

04 - STRUCTURE INDEX OF DRAWINGS

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S-31	UNDERSIDE OF DECK REPAIRS - 2		

DESIGNED BY:
DEWBERRY ENGINEERS INC.



REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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Plotted Date: 6/30/2016

DESIGNER/DRAFTER:
A. HIPIUS/S. ERDAS
CHECKED BY:
T. STRNAD
SCALE AS NOTED



STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\\SB_MSH_Br03093_092_0668_IND.dgn

SIGNATURE/
BLOCK:




59 Elm Street, Suite 101
New Haven, CT 06510-2047

PROJECT TITLE:
**REHABILITATION OF BRIDGE
NO. 03093 I-91 OVER FRONT
STREET AND QUINNIPIAC RIVER**

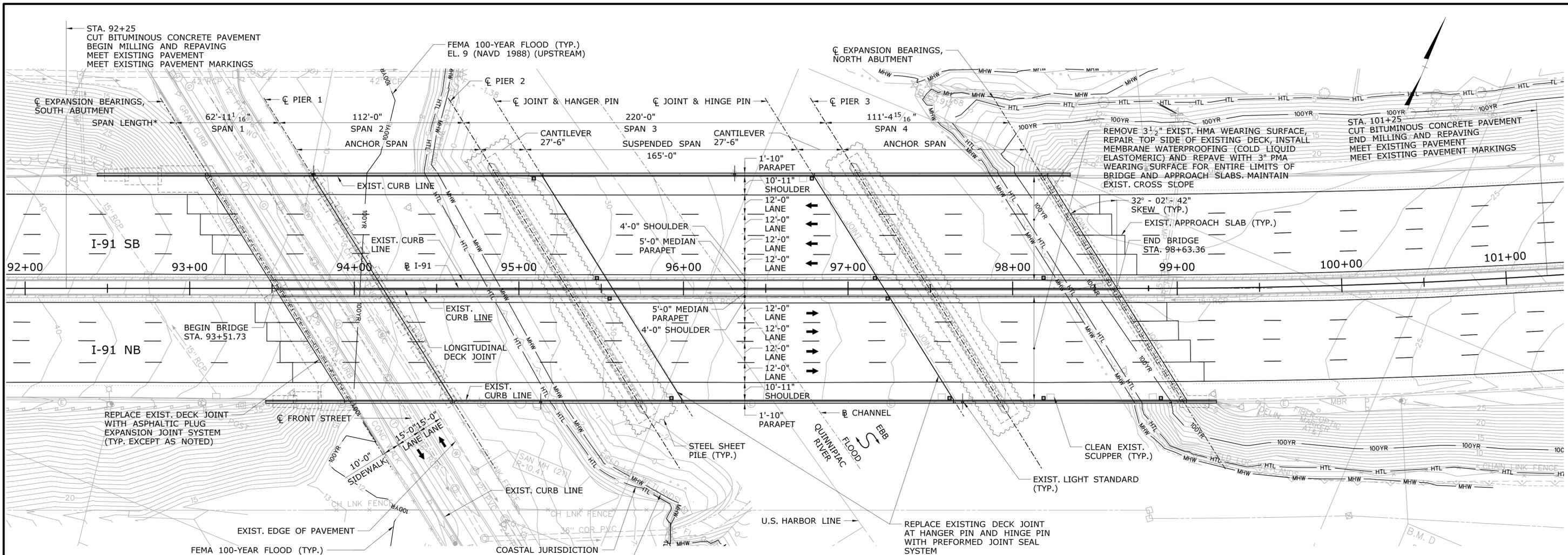
TOWN:
NEW HAVEN

DRAWING TITLE:
INDEX OF DRAWINGS

PROJECT NO.
92-668

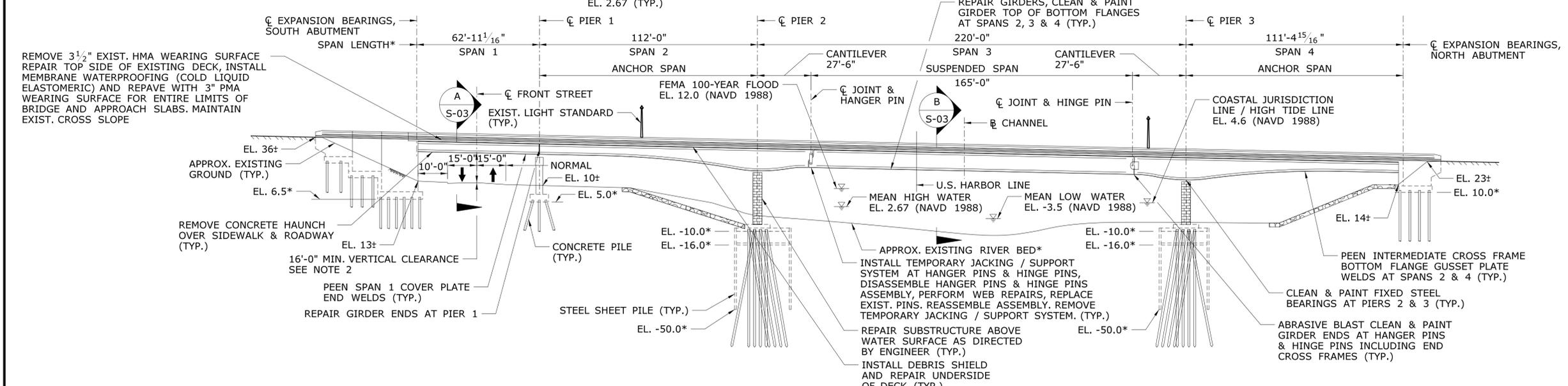
DRAWING NO.
S-01

SHEET NO.
04.01



GENERAL PLAN

SCALE: 1" = 30'



EAST ELEVATION

SCALE: 1" = 30'

NOTES

- SEE THE CERTIFICATE OF PERMISSION PERMIT PLATES FOR DETAILS OF THE TEMPORARY BARGE AND DEBRIS SHIELD.
- 14'-3" MINIMUM VERTICAL CLEARANCE FOR TEMPORARY SUSPENDED DEBRIS SHIELD OR WORK PLATFORM.

LEGEND

* BASED ON ORIGINAL CONSTRUCTION PLANS

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A.HIPIUS/S.ERDAS

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T. STRNAD

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Plotted Date: 6/30/2016

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Dewberry

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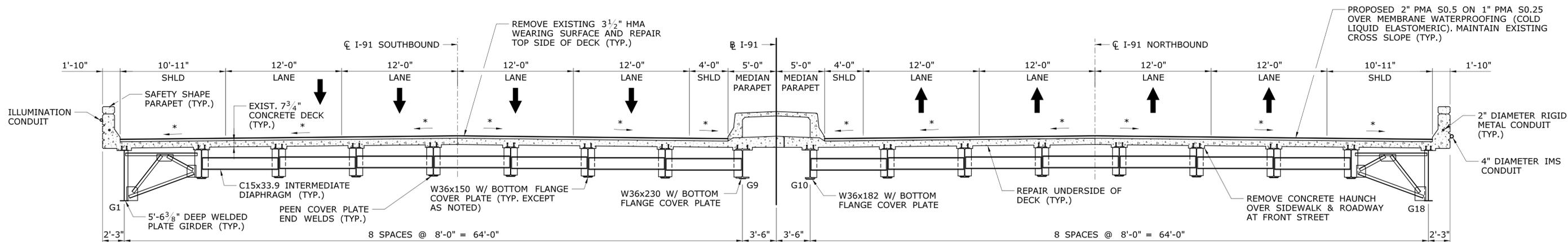
TOWN:
NEW HAVEN

PROJECT NO.
92-668

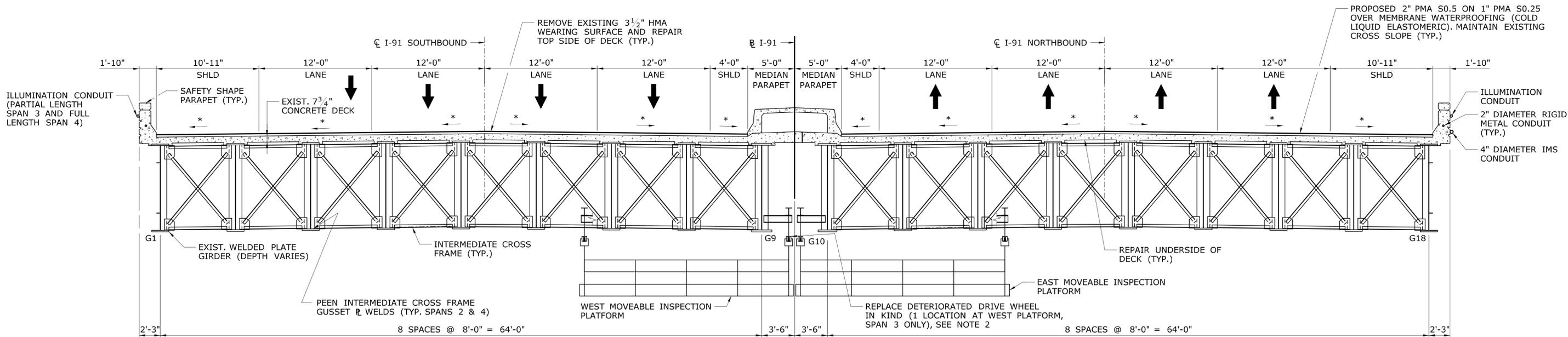
DRAWING NO.
S-02

DRAWING TITLE:
GENERAL PLAN AND ELEVATION

SHEET NO.
04.02



A CROSS SECTION - SPAN 1
S-02 SCALE: 3/16" = 1'-0"



B CROSS SECTION - SPANS 2-4
S-02 SCALE: 3/16" = 1'-0"

NOTES

- CROSS SECTION BETWEEN STA. 93+52+ AND STA. 96+75 SHOWN. CROSS SECTION BETWEEN STA. 96+75 AND 98+63+ IS SUPERELEVATED.
- THE COST OF FURNISHING AND INSTALLING THE REPLACEMENT DRIVE WHEEL SHALL BE INCLUDED IN THE GENERAL COST OF CONSTRUCTION.
- SEE THE CERTIFICATE OF PERMISSION PERMIT PLATES FOR DETAILS OF THE TEMPORARY DEBRIS SHIELD.

LEGEND

* MAINTAIN EXISTING CROSS SLOPE

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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STATE OF CONNECTICUT
 DEPARTMENT OF TRANSPORTATION

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PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 03093 I-91 OVER FRONT STREET AND QUINNIPIAC RIVER

TOWN:
NEW HAVEN

DRAWING TITLE:
CROSS SECTIONS

PROJECT NO.
92-668

DRAWING NO.
S-03

SHEET NO.
04.03

GENERAL NOTES

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

DESIGN SPECIFICATIONS:
AASHTO LRFD BRIDGE DESIGN SPECIFICATION, (AASHTO 6TH EDITION, 2012)
AS SUPPLEMENTED BY THE CONNECTICUT DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL (2003).

ALLOWABLE DESIGN STRESSES:
CLASS "S" CONCRETE BASED ON $f_c = 3000$ PSI
REINFORCEMENT (ASTM A615 GRADE 60) $f_y = 60000$ PSI
STRUCTURAL STEEL (AASHTO M270, GRADE 50) $F_y = 50000$ PSI

LIVE LOAD:
HL-93 (STEEL REPAIRS ONLY)

FUTURE PAVING ALLOWANCE:
NONE

STRUCTURAL STEEL:
SEE STRUCTURE SHEET NOTES FOR DESIGNATIONS AND REQUIREMENTS.

PAINT:
PAINT SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIAL PROVISION "ABRASIVE BLAST CLEANING AND FIELD PAINTING OF STRUCTURE (SITE NO. 1)", "LOCALIZED PAINT REMOVAL AND FIELD PAINTING OF EXISTING STEEL" AND "STRUCTURAL STEEL (SITE NO. 1)". THE COLOR OF THE TOP COAT MATERIAL ON REPAIR AND EXISTING STRUCTURAL STEEL SHALL CONFORM TO FEDERAL STANDARD COLOR NO. 26329 (BLUE)

BITUMINOUS CONCRETE OVERLAY:
THIS SHALL CONSIST OF TWO LIFTS. THE FIRST SHALL BE PMA S0.25 (1" THICK) AND THE SECOND SHALL BE PMA S0.5 (2" THICK).

DIMENSIONS:
WHEN DECIMAL DIMENSIONS ARE GIVEN TO LESS THAN THREE DECIMAL PLACES, THE OMITTED DIGITS SHALL BE ASSUMED TO BE ZEROS.

EXISTING DIMENSIONS:
DIMENSIONS OF THE EXISTING STRUCTURES SHOWN ON THESE PLANS ARE FOR GENERAL REFERENCE ONLY. THEY HAVE BEEN TAKEN FROM 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 THE ACCURACY. WHEN SHOP DRAWINGS BASED ON FIELD MEASUREMENTS ARE SUBMITTED FOR APPROVAL, THE FIELD MEASUREMENTS SHALL ALSO BE SUBMITTED FOR THE REFERENCE OF THE REVIEWER.

TRAFFIC:
ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIAL PROVISIONS, "MAINTENANCE AND PROTECTION OF TRAFFIC" & "PROSECUTION AND PROGRESS".

UTILITIES:
THE CONTRACTOR SHALL VERIFY THE SIZE AND LOCATION OF ALL UTILITIES WITHIN THE PROJECT LIMITS PRIOR TO THE START OF CONSTRUCTION AND SHALL TAKE NECESSARY PRECAUTIONS WHEN WORKING NEAR UTILITIES SO AS TO NOT DISTURB THEM OR PLACE ANY LOAD OR EQUIPMENT ON THEM. ALL UTILITY COMPANIES SHALL BE NOTIFIED 48 HOURS PRIOR TO ANY WORK AFFECTING CABLES, CONDUITS, OR OTHER UTILITIES.

EXISTING PLANS:
PLANS FOR THE EXISTING BRIDGE ARE AVAILABLE AT THE CONNECTICUT DEPARTMENT OF TRANSPORTATION PLAN ROOM, 160 PASCONE PLACE, NEWINGTON.

ACCESS:
ANY TEMPORARY FACILITIES OR EQUIPMENT ALLOWED BELOW THE 100 YEAR FLOOD ELEVATION (EL. 9.0 UPSTREAM / EL. 12.0 DOWNSTREAM) WILL BE SUBJECT TO APPROVAL OF THE ENGINEER AND WILL BE SUBJECT TO REMOVAL IN A TIMELY MANNER IN THE EVENT OF A FLOOD WARNING.

CONCRETE NOTES:

REMAIN-IN-PLACE FORMS:
THE USE OF REMAIN-IN-PLACE FORMS ON THIS STRUCTURE IS NOT ALLOWED.

CLASS "S" CONCRETE:
CLASS "S" CONCRETE SHALL BE USED IN REPAIR LOCATIONS WHERE THE AREA EXCEEDS 4 SQUARE FEET AND THE REINFORCING BARS ARE SUFFICIENTLY EXPOSED TO ENGAGE AND ANCHOR THE PATCHING MATERIAL. CLASS "S" CONCRETE MAY BE USED FOR AREAS SMALLER THAN 4 SQUARE FEET WHERE THERE IS A SUFFICIENT TOTAL VOLUME TO JUSTIFY THE USE OF THIS MATERIAL AND WHERE THE PATCH CAN BE SECURELY ANCHORED BY THE REINFORCING OR WELDED WIRE FABRIC. THIS DETERMINATION IS AT THE DISCRETION OF THE ENGINEER.

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.

BRIDGE 03093 QUANTITIES		
ITEM	UNIT	QUANTITY
GUANO ABATEMENT	CF	250
LEAD COMPLIANCE FOR MISCELLANEOUS TASKS	LS	LS
LEAD COMPLIANCE FOR ABRASIVE BLAST CLEANING	LS	LS
WATER TRANSPORTATION FOR INSPECTION PERSONNEL	DAY	180
PMA S0.25	TON	382
PMA S0.5	TON	765
MATERIAL FOR TACK COAT	GAL.	703
REMOVAL OF EXISTING WEARING SURFACE	SY	7,650
MATERIAL TRANSFER VEHICLE	TON	765
ASPHALT ADJUSTMENT COST (ESTIMATED COST)	EST	338
CLEAN EXISTING SCUPPERS	EA	11
1-1/2" POLYVINYL CHLORIDE PLASTIC PIPE	LF	75
ELASTOMERIC CONCRETE HEADER	CF	55
ASPHALTIC PLUG EXPANSION JOINT SYSTEM	CF	190
PREFORMED JOINT SEAL	LF	350
CLASS "S" CONCRETE	CY	4
REMOVE STAY IN PLACE FORM	SF	280
VARIABLE DEPTH PATCH	CF	50
FULL DEPTH PATCH (HIGH EARLY STRENGTH CONCRETE)	CY	110
PARTIAL DEPTH PATCH	CF	2,580
EPOXY INJECTION CRACK REPAIR	LF	40
CLEAN AND COAT EXISTING EXPOSED REINFORCING STEEL	LF	4,500
STRUCTURAL STEEL (SITE NO. 1)	LS	LS
STRUCTURAL STEEL REPAIR (SITE NO. 1)	CWT	450
DISPOSAL OF LEAD DEBRIS FROM ABRASIVE BLAST CLEANING	TON	2
STRUCTURAL PIN ASSEMBLY (STAINLESS STEEL)	EA	54
CLASS 1 CONTAINMENT AND COLLECTION OF SURFACE PREPARATION DEBRIS (SITE NO. 1)	LS	LS
EMBEDDED GALVANIC ANODES	EA	85
LOCALIZED PAINT REMOVAL AND FIELD PAINTING OF EXISTING STEEL	SF	4,000
TEMPORARY SUPPORT SYSTEM NO. 1	LS	LS
ABRASIVE BLAST CLEANING AND FIELD PAINTING OF STRUCTURE (SITE NO. 1)	LS	LS
PEENING COVER PLATE WELDS	EA	224
MEMBRANE WATERPROOFING (COLD LIQUID ELASTOMERIC)	SY	7,650
PROTECTIVE COMPOUND FOR BRIDGES	SY	10
CONCRETE HAUNCH REMOVAL	LF	1,700

NOTICE TO BRIDGE INSPECTORS

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 INSPECTING THE FOLLOWING SPECIAL COMPONENTS AND DETAILS. (THE LISTING FOR COMPONENTS FOR SPECIFIC ATTENTION SHALL NOT BE CONSTRUED TO REDUCE THE IMPORTANCE OF INSPECTION 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.

COMPONENT OR DETAIL	STRUCTURE SHEET REFERENCE
NONE	N/A

CONCRETE DISTRIBUTION

	UNIT	QUANTITY
SUPERSTRUCTURE	CY	206
SUBSTRUCTURE	CY	6
FOOTINGS	CY	0
TOTAL	CY	212

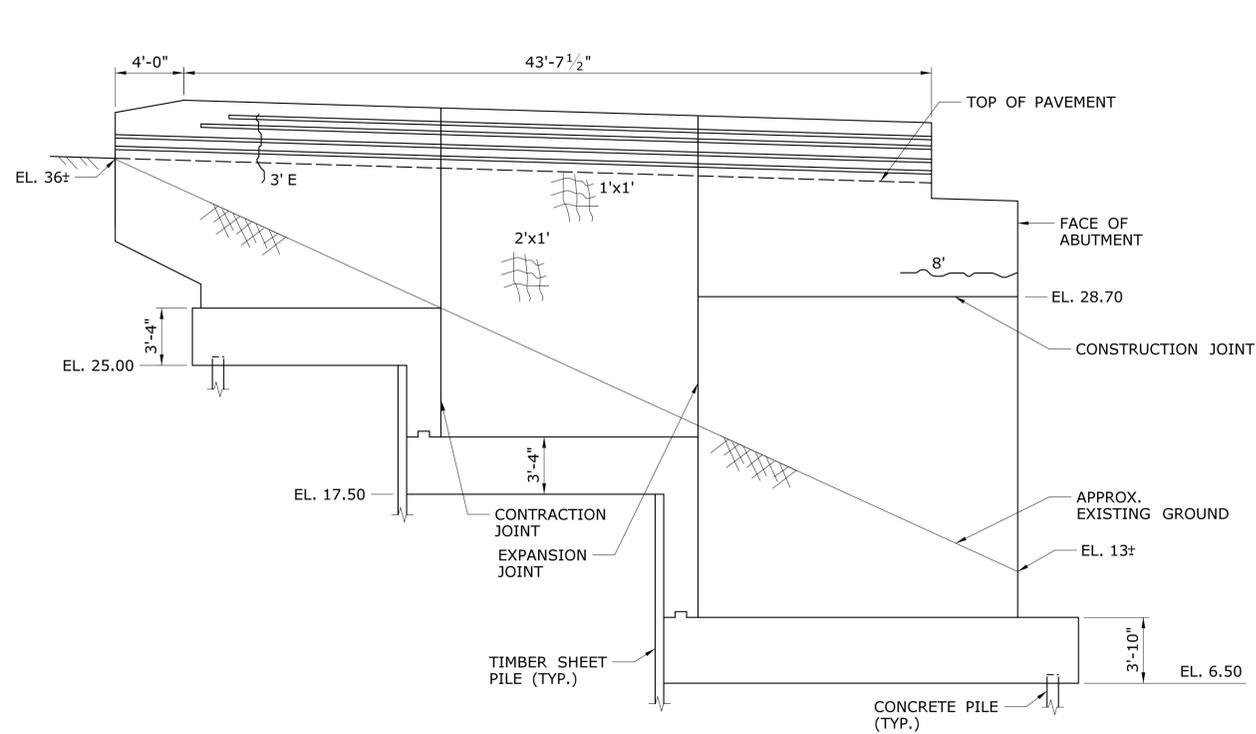
INSPECTION OF FIELD WELDS

METHOD	UNIT	QUANTITY
ULTRASONIC	IN	470
MAGNETIC PARTICLE	LF	5000

TRANSPORTATION DIMENSIONS AND MASS DATA

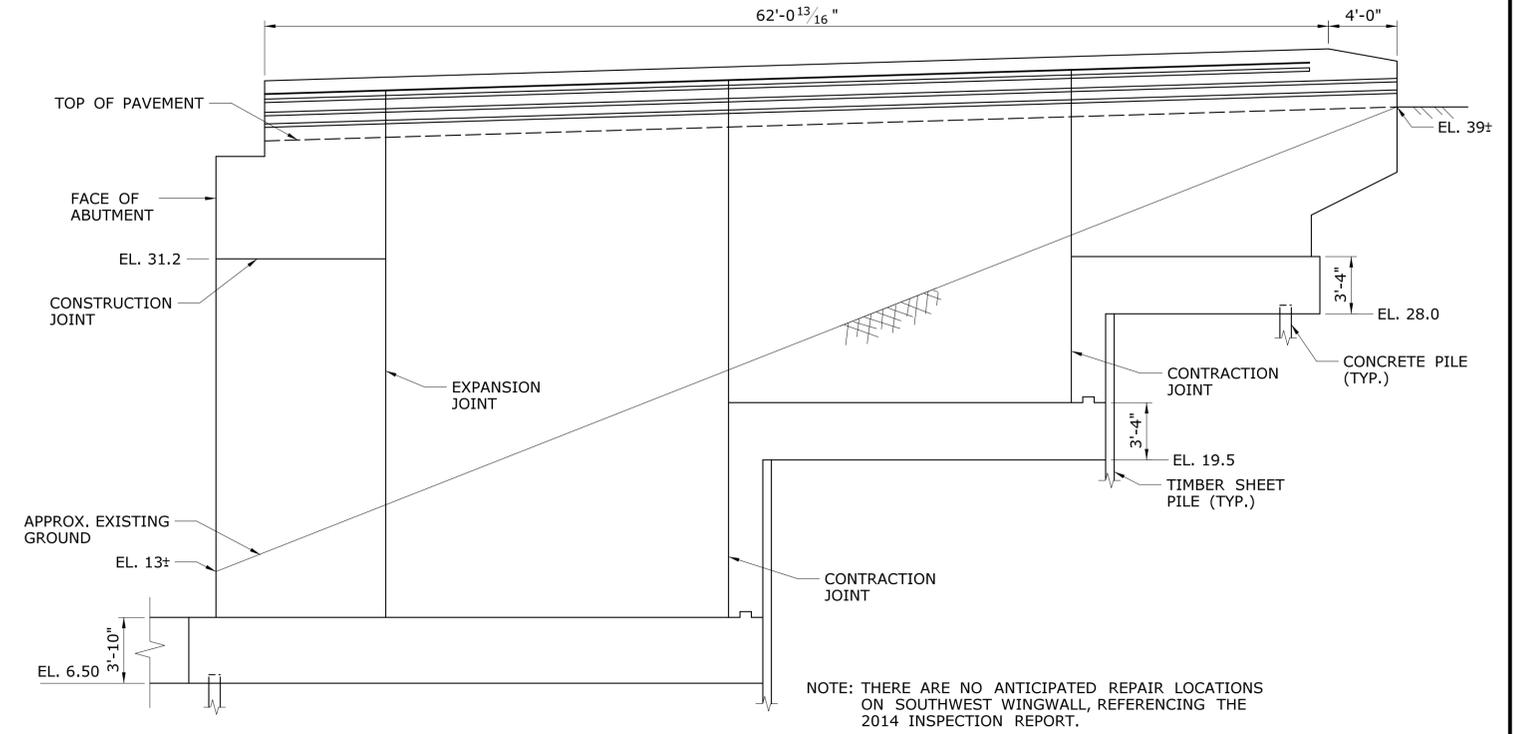
MEMBER	SHIPPING LENGTH	SHIPPING HEIGHT	SHIPPING WIDTH	SHIPPING WEIGHT
N/A	N/A	N/A	N/A	N/A

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 7/1/2016	DESIGNER/DRAFTER: A.HIPIUS/S.ERDAS CHECKED BY: T. STRNAD	 STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION Filename: ...\\SB_MSH_Br03093_092_0668_NOTES.dgn	SIGNATURE/ BLOCK:   59 Elm Street, Suite 101 New Haven, CT 06510-2047	PROJECT TITLE: REHABILITATION OF BRIDGE NO. 03093 I-91 OVER FRONT STREET AND QUINNIPIAC RIVER	TOWN: NEW HAVEN	PROJECT NO. 92-668 DRAWING NO. S-04 SHEET NO. 04.04
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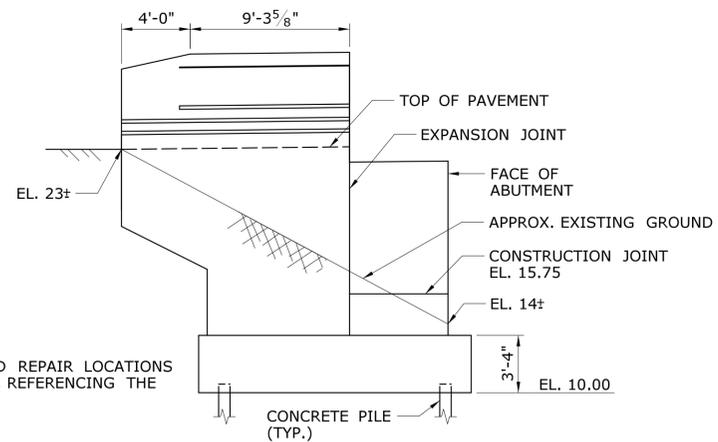
SOUTHEAST WINGWALL REPAIRS - ELEVATION

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



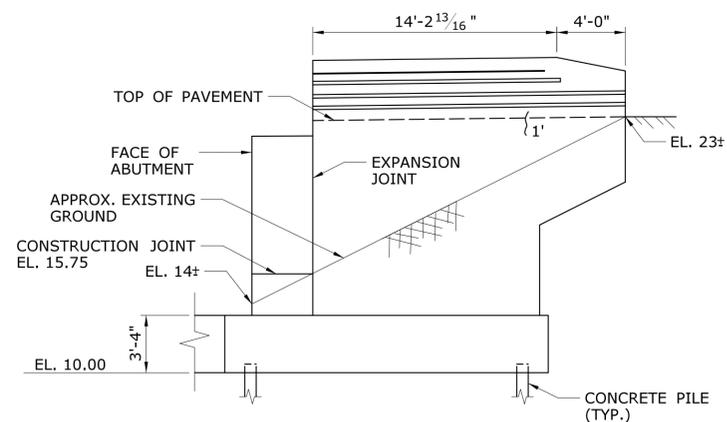
SOUTHWEST WINGWALL REPAIRS - ELEVATION

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



NORTHWEST WINGWALL REPAIRS - ELEVATION

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



NORTHEAST WINGWALL REPAIRS - ELEVATION

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

LEGEND

- CRACK
- HOLLOW AREA
- MAP CRACKING
- SHALLOW REBAR
- SPALL AREA
- SPALL AREA WITH EXPOSED REBAR
- SCALE AREA

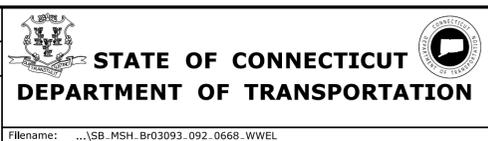
- E = EFFLORESCENCE
- FH = FULL HEIGHT
- FW = FULL WIDTH
- DP = DEEP
- HC = HONEY COMBING
- HA = HOLLOW AREA

REFERENCES

1. SEE DWG. NO. S-10 FOR SUBSTRUCTURE REPAIR NOTES AND CONCRETE CRACK REPAIR DETAILS.
2. SEE DWG. NO. S-11 FOR CONCRETE PATCH REPAIR DETAILS.

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DESIGNER/DRAFTER:
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SCALE AS NOTED



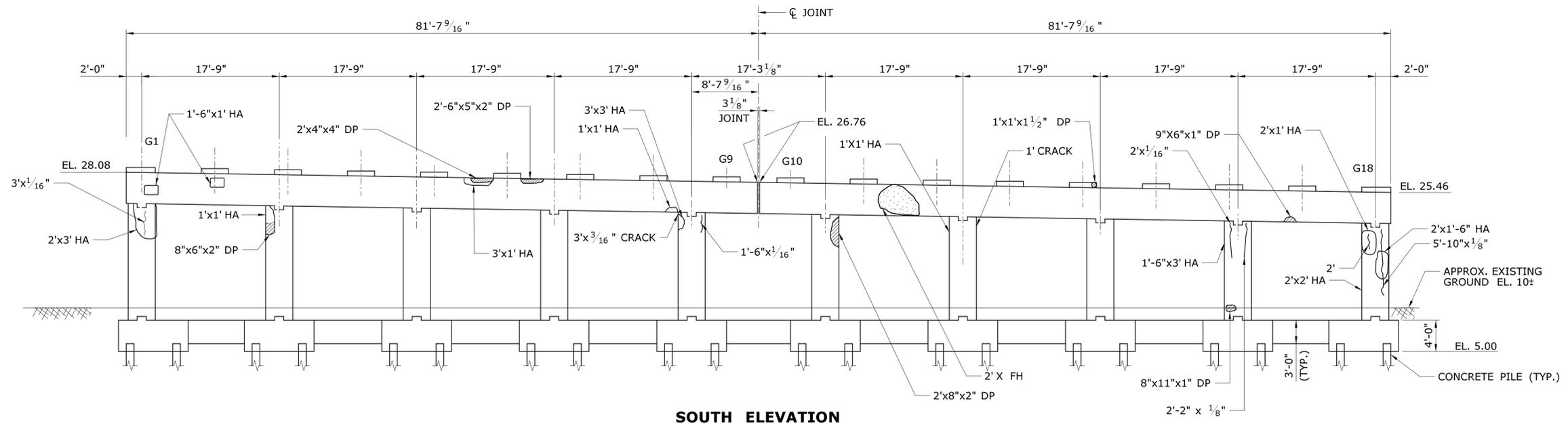
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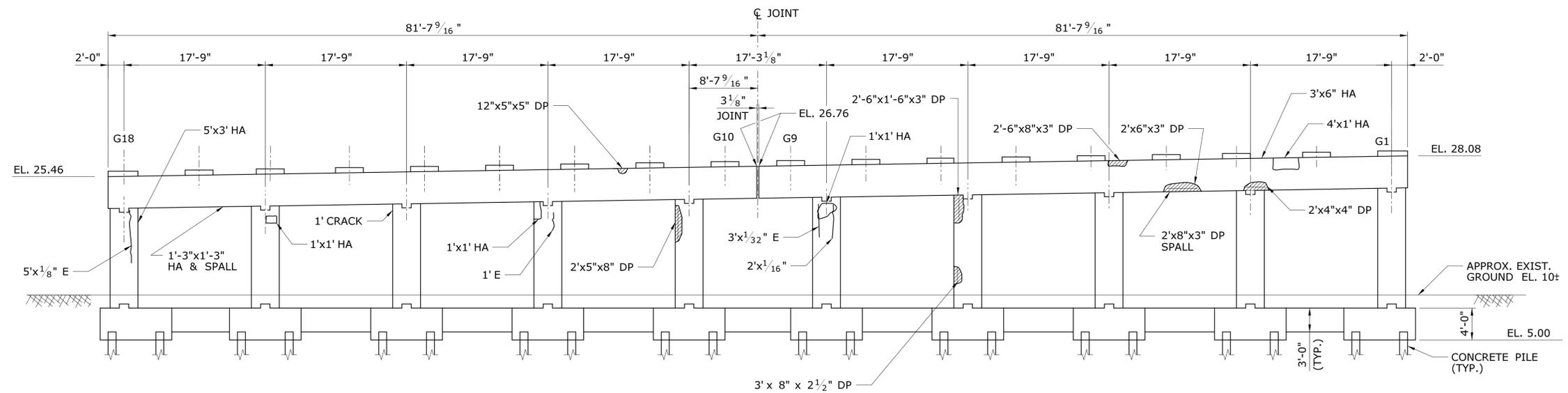
PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 03093 I-91 OVER FRONT STREET AND QUINNIPIAC RIVER

TOWN:
NEW HAVEN
DRAWING TITLE:
WINGWALLS

PROJECT NO.
92-668
DRAWING NO.
S-06
SHEET NO.
04.06



SOUTH ELEVATION



NORTH ELEVATION

PIER 1 - REPAIRS

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

LEGEND

- CRACK
- HOLLOW AREA
- MAP CRACKING
- SHALLOW REBAR
- SPALL AREA
- SPALL AREA WITH EXPOSED REBAR
- SCALE AREA

- E = EFFLORESCENCE
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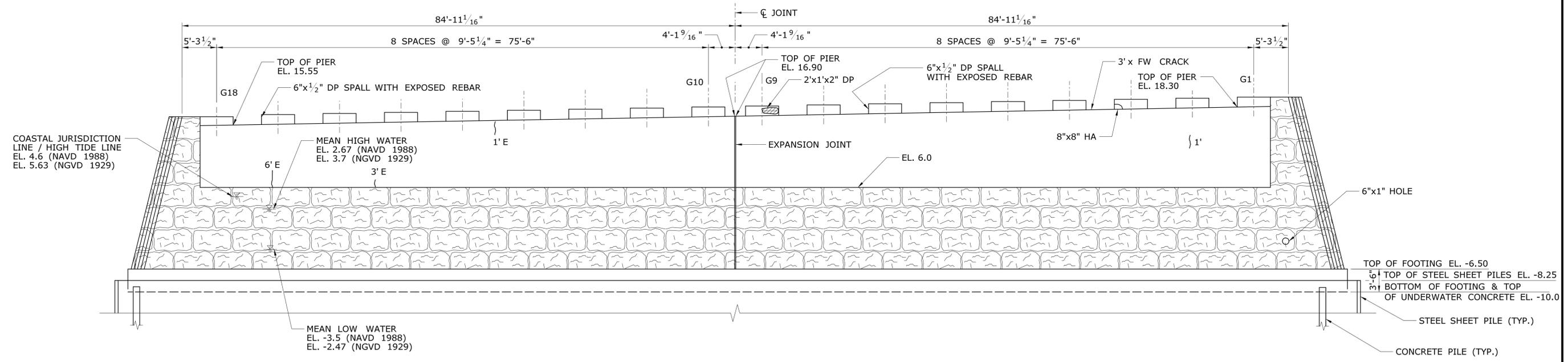
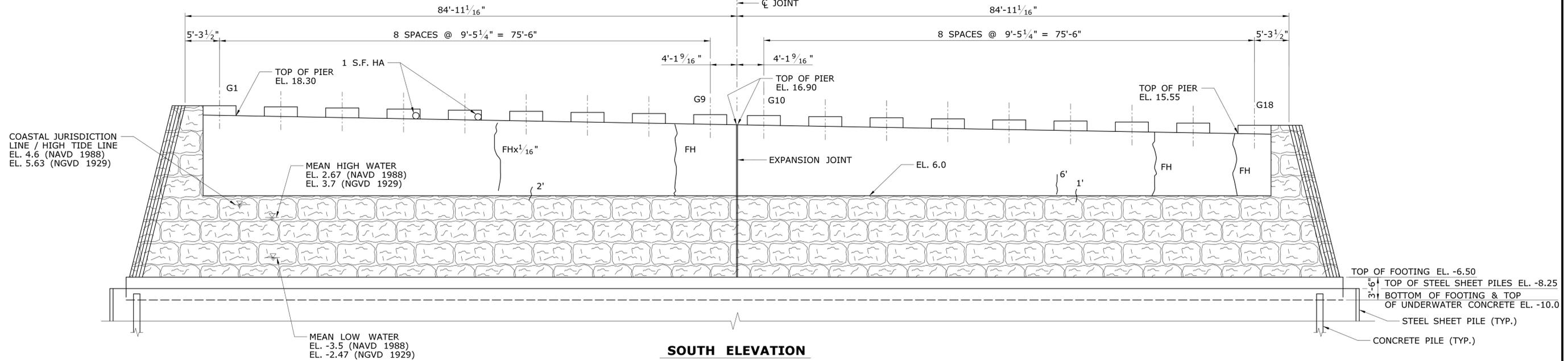
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TOWN:
NEW HAVEN
DRAWING TITLE:
PIERS - 1

PROJECT NO.
92-668
DRAWING NO.
S-07
SHEET NO.
04.07



PIER 2 - REPAIRS
SCALE: 1/8" = 1'-0"

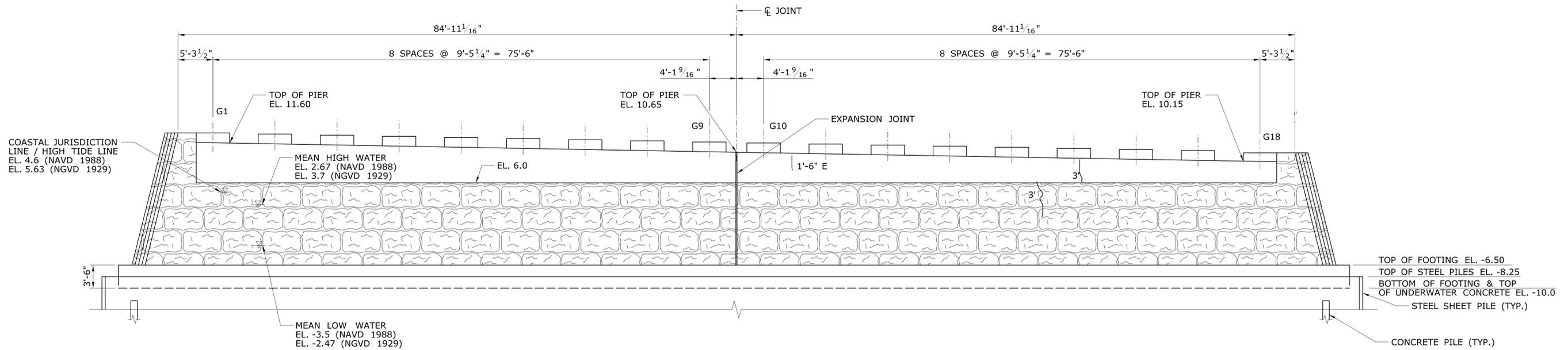
LEGEND

- CRACK
- HOLLOW AREA
- MAP CRACKING
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- SPALL AREA
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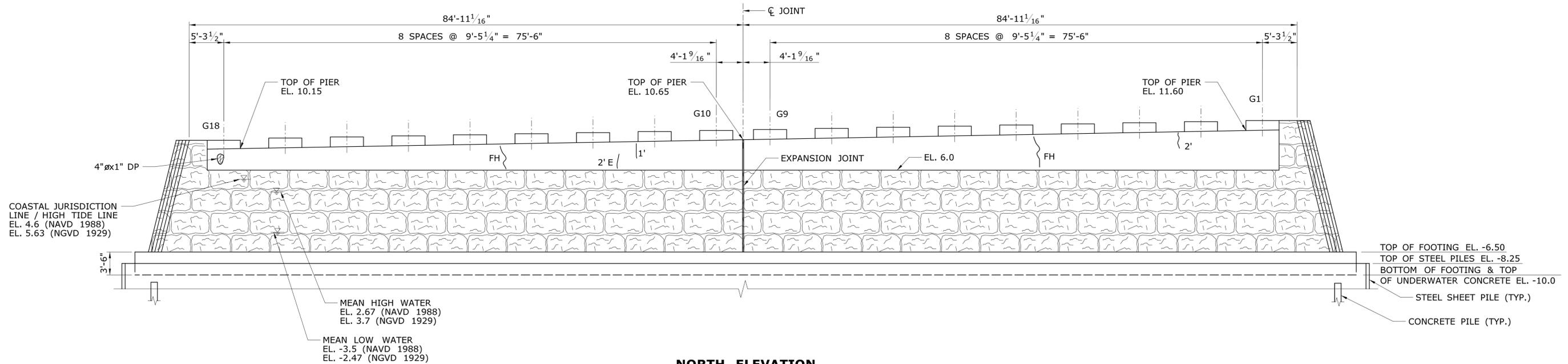
REFERENCES

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2. SEE DWG. NO. S-11 FOR CONCRETE PATCH REPAIR DETAILS.

