
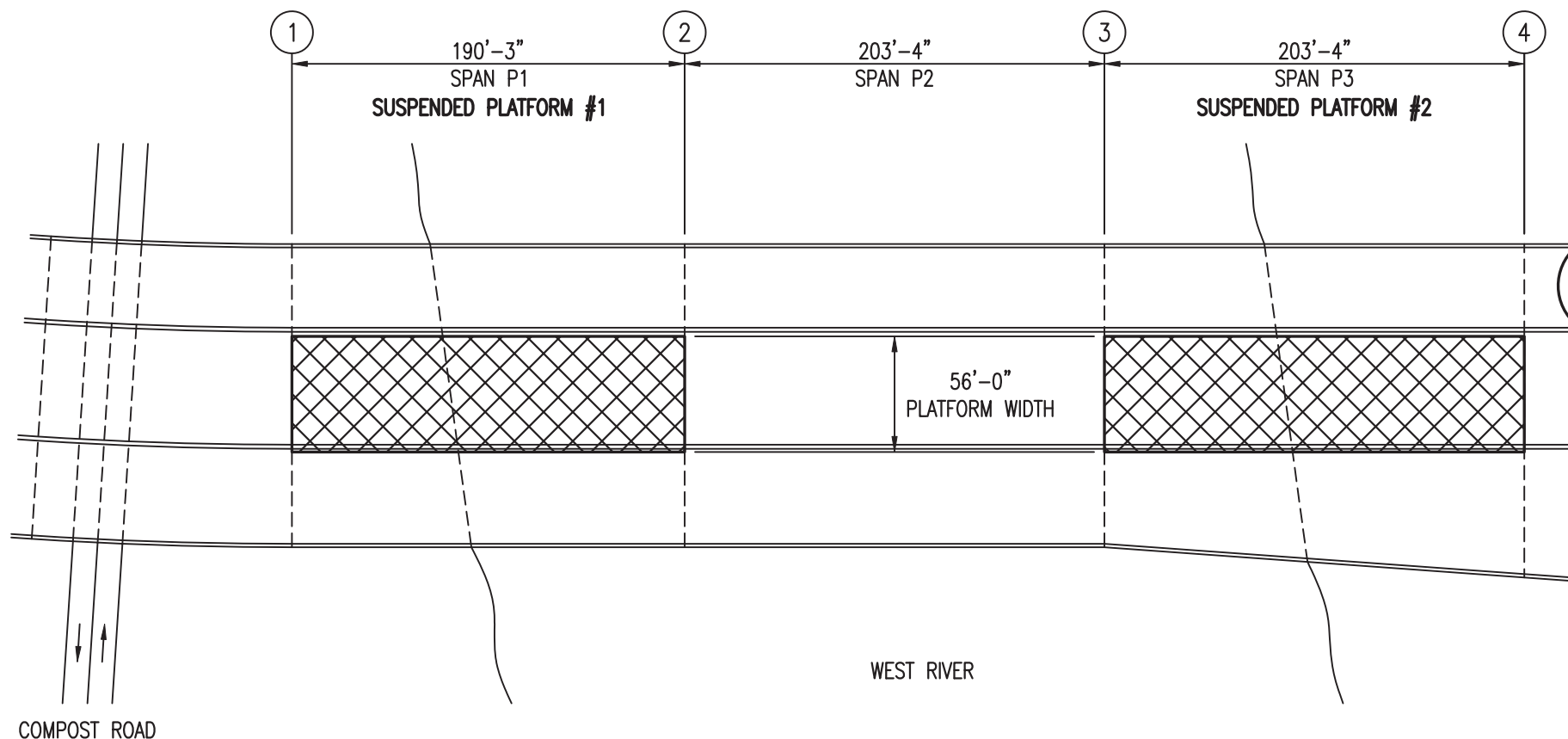
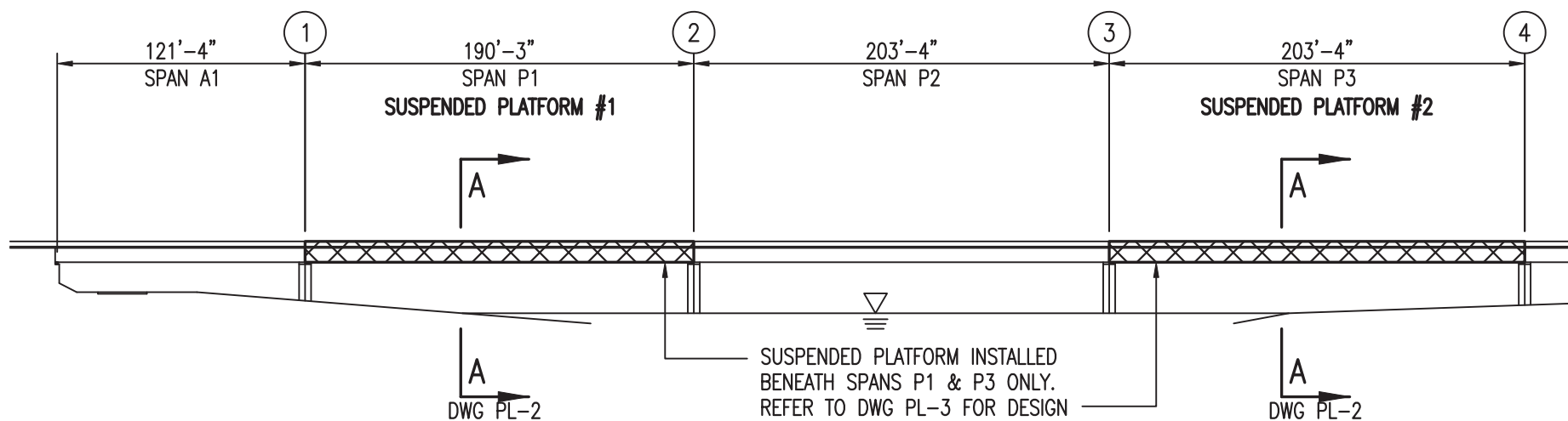


WSP USA has reviewed the submittal and returns it with the status "Reviewed as Noted". Resubmission is not required unless significant changes result from the review comments.

