

# 04 - STRUCTURE - BRIDGE 02514A

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REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER:  
**C. DAVIS / S. SLATER**  
 CHECKED BY:  
**M. EGAN**  
 SCALE AS NOTED


**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**

Filename: ... \SB\_MSH\_0094\_0252\_BR\_NO\_02514A\_IND-1.dgn

SIGNATURE/  
 BLOCK:  

 Cardinal Engineering Associates, Inc.  
 3 Colony Street  
 Meriden, CT 06451

PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

TOWN:  
**NEW LONDON/GROTON**  
 DRAWING TITLE:  
**INDEX OF DRAWINGS**

PROJECT NO.  
**94-252**  
 DRAWING NO.  
**SA-01**  
 SHEET NO.  
**04.001**

BRIDGE QUANTITIES		
ITEM	UNIT	QUANTITY
PMA S0.25	TON	3250
PMA S0.5	TON	4725
MATERIAL FOR TACK COAT	GAL	2975
REMOVAL OF EXISTING WEARING SURFACE	SY	59500
REMOVAL OF BRIDGE DECK CONCRETE	CY	30
JACKING EXISTING SUPERSTRUCTURE (SITE NO. 1)	LS	LS
REMOVAL OF PARAPET	CY	45
TEMPORARY WORK PLATORM	LS	LS
CLEAN EXISTING SCUPPERS	EA	71
EXTEND EXISTING WEEPHOLES	EA	18
REMOVAL AND REPLACEMENT OF EXISTING BRIDGE DRAINAGE SYSTEM	LF	89
SILICONE EXPANSION JOINT SYSTEM	LF	125
ASPHALTIC PLUG EXPANSION JOINT SYSTEM	CF	1445
STRIP SEAL EXPANSION JOINT SYSTEM FOR REHAB PROJECTS	LF	264
REPLACE MODULAR EXPANSION JOINT SEAL	LF	2000
REPLACE MODULAR EXPANSION JOINT CONTROL SPRING ASSEMBLY	EA	135
REPLACE MODULAR EXPANSION JOINT SUPPORT BAR BEARING	EA	36
REPLACE MODULAR EXPANSION JOINT CENTER BEAM	LF	80
CLEAN AND LUBRICATE EXISTING BEARINGS	EA	33
3" ELASTOMERIC COMPRESSION SEAL	LF	216
CLASS "S" CONCRETE	CY	30
CLASS "F" CONCRETE	CY	90
FULL DEPTH PATCH (HIGH EARLY STRENGTH CONCRETE)	CY	450
PARTIAL DEPTH PATCH	CF	8673
REPAIR BEARING PAD	EA	2
EPOXY INJECTION CRACK REPAIR	LF	35
DEFORMED STEEL BARS	LB	30
DEFORMED STEEL BARS (EPOXY COATED)	LB	30000
DOWEL BAR SPLICER SYSTEM - EPOXY COATED	EA	250
DRILLING AND GROUTING REINFORCING BARS	LF	10
BOLT REPLACEMENT	EA	192
CLEAN AND COAT EXPOSED REINFORCING STEEL	LF	575
REPAIR DEFECTIVE WELDS	LF	315
STRUCTURAL STEEL REPAIRS (SITE NO. 1)	CWT	105
LOCALIZED PAINT REMOVAL & FIELD PAINTING OF EXISTING STEEL	SF	1450
REMOVAL OF EXISTING STRUCTURAL STEEL	LS	LS
REPOINT MORTAR JOINTS	LF	5843
MEMBRANE WATERPROOFING (COLD LIQUID ELASTOMERIC)	SY	59300
RESET METAL POST	EA	1652
CONCRETE HAUNCH REMOVAL	LF	12421
MODIFY LIGHT STANDARD ANCHORAGES	EA	3
1" RIGID METAL CONDUIT IN STRUCTURE	LF	200
2" RIGID METAL CONDUIT IN STRUCTURE	LF	380
ABRASIVE BLAST CLEANING AND FIELD PAINTING OF BEAM ENDS (SITE NO. 1)	LS	LS
CLASS 1 CONTAINMENT AND COLLECTION OF SURFACE PREPARATION DEBRIS (SITE NO. 1)	LS	LS
PROTECTIVE COMPOUND FOR BRIDGES	SY	355
REMOVAL OF EXISTING OVERHEAD SIGNING	LS	LS
REMOVE AND RESET METAL BRIDGE RAIL (5'-0" HIGH)	LF	165
REMOVE AND RESET METAL BRIDGE RAIL	LF	180
PEENING COVER PLATE WELDS	EA	9
RESET IMPACT ATTENUATOR	EA	1
4" FIBERGLASS MULTIDUCT CONDUIT - EXTRA HEAVY WALL	LF	6500
18" X 12" X 8" CAST IRON JUNCTION BOX	EA	7
14" X 16" X 8" FIBERGLASS JUNCTION BOX	EA	13
PULL BOX	EA	2

NOTICE TO BRIDGE INSPECTORS	
<p>THE DEPARTMENT'S BRIDGE SAFETY PROCEDURES REQUIRE THIS BRIDGE TO BE INSPECTED FOR, BUT NOT LIMITED TO, ALL APPROPRIATE COMPONENTS INDICATED IN THE GOVERNING MANUALS FOR BRIDGE INSPECTION. ATTENTION MUST BE GIVEN TO INSPECTING THE FOLLOWING SPECIAL COMPONENTS AND DETAILS. (THE LISTING OF COMPONENTS FOR SPECIFIC ATTENTION SHALL NOT BE CONSTRUED TO REDUCE THE IMPORTANCE OF ANY OTHER COMPONENT OF THE STRUCTURE.) THE FREQUENCY OF INSPECTION OF THIS STRUCTURE SHALL BE IN ACCORDANCE WITH THE GOVERNING MANUALS FOR BRIDGE INSPECTION, UNLESS OTHERWISE DIRECTED BY THE MANAGER OF BRIDGE SAFETY AND EVALUATION.</p>	
COMPONENT OR DETAIL	DRAWING NUMBER REFERENCE
NONE	-

INSPECTION OF FIELD WELDS		
METHOD	UNIT	QUANTITY
ULTRASONIC	INCH	0
MAGNETIC PARTICLE	FEET	321

CONCRETE DISTRIBUTION		
SUPERSTRUCTURE	CY	861
SUBSTRUCTURE	CY	30
FOOTINGS	CY	0
TOTAL	CY	891

## GENERAL NOTES

SPECIFICATIONS: CONNECTICUT DEPARTMENT OF TRANSPORTATION FORM 816 (2004), SUPPLEMENTAL SPECIFICATIONS DATED JANUARY 2016 AND SPECIAL PROVISIONS.

DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGE DESIGN - 17TH EDITION, 2002 WITH INTERIM SPECIFICATIONS INCLUDING AND UP TO 2003 AS SUPPLEMENTED BY THE CONNECTICUT DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL (2003).

ALLOWABLE DESIGN STRESSES:  
 CLASS "S" CONCRETE BASED ON  $f'_c = 3,000$  PSI  
 CLASS "F" CONCRETE BASED ON  $f'_c = 4,000$  PSI

REINFORCEMENT (ASTM A615 GRADE 60) BASED ON  $F_y = 60,000$  PSI  
 STRUCTURAL STEEL (ASTM M270 GRADE 50T2) BASED ON  $F_y = 50,000$  PSI

THE SPECIFIED CONCRETE STRENGTH USED IN DESIGN,  $f'_c$ , OF THE CONCRETE COMPONENTS IS NOTED ABOVE. THE MINIMUM COMPRESSIVE STRENGTH OF THE CONCRETE MIX IN THE CONSTRUCTED COMPONENTS SHALL CONFORM TO THE REQUIREMENTS OF "SECTION 6.01 CONCRETE FOR STRUCTURES".

LIVE LOAD: AASHTO HS20 LOADING (NEW ELEMENTS ONLY)

FUTURE PAVING ALLOWANCE: NONE

STRUCTURAL STEEL: SEE DWG. NO. SA-57 FOR DESIGNATIONS AND REQUIREMENTS.

PAINT: SELECT BEARINGS AND BEAM ENDS, AS DETAILED ON THE PLANS, SHALL BE CLEANED AND PAINTED UNDER THE ITEM "ABRASIVE BLAST CLEANING AND FIELD PAINTING OF BEAM ENDS (SITE NO. 1)". THE CONTRACTOR SHALL ALSO PERFORM LOCALIZED FIELD PAINTING OF THE EXISTING STRUCTURAL STEEL AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER, WHICH WILL BE PAID FOR UNDER THE ITEM "LOCALIZED PAINT REMOVAL AND FIELD PAINTING OF EXISTING STEEL." THE COLOR OF THE TOP COAT SHALL CONFORM TO FEDERAL STANDARD 595A COLOR NO. 35526 LIGHT BLUE.

PMA OVERLAY: THIS SHALL CONSIST OF TWO LIFTS, THE FIRST SHALL BE PMA S0.25 (1" THICK) AND THE SECOND SHALL BE PMA S0.5 (1½" THICK).

SUBSTRUCTURE ELEVATIONS: ELEVATIONS SHOWN ARE N.A.V.D. 1988 ELEVATIONS CONVERTED FROM ORIGINAL N.G.V.D. 1929 ELEVATIONS TAKEN FROM ORIGINAL AS-BUILT PLANS DATED 1969 & 1970.

DIMENSIONS: ALL DIMENSIONS SHOWN ON THE PLANS ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED. ALL ELEVATIONS ARE GIVEN IN FEET. WHEN ELEVATIONS ARE GIVEN TO LESS THAN THREE DECIMAL PLACES, THE OMITTED DIGITS SHALL BE ASSUMED TO BE ZERO.

EXISTING DIMENSIONS: DIMENSIONS OF THE EXISTING STRUCTURE SHOWN ON THESE PLANS ARE FOR GENERAL REFERENCE ONLY. THEY HAVE BEEN TAKEN FROM THE ORIGINAL DESIGN DRAWINGS AND ARE NOT GUARANTEED. THE CONTRACTOR SHALL TAKE ALL FIELD MEASUREMENTS NECESSARY TO ASSURE PROPER FIT OF THE FINISHED WORK AND SHALL ASSUME FULL RESPONSIBILITY FOR THEIR ACCURACY. WHEN SHOP DRAWINGS BASED ON FIELD MEASUREMENTS ARE SUBMITTED FOR APPROVAL, THE FIELD MEASUREMENTS SHALL ALSO BE SUBMITTED FOR REFERENCE BY THE REVIEWER.

DEBRIS SHIELDS TO BE INSTALLED ON BRIDGE FOR UNDER DECK WORK ASSOCIATED WITH ITEMS "CLEAN AND COAT EXPOSED REINFORCING STEEL", "FULL DEPTH PATCH" AND "CONCRETE HAUNCH REMOVAL". DEBRIS SHIELDS SHALL BE PAID FOR UNDER THE RESPECTIVE ITEMS, FOR INFORMATION SEE SPECIAL PROVISIONS. SEE DRAWINGS SA-03 TO SA-05 FOR ADDITIONAL NOTES REGARDING THE INSTALLATION OF DEBRIS SHIELDS ON BRIDGE.

WORK PLATFORM: WORK PLATFORM IS BEING PROVIDED FOR THE RECONSTRUCTION OF MODULAR JOINTS AND BEING PAID FOR UNDER THE ITEM "TEMPORARY WORK PLATFORM", ITEM # 0503967A, SEE SPECIAL PROVISION. WORK PLATFORMS AND CONTRACTOR ACCESS REQUIRED FOR ALL OTHER WORK SHALL BE PAID FOR AND MEET THE REQUIREMENTS AS INDICATED UNDER THOSE ITEMS.

EXISTING PLANS: PLANS FOR THE EXISTING BRIDGE ARE AVAILABLE AT THE CONNECTICUT DEPARTMENT OF TRANSPORTATION PLAN ROOM, 160 PASCOENE PLACE, NEWINGTON. THE ORIGINAL SUBSTRUCTURE WAS CONSTRUCTED UNDER PROJECT NO. 94-95. THE ORIGINAL SUPERSTRUCTURE WAS CONSTRUCTED UNDER PROJECT NO. 94-106 AND THE BRIDGE WAS REHABILITATED UNDER PROJECT NO. 94-171.

## CONCRETE NOTES

CLASS "F" CONCRETE: CLASS "F" CONCRETE SHALL BE USED FOR RE-CONSTRUCTED PARAPETS AND DECK SECTIONS AT OVERHEAD SIGN SUPPORT ANCHORAGES.

CLASS "S" CONCRETE: CLASS "S" CONCRETE SHALL BE USED FOR PATCHING SUBSTRUCTURE COMPONENTS.

DECK REPAIRS: SURFACE REPAIRS TO THE DECK UNDERSIDE SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIAL PROVISION "CLEAN AND COAT EXPOSED REINFORCING STEEL". FULL DEPTH PATCHING (AS REQUIRED) AS DIRECTED BY THE ENGINEER SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIAL PROVISION "FULL DEPTH PATCH (HIGH EARLY STRENGTH CONCRETE)". PARTIAL DEPTH PATCHING (AS REQUIRED) AS DIRECTED BY THE ENGINEER SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIAL PROVISION "PARTIAL DEPTH PATCH".

JOINT SEAL: SEE SPECIAL PROVISIONS

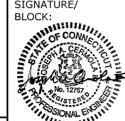
EXPOSED EDGES: EXPOSED EDGES OF CONCRETE SHALL BE BEVELED 1" x 1" UNLESS DIMENSIONED OTHERWISE.

CONCRETE COVER: ALL REINFORCEMENT SHALL HAVE TWO INCHES COVER UNLESS DIMENSIONED OTHERWISE.

REINFORCEMENT: ALL REINFORCEMENT SHALL BE ASTM A615 GRADE 60.

CONSTRUCTION JOINTS: CONSTRUCTION JOINTS, OTHER THAN THOSE SHOWN ON THE PLANS, WILL NOT BE PERMITTED WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.

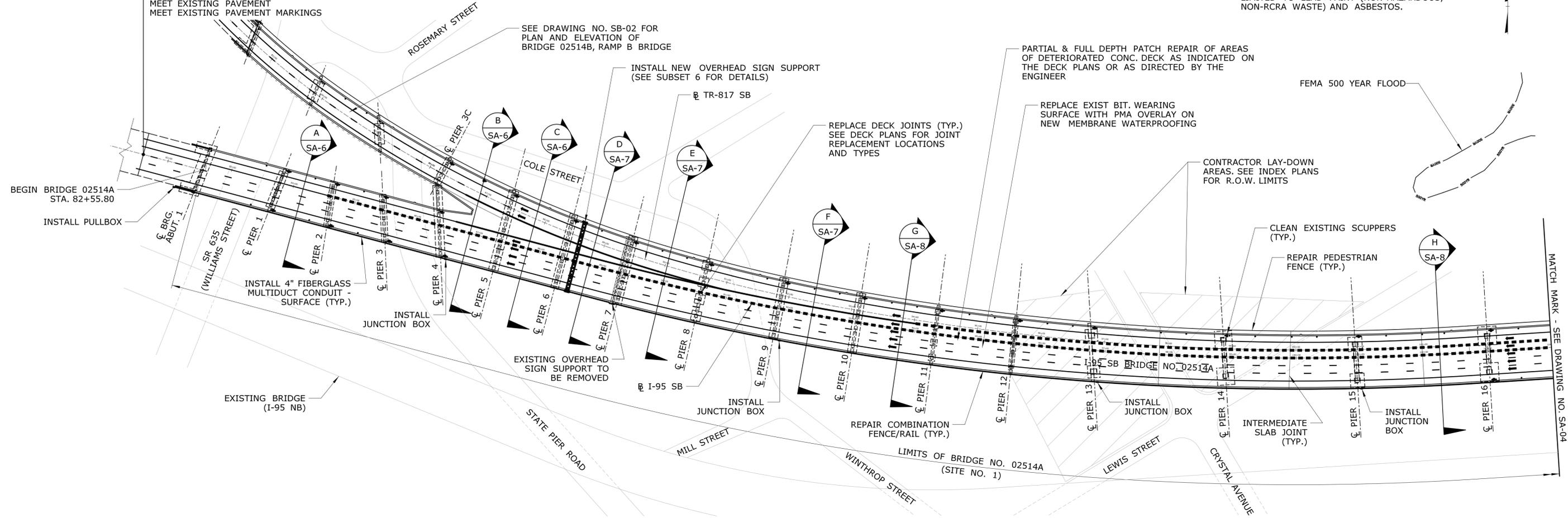
GALVANIZED REINFORCING BARS: THE REINFORCEMENT IN THE JOINT HEADER SHALL BE GALVANIZED.

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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	Filename: ...SB_MSH_0094_0252_BR_NO_02514A_GEN_NOTES.dgn		

**BEGIN STATE PROJECT NO. 94-252**

STA. 81+55  
 CUT BITUMINOUS CONCRETE PAVEMENT  
 BEGIN MILLING AND REPAVING  
 MEET EXISTING PAVEMENT  
 MEET EXISTING PAVEMENT MARKINGS

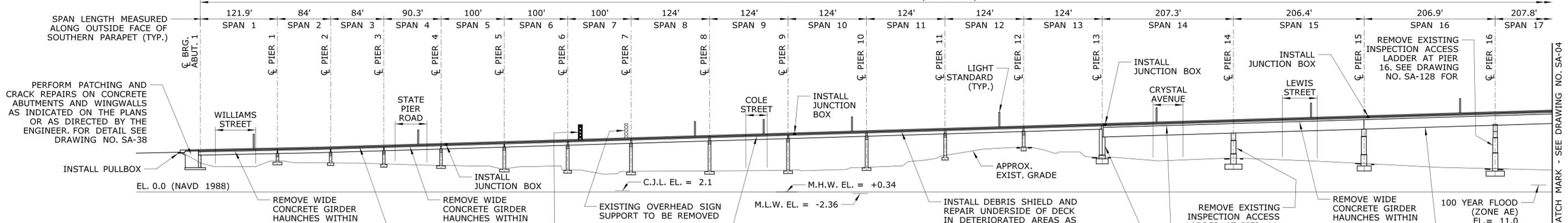
NOTE: NON-HAZARDOUS AND HAZARDOUS MATERIALS SHALL BE STORED ABOVE THE 500 YEAR FLOOD PLAIN, INCLUDING, BUT NOT LIMITED TO LEAD PAINT (NON-HAZARDOUS, NON-RCRA WASTE) AND ASBESTOS.



\*PIER 3C NOT SHOWN FOR CLARITY

**PLAN**

LIMITS OF BRIDGE NO. 02514A (SITE NO. 1)



**ELEVATION**

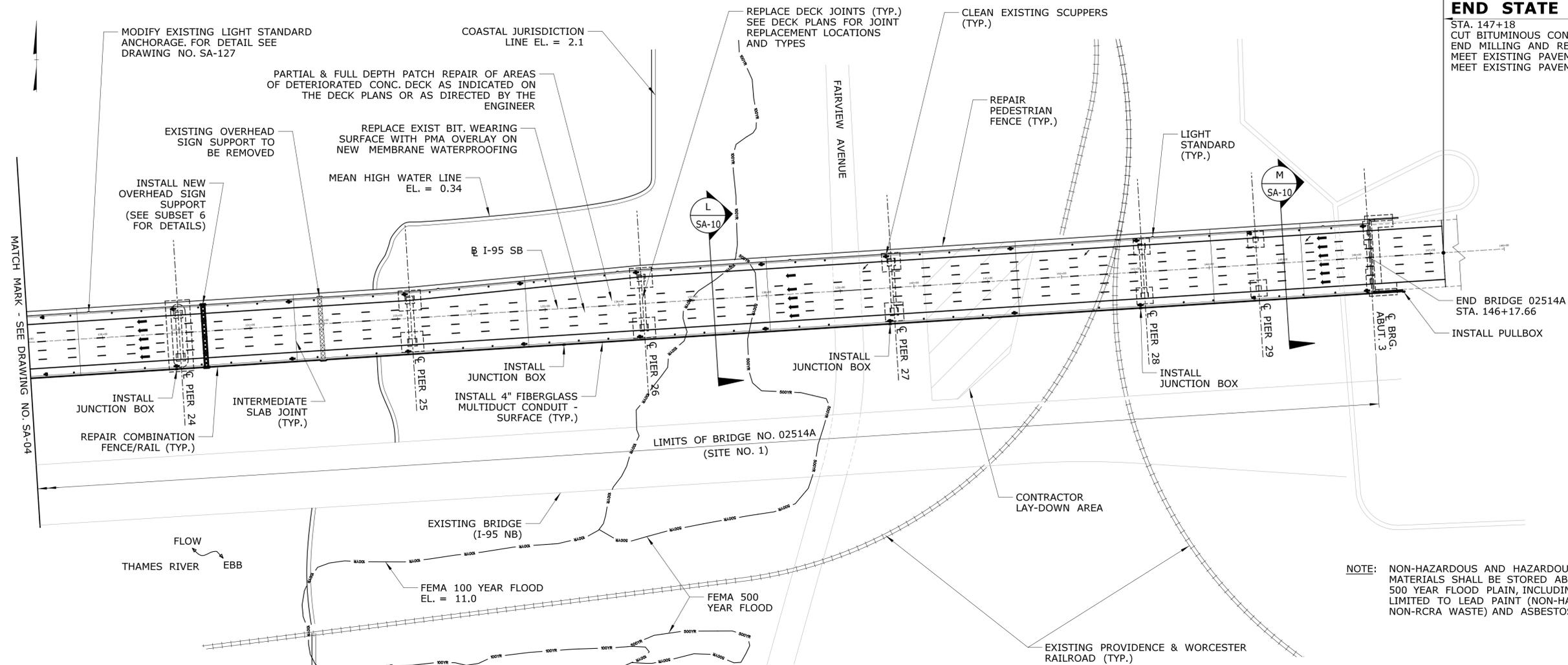
**DEBRIS SHIELD NOTES:**  
 1. MINIMUM ELEVATION OF DEBRIS SHIELDS:  
 SPANS 1-7 = 57.0  
 SPANS 8-12 = 73.4  
 SPANS 13-16 = 82.5  
 SPAN 17 = 77.7  
 2. ALL ELEVATIONS ARE BASED ON NAVD 1988  
 3. ANY DEBRIS SHIELD AND SCAFFOLDING/WORK PLATFORM SHALL BE INSTALLED ABOVE THE 100 YEAR FEMA FLOOD ELEVATION AS WILL ALL STAGING AND STORAGE LOCATIONS FOR EQUIPMENT, MATERIAL AND DEBRIS FOR CONTRACTOR OPERATIONS INCLUDING PAINT REMOVAL.

NOTE "A": FOR CONCRETE GIRDER HAUNCH REMOVAL DETAILS, SEE DRAWING NO. SA-100

DESIGNER/DRAFTER: <b>C. DAVIS</b> CHECKED BY: <b>M. EGAN</b> SCALE IN FEET 0 80 160 SCALE 1"=80'		STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451		PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>		TOWN: <b>NEW LONDON/GROTON</b>		PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-03</b> SHEET NO. <b>04.003</b>	
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016		GENERAL PLAN AND ELEVATION			

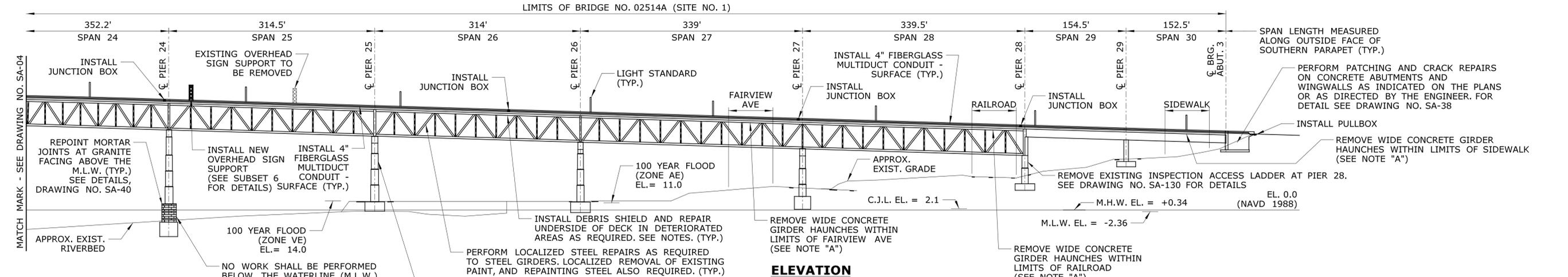


STA. 147+18  
 CUT BITUMINOUS CONCRETE PAVEMENT  
 END MILLING AND REPAVING  
 MEET EXISTING PAVEMENT  
 MEET EXISTING PAVEMENT MARKINGS



**PLAN**

**NOTE:** NON-HAZARDOUS AND HAZARDOUS MATERIALS SHALL BE STORED ABOVE THE 500 YEAR FLOOD PLAIN, INCLUDING, BUT NOT LIMITED TO LEAD PAINT (NON-HAZARDOUS, NON-RCRA WASTE) AND ASBESTOS.

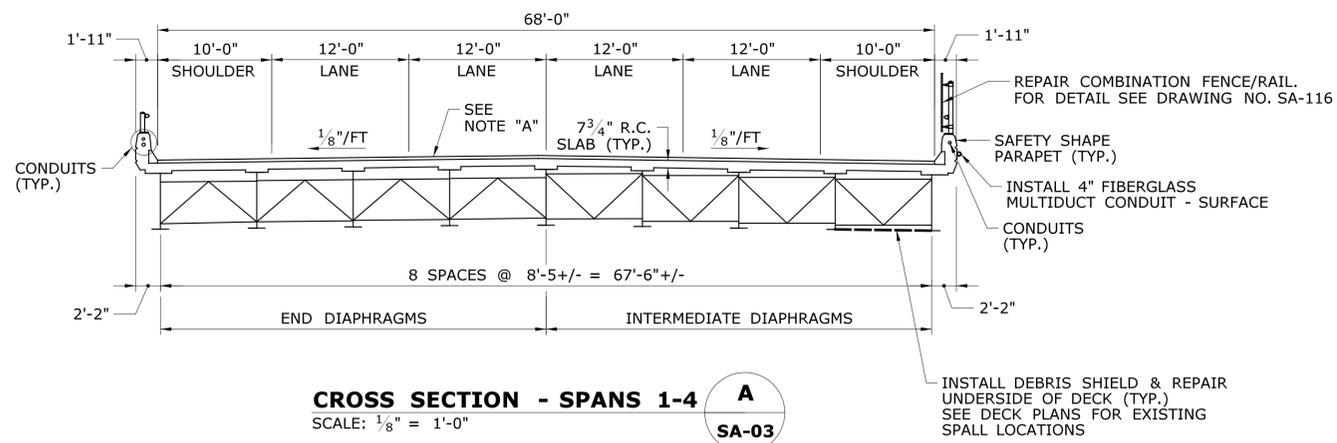


**ELEVATION**

**NOTE "A":** FOR CONCRETE GIRDER HAUNCH REMOVAL DETAILS, SEE DRAWING NO. SA-100

- DEBRIS SHIELD NOTES:**
1. MINIMUM ELEVATION OF DEBRIS SHIELDS:  
 SPAN 25 = 80.1  
 SPANS 26-27 = 85.4  
 SPANS 28-30 = 76.0
  2. ALL ELEVATIONS ARE BASED ON NAVD 1988
  3. ANY DEBRIS SHIELD AND SCAFFOLDING/WORK PLATFORM SHALL BE INSTALLED ABOVE THE 100 YEAR FEMA FLOOD ELEVATION AS WELL ALL STAGING AND STORAGE LOCATIONS FOR EQUIPMENT, MATERIAL AND DEBRIS FOR CONTRACTOR OPERATIONS INCLUDING PAINT REMOVAL.
  4. IN RIVER SPANS, DEBRIS SHIELD TO BE INSTALLED BY ACCESS EQUIPMENT ON BRIDGE DECK OR BY RIGGING.

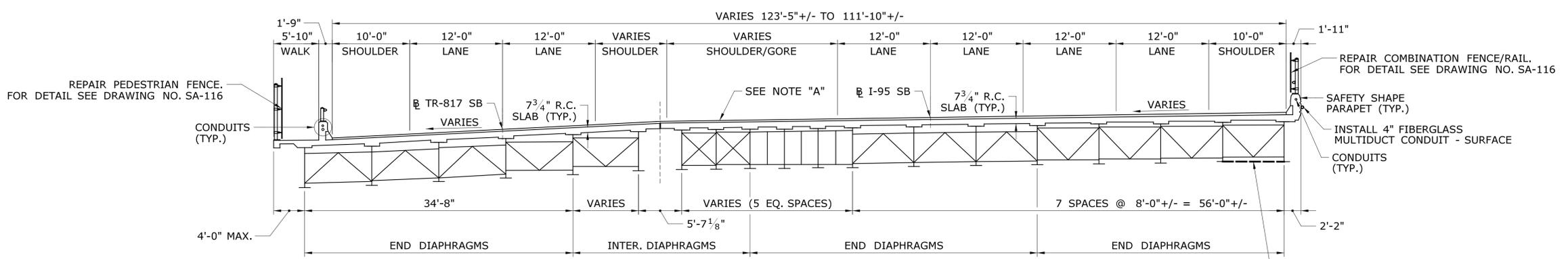
DESIGNER/DRAFTER: <b>C. DAVIS</b> CHECKED BY: <b>M. EGAN</b> SCALE IN FEET 0 80 160 SCALE 1"=80'		STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION		PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>		TOWN: <b>NEW LONDON/GROTON</b>		PROJECT NO. <b>94-252</b>	
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**CROSS SECTION - SPANS 1-4**  
SCALE: 1/8" = 1'-0"  
**A**  
**SA-03**

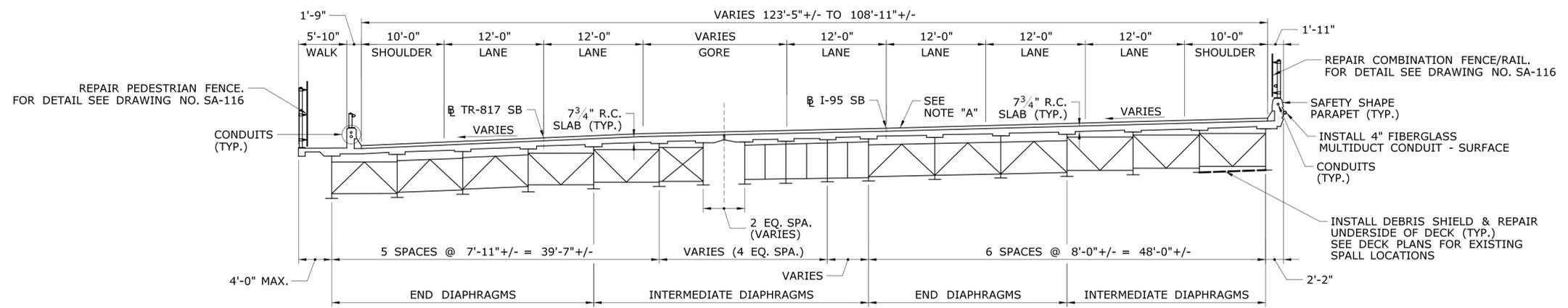
NOTE "A": REMOVE EXISTING 2.5"+/- BITUMINOUS WEARING SURFACE. PATCH CONCRETE DECK AS REQUIRED. PLACE MEMBRANE WATERPROOFING. REPAVE WITH 2.5" OF PMA FOR ENTIRE LIMITS OF BRIDGE. MAINTAIN EXISTING CROSS SLOPE.

INSTALL DEBRIS SHIELD & REPAIR UNDERSIDE OF DECK (TYP.) SEE DECK PLANS FOR EXISTING SPALL LOCATIONS



**CROSS SECTION - SPAN 5**  
SCALE: 1/8" = 1'-0"  
**B**  
**SA-03**

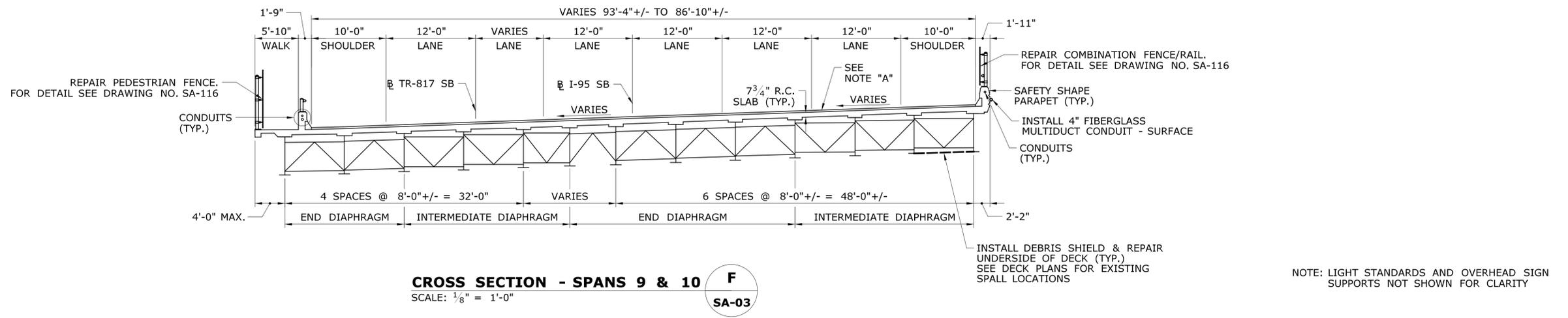
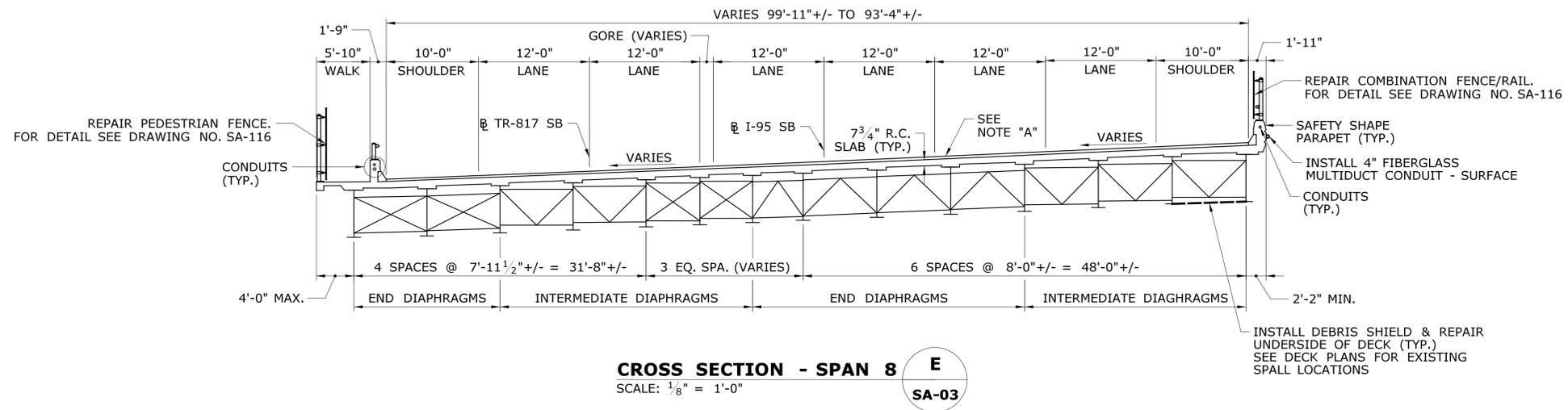
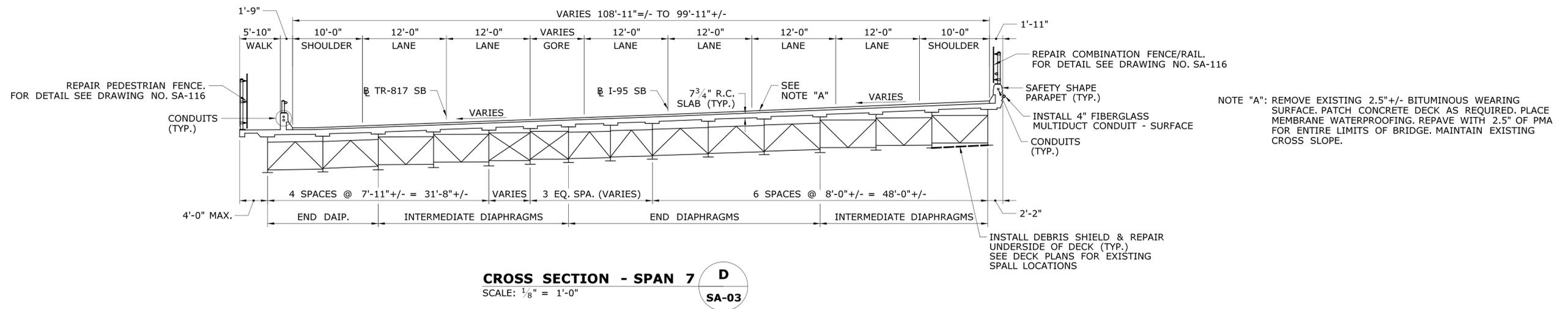
INSTALL DEBRIS SHIELD & REPAIR UNDERSIDE OF DECK (TYP.) SEE DECK PLANS FOR EXISTING SPALL LOCATIONS



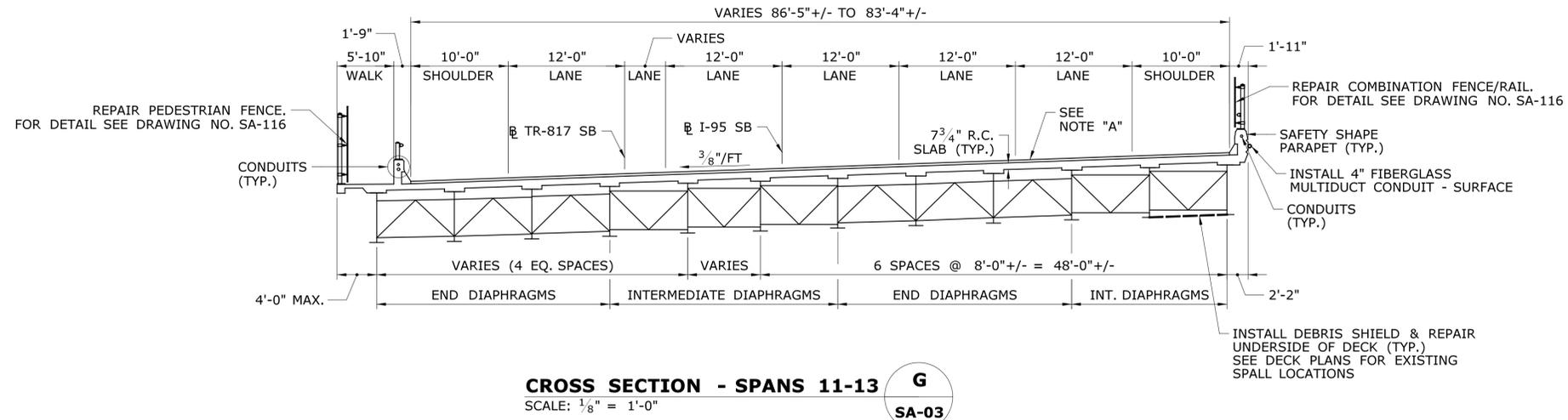
**CROSS SECTION - SPAN 6**  
SCALE: 1/8" = 1'-0"  
**C**  
**SA-03**

NOTE: LIGHT STANDARDS AND OVERHEAD SIGN SUPPORTS NOT SHOWN FOR CLARITY

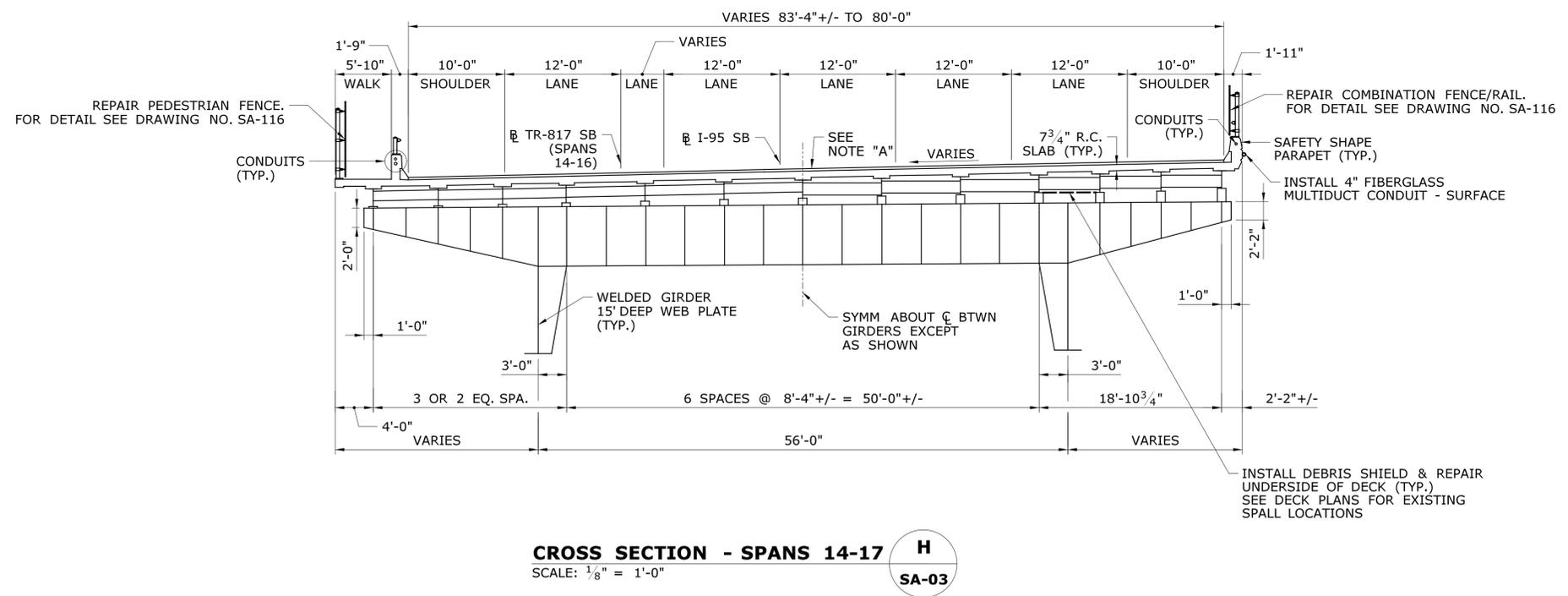
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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016								



REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	DESIGNER/DRAFTER: <b>C. DAVIS</b>	 <b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b>	SIGNATURE/ BLOCK:  Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>92-252</b>
				CHECKED BY: <b>M. EGAN</b>				SCALE AS NOTED	File name: ..._SB_MSH_0094_0252_BR_NO_02514A_TYP-02.dgn

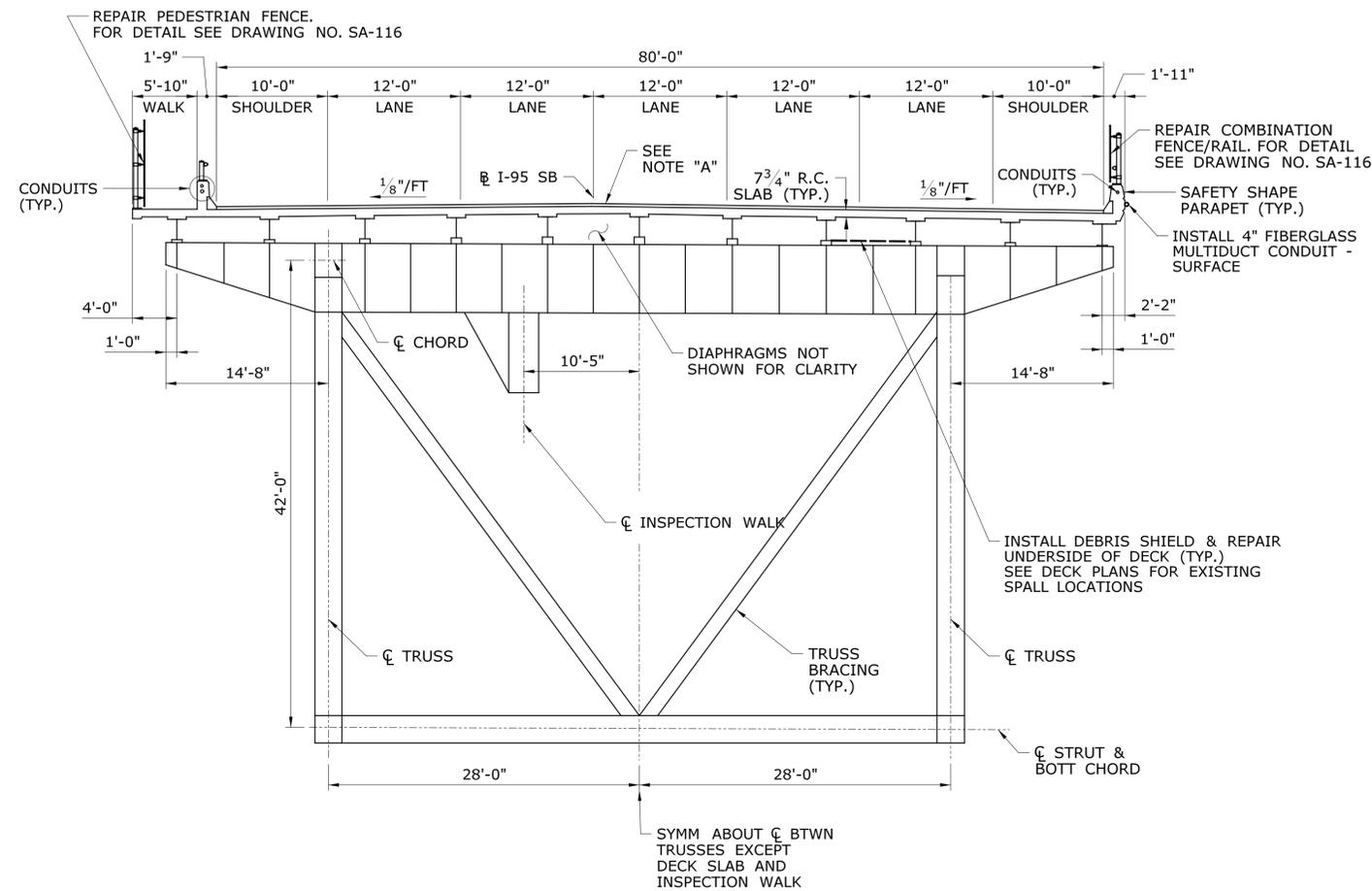


NOTE "A": REMOVE EXISTING 2.5" +/- BITUMINOUS WEARING SURFACE. PATCH CONCRETE DECK AS REQUIRED. PLACE MEMBRANE WATERPROOFING. REPAVE WITH 2.5" OF PMA FOR ENTIRE LIMITS OF BRIDGE. MAINTAIN EXISTING CROSS SLOPE.

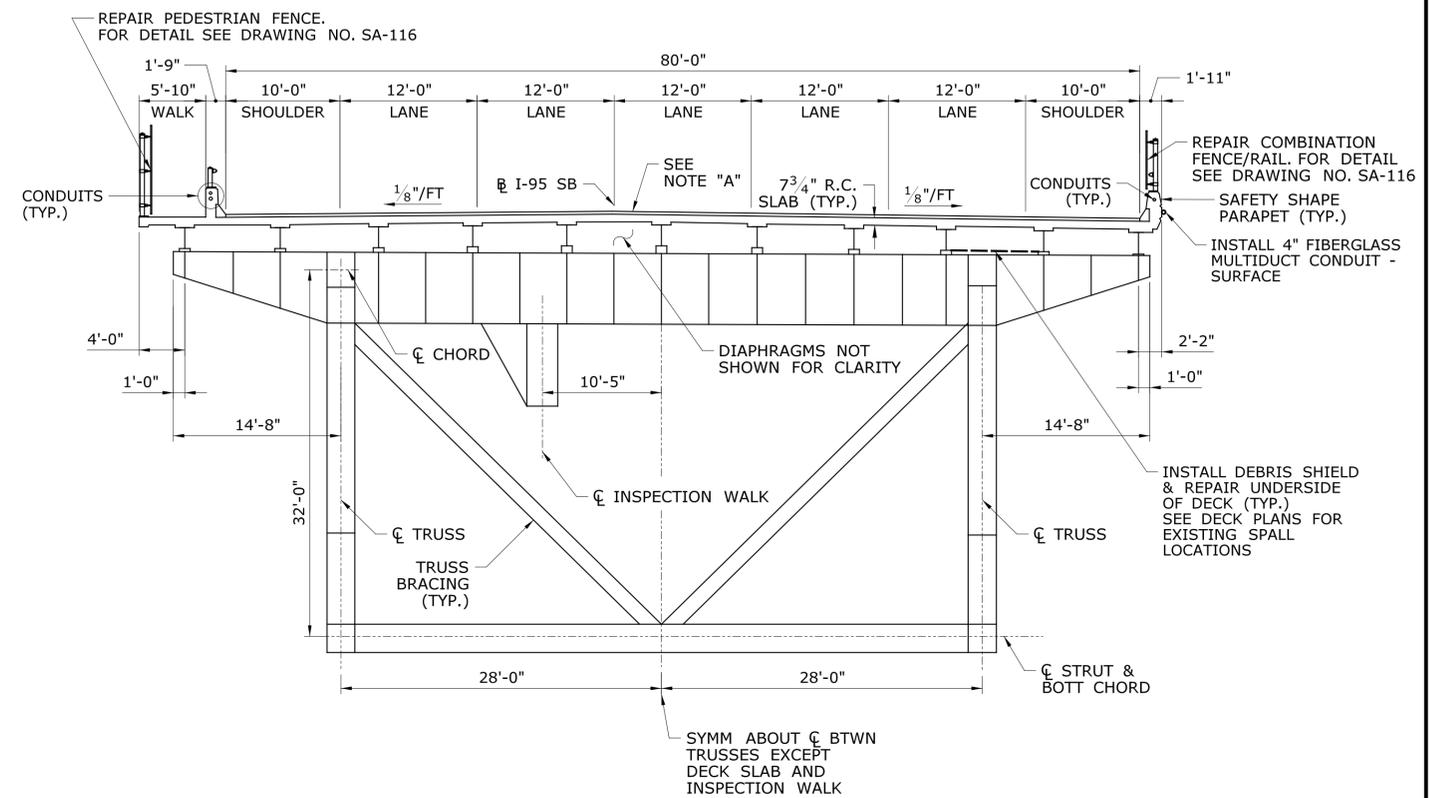


NOTE: LIGHT STANDARDS AND OVERHEAD SIGN SUPPORTS NOT SHOWN FOR CLARITY

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: <b>C. DAVIS</b> CHECKED BY: <b>M. EGAN</b> SCALE AS NOTED	<b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b> Filename: ..._SB_MSH_0094_0252_BR_NO_02514A_TYP-03.dgn	SIGNATURE/BLOCK: Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>92-252</b> DRAWING NO. <b>SA-08</b> SHEET NO. <b>04.008</b>	
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	<b>TYPICAL SECTIONS SPANS 11 THRU 17</b>			



**CROSS SECTION - SPANS 18-22 & 24-25** I  
 SCALE: 1/8" = 1'-0"  
 SA-04

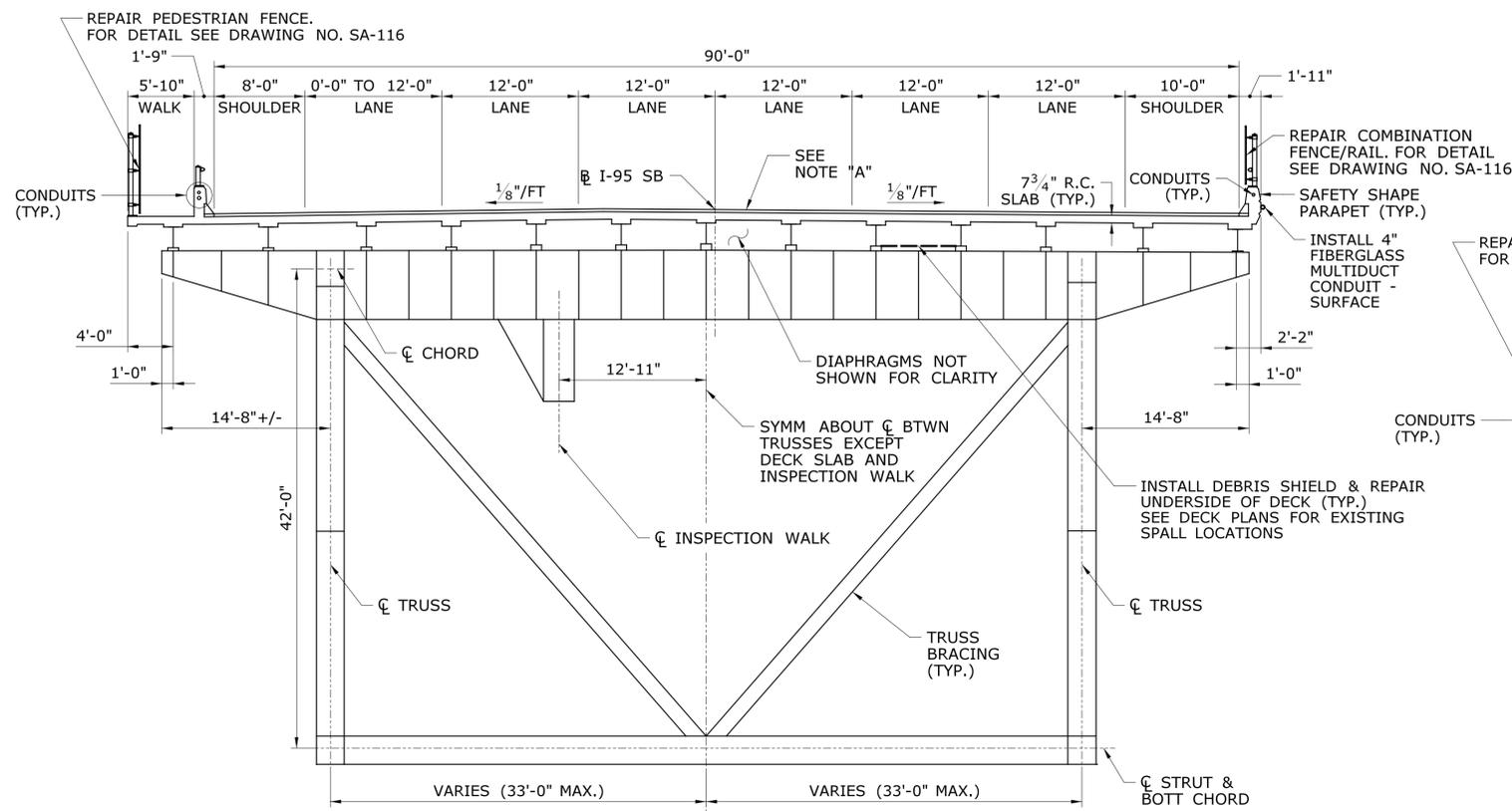


**CROSS SECTION - SPAN 23** K  
 SCALE: 1/8" = 1'-0"  
 SA-04

NOTE "A": REMOVE EXISTING 2.5"+/- BITUMINOUS WEARING SURFACE. PATCH CONCRETE DECK AS REQUIRED. PLACE MEMBRANE WATERPROOFING. REPAVE WITH 2.5" OF PMA FOR ENTIRE LIMITS OF BRIDGE. MAINTAIN EXISTING CROSS SLOPE.

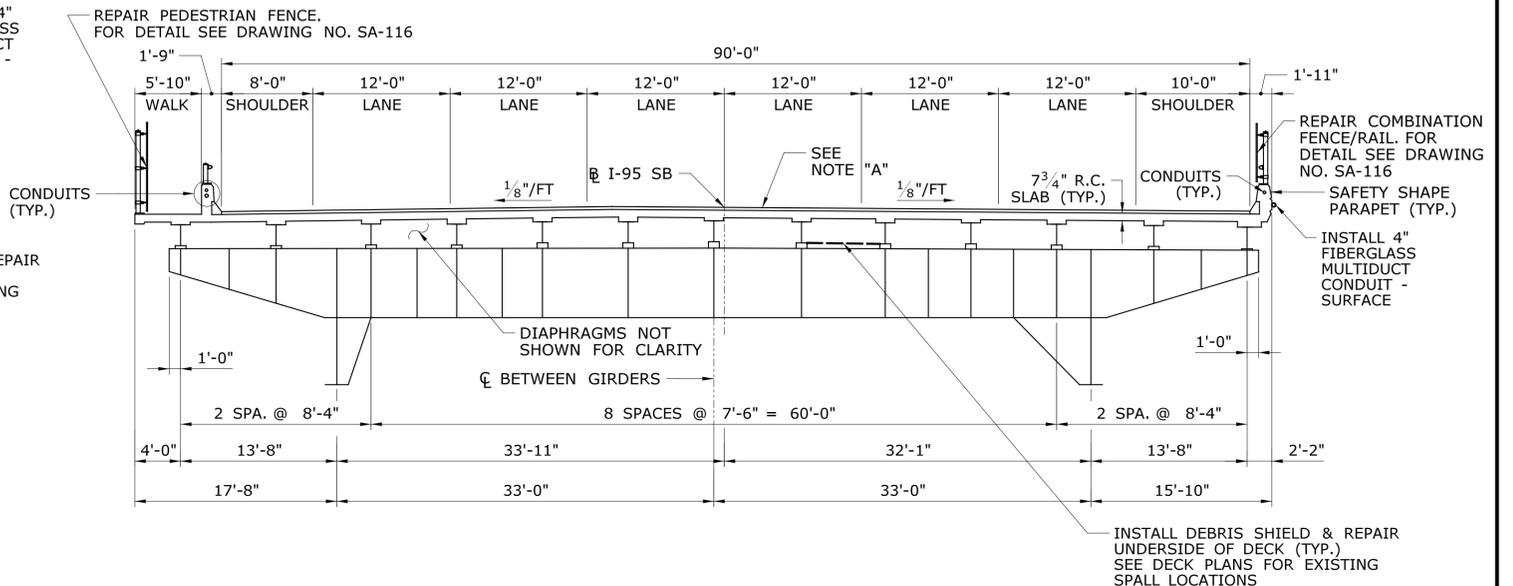
NOTE: LIGHT STANDARDS AND OVERHEAD SIGN SUPPORTS NOT SHOWN FOR CLARITY

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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	<b>TYPICAL SECTIONS SPANS 18 THRU 25</b>		



**CROSS SECTION - SPANS 26-28**  
SCALE: 1/8" = 1'-0"

**L**  
SA-05



**CROSS SECTION - SPANS 29 & 30**  
SCALE: 1/8" = 1'-0"

**M**  
SA-05

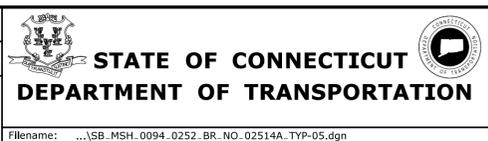
NOTE "A": REMOVE EXISTING 2.5"+/- BITUMINOUS WEARING SURFACE. PATCH CONCRETE DECK AS REQUIRED. PLACE MEMBRANE WATERPROOFING. REPAVE WITH 2.5" OF PMA FOR ENTIRE LIMITS OF BRIDGE. MAINTAIN EXISTING CROSS SLOPE.

NOTE: LIGHT STANDARDS AND OVERHEAD SIGN SUPPORTS NOT SHOWN FOR CLARITY

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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DESIGNER/DRAFTER:  
**C. DAVIS**  
CHECKED BY:  
**M. EGAN**  
SCALE AS NOTED

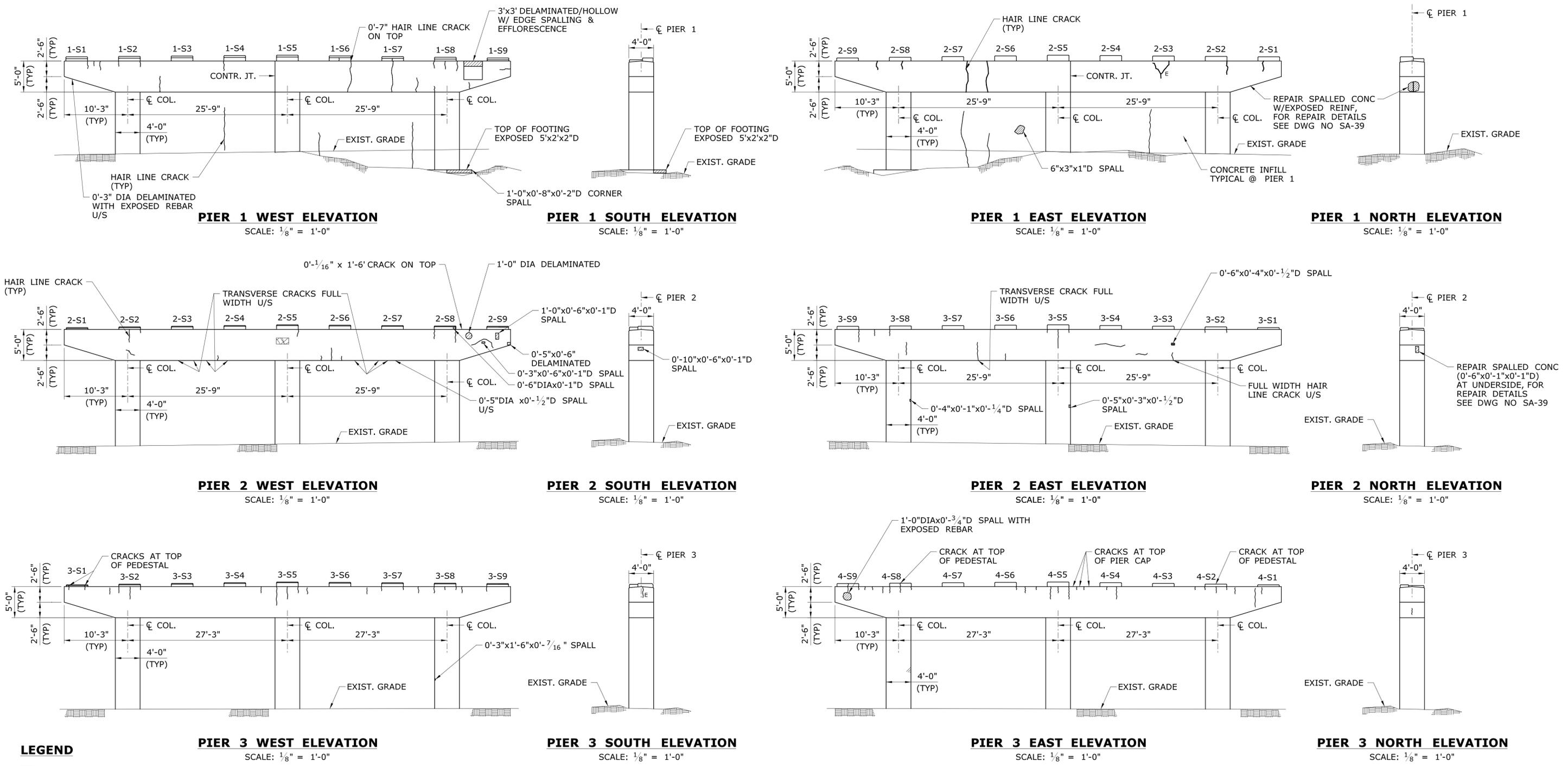


SIGNATURE/BLOCK:  
Cardinal Engineering Associates, Inc.  
3 Colony Street  
Meriden, CT 06451

PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

TOWN:  
**NEW LONDON/GROTON**  
DRAWING TITLE:  
**TYPICAL SECTIONS SPANS 26 THRU 30**

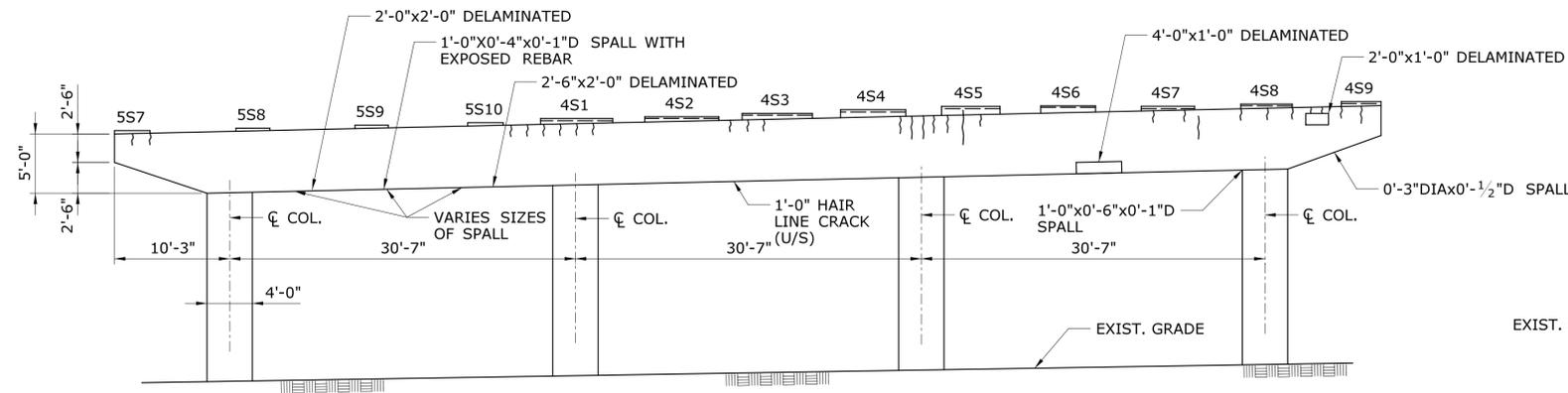
PROJECT NO.  
**92-252**  
DRAWING NO.  
**SA-10**  
SHEET NO.  
**04.010**



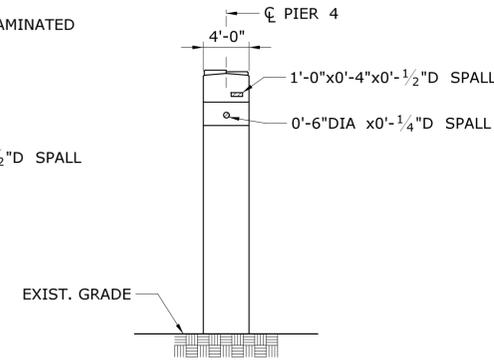
**LEGEND**

- DELAMINATED/HOLLOW CONCRETE
- SPALLED CONCRETE
- SPALLED CONCRETE WITH EXPOSED REINFORCEMENT
- SCALED CONCRETE
- HONEYCOMBED CONCRETE
- HONEYCOMBED CONCRETE WITH EXPOSED REINFORCEMENT
- CONCRETE POPOUT
- HAIR LINE CRACK OR CRACK
- MAP CRACKS
- E - WITH EFFLORESCENCE

- PIER REPAIR NOTES:**
1. THE SUBSTRUCTURE DETERIORATION AND REPAIR DIMENSIONS ARE BASED ON LIMITED FIELD OBSERVATIONS AND BRIDGE SAFETY INSPECTION REPORT (NOVEMBER 22, 2013). THE INFORMATION IS INTENDED TO BE USED AS A GUIDE AND DOES NOT NECESSARILY REFLECT THE CURRENT CONDITION OF THE STRUCTURE. THE EXACT LOCATION AND LIMITS OF DETERIORATED CONCRETE TO BE REPAIRED SHALL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION. DETERIORATIONS SHOWN ARE NOT DRAWN TO SCALE FOR CLARITY, THOUGH CRACKS ARE SHOWN APPROXIMATELY TO SCALE.
  2. THE CONTRACTOR SHALL PROVIDE SAFE ACCESS FOR THE ENGINEER TO DELINEATE AND REVIEW THE REPAIR WORK. THE COST OF PROVIDING ACCESS SHALL BE INCLUDED IN THE COST OF APPROPRIATE REPAIR ITEMS.
  3. THE CONTRACTOR SHALL NOT PERFORM ANY REPAIR WORK WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
  4. SPALL AREAS, DELAMINATED/HOLLOW AREAS, AND SHALLOW REBAR AREAS SHALL BE REPAIRED IN ACCORDANCE WITH DETAILS SHOWN ON DWG. NO. SA-39 (TYP.).
  5. ONLY CRACKS THAT MEET THE CRITERIA SPECIFIED ON DWG. NO. SA-39 SHALL BE REPAIRED
  6. FOR CONCRETE BEARING PADS NOTED TO BE REPAIRED SEE DETAIL ON DWG. NO. SA-12.
  7. ELEVATIONS SHOWN ARE N.A.V.D. 1988 ELEVATIONS CONVERTED FROM ORIGINAL N.G.V.D. 1929 ELEVATIONS TAKEN FROM ORIGINAL AS-BUILT PLANS DATED 1969 & 1970.

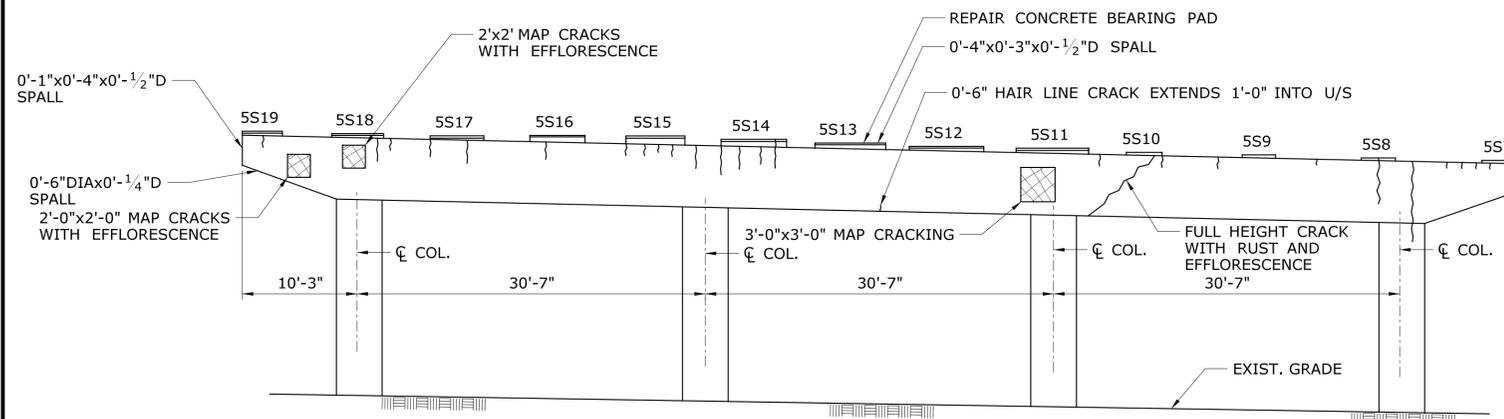
**PIER 4 WEST ELEVATION**  
SCALE: 1/8" = 1'-0"



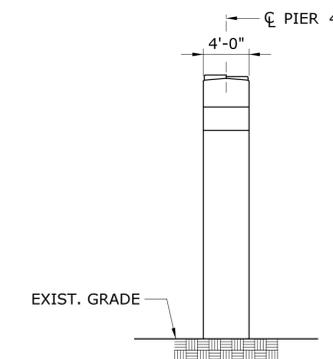
**PIER 4 SOUTH ELEVATION**  
SCALE: 1/8" = 1'-0"

**PIER REPAIR NOTES:**

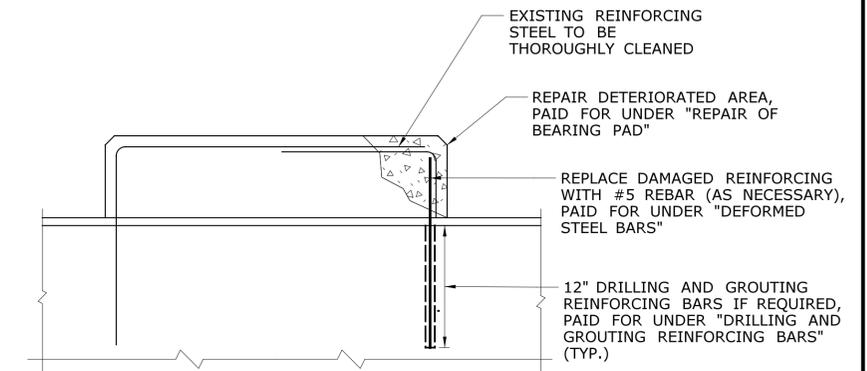
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**PIER 4 EAST ELEVATION**  
SCALE: 1/8" = 1'-0"



**PIER 4 NORTH ELEVATION**  
SCALE: 1/8" = 1'-0"



**CONCRETE BEARING PAD REPAIR DETAIL**  
NOT TO SCALE

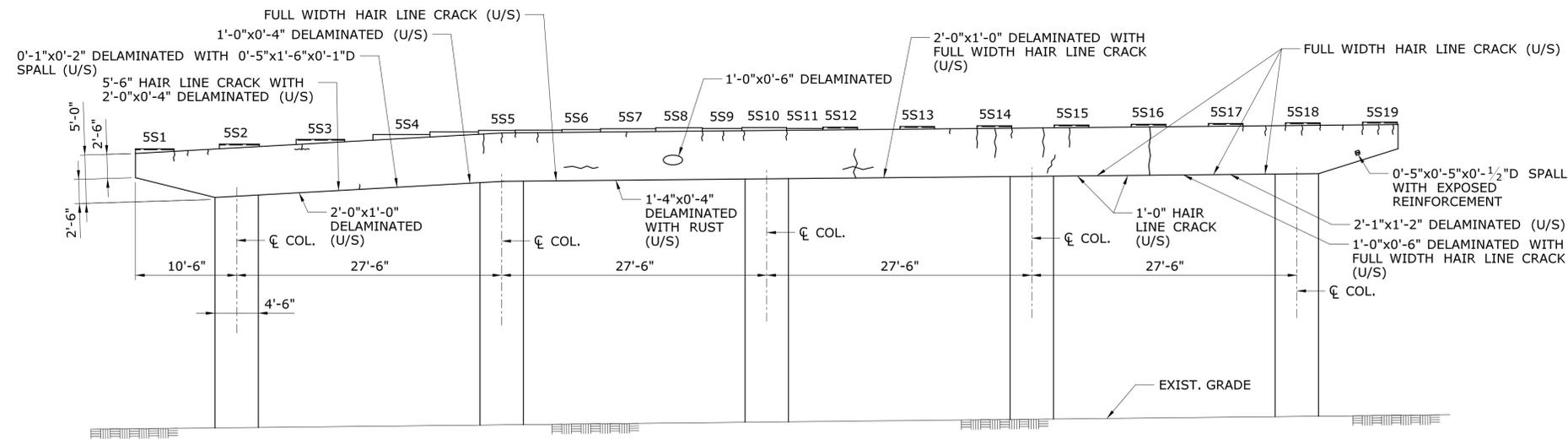
**NOTE:**

CONTRACTOR SHALL LIMIT REMOVAL OF CONCRETE BEARING PADS TO AVOID POTENTIAL UNDERMINING OF BEARING PADS. BEARING PAD REMOVAL SHALL BE AS DIRECTED BY THE ENGINEER.

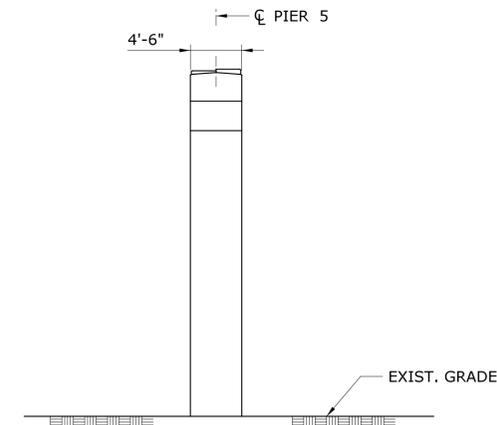
**LEGEND**

- DELAMINATED/HOLLOW CONCRETE
- SPALLED CONCRETE
- SPALLED CONCRETE WITH EXPOSED REINFORCEMENT
- SCALED CONCRETE
- HONEYCOMBED CONCRETE
- HONEYCOMBED CONCRETE WITH EXPOSED REINFORCEMENT
- CONCRETE POPOUT
- HAIR LINE CRACK OR CRACK
- MAP CRACKS
- E - WITH EFFLORESCENCE

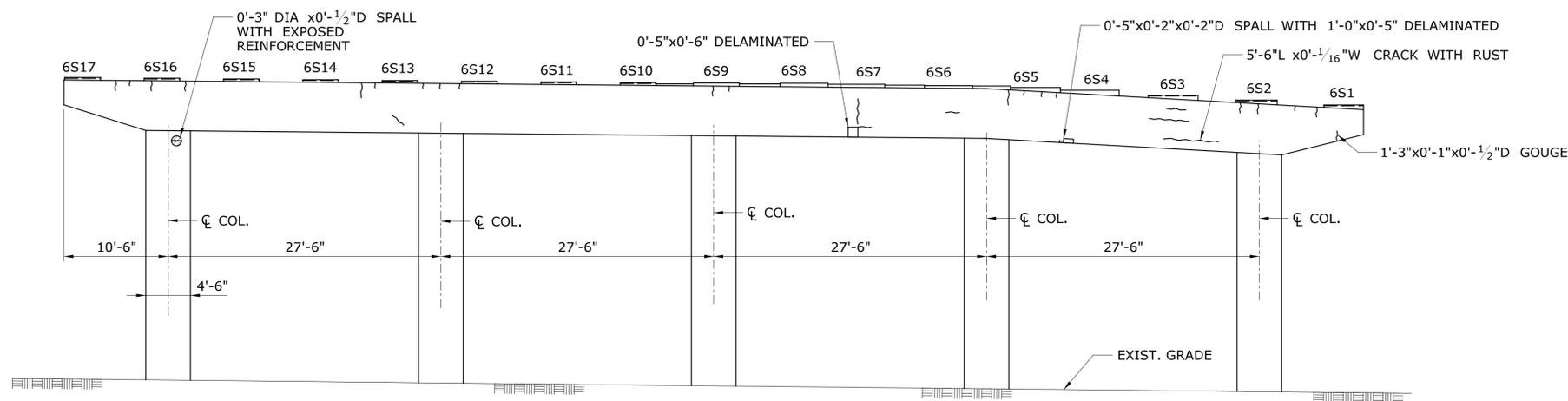
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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016			



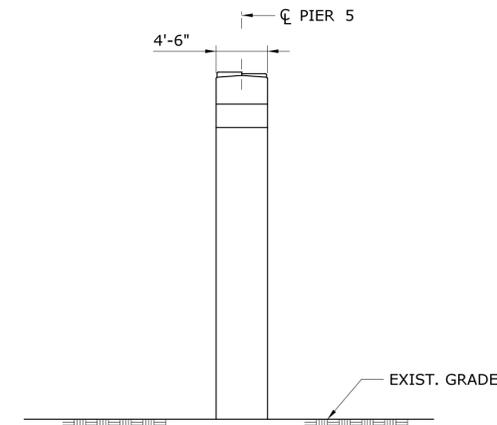
**PIER 5 WEST ELEVATION**  
SCALE: 1/8" = 1'-0"



**PIER 5 NORTH ELEVATION**  
SCALE: 1/8" = 1'-0"



**PIER 5 EAST ELEVATION**  
SCALE: 1/8" = 1'-0"



**PIER 5 SOUTH ELEVATION**  
SCALE: 1/8" = 1'-0"

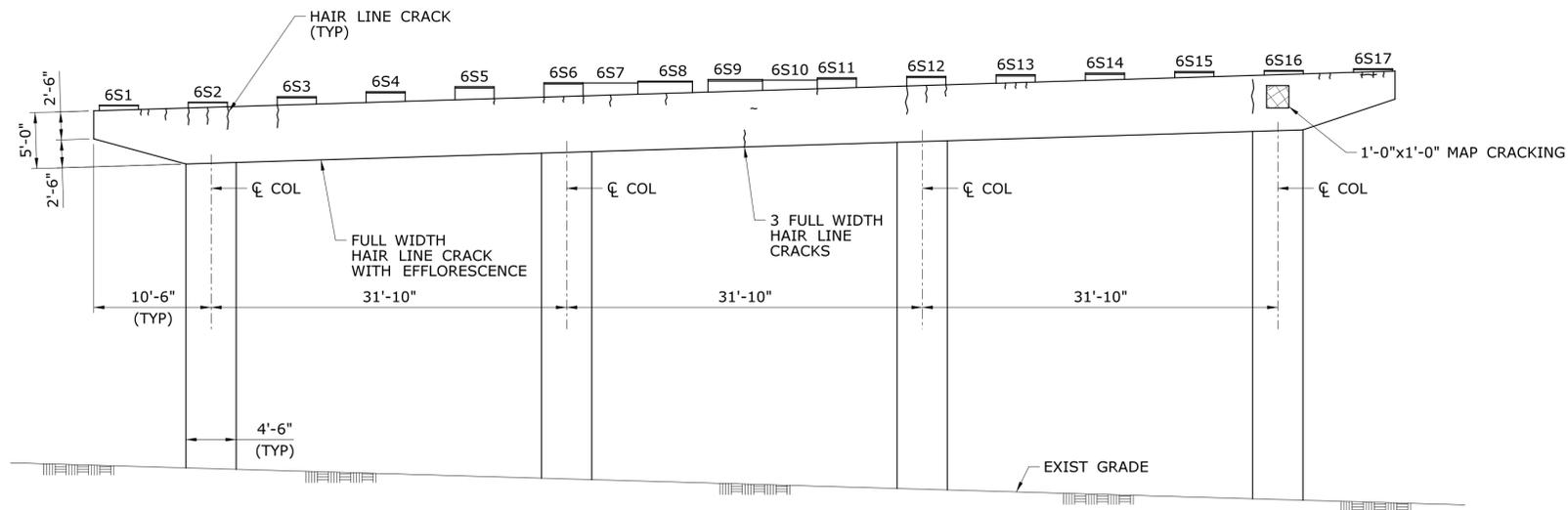
**LEGEND**

- DELAMINATED/HOLLOW CONCRETE
- SPALLED CONCRETE
- SPALLED CONCRETE WITH EXPOSED REINFORCEMENT
- SCALED CONCRETE
- HONEYCOMBED CONCRETE
- HONEYCOMBED CONCRETE WITH EXPOSED REINFORCEMENT
- CONCRETE POPOUT
- HAIR LINE CRACK OR CRACK
- MAP CRACKS
- WITH EFFLORESCENCE

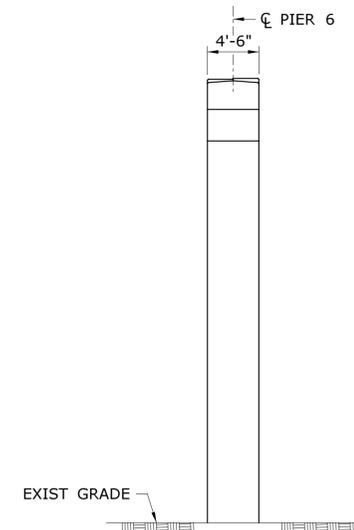
**PIER REPAIR NOTES:**

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PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>		TOWN: <b>NEW LONDON/GROTON</b>		PROJECT NO. <b>94-252</b>		DRAWING NO. <b>SA-13</b>		
SHEET NO. <b>04.013</b>		DRAWING TITLE: <b>PIER 5 - REPAIRS</b>		SHEET NO. <b>04.013</b>		SHEET NO. <b>04.013</b>		
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016				Filename: ...\\SB_MSH_0094_0252_BR_NO_02514A_PIER 5.dgn



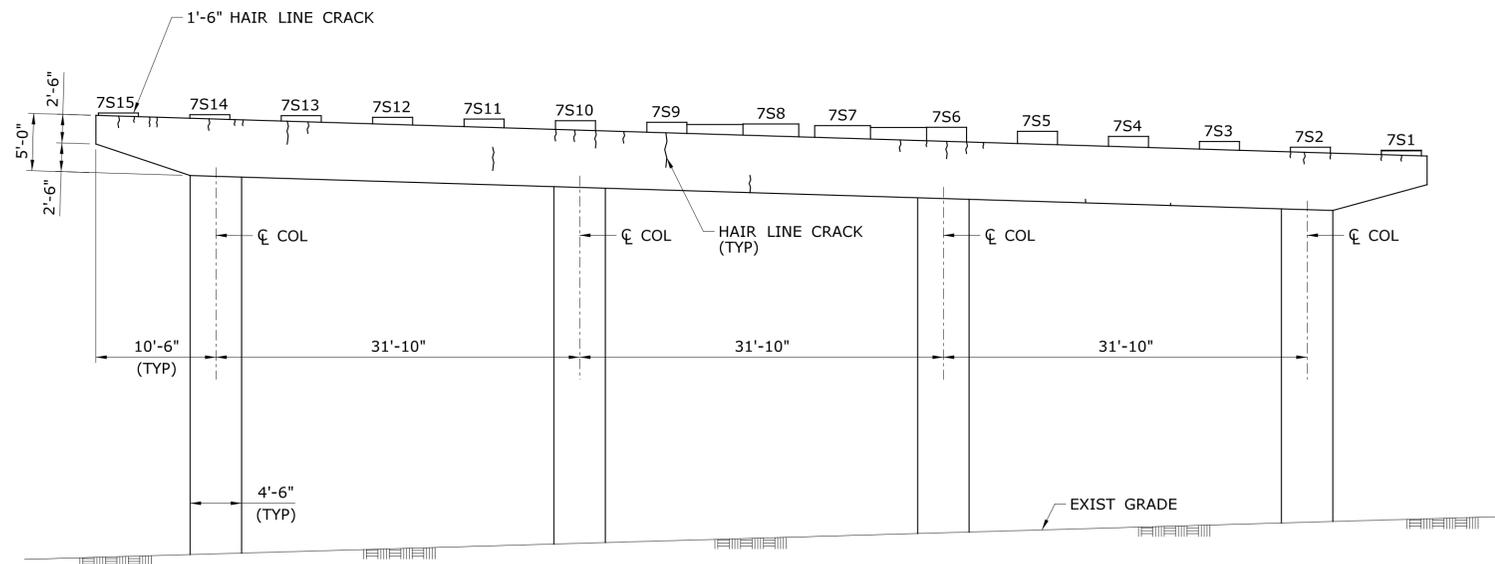
**PIER 6 WEST ELEVATION**  
SCALE: 1/8" = 1'-0"



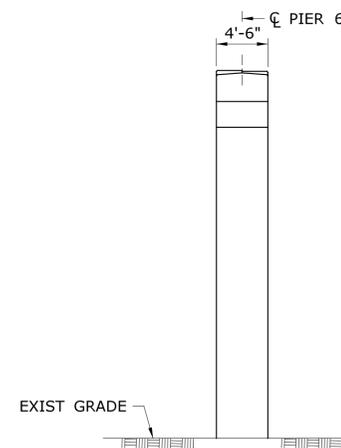
**PIER 6 SOUTH ELEVATION**  
SCALE: 1/8" = 1'-0"

**PIER REPAIR NOTES:**

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**PIER 6 EAST ELEVATION**  
SCALE: 1/8" = 1'-0"



**PIER 6 NORTH ELEVATION**  
SCALE: 1/8" = 1'-0"

**LEGEND**

- DELAMINATED/HOLLOW CONCRETE
- SPALLED CONCRETE
- SPALLED CONCRETE WITH EXPOSED REINFORCEMENT
- SCALED CONCRETE
- HONEYCOMBED CONCRETE
- HONEYCOMBED CONCRETE WITH EXPOSED REINFORCEMENT
- CONCRETE POPOUT
- HAIR LINE CRACK OR CRACK
- MAP CRACKS
- E WITH EFFLORESCENCE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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DESIGNER/DRAFTER:  
**S. SLATER**  
CHECKED BY:  
**M. EGAN**  
SCALE AS NOTED



SIGNATURE/  
BLOCK:  
  
Cardinal Engineering Associates, Inc.  
3 Colony Street  
Meriden, CT 06451

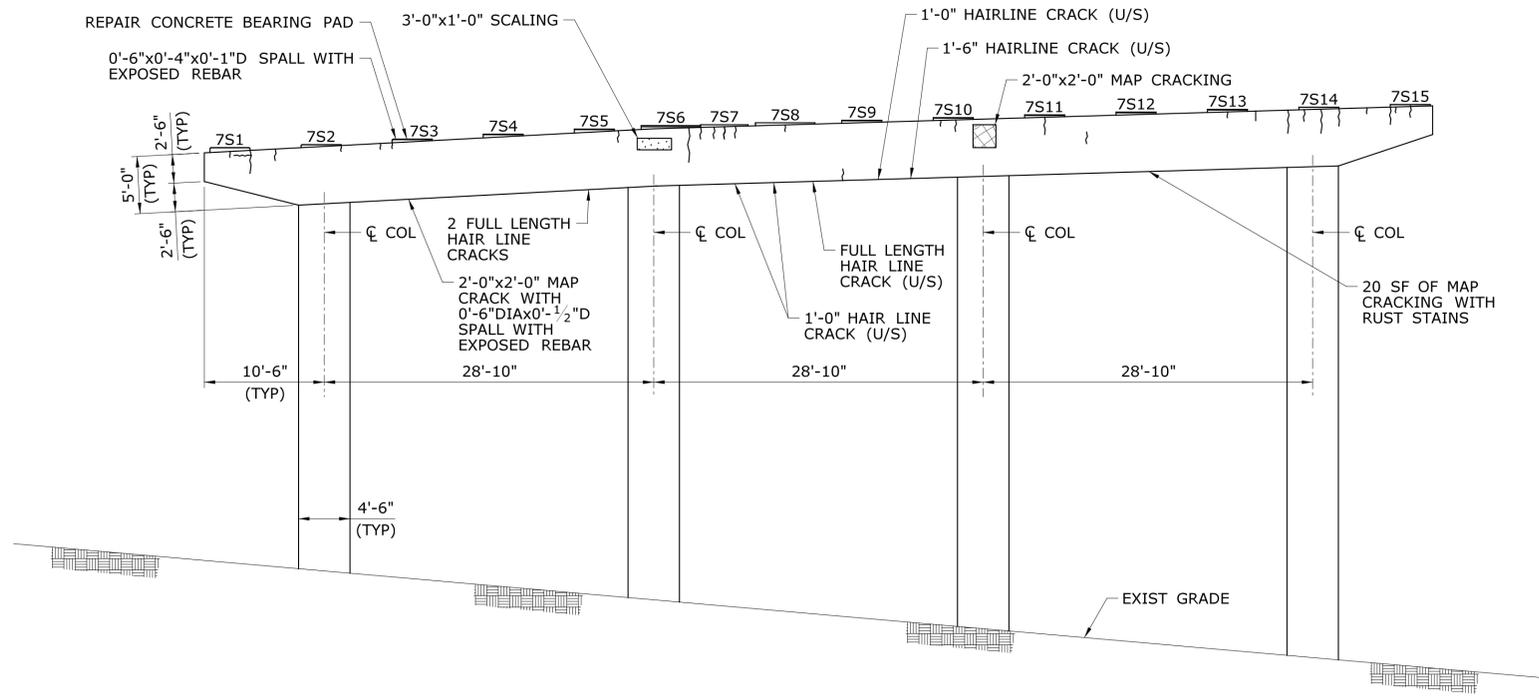
PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

TOWN:  
**NEW LONDON/GROTON**  
DRAWING TITLE:  
**PIER 6 REPAIRS**

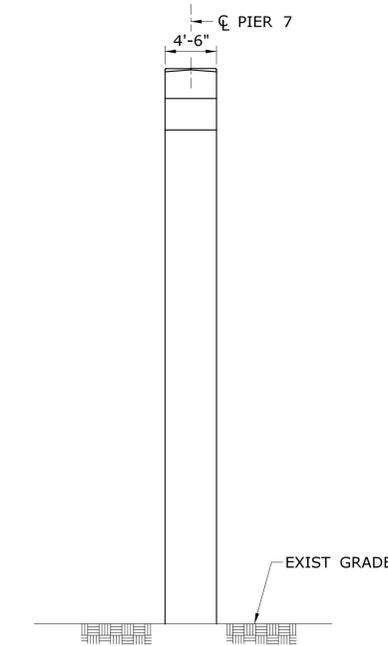
PROJECT NO.  
**94-252**  
DRAWING NO.  
**SA-14**  
SHEET NO.  
**04.014**

PIER REPAIR NOTES:

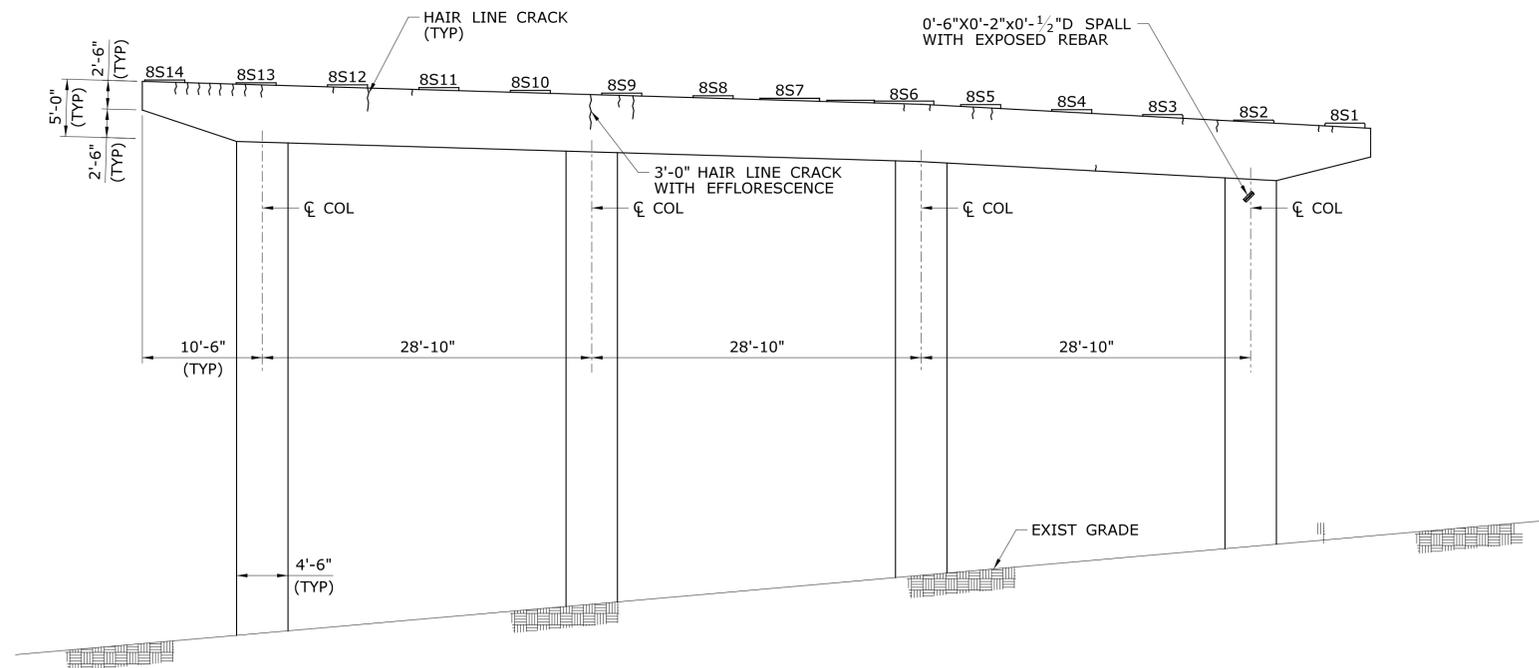
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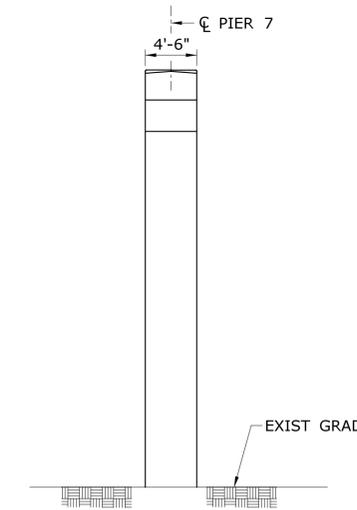
**PIER 7 WEST ELEVATION**  
SCALE: 1/8" = 1'-0"



**PIER 7 SOUTH ELEVATION**  
SCALE: 1/8" = 1'-0"



**PIER 7 EAST ELEVATION**  
SCALE: 1/8" = 1'-0"

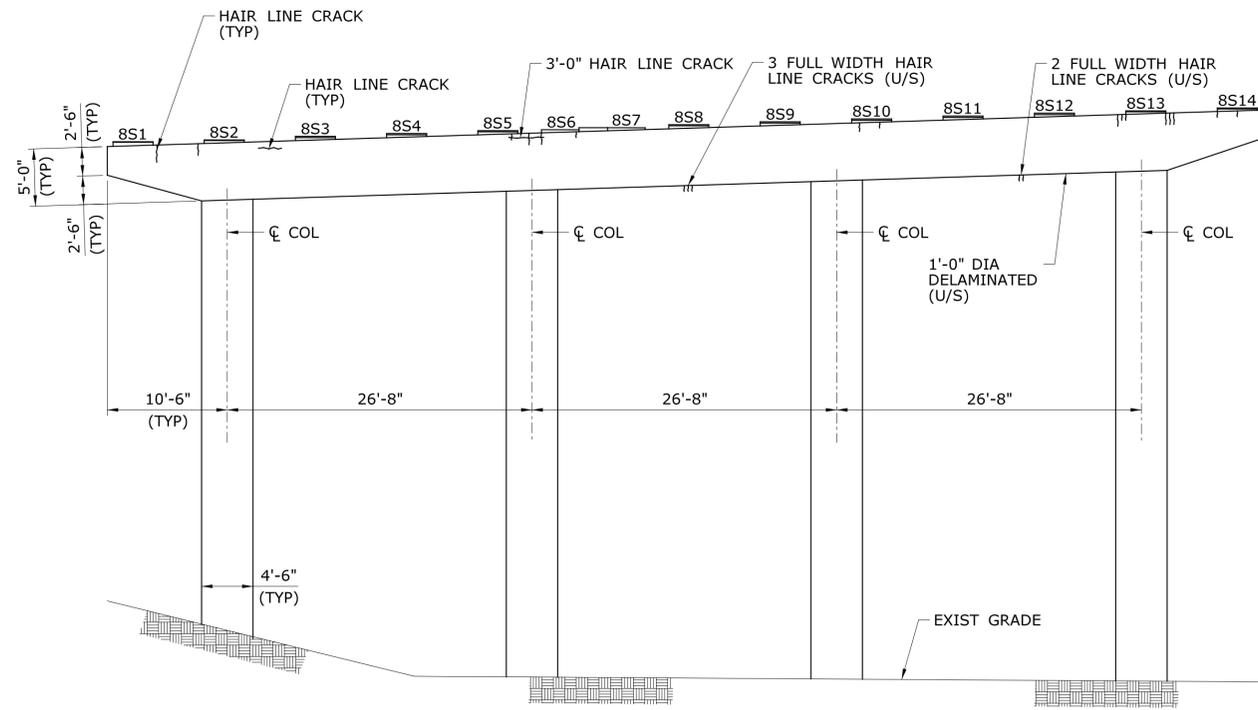


**PIER 7 NORTH ELEVATION**  
SCALE: 1/8" = 1'-0"

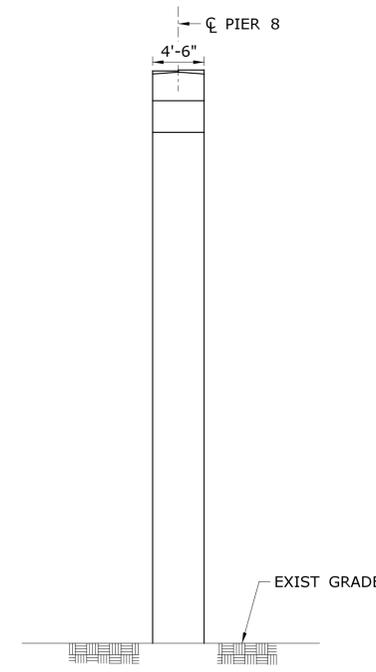
**LEGEND**

- DELAMINATED/HOLLOW CONCRETE
- ▨ SPALLED CONCRETE
- ▩ SPALLED CONCRETE WITH EXPOSED REINFORCEMENT
- ▧ SCALED CONCRETE
- ▦ HONEYCOMBED CONCRETE
- ▥ HONEYCOMBED CONCRETE WITH EXPOSED REINFORCEMENT
- ▤ CONCRETE POPOUT
- HAIR LINE CRACK OR CRACK
- ⊠ MAP CRACKS
- E WITH EFFLORESCENCE

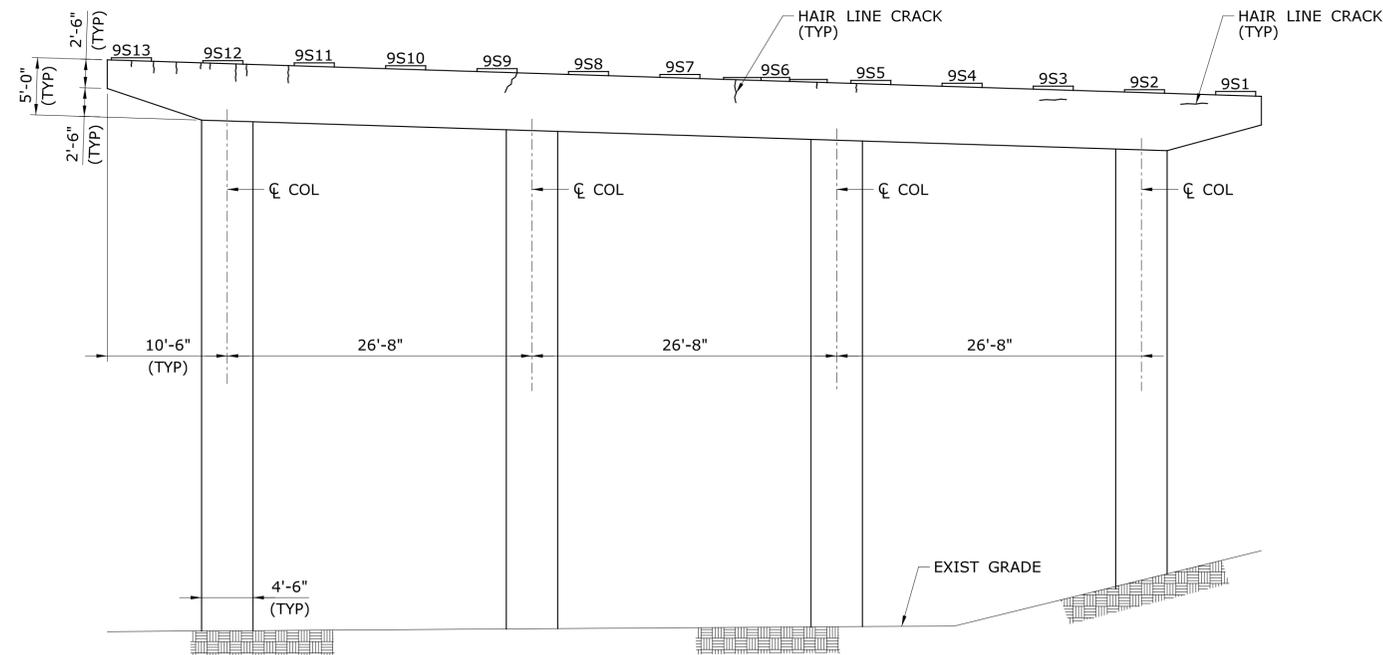
THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: <b>S. SLATER</b> CHECKED BY: <b>M. EGAN</b> SCALE AS NOTED	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION Filename: ...SB_MSH_0094_0252_BR_NO_02514A_PIER 7.dgn	SIGNATURE/BLOCK: Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-15</b> SHEET NO. <b>04.015</b>
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	<b>PIER 7 REPAIRS</b>		



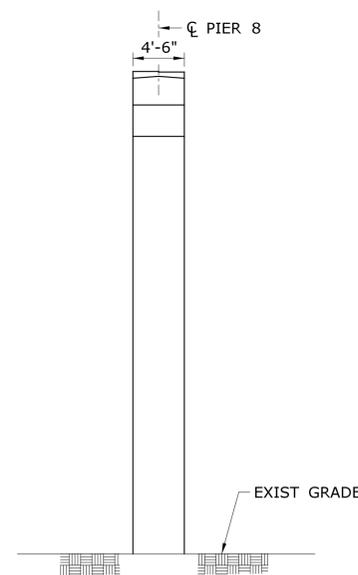
**PIER 8 WEST ELEVATION**  
SCALE: 1/8" = 1'-0"



**PIER 8 SOUTH ELEVATION**  
SCALE: 1/8" = 1'-0"



**PIER 8 EAST ELEVATION**  
SCALE: 1/8" = 1'-0"



**PIER 8 NORTH ELEVATION**  
SCALE: 1/8" = 1'-0"

**PIER REPAIR NOTES:**

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**LEGEND**

- DELAMINATED/HOLLOW CONCRETE
- SPALLED CONCRETE
- SPALLED CONCRETE WITH EXPOSED REINFORCEMENT
- SCALED CONCRETE
- HONEYCOMBED CONCRETE
- HONEYCOMBED CONCRETE WITH EXPOSED REINFORCEMENT
- CONCRETE POPOUT
- HAIR LINE CRACK OR CRACK
- MAP CRACKS
- WITH EFFLORESCENCE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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Plotted Date: 7/12/2016

DESIGNER/DRAFTER:  
**S. SLATER**  
CHECKED BY:  
**M. EGAN**  
SCALE AS NOTED

**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**

Filename: ...\_SB\_MSH\_0094\_0252\_BR\_NO\_02514A\_PIER 8.dgn

SIGNATURE/  
BLOCK:

Cardinal Engineering Associates, Inc.  
 3 Colony Street  
 Meriden, CT 06451

PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

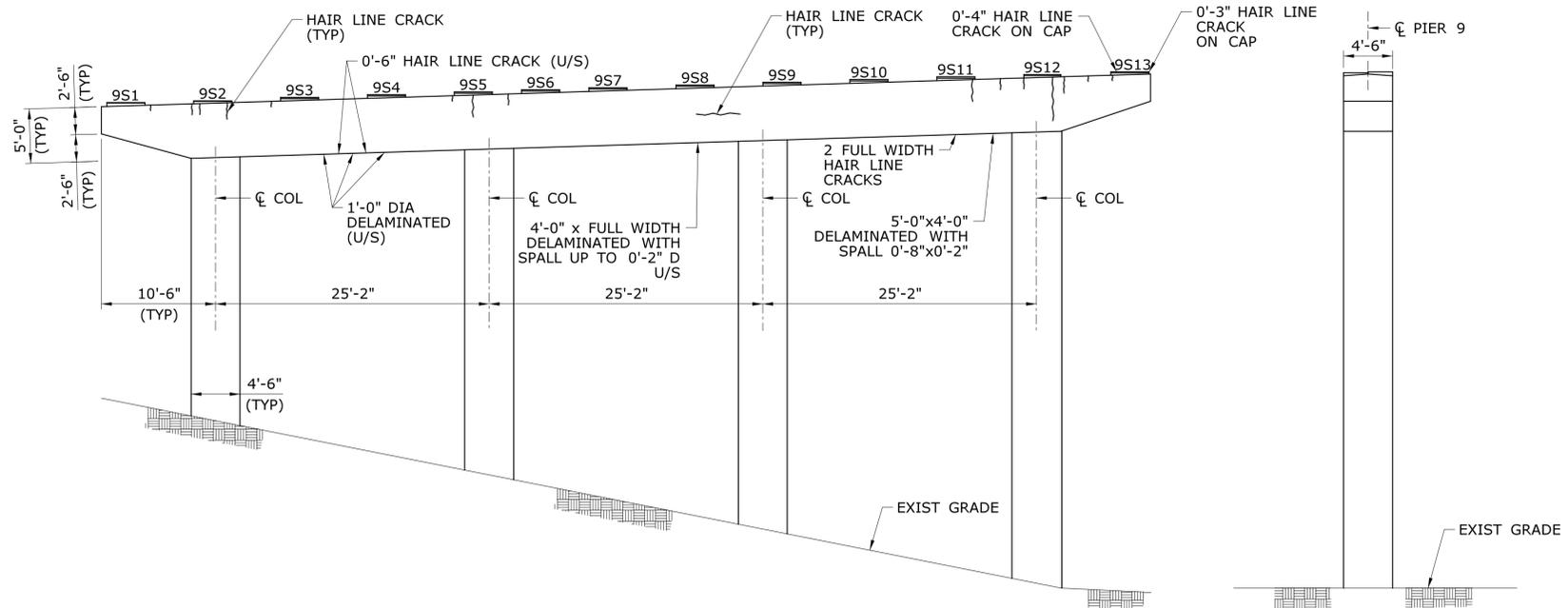
TOWN:  
**NEW LONDON/GROTON**

DRAWING TITLE:  
**PIER 8 REPAIRS**

PROJECT NO.  
**94-252**

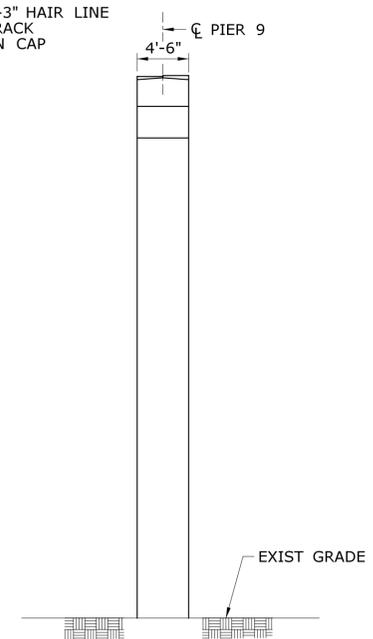
DRAWING NO.  
**SA-16**

SHEET NO.  
**04.016**



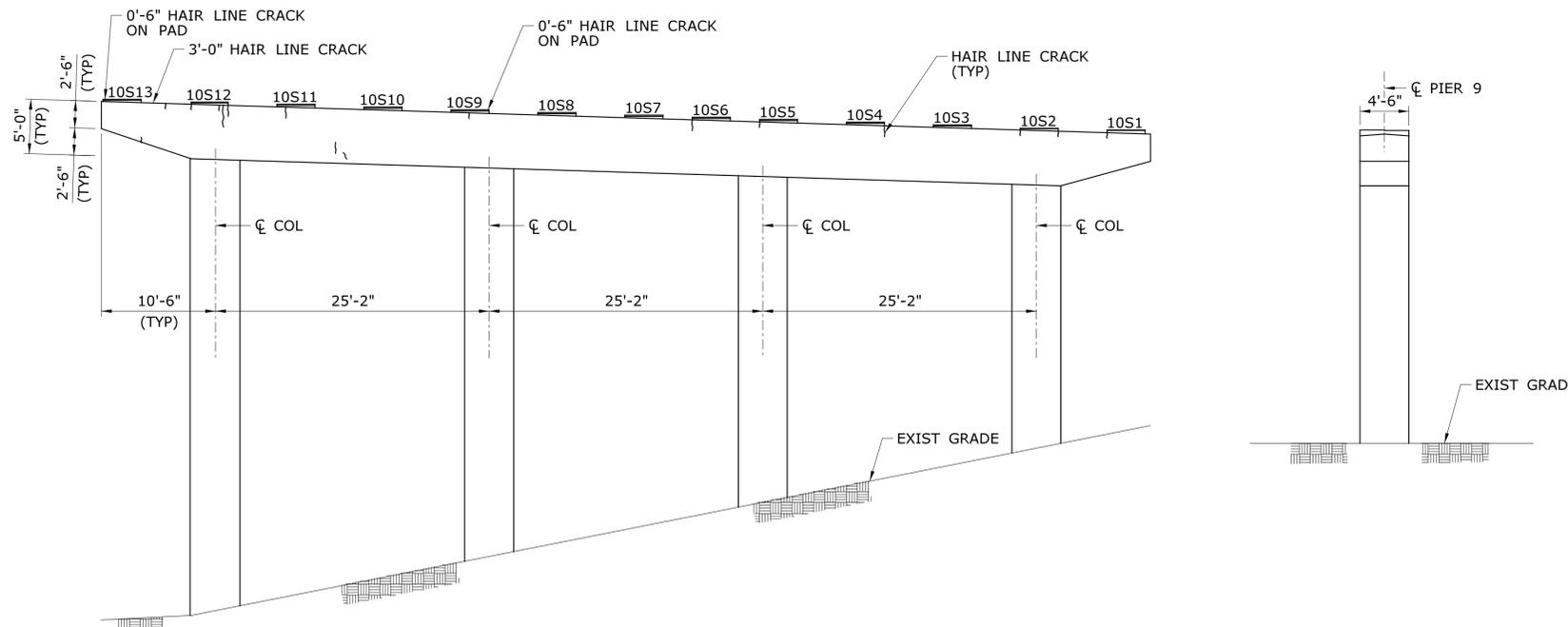
**PIER 9 WEST ELEVATION**

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



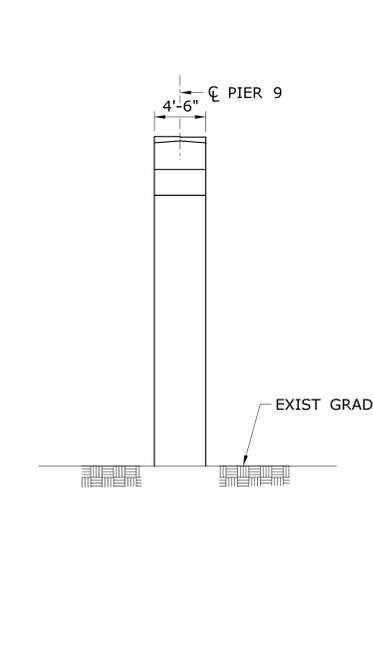
**PIER 9 SOUTH ELEVATION**

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



**PIER 9 EAST ELEVATION**

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



**PIER 9 NORTH ELEVATION**

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

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**LEGEND**

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- SPALLED CONCRETE WITH EXPOSED REINFORCEMENT
- SCALED CONCRETE
- HONEYCOMBED CONCRETE
- HONEYCOMBED CONCRETE WITH EXPOSED REINFORCEMENT
- CONCRETE POPOUT
- HAIR LINE CRACK OR CRACK
- MAP CRACKS
- WITH EFFLORESCENCE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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DESIGNER/DRAFTER:  
**S. SLATER**  
CHECKED BY:  
**M. EGAN**  
SCALE AS NOTED

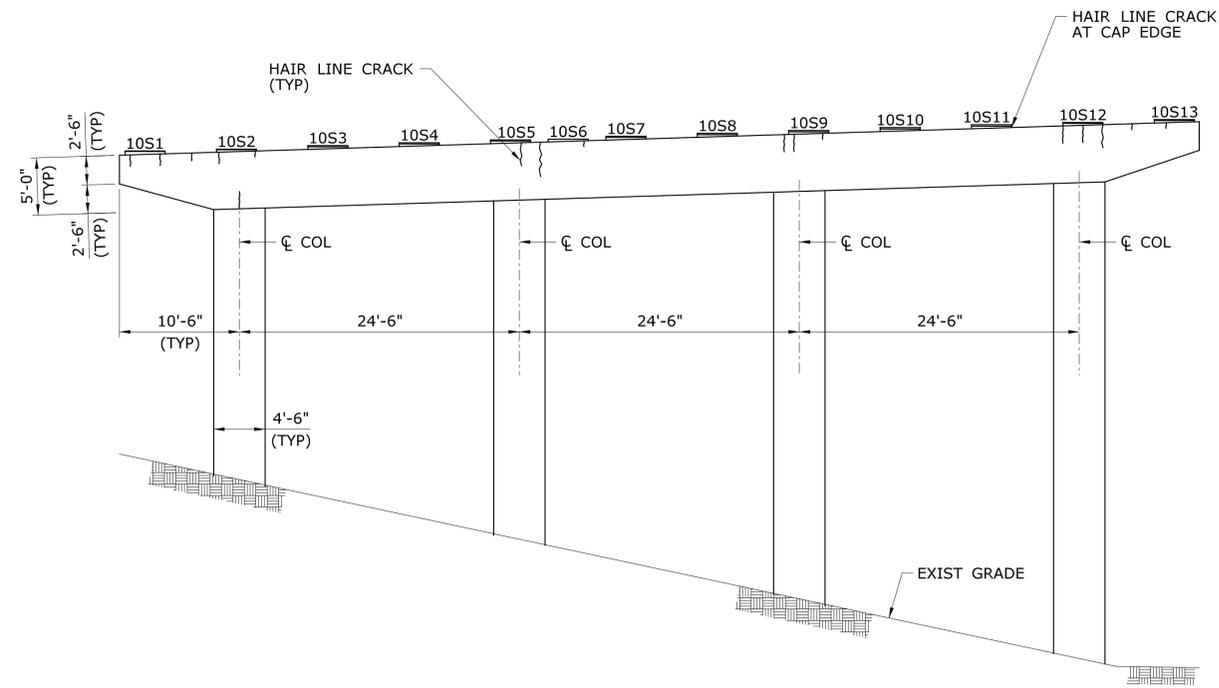


SIGNATURE/BLOCK:  
  
