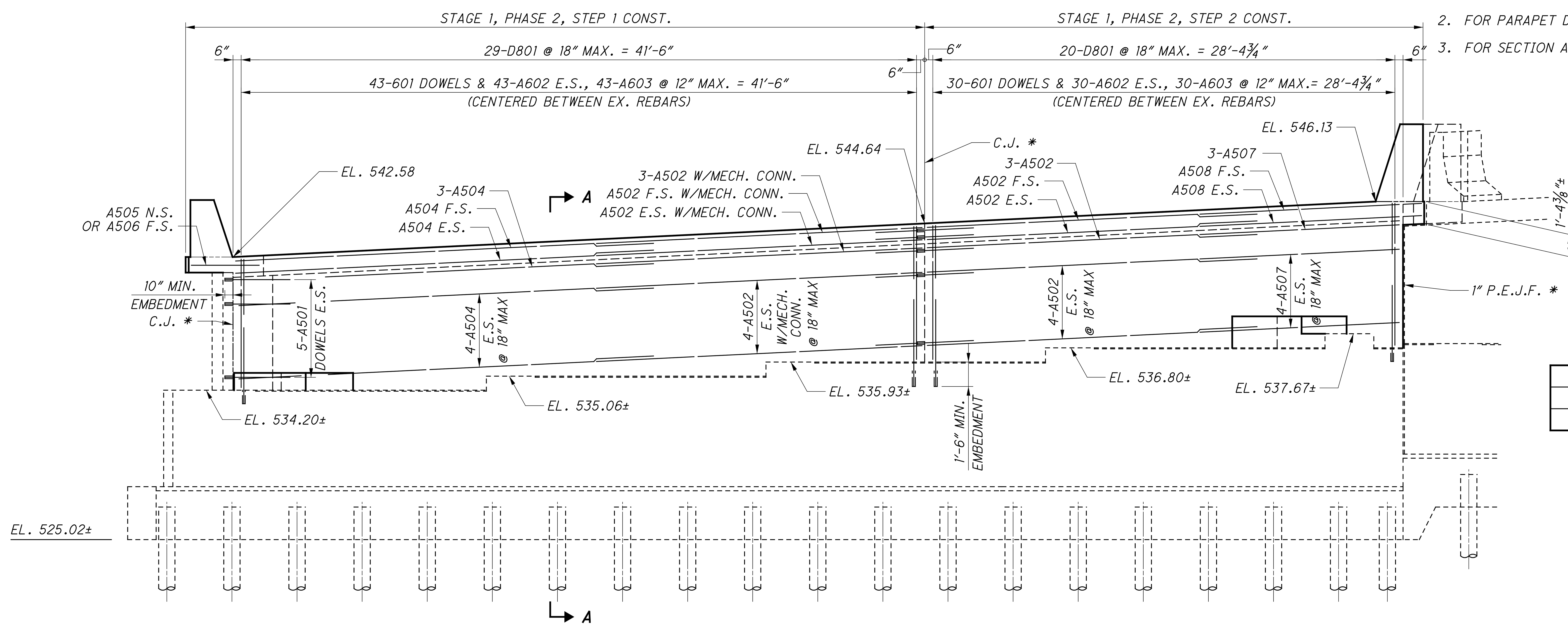


PLAN - REAR ABUTMENT



ELEVATION - REAR ABUTMENT

NOTES:

1. * 3'-0" WIDE TYPE 2 WATERPROOFING ON BACK FACE CENTERED ON JOINT FROM TOP OF SEAT TO BOTTOM OF APPROACH SLAB.
2. FOR PARAPET DETAILS, SEE SHEET 31/41.
3. FOR SECTION A-A, SEE SHEET 13/41.

MINIMUM BAR LAP	
#5	3'-6"
#6	3'-10"

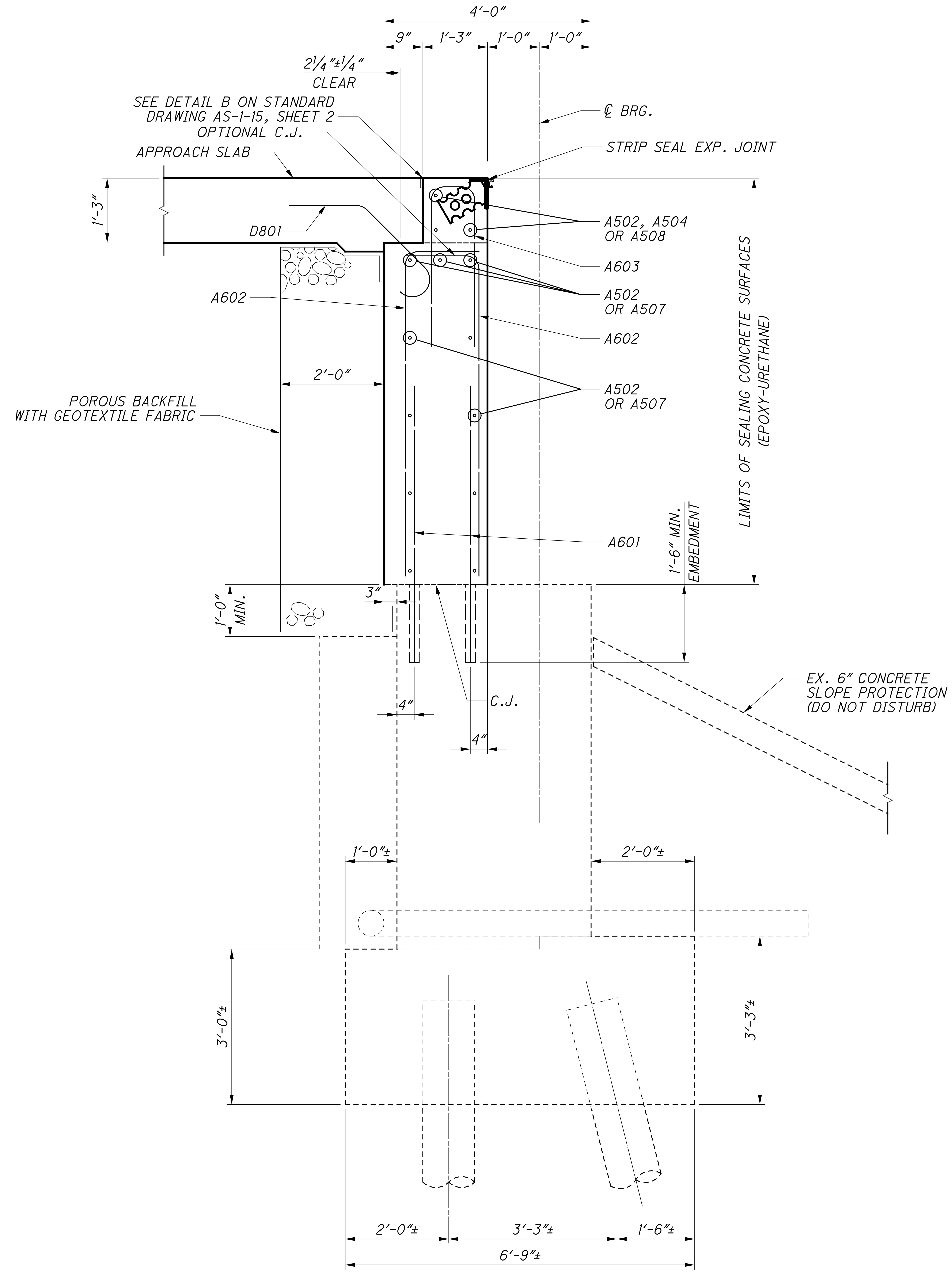
DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115526	

REAR ABUTMENT DETAILS (RIGHT BRIDGE)

BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84
PID No. 104667



SECTION A-A

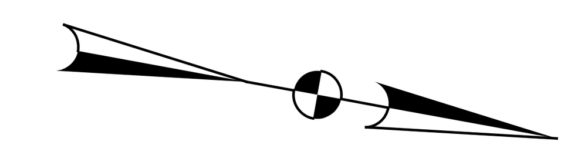
DESIGN AGENCY
STRUCTUREPOINT

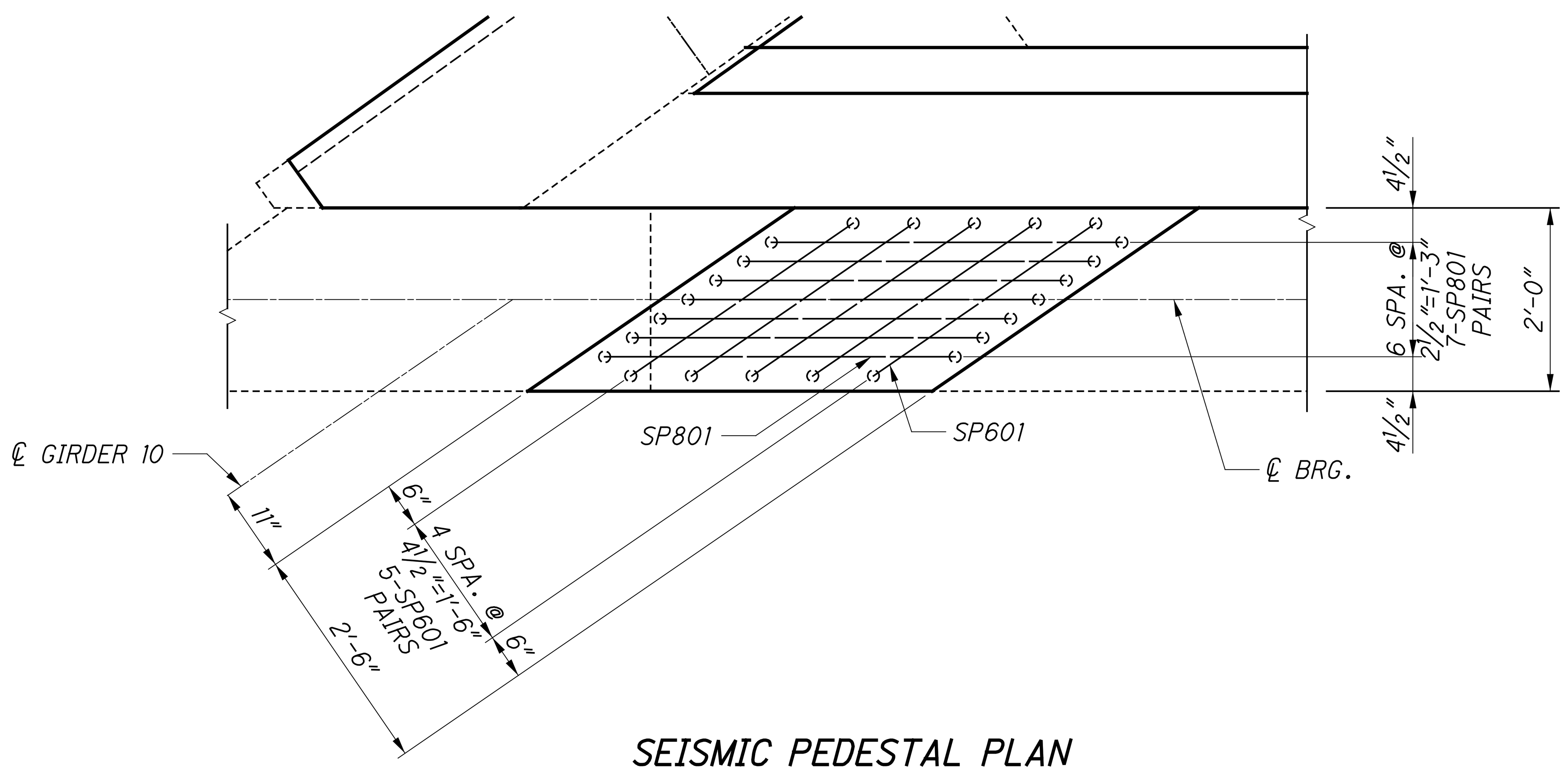
DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115526	

REAR ABUTMENT DETAILS (RIGHT BRIDGE)

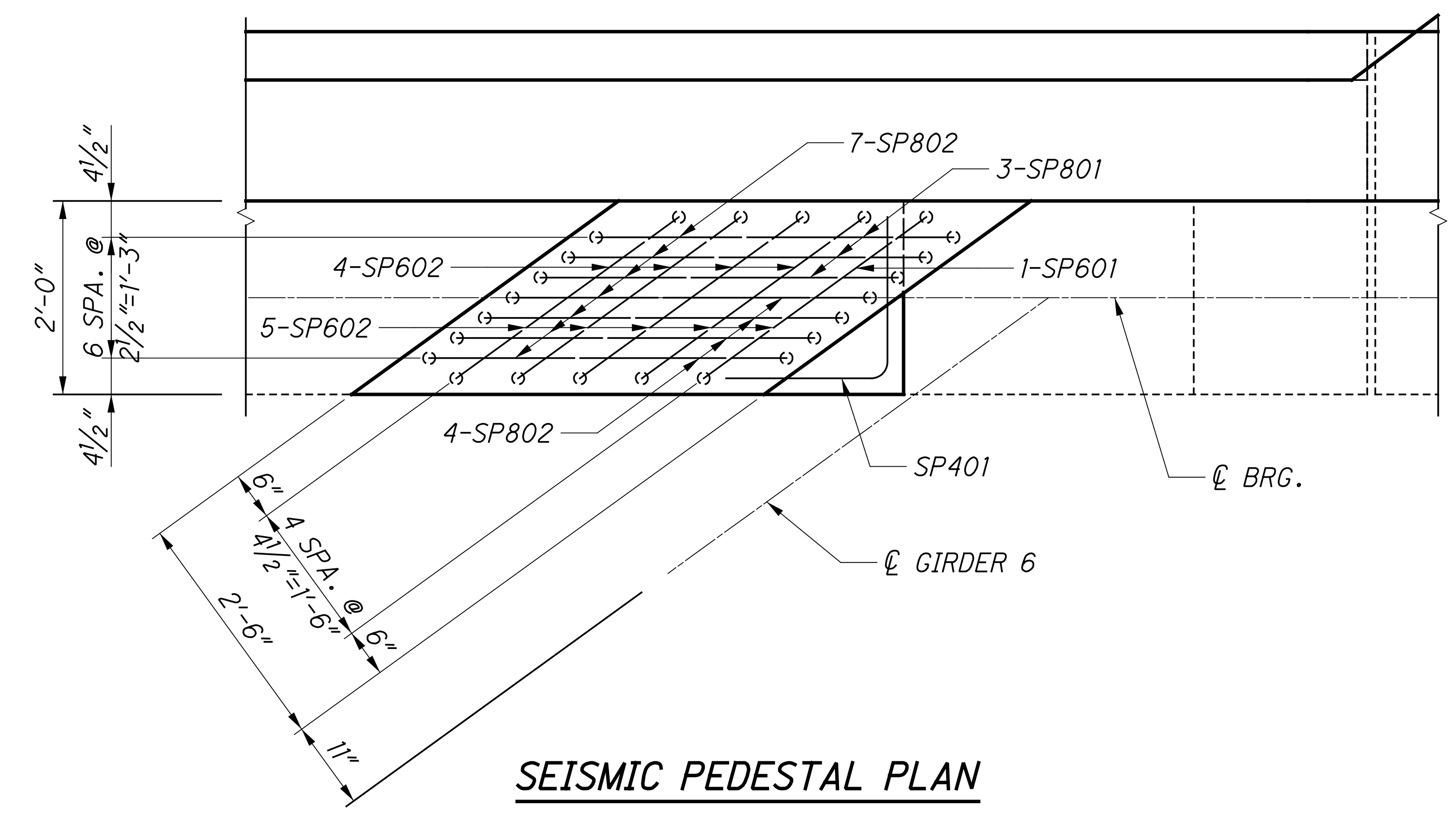
BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84
PID No. 104667

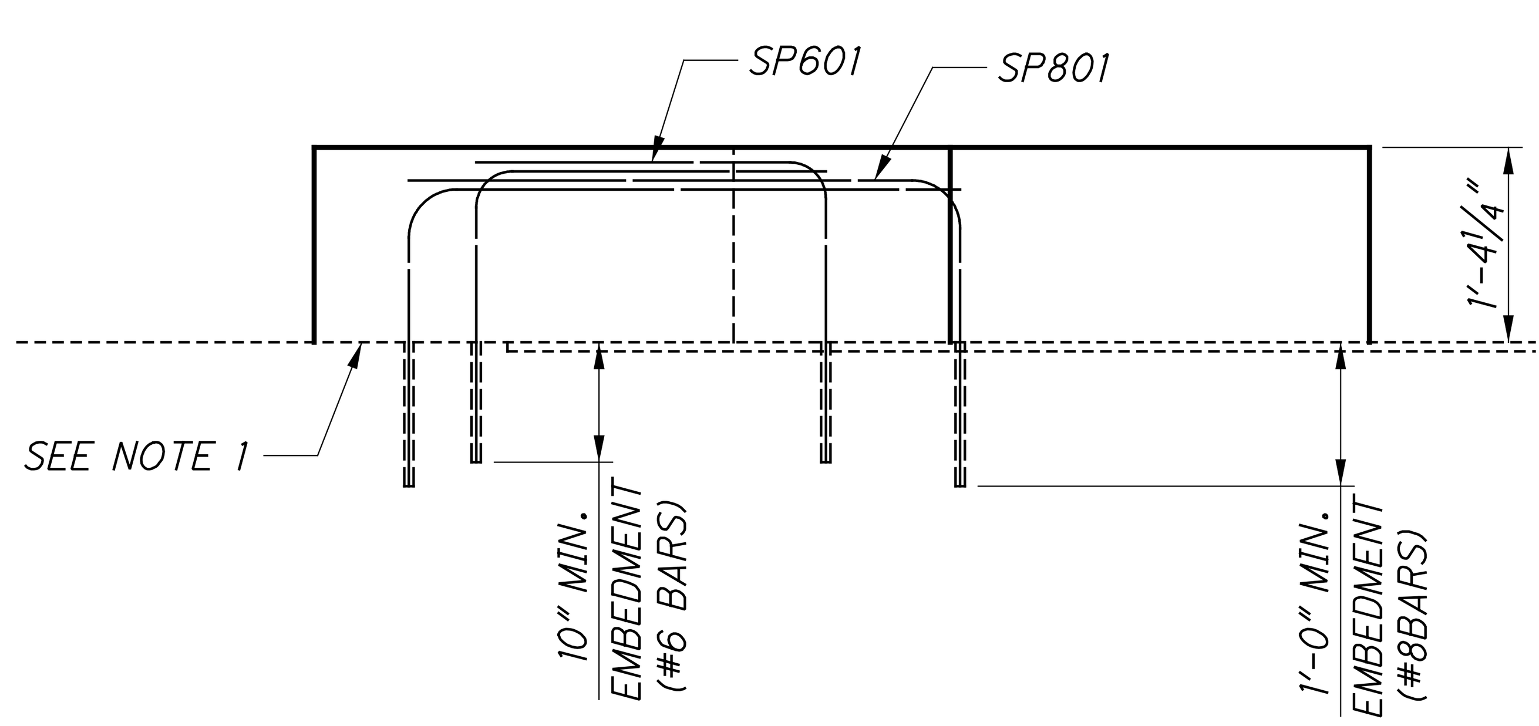




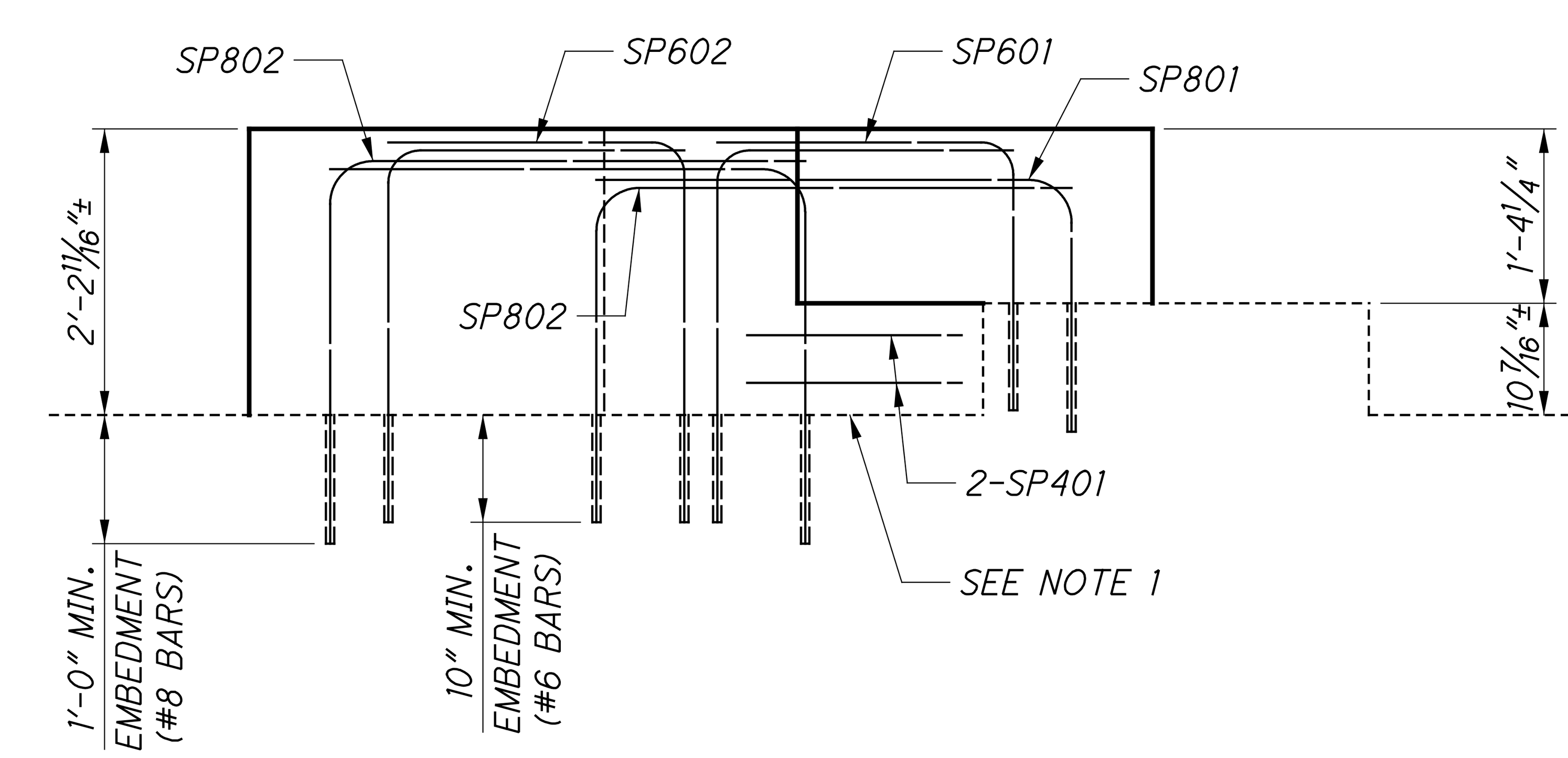
SEISMIC PEDESTAL PLAN
AT GIRDER 10



SEISMIC PEDESTAL PLAN
AT GIRDER 6



SEISMIC PEDESTAL ELEVATION
AT GIRDER 10



SEISMIC PEDESTAL ELEVATION
AT GIRDER 6

NOTES:

1. INTENTIONALLY ROUGHEN PORTIONS OF EXISTING BEAM SEAT BENEATH SEISMIC PEDESTAL TO A FULL AMPLITUDE OF APPROXIMATELY ¼ INCH

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115526	

REAR ABUTMENT DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84
PID No. 104667

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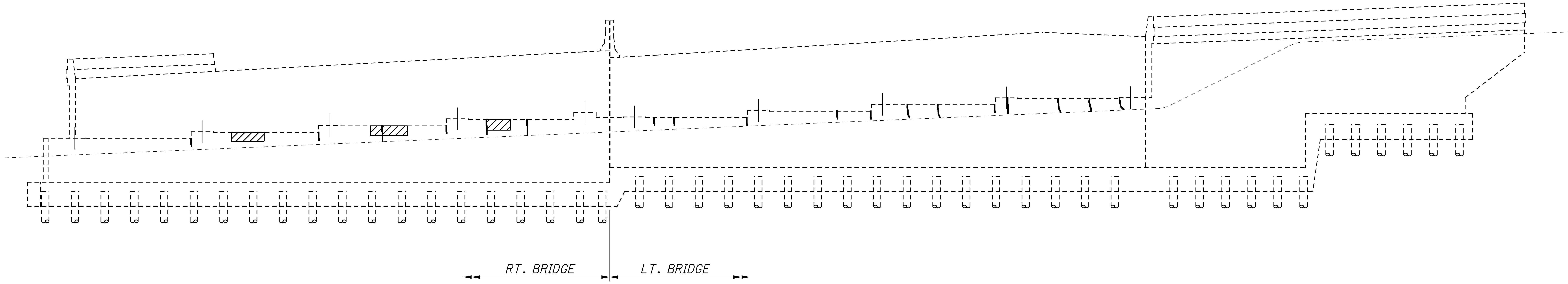

REAR ABUTMENT - RIGHT BRIDGE

REAR ABUTMENT - LEFT BRIDGE

SUMMARY OF ABUT. REPAIR QUANTITIES		
	PATCH	EPOXY INJECTION
	(SQ FT)	(FT)
REAR ABUTMENT	* 1.75	* 51.08

* FIELD MEASURED TOTAL FOR LEFT AND RIGHT BRIDGES

REAR ABUTMENT ELEVATION
(LOOKING WEST)

LEGEND

AREA TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN.

NOTES:

1. ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN AND ITEM 512 - CONCRETE REPAIR BY EPOXY INJECTION ARE UNIT PRICE PAY ITEMS (31 AND 32).

DESIGN AGENCY STRUCTUREPOINT

DESIGNED SJF | DRAWN DSH | REVIEWED MDS | DATE 11/12/18
CHECKED CLB | REVISED | STRUCTURE FILE NUMBER 3115526

PATCHING DETAILS - REAR ABUTMENT
BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84
PID No. 104667

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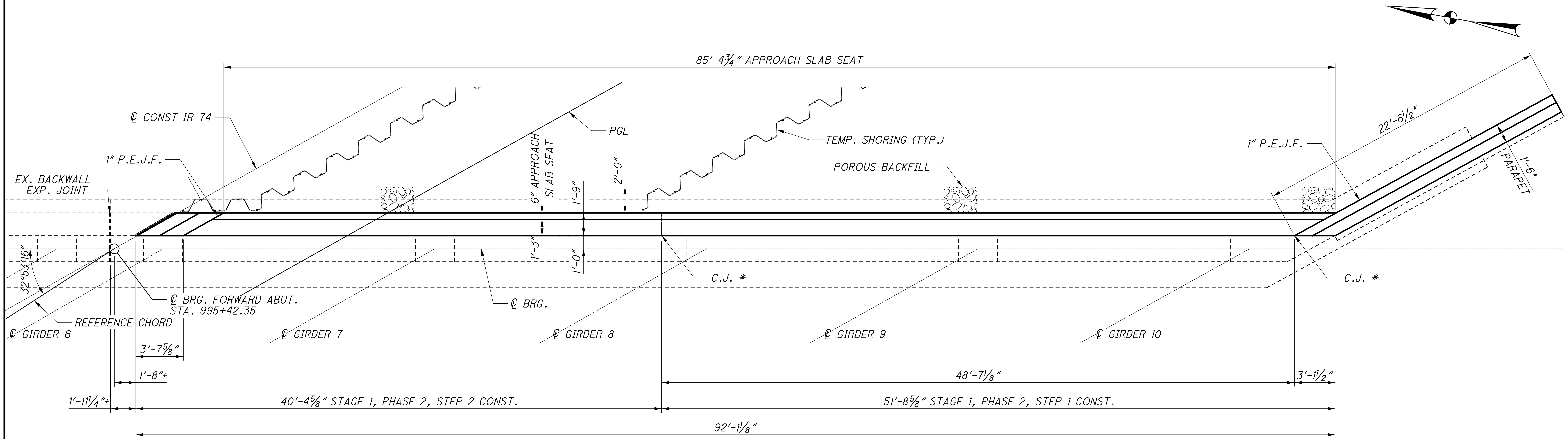
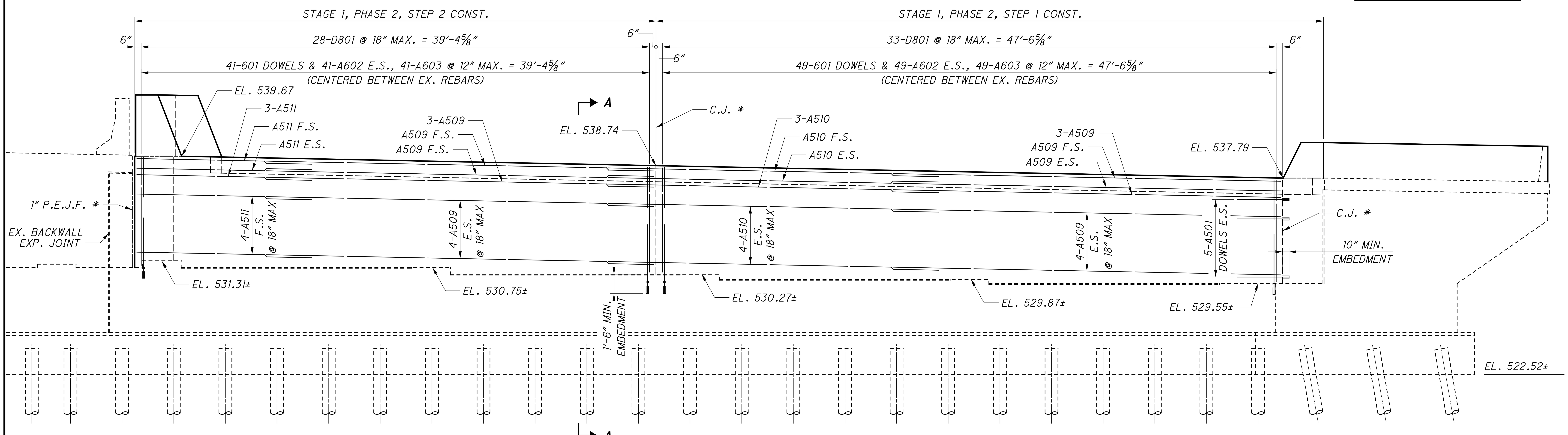


PLAN - FORWARD ABUTMENT

MINIMUM BAR LAP	
#5	3'-6"
#6	3'-10"



ELEVATION - FORWARD ABUTMENT

NOTES:

1. * 3'-0" WIDE TYPE 2 WATERPROOFING ON BACK FACE CENTERED ON JOINT FROM TOP OF SEAT TO BOTTOM OF APPROACH SLAB.
2. FOR PARAPET DETAILS, SEE SHEETS 32/41.
3. FOR SECTION A-A, SEE SHEET 17/41.

DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	CHECKED	DRAWN	REVISED	REVIEWED	DATE
SJF	CLB	DSH		MDS	11/12/18

STRUCTURE FILE NUMBER 3115526

FORWARD ABUTMENT DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84
PID No. 104667

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17/120

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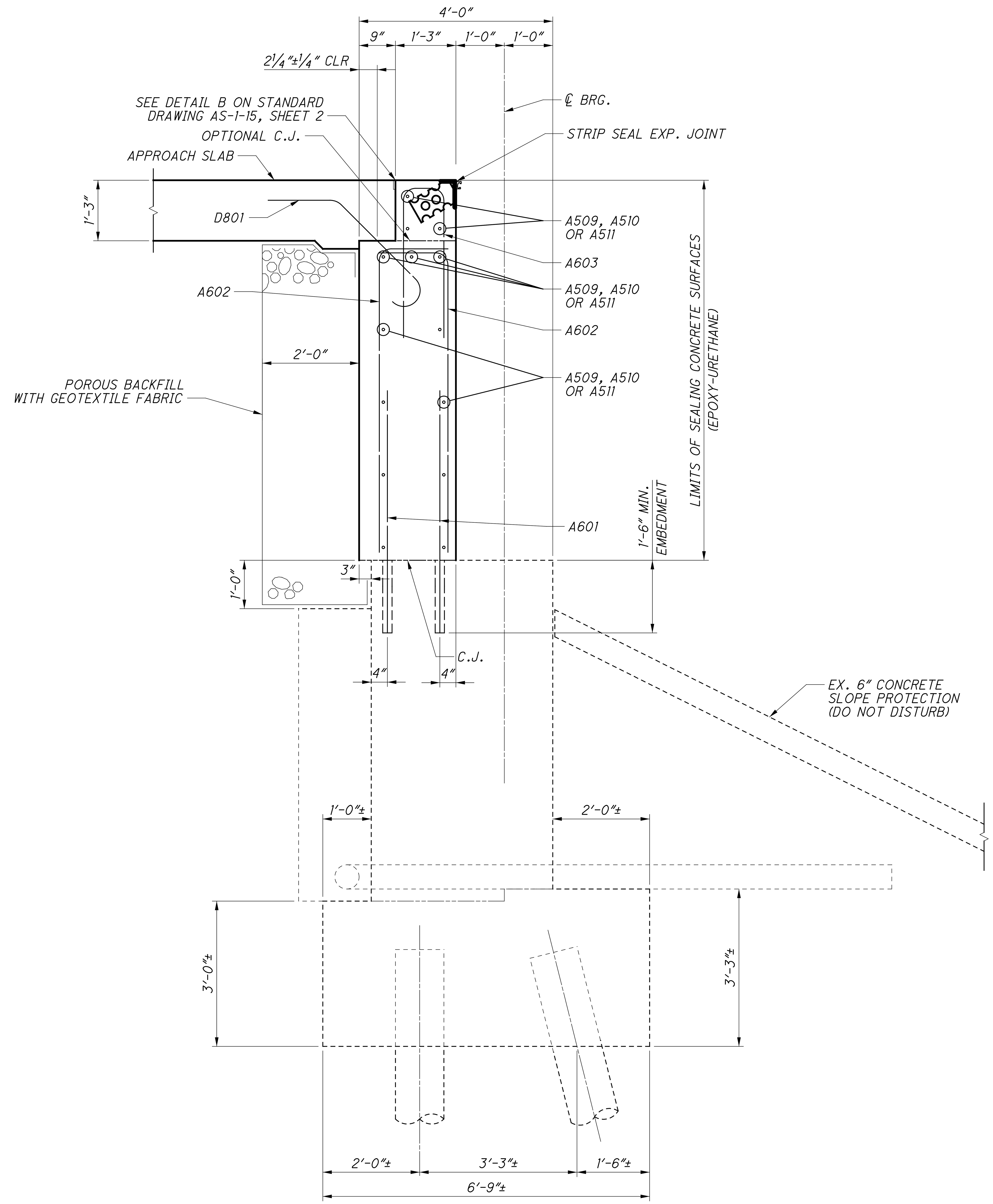

SECTION A-A

FORWARD ABUTMENT DETAILS (RIGHT BRIDGE)

BRIDGE NO. HAM-74-1840 L/R

OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115526	

DESIGN AGENCY
STRUCTUREPOINT

HAM-75-3.84
PID No. 104667

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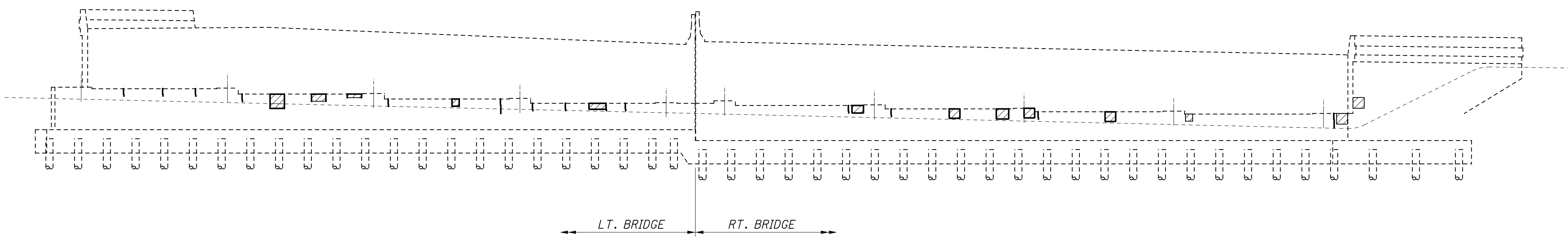

FORWARD ABUTMENT - LEFT BRIDGE

FORWARD ABUTMENT - RIGHT BRIDGE

SUMMARY OF ABUT. REPAIR QUANTITIES		
	PATCH	EPOXY INJECTION
	(SQ FT)	(FT)
FORWARD ABUTMENT	* 17.41	* 59.33

* FIELD MEASURED TOTAL FOR LEFT AND RIGHT BRIDGES

FORWARD ABUTMENT
(LOOKING EAST)

LEGEND

AREA TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN.

NOTES:

1. ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN AND ITEM 512 - CONCRETE REPAIR BY EPOXY INJECTION ARE UNIT PRICE PAY ITEMS (31 AND 32).

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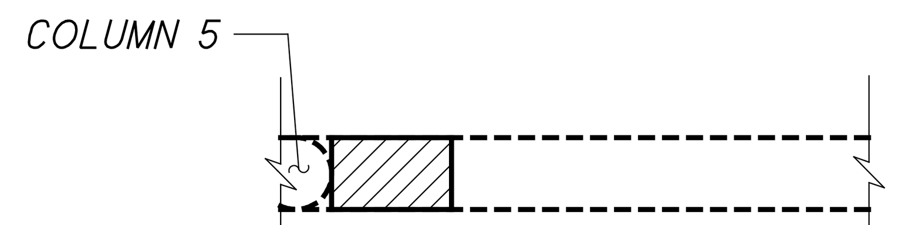
DESIGN AGENCY
STRUCTUREPOINT

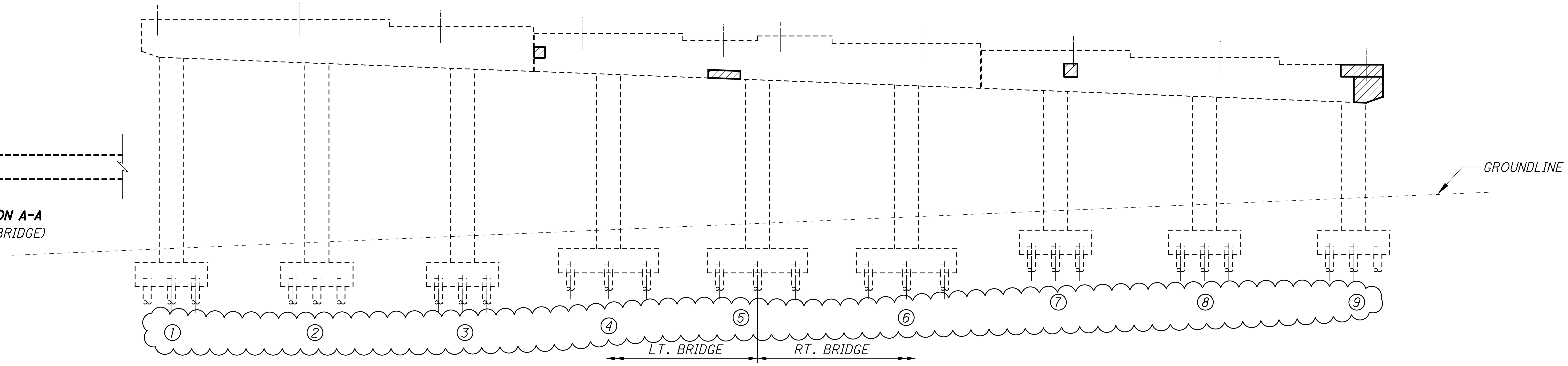
DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115526	

PATCHING DETAILS - FORWARD ABUTMENT
BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84
PID No. 104667



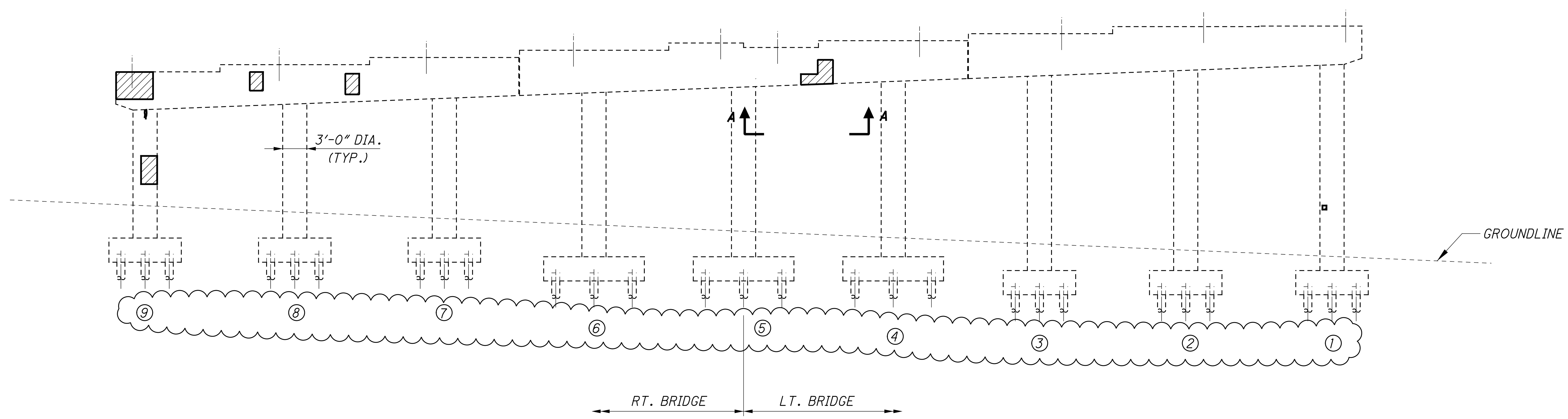
SECTION A-A
(LEFT BRIDGE)



PIER 1 - LEFT BRIDGE

PIER 1 - WEST ELEVATION
(LOOKING EAST)

PIER 1 - RIGHT BRIDGE



PIER 1 - RIGHT BRIDGE

PIER 1 - EAST ELEVATION
(LOOKING WEST)

PIER 1 - LEFT BRIDGE

SUMMARY OF PIER 1 REPAIR QUANTITIES		
	PATCH	EPOXY INJECTION
	(SQ FT)	(FT)
PIER 1	* 89.64	* 0

* FIELD MEASURED TOTAL FOR LEFT AND RIGHT BRIDGES

LEGEND

AREA TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN.

NOTES:

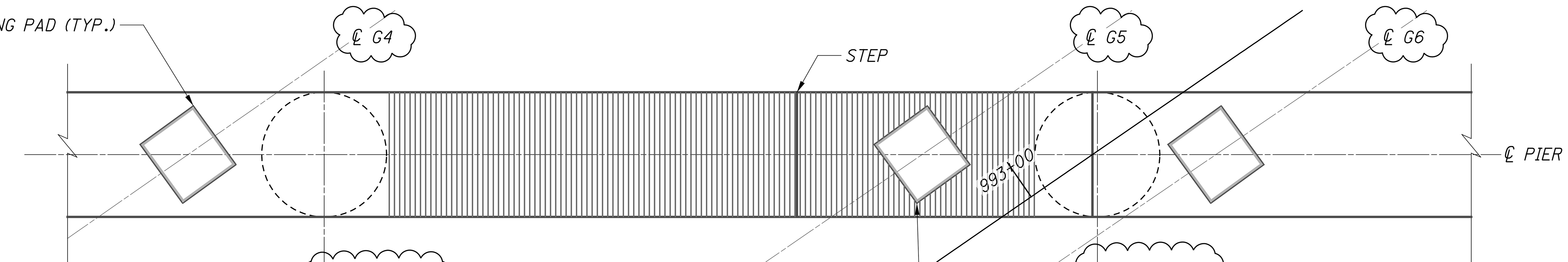
1. ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN AND ITEM 512 - CONCRETE REPAIR BY EPOXY INJECTION ARE UNIT PRICE PAY ITEMS (31 AND 32).

DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115526	

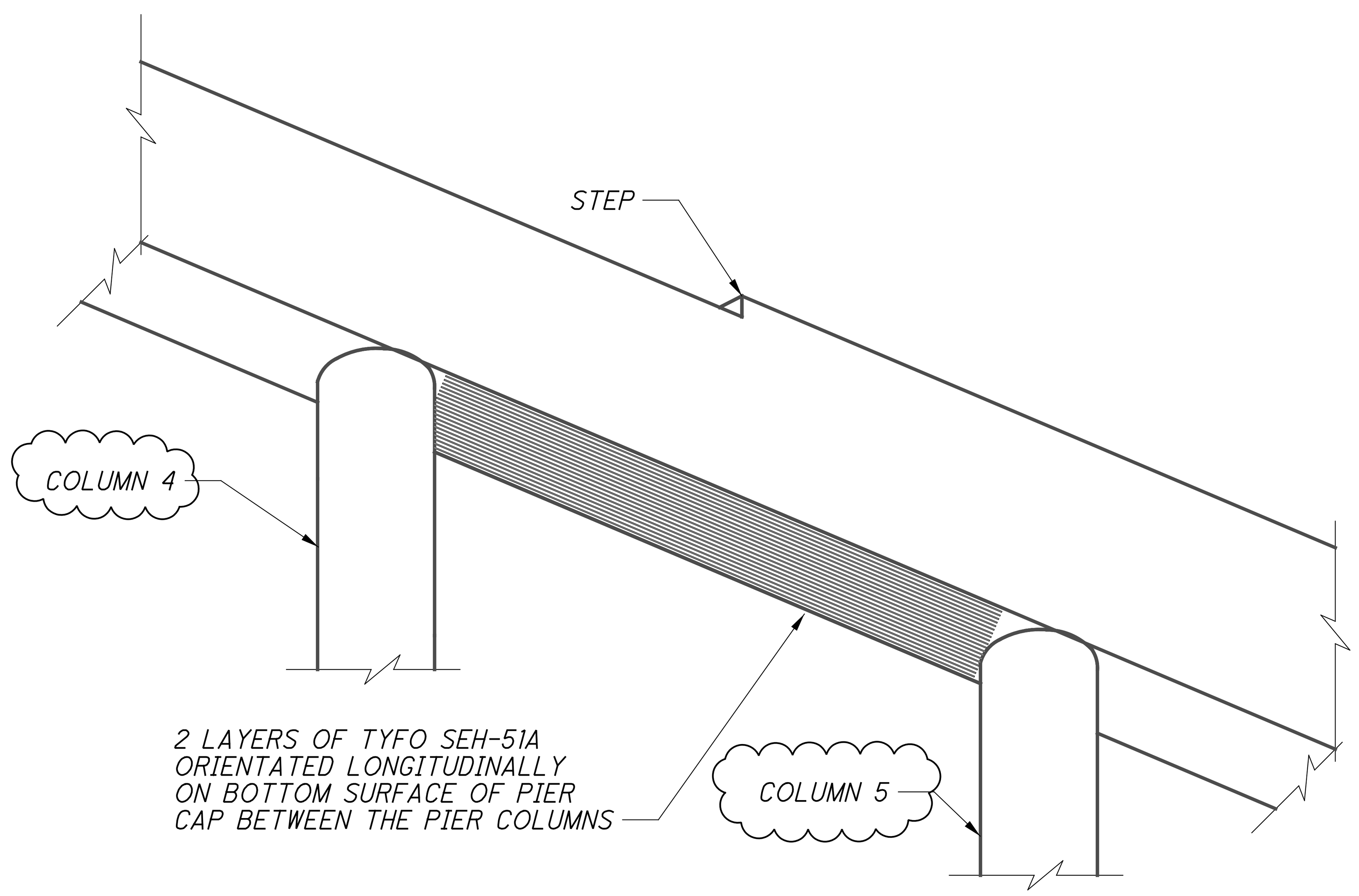
PIER 1 DETAILS
BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84
PID No. 104667

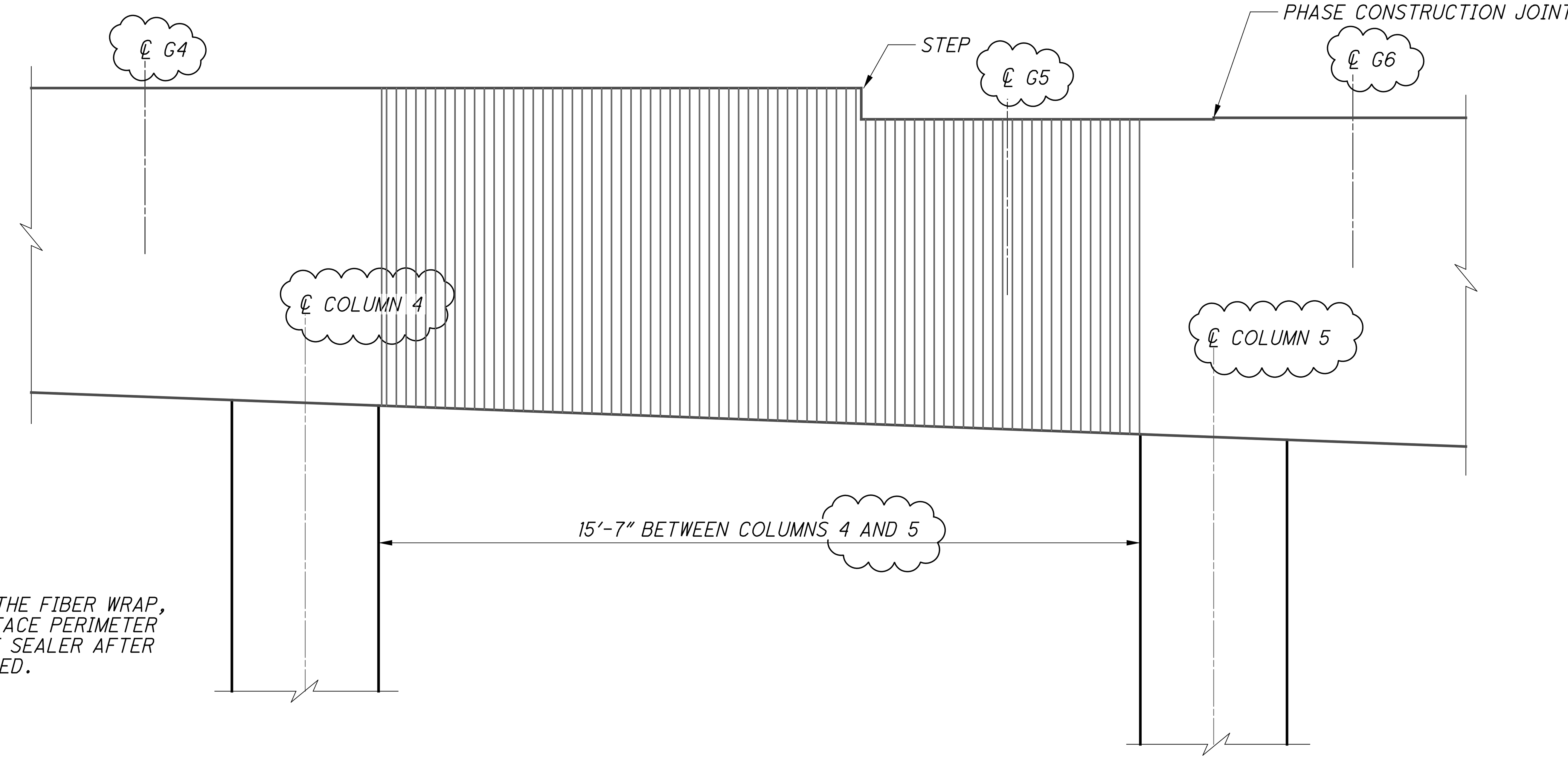


PIER 1 PLAN

(PIER 2 SIMILAR)

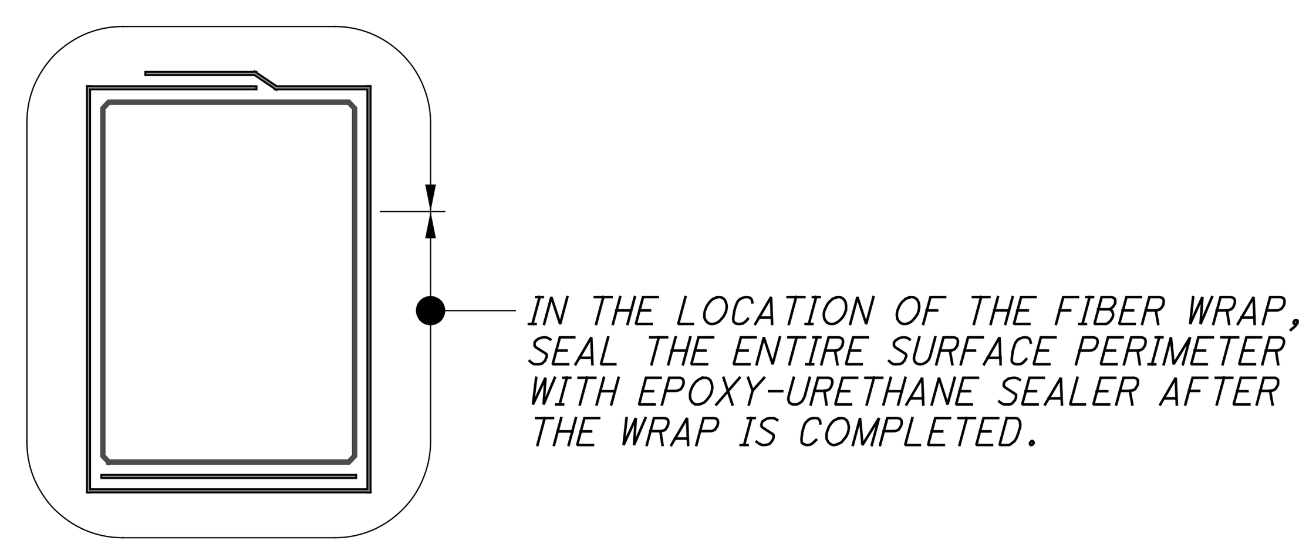


STEP 1

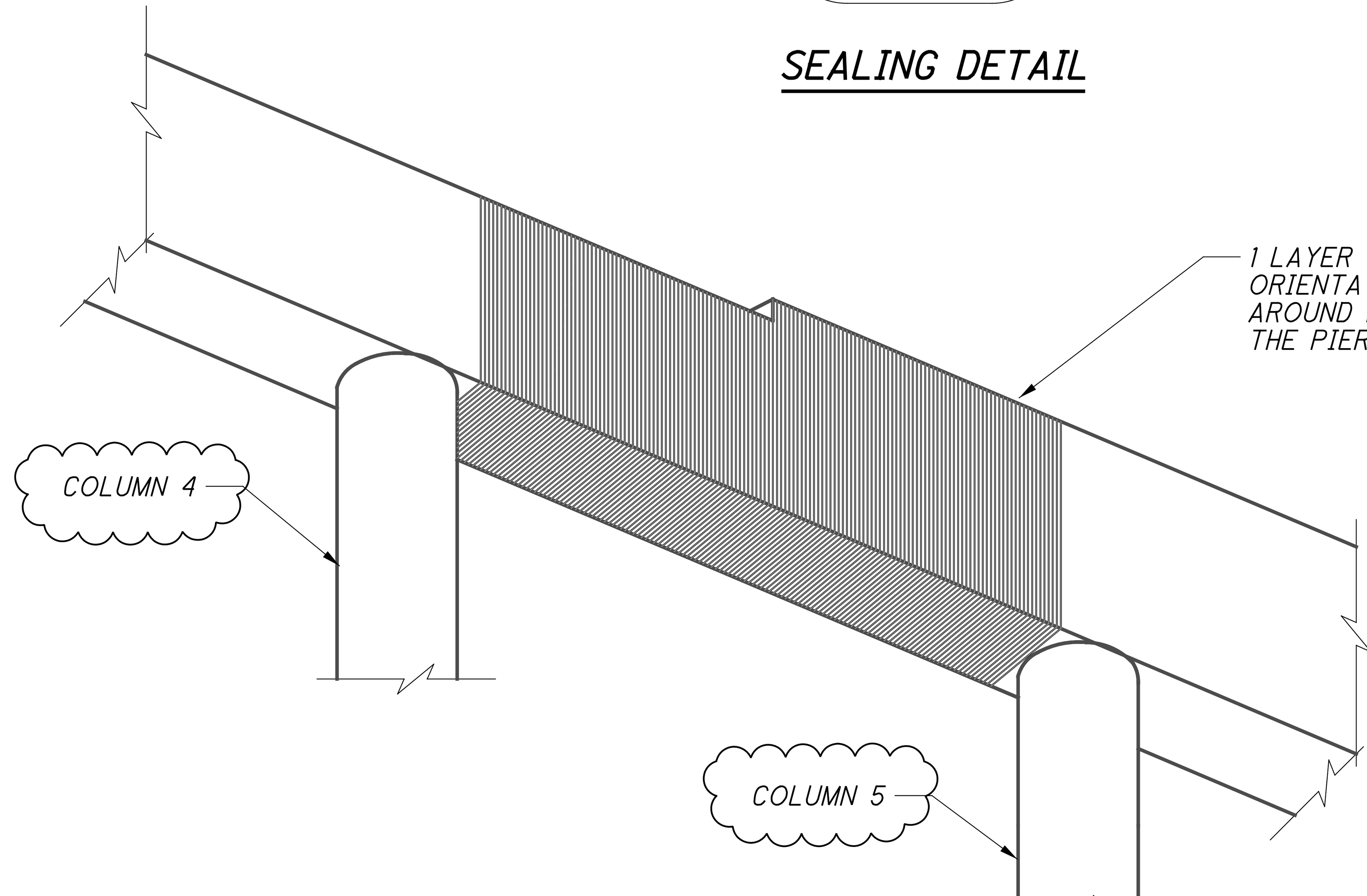


PIER 1 ELEVATION

(PIER 2 SIMILAR)



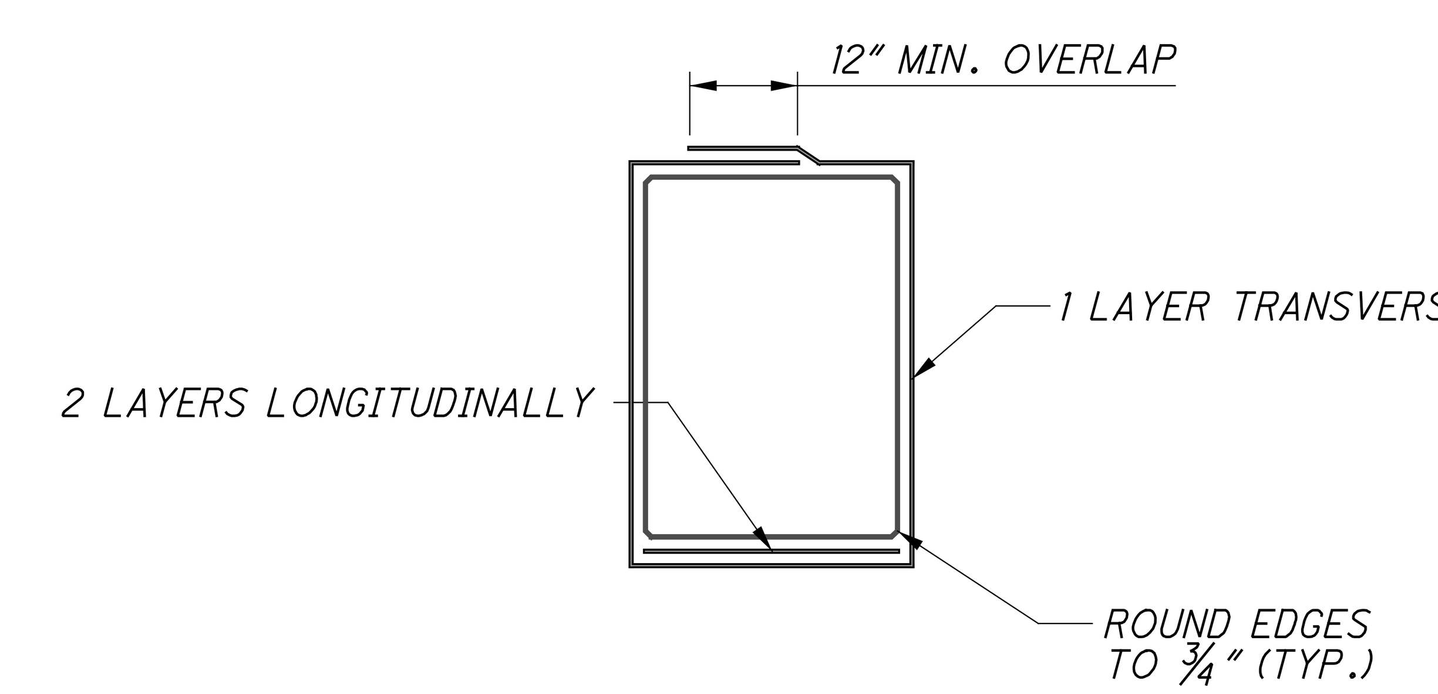
SEALING DETAIL



STEP 2

NOTES:

1. 24 TO 72 HOURS AFTER THE FIBER WRAP HAS BEEN PLACED, SEAL THE PIER CAP A MINIMUM OF 1'-0" PAST THE LIMITS OF THE FIBER WRAP WITH AN EPOXY-URETHANE SEALER.



SECTION A-A

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115526	

PIER 1 DETAILS
BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84
PID No. 104667

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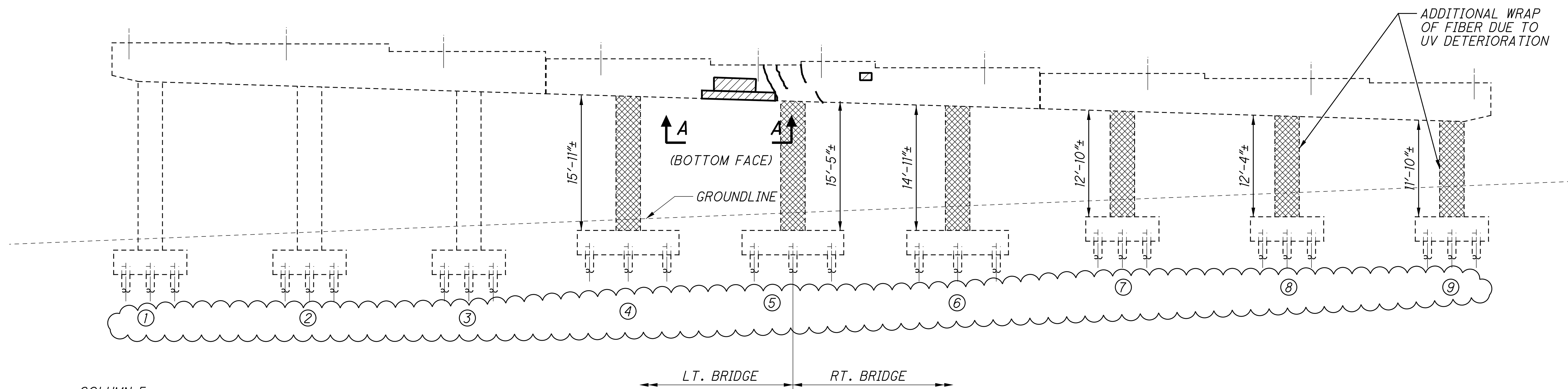
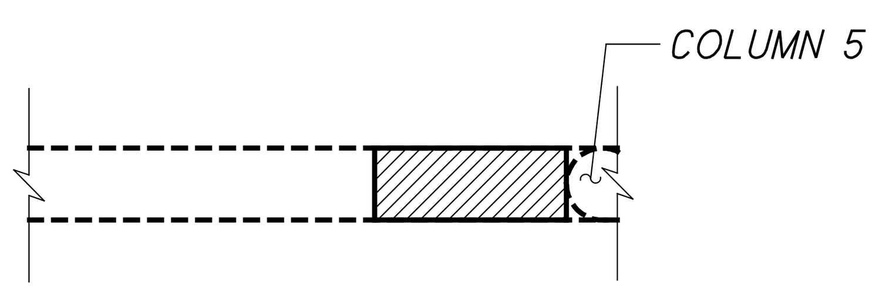


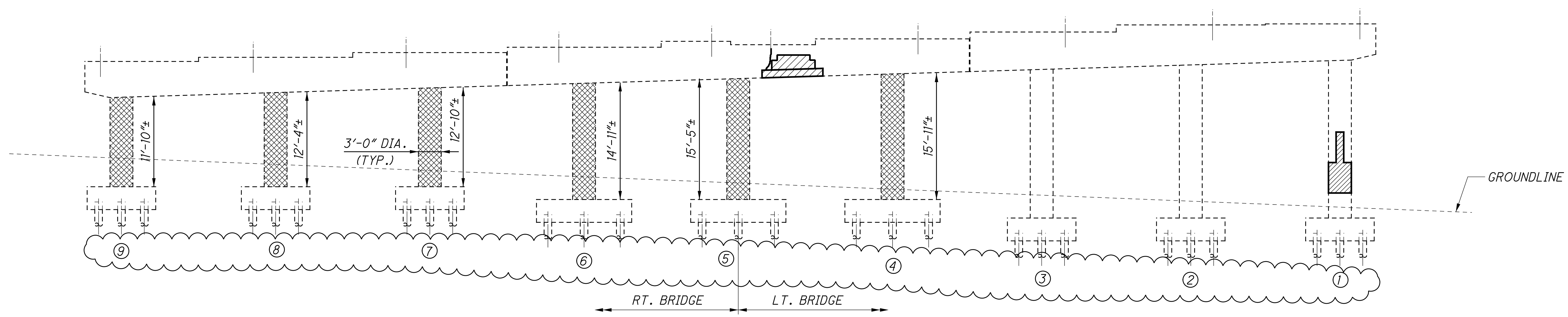
PIER 2 - LEFT BRIDGE

PIER 2 - WEST ELEVATION
(LOOKING EAST)

PIER 2 - RIGHT BRIDGE



SECTION A-A
(LEFT BRIDGE)



PIER 2 - RIGHT BRIDGE

PIER 2 - EAST ELEVATION
(LOOKING WEST)

PIER 2 - LEFT BRIDGE

SUMMARY OF PIER 2 REPAIR QUANTITIES		
	PATCH	EPOXY INJECTION
	(SQ FT)	(FT)
PIER 2	* 84.16	* 0

* FIELD MEASURED TOTAL FOR LEFT AND RIGHT BRIDGES

LEGEND

[hatched box] AREA TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN.

[open box] FIBER WRAP COLUMN FROM TOP OF FOOTING TO BOTTOM OF CAP. TOP AND BOTTOM 3'-0" REQUIRE FRP JACKET (f1) OF 0.3 KSI, REMAINING LENGTH (f1) OF 0.15 KSI

NOTES:

1. ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN AND ITEM 512 - CONCRETE REPAIR BY EPOXY INJECTION ARE UNIT PRICE PAY ITEMS (31 AND 32).

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
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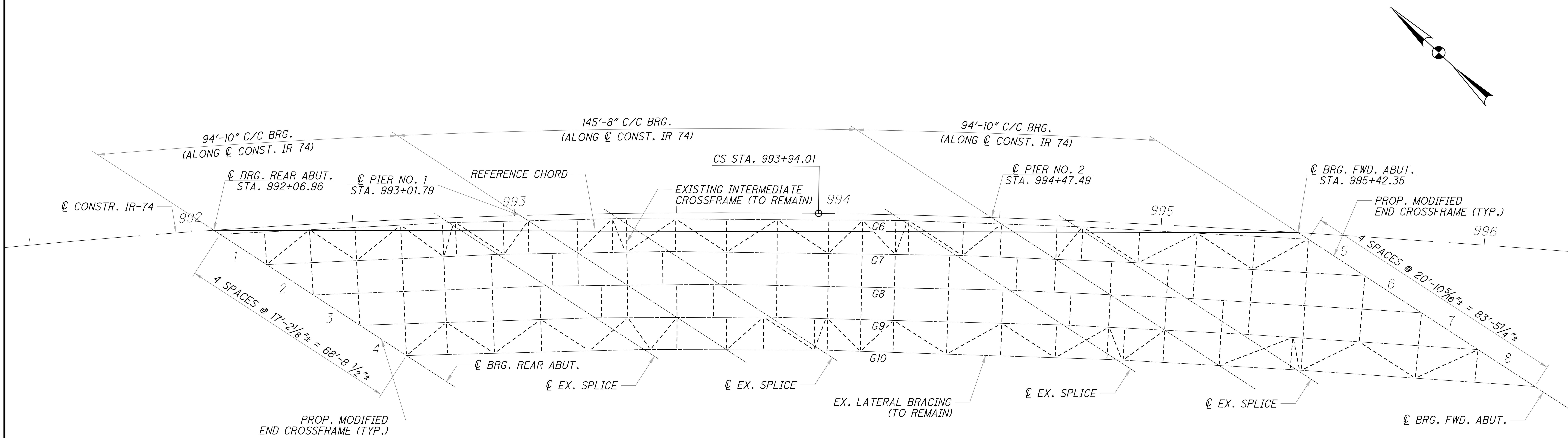
PIER 2 DETAILS
BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84
PID No. 104667



<u>FRAMING PLAN</u>

DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115526	

FRAMING PLAN (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84
PID No. 104667

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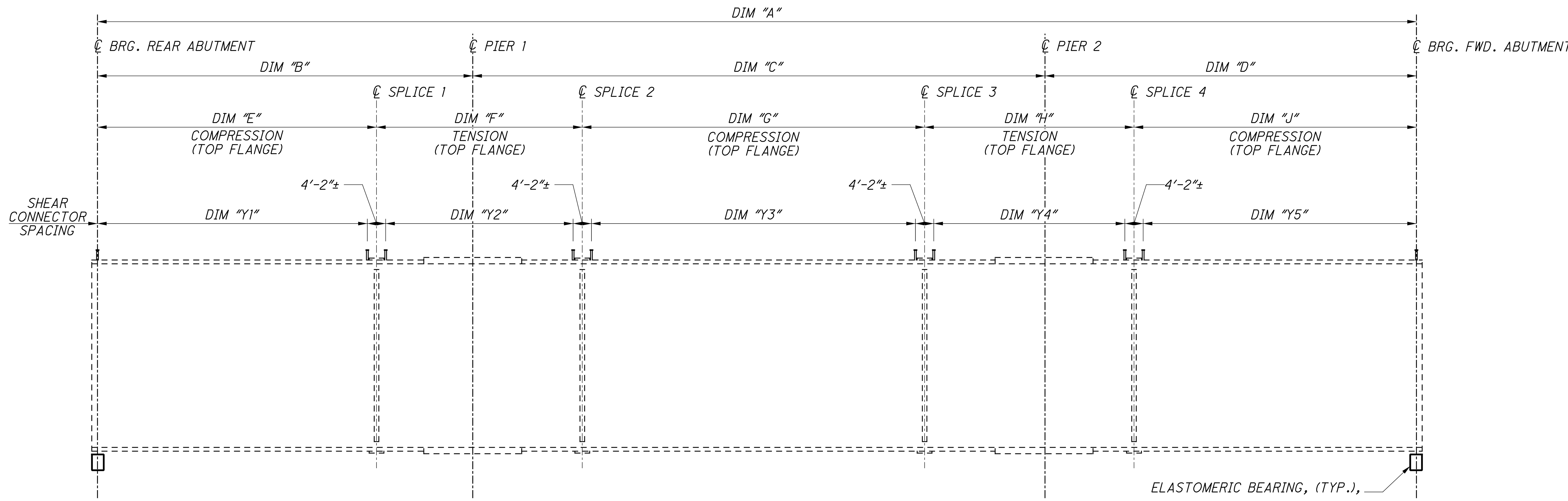
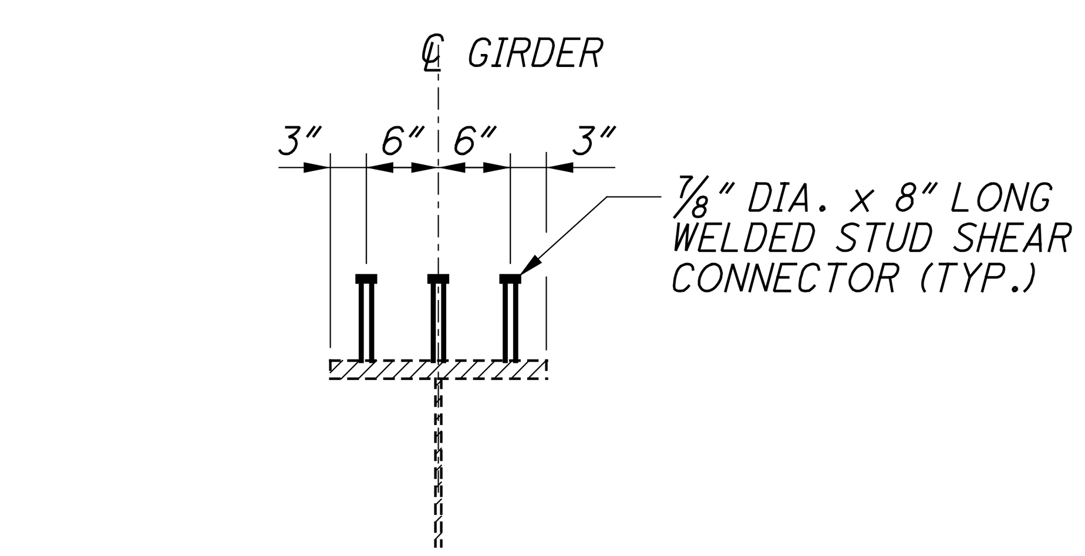


EXISTING GIRDER G6 THRU GIRDER G10 ELEVATION

(DIMENSIONS SHOWN ARE MEASURED ALONG ℄ GIRDER)



SHEAR CONNECTOR SECTION

(STUD PLACEMENT ON FLANGE SPLICE PLATES IS NOT PERMITTED.)

SPAN LENGTHS

	DIM "A"	DIM "B"	DIM "C"	DIM "D"
G6	336'-7 3/8"±	95'-4 1/2"±	146'-3 3/8"±	94'-11 1/2"±
G7	339'-8 3/8"±	96'-3 1/4"±	147'-9 3/8"±	95'-7 3/4"±
G8	342'-9 3/4"±	97'-2"±	149'-3 5/8"±	96'-4 1/8"±
G9	345'-11"±	98'-0 13/16"±	150'-9 3/4"±	97'-0 7/16"±
G10	349'-0 9/16"±	98'-11 11/16"±	152'-4 1/4"±	97'-8 5/8"±

TENSION AND COMPRESSION AREAS

	DIM "E"	DIM "F"	DIM "G"	DIM "H"	DIM "J"
G6	70'-10 1/8"±	52'-5 9/16"±	87'-8 11/16"±	53'-9 1/2"±	71'-9 1/2"±
G7	71'-5 13/16"±	53'-0"±	88'-8"±	54'-3 5/16"±	72'-3 1/4"±
G8	72'-1 9/16"±	53'-6 1/2"±	89'-7 7/16"±	54'-9 3/16"±	72'-9 1/16"±
G9	72'-9 5/16"±	54'-0 15/16"±	90'-6 13/16"±	55'-3 1/16"±	73'-2 7/8"±
G10	73'-5 1/8"±	54'-7 1/2"±	91'-6 1/4"±	55'-9"±	73'-8 11/16"±

SHEAR CONNECTOR SPACING

	DIM "Y1"	DIM "Y2"	DIM "Y3"	DIM "Y4"	DIM "Y5"	QUANTITY
G6	63 SPA. @ 13" MAX. = 68'-3"±	44 SPA. @ 13" MAX. = 47'-8"±	77 SPA. @ 13" MAX. = 83'-5"±	45 SPA. @ 13" MAX. = 48'-9"±	64 SPA. @ 13" MAX. = 69'-4"±	894
G7	64 SPA. @ 13" MAX. = 69'-4"±	45 SPA. @ 13" MAX. = 48'-9"±	78 SPA. @ 13" MAX. = 84'-6"±	46 SPA. @ 13" MAX. = 49'-10"±	64 SPA. @ 13" MAX. = 69'-4"±	906
G8	64 SPA. @ 13" MAX. = 69'-4"±	45 SPA. @ 13" MAX. = 48'-9"±	79 SPA. @ 13" MAX. = 85'-7"±	46 SPA. @ 13" MAX. = 49'-10"±	65 SPA. @ 13" MAX. = 70'-5"±	912
G9	65 SPA. @ 13" MAX. = 70'-5"±	46 SPA. @ 13" MAX. = 49'-10"±	79 SPA. @ 13" MAX. = 85'-7"±	47 SPA. @ 13" MAX. = 50'-11"±	65 SPA. @ 13" MAX. = 70'-5"±	921
G10	66 SPA. @ 13" MAX. = 71'-6"±	46 SPA. @ 13" MAX. = 49'-10"±	80 SPA. @ 13" MAX. = 86'-8"±	47 SPA. @ 13" MAX. = 50'-11"±	66 SPA. @ 13" MAX. = 71'-6"±	930

NOTES:

1. ALL PROPOSED STRUCTURAL STEEL SHALL BE A709 GRADE 50.
2. HIGH STRENGTH BOLTS SHALL BE 7/8" DIAMETER A325 UNLESS OTHERWISE NOTED.
3. WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE NO MORE THAN 2" LONG, AND BE AT LEAST 1/4" FOR THICKNESSES UP TO 3/4" OR 5/16" FOR GREATER THAN 3/4" THICK.

DESIGN AGENCY: STRUCTUREPOINT

REVIEWED MDS | DATE 11/12/18 | STRUCTURE FILE NUMBER 3115526

DRAWN DSH | REVISED

DESIGNED SJF | CHECKED CLB

GIRDER ELEVATION (RIGHT BRIDGE)

BRIDGE NO. HAM-74-1840 L/R

OVER SB BEEKMAN ST. (U.S. 27) & RAMP F

HAM-75-3.84

PID No. 104667

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Name	No. of Plates	Plate 1	Plate 2
1-A	1	6"x6"x1"	N/A
1-B	2	7"x7"x1"	6"x6"x1"
1-C	2	7"x7"x1"	6"x6"x1"
1-D	2	7"x7"x1"	6"x6"x1"
1-E	2	7"x7"x1"	6"x6"x1"
1-F	1	6"x6"x1"	6"x6"x1"
1-G	0	N/A	N/A
1-H	2	7"x7"x1"	6"x6"x1"

Name	No. of Plates	Plate 1
2-A	1	6"x6"x3/8"
2-B	1	6"x6"x3/8"
2-C	1	6"x6"x3/8"
2-D	0	N/A
2-E	1	6"x6"x1"
2-F	1	6"x6"x1"
2-G	1	6"x6"x1"
2-H	0	N/A

Name	No. of Plates	Plate 1
3-A	0	N/A
3-B	1	5"x5"x3/8"
3-C	0	N/A
3-D	0	N/A
3-E	0	N/A
3-F	0	N/A
3-G	0	N/A
3-H	0	N/A

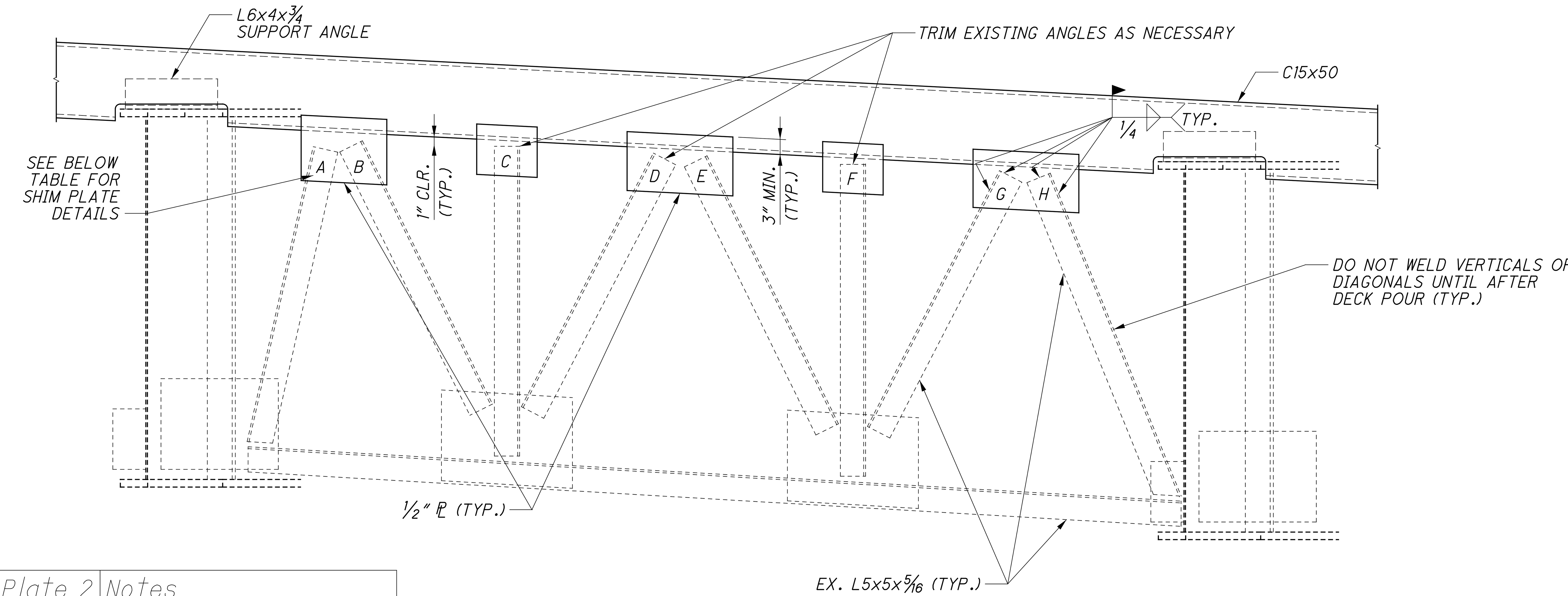
Name	No. of Plates	Plate 1
4-A	1	5"x5"x1 1/4"
4-B	1	5"x5"x1"
4-C	1	5"x5"x1"
4-D	1	5"x5"x1"
4-E	1	5"x5"x1 1/4"
4-F	1	5"x5"x7/8"
4-G	0	N/A
4-H	0	N/A

Name	No. of Plates	Plate 1	Plate 2	Notes
5-A	2	7"x7x1"	6"x6x1"	
5-B	2	7"x7x1"	6"x6x1"	
5-C	2	7"x7x1"	6"x6x1"	
5-D	2	7"x7x1"	6"x6x1"	
5-E	2	7"x7x1"	6"x6x1"	
5-F	1	6"x6x1"	N/A	TOP OF FLANGE CUT OFF
5-G	1	6"x6x1"	N/A	
5-H	1	6"x6x1"	N/A	

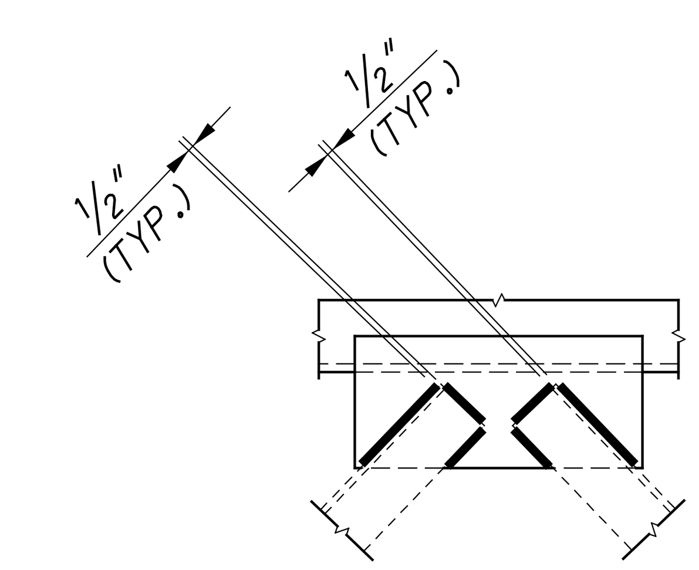
Name	No. of Plates	Plate 1	Notes
6-A	1	6"x6"x1"	1"x1" CLIP
6-B	1	6"x6"x1"	4"x4" CLIP
6-C	1	6"x6"x1"	2 1/2"x 2 1/2" CLIP
6-D	1	6"x6"x1"	
6-E	1	6"x6"x1"	4"x4" CLIP
6-F	1	6"x6"x1"	3"x3" CLIP
6-G	0	N/A	
6-H	0	N/A	

Name	No. of Plates	Plate 1	Plate 2	Notes
7-A	1	6"x6"x1/2"	N/A	12" OF WELD
7-B	1	5"x5"x1 1/4"	N/A	13" OF WELD
7-C	1	6"x6"x3/4"	N/A	
7-D	1	5"x5"x1"	N/A	15" OF WELD
7-E	2	5"x5"x1 1/4"	4 1/2"x4 1/2"x1/2"	12.5" OF WELD
7-F	1	6"x6"x1/2"	N/A	
7-G	1	6"x6"x1/2"	N/A	
7-H	0	N/A	N/A	

Name	No. of Plates	Plate 1
8-A	1	6"x6"x1/2"
8-B	1	6"x6"x1/2"
8-C	1	6"x6"x1/2"
8-D	1	6"x6"x1/2"
8-E	1	6"x6"x1/2"
8-F	1	6"x6"x1/2"
8-G	1	6"x6"x1/2"
8-H	1	6"x6"x1/2"



END CROSS FRAME REHABILITATION DETAIL



WELD TERMINATION DETAIL

TABLE LEGEND

NAME - 1-A

BAY LOCATION (SEE SHEET 22/41)

END CROSS FRAME GUSSET PLATE LOCATION (SEE DETAIL ABOVE)

NOTES:

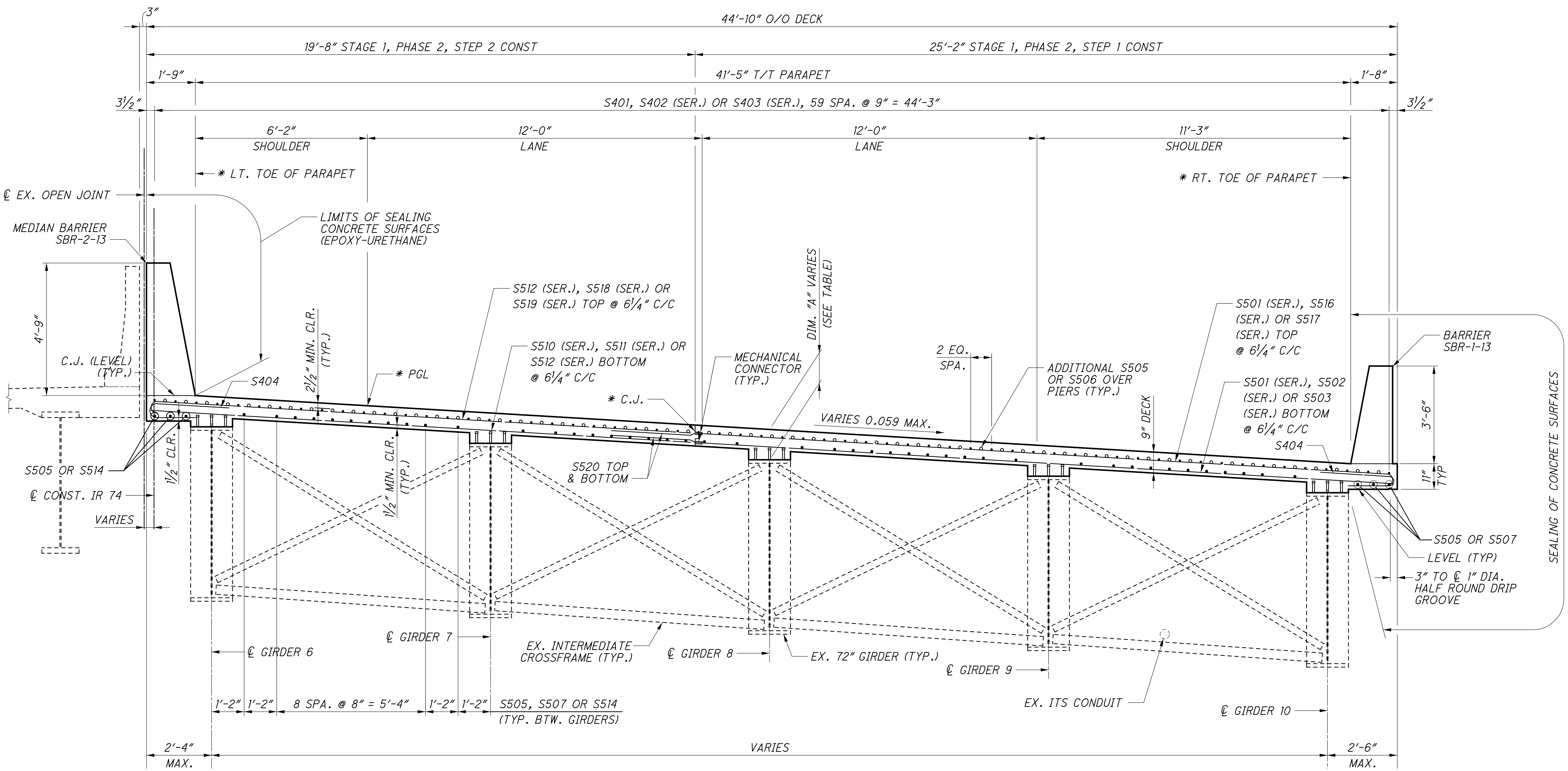
1. ALL PROPOSED STRUCTURAL STEEL SHALL BE A709 GRADE 50.
2. FOR ADDITIONAL NOTES AND DETAILS, SEE STD. DWG. GSD-1-96.

DESIGN AGENCY
STRUCTUREPOINT

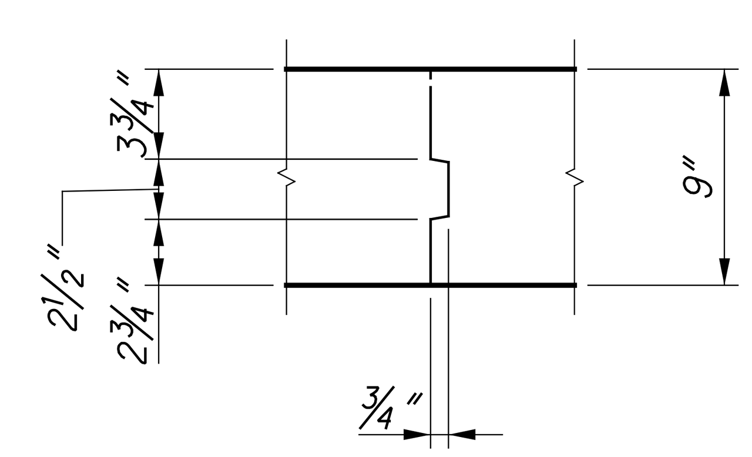
DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115526	

SUPERSTRUCTURE DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84
PID No. 104667



TRANSVERSE SECTION



CONSTRUCTION JOINT KEYWAY DETAIL

REFER TO CMS 511.12 FOR ADDITIONAL INFORMATION

DIMENSION "A" (TOP OF SLAB TO TOP OF FLANGE)				
LOCATION	℄ BRG. R.A.	℄ BRG. PIER 1	℄ BRG. PIER 2	℄ BRG. F.A.
GIRDER 6	1'-0 5/16"	11 1/4"	11 9/16"	1'-0 3/16"
GIRDER 7	1'-0 1/8"	11 9/16"	11 9/16"	1'-0"
GIRDER 8	1'-0"	11 9/16"	11 5/16"	11 11/16"
GIRDER 9	1'-0 1/4"	11 7/16"	10 15/16"	11 9/16"
GIRDER 10	1'-0 7/16"	11 1/8"	10 11/16"	11 5/8"

NOTES:

1. FOR PARAPET DETAILS SEE SHEETS 29/41 AND 30/41.
2. FOR SLAB REINFORCING PLAN SEE SHEET 26/41.
3. * SCREED ELEVATION LOCATIONS.

DESIGN AGENCY: STRUCTUREPOINT

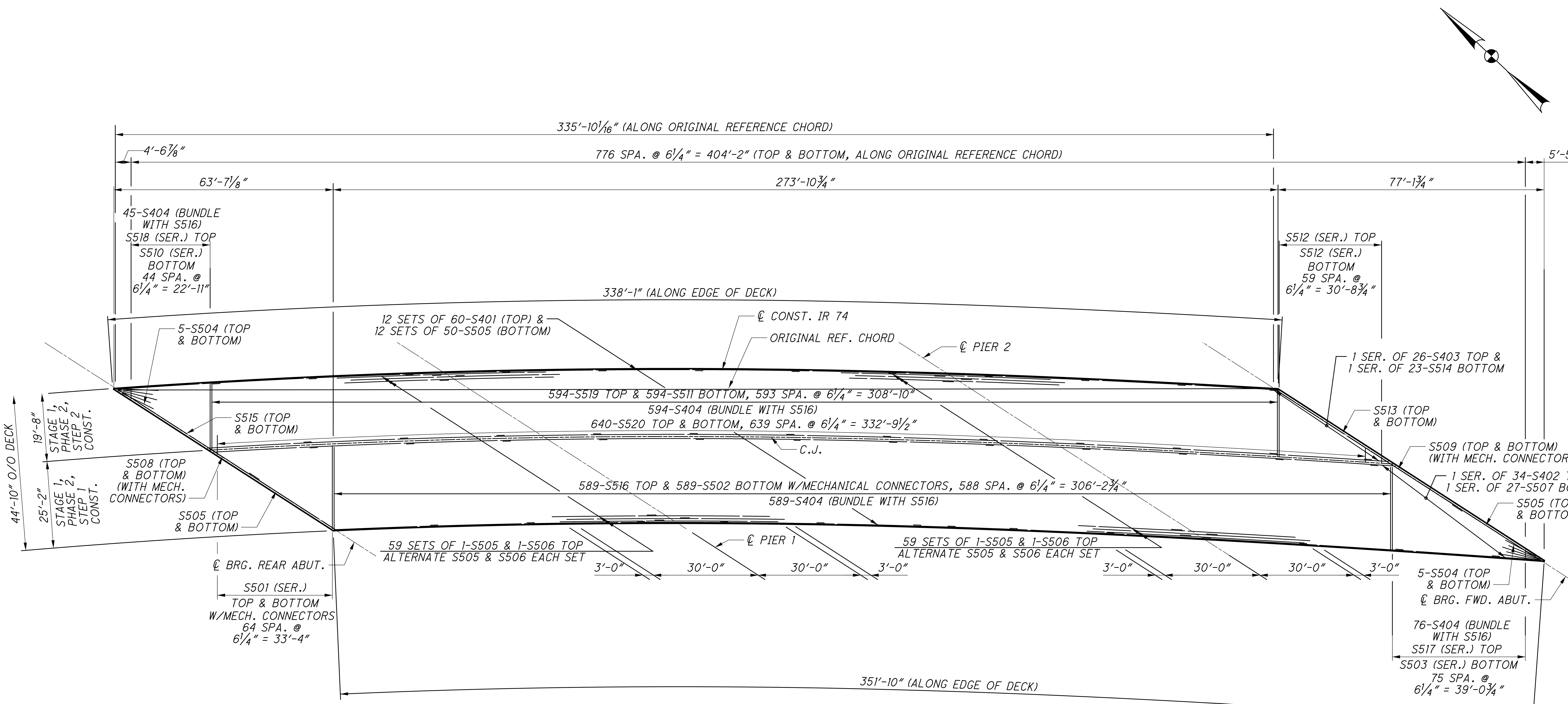
DESIGNED	CHECKED	DRAWN	REVISED	REVIEWED	DATE
SJF	CLB	BMP		MDS	09/12/18

STRUCTURE FILE NUMBER 3115526

TRANSVERSE SECTION (RIGHT BRIDGE)

BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (US 27) AND RAMP F

HAM-75-3.84
PID No. 104667



DECK REINFORCING PLAN

MINIMUM BAR LAP	
#4	2'-6"
#5 (LONGITUDINAL)	3'-1"
#5 (TRANSVERSE)	4'-0"

NOTES:

1. FOR TRANSVERSE SECTION, SEE SHEET 25/41.

2. DECK POUR SEQUENCE: CONTINUOUSLY POUR FROM ONE END TO OTHER IN EACH STEP OF CONSTRUCTION. TO AVOID UPLIFT AT THE ABUTMENT, HOLD DOWN OR COUNTER WEIGHT CAPABLE OF RESISTING 4.5K PER GIRDER SHALL BE UTILIZED.

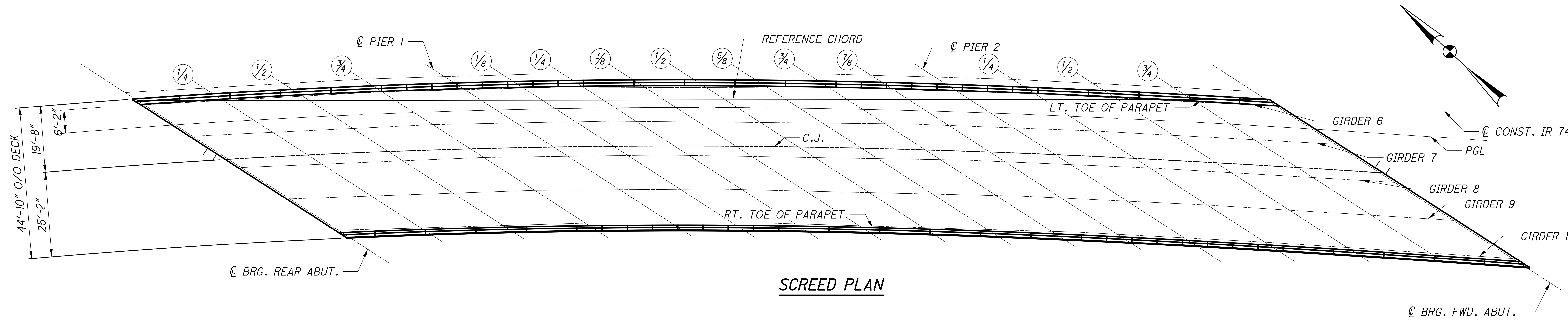
DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/14/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115526	

DECK PLAN (RIGHT BRIDGE)

BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84
PID No. 104667



SCREED PLAN

NOTES:

1. SCREED ELEVATIONS SHOWN REPRESENT THE THEORETICAL DECK SURFACE LOCATION PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.
2. FOR TOP OF HAUNCH (T.O.H.) ELEVATIONS TABLE, SEE SHEET 28/41.
3. FINAL DECK SURFACE (F.D.S.) ELEVATIONS SHOWN REPRESENT THE DECK SURFACE LOCATION AFTER ALL ANTICIPATED DEAD LOAD DEFLECTIONS HAVE OCCURRED.

SCREED ELEVATIONS TABLE

SCREED LINE	DESCRIPTION	℄ BRG. REAR ABUT.	1/4 POINT	1/2 POINT	3/4 POINT	℄ PIER NO. 1	1/8 POINT	1/4 POINT	3/8 POINT	1/2 POINT	5/8 POINT	3/4 POINT	7/8 POINT	℄ PIER NO. 2	1/4 POINT	1/2 POINT	3/4 POINT	℄ BRG. FWD. ABUT.
HAM-74-1840 SCREED ELEVATIONS																		
LT. TOE OF PARAPET	STATION	992+08.58	992+32.38	992+56.19	992+79.99	993+03.81	993+22.10	993+40.40	993+58.70	993+77.00	993+95.30	994+13.61	994+31.91	994+50.21	994+74.03	994+97.84	995+21.64	995+45.43
	OFFSET	1.22	1.26	1.30	1.34	1.39	1.42	1.45	1.46	1.51	1.54	1.58	1.60	1.63	1.66	1.69	1.72	1.74
	F.D.S. ELEV.	546.07	545.60	545.14	544.69	544.23	543.89	543.52	543.15	542.79	542.45	542.11	541.74	541.39	540.94	540.50	540.09	539.70
	DEFLECTION	0.00	0.01	0.01	0.00	0.00	0.03	0.07	0.10	0.12	0.11	0.08	0.03	0.00	-0.01	0.00	0.01	0.00
	SCREED ELEV.	546.07	545.61	545.15	544.69	544.23	543.91	543.58	543.25	542.91	542.56	542.18	541.77	541.39	540.94	540.51	540.10	539.70
PGL	STATION	992+16.86	992+40.84	992+64.84	992+88.84	993+12.85	993+31.30	993+49.76	993+68.23	993+86.70	994+05.17	994+23.65	994+42.11	994+60.55	994+84.56	995+08.54	995+32.49	995+56.40
	OFFSET	7.40	7.44	7.48	7.53	7.57	7.60	7.63	7.66	7.70	7.73	7.76	7.79	7.81	7.84	7.87	7.89	7.90
	F.D.S. ELEV.	545.57	545.11	544.68	544.18	543.74	543.38	543.01	542.67	542.29	541.92	541.58	541.26	540.92	540.54	540.09	539.67	539.29
	DEFLECTION	0.00	0.01	0.01	0.00	0.00	0.03	0.07	0.10	0.12	0.11	0.07	0.03	0.00	0.00	0.01	0.02	0.00
	SCREED ELEV.	545.57	545.12	544.69	544.17	543.74	543.41	543.08	542.77	542.41	542.02	541.66	541.30	540.92	540.54	540.10	539.69	539.29
C.J.	STATION	992+33.87	992+57.21	992+81.78	993+05.96	993+30.37	993+49.13	993+67.91	993+86.70	994+05.50	994+24.30	994+43.08	994+61.83	994+80.55	995+04.89	995+29.16	995+53.38	995+77.53
	OFFSET	19.18	19.22	19.26	19.31	19.35	19.38	19.41	19.45	19.48	19.51	19.54	19.56	19.59	19.62	19.64	19.66	19.68
	F.D.S. ELEV.	545.17	544.34	543.61	543.29	542.69	542.29	541.89	541.74	541.26	540.84	540.82	540.45	540.82	539.96	539.48	539.02	538.73
	DEFLECTION	0.00	0.01	0.01	-0.01	0.00	0.03	0.08	0.11	0.12	0.11	0.08	0.03	0.00	0.00	0.02	0.02	0.00
	SCREED ELEV.	545.17	544.35	543.62	543.28	542.69	542.32	541.96	541.85	541.39	540.95	540.90	540.48	540.82	539.96	539.49	539.04	538.73
RT. TOE OF PARAPET	STATION	992+65.88	992+90.99	993+16.14	993+41.33	993+66.58	993+86.01	994+05.47	994+24.93	994+44.36	994+63.75	994+83.09	995+02.36	995+21.57	995+46.46	995+71.19	995+95.78	996+20.23
	OFFSET	42.74	42.78	42.82	42.87	42.91	42.95	42.98	43.01	43.04	43.07	43.09	43.11	43.13	43.15	43.15	43.15	43.15
	F.D.S. ELEV.	542.60	542.15	541.69	541.16	540.67	540.31	539.98	539.72	539.45	539.25	539.05	538.85	538.67	538.43	538.18	537.96	537.78
	DEFLECTION	0.00	0.00	0.00	-0.02	0.00	0.04	0.09	0.13	0.14	0.12	0.08	0.03	0.00	0.00	0.02	0.02	0.00
	SCREED ELEV.	542.60	542.16	541.68	541.14	540.67	540.35	540.07	539.85	539.59	539.37	539.13	538.88	538.67	538.43	538.20	537.98	537.78

DESIGN AGENCY
STRUCTUREPOINT

DESIGNED SJF | CHECKED CLB | DRAWN BNM | REVISED | REVIEWED MDS | DATE 11/14/18 | STRUCTURE FILE NUMBER 3115526

SCREED PLAN (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84
PID No. 104667

HAUNCH ELEVATIONS TABLE

SCREED LINE	DESCRIPTION	℄ BRG. REAR ABUT.	¼ POINT	½ POINT	¾ POINT	℄ PIER NO. 1	⅛ POINT	¼ POINT	⅜ POINT	½ POINT	⅝ POINT	¾ POINT	⅞ POINT	℄ PIER NO. 2	¼ POINT	½ POINT	¾ POINT	℄ BRG. FWD. ABUT.
HAM-74-1840 TOP OF HAUNCH ELEVATIONS																		
GIRDER 6	STATION	992+08.80	992+32.94	992+56.74	992+80.22	993+04.24	993+22.45	993+40.83	993+59.46	993+77.86	993+96.03	994+13.98	994+32.26	994+50.62	994+74.24	994+98.31	995+22.10	995+45.63
	OFFSET	1.38	1.67	1.70	1.50	1.68	1.65	1.74	1.98	2.06	2.00	1.81	1.82	1.88	1.79	1.97	1.98	1.85
	F.D.S. ELEV.	546.07	545.60	545.14	544.69	544.23	543.89	543.52	543.15	542.79	542.45	542.11	541.74	541.39	540.94	540.50	540.09	539.70
	DEFLECTION	0.00	0.01	0.01	0.00	0.00	0.03	0.07	0.10	0.12	0.11	0.08	0.03	0.00	-0.01	0.00	0.01	0.00
	T.O.H. ELEV.	545.30	544.84	544.36	543.89	543.43	543.14	542.78	542.44	542.10	541.79	541.43	541.01	540.62	540.13	539.76	539.35	538.96
GIRDER 7	STATION	992+22.61	992+47.07	992+71.20	992+95.00	993+19.37	993+37.85	993+56.52	993+75.42	993+94.11	994+12.56	994+30.77	994+49.30	994+67.89	994+91.78	995+16.10	995+40.10	995+63.84
	OFFSET	11.65	11.95	11.99	11.79	11.99	11.96	12.05	12.29	12.37	12.31	12.11	12.11	12.16	12.05	12.20	12.20	12.07
	F.D.S. ELEV.	545.24	544.71	544.23	543.79	543.33	542.98	542.61	542.23	541.86	541.51	541.20	540.90	540.61	540.24	539.82	539.44	539.10
	DEFLECTION	0.00	0.01	0.01	0.00	0.00	0.03	0.07	0.10	0.12	0.11	0.07	0.03	0.00	0.00	0.01	0.02	0.00
	T.O.H. ELEV.	544.44	543.95	543.49	543.03	542.58	542.26	541.93	541.56	541.22	540.86	540.51	540.17	539.80	539.47	539.07	538.71	539.10
GIRDER 8	STATION	992+36.53	992+61.33	992+85.78	993+09.91	993+34.64	993+53.40	993+72.34	993+91.53	994+10.50	994+29.22	994+47.69	994+66.46	994+85.27	995+09.46	995+33.97	995+58.18	995+82.12
	OFFSET	21.84	22.14	22.19	21.99	22.19	22.16	22.25	22.49	22.56	22.49	22.30	22.29	22.33	22.24	22.36	22.35	22.22
	F.D.S. ELEV.	544.29	543.84	543.33	542.94	542.44	542.00	541.66	541.28	540.95	540.67	540.37	540.04	539.88	539.53	539.20	538.87	538.58
	DEFLECTION	0.00	0.01	0.01	-0.01	0.00	0.03	0.08	0.11	0.12	0.11	0.08	0.03	0.00	0.00	0.02	0.02	0.00
	T.O.H. ELEV.	543.49	543.12	542.53	542.14	541.66	541.30	541.01	540.60	540.33	540.03	539.70	539.29	539.10	538.76	538.43	538.09	537.76
GIRDER 9	STATION	992+50.60	992+75.73	993+00.51	993+24.97	993+50.06	993+69.09	993+88.31	994+07.79	994+27.03	994+46.00	994+64.73	994+83.73	995+02.75	995+27.20	995+51.92	995+76.33	996+00.44
	OFFSET	31.95	32.26	32.30	32.09	32.29	32.27	32.35	32.58	32.65	32.58	32.39	32.38	32.42	32.33	32.44	32.43	32.32
	F.D.S. ELEV.	543.47	542.99	542.51	542.04	541.56	541.16	540.81	540.41	540.15	539.94	539.63	539.41	539.29	538.99	538.69	538.32	538.10
	DEFLECTION	0.00	0.01	0.00	-0.01	0.00	0.03	0.08	0.12	0.13	0.11	0.08	0.03	0.00	0.00	0.02	0.02	0.00
	T.O.H. ELEV.	542.69	542.22	541.69	541.25	540.80	540.43	540.13	539.78	539.55	539.34	538.96	538.68	538.53	538.23	537.93	537.57	537.31
GIRDER 10	STATION	992+64.78	992+90.25	993+15.37	993+40.15	993+65.61	993+84.91	994+04.42	994+24.17	994+43.67	994+62.90	994+81.87	995+01.08	995+20.31	995+45.02	995+69.93	995+94.52	996+18.80
	OFFSET	41.97	42.28	42.31	42.09	42.29	42.26	42.33	42.55	42.63	42.56	42.38	42.38	42.42	42.35	42.46	42.46	42.38
	F.D.S. ELEV.	542.60	542.15	541.69	541.16	540.67	540.31	539.98	539.72	539.45	539.25	539.05	538.85	538.67	538.43	538.18	537.96	537.78
	DEFLECTION	0.00	0.00	0.00	-0.02	0.00	0.04	0.09	0.13	0.14	0.12	0.08	0.03	0.00	0.00	0.02	0.02	0.00
	T.O.H. ELEV.	541.68	541.24	540.77	540.23	539.76	539.43	539.15	538.93	538.67	538.45	538.21	537.96	537.75	537.51	537.28	537.06	536.86

NOTES:

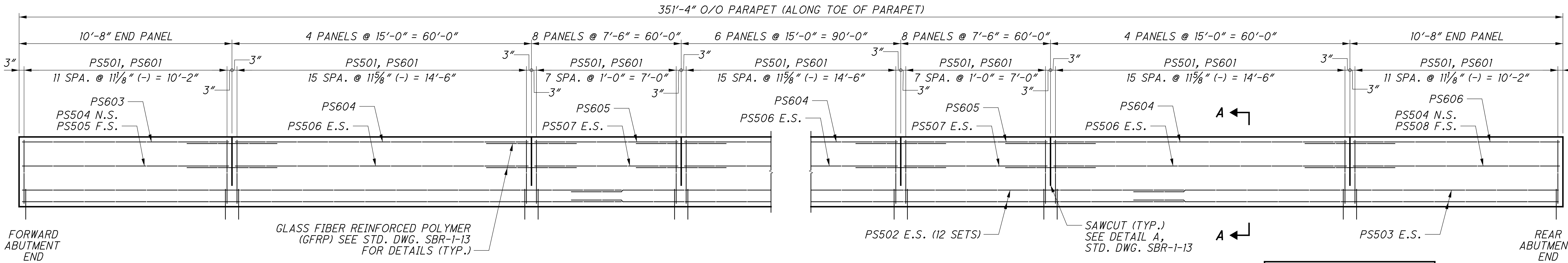
1. FOR SCREED LINE LOCATIONS AND ELEVATIONS TABLE, SEE SHEET 27/41.
2. TOP OF HAUNCH (T.O.H.) ELEVATIONS SHOWN REPRESENT THE THEORETICAL LOCATION OF THE BOTTOM OF THE DECK ABOVE THE BEAM HAUNCH PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.
3. FINAL DECK SURFACE (F.D.S.) ELEVATIONS SHOWN REPRESENT THE DECK SURFACE LOCATION AFTER ALL ANTICIPATED DEAD LOAD DEFLECTIONS HAVE OCCURRED.

