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334+00 335+00 336+00 337+00 338+00 339+00 340+00 341+00

F.A. PROJECT No. BRSTP-0024(33)

NOTES:

PLANSET INFORMATION IS TAKEN FROM THE AS-BUILT
PLANS DATED APRIL 6, 1979, REHABILITATION PLANS
DATED JULY 1981, AND DECEMBER 15, 1987.

EXISTING GROUNDLINE BASED ON BEST INFORMATION
AVAILABLE.

NO PROFILE HAS BEEN DESIGNED FOR THE EXISTING
BRIDGE. DECK REHABILITATION SHALL MATCH EXISTING
BRIDGE ELEVATIONS, PROFILE, AND SUPERELEVATION.

*OFFSET FROM -L- TO -L-RT- IS BASED ON BEST
AVAILABLE SURVEY INFORMATION. ACTUAL CONDITIONS
MAY DIFFER.

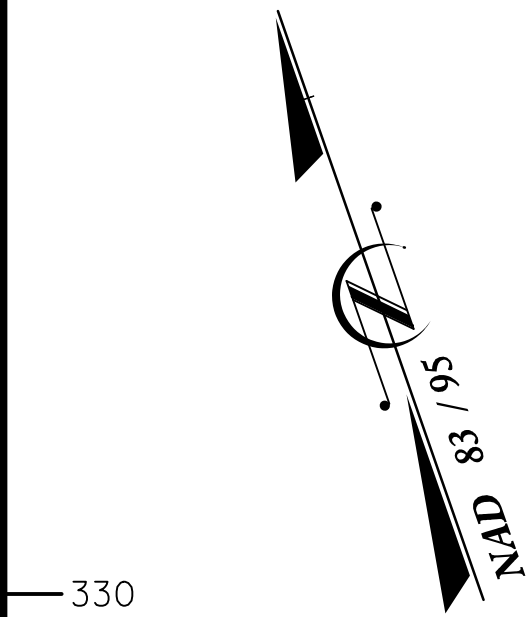
I HEREBY CERTIFY THIS STRUCTURE WAS REHABILITATED
ACCORDING TO THESE PLANS OR AS NOTED HEREIN

RESIDENT ENGINEER

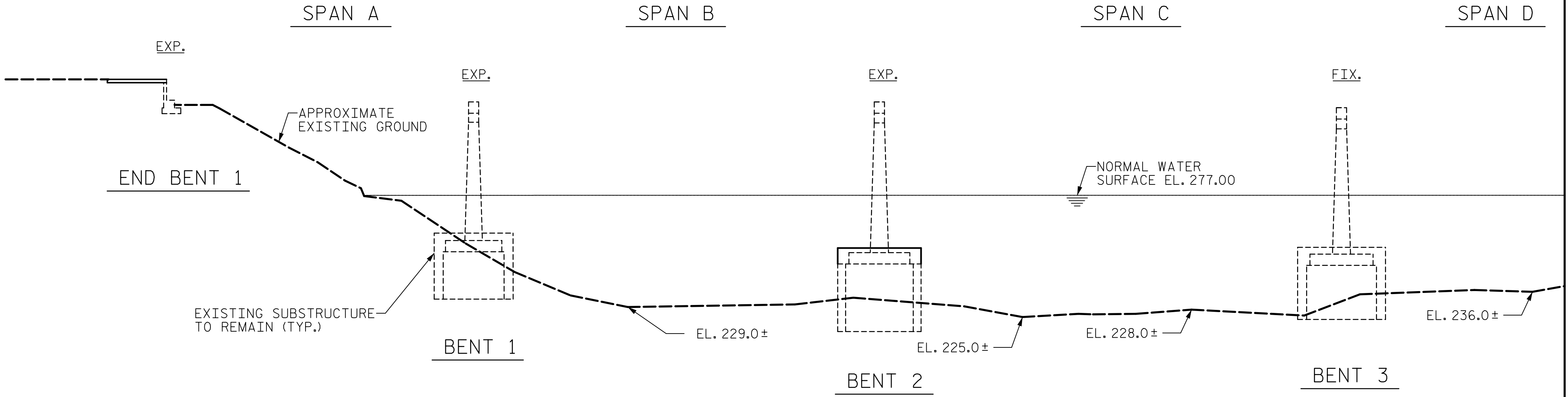
DATE

ABBREVIATIONS

SY	SQUARE YARD(S)
ERI	EPOXY RESIN INJECTION
LF	LINEAR FOOT (FEET)
PPC	POLYESTER POLYMER CONCRETE
CY	CUBIC YARD(S)
BT	BENT
EB	END BENT
MIN	MINIMUM
TYP	TYPICAL
CL	CENTERLINE
PL	PLATE
ICT	INTERMEDIATE CONTRACT TIME
W.P.	WORKPOINT

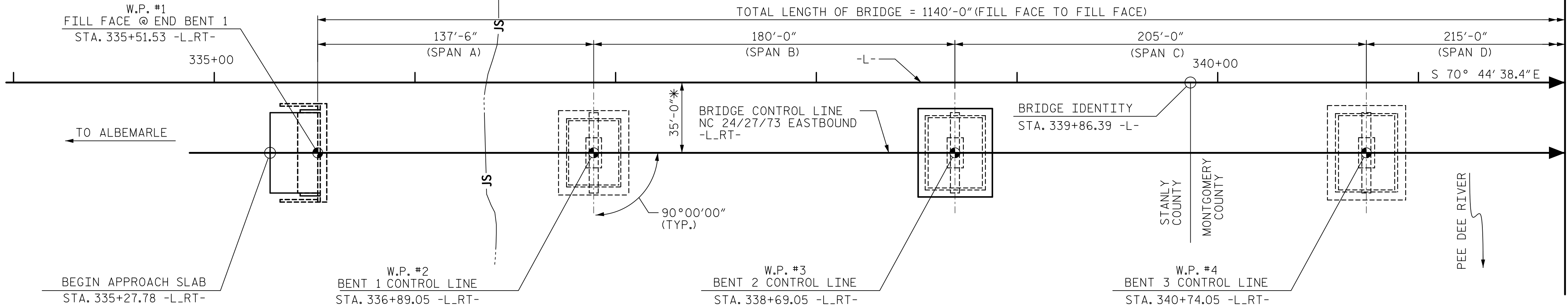


330
320
310
300
290
280
270
260
250
240
230
220



SECTION ALONG -L-RT-

MATCHLINE - SEE SHEET 2 OF 3
STA. 341+73.01



PLAN

PROJECT NO. 15BPR.43

STANLY/MONTGOMERY COUNTY

STATION: 339+86.39 -L-

REHABILITATION OF
BRIDGE NO. 830050

DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE ON NC 24/27/73
EASTBOUND OVER
PEE DEE RIVER

REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.

S-1

TOTAL SHEETS

37

DRAWN BY : K. DONALD	DATE : 08/2018
CHECKED BY : G. COLS	DATE : 08/2018
DESIGNED BY : K. DONALD	DATE : 08/2018
DESIGN CHECKED BY : G. COLS	DATE : 08/2018

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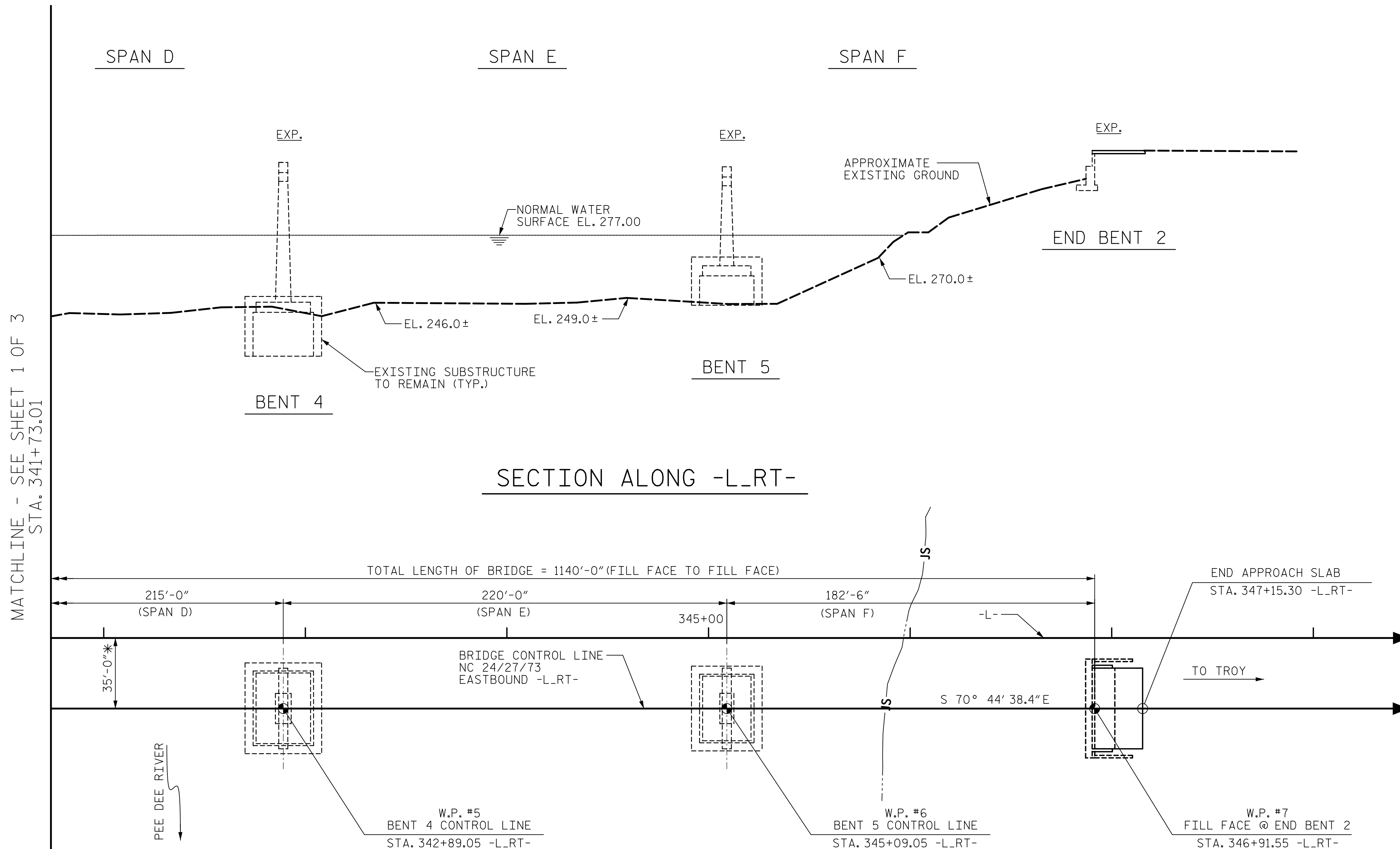
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DO NOT USE FOR CONSTRUCTION

NOTES:

FOR OTHER NOTES, SEE SHEET 1.

*OFFSET FROM -L- TO -L-RT- IS BASED ON BEST AVAILABLE SURVEY INFORMATION. ACTUAL CONDITIONS MAY DIFFER.



PLAN

PROJECT NO. 15BPR.43
STANLY/MONTGOMERY COUNTY
STATION: 339+86.39 -L-

SHEET 2 OF 3

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DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

BRIDGE ON NC 24/27/73
EASTBOUND OVER
PEE DEE RIVER

REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.
S-2TOTAL
SHEETS
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DESIGN CHECKED BY : G. COLS	DATE : 08/2018

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WOODS

TO ALBEMARLE

BRIDGE ID
STA. 339+86.39 -L-

EXISTING R/W

BRIDGE CONTROL LINE
NC 24/27/73
EASTBOUND
-L-RT-

PEE DEE RIVER

WOODS

TO TROY

WOODS

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

GENERAL SCOPE AND SEQUENCE OF WORK FOR ICT #1:

IN STAGES, APPLY SILANE TREATMENT TO BARRIER RAIL.

REPLACE NAVIGATION SIGNS ON BENT COLUMNS.

	GROOVING BRIDGE FLOOR	BRIDGE APPROACH SLAB	REINFORC- ING STEEL	EPOXY COATED REINFORC- ING STEEL	POLLUTION CONTROL	CONCRETE BARRIER RAIL	CLASS II SURFACE PREPARATION	DISC BEARINGS	CONCRETE REPAIRS FOR BRIDGE 50	EPOXY RESIN INJECTION FOR BRIDGE 50	EPOXY MORTAR REPAIRS FOR BRIDGE 50	BEAM REPAIR	CLEANING AND PAINTING EXISTING WEATHERING STEEL	CONCRETE DECK REPAIR FOR PPC OVERLAY	CONCRETE FOR DECK REPAIR	EPOXY COATING (SUB- STRUCTURE)	FOOTING SEAL REPAIR	FOOTING REPAIR REINF. STEEL	JOINT REPAIR
	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	SQ. FT.	LUMP SUM	LBS.	LBS.	LUMP SUM	LIN. FT.	SQ. YDS.	LUMP SUM	CU. FT.	LIN. FT.	SQ. FT.	LBS.	LUMP SUM	SQ. YDS.	CU. FT.	SQ. FT.	CU. YDS.	LBS.	SQ. FT.
TOTAL	43654	1	277	1003	1	48.7	1	1	24	114	22.0	364	1	1	7.5	4240	330	20,000	200

	MOLDED RUBBER SEGMENTAL EXPANSION JOINTS *	PAINTING CONTAINMENT *	PLACING AND FINISHING PPC OVERLAY *	PPC MATERIALS *	REPLACEMENT OF NAVIGATION SIGNS ON COLUMNS *	SCARIFYING BRIDGE DECK *	SHOTBLASTING BRIDGE DECK *	SILANE TREATMENT *	STRUCTURAL EPOXY GROUT JACKET *	SURFACE PREPARATION FOR SILANE *	TYPE II BRIDGE JACKING *	VOLUMETRIC MIXER *
	LUMP SUM	LUMP SUM	SQ. YDS.	CU. FT.	LUMP SUM	SQ. YDS.	SQ. YDS.	SQ. FT.	CU. FT.	SQ. FT.	EA.	LUMP SUM
TOTAL	1	1	5041.5	210.1	1	5041.5	5041.5	30,020	230	30,020	35	1

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FOR PAINTING OF EXISTING WEATHERING STEEL, SEE SPECIAL PROVISIONS.

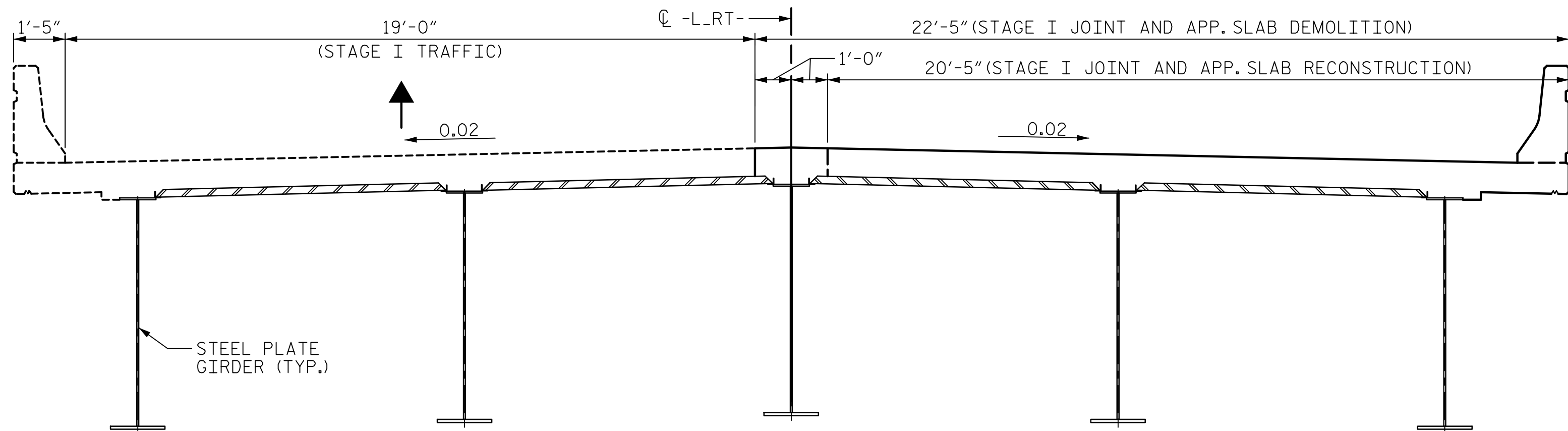
RIPRAP AT BOTH ENDS SHALL BE PLACED IN ACCORDANCE WITH PLANS FOR BRIDGE #51. NO PAYMENT WILL BE MADE UNDER BRIDGE #50.

F

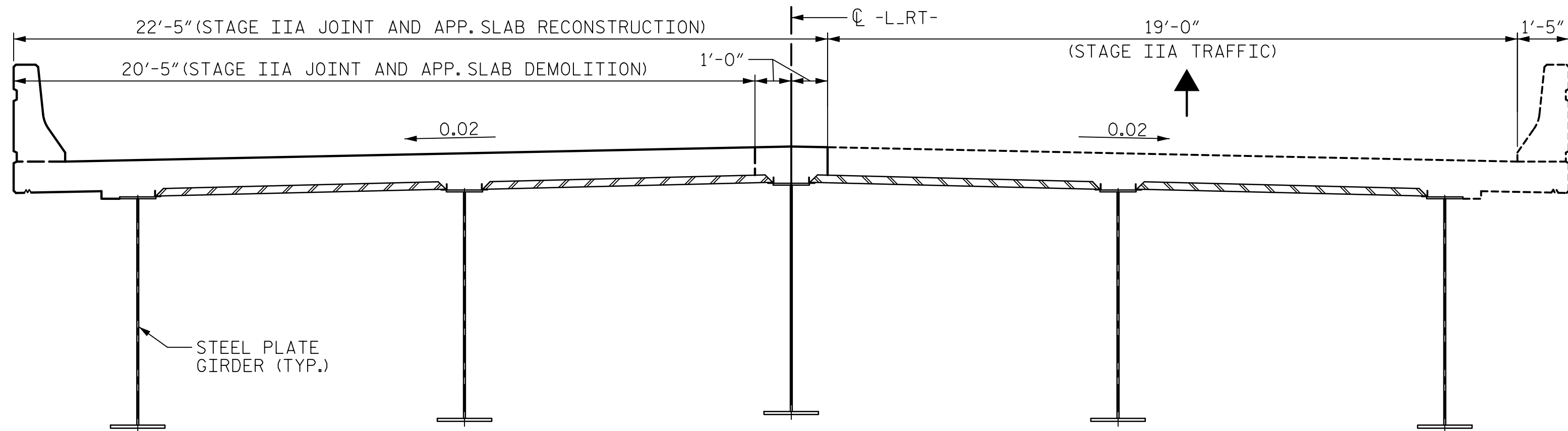
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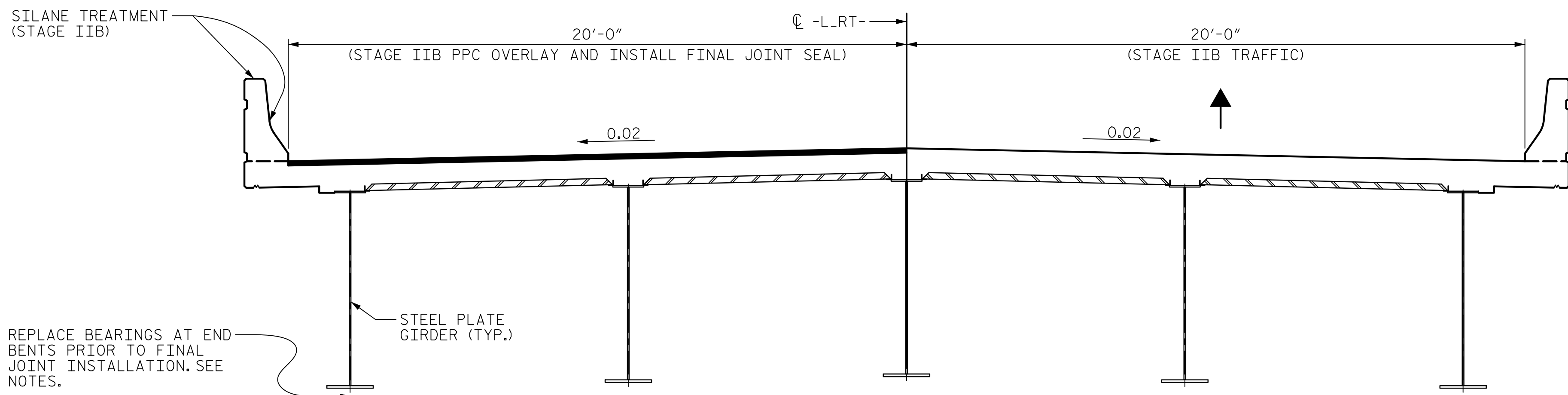
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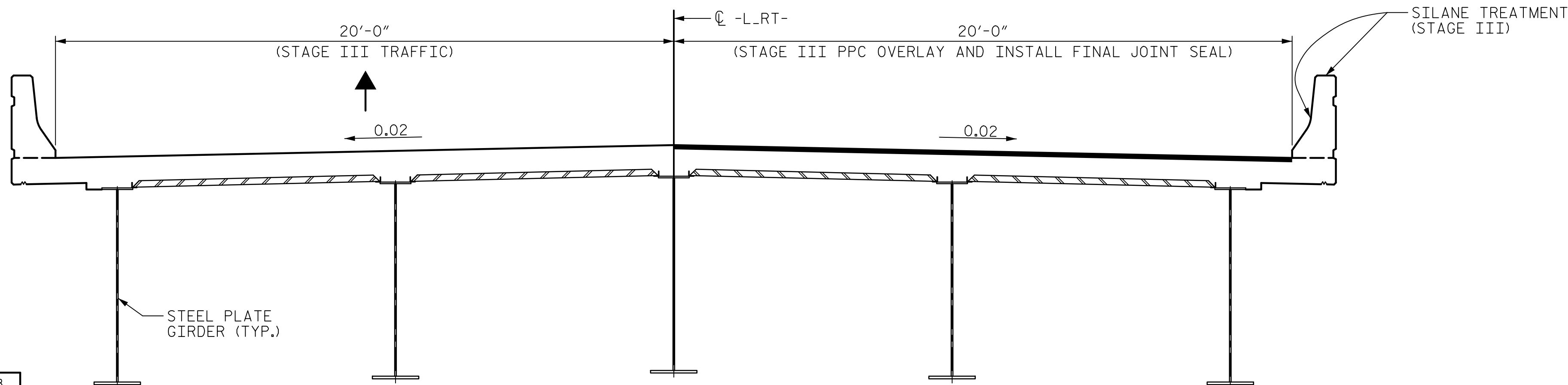
STAGE I CONSTRUCTION



STAGE IIA CONSTRUCTION



STAGE IIB CONSTRUCTION



STAGE III CONSTRUCTION

NOTES:

THIS CONSTRUCTION SEQUENCE SHALL APPLY TO THE END BENT BEARING REPLACEMENT, JOINT REPAIR, OVERLAY SURFACE PREPARATION, PPC OVERLAY, SILANE TREATMENT FOR BARRIER, AND APPROACH SLAB RECONSTRUCTION. FOR THE CONSTRUCTION SEQUENCE OF OTHER REHABILITATION ITEMS, REFER TO THE VARIOUS SPECIAL PROVISIONS AND PLAN SHEETS.

THE FINAL MOLDED RUBBER SEGMENTAL EXPANSION JOINT SHALL NOT BE INSTALLED UNTIL THE FOLLOWING TASKS ARE COMPLETED: BRIDGE JACKING AND REPLACEMENT OF BEARINGS AT END BENTS, SURFACE PREPARATION FOR PPC, PPC OVERLAY, AND SILANE TREATMENT FOR BARRIER.

THE RECONSTRUCTED APPROACH SLAB SHALL NOT RECEIVE A PPC OVERLAY.

THE BARRIER ON APPROACH SLAB SHALL RECIEVE SILANE TREATMENT FOR BARRIER RAIL ON ALL FACES.

FOR BEARING REPLACEMENT, SEE DISC BEARING SHEETS AND SPECIAL PROVISIONS.

FOR TEMPORARY LANE WIDTHS AND OFFSETS, LANE SHIFTS, CHANNELIZATION DEVICES, AND OTHER MAINTENANCE OF TRAFFIC MEASURES, SEE TRANSPORTATION MANAGEMENT PLANS.

STAGE I CONSTRUCTION

1. MAINTAIN ONE LANE OF EASTBOUND TRAFFIC ON LEFT SIDE OF BRIDGE AS SHOWN.
2. REMOVE DECK PORTION AND END DIAPHRAGMS AT END BENTS. RECONSTRUCT AS SHOWN ON JOINT REPLACEMENT SHEETS.
3. REMOVE AND RECONSTRUCT APPROACH SLAB AS SHOWN ON APPROACH SLAB REPLACEMENT SHEETS.
4. INSTALL TEMPORARY JOINT PLATES.

STAGE IIA CONSTRUCTION

1. SHIFT TRAFFIC TO RIGHT SIDE AS SHOWN.
2. REMOVE DECK PORTION AND END DIAPHRAGMS AT END BENTS. RECONSTRUCT AS SHOWN ON JOINT REPLACEMENT SHEETS.
3. REMOVE AND RECONSTRUCT APPROACH SLAB AS SHOWN ON APPROACH SLAB REPLACEMENT SHEETS.
4. INSTALL TEMPORARY JOINT PLATES.

STAGE IIB CONSTRUCTION

1. MAINTAIN TRAFFIC ON RIGHT SIDE.
2. PREPARE TOP AND TRAFFIC FACES OF BARRIER RAIL FOR SILANE TREATMENT AND APPLY SILANE TREATMENT FOR BARRIER.
2. PREPARE DECK SURFACE FOR OVERLAY AND INSTALL PPC OVERLAY.
3. REMOVE TEMPORARY PLATE JOINT AS NECESSARY.
4. INSTALL FINAL JOINT SEAL TO CROWN. EPOXY-SET JOINT ANCHORS.

STAGE III CONSTRUCTION

1. SHIFT TRAFFIC TO LEFT SIDE AS SHOWN.
2. PREPARE TOP AND TRAFFIC FACES OF BARRIER RAIL FOR SILANE TREATMENT AND INSTALL SILANE TREATMENT FOR BARRIER.
2. PREPARE DECK SURFACE FOR OVERLAY AND INSTALL PPC OVERLAY.
3. REMOVE TEMPORARY PLATE JOINT AS NECESSARY.
4. INSTALL FINAL JOINT SEAL TO CROWN. EPOXY-SET JOINT ANCHORS.

PROJECT NO. 15BPR.43

STANLY/MONTGOMERY COUNTY

STATION: 339+86.39 -L-

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RALEIGH

SUPERSTRUCTURE

TOPSIDE
CONSTRUCTION
SEQUENCE

REVISIONS

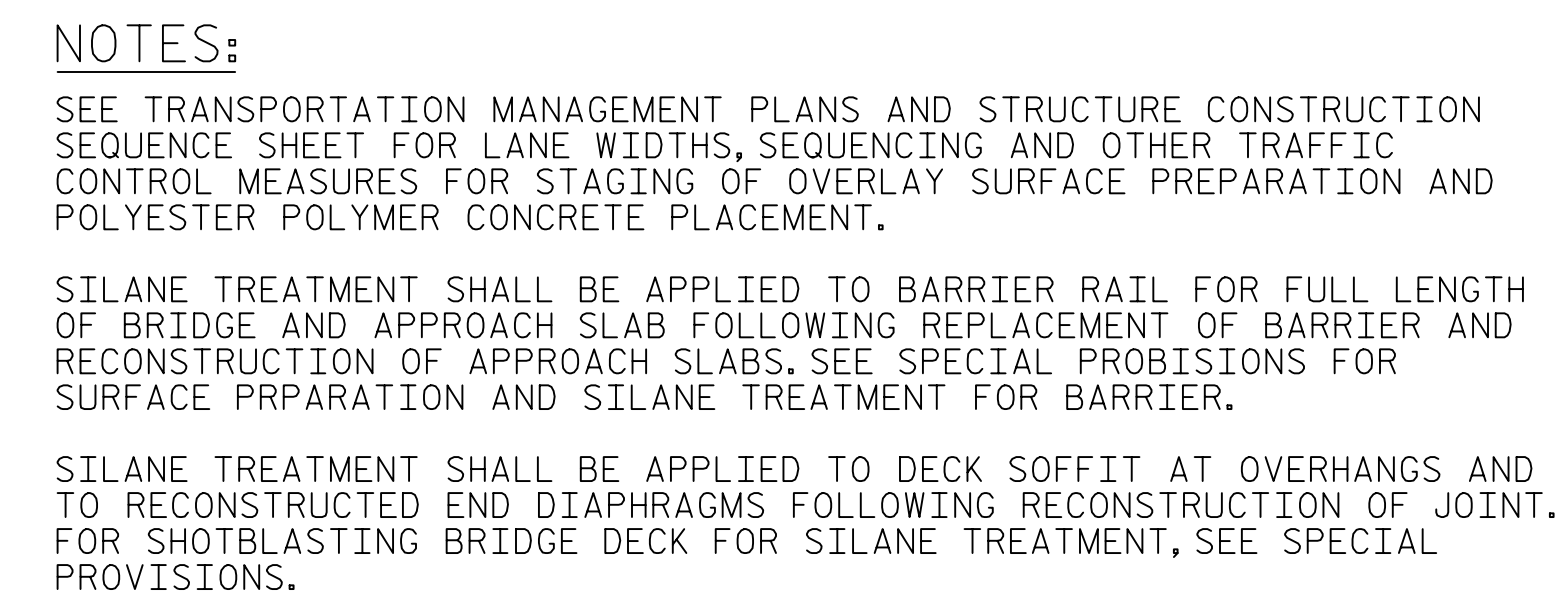
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1			3			S-04
2			4			TOTAL SHEETS
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DRAWN BY : T.B. STUMP
CHECKED BY : G.R. COLS
DESIGNED BY : G.R. COLS
DESIGN CHECKED BY : K.J. MUENCH

DATE : 08/2018
DATE : 08/2018
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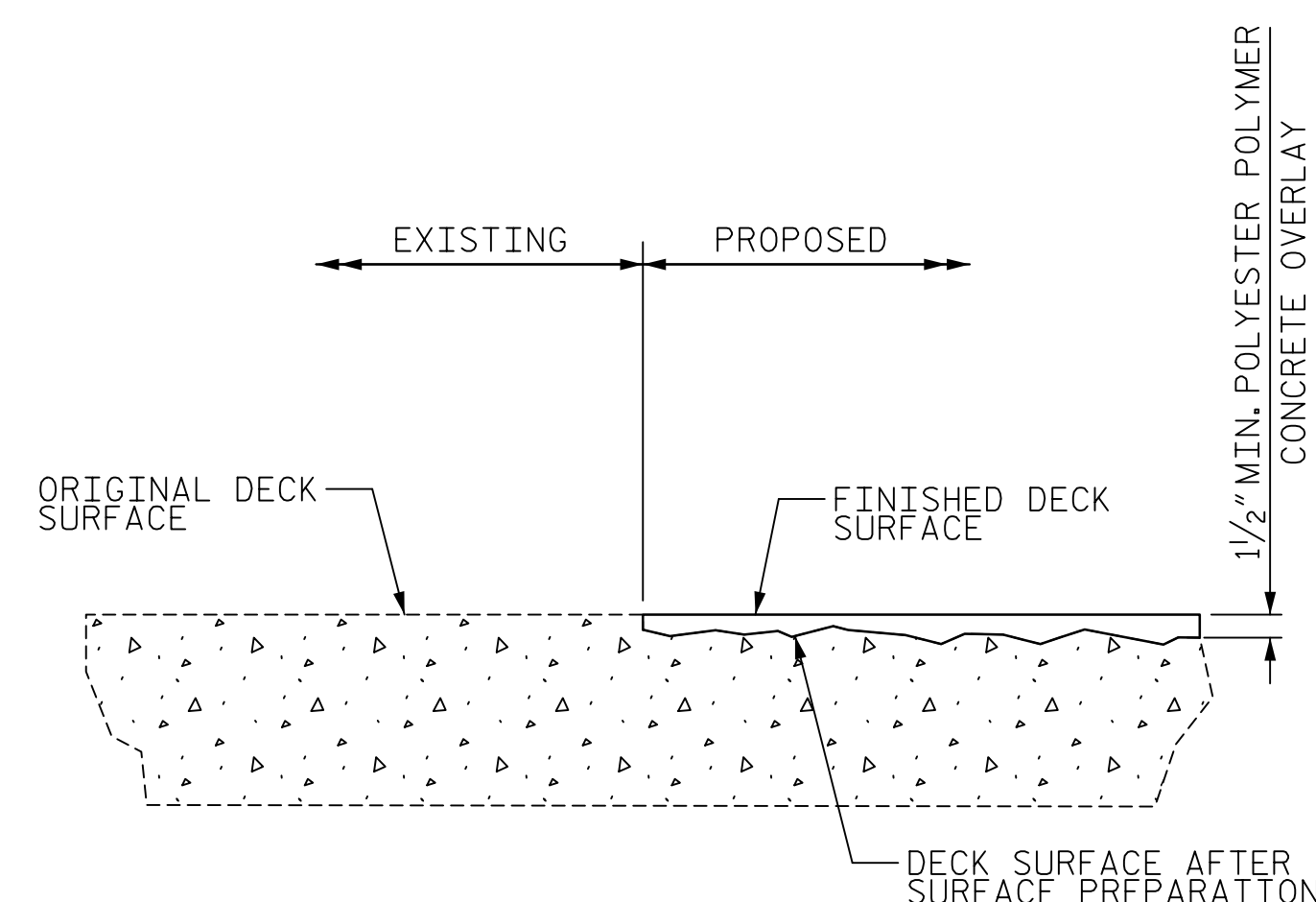
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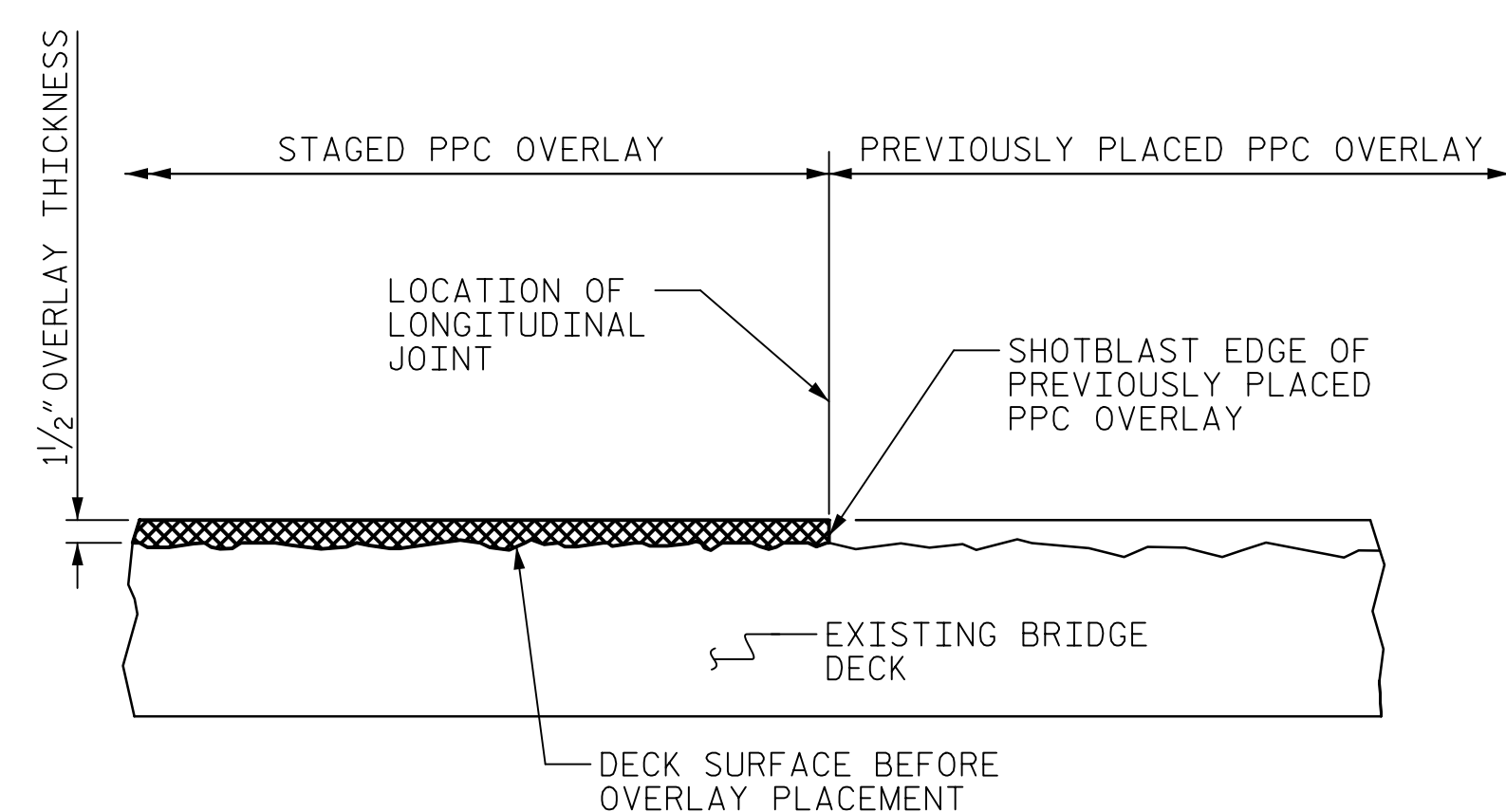
INCLUDES BARRIER ON APPROACH SLAB



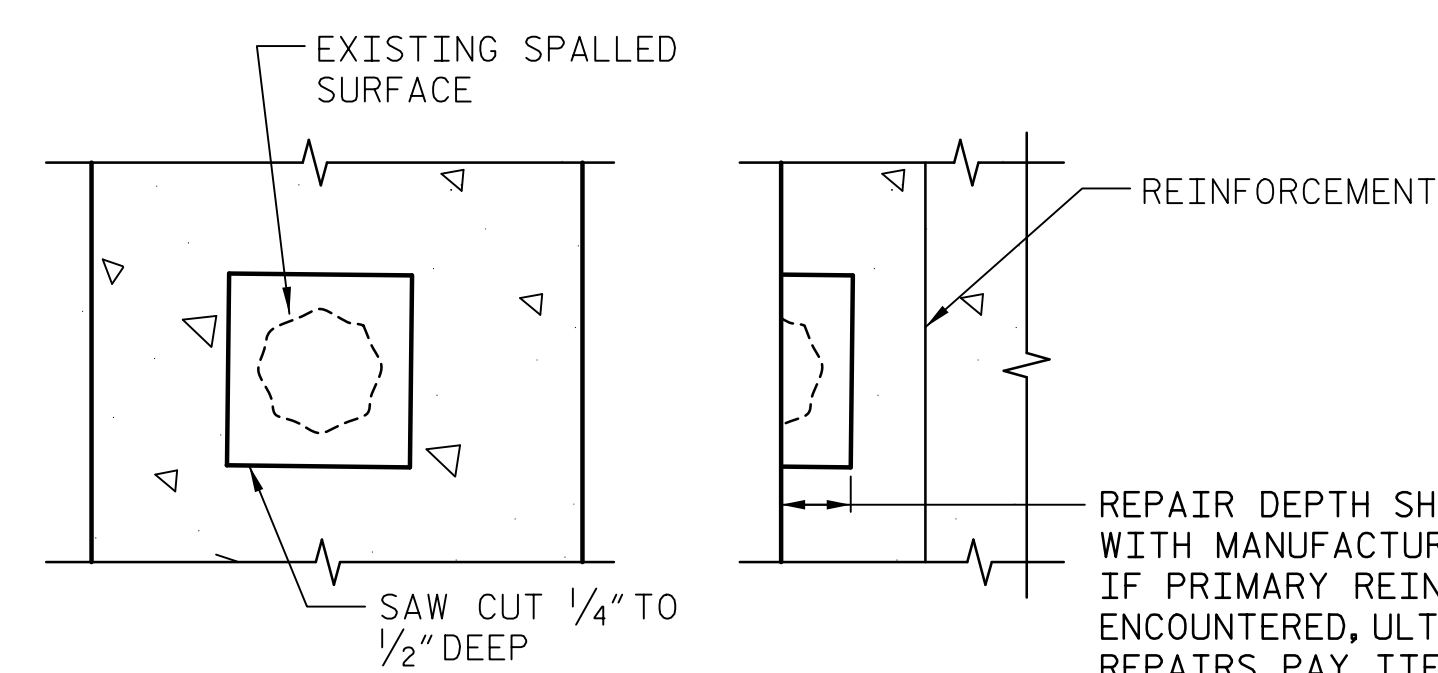
TYPICAL SECTION



DETAIL FOR POLYESTER
POLYMER CONCRETE OVERLAY



STAGED PPC OVERLAY JOINT
(AS NEEDED)



ELEVATION END ELEVATION

EPOXY MORTAR REPAIRS (FOR BARRIER)

REPAIR DEPTH SHALL BE CONSISTENT
WITH MANUFACTURER'S LITERATURE
IF PRIMARY REINFORCEMENT IS
ENCOUNTERED, ULTIIZE CONCRETE
REPAIRS PAY ITEM.