	APPROVED		REVISE AND RESUBMIT
	APPROVED AS NOTED RESUBMISSION NOT REQUIRED		NOT APPROVED (SEE ACCOMPANYING LETTER)
	REVIEWED	X	REVIEWED AS NOTED
<p>REVIEW IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR CONFORMANCE TO ALL REQUIREMENTS OF THE PLANS AND SPECIFICATIONS, INCLUDING, BUT NOT LIMITED TO: DIMENSIONS WHICH SHALL BE CONFIRMED AND CORRELATED AT THE JOB SITE; FOR INFORMATION THAT PERTAINS SOLELY TO THE FABRICATION PROCESS OR TO THE MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES OF CONSTRUCTION; AND FOR COORDINATION OF THE WORK OF ALL TRADES.</p> <p style="text-align: center;"></p> <p>BY <u>B.Maljanian</u> DATE <u>07/24/2017</u></p>			



PLAN VIEW
SCALE: 1" = 80'-0"

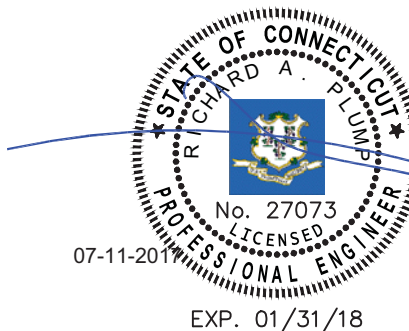


ELEVATION
SCALE: 1" = 80'-0"

SUSPENDED PLATFORM SYSTEM DESIGN

1. THE SUSPENDED PLATFORM SYSTEMS BEING PROPOSED BY MIDDLESEX CORPORATION FOR USE ON THE ROUTE I-95 BRIDGE WILL CONSIST OF CORRUGATED STEEL DECKING SUPPORTED BY A SERIES OF LONGITUDINAL CABLES RIGGED BENEATH SPANS P1 & P3. REFER TO THE PLAN VIEW ON DWG PL-3 FOR THE PROPOSED PLATFORM SYSTEM INSTALLATIONS.
2. THE SUSPENDED PLATFORMS HAVE BEEN DESIGNED TO SUPPORT (3) WORKERS ALONG EACH LONGITUDINAL PLATFORM CABLE, BETWEEN EACH PAIR OF VERTICAL HANGERS (DIAPHRAGMS). WORK TO BE PERFORMED ON THE SUSPENDED PLATFORMS SHALL INCLUDE INSTALLING DIAPHRAGMS, FORMING & STRIPPING CONCRETE, AND TOUCH-UP PAINTING. WORKERS WILL USE SMALL TOOLS AND MATERIALS, AND NO HEAVY EQUIPMENT OR MATERIALS (CONCRETE/STEEL) SHALL BE STORED ON THE PLATFORM.
3. THE MAJORITY OF THE PLATFORM SYSTEM COMPONENTS DEPICTED ON THESE DRAWINGS ARE PRE-PURCHASED ITEMS PROVIDED BY CORRUGATED PLATFORMS, INC. AND SAFESPAN, INC. ALL COMPONENT DETAILS ARE FOR ILLUSTRATION PURPOSES ONLY, AND DIMENSIONS INCLUDED ON THESE DWGS MAY DIFFER SLIGHTLY FROM THE ACTUAL PRE-PURCHASED SYSTEM ITEM. THE DESIGN, FABRICATION & RECOMMENDED INSTALLATION REQUIREMENTS OF EACH SYSTEM COMPONENT ARE THE FULL RESPONSIBILITY OF CORRUGATED PLATFORMS, INC. AND SAFESPAN, INC.
4. A MINIMUM OF (12) LONGITUDINAL PLATFORM CABLES WILL BE RIGGED AT 5'-0" UNIFORM SPACINGS ACROSS THE WIDTH OF THE BRIDGE, BENEATH THE CENTER PORTIONS OF SPANS P1 & P3. THE PLATFORM CABLES WILL BE 5/8" DIA. IWRC-XIP STEEL CABLES WITH A NOMINAL STRENGTH OF 20.60 TONS. REFER TO THE CABLE SCHEDULE ON DWG PL-3 FOR THE PLATFORM CABLE INSTALLATION REQUIREMENTS FOR EACH SPAN.
5. THE LONGITUDINAL CABLES WILL BE SECURED AT EACH PIER BY EITHER; RIGGING HORIZONTALLY AROUND THE GIRDER BEARINGS AND CONCRETE PEDESTALS, AND/OR; RIGGING VERTICALLY AROUND THE CONCRETE PIER CAPS WITH CABLES & SHACKLES. ALL CABLES WILL BE PROTECTED FROM DAMAGE USING SECTIONS OF RUBBER BLAST HOSE INSTALLED AT EACH LOCATION WHERE CABLES COME IN CONTACT WITH THE BRIDGE (PIER CAPS, BEARINGS, DIAPHRAGMS, ETC).
6. THE LONGITUDINAL PLATFORM CABLES WILL BE INSTALLED WITH A MAXIMUM PRE-TENSION OF 1,000 LBS PRIOR TO INSTALLING THE VERTICAL HANGERS AND DECKING PANELS.
7. EACH LONGITUDINAL PLATFORM CABLE WILL BE SUPPORTED VERTICALLY AT EVERY DIAPHRAGM INTERVAL (EITHER TO THE DIAPHRAGMS AND/OR BOTTOM FLANGES OF THE GIRDERS) USING EITHER 1/2" DIA IWRC-XIP CABLES WITH A NOMINAL STRENGTH OF 13.30 TONS AND/OR 5/16" DIA SPECTRUM-7 STEEL ALLOY CHAINS WITH AN ULTIMATE CAPACITY OF 9.40 TONS.