DESIGNER/DRAFTER: A.HIPIUS/S.ERDAS	CHECKED BY: T. STRNAD	 STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	 Dewberry <small>59 Elm Street, Suite 101 New Haven, CT 06510-2047</small>	PROJECT TITLE: REHABILITATION OF BRIDGE NO. 03093 I-91 OVER FRONT STREET AND QUINNIPIAC RIVER	TOWN: NEW HAVEN	PROJECT NO. 92-668	DRAWING NO. S-08
REV. DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 6/30/2016	SCALE AS NOTED	Filename: ...\\SB_MSH_Br03093_092_0668_PIEREL-02.dgn	DRAWING TITLE: PIERS - 2	SHEET NO. 04.08



SOUTH ELEVATION



NORTH ELEVATION

PIER 3

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

LEGEND

- CRACK
- HOLLOW AREA
- MAP CRACKING
- SHALLOW REBAR
- SPALL AREA
- SPALL AREA WITH EXPOSED REBAR
- SCALE AREA
- E = EFFLORESCENCE
- FH = FULL HEIGHT
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CHECKED BY: T. STRNAD				DRAWING TITLE: PIERS - 3	SHEET NO. S-09
SCALE AS NOTED	Plotted Date: 6/30/2016	Filename: ...\\SB_MSH_Br03093_092_0668_PIEREL-03.dgn			SHEET NO. 04.09

CRACK REPAIR PROCEDURE FOR CRACKS 1/4" - 1" WIDE

- SURFACE PREPARATION:**
 - REMOVE ALL LOOSE, DETERIORATED CONCRETE, DIRT, OIL, GREASE, AND ALL BOND-INHIBITING MATERIALS FROM SURFACE.
 - PROVIDE A MINIMUM REPAIR DEPTH OF 1/8".
 - PREPARATION WORK SHOULD BE DONE BY SCABBLER, CHISELING, WIRE BRUSHING OR OTHER APPROPRIATE MECHANICAL MEANS.
 - ROUGHEN CONTACT SURFACE WITH A MINIMUM PROFILE OF APPROXIMATELY 1/16" FOR BONDING WITH NEW MORTAR.
 - SATURATE SURFACE WITH CLEAN WATER.
 - SUBSTRATE SHOULD BE SATURATED SURFACE DRY (SSD) WITH NO STANDING WATER DURING APPLICATION.
- APPLICATION AND FINISH:**
 - MIX COMPONENTS OF PATCHING MORTAR AND EPOXY ADHESIVE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
 - APPLY EPOXY ADHESIVE ONTO THE CONCRETE WITH A BRUSH OR BROOM
 - APPLY THE PATCHING MORTAR WHILE THE EPOXY ADHESIVE IS STILL TACKY. IF THE COATING BECOMES GLOSSY AND LOOSES TACKINESS, REMOVE ANY SURFACE CONTAMINANTS AND RECOAT WITH ADDITIONAL EPOXY ADHESIVE AND PROCEED WITH PATCHING WORK.
 - SCRUB REPAIR MORTAR INTO THE SUBSTRATE, FILLING ALL PORES AND VOIDS. FORCE MATERIAL AGAINST EDGE OF REPAIR, WORKING TOWARDS THE CENTER.
 - MATERIAL MAY BE APPLIED IN MULTIPLE LIFTS. EACH LIFT THICKNESS SHALL NOT BE LESS THAN 1/8" NOR GREATER THAN 3" THICK.
 - WHERE MULTIPLE LIFTS ARE REQUIRED, SCORE TOP SURFACE OF EACH LIFT TO PRODUCE A ROUGHENED SURFACE FOR NEXT LIFT. ALLOW PRECEDING LIFT TO REACH FINAL SET, 30 MINUTES MINIMUM, BEFORE APPLYING FRESH MATERIAL.
 - SATURATE SURFACE OF THE LIFT WITH CLEAN WATER.
 - SCRUB FRESH MORTAR INTO PRECEDING LIFT.
 - AFTER FILLING REPAIR, CONSOLIDATE, THEN SCREED.
 - ALLOW MORTAR TO SET TO DESIRED STIFFNESS, THEN FINISH WITH WOOD OR SPONGE FLOAT FOR A SMOOTH SURFACE.
- CURING:**
 - CURING SHOULD COMMENCE IMMEDIATELY AFTER FINISHING.
 - IF NECESSARY, PROTECT NEWLY APPLIED MATERIAL FROM DIRECT SUNLIGHT, WIND, RAIN OR FROST.
 - MOIST CURE WITH FINE MIST OF WATER OR WITH WET BURLAP AND POLYETHYLENE.

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

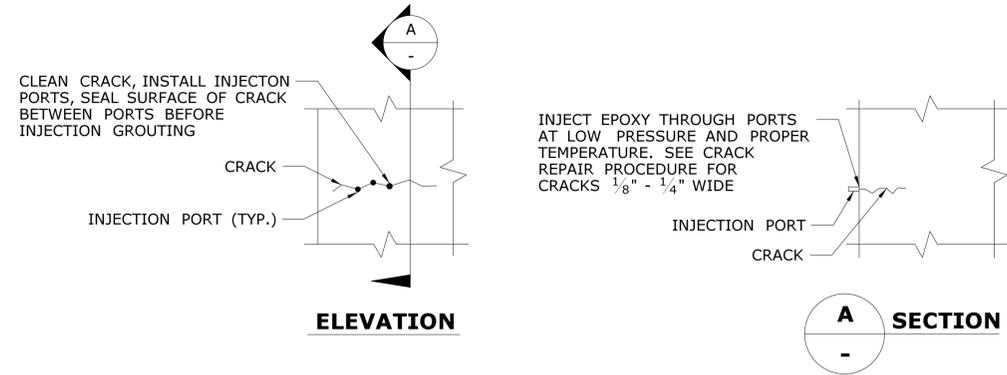
- SURFACE PREPARATION:**
 - REMOVE DUST, LAITANCE, GREASE, IMPREGNATIONS, FOREIGN PARTICLES AND DISINTEGRATED MATERIALS. SURFACE MUST BE CLEAN AND SOUND WITH A ROUGHENED TEXTURE. IDEALLY DRY, SURFACE MAY BE DAMP BUT SHALL BE FREE OF STANDING WATER.
- APPLICATION AND FINISH:**
 - SET GROUT PRESSURE INJECTION 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". SEE SPECIAL PROVISIONS.**
- ANY CRACK LESS THAN 1/8" WIDE SHALL NOT BE REPAIRED BUT SHALL BE SEALED BY THE APPLICATION OF PROTECTIVE COATING OF CONCRETE. TO BE PAID UNDER THE ITEM "PROTECTIVE COMPOUND FOR BRIDGES".**

SUBSTRUCTURE REPAIR NOTES

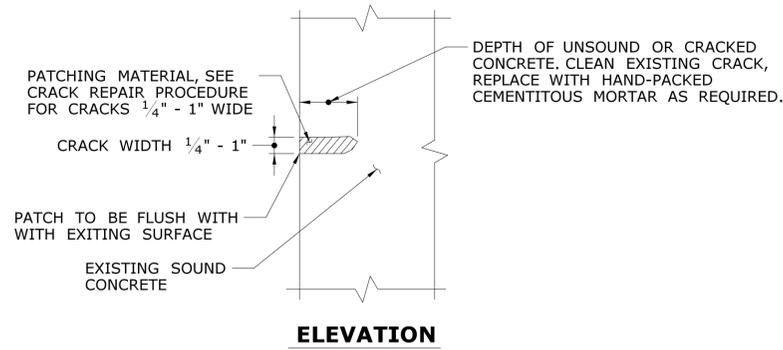
- ABUTMENT, WINGWALL, AND PIER DETERIORATION DIMENSIONS DETAILED ARE APPROXIMATE BASED ON BRIDGE SAFETY INSPECTION REPORTS DATED 2014 AND ARE NOT SHOWN TO SCALE FOR CLARITY. THE INFORMATION IS INTENDED TO BE USED AS A GUIDE. THE EXACT LOCATION, LIMITS OF DETERIORATED CONCRETE TO BE REPAIRED AND THE TYPE OF REPAIR SHALL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION.
- SUBSTRUCTURE REPAIRS SHALL BE PERFORMED ONLY ABOVE THE WATER SURFACE.
- THE CONTRACTOR SHALL NOT PERFORM ANY REPAIR WORK WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- CRACKS SHALL BE REPAIRED IN ACCORDANCE WITH "CRACK REPAIR DETAILS" SHOWN ON THIS SHEET.
- SPALL AREAS, SCALED AREAS, HOLLOW AREAS, AND SHALLOW REBAR AREAS SHALL BE REPAIRED IN ACCORDANCE WITH "SHALLOW PATCH REPAIR DETAIL" OR "DEEP PATCH REPAIR DETAIL" SHOWN ON DRAWING NO. S-11.
- 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.

REFERENCE

- SEE DWG. NO S-11 FOR CONCRETE PATCH REPAIR DETAILS.



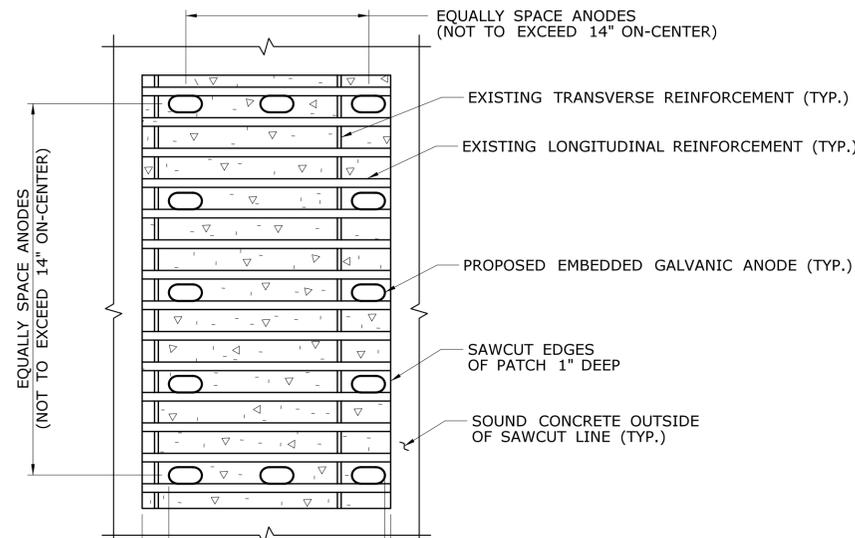
CRACKS 1/8" - 1/4" WIDE



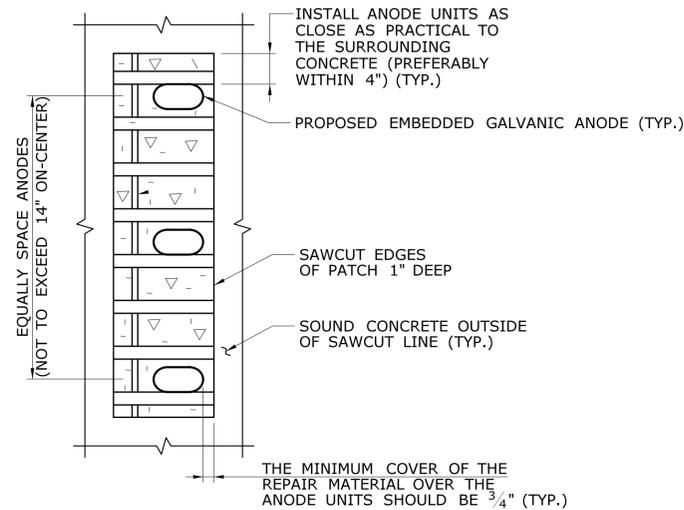
CRACKS 1/4" - 1" WIDE

CRACK REPAIR DETAIL

N.T.S.



ANODE PLACEMENT - LARGE RECTANGULAR TYPE PATCH



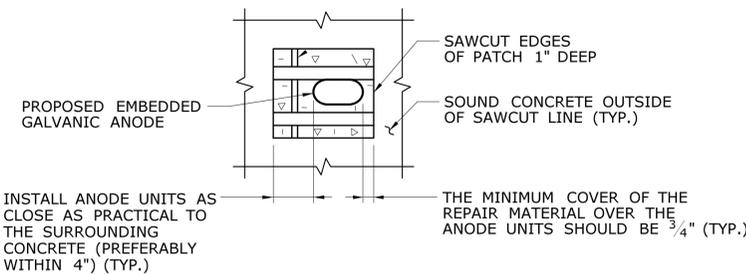
ANODE PLACEMENT - NARROW TYPE PATCH

INSTALL ANODE UNITS AS CLOSE AS PRACTICAL TO THE SURROUNDING CONCRETE (PREFERABLY WITHIN 4") (TYP.)

THE MINIMUM COVER OF THE REPAIR MATERIAL OVER THE ANODE UNITS SHOULD BE 3/4" (TYP.)

EMBEDDED GALVANIC ANODE NOTES

- ANODES ARE TO BE INSTALLED FOR DEEP PATCH REPAIRS. THEIR PRIME PURPOSE IS TO PROTECT REINFORCING BARS THAT CROSS THE EDGE OF THE PATCH.
- INSTALLATION OF ANODES SHALL BE AS DETAILED ON THIS PLAN AND PER THE RECOMMENDATIONS OF THE ANODE MANUFACTURER'S REPRESENTATIVE AND AS DIRECTED BY THE ENGINEER.
- THE EMBEDDED GALVANIC ANODES SHALL BE INSTALLED AFTER THE REINFORCING BARS HAVE BEEN BLAST CLEANED AND PRIOR TO APPLYING THE PATCH MATERIAL.
- FURNISHING AND INSTALLATION OF ANODES SHALL BE PAID FOR UNDER THE ITEM "EMBEDDED GALVANIC ANODES", SEE SPECIAL PROVISION.
- CLASS 'S' CONCRETE SHALL NOT CONTAIN GROUND GRANULATED BLAST FURNACE SLAG (GGBFS) OR FLY ASH WHERE GALVANIC ANODES ARE USED.



ANODE PLACEMENT - SMALL PATCH

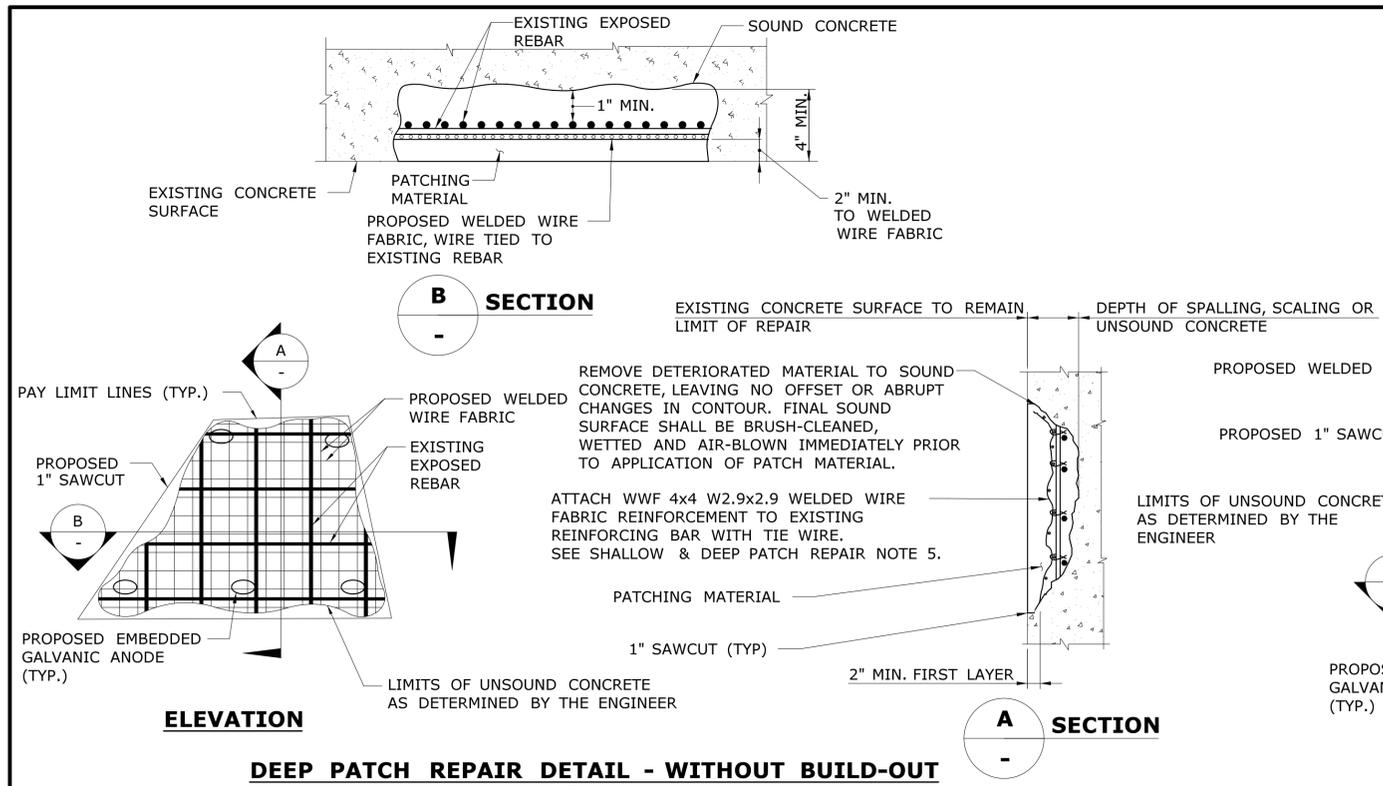
INSTALLATION OF EMBEDDED GALVANIC ANODES

NOT TO SCALE

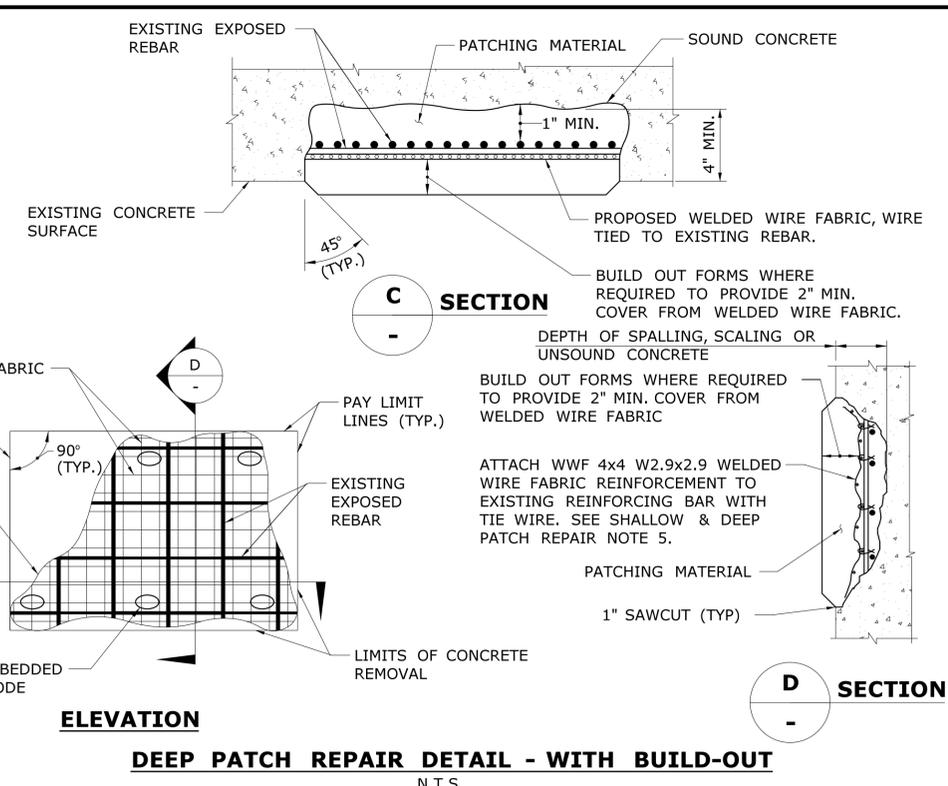
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 6/30/2016	DESIGNER/DRAFTER: A.HIPIUS/S.ERDAS	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p> <p>59 Elm Street, Suite 101 New Haven, CT 06510-2047</p>	SIGNATURE/ BLOCK:	PROJECT TITLE:	TOWN:	PROJECT NO.
					CHECKED BY: T. STRNAD			<p>REHABILITATION OF BRIDGE NO. 03093 I-91 OVER FRONT STREET AND QUINNIPIAC RIVER</p>	<p>NEW HAVEN</p>	<p>92-668</p>
					SCALE AS NOTED					<p>Filename: ...\\SB_MSH_Br03093_092_0668.SUBRPR-01.dgn</p>
										<p>SHEET NO. 04.10</p>

DEEP PATCH REPAIR PROCEDURE

1. DEEP PATCH REPAIR DETAIL APPLIES TO DETERIORATED AREAS OF REINFORCED CONCRETE WHERE MORE THAN HALF THE SURFACE AREA OF REINFORCING IS EXPOSED.
2. REMOVE DETERIORATED MATERIAL TO SOUND CONCRETE LEAVING NO OFFSET OR ABRUPT CHANGES IN CONTOUR.
3. CLEAN EXISTING REINFORCING STEEL AND CONCRETE (NEWLY EXPOSED), SEE SPECIFICATIONS. MISSING OR DETERIORATED REINFORCING STEEL SHALL BE REPLACED AND SPLICED AS SHOWN IN DETAIL OR AS DIRECTED BY THE ENGINEER. COST OF SPLICING TO BE PAID UNDER THE COST FOR PATCHING MATERIAL.
4. INSTALL GALVANIC ANODES AND WELDED WIRE FABRIC. COST OF WELDED WIRE FABRIC TO BE PAID UNDER THE COST FOR PATCHING MATERIAL.
5. FORM AND PATCH SURFACE.
6. A MINIMUM OF 72 HOURS SHALL ELAPSE BETWEEN PLACING OF CONCRETE AND START OF NEXT ADJACENT PATCH.
7. ALL NEW EXPOSED CONCRETE SURFACES WITHIN AREA TO BE REPAIRED SHALL BE RUBBED TO PRODUCE A SMOOTH FINISH.



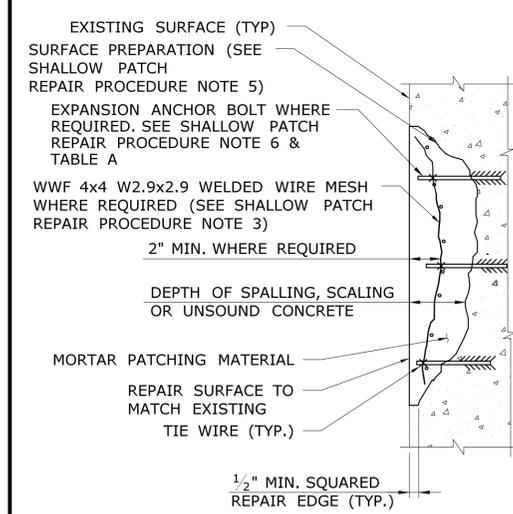
DEEP PATCH REPAIR DETAIL - WITHOUT BUILD-OUT
N.T.S.



DEEP PATCH REPAIR DETAIL - WITH BUILD-OUT
N.T.S.

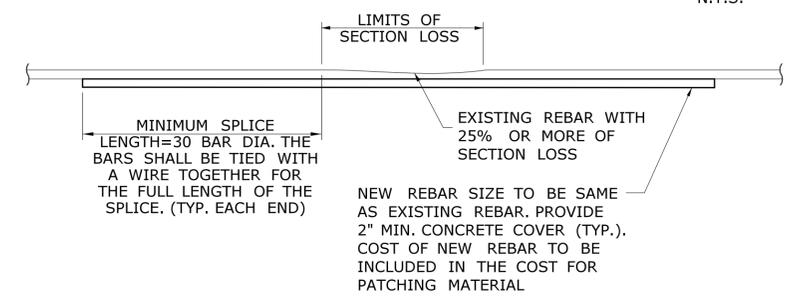
SHALLOW PATCH REPAIR PROCEDURE

1. SHALLOW PATCH REPAIR DETAIL APPLIES TO DETERIORATED AREAS OF UNREINFORCED CONCRETE OR REPAIR AREAS WHERE NO MORE THAN HALF THE SURFACE AREA OF REINFORCING IS EXPOSED OR THE PATCH AREA IS LESS THAN 4 S.F.
2. REPAIR DEPTH SHALL BE 1/8" (MIN.) OR GREATER. REPAIR DEPTHS LESS THAN 1/8" NEED NOT BE REPAIRED.
3. FOR AREAS WHERE THE CONCRETE REPAIR EXCEEDS 4" IN DEPTH, A SINGLE LAYER OF WIRE MESH SHALL BE USED TO REINFORCE EACH 2" THICKNESS OF PATCHING MATERIAL. THE COST OF WELDED WIRE FABRIC SHALL BE INCLUDED IN THE COST OF PATCHING MATERIAL.
4. THE PERIMETER OF EACH DETERIORATED AREA SHALL BE SQUARED-OFF BY CHISELING OR SAWCUTTING.
5. SURFACE PREPARATION
 - A. REMOVE LOOSE AND DETERIORATED CONCRETE, INCLUDING DIRT, OIL, GREASE AND ALL BOND-INHIBITING MATERIALS FROM SURFACE, LEAVING NO OFFSET OR ABRUPT CHANGES IN CONTOUR. SURFACE PREPARATION SHALL BE DONE BY SCABBLER, CHISELING, WIRE BRUSHING OR OTHER APPROPRIATE MECHANICAL MEANS.
 - B. ROUGHEN CONTACT SURFACE WITH A MINIMUM PROFILE OF APPROXIMATELY 1/16" FOR BONDING WITH PATCHING MATERIAL.
 - C. SATURATE WITH CLEAN WATER PRIOR TO APPLYING MORTAR. SUBSTRATE SHOULD BE SATURATED SURFACE DRY (SSD) WITH NO STANDING WATER DURING APPLICATION OF PATCHING MORTAR.
6. EXPANSION ANCHOR BOLTS SHALL CONFORM TO ASTM A307 GRADE A AND BE MECHANICALLY GALVANIZED IN ACCORDANCE WITH ASTM B695, CLASS 50, TYPE 1. COST OF BOLTS, INCLUDING MATERIAL AND INSTALLATION, SHALL BE INCLUDED IN THE COST OF PATCHING MATERIAL.
7. NEW CONCRETE SHALL MATCH SHAPE AND COLOR OF EXISTING CONCRETE SURFACE AS CLOSELY AS POSSIBLE.

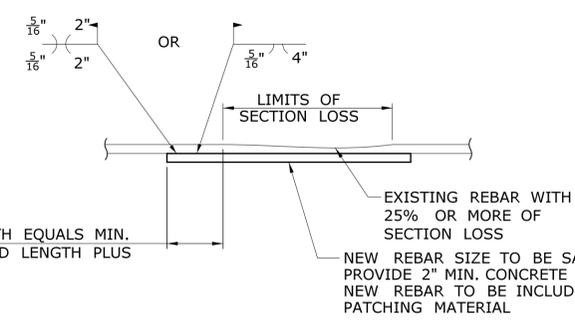


THICKNESS OF PATCH MAT'L	SIZE AND SPACING
4" ±	1/2" DIA. AT 24" ± CTRS.
5" ±	1/2" DIA. AT 22" ± CTRS.
6" ±	1/2" DIA. AT 20" ± CTRS.

SHALLOW PATCH REPAIR DETAIL
N.T.S.



LAPPED TIED SPLICE REBAR



LAPPED WELDED SPLICE REBAR

REINFORCEMENT SPLICE DETAIL
N.T.S.

NOTES

1. THIS DETAIL TO BE USED ONLY IF IT IS VERIFIED THAT EXISTING STEEL IS WELDABLE BASED ON ITS CHEMICAL COMPOSITION.
2. WELDING SHALL BE DONE IN ACCORDANCE WITH AWS D1.4 STRUCTURAL WELDING CODE - REINFORCING STEEL.
3. MECHANICAL SPLICERS ARE AN ACCEPTABLE ALTERNATE IF APPROVED BY THE ENGINEER.

REFERENCES

1. SEE DWG. NOS. S-05 FOR ABUTMENT REPAIR LOCATIONS.
2. SEE DWG. NO. S-06 FOR WINGWALL REPAIR LOCATIONS.
3. SEE DWG. NO. S-07 TO S-09 FOR PIER REPAIR LOCATIONS.
4. SEE DWG. NO. S-10 FOR EMBEDDED GALVANIC ANODE INSTALLATION DETAILS.