PROJECT NO. 15BPR.43
STANLY/MONTGOMERY COUNTY
 STATION: 339+86.39 -L-



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DEPARTMENT OF TRANSPORTATION

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SUPERSTRUCTURE

TYPICAL SECTION

AND

PPC OVERLAY

DETAILS

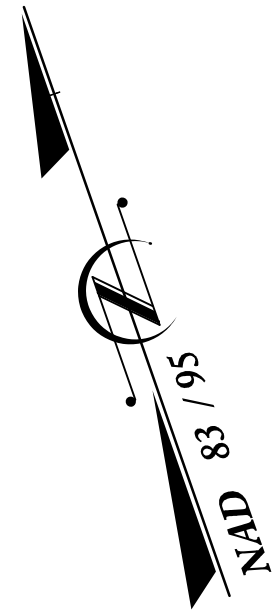
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-05
1			3			TOTAL SHEETS
2			4			37

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NOTES:

EXISTING BRIDGE CONCRETE DECK SHALL BE REPAIRED PRIOR TO THE SURFACE PREPARATION AND APPLICATION OF THE PPC OVERLAY AT LOCATIONS SHOWN ON THE PLANS OR AS DETERMINED BY THE ENGINEER. IF NECESSARY, SUCH LOCATIONS MAY BE REPAIRED WITH PPC. PPC SHALL NOT BE USED FOR THE RECONSTRUCTION OF THE JOINTS, BARRIERS, OR APPROACH SLABS.

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE AS-BUILT REPAIR QUANTITY TABLE.

QUANTITIES IN TABLES REPRESENT ESTIMATED VALUES OF CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PPC OVERLAY AFTER REMOVAL OF UNSOUND CONCRETE (MIN. 2" CLEAR TO SAW CUT). SEE SPECIAL PROVISIONS.

LONGITUDINAL CONSTRUCTION JOINTS OF OVERLAYS SHALL BE LOCATED ALONG THE CROWN OF THE DECK OR EDGE OF TRAVEL LANES.

FOR LIMITS OF SILANE COATING ON BARRIER, UNDERSIDE OF DECK, AND TYPICAL REPAIR DETAILS, SEE "TYPICAL SECTION AND PPC OVERLAY" SHEET.

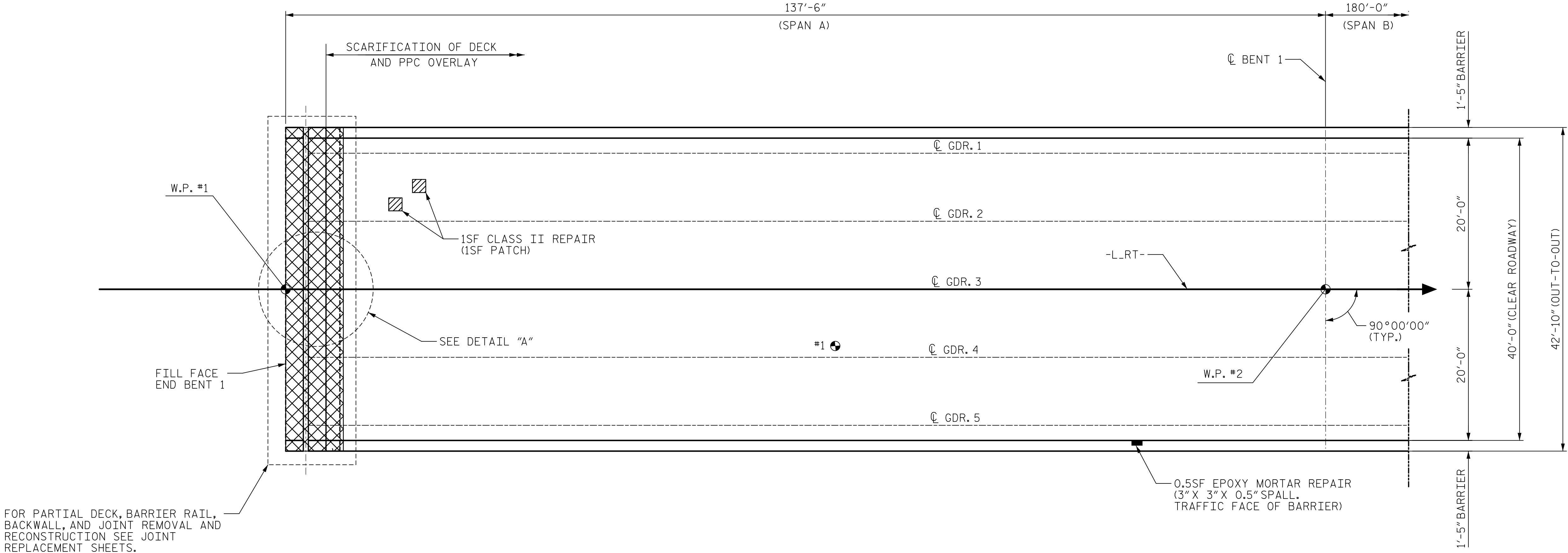
FOR STAGING LIMITS, SEE CONSTRUCTION SEQUENCE SHEET.

REPAIR QUANTITY TABLE

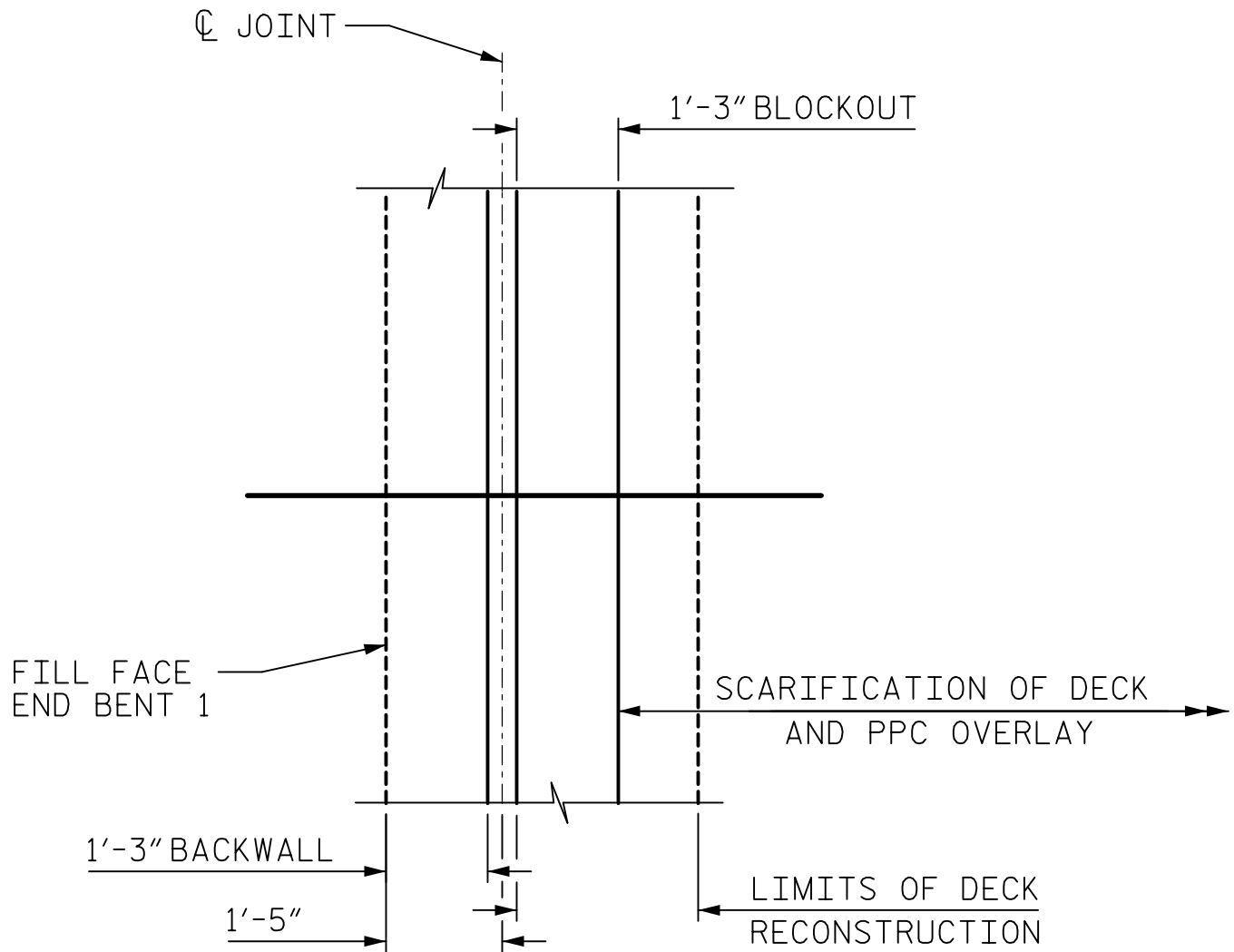
SPAN A		
TOP OF DECK REPAIRS		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	598.5 SY	
CLASS II SURFACE PREPARATION	2.0 SY	
CONCRETE DECK REPAIR FOR PPC OVERLAY	2.0 SY	
SHOTBLASTING BRIDGE DECK	598.5 SY	
PPC MATERIAL	16.6 CY	
PLACING AND FINISHING PPC OVERLAY	598.5 SY	
GROOVING BRIDGE FLOORS	4977 SF	
BARRIER REPAIRS		
EPOXY MORTAR REPAIRS	0.5 SF	

SPAN	CONCRETE COVER (AVERAGE)
A	3 1/8"

INFORMATION IN CHART TAKEN FROM DECK EVALUATION DATED 08/05/18. FOR ADDITIONAL DATA, SEE SPECIAL PROVISIONS.



FOR PARTIAL DECK, BARRIER RAIL, BACKWALL, AND JOINT REMOVAL AND RECONSTRUCTION SEE JOINT REPLACEMENT SHEETS.



DETAIL A

PLAN OF SPAN A

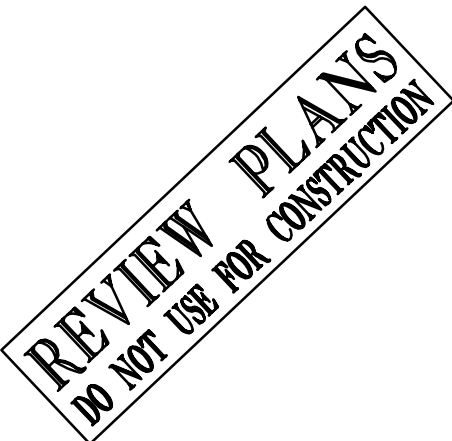
- APPROXIMATE CLASS II REPAIR
- JOINT REPAIR
- #1 CHLORIDE TEST LOCATION
- EPOXY MORTAR REPAIR (ON BARRIER)

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DESIGNED BY : K. DONALD	DATE : 08/2018
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PROJECT NO. 15BPR.43
STANLY/MONTGOMERY COUNTY
STATION: 339+86.39 -L-

SHEET 1 OF 6



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PLAN OF SPANS
SPAN A

REVISIONS						SHEET NO. S-06
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 37
2			4			

EXISTING BRIDGE CONCRETE DECK SHALL BE REPAIRED PRIOR TO THE SURFACE PREPARATION AND APPLICATION OF THE PPC OVERLAY AT LOCATIONS SHOWN ON THE PLANS OR AS DETERMINED BY THE ENGINEER. IF NECESSARY, SUCH LOCATIONS MAY BE REPAIRED WITH PPC. PPC SHALL NOT BE USED FOR THE RECONSTRUCTION OF THE JOINTS, BARRIERS, OR APPROACH SLABS.

QUANTITIES IN TABLES REPRESENT ESTIMATED VALUES OF CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PPC OVERLAY AFTER REMOVAL OF UNSOUND CONCRETE (MIN. 2" CLEAR TO SAW CUT). SEE SPECIAL PROVISIONS.

FOR LIMITS OF SILANE COATING ON BARRIER, UNDERSIDE OF DECK, AND TYPICAL REPAIR DETAILS, "SEE TYPICAL SECTION AND PPC OVERLAY DETAILS" SHEET.

REPAIR QUANTITY TABLE		
SPAN B		
TOP OF DECK REPAIRS		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	800 SY	
CLASS II SURFACE PREPARATION	0.0 SY	
CONCRETE DECK REPAIR FOR PPC OVERLAY	0.0 SY	
SHOTBLASTING BRIDGE DECK	800 SY	
PPC MATERIAL	22.2 CY	
PLACING AND FINISHING PPC OVERLAY	800 SY	
GROOVING BRIDGE FLOORS	6600 SF	
BARRIER REPAIRS		
EPOXY MORTAR REPAIR	1.0 SF	



SPAN	CONCRETE COVER (AVERAGE)
B	2 ¹⁵ / ₁₆ "

INFORMATION IN CHART TAKEN
FROM DECK EVALUATION DATED
08/05/18. FOR ADDITIONAL DATA,
SEE SPECIAL PROVISIONS.

SHEET 2 OF 6

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PLAN OF SPANS

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NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 37
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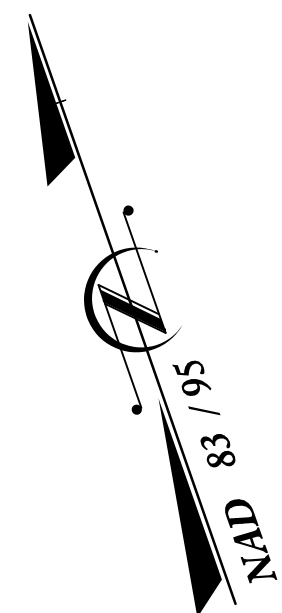
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CHECKED BY : <u>G. COLS</u>	DATE : <u>08/2018</u>
DESIGNED BY : <u>K. DONALD</u>	DATE : <u>08/2018</u>
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DGN: \\usralf6001.na.comnet.com\data\Projects\60579778 - ASR Lake Tillery\900_CAD_GIS\910_CAD\70_WCDOT_TIP\Structures\04 Drawings\401_015_15BPR.43_SMU_PS2.dgn

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 DSN: \\usral3f001\aznecommel.com\data\Projects\605793778 - ASR Lake Tillery\9000_CAD_GIS\910_CAD\70_WCDOT_TIP\Structures\04_Drawings\401_017_155PR\43_SUN_PS3.dgn



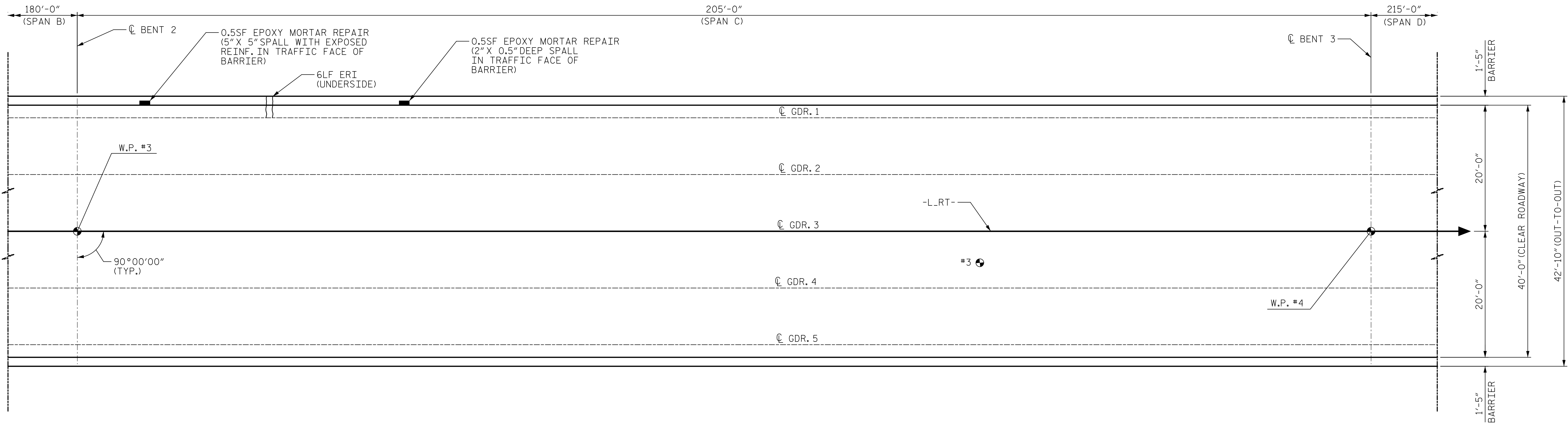
EXISTING BRIDGE CONCRETE DECK SHALL BE REPAIRED PRIOR TO THE SURFACE PREPARATION AND APPLICATION OF THE PPC OVERLAY AT LOCATIONS SHOWN ON THE PLANS OR AS DETERMINED BY THE ENGINEER. IF NECESSARY, SUCH LOCATIONS MAY BE REPAIRED WITH PPC. PPC SHALL NOT BE USED FOR THE RECONSTRUCTION OF THE JOINTS, BARRIERS, OR APPROACH SLABS.

QUANTITIES IN TABLES REPRESENT ESTIMATED VALUES OF CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PPC OVERLAY AFTER REMOVAL OF UNSOUND CONCRETE (MIN. 2" CLEAR TO SAW CUT). SEE SPECIAL PROVISIONS.

FOR LIMITS OF SILANE COATING ON BARRIER, UNDERSIDE OF DECK, AND TYPICAL REPAIR DETAILS, SEE "TYPICAL SECTION AND PPC OVERLAY" SHEET.

FOR STAGING LIMITS, SEE CONSTRUCTION SEQUENCE SHEET.

REPAIR QUANTITY TABLE		
SPAN C		
TOP OF DECK REPAIRS		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	911.1 SY	
CLASS II SURFACE PREPARATION	0.0 SY	
CONCRETE DECK REPAIR FOR PPC OVERLAY	0.0 SY	
SHOTBLASTING BRIDGE DECK	911.1 SY	
PPC MATERIAL	25.3 CY	
PLACING AND FINISHING PPC OVERLAY	911.1 SY	
GROOVING BRIDGE FLOORS	7585 SF	
BOTTOM OF DECK REPAIRS		
EPOXY RESIN INJECTION	6 LF	
BARRIER REPAIRS		
EPOXY MORTAR REPAIR	1 SF	



#3 CHLORIDE TEST LOCATION

 EPOXY RESIN INJECTION

 EPOXY MORTAR REPAIR
(ON BARRIER)

SPAN	CONCRETE COVER (AVERAGE)
C	2 ¹³ / ₁₆ "

INFORMATION IN CHART TAKEN
FROM DECK EVALUATION DATED
08/05/18. FOR ADDITIONAL DATA,
SEE SPECIAL PROVISIONS.

PROJECT NO. 15BPR.43

STANLY/MONTGOMERY COUNTY

STATION: 339+86.39 -L-

SHEET 3 OF 6

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE

PLAN OF SPANS
 SPAN C

REVISIONS						SHEET NO. S-08
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 37
1			3			
2			4			

DRAWN BY : K. DONALD DATE : 08/2018
 CHECKED BY : G. COLS DATE : 08/2018
 DESIGNED BY : K. DONALD DATE : 08/2018
 DESIGN CHECKED BY : G. COLS DATE : 08/2018

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EXISTING BRIDGE CONCRETE DECK SHALL BE REPAIRED PRIOR TO THE SURFACE PREPARATION AND APPLICATION OF THE PPC OVERLAY AT LOCATIONS SHOWN ON THE PLANS OR AS DETERMINED BY THE ENGINEER. IF NECESSARY, SUCH LOCATIONS MAY BE REPAIRED WITH PPC. PPC SHALL NOT BE USED FOR THE RECONSTRUCTION OF THE JOINTS, BARRIERS, OR APPROACH SLABS.

QUANTITIES IN TABLES REPRESENT ESTIMATED VALUES OF CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PPC OVERLAY AFTER REMOVAL OF UNSOUND CONCRETE (MIN. 2" CLEAR TO SAW CUT). SEE SPECIAL PROVISIONS.

FOR LIMITS OF SILANE COATING ON BARRIER, UNDERSIDE OF DECK, AND TYPICAL REPAIR DETAILS, SEE "TYPICAL SECTION AND PPC OVERLAY" SHEET.

REPAIR QUANTITY TABLE

SPAN D

TOP OF DECK REPAIRS

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	955.6 SY	
CLASS II SURFACE PREPARATION	0.0 SY	
CONCRETE DECK REPAIR FOR PPC OVERLAY	0.0 SY	
SHOTBLASTING BRIDGE DECK	955.6 SY	
PPC MATERIAL	26.5 CY	
PLACING AND FINISHING PPC OVERLAY	955.5 SY	
GROOVING BRIDGE FLOORS	7955 SF	
BARRIER RAIL		
EPOXY MORTAR REPAIR	7 SF	



SPAN	CONCRETE COVER (AVERAGE)
D	2 ¹⁵ / ₁₆ "

EPOXY MORTAR REPAIR
(ON BARRIER)

PROJECT NO. 15BPR.43

STANLY/MONTGOMERY COUNTY

STATION: 339+86.39 -L-

SHEET 4 OF 6

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SUPERSTRUCTURE

PLAN OF SPANS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-09
1			3			TOTAL SHEETS 37
2			4			

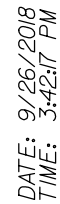
DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

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 DESIGNED BY : K. DONALD DATE : 08/2018
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DATE: 9/26/2018
TIME: 3:42:10 PM

USER: Henry.Rosemond
DGN: \\usralf6001.na.comnet.com\data\Projects\60579778 - ASR Lake Tillery\900_CAD_GIS\910_CAD\70_WCDOT_TIP\Structures\04 Drawings\401_019_15BPR\43_SMU_PS4.dgn



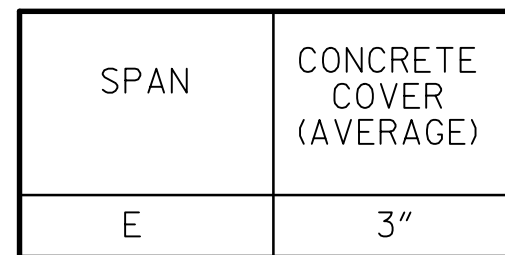
USER: Henry.Rosemond
DGN: \usr\3fpool\nd

FOR STAGING LIMITS, SEE CONSTRUCTION SEQUENCE SHEET.

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■ EPOXY MORTAR REPAIR
(ON BARRIER)

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SHEET 5 OF 6

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH

SUPERSTRUCTURE

PLAN OF SPANS

SPAN E

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			37

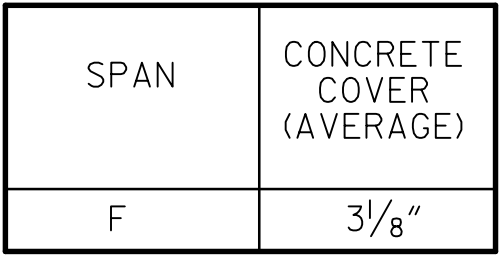
EXISTING BRIDGE CONCRETE DECK SHALL BE REPAIRED PRIOR TO THE SURFACE PREPARATION AND APPLICATION OF THE PPC OVERLAY AT LOCATIONS SHOWN ON THE PLANS OR AS DETERMINED BY THE ENGINEER. IF NECESSARY, SUCH LOCATIONS MAY BE REPAIRED WITH PPC. PPC SHALL NOT BE USED FOR THE RECONSTRUCTION OF THE JOINTS, BARRIERS, OR APPROACH SLABS.

QUANTITIES IN TABLES REPRESENT ESTIMATED VALUES OF CLASS II SURFACE PREPARATION AND CONCRETE DECK REPAIR FOR PPC OVERLAY AFTER REMOVAL OF UNSOUND CONCRETE (MIN. 2" CLEAR TO SAW CUT), SEE SPECIAL PROVISIONS.

FOR LIMITS OF SILANE COATING ON BARRIER, UNDERSIDE OF DECK, AND TYPICAL REPAIR DETAILS, SEE "TYPICAL SECTION AND PPC OVERLAY DETAILS" SHEETS.

REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS		
SPAN F		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	798.5 SY	
CLASS II SURFACE PREPARATION	0.0 SY	
CONCRETE DECK REPAIR FOR PPC OVERLAY	0.0 SY	
SHOTBLASTING BRIDGE DECK	798.5 SY	
PPC MATERIAL	22.2 CY	
PLACING AND FINISHING PPC OVERLAY	798.5 SY	
GROOVING BRIDGE FLOORS	6641 SF	
BOTTOM OF DECK REPAIRS		
EPOXY RESIN INJECTION	8 LF	
BARRIER REPAIRS		
EPOXY MORTAR REPAIRS	2 SF	



PROJECT NO. 15BPR.43

STANLY/MONTGOMERY COUNTY

STATION: 339+86.39 -L-

SHEET 6 OF 6

 JOINT REPAIR

#6 CHLORIDE TEST LOCATION

 EPOXY RESIN INJECTION

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STATE OF NORTH CAROLINA
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RALEIGH

SUPERSTRUCTURE

PLAN OF SPANS
SPAN F

REVISIONS						SHEET NO. S-11
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 37
2			4			

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 CHECKED BY : G. COLS DATE : 08/2018
 DESIGNED BY : K. DONALD DATE : 08/2018
 DESIGN CHECKED BY : G. COLS DATE : 08/2018

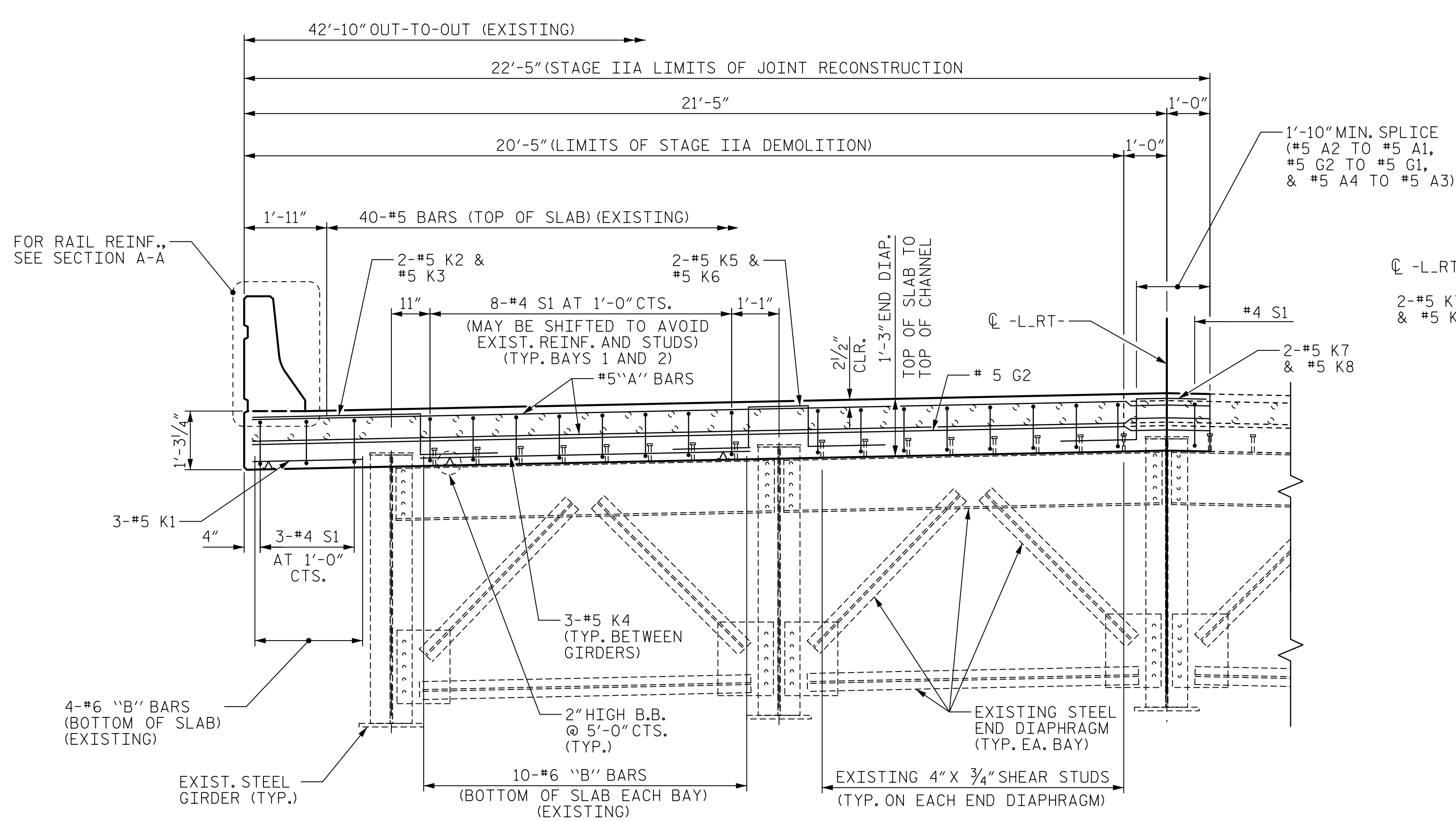
DETAIL B

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TIME: 3:42:24 PM

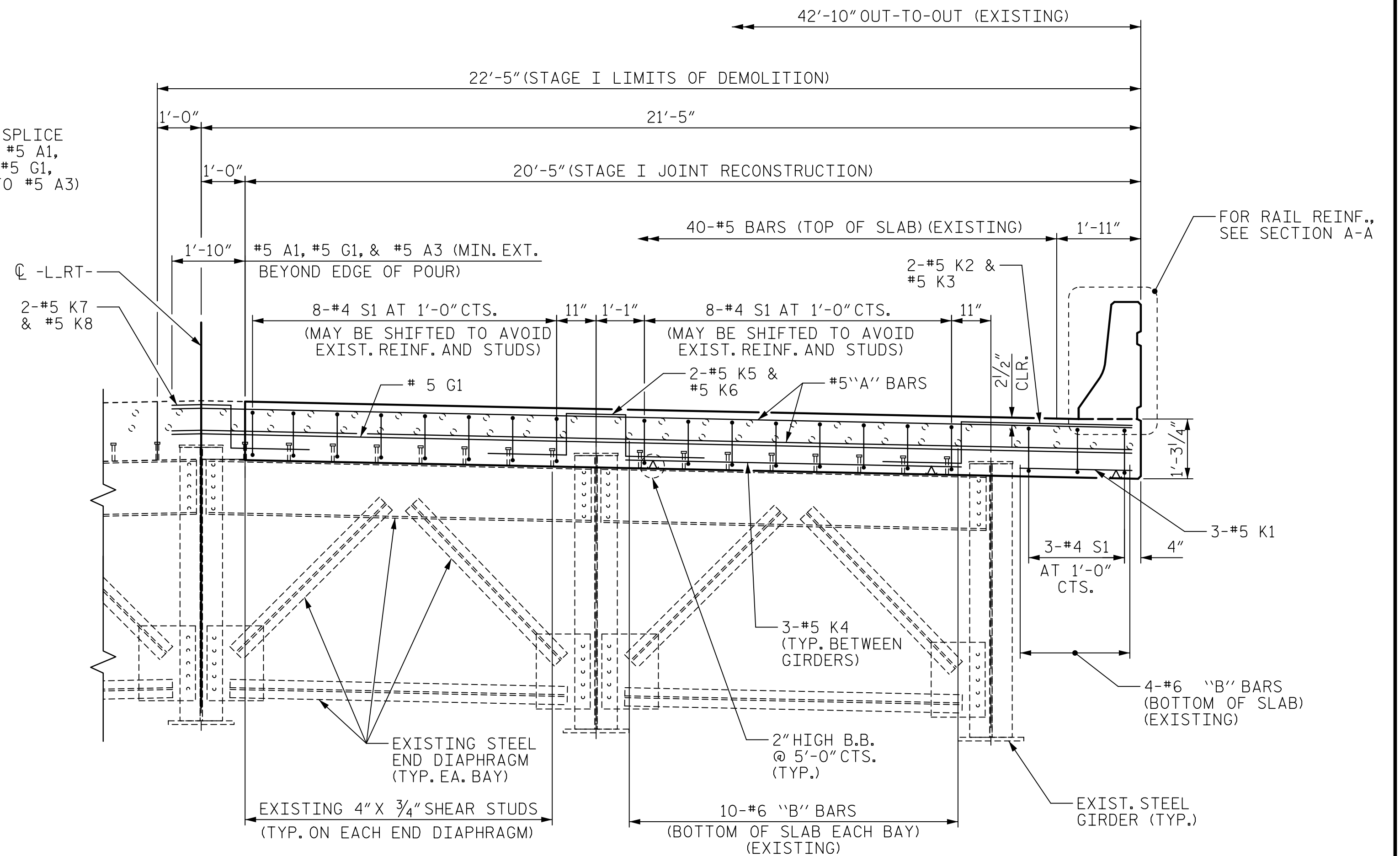
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 DGN: \\usrall31pool\naeconnect.com\data\Projects\60579778 - ASR Lake Tillery\900_CAD\910_CAD\70_WCDOT_TIP\Structures\04 Drawings\401_023_15BPPR.43_SMU_PSE6.dgn

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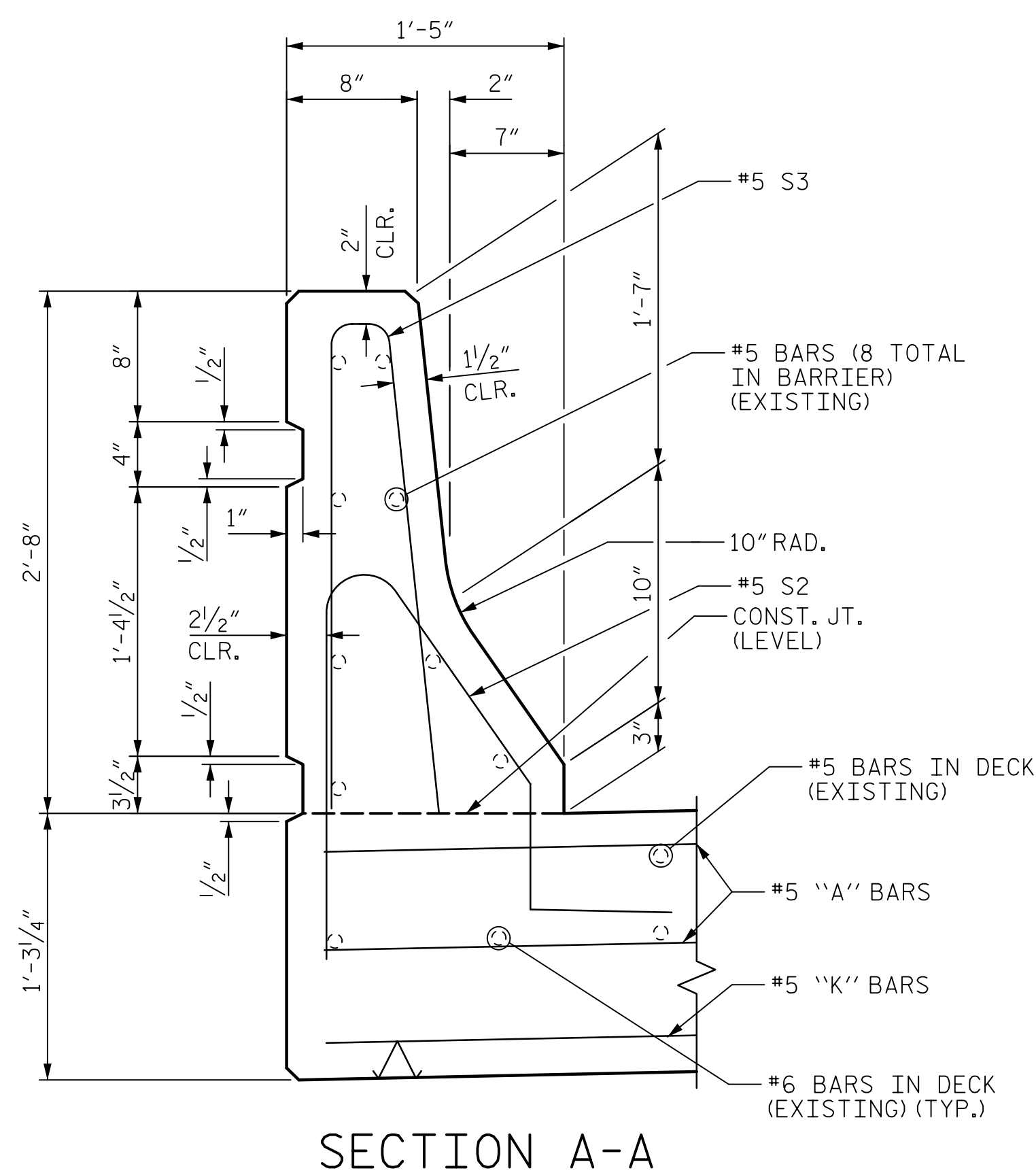
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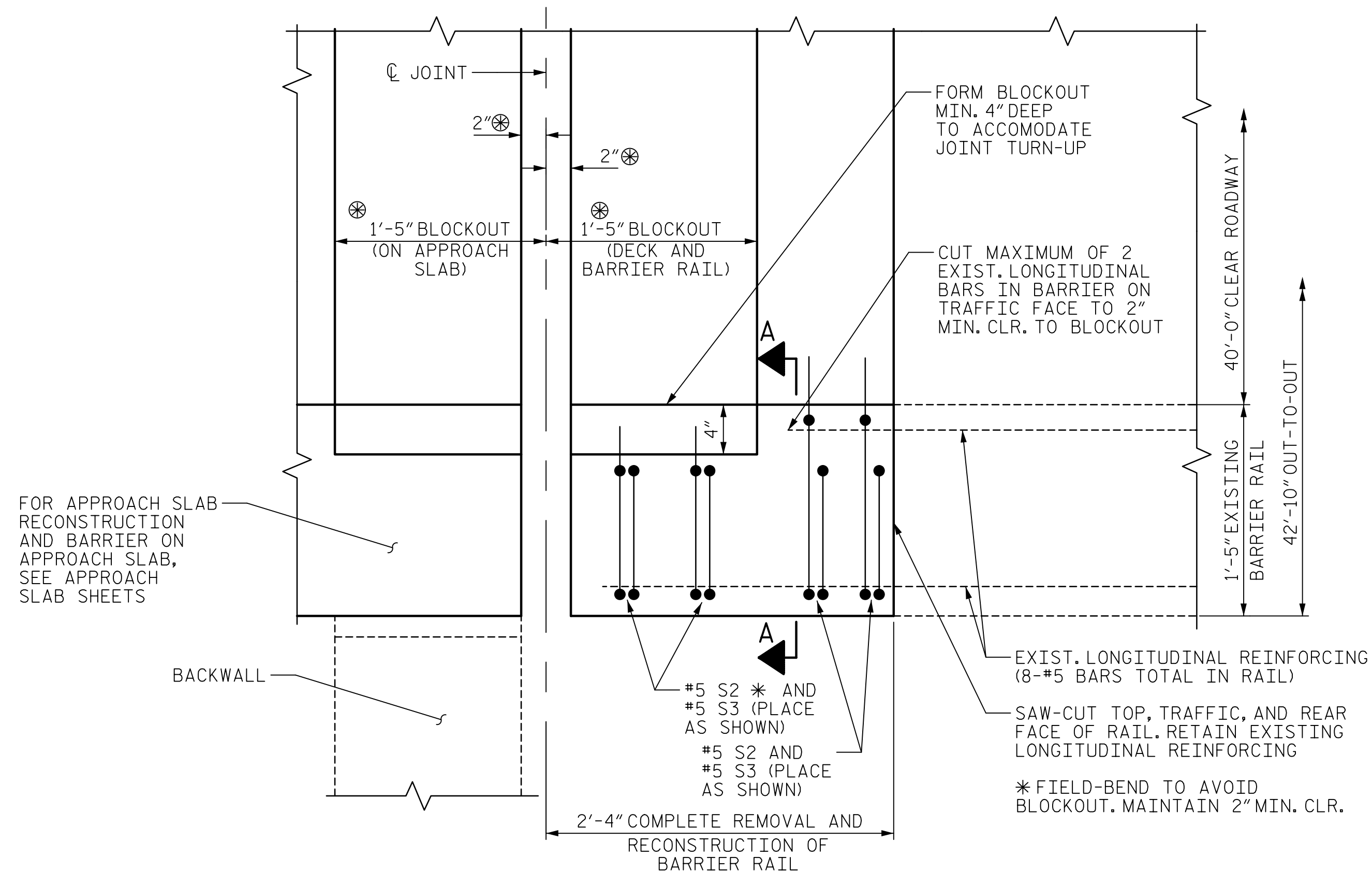
TYPICAL SECTION - STAGE IIA
(SEE TYPICAL SECTION SHEET FOR ADDITIONAL DIMENSIONS)



TYPICAL SECTION - STAGE I
(SEE TYPICAL SECTION SHEET FOR ADDITIONAL DIMENSIONS)



SECTION A-A



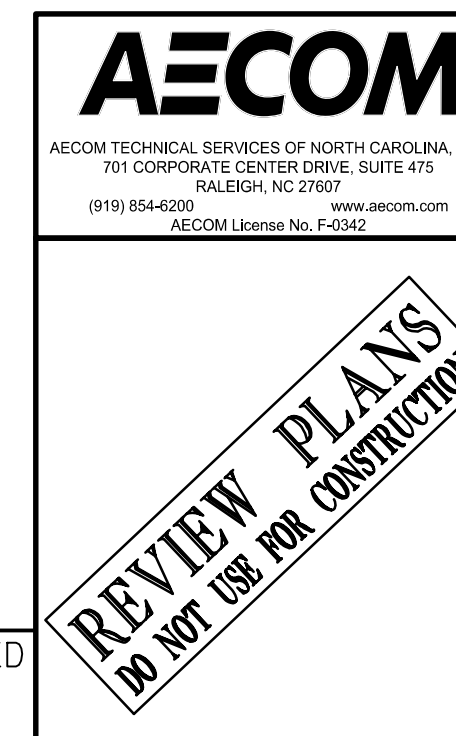
PLAN OF BARRIER RAIL RECONSTRUCTION

⊗ DIMENSION AT 60° F.