(CONTINUED ON DRAWING PL-2)

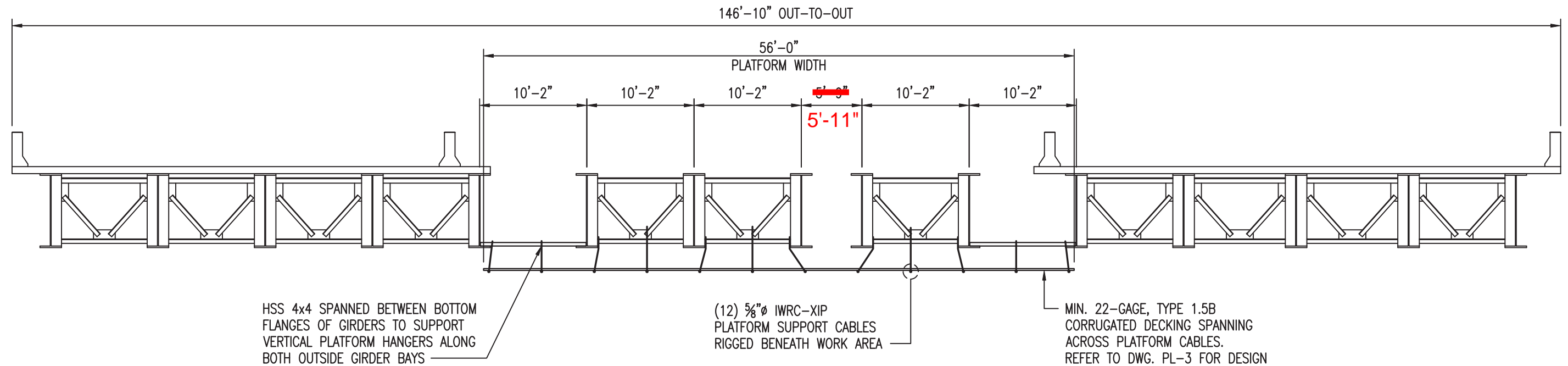


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THE MIDDLESEX CORPORATION			
CONNECTICUT DEPARTMENT OF TRANSPORTATION CONTRACT No. 92-522 ROUTE I-95 over WEST RIVER SUSPENDED PLATFORM INSTALLATION PLAN PLAN VIEW & ELEVATION			
CDI JOB NO. 17-11	DATE 2-14-17	DWG. NO. PL-1	1



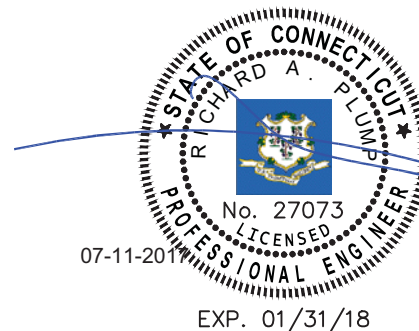
SECTION A-A
SCALE: 1" = 10'-0"

SUSPENDED PLATFORM SYSTEM DESIGN (CONT. FROM DWG PL-1)

8. DUE TO THE ABSENCE OF DIAPHRAGMS BETWEEN THE NEW GIRDERS AND ADJACENT EXISTING GIRDERS, THE VERTICAL HANGERS WITHIN THOSE OUTER GIRDER BAYS WILL BE INSTALLED USING EITHER SECTIONS OF 4x4 TUBE SPANNED BETWEEN THE BOTTOM FLANGES OF THE GIRDERS AND/OR CABLES RIGGED BETWEEN THE BOTTOM FLANGES OF THE GIRDERS TO WHICH THE VERTICAL HANGERS WILL BE ATTACHED. REFER TO THE DETAILS ON DWG PL-5 FOR ILLUSTRATION OF THESE REQUIRED INSTALLATIONS. 1
9. SHACKLES FOR THE MAIN LONGITUDINAL CABLES WILL BE 3/4" DIA. WITH AN ULTIMATE LOAD CAPACITY OF 28.5 TONS. SHACKLES FOR THE VERTICAL HANGERS (IF UTILIZED) WILL BE 1/2" DIA. WITH AN ULTIMATE LOAD CAPACITY OF 12 TONS. ALL SHACKLES, AS/WHERE IDENTIFIED ON THE PLANS, HAVE BEEN SIZED TO PROVIDE THE 2.0 SAFETY FACTOR REQUIRED BY AASHTO.
10. THE PLATFORMS WILL BE CONSTRUCTED OF MINIMUM 22-GAGE, TYPE 1.5-B CORRUGATED STEEL DECKING, AS MANUFACTURED BY VULCRAFT (OR EQUAL). THE CORRUGATED STEEL SHEETS HAVE A MINIMUM D+L LIVE LOAD RATING IN EXCESS OF 40 PSF, WHICH IS BASED ON; (A) THE MAXIMUM SUPPORT CABLE SPACING OF 5'-0"; (B) THE CALCULATED LIVE LOAD CAPACITY OF 169 PSF FOR INSTALLATION ACROSS (3) SUPPORT CABLES (DOUBLE SPAN), AND; (C) THE 4.0 SAFETY FACTOR REQUIRED BY OSHA.

11. THE CORRUGATED STEEL PANELS MAY INCLUDE CUT-OUTS AT 5'-0" INTERVALS ALONG (1) OR BOTH SIDES OF EACH SHEET, WHICH ALLOW FOR THE ATTACHMENT OF THE DECKING PANELS TO THE LONGITUDINAL SUPPORT CABLES. ATTACHMENT OF THE STEEL PANELS TO THE CABLES WILL BE MADE USING DECKING ATTACHMENT CLIPS PROVIDED BY SAFE-SPAN, INC. THE DECKING ATTACHMENT CLIPS WILL PROVIDE BOTH A SECURE METHOD OF ATTACHING THE CORRUGATED STEEL SHEETS TO THE SUPPORT CABLES, AS WELL AS PROVIDING A CONNECTION POINT FOR THE VERTICAL CABLE HANGERS (WHERE REQ'D).
12. ANY/ALL OPENINGS BETWEEN THE CORRUGATED DECKING PANELS (DUE TO HANGER INSTALLATIONS) AND/OR ALONG THE PIERS WILL BE SEALED USING PLYWOOD PANELS AND/OR CORRUGATED DECKING, CUT TO FIT AS REQ'D.
13. WORKER HARNESSES WITH 3/8" DIA. IWRC-XIP SAFETY TIE-OFF CABLES AND/OR WITH RETRACTABLE LANYARDS SECURED DIRECTLY TO THE BRIDGE STEEL WILL BE USED DURING ALL WORK, INCLUDING INSTALLATION & REMOVAL OF THE SUSPENDED PLATFORM SYSTEM, IN ACCORDANCE WITH OSHA REGULATIONS. THE SAFETY CABLES WILL BE RIGGED AT THE PROPER LOCATIONS SO AS TO PROVIDE 100% TIE-OFF AT ALL TIMES USING THE 6'-0" TETHER LENGTH (FINAL LOCATIONS TO BE DETERMINED BY MIDDLESEX CORPORATION BASED ON REQ'D WORK OPERATIONS).

