

Print Date: 12/10/2024 1:28 PM
 Filepath: F:\PROJECT\135A - ERIE COUNTY TRACK & BRIDGE REHAB (MP 2.70 TO MP 32.91)\DESIGN\CADD\SHEET FILES\MP 13.94\BILL OF MATERIALS.DWG
 By: NGBISON

BILL OF MATERIALS				
	ITEM	BASE BID QUANTITY	ADD ALT QUANTITY	UNIT
TIMBER TIE	11'-0" LENGTH NO. 1 SOUTHERN YELLOW PINE OR OAK TREATED WITH CREOSOTE OR COPPER NAPHTHENATE AND BORATE PLUGS; FURNISH DECK TIES 100% END PLATED (ADD ALT)	261	-75	EACH
	14'-0" LENGTH NO. 1 SOUTHERN YELLOW PINE OR OAK TREATED WITH CREOSOTE OR COPPER NAPHTHENATE AND BORATE PLUGS; FURNISH DECK TIES 100% END PLATED (ADD ALT)	0	75	EACH
TIMBER TIE SPACER	TIMBER TIE SPACER, 8" WIDTH, 4" THICKNESS	612	0	LINEAR FEET
	GALVANIZED SQUARE HEAD DRIVE WASHER DRIVE SPIKE 5/8" DIAMETER, 10" LENGTH (LEWIS NUT & BOLT COMPANY)	522	0	EACH
HOOK BOLTS	2" STANDARD SEALTITE HOOK BOLT 3/4" DIAMETER, 15" LENGTH, WITH 4" MINIMUM LENGTH HAVING THREADS (LEWIS NUT & BOLT COMPANY)	228	0	EACH
	WASHER NUT: 3/4" DIAMETER, PART NWSH (LEWIS NUT & BOLT COMPANY)	228	0	EACH
	COMMON 10D GALVANIZED NAILS	228	0	EACH
WALKWAY GRATING (ADD ALT)	1-1/2" x 3/16" GALVANIZED WELDED BAR GRATING WITH 1-3/16" BEARING BAR CENTERS AND SERRATED TOP EDGE (WALKWAY SURFACE)	0	918	SQUARE FOOT
	GALVANIZED SADDLE CLIPS FOR WELDED BAR GRATING WITH RECTANGULAR BEARING BARS SPACED 1-3/16" ON CENTER	0	225	EACH
	GALVANIZED LAG BOLTS 1/4" DIAMETER, 6" LENGTH (GRATING SADDLE CLIPS)	0	225	EACH
	1/4" USS GALVANIZED FLAT WASHER (SADDLE CLIPS)	0	225	EACH
	1/4" GALVANIZED MEDIUM SPLIT LOCK WASHER (SADDLE CLIPS)	0	225	EACH
	2" x 6" PRESSURE TREATED (GROUND CONTACT) SOUTHERN YELLOW PINE #2 GRADE (TOE BOARD)	0	612	LINEAR FOOT
	GALVANIZED 1/2-13 x 2-1/2" CARRIAGE BOLT (TOE BOARD)	0	150	EACH
	1/2" USS GALVANIZED FLAT WASHER (TOE BOARD)	0	150	EACH
	1/2" GALVANIZED MEDIUM SPLIT LOCK WASHER (TOE BOARD)	0	150	EACH
	GALVANIZED 1/4-20 HEX NUT (TOE BOARD)	0	150	EACH
HAND RAILING (ADD ALT)	2-1/2" x 2-1/2" x 5/16" STEEL ANGLE (GALVANIZED) HAND RAIL STANCHIONS	0	75	EACH
	GALVANIZED LAG BOLTS 3/4" DIAMETER, 6" LENGTH FOR HAND RAIL STANCHIONS	0	150	EACH
	3/4" USS GALVANIZED FLAT WASHER FOR HAND RAILING STANCHIONS	0	150	EACH
	3/4" GALVANIZED MEDIUM SPLIT LOCK WASHER FOR HAND RAILING STANCHIONS	0	150	EACH
	3/8" DIAMETER GALVANIZED WIRE ROPE	0	612	EACH
	3/8" CROSBY G-450 WIRE ROPE CLIPS	0	178	EACH