DESIGN AGENCY STRUCTUREPOINT

DESIGNED SJF | CHECKED CLB | DRAWN BNM | REVISED | REVIEWED MDS | DATE 11/14/18 | STRUCTURE FILE NUMBER 3115526

SCREED PLAN (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

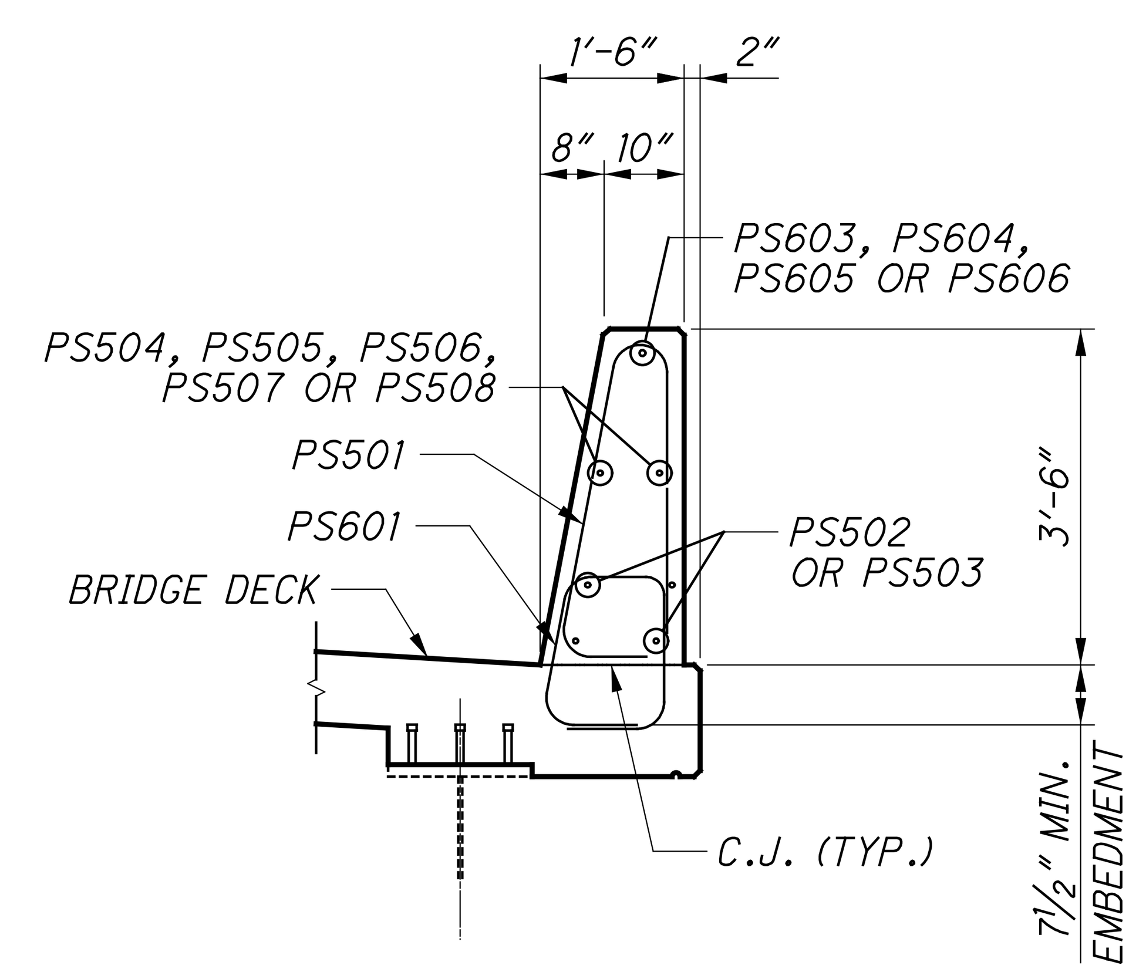
HAM-75-3.84
PID No. 104667



PARAPET ELEVATION

RIGHT PARAPET SHOWN (ALONG TOE OF PARAPET)

MINIMUM BAR LAP	
#5	2'-7"



SECTION A-A

NOTES:

1. SEE STANDARD BRIDGE DRAWING SBR-1-13 FOR ADDITIONAL DETAILS.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED SJF | CHECKED CLB | DRAWN DSH | REVIEWED MDS | DATE 11/12/18 | STRUCTURE FILE NUMBER 3115526

PARAPET DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84
PID No. 104667

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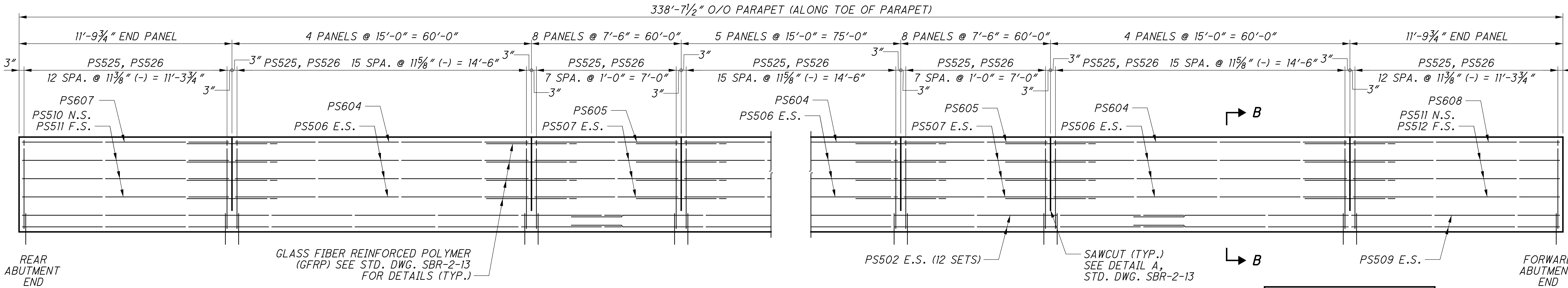
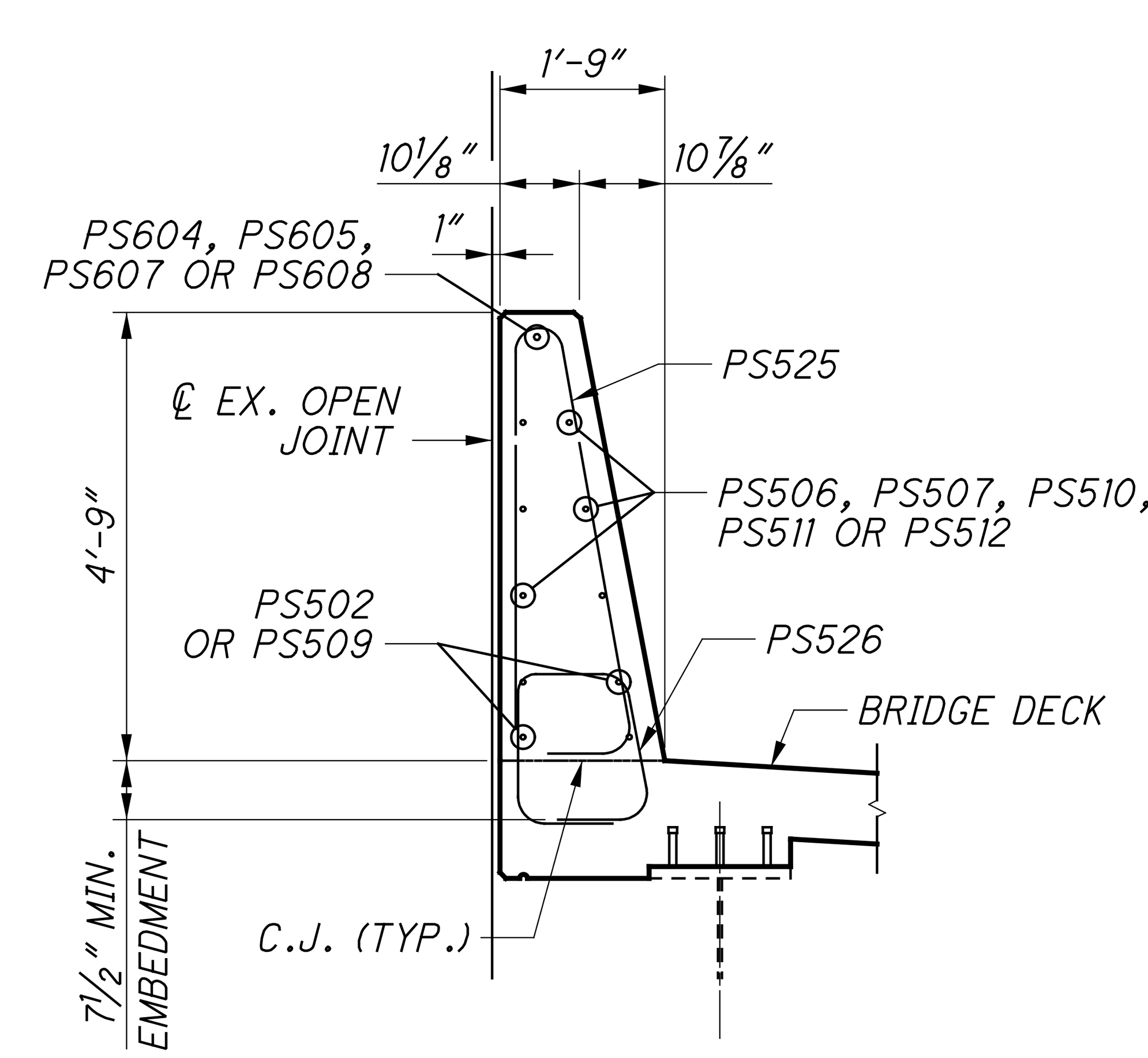


PARAPET ELEVATION
LEFT PARAPET SHOWN (ALONG F.F. PARAPET)

MINIMUM BAR LAP	
#5	2'-7"



SECTION B-B

NOTES:

1. SEE STANDARD BRIDGE DRAWING SBR-2-13 FOR ADDITIONAL DETAILS.

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DESIGN AGENCY STRUCTUREPOINT

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SJF	DSH	MDS	11/12/18
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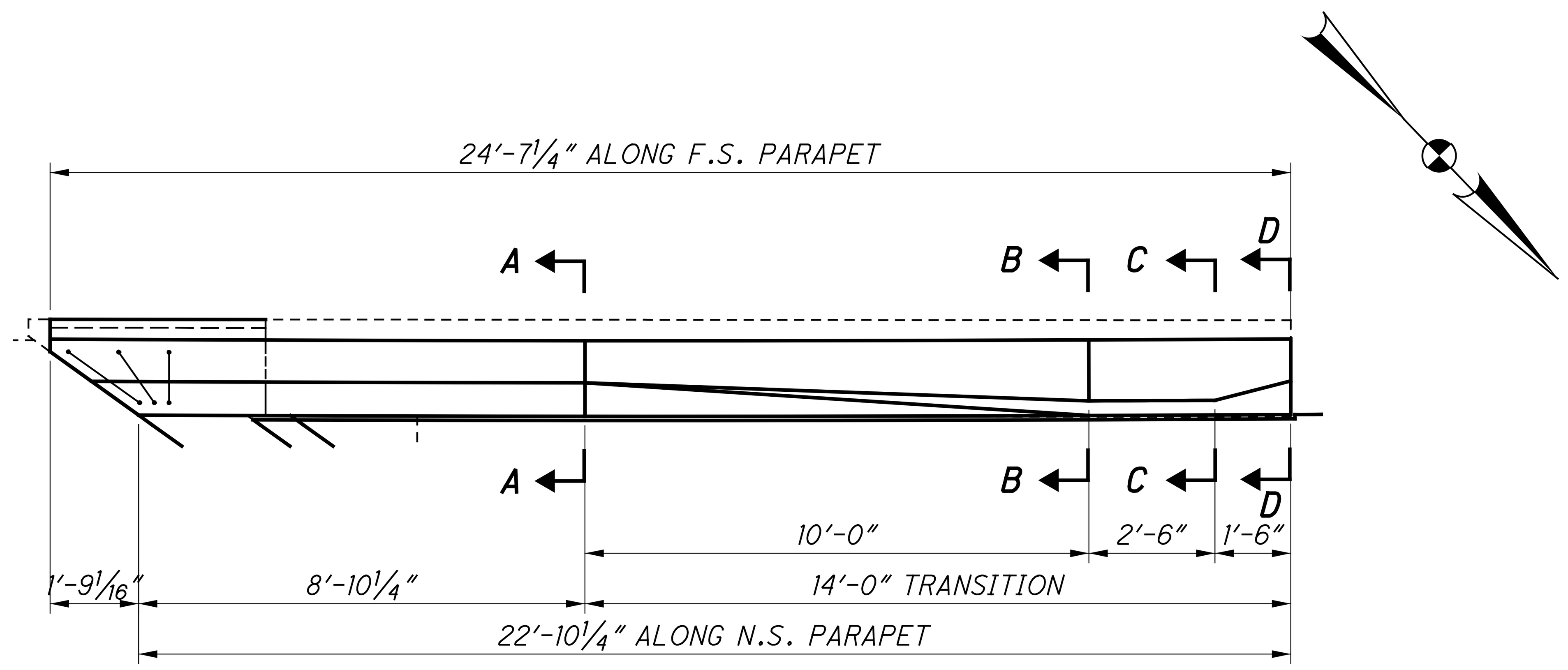
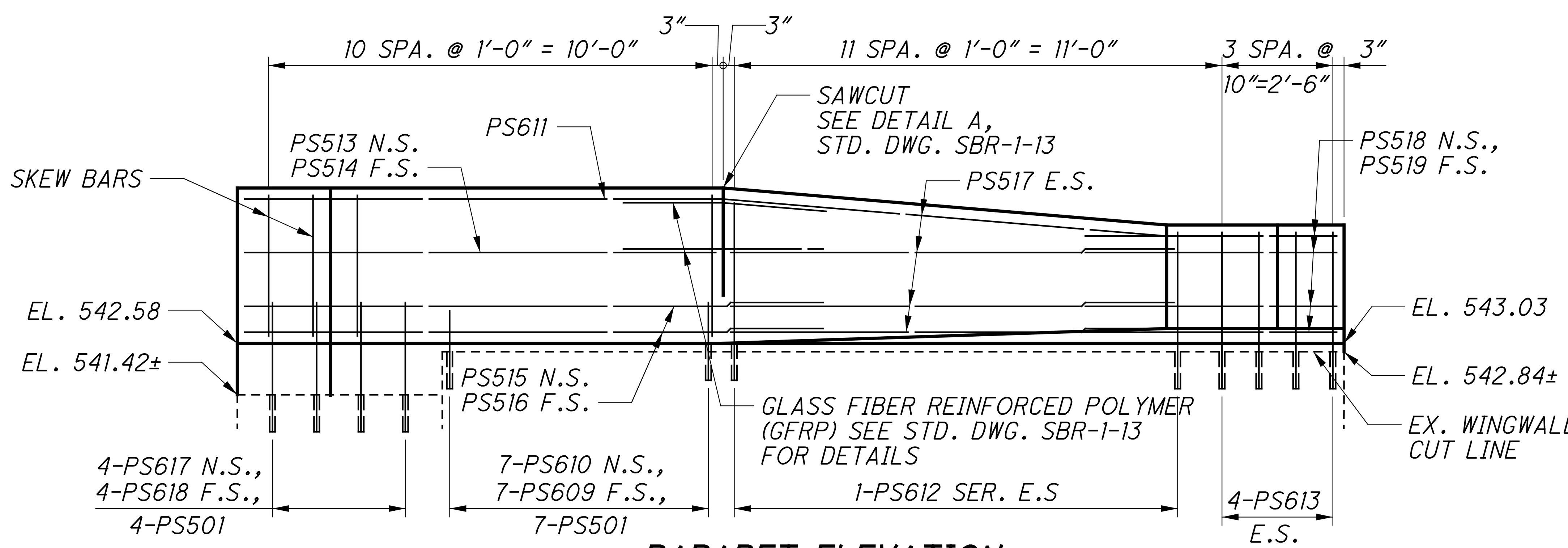
CLB		3115526	

PARAPET DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

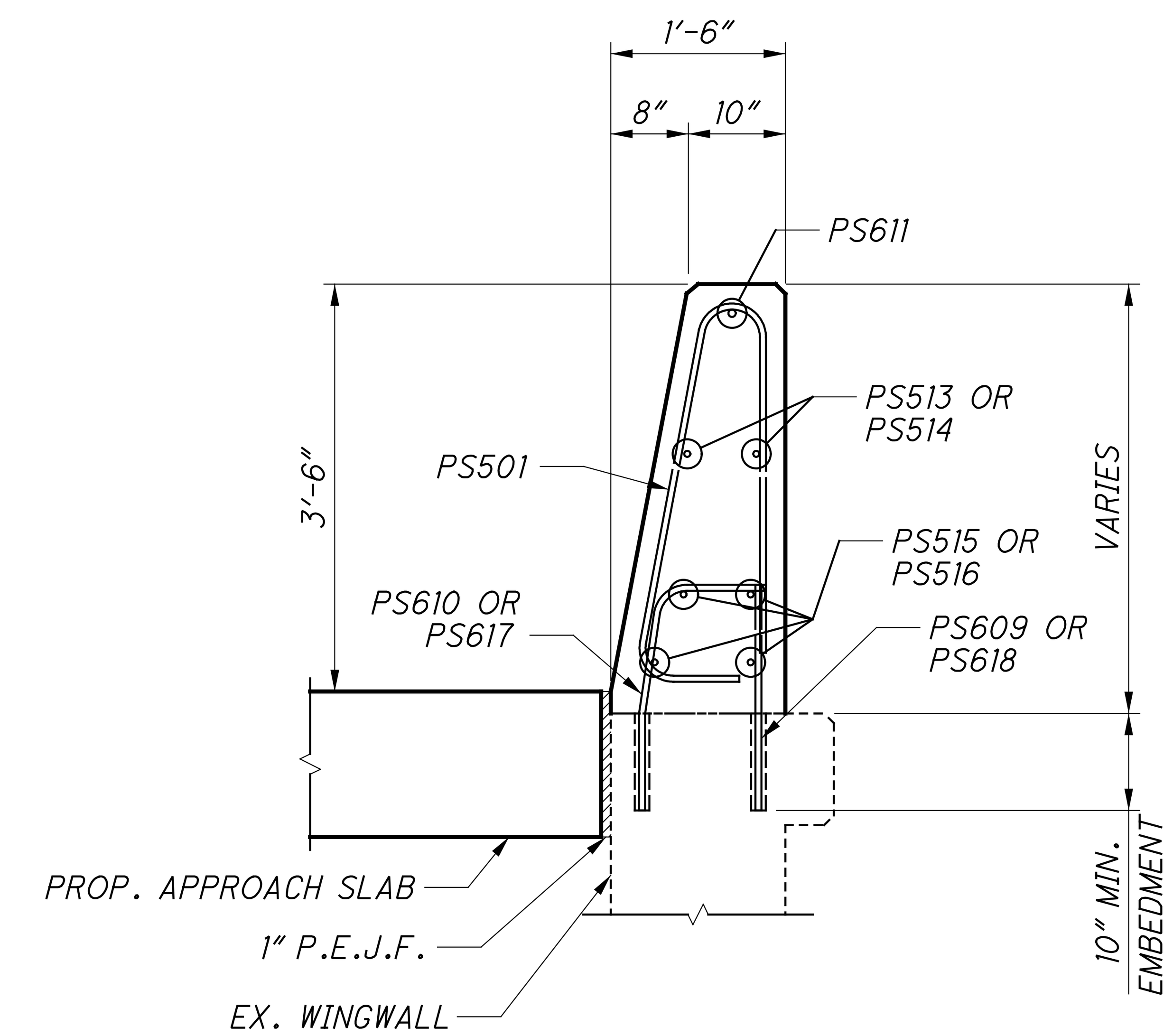
HAM-75-3.84
PID No. 104667



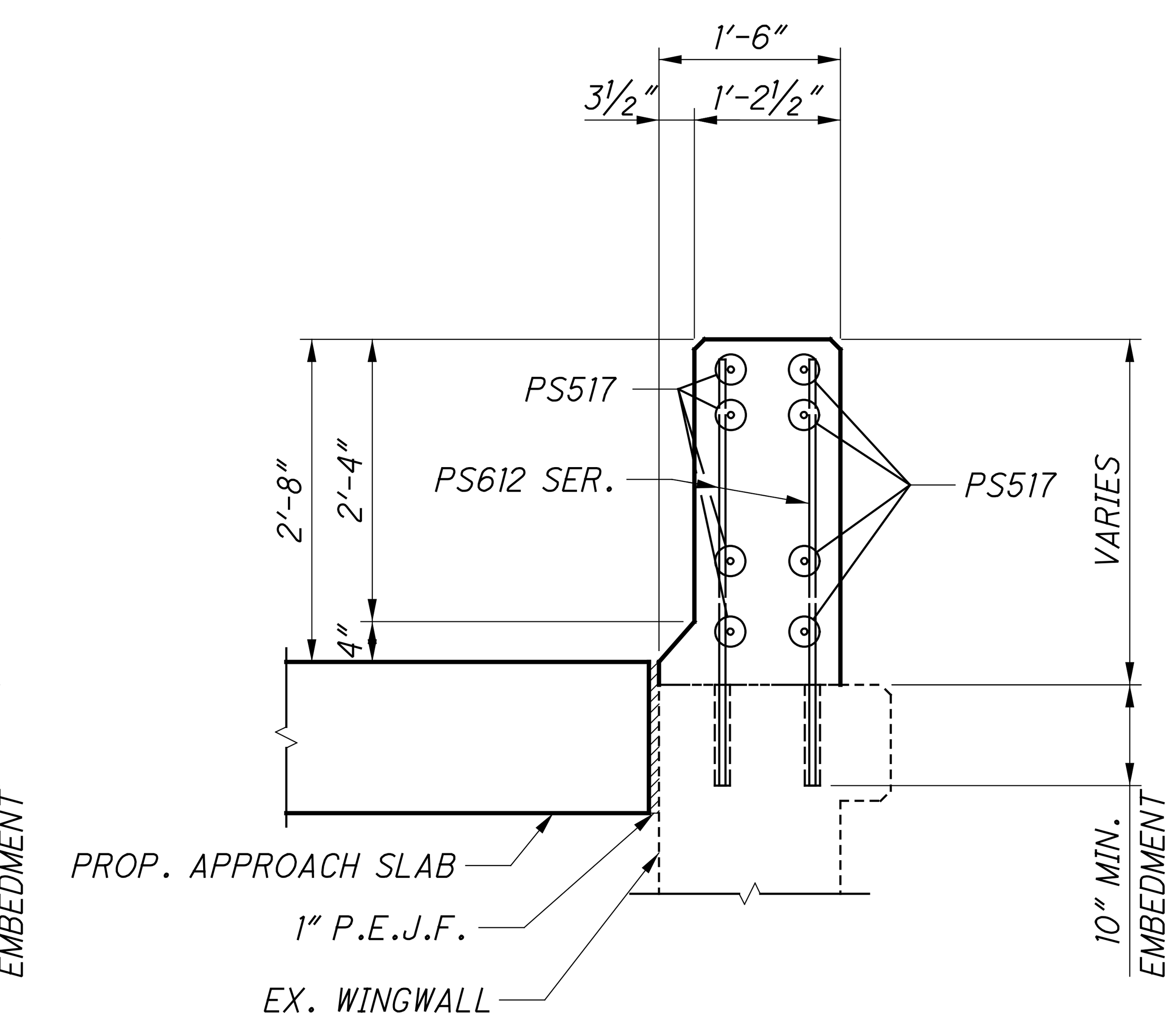
PARAPET PLAN
AT SOUTH WINGWALL REAR ABUTMENT



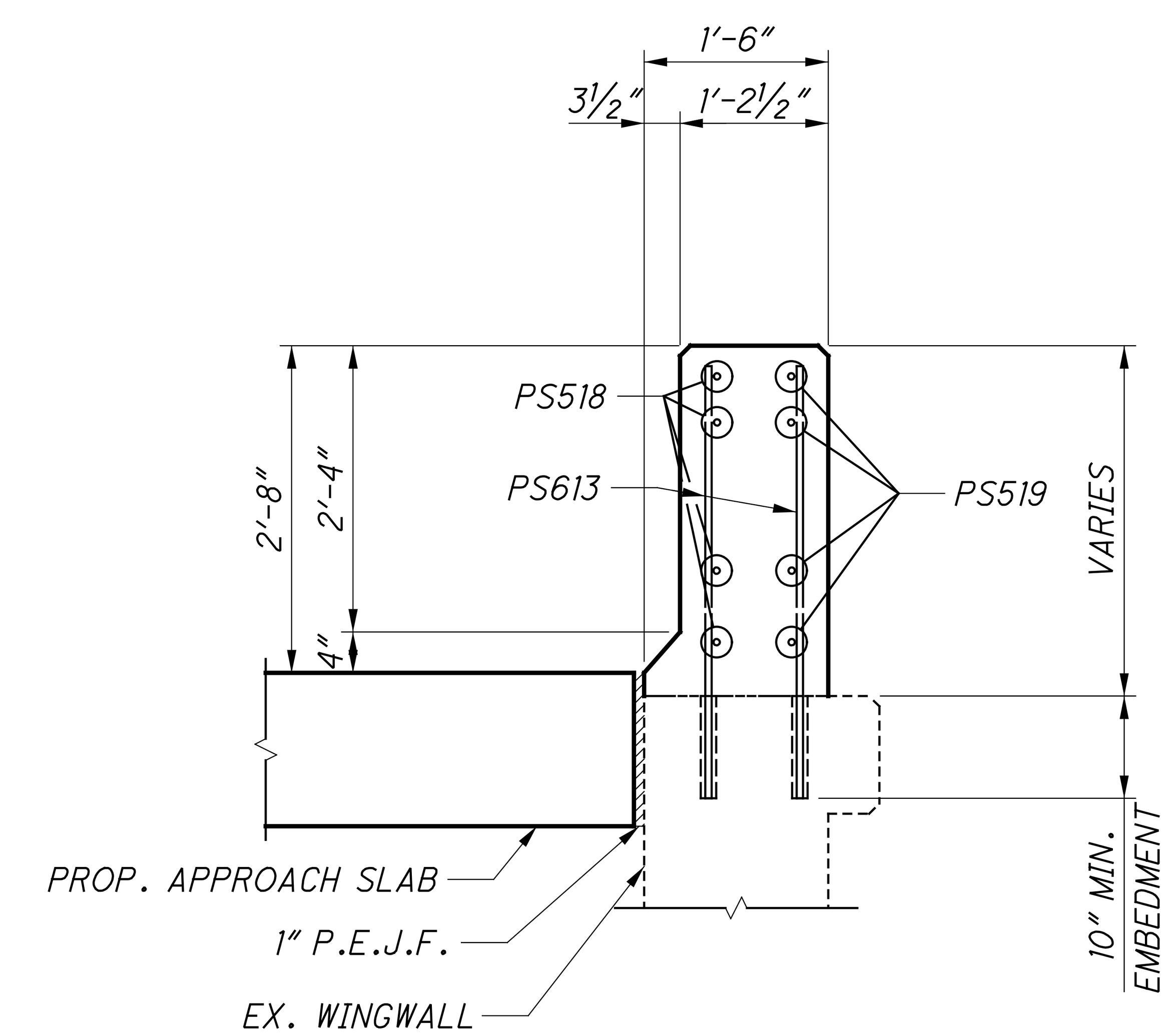
PARAPET ELEVATION
AT SOUTH WINGWALL REAR ABUTMENT



SECTION A-A



SECTION B-B



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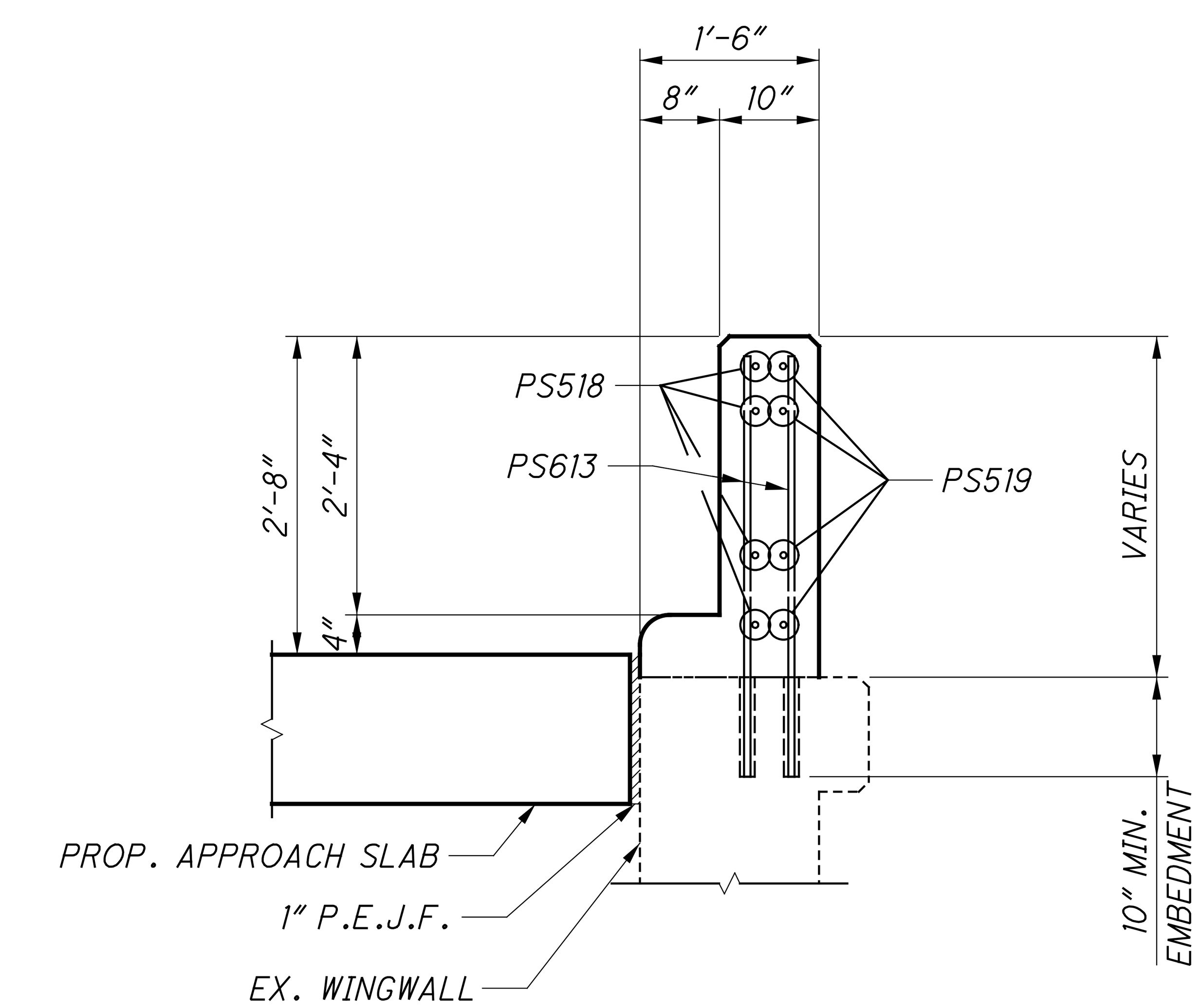

SECTION D-D

MINIMUM BAR LAP	
#5	2'-7"

NOTES:

1. SEE STANDARD BRIDGE DRAWING SBR-1-13 FOR ADDITIONAL DETAILS.

DESIGN AGENCY

AMERICAN STRUCTUREPOINT INC.
2550 CORPORATE EXCHANGE DR, STE 300
COLUMBUS, OH 43231
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www.structurepoint.com

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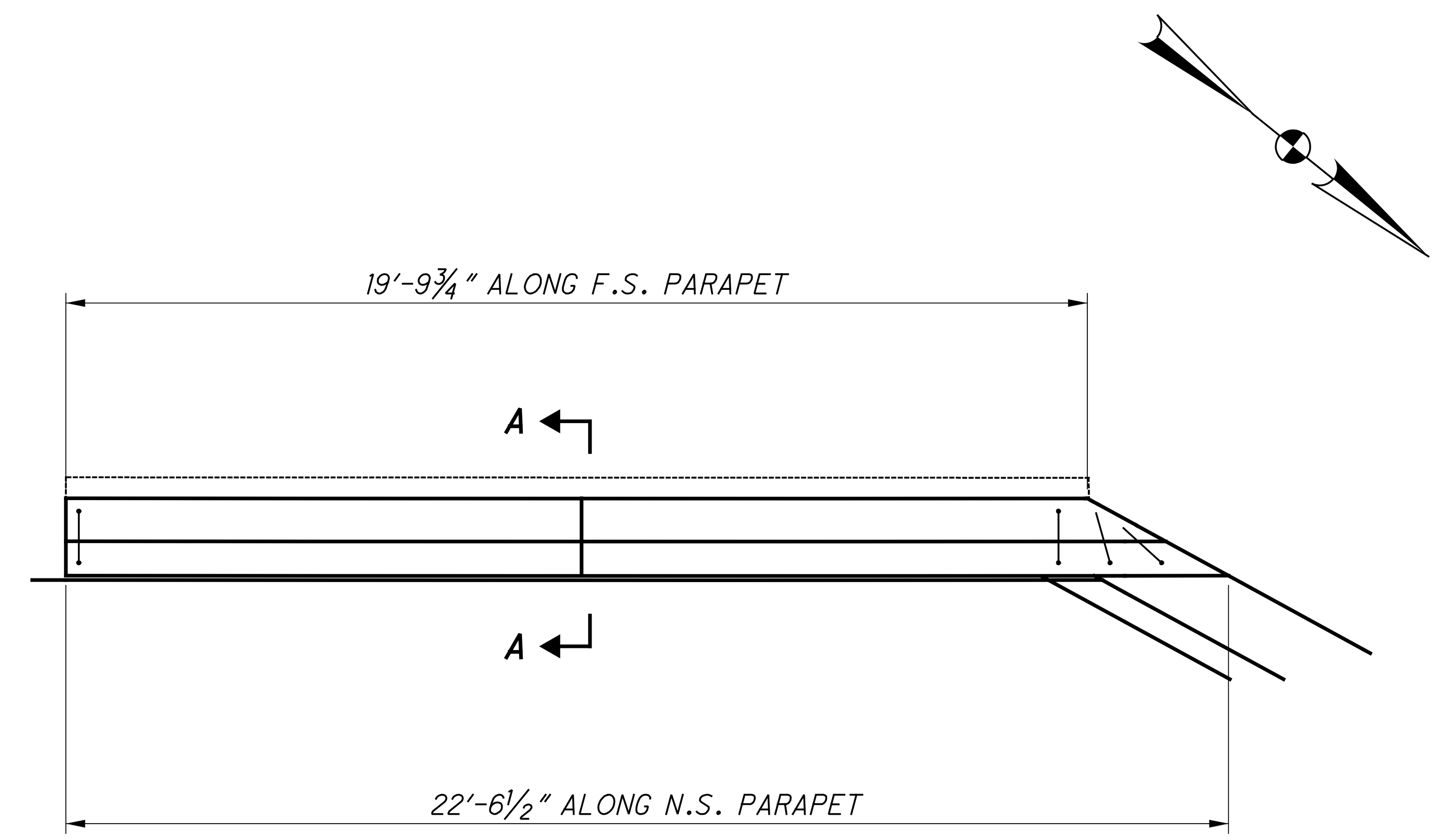
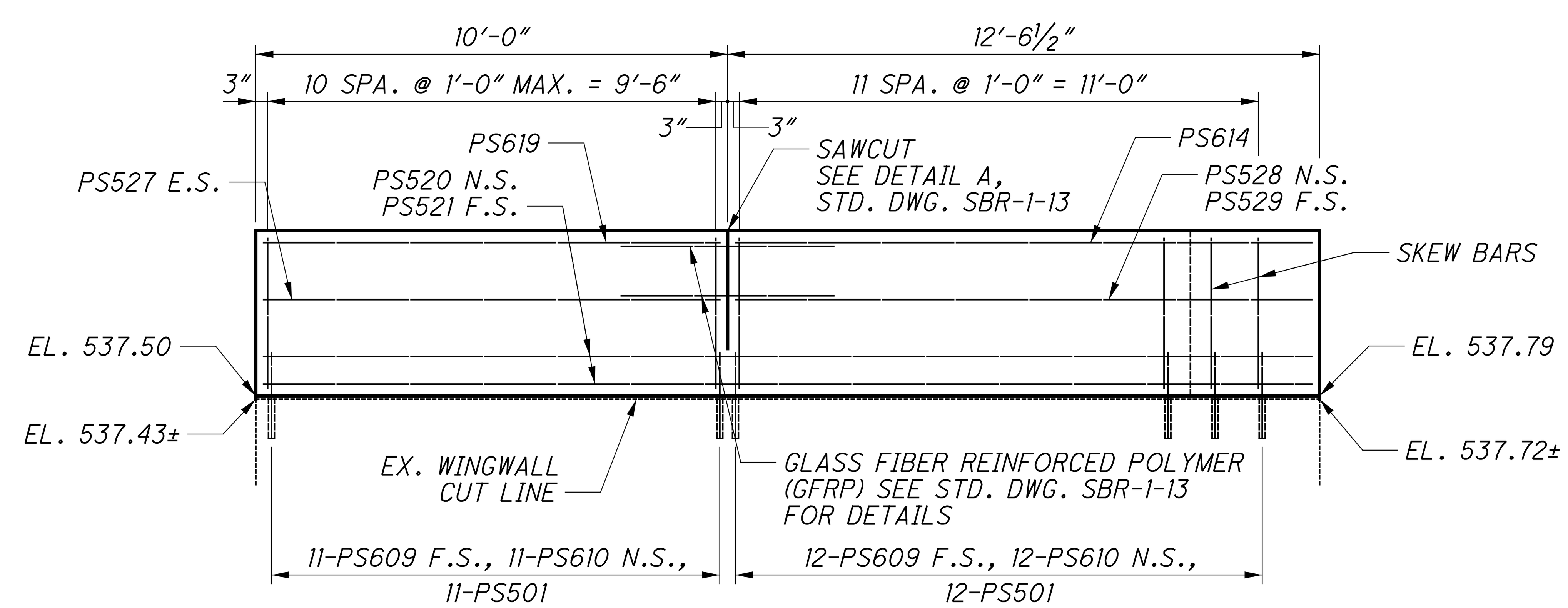
PARAPET DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84
PID No. 104667



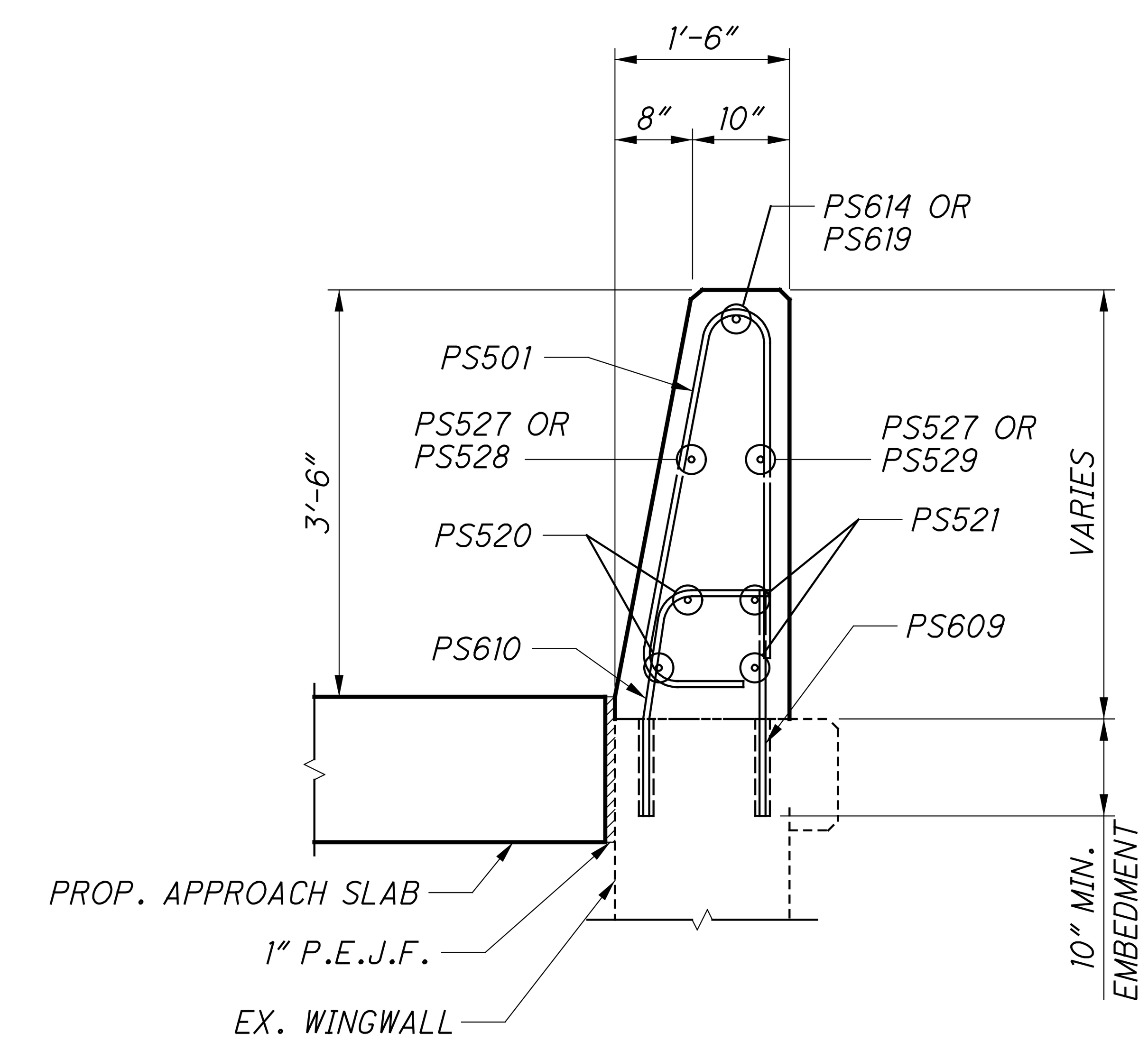
PARAPET PLAN

AT SOUTH WINGWALL FORWARD ABUTMENT



PARAPET ELEVATION

AT SOUTH WINGWALL FORWARD ABUTMENT



SECTION A-A

NOTES:

1. SEE STANDARD BRIDGE DRAWING SBR-1-13
   FOR ADDITIONAL DETAILS.

DESIGN AGENCY
STRUCTUREPOINT

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PARAPET DETAILS (RIGHT BRIDGE)

BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84
PID No. 104667

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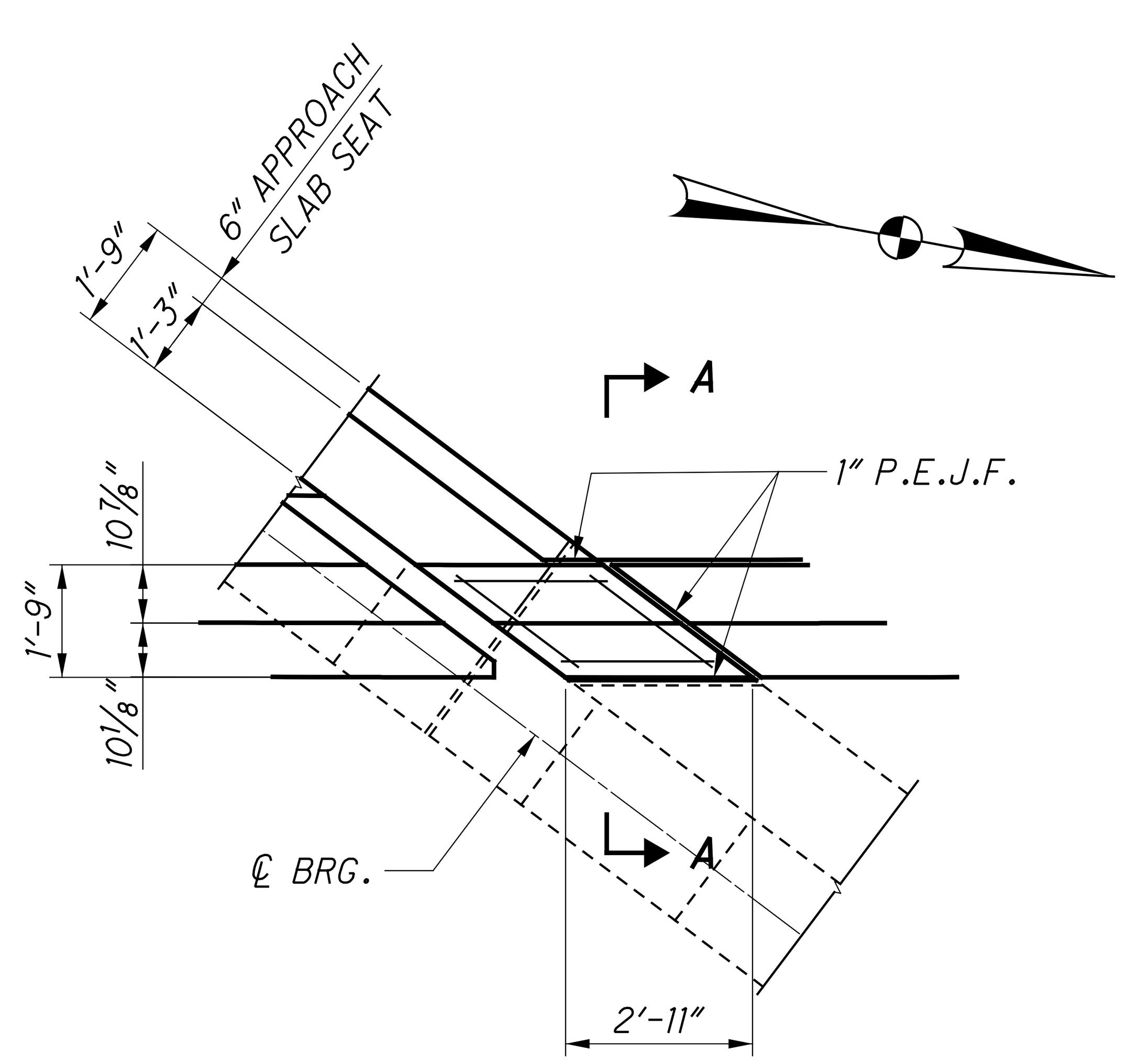
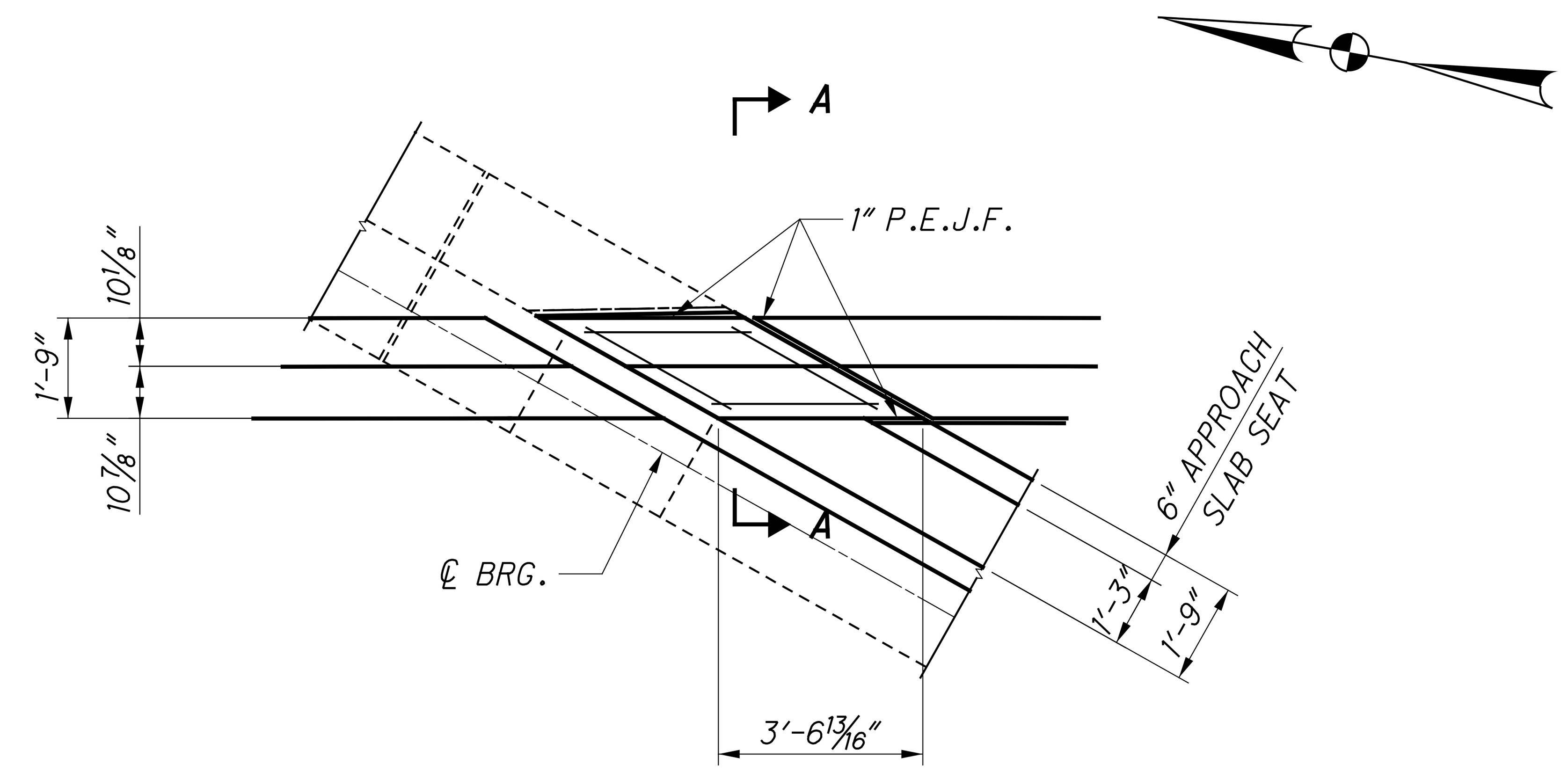
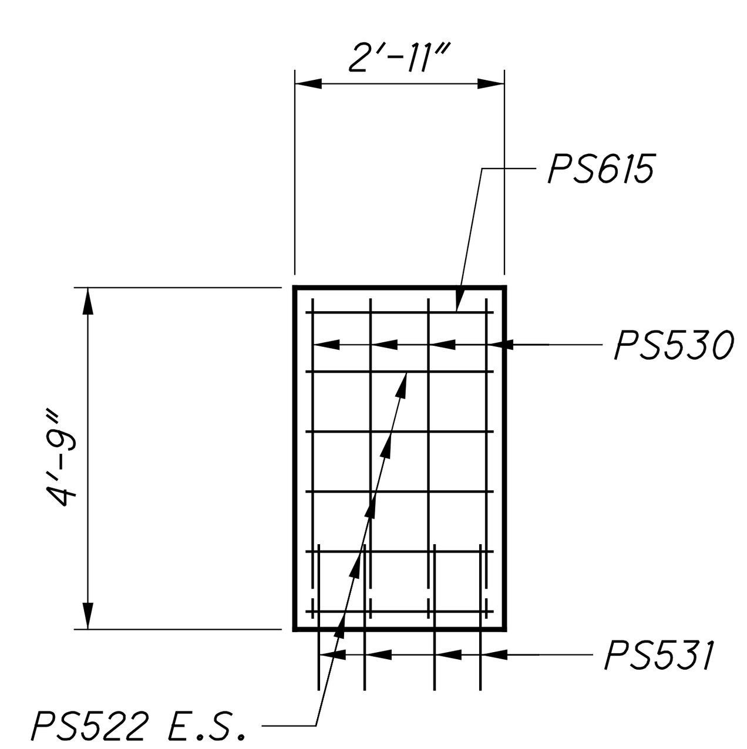


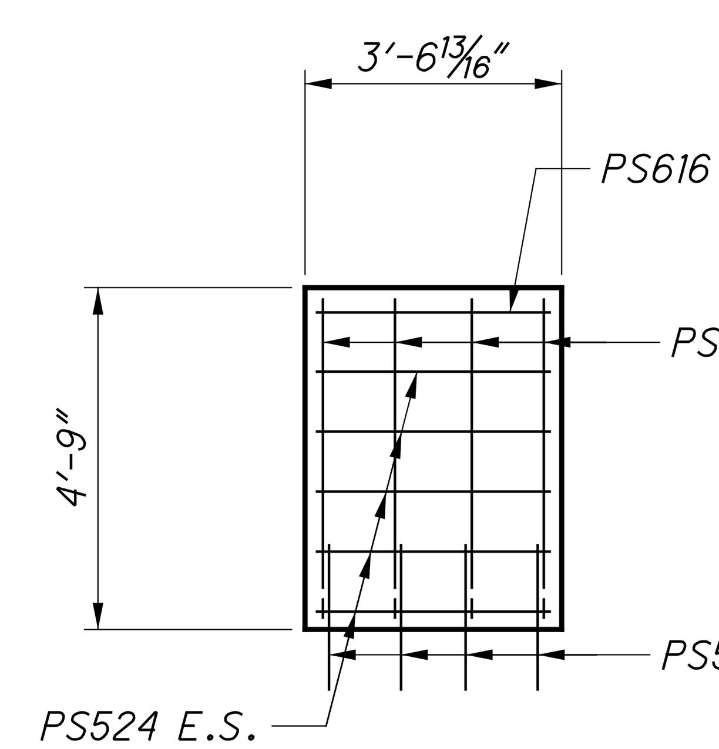
PLAN AT MEDIAN - REAR ABUTMENT



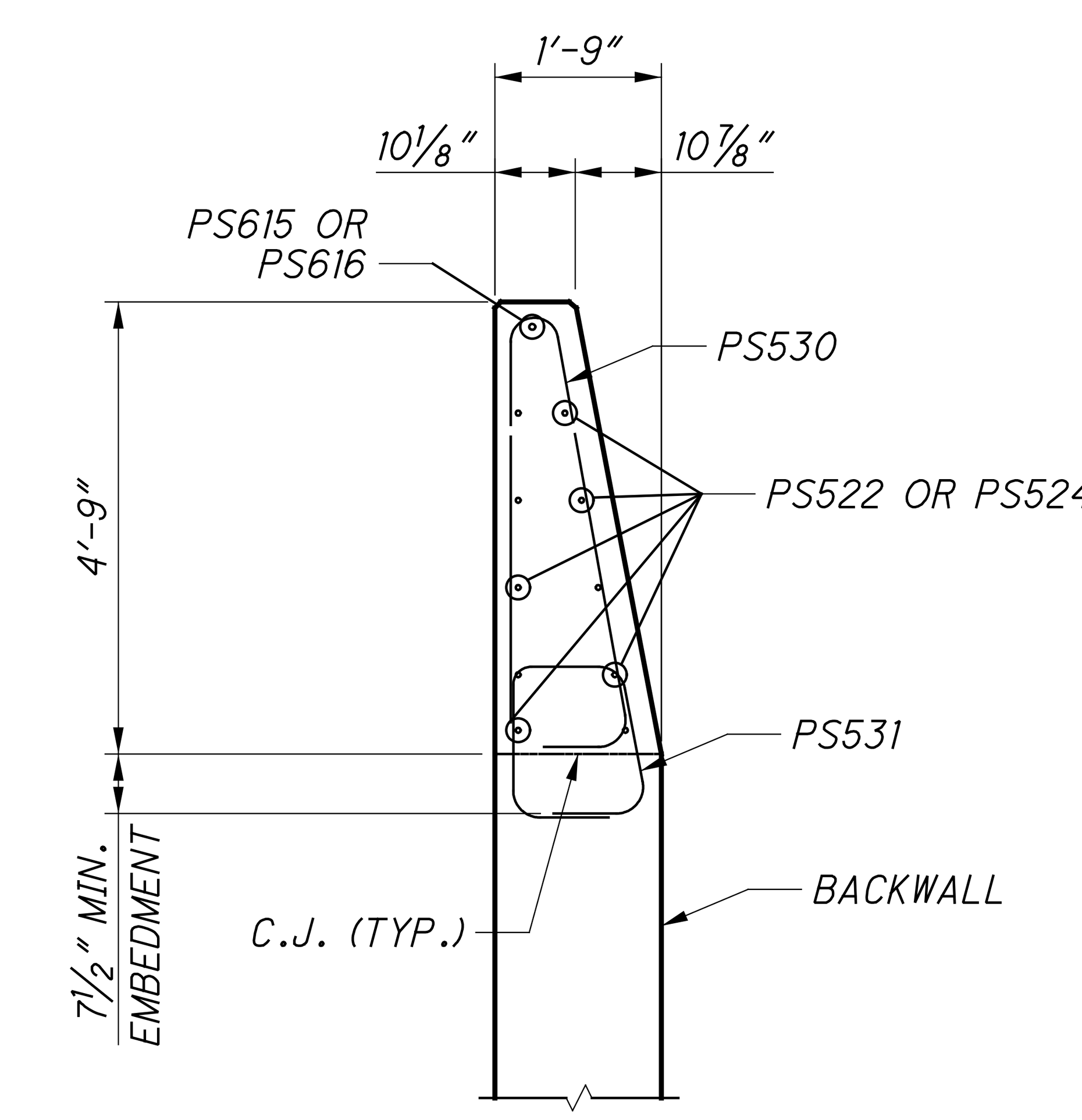
PLAN AT MEDIAN - FORWARD ABUTMENT



ELEVATION AT MEDIAN - REAR ABUTMENT



ELEVATION AT MEDIAN - FORWARD ABUTMENT



SECTION A-A

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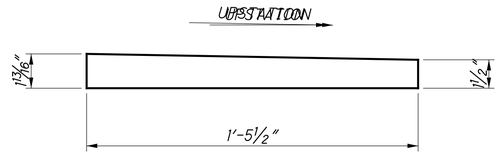
PARAPET DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84
PID No. 104667

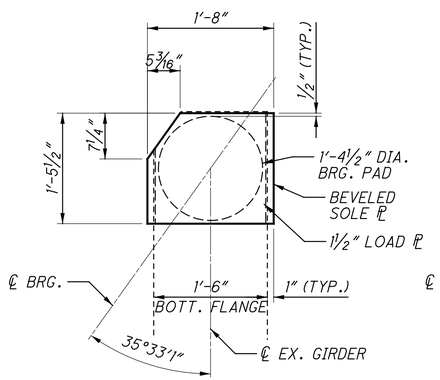
BRIDGE	BEARING SCHEDULE									BEVELED STEEL SOLE PLATE L x W	1½" STEEL LOAD PLATE L x W
	LOCATION	ASSEMBLY TYPE	NO. OF BEARINGS	SIZE D x T	NO. OF STEEL LAMINATES	ti	NO. OF ti LAYERS	te	NO. OF te LAYERS		
LEFT	REAR ABUT.	EXPANSION	5	16½" x 4⅛"	8	0.406"	8	0.25"	1	1'-5½" x 1-8"	1'-5½" x 1-5½"
LEFT	FWD. ABUT.	EXPANSION	5	16½" x 3⅛"	6	0.406"	6	0.25"	1	1'-5½" x 1-8"	1'-5½" x 1-5½"
RIGHT	REAR ABUT.	EXPANSION	5	16½" x 4⅛"	8	0.406"	8	0.25"	1	1'-5½" x 1-8"	1'-5½" x 1-5½"
RIGHT	FWD. ABUT.	EXPANSION	5	16½" x 3⅛"	6	0.406"	6	0.25"	1	1'-5½" x 1-8"	1'-5½" x 1-5½"



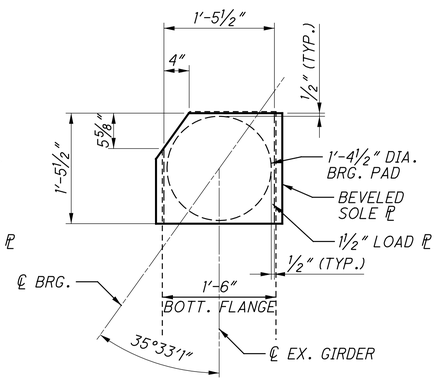
BEVELED SOLE PLATE

UNFACTORED ELASTOMERIC BEARING LOADS:

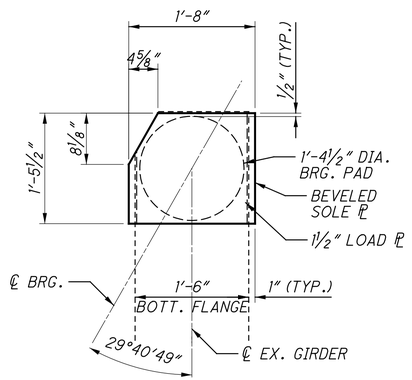
		R.A.	F.A.
DEAD LOAD	=	69 K	85 K
LIVE LOAD	=	60 K	85 K
TOTAL LOAD	=	129 K	170 K



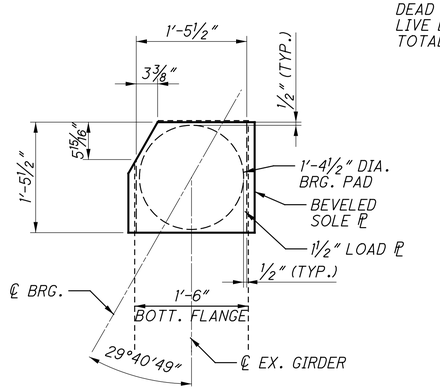
PLAN @ R.A.



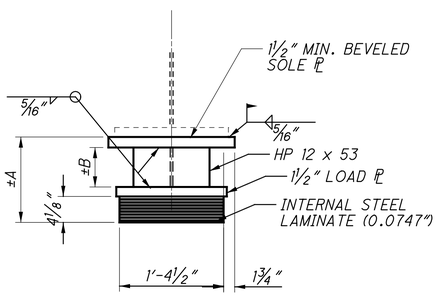
R.A. LOAD PLATE DETAIL

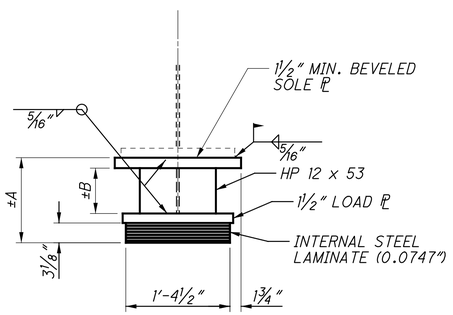


PLAN @ F.A.



F.A. LOAD PLATE DETAIL





EXPANSION BEARINGS AT ABUTMENTS

BEARING HEIGHT TABLE				
	REAR ABUTMENT		FWD. ABUTMENT	
LOCATION	A	B	A	B
G1	1'-1 9/16"	6 9/32"	1'-1 1/16"	7 5/32"
G2	1'-1 11/16"	6 13/32"	1'-2 1/8"	7 27/32"
G3	1'-1 7/8"	6 19/32"	1'-2"	7 23/32"
G4	1'-1 7/8"	6 19/32"	1'-2 3/16"	7 29/32"
G5	1'-1 15/16"	6 21/32"	1'-1 7/8"	7 19/32"
G6	1'-1 15/16"	6 5/8"	1'-1 13/16"	7 1/2"
G7	1'-1 15/16"	6 5/8"	1'-1 15/16"	7 5/8"
G8	1'-1 13/16"	6 1/2"	1'-1 13/16"	7 1/2"
G9	1'-1 15/16"	6 5/8"	1'-1 15/16"	7 5/8"
G10	1'-1 15/16"	6 5/8"	1'-1 15/16"	7 5/8"

NOTES:

1. THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED UNDER DIVISION I, SECTION 14.6.6 (METHOD A) OF THE AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGES.
2. THE STEEL LOAD PLATES FOR ELASTOMERIC BEARINGS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709, GRADE 50. THE LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS. STRUCTURAL STEEL LOAD PLATES SHALL BE PAINTED PER CMS 513 AND 514.
3. ALL BEARINGS SHALL BE MARKED PRIOR TO SHIPPING. THE MARKS SHALL INCLUDE THE BEARING LOCATION ON THE BRIDGE, AND A DIRECTION ARROW THAT POINTS UP-STATION. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.
4. CONTRACTOR SHALL VERIFY EXISTING BEARING HEIGHT PRIOR TO FABRICATION OF PROPOSED BEARING.

DESIGN AGENCY
200 CORPORATE EXCHANGE DR. STE 200
COLUMBUS, OH 43231
TEL: 614.901.7900 FAX: 614.901.7901
www.structurepoint.com
STRUCTUREPOINT LLC

DESIGNED SJF | DRAWN SJF | REVIEWED MDS | DATE 11/12/18
CHECKED CLB | REVISED | STRUCTURE FILE NUMBER 3115526

BEARING DETAILS
BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (US 27) AND RAMP F

HAM-75-3.84
PID No. 104667

34 / 41

35 / 120

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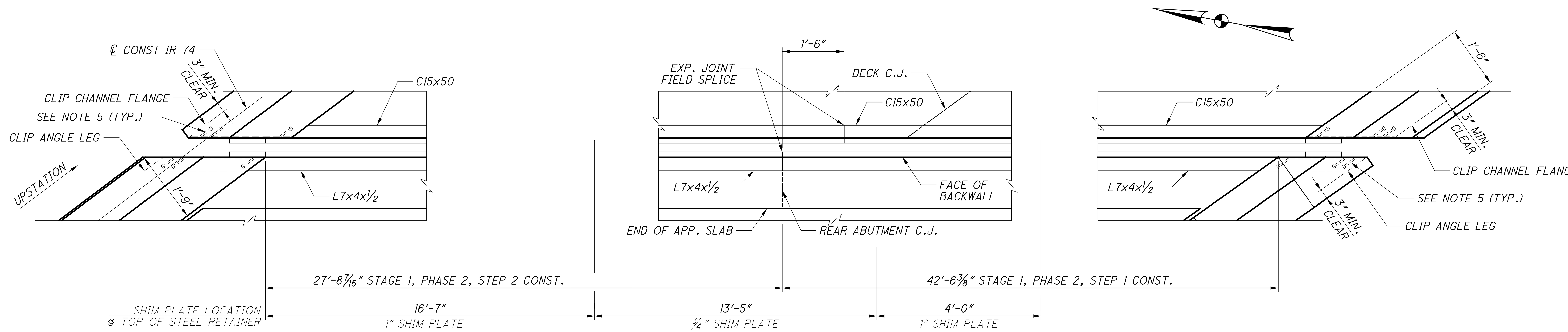

PARTIAL PLAN - REAR ABUTMENT
EXPANSION JOINT DETAILS

NOTES:

1. SEE STD. DWG. EXJ-4-87 FOR ADDITIONAL DETAILS.
2. ALL CHANNELS, ANGLES AND PLATES SHALL BE ASTM A709 GRADE 50.
3. COAT ALL STEEL PARTS OF THE JOINT ASSEMBLY ACCORDING TO 516.
4. FOR ADDITIONAL STRIP SEAL DETAILS, SEE SHEET 37/41.
5. SHEAR STUDS SHALL BE WELDED AT AN ANGLE TO MAINTAIN CLEARANCE IN PARAPET.

DESIGN AGENCY
STRUCTUREPOINT

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EXPANSION JOINT DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84
PID No. 104667

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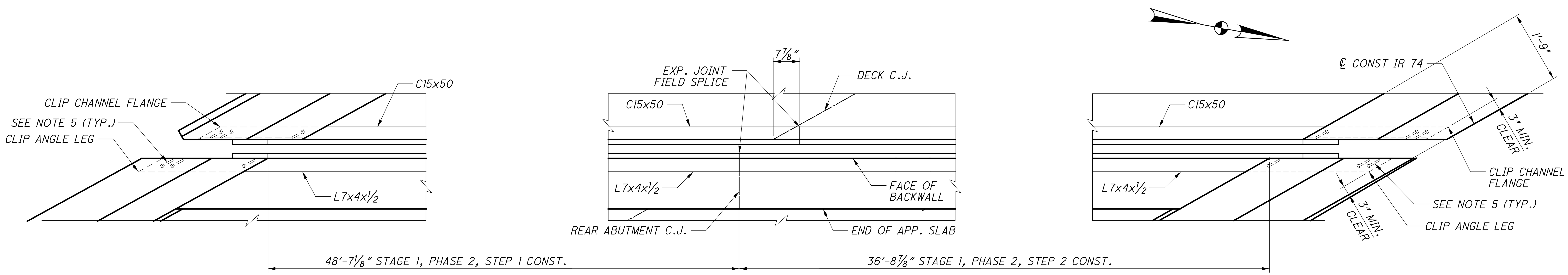

PARTIAL PLAN - FORWARD ABUTMENT
EXPANSION JOINT DETAILS

NOTES:

1. SEE STD. DWG. EXJ-4-87 FOR ADDITIONAL DETAILS.
2. ALL CHANNELS, ANGLES AND PLATES SHALL BE ASTM A709 GRADE 50.
3. COAT ALL STEEL PARTS OF THE JOINT ASSEMBLY ACCORDING TO 516.
4. FOR ADDITIONAL STRIP SEAL DETAILS, SEE SHEET 37/41.
5. SHEAR STUDS SHALL BE WELDED AT AN ANGLE TO MAINTAIN CLEARANCE IN PARAPET.

DESIGN AGENCY: STRUCTUREPOINT

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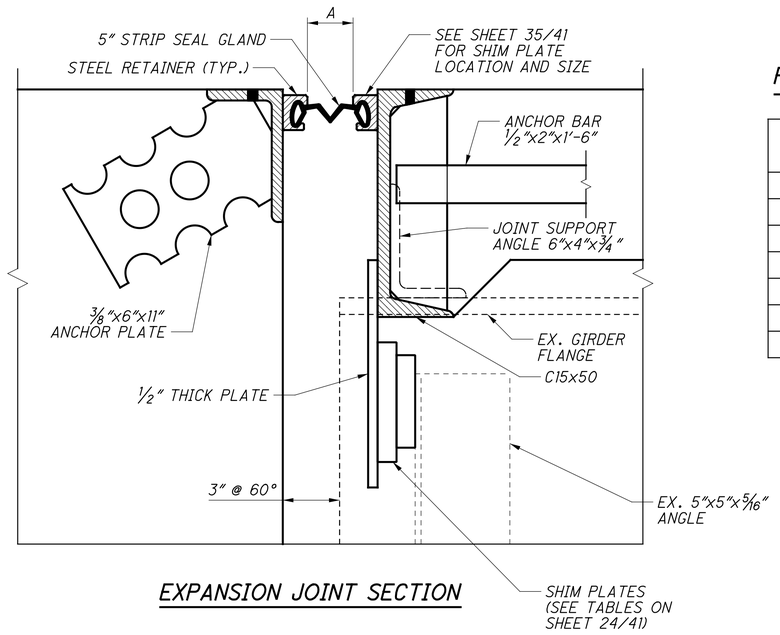
EXPANSION JOINT DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84
PID No. 104667



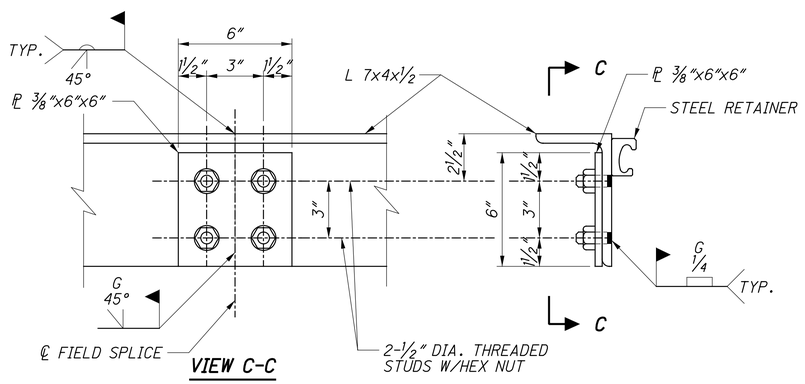
EXPANSION JOINT SECTION

REAR 5" STRIP SEAL DETAIL

AMBIENT TEMP.	DIMENSION "A" (IN.)
30°	2⅞"
40°	2¾"
50°	2¹¹⁄₁₆"
60°	2⅝"
70°	2½"
80°	2⁷⁄₁₆"
90°	2⁵⁄₁₆"

FWD 5" STRIP SEAL DETAIL

AMBIENT TEMP.	DIMENSION "A" (IN.)
30°	2¹¹⁄₁₆"
40°	2¹¹⁄₁₆"
50°	2⅝"
60°	2⅝"
70°	2⁹⁄₁₆"
80°	2⁹⁄₁₆"
90°	2½"



VIEW C-C

END OF BACKWALL ANGLE FIELD SPLICE DETAILS

(FOR ADDITIONAL DETAILS, SEE STD. DWG. EXJ-4-87)

NOTES:

1. FOR ADDITIONAL STRIP SEAL JOINT DETAILS AND NOTES, SEE STANDARD DWG. EXJ-4-87.

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2500 CORPORATE EXCHANGE DR. STE 200
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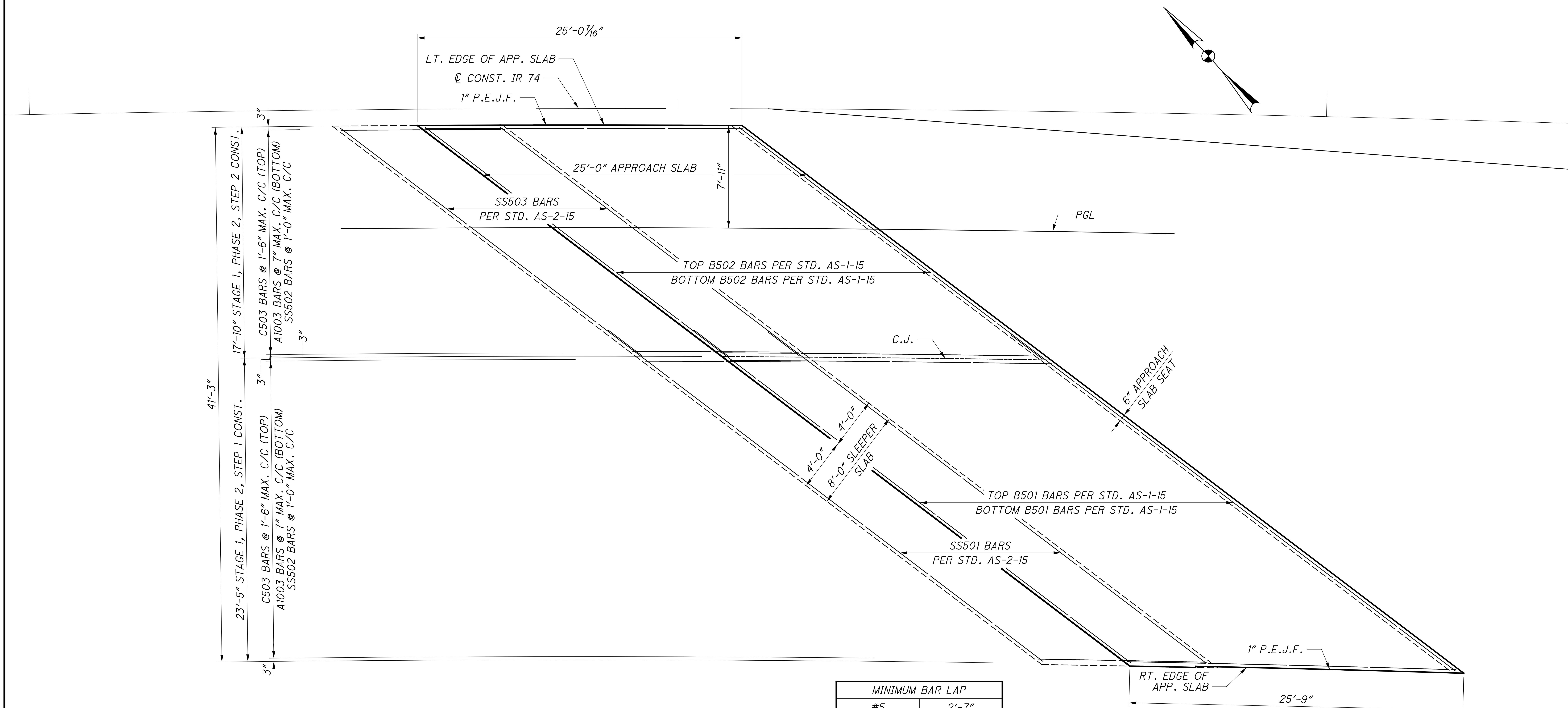
EXPANSION JOINT DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667

37 / 41

38
120



MINIMUM BAR LAP	
#5	2'-7"

PLAN

REAR APPROACH SLAB

NOTES:

1. FOR STANDARD APPROACH SLAB DETAILS, SEE STANDARD BRIDGE DWG. AS-1-15 AND STANDARD BRIDGE DWG. AS-2-15.

APPROACH SLAB ELEVATIONS

APPROACH LINE	DESCRIPTION	BEGIN REAR SLEEPER SLAB	BEGIN REAR APPROACH SLAB	END REAR SLEEPER SLAB	END REAR APPROACH SLAB	STRUCTURE LIMITS	BEGIN FWD. APPROACH SLAB	BEGIN FWD. SLEEPER SLAB	END FWD. APPROACH SLAB	END FWD. SLEEPER SLAB
LT. EDGE APP. SLAB	STATION	991+73.34	991+79.89	991+86.48	992+04.94		995+50.01	995+66.81	995+75.02	995+83.24
	OFFSET	1.24	1.25	1.27	1.30		1.74	1.74	1.74	1.73
	ELEVATION	545.52	546.64	545.26	546.16		539.62	538.09	539.21	537.83
PGL	STATION	991+81.24	991+87.85	991+94.48	992+13.08		995+61.00	995+77.86	995+86.04	995+94.25
	OFFSET	7.34	7.42	7.43	7.39		7.90	7.90	7.90	7.89
	ELEVATION	545.01	546.13	544.75	545.64		539.27	537.76	538.89	537.52
C.J.	STATION	991+97.74	992+03.77	992+10.16	992+29.03		995+82.52	995+99.40	996+07.59	996+15.80
	OFFSET	19.12	19.42	19.43	19.17		19.90	19.90	19.90	19.89
	ELEVATION	543.99	545.11	543.74	544.64		538.66	537.20	538.35	537.00
RT. EDGE APP. SLAB	STATION	992+28.65	992+35.55	992+42.48	992+61.80		996+24.93	996+42.11	996+50.34	996+58.71
	OFFSET	42.67	42.67	42.68	42.64		40.15	40.15	40.15	40.14
	ELEVATION	542.01	543.13	541.75	542.63		537.82	536.34	537.48	536.12

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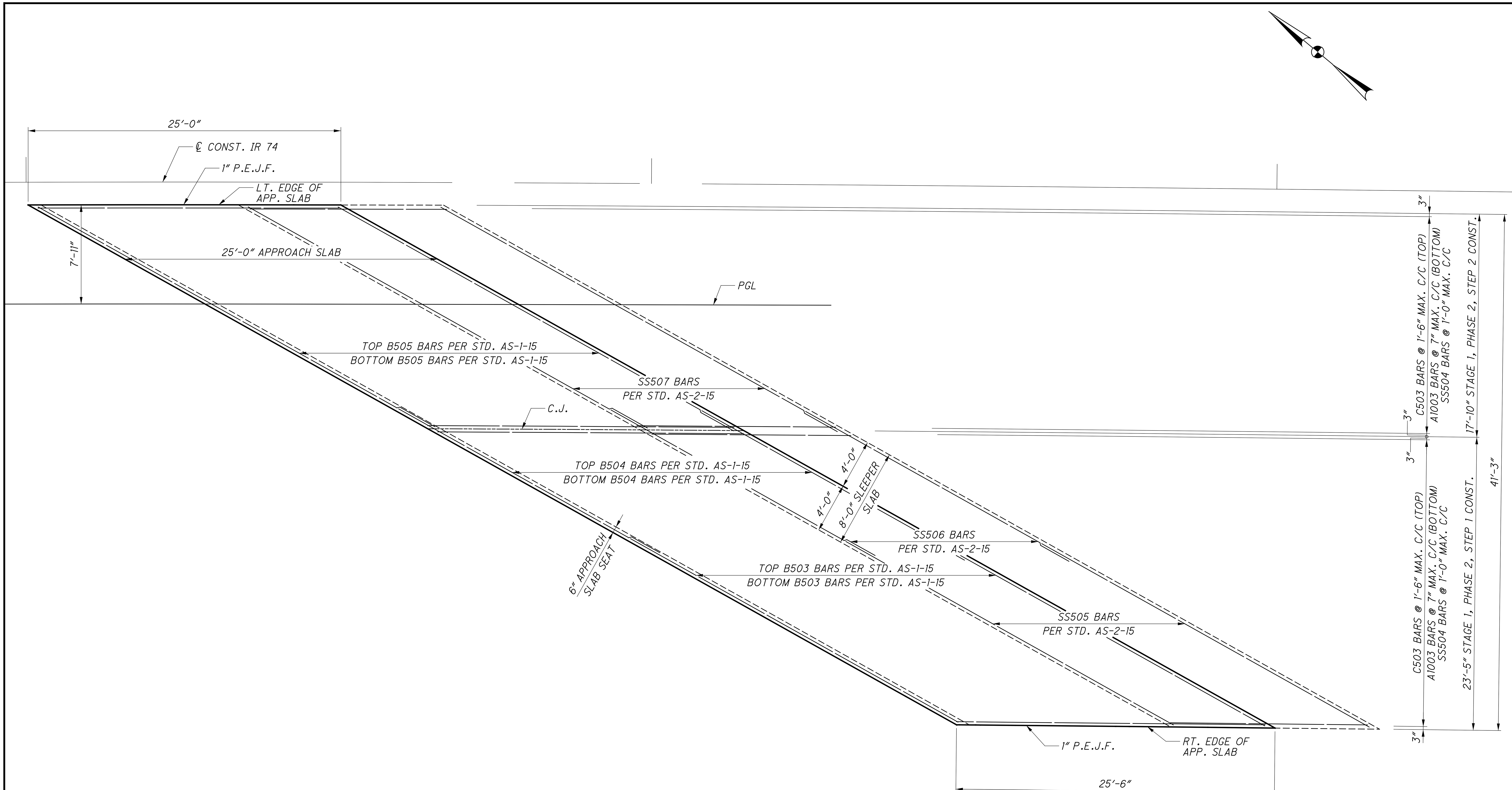
CLB		3115526	

APPROACH SLAB DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84
PID No. 104667



PLAN

FORWARD APPROACH SLAB

MINIMUM BAR LAP	
#5	2'-7"

NOTES:

1. FOR STANDARD APPROACH SLAB DETAILS, SEE STANDARD BRIDGE DWG. AS-1-15 AND STANDARD BRIDGE DWG. AS-2-15.

2. FOR APPROACH SLAB ELEVATIONS, SEE SHEET 38/41.

DESIGN AGENCY: STRUCTUREPOINT

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APPROACH SLAB DETAILS (RIGHT BRIDGE)

BRIDGE NO. HAM-74-1840 L/R

OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84

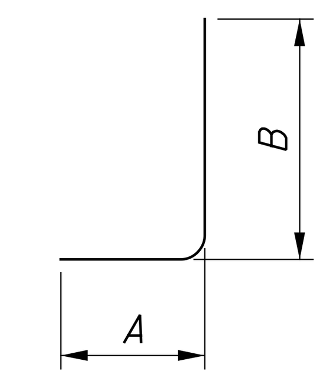
PID No. 104667

REINFORCING STEEL LIST

MARK	NUMBER: REAR ABUT.	NUMBER: FORWARD ABUT.	NUMBER: TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS: A	B	C	D	E	R	INC
ABUTMENTS													
A501	10	10	20	4'-4"	91	STR							
(1) A502	28		28	20'-0"	584	STR							
A503	NOT USED												
A504	14		14	25'-8"	375	STR							
A505	1		1	4'-10"	5	STR							
A506	1		1	3'-3"	3	STR							
A507	11		11	12'-10"	147	STR							
A508	3		3	16'-6"	52	STR							
A509		28	28	30'-0"	876	STR							
A510		14	14	28'-9"	420	STR							
A511		14	14	13'-7"	198	STR							
A601	146	180	326	5'-8"	2775	STR							
A602	146	180	326	7'-11"	3876	1	1'-4"	6'-9"					
A603	73	90	163	10'-1"	2469	2	4'-9"	0'-11"	4'-9"				
D801	49	61	110	5'-10"	1711	18	3'-8"	1'-0"	1'-0"				
SP401	2		2	3'-3"	4	1	1'-8"	1'-8"					
SP601	11		11	4'-8"	77	1	2'-0"	2'-10"					
SP602	9		9	5'-6"	74	1	2'-10"	2'-10"					
SP801	17		17	5'-7"	253	1	2'-2"	3'-8"					
SP802	11		11	6'-5"	188	1	3'-0"	3'-8"					
				SUB-TOTAL	14,178								

(1) REQUIRES MECHANICAL CONNECTORS. (14 REQUIRED)

MARK	NUMBER: REAR ABUT.	NUMBER: FORWARD ABUT.	NUMBER: TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS: A	B	C	D	E	R	INC
APPROACH SLABS													
B501	57		57	43'-0"	2556	STR							
B502	57		57	29'-0"	1724	STR							
B503		57	57	30'-0"	1784	STR							
B504		57	57	24'-0"	1427	STR							
B505		57	57	36'-3"	2155	STR							
C503	30	30	60	24'-6"	1533	STR							
SS501	8		8	42'-6"	355	STR							
SS502	43		43	12'-6"	561	STR							
SS503	8		8	29'-0"	242	STR							
SS504		43	43	15'-9"	706	STR							
SS505		8	8	30'-0"	250	STR							
SS506		8	8	24'-6"	204	STR							
SS507		8	8	36'-3"	302	STR							
A1003	72	72	144	25'-11"	16059	16	24'-6"						
				SUB-TOTAL	29,858								



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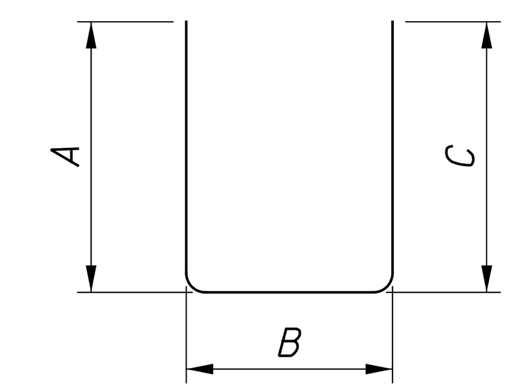

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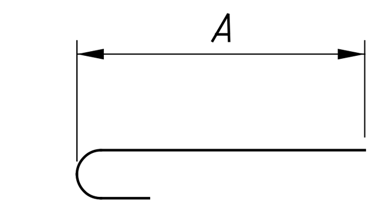

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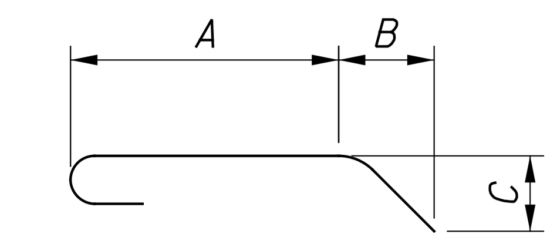


TYPE-18

NOTES:

(1) REQUIRES MECHANICAL CONNECTORS (NON-PROTRUDING TYPE)

AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING SHALL BE PROVIDED. INSTALLATION OF THE CONNECTORS SHALL CONFORM WITH RECOMMENDED MANUFACTURER'S PROCEDURES. IF A DOWEL BAR SPLICE IS FURNISHED, THE MINIMUM DOWEL BAR LENGTH TO BE INCLUDED WITH THE CONNECTOR SHALL BE GIVEN BY THE DIMENSION "L" SHOWN BELOW :
#5 REINFORCING BAR, L = 3'-6"

WHERE MECHANICAL CONNECTORS ARE REQUIRED THE REINFORCING BAR LENGTH IS MEASURED TO THE CONSTRUCTION JOINT. EXTRA BAR LENGTH AND/OR BAR PREPARATION MAY BE NECESSARY DEPENDING ON THE TYPE OF MECHANICAL CONNECTOR FURNISHED.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	CHECKED	DRAWN	REVISED	REVIEWED	DATE
SJF	CLB	DSH		MDS	11/12/18

STRUCTURE FILE NUMBER 3115526

REINFORCING STEEL LIST (RIGHT BRIDGE)

BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84
PID No. 104667

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
					SUPERSTRUCTURE						
S401	720	30'-0"	14429	STR							
	1 SR	12'-7"									
S402	OF	TO	370	STR							0'-2 3/4"
	34	20'-0"									
	1 SR	6'-9"									
S403	OF	TO	166	STR							0'-2 3/4"
	26	12'-4"									
S404	1304	4'-6"	3920	2	2'-7"	0'-6 1/4"	1'-7"				
	2 SR	1'-4"									
(1) S501	OF	TO	1751	STR							0'-4 1/4"
	65	24'-6"									
(1) S502	589	25'-0"	15358	STR							
	1 SR	2'-9"									
S503	OF	TO	1097	STR							0'-3 1/2"
	76	24'-11"									
S504	20	10'-0"	209	STR							
S505	722	30'-0"	22591	STR							
S506	118	36'-1"	4441	STR							
	1 SR	19'-7"									
S507	OF	TO	656	STR							0'-3 1/2"
	27	27'-0"									
(1) S508	2	16'-10"	35	STR							
(1) S509	2	25'-8"	54	STR							
	1 SR	3'-2"									
S510	OF	TO	530	STR							0'-4 1/2"
	45	19'-5"									
S511	594	19'-5"	12029	STR							
	2 SR	1'-8"									
S512	OF	TO	1288	STR							0'-3 1/2"
	60	18'-11"									
S513	2	36'-4"	76	STR							
	1 SR	13'-9"									
S514	OF	TO	397	STR							0'-3"
	23	19'-4"									
S515	2	32'-7"	68	STR							
(1) S516	589	25'-7"	15717	16	25'-0"						
	1 SR	3'-4"			2'-9"						
S517	OF	TO	1143	16	TO						0'-3 1/2"
	76	25'-6"			24'-11"						
	1 SR	3'-9"			3'-2"						
S518	OF	TO	559	16	TO						0'-4 1/2"
	45	20'-0"			19'-5"						
S519	594	20'-0"	12391	16	19'-5"						
S520	1280	4'-2"	5563	STR							
		SUB-TOTAL	114,838								

(1) REQUIRES MECHANICAL CONNECTORS. (1312 REQUIRED)

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
					PARAPETS						
PS501	410	7'-4"	3136	23	0'-11"	3'-3"	3'-0"			0'-3"	
PS502	96	30'-0"	3004	STR							
PS503	4	22'-0"	92	STR							
PS504	2	10'-4"	22	STR							
PS505	1	12'-10"	13	STR							
PS506	106	14'-8"	1622	STR							
PS507	128	7'-2"	957	STR							
PS508	1	8'-2"	9	STR							
PS509	4	9'-4"	39	STR							
PS510	3	11'-5"	36	STR							
PS511	6	13'-5"	84	STR							
PS512	3	8'-4"	26	STR							
PS513	1	8'-6"	9	STR							
PS514	1	10'-7"	11	STR							
PS515	2	11'-4"	24	STR							
PS516	2	13'-5"	28	STR							
PS517	8	9'-7"	80	STR							
PS518	4	5'-9"	24	25	1'-10"	2'-5"	1'-5"	0'-1 1/2"	0'-5"		
PS519	4	6'-3"	26	STR							
PS520	2	22'-2"	46	STR							
PS521	2	19'-5"	41	STR							
PS522	10	2'-7"	27	STR							
PS524	10	3'-2"	33	STR							
PS525	362	10'-0"	3776	41	0'-11"	4'-6"	4'-3"			0'-3"	
PS526	362	6'-2"	2328	40	1'-4"	1'-2"	1'-7"	1'-7"			
PS527	2	9'-8"	20	STR							
PS528	1	12'-2"	13	STR							
PS529	1	9'-5"	10	STR							
PS530	8	10'-5"	87	44	1'-0"	4'-6"	4'-3"			0'-6 1/4"	
PS531	8	9'-6"	79	43	2'-0"	2'-3"	1'-7"	1'-7"			
PS601	376	5'-7"	3153	40	1'-1"	1'-0"	1'-7"	1'-7"			
PS603	1	11'-7"	17	STR							
PS604	27	14'-8"	595	STR							
PS605	32	7'-2"	344	STR							
PS606	1	9'-3"	14	STR							
PS607	1	12'-5"	19	STR							
PS608	1	9'-11"	15	STR							
PS609	30	2'-0"	90	STR							
PS610	30	2'-9"	124	13	1'-0"	0'-11"	0'-2 1/4"	0'-11"			
PS611	1	9'-6"	14	STR							
	2 SR	3'-6"									
PS612	OF	TO	129	STR							0'-1"
	11	4'-4"									
PS613	8	3'-5"	41	STR							
PS614	1	20'-10"	31	STR							
PS615	1	2'-7"	4	STR							
PS616	1	3'-2"	5	STR							
PS617	4	3'-9"	23	13	2'-0"	0'-11"	0'-2"	0'-11"			
PS618	4	2'-11"	18	STR							
PS619	1	9'-8"	15	STR							
		SUB-TOTAL	20,353								

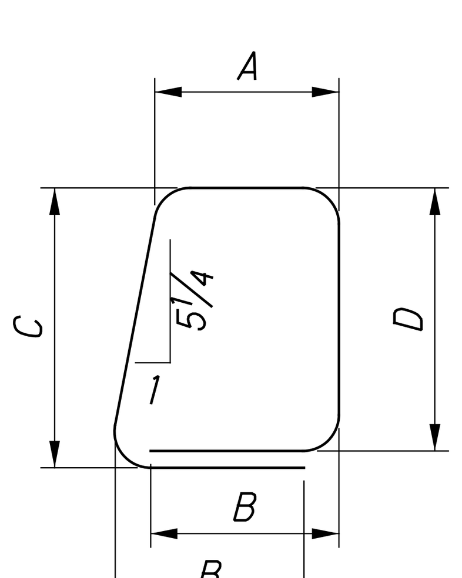
PS523 AND PS602 NOT USED.

NOTES:

(1) REQUIRES MECHANICAL CONNECTORS (NON-PROTRUDING TYPE)

AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING SHALL BE PROVIDED. INSTALLATION OF THE CONNECTORS SHALL CONFORM WITH RECOMMENDED MANUFACTURER'S PROCEDURES. IF A DOWEL BAR SPLICE IS FURNISHED, THE MINIMUM DOWEL BAR LENGTH TO BE INCLUDED WITH THE CONNECTOR SHALL BE GIVEN BY THE DIMENSION "L" SHOWN BELOW :
#5 REINFORCING BAR, L = 3'-6"

WHERE MECHANICAL CONNECTORS ARE REQUIRED THE REINFORCING BAR LENGTH IS MEASURED TO THE CONSTRUCTION JOINT. EXTRA BAR LENGTH AND/OR BAR PREPARATION MAY BE NECESSARY DEPENDING ON THE TYPE OF MECHANICAL CONNECTOR FURNISHED.



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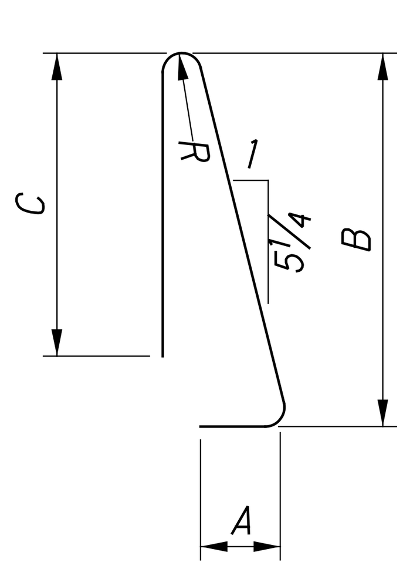

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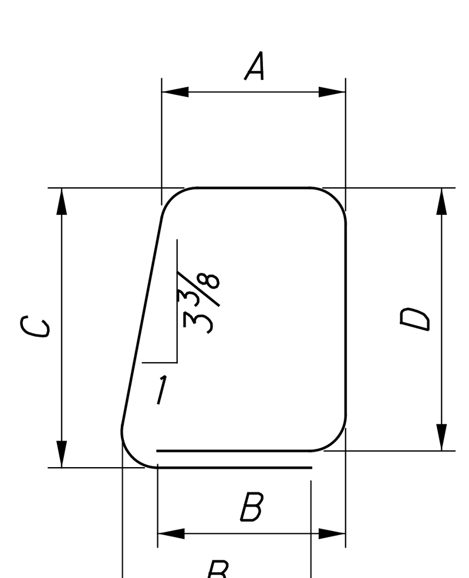

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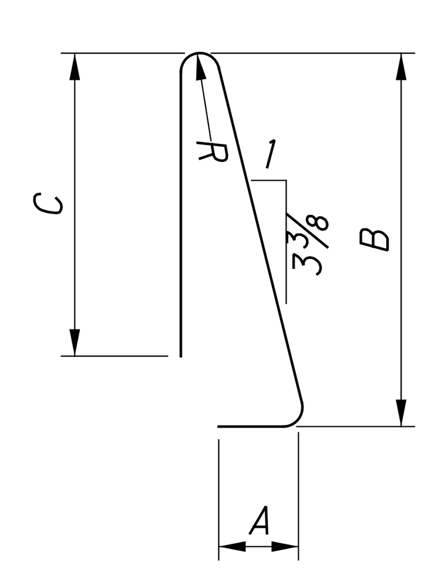

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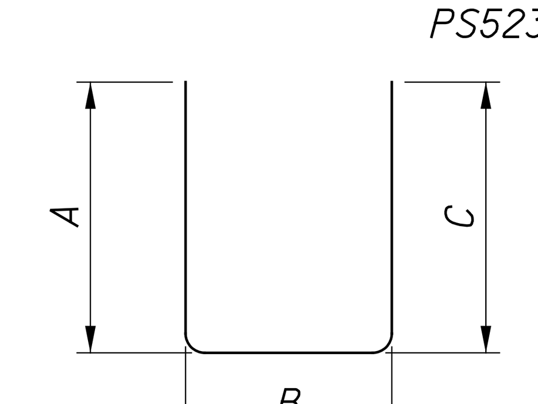

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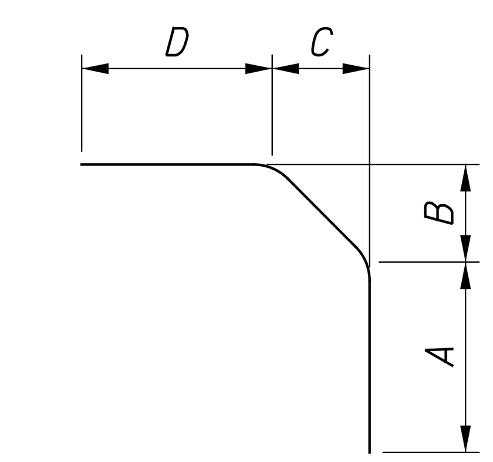

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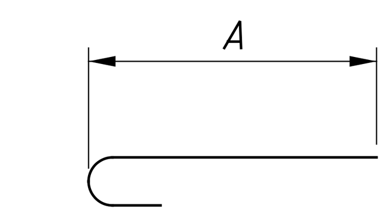

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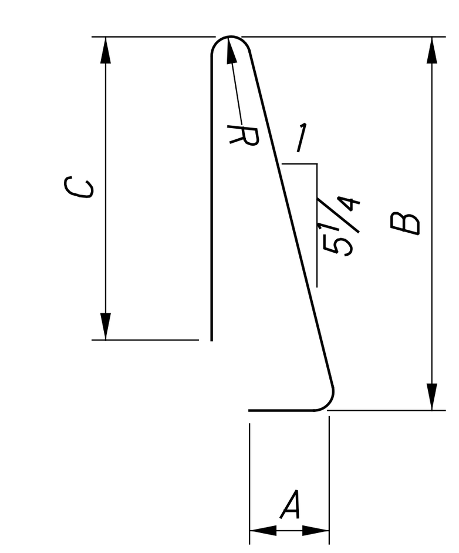

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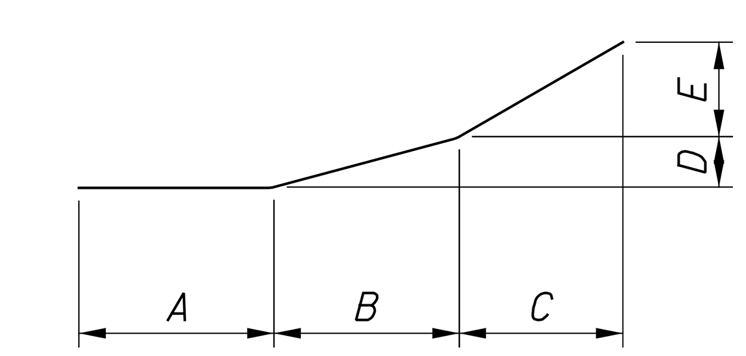

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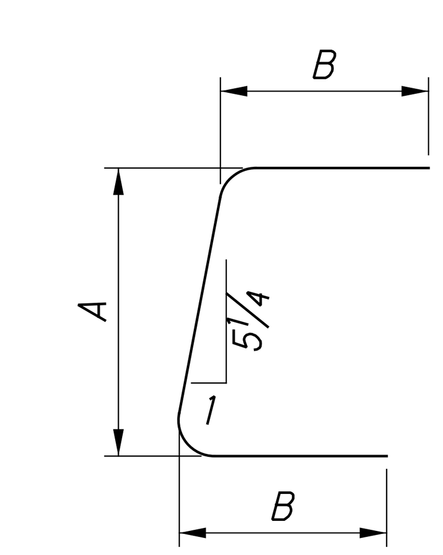

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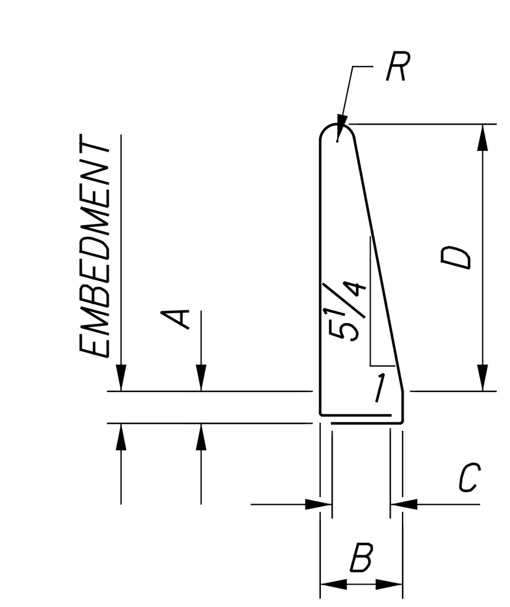

TYPE-35

DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	CHECKED	DRAWN	REVISED	REVIEWED	DATE
SJF	CLB	TLH		MDS	11/15/18

STRUCTURE FILE NUMBER 3115526

REINFORCING STEEL LIST (RIGHT BRIDGE)

BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84
PID No. 104667

41/41

SFlannagan
11/16/2023 9:34:08 AM
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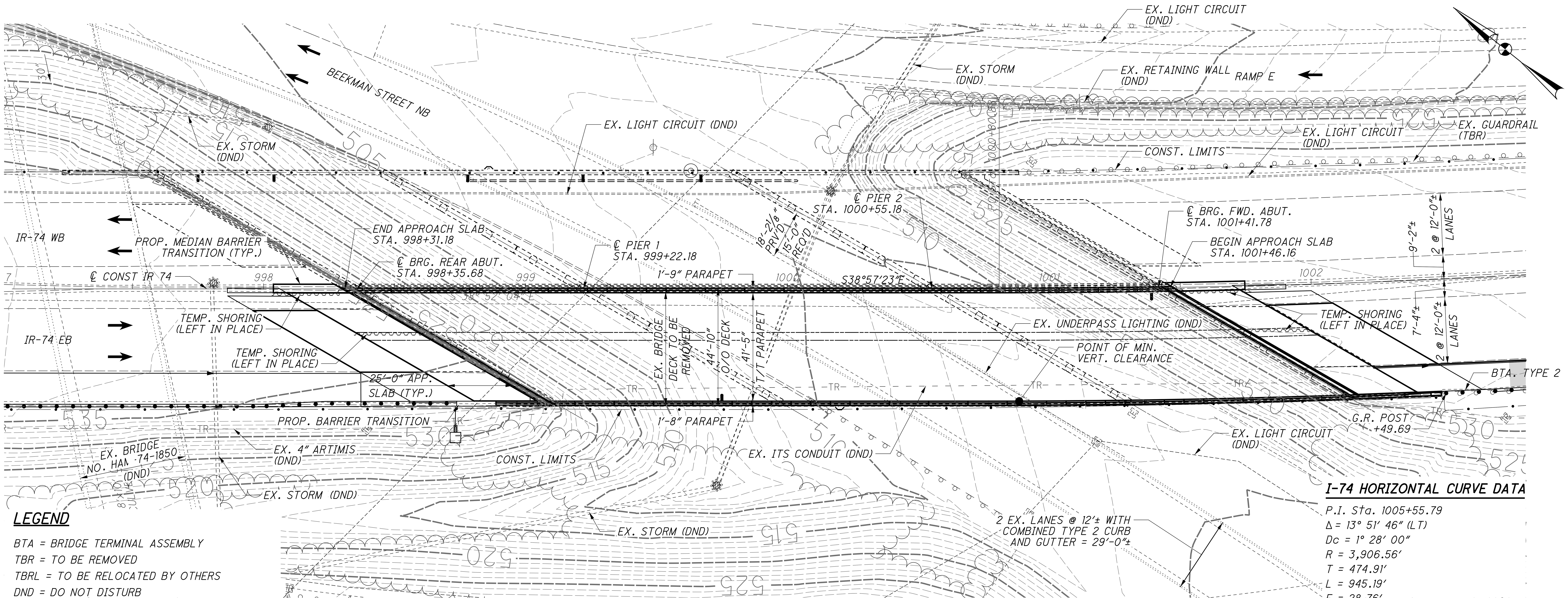


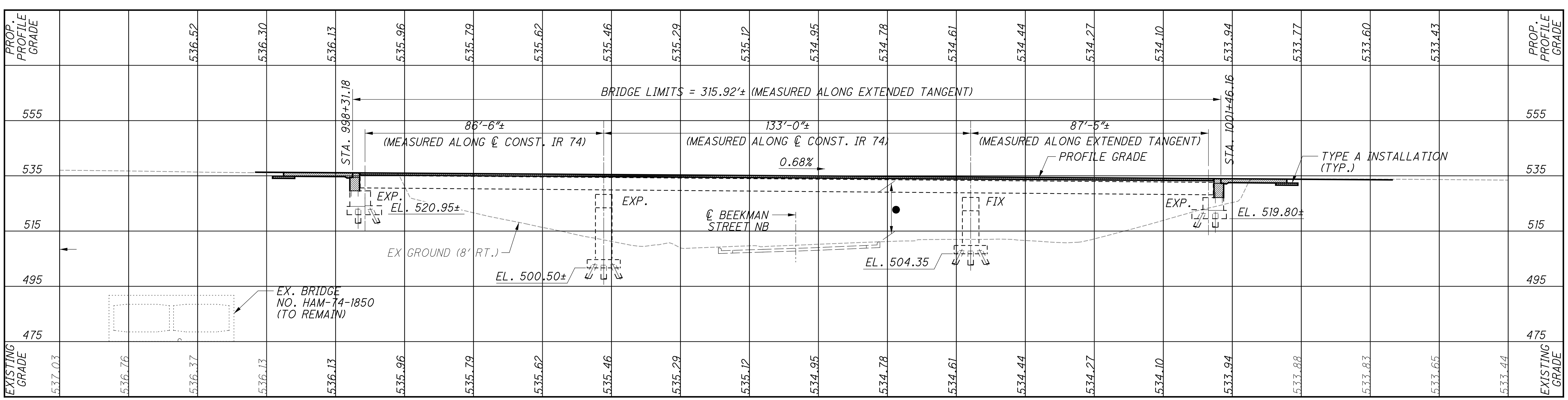
LEGEND

BTA = BRIDGE TERMINAL ASSEMBLY
TBR = TO BE REMOVED
TBRL = TO BE RELOCATED BY OTHERS
DND = DO NOT DISTURB
● 14'-6" REQUIRED MINIMUM VERTICAL CLEARANCE
15'-5"± PROVIDED MINIMUM VERTICAL CLEARANCE

I-74 HORIZONTAL CURVE DATA

P.I. Sta. 1005+55.79
Δ = 13° 51' 46" (LT)
Dc = 1° 28' 00"
R = 3,906.56'
T = 474.91'
L = 945.19'
E = 28.76'
C = 942.89'
C.B. = S 45° 47' 56" E

PLAN



PROFILE

ELEVATION ALONG ℄ CONST. IR 74

NOTE:
FOR ADDITIONAL SITE PLAN INFORMATION, SEE SHEET 2/40.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	09/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115577	

HAMILTON COUNTY
STA. 998+31.18
STA. 1001+46.16

SITE PLAN
BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667

SFlannagan 11/16/2023 9:34:12 AM
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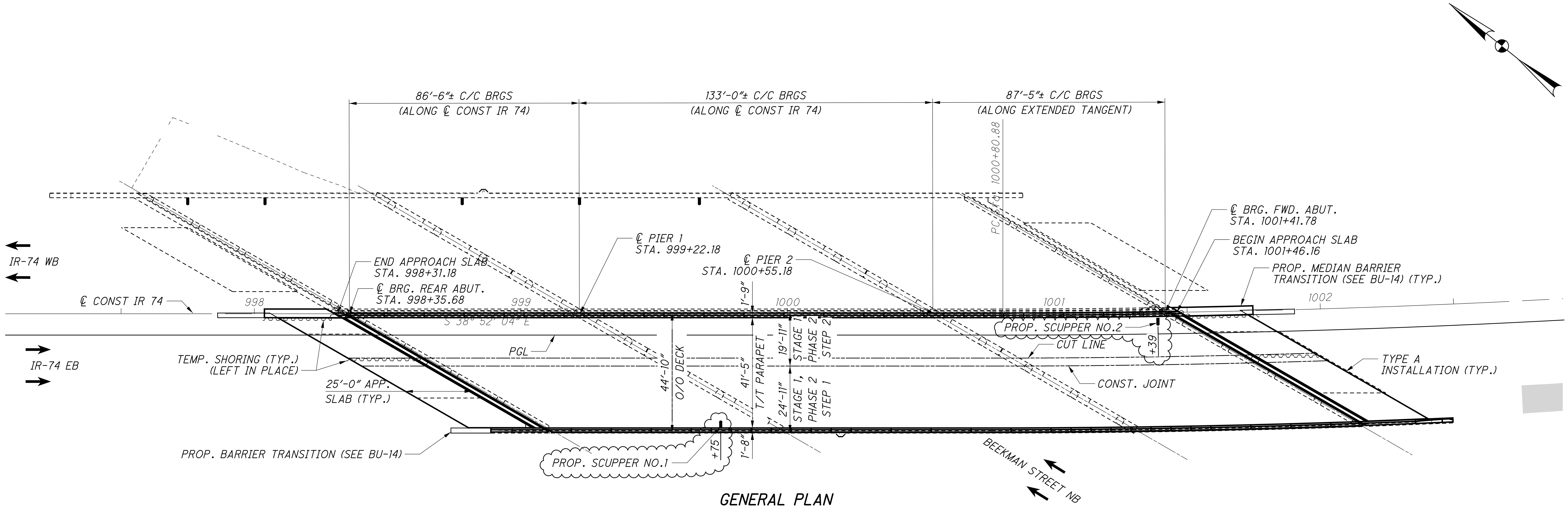
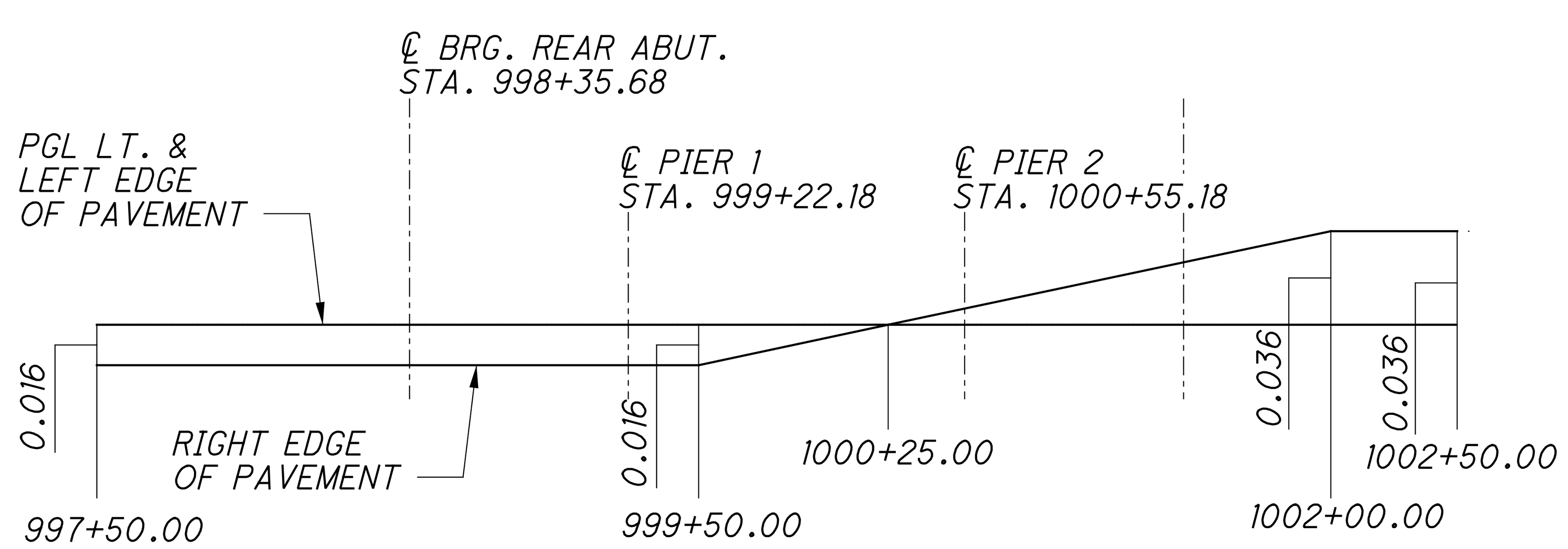
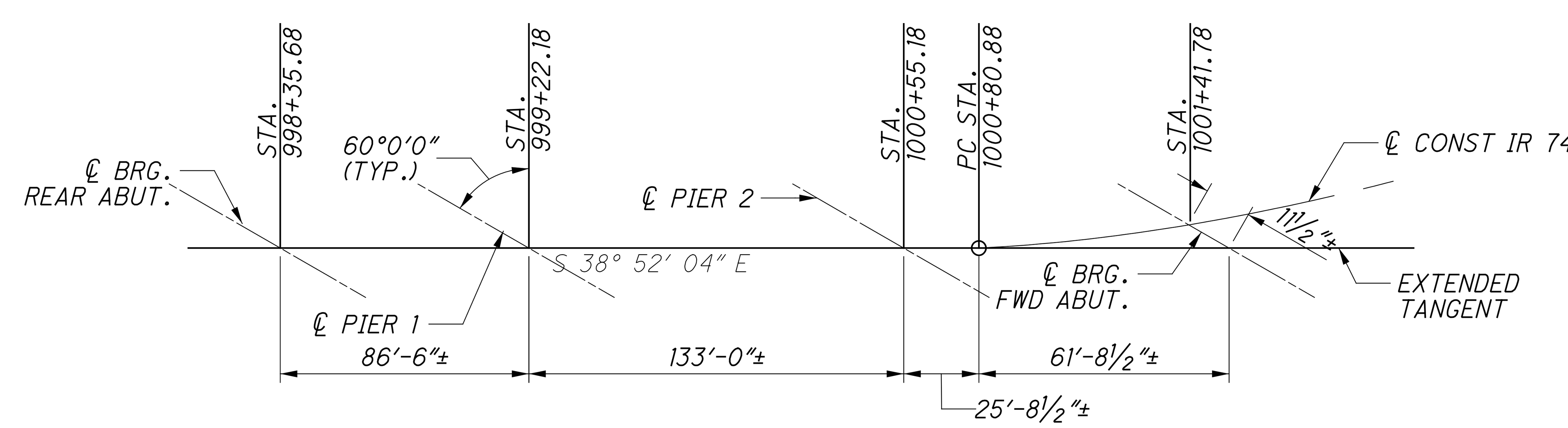


GENERAL PLAN



SUPERELEVATION TRANSITION DIAGRAM

RIGHT BRIDGE



REFERENCE CHORD DIAGRAM

BENCHMARK DATA
REFER TO BU-14 FOR BENCHMARK DATA.

NOTES

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.

DESIGN TRAFFIC:
2010 ADT = 75,000 2010 ADTT = 11,250
2030 ADT = 89,300 2030 ADTT = 13,395
DIRECTIONAL DISTRIBUTION = 0.72

EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL PLATE GIRDERS WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE

SPANS: 86'-6"±, 133'-0"±, 87'-5"± C/C BRGS. (ALONG EXTENDED TANGENT)

ROADWAY: 41'-10"± TOE/TOE PARAPET

LOADING: HS20-44 AND THE ALTERNATE MILITARY LOADING

SKEW: 60°00'± RF

APPROACH SLABS: AS-1-67 (25'-0"±)

ALIGNMENT: TANGENT AND 1°28'00"± CURVE LEFT

CROWN: VARIES, 0.036± FT/FT MAX.

STRUCTURAL FILE NUMBER: 3115577

DATE BUILT: 1973

WEARING SURFACE: 2"± ASPHALT CONCRETE OVERLAY
1¾"± SDC OVERLAY

DISPOSITION: REHABILITATION

PROPOSED STRUCTURE

TYPE: RIGHT BRIDGE (EB)
REPLACE DECK WITH COMPOSITE DECK, REPLACE EXPANSION JOINTS, REPLACE ABUTMENT BEARINGS WITH ELASTOMERIC BEARINGS, REMOVE AND REPLACE BACKWALL TO TOP OF BEAM SEAT, REPLACE APPROACH SLABS, PATCH EX. SUBSTRUCTURE, FIBER WRAP PIER 2 COLUMNS

LEFT BRIDGE (WB)
REPLACE ABUTMENT BEARINGS WITH ELASTOMERIC BEARINGS

SPANS: 86'-6"±, 133'-0"±, 87'-5"± C/C BRGS. (ALONG EXTENDED TANGENT)

ROADWAY: 41'-5" TOE/TOE PARAPET

LOADING: HS20-44 AND THE ALTERNATE MILITARY LOADING

SKEW: 60°00'± RF

APPROACH SLABS: 25' LONG (AS-1-15 & AS-2-15)

ALIGNMENT: TANGENT AND 1°28'00" CURVE LEFT

SUPERELEVATION: VARIES, 0.036 FT/FT MAX.

WEARING SURFACE: 1" MONOLITHIC CONCRETE

COORDINATES: LATITUDE N39°09'33.80"
LONGITUDE W84°33'02.07"

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	09/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115577	

GENERAL PLAN
BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667

2/40

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWINGS:

AS-1-15 REVISED 07-17-15
AS-2-15 REVISED 01-19-18
EXJ-4-87 REVISED 01-19-18
GSD-1-96 REVISED 07-19-02
PCB-91 REVISED 01-18-13
SBR-1-13 REVISED 07-20-18
SBR-2-13 REVISED 07-20-18

AND TO THE FOLLOWING PROPOSAL NOTES:

519 COMPOSITE FIBER WRAP SYSTEM REVISED 07-21-17

DESIGN SPECIFICATIONS:

THE PROPOSED WORK CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 17TH EDITION, AND THE 2004 ODOT BRIDGE DESIGN MANUAL.

DESIGN LOADING:

DESIGN LOADING: HS20-44, CASE I AND THE ALTERNATE MILITARY LOADING.

FUTURE WEARING SURFACE (FWS) OF 60 PSF

DESIGN DATA:

QC/QA CONCRETE, CLASS QC3 - COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE)

CONCRETE, CLASS QC3 - COMPRESSIVE STRENGTH 4000 PSI (SUBSTRUCTURE)

REINFORCING STEEL - MINIMUM YIELD STRENGTH 75,000 PSI (DECK)

REINFORCING STEEL - MINIMUM YIELD STRENGTH 60,000 PSI (SUBSTRUCTURE & PARAPETS)

STRUCTURAL STEEL - ASTM A709 GRADE 50 - YIELD STRENGTH 50 KSI (BEARINGS)

DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL

2½" CONCRETE COVER

MONOLITHIC WEARING SURFACE:

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1 INCH THICK.

EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05 AND 105.02.

BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS THAT HAVE BEEN VERIFIED IN THE FIELD.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN:

DESCRIPTION:
ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AS SHOWN IN THE PLANS AND AS PER CMS 202.

CUTLINE CONSTRUCTION JOINT PREPARATION: THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH, BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

SUBSTRUCTURE CONCRETE REMOVAL: REMOVE CONCRETE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

DECK REMOVAL: PERFORM WORK CAREFULLY DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. THE USE OF EXPLOSIVES OR HEADACHE BALLS IS PROHIBITED. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05.

REMOVAL METHODS: REMOVAL METHODS OVER STRUCTURAL MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING THE PRIMARY STRUCTURAL MEMBERS. REPLACE OR REPAIR STRUCTURAL MEMBERS DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE DIRECTOR. OBTAIN THE DIRECTOR'S APPROVAL BEFORE PERFORMING REPAIR.
EXISTING WELDED ATTACHMENTS: REMOVE EXISTING WELDED ATTACHMENTS (E.G., FINISHING MACHINE AND FORM SUPPORTS; SUPPORTS FOR SCUPPERS AND BULB ANGLES WHICH ARE TO BE REMOVED; AND LIGHTING SUPPORTS) LOCATED IN THE DESIGNATED TENSION PORTIONS OF THE TOP FLANGES OF EXISTING STEEL MEMBERS AND GRIND THE FLANGE SURFACES SMOOTH. CAREFULLY GRIND PARALLEL TO THE FLANGES.

ITEM 510 - DOWEL HOLES WITH NONSHRINK NONMETALLIC GROUT, AS PER PLAN:

DRILL DOWEL HOLES WHERE SHOWN IN THE PLANS. INSTALL REINFORCING STEEL ACCORDING TO ITEM 510 USING EPOXY GROUT, 705.20. PRIOR TO DRILLING DOWEL HOLES, LOCATE ALL EXISTING REINFORCING STEEL BARS IN THE AREA OF THE HOLE WITH THE AID OF A REINFORCING STEEL BAR LOCATOR (PACHOMETER). IF AN EXISTING BAR IS ENCOUNTERED AT THE SAME LOCATION AS A PROPOSED DOWEL HOLE, MOVE THE DOWEL HOLE TO EITHER SIDE OF THE EXISTING BAR.

ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN:

PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING.

ITEM 519 - PATCHING OF CONCRETE STRUCTURES IS A UNIT PRICE PAY ITEM (LINE 0032).

CLASS QC3 CONCRETE WITH QC/QA, SUBSTRUCTURE, AS PER PLAN

THIS ITEM MODIFIES THE STANDARD 511 CONCRETE FOR STRUCTURES SPECIFICATION TO INCLUDE MACRO-SYNTHETIC INTO THE SUBSTRUCTURE CONCRETE. THIS ITEM SHALL CONFORM TO CMS 511 WITH THE FOLLOWING CONDITIONS AND REVISIONS:

PROVIDE MATERIALS CONFORMING TO 511.02 EXCEPT AS MODIFIED BELOW:
PORTLAND CEMENT CONCRETE - 499.03, CLASS QC 3 MEETING A DESIGN STRENGTH OF 4,000 PSI, WITH MACRO-SYNTHETIC FIBERS WITH MODIFICATION PER 511.02.
FIBERS FOR CONCRETE - ASTM C 1116, TYPE III

THE CLASS QC3 CONCRETE FOR THE SUBSTRUCTURE SHALL MEET THE FOLLOWING CRITERIA: WATER/CEMENT RATIO = 0.40 MAXIMUM; MINIMUM 4 LBS/CY MACRO-SYNTHETIC FIBERS (1.5 IN. MIN. TO 2.5 IN. MAX.) MEETING ASTM C1116 TYPE III SHALL BE ADDED TO THE MIX.

THE MACRO-SYNTHETIC FIBERS SHALL BE INCORPORATED INTO THE MIX IN SUCH A WAY THAT NO 'BALLING' OCCURS. UPON INSPECTION OF THE MIX AT THE TIME OF PLACEMENT, IF ANY 'BALLING' OCCURS, THE ENGINEER SHALL REJECT THE REMAINDER OF THE LOAD AT ANY TIME DURING THE POUR. IT IS IMPORTANT TO FOLLOW INDUSTRY STANDARDS AND ASTM SPECIFICATIONS ON THE PREMIXING OF THE CEMENT, AGGREGATE, AND MACRO-SYNTHETICFIBERS PRIOR TO THE ADDITION OF WATER AND ADMIXTURES. PROVIDE MACRO-SYNTHETIC FIBERS THAT ARE MONOFILAMENT FIBERS MADE FROM VIRGIN POLYPROPYLENE, POLYETHYLENE, OR CO-POLYMERS THAT ARE INERT TO ALKALI ATTACK. ENSURE THE MACRO-SYNTHETIC FIBERS HAVE A MINIMUM TENSILE STRENGTH OF 70 KSI, A MINIMUM MODULUS OF ELASTICITY OF 800 KSI, A MINIMUM FILAMENT DIAMETER OF 0.012 INCHES, AND ASPECT RATIO BETWEEN 60 AND 100, AND ARE BETWEEN 1.5 AND 2.5 INCHES IN LENGTH. STORE THE MACRO-SYNTHETIC FIBERS ACCORDING TO THE MANUFACTURE'S RECOMMENDATION AND KEEP THE MATERIAL FREE FROM DUST, DIRT AND MOISTURE.

USE A MINIMUM DOSAGE RATE OF MACRO-SYNTHETIC FIBERS OF 4.0 LBS/CY OF CONCRETE. DETERMINE THE FINAL PROPOSED DOSAGE RATE THROUGH MIX TESTING. ENSURE THE FIBER REINFORCED CONCRETE MEETS OR EXCEEDS A MINIMUM EQUIVALENT FLEXURAL STRENGTH RATIO OF 25% ACCORDING TO ASTM C 1609. MACRO-SYNTHETIC FIBERS IS TO BE USED AS AN ADMIXTURE TO CONTROL CRACKING AND IS NOT TO BE USED TO SUPPLEMENT OR REPLACE REINFORCING STEEL IN THE DESIGN. ENSURE THE FINAL PROPOSED MIX IS WORKABLE AND ABLE TO BE PRODUCED SUCH THAT BALLING OR CLUMPING OF THE FIBERS IS NOT A PROBLEM AS DETERMINED BY THE ENGINEER. UTILIZE A LABORATORY REGULARLY INSPECTED BY THE CEMENT AND CONCRETE REFERENCE LABORATORY (CCRL) OF THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, OR OTHER APPROVED REFERENCE LABORATORY, TO PERFORM THE TESTING. BEFORE USE, SUBMIT DOCUMENTATION TO THE PROJECT ENGINEER CERTIFYING BOTH THE MACRO-SYNTHETIC FIBERS AND THE MIX MEET OR EXCEED THE REQUIRED PROPERTIES. SAMPLING WILL BE ALLOWED FOR TESTING PURPOSES. A DEMONSTRATION OF THE MIX PRODUCTION OR TRIAL MIX, MAY BE REQUIRED BY THE ENGINEER PRIOR TO PLACING ANY OF THE MIX ON THE PROJECT.

THE BATCH WEIGHTS SHALL BE CORRECTED TO COMPENSATE FOR THE MOISTURE CONTAINED IN THE AGGREGATE AT THE TIME OF USE. A CHEMICAL ADMIXTURE (705.12, TYPE A OR D) SHALL BE USED.

CONCRETE SUPPLIERS SHOULD RECOGNIZE THAT ADMIXTURES MAY HAVE AN EFFECT ON STRENGTH, ENTRAINED AIR CONTENT, WORKABILITY, ETC. OF THEIR CONCRETE MIXES. THE CONCRETE SUPPLIER'S CHOICE OF ADMIXTURES DOES NOT ALLEVIATE MEETING DESIGN REQUIREMENTS.

CLASS QC3 CONCRETE WITH QC/QA, SUPERSTRUCTURE, AS PER PLAN

THIS ITEM MODIFIES THE STANDARD 511 CONCRETE FOR STRUCTURES SPECIFICATION TO INCLUDE MACRO-SYNTHETICINTO THE SUPERSTRUCTURE CONCRETE. THIS ITEM SHALL CONFORM TO CMS 511 WITH THE FOLLOWING CONDITIONS AND REVISIONS:

PROVIDE MATERIALS CONFORMING TO 511.02 EXCEPT AS MODIFIED BELOW:
PORTLAND CEMENT CONCRETE - 499.03, CLASS QC 3 MEETING A DESIGN STRENGTH OF 4,500 PSI, WITH MACRO-SYNTHETIC FIBERS WITH MODIFICATION PER 511.02
FIBERS FOR CONCRETE - ASTM C 1116, TYPE III

THE CLASS QC3 CONCRETE FOR THE SUPERSTRUCTURE SHALL MEET THE FOLLOWING CRITERIA: WATER/CEMENT RATIO = 0.40 MAXIMUM; MINIMUM 4 LBS/CY MACRO-SYNTHETIC FIBERS (1.5 IN. MIN. TO 2.5 IN. MAX.) MEETING ASTM C1116 TYPE III SHALL BE ADDED TO THE MIX.

THE MACRO-SYNTHETIC FIBERS SHALL BE INCORPORATED INTO THE MIX IN SUCH A WAY THAT NO 'BALLING' OCCURS. UPON INSPECTION OF THE MIX AT THE TIME OF PLACEMENT, IF ANY 'BALLING' OCCURS, THE ENGINEER SHALL REJECT THE REMAINDER OF THE LOAD AT ANY TIME DURING THE POUR. IT IS IMPORTANT TO FOLLOW INDUSTRY STANDARDS AND ASTM SPECIFICATIONS ON THE PREMIXING OF THE CEMENT, AGGREGATE, AND MACRO-SYNTHETIC FIBERS PRIOR TO THE ADDITION OF WATER AND ADMIXTURES. PROVIDE MACRO-SYNTHETIC FIBERS THAT ARE MONOFILAMENT FIBERS MADE FROM VIRGIN POLYPROPYLENE, POLYETHYLENE, OR CO-POLYMERS THAT ARE INERT TO ALKALI ATTACK. ENSURE THE MACRO-SYNTHETIC FIBERS HAVE A MINIMUM TENSILE STRENGTH OF 70 KSI, A MINIMUM MODULUS OF ELASTICITY OF 800 KSI, A MINIMUM FILAMENT DIAMETER OF 0.012 INCHES, AND ASPECT RATIO BETWEEN 60 AND 100, AND ARE BETWEEN 1.5 AND 2.5 INCHES IN LENGTH. STORE THE MACRO-SYNTHETIC FIBERS ACCORDING TO THE MANUFACTURE'S RECOMMENDATION AND KEEP THE MATERIAL FREE FROM DUST, DIRT AND MOISTURE.

USE A MINIMUM DOSAGE RATE OF MACRO-SYNTHETIC FIBERS OF 4.0 LBS/CY OF CONCRETE. DETERMINE THE FINAL PROPOSED DOSAGE RATE THROUGH MIX TESTING. ENSURE THE FIBER REINFORCED CONCRETE MEETS OR EXCEEDS A MINIMUM EQUIVALENT FLEXURAL STRENGTH RATIO OF 25% ACCORDING TO ASTM C 1609. MACRO-SYNTHETIC FIBERS IS TO BE USED AS AN ADMIXTURE TO CONTROL CRACKING AND IS NOT TO BE USED TO SUPPLEMENT OR REPLACE REINFORCING STEEL IN THE DESIGN. ENSURE THE FINAL PROPOSED MIX IS WORKABLE AND ABLE TO BE PRODUCED SUCH THAT BALLING OR CLUMPING OF THE FIBERS IS NOT A PROBLEM AS DETERMINED BY THE ENGINEER. UTILIZE A LABORATORY REGULARLY INSPECTED BY THE CEMENT AND CONCRETE REFERENCE LABORATORY (CCRL) OF THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, OR OTHER APPROVED REFERENCE LABORATORY, TO PERFORM THE TESTING. BEFORE USE, SUBMIT DOCUMENTATION TO THE PROJECT ENGINEER CERTIFYING BOTH THE MACRO-SYNTHETIC FIBERS AND THE MIX MEET OR EXCEED THE REQUIRED PROPERTIES. SAMPLING WILL BE ALLOWED FOR TESTING PURPOSES. A DEMONSTRATION OF THE MIX PRODUCTION OR TRIAL MIX, MAY BE REQUIRED BY THE ENGINEER PRIOR TO PLACING ANY OF THE MIX ON THE PROJECT.

THE BATCH WEIGHTS SHALL BE CORRECTED TO COMPENSATE FOR THE MOISTURE CONTAINED IN THE AGGREGATE AT THE TIME OF USE. A CHEMICAL ADMIXTURE (705.12, TYPE A OR D) SHALL BE USED.

CONCRETE SUPPLIERS SHOULD RECOGNIZE THAT ADMIXTURES MAY HAVE AN EFFECT ON STRENGTH, ENTRAINED AIR CONTENT, WORKABILITY, ETC. OF THEIR CONCRETE MIXES. THE CONCRETE SUPPLIER'S CHOICE OF ADMIXTURES DOES NOT ALLEVIATE MEETING DESIGN REQUIREMENTS.

DESIGN AGENCY
STRUCTUREPOINT

DESIGNED SJF | DRAWN DSH | REVIEWED MDS | DATE 11/16/18
CHECKED CLB | REVISED | STRUCTURE FILE NUMBER 3115577

GENERAL NOTES
BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667

CLASS QC3 CONCRETE WITH QC/QA, SUPERSTRUCTURE, AS PER PLAN (CONT.)

APPROACH SLABS, DIAPHRAGMS, AND BRIDGE RAILING CONCRETE ARE TO USE THE SAME MIX DESIGN AS THE BRIDGE DECK (WHEN APPLICABLE). USE SELF-COMPACTING CONCRETE ON DECORATIVE RAILING SIMILAR TO TEXAS RAILING AND MACRO-SYNTHETIC CONCRETE PER THIS SPECIFICATION ON TRADITIONAL CONCRETE RAILING WHEN APPLICABLE.

THE PLACING OF THE DECK AND THE APPROACH SLABS IN THE SAME CONCRETE POUR IS NOT PERMITTED.

DECK PLACEMENT DESIGN ASSUMPTIONS:

DECK PLACEMENT DESIGN ASSUMPTIONS:
THE FOLLOWING ASSUMPTIONS OF CONSTRUCTION MEANS AND METHODS WERE MADE FOR THE ANALYSIS AND DESIGN OF THE SUPERSTRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE FALSEWORK SUPPORT SYSTEM WITHIN THESE PARAMETERS AND WILL ASSUME RESPONSIBILITY FOR SUPERSTRUCTURE ANALYSIS FOR DEVIATION FROM THESE DESIGN ASSUMPTIONS.

AN EIGHT WHEEL FINISHING MACHINE WITH A MAXIMUM WHEEL LOAD OF 2.27 KIPS.

A MINIMUM OUT-TO-OUT WHEEL SPACING AT EACH END OF THE MACHINE OF 103".

A MAXIMUM SPACING OF OVERHANG FALSEWORK BRACKETS OF 48 IN.

A MAXIMUM DISTANCE FROM THE CENTERLINE OF THE FASCIA GIRDER TO THE FACE OF THE SAFETY HANDRAIL OF 65".

MECHANICAL CONNECTORS:

MECHANICAL CONNECTORS SHALL BE CAPABLE OF DEVELOPING 125 PERCENT OF THE YIELD STRENGTH OF THE CONNECTED BARS. FOR CONNECTORS WITH THREADED BAR ENDS, IN ORDER TO OFFSET THE EFFECT OF AREA REDUCTION ON THE STRENGTH OF THE BAR AND STILL MEET THE REQUIREMENTS OF ASTM A615, USE THE NEXT LARGER DIAMETER BAR OR A HIGHER GRADE OF STEEL BAR.

ITEM 514 - FIELD PAINTING, MISC.: MAIN AND SECONDARY MEMBERS:

THIS ITEM SHALL INCLUDE PAINTING AS WELL AS THE SURFACE PREPARATION OF THE MAIN AND SECONDARY MEMBERS IN THE FIELD WITH PRIME, INTERMEDIATE AND SURFACE COATS AS DIRECTED BY THE ENGINEER AT LOCATIONS WHERE THE EXISTING COATING IS DAMAGED. THE PAINT MAY BE APPLIED BY BRUSH ACCORDING TO 514.17E. SOLVENT CLEAN THE MAIN AND SECONDARY MEMBERS AS PER SSPC-SP 1 AND SSPC-SP 2, RESPECTIVELY, PRIOR TO PAINTING ACCORDING TO ITEM 514.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR SELECTING THE FINISH COAT TO MATCH THE EXISTING AS CLOSE AS POSSIBLE AND SHALL RECIEVE APPROVAL FROM THE ENGINEER.

ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN:

THIS WORK CONSISTS OF RAISING OR REPOSITIONING EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

SUBMIT CONSTRUCTION PLANS IN ACCORDANCE WITH CMS 501.05.

IF, DURING THE JACKING OPERATIONS, DAMAGE TO THE STRUCTURE IS VISUALLY OBSERVED, IMMEDIATELY CEASE THE JACKING OPERATION AND INSTALL SUPPORTS TO THE SATISFACTION OF THE ENGINEER. ANALYZE THE DAMAGE AND SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. THE BRIDGE BEARINGS SHALL BE FULLY SEATED AT ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUBMIT A REPAIR PLAN TO THE ENGINEER. THE DEPARTMENT WILL NOT PAY FOR THE REPAIR COSTS TO ENSURE FULL SEATING ON BEARINGS.

CONCRETE SEALER:

CHEMMASTERS SAFE CURE AND SEAL EPX (EPOXY) AND DURAGUARD 310 CRU (URETHANE) USED FOR SEALING OF CONCRETE SURFACES (EPOXY-URETHANE).

PROPOSED WORK (RIGHT BRIDGE):

- REMOVE AND REPLACE EXISTING CONCRETE DECK WITH COMPOSITE DECK
- REMOVE AND REPLACE EXISTING CONCRETE PARAPETS
- REMOVE AND REPLACE ABUTMENT BACKWALLS
- REPLACE ABUTMENT BEARINGS WITH ELASTOMERIC BEARINGS (LEFT & RIGHT BRIDGE)
- REPLACE APPROACH SLABS
- REPLACE STRIP SEAL EXPANSION JOINTS
- ADD SEISMIC PEDETALS TO REAR ABUTMENT
- ADD CROSS FRAMES AT FIXED PIER
- FIBER WRAP PIER 2 COLUMNS
- PATCH EXISTING SUBSTRUCTURE UNITS
- SEAL CONCRETE

BUILDABLE UNIT REFERENCES:

REFERENCE THE FOLLOWING BUILDABLE UNITS FOR ADDITIONAL INFORMATION, DETAILS, AND SPECIFICATIONS:
ROADWAY AND DRAINAGE - BU-14
MAINTENANCE OF TRAFFIC - BU-04 AND BU-23
LIGHTING, STRIPING, PAVEMENT MARKINGS, ITS - BU-19

UTILITY LINES

THE UTILITY(IES) SHALL BORE ALL EXPENSE INVOLVED IN RELOCATING (INSTALLING) THE AFFECTED UTILITY LINES. THE CONTRACTOR AND UTILITY(IES) ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

ABBREVIATION LIST:

THE FOLLOWING STANDARD ABBREVIATIONS ARE USED THROUGHOUT THE BRIDGE PLANS.

ABUT.	= ABUTMENT
ACT.	= ACTUAL
APP.	= APPROACH
BRG.	= BEARING
BOT.	= BOTTOM
BTW.	= BETWEEN
CB	= CATCH BASIN
C.I.P.	= CAST-IN-PLACE
C.J.	= CONSTRUCTION JOINT
CLR.	= CLEARANCE
CONST	= CONSTRUCTION
CONT.	= CONTINUOUS
DIA.	= DIAMETER
DIM.	= DIMENSION
DWG.	= DRAWING
E.S.	= EACH SIDE
EL.	= ELEVATION
EQ.	= EQUAL
EST.	= ESTIMATED
EX.	= EXISTING
EXP.	= EXPANSION
F.A.	= FORWARD ABUTMENT
F.D.S.	= FINAL DECK SURFACE
F.S.	= FAR SIDE
FTG.	= FOOTING
FWD.	= FORWARD
GR.	= GUARDRAIL
HMWM	= HIGH MOLECULAR WEIGHT METHACRYLATE
INT.	= INTERIOR
INV.	= INVERT
NPCCP	= NON-PERFORATED CORRUGATED PLASTIC PIPE
N.S.	= NEAR SIDE
O.C.J.	= OPTIONAL CONSTRUCTION JOINT
PCCP	= PERFORATED CORRUGATED PLASTIC PIPE
PEJF	= PREFORMED EXPANSION JOINT FILLER
PERP.	= PERPENDICULAR
PROP.	= PROPOSED
PT.	= POINT
R.A.	= REAR ABUTMENT
REQD.	= REQUIRED
SER.	= SERIES
SHLD.	= SHOULDER
SPA.	= SPACES
STA.	= STATION
STD.	= STANDARD
STM	= STORM SEWER LINE
T&B	= TOP AND BOTTOM
T.O.H.	= TOP OF HAUNCH
T/S	= TOP OF SLOPE
TYP.	= TYPICAL
U.N.	= UNLESS NOTED

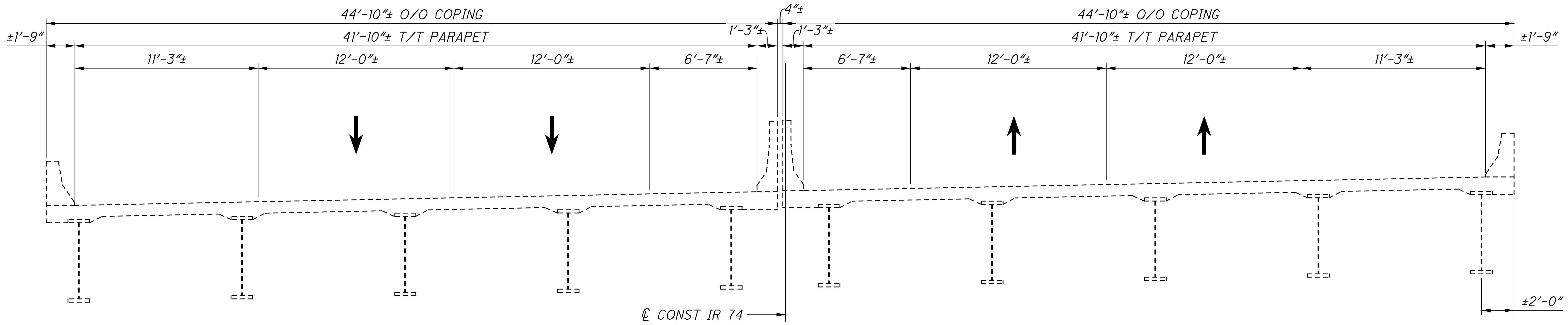
DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/16/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115577	

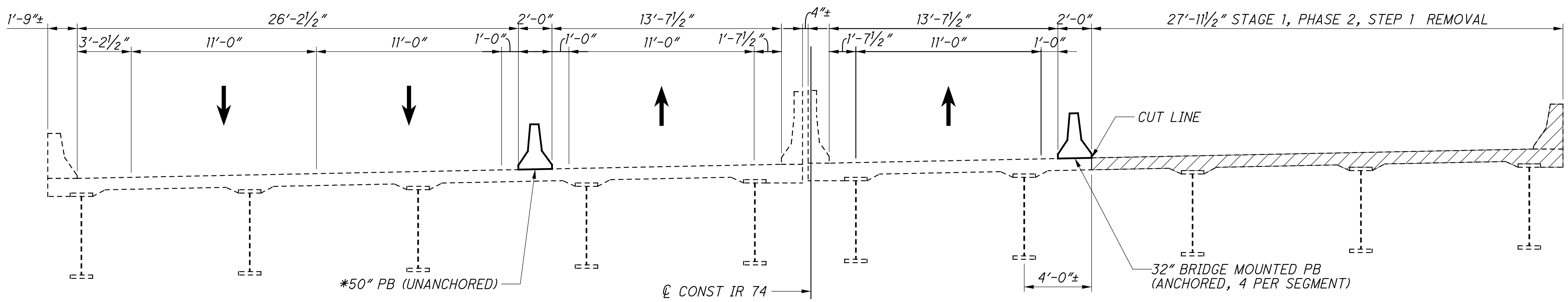
GENERAL NOTES - 2
BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667

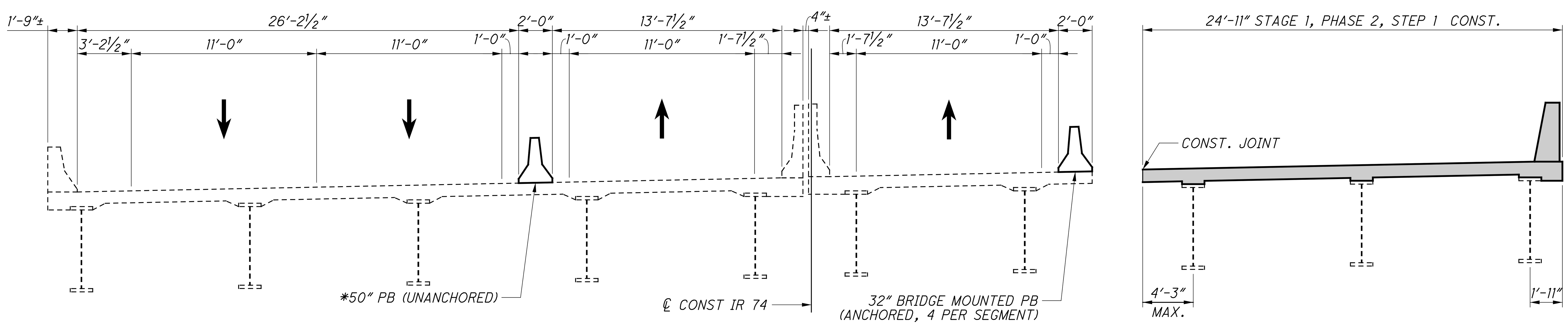
4/40



EXISTING TRANSVERSE SECTION



STAGE 1, PHASE 2, STEP 1 REMOVAL



STAGE 1, PHASE 2, STEP 1 CONSTRUCTION

SEQUENCE OF CONSTRUCTION

STAGE 1/ PHASE 2/ STEP 1

1. INSTALL PB AS SHOWN IN BU-04 & BU-23 PLANS.
2. MAINTAIN TRAFFIC AS SHOWN.
3. INSTALL TEMP. SHORING.
4. REMOVE STAGE 1/ PHASE 2/ STEP 1 PORTIONS OF RIGHT BRIDGE.
5. CONSTRUCT STAGE 1/ PHASE 2/ STEP 1 PORTIONS OF RIGHT BRIDGE.