14. THE PLATFORM SYSTEMS ARE TO BE INSPECTED DAILY (PER OSHA) TO ENSURE THE INSTALLATIONS ARE SOUND, VOID OF ANY DAMAGED OR LOOSE COMPONENTS, AND DONE SO IN ACCORDANCE WITH THESE PLATFORM INSTALLATION PLANS AND MANUFACTURER'S INSTALLATION REQUIREMENTS.
15. PLATFORM DECKS AND ALL ASSOCIATED COMPONENTS WERE DESIGNED WITH A MINIMUM 4.0 SAFETY FACTOR, AS REQUIRED BY OSHA. ALL CABLES & DIRECT ATTACHMENT COMPONENTS FOR THE PLATFORM SUPPORT STRUCTURE WERE DESIGNED TO INCLUDE THE OSHA REQUIRED 6.0 SAFETY FACTOR.
16. A LATERAL LOAD ANALYSIS OF PIER #1 (WORST-CASE) WAS PERFORMED TO DETERMINE THE EFFECTS OF THE PLATFORM CABLES DURING THE WORK OPERATIONS. SINCE THE RESISTANCE DUE TO FRICTION IMPOSED AT THE TOP OF PIER #1 BY THE DEAD WEIGHT OF THE BRIDGE STEEL IS APPROX 3.5 TIMES THAT OF THE TOTAL LATERAL LOADING DUE TO THE PLATFORM CABLES, THE PIERS ARE DEEMED ADEQUATE TO SUPPORT ALL PROPOSED PLATFORM LOADS WITHOUT ADVERSE EFFECT. 1

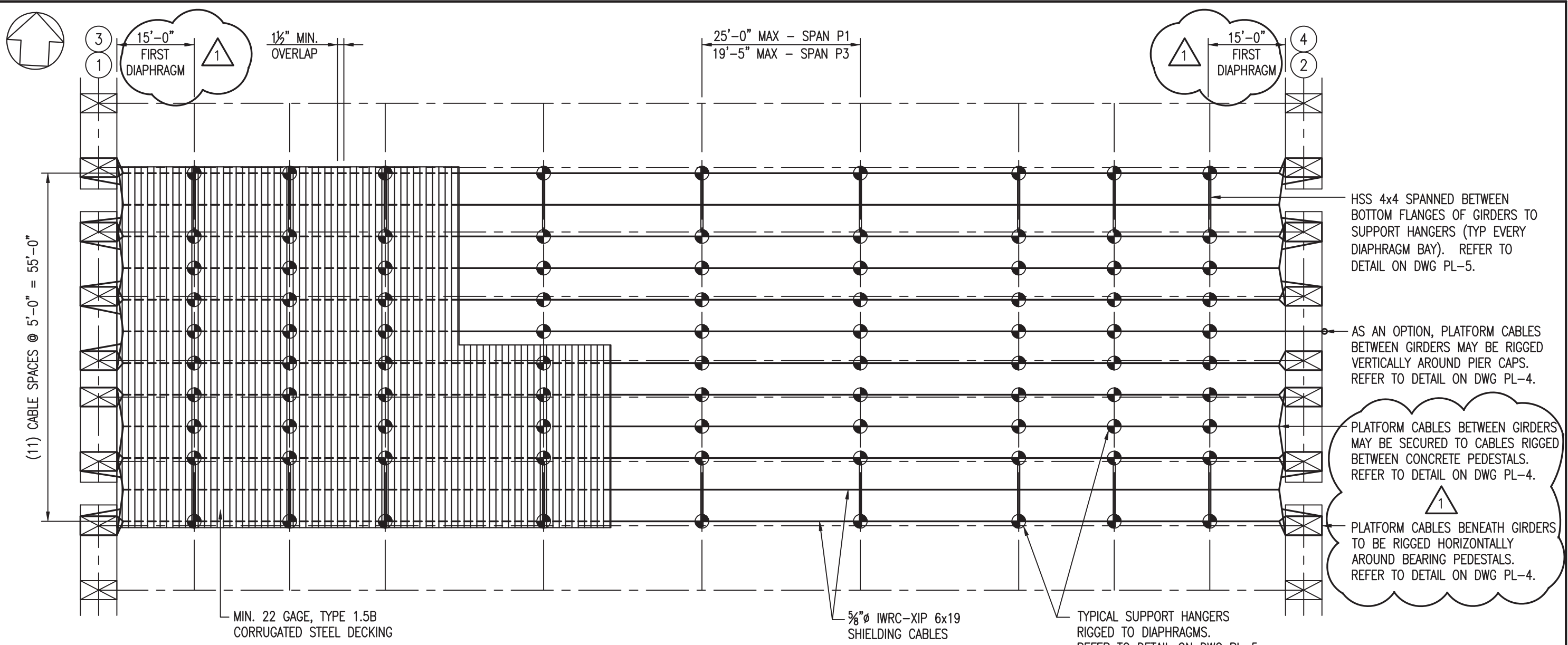


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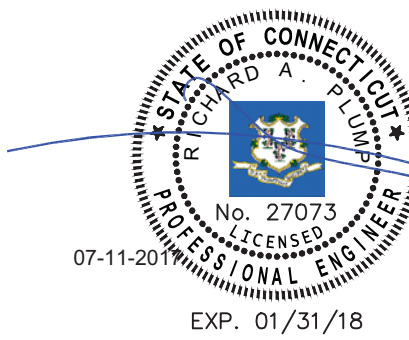
THE MIDDLESEX CORPORATION			
CONNECTICUT DEPARTMENT OF TRANSPORTATION CONTRACT No. 92-522 ROUTE I-95 over WEST RIVER SUSPENDED PLATFORM INSTALLATION PLAN TYPICAL CROSS-SECTION			
CDI JOB NO. 17-11	DATE 2-14-17	DWG. NO. PL-2	1