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CHECKED BY : G.R. COLS
DESIGNED BY : G.R. COLS
DESIGN CHECKED BY : K. J. MUENCH

DATE : 08/2018
DATE : 08/2018
DATE : 08/2018
DATE : 08/2018

DOCUMENT NOT CONSIDERED
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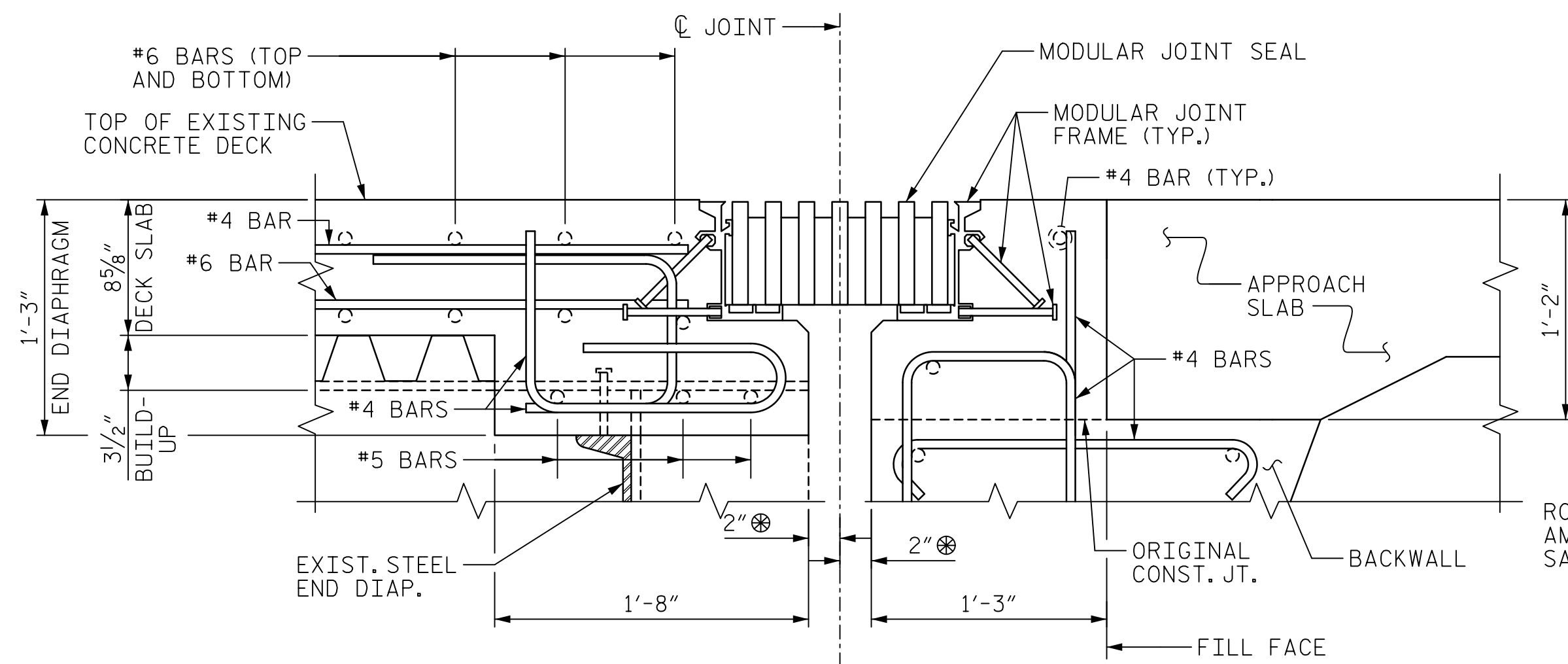
STANLY/MONTGOMERY COUNTY

STATION: 339+86.39 -L-

SHEET 1 OF 4

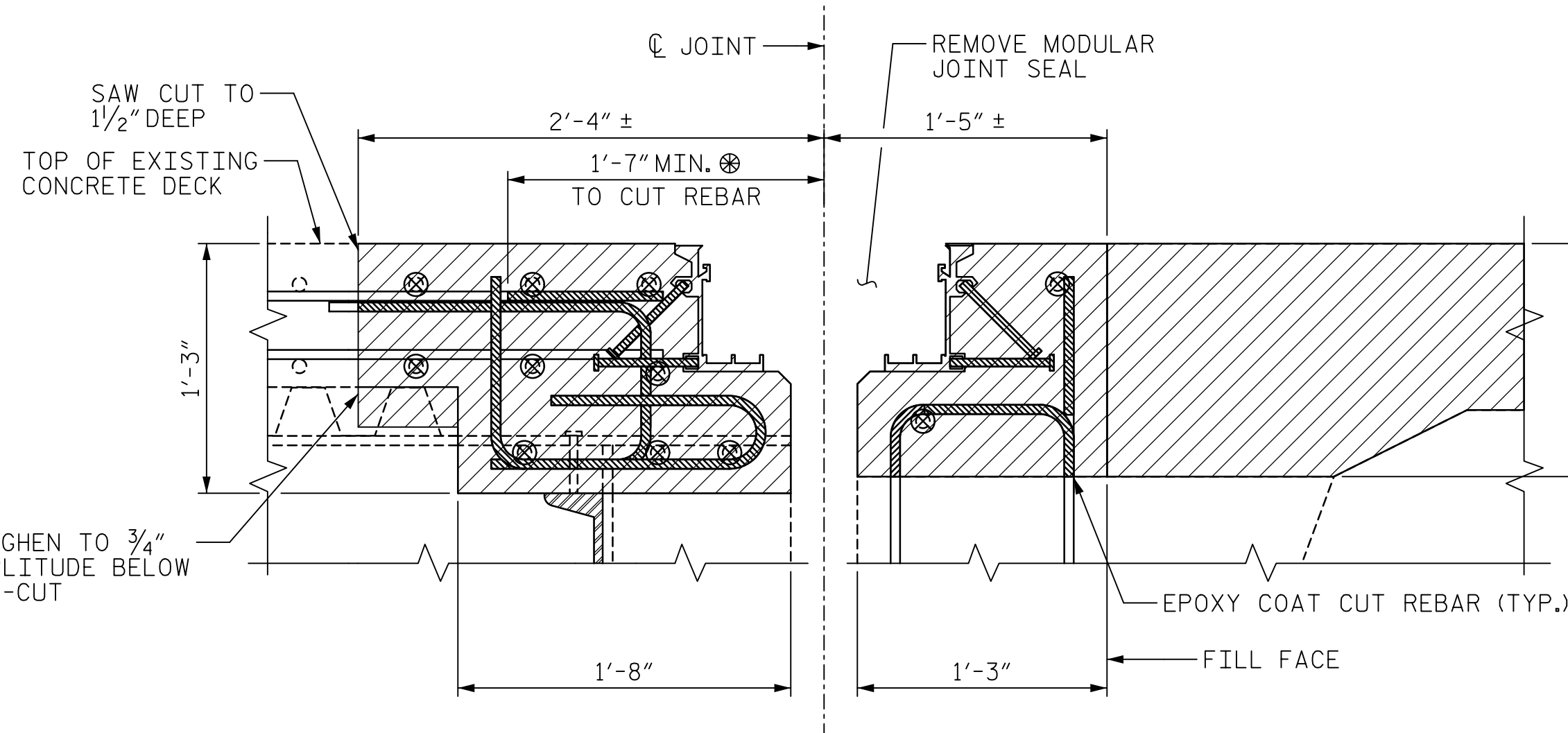
REVISIONS						SHEET NO.
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1			3			S-12
2			4			

TOTAL SHEETS 37



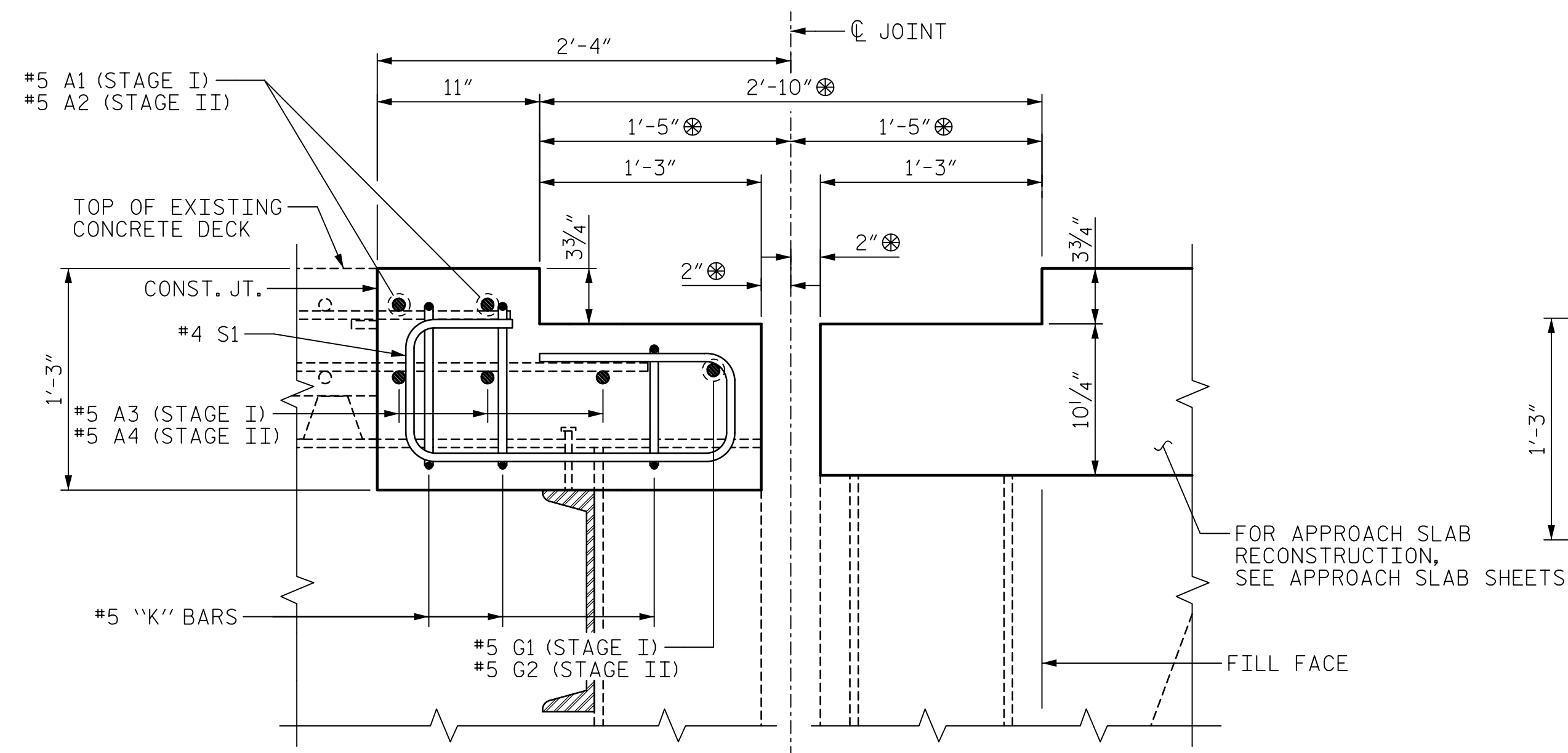
EXISTING JOINT CONDITIONS

INFORMATION SHOWN BASED ON BEST DATA AVAILABLE.



EXISTING TO BE REMOVED

-  EXISTING CONCRETE TO BE REMOVED
 EXISTING REBAR TO BE REMOVED
 EXISTING REBAR TO BE REMOVED



DECK AND END DIAPHRAGM RECONSTRUCTION

-  PROPOSED CONCRETE
 PROPOSED REBAR
 PROPOSED REBAR

NOTES

CONTRACTOR SHALL VERIFY EXISTING BAR COVER PRIOR TO SAW CUT AND SHALL SET CUT DEPTH AS SPECIFIED IN THE SPECIAL PROVISION.

ANY DAMAGE TO THE EXISTING REINFORCING STEEL, DURING CONTRACTORS OPERATIONS, SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER AND PERFORMED AT NO ADDITIONAL COST.

FOR JOINT REPAIR, SEE SPECIAL PROVISIONS.

THE CONTRACTOR IS TO FIELD VERIFY THAT THE DETAILS SHOWN ON THE PLANS MATCH THE EXISTING JOINT CLEAR OPENINGS BEFORE ORDERING ANY MATERIALS. THE MANUFACTURER IS TO CONFIRM THE MODEL SPECIFIED IN SPECIAL PROVISIONS IS THE CORRECT MODEL SYSTEM FOR THE CONTRACTOR VERIFIED JOINT OPENINGS, PLUS AN ADDITIONAL 1 1/4" ANTICIPATED CONTRACTION DUE TO THE DESIGN TEMPERATURES.

EXISTING MODULAR JOINT AND DECK REINFORCING STEEL SHOWN IS BASED ON
BEST INFORMATION AVAILABLE.

FINAL JOINT SHALL NOT BE INSTALLED UNTIL PPC OVERLAY IS COMPLETE.

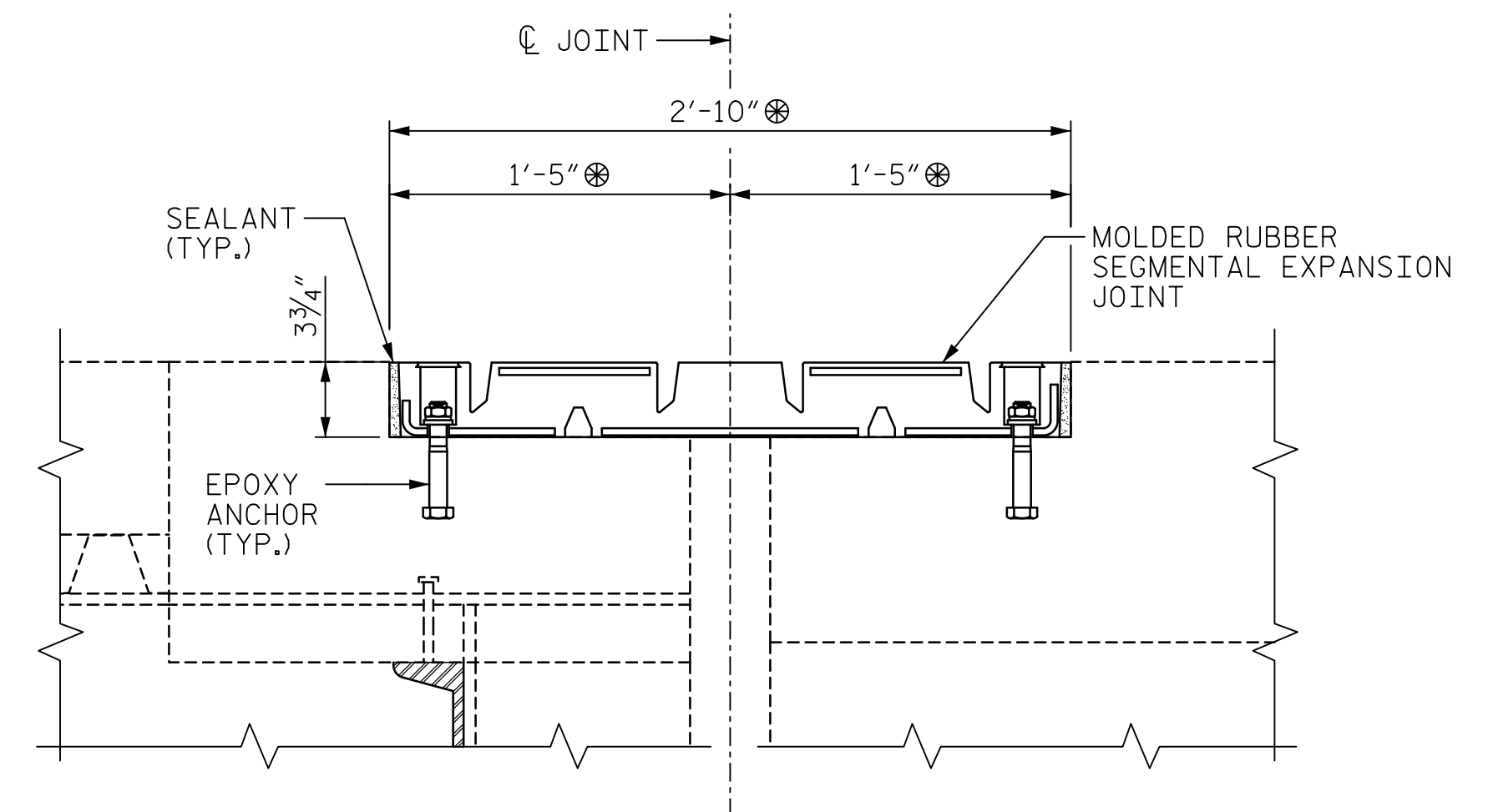
ALL PROPOSED EXPANSION JOINT DIMENSIONS, OPENINGS, AND BLOCKOUTS ARE SHOWN AT 60°F AND BASED ON BEST AVAILABLE INFORMATION OF THE EXISTING STRUCTURE. DIFFERENCES IN ACTUAL JOINT OPENINGS AND INSTALLATION TEMPERATURES SHALL BE REPORTED TO THE ENGINEER. CONTRACTOR SHALL FOLLOW MANUFACTURER'S INSTALLATION GUIDELINES AND MAKE ANY NECESSARY ADJUSTMENTS TO ACCOUNT FOR SUCH DIFFERENCES.

TEMPORARY JOINT SHALL BE INSTALLED IN THE EVENT OF ANY OF THE FOLLOWING:

- LOWING:
-TRAFFIC (CONSTRUCTION OR PUBLIC) IS EXPECTED TO CROSS THE JOINT
IN THAT STAGE PRIOR TO COMPLETION OF PPC OVERLAY.
-END BENT BEARINGS ARE REPLACED AFTER DECK/APPROACH SLAB
RECONSTRUCTION.

CONTRACTOR SHALL HAVE A REPRESENTATIVE FROM THE JOINT MANUFACTURER PRESENT DURING INSTALLATION OF THE PROPOSED MOLDED RUBBER SEGMENTAL EXPANSION JOINT.

ADHESIVE ANCHOR BOLTS AND HARDWARE FROM THE PROPOSED EXPANSION JOINT SHALL BE GALVANIZED PER ASTM A 153 AND INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS.



FINAL JOINT CONDITIONS

PROJECT NO. 15BPR.43

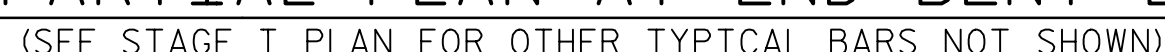
STANLY/MONTGOMERY COUNTY

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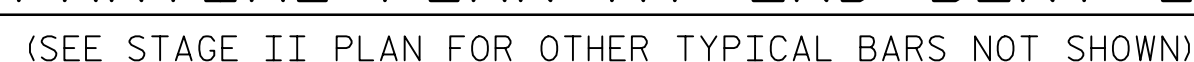
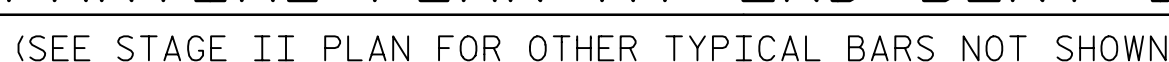
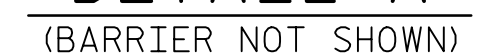
SHEET 2 OF 4

 AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC. 701 CORPORATE CENTER DRIVE, SUITE 475 RALEIGH, NC 27607 (919) 854-6200 www.aecom.com AECOM License No. F-40362	STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH SUPERSTRUCTURE JOINT REPLACEMENT CONSTRUCTION SEQUENCE																											
REVIEW PLANS DO NOT USE FOR CONSTRUCTION	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="6" style="text-align: center;">REVISIONS</th> <th style="text-align: center;">SHEET NO.</th> </tr> <tr> <th style="width: 5%;">NO.</th> <th style="width: 15%;">BY:</th> <th style="width: 15%;">DATE:</th> <th style="width: 5%;">NO.</th> <th style="width: 15%;">BY:</th> <th style="width: 15%;">DATE:</th> <th style="width: 20%; text-align: center; font-size: large;">S-13</th> </tr> <tr> <td style="text-align: center;">1</td> <td></td> <td></td> <td style="text-align: center;">3</td> <td></td> <td></td> <td rowspan="2" style="text-align: center; vertical-align: middle;"> TOTAL SHEETS 37 </td> </tr> <tr> <td style="text-align: center;">2</td> <td></td> <td></td> <td style="text-align: center;">4</td> <td></td> <td></td> </tr> </table>	REVISIONS						SHEET NO.	NO.	BY:	DATE:	NO.	BY:	DATE:	S-13	1			3			TOTAL SHEETS 37	2			4		
REVISIONS						SHEET NO.																						
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13																						
1			3			TOTAL SHEETS 37																						
2			4																									

USER: Henry.Rosemond
 DSN: \\ustulst13001.nra.com\csm\dat\Projects\650757978 - ASR Lake Tillery\900_CAD_SIS\910_CAD\70_MCCOT_TIP\Structures\04_Drawings\40_C29_56PR47_5MW_E\7.3.dgn



FOR SECTION B-B, SEE SHEET 2.



— FOR APPROACH SLAB
AND BARRIER ON
APPROACH SLAB, SEE
APPROACH SLAB SHEETS

SHEET 3 OF 4

JOINT REPLACEMENT
PLAN VIEW

REVISIONS						SHEET NO. S-14
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 37
2			4			

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NOTES

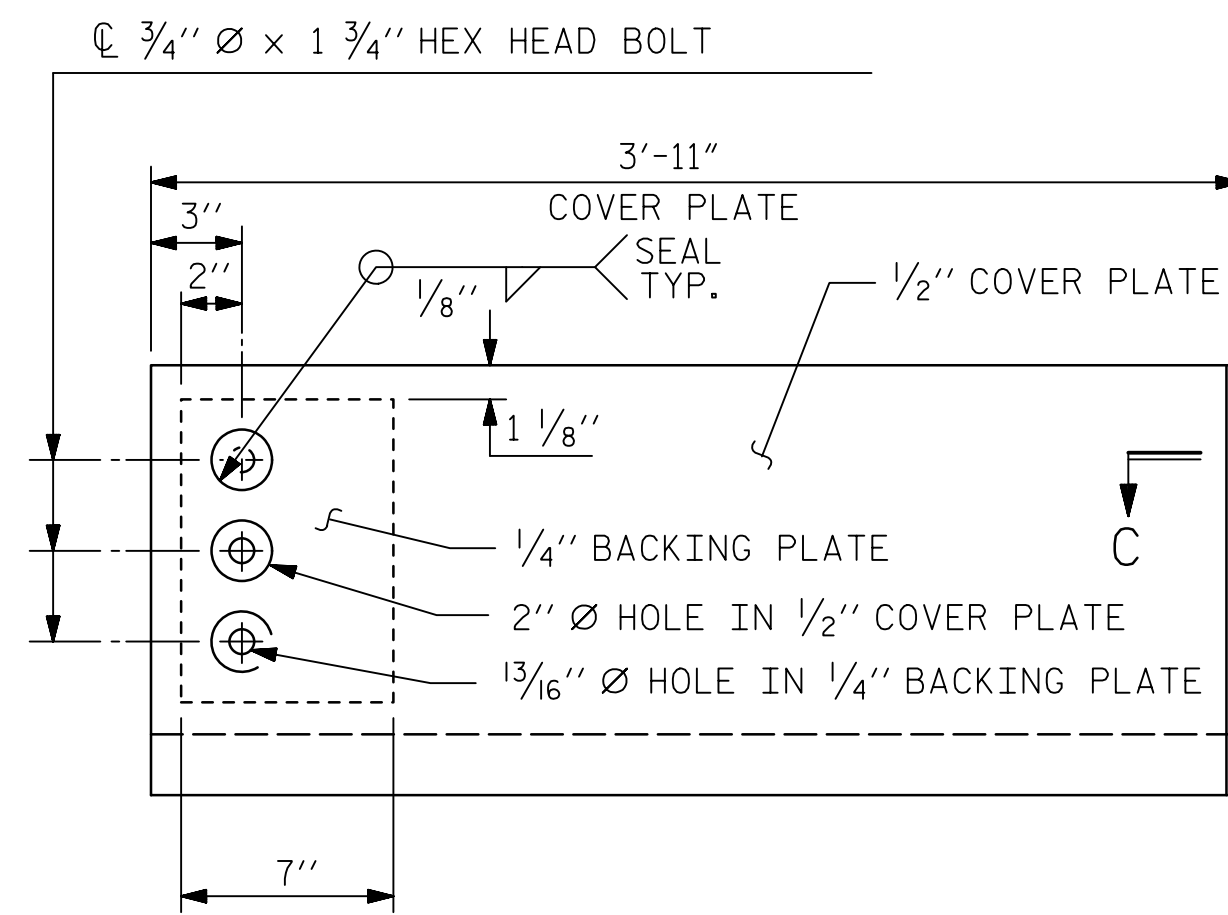
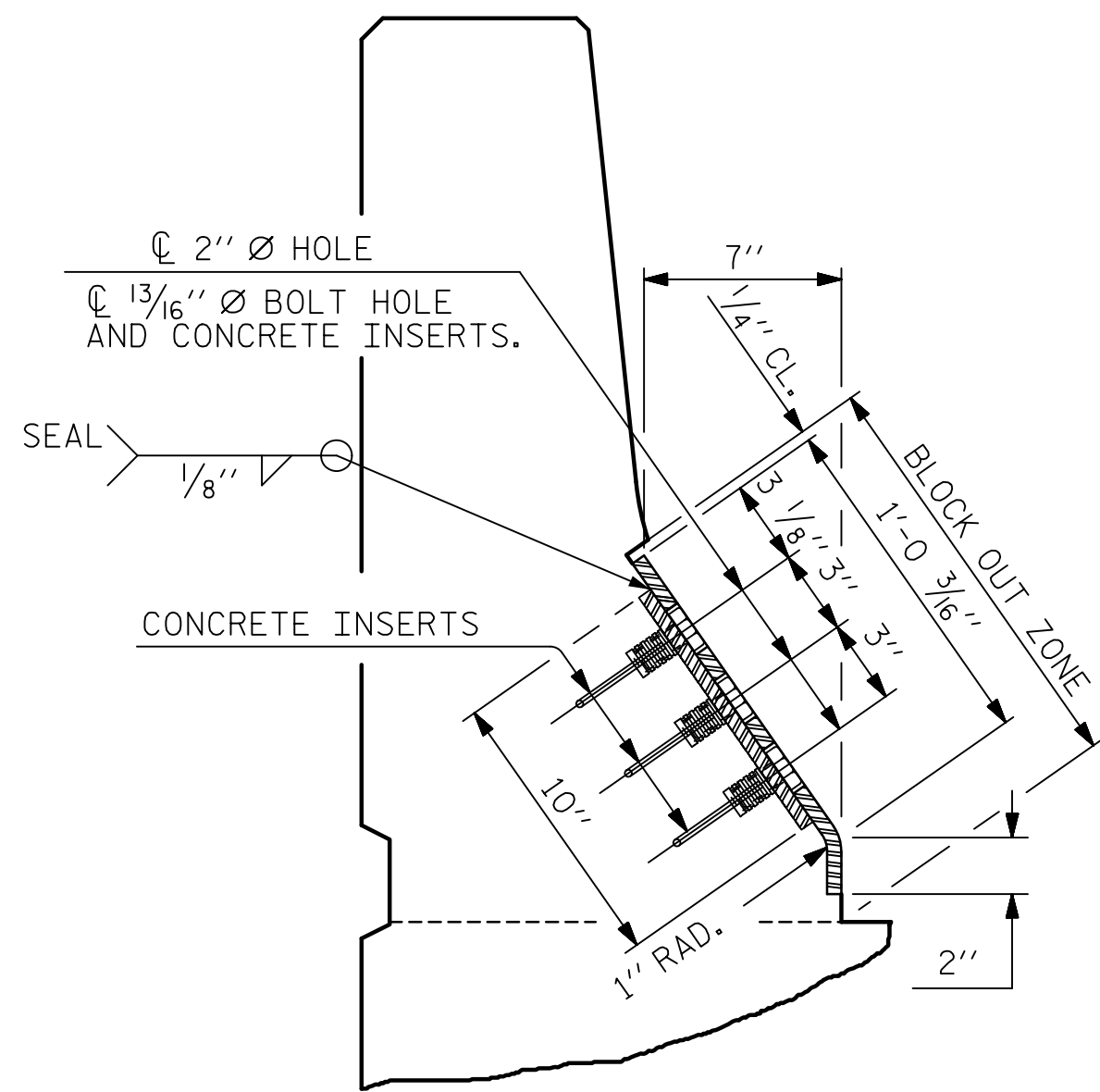
FOR MOLDED RUBBER SEGMENTAL EXPANSION JOINTS,
SEE SPECIAL PROVISIONS.

THE STEEL PLATES SHALL CONFORM TO AASHTO M270 GRADE 36 OR APPROVED EQUAL AND BE PAINTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. AT THE CONTRACTOR'S OPTION, THE PLATES MAY BE METALLIZED AFTER FABRICATION. SEE SPECIAL PROVISIONS FOR THERMAL SPRAYED COATINGS (METALLIZATION).

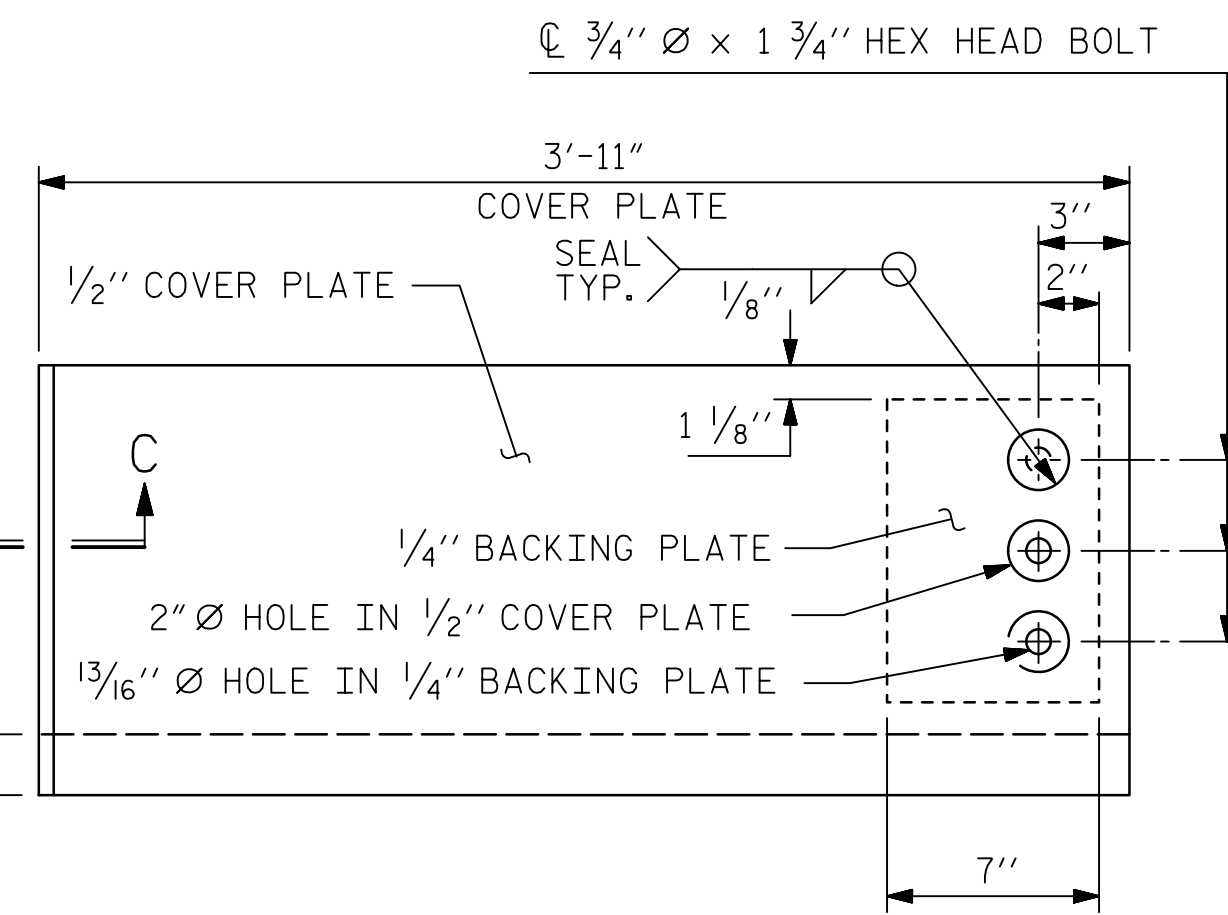
THE 3/4" Ø HEX HEAD BOLTS SHALL CONFORM TO
ASTM F593 ALLOY 304 STAINLESS STEEL.

THE 3/4" CONCRETE INSERTS SHALL BE CLOSED-END FERRULES WITH LOOPED WIRE STRUTS ATTACHED TO THEM. THE INSERTS SHALL CONFORM TO AASHTO M169, GRADE 12L14 AND SHALL HAVE A TENSILE WORKING LOAD CAPACITY OF 3000 LBS.

NO SEPARATE PAYMENT WILL BE MADE FOR
FURNISHING AND INSTALLING THE COVER PLATE.

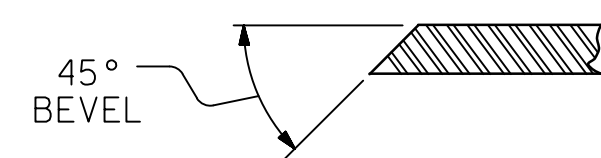


TYPE I - ELEVATION VIEW



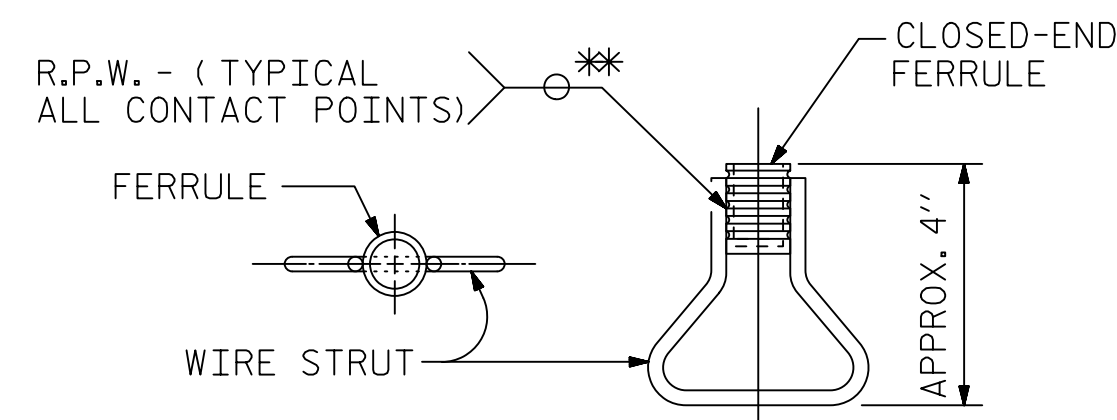
TYPE II - ELEVATION VIEW

COVER PLATE DETAILS



SECTION C-C

	SKEW ANGLE	TOTAL MOVEMENT ALONG C ROADWAY
END BENT #1	90°-00'-00"	4 1/8"
END BENT #2	90°-00'-00"	4 7/8"

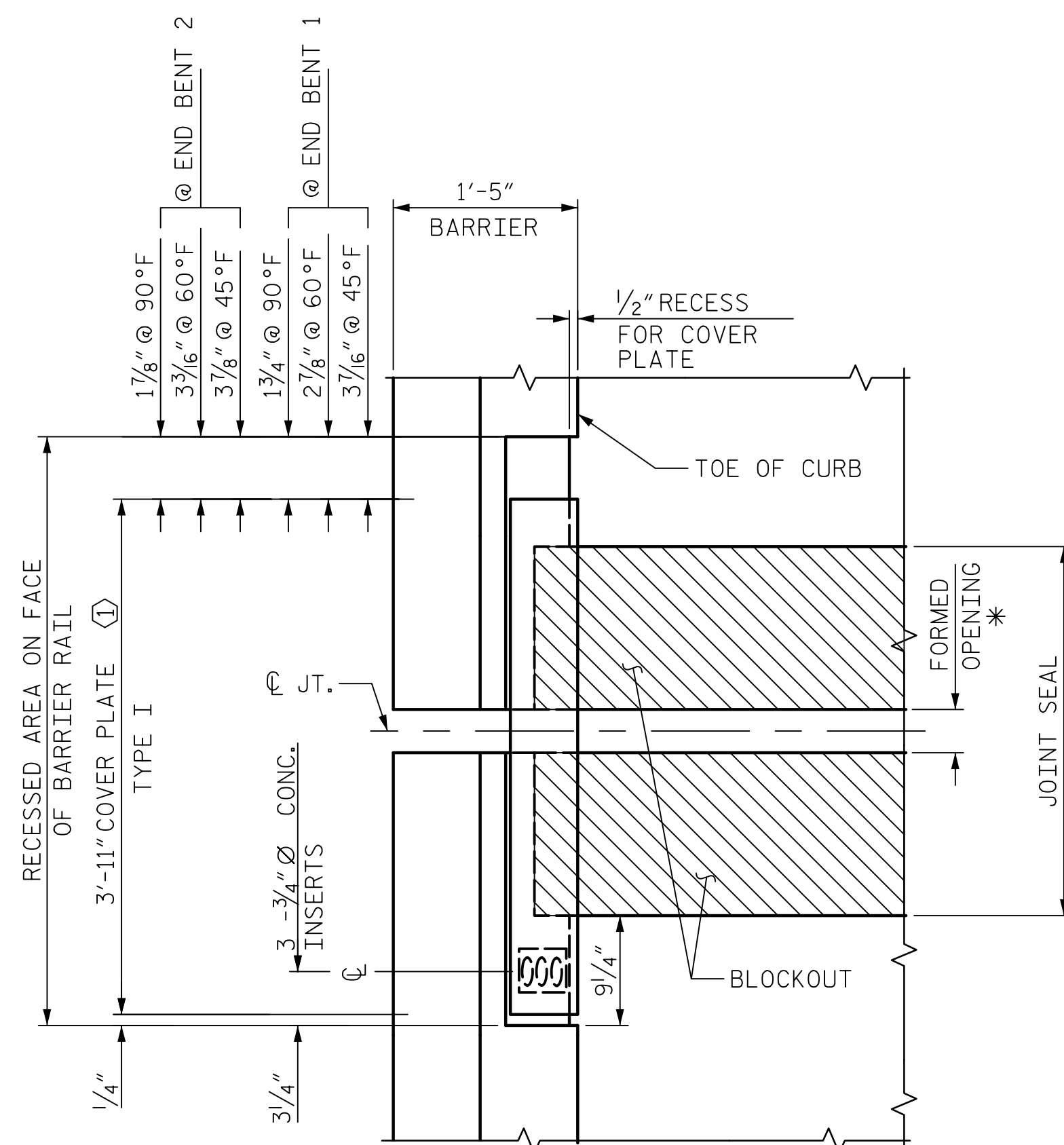


PLAN

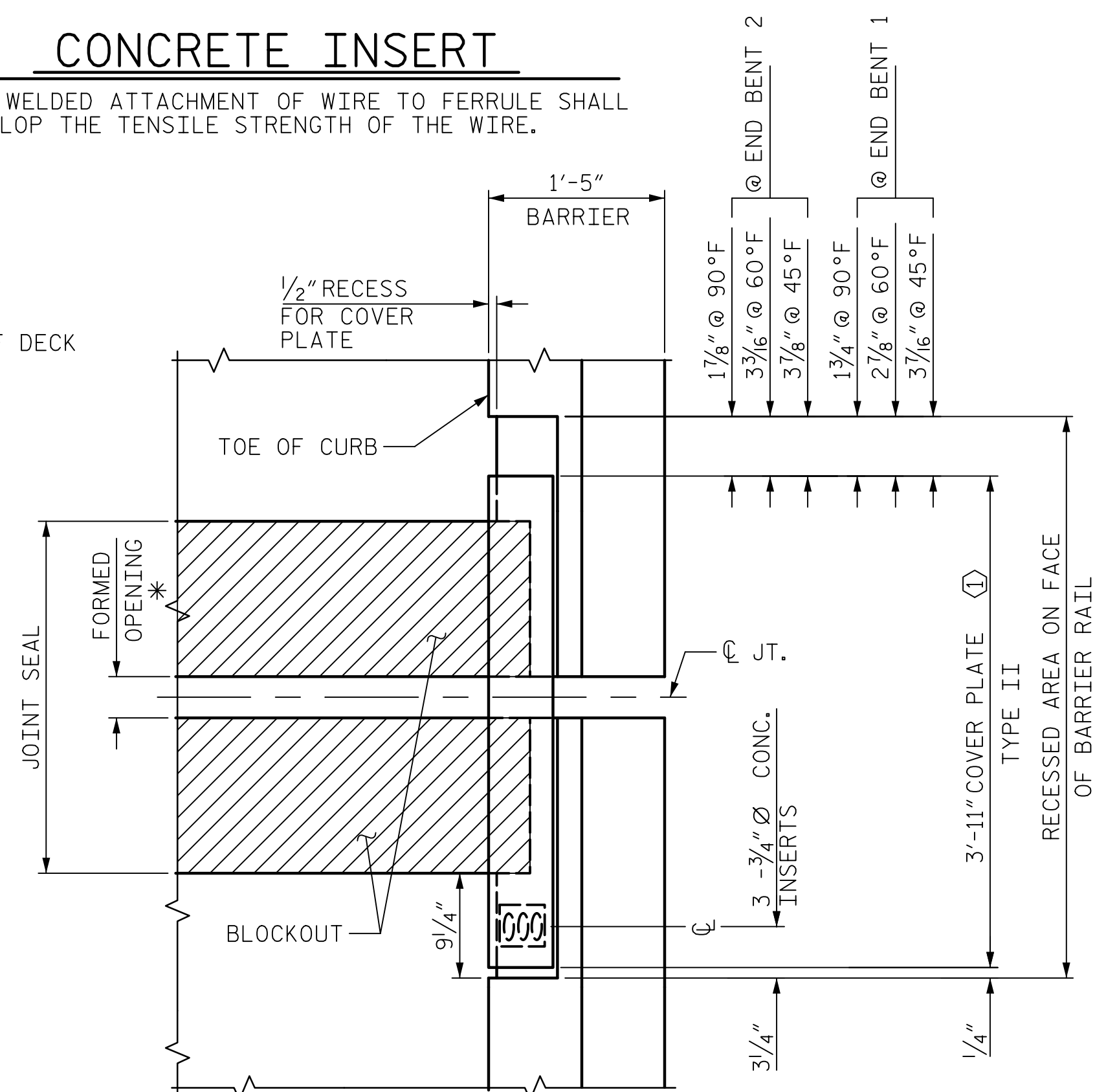
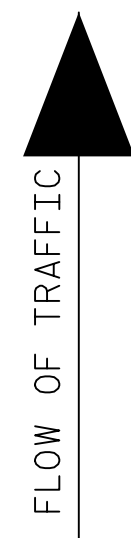
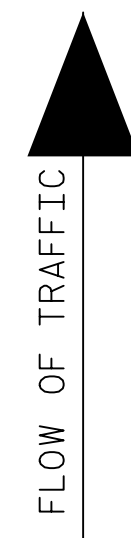
ELEVATION

CONCRETE INSERT

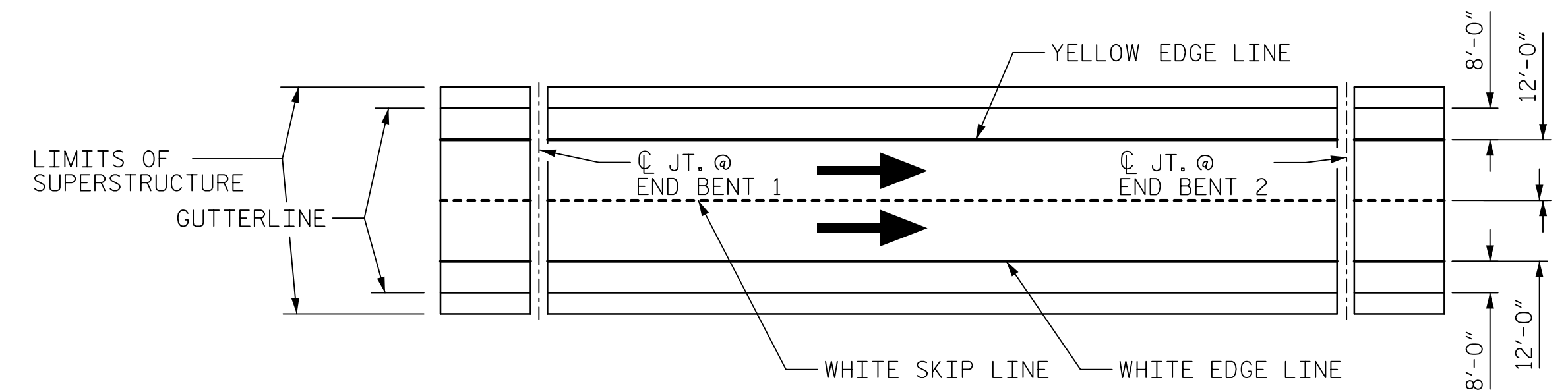
*EACH WELDED ATTACHMENT OF WIRE TO FERRULE SHALL DEVELOP THE TENSILE STRENGTH OF THE WIRE.