Cardinal Engineering Associates, Inc.  
3 Colony Street  
Meriden, CT 06451

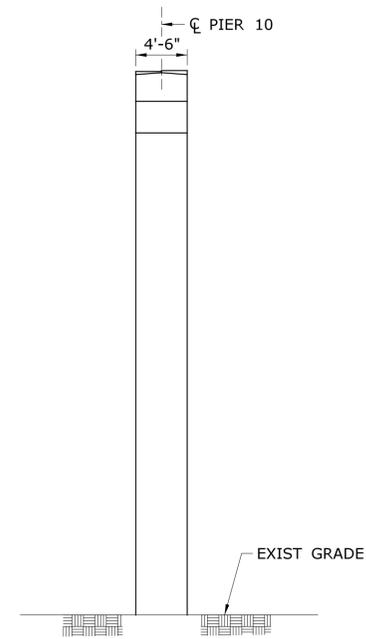
PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

TOWN:  
**NEW LONDON/GROTON**  
DRAWING TITLE:  
**PIER 9 REPAIRS**

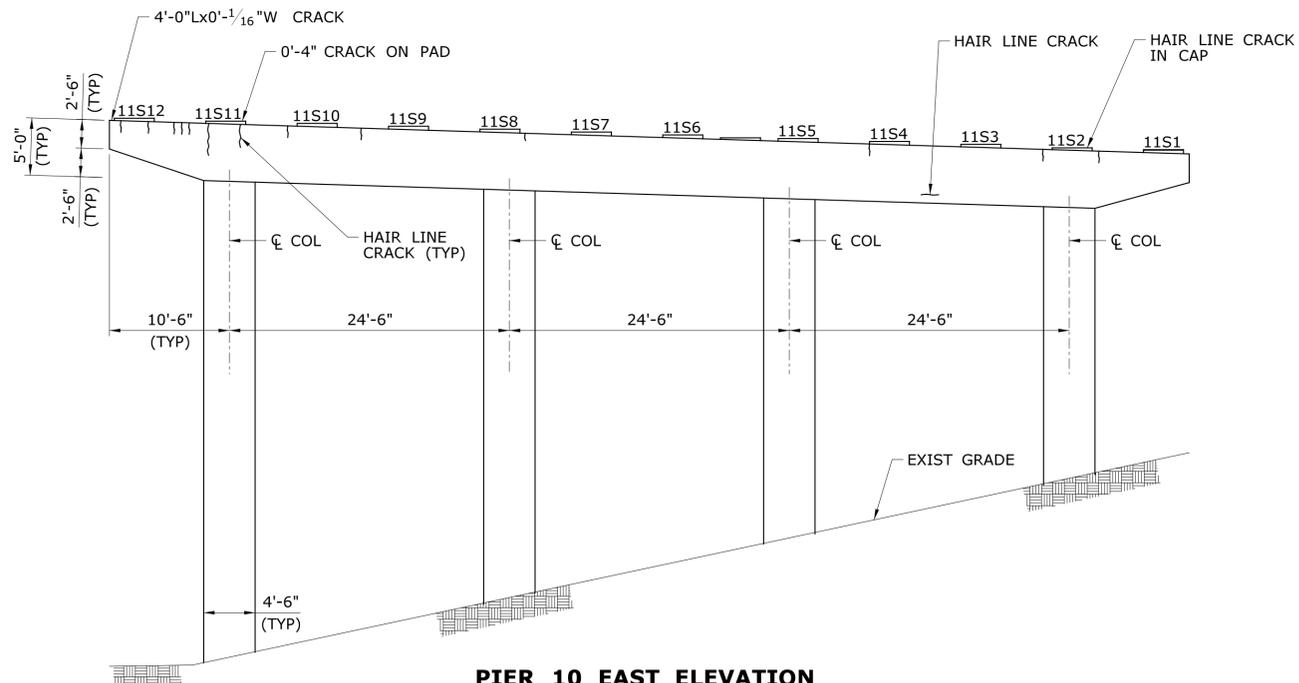
PROJECT NO.  
**94-252**  
DRAWING NO.  
**SA-17**  
SHEET NO.  
**04.017**



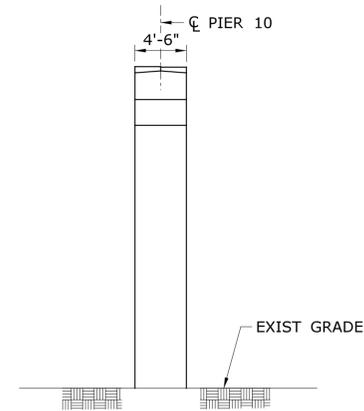
**PIER 10 WEST ELEVATION**  
SCALE: 1/8" = 1'-0"



**PIER 10 SOUTH ELEVATION**  
SCALE: 1/8" = 1'-0"



**PIER 10 EAST ELEVATION**  
SCALE: 1/8" = 1'-0"



**PIER 10 NORTH ELEVATION**  
SCALE: 1/8" = 1'-0"

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**LEGEND**

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- SPALLED CONCRETE
- SPALLED CONCRETE WITH EXPOSED REINFORCEMENT
- SCALED CONCRETE
- HONEYCOMBED CONCRETE
- HONEYCOMBED CONCRETE WITH EXPOSED REINFORCEMENT
- CONCRETE POPOUT
- HAIR LINE CRACK OR CRACK
- MAP CRACKS
- E WITH EFFLORESCENCE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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DESIGNER/DRAFTER:  
**S. SLATER**  
CHECKED BY:  
**M. EGAN**  
SCALE AS NOTED

**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**

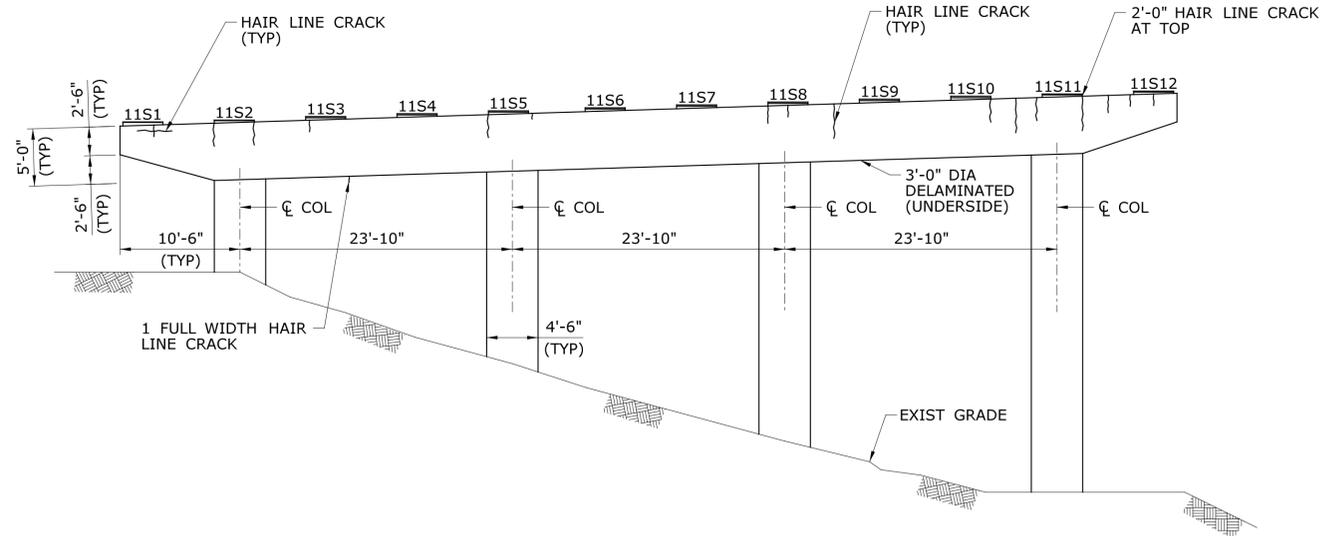
Filename: ...SB\_MSH\_0094\_0252\_BR\_NO\_02514A\_PIER 10.dgn

SIGNATURE/  
BLOCK:  
  
Cardinal Engineering Associates, Inc.  
3 Colony Street  
Meriden, CT 06451

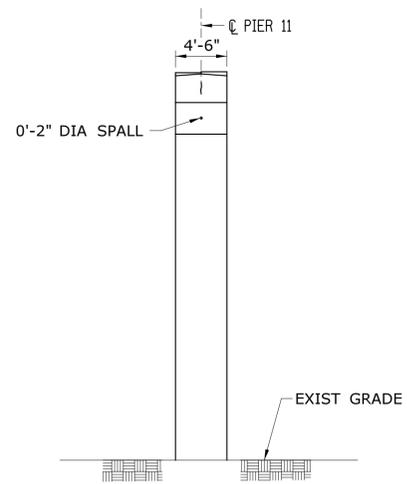
PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

TOWN:  
**NEW LONDON/GROTON**  
DRAWING TITLE:  
**PIER 10 REPAIRS**

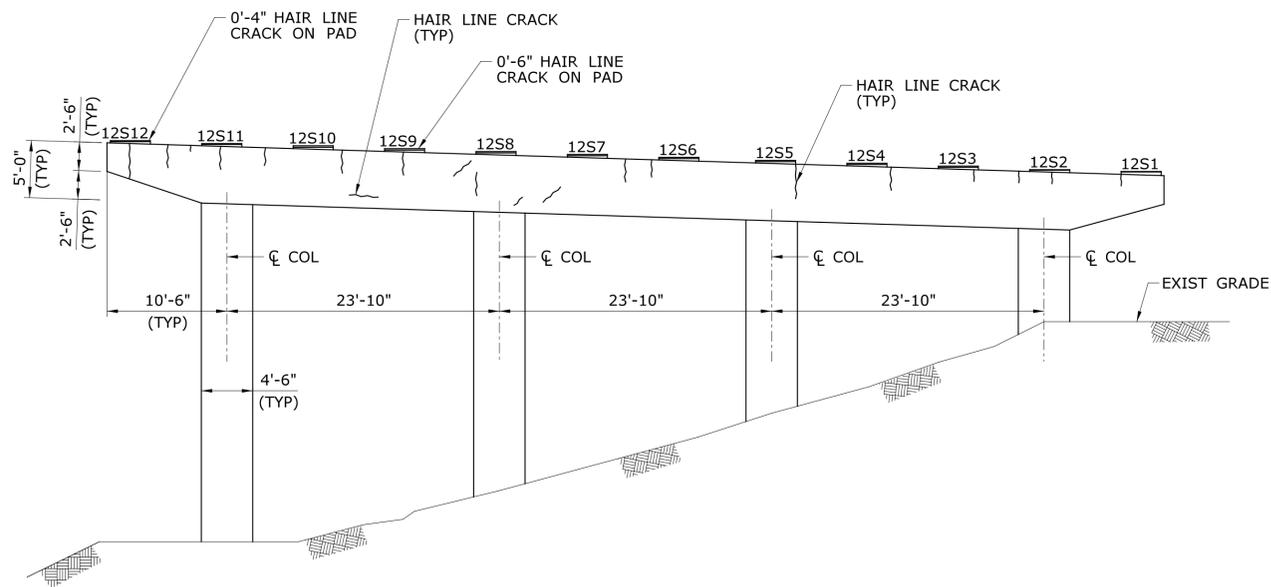
PROJECT NO.  
**94-252**  
DRAWING NO.  
**SA-18**  
SHEET NO.  
**04.018**



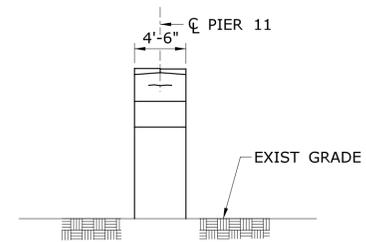
**PIER 11 WEST ELEVATION**  
SCALE: 1/8" = 1'-0"



**PIER 11 SOUTH ELEVATION**  
SCALE: 1/8" = 1'-0"



**PIER 11 EAST ELEVATION**  
SCALE: 1/8" = 1'-0"



**PIER 11 NORTH ELEVATION**  
SCALE: 1/8" = 1'-0"

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- SPALLED CONCRETE WITH EXPOSED REINFORCEMENT
- SCALED CONCRETE
- HONEYCOMBED CONCRETE
- HONEYCOMBED CONCRETE WITH EXPOSED REINFORCEMENT
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REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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DESIGNER/DRAFTER:  
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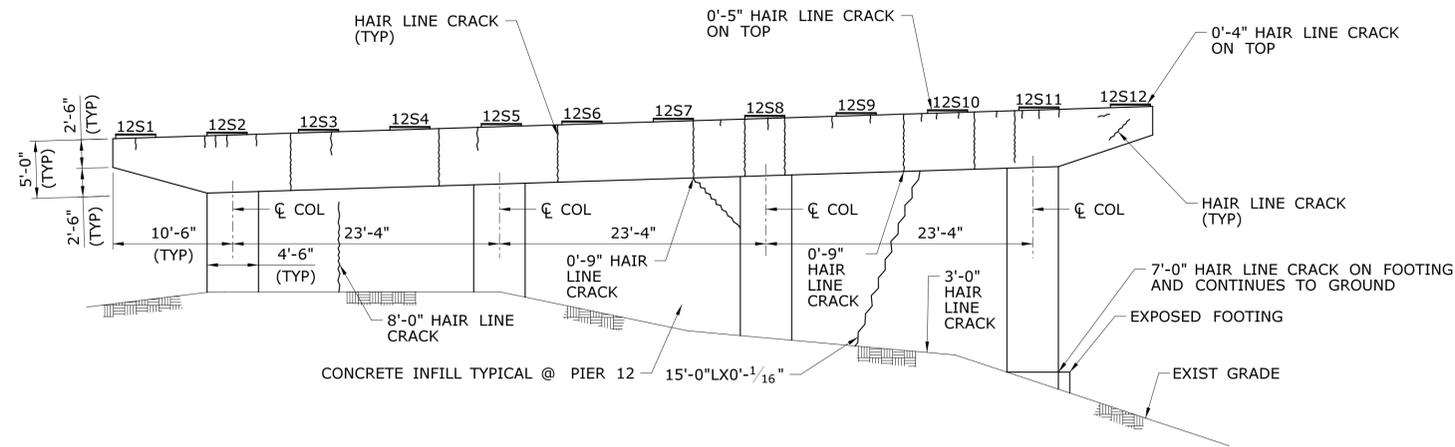
**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**

SIGNATURE/BLOCK:  
  
 Cardinal Engineering Associates, Inc.  
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 Meriden, CT 06451

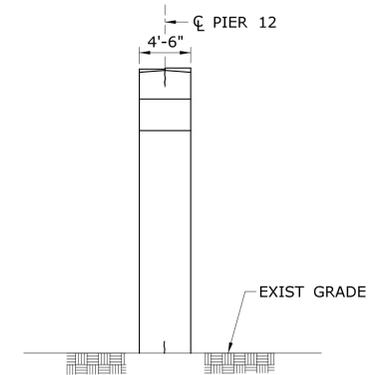
PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

TOWN:  
**NEW LONDON/GROTON**  
 DRAWING TITLE:  
**PIER 11 REPAIRS**

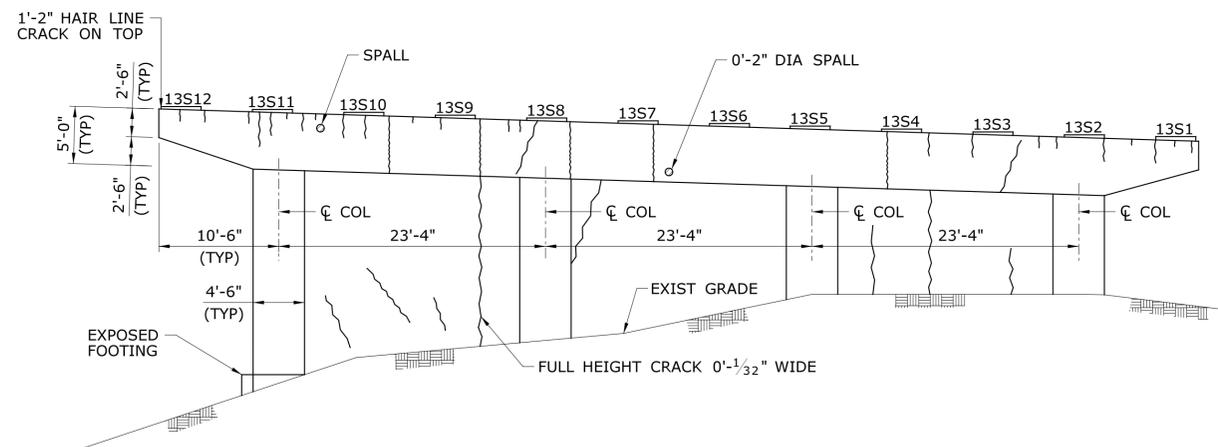
PROJECT NO.  
**94-252**  
 DRAWING NO.  
**SA-19**  
 SHEET NO.  
**04.019**



**PIER 12 WEST ELEVATION**  
 SCALE: 1/8" = 1'-0"

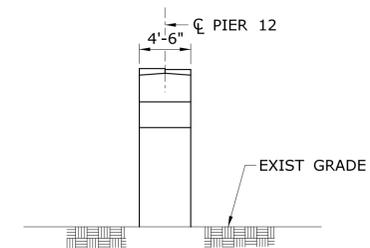


**PIER 12 SOUTH ELEVATION**  
 SCALE: 1/8" = 1'-0"



**PIER 12 EAST ELEVATION**  
 SCALE: 1/8" = 1'-0"

NOTE: CONCRETE INFILL BETWEEN COLUMNS (TYP.)



**PIER 12 NORTH ELEVATION**  
 SCALE: 1/8" = 1'-0"

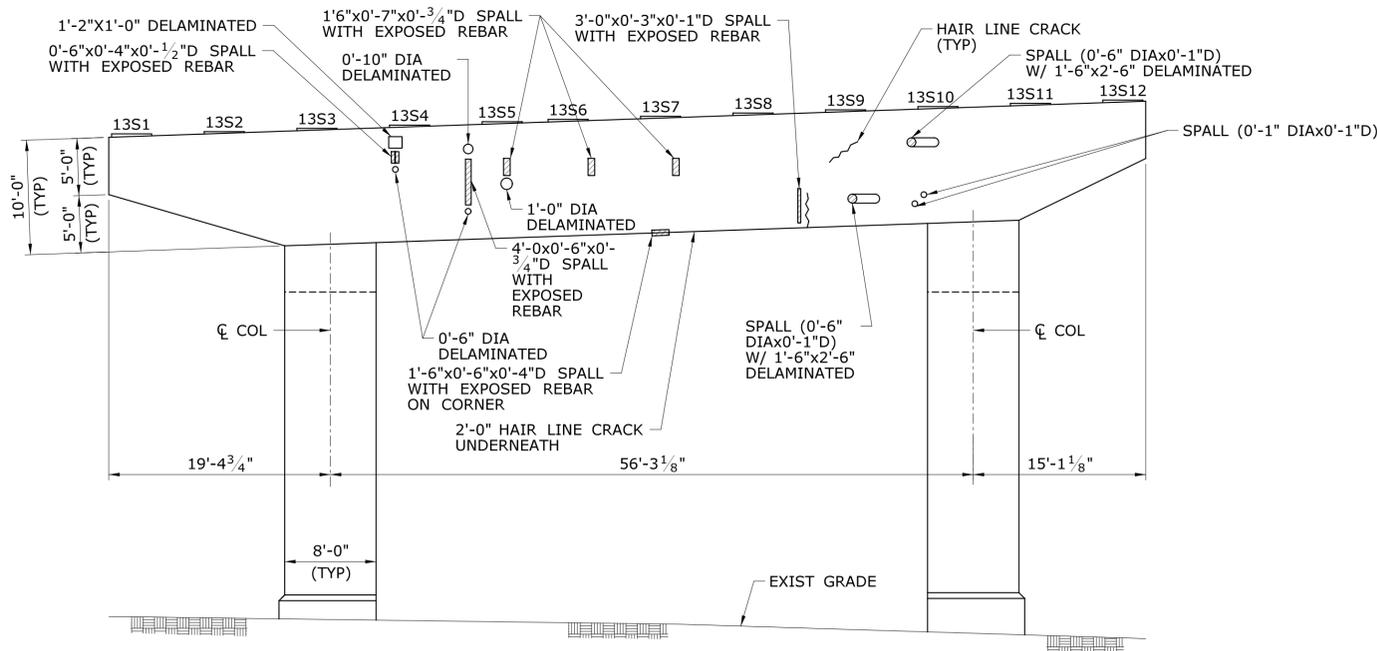
PIER REPAIR NOTES:

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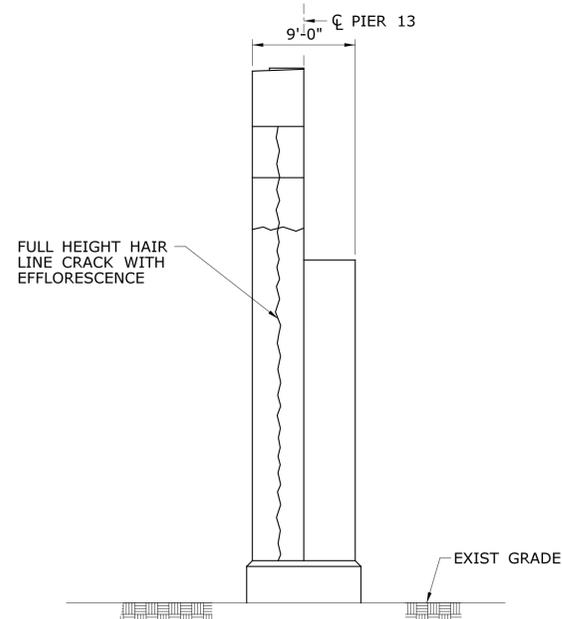
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- SPALLED CONCRETE WITH EXPOSED REINFORCEMENT
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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016		



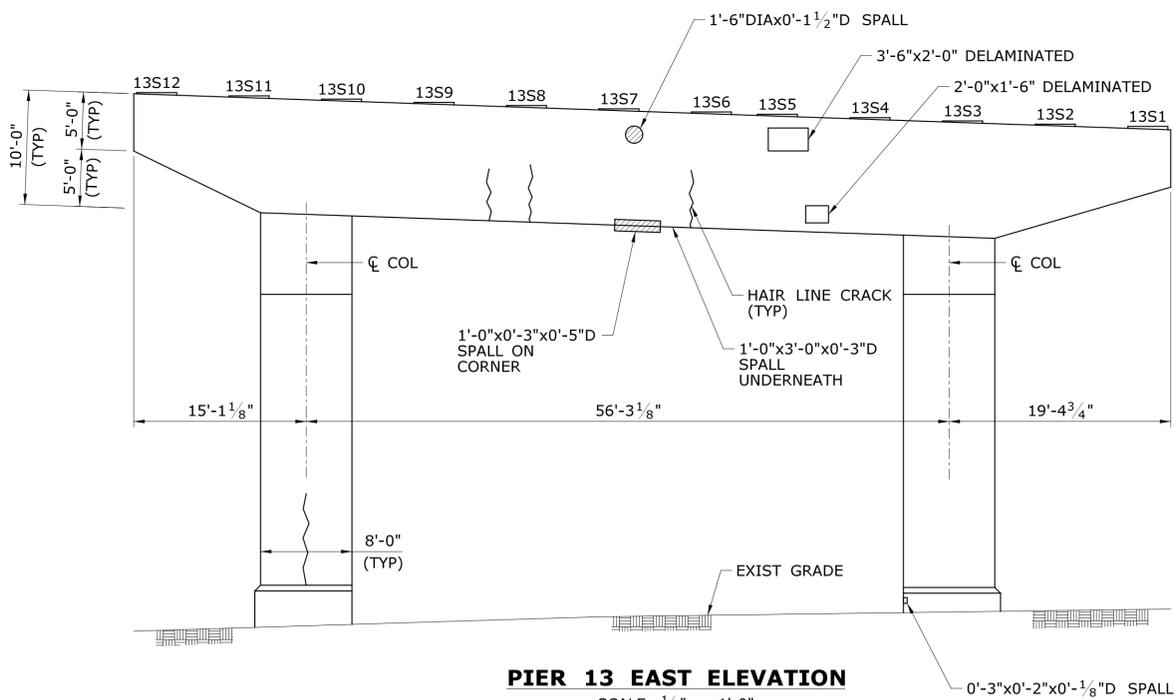
**PIER 13 WEST ELEVATION**  
SCALE: 1/8" = 1'-0"



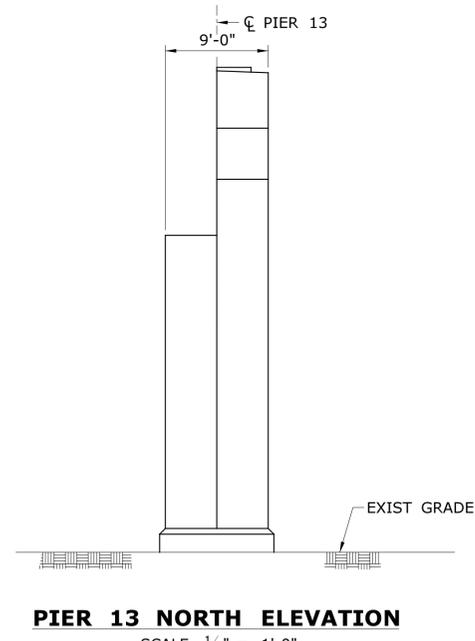
**PIER 13 SOUTH ELEVATION**  
SCALE: 1/8" = 1'-0"

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**PIER 13 EAST ELEVATION**  
SCALE: 1/8" = 1'-0"



**PIER 13 NORTH ELEVATION**  
SCALE: 1/8" = 1'-0"

**LEGEND**

- DELAMINATED/HOLLOW CONCRETE
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**S. SLATER**  
CHECKED BY:  
**M. EGAN**  
SCALE AS NOTED

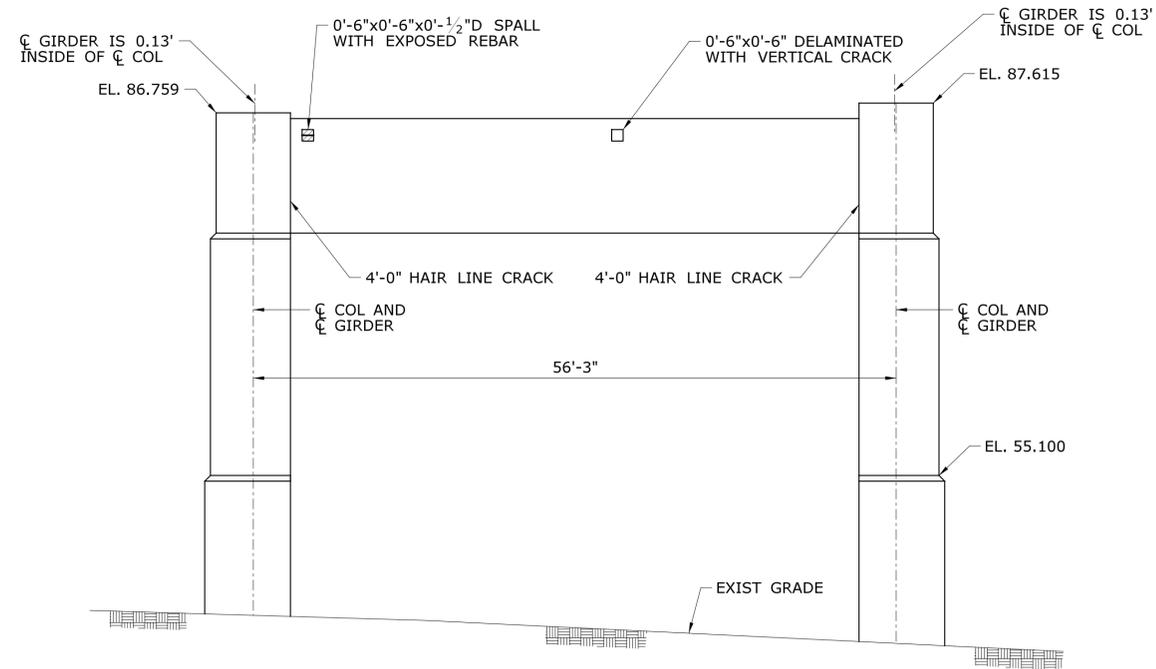


SIGNATURE/BLOCK:  
  
Cardinal Engineering Associates, Inc.  
3 Colony Street  
Meriden, CT 06451

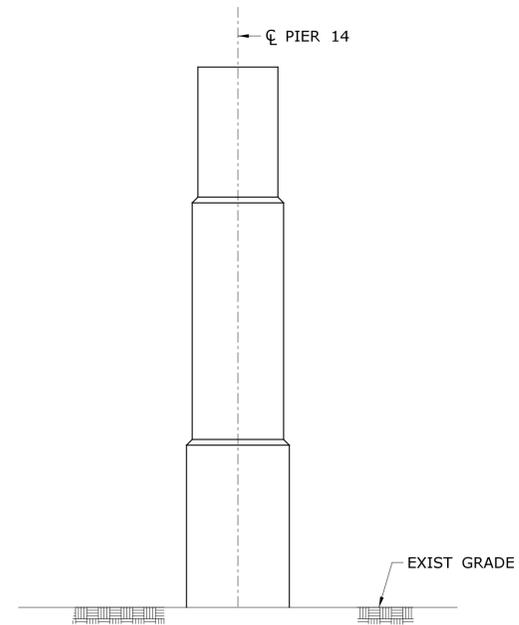
PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

TOWN:  
**NEW LONDON/GROTON**  
DRAWING TITLE:  
**PIER 13 REPAIRS**

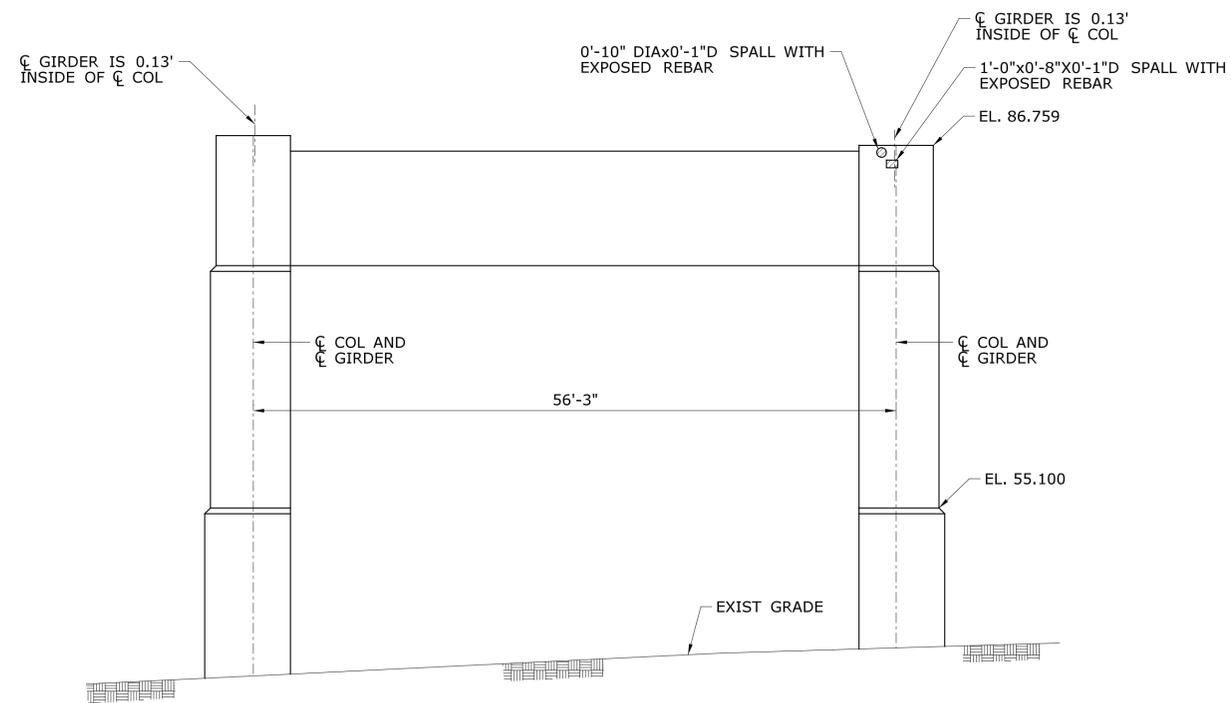
PROJECT NO.  
**94-252**  
DRAWING NO.  
**SA-21**  
SHEET NO.  
**04.021**



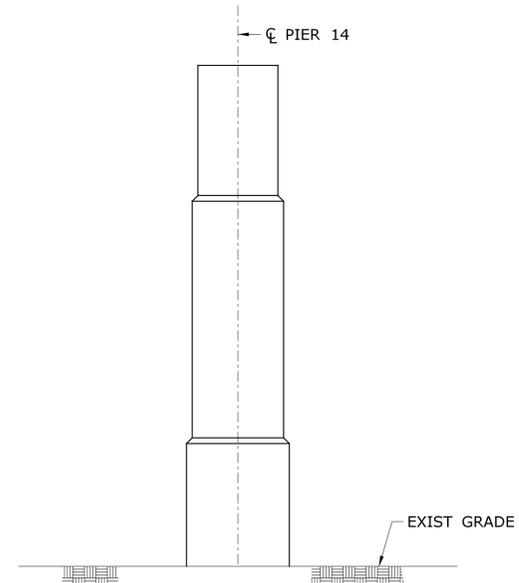
**PIER 14 WEST ELEVATION**  
SCALE: 1/8" = 1'-0"



**PIER 14 SOUTH ELEVATION**  
SCALE: 1/8" = 1'-0"



**PIER 14 EAST ELEVATION**  
SCALE: 1/8" = 1'-0"



**PIER 14 NORTH ELEVATION**  
SCALE: 1/8" = 1'-0"

**PIER REPAIR NOTES:**

1. THE SUBSTRUCTURE DETERIORATION AND REPAIR DIMENSIONS ARE BASED ON LIMITED FIELD OBSERVATIONS AND BRIDGE SAFETY INSPECTION REPORT (NOVEMBER 22, 2013). THE INFORMATION IS INTENDED TO BE USED AS A GUIDE AND DOES NOT NECESSARILY REFLECT THE CURRENT CONDITION OF THE STRUCTURE. THE EXACT LOCATION AND LIMITS OF DETERIORATED CONCRETE TO BE REPAIRED SHALL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION. DETERIORATIONS SHOWN ARE NOT DRAWN TO SCALE FOR CLARITY, THOUGH CRACKS ARE SHOWN APPROXIMATELY TO SCALE.
2. THE CONTRACTOR SHALL PROVIDE SAFE ACCESS FOR THE ENGINEER TO DELINEATE AND REVIEW THE REPAIR WORK. THE COST OF PROVIDING ACCESS SHALL BE INCLUDED IN THE COST OF APPROPRIATE REPAIR ITEMS.
3. THE CONTRACTOR SHALL NOT PERFORM ANY REPAIR WORK WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
4. SPALL AREAS, DELAMINATED/HOLLOW AREAS, AND SHALLOW REBAR AREAS SHALL BE REPAIRED IN ACCORDANCE WITH DETAILS SHOWN ON DWG. NO. SA-39 (TYP.).
5. ONLY CRACKS THAT MEET THE CRITERIA SPECIFIED ON DWG. NO. SA-39 SHALL BE REPAIRED
6. FOR CONCRETE BEARING PADS NOTED TO BE REPAIRED SEE DETAIL ON DWG. NO. SA-12.
7. ELEVATIONS SHOWN ARE N.A.V.D. 1988 ELEVATIONS CONVERTED FROM ORIGINAL N.G.V.D. 1929 ELEVATIONS TAKEN FROM ORIGINAL AS-BUILT PLANS DATED 1969 & 1970.

**LEGEND**

- DELAMINATED/HOLLOW CONCRETE
- SPALLED CONCRETE
- SPALLED CONCRETE WITH EXPOSED REINFORCEMENT
- SCALED CONCRETE
- HONEYCOMBED CONCRETE
- HONEYCOMBED CONCRETE WITH EXPOSED REINFORCEMENT
- CONCRETE POPOUT
- HAIR LINE CRACK OR CRACK
- MAP CRACKS
- WITH EFFLORESCENCE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER:  
**S. SLATER**  
 CHECKED BY:  
**M. EGAN**  
 SCALE AS NOTED

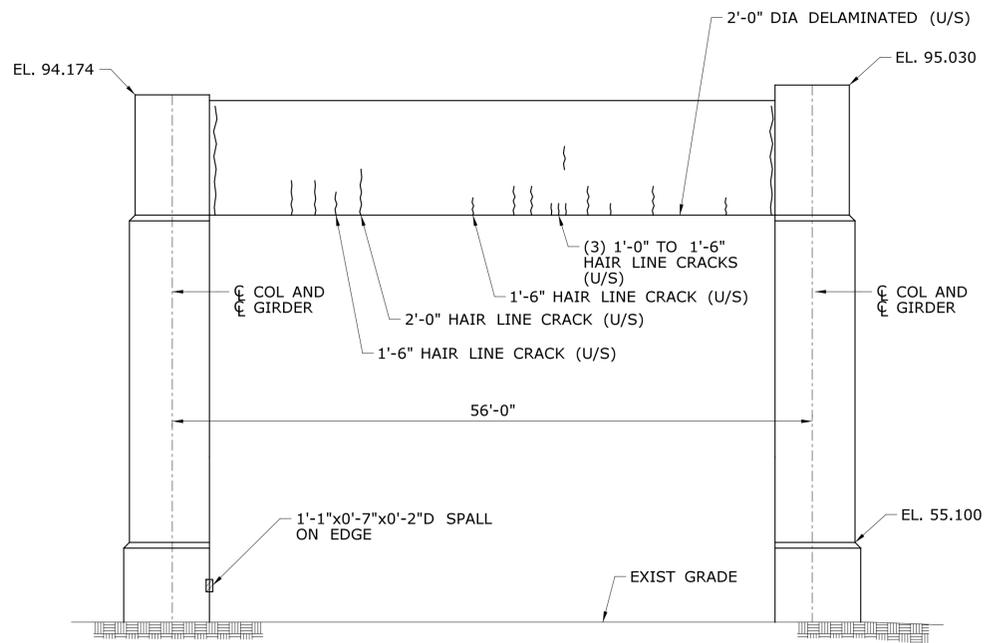
**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**  
 Plotted Date: 7/12/2016  
 Filename: ...\_SB\_MSH\_0094\_0252\_BR\_NO\_02514A\_PIER\_14.dgn

SIGNATURE/BLOCK:  
  
 Cardinal Engineering Associates, Inc.  
 3 Colony Street  
 Meriden, CT 06451

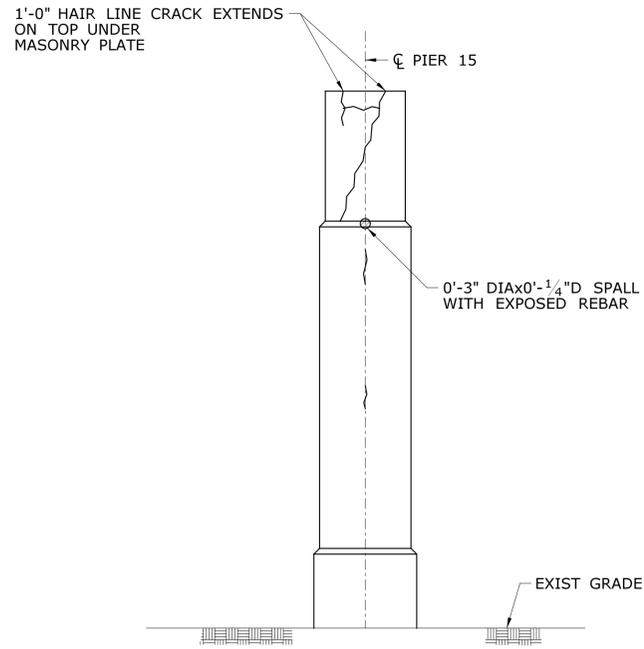
PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

TOWN:  
**NEW LONDON/GROTON**  
 DRAWING TITLE:  
**PIER 14 REPAIRS**

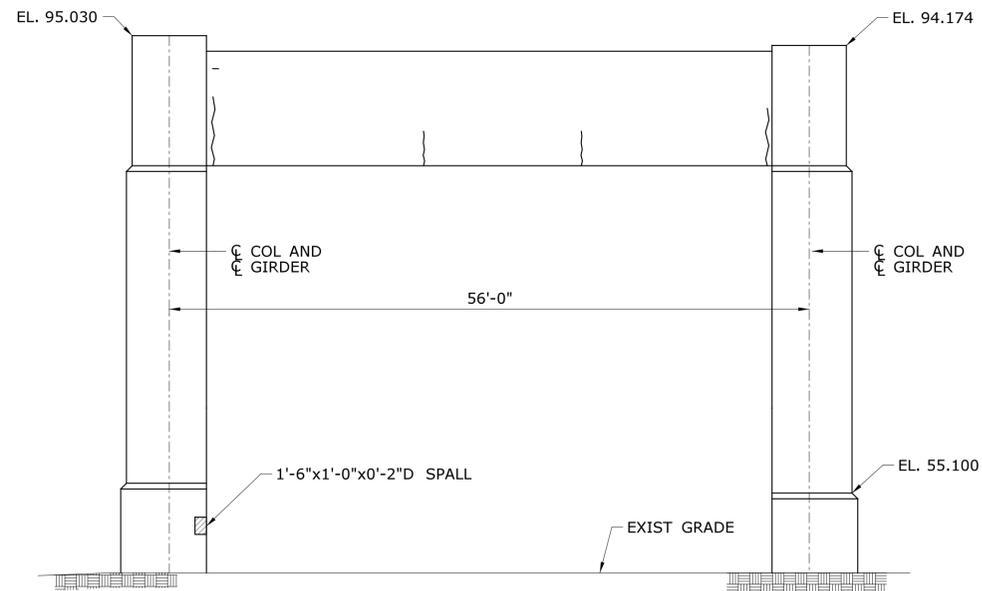
PROJECT NO.  
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 DRAWING NO.  
**SA-22**  
 SHEET NO.  
**04.022**



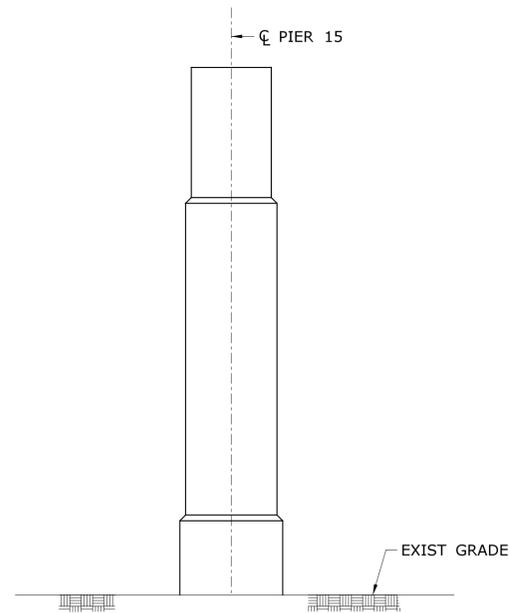
**PIER 15 WEST ELEVATION**  
SCALE: 1/8" = 1'-0"



**PIER 15 SOUTH ELEVATION**  
SCALE: 1/8" = 1'-0"



**PIER 15 EAST ELEVATION**  
SCALE: 1/8" = 1'-0"



**PIER 15 NORTH ELEVATION**  
SCALE: 1/8" = 1'-0"

**PIER REPAIR NOTES:**

1. THE SUBSTRUCTURE DETERIORATION AND REPAIR DIMENSIONS ARE BASED ON LIMITED FIELD OBSERVATIONS AND BRIDGE SAFETY INSPECTION REPORT (NOVEMBER 22, 2013). THE INFORMATION IS INTENDED TO BE USED AS A GUIDE AND DOES NOT NECESSARILY REFLECT THE CURRENT CONDITION OF THE STRUCTURE. THE EXACT LOCATION AND LIMITS OF DETERIORATED CONCRETE TO BE REPAIRED SHALL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION. DETERIORATIONS SHOWN ARE NOT DRAWN TO SCALE FOR CLARITY, THOUGH CRACKS ARE SHOWN APPROXIMATELY TO SCALE.
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5. ONLY CRACKS THAT MEET THE CRITERIA SPECIFIED ON DWG. NO. SA-39 SHALL BE REPAIRED
6. FOR CONCRETE BEARING PADS NOTED TO BE REPAIRED SEE DETAIL ON DWG. NO. SA-12.
7. ELEVATIONS SHOWN ARE N.A.V.D. 1988 ELEVATIONS CONVERTED FROM ORIGINAL N.G.V.D. 1929 ELEVATIONS TAKEN FROM ORIGINAL AS-BUILT PLANS DATED 1969 & 1970.

**LEGEND**

- DELAMINATED/HOLLOW CONCRETE
- SPALLED CONCRETE
- SPALLED CONCRETE WITH EXPOSED REINFORCEMENT
- SCALED CONCRETE
- HONEYCOMBED CONCRETE
- HONEYCOMBED CONCRETE WITH EXPOSED REINFORCEMENT
- CONCRETE POPOUT
- HAIR LINE CRACK OR CRACK
- MAP CRACKS
- WITH EFFLORESCENCE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 7/12/2016

DESIGNER/DRAFTER:  
**S. SLATER**  
CHECKED BY:  
**M. EGAN**  
SCALE AS NOTED

**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**

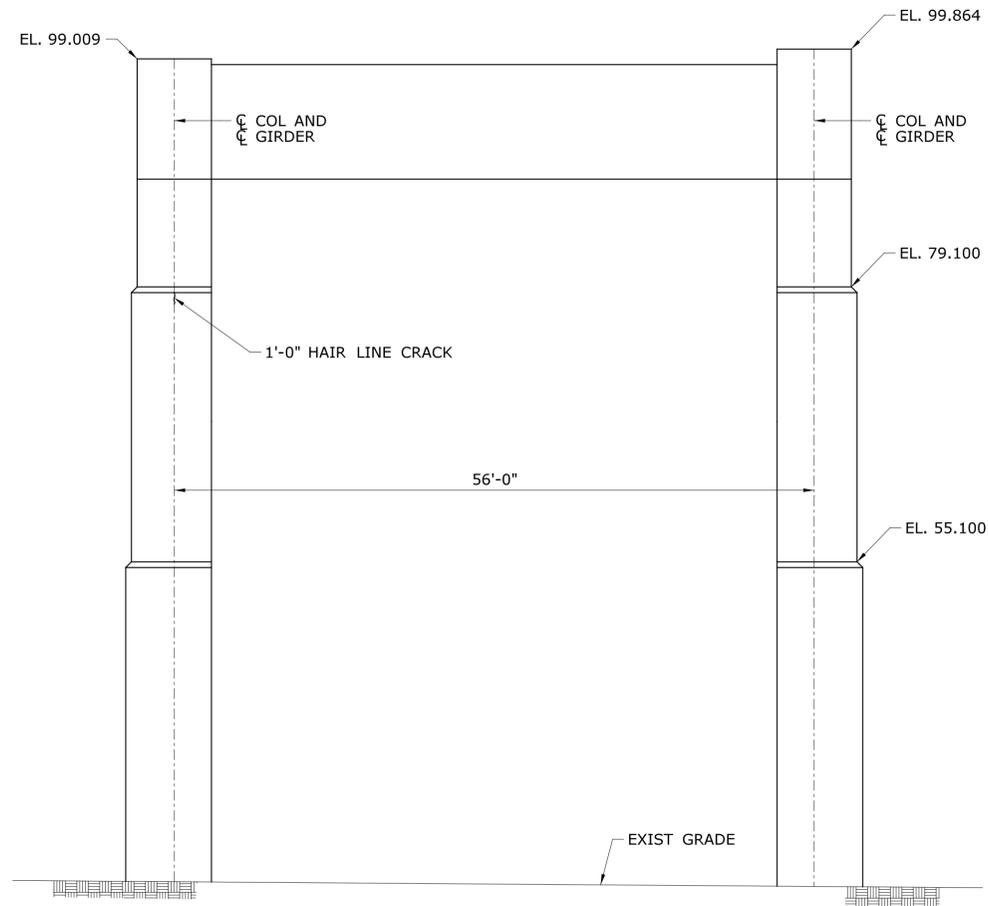
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SIGNATURE/BLOCK:  
  
 Cardinal Engineering Associates, Inc.  
 3 Colony Street  
 Meriden, CT 06451

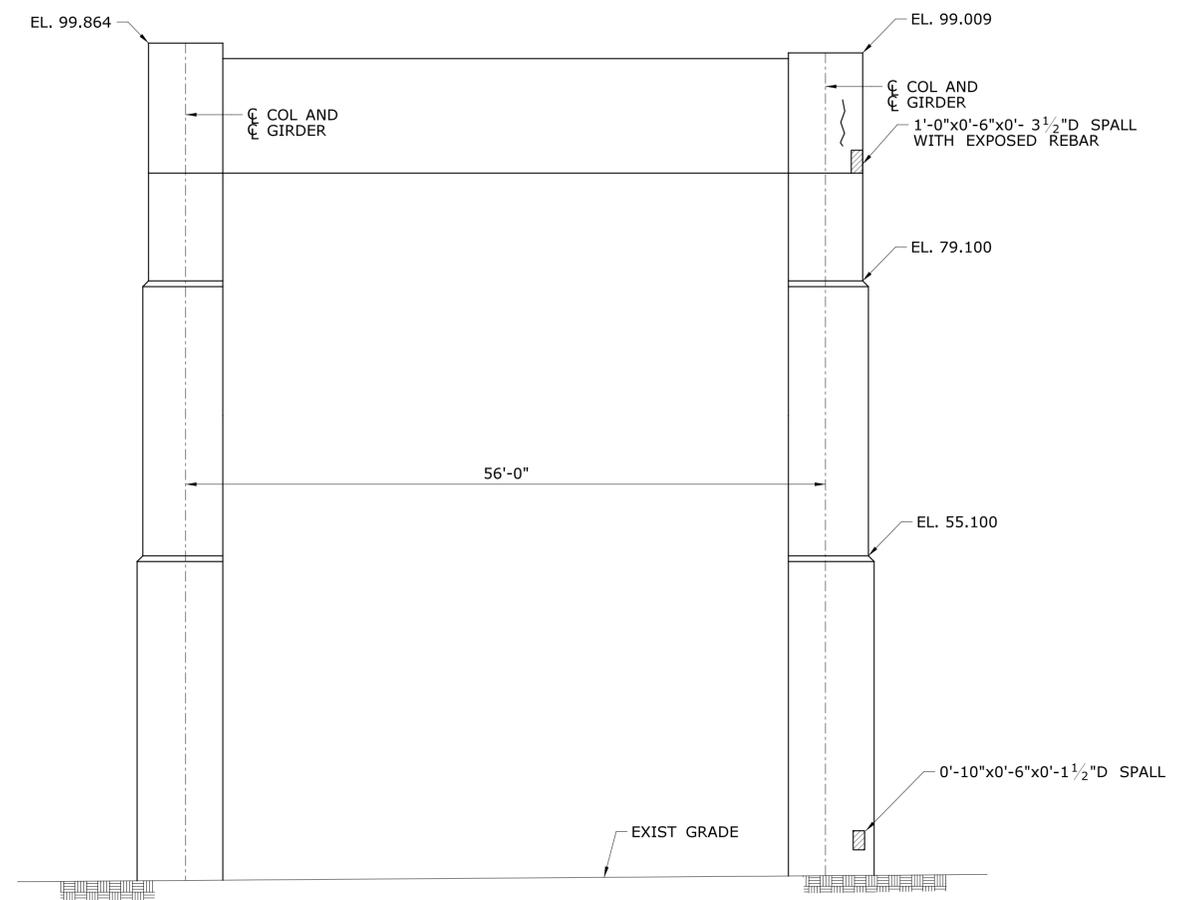
PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

TOWN:  
**NEW LONDON/GROTON**  
 DRAWING TITLE:  
**PIER 15 REPAIRS**

PROJECT NO.  
**94-252**  
 DRAWING NO.  
**SA-23**  
 SHEET NO.  
**04.023**



**PIER 16 WEST ELEVATION**  
SCALE: 1/8" = 1'-0"



**PIER 16 EAST ELEVATION**  
SCALE: 1/8" = 1'-0"

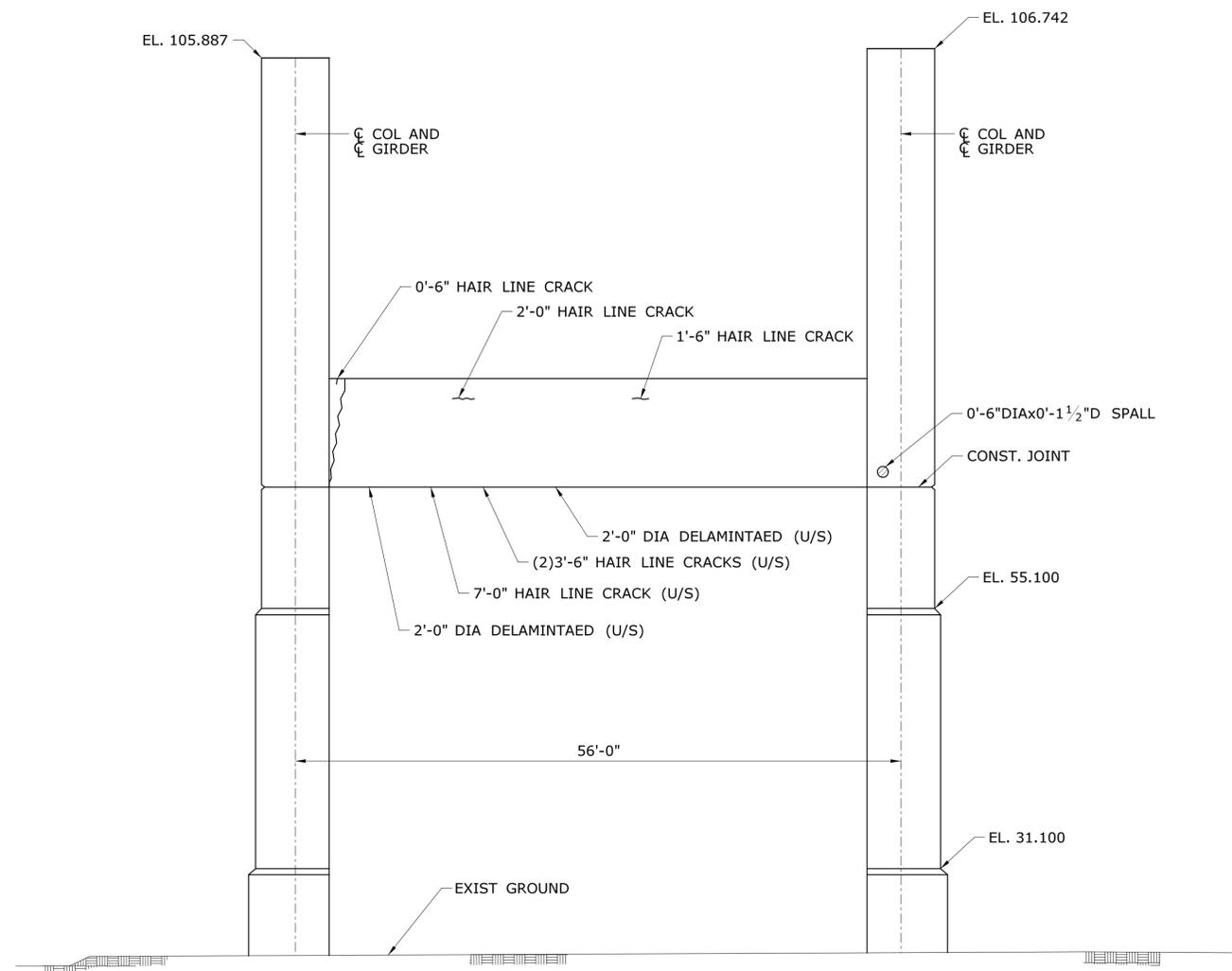
**PIER REPAIR NOTES:**

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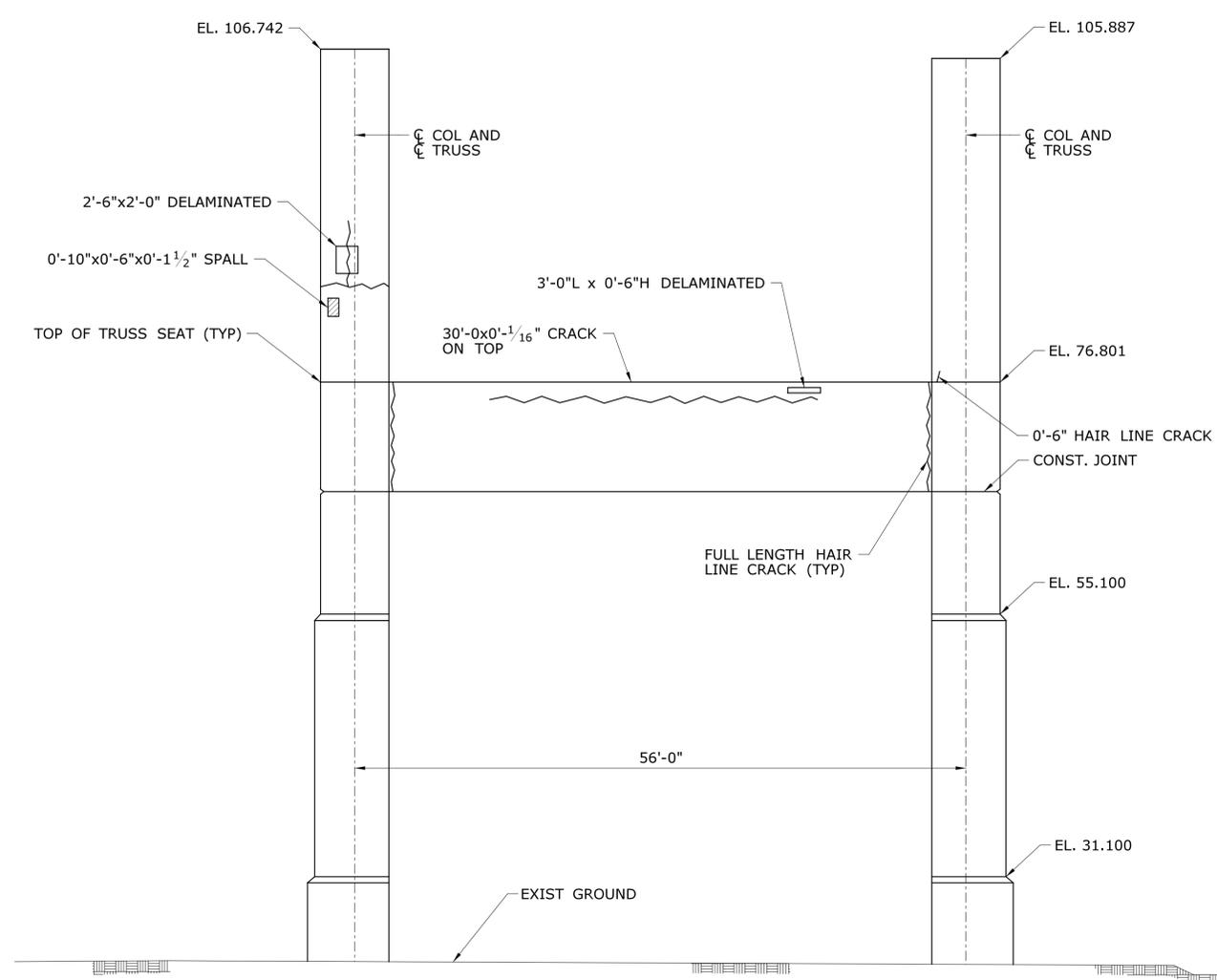
**LEGEND**

- DELAMINATED/HOLLOW CONCRETE
- SPALLED CONCRETE
- SPALLED CONCRETE WITH EXPOSED REINFORCEMENT
- SCALED CONCRETE
- HONEYCOMBED CONCRETE
- HONEYCOMBED CONCRETE WITH EXPOSED REINFORCEMENT
- CONCRETE POPOUT
- HAIR LINE CRACK OR CRACK
- MAP CRACKS
- WITH EFFLORESCENCE

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: <b>S. SLATER</b> CHECKED BY: <b>M. EGAN</b> SCALE AS NOTED	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION Filename: ...SB_MSH_0094_0252_BR_NO_02514A_PIER_16.dgn	SIGNATURE/BLOCK: Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-24</b> SHEET NO. <b>04.024</b>
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016			



**PIER 17 WEST ELEVATION**  
SCALE: 1/8" = 1'-0"



**PIER 17 EAST ELEVATION**  
SCALE: 1/8" = 1'-0"

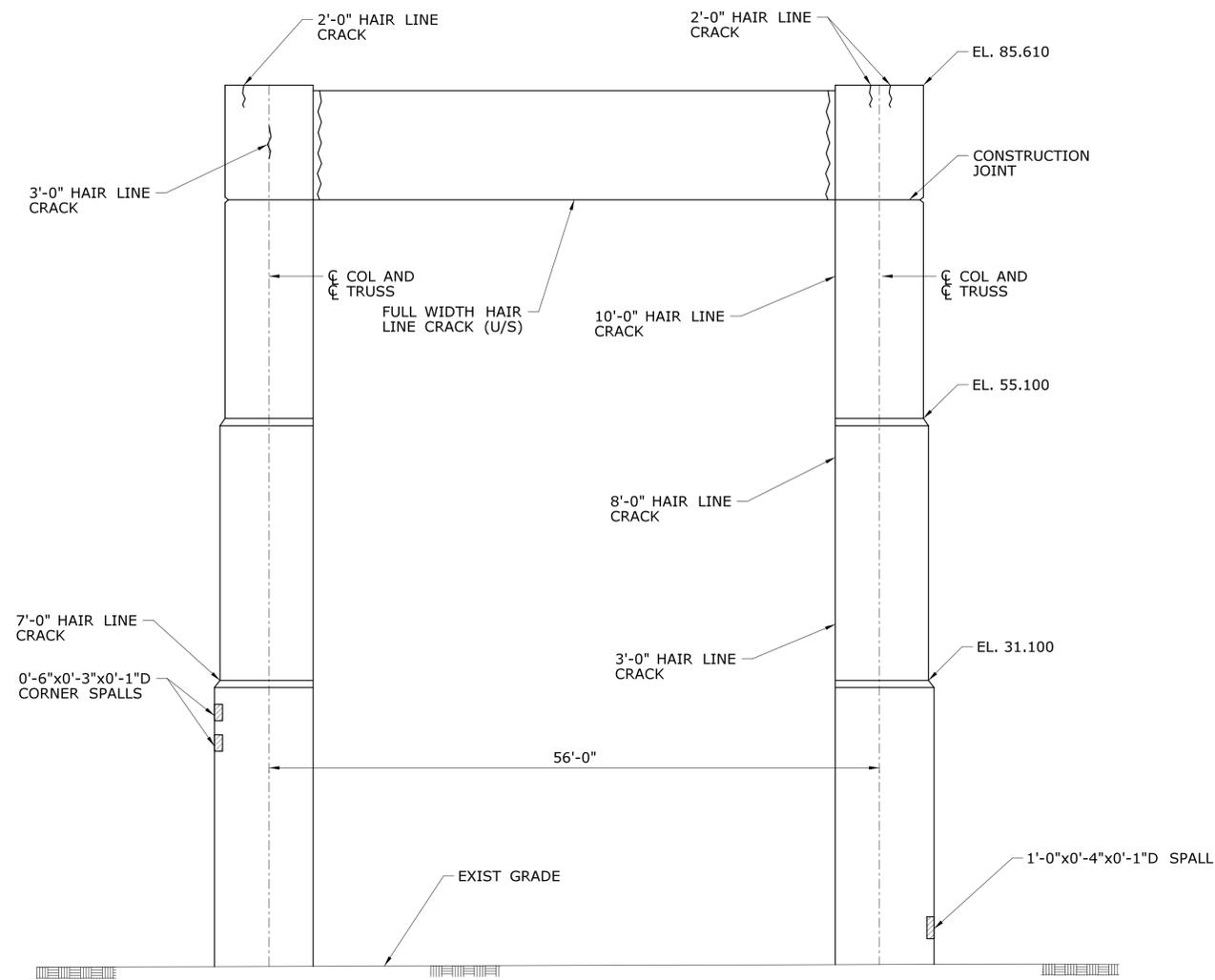
**PIER REPAIR NOTES:**

1. THE SUBSTRUCTURE DETERIORATION AND REPAIR DIMENSIONS ARE BASED ON LIMITED FIELD OBSERVATIONS AND BRIDGE SAFETY INSPECTION REPORT (NOVEMBER 22, 2013). THE INFORMATION IS INTENDED TO BE USED AS A GUIDE AND DOES NOT NECESSARILY REFLECT THE CURRENT CONDITION OF THE STRUCTURE. THE EXACT LOCATION AND LIMITS OF DETERIORATED CONCRETE TO BE REPAIRED SHALL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION. DETERIORATIONS SHOWN ARE NOT DRAWN TO SCALE FOR CLARITY, THOUGH CRACKS ARE SHOWN APPROXIMATELY TO SCALE.
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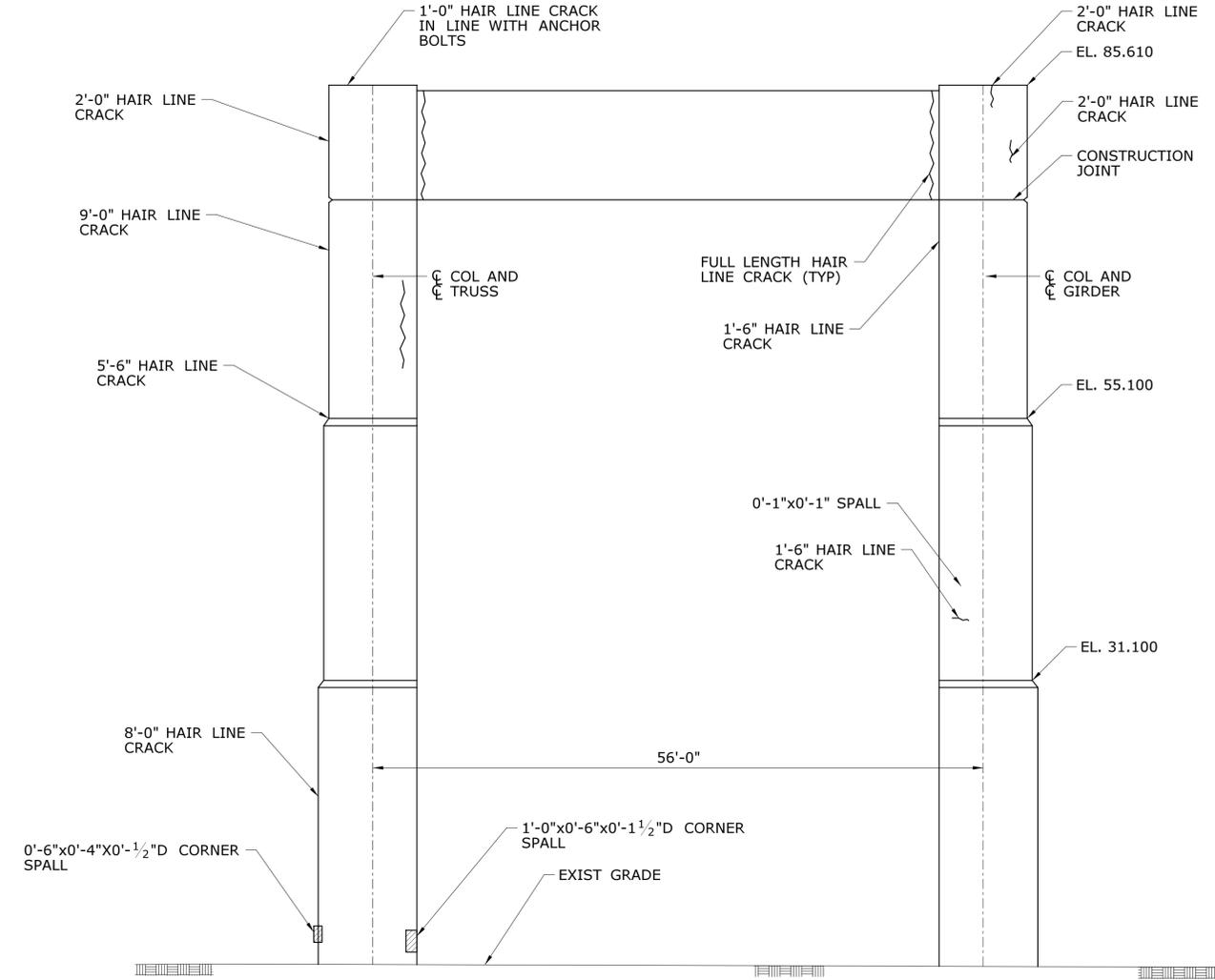
**LEGEND**

- DELAMINATED/HOLLOW CONCRETE
- SPALLED CONCRETE
- SPALLED CONCRETE WITH EXPOSED REINFORCEMENT
- SCALED CONCRETE
- HONEYCOMBED CONCRETE
- HONEYCOMBED CONCRETE WITH EXPOSED REINFORCEMENT
- CONCRETE POPOUT
- HAIR LINE CRACK OR CRACK
- MAP CRACKS
- WITH EFFLORESCENCE

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: <b>S. SLATER</b> CHECKED BY: <b>M. EGAN</b> SCALE AS NOTED	<b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b> Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-25</b> SHEET NO. <b>04.025</b>
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016		



**PIER 18 WEST ELEVATION**  
SCALE: 1/8" = 1'-0"



**PIER 18 EAST ELEVATION**  
SCALE: 1/8" = 1'-0"

**PIER REPAIR NOTES:**

1. THE SUBSTRUCTURE DETERIORATION AND REPAIR DIMENSIONS ARE BASED ON LIMITED FIELD OBSERVATIONS AND BRIDGE SAFETY INSPECTION REPORT (NOVEMBER 22, 2013). THE INFORMATION IS INTENDED TO BE USED AS A GUIDE AND DOES NOT NECESSARILY REFLECT THE CURRENT CONDITION OF THE STRUCTURE. THE EXACT LOCATION AND LIMITS OF DETERIORATED CONCRETE TO BE REPAIRED SHALL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION. DETERIORATIONS SHOWN ARE NOT DRAWN TO SCALE FOR CLARITY, THOUGH CRACKS ARE SHOWN APPROXIMATELY TO SCALE.
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7. ELEVATIONS SHOWN ARE N.A.V.D. 1988 ELEVATIONS CONVERTED FROM ORIGINAL N.G.V.D. 1929 ELEVATIONS TAKEN FROM ORIGINAL AS-BUILT PLANS DATED 1969 & 1970.

**LEGEND**

- DELAMINATED/HOLLOW CONCRETE
- SPALLED CONCRETE
- SPALLED CONCRETE WITH EXPOSED REINFORCEMENT
- SCALED CONCRETE
- HONEYCOMBED CONCRETE
- HONEYCOMBED CONCRETE WITH EXPOSED REINFORCEMENT
- CONCRETE POPOUT
- HAIR LINE CRACK OR CRACK
- MAP CRACKS
- E WITH EFFLORESCENCE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER:  
**S. SLATER**  
CHECKED BY:  
**M. EGAN**  
SCALE AS NOTED

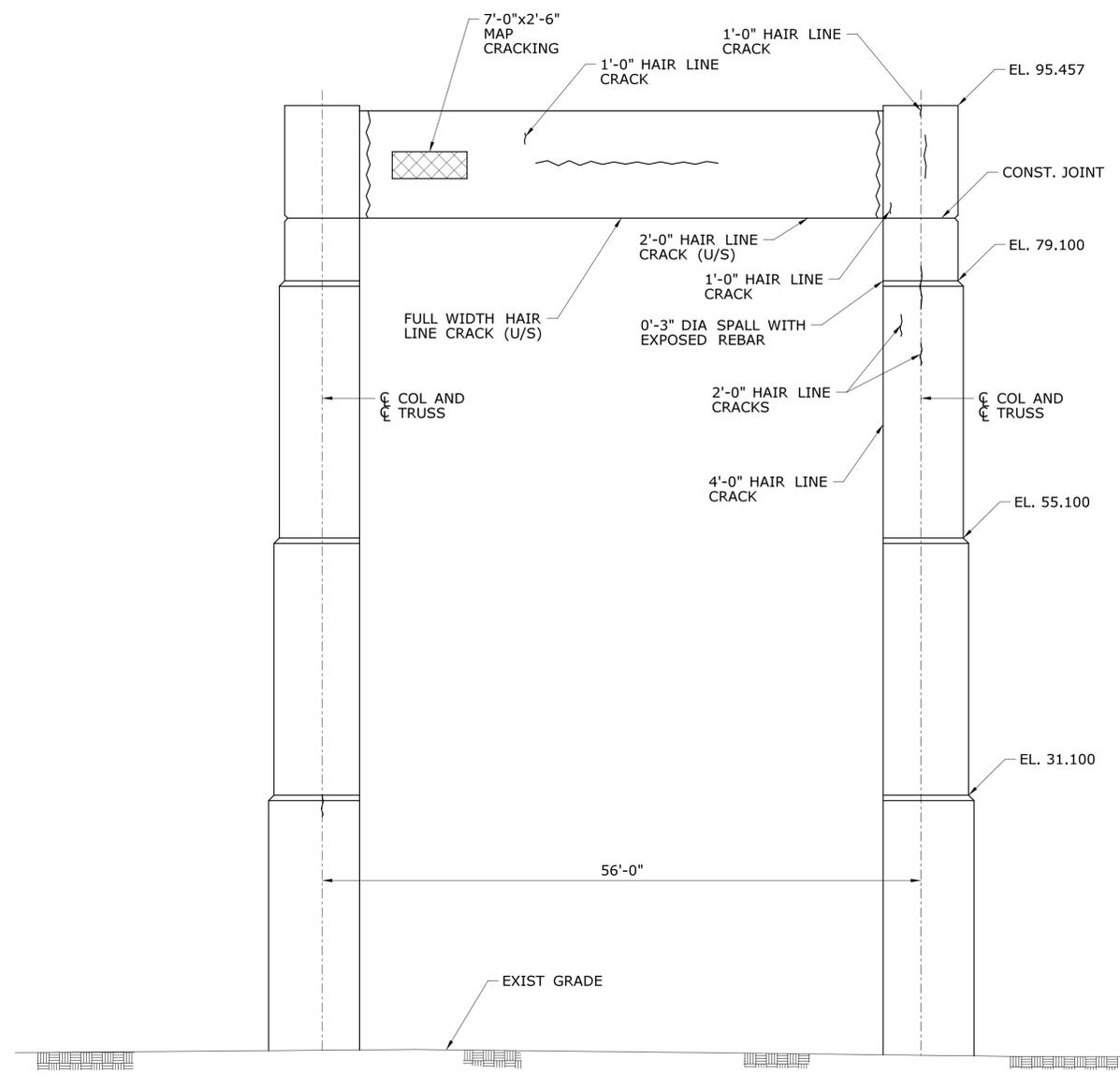


SIGNATURE/BLOCK:  
  
Cardinal Engineering Associates, Inc.  
3 Colony Street  
Meriden, CT 06451

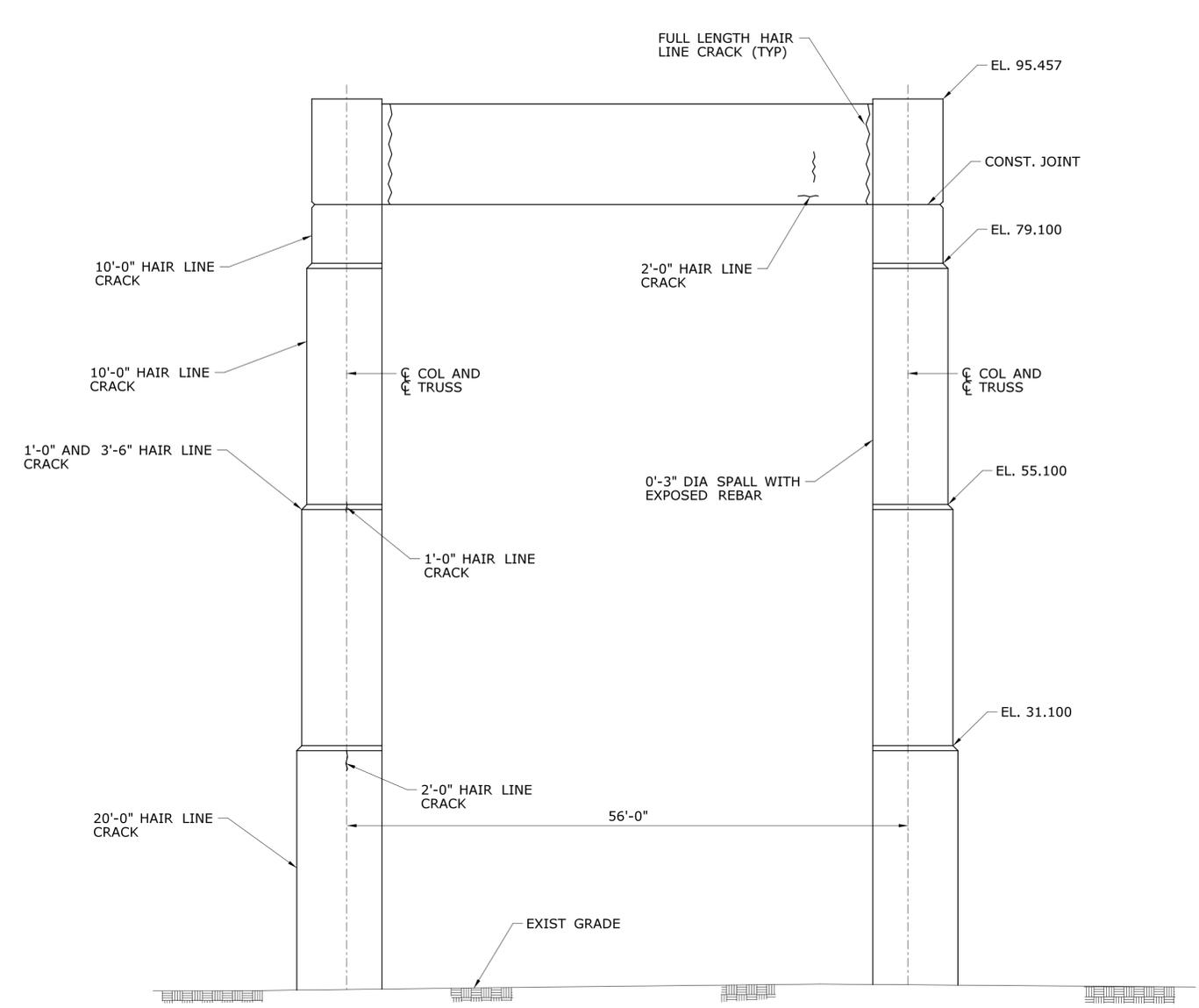
PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

TOWN:  
**NEW LONDON/GROTON**  
DRAWING TITLE:  
**PIER 18 REPAIRS**

PROJECT NO.  
**94-252**  
DRAWING NO.  
**SA-26**  
SHEET NO.  
**04.026**



**PIER 19 WEST ELEVATION**  
SCALE: 1/8" = 1'-0"



**PIER 19 EAST ELEVATION**  
SCALE: 1/8" = 1'-0"

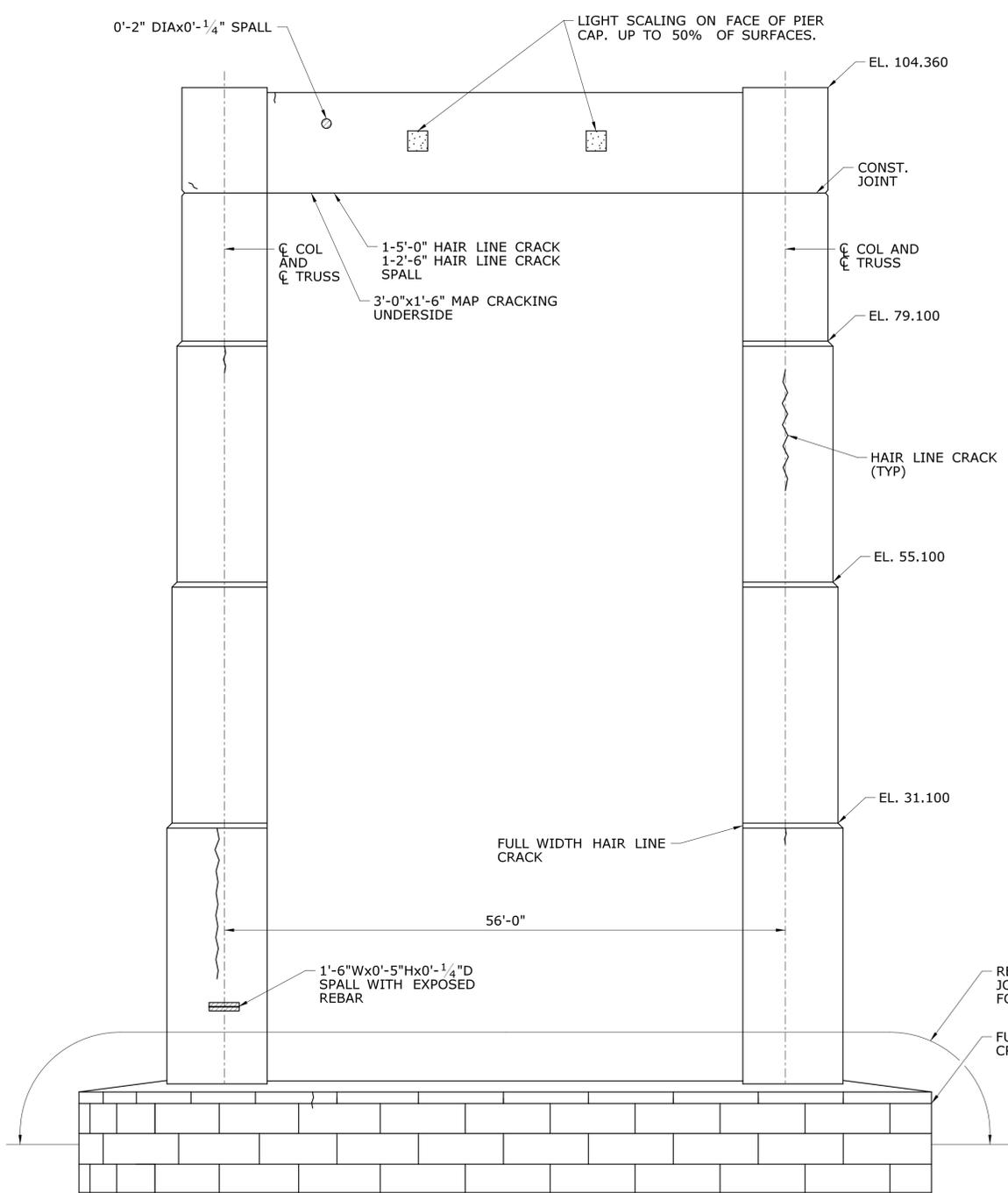
**PIER REPAIR NOTES:**

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**LEGEND**

- DELAMINATED/HOLLOW CONCRETE
- SPALLED CONCRETE
- SPALLED CONCRETE WITH EXPOSED REINFORCEMENT
- SCALED CONCRETE
- HONEYCOMBED CONCRETE
- HONEYCOMBED CONCRETE WITH EXPOSED REINFORCEMENT
- CONCRETE POPOUT
- HAIR LINE CRACK OR CRACK
- MAP CRACKS
- E WITH EFFLORESCENCE

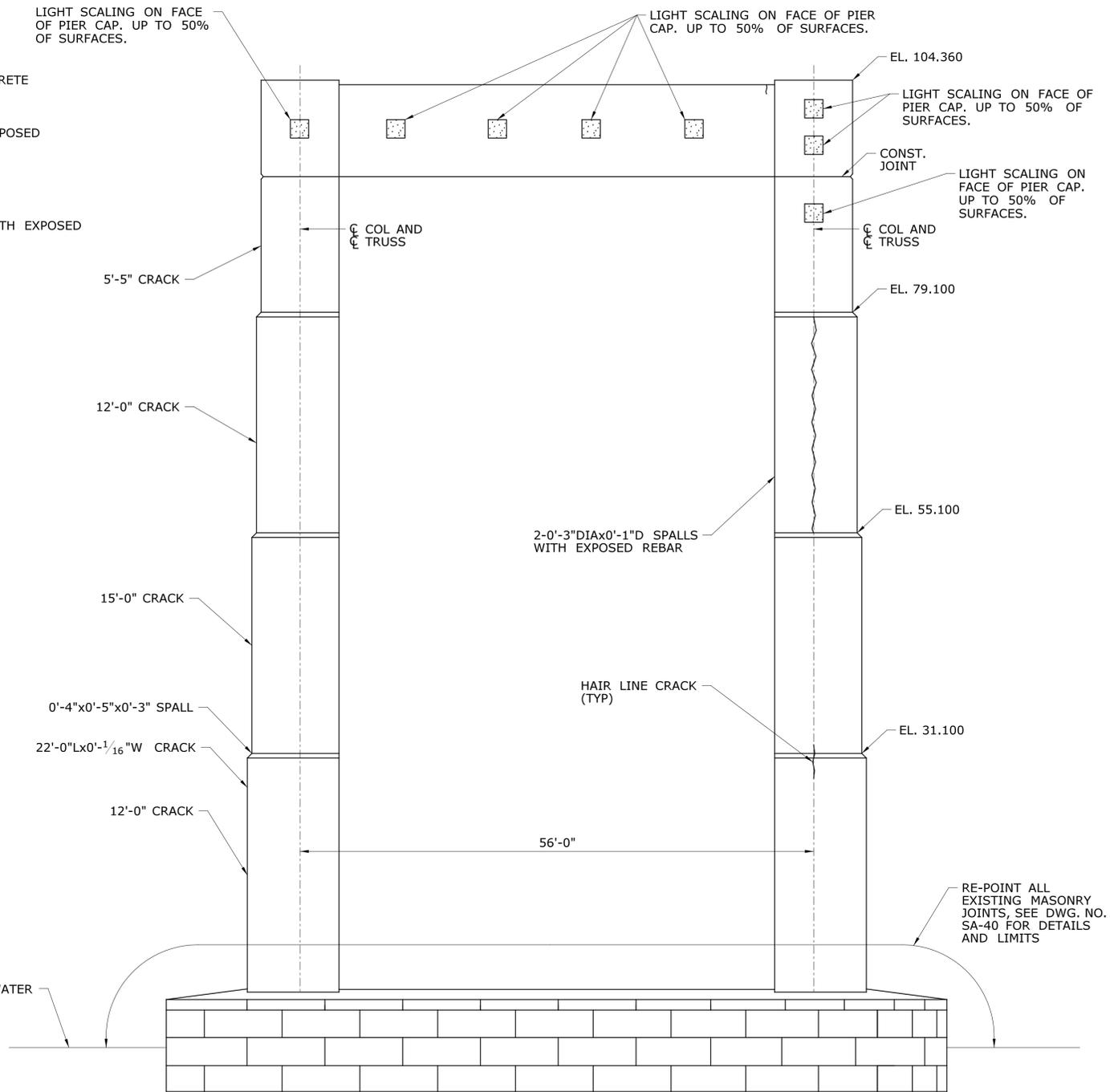
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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016			



**PIER 20 WEST ELEVATION**  
SCALE: 1/8" = 1'-0"

NOTE:  
1. FOR FEMA 100 YEAR FLOOD ELEVATION, COASTAL JURISDICTION LINE ELEVATION, MEAN HIGH WATER ELEVATION, AND MEAN LOW WATER ELEVATION SEE GENERAL PLAN DRAWINGS SA-03 TO SA-05.

- LEGEND**
- DELAMINATED/HOLLOW CONCRETE
  - ▨ SPALLED CONCRETE
  - ▩ SPALLED CONCRETE WITH EXPOSED REINFORCEMENT
  - ▧ SCALED CONCRETE
  - ▦ HONEYCOMBED CONCRETE
  - ▥ HONEYCOMBED CONCRETE WITH EXPOSED REINFORCEMENT
  - ▤ CONCRETE POPOUT
  - HAIR LINE CRACK OR CRACK
  - ⊠ MAP CRACKS
  - E WITH EFFLORESCENCE

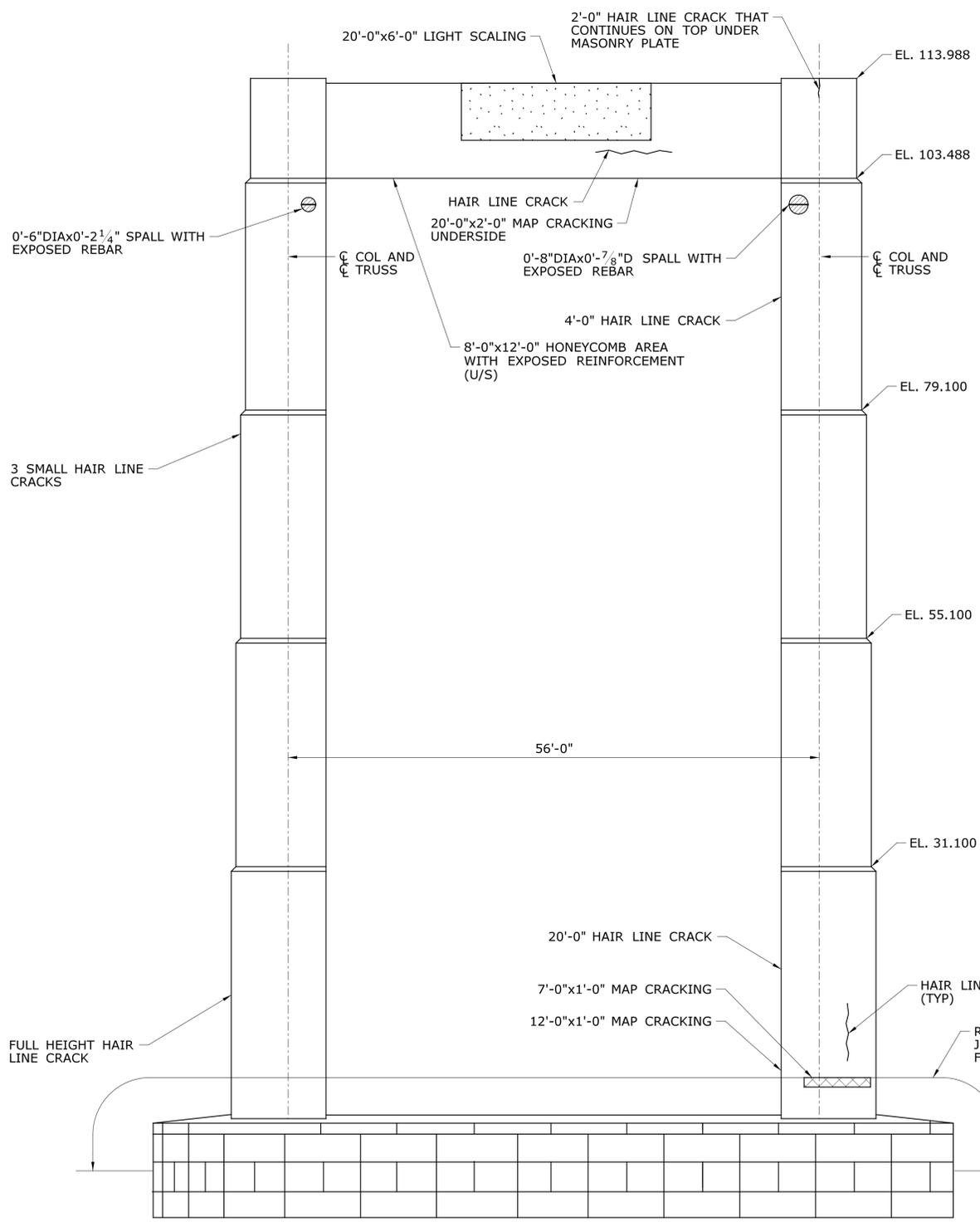


**PIER 20 EAST ELEVATION**  
SCALE: 1/8" = 1'-0"

- PIER REPAIR NOTES:**
1. THE SUBSTRUCTURE DETERIORATION AND REPAIR DIMENSIONS ARE BASED ON LIMITED FIELD OBSERVATIONS AND BRIDGE SAFETY INSPECTION REPORT (NOVEMBER 22, 2013). THE INFORMATION IS INTENDED TO BE USED AS A GUIDE AND DOES NOT NECESSARILY REFLECT THE CURRENT CONDITION OF THE STRUCTURE. THE EXACT LOCATION AND LIMITS OF DETERIORATED CONCRETE TO BE REPAIRED SHALL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION. DETERIORATIONS SHOWN ARE NOT DRAWN TO SCALE FOR CLARITY, THOUGH CRACKS ARE SHOWN APPROXIMATELY TO SCALE.
  2. THE CONTRACTOR SHALL PROVIDE SAFE ACCESS FOR THE ENGINEER TO DELINEATE AND REVIEW THE REPAIR WORK. THE COST OF PROVIDING ACCESS SHALL BE INCLUDED IN THE COST OF APPROPRIATE REPAIR ITEMS.
  3. THE CONTRACTOR SHALL NOT PERFORM ANY REPAIR WORK WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

4. SPALL AREAS, DELAMINATED/HOLLOW AREAS, AND SHALLOW REBAR AREAS SHALL BE REPAIRED IN ACCORDANCE WITH DETAILS SHOWN ON DWG. NO. SA-39 (TYP.).
5. ONLY CRACKS THAT MEET THE CRITERIA SPECIFIED ON DWG. NO. SA-39 SHALL BE REPAIRED
6. FOR CONCRETE BEARING PADS NOTED TO BE REPAIRED SEE DETAIL ON DWG. NO. SA-12.
7. ELEVATIONS SHOWN ARE N.A.V.D. 1988 ELEVATIONS CONVERTED FROM ORIGINAL N.G.V.D. 1929 ELEVATIONS TAKEN FROM ORIGINAL AS-BUILT PLANS DATED 1969 & 1970.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: <b>S. SLATER</b> CHECKED BY: <b>M. EGAN</b>	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	SIGNATURE/BLOCK: Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-28</b> SHEET NO. <b>04.028</b>
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	Filename: ..._SB_MSH_0094_0252_BR_NO_02514A_PIER_20.dgn		



**PIER 21 WEST ELEVATION**  
SCALE: 1/8" = 1'-0"

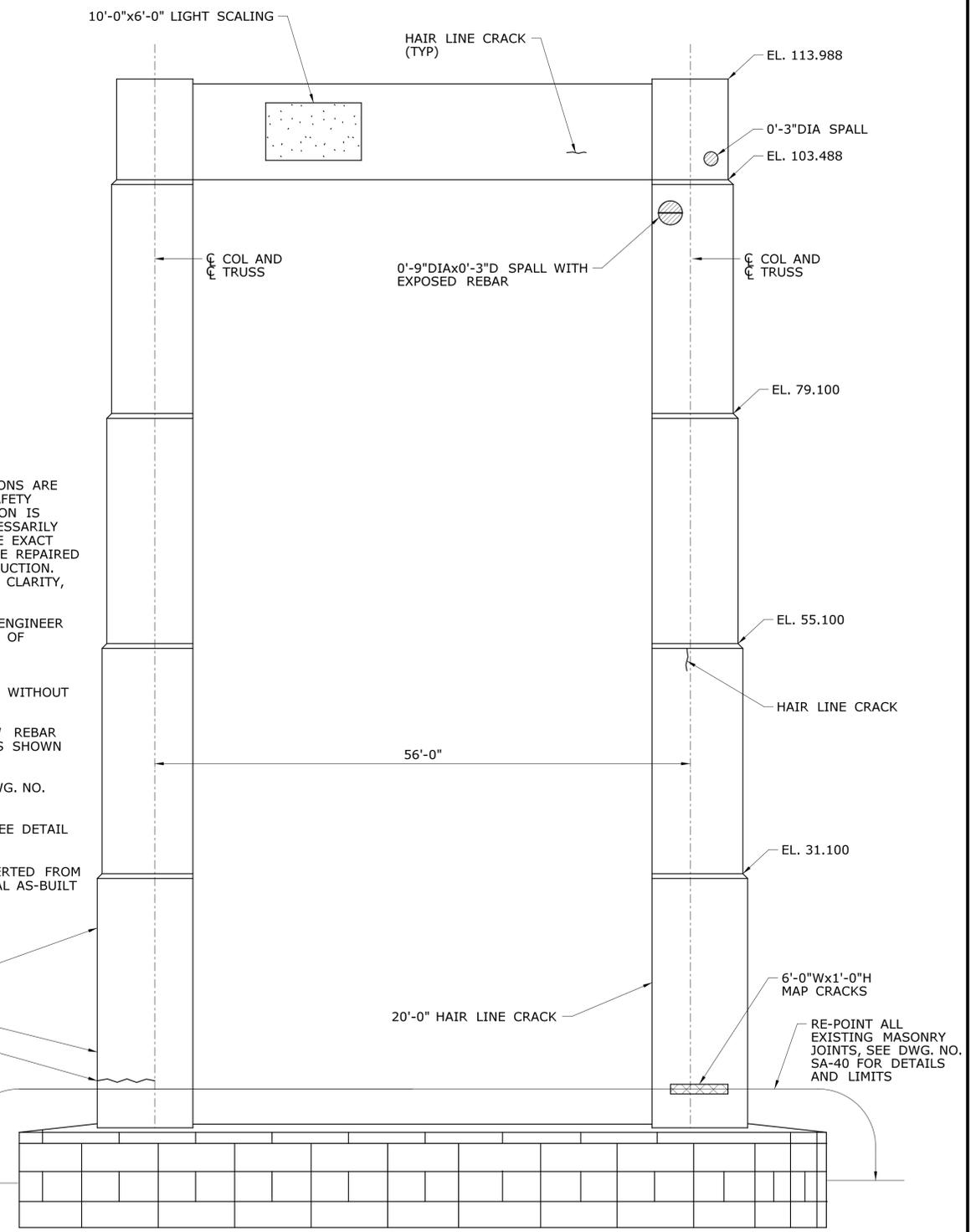
**LEGEND**

- DELAMINATED/HOLLOW CONCRETE
- ▨ SPALLED CONCRETE
- ▩ SPALLED CONCRETE WITH EXPOSED REINFORCEMENT
- ▧ SCALED CONCRETE
- ▦ HONEYCOMBED CONCRETE
- ▥ HONEYCOMBED CONCRETE WITH EXPOSED REINFORCEMENT
- ▤ CONCRETE POPOUT
- HAIR LINE CRACK OR CRACK
- ⊗ MAP CRACKS
- E WITH EFFLORESCENCE

**PIER REPAIR NOTES:**

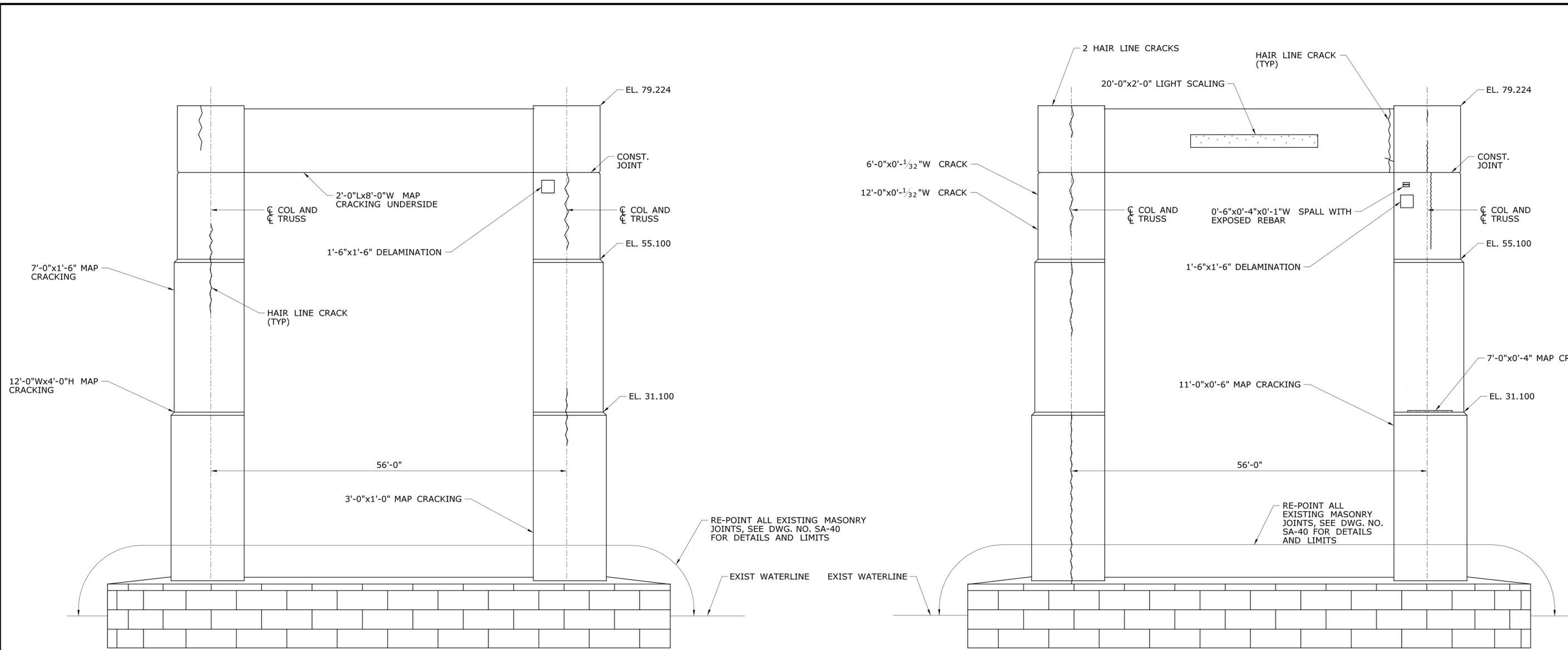
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3. THE CONTRACTOR SHALL NOT PERFORM ANY REPAIR WORK WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
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5. ONLY CRACKS THAT MEET THE CRITERIA SPECIFIED ON DWG. NO. SA-39 SHALL BE REPAIRED
6. FOR CONCRETE BEARING PADS NOTED TO BE REPAIRED SEE DETAIL ON DWG. NO. SA-12.
7. ELEVATIONS SHOWN ARE N.A.V.D, 1988 ELEVATIONS CONVERTED FROM ORIGINAL N.G.V.D, 1929 ELEVATIONS TAKEN FROM ORIGINAL AS-BUILT PLANS DATED 1969 & 1970.

NOTE:  
1. FOR FEMA 100 YEAR FLOOD ELEVATION, COASTAL JURISDICTION LINE ELEVATION, MEAN HIGH WATER ELEVATION, AND MEAN LOW WATER ELEVATION SEE GENERAL PLAN DRAWINGS SA-03 TO SA-05.



**PIER 21 EAST ELEVATION**  
SCALE: 1/8" = 1'-0"

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: <b>S. SLATER</b> CHECKED BY: <b>M. EGAN</b> SCALE AS NOTED	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION Filename: ...SB_MSH_0094_0252_BR_NO_02514A_PIER_21.dgn	SIGNATURE/BLOCK: Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-29</b> SHEET NO. <b>04.029</b>
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	DRAWING TITLE: <b>PIER 21 REPAIRS</b>		



**PIER 22 WEST ELEVATION**  
SCALE: 1/8" = 1'-0"

**PIER 22 EAST ELEVATION**  
SCALE: 1/8" = 1'-0"

**LEGEND**

- DELAMINATED/HOLLOW CONCRETE
- SPALLED CONCRETE
- SPALLED CONCRETE WITH EXPOSED REINFORCEMENT
- SCALED CONCRETE
- HONEYCOMBED CONCRETE
- HONEYCOMBED CONCRETE WITH EXPOSED REINFORCEMENT
- CONCRETE POPOUT
- HAIR LINE CRACK OR CRACK
- MAP CRACKS
- E WITH EFFLORESCENCE

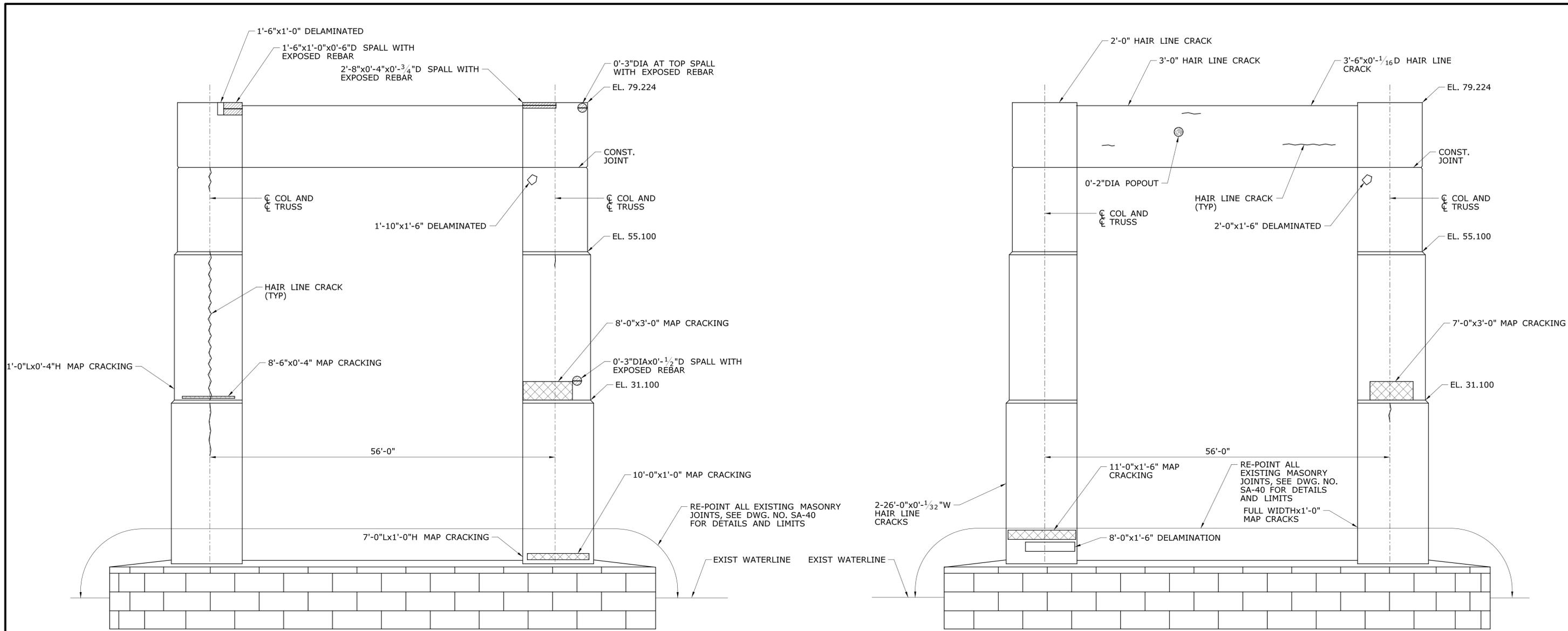
**PIER REPAIR NOTES:**

1. THE SUBSTRUCTURE DETERIORATION AND REPAIR DIMENSIONS ARE BASED ON LIMITED FIELD OBSERVATIONS AND BRIDGE SAFETY INSPECTION REPORT (NOVEMBER 22, 2013). THE INFORMATION IS INTENDED TO BE USED AS A GUIDE AND DOES NOT NECESSARILY REFLECT THE CURRENT CONDITION OF THE STRUCTURE. THE EXACT LOCATION AND LIMITS OF DETERIORATED CONCRETE TO BE REPAIRED SHALL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION. DETERIORATIONS SHOWN ARE NOT DRAWN TO SCALE FOR CLARITY, THOUGH CRACKS ARE SHOWN APPROXIMATELY TO SCALE.
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6. FOR CONCRETE BEARING PADS NOTED TO BE REPAIRED SEE DETAIL ON DWG. NO. SA-12.
7. ELEVATIONS SHOWN ARE N.A.V.D. 1988 ELEVATIONS CONVERTED FROM ORIGINAL N.G.V.D. 1929 ELEVATIONS TAKEN FROM ORIGINAL AS-BUILT PLANS DATED 1969 & 1970.

**NOTE:**

1. FOR FEMA 100 YEAR FLOOD ELEVATION, COASTAL JURISDICTION LINE ELEVATION, MEAN HIGH WATER ELEVATION, AND MEAN LOW WATER ELEVATION SEE GENERAL PLAN DRAWINGS SA-03 TO SA-05.

<p>THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.</p>		<p>DESIGNER/DRAFTER: <b>S. SLATER</b></p> <p>CHECKED BY: <b>M. EGAN</b></p> <p>SCALE AS NOTED</p>		<p><b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b></p>		<p>SIGNATURE/ BLOCK:</p> <p>Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451</p>		<p>PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b></p>		<p>TOWN: <b>NEW LONDON/GROTON</b></p>		<p>PROJECT NO. <b>94-252</b></p>	
								<p>DRAWING NO. <b>SA-30</b></p>		<p>SHEET NO. <b>04.030</b></p>			
<p>REV. DATE REVISION DESCRIPTION SHEET NO.</p>		<p>Plotted Date: 7/12/2016</p>		<p>Filename: ...SB_MSH_0094_0252_BR_NO_02514A_PIER_22.dgn</p>				<p>PIER 22 REPAIRS</p>					



**PIER 23 WEST ELEVATION**  
SCALE: 1/8" = 1'-0"

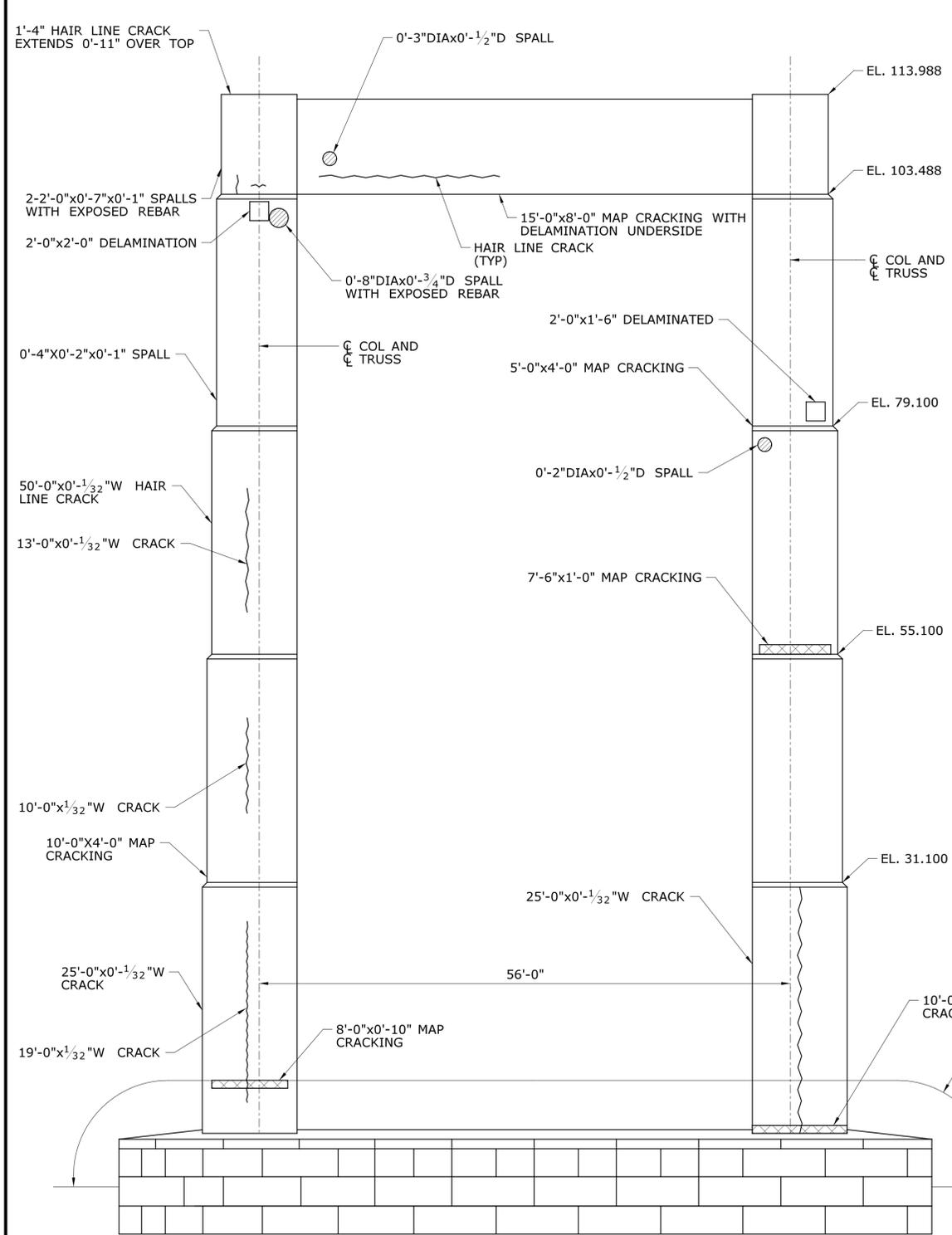
**PIER 23 EAST ELEVATION**  
SCALE: 1/8" = 1'-0"

- LEGEND**
- DELAMINATED/HOLLOW CONCRETE
  - SPALLED CONCRETE
  - SPALLED CONCRETE WITH EXPOSED REINFORCEMENT
  - SCALED CONCRETE
  - HONEYCOMBED CONCRETE
  - HONEYCOMBED CONCRETE WITH EXPOSED REINFORCEMENT
  - CONCRETE POPOUT
  - HAIR LINE CRACK OR CRACK
  - MAP CRACKS
  - E WITH EFFLORESCENCE

- PIER REPAIR NOTES:**
1. THE SUBSTRUCTURE DETERIORATION AND REPAIR DIMENSIONS ARE BASED ON LIMITED FIELD OBSERVATIONS AND BRIDGE SAFETY INSPECTION REPORT (NOVEMBER 22, 2013). THE INFORMATION IS INTENDED TO BE USED AS A GUIDE AND DOES NOT NECESSARILY REFLECT THE CURRENT CONDITION OF THE STRUCTURE. THE EXACT LOCATION AND LIMITS OF DETERIORATED CONCRETE TO BE REPAIRED SHALL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION. DETERIORATIONS SHOWN ARE NOT DRAWN TO SCALE FOR CLARITY, THOUGH CRACKS ARE SHOWN APPROXIMATELY TO SCALE.
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  3. THE CONTRACTOR SHALL NOT PERFORM ANY REPAIR WORK WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
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  6. FOR CONCRETE BEARING PADS NOTED TO BE REPAIRED SEE DETAIL ON DWG. NO. SA-12.
  7. ELEVATIONS SHOWN ARE N.A.V.D. 1988 ELEVATIONS CONVERTED FROM ORIGINAL N.G.V.D. 1929 ELEVATIONS TAKEN FROM ORIGINAL AS-BUILT PLANS DATED 1969 & 1970.

NOTE:  
1. FOR FEMA 100 YEAR FLOOD ELEVATION, COASTAL JURISDICTION LINE ELEVATION, MEAN HIGH WATER ELEVATION, AND MEAN LOW WATER ELEVATION SEE GENERAL PLAN DRAWINGS SA-03 TO SA-05.