TYPICAL PLAN VIEW
SCALE: 1/16" = 1'-0"

SUSPENDED PLATFORM INSTALLATION												
STRUCTURE		HORIZONTAL CABLE INSTALLATIONS							DECKING CAPACITY			PLATFORM LIVE LOADING
SPAN #S	C/C GIRDERS	DIAPHRAGM SPACING	# CABLES	MAX. CABLE SPACING	HANGER SPACING	MINIMUM CABLE SAG	TENSION TONS	SAFETY FACTOR	MAX. CABLE SPACING	ULTIMATE D+L LOAD	SAFETY FACTOR	
P1	10'-2" MAX	25'-0" MAX.	12	5'-0"	25'-0" MAX.	6"	3.11	6.5	5'-0"	169 PSF	21.7	3 WORKERS PER CABLE, PER DIAPHRAGM
P3		19'-5" MAX.			19'-5" MAX.	4.5"	3.04	6.6			17.8	

NOTE:
THE ACTUAL NUMBER OF CABLES INSTALLED FOR THE PLATFORMS MAY VARY FROM THE NUMBER DEPICTED IN THE SCHEDULE, AS LONG AS THE CABLE SPACINGS DO NOT EXCEED 5'-0".

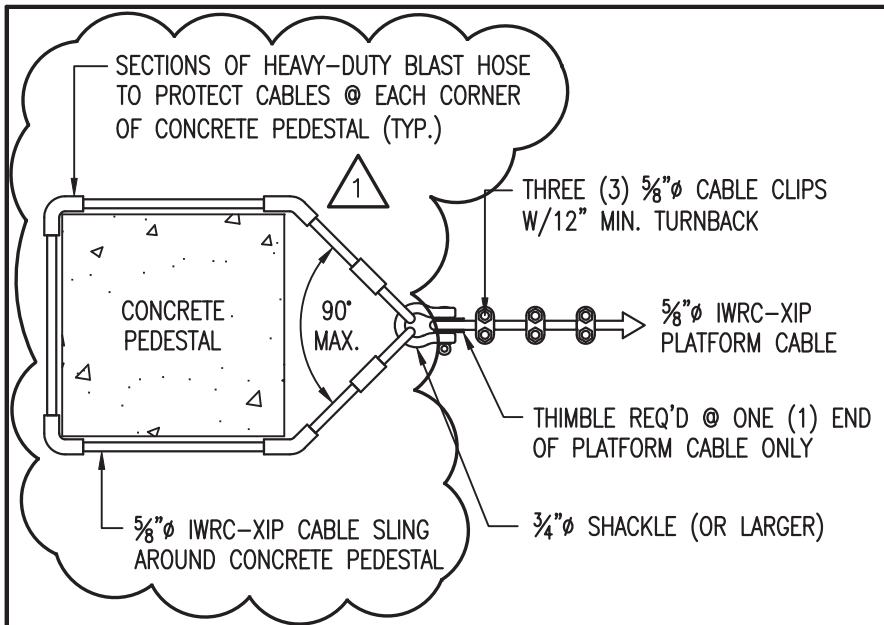


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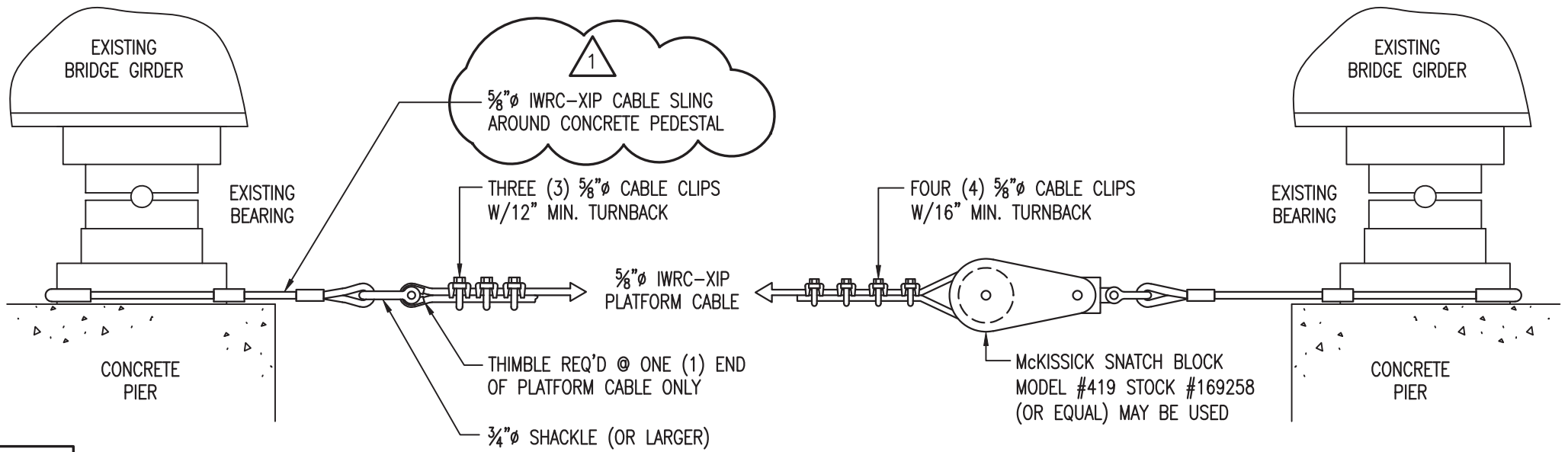
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CDI JOB NO. 17-11	DATE 2-14-17	DWG. NO. PL-3	1