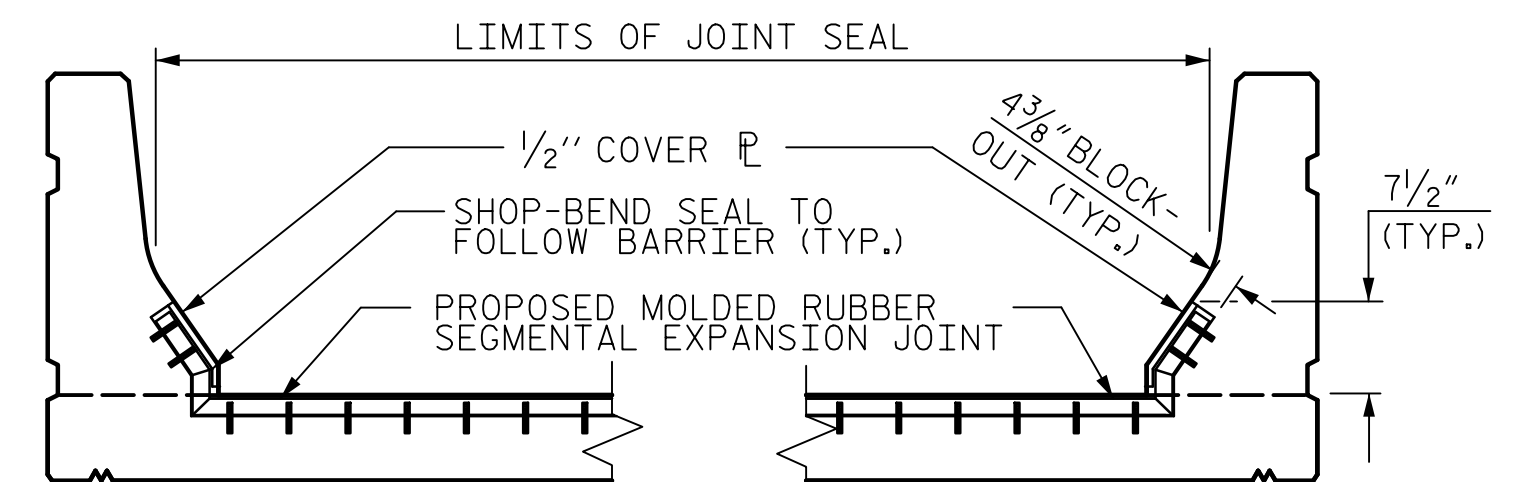
PLAN OF JOINT - LEFT SIDE



PLAN OF JOINT - RIGHT SIDE



PAVEMENT MARKING ALIGNMENT



SKETCH SHOWING LIMITS OF JOINT
SEAL AT BARRIER RAIL

PROJECT NO. 15BPR.43

STANLY/MONTGOMERY COUNTY

STATION: 339+86.39 -L-

SHEET 4 OF 4

AECOM AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC. 701 CORPORATE CENTER DRIVE, SUITE 470 RALEIGH, NC 27607 (919) 854-6200 www.aecom.com AECOM License No. F-0342	STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH JOINT REPLACEMENT DETAILS
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REVIEW PLANS
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-15 TOTAL SHEETS 37
2			4			

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DRAWN BY : <u>T.B. STUMP</u>	DATE : <u>8/2018</u>
CHECKED BY : <u>G.R. COLS</u>	DATE : <u>8/2018</u>
DESIGNED BY : <u>G.R. COLS</u>	DATE : <u>8/2018</u>
DESIGN CHECKED BY : <u>K.J. MUENCH</u>	DATE : <u>8/2018</u>

① SEE COVER PLATE ELEVATIONS FOR DETAILS AND DIMENSIONS. COVERPLATE DIMENSIONS BASED ON BEST AVAILABLE INFORMATION REGARDING EXISTING RAIL. CONTRACTOR SHALL VERIFY EXISTING RAIL DIMENSIONS FOR COMPATIBILITY WITH RAIL COVER PLATE PRIOR TO FABRICATION AND SHALL REPORT ANY DEVIATIONS TO THE ENGINEER.

DATE: 9/26/2018
TIME: 3:42:57 PM

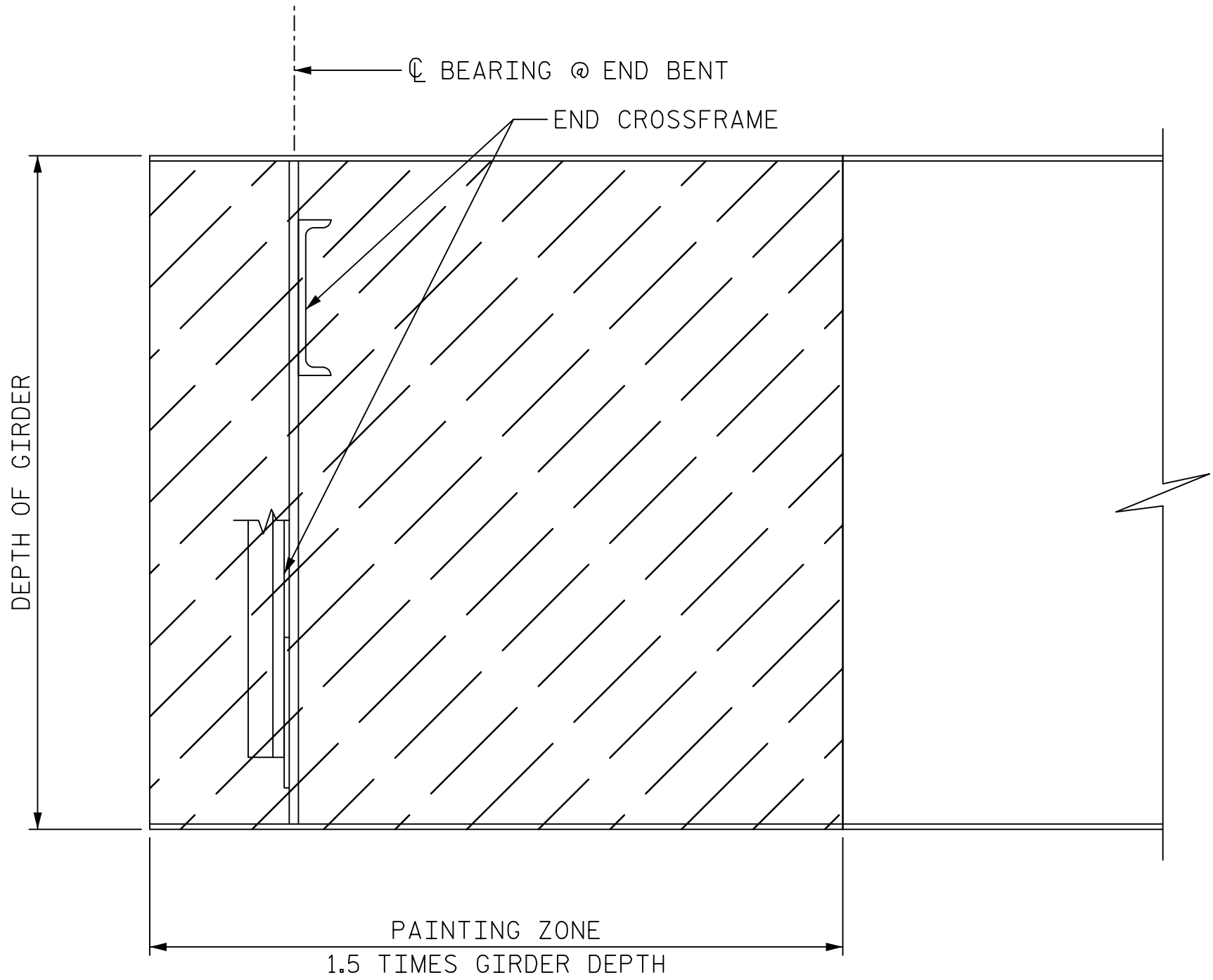
USER: Henry.Rosemond
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DATE: 9/26/2018
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LOCATION	DEFECT DESCRIPTION	REPAIR DESCRIPTION	EST. LBS.
SPAN 2 BAY 3 BOTTOM LATERAL BRACING 30FT FROM BENT 1 4TH INT. DIAPHRAGM	MEMBER BENT (2 LOC.)	REPLACE MEMBER & CONNECTION BOLT	240 LBS.
SPAN 2 BAY 4 BOTTOM LATERAL BRACING 2ND INT. DIAPHRAGM, GIRDER 5 SIDE	LOOSE CONNECTION BOLT	REPLACE BOLT	2 LBS.
SPAN 2 BAY 2 BOTTOM LATERAL BRACING BRACING POINT 2	LOOSE CONNECTION BOLT	REPLACE BOLT	2 LBS.
SPAN 3 BAY 2 DIAPHRAGM 2 BOTTOM LATERAL BRACING	MEMBER BENT (1 LOC.)	REPLACE MEMBER & CONNECTION BOLT	120 LBS.

STEEL REPAIR LOCATIONS



BEAM PAINTING DETAIL

BEAM PAINTING NOTES:

FOR PAINTING EXISTING WEATHERING STEEL, SEE SPECIAL PROVISIONS.

BEAM PAINTING WORK SHALL NOT BEGIN UNTIL BEARING REPLACEMENTS ARE COMPLETED.

NEW BEARINGS SHALL BE PROTECTED DURING CLEANING, SURFACE PREPARATION, AND PAINTING OPERATIONS.

APPOX. AREA OF BEAM PAINTING = 2330 SQ. FT.

BEAM REPAIR NOTES:

FOR BEAM REPAIRS, SEE SPECIAL PROVISIONS.

CONTRACTOR SHALL REPLACE ALL LOOSE CONNECTION BOLTS AT CROSSFRAME CONNECTIONS, AS LISTED IN TABLE OR AS DIRECTED BY THE ENGINEER. BOLTS AND INSTALLATION SHALL CONFORM TO ARTICLE 440-8 OF THE STANDARD SPECIFICATIONS.

AT ALL LOOSE BOLT LOCATIONS, BOLTS SHALL BE REMOVED. THE CONTRACTOR SHALL REPLACE THE BOLT WITH A LIKE HIGH-STRENGTH BOLT AND TIGHTEN IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. DIRECT TENSION INDICATORS SHALL BE USED.

CONTRACTOR SHALL REPLACE ALL DAMAGED CROSSFRAME & LATERAL BRACING MEMBERS (AS LISTED IN THE TABLE OR AS DIRECTED BY THE ENGINEER.) ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50W OR APPROVED EQUAL. REPLACEMENT MEMBERS SHALL BE THE SAME SHAPE AS THE ORIGINAL.

IF THE SAME SHAPE IS NOT READILY AVAILABLE, REPLACEMENT SHAPE SHALL MEET OR EXCEED SECTION PROPERTIES AND BE WITHIN 5% OF THE WEIGHT OF THE ORIGINAL MEMBER. SEE SPECIAL PROVISIONS.

FOR MEMBER REPLACEMENTS, CONNECTION BOLTS SHALL BE REPLACED AND INSTALLED IN ACCORDANCE WITH ARTICLE 440-8 OF THE STANDARD SPECIFICATIONS.

DEFECTS AND BOLT LOCATIONS SHOWN IN THE TABLE ARE BASED ON THE BEST INFORMATION AVAILABLE AND ARE PRESENTED FOR THE CONVENIENCE OF THE CONTRACTOR. IT SHALL BE THE ENGINEER'S RESPONSIBILITY TO INSPECT AND SPECIFY ADDITIONAL REPAIRS.

APPROX. WEIGHT OF BEAM REPAIR = 364 LBS.

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STATION: 339+86.39 -L-

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CHECKED BY : G. COLS	DATE : 08/2018
DESIGNED BY : K. DONALD	DATE : 08/2018
DESIGN CHECKED BY : G. COLS	DATE : 08/2018

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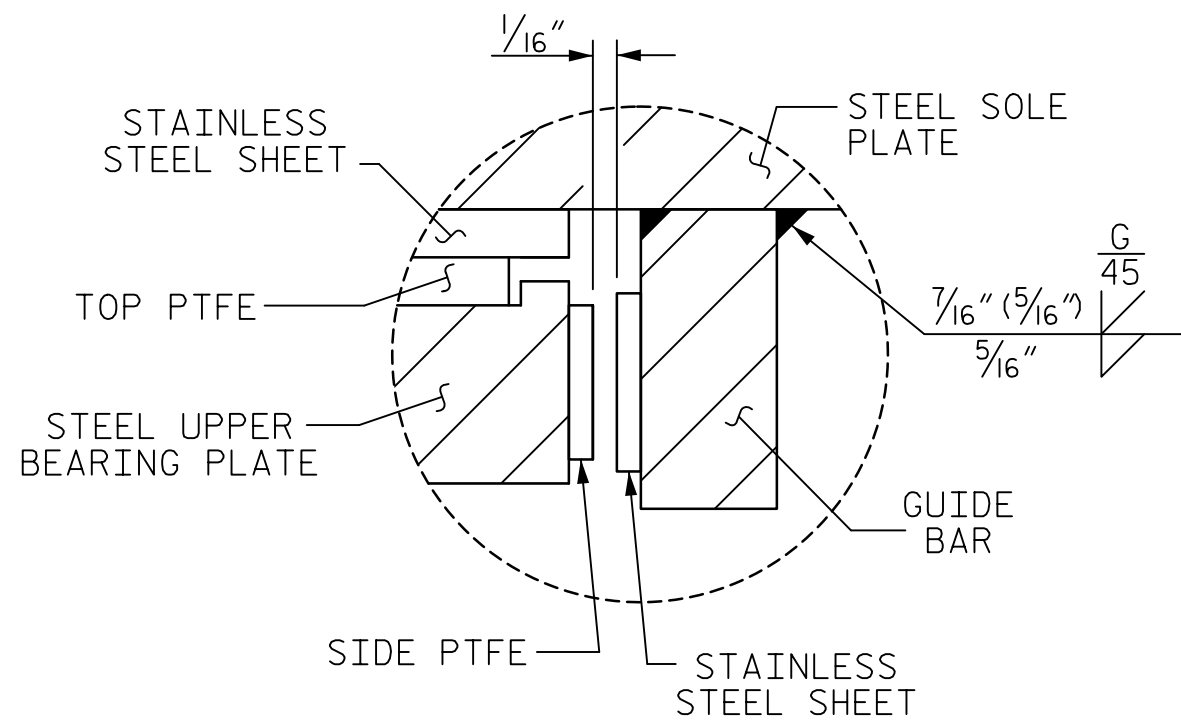
STATE OF NORTH CAROLINA
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RALEIGH
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BEAM PAINTING
AND REPAIRS

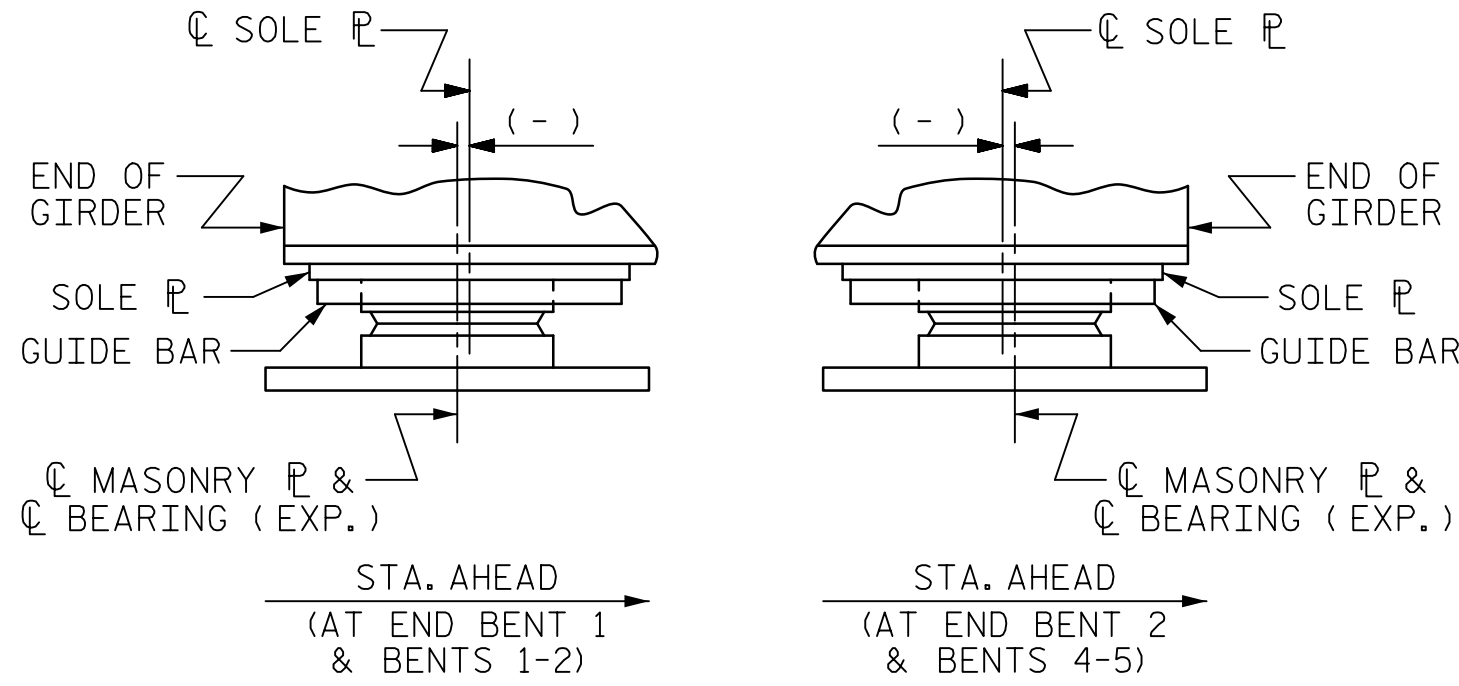
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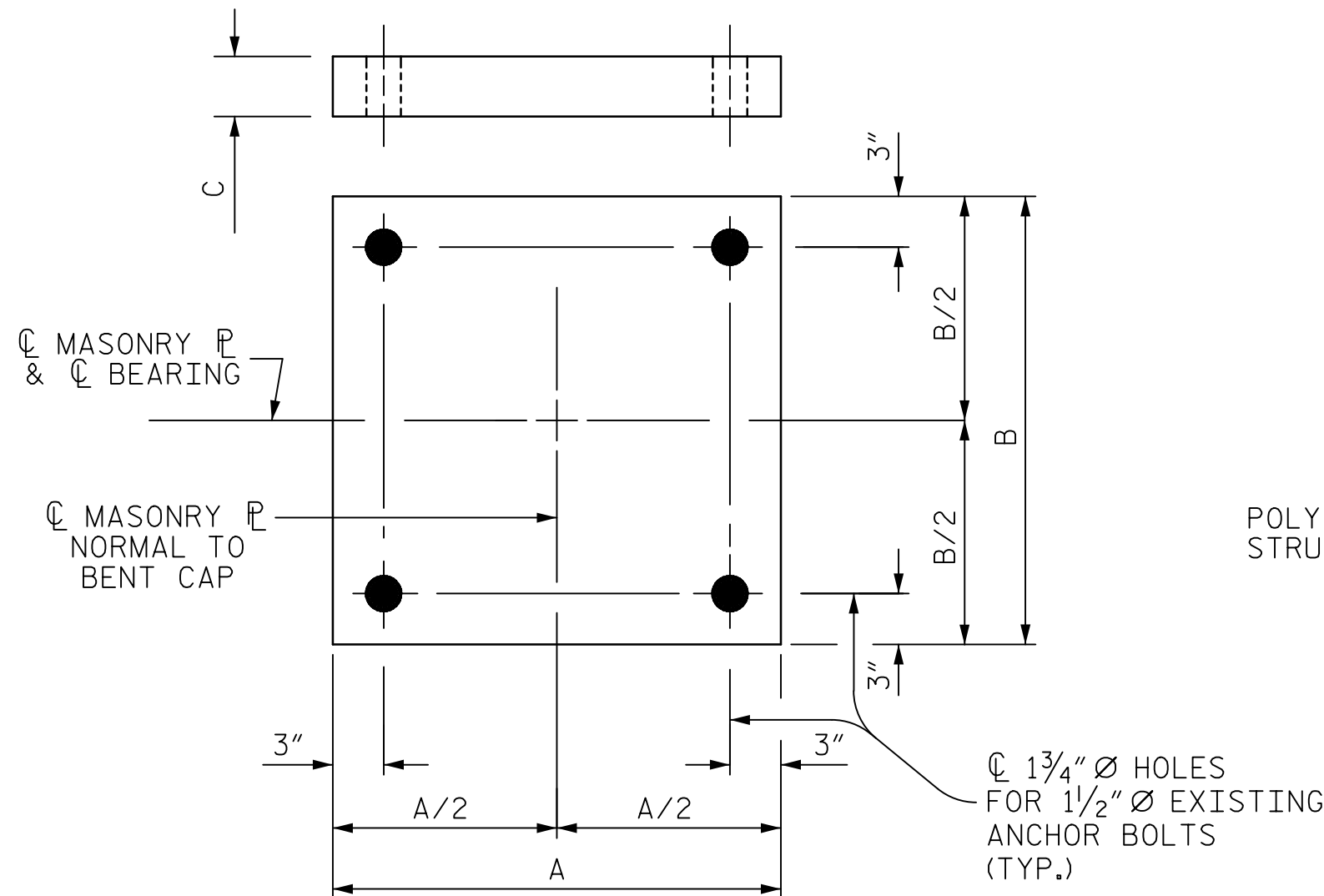
DETAIL "B"



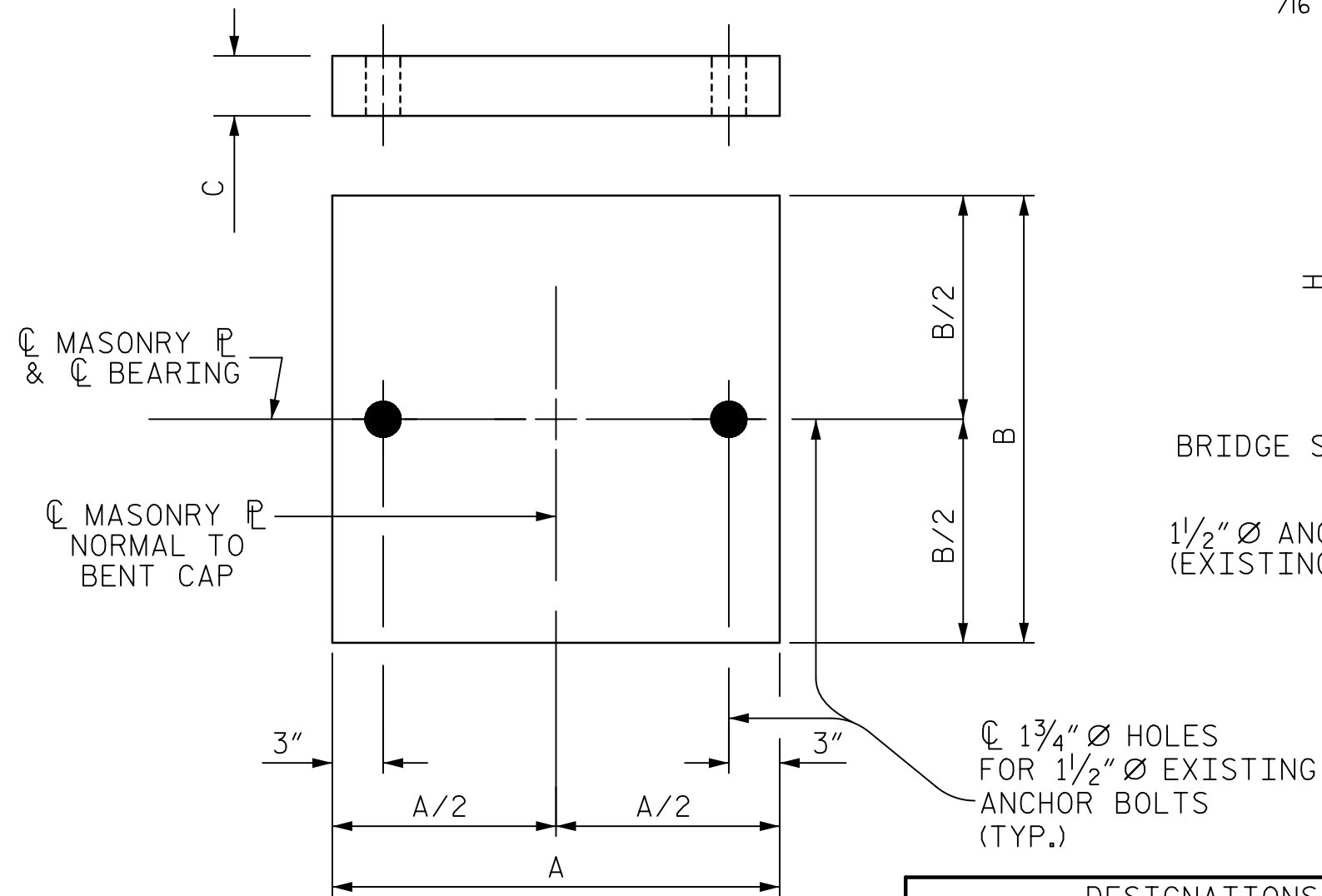
TEMPERATURE SETTING DETAIL

PLATE SETTING DATA (EXPANSION DISC BEARINGS)				
LOCATION	TEMPERATURE AT TIME OF SETTING			*
	45° F	60° F	90° F	
EB 1	-5/8"	0"	1 3/16"	0"
BT 1	-7/16"	0"	7/8"	0"
BT 2	-1/4"	0"	1/2"	0"
BT 3	0"	0"	0"	0"
BT 4	-1/4"	0"	1/2"	0"
BT 5	-1/2"	0"	1"	0"
EB 2	-3/4"	0"	1 1/16"	0"

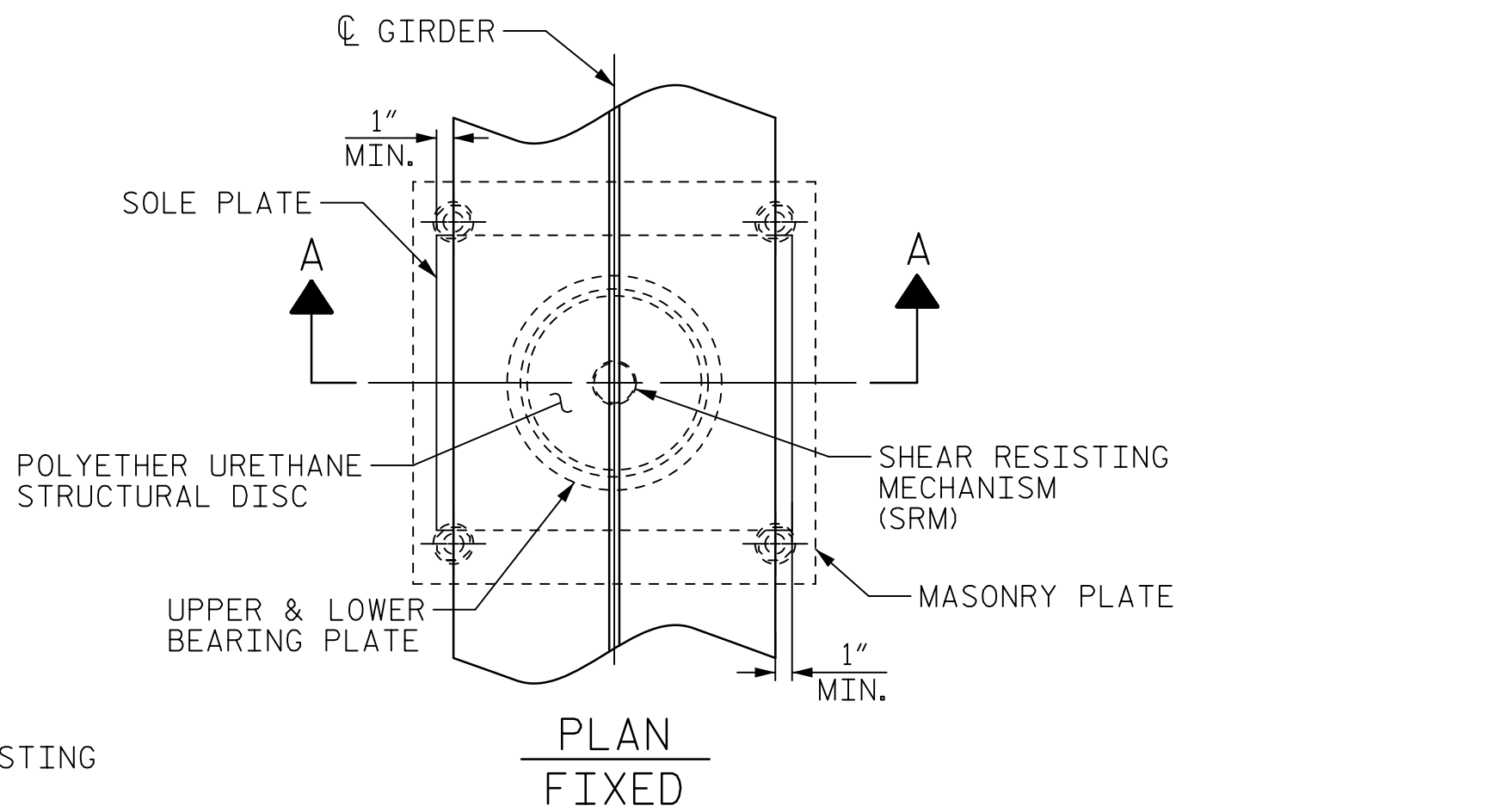
* CORRECTION FOR END ROTATION DUE TO WEIGHT OF SLAB AND COMPOSITE DEAD LOAD. (NEGLIGIBLE FOR IN-SERVICE BEARING REPLACEMENT)



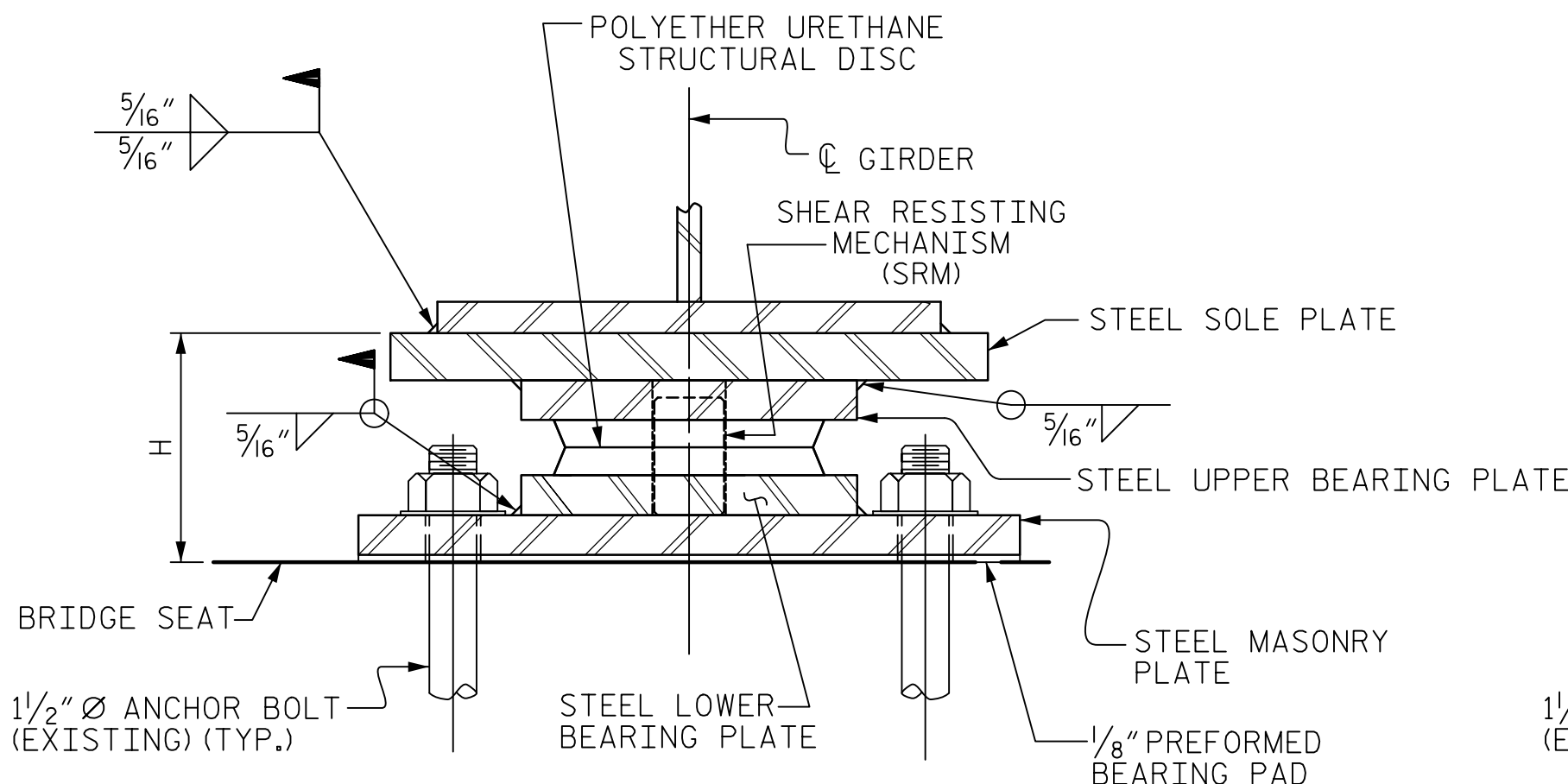
PLAN
M4 (5 REQ'D.)



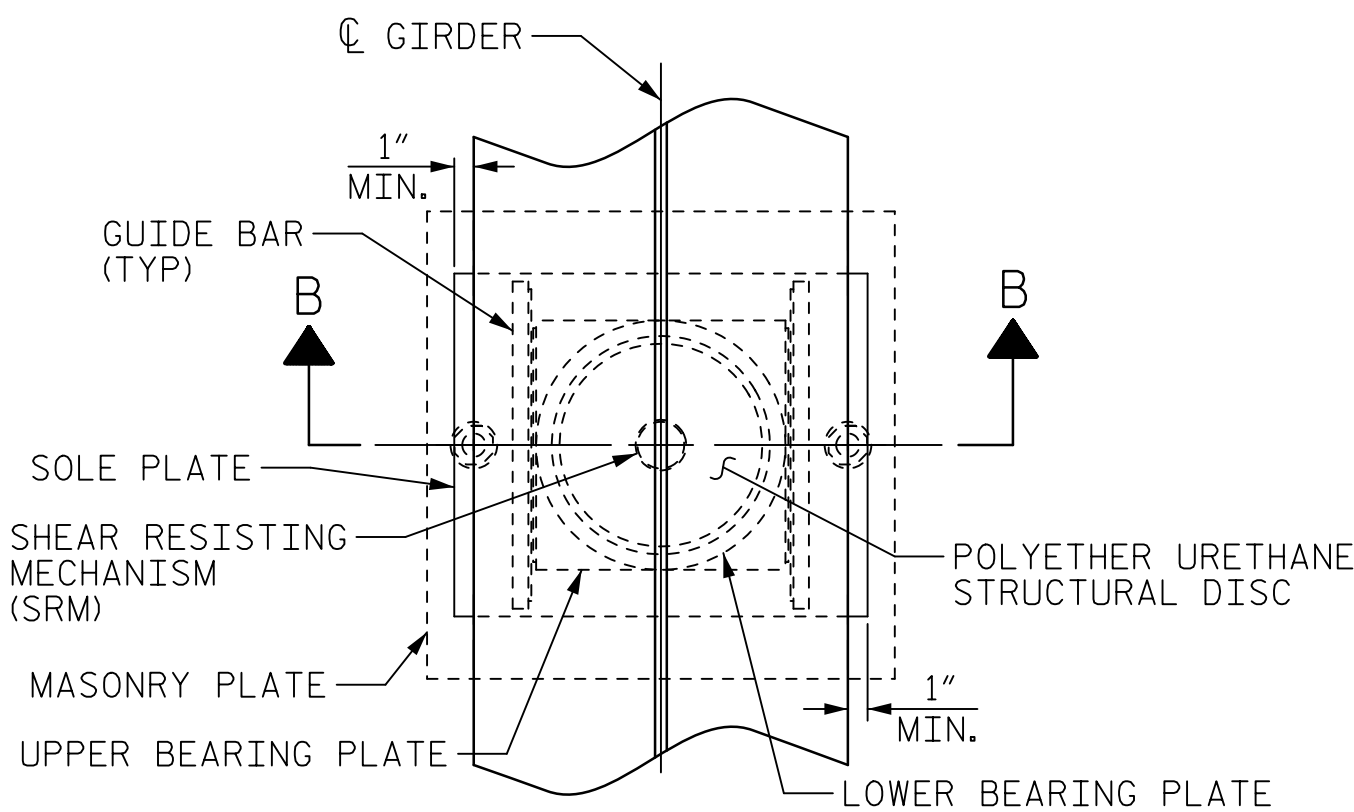
PLAN
M1, M2, M3, M5, M6, M7
(30 REQ'D.)
MASONRY PLATE
DETAILS



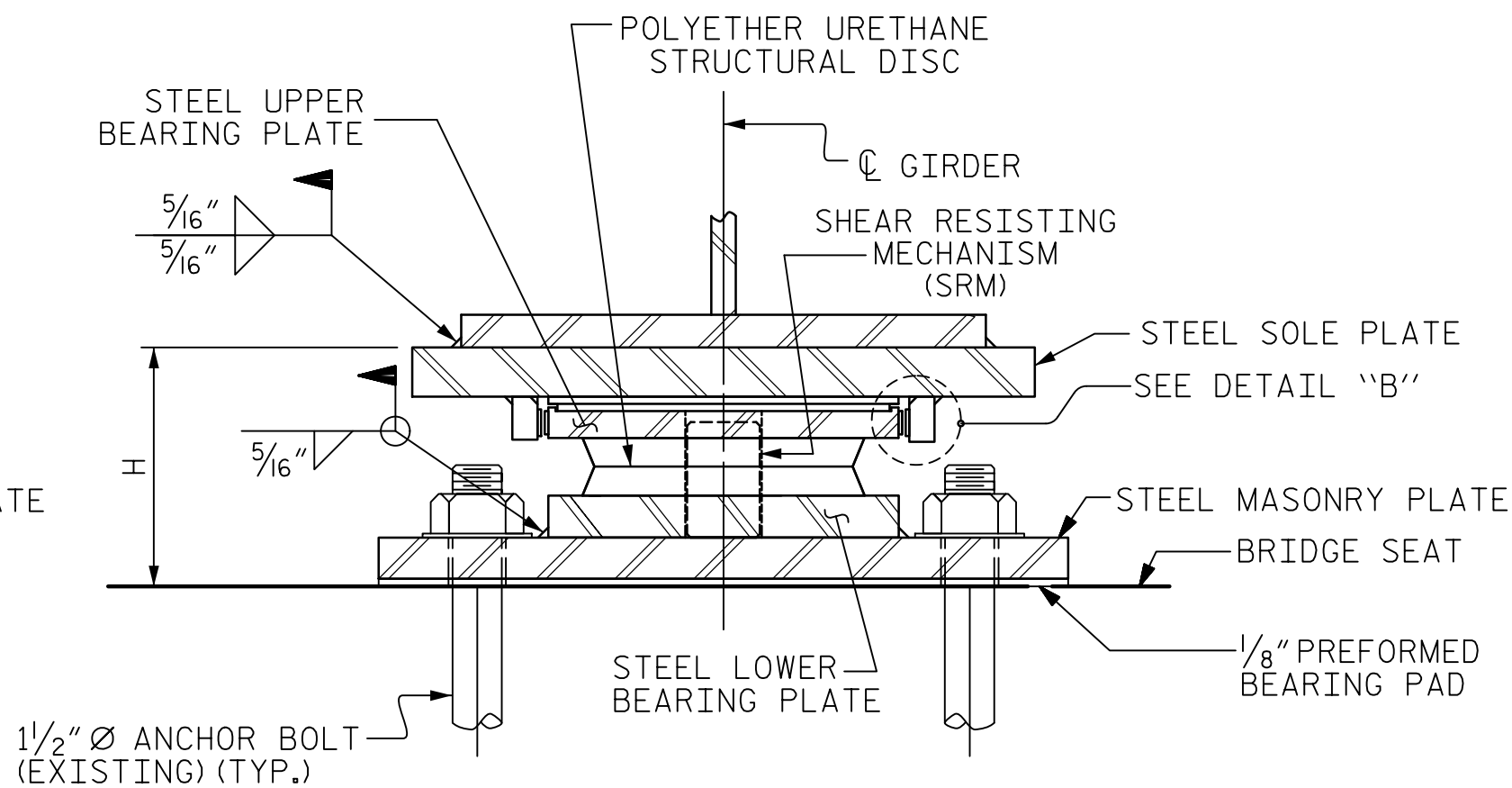
PLAN
FIXED



SECTION A-A
DB4
FIXED



PLAN
EXPANSION



SECTION B-B
DB1-DB3, DB5-DB7
EXP.