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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016			



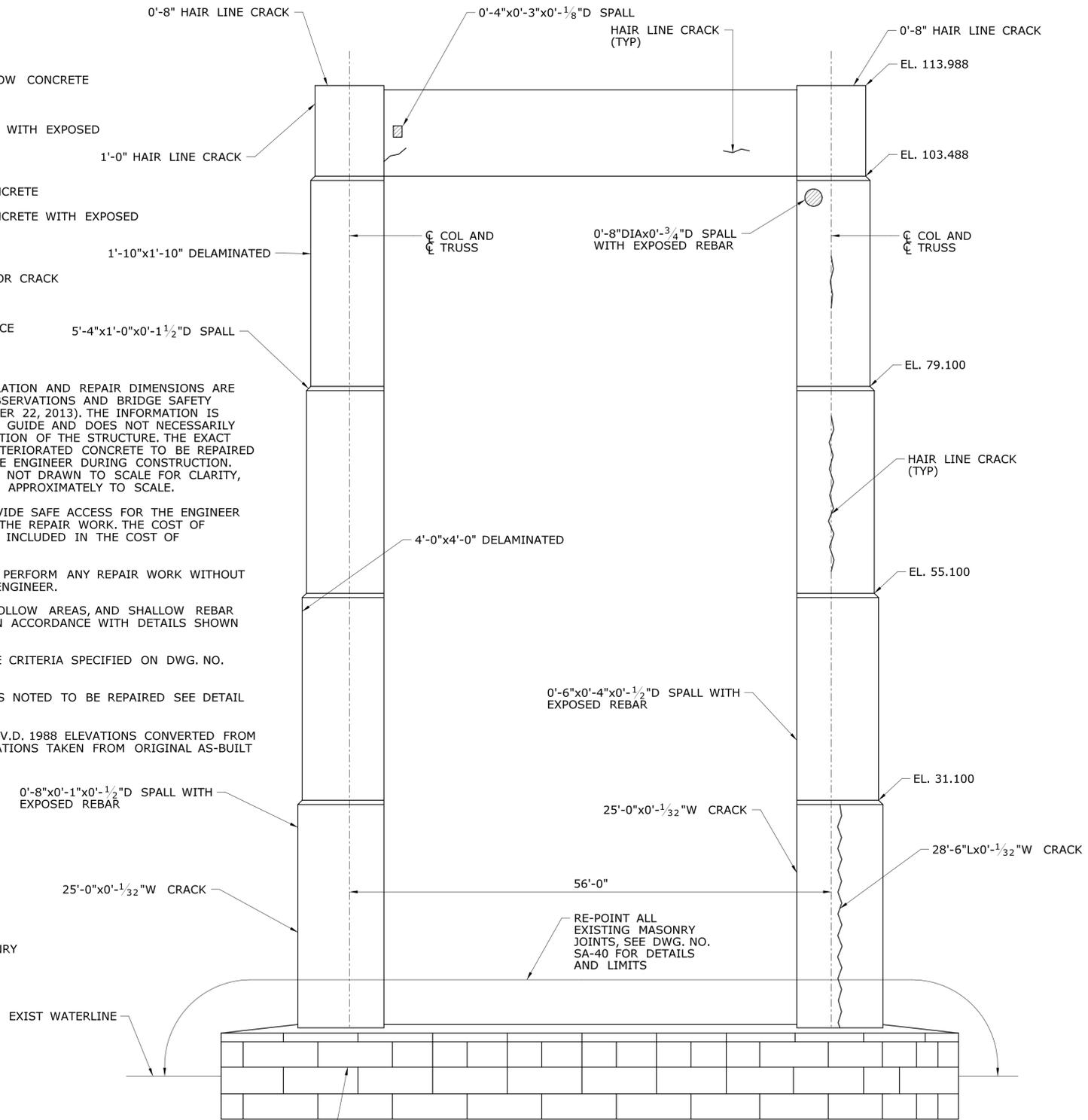
**PIER 24 WEST ELEVATION**  
SCALE: 1/8" = 1'-0"

**LEGEND**

- DELAMINATED/HOLLOW CONCRETE
- SPALLED CONCRETE
- SPALLED CONCRETE WITH EXPOSED REINFORCEMENT
- SCALED CONCRETE
- HONEYCOMBED CONCRETE
- HONEYCOMBED CONCRETE WITH EXPOSED REINFORCEMENT
- CONCRETE POPOUT
- HAIR LINE CRACK OR CRACK
- MAP CRACKS
- WITH EFFLORESCENCE

**PIER REPAIR NOTES:**

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6. FOR CONCRETE BEARING PADS NOTED TO BE REPAIRED SEE DETAIL ON DWG. NO. SA-12.
7. ELEVATIONS SHOWN ARE N.A.V.D. 1988 ELEVATIONS CONVERTED FROM ORIGINAL N.G.V.D. 1929 ELEVATIONS TAKEN FROM ORIGINAL AS-BUILT PLANS DATED 1969 & 1970.



**PIER 24 EAST ELEVATION**  
SCALE: 1/8" = 1'-0"

**NOTE:**  
1. FOR FEMA 100 YEAR FLOOD ELEVATION, COASTAL JURISDICTION LINE ELEVATION, MEAN HIGH WATER ELEVATION, AND MEAN LOW WATER ELEVATION SEE GENERAL PLAN DRAWINGS SA-03 TO SA-05.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 7/12/2016

DESIGNER/DRAFTER:  
**S. SLATER**  
CHECKED BY:  
**M. EGAN**  
SCALE AS NOTED

**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**

File name: ...SB\_MSH\_0094\_0252\_BR\_NO\_02514A\_PIER\_24.dgn

SIGNATURE/BLOCK:

Cardinal Engineering Associates, Inc.  
3 Colony Street  
Meriden, CT 06451

PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

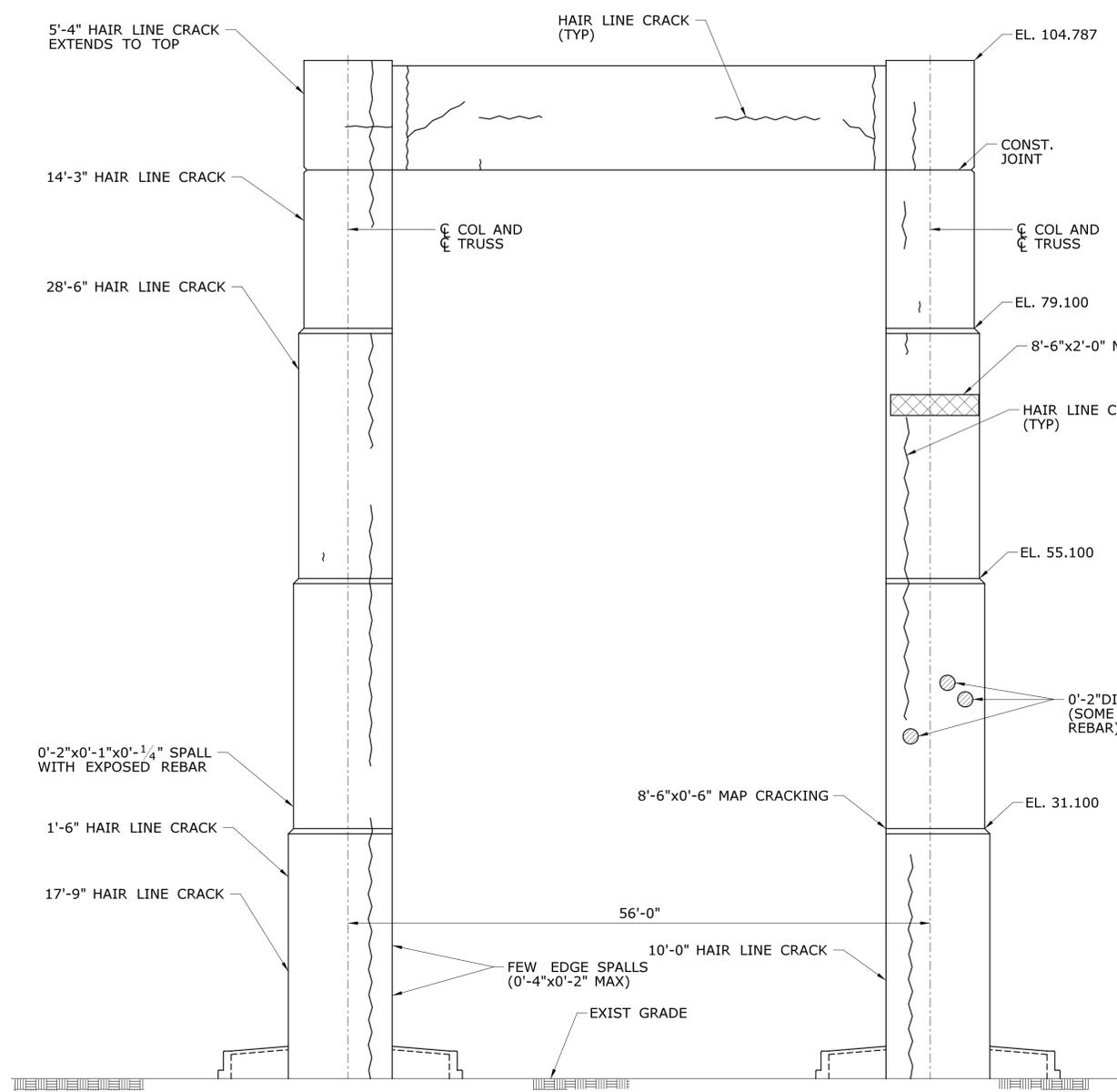
TOWN:  
**NEW LONDON/GROTON**

DRAWING TITLE:  
**PIER 24 REPAIRS**

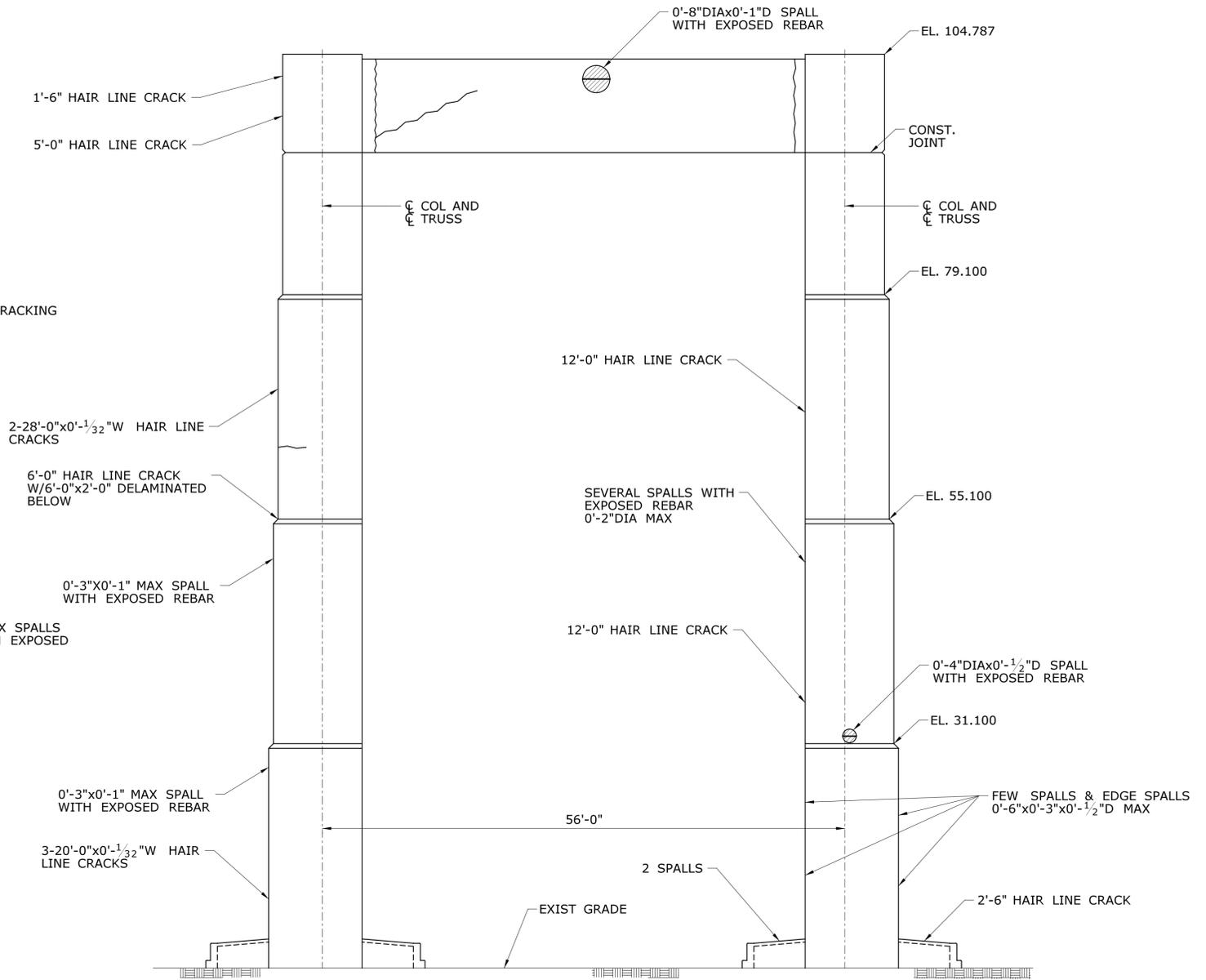
PROJECT NO.  
**94-252**

DRAWING NO.  
**SA-32**

SHEET NO.  
**04.032**



**PIER 25 WEST ELEVATION**  
SCALE: 1/8" = 1'-0"



**PIER 25 EAST ELEVATION**  
SCALE: 1/8" = 1'-0"

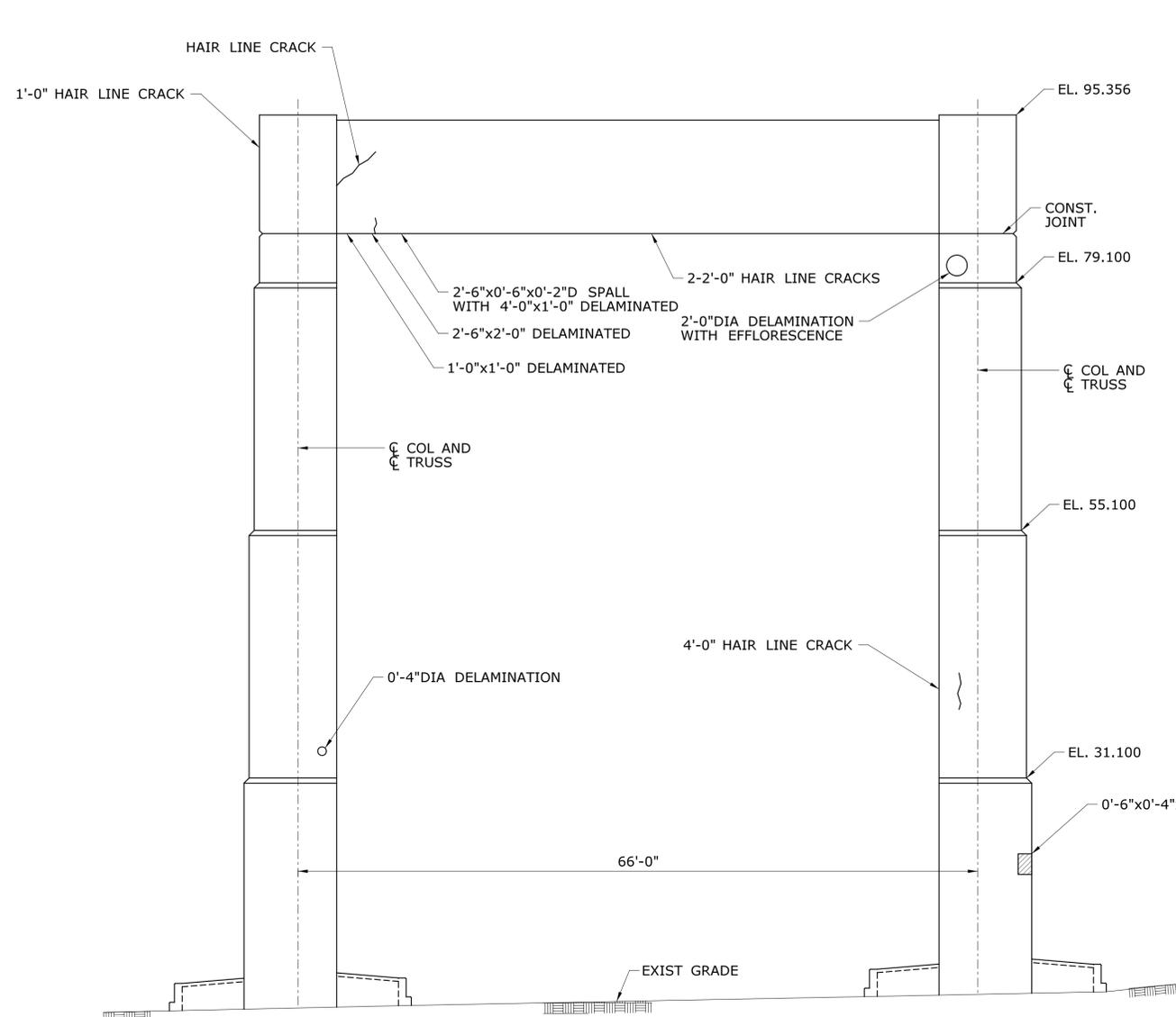
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**LEGEND**

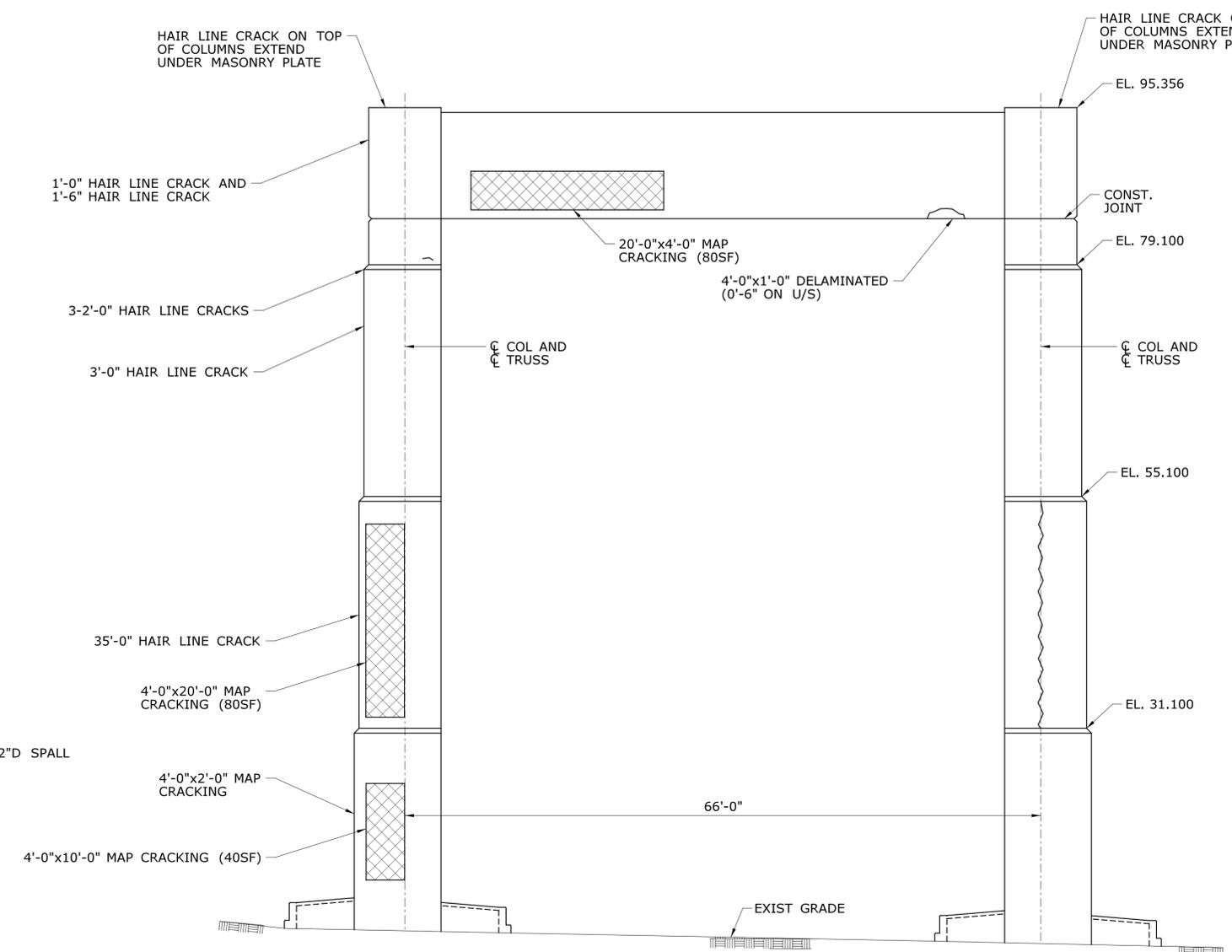
- DELAMINATED/HOLLOW CONCRETE
- SPALLED CONCRETE
- SPALLED CONCRETE WITH EXPOSED REINFORCEMENT
- SCALED CONCRETE
- HONEYCOMBED CONCRETE
- HONEYCOMBED CONCRETE WITH EXPOSED REINFORCEMENT
- CONCRETE POPOUT
- HAIR LINE CRACK OR CRACK
- MAP CRACKS
- E WITH EFFLORESCENCE

		THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.	DESIGNER/DRAFTER: <b>S. SLATER</b> CHECKED BY: <b>M. EGAN</b> SCALE AS NOTED	<p><b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b></p>	SIGNATURE/ BLOCK: Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b> DRAWING TITLE: <b>PIER 25 REPAIRS</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-33</b> SHEET NO. <b>04.033</b>	
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	Filename: ...\\SB_MSH_0094_0252_BR_NO_02514A_PIER_25.dgn				



**PIER 26 WEST ELEVATION**

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



**PIER 26 EAST ELEVATION**

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

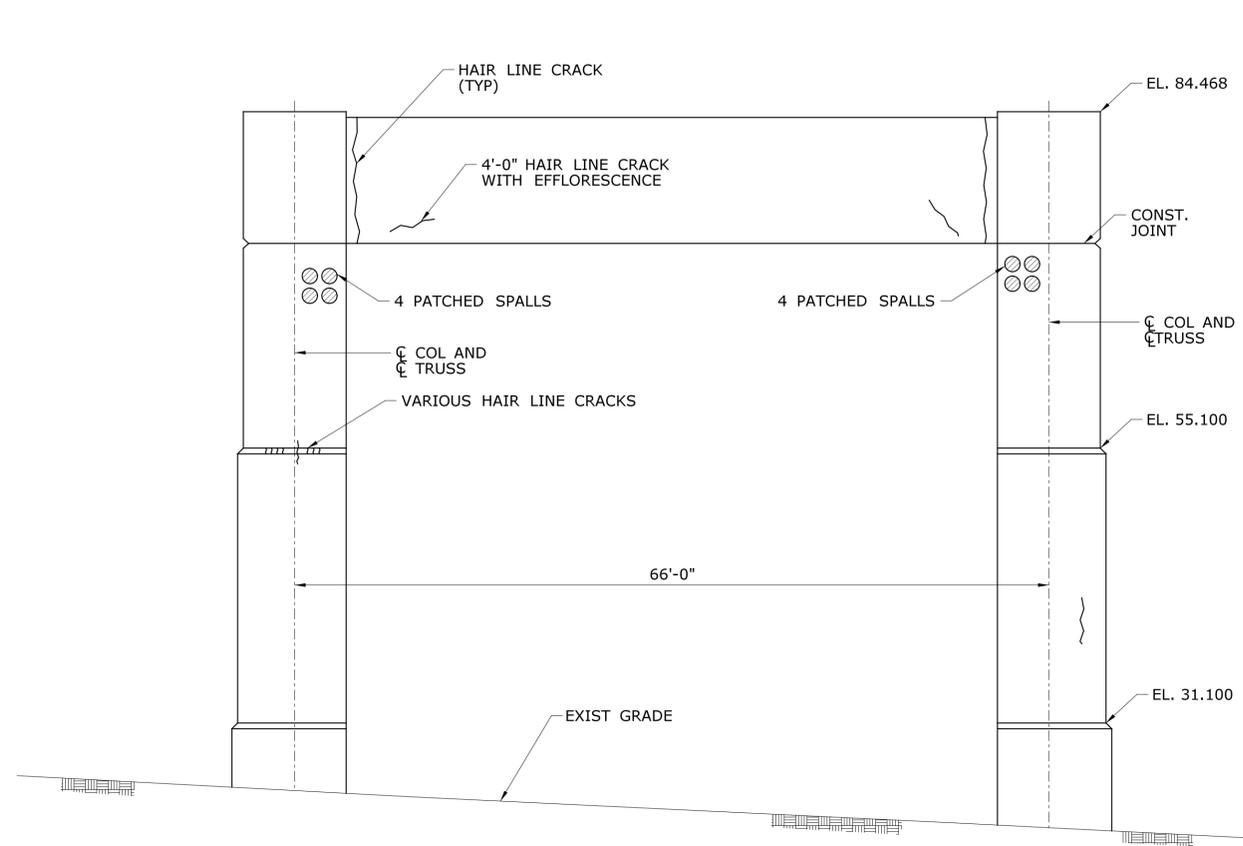
**PIER REPAIR NOTES:**

1. THE SUBSTRUCTURE DETERIORATION AND REPAIR DIMENSIONS ARE BASED ON LIMITED FIELD OBSERVATIONS AND BRIDGE SAFETY INSPECTION REPORT (NOVEMBER 22, 2013). THE INFORMATION IS INTENDED TO BE USED AS A GUIDE AND DOES NOT NECESSARILY REFLECT THE CURRENT CONDITION OF THE STRUCTURE. THE EXACT LOCATION AND LIMITS OF DETERIORATED CONCRETE TO BE REPAIRED SHALL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION. DETERIORATIONS SHOWN ARE NOT DRAWN TO SCALE FOR CLARITY, THOUGH CRACKS ARE SHOWN APPROXIMATELY TO SCALE.
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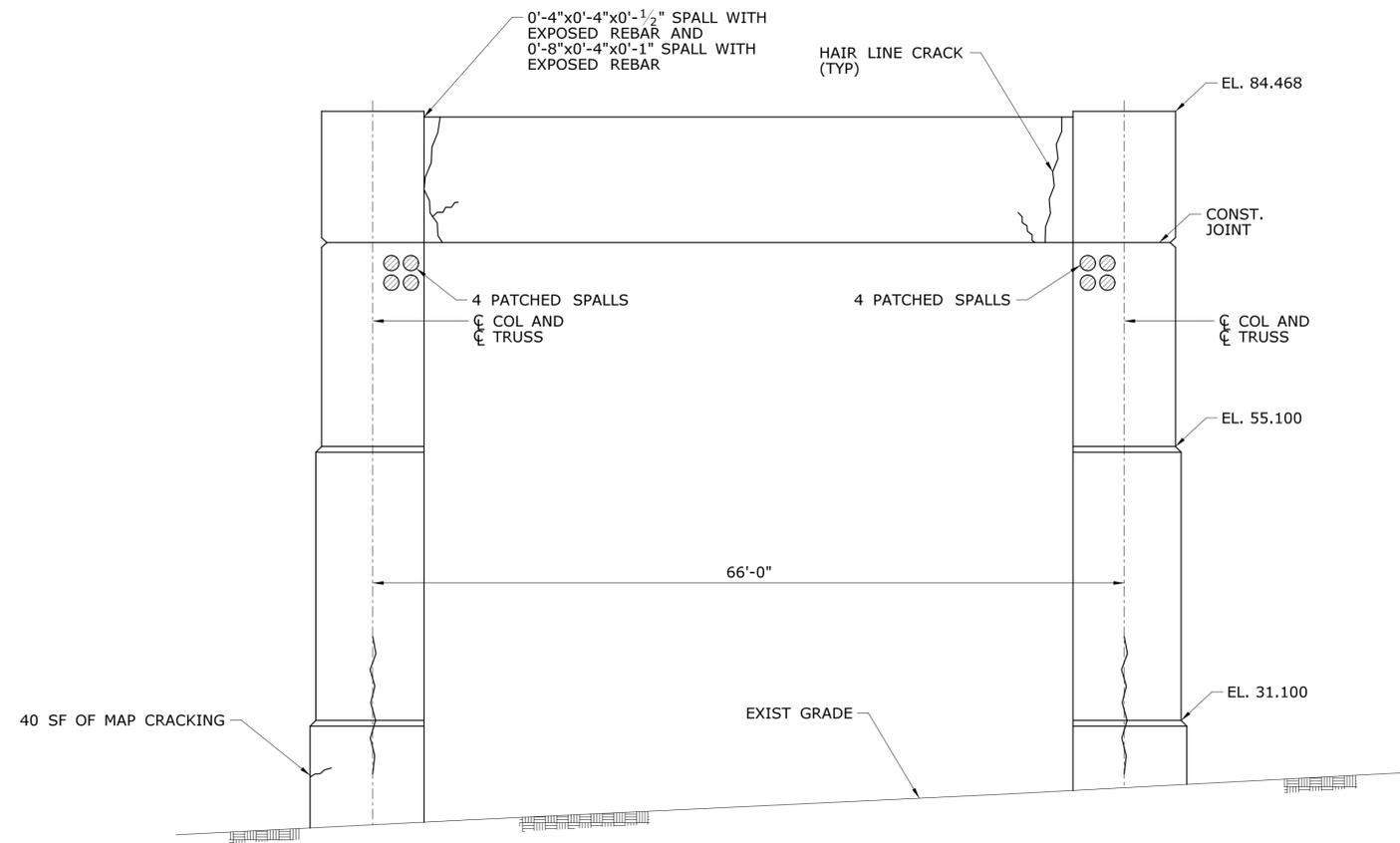
**LEGEND**

- DELAMINATED/HOLLOW CONCRETE
- SPALLED CONCRETE
- SPALLED CONCRETE WITH EXPOSED REINFORCEMENT
- SCALED CONCRETE
- HONEYCOMBED CONCRETE
- HONEYCOMBED CONCRETE WITH EXPOSED REINFORCEMENT
- CONCRETE POPOUT
- HAIR LINE CRACK OR CRACK
- MAP CRACKS
- WITH EFFLORESCENCE

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: <b>S. SLATER</b> CHECKED BY: <b>M. EGAN</b>		 <b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b>		SIGNATURE/ BLOCK:  Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	
PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>		TOWN: <b>NEW LONDON/GROTON</b>		PROJECT NO. <b>94-252</b>		DRAWING NO. <b>SA-34</b>	
SHEET NO. <b>04.034</b>		DRAWING TITLE: <b>PIER 26 REPAIRS</b>		SHEET NO. <b>04.034</b>			
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016			



**PIER 27 WEST ELEVATION**  
SCALE: 1/8" = 1'-0"



**PIER 27 EAST ELEVATION**  
SCALE: 1/8" = 1'-0"

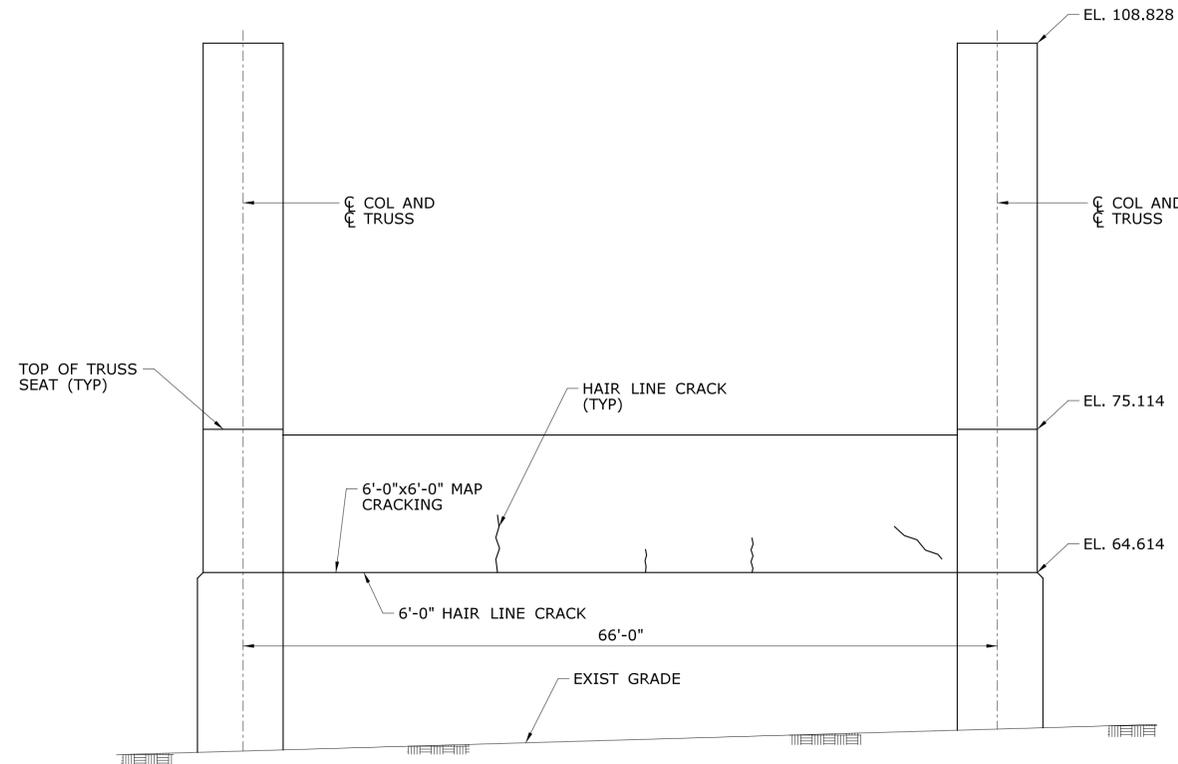
**PIER REPAIR NOTES:**

1. THE SUBSTRUCTURE DETERIORATION AND REPAIR DIMENSIONS ARE BASED ON LIMITED FIELD OBSERVATIONS AND BRIDGE SAFETY INSPECTION REPORT (NOVEMBER 22, 2013). THE INFORMATION IS INTENDED TO BE USED AS A GUIDE AND DOES NOT NECESSARILY REFLECT THE CURRENT CONDITION OF THE STRUCTURE. THE EXACT LOCATION AND LIMITS OF DETERIORATED CONCRETE TO BE REPAIRED SHALL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION. DETERIORATIONS SHOWN ARE NOT DRAWN TO SCALE FOR CLARITY, THOUGH CRACKS ARE SHOWN APPROXIMATELY TO SCALE.
2. THE CONTRACTOR SHALL PROVIDE SAFE ACCESS FOR THE ENGINEER TO DELINEATE AND REVIEW THE REPAIR WORK. THE COST OF PROVIDING ACCESS SHALL BE INCLUDED IN THE COST OF APPROPRIATE REPAIR ITEMS.
3. THE CONTRACTOR SHALL NOT PERFORM ANY REPAIR WORK WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
4. SPALL AREAS, DELAMINATED/HOLLOW AREAS, AND SHALLOW REBAR AREAS SHALL BE REPAIRED IN ACCORDANCE WITH DETAILS SHOWN ON DWG. NO. SA-39 (TYP.).
5. ONLY CRACKS THAT MEET THE CRITERIA SPECIFIED ON DWG. NO. SA-39 SHALL BE REPAIRED
6. FOR CONCRETE BEARING PADS NOTED TO BE REPAIRED SEE DETAIL ON DWG. NO. SA-12.
7. ELEVATIONS SHOWN ARE N.A.V.D. 1988 ELEVATIONS CONVERTED FROM ORIGINAL N.G.V.D. 1929 ELEVATIONS TAKEN FROM ORIGINAL AS-BUILT PLANS DATED 1969 & 1970.

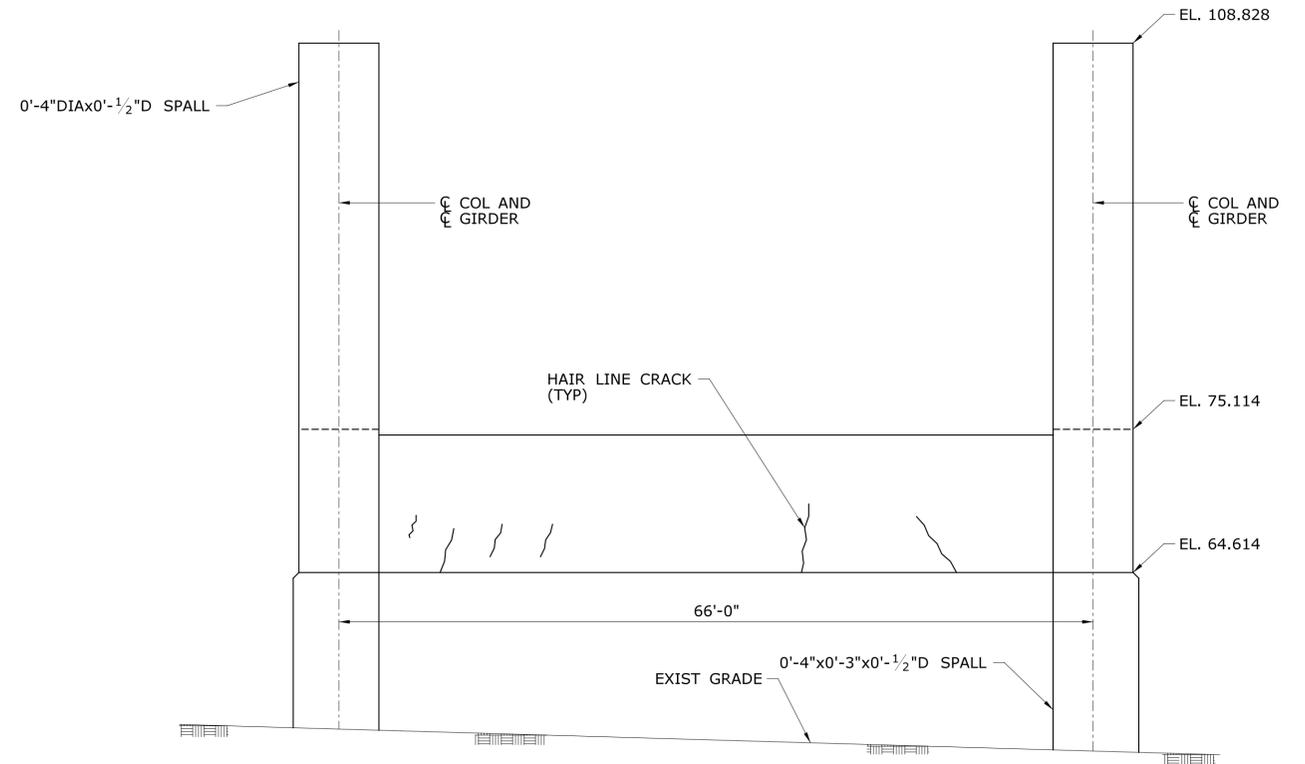
**LEGEND**

- DELAMINATED/HOLLOW CONCRETE
- SPALLED CONCRETE
- SPALLED CONCRETE WITH EXPOSED REINFORCEMENT
- SCALED CONCRETE
- HONEYCOMBED CONCRETE
- HONEYCOMBED CONCRETE WITH EXPOSED REINFORCEMENT
- CONCRETE POPOUT
- HAIR LINE CRACK OR CRACK
- MAP CRACKS
- WITH EFFLORESCENCE

	THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.	DESIGNER/DRAFTER: <b>S. SLATER</b> CHECKED BY: <b>M. EGAN</b> SCALE AS NOTED	 <b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b> <small>Filename: ...\\SB_MSH_0094_0252_BR_NO_02514A_PIER_27.dgn</small>	SIGNATURE/ BLOCK:  Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b> DRAWING TITLE: <b>PIER 27 REPAIRS</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-35</b> SHEET NO. <b>04.035</b>	
REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016					



**PIER 28 WEST ELEVATION**  
SCALE: 1/8" = 1'-0"



**PIER 28 EAST ELEVATION**  
SCALE: 1/8" = 1'-0"

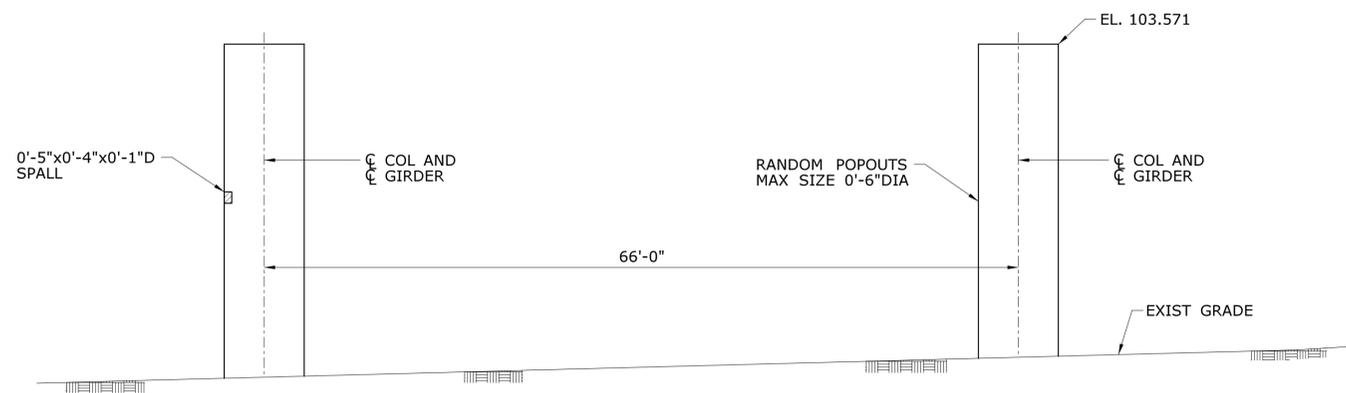
**PIER REPAIR NOTES:**

1. THE SUBSTRUCTURE DETERIORATION AND REPAIR DIMENSIONS ARE BASED ON LIMITED FIELD OBSERVATIONS AND BRIDGE SAFETY INSPECTION REPORT (NOVEMBER 22, 2013). THE INFORMATION IS INTENDED TO BE USED AS A GUIDE AND DOES NOT NECESSARILY REFLECT THE CURRENT CONDITION OF THE STRUCTURE. THE EXACT LOCATION AND LIMITS OF DETERIORATED CONCRETE TO BE REPAIRED SHALL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION. DETERIORATIONS SHOWN ARE NOT DRAWN TO SCALE FOR CLARITY, THOUGH CRACKS ARE SHOWN APPROXIMATELY TO SCALE.
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5. ONLY CRACKS THAT MEET THE CRITERIA SPECIFIED ON DWG. NO. SA-39 SHALL BE REPAIRED
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**LEGEND**

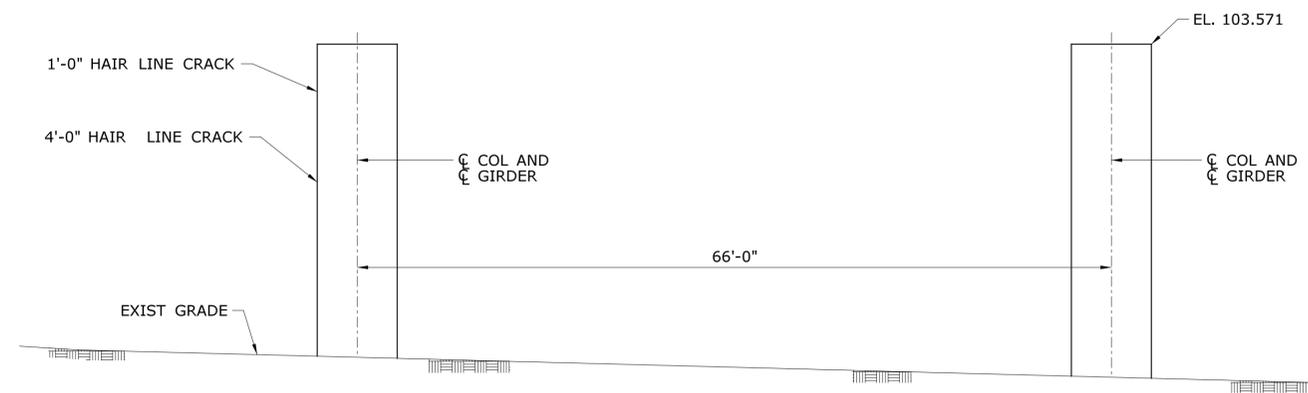
- DELAMINATED/HOLLOW CONCRETE
- SPALLED CONCRETE
- SPALLED CONCRETE WITH EXPOSED REINFORCEMENT
- SCALED CONCRETE
- HONEYCOMBED CONCRETE
- HONEYCOMBED CONCRETE WITH EXPOSED REINFORCEMENT
- CONCRETE POPOUT
- HAIR LINE CRACK OR CRACK
- MAP CRACKS
- WITH EFFLORESCENCE

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: <b>S. SLATER</b> CHECKED BY: <b>M. EGAN</b> SCALE AS NOTED	<b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b> Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-36</b> SHEET NO. <b>04.036</b>
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016		



**PIER 29 WEST ELEVATION**

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



**PIER 29 EAST ELEVATION**

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

**PIER REPAIR NOTES:**

1. THE SUBSTRUCTURE DETERIORATION AND REPAIR DIMENSIONS ARE BASED ON LIMITED FIELD OBSERVATIONS AND BRIDGE SAFETY INSPECTION REPORT (NOVEMBER 22, 2013). THE INFORMATION IS INTENDED TO BE USED AS A GUIDE AND DOES NOT NECESSARILY REFLECT THE CURRENT CONDITION OF THE STRUCTURE. THE EXACT LOCATION AND LIMITS OF DETERIORATED CONCRETE TO BE REPAIRED SHALL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION. DETERIORATIONS SHOWN ARE NOT DRAWN TO SCALE FOR CLARITY, THOUGH CRACKS ARE SHOWN APPROXIMATELY TO SCALE.
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5. ONLY CRACKS THAT MEET THE CRITERIA SPECIFIED ON DWG. NO. SA-39 SHALL BE REPAIRED
6. FOR CONCRETE BEARING PADS NOTED TO BE REPAIRED SEE DETAIL ON DWG. NO. SA-12.
7. ELEVATIONS SHOWN ARE N.A.V.D. 1988 ELEVATIONS CONVERTED FROM ORIGINAL N.G.V.D. 1929 ELEVATIONS TAKEN FROM ORIGINAL AS-BUILT PLANS DATED 1969 & 1970.

**LEGEND**

- DELAMINATED/HOLLOW CONCRETE
- SPALLED CONCRETE
- SPALLED CONCRETE WITH EXPOSED REINFORCEMENT
- SCALED CONCRETE
- HONEYCOMBED CONCRETE
- HONEYCOMBED CONCRETE WITH EXPOSED REINFORCEMENT
- CONCRETE POPOUT
- HAIR LINE CRACK OR CRACK
- MAP CRACKS
- WITH EFFLORESCENCE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER:  
**S. SLATER**  
CHECKED BY:  
**M. EGAN**  
SCALE AS NOTED

**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**

Filename: ...SB\_MSH\_0094\_0252\_BR\_NO\_02514A\_PIER\_29.dgn

SIGNATURE/  
BLOCK:

Cardinal Engineering Associates, Inc.  
 3 Colony Street  
 Meriden, CT 06451

PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

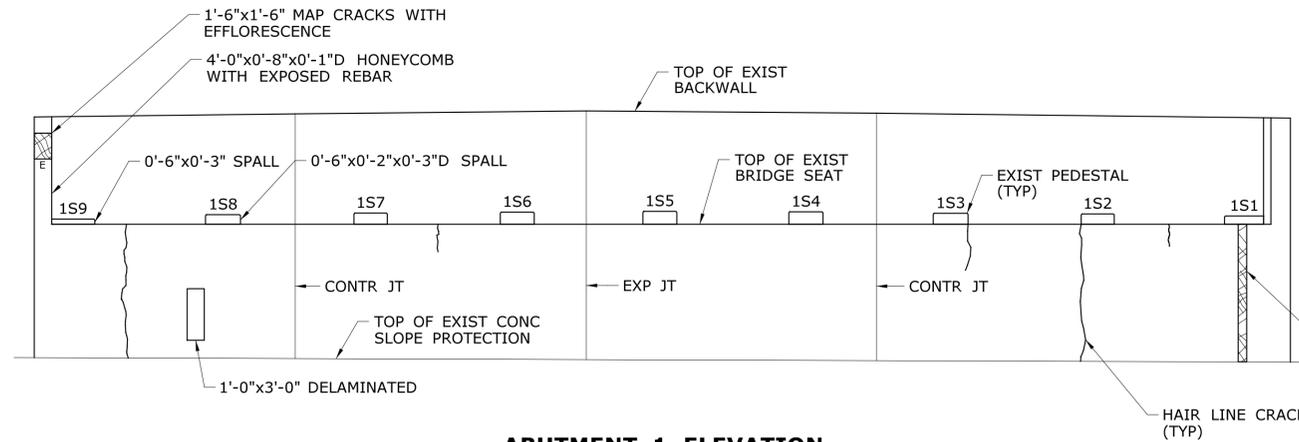
TOWN:  
**NEW LONDON/GROTON**

DRAWING TITLE:  
**PIER 29 REPAIRS**

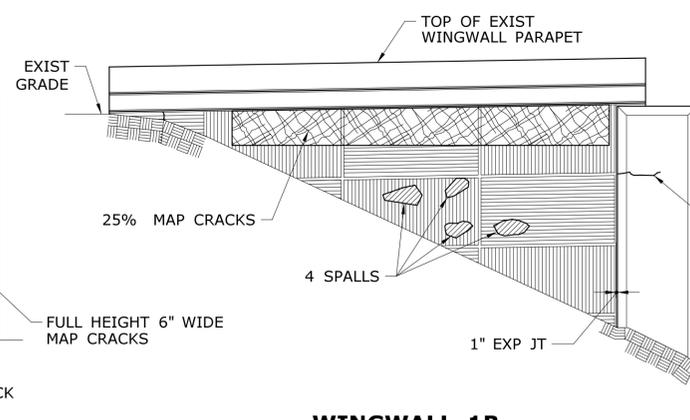
PROJECT NO.  
**94-252**

DRAWING NO.  
**SA-37**

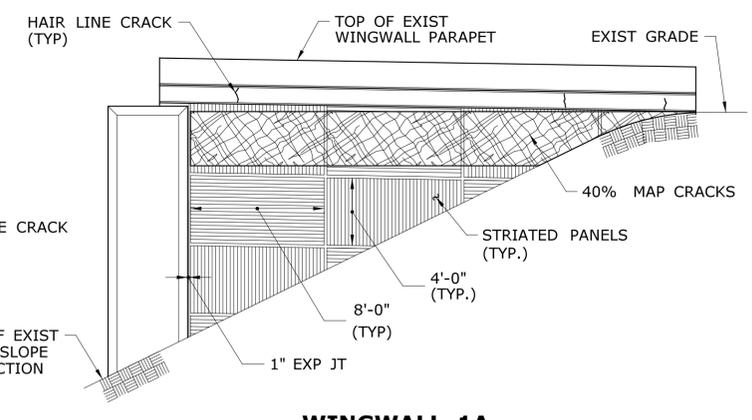
SHEET NO.  
**04.037**



**ABUTMENT 1 ELEVATION**  
SCALE: 3/16" = 1'-0"



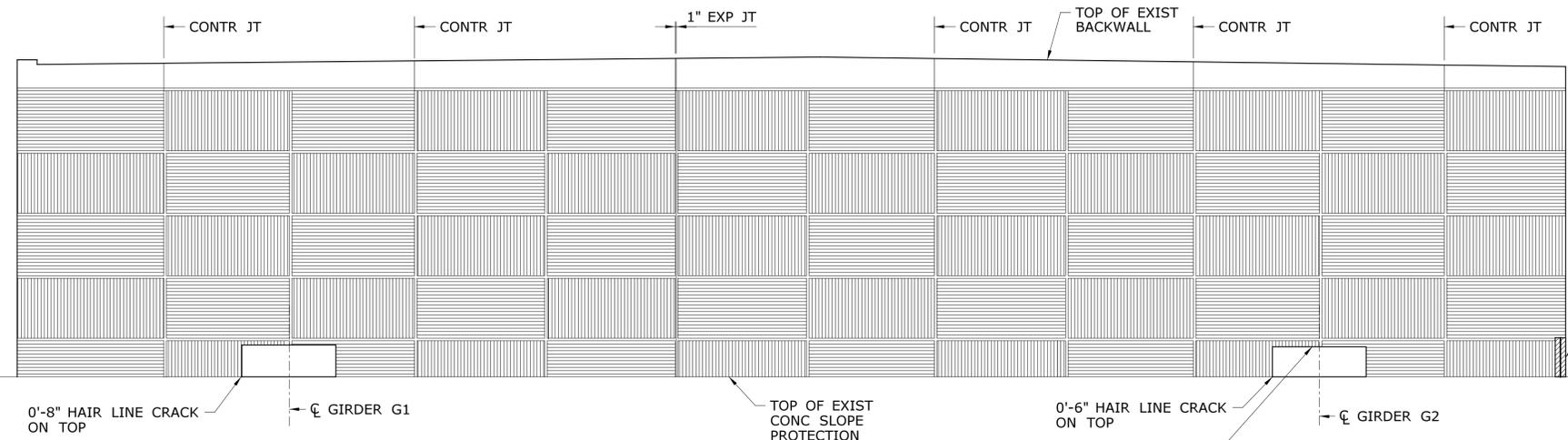
**WINGWALL 1B**  
SCALE: 3/16" = 1'-0"



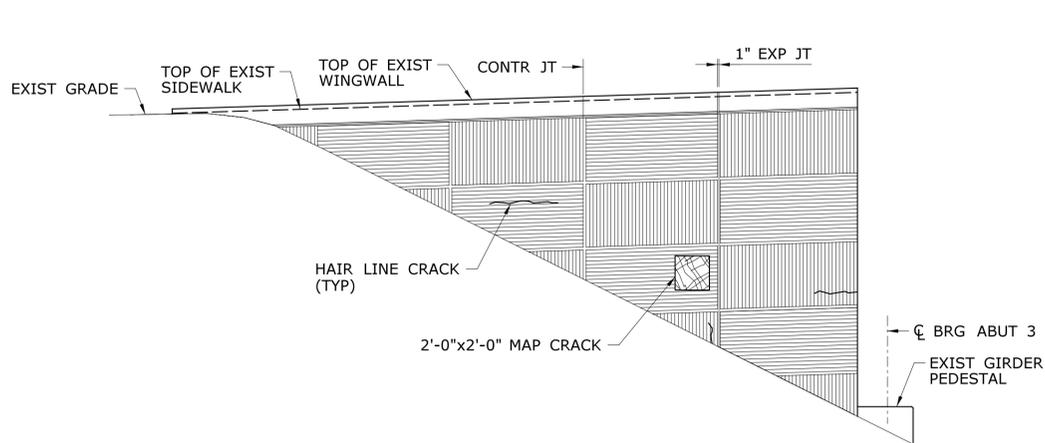
**WINGWALL 1A**  
SCALE: 3/16" = 1'-0"

**NOTES:**

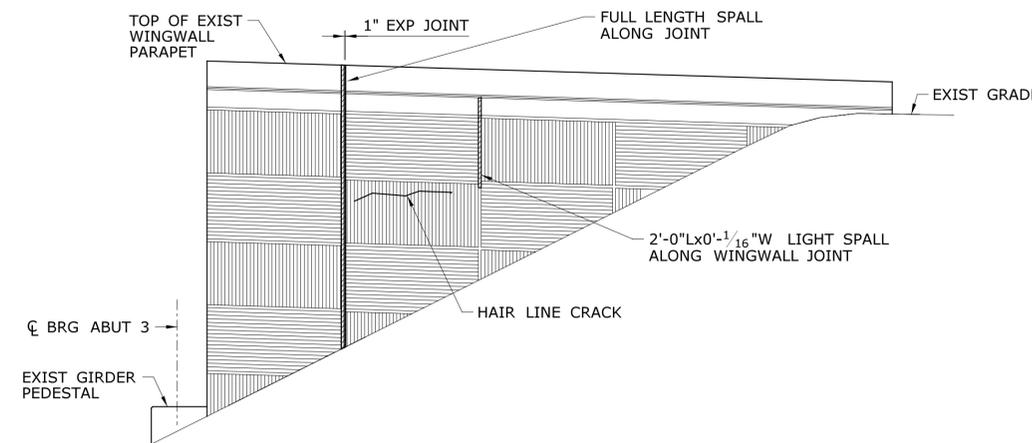
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5. ONLY CRACKS THAT MEET THE CRITERIA SPECIFIED ON DWG. NO. SA-39 SHALL BE REPAIRED.
6. FOR CONCRETE BEARING PADS NOTED TO BE REPAIRED SEE DETAIL ON DWG. NO. SA-12



**ABUTMENT 3 ELEVATION**  
SCALE: 3/16" = 1'-0"



**WINGWALL 3B**  
SCALE: 3/16" = 1'-0"



**WINGWALL 3A**  
SCALE: 3/16" = 1'-0"

**LEGEND**

- DELAMINATED/HOLLOW CONCRETE
- ▨ SPALLED CONCRETE
- ▩ SPALLED CONCRETE WITH EXPOSED REINFORCEMENT
- ▧ SCALED CONCRETE
- ▦ HONEYCOMBED CONCRETE
- ▥ HONEYCOMBED CONCRETE WITH EXPOSED REINFORCEMENT
- ▤ CONCRETE POPOUT
- HAIR LINE CRACK OR CRACK
- ⊠ MAP CRACKS
- E WITH EFFLORESCENCE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date: 7/12/2016

DESIGNER/DRAFTER:  
**S. SLATER**  
CHECKED BY:  
**M. EGAN**  
SCALE AS NOTED



SIGNATURE/BLOCK:  
  
Cardinal Engineering Associates, Inc.  
3 Colony Street  
Meriden, CT 06451

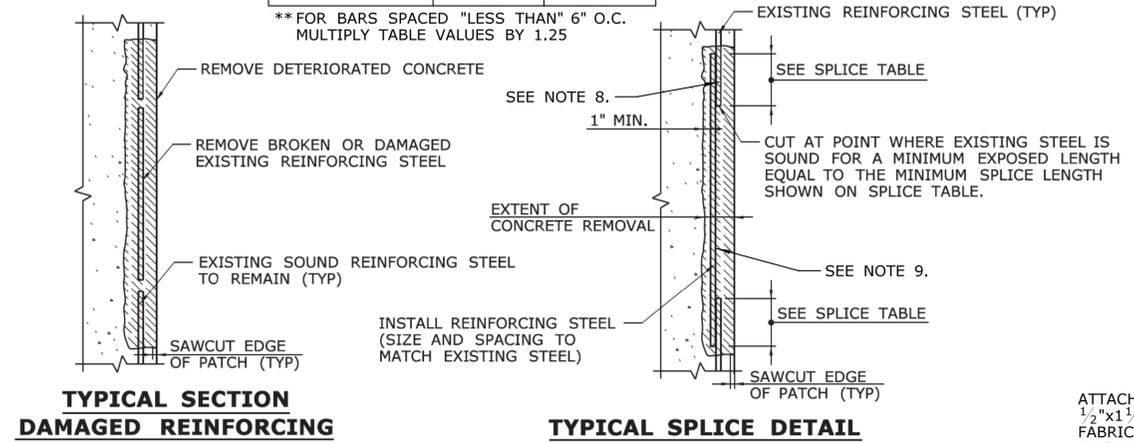
PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

TOWN:  
**NEW LONDON/GROTON**  
DRAWING TITLE:  
**ABUTMENT NOS. 1 & 3 & WINGWALL REPAIRS**

PROJECT NO.  
**94-252**  
DRAWING NO.  
**SA-38**  
SHEET NO.  
**04.038**

TABLE OF SPLICE LENGTHS		
	BAR SIZE	MIN. SPLICE LENGTH
REINFORCEMENT SPACING @ $\geq 6"$ O.C.**	#4	1'-9"
	#5	1'-9"
	#6	2'-3"
	#7	3'-0"
	#8	3'-9"

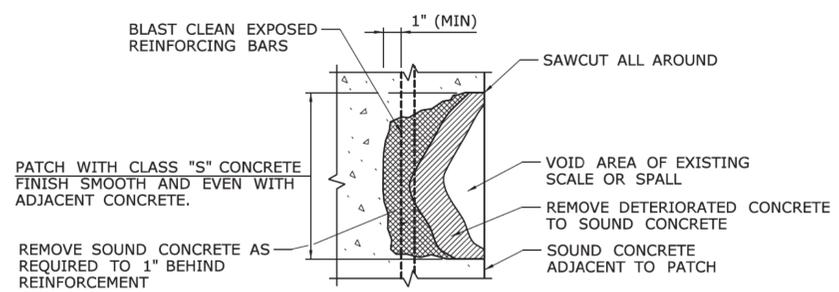
\*\* FOR BARS SPACED "LESS THAN" 6" O.C. MULTIPLY TABLE VALUES BY 1.25



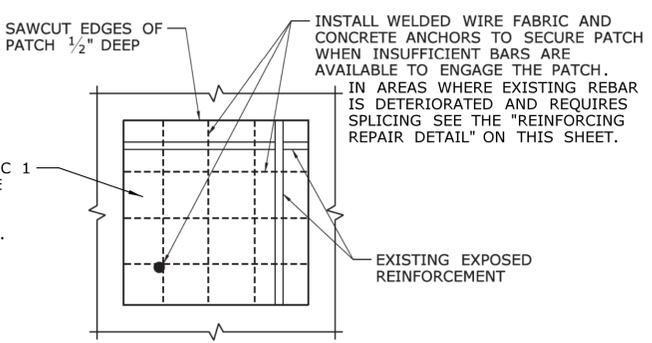
**TYPICAL SECTION DAMAGED REINFORCING**

**TYPICAL SPLICE DETAIL**

**REINFORCING REPAIR DETAIL**  
NOT TO SCALE



**CLASS "S" CONCRETE REPAIR**  
NOT TO SCALE



**SECURING CLASS "S" PATCH WITH WELDED WIRE FABRIC**  
NOT TO SCALE

ATTACH WELDED WIRE FABRIC 1/2"x1 1/2" D3x3 WELDED WIRE FABRIC REINFORCEMENT TO EXISTING REINFORCING BAR WITH TIE WIRE. SEE NOTE 8.

**CONCRETE REPAIR NOTES:**

- THE ENGINEER WILL DETERMINE THE LOCATIONS OF UNSOUND OR DETERIORATED CONCRETE TO BE REPAIRED. THE METHOD USED TO DELINEATE AREAS OF CONCRETE TO BE REPAIRED SHALL NOT PERMANENTLY MARK THE CONCRETE, LEAVE ANY RESIDUE AFTER REMOVAL, OR REQUIRE HARSH CHEMICALS TO REMOVE.
- THE CONTRACTOR SHALL REMOVE THE DETERIORATED CONCRETE IN ACCORDANCE WITH THE GUIDELINES SET IN THESE NOTES AND IN THE SPECIAL PROVISIONS AND THE ENGINEER WILL DETERMINE THE TYPE OF REPAIR REQUIRED FOR EACH AREA.
- ALL CRACKS 1/8" WIDE AND GREATER SHALL BE REPAIRED BY "EPOXY INJECTION CRACK REPAIR" (SEE SPECIAL PROVISION).
- ALL CRACKS LESS THAN 1/8" WIDE SHALL BE SEALED BY THE APPLICATION OF "PROTECTIVE COMPOUND FOR BRIDGES".
- UNLESS OTHERWISE DIRECTED BY THE ENGINEER, ALL SPALLS SHALL BE REPAIRED BY "CLASS 'S' CONCRETE" (SEE SPECIAL PROVISION).
- CONCRETE AT HOLLOW AREAS SHALL BE REMOVED TO SOUND CONCRETE AND AREA SHALL BE REPAIRED BY "CLASS 'S' CONCRETE".
- THE CONTRACTOR SHALL SUPPLY WHATEVER MEANS NECESSARY, INCLUDING BUT NOT LIMITED TO LADDERS, LIFTS AND TRAFFIC PROTECTION FOR THE ENGINEER TO SAFELY ACCESS VARIOUS AREAS FOR INSPECTION. THE COST OF PROVIDING ACCESS FOR THE INSPECTION IS INCLUDED UNDER THE RESPECTIVE REPAIR ITEM. SEE SPECIAL PROVISIONS.
- EXPOSED REINFORCING BARS SHALL BE BLAST CLEANED AND COATED WITH A ZINC RICH PRIMER THAT CONFORMS TO FEDERAL SPECIFICATION TT-P-641, TYPE 1, BEFORE APPLYING THE PATCHING MATERIAL. COST OF PRIMER SHALL BE INCLUDED IN THE COST OF THE PATCHING MATERIAL ITEM. INSTALL EMBEDDED GALVANIC ANODES PRIOR TO APPLYING PATCHING MATERIAL.
- SPLICED REINFORCING BARS SHALL BE COATED WITH A ZINC RICH PRIMER THAT CONFORMS TO FEDERAL SPECIFICATION TT-P-641, TYPE 1, BEFORE APPLYING PATCHING MATERIAL. COST OF PRIMER SHALL BE INCLUDED IN THE COST OF THE PATCHING MATERIAL.

**REINFORCING BAR REPAIRS**

- REINFORCING WHICH IS DETERMINED BY THE ENGINEER TO BE IN NEED OF REPLACEMENT, SHALL BE REMOVED TO A POINT WHERE IT IS SOUND. THE PATCH SHALL EXTEND A SUFFICIENT DISTANCE BEYOND THIS POINT TO DEVELOP A SPLICE LENGTH SPECIFIED IN THE TABLE ON THIS SHEET.

**RESTRICTIONS**

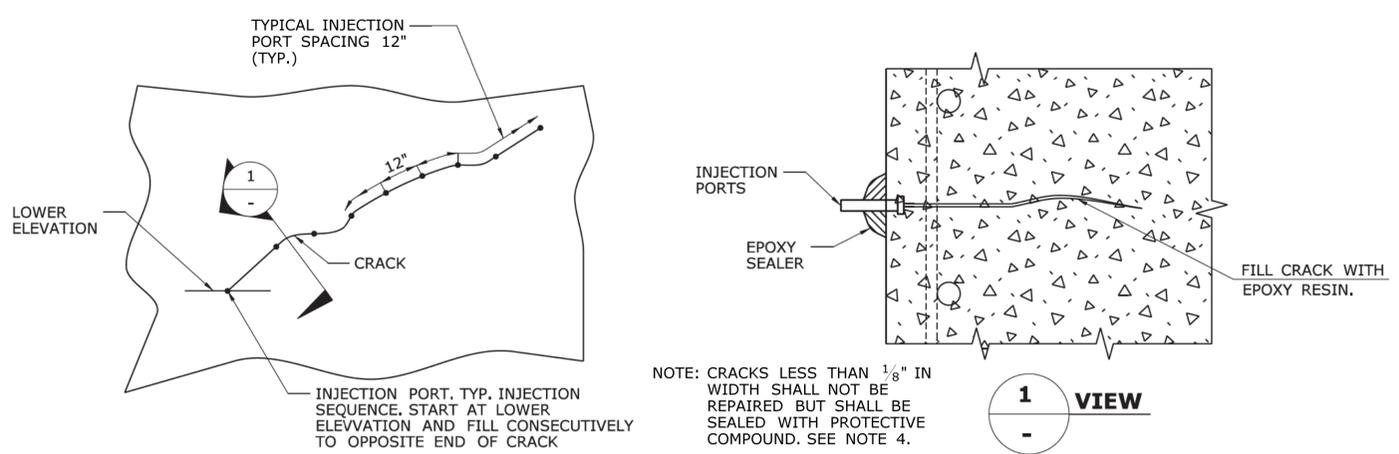
- THE REMOVAL OF DETERIORATED CONCRETE SHALL PROCEED AS DIRECTED BY THE ENGINEER. IF THE REMOVAL OF DETERIORATED CONCRETE BECOMES EXCESSIVE, THE REMOVAL WORK SHALL BE STOPPED AT THAT LOCATION AND THE ENGINEER NOTIFIED IMMEDIATELY. ALSO, IF REMOVAL EXTENDS MORE THAN 1 1/2" BEHIND THE MAIN REINFORCING BARS, THE REMOVAL WORK SHALL BE STOPPED AND THE ENGINEER NOTIFIED IMMEDIATELY.
- MAXIMUM HAMMER SIZE USED TO REMOVE DETERIORATED CONCRETE SHALL BE 15 POUNDS.
- AT PIER COLUMNS AND CAPS, IF REMOVAL OF DETERIORATED CONCRETE EXTENDS INSIDE THE MAIN REINFORCING, REMOVAL SHALL BE LIMITED TO ONE FACE OF THE MEMBER AT A TIME AND A MAXIMUM AREA OF 4 S.F. REMOVAL MAY BE PERMITTED ON MORE THAN ONE FACE OF THE COLUMN SIMULTANEOUSLY IF THE AREAS OF REMOVAL ARE NOT ADJACENT TO OR DIRECTLY OPPOSITE ONE ANOTHER. IF REMOVAL EXTENDS MORE THAN 1 1/2" BEHIND THE MAIN REINFORCING BARS, THE REMOVAL WORK SHALL BE STOPPED AND THE ENGINEER NOTIFIED IMMEDIATELY.
- BEFORE EXPOSING THE MAIN REINFORCING BARS OF MORE THAN ONE PIER COLUMN AT THE SAME TIME, THE ENGINEER SHALL BE CONSULTED.
- AT THE PIER CAP, NO MORE THAN ONE THIRD OF THE UNDERSIDE OF THE CAP SHOULD BE REMOVED AT ONE TIME. IF THE ENTIRE UNDERSIDE OF THE CAP IS TO BE PATCHED, BEGIN AT THE COLUMN AND PATCH ONE-THIRD OF THE CLEAR SPAN OF THE CAP. AFTER THE PATCH HAS GAINED SUFFICIENT STRENGTH, BEGIN AT THE OPPOSITE END OF THE CAP AND PATCH ONE THIRD OF THE SPAN. THE MIDDLE THIRD SHOULD BE PATCHED LAST.
- IF A SPLICE IS ENCOUNTERED DURING REMOVAL OF CONCRETE IN A PIER COLUMN OR CAP, WORK AT THAT LOCATION SHALL BE STOPPED AND THE ENGINEER SHALL BE NOTIFIED. WORK AT THAT LOCATION SHALL NOT PROCEED UNTIL DIRECTION IS GIVEN BY THE ENGINEER.

**PAY ITEM NOTES**

- THE 1/2" DEEP SAW CUT SHALL BE INCLUDED IN THE CONTRACT BID PRICE OF THE APPLICABLE REPAIR PAY ITEM.
- REINFORCING BARS WILL BE PAID FOR UNDER THE ITEM "CLASS 'S' CONCRETE".

**CRACK REPAIR PROCEDURE FOR CRACKS 1/8" - 1/4" WIDE:**

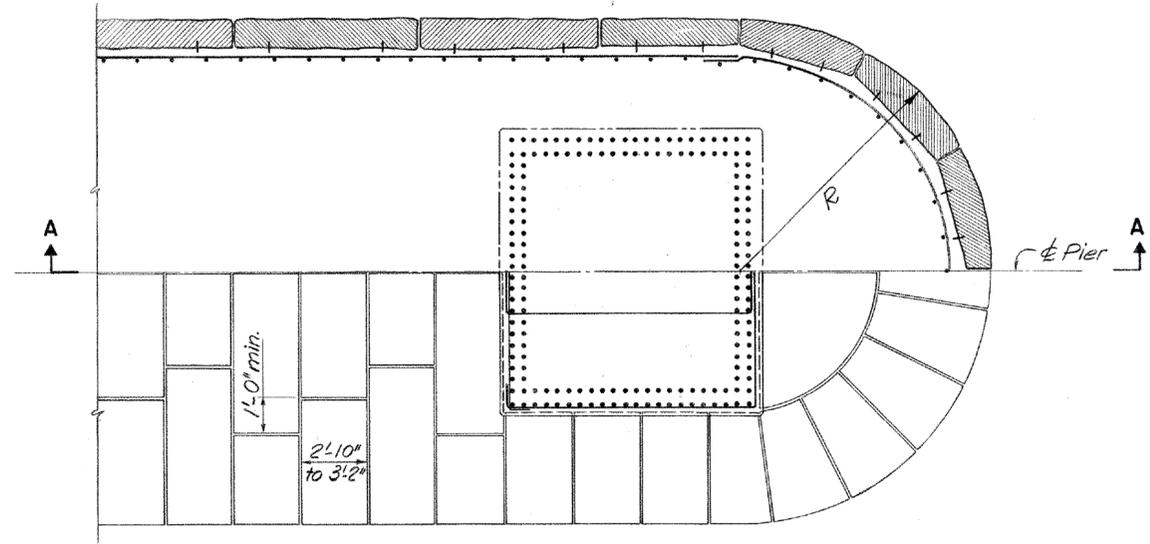
- SURFACE PREPARATION:**  
REMOVE DUST, LAITANCE, GREASE, IMPREGNATIONS, FOREIGN PARTICLES AND DISINTEGRATED MATERIALS. SURFACE MUST BE CLEAN AND SOUND WITH A ROUGHENED TEXTURE. IDEALLY DRY, SURFACE MAY BE DAMP BUT SHALL BE FREE OF STANDING WATER.
- APPLICATION AND FINISH:**  
- SET GROUT PRESSURE INJECTION PORTS INTO PLACE.  
- MIX EPOXY ADHESIVE PER MANUFACTURER'S SPECIFICATION.  
- SEAL CRACKS AND PORTS BY APPLYING MIXED EPOXY ADHESIVE MATERIAL OVER THE CRACKS TO BE PRESSURE INJECTED WITH THE HIGH-STRENGTH EPOXY GROUT.  
- MIX EPOXY GROUT PER MANUFACTURER'S SPECIFICATION.  
- WHEN THE EPOXY ADHESIVE HAS CURED, INJECT THE EPOXY GROUT WITH STEADY PRESSURE.  
- ALLOW THE INJECTED EPOXY GROUT TO SET THEN CUT THE PRESSURE INJECTION PORTS FLUSH WITH THE EPOXY ADHESIVE.
- CRACK REPAIRS SHALL BE PAID FOR UNDER THE ITEM "EPOXY INJECTION CRACK REPAIR".
- ANY CRACK LESS THAN 1/8" SHALL NOT BE REPAIRED UNLESS DIRECTED BY THE ENGINEER. CRACKS LESS THAN 1/8" SHALL BE SEALED WITH AN APPLICATION OF A PROTECTIVE COATING OF CONCRETE. TO BE PAID FOR UNDER THE ITEM #0818001 "PROTECTIVE COMPOUND FOR BRIDGES".



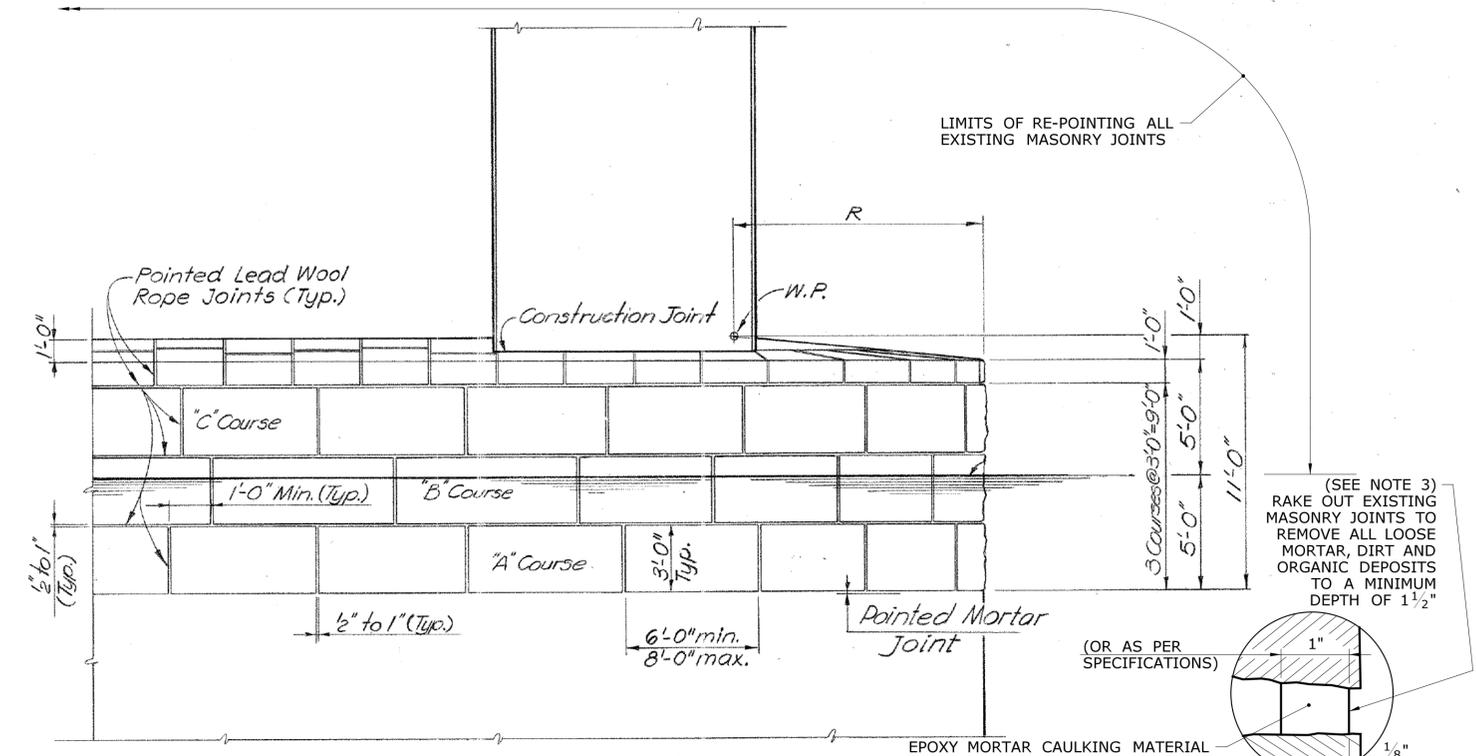
**TYPICAL CRACK REPAIR (WIDTH 1/8" - 1/4")**  
NOT TO SCALE

NOTE: CRACKS LESS THAN 1/8" IN WIDTH SHALL NOT BE REPAIRED BUT SHALL BE SEALED WITH PROTECTIVE COMPOUND. SEE NOTE 4.

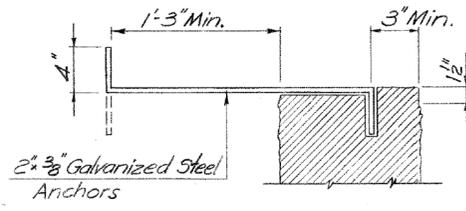
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	CHECKED BY: <b>M. EGAN</b>			NOT TO SCALE	DRAWING NO.: <b>SA-39</b>	SHEET NO.: <b>04.039</b>
REV. DATE REVISION DESCRIPTION SHEET NO. Plotted Date: 7/12/2016						



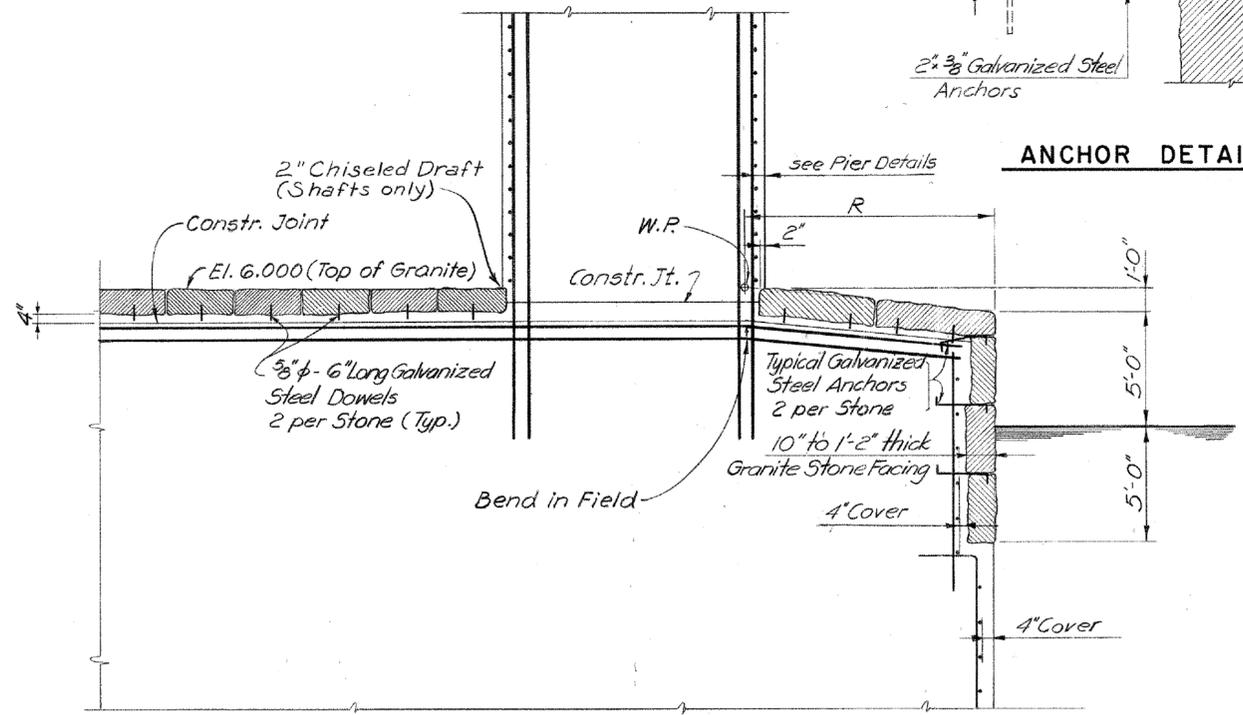
PLAN



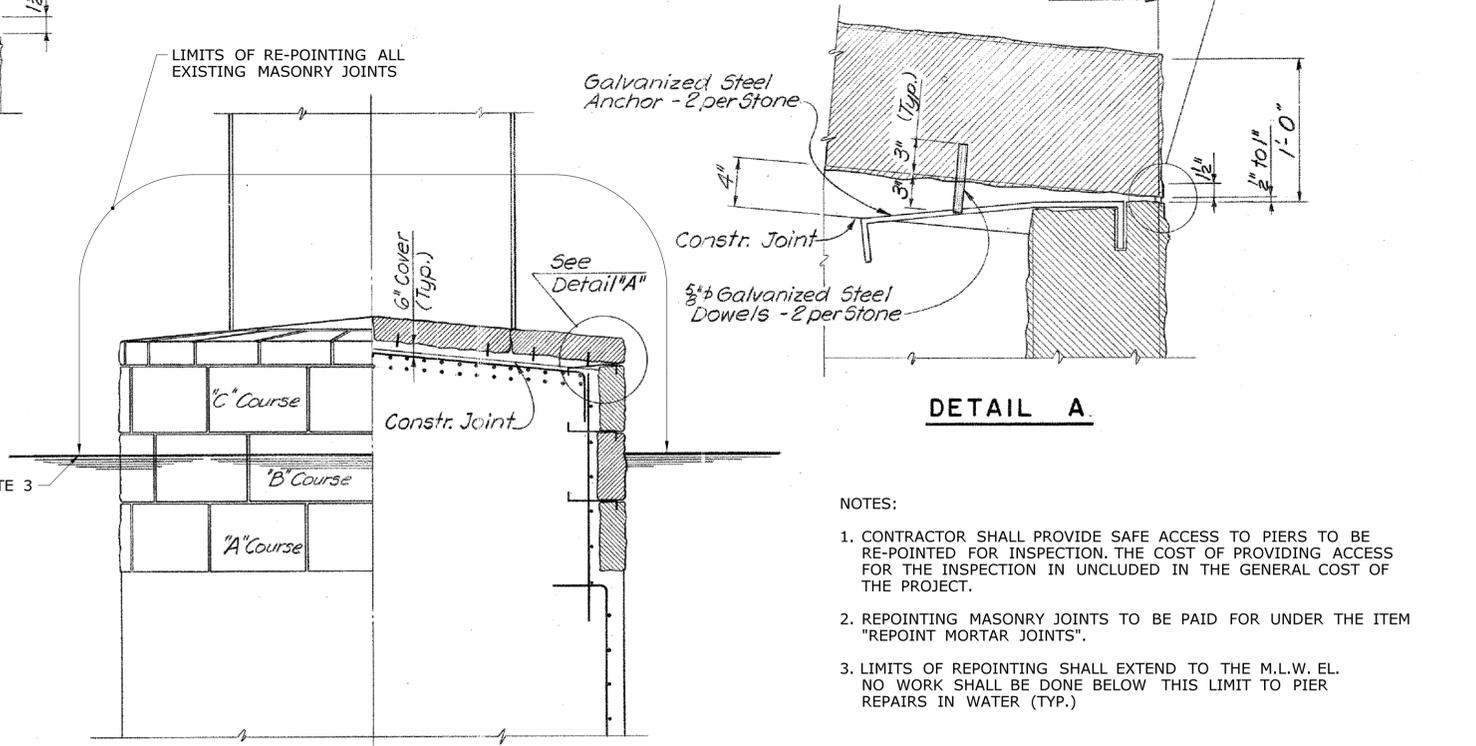
FRONT ELEVATION



ANCHOR DETAIL



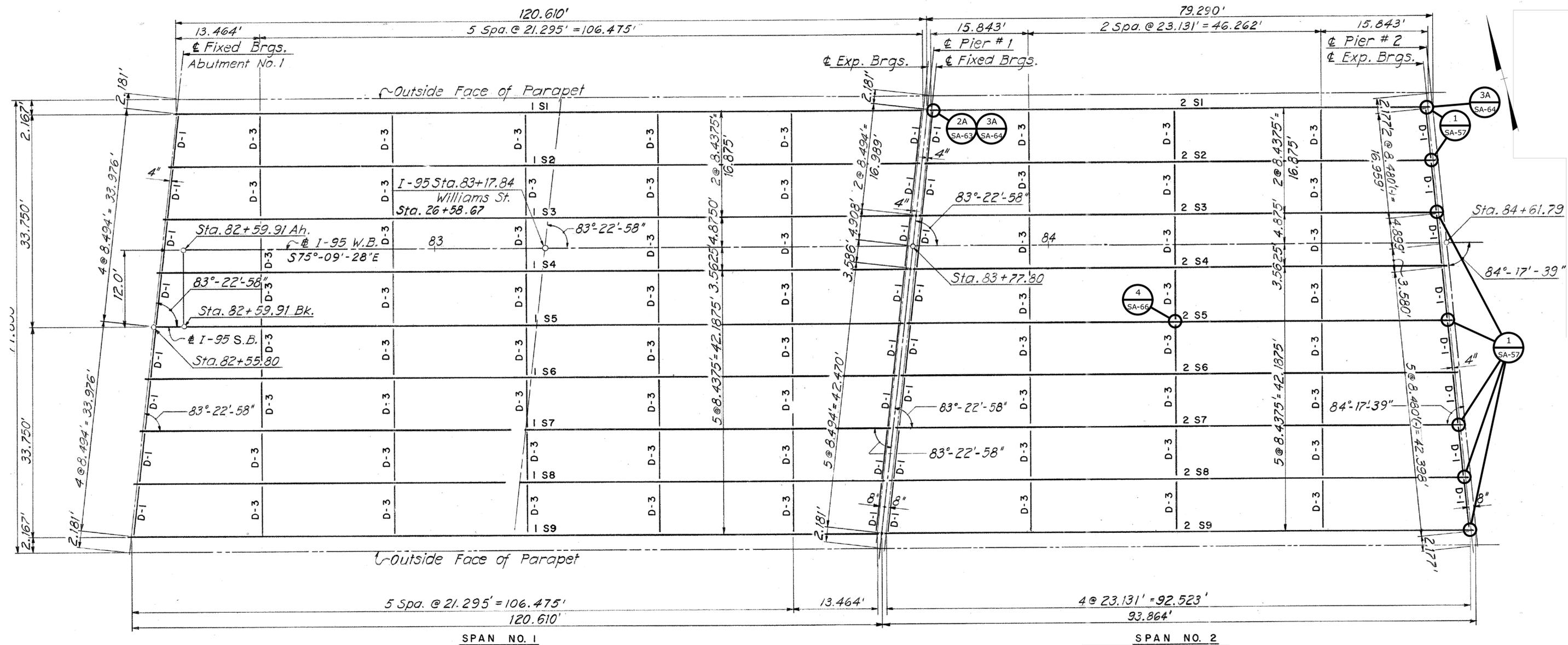
SECTION A-A



END ELEV. & SECTION

- NOTES:
1. CONTRACTOR SHALL PROVIDE SAFE ACCESS TO PIERS TO BE RE-POINTED FOR INSPECTION. THE COST OF PROVIDING ACCESS FOR THE INSPECTION IS UNINCLUDED IN THE GENERAL COST OF THE PROJECT.
  2. REPOINTING MASONRY JOINTS TO BE PAID FOR UNDER THE ITEM "REPOINT MORTAR JOINTS".
  3. LIMITS OF REPOINTING SHALL EXTEND TO THE M.L.W. EL. NO WORK SHALL BE DONE BELOW THIS LIMIT TO PIER REPAIRS IN WATER (TYP.)

REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	DESIGNER/DRAFTER: <b>C. DAVIS</b>	CHECKED BY: <b>M. EGAN</b>	NOT TO SCALE	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p>	<p>Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451</p>	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b>
										DRAWING NO. <b>SA-40</b>	SHEET NO. <b>04.040</b>
										SUBSTRUCTURE CONCRETE REPAIR DETAILS	



**FRAMING PLAN**  
SCALE: 1/8"=1'-0"

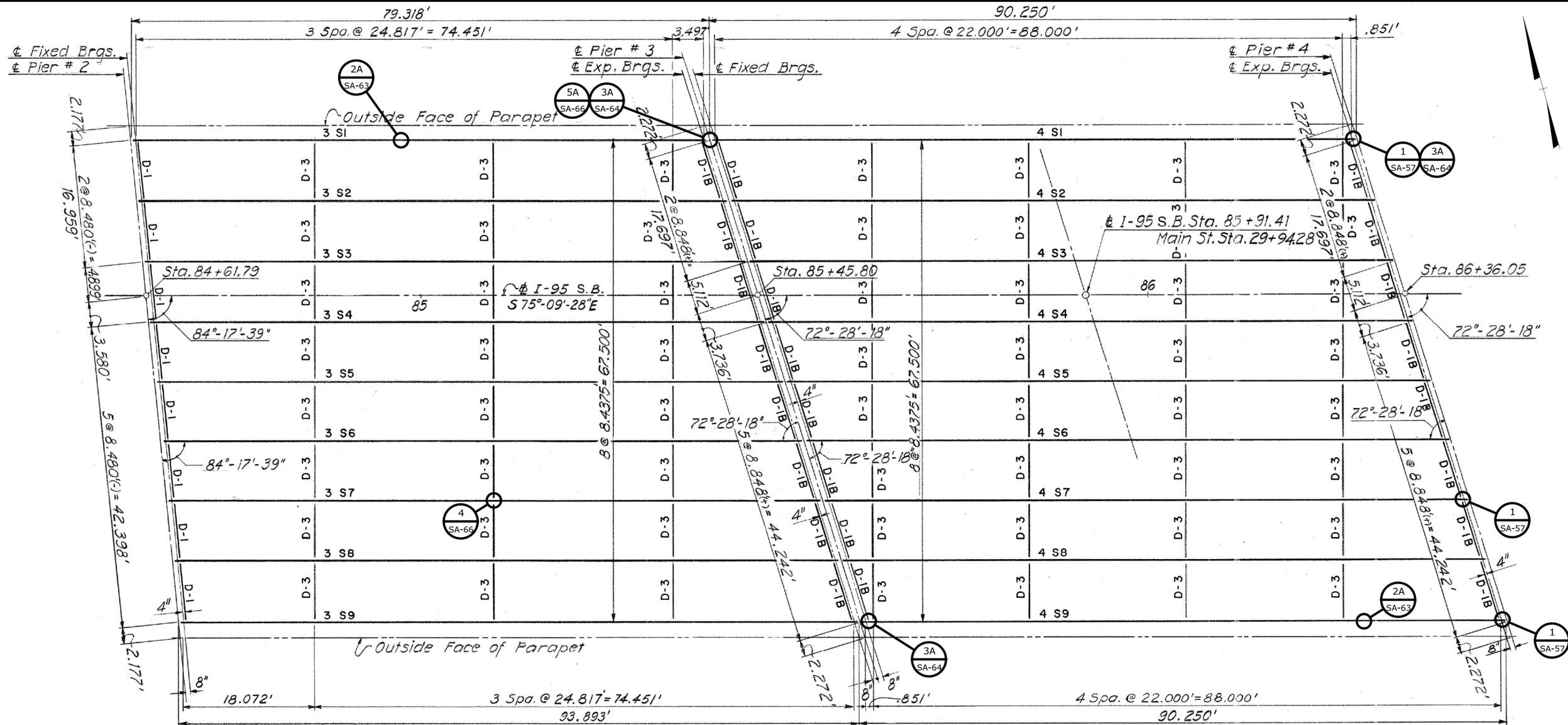
**STRUCTURAL STEEL REPAIR LEGEND**

- ① JACK, CLEAN, AND LUBRICATE, BRONZE SLIDING BEARINGS
- ②A REPAIR BOTTOM FLANGE (AT APPROACH GIRDERS)
- ③A REPAIR STIFFENER
- ④ REPAIR WELD AT STIFFENER

GENERAL NOTE:

NUMBERING OF FLOOR BEAMS AND NODES CONFORMS TO CONVENTIONS USED ON BRIDGE INSPECTION REPORTS DATED 2013. TYPICAL FOR ALL MAIN GIRDER AND TRUSS SPANS.

REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	DESIGNER/DRAFTER: <b>C. DAVIS</b>	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	SIGNATURE/ BLOCK:  Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b>
				CHECKED BY: <b>M. EGAN</b>			SCALE AS NOTED	FILENAME: ...\\SB_MSH_0094_0252_BR_NO_02514A_FRM-1.dgn	DRAWING TITLE: <b>FRAMING PLAN SPANS 1 &amp; 2</b>



SPAN NO. 3

**FRAMING PLAN**

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

SPAN NO. 4

**STRUCTURAL STEEL REPAIR LEGEND**

- ① JACK, CLEAN, AND LUBRICATE, BRONZE SLIDING BEARINGS
- ②A REPAIR BOTTOM FLANGE (AT APPROACH GIRDERS)
- ③A REPAIR STIFFENER
- ④ REPAIR WELD AT STIFFENER
- ⑤A REPAIR WEB

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 7/12/2016

DESIGNER/DRAFTER:  
**C. DAVIS**  
CHECKED BY:  
**M. EGAN**  
SCALE AS NOTED



SIGNATURE/BLOCK:  
  
Cardinal Engineering Associates, Inc.  
3 Colony Street  
Meriden, CT 06451

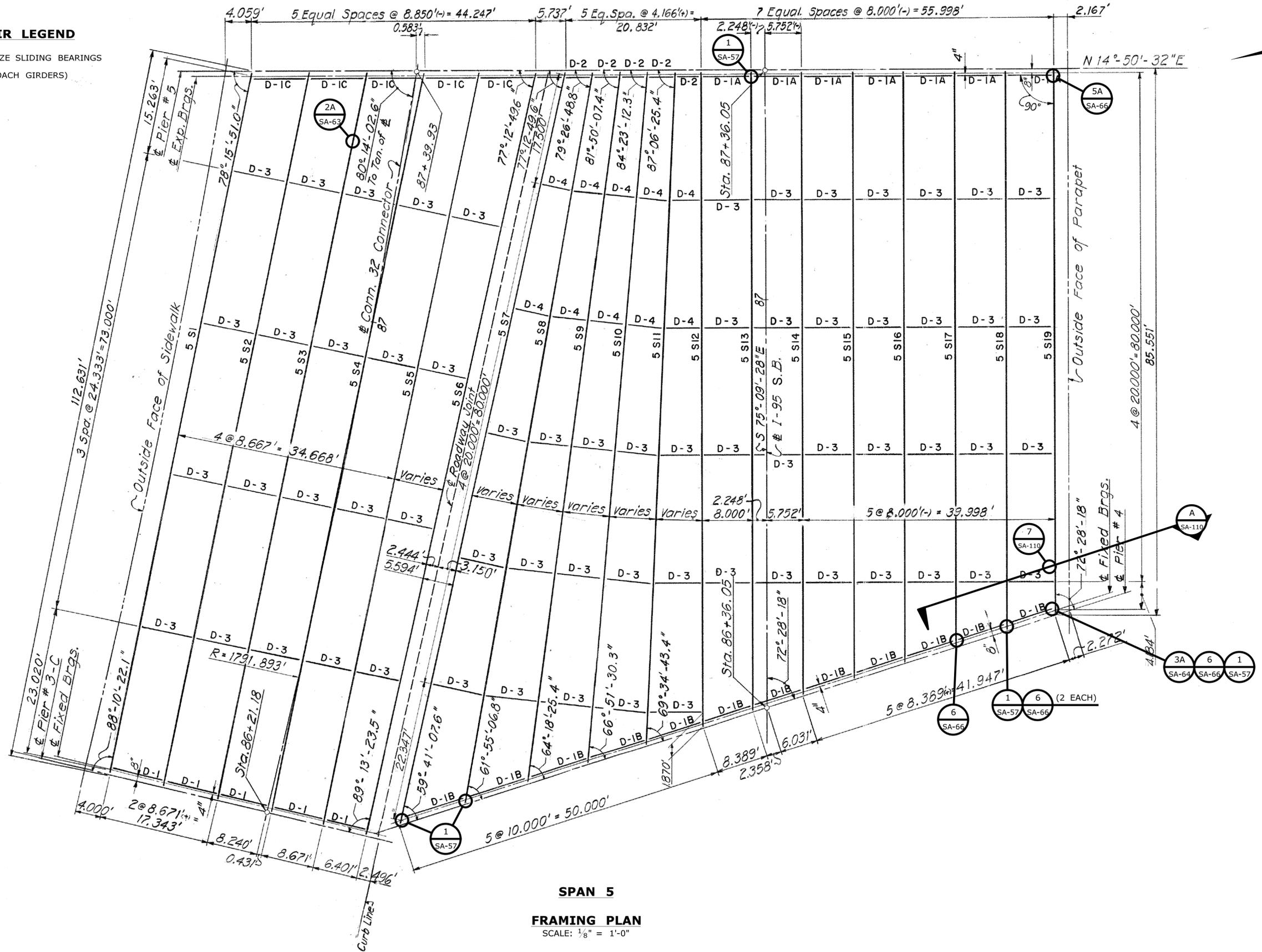
PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

TOWN:  
**NEW LONDON/GROTON**  
DRAWING TITLE:  
**FRAMING PLAN SPANS 3 & 4**

PROJECT NO.  
**94-252**  
DRAWING NO.  
**SA-42**  
SHEET NO.  
**04.042**

**STRUCTURAL STEEL REPAIR LEGEND**

- ① JACK, CLEAN, AND LUBRICATE, BRONZE SLIDING BEARINGS
- ②A REPAIR BOTTOM FLANGE (AT APPROACH GIRDERS)
- ③A REPAIR STIFFENER
- ⑤A REPAIR WEB
- ⑥ REPAIR WELD AT KEEPER BLOCK
- ⑦ REPAIR SCUPPER DRAIN PIPE



**SPAN 5**  
**FRAMING PLAN**  
SCALE: 1/8" = 1'-0"

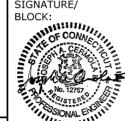
		DESIGNER/DRAFTER: <b>C. DAVIS</b> CHECKED BY: <b>M. EGAN</b> SCALE AS NOTED	 <b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b> <small>Filename: ...SB_MSH_0094_0252_BR_NO_02514A_FRM-3.dgn</small>	SIGNATURE/BLOCK:  Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b> DRAWING TITLE: <b>FRAMING PLAN SPAN 5</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-43</b> SHEET NO. <b>04.043</b>	
REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016					

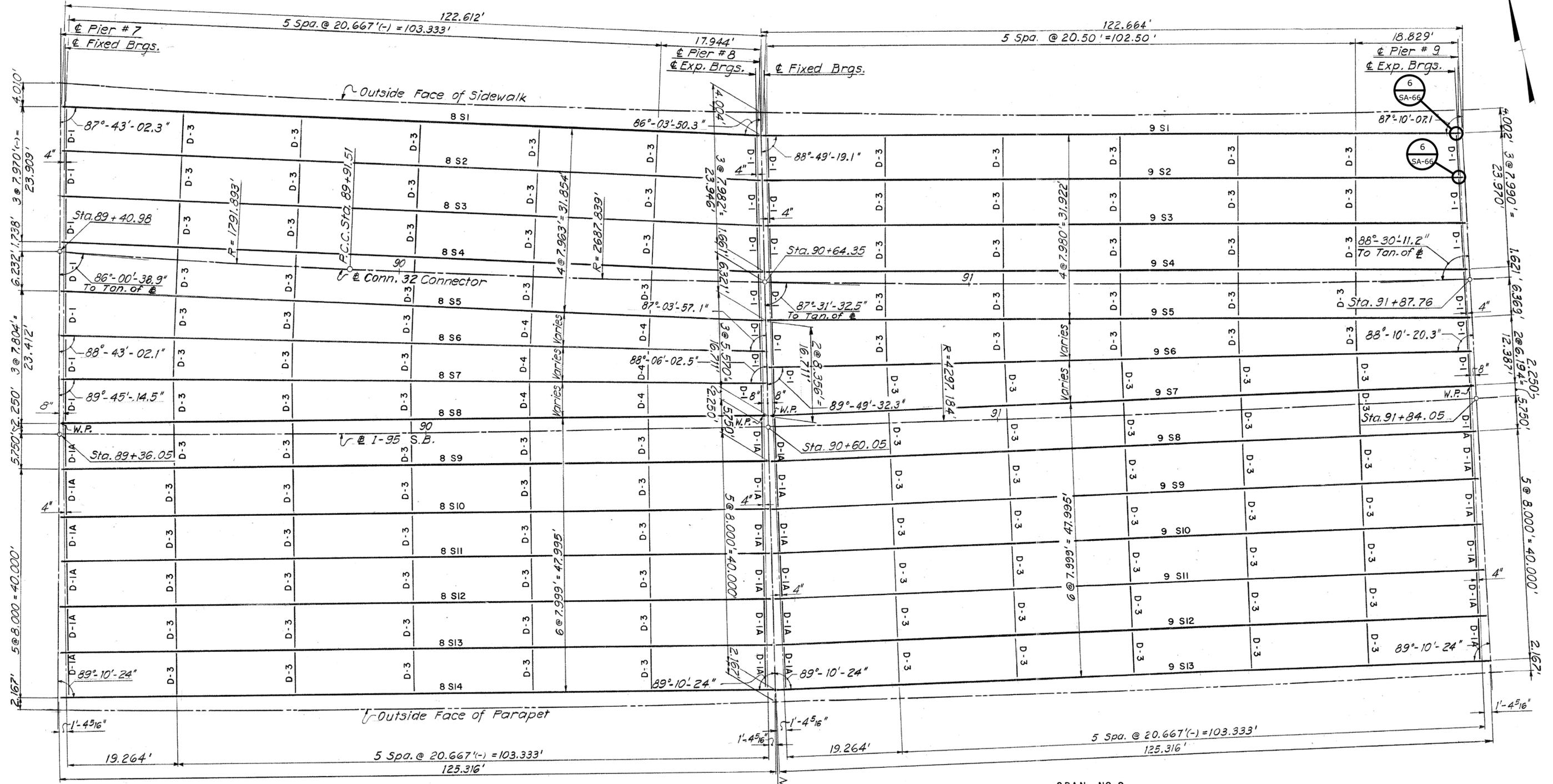


**FRAMING PLAN**  
SCALE: 1/8" = 1'-0"

**STRUCTURAL STEEL REPAIR LEGEND**

⊗ EXTEND WEEP PIPE

REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	DESIGNER/DRAFTER: <b>C. DAVIS</b>	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	SIGNATURE/ BLOCK:  Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b>
				CHECKED BY: <b>M. EGAN</b>			SCALE AS NOTED	FILENAME: ...\\SB_MSH_0094_0252_BR_NO_02514A_FRM-4.dgn	DRAWING TITLE: <b>FRAMING PLAN SPANS 6 &amp; 7</b>



SPAN NO. 8

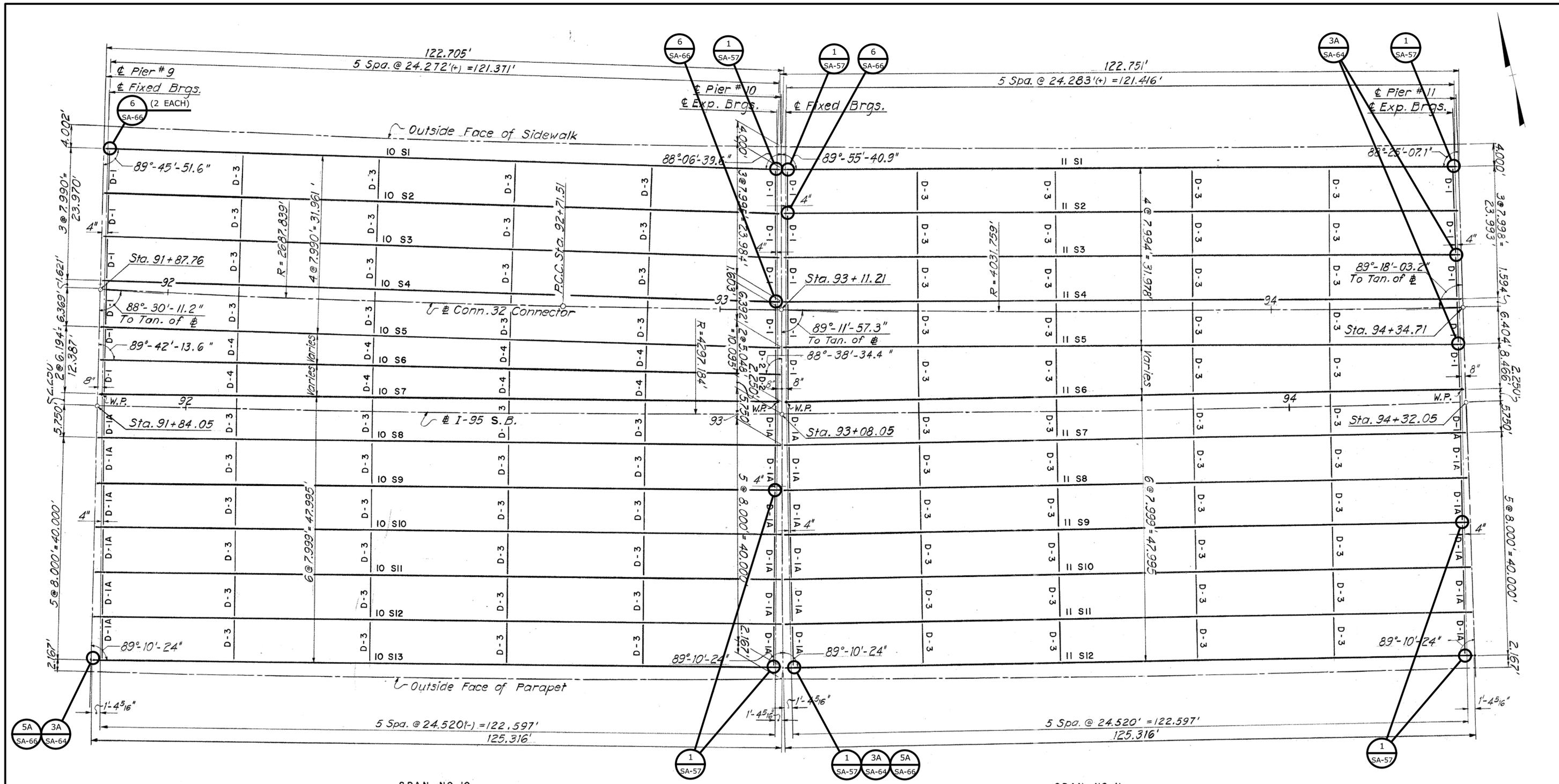
SPAN NO. 9

**STRUCTURAL STEEL REPAIR LEGEND**

Ⓢ REPAIR WELD AT KEEPER BLOCK

**FRAMING PLAN**  
SCALE: 1/8" = 1'-0"

REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	DESIGNER/DRAFTER: <b>C. DAVIS</b>	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	SIGNATURE/ BLOCK:  Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b>
				CHECKED BY: <b>M. EGAN</b>				SCALE AS NOTED	DRAWING TITLE: <b>FRAMING PLAN</b> <b>SPANS 8 &amp; 9</b>



SPAN NO. 10

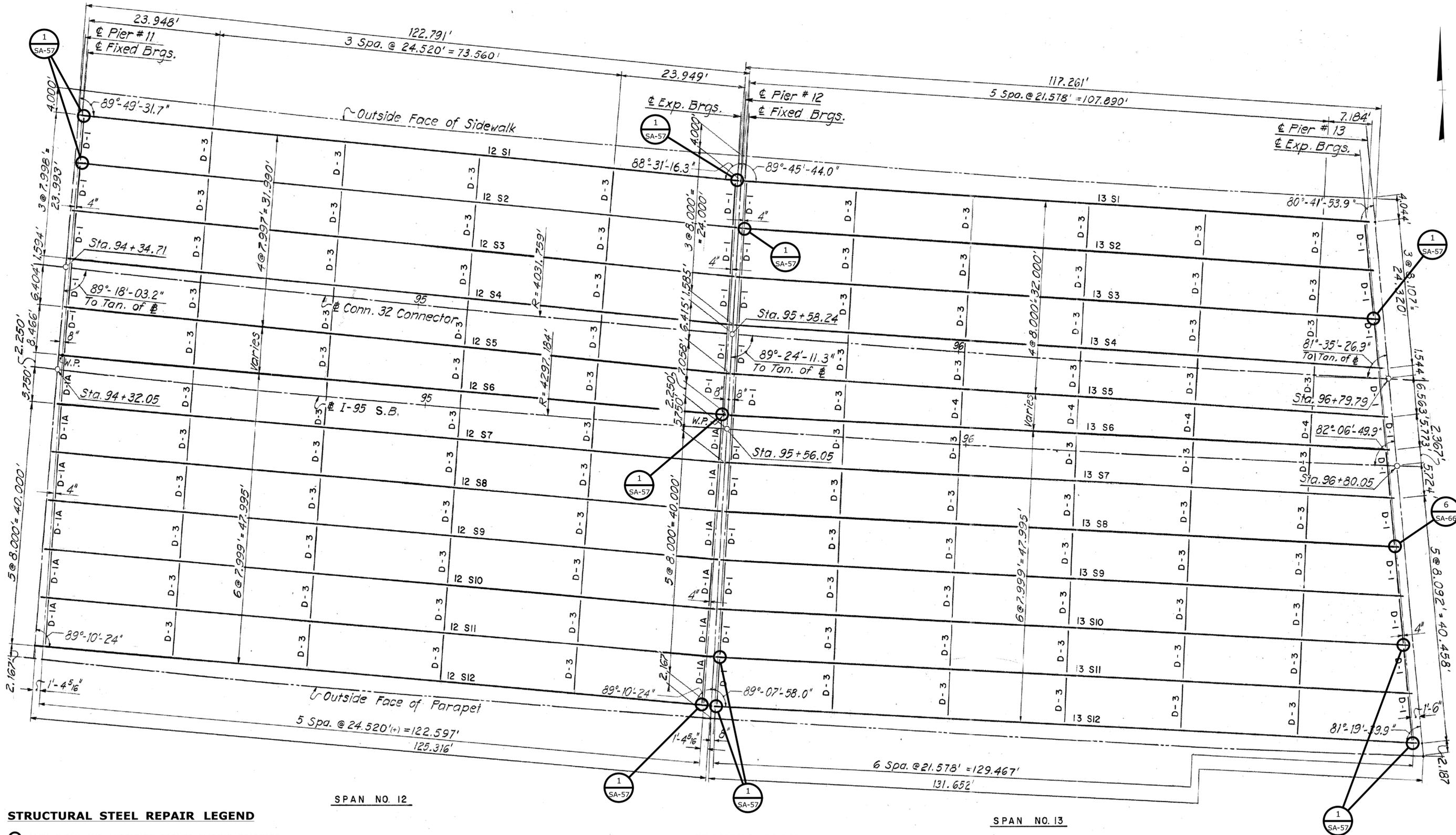
SPAN NO. 11

**STRUCTURAL STEEL REPAIR LEGEND**

- ① JACK, CLEAN, AND LUBRICATE, BRONZE SLIDING BEARINGS
- ③A REPAIR STIFFENER
- ⑤A REPAIR WEB
- ⑥ REPAIR WELD AT KEEPER BLOCK

**FRAMING PLAN**  
SCALE: 1/8" = 1'-0"

REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	DESIGNER/DRAFTER: <b>C. DAVIS</b>	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	SIGNATURE/ BLOCK:  Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b>
				CHECKED BY: <b>M. EGAN</b>			SCALE AS NOTED	FILENAME: ..._SB_MSH_0094_0252_BR_NO_02514A_FRM-6.dgn	DRAWING TITLE: <b>FRAMING PLAN SPANS 10 &amp; 11</b>



**STRUCTURAL STEEL REPAIR LEGEND**

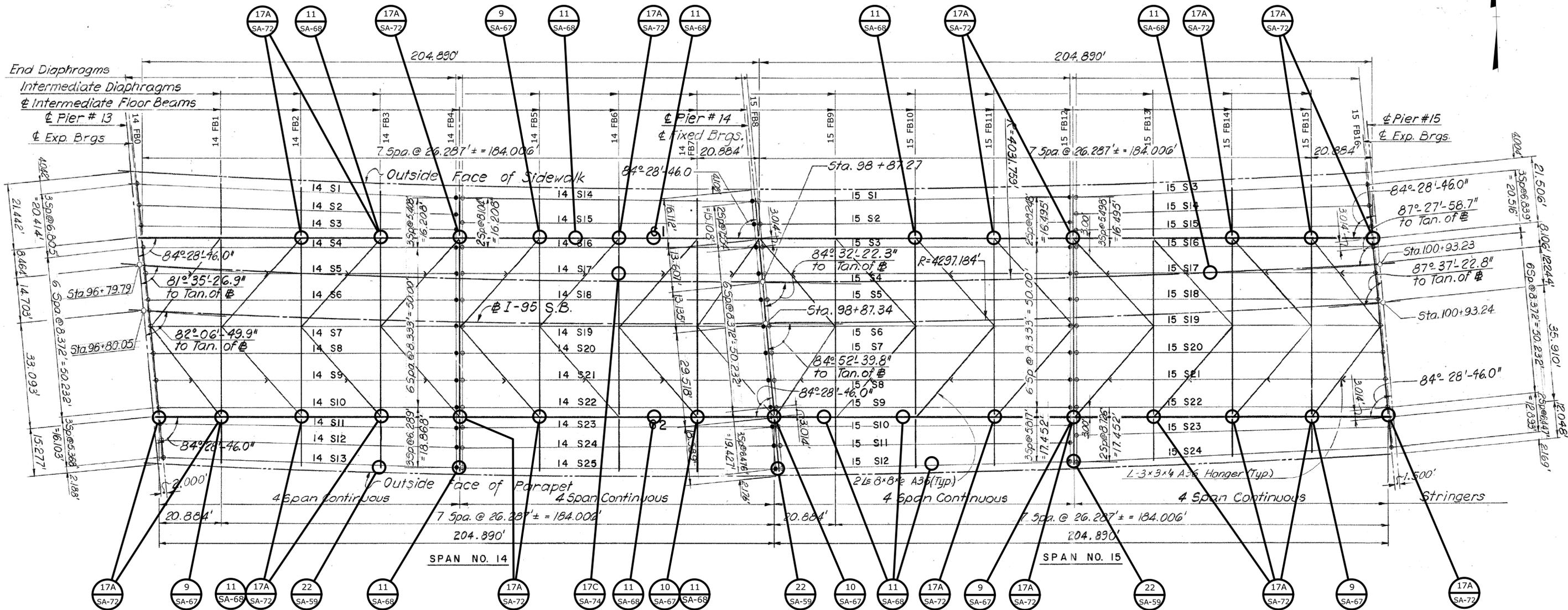
- ① JACK, CLEAN, AND LUBRICATE, BRONZE SLIDING BEARINGS
- ⑥ REPAIR WELD AT KEEPER BLOCK

SPAN NO. 12

**FRAMING PLAN**  
SCALE: 1/8" = 1'-0"

SPAN NO. 13

REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	DESIGNER/DRAFTER: <b>C. DAVIS</b>	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	SIGNATURE/ BLOCK:  Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b>
				CHECKED BY: <b>M. EGAN</b>				SCALE AS NOTED	FILENAME: ..._SB_MSH_0094_0252_BR_NO_02514A_FRM-7.dgn