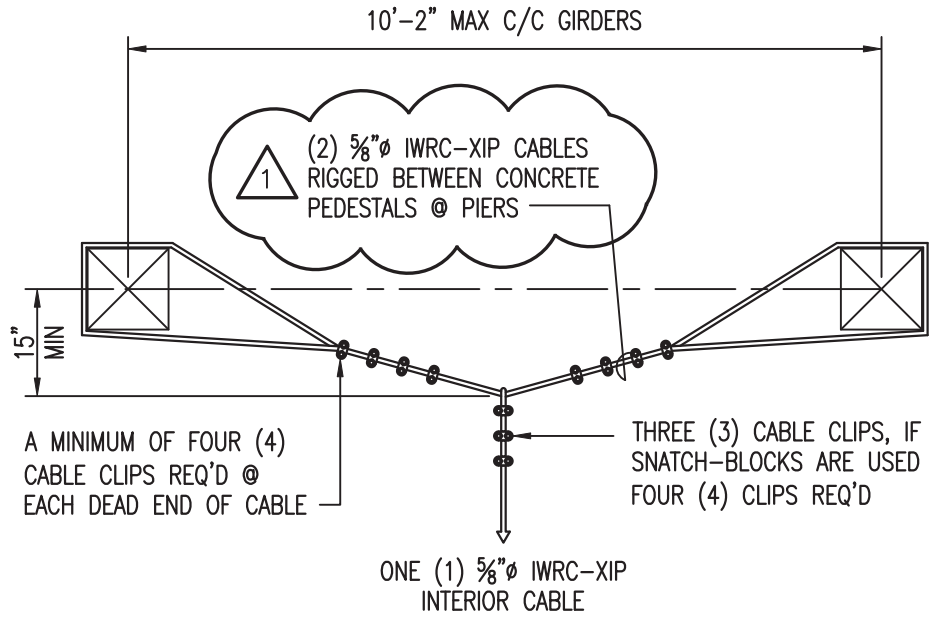
PLAN VIEW

NOTE:
IF THE INTERNAL ANGLE IS GREATER THAN 90°, THE CABLE CHOKER MUST BE INCREASED TO THE NEXT CABLE DIAMETER (FROM 5/8" TO 3/4" DIA.).

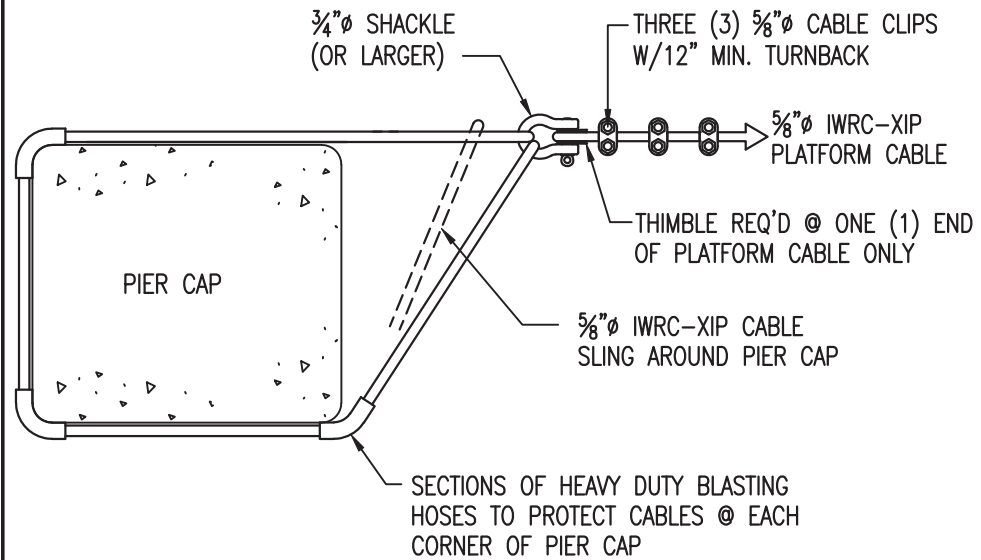


ELEVATION

DETAIL #4A
CABLE ATTACHMENT TO BEARINGS
NOT-TO-SCALE



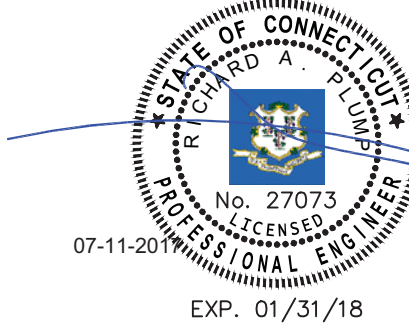
DETAIL #4B
MID-BAY CABLE ATTACHMENT
NOT-TO-SCALE



DETAIL #4C
PIER CAP CABLE ATTACHMENT
NOT-TO-SCALE

CABLE CLIP INSTALLATION				
CABLE DIA.	MIN. CABLE TURNBACK, IN.	MIN. TORQUE FT-LBS	# CLIPS W/O SNATCHBLOCK	# CLIPS W/ SNATCHBLOCK
3/8"	9.75"	45	3	N/A
1/2"	11.50"	65	3	N/A
5/8"	12"	95	3	4

NOTE:
ALL CABLES & CLIPS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED PROCEDURES.