NOTES

FOR DISC BEARINGS, SEE SPECIAL PROVISIONS.

FOR BEARING REPLACEMENT SEE SPECIAL PROVISIONS.

ALL BEARING PLATES SHALL BE AASHTO M270 GRADE 50W OR GRADE 50.

AT ALL POINTS OF SUPPORT, NUTS FOR ANCHOR BOLTS SHALL BE FINGER-TIGHTENED PLUS AN ADDITIONAL 1/4 TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.

WHEN WELDING THE SOLE PLATE TO THE GIRDER, USE TEMPERATURE INDICATING WAX PENS, OR OTHER SUITABLE MEANS, TO ENSURE THAT THE TEMPERATURE OF THE BEARING DOES NOT EXCEED 250°F. TEMPERATURES ABOVE THIS MAY DAMAGE THE TFE OR URETHANE DISC.

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

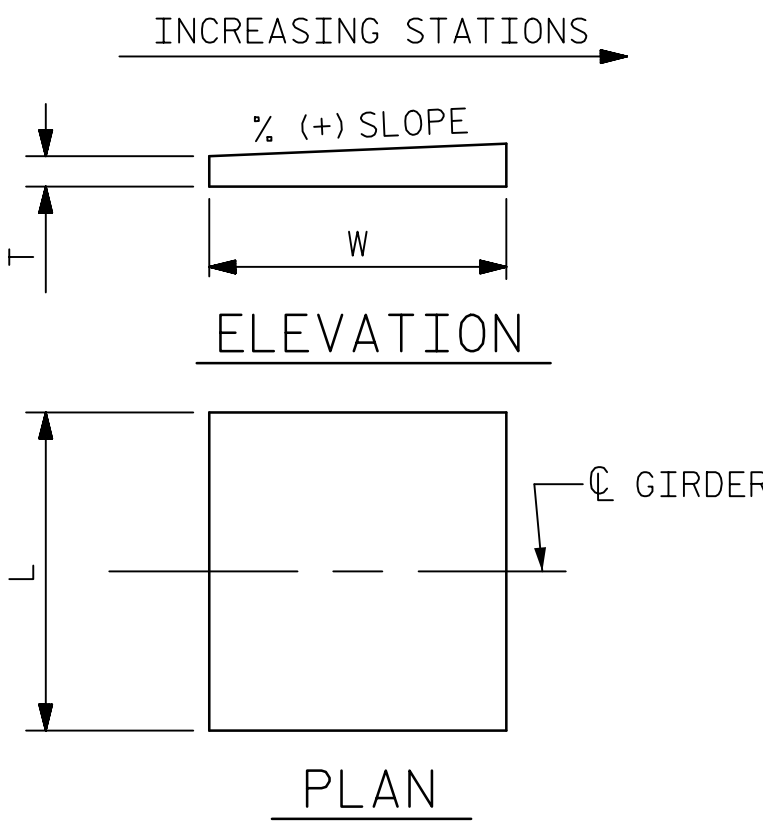
FOR ATTACHMENT OF THE STAINLESS STEEL SHEETS TO THE STEEL SOLE PLATE AND GUIDE BARS, AS WELL AS THE TOP AND SIDE PTFE SHEETS TO THE STEEL UPPER BEARING PLATE, SEE SPECIAL PROVISIONS.

FOR THERMAL SPRAYED COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.

THE MINIMUM ROTATIONAL CAPACITY FOR ALL BEARINGS SHALL BE 0.02 RADIAN.

DIMENSIONS "H" ARE BASED ON EXISTING BEARING HEIGHTS. EXISTING HEIGHTS SHALL BE FIELD-VERIFIED PRIOR TO FABRICATION OF NEW BEARINGS.

BEARING SHALL BE DESIGNED TO FIT WITH EXISTING ANCHOR BOLTS. EXISTING ANCHOR BOLT SIZES AND LOCATIONS SHOWN BASED ON BEST INFORMATION AVAILABLE. EXISTING ANCHOR BOLTS SHALL BE FIELD-MEASURED PRIOR TO BEARING FABRICATION.



NOTE:
DIMENSIONS "W" AND "T" SHALL BE DETERMINED BY THE BEARING MANUFACTURER.

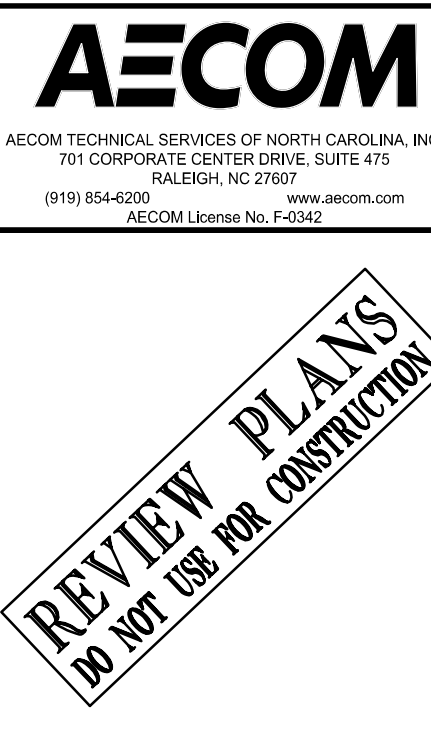
SOLE PLATE DETAILS

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ANCHOR BOLTS (TYP.)					DIMENSIONS						LOADS AND MOVEMENT				
DESIGNATIONS			LOCATION	NUMBER OF BEARINGS	BEARING	MASONRY PLATE			SOLE PLATE		UNFACTORED VERTICAL LOAD (KIPS)		FACTORED HORIZONTAL LOAD (KIPS)	ONE-WAY MOVEMENT (IN.)	
BEARINGS	MASONRY P	SOLE P			H** (IN.)	A (IN.)	B (IN.)	C (IN.)	TOP SLOPE (%)	L (IN.)	DEAD				LIVE LL+IM
					DC	DW									
DB1 (EXP.)	M1	P1	EB 1	5	4.82"	26"	14 1/4"	*	-0.5%	14"	77	11	114	36	2"
DB2 (EXP.)	M2	P2	BT 1	5	5.94"	34 1/2"	34 1/2"	*	-0.5%	20"	280	42	239	110	1 1/2"
DB3 (EXP.)	M3	P3	BT 2	5	6.32"	36"	36"	*	-0.5%	20"	319	46	259	124	1 3/16"
DB4 (FIX.)	M4	P4	BT 3	5	5.32"	34 1/2"	34 1/2"	*	-0.5%	20"	359	51	270	136	0"
DB5 (EXP.)	M5	P5	BT 4	5	6.32"	37"	37"	*	-0.5%	20"	366	52	272	138	1 3/16"
DB6 (EXP.)	M6	P6	BT 5	5	6.32"	38"	38"	*	-0.5%	20"	384	54	270	143	1 11/16"
DB7 (EXP.)	M7	P7	EB 2	5	4.94"	27"	15 1/4"	*	-0.5%	14"	104	15	126	45	2 3/8"

* MASONRY PLATE THICKNESS TO BE DETERMINED BY BEARING MANUFACTURER.
** EQUAL TO EXISTING BEARING HEIGHT, SEE NOTES.

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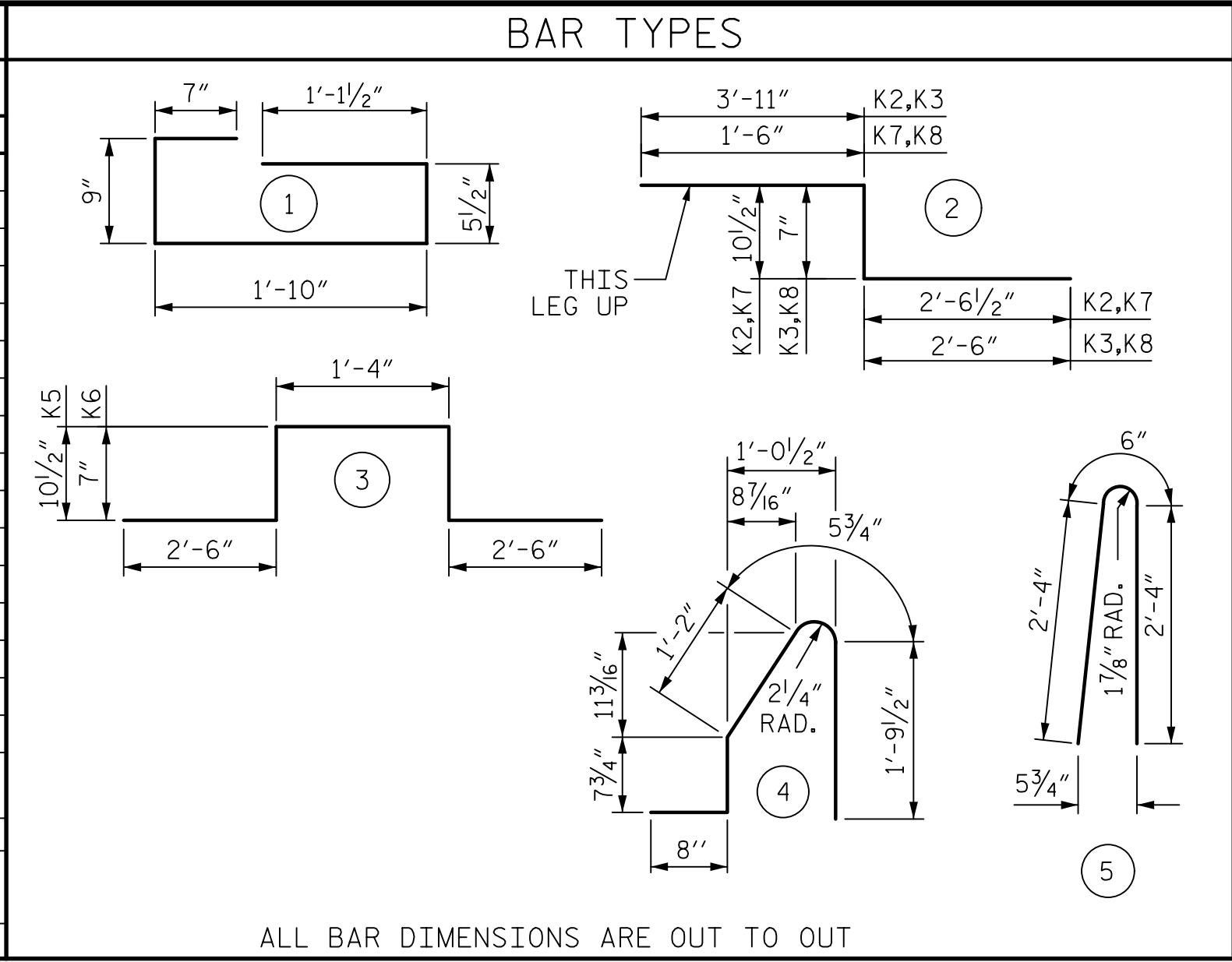
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DISC BEARING DETAILS					
REVISIONS					
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SHEET NO. S-17					TOTAL SHEETS 37

STD. NO. DB1

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REINFORCING BAR SCHEDULE																				
STAGE I						STAGE II						BARRIER RAIL ONLY								
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT			
*A1	4	#5	STR	22'-1"	92	*A2	4	#5	STR	22'-3"	95	*S2	16	#5	4	4'-9"	79			
A3	6	#5	STR	22'-1"	138	A4	6	#5	STR	22'-3"	142	*S3	16	#5	5	5'-2"	86			
*G1	2	#5	STR	22'-1"	46	*G2	2	#5	STR	22'-3"	47									
*K1	6	#5	STR	2'-7"	16	*K1	6	#5	STR	2'-7"	16									
*K2	4	#5	2	7'-4"	31	*K2	4	#5	2	7'-4"	31									
*K3	2	#5	2	7'-0"	15	*K3	2	#5	2	7'-0"	15									
*K4	12	#5	STR	7'-8"	96	*K4	12	#5	STR	7'-8"	96									
*K5	4	#5	3	8'-1"	34	*K5	4	#5	3	8'-1"	34									
*K6	2	#5	3	7'-6"	16	*K6	2	#5	3	7'-6"	16									
*K7	4	#5	2	4'-11"	21	*K7	4	#5	2	4'-11"	21									
*K8	2	#5	2	4'-7"	10	*K8	2	#5	2	4'-7"	10									
*S1	38	#4	1	4'-9"	121	*S1	40	#4	1	4'-9"	133									
TOTAL REINFORCING STEEL						TOTAL REINFORCING STEEL						*EPOXY COATED REINFORCING STEEL								
					LBS.	138						LBS.	139						LBS.	165
*EPOXY COATED REINFORCING STEEL						*EPOXY COATED REINFORCING STEEL						CONCRETE FOR DECK REPAIR						C. Y.		1.0
					LBS.	498						LBS.	505	CONCRETE BARRIER RAIL					8.7	LIN. FT.
CONCRETE FOR DECK REPAIR						CONCRETE FOR DECK REPAIR														
					C. Y.	3.5						C. Y.	4.0							



SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS

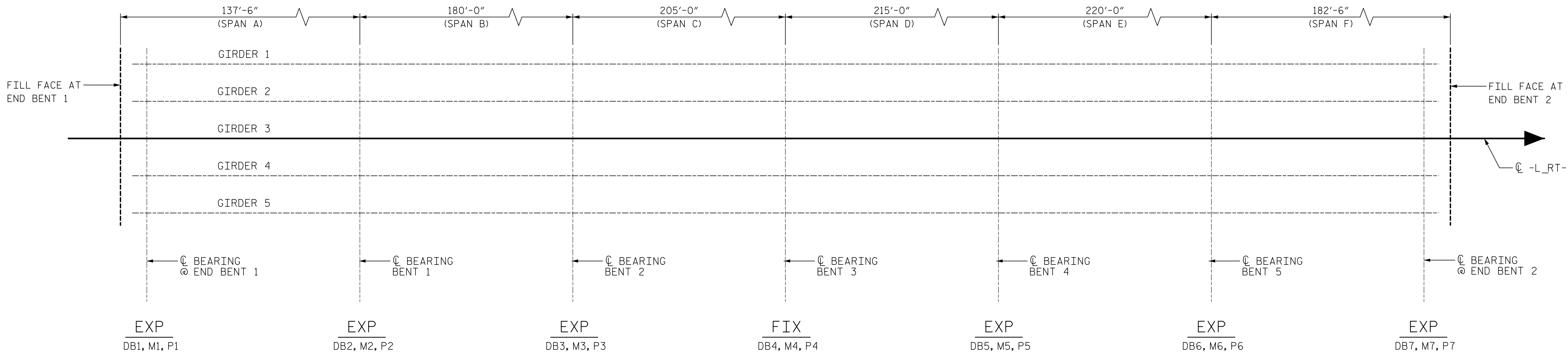
BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND BARRIER RAIL		APPROACH SLABS		PARAPET AND BARRIER RAIL
	EPOXY COATED	UNCOATED	EPOXY COATED	UNCOATED	
#4	2'-0"	1'-9"	2'-0"	1'-9"	2'-9"
#5	2'-6"	2'-2"	2'-6"	2'-2"	3'-5"
#6	3'-0"	2'-7"	3'-10"	2'-7"	4'-4"
#7	5'-3"	3'-6"			
#8	6'-10"	4'-7"			

(EXCEPT AS NOTED OTHERWISE)

SUPERSTRUCTURE BILL OF MATERIAL

STAGE I			STAGE II		
CONCRETE FOR DECK REPAIR	REINFORCING STEEL (LBS)	EPOXY COATED REINFORCING STEEL (LBS)	CONCRETE FOR DECK REPAIR	REINFORCING STEEL (LBS)	EPOXY COATED REINFORCING STEEL (LBS)
3.5	138	498	4.0	139	505

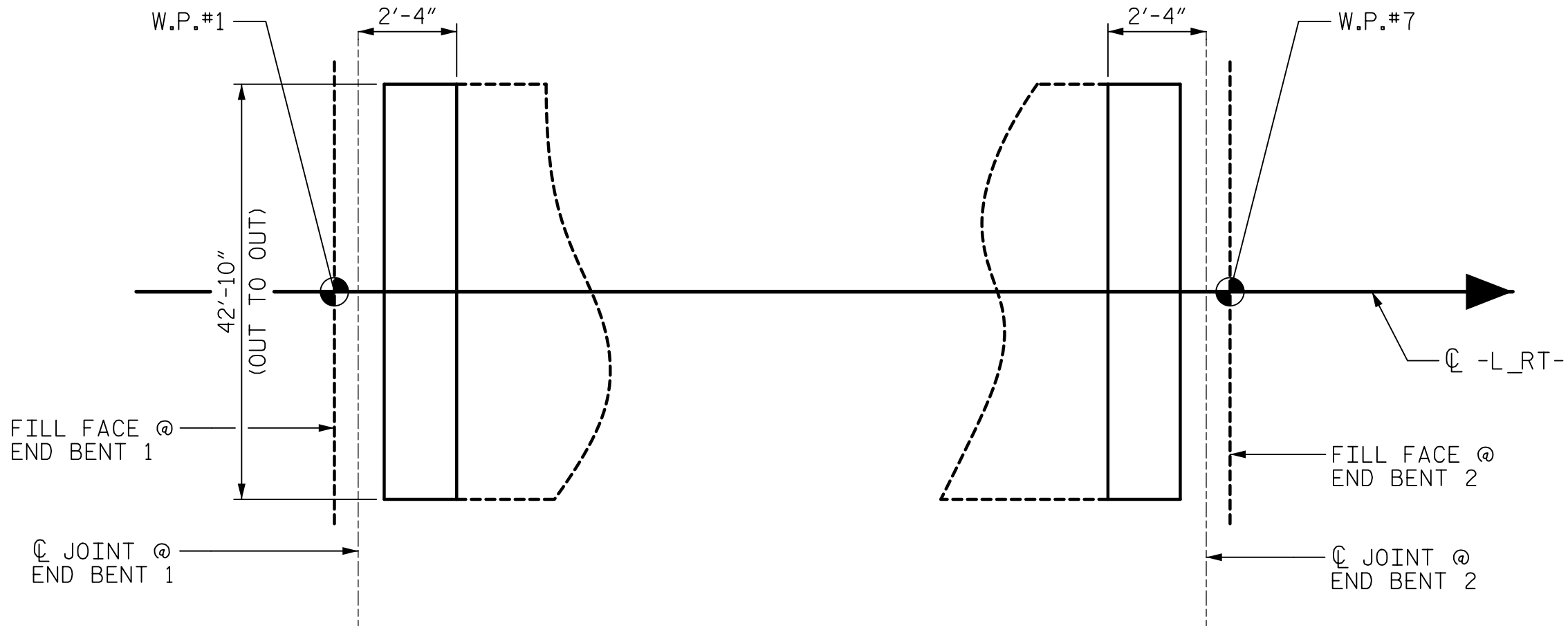
(QUANTITIES FOR BARRIER RAIL NOT INCLUDED)



PLAN OF BEARING REPLACEMENTS

GROOVING BRIDGE FLOORS	
APPROACH SLABS	1696 SQ. FT.
BRIDGE DECK	41958 SQ. FT.
TOTAL	43654 SQ. FT.

*QUANTITY IS FOR BOTH APPROACH SLABS



LAYOUT FOR COMPUTING AREA OF JOINT REPAIR

SQ. FT = 200

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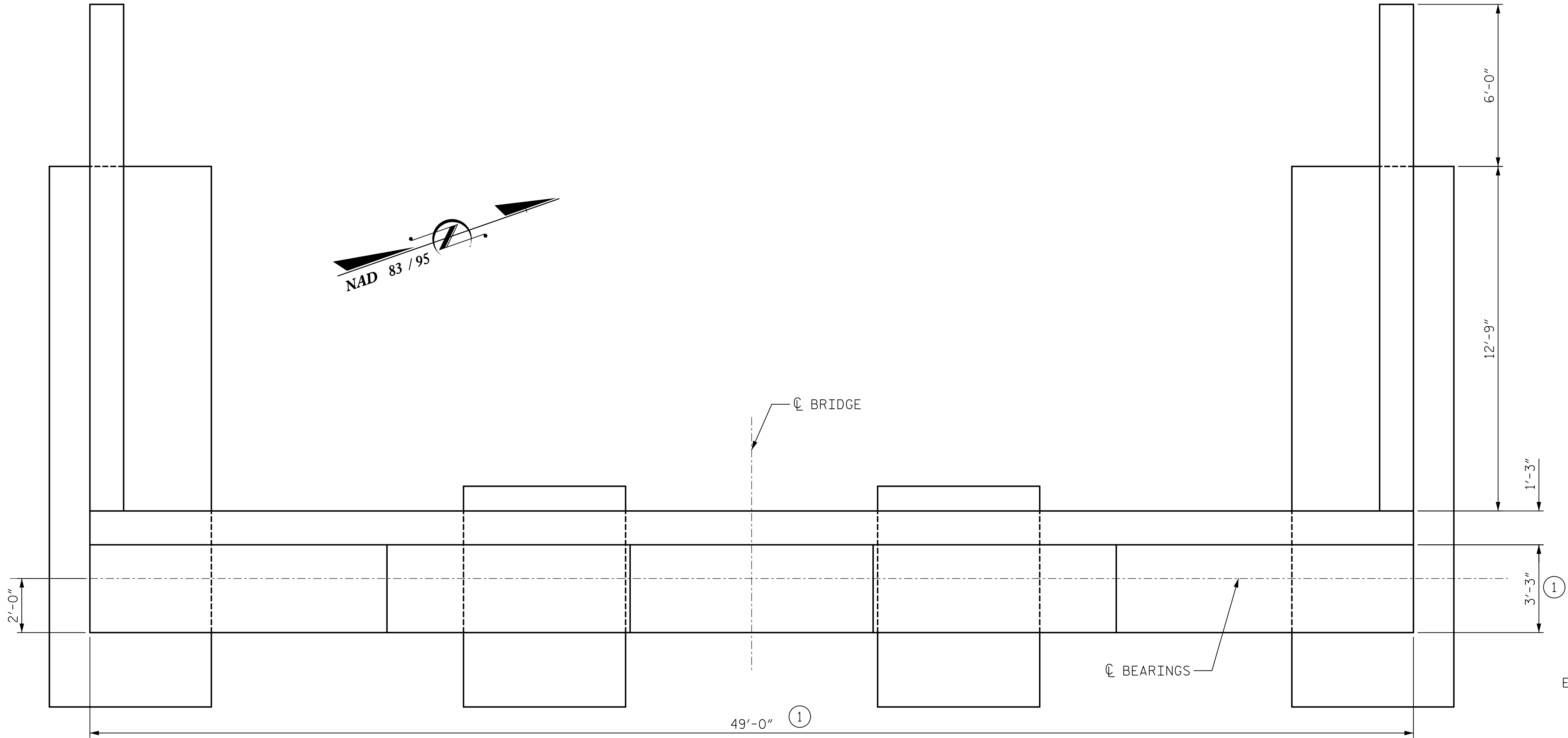
BILL OF MATERIAL

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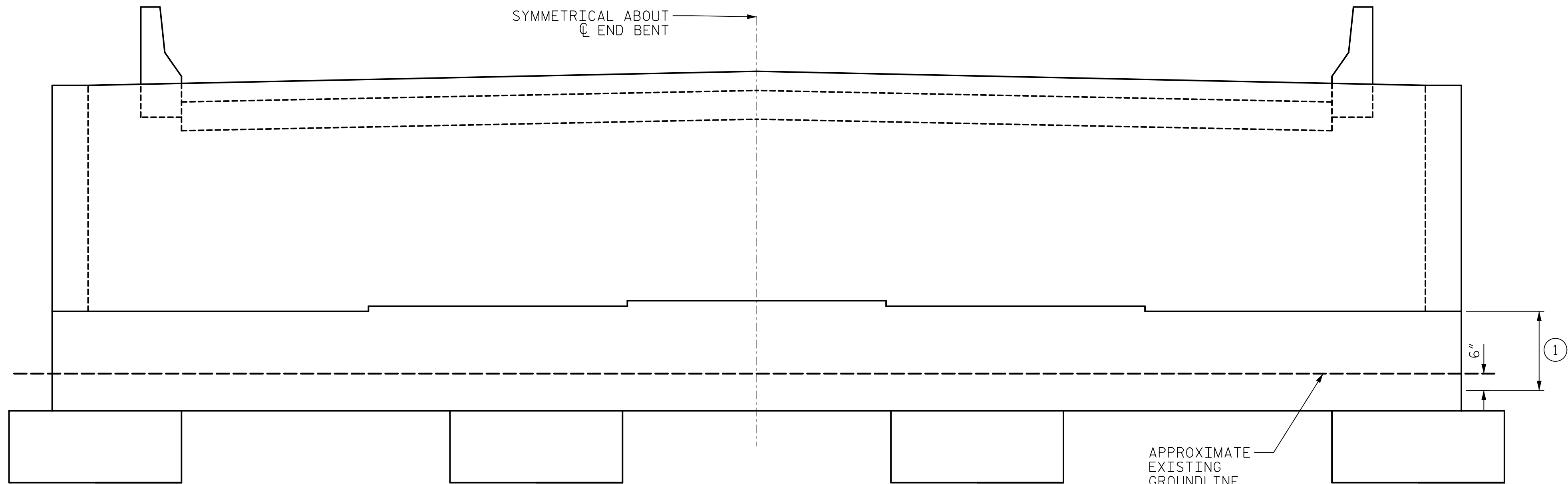
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PLAN



ELEVATION

① LIMITS OF EPOXY COATING

DRAWN BY : K. DONALD	DATE : 08/2018
CHECKED BY : G. COLS	DATE : 08/2018
DESIGNED BY : K. DONALD	DATE : 08/2018
DESIGN CHECKED BY : G. COLS	DATE : 08/2018

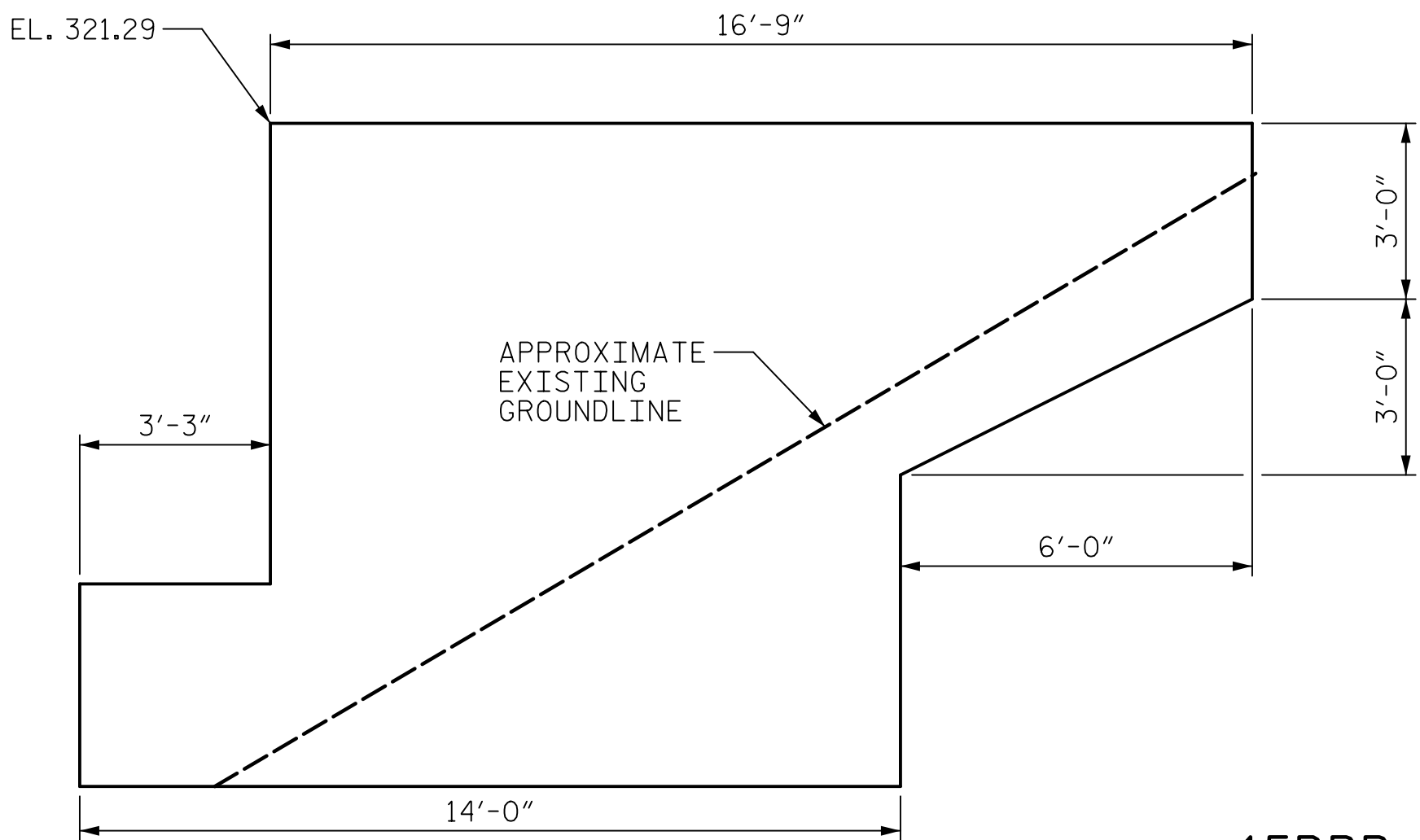
REPAIR QUANTITY TABLE

BENT REPAIRS		
END BENT 1		
	ESTIMATE	ACTUAL
EPOXY MORTAR REPAIRS		
CAP	0 CF	
CONCRETE REPAIRS		
CAP	0 CF	
EPOXY RESIN INJECTION		
CAP	0 CF	
EPOXY COATING		
CAP	120 SF	

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT.

NOTES:

FOR NOTES AND TYPICAL REPAIR DETAILS, SEE SUBSTRUCTURE REHABILITATION SHEETS.



TYPICAL
WING WALL

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REHABILITATION

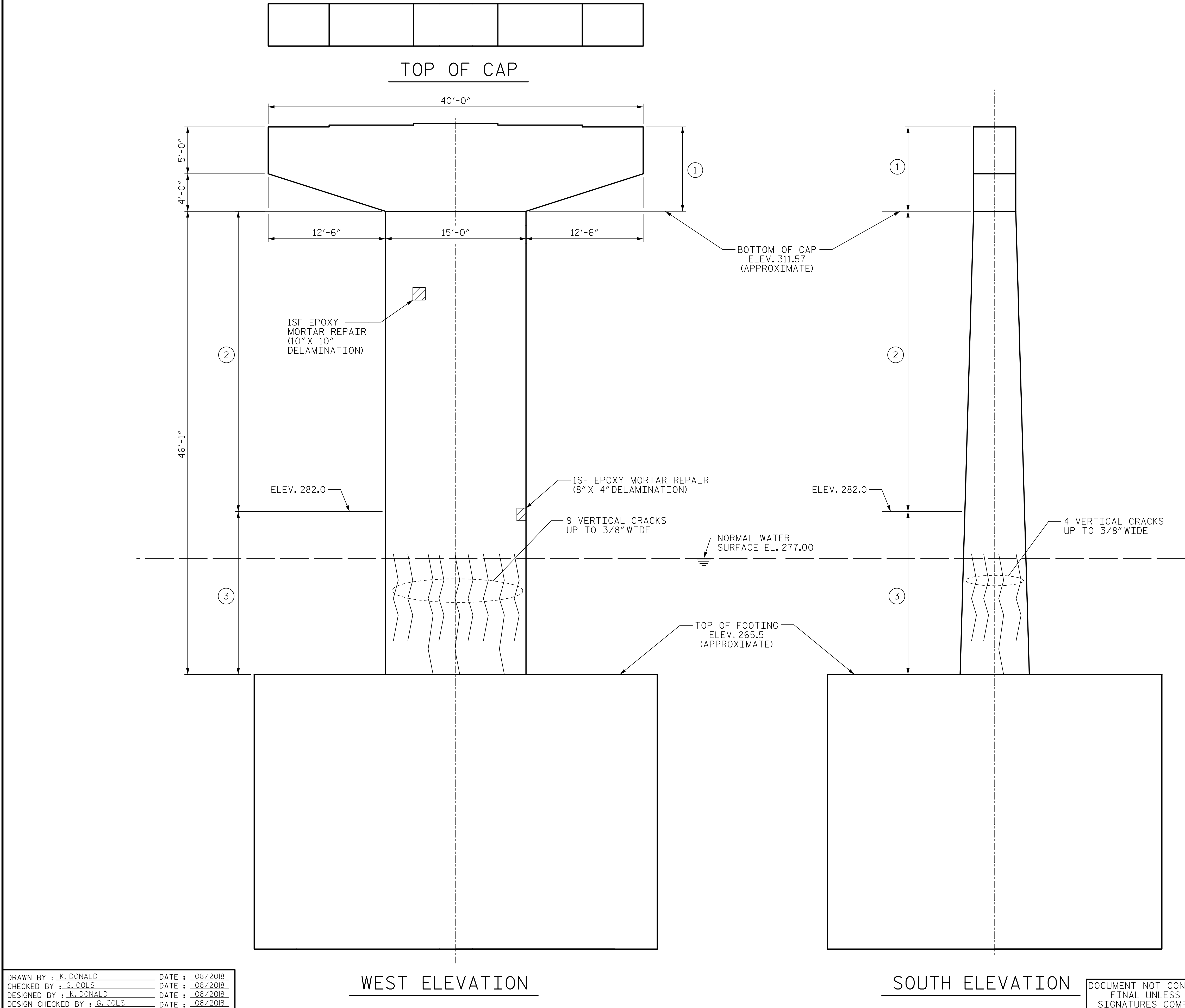
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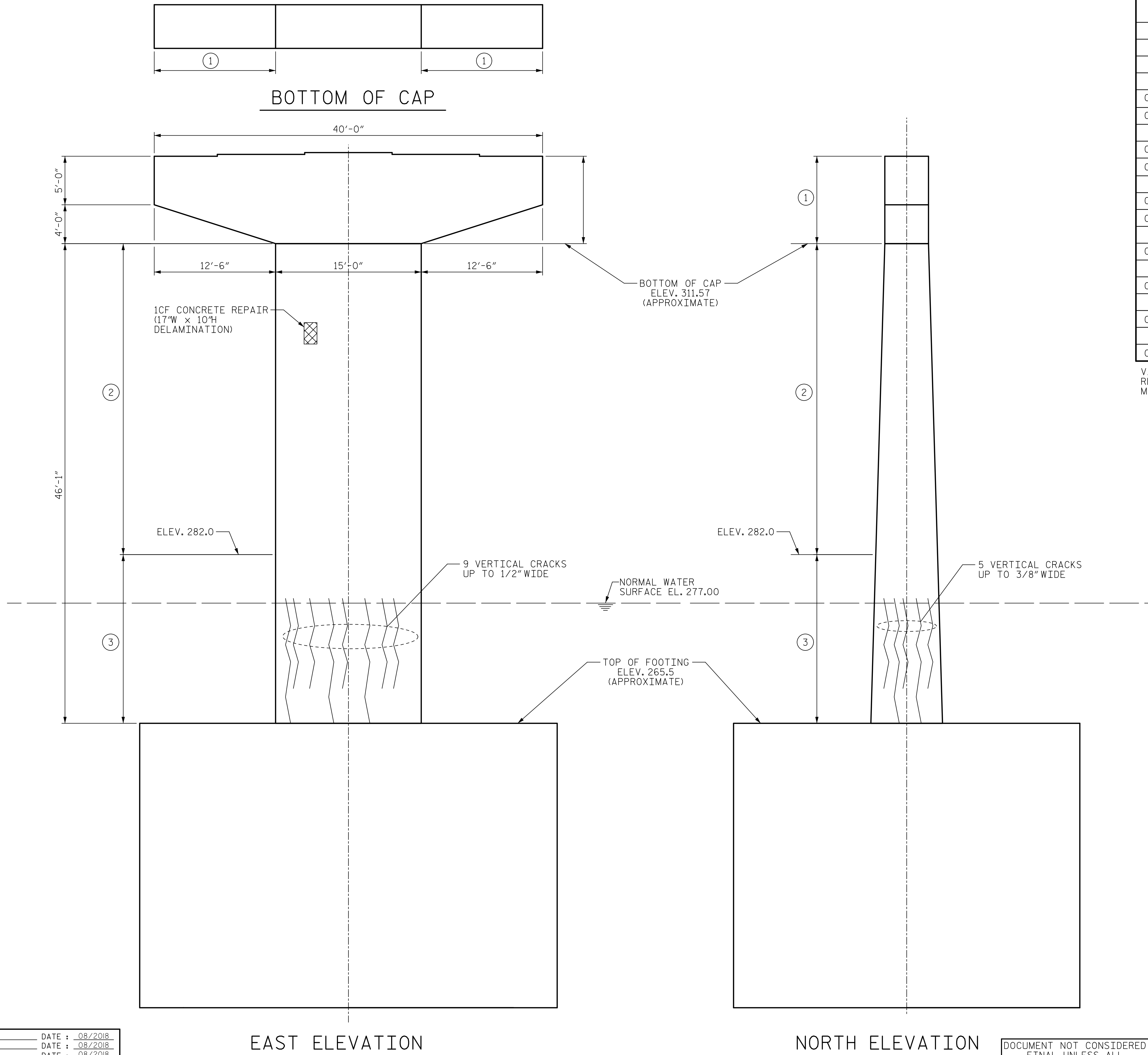
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DESIGNED BY : K. DONALD	DATE : 08/2018
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REPAIR QUANTITY TABLE

BENT REPAIRS		
BENT 1		
	ESTIMATE	ACTUAL
EPOXY MORTAR REPAIR		
CAP	0 SF	
COLUMN	1 SF	
CONCRETE REPAIRS		
CAP	0 CF	
COLUMN	1 CF	
EPOXY RESIN INJECTION		
CAP	0 LF	
COLUMN	0 LF	
EPOXY COATING		
CAP	800 SF	
SILANE COATING		
COLUMN	1210 SF	
SURFACE PREPARATION FOR SILANE		
COLUMN	1210 SF	
STRUCTURAL EPOXY GROUT JACKET		
COLUMN	40 CF	

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT.

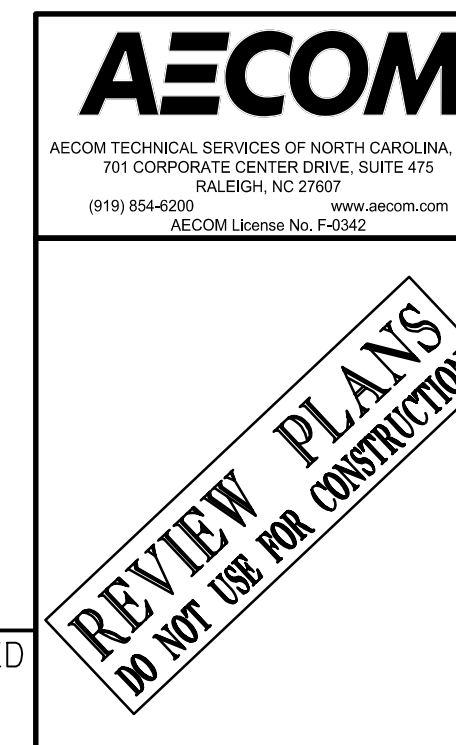
NOTES:

FOR NOTES AND TYPICAL REPAIR DETAILS, SEE SUBSTRUCTURE REHABILITATION DETAILS SHEETS.