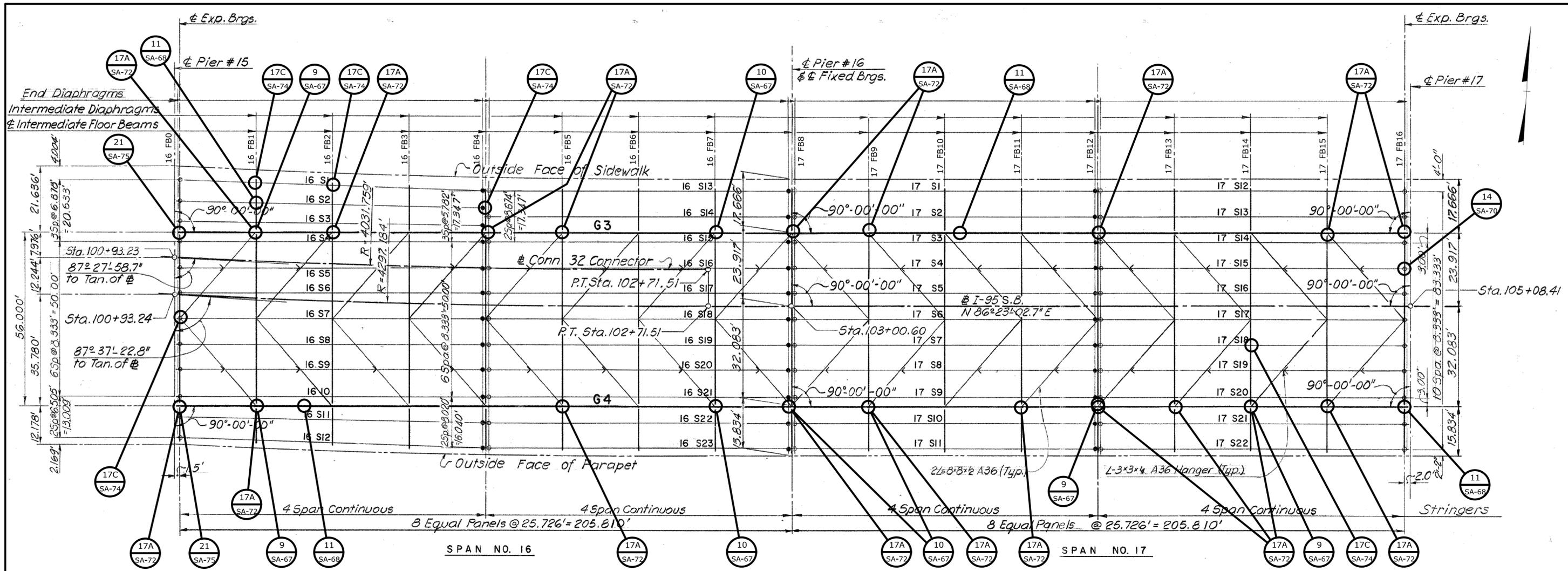
**STRUCTURAL STEEL REPAIR LEGEND**

- ⑨ REPAIR/REPLACE SHEARED CONNECTION BOLTS BETWEEN GIRDER TOP FLANGE AND FLOORBEAM TIE PLATE
- ⑩ REPAIR FILLET WELD AT GIRDER TOP FLANGE OR FLOORBEAM TIE PLATE TO SHIM
- ⑪ REPLACE LOOSE/MISSING BOLTS OR NUTS
- ⑰ GRIND OUT CRACK IN TACK WELD
- ⑰ REMOVE TACK WELDS
- ⑲ REPAIR BOLSTER

**FRAMING PLAN**

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

REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	DESIGNER/DRAFTER: <b>C. DAVIS</b>	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	SIGNATURE/ BLOCK:  Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b>
				CHECKED BY: <b>M. EGAN</b>			SCALE AS NOTED	FILENAME: ...\\SB_MSH_0094_0252_BR_NO_02514A_FRM-8.dgn	DRAWING TITLE: <b>FRAMING PLAN SPANS 14 &amp; 15</b>

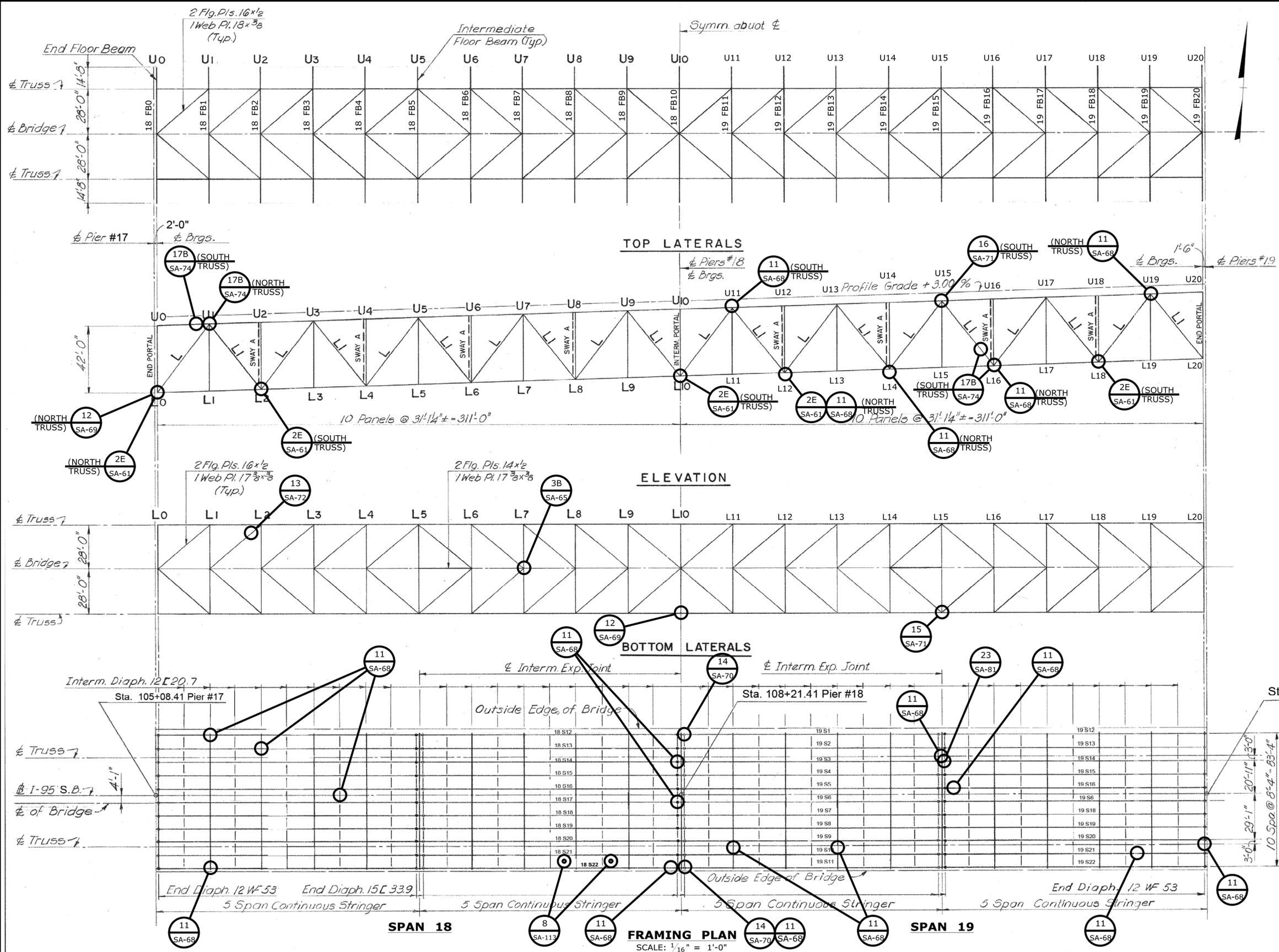


**STRUCTURAL STEEL REPAIR LEGEND**

- 9 REPAIR/REPLACE SHEARED CONNECTION BOLTS BETWEEN GIRDER TOP FLANGE AND FLOORBEAM TIE PLATE
- 10 REPAIR FILLET WELD AT GIRDER TOP FLANGE OR FLOORBEAM TIE PLATE TO SHIM
- 11 REPLACE LOOSE/MISSING BOLTS OR NUTS
- 14 REPAIR TOP FLANGE OF FLOORBEAM (OR TOP PLATE OF TRUSS)
- 17A GRIND OUT CRACK IN TACK WELD
- 17C REMOVE TACK WELD
- 21 CLEAN AND PAINT ROCKER BEARING

**FRAMING PLAN**  
SCALE: 1/16" = 1'-0"

		THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.	DESIGNER/DRAFTER: <b>C. DAVIS</b> CHECKED BY: <b>M. EGAN</b> SCALE AS NOTED	 <b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b> <small>Filename: ..._SB_MSH_0094_0252_BR_NO_02514A_FRM-9.dgn</small>	SIGNATURE/BLOCK:  Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-49</b> SHEET NO. <b>04.049</b>		
REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016						<b>FRAMING PLAN</b> <b>SPANS 16 &amp; 17</b>	



**STRUCTURAL STEEL REPAIR LEGEND**

- 2E REPAIR BOTTOM FLANGE (BOTTOM CHORD OF TRUSS)
- 3B REPAIR STIFFENER
- 8 EXTEND WEEP PIPE
- 11 TIGHTEN/REPLACE LOOSE/MISSING BOLTS OR NUTS
- 12 REPLACE MISSING COTTER PIN
- 13 REPAIR TEAR/GOUGE IN LATERAL BRACING
- 14 REPAIR TOP FLANGE (OR TOP PLATE OF TRUSS)
- 15 REPAIR TEAR IN GUSSET PLATE
- 16 INSTALL SPLICE PLATE CONNECTION BOLTS AT THE TOP CHORD
- 17B GRIND OUT CRACK IN TACK WELD
- 23 CLEAN AND PAINT STRINGER END

**TOP LATERALS**

**ELEVATION**

**BOTTOM LATERALS**

**FRAMING PLAN**

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

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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DESIGNER/DRAFTER:  
**C. DAVIS**  
CHECKED BY:  
**M. EGAN**  
SCALE AS NOTED



SIGNATURE/BLOCK:  
  
Cardinal Engineering Associates, Inc.  
3 Colony Street  
Meriden, CT 06451

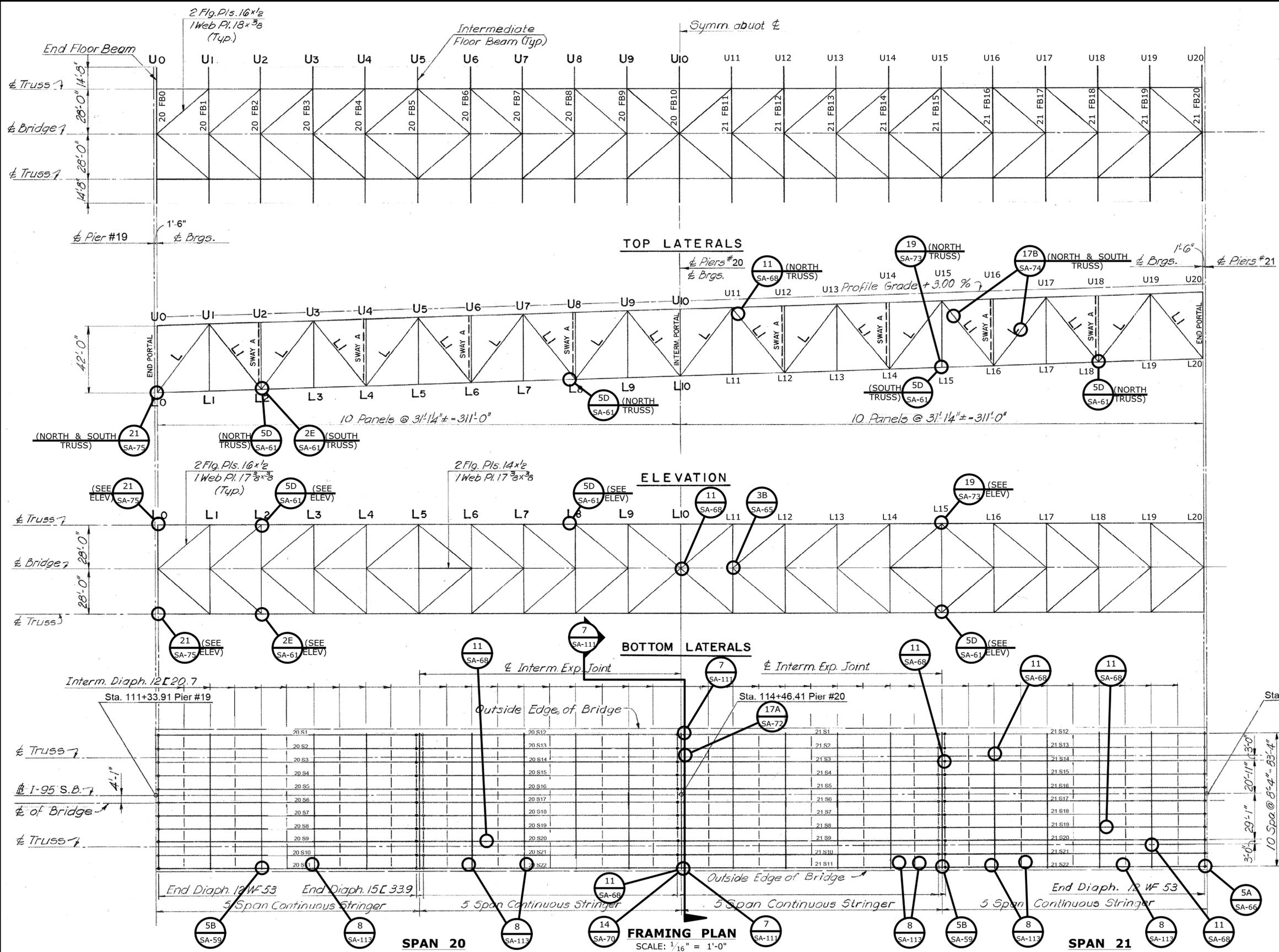
PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

TOWN:  
**NEW LONDON/GROTON**  
DRAWING TITLE:  
**FRAMING PLAN SPANS 18 & 19**

PROJECT NO.  
**94-252**  
DRAWING NO.  
**SA-50**  
SHEET NO.  
**04.050**

Plotted Date: 7/12/2016

Filename: ... \SB\_MSH\_0094\_0252\_BR\_NO\_02514A\_FRM-10.dgn



**STRUCTURAL STEEL REPAIR LEGEND**

- 2E REPAIR BOTTOM FLANGE (OR BOTTOM CHORD OF TRUSS)
- 3B REPAIR STIFFENER
- 5A REPAIR WEB
- 5B REPAIR WEB (STRINGER)
- 5D REPAIR WEB (BOTTOM CHORD OF TRUSS)
- 7 REPAIR SCUPPER DRAIN PIPE
- 8 EXTEND WEEP PIPE
- 11 TIGHTEN/REPLACE LOOSE/MISSING BOLTS OR NUTS
- 14 REPAIR TOP FLANGE (OR TOP PLATE OF TRUSS)
- 17A GRIND OUT CRACK IN TACK WELD
- 19 REPAIR GUSSET PLATE
- 21 CLEAN AND PAINT ROCKER BEARING

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

DESIGNER/DRAFTER:  
**C. DAVIS**  
CHECKED BY:  
**M. EGAN**  
SCALE AS NOTED

**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**

File name: ...SB\_MSH\_0094\_0252\_BR\_NO\_02514A\_FRM-11.dgn

SIGNATURE/BLOCK:  
  
 Cardinal Engineering Associates, Inc.  
 3 Colony Street  
 Meriden, CT 06451

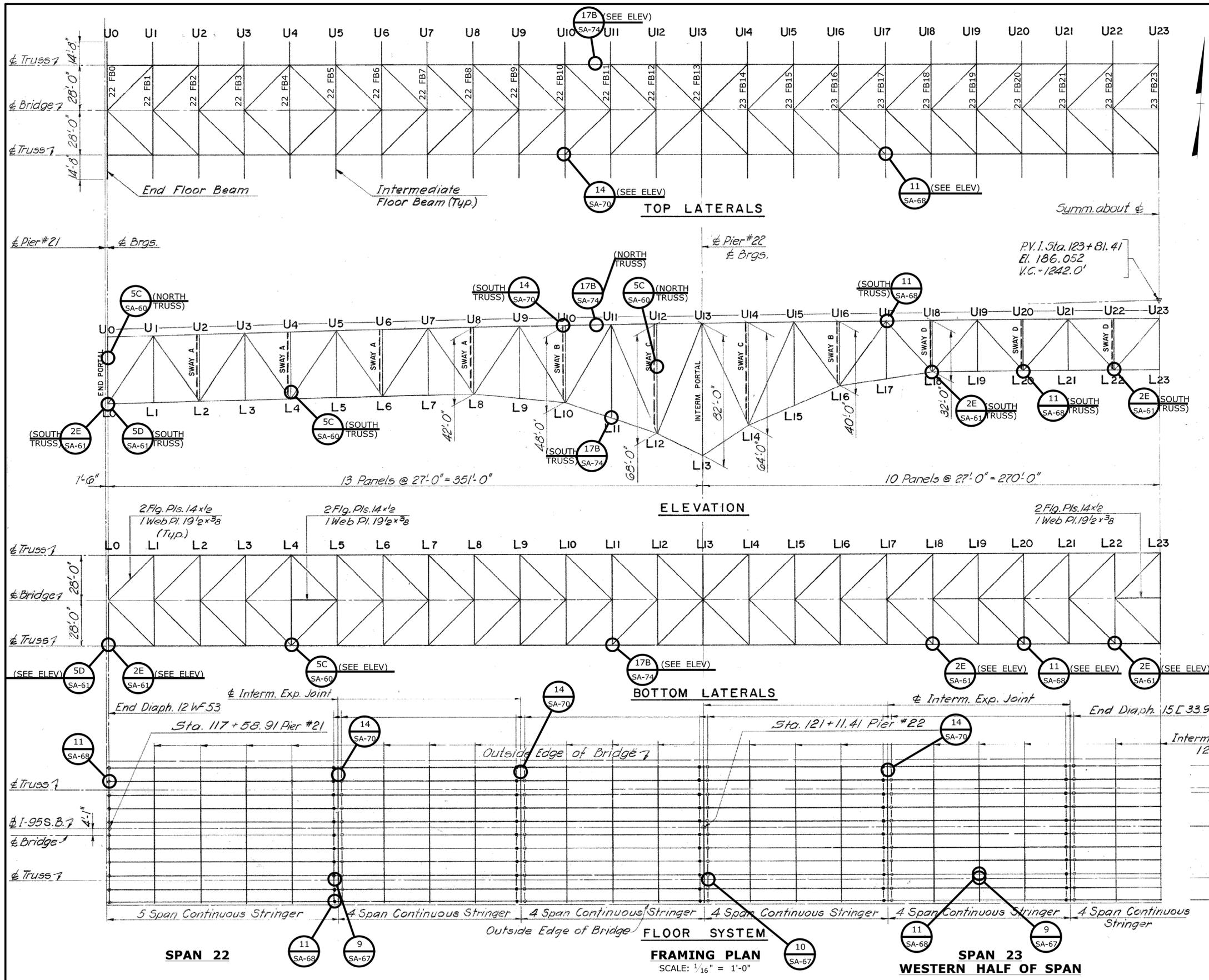
PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

TOWN:  
**NEW LONDON/GROTON**  
 DRAWING TITLE:  
**FRAMING PLAN SPANS 20 & 21**

PROJECT NO.  
**94-252**  
 DRAWING NO.  
**SA-51**  
 SHEET NO.  
**04.051**

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 7/12/2016



**STRUCTURAL STEEL REPAIR LEGEND**

- 2E REPAIR BOTTOM FLANGE (BOTTOM CHORD OF TRUSS)
- 5C REPAIR WEB (VERTICAL TRUSS MEMBER)
- 5D REPAIR WEB (BOTTOM CHORD OF TRUSS)
- 9 REPAIR/REPLACE SHEARED CONNECTION BOLTS BETWEEN GIRDER TOP FLANGE AND FLOORBEAM TIE PLATE
- 10 REPAIR FILLET WELD AT GIRDER TOP FLANGE OR FLOORBEAM TIE PLATE TO SHIM
- 11 TIGHTEN/REPLACE LOOSE/MISSING BOLTS OR NUTS
- 14 REPAIR TOP FLANGE (OR TOP PLATE OF TRUSS)
- 17B GRIND OUT CRACK IN TACK WELD

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER:  
**C. DAVIS**  
CHECKED BY:  
**M. EGAN**  
SCALE AS NOTED

**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**

Signature/Block:

SIGNATURE/BLOCK:  
  
Cardinal Engineering Associates, Inc.  
3 Colony Street  
Meriden, CT 06451

PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

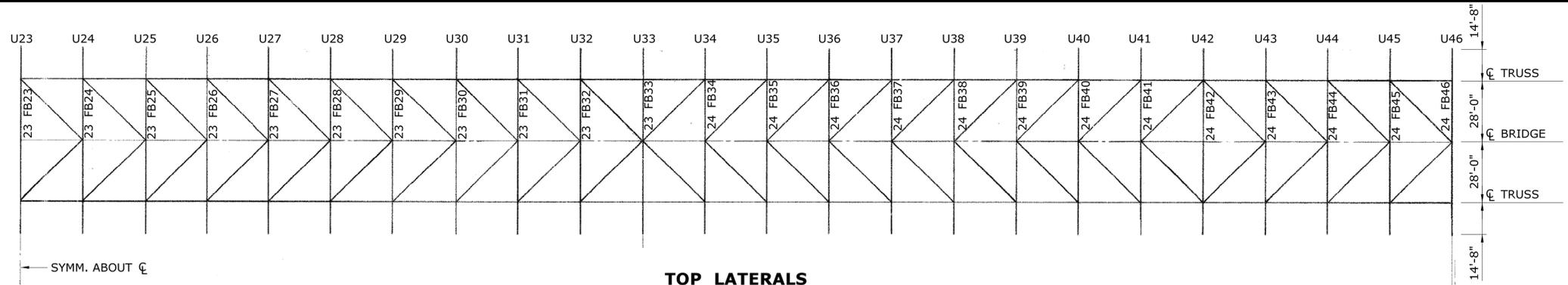
TOWN:  
**NEW LONDON/GROTON**

DRAWING TITLE:  
**FRAMING PLAN SPANS 22 & 23**

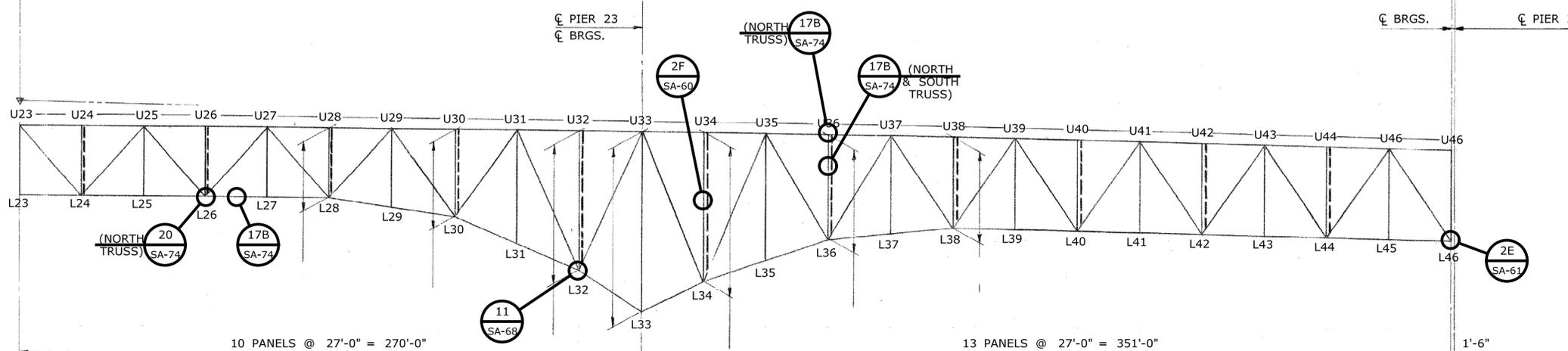
PROJECT NO.  
**94-252**

DRAWING NO.  
**SA-52**

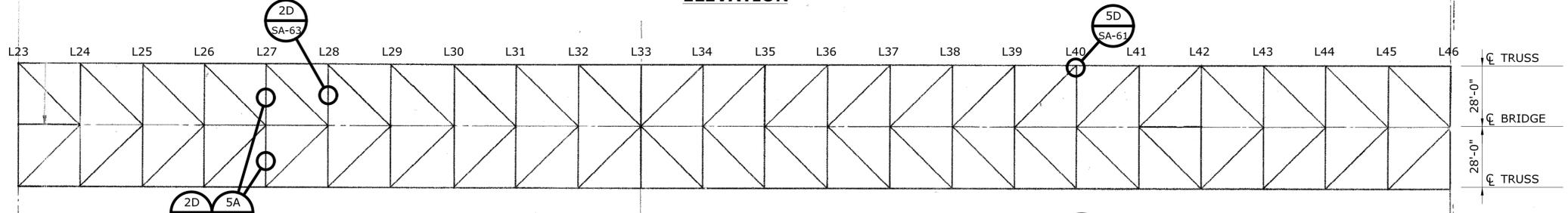
SHEET NO.  
**04.052**



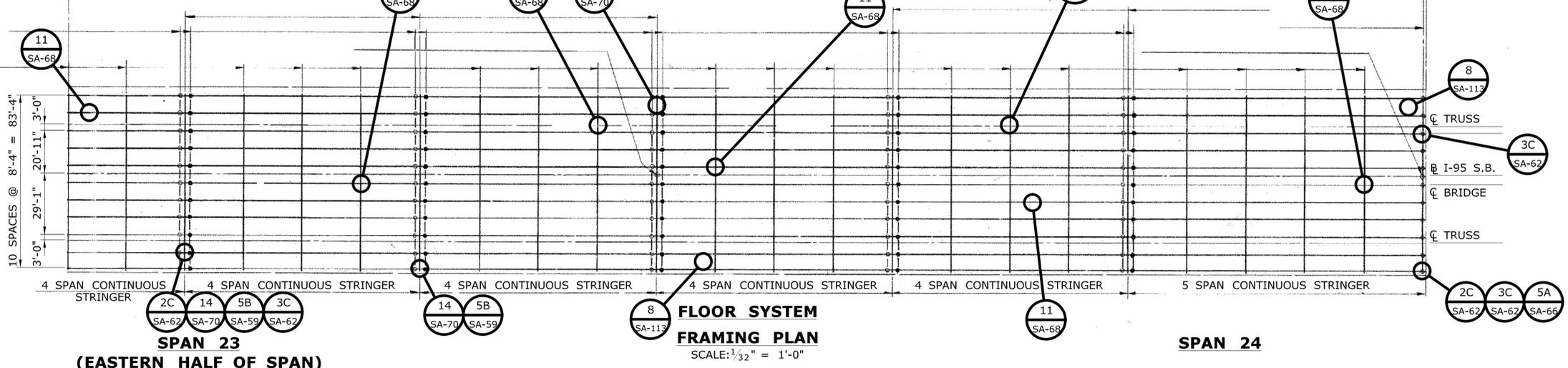
**TOP LATERALS**



**ELEVATION**



**BOTTOM LATERALS**



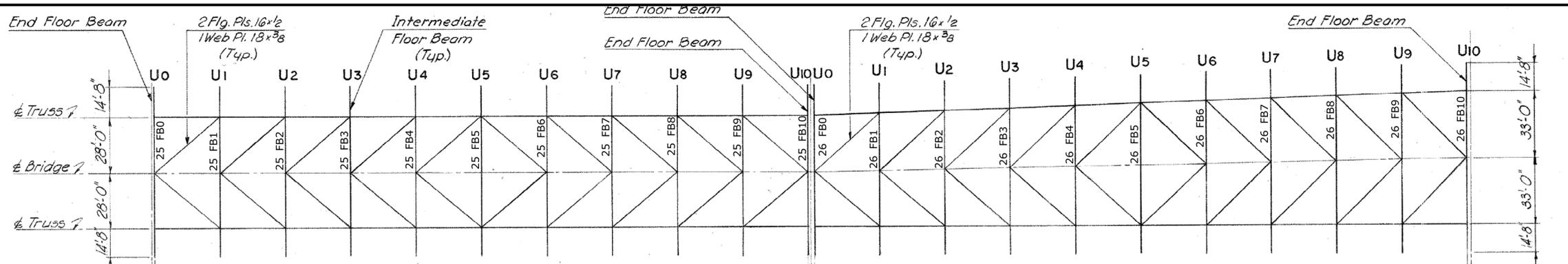
**SPAN 23 (EASTERN HALF OF SPAN)**

**SPAN 24**

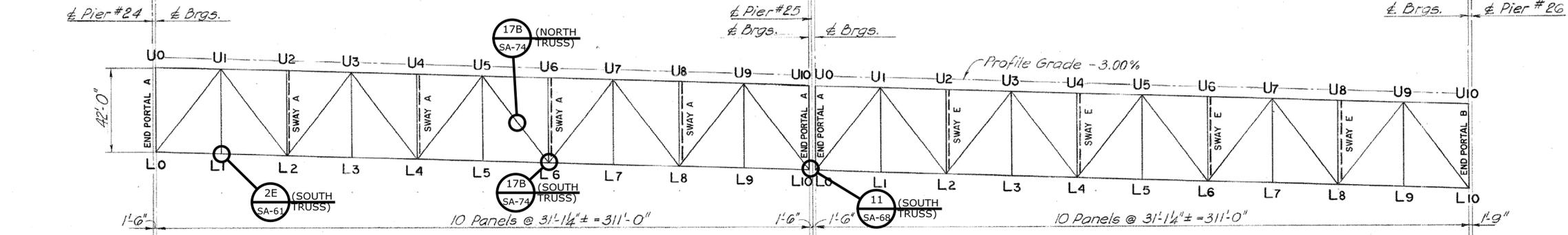
**STRUCTURAL STEEL REPAIR LEGEND**

- (2B) REPAIR BOTTOM FLANGE (AT INTERMEDIATE FLOOR BEAM - INTERMEDIATE SUPPORT)
- (2C) REPAIR BOTTOM FLANGE (AT FLOOR BEAM)
- (2D) REPAIR BOTTOM FLANGE (AT BOTTOM STRUTS - TRUSS)
- (2E) REPAIR BOTTOM FLANGE (BOTTOM CHORD OF TRUSS)
- (2F) REPAIR BOTTOM FLANGE (VERTICAL TRUSS MEMBER)
- (3C) REPAIR STIFFENER (FLOOR BEAM)
- (5A) REPAIR WEB
- (5B) REPAIR WEB (STRINGER)
- (5D) REPAIR WEB (BOTTOM CHORD OF TRUSS)
- (8) EXTEND WEEP PIPE
- (11) TIGHTEN/REPLACE LOOSE/MISSING BOLTS OR NUTS
- (14) REPAIR TOP FLANGE (OR TOP PLATE OF TRUSS)
- (17B) GRIND OUT CRACK IN TACK WELD
- (20) REPAIR/REPLACE WELDS WITH POROSITY HOLES

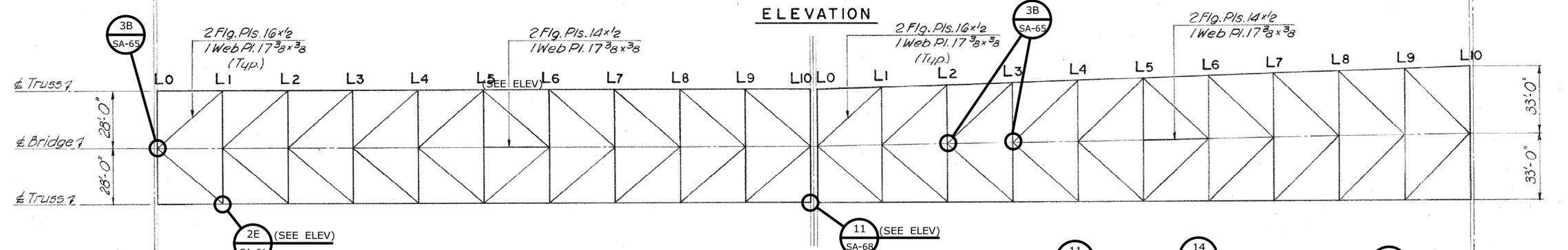
		THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.	DESIGNER/DRAFTER: <b>C. DAVIS</b> CHECKED BY: <b>M. EGAN</b> SCALE AS NOTED	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION <small>Filename: ...SB_MSH_0094_0252_BR_NO_02514A_FRM-13.dgn</small>	SIGNATURE/BLOCK:  Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-53</b> SHEET NO. <b>04.053</b>		
REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016						<b>FRAMING PLAN SPANS 23 &amp; 24</b>	



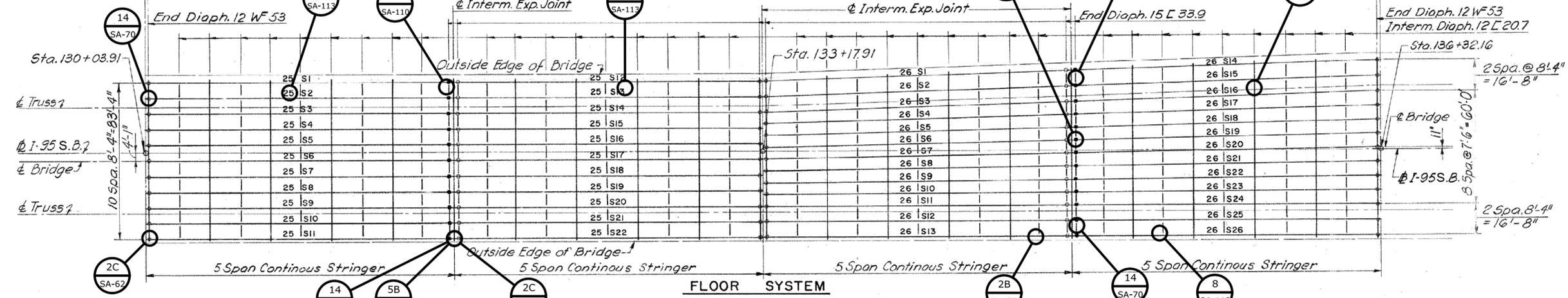
**TOP LATERALS**



**ELEVATION**



**BOTTOM LATERALS**



**FRAMING PLAN**

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

**STRUCTURAL STEEL REPAIR LEGEND**

- 2B REPAIR BOTTOM FLANGE (STRINGER)
- 2C REPAIR BOTTOM FLANGE (AT FLOOR BEAM)
- 2E REPAIR BOTTOM FLANGE (BOTTOM CHORD OF TRUSS)
- 3B REPAIR STIFFENER (AT BOTTOM STRUT)
- 5B REPAIR WEB
- 7 REPAIR SCUPPER DRAIN PIPE
- 8 EXTEND WEEP PIPE
- 11 TIGHTEN/REPLACE LOOSE/MISSING BOLTS OR NUTS
- 14 REPAIR TOP FLANGE (OR TOP PLATE OF TRUSS)
- 17A GRIND OUT CRACK IN TACK WELD
- 17B GRIND OUT CRACK IN TACK WELD

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER:  
**C. DAVIS**  
CHECKED BY:  
**M. EGAN**  
SCALE AS NOTED

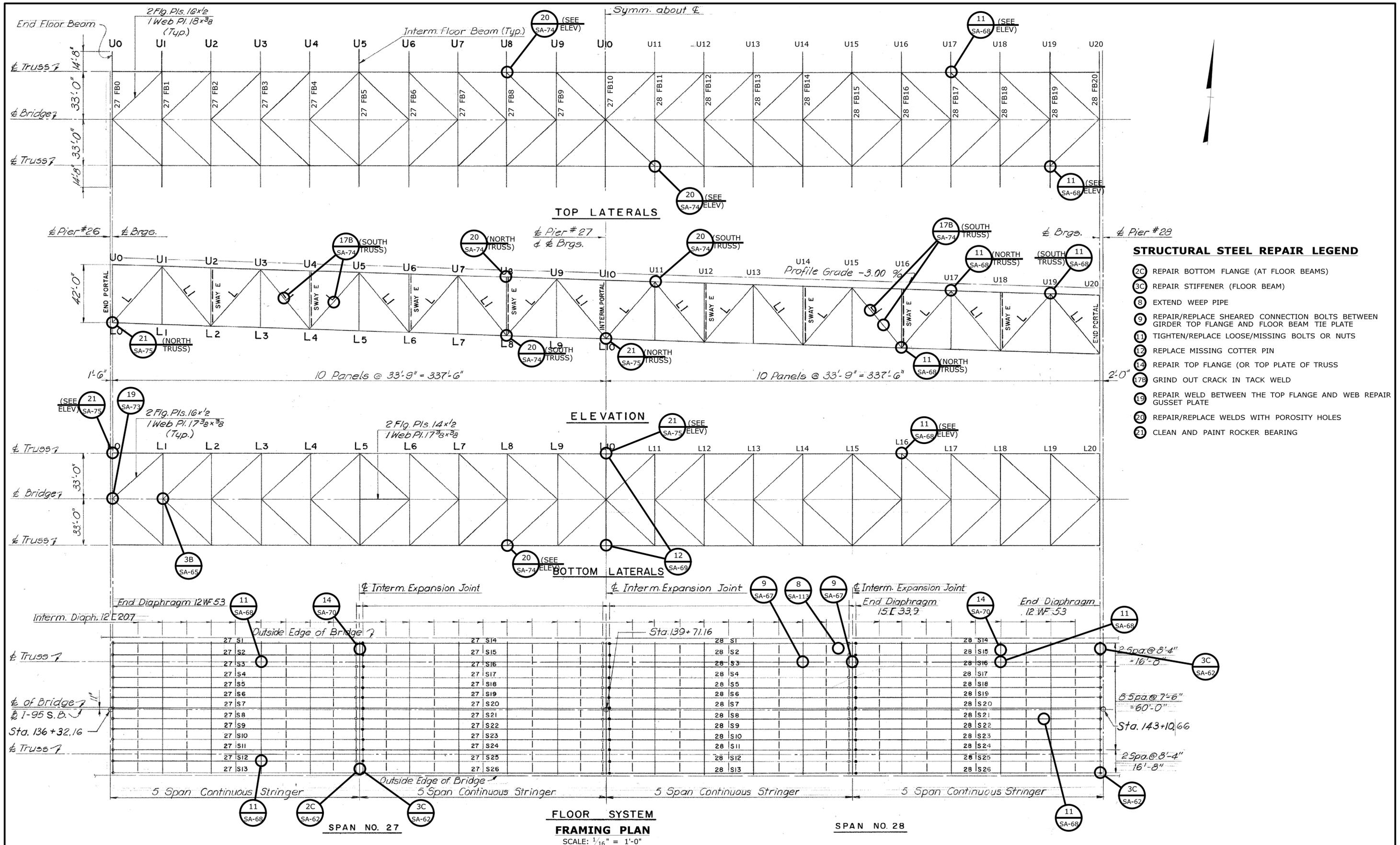


SIGNATURE/BLOCK:  
**CARDINAL ENGINEERING ASSOCIATES, INC.**  
3 Colony Street  
Meriden, CT 06451

PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

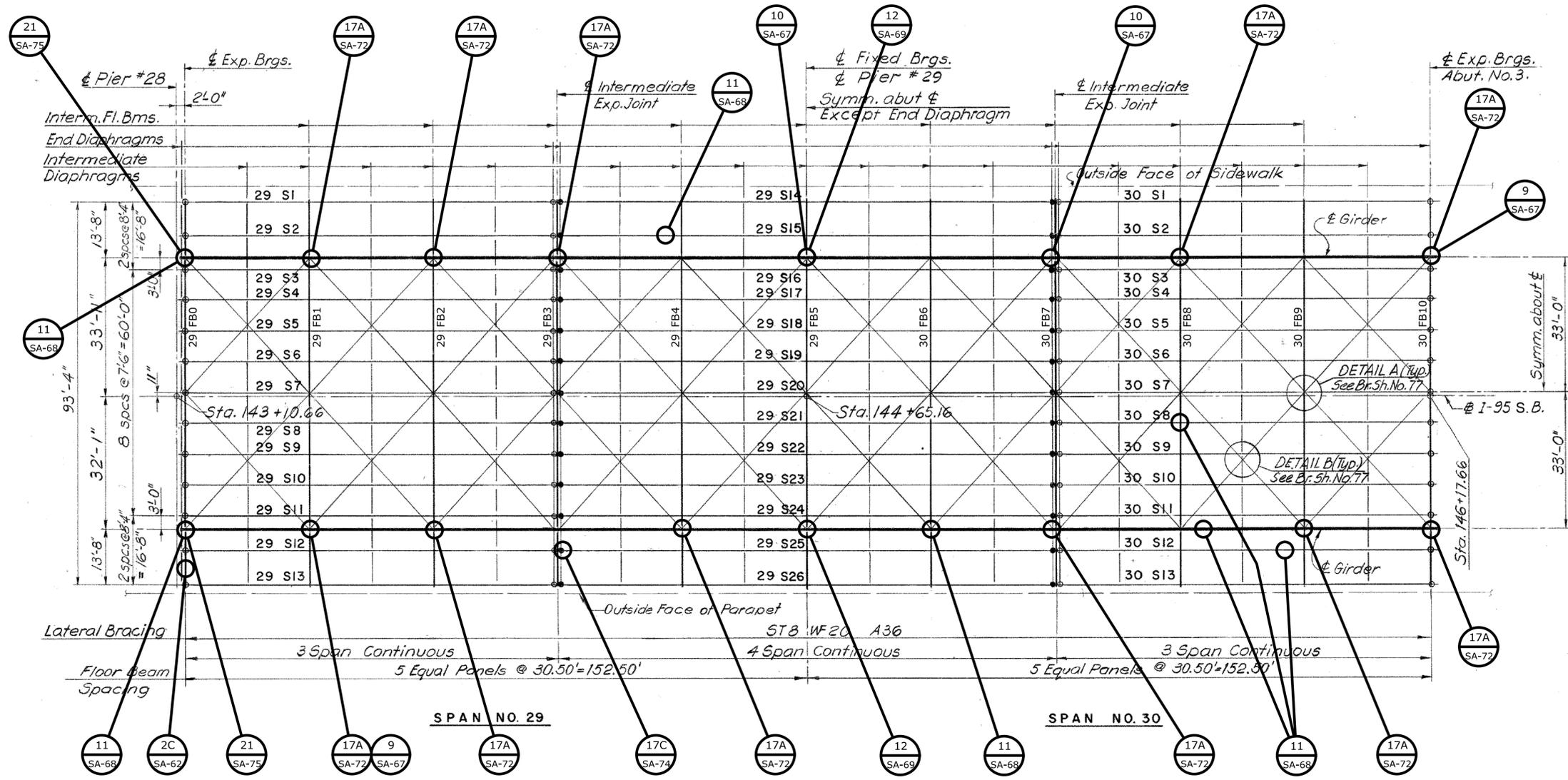
TOWN:  
**NEW LONDON/GROTON**  
DRAWING TITLE:  
**FRAMING PLAN SPANS 25 & 26**

PROJECT NO.  
**94-252**  
DRAWING NO.  
**SA-54**  
SHEET NO.  
**04.054**



- STRUCTURAL STEEL REPAIR LEGEND**
- 2C REPAIR BOTTOM FLANGE (AT FLOOR BEAMS)
  - 3C REPAIR STIFFENER (FLOOR BEAM)
  - 8 EXTEND WEEP PIPE
  - 9 REPAIR/REPLACE SHEARED CONNECTION BOLTS BETWEEN GIRDER TOP FLANGE AND FLOOR BEAM TIE PLATE
  - 11 TIGHTEN/REPLACE LOOSE/MISSING BOLTS OR NUTS
  - 12 REPLACE MISSING COTTER PIN
  - 14 REPAIR TOP FLANGE (OR TOP PLATE OF TRUSS)
  - 17B GRIND OUT CRACK IN TACK WELD
  - 19 REPAIR WELD BETWEEN THE TOP FLANGE AND WEB REPAIR GUSSET PLATE
  - 20 REPAIR/REPLACE WELDS WITH POROSITY HOLES
  - 21 CLEAN AND PAINT ROCKER BEARING

	THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.	DESIGNER/DRAFTER: <b>C. DAVIS</b> CHECKED BY: <b>M. EGAN</b> SCALE AS NOTED	 <b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b> <small>Filename: ...SB_MSH_0094_0252_BR_NO_02514A_FRM-15.dgn</small>	SIGNATURE/BLOCK:  Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b> DRAWING TITLE: <b>FRAMING PLAN SPANS 27 &amp; 28</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-55</b> SHEET NO. <b>04.055</b>	
REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016					

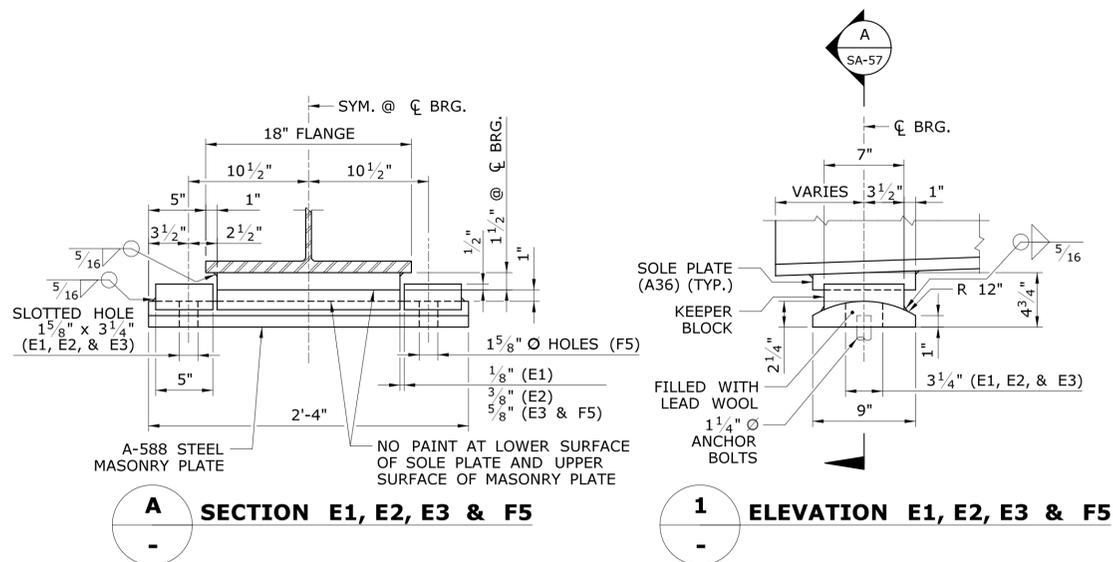


**STRUCTURAL STEEL REPAIR LEGEND**

- 2C REPAIR BOTTOM FLANGE (AT FLOOR BEAMS)
- 9 REPAIR/REPLACE SHEARED CONNECTION BOLTS BETWEEN GIRDER TOP FLANGE AND FLOORBEAM TIE PLATE
- 10 REPAIR FILLET WELD AT GIRDER TOP FLANGE OR FLOORBEAM TIE PLATE TO SHIM
- 11 TIGHTEN/REPLACE LOOSE/MISSING BOLTS OR NUTS
- 12 REPLACE MISSING COTTER PIN
- 17A GRIND OUT CRACK IN TACK WELD
- 17C REMOVE TACK WELD
- 21 CLEAN AND PAINT ROCKER BEARING

**FRAMING PLAN**  
SCALE: 1/16" = 1'-0"

		THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.	DESIGNER/DRAFTER: <b>C. DAVIS</b> CHECKED BY: <b>M. EGAN</b> SCALE AS NOTED	 <b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b> <small>Filename: ..._SB_MSH_0094_0252_BR_NO_02514A_FRM-16.dgn</small>	SIGNATURE/BLOCK:  Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-56</b> SHEET NO. <b>04.056</b>	
REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016						



**EXISTING EXPANSION BEARING SHOE TYPE E1, E2 & E3**  
**EXISTING FIXED BEARING SHOE TYPE F5**  
**(SHOWN IN REFERENCE FOR EXISTING)**  
 SCALE: 1 1/2" = 1'-0"

**ABRASIVE BLAST CLEANING AND FIELD PAINTING BEAM ENDS (SITE NO. 1)**

- THIS ITEM SHALL BE USED TO PAINT THE EXISTING BEARINGS THAT ARE BEING LUBRICATED AS SHOWN IN TABLE "A" AND TO THE LIMITS SHOWN IN DETAILS THIS DRAWING.
- THIS ITEM SHALL BE USED TO PAINT BEARINGS IN TRUSS AND FLOOR BEAM/GIRDER SPANS TO THE LIMITS SHOWN ON DRAWING NO. SA-75
- FOR THE LIMITS AND MEMBERS PAINTED UNDER THE ITEM "ABRASIVE BLAST CLEANING AND FIELD PAINTING BEAM ENDS (SITE NO. 2)" SEE APPLICABLE DRAWINGS ON SUBSET 5 FOR BRIDGE NO. 02514B.
- LOCATIONS BEING ABRASIVE BLAST CLEANED SHALL HAVE CONTAINMENT STRUCTURES THAT ADHERE TO THE REQUIREMENTS OF "CONTAINMENT AND COLLECTION OF SURFACE PREPARATION DEBRIS (SITE NO. 1)". SEE SPECIFICATIONS

**TABLE A - TABULATION FOR SHOE LOCATION IN SPANS 1 TO 13**

	STRINGER NO.	TYPE OF SHOE		STRINGER NO.	TYPE OF SHOE
PIER #1	1S1 TO 1S9	E1	PIER #8	8S1, 8S2, 8S13 & 8S14	E3
PIER #2	2S1 TO 2S9	E4		8S3, 8S4, 8S11 & 8S12	E2
PIER #3	3S1 TO 3S9	E4		8S5 TO 8S10	E1
PIER #4	4S1 TO 4S9	E4	PIER #9	9S1, 9S2, 9S12 & 9S13	F5
	5S7 & 5S8	F5		9S1, 9S2, 9S12 & 9S13	E3
	5S18 & 5S19	F6		9S3, 9S4, 9S10 & 9S11	E2
PIER #5	5S1 TO 5S6	E1		9S5 TO 9S9	E1
	5S7 & 5S8	E3		10S1, 10S2, 10S12 & 10S13	F5
	5S9 & 5S10	E2	PIER #10	10S1, 10S2, 10S12 & 10S13	E3
	5S11	E1		10S3, 10S4, 10S10 & 10S11	E2
	5S12 TO 5S15	E4		10S5 TO 10S9	E1
	5S16 & 5S17	E5		11S1, 11S2, 11S11 & 11S12	F5
	5S18 & 5S19	E6	PIER #11	11S1, 11S2, 11S11 & 11S12	E3
PIER #6	6S1 TO 6S17	E4		11S3, 11S4, 11S9 & 11S10	E2
	7S1, 7S2, 7S14 & 7S15	F6		11S5 TO 11S8	E1
PIER #7	7S1, 7S2, 7S14 & 7S15	E6		12S1, 12S2, 12S11 & 12S12	F5
	7S3, 7S4, 7S12 & 7S13	E5	PIER #12	12S1 TO 12S12	E1
	7S5 TO 7S11	E4	PIER #13	13S1 TO 13S12	E1
	8S1, 8S2, 8S13 & 8S14	F5			

**SHIM PLATES AS CONSTRUCTED**

PIER	PAD	SHIM THICKNESS	WEIGHT	REMARKS
	4TH FROM NORTH	1/2"	38	A-588 MATERIAL
	5TH FROM NORTH	1/4"	18	A-588 MATERIAL
	6TH FROM NORTH	3/4"	54	A-588 MATERIAL
PIER #13W	7TH FROM NORTH	3/4"	54	A-588 MATERIAL
	8TH FROM NORTH	3/4"	54	A-588 MATERIAL
	9TH FROM NORTH	1/2"	36	A-588 MATERIAL
	12TH FROM NORTH	1/4"	18	A-588 MATERIAL

**STEEL REPAIR NOTES**

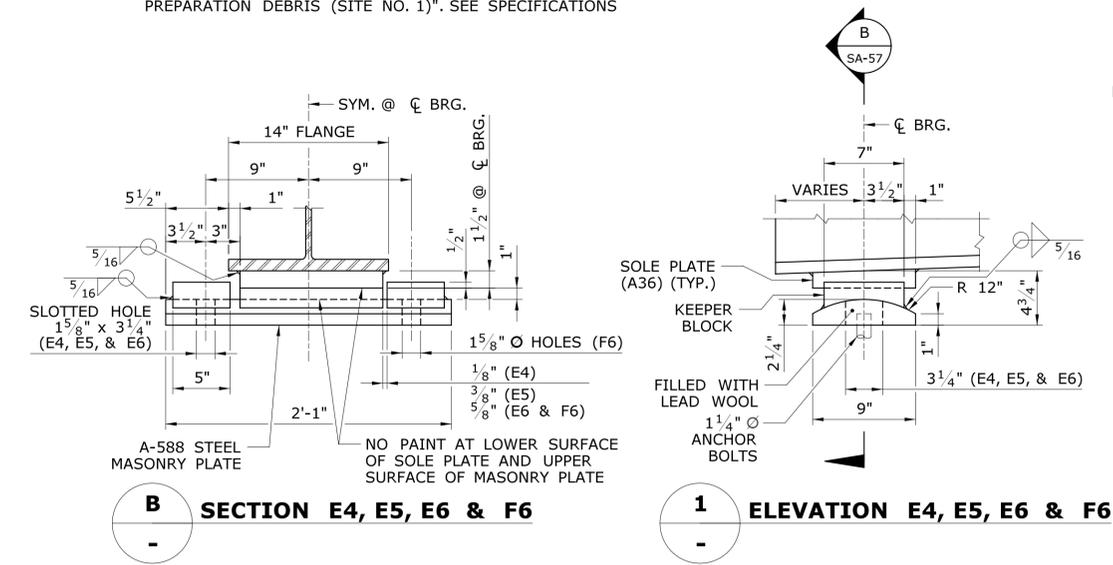
- STRUCTURAL STEEL (LOW ALLOY) SHALL CONFORM TO AASHTO M270, GRADE 50 T2. WELDING DETAILS, PROCEDURES AND TESTING METHODS SHALL CONFORM TO THE ANSI/AASHTO/AWS D1.5-(2015) - BRIDGE WELDING CODE, UNLESS OTHERWISE NOTED ON THE PLANS.
- THE REPAIR DETAILS HAVE BEEN DEVELOPED BASED ON THE 2013 IN-DEPTH INSPECTION. THE ENGINEER WILL DOCUMENT THE DETERIORATION AND FORWARD IT TO THE DESIGNER FOR REVIEW AND CONFIRMATION OF THE APPLICABILITY OF THE DEVELOPED REPAIR DETAILS AFTER THE COMPLETION OF THE CLEANING OPERATION. SUBSEQUENT TO THE DESIGNER'S CONFIRMATION, THE CONTRACTOR WILL SUBMIT SHOP DRAWINGS OF PROPOSED REPAIRS TO THE DESIGNER FOR APPROVAL. NO REPAIRS SHALL BE PERFORMED PRIOR TO THE APPROVAL OF THE SHOP DRAWINGS.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF DETERIORATION OTHER THAN WHAT IS DEPICTED IN THE PLAN DRAWING IS OBSERVED. ADDITIONAL REPAIR DETAILS WILL BE DEVELOPED BY THE DESIGNER, IF NECESSARY.
- ALL STEEL REPAIRS INCLUDING REMOVAL OF DETERIORATED STEEL, SHOP PAINTING OF REPAIR STEEL AND FIELD WELDING AND TESTING SHALL BE PAID FOR UNDER THE ITEM "STRUCTURAL STEEL REPAIRS (SITE NO. 1)", SEE SPECIAL PROVISIONS.
- REMOVAL OF PAINT IN THE VICINITY OF THE REPAIR AREAS SHALL BE PAID FOR UNDER THE ITEM "LOCALIZED PAINT REMOVAL AND FIELD PAINTING OF EXISTING STEEL". SEE SPECIAL PROVISIONS.

**SUGGESTED SEQUENCE OF DETERIORATED STEEL REPAIRS**

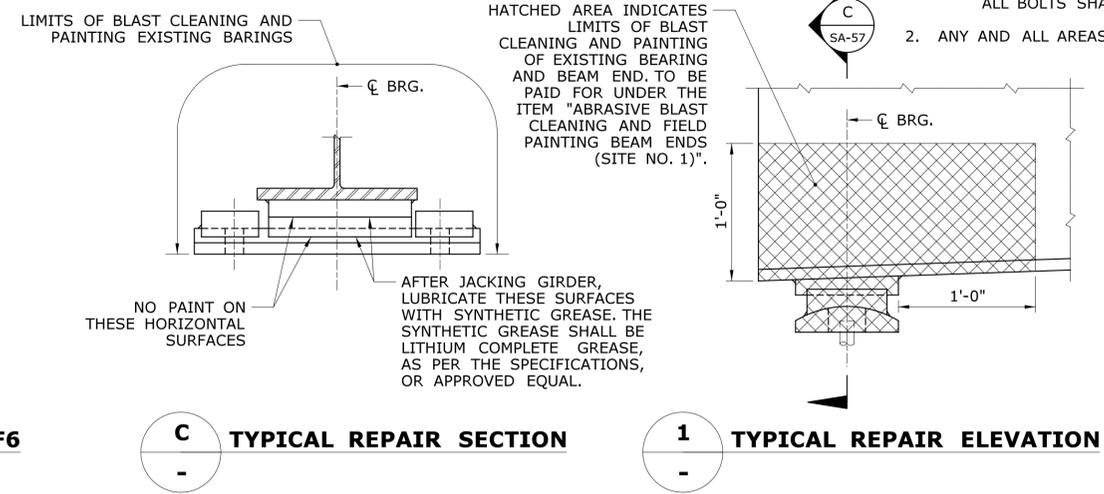
- CLEAN TO LIMITS SHOWN IN PLANS, AND AS DIRECTED BY THE ENGINEER. LIMITS DEFINED AS DETERIORATED AREAS AS SHOWN IN SPECIFIC DETAILS.
- REPAIR STEEL WITH BOLTED OR WELDED REPAIR PLATES/SHAPES AS SHOWN IN DETAILS.
- PAINT THE DETERIORATED STEEL.

**LOCALIZED PAINT REMOVAL AND FIELD PAINTING OF EXISTING STEEL**

- WHEN NOT NOTED AS BEING PAINTED UNDER THE ITEM "ABRASIVE BLAST CLEANING AND FIELD PAINTING OF BEAM ENDS (SITE NO. 1)". (SEE NOTES THIS DRAWING), ALL OTHER REQUIRED PAINTING ON SITE NO. 1 (BRIDGE 02514A) SHALL BE PAID FOR AND ADHERE TO THE REQUIREMENTS OF THE ITEM "LOCALIZED PAINT REMOVAL AND FIELD PAINTING OF EXISTING STEEL". THE LIMITS OF REMOVAL AND FIELD PAINTING SHALL BE AS FOLLOWS:
  - A) IN DETAILS CALLED OUT TO BE FIELD PAINTED, THE LIMITS OF REMOVAL AND REPAINTING SHALL BE AS INDICATED IN THE DETAIL.
  - B) WHEN DEFECTIVE WELDS ARE REPAIRED UNDER THE ITEM "REPAIR DEFECTIVE WELDS", THE EXISTING PAINT SHALL BE REMOVED TO A DISTANCE 12" BEYOND THE LIMITS OF THE REPAIR IN ALL DIRECTIONS AND ON BOTH SIDES OF THE STEEL MEMBER. THIS ENTIRE AREA SHALL THEN BE FIELD PAINTED UPON COMPLETION AND TESTING OF THE WELD REPAIR.
  - C) FOR STEEL REPAIRS INVOLVING WELDED PLATES, THE EXISTING PAINT SHALL BE REMOVED FOR THE DETERIORATED AREA OF STEEL AND AN ADDITIONAL 12" BEYOND THE LIMITS OF THE DETERIORATED AREA TO BE WELDED TO ON BOTH SIDES OF THE BEAM. FIELD PAINTING SHALL THEN BE APPLIED TO THE EXPOSED PORTION OF THE REPAIR PLATE AND ALL PORTIONS OF THE EXISTING STEEL THAT REMAIN EXPOSED FROM HAVING THEIR EXISTING PAINT COATING REMOVED. PAINTING SHALL BE DONE UPON COMPLETION OF ALL TESTING AND INSPECTION OF THE WELDS AT THE REPAIR.
  - D) FOR STEEL REPAIRS INVOLVING BOLTING, THE EXISTING PAINT SHALL BE REMOVED FROM THE DETERIORATED AREA OF STEEL. FIELD PAINTING (PRIMER COAT ONLY) SHALL BE APPLIED TO THE NEWLY EXPOSED DETERIORATED AREA OF STEEL AND ALL SURFACES OF THE REPAIR PLATE PRIOR TO INSTALLATION OF THE REPAIR PLATE AT THE REPAIR LOCATION. AFTER INSTALLATION OF REPAIR PLATE FULLY PAINT NEW AND EXISTING STEEL WITH TOP COAT. IF THE CONTRACTOR FIELD DRILLS HOLES USING THE REPAIR PLATE AS A TEMPLATE, THE PAINT COATING ON THE EXISTING AND REPAIR STEEL SHALL BE REPAINTED AS REQUIRED. ALL BOLTS SHALL BE FIELD PAINTED AFTER INSTALLATION OR BE GALVANIZED.
- ANY AND ALL AREAS OF STEEL THAT HAVE THEIR PAINT REMOVED SHALL BE FIELD PAINTED.



**EXISTING EXPANSION BEARING SHOE TYPE E4, E5 & E6**  
**EXISTING FIXED BEARING SHOE TYPE F6**  
**(SHOWN IN REFERENCE FOR EXISTING)**  
 SCALE: 1 1/2" = 1'-0"

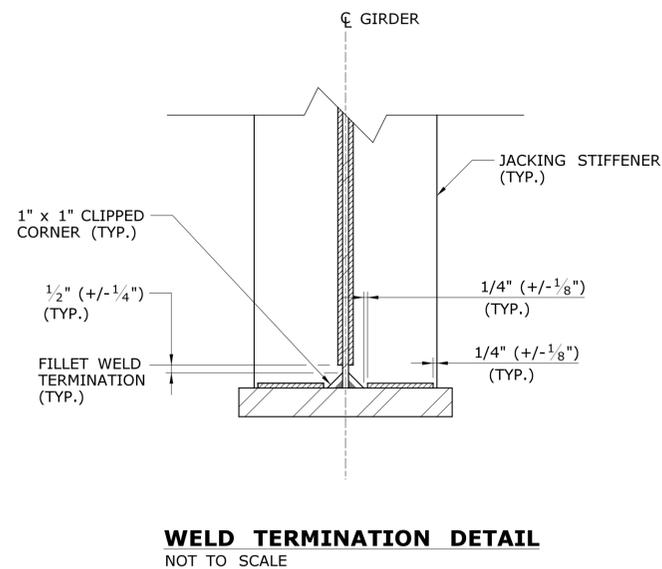
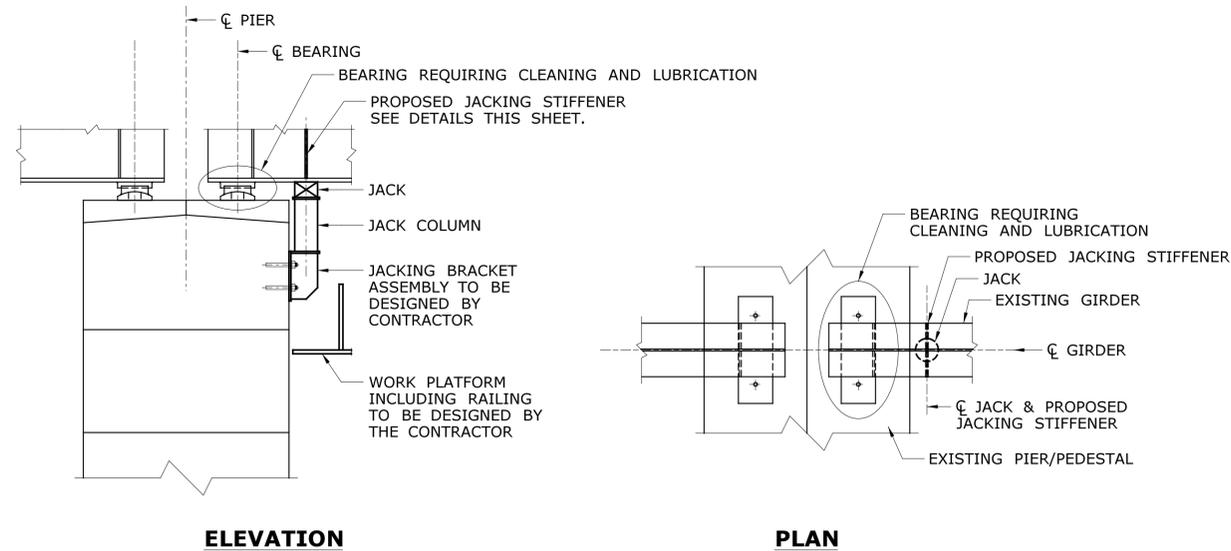


**EXPANSION BEARING SHOE TYPICAL REPAIR NO. 1**  
 SCALE: 1 1/2" = 1'-0"

**WELD REPAIR NOTES**

- PRIOR TO APPLYING THE HEAT OF WELDING/CUTTING EQUIPMENT TO LOCALIZED AREAS OF EXISTING STEEL, THE EXISTING PAINT SHALL BE REMOVED ON EACH FACE OF THE STEEL TO A WIDTH OF 12" FROM THE LOCATION WHERE THE HEAT WILL BE APPLIED, OR AS DIRECTED BY THE ENGINEER. THE PAINT REMOVAL AND REPAINTING OF EXISTING STEEL ARE TO BE PAID FOR UNDER THE ITEM "LOCALIZED PAINT REMOVAL AND FIELD PAINTING OF EXISTING STEEL".
- ALL WELDS SHALL BE TESTED USING THE MAG-PARTICLE TEST OR AS PER THE SPECIFICATIONS.
- WELDING OF NEW REPAIR PLATES SHALL BE PAID FOR UNDER THE ITEM "STRUCTURAL STEEL REPAIRS (SITE NO. 1)" AND SHALL CONFORM TO ALL REQUIREMENTS SPECIFIED IN THAT SPECIFICATION. WELD REPAIRS SHALL BE PAID FOR UNDER THE ITEM "REPAIR DEFECTIVE WELDS" AND SHALL CONFORM TO ALL REQUIREMENTS IN THAT SPECIFICATION.

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REV. DATE REVISION DESCRIPTION SHEET NO.						



**JACKING ASSEMBLY NOTES**

- JACKS SHALL BE PLACED AS CLOSE TO THE CENTERLINE OF BEARINGS AS POSSIBLE.
- THE PLANS DEPICT A SCHEMATIC TO JACK THE GIRDERS. THE ACTUAL MEANS AND METHODS SHALL BE DETERMINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.
- THE JACKING BRACKET ASSEMBLY AND WORK PLATFORM, INCLUDING O.S.H.A. COMPLIANT RAILING AND MEANS OF ACCESS, SHALL BE DESIGNED BY THE CONTRACTOR. THE CONTRACTOR SHALL SUBMIT WORKING DRAWINGS AND COMPUTATIONS PREPARED, SIGNED & SEALED BY AN ENGINEER LICENSED IN THE STATE OF CONNECTICUT, TO THE ENGINEER FOR REVIEW AND APPROVAL.
- THE CONTRACTOR SHALL DESIGN THE JACKING BRACKET ASSEMBLY AT THE EXISTING GIRDER FOR THE JACKING LOADS SPECIFIED IN THE JACKING LOADS TABLE.
- THE CONTRACTOR SHALL INSTALL JACKING STIFFENERS AS DETAILED ON THE PLANS, TO BE PAID FOR UNDER THE ITEM "STRUCTURAL STEEL REPAIRS (SITE NO. 1)". NOTE THAT PAINTING JACKING STIFFENERS SHALL BE PAID FOR UNDER THE ITEM "LOCALIZED PAINT REMOVAL AND FIELD PAINTING OF STRUCTURAL STEEL".
- BEARINGS SHALL BE CLEANED AND LUBRICATED ONLY AT ONE SUBSTRUCTURE UNIT AT ANY GIVEN TIME. THE CONTRACTOR WILL BE REQUIRED TO JACK ALL GIRDERS WITHIN THE STAGE LIMITS OF CONSTRUCTION SIMULTANEOUSLY ALONG A SUBSTRUCTURE UNIT.
- THE DESIGN, FURNISHING, INSTALLATION AND REMOVAL OF JACKING BRACKET ASSEMBLY, OSHA COMPLIANT JACKING WORK PLATFORM AND RAILING FOR THE CLEANING AND LUBRICATION OF EXISTING BEARINGS SHALL BE PAID UNDER THE ITEM "JACKING EXISTING SUPERSTRUCTURE (SITE NO. 1)", SEE SPECIAL PROVISIONS.

**SEQUENCE OF OPERATIONS FOR THE ITEM "CLEAN AND LUBRICATE EXISTING BEARINGS"**

- ASSEMBLE THE WORK PLATFORM AS DESIGNED BY THE CONTRACTOR.
- CLEAN THE BEARINGS AND BEAM ENDS TO THE LIMITS SHOWN AS PER PLANS.
- STRENGTHEN GIRDERS AS REQUIRED WITH JACKING STIFFENERS. (PAID FOR UNDER THE ITEM "STRUCTURAL STEEL REPAIRS (SITE NO. 1)").
- ASSEMBLE THE JACKING BRACKET ASSEMBLY.
- LOOSEN THE BOLTS FOR THE ADJACENT END DIAPHRAGM CONNECTIONS. CONTRACTOR SHALL JACK TILL MAXIMUM ALLOWABLE CLEARANCE IS PROVIDED BETWEEN THE STEEL MASONRY SOLE PLATE AND THE BRONZE BEARING PLATE FOR LUBRICATION OF THE SURFACES BETWEEN THE STEEL MASONRY SOLE PLATE AND THE BRONZE BEARING PLATE, AND BETWEEN THE BRONZE BEARING PLATE AND THE MASONRY PLATE.
- SHIM EXISTING GIRDERS. (PAID FOR UNDER THE ITEM "JACK EXISTING SUPERSTRUCTURE (SITE NO. 1)")
- CONTRACTOR SHALL MECHANICALLY CLEAN SLIDING SURFACES OF EXISTING BEARINGS WITH ACCESS PROVIDED DURING JACKING OPERATION.
- AFTER THESE SURFACES HAVE BEEN MECHANICALLY CLEANED AND REMNANT RUST REMOVED WITH HIGH PRESSURE AIR, LUBRICATE SURFACES WITH SYNTHETIC GREASE.
- RESET BEARINGS AND PAINT AREAS INDICATED IN DETAILS. PAINTING TO BE PAID FOR UNDER THE ITEM "ABRASIVE BLAST CLEANING AND FIELD PAINTING STRUCTURAL STEEL (SITE NO. 1)".
- RE-TIGHTEN END DIAPHRAGM CONNECTIONS.
- EXISTING DETAILS AND TABLES SHOWN FOR REFERENCE.
- EXISTING BEARINGS TO BE CLEANED AND LUBRICATED ARE SHOWN ON THE FRAMING PLANS AND INDICATED IN THE JACKING TABLE.

**JACKING LIMIT**

- MAXIMUM ALLOWABLE CLEARANCE IS BASED ON MAXIMUM JACKING LIMIT.
- MAXIMUM JACKING LIMIT IS 1/4" WHEN A SERIES OF ADJACENT BEARINGS ARE BEING JACKED, WITH MAXIMUM DIFFERENTIAL DISPLACEMENT OF 1/8" BETWEEN ADJACENT BEARINGS.
- WHEN ONLY ONE BEARING IS BEING JACKED, MAXIMUM JACKING LIMIT IS 1/8".

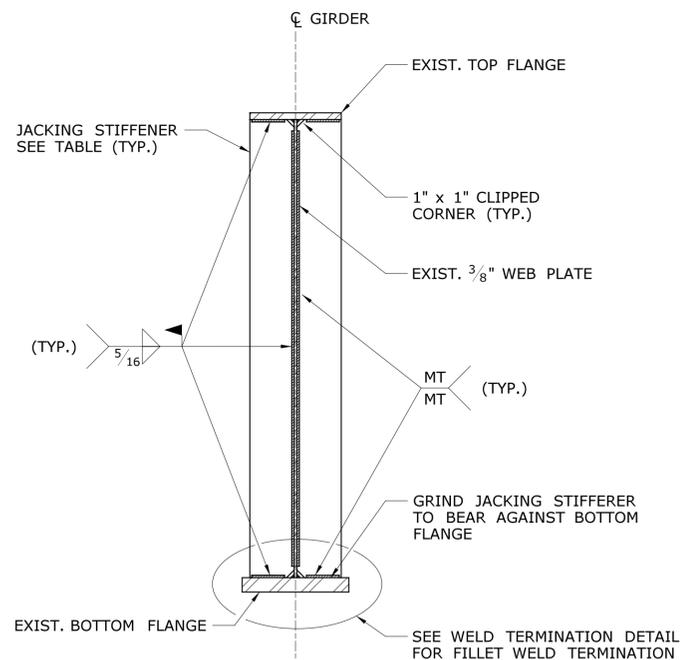
**1 JACKING ASSEMBLY FOR EXISTING BEARINGS**  
NOT TO SCALE

EXISTING STEEL BEARINGS TO BE CLEANED AND LUBRICATED					MINIMUM JACKING LOAD*	REQUIRED JACKING STIFFENER
SPAN	PIER	STRINGER	DL (KIPS)	LL+I (KIPS)	(KIPS)	PLATE SIZE
SPAN 2	PIER 2	2S1	49.71	46.17	143.82	60" x 5" x 7/16"
		2S2	58.57	61.0	179.35	60" x 5" x 7/16"
		2S3	60.03	61.09	181.67	60" x 5" x 7/16"
		2S5	62.67	61.17	185.77	60" x 5" x 7/16"
		2S7	66.16	61.25	191.11	60" x 5" x 7/16"
SPAN 4	PIER 4	2S8	67.79	61.25	193.55	60" x 5" x 7/16"
		2S9	60.29	46.35	159.96	60" x 5" x 7/16"
		4S1	58.72	47.54	159.38	60" x 5" x 7/16"
		4S7	68.17	63.81	197.98	60" x 5" x 7/16"
		4S9	58.72	47.54	159.38	60" x 5" x 7/16"
SPAN 5	PIER 4	5S7	91.24	61.18	228.63	60" x 6" x 5/8"
		5S8	93.25	63.35	234.89	60" x 6" x 5/8"
		5S18	58.67	58.08	175.12	60" x 5" x 7/16"
		5S19	49.49	44.80	141.44	60" x 5" x 7/16"
		5S13	60.09	46.33	159.63	60" x 5" x 7/16"
SPAN 5	PIER 5	10S1	76.28	44.85	181.70	60" x 6" x 5/8"
		10S9	87.99	58.13	219.18	60" x 6" x 5/8"
		10S13	77.37	44.81	183.27	60" x 6" x 5/8"
SPAN 11	PIER 10	11S1	90.23	59.99	225.34	60" x 6" x 5/8"
		11S12	78.95	44.81	185.64	60" x 6" x 5/8"
SPAN 11	PIER 11	11S1	89.99	59.99	224.97	60" x 6" x 5/8"
		11S9	89.57	58.13	221.54	60" x 6" x 5/8"
SPAN 12	PIER 11	11S12	78.95	44.81	185.64	60" x 6" x 5/8"
		12S1	89.99	59.99	224.97	60" x 6" x 5/8"
		12S2	88.93	58.17	220.64	60" x 6" x 5/8"
SPAN 12	PIER 12	12S1	89.77	59.99	224.65	60" x 6" x 5/8"
		12S6	88.84	58.13	220.45	60" x 6" x 5/8"
		12S12	78.70	44.81	185.26	60" x 6" x 5/8"
SPAN 13	PIER 12	13S3	85.87	58.32	216.29	60" x 6" x 5/8"
		13S10	93.99	57.97	227.93	60" x 6" x 5/8"
		13S12	82.73	44.69	191.12	60" x 6" x 5/8"
SPAN 13	PIER 13	13S3	84.32	56.80	211.68	60" x 6" x 5/8"
		13S10	93.38	57.97	227.02	60" x 6" x 5/8"
		13S12	83.87	44.61	192.71	60" x 6" x 5/8"

NOTE: LL+I = HS20 LOADING

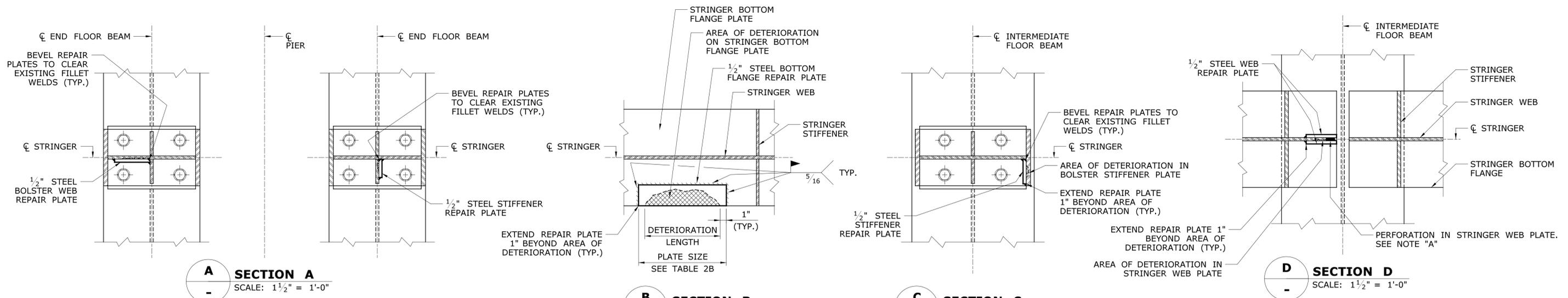
\*NOTE: MAXIMUM JACKING LOAD IS 1.5 x CALCULATED DL + (LL+I) LOADS

NOTE: BEAM 2S9 SHOWN, OTHER BEAMS SIMILAR.



**1 JACKING STIFFENER DETAIL**  
SCALE: 1" = 1'-0"

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.	DESIGNER/DRAFTER: <b>C. DAVIS</b> CHECKED BY: <b>M. EGAN</b>	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGNATURE/BLOCK: Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-58</b>
REV. DATE REVISION DESCRIPTION SHEET NO. Plotted Date: 7/12/2016	SCALE AS NOTED	Filename: ..._SB_MSH_0094_0252_BR_NO_02514A_SRP-01-B.dgn	DRAWING TITLE: <b>STEEL REPAIRS REPAIR NO. 1</b>	SHEET NO. <b>04.058</b>		



GENERAL NOTES:  
 1. PLATE SIZES SHOWN ARE BASED ON THE REQUIREMENTS INDICATED IN THE RELATED DETAIL AND DETERIORATION OF THE EXISTING STEEL AS NOTED IN THE 2013 BRIDGE INSPECTION REPORT FOR BRIDGE 02514A. PLATE SIZES NOTED WITH \* INDICATE THAT THE AREA OF DETERIORATION IS NOT PROVIDED IN THE INSPECTION REPORT AND PLATE SIZES ARE ASSUMED.  
 2. CONTRACTOR SHALL PERFORM AN INSPECTION OF ALL AREAS NOTED FOR STEEL REPAIRS AND DOCUMENT THE EXISTING DETERIORATION PRIOR TO THE FABRICATION OF REPAIR PLATES. THE RESULTS OF THE CONTRACTOR'S REPAIR INSPECTION PERFORMED PRIOR TO FABRICATION OF REPAIR PLATES SHALL BE INCLUDED IN THE CONTRACTOR'S SHOP DRAWING SUBMISSION FOR THE STRUCTURAL STEEL REPAIR PLATES. THE COST ASSOCIATED WITH THE INSPECTION SHALL BE INCLUDED IN THE UNIT PRICE FOR "STRUCTURAL STEEL REPAIRS (SITE NO. 1)".

**BOLSTER REPAIR PLATES (22)**

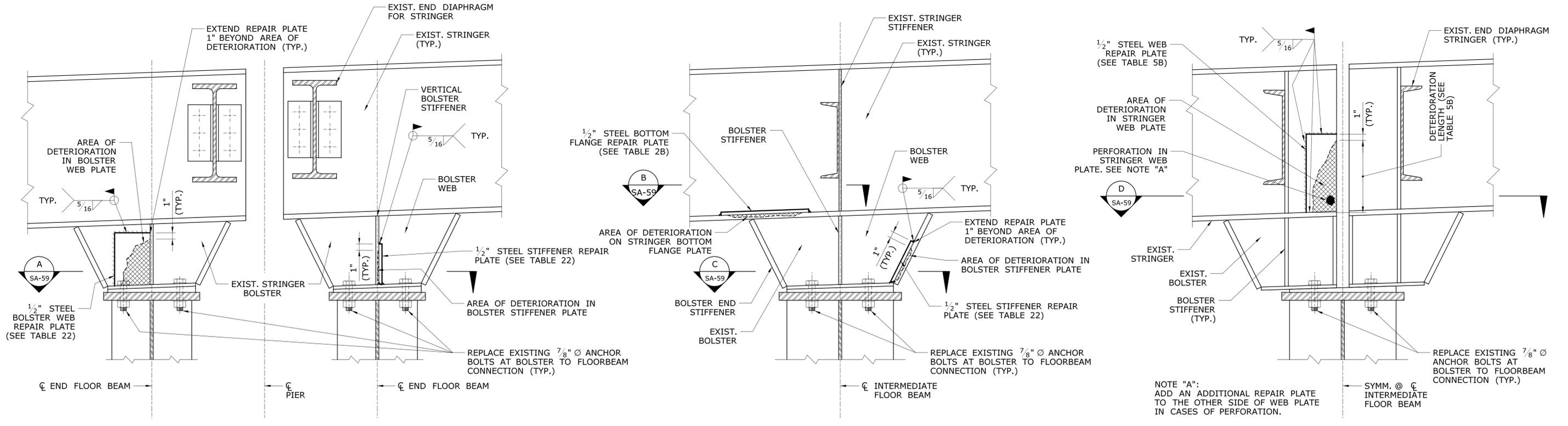
LOCATION	PLATE SIZE	PLATE LOCATION
SPAN 14, S13 @ FB3	4"x16"	WEST END STIFFENER
SPAN 15, S12 @ FB0	3 1/2"x12"	VERTICAL STIFFENER
SPAN 15, S12 @ FB4	3 1/2"x12"	VERTICAL STIFFENER

**FLANGE REPAIR PLATES (2B)**

LOCATION	PLATE SIZE
SPAN 26, S13	18"x4"

**WEB REPAIR PLATES (5B)**

LOCATION	PLATE SIZE
SPAN 20, S11	14"x6"
SPAN 21, S11	9"x20"
SPAN 23, S10	*6"x8"
SPAN 23, S33	*6"x8"
SPAN 25, S11	*6"x8"

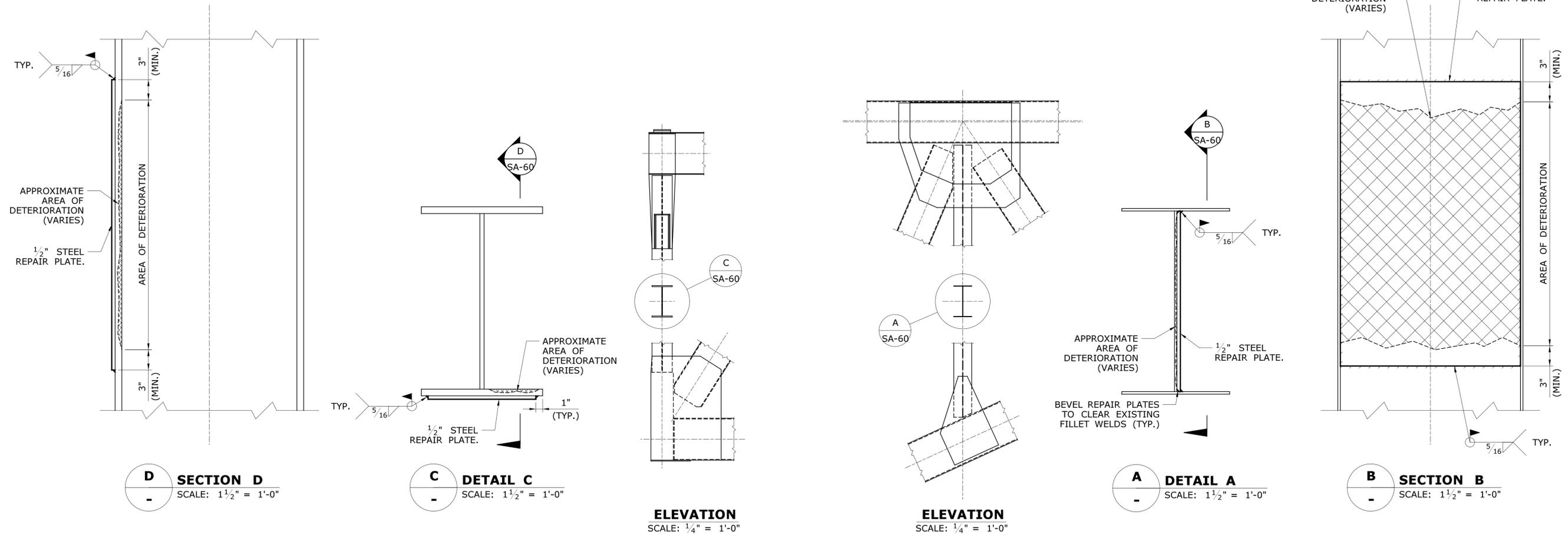


NOTE "A":  
 ADD AN ADDITIONAL REPAIR PLATE TO THE OTHER SIDE OF WEB PLATE IN CASES OF PERFORATION.

VERTICAL TRUSS MEMBERS (2F)	
FLANGE REPAIR PLATES	
LOCATION	PLATE SIZE
SPAN 24, L34-U34	*108"x12"

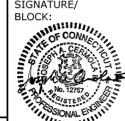
GENERAL NOTES:  
 1. PLATE SIZES SHOWN ARE BASED ON THE REQUIREMENTS INDICATED IN THE RELATED DETAIL AND DETERIORATION OF THE EXISTING STEEL AS NOTED IN THE 2013 BRIDGE INSPECTION REPORT FOR BRIDGE 02514A. PLATE SIZES NOTED WITH \* INDICATE THAT THE AREA OF DETERIORATION IS NOT PROVIDED IN THE INSPECTION REPORT AND PLATE SIZES ARE ASSUMED.  
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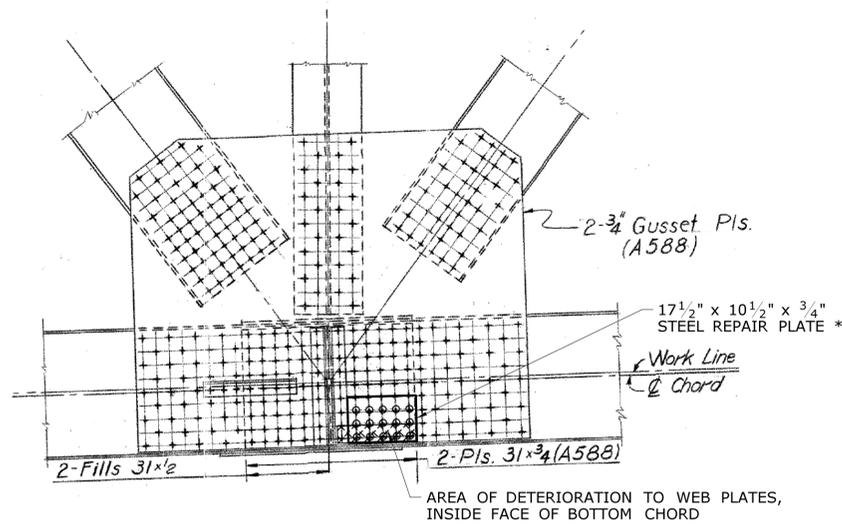
VERTICAL TRUSS MEMBERS (5C)	
WEB REPAIR PLATES	
LOCATION	PLATE SIZE
SPAN 22, L0-U0	*10"x24"
SPAN 22, L4-U4	*10"x24"
SPAN 22, L12-U12	*10"x24"



**2F**  
 - STEEL REPAIR NO. 2F - REPAIR BOTTOM FLANGE  
 IN VERTICAL TRUSS MEMBER  
 (SPAN 24, NODE 0 SHOWN)

**5C**  
 - STEEL REPAIR NO. 5C - REPAIR WEB IN  
 VERTICAL TRUSS MEMBER  
 (SPAN 22, NODE 15 SHOWN)

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	DESIGNER/DRAFTER: <b>C. DAVIS</b> CHECKED BY: <b>M. EGAN</b> SCALE AS NOTED	 <b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b> Filename: ...SB_MSH_0094_0252_BR_NO_02514A_SRP-02F-05C.dgn	SIGNATURE/ BLOCK:  Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b> DRAWING TITLE: <b>STEEL REPAIRS REPAIR NOS. 2F &amp; 5C</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-60</b> SHEET NO. <b>04.060</b>
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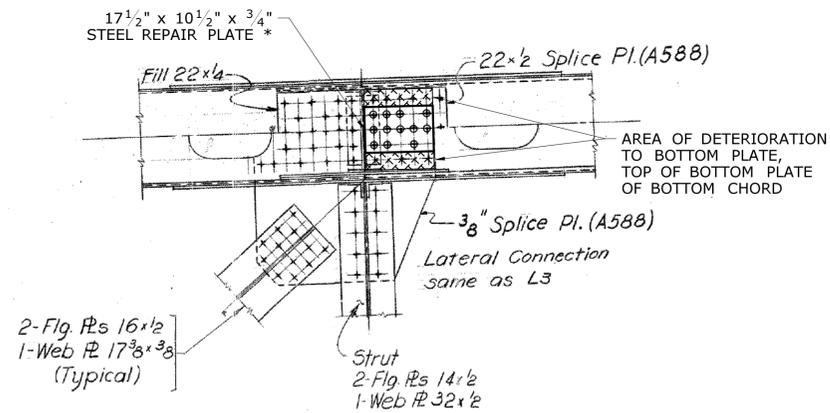


**TYPE 5D REPAIRS AT EVEN TRUSS NODES:**

AT EVEN TRUSS NODES, WHERE BOTTOM CHORDS ARE SPLICED TOGETHER, REPAIR PLATE INSTALLATION REQUIRES USE OF EXISTING BOLT HOLES AND REPLACEMENT OF EXISTING BOLTS. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXISTING BOLT HOLE SPACING AND REQUIRED BOLT LENGTHS FOR REPAIR TO ENSURE FULL THREAD ENGAGEMENT.

**ELEVATION VIEW**

**BOTTOM CHORD OF TRUSS** **5D**  
**REPAIR WEB**  
**(EVEN NODES)**  
 SCALE: 1/2" = 1'-0"

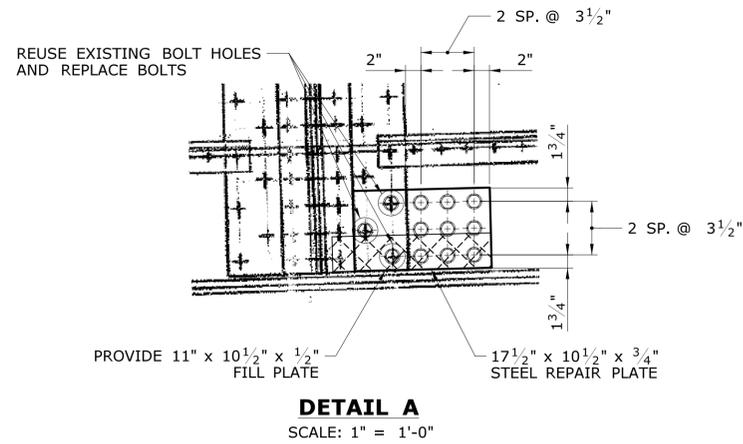


**TYPE 2E REPAIRS AT EVEN TRUSS NODES:**

AT EVEN TRUSS NODES, WHERE BOTTOM CHORDS ARE SPLICED TOGETHER, REPAIR PLATE INSTALLATION REQUIRES USE OF EXISTING BOLT HOLES AND REPLACEMENT OF EXISTING BOLTS. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXISTING BOLT HOLE SPACING AND REQUIRED BOLT LENGTHS FOR REPAIR TO ENSURE FULL THREAD ENGAGEMENT.

**SECTION VIEW**

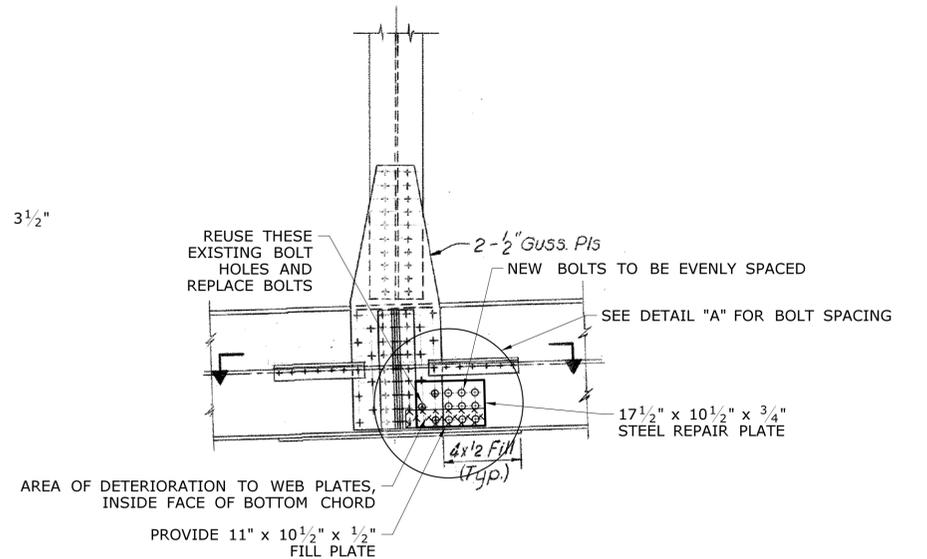
**BOTTOM CHORD OF TRUSS** **2E**  
**REPAIR BOTTOM FLANGE**  
**(EVEN NODES)**  
 SCALE: 1/2" = 1'-0"



\* AS PER REQUIRED BOLT SPACING, TO BE CONFIRMED BASED ON EXISTING BOLT SPACING. (TYP.)

**GENERAL REPAIR NOTES:**

1. REPLACE ALL EXISTING BOLTS AND REUSE EXISTING BOLT HOLES AS INDICATED IN DETAILS. FOR INSTALLATION OF REPAIR PLATES, THE CONTRACTOR SHALL NOT REMOVE MORE THAN 3 BOLTS AT ANY ONE TIME WITHOUT REPLACING THEM WITH TEMPORARY ERECTION PINS. ONCE ALL EXISTING BOLTS HAVE BEEN REPLACED WITH TEMPORARY ERECTION PINS, PLACE THE NEW REPAIR PLATE ONTO THE ERECTION PINS AND REPLACE THE ERECTION PINS WITH NEW BOLTS.
2. PAINTING LIMITS SHALL EXTEND 6" BEYOND REPAIR PLATES ON WEB REPAIRS, AND 12" BEYOND BOTTOM FLANGE REPAIRS IN LONGITUDINAL DIRECTION, FULL WIDTH OF EXISTING BOTTOM FLANGE IN TRANSVERSE DIRECTION. TO BE PAID FOR UNDER THE ITEM "LOCALIZED PAINT REMOVAL AND FIELD PAINTING OF STRUCTURAL STEEL."
3. REPLACEMENT OF EXISTING BOLTS FOR ATTACHING THE NEW REPAIR PLATE SHALL BE PAID FOR UNDER THE ITEM "STRUCTURAL STEEL REPAIRS (SITE NO. 1)"
4. THE CONTRACTOR SHALL REPLACE ANY EXISTING BOLTS, BEYOND THE LIMITS OF THE REPAIR PLATE AT NODES BEING REPAIRED, THAT HAVE GREATER THAN 50% SECTION LOSS TO THE BOLT HEAD OR NUT, AS DETERMINED BY THE ENGINEER. REPLACEMENT OF THESE BOLTS SHALL BE DONE USING SIMILAR PROCEDURES TO THOSE NOTED ABOVE. THE COST OF REPLACEMENT OF THESE BOLTS SHALL BE PAID FOR UNDER THE ITEM "BOLT REPLACEMENT".
5. CONTRACTOR SHALL PERFORM AN INSPECTION OF ALL AREAS NOTED FOR STEEL REPAIRS AND DOCUMENT THE EXISTING DETERIORATION PRIOR TO THE FABRICATION OF REPAIR PLATES. THE RESULTS OF THE CONTRACTOR'S REPAIR INSPECTION PERFORMED PRIOR TO FABRICATION OF REPAIR PLATES SHALL BE INCLUDED IN THE CONTRACTOR'S SHOP DRAWING SUBMISSION FOR THE STRUCTURAL STEEL REPAIR PLATES. THE COST ASSOCIATED WITH THE INSPECTION SHALL BE INCLUDED IN THE UNIT PRICE FOR "STRUCTURAL STEEL REPAIRS (SITE NO. 1)".
6. EXISTING BOLTS ARE ASSUMED TO BE 1" DIA. BOLTS, WITH MINIMUM BOLT SPACING OF 3 1/2" AND MINIMUM EDGE DISTANCE OF 1 3/4".
7. NOTE THAT NEW BOLTS IN NEWLY DRILLED HOLES SHALL MATCH THE SIZE OF EXISTING BOLTS BEING REPLACED ON REPAIR PLATE.

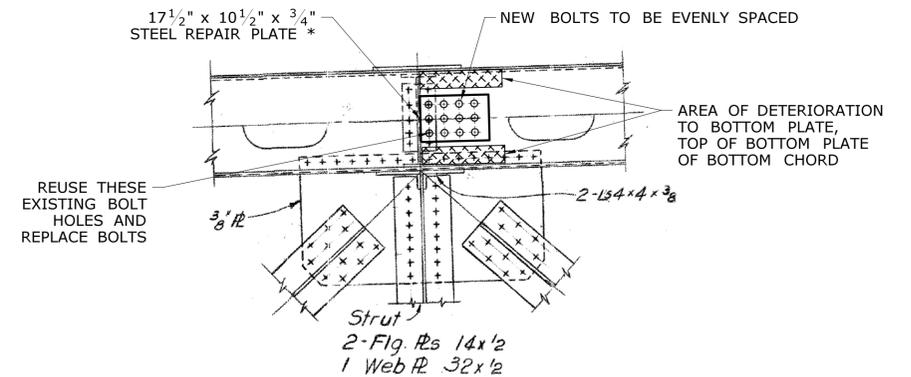


**TYPE 5D REPAIRS AT ODD TRUSS NODES:**

AT ODD TRUSS NODES, WHERE BOTTOM CHORD CONTINUES AT NODE (NO SPLICE PLATES), WEB REPAIR PLATE INSTALLATION REQUIRES DRILLING NEW HOLES AND PROVIDING FILL PLATES AS REQUIRED.

**ELEVATION VIEW**

**BOTTOM CHORD OF TRUSS** **5D**  
**REPAIR WEB**  
**(ODD NODES)**  
 SCALE: 1/2" = 1'-0"



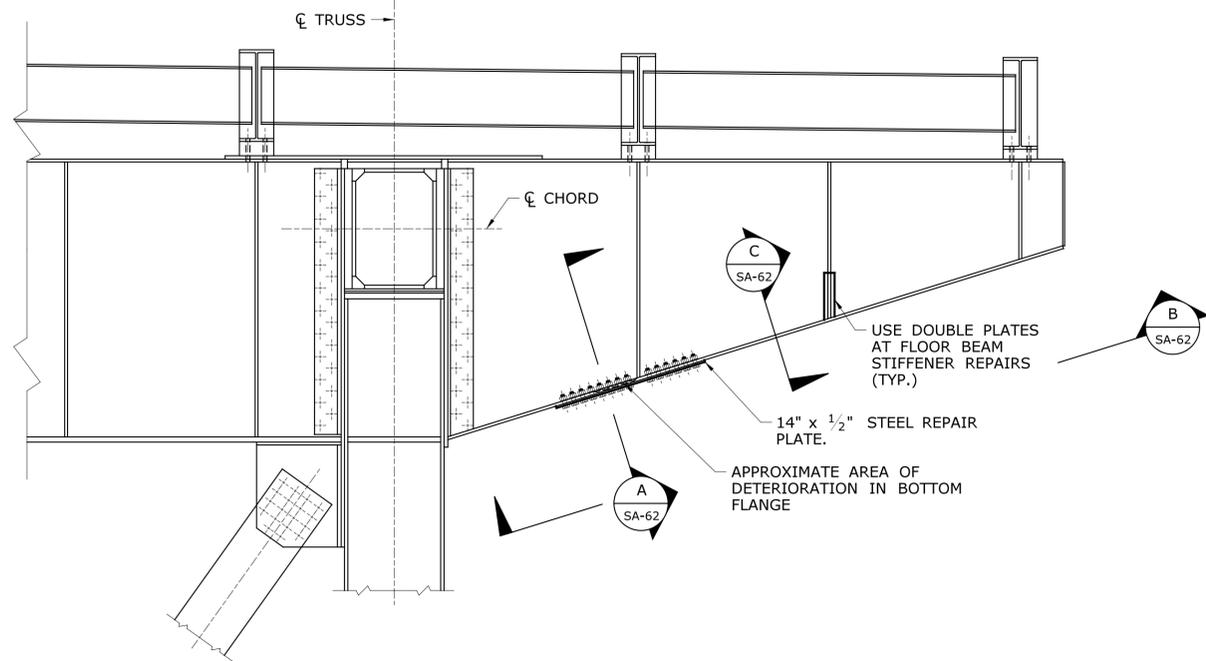
**TYPE 2E REPAIRS AT ODD TRUSS NODES:**

AT ODD TRUSS NODES, WHERE BOTTOM CHORD CONTINUES AT NODE (NO SPLICE PLATES), REPAIR PLATE INSTALLATION REQUIRES DRILLING NEW HOLES AS SHOWN.

**SECTION VIEW**

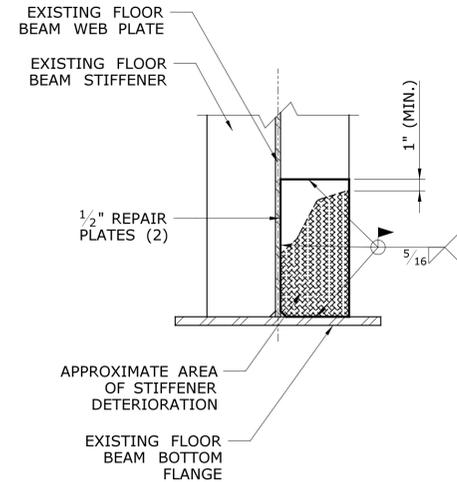
**BOTTOM CHORD OF TRUSS** **2E**  
**REPAIR BOTTOM FLANGE**  
**(ODD NODES)**  
 SCALE: 1/2" = 1'-0"

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: <b>C. DAVIS</b> CHECKED BY: <b>M. EGAN</b> SCALE AS NOTED	<b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b> Filename: ...SB_MSH_0094_0252_BR_NO_02514A_SRP-02E-05D.dgn	SIGNATURE/BLOCK:  Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-61</b> SHEET NO. <b>04.061</b>	
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016				

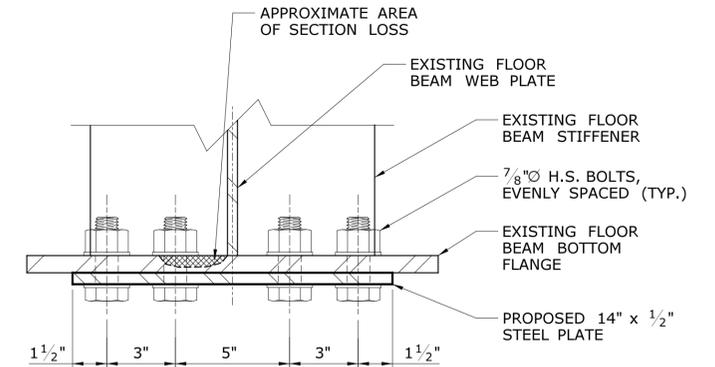


**ELEVATION**

**3C** **2C**  
**REPAIR BOTTOM FLANGE AT FLOOR BEAM (2C)**  
**REPAIR STIFFENER AT FLOOR BEAM (3C)**  
 SCALE: 1/2" = 1'-0"



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

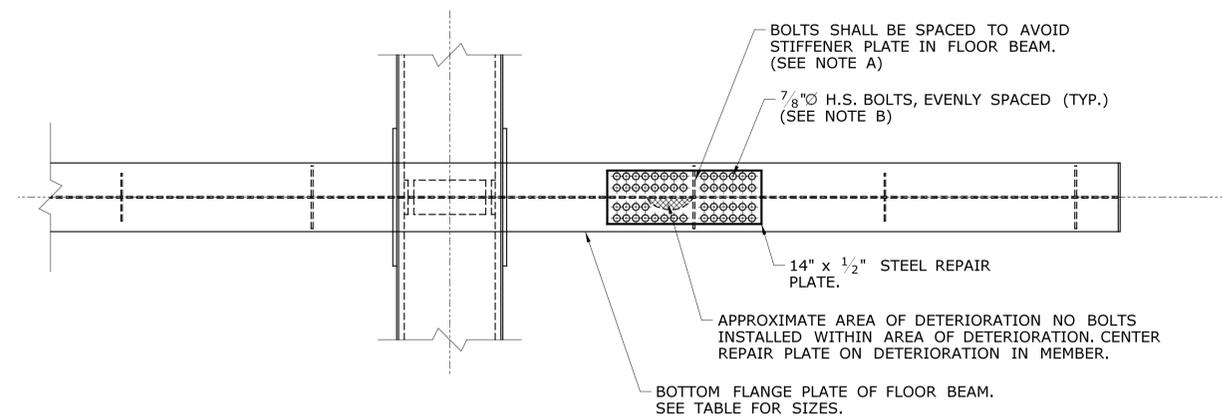


**A** **SECTION A**  
 SCALE: 3" = 1'-0"

FLOOR BEAM BOTTOM FLANGES AT CANTILEVER SECTIONS	
AT INTERMEDIATE FLOOR BEAMS	18" x 3/4" BOTTOM FLANGE
AT END FLOOR BEAMS	15" x 3/4" BOTTOM FLANGE

FLOORBEAM STIFFENER REPAIRS (3C)	
LOCATION	PLATE SIZE
SPAN 23, FB 25	*6"x12"
SPAN 24, FB 46	*6"x12"
SPAN 24, FB 46	*6"x12"
SPAN 27, FB 5	*6"x12"
SPAN 28, FB 20	*6"x12"
SPAN 28, FB 20	*6"x12"

FLANGE REPAIR PLATES (2C)	
LOCATION	PLATE SIZE
SPAN 23, FB 25	14"x36"
SPAN 24, FB 46	14"x60"
SPAN 25, FB 0	14"x48"
SPAN 25, FB 5	14"x48"
SPAN 27, FB 5	14"x60"
SPAN 29, FB 0	14"x60"



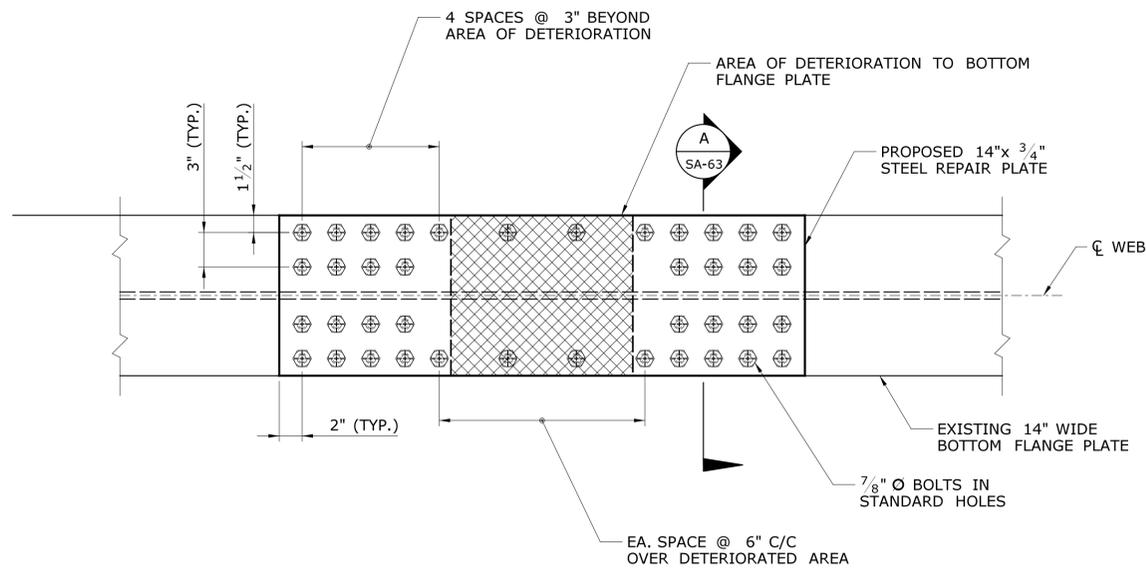
**B** **PLAN VIEW (UNDERSIDE)**  
 SCALE: 1/2" = 1'-0"

**NOTES:**  
 A. MAXIMUM SPACING OF BOLTS AT OUTSIDE LINE OF CONNECTION SHALL BE 7" WHERE SPACED TO AVOID OBSTRUCTIONS LIKE STIFFENER PLATES.  
 B. BOLTS SHALL BE SPACED A MINIMUM OF 3" INCHES AND HAVE A MINIMUM EDGE DISTANCE OF 1 1/2"

**GENERAL NOTES:**

1. PLATE SIZES SHOWN ARE BASED ON THE REQUIREMENTS INDICATED IN THE RELATED DETAIL AND DETERIORATION OF THE EXISTING STEEL AS NOTED IN THE 2013 BRIDGE INSPECTION REPORT FOR BRIDGE 02514A. PLATE SIZES NOTED WITH \* INDICATE THAT THE AREA OF DETERIORATION IS NOT PROVIDED IN THE INSPECTION REPORT AND PLATE SIZES ARE ASSUMED.
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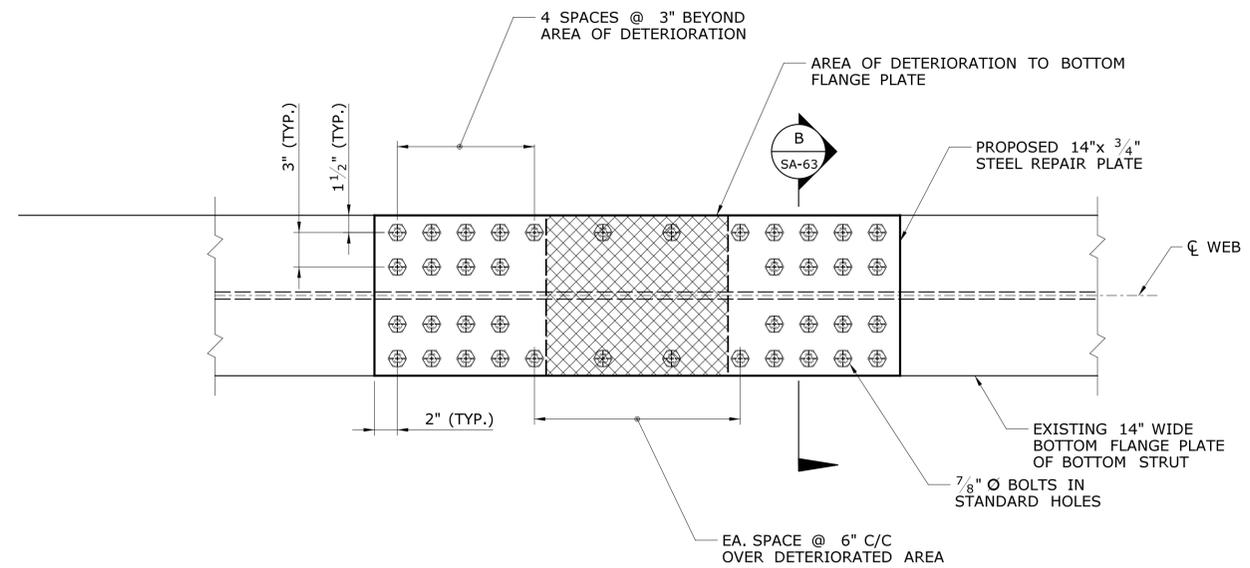
REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	DESIGNER/DRAFTER: <b>C. DAVIS</b>	 <b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b>	SIGNATURE/ BLOCK:  Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b>
				CHECKED BY: <b>M. EGAN</b>				SCALE AS NOTED	DRAWING TITLE: <b>STEEL REPAIRS REPAIR NO. 2C - 3C</b>



**REPAIR TYPE - 2A**  
**AT APPROACH GIRDERS (UNDERSIDE)**  
 SCALE: 1 1/2" = 1'-0"

**2A**  
 -

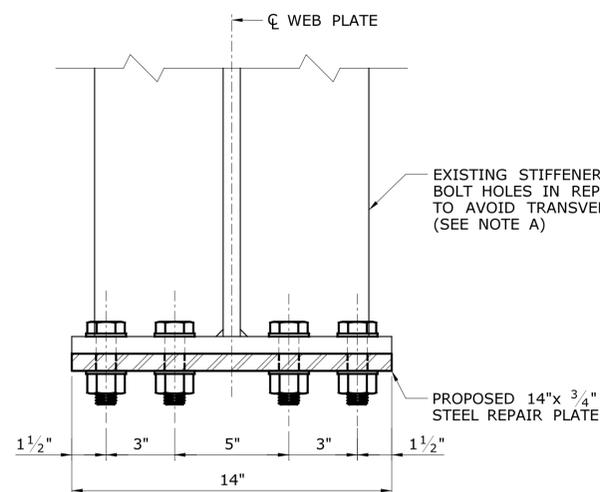
APPROACH GIRDERS (2A)	
LOCATION	PLATE SIZE
SPAN 2, S1	14"x36"
SPAN 3, S1	14"x42"
SPAN 4, S9	14"x48"
SPAN 5, S3	14"x66"



**REPAIR TYPE - 2D**  
**AT BOTTOM STRUTS - TRUSS (UNDERSIDE)**  
 SCALE: 1 1/2" = 1'-0"

**2D**  
 -

BOTTOM STRUTS (2D)	
LOCATION	PLATE SIZE
SPAN 23, L27 (LOCATION 1)	*14"x48"
SPAN 23, L27 (LOCATION 2)	*14"x48"
SPAN 23, L28	*14"x48"

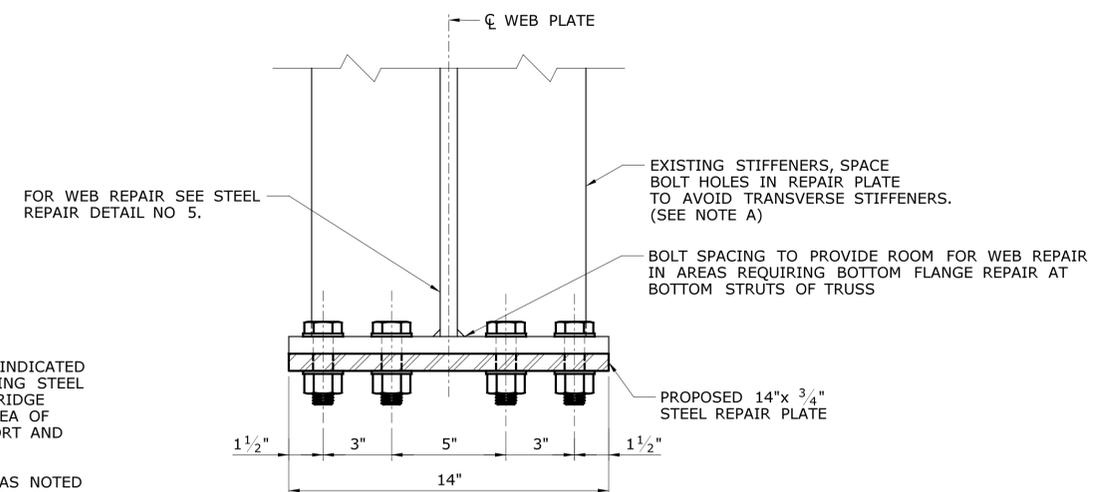


**SECTION A**  
 SCALE: 3" = 1'-0"

**A**  
 -

GENERAL NOTES:  
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**SECTION B**  
 SCALE: 3" = 1'-0"

**B**  
 -

NOTE A: MAXIMUM SPACING OF BOLTS AT OUTSIDE LINE OF CONNECTION SHALL BE 7" WHERE SPACED TO AVOID OBSTRUCTIONS LIKE STIFFENER PLATES.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

DESIGNER/DRAFTER:  
**C. DAVIS**  
 CHECKED BY:  
**M. EGAN**  
 SCALE AS NOTED

STATE OF CONNECTICUT  
 DEPARTMENT OF TRANSPORTATION

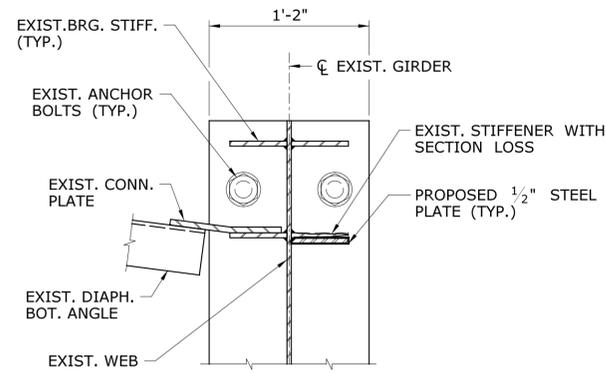
SIGNATURE/BLOCK:  
 Cardinal Engineering Associates, Inc.  
 3 Colony Street  
 Meriden, CT 06451

PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

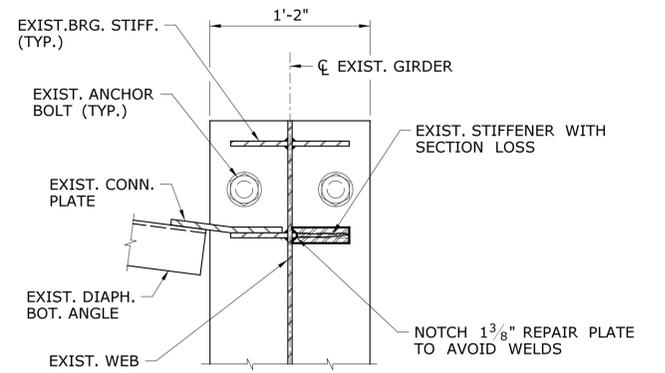
TOWN:  
**NEW LONDON/GROTON**  
 DRAWING TITLE:  
**STEEL REPAIRS REPAIR NOS. 2A & 2D**

PROJECT NO.  
**94-252**  
 DRAWING NO.  
**SA-63**  
 SHEET NO.  
**04.063**

REPAIR PLATES (3A)	
LOCATION	PLATE SIZE
SPAN 2, S1, PIER 1	6"x12"
SPAN 2, S1, PIER 2	6"x12"
SPAN 3, S1, PIER 3	5"x10"
SPAN 4, S9, PIER 3	6"x12"
SPAN 4, S1, PIER 4	6"x12"
SPAN 5, S19, PIER 4	6"x12"
SPAN 10, S13, PIER 9	6"x12"
SPAN 11, S12, PIER 10	6"x12"
SPAN 11, S3, PIER 11	6"x12"
SPAN 11, S5, PIER 11	6"x12"

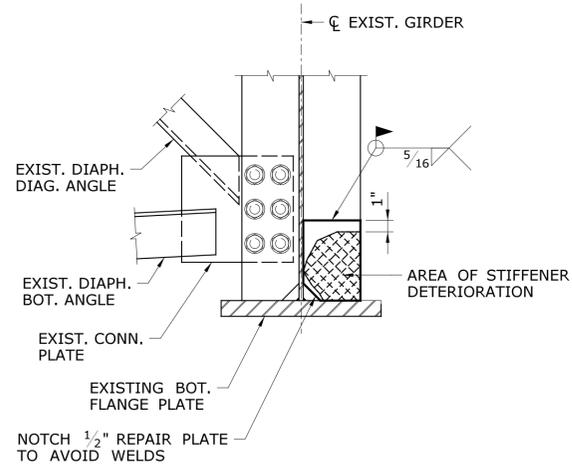


**A SECTION A**  
SCALE: 1 1/2" = 1'-0"

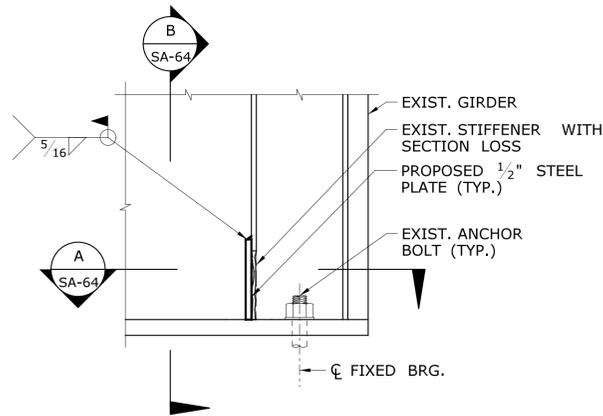


**C SECTION C**  
SCALE: 1 1/2" = 1'-0"

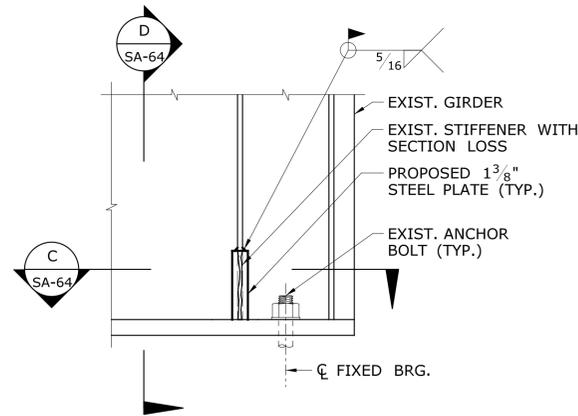
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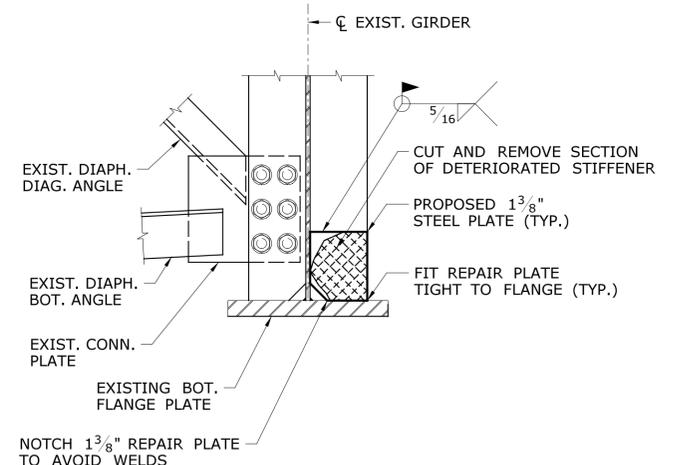
**B SECTION B**  
SCALE: 1 1/2" = 1'-0"



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



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

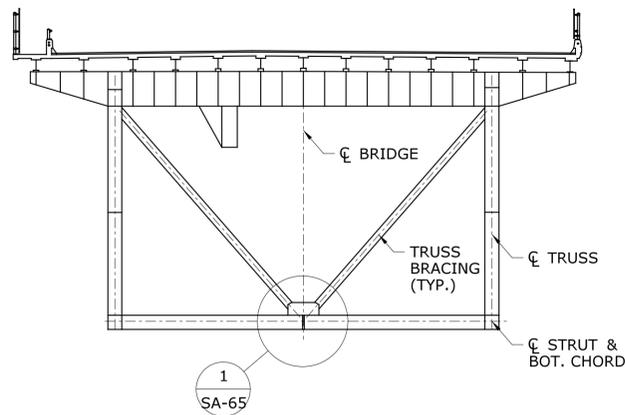


**D SECTION D**  
SCALE: 1 1/2" = 1'-0"

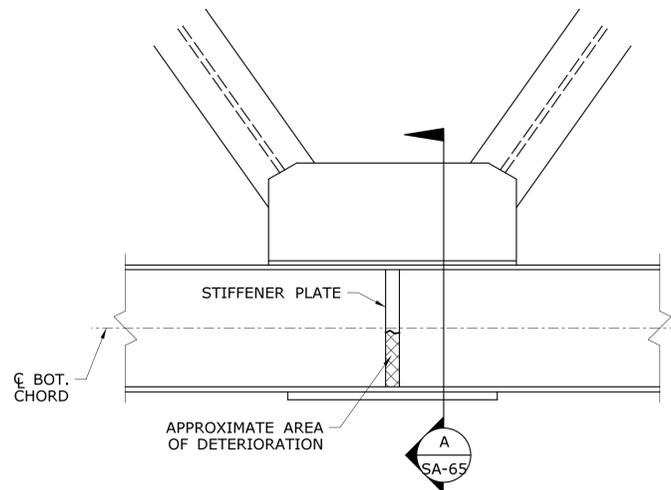
**3A EXISTING STIFFENER REMAINING THICKNESS >= 1/4"**  
SCALE: 1 1/2" = 1'-0"

**3A EXISTING STIFFENER REMAINING THICKNESS < 1/4"**  
SCALE: 1 1/2" = 1'-0"

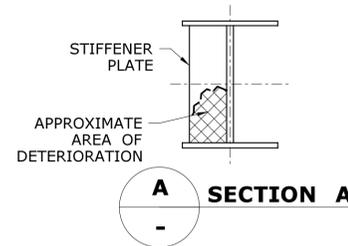
REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	DESIGNER/DRAFTER: <b>C. DAVIS</b>	 <b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b>	SIGNATURE/ BLOCK:  Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE:	TOWN:	PROJECT NO.
				CHECKED BY: <b>M. EGAN</b>			<b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	<b>NEW LONDON/GROTON</b>	<b>94-252</b>
				SCALE AS NOTED	Filename: ...\\SB_MSH_0094_0252_BR_NO_02514A_SRP-03A.dgn		<b>STEEL REPAIRS REPAIR NO. 3A</b>		<b>SA-64</b> <b>04.064</b>



**3B** STEEL REPAIR NO. 3 - REPAIR STIFFENER  
 - (CROSS SECTION AT SPAN 27 SHOWN)  
 SCALE: 1/16" = 1'-0"



**ELEVATION**



NOTE:  
 FOR REPAIR DETAILS, SEE DRAWING NO. SA-64. USE 3/4" PLATE FOR THE 1/2" PLATE SHOWN AND 1 3/4" PLATE FOR THE 1 3/8" PLATE SHOWN IN OTHER DETAILS.