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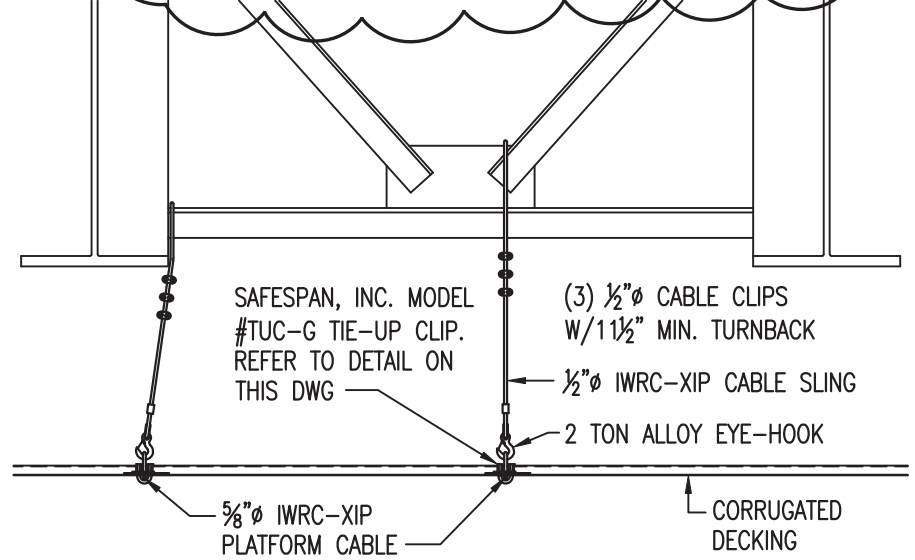


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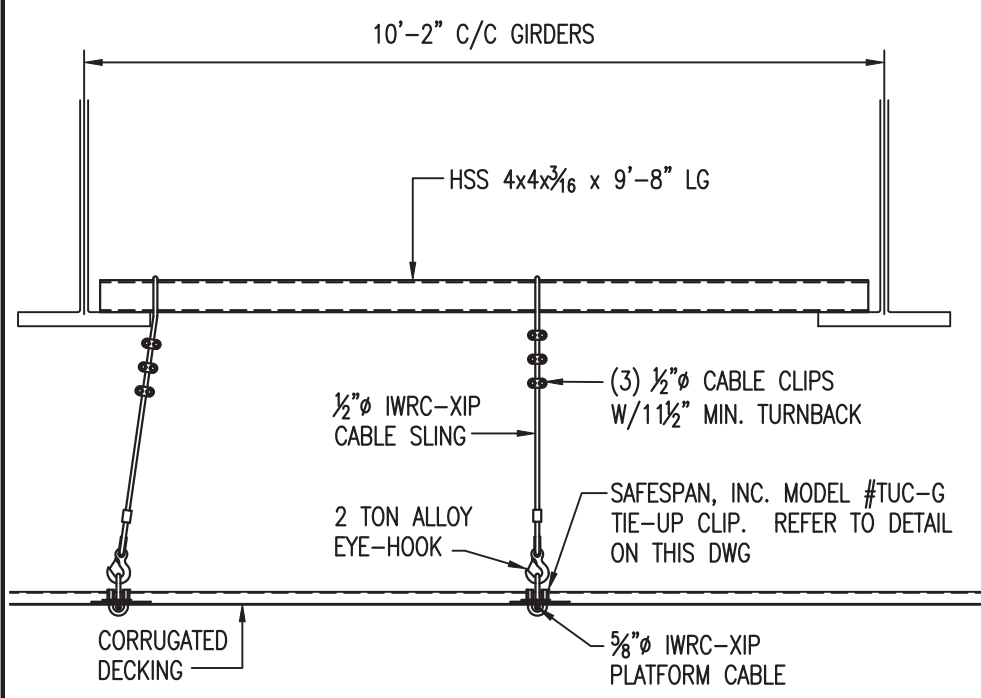
THE MIDDLESEX CORPORATION
CONNECTICUT DEPARTMENT OF TRANSPORTATION
CONTRACT No. 92-522
ROUTE I-95 over WEST RIVER
SUSPENDED PLATFORM INSTALLATION PLAN
DETAILS

CDI JOB NO. 17-11	DATE 2-14-17	DWG. NO. PL-4	1
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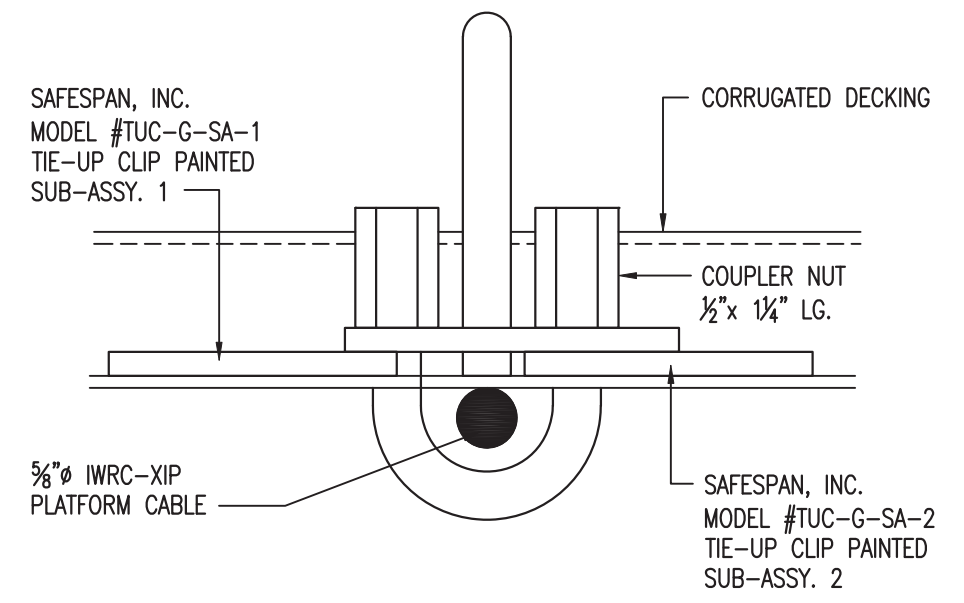
NOTE:
 THE USE OF HANGER TYPES A, B & C ILLUSTRATED ON THIS DWG MAY BE USED AT THE CONTRACTOR'S DISCRETION, BASED ON BEST APPLICATION.