SHALLOW AND DEEP PATCH REPAIR NOTES

1. ALL WORK SHOWN ON THIS DRAWING SHALL BE PERFORMED WHERE DIRECTED BY THE ENGINEER.
2. DEEP PATCH REPAIRS SHALL BE PAID UNDER ITEM CLASS "S" CONCRETE. SHALLOW PATCH REPAIRS SHALL BE PAID UNDER ITEM "VARIABLE DEPTH PATCH". SEE SPECIAL PROVISIONS. CLASS "S" CONCRETE SHALL NOT CONTAIN GROUND GRANULATED BLAST FURNACE SLAG (GGBFS) OR FLY ASH WHERE EMBEDDED GALVANIC ANODES ARE USED.
3. SURFACE PREPARATION, PROPORTIONING AND MIXING OF MATERIALS, APPLICATION OF MATERIALS AND REPAIR PROCEDURES SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
4. NEW CONCRETE PATCHES SHALL MATCH SHAPE OF EXISTING CONCRETE SURFACES. COLOR OF NEW PATCH CONCRETE SHALL MATCH COLOR OF THE ADJACENT SURFACES AS CLOSELY AS POSSIBLE.
5. 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.
6. 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.
7. 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 THE LOCATION AND THE ENGINEER NOTIFIED IMMEDIATELY. COST OF REMOVAL OF DETERIORATED CONCRETE AND SURFACE PREPARATION OF THE REPAIR AREA SHALL BE INCLUDED IN THE APPROPRIATE PAY ITEM OF THE PATCHING MATERIAL.
8. THE CONTRACTOR SHALL NOT REMOVE CONCRETE EXCEPT IN THE PRESENCE OF THE ENGINEER OR HIS APPOINTED REPRESENTATIVE. IF THE AREA REMOVED EXCEEDS THE AREA SHOWN ON THE PLANS BY 25% OR IF THE REMOVAL DEPTH EXTENDS MORE THAN 1-1/2" BEHIND THE MAIN REINFORCING BARS, THE CONTRACTOR SHALL CEASE REMOVAL OPERATIONS AND NOTIFY THE ENGINEER IMMEDIATELY. THE ENGINEER SHALL DETERMINE IF THE REMOVAL OPERATIONS REDUCE THE STRUCTURAL CAPACITY OF THE ELEMENT.
9. AREAS DISTURBED BY CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL CONDITION UNLESS OTHERWISE NOTED OR AS ORDERED BY ENGINEER.
10. REPAIR DETAILS APPLY TO SPALLED, SCALED, AND HOLLOW AREAS IN ABUTMENTS AND PIERS WHERE REQUIRED AND NOTED ON DRAWINGS, AND AS DIRECTED BY ENGINEER.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

DESIGNER/DRAFTER:
A.SESHADRI/S.ERDAS
CHECKED BY:
T. STRNAD
SCALE AS NOTED



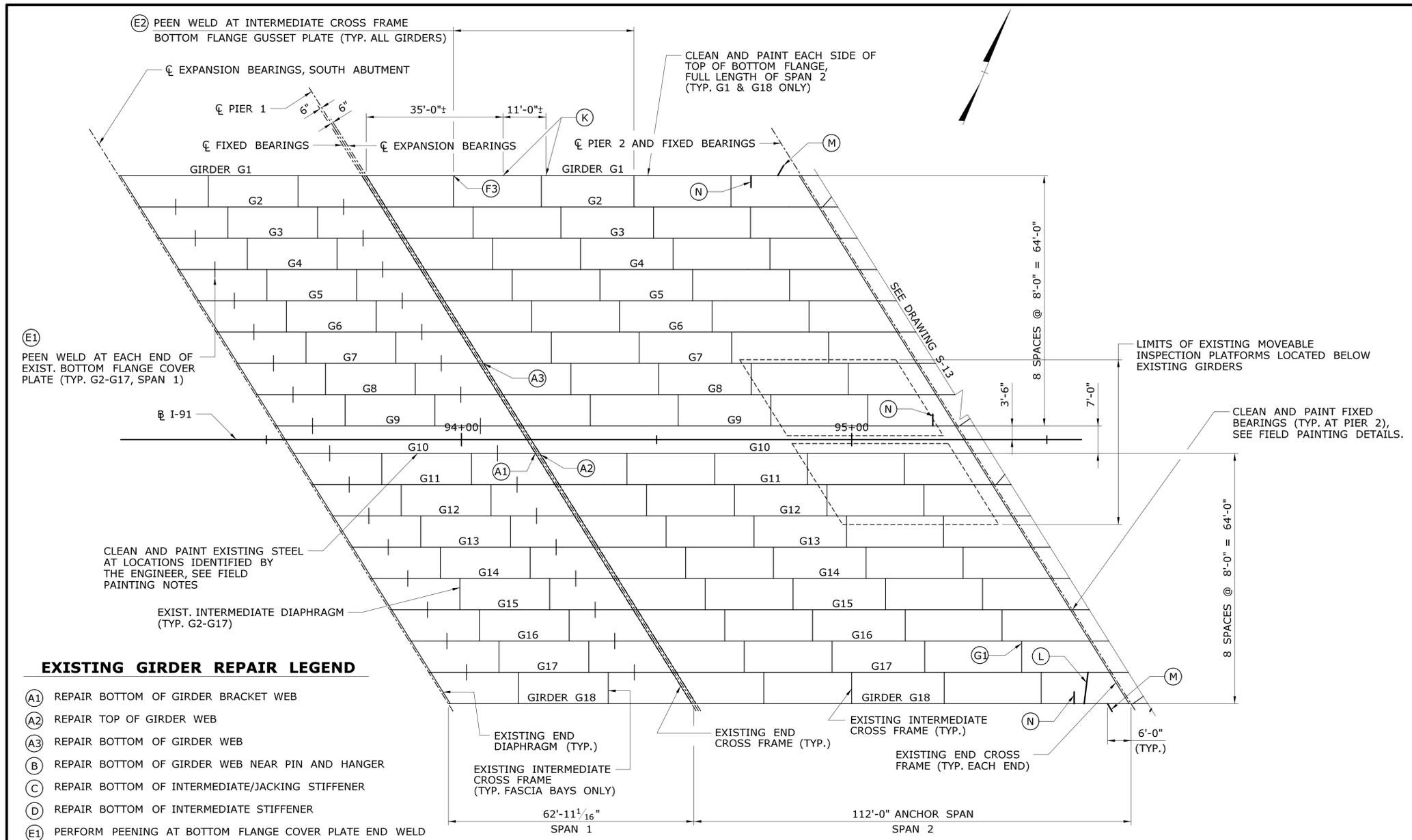
SIGNATURE/
BLOCK:

59 Elm Street, Suite 101
New Haven, CT 06510-2047

PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 03093 I-91 OVER FRONT STREET AND QUINNIPIAC RIVER

TOWN:
NEW HAVEN
DRAWING TITLE:
SUBSTRUCTURE REPAIRS - 2

PROJECT NO.
92-668
DRAWING NO.
S-11
SHEET NO.
04.11



FRAMING PLAN NOTES

1. ALL DIMENSIONS ARE HORIZONTAL, MEASURED ALONG THE CENTERLINE OF THE WEB AND HAVE BEEN OBTAINED FROM ORIGINAL CONSTRUCTION PLANS
2. JACKING STIFFENERS SHALL BE PROVIDED ON BOTH SIDES OF THE WEB.

STRUCTURAL STEEL NOTES

1. STRUCTURAL STEEL (LOW ALLOY) FOR INTERMEDIATE CROSS FRAMES, WEEP PIPE SUPPORT BRACKETS AND GIRDER BOLTED FLANGE REPAIRS SHALL CONFORM TO AASHTO M270, GRADE 50 AND SHALL BE PAID UNDER ITEM "STRUCTURAL STEEL (SITE NO. 1)", SEE SPECIAL PROVISIONS. STRUCTURAL STEEL SHALL BE FREE OF BURRS, NICKS OR GOUGES. THE ESTIMATED WEIGHT OF STRUCTURAL STEEL IS 20 CWT AND IS PROVIDED FOR INFORMATION ONLY.
2. STRUCTURAL STEEL (LOW ALLOY) FOR JACKING STIFFENER, DRIP PLATE, AND GIRDER WEB, INTERMEDIATE STIFFENER, END DIAHRAGM AND CROSS FRAME REPAIRS SHALL CONFORM TO AASHTO M270, GRADE 50 AND SHALL BE PAID UNDER ITEM "STRUCTURAL STEEL REPAIRS (SITE NO. 1)", SEE SPECIAL PROVISIONS. STRUCTURAL STEEL SHALL BE FREE OF BURRS, NICKS OR GOUGES.
3. WELDING DETAILS, PROCEDURES AND TESTING METHODS SHALL CONFORM TO THE CURRENT ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE, UNLESS OTHERWISE NOTED ON THE PLANS.
4. ALL WEB TO JACKING STIFFENER AND JACKING STIFFENER TO FLANGE FILLET WELDS SHALL BE INSPECTED BY THE MAGNETIC PARTICLE METHOD.
5. MULTIPLE PASS WELDS, INSPECTED BY THE MAGNETIC PARTICLE METHOD SHALL HAVE EACH PASS OR LAYER INSPECTED AND ACCEPTED BEFORE PROCEEDING TO THE NEXT PASS OR LAYER, AS DETERMINED BY THE ENGINEER.
6. WELDING ELECTRODES SHALL HAVE THE SAME CORROSION RESISTANCE AS THE BASE METAL.
7. THE STRUCTURAL STEEL FABRICATORS SHALL BE CERTIFIED UNDER THE AISC QUALITY CONTROL PROGRAM, "CATEGORY Mbr - MAJOR STEEL BRIDGES".
8. ALL BOLTS SHALL BE ASTM A325 7/8" DIA. IN 15/16" DIA. HOLES, UNLESS NOTED OTHERWISE. BOLTS SHALL CONFORM TO TYPE I AND BE MECHANICALLY GALVANIZED IN ACCORDANCE WITH ASTM B695, CLASS 50.
9. BOLTED CONNECTIONS SHALL BE "SLIP CRITICAL" CONNECTION WITH CLASS "B" SURFACE CONDITIONS.
10. ALL DIMENSIONS SHALL BE FIELD VERIFIED PRIOR TO FABRICATION.
11. EXISTING PAINT AT REPAIR LOCATION FAYING SURFACES SHALL BE REMOVED. TO BE PAID UNDER THE ITEM "LOCALIZED PAINT REMOVAL AND FIELD PAINTING OF EXISTING STEEL".

STEEL FRAMING DETERIORATION NOTES

1. THE REPAIR LOCATIONS DEPICTED ON THE FRAMING PLAN ARE BASED ON IN-DEPTH INSPECTION PERFORMED BY DEWBERRY IN 2014. THE EXACT LOCATION AND LIMITS OF DETERIORATED STEEL TO BE REPAIRED SHALL BE DELINEATED BY THE ENGINEER DURING CONSTRUCTION.
2. NO STEEL REPAIRS SHALL BE PERFORMED WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.
3. REPAIR WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE SUGGESTED SEQUENCE OF STEEL REPAIRS.

REFERENCES

1. SEE DWG. NO. S-15 TO S-23 FOR STEEL REPAIR DETAILS.
2. SEE DWG. NO. S-24 AND S-25 FOR FIELD PAINTING DETAILS AND NOTES.
3. SEE DWG. NO. S-26 TO S-29 FOR JACKING SUPPORT SYSTEM DETAILS AND NOTES.
4. SEE DWG. NO. S-38 FOR WEEP PIPE SUPPORT BRACKET DETAILS.

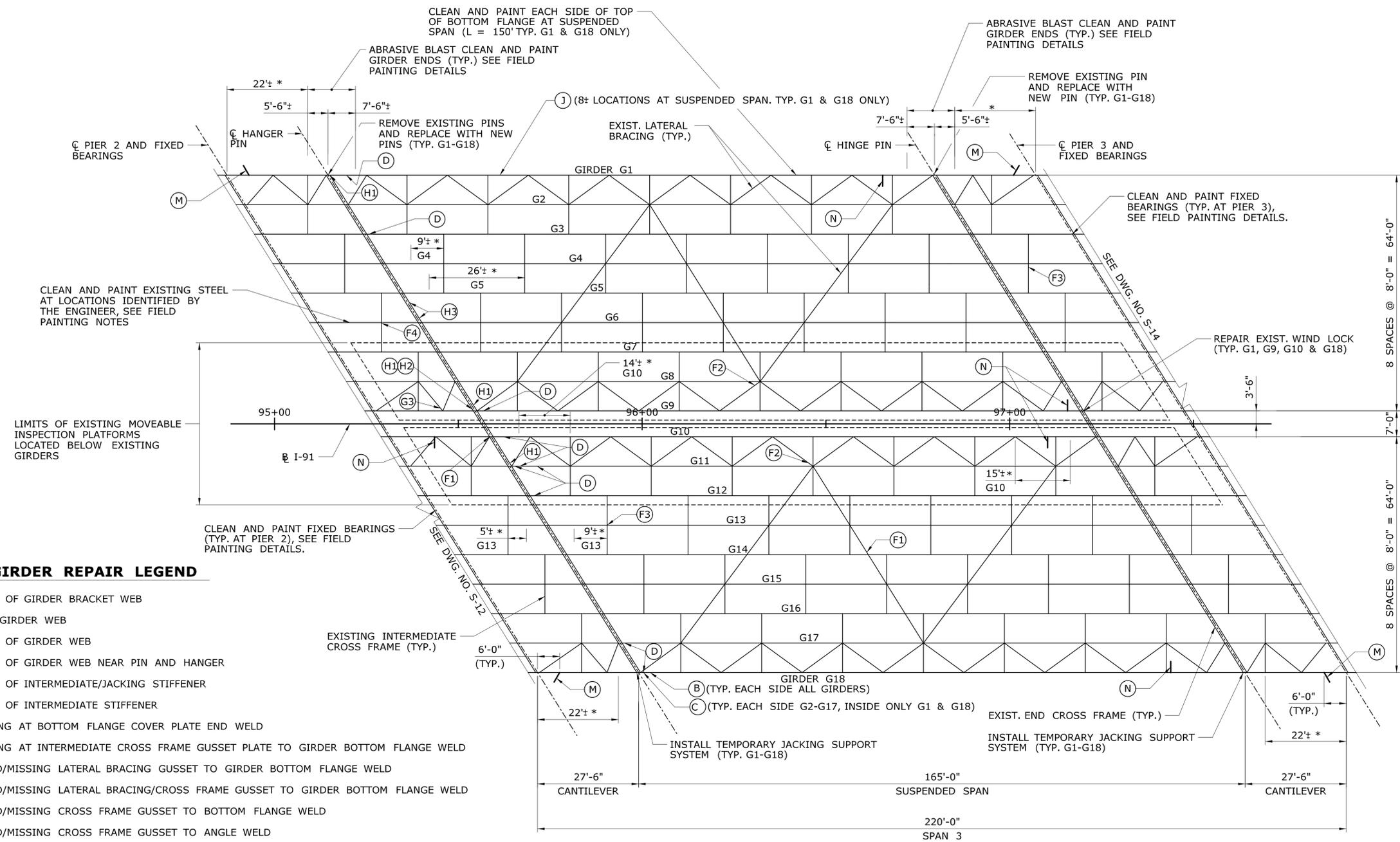
EXISTING GIRDER REPAIR LEGEND

- (A1) REPAIR BOTTOM OF GIRDER BRACKET WEB
- (A2) REPAIR TOP OF GIRDER WEB
- (A3) REPAIR BOTTOM OF GIRDER WEB
- (B) REPAIR BOTTOM OF GIRDER WEB NEAR PIN AND HANGER
- (C) REPAIR BOTTOM OF INTERMEDIATE/JACKING STIFFENER
- (D) REPAIR BOTTOM OF INTERMEDIATE STIFFENER
- (E1) PERFORM PEENING AT BOTTOM FLANGE COVER PLATE END WELD
- (E2) PERFORM PEENING AT INTERMEDIATE CROSS FRAME GUSSET PLATE TO GIRDER BOTTOM FLANGE WELD
- (F1) REPAIR CRACKED/MISSING LATERAL BRACING GUSSET TO GIRDER BOTTOM FLANGE WELD
- (F2) REPAIR CRACKED/MISSING LATERAL BRACING/CROSS FRAME GUSSET TO GIRDER BOTTOM FLANGE WELD
- (F3) REPAIR CRACKED/MISSING CROSS FRAME GUSSET TO BOTTOM FLANGE WELD
- (F4) REPAIR CRACKED/MISSING CROSS FRAME GUSSET TO ANGLE WELD
- (G1) REPAIR GAP UNDER CROSS FRAME GUSSET PLATE AT GIRDER BOTTOM FLANGE
- (G2) REPAIR BENT CROSS FRAME GUSSET PLATE AT GIRDER BOTTOM FLANGE
- (G3) REPAIR BENT LATERAL BRACING GUSSET PLATE AT GIRDER BOTTOM FLANGE
- (H1) REPAIR END CROSS FRAME BOTTOM GUSSET PLATE
- (H2) REPAIR END CROSS FRAME TOP GUSSET PLATE
- (H3) REPAIR END CROSS FRAME TOP HORIZONTAL STIFFENER
- (J) REPAIR GIRDER LOWER LONGITUDINAL STIFFENER BUTT WELD
- (K) REPAIR GIRDER BOTTOM FLANGE AT MIDSPAN
- (L) INSTALL INTERMEDIATE CROSS FRAME
- (M) INSTALL DRIP PLATE ON GIRDER BOTTOM FLANGE
- (N) INSTALL WEEP PIPE SUPPORT BRACKET

FRAMING PLAN - SPANS 1 & 2

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

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REV.	DATE	REVISION DESCRIPTION	SHEET NO.																																			



EXISTING GIRDER REPAIR LEGEND

- (A1) REPAIR BOTTOM OF GIRDER BRACKET WEB
- (A2) REPAIR TOP OF GIRDER WEB
- (A3) REPAIR BOTTOM OF GIRDER WEB
- (B) REPAIR BOTTOM OF GIRDER WEB NEAR PIN AND HANGER
- (C) REPAIR BOTTOM OF INTERMEDIATE/JACKING STIFFENER
- (D) REPAIR BOTTOM OF INTERMEDIATE STIFFENER
- (E1) PERFORM PEENING AT BOTTOM FLANGE COVER PLATE END WELD
- (E2) PERFORM PEENING AT INTERMEDIATE CROSS FRAME GUSSET PLATE TO GIRDER BOTTOM FLANGE WELD
- (F1) REPAIR CRACKED/MISSING LATERAL BRACING GUSSET TO GIRDER BOTTOM FLANGE WELD
- (F2) REPAIR CRACKED/MISSING LATERAL BRACING/CROSS FRAME GUSSET TO GIRDER BOTTOM FLANGE WELD
- (F3) REPAIR CRACKED/MISSING CROSS FRAME GUSSET TO BOTTOM FLANGE WELD
- (F4) REPAIR CRACKED/MISSING CROSS FRAME GUSSET TO ANGLE WELD
- (G1) REPAIR GAP UNDER CROSS FRAME GUSSET PLATE AT GIRDER BOTTOM FLANGE
- (G2) REPAIR BENT CROSS FRAME GUSSET PLATE AT GIRDER BOTTOM FLANGE
- (G3) REPAIR BENT LATERAL BRACING GUSSET PLATE AT GIRDER BOTTOM FLANGE
- (H1) REPAIR END CROSS FRAME BOTTOM GUSSET PLATE
- (H2) REPAIR END CROSS FRAME TOP GUSSET PLATE
- (H3) REPAIR END CROSS FRAME TOP HORIZONTAL STIFFENER
- (J) REPAIR GIRDER LOWER LONGITUDINAL STIFFENER BUTT WELD
- (K) REPAIR GIRDER BOTTOM FLANGE AT MIDSPAN
- (L) INSTALL INTERMEDIATE CROSS FRAME
- (M) INSTALL DRIP PLATE ON GIRDER BOTTOM FLANGE
- (N) INSTALL WEEP PIPE SUPPORT BRACKET

FRAMING PLAN - SPAN 3

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

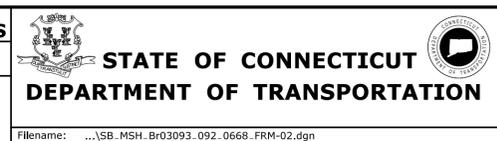
NOTE: *CLEAN AND PAINT EACH SIDE OF TOP OF GIRDER BOTTOM FLANGE BEYOND LIMITS OF ABRASIVE BLAST CLEAN AND PAINT AT GIRDER ENDS.

REFERENCES

1. SEE DWG. NO. S-15 TO S-23 FOR STEEL REPAIR DETAILS.
2. SEE DWG. NO. S-24 AND S-25 FOR FIELD PAINTING DETAILS AND NOTES.
3. SEE DWG. NO. S-26 TO S-29 FOR TEMPORARY JACKING SUPPORT SYSTEM DETAILS AND NOTES.
4. SEE DWG. NO. S-28 FOR WIND LOCK REPAIR DETAIL.
5. SEE DWG. NO. S-38 FOR WEEP PIPE SUPPORT BRACKET DETAILS.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

DESIGNER/DRAFTER:
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CHECKED BY:
T. STRNAD
SCALE AS NOTED



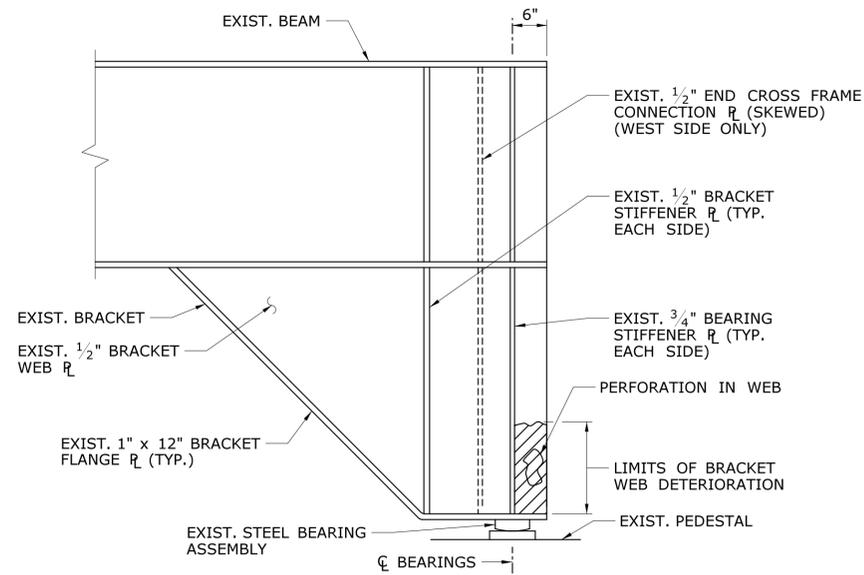
SIGNATURE/BLOCK:

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59 Elm Street, Suite 101
New Haven, CT 06510-2047

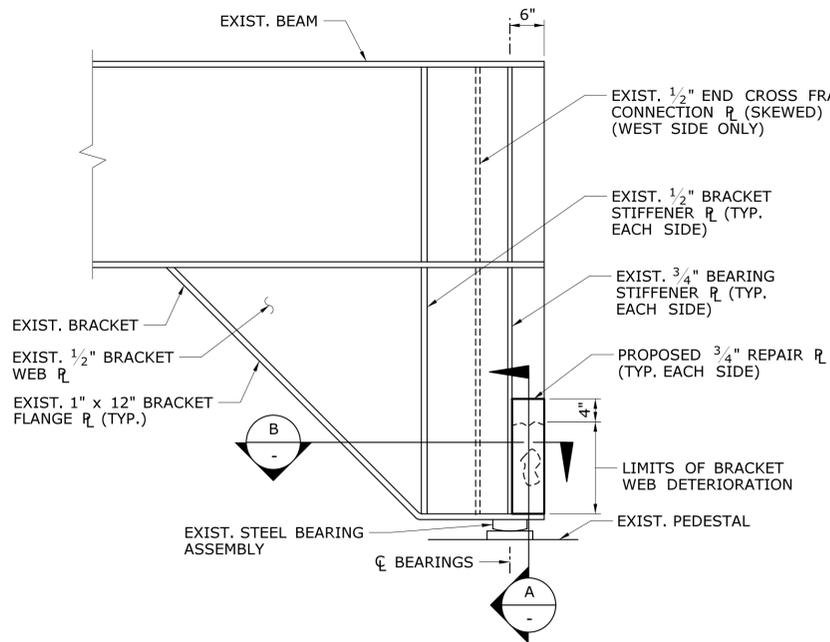
PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 03093 I-91 OVER FRONT STREET AND QUINNIPIAC RIVER

TOWN:
NEW HAVEN
DRAWING TITLE:
FRAMING PLAN - 2

PROJECT NO.
92-668
DRAWING NO.
S-13
SHEET NO.
04.13



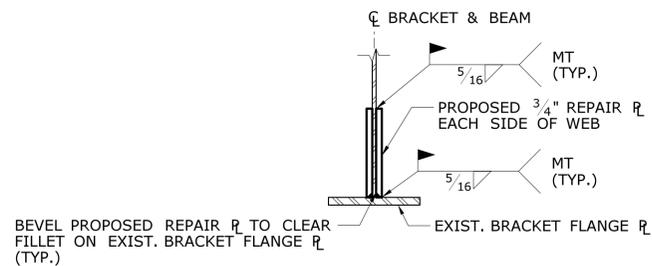
EXISTING CONDITION - EAST ELEVATION



PROPOSED REPAIR - EAST ELEVATION

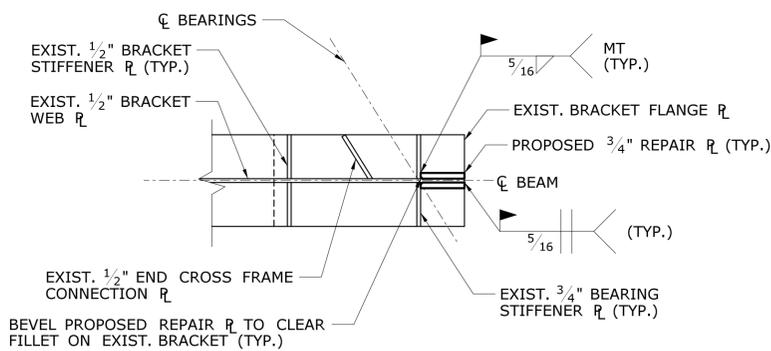
SPAN 1 BEAM BRACKET WEB REPAIR - DETAIL A1

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

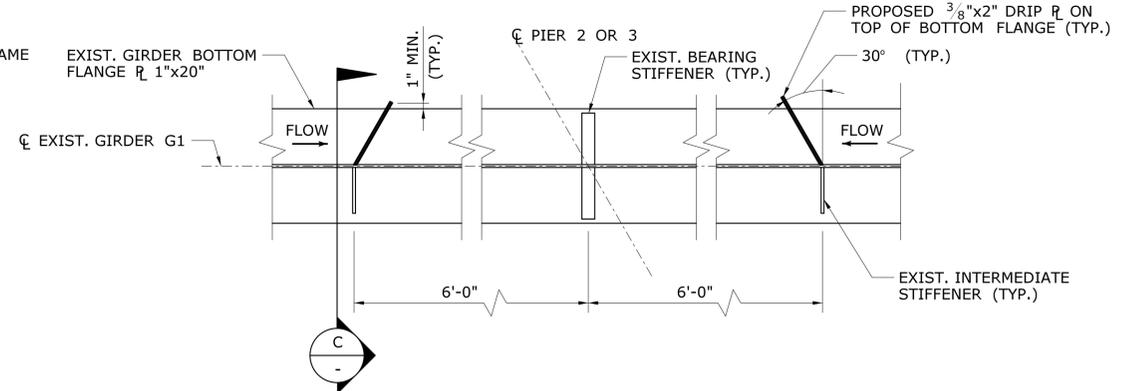


A SECTION
SCALE: 1"=1'-0"

NOTE: STIFFENERS NOT SHOWN FOR CLARITY.



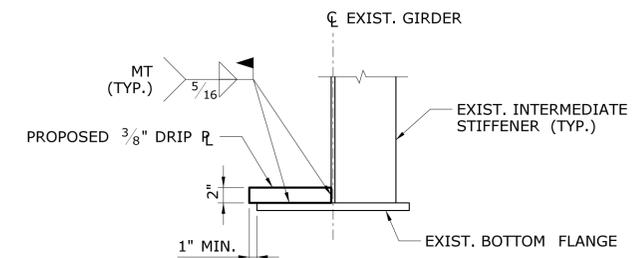
B SECTION
SCALE: 1"=1'-0"



DRIP PLATE INSTALLATION - DETAIL M

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

NOTE: GIRDER G1 SHOWN. GIRDER G18 SIMILAR.



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

LEGEND

= DETERIORATION IN STEEL

REFERENCE

1. SEE FRAMING PLAN IN DWG. NO. S-12 TO S-14 FOR REPAIR LOCATIONS.

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DESIGNER/DRAFTER:
A. HIPIUS/S. ERDAS
CHECKED BY:
T. STRNAD
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Plotted Date: 6/30/2016
Filename: ..._SB_MSH_Br03093_092_0668_STLRPR-01.dgn

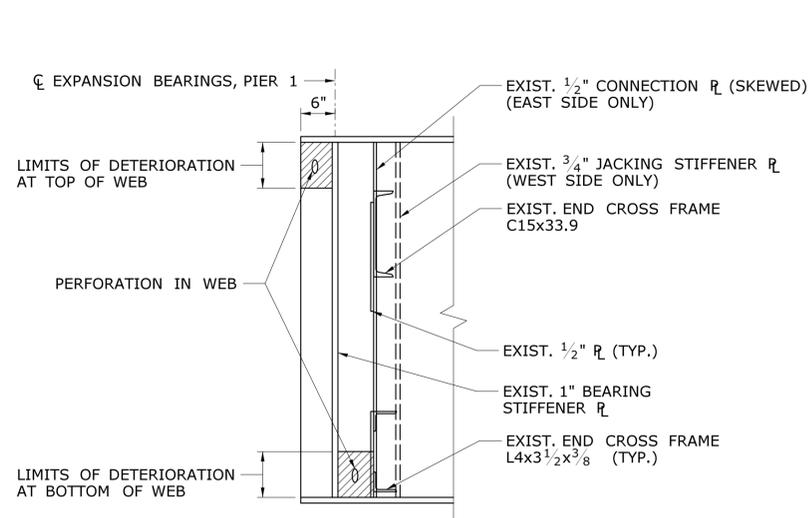
SIGNATURE/BLOCK:

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New Haven, CT 06510-2047

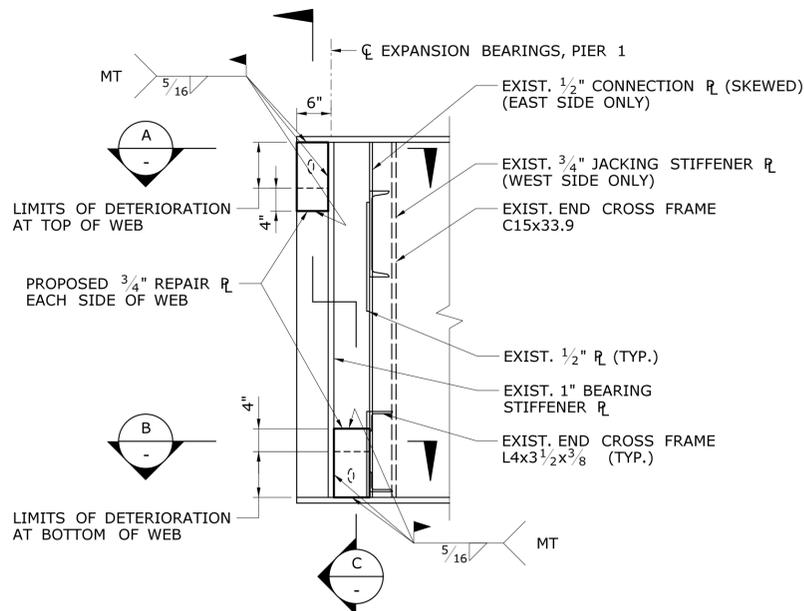
PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 03093 I-91 OVER FRONT STREET AND QUINNIPIAC RIVER

TOWN:
NEW HAVEN
DRAWING TITLE:
STEEL REPAIR DETAILS - 1

PROJECT NO.
92-668
DRAWING NO.
S-15
SHEET NO.
04.15



EXISTING CONDITION - EAST ELEVATION

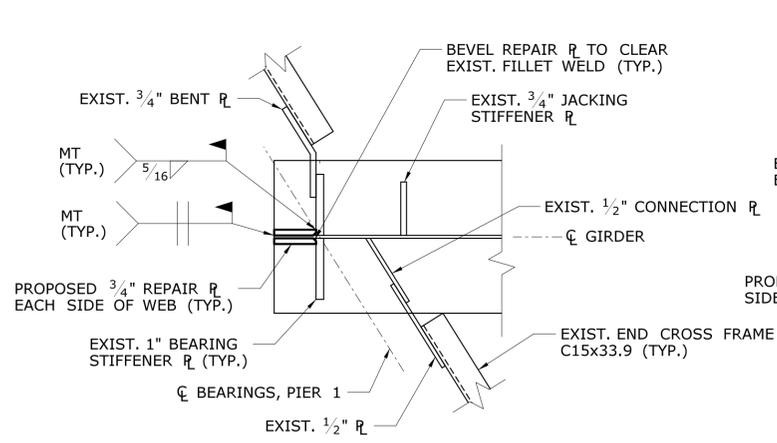


PROPOSED REPAIR - EAST ELEVATION

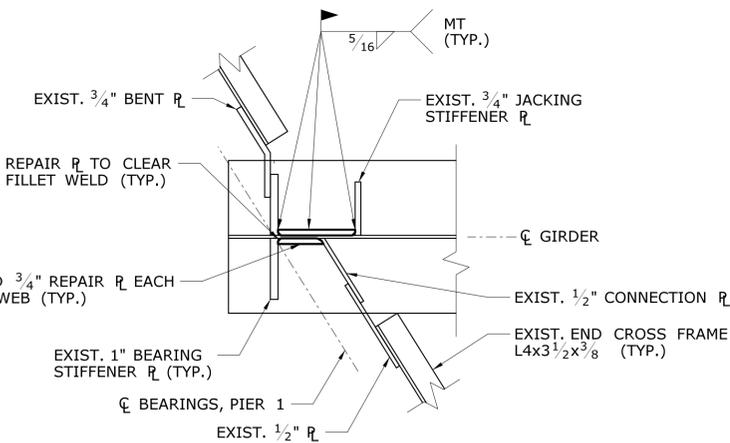
SPAN 2 GIRDER WEB REPAIR - DETAILS A2 & A3

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

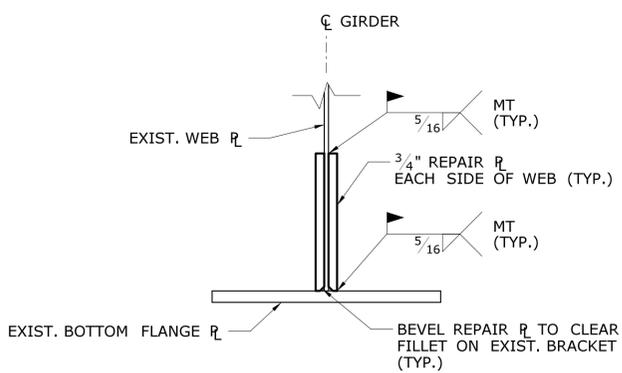
- NOTES: 1. DETAIL A2 APPLIES AT TOP OF GIRDER WEB.
2. DETAIL A3 APPLIES AT BOTTOM OF GIRDER WEB.



A SECTION - GIRDER WEB REPAIR - DETAIL A2
SCALE: 1" = 1'-0"



B SECTION - GIRDER WEB REPAIR - DETAIL A3
SCALE: 1" = 1'-0"



C SECTION

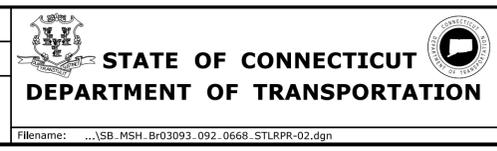
- LEGEND**
 = DETERIORATION IN STEEL
- REFERENCE**
 1. SEE FRAMING PLAN IN DWG. NO. S-12 TO S-14 FOR REPAIR LOCATIONS.