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

REPAIR PLATES (3-B)	
LOCATION	PLATE SIZE
SPAN 18, L7	*6"x8"
SPAN 21, L11	*6"x8"
SPAN 25, L0	*6"x8"
SPAN 26, L2	*6"x8"
SPAN 26, L3	*6"x8"
SPAN 27, L1	*6"x8"

GENERAL NOTES:  
 1. PLATE SIZES SHOWN ARE BASED ON THE REQUIREMENTS INDICATED IN THE RELATED DETAIL AND DETERIORATION OF THE EXISTING STEEL AS NOTED IN THE 2013 BRIDGE INSPECTION REPORT FOR BRIDGE 02514A. PLATE SIZES NOTED WITH \* INDICATE THAT THE AREA OF DETERIORATION IS NOT PROVIDED IN THE INSPECTION REPORT AND PLATE SIZES ARE ASSUMED.

2. CONTRACTOR SHALL PERFORM AN INSPECTION OF ALL AREAS NOTED FOR STEEL REPAIRS AND DOCUMENT THE EXISTING DETERIORATION PRIOR TO THE FABRICATION OF REPAIR PLATES. THE RESULTS OF THE CONTRACTORS REPAIR INSPECTION PERFORMED PRIOR TO FABRICATION OF REPAIR PLATES SHALL BE INCLUDED IN THE CONTRACTOR'S SHOP DRAWING SUBMISSION FOR THE STRUCTURAL STEEL REPAIR PLATES. THE COST ASSOCIATED WITH THE INSPECTION SHALL BE INCLUDED IN THE UNIT PRICE FOR "STRUCTURAL STEEL REPAIRS (SITE NO. 1)".

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER:  
**C. DAVIS**  
 CHECKED BY:  
**M. EGAN**  
 SCALE AS NOTED

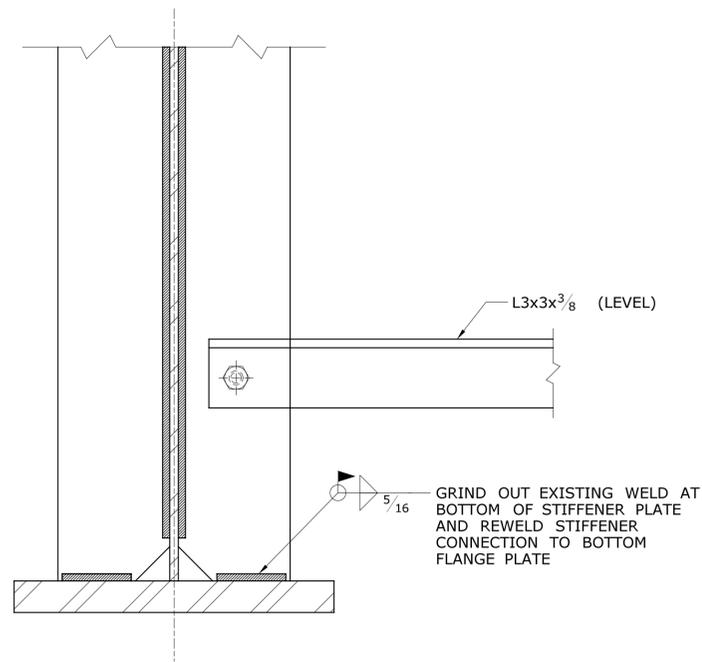

**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**  
 Plotted Date: 7/12/2016  
 Filename: ...SB\_MSH\_0094\_0252\_BR\_NO\_02514A\_SRP-03B.dgn

SIGNATURE/  
 BLOCK:  
  
 Cardinal Engineering Associates, Inc.  
 3 Colony Street  
 Meriden, CT 06451

PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

TOWN:  
**NEW LONDON/GROTON**  
 DRAWING TITLE:  
**STEEL REPAIRS REPAIR NO. 3B**

PROJECT NO.  
**94-252**  
 DRAWING NO.  
**SA-65**  
 SHEET NO.  
**04.065**

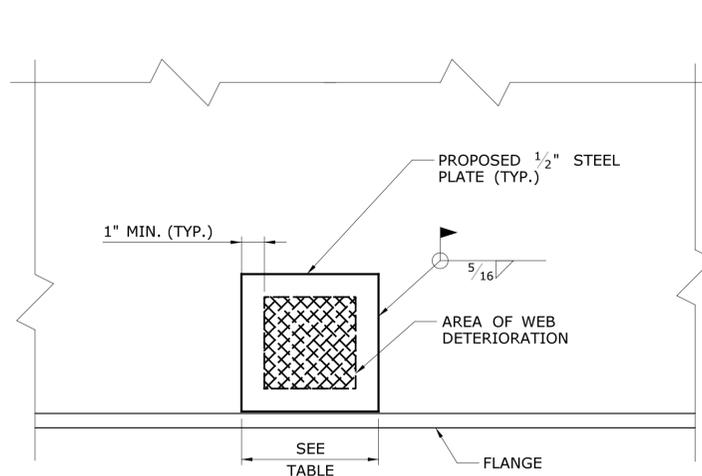


**REPAIR WELD AT STIFFENER** 4

SCALE: 3" = 1'-0"

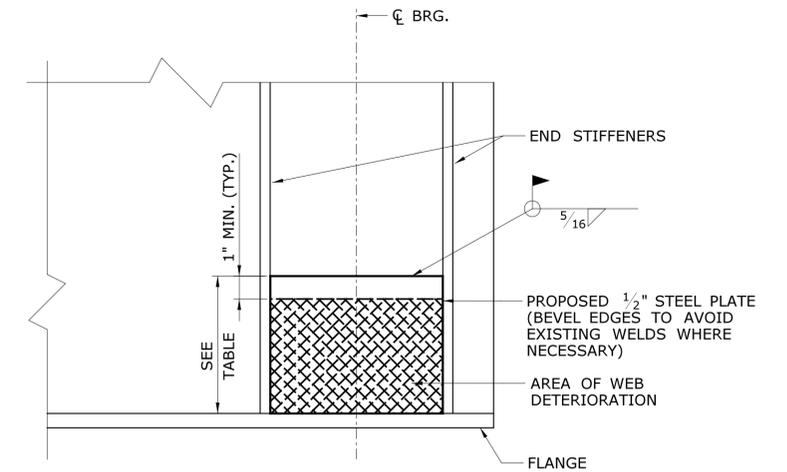
**NOTES:**

1. REPAIR WELDS SHALL BE PAID FOR UNDER THE ITEM "REPAIR DEFECTIVE WELDS"
2. SEE WELD REPAIR NOTES ON DRAWING SA-57



**TYPICAL WEB REPAIR**

NOTE: AT PERFORATIONS, INSTALL PLATES AT EACH SIDE OF WEB.



**BETWEEN STIFFENERS**

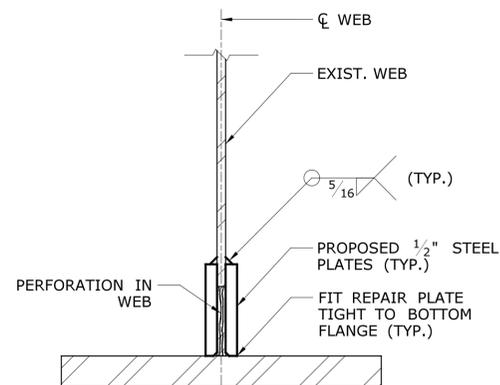
WEB REPAIR PLATE (5A)	
LOCATION	PLATE SIZE
SPAN 3, S1	6"x10"
SPAN 5, S19	10"x17"
SPAN 10, S13	6"x16"
SPAN 11, S12	6"x14"
SPAN 21, FB20	6'-0"x9"
SPAN 23, L27 (LOCATION 1)	*6"x8"
SPAN 23, L27 (LOCATION 2)	*6"x8"
SPAN 24, S33 (AT PIER 24)	11"x38"

**GENERAL NOTES:**

1. PLATE SIZES SHOWN ARE BASED ON THE REQUIREMENTS INDICATED IN THE RELATED DETAIL AND DETERIORATION OF THE EXISTING STEEL AS NOTED IN THE 2013 BRIDGE INSPECTION REPORT FOR BRIDGE 02514A. PLATE SIZES NOTED WITH \* INDICATE THAT THE AREA OF DETERIORATION IS NOT PROVIDED IN THE INSPECTION REPORT AND PLATE SIZES ARE ASSUMED.
2. CONTRACTOR SHALL PERFORM AN INSPECTION OF ALL AREAS NOTED FOR STEEL REPAIRS AND DOCUMENT THE EXISTING DETERIORATION PRIOR TO THE FABRICATION OF REPAIR PLATES. THE RESULTS OF THE CONTRACTORS REPAIR INSPECTION PERFORMED PRIOR TO FABRICATION OF REPAIR PLATES SHALL BE INCLUDED IN THE CONTRACTOR'S SHOP DRAWING SUBMISSION FOR THE STRUCTURAL STEEL REPAIR PLATES. THE COST ASSOCIATED WITH THE INSPECTION SHALL BE INCLUDED IN THE UNIT PRICE FOR "STRUCTURAL STEEL REPAIRS (SITE NO. 1)".

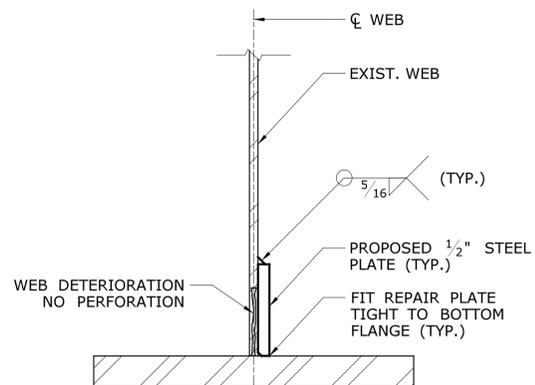
**5A WEB REPAIR DETAILS**

SCALE: 3" = 1'-0"



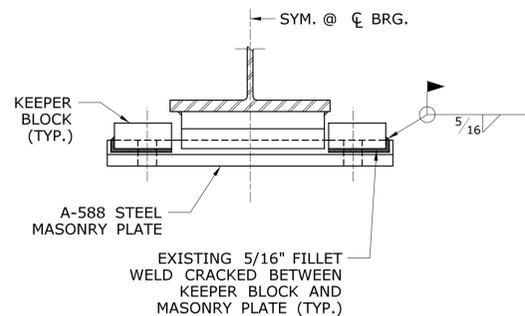
**TYPICAL WEB REPAIR WITH PERFORATIONS**

SCALE: 3" = 1'-0"



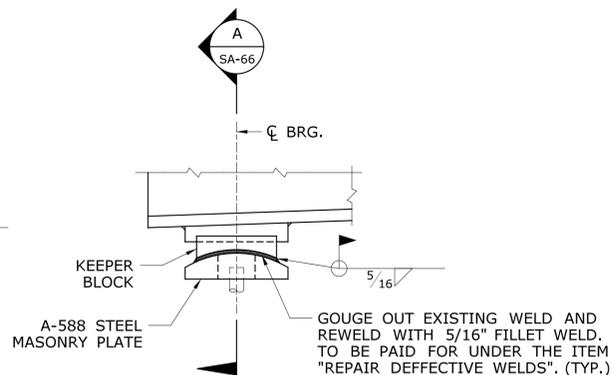
**TYPICAL WEB REPAIR WITHOUT PERFORATIONS**

SCALE: 3" = 1'-0"



**A SECTION A**

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



**6 REPAIR WELD AT KEEPER BLOCK ELEVATION**

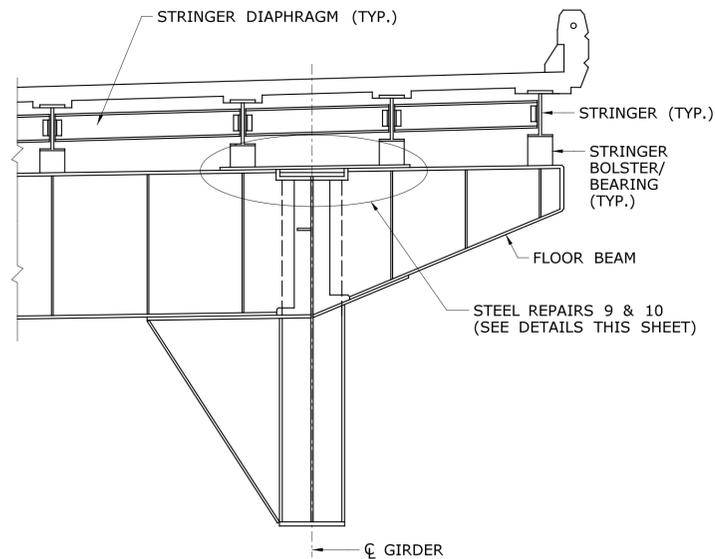
SCALE: 1 1/2" = 1'-0"

**TABLE OF KEEPER BLOCK REPAIR WELD LOCATIONS (REPAIR TYPE 6)**

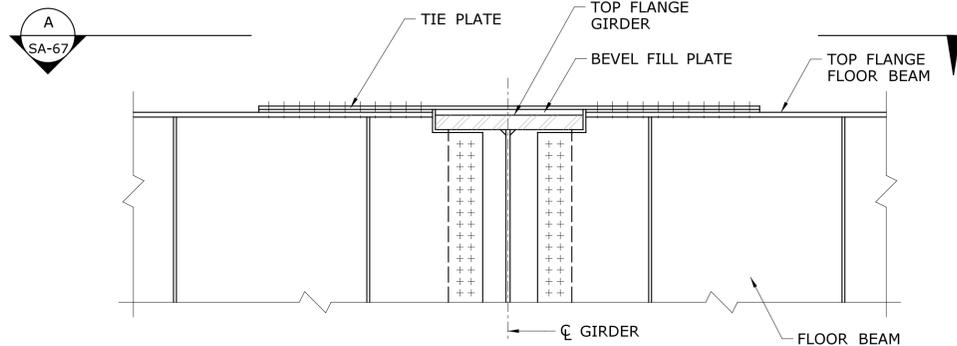
LOCATION	TYPE OF SHOE
SPAN 5, PIER 4, GIRDER S-17	F6
SPAN 5, PIER 4, GIRDER S-19	F6
SPAN 9, PIER 9, GIRDER S-1	E3
SPAN 9, PIER 9, GIRDER S-2	E3
SPAN 10, PIER 9, GIRDER S-1	F5
SPAN 10, PIER 10, GIRDER S-4	E2
SPAN 11, PIER 10, GIRDER S-2	F5
SPAN 13, PIER 13, GIRDER S-8	E1

NOTE: FOR DETAILS AND DIMENSIONS OF BEARINGS TO BE REPAIRED, SEE DRAWING NO. SA-57

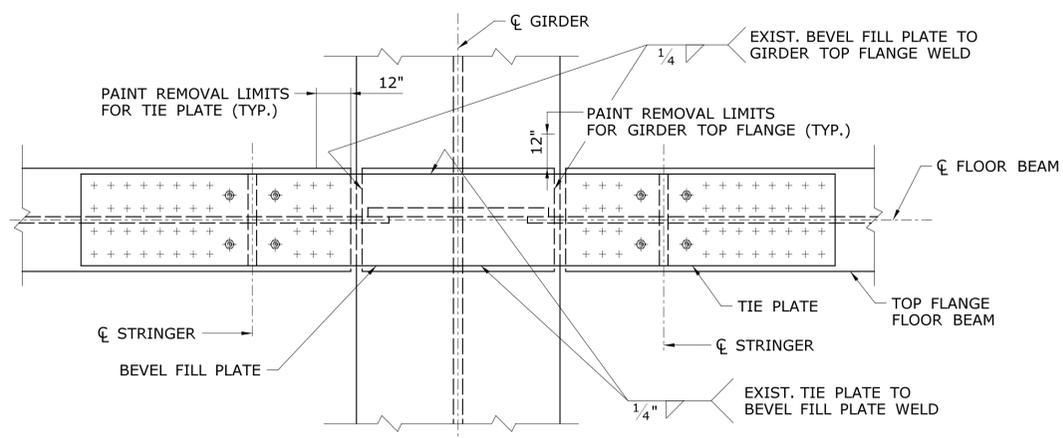
REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	DESIGNER/DRAFTER: <b>C. DAVIS</b>	<p><b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION</p>	SIGNATURE/BLOCK: 	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b>
				CHECKED BY: <b>M. EGAN</b>		<p>Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451</p>	DRAWING NO. <b>SA-66</b>	SHEET NO. <b>04.066</b>	



**9 10 TYPICAL SECTION - FLOOR BEAM (ALSO APPLIES AT TRUSS)**  
SCALE: 1/4" = 1'-0"



**10 TYPICAL SECTION - REPAIR NO. 10**  
SCALE: 1/4" = 1'-0"



(SEE REPAIR PROCEDURE REPAIR NO. 10)  
**A STEEL REPAIR NO. 10 - SECTION A**  
SCALE: 3/4" = 1'-0"

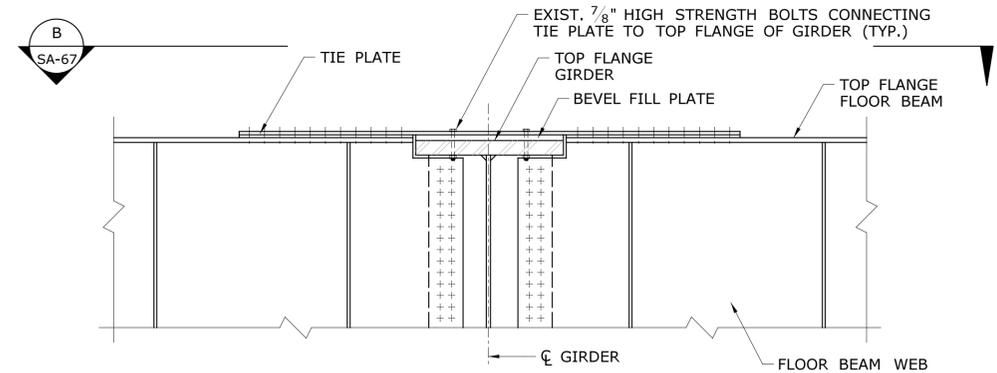
**GENERAL NOTE:**

THE TIE PLATES CONNECTING THE TOP FLANGE OF FLOOR BEAMS AND THE TOP FLANGE OF MAIN GIRDERS USE A BOLTED CONNECTION IN THE POSITIVE MOMENT REGIONS AND A WELDED CONNECTION AT THE NEGATIVE MOMENT REGIONS. THE WELDED CONNECTIONS IN THE NEGATIVE MOMENT REGIONS ARE AT THE FOLLOWING FLOOR BEAMS: 14FB6, 14FB7, 15FB0, 15FB1, 15FB2, 16FB6, 16FB7, 17FB0, 17FB1, 17FB2, 29FB4, 3FB0 AND 30FB1, SEE FRAMING PLANS FOR LOCATIONS OF FLOOR BEAMS. TACK WELDS WERE USED AT BOLTED CONNECTIONS DURING CONSTRUCTION TO ASSIST IN ERECTION. SEE DETAIL 17A FOR THE REMOVAL OF THESE TACK WELDS THAT HAVE CRACKED.

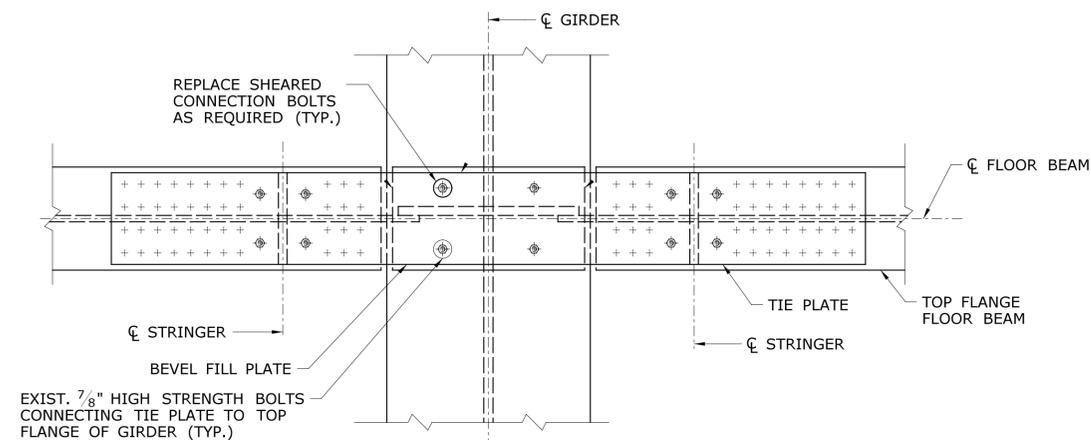
STEEL REPAIR NO. 9 ON THIS SHEET DEPICTS THE REPLACEMENT OF SHEARED BOLTS AT THE BOLTED TIE PLATE CONNECTIONS. THIS WORK TO BE PAID FOR UNDER THE ITEM "BOLT REPLACEMENT".

STEEL REPAIR NO. 10 ON THIS SHEET DEPICTS THE REQUIRED REPAIRS AT WELDED CONNECTIONS WHERE THESE MAIN CONNECTION WELDS HAVE CRACKED. NOTE THAT THE WELD REPAIRS INCLUDE BOTH THE WELD FROM THE TIE PLATE TO THE BEVEL FILL PLATE TRANSVERSE TO THE CENTERLINE OF GIRDERS, AND THE WELD FROM THE BEVEL FILL PLATE TO THE GIRDER TOP FLANGE LONGITUDINAL TO THE CENTERLINE OF GIRDERS. THIS REPAIR WORK SHALL BE PAID UNDER THE ITEMS "REPAIR DEFECTIVE WELDS", "PEENING COVER PLATE WELDS" AND "LOCALIZED PAINT REMOVAL AND FIELD PAINTING OF EXISTING STEEL".

PHOTOS SHOW THE EXISTING CONDITIONS OF CONNECTIONS AT LOCATIONS WITH SHEARED BOLTS (REPAIR NO. 9) AND CRACKED WELDS (REPAIR NO. 10).



**9 TYPICAL SECTION - REPAIR NO. 9**  
SCALE: 1/2" = 1'-0"



**B STEEL REPAIR NO. 9 - SECTION B**  
SCALE: 3/4" = 1'-0"

**REPAIR PROCEDURE: REPAIR NO. 10**

1. REMOVE ALL PAINT AT CONNECTION. LIMITS ARE AS SHOWN.
2. PERFORM MAGNETIC PARTICLE TESTING OF THE EXISTING TIE PLATE TO BEVEL FILL PLATE WELD AND THE BEVEL FILL PLATE TO GIRDER TOP FLANGE WELD.
3. AT CONFIRMED CRACK LOCATIONS, REMOVE EXISTING WELD 2" BEYOND CRACK, GRIND OUT AND RE-WELD.
4. INSPECTION, WELD REMOVAL AND REPAIR TO BE PAID FOR UNDER THE ITEM "REPAIR DEFECTIVE WELDS".
5. PEEN THE EXISTING TIE PLATE TO BEVEL FILL PLATE WELDS, FULL LENGTH, AND PEEN THE ACCESSIBLE PORTIONS OF THE BEVEL FILL PLATE TO GIRDER TOP FLANGE WELD. TO BE PAID FOR UNDER THE ITEM "PEENING COVER PLATE WELDS".
6. PAINT THE CONNECTIONS TO THE LIMITS SHOWN. TO BE PAID FOR UNDER THE ITEM "LOCALIZED PAINT REMOVAL AND FIELD PAINTING EXISTING STEEL".
7. EACH PEENED WELD WILL BE PAID FOR AS "EACH" UNDER THE ITEM "PEENING COVER PLATE WELDS". SEE SPECIFICATIONS.



**TYPICAL LOCATION & EXISTING CONDITION FOR REPAIR NO. 10**



**TYPICAL LOCATION & EXISTING CONDITION FOR REPAIR NO. 9**

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	DESIGNER/DRAFTER: <b>C. DAVIS</b>	<p><b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION</p>	SIGNATURE/BLOCK: 	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b>
					CHECKED BY: <b>M. EGAN</b>		Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	DRAWING TITLE: <b>STEEL REPAIRS REPAIRS NO. 9 &amp; 10</b>	SHEET NO. <b>SA-67</b>	

**LOOSE/MISSING/DETERIORATED BOLT TABLE**

SPAN	LOCATION	REPAIR	# OF BOLTS
14 WEST	FB3/G1: LOOSE BOLT @ BOTTOM FB TO STRINGER CONNECTION (NORTH FACE)	REPLACE LOOSE BOLT	1
14 WEST	FB3/G2: FB BOTTOM FLANGE TO STRINGER CONNECTION - TWO BOLTS LOOSE; PACK RUST	REPLACE LOOSE BOLT	2
14 EAST	G1/FB6-FB7: LOOSE NUTS - INTERIOR FLANGE	REPLACE LOOSE CONNECTION BOLTS	1
14 EAST	G1: LOOSE GIRDER FIELD SPLICE BOTTOM BOLT	REPLACE LOOSE CONNECTION BOLTS	1
14 EAST	G1/FB8: TWO LATERAL BRACING CONN NUTS LOOSE, OBSTRUCTED BY LATERAL BRACING WEB WELD; FB BOT FLANGE TO WEB CONN WITH PACK RUST	REPLACE LOOSE CONNECTION BOLTS	2
14 EAST	G2, BET FB6 & FB7: TWO BOLTS LOOSE BETWEEN TOP & BOT GIRDER SECTS	REPLACE LOOSE CONNECTION BOLTS	2
14 EAST	G2/FB7: TWO BOLTS LOOSE @ LAT BRACING CONN	REPLACE LOOSE CONNECTION BOLTS	2
14 EAST	FB4/S25: STRINGER BRG PL W/ UP TO 1/16" SECT LOSS & 50% SECT LOSS @ CONN BOLT NUT	REPLACE CONN BOLTS	1
15 WEST	FB10/G1: LATERAL BRACING GUSSET HAS ONE MISSING NUT AND TWO DRIFT PINS INSTEAD OF BOLTS.	REPLACE BOLTS	3
15 WEST	S12 NEAR FB10: TWO LOOSE BOLTS @ BOTTOM FLANGE OF STRINGER FIELD SPLICE.	REPLACE BOLTS	2
15 WEST	G2 NEAR FB10: LOOSE NUT @ INTERMEDIATE FLANGE.	REPLACE BOLTS	1
15 WEST	G2 NEAR FB9: LOOSE NUT @ INTERMEDIATE FLANGE.	REPLACE BOLTS	1
15 EAST	S17 NEAR FB14: SHORT BOLT @ STRINGER FIELD SPLICE.	REPLACE BOLT	1
16 WEST	G4 BTWN FB1 - FB2: ONE LOOSE BOLT @ INTERM. FLANGE SPLICE PLATE. THREE LOOSE BOLTS @ BOTTOM FLANGE OF SPLICE PLATE.	REPLACE LOOSE BOLTS	1
16 WEST	FB1/S2: NW ANCHOR BOLT NOT FULLY THREADED.	REPLACE BOLT	1
17 EAST	FB16/G4: ONE BOLT NOT INSTALLED AND GUSSET PLATE NOT DRILLED. GIRDER WEB HAS SECTION LOSS.	INSTALL MISSING BOLT	1
18 WEST	3 LOCATIONS- FB1/S1, FB1/S11 & FB2/S2: BOLT NUT BACKED OFF @ NW CORNER.	REPLACE BOLTS	3
18 WEST	DIAPHRAGM BTWN FB3 & FB4/S5-S6: ONE LOOSE CATWALKS SUPPORT ANGLE BOLT @ DIAPH. CONNECTION.	REPLACE LOOSE BOLT	1
18 EAST	FB10/S14: ANCHOR BOLT NOT FULLY TIGHTENED. ABRASION DUST BTWN STR BOT FLANGE & BRG PL.	REPLACE LOOSE BOLT	1
18 EAST	FB7/S17 & FB10/S17: ONE LOOSE BOLT @ UPPER GUSSET PL CONN.	REPLACE LOOSE BOLT	1
18 EAST	S21 OR S22 @ FB10: SO ANCHOR BOLT SHEARED OFF, & 25% SECT LOSS ON NORTH NUT.	REPLACE CONNECTION BOLTS	2
19 WEST	FB11/ SO. TRUSS & FB15/NO. TRUSS: ONE LOOSE BOLT IN GUSSET PL FOR TOP LATERAL BRACING.	REPLACE LOOSE BOLTS	1
19 WEST	FB10/S11: 60% SECT LOSS ON BOLTS AND NUTS.	REPLACE DETERIORATED BOLTS	3
19 WEST	FB13/SO. TRUSS: TWO LOOSE BOLTS @ BOTTOM OF VERTICAL GUSSET PL.	REPLACE LOOSE BOLTS	2
19 EAST	NEAR FB16/S16: ONE LOOSE BOLT @ FLANGE SPLICE (BOTTOM).	REMOVE & REPLACE LOOSE BOLT	1
19 EAST	FB20/SOUTH TRUSS: ONE BOLT TILTED TO NORTH @ TOP OF TIE PL OVER FB.	REMOVE & REPLACE BOLT	1
19 EAST	S21 WEST OF FB19: ONE MISSING NUT @ BOTTOM FLANGE SPLICE CONNECTION.	REPLACE BOLT	1
20 EAST	S20 BTWN FB6 & FB7: ONE BOLT BACKED OFF @ STRINGER SPLICE TOP FLANGE.	REPLACE BOLT	1
20 EAST	FB10/S22: SECTION LOSS (100% ) @ ANCHOR BOLT NUTS TO STRINGER.	REPLACE DETERIORATED BOLTS	2
21 EAST	FB15 @ S14: NUT NOT FULLY ENGAGED @ LATERAL BRACING TO GUSSET PL. PACK RUST / VOID (1/16" H) BTWN STRINGER BOTTOM FLANGE & BEARING PL W/ ABRASION DUST.	REPLACE BOLT	1

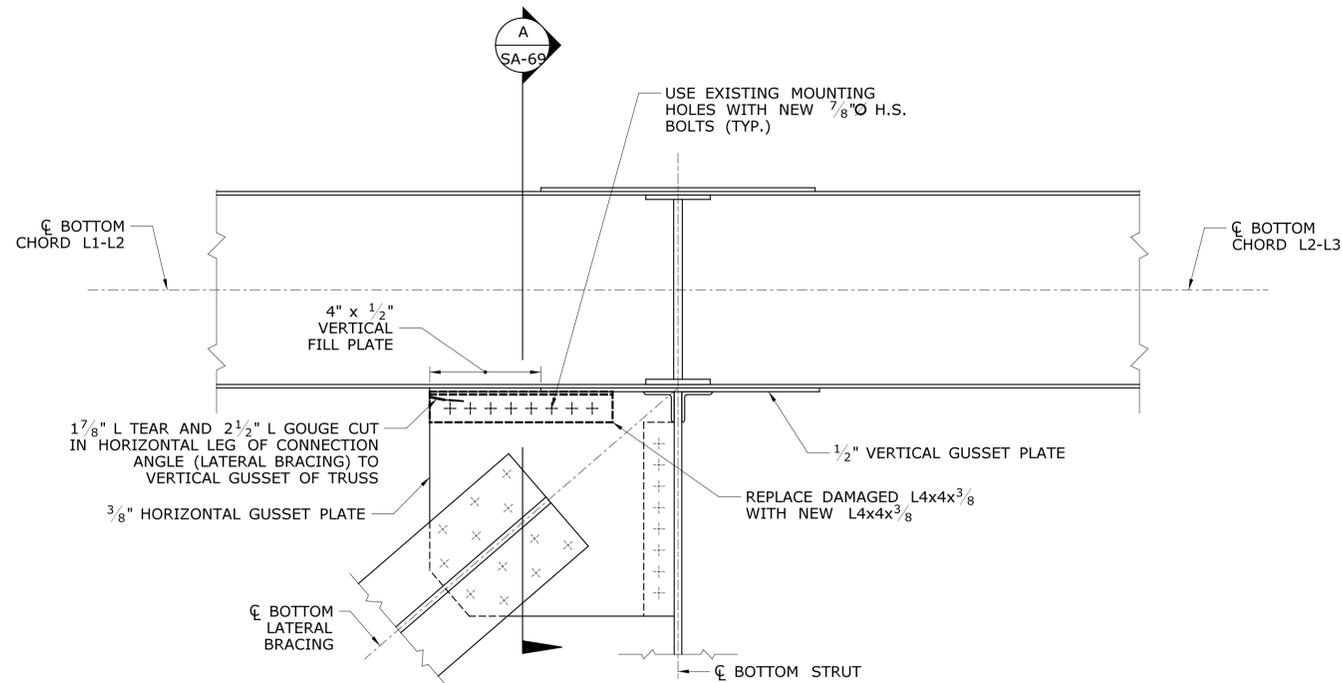
**NOTES:**

- THE ABOVE TABLE LISTS LOOSE, MISSING OR DETERIORATED BOLTS TO BE REPLACED WITH NEW BOLTS. REPLACEMENT OF EXISTING OR MISSING BOLTS SHALL BE PAID FOR UNDER THE ITEM "BOLT REPLACEMENT".
- LOCATIONS OF MISSING/LOOSE/DETERIORATED BOLTS ARE AS INDICATED IN THE TABLE, WITH LOCATIONS AS PER THE 2013 BRIDGE INSPECTION REPORT FOR BRIDGE NO. 02514A.
- THE CONTRACTOR SHALL VERIFY THE SIZE OF THE EXISTING BOLT TO BE REPLACED. EXISTING BRIDGE PLANS PROVIDE BOLT SIZES AS FOLLOWS:
  - 1" Ø HIGH STRENGTH ASTM A325 BOLTS USED IN WEBS OF TRUSS CHORDS, TRUSS DIAGONALS, TRUSS VERTICALS, TIE PLATES OF FLOORBEAMS AND BRACKETS CONNECTED TO MAIN GUSSETS.
  - 7/8" Ø HIGH STRENGTH ASTM A325 BOLTS USED IN ALL OTHER CONNECTIONS NOT NOTED ABOVE.
- ALL REPLACEMENT BOLTS/NUTS/WASHERS SHALL BE GALVANIZED IN ACCORDANCE TO ASTM A123.
- BOLTS USED FOR OTHER STEEL REPAIRS SHALL BE PAID FOR UNDER THE ITEM "STRUCTURAL STEEL REPAIRS (SITE NO. 1)" AS DETAILED ELSEWHERE ON THE PLANS. BOLT REPLACEMENT THAT IS DETAILED ELSEWHERE ON THE PLANS THAT IS NOTED TO BE PAID FOR UNDER THE ITEM "BOLT REPLACEMENT" SHALL MEET THE CRITERIA SPECIFIED UNDER THOSE SPECIFIC DETAILS.
- SEE SPECIAL PROVISION "BOLT REPLACEMENT".

**LOOSE/MISSING/DETERIORATED BOLT TABLE**

SPAN	LOCATION	REPAIR	# OF BOLTS
21 EAST	S20 BTWN FB18&FB19 @ SPLICE: ONE NUT NOT FULLY ENGAGED.	REPLACE BOLT	1
21 EAST	FB19/SO. TRUSS: RODS INSTEAD OF BOLTS (2) @ FB TO TOP CHORD CONNECTION.	REPLACE RODS W/ BOLTS	2
22 WEST	FB5/S11: SHEARED OFF ANCHOR BOLTS (2 OF 2) @ FB STRINGER CONNECTION.	REPLACE SHEARED OFF BOLTS	2
22 WEST	FB0/S2: SECTION LOSS (UP TO 50%) ON NUTS.	REPLACE DETERIORATED BOLTS.	2
23-2	FB19 @ S20: MISSING ANCHOR BOLT BTWN FB TOP FLANGE & STRINGER CONNECTION (SE SIDE).	REPLACE BOLT	1
23-2	SOUTH TRUSS @ FB20: TWO SHORT THREADS @ U20.	REPLACE BOLTS	2
23-3	S24 EAST OF FB23 @ SPLICE: MISSING NUT @ STRINGER TOP FLANGE SPLICE PL CONNECTION.	REPLACE BOLT	1
23-4	FB28 NEAR S39: LOOSE NUT @ BOTTOM GUSSET PL CONNECTION FOR TOP CHORD LATERAL.	REPLACE BOLT	1
23-5	NO. TRUSS @ FB32: 1 LOOSE NUT @ INSIDE BOTTOM GUSSET PL TO TOP LATERAL.	REPLACE BOLT	1
24 WEST	S5 @ FB34: LOOSE BOLT (WNUT BACKED OFF APPRX. 1") @ STRINGER & FB CONNECTION.	REPLACE BOLT	1
24 CENTRAL	NO. TRUSS @ FB39: LOOSE BOLT (ONE) @ CONNECTION TO LATERAL BRACING AND BOTTOM GUSSET PL.	REPLACE BOLT	1
24 CENTRAL	S18 EAST OF FB39 @ SPLICE: SIX SHORT BOLTS W/NUTS NOT FULLY ENGAGED. ONE BACKED OFF NUT (APPROXIMATELY 1/18").	REPLACE BOLTS	6
24 EAST	FB45 NEAR S28: LOOSE BOLT (ONE) (NOT FULLY TIGHTENED) @ LATERAL BRACING CONNECTION TO GUSSET PL.	REPLACE BOLT	1
26 EAST	FB5 @ S19: LOOSE SE ANCHOR BOLT (NOT FULLY TIGHTENED).	REPLACE BOLT	1
27 WEST	S12 @ FB4: LOOSE SW ANCHOR BOLT (1/2" BACKED OFF).	REPLACE BOLT	1
27 WEST	FB4/NO. TRUSS: 2 NUTS MISSING @ FB/TRUSS CONNECTION.	REPLACE BOLTS	2
27 WEST	GENERAL NOTE: UP TO 50% SECTION LOSS ON RANDOM STRINGER ANCHOR BOLTS	REPLACE DETERIORATED BOLTS	2
28 EAST	FB8/NO. TRUSS: LOOSE BOLT @ FB SPLICE & TOP CHORD.	REPLACE BOLT	1
28 EAST	S21/WEST OF FB9: LOOSE BOLT (NOT FULLY TIGHTENED) @ STRINGER FIELD SPLICE BOTTOM FLANGE.	REPLACE BOLT	1
28 EAST	FB8/NO. TRUSS: TOP LATERAL, BOTTOM GUSSET PL, (2) BOLTS LOOSE @ BOTTOM CONNECTION.	REPLACE BOLTS	2
29	S15 BTWN FB3 & FB4: ONE NUT LOOSE @ BOT FLANGE SPLICE PL. PACK RUST @ BOT OF SPLICE PL (EAST END).	REPLACE LOOSE BOLT	1
30	S12 BTWN FB8 & FB9: MISSING NUT @ BOTTOM FLANGE SPLICE PL.	REPLACE BOLT	1
30	S8 @ EITHER FB8 OR FB9: BACKED OFF NUT FROZEN TO BOLSTER BLOCK (SOUTH SIDE).	REPLACE BOLSTER BOLTS	1
30	FB6/G6: TWO NOT FULLY ENGAGED BOLTS @ BOTTOM OF CATWALK STAND.	REPLACE BOLTS	2

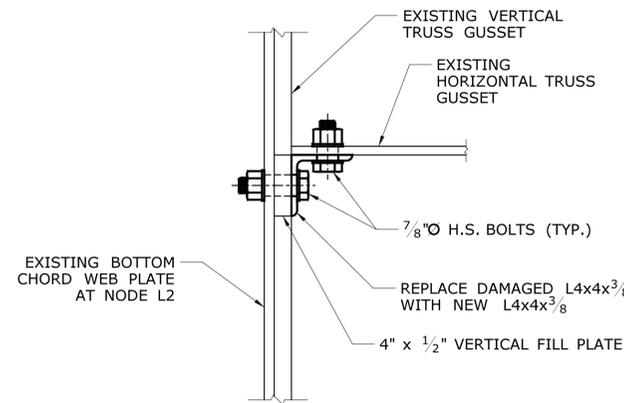
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	DESIGNER/DRAFTER: <b>C. DAVIS</b> CHECKED BY: <b>M. EGAN</b> SCALE AS NOTED	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-68</b> SHEET NO. <b>04.068</b>
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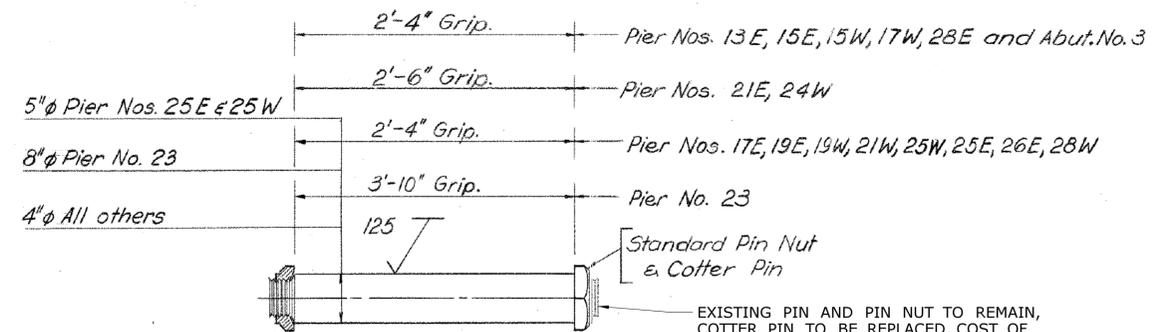
**13**  
-  
**REPAIR TEAR/GOUGE IN LATERAL BRACING AT SPAN 18, NORTH TRUSS, NODE L2**  
**PLAN VIEW**  
SCALE: 1" = 1'-0"



**IMAGE OF DAMAGED L4x4x3/8 ANGLE STEEL**



**A**  
-  
**SECTION A**  
SCALE: 3" = 1'-0"



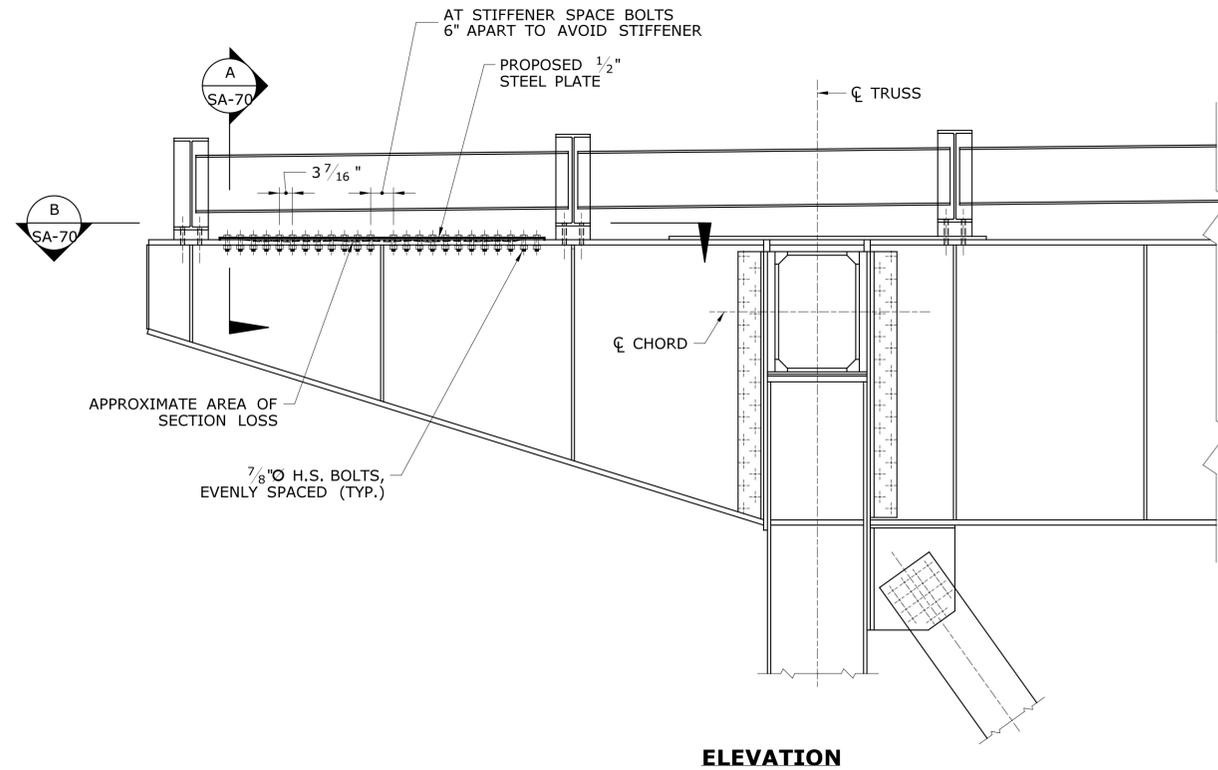
NOTE: REPLACE MISSING COTTER PIN ON ROCKER BEARING AT PIER 17E & 29. SEE TABLE FOR LOCATIONS.

**PIN ASSEMBLY**  
For Expansion Shoes

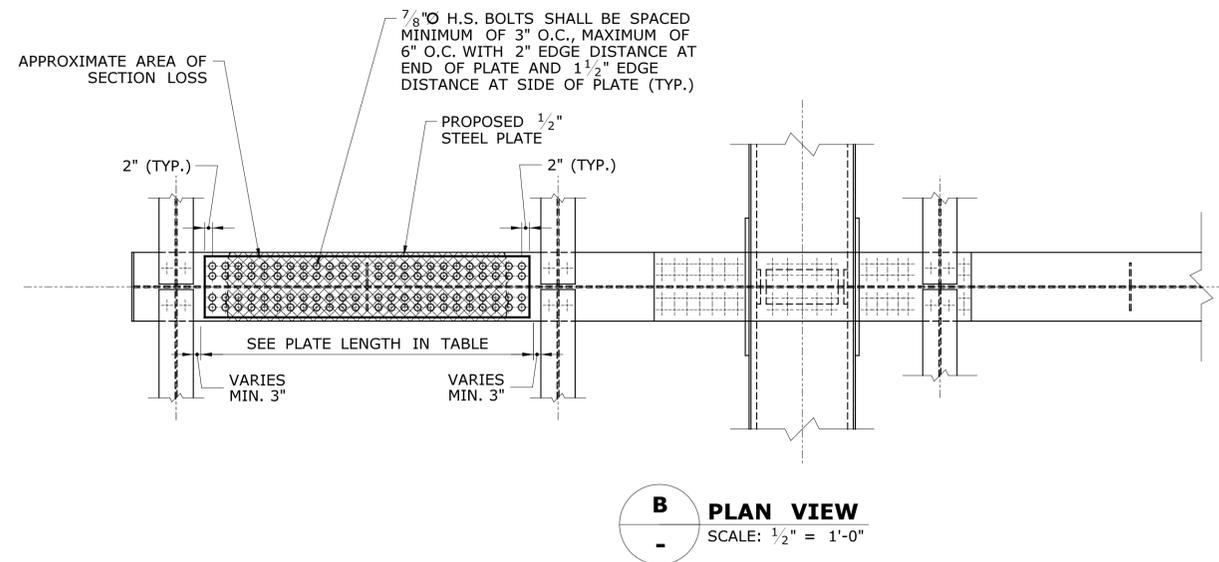
COTTER PIN LOCATIONS		
PIER	SPAN	TRUSS
PIER 17E	SPAN 18	NORTH
PIER 29E	SPAN 30	NORTH
PIER 29E	SPAN 30	SOUTH

**REPLACE MISSING COTTER PIN IN TRUSS ROCKER BEARING**  
SCALE: 1"=1'-0"

**12**  
-

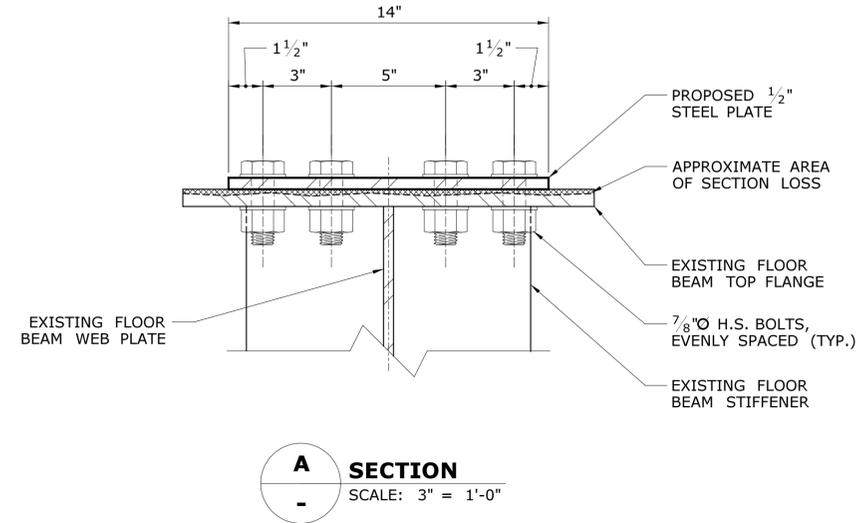


**14 STEEL REPAIR NO. 14 AT FLOOR BEAM**  
SCALE: 1/2" = 1'-0"



**B PLAN VIEW**  
SCALE: 1/2" = 1'-0"

FLOOR BEAM TOP FLANGES AT CANTILEVER SECTIONS	
AT INTERMEDIATE FLOOR BEAMS	18" x 3/4" TOP FLANGE
AT END FLOOR BEAMS	15" x 3/4" TOP FLANGE



**A SECTION**  
SCALE: 3" = 1'-0"

FLOORBEAMS TOP FLANGE 14" WIDE FLANGE REPAIR PLATES	
LOCATION	PLATE LENGTH
SPAN 17, FB 16	46"
SPAN 18, FB 10 (LOCATION 1)	51"
SPAN 18, FB 10 (LOCATION 2)	51"
SPAN 20, FB 10	46"
SPAN 22, FB 5	84"
SPAN 22, FB 9	84"
SPAN 23, FB 17	84"
SPAN 23, FB 25	84"
SPAN 23, FB 29	46"
SPAN 23, FB 33	46"
SPAN 25, FB 0	46"
SPAN 25, FB 5	46"
SPAN 26, FB 5 (LOCATION 1)	46"
SPAN 26, FB 5 (LOCATION 2)	46"
SPAN 27, FB 5	46"
SPAN 28, FB 18	46"

GENERAL NOTES:  
 1. PLATE SIZES SHOWN ARE BASED ON THE REQUIREMENTS INDICATED IN THE RELATED DETAIL AND DETERIORATION OF THE EXISTING STEEL AS NOTED IN THE 2013 BRIDGE INSPECTION REPORT FOR BRIDGE 02514A. PLATE SIZES NOTED WITH \* INDICATE THAT THE AREA OF DETERIORATION IS NOT PROVIDED IN THE INSPECTION REPORT AND PLATE SIZES ARE ASSUMED.  
 2. CONTRACTOR SHALL PERFORM AN INSPECTION OF ALL AREAS NOTED FOR STEEL REPAIRS AND DOCUMENT THE EXISTING DETERIORATION PRIOR TO THE FABRICATION OF REPAIR PLATES. THE RESULTS OF THE CONTRACTORS REPAIR INSPECTION PERFORMED PRIOR TO FABRICATION OF REPAIR PLATES SHALL BE INCLUDED IN THE CONTRACTOR'S SHOP DRAWING SUBMISSION FOR THE STRUCTURAL STEEL REPAIR PLATES. THE COST ASSOCIATED WITH THE INSPECTION SHALL BE INCLUDED IN THE UNIT PRICE FOR "STRUCTURAL STEEL REPAIRS (SITE NO. 1)".

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date: 7/12/2016

DESIGNER/DRAFTER:  
**C. DAVIS**  
 CHECKED BY:  
**M. EGAN**  
 SCALE AS NOTED

STATE OF CONNECTICUT  
 DEPARTMENT OF TRANSPORTATION

Signature/Block: [Signature]

Cardinal Engineering Associates, Inc.  
 3 Colony Street  
 Meriden, CT 06451

Filename: ...SB\_MSH\_0094\_0252\_BR\_NO\_02514A\_SRP-14.dgn

PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

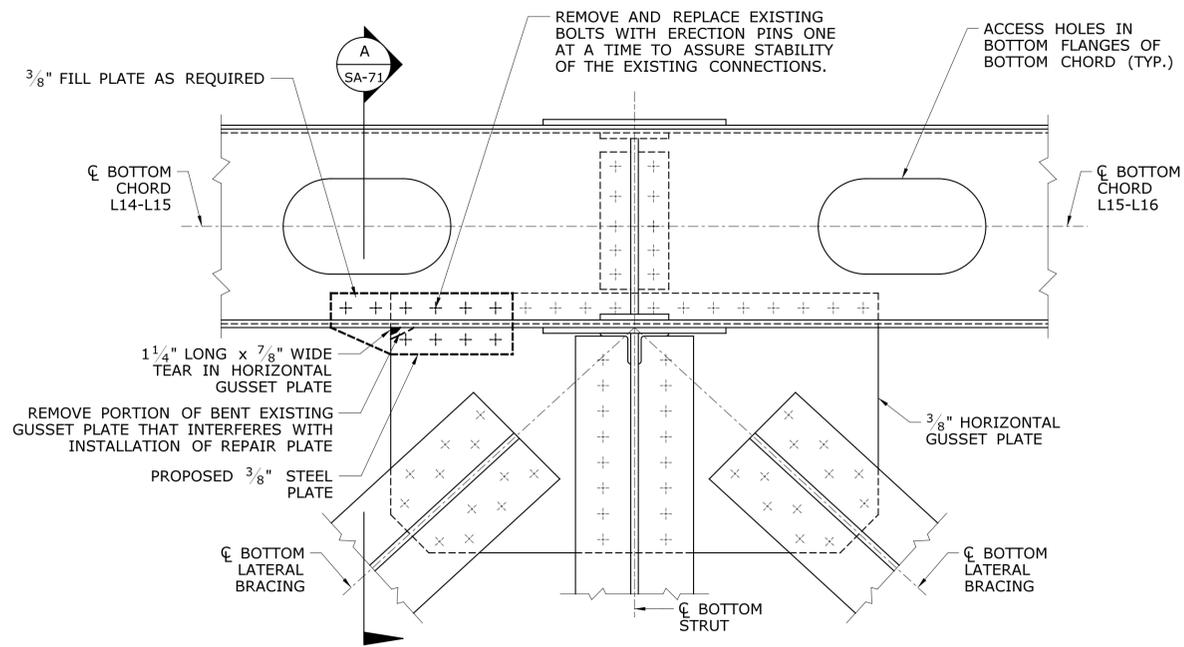
TOWN:  
**NEW LONDON/GROTON**

DRAWING TITLE:  
**STEEL REPAIRS REPAIR NO. 14**

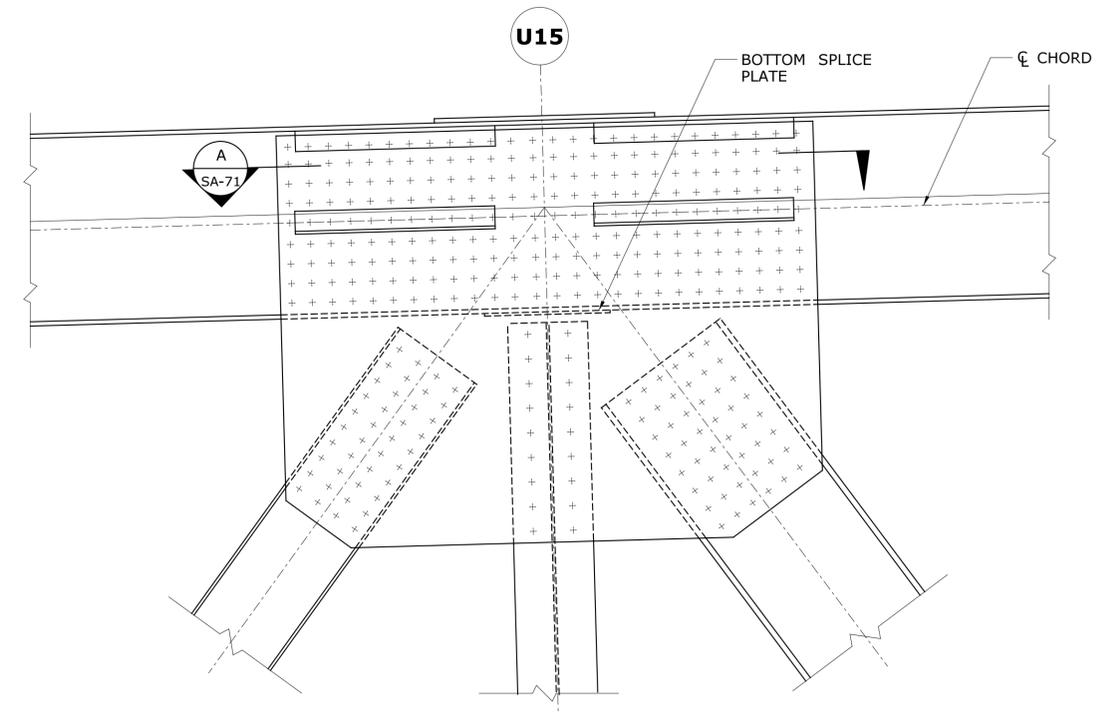
PROJECT NO.  
**94-252**

DRAWING NO.  
**SA-70**

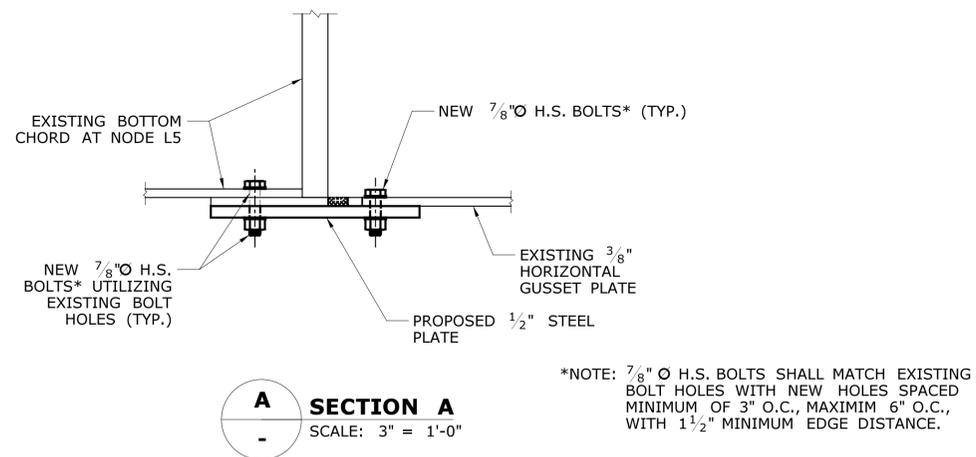
SHEET NO.  
**04.070**



**15 REPAIR OF TEAR IN GUSSET PLATE  
AT SPAN 19, SOUTH TRUSS, NODE L15  
PLAN VIEW**  
SCALE: 1" = 1'-0"

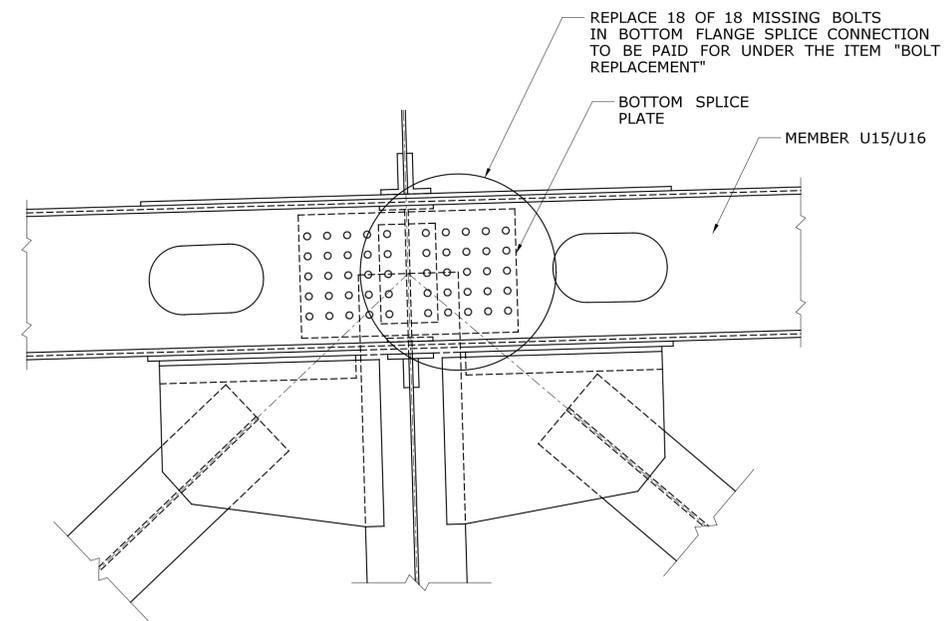


**16 TOP CHORD - SOUTH TRUSS  
SPAN 19 - U15 CONNECTION**  
SCALE: 3/4" = 1'-0"



**A SECTION A**  
SCALE: 3" = 1'-0"

\*NOTE: 7/8" O H.S. BOLTS SHALL MATCH EXISTING BOLT HOLES WITH NEW HOLES SPACED MINIMUM OF 3" O.C., MAXIMUM 6" O.C., WITH 1 1/2" MINIMUM EDGE DISTANCE.



**A LATERAL CONNECTION - SECTION A**  
SCALE: 3/4" = 1'-0"

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 7/12/2016

DESIGNER/DRAFTER:  
**C. DAVIS**  
CHECKED BY:  
**M. EGAN**  
SCALE AS NOTED

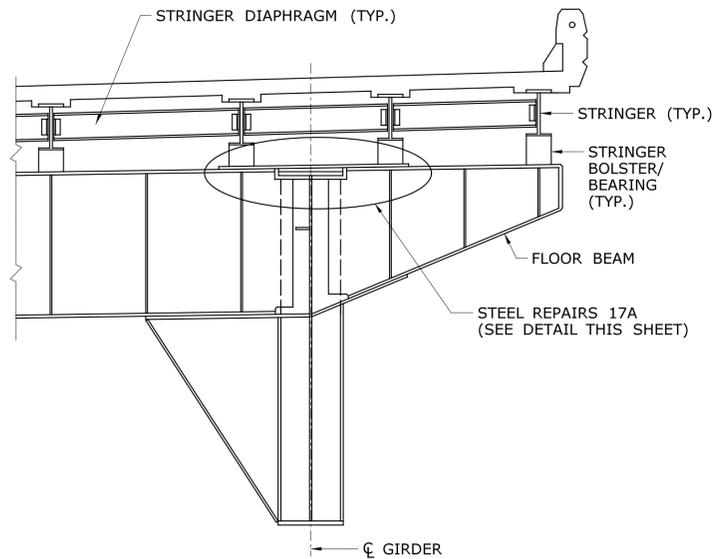


SIGNATURE/BLOCK:  
  
Cardinal Engineering Associates, Inc.  
3 Colony Street  
Meriden, CT 06451

PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

TOWN:  
**NEW LONDON/GROTON**  
DRAWING TITLE:  
**STEEL REPAIRS  
REPAIR NO. 15 & 16**

PROJECT NO.  
**94-252**  
DRAWING NO.  
**SA-71**  
SHEET NO.  
**04.071**



NOTE: TRUSS SPANS SIMILAR

**TYPICAL SECTION - FLOOR BEAM 17A**

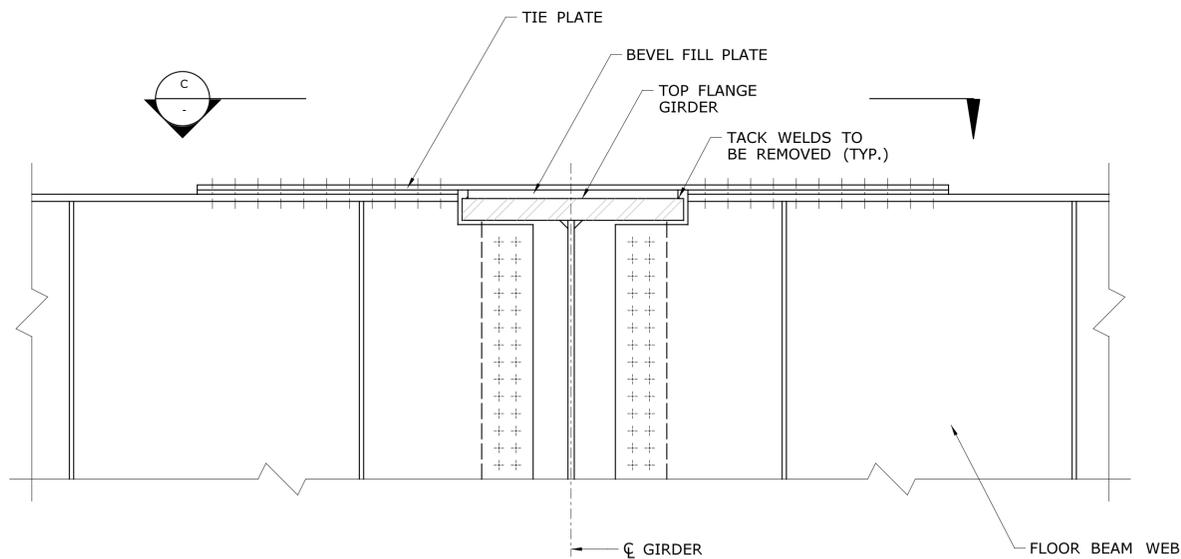
SCALE: 1/4" = 1'-0"



**TYPICAL LOCATION & EXISTING CONDITION FOR REPAIR NO. 17A**

STEEL REPAIR-17A LOCATION		
SPAN NO.	GIRDER NO.	FLOORBEAM NO.
14	G-1	3
14	G-1	4
14	G-1	5
14	G-1	7
14	G-2	1
14	G-2	2
14	G-2	4
14	G-2	6
15	G-1	4
15	G-1	5
15	G-1	7
15	G-1	8
15	G-1	9
15	G-2	4
15	G-2	5
15	G-2	6
15	G-2	7
15	G-2	9
16	G-3	2
16	G-3	3
16	G-3	5
16	G-3	6
16	G-3	9
16	G-4	1
16	G-4	6
16	G-4	9

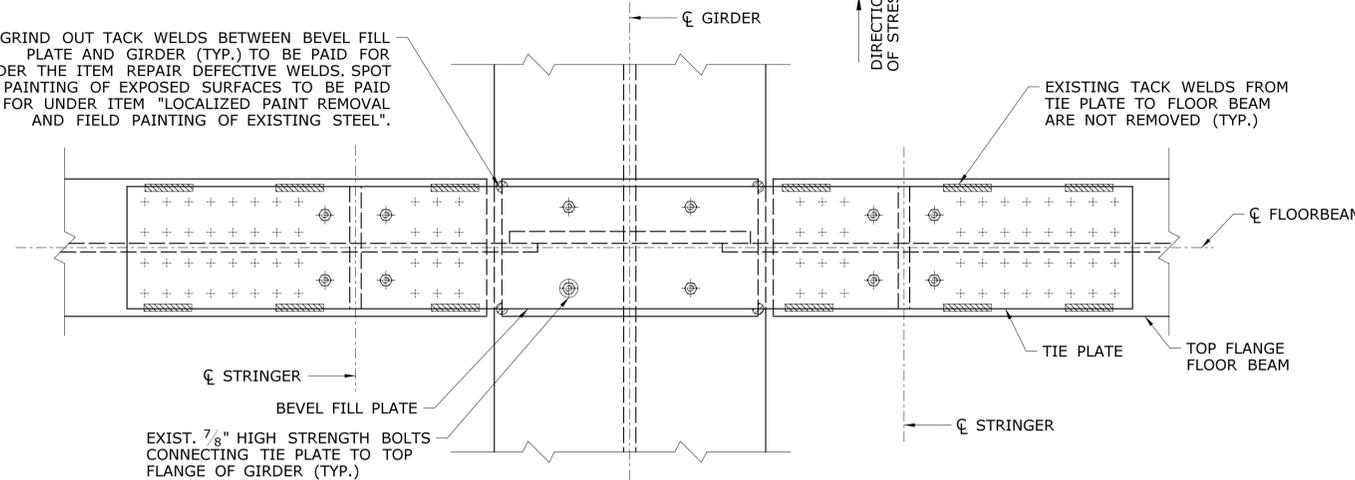
STEEL REPAIR-17A LOCATION		
SPAN NO.	GIRDER NO.	FLOORBEAM NO.
17	G-3	1
17	G-3	2
17	G-3	5
17	G-3	8
17	G-3	9
17	G-4	1
17	G-4	2
17	G-4	4
17	G-4	5
17	G-4	6
17	G-4	7
17	G-4	8
20	NORTH TRUSS	10
26	NORTH TRUSS	8
29	G-1	2
29	G-1	3
29	G-1	4
29	G-2	2
29	G-2	3
29	G-2	5
29	G-2	8
30	G-1	4
30	G-1	6
30	G-2	3
30	G-2	5
30	G-2	6



**TYPICAL SECTION - REPAIR NO. 17A 17A**

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

GRIND OUT TACK WELDS BETWEEN BEVEL FILL PLATE AND GIRDER (TYP.) TO BE PAID FOR UNDER THE ITEM REPAIR DEFECTIVE WELDS. SPOT PAINTING OF EXPOSED SURFACES TO BE PAID FOR UNDER ITEM "LOCALIZED PAINT REMOVAL AND FIELD PAINTING OF EXISTING STEEL".

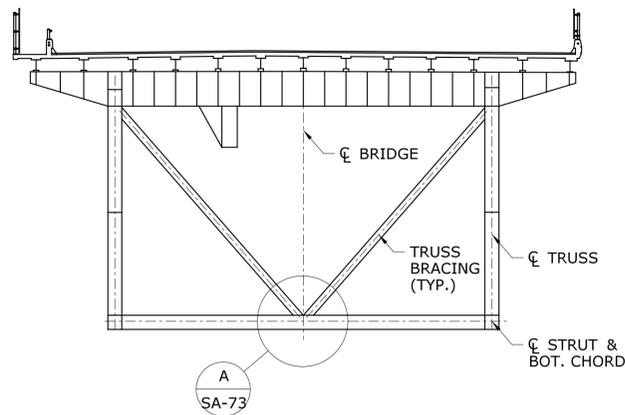


NOTE: DURING REMOVAL OF TACK WELDS, GRIND IN DIRECTION OF STRESS, LONGITUDINALLY PARALLEL TO CL OF GIRDER

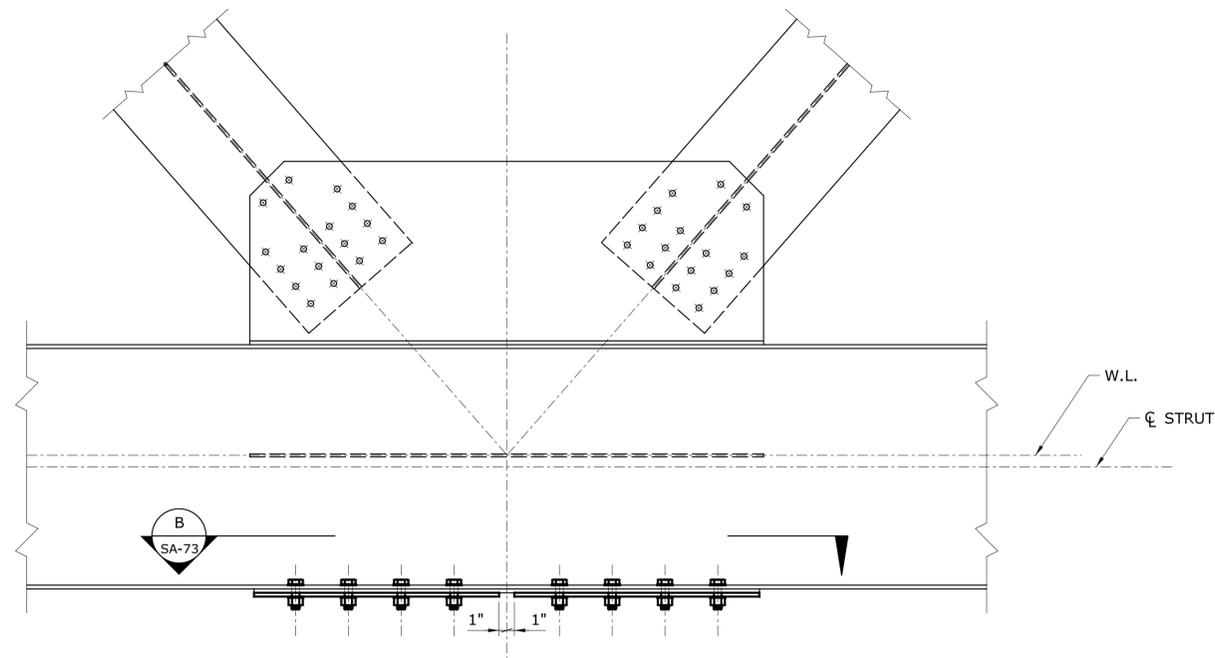
**SECTION C - STEEL REPAIR NO. 17A C**

SCALE: 1" = 1'-0"

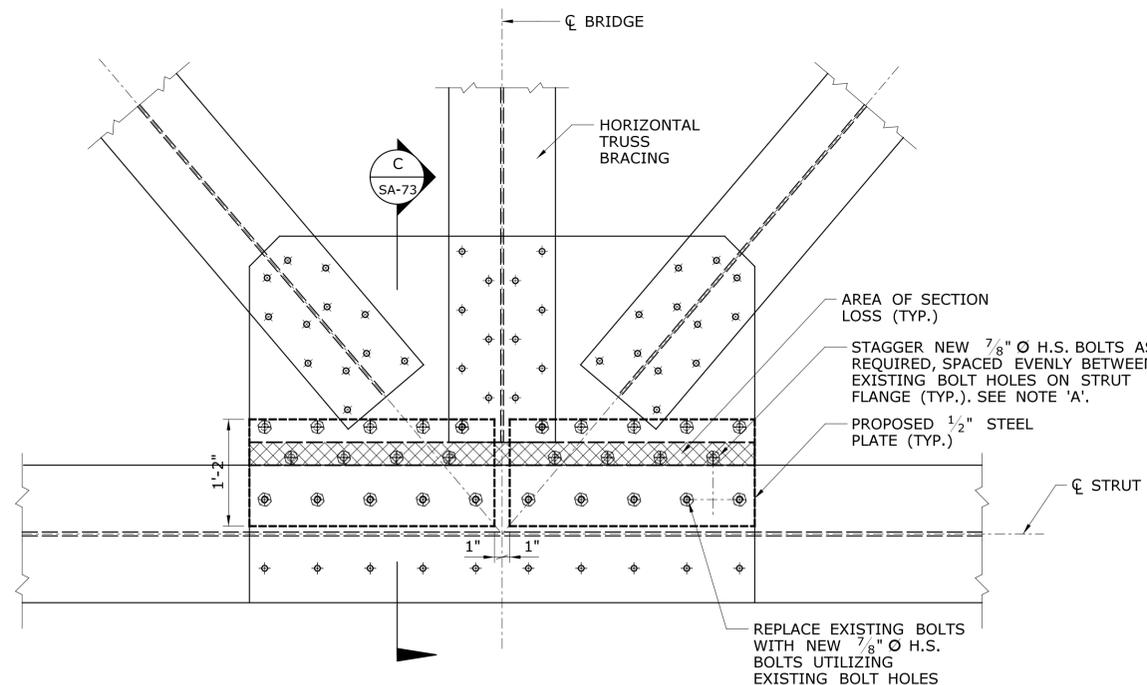
REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	DESIGNER/DRAFTER: <b>C. DAVIS</b>	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	SIGNATURE/BLOCK:  Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE:	TOWN:	PROJECT NO.
				THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.			CHECKED BY: <b>M. EGAN</b>	<b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	<b>NEW LONDON/GROTON</b>
				SCALE AS NOTED	Filename: ... \SB_MSH_0094_0252_BR_NO_02514A_SRP-17.dgn		<b>STEEL REPAIRS REPAIR NO. 17A</b>	<b>SA-72</b>	<b>04.072</b>



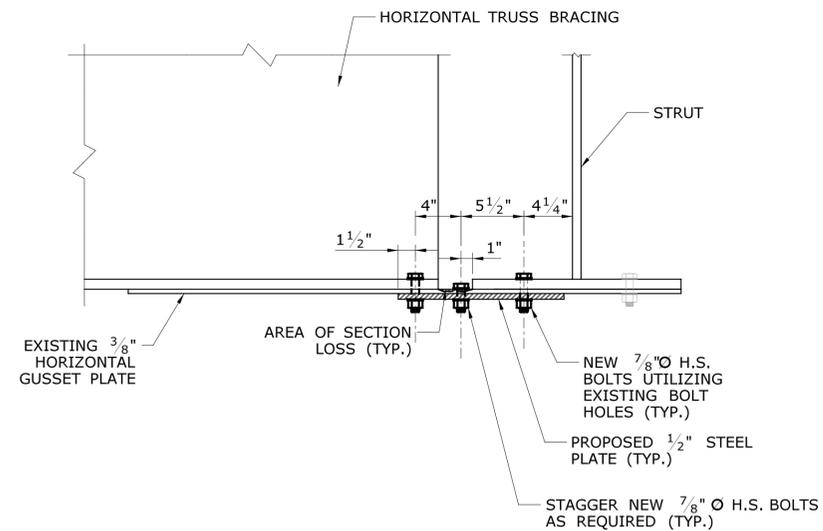
**CROSS SECTION - SPAN 27 19**  
SCALE: 1/16" = 1'-0"



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



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



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

NOTE 'A': BOLT SPACING SHALL BE MINIMUM OF 3" O.C. FOR THE 7/8" Ø H.S. BOLTS AND MAXIMUM OF 6" O.C. EDGE DISTANCE SHALL BE A MINIMUM OF 1 1/2".

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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DESIGNER/DRAFTER:  
**C. DAVIS**  
CHECKED BY:  
**M. EGAN**  
SCALE AS NOTED

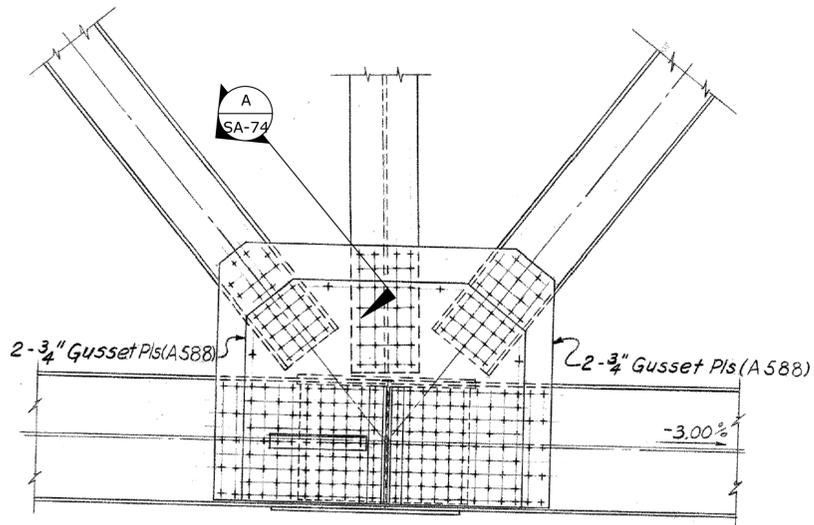
STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION

SIGNATURE/BLOCK:  
Cardinal Engineering Associates, Inc.  
3 Colony Street  
Meriden, CT 06451

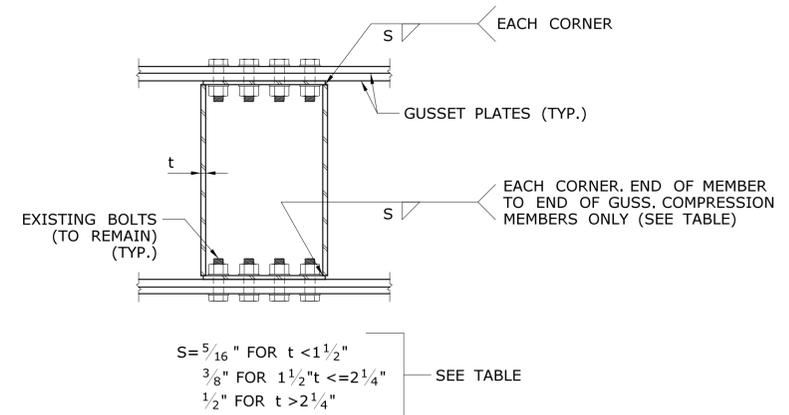
PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

TOWN:  
**NEW LONDON/GROTON**  
DRAWING TITLE:  
**STEEL REPAIRS REPAIR NO. 19**

PROJECT NO.  
**94-252**  
DRAWING NO.  
**SA-73**  
SHEET NO.  
**04.073**



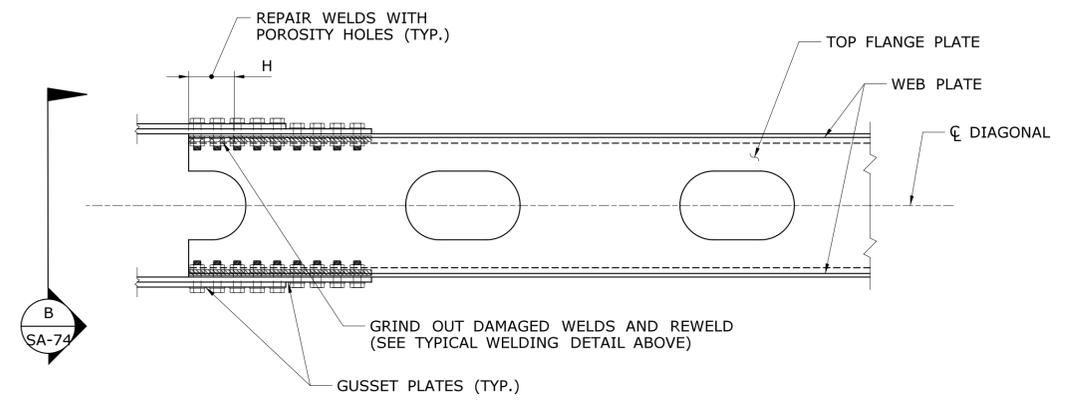
- NOTES:
- 1.CONNECTION AT BOTTOM NODE SHOWN, CONNECTION AT TOP NODE SIMILAR.
  - 2.TO BE PAID FOR UNDER THE ITEM "REPAIR DEFECTIVE WELDS".
  - 3.SEE WELD REPAIR NOTES ON DRAWING NO. SA-57



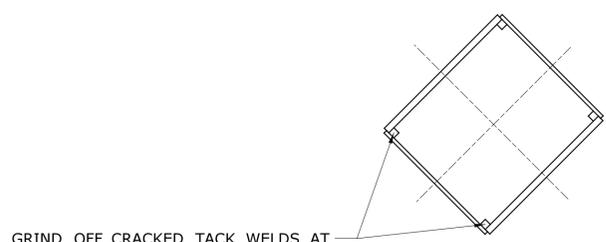
**B SECTION B - TYPICAL WELDING DETAIL**  
SCALE: 1" = 1'-0"

**20 REPAIR/REPLACE WELDS WITH POROSITY HOLES**  
**- NORTH TRUSS SPAN 27, NODE L4 SHOWN**  
SCALE: 1/2" = 1'-0"

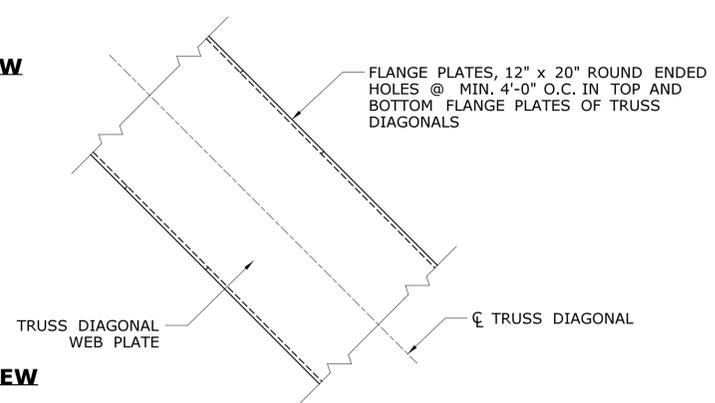
WELD REPAIR TABLE					
LOCATION	H (IN INCHES)	EXISTING FLANGE PLATE SIZE	EXISTING WEB PLATE SIZE (t)	S	COMPRESSION OR TENSION MEMBERS
SPAN 28 SOUTH TRUSS L0-U1	6"	25" x 5/8" (PERF.)	30" x 1 5/8"	5/16"	COMPRESSION
SPAN 27 NORTH TRUSS U3-L4	4"	25" x 5/8" (PERF.)	16" x 1/2"	5/16"	TENSION
SPAN 27 NORTH TRUSS U9-L10	8"	25" x 5/8" (PERF.)	30" x 2 5/8"	1/2"	COMPRESSION



**A SECTION A**  
SCALE: 3/4" = 1'-0"

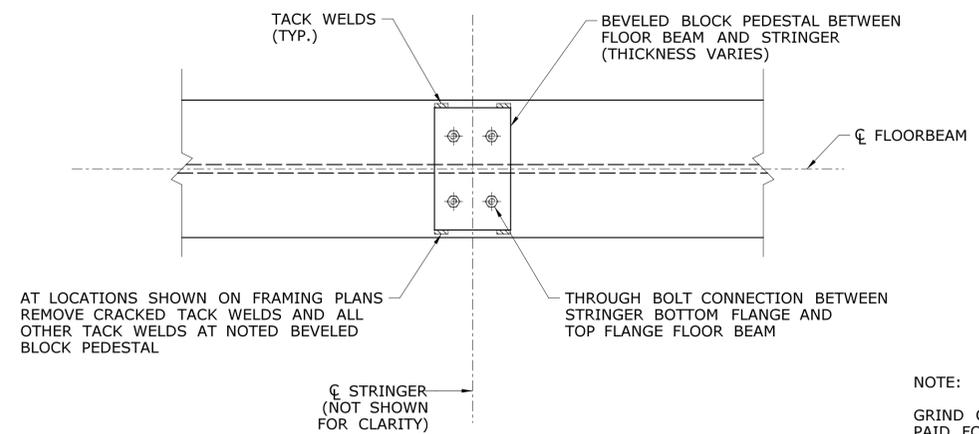


**SECTION VIEW**



**ELEVATION VIEW**

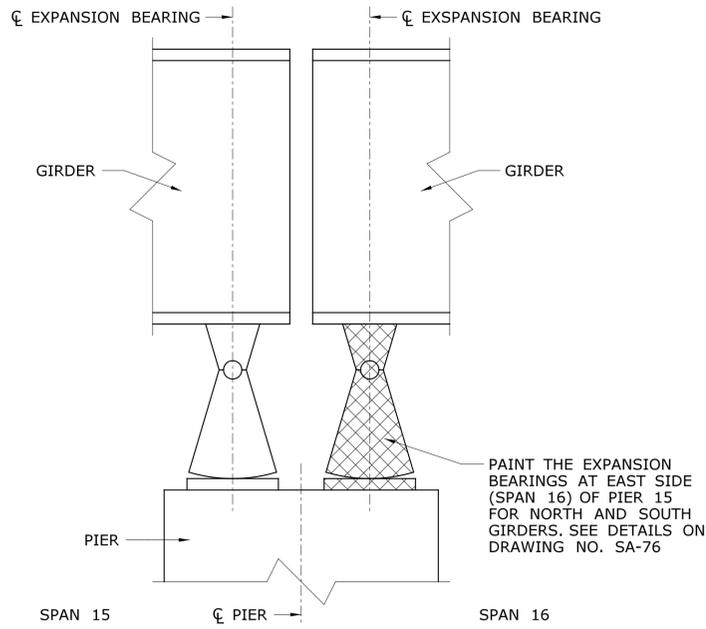
**17B TACK WELD REMOVAL AT TRUSS DIAGONALS**  
**- NORTH TRUSS SPAN 28, DIAGONAL U5-L6 SHOWN**  
SCALE: 3/4" = 1'-0"



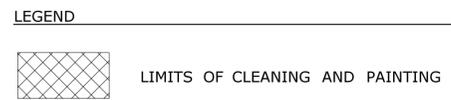
**17C TACK WELD REMOVAL AT BEVELED STEEL BLOCK STRINGER PEDESTAL - AT FLOOR BEAM**  
SCALE: 1" = 1'-0"

NOTE:  
GRIND OUT EXISTING WELDS AS NOTED. PAID FOR UNDER THE ITEM "REPAIR DEFECTIVE WELDS". PAINT AREA OF REMOVED WELD UNDER THE ITEM "LOCALIZED PAINT REMOVAL AND FIELD PAINTING STRUCTURAL STEEL"

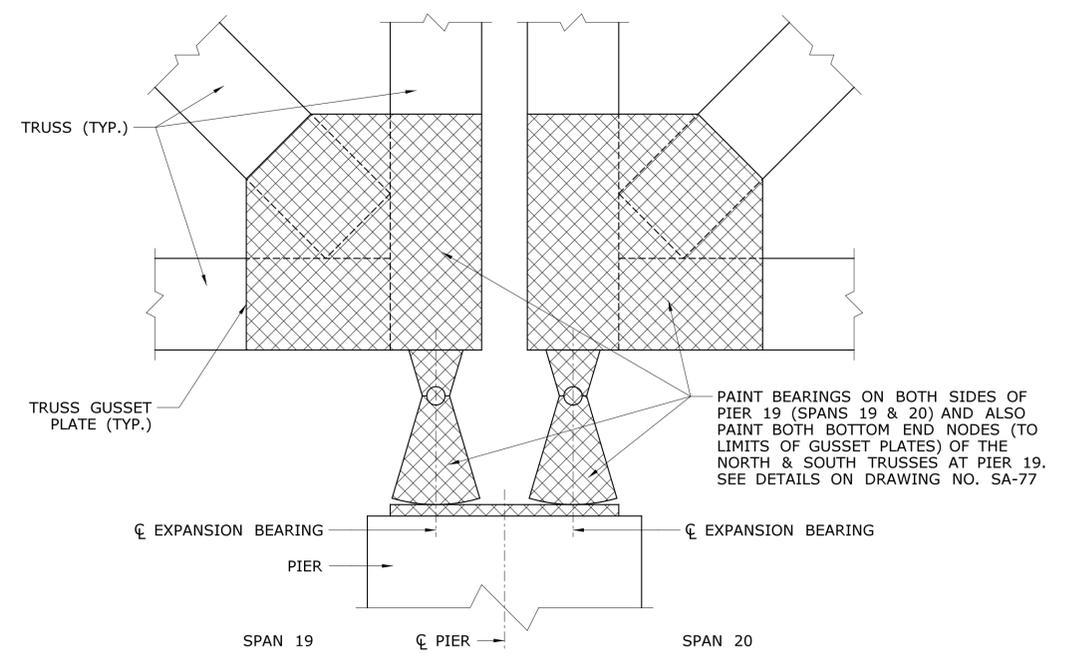
REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	DESIGNER/DRAFTER: <b>C. DAVIS</b>	 STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION Filename: ...SB_MSH_0094_0252_BR_NO_02514A_SRP-20.dgn	SIGNATURE/ BLOCK: 	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b>
				CHECKED BY: <b>M. EGAN</b>		SCALE AS NOTED		 Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	DRAWING TITLE: <b>STEEL REPAIRS REPAIR NO. 20 - 17B-C</b>



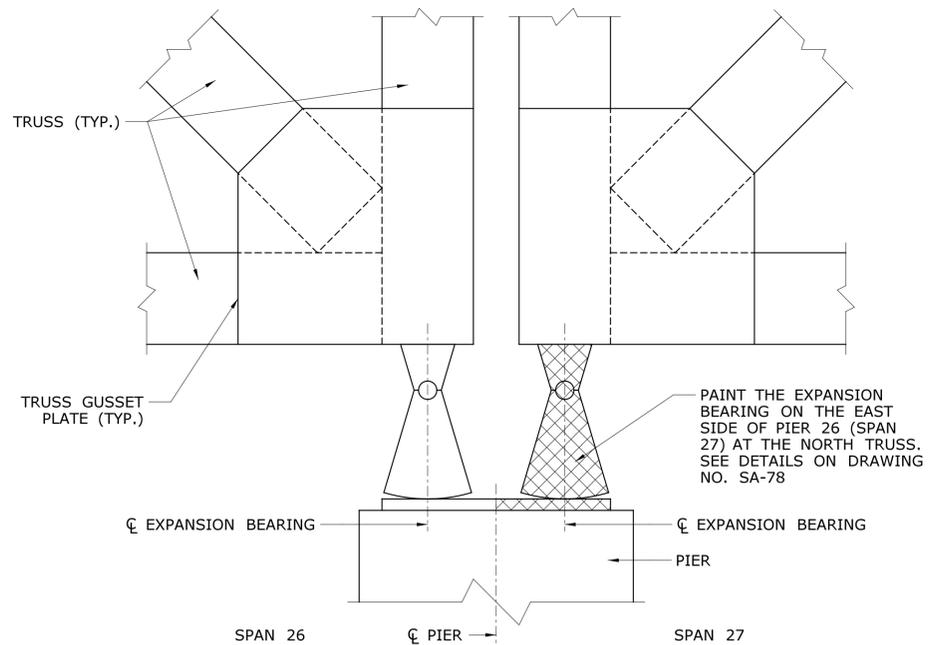
**PIER 15**



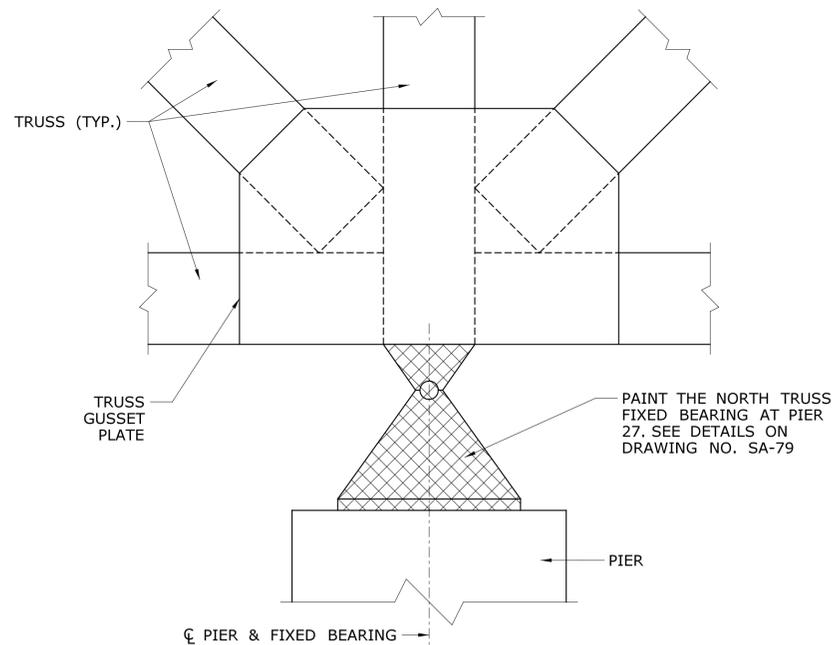
- GENERAL NOTES:**
- STEEL REPAIR NO. 21 CALLS FOR CLEANING AND PAINTING ROCKER BEARINGS AT THE FOLLOWING LOCATIONS:
    - AT PIER 19, THE WESTERN AND EASTERN SIDES (SPANS 19 AND 20 BEARINGS) AT BOTH THE NORTH AND SOUTH TRUSSES.
    - AT PIER 26 WESTERN EXPANSION BEARING (SPAN 27) AT THE NORTH TRUSS.
    - AT THE SINGLE FIXED BEARING AT PIER 27, NORTH TRUSS.
    - AT BOTH EXPANSION BEARINGS AT PIER 15, SPAN 16.
  - LIMITS OF PAINTING SHALL INCLUDE ENTIRE MASONRY PLATE, ROCKERS AND UPPER SHOE CASTING.
  - AT LOCATIONS WHERE THE TRUSS NODES HAVE NOT BEEN DESIGNATED AS BEING CLEANED AND PAINTED, LIMITS SHALL INCLUDE THE BOTTOM OF THE BOTTOM PLATE OF THE BOTTOM TRUSS CHORD WITHIN 1'-0" OF LIMITS OF UPPER SHOE CASTING ALL AROUND.
  - TO BE PAID FOR UNDER THE ITEM "ABRASIVE BLAST CLEANING AND FIELD PAINTING OF BEAM ENDS (SITE NO. 1)".



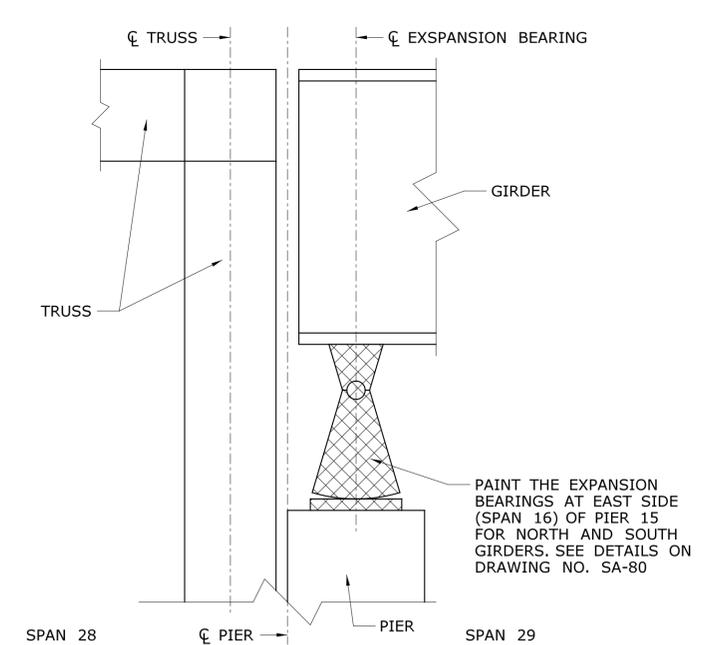
**PIER 19**



**PIER 26**



**PIER 27**



**PIER 28**

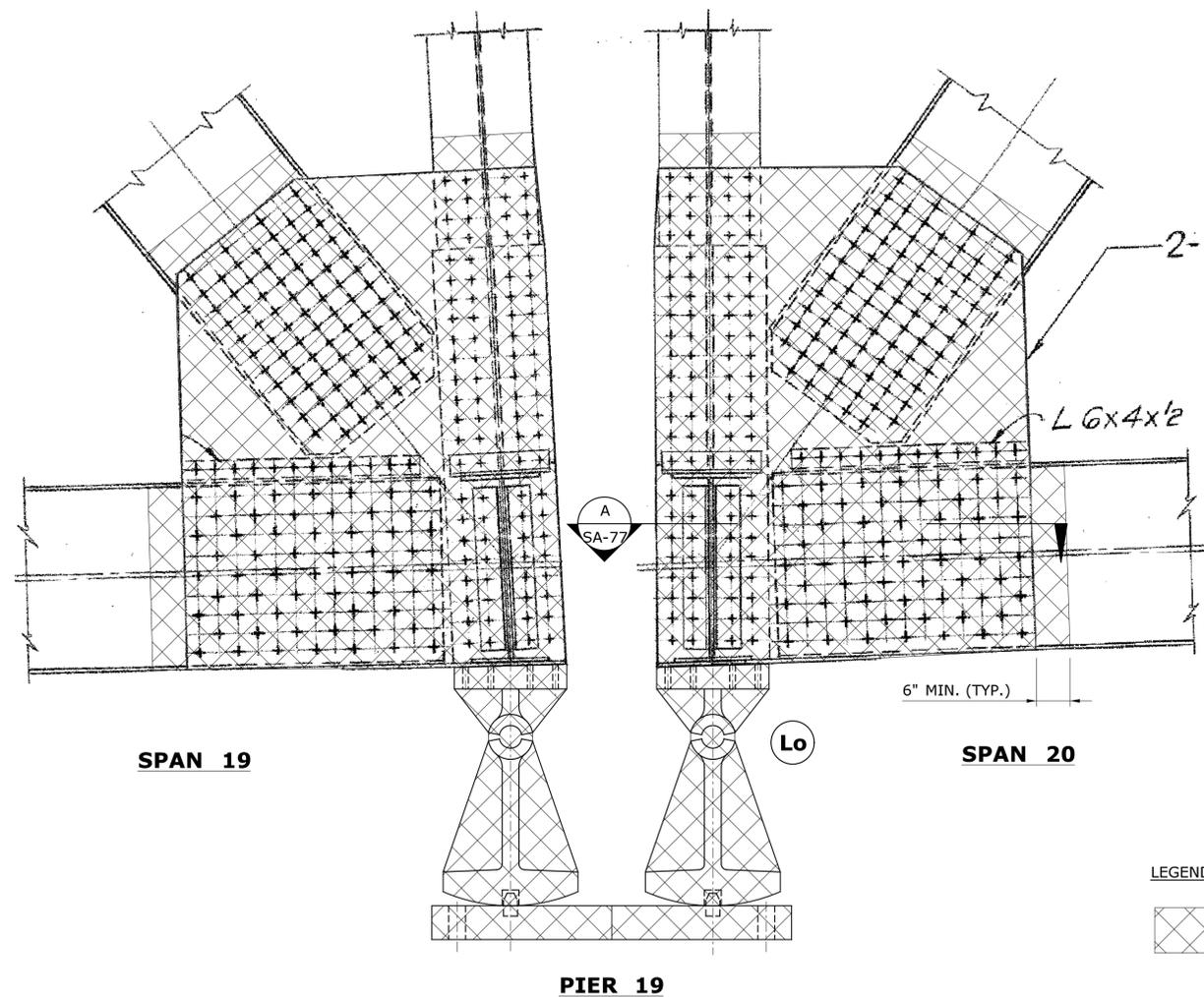
**DEFINED LIMITS OF "ABRASIVE BLAST CLEANING AND FIELD PAINTING OF BEAM ENDS (SITE 1)" AT PIER NOS. 15, 19, 26, 27 AND 28**

21

SCALE: NOT TO SCALE

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: <b>C. DAVIS</b> CHECKED BY: <b>M. EGAN</b>	<b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b>	SIGNATURE/BLOCK: Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-75</b> SHEET NO. <b>04.075</b>
REV. DATE REVISION DESCRIPTION SHEET NO.	Plotted Date: 7/12/2016	SCALE AS NOTED	Filename: ...SB_MSH_0094_0252_BR_NO_02514A_SRP-21-A.dgn	<b>STEEL REPAIRS REPAIR NO. 21</b>			



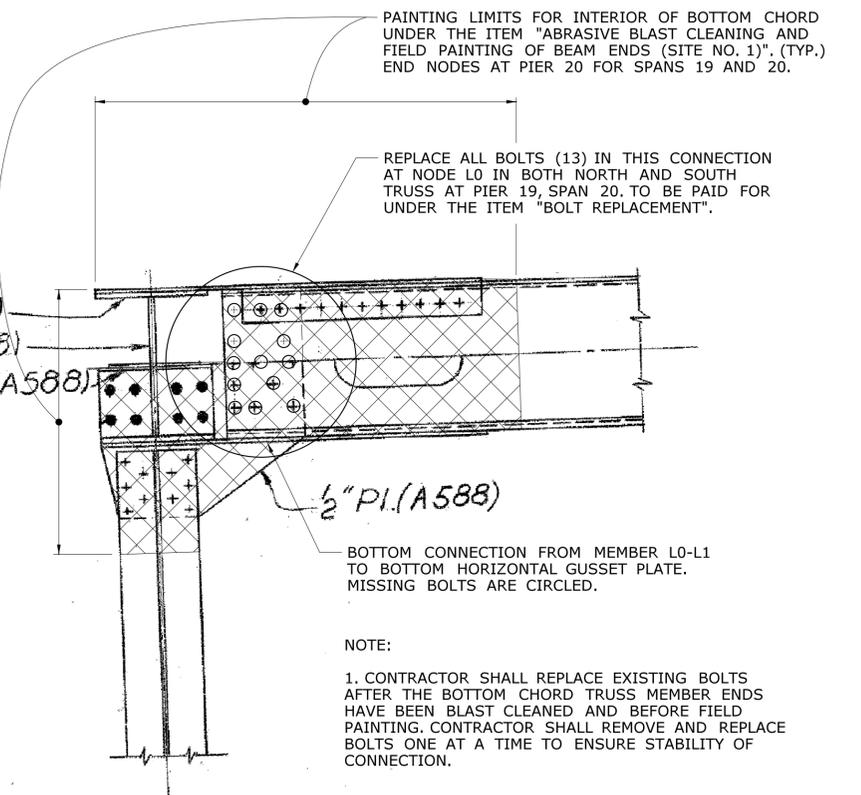


**CLEAN AND PAINT ROCKER BEARING** 21  
SCALE: 3/4" = 1'-0"



GENERAL NOTE:  
1. ADDITIONAL LIMITS OF PAINTING AT PIER 19. TO BE PAID FOR UNDER THE ITEM "ABRASIVE BLAST CLEANING AND FIELD PAINTING OF BEAM ENDS (SITE NO. 1)".

2 Flg. Pls. 20x8 (A588)  
1 Web Pl 24 1/4x18 (A588)  
3/4" Stiff. Pl. (A588)

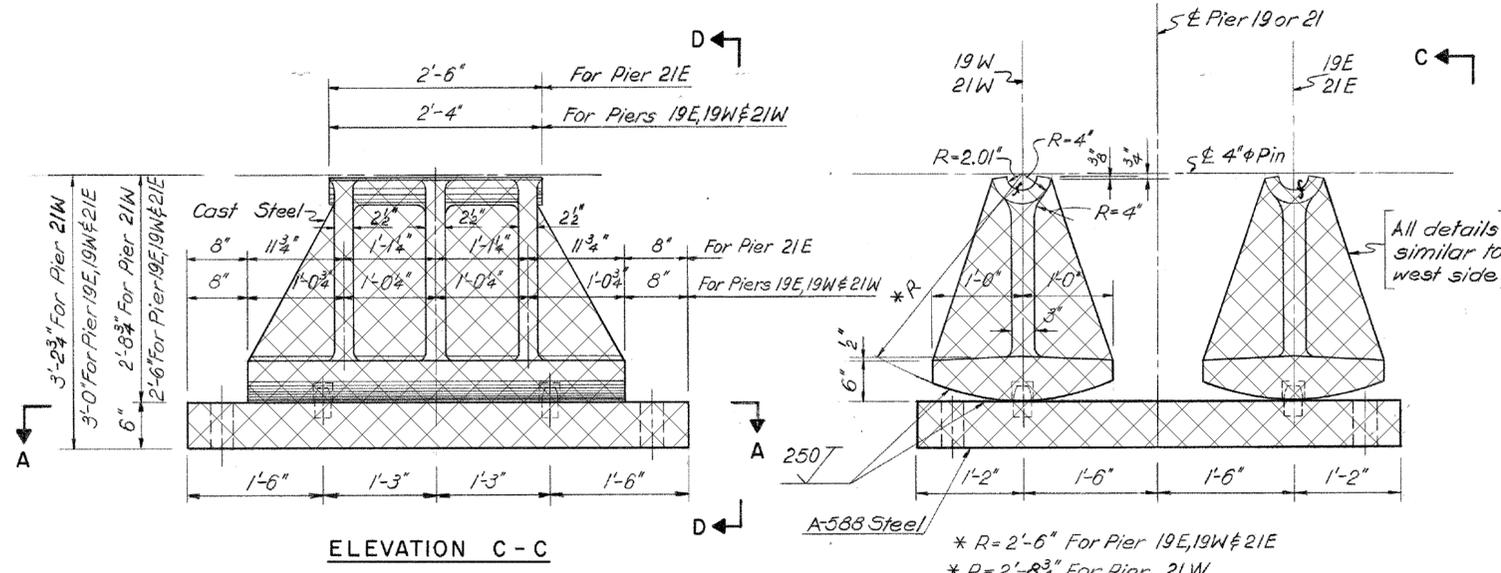


**SECTION A**  
SCALE: 3/4" = 1'-0"

NOTE:  
1. CONTRACTOR SHALL REPLACE EXISTING BOLTS AFTER THE BOTTOM CHORD TRUSS MEMBER ENDS HAVE BEEN BLAST CLEANED AND BEFORE FIELD PAINTING. CONTRACTOR SHALL REMOVE AND REPLACE BOLTS ONE AT A TIME TO ENSURE STABILITY OF CONNECTION.