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BSOR MAINLINE TRACK
MP 2.70 TO MP 32.90
PIN 5936.82.301, DR38925

MARK	DATE	DESCRIPTION
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REVISIONS

PROJECT NO:	135A.011.001
DATE:	NOVEMBER 19, 2024
DRAWN BY:	NG
DESIGNED BY:	NG
CHECKED BY:	CWR

NO ALTERATION PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK EDUCATION LAW

CIVIL

MP 13.94
 BILL OF
 MATERIALS

ST1-04

BRIDGE MP 13.94 DECK TIE TABLE									
TIE#	TIE CENTER STA	SPAN	TIE LOCATION	SELECTED TIE THICKNESS (IN) (U&Z)	DAP WIDTH (IN) (V&Y)	FINAL LEFT DAP DEPTH (IN) (W)	FINAL RIGHT DAP DEPTH (IN) (X)	TIE LENGTH (FT) (L) (*)	HOOKBOLT HOLEDIST. FROM TIE CENTER (IN) (A)
1	-0+19.00	MASONRY ABUTMENT & BACKWALL		7	-	-	-	14.00	-
2	-0+17.68			7	-	-	-	11.00	-
3	-0+16.37			7	-	-	-	11.00	-
4	-0+15.05			7	-	-	-	14.00	-
5	-0+13.74			7	-	-	-	11.00	-
6	-0+12.42			7	-	-	-	11.00	-
7	-0+11.11			7	-	-	-	14.00	-
8	-0+09.79			7	-	-	-	11.00	-
9	-0+08.48			7	-	-	-	11.00	-
10	-0+07.16			7	-	-	-	11.00	-
11	-0+05.85			7	-	-	-	14.00	-
12	-0+04.53			7	-	-	-	11.00	-
13	-0+03.21			7	-	-	-	11.00	-
14	-0+01.90			7	-	-	-	11.00	-
15	-0+00.58			7	-	-	-	14.00	-
16	0+00.50	SPAN 1	GIRDER FLANGE	13	16 1/2	3/4	3/8	14.00	44 3/4
17	0+01.64			13	16 1/2	3/4	1/2	11.00	-
18	0+02.79			13	16 1/2	3/4	3/8	11.00	-
19	0+03.93			13	16 1/2	5/8	7/8	14.00	44 3/4
20	0+05.07			13	16 1/2	5/8	1 1/8	11.00	-
21	0+06.21			13	16 1/2	5/8	1 1/4	11.00	44 3/4
22	0+07.36			13	16 1/2	5/8	1 1/4	11.00	-
23	0+08.50			13	16 1/2	5/8	1 1/8	14.00	44 3/4
24	0+09.64			13	16 1/2	5/8	1	11.00	-
25	0+10.79			12 1/2	16 1/2	7/8	7/8	11.00	44 3/4
26	0+11.93			12 1/2	16 1/2	7/8	7/8	11.00	-
27	0+13.07			12 1/2	16 1/2	7/8	7/8	14.00	44 3/4