- NOTES: 1. STIFFENERS NOT SHOWN FOR CLARITY.
2. REPAIR AT BOTTOM OF WEB SHOWN.
3. REPAIR AT TOP OF WEB SIMILAR.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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Plotted Date: 6/30/2016

DESIGNER/DRAFTER:
A. HIPIUS/S. ERDAS
 CHECKED BY:
T. STRNAD
 SCALE AS NOTED



PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 03093 I-91 OVER FRONT STREET AND QUINNIPIAC RIVER

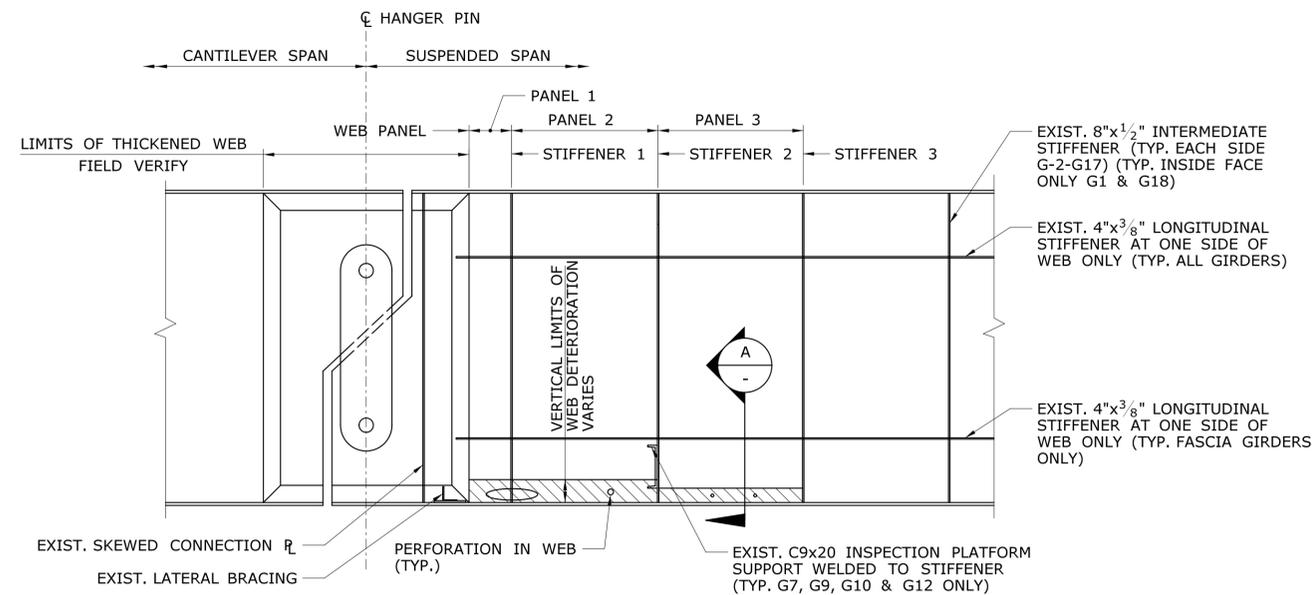
TOWN:
NEW HAVEN

DRAWING TITLE:
STEEL REPAIR DETAILS - 2

PROJECT NO.
92-668

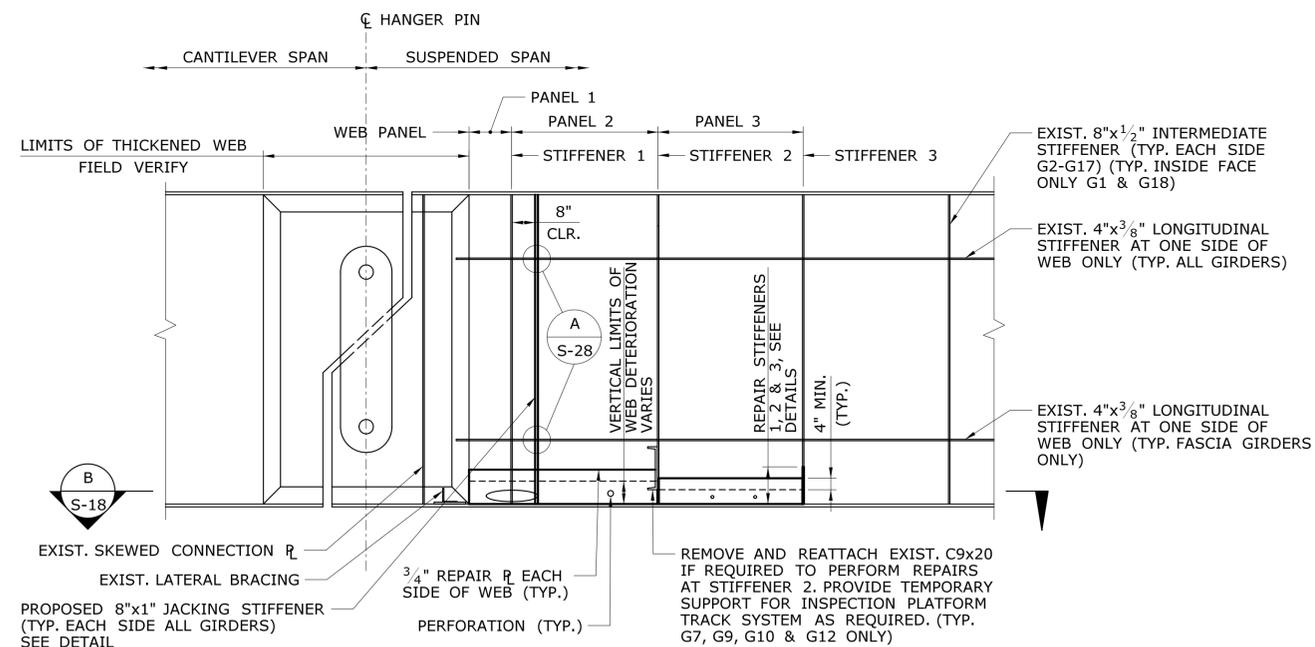
DRAWING NO.
S-16

SHEET NO.
04.16



EXISTING CONDITION - SUSPENDED SPAN 3 GIRDER EAST ELEVATION

SCALE: 3/8" = 1'-0"



PROPOSED REPAIR - SUSPENDED SPAN 3 GIRDER EAST ELEVATION

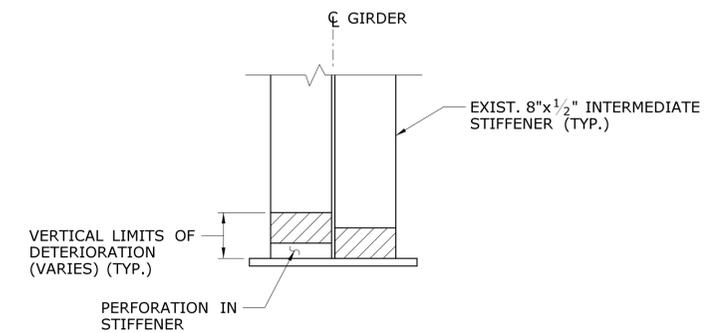
SCALE: 3/8" = 1'-0"

NOTES:

1. REMOVE EXIST. 12"x1/2" REPAIR PLATES IN PANEL 2 AT EACH SIDE OF WEB AT G18 PRIOR TO INSTALLING PROPOSED WEB AND STIFFENER REPAIRS.
2. FOR REPAIRS AT BOTTOM OF GIRDER WEB, SEE DETAIL B.
3. FOR REPAIRS AT INTERMEDIATE / JACKING STIFFENER 1, SEE DETAIL C.
4. FOR REPAIRS AT INTERMEDIATE STIFFENERS 2 & 3, SEE DETAIL D.

SUGGESTED SEQUENCE OF STEEL REPAIRS NEAR HANGER PIN

1. CLEAN GIRDER ENDS TO LIMITS SHOWN IN PLANS.
2. REMOVE PORTION OF STIFFENERS 1, 2 & 3 TO LIMITS SHOWN IN PLANS.
3. REPAIR STIFFENERS 2 & 3.
4. INSTALL WEB REPAIR PLATES.
5. REPAIR STIFFENER 1.
6. REMOVE PORTION OF LONGITUDINAL STIFFENER TO LIMITS SHOWN IN PLANS.
7. INSTALL JACKING STIFFENER IN WEB PANEL 2.



A SECTION - EXISTING STIFFENER CONDITION

SCALE: 1" = 1'-0"

NOTES:

1. INTERIOR GIRDER SHOWN. FASCIA GIRDER SIMILAR.
2. STIFFENER DETERIORATION APPLIES TO STIFFENERS 1, 2 & 3.

TABLE OF REPAIR DETAILS NEAR PIN & HANGER

GIRDER	WEB PANEL			INTERMEDIATE STIFFENER						
	PANEL 1	PANEL 2	PANEL 3	EAST			WEST			
				1	2	3	1	2	3	
1	B	B		C	D		C	D		
2	B	B		C			C			
3	B	B		C			C	D		
4	B	B		C			C			
5	B	B		C			C			
6	B	B		C			C			
7	B	B		C			C			
8	B	B		C			C			
9	B	B	B	C			C	D		
10	B	B		C	D		C			
11	B	B	B	C	D	D	C	D		
12	B	B		C			C	D		
13	B	B		C			C			
14	B	B		C			C			
15	B	B		C			C			
16	B	B		C			C			
17	B	B		C	D		C			
18	B	B	B	NO STIFFENERS			C	D		

REFERENCES

1. SEE DWG. NO. S-18 FOR SECTION B, AND DETAILS B, C & D.
2. SEE DWG. NO. S-28 FOR DETAIL A.
3. SEE DWG. NO. S-29 FOR JACKING STIFFENER DETAILS.

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Plotted Date: 6/30/2016

DESIGNER/DRAFTER:
A. HIPIUS/S. ERDAS

CHECKED BY:
T. STRNAD

SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

File name: ...\\SB_MSH_Br03093_092_0668_STLRPR-03.dgn

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PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 03093 I-91 OVER FRONT STREET AND QUINNIPIAC RIVER

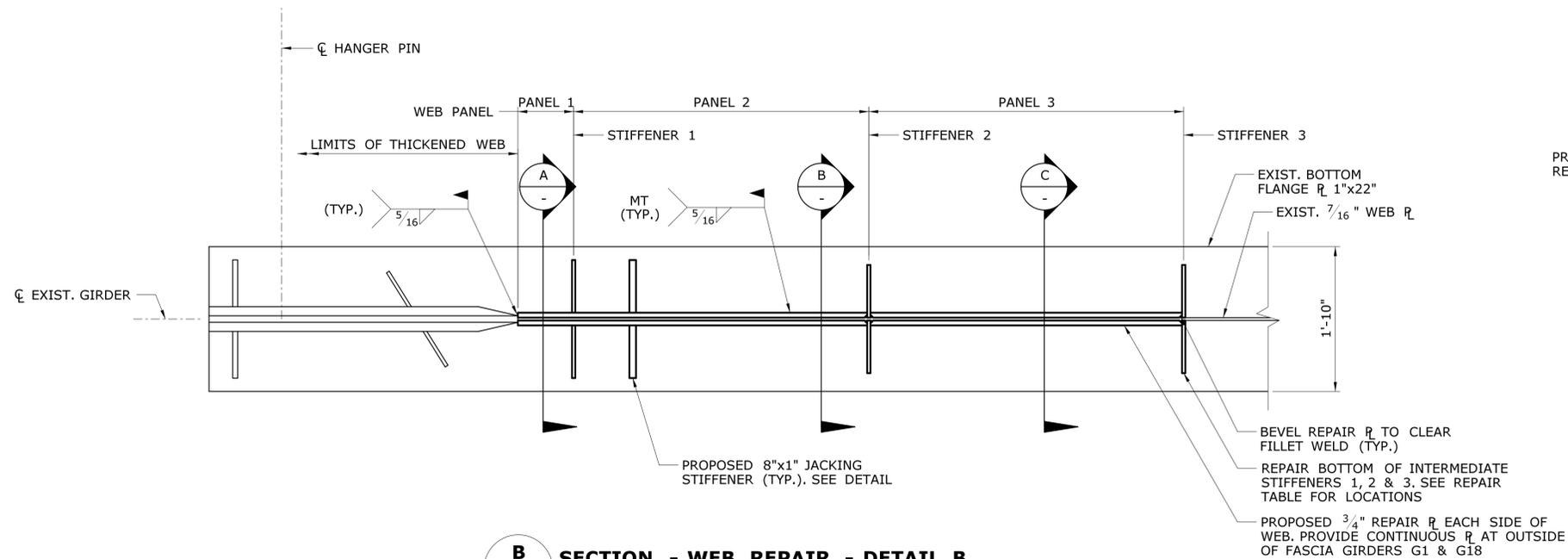
TOWN:
NEW HAVEN

DRAWING TITLE:
STEEL REPAIR DETAILS - 3

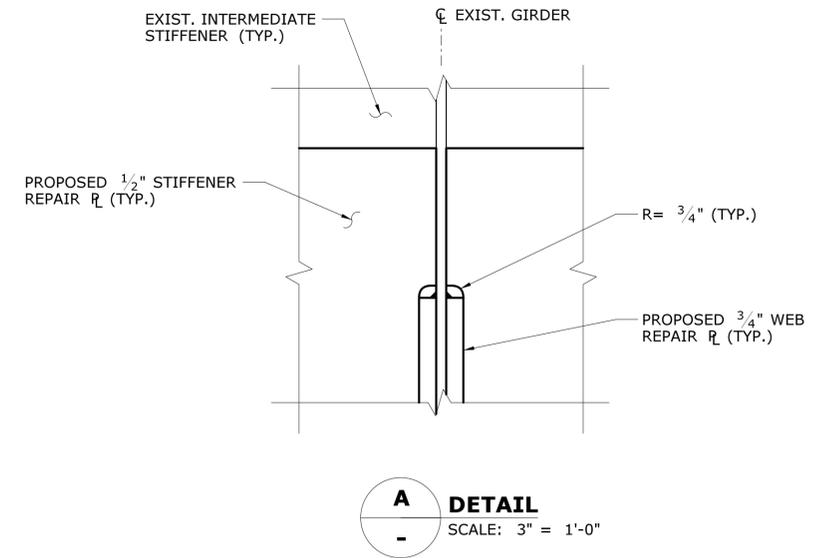
PROJECT NO.
92-668

DRAWING NO.
S-17

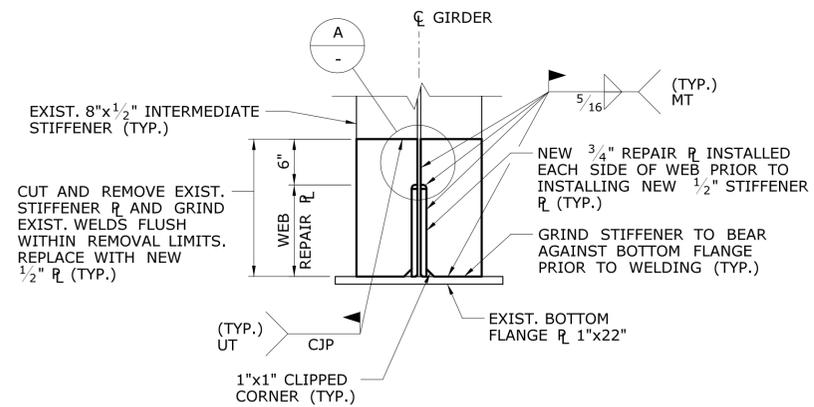
SHEET NO.
04.17



B SECTION - WEB REPAIR - DETAIL B
 SCALE: 1" = 1'-0"
 NOTE: INTERIOR GIRDER SHOWN. FASCIA GIRDER SIMILAR.

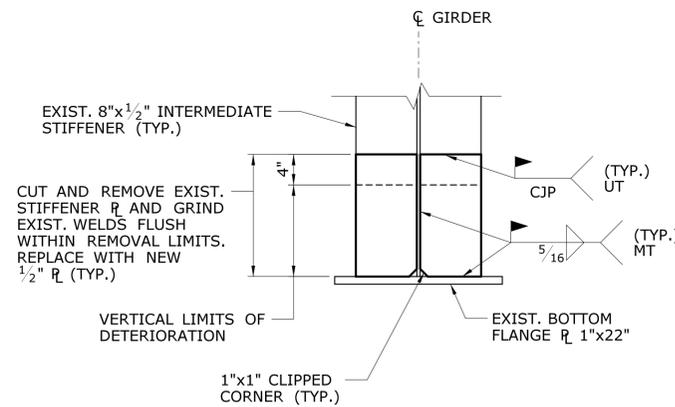


A DETAIL
 SCALE: 3" = 1'-0"



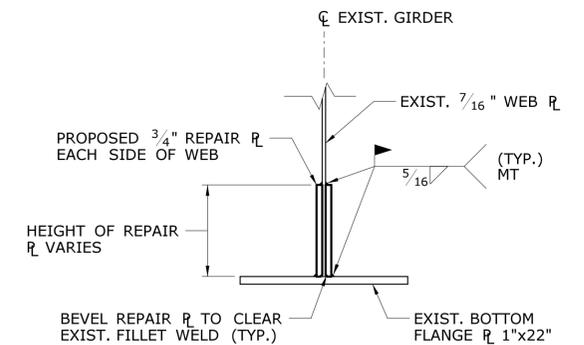
A SECTION - INTERMEDIATE / JACKING STIFFENER 1 REPAIR - DETAIL C
 SCALE: 1" = 1'-0"

- NOTES:
1. DETAIL APPLIES TO STIFFENER 1 REPAIRS.
 2. INTERIOR GIRDER SHOWN. FASCIA GIRDER SIMILAR.



B SECTION - INTERMEDIATE STIFFENER 2 & 3 REPAIR - DETAIL D
 SCALE: 1" = 1'-0"

- NOTES:
1. DETAIL APPLIES TO STIFFENER 2 & 3 REPAIRS.
 2. INSTALL STIFFENER REPAIR PLATES PRIOR TO INSTALLING WEB REPAIR PLATES. WEB REPAIR PLATES NOT SHOWN FOR CLARITY.
 3. INTERIOR GIRDER SHOWN. FASCIA GIRDER SIMILAR.

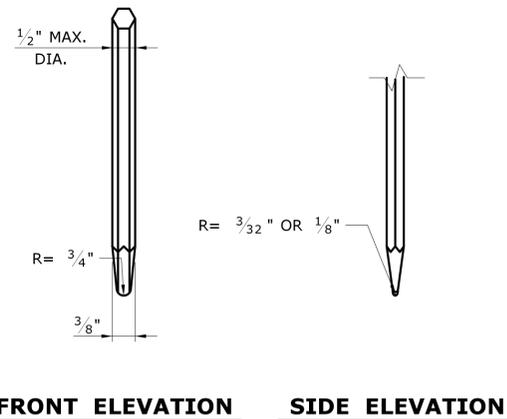


C SECTION
 SCALE: 1" = 1'-0"
 NOTE: SECTION APPLIES AT WEB PANELS 1, 2 & 3.

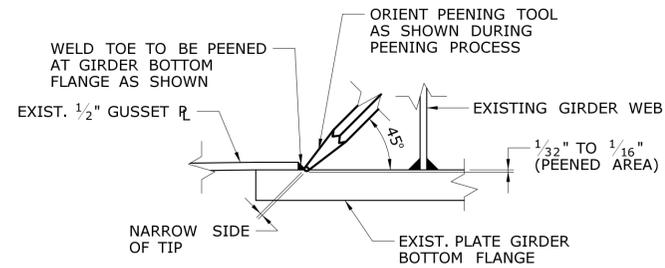
REFERENCE

SEE DWG. NO. S-29 FOR JACKING STIFFENER DETAILS.

DESIGNER/DRAFTER: A. HIPIUS/S. ERDAS	 STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGNATURE/ BLOCK: Dewberry 59 Elm Street, Suite 101 New Haven, CT 06510-2047	PROJECT TITLE: REHABILITATION OF BRIDGE NO. 03093 I-91 OVER FRONT STREET AND QUINNIPIAC RIVER	TOWN: NEW HAVEN	PROJECT NO. 92-668
CHECKED BY: T. STRNAD				DRAWING TITLE: STEEL REPAIR DETAILS - 4	DRAWING NO. S-18
SCALE AS NOTED	Plotted Date: 6/30/2016	FILENAME: ..._SB_MSH_Br03093_092_0668_STLRPR-04.dgn			SHEET NO. 04.18



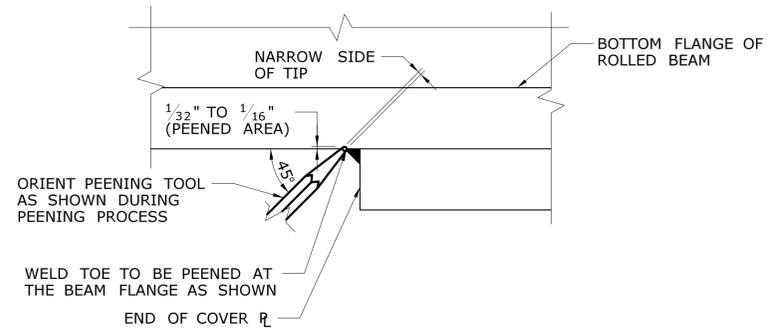
PEENING TOOL
N.T.S.



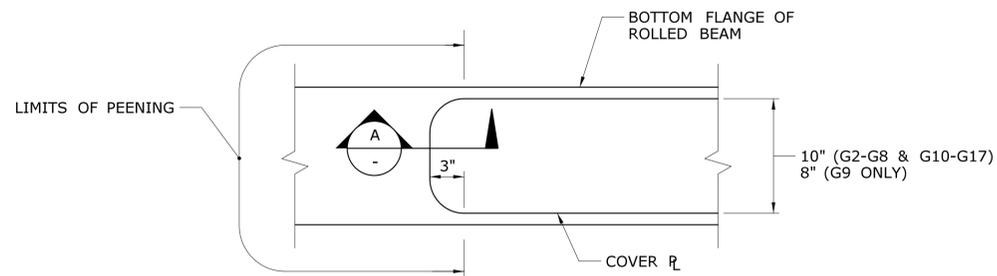
A PEENING DETAIL
N.T.S.

PEENING NOTES

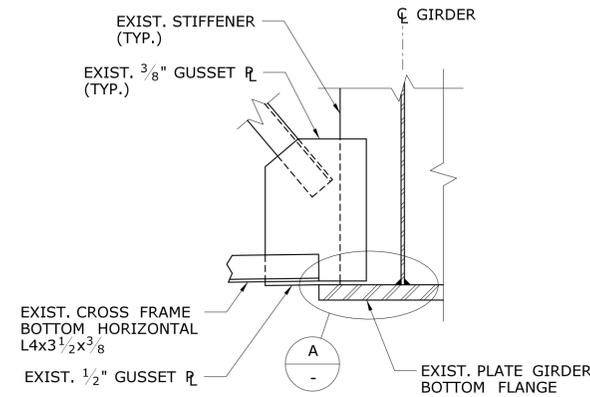
1. WHEN PEENING TOOL IS SHAPED, SHARP EDGES RESULTING FROM SHAPING OF THE TOOL ARE TO BE GROUND SMOOTH.
2. FOR PEENING INFORMATION NOT SHOWN, SEE SPECIAL PROVISIONS "PEENING COVER PLATE WELDS".
3. ALL PEENED AREAS SHALL BE PAINTED. COST SHALL BE INCLUDED IN ITEM "LOCALIZED PAINT REMOVAL AND FIELD PAINTING OF EXISTING STEEL".



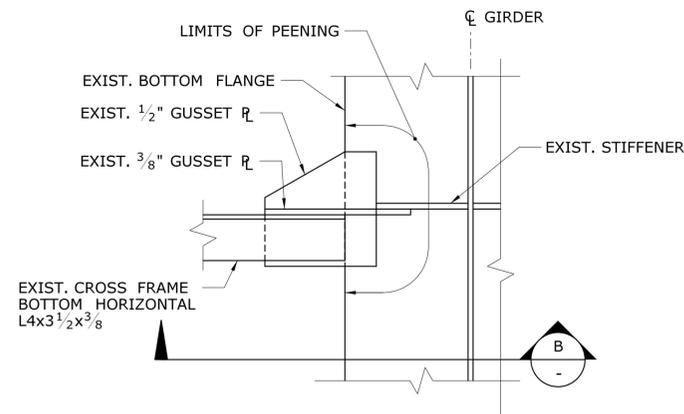
A SECTION
N.T.S.



SPAN 1 BOTTOM FLANGE COVER PLATE END WELD PEENING LIMITS - DETAIL E1
N.T.S.



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



SPAN 2 AND SPAN 4 INTERMEDIATE CROSS FRAME GUSSET PLATE TO GIRDER BOTTOM FLANGE WELD PEENING LIMITS - DETAIL E2

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

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Plotted Date: 6/30/2016

DESIGNER/DRAFTER:
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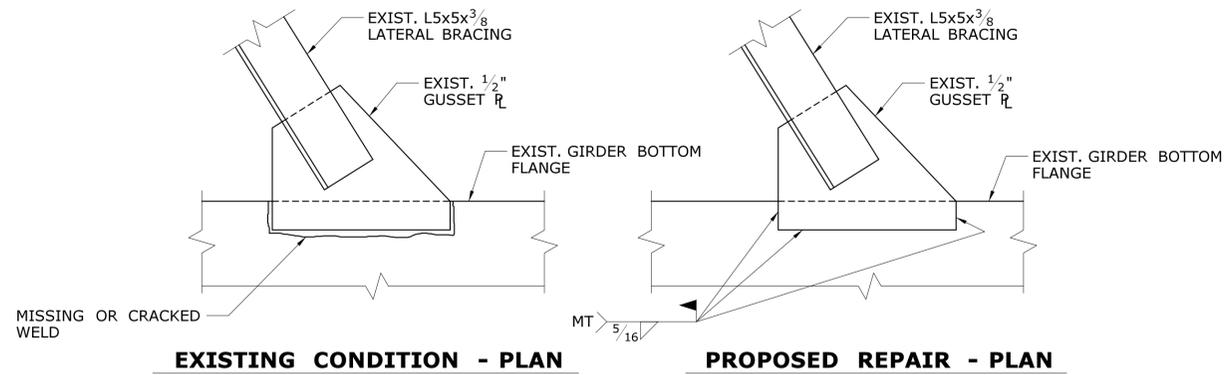
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
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PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 03093 I-91 OVER FRONT STREET AND QUINNIPIAC RIVER

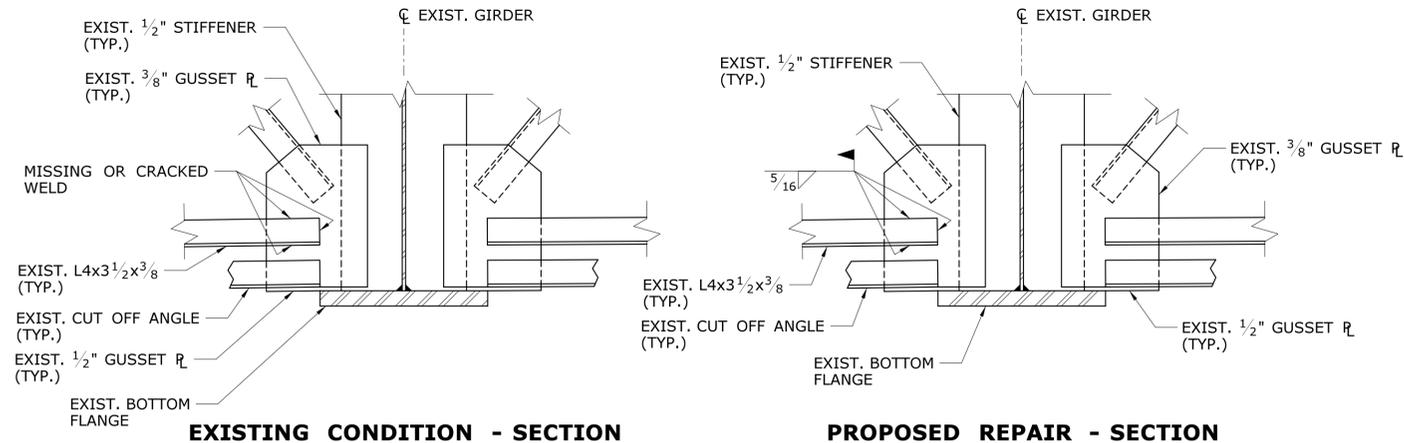
TOWN:
NEW HAVEN
DRAWING TITLE:
STEEL REPAIR DETAILS - 5

PROJECT NO.
92-668
DRAWING NO.
S-19
SHEET NO.
04.19



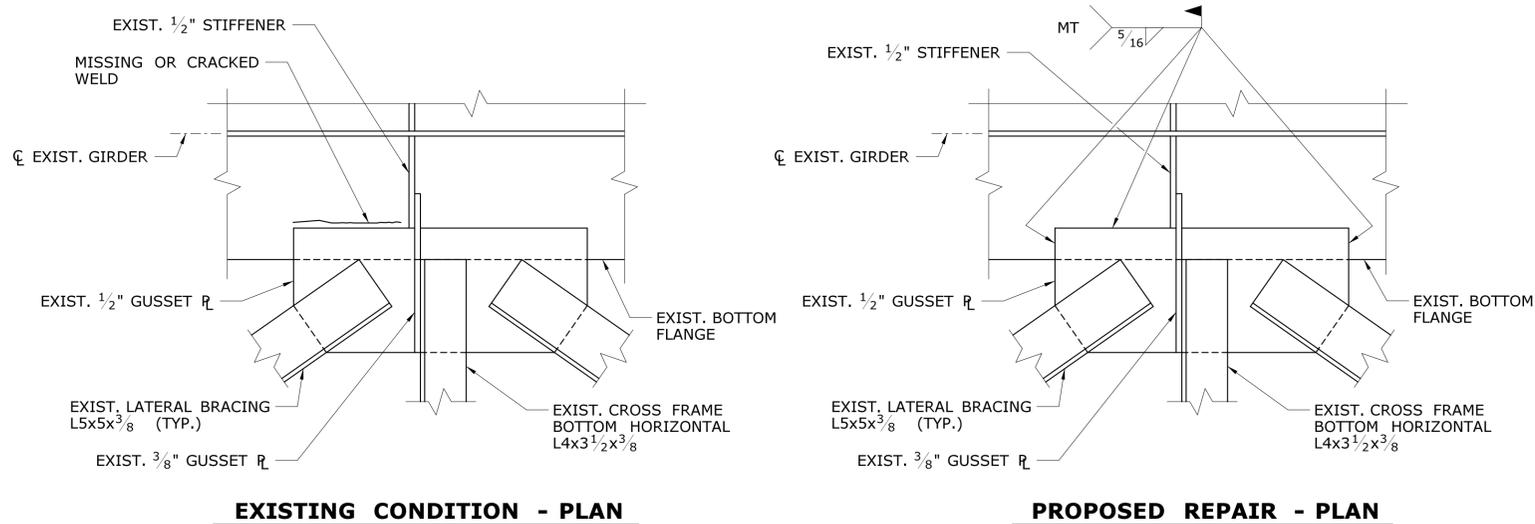
LATERAL BRACING GUSSET TO GIRDER BOTTOM FLANGE WELD REPAIR - DETAIL F1

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



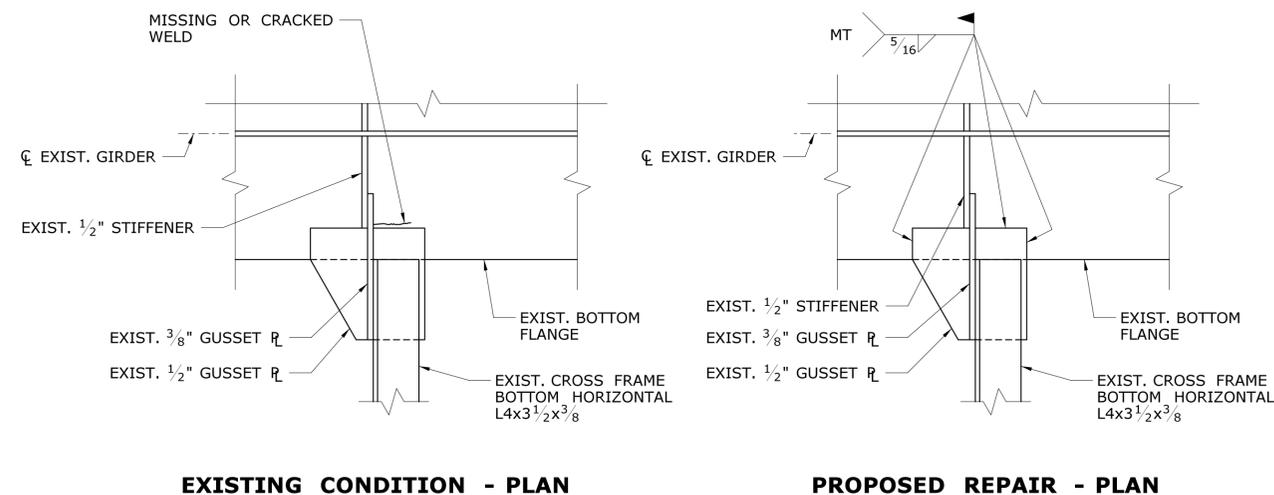
CROSS FRAME GUSSET TO ANGLE WELD REPAIR - DETAIL F4

SCALE: 1" = 1'-0"



LATERAL BRACING / CROSS FRAME GUSSET TO GIRDER BOTTOM FLANGE WELD REPAIR - DETAIL F2

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



CROSS FRAME GUSSET TO GIRDER BOTTOM FLANGE WELD REPAIR - DETAIL F3

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

WELD REPAIR NOTES

1. WELD REPAIRS AT OPPOSITE HAND LOCATIONS SIMILAR.
2. REMOVE EXISTING CRACKED WELDS AND GRIND FLUSH PRIOR TO INSTALLING REPAIR WELDS.
3. REPAIR OF MISSING AND/OR CRACKED WELDS SHALL BE PAID UNDER THE ITEM "STRUCTURAL STEEL REPAIRS, (SITE NO. 1)".

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Plotted Date: 6/30/2016

DESIGNER/DRAFTER:
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CHECKED BY:
T. STRNAD

SCALE AS NOTED



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PROJECT TITLE:
**REHABILITATION OF BRIDGE
NO. 03093 I-91 OVER FRONT
STREET AND QUINNIPIAC RIVER**

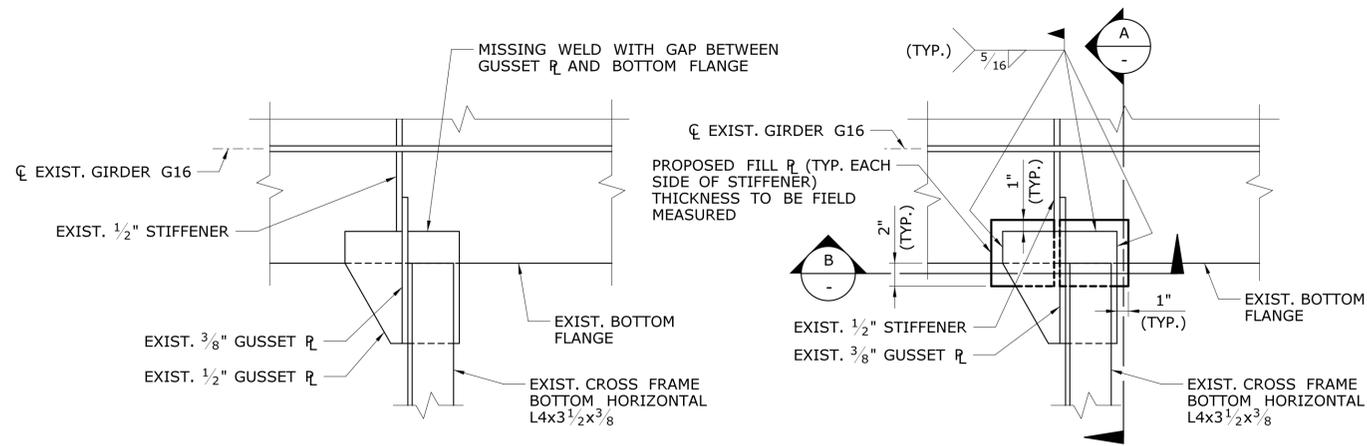
TOWN:
NEW HAVEN

DRAWING TITLE:
**STEEL REPAIR
DETAILS - 6**

PROJECT NO.
92-668

DRAWING NO.
S-20

SHEET NO.
04.20

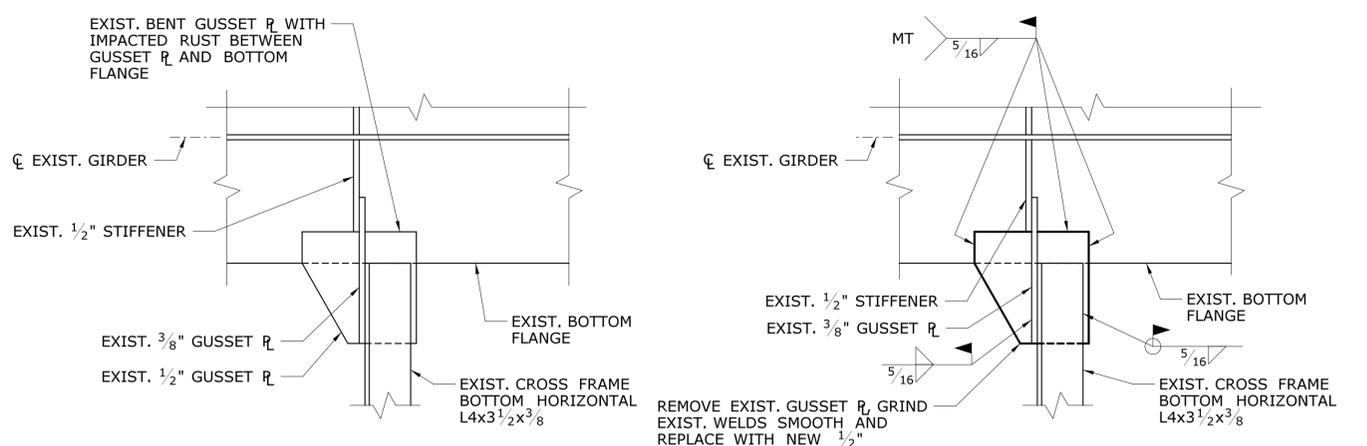


EXISTING CONDITION - PLAN

PROPOSED REPAIR - PLAN

CROSS FRAME BOTTOM FLANGE GUSSET PLATE GAP REPAIR - DETAIL G1

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

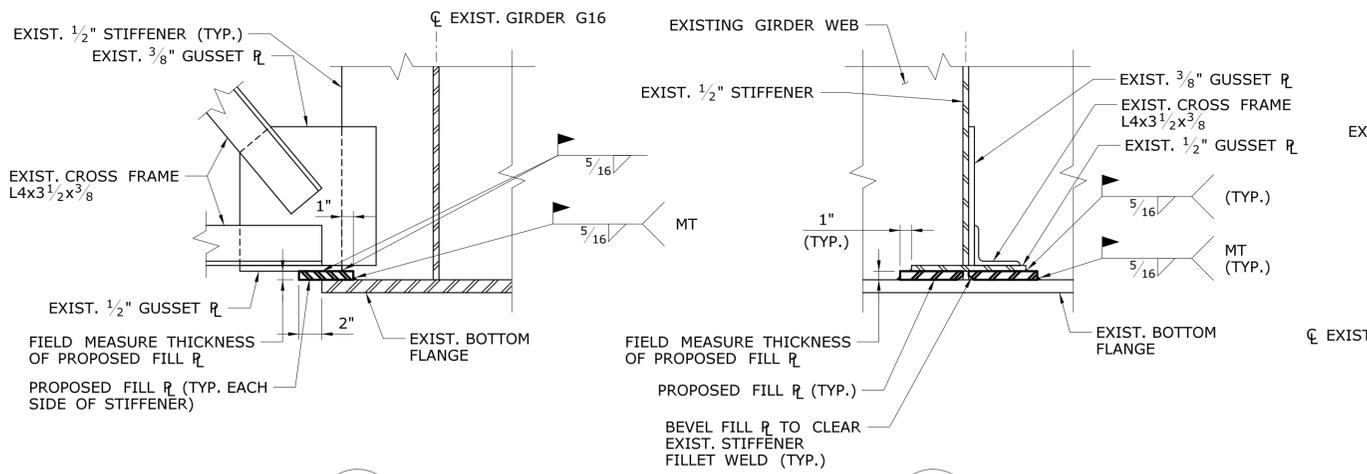


EXISTING CONDITION - PLAN

PROPOSED REPAIR - PLAN

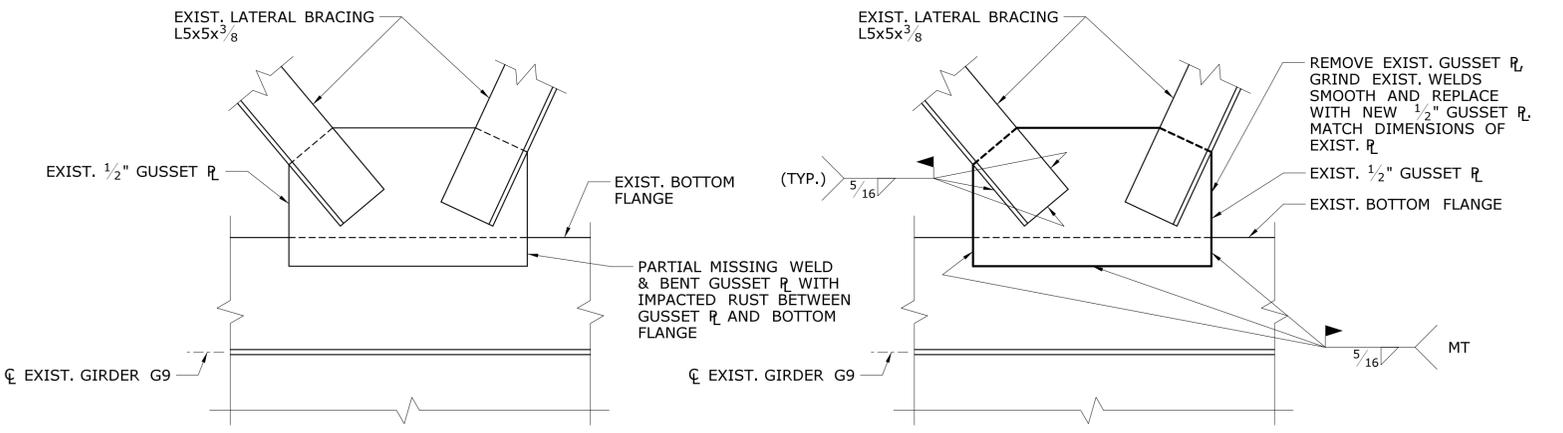
CROSS FRAME BENT BOTTOM FLANGE GUSSET PLATE REPAIR - DETAIL G2

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



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

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



EXISTING CONDITION - PLAN

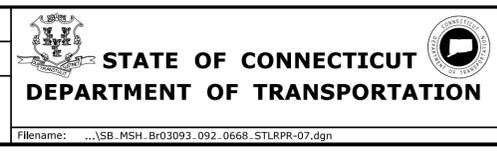
PROPOSED REPAIR - PLAN

LATERAL BRACING BOTTOM FLANGE BENT GUSSET PLATE REPAIR - DETAIL G3

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

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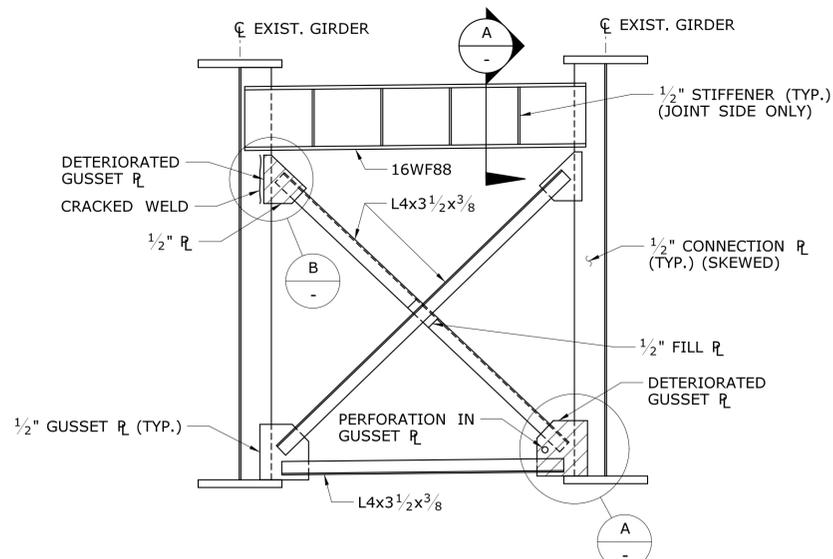
DESIGNER/DRAFTER:
A. HIPIUS/S. ERDAS
CHECKED BY:
T. STRNAD
SCALE AS NOTED