- ERI - EPOXY RESIN INJECTION
- EPOXY MORTAR REPAIR AREA
- CONCRETE REPAIR AREA
- ① LIMITS OF EPOXY COATING
- ② LIMITS OF SILANE COATING
- ③ LIMITS OF STRUCTURAL EPOXY GROUT JACKET

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SHEET 2 OF 2



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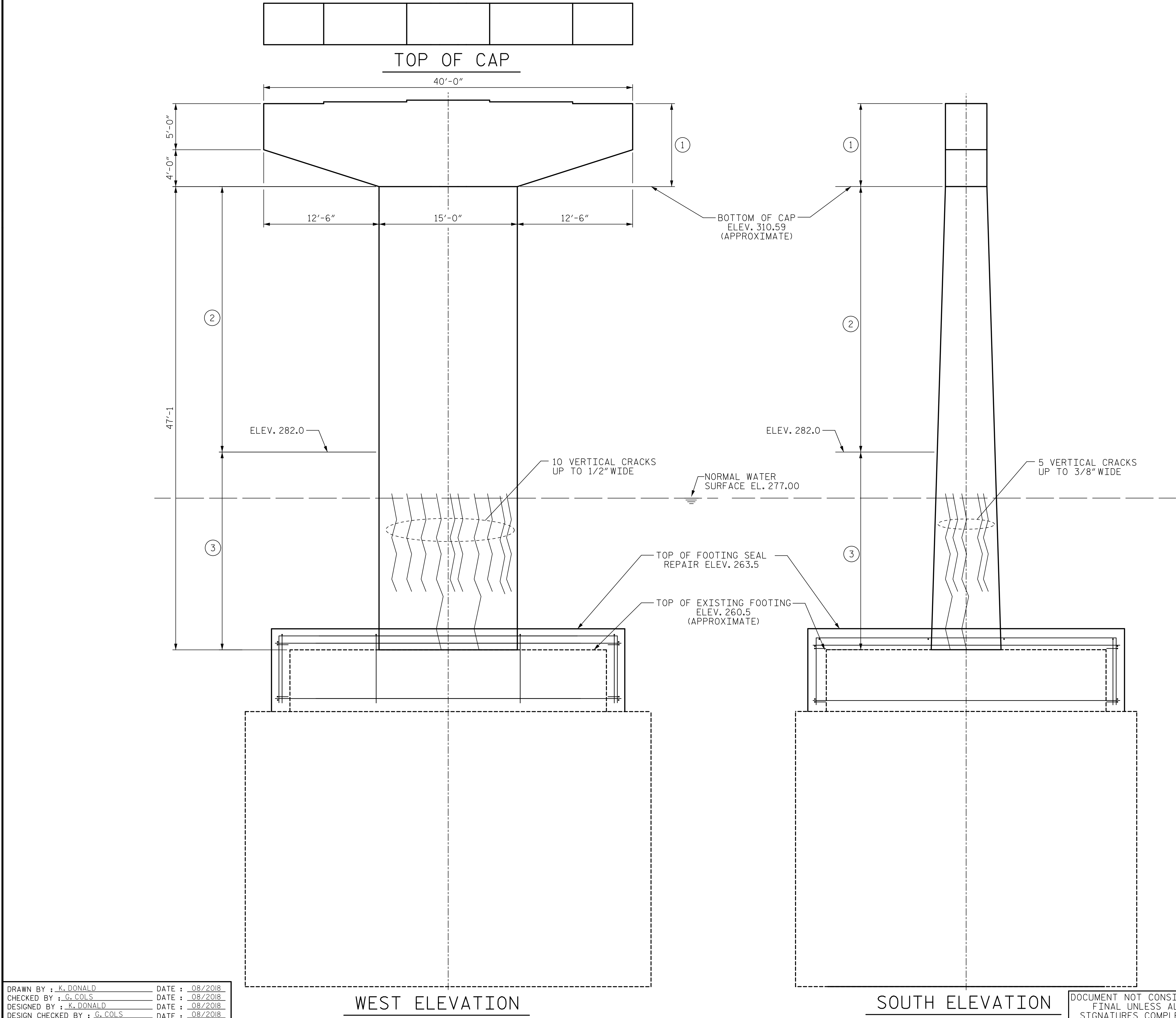
NORTH ELEVATION

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EAST ELEVATION

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NOTES:

FOR NOTES AND TYPICAL REPAIR DETAILS, SEE SUBSTRUCTURE REHABILITATION DETAILS SHEETS.

- ERI - EPOXY RESIN INJECTION
- EPOXY MORTAR REPAIR AREA
- CONCRETE REPAIR AREA
- 1 LIMITS OF EPOXY COATING
- 2 LIMITS OF SILANE COATING
- 3 LIMITS OF STRUCTURAL EPOXY GROUT JACKET

PLANS IN PROGRESS

FOR FOOTING SEAL REPAIR

PROJECT NO. 15BPR.43
STANLY/MONTGOMERY COUNTY
STATION: 339+86.39 -L-

SHEET 1 OF 3

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BENT 2

REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.
S-23
TOTAL
SHEETS
37

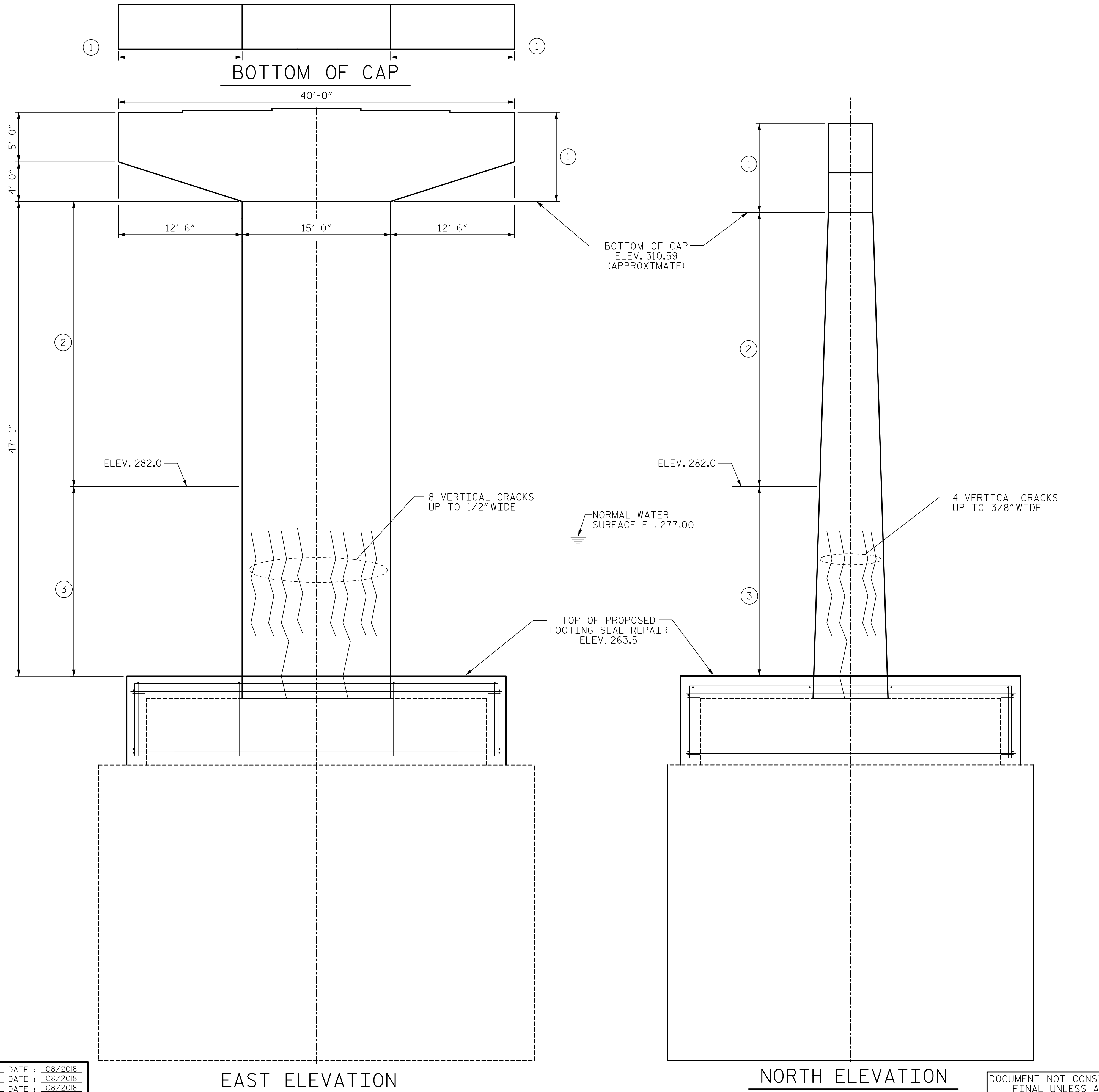
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CHECKED BY : G. COLS
DESIGNED BY : K. DONALD
DESIGN CHECKED BY : G. COLS

DATE : 08/2018
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DATE : 08/2018

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DESIGN CHECKED BY: G. COLS



REPAIR QUANTITY TABLE

BENT REPAIRS		
BENT 2		
	ESTIMATE	ACTUAL
EPOXY MORTAR REPAIRS		
CAP	0 SF	
COLUMN	0 SF	
CONCRETE REPAIRS		
CAP	0 CF	
COLUMN	0 CF	
EPOXY RESIN INJECTION		
CAP	0 LF	
COLUMN	0 LF	
EPOXY COATING		
CAP	800 SF	
SILANE COATING		
COLUMN	1170 SF	
SURFACE PREPARATION FOR SILANE		
COLUMN	1170 SF	
STRUCTURAL EPOXY GROUT JACKET		
COLUMN	50 CF	

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT.

NOTES:

FOR NOTES AND TYPICAL REPAIR DETAILS, SEE SUBSTRUCTURE REHABILITATION DETAILS SHEETS.

- ERI - EPOXY RESIN INJECTION
- EPOXY MORTAR REPAIR AREA
- CONCRETE REPAIR AREA
- ① LIMITS OF EPOXY COATING
- ② LIMITS OF SILANE COATING
- ③ LIMITS OF STRUCTURAL EPOXY GROUT JACKET

PLANS IN PROGRESS

FOR FOOTING SEAL REPAIR

PROJECT NO. 15BPR.43

STANLY/MONTGOMERY COUNTY

STATION: 339+86.39 -L-

SHEET 2 OF 3

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REVISIONS				SHEET NO. S-24		
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 37
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2			4			

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USER: cgregory@cis
 DON: \USFAL31501\inacemcomf.com\Don\Projects\60579778 -- ASR_Lake_Tillery\9000_CAD_GIS\910_CAD\70_MCD\20_TIP\Structures\04_Drawings\40_050_15BPR\43_SMU_B2C.dgn



PLANS IN PROGRESS

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 DESIGNED BY : _____ DATE : _____
 DESIGN CHECKED BY : _____ DATE : _____

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SHEET 3 OF 3

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH

REHABILITATION

BENT 2

FOOTING SEAL

REPAIR

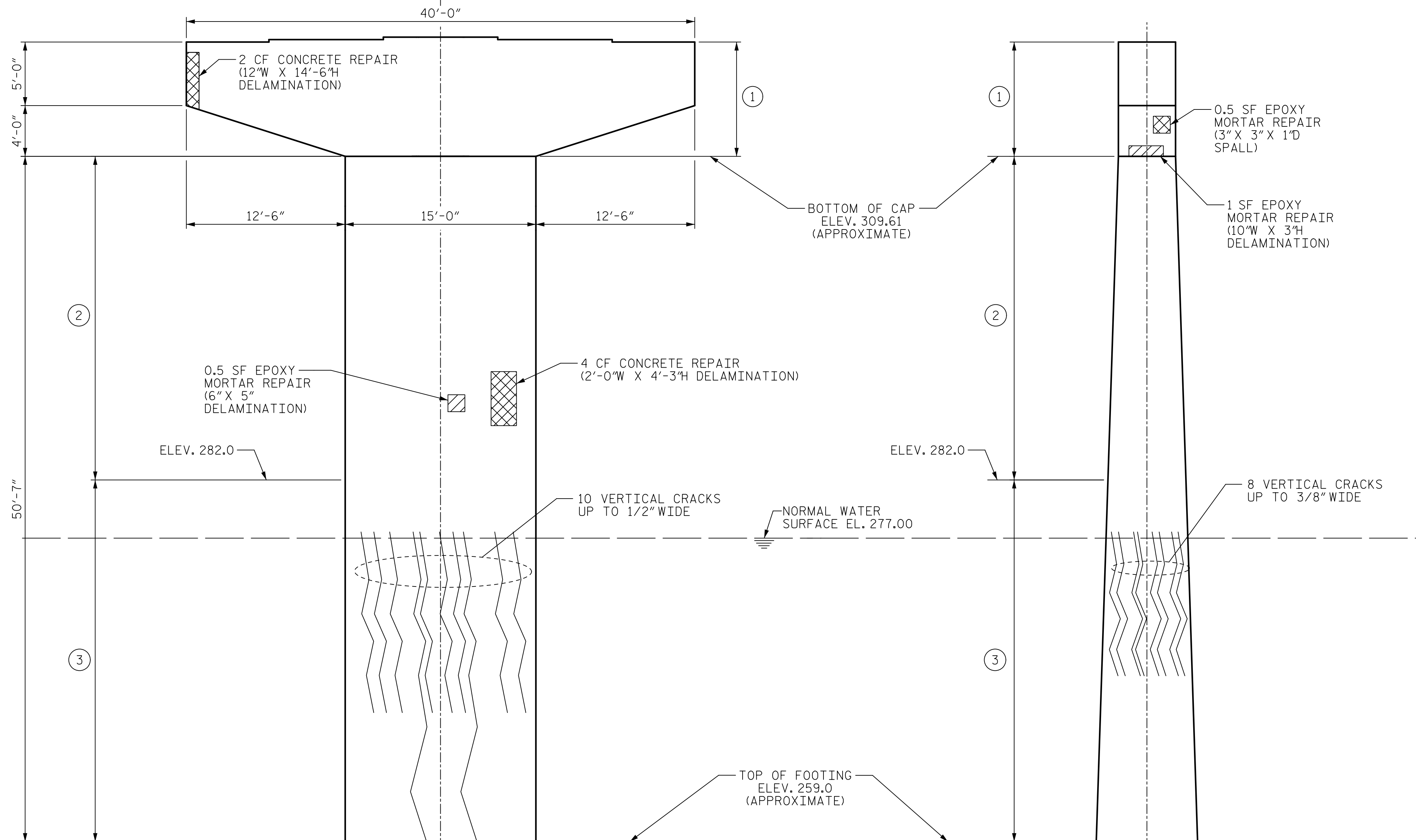
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-25
1			3			TOTAL SHEETS
2			4			37



TOP OF CAP



NOTES:
FOR NOTES AND TYPICAL REPAIR DETAILS, SEE SUBSTRUCTURE
REHABILITATION DETAILS SHEETS.

- ERI - EPOXY RESIN INJECTION
- EPOXY MORTAR REPAIR AREA
- CONCRETE REPAIR AREA
- ① LIMITS OF EPOXY COATING
- ② LIMITS OF SILANE COATING
- ③ LIMITS OF STRUCTURAL EPOXY GROUT JACKET

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REHABILITATION

BENT 3

REVISIONS						SHEET NO. S-25
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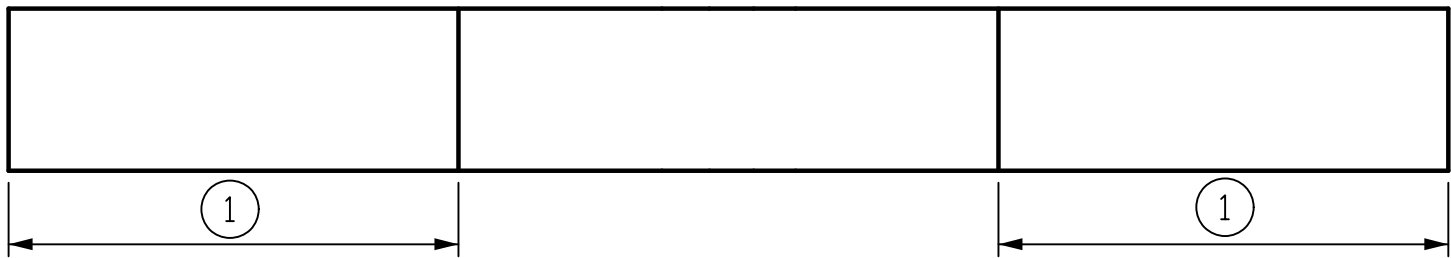
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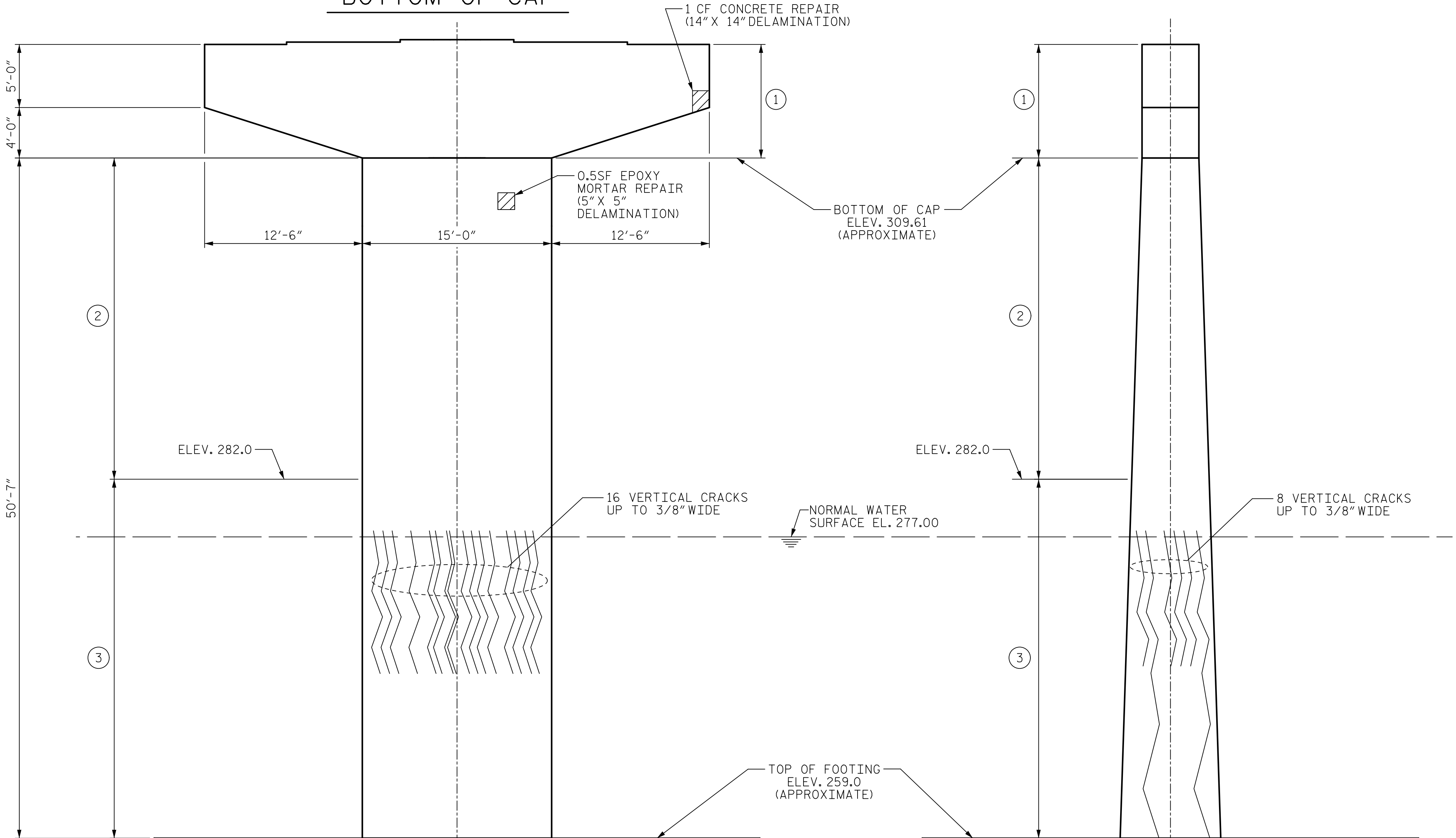
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BOTTOM OF CAP



EAST ELEVATION

NORTH ELEVATION

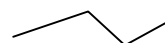
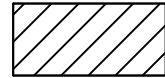
REPAIR QUANTITY TABLE

BENT REPAIRS		
BENT 3		
	ESTIMATE	ACTUAL
EPOXY MORTAR REPAIRS		
CAP	1.5 SF	
COLUMN	1.0 SF	
CONCRETE REPAIRS		
CAP	3 CF	
COLUMN	4 CF	
EPOXY RESIN INJECTION		
CAP	0 LF	
COLUMN	372 LF	
EPOXY COATING		
CAP	800 SF	
SILANE COATING		
COLUMN	1130 SF	
SURFACE PREPARATION FOR SILANE		
COLUMN	1130 SF	
STRUCTURAL EPOXY GROUT JACKET		
COLUMN	60 CF	

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT.

NOTES:

FOR NOTES AND TYPICAL REPAIR DETAILS, SEE SUBSTRUCTURE REHABILITATION DETAILS SHEETS.

-  ERI - EPOXY RESIN INJECTION
-  EPOXY MORTAR REPAIR AREA
-  CONCRETE REPAIR AREA
- ①

LIMITS OF EPOXY COATING
- ②

LIMITS OF SILANE COATING
- ③

LIMITS OF STRUCTURAL EPOXY GROUT JACKET

PROJECT NO. 15BPR.43
STANLY/MONTGOMERY COUNTY
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BENT 3

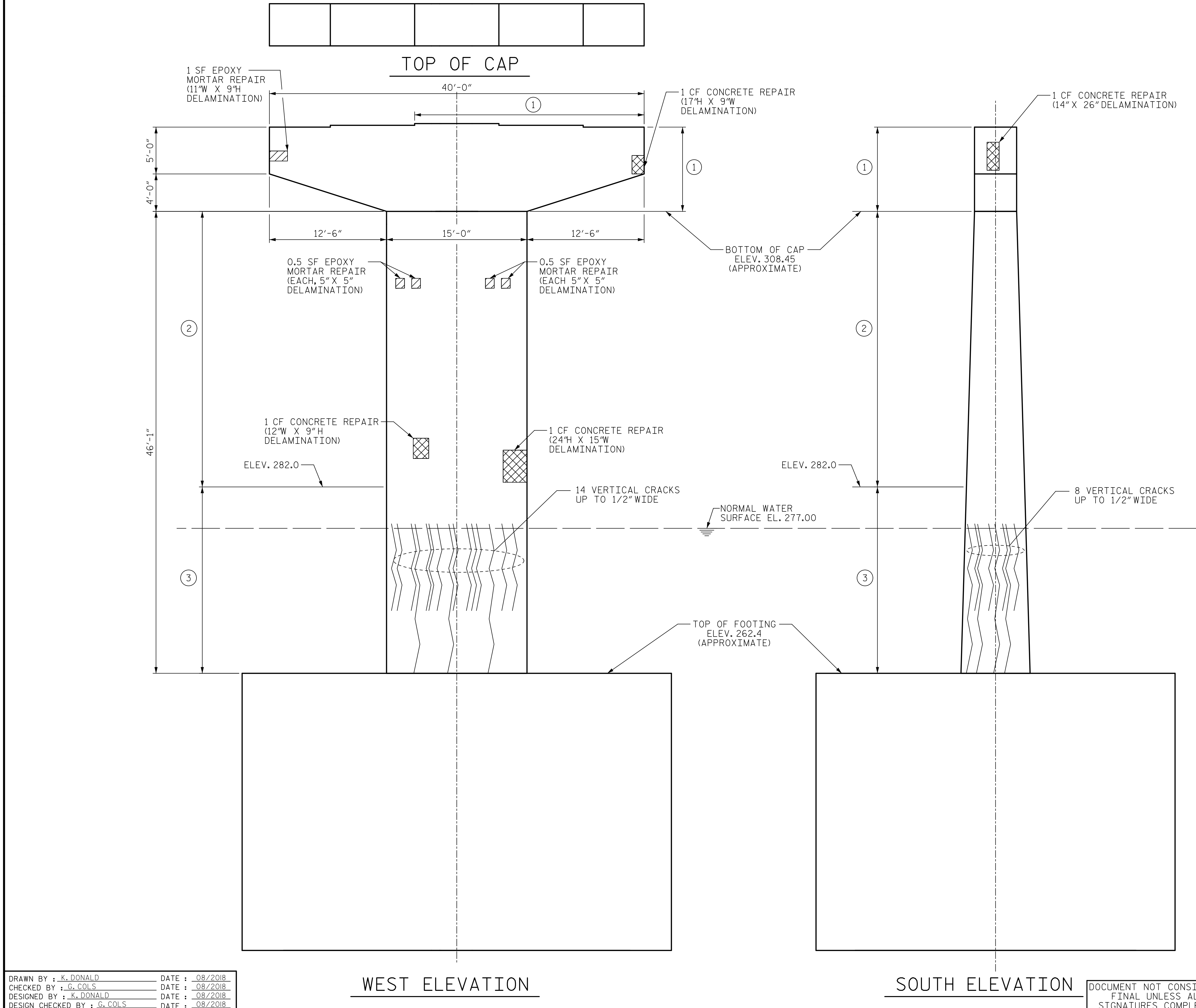
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2			4			

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DESIGN CHECKED BY : G. COLS DATE : 08/2018

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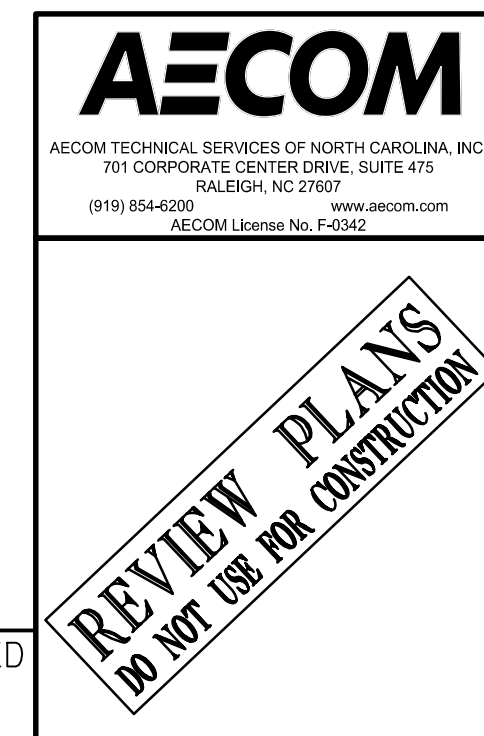
NOTES:

FOR NOTES AND TYPICAL REPAIR DETAILS, SEE SUBSTRUCTURE REHABILITATION DETAILS SHEETS.

- ERI - EPOXY RESIN INJECTION
- EPOXY MORTAR REPAIR AREA
- CONCRETE REPAIR AREA
- ① LIMITS OF EPOXY COATING
- ② LIMITS OF SILANE COATING
- ③ LIMITS OF STRUCTURAL EPOXY GROUT JACKET

PROJECT NO. 15BPR.43
STANLY/MONTGOMERY COUNTY
STATION: 339+86.39 -L-

SHEET 1 OF 2



REVISIONS						SHEET NO. S-27
NO.	BY:	DATE:	NO.	BY:	DATE:	
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2			4			

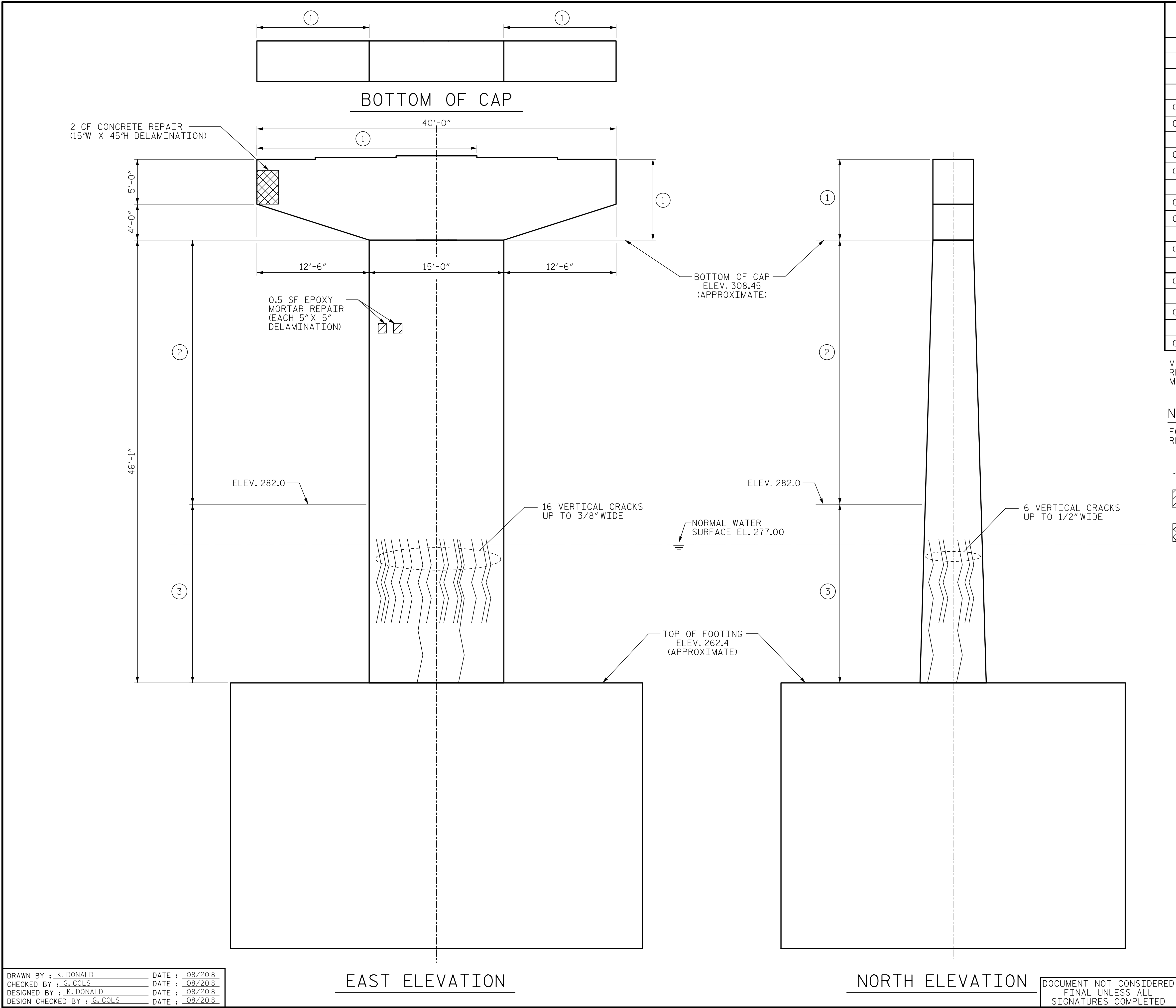
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DESIGNED BY : K. DONALD
DESIGN CHECKED BY : G. COLS

DATE : 08/2018
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DATE : 08/2018

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REPAIR QUANTITY TABLE

BENT REPAIRS		
BENT 4		
	ESTIMATE	ACTUAL
EPOXY MORTAR REPAIRS		
CAP	1 SF	
COLUMN	3 SF	
CONCRETE REPAIRS		
CAP	4 CF	
COLUMN	2 CF	
EPOXY RESIN INJECTION		
CAP	0 LF	
COLUMN	418 LF	
EPOXY COATING		
CAP	800 SF	
SILANE COATING		
COLUMN	1080 SF	
SURFACE PREPARATION FOR SILANE		
COLUMN	1080 SF	
STRUCTURAL EPOXY GROUT JACKET		
COLUMN	50 CF	

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT.

NOTES:

FOR NOTES AND TYPICAL REPAIR DETAILS, SEE SUBSTRUCTURE REHABILITATION DETAILS SHEETS.

- ERI - EPOXY RESIN INJECTION
- EPOXY MORTAR REPAIR AREA
- CONCRETE REPAIR AREA
- ① LIMITS OF EPOXY COATING
- ② LIMITS OF SILANE COATING
- ③ LIMITS OF STRUCTURAL EPOXY GROUT JACKET

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BENT 4

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1			3			S-28
2			4			TOTAL SHEETS 37

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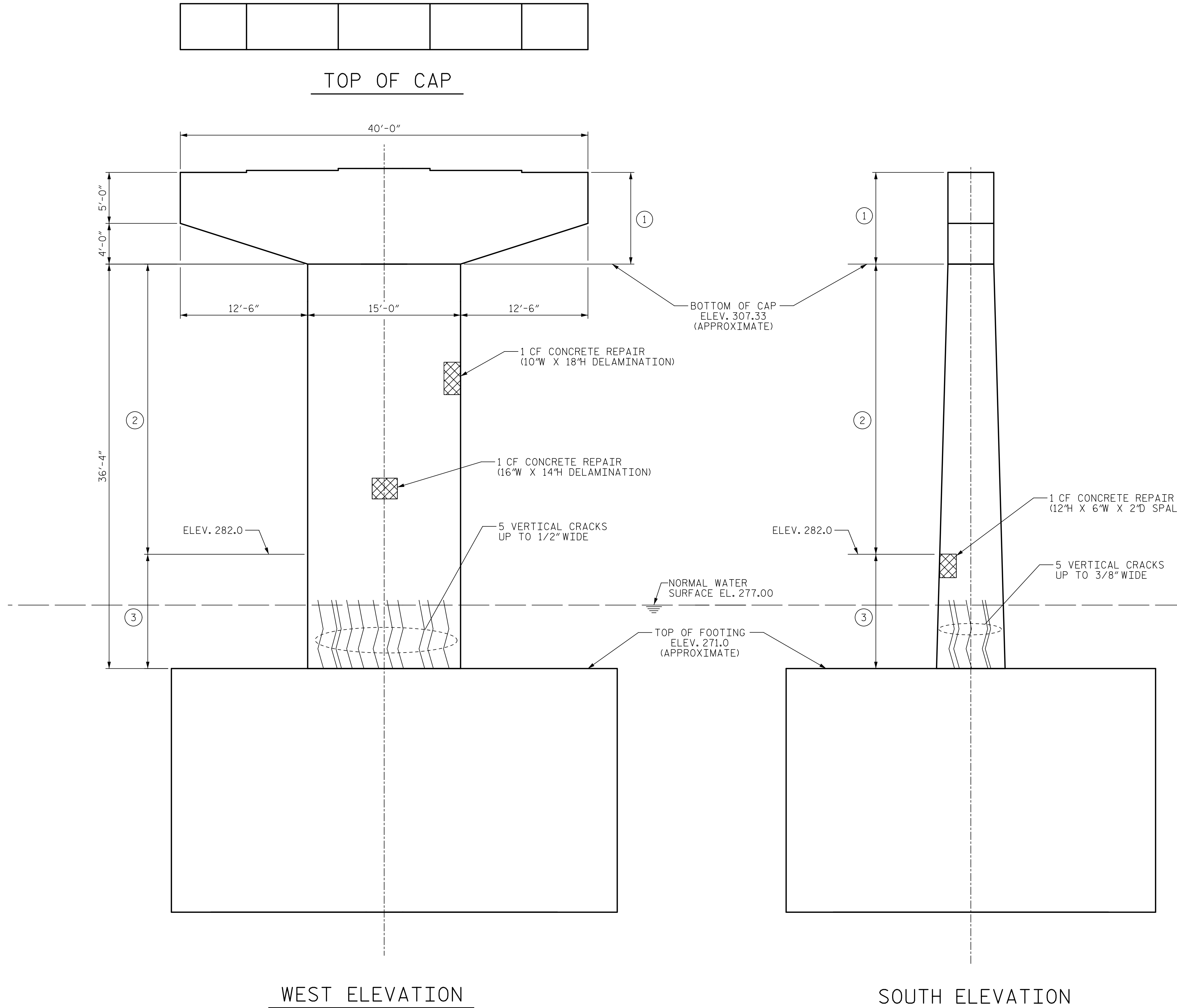
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NORTH ELEVATION

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DESIGNED BY : K. DONALD DATE : 08/2018
DESIGN CHECKED BY : G. COLS DATE : 08/2018



NOTES:

FOR NOTES AND TYPICAL REPAIR DETAILS, SEE SUBSTRUCTURE REHABILITATION DETAILS SHEETS.

ERI - EPOXY RESIN INJECTION

EPOXY MORTAR REPAIR AREA

CONCRETE REPAIR AREA

- ① LIMITS OF EPOXY COATING
- ② LIMITS OF SILANE COATING
- ③ LIMITS OF STRUCTURAL EPOXY GROUT JACKET

PROJECT NO. 15BPR.43
STANLY/MONTGOMERY COUNTY
STATION: 339+86.39 -L-

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REHABILITATION

BENT 5

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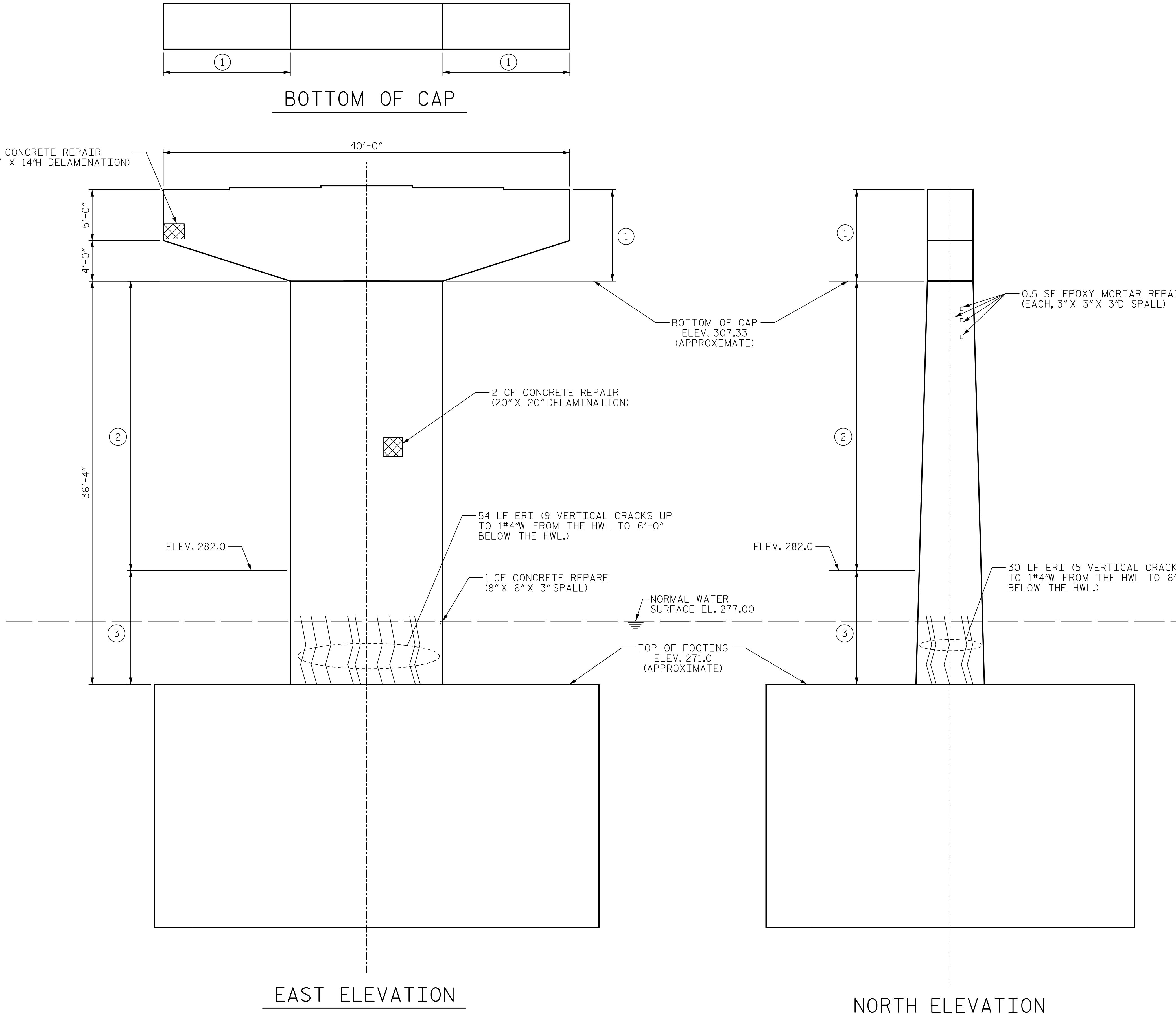
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DESIGN CHECKED BY : G. COLS	DATE : 08/2018



REPAIR QUANTITY TABLE

BENT REPAIRS		
BENT 5		
	ESTIMATE	ACTUAL
EPOXY MORTAR REPAIR		
CAP	0 SF	
COLUMN	2 SF	
CONCRETE REPAIRS		
CAP	1 CF	
COLUMN	6 CF	
EPOXY RESIN INJECTION		
CAP	0 LF	
COLUMN	169 LF	
EPOXY COATING		
CAP	800 SF	
SILANE COATING		
COLUMN	1030 SF	
SURFACE PREPARATION FOR SILANE		
COLUMN	1030 SF	
STRUCTURAL EPOXY GROUT JACKET		
COLUMN	30 CF	

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT.