28	0+14.22			12 1/2	16 1/2	7/8	7/8	11.00	-
29	0+15.36			12 1/2	16 1/2	7/8	7/8	11.00	44 3/4
30	0+16.50			12 1/2	16 1/2	7/8	7/8	11.00	-
31	0+17.64			12 1/2	16 1/2	7/8	7/8	14.00	44 3/4
32	0+18.79			12 1/2	16 1/2	7/8	7/8	11.00	-
33	0+19.93			12 1/2	16 1/2	7/8	7/8	11.00	44 3/4
34	0+21.07		12 1/2	16 1/2	7/8	7/8	11.00	-	
35	0+22.22		12 1/2	16 1/2	7/8	7/8	14.00	44 3/4	
36	0+23.36		12 1/2	16 1/2	7/8	7/8	11.00	-	
37	0+24.50		12	16 1/2	1/2	1/2	11.00	44 3/4	
38	0+25.64		12	16 1/2	1/2	1/2	11.00	-	
39	0+26.79		12	16 1/2	1/2	1/2	14.00	44 3/4	
40	0+27.93		12	16 1/2	1/2	1/2	11.00	-	
41	0+29.07		12	16 1/2	1/2	1/2	11.00	44 3/4	
42	0+30.22		12	16 1/2	1/2	1/2	11.00	-	
43	0+31.36		12	16 1/2	1/2	1/2	14.00	44 3/4	
44	0+32.50		12	16 1/2	5/8	5/8	11.00	-	
45	0+33.65		12	16 1/2	5/8	5/8	11.00	44 3/4	
46	0+34.79		12	16 1/2	5/8	5/8	11.00	-	
47	0+35.93		12	16 1/2	5/8	5/8	14.00	44 3/4	
48	0+37.07		12	16 1/2	3/4	3/4	11.00	-	
49	0+38.22		12	16 1/2	3/4	3/4	11.00	44 3/4	
50	0+39.36		12	16 1/2	3/4	3/4	11.00	-	
51	0+40.50		12	16 1/2	3/4	3/4	14.00	44 3/4	
52	0+41.65	12	16 1/2	3/4	3/4	11.00	-		
53	0+42.79	12	16 1/2	3/4	3/4	11.00	44 3/4		
54	0+43.93	12	16 1/2	3/4	3/4	11.00	-		
55	0+45.07	12	16 1/2	3/4	3/4	14.00	44 3/4		
56	0+46.22	12	16 1/2	3/4	3/4	11.00	-		
57	0+47.36	12	16 1/2	3/4	3/4	11.00	44 3/4		
58	0+48.50	12	16 1/2	5/8	5/8	11.00	-		
59	0+49.65	12	16 1/2	1/2	1/2	14.00	44 3/4		
60	0+50.79	12	16 1/2	1/2	1/2	11.00	-		
61	0+51.93	12	16 1/2	5/8	5/8	11.00	44 3/4		
62	0+53.08	12	16 1/2	5/8	5/8	11.00	-		
63	0+54.22	12	16 1/2	3/4	3/4	14.00	44 3/4		
64	0+55.36	12	16 1/2	3/4	3/4	11.00	-		
65	0+56.50	12	16 1/2	3/4	7/8	11.00	44 3/4		
66	0+57.65	11 1/2	16 1/2	3/8	1/2	11.00	-		
67	0+58.79	11 1/2	16 1/2	3/8	1/2	14.00	44 3/4		