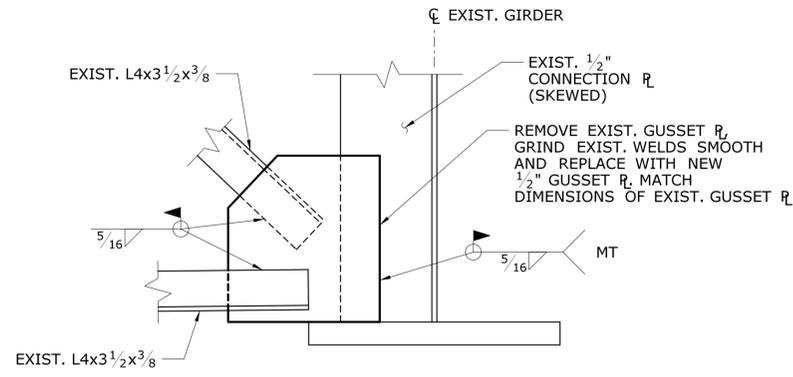
PROJECT TITLE:
**REHABILITATION OF BRIDGE
NO. 03093 I-91 OVER FRONT
STREET AND QUINNIPIAC RIVER**

TOWN:
NEW HAVEN
DRAWING TITLE:
**STEEL REPAIR
DETAILS - 7**

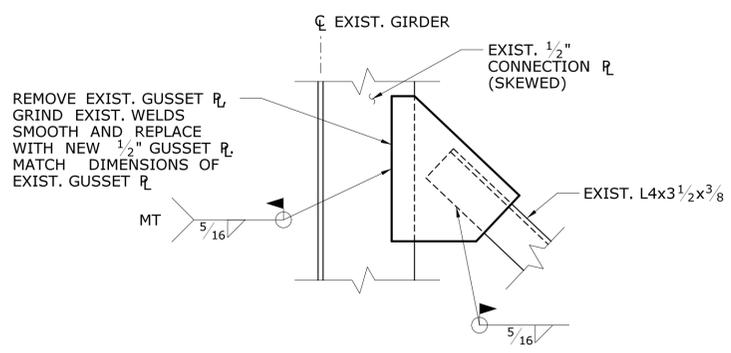
PROJECT NO.
92-668
DRAWING NO.
S-21
SHEET NO.
04.21



EXISTING CONDITION - ELEVATION
SCALE: 1/2" = 1'-0"

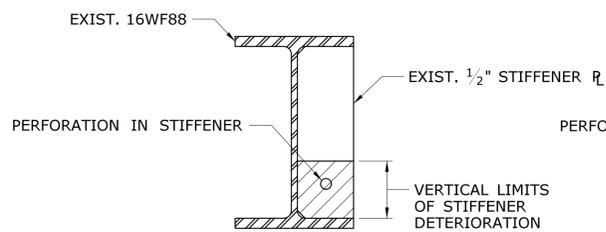


A PROPOSED BOTTOM GUSSET PLATE REPAIR - DETAIL H1
SCALE: 1/2" = 1'-0"

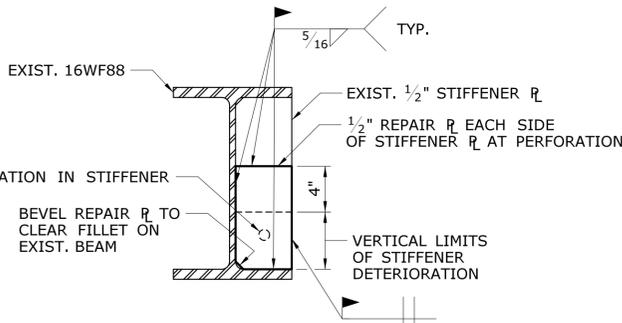


B PROPOSED TOP GUSSET PLATE REPAIR - DETAIL H2
SCALE: 1/2" = 1'-0"

END CROSS FRAME REPAIR DETAILS

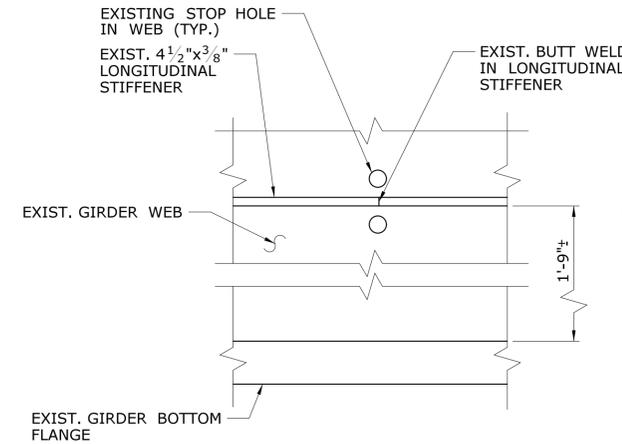


EXISTING CONDITION

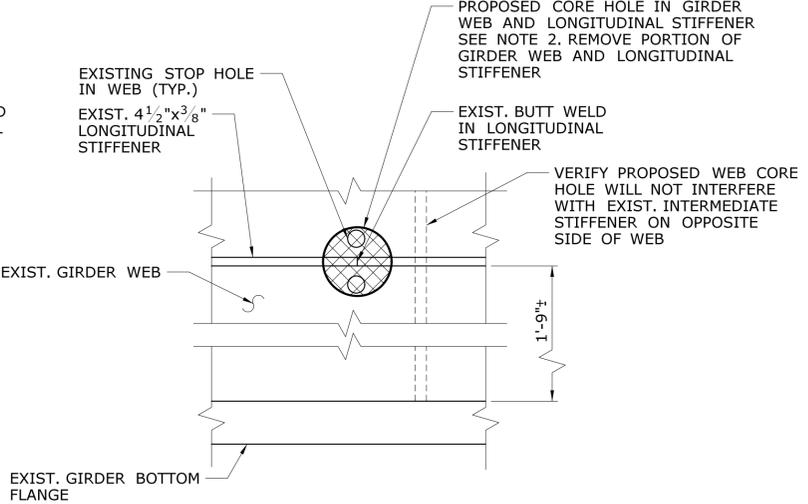


PROPOSED CONDITION

A SECTION - END CROSS FRAME TOP HORIZONTAL STIFFENER REPAIR - DETAIL H3
SCALE: 1/2" = 1'-0"



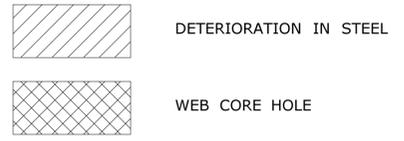
EXISTING CONDITION - ELEVATION



PROPOSED CONDITION - ELEVATION

SPAN 3 GIRDER LONGITUDINAL STIFFENER BUTT WELD REPAIR - DETAIL J
SCALE: 3" = 1'-0"

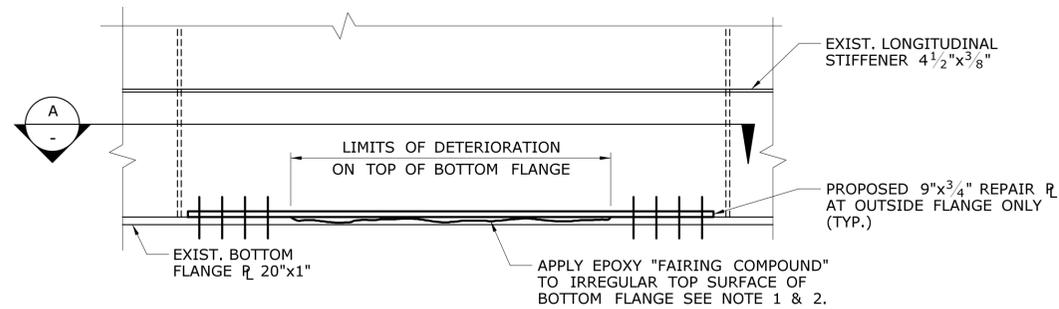
LEGEND



STIFFENER BUTT WELD REPAIR NOTES

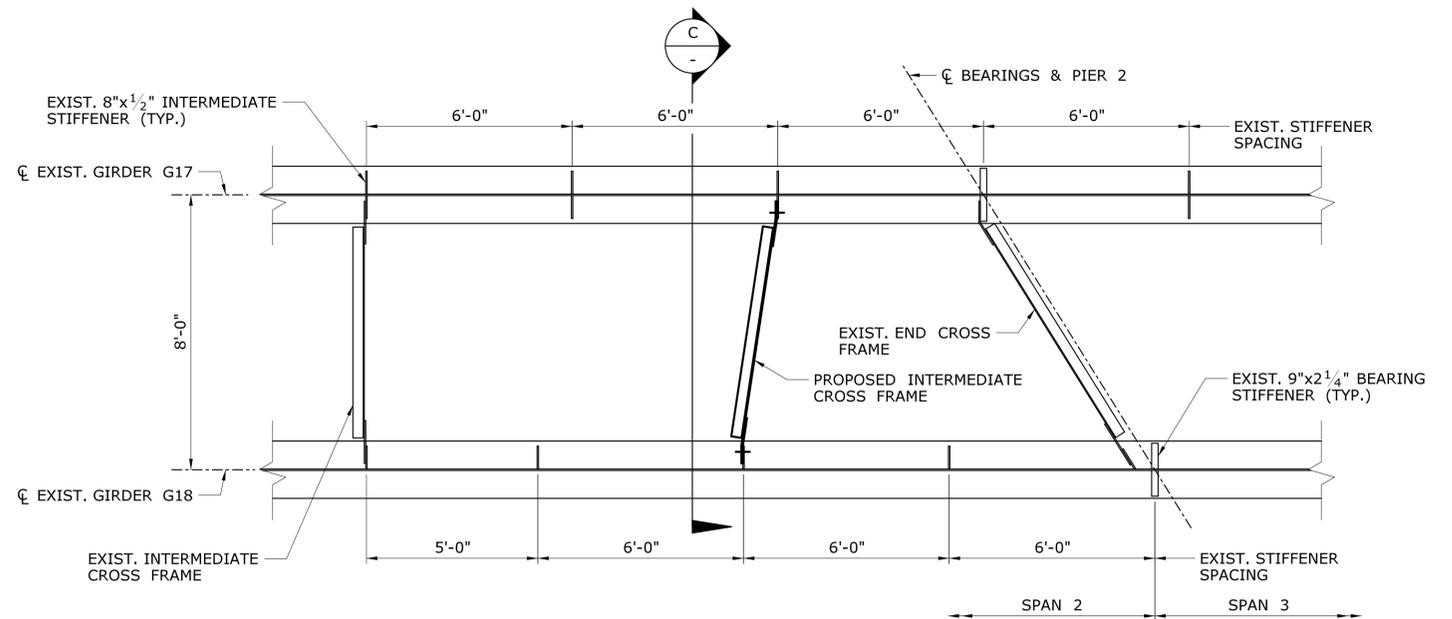
- PERFORM LONGITUDINAL STIFFENER REPAIR AT ALL LOWER STIFFENER BUTT WELD LOCATIONS AT FASCIA GIRDERS G1 & G18 IN THE SUSPENDED SPAN WITH 7/16" WEB THICKNESS. EXISTING CRACKED BUTT WELDS AND/OR EXISTING STOP HOLES IN THE GIRDER WEB ARE PRESENT AT SEVERAL LOCATIONS.
- THE DIAMETER OF THE PROPOSED CORE HOLE SHALL BE FIELD MEASURED TO INCLUDE ALL EXISTING STOP HOLES AND BE CENTERED AT THE LONGITUDINAL STIFFENER BUTT WELD. THE MINIMUM HOLE DIAMETER SHALL BE 3".
- GRIND SMOOTH ALL EDGES ON GIRDER WEB AND LONGITUDINAL STIFFENER AT THE CORE HOLE.
- PAINT ALL EXPOSED EDGES. COST SHALL BE INCLUDED IN ITEM "LOCALIZED PAINT REMOVAL AND FIELD PAINTING OF EXISTING STEEL", SEE SPECIAL PROVISIONS.
- CORE DRILLING HOLES AND GRINDING ALL EXPOSED EDGES TO BE PAID UNDER THE ITEM "STRUCTURAL STEEL REPAIRS, (SITE NO. 1)", SEE SPECIAL PROVISIONS.

DESIGNER/DRAFTER: A.HIPIUS/S.ERDAS	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p>	<p>Dewberry 59 Elm Street, Suite 101 New Haven, CT 06510-2047</p>	<p>PROJECT TITLE: REHABILITATION OF BRIDGE NO. 03093 I-91 OVER FRONT STREET AND QUINNIPIAC RIVER</p>	TOWN: NEW HAVEN	PROJECT NO. 92-668
CHECKED BY: T. STRNAD				DRAWING TITLE: STEEL REPAIR DETAILS - 8	DRAWING NO. S-22
SCALE AS NOTED	Plotted Date: 6/30/2016	FILENAME: ..._SB_MSH_Br03093_092_0668_STLRPR-08.dgn		SHEET NO. 04.22	



**ELEVATION - SPAN 2 FASCIA GIRDER G1
BOTTOM FLANGE REPAIR - DETAIL K**

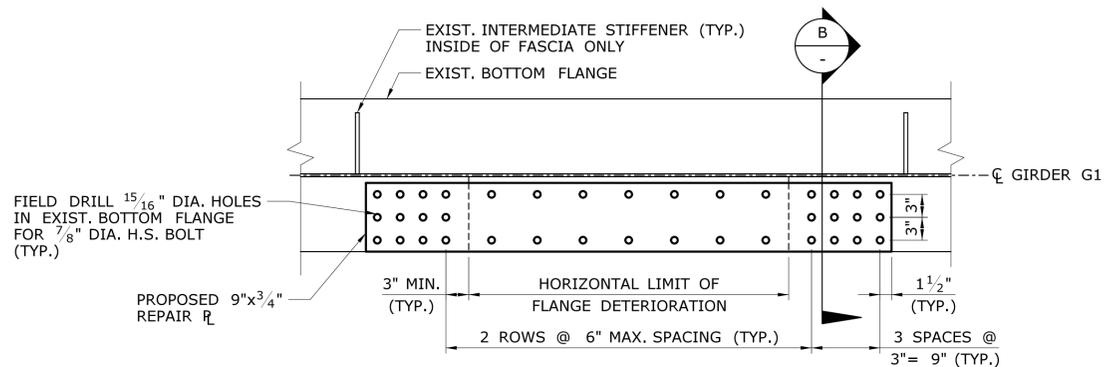
SCALE: 1" = 1'-0"
NOTE: WEST FACE SHOWN



PLAN - PROPOSED INTERMEDIATE CROSS FRAME - DETAIL L

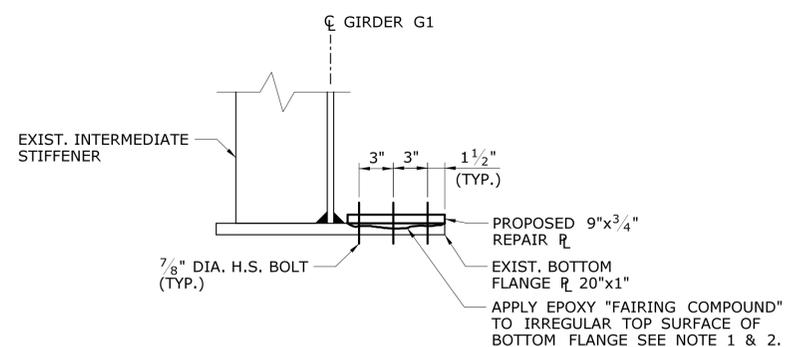
SCALE: 3/8" = 1'-0"

NOTE: PROPOSED CROSS FRAME BETWEEN GIRDERS G17 & G18 AT PIER 2 SHOWN.
PROPOSED CROSS FRAME BETWEEN G1 & G2 AT PIER 3 OPPOSITE AND SIMILAR.



A SECTION - TYPICAL FLANGE REPAIR PLATE

SCALE: 1" = 1'-0"

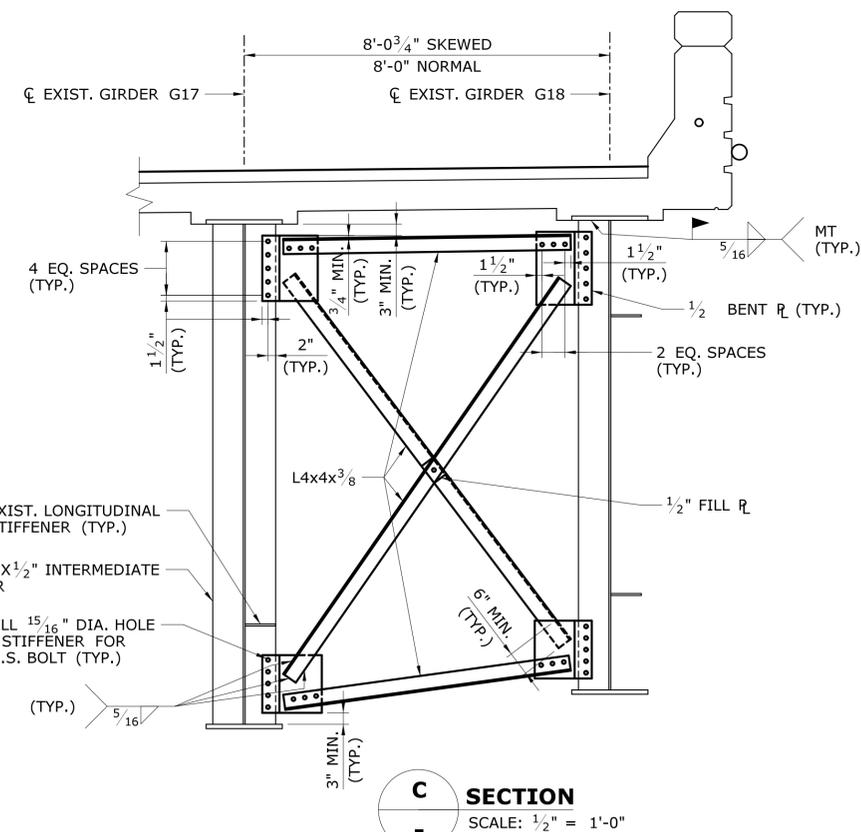


B SECTION

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

DETAIL K REPAIR NOTES

1. AFTER CLEANING OF THE STEEL, AND PRIOR TO INSTALLATION OF THE REPAIR PLATE, APPLY AN EPOXY "FAIRING COMPOUND" TO IRREGULAR SURFACES OF THE TOP OF THE BOTTOM FLANGE TO CREATE A SMOOTH SURFACE. ALLOW THE EPOXY MATERIAL TO FULLY CURE AND GRIND ANY HIGH SPOTS AS REQUIRED PRIOR TO FIELD DRILLING HOLES.
2. THE EPOXY "FAIRING COMPOUND" SHALL BE SUITABLE FOR STEEL SURFACES AND SHALL NOT CONTAIN ANY METALS OR OTHER PRODUCTS THAT PROMOTE CORROSION OF STEEL. COST OF FURNISHING AND INSTALLING EPOXY PAID FOR UNDER ITEM "STRUCTURAL STEEL REPAIRS (SITE NO.1)."



C SECTION

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

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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DESIGNER/DRAFTER:
A. HIPIUS/S. ERDAS
CHECKED BY:
T. STRNAD
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Plotted Date: 6/30/2016

SIGNATURE/BLOCK:

Dewberry
59 Elm Street, Suite 101
New Haven, CT 06510-2047

PROJECT TITLE:
**REHABILITATION OF BRIDGE
NO. 03093 I-91 OVER FRONT
STREET AND QUINNIPIAC RIVER**

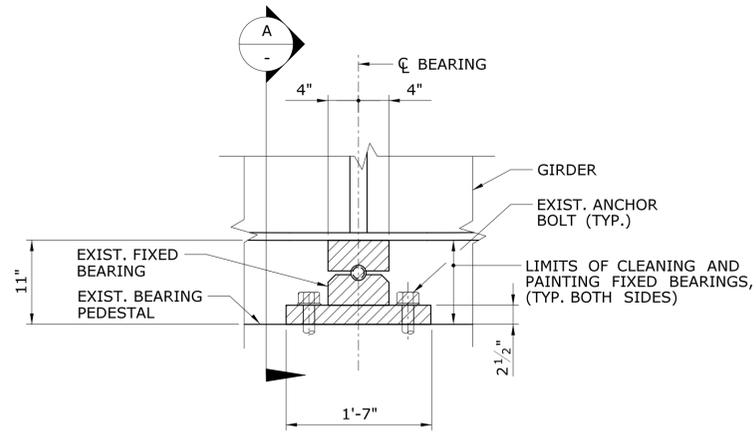
TOWN:
NEW HAVEN

DRAWING TITLE:
**STEEL REPAIR
DETAILS - 9**

PROJECT NO.
92-668

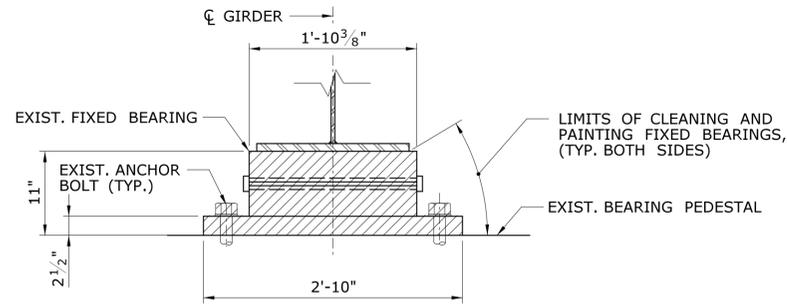
DRAWING NO.
S-23

SHEET NO.
04.23



CLEANING AND PAINTING OF FIXED BEARINGS AT PIERS 2 & 3

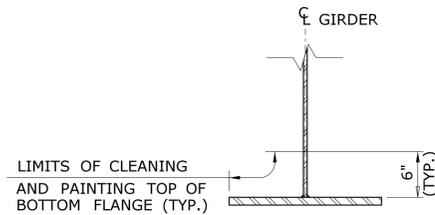
SCALE: 1" = 1'-0"



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

FIELD PAINTING NOTES

1. THE ENDS OF EXISTING GIRDERS AND END CROSS FRAMES (IN THEIR ENTIRETY) INCLUDING CONNECTION PLATES AND STIFFENERS AT HANGER PIN AND HINGE PIN LOCATIONS SHALL BE CLEANED AND PAINTED IN ACCORDANCE WITH THE SPECIFICATION "ABRASIVE BLAST CLEANING AND FIELD PAINTING OF STRUCTURE (SITE NO. 1)", SEE SPECIAL PROVISIONS. THE CONTAINMENT FOR THE PAINTING SHALL BE PAID FOR UNDER THE ITEM "CLASS 1 CONTAINMENT AND SURFACE PREPARATION OF DEBRIS". DISPOSAL OF LEAD DEBRIS SHALL BE PAID FOR UNDER THE ITEM "DISPOSAL OF LEAD DEBRIS FROM ABRASIVE BLAST CLEANING", SEE SPECIAL PROVISIONS.
2. CLEANING AND PAINTING OF AREAS IDENTIFIED BY THE ENGINEER OR DEPICTED IN THE PLANS OTHER THAN THE ENDS OF EXISTING GIRDERS AND END CROSS FRAMES AT HANGER PIN AND HINGE PIN LOCATIONS, SHALL BE PAID FOR UNDER THE ITEM "LOCALIZED PAINT REMOVAL AND FIELD PAINTING OF EXISTING STEEL", SEE SPECIAL PROVISIONS. DISPOSAL OF LEAD DEBRIS SHALL BE PAID UNDER THE ITEM "DISPOSAL OF LEAD DEBRIS FROM ABRASIVE BLAST CLEANING", SEE SPECIAL PROVISIONS.
3. PAINT AND DEBRIS COLLECTED FROM PAINT REMOVAL SHALL BE STORED ABOVE THE 100-YEAR FLOOD ELEVATION.
4. THE 27,600 SQUARE FEET OF ESTIMATED SURFACE AREA TO BE CLEANED & PAINTED IS APPROXIMATE. THE CONTRACTOR SHALL SURVEY THE EXISTING BRIDGE STRUCTURE AND REVIEW THE EXISTING PLANS TO FAMILIARIZE HIMSELF WITH THE AREA TO BE CLEANED AND PAINTED.



CLEANING AND PAINTING OF GIRDER BOTTOM FLANGE - SPANS 2, 3 & 4

SCALE: 1" = 1'-0"

NOTE: SEE FRAMING PLAN FOR HORIZONTAL LIMITS OF TOP OF BOTTOM FLANGE CLEANING AND PAINTING.

LEGEND



LIMITS OF CLEANING AND PAINTING

REFERENCE

1. SEE DWG. NO. S-12 THRU S-14 FOR FRAMING PLANS.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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A. HIPIUS/S. ERDAS
CHECKED BY:
T. STRNAD
SCALE AS NOTED

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DEPARTMENT OF TRANSPORTATION

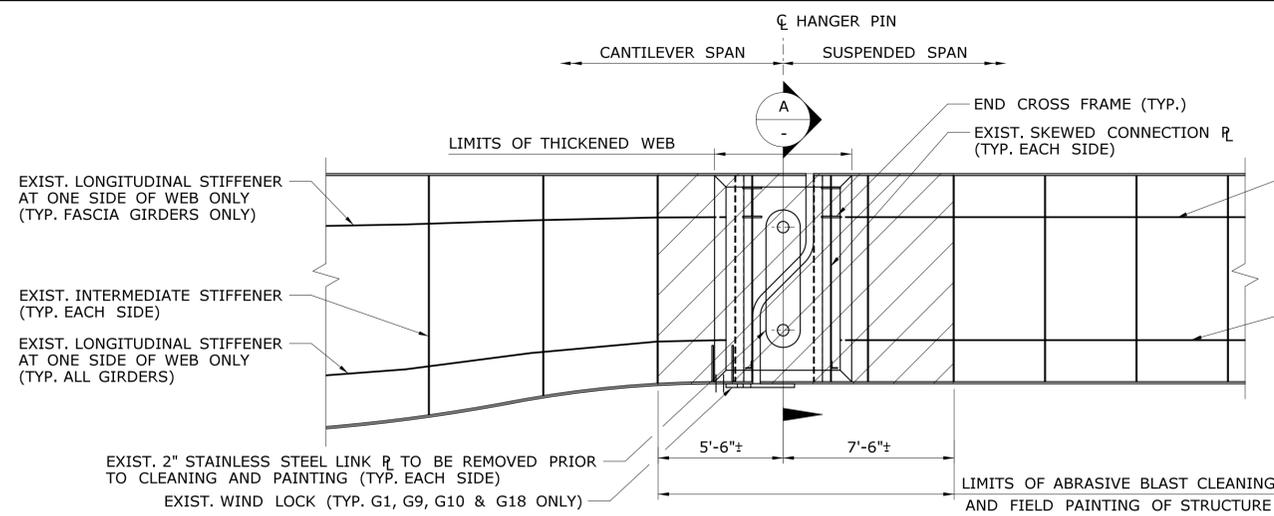
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**REHABILITATION OF BRIDGE
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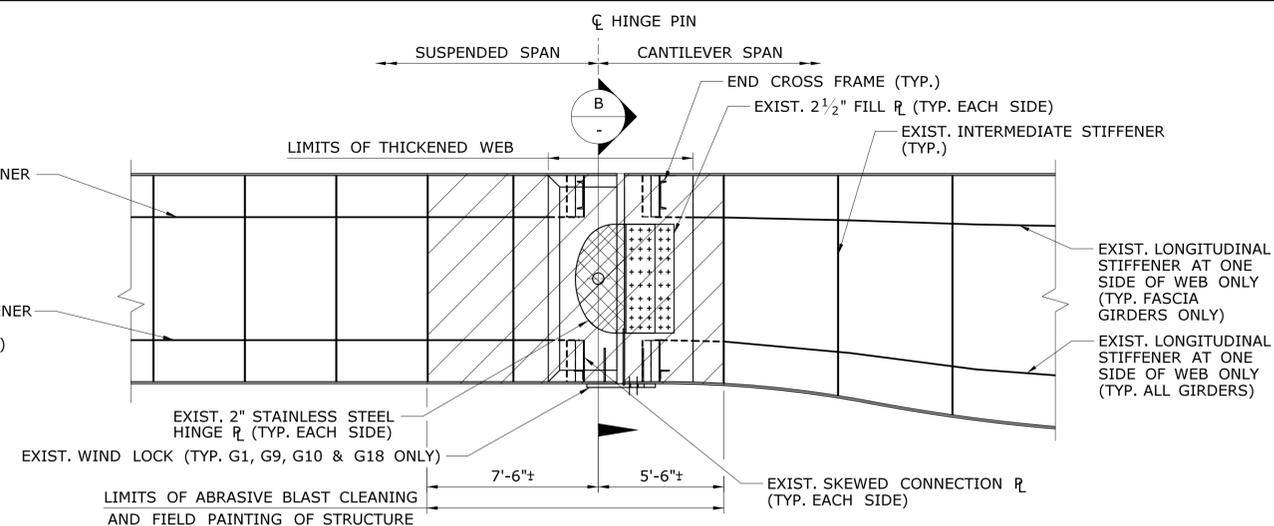
TOWN:
NEW HAVEN
DRAWING TITLE:
FIELD PAINTING - 1

PROJECT NO.
92-668
DRAWING NO.
S-24
SHEET NO.
04.24



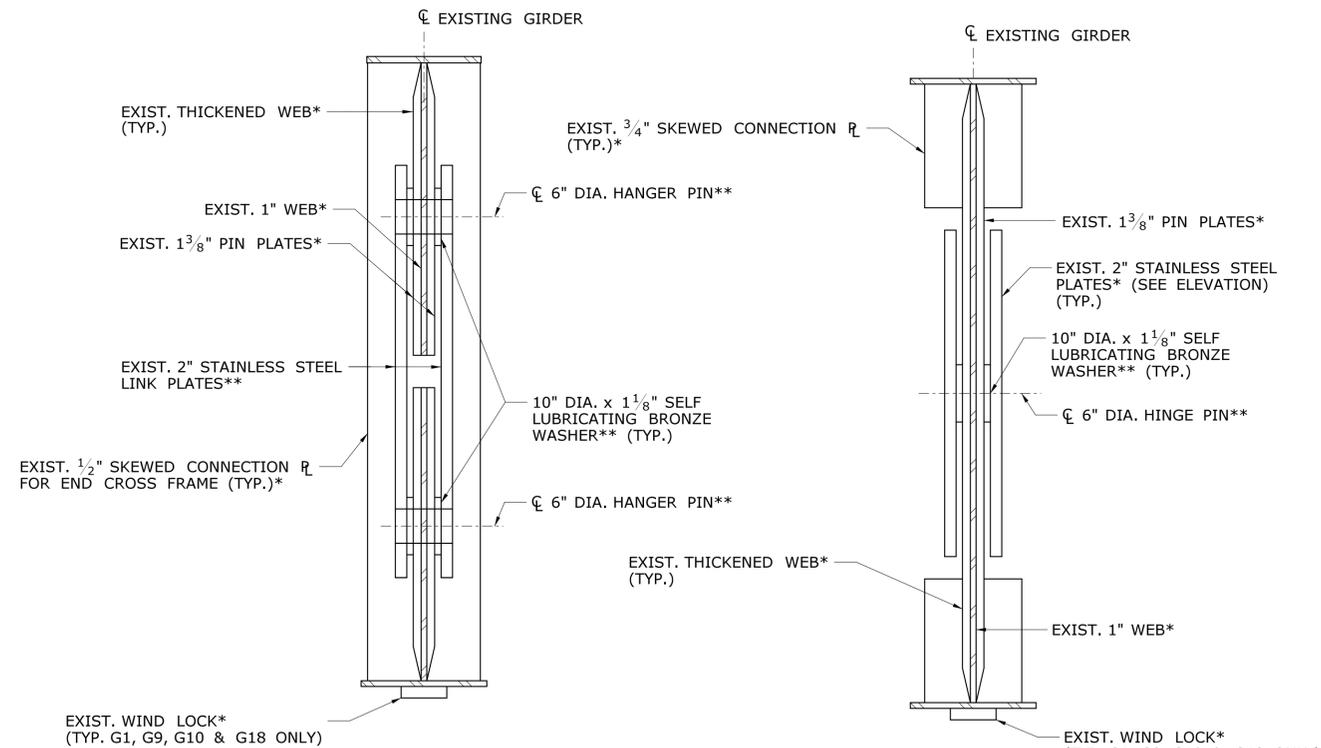
TYPICAL EXISTING CONDITION AT PIN & HANGER - EAST ELEVATION

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



TYPICAL EXISTING CONDITION AT HINGE - EAST ELEVATION

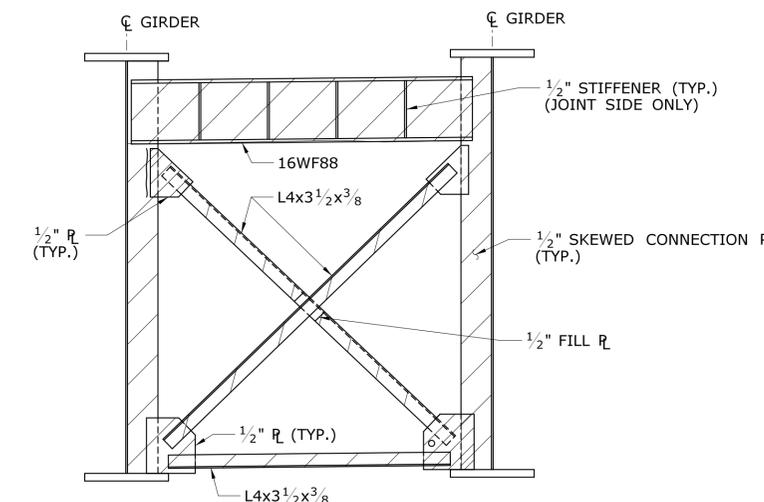
SCALE: 1/4" = 1'-0"



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

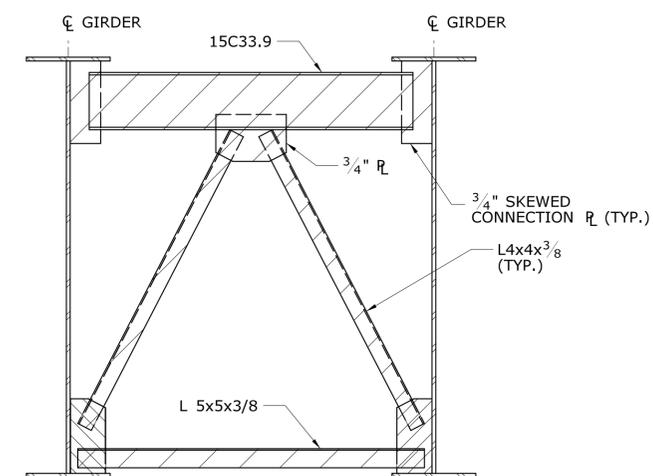
B SECTION
SCALE: 3/4" = 1'-0"

NOTES:
* - GIRDER COMPONENTS TO BE ABRASIVE BLAST CLEANED AND PAINTED.
** - COMPONENTS TO BE REMOVED PRIOR TO ABRASIVE BLAST CLEANING AND PAINTING OF STRUCTURE.