NOTES:

FOR NOTES AND TYPICAL REPAIR DETAILS, SEE SUBSTRUCTURE REHABILITATION DETAILS SHEETS.

- ERI - EPOXY RESIN INJECTION
- EPOXY MORTAR REPAIR AREA
- CONCRETE REPAIR AREA
- ① LIMITS OF EPOXY COATING
- ② LIMITS OF SILANE COATING
- ③ LIMITS OF STRUCTURAL EPOXY GROUT JACKET

PROJECT NO. 15BPR.43
STANLY/MONTGOMERY COUNTY
STATION: 339+86.39 -L-

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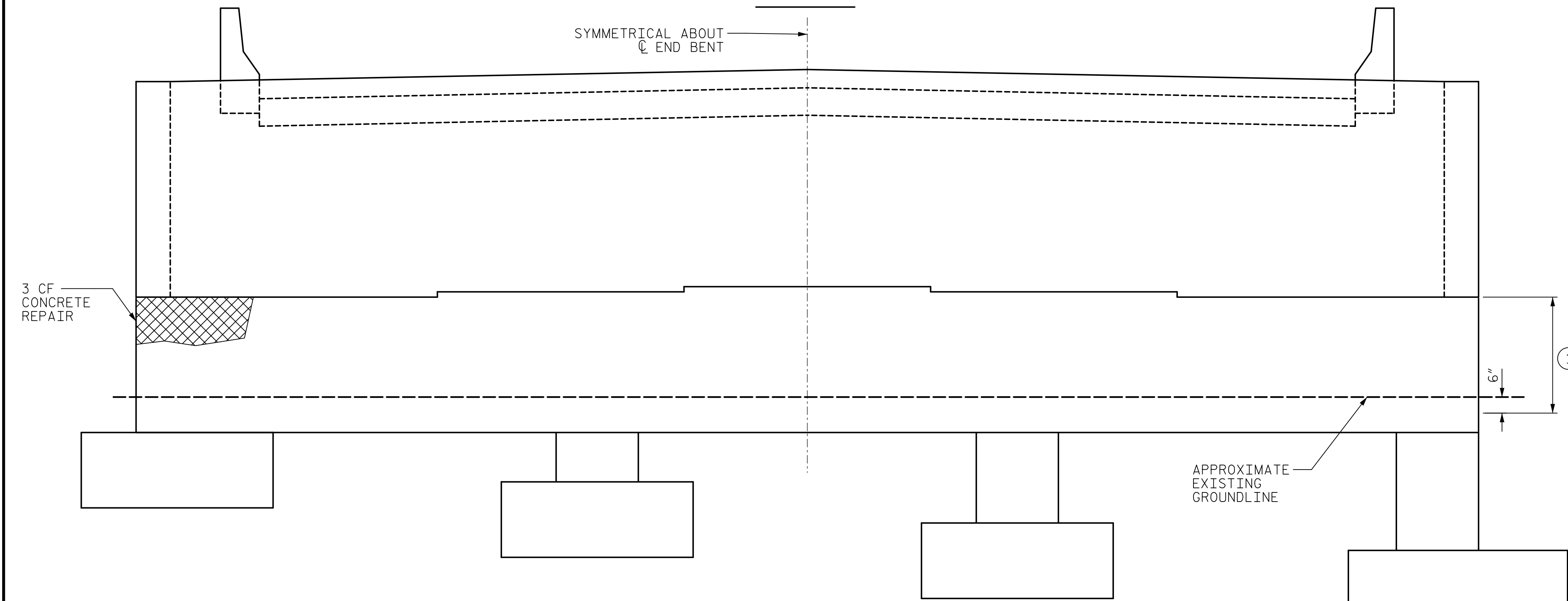
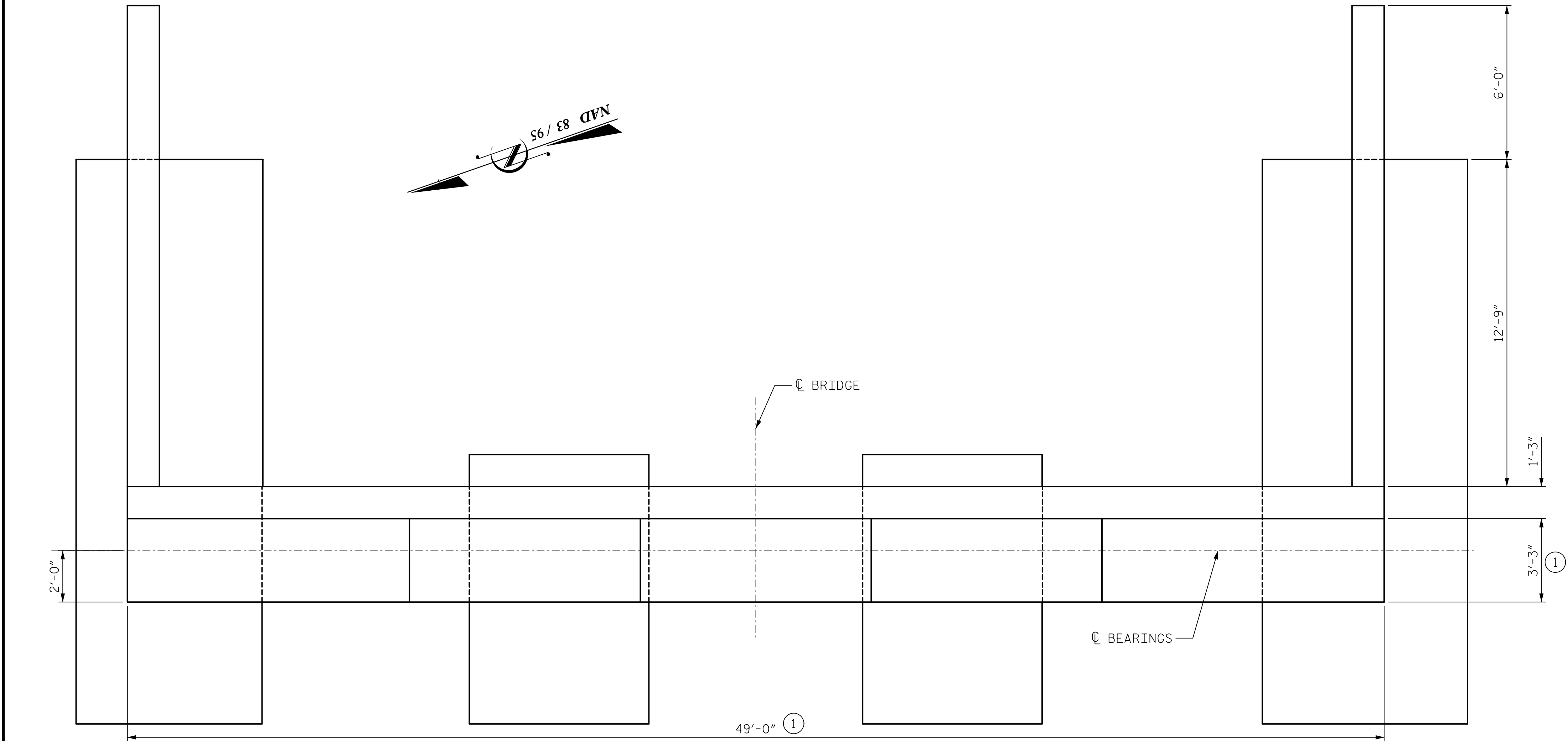
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REHABILITATION					
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REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
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SHEET NO. S-30					TOTAL SHEETS 37

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DESIGNED BY : K. DONALD
DESIGN CHECKED BY : G. COLS

DATE : 08/2018
DATE : 08/2018
DATE : 08/2018
DATE : 08/2018

(1) LIMITS OF EPOXY COATING

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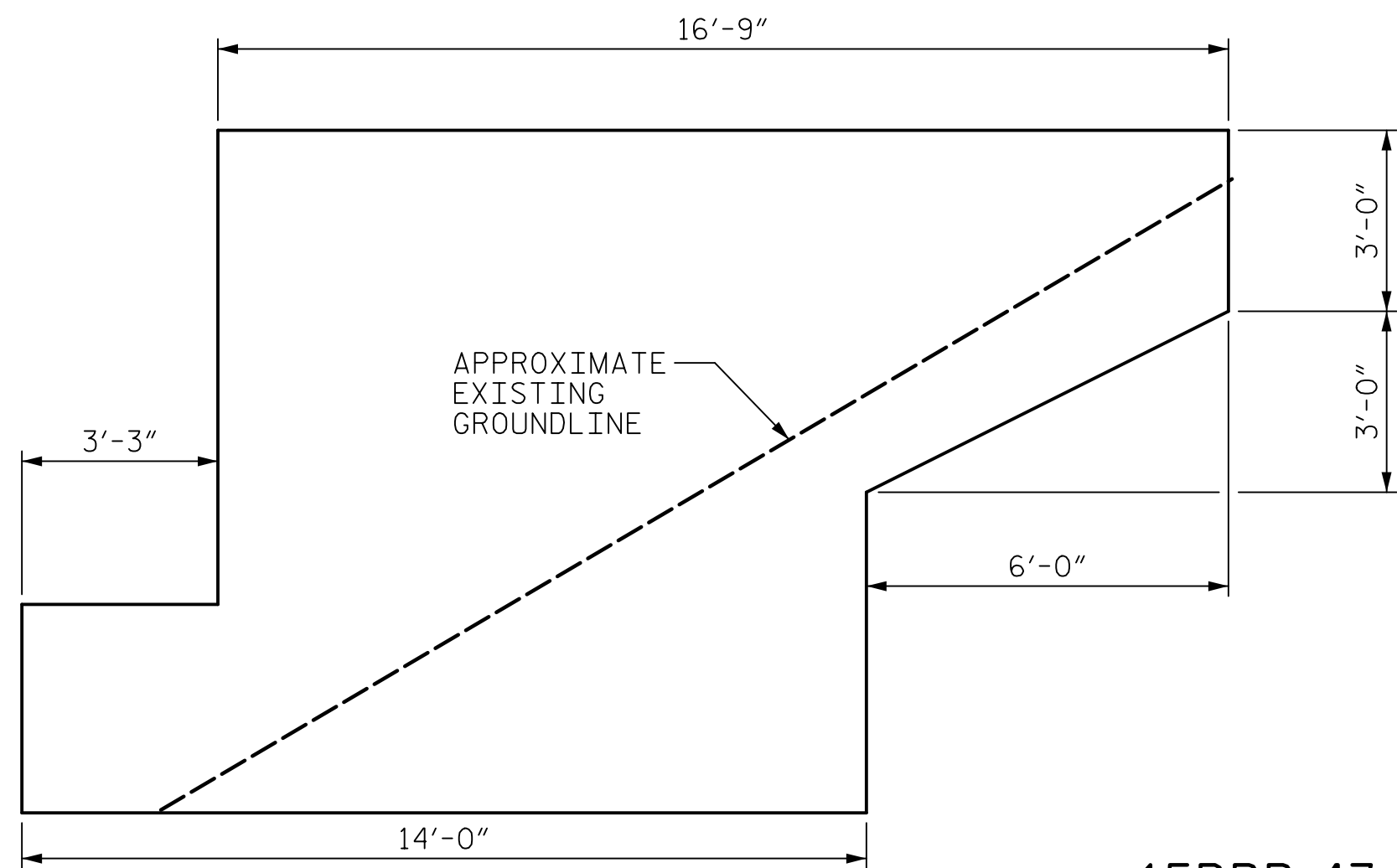
REPAIR QUANTITY TABLE

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END BENT 2		
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CONCRETE REPAIRS		
CAP	3.0 CF	
EPOXY RESIN INJECTION		
CAP	0 CF	
EPOXY COATING		
CAP	120 SF	

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE. MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT.

NOTES:

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PROJECT NO. 15BPR.43
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STATION: 339+86.39 -L-

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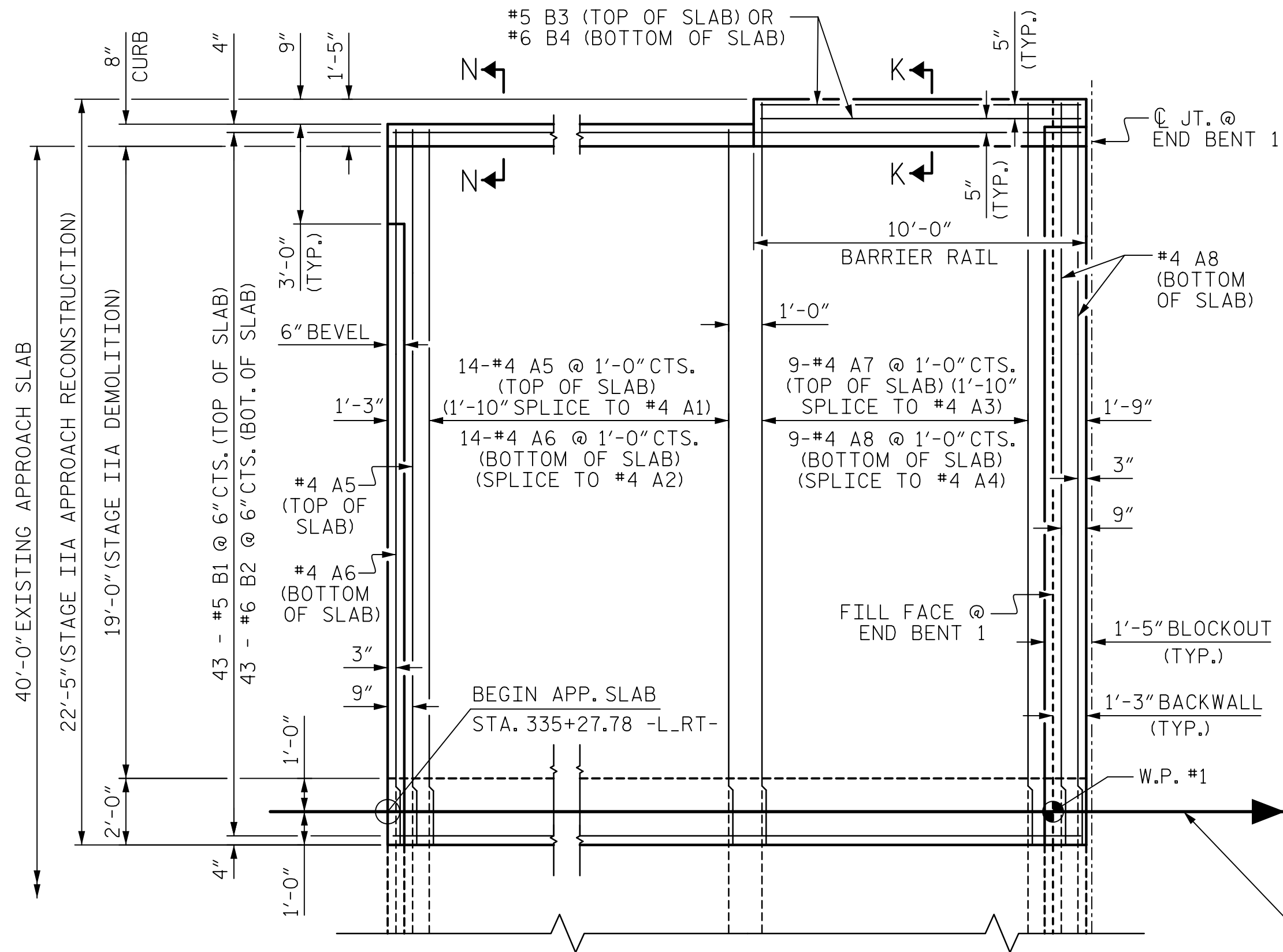
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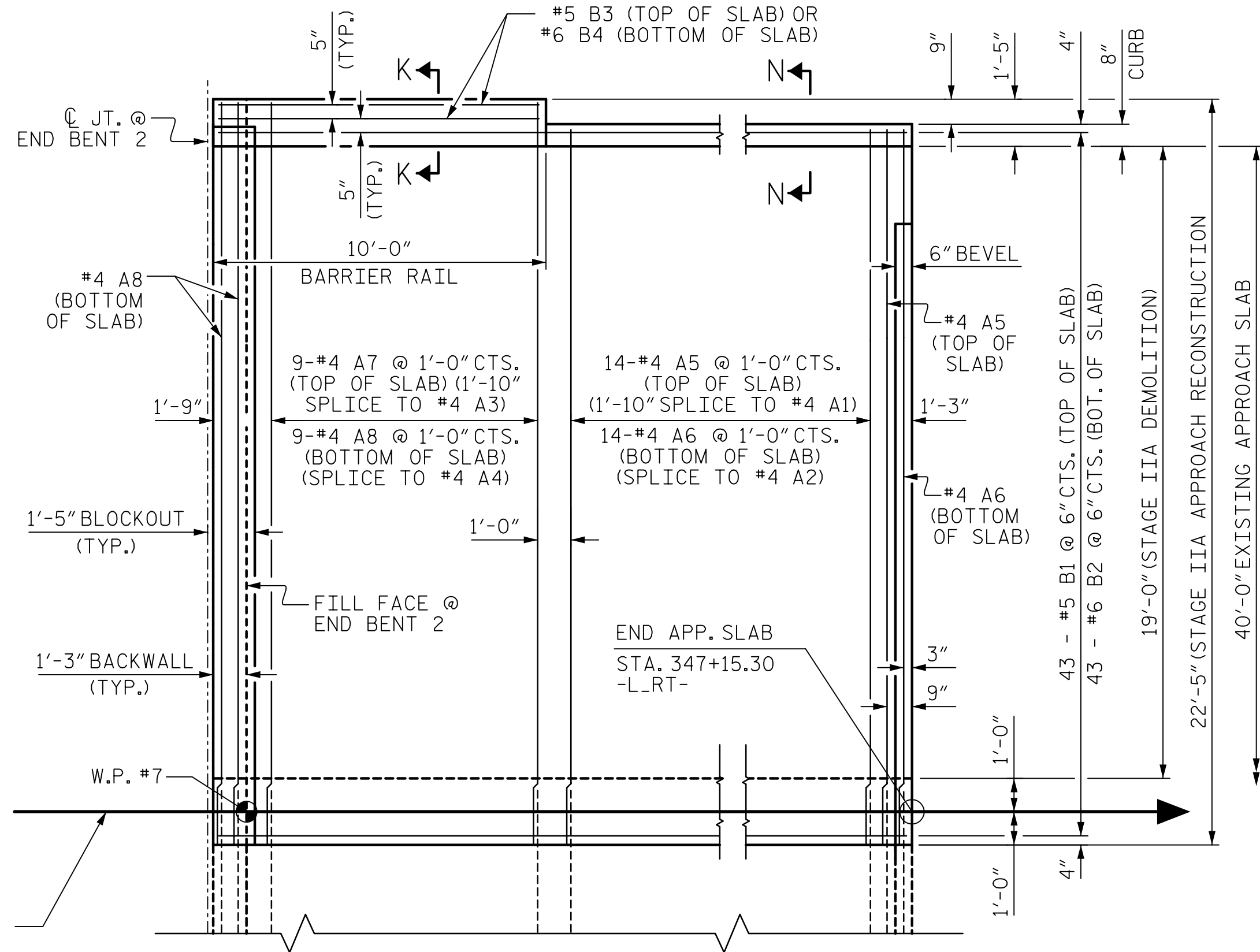
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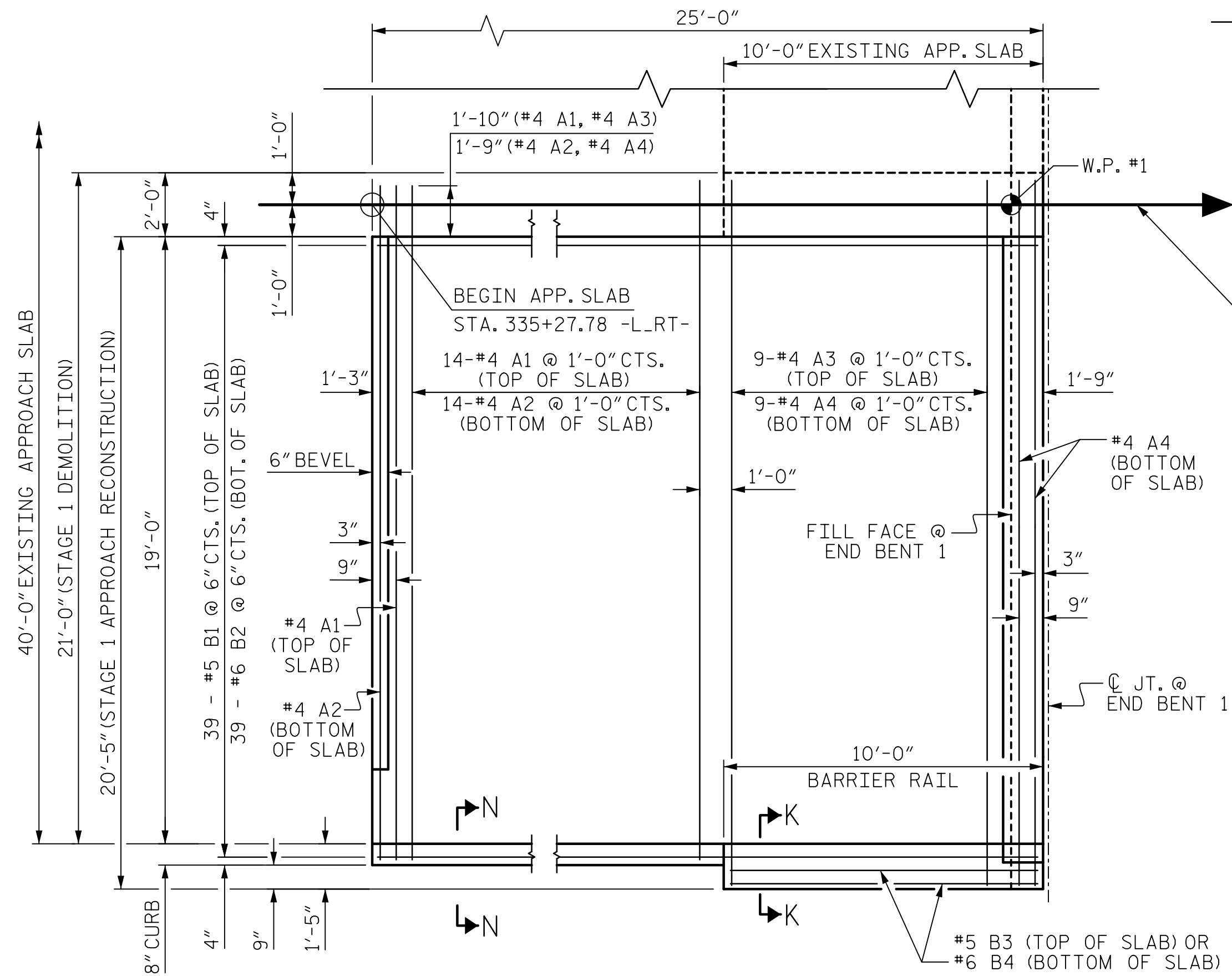


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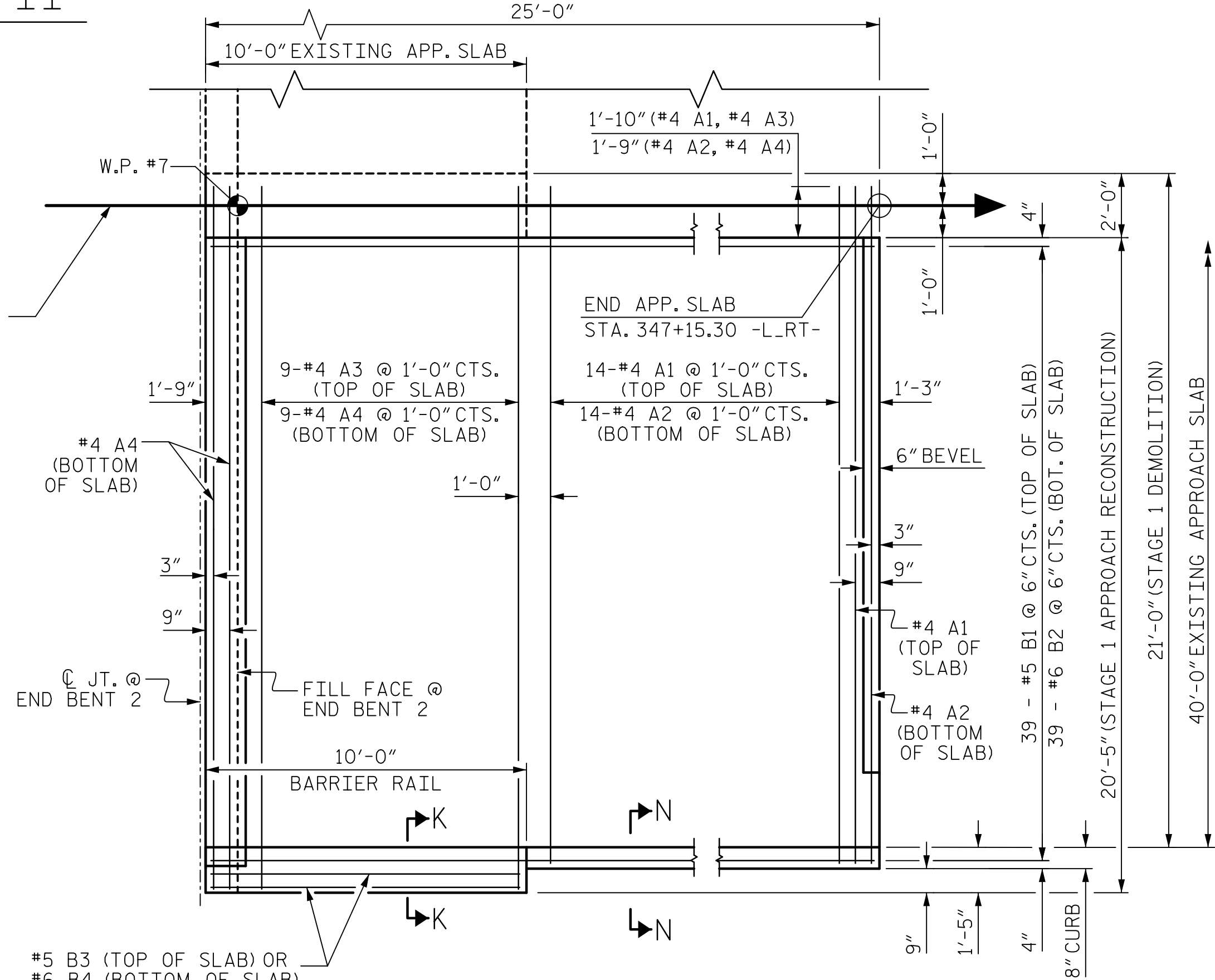


PLAN @ END BENT 2

STAGE II



PLAN @ END BENT 1



PLAN @ END BENT 2

STAGE I

NOTES

AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

SHORING SHALL BE INSTALLED AS NECESSARY TO CONSTRUCT THE APPROACH SLAB FOUNDATION MATERIAL IN STAGES.

THE JOINT OPENING SHALL BE FORMED TO MATCH EXISTING CONDITIONS, THE EXISTING FORMED OPENING IS EQUAL TO 4 INCHES AT 60 DEGREES FARENHEIT, EXISTING OPENING SHALL BE MEASURED BY THE CONTRACTOR PRIOR TO FORMING THE JOINT, AND ANY DEVIATION OF OVER 1/4 INCH SHALL BE REPORTED TO THE ENGINEER, AND SHALL BE ACCOUNTED FOR.

THE BLOCKOUT SHALL BE FORMED TO CREATE A SMOOTH BOTTOM SURFACE, PARALLEL TO THE GRADE. BLOCKOUT SHALL BE CONSTRUCTED WITHIN JOINT SEAL TOLERANCES AS SPECIFIED BY JOINT MANUFACTURER.

FOR APPROACH SLAB REPLACEMENT, SEE SPECIAL PROVISIONS.

THE FINAL GRADE OF THE APPROACH SLAB SHALL BE CONSTRUCTED TO PROVIDE A CONTINUOUS, SMOOTH RIDING SURFACE WITH THE BRIDGE DECK AND APPROACH ROADWAY. CONTRACTOR SHALL COORDINATE WITH ROADWAY PLANS. NO CONSTRUCTION ELEVATIONS WILL BE PROVIDED.

APPROACH SLAB IN A STAGE MAY BE CONSTRUCTED CONCURRENTLY WITH THAT PORTION OF THE BRIDGE DECK.

PROJECT NO. 15BPR.43

STANLY/MONTGOMERY COUNTY

STATION: 339+86.39 -L-

SHEET 1 OF 3



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE
APPROACH SLAB
REPLACEMENT

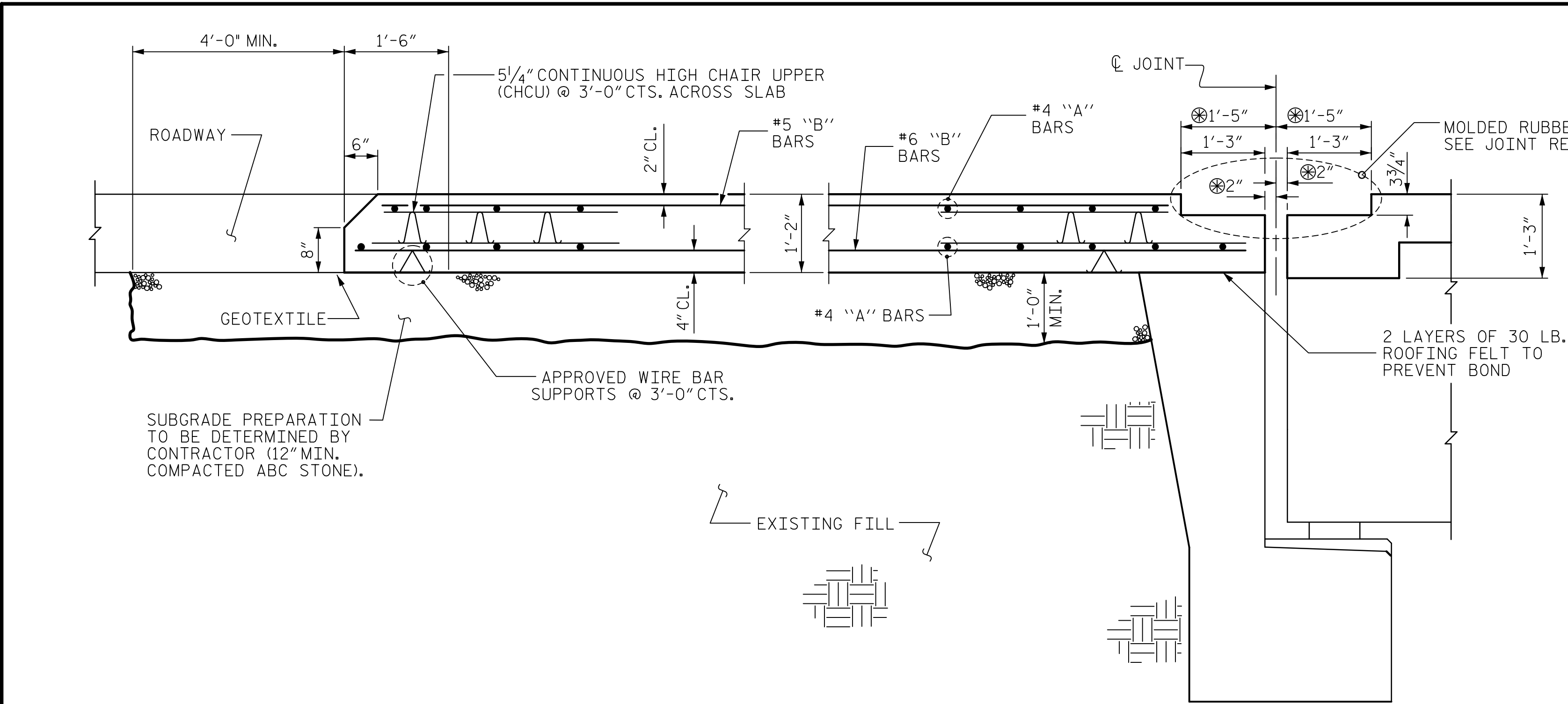
DRAWN BY : H.T. ROSEMOND DATE : 08/2018
CHECKED BY : G.R. COLS DATE : 08/2018
DESIGNED BY : H.T. ROSEMOND DATE : 08/2018
DESIGN CHECKED BY : G.R. COLS DATE : 08/2018

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REVISIONS						SHEET NO. S-34
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 37
2			4			

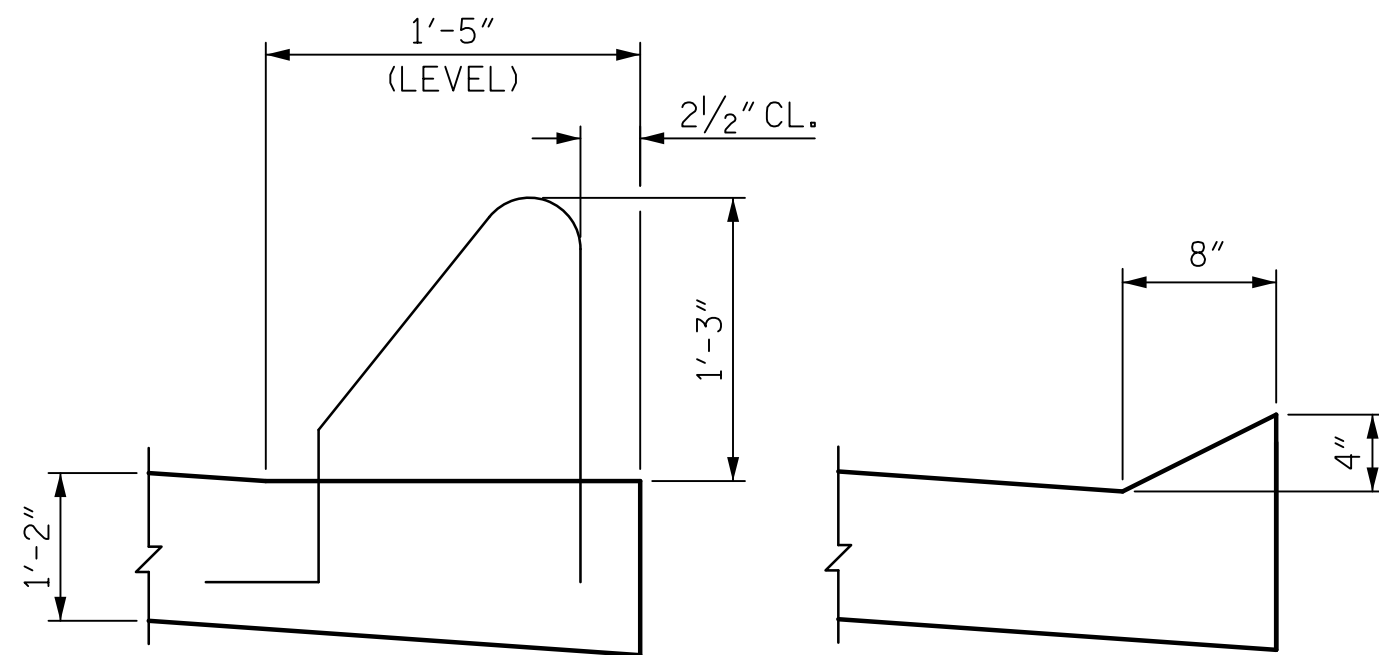
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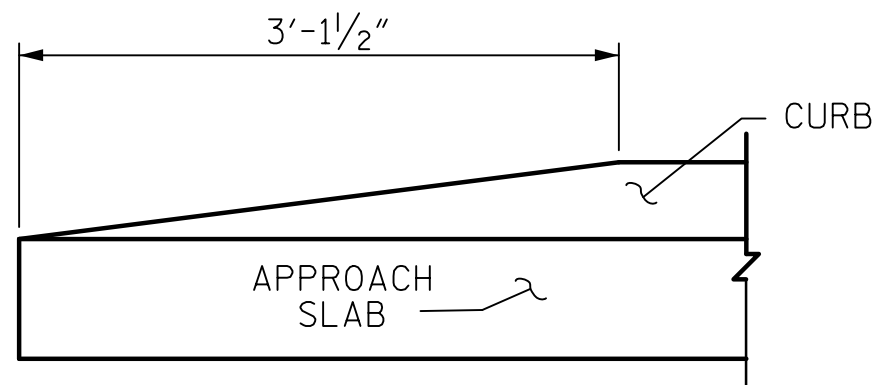
⊗ DIMENSION AT 60°F

SECTION THRU SLAB



SECTION K-K

SECTION N-N



END OF CURB WITHOUT
SHOULDER BERM GUTTER

BILL OF MATERIAL					
FOR ONE APP. SLAB (2 REQ'D)					
STAGE I					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	15	#4	STR	21'-4"	214
A2	15	#4	STR	21'-3"	213
*A3	9	#4	STR	22'-1"	133
A4	11	#4	STR	22'-0"	162
*B1	38	#5	STR	23'-0"	936
B2	38	#6	STR	24'-8"	1445
*B3	2	#5	STR	8'-5"	18
B4	2	#6	STR	9'-8"	29
REINFORCING STEEL				LBS.	1849
* EPOXY COATED REINFORCING STEEL				LBS.	1301
CONCRETE FOR DECK REPAIR				C. Y.	22
STAGE II					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A5	15	#4	STR	21'-6"	215
A6	15	#4	STR	21'-6"	215
*A7	9	#4	STR	22'-3"	134
A8	11	#4	STR	22'-3"	163
*B1	44	#5	STR	23'-0"	1032
B2	44	#6	STR	24'-8"	1593
*B3	2	#5	STR	8'-5"	18
B4	2	#6	STR	9'-8"	29
REINFORCING STEEL				LBS.	2000
* EPOXY COATED REINFORCING STEEL				LBS.	1399
CONCRETE FOR DECK REPAIR				C. Y.	24

SPlice LENGTHS		
BAR SIZE	EPOXY COATED	UNCOATED
#4	2'-0"	1'-9"
#5	2'-6"	2'-2"
#6	3'-10"	2'-7"

(EXCEPT AS NOTED
OTHERWISE IN PLANS)

PROJECT NO. 15BPR.43
STANLY/MONTGOMERY COUNTY
STATION: 339+86.39 -L-

SHEET 2 OF 3

DRAWN BY : H.T. ROSEMOND	DATE : 08/2018
CHECKED BY : G.R. COLS	DATE : 08/2018
DESIGNED BY : G.R. COLS	DATE : 08/2018
DESIGN CHECKED BY :	DATE :