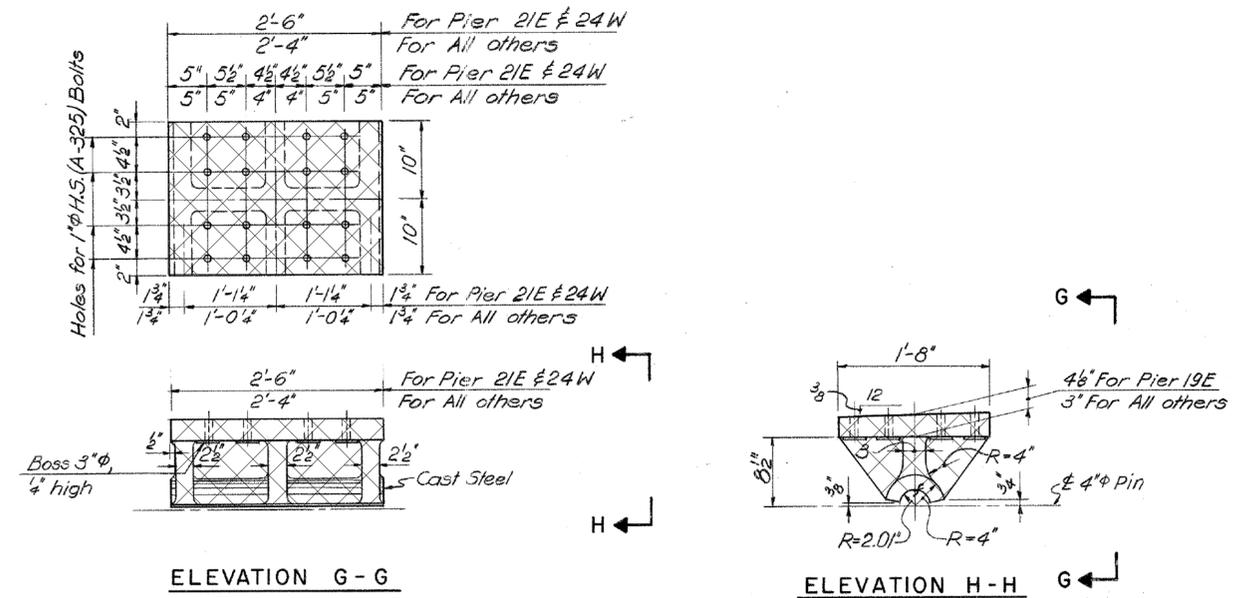
THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: <b>C. DAVIS</b> CHECKED BY: <b>M. EGAN</b> SCALE AS NOTED	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION Filename: ...SB_MSH_0094_0252_BR_NO_02514A_SRP-21-C.dgn	SIGNATURE/BLOCK:  Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-77</b> SHEET NO. <b>04.077</b>
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016			

For upper casting details see this sheet



ELEVATION C-C

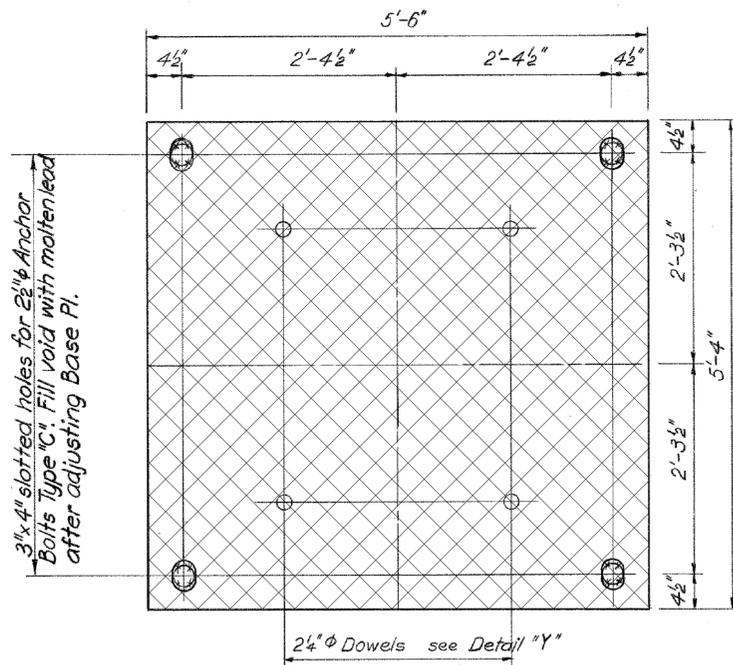
ELEVATION D-D



ELEVATION G-G

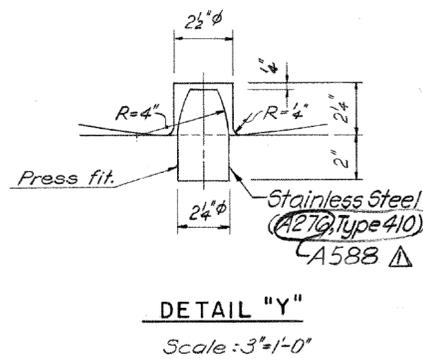
ELEVATION H-H

UPPER SHOE CASTING  
PIER 26



SECTION A-A

EXPANSION SHOE  
PIER 26



DETAIL "Y"  
Scale: 3"=1'-0"

LEGEND



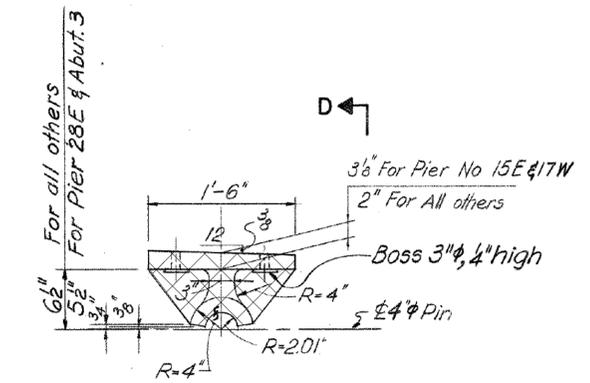
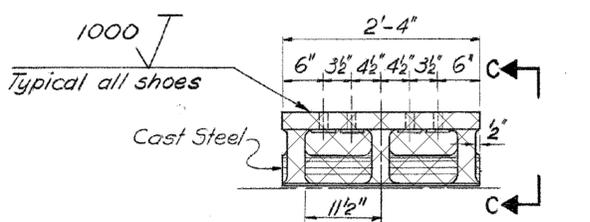
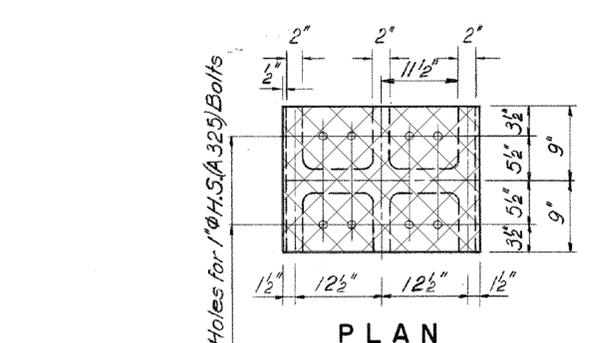
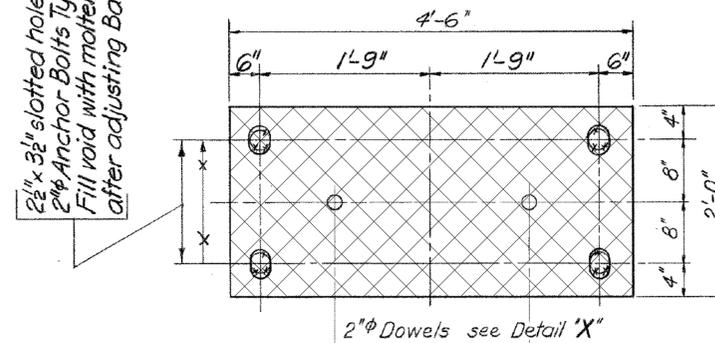
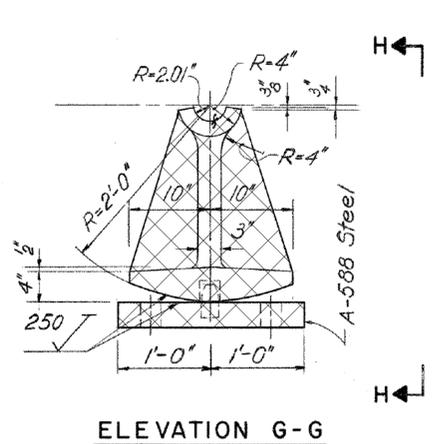
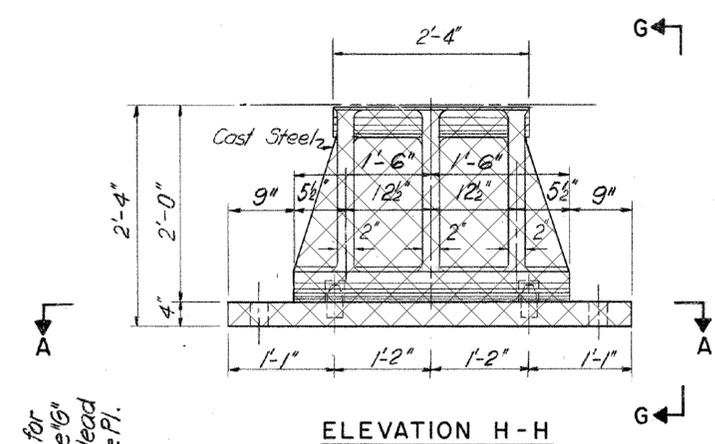
NOTE:

- LIMIT OF PAINTING SHALL INCLUDE MASONRY BASE PLATE, UPPER SHOE AND BOTTOM PLATE OF BOTTOM CHORD WITHIN 1'-0" OF UPPER SHOE, ALL AROUND. TO BE PAID FOR UNDER THE ITEM "ABRASIVE BLAST CLEANING AND FIELD PAINTING OF BEAM ENDS (SITE NO. 1)".

CLEAN & PAINT ROCKER BEARINGS 21  
SCALE: 1"=1'-0"

REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	DESIGNER/DRAFTER: <b>C. DAVIS</b>	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p>	<p>Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451</p>	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b>
				CHECKED BY: <b>M. EGAN</b>				SCALE AS NOTED	FILENAME: ...SB_MSH_0094_0252_BR_NO_02514A_SRP-21-D.dgn





**UPPER SHOE CASTING**  
PIER 28

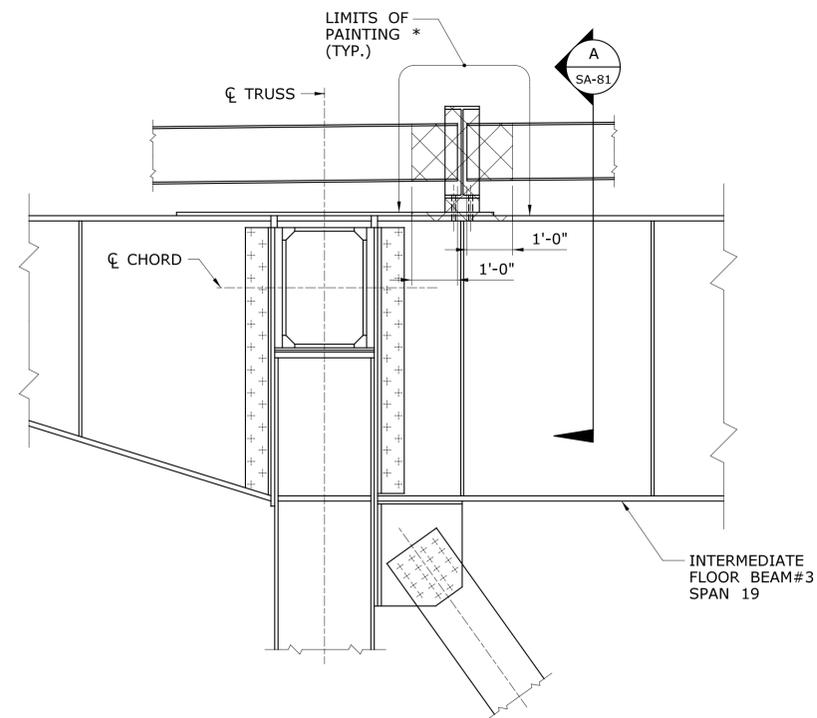
**EXPANSION SHOE**  
PIER 28

LEGEND  
 LIMITS OF CLEANING AND PAINTING

NOTE:  
 1. LIMIT OF PAINTING SHALL INCLUDE MASONRY BASE PLATE, UPPER SHOE AND BOTTOM PLATE OF GIRDER WITHIN 1'-0" OF UPPER SHOE, ALL AROUND. TO BE PAID FOR UNDER THE ITEM "ABRASIVE BLAST CLEANING AND FIELD PAINTING OF BEAM ENDS (SITE NO. 1)".

**CLEAN & PAINT EXPANSION BEARINGS** 21  
 SCALE: 1"=1'-0"

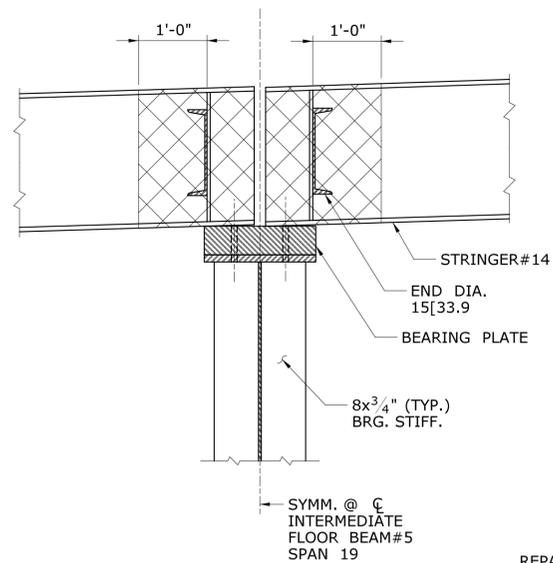
REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	DESIGNER/DRAFTER: <b>C. DAVIS</b>	 <b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b>	SIGNATURE/ BLOCK:  Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b>
				CHECKED BY: <b>M. EGAN</b>			SCALE AS NOTED	FILENAME: ...\\SB_MSH_0094_0252_BR_NO_02514A_SRP-21-F.dgn	DRAWING TITLE: <b>STEEL REPAIRS REPAIR NO. 21</b>



\* LIMITS OF CLEANING AND PAINTING DIAPHRAGMS, STRINGER ENDS, BEARING PLATE AND TOP OF TOP FLANGE OF FLOOR BEAM.

**23** PAINTING STRINGER AND STRINGER BEARING PLATE AT INTERMEDIATE FLOOR BEAM (STRINGER END SUPPORT)  
SCALE: 1/2" = 1'-0"

LEGEND



**A** SECTION A  
SCALE: 3/4" = 1'-0"

REPAIR NOTE:  
PAINTING LIMITS SHOWN, OR AS DIRECTED BY THE ENGINEER TO BE PAID FOR UNDER ITEM "ABRASIVE BLAST CLEANING AND FIELD PAINTING BEAM ENDS (SITE NO. 1).

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 7/12/2016

DESIGNER/DRAFTER:  
**C. DAVIS**  
CHECKED BY:  
**M. EGAN**  
SCALE AS NOTED

STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION

Filename: ...SB\_MSH\_0094\_0252\_BR\_NO\_02514A\_SRP-23.dgn

SIGNATURE/BLOCK:  
  
Cardinal Engineering Associates, Inc.  
3 Colony Street  
Meriden, CT 06451

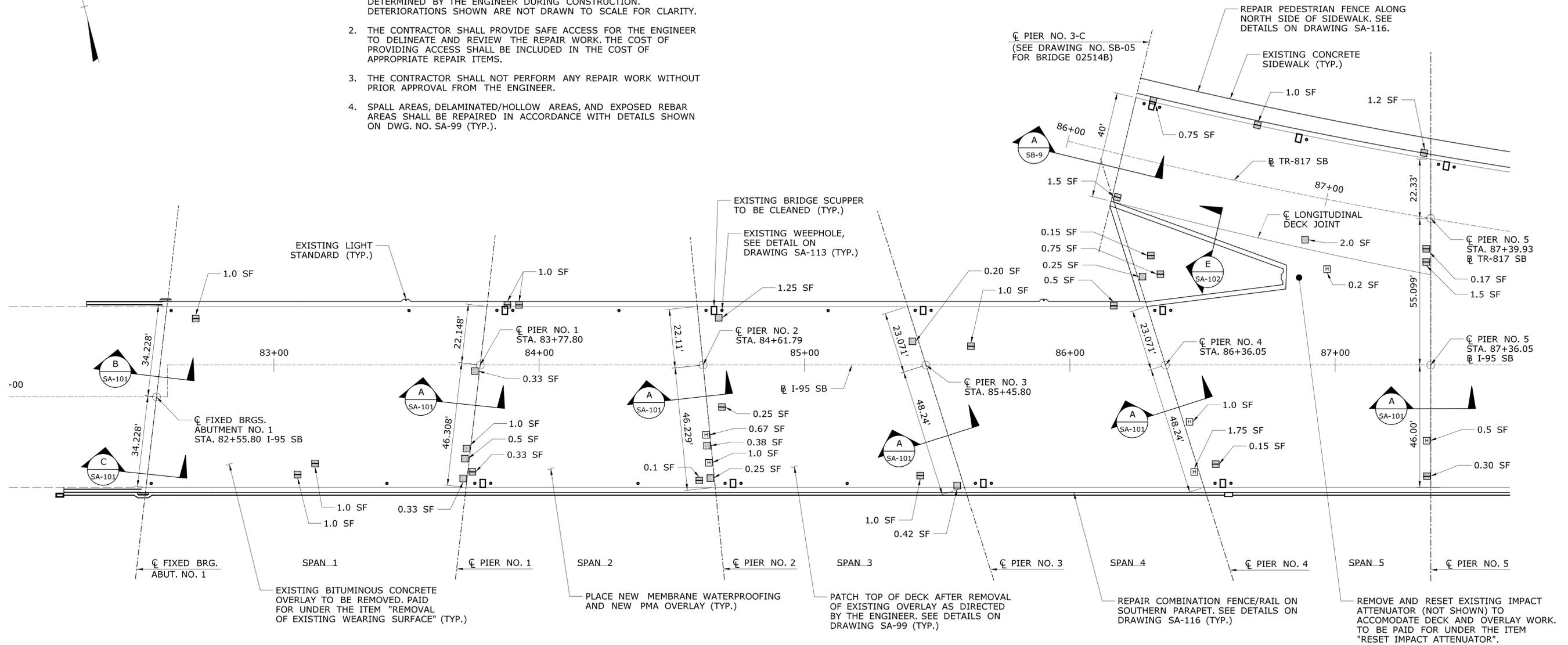
PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

TOWN:  
**NEW LONDON/GROTON**  
DRAWING TITLE:  
**STEEL REPAIRS REPAIR NO. 23**

PROJECT NO.  
**94-252**  
DRAWING NO.  
**SA-81**  
SHEET NO.  
**04.081**

DECK REPAIR NOTES:

1. THE DECK DETERIORATION AND REPAIR DIMENSIONS ARE BASED ON LIMITED FIELD OBSERVATIONS AND BRIDGE SAFETY INSPECTION REPORT (NOVEMBER 22, 2013). THE INFORMATION IS INTENDED TO BE USED AS A GUIDE AND DOES NOT NECESSARILY REFLECT THE CURRENT CONDITION OF THE STRUCTURE. THE EXACT LOCATION AND LIMITS OF DETERIORATED CONCRETE TO BE REPAIRED SHALL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION. DETERIORATIONS SHOWN ARE NOT DRAWN TO SCALE FOR CLARITY.
2. THE CONTRACTOR SHALL PROVIDE SAFE ACCESS FOR THE ENGINEER TO DELINEATE AND REVIEW THE REPAIR WORK. THE COST OF PROVIDING ACCESS SHALL BE INCLUDED IN THE COST OF APPROPRIATE REPAIR ITEMS.
3. THE CONTRACTOR SHALL NOT PERFORM ANY REPAIR WORK WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
4. SPALL AREAS, DELAMINATED/HOLLOW AREAS, AND EXPOSED REBAR AREAS SHALL BE REPAIRED IN ACCORDANCE WITH DETAILS SHOWN ON DWG. NO. SA-99 (TYP.).



GENERAL NOTE:

1. FOR LIGHT STANDARD REPLACEMENT/REPAIR DETAILS SEE SUBSET 08 - ILLUMINATION.

LEGEND OF UNDERSIDE DECK DETERIORATION

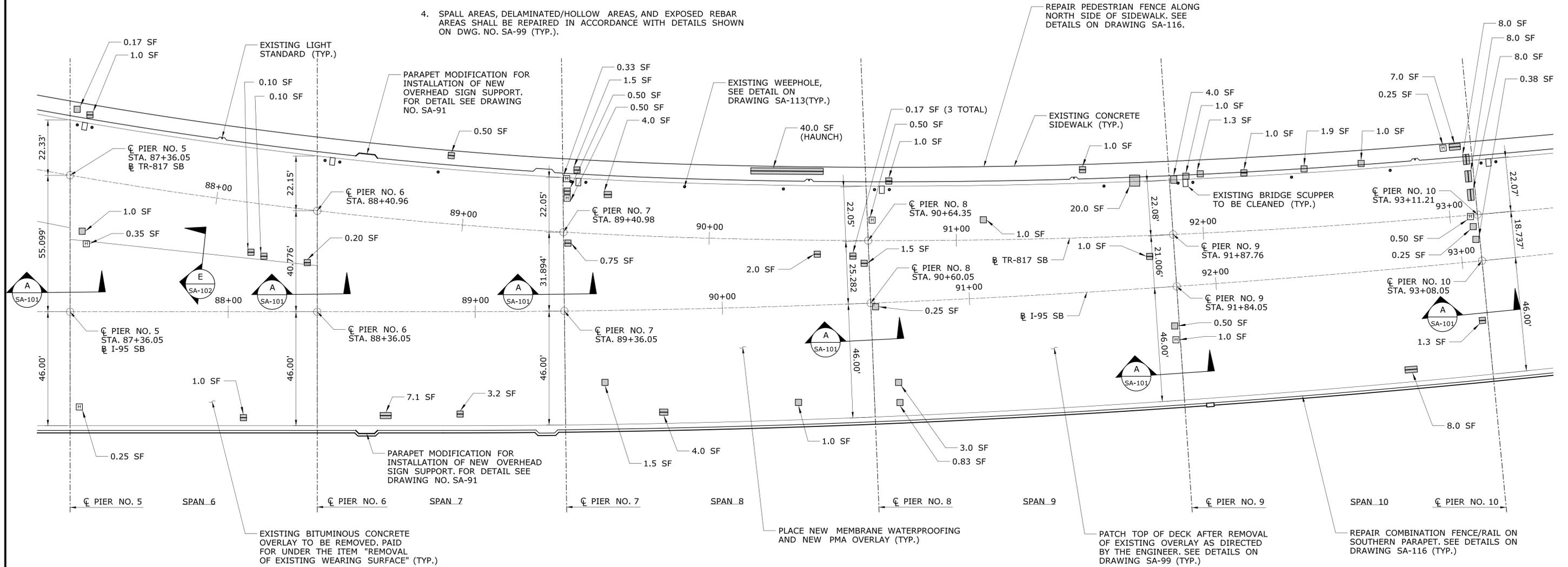
- ☐ - DELAMINATED/HOLLOW CONCRETE
- - CONCRETE SPALL
- ▣ - CONCRETE SPALL WITH EXPOSED REINFORCEMENT
- SF - SQUARE FEET
- EA - EACH

DECK PLAN SPANS 1-5  
SCALE: 1"= 20'-0"

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: <b>S. SLATER</b> CHECKED BY: <b>M. EGAN</b>	<b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b>	SIGNATURE/BLOCK: Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-82</b> SHEET NO. <b>04.082</b>
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	Filename: ...SB_MSH_0094_0252_BR_NO_02514A_DCK-1.dgn	DRAWING TITLE: <b>DECK PLAN SPANS 1 - 5</b>	

DECK REPAIR NOTES:

1. THE DECK DETERIORATION AND REPAIR DIMENSIONS ARE BASED ON LIMITED FIELD OBSERVATIONS AND BRIDGE SAFETY INSPECTION REPORT (NOVEMBER 22, 2013). THE INFORMATION IS INTENDED TO BE USED AS A GUIDE AND DOES NOT NECESSARILY REFLECT THE CURRENT CONDITION OF THE STRUCTURE. THE EXACT LOCATION AND LIMITS OF DETERIORATED CONCRETE TO BE REPAIRED SHALL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION. DETERIORATIONS SHOWN ARE NOT DRAWN TO SCALE FOR CLARITY.
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4. SPALL AREAS, DELAMINATED/HOLLOW AREAS, AND EXPOSED REBAR AREAS SHALL BE REPAIRED IN ACCORDANCE WITH DETAILS SHOWN ON DWG. NO. SA-99 (TYP.).



GENERAL NOTE:

1. FOR LIGHT STANDARD REPLACEMENT/REPAIR DETAILS SEE SUBSET 08 - ILLUMINATION.

LEGEND OF UNDERSIDE DECK DETERIORATION

- ☐ - DELAMINATED/HOLLOW CONCRETE
- - CONCRETE SPALL
- ▣ - CONCRETE SPALL WITH EXPOSED REINFORCEMENT
- SF - SQUARE FEET
- EA - EACH

DECK PLAN SPANS 6-10  
SCALE: 1"= 20'-0"

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date: 7/12/2016

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DESIGNER/DRAFTER:  
**S. SLATER**

CHECKED BY:  
**M. EGAN**

SCALE AS NOTED



SIGNATURE/BLOCK:

Cardinal Engineering Associates, Inc.  
3 Colony Street  
Meriden, CT 06451

PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

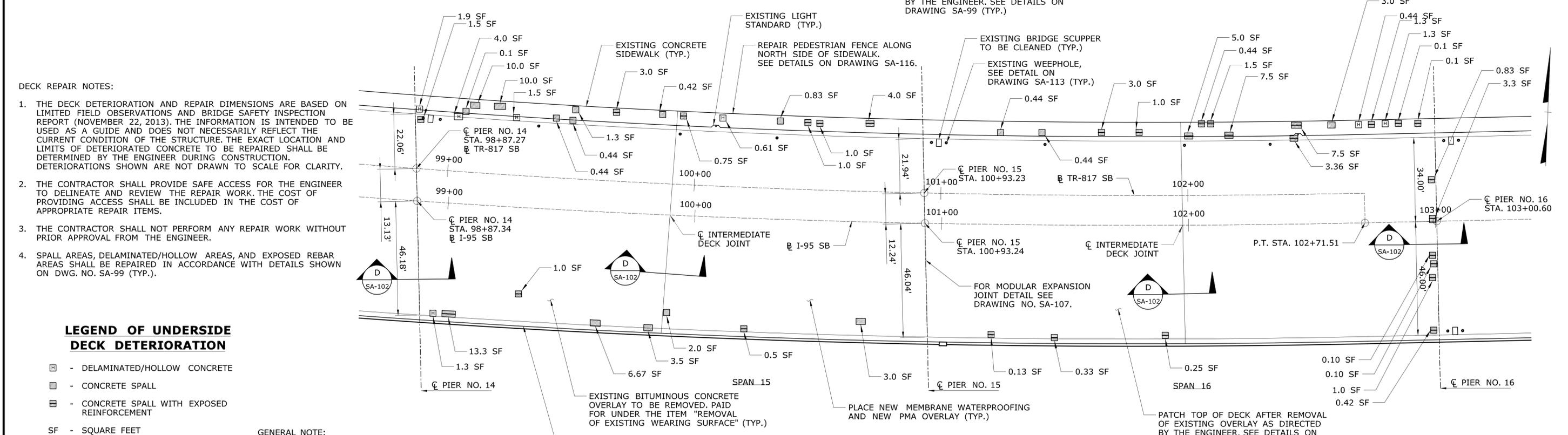
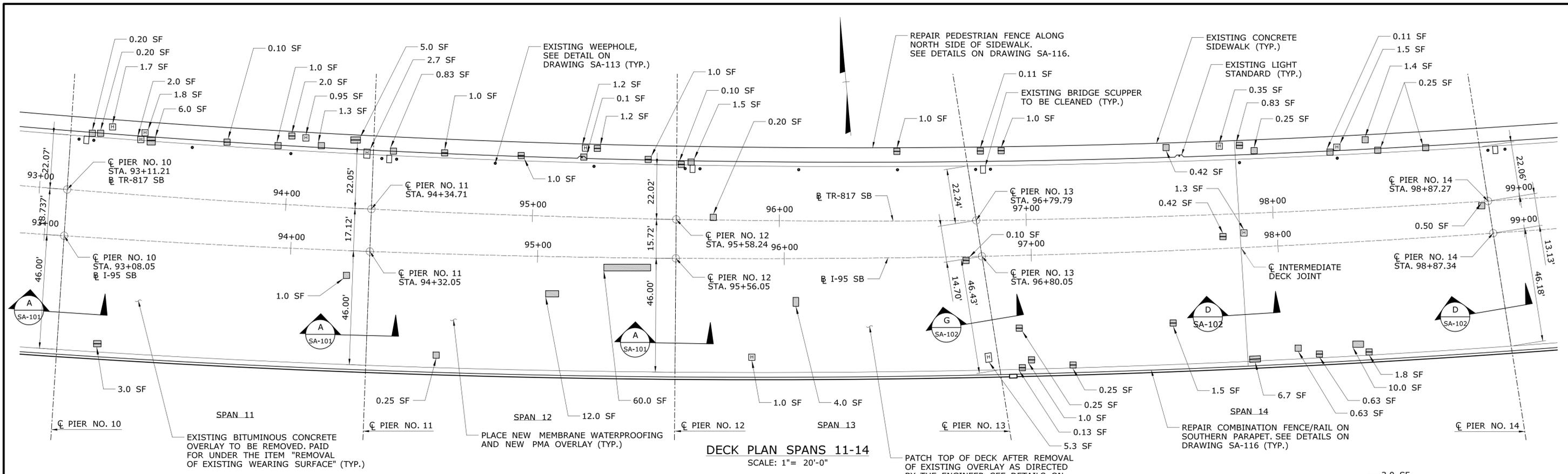
TOWN:  
**NEW LONDON/GROTON**

DRAWING TITLE:  
**DECK PLAN SPANS 6 - 10**

PROJECT NO.  
**94-252**

DRAWING NO.  
**SA-83**

SHEET NO.  
**04.083**



**DECK REPAIR NOTES:**

1. THE DECK DETERIORATION AND REPAIR DIMENSIONS ARE BASED ON LIMITED FIELD OBSERVATIONS AND BRIDGE SAFETY INSPECTION REPORT (NOVEMBER 22, 2013). THE INFORMATION IS INTENDED TO BE USED AS A GUIDE AND DOES NOT NECESSARILY REFLECT THE CURRENT CONDITION OF THE STRUCTURE. THE EXACT LOCATION AND LIMITS OF DETERIORATED CONCRETE TO BE REPAIRED SHALL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION. DETERIORATIONS SHOWN ARE NOT DRAWN TO SCALE FOR CLARITY.
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3. THE CONTRACTOR SHALL NOT PERFORM ANY REPAIR WORK WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
4. SPALL AREAS, DELAMINATED/HOLLOW AREAS, AND EXPOSED REBAR AREAS SHALL BE REPAIRED IN ACCORDANCE WITH DETAILS SHOWN ON DWG. NO. SA-99 (TYP.).

**LEGEND OF UNDERSIDE DECK DETERIORATION**

- DELAMINATED/HOLLOW CONCRETE
- CONCRETE SPALL
- CONCRETE SPALL WITH EXPOSED REINFORCEMENT
- SF - SQUARE FEET
- EA - EACH

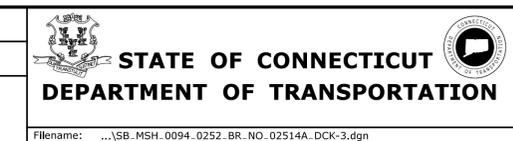
**GENERAL NOTE:**

1. FOR LIGHT STANDARD REPLACEMENT/REPAIR DETAILS SEE SUBSET 08 - ILLUMINATION.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Plotted Date: 7/12/2016

DESIGNER/DRAFTER:  
**S. SLATER**  
CHECKED BY:  
**M. EGAN**  
SCALE AS NOTED

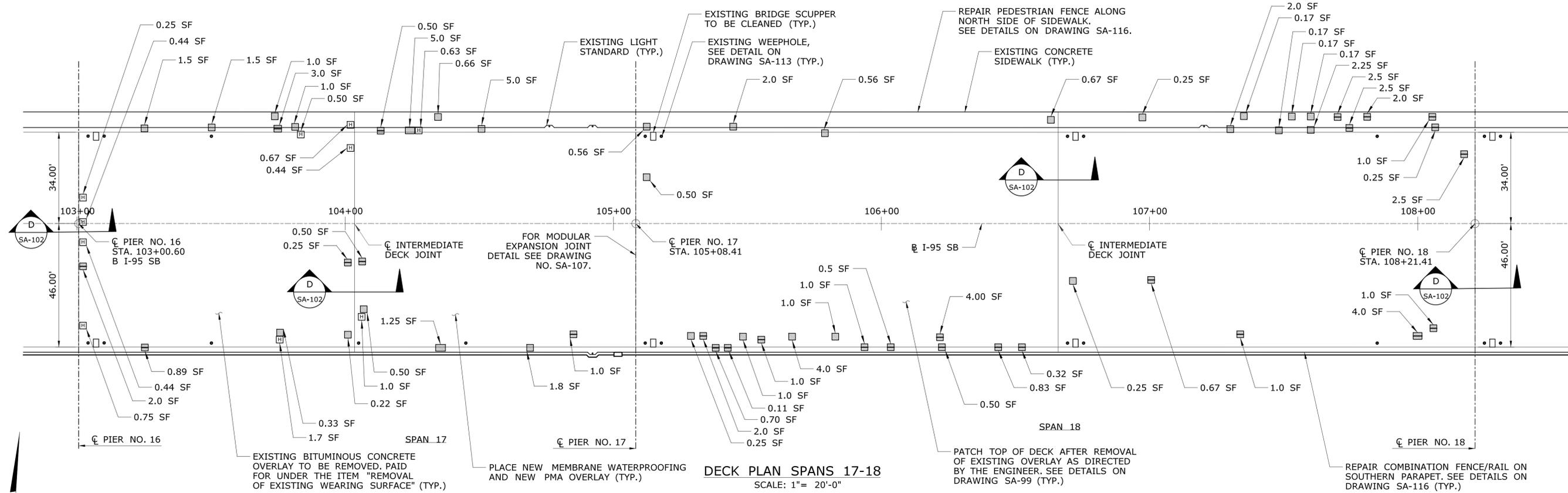


SIGNATURE/BLOCK:  
  
Cardinal Engineering Associates, Inc.  
3 Colony Street  
Meriden, CT 06451

PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

TOWN:  
**NEW LONDON/GROTON**  
DRAWING TITLE:  
**DECK PLAN SPANS 11 - 16**

PROJECT NO.  
**94-252**  
DRAWING NO.  
**SA-84**  
SHEET NO.  
**04.084**



DECK PLAN SPANS 17-18  
SCALE: 1" = 20'-0"

DECK REPAIR NOTES:

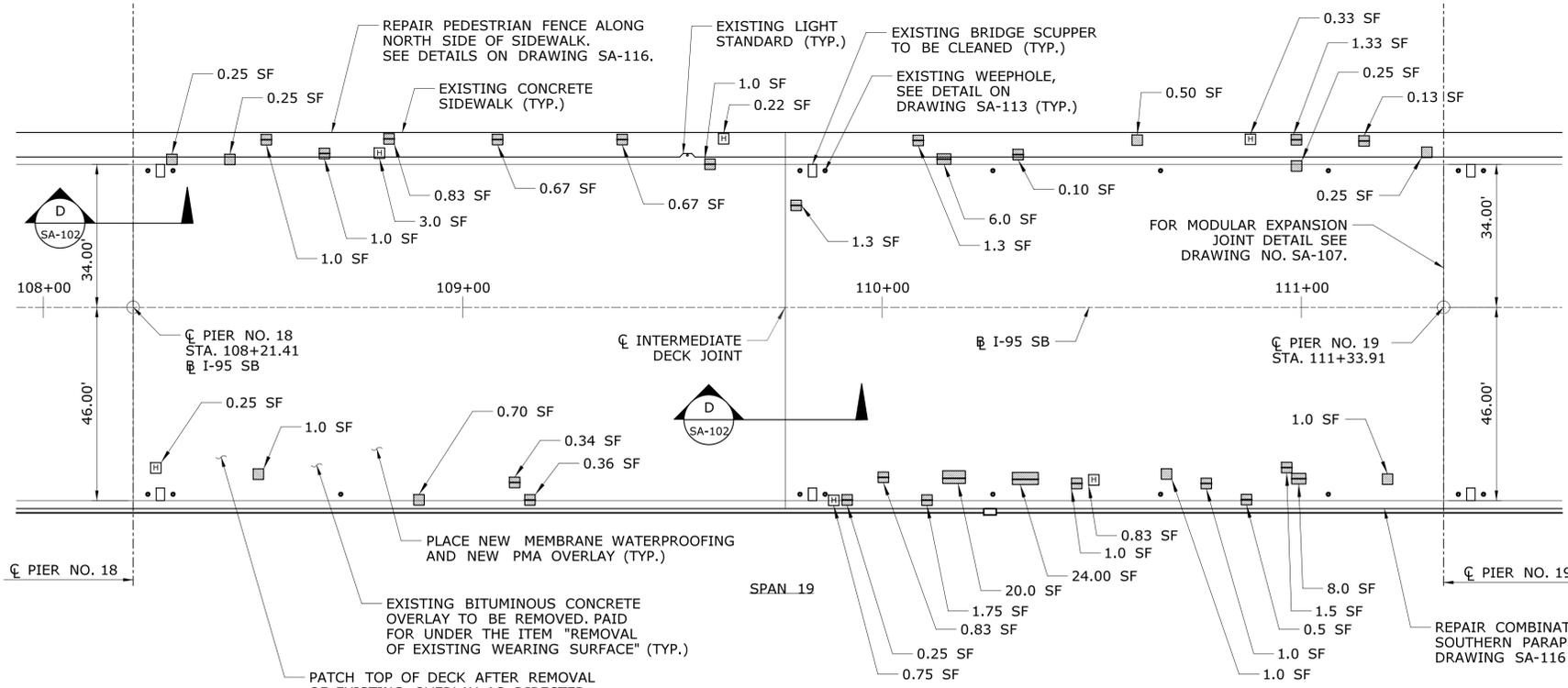
1. THE DECK DETERIORATION AND REPAIR DIMENSIONS ARE BASED ON LIMITED FIELD OBSERVATIONS AND BRIDGE SAFETY INSPECTION REPORT (NOVEMBER 22, 2013). THE INFORMATION IS INTENDED TO BE USED AS A GUIDE AND DOES NOT NECESSARILY REFLECT THE CURRENT CONDITION OF THE STRUCTURE. THE EXACT LOCATION AND LIMITS OF DETERIORATED CONCRETE TO BE REPAIRED SHALL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION. DETERIORATIONS SHOWN ARE NOT DRAWN TO SCALE FOR CLARITY.
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4. SPALL AREAS, DELAMINATED/HOLLOW AREAS, AND EXPOSED REBAR AREAS SHALL BE REPAIRED IN ACCORDANCE WITH DETAILS SHOWN ON DWG. NO. SA-99 (TYP.).

LEGEND OF UNDERSIDE DECK DETERIORATION

- ☐ - DELAMINATED/HOLLOW CONCRETE
- ☐ - CONCRETE SPALL
- ☐ - CONCRETE SPALL WITH EXPOSED REINFORCEMENT
- SF - SQUARE FEET
- EA - EACH

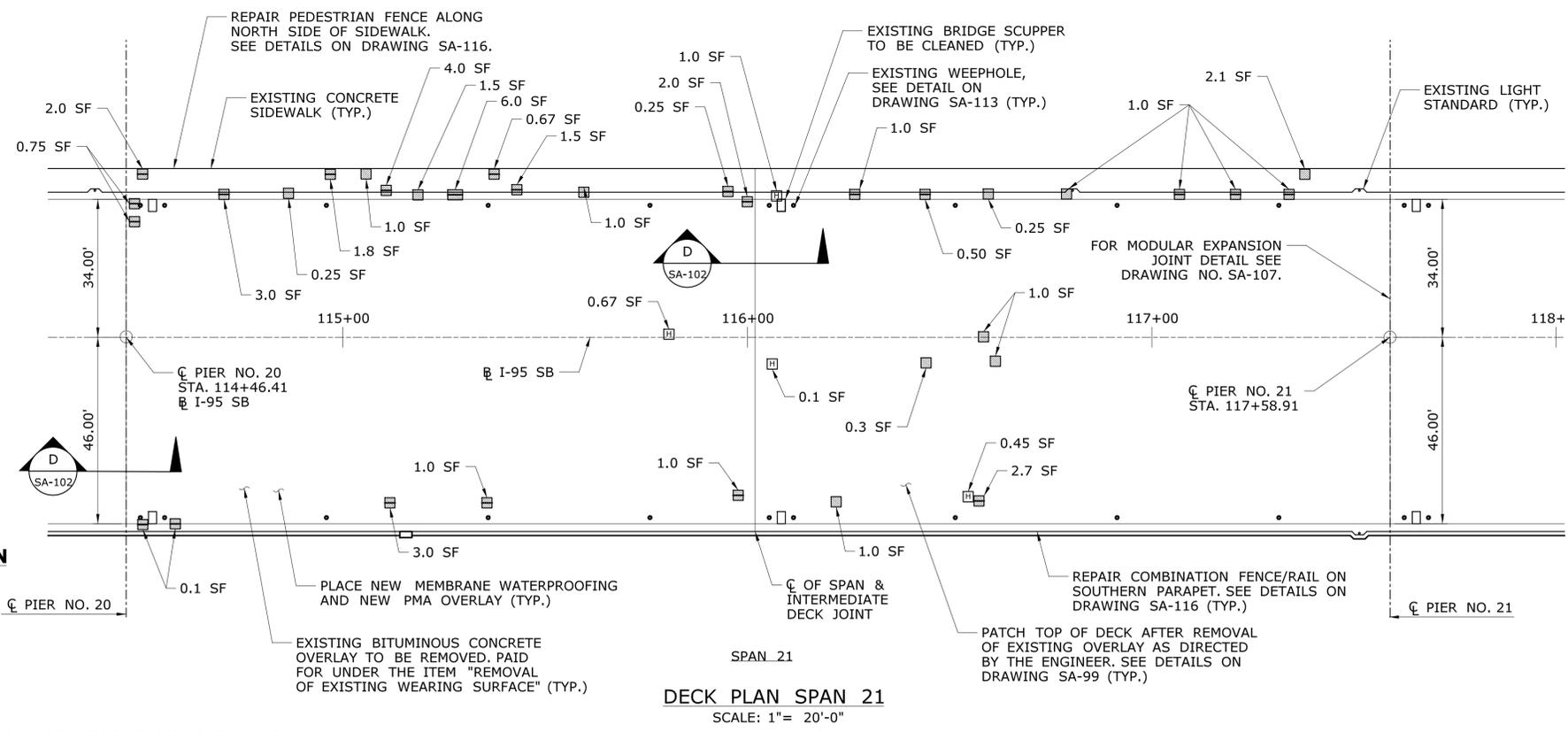
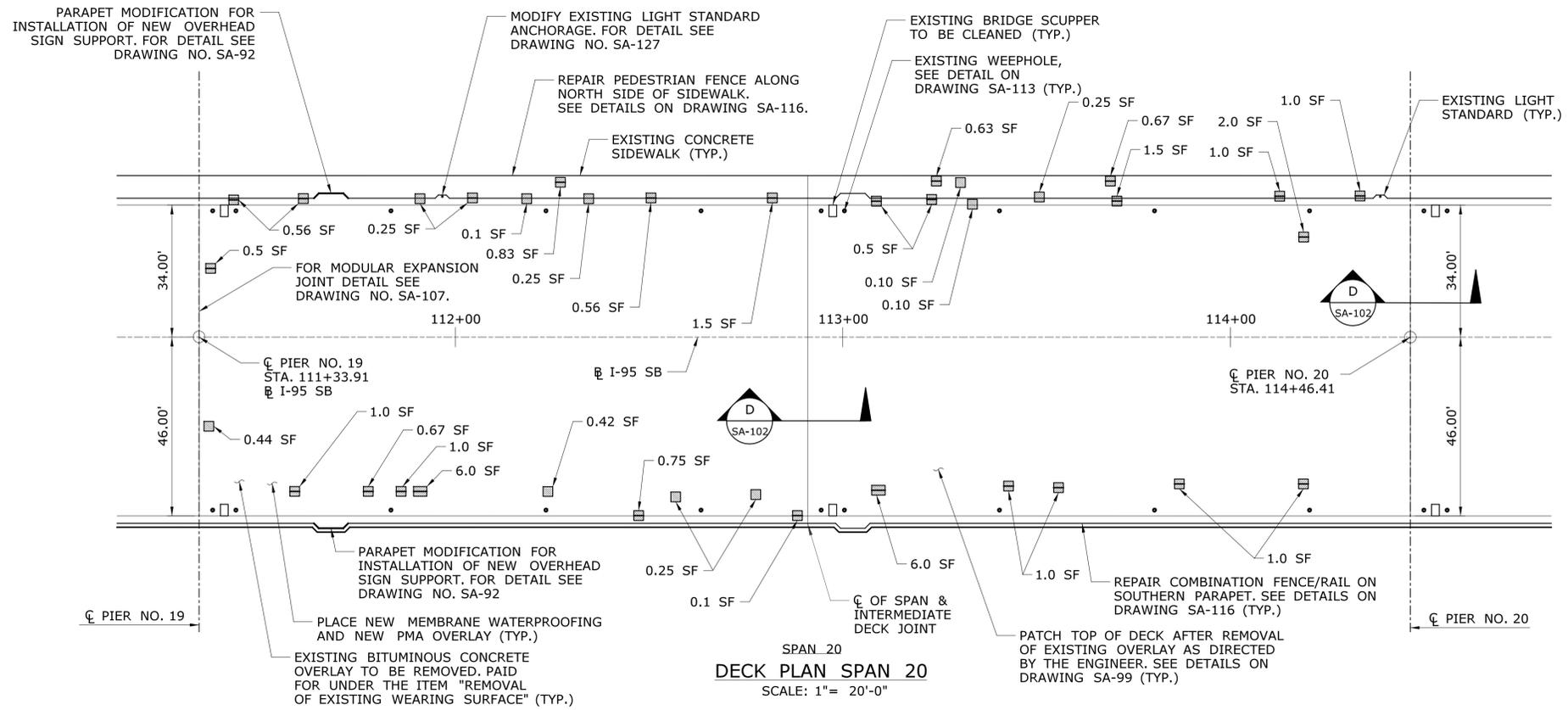
GENERAL NOTE:

1. FOR LIGHT STANDARD REPLACEMENT/REPAIR DETAILS SEE SUBSET 08 - ILLUMINATION.



DECK PLAN SPAN 19  
SCALE: 1" = 20'-0"

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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	Filename: ..._SB_MSH_0094_0252_BR_NO_02514A_DCK-4.dgn	<b>DECK PLAN SPANS 17 - 19</b>	



- DECK REPAIR NOTES:
1. THE DECK DETERIORATION AND REPAIR DIMENSIONS ARE BASED ON LIMITED FIELD OBSERVATIONS AND BRIDGE SAFETY INSPECTION REPORT (NOVEMBER 22, 2013). THE INFORMATION IS INTENDED TO BE USED AS A GUIDE AND DOES NOT NECESSARILY REFLECT THE CURRENT CONDITION OF THE STRUCTURE. THE EXACT LOCATION AND LIMITS OF DETERIORATED CONCRETE TO BE REPAIRED SHALL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION. DETERIORATIONS SHOWN ARE NOT DRAWN TO SCALE FOR CLARITY.
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**LEGEND OF UNDERSIDE DECK DETERIORATION**

- ☐ - DELAMINATED/HOLLOW CONCRETE
- ☐ - CONCRETE SPALL
- ☐ - CONCRETE SPALL WITH EXPOSED REINFORCEMENT
- SF - SQUARE FEET
- EA - EACH

GENERAL NOTE:  
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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016			

**LEGEND OF UNDERSIDE DECK DETERIORATION**

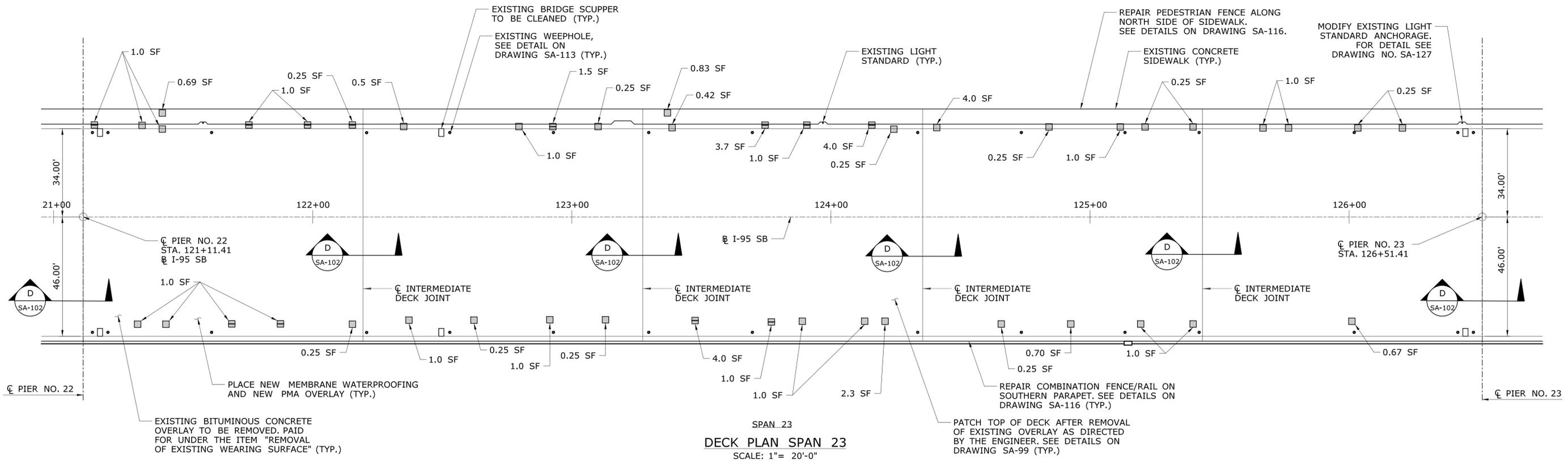
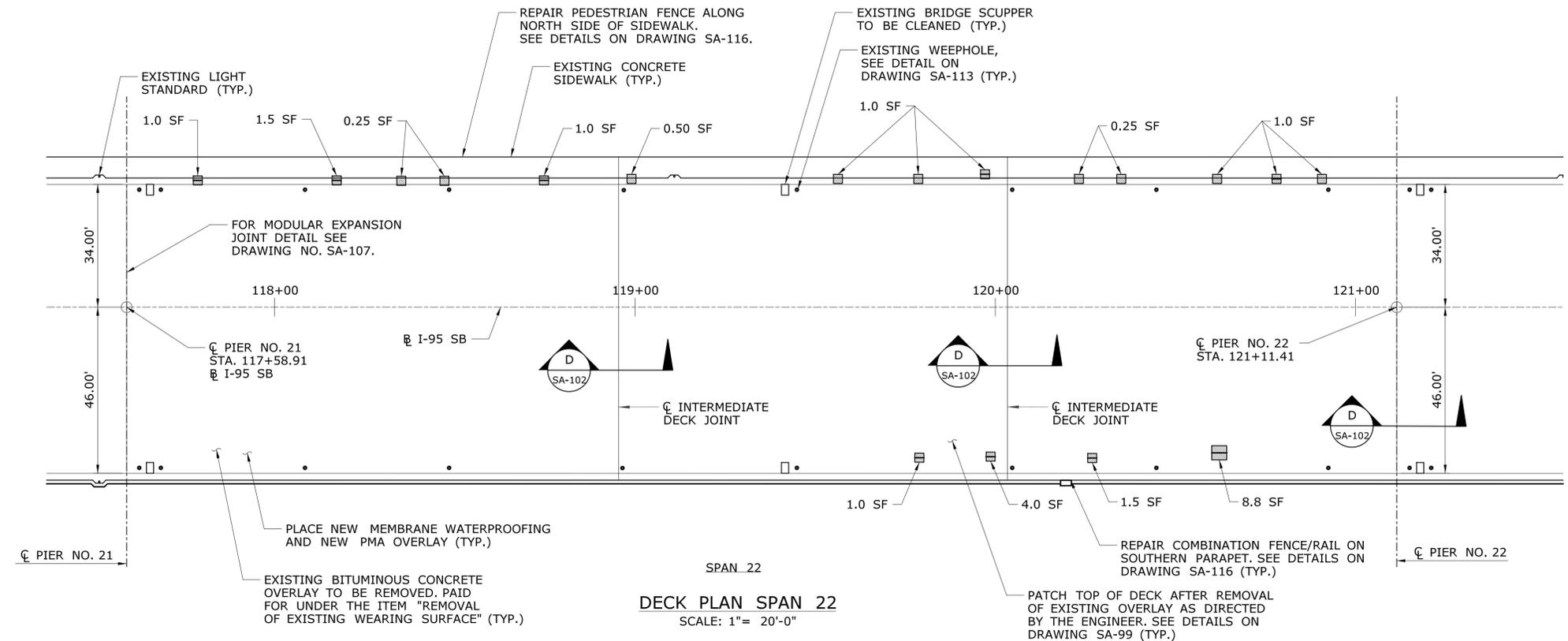
- ☐ - DELAMINATED/HOLLOW CONCRETE
- - CONCRETE SPALL
- ▣ - CONCRETE SPALL WITH EXPOSED REINFORCEMENT
- SF - SQUARE FEET
- EA - EACH

**DECK REPAIR NOTES:**

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**GENERAL NOTE:**

1. FOR LIGHT STANDARD REPLACEMENT/REPAIR DETAILS SEE SUBSET 08 - ILLUMINATION.



REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	DESIGNER/DRAFTER: <b>S. SLATER</b>	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	SIGNATURE/BLOCK:  Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b>
				CHECKED BY: <b>M. EGAN</b>		SCALE AS NOTED		DRAWING NO. <b>SA-87</b>	SHEET NO. <b>04.087</b>

**LEGEND OF UNDERSIDE DECK DETERIORATION**

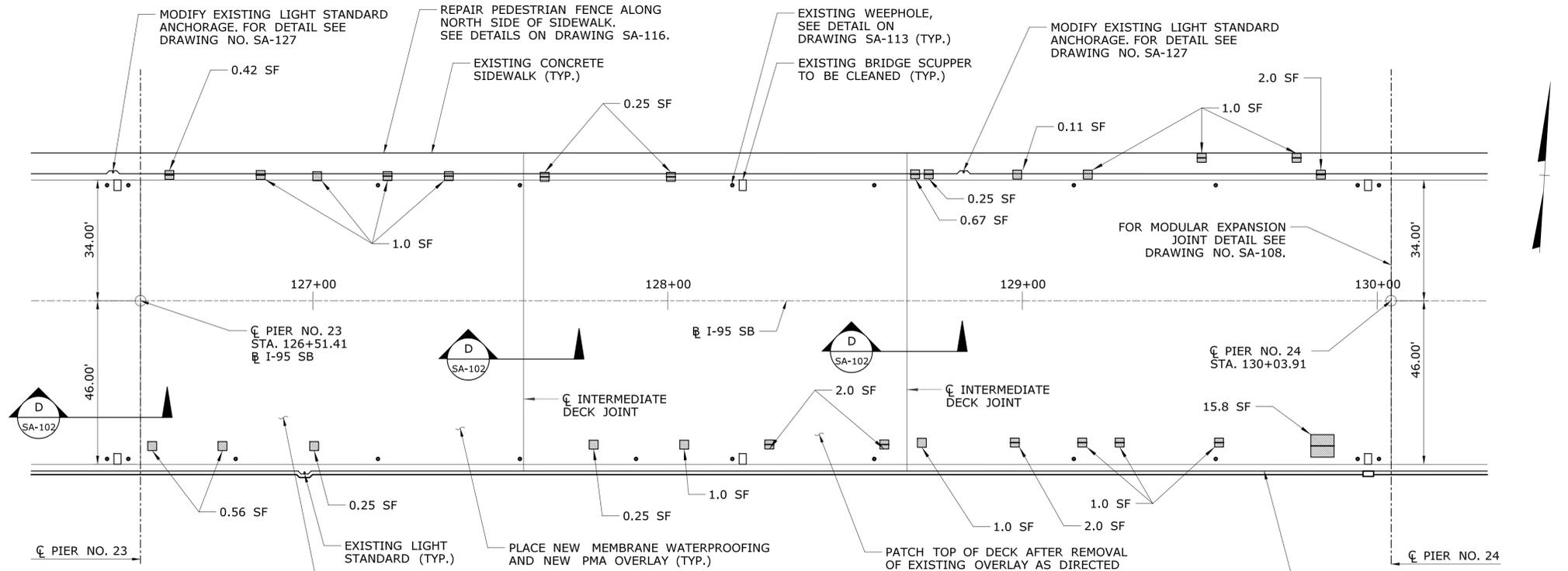
- ☐ - DELAMINATED/HOLLOW CONCRETE
- - CONCRETE SPALL
- ▣ - CONCRETE SPALL WITH EXPOSED REINFORCEMENT
- SF - SQUARE FEET
- EA - EACH

**DECK REPAIR NOTES:**

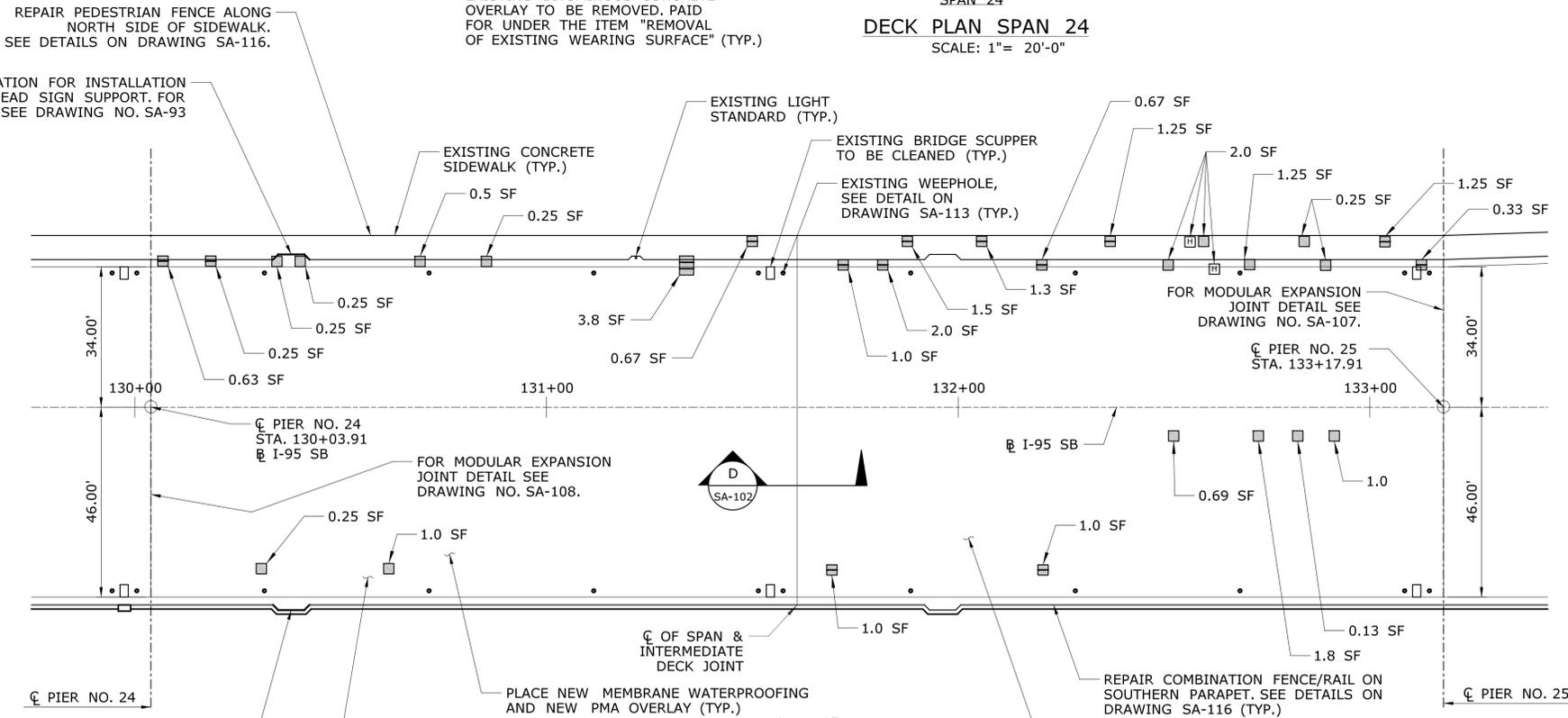
1. THE DECK DETERIORATION AND REPAIR DIMENSIONS ARE BASED ON LIMITED FIELD OBSERVATIONS AND BRIDGE SAFETY INSPECTION REPORT (NOVEMBER 22, 2013). THE INFORMATION IS INTENDED TO BE USED AS A GUIDE AND DOES NOT NECESSARILY REFLECT THE CURRENT CONDITION OF THE STRUCTURE. THE EXACT LOCATION AND LIMITS OF DETERIORATED CONCRETE TO BE REPAIRED SHALL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION. DETERIORATIONS SHOWN ARE NOT DRAWN TO SCALE FOR CLARITY.
2. THE CONTRACTOR SHALL PROVIDE SAFE ACCESS FOR THE ENGINEER TO DELINEATE AND REVIEW THE REPAIR WORK. THE COST OF PROVIDING ACCESS SHALL BE INCLUDED IN THE COST OF APPROPRIATE REPAIR ITEMS.
3. THE CONTRACTOR SHALL NOT PERFORM ANY REPAIR WORK WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
4. SPALL AREAS, DELAMINATED/HOLLOW AREAS, AND EXPOSED REBAR AREAS SHALL BE REPAIRED IN ACCORDANCE WITH DETAILS SHOWN ON DWG. NO. SA-99 (TYP.).

**GENERAL NOTE:**

1. FOR LIGHT STANDARD REPLACEMENT/REPAIR DETAILS SEE SUBSET 08 - ILLUMINATION.



**DECK PLAN SPAN 24**  
SCALE: 1" = 20'-0"



**DECK PLAN SPAN 25**  
SCALE: 1" = 20'-0"

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER:  
**S. SLATER**  
CHECKED BY:  
**M. EGAN**  
SCALE IN FEET  
0 SCALE AS NOTED 80  
SCALE 1" = 40'



SIGNATURE/BLOCK:  
**CARDINAL ENGINEERING ASSOCIATES, INC.**  
3 Colony Street  
Meriden, CT 06451

PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

TOWN:  
**NEW LONDON/GROTON**  
DRAWING TITLE:  
**DECK PLAN SPANS 24 - 25**

PROJECT NO.  
**94-252**  
DRAWING NO.  
**SA-88**  
SHEET NO.  
**04.088**

**LEGEND OF UNDERSIDE DECK DETERIORATION**

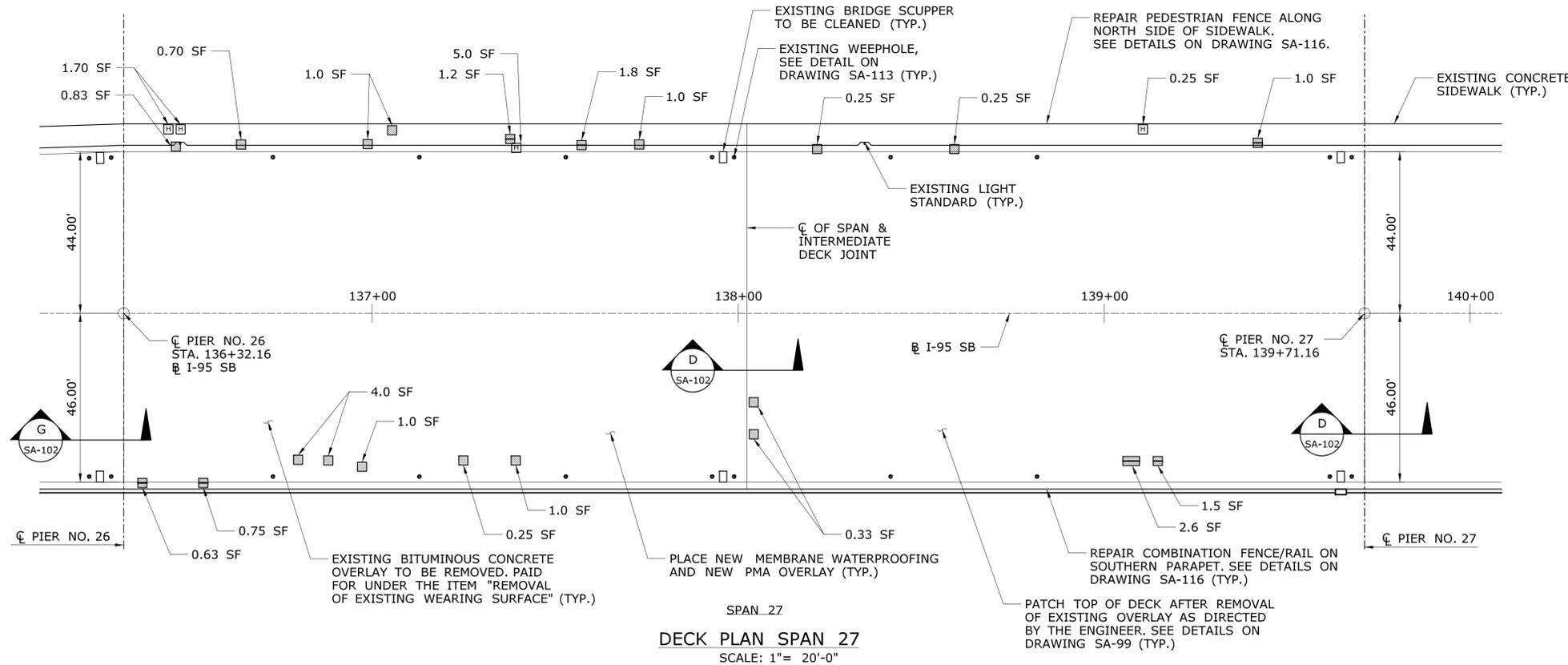
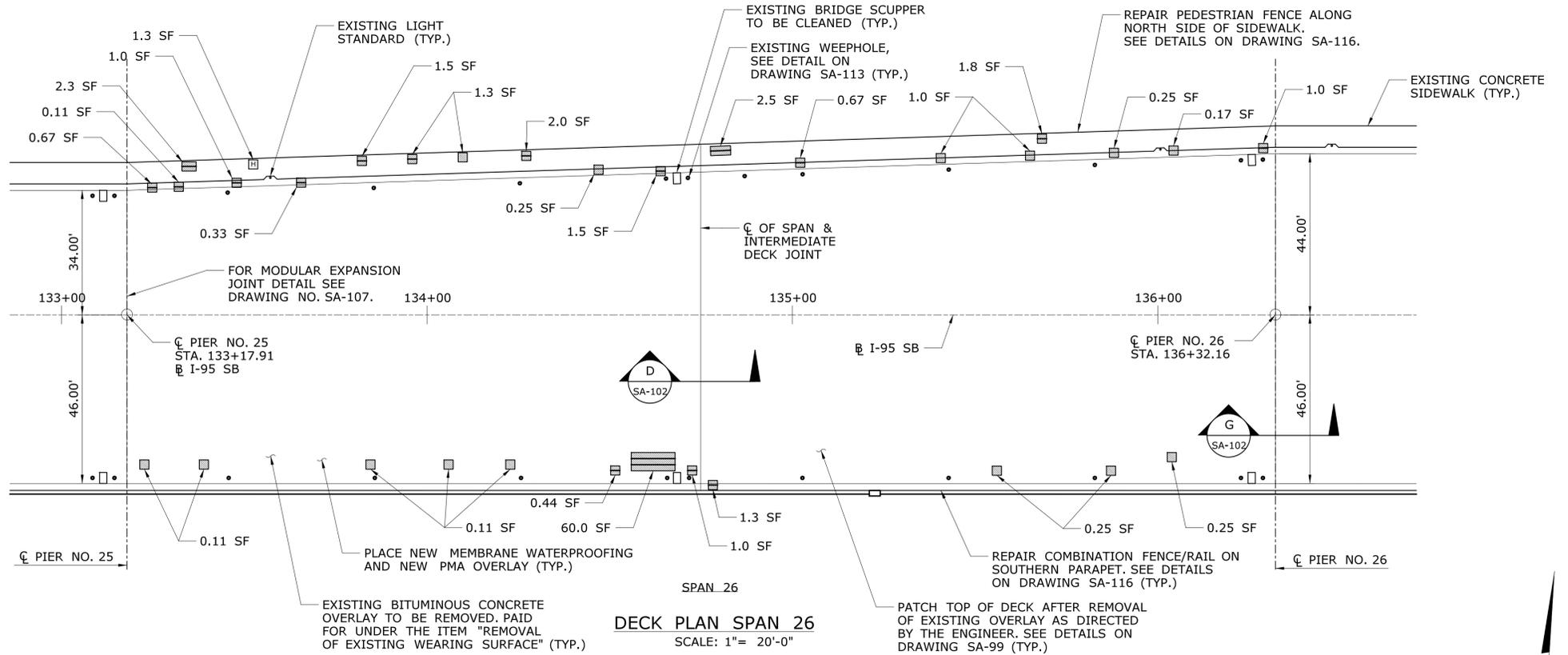
- ☐ - DELAMINATED/HOLLOW CONCRETE
- - CONCRETE SPALL
- ▨ - CONCRETE SPALL WITH EXPOSED REINFORCEMENT
- SF - SQUARE FEET
- EA - EACH

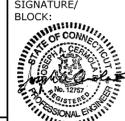
**DECK REPAIR NOTES:**

1. THE DECK DETERIORATION AND REPAIR DIMENSIONS ARE BASED ON LIMITED FIELD OBSERVATIONS AND BRIDGE SAFETY INSPECTION REPORT (NOVEMBER 22, 2013). THE INFORMATION IS INTENDED TO BE USED AS A GUIDE AND DOES NOT NECESSARILY REFLECT THE CURRENT CONDITION OF THE STRUCTURE. THE EXACT LOCATION AND LIMITS OF DETERIORATED CONCRETE TO BE REPAIRED SHALL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION. DETERIORATIONS SHOWN ARE NOT DRAWN TO SCALE FOR CLARITY.
2. THE CONTRACTOR SHALL PROVIDE SAFE ACCESS FOR THE ENGINEER TO DELINEATE AND REVIEW THE REPAIR WORK. THE COST OF PROVIDING ACCESS SHALL BE INCLUDED IN THE COST OF APPROPRIATE REPAIR ITEMS.
3. THE CONTRACTOR SHALL NOT PERFORM ANY REPAIR WORK WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
4. SPALL AREAS, DELAMINATED/HOLLOW AREAS, AND EXPOSED REBAR AREAS SHALL BE REPAIRED IN ACCORDANCE WITH DETAILS SHOWN ON DWG. NO. SA-99 (TYP.).

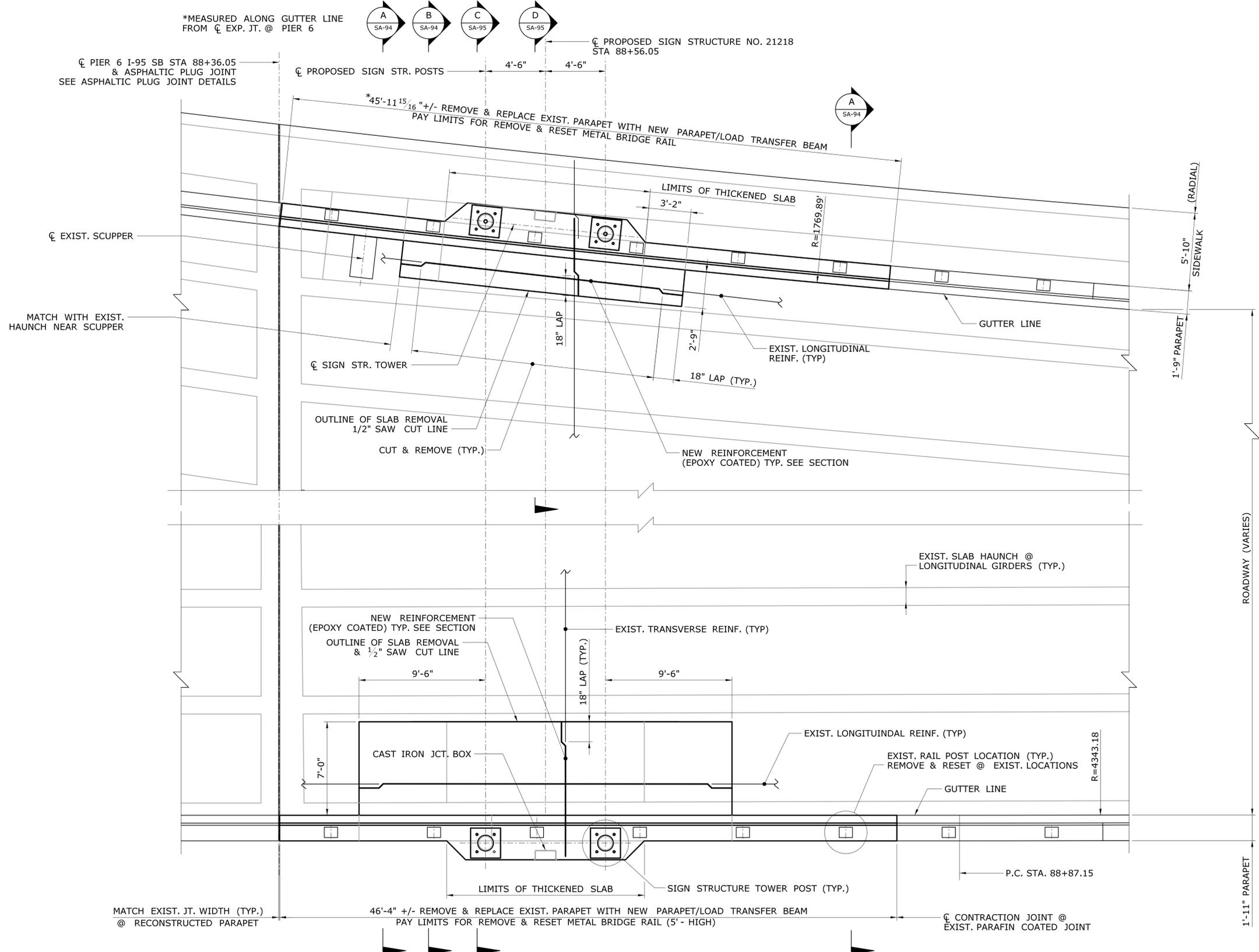
**GENERAL NOTE:**

1. FOR LIGHT STANDARD REPLACEMENT/REPAIR DETAILS SEE SUBSET 08 - ILLUMINATION.



REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	DESIGNER/DRAFTER: <b>S. SLATER</b> CHECKED BY: <b>M. EGAN</b> SCALE AS NOTED	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION Filename: ..._SB_MSH_0094_0252_BR_NO_02514A_DCK-8.dgn	SIGNATURE/BLOCK:  Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-89</b> SHEET NO. <b>04.089</b>
DRAWING TITLE: <b>DECK PLAN SPANS 26 - 27</b>										





**1 PARTIAL PLAN - SIGN STRUCTURE NO. 21218**

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER:  
**S. CIRILLO**  
CHECKED BY:  
**J. SILVA**  
1/4" = 1'-0"

STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION

Filename: ...SB\_MSH\_0094\_0252\_BR02514\_DECK\_4COHSS-1.DGN

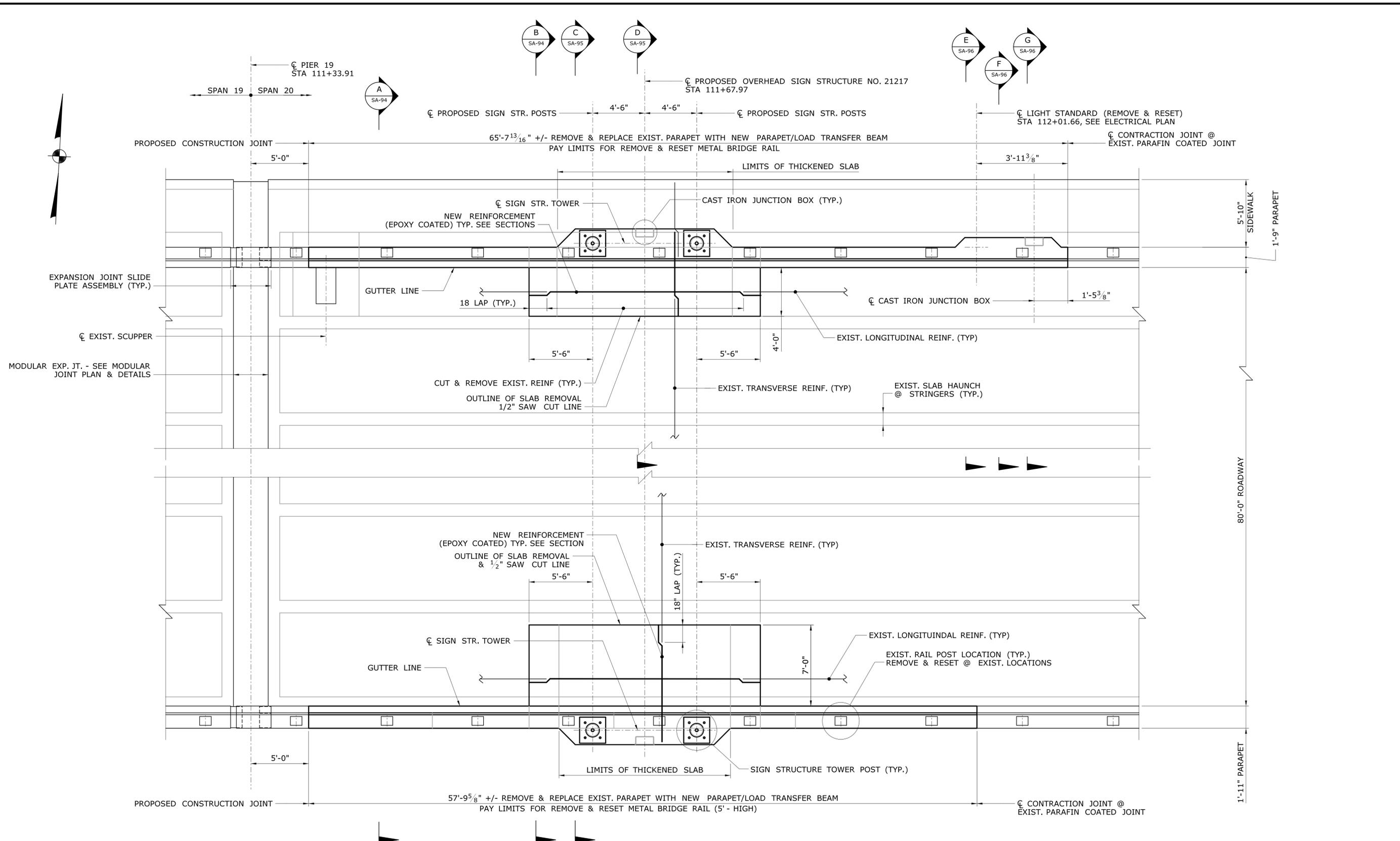
SIGNATURE/BLOCK:

SILVA ENGINEERING, LLC  
90 QUARRY ST.  
WILLIAMANTIC, CT 06226

PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

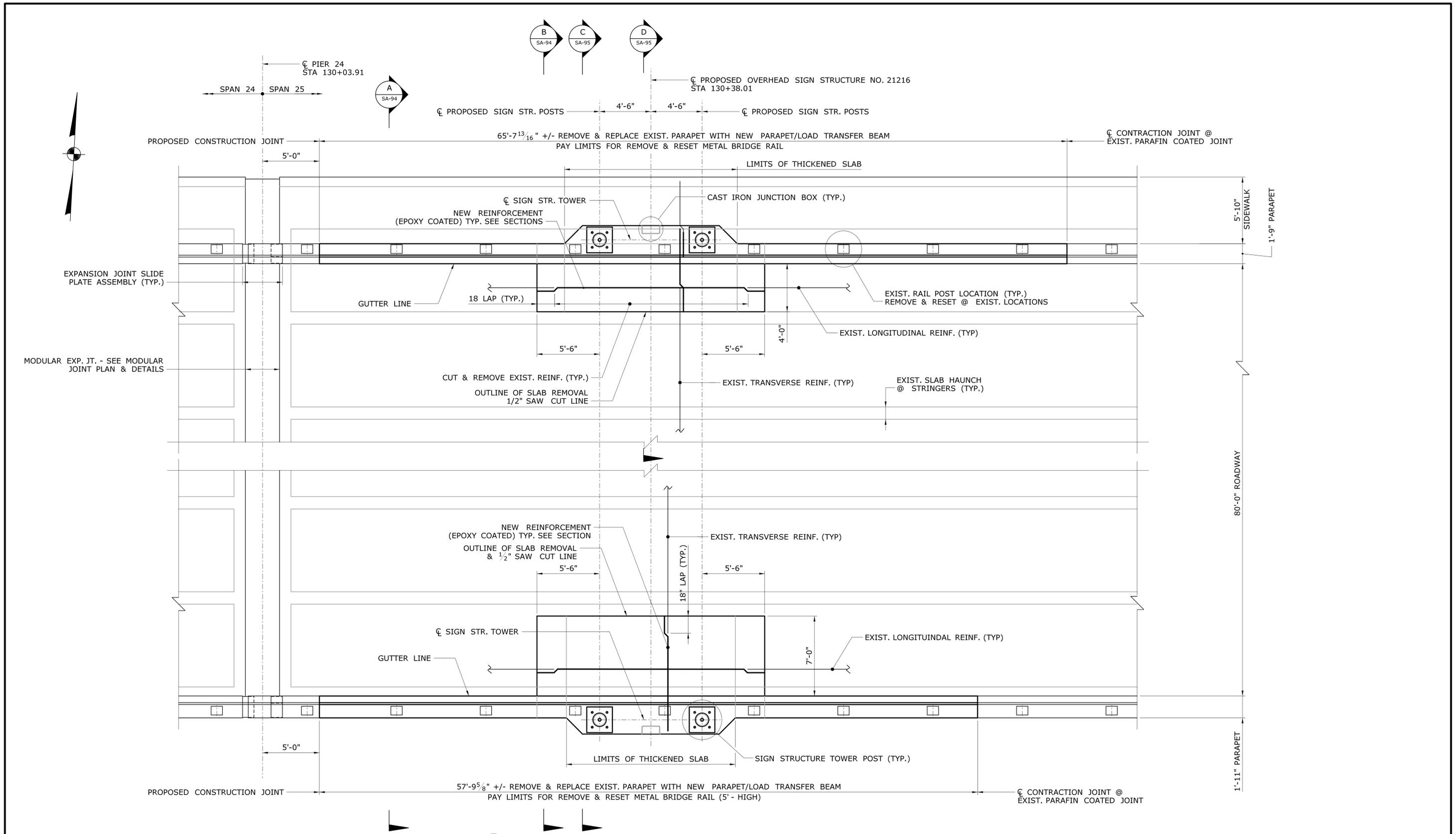
TOWN:  
**NEW LONDON / GROTON**  
DRAWING TITLE:  
**OVERHEAD SIGN STRUCTURE DECK PLAN I**

PROJECT NO.  
**94-252**  
DRAWING NO.  
**SA-91**  
SHEET NO.  
**04.091**



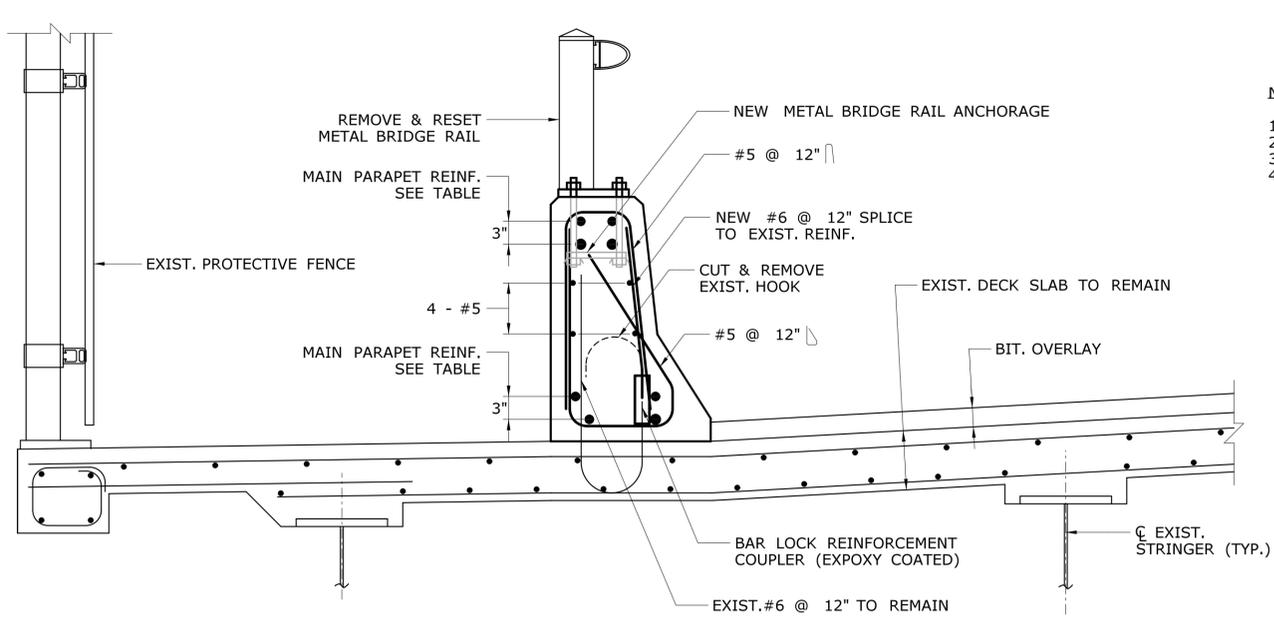
**1 PARTIAL PLAN - SIGN STRUCTURE NO. 21217**

REV. DATE REVISION DESCRIPTION SHEET NO. Plotted Date: 7/12/2016	THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.	DESIGNER/DRAFTER: <b>S. CIRILLO</b> CHECKED BY: <b>J. SILVA</b> 1/4" = 1'-0"	<b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b> Filename: ...SB_MSH_0094_0252_BR02514_DECK_4COHSS-2.DGN	SIGNATURE/BLOCK:  SILVA ENGINEERING, LLC 90 QUARRY ST. WILLIMANTIC, CT 06226	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON / GROTON</b> DRAWING TITLE: <b>OVERHEAD SIGN STRUCTURE DECK PLAN II</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-92</b> SHEET NO. <b>04.092</b>
	FILENAME: ...SB_MSH_0094_0252_BR02514_DECK_4COHSS-2.DGN						

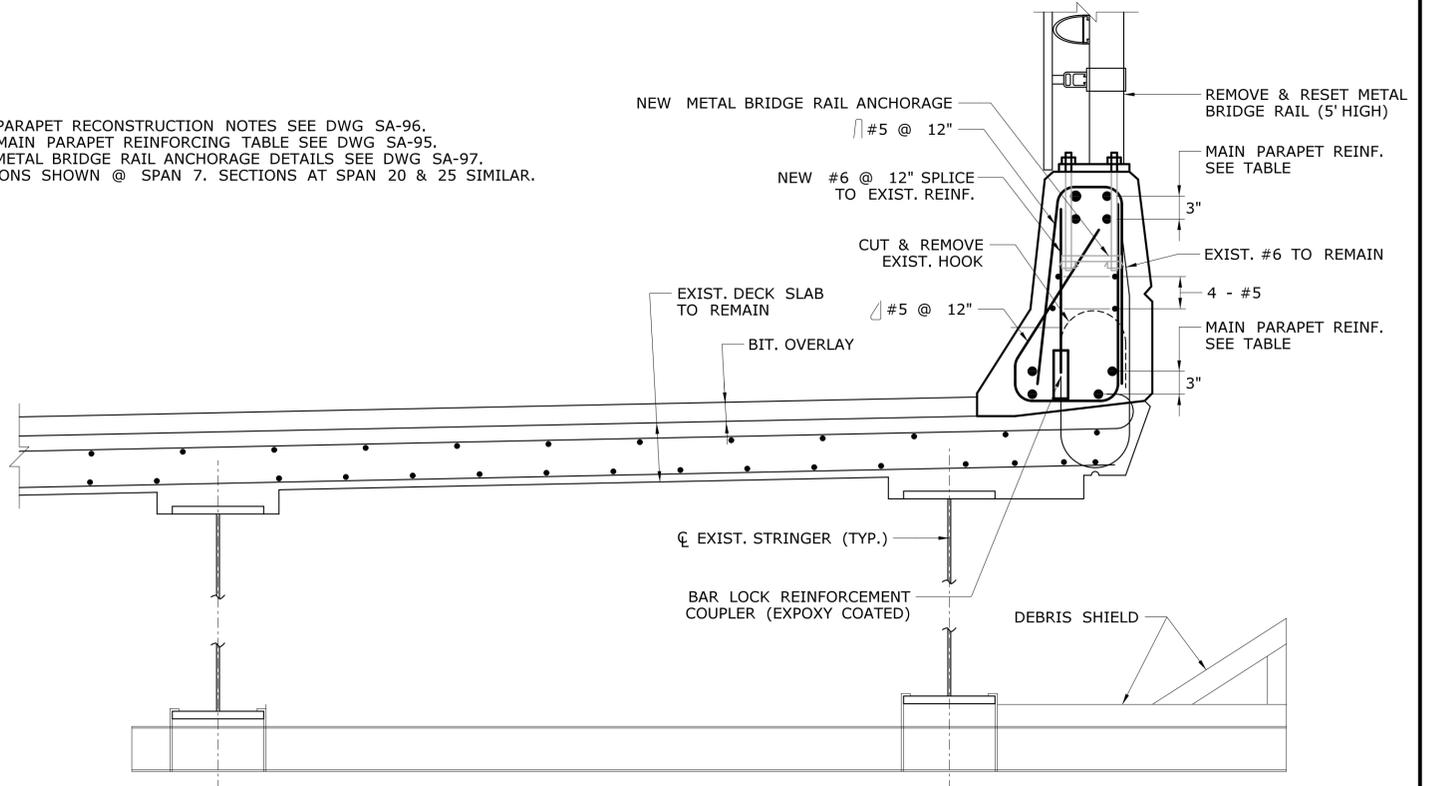


**1 PARTIAL PLAN - SIGN STRUCTURE NO. 21216**

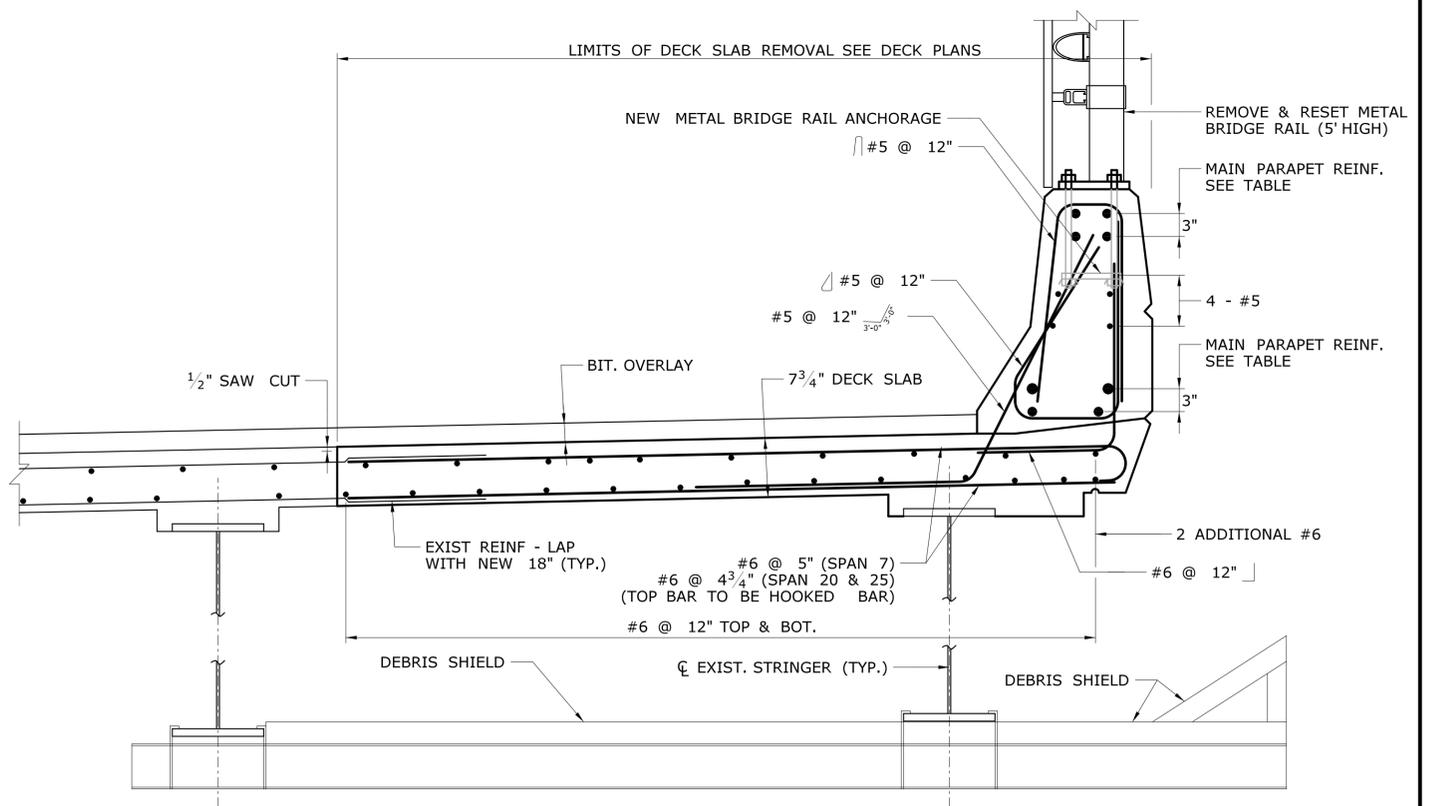
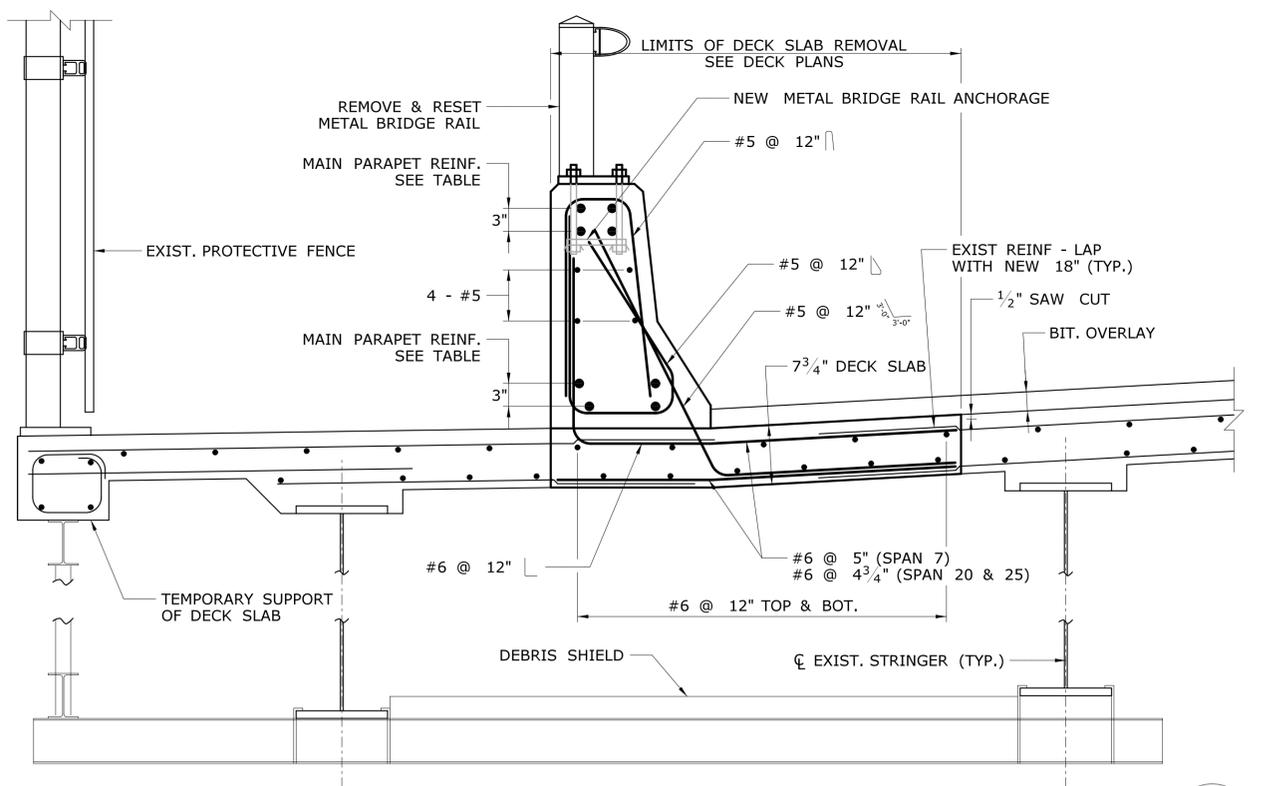
REV. DATE REVISION DESCRIPTION SHEET NO. Plotted Date: 7/12/2016	THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.	DESIGNER/DRAFTER: <b>S. CIRILLO</b> CHECKED BY: <b>J. SILVA</b> 1/4" = 1'-0"	<b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b> Filename: ...SB_MSH_0094_0252_BR02514_DECK_4COHSS-3.dgn	SIGNATURE/BLOCK: SILVA ENGINEERING, LLC 90 QUARRY ST. WILLIMANTIC, CT 06226	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON / GROTON</b> DRAWING TITLE: <b>OVERHEAD SIGN STRUCTURE DECK PLAN III</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-93</b> SHEET NO. <b>04.093</b>
	FILENAME: ...SB_MSH_0094_0252_BR02514_DECK_4COHSS-3.dgn						



- NOTES:
1. FOR PARAPET RECONSTRUCTION NOTES SEE DWG SA-96.
  2. FOR MAIN PARAPET REINFORCING TABLE SEE DWG SA-95.
  3. FOR METAL BRIDGE RAIL ANCHORAGE DETAILS SEE DWG SA-97.
  4. SECTIONS SHOWN @ SPAN 7. SECTIONS AT SPAN 20 & 25 SIMILAR.



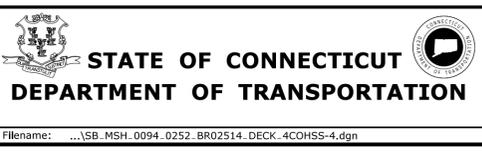
**A SECTION**  
SCALE: 1" = 1'-0"



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

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016

DESIGNER/DRAFTER:  
**S. CIRILLO**  
CHECKED BY:  
**J. SILVA**  
SCALE AS NOTED

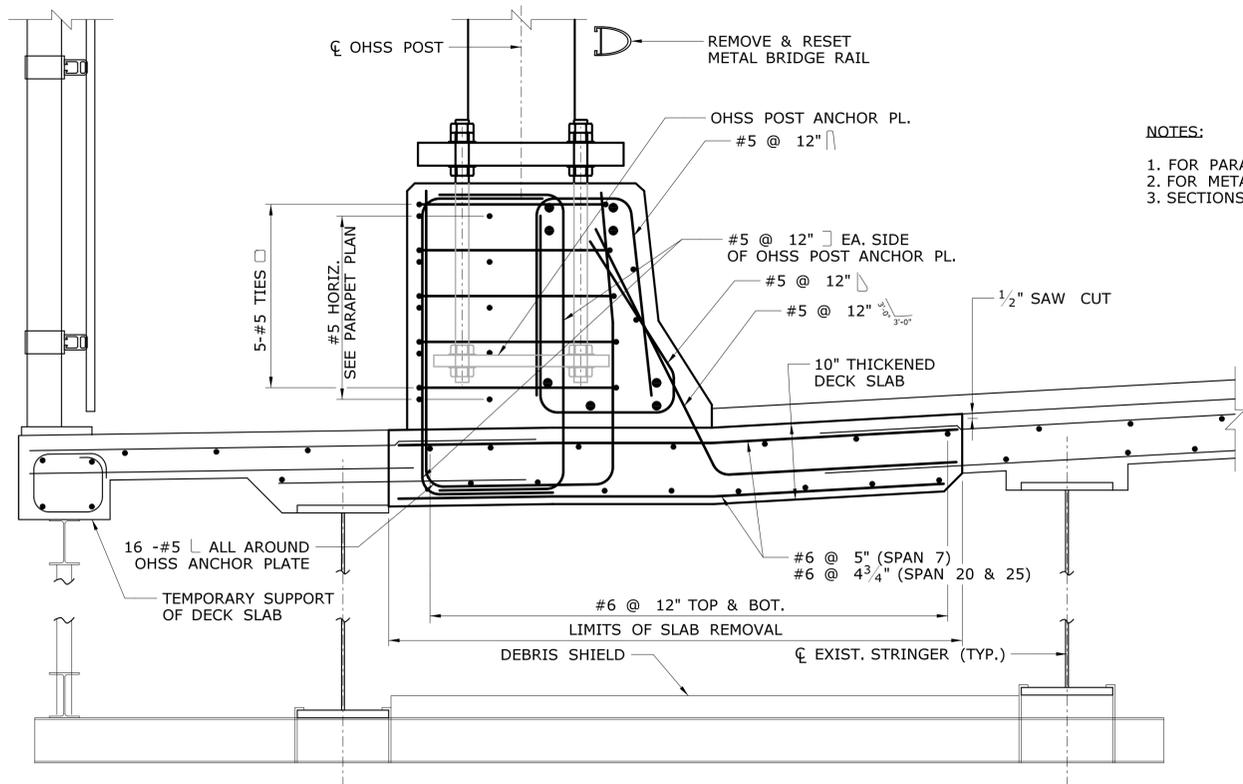


SIGNATURE/BLOCK:  
SILVA ENGINEERING, LLC  
90 QUARRY ST.  
WILLIMANTIC, CT 06226

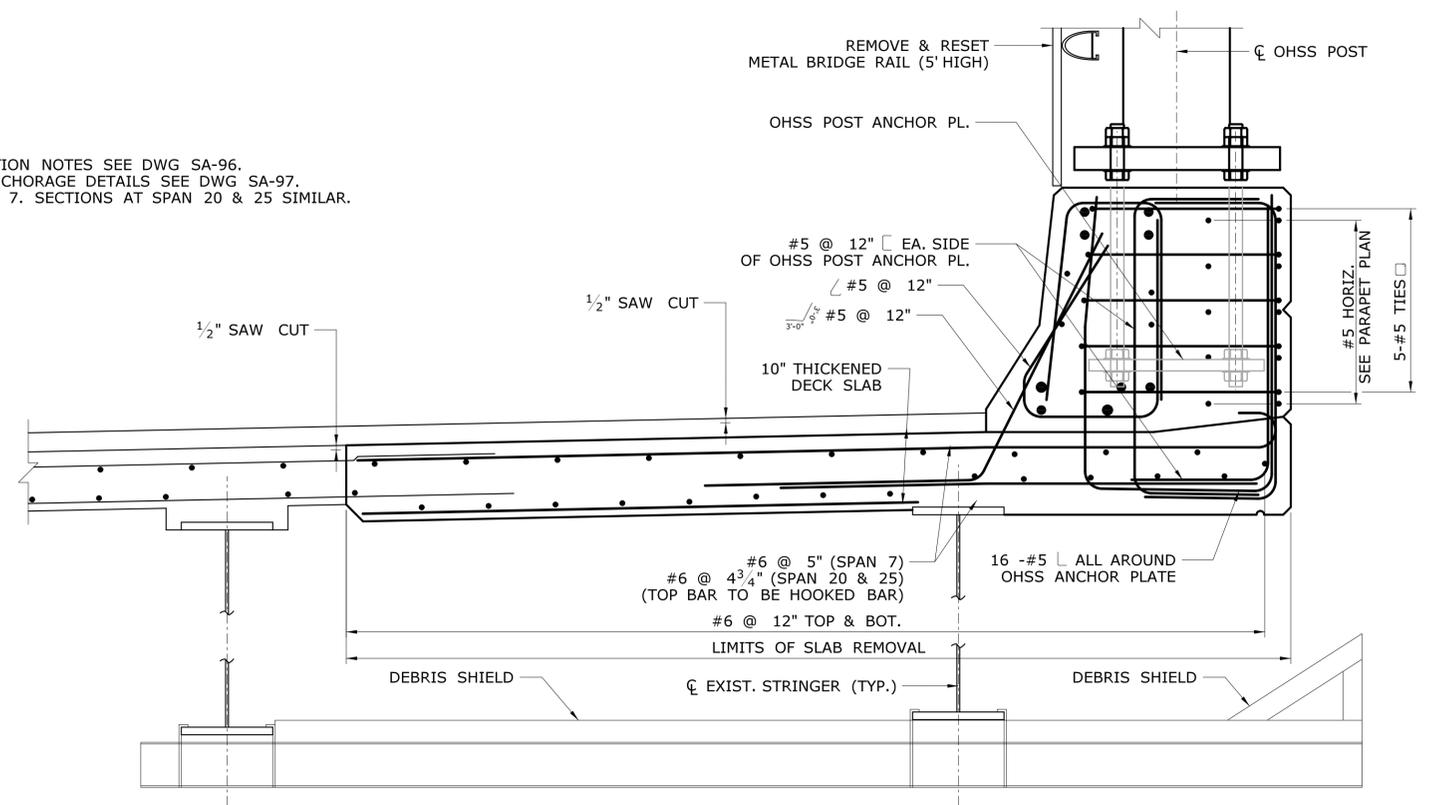
PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

TOWN:  
**NEW LONDON / GROTON**  
DRAWING TITLE:  
**OVERHEAD SIGN STRUCTURE DECK SECTIONS I**

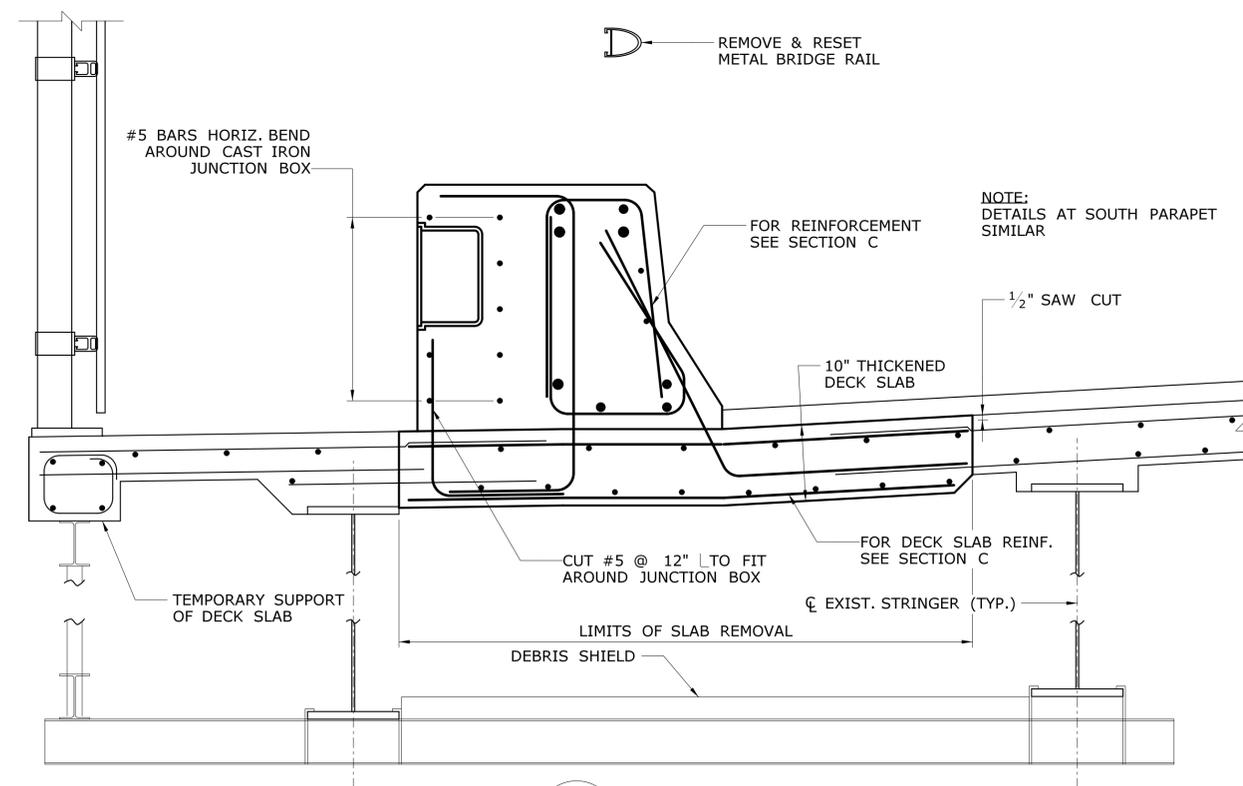
PROJECT NO.  
**94-252**  
DRAWING NO.  
**SA-94**  
SHEET NO.  
**04.094**



**NOTES:**  
 1. FOR PARAPET RECONSTRUCTION NOTES SEE DWG SA-96.  
 2. FOR METAL BRIDGE RAIL ANCHORAGE DETAILS SEE DWG SA-97.  
 3. SECTIONS SHOWN @ SPAN 7. SECTIONS AT SPAN 20 & 25 SIMILAR.



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



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

**MAIN STEEL REINFORCEMENT TABLE**

LOCATION	DESCRIPTION	REINFORCEMENT	LAP SPLICE LENGTH
NORTH PARAPET	TOP	4 - #9 (TWO LAYERS) 3" APART	8'-8"
NORTH PARAPET	BOT.	4 - #9 (TWO LAYERS) 3" APART	6'-2"
SOUTH PARAPET	TOP	4 - #7 (TWO LAYERS) 3" APART	5'-2"
SOUTH PARAPET	BOT.	4 - #7 (TWO LAYERS) 3" APART	3'-8"

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016

DESIGNER/DRAFTER:  
**S. CIRILLO**  
 CHECKED BY:  
**J. SILVA**  
 SCALE AS NOTED

STATE OF CONNECTICUT  
 DEPARTMENT OF TRANSPORTATION

File name: ...SB\_MSH\_0094\_0252\_BR02514\_DECK\_4COHSS-5.dgn

SIGNATURE/  
 BLOCK:

SILVA ENGINEERING, LLC  
 90 QUARRY ST.  
 WILLIMANTIC, CT 06226

PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

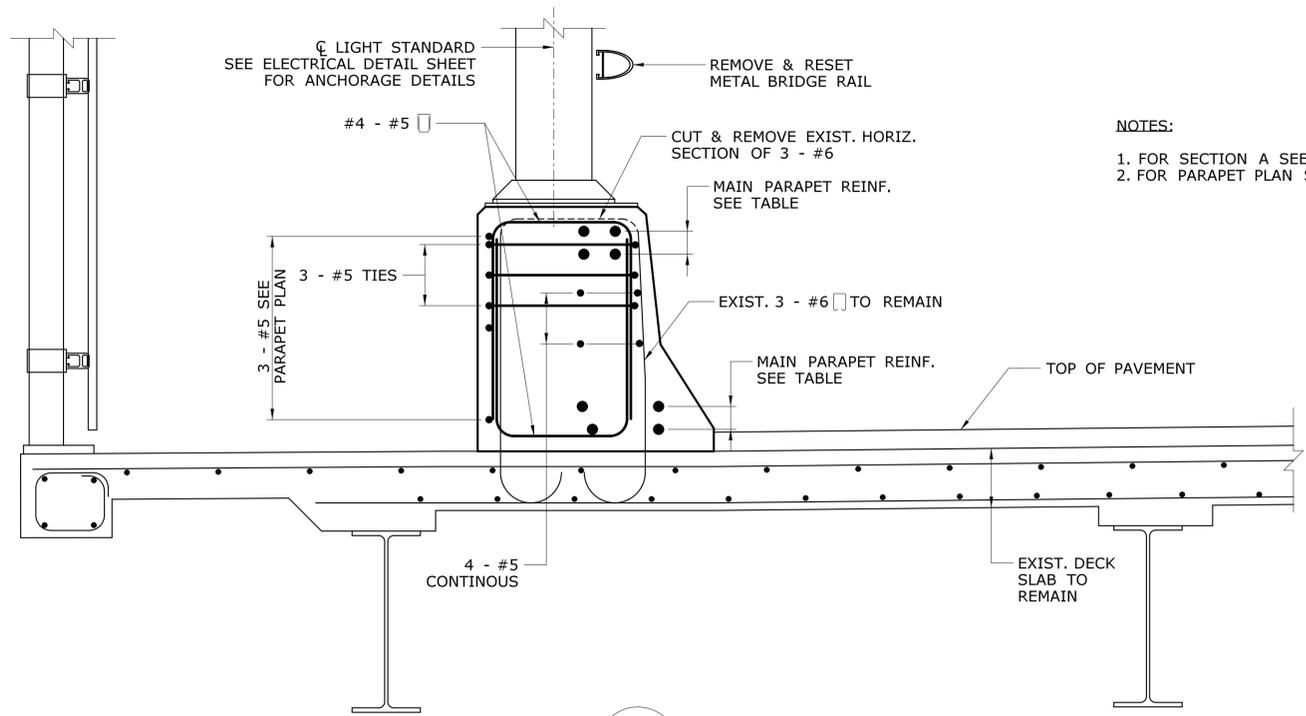
TOWN:  
**NEW LONDON / GROTON**

DRAWING TITLE:  
**OVERHEAD SIGN STRUCTURE DECK SECTIONS II**

PROJECT NO.  
**94-252**

DRAWING NO.  
**SA-95**

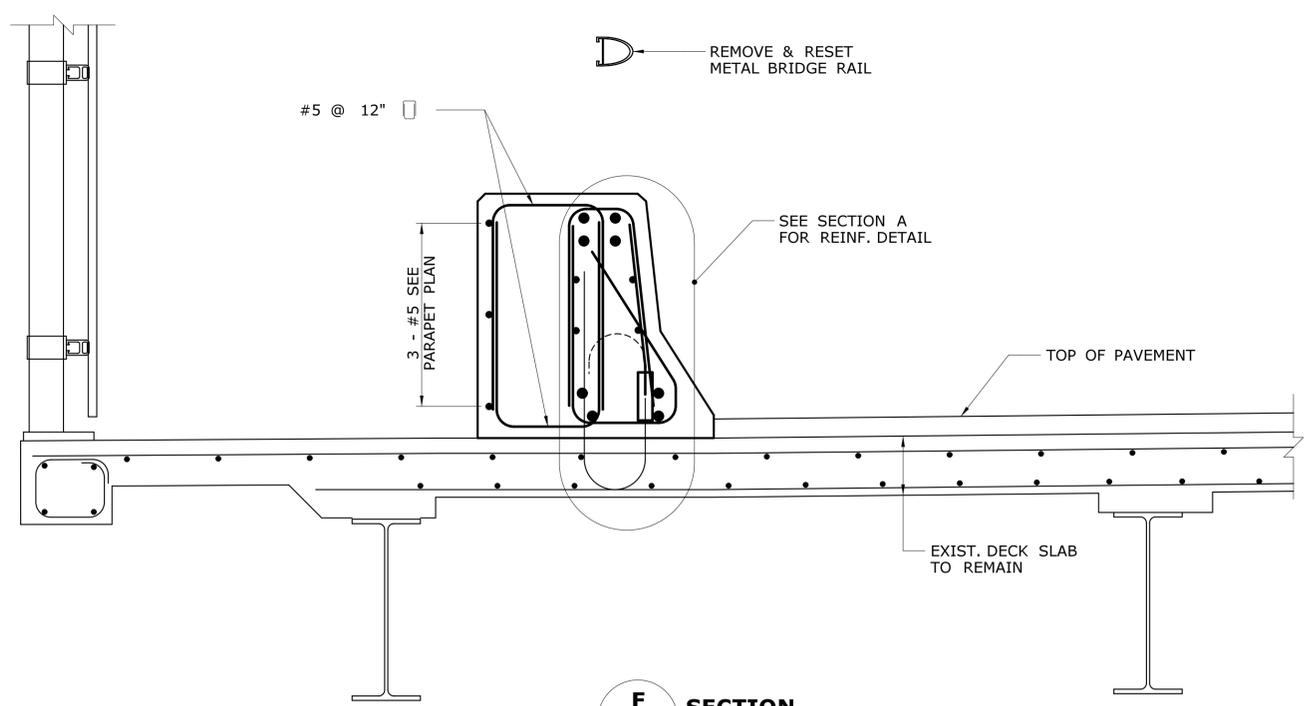
SHEET NO.  
**04.095**



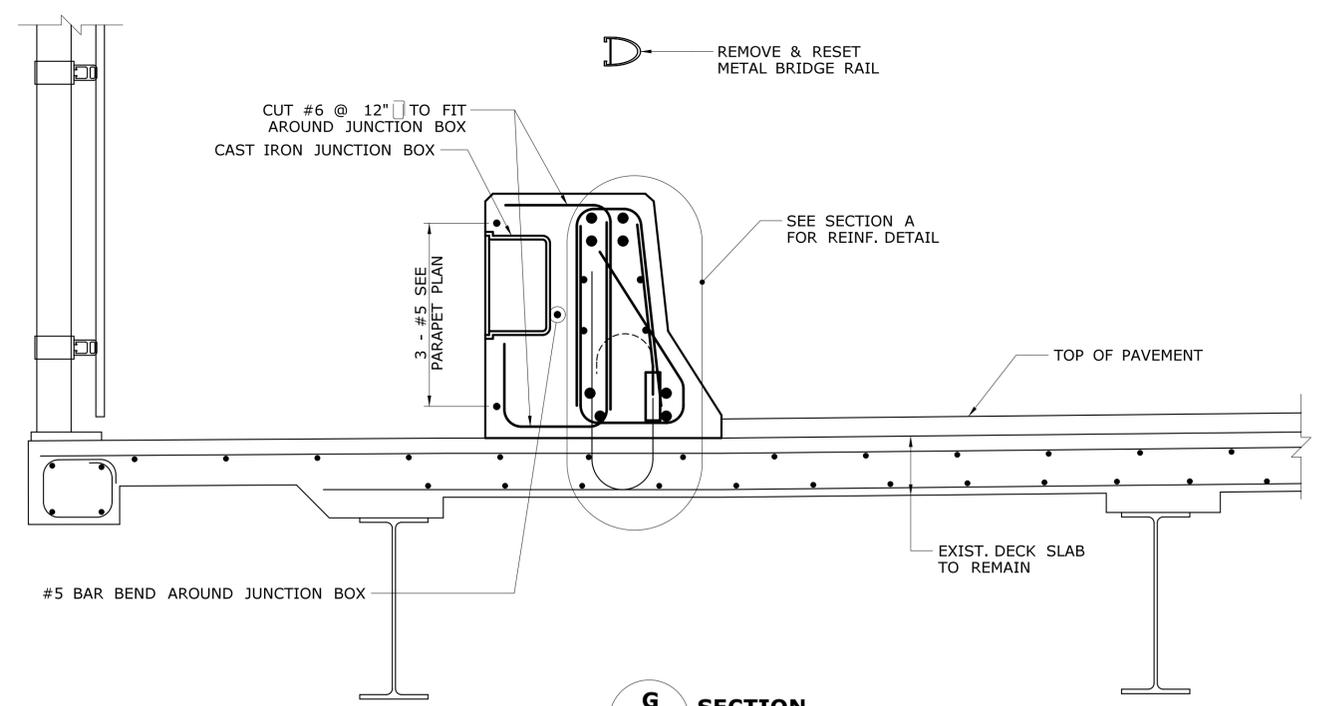
**NOTES:**  
 1. FOR SECTION A SEE DWG. SA-94.  
 2. FOR PARAPET PLAN SEE DWG. SA-92.