* 32" PB WITH GLARE SCREEN MAY BE USED AS AN ALTERNATE

LEGEND

LIMITS OF REMOVAL PER ITEM 202 - STRUCTURE REMOVED, OVER 20 FOOT SPAN

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	BMP	MDS	9/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115577	

PHASE CONSTRUCTION DETAILS - 1
BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667

5/40

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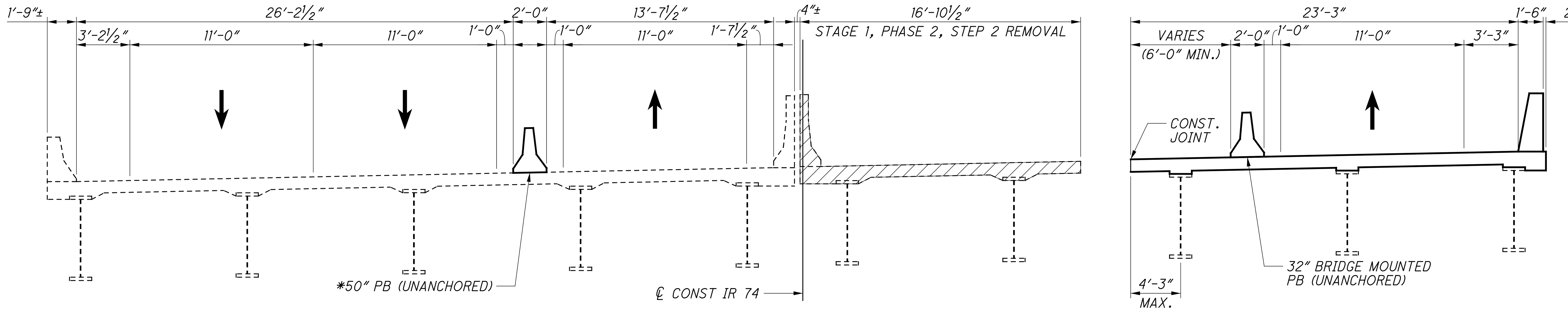
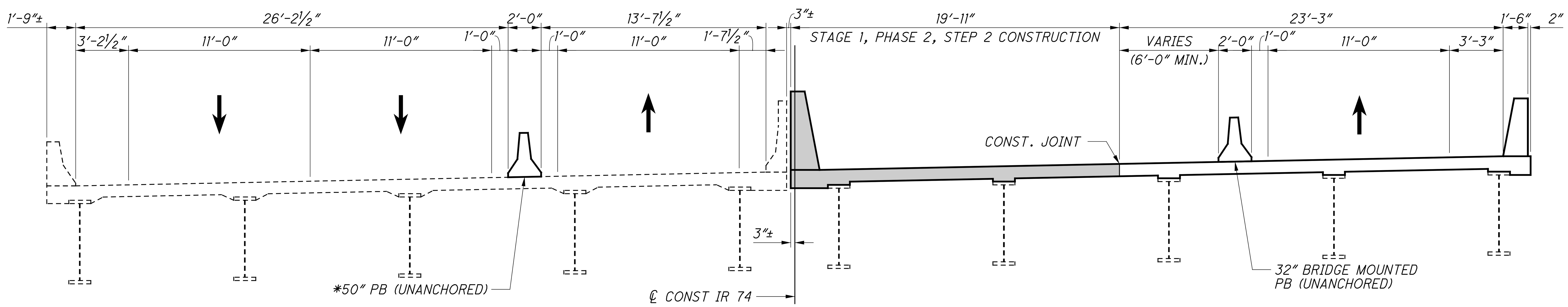


STAGE 1, PHASE 2, STEP 2 REMOVAL

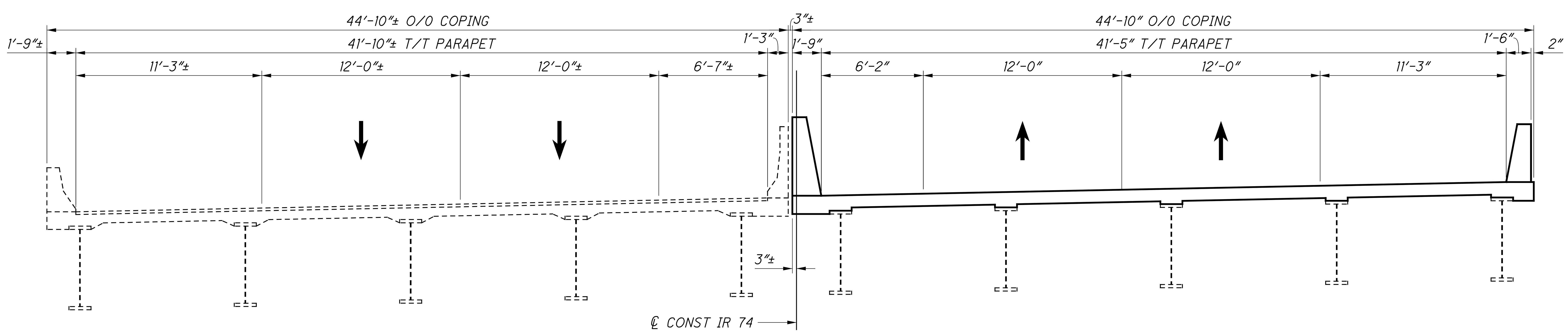
SEQUENCE OF CONSTRUCTION

STAGE 1/ PHASE 2/ STEP 2

1. RELOCATE PB AS SHOWN IN BU-04 & BU-23 PLANS.
2. MAINTAIN TRAFFIC AS SHOWN.
3. INSTALL TEMP. SHORING.
4. REMOVE STAGE 1/ PHASE 2/ STEP 2 PORTIONS OF RIGHT BRIDGE.
5. CONSTRUCT STAGE 1/ PHASE 2/ STEP 2 PORTIONS OF RIGHT BRIDGE.



STAGE 1, PHASE 2, STEP 2 CONSTRUCTION



PROPOSED TRANSVERSE SECTION

* 32" PB WITH GLARE SCREEN MAY BE USED AS AN ALTERNATE

LEGEND

LIMITS OF REMOVAL PER ITEM 202 - STRUCTURE REMOVED, OVER 20 FOOT SPAN

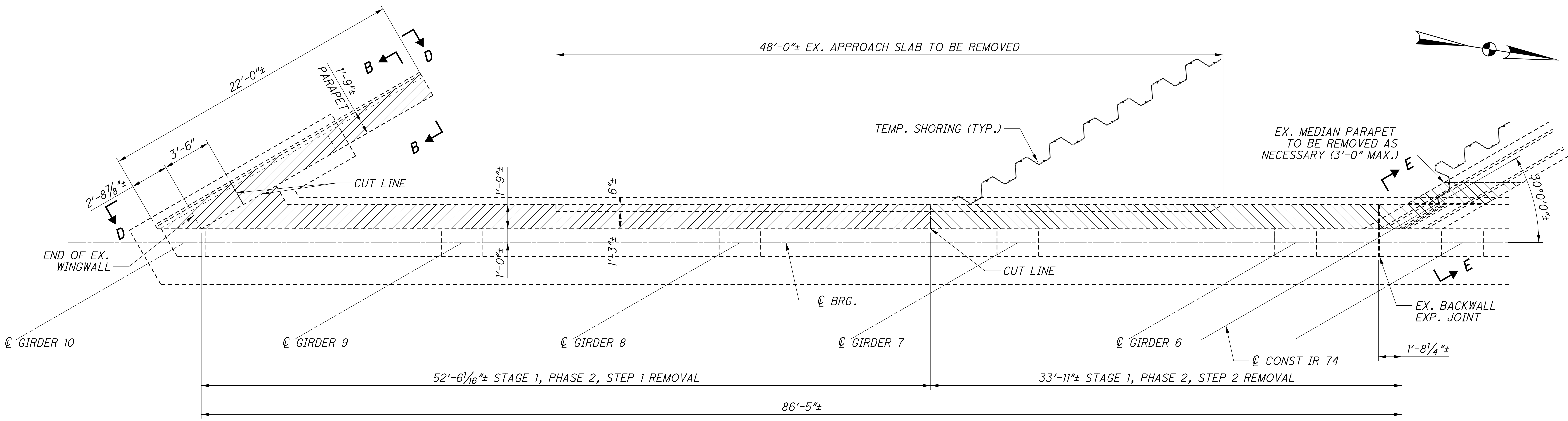
DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	CHECKED	DRAWN	REVISED	REVIEWED	DATE	STRUCTURE FILE NUMBER
SJF	CLB	BMP		MDS	9/12/18	3115577

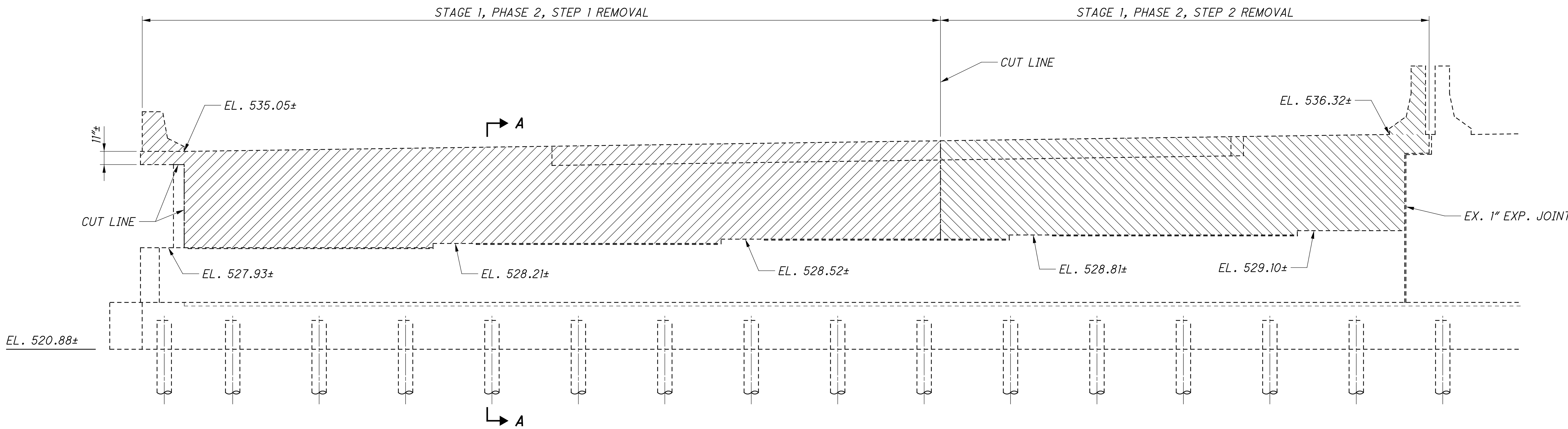
PHASE CONSTRUCTION DETAILS - 2
BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667

6/40



PLAN - REAR ABUTMENT



ELEVATION - REAR ABUTMENT

LEGEND

LIMITS OF REMOVAL PER ITEM 202

NOTES:

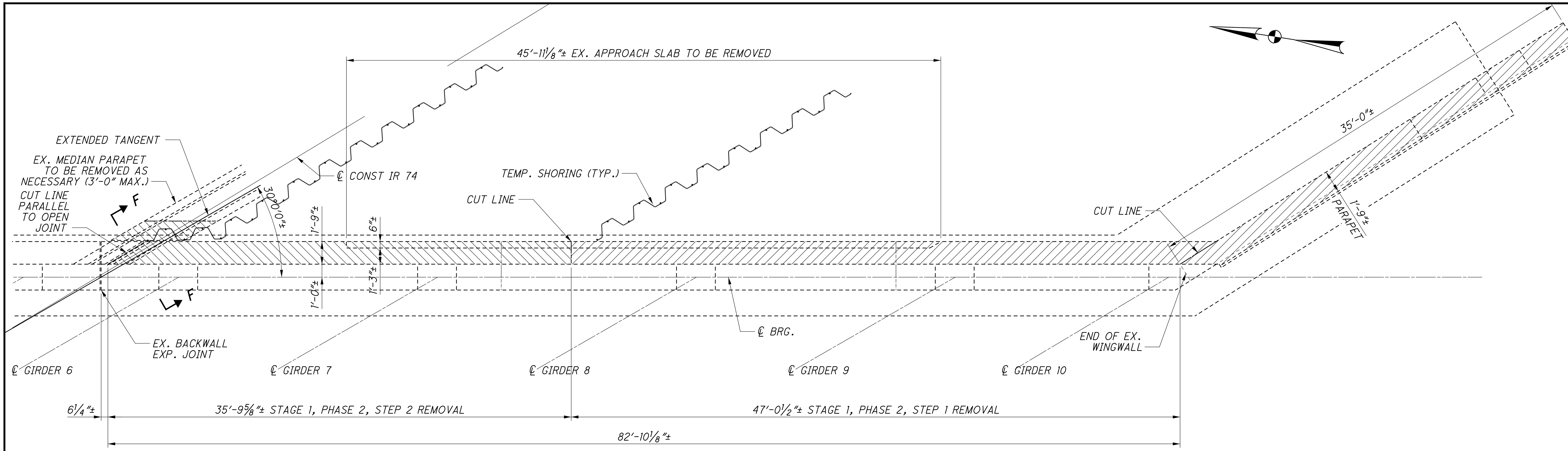
FOR SECTIONS A-A, B-B AND E-E, AND VIEW D-D, SEE SHEET 9/40.

DESIGN AGENCY: STRUCTUREPOINT

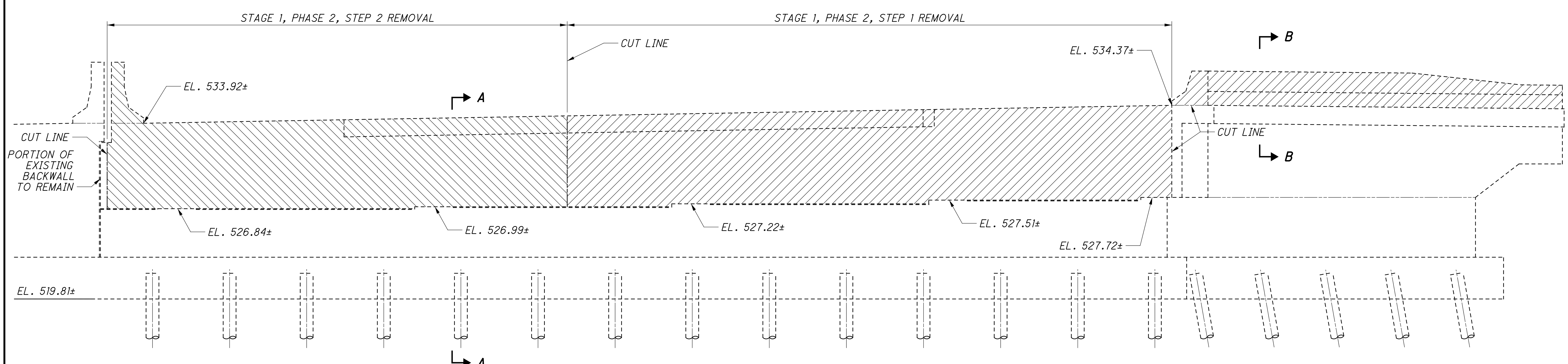
DESIGNED SJF | DRAWN DSH | REVIEWED MDS | DATE 11/12/18 | CHECKED CLB | REVISED | STRUCTURE FILE NUMBER 3115577

ABUTMENT REMOVAL DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667



PLAN - FORWARD ABUTMENT



ELEVATION - FORWARD ABUTMENT

LEGEND

LIMITS OF REMOVAL PER ITEM 202

NOTES:

FOR SECTIONS A-A, B-B AND F-F, SEE SHEET 9/40.

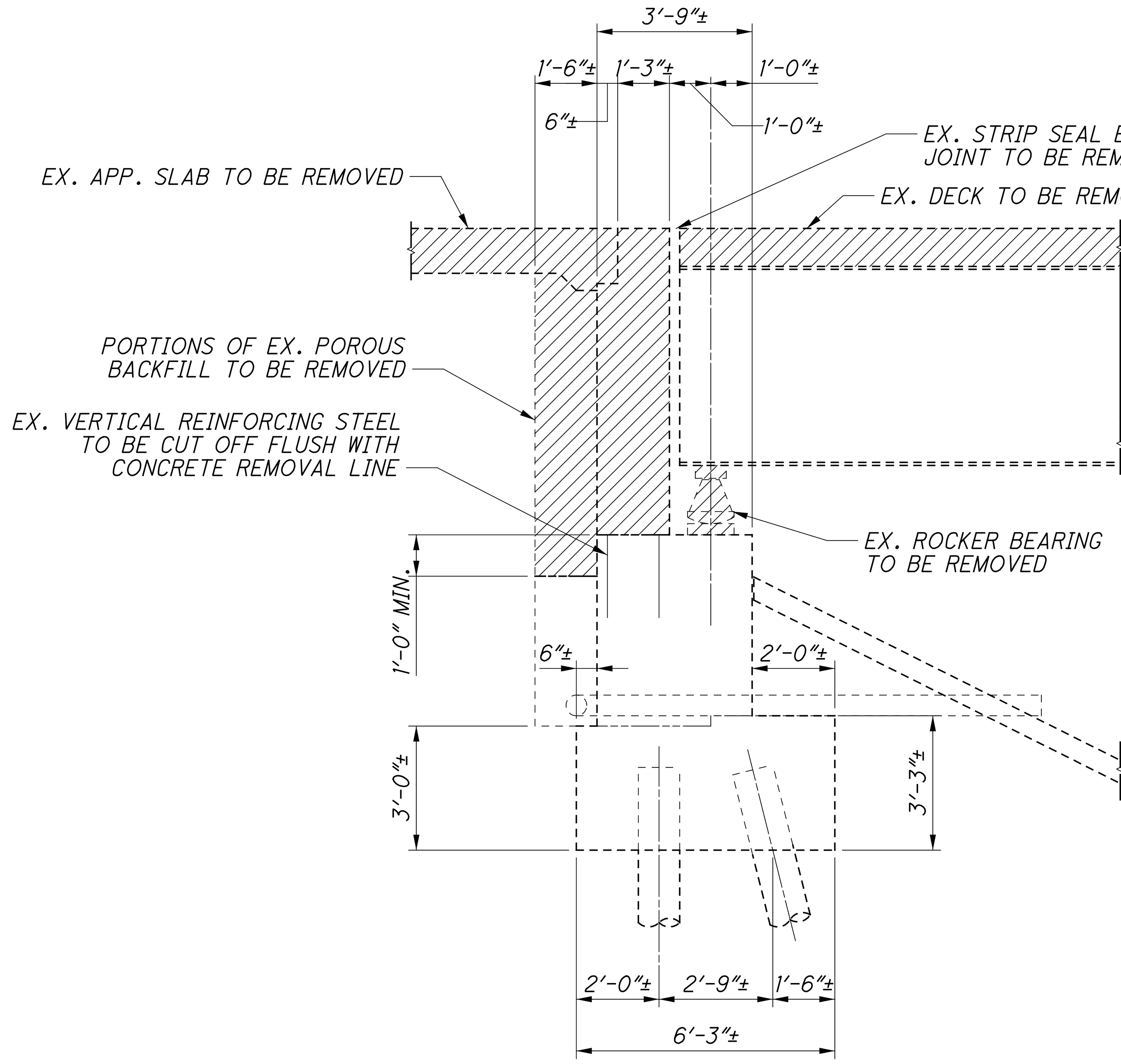
DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	CHECKED	DRAWN	REVISED	REVIEWED	DATE	STRUCTURE FILE NUMBER
SJF	CLB	DSH		MDS	11/12/18	3115577

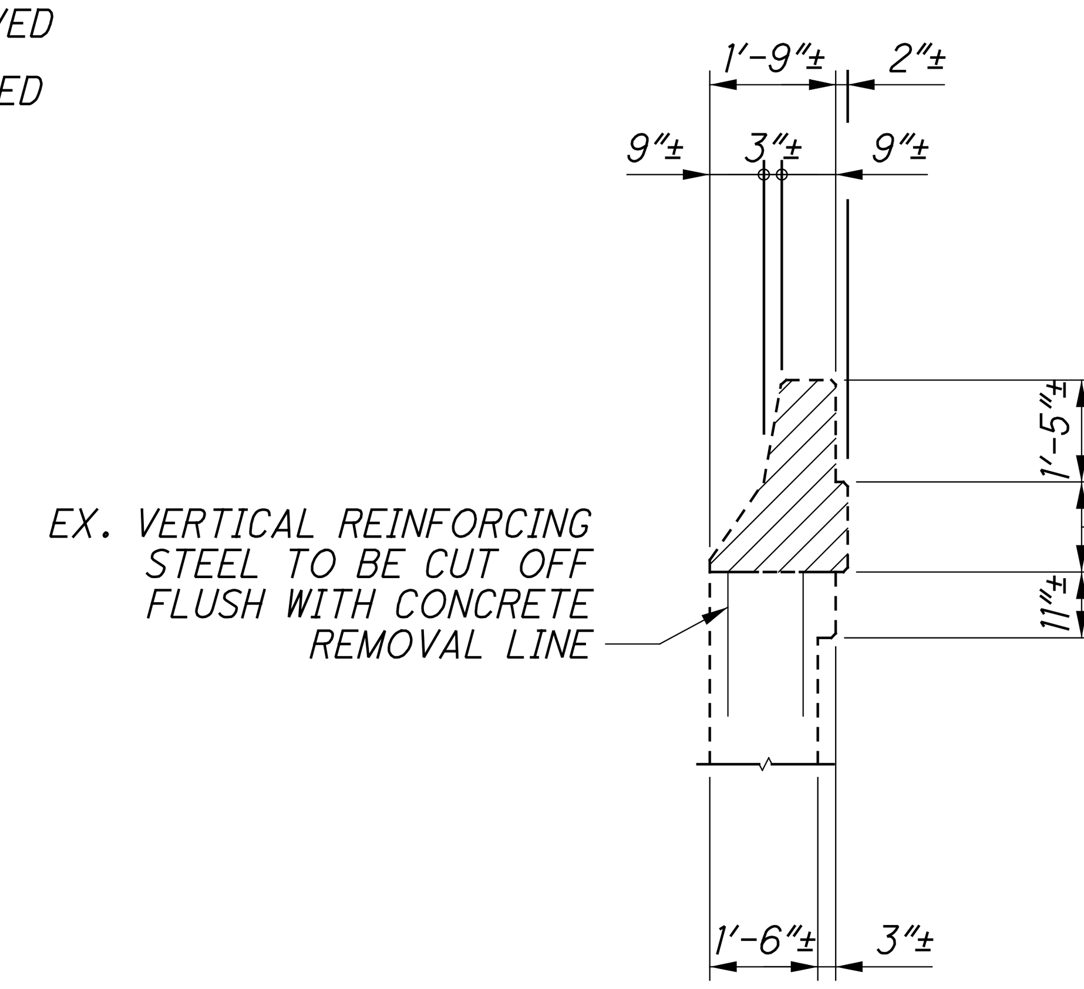
ABUTMENT REMOVAL DETAILS (RIGHT BRIDGE)

BRIDGE NO. HAM-74-1852 L/R OVER BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667



SECTION A-A



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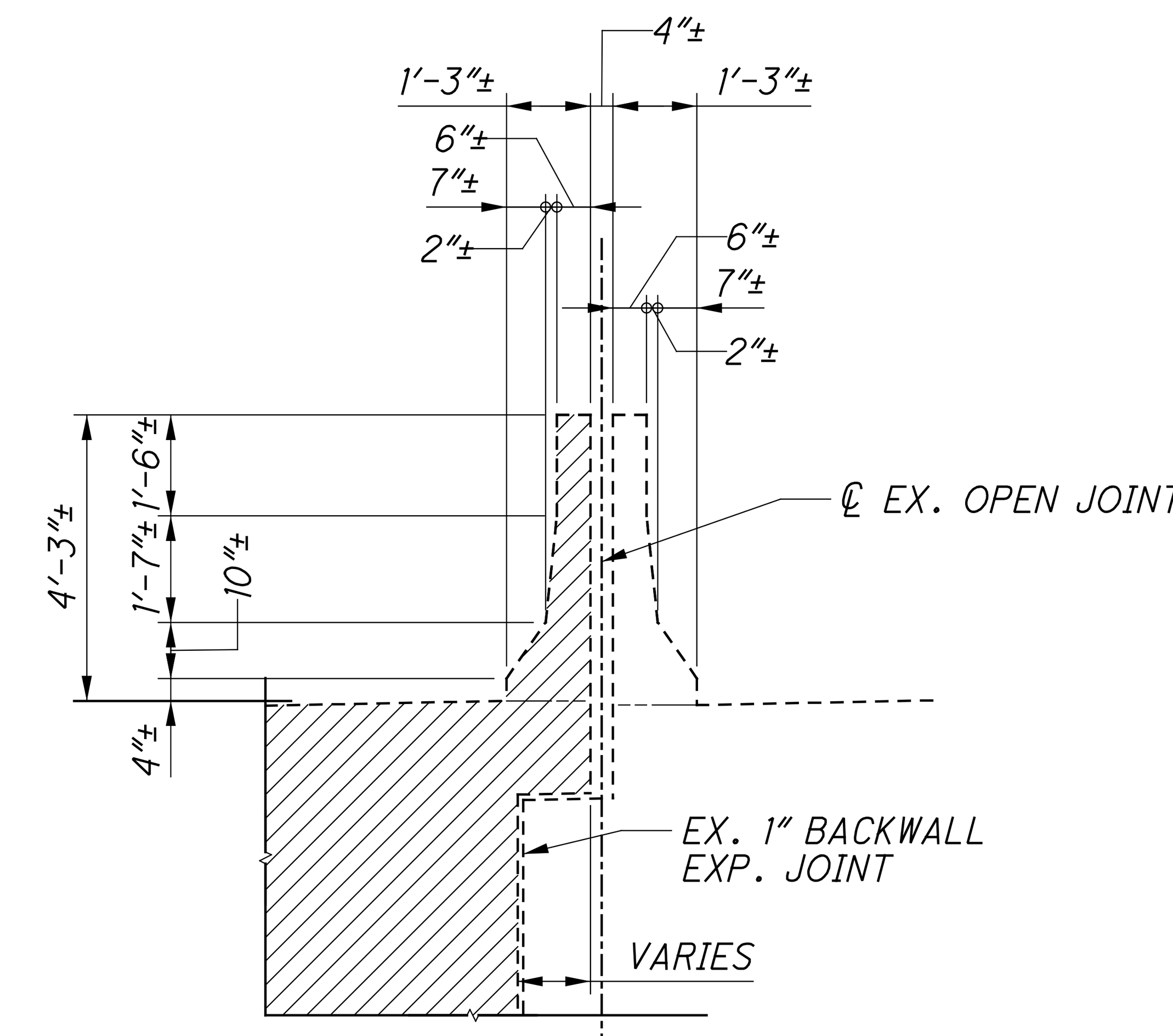

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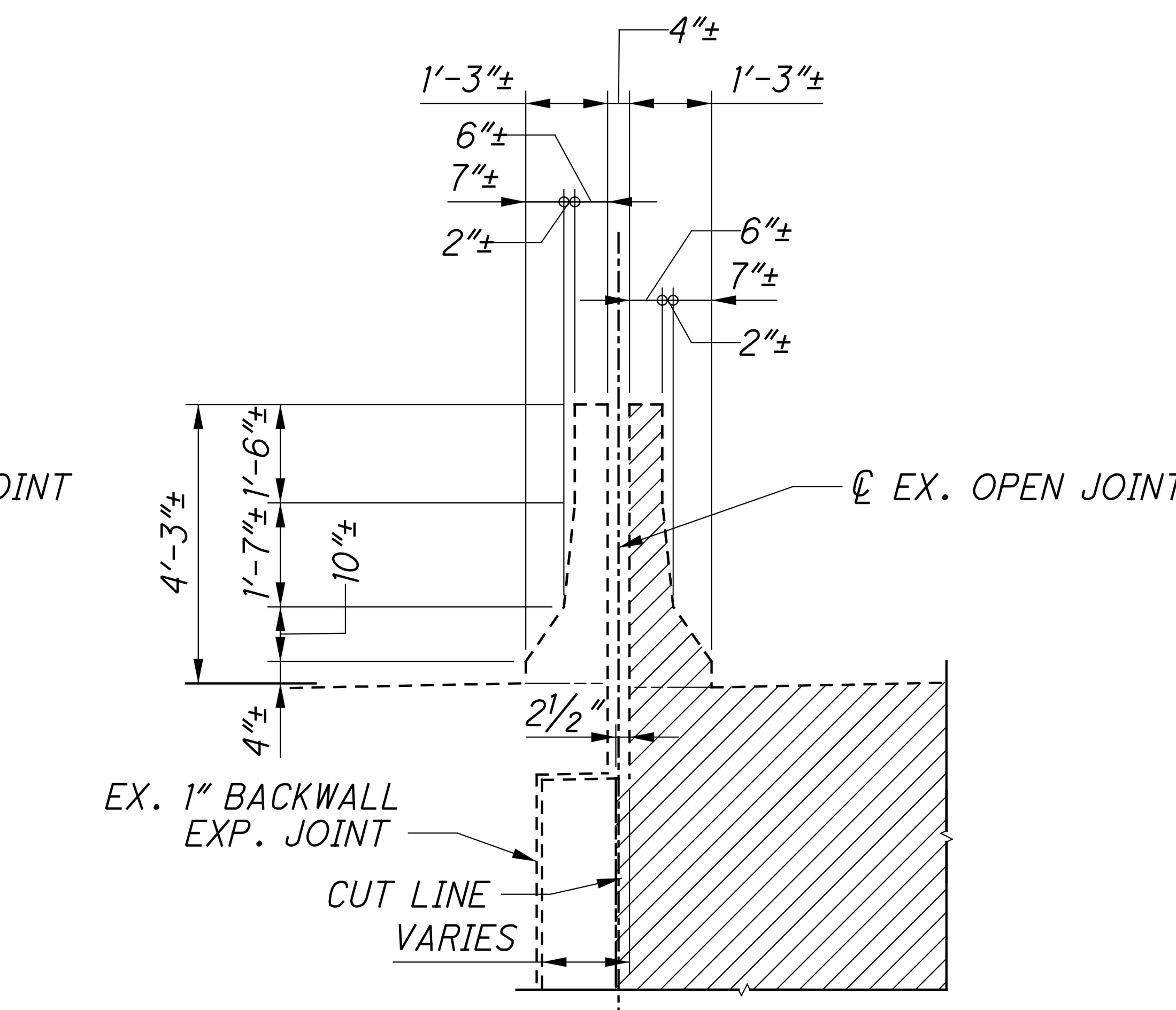

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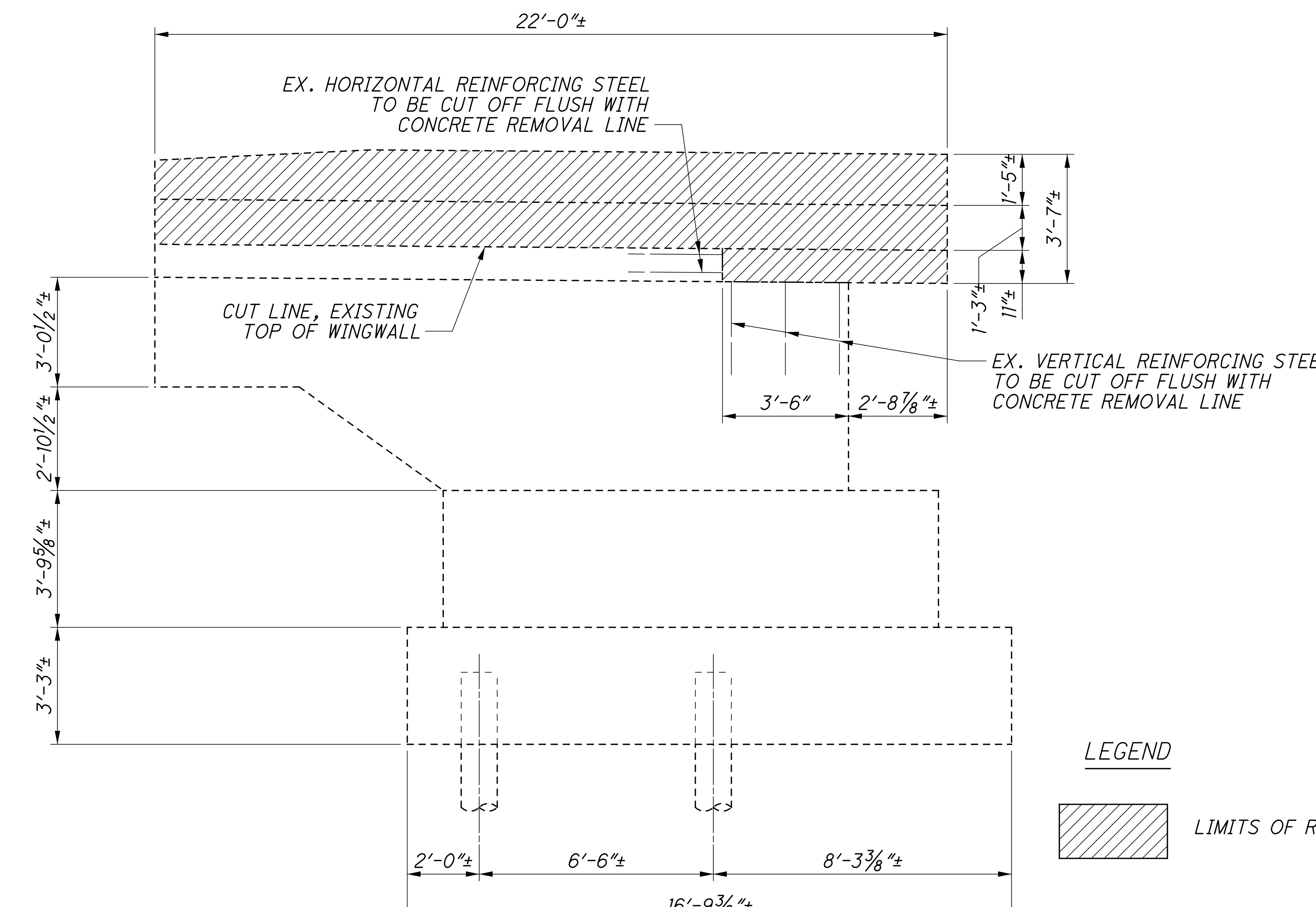

VIEW D-D

LEGEND

LIMITS OF REMOVAL PER ITEM 202

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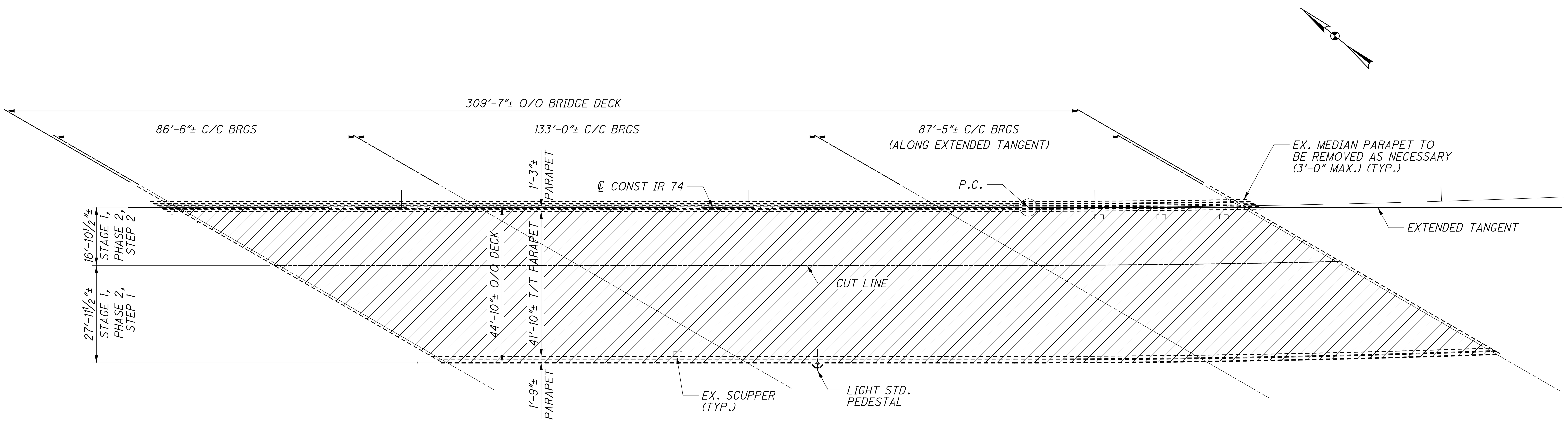
DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115577	

ABUTMENT REMOVAL DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1852 L/R
OVER BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667



PLAN

LEGEND

LIMITS OF REMOVAL PER ITEM 202

DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	CHECKED	DRAWN	REVISED	REVIEWED	DATE	STRUCTURE FILE NUMBER
SJF	CLB	DSH	CLB	MDS	11/12/18	3115577

SUPERSTRUCTURE REMOVAL DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1852 L/R
OVER BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667

10/40

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11/16/2023 9:34:18 AM
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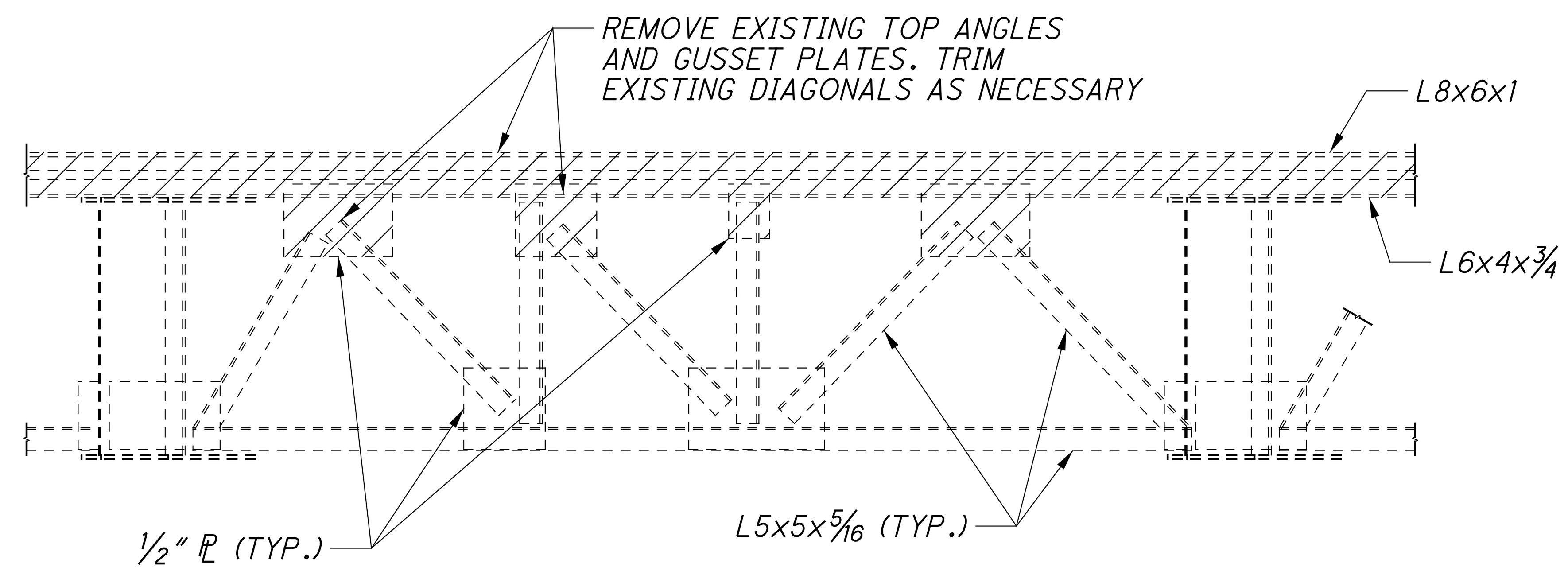


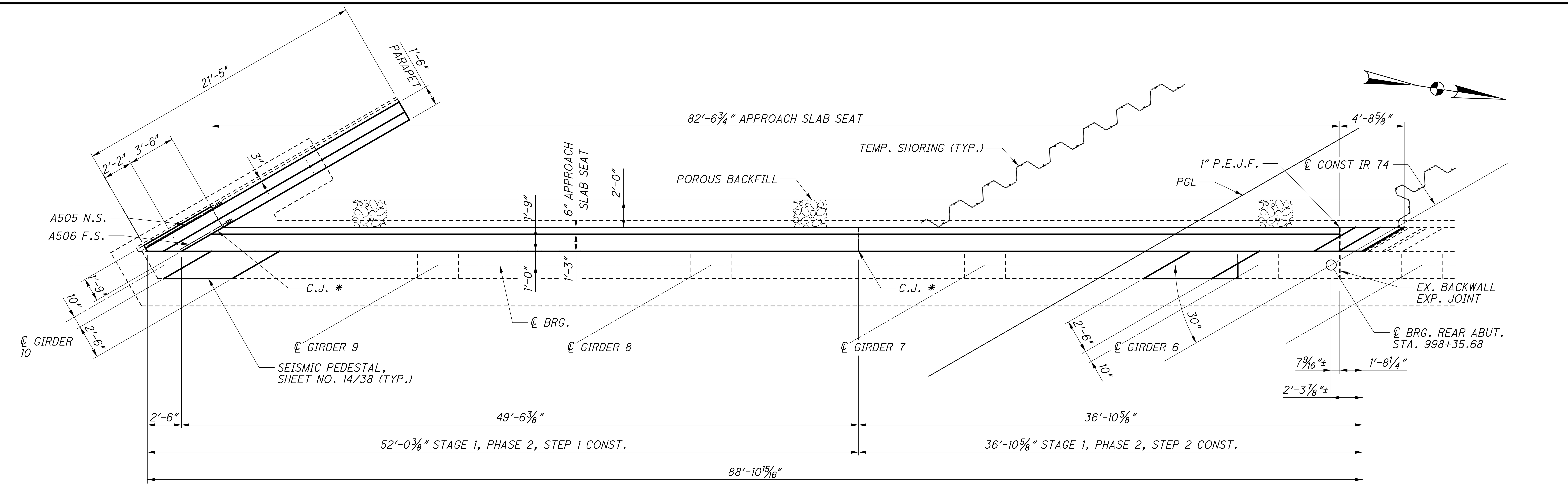
END CROSS FRAME REMOVAL DETAIL

DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115577	

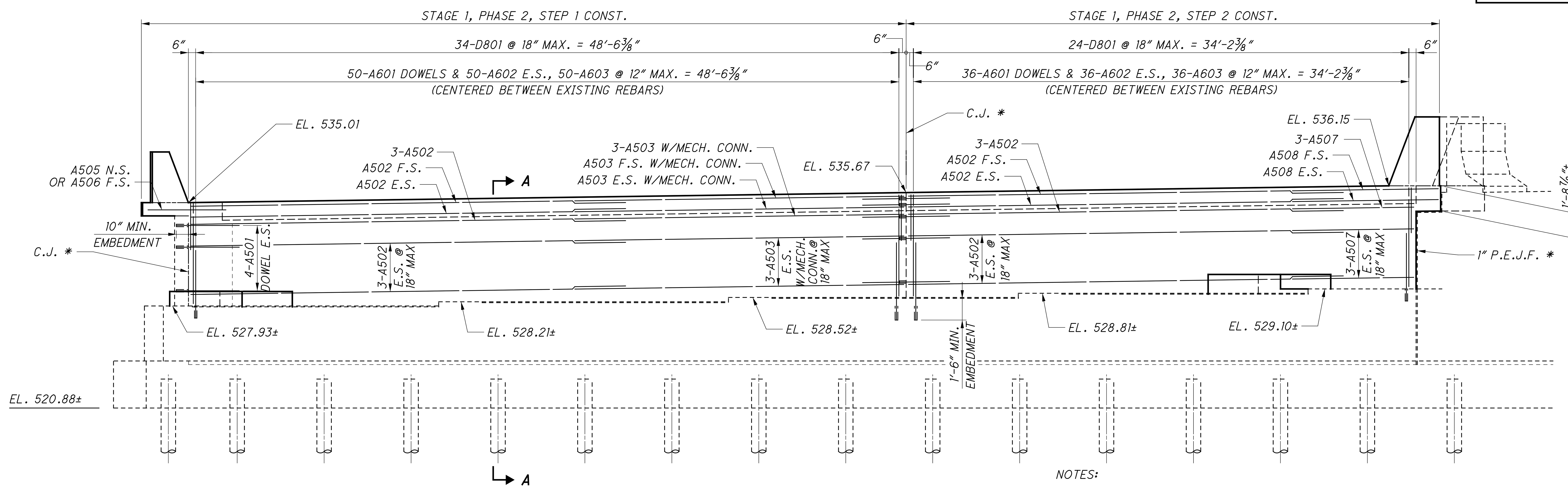
SUPERSTRUCTURE REMOVAL DETAILS
BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667



PLAN - REAR ABUTMENT

MINIMUM BAR LAP	
#5	3'-6"
#6	3'-10"



ELEVATION - REAR ABUTMENT

NOTES:

1. * 3'-0" WIDE TYPE 2 WATERPROOFING ON BACK FACE CENTERED ON JOINT FROM TOP OF SEAT TO BOTTOM OF APPROACH SLAB.
2. FOR PARAPET DETAILS, SEE SHEET 30/40 & 32/40.
3. FOR SECTION A-A, SEE SHEET 13/40.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115577	

REAR ABUTMENT DETAILS (RIGHT BRIDGE)

BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667

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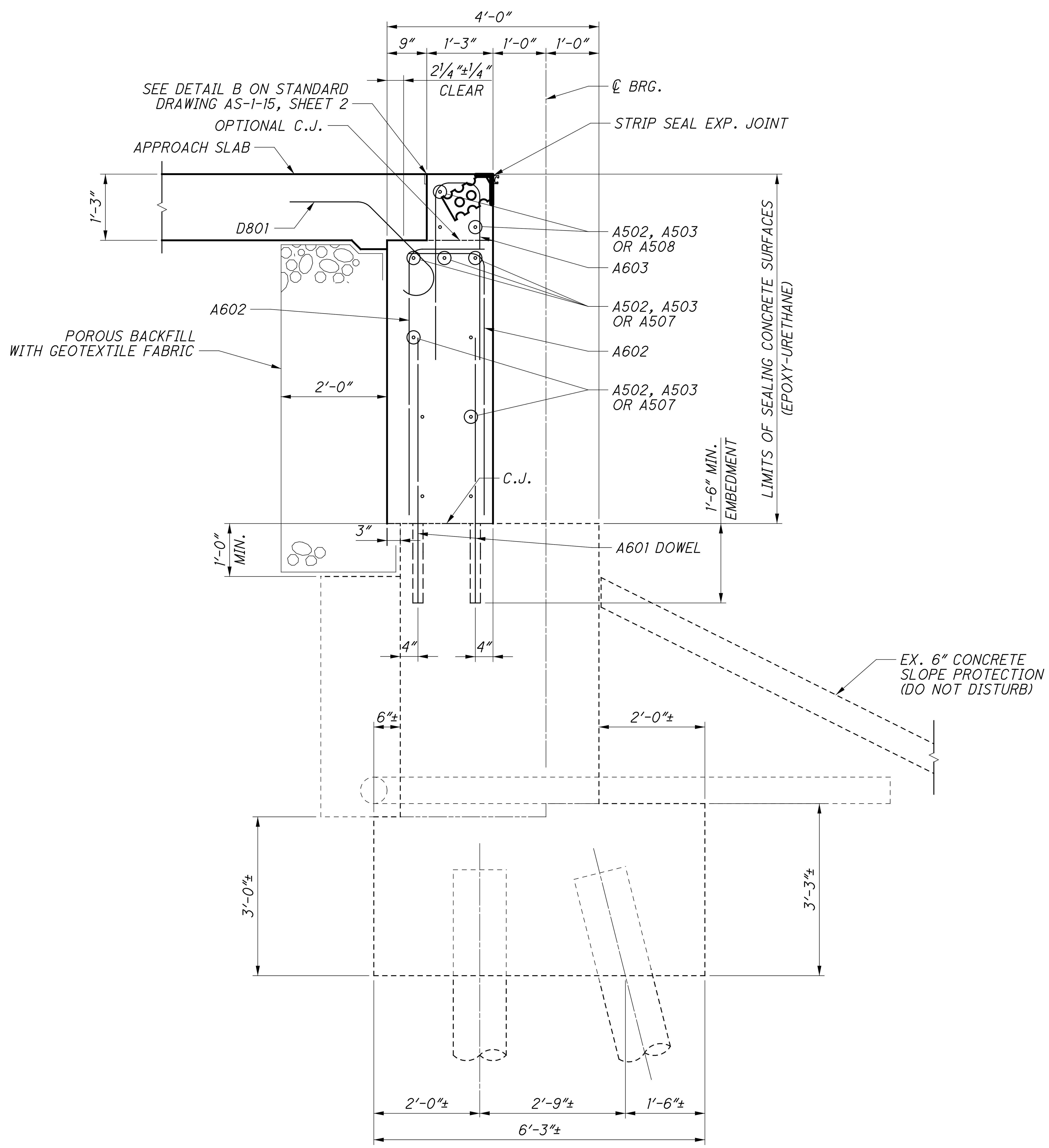

SECTION A-A

DESIGN AGENCY STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115577	

REAR ABUTMENT DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667

13/40

55/120

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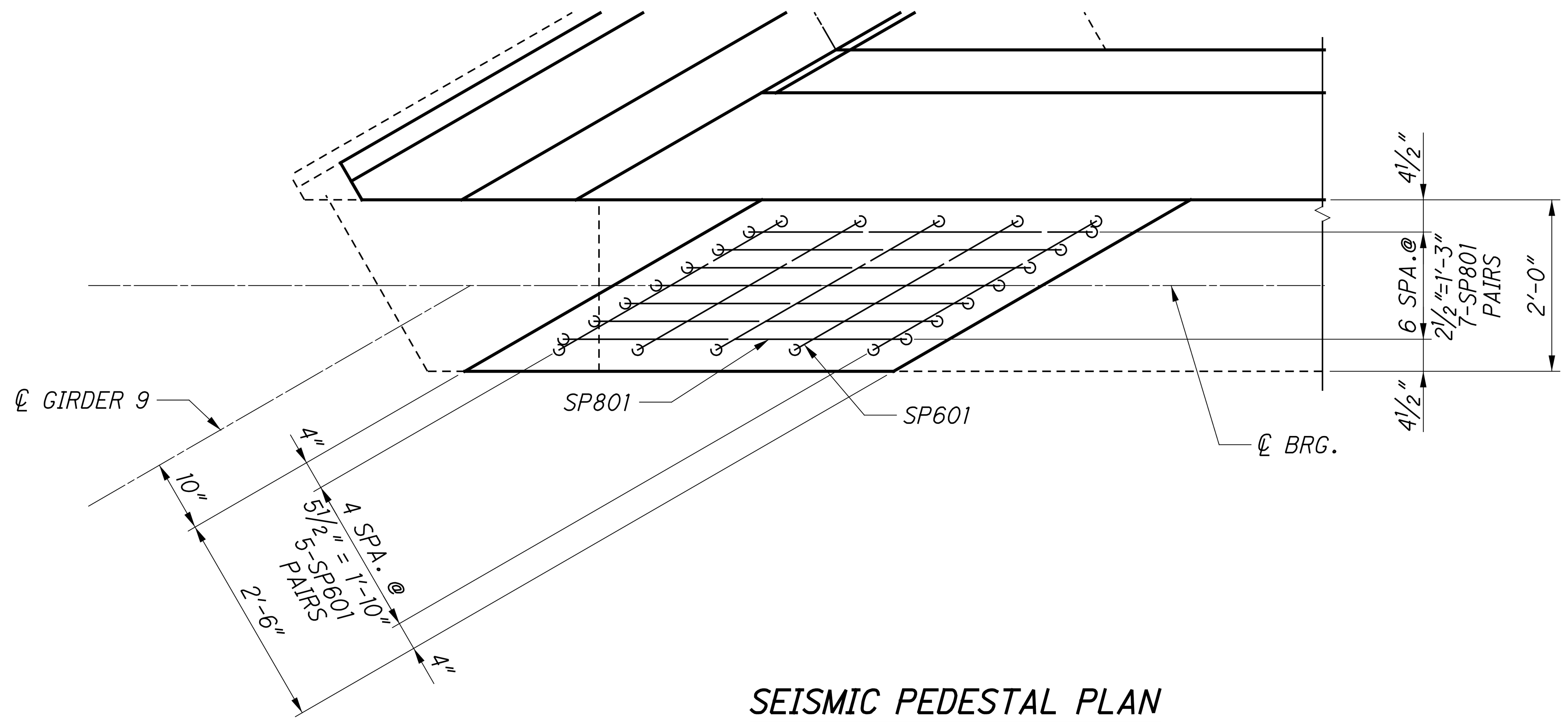
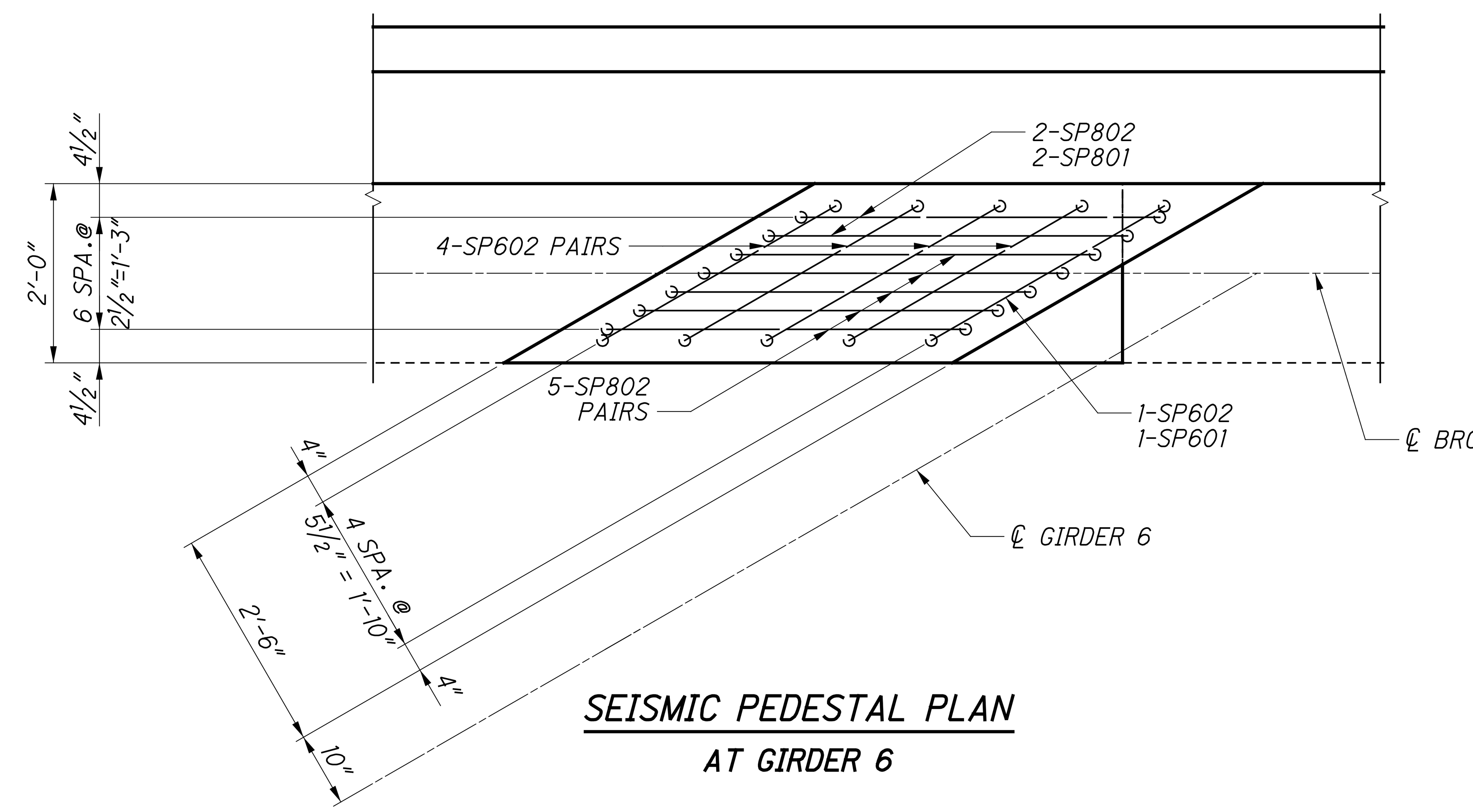
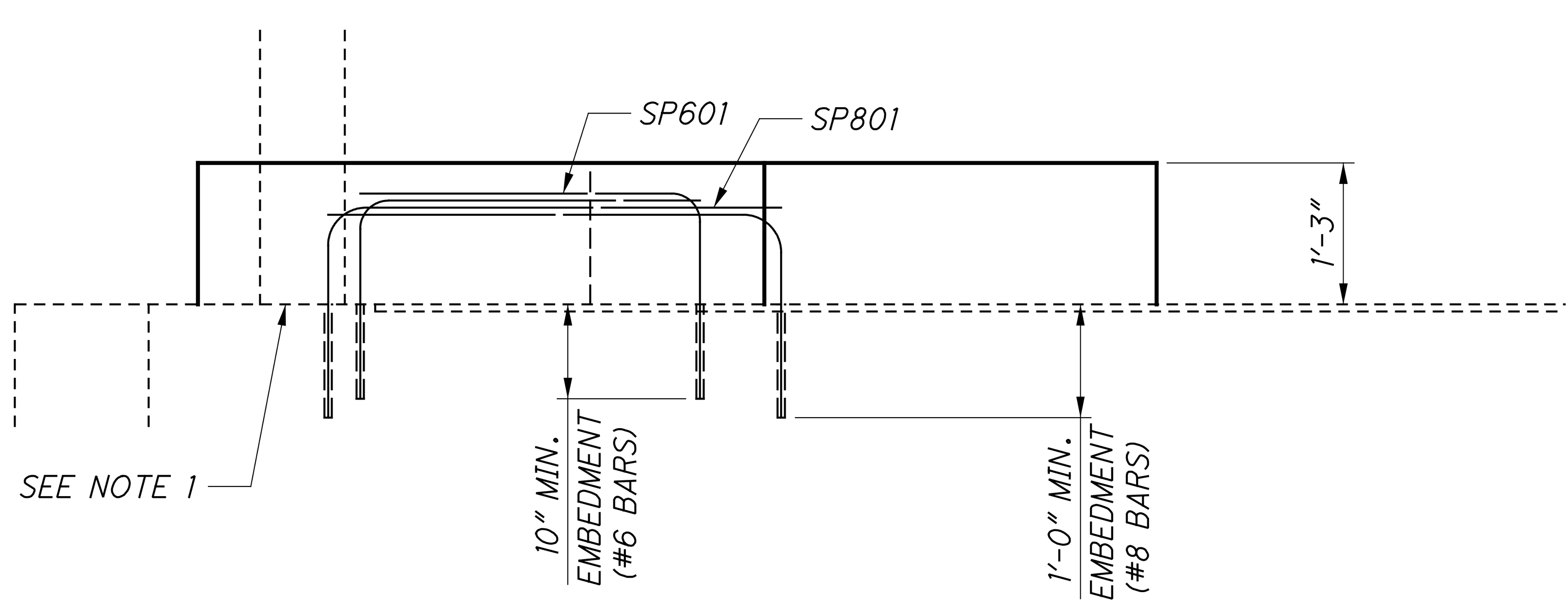


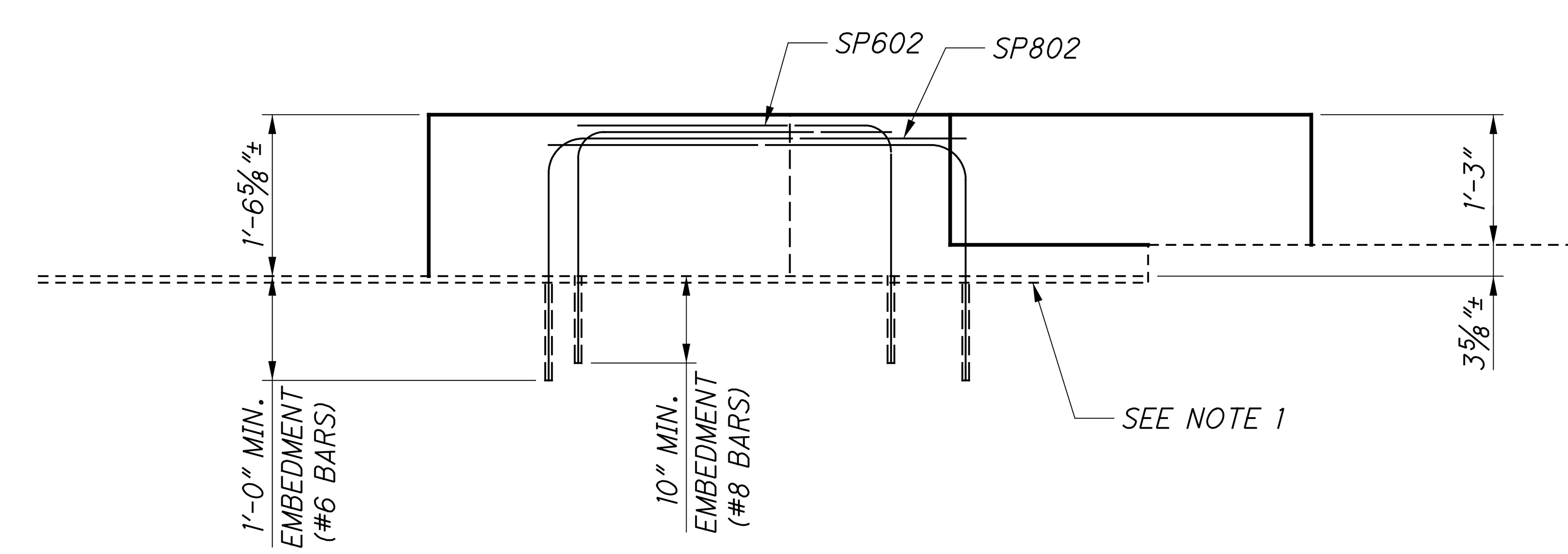
SEISMIC PEDESTAL PLAN
AT GIRDER 9



SEISMIC PEDESTAL PLAN
AT GIRDER 6



SEISMIC PEDESTAL ELEVATION
AT GIRDER 9



SEISMIC PEDESTAL ELEVATION
AT GIRDER 6

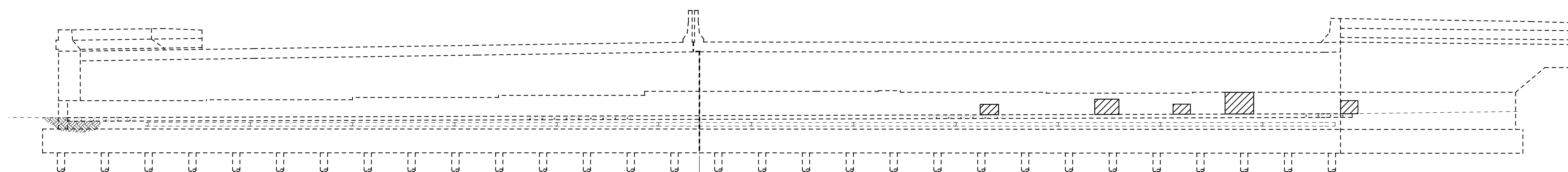
DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115577	

REAR ABUTMENT DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667

14/40



SUMMARY OF ABUT. REPAIR QUANTITIES		
	PATCH	EPOXY INJECTION
	(SQ FT)	(FT)
REAR ABUTMENT	* 25.91	* 83.92

* FIELD MEASURED TOTAL FOR LEFT AND RIGHT BRIDGES

LEGEND

AREA TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN.

NOTES:

1. ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN AND ITEM 512 - CONCRETE REPAIR BY EPOXY INJECTION ARE UNIT PRICE PAY ITEMS (31 AND 32).

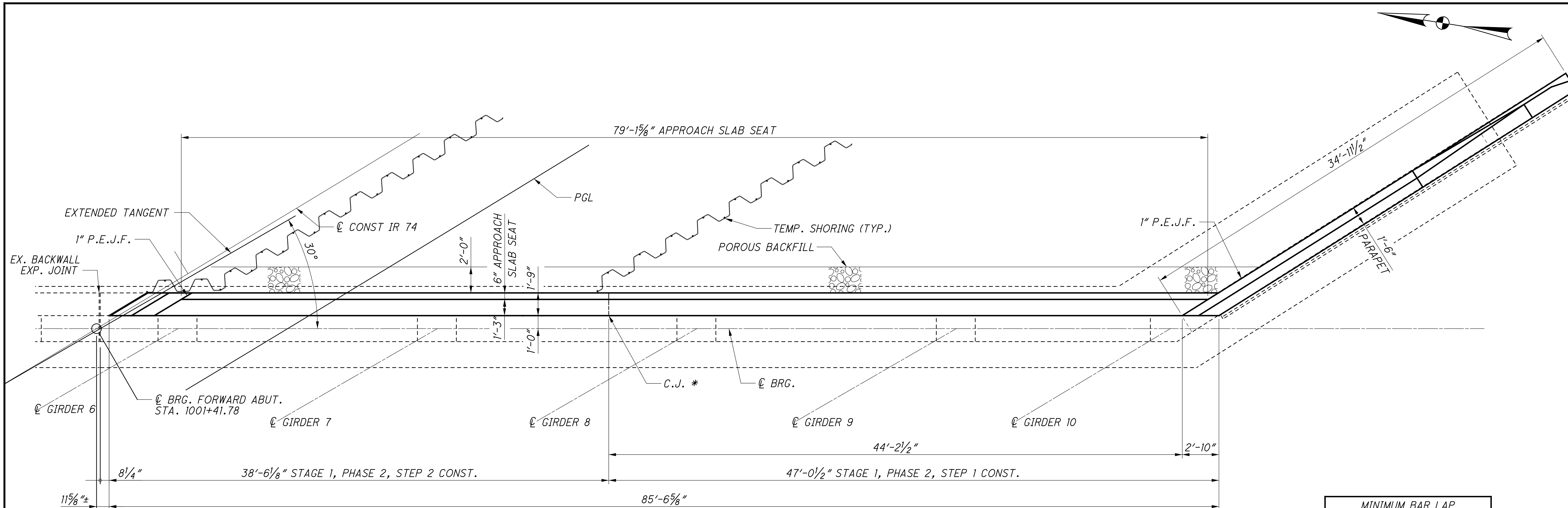
DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115577	

PATCHING DETAILS - REAR ABUTMENT

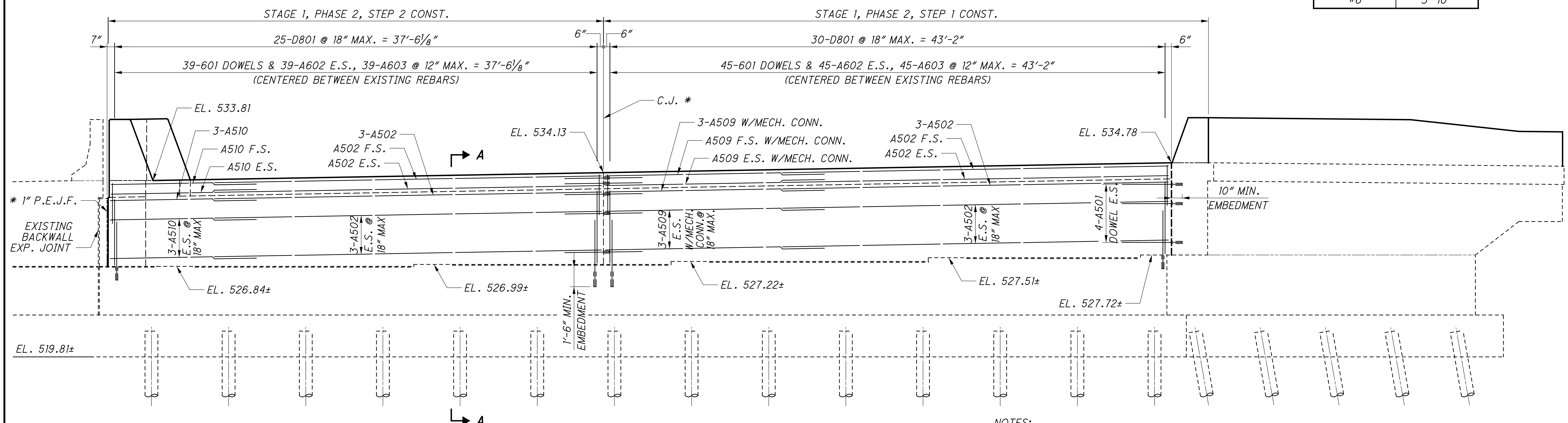
BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667



PLAN - FORWARD ABUTMENT

MINIMUM BAR LAP	
#5	3'-6"
#6	3'-10"



ELEVATION - FORWARD ABUTMENT

NOTES:

1. ∗ 3'-0" WIDE TYPE 2 WATERPROOFING ON BACK FACE CENTERED ON JOINT FROM TOP OF SEAT TO BOTTOM OF APPROACH SLAB.
2. FOR PARAPET DETAILS, SEE SHEETS 31/40 AND 32/40.
3. FOR SECTION A-A, SEE SHEET 17/40.

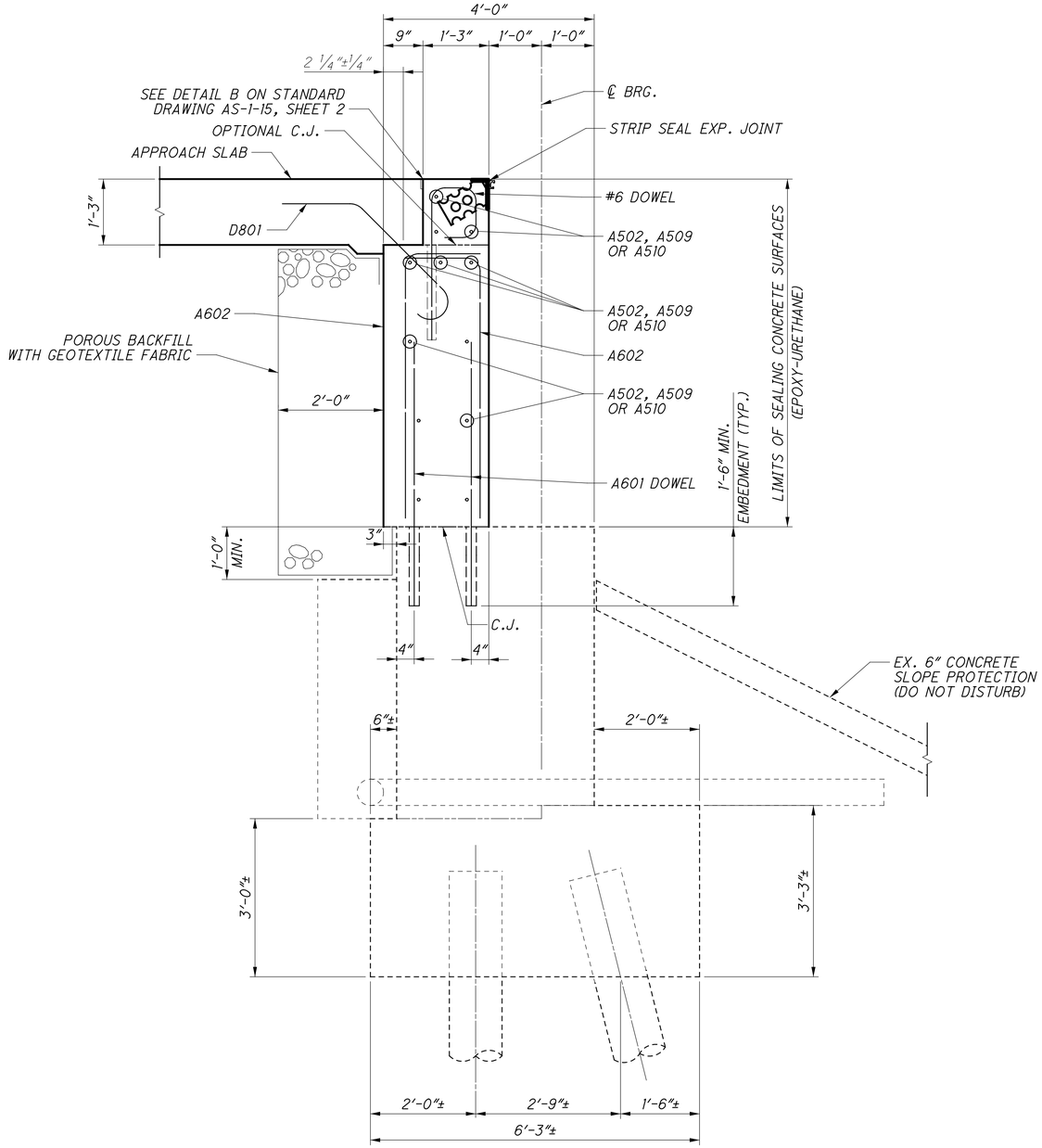
DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115577	

FORWARD ABUTMENT DETAILS (RIGHT BRIDGE)

BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667



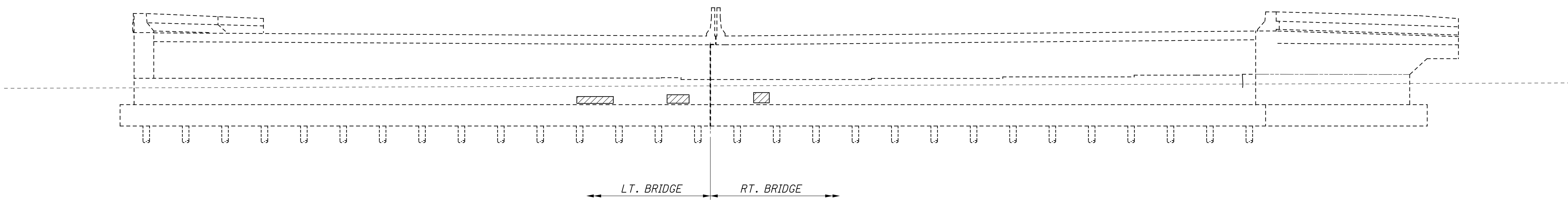
SECTION A-A

DESIGN AGENCY
STRUCTUREPOINT LLC
2550 CORPORATE EXCHANGE DR. STE 250
COLUMBUS, OH 43231
TEL: 614.901.7900 FAX: 614.901.7901
www.structurepoint.com

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115577	

FORWARD ABUTMENT DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667



SUMMARY OF ABUT. REPAIR QUANTITIES

	PATCH	EPOXY INJECTION
	(SQ FT)	(FT)
FORWARD ABUTMENT	∗6.36	∗21.08

∗ FIELD MEASURED TOTAL FOR LEFT AND RIGHT BRIDGE

LEGEND

AREA TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN.

NOTES:

1. ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN AND ITEM 512 - CONCRETE REPAIR BY EPOXY INJECTION ARE UNIT PRICE PAY ITEMS (31 AND 32).

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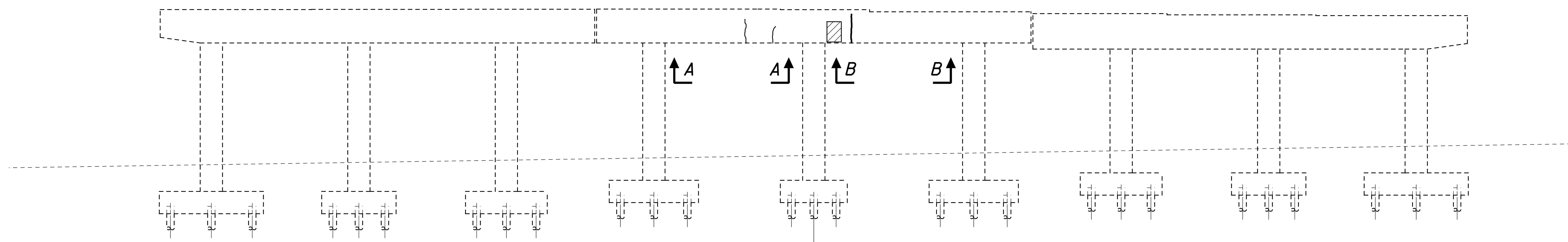
DESIGN AGENCY
STRUCTUREPOINT
DESIGNED SJF | DRAWN DSH | REVIEWED MDS | DATE 11/12/18
CHECKED CLB | REVISED | STRUCTURE FILE NUMBER 3115577

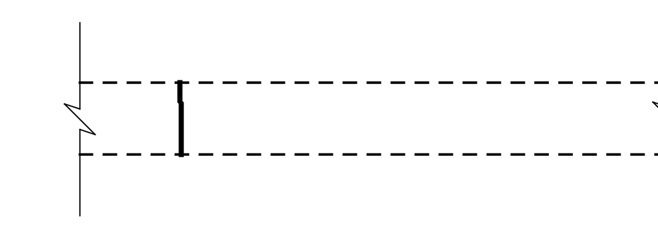
PATCHING DETAILS - FORWARD ABUTMENT
BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)



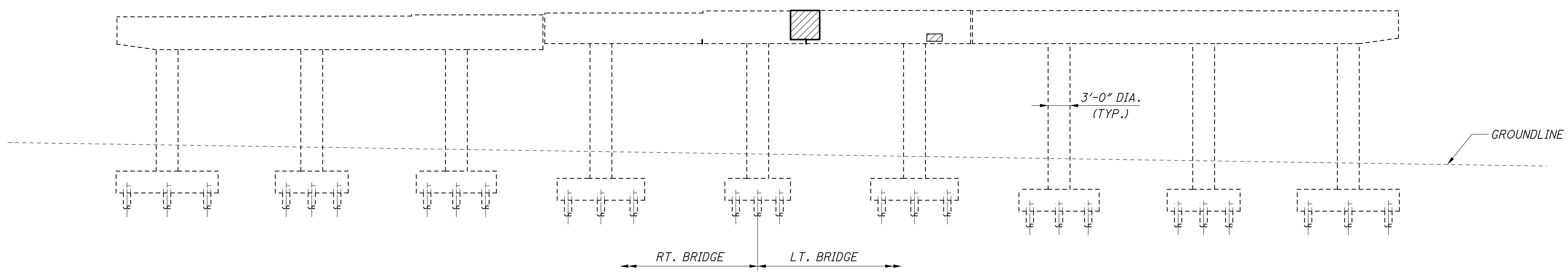
PIER 1 - LEFT BRIDGE

PIER 1 - WEST ELEVATION
(LOOKING EAST)

PIER 1 - RIGHT BRIDGE



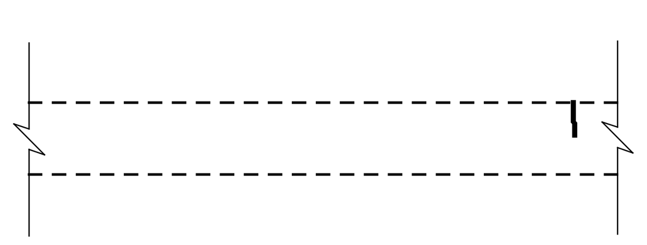
VIEW B-B



PIER 1 - RIGHT BRIDGE

PIER 1 - EAST ELEVATION
(LOOKING WEST)

PIER 1 - LEFT BRIDGE

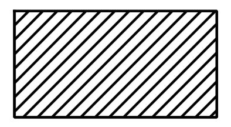


VIEW A-A

SUMMARY OF PIER 1 REPAIR QUANTITIES		
	PATCH	EPOXY INJECTION
	(SQ FT)	(FT)
PIER 1	* 37.68	* 24

* FIELD MEASURED TOTAL FOR LEFT AND RIGHT BRIDGES

LEGEND

 AREA TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN.

NOTES:

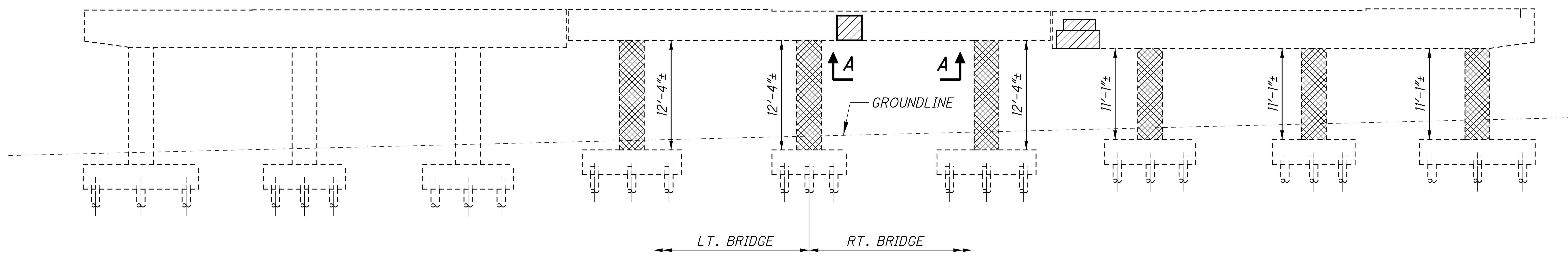
1. ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN AND ITEM 512 - CONCRETE REPAIR BY EPOXY INJECTION ARE UNIT PRICE PAY ITEMS (31 AND 32).

DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	CHECKED	DRAWN	REVISED	REVIEWED	DATE	STRUCTURE FILE NUMBER
SJF	CLB	DSH		MDS	11/12/18	3115577

PIER 1 DETAILS
BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

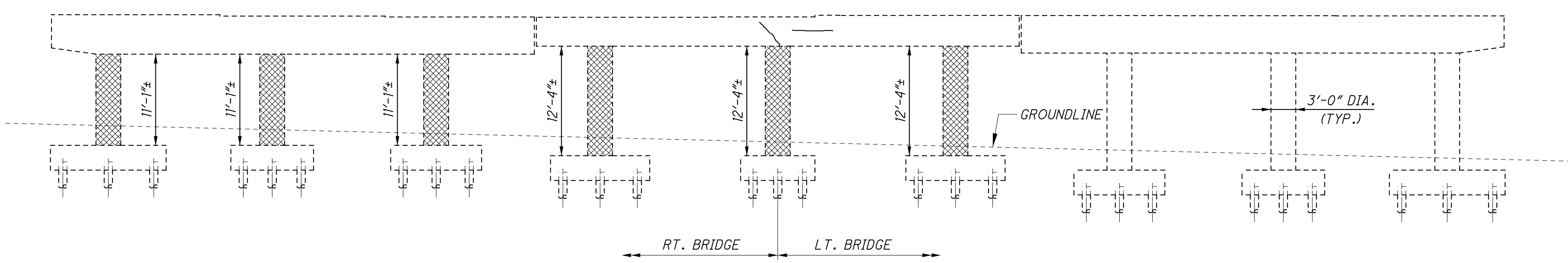
HAM-75-3.84
PID No. 104667



PIER 2 - LEFT BRIDGE

PIER 2 - WEST ELEVATION
(LOOKING EAST)

PIER 2 - RIGHT BRIDGE



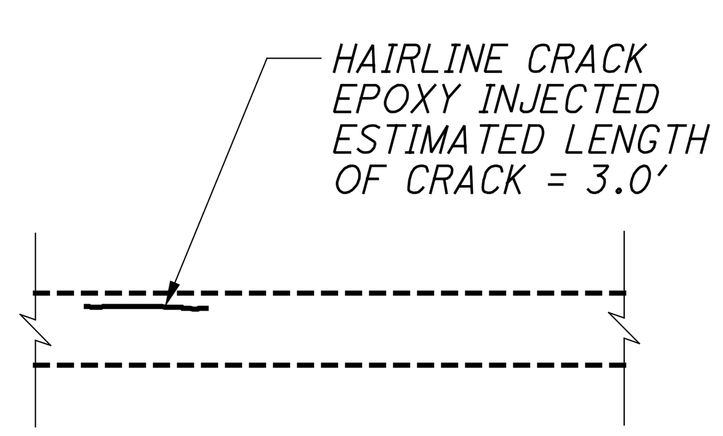
PIER 2 - RIGHT BRIDGE

PIER 2 - EAST ELEVATION
(LOOKING WEST)

PIER 2 - LEFT BRIDGE

SUMMARY OF PIER 2 REPAIR QUANTITIES		
	PATCH	EPOXY INJECTION
	(SQ FT)	(FT)
PIER 2	* 28.25	* 14.41

* FIELD MEASURED TOTAL FOR LEFT AND RIGHT BRIDGES



VIEW A-A

LEGEND

AREA TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN.

FIBER WRAP COLUMN FROM TOP OF FOOTING TO BOTTOM OF CAP. TOP AND BOTTOM 3'-0" REQUIRE FRP JACKET (f1) OF 0.3 KSI, REMAINING LENGTH (f1) OF 0.15 KSI

NOTES:

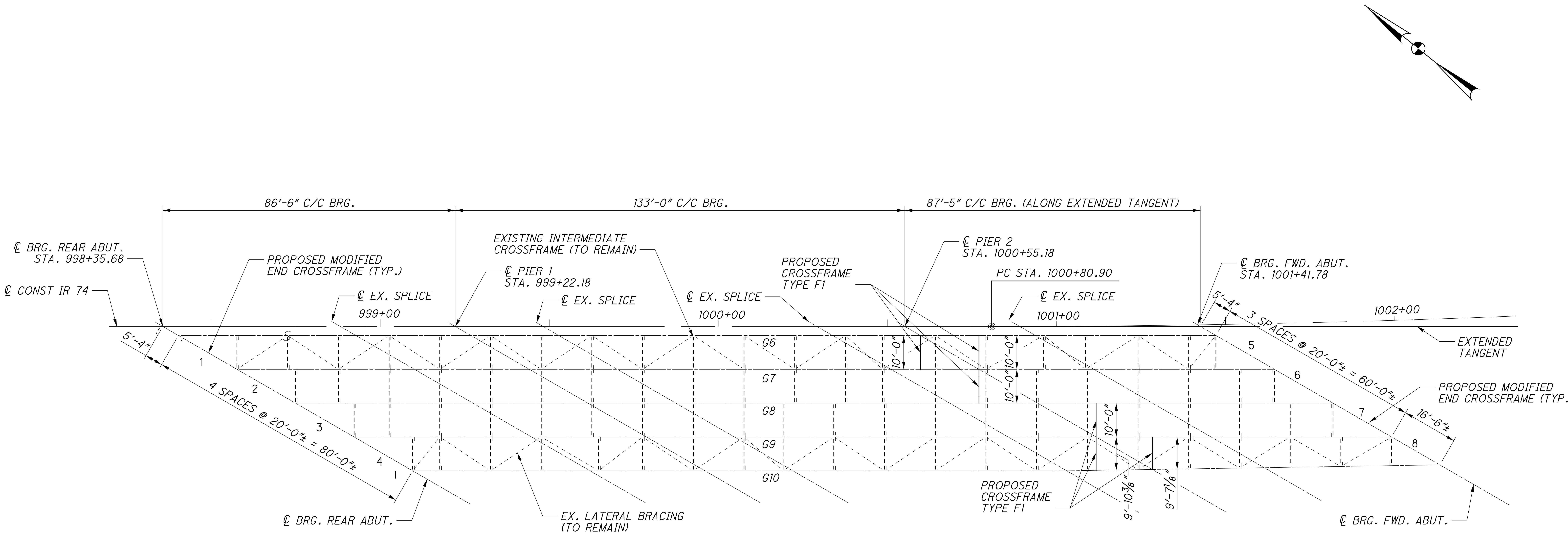
1. ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN AND ITEM 512 - CONCRETE REPAIR BY EPOXY INJECTION ARE UNIT PRICE PAY ITEMS (31 AND 32).

DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115577	

PIER 2 DETAILS
BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667



FRAMING PLAN

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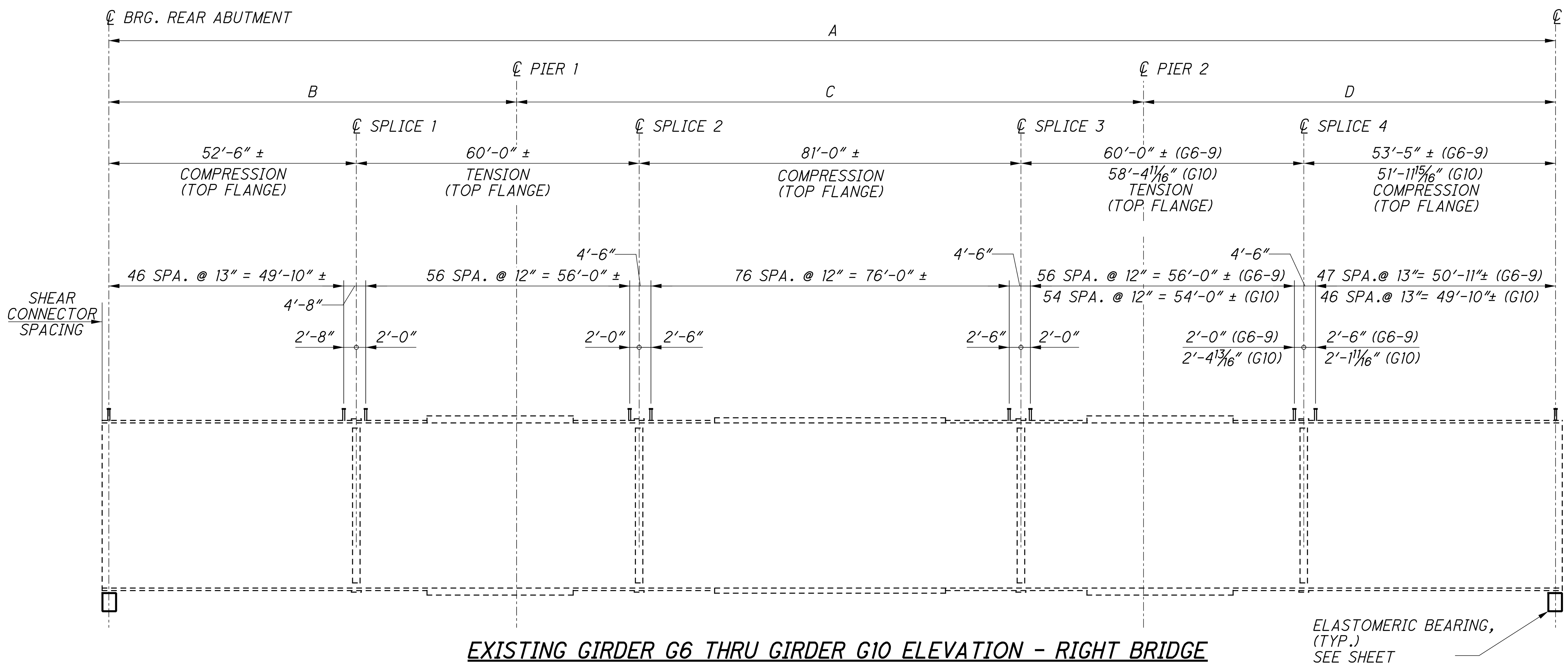
DESIGN AGENCY
STRUCTUREPOINT

DESIGNED SJF | CHECKED CLB | DRAWN DSH | REVISED | REVIEWED MDS | DATE 11/12/18
STRUCTURE FILE NUMBER 3115577

FRAMING PLAN (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

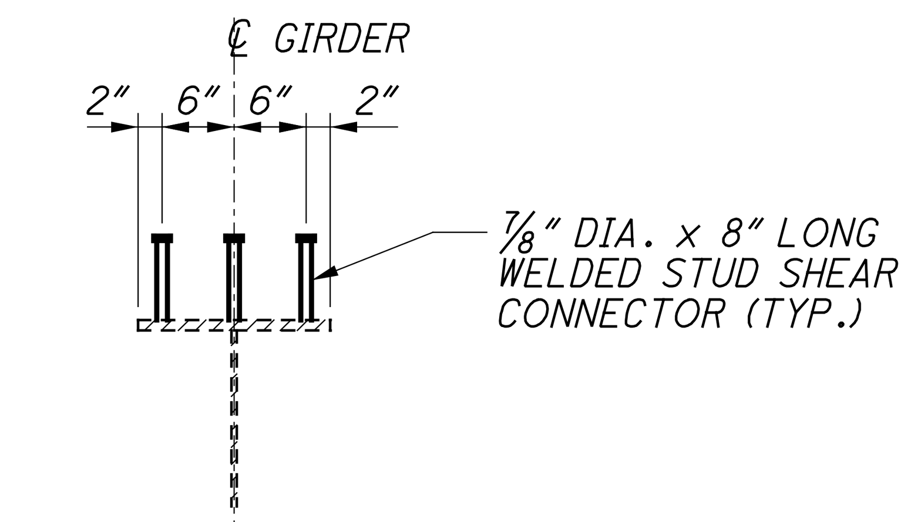
HAM-75-3.84
PID No. 104667



EXISTING GIRDER G6 THRU GIRDER G10 ELEVATION - RIGHT BRIDGE

(DIMENSIONS SHOWN ARE MEASURED ALONG ℄ GIRDER)

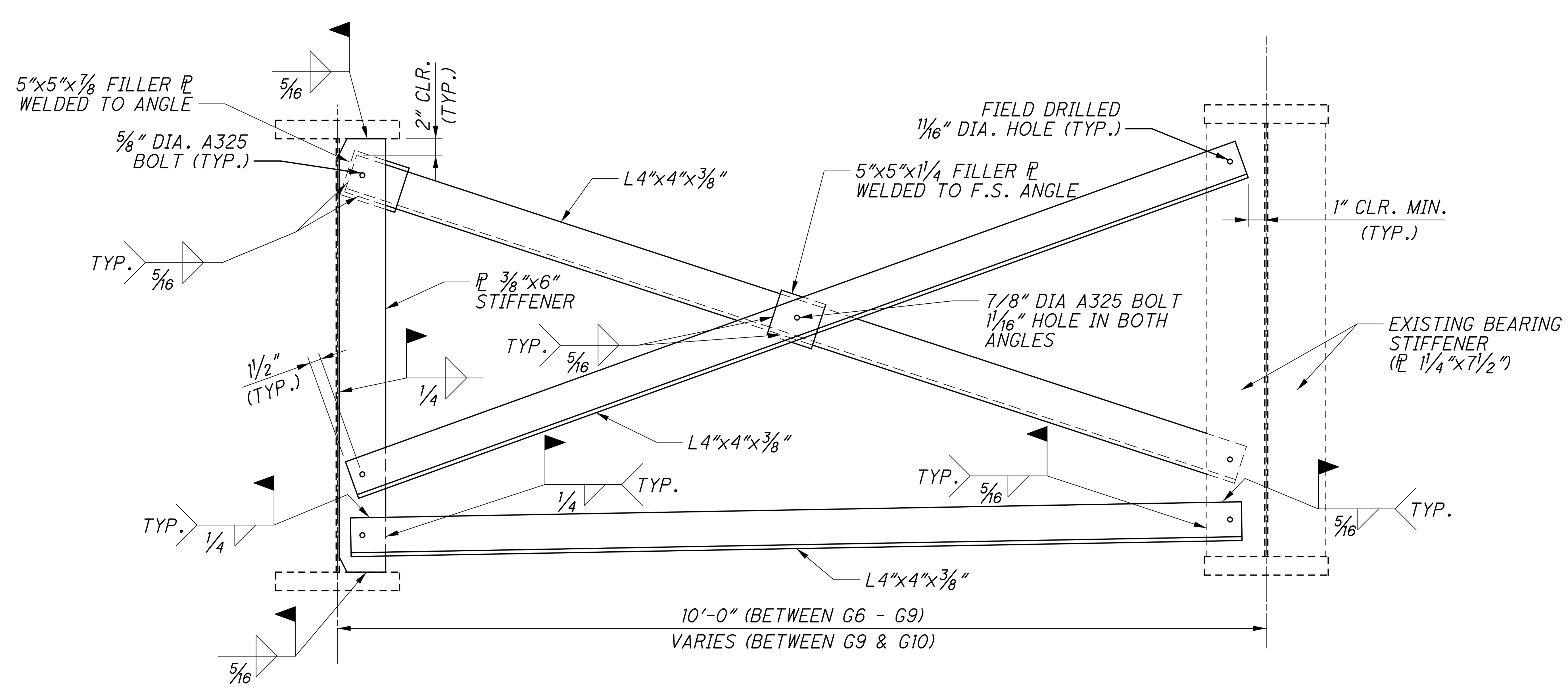
	A	B	C	D
G6 THRU G9	306'-11"±	86'-6"±	133'-0"±	87'-5"±
G10	304'-7 1/16"±	86'-6"±	133'-0"±	85'-1 1/16"±



SHEAR CONNECTOR DETAIL

GIRDER G6 THRU G10

(STUD PLACEMENT ON FLANGE SPLICE PLATES IS NOT PERMITTED.)



PROPOSED CROSSFRAME TYPE F1 DETAIL

NOTES:

1. ALL PROPOSED STRUCTURAL STEEL SHALL BE A709 GRADE 50.
2. HIGH STRENGTH BOLTS SHALL BE 7/8" DIAMETER A325 UNLESS OTHERWISE NOTED.
3. WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE NO MORE THAN 2" LONG, AND BE AT LEAST 1/4" FOR THICKNESSES UP TO 3/4" OR 5/16" FOR GREATER THAN 3/4" THICK.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115577	

GIRDER ELEVATION (RIGHT BRIDGE)

BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667

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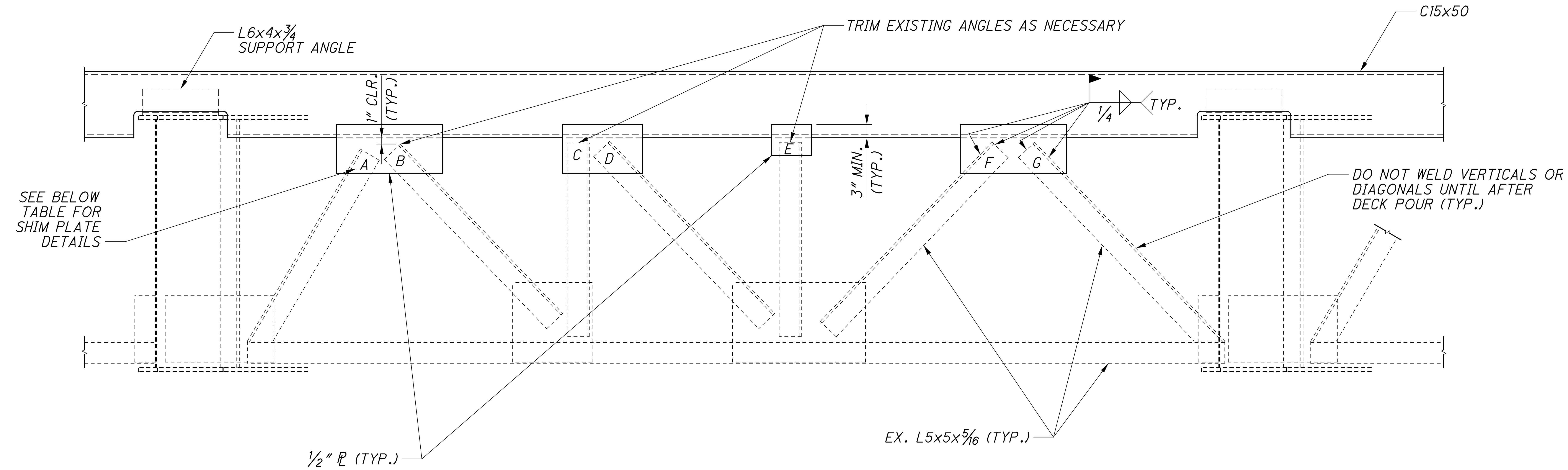
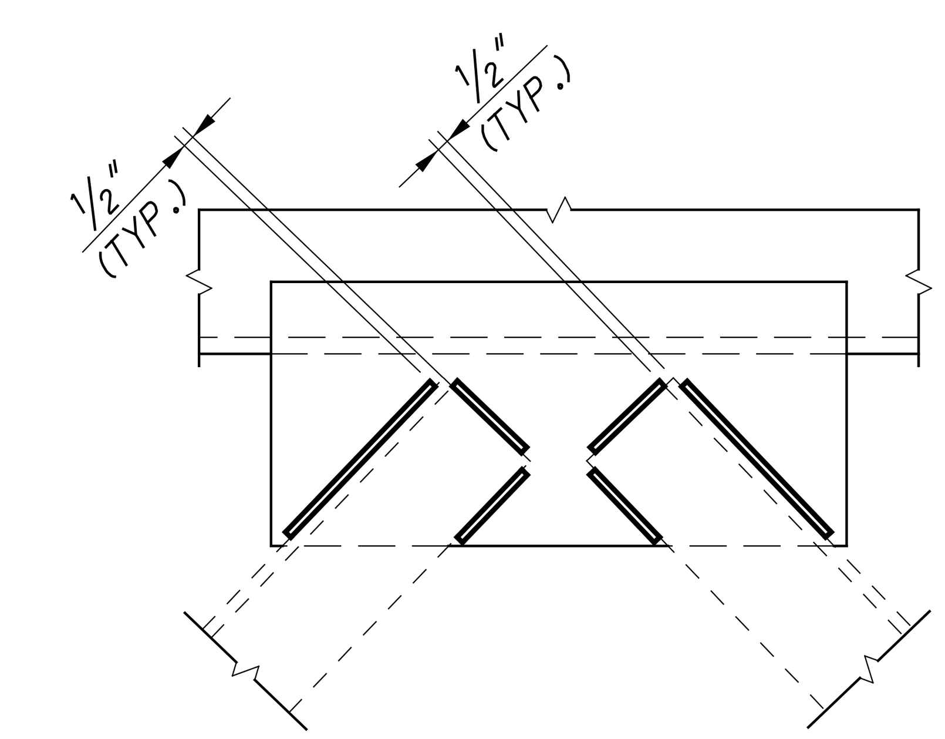


END CROSS FRAME DETAIL



WELD TERMINATION DETAIL

Name	# of Plates	Plate 1	Notes
1-A	0	N/A	N/A
1-B	1	6x6x1	N/A
1-C	1	6x6x1	3x3 CLIP
1-D	1	6x6x1	4x5 CLIP
1-E	1	6x6x1	3x3 CLIP
1-F	1	6x6x1	2x2 CLIP
1-G	0	N/A	N/A

Name	# of Plates	Plate 1
2-A	0	N/A
2-B	0	N/A
2-C	1	6x6x1
2-D	1	6x6x1
2-E	1	6x6x1
2-F	1	6x6x1
2-G	0	N/A

Name	# of Plates	Plate 1
3-A	0	N/A
3-B	1	6"x6"x1"
3-C	0	N/A
3-D	0	N/A
3-E	0	N/A
3-F	0	N/A
3-G	0	N/A

Name	# of Plates	Plate 1
4-A	0	N/A
4-B	0	N/A
4-C	0	N/A
4-D	0	N/A
4-E	1	8"x6"x1¼"
4-F	1	N/A
4-G	0	N/A

Name	# of Plates	Plate 1	Plate 2	Notes
6-A	0	N/A	N/A	4x4 CLIP
6-B	0	N/A	N/A	3x4 CLIP
6-C	1	6"x6"x1"	N/A	1x1 CLIP
6-D	1	8"x6"x1½"	N/A	4x4 CLIP
6-E	2	7"x7"x1"	6"x6"x1"	N/A
6-F	2	7"x7"x1"	6"x6"x1¼"	N/A
6-G	1	8"x6"x1½"	N/A	4x4 CLIP

Name	# of Plates	Plate 1	Notes
7-A	1	6"x6"x1"	N/A
7-B	1	8"x6"x1¼"	N/A
7-C	1	8"x6"x1¼"	N/A
7-D	1	8"x6"x1¼"	4x4 CLIP
7-E	1	8"x6"x1¼"	4x4 CLIP
7-F	1	8"x6"x1¼"	2x2 CLIP
7-G	0	N/A	N/A

Name	# of Plates	Plate 1
8-A	0	N/A
8-B	1	8"x6"x1¼"
8-C	1	8"x6"x1¼"
8-D	1	8"x6"x1¼"
8-E	1	8"x6"x1¼"
8-F	1	8"x6"x1¼"
8-G	0	N/A

TABLE LEGEND

NAME - 1-A

BAY LOCATION (SEE SHEET 21/40)

END CROSS FRAME GUSSET PLATE LOCATION (SEE DETAIL ABOVE)

NOTES:

1. ALL PROPOSED STRUCTURAL STEEL SHALL BE A709 GRADE 50.
2. FOR ADDITIONAL NOTES AND DETAILS, SEE STD. DWG. GSD-1-96.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115577	

SUPERSTRUCTURE DETAILS (RIGHT BRIDGE)

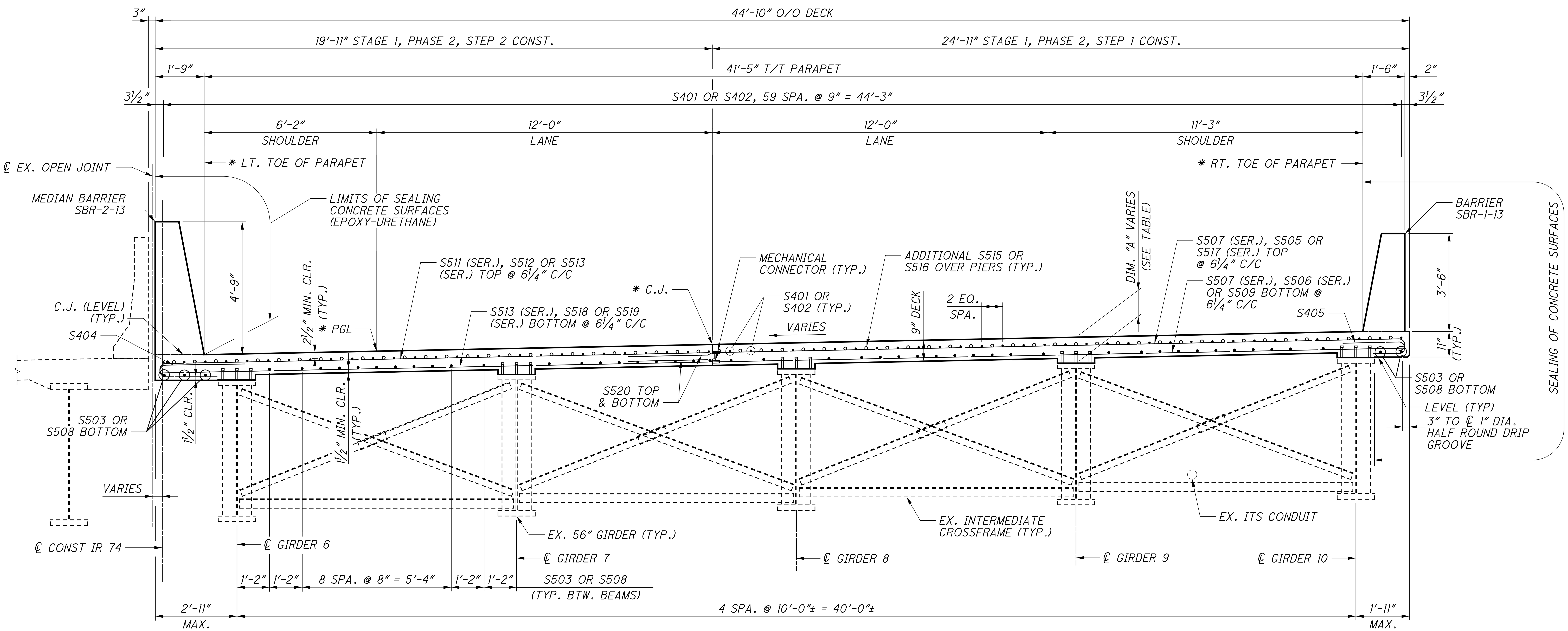
BRIDGE NO. HAM-74-1852 L/R

OVER NB BEEKMAN ST. (U.S. 27)

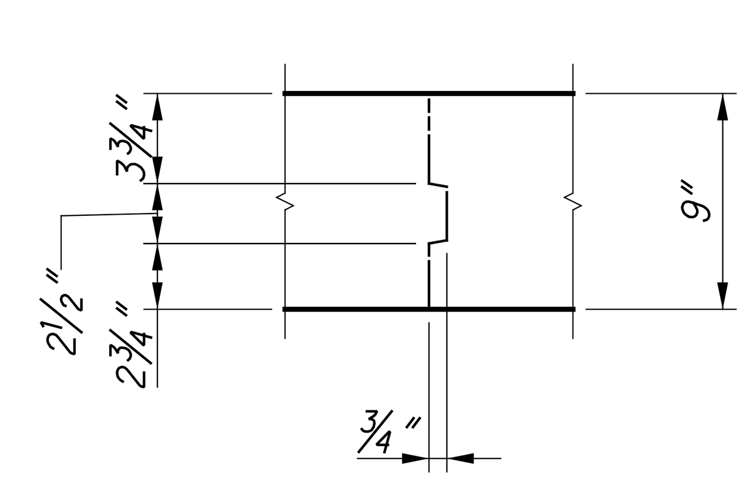
HAM-75-3.84

PID No. 104667

SFlannagan 11/16/2023 9:34:24 AM O:\2017\01113\C. Design\104667_HAM-75-3.84\Design\Structures\HAM0074_1852C\Sheets\74_1852SD003.dgn

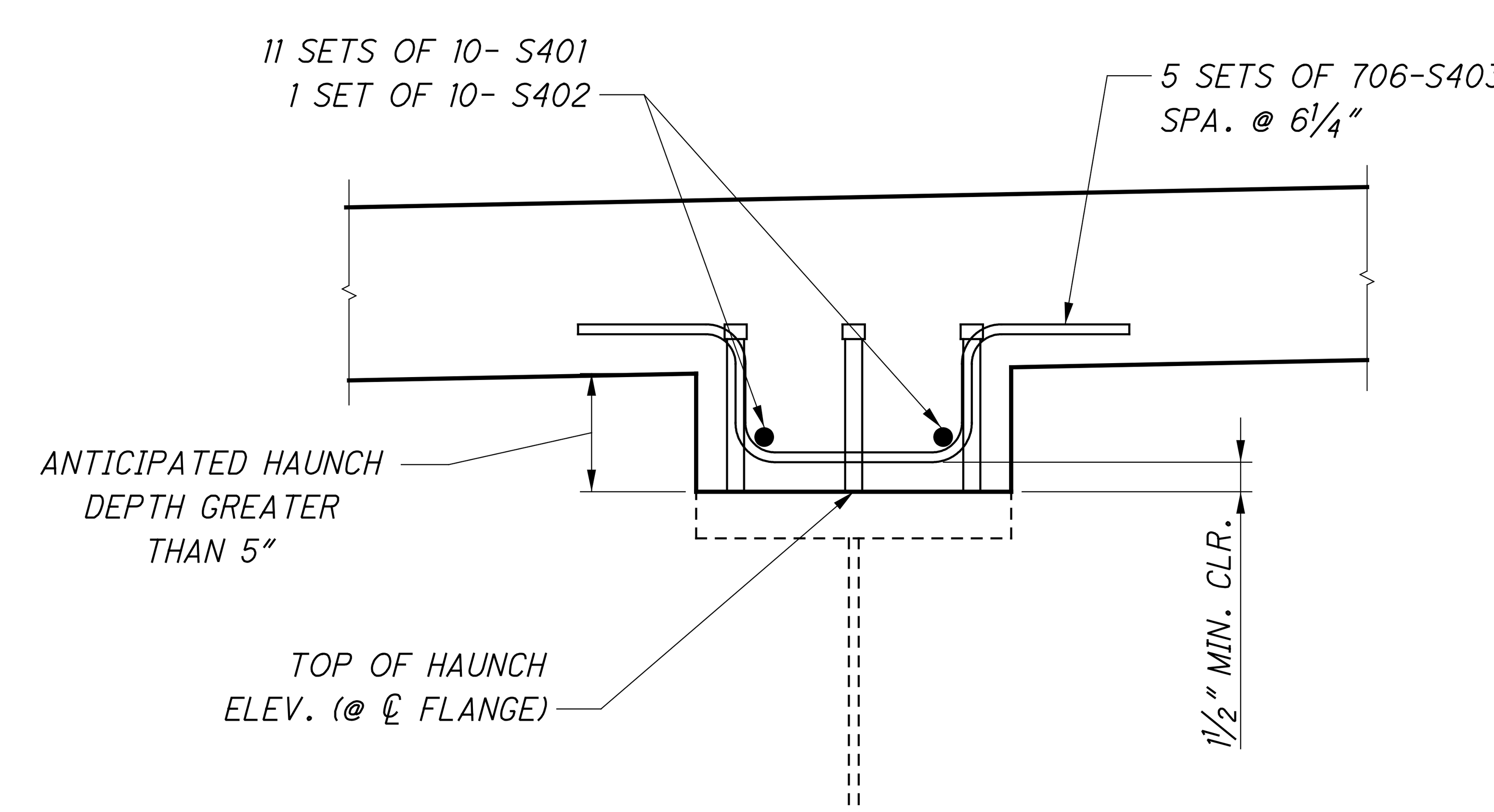


TRANSVERSE SECTION



CONSTRUCTION JOINT KEYWAY DETAIL

REFER TO CMS 511.12 FOR
ADDITIONAL INFORMATION



HAUNCH REINFORCING DETAIL

DIMENSION "A" (TOP OF SLAB TO TOP OF FLANGE)				
LOCATION	℄ BRG. R.A.	℄ BRG. PIER 1	℄ BRG. PIER 2	℄ BRG. F.A.
GIRDER 6	1'-2⅛"	1'-0 7/16"	11 13/16"	1'-2¼"
GIRDER 7	1'-1⅞"	1'-0 3/16"	11¾"	1'-2"
GIRDER 8	1'-2 5/16"	11 15/16"	11 13/16"	1'-2 5/16"
GIRDER 9	1'-2⅞"	11 13/16"	11 13/16"	1'-2 9/16"
GIRDER 10	1'-3 3/16"	11 11/16"	11 13/16"	1'-3 1/16"

NOTES:

1. FOR PARAPET DETAILS SEE SHEETS 28/40 AND 29/40.
2. FOR SLAB REINFORCING PLAN SEE SHEET 25/40.
3. HAUNCHES OVER 5 INCHES SHALL BE REINFORCED AS SHOWN ON THIS SHEET. HAUNCH STIRRUPS SHALL BE AT THE SAME SPACING AS THE TRANSVERSE DECK REINFORCING.
4. * SCREED ELEVATION LOCATIONS.

DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	TMT	MDS	09/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115577	

TRANSVERSE SECTION (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667

SFlannagan 11/16/2023 9:34:25 AM
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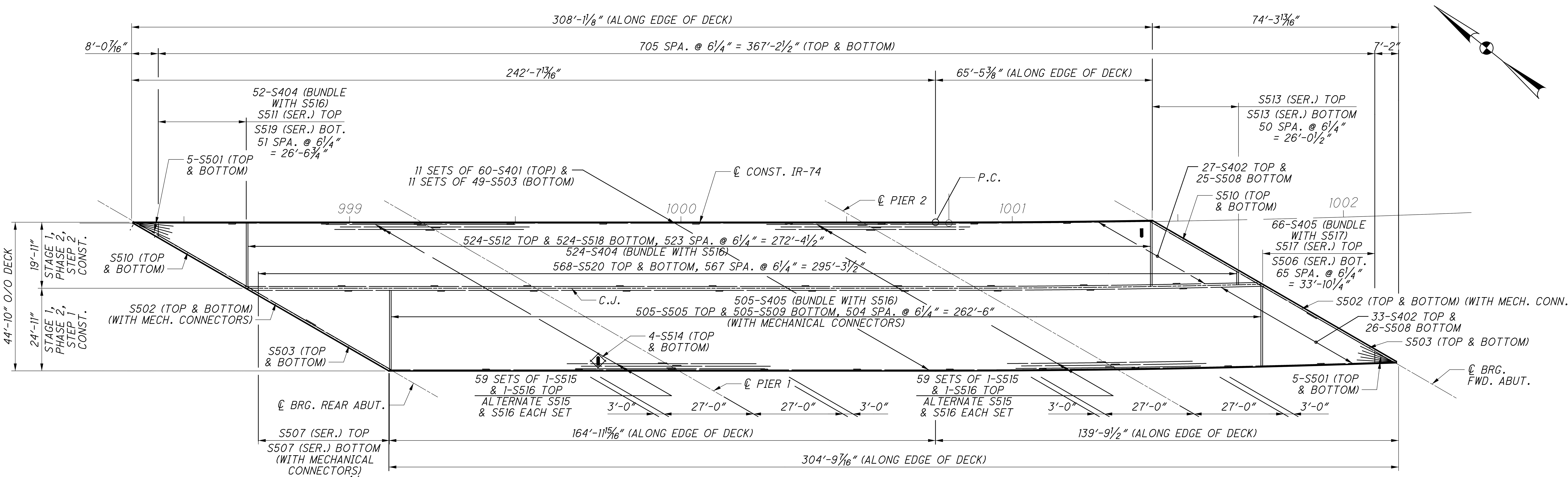
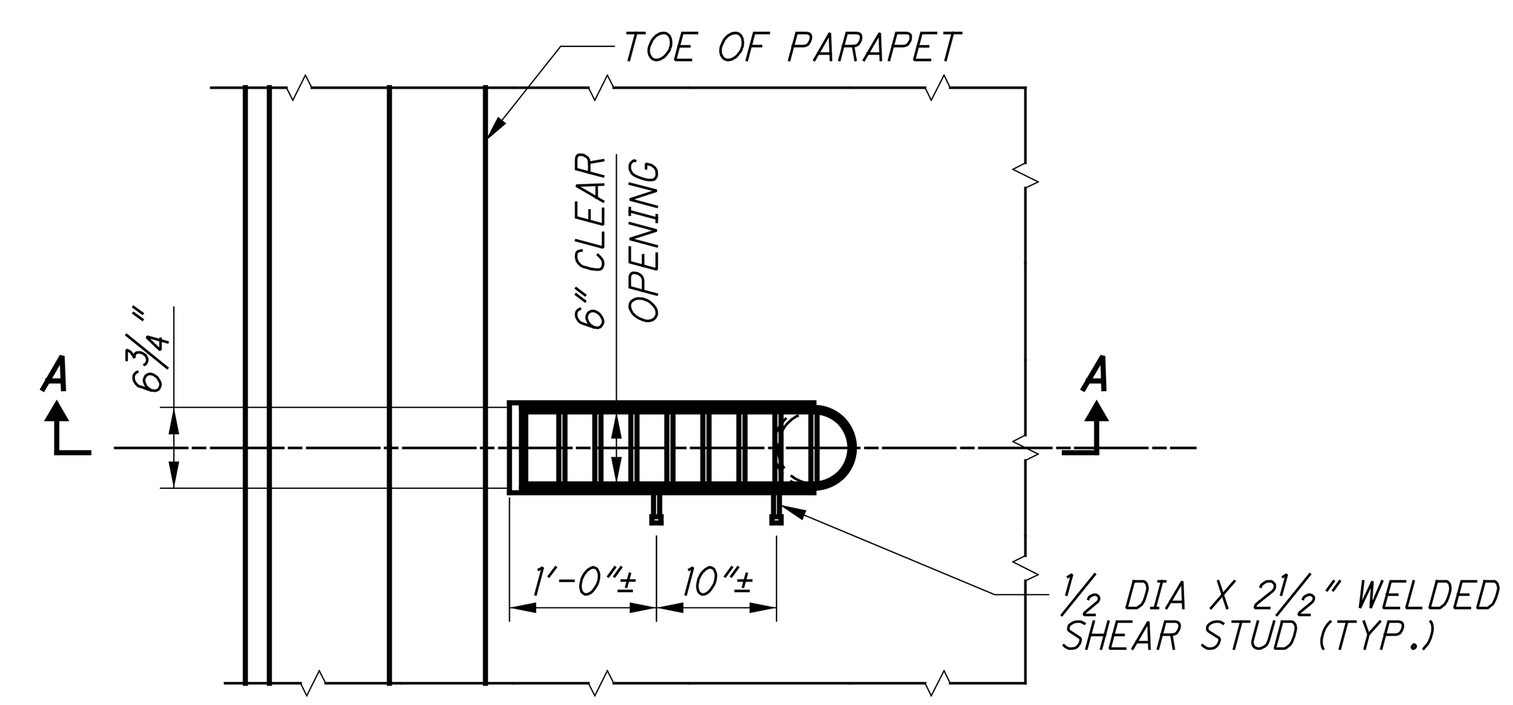
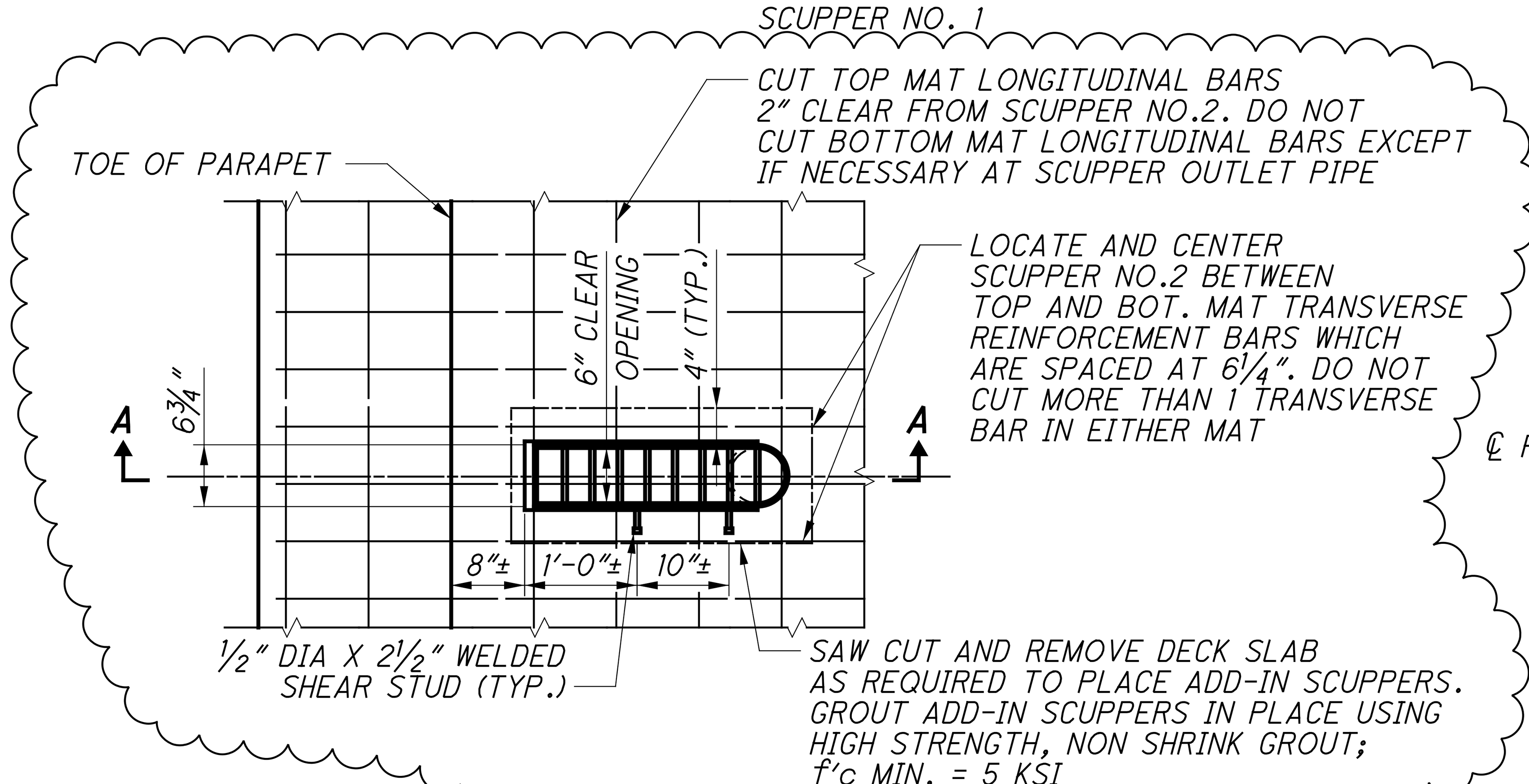


DECK REINFORCING PLAN

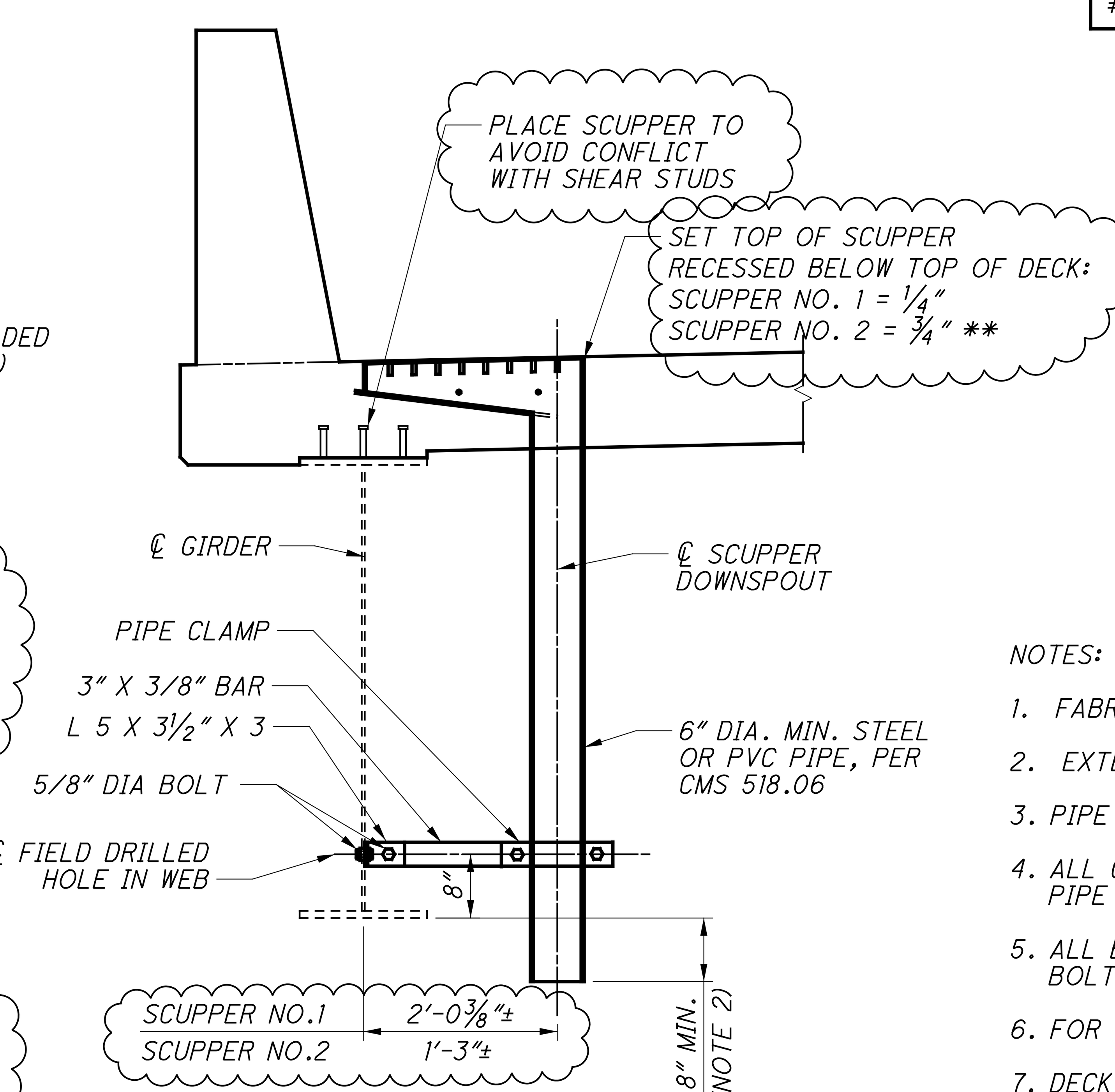
MINIMUM BAR LAP	
#4	2'-6"
#5 (LONGITUDINAL)	3'-1"
#5 (TRANSVERSE)	4'-0"



PLAN
SCUPPER NO. 1



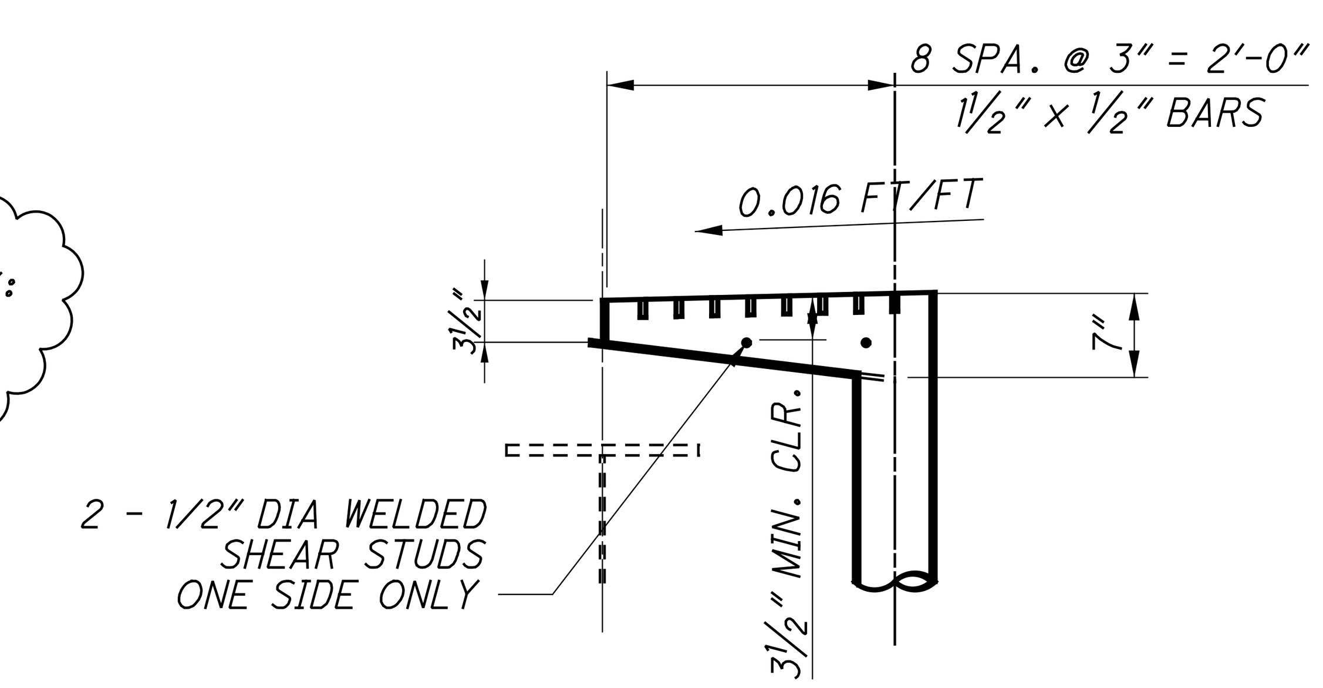
PLAN
SCUPPER NO. 2



TYPICAL SECTION

SCUPPER DETAILS
(2 REQUIRED)

** GRIND AS NEEDED TO DRAIN AND PROVIDE A MAXIMUM 6:1 SLOPE TO SCUPPER



SECTION A-A

NOTES:

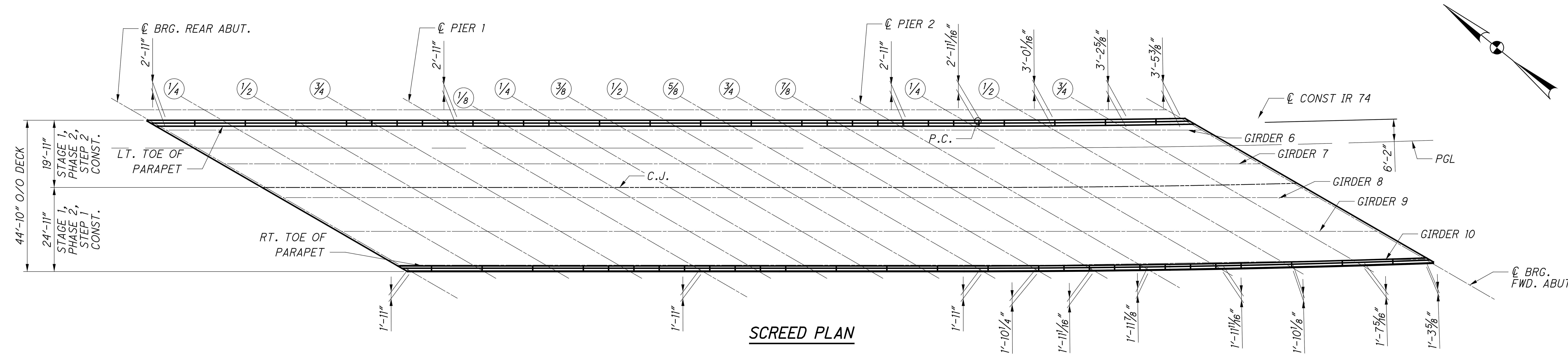
1. FABRICATE SCUPPERS FROM MIN. ⅜" THICK STEEL PLATE; ASTM A36 OR EQUAL.
2. EXTEND DOWNDRAIN 8" MIN. BEYOND BOTTOM OF EXISTING GIRDER.
3. PIPE CLAMPS SHALL BE EATON B-LINE SERIES B3140-8 OR APPROVED EQUAL.
4. ALL COMPONENTS (ANGLES, BARS, CLAMPS, ANCHORS, BOLT COUPLERS, PIPE HANGERS, ETC.) SHALL BE GALVANIZED.
5. ALL BOLTS SHALL BE A325, TYPE 1 GALVANIZED. EACH ASSEMBLY SHALL INCLUDE BOLT, NUT, AND TWO WASHERS. TIGHTEN ACCORDING TO CMS 513.
6. FOR TRANSVERSE SECTION, SEE SHEET 24/40.
7. DECK POUR SEQUENCE: CONTIUOUSLY POUR FROM ONE END TO OTHER IN EACH STEP OF CONSTRUCTION. TO AVOID UPLIFT AT THE ABUTMENT, HOLD DOWN OR COUNTER WEIGHT CAPABLE OF RESISTING 7K PER GIRDER SHALL BE UTILIZED.
8. PRIOR TO REMOVING PORTIONS OF DECK TO INSTALL SCUPPER NO.2, VERIFY SCUPPER WILL NOT CONFLICT WITH EXISTING CROSSFRAMES.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115577	

DECK PLAN (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667



SCREED PLAN

NOTES:

1. SCREED ELEVATIONS SHOWN REPRESENT THE THEORETICAL DECK SURFACE LOCATION PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.

2. FOR TOP OF HAUNCH (T.O.H.) ELEVATIONS TABLE, SEE SHEET 27/40.

3. FINAL DECK SURFACE (F.D.S.) ELEVATIONS SHOWN REPRESENT THE DECK SURFACE LOCATION AFTER ALL ANTICIPATED DEAD LOAD DEFLECTIONS HAVE OCCURRED.

SCREED ELEVATIONS TABLE

SCREED LINE	DESCRIPTION	℄ BRG. REAR ABUT.	¼ POINT	½ POINT	¾ POINT	℄ PIER NO. 1	⅛ POINT	¼ POINT	⅜ POINT	½ POINT	⅝ POINT	¾ POINT	⅞ POINT	℄ PIER NO. 2	¼ POINT	½ POINT	¾ POINT	℄ BRG. FWD. ABUT.
HAM-74-1852 SCREED ELEVATIONS																		
LT. TOE OF PARAPET	STATION	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.47	1.45	1.43
	OFFSET	536.12	535.97	535.84	535.70	535.56	535.45	535.30	535.17	535.08	534.92	534.80	534.68	534.56	534.38	534.17	534.05	533.90
	F.D.S. ELEV.	0.00	0.03	0.04	0.01	0.00	0.02	0.06	0.10	0.12	0.11	0.08	0.04	0.00	-0.01	0.01	0.02	0.00
	DEFLECTION	536.12	536.01	535.87	535.71	535.56	535.47	535.36	535.27	535.20	535.03	534.88	534.72	534.56	534.37	534.18	534.07	533.90
	SCREED ELEV.	998+48.95	998+70.58	998+92.20	999+13.83	999+35.45	999+52.08	999+68.70	999+85.33	1000+01.95	1000+18.58	1000+35.20	1000+51.83	1000+68.45	1000+90.25	1001+11.83	1001+33.21	1001+54.40
PGL	STATION	7.66	7.66	7.66	7.66	7.66	7.66	7.66	7.66	7.66	7.66	7.66	7.66	7.66	7.65	7.63	7.61	7.59
	OFFSET	536.00	535.82	535.66	535.54	535.38	535.27	535.15	535.05	534.92	534.82	534.70	534.60	534.48	534.32	534.14	534.04	533.92
	F.D.S. ELEV.	0.00	0.03	0.03	0.01	0.00	0.02	0.06	0.10	0.11	0.10	0.07	0.03	0.00	0.00	0.02	0.02	0.00
	DEFLECTION	536.00	535.85	535.69	535.54	535.38	535.29	535.21	535.15	535.03	534.93	534.78	534.63	534.48	534.32	534.16	534.06	533.92
	SCREED ELEV.	998+69.74	998+91.36	999+12.99	999+34.61	999+56.24	999+72.86	999+89.49	1000+06.11	1000+22.74	1000+39.36	1000+55.99	1000+72.61	1000+89.17	1001+10.69	1001+32.02	1001+53.15	1001+74.09
C.J.	STATION	19.66	19.66	19.66	19.66	19.66	19.66	19.66	19.66	19.66	19.66	19.66	19.66	19.65	19.63	19.61	19.59	19.57
	OFFSET	536.14	535.74	535.34	535.70	535.32	535.00	535.43	534.98	535.04	534.72	534.77	534.58	535.00	534.54	534.45	534.36	534.14
	F.D.S. ELEV.	0.00	0.03	0.02	0.00	0.00	0.03	0.07	0.10	0.11	0.10	0.07	0.03	0.00	0.00	0.02	0.03	0.00
	DEFLECTION	536.14	535.77	535.37	535.70	535.32	535.03	535.50	535.08	535.15	534.82	534.84	534.60	535.00	534.53	534.47	534.38	534.14
	SCREED ELEV.	999+10.01	999+31.63	999+53.26	999+74.88	999+96.51	1000+13.13	1000+29.76	1000+46.38	1000+63.01	1000+79.64	1000+96.02	1001+12.26	1001+28.40	1001+49.44	1001+70.29	1001+90.96	1002+11.46
RT. TOE OF PARAPET	STATION	42.91	42.91	42.91	42.91	42.91	42.91	42.91	42.91	42.91	42.91	42.90	42.88	42.86	42.84	42.82	42.80	42.78
	OFFSET	534.96	534.86	534.82	534.81	534.83	534.80	534.80	534.79	534.82	534.81	534.79	534.79	534.80	534.80	534.82	534.77	534.77
	F.D.S. ELEV.	0.00	0.02	0.01	-0.01	0.00	0.03	0.08	0.11	0.11	0.09	0.06	0.02	0.00	0.01	0.03	0.03	0.00
	DEFLECTION	534.96	534.88	534.83	534.80	534.83	534.83	534.87	534.90	534.93	534.90	534.85	534.81	534.80	534.80	534.85	534.80	534.77
	SCREED ELEV.	534.99	534.86	534.73	534.73	534.76	534.81	534.86	534.90	534.91	534.90	534.87	534.84	534.83	534.85	534.88	534.89	534.79

DESIGN AGENCY
STRUCTUREPOINT

DESIGNED SJF | DRAWN BNM | REVIEWED MDS | DATE 11/12/18
CHECKED CLB | REVISED | STRUCTURE FILE NUMBER 3115577

SCREED PLAN (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667

HAUNCH ELEVATIONS TABLE

SCREED LINE	DESCRIPTION	℄ BRG. REAR ABUT.	1/4 POINT	1/2 POINT	3/4 POINT	℄ PIER NO. 1	1/8 POINT	1/4 POINT	3/8 POINT	1/2 POINT	5/8 POINT	3/4 POINT	7/8 POINT	℄ PIER NO. 2	1/4 POINT	1/2 POINT	3/4 POINT	℄ BRG. FWD. ABUT.
HAM-74-1852 TOP OF HAUNCH ELEVATIONS																		
GIRDER 6	STATION	998+40.29	998+61.92	998+83.54	999+05.17	999+26.79	999+43.42	999+60.04	999+76.67	999+93.29	1000+09.92	1000+26.54	1000+43.17	1000+59.79	1000+81.65	1001+03.49	1001+25.33	1001+47.16
	OFFSET	2.66	2.66	2.66	2.66	2.66	2.66	2.66	2.66	2.66	2.66	2.66	2.66	2.66	2.66	2.73	2.92	3.23
	F.D.S. ELEV.	536.10	535.97	535.84	535.70	535.56	535.45	535.30	535.17	535.08	534.92	534.80	534.68	534.56	534.38	534.17	534.05	533.89
	DEFLECTION	0.00	0.03	0.04	0.01	0.00	0.02	0.06	0.10	0.12	0.11	0.08	0.04	0.00	-0.01	0.01	0.02	0.00
	T.O.H. ELEV.	535.37	535.26	535.12	534.95	534.80	534.71	534.59	534.48	534.45	534.28	534.13	533.97	533.80	533.61	533.43	533.31	533.13
GIRDER 7	STATION	998+57.61	998+79.24	999+00.86	999+22.49	999+44.11	999+60.74	999+77.36	999+93.99	1000+10.61	1000+27.24	1000+43.86	1000+60.49	1000+77.11	1000+98.91	1001+20.70	1001+42.47	1001+64.25
	OFFSET	12.66	12.66	12.66	12.66	12.66	12.66	12.66	12.66	12.66	12.66	12.66	12.66	12.66	12.71	12.87	13.15	13.56
	F.D.S. ELEV.	535.82	535.69	535.54	535.38	535.26	535.14	535.05	534.95	534.87	534.76	534.66	534.57	534.49	534.36	534.21	534.10	533.98
	DEFLECTION	0.00	0.03	0.03	0.01	0.00	0.02	0.06	0.10	0.11	0.10	0.07	0.03	0.00	0.00	0.02	0.02	0.00
	T.O.H. ELEV.	535.05	534.93	534.77	534.59	534.49	534.42	534.32	534.29	534.21	534.12	533.98	533.85	533.70	533.60	533.46	533.36	533.23
GIRDER 8	STATION	998+74.94	998+96.56	999+18.19	999+39.81	999+61.44	999+78.06	999+94.69	1000+11.31	1000+27.94	1000+44.56	1000+61.19	1000+77.81	1000+94.10	1001+16.09	1001+37.81	1001+59.53	1001+81.25
	OFFSET	22.66	22.66	22.66	22.66	22.66	22.66	22.66	22.66	22.66	22.66	22.66	22.66	22.69	22.82	23.08	23.46	23.96
	F.D.S. ELEV.	535.52	535.38	535.24	535.12	535.02	534.94	534.87	534.84	534.79	534.71	534.65	534.59	534.53	534.47	534.36	534.29	534.23
	DEFLECTION	0.00	0.03	0.02	0.00	0.00	0.03	0.07	0.10	0.11	0.10	0.07	0.03	0.00	0.00	0.02	0.03	0.00
	T.O.H. ELEV.	534.73	534.57	534.49	534.33	534.21	534.15	534.14	534.16	534.10	534.01	533.94	533.82	533.75	533.70	533.62	533.54	533.45
GIRDER 9	STATION	998+92.26	999+13.88	999+35.51	999+57.13	999+78.76	999+95.38	1000+12.01	1000+28.63	1000+45.26	1000+61.88	1000+78.51	1000+95.02	1001+11.50	1001+33.17	1001+54.84	1001+76.50	1001+98.16
	OFFSET	32.66	32.66	32.66	32.66	32.66	32.66	32.66	32.66	32.66	32.66	32.66	32.69	32.79	33.02	33.37	33.84	34.44
	F.D.S. ELEV.	535.28	535.14	535.03	534.96	534.92	534.84	534.84	534.83	534.81	534.75	534.74	534.72	534.77	534.66	534.61	534.57	534.57
	DEFLECTION	0.00	0.02	0.01	0.00	0.00	0.03	0.07	0.10	0.11	0.09	0.06	0.02	0.00	0.01	0.03	0.03	0.00
	T.O.H. ELEV.	534.49	534.36	534.29	534.16	534.18	534.10	534.13	534.15	534.13	534.08	534.06	534.00	534.02	533.93	533.88	533.85	533.82
GIRDER 10	STATION	999+09.58	999+31.20	999+52.83	999+74.45	999+96.08	1000+12.70	1000+29.33	1000+45.95	1000+62.58	1000+79.21	1000+95.67	1001+11.87	1001+27.88	1001+48.92	1001+69.96	1001+91.00	1002+12.04
	OFFSET	42.66	42.66	42.66	42.66	42.66	42.66	42.66	42.66	42.66	42.66	42.69	42.64	42.55	42.53	42.62	42.82	43.14
	F.D.S. ELEV.	534.01	534.86	534.82	534.81	534.83	534.80	534.80	534.79	534.82	534.81	534.79	534.79	534.80	534.80	534.82	534.77	534.71
	DEFLECTION	0.00	0.02	0.01	-0.01	0.00	0.03	0.08	0.11	0.11	0.09	0.06	0.02	0.00	0.01	0.03	0.03	0.00
	T.O.H. ELEV.	534.08	533.96	533.91	533.88	533.91	533.92	533.96	533.99	534.02	533.99	533.94	533.90	533.88	533.89	533.94	533.89	533.88

NOTES:

1. FOR SCREED LINE LOCATIONS AND ELEVATIONS TABLE, SEE SHEET 26/40.

2. TOP OF HAUNCH (T.O.H.) ELEVATIONS SHOWN REPRESENT THE THEORETICAL LOCATION OF THE BOTTOM OF THE DECK ABOVE THE GIRDER HAUNCH PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.

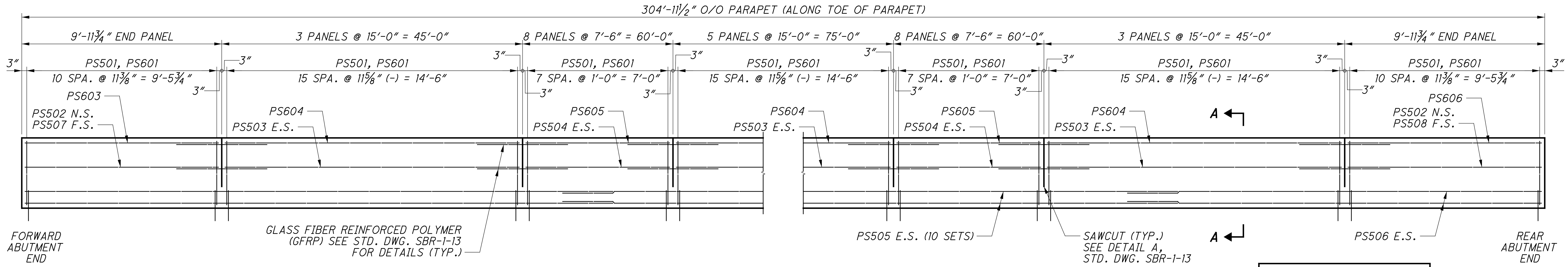
3. FINAL DECK SURFACE (F.D.S.) ELEVATIONS SHOWN REPRESENT THE DECK SURFACE LOCATION AFTER ALL ANTICIPATED DEAD LOAD DEFLECTIONS HAVE OCCURRED.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED SJF | CHECKED CLB | DRAWN BNM | REVISED | REVIEWED MDS | DATE 11/12/18 | STRUCTURE FILE NUMBER 3115577

SCREED PLAN (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

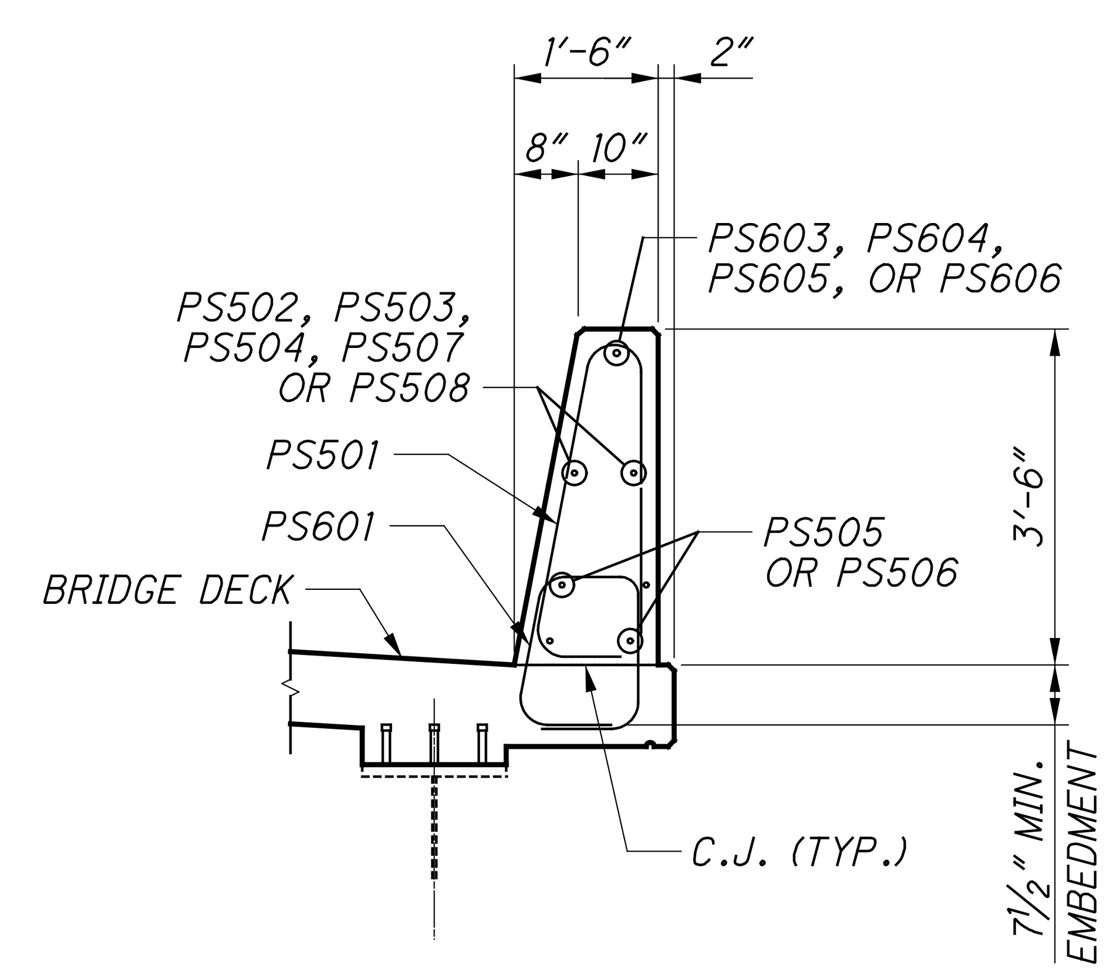
HAM-75-3.84
PID No. 104667



PARAPET ELEVATION

RIGHT PARAPET SHOWN (ALONG TOE OF PARAPET)

MINIMUM BAR LAP	
#5	2'-7"



SECTION A-A

NOTES:

1. SEE STANDARD BRIDGE DRAWING SBR-1-13 FOR ADDITIONAL DETAILS.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED CLB	REVISED	STRUCTURE FILE NUMBER 3115577	

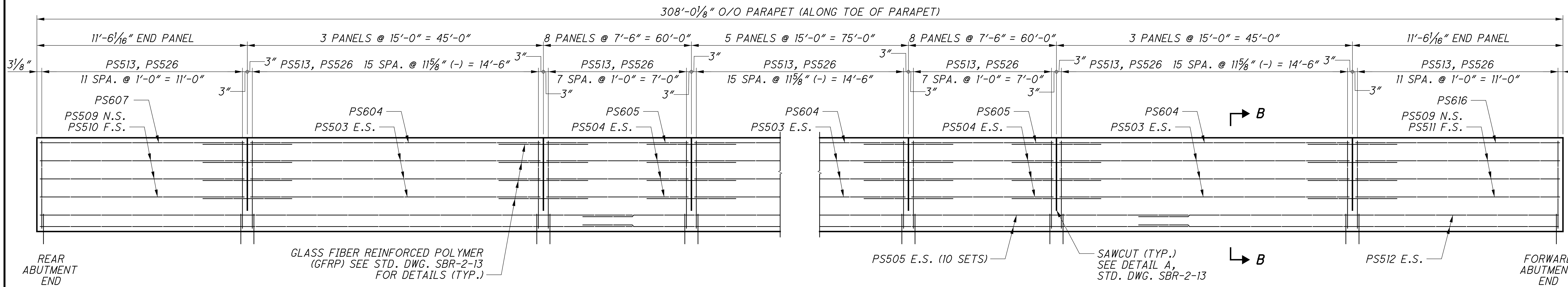
PARAPET DETAILS (RIGHT BRIDGE)

BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667

28/40

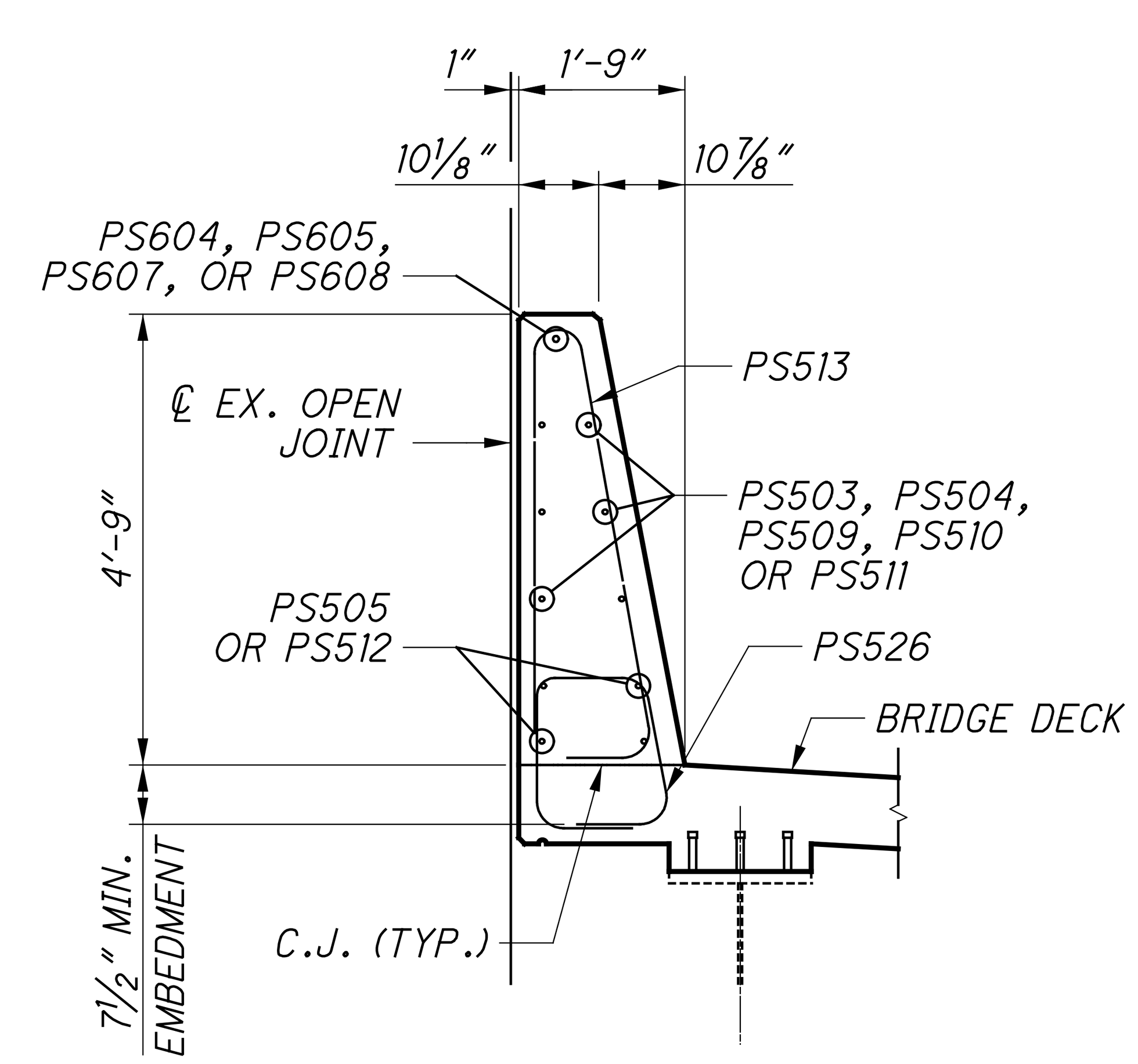
70/120



PARAPET ELEVATION

LEFT PARAPET SHOWN (ALONG TOE OF PARAPET)

MINIMUM BAR LAP	
#5	2'-7"



SECTION B-B

NOTES:

1. SEE STANDARD BRIDGE DRAWING SBR-2-13 FOR ADDITIONAL DETAILS.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	CHECKED	DRAWN	REVISED	REVIEWED	DATE	STRUCTURE FILE NUMBER
SJF	CLB	DSH		MDS	11/12/18	3115577

PARAPET DETAILS (RIGHT BRIDGE)

BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84

PID No. 104667

29/40

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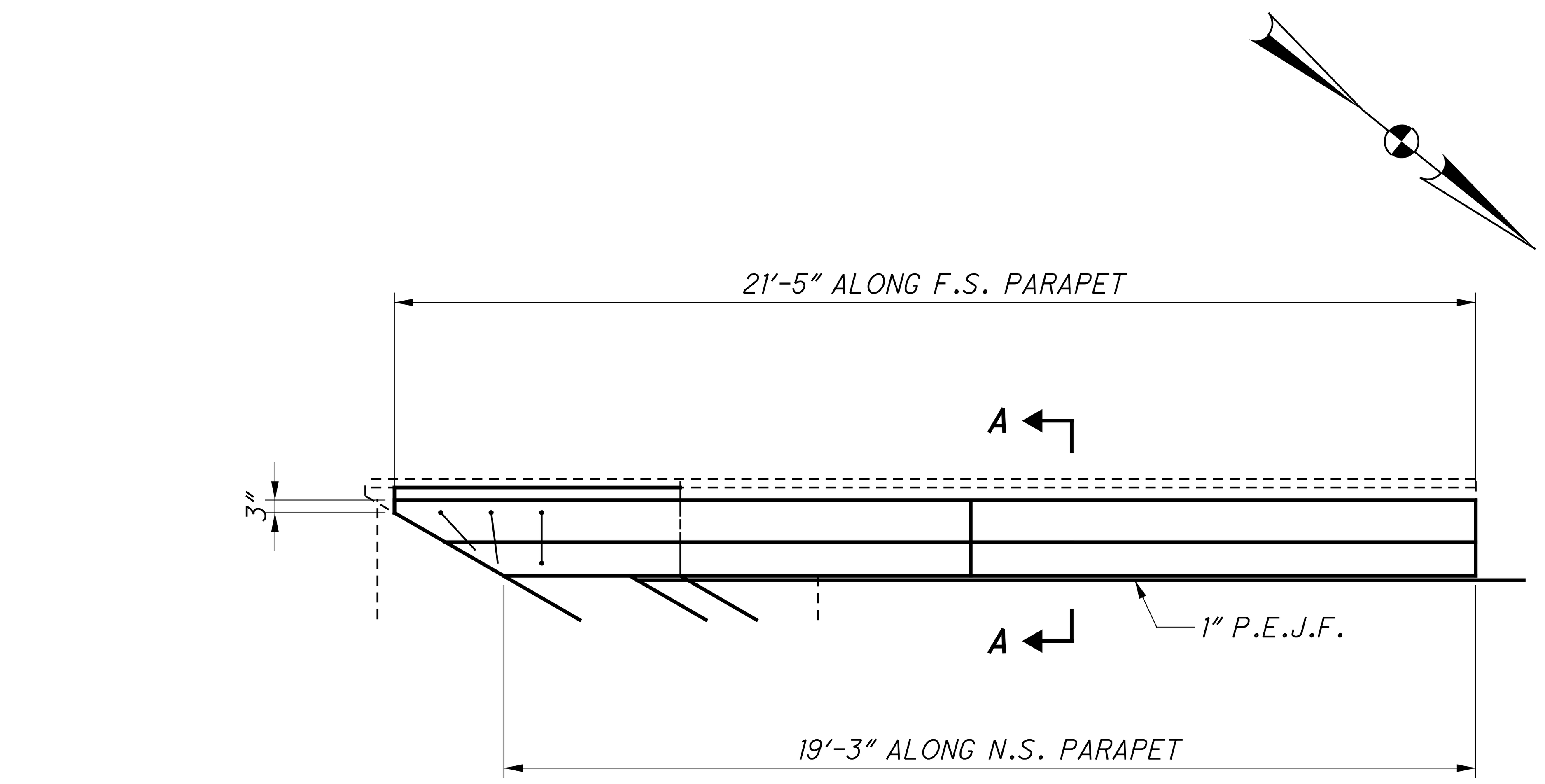
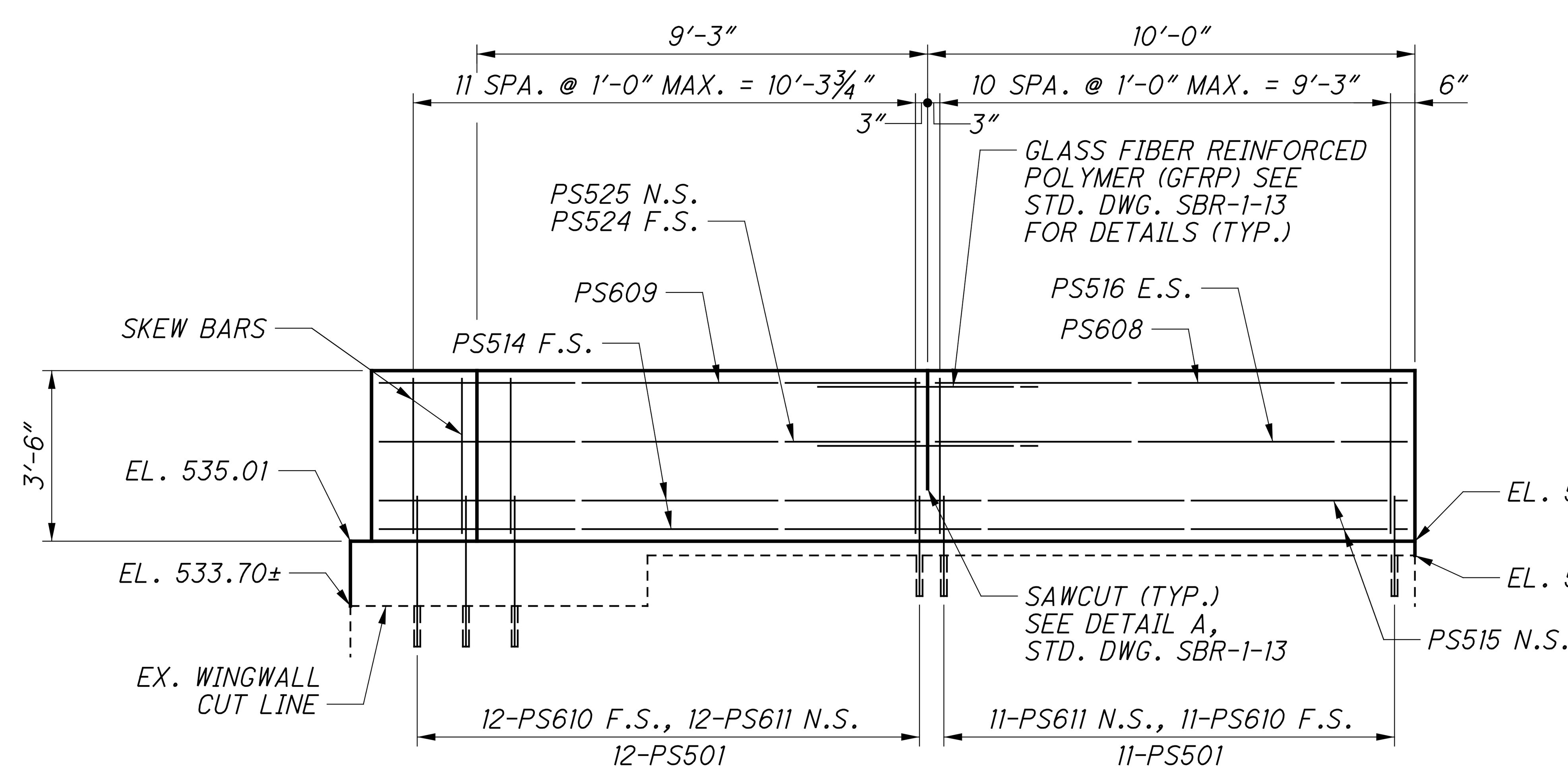


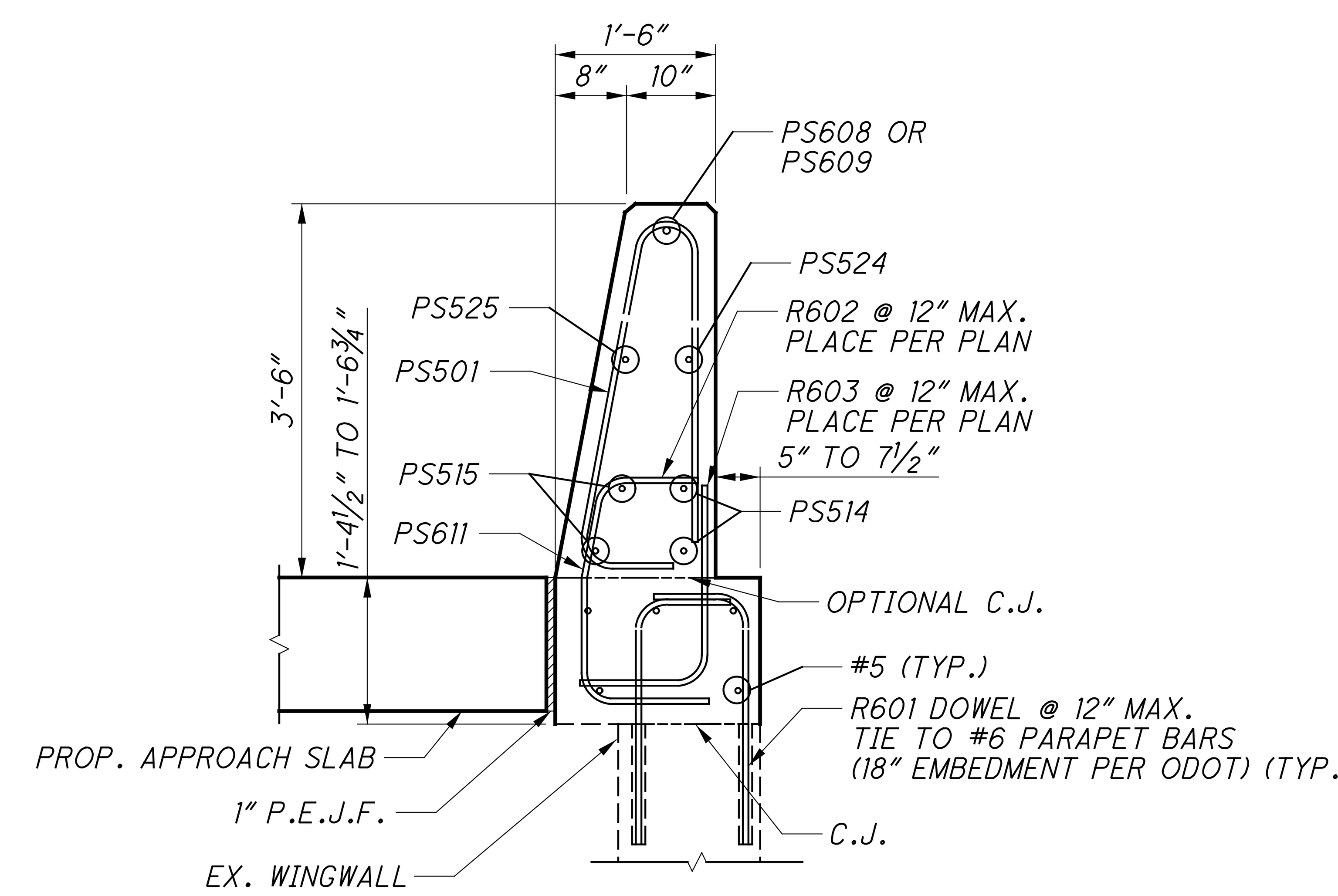
PARAPET PLAN

AT SOUTH WINGWALL REAR ABUTMENT

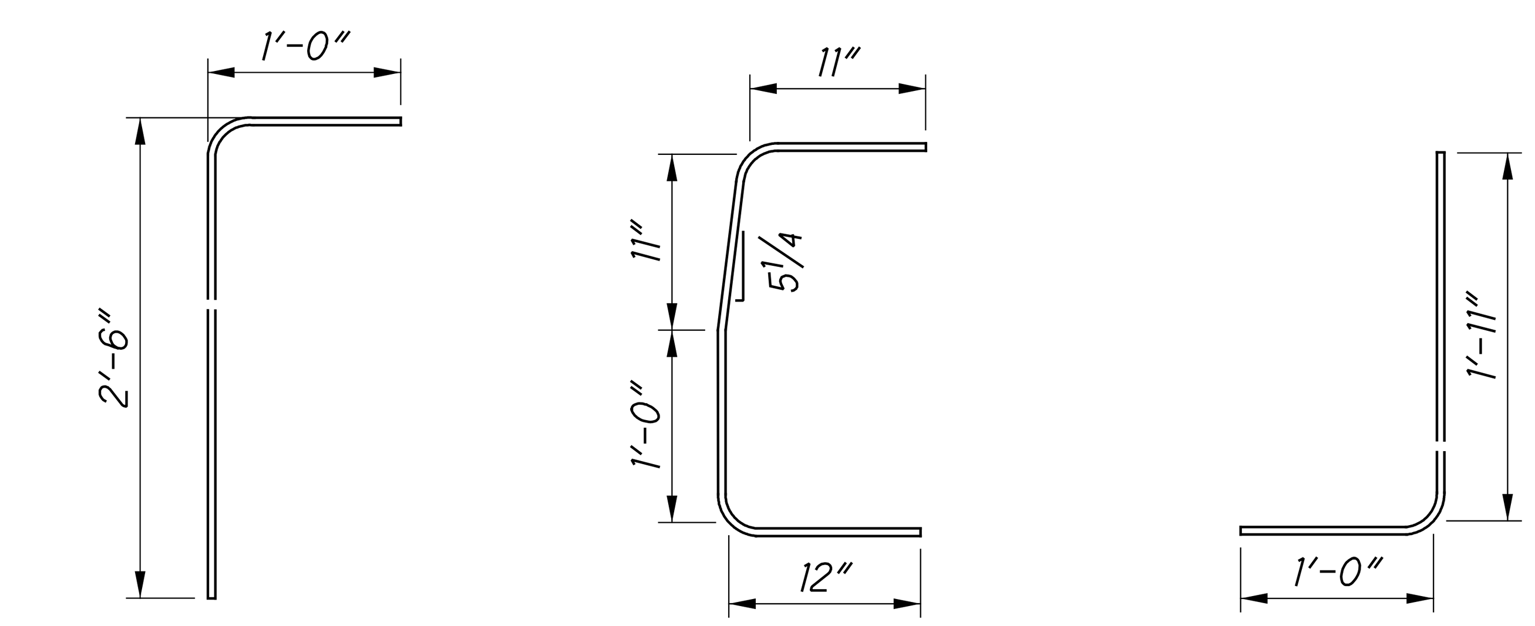


PARAPET ELEVATION

AT SOUTH WINGWALL REAR ABUTMENT



SECTION A-A



R601 R602 R603

MINIMUM BAR LAP	
#5	2'-7"

NOTES:

1. SEE STANDARD BRIDGE DRAWING SBR-1-13 FOR ADDITIONAL DETAILS.

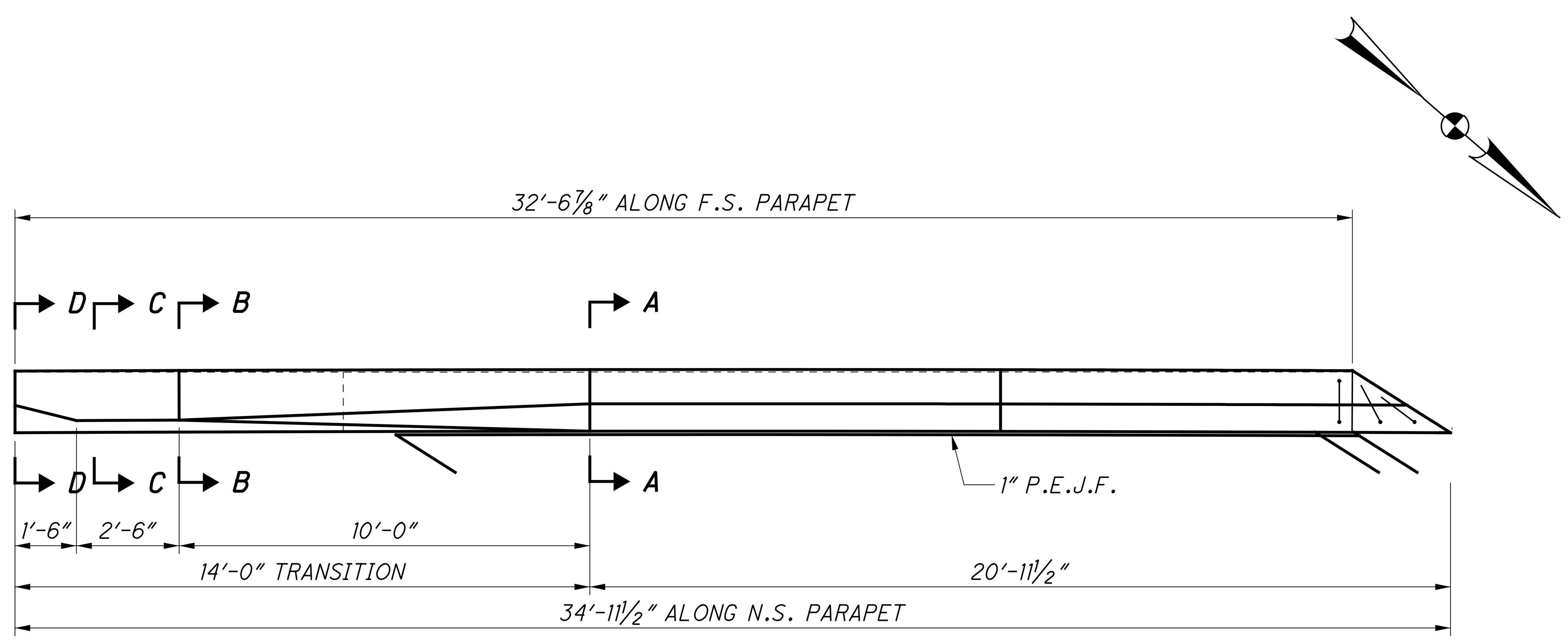
DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115577	

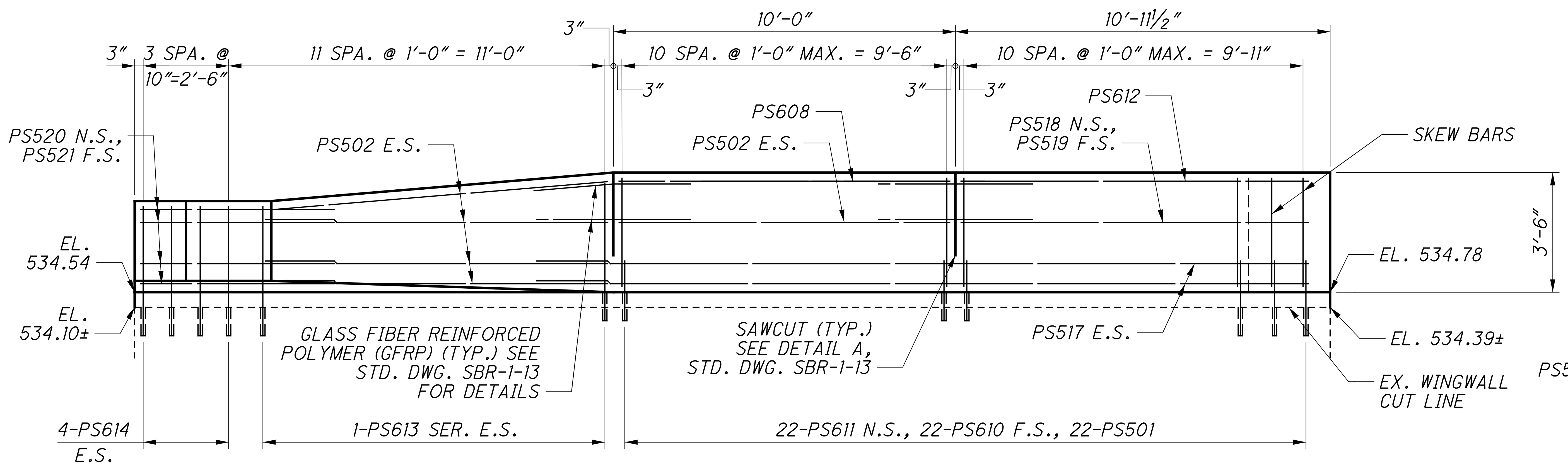
PARAPET DETAILS (RIGHT BRIDGE)

BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

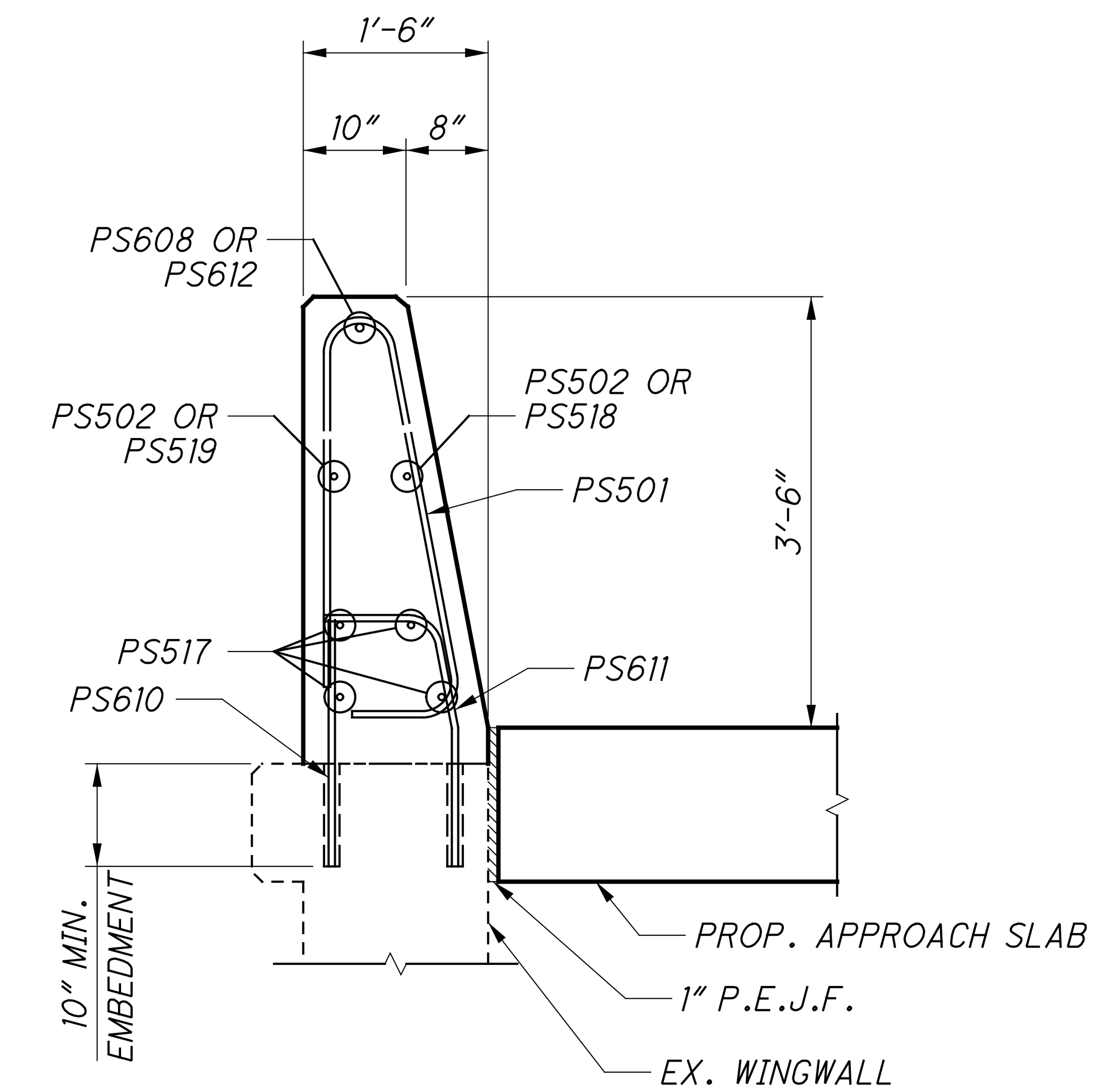
HAM-75-3.84
PID No. 104667



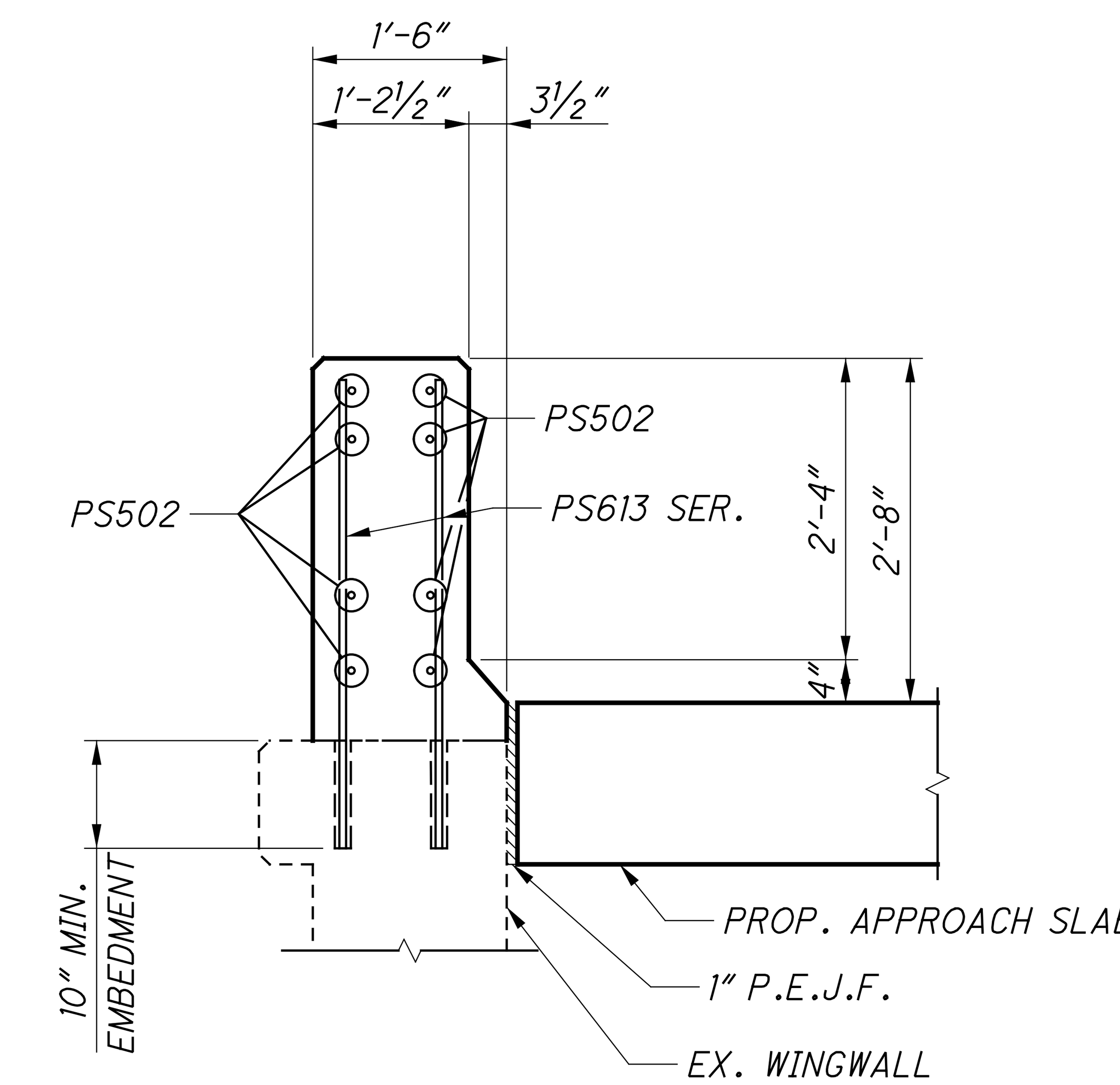
PARAPET PLAN
AT SOUTH WINGWALL FORWARD ABUTMENT



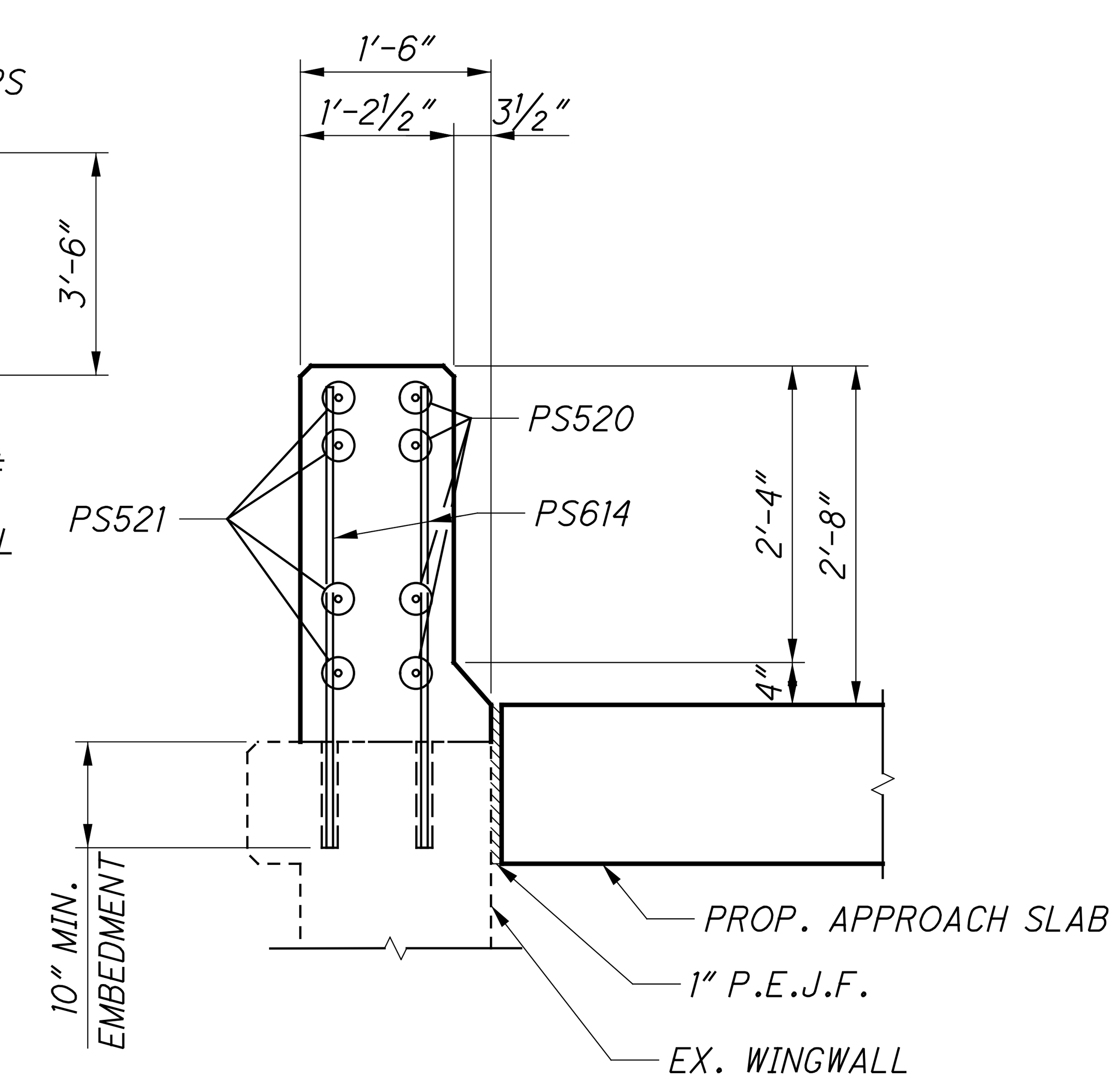
PARAPET ELEVATION
AT SOUTH WINGWALL FORWARD ABUTMENT



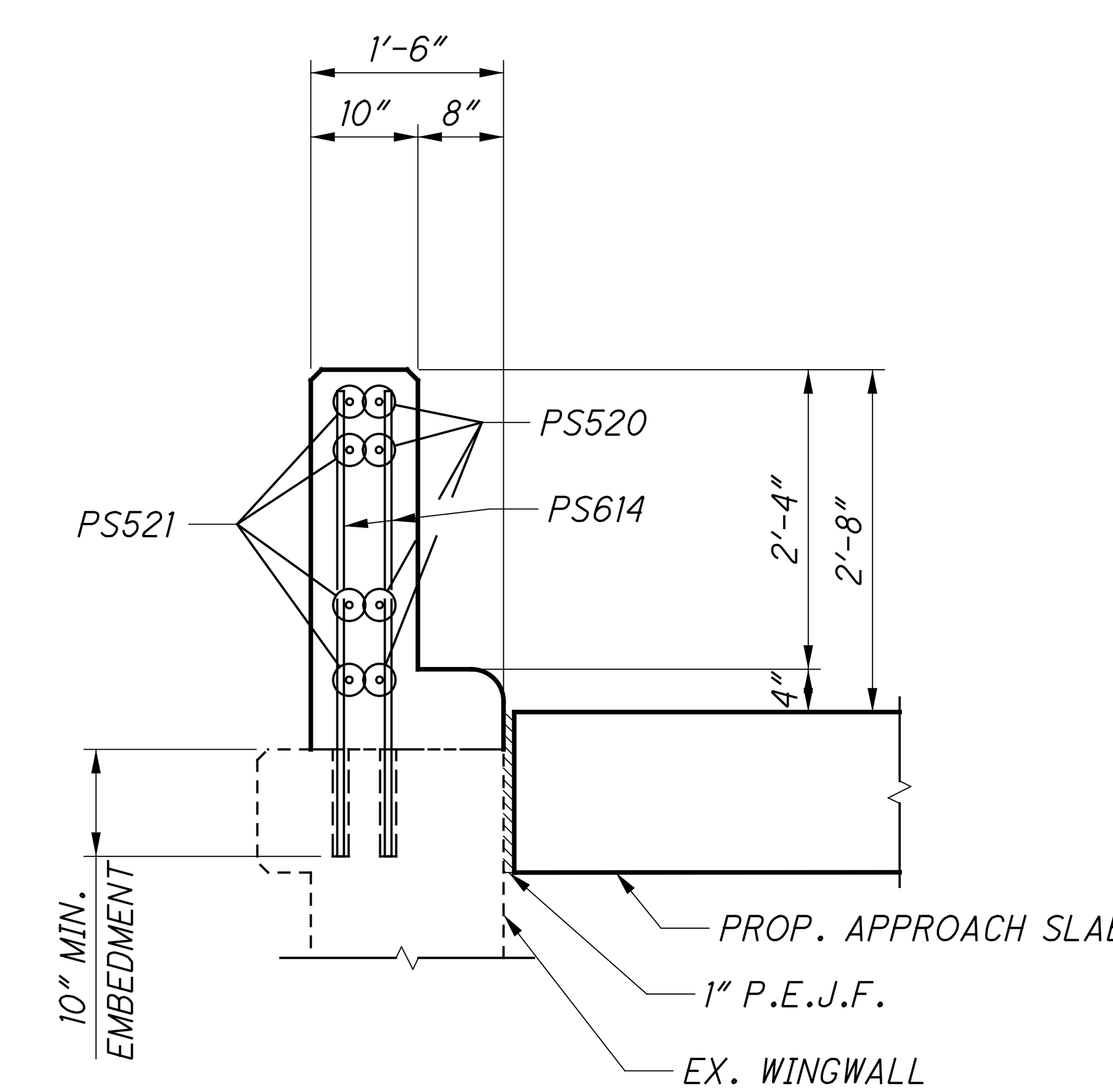
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

MINIMUM BAR LAP	
#5	2'-7"

NOTES:

1. SEE STANDARD BRIDGE DRAWING SBR-1-13 FOR ADDITIONAL DETAILS.

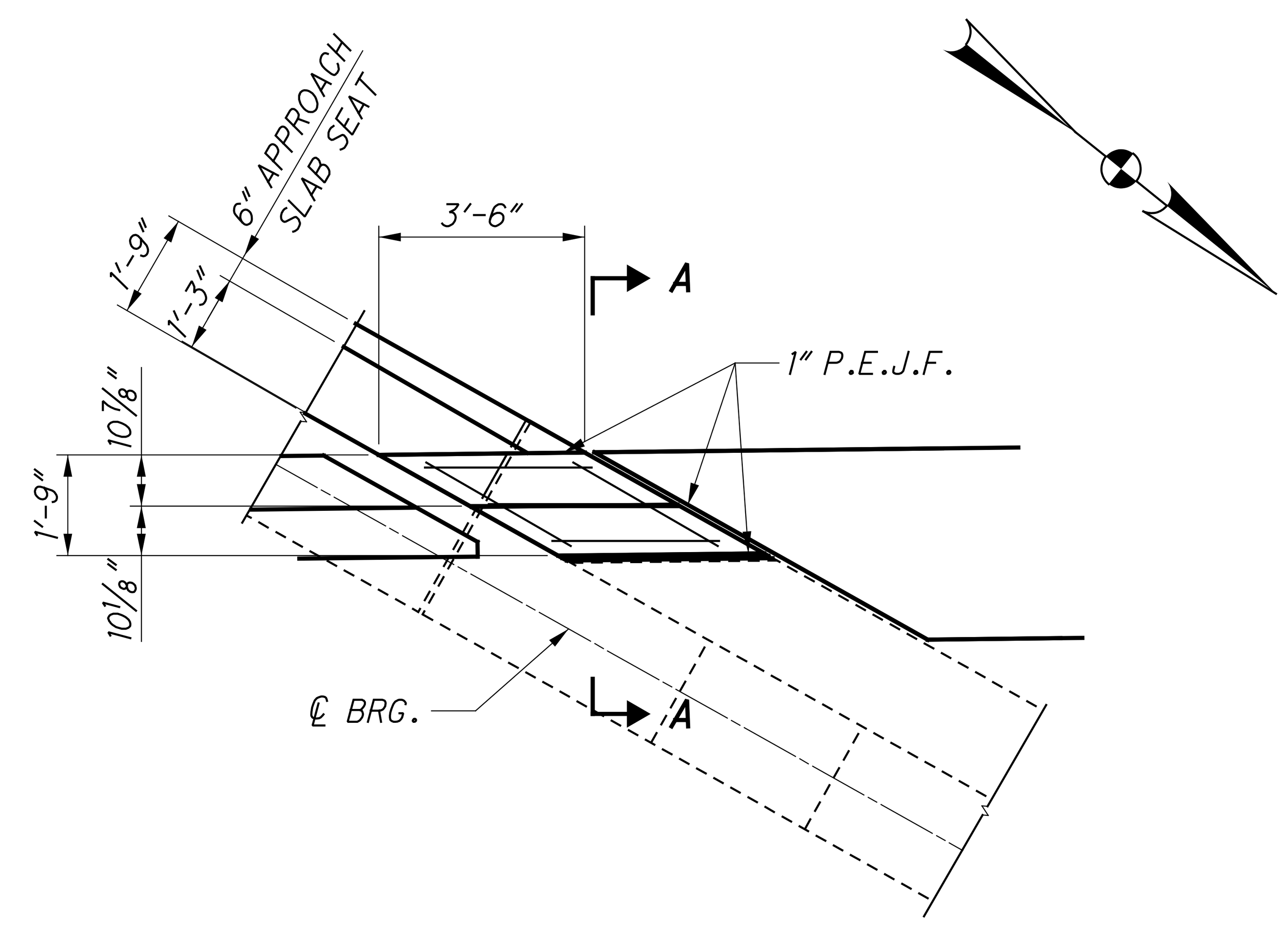
2. FOR BRIDGE TERMINAL ASSEMBLY, SEE STANDARD CONSTRUCTION DRAWING MGS 3.1.

DESIGN AGENCY
STRUCTUREPOINT

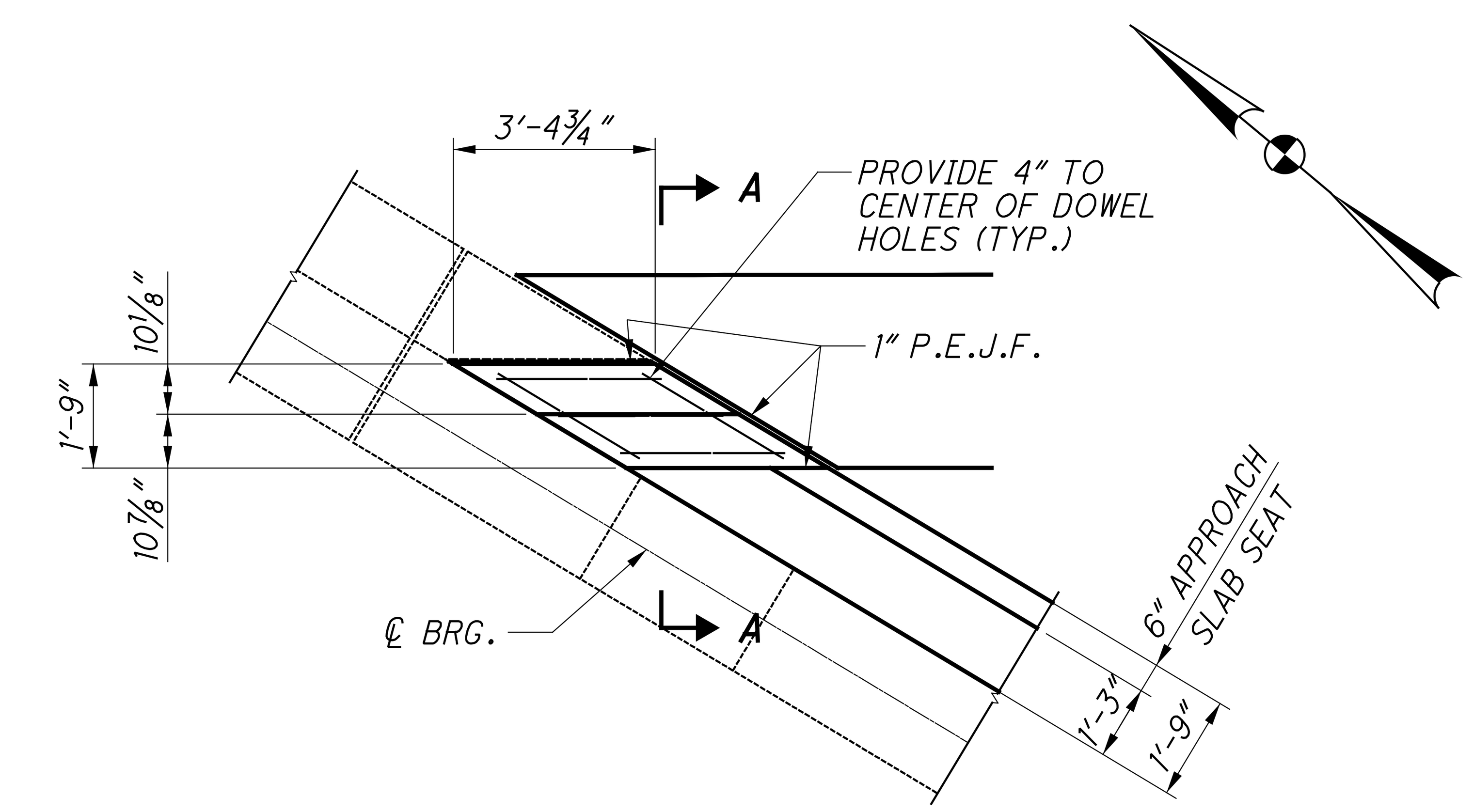
DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/15/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115577	

PARAPET DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1852 L/R
NB BEEKMAN ST. (U.S. 27)

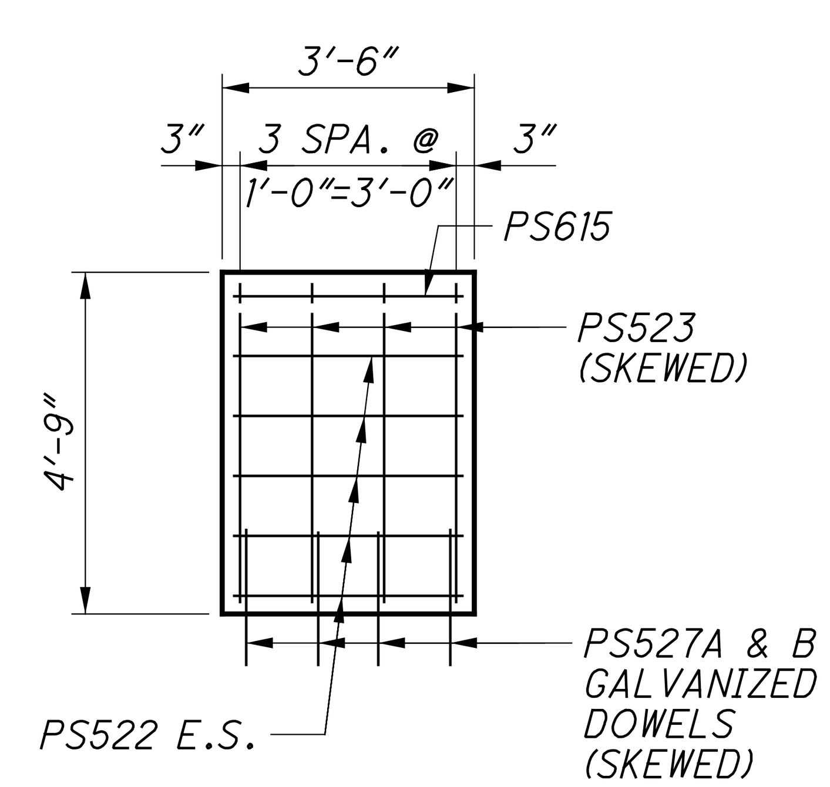
HAM-75-3.84
PID No. 104667



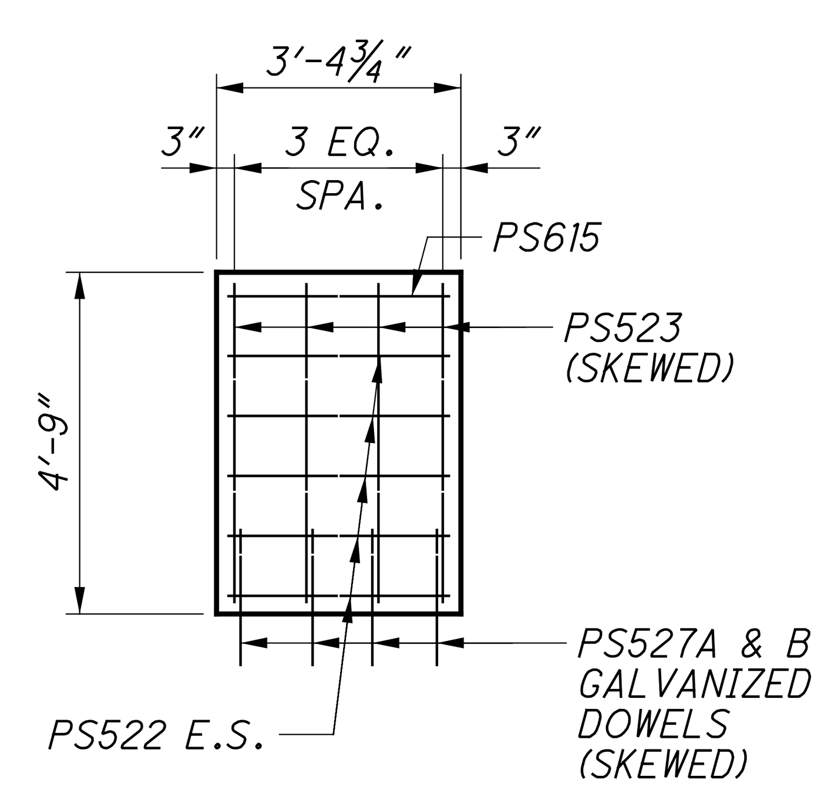
PLAN AT MEDIAN - REAR ABUTMENT



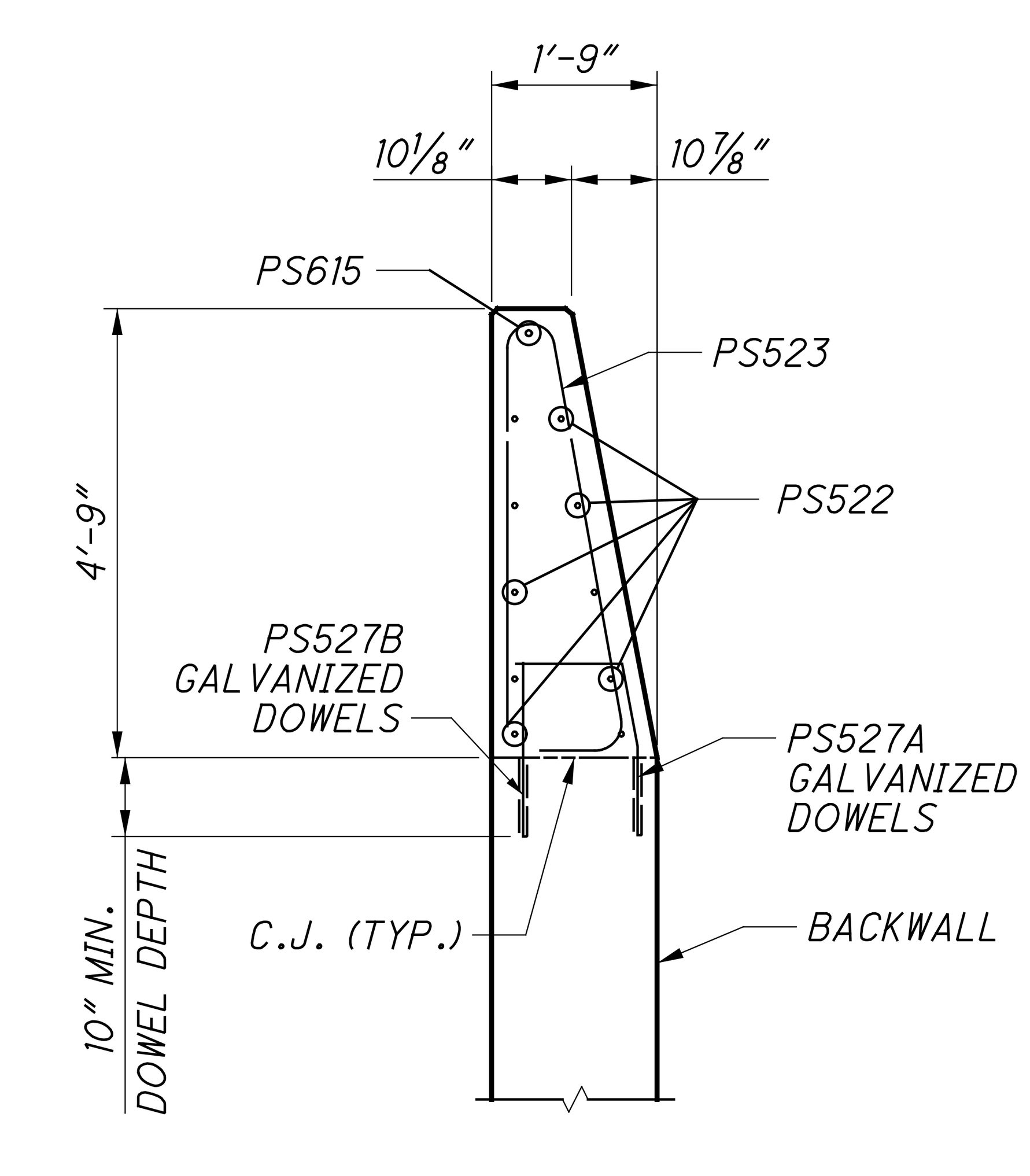
PLAN AT MEDIAN - FORWARD ABUTMENT



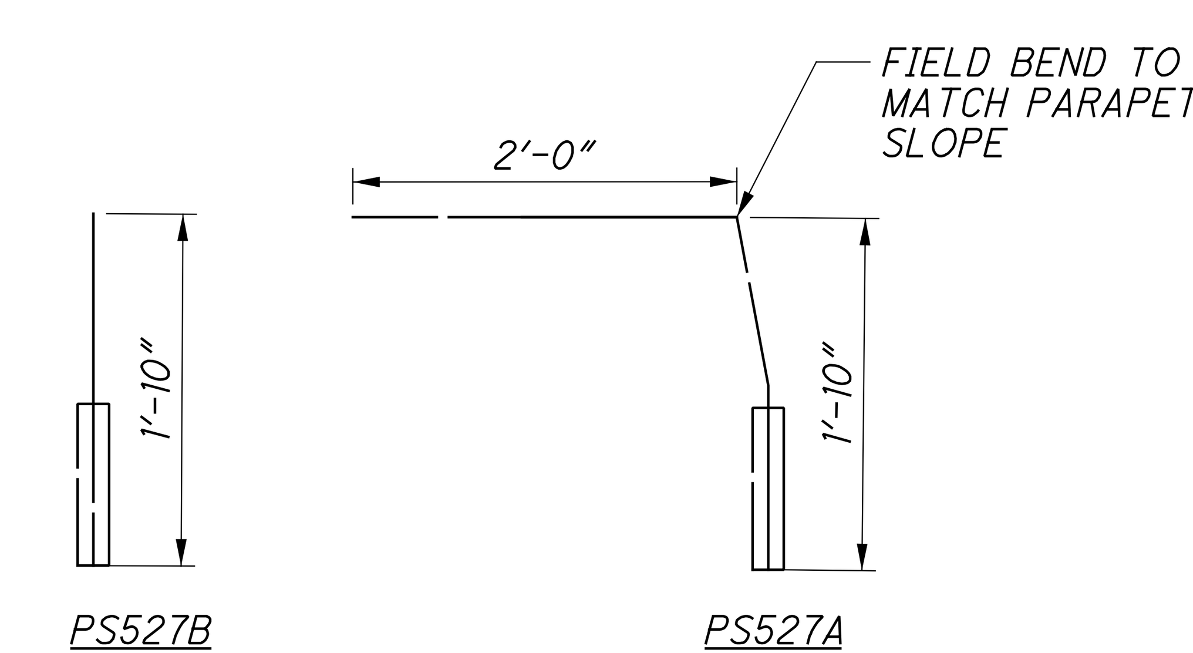
ELEVATION AT MEDIAN - REAR ABUTMENT



ELEVATION AT MEDIAN - FORWARD ABUTMENT



SECTION A-A



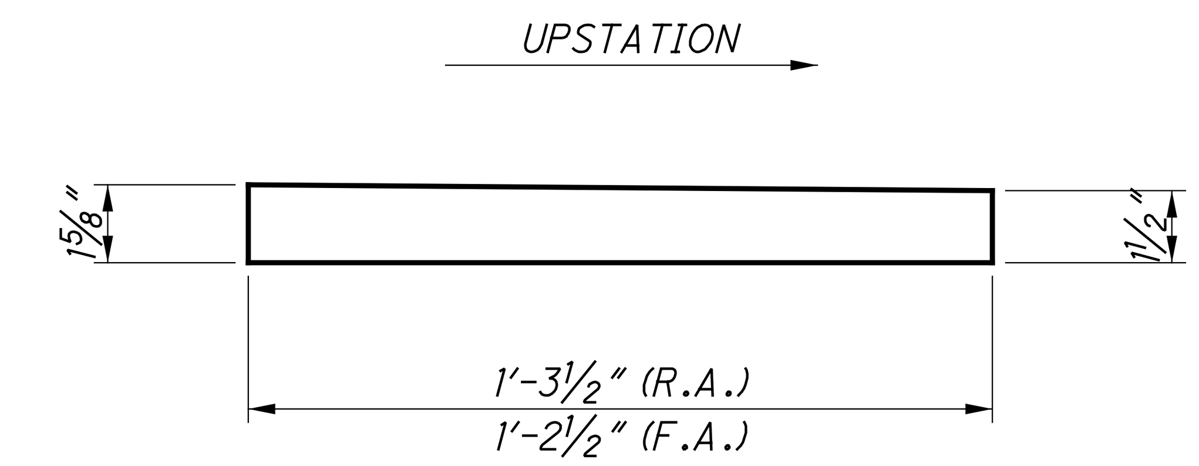
DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/15/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115577	

PARAPET DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667

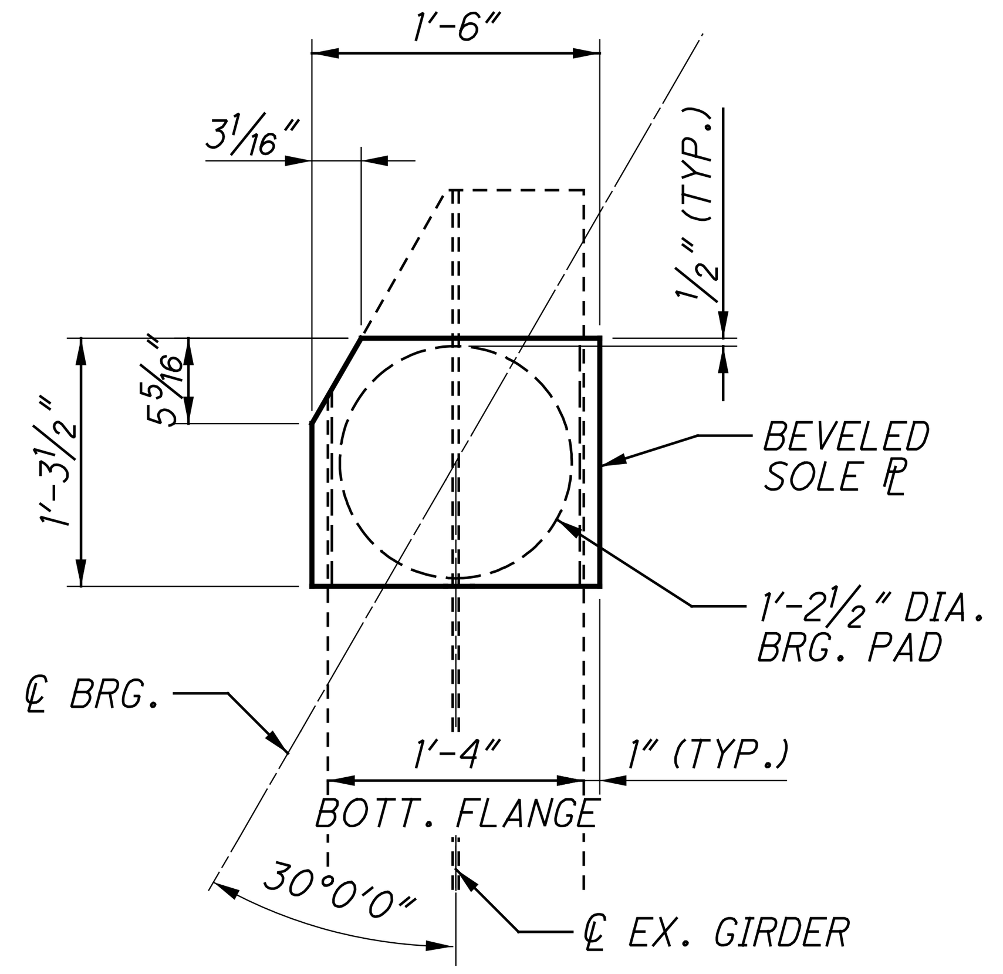
BRIDGE	BEARING SCHEDULE									BEVELED STEEL SOLE PLATE L x W	1½" STEEL LOAD PLATE L x W
	LOCATION	ASSEMBLY TYPE	NO. OF BEARINGS	SIZE D x T	NO. OF STEEL LAMINATES	ti	NO. OF ti LAYERS	te	NO. OF te LAYERS		
LEFT	REAR ABUT.	EXPANSION	5	14½" x 3⅝"	7	0.406"	7	0.25"	1	1'-3½" x 1-6"	1'-3½" x 1-3½"
LEFT	FWD. ABUT.	EXPANSION	5	13½" x 2½"	5	0.375"	5	0.25"	1	1'-2½" x 1-6"	1'-2½" x 1-2½"
RIGHT	REAR ABUT.	EXPANSION	5	14½" x 3⅝"	7	0.406"	7	0.25"	1	1'-3½" x 1-6"	1'-3½" x 1-3½"
RIGHT	FWD. ABUT.	EXPANSION	5	13½" x 2½"	5	0.375"	5	0.25"	1	1'-2½" x 1-6"	1'-2½" x 1-2½"



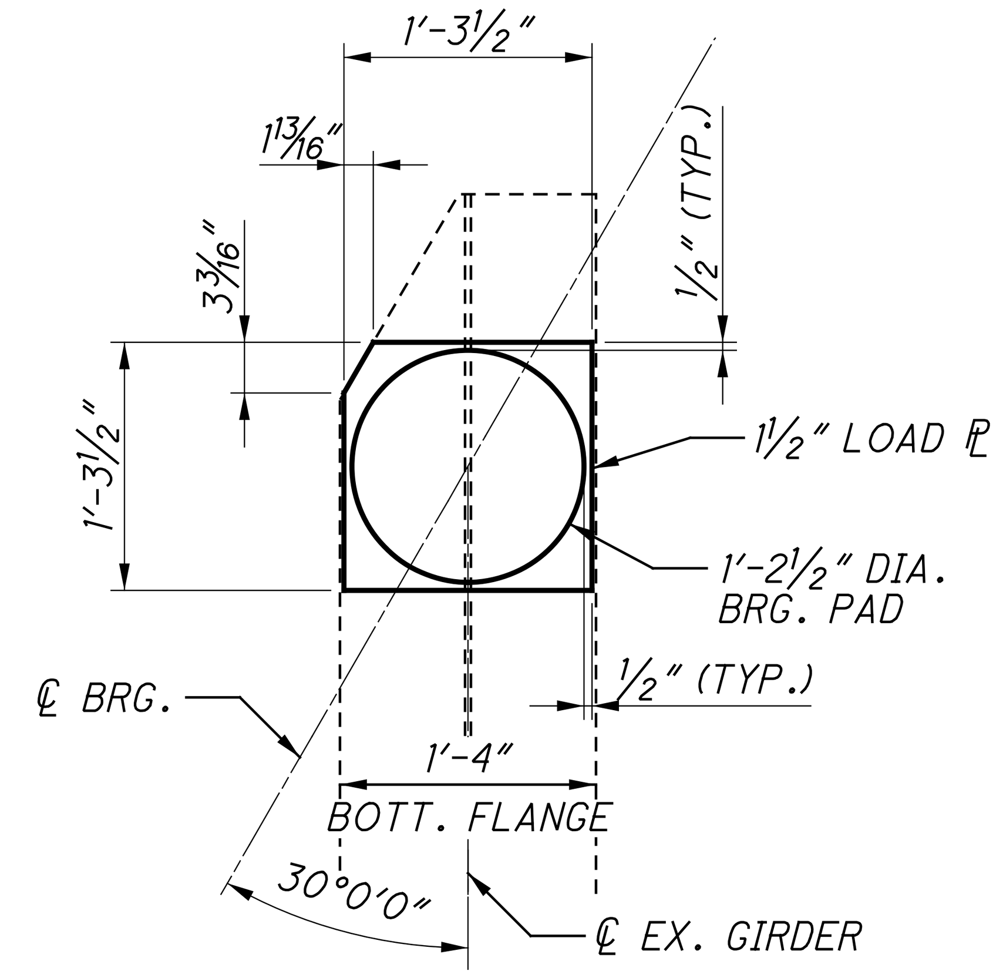
BEVELED SOLE PLATE

UNFACTORED ELASTOMERIC BEARING LOADS:

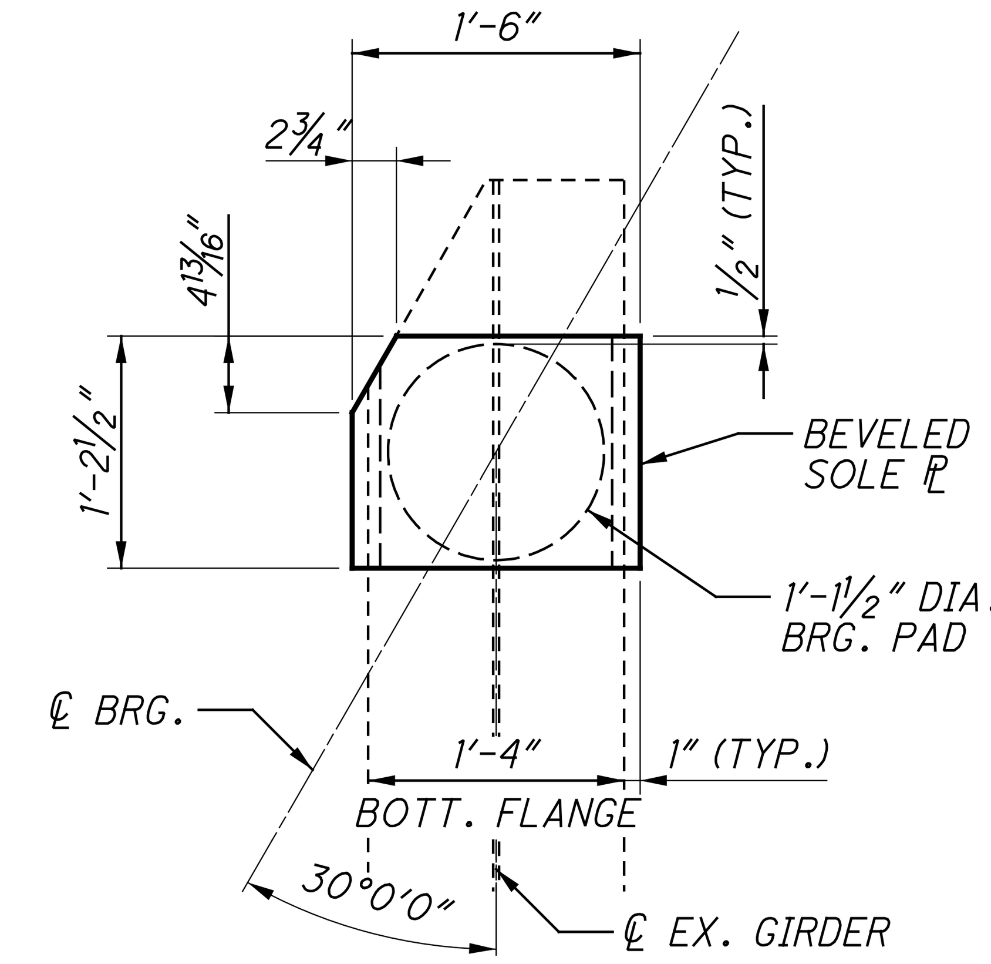
		R.A.	F.A.
DEAD LOAD	=	56 K	62 K
LIVE LOAD	=	56 K	54 K
TOTAL LOAD	=	112 K	116 K



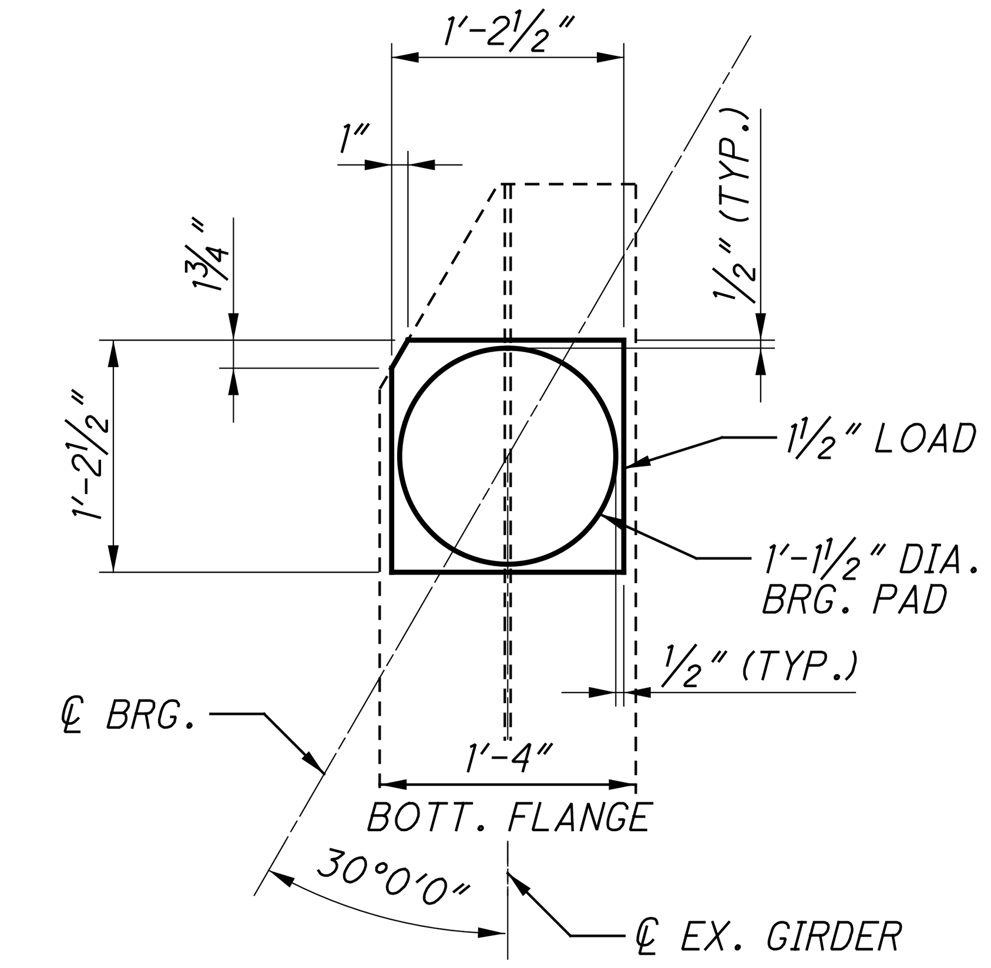
PLAN @ R.A.



R.A. LOAD PLATE DETAIL

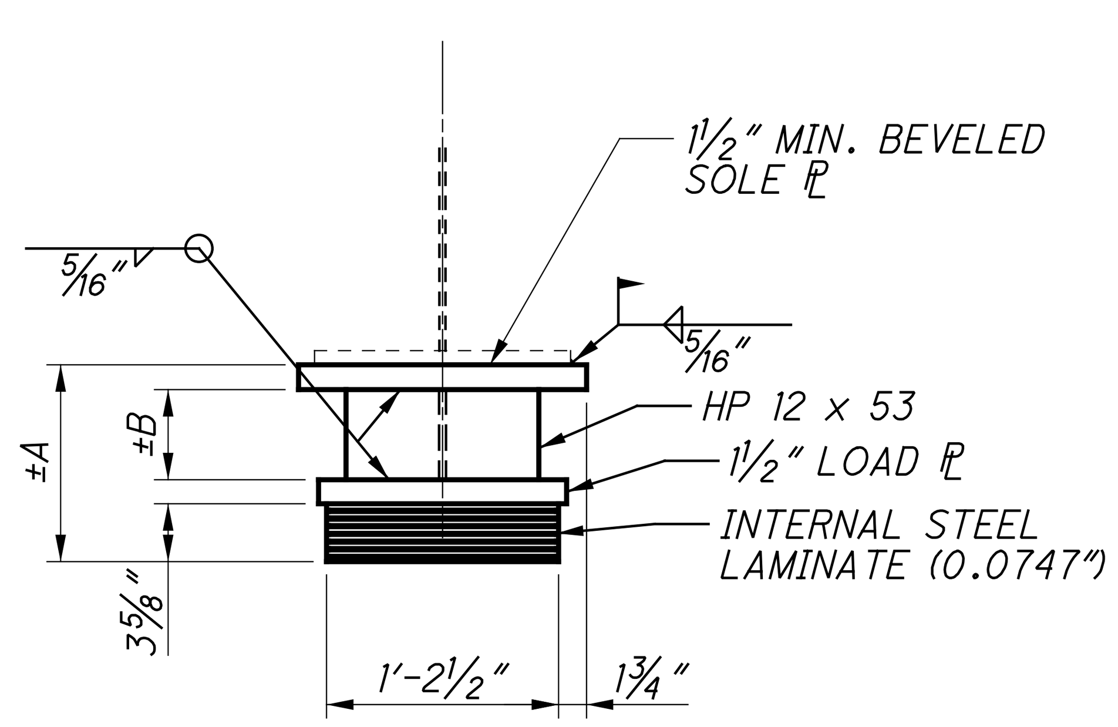


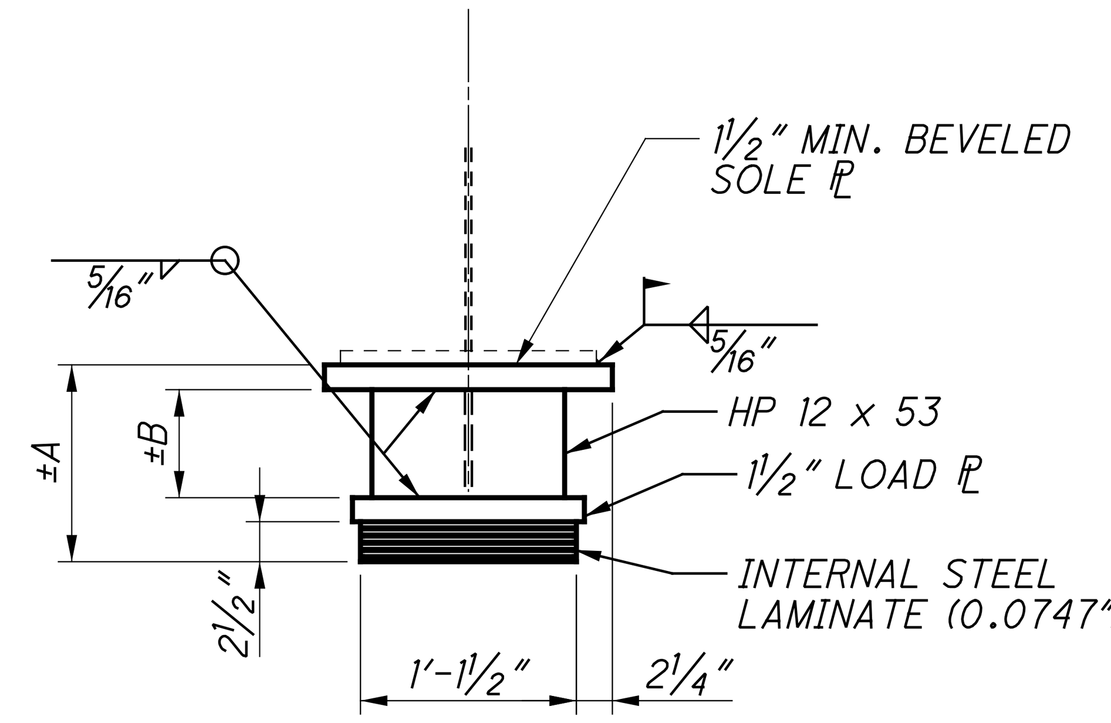
PLAN @ F.A.



F.A. LOAD PLATE DETAIL

BEARING HEIGHT TABLE				
	REAR ABUTMENT		FWD. ABUTMENT	
LOCATION	A	B	A	B
G1	1'-2½"	7 13/16"	1'-0 15/16"	7⅜"
G2	1'-2 11/16"	8"	1'-0 9/16"	7"
G3	1'-2 11/16"	8"	1'-0¾"	7 3/16"
G4	1'-2½"	7 13/16"	1'-0¾"	7 3/16"
G5	1'-2⅜"	7 11/16"	1'-0 5/16"	6¾"
G6	1'-3"	8 5/16"	1'-0⅜"	6 13/16"
G7	1'-2⅞"	8 3/16"	1'-0⅝"	7"
G8	1'-2⅝"	8"	1'-0⅜"	6 13/16"
G9	1'-2⅞"	8 3/16"	1'-0½"	6 15/16"
G10	1'-2¾"	8 1/16"	1'-0⅜"	6 13/16"





EXPANSION BEARINGS AT ABUTMENTS

NOTES:

1. THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED UNDER DIVISION I, SECTION 14.6.6 (METHOD A) OF THE AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGES.
2. THE STEEL LOAD PLATES FOR ELASTOMERIC BEARINGS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709, GRADE 50. THE LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS. STRUCTURAL STEEL LOAD PLATES SHALL BE PAINTED PER CMS 513 AND 514.
3. ALL BEARINGS SHALL BE MARKED PRIOR TO SHIPPING. THE MARKS SHALL INCLUDE THE BEARING LOCATION ON THE BRIDGE, AND A DIRECTION ARROW THAT POINTS UP-STATION. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.
4. CONTRACTOR SHALL VERIFY EXISTING BEARING HEIGHT PRIOR TO FABRICATION OF PROPOSED BEARING.

DESIGN AGENCY
AMERICAN STRUCTUREPOINT INC.
2550 CORPORATE EXCHANGE DR, STE 300
COLUMBUS, OH 43231
TEL 614.901.2235 FAX 614.901.2236
www.structurepoint.com

REVIEWED	DATE
MDS	11/12/18

STRUCTURE FILE NUMBER 3115577

DESIGNED	DRAWN	CHECKED	REVISED
SJF	SJF	CLB	

BEARING DETAILS

BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667

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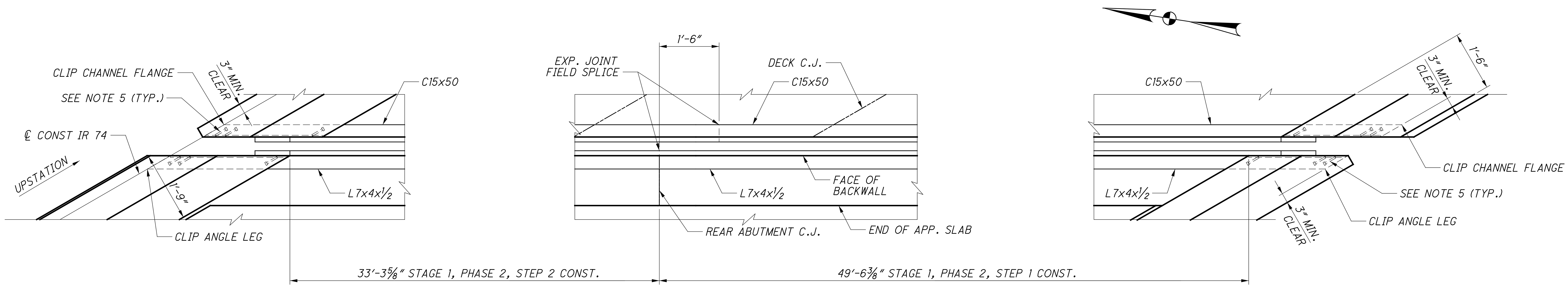


PARTIAL PLAN - REAR ABUTMENT EXPANSION JOINT DETAILS

NOTES:

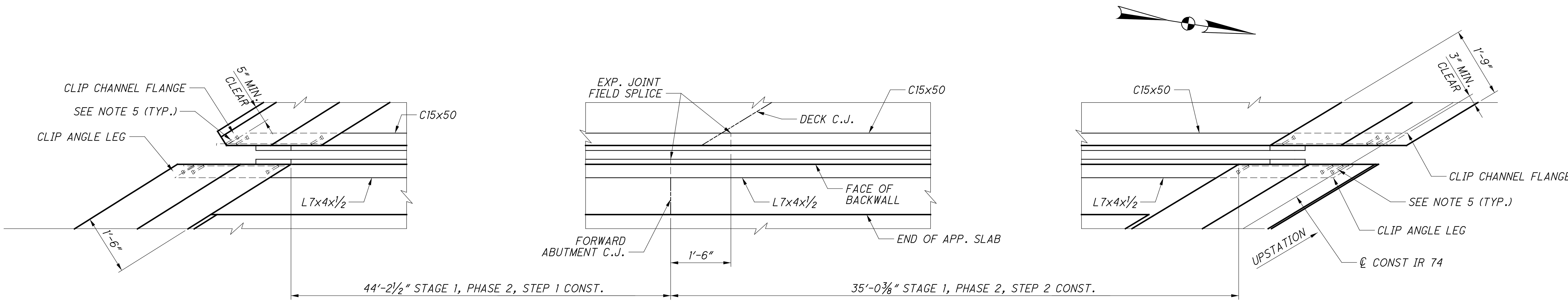
1. SEE STD. DWG. EXJ-4-87 FOR ADDITIONAL DETAILS.
2. ALL CHANNELS, ANGLES AND PLATES SHALL BE ASTM A709 GRADE 50.
3. COAT ALL STEEL PARTS OF THE JOINT ASSEMBLY ACCORDING TO 516.
4. FOR ADDITIONAL STRIP SEAL DETAILS, SEE SHEET 36/40.
5. SHEAR STUDS SHALL BE WELDED AT AN ANGLE TO MAINTAIN CLEARANCE IN PARAPET.

DESIGN AGENCY STRUCTUREPOINT

DESIGNED SJF | DRAWN DSH | REVIEWED MDS | DATE 11/12/18
CHECKED CLB | REVISED | STRUCTURE FILE NUMBER 3115577

EXPANSION JOINT DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1852 L/R
OVER NB BEELMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667



PARTIAL PLAN - FORWARD ABUTMENT EXPANSION JOINT DETAILS

NOTES:

1. SEE STD. DWG. EXJ-4-87 FOR ADDITIONAL DETAILS.
2. ALL CHANNELS, ANGLES AND PLATES SHALL BE ASTM A709 GRADE 50.
3. COAT ALL STEEL PARTS OF THE JOINT ASSEMBLY ACCORDING TO 516.
4. FOR ADDITIONAL STRIP SEAL DETAILS, SEE SHEET 36/40.
5. SHEAR STUDS SHALL BE WELDED AT AN ANGLE TO MAINTAIN CLEARANCE IN PARAPET.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	CHECKED	DRAWN	REVISED	REVIEWED	DATE	STRUCTURE FILE NUMBER
SJF	CLB	DSH		MDS	11/12/18	3115577

EXPANSION JOINT DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667

35/40

77/120

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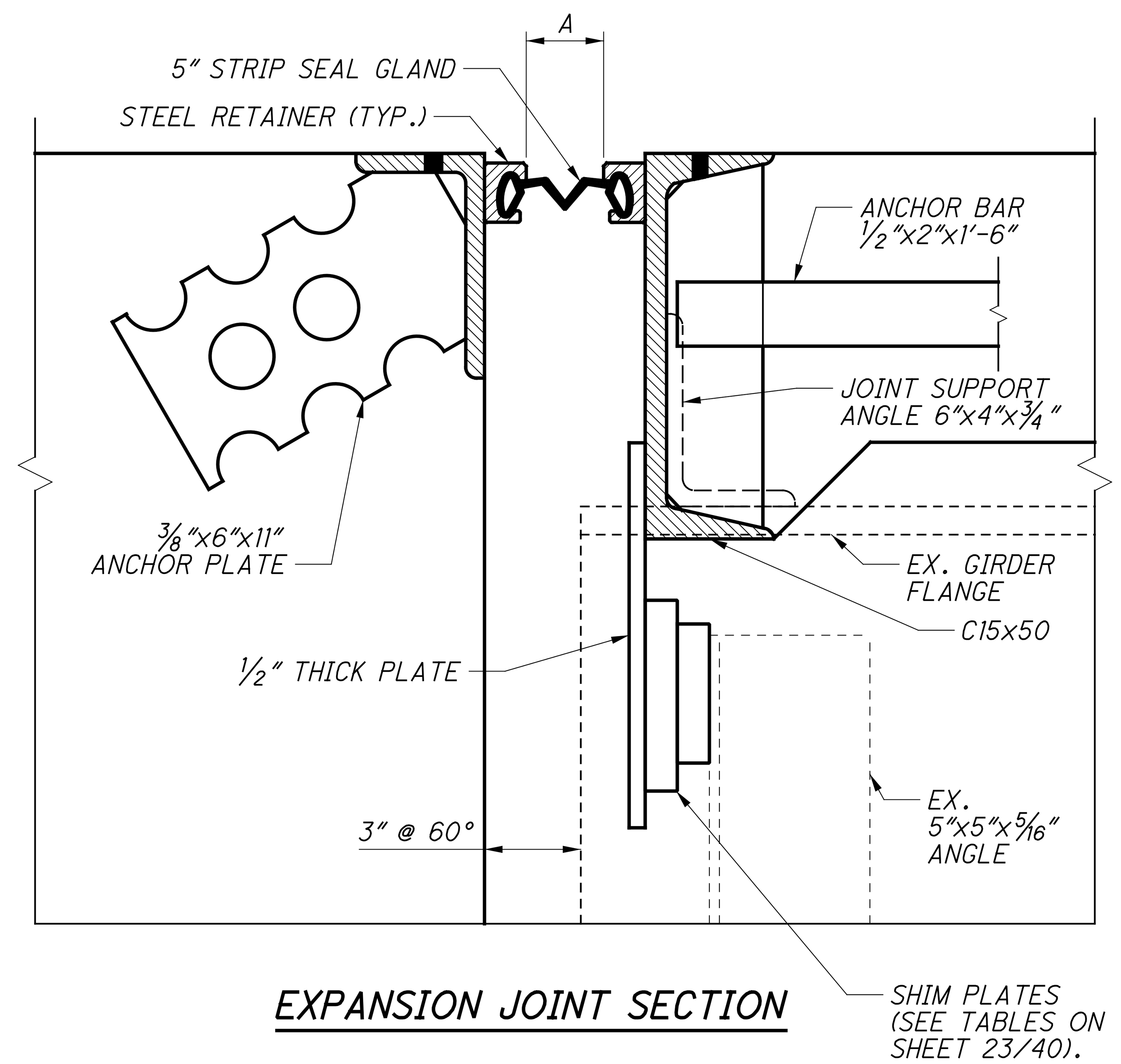


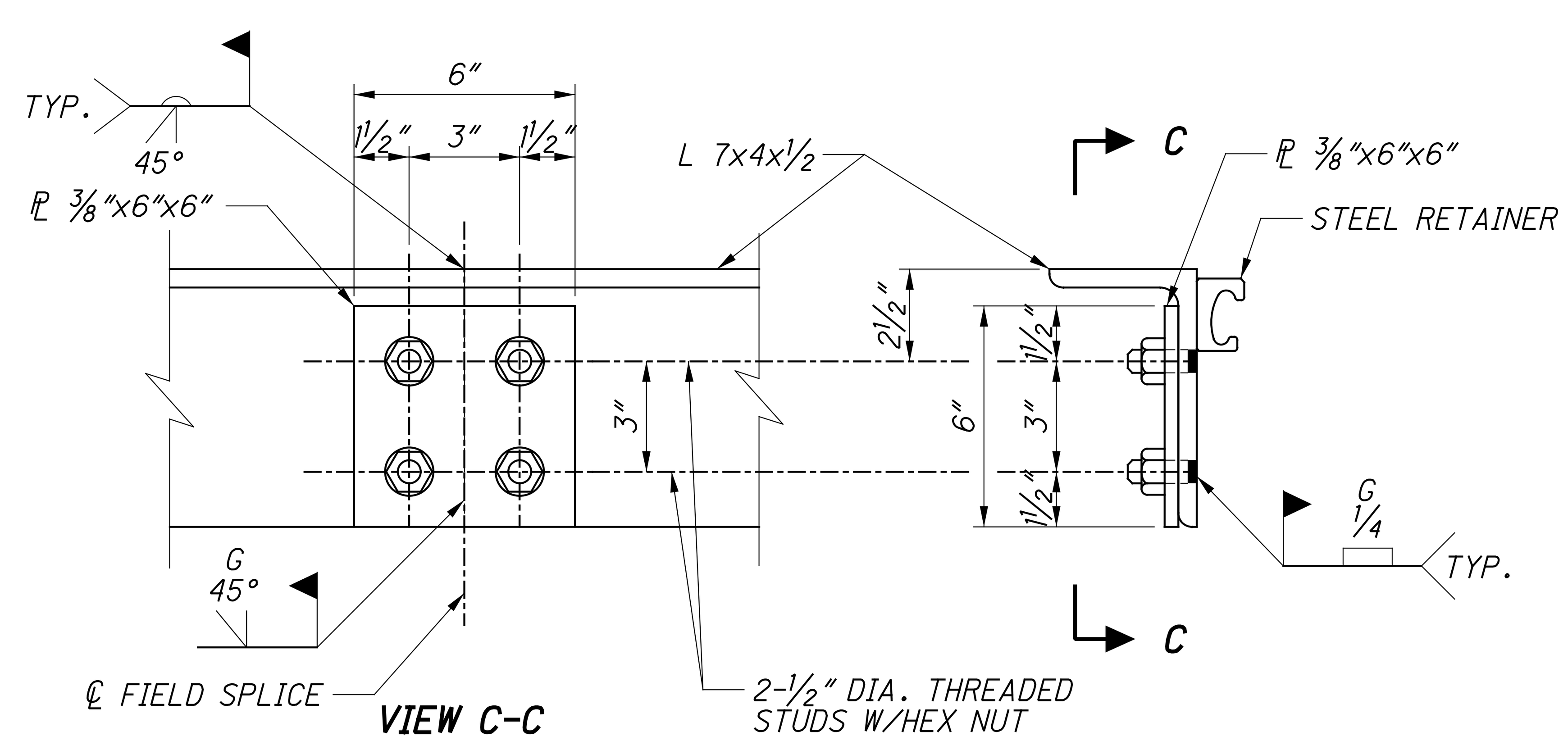
EXPANSION JOINT SECTION

REAR 5" STRIP SEAL DETAIL

AMBIENT TEMP.	DIMENSION "A" (IN.)
30°	2⅞"
40°	2¾"
50°	2 11⁄16"
60°	2⅝"
70°	2½"
80°	2 7⁄16"
90°	2 5⁄16"

FWD 5" STRIP SEAL DETAIL

AMBIENT TEMP.	DIMENSION "A" (IN.)
30°	2 11⁄16"
40°	2 11⁄16"
50°	2⅝"
60°	2⅝"
70°	2 9⁄16"
80°	2 9⁄16"
90°	2½"



END OF BACKWALL ANGLE FIELD SPLICE DETAILS

(FOR ADDITIONAL DETAILS, SEE STD. DWG. EXJ-4-87)

NOTES:

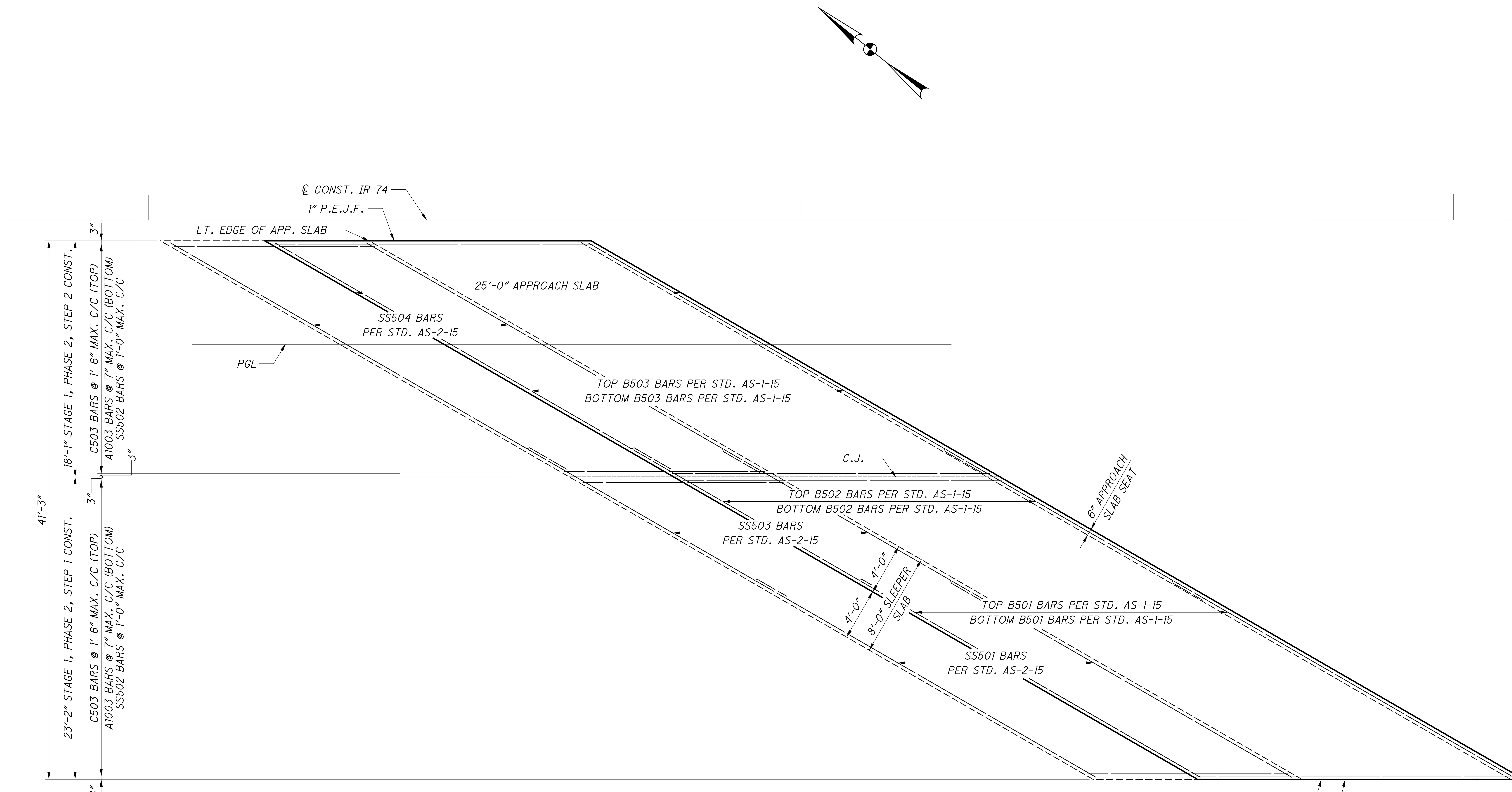
1. FOR ADDITIONAL STRIP SEAL JOINT DETAILS AND NOTES, SEE STANDARD DWG. EXJ-4-87.

DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115577	

EXPANSION JOINT DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667



PLAN
REAR APPROACH SLAB

APPROACH SLAB ELEVATIONS

APPROACH LINE	DESCRIPTION	BEGIN REAR SLEEPER SLAB	BEGIN REAR APPROACH SLAB	END REAR SLEEPER SLAB	END REAR APPROACH SLAB	STRUCTURE LIMITS	BEGIN FWD. APPROACH SLAB	BEGIN FWD. SLEEPER SLAB	END FWD. APPROACH SLAB	END FWD. SLEEPER SLAB
LT. EDGE APP. SLAB	STATION	998+00.77	998+08.77	998+08.77	998+33.77		1001+48.53	1001+64.95	1001+72.64	1001+80.30
	OFFSET	1.50	1.50	1.50	1.50		1.43	1.41	1.40	1.39
	ELEVATION	535.14	536.34	535.09	536.17		533.79	532.91	533.59	532.78
PGL	STATION	998+11.45	998+19.45	998+19.45	998+44.45		1001+58.74	1001+75.06	1001+82.70	1001+90.32
	OFFSET	7.66	7.66	7.66	7.66		7.58	7.56	7.56	7.55
	ELEVATION	534.97	536.17	534.92	536.00		533.88	533.02	533.71	532.91
C.J.	STATION	998+32.24	998+40.24	998+40.24	998+65.24		1001+78.39	1001+94.52	1002+02.08	1002+09.61
	OFFSET	19.66	19.66	19.66	19.66		19.56	19.54	19.54	19.53
	ELEVATION	534.64	535.84	534.59	535.67		534.12	533.30	534.02	533.21
RT. EDGE APP. SLAB	STATION	998+72.51	998+80.51	998+80.51	999+05.51		1002+15.67	1002+31.47	1002+38.87	1002+46.24
	OFFSET	42.91	42.91	42.91	42.91		42.77	42.76	42.75	42.74
	ELEVATION	534.00	535.19	533.94	535.02		534.76	533.90	534.60	533.80

MINIMUM BAR LAP	
#5	2'-7"

NOTES:

1. FOR STANDARD APPROACH SLAB DETAILS, SEE STANDARD BRIDGE DWG. AS-1-15 AND STANDARD BRIDGE DWG. AS-2-15.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115577	

APPROACH SLAB DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667

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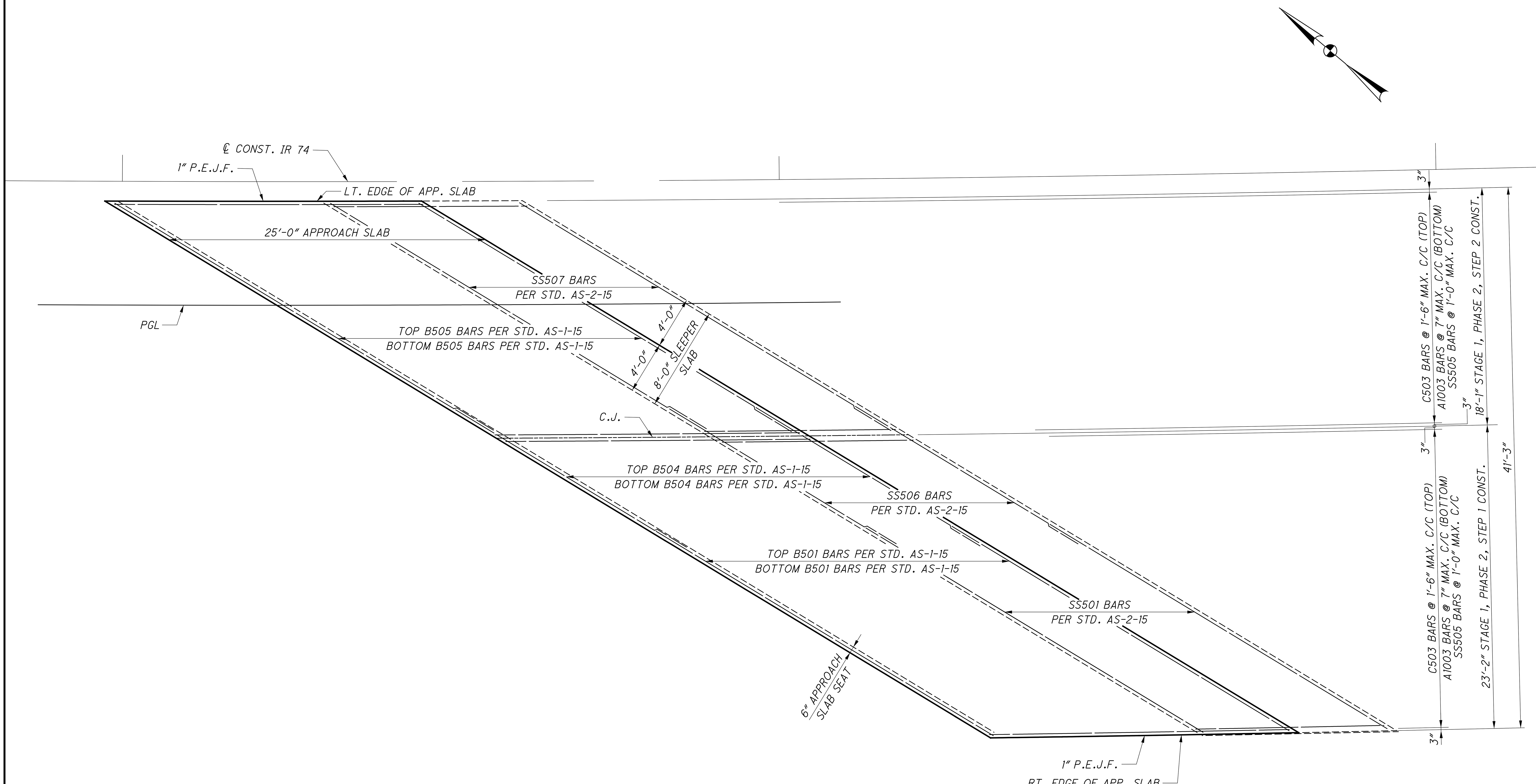

PLAN
FORWARD APPROACH SLAB

MINIMUM BAR LAP	
#5	2'-7"

NOTES:

1. FOR STANDARD APPROACH SLAB DETAILS, SEE STANDARD BRIDGE DWG. AS-1-15 AND STANDARD BRIDGE DWG. AS-2-15.

2. FOR APPROACH SLAB ELEVATIONS, SEE SHEET 37/40.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115577	

APPROACH SLAB DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667

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11/16/2023 9:34:43 AM
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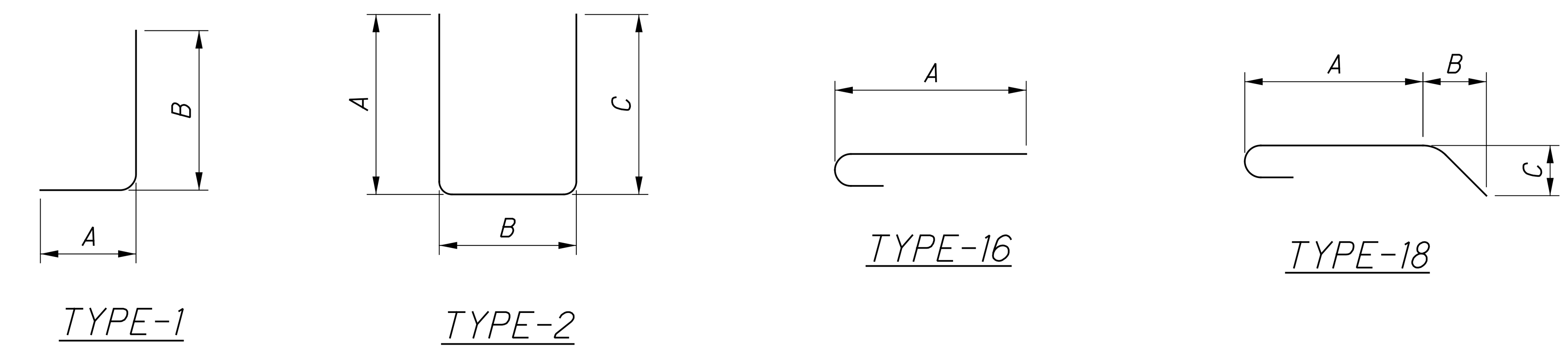
REINFORCING STEEL LIST

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS						
	REAR ABUT.	FORWARD ABUT.	TOTAL				A	B	C	D	E	R	INC
ABUTMENTS													
A501	8	8	16	4'-4"	72	STR							
(1) A502	24	24	48	30'-0"	1502	STR							
(1) A503	12		12	23'-0"	288	STR							
A504	NOT USED												
A505	1		1	6'-3"	7	STR							
A506	1		1	4'-3"	4	STR							
A507	9		9	8'-9"	82	STR							
A508	3		3	13'-6"	42	STR							
A509		12	12	20'-6"	257	STR							
A510		12	12	12'-0"	150	STR							
A601	172	168	340	5'-3"	2681	STR							
A602	172	168	340	6'-6"	3320	1	1'-4"	5'-4"					
A603	86	84	170	10'-1"	2575	2	4'-9"	0'-11"	4'-9"				
D801	58	55	113	5'-10"	1760	18	3'-8"	1'-0"	1'-0"				
SP601	11		11	4'-9"	78	1	1'-11"	3'-0"					
SP602	9		9	5'-0"	68	1	2'-2"	3'-0"					
SP801	16		16	5'-10"	249	1	2'-1"	4'-0"					
SP802	12		12	6'-1"	195	1	2'-4"	4'-0"					
				SUB-TOTAL	13,330								

(1) REQUIRES MECHANICAL CONNECTORS. (12 REQUIRED)

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS						
	REAR ABUT.	FORWARD ABUT.	TOTAL				A	B	C	D	E	R	INC
APPROACH SLABS													
B501	57	57	114	30'-0"	3567	STR							
B502	57		57	23'-0"	1367	STR							
B503	57		57	34'-9"	2066	STR							
B504		57	57	20'-6"	1219	STR							
B505		57	57	33'-3"	1977	STR							
C503	30	30	60	24'-6"	1533	STR							
SS501	8	8	16	30'-0"	501	STR							
SS502	43		43	15'-4"	688	STR							
SS503	8		8	23'-0"	192	STR							
SS504	8		8	34'-9"	290	STR							
SS505		43	43	14'-6"	650	STR							
SS506		8	8	20'-6"	171	STR							
SS507		8	8	33'-3"	277	STR							
A1003	72	72	144	25'-11"	16059	16	24'-6"						
				SUB-TOTAL	30,557								



NOTES:

(1) REQUIRES MECHANICAL CONNECTORS (NON-PROTRUDING TYPE)

AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING SHALL BE PROVIDED. INSTALLATION OF THE CONNECTORS SHALL CONFORM WITH RECOMMENDED MANUFACTURER'S PROCEDURES. IF A DOWEL BAR SPLICE IS FURNISHED, THE MINIMUM DOWEL BAR LENGTH TO BE INCLUDED WITH THE CONNECTOR SHALL BE GIVEN BY THE DIMENSION "L" SHOWN BELOW :
#5 REINFORCING BAR, L = 3'-6"

WHERE MECHANICAL CONNECTORS ARE REQUIRED THE REINFORCING BAR LENGTH IS MEASURED TO THE CONSTRUCTION JOINT. EXTRA BAR LENGTH AND/OR BAR PREPARATION MAY BE NECESSARY DEPENDING ON THE TYPE OF MECHANICAL CONNECTOR FURNISHED.

DESIGN AGENCY
STRUCTUREPOINT

DESIGNED SJF | DRAWN DSH | REVIEWED MDS | DATE 11/12/18
CHECKED CLB | REVISED | STRUCTURE FILE NUMBER 3115577

REINFORCING STEEL LIST (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667

39/40

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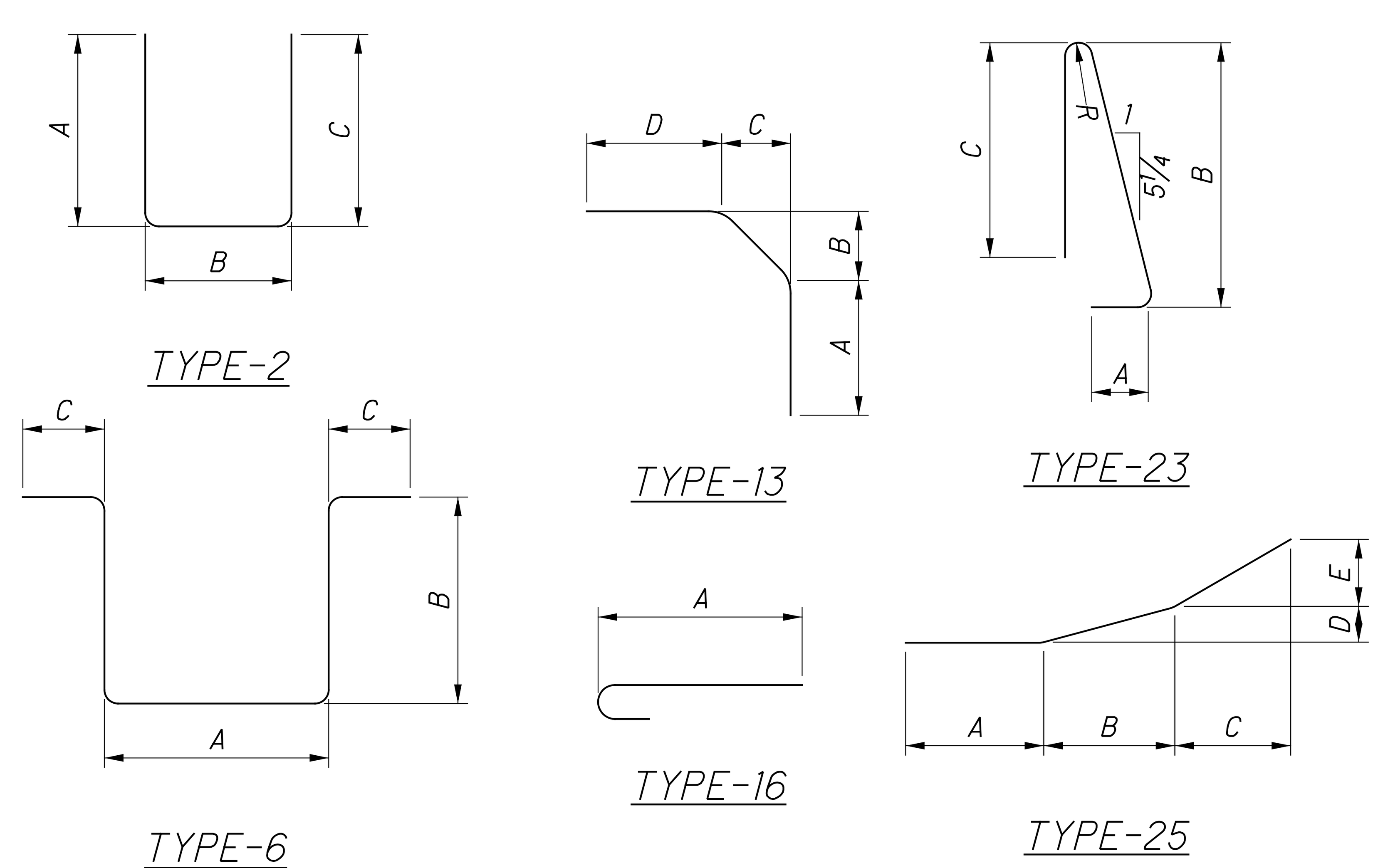
MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	A	B	C	D	E	R	INC
SUPERSTRUCTURE											
S401	770	30'-0"	15431	STR							
S402	70	4'-1"	191	STR							
S403	3530	3'-1"	7271	6	1'-0"	0'-7"	0'-8"				
S404	576	5'-4"	2052	2	3'-0"	0'-6 1/4"	2'-0"				
S405	571	3'-6"	1335	2	2'-1"	0'-6 1/4"	1'-1"				
S501	20	10'-0"	209	STR							
(1) S502	4	23'-6"	98	STR							
S503	543	30'-0"	16990	STR							
S504	NOT USED										
(1) S505	505	25'-2"	13256	16	24'-7"						
	1 SR	3'-9"									
S506	OF	TO	964	STR							0'-3 3/4"
	66	24'-3"									
	2 SR	1'-6"									
(1) S507	OF	TO	2075	STR							0'-3 1/2"
	77	24'-4"									
S508	51	10'-6"	559	STR							
(1) S509	505	24'-7"	12948	STR							
S510	4	39'-2"	163	STR							
	1 SR	4'-7"			4'-0"						
S511	OF	TO	664	16	TO						0'-3 1/2"
	52	19'-11"			19'-4"						
S512	524	20'-2"	11022	16	19'-7"						
	2 SR	3'-9"									
S513	OF	TO	1228	STR							0'-3 3/4"
	51	19'-4"									
S514	8	3'-6"	29	STR							
S515	118	40'-0"	4923	STR							
S516	118	20'-1"	2472	STR							
	1 SR	4'-4"			3'-9"						
S517	OF	TO	1004	16	TO						0'-3 3/4"
	66	24'-10"			24'-3"						
S518	524	19'-7"	10703	STR							
	1 SR	4'-0"									
S519	OF	TO	633	STR							0'-3 1/2"
	52	19'-4"									
S520	1136	4'-2"	4937	STR							
		SUB-TOTAL	111,157								

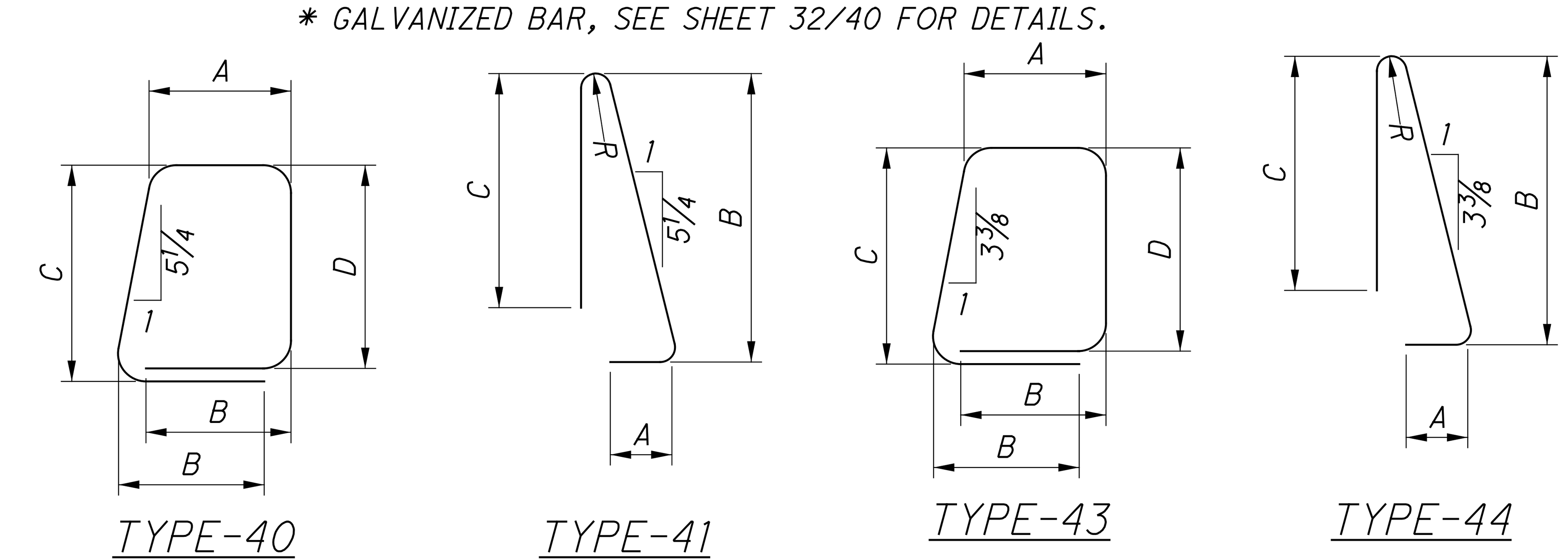
(1) REQUIRES MECHANICAL CONNECTORS. (1168 REQUIRED)



MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	A	B	C	D	E	R	INC
PARAPETS											
PS501	371	7'-4"	2838	23	0'-11"	3'-3"	3'-0"			0'-3"	
PS502	12	9'-7"	120	STR							
PS503	88	14'-8"	1346	STR							
PS504	128	7'-2"	957	STR							
PS505	80	30'-0"	2503	STR							
PS506	4	30'-6"	127	STR							
PS507	1	11'-10"	12	STR							
PS508	1	7'-0"	7	STR							
PS509	6	11'-2"	70	STR							
PS510	3	13'-9"	43	STR							
PS511	3	8'-3"	26	STR							
PS512	4	33'-7"	140	STR							
PS513	328	9'-10"	3364	41	0'-11"	4'-3"	4'-0"			0'-3"	
PS514	2	21'-0"	44	STR							
PS515	2	18'-11"	39	STR							
PS516	2	9'-8"	20	STR							
PS517	4	23'-5"	98	STR							
PS518	1	9'-6"	10	STR							
PS519	1	8'-2"	9	STR							
PS520	4	5'-9"	24	25	1'-10"	2'-5"	1'-5"	0'-1 1/2"	0'-5"		
PS521	4	6'-3"	26	STR							
PS522	20	3'-0"	63	STR							
PS523	8	10'-5"	87	44	1'-0"	4'-6"	4'-3"			0'-6 1/4"	
PS524	1	11'-1"	12	STR							
PS525	1	8'-11"	9	STR							
PS526	328	5'-7"	1910	43	1'-1"	1'-0"	1'-7"	1'-7"			
PS527	8	9'-6"	79	43	2'-0"	2'-3"	1'-7"	1'-7"			
PS601	326	5'-7"	2734	40	1'-1"	1'-0"	1'-7"	1'-7"			
PS603	1	10'-9"	16	STR							
PS604	22	14'-8"	485	STR							
PS605	32	7'-2"	344	STR							
PS606	1	8'-4"	13	STR							
PS607	1	12'-5"	19	STR							
PS608	2	9'-8"	29	STR							
PS609	1	10'-2"	15	STR							
PS610	45	3'-1"	208	STR							
PS611	45	3'-11"	265	13	2'-2"	0'-11"	0'-2 1/4"	0'-11"			
PS612	1	8'-10"	13	STR							
	2 SR	3'-5"									
PS613	OF	TO	127	STR							0'-1"
	11	4'-3"									
PS614	8	3'-5"	41	STR							
PS615	2	3'-0"	9	STR							
PS616	1	10'-0"	15	STR							
		SUB-TOTAL	18,316								
*PS527A	8	-	-	-							
*PS527B	8	-	-	-							

PS602 NOT USED.

* GALVANIZED BAR, SEE SHEET 32/40 FOR DETAILS.



NOTES:

(1) REQUIRES MECHANICAL CONNECTORS (NON-PROTRUDING TYPE)

AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING SHALL BE PROVIDED. INSTALLATION OF THE CONNECTORS SHALL CONFORM WITH RECOMMENDED MANUFACTURER'S PROCEDURES. IF A DOWEL BAR SPLICE IS FURNISHED, THE MINIMUM DOWEL BAR LENGTH TO BE INCLUDED WITH THE CONNECTOR SHALL BE GIVEN BY THE DIMENSION "L" SHOWN BELOW :
#5 REINFORCING BAR, L = 3'-6"

WHERE MECHANICAL CONNECTORS ARE REQUIRED THE REINFORCING BAR LENGTH IS MEASURED TO THE CONSTRUCTION JOINT. EXTRA BAR LENGTH AND/OR BAR PREPARATION MAY BE NECESSARY DEPENDING ON THE TYPE OF MECHANICAL CONNECTOR FURNISHED.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED SJF | DRAWN TLH | REVIEWED MDS | DATE 11/15/18 | CHECKED CLB | REVISED | STRUCTURE FILE NUMBER 3115577

REINFORCING STEEL LIST (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667

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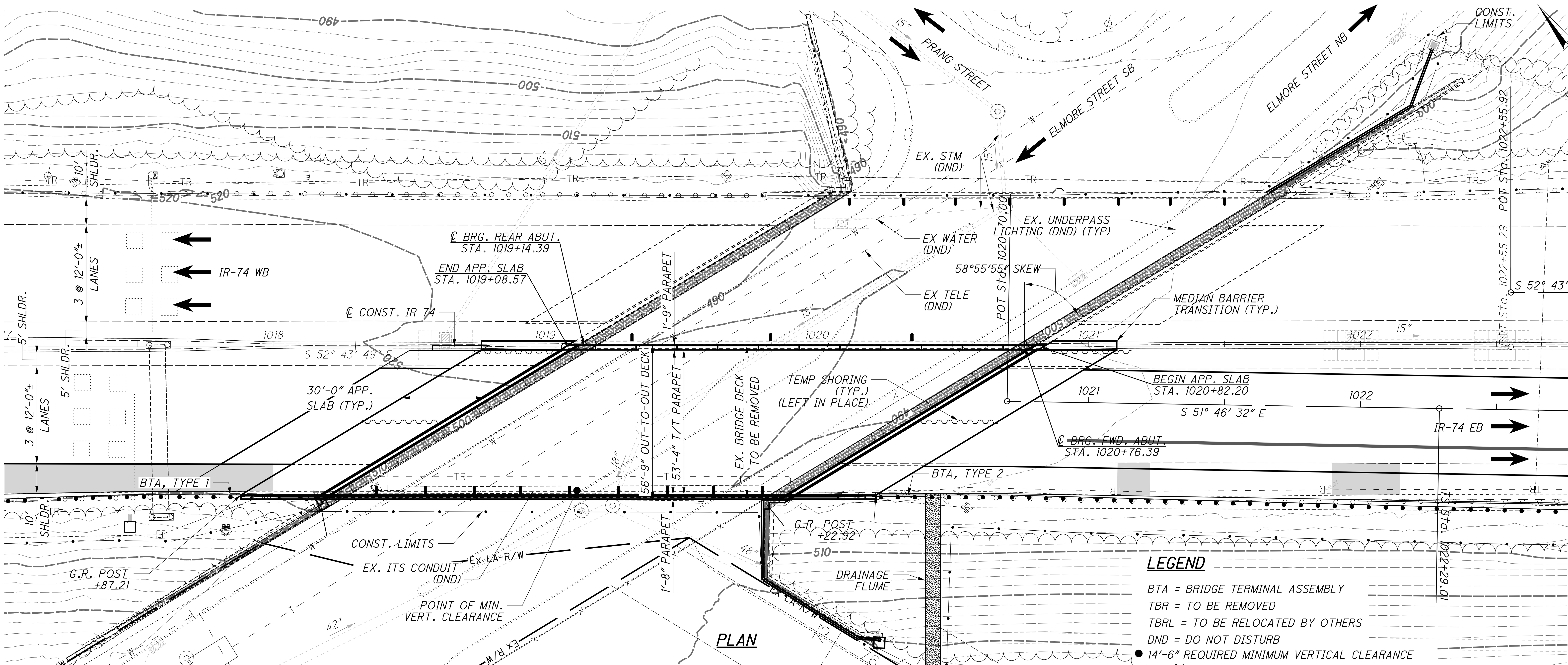

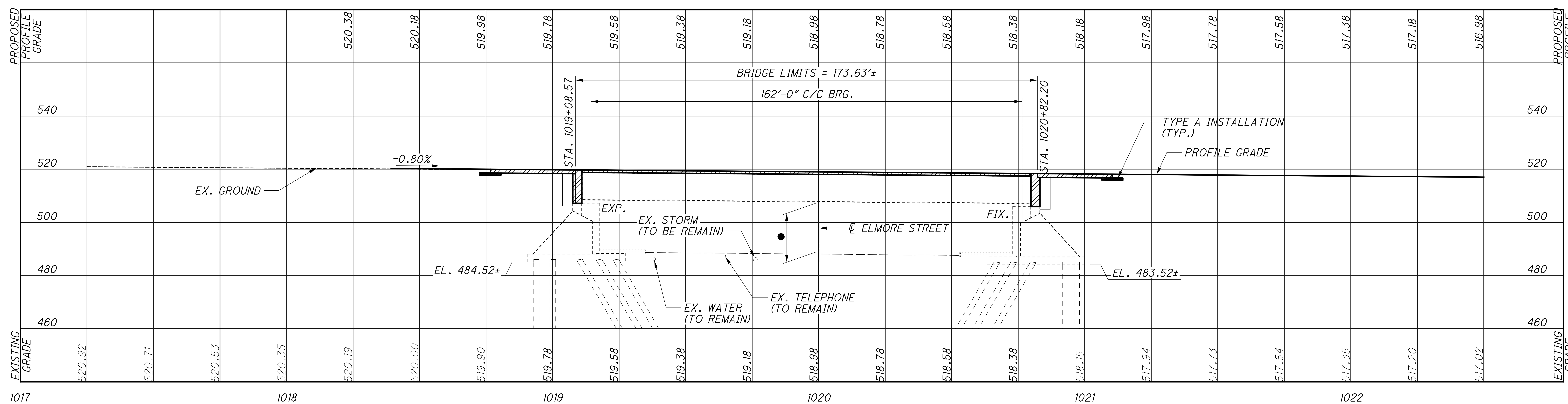

PROFILE

ELEVATION ALONG ℄ CONST. IR 74

NOTE:

FOR ADDITIONAL SITE PLAN INFORMATION, SEE SHEET 2/38.

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DESIGN AGENCY: STRUCTUREPOINT

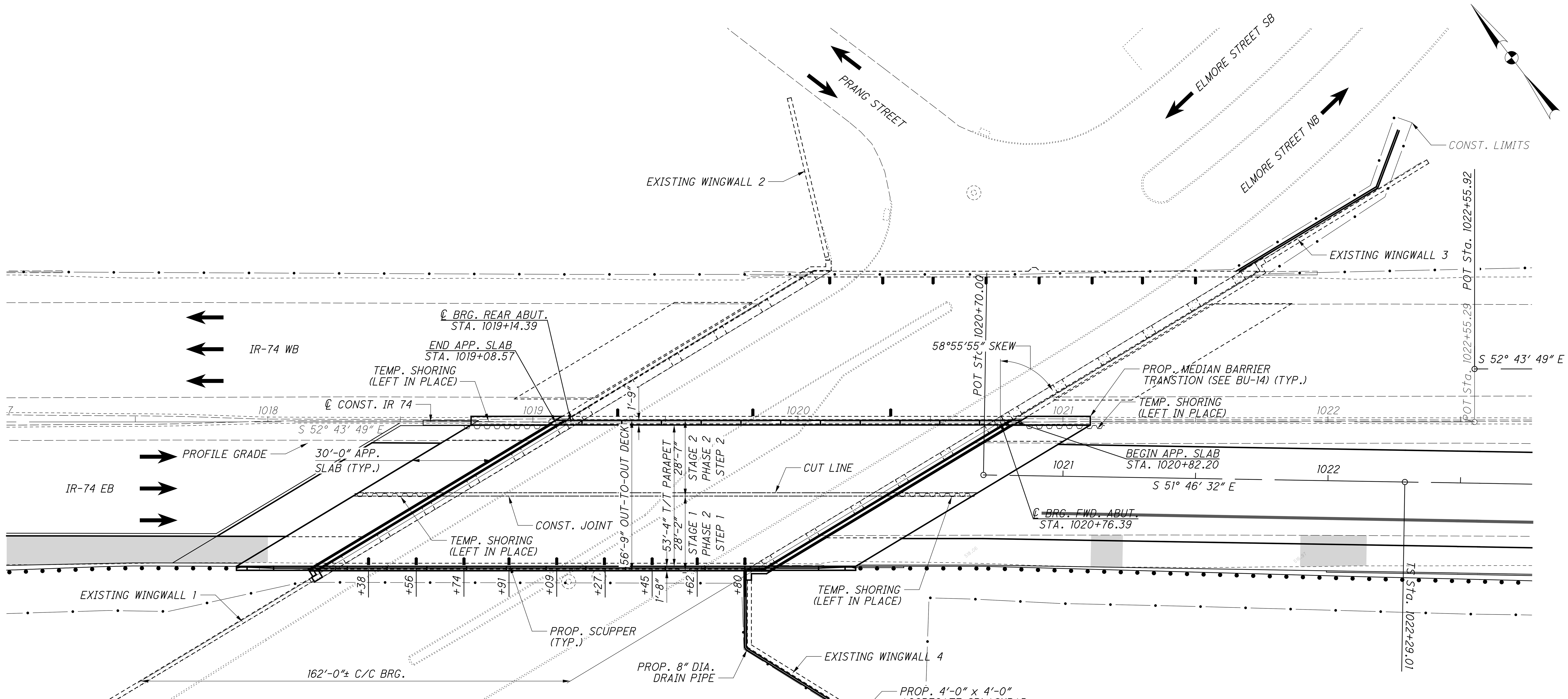
DESIGNED	DRAWN	REVIEWED	DATE
SJF	BMP	MDS	9/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115690	

HAMILTON COUNTY
STA. 1019+08.57
STA. 1020+82.20

SITE PLAN

BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

HAM-75-3.84
PID No. 104667



PLAN

BENCHMARK DATA

REFER TO BU-14 FOR BENCHMARK DATA.

EXISTING STRUCTURE

TYPE: STEEL PLATE GIRDERS WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE

SPAN: 162'-0"± C/C BRG.

ROADWAY: 52'-7"± TOE/TOE PARAPET

LOADING: C.F.= 2000(57), ADEQUATE FOR AASHTO ALTERNATE LOADING

SKEW: 58°55'55"± LF

APPROACH SLABS: AS-1-67 (30'-0"±)

ALIGNMENT: TANGENT

CROWN: 0.016± FT/FT

STRUCTURAL FILE NUMBER: 3115690

DATE BUILT: 1973

WEARING SURFACE: 1¾"± SDC OVERLAY

DISPOSITION: REHABILITATION

PROPOSED STRUCTURE

PROPOSED WORK: REPLACE DECK WITH COMPOSITE DECK, REPLACE APPROACH SLABS, REMOVE AND REPLACE BACKWALL TO TOP OF BEAM SEAT, REPLACE EXPANSION JOINTS, PATCH EX. SUBSTRUCTURE

SPANS: 162'-0"± C/C BRG.

ROADWAY: 53'-4" TOE/TOE PARAPET

LOADING: HS20-44 AND THE ALTERNATE MILITARY LOADING

SKEW: 58°55'55"± LF

APPROACH SLABS: 30' LONG (AS-1-15 & AS-2-15)

ALIGNMENT: TANGENT

CROWN: 0.016 FT/FT

WEARING SURFACE: 1" MONOLITHIC CONCRETE

COORDINATES: LATITUDE N39°09'20"
LONGITUDE W84°32'41"

NOTES

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.

DESIGN TRAFFIC:
2010 ADT = 88,300 2010 ADTT = 11,479
2030 ADT = 102,000 2030 ADTT = 13,260
DIRECTIONAL DISTRIBUTION = 0.73

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	BMP	MDS	9/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115690	

GENERAL PLAN
BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

HAM-75-3.84
PID No. 104667

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWINGS:

AS-1-15 REVISED 07-17-15
AS-2-15 REVISED 01-19-18
EXJ-4-87 REVISED 01-19-18
GSD-1-96 REVISED 07-19-02
PCB-91 REVISED 01-18-13
SBR-1-13 REVISED 07-20-18
SBR-2-13 REVISED 07-20-18

DESIGN SPECIFICATIONS:

THE PROPOSED WORK CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 17TH EDITION, AND THE 2004 ODOT BRIDGE DESIGN MANUAL.

DESIGN LOADING:

DESIGN LOADING: HS20-44, CASE I AND THE ALTERNATE MILITARY LOADING.

FUTURE WEARING SURFACE (FWS) OF 60 PSF

DESIGN DATA:

QC/QA CONCRETE, CLASS QC3 - COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE)

CONCRETE, CLASS QC3 - COMPRESSIVE STRENGTH 4000 PSI (SUBSTRUCTURE)

REINFORCING STEEL - MINIMUM YIELD STRENGTH 75,000 PSI (DECK)

REINFORCING STEEL - MINIMUM YIELD STRENGTH 60,000 PSI (SUBSTRUCTURE & PARAPETS)

STRUCTURAL STEEL - ASTM A709 GRADE 50 - YIELD STRENGTH 50 KSI (BEARINGS)

DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL

2½" CONCRETE COVER

MONOLITHIC WEARING SURFACE:

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1 INCH THICK.

EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05 AND 105.02.

BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS THAT HAVE BEEN VERIFIED IN THE FIELD.

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN:

DESCRIPTION:
ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AS SHOWN IN THE PLANS AND AS PER CMS 202.

CUTLINE CONSTRUCTION JOINT PREPARATION: THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH, BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

SUBSTRUCTURE CONCRETE REMOVAL: REMOVE CONCRETE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

DECK REMOVAL: PERFORM WORK CAREFULLY DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. THE USE OF EXPLOSIVES OR HEADACHE BALLS IS PROHIBITED. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05.

REMOVAL METHODS: REMOVAL METHODS OVER STRUCTURAL MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING THE PRIMARY STRUCTURAL MEMBERS. REPLACE OR REPAIR STRUCTURAL MEMBERS DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE DIRECTOR. OBTAIN THE DIRECTOR'S APPROVAL BEFORE PERFORMING REPAIR.
EXISTING WELDED ATTACHMENTS: REMOVE EXISTING WELDED ATTACHMENTS (E.G., FINISHING MACHINE AND FORM SUPPORTS; SUPPORTS FOR SCUPPERS AND BULB ANGLES WHICH ARE TO BE REMOVED; AND LIGHTING SUPPORTS) LOCATED IN THE DESIGNATED TENSION PORTIONS OF THE TOP FLANGES OF EXISTING STEEL MEMBERS AND GRIND THE FLANGE SURFACES SMOOTH. CAREFULLY GRIND PARALLEL TO THE FLANGES.

ITEM 510 - DOWEL HOLES WITH NONSHRINK NONMETALLIC GROUT, AS PER PLAN:

DRILL DOWEL HOLES WHERE SHOWN IN THE PLANS. INSTALL REINFORCING STEEL ACCORDING TO ITEM 510 USING EPOXY GROUT, 705.20. PRIOR TO DRILLING DOWEL HOLES, LOCATE ALL EXISTING REINFORCING STEEL BARS IN THE AREA OF THE HOLE WITH THE AID OF A REINFORCING STEEL BAR LOCATOR (PACHOMETER). IF AN EXISTING BAR IS ENCOUNTERED AT THE SAME LOCATION AS A PROPOSED DOWEL HOLE, MOVE THE DOWEL HOLE TO EITHER SIDE OF THE EXISTING BAR.

ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN:

PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING.

ITEM 519 - PATCHING OF CONCRETE STRUCTURES IS A UNIT PRICE PAY ITEM (LINE 0032).

CLASS QC3 CONCRETE WITH QC/QA, SUBSTRUCTURE, AS PER PLAN

THIS ITEM MODIFIES THE STANDARD 511 CONCRETE FOR STRUCTURES SPECIFICATION TO INCLUDE MACRO-SYNTHETIC INTO THE SUBSTRUCTURE CONCRETE. THIS ITEM SHALL CONFORM TO CMS 511 WITH THE FOLLOWING CONDITIONS AND REVISIONS:

PROVIDE MATERIALS CONFORMING TO 511.02 EXCEPT AS MODIFIED BELOW:
PORTLAND CEMENT CONCRETE - 499.03, CLASS QC 3 MEETING A DESIGN STRENGTH OF 4,000 PSI, WITH MACRO-SYNTHETIC FIBERS WITH MODIFICATION PER 511.02.
FIBERS FOR CONCRETE - ASTM C 1116, TYPE III

THE CLASS QC3 CONCRETE FOR THE SUBSTRUCTURE SHALL MEET THE FOLLOWING CRITERIA: WATER/CEMENT RATIO = 0.40 MAXIMUM; MINIMUM 4 LBS/CY MACRO-SYNTHETIC FIBERS (1.5 IN. MIN. TO 2.5 IN. MAX.) MEETING ASTM C1116 TYPE III SHALL BE ADDED TO THE MIX.

THE MACRO-SYNTHETIC FIBERS SHALL BE INCORPORATED INTO THE MIX IN SUCH A WAY THAT NO 'BALLING' OCCURS. UPON INSPECTION OF THE MIX AT THE TIME OF PLACEMENT, IF ANY 'BALLING' OCCURS, THE ENGINEER SHALL REJECT THE REMAINDER OF THE LOAD AT ANY TIME DURING THE POUR. IT IS IMPORTANT TO FOLLOW INDUSTRY STANDARDS AND ASTM SPECIFICATIONS ON THE PREMIXING OF THE CEMENT, AGGREGATE, AND MACRO-SYNTHETICFIBERS PRIOR TO THE ADDITION OF WATER AND ADMIXTURES. PROVIDE MACRO-SYNTHETIC FIBERS THAT ARE MONOFILAMENT FIBERS MADE FROM VIRGIN POLYPROPYLENE, POLYETHYLENE, OR CO-POLYMERS THAT ARE INERT TO ALKALI ATTACK. ENSURE THE MACRO-SYNTHETIC FIBERS HAVE A MINIMUM TENSILE STRENGTH OF 70 KSI, A MINIMUM MODULUS OF ELASTICITY OF 800 KSI, A MINIMUM FILAMENT DIAMETER OF 0.012 INCHES, AND ASPECT RATIO BETWEEN 60 AND 100, AND ARE BETWEEN 1.5 AND 2.5 INCHES IN LENGTH. STORE THE MACRO-SYNTHETIC FIBERS ACCORDING TO THE MANUFACTURE'S RECOMMENDATION AND KEEP THE MATERIAL FREE FROM DUST, DIRT AND MOISTURE.

USE A MINIMUM DOSAGE RATE OF MACRO-SYNTHETIC FIBERS OF 4.0 LBS/CY OF CONCRETE. DETERMINE THE FINAL PROPOSED DOSAGE RATE THROUGH MIX TESTING. ENSURE THE FIBER REINFORCED CONCRETE MEETS OR EXCEEDS A MINIMUM EQUIVALENT FLEXURAL STRENGTH RATIO OF 25% ACCORDING TO ASTM C 1609. MACRO-SYNTHETIC FIBERS IS TO BE USED AS AN ADMIXTURE TO CONTROL CRACKING AND IS NOT TO BE USED TO SUPPLEMENT OR REPLACE REINFORCING STEEL IN THE DESIGN. ENSURE THE FINAL PROPOSED MIX IS WORKABLE AND ABLE TO BE PRODUCED SUCH THAT BALLING OR CLUMPING OF THE FIBERS IS NOT A PROBLEM AS DETERMINED BY THE ENGINEER. UTILIZE A LABORATORY REGULARLY INSPECTED BY THE CEMENT AND CONCRETE REFERENCE LABORATORY (CCRL) OF THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, OR OTHER APPROVED REFERENCE LABORATORY, TO PERFORM THE TESTING. BEFORE USE, SUBMIT DOCUMENTATION TO THE PROJECT ENGINEER CERTIFYING BOTH THE MACRO-SYNTHETIC FIBERS AND THE MIX MEET OR EXCEED THE REQUIRED PROPERTIES. SAMPLING WILL BE ALLOWED FOR TESTING PURPOSES. A DEMONSTRATION OF THE MIX PRODUCTION OR TRIAL MIX, MAY BE REQUIRED BY THE ENGINEER PRIOR TO PLACING ANY OF THE MIX ON THE PROJECT.

THE BATCH WEIGHTS SHALL BE CORRECTED TO COMPENSATE FOR THE MOISTURE CONTAINED IN THE AGGREGATE AT THE TIME OF USE. A CHEMICAL ADMIXTURE (705.12, TYPE A OR D) SHALL BE USED.

CONCRETE SUPPLIERS SHOULD RECOGNIZE THAT ADMIXTURES MAY HAVE AN EFFECT ON STRENGTH, ENTRAINED AIR CONTENT, WORKABILITY, ETC. OF THEIR CONCRETE MIXES. THE CONCRETE SUPPLIER'S CHOICE OF ADMIXTURES DOES NOT ALLEVIATE MEETING DESIGN REQUIREMENTS.

CLASS QC3 CONCRETE WITH QC/QA, SUPERSTRUCTURE, AS PER PLAN

THIS ITEM MODIFIES THE STANDARD 511 CONCRETE FOR STRUCTURES SPECIFICATION TO INCLUDE MACRO-SYNTHETICINTO THE SUPERSTRUCTURE CONCRETE. THIS ITEM SHALL CONFORM TO CMS 511 WITH THE FOLLOWING CONDITIONS AND REVISIONS:

PROVIDE MATERIALS CONFORMING TO 511.02 EXCEPT AS MODIFIED BELOW:
PORTLAND CEMENT CONCRETE - 499.03, CLASS QC 3 MEETING A DESIGN STRENGTH OF 4,500 PSI, WITH MACRO-SYNTHETIC FIBERS WITH MODIFICATION PER 511.02
FIBERS FOR CONCRETE - ASTM C 1116, TYPE III

THE CLASS QC3 CONCRETE FOR THE SUPERSTRUCTURE SHALL MEET THE FOLLOWING CRITERIA: WATER/CEMENT RATIO = 0.40 MAXIMUM; MINIMUM 4 LBS/CY MACRO-SYNTHETIC FIBERS (1.5 IN. MIN. TO 2.5 IN. MAX.) MEETING ASTM C1116 TYPE III SHALL BE ADDED TO THE MIX.

THE MACRO-SYNTHETIC FIBERS SHALL BE INCORPORATED INTO THE MIX IN SUCH A WAY THAT NO 'BALLING' OCCURS. UPON INSPECTION OF THE MIX AT THE TIME OF PLACEMENT, IF ANY 'BALLING' OCCURS, THE ENGINEER SHALL REJECT THE REMAINDER OF THE LOAD AT ANY TIME DURING THE POUR. IT IS IMPORTANT TO FOLLOW INDUSTRY STANDARDS AND ASTM SPECIFICATIONS ON THE PREMIXING OF THE CEMENT, AGGREGATE, AND MACRO-SYNTHETIC FIBERS PRIOR TO THE ADDITION OF WATER AND ADMIXTURES. PROVIDE MACRO-SYNTHETIC FIBERS THAT ARE MONOFILAMENT FIBERS MADE FROM VIRGIN POLYPROPYLENE, POLYETHYLENE, OR CO-POLYMERS THAT ARE INERT TO ALKALI ATTACK. ENSURE THE MACRO-SYNTHETIC FIBERS HAVE A MINIMUM TENSILE STRENGTH OF 70 KSI, A MINIMUM MODULUS OF ELASTICITY OF 800 KSI, A MINIMUM FILAMENT DIAMETER OF 0.012 INCHES, AND ASPECT RATIO BETWEEN 60 AND 100, AND ARE BETWEEN 1.5 AND 2.5 INCHES IN LENGTH. STORE THE MACRO-SYNTHETIC FIBERS ACCORDING TO THE MANUFACTURE'S RECOMMENDATION AND KEEP THE MATERIAL FREE FROM DUST, DIRT AND MOISTURE.

USE A MINIMUM DOSAGE RATE OF MACRO-SYNTHETIC FIBERS OF 4.0 LBS/CY OF CONCRETE. DETERMINE THE FINAL PROPOSED DOSAGE RATE THROUGH MIX TESTING. ENSURE THE FIBER REINFORCED CONCRETE MEETS OR EXCEEDS A MINIMUM EQUIVALENT FLEXURAL STRENGTH RATIO OF 25% ACCORDING TO ASTM C 1609. MACRO-SYNTHETIC FIBERS IS TO BE USED AS AN ADMIXTURE TO CONTROL CRACKING AND IS NOT TO BE USED TO SUPPLEMENT OR REPLACE REINFORCING STEEL IN THE DESIGN. ENSURE THE FINAL PROPOSED MIX IS WORKABLE AND ABLE TO BE PRODUCED SUCH THAT BALLING OR CLUMPING OF THE FIBERS IS NOT A PROBLEM AS DETERMINED BY THE ENGINEER. UTILIZE A LABORATORY REGULARLY INSPECTED BY THE CEMENT AND CONCRETE REFERENCE LABORATORY (CCRL) OF THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, OR OTHER APPROVED REFERENCE LABORATORY, TO PERFORM THE TESTING. BEFORE USE, SUBMIT DOCUMENTATION TO THE PROJECT ENGINEER CERTIFYING BOTH THE MACRO-SYNTHETIC FIBERS AND THE MIX MEET OR EXCEED THE REQUIRED PROPERTIES. SAMPLING WILL BE ALLOWED FOR TESTING PURPOSES. A DEMONSTRATION OF THE MIX PRODUCTION OR TRIAL MIX, MAY BE REQUIRED BY THE ENGINEER PRIOR TO PLACING ANY OF THE MIX ON THE PROJECT.

THE BATCH WEIGHTS SHALL BE CORRECTED TO COMPENSATE FOR THE MOISTURE CONTAINED IN THE AGGREGATE AT THE TIME OF USE. A CHEMICAL ADMIXTURE (705.12, TYPE A OR D) SHALL BE USED.

CONCRETE SUPPLIERS SHOULD RECOGNIZE THAT ADMIXTURES MAY HAVE AN EFFECT ON STRENGTH, ENTRAINED AIR CONTENT, WORKABILITY, ETC. OF THEIR CONCRETE MIXES. THE CONCRETE SUPPLIER'S CHOICE OF ADMIXTURES DOES NOT ALLEVIATE MEETING DESIGN REQUIREMENTS.

CLASS QC3 CONCRETE WITH QC/QA, SUPERSTRUCTURE, AS PER PLAN (CONT.)

APPROACH SLABS, DIAPHRAGMS, AND BRIDGE RAILING CONCRETE ARE TO USE THE SAME MIX DESIGN AS THE BRIDGE DECK (WHEN APPLICABLE). USE SELF-COMPACTING CONCRETE ON DECORATIVE RAILING SIMILAR TO TEXAS RAILING AND MACRO-SYNTHETIC CONCRETE PER THIS SPECIFICATION ON TRADITIONAL CONCRETE RAILING WHEN APPLICABLE.

THE PLACING OF THE DECK AND THE APPROACH SLABS IN THE SAME CONCRETE POUR IS NOT PERMITTED.

ITEM 511 - CLASS QC3 CONCRETE SUPERSTRUCTURE, AS PER PLAN:

LOCATE THE LOWER CONTACT POINT OF THE OVERHANG FALSEWORK AT 42 INCHES ± 2 IN. ABOVE THE TOP OF THE GIRDER'S BOTTOM FLANGE. DECK OVERHANG FALSEWORK BRACKETS SHALL BE PLACED AT LOCATIONS DIRECTLY ADJACENT TO EXISTING INTERMEDIATE STIFFENERS. THE BRACKET CONTACT POINT LOCATION REQUIREMENTS OF C&MS 508 DO NOT APPLY.

DECK PLACEMENT DESIGN ASSUMPTIONS:

DECK PLACEMENT DESIGN ASSUMPTIONS:
THE FOLLOWING ASSUMPTIONS OF CONSTRUCTION MEANS AND METHODS WERE MADE FOR THE ANALYSIS AND DESIGN OF THE SUPERSTRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE FALSEWORK SUPPORT SYSTEM WITHIN THESE PARAMETERS AND WILL ASSUME RESPONSIBILITY FOR SUPERSTRUCTURE ANALYSIS FOR DEVIATION FROM THESE DESIGN ASSUMPTIONS.

AN EIGHT WHEEL FINISHING MACHINE WITH A MAXIMUM WHEEL LOAD OF 2.44 KIPS.

A MINIMUM OUT-TO-OUT WHEEL SPACING AT EACH END OF THE MACHINE OF 103".

A MAXIMUM SPACING OF OVERHANG FALSEWORK BRACKETS OF 48 IN.

A MAXIMUM DISTANCE FROM THE CENTERLINE OF THE FASCIA GIRDER TO THE FACE OF THE SAFETY HANDRAIL OF 65".

MECHANICAL CONNECTORS:

MECHANICAL CONNECTORS SHALL BE CAPABLE OF DEVELOPING 125 PERCENT OF THE YIELD STRENGTH OF THE CONNECTED BARS. FOR CONNECTORS WITH THREADED BAR ENDS, IN ORDER TO OFFSET THE EFFECT OF AREA REDUCTION ON THE STRENGTH OF THE BAR AND STILL MEET THE REQUIREMENTS OF ASTM A615, USE THE NEXT LARGER DIAMETER BAR OR A HIGHER GRADE OF STEEL BAR.

ITEM 514 - FIELD PAINTING, MISC.: MAIN AND SECONDARY MEMBERS:

THIS ITEM SHALL INCLUDE PAINTING AS WELL AS THE SURFACE PREPARATION OF THE MAIN AND SECONDARY MEMBERS IN THE FIELD WITH PRIME, INTERMEDIATE AND SURFACE COATS AS DIRECTED BY THE ENGINEER AT LOCATIONS WHERE THE EXISTING COATING IS DAMAGED. THE PAINT MAY BE APPLIED BY BRUSH ACCORDING TO 514.17E. SOLVENT CLEAN THE MAIN AND SECONDARY MEMBERS AS PER SSPC-SP 1 AND SSPC-SP 2, RESPECTIVELY, PRIOR TO PAINTING ACCORDING TO ITEM 514.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR SELECTING THE FINISH COAT TO MATCH THE EXISTING AS CLOSE AS POSSIBLE AND SHALL RECIEVE APPROVAL FROM THE ENGINEER.

CONCRETE SEALER:

CHEMMASTERS TEXTURE DOT SMOOTH (1 COAT ACRYLIC) USED FOR SEALING OF CONCRETE SURFACES (EPOXY-URETHANE).

PROPOSED WORK (LEFT BRIDGE):

- REMOVE AND REPLACE EXISTING CONCRETE DECK WITH COMPOSITE DECK
- REMOVE AND REPLACE EXISTING CONCRETE PARAPETS
- REMOVE AND REPLACE ABUTMENT BACKWALLS
- REPLACE APPROACH SLABS
- REPLACE STRIP SEAL EXPANSION JOINTS
- PATCH EXISTING SUBSTRUCTURE UNITS
- SEAL CONCRETE

BUILDABLE UNIT REFERENCES:

REFERENCE THE FOLLOWING BUILDABLE UNITS FOR ADDITIONAL INFORMATION, DETAILS, AND SPECIFICATIONS:
ROADWAY AND DRAINAGE - BU-14
MAINTENANCE OF TRAFFIC - BU-04 AND BU-23
LIGHTING, STRIPING, PAVEMENT MARKINGS, ITS - BU-19

UTILITY LINES

THE UTILITY(IES) SHALL BORE ALL EXPENSE INVOLVED IN RELOCATING (INSTALLING) THE AFFECTED UTILITY LINES. THE CONTRACTOR AND UTILITY(IES) ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

ABBREVIATION LIST:

THE FOLLOWING STANDARD ABBREVIATIONS ARE USED THROUGHOUT THE BRIDGE PLANS.

ABUT.	= ABUTMENT
ACT.	= ACTUAL
APP.	= APPROACH
BRG.	= BEARING
BOT.	= BOTTOM
BTW.	= BETWEEN
CB	= CATCH BASIN
C.I.P.	= CAST-IN-PLACE
C.J.	= CONSTRUCTION JOINT
CLR.	= CLEARANCE
CONST	= CONSTRUCTION
CONT.	= CONTINUOUS
DIA.	= DIAMETER
DIM.	= DIMENSION
DWG.	= DRAWING
E.S.	= EACH SIDE
EL.	= ELEVATION
EQ.	= EQUAL
EST.	= ESTIMATED
EX.	= EXISTING
EXP.	= EXPANSION
F.A.	= FORWARD ABUTMENT
F.D.S.	= FINAL DECK SURFACE
F.S.	= FAR SIDE
FTG.	= FOOTING
FWD.	= FORWARD
GR.	= GUARDRAIL
HMWM	= HIGH MOLECULAR WEIGHT METHACRYLATE
INT.	= INTERIOR
INV.	= INVERT
NPCCP	= NON-PERFORATED CORRUGATED PLASTIC PIPE
N.S.	= NEAR SIDE
O.C.J.	= OPTIONAL CONSTRUCTION JOINT
PCCP	= PERFORATED CORRUGATED PLASTIC PIPE
PEJF	= PREFORMED EXPANSION JOINT FILLER
PERP.	= PERPENDICULAR
PROP.	= PROPOSED
PT.	= POINT
R.A.	= REAR ABUTMENT
REQD.	= REQUIRED
SER.	= SERIES
SHLD.	= SHOULDER
SPA.	= SPACES
STA.	= STATION
STD.	= STANDARD
STM	= STORM SEWER LINE
T&B	= TOP AND BOTTOM
T.O.H.	= TOP OF HAUNCH
T/S	= TOP OF SLOPE
TYP.	= TYPICAL
U.N.	= UNLESS NOTED

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GENERAL NOTES - 2
BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

HAM-75-3.84
PID No. 104667

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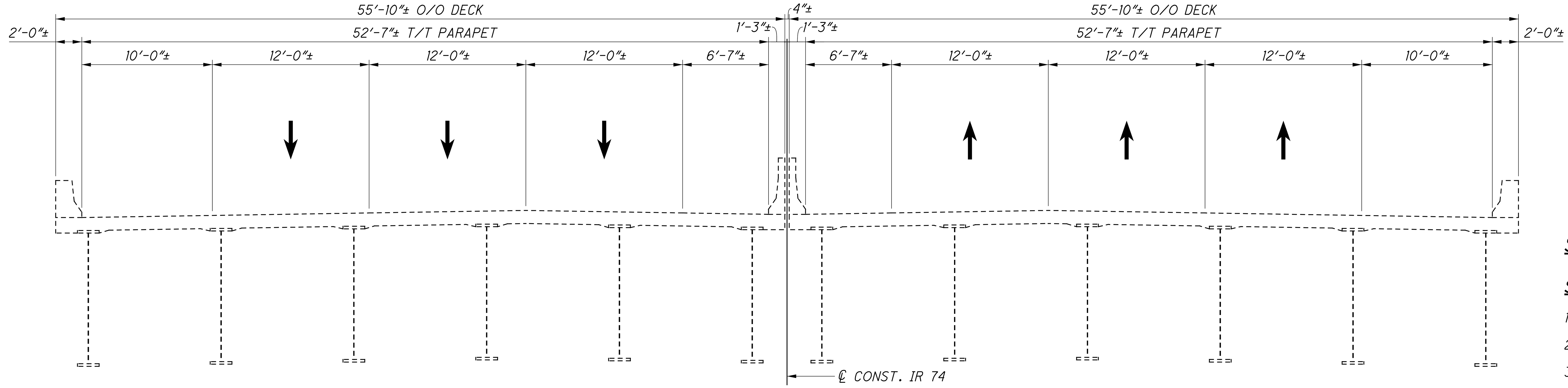

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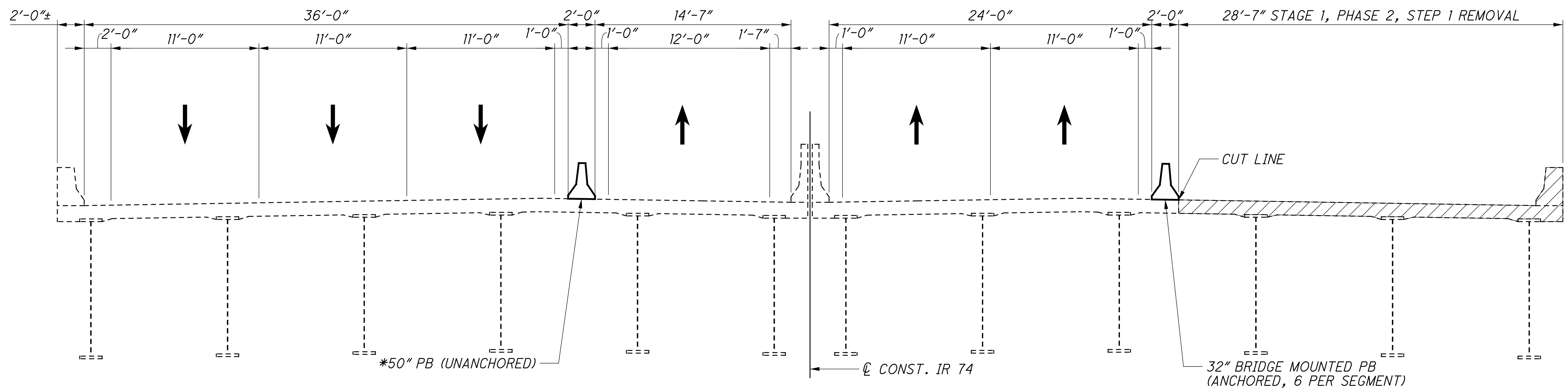
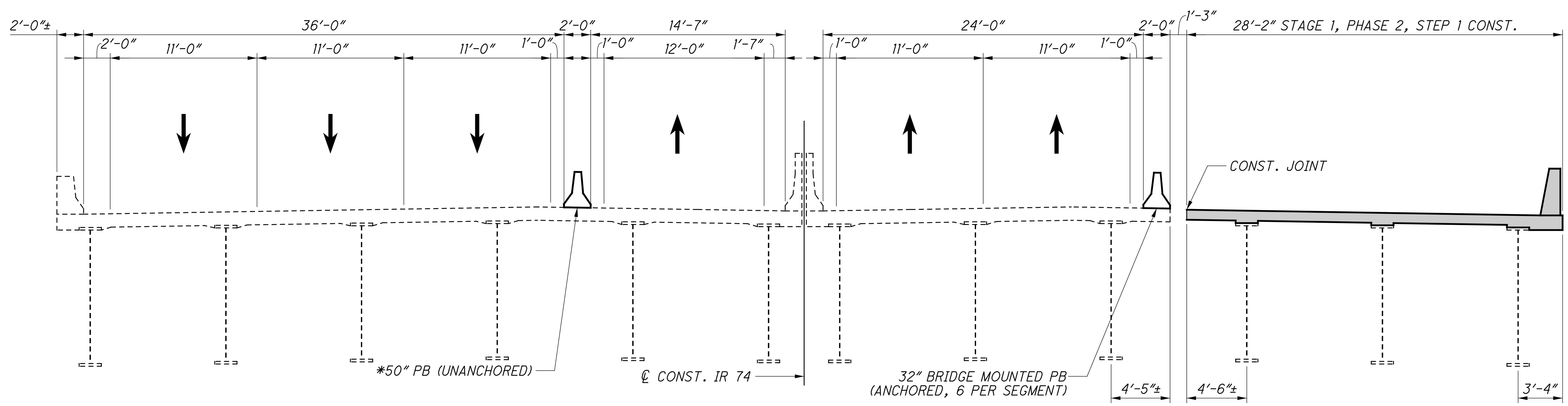


STAGE 1, PHASE 2, STEP 1 REMOVAL



STAGE 1, PHASE 2, STEP 1 CONSTRUCTION

SEQUENCE OF CONSTRUCTION

STAGE 1/ PHASE 2/ STEP 1

1. INSTALL PB AS SHOWN IN BU-04 & BU-23 PLANS.
2. MAINTAIN TRAFFIC AS SHOWN.
3. INSTALL TEMP. SHORING.
4. REMOVE STAGE 1/ PHASE 2/ STEP 1 PORTIONS OF RIGHT BRIDGE.
5. CONSTRUCT STAGE 1/ PHASE 2/ STEP 1 PORTIONS OF RIGHT BRIDGE.

* 32" PB WITH GLARE SCREEN MAY BE USED AS AN ALTERNATE

LEGEND

LIMITS OF REMOVAL PER ITEM 202 - STRUCTURE REMOVED, OVER 20 FOOT SPAN

DESIGN AGENCY: STRUCTUREPOINT

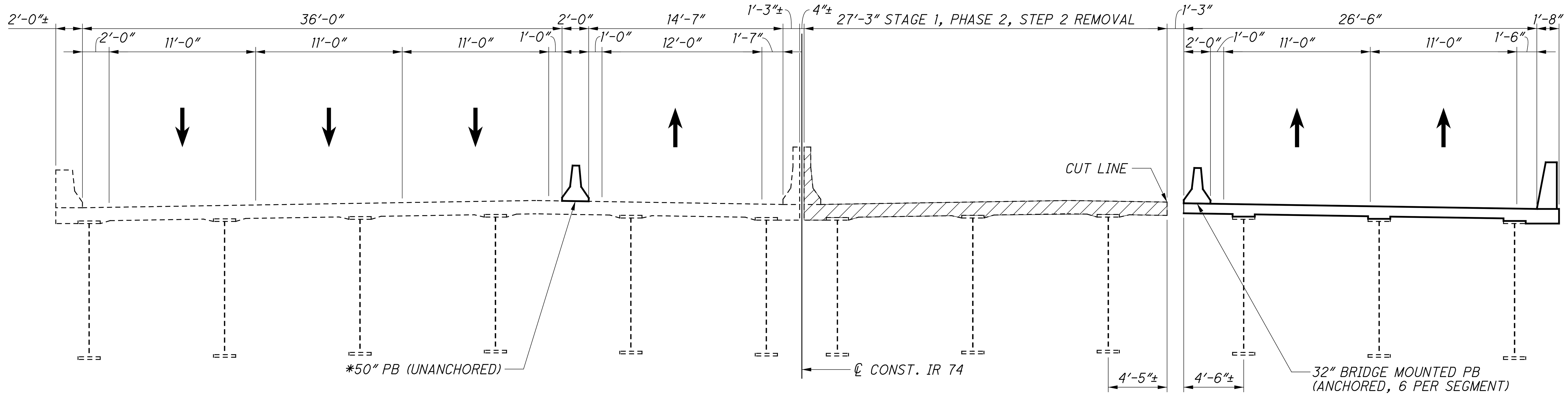
DESIGNED: SJF | CHECKED: CLB | DRAWN: BMP | REVISED | REVIEWED: MDS | DATE: 9/12/18 | STRUCTURE FILE NUMBER: 3115690

PHASE CONSTRUCTION DETAILS - 1

BRIDGE NO. HAM-74-1892 L/R OVER ELMORE STREET

HAM-75-3.84

PID No. 104667



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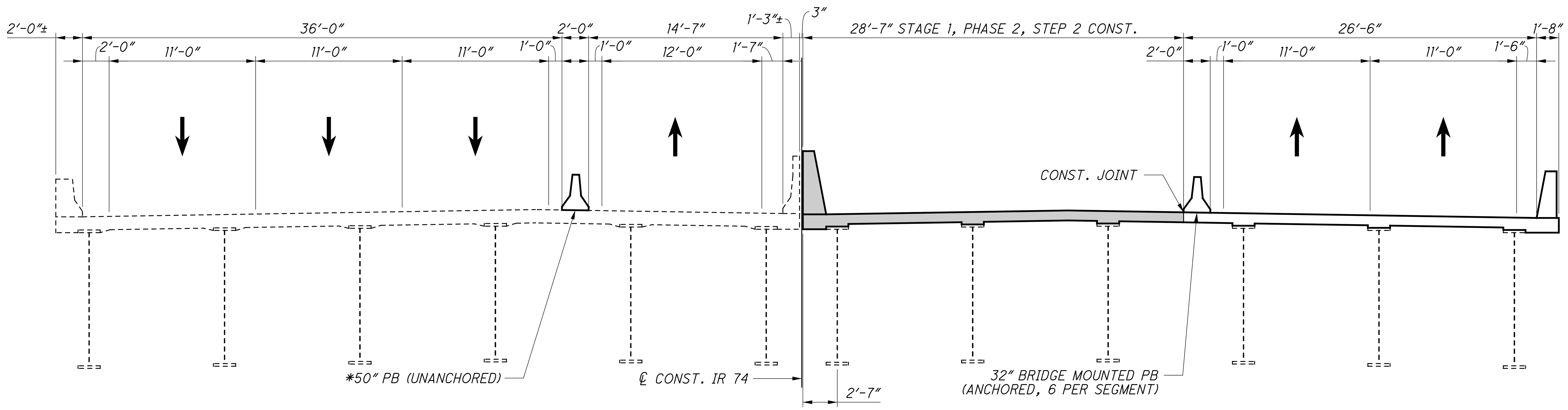
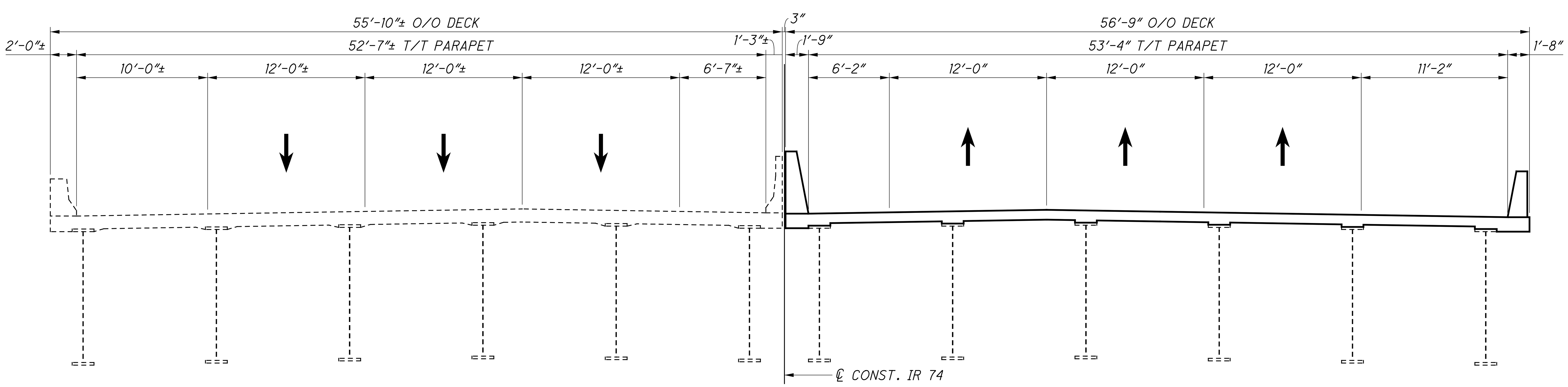


STAGE 1, PHASE 2, STEP 2 CONSTRUCTION



PROPOSED TRANSVERSE SECTION

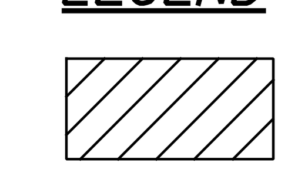
SEQUENCE OF CONSTRUCTION

STAGE 1/ PHASE 2/ STEP 2

1. RELOCATE PB AS SHOWN IN BU-04 & BU-23 PLANS.
2. MAINTAIN TRAFFIC AS SHOWN.
3. INSTALL TEMP. SHORING.
4. REMOVE STAGE 1/ PHASE 2/ STEP 2 PORTIONS OF RIGHT BRIDGE.
5. CONSTRUCT STAGE 1/ PHASE 2/ STEP 2 PORTIONS OF RIGHT BRIDGE.

* 32" PB WITH GLARE SCREEN MAY BE USED AS AN ALTERNATE

LEGEND

 LIMITS OF REMOVAL PER ITEM 202 - STRUCTURE REMOVED, OVER 20 FOOT SPAN

DESIGN AGENCY STRUCTUREPOINT

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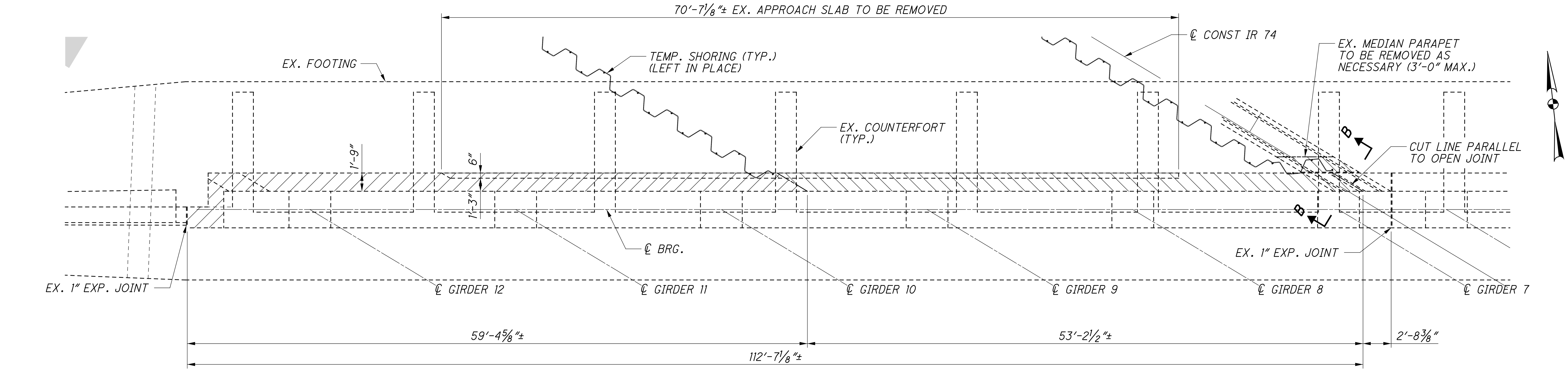
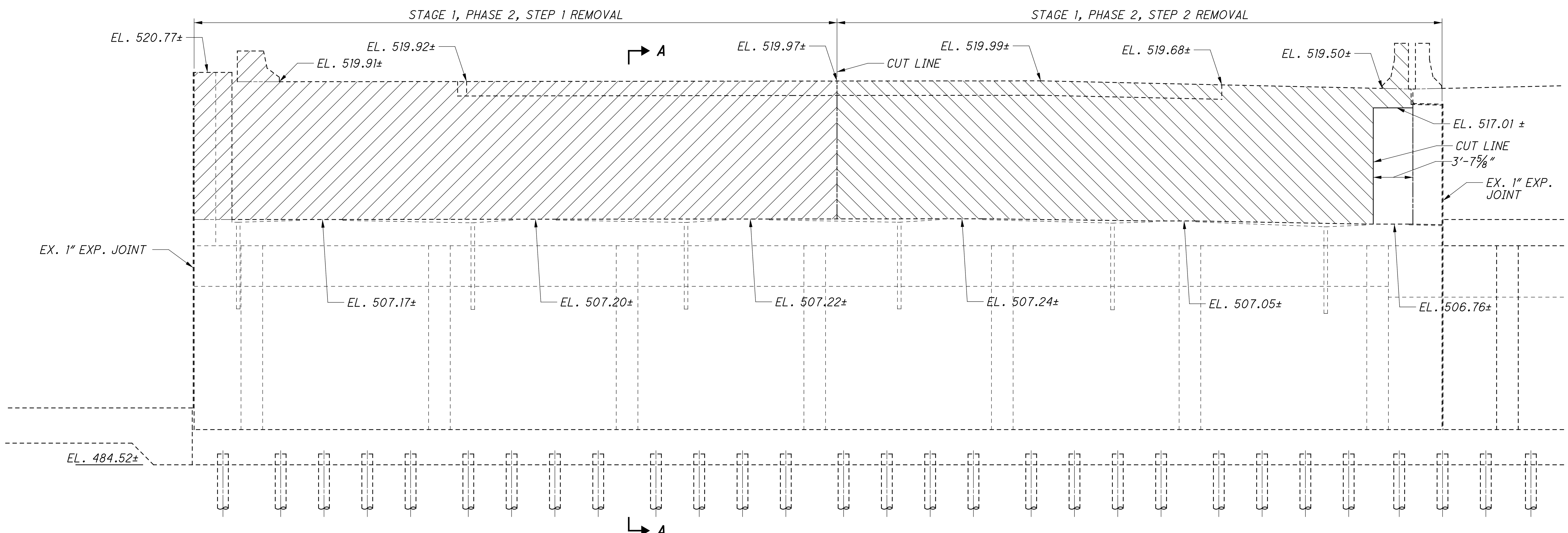
PHASE CONSTRUCTION DETAILS - 2
BRIDGE NO. HAM-74-1892 L/R
IR-74 OVER ELMORE STREET

HAM-75-3.84
PID No. 104667



PLAN - REAR ABUTMENT



ELEVATION - REAR ABUTMENT

LEGEND

▨ LIMITS OF REMOVAL PER ITEM 202

NOTES:

FOR SECTIONS A-A AND B-B, SEE SHEET 9/38.

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ABUTMENT REMOVAL DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

HAM-75-3.84
PID No. 104667

7/38

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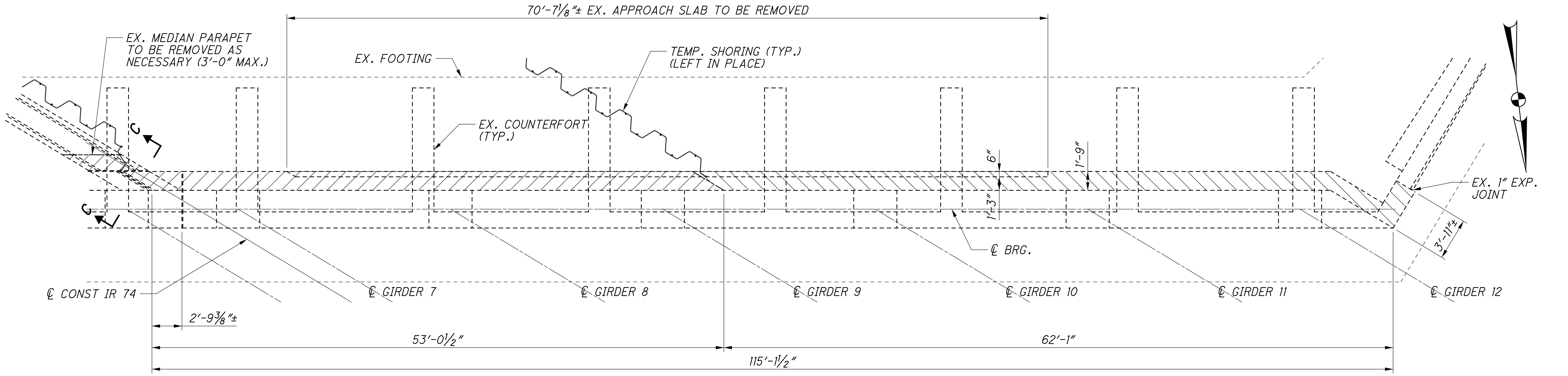
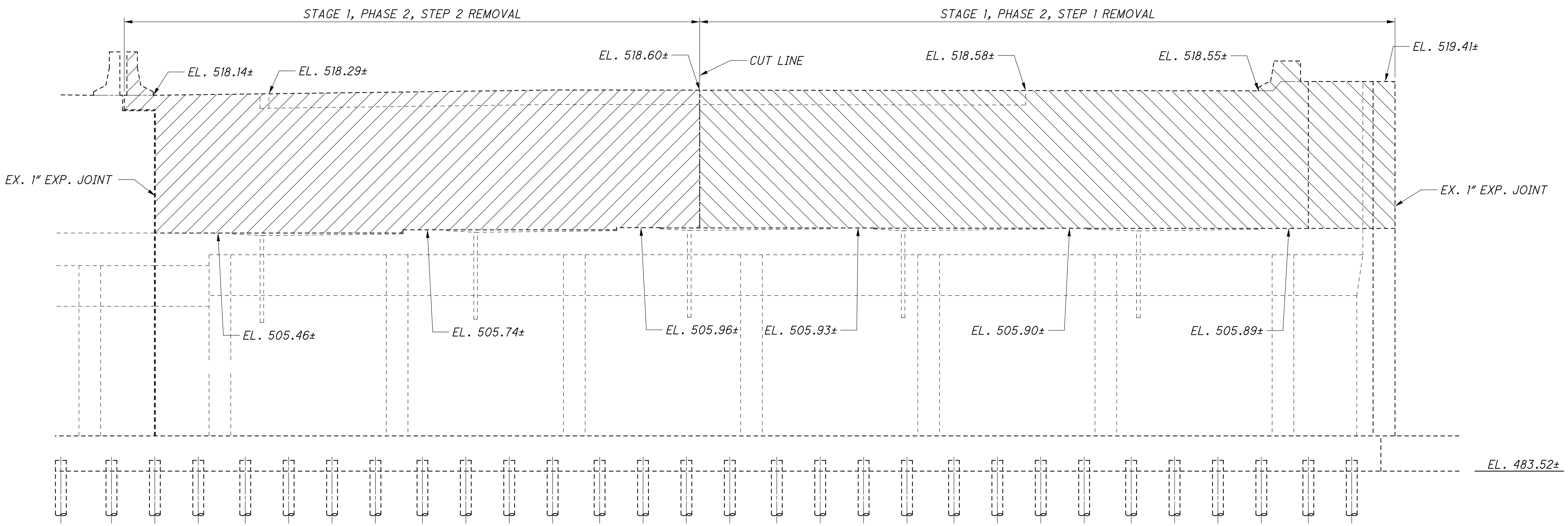


PLAN - FORWARD ABUTMENT



ELEVATION - FORWARD ABUTMENT

LEGEND

LIMITS OF REMOVAL PER ITEM 202

NOTES:

FOR SECTIONS A-A AND C-C, SEE SHEET 9/38.

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ABUTMENT REMOVAL DETAILS (RIGHT BRIDGE)

BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

HAM-75-3.84

PID No. 104667

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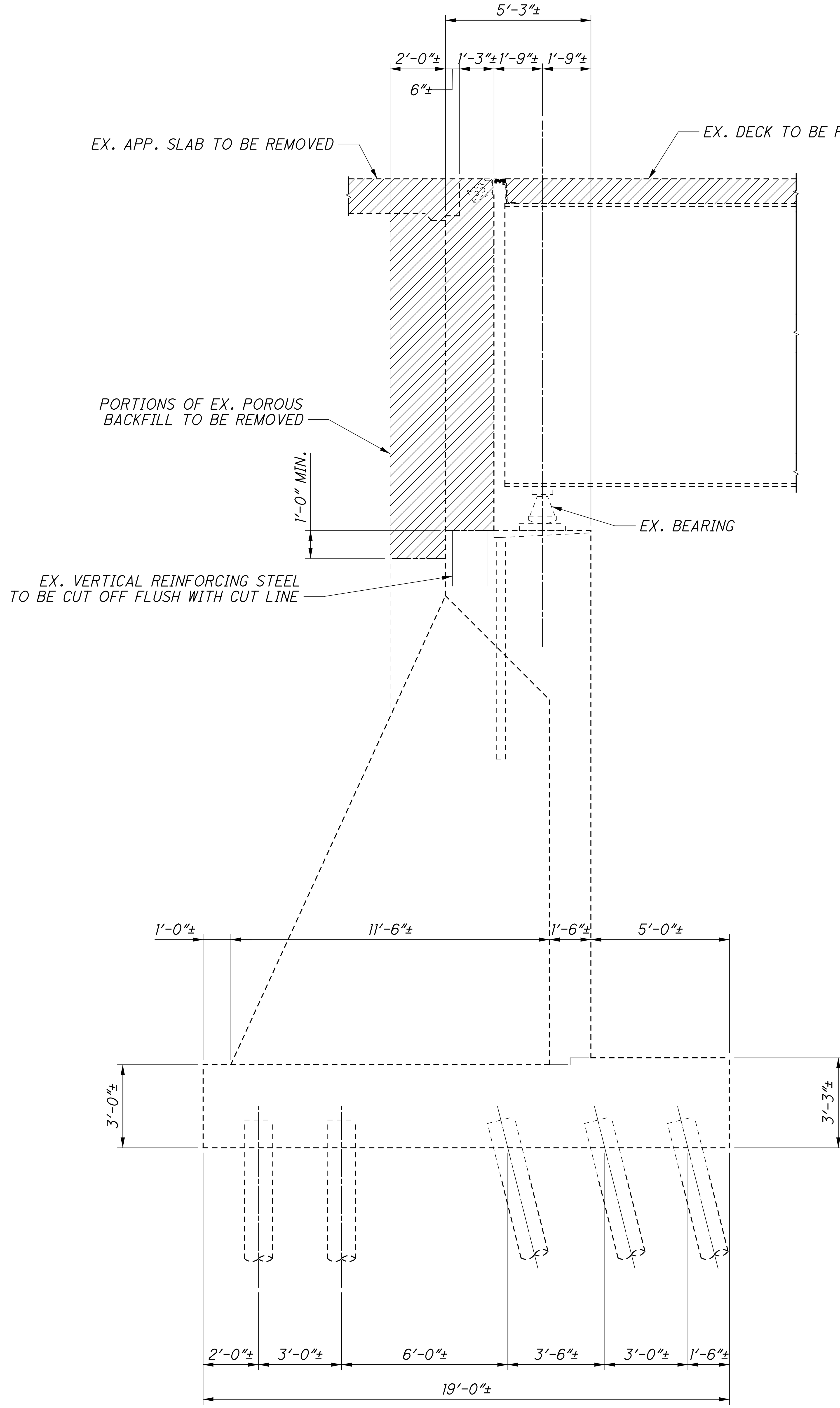
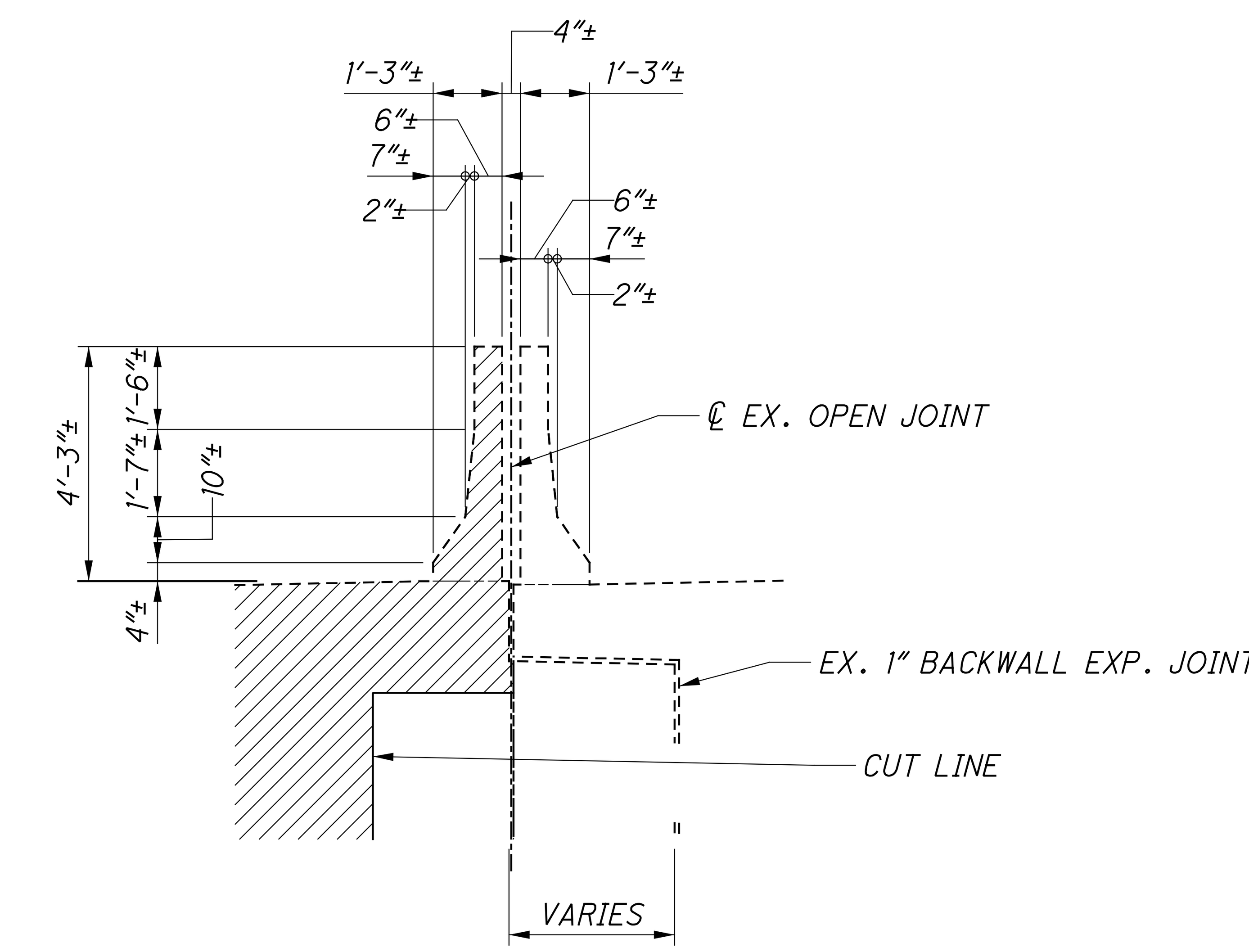


SECTION A-A



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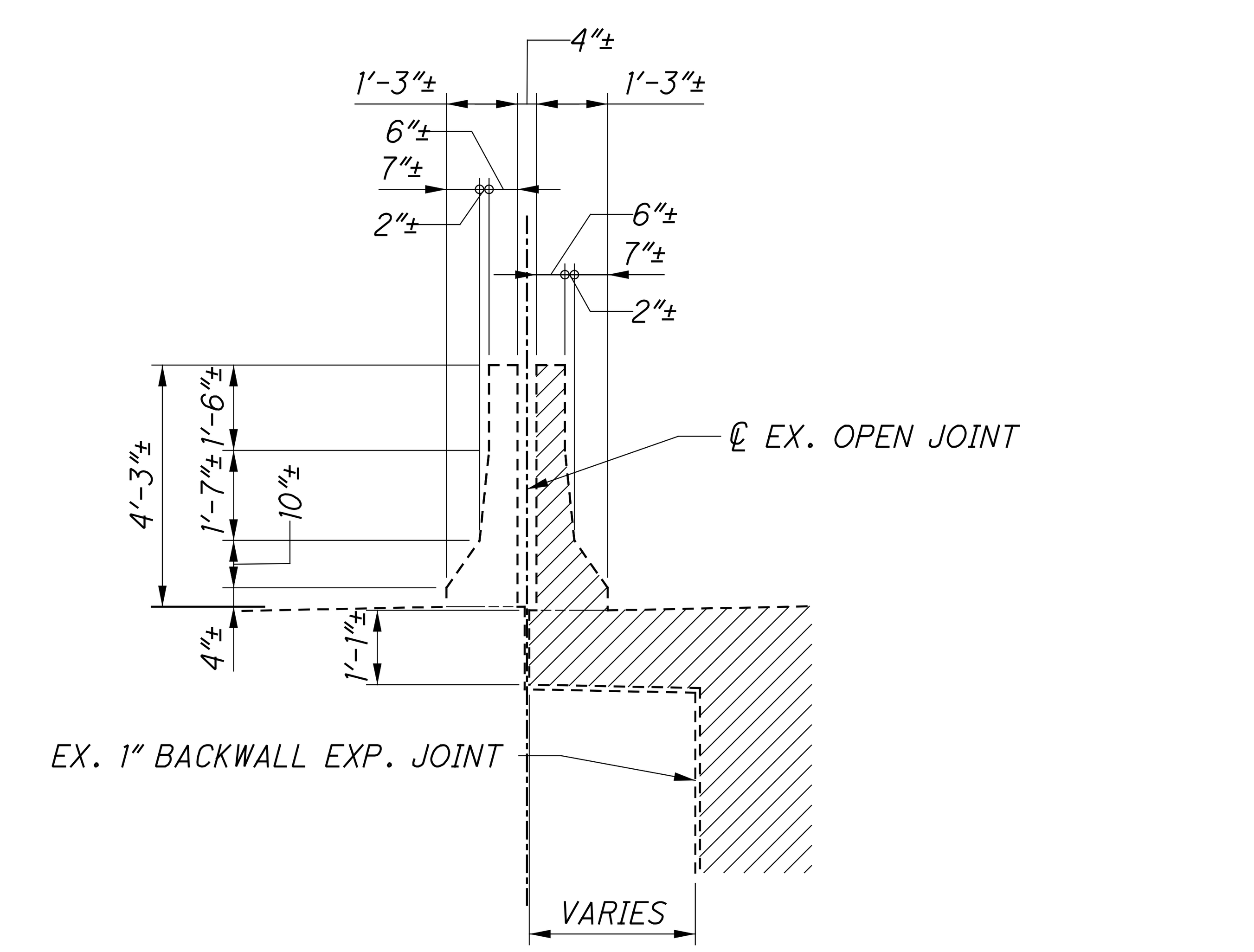

SECTION C-C

LEGEND

LIMITS OF REMOVAL PER ITEM 202

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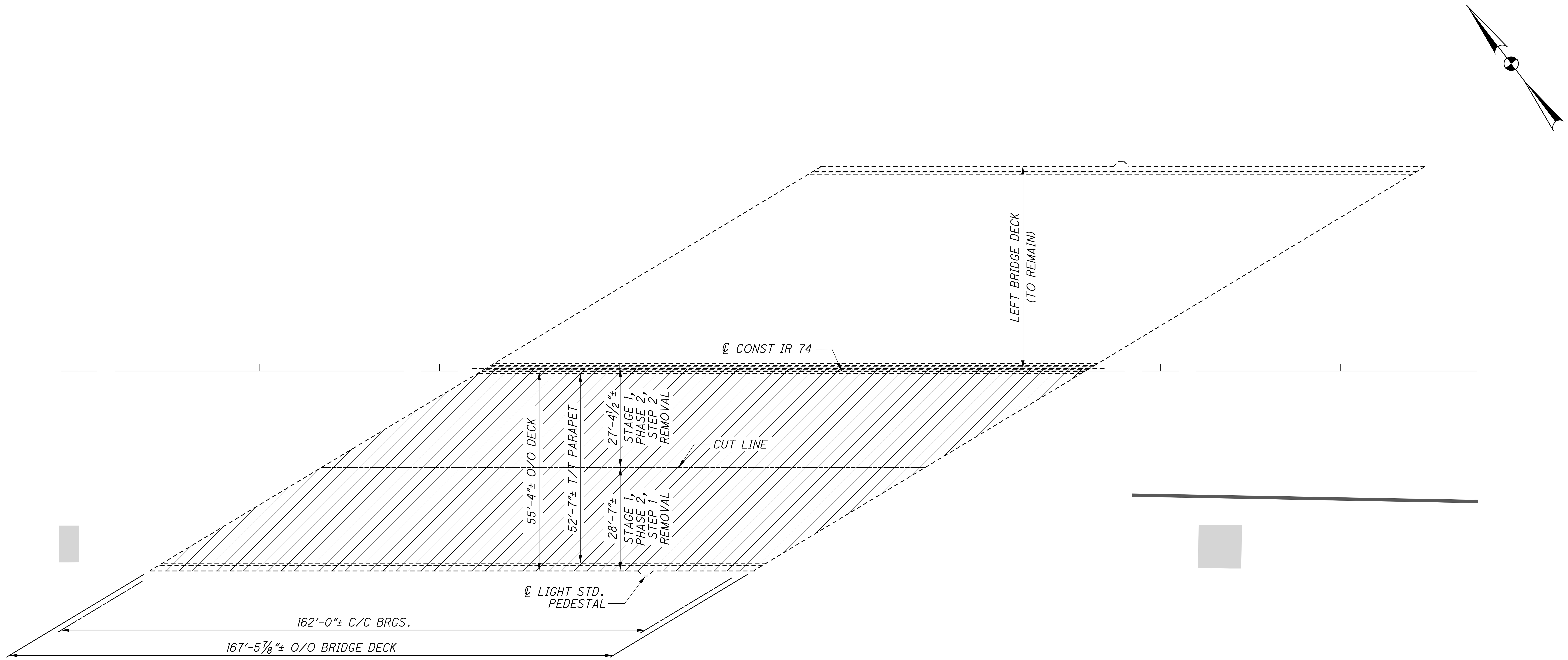
ABUTMENT REMOVAL DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

HAM-75-3.84
PID No. 104667



PLAN

LEGEND

LIMITS OF REMOVAL PER ITEM 202

SUPERSTRUCTURE REMOVAL DETAILS (RIGHT BRIDGE)

BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

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DESIGN AGENCY
STRUCTUREPOINT

HAM-75-3.84
PID No. 104667

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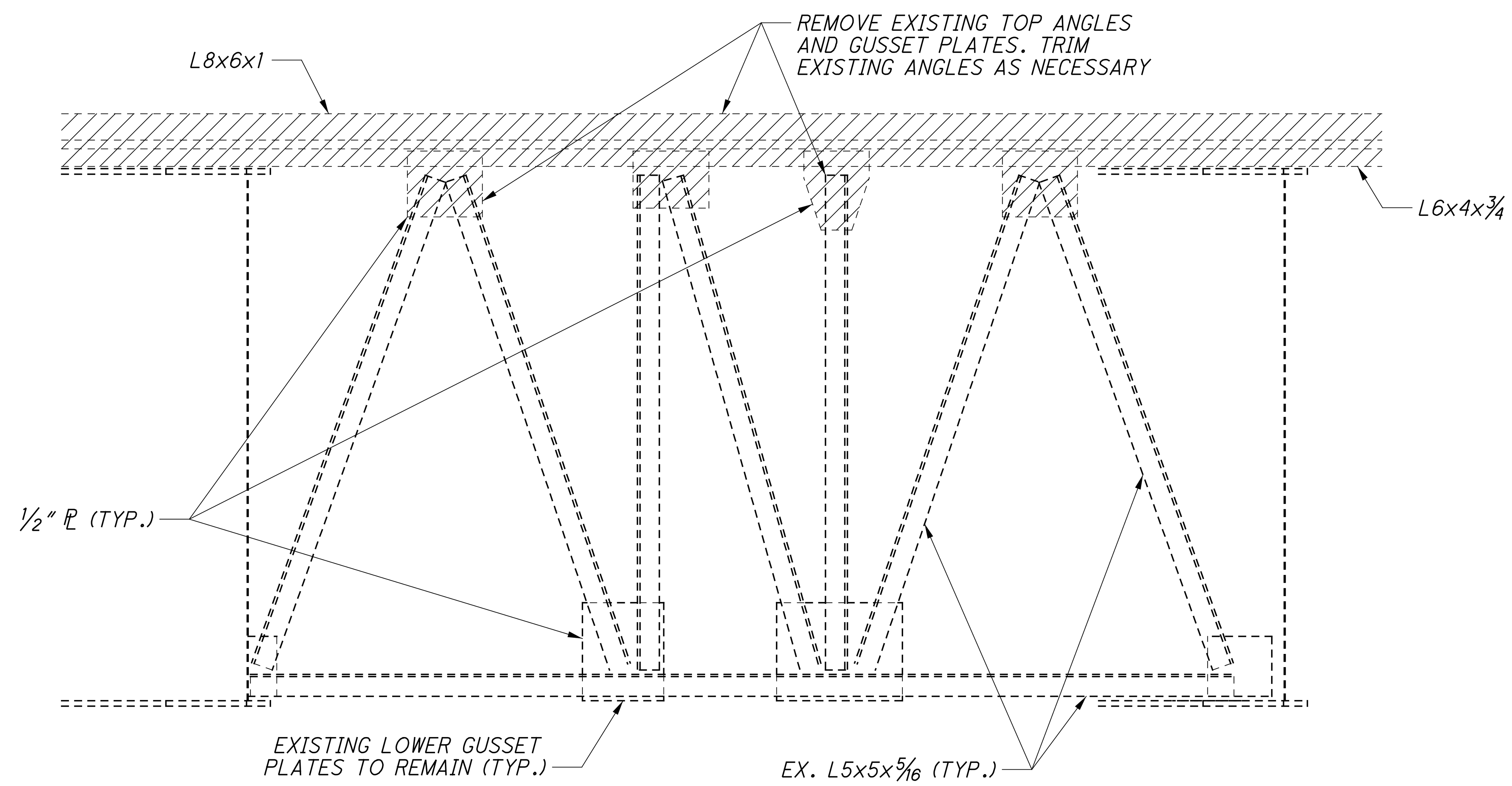

END CROSS FRAME REMOVAL DETAIL

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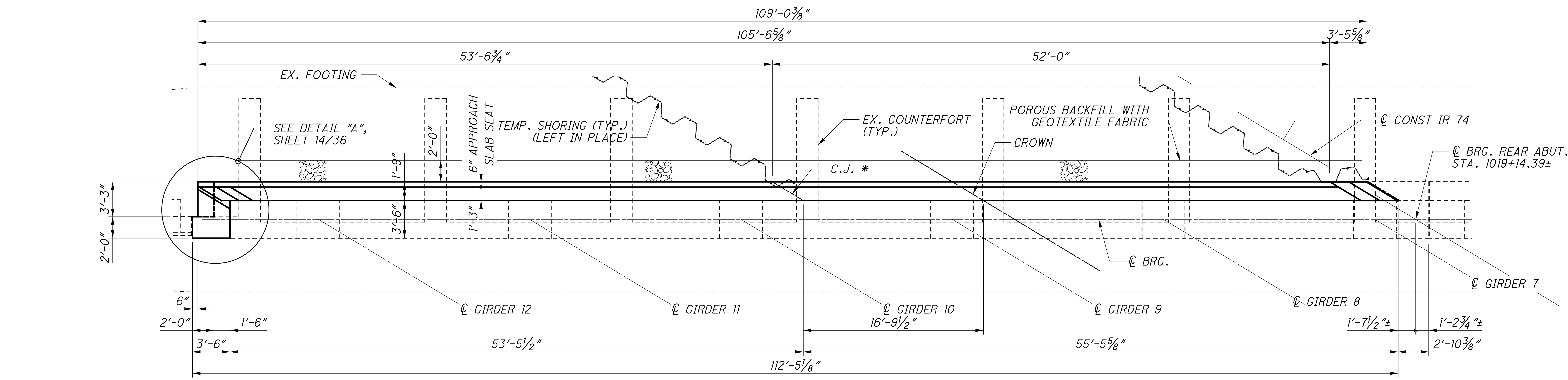
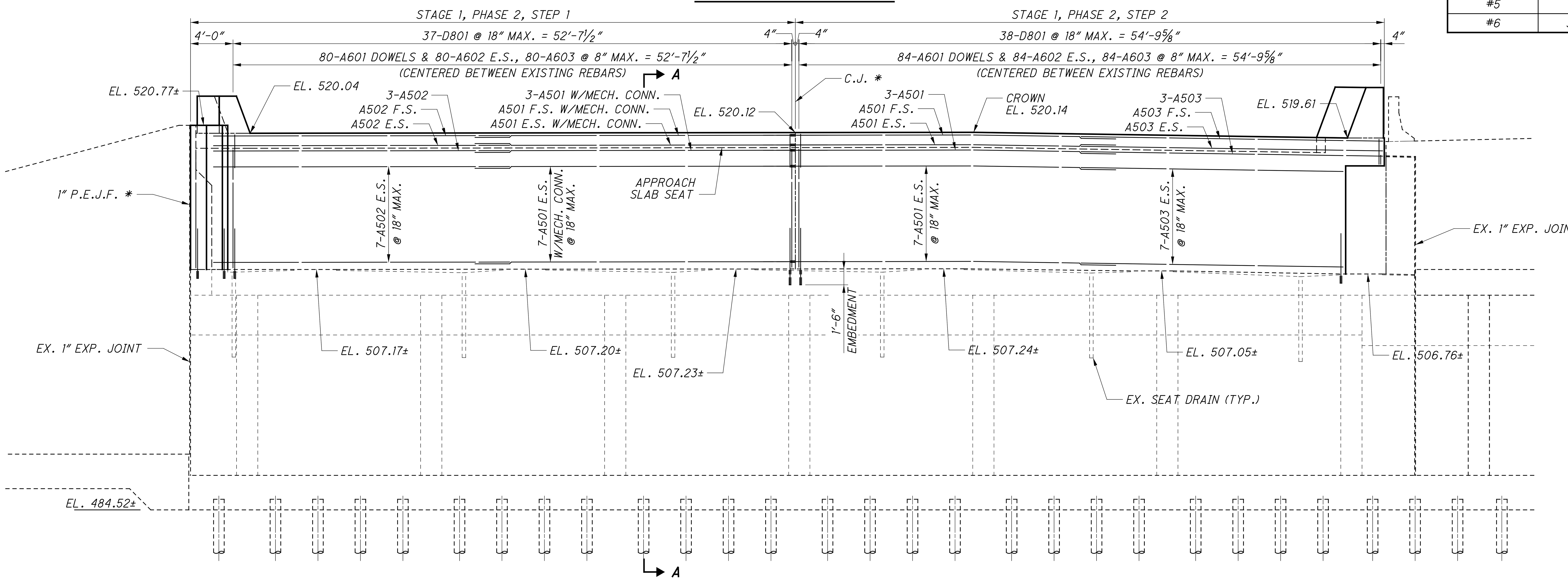
REMOVAL DETAILS (RIGHT BRIDGE)

BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

HAM-75-3.84
PID No. 104667



PLAN - REAR ABUTMENT



ELEVATION - REAR ABUTMENT

MINIMUM BAR LAP	
#5	3'-6"
#6	3'-10"

NOTES:

1. ✱ 3'-0" WIDE TYPE 2 WATERPROOFING ON BACK FACE CENTERED ON JOINT FROM TOP OF SEAT TO BOTTOM OF APPROACH SLAB.
2. FOR PARAPET DETAILS, SEE SHEETS 26/38 AND 28/38.
3. FOR SECTION A-A, SEE SHEET 13/38.
4. ELEVATIONS PROVIDED AT FRONT FACE OF BACKWALL.

DESIGN AGENCY: STRUCTUREPOINT

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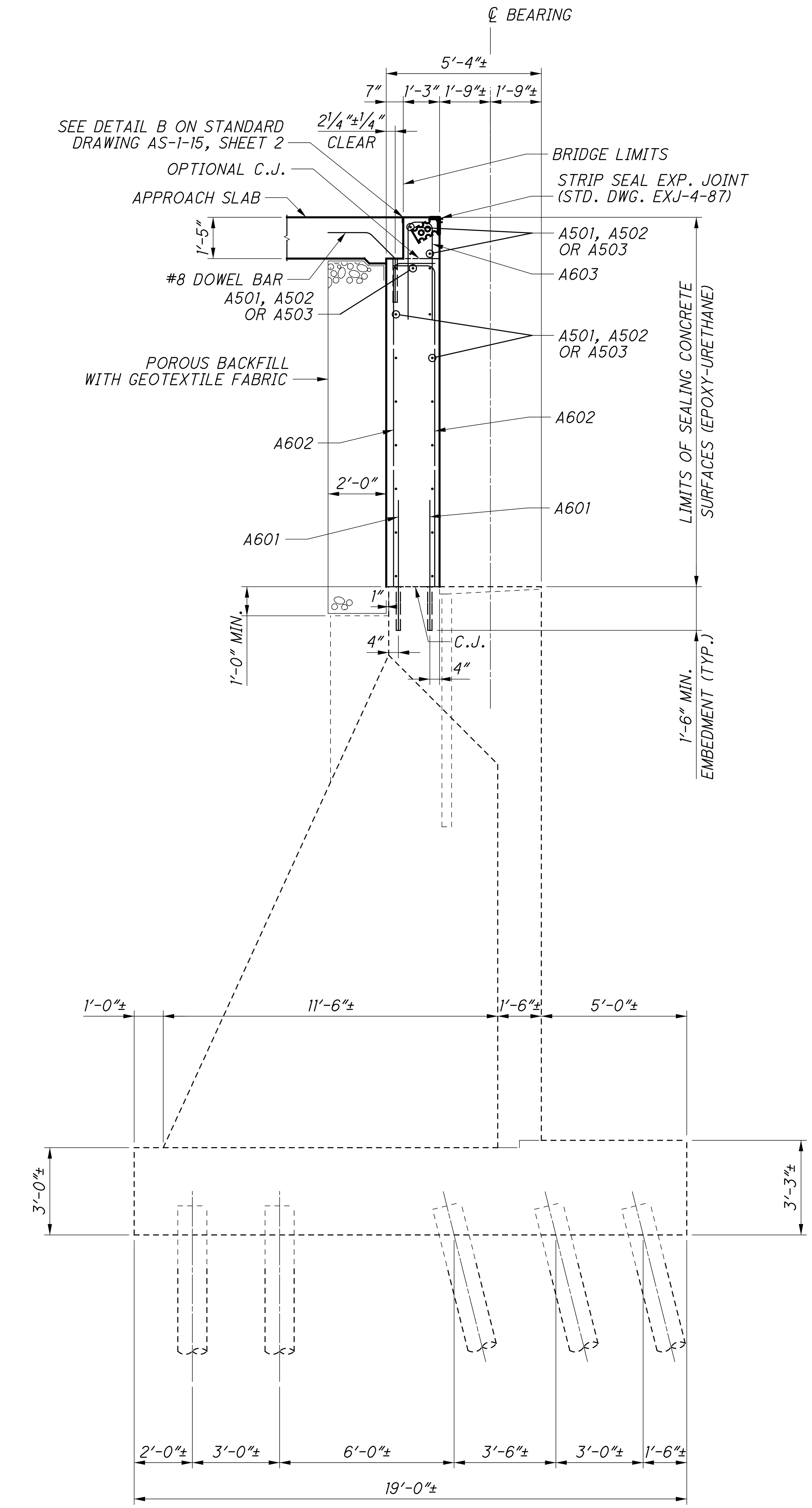
SJF	CLB	DSH		MDS	11/12/18	3115690

REAR ABUTMENT DETAILS (RIGHT BRIDGE)

BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

HAM-75-3.84
PID No. 104667

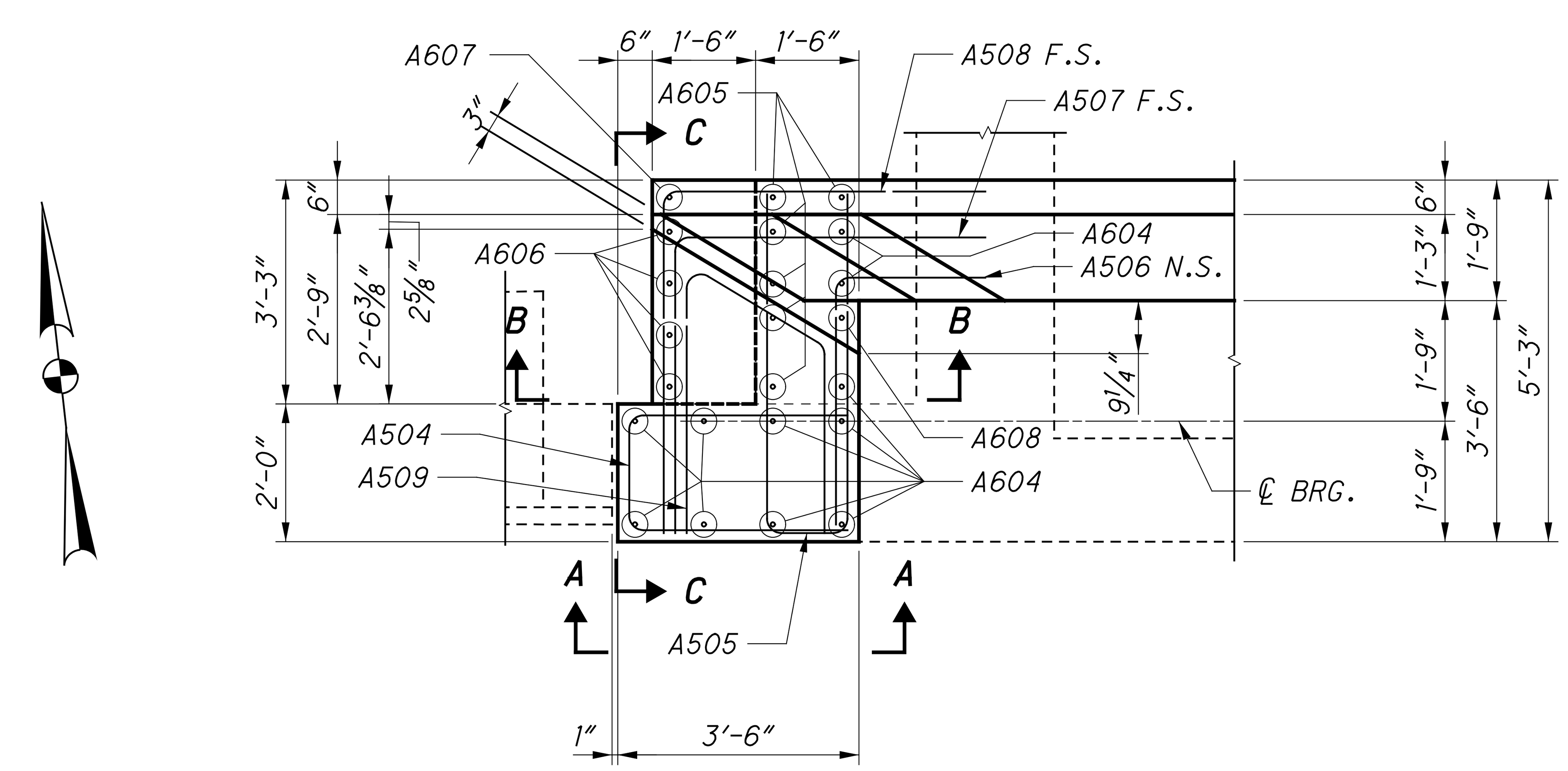


SECTION A-A

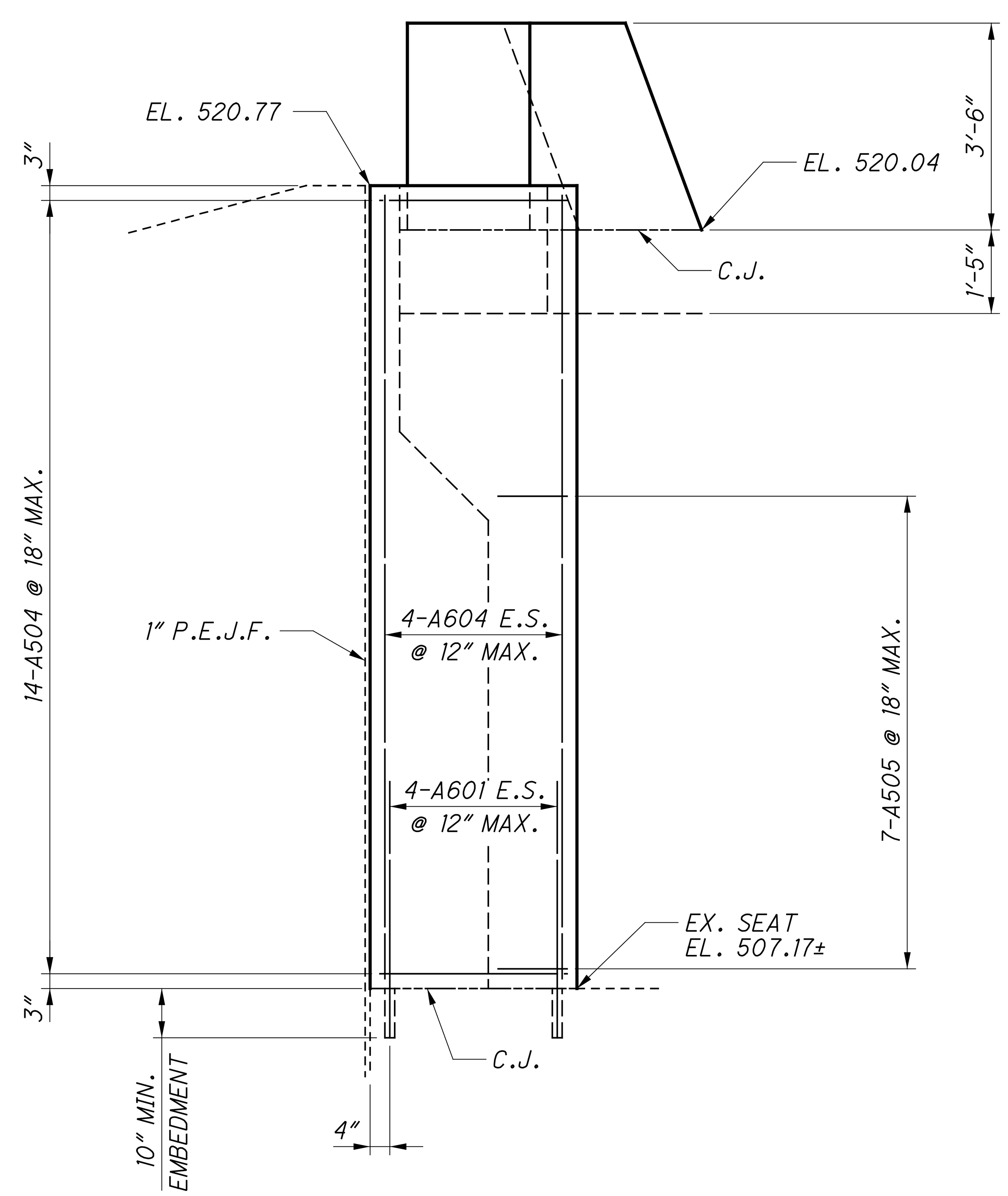
DESIGN AGENCY	STRUCTUREPOINT
DESIGNED SJF	CHECKED CLB
DRAWN DSH	REVISED
REVIEWED MDS	DATE 11/12/18
STRUCTURE FILE NUMBER 3115690	

REAR ABUTMENT DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

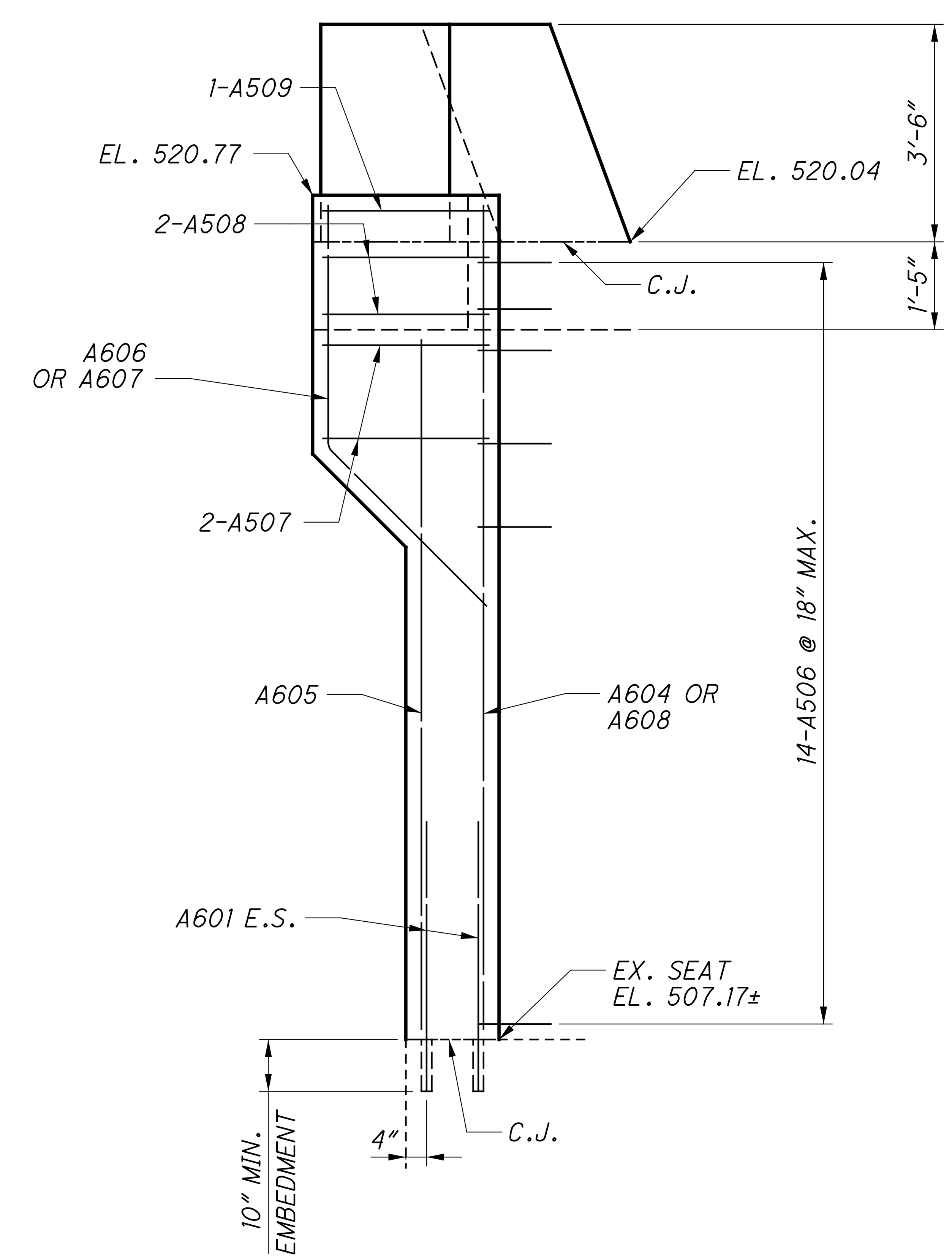
HAM-75-3.84
PID No. 104667



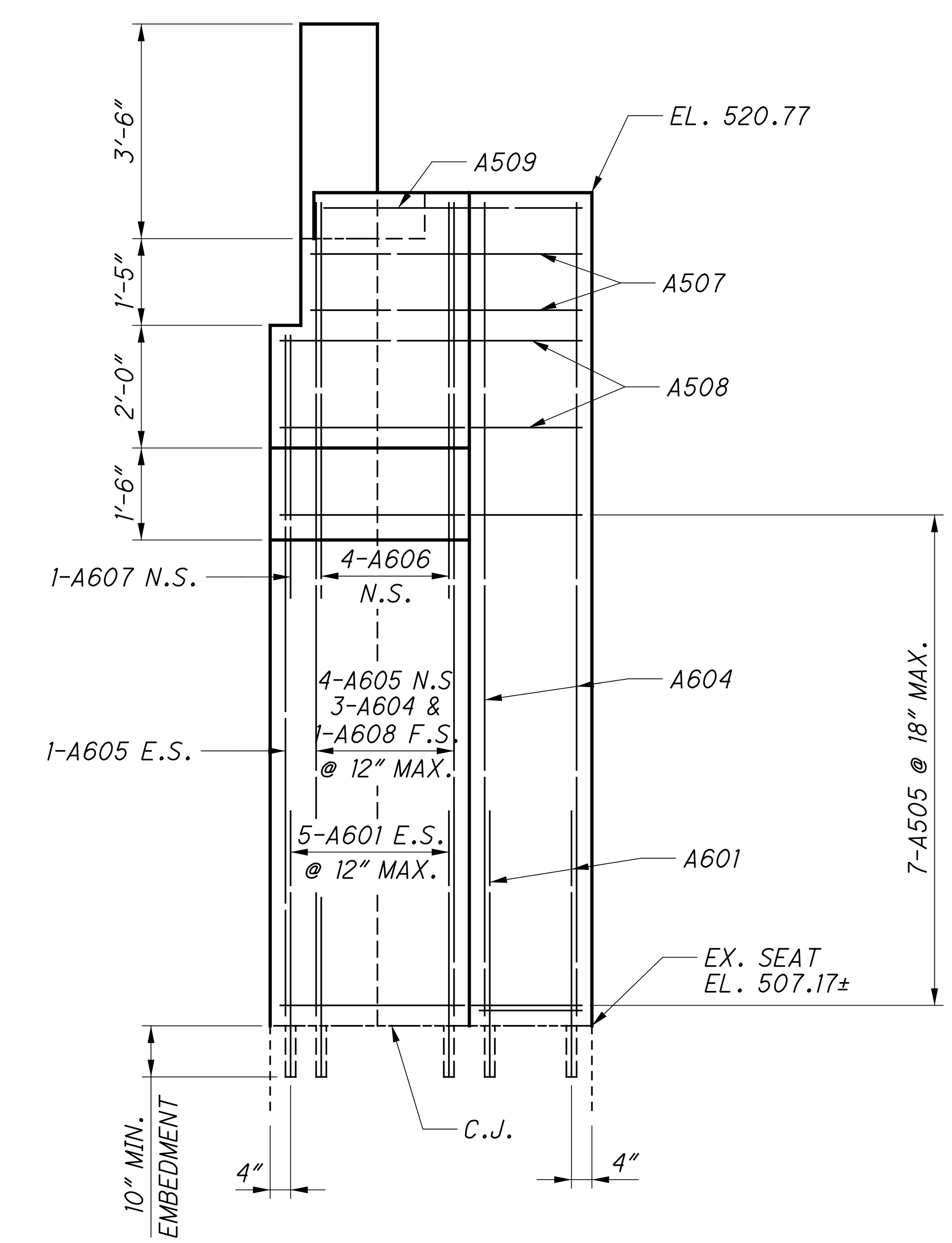
DETAIL "A"



ELEVATION A



SECTION B-B



ELEVATION C

DESIGN AGENCY
STRUCTUREPOINT

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REAR ABUTMENT DETAILS (RIGHT BRIDGE)

BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

HAM-75-3.84
PID No. 104667

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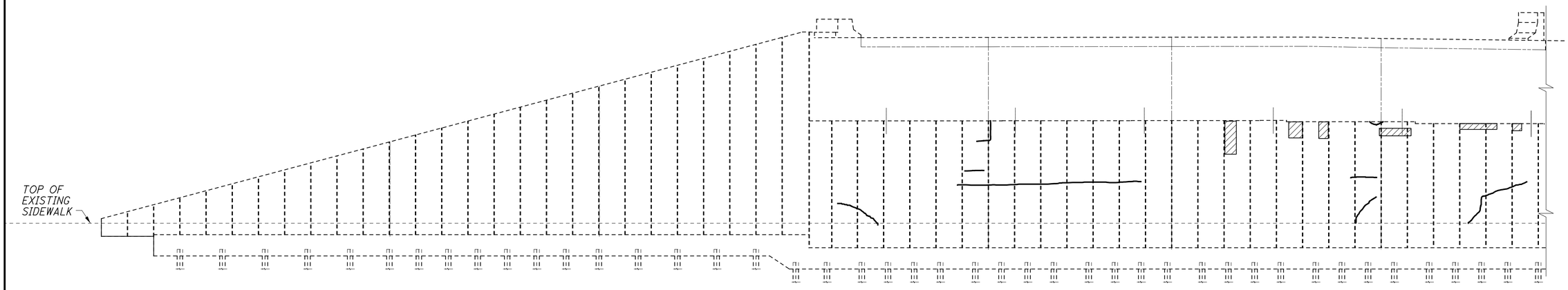
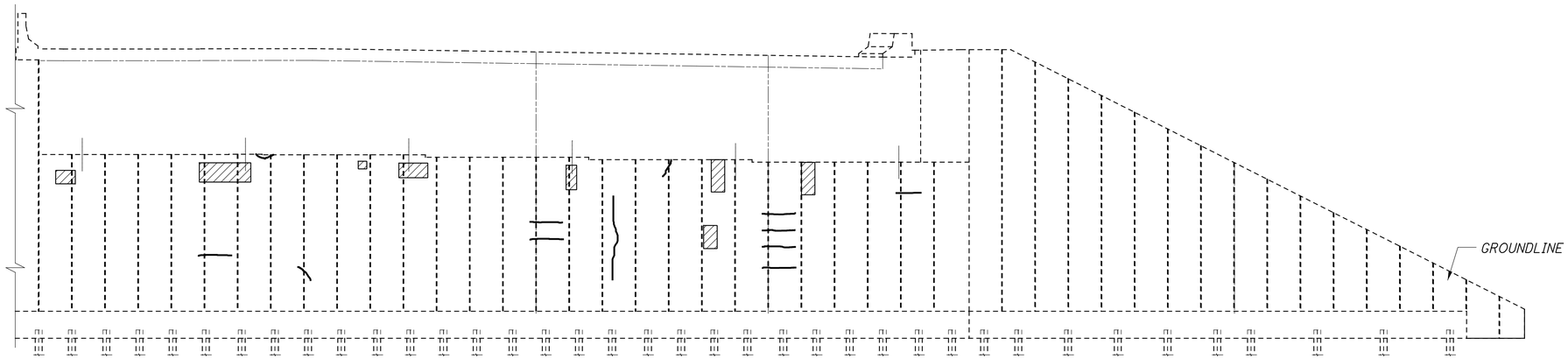


PART ELEVATION - REAR ABUTMENT



PART ELEVATION - REAR ABUTMENT

LEGEND

AREA TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN.