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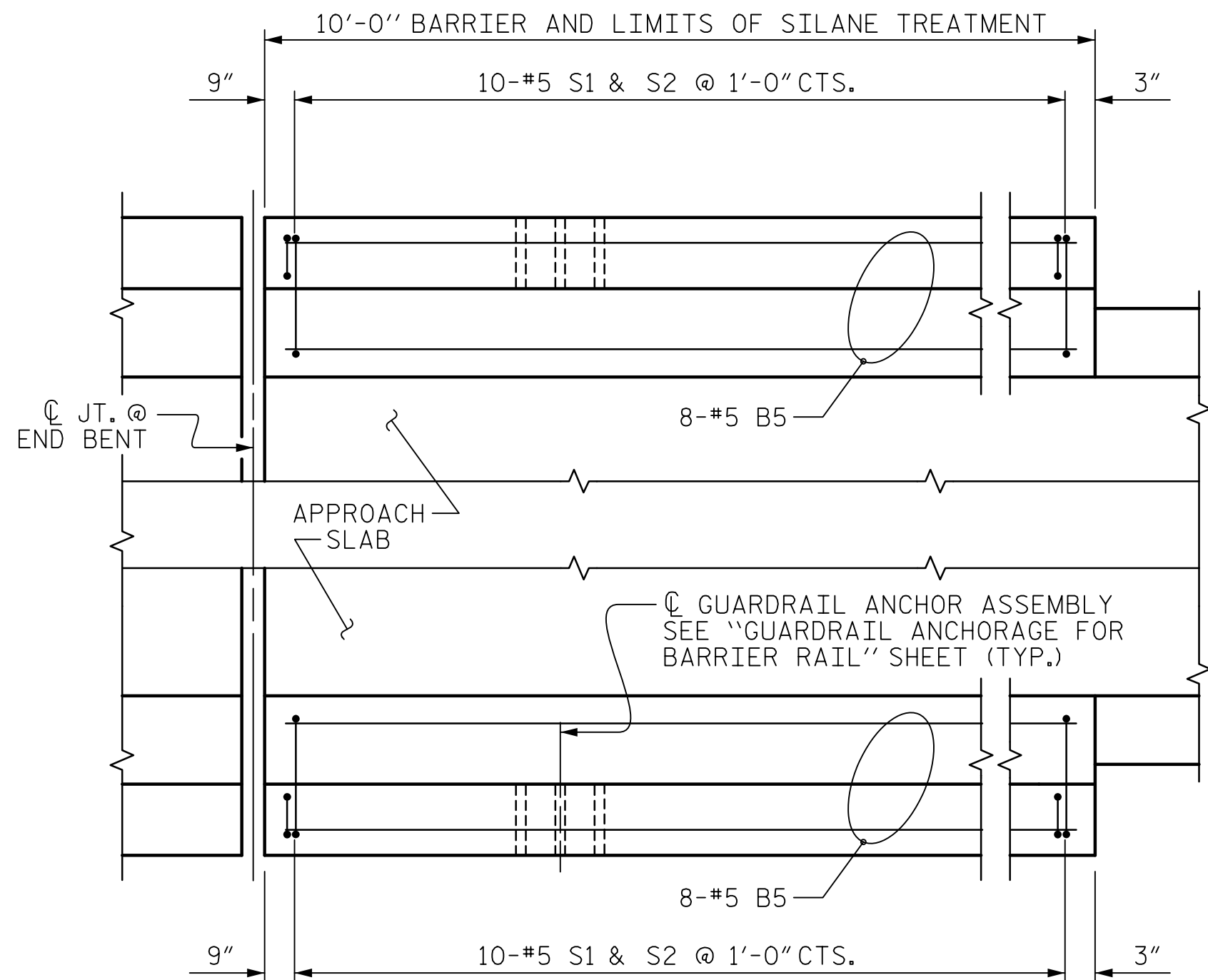
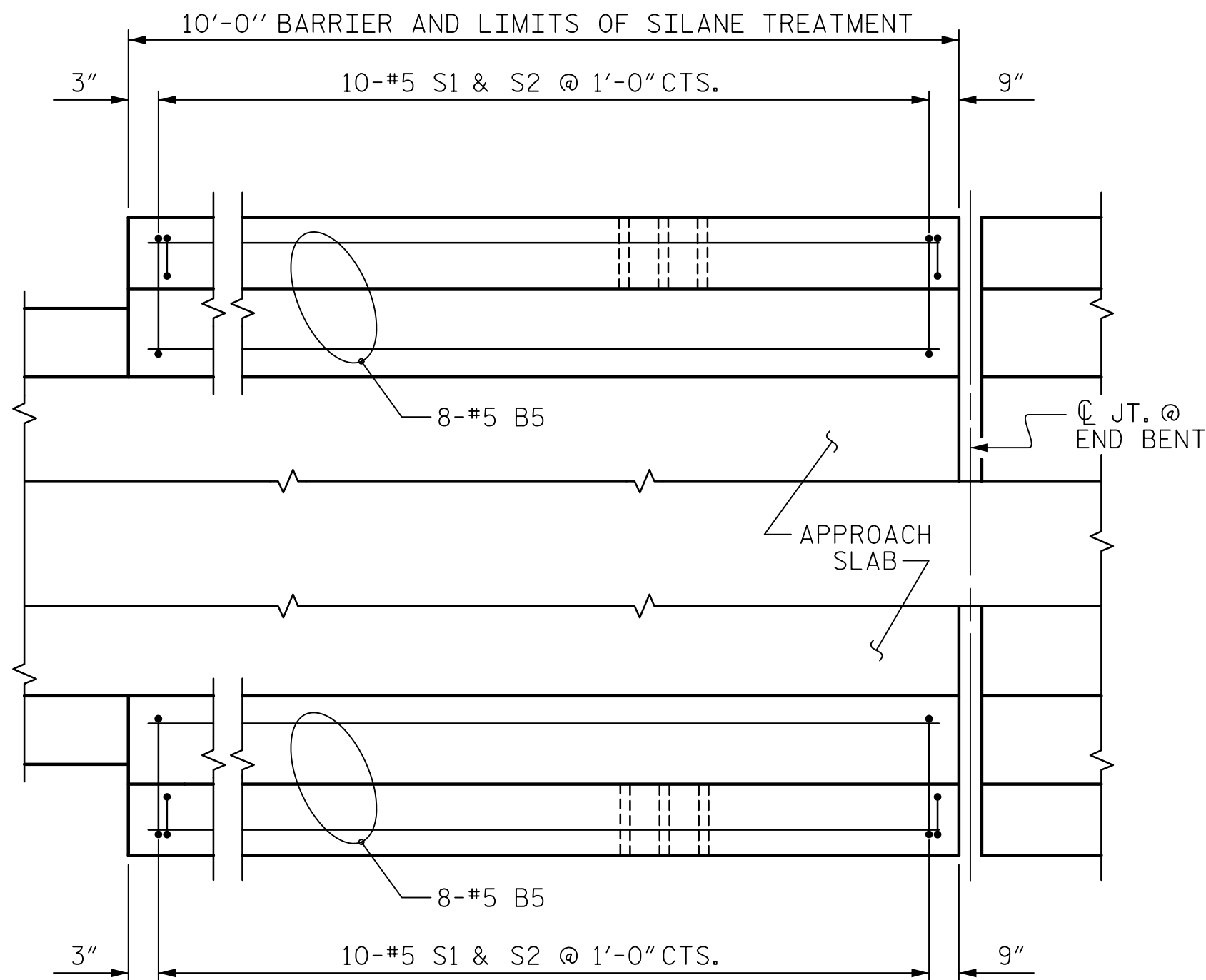
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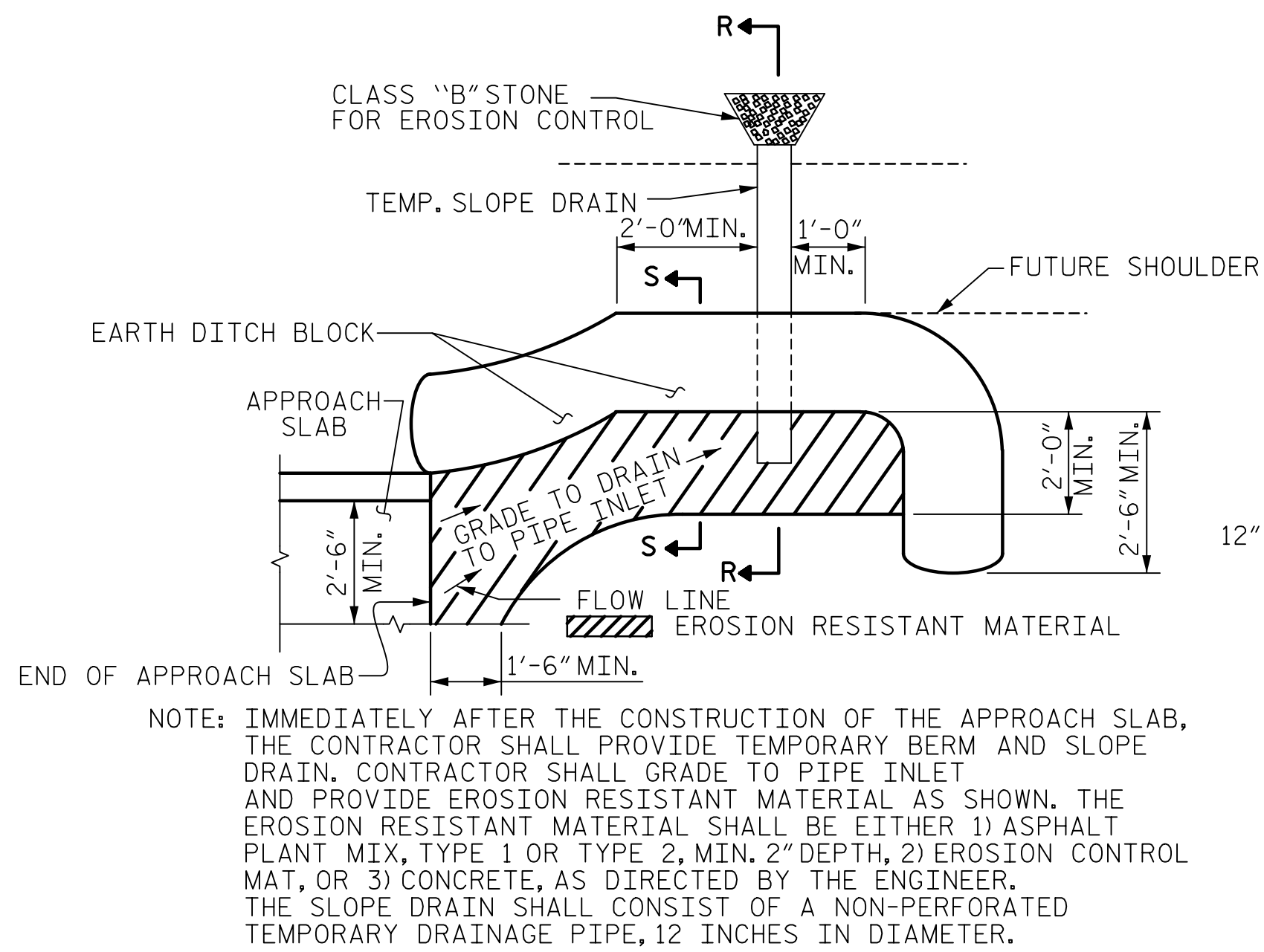
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
BRIDGE APPROACH SLAB REPLACEMENT					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 37

DATE: 09/06/2018
TIME: 3:45:13 PM

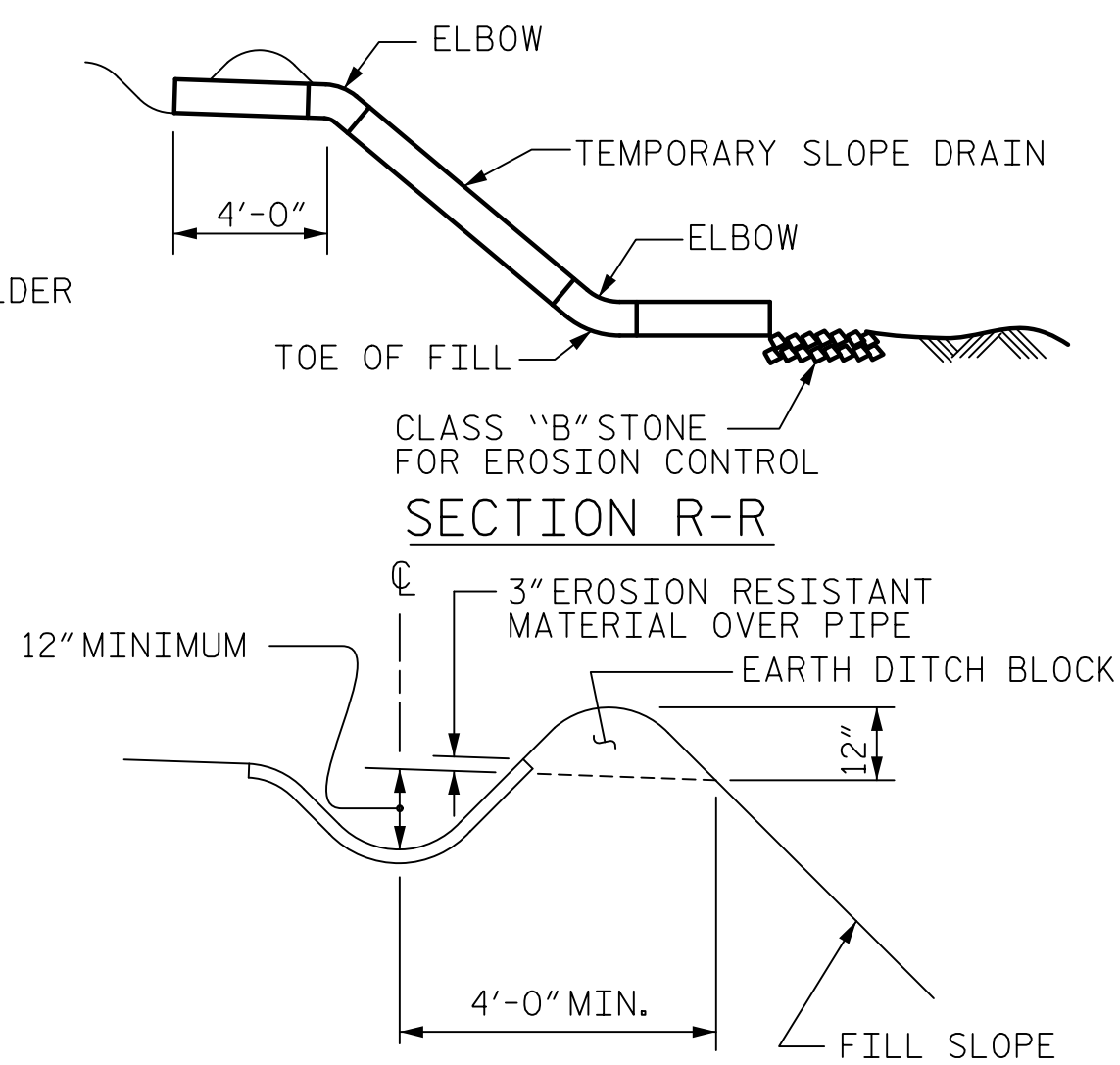
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DGN: N:\a\al\p20\Inracomnet.com\data\Pro\pca\60579718 - ASF Lake Tillery\900_CAD_GIS\900_CAD\70_MCDOT\TIP\Structures\04 Drawings\401_073_15BPR\43_SML\BAS3.dgn



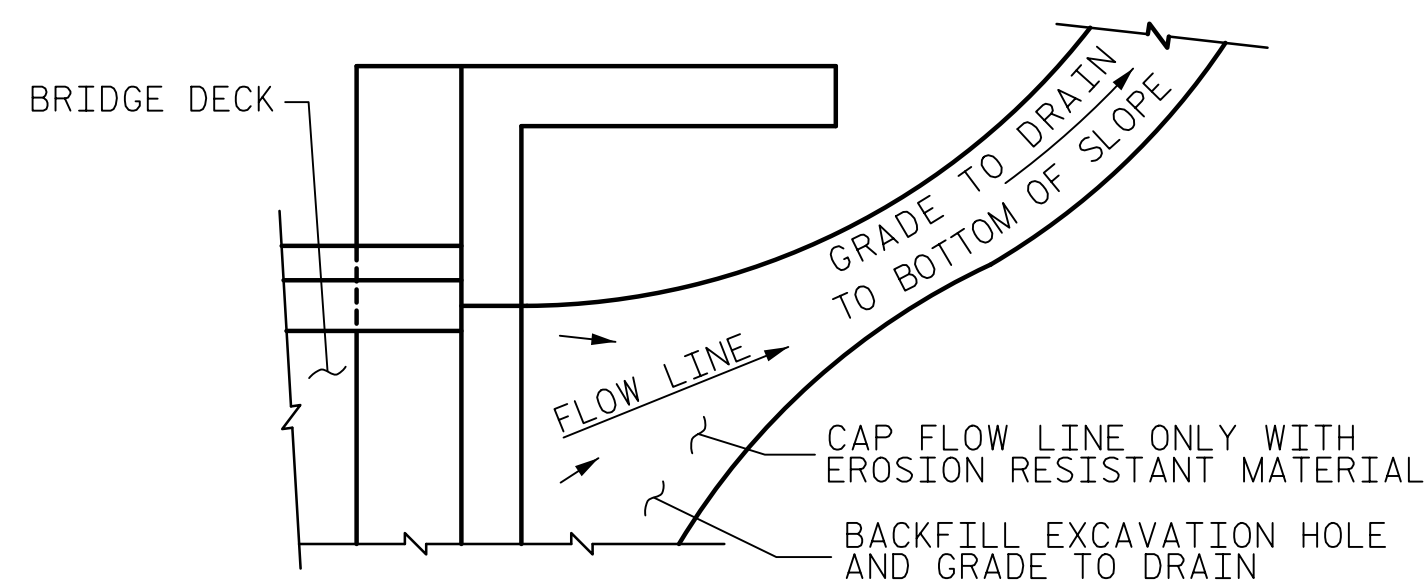
PLAN OF BARRIER RAIL



PLAN VIEW



SECTION S-S



NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT TO THE STRUCTURE. THE CONTRACTOR WILL BE REQUIRED TO REMOVE THESE MATERIALS PRIOR TO CONSTRUCTION OF THE APPROACH SLAB.

TEMPORARY DRAINAGE DETAIL

NOTES

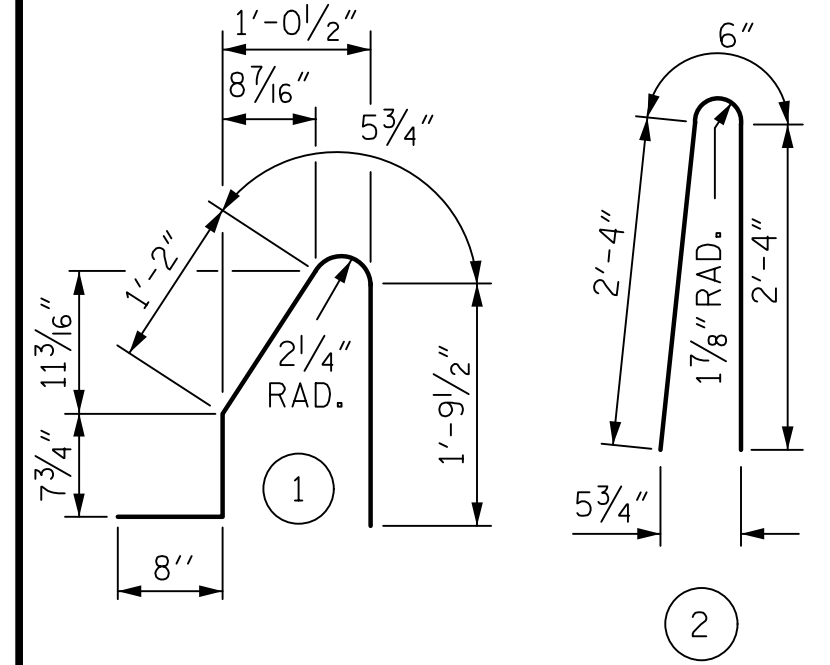
THE BARRIER RAIL ON EACH APPROACH SLAB SHALL NOT BE CAST UNTIL ALL APPROACH SLAB CONCRETE IN THAT STAGE HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

THE #5 S1 AND S2 BARS MAY BE BENT AS NECESSARY TO AVOID THE JOINT BLOCKOUT NOT SHOWN.

BARRIER ON APPROACH SLAB SHALL BE TREATED WITH SILANE CONSISTENT WITH THE LIMITS SHOWN FOR THE SUPERSTRUCTURE. SEE SPECIAL PROVISIONS.

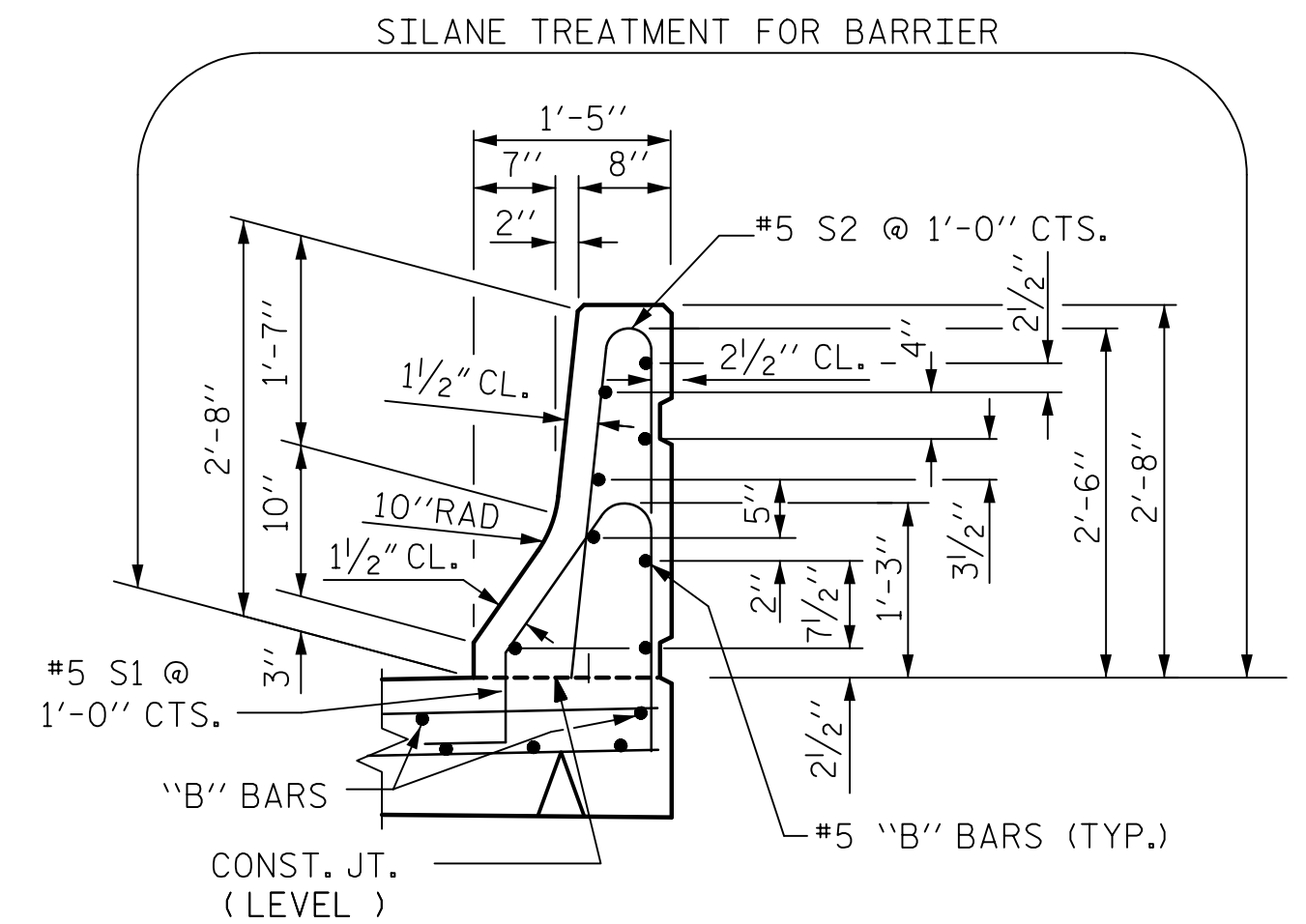
BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

BARRIER RAIL ONLY					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B5	32	#5	STR	9'-8"	323
* S1	40	#5	1	4'-9"	198
* S2	40	#5	2	5'-2"	216
* EPOXY COATED REINFORCING STEEL				LBS.	737
CONCRETE FOR DECK REPAIR				C. Y.	4.0
CONCRETE BARRIER RAIL				40 LIN. FT.	



SECTION THRU RAIL

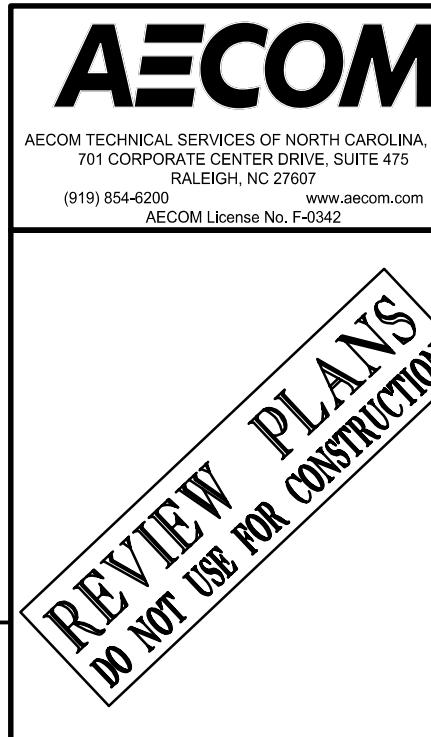
SEE JOINT REPLACEMENT SHEET #1 FOR ADDITIONAL DIMENSIONS. OMIT RECESS AT GUARDRAIL ANCHORAGE POINTS.

PROJECT NO. 15BPR.43

STANLY/MONTGOMERY COUNTY

STATION: 339+86.39 -L-

SHEET 3 OF 3



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

BRIDGE APPROACH SLAB DETAILS

REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			S-36
2			4			TOTAL SHEETS 37

DRAWN BY : H.T. ROSEMOND DATE : 09/2018
CHECKED BY : G.R. COLS DATE : 09/2018
DESIGNED BY : H.T. ROSEMOND DATE : 09/2018
DESIGN CHECKED BY : G.R. COLS DATE : 09/2018

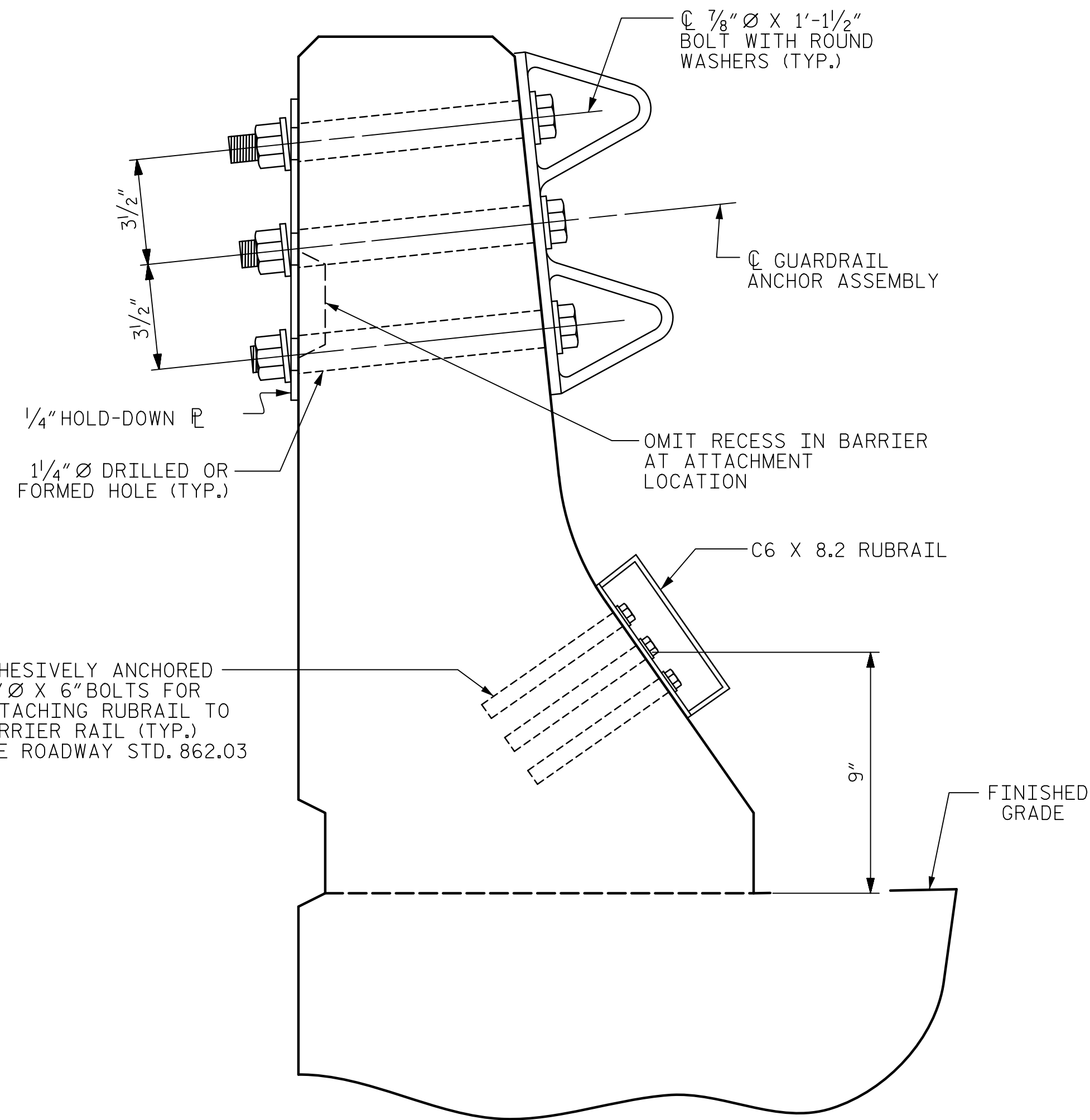
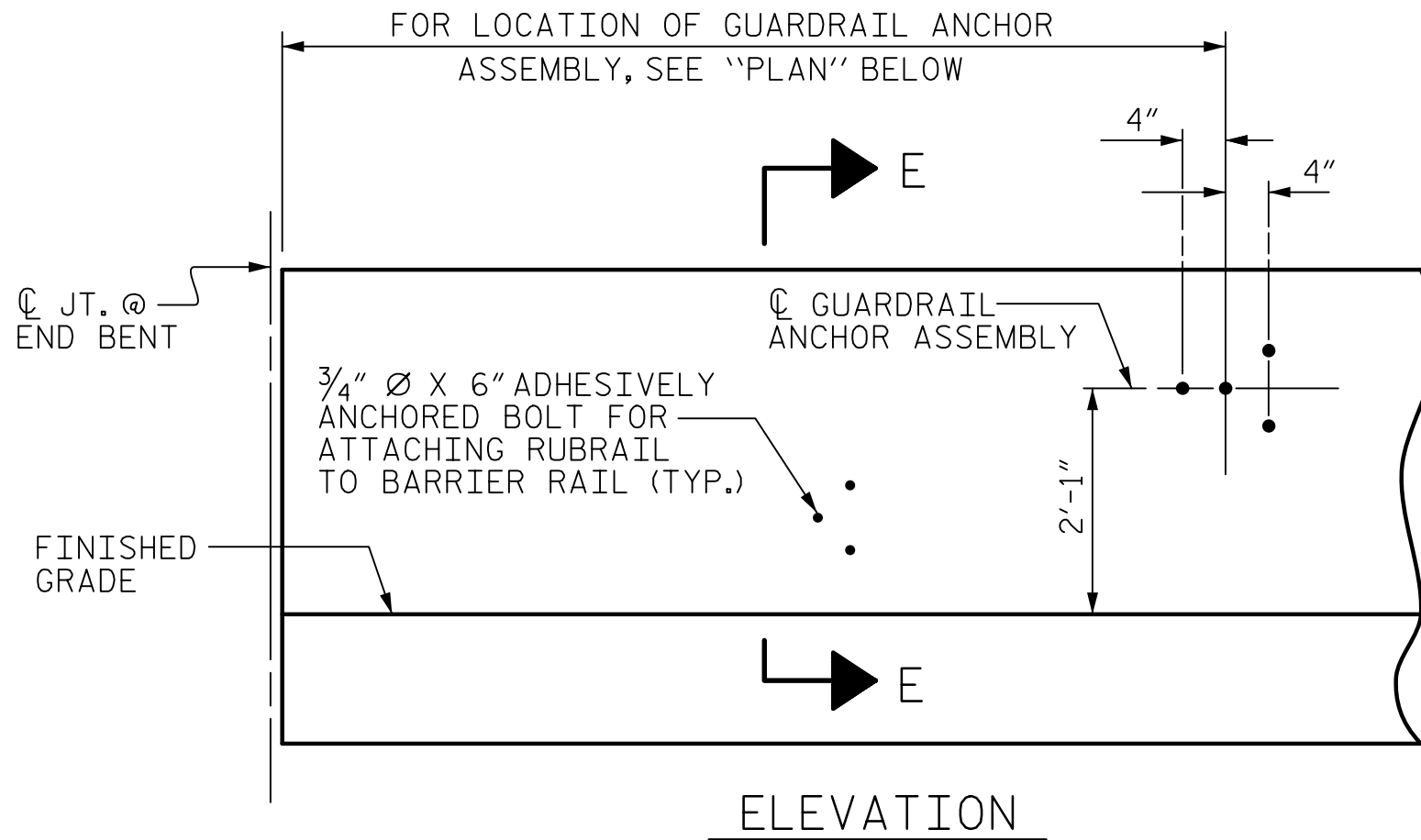
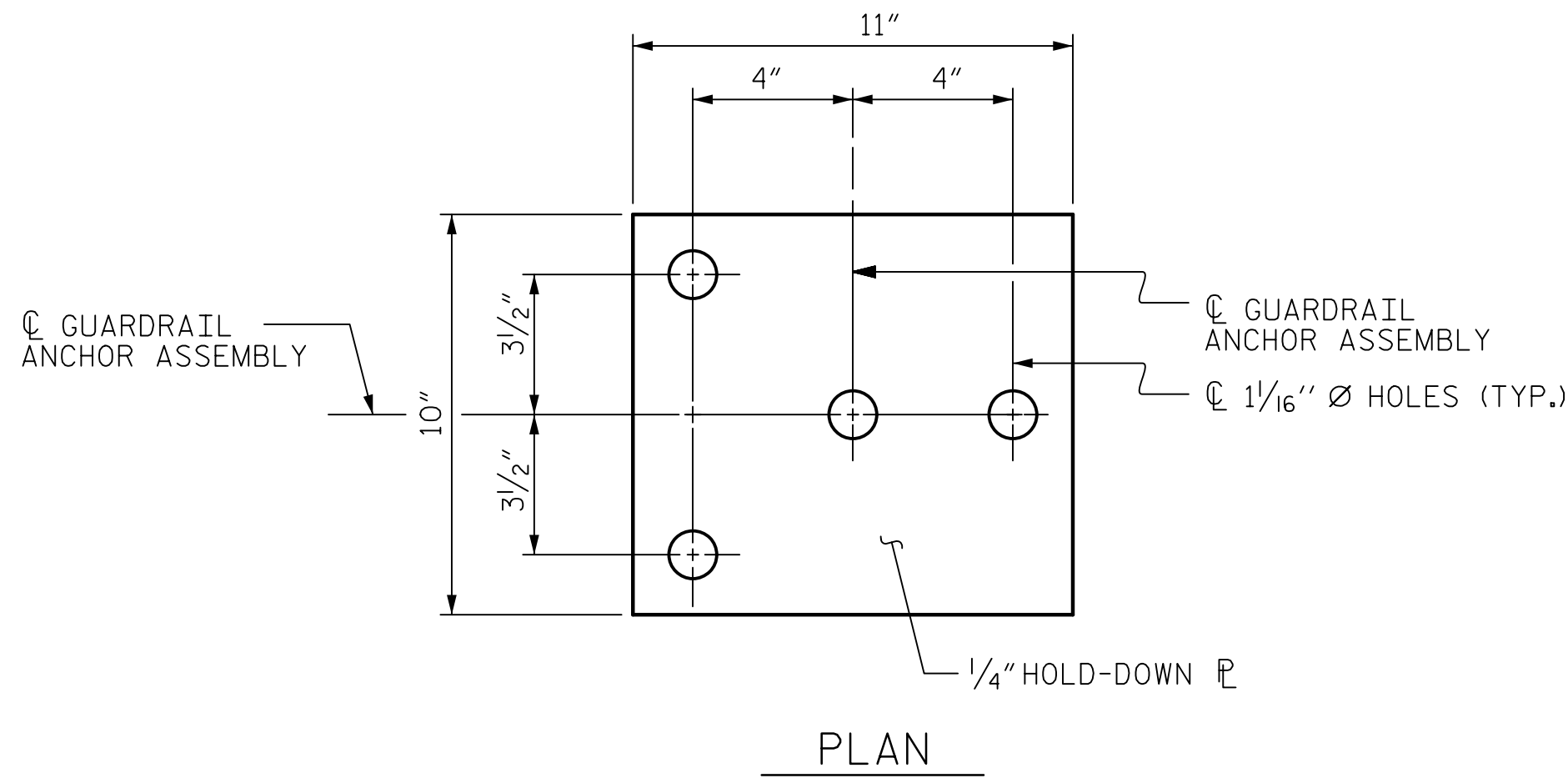
TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

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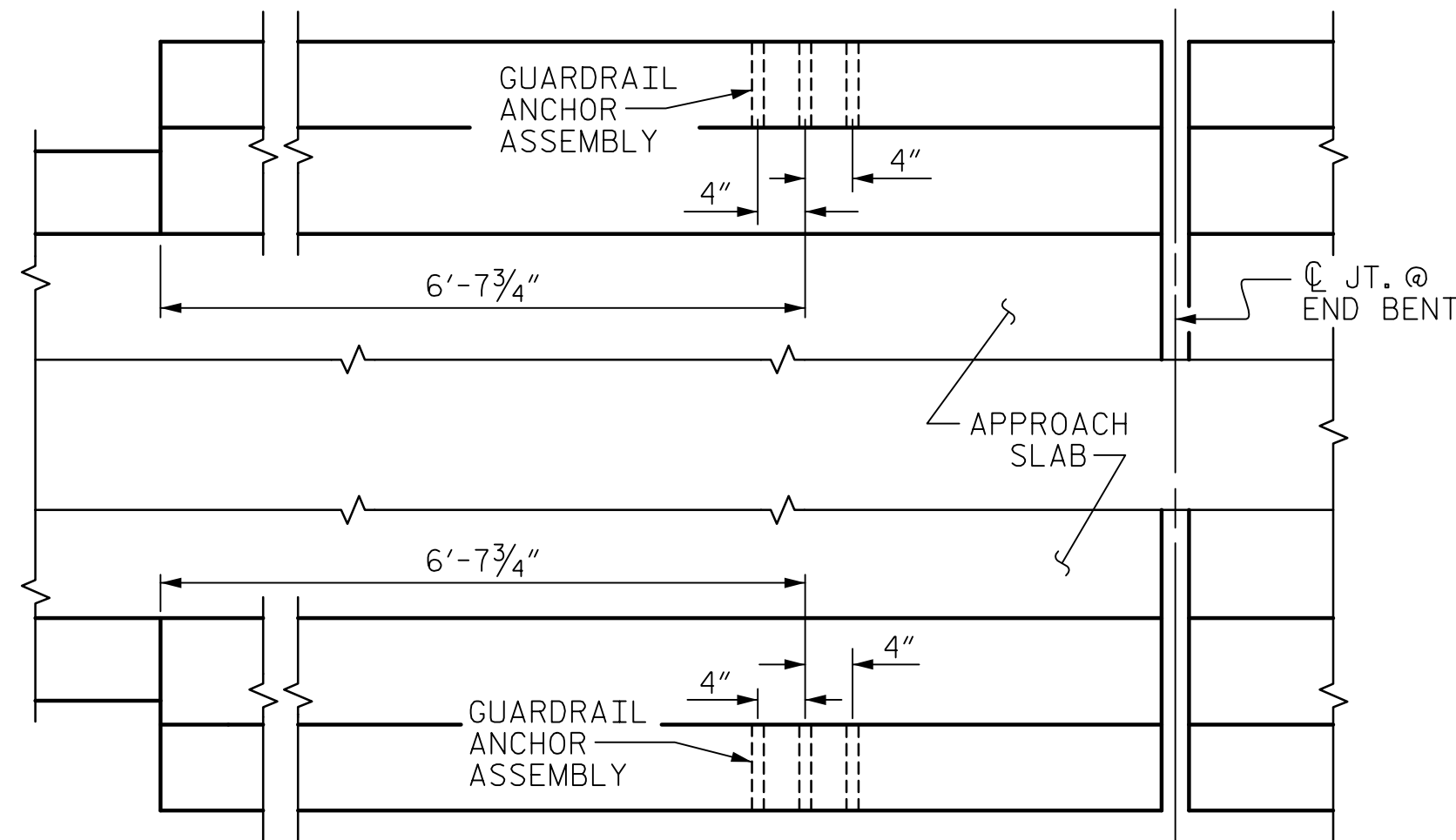
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SECTION E-E
GUARDRAIL ANCHOR ASSEMBLY DETAILS

DRAWN BY :	H.T. ROSEMOND	DATE :	09/2018
CHECKED BY :	G.R. COLS	DATE :	09/2018
DESIGNED BY :	G.R. COLS	DATE :	09/2018
DESIGN CHECKED BY :	K.J. MUENCH	DATE :	09/2018



LOCATION OF ANCHORS FOR GUARDRAIL

END BENT #1 SHOWN, END BENT #2 SIMILAR.

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD-DOWN PLATE AND 4 - 1/8" Ø BOLTS WITH NUTS AND WASHERS, RUBRAIL, AND ADHESIVELY ANCHORED BOLTS.

THE HOLD-DOWN PLATE SHALL CONFORM TO AASHTO M270 GRADE 36. AFTER FABRICATION, THE HOLD-DOWN PLATE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111.

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 1/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)

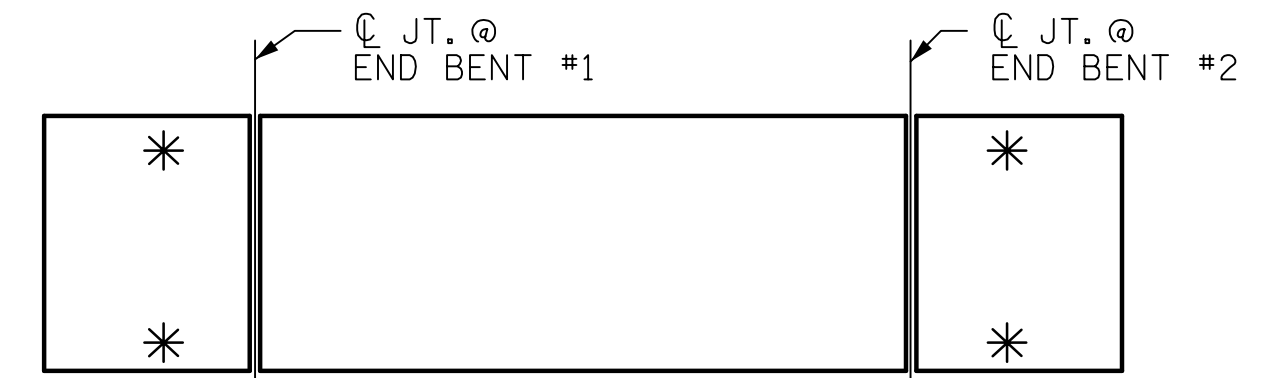
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

AFTER INSTALLATION, THE EXPOSED THREAD OF THE BOLT SHALL BE BURRED WITH A SHARP POINTED TOOL.

THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY CONSIDERED INCIDENTAL TO THE COST OF THE CONCRETE BARRIER RAIL.

THE 1 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.

THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE 3/4" Ø X 6" BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4" Ø BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE STANDARD SPECIFICATIONS. SEE ROADWAY STANDARD 862.03 FOR DETAILS AND LOCATION OF THE RUBRAIL.



SKETCH SHOWING POINTS OF ATTACHMENTS

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. 15BPR.43
STANLY/MONTGOMERY COUNTY
STATION: 339+86.39 -L-

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DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD

GUARDRAIL ANCHORAGE
FOR BARRIER RAIL

REVISIONS						SHEET NO. S-37
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 37
2			4			

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