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

- PARAPET RECONSTRUCTION NOTES:**
1. CONCRETE USED FOR RECONSTRUCTION OF PARAPET AND DECK SLAB SHALL BE CLASS F CONCRETE.
  2. ALL NEW REINFORCING STEEL SHALL BE EPOXY COATED.
  3. STEEL REINFORCEMENT COVER SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:  
 PARAPETS: 2" COVER ALL AROUND.  
 DECK SLAB: 2" COVER TOP; 1" COVER BOTTOM
  4. PARAPETS SHALL BE CONSTRUCTED WITHOUT HORIZONTAL CONSTRUCTION JOINTS. CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND APPROVAL THE PROCEDURES TO BE USED TO ENSURE PROPER CONSOLIDATION OF THE CONCRETE. PARTICULAR ATTENTION IS REQUIRED FOR THE PLACEMENT OF THE CONCRETE AROUND STEEL REINFORCEMENT AT THE BASE OF THE POUR.
  5. PRIOR TO REMOVING CONCRETE, INSTALL TEMPORARY PRECAST CONCRETE BARRIER CURB (STRUCTURE) AS SHOWN ON DRAWING NO. SA-98. LAYOUT OF TEMPORARY PRECAST CONCRETE BARRIER CURB SHALL BE AS SHOWN IN THE MAINTENANCE & PROTECTION OF TRAFFIC DRAWINGS.
  6. EXISTING METAL BRIDGE RAIL ON NORTH PARAPET, AND METAL BRIDGE RAIL (5 FT HIGH) ON SOUTH PARAPET SHALL BE REMOVED, STORED AND RESET ON NEW PARAPET WITH NEW STAINLESS STEEL ANCHORS. COST OF THIS WORK SHALL BE PAID FOR UNDER THE ITEM FOR "REMOVE AND RESET METAL BRIDGE RAIL" OR "REMOVE AND RESET METAL BRIDGE RAIL (5 FT HIGH)", AS APPLICABLE.
  7. REMOVAL OF CONCRETE PARAPETS SHALL BE PAID FOR UNDER THE ITEM FOR "REMOVAL OF PARAPET".
  8. REMOVAL OF CONCRETE DECK SLAB, SHALL BE PAID FOR UNDER THE ITEM FOR "REMOVAL OF BRIDGE DECK CONCRETE".
  9. BAR LOCK REINFORCEMENT COUPLER SHALL BE PAID FOR UNDER THE ITEM FOR "DOWEL BAR SPLICER SYSTEM - EPOXY COATED".
  10. THE COST OF DESIGNING, FURNISHING AND INSTALLING DEBRIS SHIELD ON THE NORTH SIDE OF THE BRIDGE SHALL BE INCLUDED UNDER THE ITEM "REMOVAL OF BRIDGE DECK CONCRETE".
  11. THE COST OF DESIGNING, FURNISHING AND INSTALLING DEBRIS SHIELD ON THE SOUTH SIDE OF THE BRIDGE SHALL BE INCLUDED UNDER THE ITEM "REMOVAL OF PARAPET".
  12. THE COST OF DESIGNING, FURNISHING AND INSTALLING OF TEMPORARY SIDEWALK SHIELD/PROTECTIVE FENCING SHALL BE INCLUDED UNDER THE ITEM "REMOVAL OF PARAPET".
  13. THE COST OF DESIGNING, FURNISHING AND INSTALLING OF TEMPORARY SIDEWALK SLAB SUPPORT SYSTEM SHALL BE INCLUDED UNDER THE ITEM "REMOVAL OF DECK CONCRETE".
  14. CONTRACTOR SHALL TEMPORARILY REROUTE EXISTING ELECTRICAL WIRING IN EXISTING CONDUITS PRIOR TO REMOVAL OF EXISTING PARAPETS AND RE-WIRE ELECTRICAL WIRING INTO THE CONDUITS IN THE NEW PARAPETS UPON THEIR COMPLETION. COST TO BE INCLUDED UNDER THE ITEM "REMOVAL OF PARAPET".

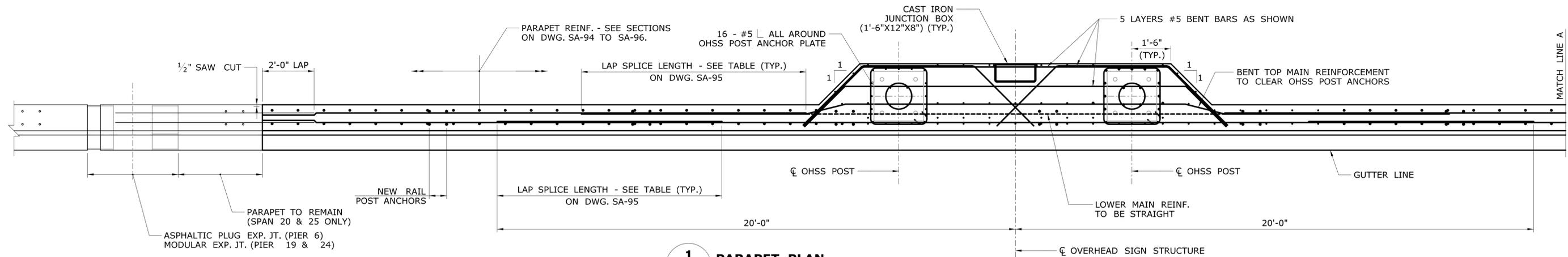


**F SECTION**  
 SCALE: 1" = 1'-0"



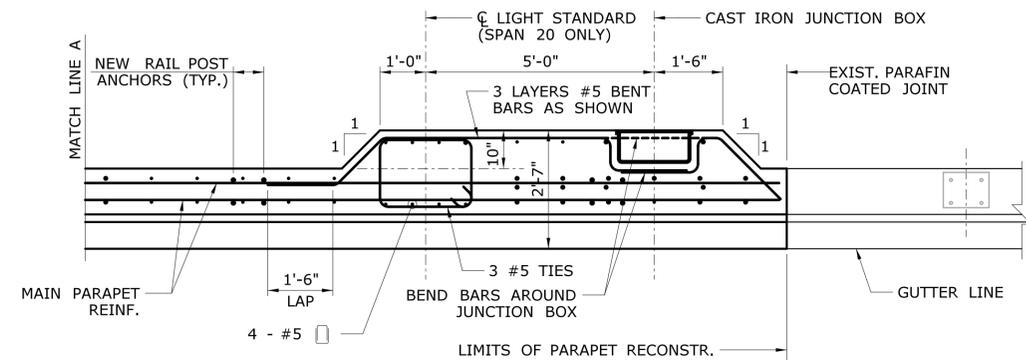
**G SECTION**  
 SCALE: 1" = 1'-0"

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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016				

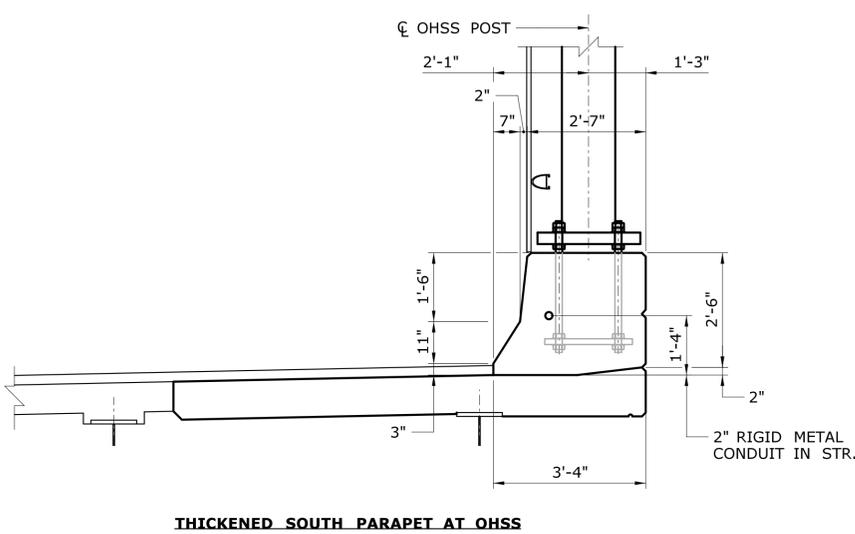
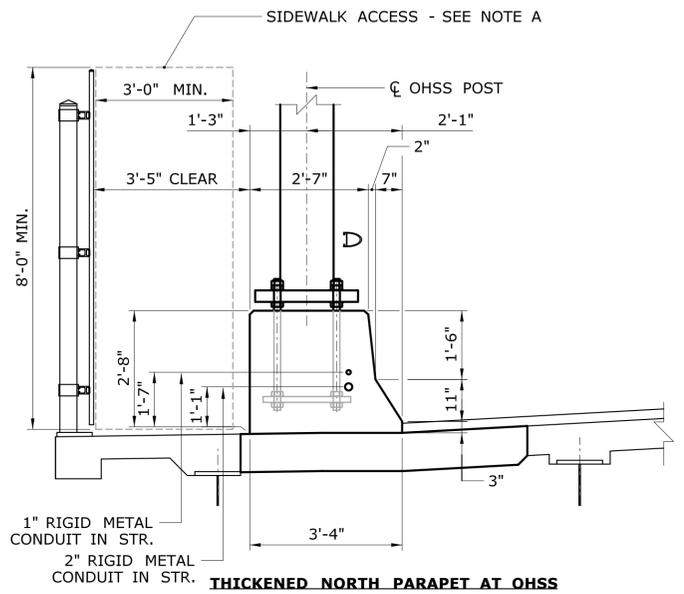


**1 PARAPET PLAN**  
SCALE: 1/2" = 1'-0"

NOTE:  
NORTH PARAPET AT SPAN 20 SHOWN,  
ALL OTHER LOCATIONS SIMILAR.

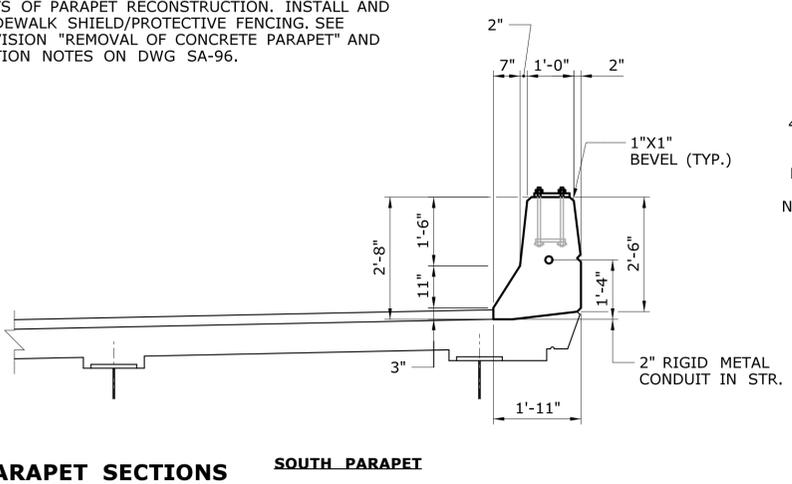
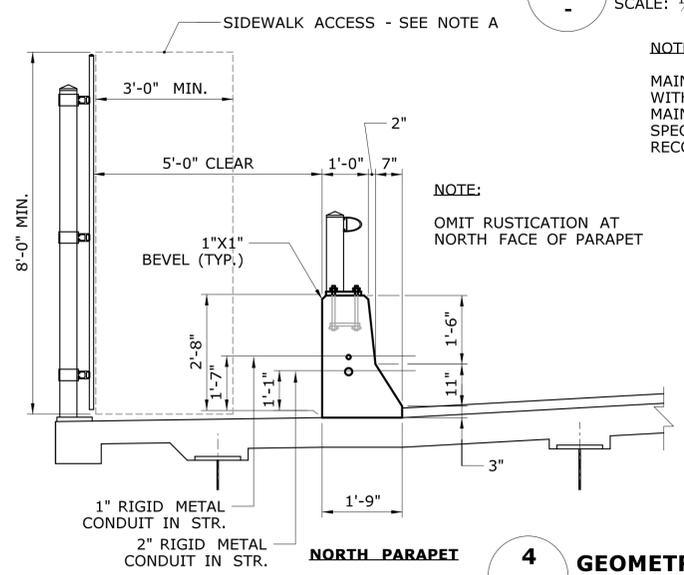


**2 PARAPET PLAN AT LIGHT STANDARD**  
SCALE: 1/2" = 1'-0"

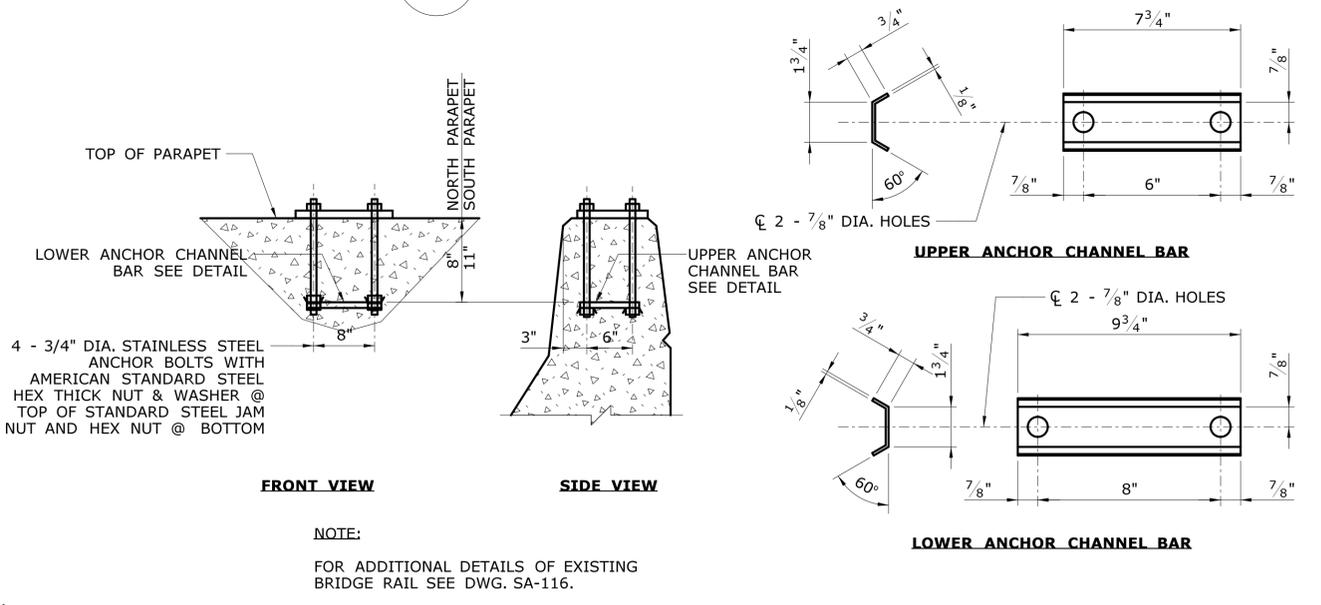


**3 GEOMETRIC PARAPET SECTIONS**  
SCALE: 1/2" = 1'-0"

NOTE A:  
MAINTAIN 3'-0" WIDE X 8'-0" HIGH ACCESS TO SIDEWALK WITHIN LIMITS OF PARAPET RECONSTRUCTION. INSTALL AND MAINTAIN SIDEWALK SHIELD/PROTECTIVE FENCING. SEE SPECIAL PROVISION "REMOVAL OF CONCRETE PARAPET" AND RECONSTRUCTION NOTES ON DWG SA-96.



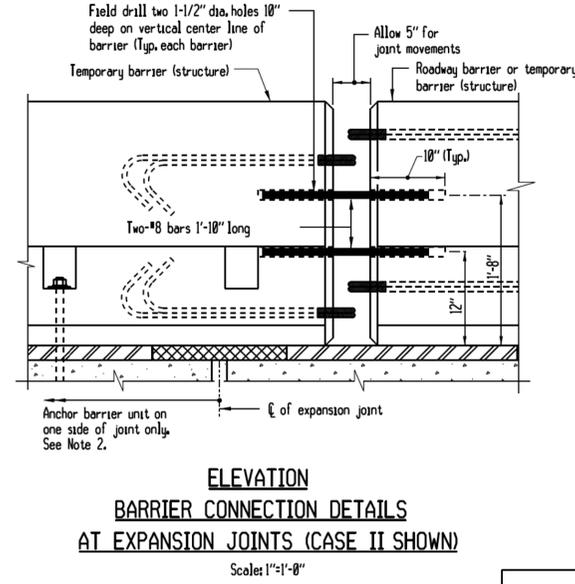
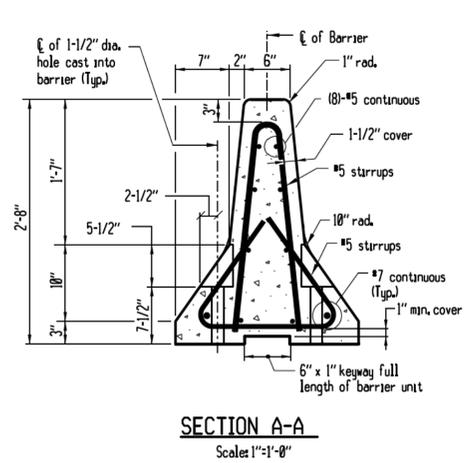
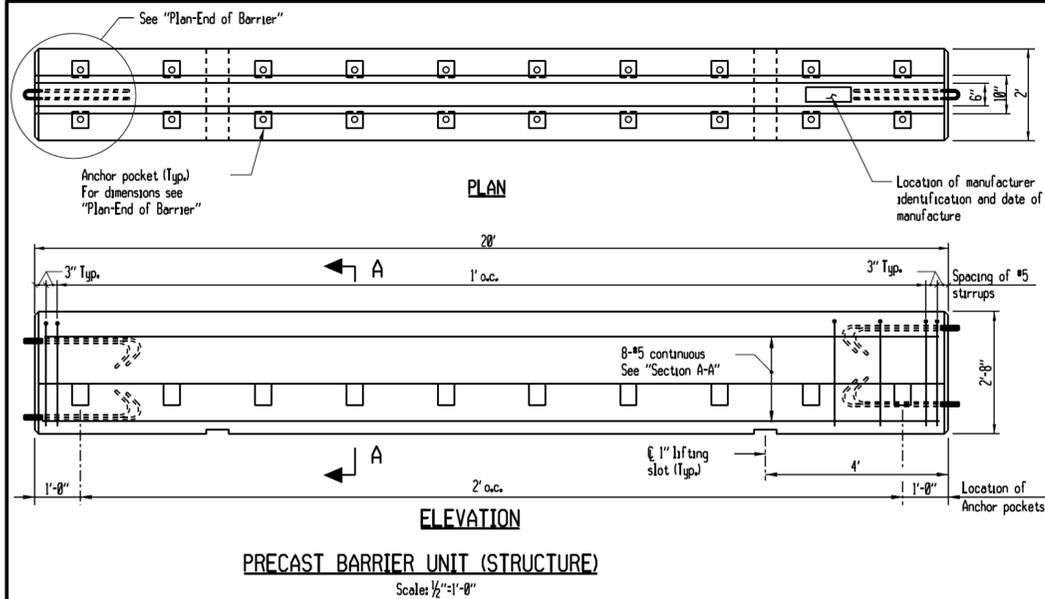
**4 GEOMETRIC PARAPET SECTIONS**  
SCALE: 1/2" = 1'-0"



**5 BRIDGE RAIL ANCHOR**  
SCALE: 1" = 1'-0"

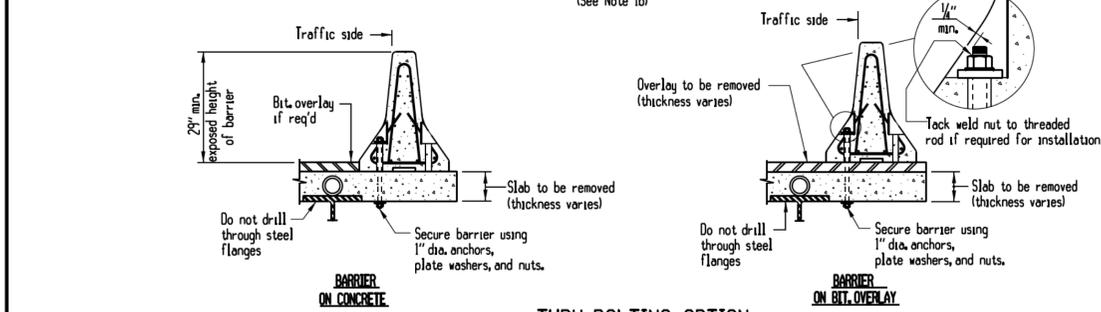
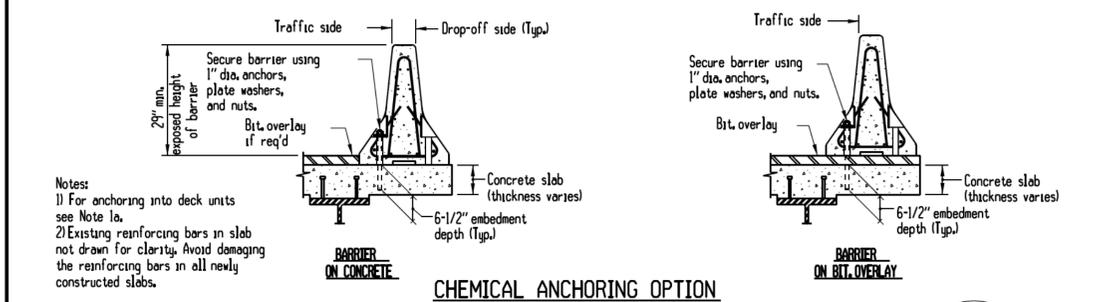
**6 ANCHOR CHANNEL BARS**  
SCALE: 3" = 1'-0"

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: <b>S. CIRILLO</b> CHECKED BY: <b>J. SILVA</b> SCALE AS NOTED	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION Filename: ...SB_MSH_0094_0252_BR02514_DECK_4COHSS-7.dgn	SIGNATURE/BLOCK: SILVA ENGINEERING, LLC 90 QUARRY ST. WILLIMANTIC, CT 06226	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON / GROTON</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-97</b> SHEET NO. <b>04.097</b>
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016			



- NOTES**
- The temporary barrier shown on this sheet shall be anchored onto bridge decks (see "Temporary Anchorage System") when it is used to protect a vertical drop-off. The temporary anchorage system shall conform to the following:
    - Prestressed Deck Units Threaded inserts shall be used for securing temporary barrier (structure) to prestressed deck units. The threaded inserts shall be cast into the deck units during fabrication and shall be located as required to accommodate the stage construction. See special provisions for additional information.
    - Chemical Anchoring This consists of drilling holes in new or existing concrete, placing threaded anchors in the holes, and securing the anchors with a pre-approved chemical anchor material which conforms to M83.01-15 of the Standard Specifications. Hole diameter shall be determined by the manufacturer of the chemical anchoring material.
    - Through-Bolting This consists of drilling through deck slabs and securing removable anchors on the underside with plate washers and nuts. Through-bolting is not permitted on new construction or prestressed concrete. Maximum hole size in slab = 1-1/2".
  - Number of Anchor On the traffic side of a typical barrier, anchors shall be installed in all pockets. At barrier units which straddle bridge expansion joints the anchor and connection details shall conform to Table 'A'.

Case	Span Length Contributing to Movement at the Expansion Joint	Method of End Connection to Abutting Barrier Unit (Where movement will occur)	Anchor Requirements for the Barrier Unit which Straddles the Bridge Joint
I.	Up to 100'	Use 1" connection rod but do not over tighten the nuts and allow room for expansion around the rod and loops.	On one side of the joint only, install as many anchors as possible on the traffic side of the barrier. On the other side of the joint do not install anchors.
II.	100' to 400'	Field drill holes in ends of both units and connect with 2-#8 bars. For details see "Barrier Connection Details".	On one side of the joint only, install a total of 10 anchors. Fill the pockets on the traffic side before filling the pockets on the drop-off side. If this cannot be achieved see III below.
III.	Over 400' or barrier layouts which do not satisfy II.	To be designed by Contractor and reviewed by Engineer. Cost of designing and furnishing special barrier units or attachments paid for under "TPCBC (Structure)".	To be designed by Contractor and reviewed by Engineer. Cost of designing and furnishing special barrier units or attachments paid for under "TPCBC (Structure)".



**TEMPORARY ANCHORAGE SYSTEM**  
Scale: 1/2"=1'-0"

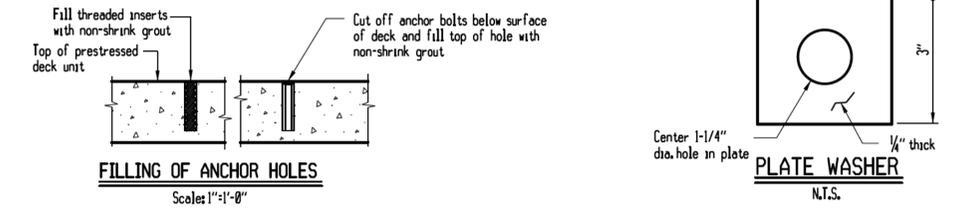
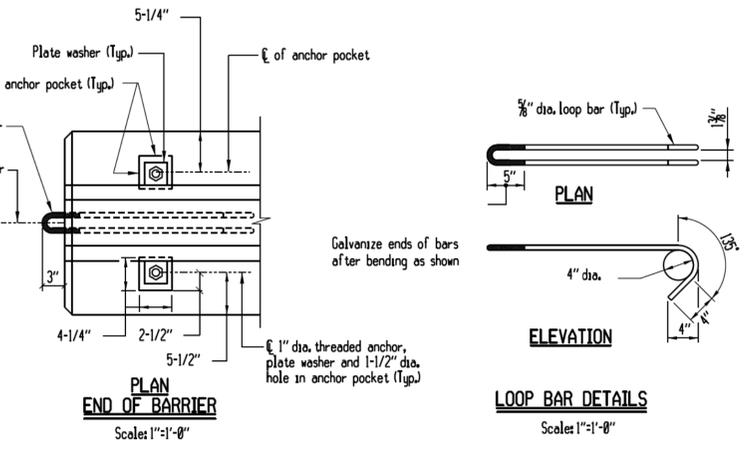
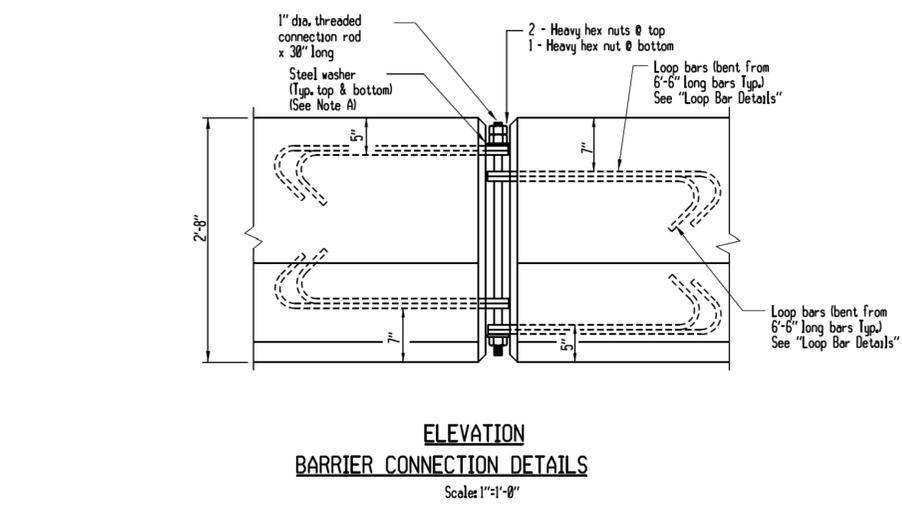
**COLOR APPLICATION**  
Left side of all roadways and ramps - YELLOW  
Right side of all roadways and ramps - SILVER

**COLOR OF DELINEATORS**  
DE-7A One Way Yellow  
DE-7 One Way Silver  
DE-7B Two Way Yellow  
DE-7C Silver/Yellow Back to Back

Delineators shall be mounted in the center of temporary barriers as required.

**SPACING OF DELINEATORS**  
On leading tapered sections - every unit (20').  
On the first 100' of parallel sections - every unit (20').  
On the remaining length - every fifth (5th) unit (100').  
Minimum of 2 if less than 100'.  
Alternating one way traffic - every unit (20').  
All other roadways shall be delineated in accordance with M.U.T.C.D.  
Paid for under Item "Delineators"

**DELINEATORS**  
N.T.S.



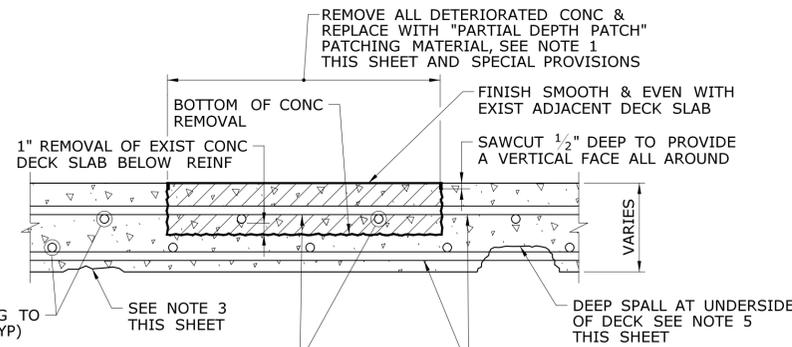
- The work done on this sheet, with the exception of the delineators, shall be paid for under the item "Temporary Precast Concrete Barrier Curb (Structure)".
- NOTES FOR CONNECTION ROD DETAILS**  
(SEE "ELEVATION-BARRIER CONNECTION DETAILS")
- Plain circular steel washers shall be manufactured with the following dimensions:  
Outside diameter = 2-3/4" (+1/4", -0")  
Inside diameter = 1-1/4" (+1/16", -0")  
Thickness = 7/16"
  - The nuts on the connection rod shall be turned until the bottom washer is drawn up against the loop bar. The loop bars shall not be bent due to the tightening process.
  - For ease of removal the threads on the connection rods and nuts shall be waxed.

**CONCRETE DECK PATCHING REPAIR NOTES**

1. NO DECK PATCHING REPAIR OPERATIONS SHALL BE PERFORMED PRIOR TO THE REMOVAL OF ALL EXISTING OVERLAYS AND MEMBRANE WATERPROOFING SYSTEMS FROM THE BRIDGE DECK SLAB.
2. IF THE EXISTING TOP REINFORCING STEEL HAS AT LEAST ONE HALF OF ITS SURFACE AREA EXPOSED AFTER REMOVAL OF THE DETERIORATED CONCRETE, THEN THE CONCRETE DECK SHALL BE FURTHER REMOVED TO A DEPTH OF 1" BELOW THE EXISTING TOP REINFORCING STEEL.
3. EXISTING SPALLED, DELAMINATED OR OTHERWISE DETERIORATED CONCRETE FROM THE EXISTING UNDERSIDE OF DECK SHALL BE REMOVED. EXISTING EXPOSED REINFORCING STEEL AND CONCRETE SHALL BE CLEANED AND COATED WITH EPOXY WITHIN SPALLS. THIS WORK SHALL BE PAID FOR UNDER THE ITEM "CLEAN AND COAT EXPOSED REINFORCING STEEL."
4. ADDITIONAL CONCRETE REMOVAL REQUIRED FOR THE REPAIR OF THE REINFORCING STEEL SHALL BE PAID FOR UNDER THE APPLICABLE CONCRETE REPAIR ITEM IF REMOVAL OF DETERIORATED CONCRETE FOR "PARTIAL DEPTH PATCH" EXCEEDS TWO-THIRDS OF THE TOTAL THICKNESS OF THE SLAB, REMOVE THE REMAINDER OF THE CONCRETE TO THE BOTTOM OF THE SLAB AND PERFORM "FULL DEPTH PATCH." FINAL PAYMENT SHALL BE MADE AS "FULL DEPTH PATCH (HIGH EARLY STRENGTH CONCRETE)" ONLY, (SEE SPECIAL PROVISIONS).
5. AT LOCATIONS WHERE SPALLS OR DELAMINATED CONCRETE ON THE UNDERSIDE OF THE DECK ARE DEEPER THAN HALF THE SLAB THICKNESS, OR THE BOTTOM OF REINFORCEMENT HAS REINFORCEMENT STEEL EXPOSED MORE THAN ONE HALF OF ITS CIRCUMFERENCE OVER AN AREA GREATER THAN 10 SQUARE FEET, THEN REMOVE THE SLAB CONCRETE FULL DEPTH AND REPAIR AS A "FULL DEPTH PATCH."
6. INSTALL PROTECTIVE DEBRIS SHIELD UNDER SPANS OVER ROADWAYS AND PEDESTRIAN TRAFFIC TO PROTECT TRAFFIC AND PEDESTRIANS FROM POSSIBLE FALLING DEBRIS (TO BE PAID FOR UNDER THE ITEM "PARTIAL DEPTH PATCH").

**DECK UNDERSIDE REPAIR NOTES**

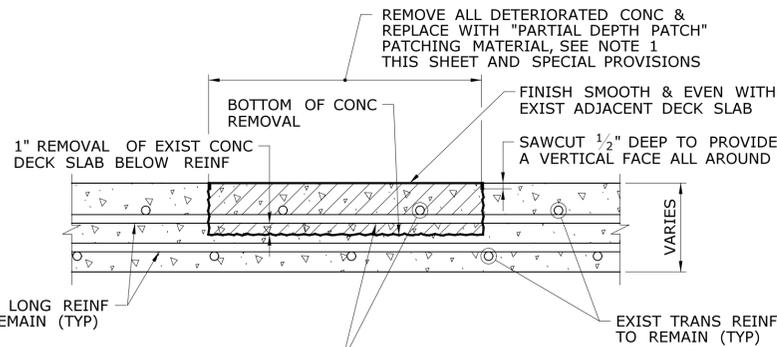
7. EPOXY COATING THE DECK UNDERSIDE REINFORCEMENT SHALL BE PERFORMED IN ACCORDANCE WITH DETAILS SHOWN ON THIS SHEET AND THE SPECIAL PROVISIONS. THIS WORK SHALL BE PAID UNDER THE ITEM "CLEAN AND COAT EXPOSED REINFORCING STEEL" (SEE SPECIAL PROVISIONS).
8. ALL WORK SHALL BE CONTAINED BY A TEMPORARY DEBRIS SHIELD. DEBRIS SHIELD SHALL BE PAID FOR UNDER THE ITEM "CLEAN AND COAT EXPOSED REINFORCING STEEL", SEE SPECIAL PROVISIONS.
9. THE EXISTING SLAB UNDERSIDE SHALL BE SOUNDED FOR HOLLOW AREAS OF CONCRETE BY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE SAFE ACCESS TO THE ENGINEER FOR DELINEATION AND INSPECTION OF THE DECK UNDERSIDE, AND THE REPAIR WORK. THE COST OF PROVIDING ACCESS FOR THE INSPECTION SHALL BE INCLUDED IN THE COST OF THE ITEM "CLEAN AND COAT EXPOSED REINFORCING STEEL".
10. ALL EXPOSED REINFORCING STEEL SHALL BE THOROUGHLY CLEANED TO REMOVE ANY DEBRIS OR RESIDUE BEFORE APPLYING THE EPOXY RESIN COATING (SEE SPECIAL PROVISION).
11. ANY EXPOSED REINFORCING STEEL IN THE AREAS OF POP-OUTS CAUSED BY THE REMOVAL OF DETERIORATED CONCRETE SHALL BE CLEANED AND COATED WITH EPOXY RESIN COATING.
12. THE CONTRACTOR SHALL NOT PERFORM ANY REPAIR WORK WITHOUT PRIOR APPROVAL FROM THE ENGINEER. THE REMOVAL OF DETERIORATED CONCRETE SHALL PROCEED AS DIRECTED BY THE ENGINEER.



EXIST SOUND REINF WITHIN THE PARTIAL DEPTH PATCH REMOVAL AREA SHALL REMAIN AND BE THOROUGHLY CLEANED, AND SEVERELY CORRODED OR DAMAGED REINF SHALL BE REMOVED, SEE DECK SLAB REINFORCING REPAIR FOR CORRODED AND DAMAGED REINF REPAIR THIS SHEET

**PARTIAL DEPTH PATCH REPAIR  
TYPICAL TRANSVERSE DECK SECTION**

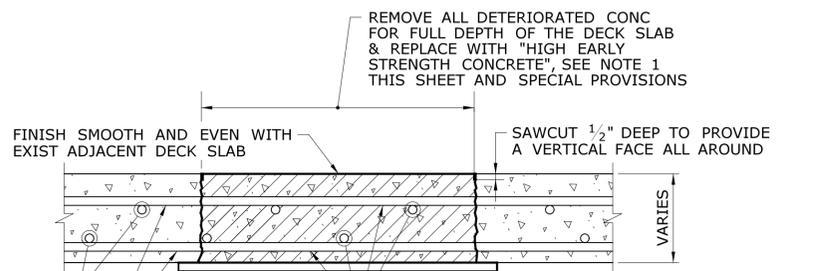
SCALE: 1 1/2" = 1'-0"



EXIST SOUND REINF WITHIN THE PARTIAL DEPTH PATCH REMOVAL AREA SHALL REMAIN AND BE THOROUGHLY CLEANED, AND SEVERELY CORRODED OR DAMAGED REINF SHALL BE REMOVED, SEE DECK SLAB REINFORCING REPAIR FOR CORRODED AND DAMAGED REINF REPAIR THIS SHEET

**PARTIAL DEPTH PATCH  
TYPICAL LONGITUDINAL DECK SECTION**

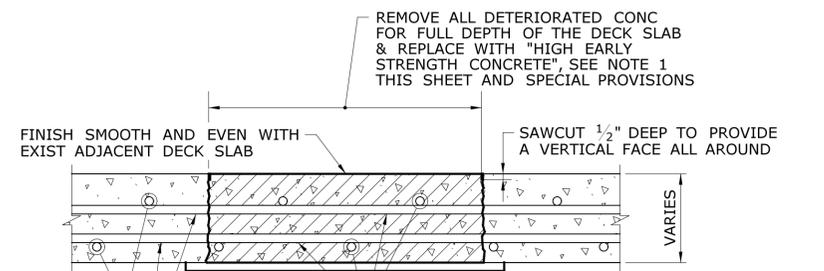
SCALE: 1 1/2" = 1'-0"



EXIST SOUND REINF WITHIN THE FULL DEPTH PATCH REMOVAL AREA SHALL REMAIN AND BE THOROUGHLY CLEANED, AND SEVERELY CORRODED OR DAMAGED REINF SHALL BE REMOVED, SEE DECK SLAB REINFORCING REPAIR FOR CORRODED AND DAMAGED REINF REPAIR THIS SHEET

**FULL DEPTH PATCH REPAIR  
(HIGH EARLY STRENGTH CONCRETE)  
TYPICAL TRANSVERSE SECTION**

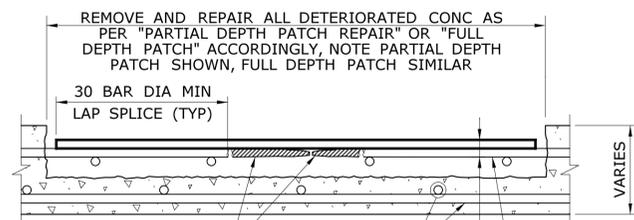
SCALE: 1 1/2" = 1'-0"



EXIST SOUND REINF WITHIN THE FULL DEPTH PATCH REMOVAL AREA SHALL REMAIN AND BE THOROUGHLY CLEANED, AND SEVERELY CORRODED OR DAMAGED REINF SHALL BE REMOVED, SEE DECK SLAB REINFORCING REPAIR FOR CORRODED AND DAMAGED REINF REPAIR THIS SHEET

**FULL DEPTH PATCH REPAIR  
(HIGH EARLY STRENGTH CONCRETE)  
TYPICAL LONGITUDINAL SECTION**

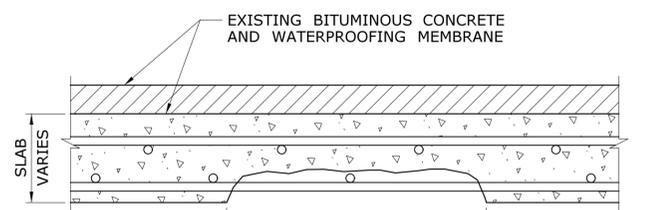
SCALE: 1 1/2" = 1'-0"



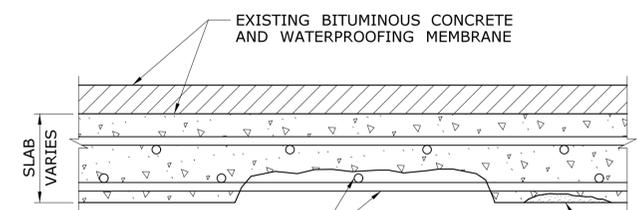
EXIST REINF SEVERELY CORRODED OR DAMAGED SHALL BE CUT AT A POINT WHERE EXIST REINF IS SOUND. THE DAMAGED REINF SHALL BE REMOVED, REPLACED AND SPICED WITH NEW REINF OF THE SAME SIZE AND SPACING, OR AS DIRECTED BY THE ENGINEER. (TOP REINF REPAIR SHOWN, BOTTOM REINF REPAIR SIMILAR)

**DECK SLAB REINFORCING REPAIR FOR  
SEVERELY CORRODED OR DAMAGED  
EXISTING DECK SLAB REINFORCING**

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



APPLY EPOXY RESIN SYSTEM  
(SEE SPECIAL PROVISION - CLEAN AND COAT EXPOSED REINFORCING STEEL)



EXPOSED REINFORCING STEEL TO BE THOROUGHLY CLEANED AND COATED WITH EPOXY RESIN SYSTEM (SEE SPECIAL PROVISION)

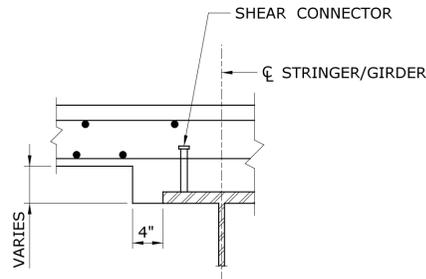
**DECK UNDERSIDE REPAIRS  
(CLEAN AND COAT EXPOSED REINFORCING STEEL)**

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

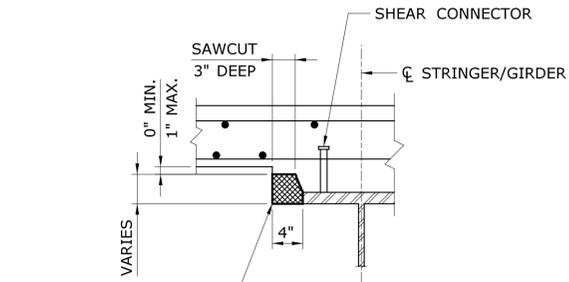
NOTE:

THE COST OF SUPPLYING ADDITIONAL REINFORCING BARS SHALL BE PAID FOR UNDER THE RESPECTIVE REPAIR ITEM, FULL DEPTH PATCH OR PARTIAL DEPTH PATCH, THAT THE STEEL REINFORCEMENT IS REQUIRED FOR.

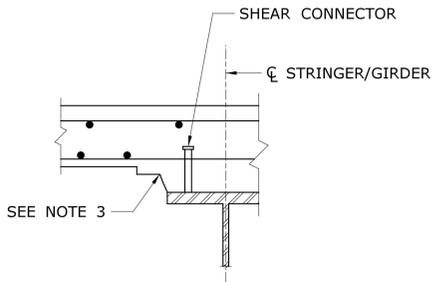
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.	DESIGNER/DRAFTER: <b>C. DAVIS</b> CHECKED BY: <b>M. EGAN</b> SCALE AS NOTED	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION Filename: ...SB_MSH_0094_0252_BR_NO_02514A_DRD-1.dgn	SIGNATURE/ BLOCK:  Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>92-252</b> DRAWING NO. <b>SA-99</b> SHEET NO. <b>04.099</b>
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**TYPICAL CONCRETE HAUNCH  
EXISTING CONDITION**  
SCALE: 1" = 1'-0"

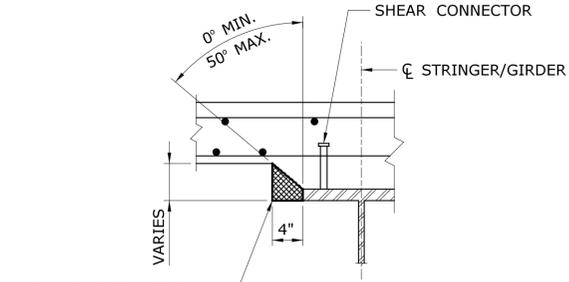


REMOVE THIS PORTION OF EXISTING CONCRETE BEAM HAUNCH  
**EXISTING CONDITION**

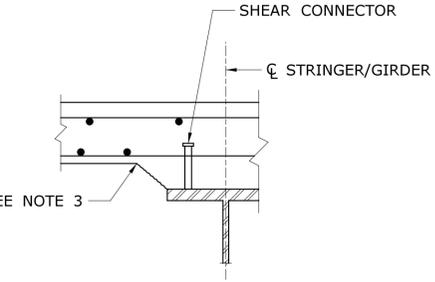


**FINAL CONDITION**

**TYPICAL CONCRETE HAUNCH REMOVAL METHOD**  
SCALE: 1" = 1'-0"

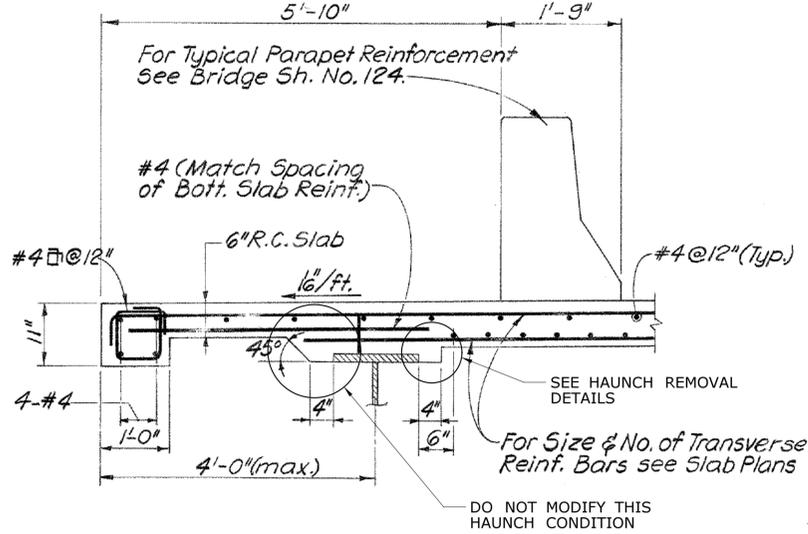


REMOVE THIS PORTION OF EXISTING CONCRETE BEAM HAUNCH  
**EXISTING CONDITION**

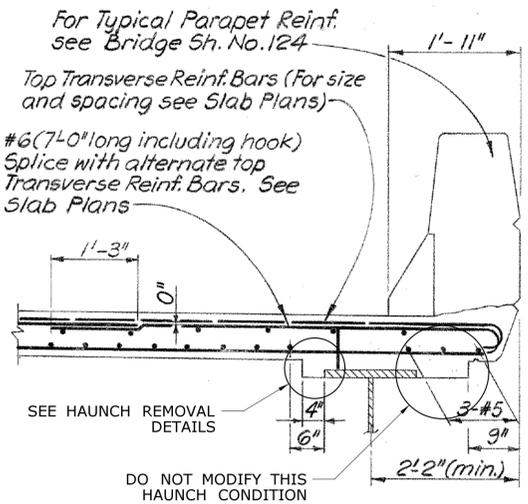


**FINAL CONDITION**

**CONCRETE HAUNCH REMOVAL METHOD FOR INACCESSIBLE LOCATIONS (SEE NOTE 2)**  
SCALE: 1" = 1'-0"



**TYPICAL SIDEWALK SLAB REINFORCEMENT**  
SCALE: N.T.S.



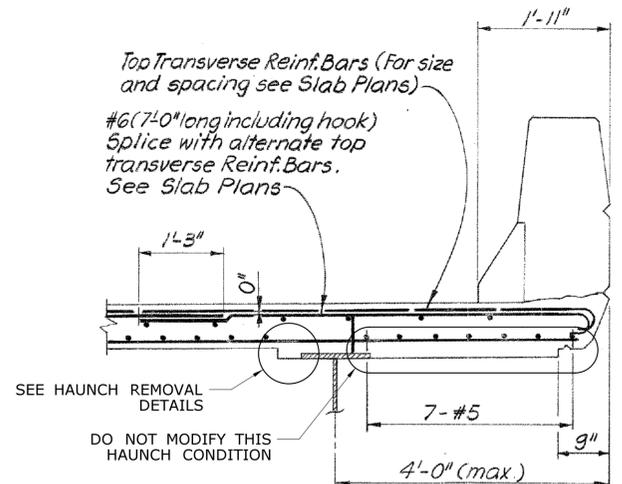
**TYPICAL ADDITIONAL SLAB REINFORCEMENT AT PARAPET**  
SCALE: N.T.S.

**CONCRETE HAUNCH REMOVAL NOTES:**

1. THE REMOVAL OF THE PORTION OF THE CONCRETE HAUNCH SHOWN SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LINEAR FOOT FOR THE ITEM "CONCRETE HAUNCH REMOVAL".
2. THIS METHOD TO BE USED ONLY IN THOSE AREAS HAVING INSUFFICIENT CLEARANCE FOR SAW-CUTTING EQUIPMENT. AREAS MAY INCLUDE LOCATIONS ABOVE DIAPHRAGMS OR OTHER LOCATIONS AS DIRECTED BY THE ENGINEER.
3. IF OVER-REMOVAL RESULTS, APPLY TWO COATS OF EPOXY RESIN TO DECK REINFORCING STEEL EXPOSED DURING HAUNCH REMOVAL. ALL REASONABLE PRECAUTIONS SHALL BE TAKEN TO AVOID THIS CONDITION.
4. TYPICALLY, WIDE HAUNCHES SHALL BE REMOVED ALONG BOTH EDGES OF INTERIOR BEAM FLANGES. ONLY THE WIDENED HAUNCH ON THE INSIDE FASCIA BEAMS SHALL BE REMOVED, UNLESS DIRECTED OTHERWISE BY THE ENGINEER.
5. CONTRACTOR SHALL ERECT A DEBRIS SHIELD TO BE PAID FOR, AND AS OUTLINED IN THE SPECIAL PROVISIONS FOR THE ITEM "CONCRETE HAUNCH REMOVAL".
6. HAUNCHES TO BE REMOVED OVER ROADWAYS, SIDEWALKS AND RAILROADS AS NOTED ON THE GENERAL PLAN AND ELEVATION SHEETS AND TO THE LIMITS INDICATED ON THE DETAILS ON THIS SHEET. APPROXIMATE LIMITS OF HAUNCH REMOVAL INDICATED IN TABLE BELOW.

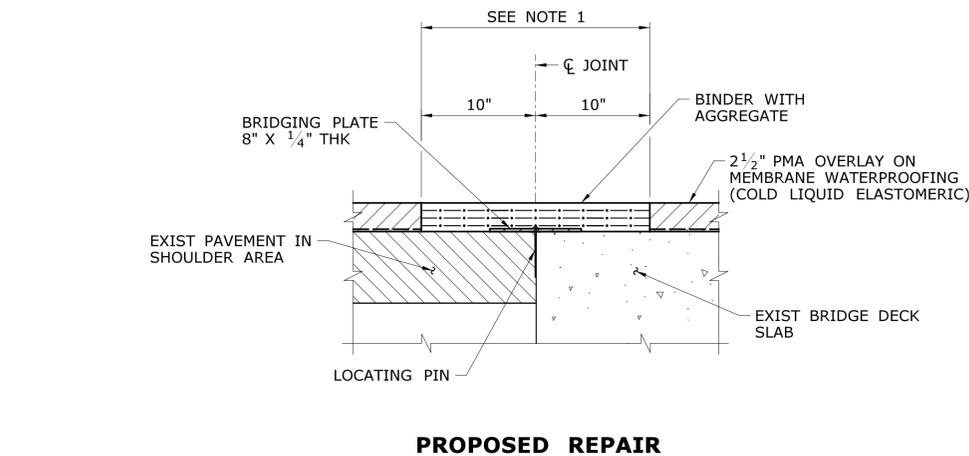
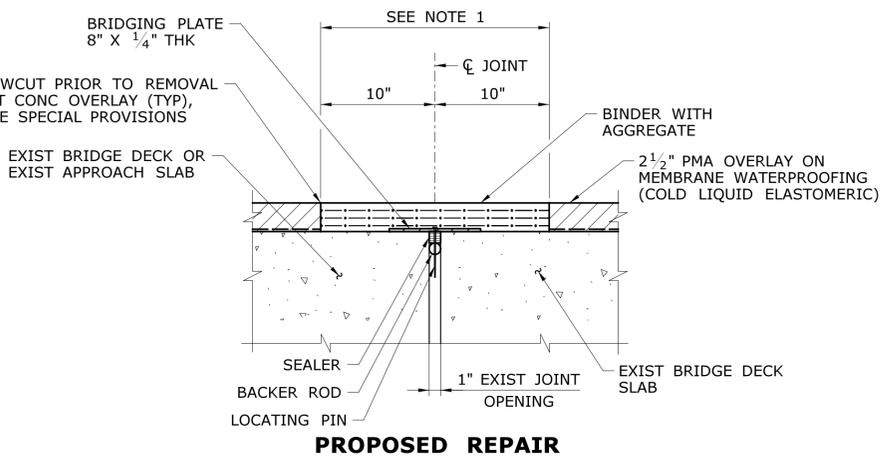
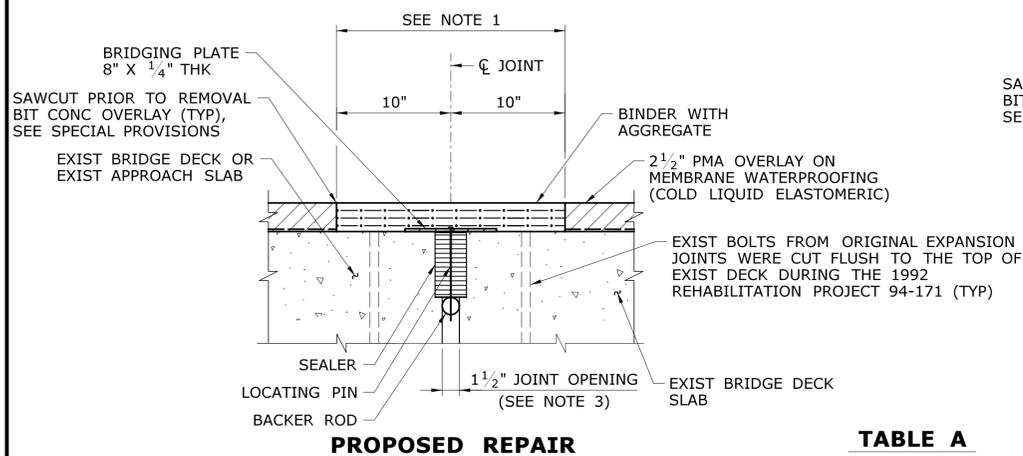
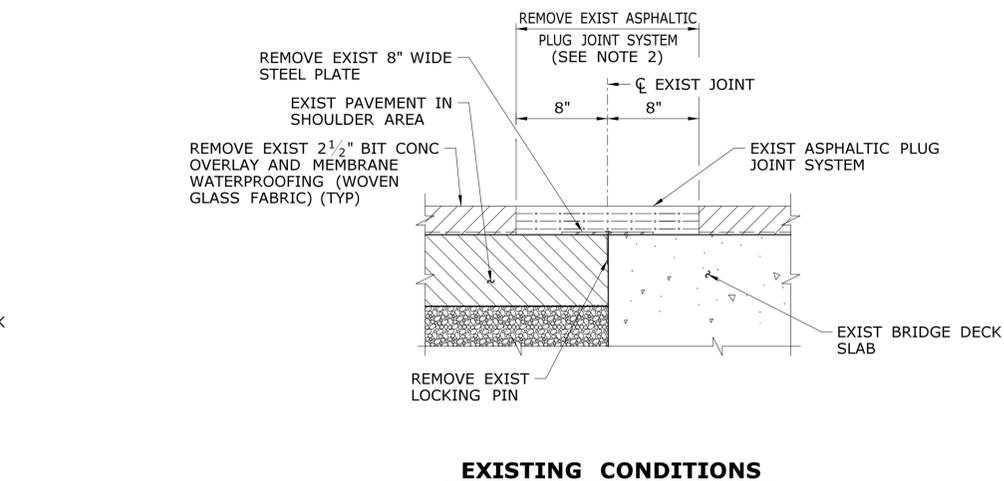
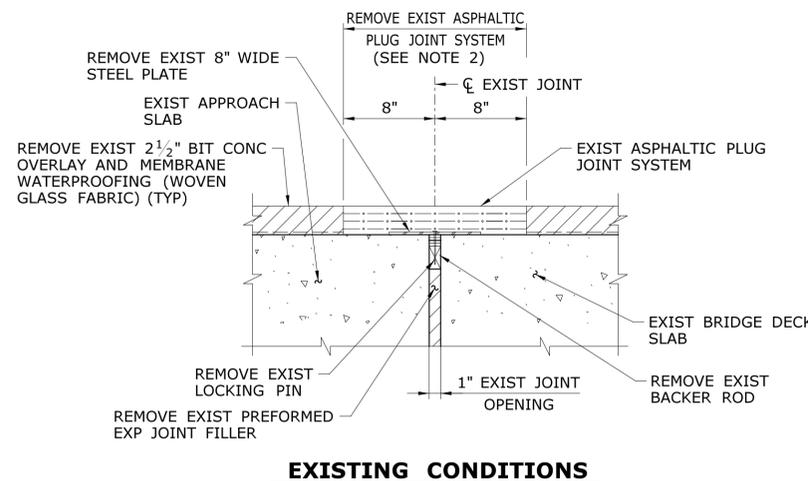
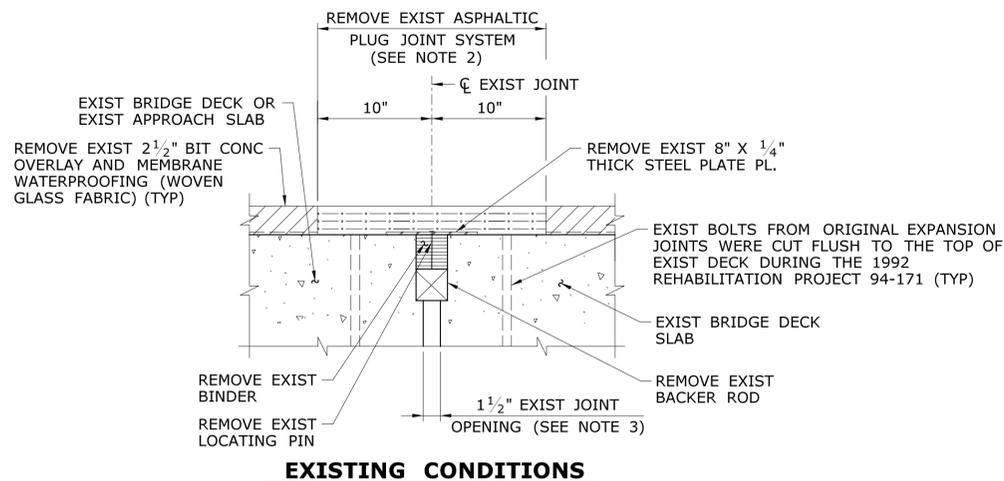
CONCRETE HAUNCH REMOVAL LOCATIONS		
LOCATION	WIDTH**	ANGLE***
WILLIAMS STREET (INCLUDING SIDEWALKS ON BOTH SIDES OF STREET)*	ENTIRE SPAN (121.9')	83.4°
STATE PIER ROAD (INCLUDING SIDEWALK ON WEST SIDE OF ROAD)*	ENTIRE SPAN (90.3')	107.5°
COLE STREET (INCLUDING SIDEWALKS ON BOTH SIDES OF STREET)*	ENTIRE SPAN (124')	89.8°
CRYSTAL AVE (INCLUDING SIDEWALKS ON BOTH SIDES OF STREET)	52'	123.5°
LEWIS STREET (INCLUDING SIDEWALKS ON BOTH SIDES OF STREET)	48'	31.3°
NEW ENGLAND CENTRAL RAILROAD (UNDER SPAN 18)	25'	93.6°
NEW ENGLAND CENTRAL RAILROAD (UNDER SPAN 19)	25'	115.6°
FAIRFIELD AVENUE (INCLUDING SIDEWALK ON EAST SIDE OF AVENUE)	44'	88.4°
PROVIDENCE AND WORCHESTER RAILROAD	50'	75.7°
SIDEWALK TO BRIDGE (UNDER SPAN 30)	6'	91.0°

\* APPLIES TO SAME LOCATION FOR BRIDGE 02514B  
 \*\* WIDTH TAKEN PERPENDICULAR TO C OF STREET/RR BELOW (EXCEPT "ENTIRE SPAN" WIDTH WHICH IS SPAN WIDTH TAKEN FROM GENERAL PLAN AND ELEVATION SHEET)  
 \*\*\* ANGLE OF STREET/RR BELOW RELATIVE TO I-95 SB B (EXCEPT "ENTIRE SPAN" WIDTH LOCATIONS WHICH IS ANGLE OF SPAN RELATIVE TO I-95 SB B)



**TYPICAL MODIFIED ADDITIONAL SLAB REINFORCEMENT AT PARAPET**  
SCALE: N.T.S.

REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	DESIGNER/DRAFTER: <b>C. DAVIS</b>	 <b>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</b>	SIGNATURE/ BLOCK:  Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b>
				CHECKED BY: <b>M. EGAN</b>				SCALE AS NOTED	FILENAME: ...SB_MSH_0094_0252_BR_NO_02514A_DRP-2.dgn



**A**  
-  
**ASPHALTIC PLUG EXPANSION JOINT SYSTEM SECTION (PIERS 1 THRU 12)**  
SCALE: 1 1/2" = 1'-0"

**B**  
-  
**ASPHALTIC PLUG EXPANSION JOINT SYSTEM SECTION (ABUTMENT 1)**  
SCALE: 1 1/2" = 1'-0"

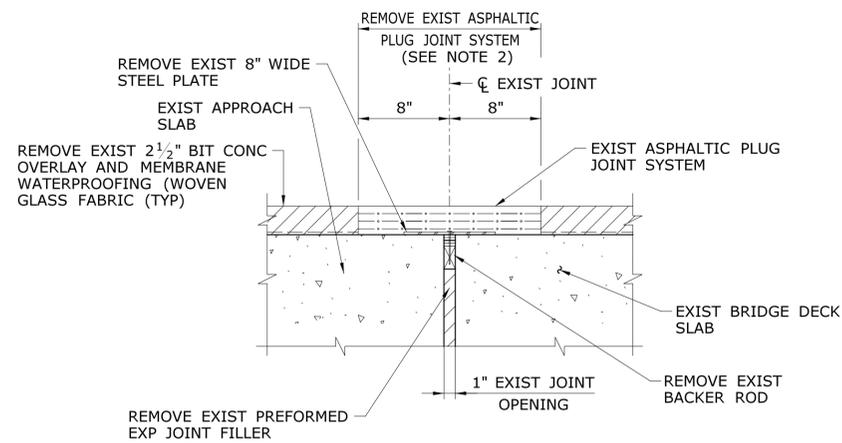
**C**  
-  
**ASPHALTIC PLUG EXPANSION JOINT SYSTEM SECTION (ABUTMENT 3 AT SHOULDER)**  
SCALE: 1 1/2" = 1'-0"

**TABLE A**

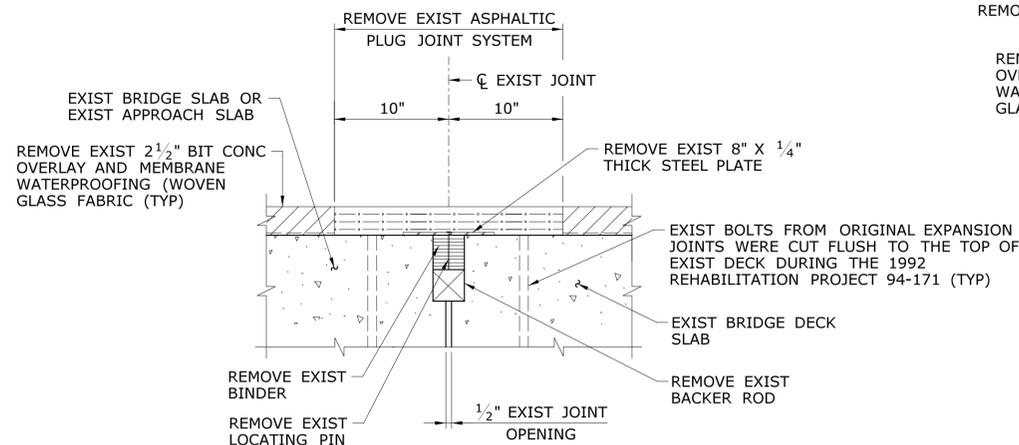
THERMAL MOVEMENT RANGE FOR ASPHALTIC PLUG JOINT INSTALLATIONS		
JOINT LOCATION	THERMAL MOVEMENT	RANGES AS PER SPECIFICATION
ABUTMENT NO. 1	0"	0" - 1"
PIER NO. 1	1.105"	1 1/8"
PIER NO. 2	0.786"	0" - 1"
PIER NO. 3	0.786"	0" - 1"
PIER NO. 4	0.819"	0" - 1"
PIER NO. 5	0.901"	0" - 1"
PIER NO. 6	0.908"	0" - 1"
PIER NO. 7	0.908"	0" - 1"
PIER NO. 8	1.129"	1 1/4"
PIER NO. 9	1.129"	1 1/4"
PIER NO. 10	1.128"	1 1/4"
PIER NO. 11	1.128"	1 1/4"
PIER NO. 12	1.128"	1 1/4"
PIER NO. 13	1.127"	1 1/4"
ALL INTERMEDIATE DECK JOINTS	0"	0" - 1"

- NOTES:
1. REMOVE NEW BITUMINOUS CONCRETE OVERLAY AND MEMBRANE WATERPROOFING. REPLACE WITH ASPHALTIC PLUG EXPANSION JOINT SYSTEM, TO BE PAID FOR UNDER THE ITEM "ASPHALTIC PLUG EXPANSION JOINT SYSTEM". (SEE SPECIAL PROVISION)
  2. REMOVAL OF EXISTING JOINT TO BE PAID FOR UNDER THE ITEM "REMOVAL OF EXISTING WEARING SURFACE".
  3. 1" AT PIERS 2 AND 3.

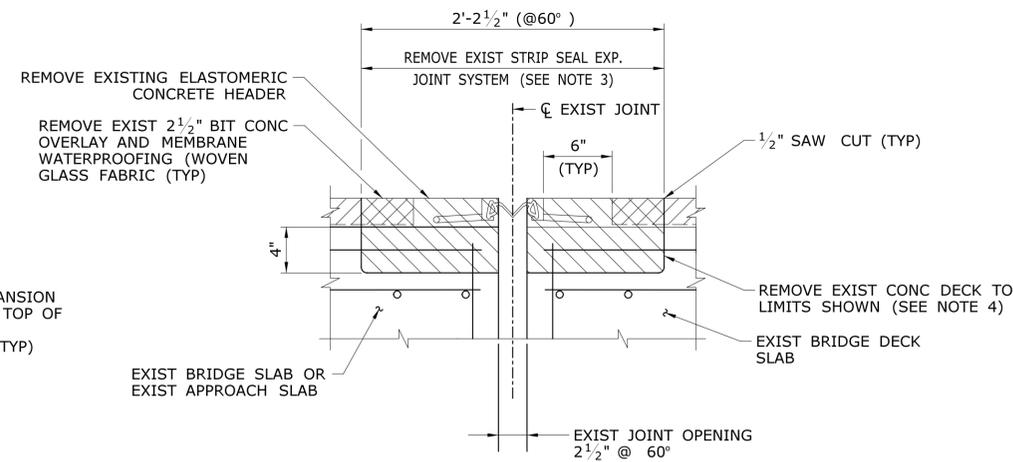
THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.	DESIGNER: <b>C. DAVIS</b> CHECKED BY: <b>M. EGAN</b> SCALE AS NOTED	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION Filename: ..._SB_MSH_0094_0252_BR_NO_02514A.APJ 1.dgn	SIGNATURE/BLOCK: Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-101</b> SHEET NO. <b>04.101</b>
REV. DATE REVISION DESCRIPTION SHEET NO. Plotted Date: 7/12/2016	<b>ASPHALTIC PLUG EXP JOINT DETAILS -1</b>					



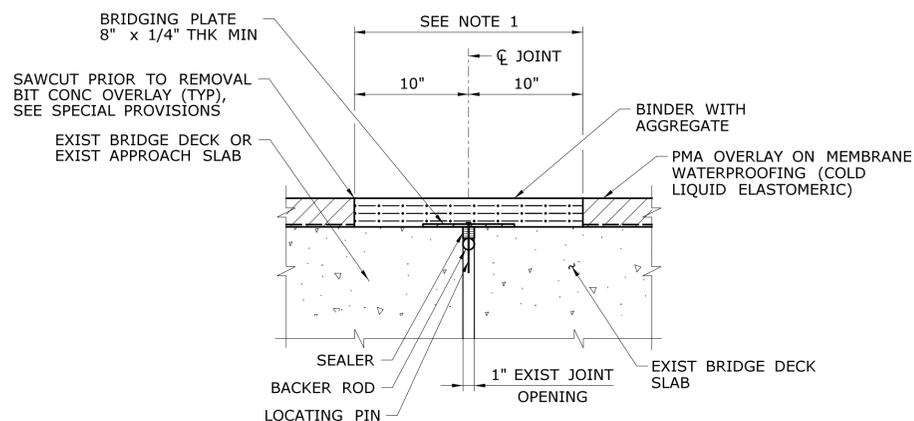
**EXISTING CONDITIONS**



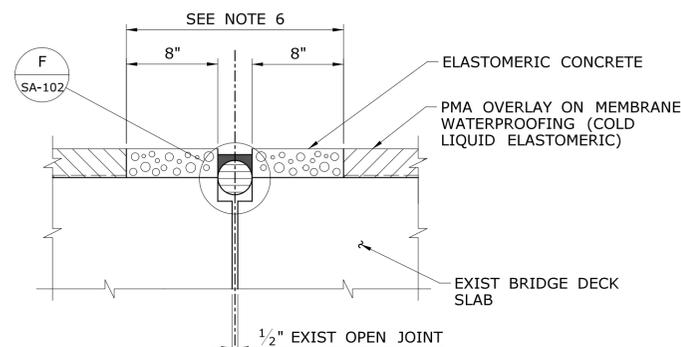
**EXISTING CONDITIONS**



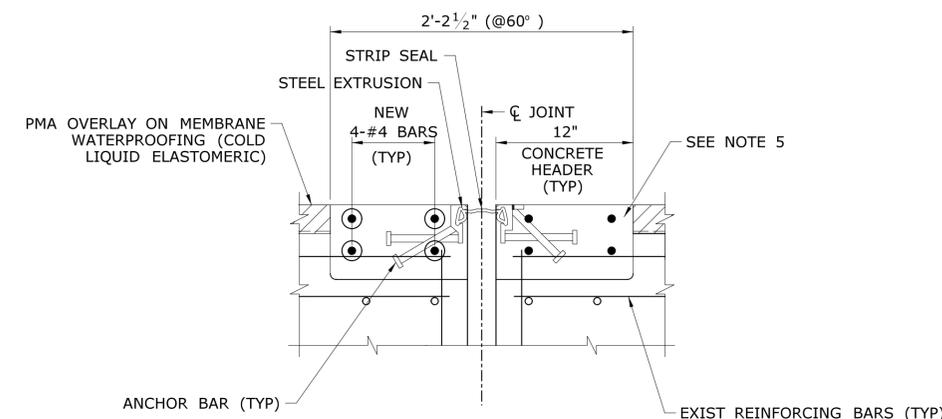
**EXISTING CONDITIONS**



**PROPOSED REPAIR**



**PROPOSED REPAIR**



**PROPOSED REPAIR**

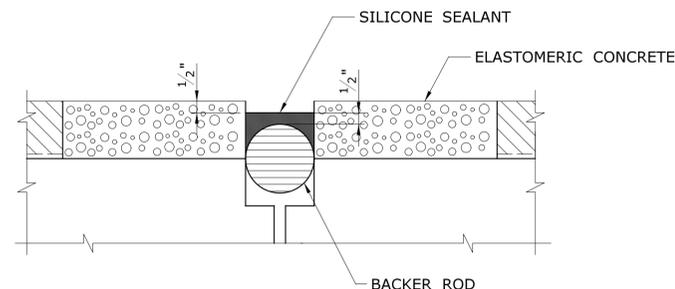
**D** ASPHALTIC PLUG EXPANSION JOINT SYSTEM SECTION (INTERMEDIATE SLAB JOINTS IN TRUSS SPANS)  
 SA-X SCALE: 1 1/2" = 1'-0"

**E** SILICONE EXPANSION JOINT SYSTEM SECTION (LONGITUDINAL JOINT)  
 SA-X SCALE: 1 1/2" = 1'-0"

**G** STRIP SEAL JOINT SYSTEM SECTION (PIERS 13 & 26 AND ABUTMENT 3)  
 SA-X SCALE: 1 1/2" = 1'-0"

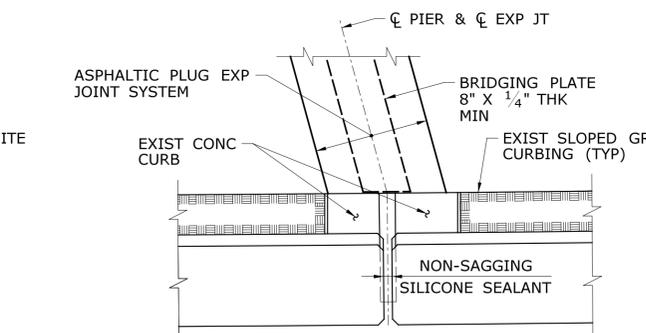
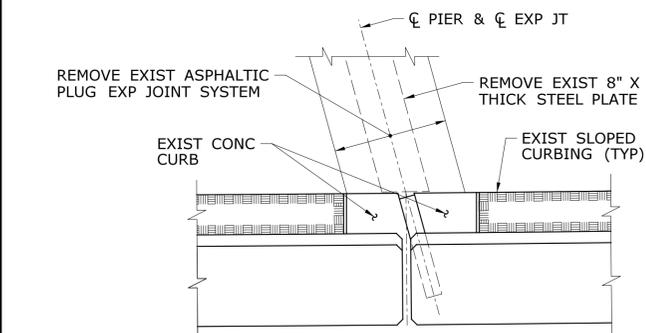
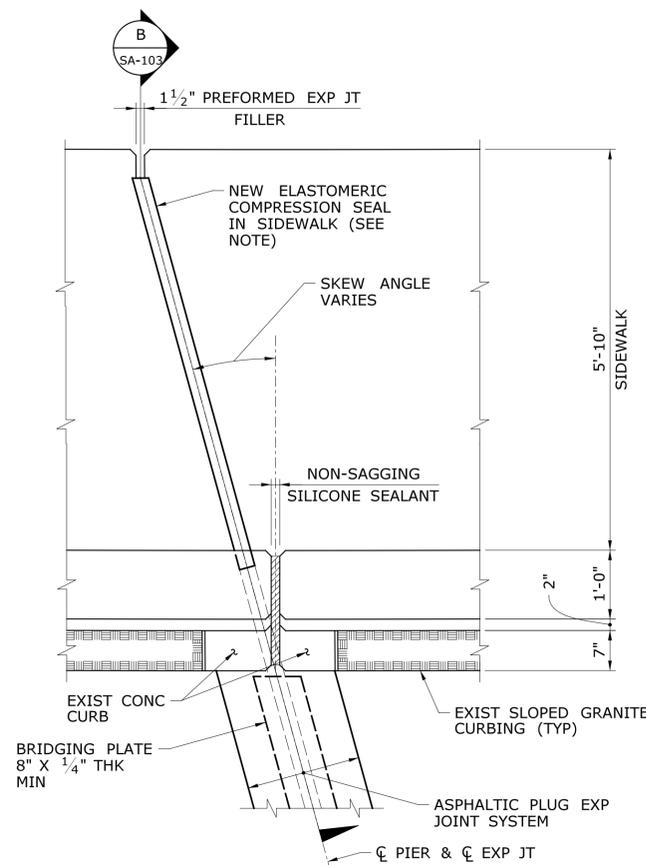
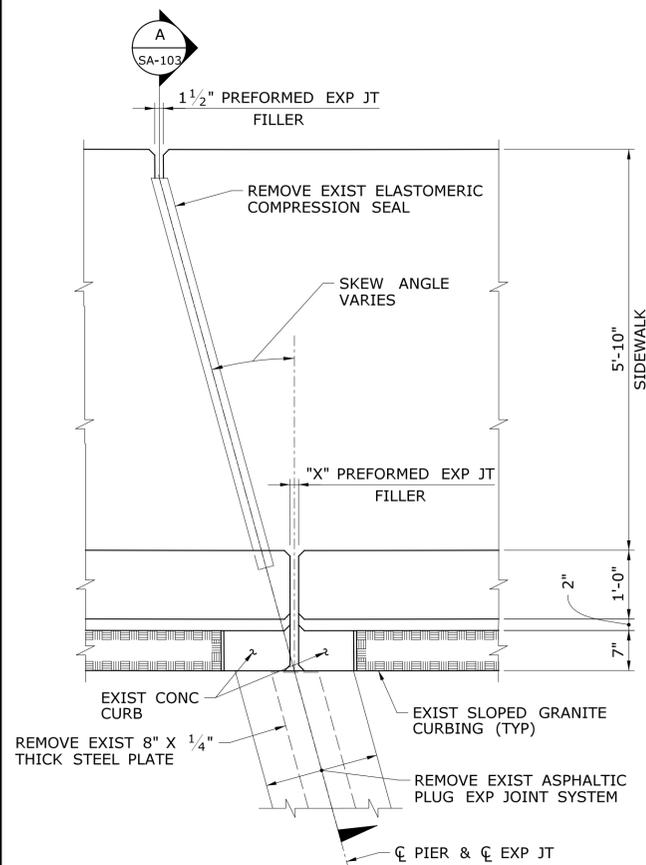
**NOTES:**

1. REMOVE NEW BITUMINOUS CONCRETE OVERLAY AND MEMBRANE WATERPROOFING. REPLACE WITH ASPHALTIC PLUG EXPANSION JOINT SYSTEM. TO BE PAID UNDER THE ITEM "ASPHALTIC PLUG EXPANSION JOINT SYSTEM". (SEE SPECIAL PROVISION).
2. REMOVAL OF EXISTING JOINT TO BE PAID FOR UNDER THE ITEM "REMOVAL OF EXISTING WEARING SURFACE".
3. REMOVAL OF EXISTING STRIP SEAL EXPANSION JOINT TO BE PAID FOR UNDER THE ITEM "STRIP SEAL EXPANSION JOINT SYSTEM".
4. REMOVAL OF EXISTING DECK TO BE PAID FOR UNDER THE ITEM "STRIP SEAL EXPANSION JOINT SYSTEM FOR REHAB PROJECTS".
5. CONCRETE FOR NEW CONCRETE HEADERS SHALL BE HIGH EARLY STRENGTH CONCRETE AND PAID FOR UNDER THE ITEM "STRIP SEAL EXPANSION JOINT SYSTEM".
6. REMOVE NEW BITUMINOUS CONCRETE OVERLAY AND MEMBRANE WATERPROOFING. REPLACE WITH SILICONE EXPANSION JOINT SYSTEM. TO BE PAID UNDER THE ITEM "SILICONE EXPANSION JOINT SYSTEM". (SEE SPECIAL PROVISION).



**F** SILICONE EXPANSION JOINT DETAIL  
 SA-102 SCALE: 3" = 1'-0"

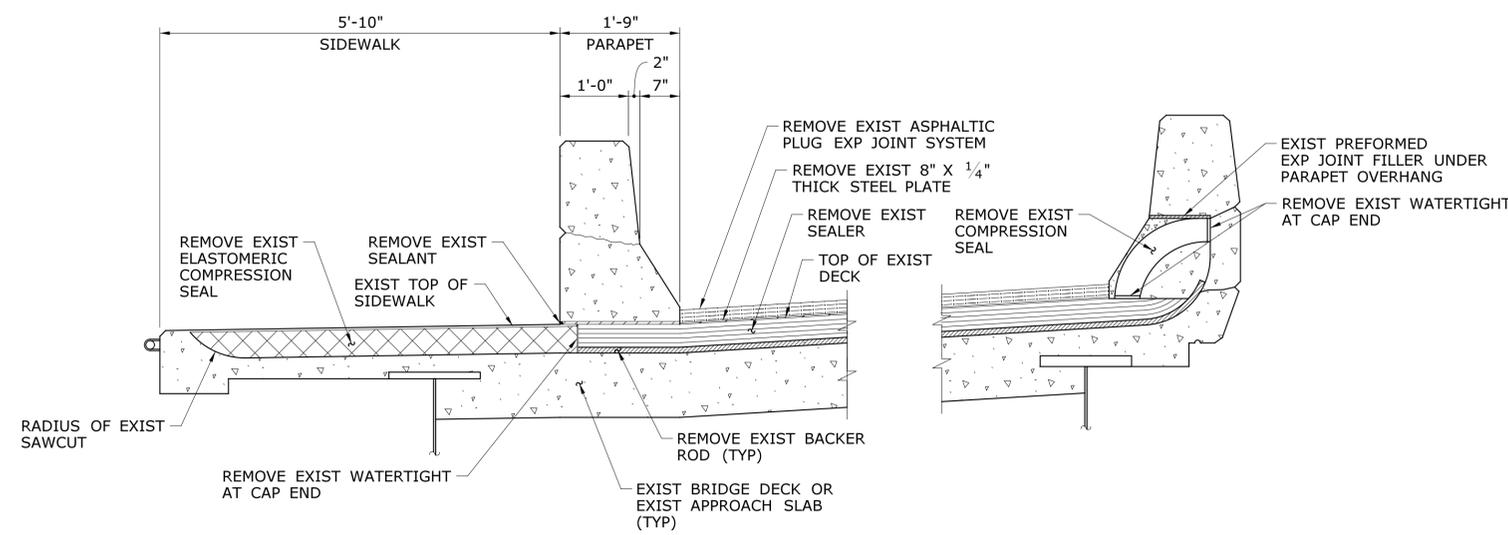
THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.			DESIGNER: <b>C. DAVIS</b> CHECKED BY: <b>M. EGAN</b>	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	SIGNATURE/BLOCK: Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-102</b> SHEET NO. <b>04.102</b>	
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016					Filename: ...\\SB_MSH_0094_0252_BR_NO_02514A_SSJ_1.dgn



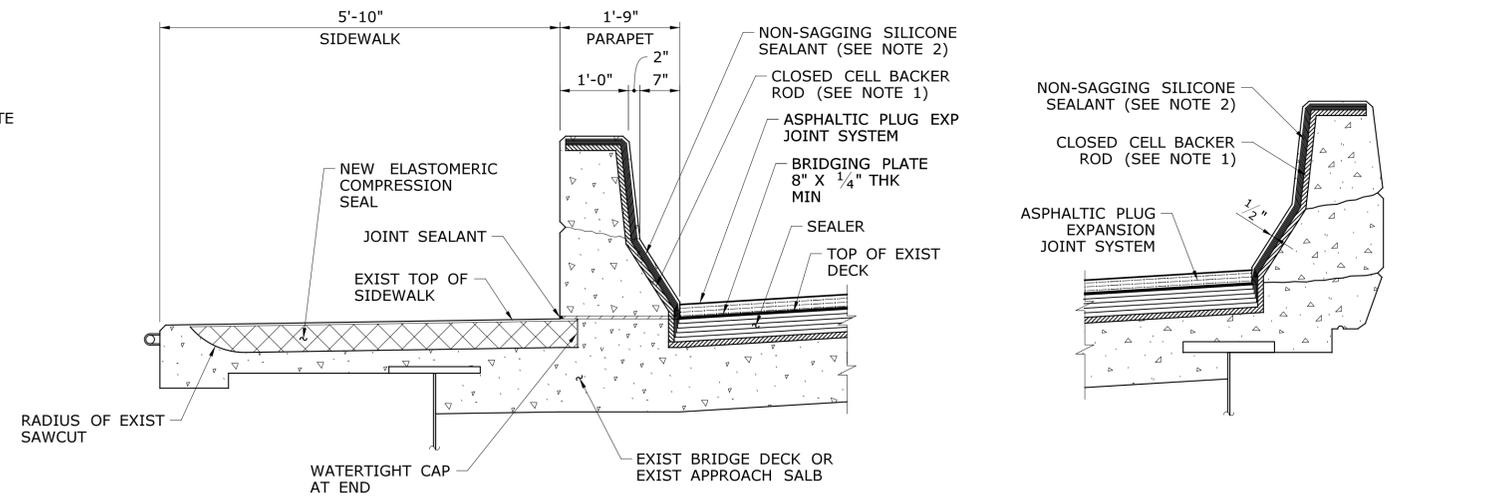
**1** EXISTING CONDITIONS PLAN  
**SA-103** ASPHALTIC PLUG EXPANSION JOINT SYSTEM  
 (PIERS 1 THRU 12)  
 SCALE: 3/4" = 1'-0"

**2** PROPOSED REPAIR PLAN  
**SA-103** ASPHALTIC PLUG EXPANSION JOINT SYSTEM  
 (PIERS 1 THRU 12)  
 SCALE: 3/4" = 1'-0"

- NOTE:**
1. THE CLOSED CELL BACKER ROD SHALL BE PLACED A MINIMUM OF 2" FROM THE OUTSIDE FACE OF PARAPETS AND MEDIAN BARRIERS.
  2. THE NON-SAGGING SILICONE SEALANT SHALL BE PLACED ON THE BACKER ROD 1/2" THICK. AT THE GUTTER, THE SILICONE SEALANT SHALL BE PLACED FLUSH WITH THE OUTSIDE FACE OF CONCRETE.
  3. REMOVAL OF EXISTING AND INSTALLATION OF NEW COMPRESSION SEAL IN SIDEWALK TO BE PAID FOR UNDER THE ITEM "3" ELASTOMERIC COMPRESSION SEAL".

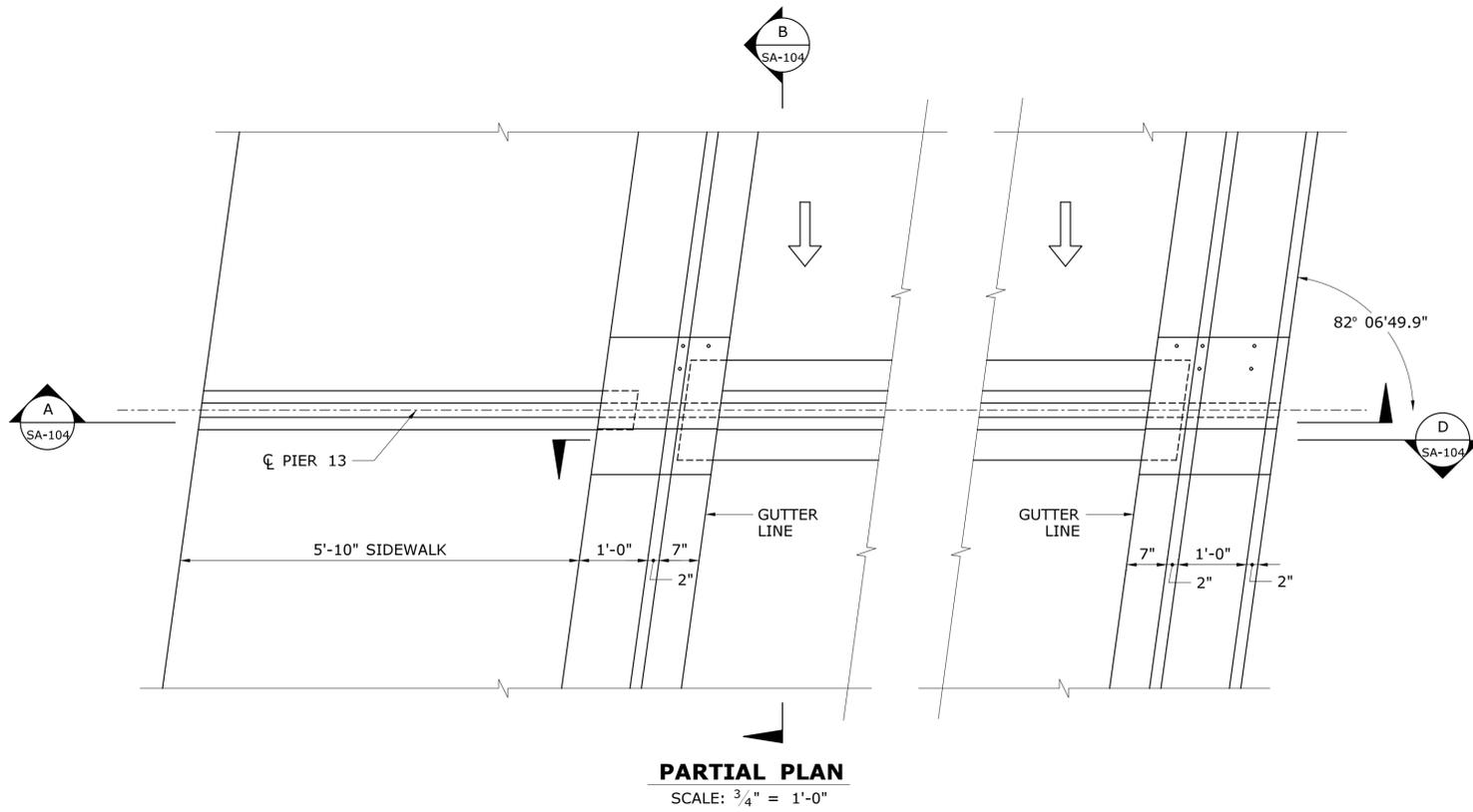


**A** EXISTING CONDITIONS SECTION  
**SA-103** ASPHALTIC PLUG EXPANSION JOINT SYSTEM  
 (PIERS 1 THRU 12)  
 SCALE: 3/4" = 1'-0"

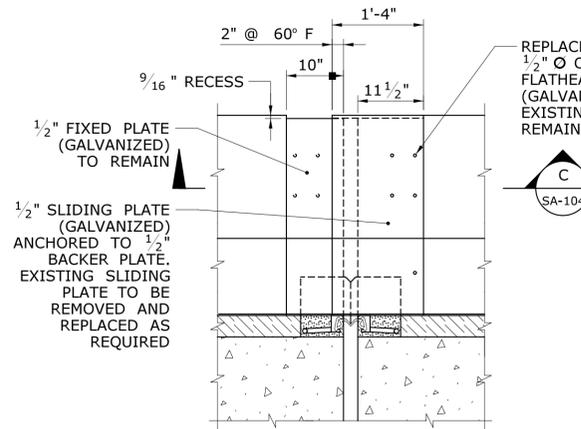


**B** PROPOSED REPAIR SECTION  
**SA-103** ASPHALTIC PLUG EXPANSION JOINT SYSTEM  
 (PIERS 1 THRU 12)  
 SCALE: 3/4" = 1'-0"

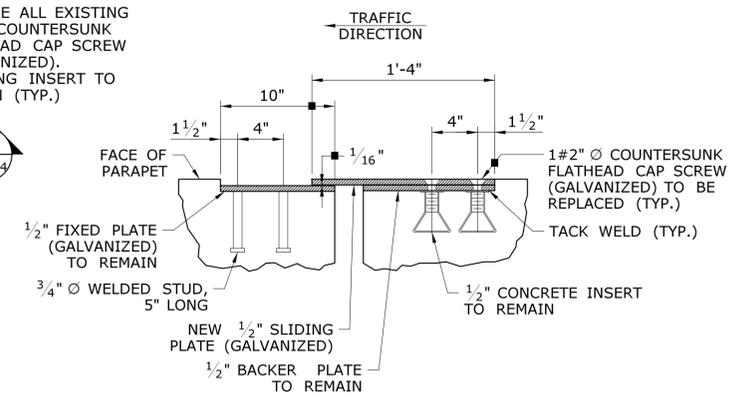
THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER: <b>C. DAVIS</b> CHECKED BY: <b>M. EGAN</b>	<b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b>	SIGNATURE/ BLOCK: Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-103</b> SHEET NO. <b>04.103</b>
REV. DATE REVISION DESCRIPTION SHEET NO.	Plotted Date: 7/12/2016 Filename: ..._SB_MSH_0094_0252_BR_NO_02514A_APJ 2.dgn	SCALE AS NOTED	PROJECT TITLE: <b>ASPHALTIC PLUG EXP JOINT DETAILS - 2</b>				



**PARTIAL PLAN**  
SCALE: 3/4" = 1'-0"



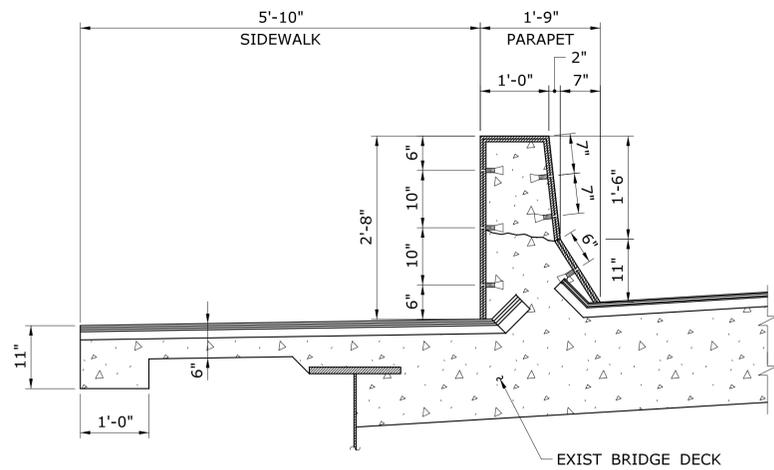
**B SECTION B**  
SA-104 SCALE: 3/4" = 1'-0"



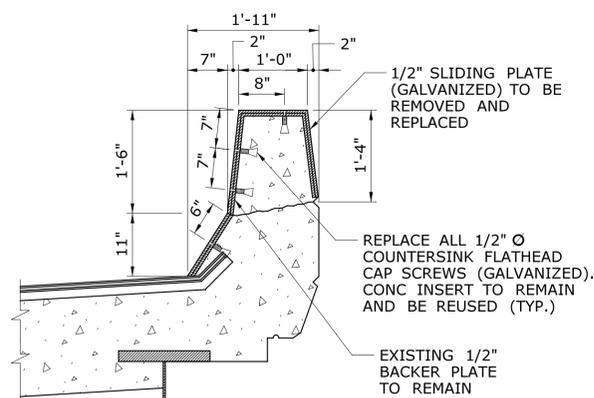
**C SECTION C**  
SA-104 SCALE: 1 1/2" = 1'-0"

**SLIDING PLATE NOTE:**

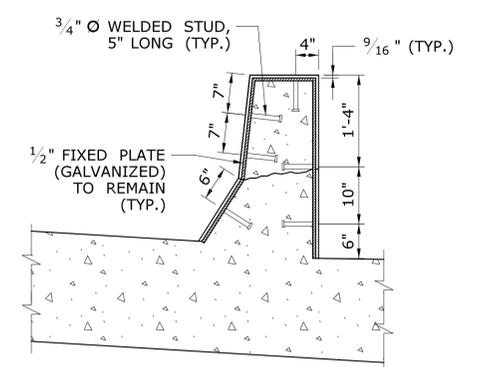
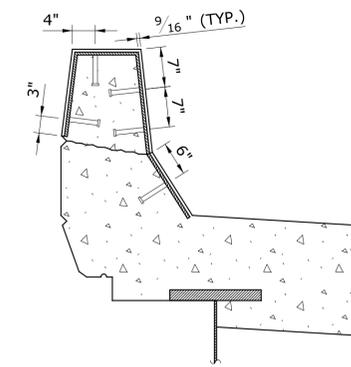
CONTRACTOR SHALL REMOVE EXISTING SLIDING PLATE AFTER TAKING ALL REQUIRED MEASUREMENTS AND FABRICATING NEW GALVANIZED STEEL SLIDING PLATE. COST TO BE INCLUDED IN THE COST OF "STRIP SEAL EXPANSION JOINT SYSTEM FOR REHAB PROJECTS" (TYP.)



**A SECTION A**  
SA-104 SCALE: 3/4" = 1'-0"



**D SECTION D**  
SA-104 SCALE: 3/4" = 1'-0"



REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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DESIGNER:  
**C. DAVIS**  
CHECKED BY:  
**M. EGAN**  
SCALE AS NOTED



SIGNATURE/BLOCK:  
  
Cardinal Engineering Associates, Inc.  
3 Colony Street  
Meriden, CT 06451

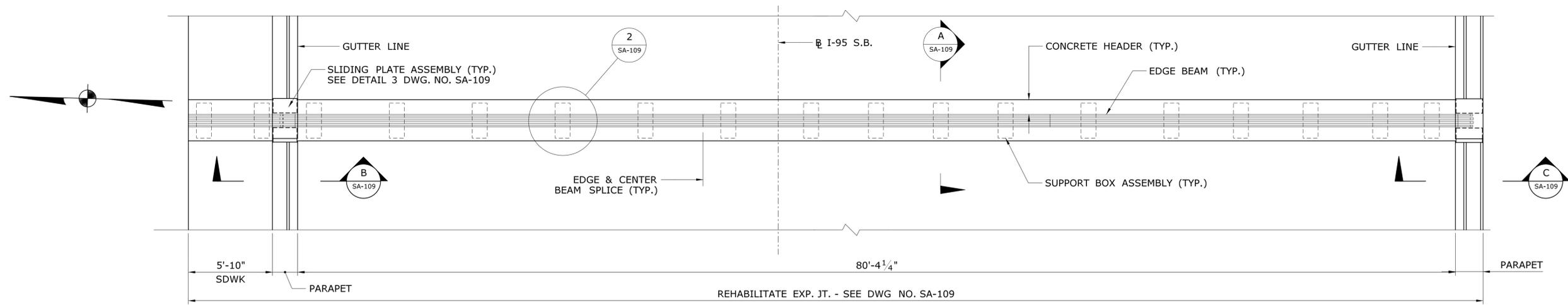
PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

TOWN:  
**NEW LONDON/GROTON**  
DRAWING TITLE:  
**PIER 13 STRIP SEAL JOINT AT CURB DETAILS**

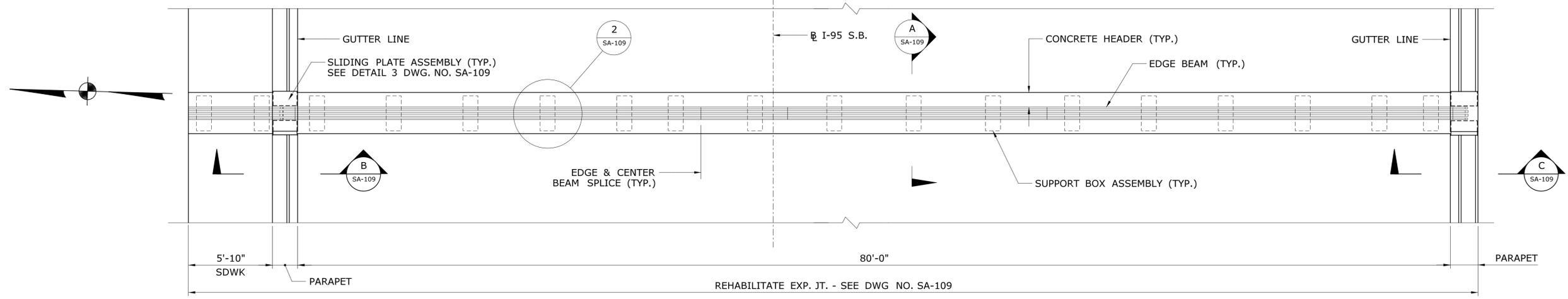
PROJECT NO.  
**94-252**  
DRAWING NO.  
**SA-104**  
SHEET NO.  
**04.104**



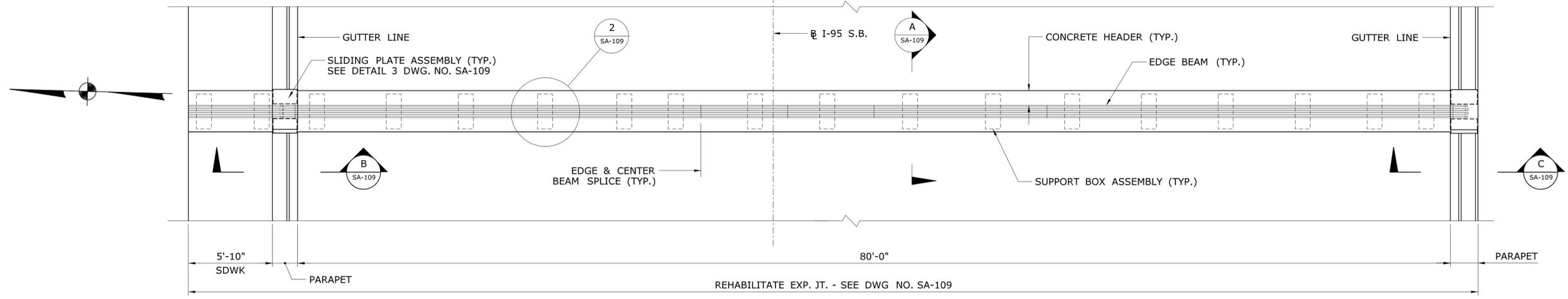




**1 PLAN - WATSON BOWMAN W.B.A D900 MODULAR EXPANSION JOINT (PIER 15)**  
SCALE: 1/4" = 1'-0"

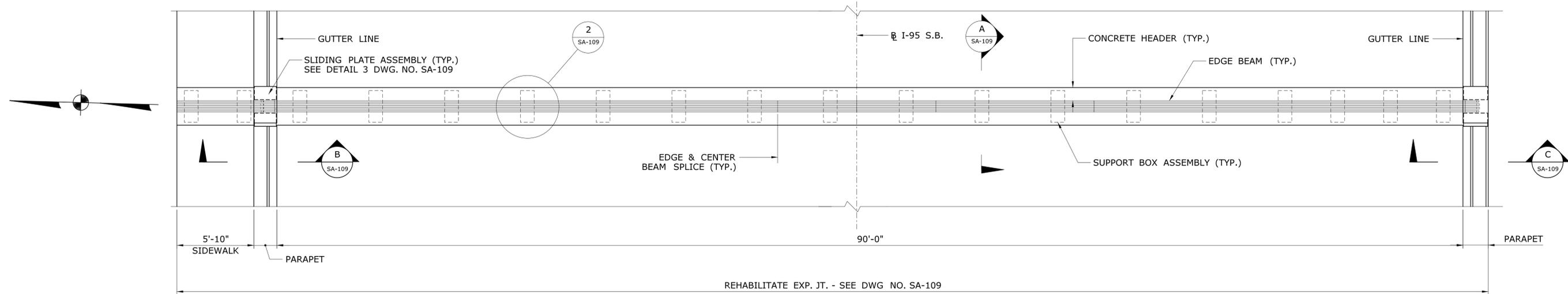


**2 PLAN - WATSON BOWMAN W.B.A D900 MODULAR EXPANSION JOINT (PIER 17)**  
SCALE: 1/4" = 1'-0"

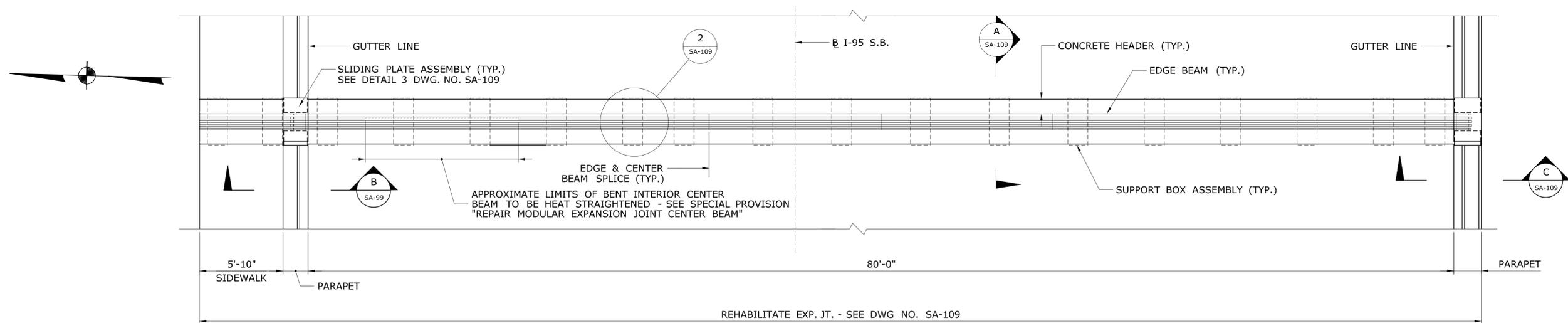


**3 PLAN - WATSON BOWMAN W.B.A D900 MODULAR EXPANSION JOINT (PIER 19, 21, 25)**  
SCALE: 1/4" = 1'-0"

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: <b>S. CIRILLO</b> CHECKED BY: <b>J. SILVA</b> SCALE AS NOTED	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION Filename: ...\\SB_MSH_0094_0252_BR02514_MJT1.dgn	SIGNATURE/BLOCK:  SILVA ENGINEERING, LLC 90 QUARRY ST. WILLIMANTIC, CT 06226	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON / GROTON</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-107</b> SHEET NO. <b>04.107</b>	
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016				

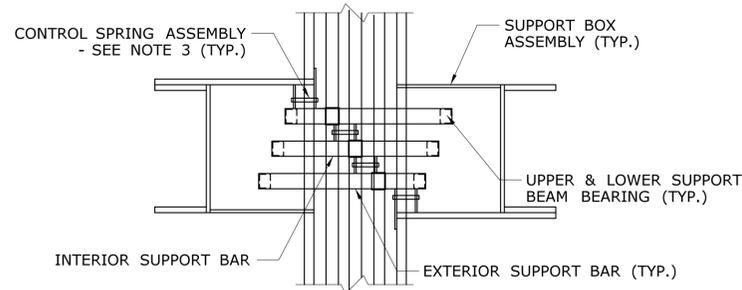


**1 PLAN - WATSON BOWMAN W.B.A D900 MODULAR EXPANSION JOINT (PIER 28)**  
 SCALE: 1/4" = 1'-0"



**2 PLAN - WATSON BOWMAN W.B.A D1200 MODULAR EXPANSION JOINT (PIER 24)**  
 SCALE: 1/4" = 1'-0"

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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016			

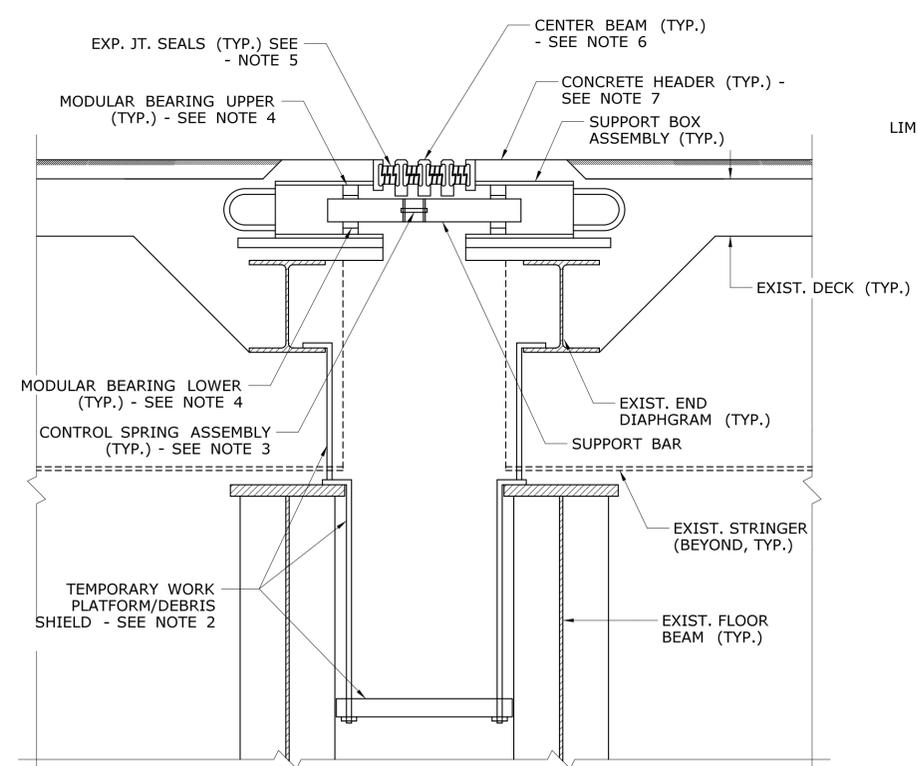


**2 SUPPORT BOX ASSEMBLY**  
**PLAN DETAIL**  
 SA-107 & SA-108  
 SCALE: 1" = 1'-0"

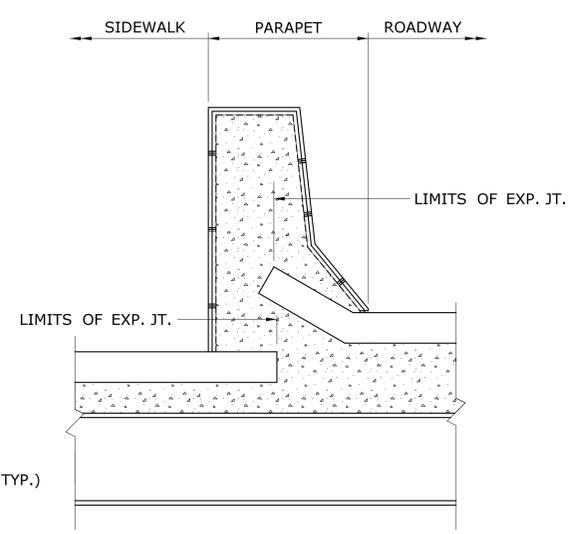
- NOTES:
1. DETAILS SHOWN ON THIS SHEET ARE FOR W.B.A D1200 MODULAR JOINT. DETAILS FOR W.B.A D900 MODULAR JOINT ARE SIMILAR.
  2. CONTRACTOR SHALL DESIGN AND INSTALL TEMP. WORK PLATFORM/DEBRIS SHIELD BENEATH EACH MODULAR EXP. JT. FOR FULL WIDTH OF BRIDGE, AND PROVIDE THE ENGINEER ACCESS TO THE UNDERDECK SIDE OF THE JOINT DURING INSPECTIONS. PAY ITEM "TEMPORARY WORK PLATFORM."

REHABILITATE MODULAR JOINT AS DIRECTED BY THE ENGINEER. THE ENGINEER SHALL DETERMINE LOCATIONS AND EXTENT OF REPAIR DURING FIELD INSPECTIONS CONDUCTED WITH MANUFACTURER'S REPRESENTATIVE AND THE CONTRACTOR. SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.