TYPICAL END CROSS FRAME AT HANGER PIN

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



TYPICAL END CROSS FRAME AT HINGE PIN

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

LEGEND

- LIMITS OF ABRASIVE BLAST CLEANING AND FIELD PAINTING OF STRUCTURE.
- LIMITS OF AREA NOT INCLUDED IN ABRASIVE BLAST CLEANING AND FIELD PAINTING OF STRUCTURE.

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A. HIPIUS/S. ERDAS
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T. STRNAD
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Signature: _____
Block: _____

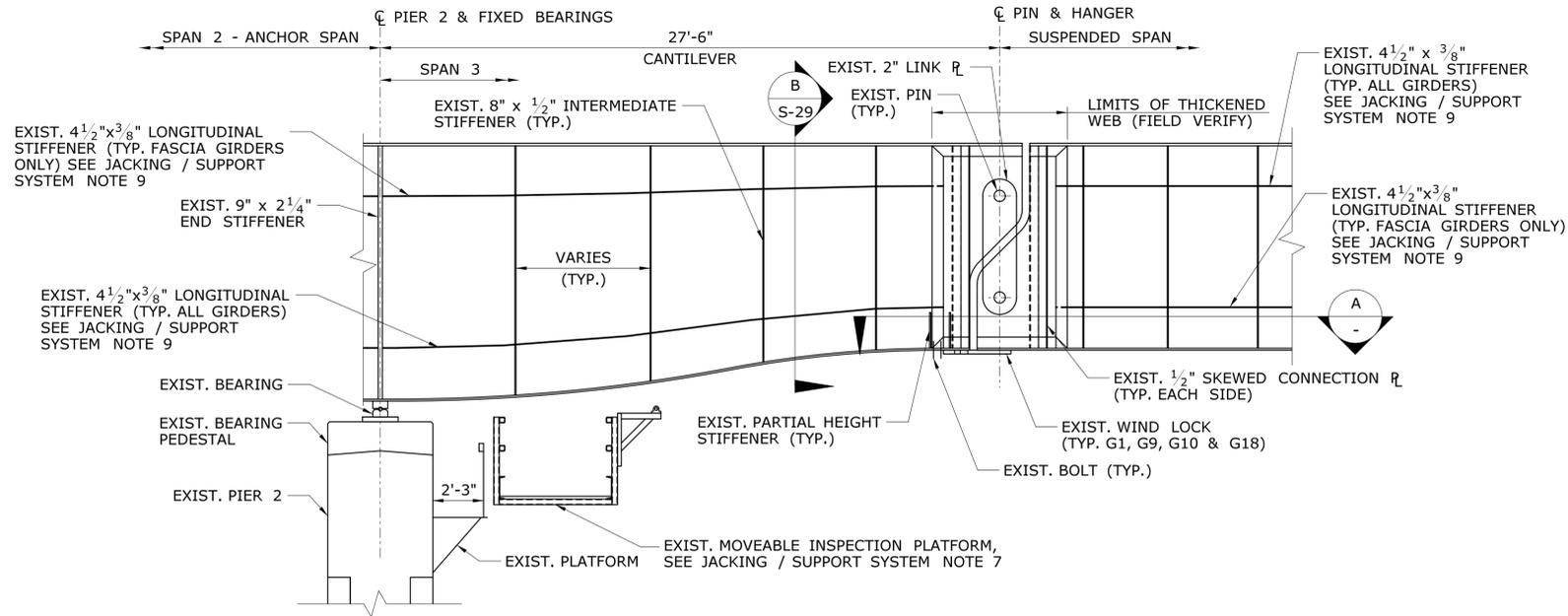
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PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 03093 I-91 OVER FRONT STREET AND QUINNIPIAC RIVER

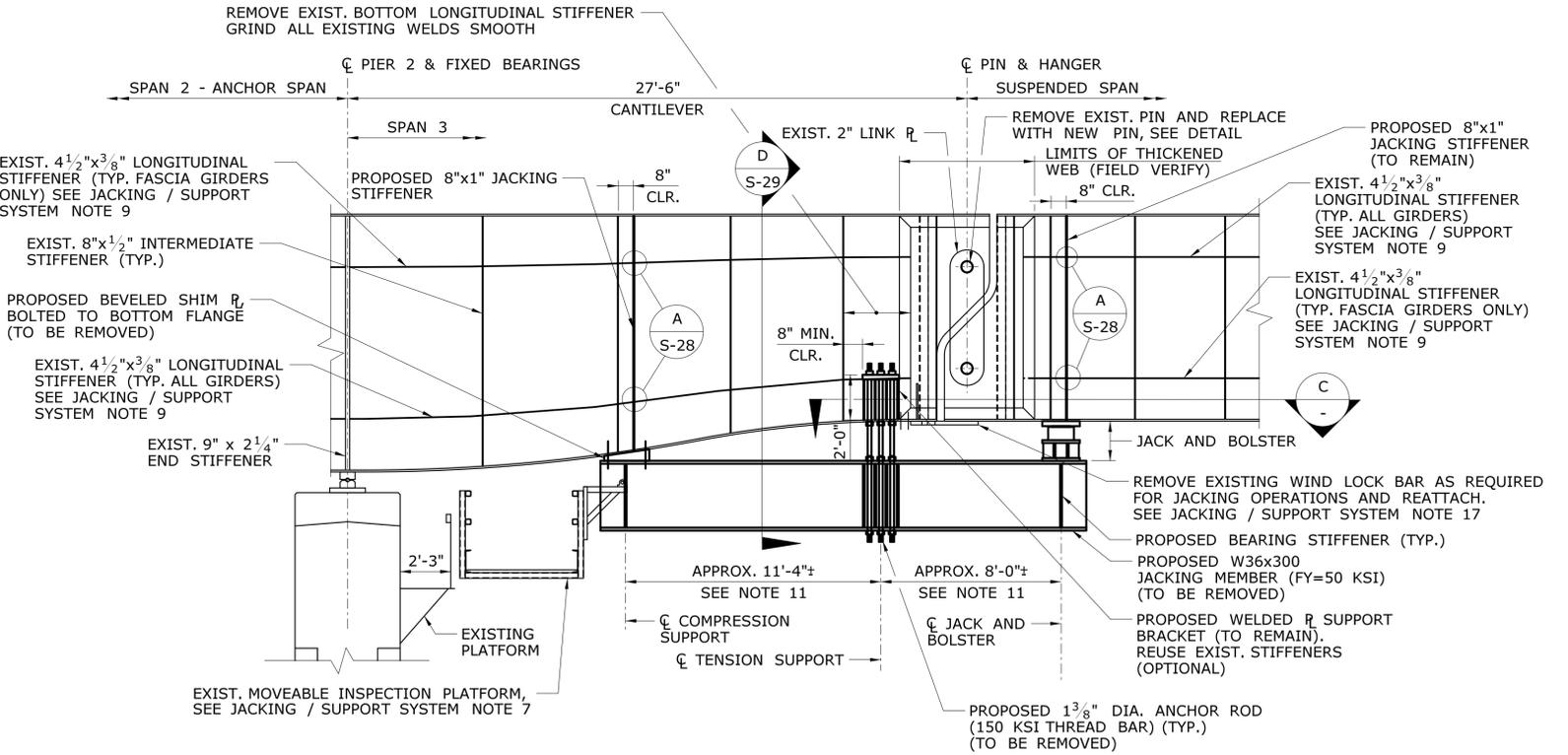
TOWN:
NEW HAVEN
DRAWING TITLE:
FIELD PAINTING - 2

PROJECT NO.
92-668
DRAWING NO.
S-25
SHEET NO.
04.25



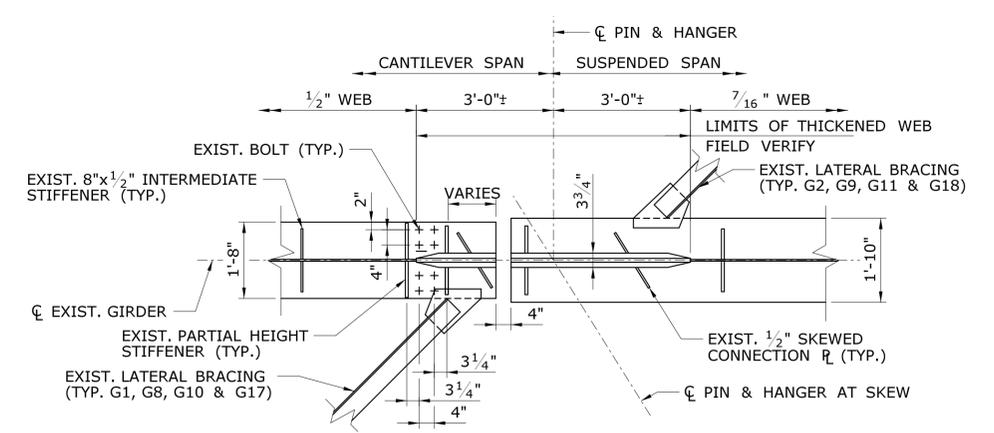
TYPICAL EXISTING CONDITION AT PIN & HANGER - EAST ELEVATION

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



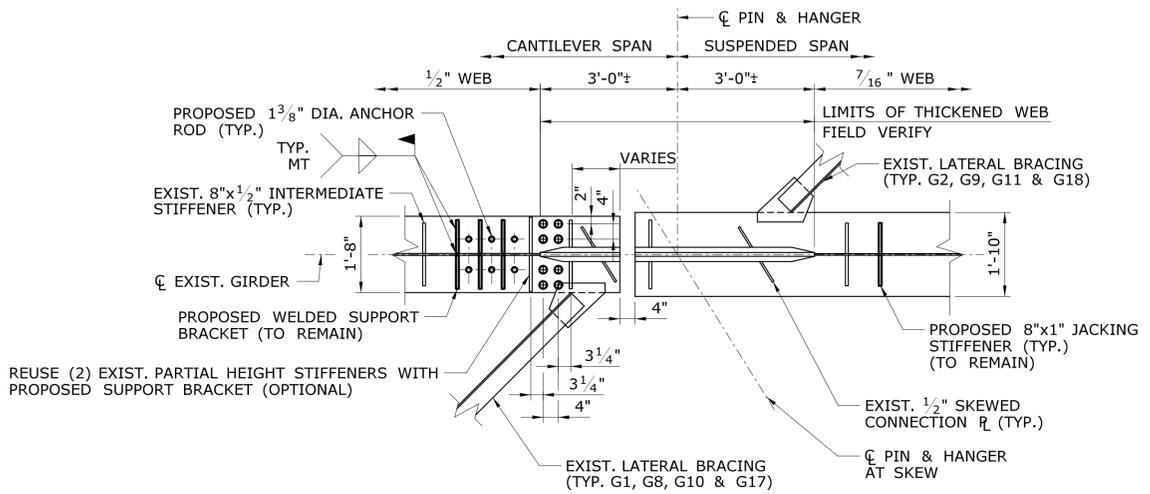
TYPICAL TEMPORARY JACKING / SUPPORT SYSTEM AT PIN & HANGER - EAST ELEVATION

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



A SECTION

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



C SECTION

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

NOTES

- SERVICE DEAD LOAD INCLUDES PERMANENT DEAD LOAD ONLY. DEAD LOAD DUE TO TEMPORARY COMPONENTS INCLUDING DEBRIS SHIELD, WORK PLATFORMS, CONTAINMENT STRUCTURE, ETC. ARE NOT INCLUDED.
- SERVICE LIVE LOAD INCLUDES IMPACT.
- JACKING FORCES ARE UNFACTORED LOADS ASSUMING SIMULTANEOUS UNIFORM JACKING OF ALL GIRDERS AT A PIN LOCATION.

REFERENCES

- SEE DWG. NO. S-17 FOR SUSPENDED SPAN REPAIR DETAILS AT PIN & HANGER.
- SEE DWG. NO. S-28 FOR DETAIL A, PIN REPLACEMENT DETAILS, AND WIND LOCK REPAIR DETAILS.
- SEE DWG. NO. S-29 FOR JACKING STIFFENER DETAILS AND JACKING/SUPPORT SYSTEM NOTES.

LEGEND

- NEW ANCHOR ROD IN NEW HOLE
- REPLACE EXISTING BOLT WITH NEW H.S. BOLT IF SECTION LOSS > 25%
- + EXISTING BOLT

SUSPENDED SPAN END REACTION PER GIRDER

DEAD LOAD = 165.0 KIPS
 LIVE LOAD = 130.0 KIPS
 TOTAL = 295.0 KIPS

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T. STRNAD
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 DEPARTMENT OF TRANSPORTATION
 Plotted Date: 6/30/2016
 Filename: ...\\SB_MSH_Br03093_092_0668_JACK-01.dgn

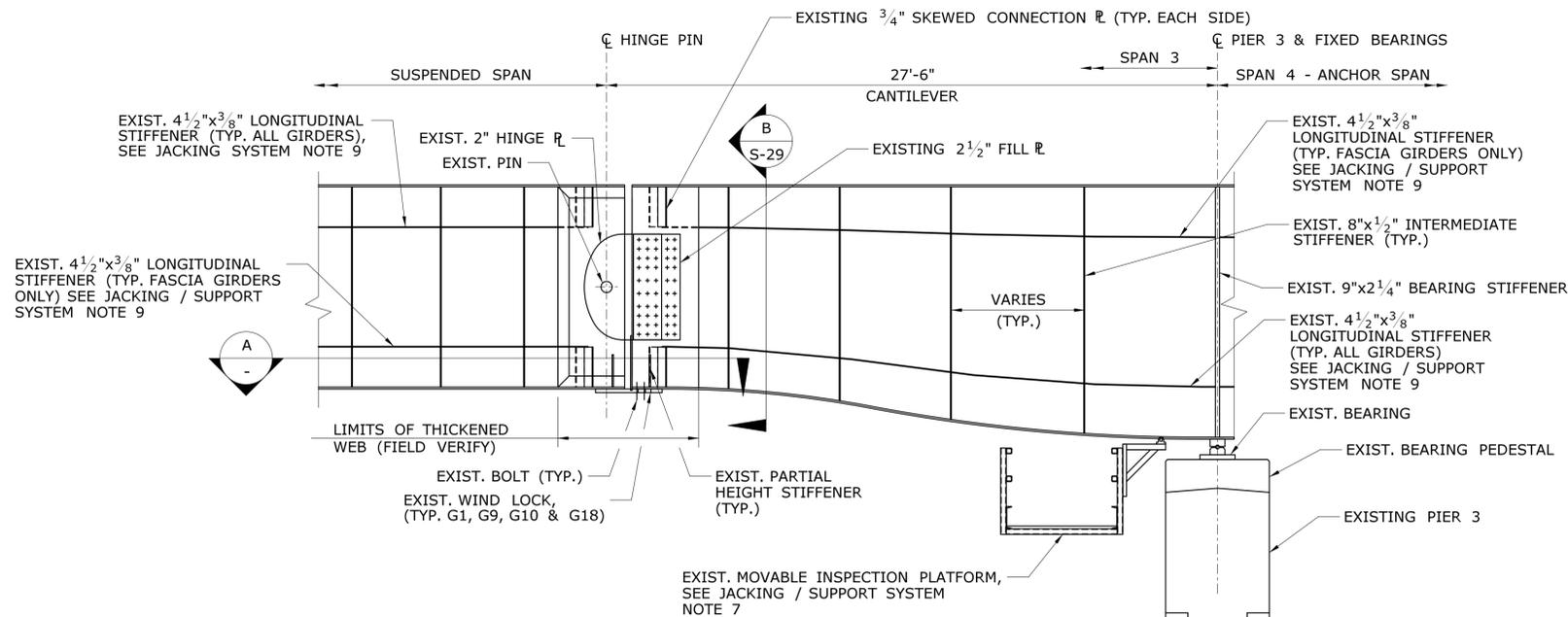
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PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 03093 I-91 OVER FRONT STREET AND QUINNIPIAC RIVER

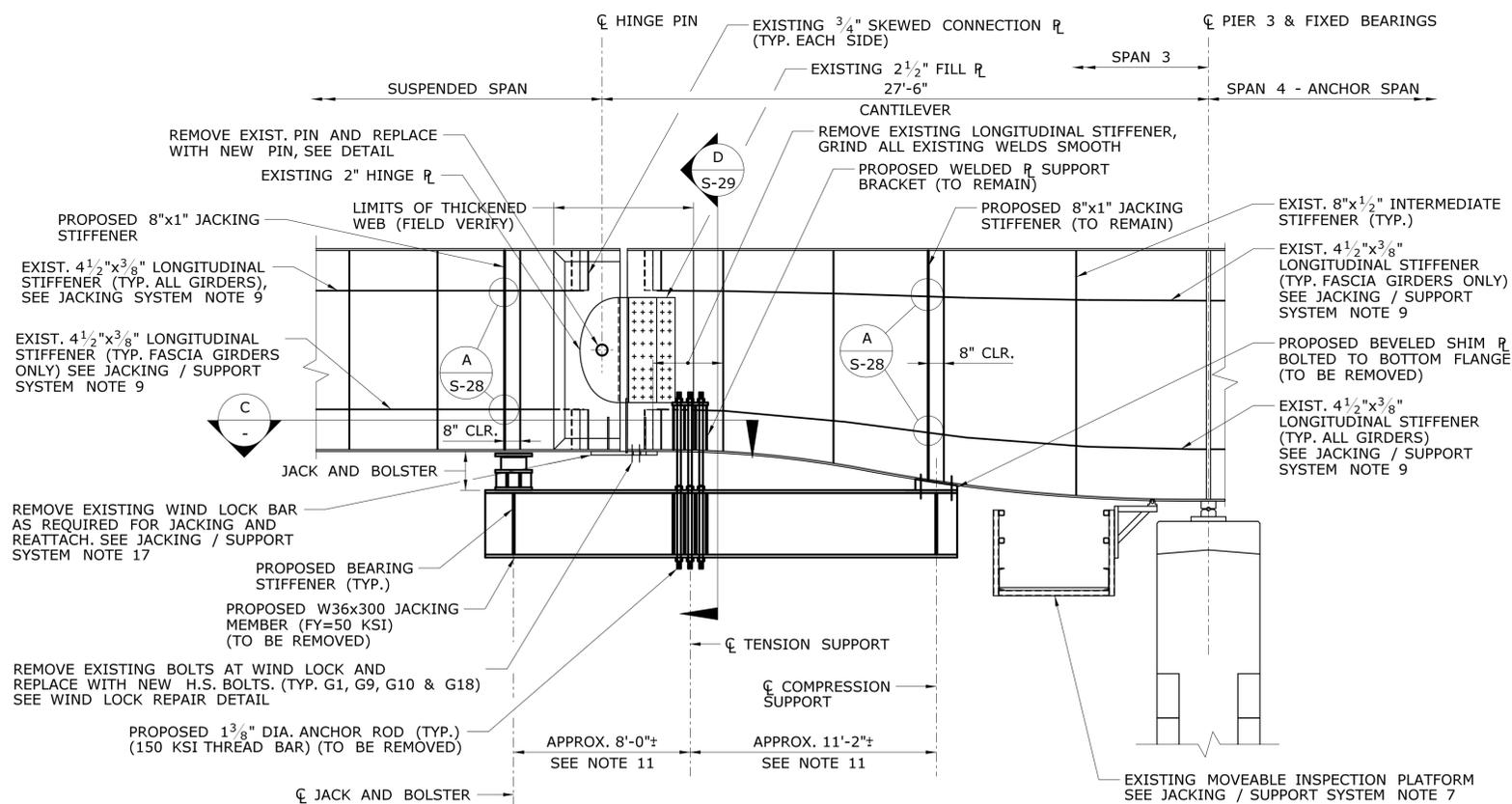
TOWN:
NEW HAVEN
 DRAWING TITLE:
PIN AND HANGER JACKING SYSTEM - 1

PROJECT NO.
92-668
 DRAWING NO.
S-26
 SHEET NO.
04.26



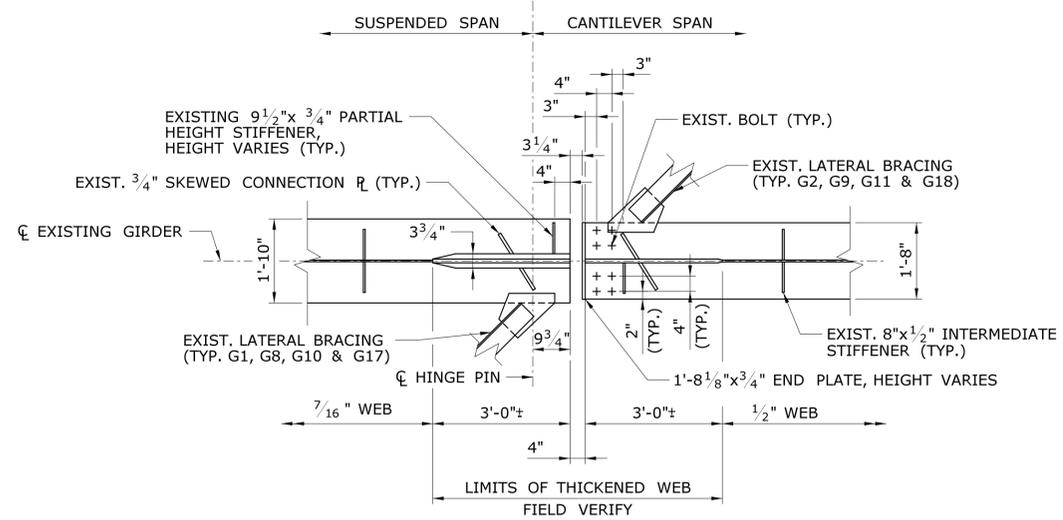
TYPICAL EXISTING CONDITION AT HINGE - EAST ELEVATION

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

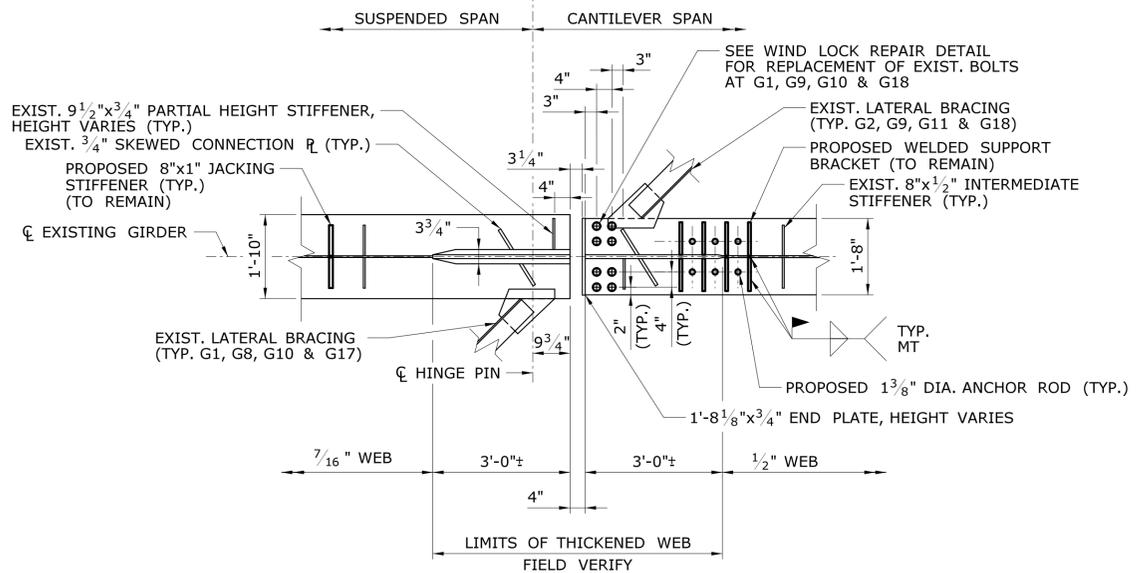


TYPICAL TEMPORARY JACKING / SUPPORT SYSTEM AT HINGE - EAST ELEVATION

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



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



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

LEGEND

- NEW ANCHOR ROD IN NEW HOLE
- REPLACE EXISTING BOLT WITH NEW H.S. BOLT IF SECTION LOSS > 25%
- + EXISTING BOLT

REFERENCES

1. SEE DWG. NO. S-17 FOR SUSPENDED SPAN REPAIR DETAILS AT PIN & HANGER.
2. SEE DWG. NO. S-26 FOR JACKING LOADS.
3. SEE DWG. NO. S-28 FOR DETAIL A, PIN REPLACEMENT DETAILS, AND WIND LOCK REPAIR DETAILS.
4. SEE DWG. NO. S-29 FOR SECTION B & D, JACKING STIFFENER DETAILS, AND JACKING / SUPPORT SYSTEM NOTES.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

DESIGNER/DRAFTER:
A. HIPIUS/S. ERDAS
CHECKED BY:
T. STRNAD
SCALE AS NOTED



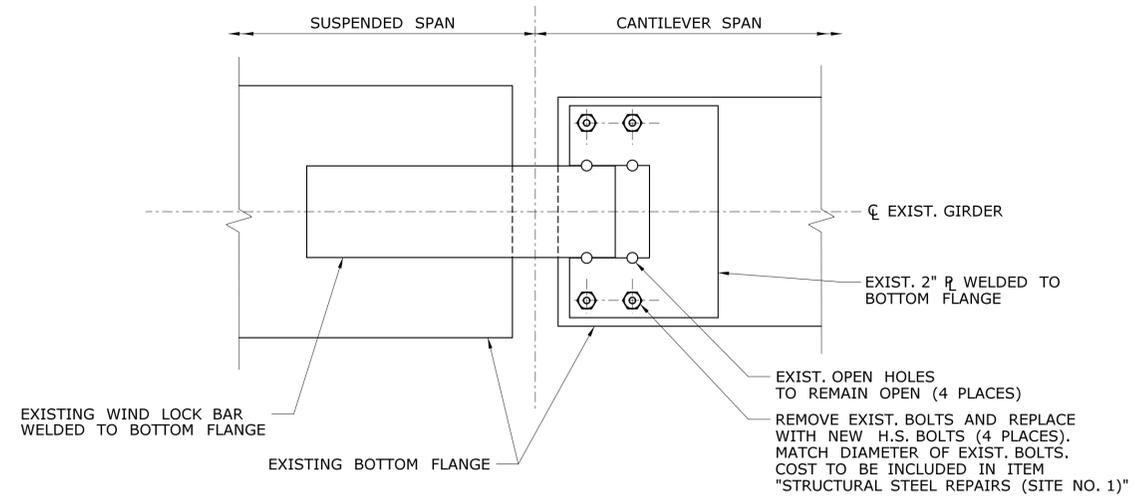
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PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 03093 I-91 OVER FRONT STREET AND QUINNIPIAC RIVER

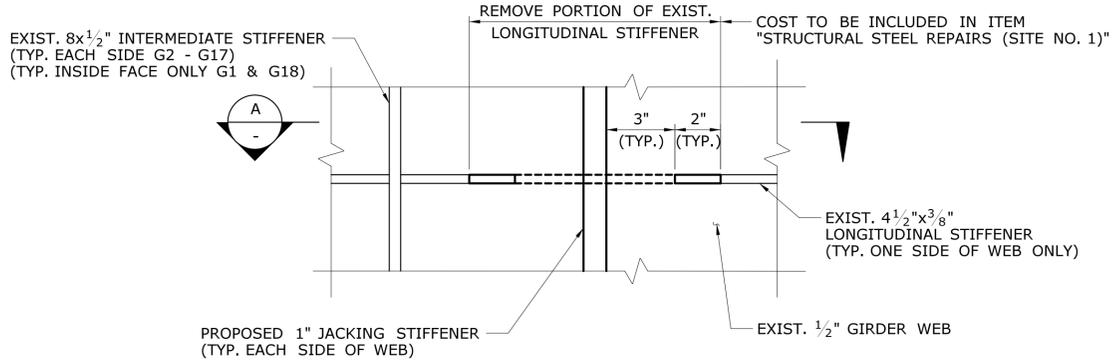
TOWN:
NEW HAVEN
DRAWING TITLE:
PIN AND HANGER JACKING SYSTEM - 2

PROJECT NO.
92-668
DRAWING NO.
S-27
SHEET NO.
04.27

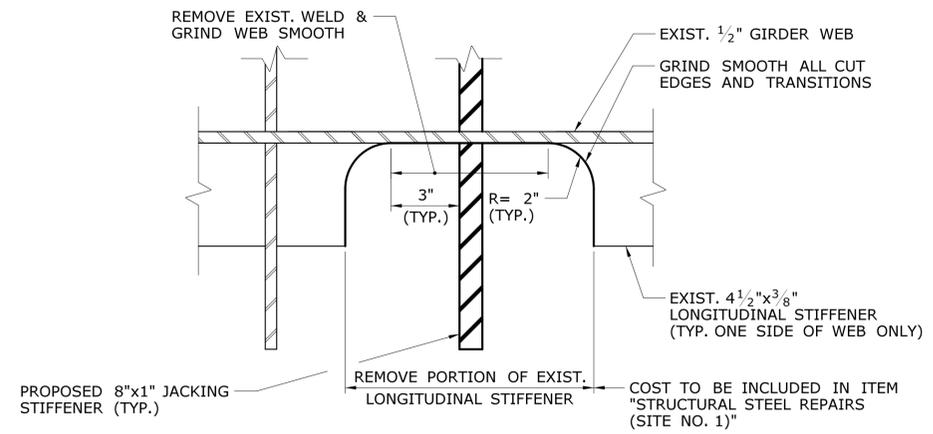


GIRDER BOTTOM FLANGE WIND LOCK REPAIR DETAIL AT HINGE PIN - REFLECTED PLAN

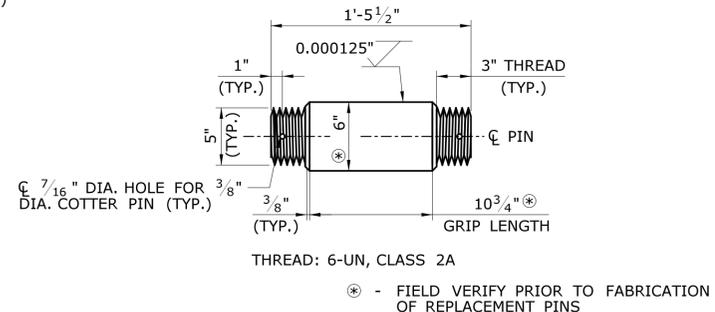
SCALE: 1 1/2" = 1'-0"
NOTE: DETAIL APPLIES AT GIRDERS G1, G9, G10 & G18



DETAIL A
SCALE: 3" = 1'-0"

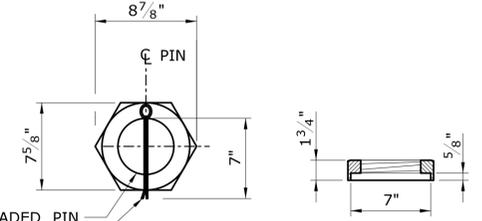


SECTION A
SCALE: 3" = 1'-0"

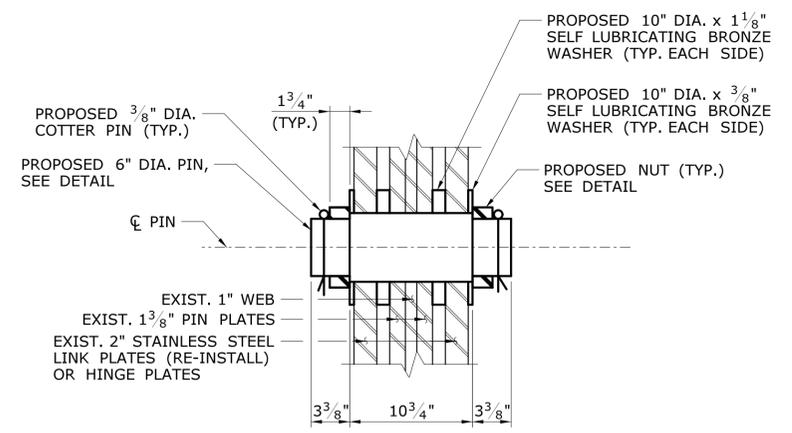


PROPOSED PIN DETAIL

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



PIN RECESSED NUT & COTTER PIN DETAIL
SCALE: 1 1/2" = 1'-0"



PROPOSED PIN ASSEMBLY

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

PIN REPLACEMENT NOTES

1. THE CONTRACTOR SHALL CAREFULLY REMOVE THE EXISTING STAINLESS STEEL PIN AND HANGER LINK PLATES AND STORE FOR REUSE IN THE PROPOSED CONSTRUCTION.
2. THE CONTRACTOR SHALL NOT DAMAGE ANY EXISTING STRUCTURAL STEEL OR EXISTING STAINLESS STEEL HINGE PLATES TO REMAIN.
3. PINS SHALL BE ULTRASONICALLY TESTED PRIOR TO INSTALLATION.
4. PINS SHALL BE ANNEALED STAINLESS STEEL AND CONFORM TO ASTM A276 UNS S21800 WITH FY = 50 KSI, NUTS SHALL CONFORM TO ASTM A276 OR ASTM 240 TYPE 316 STAINLESS STEEL AND COTTER PINS SHALL BE STAINLESS STEEL AND CONFORM TO ANSI B18.8.1.
5. THE SELF-LUBRICATING BRONZE WASHERS SHALL CONFORM TO ASTM B22 ALLOY 911. THE SELF-LUBRICANT SHALL BE PROVIDED ON BOTH FACES OF THE WASHER.
6. THE COST OF REMOVING EXISTING PINS AND BRONZE WASHERS, FABRICATION AND INSTALLATION OF NEW PIN ASSEMBLIES AND SELF LUBRICATING BRONZE WASHERS AND REMOVAL, STORAGE, AND REINSTALLATION OF EXISTING PIN AND HANGER LINK PLATES SHALL BE INCLUDED IN THE COST OF ITEM "STRUCTURAL PIN ASSEMBLY (STAINLESS STEEL)". SEE SPECIAL PROVISIONS.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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A. HIPIUS/S. ERDAS
CHECKED BY:
T. STRNAD
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Signature/Block: [Signature]