SUMMARY OF REPAIR QUANTITIES		
ELEVATION	PATCH (SQ FT)	EPOXY INJECTION (FT)
REAR ABUTMENT	*92.91	*108.91

* FIELD MEASURED TOTAL FOR LEFT AND RIGHT BRIDGES

NOTES:

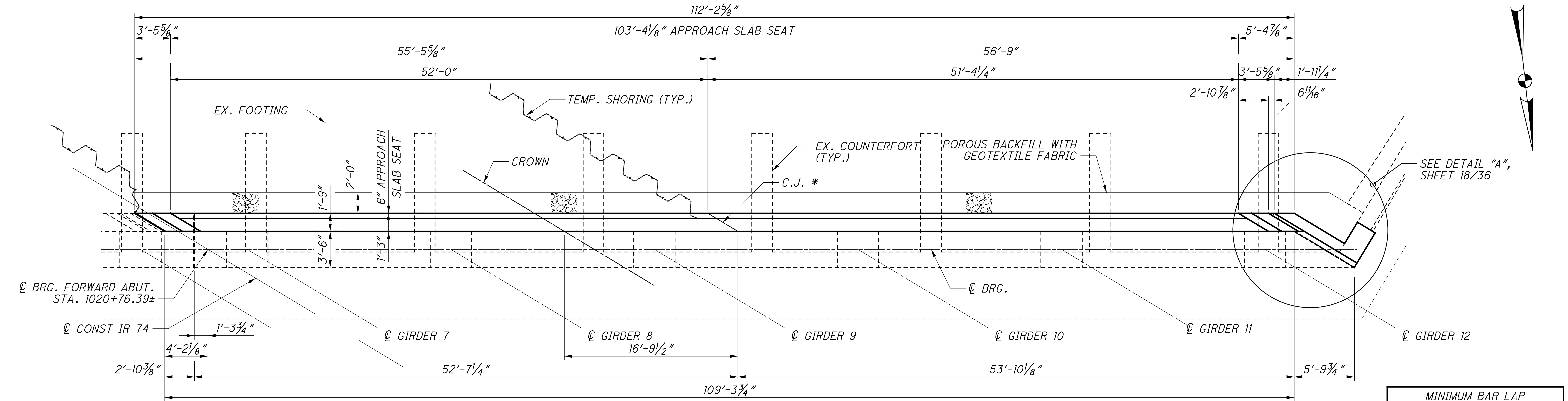
1. ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN AND ITEM 512 - CONCRETE REPAIR BY EPOXY INJECTION ARE UNIT PRICE PAY ITEMS (31 AND 32).

DESIGN AGENCY
STRUCTUREPOINT LLC

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115690	

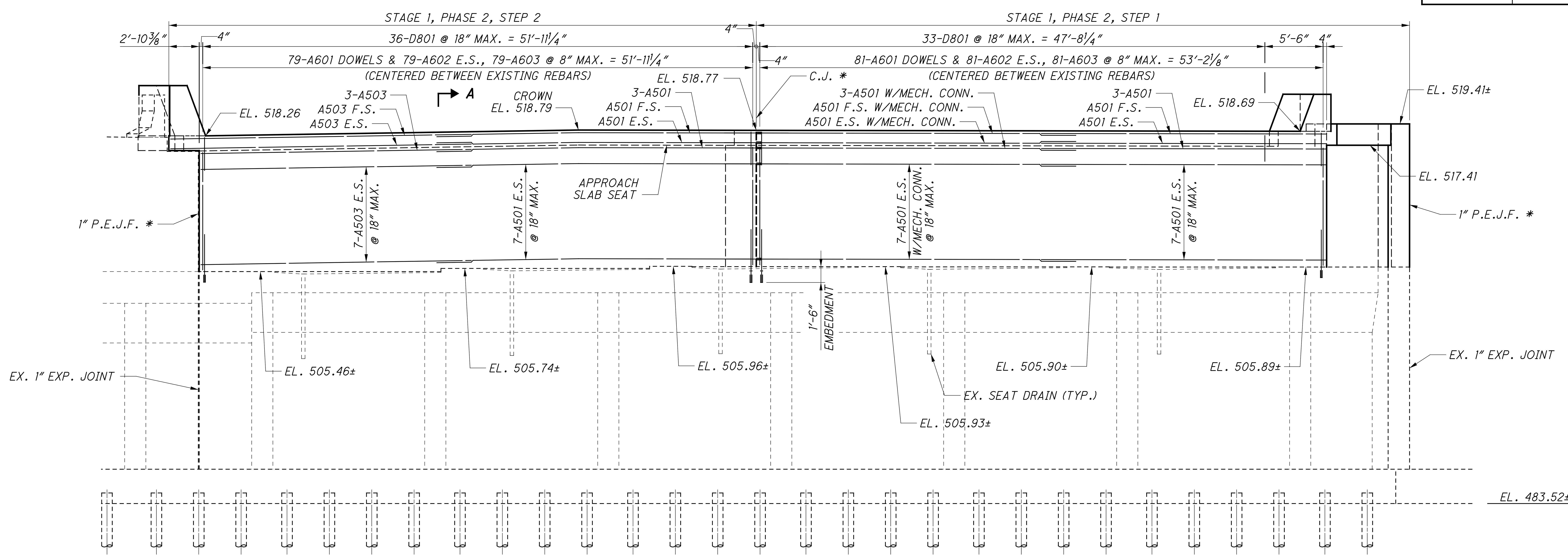
PATCHING DETAILS - REAR ABUTMENT
BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

HAM-75-3.84
PID No. 104667



PLAN - FORWARD ABUTMENT

MINIMUM BAR LAP	
#5	3'-6"
#6	3'-10"



ELEVATION - FORWARD ABUTMENT

NOTES:

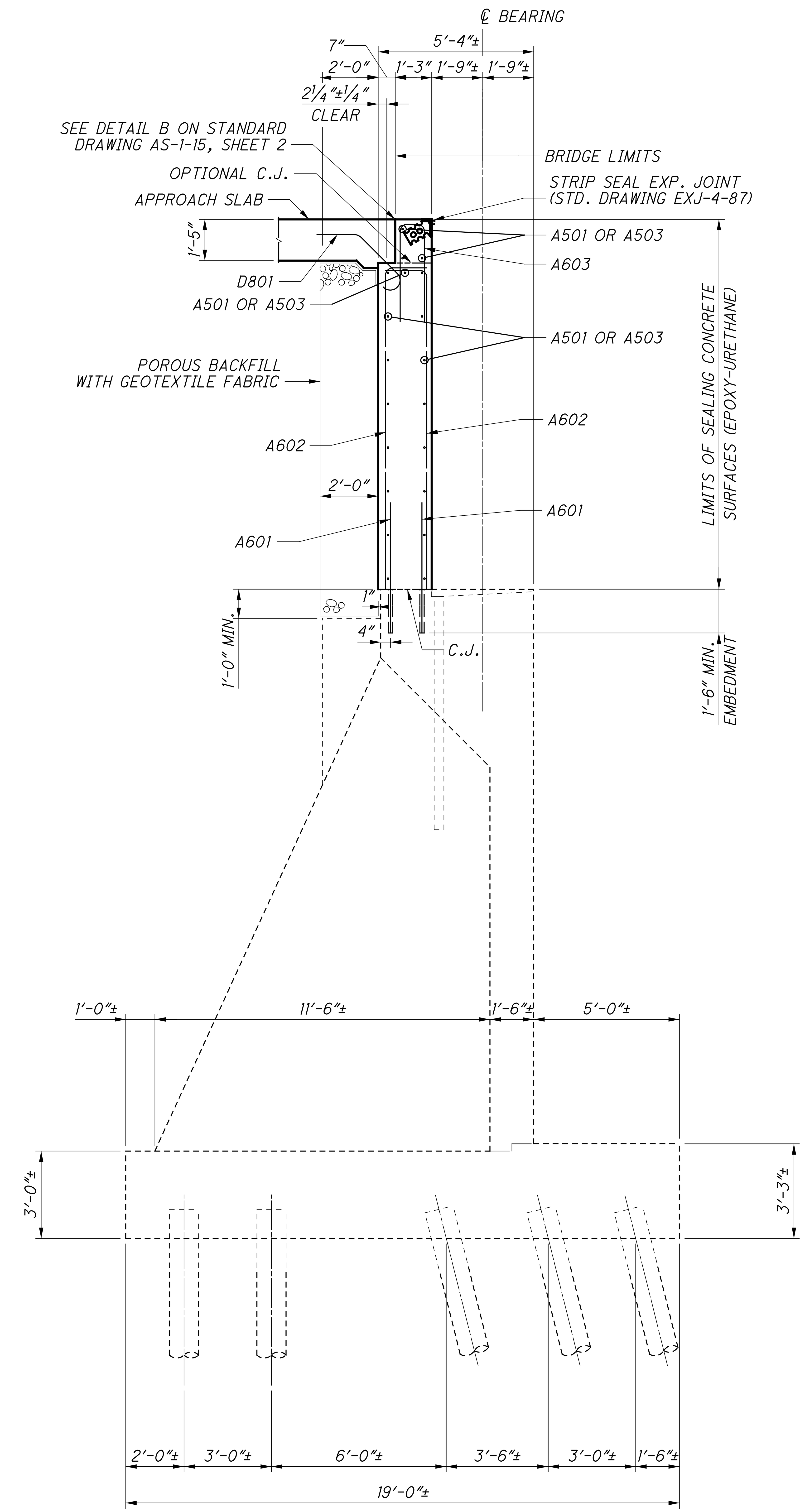
1. * 3'-0" WIDE TYPE 2 WATERPROOFING ON BACK FACE CENTERED ON JOINT FROM TOP OF SEAT TO BOTTOM OF APPROACH SLAB.
2. FOR PARAPET DETAILS, SEE SHEETS 26/38 AND 28/38.
3. FOR SECTION A-A, SEE SHEET 17/38.
4. ELEVATIONS PROVIDED AT FRONT FACE OF BACKWALL.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED SJF | CHECKED CLB | DRAWN DSH | REVISED | REVIEWED MDS | DATE 11/12/18 | STRUCTURE FILE NUMBER 3115690

FORWARD ABUTMENT DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

HAM-75-3.84
PID No. 104667



SECTION A-A

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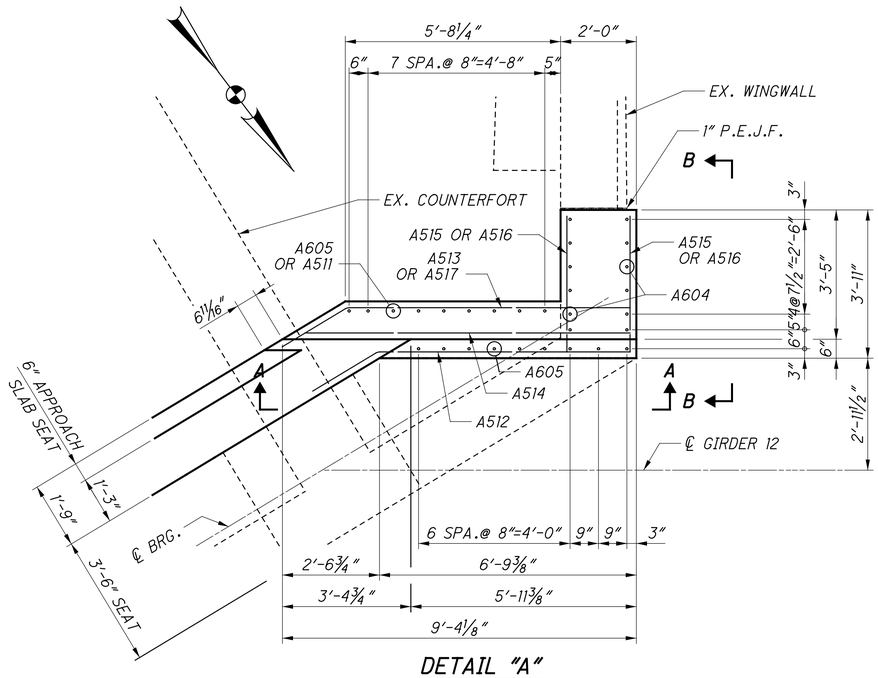
DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115690	

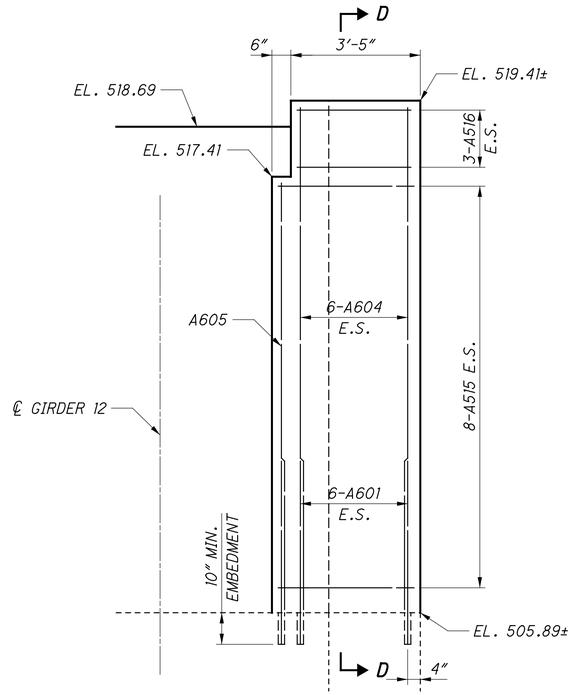
FORWARD ABUTMENT DETAILS (RIGHT BRIDGE)

BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

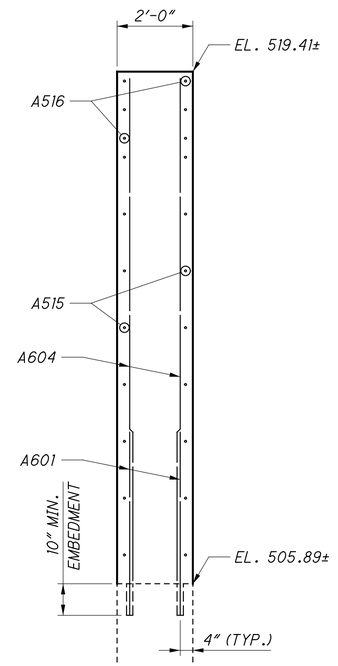
HAM-75-3.84
PID No. 104667



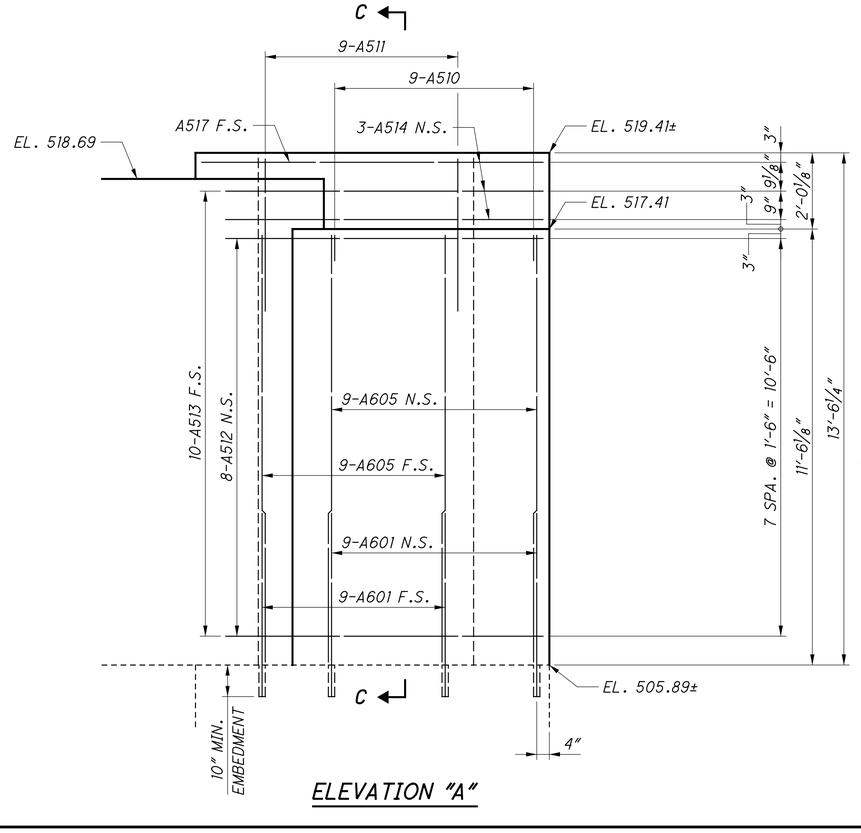
DETAIL "A"



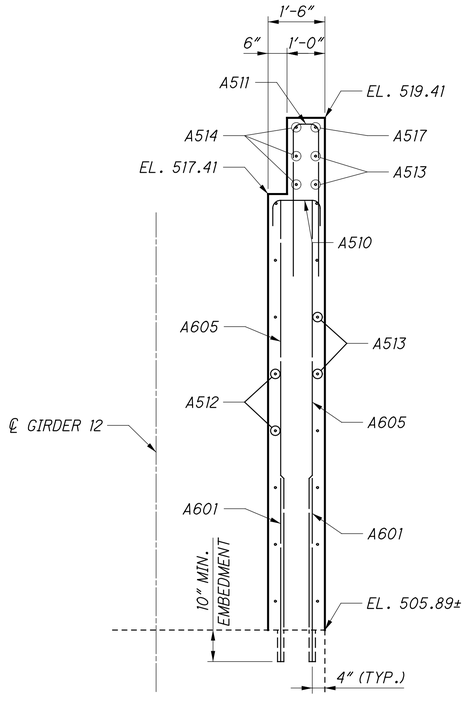
ELEVATION "B"



SECTION "D"



ELEVATION "A"



SECTION "C"

DESIGN AGENCY
STRUCTUREPOINT LLC
2001 CORPORATE EXCHANGE DR. STE 200
COLUMBUS, OH 43231
TEL 614.901.7900 www.structurepoint.com

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SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115690	

FORWARD ABUTMENT DETAILS (RIGHT BRIDGE)

BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

HAM-75-3.84
PID No. 104667

18 / 38

100
120

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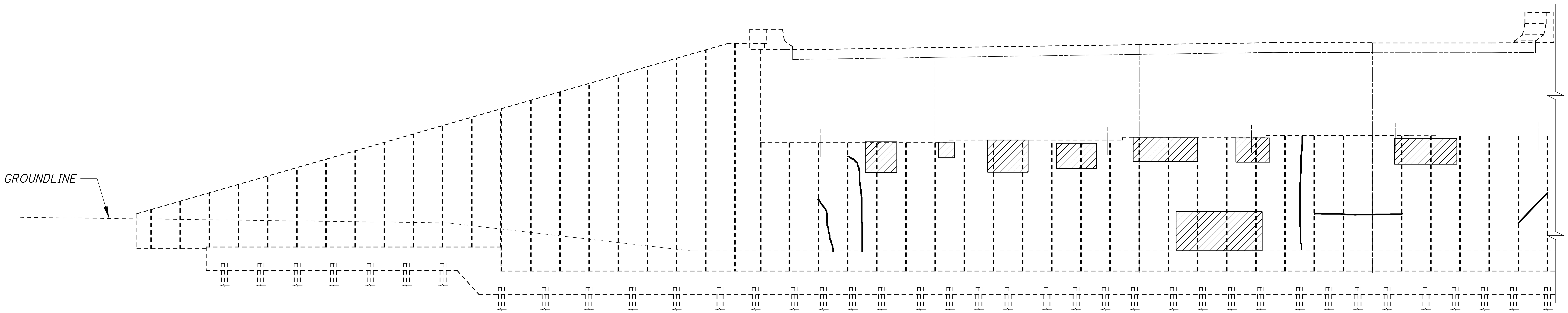
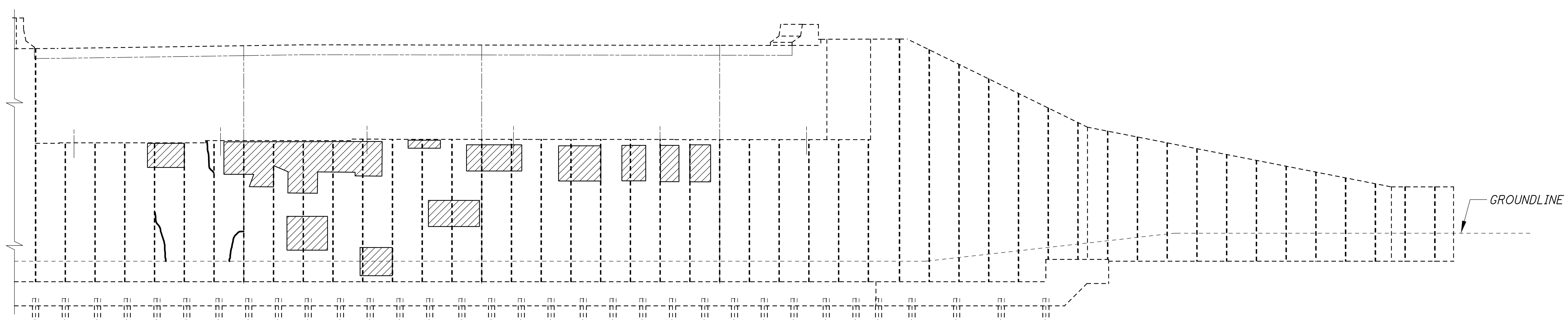


PART ELEVATION - FORWARD ABUTMENT



PART ELEVATION - FORWARD ABUTMENT

LEGEND

AREA TO BE PATCHED PER ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN.

SUMMARY OF REPAIR QUANTITIES		
ELEVATION	PATCH (SQ FT)	EPOXY INJECTION (FT)
FORWARD ABUTMENT	*193.46	* 58.58

*FIELD MEASURED TOTAL FOR LEFT AND RIGHT BRIDGES

NOTES:

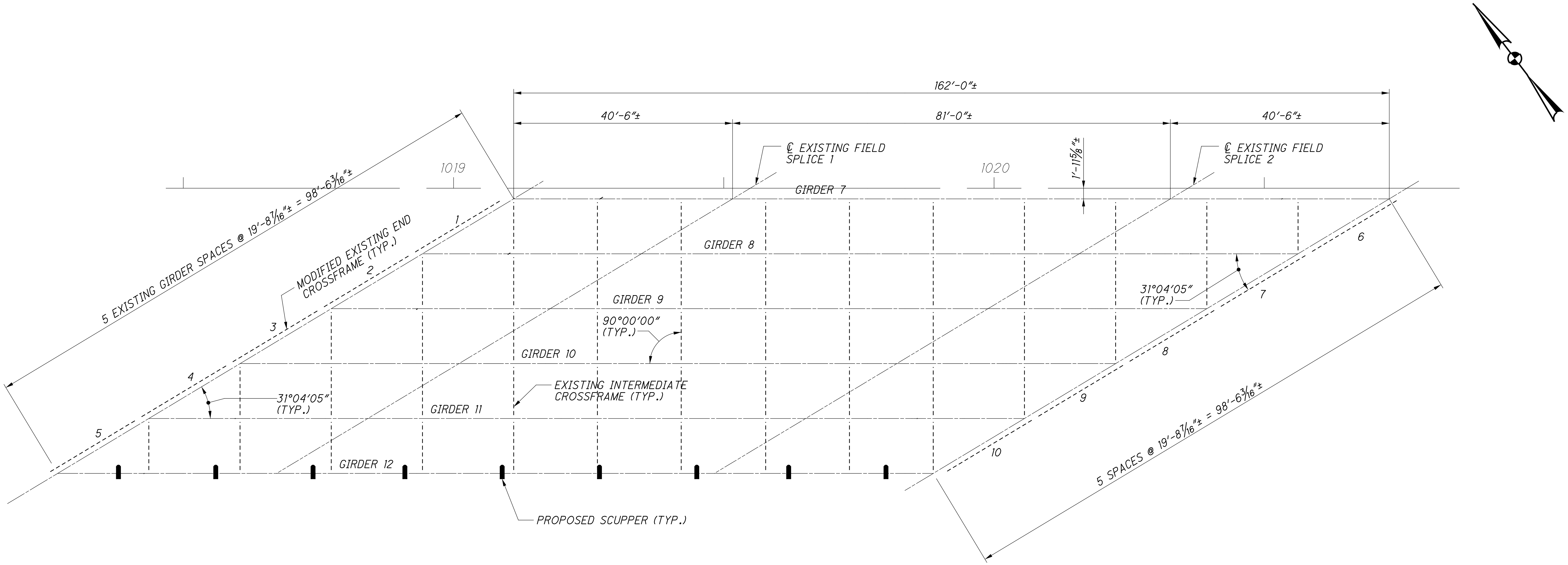
1. ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN AND ITEM 512 - CONCRETE REPAIR BY EPOXY INJECTION ARE UNIT PRICE PAY ITEMS (31 AND 32).

DESIGN AGENCY
STRUCTUREPOINT

DESIGNED SJF | DRAWN DSH | REVIEWED MDS | DATE 11/12/18
CHECKED CLB | REVISED | STRUCTURE FILE NUMBER 3115690

PATCHING DETAILS - FORWARD ABUTMENT
BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

HAM-75-3.84
PID No. 104667



FRAMING PLAN

DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/13/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115690	

FRAMING PLAN (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

HAM-75-3.84
PID No. 104667

20/38

102/120

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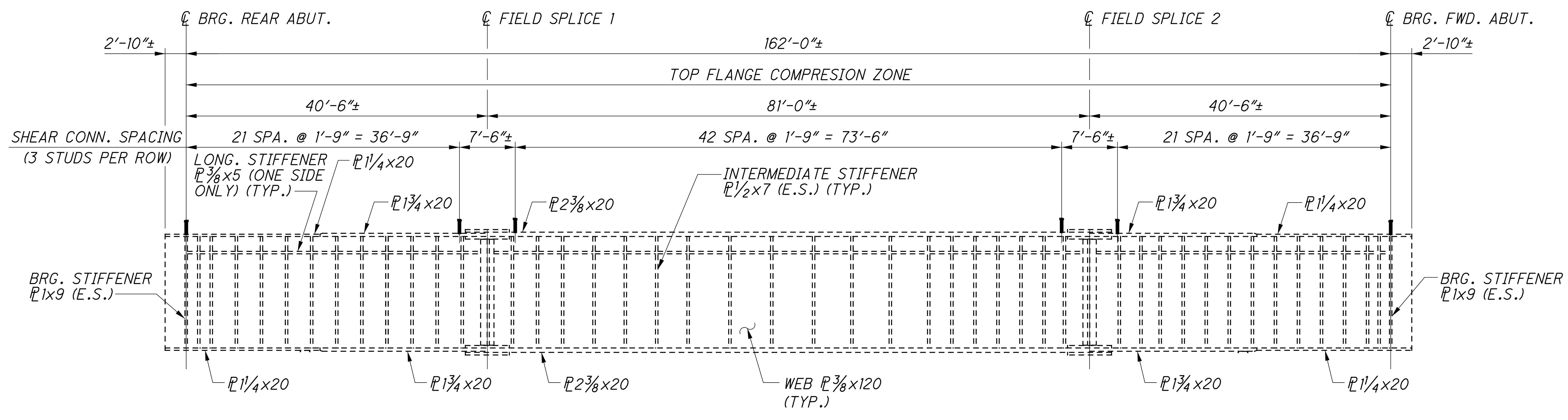
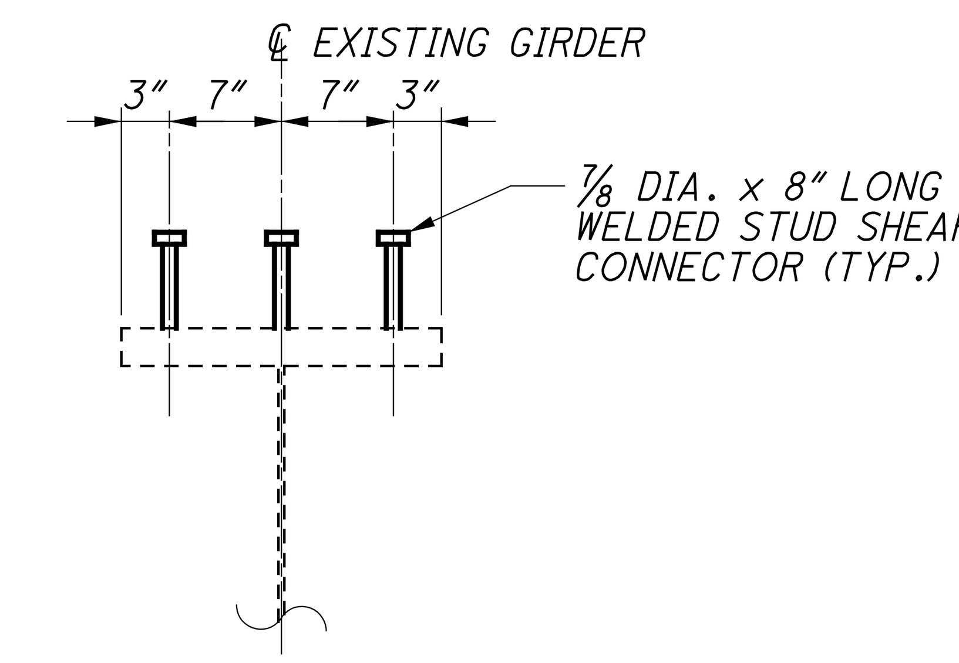


EXISTING GIRDER ELEVATION



SHEAR CONNECTOR DETAIL
EXISTING GIRDER

DESIGN AGENCY
AMERICAN STRUCTUREPOINT INC.
2550 CORPORATE EXCHANGE DR, STE 300
COLUMBUS, OH 43231
TEL 614.901.2235 FAX 614.901.2236
www.structurepoint.com

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/13/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115690	

GIRDER ELEVATION (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

HAM-75-3.84
PID No. 104667

21/38

103/120

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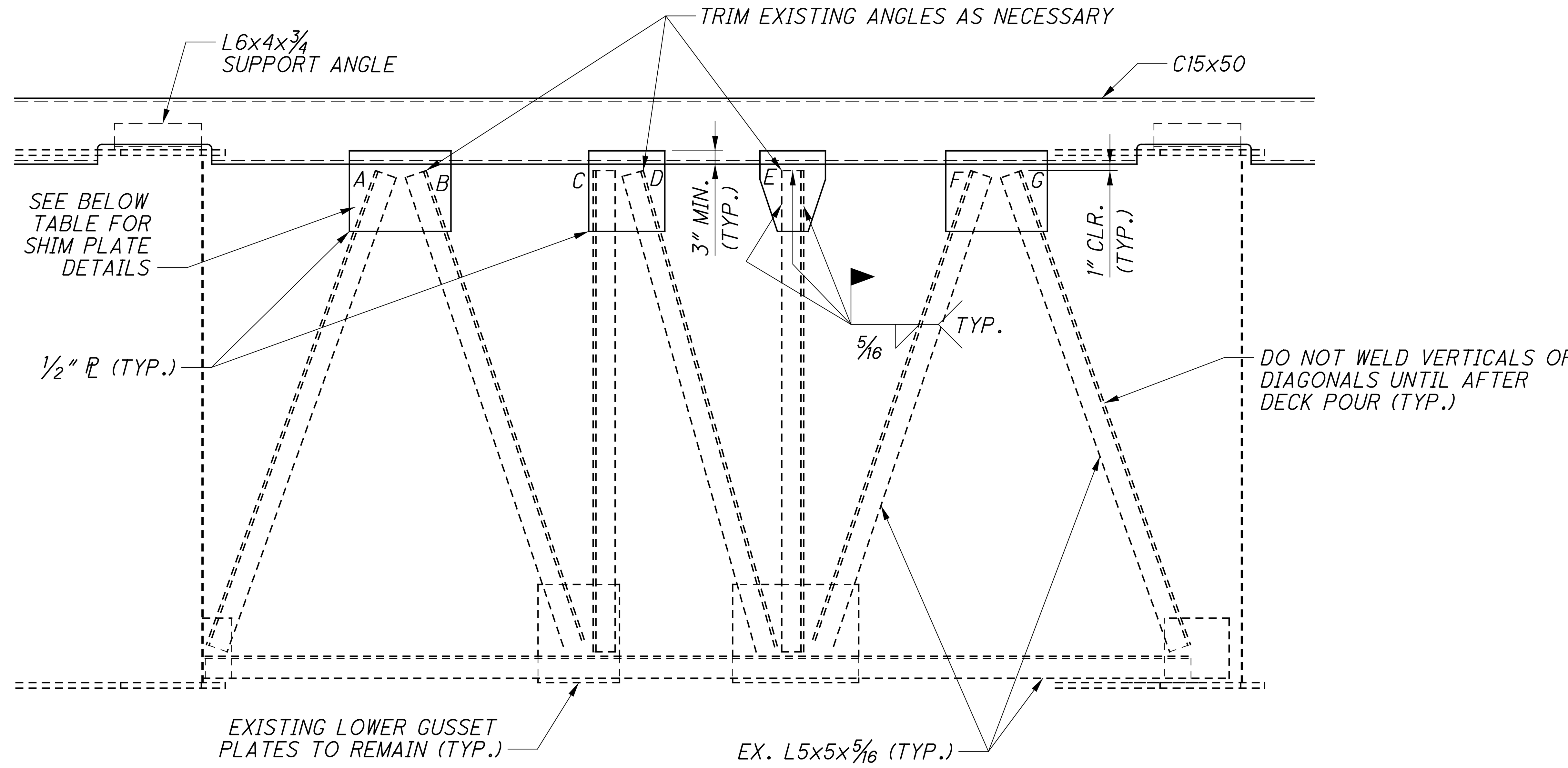
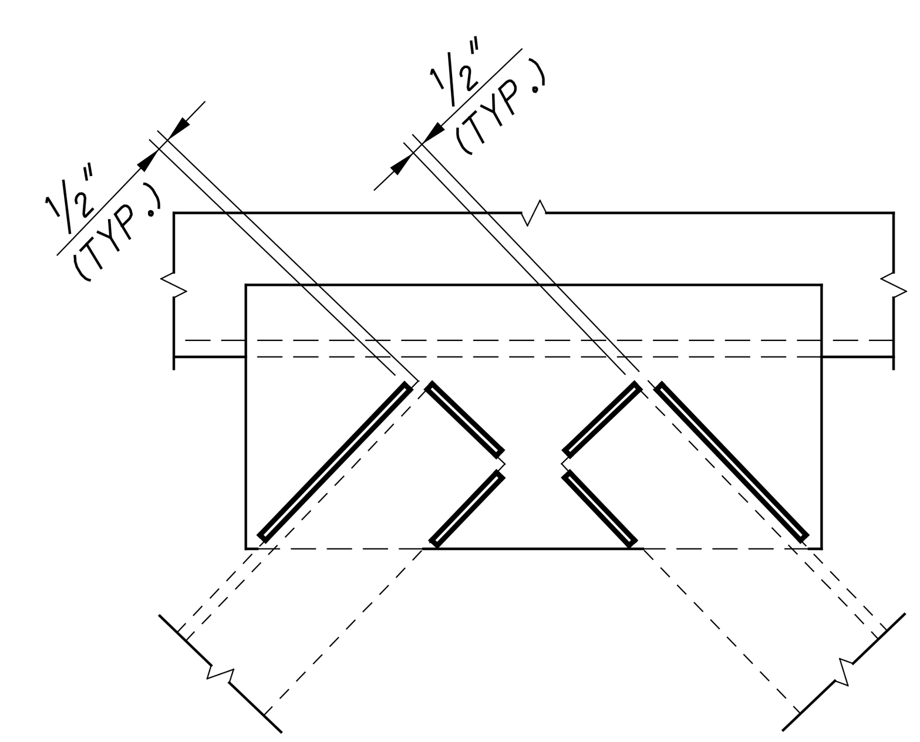


END CROSS FRAME DETAIL

Name	# of Plates	Plate 1	Plate 2
8-A	0	N/A	N/A
8-B	0	N/A	N/A
8-C	0	N/A	N/A
8-D	0	N/A	N/A
8-E	2	6"x6"x1¼"	6"x6"x1¼"
8-F	0	N/A	N/A
8-G	0	N/A	N/A

Name	# of Plates	Plate 1	Plate 2
9-A	0	N/A	N/A
9-B	0	N/A	N/A
9-C	0	N/A	N/A
9-D	0	N/A	N/A
9-E	0	N/A	N/A
9-F	0	N/A	N/A
9-G	2	8"x8"x1¼"	8"x8"x1"

Name	# of Plates	Plate 1	Plate 2
10-A	1	8"x8"x1¼"	N/A
10-B	2	8"x8"1¼"	8"x8"1¼"
10-C	2	8"x8"x1¼"	8"x8"1¼"
10-D	2	8"x8"x1¼"	8"x8"1¼"
10-E	2	8"x8"x1¼"	8"x8"1¼"
10-F	2	8"x8"x1¼"	8"x8"1¼"
10-G	1	8"x8"x1¼"	N/A



WELD TERMINATION DETAIL

TABLE LEGEND
NAME - 1-A

BAY LOCATION (SEE SHEET 20/38)

END CROSS FRAME GUSSET PLATE LOCATION (SEE DETAIL ABOVE)

NOTES:

1. ALL STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 50.
2. FOR ADDITIONAL NOTES AND DETAILS, SEE STD. DWG. GSD-1-96.

DESIGN AGENCY
AMERICAN STRUCTUREPOINT INC.
2550 CORPORATE EXCHANGE DR, STE 300
COLUMBUS, OH 43231
TEL 614.901.2235 FAX 614.901.2236
www.structurepoint.com

DESIGNED SJF | DRAWN DSH | REVIEWED MDS | DATE 11/13/18
CHECKED CLB | REVISED | STRUCTURE FILE NUMBER 3115690

SUPERSTRUCTURE DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

HAM-75-3.84
PID No. 104667

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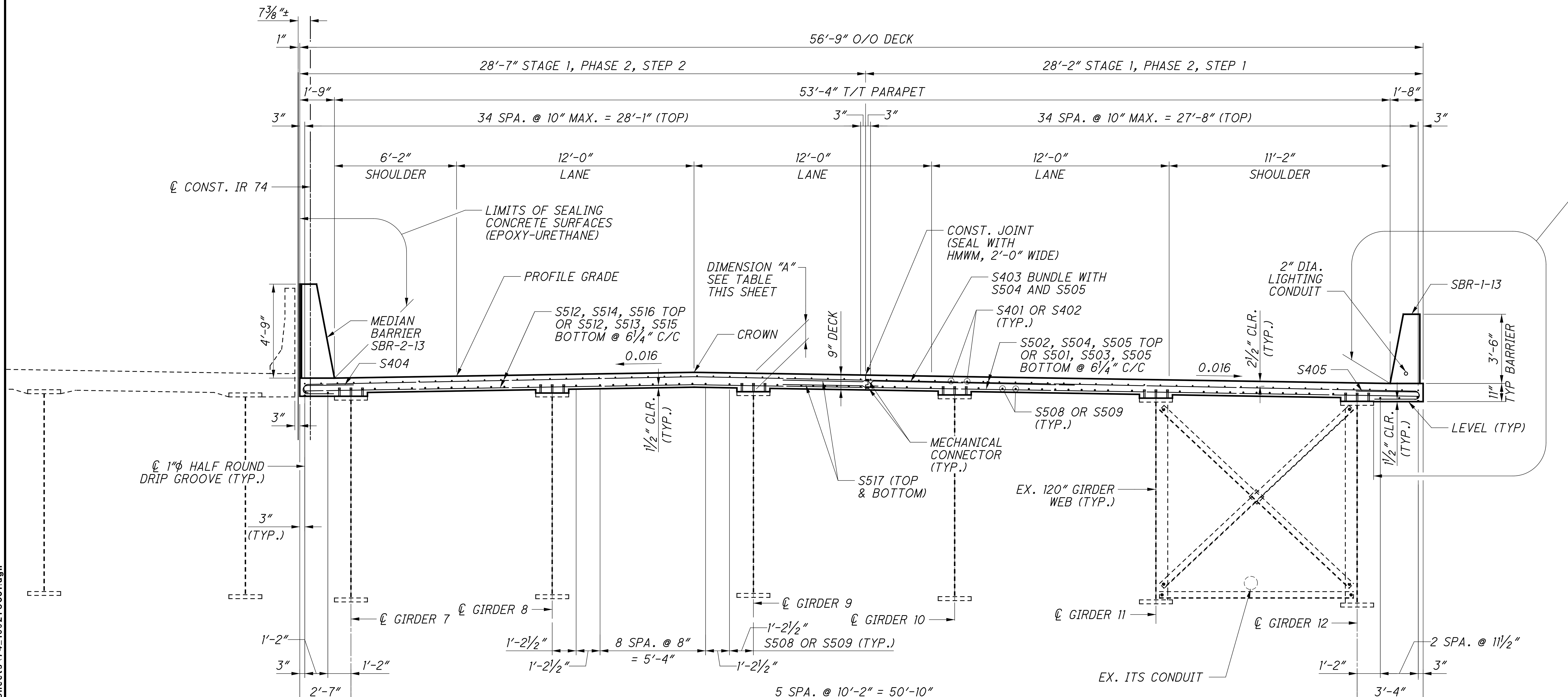


TRANSVERSE SECTION

DIMENSION "A" (TOP OF SLAB TO TOP OF FLANGE)		
LOCATION	℄ BRG. R.A.	℄ BRG. F.A.
GIRDER 7	1'-0½"	1'-0½"
GIRDER 8	1'-0½"	1'-0⅝"
GIRDER 9	1'-0½"	1'-0½"
GIRDER 10	1'-0½"	1'-0¾"
GIRDER 11	1'-0⅜"	1'-0½"
GIRDER 12	1'-0½"	1'-0⅜"

NOTES:

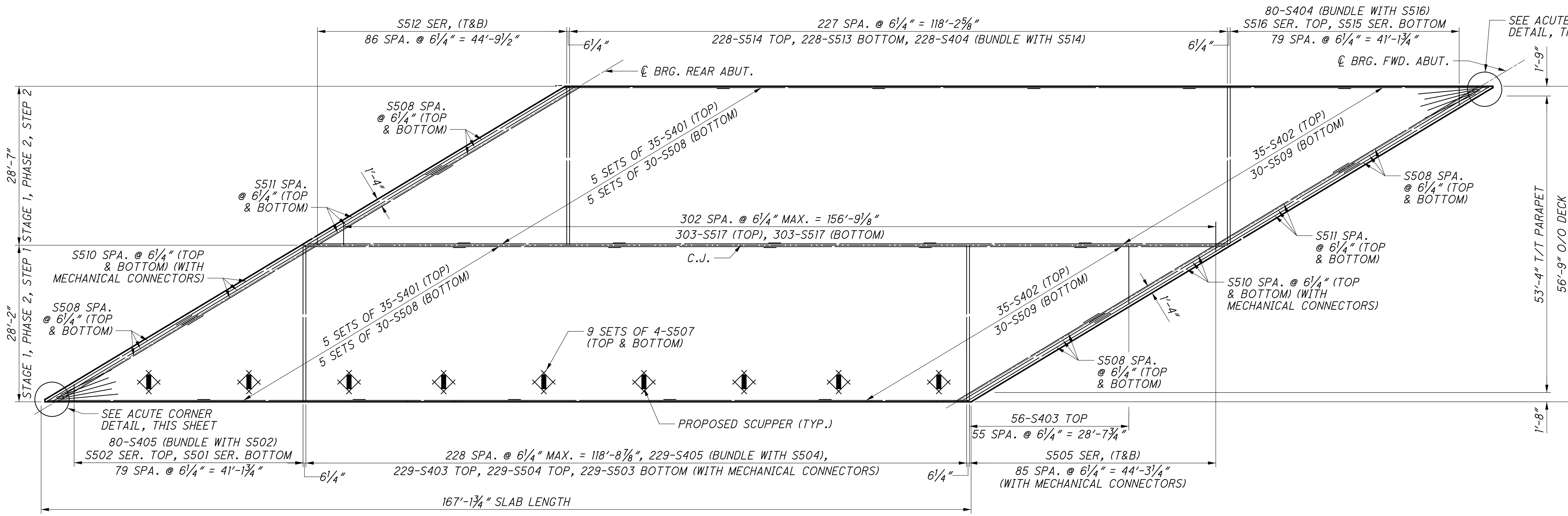
1. FOR PARAPET DETAILS SEE SHEETS 26/38 TO 28/38.
2. FOR SLAB REINFORCING PLAN SEE SHEET 24/38.
3. SEE HL-30.31 FOR ADDITIONAL LIGHTING CONDUIT DETAILS.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	BMP	MDS	9/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115690	

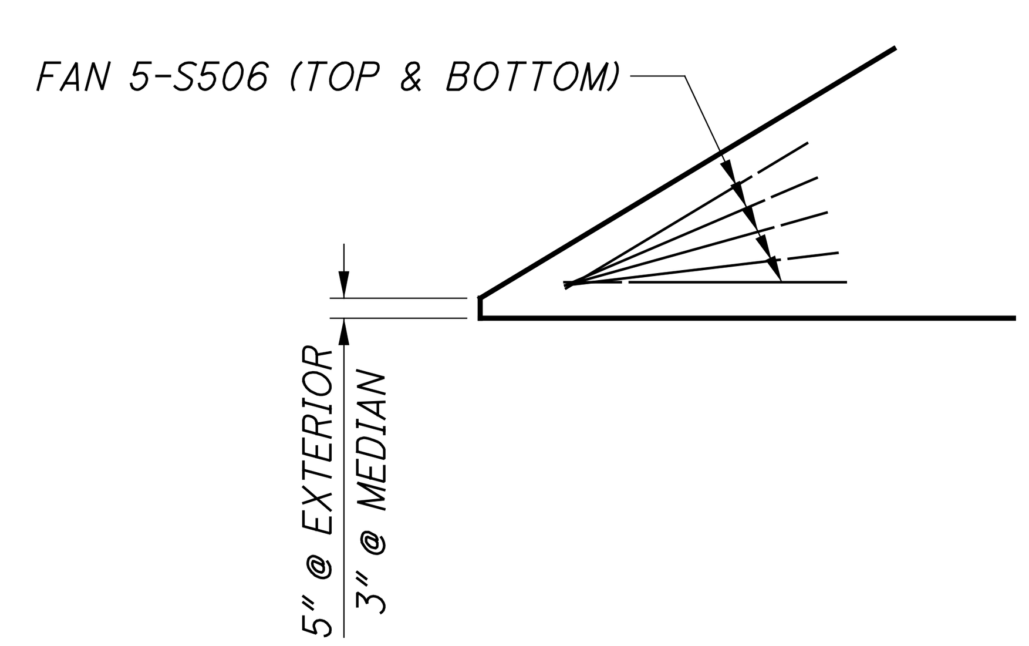
TRANSVERSE SECTION (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1892 L/R
IR-74 OVER ELMORE STREET

HAM-75-3.84
PID No. 104667



SLAB REINFORCING PLAN

MINIMUM BAR LAP	
#4	2'-6"
#5 (LONGITUDINAL)	3'-1"
#5 (TRANSVERSE)	4'-0"



ACUTE CORNER DETAIL

NOTES:

MECHANICAL CONNECTORS FOR REINFORCING BARS SHALL BE USED AT LONGITUDINAL CONSTRUCTION JOINT.

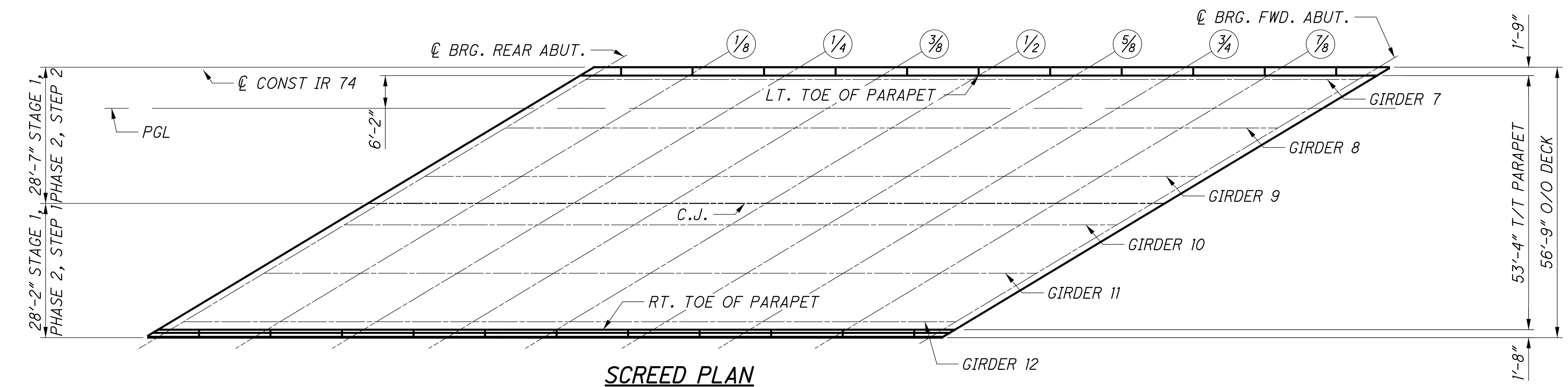
FOR PARAPET DETAILS, SEE SHEETS 26/38 THRU 28/38.

DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	TMT	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115690	

SLAB REINFORCING PLAN (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

HAM-75-3.84
PID No. 104667



SCREED PLAN

NOTES:

1. SCREED ELEVATIONS SHOWN REPRESENT THE THEORETICAL DECK SURFACE LOCATION PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.
2. TOP OF HAUNCH (T.O.H.) ELEVATIONS SHOWN REPRESENT THE THEORETICAL LOCATION OF THE BOTTOM OF THE DECK ABOVE THE GIRDER HAUNCH PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.
3. FINAL DECK SURFACE (F.D.S.) ELEVATIONS SHOWN REPRESENT THE DECK SURFACE LOCATION AFTER ALL ANTICIPATED DEAD LOAD DEFLECTIONS HAVE OCCURRED.

HAUNCH AND SCREED ELEVATIONS TABLE

SCREED LINE \ DESCRIPTION		℄ BRG. R. A.	1/8 POINT	1/4 POINT	3/8 POINT	1/2 POINT	5/8 POINT	3/4 POINT	7/8 POINT	℄ BRG. F. A.
HAM-74-1892 SCREED ELEVATIONS										
LT. TOE OF PARAPET	STATION	1019+12.51	1019+32.76	1019+53.01	1019+73.26	1019+93.51	1020+13.76	1020+34.01	1020+54.26	1020+74.51
	F.D.S. ELEV.	519.76	519.59	519.40	519.25	519.10	518.92	518.78	518.60	518.53
	DEFLECTION	0.00	0.06	0.11	0.14	0.15	0.14	0.11	0.06	0.00
	SCREED ELEV.	519.76	519.65	519.51	519.39	519.25	519.06	518.89	518.66	518.53
PGL	STATION	1019+02.27	1019+22.52	1019+42.77	1019+63.02	1019+83.27	1020+03.52	1020+23.77	1020+44.02	1020+64.27
	F.D.S. ELEV.	519.76	519.59	519.41	519.26	519.11	518.93	518.79	518.60	518.53
	DEFLECTION	0.00	0.06	0.10	0.13	0.14	0.13	0.10	0.06	0.00
	SCREED ELEV.	519.76	519.65	519.51	519.39	519.25	519.06	518.89	518.66	518.53
CROWN	STATION	1018+82.36	1019+02.61	1019+22.86	1019+43.11	1019+63.36	1019+83.61	1020+03.86	1020+24.11	1020+44.36
	F.D.S. ELEV.	520.13	520.01	519.80	519.62	519.47	518.58	519.15	518.96	518.85
	DEFLECTION	0.00	0.05	0.10	0.12	0.13	0.12	0.10	0.05	0.00
	SCREED ELEV.	520.13	520.07	519.89	519.74	519.60	518.70	519.24	519.01	518.85
C.J.	STATION	1018+67.98	1018+88.23	1019+08.48	1019+28.73	1019+48.98	1019+69.23	1019+89.48	1020+09.73	1020+29.98
	F.D.S. ELEV.	520.11	519.93	519.76	519.60	519.44	519.29	519.14	518.98	518.85
	DEFLECTION	0.00	0.05	0.10	0.12	0.13	0.12	0.10	0.05	0.00
	SCREED ELEV.	520.11	519.99	519.86	519.73	519.57	519.42	519.23	519.03	518.85
RT. TOE OF PARAPET	STATION	1018+23.99	1018+44.24	1018+64.49	1018+84.74	1019+04.99	1019+25.24	1019+45.49	1019+65.74	1019+85.99
	F.D.S. ELEV.	520.08	519.85	519.71	519.53	519.36	519.22	519.08	518.89	518.72
	DEFLECTION	0.00	0.06	0.11	0.15	0.16	0.15	0.12	0.07	0.00
	SCREED ELEV.	520.08	519.91	519.83	519.68	519.52	519.37	519.20	518.96	518.72
HAM-74-1892 TOP OF HAUNCH ELEVATIONS										
GIRDER 7	STATION	1019+11.13	1019+31.38	1019+51.63	1019+71.88	1019+92.13	1020+12.38	1020+32.63	1020+52.88	1020+73.13
	F.D.S. ELEV.	519.76	519.59	519.40	519.25	519.10	518.92	518.78	518.60	518.53
	DEFLECTION	0.00	0.06	0.11	0.14	0.15	0.14	0.11	0.06	0.00
	T.O.H. ELEV.	518.99	518.90	518.76	518.62	518.48	518.31	518.14	517.91	517.72
GIRDER 8	STATION	1018+94.25	1019+14.50	1019+34.75	1019+55.00	1019+75.25	1019+95.50	1020+15.75	1020+36.00	1020+56.25
	F.D.S. ELEV.	519.92	519.77	519.55	519.40	519.29	519.10	518.91	518.79	518.61
	DEFLECTION	0.00	0.06	0.10	0.13	0.14	0.13	0.10	0.06	0.00
	T.O.H. ELEV.	519.08	518.93	518.79	518.66	518.57	519.13	518.18	518.06	517.75
GIRDER 9	STATION	1018+77.38	1018+97.63	1019+17.88	1019+38.13	1019+58.38	1019+78.63	1019+98.88	1020+19.13	1020+39.38
	F.D.S. ELEV.	520.11	519.95	519.79	519.61	519.44	519.29	519.13	518.95	518.89
	DEFLECTION	0.00	0.05	0.10	0.12	0.13	0.12	0.10	0.05	0.00
	T.O.H. ELEV.	519.34	519.23	519.13	518.95	518.79	518.63	518.43	518.23	518.12
GIRDER 10	STATION	1018+60.51	1018+80.76	1019+01.01	1019+21.26	1019+41.51	1019+61.76	1019+82.01	1020+02.26	1020+22.51
	F.D.S. ELEV.	520.10	519.92	519.73	519.60	519.44	519.29	519.15	519.01	518.81
	DEFLECTION	0.00	0.05	0.10	0.12	0.13	0.12	0.10	0.05	0.00
	T.O.H. ELEV.	519.33	519.20	519.07	518.94	518.79	518.64	518.45	518.29	518.04
GIRDER 11	STATION	1018+43.63	1018+63.88	1018+84.13	1019+04.38	1019+24.63	1019+44.88	1019+65.13	1019+85.38	1020+05.63
	F.D.S. ELEV.	520.08	519.88	519.72	519.57	519.41	519.26	519.12	518.95	518.77
	DEFLECTION	0.00	0.06	0.10	0.13	0.14	0.13	0.10	0.06	0.00
	T.O.H. ELEV.	519.32	519.17	519.07	518.94	518.79	518.63	518.46	518.25	518.01
GIRDER 12	STATION	1018+26.76	1018+47.01	1018+67.26	1018+87.51	1019+07.76	1019+28.01	1019+48.26	1019+68.51	1019+88.76
	F.D.S. ELEV.	520.06	519.83	519.72	519.54	519.38	519.22	519.10	518.90	518.73
	DEFLECTION	0.00	0.06	0.11	0.15	0.16	0.15	0.12	0.07	0.00
	T.O.H. ELEV.	519.31	519.15	519.08	518.93	518.78	518.62	518.46	518.21	517.98

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	BNM	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115690	

SCREED PLAN (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

HAM-75-3.84
PID No. 104667

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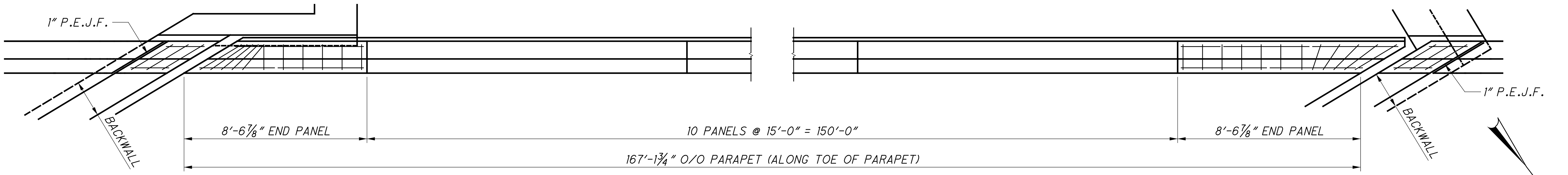
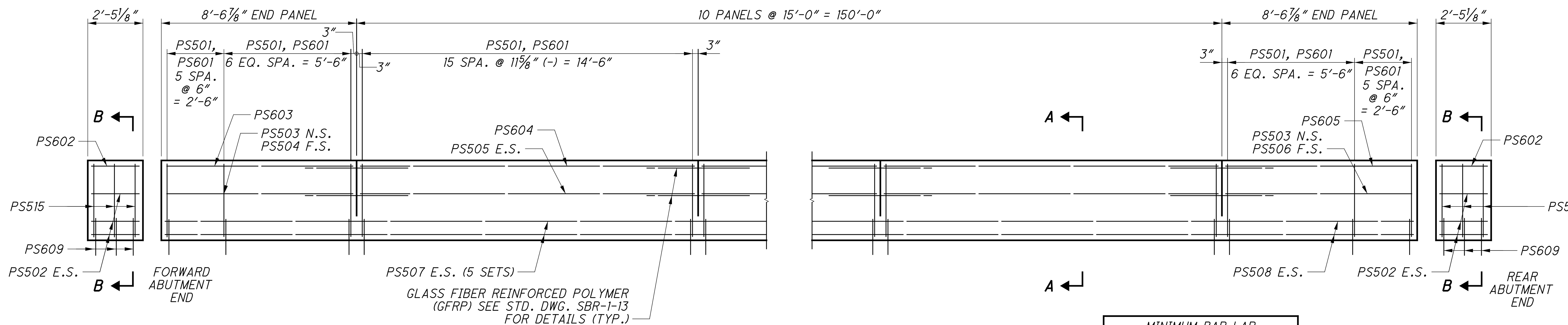


PARAPET PLAN



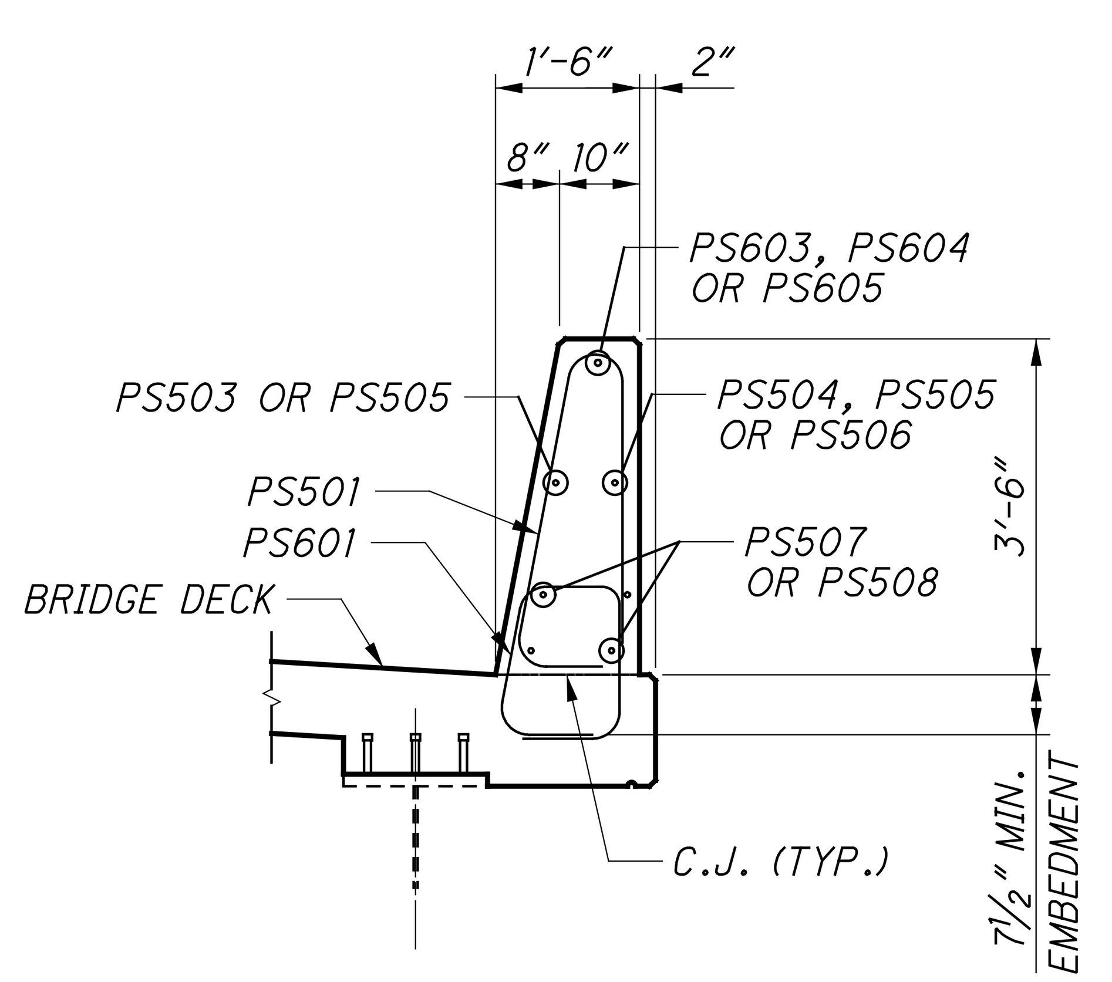
MINIMUM BAR LAP	
#5	2'-7"

PARAPET ELEVATION

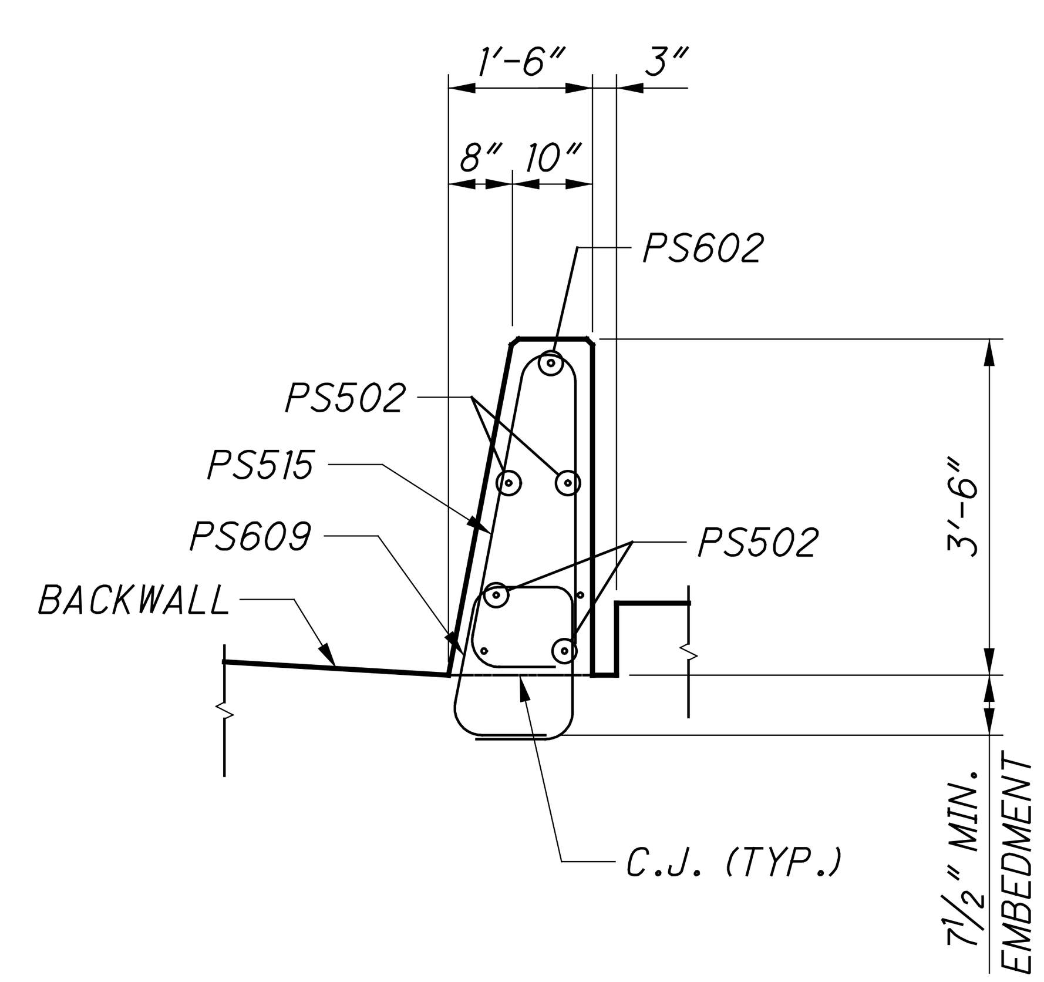
RIGHT PARAPET SHOWN (ALONG TOE OF PARAPET)

NOTES:

1. SEE STANDARD BRIDGE DRAWING SBR-1-13 FOR ADDITIONAL DETAILS.



SECTION A-A



SECTION B-B

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	CHECKED	DRAWN	REVISED	REVIEWED	DATE	STRUCTURE FILE NUMBER
SJF	CLB	DSH		MDS	11/13/18	3115690

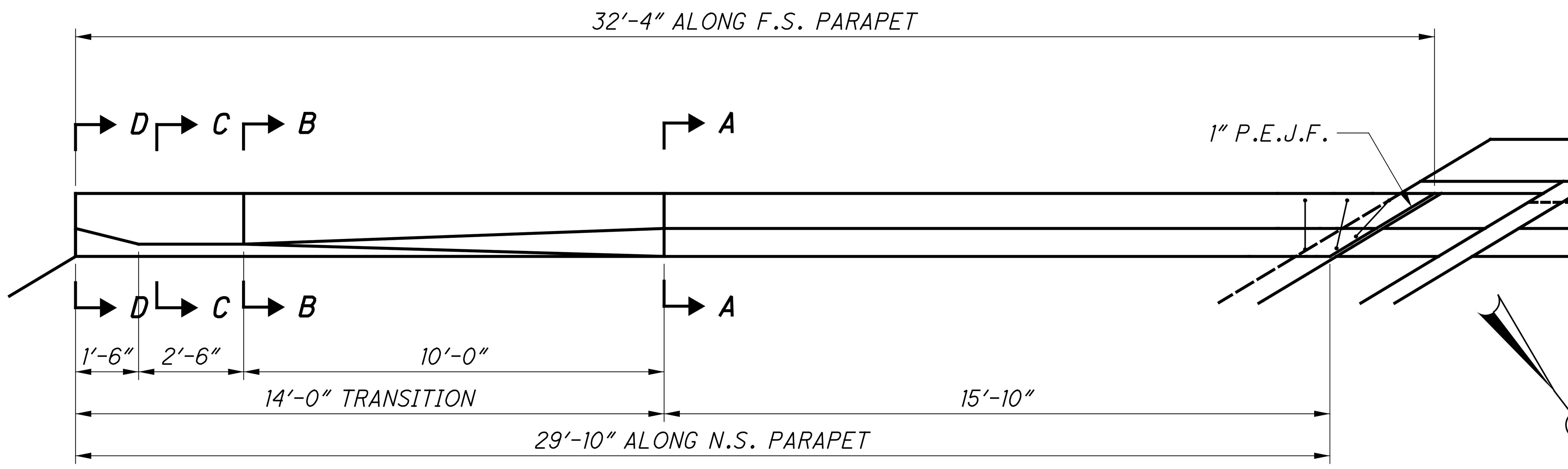
PARAPET DETAILS (RIGHT BRIDGE)

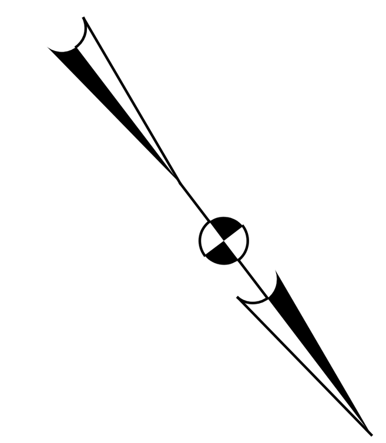
BRIDGE NO. HAM-74-1892 L/R OVER ELMORE STREET

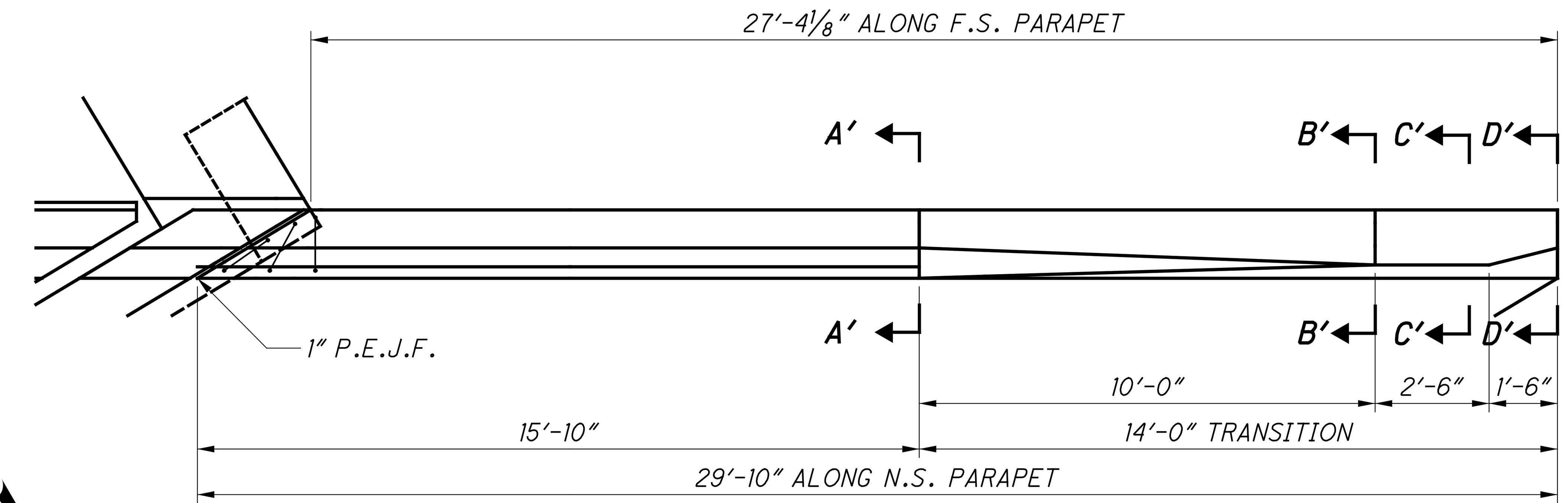
HAM-75-3.84

PID No. 104667

26/38

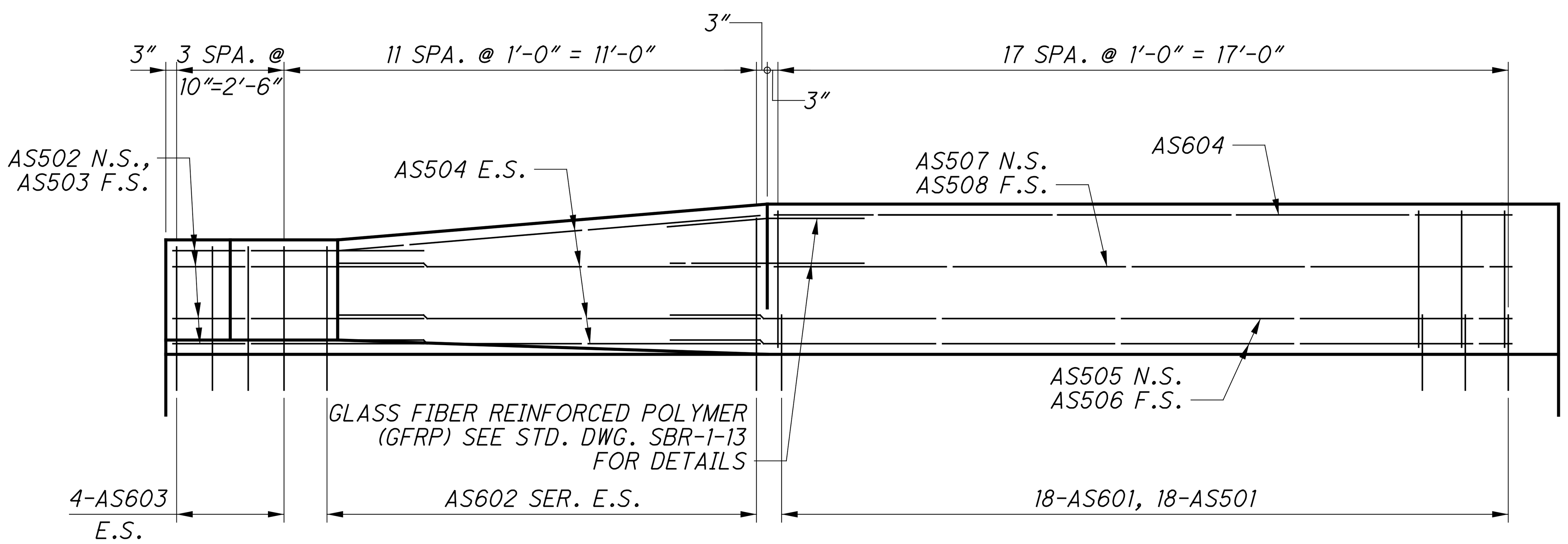


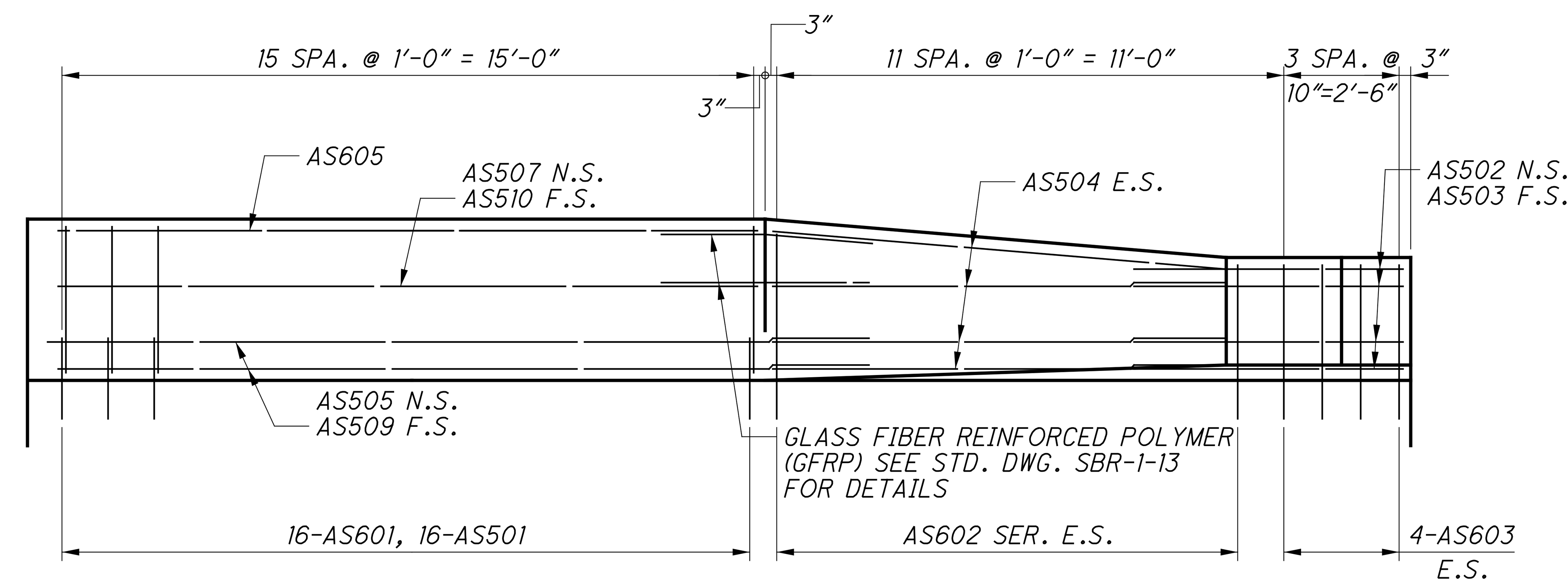




PARAPET PLAN
AT WEST WINGWALL FORWARD ABUTMENT

PARAPET PLAN
AT WEST WINGWALL REAR ABUTMENT





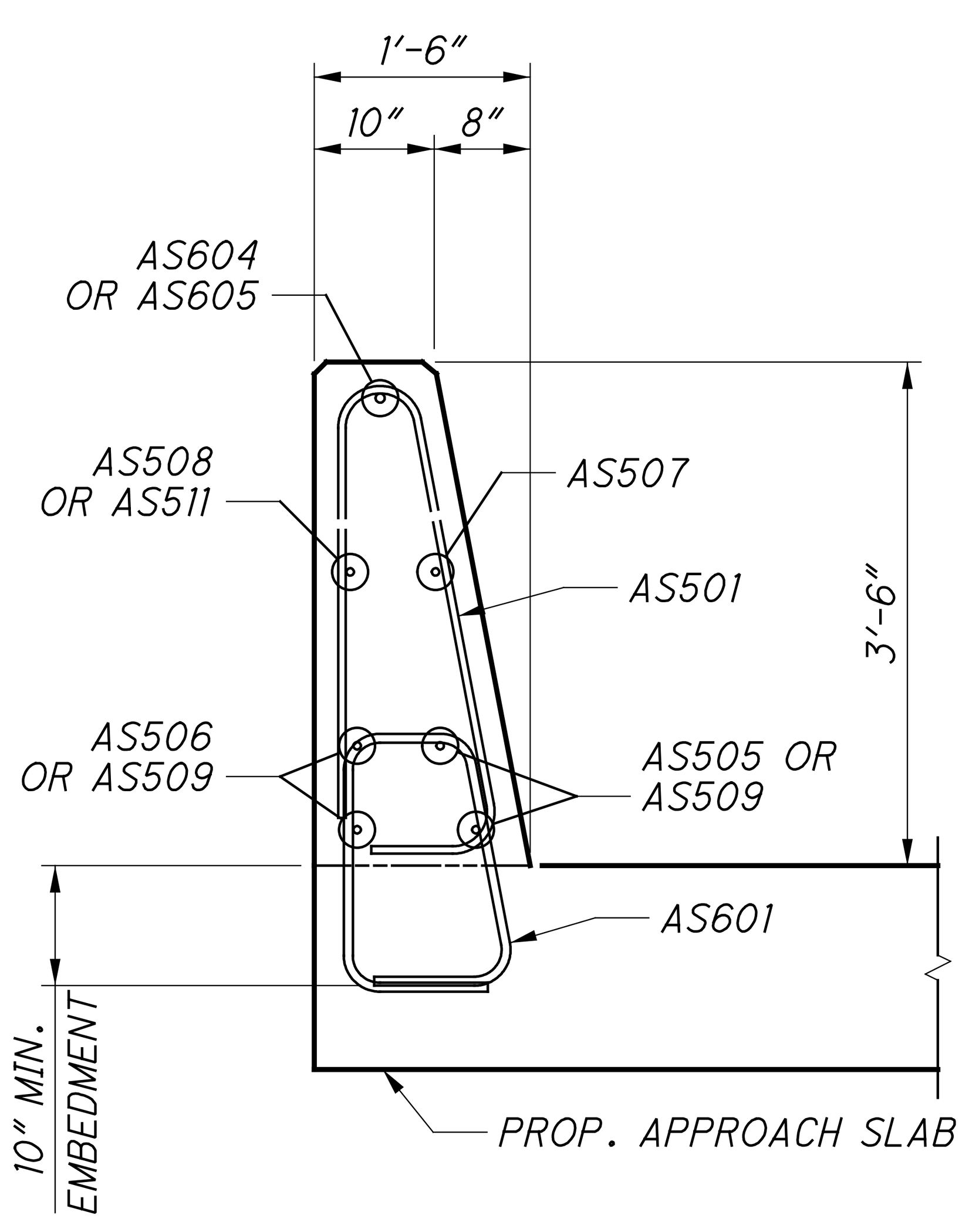
PARAPET ELEVATION
AT WEST WINGWALL FORWARD ABUTMENT

MINIMUM BAR LAP	
#5	2'-7"

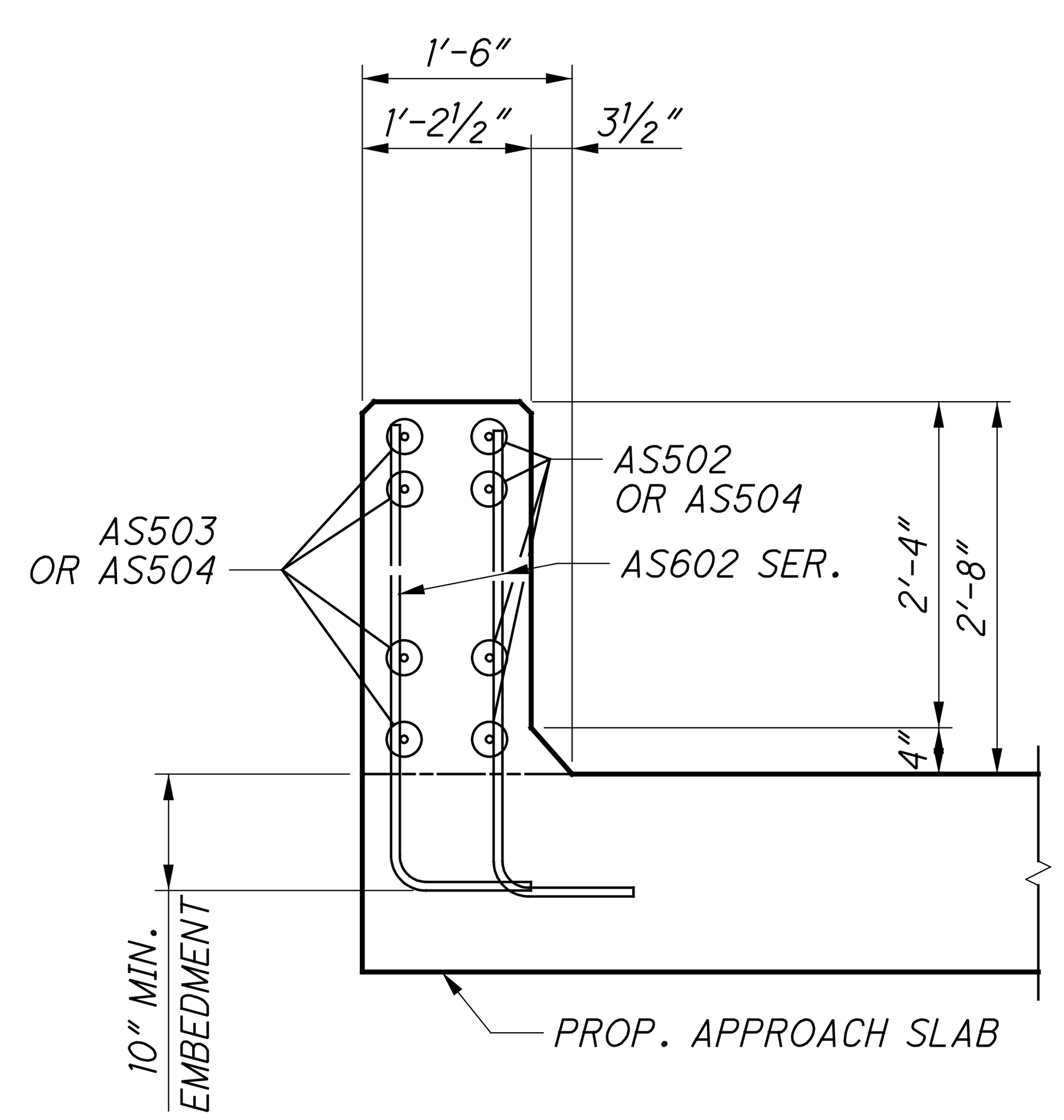
PARAPET ELEVATION
AT WEST WINGWALL REAR ABUTMENT

NOTES:

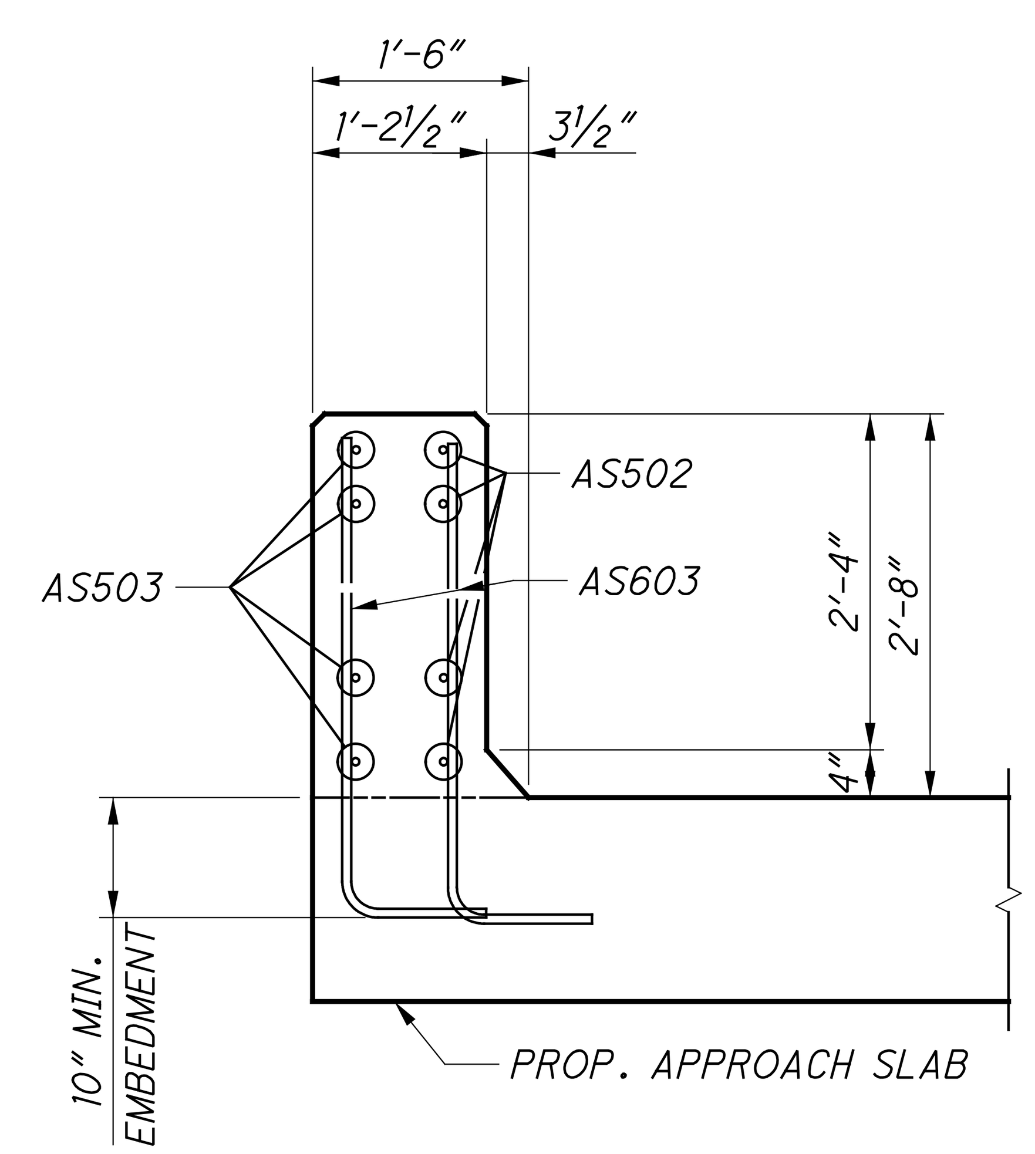
1. SEE STANDARD BRIDGE DRAWING SBR-1-13 FOR ADDITIONAL DETAILS.



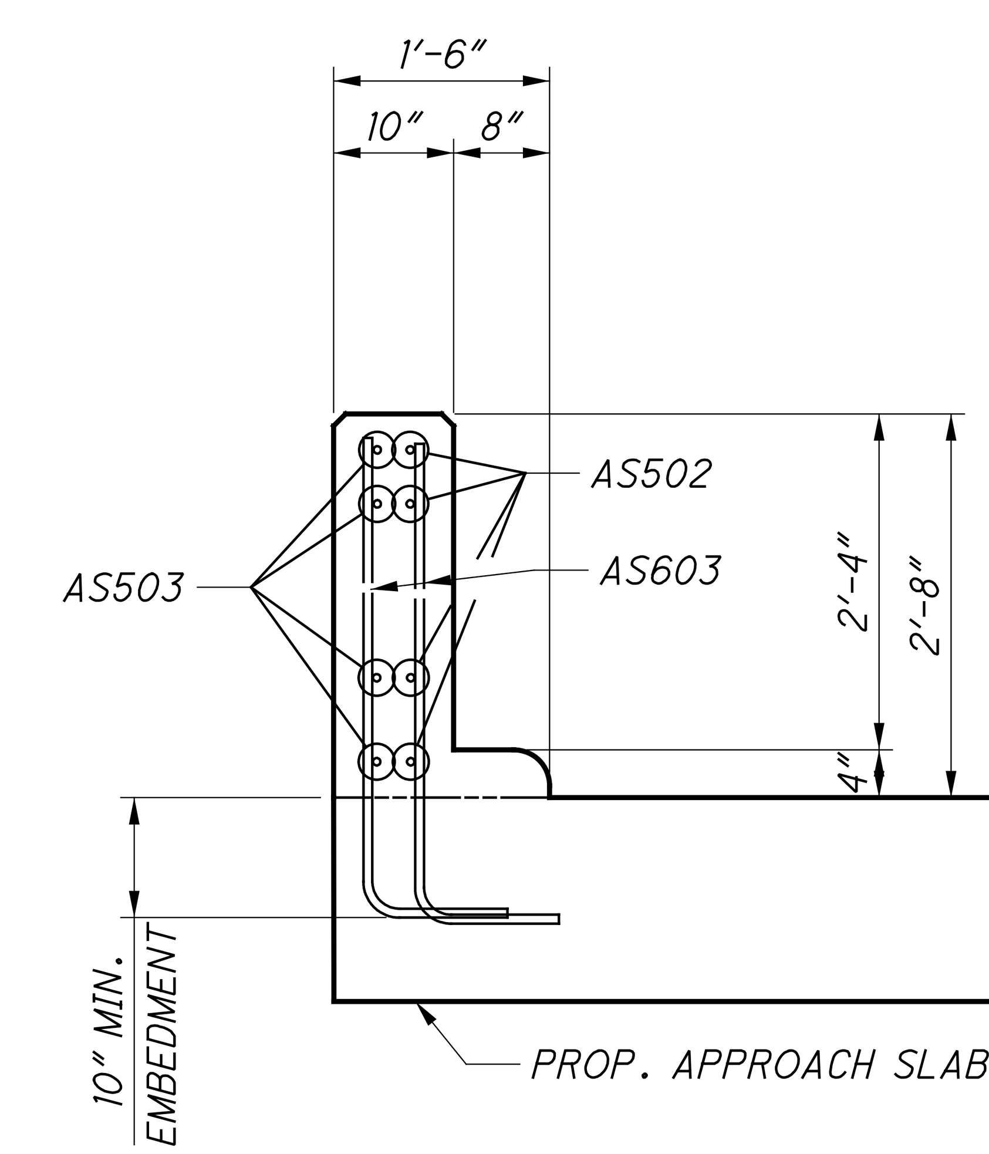
SECTION A-A
SECTION A'-A' SIMILAR



SECTION B-B
SECTION B'-B' SIMILAR



SECTION C-C
SECTION C'-C' SIMILAR



SECTION D-D
SECTION D'-D' SIMILAR

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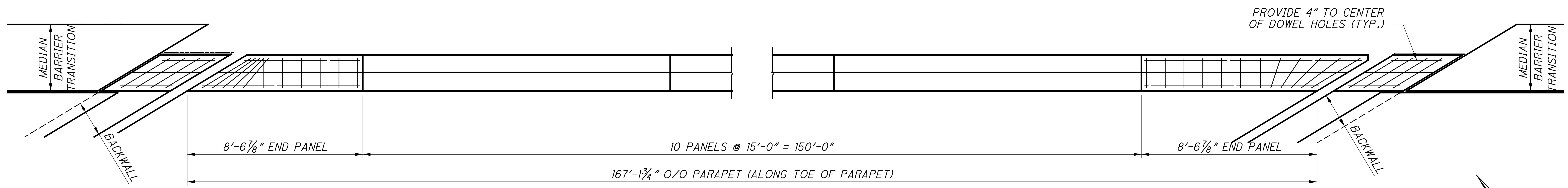
DESIGN AGENCY
STRUCTUREPOINT

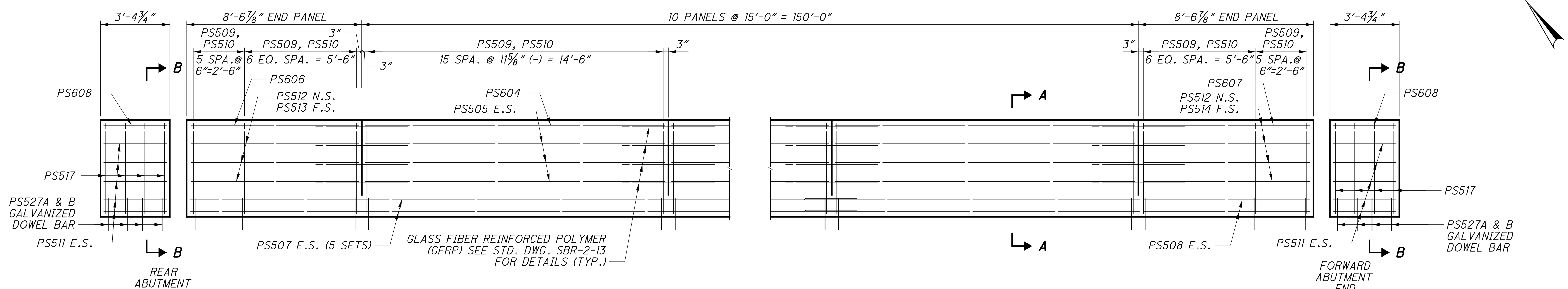
DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/13/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115690	

PARAPET DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

HAM-75-3.84
PID No. 104667

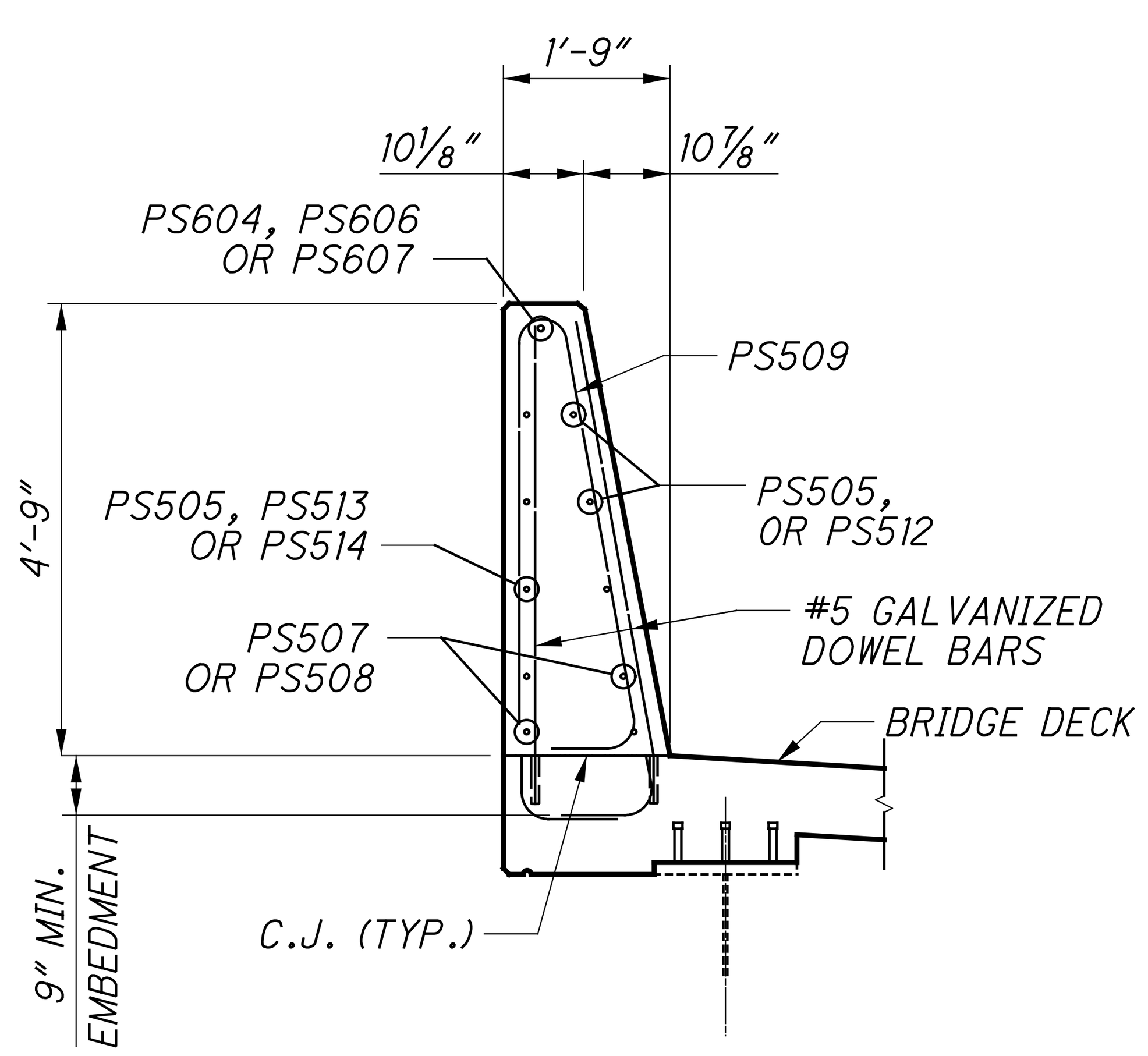


PARAPET PLAN

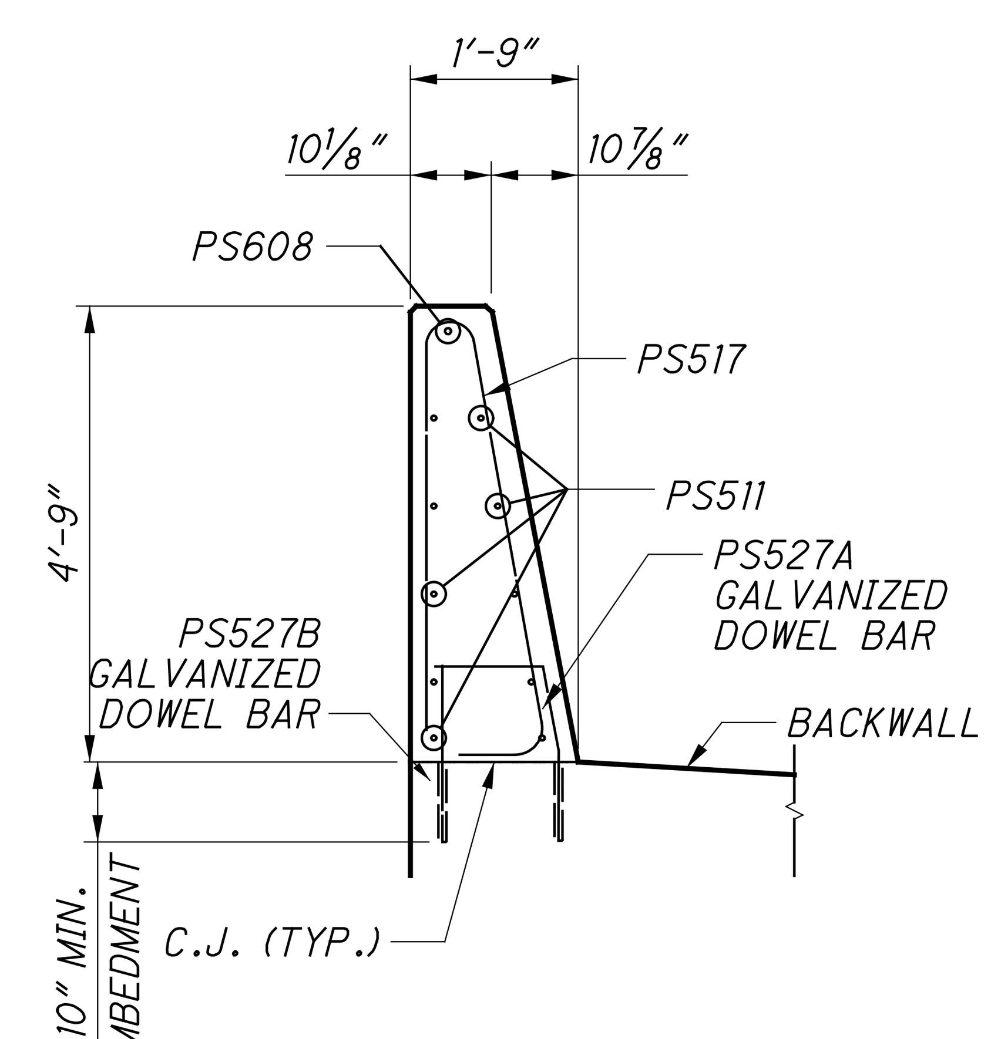


PARAPET ELEVATION

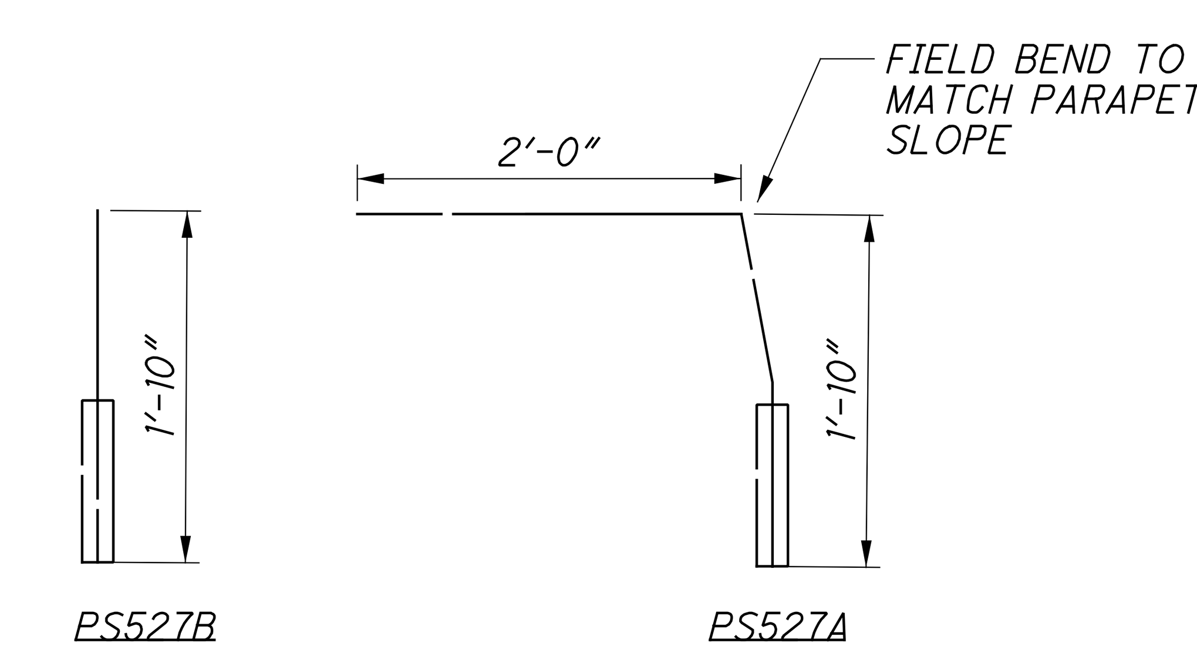
LEFT PARAPET SHOWN (ALONG TOE OF PARAPET)



SECTION A-A



SECTION B-B



MINIMUM BAR LAP	
#5	2'-7"

NOTES:

1. SEE STANDARD BRIDGE DRAWING SBR-2-13 FOR ADDITIONAL DETAILS.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/13/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115690	

PARAPET DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

HAM-75-3.84
PID No. 104667

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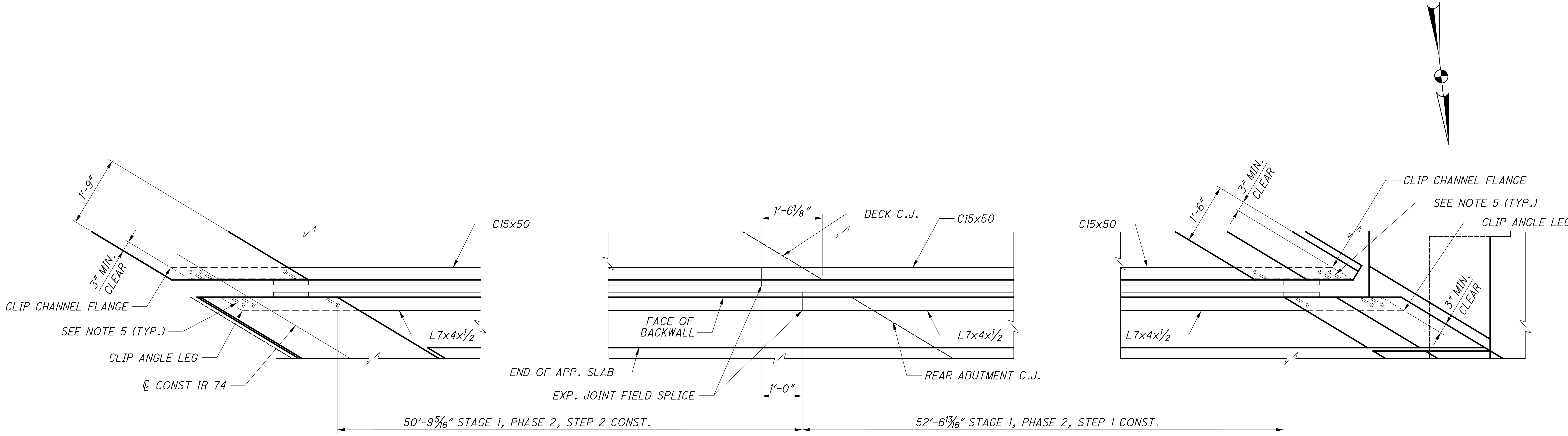

PARTIAL PLAN - REAR ABUTMENT
PARAPET JOINT DETAILS

NOTES:

1. SEE STD. DWG. EXJ-4-87 FOR ADDITIONAL DETAILS.
2. ALL CHANNELS, ANGLES AND PLATES SHALL BE ASTM A709 GRADE 50.
3. COAT ALL STEEL PARTS OF THE JOINT ASSEMBLY ACCORDING TO 516.
4. FOR ADDITIONAL STRIP SEAL DETAILS, SEE SHEET 31/38.
5. SHEAR STUDS SHALL BE WELDED AT AN ANGLE TO MAINTAIN CLEARANCE IN PARAPET.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED SJF | CHECKED CLB | DRAWN DSH | REVISED | REVIEWED MDS | DATE 11/13/18 | STRUCTURE FILE NUMBER 3115690

EXPANSION JOINT DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

HAM-75-3.84
PID No. 104667

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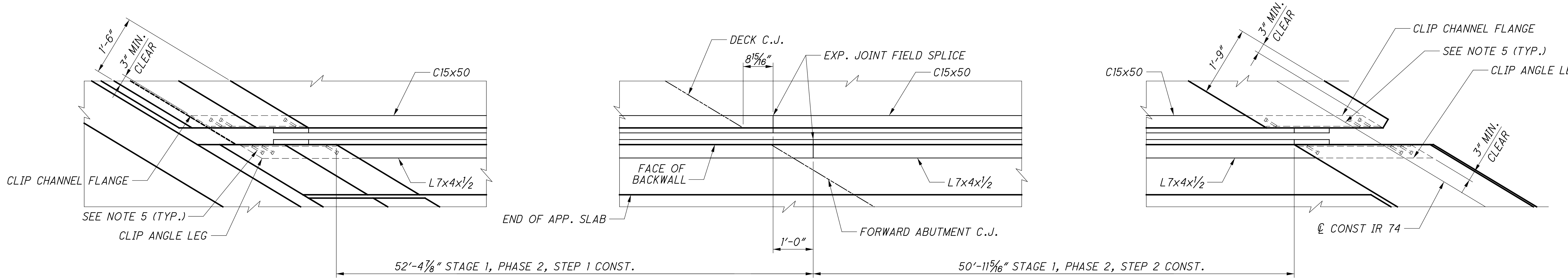


PARTIAL PLAN - FORWARD ABUTMENT PARAPET JOINT DETAILS

NOTES:

1. SEE STD. DWG. EXJ-4-87 FOR ADDITIONAL DETAILS.
2. ALL CHANNELS, ANGLES AND PLATES SHALL BE ASTM A709 GRADE 50.
3. COAT ALL STEEL PARTS OF THE JOINT ASSEMBLY ACCORDING TO 516.
4. FOR ADDITIONAL STRIP SEAL DETAILS, SEE SHEET 31/38.
5. SHEAR STUDS SHALL BE WELDED AT AN ANGLE TO MAINTAIN CLEARANCE IN PARAPET.

DESIGN AGENCY: STRUCTUREPOINT

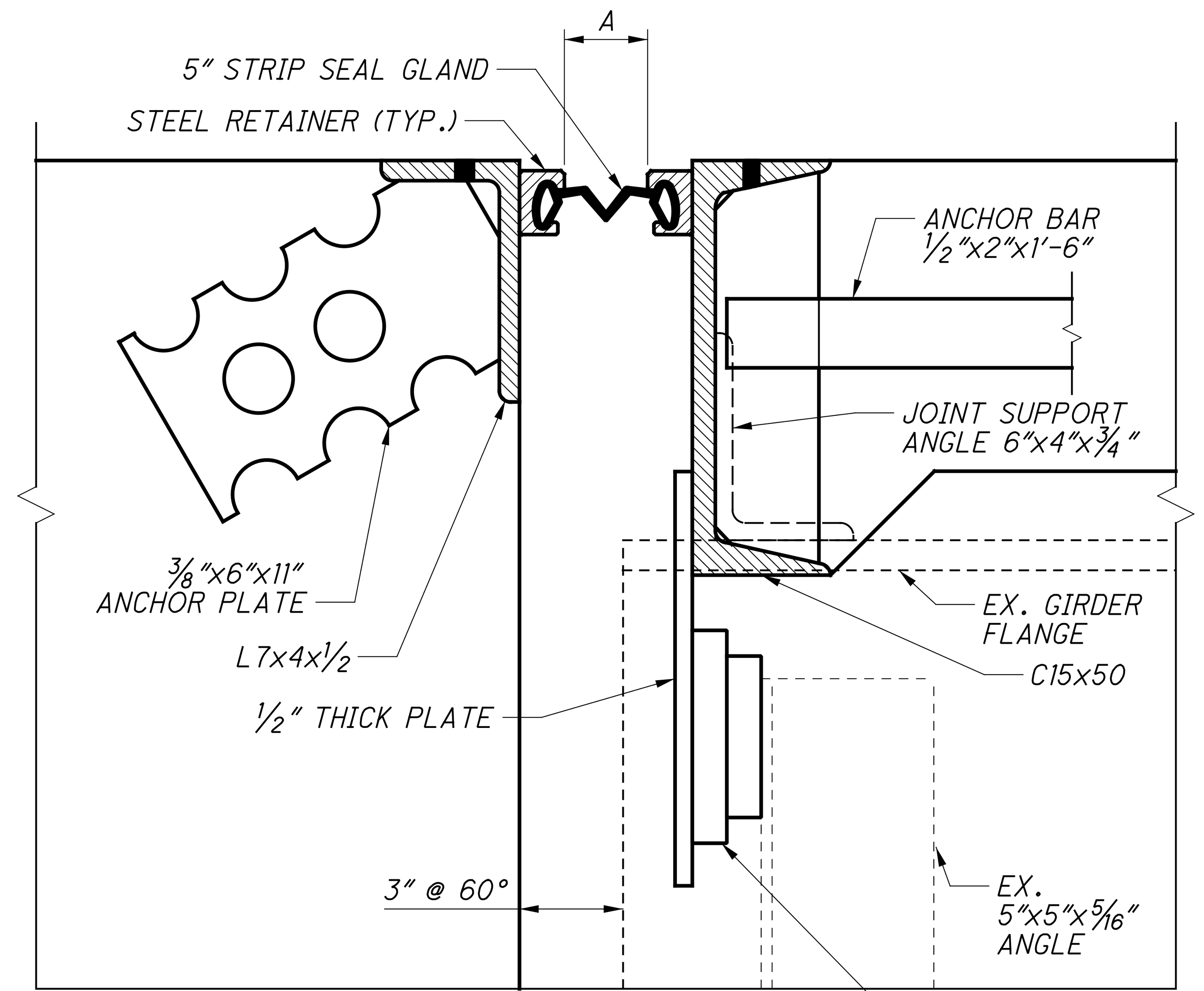
DESIGNED	CHECKED	DRAWN	REVISED	REVIEWED	DATE
SJF	CLB	DSH		MDS	11/13/18

STRUCTURE FILE NUMBER 3115690

EXPANSION JOINT DETAILS (RIGHT BRIDGE)

BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

HAM-75-3.84
PID No. 104667



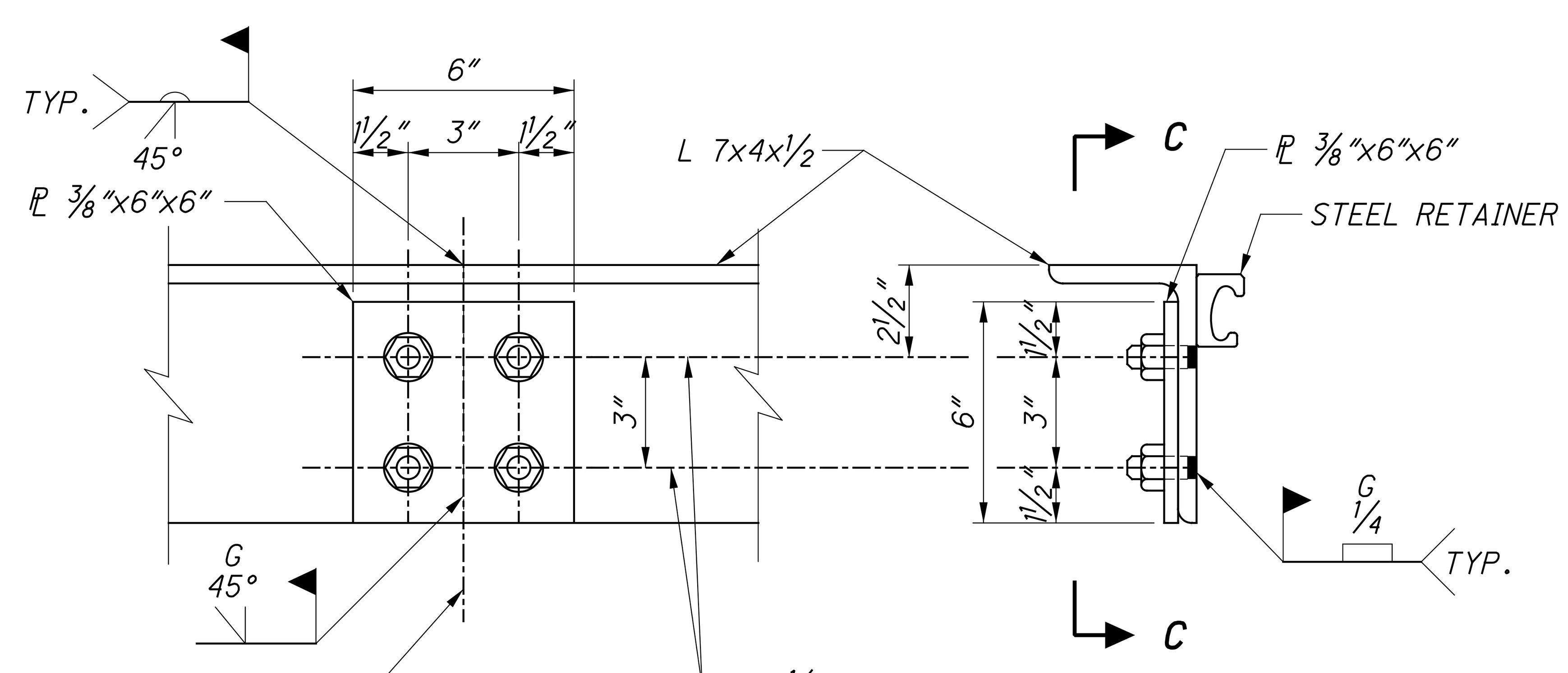
EXPANSION JOINT SECTION

REAR 4″ STRIP SEAL DETAIL

AMBIENT TEMP.	DIMENSION "A" (IN.)
30°	2 7/8″
40°	2 3/4″
50°	2 11/16″
60°	2 5/8″
70°	2 1/2″
80°	2 7/16″
90°	2 5/16″

FWD 4″ STRIP SEAL DETAIL

AMBIENT TEMP.	DIMENSION "A" (IN.)
30°	2 11/16″
40°	2 11/16″
50°	2 5/8″
60°	2 5/8″
70°	2 9/16″
80°	2 9/16″
90°	2 1/2″



END OF BACKWALL ANGLE
FIELD SPLICE DETAILS

(FOR ADDITIONAL DETAILS, SEE STD. DWG. EXJ-4-87)

NOTES:

1. FOR ADDITIONAL STRIP SEAL JOINT DETAILS AND NOTES, SEE STANDARD DWG. EXJ-4-87.

DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115690	

EXPANSION JOINT DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1982 L/R
OVER ELMORE STREET

HAM-75-3.84
PID No. 104667

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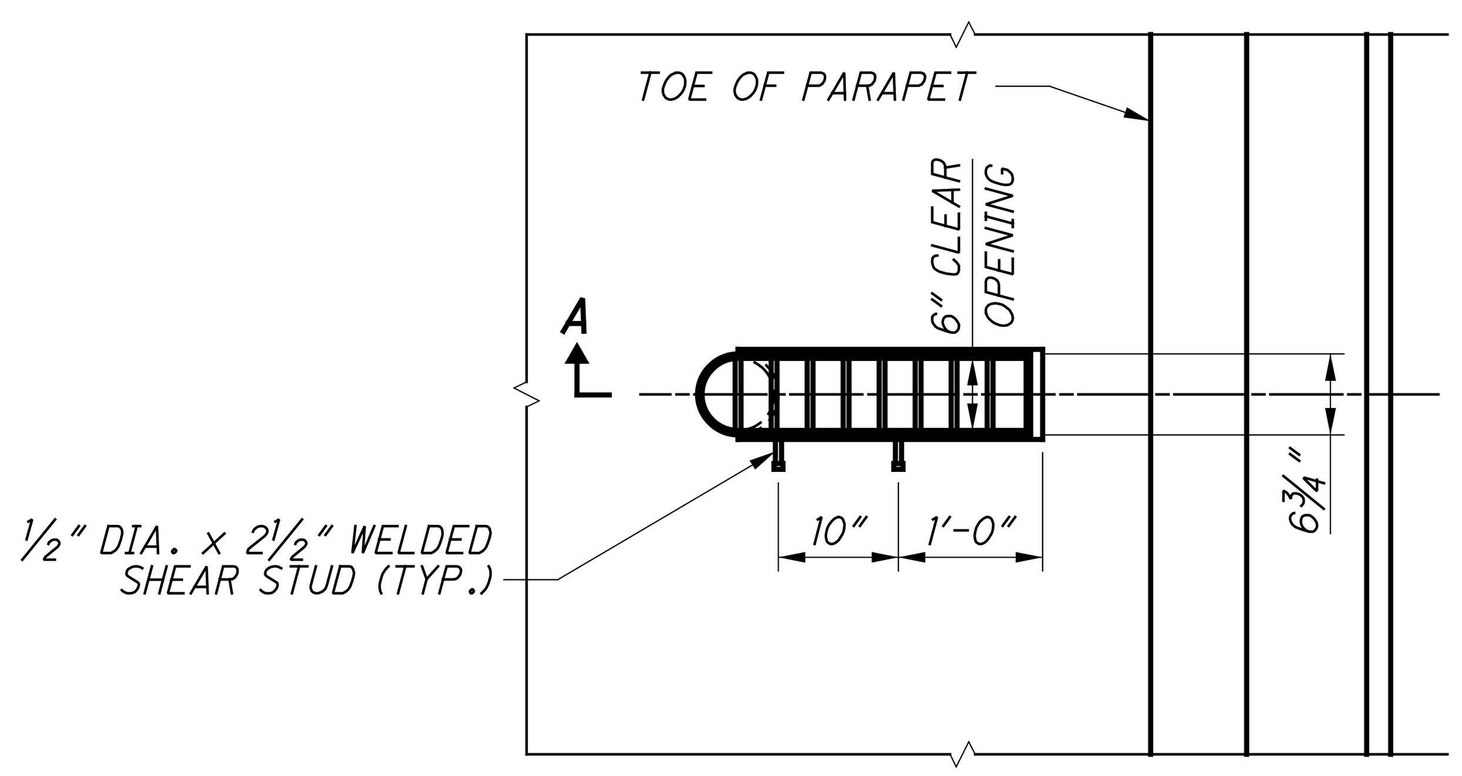
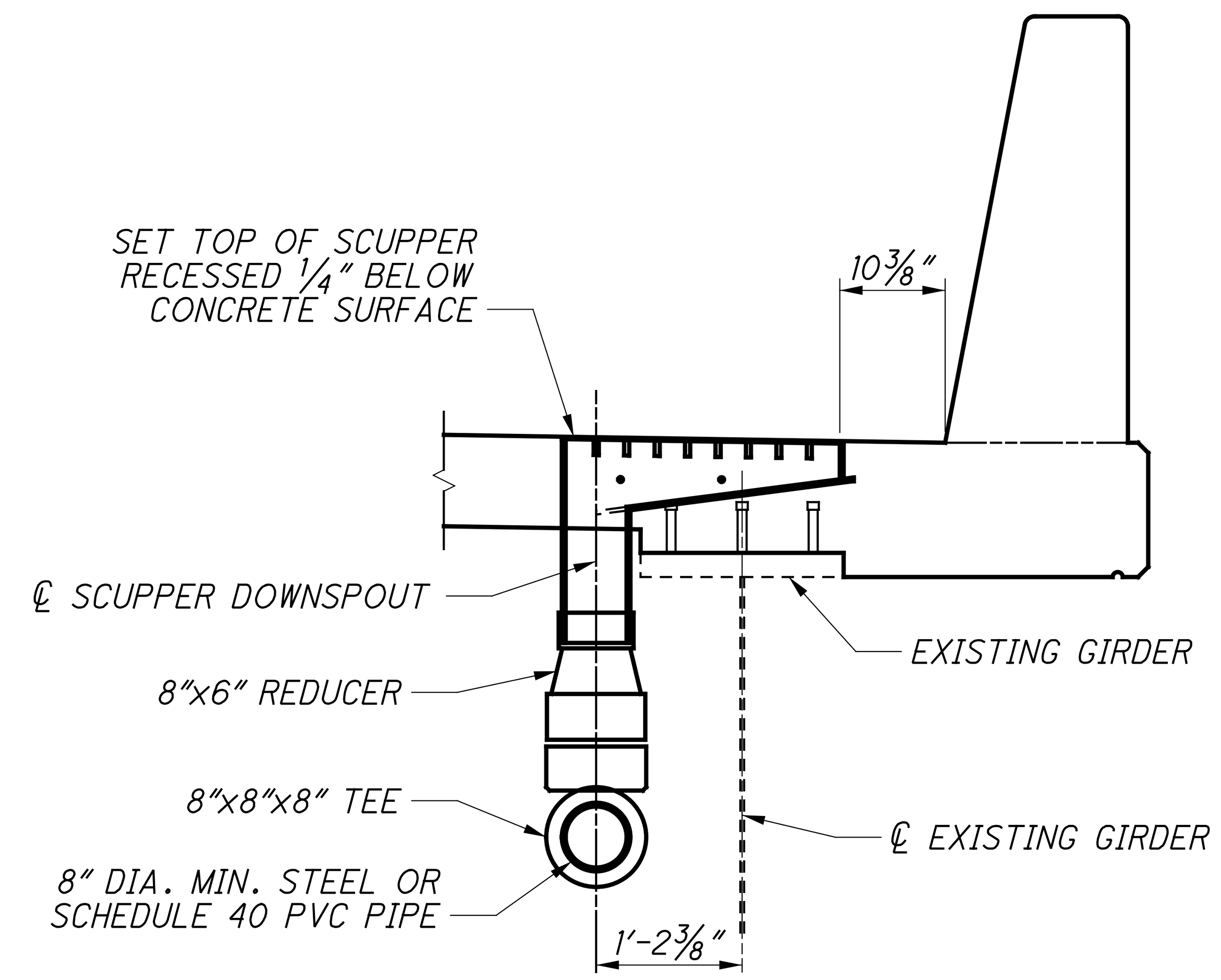
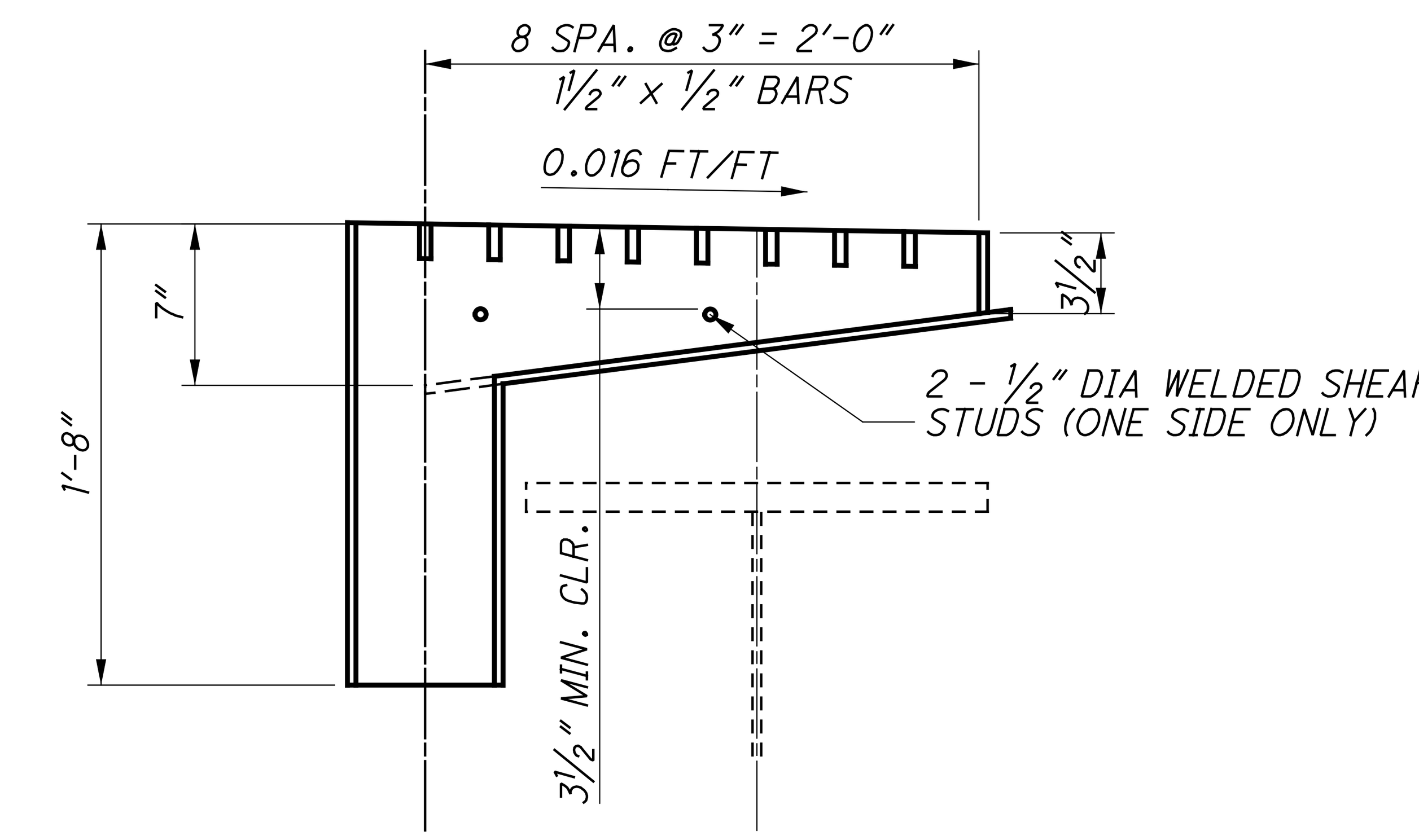


PLAN



TYPICAL SECTION



SECTION A-A

SCUPPER DETAILS

NOTES:

1. FABRICATE SCUPPERS FROM MIN. ⅜" THICK STEEL PLATE; ASTM A36 OR EQUAL.

2. ALL COMPONENTS (ANCHORS, PIPE HANGERS, PIPE SUPPORT STRAPS, COUPLERS, ETC.) SHALL BE GALVANIZED.

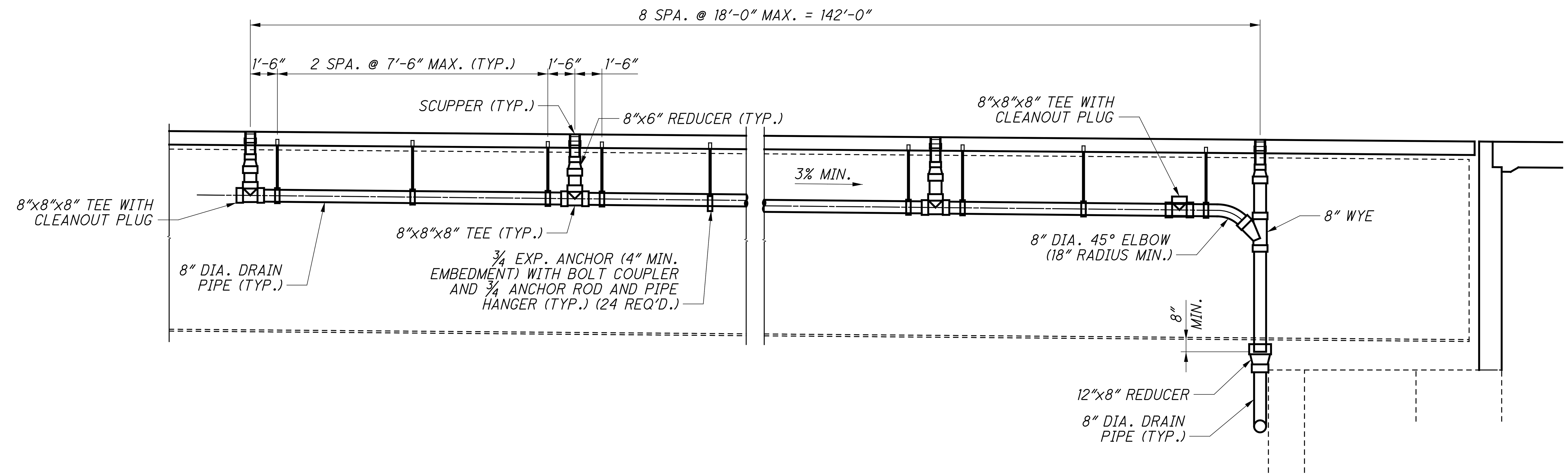
3. ALL BOLTS SHALL BE A325, TYPE 1 GALVANIZED. EACH ASSEMBLY SHALL INCLUDE BOLT, NUT, AND TWO WASHERS. TIGHTEN ACCORDING TO CMS 513.

DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115690	

DRAINAGE DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

HAM-75-3.84
PID No. 104667



ELEVATION - CLOSED DRAINAGE SYSTEM - OUTSIDE SHOULDER

NOTES:

1. SEE SHEET 32/38 FOR NOTES.
2. PIPE HANGERS SHALL BE EATON B-LINE SERIES B3110-B OR APPROVED EQUAL AND SHALL BE GALVANIZED.

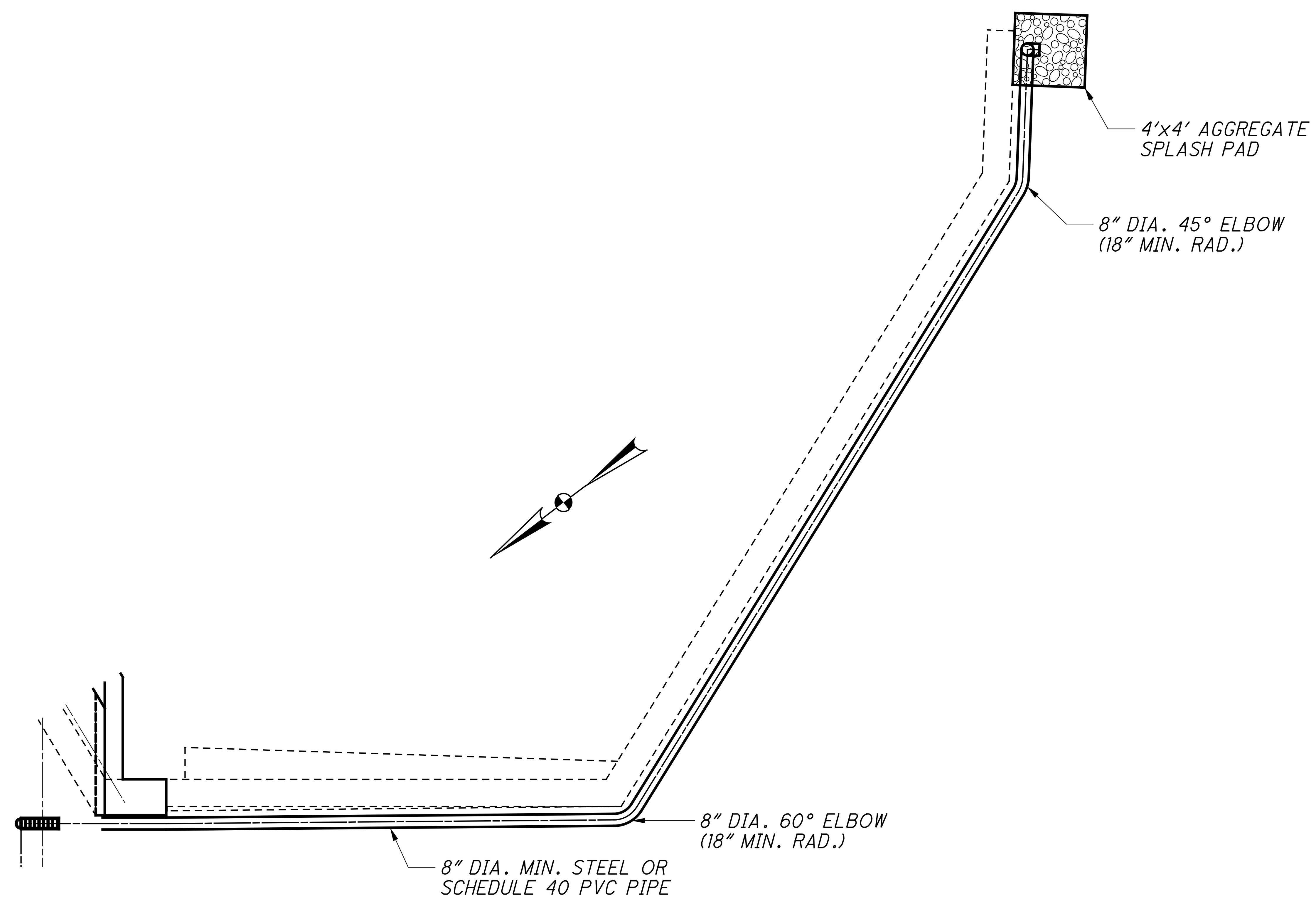
DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/12/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115690	

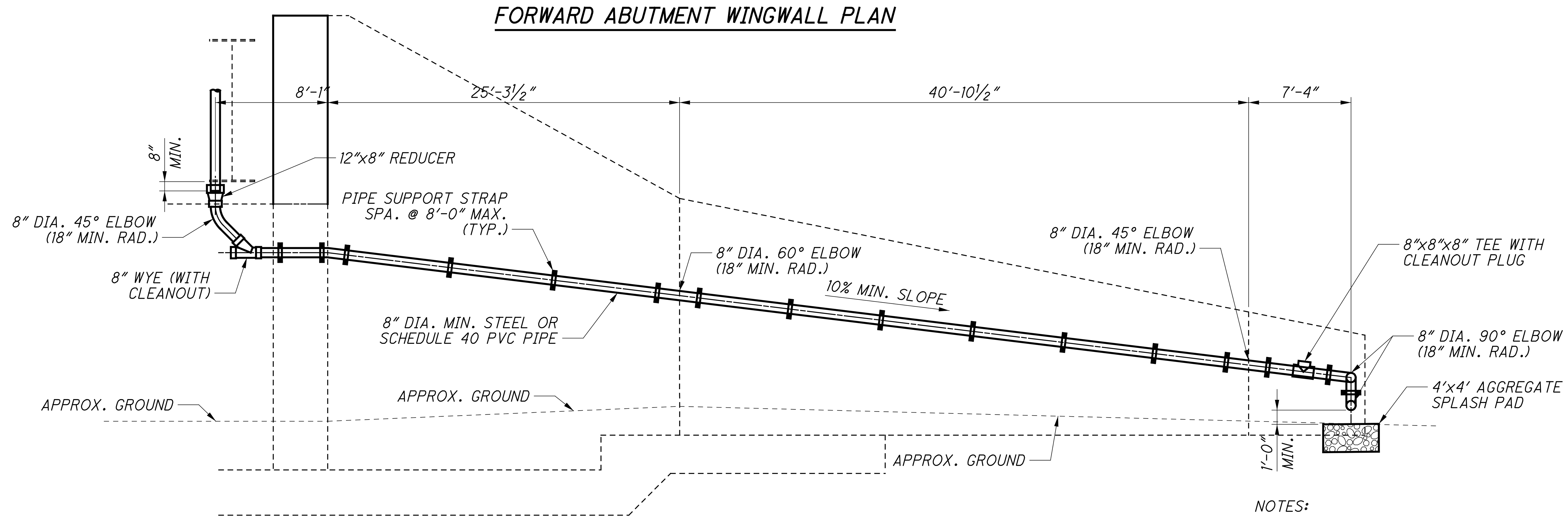
DRAINAGE DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

HAM-75-3.84
PID No. 104667

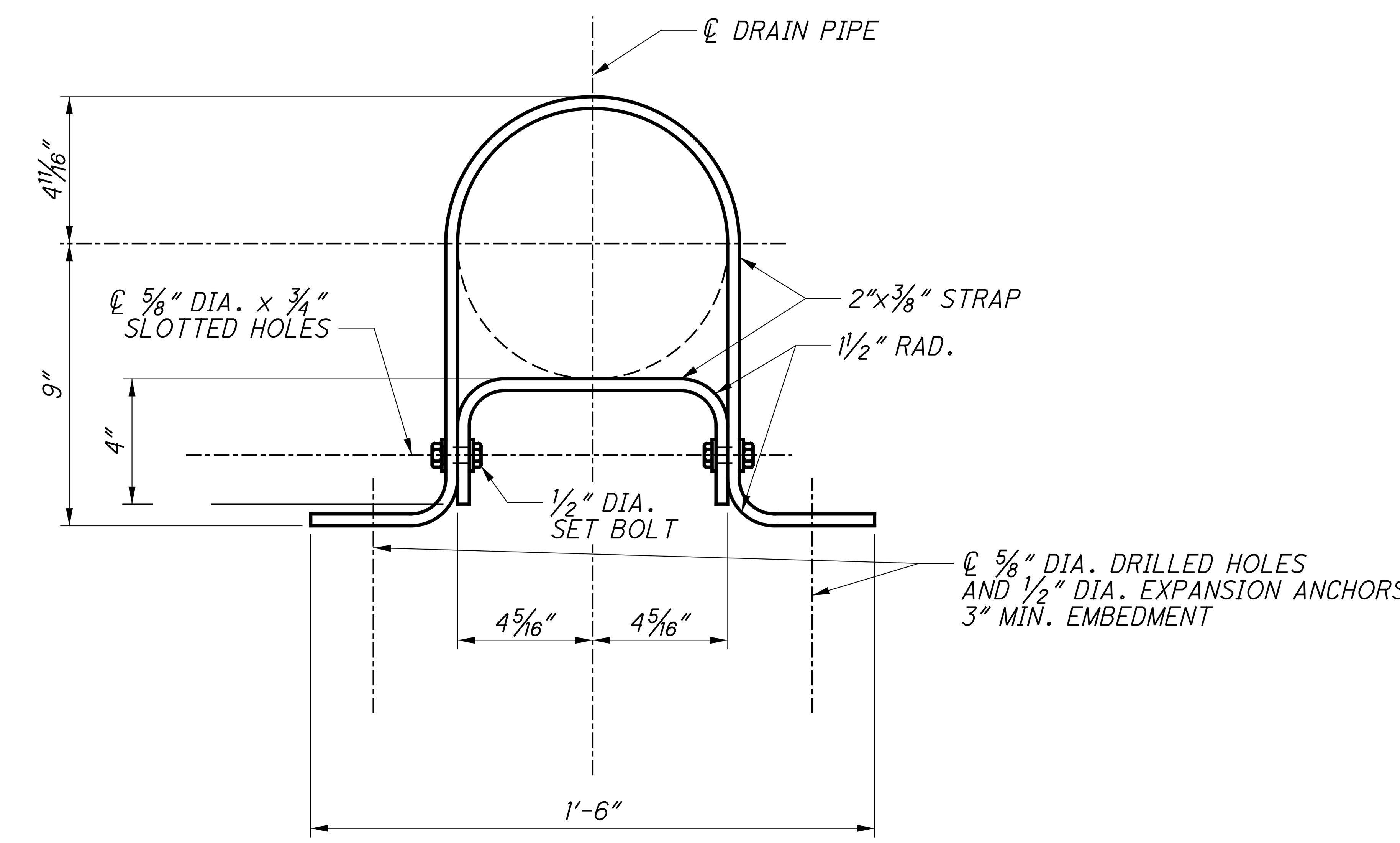
33/38



FORWARD ABUTMENT WINGWALL PLAN



FORWARD ABUTMENT WINGWALL ELEVATION



PIPE SUPPORT STRAP DETAILS

(ALL DIMENSIONS BASED ON PVC PIPE)

NOTES:

1. SEE SHEET 32/38 FOR NOTES.

DESIGNED SJF | DRAWN DSH | REVIEWED MDS | DATE 11/12/18
CHECKED CLB | REVISED | STRUCTURE FILE NUMBER 3115690

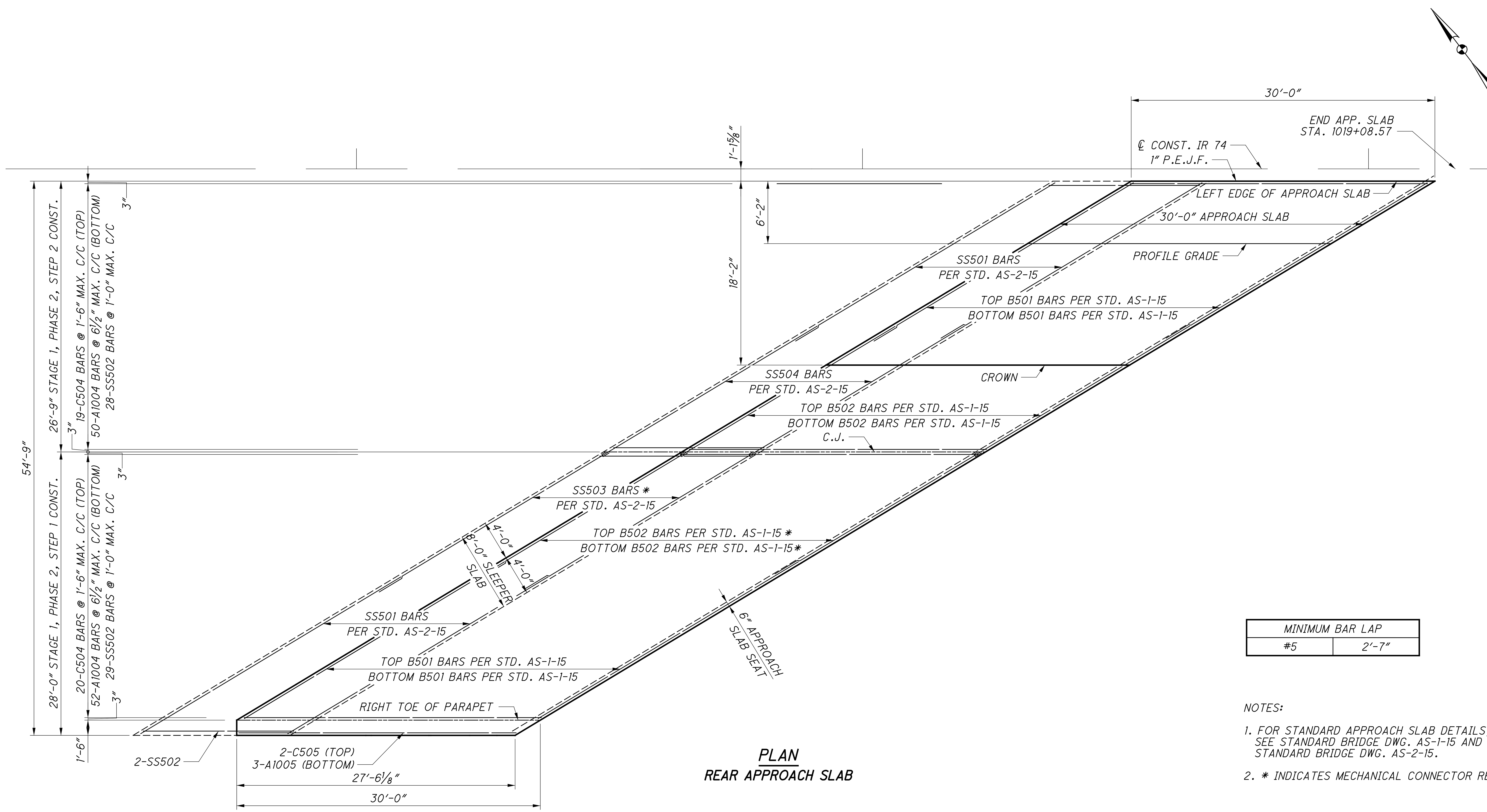
DESIGN AGENCY: STRUCTUREPOINT

DRAINAGE DETAILS (RIGHT BRIDGE)

BRIDGE NO. HAM-74-1892 L/R OVER ELMORE STREET

HAM-75-3.84

PID No. 104667



PLAN
REAR APPROACH SLAB

MINIMUM BAR LAP	
#5	2'-7"

NOTES:

1. FOR STANDARD APPROACH SLAB DETAILS, SEE STANDARD BRIDGE DWG. AS-1-15 AND STANDARD BRIDGE DWG. AS-2-15.

2. * INDICATES MECHANICAL CONNECTOR REQUIRED.

APPROACH SLAB ELEVATIONS

APPROACH LINE	DESCRIPTION	BEGIN REAR SLEEPER SLAB	BEGIN REAR APPROACH SLAB	END REAR SLEEPER SLAB	END REAR APPROACH SLAB	STRUCTURE LIMITS	BEGIN FWD. APPROACH SLAB	BEGIN FWD. SLEEPER SLAB	END FWD. APPROACH SLAB	END FWD. SLEEPER SLAB
LT. EDGE APP. SLAB	STATION	1018+68.94	1018+76.69	1018+84.44	1019+06.69		1020+80.32	1021+02.57	1021+10.32	1021+18.07
	OFFSET	1.13	1.13	1.13	1.13		1.13	1.13	1.13	1.13
	ELEVATION	518.51	519.87	518.39	519.63		518.24	516.64	518.00	516.52
PGL	STATION	1018+58.70	1018+66.45	1018+74.20	1018+96.45		1020+70.08	1020+92.33	1021+00.08	1021+07.83
	OFFSET	7.30	7.30	7.30	7.30		7.30	7.30	7.30	7.30
	ELEVATION	518.69	520.05	518.57	519.81		518.42	516.82	518.18	516.70
CROWN	STATION	1018+38.79	1018+46.54	1018+54.29	1018+76.54		1020+50.17	1020+72.42	1020+80.17	1020+87.92
	OFFSET	19.30	19.30	19.30	19.30		19.30	19.30	19.30	19.30
	ELEVATION	519.05	520.40	518.92	520.16		518.77	517.18	518.53	517.05
C.J.	STATION	1018+24.41	1018+32.16	1018+39.91	1018+62.16		1020+35.79	1020+58.04	1020+65.79	1020+73.54
	OFFSET	27.97	27.97	27.97	27.97		27.97	27.97	27.97	27.97
	ELEVATION	519.02	520.38	518.90	520.14		518.75	517.15	518.51	517.03
RT. TOE OF PARAPET	STATION	1017+80.42	1017+88.17	1017+95.92	1018+18.17		1019+91.80	1020+14.05	1020+21.80	1020+29.55
	OFFSET	54.47	54.47	54.47	54.47		54.47	54.47	54.47	54.47
	ELEVATION	518.95	520.30	518.83	520.06		518.67	517.08	518.43	516.96

DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/13/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115690	

REAR APPROACH SLAB DETAILS (RIGHT BRIDGE)

BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

HAM-75-3.84
PID No. 104667

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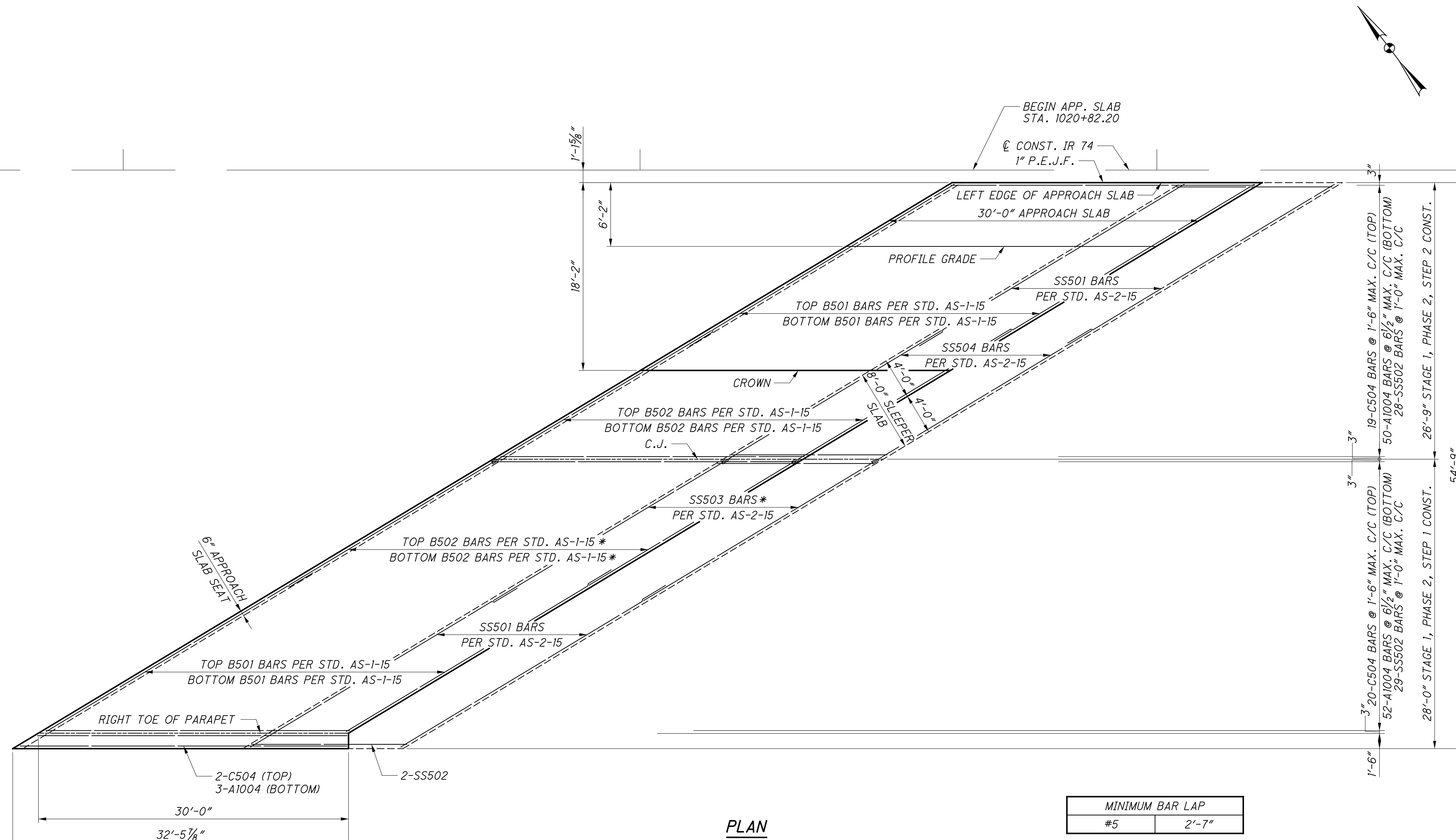


PLAN
FORWARD APPROACH SLAB

MINIMUM BAR LAP	
#5	2'-7"

NOTES:

1. FOR STANDARD APPROACH SLAB DETAILS, SEE STANDARD BRIDGE DWG. AS-1-15 AND STANDARD BRIDGE DWG. AS-2-15.

2. * INDICATES MECHANICAL CONNECTOR REQUIRED.

3. FOR APPROACH SLAB ELEVATIONS, SEE SHEET 35/38.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
SJF	DSH	MDS	11/13/18
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115690	

FORWARD APPROACH SLAB DETAILS (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

HAM-75-3.84
PID No. 104667

36/38

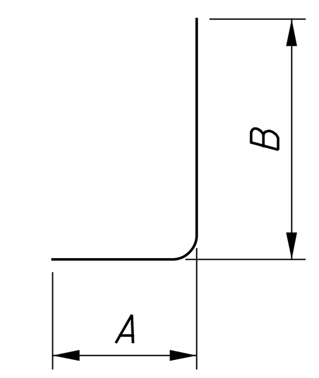
REINFORCING STEEL LIST

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS						
	REAR ABUT.	FORWARD ABUT.	TOTAL				A	B	C	D	E	R	INC
ABUTMENTS													
(1) A501	40	60	100	30'-0"	3129	STR							
A502	20		20	28'-6"	595	STR							
A503	20	20	40	29'-0"	1210	STR							
A504	14		14	7'-9"	113	2	3'-2"	1'-8"	3'-2"				
A505	7		7	10'-9"	78	2	4'-11"	1'-2"	4'-11"				
A506	14		14	5'-10"	85	1	3'-6"	2'-6"					
A507	2		2	9'-8"	20	1	4'-4"	5'-6"					
A508	2		2	10'-2"	21	1	4'-10"	5'-6"					
A509	1		1	9'-3"	10	37	4'-0"	2'-8"	1'-8"	2'-5"			
A510		9	9	2'-11"	27	2	1'-0"	1'-2"	1'-0"				
A511		9	9	8'-5"	79	2	4'-0"	0'-8"	4'-0"				
A512		8	8	8'-8"	72	19	6'-8"	1'-8 1/2"	1'-0"				
A513		10	10	9'-5"	98	19	7'-5"	1'-8 1/2"	1'-0"				
A514		3	3	8'-6"	27	STR							
A515		16	16	3'-7"	60	STR							
A516		6	6	3'-1"	19	STR							
A517		1	1	8'-8"	9	19	7'-5"	1'-1"	0'-8"				
A601	346	350	696	5'-0"	5227	STR							
A602	328	320	648	12'-5"	12085	1	1'-4"	11'-3"					
A603	164	160	324	6'-7"	3204	2	3'-0"	0'-11"	3'-0"				
A604	11	12	23	13'-3"	458	STR							
A605	6	18	24	11'-3"	406	STR							
A606	4		4	7'-4"	44	19	3'-10"	2'-6"	2'-6"				
A607	1		1	5'-2"	8	19	1'-8"	2'-6"	2'-6"				
A608	1		1	12'-8"	19	STR							
D801	75	69	144	5'-10"	2243	18	3'-8"	1'-0"	1'-0"				
				SUB-TOTAL	29,346								

(1) REQUIRES MECHANICAL CONNECTORS. (40 REQUIRED)

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS						
	REAR ABUT.	FORWARD ABUT.	TOTAL				A	B	C	D	E	R	INC
APPROACH SLABS													
B501	130	130	260	30'-0"	8135	STR							
(1) B502	130	130	260	24'-0"	6508	STR							
C504	39	41	80	29'-6"	2461	STR							
C505	2		2	27'-4"	57	STR							
SS501	16	16	32	30'-0"	1001	STR							
SS502	59	59	118	14'-9"	1815	STR							
(1) SS503	8	8	16	26'-9"	446	STR							
SS504	8	8	16	24'-0"	401	STR							
A1004	102	105	207	30'-11"	27538	16	29'-6"						
A1005	3		3	28'-9"	371	16	27'-4"						
				SUB-TOTAL	48,733								

(1) REQUIRES MECHANICAL CONNECTORS. (276 REQUIRED)



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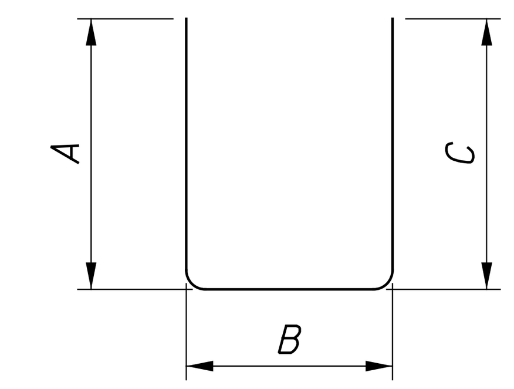

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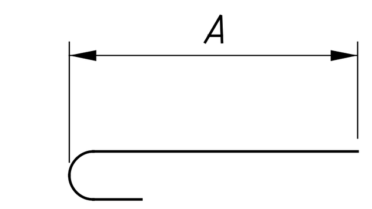

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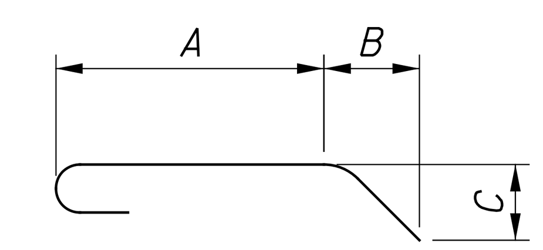

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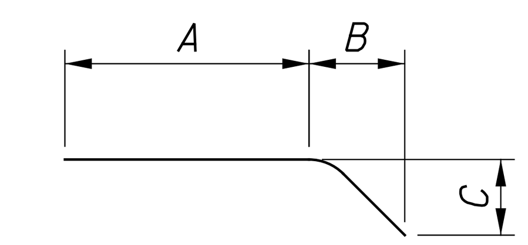

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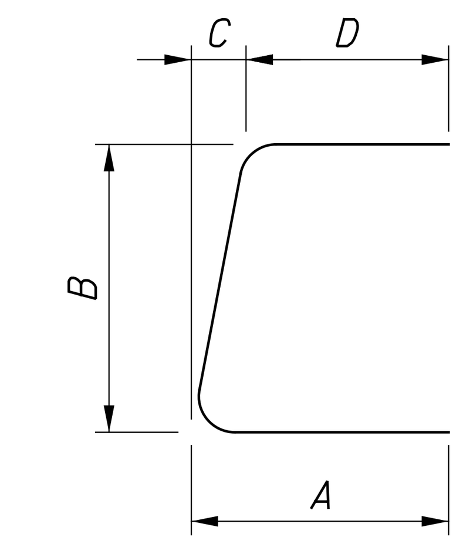


TYPE-37

NOTES:

(1) REQUIRES MECHANICAL CONNECTORS (NON-PROTRUDING TYPE)

AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING SHALL BE PROVIDED. INSTALLATION OF THE CONNECTORS SHALL CONFORM WITH RECOMMENDED MANUFACTURER'S PROCEDURES. IF A DOWEL BAR SPLICE IS FURNISHED, THE MINIMUM DOWEL BAR LENGTH TO BE INCLUDED WITH THE CONNECTOR SHALL BE GIVEN BY THE DIMENSION "L" SHOWN BELOW :
#5 REINFORCING BAR, L = 3'-6"

WHERE MECHANICAL CONNECTORS ARE REQUIRED THE REINFORCING BAR LENGTH IS MEASURED TO THE CONSTRUCTION JOINT. EXTRA BAR LENGTH AND/OR BAR PREPARATION MAY BE NECESSARY DEPENDING ON THE TYPE OF MECHANICAL CONNECTOR FURNISHED.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED SJF | CHECKED CLB | DRAWN DSH | REVISED | REVIEWED MDS | DATE 11/12/18 | STRUCTURE FILE NUMBER 3115690

REINFORCING STEEL LIST (RIGHT BRIDGE)
BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

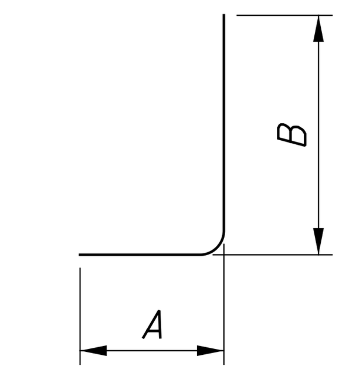
HAM-75-3.84
PID No. 104667

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	A	B	C	D	E	R	INC
PARAPETS											
PS501	190	7'-4"	1453	23	0'-11"	3'-3"	3'-0"			0'-3"	
PS502	12	2'-1"	26	STR							
PS503	2	7'-7"	16	STR							
PS504	1	5'-9"	6	STR							
PS505	80	14'-8"	1224	STR							
PS506	1	10'-1"	11	STR							
PS507	40	30'-0"	1252	STR							
PS508	8	29'-9"	248	STR							
PS509	192	9'-10"	1969	41	0'-11"	4'-3"	4'-0"			0'-3"	
PS510	192	5'-9"	1152	40	1'-1"	1'-0"	1'-7"	1'-7"			
PS511	20	3'-0"	63	STR							
PS512	6	7'-7"	47	STR							
PS513	3	5'-4"	17	STR							
PS514	3	10'-6"	33	STR							
PS515	6	7'-10"	49	44	1'-0"	3'-3"	3'-0"			0'-6 3/4"	
PS516	8	9'-6"	79	43	2'-0"	2'-3"	1'-7"	1'-7"			
PS517	8	10'-5"	87	44	1'-0"	4'-6"	4'-3"			0'-6 1/4"	
PS601	190	5'-7"	1593	40	1'-1"	1'-0"	1'-7"	1'-7"			
PS602	2	2'-1"	6	STR							
PS603	1	7'-0"	11	STR							
PS604	20	14'-8"	441	STR							
PS605	1	9'-3"	14	STR							
PS606	1	6'-9"	10	STR							
PS607	1	9'-5"	14	STR							
PS608	2	3'-0"	9	STR							
PS609	8	9'-6"	114	43	2'-0"	2'-3"	1'-7"	1'-7"			
		SUB-TOTAL	9,944								
**PS527A	8	-	-	-							
**PS527B	8	-	-	-							
PARAPETS (ON APPROACH SLAB)											
AS501	34	7'-4"	260	23	0'-11"	3'-3"	3'-0"			0'-3"	
AS502	8	5'-9"	48	25	1'-10"	2'-5"	1'-5"	0'-1 1/2"	0'-5"	0'-2 3/4"	
AS503	8	5'-8"	47	STR							
AS504	16	10'-0"	167	STR							
AS505	4	18'-5"	77	STR							
AS506	2	20'-10"	43	STR							
AS507	2	15'-0"	31	STR							
AS508	1	17'-5"	18	STR							
AS509	1	16'-0"	17	STR							
AS510	1	13'-0"	14	STR							
PS601	34	5'-7"	285	40	1'-1"	1'-0"	1'-7"	1'-7"			
	4 SR	4'-1"				3'-3"					
PS602	OF	TO	303	1	1'-0"	TO					0'-1"
	11	5'-0"				4'-2"					
PS603	16	4'-1"	98	1	1'-0"	3'-3"					
AS604	1	16'-11"	25	STR							
AS605	1	14'-5"	22	STR							
		SUB-TOTAL	1,455								

** GALVANIZED BAR, SEE SHEET 28/38 FOR DETAILS.

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	A	B	C	D	E	R	INC
SUPERSTRUCTURE											
S401	350	30'-0"	7014	STR							
S402	70	29'-5"	1376	STR							
S403	285	10'-9"	2047	16	10'-2 3/4"						
S404	308	4'-4"	892	2	2'-6"	0'-6 1/4"	1'-6"				
S405	309	5'-10"	1204	2	3'-3"	0'-6 1/4"	2'-3"				
	1 SR	2'-11"									
S501	OF	TO	1276	STR							0'-3 3/4"
	80	27'-8"									
	1 SR	3'-6"			2'-11"						
S502	OF	TO	1328	16	TO						0'-3 3/4"
	80	28'-3"			27'-8"						
(1) S503	229	27'-10"	6648	STR							
(1) S504	229	28'-5"	6787	16	27'-10"						
	2 SR	1'-0"									
(1) S505	OF	TO	2586	STR							0'-3 3/4"
	86	27'-10"									
S506	20	10'-0"	209	STR							
S507	72	3'-6"	263	STR							
S508	324	30'-0"	10138	STR							
S509	60	32'-3"	2018	STR							
(1) S510	12	28'-3"	354	STR							
S511	12	29'-1"	364	STR							
	2 SR	1'-1"									
S512	OF	TO	2662	STR							0'-3 3/4"
	87	28'-3"									
S513	228	28'-3"	6718	STR							
S514	228	28'-10"	6857	16	28'-3"						
	1 SR	3'-3"									
S515	OF	TO	1304	STR							0'-3 3/4"
	80	28'-0"									
	1 SR	3'-10"			3'-3"						
S516	OF	TO	1349	16	TO						0'-3 3/4"
	80	28'-7"			28'-0"						
S517	606	4'-2"	2634	STR							
		SUB-TOTAL	66,028								

(1) REQUIRES MECHANICAL CONNECTORS. (642 REQUIRED)



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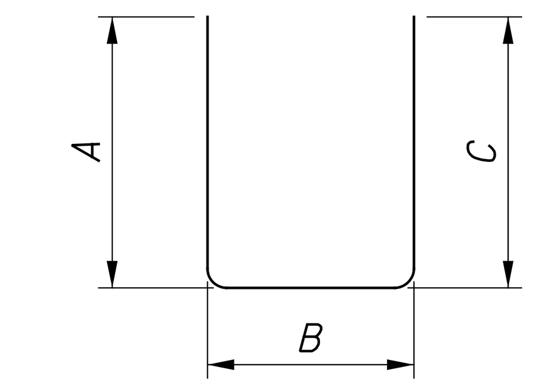

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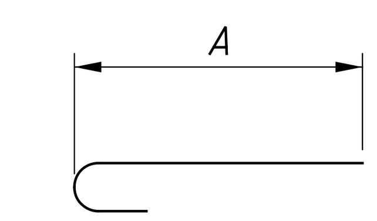

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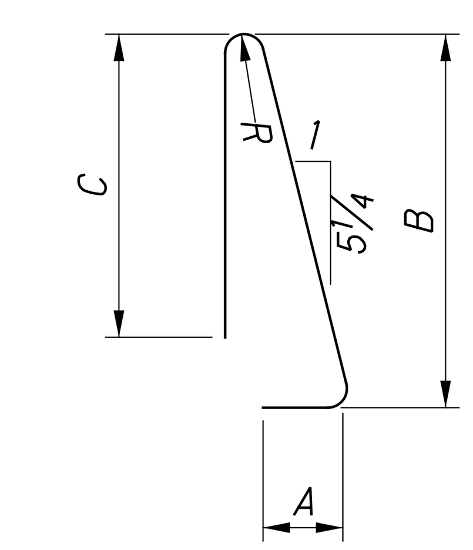

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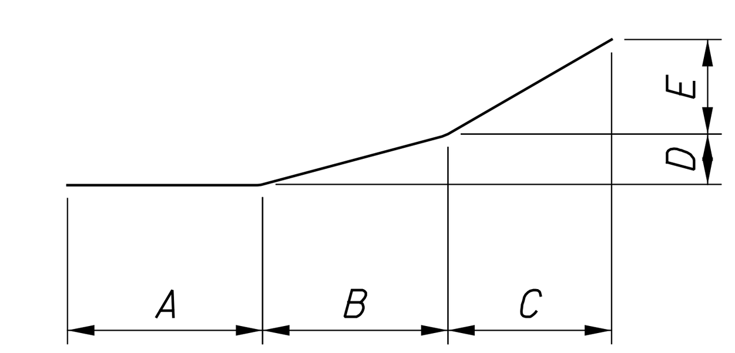

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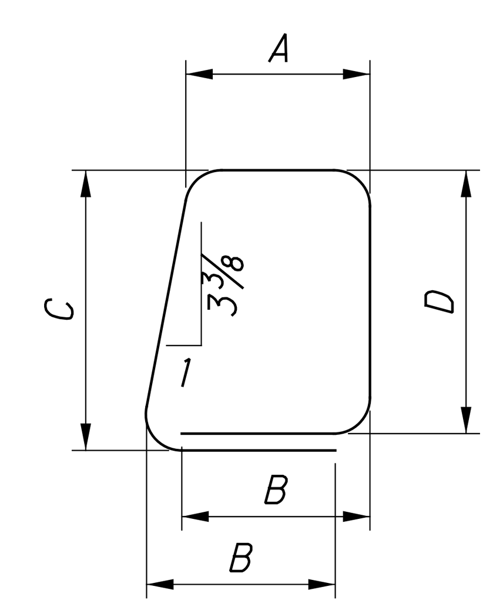

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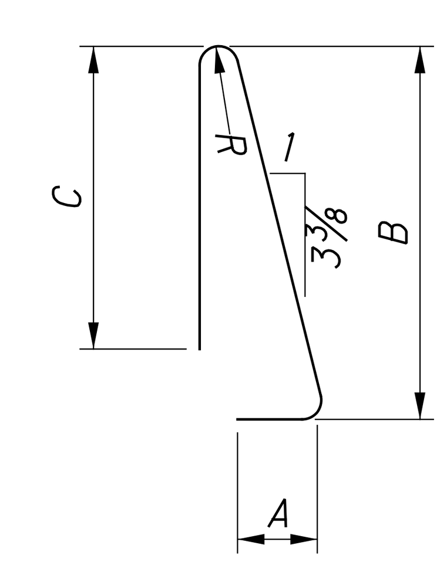

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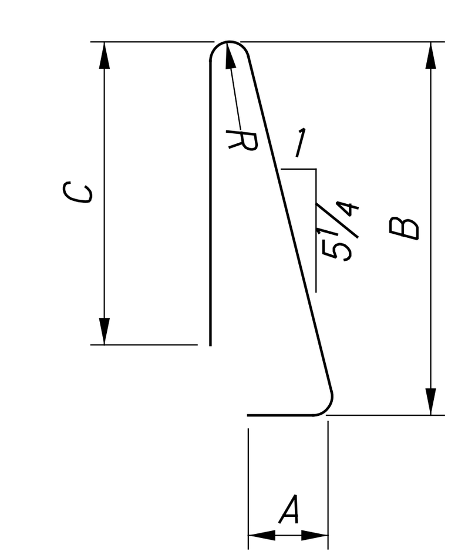

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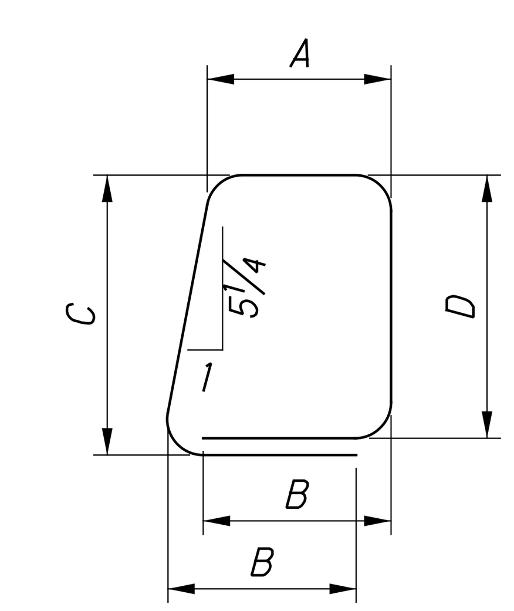

TYPE-40

NOTES:

(1) REQUIRES MECHANICAL CONNECTORS (NON-PROTRUDING TYPE)

AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING SHALL BE PROVIDED. INSTALLATION OF THE CONNECTORS SHALL CONFORM WITH RECOMMENDED MANUFACTURER'S PROCEDURES. IF A DOWEL BAR SPLICE IS FURNISHED, THE MINIMUM DOWEL BAR LENGTH TO BE INCLUDED WITH THE CONNECTOR SHALL BE GIVEN BY THE DIMENSION "L" SHOWN BELOW :
#5 REINFORCING BAR, L = 3'-6"

WHERE MECHANICAL CONNECTORS ARE REQUIRED THE REINFORCING BAR LENGTH IS MEASURED TO THE CONSTRUCTION JOINT. EXTRA BAR LENGTH AND/OR BAR PREPARATION MAY BE NECESSARY DEPENDING ON THE TYPE OF MECHANICAL CONNECTOR FURNISHED.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED SJF | CHECKED CLB | DRAWN TLH | REVISED | REVIEWED MDS | DATE 11/19/18 | STRUCTURE FILE NUMBER 3115690

REINFORCING STEEL LIST (RIGHT BRIDGE)

BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

HAM-75-3.84
PID No. 104667

SFlannagan
11/16/2023 9:35:24 AM
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CORRECTIVE WORK PLAN:

PER C&MS 501.05.D.

SUPPLEMENTAL SPECIFICATIONS:

REFER TO SS 849 AS NOTED IN THE PLANS.

SEQUENCE OF WORK:

REPAIR CUT LOCATIONS WITH FULL PENETRATION WELDS AND GRINDING PER PLANS AND SS 849.14. REPLACE CROSSFRAME MEMBERS.

REPLACE TOP SPLICE PLATE ON GIRDER 10.

REPAIR STRUCTURAL STEEL COATING SYSTEM AT ALL LOCATIONS DAMAGED DURING DEMOLITION AND DURING THE REPAIR PROCEDURES PER ITEM 514 - FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN (ONE COAT)

ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN:

ALL REQUIREMENTS OF 513 APPLY TO SHOP FABRICATED MEMBERS. PERFORM WORK FOR FIELD FABRICATED MEMBERS ACCORDING TO ITEM 513, EXCEPT AS MODIFIED HEREIN. THE DEPARTMENT WILL NOT REQUIRE THE CONTRACTOR PERFORMING FIELD FABRICATION TO BE PRE-QUALIFIED AS SPECIFIED IN SUPPLEMENT 1078. SUBMIT A WRITTEN LETTER OF MATERIAL ACCEPTANCE, 501.06, TO THE ENGINEER. PROVIDE SHOP DRAWINGS ACCORDING TO 513.06 OR SUPPLY THE ENGINEER WITH "AS BUILT" DRAWINGS MEETING 513.06 AFTER COMPLETION OF FIELD FABRICATION. THE ENGINEER WILL REVIEW THE SUBMITTED DRAWINGS FOR CONCURRENCE WITH THE FINAL AS-BUILT CONDITION. THE ENGINEER MAY CONTACT THE OFFICE OF STRUCTURAL ENGINEERING FOR TECHNICAL ASSISTANCE. IF THE ENGINEER IS SATISFIED WITH THE "AS-BUILT" DRAWINGS AND THE DELIVERED MATERIALS. SUPPLY A COPY OF THE DRAWINGS, STAMPED, SEALED AND DATED, ACCORDING S1002, TO THE STRUCTURAL, WELDING AND METALS SECTION OF THE OFFICE OF MATERIAL MANAGEMENT FOR RECORD PURPOSES. SPLICE PLATE REPLACEMENT FOR THE REPAIR OF THE GIRDER 10 TOP FLANGE AND CROSS FRAME ANGLE REPLACEMENT ARE INCLUDED IN THIS ITEM.

ITEM 513 - STRUCTURAL STEEL MISC., REPAIR OF DAMAGED MAIN MEMBER, COMPLETE PENETRATION WELDING:

AFTER DAMAGED AREAS HAVE BEEN INSPECTED ACCORDING TO ITEM 849 DAMAGE ASSESSMENT. PREPARE THE DAMAGED MATERIAL FOR WELDING, PROVIDE RUNOFF TABS FOR ALL COMPLETE PENETRATION WELDS. PERFORMING COMPLETE PENETRATION WELDS ACCORDING TO C&MS 513 USING APPROVED ELECTRODES, PROCEDURES AND WELDERS. REMOVE RUNOFF TABS AND GRIND THE COMPLETED EDGES SMOOTH. GRIND THE COMPLETED WELDS SMOOTH AND FLUSH WITH THE ADJACENT SURFACES TO PROVIDE A SURFACE FINISH ACCORDING TO ANSI B46.1 OF 250 MIL. DO NOT OVER GRIND AS TO REDUCE THE MATERIAL THICKNESS OR WIDTH OF THE NEW OR EXISTING MATERIALS. PREPARE ALL REENTRANT CORNERS WITH A ONE INCH RADIUS. REMOVE WELDING, START AND STOP DISCONTINUITIES. RADIOGRAPHIC TEST THE FINISHED WELDS ACCORDING TO C&MS 513.25A AND SUBMIT COPIES OF THE REPORTS TO THE ENGINEER. THE ENGINEER MAY OBTAIN TECHNICAL ASSISTANCE FROM THE OFFICE OF MATERIALS MANAGEMENT.

ITEM 514 - FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN (ONE COAT):

1.0 DESCRIPTION: THIS ITEM CONSISTS OF FIELD PAINTING STRUCTURAL STEEL PREVIOUSLY COATED WITH AN UNKNOWN EXISTING PAINT TO CORRECT DAMAGE FROM DEMOLITION AND REPAIR PROCEDURES. THIS WORK CONSISTS OF PERFORMING SURFACE PREPARATION AND APPLYING A PRIMER TO THE PREPARED STEEL AND FEATHERED REMOVAL AREAS OF UNKNOWN EXISTING PAINT SYSTEMS. ALL STRUCTURAL STEEL SURFACE AREAS DAMAGED BY DEMOLITION OR REPAIR PROCEDURES, THAT WILL BE EXPOSED AFTER FINAL CONSTRUCTION COMPLETE, SHALL BE PAINTED.

2.0 GENERAL: C&MS 514.05 THROUGH 514.10 AND 514.13.D APPLY UNLESS MODIFIED BY THESE NOTES.

3.0 WASHING EXISTING PAINTED SURFACES:
CLEAN SURFACES TO BE COATED WITH LOW PRESSURE WATER CLEANING TO REMOVE ALL DIRT, DEBRIS, ANIMAL EXCREMENT, SALT CONTAMINANTS AND OTHER ACCUMULATED FOREIGN MATERIAL IN ACCORDANCE WITH SSPC-SP12 (LP WC), LOW PRESSURE WATER CLEANING. THE PRESSURE WASHER SHALL BE CAPABLE OF ACHIEVING AT LEAST 2000 POUNDS PER SQUARE INCH AT THE NOZZLE. WHEN USING THE POWER WASHING EQUIPMENT, THE NOZZLE SHALL BE MAINTAINED NO MORE THAN 10 INCHES FROM THE SURFACE. SUPPLY AND USE POTABLE WATER. PROVIDE TO THE ENGINEER A LETTER OF WRITTEN ACCEPTANCE FOR ANY BIODEGRADABLE DETERGENTS OR CLEANERS USED IN CONJUNCTION WITH THIS METHOD.

COLLECT AND CONTAIN WATER AND DEBRIS REMOVED DURING WASHING OPERATIONS ABOVE WATER FEATURES IN CONFORMANCE WITH C&MS 514.08 AND C&MS 514.13.D FOR ANY DEBRIS. CREATE SETTLEMENT COLLECTION BASINS AND STRAIN ALL WASH WATER ABOVE LAND FEATURES AS NECESSARY TO PRODUCE VISIBLY CLEAR WATER AND COMPLY WITH CMS 514.08 AND C&MS 514.13.D FOR ANY DEBRIS.

4.0 SURFACE PREPARATION: AFTER THE PRESSURE WASHED SURFACE HAS DRIED, REMOVE EXISTING PAINT COATING TO CONTRACT LIMITS OR AS DIRECTED BY THE ENGINEER ACCORDING TO: SSPC-SP 11, POWER TOOL CLEANING TO BARE METAL, AS SHOWN ON THE PICTORIAL SURFACE PREPARATION STANDARDS FOR PAINTING STEEL SURFACES SHOWN IN SSPC-VIS 3; SSPC SP6, COMMERCIAL BLAST CLEANING, AS SHOWN ON THE PICTORIAL SURFACE PREPARATION STANDARDS FOR PAINTING STEEL SURFACES SHOWN IN SSPC-VIS 1; OR SSPC SP12 UHP WJ-4, ULTRAHIGH-PRESSURE WATER JETTING, AS SHOWN ON THE PICTORIAL SURFACE PREPARATION STANDARDS FOR PAINTING STEEL SURFACES SHOWN IN SSPC-VIS 4. SUPPLY BLAST WATER CONTAINING A COMMERCIALLY AVAILABLE RUST INHIBITOR AT A DOSAGE THAT PREVENTS FLASH RUSTING FOR 12 HOURS AND DOCUMENTED AS ACCEPTABLE TO THE COATING'S MANUFACTURER. THE ENGINEER WILL USE THE SSPC-VIS 1, SSPC-VIS 3 OR SSPC-VIS 4 TO DETERMINE THE ACCEPTANCE OF THE SURFACE PREPARATION. FEATHER THE EXISTING PAINT TO ROUGHEN A MINIMUM OF 1/2 INCH OF THE EXISTING PAINT. CONTAIN AND DISPOSE OF WASTE GENERATED BY THE CLEANING ACCORDING TO C&MS 514.13.D.

ROUND ALL EXPOSED CORNERS OF MAIN MATERIAL TO BE PAINTED AS NECESSARY TO ACHIEVE A 1/16 INCH RADIUS OR EQUIVALENT FLAT SURFACE AT A 45 DEGREE ANGLE.

5.0 FIELD PAINTING: APPLY THE PRIME COAT OF THE THREE-COAT PAINT SYSTEM SPECIFIED IN C&MS 708.02, ACCORDINGTO C&MS 514.15, 514.16, 514.17, 514.19 AND 514.20 TO THE CONTRACT LIMITS OR AS DIRECTED BY THE ENGINEER. THE ENGINEER WILL DETERMINE THE PRIME COAT THICKNESS USING A TYPE 2 MAGNETIC GAGE AT SPOT LOCATIONS. DO NOT APPLY THE INTERMEDIATE OR FINISH COAT. THE PRIME COAT OF PAINT SHALL MEET THE MINIMUM DRY FILM THICKNESS REQUIREMENTS OF C&MS 514.20. APPLY PAINT AS FOLLOWS:

APPLY THE PRIME COAT ONLY TO THE PREPARED SURFACE OF THE BARE STEEL AND THE EXISTING UNKNOWN PAINT SYSTEM ROUGHENED BY FEATHERING. AT THE PERIMETER OF THE REPAIR AREA, APPLY THE PRIME COAT USING A BRUSH. IN LIEU OF BRUSHING THE CONTRACTOR MAY DOUBLE MASK THE AREAS NOT TO BE COATED AND SPRAY TO FEATHERED REMOVAL LINES.

STATE OF OHIO
CHRISTOPHER L. BETTINGER E-69388 REGISTERED
PROFESSIONAL ENGINEER

6/3/2019

DESIGN AGENCY
STRUCTUREPOINT LLC
2550 CORPORATE EXCHANGE DR. STE 300
COLUMBUS, OH 43231
TEL: 614.901.7900 FAX: 614.901.7901
www.structurepoint.com

DESIGNED	DRAWN	REVIEWED	DATE
AMI	DSH	SJF	5/16/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115526	

CORRECTIVE WORK PLAN - GIRDER REPAIR NOTES
BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84
PID No. 104667

1 / 4

1/4

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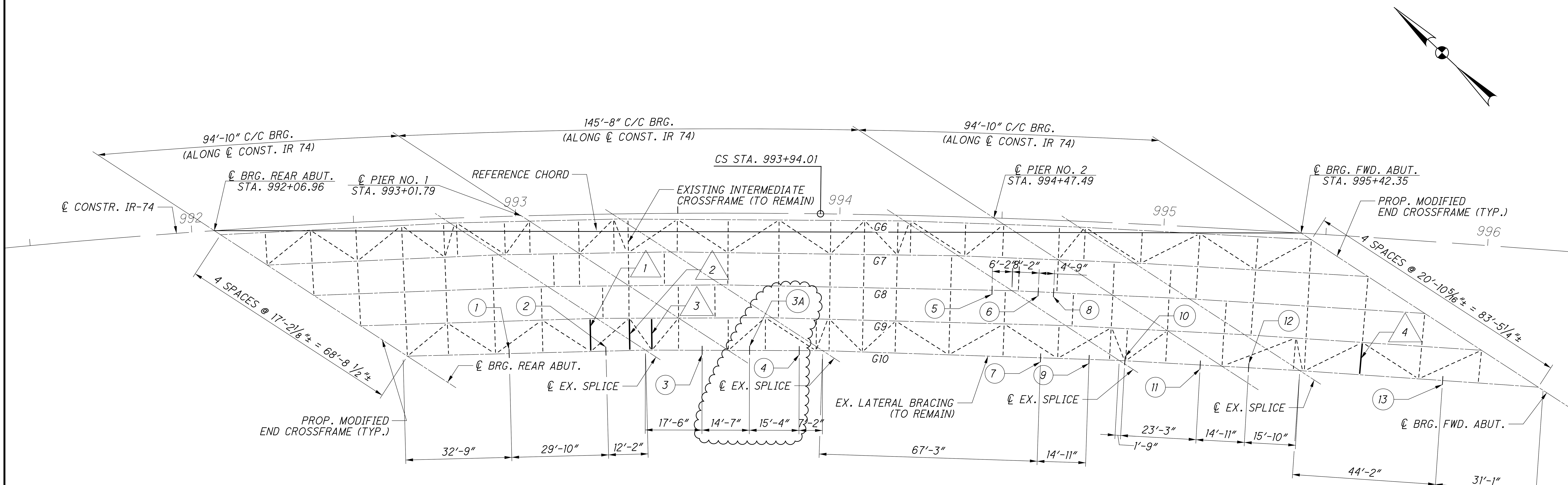


FRAMING PLAN

("X" in circle) INDICATES CUT LOCATION NUMBER

("X" in triangle) INDICATES CROSS-FRAME DAMAGE LOCATION NUMBER

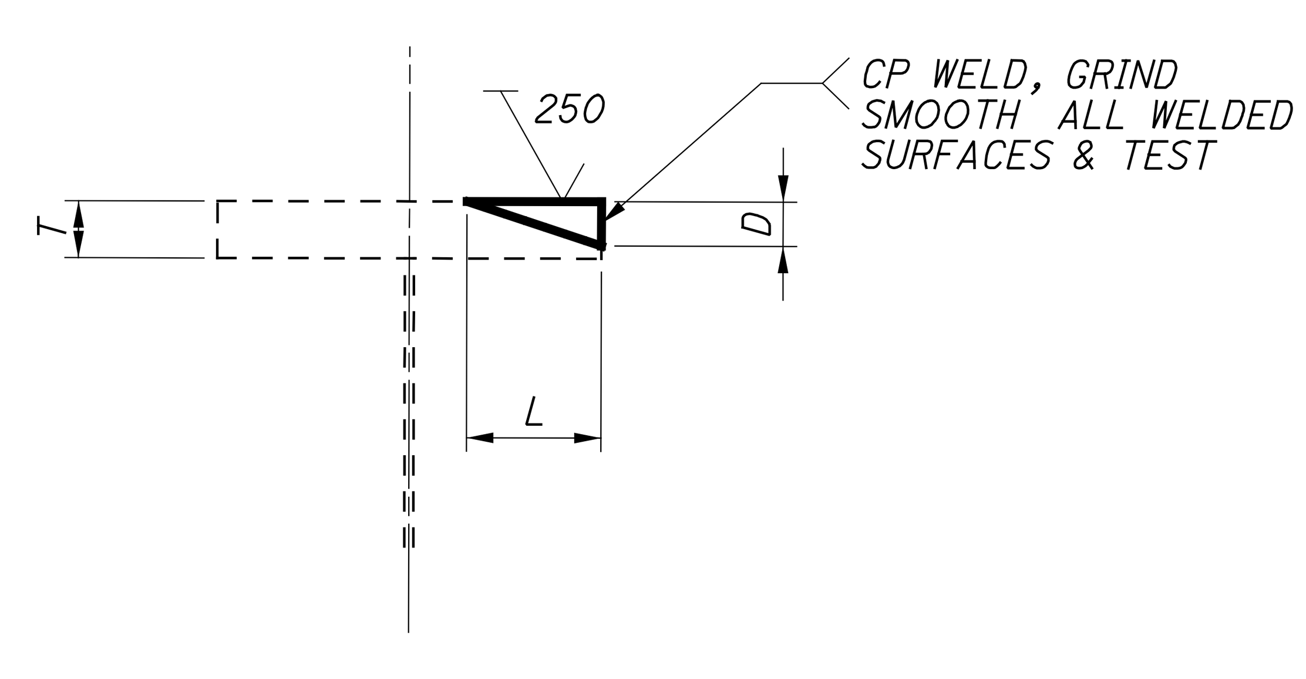
NOTES:

1. CROSS-FRAME DAMAGE LOCATIONS 1-3
   REPLACE DAMAGED TOP MEMBER (L4x4x5/16)
2. CROSS-FRAME DAMAGE LOCATION 4
   REPLACE DAMAGED DIAGONAL (L3x3x5/16)
3. SEE SHEET 4/4 FOR CROSS FRAME REPAIR DETAILS.
4. SEE SHEET 3/4 FOR CUT LOCATION 10 SPLICE
   PLATE REPLACEMENT DETAILS.

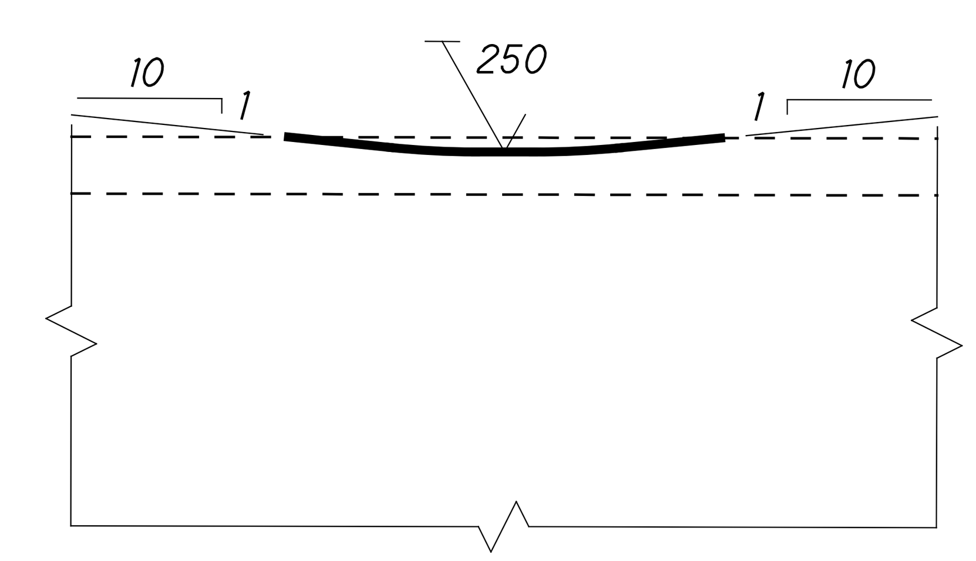
CUT LOCATION	L	D	T	REPAIR TYPE
1	4¼"	7/16"	1½"	WELD
2	3 7/16"	5/16"	1½"	WELD
3	8"	1⅛"	2½"	WELD
3A	4¾"	⅝"	2½"	WELD
4	1½"	3/16"	1½"	GRIND
5	11/16"	9/16"	1½"	GRIND
6	1⅝"	⅝"	1½"	WELD
7	5¼"	3/16"	1½"	WELD
8	1⅜"	½"	1½"	GRIND
9	6 3/16"	⅝"	1½"	WELD
10	8⅛"	* ⅞"	** 1½"	WELD
11	6 9/16"	13/16"	2½"	WELD
12	7⅛"	9/16"	2½"	WELD
13	8¾"	1 1/16"	1½"	WELD

* INCLUDES ¾" TOP SPLICE PLATE CUT COMPLETELY THROUGH

** FLANGE THICKNESS ONLY.



TYPICAL WELD REPAIR



TYPICAL GRINDING REPAIR

DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
AMI	DSH	SJF	5/16/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115526	

CORRECTIVE WORK PLAN - GIRDER REPAIR WELD/GRINDING DETAILS
BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84
PID No. 104667

2/4

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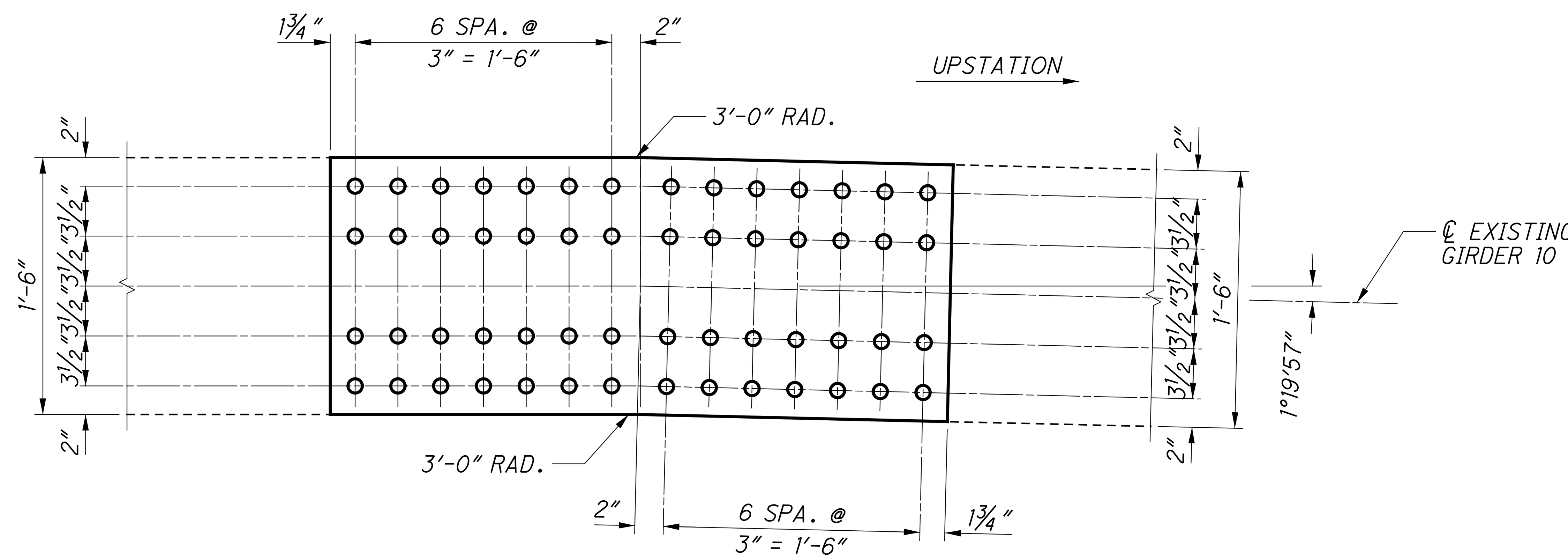
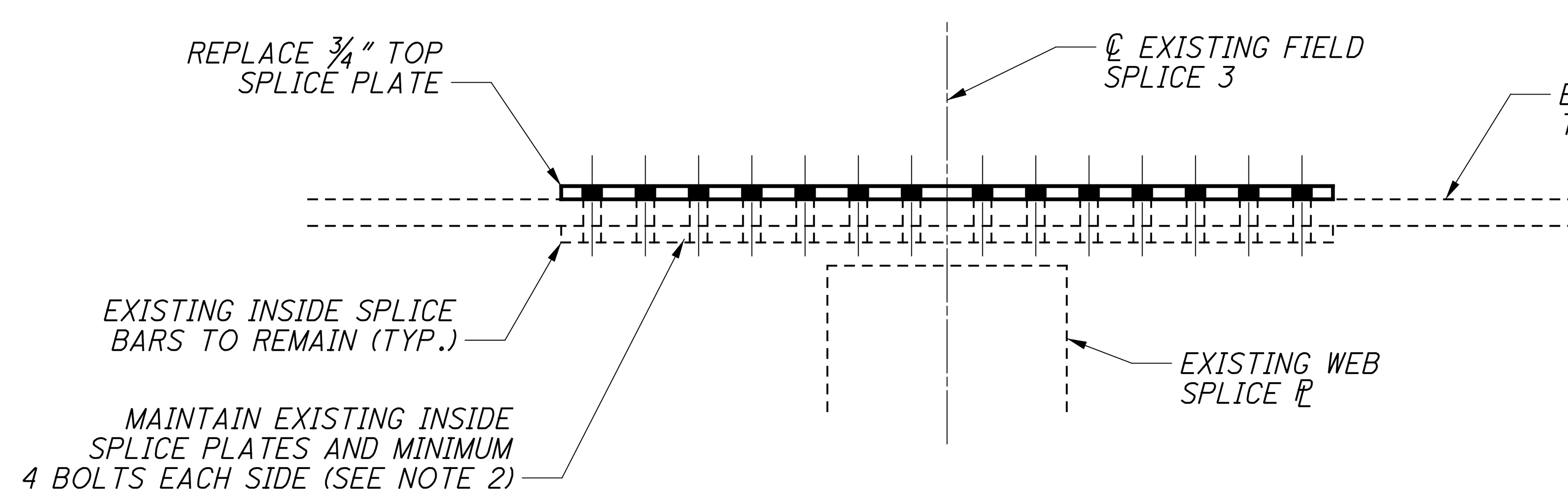


TOP SPLICE PLATE PLAN



TOP SPLICE PLATE ELEVATION

GIRDER 10 CUT LOCATION 10
SPLICE PLATE REPLACEMENT DETAILS

NOTES:

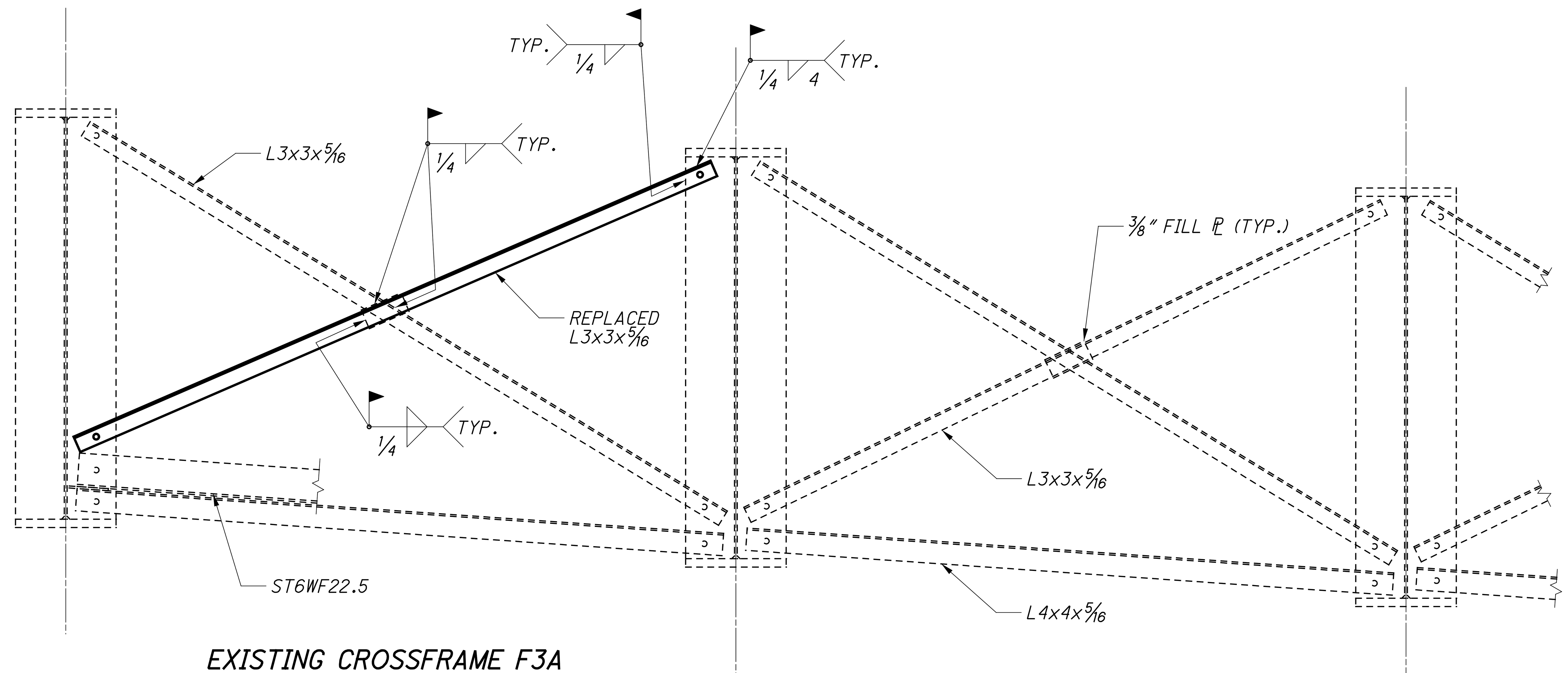
1. WELD REPAIRS PER SHEET 2/4 AND SS 849.14 SHALL BE COMPLETED AT CUT LOCATION 10 PRIOR TO INSTALLATION NEW TOP SPLICE PLATE.
2. MAINTAIN MINIMUM OF 4 BOLTS EACH SIDE OF EXISTING SPLICE INCLUDING INSIDE SPLICE PLATES AT ALL TIMES FOR SHEAR AND HOLE ALIGNMENT. BOLTS DO NOT REQUIRE PRETENSIONING FOR TEMPORARY CONDITION. DRIFT/BULL PINS MAY BE USED TEMPORARILY TO REMOVE EXISTING TOP SPLICE PLATE AND PLACE NEW PLATE.
3. REPLACE ALL BOLTS IN THE TOP SPLICE PLATE. BOLTS ARE ASTM F3125 GRADE A325 ⅞" DIA. HIGH STRENGTH BOLTS.
4. SPLICE PLATE SHALL BE ASTM A709 GRADE 50.
5. SPLICE PLATE MATERIAL SHALL MEET THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.
6. ALL DIMENSIONS PROVIDED ARE BASED ON EXISTING PLANS. CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.

DESIGN AGENCY
STRUCTUREPOINT

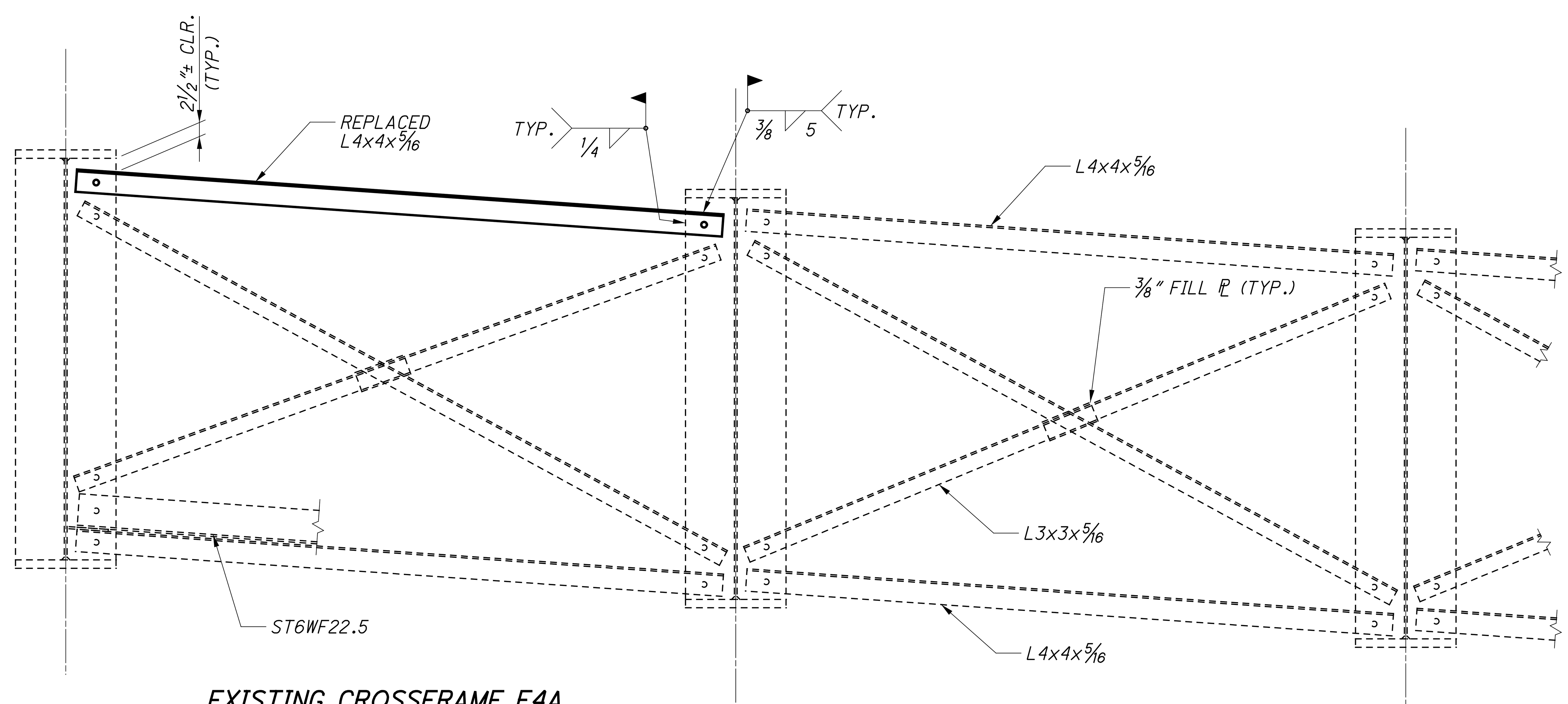
DESIGNED	DRAWN	REVIEWED	DATE
AMI	DSH	SJF	5/16/19
CHECKED CLB	REVISED	STRUCTURE FILE NUMBER 3115526	

CORRECTIVE WORK PLAN - GIRDER SPLICE REPAIR DETAILS
BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84
PID No. 104667



EXISTING CROSSFRAME F3A
CROSSFRAME DAMAGE LOCATION 4



EXISTING CROSSFRAME F4A
CROSSFRAME DAMAGE LOCATIONS 1-3

NOTES:

1. STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 50.
2. CROSSFRAMES TO BE REPLACED PRIOR TO DECK POUR.
3. ALL FOUR CROSSFRAME REPLACEMENT LOCATIONS SHOWN ON SHEET 2/4 MAY BE REPLACED CONCURRENTLY.

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
AMI	DSH	SJF	5/16/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115526	

CORRECTIVE WORK PLAN - CROSSFRAME REPAIR DETAILS

BRIDGE NO. HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

HAM-75-3.84
PID No. 104667

CORRECTIVE WORK PLAN:

PER CMS 505.05.D

SUPPLEMENTAL SPECIFICATIONS:

REFER TO SS 849 AS NOTED IN THE PLANS.

SEQUENCE OF WORK:

REPAIR CUT LOCATIONS WITH SPLICE PLATES PER PLANS

REPAIR CUT LOCATIONS WITH FULL PENETRATION WELDS AND GRINDING PER PLANS AND SS 849.14

REPAIR STRUCTURAL STEEL COATING SYSTEM AT ALL LOCATIONS DAMAGED DURING DEMOLITION AND DURING THE REPAIR PROCEEDURES PER ITEM 514 - FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN (ONE COAT)

ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN:

ALL REQUIREMENTS OF 513 APPLY TO SHOP FABRICATED MEMBERS. PERFORM WORK FOR FIELD FABRICATED MEMBERS ACCORDING TO ITEM 513, EXCEPT AS MODIFIED HEREIN. THE DEPARTMENT WILL NOT REQUIRE THE CONTRACTOR PERFORMING FIELD FABRICATION TO BE PRE-QUALIFIED AS SPECIFIED IN SUPPLEMENT 1078. SUBMIT A WRITTEN LETTER OF MATERIAL ACCEPTANCE, 501.06, TO THE ENGINEER. PROVIDE SHOP DRAWINGS ACCORDING TO 513.06 OR SUPPLY THE ENGINEER WITH "AS BUILT" DRAWINGS MEETING 513.06 AFTER COMPLETION OF FIELD FABRICATION. THE ENGINEER WILL REVIEW THE SUBMITTED DRAWINGS FOR CONCURRENCE WITH THE FINAL AS-BUILT CONDITION. THE ENGINEER MAY CONTACT THE OFFICE OF STRUCTURAL ENGINEERING FOR TECHNICAL ASSISTANCE. IF THE ENGINEER IS SATISFIED WITH THE "AS-BUILT" DRAWINGS AND THE DELIVERED MATERIALS. SUPPLY A COPY OF THE DRAWINGS, STAMPED, SEALED AND DATED, ACCORDING S1002, TO THE STRUCTURAL, WELDING AND METALS SECTION OF THE OFFICE OF MATERIAL MANAGEMENT FOR RECORD PURPOSES. SPLICE PLATES FOR THE REPAIR OF THE GIRDER 10 TOP FLANGE ARE INCLUDED IN THIS ITEM.

ITEM 513 - STRUCTURAL STEEL MISC., REPAIR OF DAMAGED MEMBERS, COPE HOLES:

COPE HOLE IS REQUIRED AT EACH LOCATION WHERE THE GIRDER WEB WAS CUT (FOUR LOCATIONS). PROVIDE A 2" DIAMETER HOLE ACCORDING TO PLAN DETAILS OR AS DIRECTED BY THE ENGINEER. GRIND THE HOLES SMOOTH ACCORDING TO C&MS 513.19.

ITEM 513 - STRUCTURAL STEEL MISC., REPAIR OF DAMAGED MAIN MEMBER, COMPLETE PENETRATION WELDING:

AFTER DAMAGED AREAS HAVE BEEN INSPECTED ACCORDING TO ITEM 849 DAMAGE ASSESSMENT. PREPARE THE DAMAGED MATERIAL FOR WELDING, PROVIDE RUNOFF TABS FOR ALL COMPLETE PENETRATION WELDS. PERFORMING COMPLETE PENETRATION WELDS ACCORDING TO C&MS 513 USING APPROVED ELECTRODES, PROCEDURES AND WELDERS. REMOVE RUNOFF TABS AND GRIND THE COMPLETED EDGES SMOOTH. GRIND THE COMPLETED WELDS SMOOTH AND FLUSH WITH THE ADJACENT SURFACES TO PROVIDE A SURFACE FINISH ACCORDING TO ANSI B46.1 OF 250 MIL. DO NOT OVER GRIND AS TO REDUCE THE MATERIAL THICKNESS OR WIDTH OF THE NEW OR EXISTING MATERIALS. PREPARE ALL REENTRANT CORNERS WITH A ONE INCH RADIUS. REMOVE WELDING, START AND STOP DISCONTINUITIES. RADIOGRAPHIC TEST THE FINISHED WELDS ACCORDING TO C&MS 513.25A AND SUBMIT COPIES OF THE REPORTS TO THE ENGINEER. THE ENGINEER MAY OBTAIN TECHNICAL ASSISTANCE FROM THE OFFICE OF MATERIALS MANAGEMENT.

ITEM 514 - FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN (ONE COAT):

1.0 DESCRIPTION: THIS ITEM CONSISTS OF FIELD PAINTING STRUCTURAL STEEL PREVIOUSLY COATED WITH AN UNKNOWN EXISTING PAINT TO CORRECT DAMAGE FROM DEMOLITION AND REPAIR PROCEDURES. THIS WORK CONSISTS OF PERFORMING SURFACE PREPARATION AND APPLYING A PRIMER TO THE PREPARED STEEL AND FEATHERED REMOVAL AREAS OF UNKNOWN EXISTING PAINT SYSTEMS. ALL STRUCTURAL STEEL SURFACE AREAS, THAT WILL BE EXPOSED AFTER CONSTRUCTION COMPLETE, DAMAGED BY DEMOLITION OR REPAIR PROCEDURES SHALL BE PAINTED.

2.0 GENERAL: C&MS 514.05 THROUGH 514.10 AND 514.13.D APPLY UNLESS MODIFIED BY THESE NOTES.

3.0 WASHING EXISTING PAINTED SURFACES:
CLEAN SURFACES TO BE COATED WITH LOW PRESSURE WATER CLEANING TO REMOVE ALL DIRT, DEBRIS, ANIMAL EXCREMENT, SALT CONTAMINANTS AND OTHER ACCUMULATED FOREIGN MATERIAL IN ACCORDANCE WITH SSPC-SP12 (LP WC), LOW PRESSURE WATER CLEANING. THE PRESSURE WASHER SHALL BE CAPABLE OF ACHIEVING AT LEAST 2000 POUNDS PER SQUARE INCH AT THE NOZZLE. WHEN USING THE POWER WASHING EQUIPMENT, THE NOZZLE SHALL BE MAINTAINED NO MORE THAN 10 INCHES FROM THE SURFACE. SUPPLY AND USE POTABLE WATER. PROVIDE TO THE ENGINEER A LETTER OF WRITTEN ACCEPTANCE FOR ANY BIODEGRADABLE DETERGENTS OR CLEANERS USED IN CONJUNCTION WITH THIS METHOD.

COLLECT AND CONTAIN WATER AND DEBRIS REMOVED DURING WASHING OPERATIONS ABOVE WATER FEATURES IN CONFORMANCE WITH C&MS 514.08 AND C&MS 514.13.D FOR ANY DEBRIS. CREATE SETTLEMENT COLLECTION BASINS AND STRAIN ALL WASH WATER ABOVE LAND FEATURES AS NECESSARY TO PRODUCE VISIBLY CLEAR WATER AND COMPLY WITH CMS 514.08 AND C&MS 514.13.D FOR ANY DEBRIS.

4.0 SURFACE PREPARATION: AFTER THE PRESSURE WASHED SURFACE HAS DRIED, REMOVE EXISTING PAINT COATING TO CONTRACT LIMITS OR AS DIRECTED BY THE ENGINEER ACCORDING TO: SSPC-SP 11, POWER TOOL CLEANING TO BARE METAL, AS SHOWN ON THE PICTORIAL SURFACE PREPARATION STANDARDS FOR PAINTING STEEL SURFACES SHOWN IN SSPC-VIS 3; SSPC SP6, COMMERCIAL BLAST CLEANING, AS SHOWN ON THE PICTORIAL SURFACE PREPARATION STANDARDS FOR PAINTING STEEL SURFACES SHOWN IN SSPC-VIS 1; OR SSPC SP12 UHP WJ-4, ULTRAHIGH-PRESSURE WATER JETTING, AS SHOWN ON THE PICTORIAL SURFACE PREPARATION STANDARDS FOR PAINTING STEEL SURFACES SHOWN IN SSPC-VIS 4. SUPPLY BLAST WATER CONTAINING A COMMERCIALLY AVAILABLE RUST INHIBITOR AT A DOSAGE THAT PREVENTS FLASH RUSTING FOR 12 HOURS AND DOCUMENTED AS ACCEPTABLE TO THE COATING'S MANUFACTURER. THE ENGINEER WILL USE THE SSPC-VIS 1, SSPC-VIS 3 OR SSPC-VIS 4 TO DETERMINE THE ACCEPTANCE OF THE SURFACE PREPARATION. FEATHER THE EXISTING PAINT TO ROUGHEN A MINIMUM OF 1/2 INCH OF THE EXISTING PAINT. CONTAIN AND DISPOSE OF WASTE GENERATED BY THE CLEANING ACCORDING TO C&MS 514.13.D.

ROUND ALL EXPOSED CORNERS OF MAIN MATERIAL TO BE PAINTED AS NECESSARY TO ACHIEVE A 1/16 INCH RADIUS OR EQUIVALENT FLAT SURFACE AT A 45 DEGREE ANGLE.

5.0 FIELD PAINTING: APPLY THE PRIME COAT OF THE THREE-COAT PAINT SYSTEM SPECIFIED IN C&MS 708.02, ACCORDINGTO C&MS 514.15, 514.16, 514.17, 514.19 AND 514.20 TO THE CONTRACT LIMITS OR AS DIRECTED BY THE ENGINEER. THE ENGINEER WILL DETERMINE THE PRIME COAT THICKNESS USING A TYPE 2 MAGNETIC GAGE AT SPOT LOCATIONS. DO NOT APPLY THE INTERMEDIATE OR FINISH COAT. THE PRIME COAT OF PAINT SHALL MEET THE MINIMUM DRY FILM THICKNESS REQUIREMENTS OF C&MS 514.20. APPLY PAINT AS FOLLOWS:

APPLY THE PRIME COAT ONLY TO THE PREPARED SURFACE OF THE BARE STEEL AND THE EXISTING UNKNOWN PAINT SYSTEM ROUGHENED BY FEATHERING. AT THE PERIMETER OF THE REPAIR AREA, APPLY THE PRIME COAT USING A BRUSH. IN LIEU OF BRUSHING THE CONTRACTOR MAY DOUBLE MASK THE AREAS NOT TO BE COATED AND SPRAY TO FEATHERED REMOVAL LINES.

STATE OF OHIO
CHRISTOPHER L. BETTINGER
E-69366
REGISTERED
PROFESSIONAL ENGINEER

5/16/2019

DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
AMI	DSH	SJF	4/17/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115577	

CORRECTIVE WORK PLAN - GIRDER REPAIR NOTES
BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667

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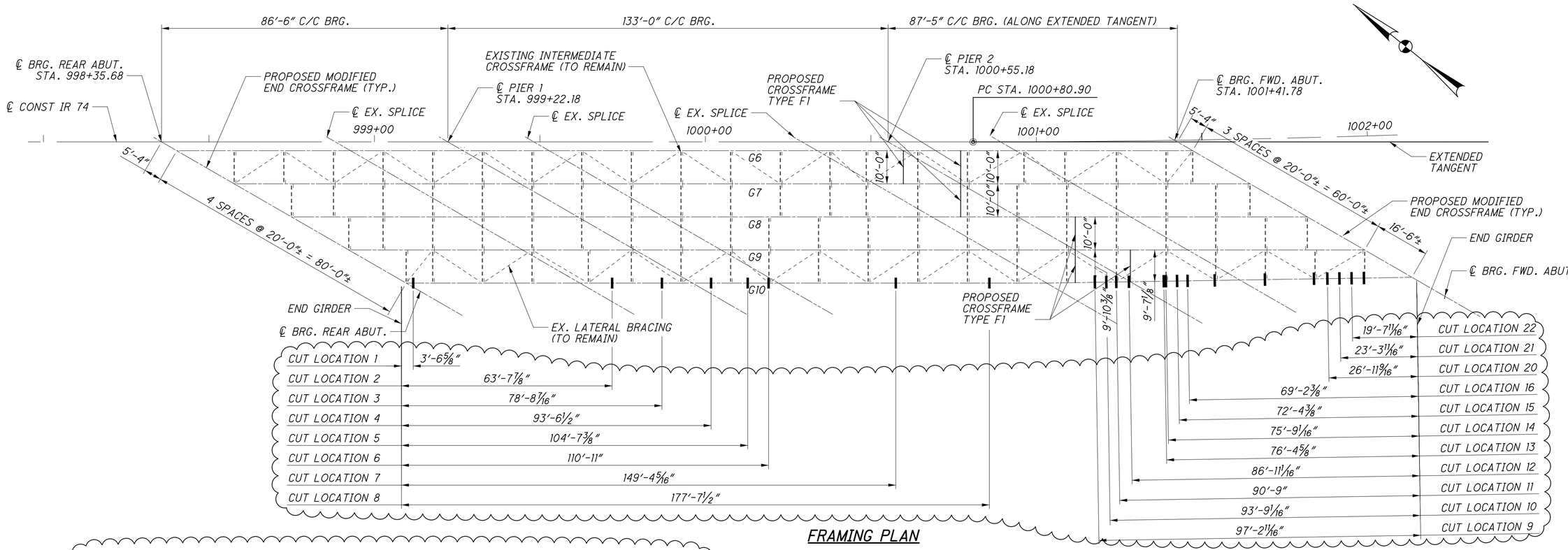


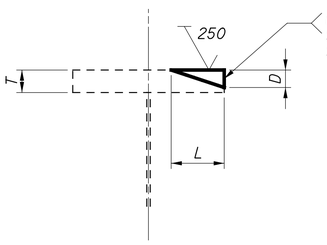
FRAMING PLAN

DAMAGE DESCRIPTIONS (LOCATIONS 1-14, GIRDER 10)

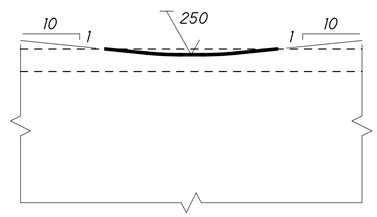
CUT LOCATION	L	D	T	REPAIR TYPE
1	6"	7/16"	7/8"	WELD
2	4"	1/16"	7/8"	GRIND
3	12"	1½"	2⅜"	WELD
4	12½"	1⅜"	2⅜"	WELD
5	10⅜"	⅝"	1¼"	WELD
6	12 1/16"	1 1/16"	1¼"	WELD
7	4⅝"	5/16"	1¾"	WELD
8A	1½"	3/16"	1¾"	WELD
8B	3⅛"	3/16"	1¾"	WELD
9A	4½"	9/16"	2⅜"	WELD
9B	4⅛"	⅛"	2⅜"	WELD
9C	2⅝"	5/16"	2⅜"	WELD
10	8⅛"	⅛"	2⅜"	GRIND
11	14¼"	2 1/16"	2⅜"	WELD
12A	9 13/16"	¼"	2⅜"	WELD
12B	9 13/16"	¼"	2⅜"	WELD
13A	4"	¼"	2⅜"	WELD
13B	2 5/16"	1/16"	2⅜"	WELD
14	13½"	1⅝"	2⅜"	WELD

DAMAGE DESCRIPTIONS (LOCATIONS 15, 16, 20-22 GIRDER 10)

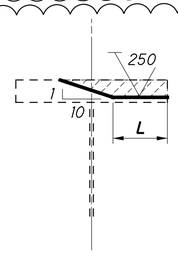
CUT LOCATION	L	D	T	REPAIR TYPE
15	5¾"	1/16"	2⅜"	GRIND
16A	1⅝"	3/16"	2⅜"	GRIND
16B	2 3/16"	1/16"	2⅜"	GRIND
20	4½"	⅛"	7/8"	WELD
21	1¾"	1/16"	7/8"	GRIND
22	1 9/16"	⅛"	7/8"	GRIND



TYPICAL WELD REPAIR



TYPICAL GRINDING REPAIR



TYPICAL GRIND REPAIR

1. REPAIR CUT BY GRINDING ACCORDING TO SUPPLEMENTAL SPECIFICATION 849, REPAIR DAMAGED MEMBERS. PERFORM GRINDING ACCORDING TO SUPPLEMENTAL SPECIFICATION 849 AND AS ILLUSTRATED IN DETAIL
2. REPAIR CUT BY WELDING ACCORDING TO SUPPLEMENTAL SPECIFICATION 849 REPAIRING DAMAGED MEMBERS, AS ILLUSTRATED IN DETAIL FC2-3. PERFORM COMPLETE PENETRATION WELDING ACCORDING TO C&MS 513.21 BY ATTACHING RUN OFF TABS AND GRIND ALL WELDED SURFACES SMOOTH ACCORDING TO ANSI B46.1 OF 250 mil
3. PERFORM NDT TESTING ACCORDING TO C&MS 513.25A

DESIGN AGENCY
STRUCTUREPOINT LLC
2550 CORPORATE EXCHANGE DR. STE 200
COLUMBUS, OH 43231
TEL 614.901.7900 FAX 614.901.7901
www.structurepoint.com

DESIGNED	DRAWN	REVIEWED	DATE
AMI	DSH	SJF	4/17/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115577	

CORRECTIVE WORK PLAN - GIRDER REPAIR WELD/GRINDING DETAILS

BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667

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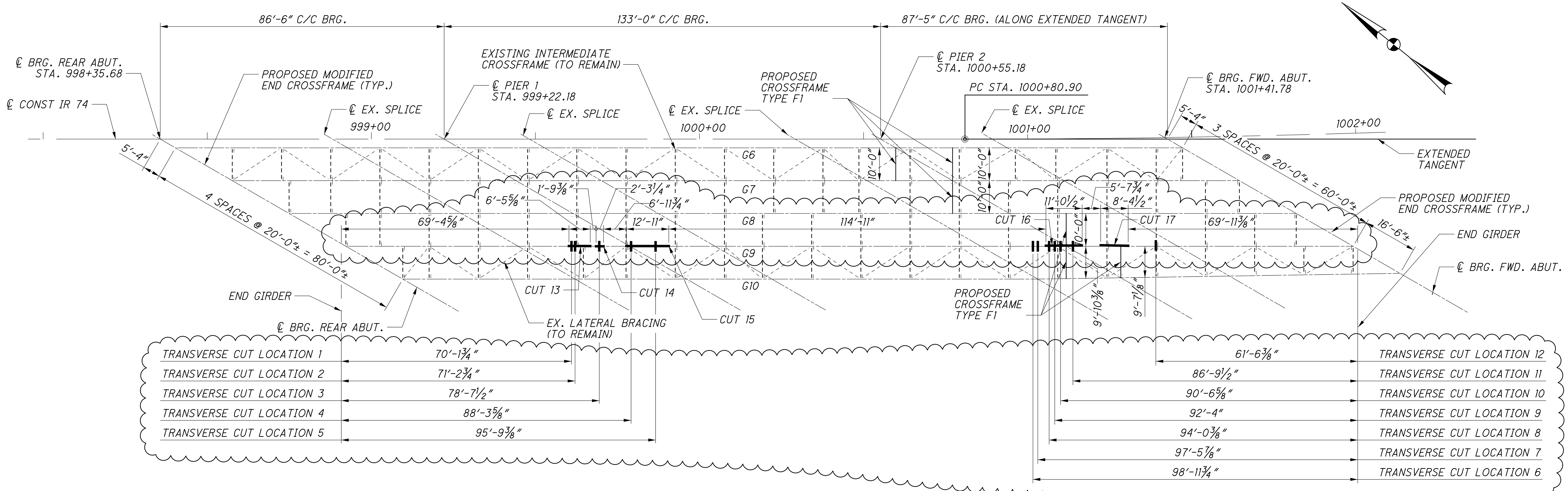
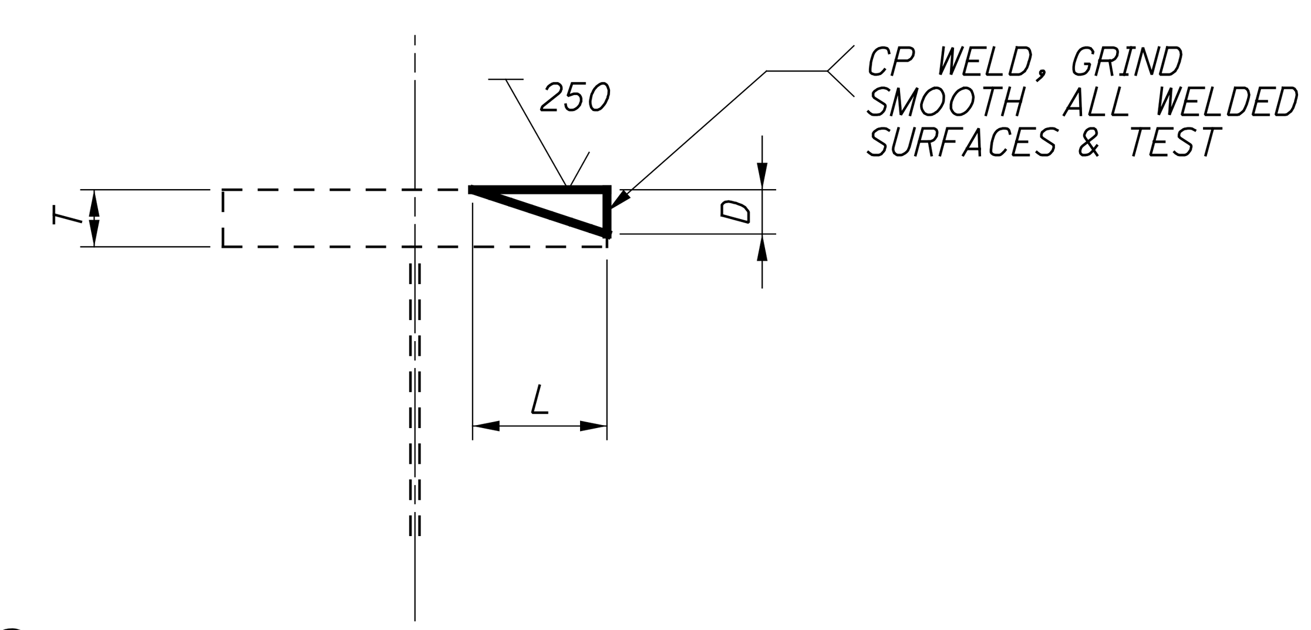
4



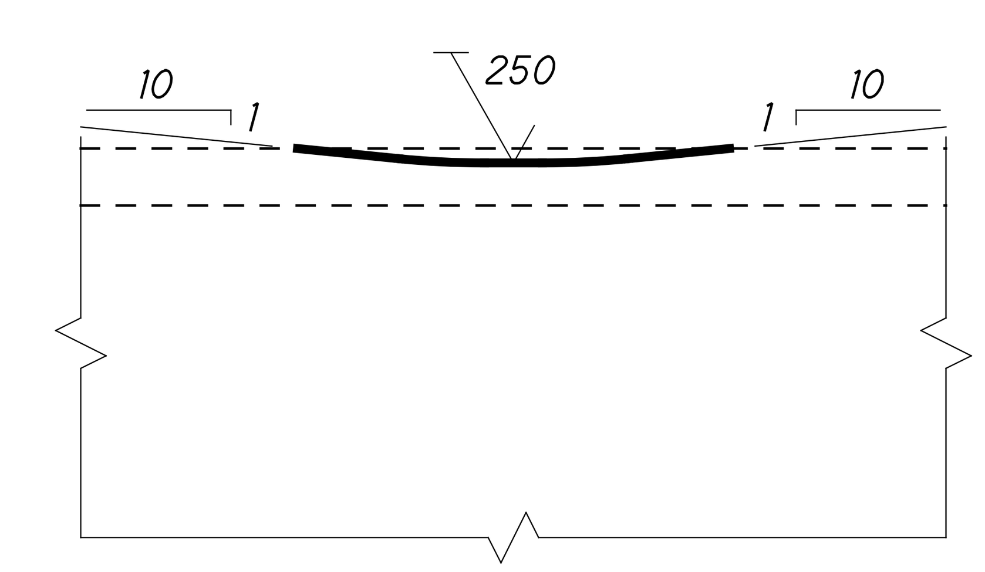
FRAMING PLAN

TRANSVERSE DAMAGE DESCRIPTIONS (LOCATIONS 1-12, GIRDER G9)					
CUT LOCATION	L	D	WIDTH	T	REPAIR TYPE
1	2"	½"	⅜"	2⅜"	WELD
2	1½"	⅜"	⅜"	2⅜"	WELD
3	1"	¾"	⅜"	2⅜"	WELD
4	1¼"	½"	⅜"	2⅜"	WELD
5	1¼"	3⁄16"	⅜"	2⅜"	WELD
6	1"	5⁄16"	⅜"	2⅜"	WELD
7	1½"	½"	⅜"	2⅜"	WELD
8	1¼"	¼"	⅜"	2⅜"	WELD
9	⅞"	⅛"	⅜"	2⅜"	GRIND
10	1¼"	⅛"	⅜"	2⅜"	WELD
11	1"	⅛"	⅜"	2⅜"	GRIND
12	2¼"	⅜"	⅜"	⅞"	WELD

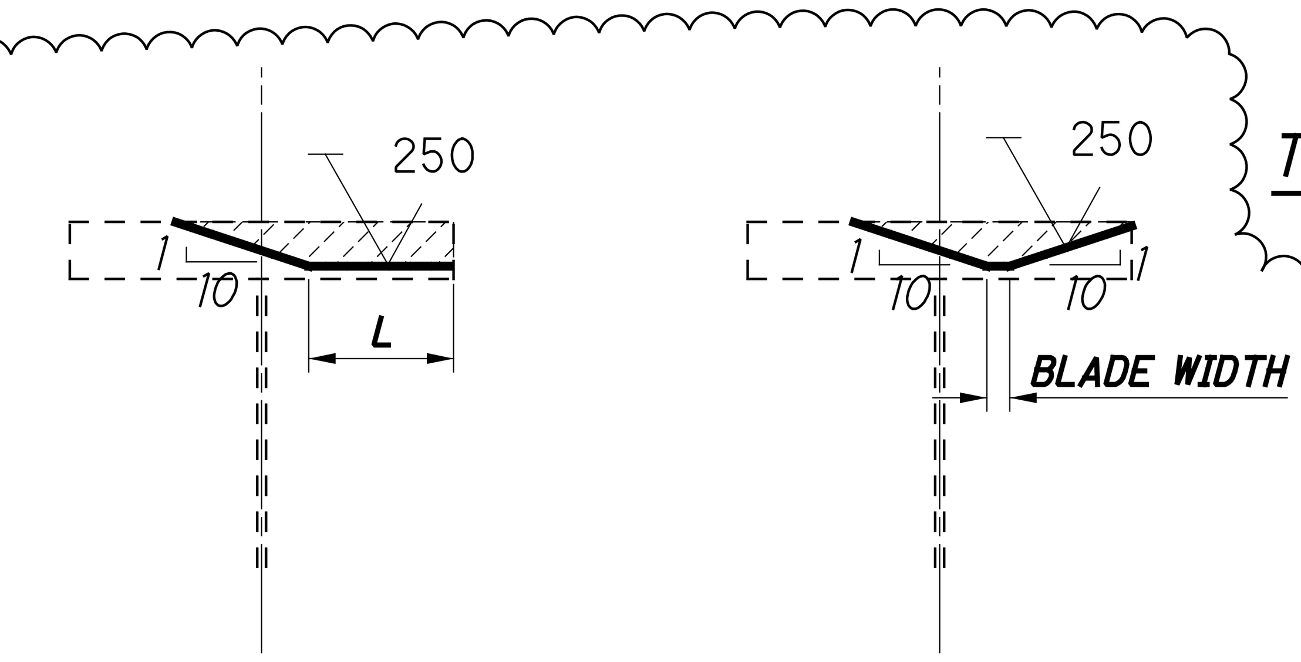
LONGITUDINAL DAMAGE DESCRIPTIONS (LOCATIONS 13-17, GIRDER G9)					
CUT LOCATION	L	D	WIDTH	T	REPAIR TYPE
13	6'-5⅝"	¼"	⅜"	2⅜"	GRIND
14	2'-3¼"	¼"	⅜"	2⅜"	GRIND
15	12'-11"	¼"	⅜"	2⅜"	GRIND
16	11'-0½"	¼"	⅜"	2⅜"	GRIND
17	8'-4½"	¼"	⅜"	2⅜"	GRIND



TYPICAL WELD REPAIR



TYPICAL GRINDING REPAIR



TYPICAL GRINDING REPAIR

TYPICAL GRINDING REPAIR
LOCATIONS 13-17

1. REPAIR CUT BY GRINDING ACCORDING TO SUPPLEMENTAL SPECIFICATION 849, REPAIR DAMAGED MEMBERS. PERFORM GRINDING ACCORDING TO SUPPLEMENTAL SPECIFICATION 849 AND AS ILLUSTRATED IN DETAIL
2. REPAIR CUT BY WELDING ACCORDING TO SUPPLEMENTAL SPECIFICATION 849 REPAIRING DAMAGED MEMBERS, AS ILLUSTRATED IN DETAIL FC2-3. PERFORM COMPLETE PENETRATION WELDING ACCORDING TO C&MS 513.21 BY ATTACHING RUN OFF TABS AND GRIND ALL WELDED SURFACES SMOOTH ACCORDING TO ANSI B46.1 OF 250 mil
3. PERFORM NDT TESTING ACCORDING TO C&MS 513.25A

DESIGN AGENCY STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
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CORRECTIVE WORK PLAN - GIRDER REPAIR WELD/GRINDING DETAILS
BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

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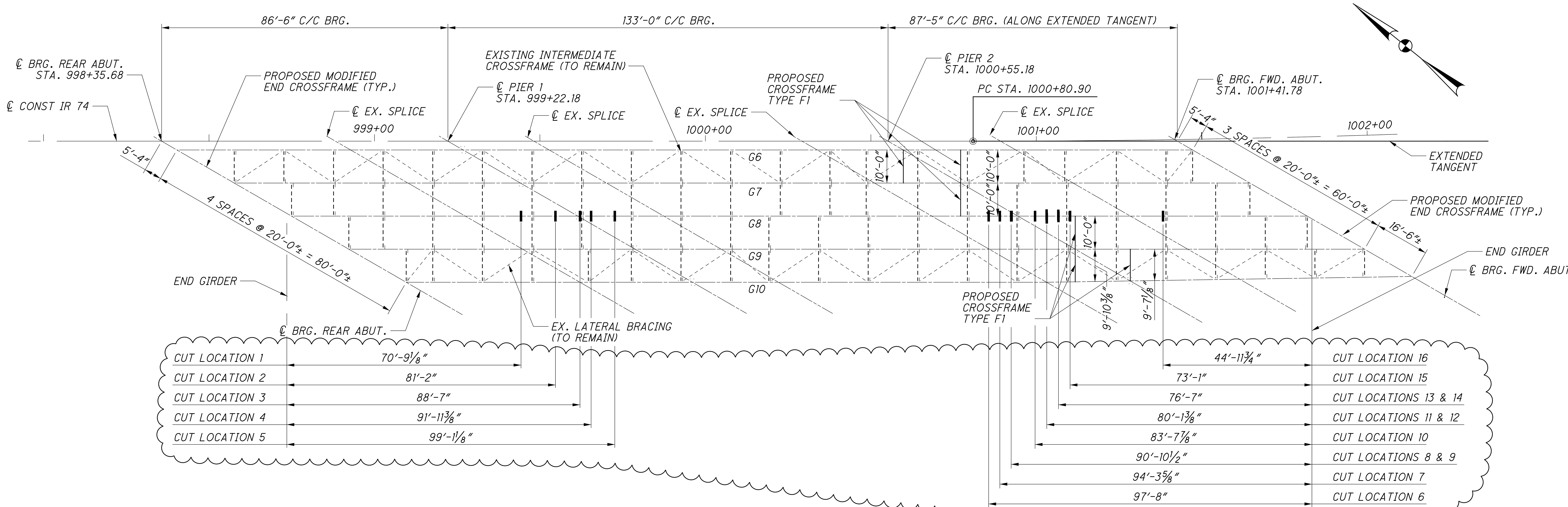
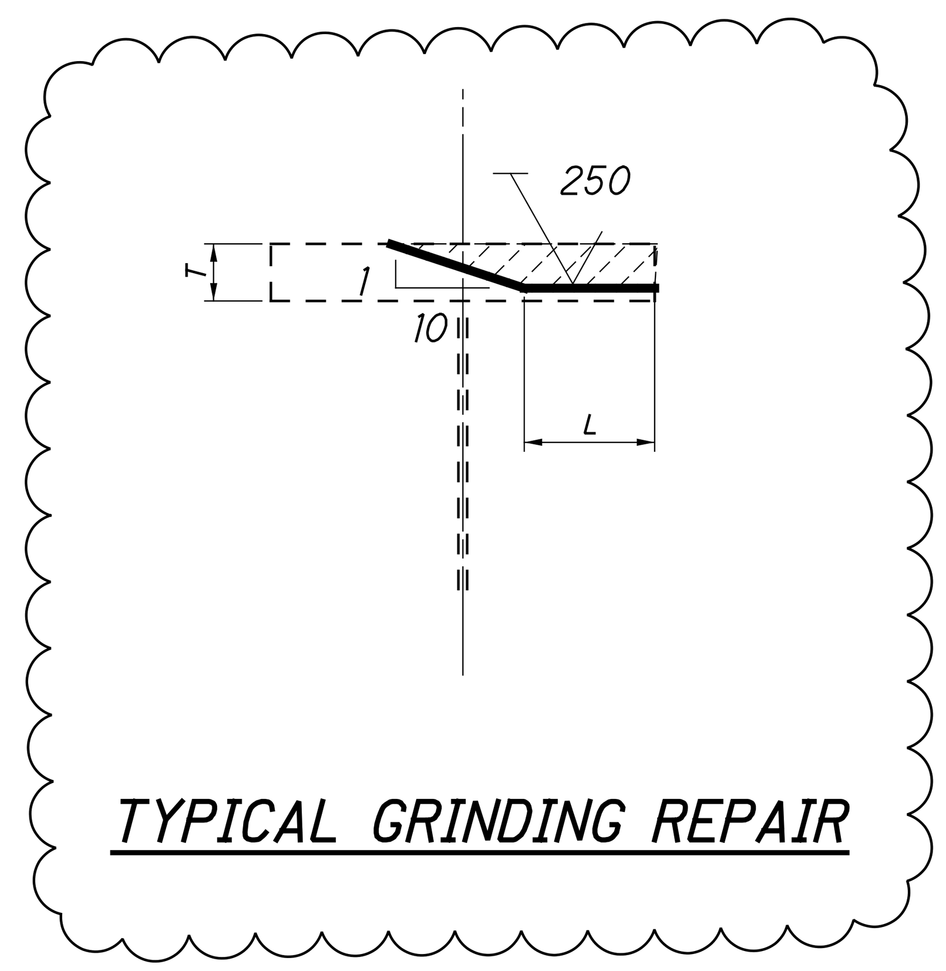
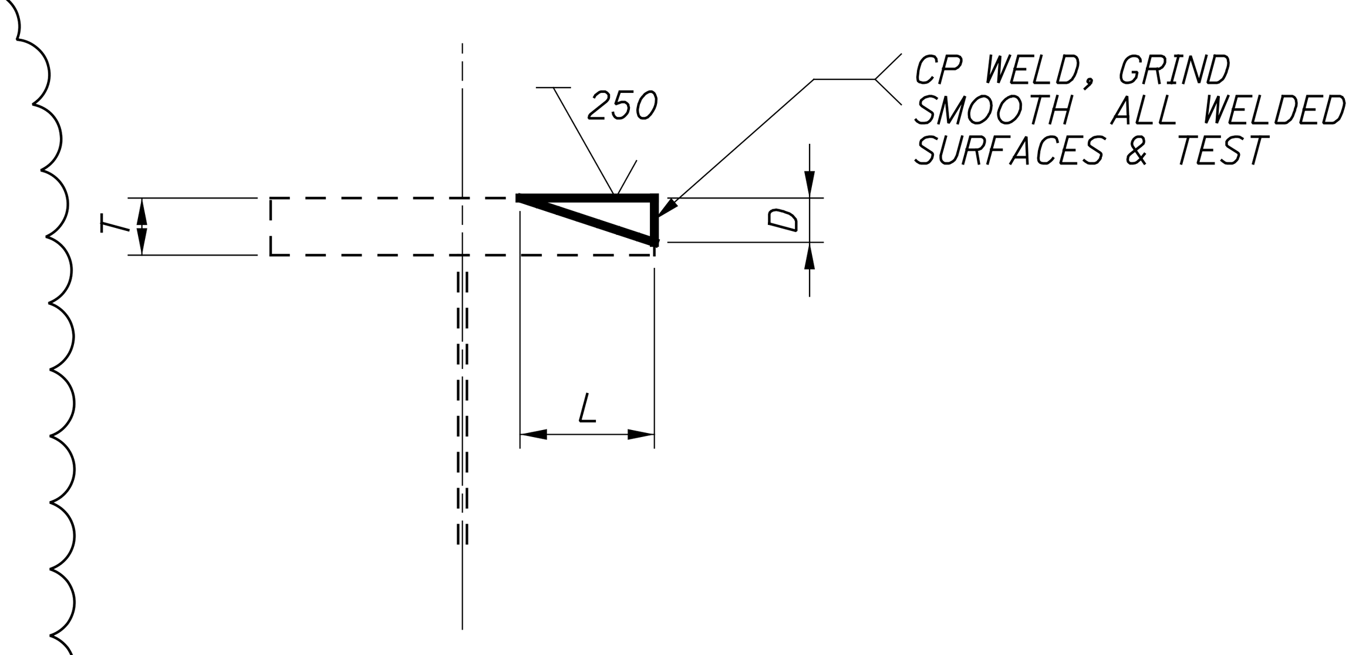


FRAMING PLAN

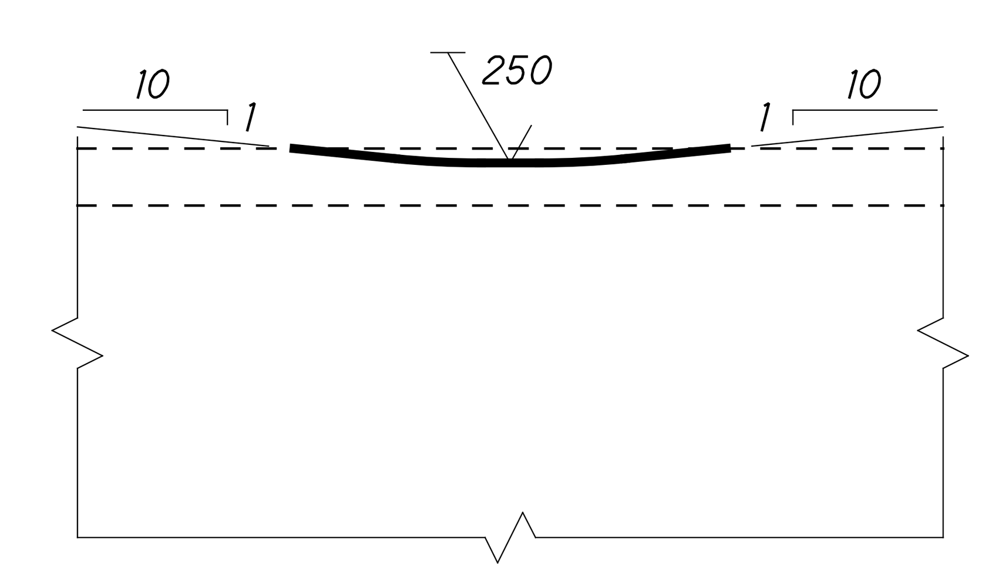
DAMAGE DESCRIPTIONS (LOCATIONS 1-16, GIRDER G8)					
CUT LOCATION	L	D	WIDTH	T	REPAIR TYPE
1	2¼"	½"	⅜"	2⅜"	WELD
2	2"	⅛"	⅜"	2⅜"	GRIND
3	2½"	¾"	⅜"	2⅜"	WELD
4	1"	5/16"	⅜"	2⅜"	WELD
5	3¼"	5/16"	⅜"	2⅜"	WELD
6	2"	½"	⅜"	2⅜"	WELD
7	1"	¼"	⅜"	2⅜"	WELD
8	2"	¾"	⅜"	2⅜"	WELD
9	1"	⅛"	⅜"	2⅜"	GRIND
10	1"	¼"	⅜"	2⅜"	WELD
11	1½"	¾"	⅜"	2⅜"	WELD
12	10"	⅛"	⅜"	2⅜"	WELD
13	3½"	¼"	⅜"	2⅜"	WELD
14	9"	¼"	⅜"	2⅜"	WELD
15	16"	⅛"-¾"	⅜"	2⅜"	WELD
16	1¼"	¼"	⅜"	⅞"	WELD



TYPICAL GRINDING REPAIR



TYPICAL WELD REPAIR



TYPICAL GRINDING REPAIR

1. REPAIR CUT BY GRINDING ACCORDING TO SUPPLEMENTAL SPECIFICATION 849, REPAIR DAMAGED MEMBERS. PERFORM GRINDING ACCORDING TO SUPPLEMENTAL SPECIFICATION 849 AND AS ILLUSTRATED IN DETAIL
2. REPAIR CUT BY WELDING ACCORDING TO SUPPLEMENTAL SPECIFICATION 849 REPAIRING DAMAGED MEMBERS, AS ILLUSTRATED IN DETAIL FC2-3. PERFORM COMPLETE PENETRATION WELDING ACCORDING TO C&MS 513.21 BY ATTACHING RUN OFF TABS AND GRIND ALL WELDED SURFACES SMOOTH ACCORDING TO ANSI B46.1 OF 250 mil
3. PERFORM NDT TESTING ACCORDING TO C&MS 513.25A

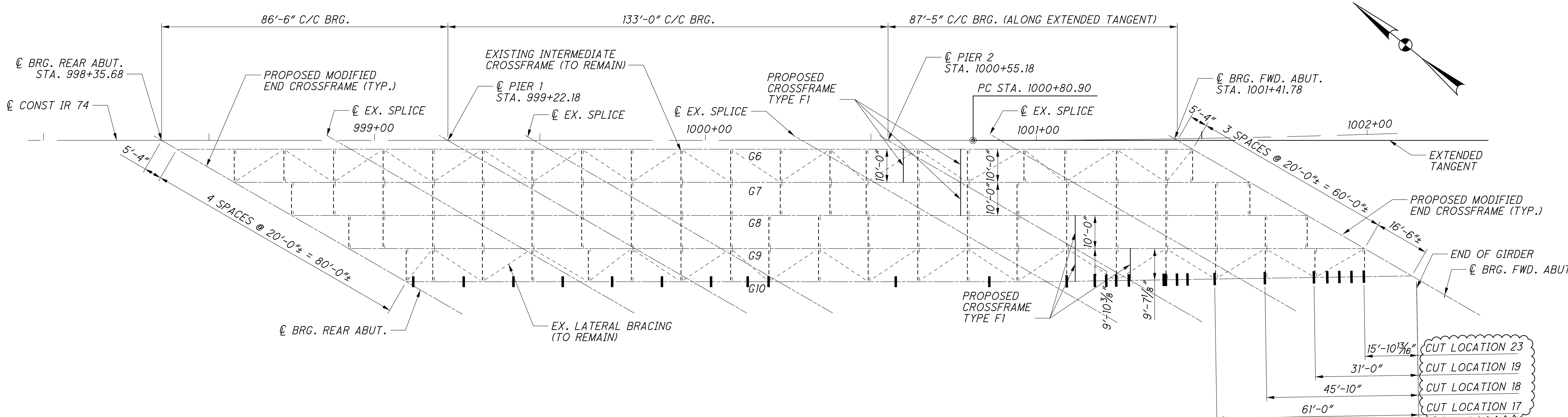
DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
AMI	DSH	SJF	4/17/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115577	

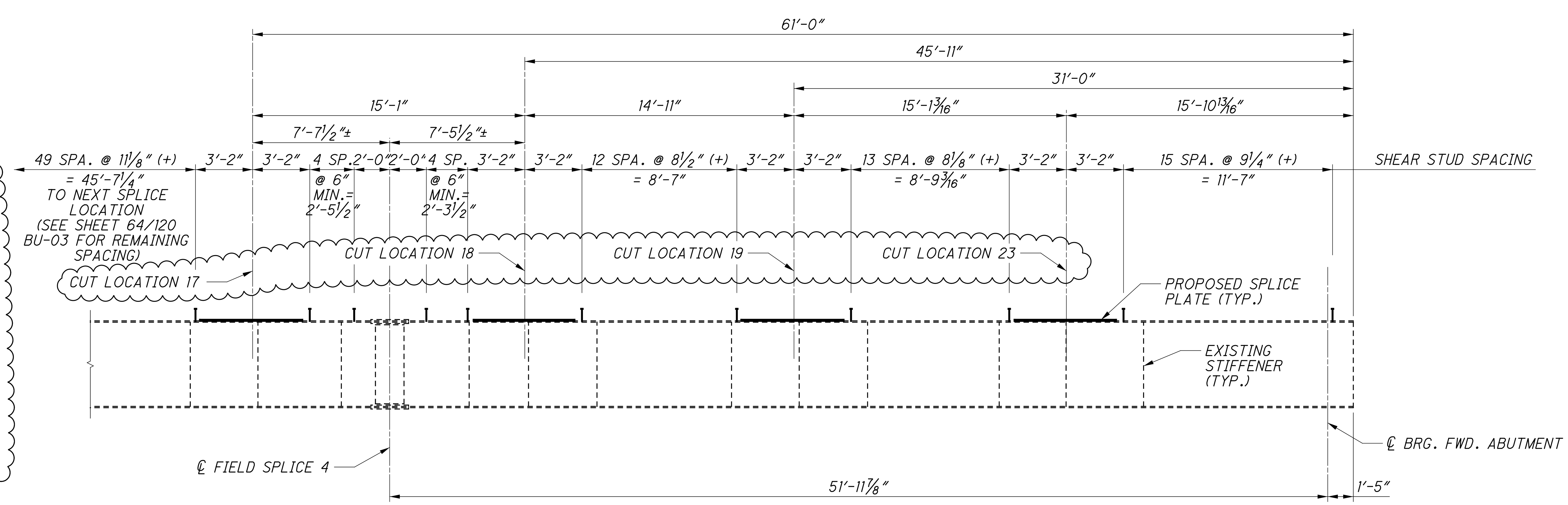
CORRECTIVE WORK PLAN - GIRDER REPAIR WELD/GRINDING DETAILS

BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667



FRAMING PLAN



DAMAGE DESCRIPTIONS

(LOCATIONS 17, 18, 19 & 23 GIRDER 10)

CUT LOCATION 17 :
11" WIDTH OF FLANGE FULL DEPTH; ¼" INTO WEB.

CUT LOCATION 18 :
11" WIDTH OF FLANGE FULL DEPTH; 1" INTO WEB.

CUT LOCATION 19 :
5" WIDTH OF FLANGE FULL DEPTH; ⅛" INTO WEB.

CUT LOCATION 23 :
7" WIDTH OF FLANGE FULL DEPTH; ¼" INTO WEB.