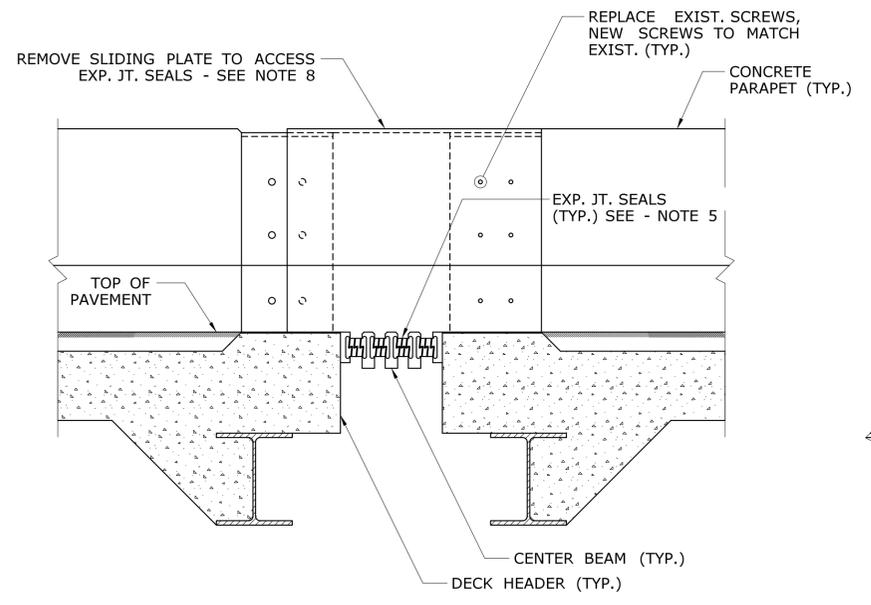
- JOINT REHABILITATION WORK INCLUDES THE FOLLOWING ITEMS:
3. REMOVE & REPLACE CONTROL SPRING ASSEMBLIES (MODULAR CONTROL SPRING DOWEL & MOD CONTROL SPRING BUFFER) AT LOCATIONS DIRECTED BY THE ENGINEER. PAY ITEM "REPLACE MODULAR EXPANSION JOINT CONTROL SPRING ASSEMBLY".
  4. REMOVE AND REPLACE BEARING BARS AT LOCATIONS DIRECTED BY THE ENGINEER. PAY ITEM "REPLACE MODULAR EXPANSION JOINT SUPPORT BAR BEARING".
  5. REMOVE AND REPLACE EXISTING JOINT SEALS. PAY ITEM "REPLACE MODULAR EXPANSION JOINT SEAL".
  6. HEAT STRAIGHTEN DAMAGED SECTIONS OF CENTER BEAM AT LOCATION INDICATED ON DRAWING SA-108 AND AT ADDITIONAL LOCATIONS AS DIRECTED BY THE ENGINEER. PAY ITEM "REPLACE MODULAR EXPANSION JOINT CENTER BEAM".
  7. PATCH CONCRETE HEADER UTILIZING PARTIAL DEPTH PATCH OR FULL DEPTH PATCH. SEE DRAWING SA-99.
  8. REMOVING AND REINSTALLING SLIDING PLATE ASSEMBLY INCLUDING REPLACING EXISTING SCREWS, AS REQUIRED, SHALL BE UNDER PAY ITEM "REPLACE MODULAR EXPANSION JOINT SEAL".



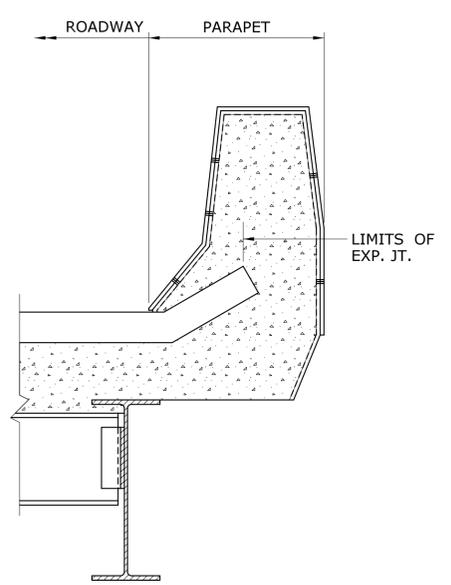
**A MODULAR EXPANSION JOINT**  
**TEMP. WORK PLATFORM/DEBRIS SHIELD**  
 SA-107 & SA-108  
 SCALE: 1" = 1'-0"



**B SIDEWALK/PARAPET**  
 SA-107 & SA-108  
 SCALE: 1" = 1'-0"

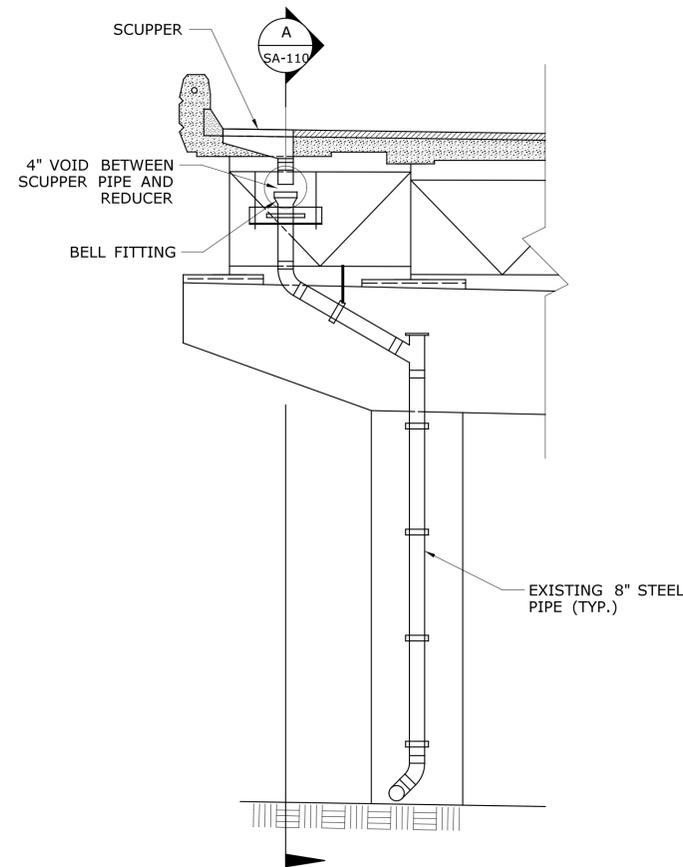


**3 SLIDING PLATE ASSEMBLY**  
**ELEVATION DETAIL**  
 SA-107 & SA-108  
 SCALE: 1" = 1'-0"

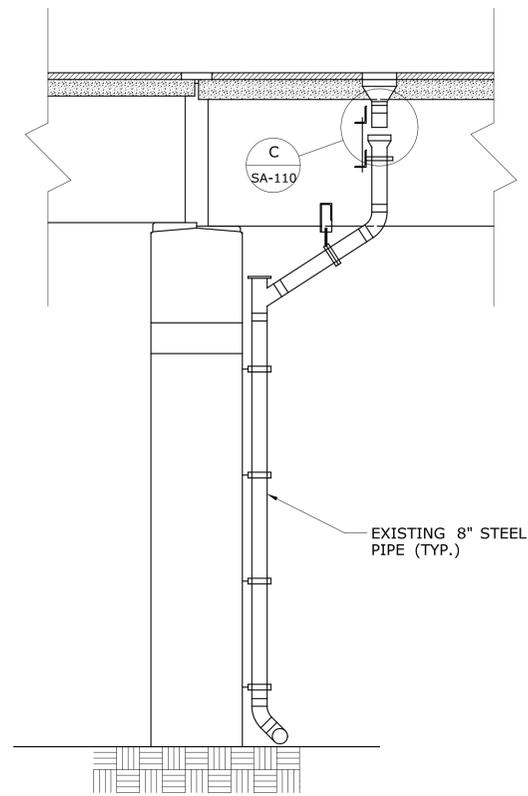


**C PARAPET**  
 SA-107 & SA-108  
 SCALE: 1" = 1'-0"

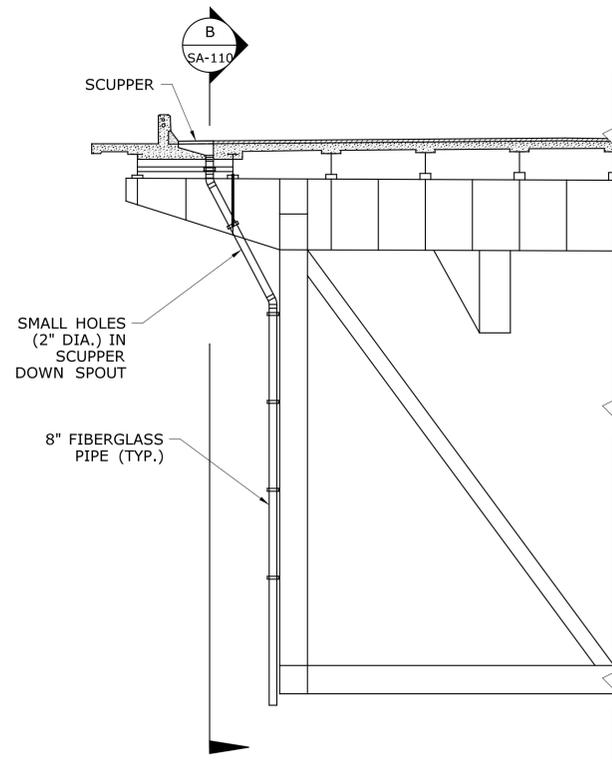
THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: <b>S. CIRILLO</b> CHECKED BY: <b>J. SILVA</b> SCALE AS NOTED	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION Filename: ..._SB_MSH_0094_0252_BR02514_MIT3.dgn	SIGNATURE/BLOCK: SILVA ENGINEERING, LLC 90 QUARRY ST. WILLIAMANTIC, CT 06226	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON / GROTON</b> DRAWING TITLE: <b>REHABILITATION - MOD. EXP. JT. DETAILS I</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-109</b> SHEET NO. <b>04.109</b>
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016			



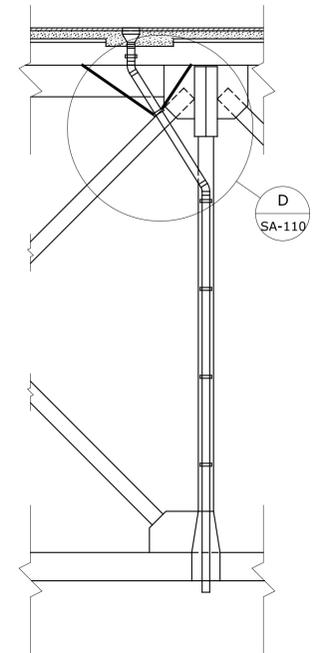
**7** PIER 4 ELEVATION  
EXISTING CONDITIONS  
SCALE: 1/4" = 1'-0"



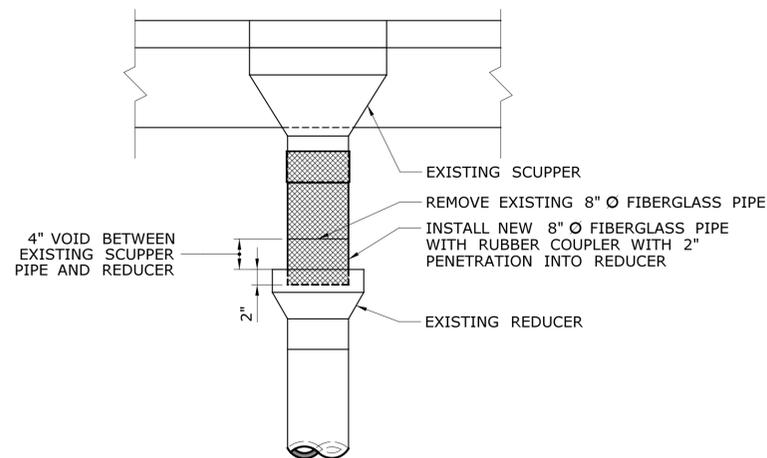
**A** PIER 4 SECTION A  
EXISTING CONDITIONS  
SCALE: 1/4" = 1'-0"



**7** SPAN 25 ELEVATION  
EXISTING CONDITIONS  
SCALE: 1/8" = 1'-0"



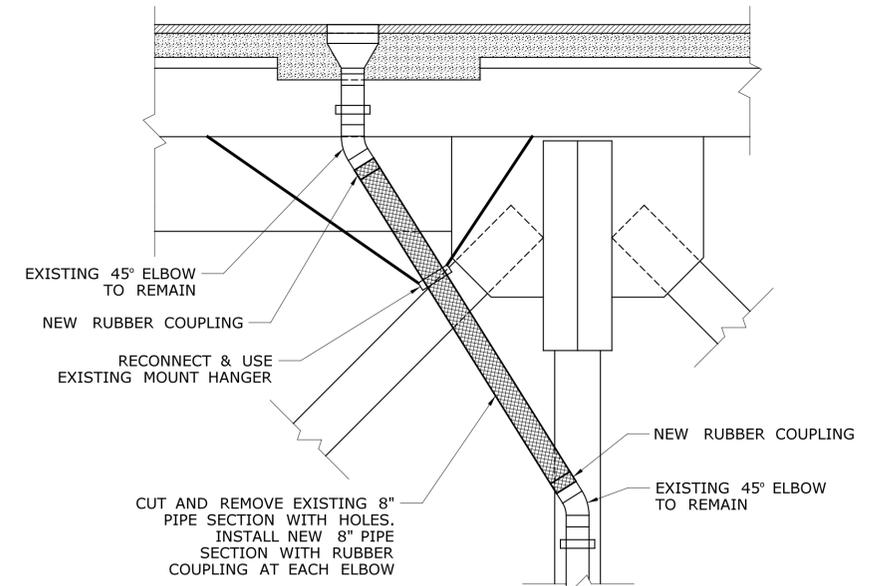
**B** SPAN 25 SECTION B  
EXISTING CONDITIONS  
SCALE: 1/8" = 1'-0"



**C** REPAIR DETAIL C  
SCALE: 1" = 1'-0"

**NOTES:**

- ALL WORK SHALL BE PAID FOR UNDER THE ITEM "REMOVAL AND REPLACEMENT OF EXISTING BRIDGE DRAINAGE SYSTEM" WHICH SHALL INCLUDE REMOVAL OF EXISTING DRAINAGE PIPE, PLACEMENT OF NEW PIPE, ANY REQUIRED CONNECTIONS AND PIPE SUPPORTS AS SHOWN AND AS INCLUDED IN THE SPECIFICATIONS.
- STRUCTURAL STEEL FOR PIPE CLAMPS, PLATES AND SUPPORTS SHALL CONFORM TO ASTM A709 GRADE 36 OR 50 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123.
- CLEANING OF EXISTING SCUPPER AND DRAINAGE SYSTEM SHALL BE PAID FOR UNDER THE ITEM "CLEAN EXISTING SCUPPERS".



**D** REPAIR DETAIL D  
SCALE: 3/8" = 1'-0"

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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DESIGNER/DRAFTER:  
**C. DAVIS**  
CHECKED BY:  
**M. EGAN**  
SCALE AS NOTED

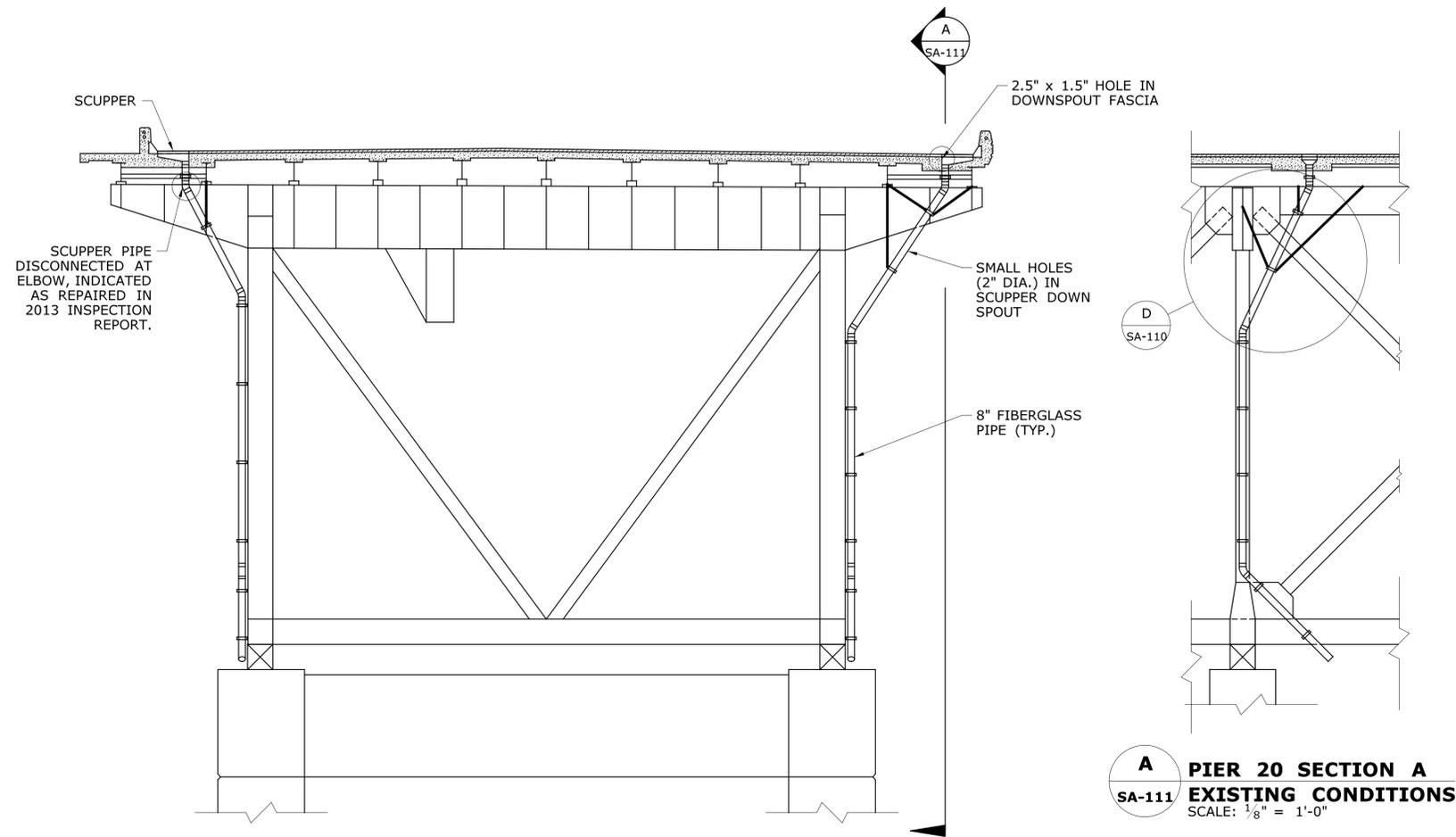
STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION  
Plotted Date: 7/12/2016  
Filename: ...SB\_MSH\_0094\_0252\_BR\_NO\_02514A\_DRN\_01.dgn

SIGNATURE/BLOCK:  
Cardinal Engineering Associates, Inc.  
3 Colony Street  
Meriden, CT 06451

PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

TOWN:  
**NEW LONDON/GROTON**  
DRAWING TITLE:  
**DRAINAGE REPAIR**

PROJECT NO.  
**94-252**  
DRAWING NO.  
**SA-110**  
SHEET NO.  
**04.110**



**7**  
-  
**PIER 20 ELEVATION**  
**EXISTING CONDITIONS**  
SCALE: 1/8" = 1'-0"

**A**  
SA-111  
**PIER 20 SECTION A**  
**EXISTING CONDITIONS**  
SCALE: 1/8" = 1'-0"

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER:  
**C. DAVIS**  
CHECKED BY:  
**M. EGAN**  
SCALE AS NOTED

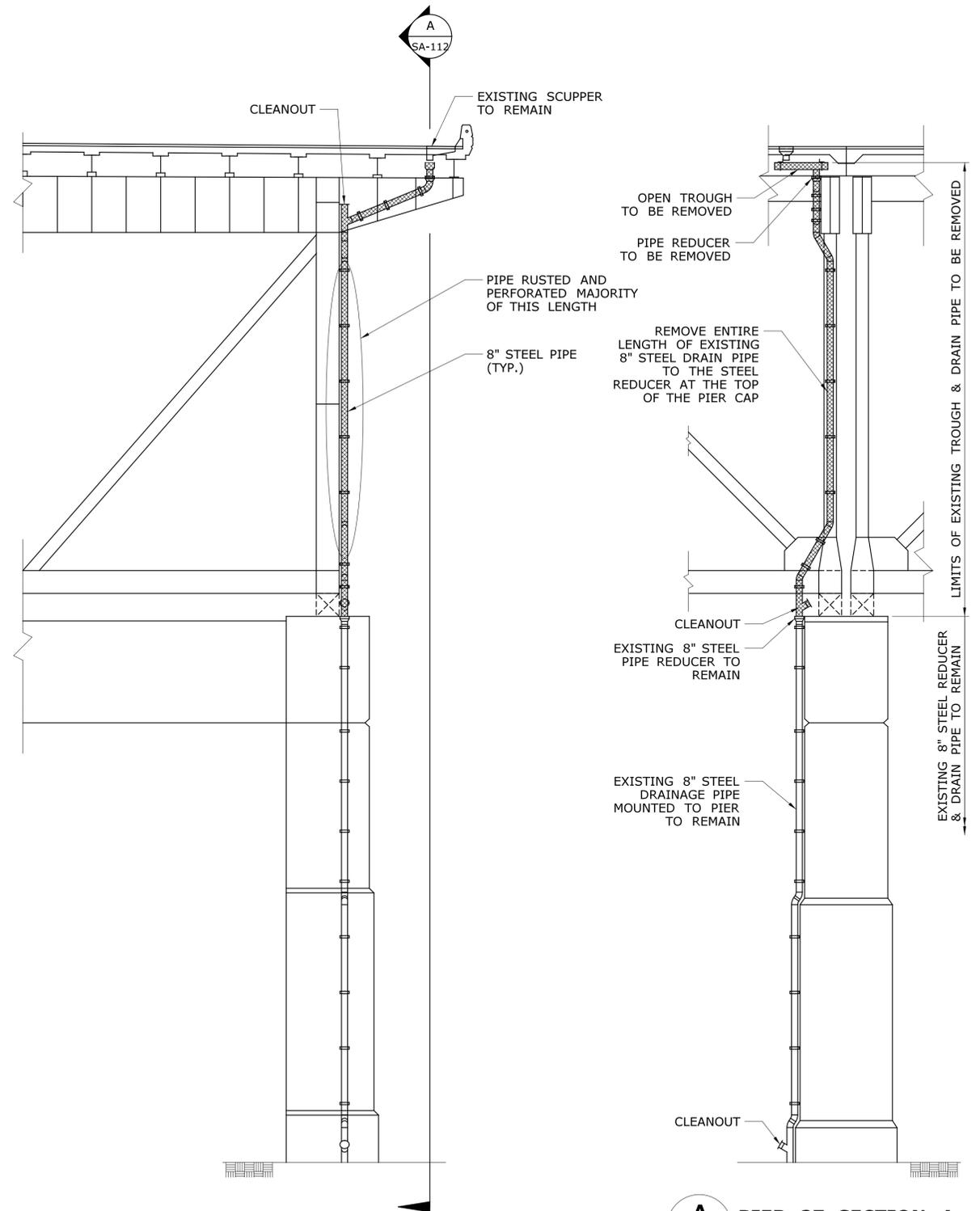

**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**  
Filename: ...\\SB\_MSH\_0094\_0252\_BR\_NO\_02514A\_DRN\_02.dgn

SIGNATURE/  
BLOCK:  
  
 Cardinal Engineering Associates, Inc.  
 3 Colony Street  
 Meriden, CT 06451

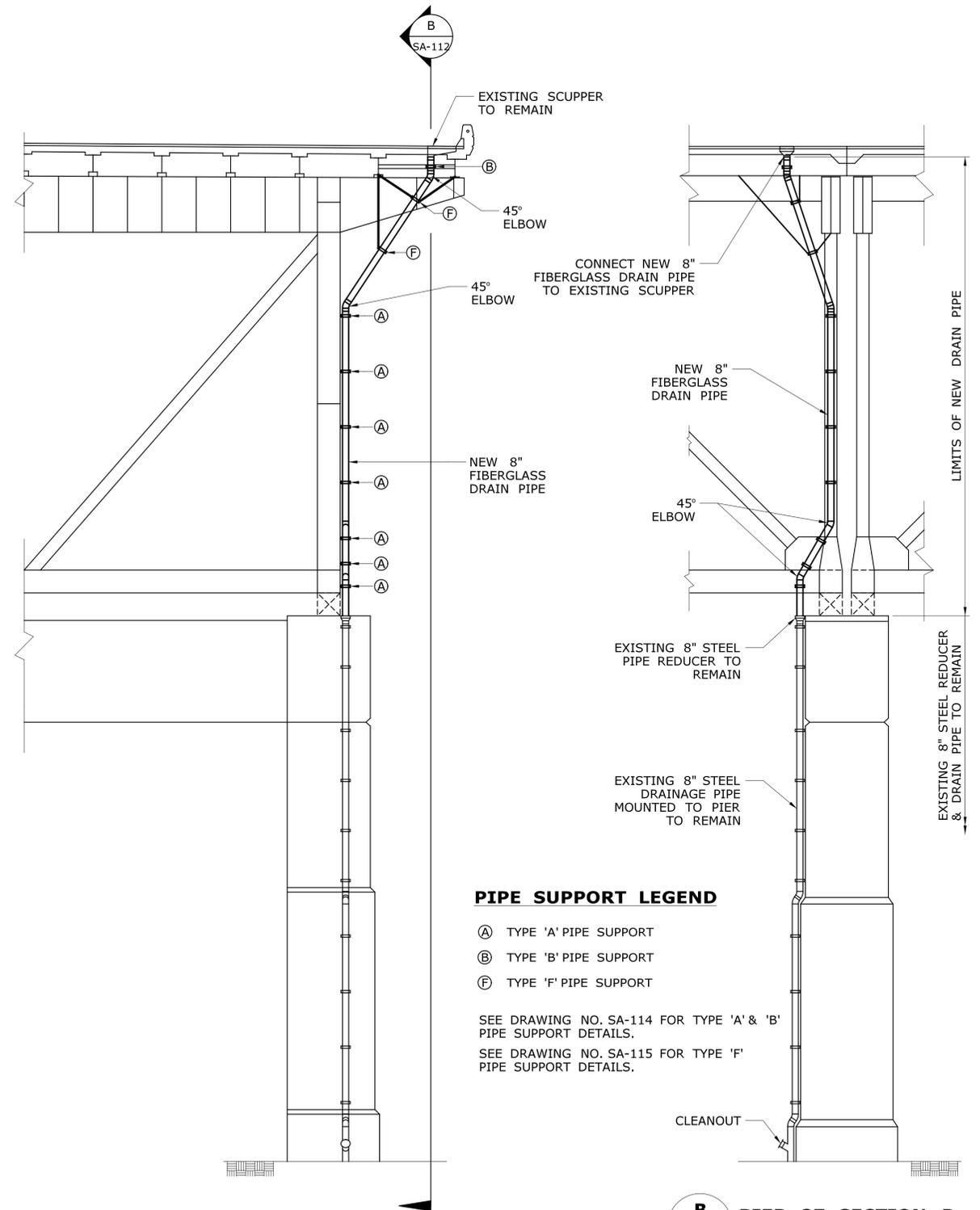
PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

TOWN:  
**NEW LONDON/GROTON**  
DRAWING TITLE:  
**DRAINAGE REPAIR**

PROJECT NO.  
**94-252**  
DRAWING NO.  
**SA-111**  
SHEET NO.  
**04.111**



**A** PIER 27 SECTION A  
 SA-112 EXISTING CONDITIONS  
 SCALE: 1/8" = 1'-0"



**B** PIER 27 SECTION B  
 SA-112 PROPOSED REPAIR  
 SCALE: 1/8" = 1'-0"

**PIPE SUPPORT LEGEND**

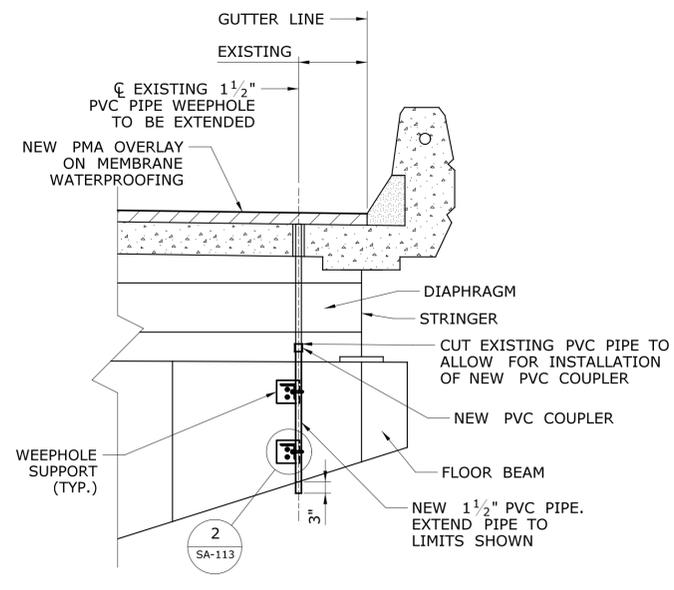
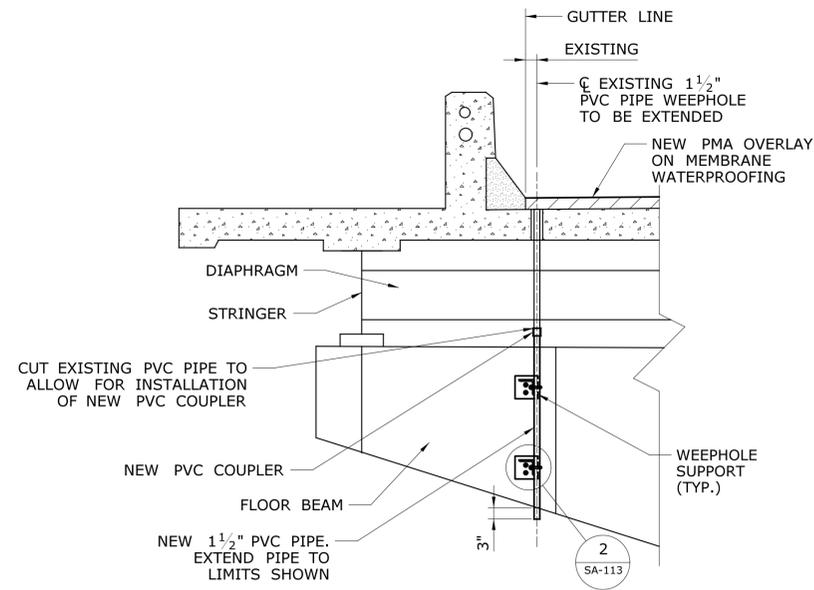
- (A) TYPE 'A' PIPE SUPPORT
- (B) TYPE 'B' PIPE SUPPORT
- (F) TYPE 'F' PIPE SUPPORT

SEE DRAWING NO. SA-114 FOR TYPE 'A' & 'B' PIPE SUPPORT DETAILS.  
 SEE DRAWING NO. SA-115 FOR TYPE 'F' PIPE SUPPORT DETAILS.

**7** PIER 27 ELEVATION  
 - EXISTING CONDITIONS  
 SCALE: 1/8" = 1'-0"

**7** PIER 27 ELEVATION  
 - PROPOSED REPAIR  
 SCALE: 1/8" = 1'-0"

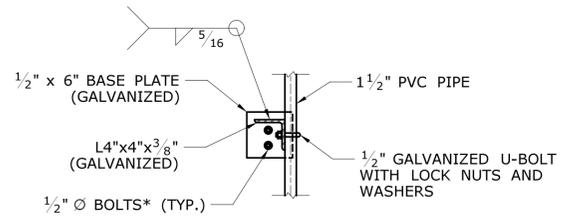
THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: <b>C. DAVIS</b> CHECKED BY: <b>M. EGAN</b> SCALE AS NOTED	<b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b> Filename: ...\\SB_MSH_0094_0252_BR_NO_02514A_DRN_03.dgn	SIGNATURE/ BLOCK:  Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-112</b> SHEET NO. <b>04.112</b>
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	DRAWING TITLE: <b>DRAINAGE REPAIR</b>		



NOTE: TO BE PAID FOR UNDER THE ITEM "EXTEND EXISTING WEEPHOLES".

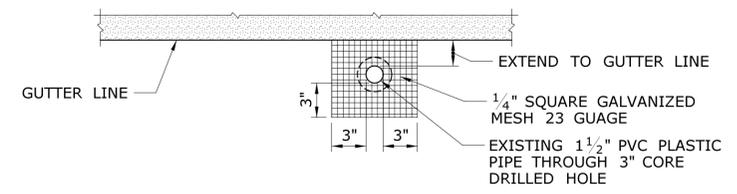
**8**  
-  
**TYPICAL WEEPHOLE REPAIR DETAIL**  
**NORTH GUTTER SPANS 13-30**  
SCALE: 1/2" = 1'-0"

**8**  
-  
**TYPICAL WEEPHOLE REPAIR DETAIL**  
**SOUTH GUTTER SPANS 13-30**  
SCALE: 1/2" = 1'-0"



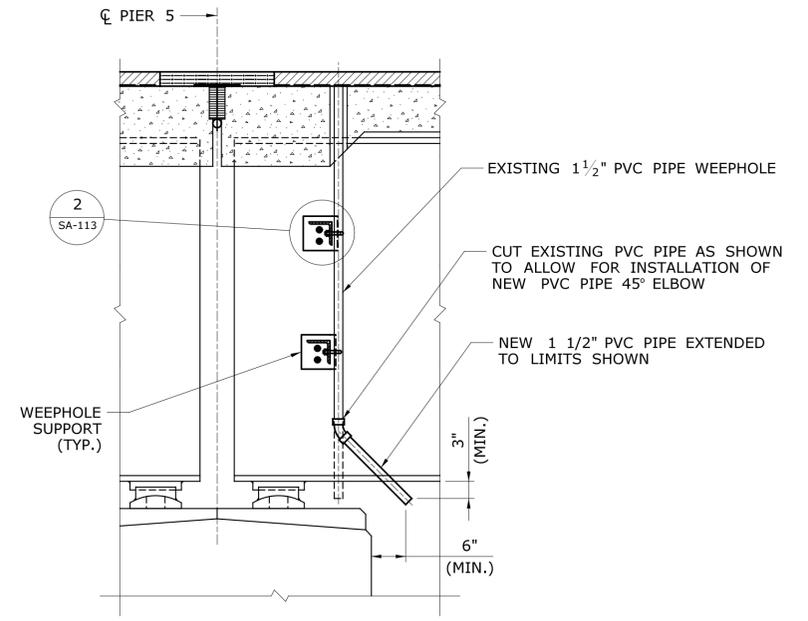
\*NOTE: DRILL HOLES THROUGH EXISTING FLOOR BEAM WEB TO ANCHOR WEEPHOLE EXTENSION SUPPORT. DRILLING HOLES, NEW STEEL SUPPORT ANGLES, BASE PLATE, BOLTS AND U-BOLTS SHALL BE PAID FOR UNDER THE ITEM "EXTEND EXISTING WEEPHOLES".

**2**  
-  
**WEEPHOLE SUPPORT DETAIL**  
SCALE: 1" = 1'-0"



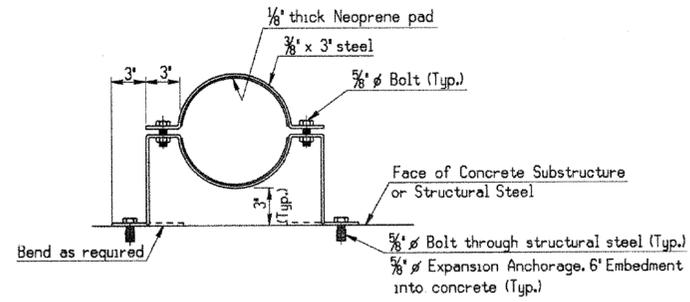
NOTE: TO BE USED AT ALL EXISTING WEEPHOLES PRIOR TO INSTALLATION OF MEMBRANE WATERPROOFING (COLD LIQUID ELASTOMERIC), TO BE PAID FOR UNDER THE ITEM "PMA S0.25".

**1**  
-  
**TYPICAL WEEPHOLE MESH DETAIL**  
SCALE: 1 1/2" = 1'-0"



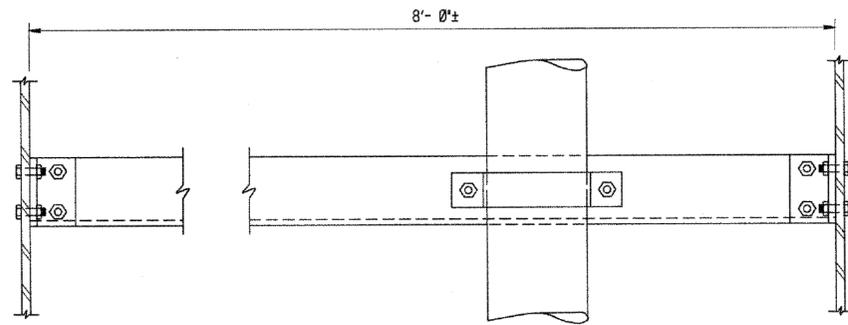
**8**  
-  
**WEEPHOLE EXTENSION DETAIL**  
**AT SPAN 6, PIER 5**  
SCALE: 3/4" = 1'-0"

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.			DESIGNER/DRAFTER: <b>C. DAVIS</b> CHECKED BY: <b>M. EGAN</b> SCALE AS NOTED	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION Filename: ...SB_MSH_0094_0252_BR_NO_02514A_DRN_04.dgn	SIGNATURE/BLOCK: Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-113</b> SHEET NO. <b>04.113</b>
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016				

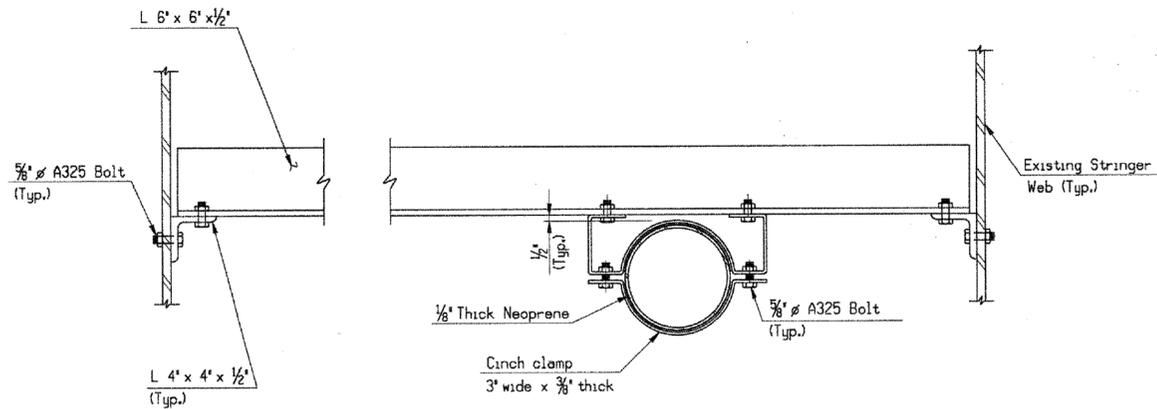


**TYPE 'A' PIPE SUPPORT**

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



**ELEVATION**



**PLAN**

**TYPE 'B' PIPE SUPPORT**

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

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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Plotted Date: 7/12/2016

DESIGNER/DRAFTER:  
**C. DAVIS**  
CHECKED BY:  
**M. EGAN**  
SCALE AS NOTED


**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**

Filename: ...SB\_MSH\_0094\_0252\_BR\_NO\_02514A\_DRN\_05.dgn

SIGNATURE/BLOCK:


 Cardinal Engineering Associates, Inc.  
 3 Colony Street  
 Meriden, CT 06451

PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

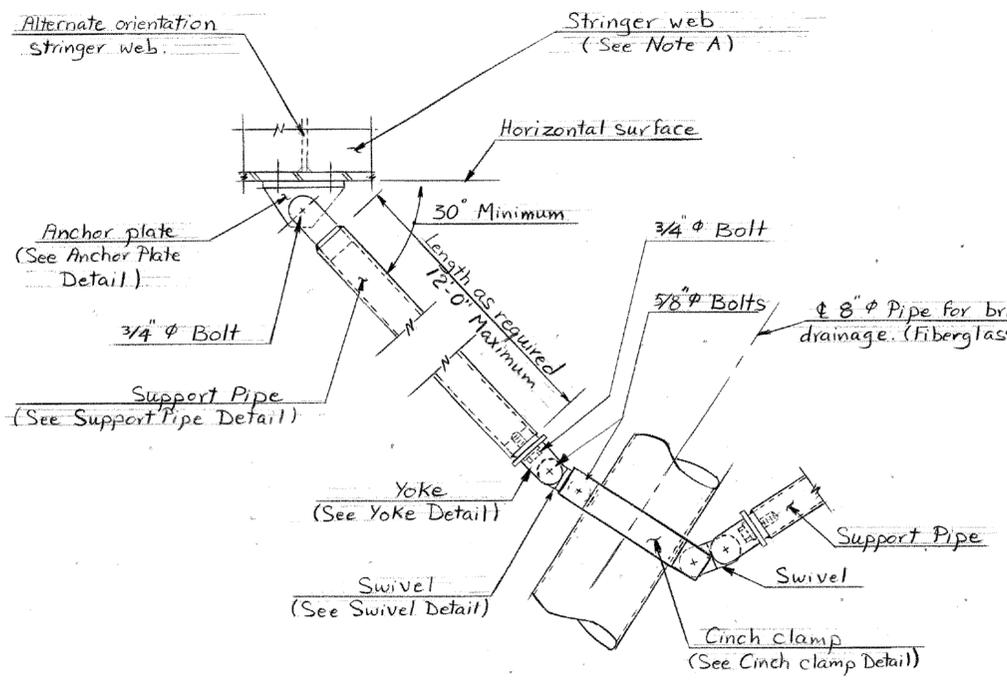
TOWN:  
**NEW LONDON/GROTON**

DRAWING TITLE:  
**DRAINAGE REPAIR**

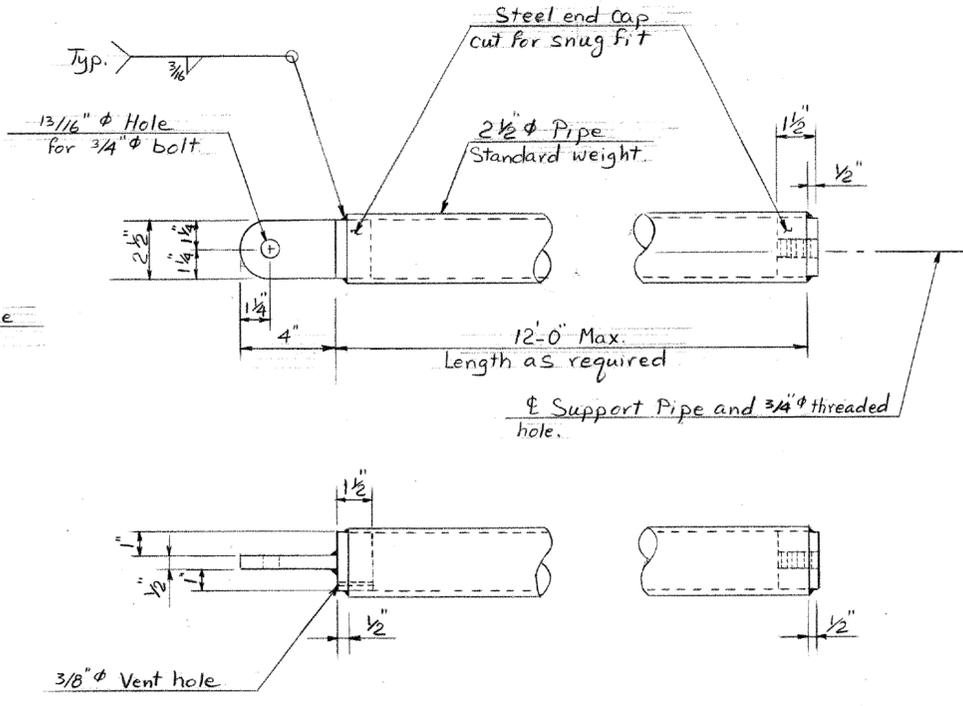
PROJECT NO.  
**94-252**

DRAWING NO.  
**SA-114**

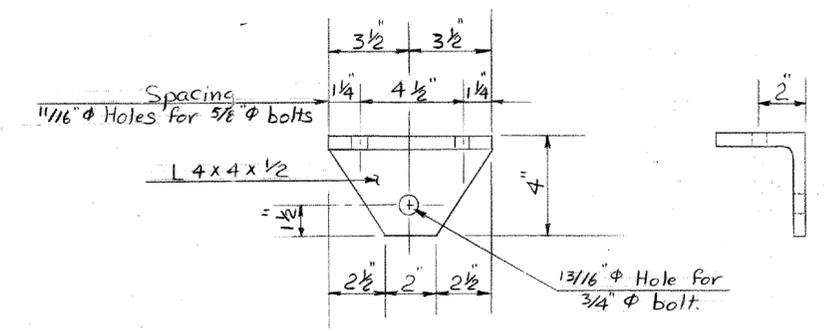
SHEET NO.  
**04.114**



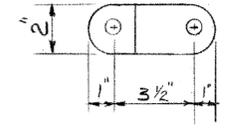
**TYPE F PIPE SUPPORT**  
Scale: 1/2" = 1'-0"



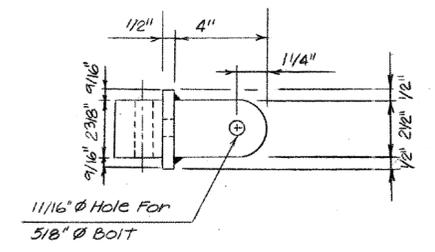
**SUPPORT PIPE**  
Scale: 3" = 1'-0"



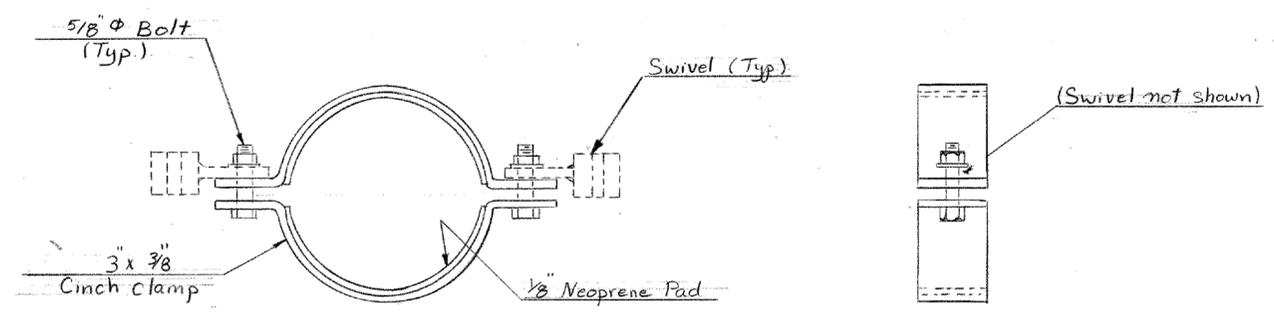
**ANCHOR PLATE**  
Scale: 3" = 1'-0"



**SWIVEL DETAIL**  
Scale: 3" = 1'-0"



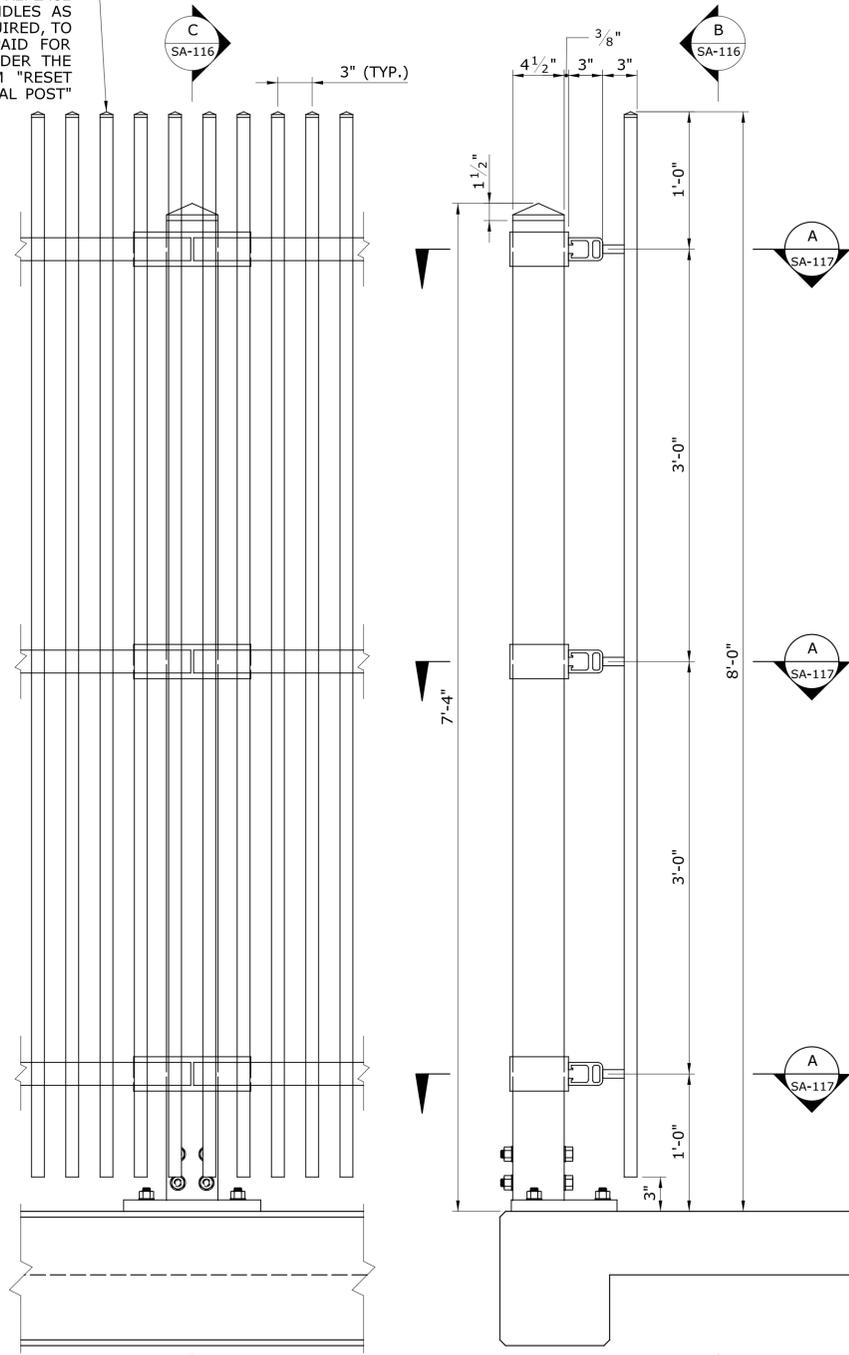
**MODIFIED YOKE DETAIL**  
Scale 3" = 1'-0"



**CINCH CLAMP DETAIL FOR TYPE F PIPE SUPPORT**  
Scale: 3" = 1'-0"

REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	DESIGNER/DRAFTER: <b>C. DAVIS</b>	 STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGNATURE/BLOCK:  Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b>
				CHECKED BY: <b>M. EGAN</b>			SCALE AS NOTED	FILENAME: ..._SB_MSH_0094_0252_BR_NO_02514A_DRN_06.dgn	DRAWING TITLE: <b>DRAINAGE REPAIR</b>

REPLACE SPINDLES AS REQUIRED, TO BE PAID FOR UNDER THE ITEM "RESET METAL POST"



**B ELEVATION**  
SA-116 SCALE: 1 1/2" = 1'-0"

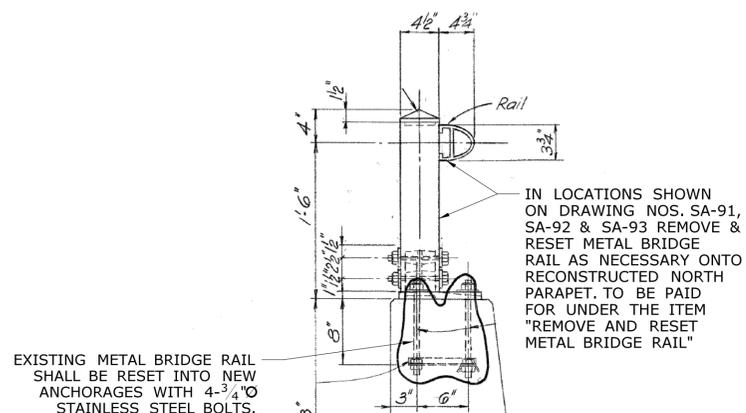
**C SECTION**  
SA-116 SCALE: 1 1/2" = 1'-0"

**PEDESTRIAN FENCE (NORTH SIDE OF SIDEWALK)**  
FOR FOR SPINDLE REPLACEMENT

**RESET METAL BRIDGE RAIL NOTES**

1. SEE DRAWING NO. SA-97 FOR ANCHORAGE DETAILS.
2. ALL BOLTS SHALL BE STAINLESS STEEL AND CONFORM TO THE REQUIREMENTS OF ASTM F593, GROUP 1, (ANSI TYPE 304). NUTS SHALL BE STAINLESS STEEL AND CONFORM TO THE REQUIREMENTS OF ASTM F594, GROUP 1. WASHERS SHALL BE STAINLESS AND CONFORM TO THE REQUIREMENTS OF ASTM A167, TYP302 THROUGH 305.

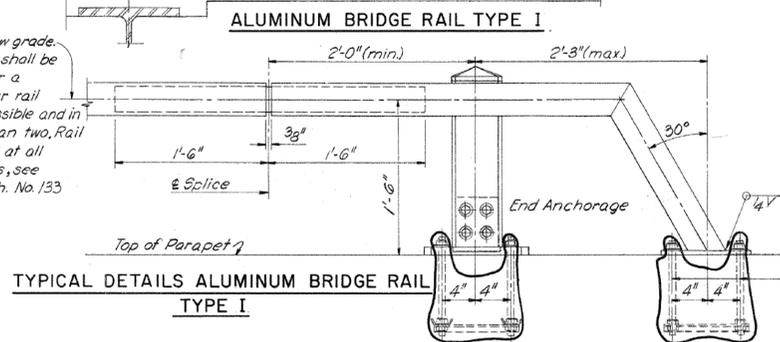
REPLACE SPINDLES AS REQUIRED, TO BE PAID FOR UNDER THE ITEM "RESET METAL POST"



EXISTING METAL BRIDGE RAIL SHALL BE RESET INTO NEW ANCHORAGES WITH 4-3/4" Ø STAINLESS STEEL BOLTS.

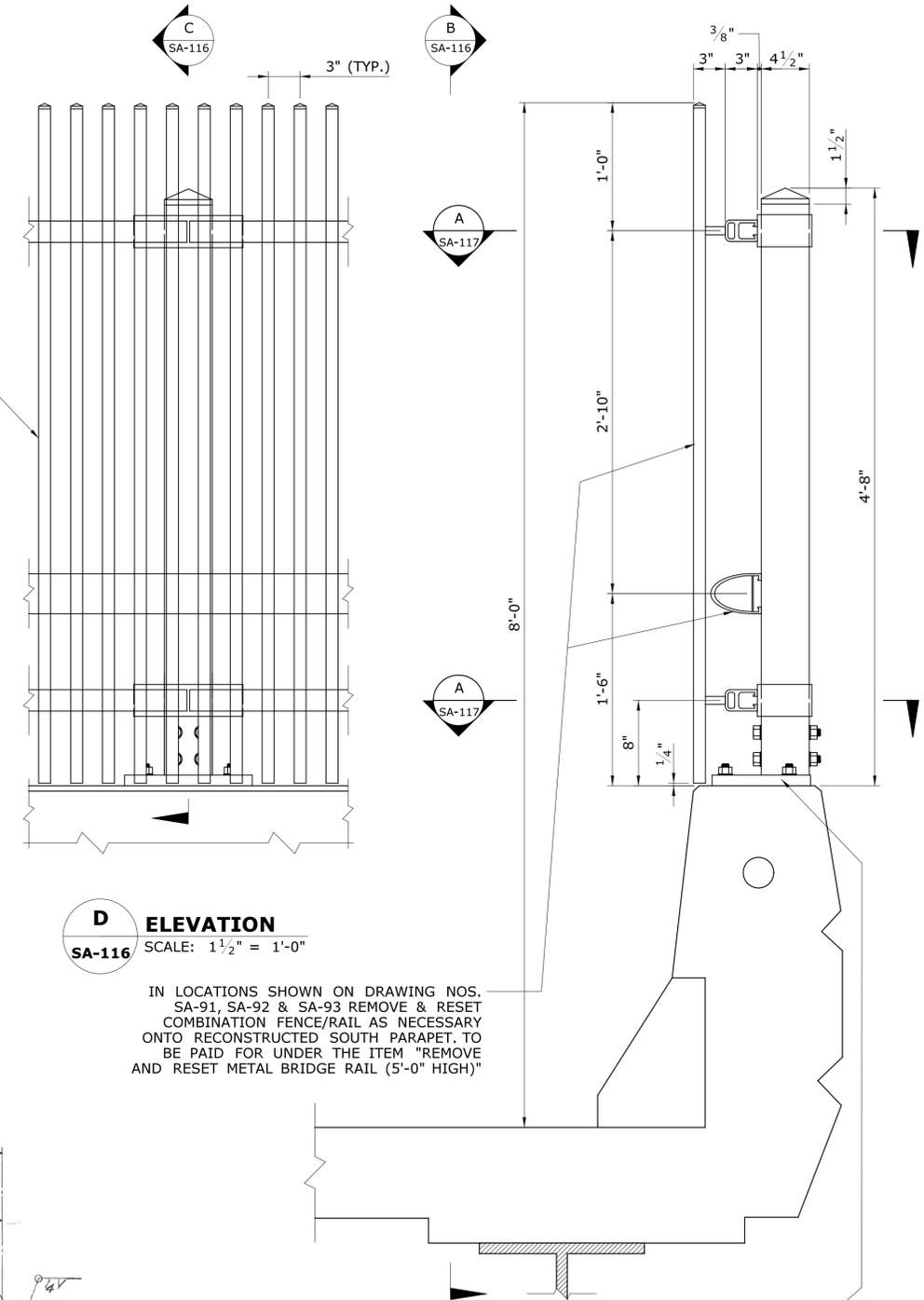
IN LOCATIONS SHOWN ON DRAWING NOS. SA-91, SA-92 & SA-93 REMOVE & RESET METAL BRIDGE RAIL AS NECESSARY ONTO RECONSTRUCTED NORTH PARAPET. TO BE PAID FOR UNDER THE ITEM "REMOVE AND RESET METAL BRIDGE RAIL"

ℳ Railing to follow grade. Lengths of rail shall be continuous over a minimum of four rail posts where possible and in no case less than two. Rail shall be spliced at all expansion joints, see Detail on Br. Sh. No. 133



**TYPICAL DETAILS ALUMINUM BRIDGE RAIL TYPE I**

**EXISTING BRIDGE RAIL DETAILS**  
FOR RESET METAL BRIDGE RAIL  
NOT TO SCALE



**D ELEVATION**  
SA-116 SCALE: 1 1/2" = 1'-0"

IN LOCATIONS SHOWN ON DRAWING NOS. SA-91, SA-92 & SA-93 REMOVE & RESET COMBINATION FENCE/RAIL AS NECESSARY ONTO RECONSTRUCTED SOUTH PARAPET. TO BE PAID FOR UNDER THE ITEM "REMOVE AND RESET METAL BRIDGE RAIL (5'-0" HIGH)"

**E SECTION**  
SA-116 SCALE: 1 1/2" = 1'-0"

**COMBINATION FENCE/RAIL (SOUTH PARAPET)**  
FOR FOR SPINDLE REPLACEMENT AND RESET METAL BRIDGE RAIL

EXISTING COMBINATION FENCE/RAIL TO BE RESET INTO NEW ANCHORAGES WITH 4-3/4" Ø STAINLESS STEEL BOLTS.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

DESIGNER/DRAFTER:  
**C. DAVIS**  
CHECKED BY:  
**M. EGAN**  
NOT TO SCALE

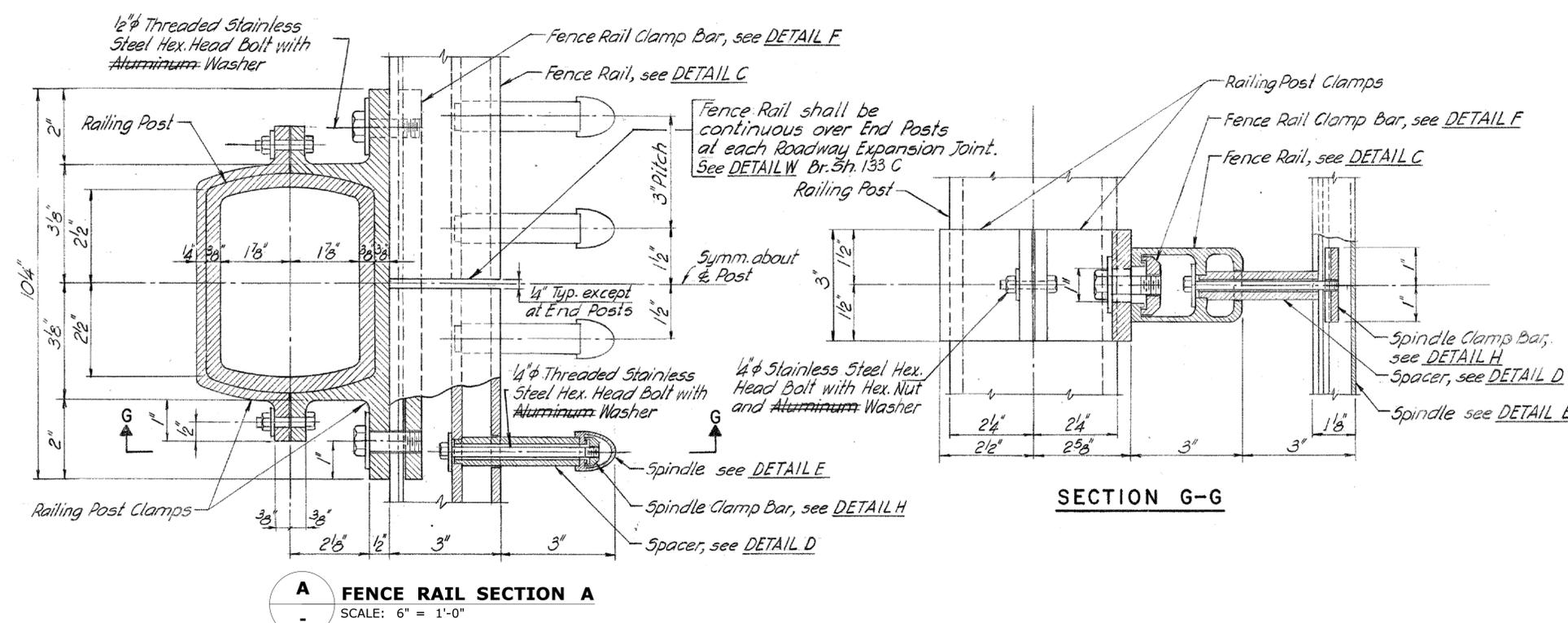


SIGNATURE/BLOCK:  
**CARDINAL ENGINEERING ASSOCIATES, INC.**  
3 Colony Street  
Meriden, CT 06451

PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

TOWN:  
**NEW LONDON/GROTON**  
DRAWING TITLE:  
**FENCE REPAIR DETAILS**

PROJECT NO.  
**94-252**  
DRAWING NO.  
**SA-116**  
SHEET NO.  
**04.116**



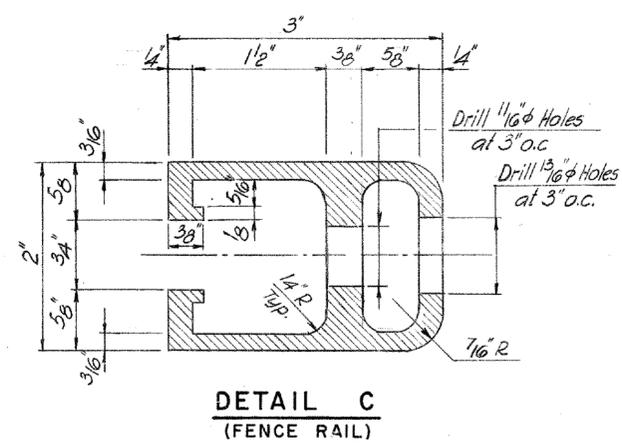
**A FENCE RAIL SECTION A**  
SCALE: 6" = 1'-0"

- NOTES:**
1. THE SPINDLE REPLACEMENT LOCATIONS AND QUANTITIES ARE BASED ON LIMITED FIELD OBSERVATIONS AND BRIDGE SAFETY INSPECTION REPORT (NOVEMBER 22, 2013). THE INFORMATION IS INTENDED TO BE USED AS A GUIDE AND DOES NOT NECESSARILY REFLECT THE CURRENT CONDITION OF THE SPINDLES. THE EXACT LOCATION AND NUMBER OF SPINDLES TO BE REPLACED SHALL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION.
  2. ALL REPLACEMENT SPINDLES SHALL BE PLUMB AFTER INSTALLATION.
  3. ALL NEW EXTRUDED ALUMINUM SPINDLES AND SPINDLE COMPONENTS SHALL CONFORM TO ASTM B 221 ALUMINUM ALLOY 6061-T6 AND SHALL MATCH EXISTING.
  4. AT EACH SPINDLE REPLACED, CONTRACTOR SHALL ALSO REPLACE SPINDLE CLAMP BAR, SPACER, SPINDLE COVER AND STAINLESS STEEL HEX HEAD BOLT WITH WASHER.
  5. REPLACEMENT OF SPINDLES TO BE PAID FOR UNDER ITEM NUMBER 0905021 "RESET METAL POST".
  6. UNASSIGNED SPINDLES IS THE NUMBER OF SPINDLES TO BE FABRICATED AND SUPPLIED TO CONNDOT BRIDGE MAINTENANCE FOR FUTURE REPAIRS.

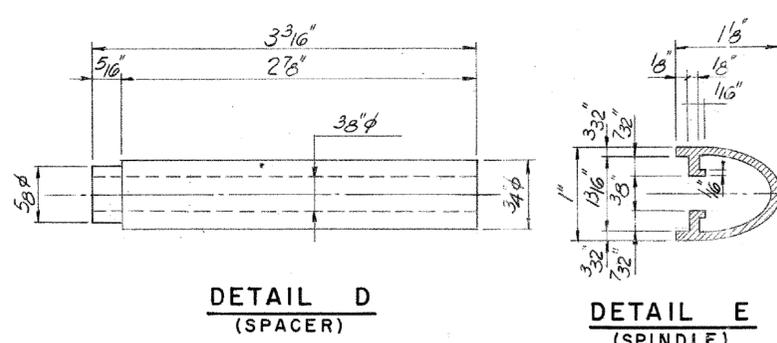
**TABLE OF FENCE DAMAGE TO BE REPLACED**

SPINDLES TO BE REPLACED		
SPAN NO.	NORTH PARAPET	SOUTH PARAPET
1	0	14
2	0	0
3	0	40
4	0	0
5	7	5
6	26	29
7	18	24
8	11	10
9	22	14
10	31	0
11	6	0
12	26	30
13	11	35
14	42	40
15	38	70
16	55	12
17	55	17
18	48	20
19	24	20
20	63	51
21	86	0
22	45	0
23	43	125
24	65	75
25	96	75
26	0	37
27	0	49
28	0	37
29	0	5
30	0	0
1C*	72	-
2C*	73	-
3C*	71	-
UNASSIGNED	100	100

\*NOTE: THESE SPANS ON BRIDGE NO. 02514B. SEE SUBSET "05 - STRUCTURE - BRIDGE 02514B" FOR DETAILS. NOTE THAT THESE FENCE REPAIR QUANTITIES FOR BIDGE NO. 02514B APPEAR ON THE "B" BRIDGE QUANTITY TABLE.

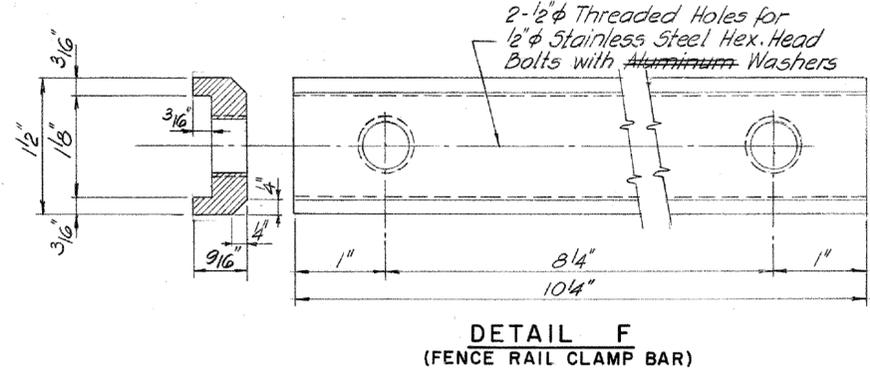


**DETAIL C (FENCE RAIL)**

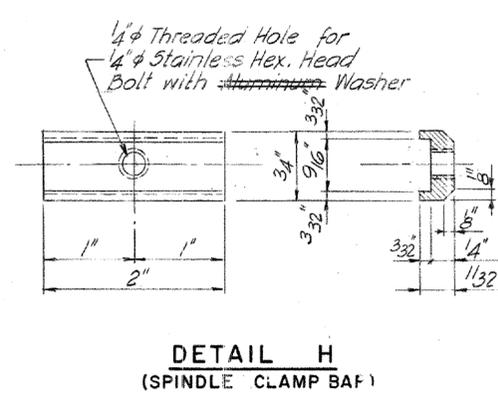


**DETAIL D (SPACER)**

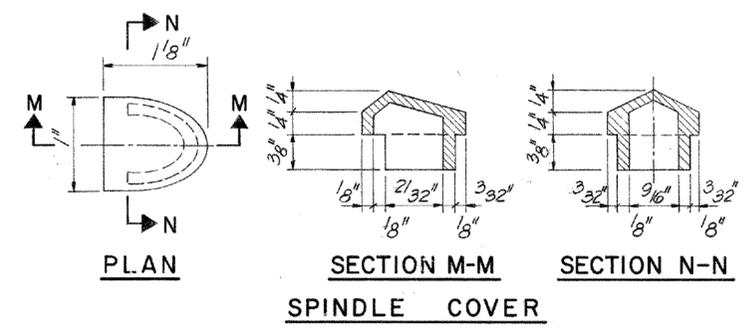
**DETAIL E (SPINDLE)**



**DETAIL F (FENCE RAIL CLAMP BAR)**



**DETAIL H (SPINDLE CLAMP BAR)**



**PLAN**

**SECTION M-M SPINDLE COVER**

**SECTION N-N**









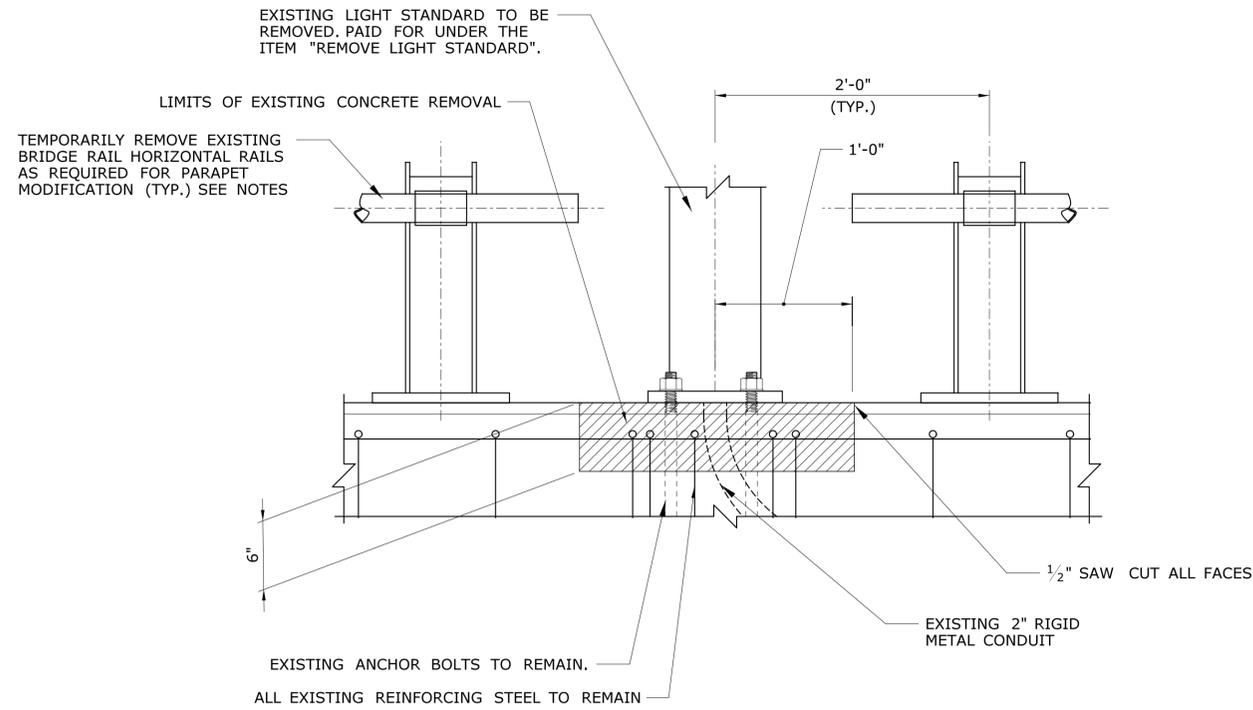






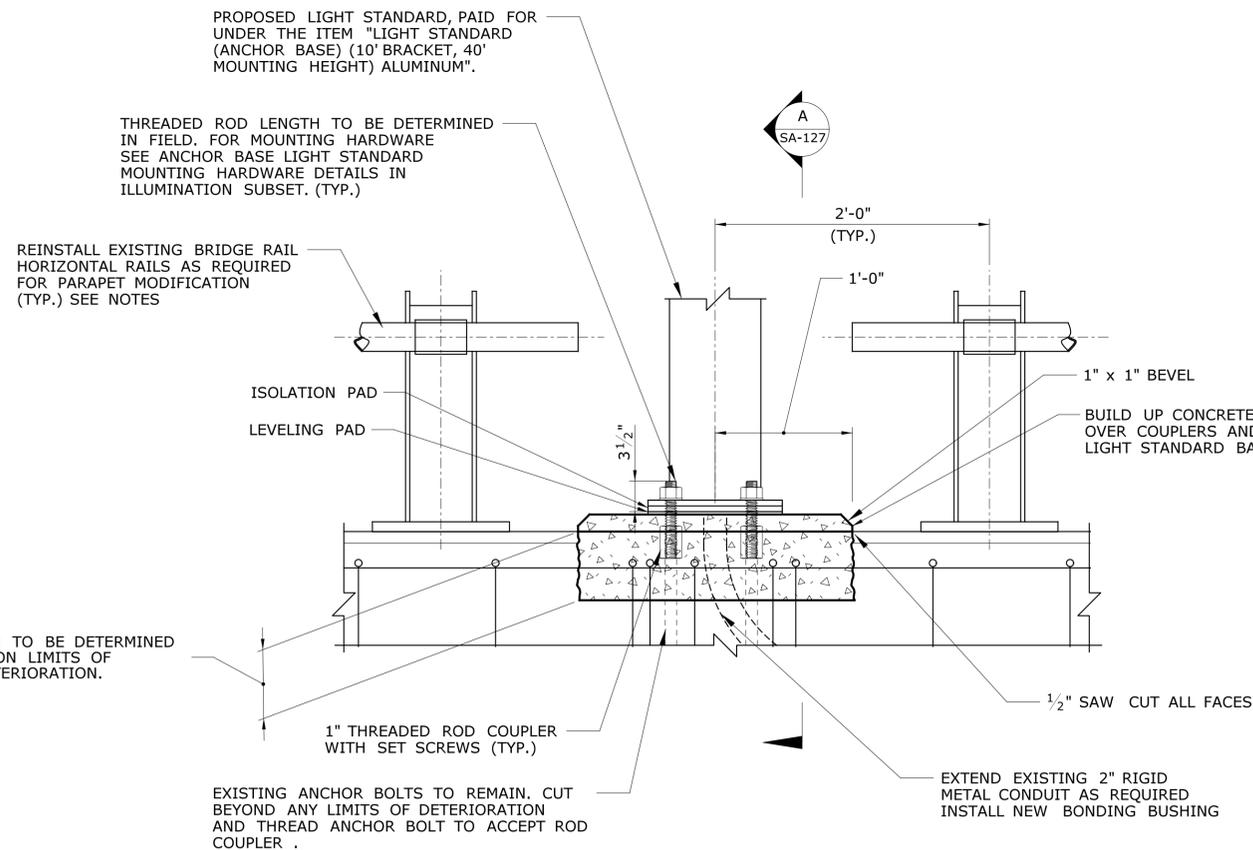






**EXISTING LIGHT STANDARD ANCHORAGE REMOVAL DETAIL**

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



**LIGHT STANDARD ANCHORAGE MODIFICATION DETAIL**

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

LIGHT STANDARD ANCHORAGE MODIFICATION LOCATION LIST	
LIGHT STANDARD NUMBER	DRAWING NUMBER
94-125	ILL-005
94-137	ILL-006
94-139	ILL-006

**NOTES**

FOR PROPOSED LOCATIONS OF LIGHT STANDARD ANCHORAGE MODIFICATIONS SEE TABLE THIS SHEET, AND DECK PLANS.

THREADED RODS SHALL BE ASTM A193 CLASS 2 GRADE B8. NUTS SHALL CONFORM TO ASTM A194 GRADE 8 STRAIN HARDENED. WASHERS SHALL BE ASTM A276 TYPE 304 ANEALD.

THREADED COUPLERS SHALL CONFORM TO ASTM A563 GRADE DH AND BE UNCOATED. COUPLERS SHALL BE FABRICATED WITH STAINLESS STEEL SET SCREWS FOR EACH THREADED ROD.

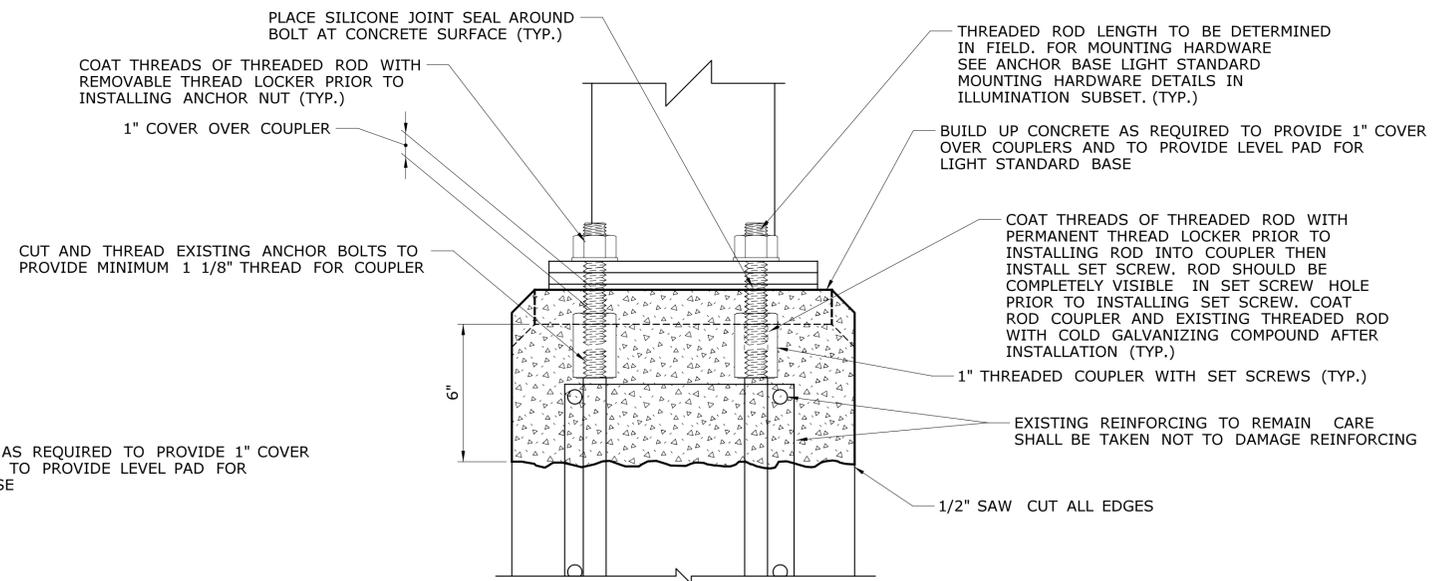
CONCRETE SHALL BE A PACKAGED DRY RAPID HARDENING CEMENTITIOUS REPAIR MORTAR CONFORMING TO ASTM C928 REPAIR MORTAR SHALL BE EXTENDED WITH AGGREGATE AS RECOMMENDED BY THE MANUFACTURER.

AS A SUBSTITUTION TO A PACKAGED DRY RAPID HARDENING CEMENTITIOUS REPAIR MORTAR, A MODIFIED CLASS "F" CONCRETE MIX MAY BE USED WITH A MAXIMUM SIZE AGGREGATE OF 3/8".

CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE EXISTING REINFORCING STEEL AND CONDUIT TO REMAIN. A MAXIMUM SIZE PNEUMATIC HAMMER OF 15 LBS SHALL BE USED ADJACENT TO CONDUIT AND REINFORCING TO REMAIN.

THIS WORK SHALL BE PAID FOR UNDER THE ITEM "MODIFY LIGHT STANDARD ANCHORAGE".

REMOVAL AND REINSTALLING EXISTING RAIL TO BE PAID FOR UNDER THE ITEM "REMOVE AND REINSTALL EXISTING BRIDGE RAIL".



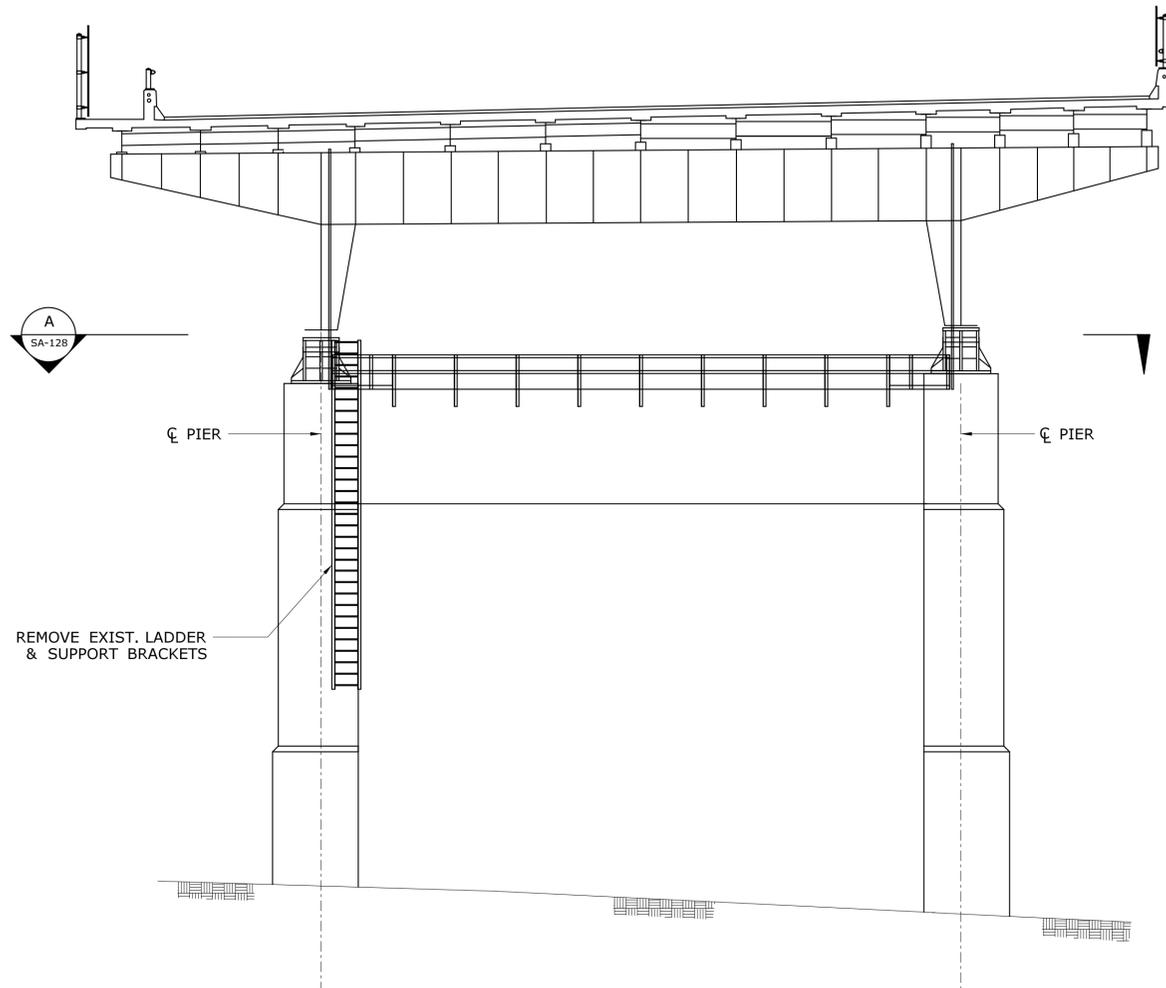
**SECTION A**

SCALE: 3" = 1'-0"

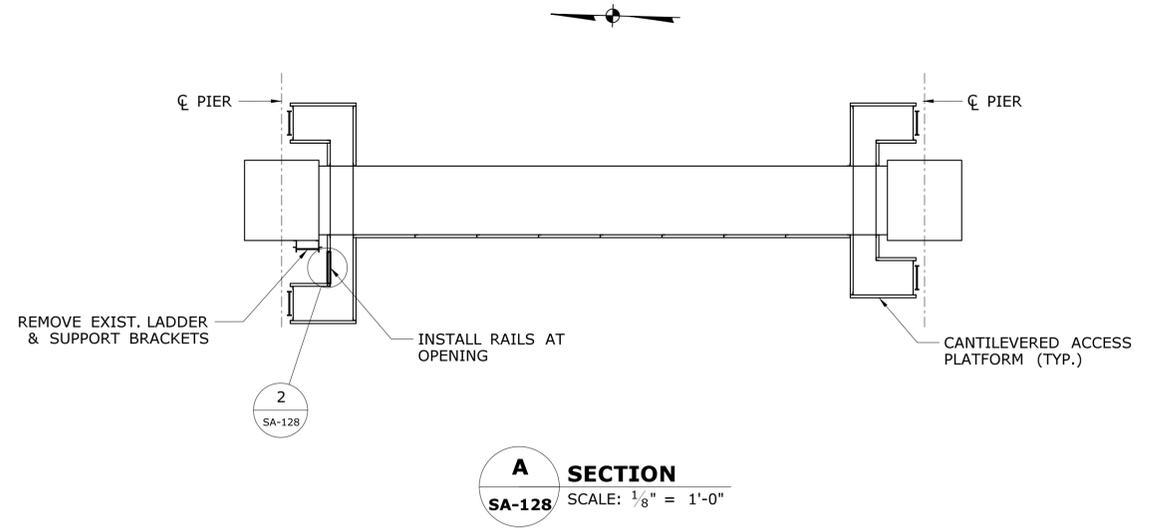


**FINAL DESIGN REVIEW**

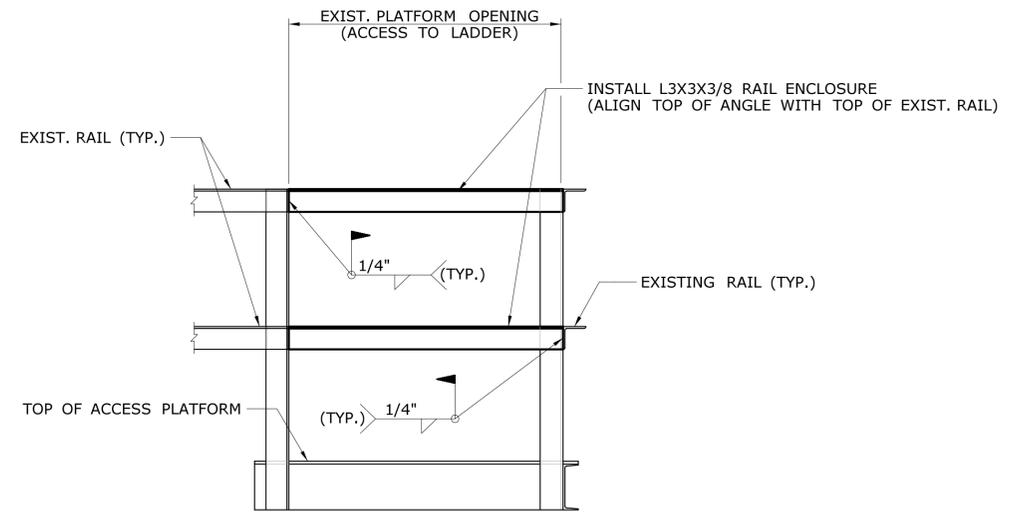
REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	DESIGNER/DRAFTER:	 <p><b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION</p>	SIGNATURE/BLOCK:	 <p>Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451</p>	PROJECT TITLE:	<p><b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b></p>	TOWN:	<p><b>NEW LONDON/GROTON</b></p>	PROJECT NO.:	<p><b>94-252</b></p>
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										<p><b>LIGHT STANDARD ANCHOR BOLT REPLACEMENT</b></p>		<p><b>SA-127</b></p>	
										<p><b>04.127</b></p>			



**1** PIER 14 & 16 WEST ELEVATION  
SCALE: 1/8" = 1'-0"



**A** SECTION  
SA-128 SCALE: 1/8" = 1'-0"



**2** LADDER ACCESS ENCLOSURE  
SA-128 SCALE: 1" = 1'-0"

NOTES:  
FOR NOTES SEE DWG. NO. SA-130.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016

DESIGNER/DRAFTER:  
**S. CIRILLO**  
CHECKED BY:  
**J. SILVA**  
SCALE AS NOTED

STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION

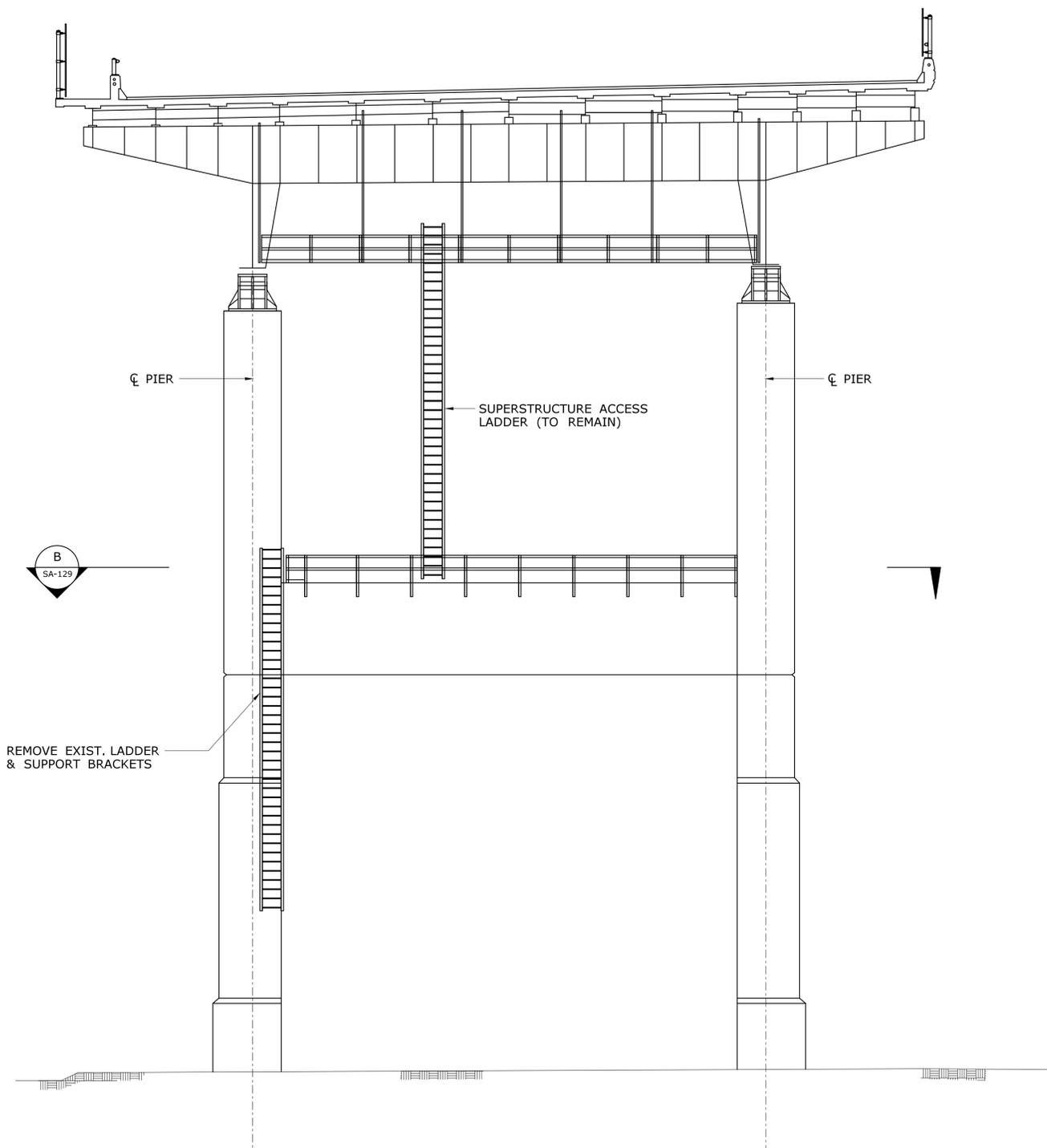
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SIGNATURE/BLOCK:  
 SILVA ENGINEERING, LLC  
90 QUARRY ST.  
WILLIMANTIC, CT 06226

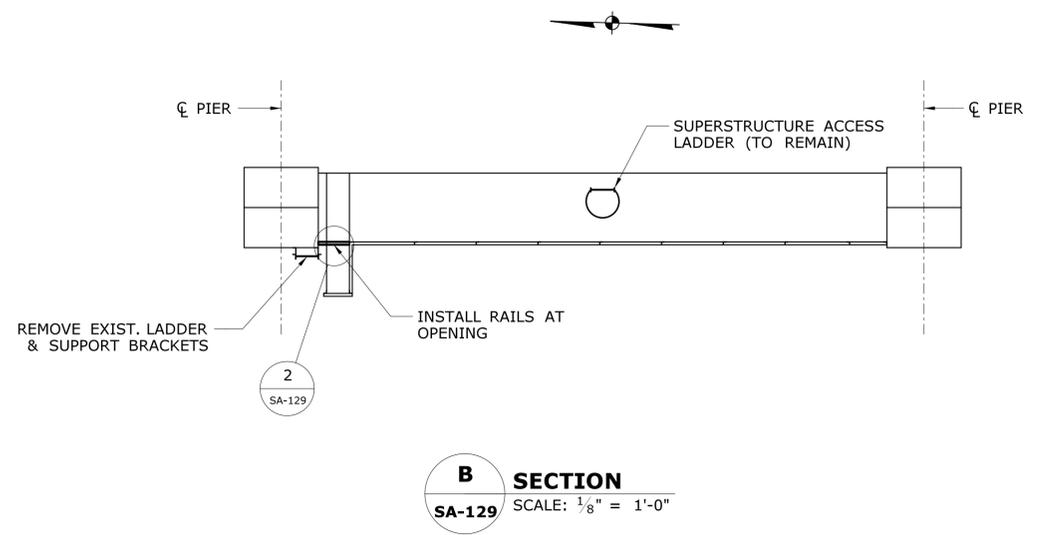
PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

TOWN:  
**NEW LONDON / GROTON**  
DRAWING TITLE:  
**PIER 14 & 16 ACCESS LADDERS**

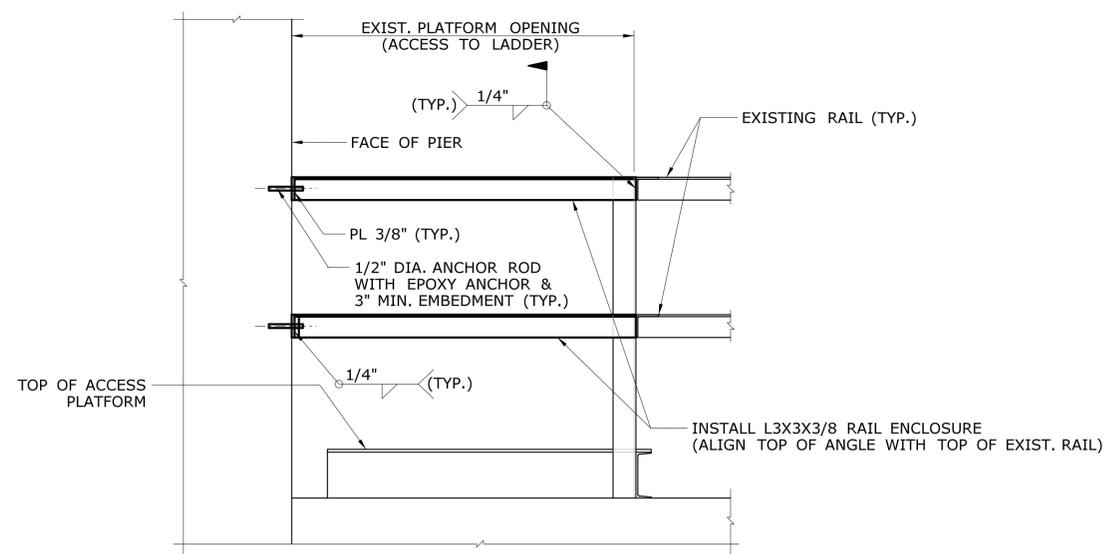
PROJECT NO.  
**94-252**  
DRAWING NO.  
**SA-128**  
SHEET NO.  
**04.128**



**1 PIER 17 WEST ELEVATION**  
 SCALE: 1/8" = 1'-0"



**B SECTION**  
 SA-129 SCALE: 1/8" = 1'-0"



**2 LADDER ACCESS ENCLOSURE**  
 SA-129 SCALE: 1" = 1'-0"

NOTES:  
 FOR NOTES SEE DWG. NO. SA-130.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER:  
**S. CIRILLO**  
 CHECKED BY:  
**J. SILVA**  
 SCALE AS NOTED

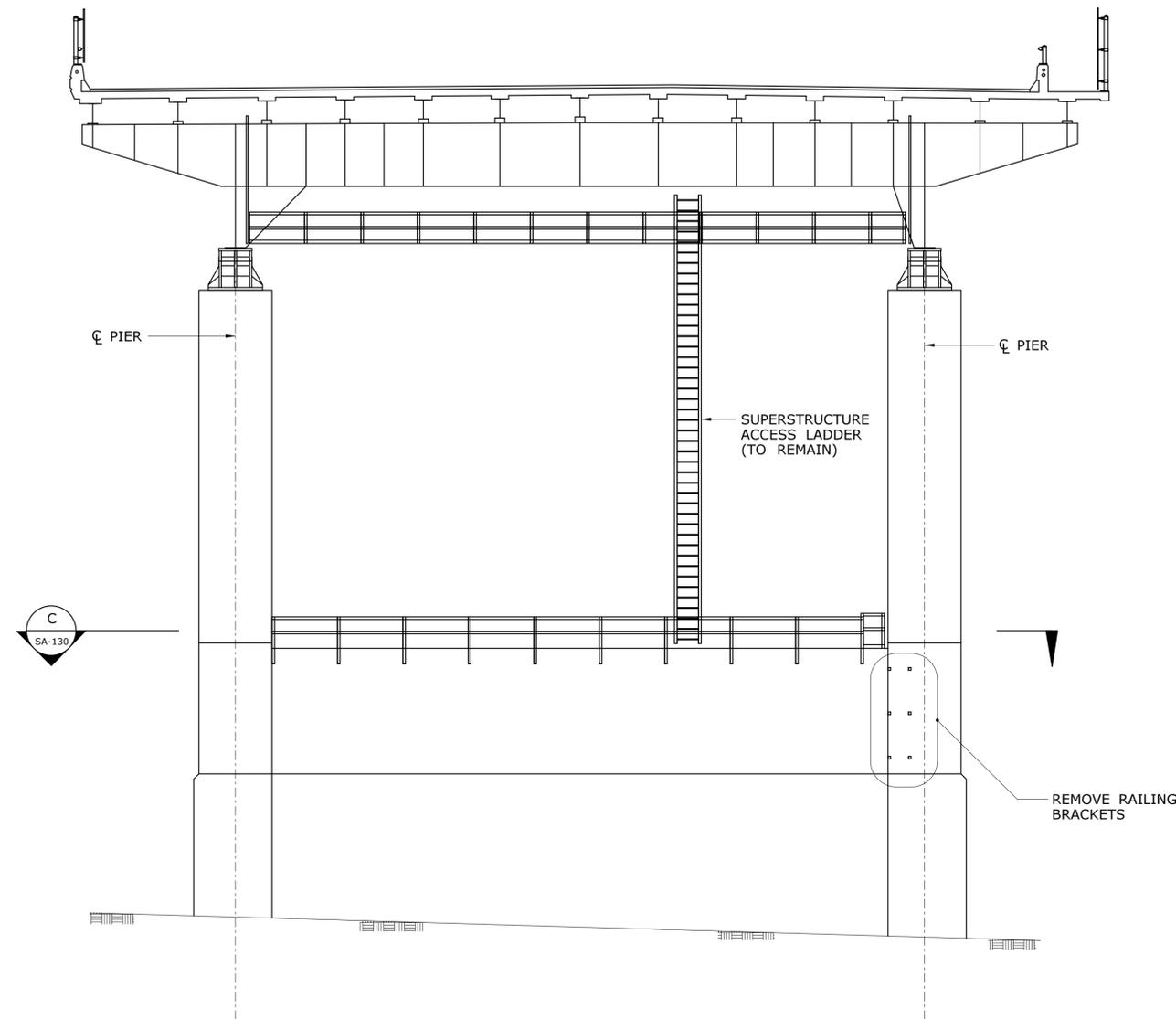

**STATE OF CONNECTICUT**  
**DEPARTMENT OF TRANSPORTATION**  
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SIGNATURE/BLOCK:  
  
 SILVA ENGINEERING, LLC  
 90 QUARRY ST.  
 WILLIAMANTIC, CT 06226

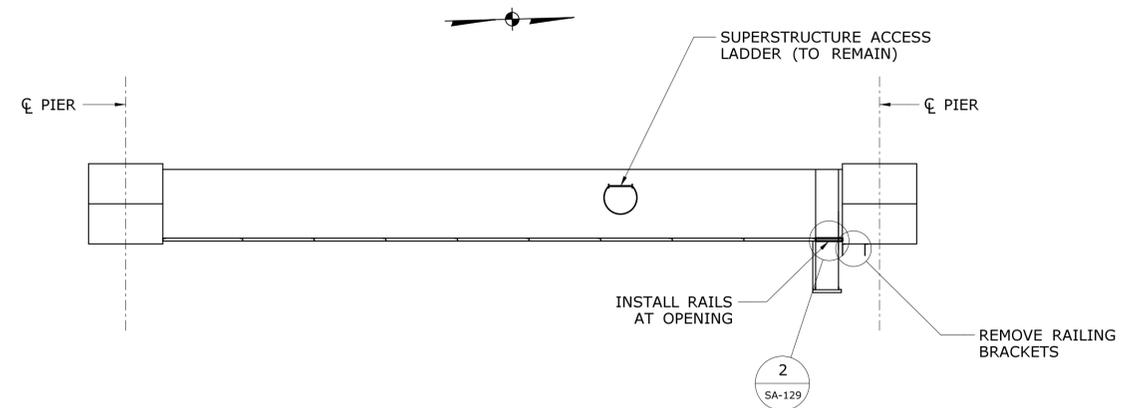
PROJECT TITLE:  
**I-95 SB & TR 817 BRIDGE NOS. 02514A & 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS & STATE PIER**

TOWN:  
**NEW LONDON / GROTON**  
 DRAWING TITLE:  
**PIER 17 ACCESS LADDERS**

PROJECT NO.  
**94-252**  
 DRAWING NO.  
**SA-129**  
 SHEET NO.  
**04.129**



**1** PIER 28 EAST ELEVATION  
SCALE: 1/8" = 1'-0"



**C** SECTION  
SA-130 SCALE: 1/8" = 1'-0"

**NOTES:**

1. CONTRACTOR SHALL FIELD VERIFY (AT A MINIMUM) AND PREPARE SHOP DRAWINGS FOR EXISTING HANDRAIL MEMBER SIZES, HANDRAIL ANCHORING SYSTEM, SPACING AND PLATFORM OPENING WIDTH & HEIGHT.

ACCESS LADDER REMOVAL & MODIFICATION INCLUDES:

- REMOVAL AND DISPOSAL OF EXISTING LADDERS SHALL BE PAID FOR UNDER ITEM "REMOVAL OF EXISTING STRUCTURAL STEEL"; SEE SPECIAL PROVISIONS. NEW STEEL, WELDING, PAINTING NON-SHRINK GROUT AND INCIDENTALS REQUIRED FOR A COMPLETE SYSTEM SHALL BE PAID FOR UNDER THE ITEM "STRUCTURAL STEEL REPAIRS (SITE NO.1)"; SEE SPECIAL PROVISIONS.
- NEW STEEL RAILS SHALL BE ASTM A588.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: <b>S. CIRILLO</b> CHECKED BY: <b>J. SILVA</b> SCALE AS NOTED	<b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b> Filename: ...SB_MSH_0094_0252_BR02514_ALDR3.dgn	SIGNATURE/BLOCK:  SILVA ENGINEERING, LLC 90 QUARRY ST. WILLIMANTIC, CT 06226	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON / GROTON</b> DRAWING TITLE: <b>PIER 28 ACCESS LADDERS</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-130</b> SHEET NO. <b>04.130</b>
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016			

**CONDUIT SUPPORT INSTALLATION SEQUENCE:**

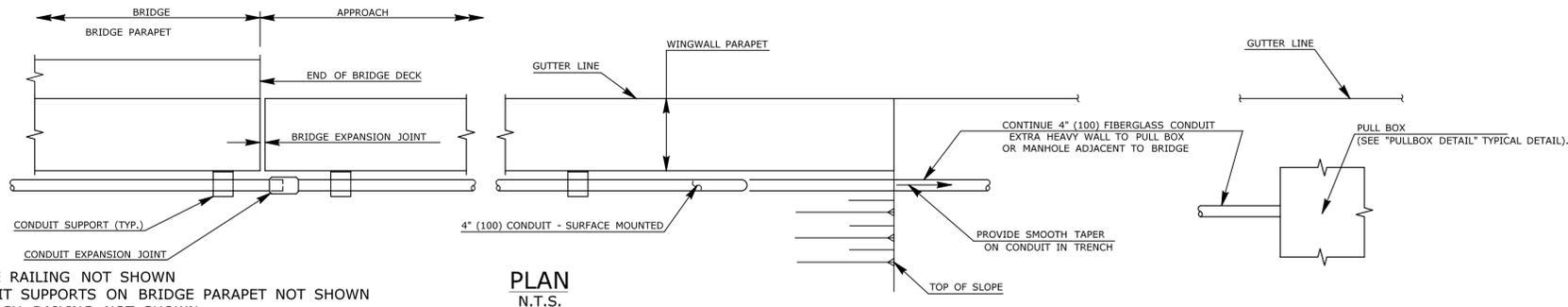
A. MOUNT CONDUIT SUPPORTS ON EXISTING BRIDGES AND WALLS. PLACE SUPPORTS ACCORDING TO MOUNTING LAYOUTS AND DETAILS AS SHOWN. DRILL HOLES IN EXISTING STRUCTURES ACCORDING TO "FIELD FASTENER NOTES" AND "STRUCTURAL NOTES".

B. FASTEN CONDUIT TO SUPPORTS WITH U-BOLTS.

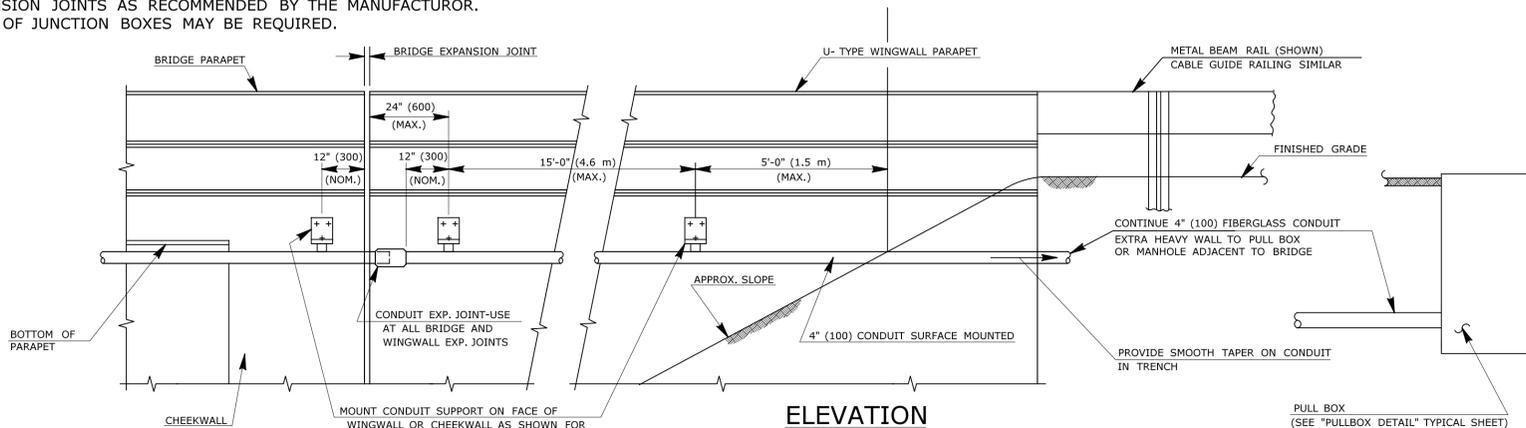
**4" (100) SURFACE MOUNTED CONDUIT SUPPORT SPACING NOTES:**

A. SPACE CONDUIT SUPPORTS AT 14'-9" (4.5 m) O.C. MAXIMUM FOR STRUCTURE MOUNTED 4" (100) CONDUIT - SURFACE MOUNTED AS SHOWN ON THE DETAILS AND AS DIRECTED BY THE ENGINEER.

B. ADDITIONAL CONDUIT SUPPORTS ARE REQUIRED AT LOCATIONS OF EXPANSION FITTINGS AND FIXED AND FLEXIBLE SWEEP BENDS AS SHOWN ON THE DETAILS OR AS DIRECTED BY THE ENGINEER.

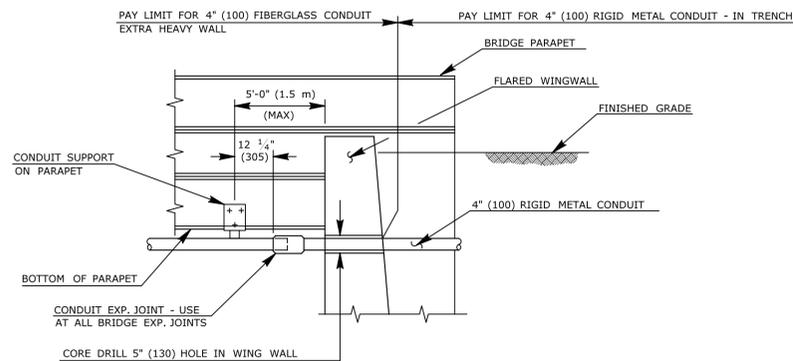


- NOTES:**
- BRIDGE RAILING NOT SHOWN
  - CONDUIT SUPPORTS ON BRIDGE PARAPET NOT SHOWN
  - APPROACH RAILING NOT SHOWN
  - INSTALL EXPANSION JOINTS AS RECOMMENDED BY THE MANUFACTURER.
  - INSTALLATION OF JUNCTION BOXES MAY BE REQUIRED.



**U - TYPE WINGWALL CONDUIT - PARAPET TO FILL**  
N.T.S.

NOTE: MOUNT CONDUIT ON WING WALLS AT SAME POSITION AS CONDUIT ON PARAPET



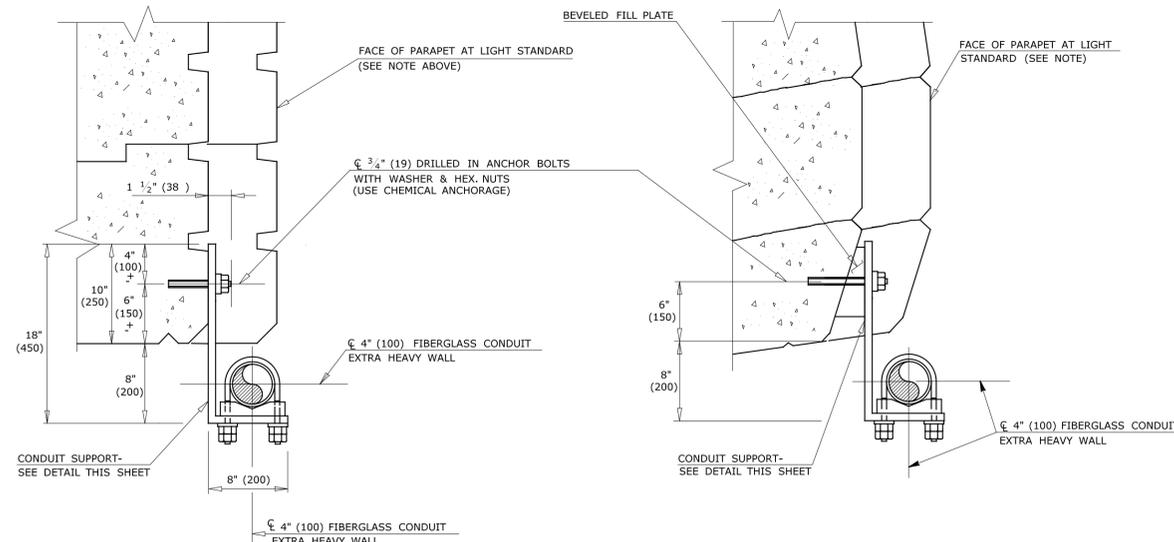
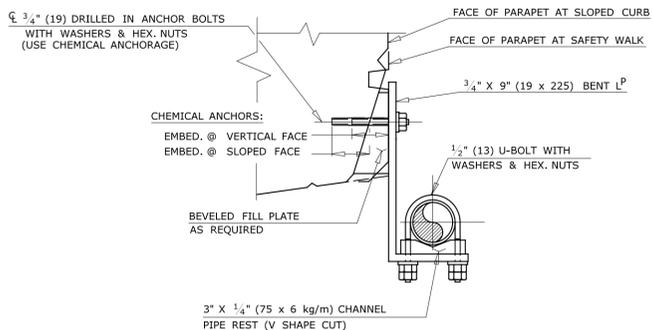
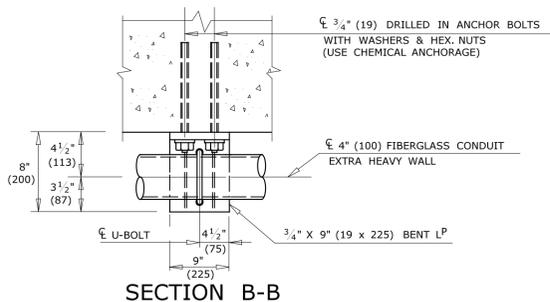
NOTE: BRIDGE RAILING & APPROACH RAILING NOT SHOWN.

**NOTES:**

- DETAILS SHOWN AT PARAPET, ATTACHMENT SIMILAR ON WALLS.
- PROVIDE 3/4" (19) DIA. HOLES FOR 5/8" (16) DIA. BOLTS AND U-BOLTS IN CONDUIT SUPPORT AND CHANNEL PIPE REST.
- MATERIAL FOR THREADED ANCHORS, NUTS, AND WASHERS FOR DRILLING AND CHEMICAL ANCHORING IN EXISTING CONCRETE ELEMENTS SHALL BE STAINLESS STEEL. ANCHORS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A193(M), CLASS 2, GRADE B8M (TYPE 316). WASHERS SHALL CONFORM TO ASTM A276(M), TYPE 316, ANNEALED.

**NOTE:**

- FACE OF PARAPET AT LIGHT STANDARDS SHOWN TO ILLUSTRATE CONDUIT MOUNTED TO CLEAR WIDENED PARAPET, DETAIL AT PARAPET MOUNTED SIGN SUPPORTS AND NOISE BARRIER WALLS, ETC. SIMILAR.



**4" (100) SURFACE MOUNTED CONDUIT SUPPORT DETAILS**  
CONDUIT SUPPORT SPACING: SPACE 4" (100) CONDUIT SUPPORTS AT 14 3/4' (4.5 m) O.C. MAXIMUM.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/12/2016	DESIGNER/DRAFTER: <b>C. DAVIS</b> CHECKED BY: <b>M. EGAN</b>	<p><b>STATE OF CONNECTICUT</b> <b>DEPARTMENT OF TRANSPORTATION</b></p>	SIGNATURE/BLOCK: <p>Cardinal Engineering Associates, Inc. 3 Colony Street Meriden, CT 06451</p>	PROJECT TITLE: <b>I-95 SB &amp; TR 817 BRIDGE NOS. 02514A &amp; 02514B OVER THAMES RIVER, SR 635 RR, LOCAL ROADS &amp; STATE PIER</b>	TOWN: <b>NEW LONDON/GROTON</b>	PROJECT NO. <b>94-252</b> DRAWING NO. <b>SA-131</b> SHEET NO. <b>04.131</b>
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