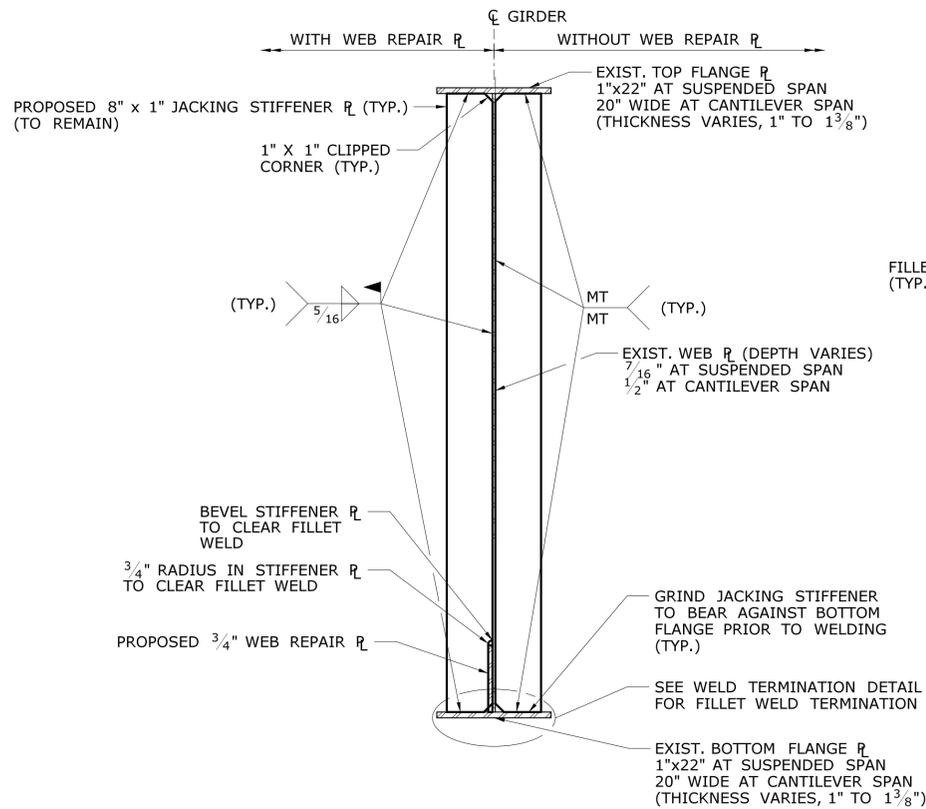
59 Elm Street, Suite 101
New Haven, CT 06510-2047

PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 03093 I-91 OVER FRONT STREET AND QUINNIPIAC RIVER

TOWN:
NEW HAVEN

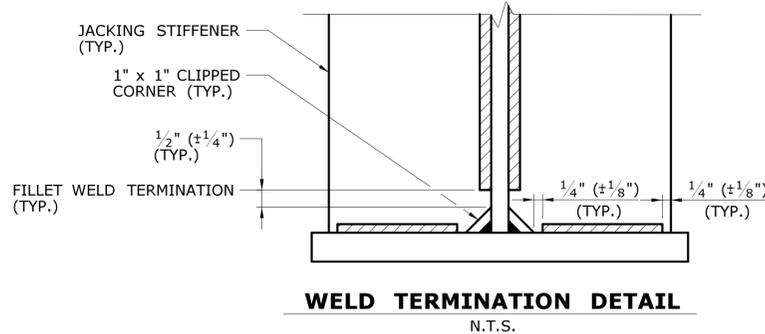
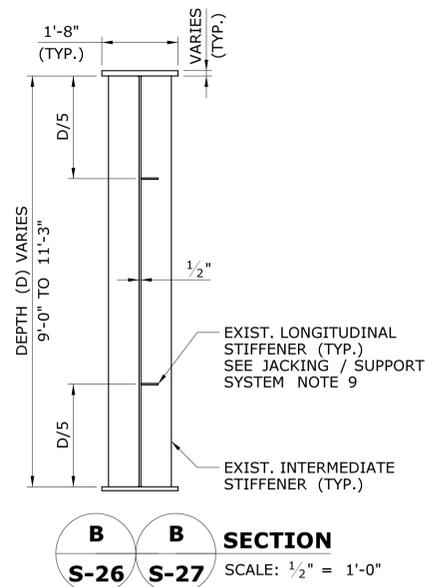
DRAWING TITLE:
PIN AND HANGER JACKING SYSTEM - 3

PROJECT NO.
92-668
DRAWING NO.
S-28
SHEET NO.
04.28



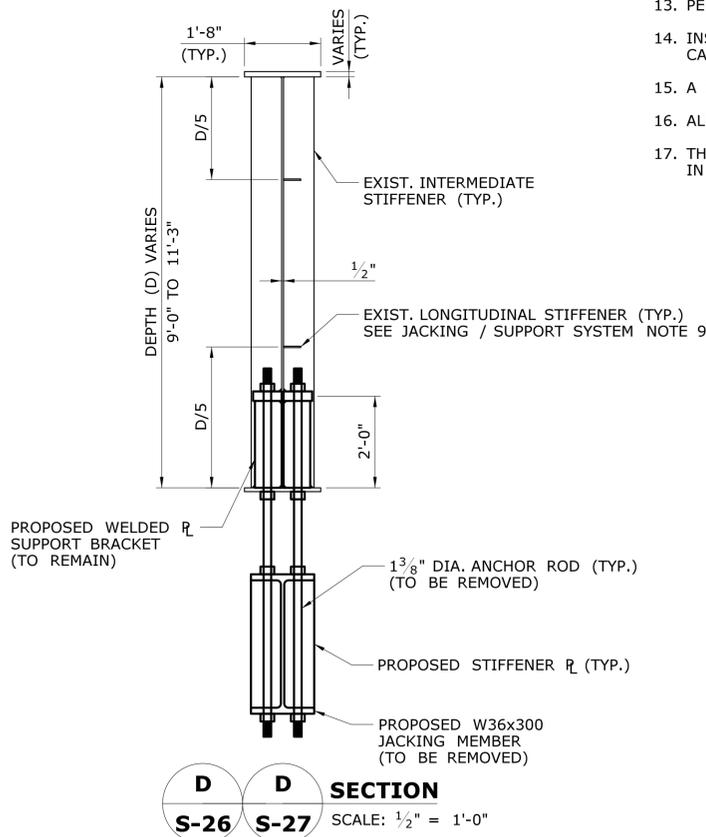
SPAN 3 GIRDER JACKING STIFFENER DETAIL

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



WELD TERMINATION DETAIL

N.T.S.



JACKING / SUPPORT SYSTEM NOTES:

1. THE DESIGN, FURNISHING, INSTALLATION, REMOVAL AND SALVAGE OF JACKING/SUPPORT ASSEMBLY SHALL BE PAID UNDER THE ITEM "TEMPORARY SUPPORT SYSTEM NO. 1", SEE SPECIAL PROVISIONS.
2. THE PLANS DEPICT A CONCEPTUAL METHOD TO JACK THE GIRDERS FOR REPLACING THE PINS AT THE PIN & HANGER AND HINGE ASSEMBLIES. THE CONTRACTOR MAY SUBMIT ALTERNATE METHOD AND PROCEDURES TO THE ENGINEER FOR REVIEW & APPROVAL.
3. THE JACKING/SUPPORT SYSTEM 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 ENGINEER FOR REVIEW AND APPROVAL.
4. JACKING OPERATIONS SHALL BE PERFORMED UNDER LIVE TRAFFIC. THE CONTRACTOR SHALL DESIGN THE JACKING ASSEMBLY FOR THE SPECIFIED GIRDER END REACTION LOADS. THE DESIGN SHALL PROVIDE FOR GIRDER STABILITY IN THE LONGITUDINAL AND TRANSVERSE BRIDGE DIRECTIONS AT ALL TIMES WHEN THE PINS ARE REMOVED.
5. THE CONTRACTOR IS CAUTIONED THAT HE WILL BE PERMITTED TO PERFORM THE WORK WHILE ENSURING THAT TRAVEL LANES ARE OPEN TO TRAFFIC IN ACCORDANCE WITH "LIMITATIONS OF OPERATIONS" CHARTS CONTAINED IN SECTION 1.08 OF THE SPECIAL PROVISIONS "PROSECUTION AND PROGRESS".
6. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS "PROSECUTION AND PROGRESS" AND "MAINTENANCE & PROTECTION OF TRAFFIC", SEE SPECIAL PROVISIONS.
7. EXISTING INSPECTION PLATFORM SHALL BE POSITIONED TO NOT INTERFERE WITH JACKING SYSTEM OR BRIDGE REPAIRS DURING CONSTRUCTION OPERATIONS.
8. PIN & HANGER AND HINGE JACKING / SUPPORT SYSTEM FOR ALL GIRDERS SHALL BE REMOVED AT END OF CONSTRUCTION OPERATIONS AND SALVAGED TO STATE, SEE SPECIAL PROVISIONS. SUPPORT BRACKETS AND JACKING STIFFENERS WELDED TO EXISTING GIRDERS SHALL REMAIN IN PLACE.
9. EXISTING LONGITUDINAL STIFFENERS ARE LOCATED ON ONE SIDE OF THE GIRDER WEB ONLY. LOCATIONS SHOWN SHALL BE FIELD VERIFIED.
10. ALL GIRDERS AT PIN AND HANGER OR HINGE LOCATIONS SHALL BE JACKED SIMULTANEOUSLY DURING CONSTRUCTION OPERATIONS. ONE END OF THE SUSPENDED SPAN SHALL BE JACKED AND/OR TEMPORARILY SUPPORTED AT A GIVEN TIME.
11. EXACT MEMBER LENGTHS SHALL BE DETERMINED TO SUIT EXISTING FIELD CONDITIONS.
12. REMOVAL OF PAINT IN THE VICINITY OF PROPOSED BEARING STIFFENERS AND SUPPORT BRACKETS SHALL BE PAID UNDER THE ITEM "ABRASIVE BLAST CLEANING AND FIELD PAINTING OF STRUCTURE (SITE NO. 1)". SEE SPECIAL PROVISIONS.
13. PERFORM SUSPENDED SPAN 3 STEEL REPAIRS AND INSTALL JACKING STIFFENERS PRIOR TO JACKING GIRDERS.
14. INSTALL H.S. BOLTS IN ALL OPEN HOLES USED FOR ATTACHMENT OF THE TEMPORARY JACKING/SUPPORT SYSTEM IN THE CANTILEVER SPAN 3 GIRDERS FOLLOWING REMOVAL OF THE TEMPORARY JACKING/SUPPORT SYSTEM.
15. A SHOP PRIMER SHALL BE APPLIED TO ALL STRUCTURAL STEEL COMPONENTS DESIGNATED TO BE REMOVED AND SALVAGED.
16. ALL JACKING/SUPPORT SYSTEM WELDS TO THE EXISTING GIRDER SHALL BE INSPECTED BY THE MAGNETIC PARTICLE METHOD.
17. THE COST OF REMOVING AND REATTACHING THE EXISTING WIND LOCK BARS TO FACILITATE JACKING SHALL BE INCLUDED IN THE ITEM "TEMPORARY SUPPORT SYSTEM NO. 1".

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DESIGNER/DRAFTER:
A. HIPIUS/S. ERDAS
CHECKED BY:
T. STRNAD
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ..._SB_MSH_Br03093_092_0668_JACK-04.dgn

SIGNATURE/BLOCK:

Dewberry
59 Elm Street, Suite 101
New Haven, CT 06510-2047

PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 03093 I-91 OVER FRONT STREET AND QUINNIPIAC RIVER

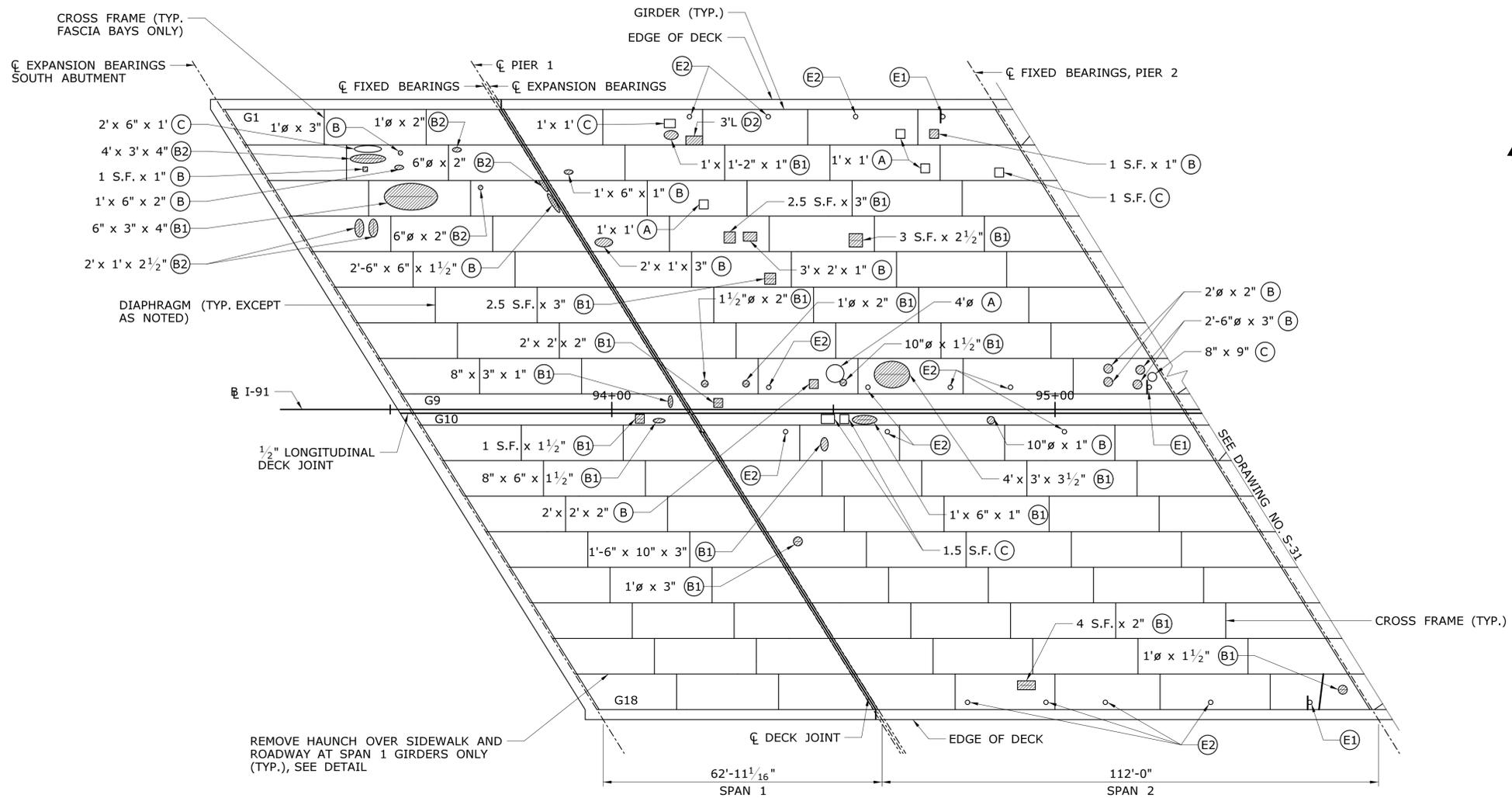
TOWN:
NEW HAVEN

DRAWING TITLE:
PIN AND HANGER JACKING SYSTEM - 4

PROJECT NO.
92-668

DRAWING NO.
S-29

SHEET NO.
04.29



UNDERSIDE OF DECK DETERIORATION PLAN: SPANS 1 - 2

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

DECK DETERIORATION NOTES

1. THE DETERIORATION LOCATION AND DIMENSIONS DEPICTED ON THE DECK UNDERSIDE ARE BASED ON INFORMATION OBTAINED FROM BRIDGE SAFETY INSPECTION REPORT (2014) AND SUPPLEMENTED BY IN-DEPTH INSPECTION PERFORMED BY DEWBERRY (2014) AND ARE NOT SHOWN TO SCALE FOR CLARITY. THE INFORMATION IS INTENDED TO BE USED AS A GUIDE. THE EXACT LOCATION AND LIMITS OF DETERIORATED CONCRETE TO BE REPAIRED ON THE UNDERSIDE OF THE DECK SHALL BE DELINEATED BY THE ENGINEER DURING CONSTRUCTION.
2. THE CONTRACTOR SHALL NOT PERFORM ANY REPAIR WORK WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
3. 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 APPROPRIATE REPAIR ITEMS.
4. SHIELDING SHALL BE PROVIDED BY THE CONTRACTOR TO PREVENT ANY DEBRIS FROM FALLING INTO THE RIVER. THE COST OF SHIELDING SHALL BE INCLUDED IN THE COST OF THE APPROPRIATE REPAIR ITEM.
5. DECK UNDERSIDE REPAIRS (DECK AND HAUNCH SPALLS, SPALLS WITH EXPOSED REINFORCING, HOLLOW AREAS, HONEYCOMB AREAS, ETC.) SHALL BE REPAIRED IN ACCORDANCE WITH "DECK UNDERSIDE REPAIR DETAIL" AND PAID UNDER THE ITEM "CLEAN AND COAT EXPOSED REINFORCING STEEL", SEE SPECIAL PROVISIONS.
6. DECK TOP SIDE REPAIRS (SPALLS, SPALLS WITH EXPOSED REINFORCING, HOLLOW AREAS) SUBSEQUENT TO REMOVAL OF EXISTING PAVEMENT, SHALL BE REPAIRED IN ACCORDANCE WITH "PARTIAL DEPTH PATCH" AND "FULL DEPTH PATCH" REPAIR DETAILS. FULL DEPTH PATCH AND PARTIAL DEPTH PATCH REPAIRS SHALL BE PAID UNDER THE ITEM "FULL DEPTH PATCH (HIGH EARLY STRENGTH CONCRETE)" AND "PARTIAL DEPTH PATCH", SEE SPECIAL PROVISIONS.
7. REMOVE LEFT-IN-PLACE WOOD FORM BY MECHANICAL MEANS TO INSPECT / ACCESS THE DECK UNDERSIDE. THE REMOVAL OF LEFT-IN-PLACE WOOD FORMS SHALL BE PAID UNDER THE ITEM "REMOVE STAY-IN-PLACE FORM", SEE SPECIAL PROVISIONS.
8. HAUNCH SHALL BE REMOVED OVER SIDEWALKS, TRAVELWAYS AND SHOULDERS IN SPAN 1 AND PAID UNDER THE ITEM "CONCRETE HAUNCH REMOVAL", SEE SPECIAL PROVISIONS.
9. AT WEEPHOLE LOCATIONS TO REMAIN OPEN, INSTALL WEEP PIPE EXTENSION AT SHORT WEEP PIPE LOCATIONS AND INSTALL STEEL SUPPORT BRACKETS. SEE WEEP PIPE REPAIR DETAIL.
10. AT WEEPHOLE LOCATIONS TO BE PLUGGED, SEE PLUGGED WEEPHOLE DETAIL.

DECK DETERIORATION LEGEND

- (A) LEFT-IN-PLACE WOOD FORM
- (B) DECK SPALL
- (B1) DECK SPALL WITH EXPOSED REBAR
- (B2) DECK SPALL WITH PREVIOUSLY COATED EXPOSED REBAR
- (C) HOLLOW AREA
- (D1) HAUNCH SPALL
- (D2) HOLLOW HAUNCH
- (E1) DECK WEEPHOLE TO REMAIN OPEN
- (E2) DECK WEEPHOLE TO BE PLUGGED
- (F) HONEYCOMB AREA

REFERENCES

1. SEE DWG. NO. S-33 FOR PARTIAL DEPTH PATCH AND FULL DEPTH PATCH REPAIR DETAILS.
2. SEE DWG. NO. S-34 FOR DECK UNDERSIDE REPAIR PROCEDURE AND DETAIL AND HAUNCH REMOVAL DETAILS.
3. SEE DWG. NO. S-38 FOR PLUGGED WEEPHOLE AND WEEP PIPE REPAIR DETAILS.

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Plotted Date: 6/30/2016

DESIGNER/DRAFTER:
A. HIPIUS/S. ERDAS
CHECKED BY:
T. STRNAD
SCALE AS NOTED



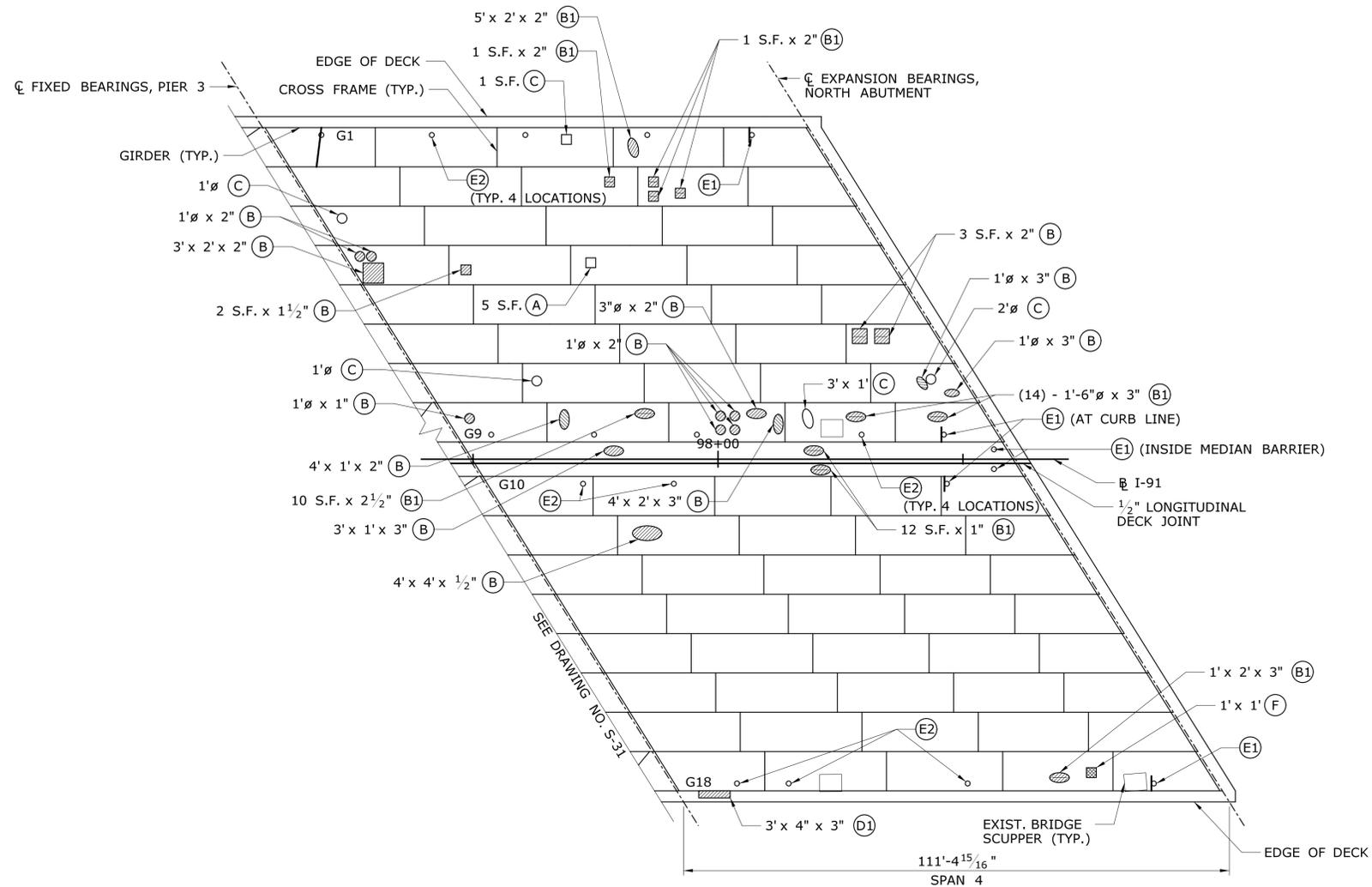
SIGNATURE/BLOCK:

Dewberry
59 Elm Street, Suite 101
New Haven, CT 06510-2047

PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 03093 I-91 OVER FRONT STREET AND QUINNIPIAC RIVER

TOWN:
NEW HAVEN
DRAWING TITLE:
UNDERSIDE OF DECK REPAIRS - 1

PROJECT NO.
92-668
DRAWING NO.
S-30
SHEET NO.
04.30



UNDERSIDE OF DECK DETERIORATION PLAN: SPAN 4

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

DECK DETERIORATION LEGEND

- (A) LEFT-IN-PLACE WOOD FORM
- (B) DECK SPALL
- (B1) DECK SPALL WITH EXPOSED REBAR
- (B2) DECK SPALL WITH PREVIOUSLY COATED EXPOSED REBAR
- (C) HOLLOW AREA
- (D1) HAUNCH SPALL
- (D2) HOLLOW HAUNCH
- (E1) DECK WEEPHOLE TO REMAIN OPEN
- (E2) DECK WEEPHOLE TO BE PLUGGED
- (F) HONEYCOMB AREA

REFERENCES

1. SEE DWG. NO. S-33 FOR PARTIAL DEPTH PATCH AND FULL DEPTH PATCH REPAIR DETAILS.
2. SEE DWG. NO. S-34 FOR DECK UNDERSIDE REPAIR PROCEDURE AND DETAIL AND HAUNCH REMOVAL DETAILS.
3. SEE DWG. NO. S-38 FOR PLUGGED WEEPHOLE AND WEEP PIPE REPAIR DETAILS.

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Plotted Date: 6/30/2016

DESIGNER/DRAFTER:
A.HIPIUS/S.ERDAS
CHECKED BY:
T. STRNAD
SCALE AS NOTED



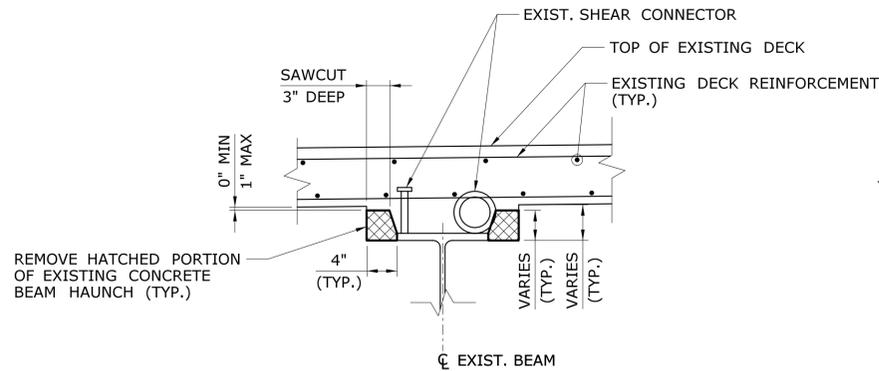
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BLOCK:

Dewberry
59 Elm Street, Suite 101
New Haven, CT 06510-2047

PROJECT TITLE:
**REHABILITATION OF BRIDGE
NO. 03093 I-91 OVER FRONT
STREET AND QUINNIPIAC RIVER**

TOWN:
NEW HAVEN
DRAWING TITLE:
**UNDERSIDE OF DECK
REPAIRS - 3**

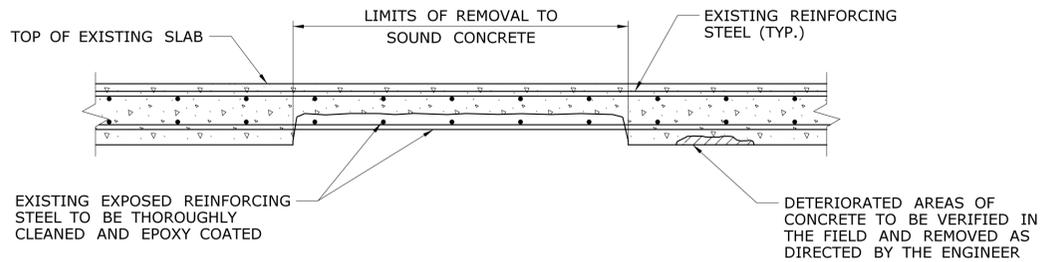
PROJECT NO.
92-668
DRAWING NO.
S-32
SHEET NO.
04.32



NOTE: INTERIOR BEAM SHOWN, FASCIA SIMILAR.

HAUNCH REMOVAL DETAIL AT ACCESSIBLE LOCATIONS

SCALE: 1" = 1'-0"



DECK UNDERSIDE REPAIR DETAIL

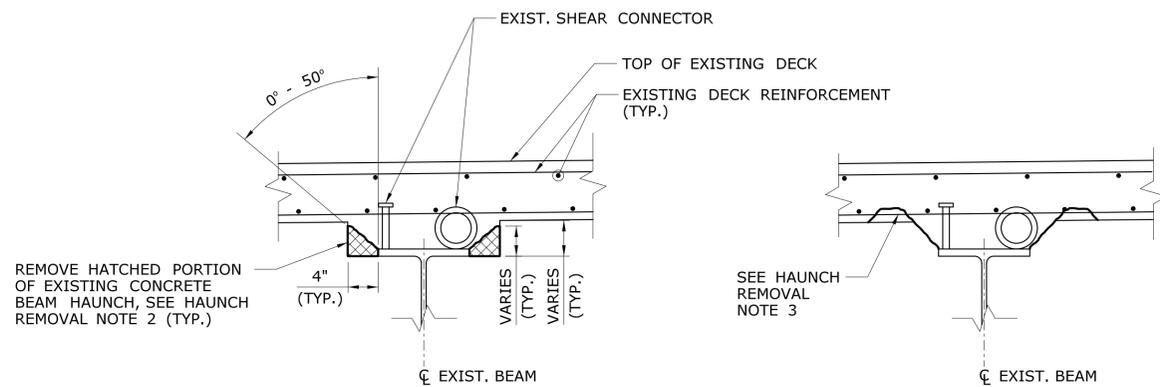
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HAUNCH REMOVAL NOTES

1. THE REMOVAL OF THE PORTION OF CONCRETE HAUNCH SHOWN SHALL BE PAID UNDER THE ITEM "CONCRETE HAUNCH REMOVAL", SEE SPECIAL PROVISIONS.
2. THE HAUNCH REMOVAL DETAIL AT INACCESSIBLE LOCATIONS IS TO BE USED ONLY IN THOSE AREAS HAVING INSUFFICIENT CLEARANCE FOR SAW-CUTTING EQUIPMENT SUCH AS ABOVE SOME DIAPHRAGMS AS ORDERED 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.

DECK UNDERSIDE REPAIR PROCEDURE

1. REMOVE LEFT-IN-PLACE WOOD FORM BY MECHANICAL MEANS TO INSPECT / ACCESS THE DECK UNDERSIDE. THE REMOVAL OF LEFT-IN-PLACE WOOD FORMS SHALL BE PAID UNDER THE ITEM "REMOVE STAY-IN-PLACE FORM", SEE SPECIAL PROVISIONS.
2. IF CONCRETE THAT WAS PREVIOUSLY COVERED WITH LEFT-IN-PLACE WOOD FORM IS DETERIORATED THEN REMOVE THE CONCRETE TO SOUND CONCRETE TO THE LIMITS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
3. IF THE CONCRETE DECK IS NOT COVERED BY LEFT-IN-PLACE WOOD FORM, THEN REMOVE DETERIORATED CONCRETE TO SOUND CONCRETE TO THE LIMITS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
4. PRESERVE EXPOSED REINFORCING STEEL, IF ANY.
5. CLEAN THE SOUND CONCRETE SURFACE AREA AND EXPOSED REINFORCING STEEL OF ALL LOOSE OR POWDER-LIKE RUST, OIL, DUST, DIRT, LOOSE PARTICLES, AND OTHER BOND INHIBITING MATTER BY AN APPROVED METHOD.
6. COAT THE EXPOSED REINFORCING STEEL WITH EPOXY RESIN.
7. DECK UNDERSIDE REPAIRS (SPALLS, SPALLS WITH EXPOSED REINFORCING, HOLLOW AREAS) SHALL BE REPAIRED IN ACCORDANCE WITH "DECK UNDERSIDE REPAIR DETAIL" AND PAID UNDER THE ITEM "CLEAN AND COAT EXPOSED REINFORCING STEEL", SEE SPECIAL PROVISIONS.
8. AT LOCATIONS WHERE SPALLS OR DELAMINATED CONCRETE ON THE UNDERSIDE OF DECK ARE DEEPER THAN HALF THE SLAB THICKNESS, REMOVE THE SLAB CONCRETE FULL DEPTH AND REPAIR AS "FULL DEPTH PATCH (HIGH EARLY STRENGTH CONCRETE)". IF LESS THAN 50% OF THE DIAMETER OF ANY REINFORCEMENT BAR IS EXPOSED OR IF THE BAR HAS LESS THAN 1 FOOT IN LENGTH WITH MORE THAN 50% OF ITS DIAMETER EXPOSED, THE TYPICAL TREATMENT IS TO CLEAN AND COAT THE BAR. IF ANY BAR IS EXPOSED MORE THAN THOSE PARAMETERS, THEN THE PROPER TREATMENT IS "FULL DEPTH PATCH (HIGH EARLY STRENGTH CONCRETE)."



EXISTING CONDITION

FINAL CONDITION

NOTE: INTERIOR BEAM SHOWN, FASCIA SIMILAR.

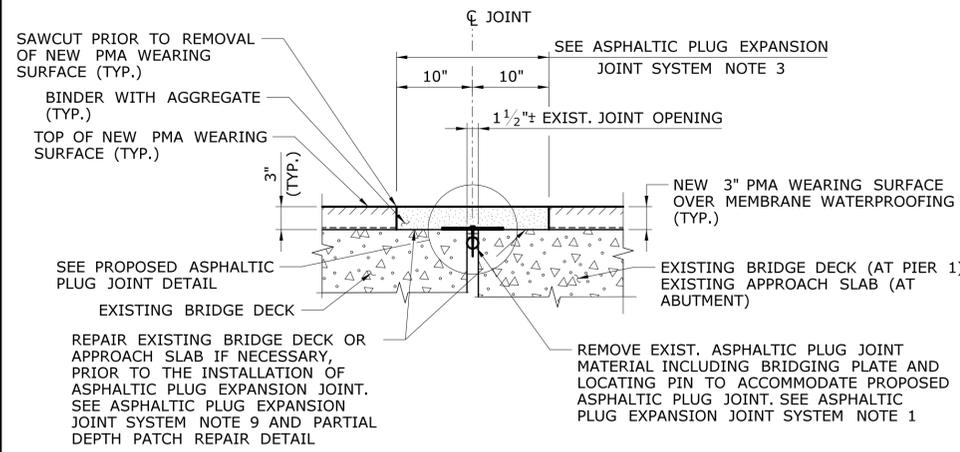
HAUNCH REMOVAL DETAIL AT INACCESSIBLE LOCATIONS

SCALE: 1" = 1'-0"

REFERENCES

1. SEE DWG. NO. S-30 TO S-32 FOR LOCATION OF UNDERSIDE DECK DETERIORATION.

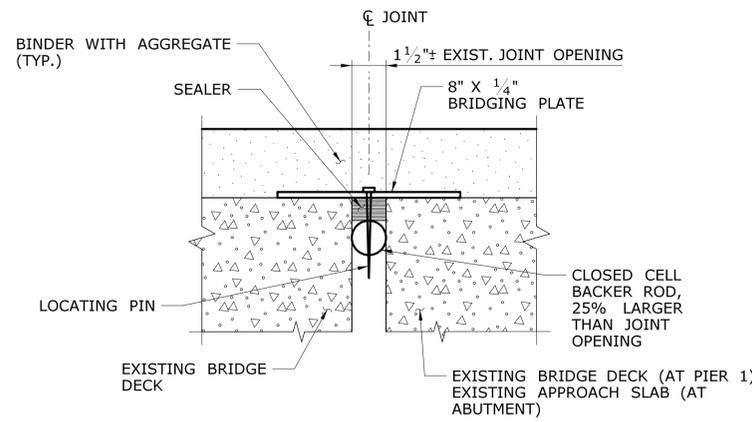
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 6/30/2016	DESIGNER/DRAFTER: A.HIPIUS/S.ERDAS	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p> <p>Filename: ...\\SB_MSH_Br03093_092_0668_DECKRPRD-02.dgn</p>	<p>T. STRNAD</p> <p>SCALE AS NOTED</p>	<p>Dewberry</p> <p>59 Elm Street, Suite 101 New Haven, CT 06510-2047</p>	PROJECT TITLE:	TOWN:	PROJECT NO.	
					REHABILITATION OF BRIDGE NO. 03093 I-91 OVER FRONT STREET AND QUINNIPIAC RIVER				NEW HAVEN	92-668		
									DRAWING TITLE:	DRAWING NO.		
								DECK REPAIR DETAILS - 2	S-34			
								SHEET NO.	04.34			



PROPOSED ASPHALTIC PLUG EXPANSION JOINT SYSTEM DETAIL

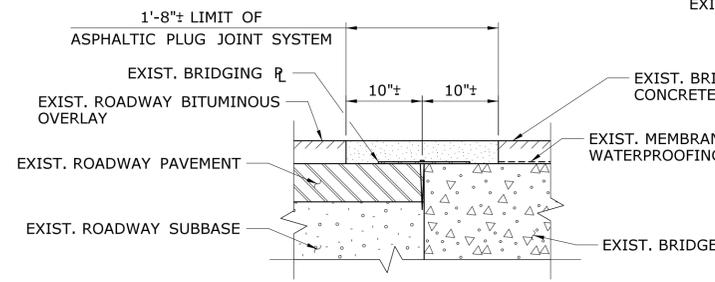
SCALE: 1" = 1'-0"

- NOTES: 1. DETAIL APPLIES AT BOTH ABUTMENTS AND PIER 1. THERE IS NO DECK JOINT AT PIERS 2 & 3. SEE PROPOSED PREFORMED JOINT SEAL DETAIL FOR HANGER PIN AND HINGE PIN LOCATION.
2. THE DECK JOINT THERMAL MOVEMENT RANGE IS APPROXIMATELY 1 1/8".
3. NO BRIDGING PLATE SHALL BE USED AT ABUTMENT BRIDGE DECK ENDS WHERE APPROACH SLAB IS NOT PRESENT.