PARTIAL GIRDER 10 ELEVATION

DESIGN AGENCY: STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
AMI	DSH	SJF	4/17/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115577	

CORRECTIVE WORK PLAN - GIRDER REPAIR SPLICE DETAILS

BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667

3 / 4

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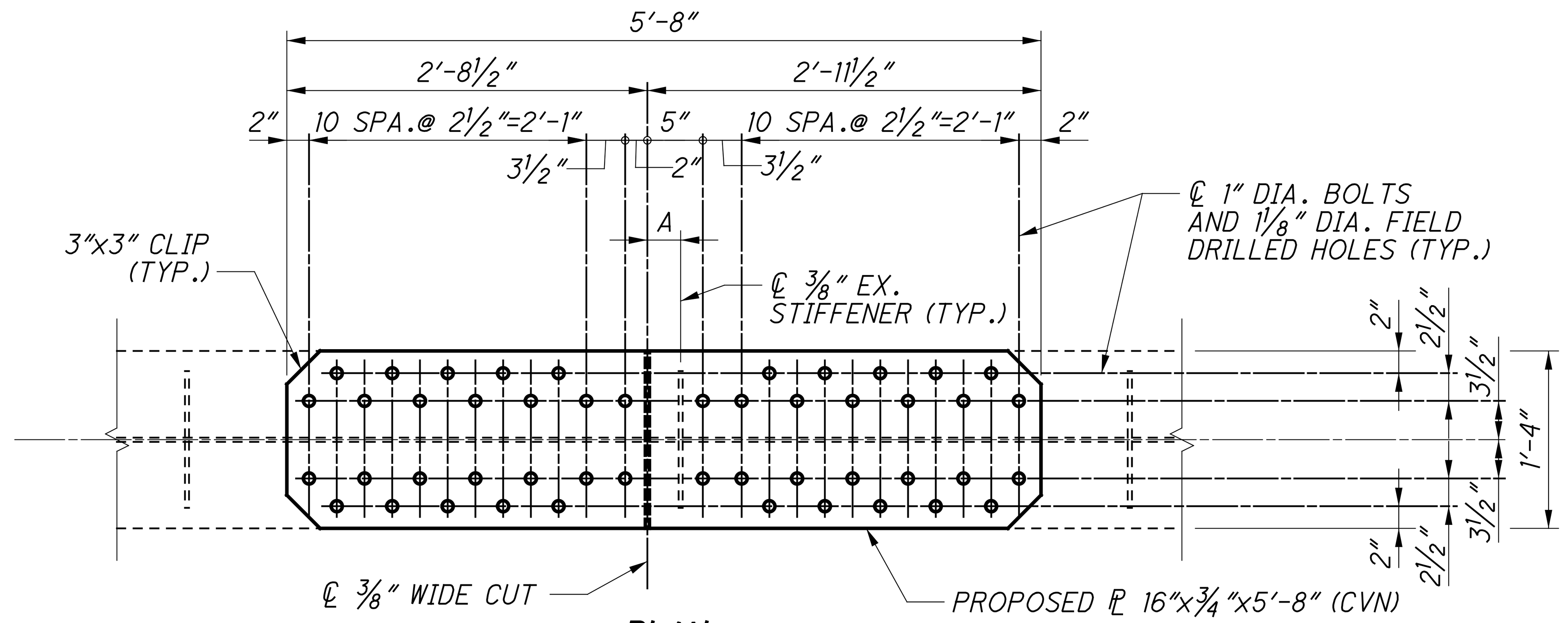
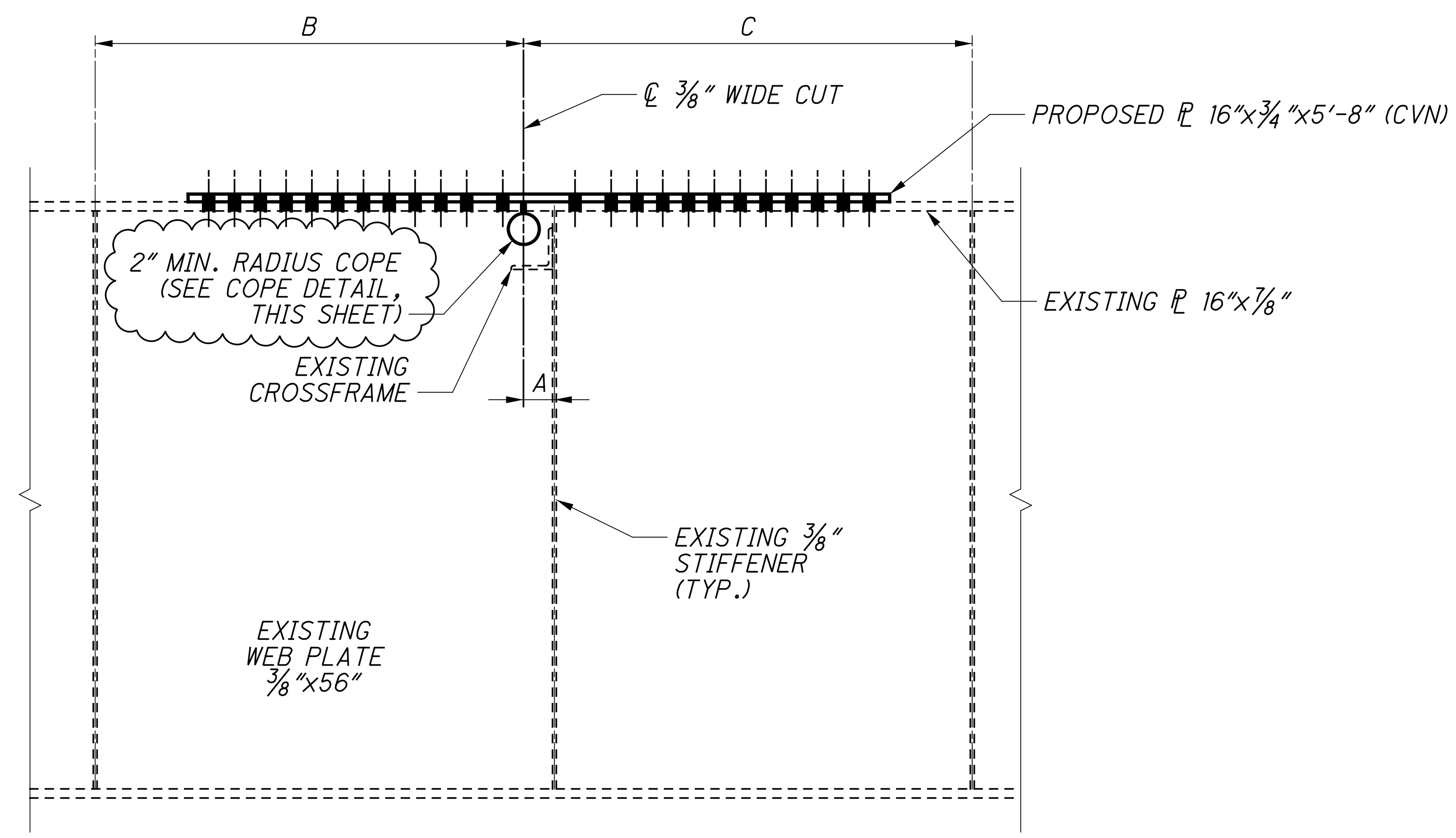


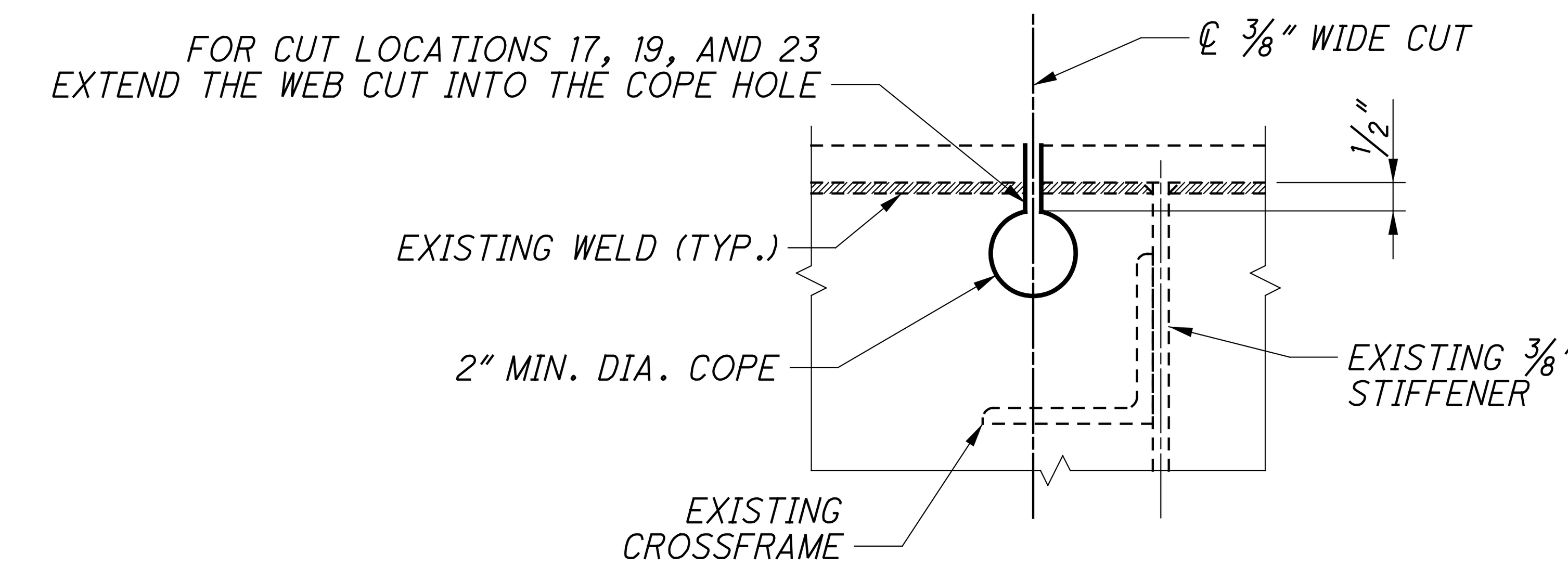
PLAN



ELEVATION

SPLICE DETAILS

CUT LOCATIONS 17, 18, 19 & 23



COPE DETAIL

2" DIA. DRILLED HOLE

TABLE OF DIMENSIONS			
CUT LOCATION	A	B	C
17	3½"	3'-5½"	4'-11"
18	2½"	3'-1"	4'-0"
19	3½"	3'-5½"	4'-1"
23	3"	3'-5½"	4'-6½"

NOTES :

1. STEEL SPLICE PLATES SHALL BE ASTM A709 GRADE 50.
2. WHERE A PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.
3. HIGH STRENGTH BOLTS SHALL BE 1" DIAMETER ASTM F3125 GRADE A325, UNLESS OTHERWISE NOTED.

DESIGN AGENCY
STRUCTUREPOINT

DESIGNED	DRAWN	REVIEWED	DATE
AMI	DSH	SJF	4/17/19
CHECKED CLB	REVISED	STRUCTURE FILE NUMBER 3115577	

CORRECTIVE WORK PLAN - GIRDER REPAIR SPLICE DETAILS
BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
PID No. 104667

SUPPLEMENTAL SPECIFICATIONS:

REFER TO SS 849 AS NOTED IN THE PLANS.

SEQUENCE OF WORK:

REPAIR CUT LOCATIONS BY GRINDING PER PLANS AND SS 849.14 AND REPLACE DAMAGED BOLTS.

REPAIR STRUCTURAL STEEL COATING SYSTEM AT ALL LOCATIONS DAMAGED DURING DEMOLITION AND DURING THE REPAIR PROCEDURES PER ITEM 514 - FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN (ONE COAT)

ITEM 514 - FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN (ONE COAT):

1.0 DESCRIPTION: THIS ITEM CONSISTS OF FIELD PAINTING STRUCTURAL STEEL PREVIOUSLY COATED WITH AN UNKNOWN EXISTING PAINT TO CORRECT DAMAGE FROM DEMOLITION AND REPAIR PROCEDURES. THIS WORK CONSISTS OF PERFORMING SURFACE PREPARATION AND APPLYING A PRIMER TO THE PREPARED STEEL AND FEATHERED REMOVAL AREAS OF UNKNOWN EXISTING PAINT SYSTEMS. ALL STRUCTURAL STEEL SURFACE AREAS, THAT WILL BE EXPOSED AFTER CONSTRUCTION COMPLETE, DAMAGED BY DEMOLITION OR REPAIR PROCEDURES SHALL BE PAINTED.

2.0 GENERAL: C&MS 514.05 THROUGH 514.10 AND 514.13.D APPLY UNLESS MODIFIED BY THESE NOTES.

3.0 WASHING EXISTING PAINTED SURFACES:
CLEAN SURFACES TO BE COATED WITH LOW PRESSURE WATER CLEANING TO REMOVE ALL DIRT, DEBRIS, ANIMAL EXCREMENT, SALT CONTAMINANTS AND OTHER ACCUMULATED FOREIGN MATERIAL IN ACCORDANCE WITH SSPC-SP12 (LP WC), LOW PRESSURE WATER CLEANING. THE PRESSURE WASHER SHALL BE CAPABLE OF ACHIEVING AT LEAST 2000 POUNDS PER SQUARE INCH AT THE NOZZLE. WHEN USING THE POWER WASHING EQUIPMENT, THE NOZZLE SHALL BE MAINTAINED NO MORE THAN 10 INCHES FROM THE SURFACE. SUPPLY AND USE POTABLE WATER. PROVIDE TO THE ENGINEER A LETTER OF WRITTEN ACCEPTANCE FOR ANY BIODEGRADABLE DETERGENTS OR CLEANERS USED IN CONJUNCTION WITH THIS METHOD.

COLLECT AND CONTAIN WATER AND DEBRIS REMOVED DURING WASHING OPERATIONS ABOVE WATER FEATURES IN CONFORMANCE WITH C&MS 514.08 AND C&MS 514.13.D FOR ANY DEBRIS. CREATE SETTLEMENT COLLECTION BASINS AND STRAIN ALL WASH WATER ABOVE LAND FEATURES AS NECESSARY TO PRODUCE VISIBLY CLEAR WATER AND COMPLY WITH CMS 514.08 AND C&MS 514.13.D FOR ANY DEBRIS.

4.0 SURFACE PREPARATION: AFTER THE PRESSURE WASHED SURFACE HAS DRIED, REMOVE EXISTING PAINT COATING TO CONTRACT LIMITS OR AS DIRECTED BY THE ENGINEER ACCORDING TO: SSPC-SP 11, POWER TOOL CLEANING TO BARE METAL, AS SHOWN ON THE PICTORIAL SURFACE PREPARATION STANDARDS FOR PAINTING STEEL SURFACES SHOWN IN SSPC-VIS 3; SSPC SP6, COMMERCIAL BLAST CLEANING, AS SHOWN ON THE PICTORIAL SURFACE PREPARATION STANDARDS FOR PAINTING STEEL SURFACES SHOWN IN SSPC-VIS 1; OR SSPC SP12 UHP WJ-4, ULTRAHIGH-PRESSURE WATER JETTING, AS SHOWN ON THE PICTORIAL SURFACE PREPARATION STANDARDS FOR PAINTING STEEL SURFACES SHOWN IN SSPC-VIS 4. SUPPLY BLAST WATER CONTAINING A COMMERCIALLY AVAILABLE RUST INHIBITOR AT A DOSAGE THAT PREVENTS FLASH RUSTING FOR 12 HOURS AND DOCUMENTED AS ACCEPTABLE TO THE COATING'S MANUFACTURER. THE ENGINEER WILL USE THE SSPC-VIS 1, SSPC-VIS 3 OR SSPC-VIS 4 TO DETERMINE THE ACCEPTANCE OF THE SURFACE PREPARATION. FEATHER THE EXISTING PAINT TO ROUGHEN A MINIMUM OF 1/2 INCH OF THE EXISTING PAINT. CONTAIN AND DISPOSE OF WASTE GENERATED BY THE CLEANING ACCORDING TO C&MS 514.13.D.

ROUND ALL EXPOSED CORNERS OF MAIN MATERIAL TO BE PAINTED AS NECESSARY TO ACHIEVE A 1/16 INCH RADIUS OR EQUIVALENT FLAT SURFACE AT A 45 DEGREE ANGLE.

5.0 FIELD PAINTING: APPLY THE PRIME COAT OF THE THREE-COAT PAINT SYSTEM SPECIFIED IN C&MS 708.02, ACCORDINGTO C&MS 514.15, 514.16, 514.17, 514.19 AND 514.20 TO THE CONTRACT LIMITS OR AS DIRECTED BY THE ENGINEER. THE ENGINEER WILL DETERMINE THE PRIME COAT THICKNESS USING A TYPE 2 MAGNETIC GAGE AT SPOT LOCATIONS. DO NOT APPLY THE INTERMEDIATE OR FINISH COAT. THE PRIME COAT OF PAINT SHALL MEET THE MINIMUM DRY FILM THICKNESS REQUIREMENTS OF C&MS 514.20. APPLY PAINT AS FOLLOWS:

APPLY THE PRIME COAT ONLY TO THE PREPARED SURFACE OF THE BARE STEEL AND THE EXISTING UNKNOWN PAINT SYSTEM ROUGHENED BY FEATHERING. AT THE PERIMETER OF THE REPAIR AREA, APPLY THE PRIME COAT USING A BRUSH. IN LIEU OF BRUSHING THE CONTRACTOR MAY DOUBLE MASK THE AREAS NOT TO BE COATED AND SPRAY TO FEATHERED REMOVAL LINES.

STATE OF OHIO
CHRISTOPHER L. BETTINGER
E-69368
REGISTERED
PROFESSIONAL ENGINEER

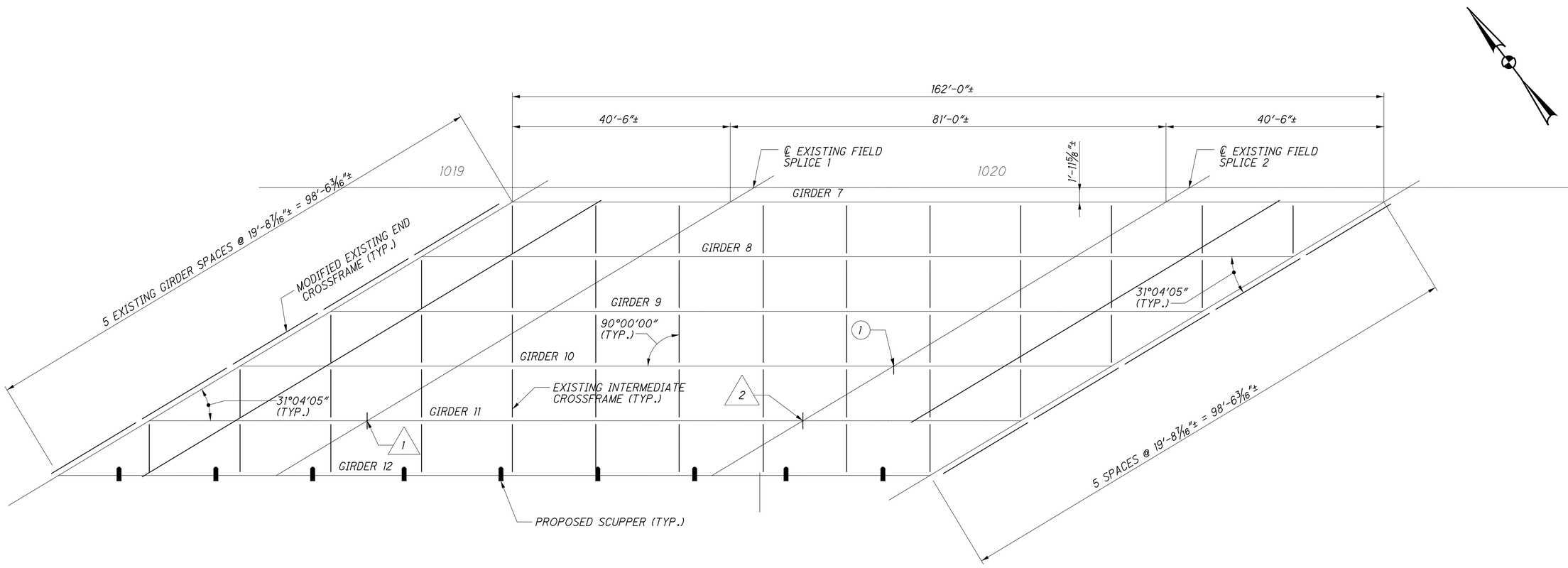
6/17/19

DESIGN AGENCY
STRUCTUREPOINT
2550 CORPORATE EXCHANGE DR. STE 300
COLUMBUS, OH 43231

DESIGNED	DRAWN	REVIEWED	DATE
AMI	DSH	SJF	5/30/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115690	

CORRECTIVE WORK PLAN - GIRDER REPAIR NOTES
BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

HAM-75-3.84
PID No. 104667



"X" INDICATES CUT LOCATION NUMBER

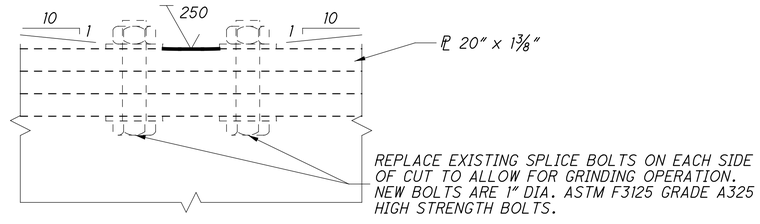
"X" INDICATES CUT BOLT LOCATION NUMBER

FRAMING PLAN

NOTES:

AT CUT BOLT LOCATIONS NUMBER 1 AND 2, REMOVE EXISTING DAMAGED BOLTS, NUTS AND WASHERS. PLACE NEW 1" DIA. ASTM F3125 GRADE A325 HIGH STRENGTH BOLTS, NUTS AND WASHERS AS REQUIRED. (2 BOLTS AT EACH LOCATION)

CUT LOCATION	LENGTH	DEPTH	DESCRIPTION	REPAIR TYPE
1	7"	1/16"	CUT IN TOP SPLICE PLATE	GRIND



TYPICAL GRINDING REPAIR

DESIGN AGENCY
STRUCTUREPOINT LLC
2000 CORPORATE EXCHANGE DR, STE 300
COLUMBUS, OH 43231
TEL 614.901.7900 FAX 614.901.7901
www.structurepoint.com

DESIGNED	DRAWN	REVIEWED	DATE
AMI	DSH	SJF	5/30/19
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CLB		3115690	

CORRECTIVE WORK PLAN - GIRDER REPAIR DETAILS

BRIDGE NO. HAM-74-1892 L/R
OVER ELMORE STREET

HAM-75-3.84
PID No. 104667

2 / 2

2
2

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COSMEC INC. / DYNAMIC RUBBER

P.O. Box 2159
1501 Rocky Ridge Road
Athens, TX 75751
TEL: 903.677.2871 FAX: 903.675.4776

TRANSMITTAL SHEET

TO: WALSH CONSTRUCTION CO. II

RACE SHARRETT RSHARRETT@WALSHGROUP.ONMICROSOFT.COM

CC KATHI MILLS

DATE: 4/8/19

JOB: E170 (713) BRIDGES HAM-75-0440 L/R, HAM-74-1840 L/R, HAM-74-1852 L/R, HAM-75-3.84

RE: SHOP DRAWING SUBMITTAL

DRP JOB NO: **15353A** LOCATION: HAMILTON CO.

WE TRANSMIT TO YOU UNDER SEPARATE COVER HERE WITH THE FOLLOWING DRAWINGS:

DWG NO	REV NO	NO EACH	DESCRIPTION	REMARKS
15353A-GN1	0	1	GENERAL NOTES	
15353A-D1	0	1	SHOP DRAWING	APPROVER NOTS REQUIRE REPLY
15353A-D2	0	1	SHOP DRAWING	APPROVER NOTS REQUIRE REPLY
15353A-D3	0	1	SHOP DRAWING	
15353A-D4	0	1	SHOP DRAWING	
15353A-D5	0	1	SHOP DRAWING	
15353A-D6	0	1	SHOP DRAWING	
15353A-D7	0	1	SHOP DRAWING	

DWG NO	REV NO	NO EACH	DESCRIPTION	REMARKS
15353A-D8	0	1	SHOP DRAWING	APPROVER NOTS REQUIRE REPLY

COMMENTS: **THE ATTACHED SHOP DRAWINGS ARE SUBMITTED FOR APPROVAL. PLEASE FORWARD THIS PACKAGE TO THE ENGINEER FOR REVIEW AND ADVISE THE APPROVAL STATUS AS SOON AS POSSIBLE.**

***** APPROVER NOTES REQUIRE REPLY*****

THE ABOVE PRINTS ARE SUBMITTED TO YOU FOR:

BY:

(XXX) Approval	( ) Final Approval	( ) Distribution
( ) Field Use	( ) Fabrication	(XXX) E-MAIL
( ) Next Day Air	( ) Second Day Air	( ) Messenger
( ) UPS	( ) First Class Mail	( ) Fax

Thank you

STEPHANIE RITZ

COSMEC INC. / DYNAMIC RUBBER PRODUCTS

WWW.COSMECINC.COM

GENERAL NOTES

GENERAL NOTES:

1. ALL BEARINGS IN ACCORDANCE WITH THE 2016 OHIO DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS AND BRIDGES AND SUPPLEMENTAL SPECIFICATIONS 800 DATED 10/19/18, AND 869 DATED 10/17/14.
2. SHOP TO MARK LOCATION, BEAM/GIRDER NUMBER, BEARING NUMBER, HIGH–SIDE ⊗ AND AHEAD STATION AS SHOWN. MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER BEARING IS INSTALLED.
3. ALL DIMENSIONS ARE IN INCHES.
4. ALL PLATES SHALL BE SMOOTH AND STRAIGHT.
5. SHIP THE SAMPLE BEARING TO AN INDEPENDENT TESTING LABORATORY FOR TESTING PER OH DOT STANDARD SPECIFICATIONS SECTION 711.23.
6. NOTIFY THE OH DOT OFFICE OF STRUCTURAL ENGINEERING AT LEAST TWO WEEKS BEFORE STARTING SHOP FABRICATION.
7. DYNAMIC RUBBER REPRESENTATIVE:
   KATHI MILLS
   903–677–2871
   1501 ROCKY RIDGE RD.
   ATHENS, TX 75751

FINISH NOTES:

BRIDGE NO.: HAM–75–0440 L/R

1. BLAST EXPOSED STEEL SURFACES OF THE SOLE PLATES, LOAD PLATES AND HP12x53 PEDESTALS TO SSPC–SP6 (COMMERCIAL BLAST CLEANING) PRIOR TO GALVANIZING.
2. BLAST EXPOSED STEEL SURFACES OF THE RUB PLATES & STUDS TO SSPC–SP5 (WHITE METAL BLAST CLEANING) PRIOR TO METALIZING.
3. GALVANIZED THE SOLE PLATES, LOAD PLATES AND HP12x53 PEDESTALS ACCORDING TO SECTION 711.02.
4. RUB PLATES & STUDS SHALL BE ZINC METALIZED AND SEAL COATED PER SUPPLEMENTAL SPECIFICATION SECTION 869.13.

BRIDGE NO.: HAM–74–1840 L/R & HAM–74–1852 L/R

1. BLAST EXPOSED STEEL SURFACES OF THE SOLE PLATES, LOAD PLATES AND HP12x53 PEDESTALS TO SSPC–SP10 (NEAR WHITE BLAST CLEANING) PRIOR TO PAINTING.
2. THE SOLE PLATES, LOAD PLATES AND HP12x53 PEDESTALS SHALL BE PRIME PAINTED WITH A CONTRACTOR DESIGNATED PRIME PAINT PER SPECIFICATION SECTION 514.

MATERIAL NOTES:

BRIDGE NO.: HAM–75–0440 L/R

1. ELASTOMER: 50 DUROMETER GRADE 3 NEOPRENE
2. STEEL LAMINATES: ASTM A709 GRADE 36, A1011 GRADE 36, GRADE 40 OR EQUIVALENT.
3. STEEL PLATES: ASTM A709 GRADE 50 (GALVANIZED)
4. STEEL HP12x53 PEDESTALS: ASTM A709 GRADE 50 (GALVANIZED)
5. RUB PLATES: ASTM A709 GRADE 50 (METALIZED)
6. STAINLESS STEEL (RUB PLATE): ASTM A240 TYPE 304 W/#8 MIRROR FINISH ON SLIDING SURFACE
7. PTFE (RUB PLATE): ASTM D4894 (UNFILLED) – UNDIMPLED (PER AASHTO 18.8)
8. SHEAR STUDS: ASTM A108 GRADE 1018 (METALIZED)

BRIDGE NO.: HAM–74–1840 L/R & HAM–74–1852 L/R

1. ELASTOMER: 50 DUROMETER GRADE 3 NEOPRENE
2. STEEL LAMINATES: ASTM A709 GRADE 36, A1011 GRADE 36, GRADE 40 OR EQUIVALENT.
3. STEEL PLATES: ASTM A709 GRADE 50 (PRIME PAINTED)
4. STEEL HP12x53 PEDESTALS: ASTM A709 GRADE 50 (PRIME PAINTED)

CONTRACTOR NOTES:

1. WHEN WELDING BEAM FLANGE TO SOLE PLATES, USE TEMPERATURE INDICATING WAX PEN OR OTHER SUITABLE MEANS TO INSURE THAT THE TEMPERATURE OF THE ELASTOMER DOES NOT EXCEED 250°F. TEMPERATURES ABOVE THIS MAY DAMAGE THE ELASTOMER.
2. HAM–74–1840 & HAM–74–1852 ARE REHABILITATION PROJECTS. THE CONTRACTOR MUST VERIFY ALL SIZES AND DIMENSIONS ON THESE SHOP DRAWINGS PRIOR TO ANY FABRICATION BY COSMEC, INC.. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE CORRECT SIZES AND CORRECT FIT, IN THE FIELD, OF ALL COMPONENTS.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

BRIDGE NO.: HAM–75–0440 L/R OVER IR–74 WB

BRIDGE NO.: HAM–74–1840 L/R OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

BRIDGE NO. HAM–74–1852 L/R OVER NB BEEKMAN ST. (U.S. 27)

HAM–75–3.84
CITY OF CINCINNATI

STATE	COUNTY	PID NO.
OH	HAMILTON	104667

FED. PROJ. NO.: E170 (713)

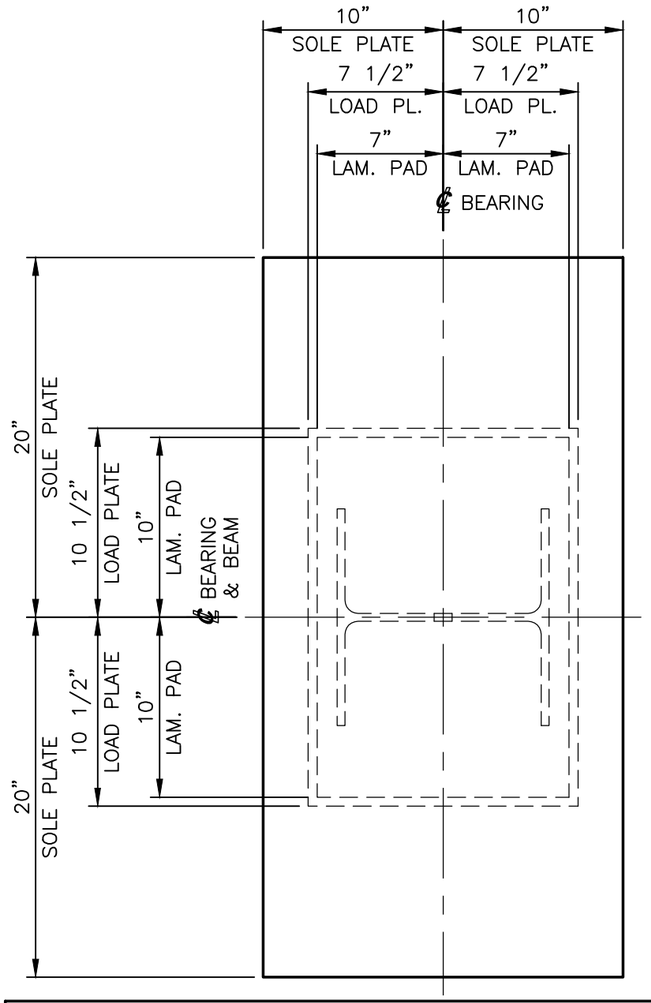
DYNAMIC RUBBER LAM. ELASTOMERIC BEARING ASSY.'S

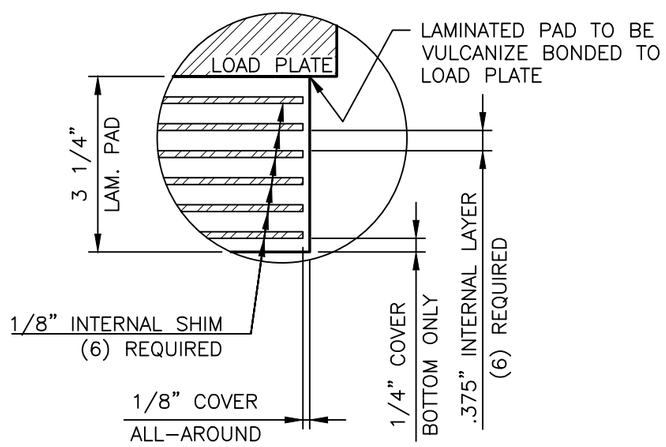
Cosmec
1501 ROCKY RIDGE ROAD
P.O. BOX 2159
ATHENS, TEXAS 75751

SCALE: NONE	DRAWN BY: MH	CHECKED BY: ELS
	DATE: 03/18/19	DATE: 03/29/19
SHEET GN1 OF 1	JOB NO.: 15353A	

REV.	DESCRIPTION	BY	DATE	CK'D	DATE
0	.	.	.	.	.

CUSTOMER	DRAWING NUMBER	REV.
WALSH CONSTRUCTION CO. II	15353A–GN1	0

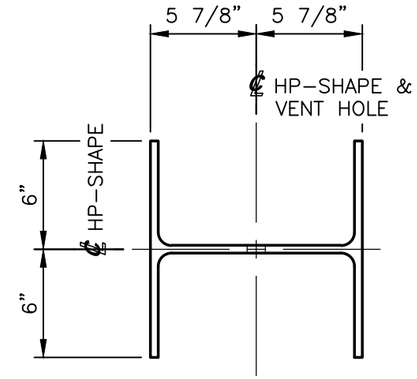




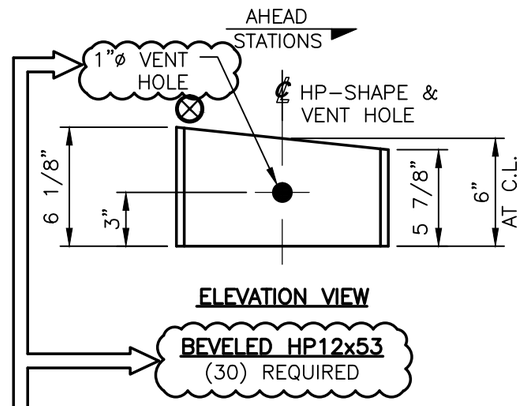
DETAIL 1
3 1/4" x 20" x 14" LAMINATED PAD
50 DUROMETER GRADE 3 NEOPRENE
VULCANIZE BONDED TO LOAD PLATE
(30) REQUIRED

TEST1-A
3 1/4" x 20" x 14" LAMINATED PAD
50 DUROMETER GRADE 3 NEOPRENE
PAD ONLY FOR TESTING
(2) REQUIRED

UNFACTORED ELASTOMERIC BEARING LOADS		
	EBA1-A (LEFT)	EBA2-A (RIGHT)
DEAD LOAD	223 KIPS	207 KIPS
LIVE LOAD	107 KIPS	101 KIPS
TOTAL LOAD (DL+LL)	330 KIPS	308 KIPS

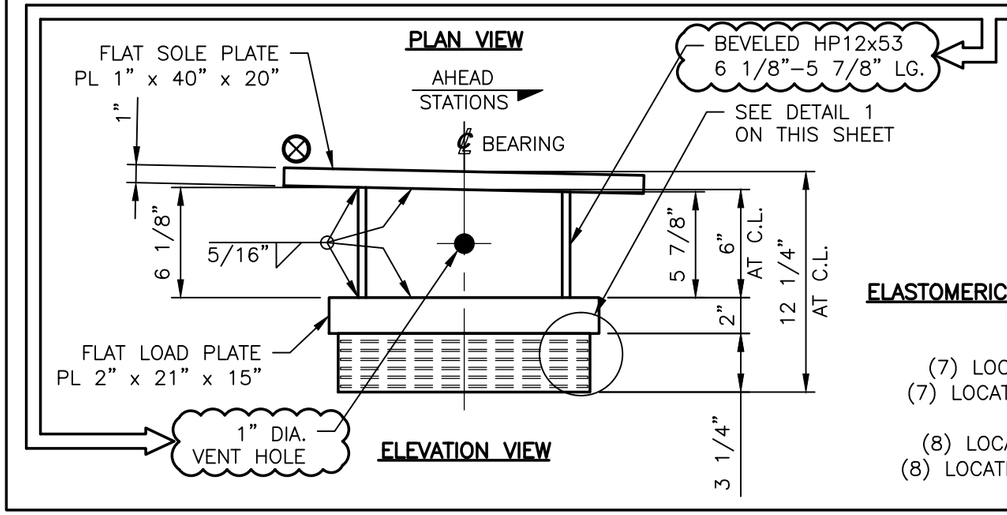


PLAN VIEW



ELEVATION VIEW

BEVELED HP12x53
(30) REQUIRED



EXPANSION LAMINATED
ELASTOMERIC BEARING ASSEMBLY (REF. NO.: 0039)
MARK: EBA1-A & EBA2-A
LEFT BRIDGE (EBA1-A)
(7) LOCATED AT REAR ABUT. (BEAMS 1-7)
(7) LOCATED AT FORWARD ABUT. (BEAMS 1-7)
RIGHT BRIDGE (EBA2-A)
(8) LOCATED AT REAR ABUT. (BEAMS 8-15)
(8) LOCATED AT FORWARD ABUT. (BEAMS 8-15)
(30) REQUIRED

APPROVER NOTE:
1. PER SECTIONS A-A, B-B AND ELEVATION VIEWS SHOWN ON CONTRACT SHEET 45 OF 68, THE HP12x53 IS TO BE BEVELED. IN THE PLAN AND BEARING SCHEDULE TABLE ON SHEET 45 OF 68 THE LOAD PLATE IS TO BE BEVELED. PLEASE VERIFY IF THE HP12x53 IS BEVELED AS SHOWN.
2. A VENT HOLE IS SHOWN IN THE DETAILS ON CONTRACT SHEET 45 OF 68 BUT THE SIZE IS NOT CALLED OUT. PLEASE VERIFY IF THE 1" DIAMETER, AS SHOWN, IS ACCEPTABLE.

BRIDGE NO.: HAM-75-0440 L/R

SEE NOTES ON SHEET GN1 OF 1

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

BRIDGE NO.: HAM-75-0440 L/R
OVER IR-74 WB

BRIDGE NO.: HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27)
AND RAMP F

BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
CITY OF CINCINNATI

STATE	COUNTY	PID NO.
OH	HAMILTON	104667

FED. PROJ. NO.: E170 (713)

DYNAMIC RUBBER
LAM. ELASTOMERIC BEARING ASSY.'S

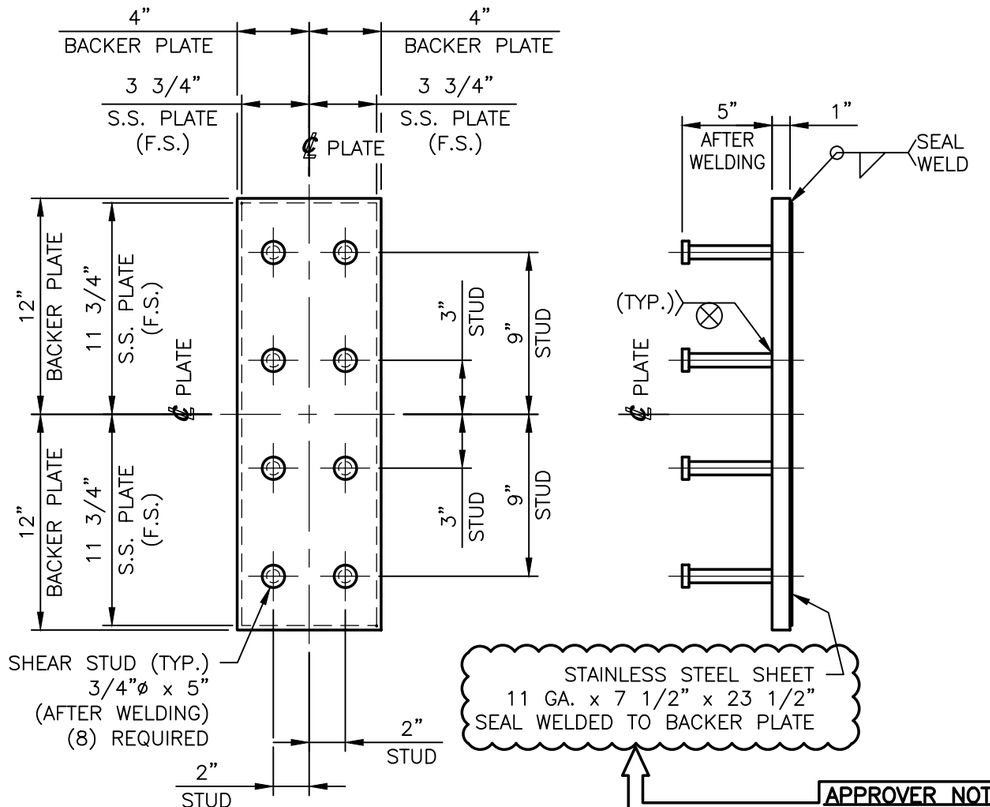
Cosmec
1501 ROCKY RIDGE ROAD
P.O. BOX 2159
ATHENS, TEXAS 75751

REV.	DESCRIPTION	BY	DATE	CK'D	DATE
0	.	.	.	.	.

SCALE: NONE | DRAWN BY: MH DATE: 03/18/19 | CHECKED BY: ELS DATE: 03/29/19

SHEET 1 OF 8 | JOB NO.: 15353A

CUSTOMER: WALSH CONSTRUCTION CO. II | DRAWING NUMBER: 15353A-D1 | REV. 0

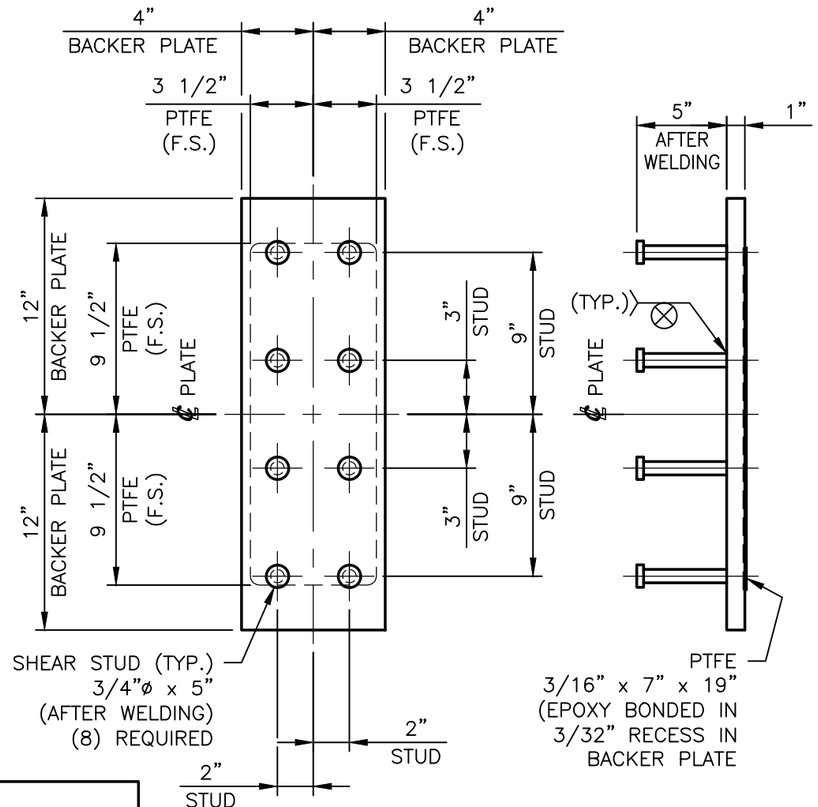


PLAN VIEW

FRONT VIEW

APPROVER NOTE:
13GA STAINLESS STEEL IS NOT AVAILABLE WITH A MIRROR FINISH. PLEASE VERIFY IF 11GA IS ACCEPTABLE.

RUB PLATE ASSEMBLY (REF. NO.: 0039)
MARK NO.: RP1–A
PL 1" x 8" x 24"
ASTM A709 GRADE 50 (METALIZED)
LEFT BRIDGE
(1) LOCATED AT REAR ABUTMENT
(1) LOCATED AT FRONT ABUTMENT
RIGHT BRIDGE
(1) LOCATED AT REAR ABUTMENT
(1) LOCATED AT FRONT ABUTMENT
(4) REQUIRED



PLAN VIEW

FRONT VIEW

RUB PLATE ASSEMBLY (REF. NO.: 0039)
MARK NO.: RP2–A
PL 1" x 8" x 24"
ASTM A709 GRADE 50 (METALIZED)
LEFT BRIDGE
(1) LOCATED AT REAR ABUTMENT
(1) LOCATED AT FRONT ABUTMENT
RIGHT BRIDGE
(1) LOCATED AT REAR ABUTMENT
(1) LOCATED AT FRONT ABUTMENT
(4) REQUIRED

BRIDGE NO.: HAM–75–0440 L/R

SEE NOTES ON SHEET GN1 OF 1

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

BRIDGE NO.: HAM–75–0440 L/R
OVER IR–74 WB

BRIDGE NO.: HAM–74–1840 L/R
OVER SB BEEKMAN ST. (U.S. 27)
AND RAMP F

BRIDGE NO. HAM–74–1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM–75–3.84
CITY OF CINCINNATI

STATE	COUNTY	PID NO.
OH	HAMILTON	104667

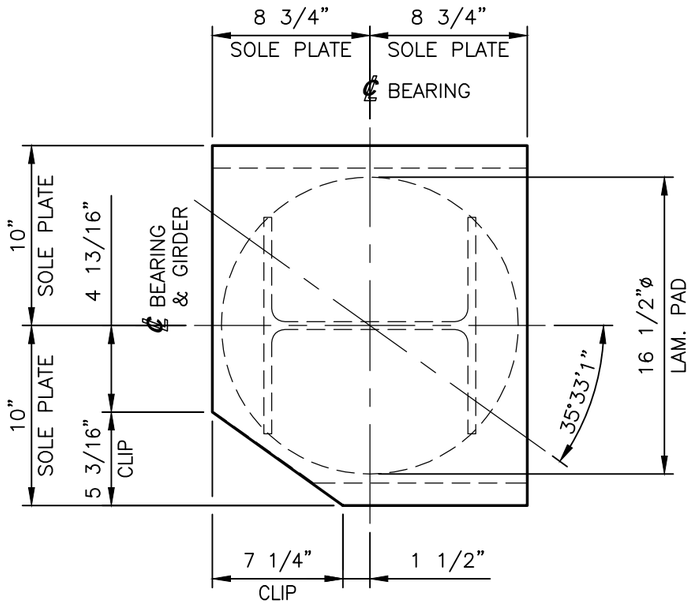
FED. PROJ. NO.: E170 (713)

DYNAMIC RUBBER
LAM. ELASTOMERIC BEARING ASSY.'S

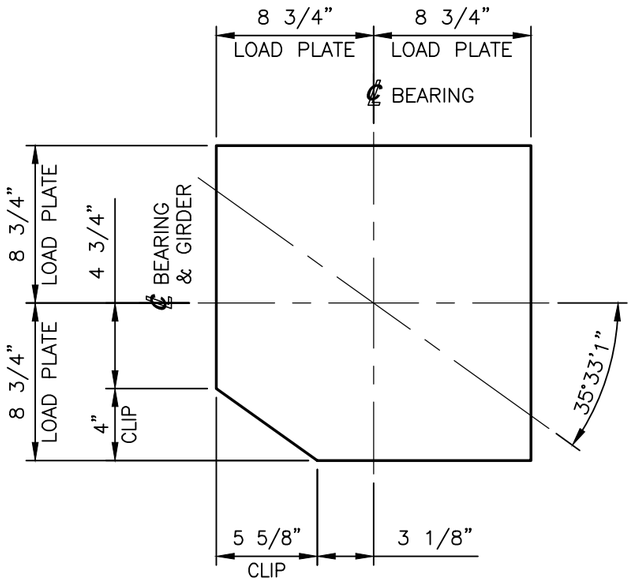
Cosmec
1501 ROCKY RIDGE ROAD
P.O. BOX 2159
ATHENS, TEXAS 75751

REV.	DESCRIPTION	BY	DATE	CK'D	DATE
0	.	.	.	.	.

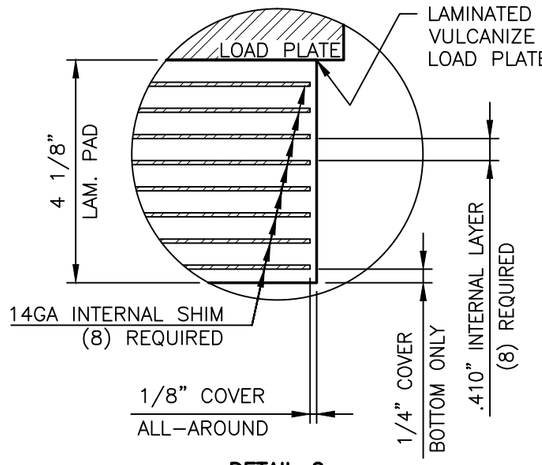
SCALE: NONE
DRAWN BY: MH DATE: 03/18/19
CHECKED BY: ELS DATE: 03/29/19
SHEET 2 OF 8
JOB NO.: 15353A
CUSTOMER: WALSH CONSTRUCTION CO. II
DRAWING NUMBER: 15353A–D2
REV.: 0



PLAN VIEW



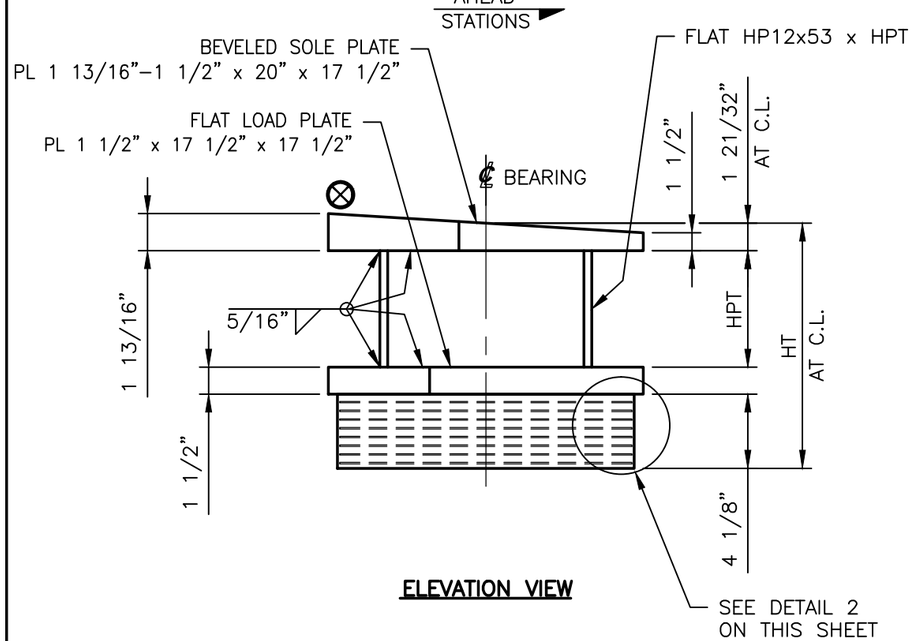
LOAD PLATE DETAIL
PL 1 1/2" x 17 1/2" x 17 1/2"
ASTM A709 GRADE 50 (PRIME PAINTED)
(10) REQUIRED



DETAIL 2
4 1/8" x 16 1/2"ø LAMINATED PAD
50 DUROMETER GRADE 3 NEOPRENE
VULCANIZE BONDED TO LOAD PLATE
(10) REQUIRED

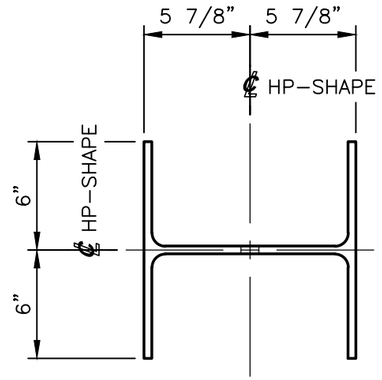
TEST2-A
4 1/8" x 16 1/2"ø LAMINATED PAD
50 DUROMETER GRADE 3 NEOPRENE
PAD ONLY FOR TESTING
(2) REQUIRED

BRIDGE NO.: HAM-74-1840 L/R

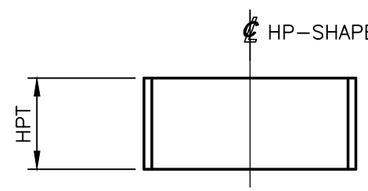


ELEVATION VIEW

EXPANSION LAMINATED ELASTOMERIC BEARING ASSEMBLY (REF. NO.: 0036) AT REAR ABUT.
SEE BEARING TABLE 1 ON SHEET 5 FOR MARK NUMBERS, QTY.'S, LOADS, LOCATIONS AND DIMENSIONS NOT SHOWN



PLAN VIEW



ELEVATION VIEW

FLAT HP12x53
(10) REQUIRED

SEE NOTES ON SHEET GN1 OF 1

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

BRIDGE NO.: HAM-75-0440 L/R
OVER IR-74 WB

BRIDGE NO.: HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27)
AND RAMP F

BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
CITY OF CINCINNATI

STATE	COUNTY	PID NO.
OH	HAMILTON	104667

FED. PROJ. NO.: E170 (713)

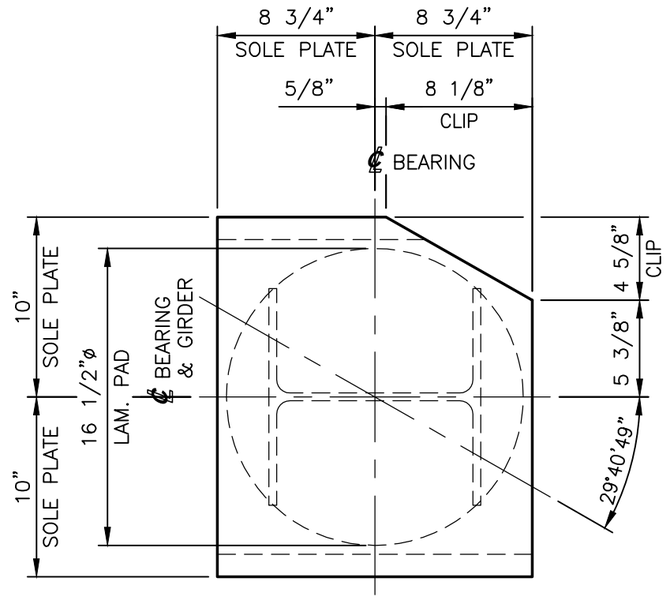
DYNAMIC RUBBER
LAM. ELASTOMERIC BEARING ASSY.'S

Cosmec
1501 ROCKY RIDGE ROAD
P.O. BOX 2159
ATHENS, TEXAS 75751

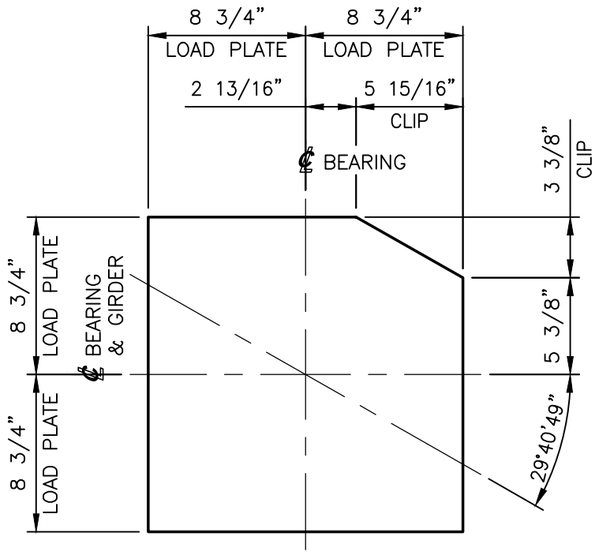
SCALE: NONE	DRAWN BY: MH	CHECKED BY: ELS
	DATE: 03/18/19	DATE: 03/29/19
SHEET 3 OF 8	JOB NO.: 15353A	

REV.	DESCRIPTION	BY	DATE	CK'D	DATE
0	.	.	.	.	.

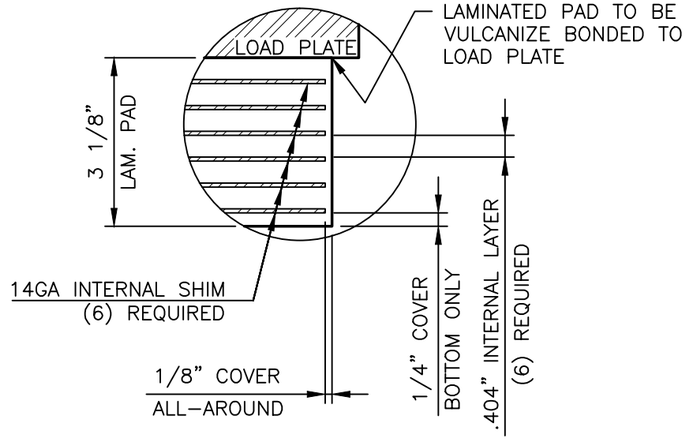
CUSTOMER	DRAWING NUMBER	REV.
WALSH CONSTRUCTION CO. II	15353A-D3	0



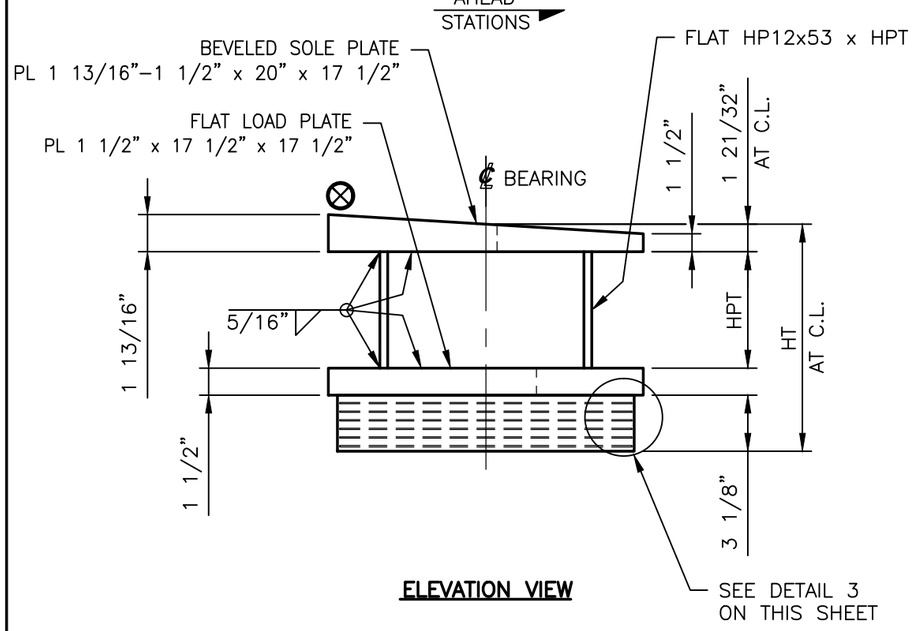
PLAN VIEW



LOAD PLATE DETAIL
PL 1 1/2" x 17 1/2" x 17 1/2"
ASTM A709 GRADE 50 (PRIME PAINTED)
(10) REQUIRED

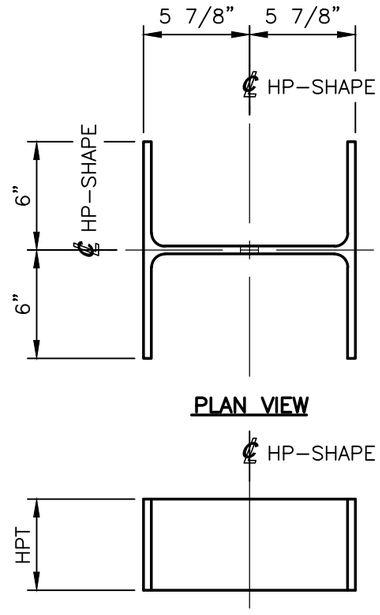


DETAIL 3
3 1/8" x 16 1/2"ø LAMINATED PAD
50 DUROMETER GRADE 3 NEOPRENE
VULCANIZE BONDED TO LOAD PLATE
(10) REQUIRED



ELEVATION VIEW

EXPANSION LAMINATED ELASTOMERIC BEARING
ASSEMBLY (REF. NO.: 0036) AT FORWARD ABUT.
SEE BEARING TABLE 2 ON SHEET 5 FOR MARK NUMBERS, QTY.'S, LOADS, LOCATIONS AND DIMENSIONS NOT SHOWN



PLAN VIEW

ELEVATION VIEW

FLAT HP12x53
(10) REQUIRED

BRIDGE NO.: HAM-74-1840 L/R

SEE NOTES ON SHEET GN1 OF 1

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

BRIDGE NO.: HAM-75-0440 L/R
OVER IR-74 WB

BRIDGE NO.: HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27)
AND RAMP F

BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
CITY OF CINCINNATI

STATE	COUNTY	PID NO.
OH	HAMILTON	104667

FED. PROJ. NO.: E170 (713)

DYNAMIC RUBBER
LAM. ELASTOMERIC BEARING ASSY.'S

Cosmec
1501 ROCKY RIDGE ROAD
P.O. BOX 2159
ATHENS, TEXAS 75751

SCALE: NONE	DRAWN BY: MH	CHECKED BY: ELS
	DATE: 03/18/19	DATE: 03/29/19
SHEET 4 OF 8	JOB NO.: 15353A	

REV.	DESCRIPTION	BY	DATE	CK'D	DATE
0	.	.	.	.	.

CUSTOMER	DRAWING NUMBER	REV.
WALSH CONSTRUCTION CO. II	15353A-D4	0

TABLE 1 - EXPANSION LAMINATED ELASTOMERIC BEARING ASSEMBLIES

REF. NO.	BEARING MARK	QTY.	LOCATION			BEARING TYPE	DESIGN LOADS (KIPS)			HP12x53	HT AT C.L. (in.)
			BRIDGE	ABUTMENT	GIRDER(s)		D.L. (KIPS)	L.L. (KIPS)	TOTAL LOAD (DL+LL) (KIPS)	HPT THK. (in.)	
0036	EBA3-A	1	LEFT	REAR	G1	EXP	69	60	129	6 9/32	13 9/16
0036	EBA4-A	1	LEFT	REAR	G2	EXP	69	60	129	6.406	13 11/16
0036	EBA5-A	2	LEFT	REAR	G3 & G4	EXP	69	60	129	6 19/32	13 7/8
0036	EBA6-A	1	LEFT	REAR	G5	EXP	69	60	129	6 21/32	13 15/16
0036	EBA7-A	4	RIGHT	REAR	G6, G7, G9 & G10	EXP	69	60	129	6.639	13.92
0036	EBA8-A	1	RIGHT	REAR	G8	EXP	69	60	129	6.519	13.80

TABLE 2 - EXPANSION LAMINATED ELASTOMERIC BEARING ASSEMBLIES

REF. NO.	BEARING MARK	QTY.	LOCATION			BEARING TYPE	DESIGN LOADS (KIPS)			HP12x53	HT AT C.L. (in.)
			BRIDGE	ABUTMENT	GIRDER(s)		D.L. (KIPS)	L.L. (KIPS)	TOTAL LOAD (DL+LL) (KIPS)	HPT THK. (in.)	
0036	EBA9-A	1	LEFT	FORWARD	G1	EXP	85	85	170	7 5/32	13 7/16
0036	EBA10-A	1	LEFT	FORWARD	G2	EXP	85	85	170	7 27/32	14 1/8
0036	EBA11-A	1	LEFT	FORWARD	G3	EXP	85	85	170	7 23/32	14
0036	EBA12-A	1	LEFT	FORWARD	G4	EXP	85	85	170	7 29/32	14 3/16
0036	EBA13-A	1	LEFT	FORWARD	G5	EXP	85	85	170	7 19/32	13 7/8
0036	EBA14-A	2	RIGHT	FORWARD	G6 & G8	EXP	85	85	170	7.519	13.80
0036	EBA15-A	3	RIGHT	FORWARD	G7, G9 & G10	EXP	85	85	170	7.639	13.92

NOTE:
REFER TO SHEETS 3 & 4 FOR BEARINGS ASSEMBLIES.

BRIDGE NO.: HAM-74-1840 L/R

SEE NOTES ON SHEET GN1 OF 1

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

BRIDGE NO.: HAM-75-0440 L/R
OVER IR-74 WB

BRIDGE NO.: HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27)
AND RAMP F

BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
CITY OF CINCINNATI

STATE	COUNTY	PID NO.
OH	HAMILTON	104667

FED. PROJ. NO.: E170 (713)

DYNAMIC RUBBER
LAM. ELASTOMERIC BEARING ASSY.'S

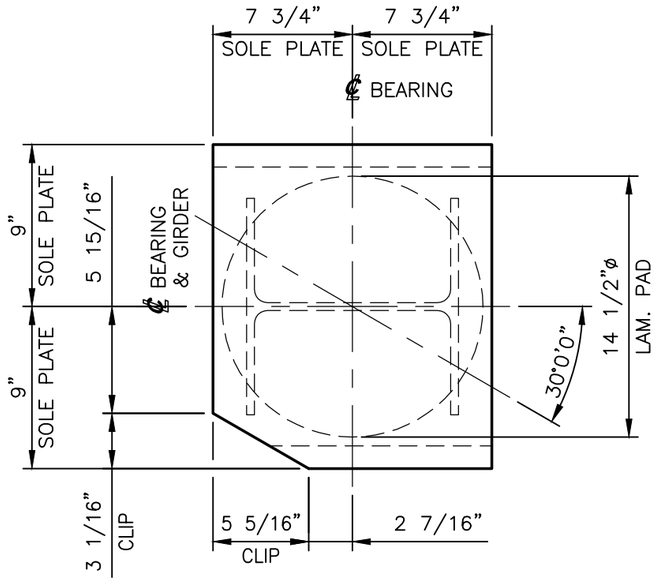
Cosmec
1501 ROCKY RIDGE ROAD
P.O. BOX 2159
ATHENS, TEXAS 75751

REV.	DESCRIPTION	BY	DATE	CK'D	DATE
0	.	.	.	.	.

SCALE: NONE | DRAWN BY: MH DATE: 03/18/19 | CHECKED BY: ELS DATE: 03/29/19

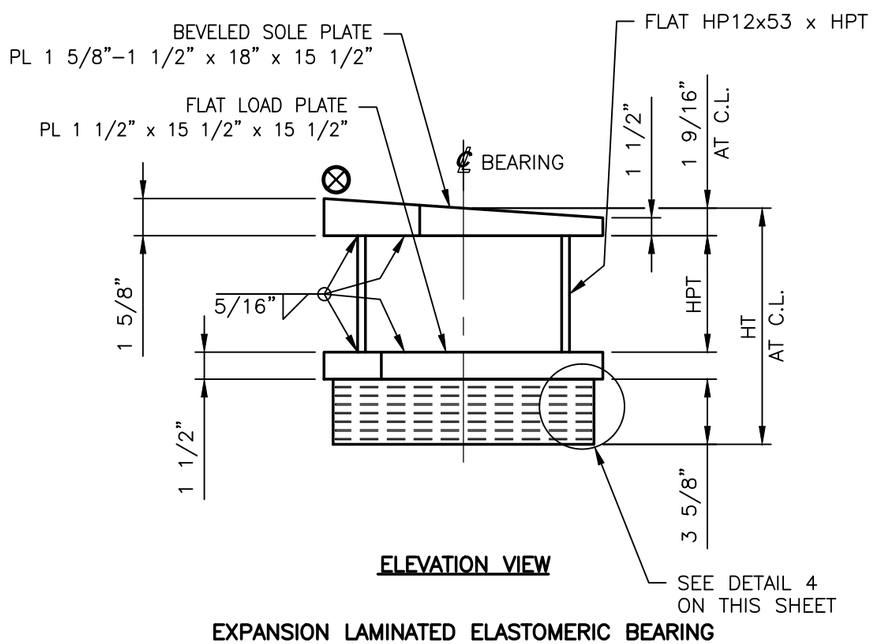
 JOB NO.: 15353A

CUSTOMER: WALSH CONSTRUCTION CO. II | DRAWING NUMBER: 15353A-D5 | REV.: 0



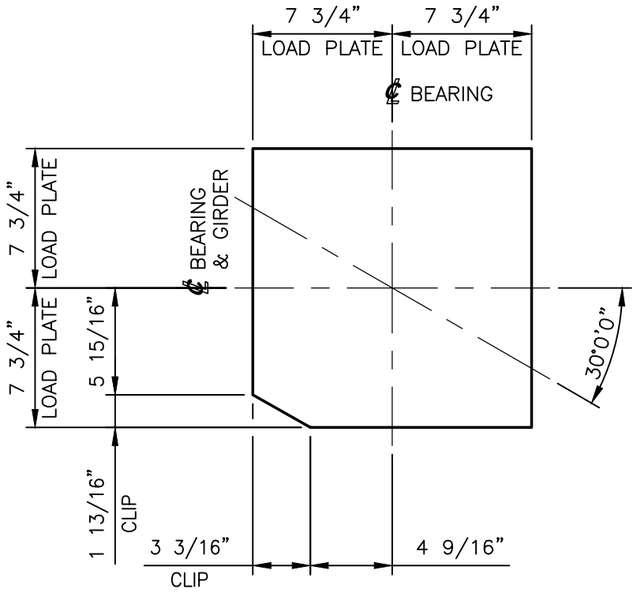
PLAN VIEW

AHEAD
STATIONS

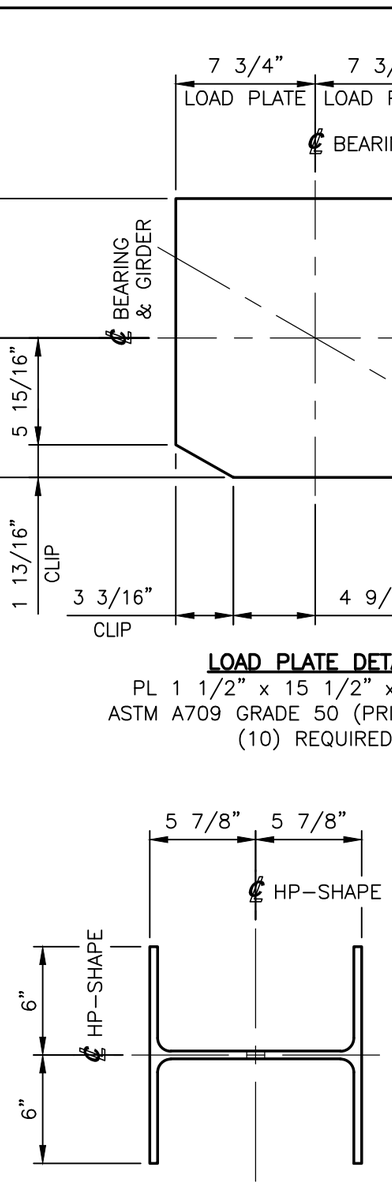


ELEVATION VIEW

EXPANSION LAMINATED ELASTOMERIC BEARING ASSEMBLY (REF. NO.: 0037) AT REAR ABUT.
SEE BEARING TABLE 3 ON SHEET 8 FOR MARK NUMBERS, QTY.'S, LOADS, LOCATIONS AND DIMENSIONS NOT SHOWN



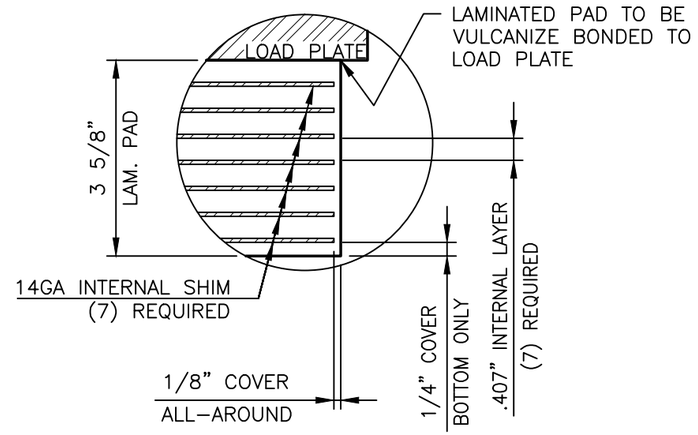
LOAD PLATE DETAIL
PL 1 1/2" x 15 1/2" x 15 1/2"
ASTM A709 GRADE 50 (PRIME PAINTED)
(10) REQUIRED



PLAN VIEW

ELEVATION VIEW

FLAT HP12x53
(10) REQUIRED



DETAIL 4
3 5/8" x 14 1/2"ø LAMINATED PAD
50 DUROMETER GRADE 3 NEOPRENE
VULCANIZE BONDED TO LOAD PLATE
(10) REQUIRED

TEST3–A
3 5/8" x 14 1/2"ø LAMINATED PAD
50 DUROMETER GRADE 3 NEOPRENE
PAD ONLY FOR TESTING
(2) REQUIRED

BRIDGE NO.: HAM–74–1852 L/R

SEE NOTES ON SHEET GN1 OF 1

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

BRIDGE NO.: HAM–75–0440 L/R
OVER IR–74 WB

BRIDGE NO.: HAM–74–1840 L/R
OVER SB BEEKMAN ST. (U.S. 27)
AND RAMP F

BRIDGE NO. HAM–74–1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM–75–3.84
CITY OF CINCINNATI

STATE	COUNTY	PID NO.
OH	HAMILTON	104667

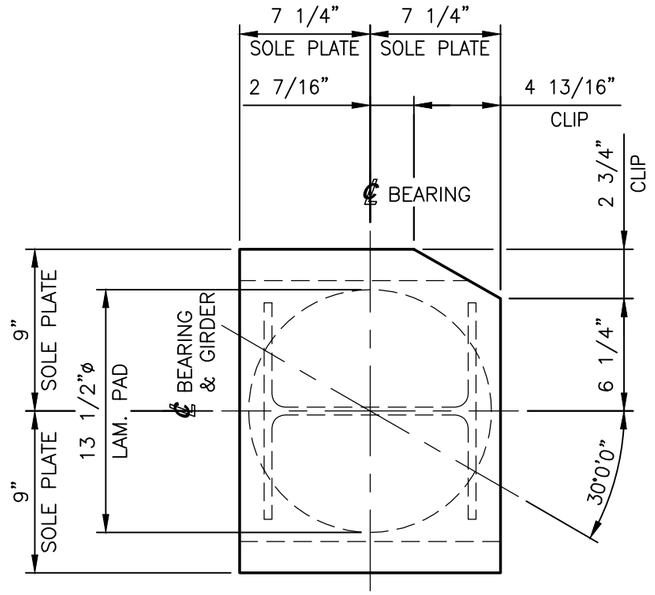
FED. PROJ. NO.: E170 (713)

DYNAMIC RUBBER
LAM. ELASTOMERIC BEARING ASSY.'S

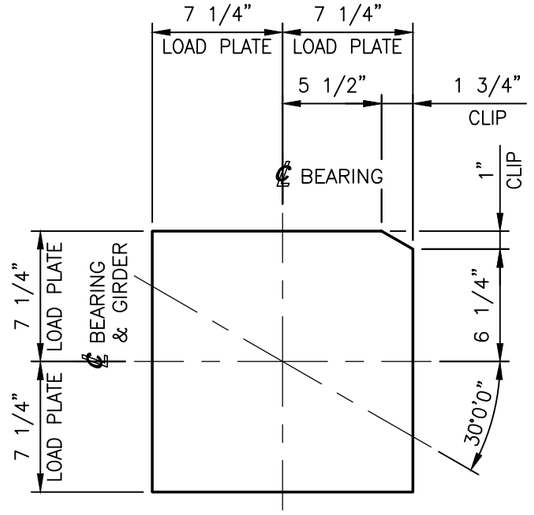
Cosmec
1501 ROCKY RIDGE ROAD
P.O. BOX 2159
ATHENS, TEXAS 75751

SCALE: NONE
DRAWN BY: MH DATE: 03/18/19
CHECKED BY: ELS DATE: 03/29/19
SHEET 6 OF 8
JOB NO.: 15353A
CUSTOMER: WALSH CONSTRUCTION CO. II
DRAWING NUMBER: 15353A–D6
REV.: 0

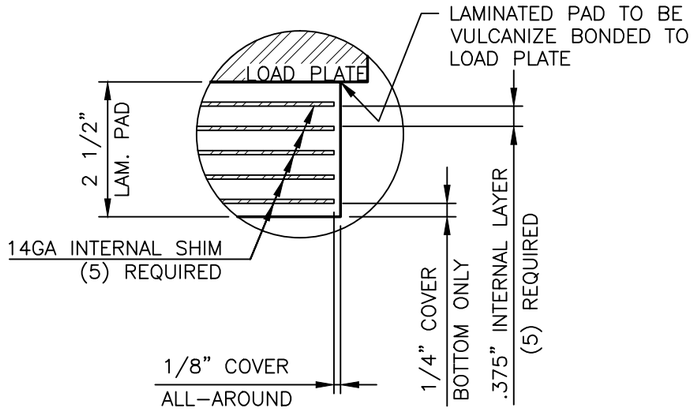
REV.	DESCRIPTION	BY	DATE	CK'D	DATE
0	.	.	.	.	.



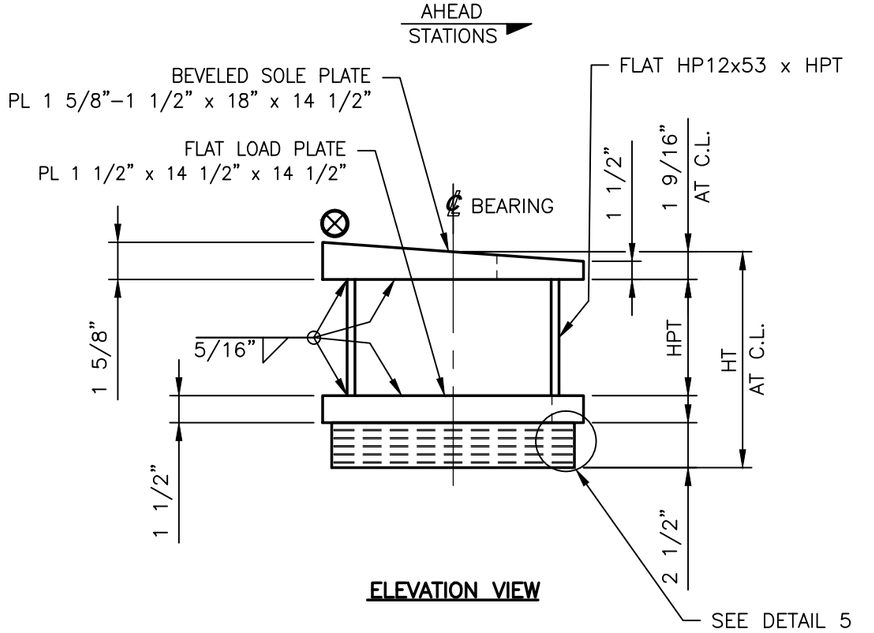
PLAN VIEW



LOAD PLATE DETAIL
PL 1 1/2" x 14 1/2" x 14 1/2"
ASTM A709 GRADE 50 (PRIME PAINTED)
(10) REQUIRED

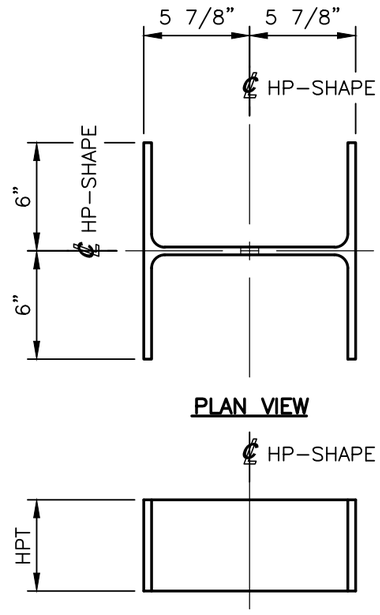


DETAIL 5
2 1/2" x 13 1/2"ø LAMINATED PAD
50 DUROMETER GRADE 3 NEOPRENE
VULCANIZE BONDED TO LOAD PLATE
(10) REQUIRED



ELEVATION VIEW

EXPANSION LAMINATED ELASTOMERIC BEARING ASSEMBLY (REF. NO.: 0037) AT FORWARD ABUT.
SEE BEARING TABLE 4 ON SHEET 8 FOR MARK NUMBERS, QTY.'S, LOADS, LOCATIONS AND DIMENSIONS NOT SHOWN



FLAT HP12x53
(10) REQUIRED

BRIDGE NO.: HAM-74-1852 L/R

SEE NOTES ON SHEET GN1 OF 1

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

BRIDGE NO.: HAM-75-0440 L/R OVER IR-74 WB

BRIDGE NO.: HAM-74-1840 L/R OVER SB BEEKMAN ST. (U.S. 27) AND RAMP F

BRIDGE NO. HAM-74-1852 L/R OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
CITY OF CINCINNATI

STATE	COUNTY	PID NO.
OH	HAMILTON	104667

FED. PROJ. NO.: E170 (713)

DYNAMIC RUBBER
LAM. ELASTOMERIC BEARING ASSY.'S

Cosmec
1501 ROCKY RIDGE ROAD
P.O. BOX 2159
ATHENS, TEXAS 75751

REV.	DESCRIPTION	BY	DATE	CK'D	DATE
0	.	.	.	.	.

SCALE: NONE
DRAWN BY: MH DATE: 03/18/19
CHECKED BY: ELS DATE: 03/29/19
SHEET 7 OF 8
JOB NO.: 15353A
CUSTOMER: WALSH CONSTRUCTION CO. II
DRAWING NUMBER: 15353A-D7
REV.: 0

TABLE 3 - EXPANSION LAMINATED ELASTOMERIC BEARING ASSEMBLIES

REF. NO.	BEARING MARK	QTY.	LOCATION			BEARING TYPE	DESIGN LOADS (KIPS)			HP12x53	HT AT C.L. (in.)
			BRIDGE	ABUTMENT	GIRDER(s)		D.L. (KIPS)	L.L. (KIPS)	TOTAL LOAD (DL+LL) (KIPS)	HPT THK. (in.)	
0037	EBA16-A	2	LEFT	REAR	G1 & G4	EXP	56	56	112	7 13/16	14 1/2
0037	EBA17-A	2	LEFT	REAR	G2 & G3	EXP	56	56	112	8	14 11/16
0037	EBA18-A	1	LEFT	REAR	G5	EXP	56	56	112	7 11/16	14 3/8
0037	EBA19-A	1	RIGHT	REAR	G6	EXP	56	56	112	8 5/16	15
0037	EBA20-A	2	RIGHT	REAR	G7 & G9	EXP	56	56	112	8 3/16	14.88
0037	EBA21-A	1	RIGHT	REAR	G8	EXP	56	56	112	7.95	14.64
0037	EBA22-A	1	RIGHT	REAR	G9	EXP	56	56	112	8.07	14.76

APPROVER NOTE:
PLEASE VERIFY 14 3/8" IS CORRECT. FIELD DIMENSIONS WERE SHOWN AS 14 6/16"

TABLE 4 - EXPANSION LAMINATED ELASTOMERIC BEARING ASSEMBLIES

REF. NO.	BEARING MARK	QTY.	LOCATION			BEARING TYPE	DESIGN LOADS (KIPS)			HP12x53	HT AT C.L. (in.)
			BRIDGE	ABUTMENT	GIRDER(s)		D.L. (KIPS)	L.L. (KIPS)	TOTAL LOAD (DL+LL) (KIPS)	HPT THK. (in.)	
0037	EBA23-A	1	LEFT	FORWARD	G1	EXP	62	54	116	7 3/8	12 15/16
0037	EBA24-A	1	LEFT	FORWARD	G2	EXP	62	54	116	7	12 9/16
0037	EBA25-A	2	LEFT	FORWARD	G3 & G4	EXP	62	54	116	7 3/16	12 3/4
0037	EBA26-A	1	LEFT	FORWARD	G5	EXP	62	54	116	6 3/4	12 5/16
0037	EBA27-A	3	RIGHT	FORWARD	G6, G8 & G10	EXP	62	54	116	6.80	12.36
0037	EBA28-A	1	RIGHT	FORWARD	G7	EXP	62	54	116	7.04	12.60
0037	EBA29-A	1	RIGHT	FORWARD	G9	EXP	62	54	116	6.92	12.48

NOTE:
REFER TO SHEETS 6 & 7 FOR BEARINGS ASSEMBLIES.

BRIDGE NO.: HAM-74-1852 L/R

SEE NOTES ON SHEET GN1 OF 1

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

BRIDGE NO.: HAM-75-0440 L/R
OVER IR-74 WB

BRIDGE NO.: HAM-74-1840 L/R
OVER SB BEEKMAN ST. (U.S. 27)
AND RAMP F

BRIDGE NO. HAM-74-1852 L/R
OVER NB BEEKMAN ST. (U.S. 27)

HAM-75-3.84
CITY OF CINCINNATI

STATE	COUNTY	PID NO.
OH	HAMILTON	104667

FED. PROJ. NO.: E170 (713)

DYNAMIC RUBBER
LAM. ELASTOMERIC BEARING ASSY.'S

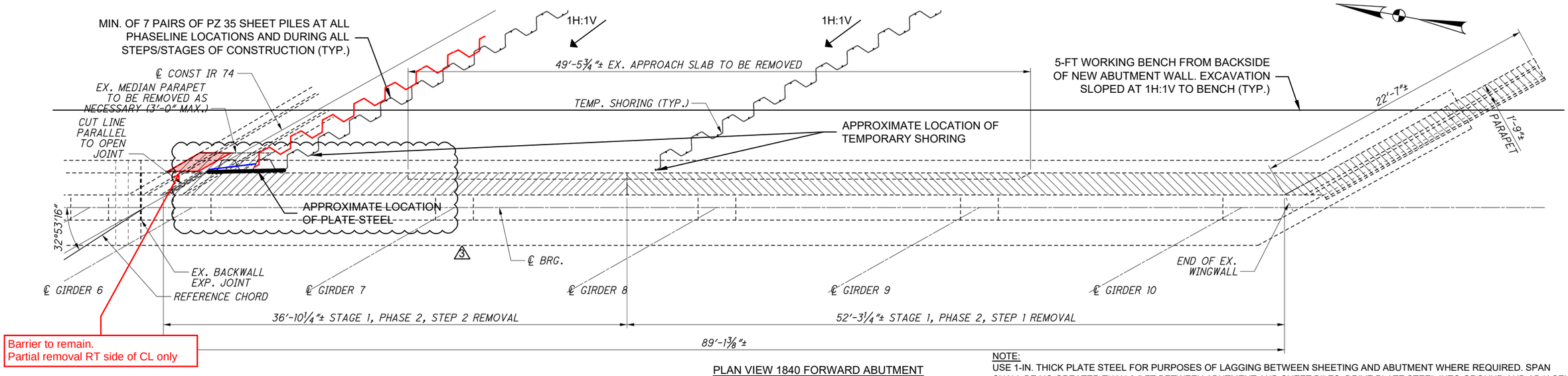
Cosmec
1501 ROCKY RIDGE ROAD
P.O. BOX 2159
ATHENS, TEXAS 75751

SCALE: NONE | DRAWN BY: MH | DATE: 03/18/19 | CHECKED BY: ELS | DATE: 03/29/19

SHEET 8 OF 8 | JOB NO.: 15353A

REV.	DESCRIPTION	BY	DATE	CK'D	DATE
0	.	.	.	.	.

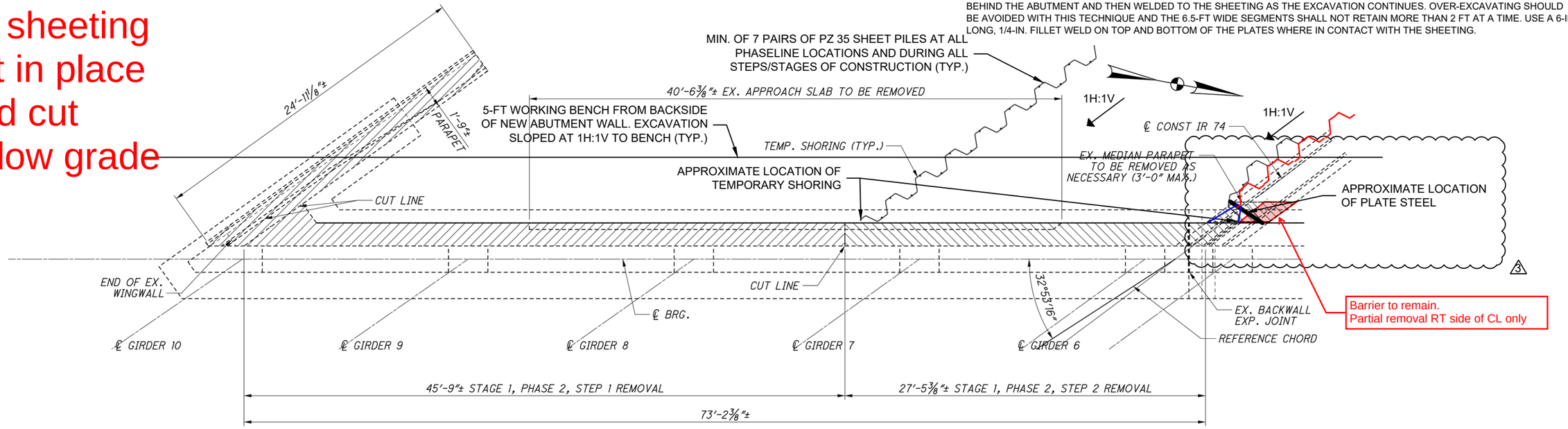
CUSTOMER: WALSH CONSTRUCTION CO. II | DRAWING NUMBER: 15353A-D8 | REV.: 0



PLAN VIEW 1840 FORWARD ABUTMENT
SCALE: ⅛" = 1'-0"

NOTE:
USE 1-IN. THICK PLATE STEEL FOR PURPOSES OF LAGGING BETWEEN SHEETING AND ABUTMENT WHERE REQUIRED. SPAN SHALL BE NO GREATER THAN 6.5 FT BETWEEN ABUTMENT AND SHEET PILES. DRIVE PLATE STEEL INTO GROUND AND ADJACENT TO ABUTMENT WITH 2-IN. PAST CONSTRUCTION JOINT AND ATTACH PLATE STEEL TO SHEETING VIA STITCH WELDING WITH 1/4-IN. FILLET WELD. IF PLATE STEEL PROVES DIFFICULT TO DRIVE, PLATE STEEL MAY BE CUT INTO SEGMENTS AND PLACED BEHIND THE ABUTMENT AND THEN WELDED TO THE SHEETING AS THE EXCAVATION CONTINUES. OVER-EXCAVATING SHOULD BE AVOIDED WITH THIS TECHNIQUE AND THE 6.5-FT WIDE SEGMENTS SHALL NOT RETAIN MORE THAN 2 FT AT A TIME. USE A 6-IN. LONG, 1/4-IN. FILLET WELD ON TOP AND BOTTOM OF THE PLATES WHERE IN CONTACT WITH THE SHEETING.

All sheeting left in place and cut below grade



PLAN VIEW 1840 REAR ABUTMENT
SCALE: ⅛" = 1'-0"

△3 - REVISION No.3 FOR APPROXIMATE LOCATION OF PLATE STEEL (2-11-20)

STATE OF OHIO
SCOTT J. LUDLOW
E59231
REGISTERED PROFESSIONAL ENGINEER

2/11/20
DATE

NOTES

1. Field verify sheet pile locations in relation to existing utilities.
2. Additional sheet piles are required if earth slopes on cut side of excavation are flatter than a 1H:1V.
3. Where required, plate steel shall be installed against abutment and perpendicular to sheeting.

AS-BUILT

PLAN VIEW - 1840 FORWARD AND REAR ABUTMENTS

PROJECT:	HAM-75-3.85 BU-03 - SOE PHASELINE CONSTRUCTION FOR I-74 O/ BEEKMAN ST.
LOCATION:	HAMILTON CO., OH
CLIENT:	WALSH CONSTRUCTION CO.
SJL PROJ. NO.:	1-19-029
SCALE:	AS SHOWN

PROJECT ENG:	SJL
APPROVED BY:	SJL
DRAWN BY:	KAL
DATE AND TIME:	2/11/20

S.J. Ludlow Consulting Engineers, Inc.
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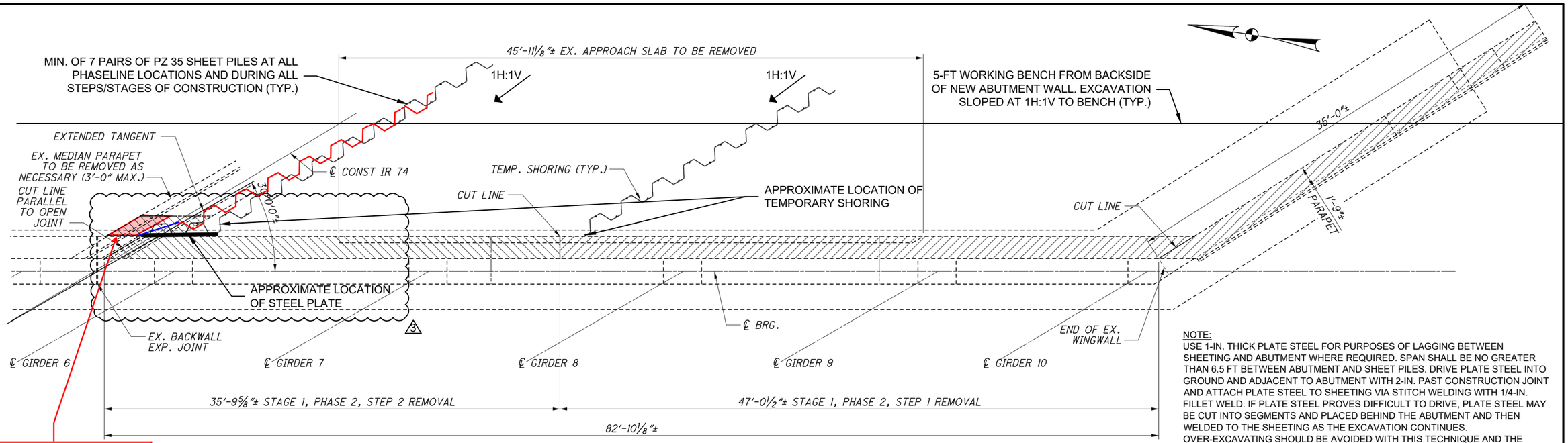
317-371-5539

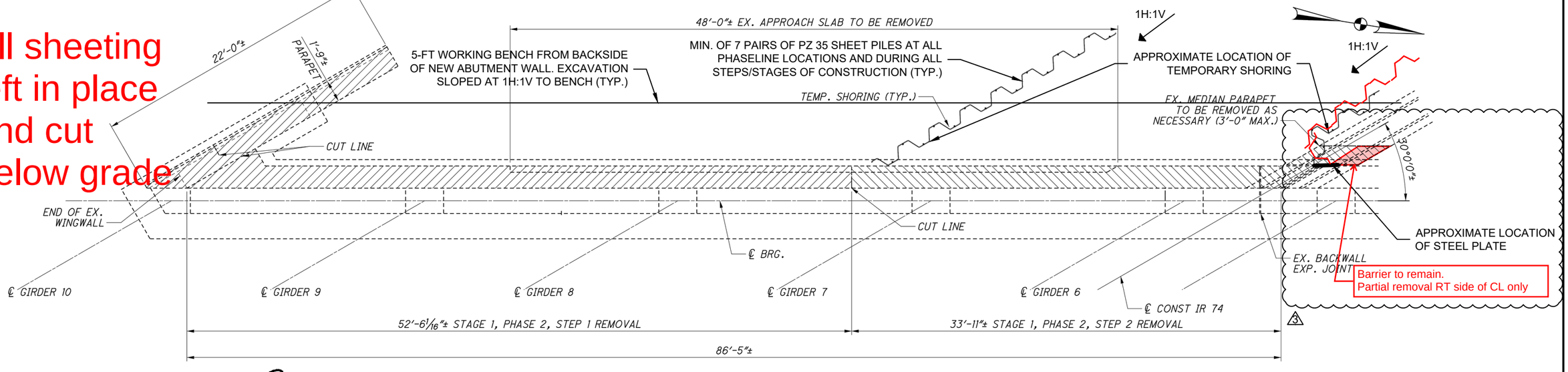
DRAWING NO.:
1-19-029.B19



PLAN VIEW - 1852 FORWARD ABUTMENT
SCALE: ⅛" = 1'-0"

NOTE:
USE 1-IN. THICK PLATE STEEL FOR PURPOSES OF LAGGING BETWEEN SHEETING AND ABUTMENT WHERE REQUIRED. SPAN SHALL BE NO GREATER THAN 6.5 FT BETWEEN ABUTMENT AND SHEET PILES. DRIVE PLATE STEEL INTO GROUND AND ADJACENT TO ABUTMENT WITH 2-IN. PAST CONSTRUCTION JOINT AND ATTACH PLATE STEEL TO SHEETING VIA STITCH WELDING WITH 1/4-IN. FILLET WELD. IF PLATE STEEL PROVES DIFFICULT TO DRIVE, PLATE STEEL MAY BE CUT INTO SEGMENTS AND PLACED BEHIND THE ABUTMENT AND THEN WELDED TO THE SHEETING AS THE EXCAVATION CONTINUES. OVER-EXCAVATING SHOULD BE AVOIDED WITH THIS TECHNIQUE AND THE 6.5-FT WIDE SEGMENTS SHALL NOT RETAIN MORE THAN 2 FT AT A TIME. USE A 6-IN. LONG, 1/4-IN. FILLET WELD ON TOP AND BOTTOM OF THE PLATES WHERE IN CONTACT WITH THE SHEETING.

All sheeting left in place and cut below grade



PLAN VIEW 1852 REAR ABUTMENT
SCALE: ⅛" = 1'-0"

△3 - REVISION No.3 FOR APPROXIMATE LOCATION OF PLATE STEEL (2-11-20)

STATE OF OHIO
SCOTT J. LUDLOW
E59231
REGISTERED PROFESSIONAL ENGINEER

2/11/20
DATE

NOTES

1. Field verify sheet pile locations in relation to existing utilities.
2. Additional sheet piles are required if earth slopes on cut side of excavation are flatter than a 1H:1V.
3. Where required, plate steel shall be installed against abutment and perpendicular to sheeting.

AS-BUILT

PLAN VIEW - 1852 FORWARD AND REAR ABUTMENTS

PROJECT: HAM-75-3.85 BU-03 - SOE PHASELINE CONSTRUCTION FOR I-74 O/ BEEKMAN ST.
LOCATION: HAMILTON CO., OH
CLIENT: WALSH CONSTRUCTION CO.
SJL PROJ. NO.:1-19-029
SCALE: AS SHOWN

PROJECT ENG: SJL	
APPROVED BY: SJL	
DRAWN BY: KAL	
DATE AND TIME: 2/11/20	

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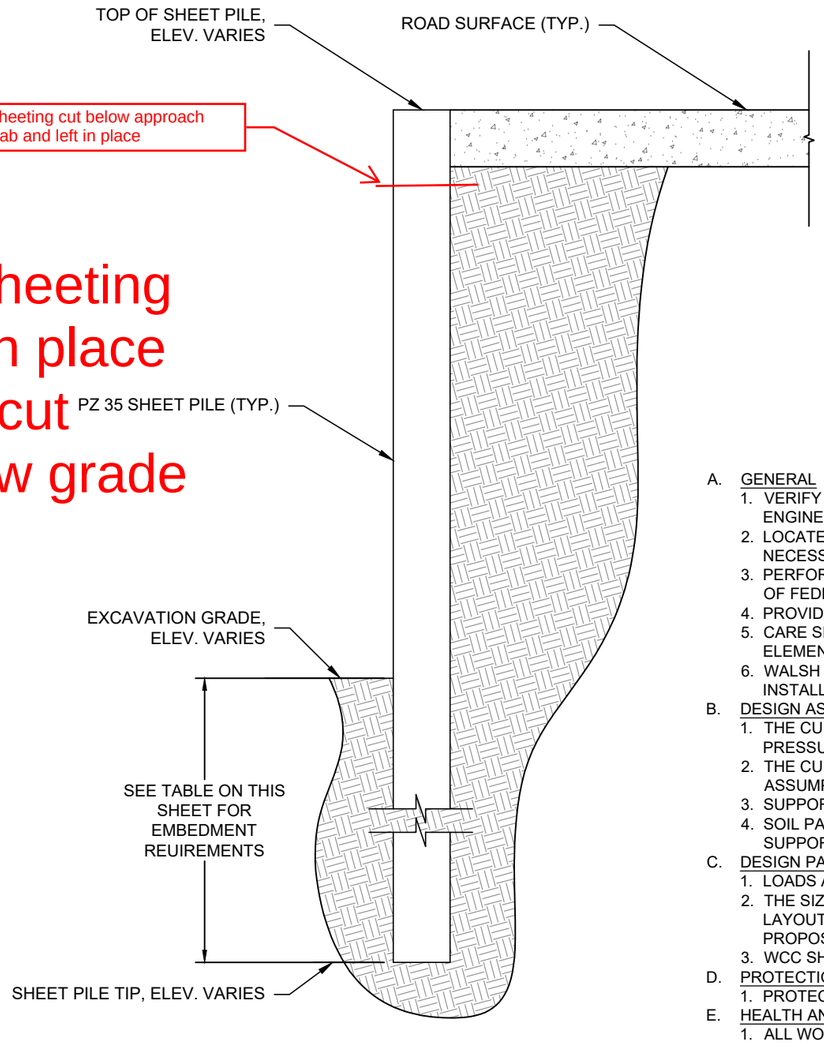
DRAWING NO.:
1-19-029.B20



All sheeting left in place and cut below grade

TYPICAL CANTILEVERED SECTION
SCALE: ⅜" = 1'-0"

SHEETING REQUIREMENTS		1840 FORWARD ABUTMENT	1840 REAR ABUTMENT	1852 FORWARD ABUTMENT	1852 REAR ABUTMENT
1ST PAIR OF SHEETS	TOTAL SHEET LENGTH (FT)	25	25	25	25
	SHEET PILE TOP ELEV.+/-*	539	545	534	536
	SHEET PILE TIP ELEV.+/-**	515.5	521.5	513.8	514.8
	MAXIMUM RETAINED HEIGHT INCLUDING ROAD SURFACE (FT)	9.8	10.5	7.6	7.7
	EMBEDMENT (FT)	13.7	13	13.65	13.55
	SHEETING SIZE	PZ35	PZ35	PZ35	PZ35
ALL OTHER SHEETS	TOTAL SHEET LENGTH (FT)	20	20	20	20
	SHEET PILE TOP ELEV.+/-*	539	545	534	536
	SHEET PILE TIP ELEV.+/-**	520.5	526.5	517.8	519.8
	MAXIMUM RETAINED HEIGHT INCLUDING ROAD SURFACE (FT)	9.8	10.5	7.6	7.7
	EMBEDMENT (FT)	8.7	8	8.65	8.55
	SHEETING SIZE	PZ35	PZ35	PZ35	PZ35

NOTE: CONTRACTOR MAY PROVIDE ADDITIONAL LENGTH OF SHEET AS NEEDED FOR INSTALLATION.
* SHEET PILE TOP ELEV. REPORTED DOES NOT INCLUDE PORTION ABOVE GROUND.
** SHEET PILE TIP ELEV. REPORTED VARIES SLIGHTLY DUE TO STEPS IN THE NEW ABUTMENT WALL. (SEE PLANS FOR EXACT ELEV. AT EACH PHASELINE)
ALL SHEET PILES SHALL HAVE EMBEDMENT SHOWN IN THE TABLE ABOVE AS A MINIMUM REQUIREMENT.

A. GENERAL
1. VERIFY THE CONFIGURATION AND ELEVATION OF ALL EXISTING AND ADJACENT STRUCTURAL ELEMENTS. REPORT SAME PRIOR TO START OF EXCAVATION SUPPORT CONSTRUCTION TO SJL ENGINEERS.
2. LOCATE AND IDENTIFY ALL EXISTING UNDERGROUND AND/OR OVERHEAD SERVICES AND STRUCTURES NEAR THE TEMPORARY EXCAVATION SUPPORT SYSTEMS, PROTECT AND RELOCATE AS NECESSARY. DO NOT INSTALL SHEET PILES BEFORE ALL SERVICES AND STRUCTURES HAVE BEEN LOCATED.
3. PERFORM EXCAVATION SUPPORT CONSTRUCTION IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS AND CONFORM TO ALL APPLICABLE SAFETY REGULATIONS INCLUDING THE PROVISIONS OF FEDERAL OSHA.
4. PROVIDE PROTECTIVE BARRIER AROUND THE EXCAVATIONS THAT CONFORMS TO ALL APPLICABLE SAFETY REGULATIONS.
5. CARE SHALL BE TAKEN DURING THE INSTALLATION OF THE EXCAVATION SUPPORT SYSTEMS TO AVOID DAMAGE AND/OR UNINTENDED CONSEQUENCES WHILE WORKING ADJACENT TO EXISTING ELEMENTS. IF GROUND CONDITIONS FOR EMBEDMENT ARE DISTURBED, SJL ENGINEERS SHALL BE NOTIFIED SO A DETERMINATION CAN BE MADE IF ADDITIONAL SUPPORT IS REQUIRED.
6. WALSH CONSTRUCTION COMPANY TO MAINTAIN RECORDS OF DRIVING RESISTANCES AND/OR PENETRATION RATES INCLUDING FREQUENCY AND AMPLITUDE DEPENDING ON METHOD OF INSTALLATION, AND REPORT TO SJL ENGINEERS.

B. DESIGN ASSUMPTIONS
1. THE CURRENT DESIGN SCHEME ILLUSTRATES TEMPORARY SUPPORT SYSTEMS CAPABLE OF SUPPORTING RETAINED HEIGHTS SHOWN WITH EARTH PRESSURES FROM AN EQUIVALENT FLUID PRESSURE EQUAL TO A 0.3*132PCF*HEIGHT DISTRIBUTION.
2. THE CURRENT DESIGN IS BASED UPON THE ASSUMPTIONS IN THE ENGINEERING CALCULATIONS AND LOADS INDICATED ON THE SHOP DRAWINGS ARE CORRECT. SHOULD ANY OR ALL OF THESE ASSUMPTIONS CHANGE, REDESIGN OF THE EXCAVATION SUPPORT SYSTEM MAY BE REQUIRED.
3. SUPPORT SYSTEMS ARE DESIGNED FOR A TRAFFIC SURCHARGE OF 250 PSF.
4. SOIL PARAMETERS ARE BASED ON THE INFORMATION PROVIDED IN THE STRUCTURE FOUNDATION EXPLORATION REVIEWED/DATED ON 3/13/13. FOR RESPONSE OF THE SOILS AT THE EXCAVATION SUPPORT SYSTEM, AN UNDRAINED SHEAR STRENGTH OF 2 KSF WAS USED ALONG WITH 0.3% STRAIN AT 50% PEAK SHEAR STRENGTH.

C. DESIGN PARAMETERS
1. LOADS APPLIED TO THE EXCAVATION SUPPORT SYSTEM, OTHER THAN THAT INDICATED ON THESE DRAWINGS, ARE SUBJECT TO REVIEW BY SJL ENGINEERS.
2. THE SIZE AND DEPTH OF THE EXCAVATION SUPPORT SYSTEM ON THE DRAWINGS ARE BASED ON INFORMATION, AS PROVIDED AT THIS TIME. FIELD VERIFICATION IS TO BE PERFORMED PRIOR TO LAYOUT AND CONSTRUCTION OF THE PROPOSED EXCAVATION SUPPORT SYSTEM. IF CHANGES TO THE EXCAVATION SUPPORT SYSTEM ARE REQUIRED IN ORDER TO ACCOMMODATE THE PROPOSED STRUCTURES AND CONNECTIONS, SJL ENGINEERS SHALL BE NOTIFIED IN A TIMELY MANNER.
3. WCC SHALL VERIFY ALL CLEARANCES FOR CONSTRUCTION OF THE EXCAVATION SUPPORT SYSTEM AND PURPOSED STRUCTURE AND CONNECTIONS.

D. PROTECTION BY CONTRACTOR
1. PROTECT ALL EXCAVATIONS FROM THE ACTIONS OF WEATHER.

E. HEALTH AND SAFETY
1. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT LATEST REVISION, AND SITE SPECIFIC SAFETY PLANS.

F. SHEET PILE AND PLATE STEEL LAGGING NOTES
1. MATERIALS:
   a. STRUCTURAL SHAPES.....ASTM A572 OR ASTM A992, 50 KSI MIN. YIELD STRESS.
   b. PLATE STEEL AS LAGGING.....ASTM A36, 36 KSI MIN. YIELD STRESS.
   c. WELD ELECTRODES.....AWS E70XX LOW HYDROGEN
2. WELDS AND WELDING PERSONNEL CERTIFICATIONS SHALL MEET THE REQUIREMENTS OF AWS D1.1, "STRUCTRUAL WELDING CODE." WELDING PERSONNEL SHALL BE AWS CERTIFIED FOR WELDS MADE.
3. FABRICATION AND INSTALLATION OF STRUCTURAL STEEL SHALL MEET THE REQUIREMENTS OF THE "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES," AS ADOPTED BY AISC.
4. INSTALL STRUCTURAL STEEL STRAIGHT, LEVEL AND PLUMB AS APPLICABLE.

STATE OF OHIO
SCOTT J. LUDLOW
E59231
REGISTERED PROFESSIONAL ENGINEER

2/05/20
DATE

NOTES

1. Sheet piles may be longer than specified on these shop drawings.
2. Where required, plate steel shall be installed against abutment and perpendicular to sheeting.

AS-BUILT

TYPICAL SECTION, TABLE, AND GENERAL NOTES

PROJECT: HAM-75-3.85 BU-03 - SOE PHASELINE CONSTRUCTION FOR I-74 O/ BEEKMAN ST.
LOCATION: HAMILTON CO., OH
CLIENT: WALSH CONSTRUCTION CO.
SJL PROJ. NO.:1-19-029
SCALE: AS SHOWN

PROJECT ENG: SJL
APPROVED BY: SJL
DRAWN BY: KAL
DATE AND TIME: 2/05/20

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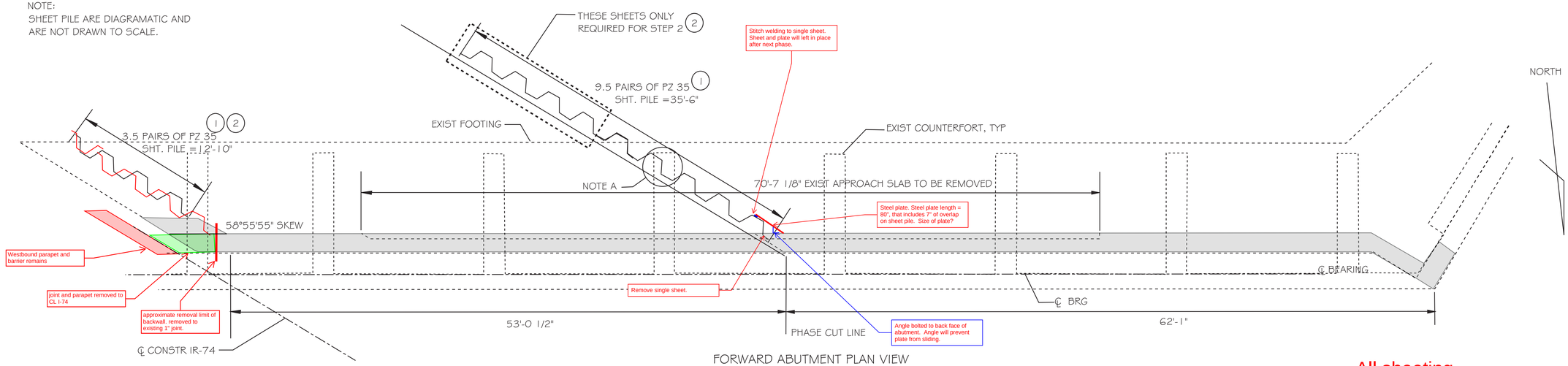
450 E. 96th St., Suite 500
Indianapolis, IN 46240
317-371-5539

DRAWING NO.:
1-19-029.B21

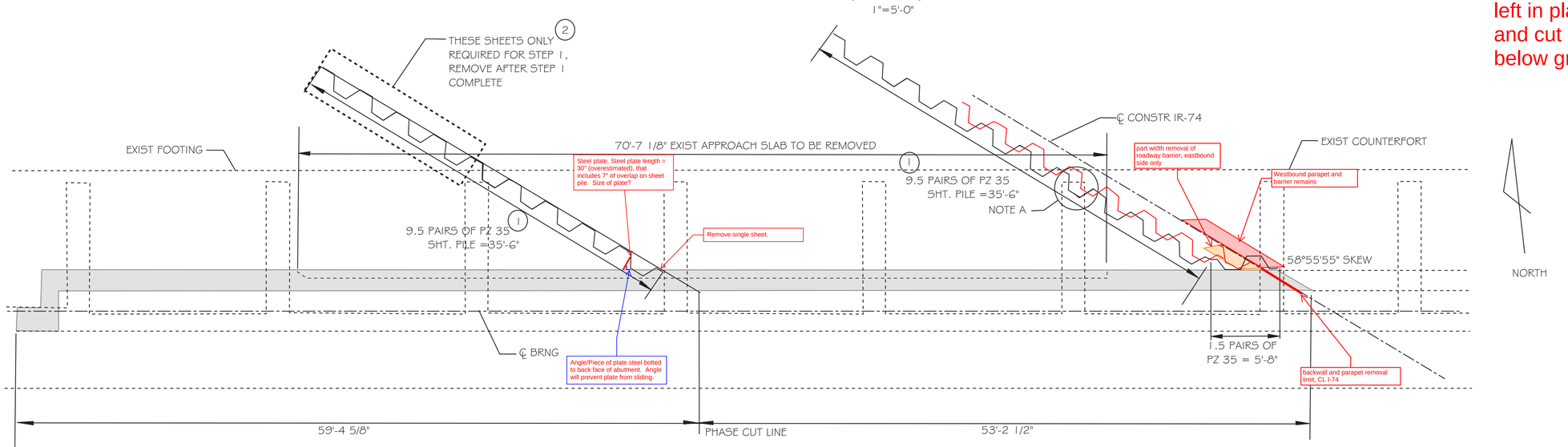
NOTE A: SHEET PILES INSTALLED OVER COUNTERFORT WALLS WILL STOP SHORT OF FURNISHED PILE LENGTH

NOTE:
SHEET PILE ARE DIAGRAMATIC AND ARE NOT DRAWN TO SCALE.



FORWARD ABUTMENT PLAN VIEW
STAGE 1, PHASE 2, STEPS 1& 2
1"=5'-0"

All sheeting left in place and cut below grade



REAR ABUTMENT PLAN VIEW
STAGE 1, PHASE 2, STEPS 1& 2
1"=5'-0"

SOE SEQUENCE OF ACTIVITIES - FORWARD ABUTMENT

1. REMOVE RIGHT LANE OF EXISTING APPROACH SLAB FOR STAGE 1 PHASE 2, STEP 1 FOWARD ABUTMENT.
2. INSTALL SOE SHEETING ON NORTH SIDE OF STAGE 1 PHASE 2, STEP 1 EXISTING APPROACH SLAB REMOVAL AREA.
3. EXCAVATE TO REQUIRED ELEVATION FOR STAGE 1 PHASE 2, STEP 1 FORWARD ABUTMENT WALL REMOVAL.
4. REMOVE AND REPLACE FORWARD ABUTMENT STAGE 1 PHASE 2, STEP 1 ABUTMENT WALL.
5. INSTALL DRAINAGE SYSTEM AND BACKFILL EXCAVATION.
6. BACKFILL TO DESIGN APPROACH SLAB SUBGRADE ELEVATION.
7. CONSTRUCT NEW FORWARD ABUTMENT STAGE 1, PHASE 2, STEP 1 APPROACH SLAB.
8. REMOVE EXISTING STAGE 1, PHASE 2, STEP 2 APPROACH SLAB.
9. INSTALL SOE SHEETING ON NORTH SIDE OF STAGE 1 PHASE 2, STEP 2 EXISTING APPROACH SLAB REMOVAL AREA.
10. EXCAVATE TO REQUIRED ELEVATION FOR FORWARD ABUTMENT STAGE 1, PHASE 2, STEP 2 WALL REMOVAL.
11. REMOVE AND REPLACE STAGE 1, PHASE 2, STEP 2 FORWARD ABUTMENT WALL.
12. INSTALL DRAINAGE SYSTEM AND BACKFILL EXCAVATION.
13. EXTRACT NORTH AND SOUTH LINES OF SHEETING.
14. CONSTRUCT NEW FORWARD ABUTMENT STAGE 1, PHASE 2, STEP 2 APPROACH SLAB.

SOE SEQUENCE OF ACTIVITIES - REAR ABUTMENT

1. REMOVE RIGHT LANE OF EXISTING APPROACH SLAB FOR STAGE 1 PHASE 2, STEP 1 REAR ABUTMENT.
2. INSTALL SOE SHEETING ON NORTH SIDE OF STAGE 1 PHASE 2, STEP 1 EXISTING APPROACH SLAB REMOVAL AREA.
3. EXCAVATE TO REQUIRED ELEVATION FOR STAGE 1 PHASE 2, STEP 1 REAR ABUTMENT WALL REMOVAL.
4. REMOVE AND REPLACE REAR ABUTMENT STAGE 1 PHASE 2, STEP 1 ABUTMENT WALL.
5. INSTALL DRAINAGE SYSTEM AND BACKFILL EXCAVATION.
6. BACKFILL TO DESIGN APPROACH SLAB SUBGRADE ELEVATION.
7. CONSTRUCT NEW REAR ABUTMENT STAGE 1, PHASE 2, STEP 1 APPROACH SLAB.
8. REMOVE EXISTING STAGE 1, PHASE 2, STEP 2 APPROACH SLAB.
9. INSTALL SOE SHEETING ON NORTH SIDE OF STAGE 1 PHASE 2, STEP 2 EXISTING APPROACH SLAB REMOVAL AREA.
10. EXCAVATE TO REQUIRED ELEVATION FOR REAR ABUTMENT STAGE 1, PHASE 2, STEP 2 WALL REMOVAL.
11. REMOVE AND REPLACE STAGE 1, PHASE 2, STEP 2 REAR ABUTMENT WALL.
12. INSTALL DRAINAGE SYSTEM AND BACKFILL EXCAVATION.
13. EXTRACT NORTH AND SOUTH LINES OF SHEETING.
14. CONSTRUCT NEW REAR ABUTMENT STAGE 1, PHASE 2, STEP 2 APPROACH SLAB.

AS-BUILT

SME
www.sme-usa.com

Scale
0'
GRAPHIC SCALE:

Project
HAM-75-3.84
BRIDGE NO.
HAM-74-1892 L/R
O/ELMORE ST

Project Location
HAMILTON COUNTY
CITY OF CINCINNATI
OHIO

Sheet Name
STAGE 1, PHASE 2, SOE PLAN & DETAILS FORWARD & REAR ABUTMENTS

Engineer's Seal
STATE OF OHIO
TIMOTHY H. BEDENIS
E-63628
REGISTERED PROFESSIONAL ENGINEER

Revisions

REV	ISSUED FOR	DATE	BY
1	REVISE EXCAVATION CUT SLOPE	4-25-19	DWB
2	SHEETING STAGING	5-07-19	DWB

Date
3-29-2019

SME Project No.
79059.01

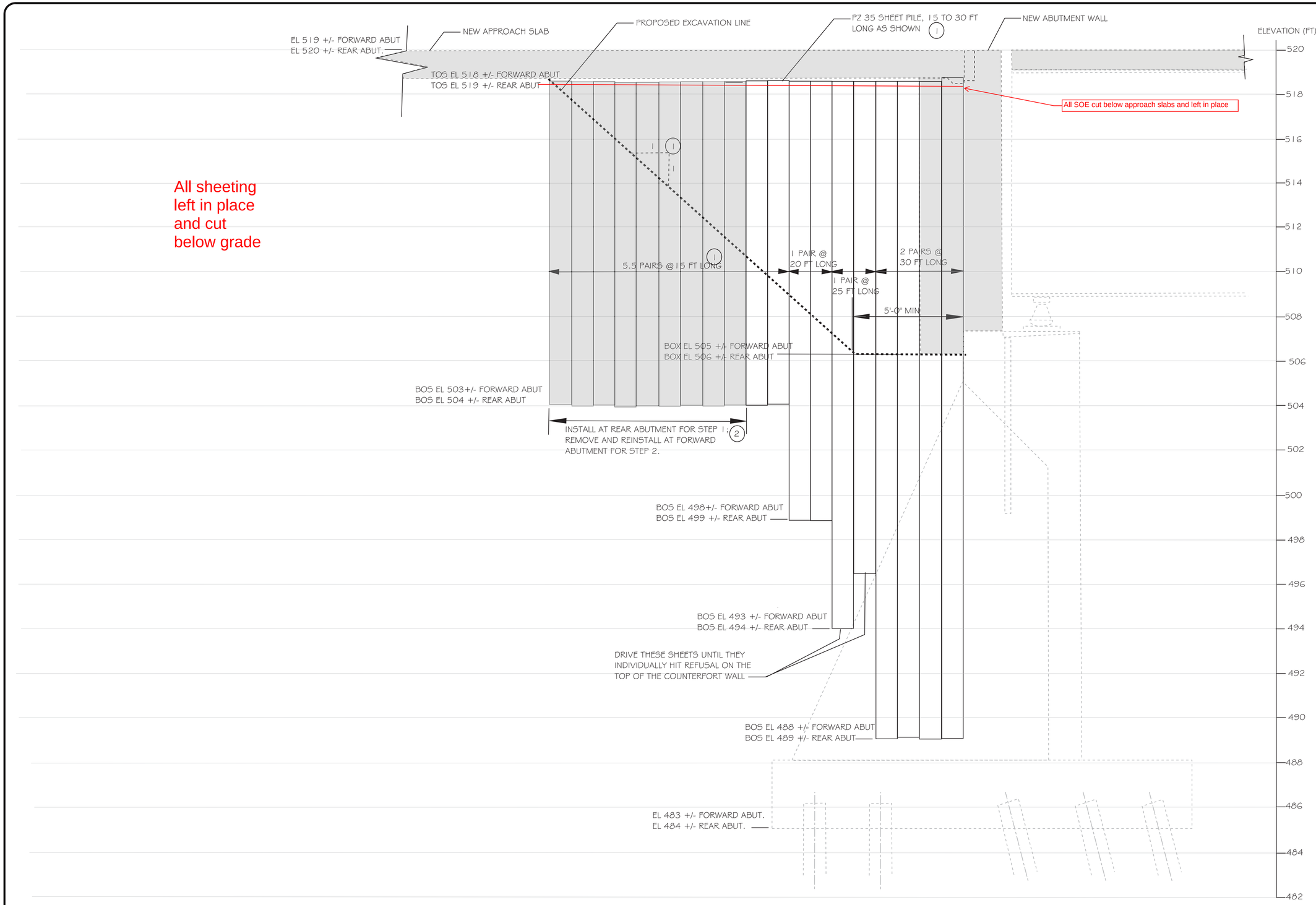
Project Manager:
TH BEDENIS

Designer:
DW BIRD

CADD:
DW BIRD

Checked By:
TH BEDENIS

Sheet No.
1 OF 2



1/2"=1'-0"

NOTE:
SHEET PILES ARE SHOWN IN REDUCED WIDTH SINCE THEY ARE SKEWED WITH ABUTMENT.

AS-BUILT

SME
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Scale
0'
GRAPHIC SCALE:

Project
HAM-75-3.84
BRIDGE NO.
HAM-74-1892 L/R
O/ELMORE ST

Project Location
HAMILTON COUNTY
CITY OF CINCINNATI
OHIO

Sheet Name
STAGE 1, PHASE 2
SOE ELEVATION
FORWARD & REAR
ABUTMENT

Engineer's Seal
STATE OF OHIO
TIMOTHY H. BEDENIS
E-63628
REGISTERED PROFESSIONAL ENGINEER

Revisions

REV	ISSUED FOR	DATE	BY
1	REVISE EXCAVATION CUT SLOPE	4-25-19	DWB
2	SHEETING STAGING	5-07-19	DWB

Date 3-29-2019

SME Project No. 79059.01

Project Manager: TH BEDENIS

Designer: DW BIRD

CADD: DW BIRD

Checked By: TH BEDENIS

Sheet No. 2 OF 2

Check plate steel for lagging using loading provided:

Assume lagging is simply supported between sheet pile and forward/rear abutments. Use a surcharge of 250 psf and a friction angle of 32 degrees with a unit weight of 120 pcf (as provided by others), with a reduction of 50 percent due to arching.

$H := 12.5\ ft$: Max retained height (provided by others)

$\phi := 32\ deg$: Internal angle of friction

$\gamma := 120\ pcf$: Unit weight of soil (provided by others)

$q := 250\ psf$: Surcharge (traffic surcharge, provided by others)

$K_a := \tan\left(45\ deg - \frac{\phi}{2}\right)^2 = 0.307$: Earth pressure coe. (Rankine distr., provided by others)

$LF_{EP} := 1.5$: ASSHTO load factor for earth pressrue

$LF_{sur} := 1.75$: ASSHTO load factor for surcharge

Try a plate steel using ASTM Gr. A36 with a thickness of 1 in.

$F_y := 36\ ksi$: Yield stress of plate steel

$b_p := 80\ in - 7\ in = 6.1\ ft$: Plate width

$t_p := 1\ in$: Plate thickness

$b_{eff} := 1\ ft$: Effective width

$p_{max} := LF_{EP} \cdot K_a \cdot (\gamma \cdot H) + q \cdot LF_{sur} = 1129\ psf$: Factored pressure (provided by others)

$T_{max} := p_{max} \cdot b_{eff} = 1.1\ \frac{kip}{ft}$: Maximum load

$\phi_{arc} := 0.5$: Use a 50% reduction for arching effects

$M_{max} := \phi_{arc} \cdot T_{max} \cdot {b_p}^2 \cdot 0.125 = 2.6\ ft \cdot kip$: Maximum moment for plate steel (say simply supported and loading is constant over unit width. This is conservative and is taken at a maximum pressure)

$\phi_{bend} := 0.9$: Reduction for bending

$S_{req} := \frac{M_{max}}{\phi_{bend} \cdot F_y} = 0.97\ in^3$: Required section modulus for plate

$S_{provided} := \frac{b_{eff} \cdot {t_p}^2}{6} = 2\ in^3$: Provided section for plate, OK by inspection

$V_{max} := T_{max} \cdot b_p \cdot 0.5 = 3.4\ kip$: Factored shear per foot at supports (neglect arching)

$\phi_p := 0.75$: Reduction factor for shear

$\phi_p V_p := \phi_p \cdot 0.6 \cdot F_y \cdot t_p \cdot b_{eff} = 194\ kip$: Factored shear resistance of plate, OK by inspection

May use 1-in. thick plate steel, ASTM Gr. A36 for purposes of lagging. Refer to attachments for locations.

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