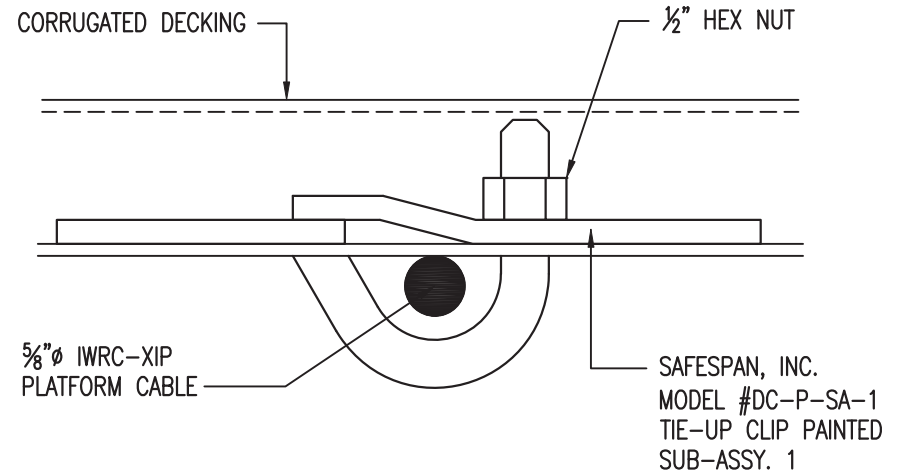
DETAIL #5A
SUPPORT HANGER - TYPE 'A'
 NOT-TO-SCALE



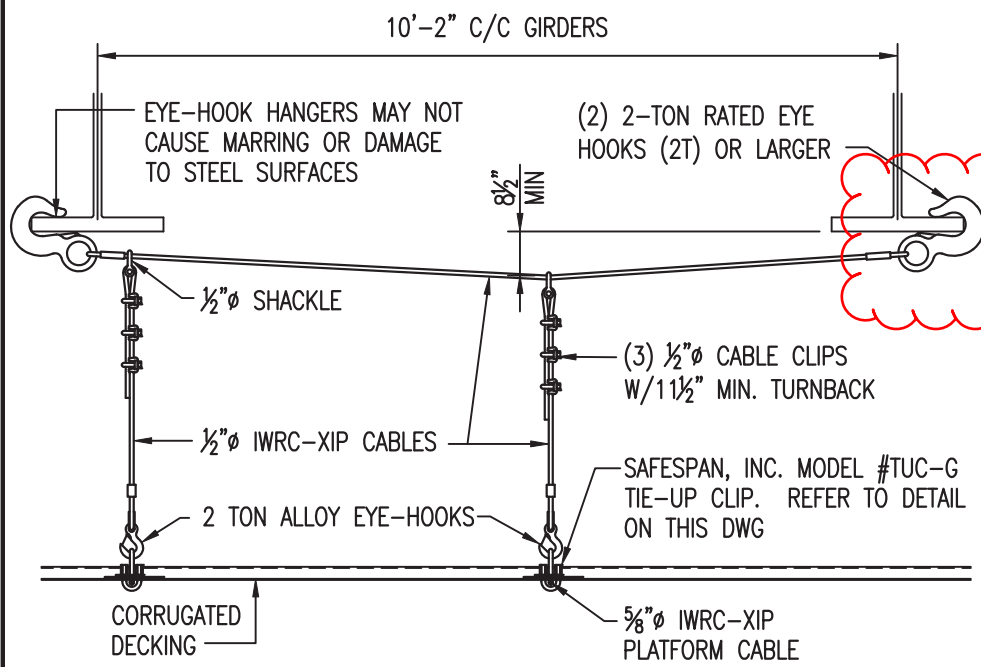
DETAIL #5B
SUPPORT HANGER - TYPE 'B'
 NOT-TO-SCALE



DETAIL #5C
TIE-UP CLIP
SAFESPAN, INC. (MODEL #TUC-G)
 HALF SCALE



DETAIL #5D
DECK CLIP
SAFESPAN, INC. (MODEL #DC-P)
 HALF SCALE

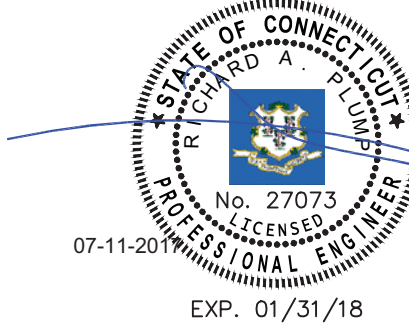


DETAIL #5E
SUPPORT HANGER - TYPE 'C'
 NOT-TO-SCALE

VERIFY THAT CONTRACTOR WILL REPAIR ANY DAMAGES TO THE FLANGES AND/OR PAINT FINISH DUE TO THE HANGERS.

FABRICATION NOTES:

1. ALL HOLLOW STRUCTURAL SHAPES SHALL CONFORM TO ASTM A500 GRADE B.
2. WIDE FLANGE SHAPES SHALL CONFORM TO ASTM A992. OTHER SHAPES AND PLATES SHALL CONFORM TO ASTM A36.
3. ALL BOLTS TO BE ASTM A325 & ALL THREADED RODS TO BE A36. HARDENED WASHER TO BE USED UNDER EACH NUT.
4. ALL WELDS SHALL BE MIN. 3/16" FILLET, UNLESS OTHERWISE NOTED.
5. STEEL FABRICATION AND INSTALLATION SHALL CONFORM TO THE AISC MANUAL OF STEEL CONSTRUCTION, 14TH EDITION.
6. ALL WELDING SHALL BE PERFORMED BY A CERTIFIED WELDER & DONE IN ACCORDANCE WITH AWS STRUCTURAL WELDING CODE D1.1 (2010).



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THE MIDDLESEX CORPORATION
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 CONTRACT No. 92-522
 ROUTE I-95 over WEST RIVER
SUSPENDED PLATFORM INSTALLATION PLAN
DETAILS

CDI JOB NO. 17-11	DATE 2-14-17	DWG. NO. PL-5	2
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