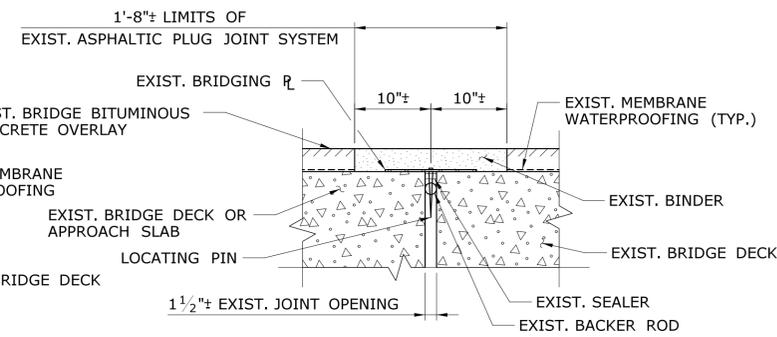


PROPOSED ASPHALTIC PLUG JOINT DETAIL

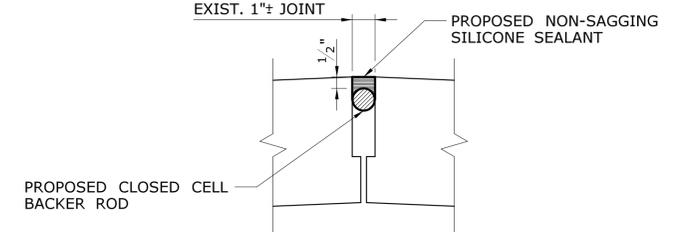
SCALE: 3" = 1'-0"



ABUTMENT BEYOND LIMITS OF APPROACH SLAB



PIER 1 OR ABUTMENT WITH APPROACH SLAB

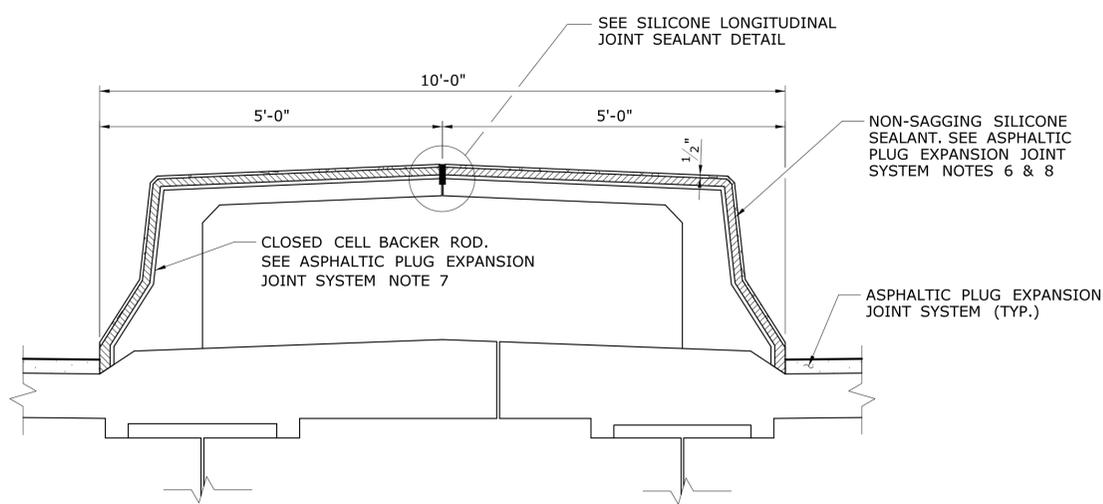


SILICONE LONGITUDINAL JOINT SEALANT DETAIL

SCALE: 3" = 1'-0"

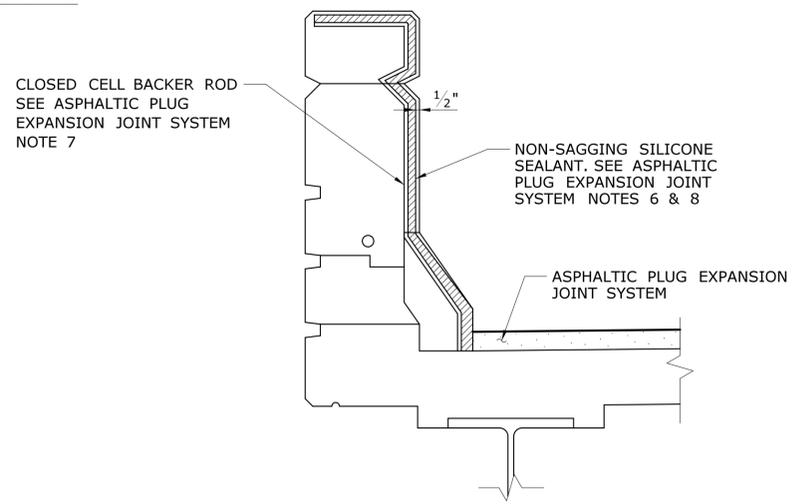
EXISTING ASPHALTIC PLUG JOINT DETAIL

SCALE: 1" = 1'-0"



PROPOSED ASPHALTIC PLUG JOINT TREATMENT DETAIL AT MEDIAN PARAPET

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



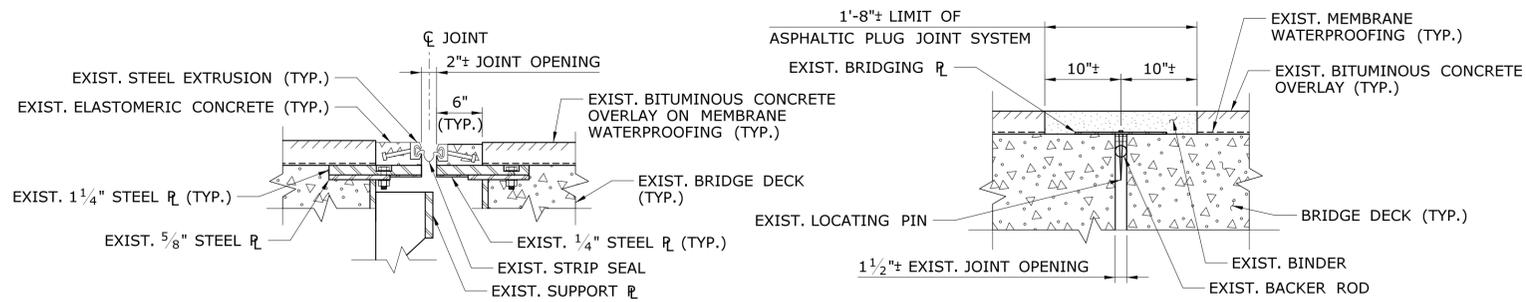
PROPOSED ASPHALTIC PLUG JOINT TREATMENT DETAIL AT FASCIA PARAPETS

SCALE: 1" = 1'-0"

REFERENCE

1. SEE DWG. NO. S-33 FOR PARTIAL DEPTH PATCH REPAIR DETAILS.

DESIGNER/DRAFTER: A. HIPIUS/S. ERDAS	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p>	<p>Dewberry 59 Elm Street, Suite 101 New Haven, CT 06510-2047</p>	<p>PROJECT TITLE: REHABILITATION OF BRIDGE NO. 03093 I-91 OVER FRONT STREET AND QUINNIPIAC RIVER</p>	TOWN: NEW HAVEN	PROJECT NO. 92-668
CHECKED BY: T. STRNAD				DRAWING TITLE: ASPHALTIC PLUG JOINT DETAILS	DRAWING NO. S-35
SCALE AS NOTED	Plotted Date: 6/30/2016	Filename: ...\\SB_MSH_Br03093_092_0668_ASPJT.dgn		SHEET NO. 04.35	

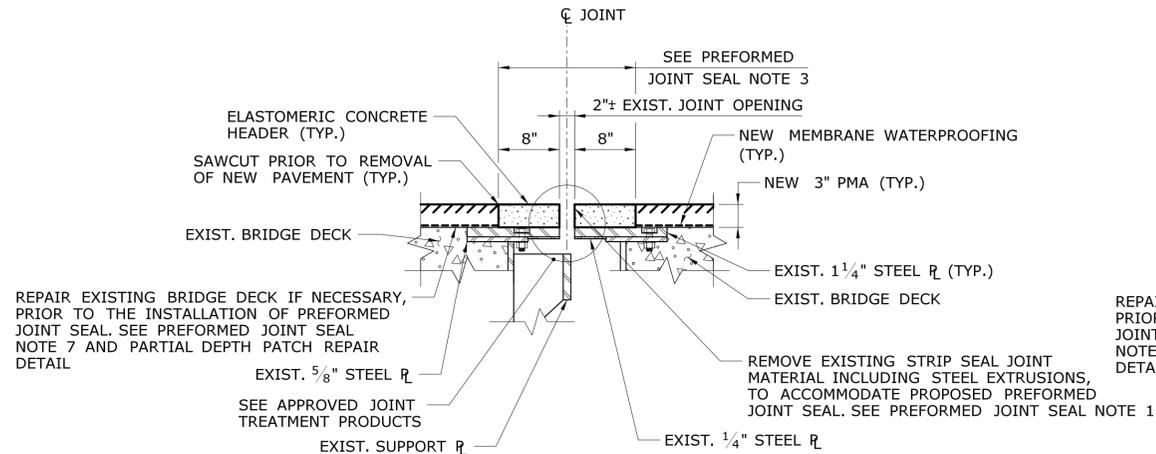


STRIP SEAL AT HANGER PIN

ASPHALTIC PLUG JOINT AT HINGE PIN

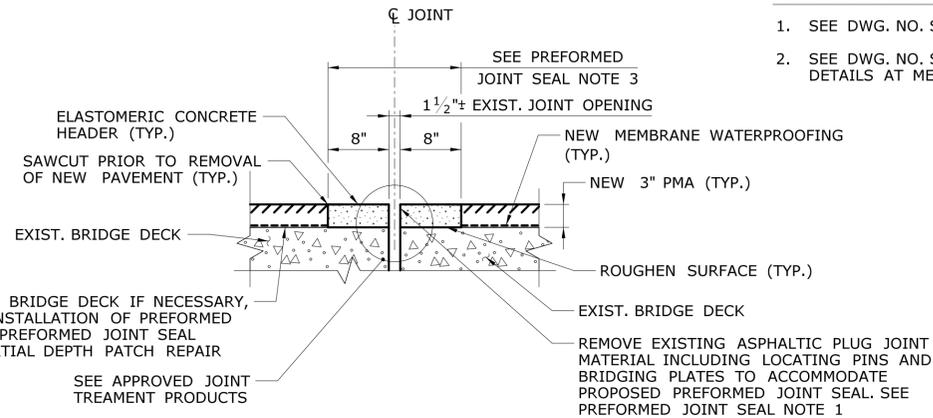
EXISTING DECK JOINT DETAIL AT PIN LOCATIONS

SCALE: 1" = 1'-0"



PROPOSED JOINT AT HANGER PIN

SCALE: 1" = 1'-0"

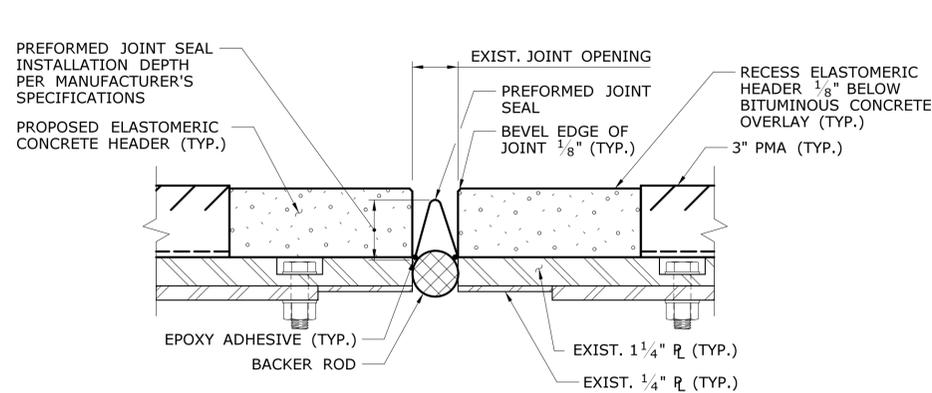


PROPOSED JOINT AT HINGE PIN

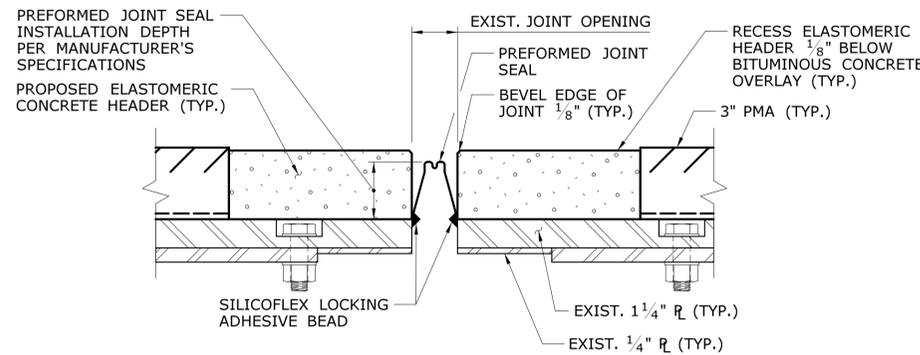
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PROPOSED PREFORMED JOINT SEAL DETAIL AT PIN LOCATIONS

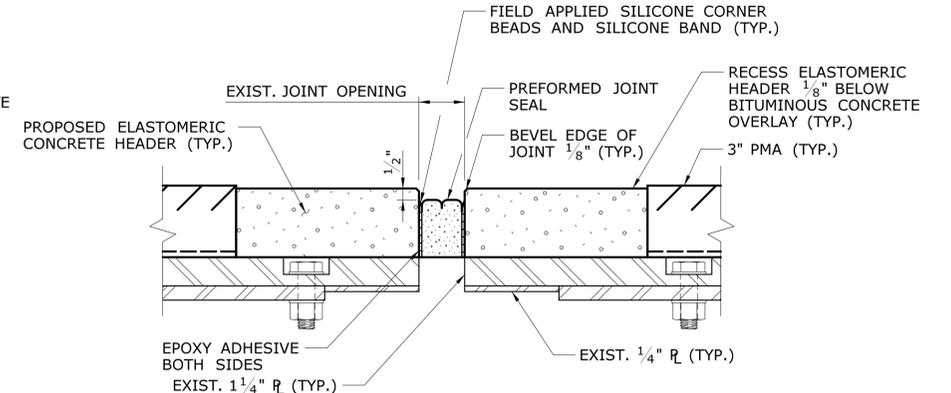
SCALE: 1" = 1'-0"



V-SEAL



SILICOFLEX



EMSEAL BEJS

APPROVED JOINT TREATMENT PRODUCTS

SCALE: 3" = 1'-0"

NOTE: PREFORMED JOINT SEAL AT HANGER PIN SHOWN. JOINT AT HINGE PIN SIMILAR.

PREFORMED JOINT SEAL NOTES

1. THE REMOVAL OF ALL EXISTING JOINT SYSTEM MATERIALS INCLUDING EXISTING SLIDING PLATE AT MEDIAN AND PARAPET JOINTS TO BE INCLUDED FOR PAYMENT UNDER THE ITEM "PREFORMED JOINT SEAL", SEE SPECIAL PROVISIONS.
2. INSTALLATION OF MEMBRANE WATERPROOFING TO BE PAID UNDER THE ITEM, "MEMBRANE WATERPROOFING (COLD LIQUID ELASTOMERIC)".
3. SAW-CUTTING AND REMOVAL OF NEW PMA PAVEMENT AND MEMBRANE WATERPROOFING FOR PREFORMED JOINT SEAL INSTALLATION TO BE INCLUDED FOR PAYMENT UNDER THE ITEM, "PREFORMED JOINT SEAL".
4. THE ELASTOMERIC CONCRETE HEADER AND PREFORMED SILICONE JOINT SEAL SHALL BE INSTALLED AFTER THE PAVEMENT HAS BEEN PLACED ON THE BRIDGE AND THE DESIGNATED AREA HAS BEEN SAW CUT AND REMOVED. CONSTRUCTION OF ELASTOMERIC CONCRETE HEADER TO BE PAID UNDER ITEM "ELASTOMERIC CONCRETE HEADER".
5. THE ELASTOMERIC CONCRETE HEADER SHALL BE BEVELED $\frac{1}{8}$ " ALONG THE OPENING OF THE JOINT AND SHALL BE RECESSED $\frac{1}{8}$ " BELOW THE BITUMINOUS CONCRETE OVERLAY.
6. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE ACTUAL GAP WIDTH NECESSARY TO ACCOMMODATE THE PRODUCT OF CHOICE.
7. THE COST OF REPAIRING EXISTING BRIDGE DECK SLAB WITHIN THE LIMITS OF PROPOSED JOINT SHALL BE PAID UNDER THE ITEM "PARTIAL DEPTH PATCH", SEE SPECIAL PROVISIONS.

REFERENCES

1. SEE DWG. NO. S-33 FOR PARTIAL DEPTH PATCH REPAIR DETAILS.
2. SEE DWG. NO. S-37 FOR PROPOSED PREFORMED JOINT SEAL TREATMENT DETAILS AT MEDIAN & FACIA PARAPETS.

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DESIGNER/DRAFTER:
A.HIPIUS/S.ERDAS
CHECKED BY:
T. STRNAD
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Signature/Block: [Signature]

File name: ... \SB_MSH_Br03093_092_0668_JTD-01.dgn

PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 03093 I-91 OVER FRONT STREET AND QUINNIPIAC RIVER

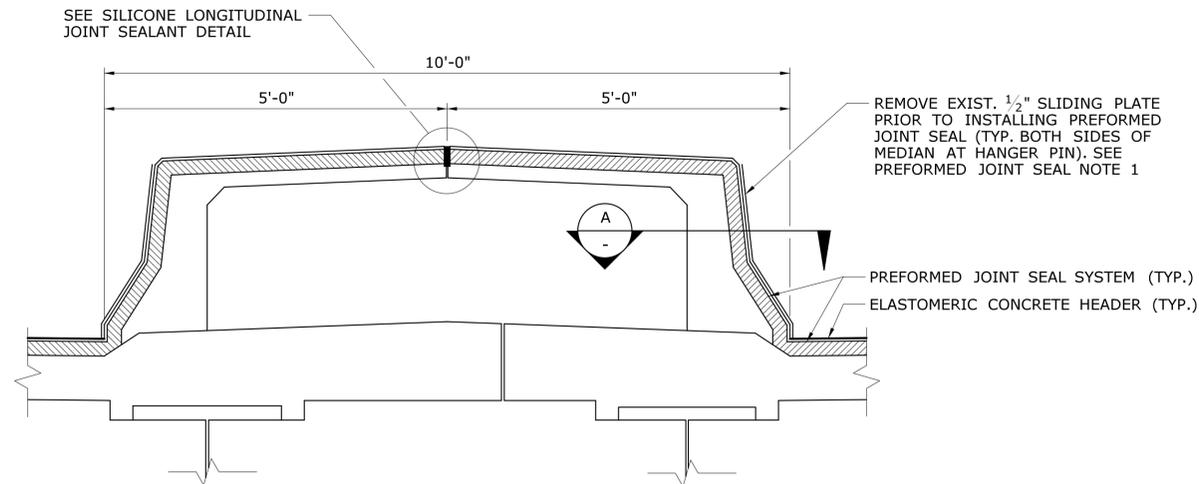
TOWN:
NEW HAVEN

DRAWING TITLE:
PREFORMED JOINT SEAL DETAILS - 1

PROJECT NO.
92-668

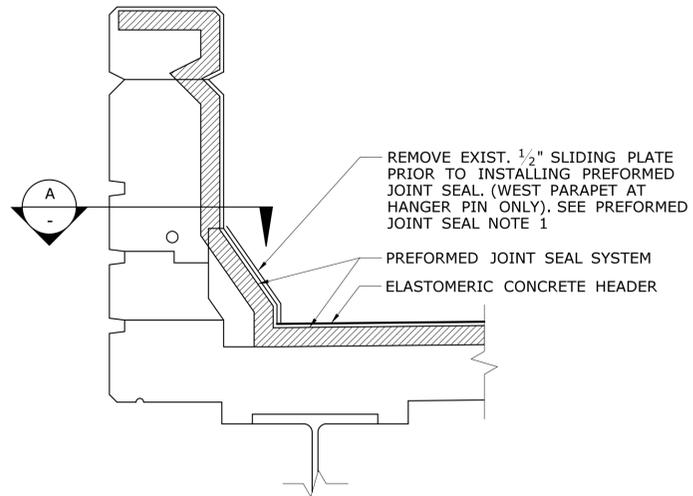
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S-36

SHEET NO.
04.36



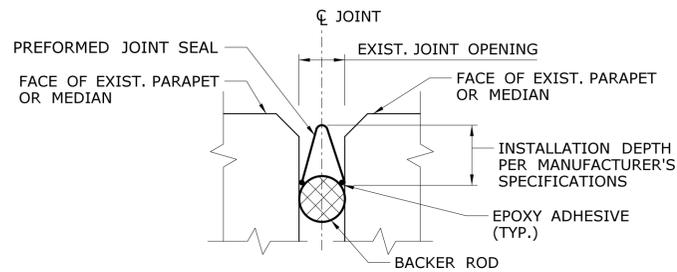
PROPOSED PREFORMED JOINT TREATMENT DETAIL AT MEDIAN PARAPET

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

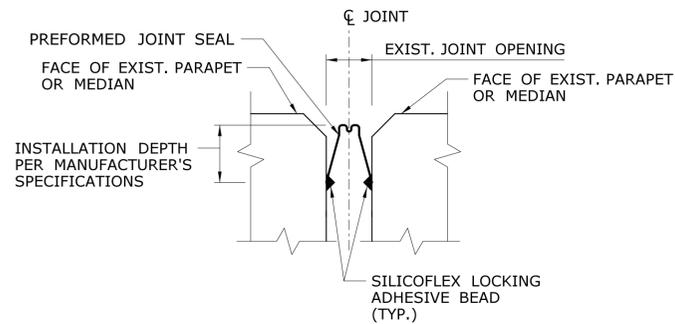


PROPOSED PREFORMED JOINT TREATMENT DETAIL AT FASCIA AT PARAPETS

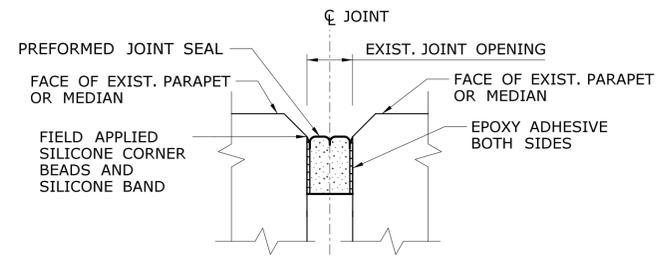
SCALE: 1" = 1'-0"



V-SEAL



SILICOFLEX



EMSEAL BEJS

APPROVED JOINT TREATMENT PRODUCTS



REFERENCES

- SEE DWG. NO. S-35 FOR SILICONE LONGITUDINAL JOINT SEALANT DETAIL.
- SEE DWG. NO. S-36 FOR PREFORMED JOINT SEAL NOTES.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
-	-	-	-
-	-	-	-
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Plotted Date: 6/30/2016

DESIGNER/DRAFTER:
A.HIPIUS/S.ERDAS

CHECKED BY:
T. STRNAD

SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ..._SB_MSH_Br03093_092_0668_JTD-02.dgn

SIGNATURE/BLOCK:

Dewberry

59 Elm Street, Suite 101
New Haven, CT 06510-2047

PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 03093 I-91 OVER FRONT STREET AND QUINNIPIAC RIVER

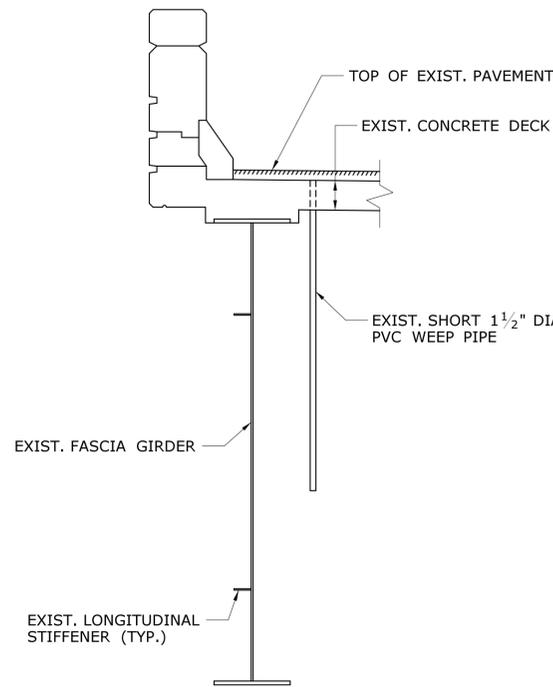
TOWN:
NEW HAVEN

DRAWING TITLE:
PREFORMED JOINT SEAL DETAILS - 2

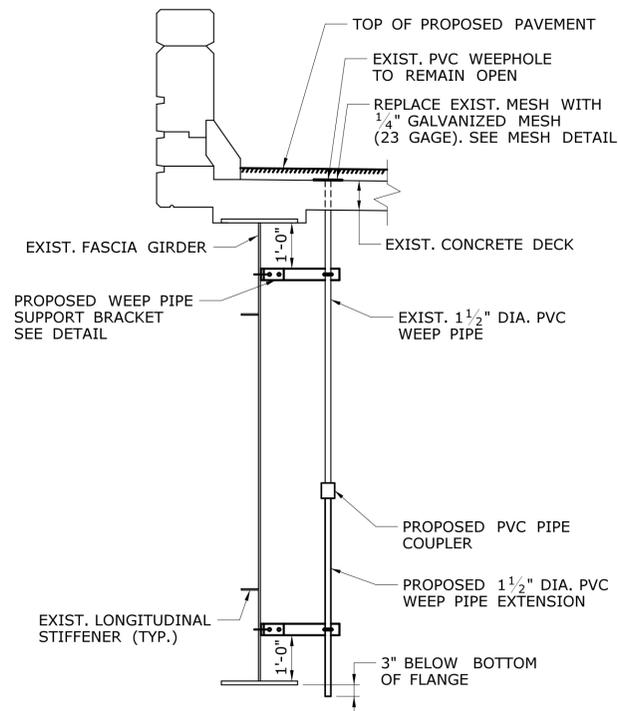
PROJECT NO.
92-668

DRAWING NO.
S-37

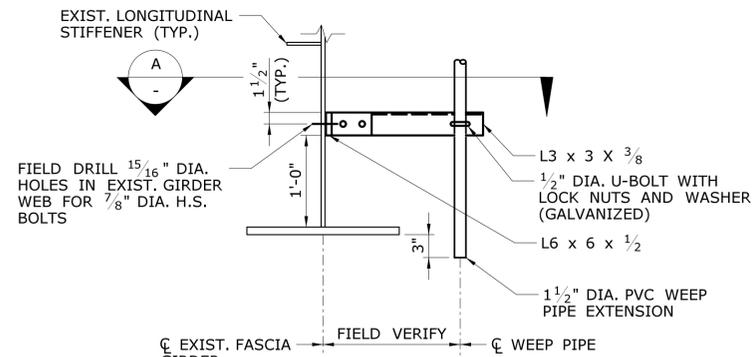
SHEET NO.
04.37



EXISTING CONDITION

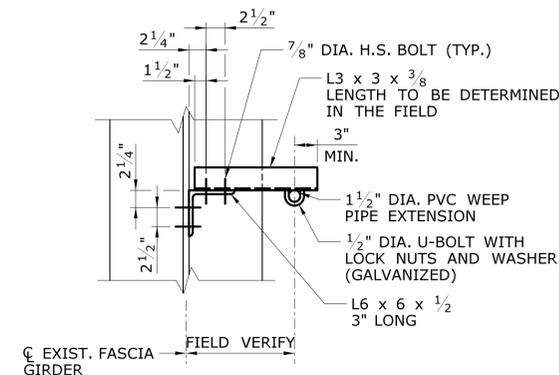


PROPOSED CONDITION

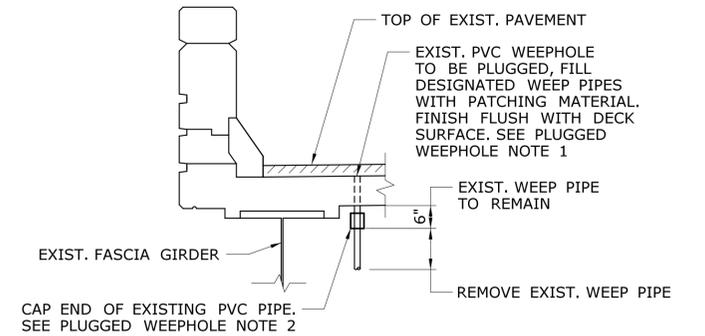


WEEP PIPE SUPPORT BRACKET - DETAIL N

SCALE: 1" = 1'-0"



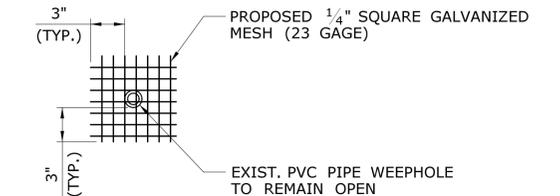
A SECTION
SCALE: 1" = 1'-0"



PLUGGED WEEPHOLE DETAIL

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

NOTE: FASCIA GIRDER G1 OR G18 SHOWN. MEDIAN GIRDER G9 & G10 SIMILAR.



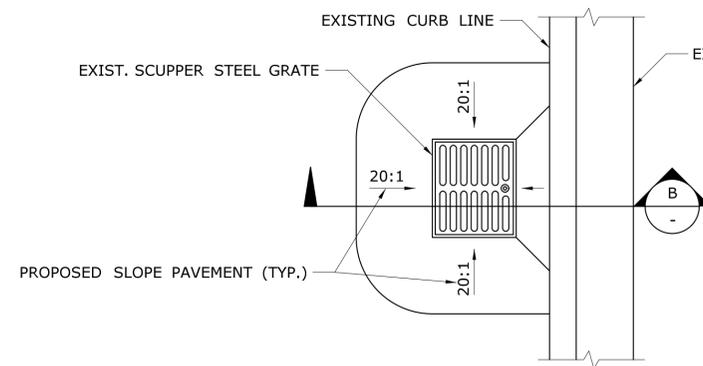
MESH DETAIL

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

WEEP PIPE REPAIR DETAIL

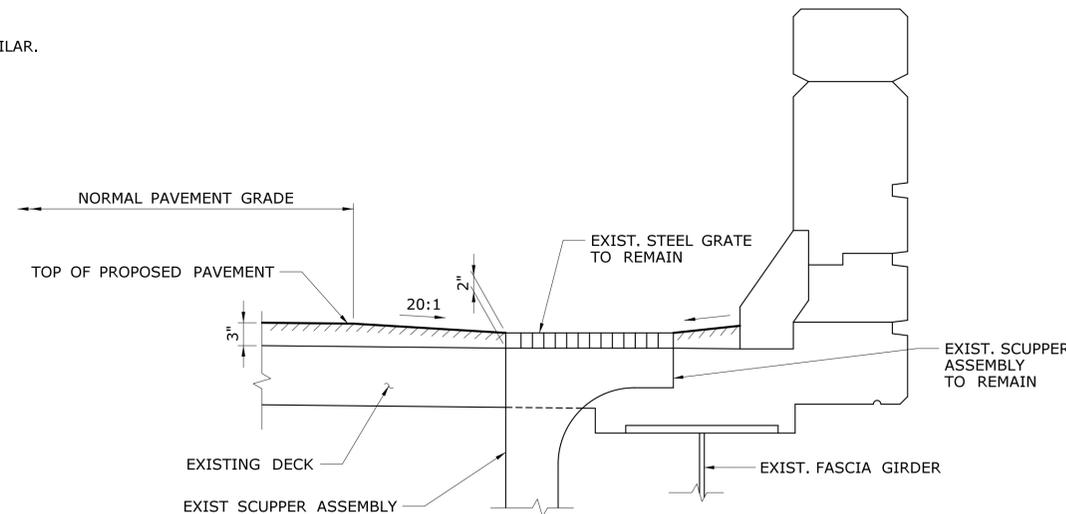
SCALE: 1/2" = 1'-0"

NOTE: FASCIA GIRDER G1 OR G18 SHOWN. MEDIAN GIRDER G9 & G10 SIMILAR.



PLAN

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



B SECTION

SCALE: 1" = 1'-0"

PROPOSED PAVEMENT DETAIL AT STEEL SCUPPER GRATE

NOTE: FASCIA GIRDER G1 OR G18 SHOWN. MEDIAN GIRDER G9 & G10 SIMILAR.

PLUGGED WEEPHOLE NOTES

1. ONLY SPECIFIED WEEPHOLES SHALL REMAIN OPEN. ALL OTHER WEEPHOLES SHALL BE PLUGGED WITH PATCHING MATERIAL, TO BE PAID FOR UNDER THE ITEM "PARTIAL DEPTH PATCH", SEE SPECIAL PROVISIONS.
2. END CAPS SHALL CONFORM TO THE REQUIREMENTS OF ASTM D2466 OR ASTM 02467. SOLVENT CEMENT USED FOR JOINING THE END CAP TO THE EXISTING PVC PIPE SHALL CONFORM TO ASTM 2564. THE END CAPS SHALL MATCH THE EXISTING PVC WEEP PIPE COLOR. THE COST OF FURNISHING AND INSTALLING PVC END CAPS SHALL BE PAID UNDER THE ITEM "1 1/2\"/>

WEEP PIPE REPAIR NOTES

1. THE COST OF THE PROPOSED 1 1/2\"/>
2. COST OF FURNISHING AND INSTALLING STRUCTURAL STEEL BRACKETS FOR WEEP PIPE SUPPORT INCLUDING ANGLES AND BOLTED CONNECTIONS SHALL BE PAID UNDER THE ITEM "STRUCTURAL STEEL (SITE NO. 1)", SEE SPECIAL PROVISIONS.
3. THE COST OF FURNISHING AND INSTALLING THE 1/4\"/>

REFERENCE

1. SEE DWG. NO. S-30 TO S-32 FOR APPROXIMATE LOCATIONS OF WEEPHOLES TO REMAIN OPEN AND WEEPHOLES TO BE PLUGGED.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
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-	-	-	-

DESIGNER/DRAFTER:
A.HIPIUS/S.ERDAS
CHECKED BY:
T. STRNAD
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
File name: ...\\SB_MSH_Br03093_092_0668_DRNGD.dgn

SIGNATURE/BLOCK:
Dewberry
59 Elm Street, Suite 101
New Haven, CT 06510-2047

PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 03093 I-91 OVER FRONT STREET AND QUINNIPIAC RIVER

TOWN:
NEW HAVEN
DRAWING TITLE:
DRAINAGE DETAILS

PROJECT NO.
92-668
DRAWING NO.
S-38
SHEET NO.
04.38