BRIDGE MP 13.94 DECK TIE TABLE											
TIE#	TIE CENTER STA	SPAN	TIE LOCATION	SELECTED TIE THICKNESS (IN) (U&Z)	DAP WIDTH (IN) (V&Y)	FINAL LEFT DAP DEPTH (IN) (W)	FINAL RIGHT DAP DEPTH (IN) (X)	TIE LENGTH (FT) (L)	HOOKBOLT DIST. FROM TIE CENTER (IN) (A)		
68	0+60.79	SPAN 2 (TOWER)		12	12 1/2	3/4	3/4	14.00	42 3/4		
69	0+61.90			12	12 1/2	3/4	3/4	11.00	-		
70	0+63.01			12	12 1/2	3/4	3/4	11.00	-		
71	0+64.12			12	12 1/2	3/4	3/4	14.00	42 3/4		
72	0+65.23			12	12 1/2	3/4	3/4	11.00	-		
73	0+66.35			12	12 1/2	3/4	3/4	11.00	-		
74	0+67.46			12	12 1/2	3/4	3/4	14.00	42 3/4		
75	0+68.57			12	12 1/2	3/4	3/4	11.00	-		
76	0+69.68			12	12 1/2	3/4	3/4	11.00	-		
77	0+70.79			12	12 1/2	3/4	3/4	14.00	42 3/4		
78	0+72.79			SPAN 3	GIRDER FLANGE	11 1/2	16 1/2	1/2	5/8	14.00	44 3/4
79	0+73.93					11 1/2	16 1/2	1/2	5/8	11.00	-
80	0+75.06					11 1/2	16 1/2	1/2	5/8	11.00	44 3/4
81	0+76.20					11 1/2	16 1/2	1/2	5/8	11.00	-
82	0+77.34					11 1/2	16 1/2	1/2	3/4	14.00	44 3/4
83	0+78.47	11 1/2	16 1/2			1/2	3/4	11.00	-		
84	0+79.61	11 1/2	16 1/2			5/8	3/4	11.00	44 3/4		
85	0+80.75	11 1/2	16 1/2			5/8	3/4	11.00	-		
86	0+81.88	11 1/2	16 1/2			5/8	3/4	14.00	44 3/4		
87	0+83.02	11 1/2	16 1/2			5/8	5/8	11.00	-		
88	0+84.16	11 1/2	16 1/2			5/8	5/8	11.00	44 3/4		
89	0+85.30	11 1/2	16 1/2			1/2	5/8	11.00	-		
90	0+86.43	12	16 1/2			1	1	14.00	44 3/4		
91	0+87.57	12	16 1/2			1	1	11.00	-		
92	0+88.71	12	16 1/2			7/8	1	11.00	44 3/4		
93	0+89.84	12	16 1/2			7/8	1	11.00	-		
94	0+90.98	12	16 1/2			3/4	7/8	14.00	44 3/4		
95	0+92.12	12	16 1/2			3/4	7/8	11.00	-		
96	0+93.25	12	16 1/2		3/4	7/8	11.00	44 3/4			
97	0+94.39	12	16 1/2		3/4	7/8	11.00	-			
98	0+95.53	12	16 1/2		3/4	7/8	14.00	44 3/4			
99	0+96.66	12	16 1/2		3/4	3/4	11.00	-			
100	0+97.80	12	16 1/2		3/4	3/4	11.00	44 3/4			
101	0+98.94	12	16 1/2		3/4	3/4	11.00	-			
102	1+00.07	12	16 1/2		3/4	3/4	14.00	44 3/4			
103	1+01.21	12	16 1/2		5/8	3/4	11.00	-			
104	1+02.35	12	16 1/2		5/8	3/4	11.00	44 3/4			
105	1+03.49	12	16 1/2		5/8	5/8	11.00	-			
106	1+04.62	12	16 1/2		5/8	5/8	14.00	44 3/4			
107	1+05.76	12	16 1/2		5/8	5/8	11.00	-			
108	1+06.90	12	16 1/2		5/8	5/8	11.00	44 3/4			
109	1+08.03	12	16 1/2		1/2	5/8	11.00	-			
110	1+09.17	12	16 1/2		1/2	5/8	14.00	44 3/4			
111	1+10.31	12	16 1/2		1/2	5/8	11.00	-			
112	1+11.44	12	16 1/2		1/2	5/8	11.00	44 3/4			
113	1+12.58	12	16 1/2		1/2	5/8	11.00	-			
114	1+13.72	12	16 1/2	1/2	5/8	14.00	44 3/4				
115	1+14.85	12 1/2	16 1/2	1	1 1/8	11.00	-				
116	1+15.99	12 1/2	16 1/2	1	1 1/8	11.00	44 3/4				
117	1+17.13	12 1/2	16 1/2	1	1 1/8	11.00	-				
118	1+18.26	12 1/2	16 1/2	7/8	1 1/8	14.00	44 3/4				
119	1+19.40	12 1/2	16 1/2	7/8	1 1/8	11.00	-				
120	1+20.54	12 1/2	16 1/2	1	1 1/8	11.00	44 3/4				
121	1+21.68	12 1/2	16 1/2	3/4	7/8	11.00	-				
122	1+22.81	12 1/2	16 1/2	5/8	7/8	14.00	44 3/4				
123	1+23.95	12 1/2	16 1/2	5/8	7/8	11.00	-				
124	1+25.09	12 1/2	16 1/2	5/8	7/8	11.00	44 3/4				
125	1+26.22	12 1/2	16 1/2	5/8	1	11.00	-				
126	1+27.36	12 1/2	16 1/2	5/8	1	14.00	44 3/4				
127	1+28.50	12 1/2	16 1/2	5/8	1	11.00	-				
128	1+29.63	12 1/2	16 1/2	5/8	1	11.00	-				
129	1+30.77	12 1/2	16 1/2	5/8	1	14.00	44 3/4				
130	1+32.77	SPAN 4 (TOWER)		12 1/2	9 1/2	3/4	1	14.00	41 1/4		
131	1+33.95			12 1/2	9 1/2	7/8	1	11.00	-		
132	1+35.13			12 1/2	9 1/2	7/8	1	11.00	-		
133	1+36.31			12 1/2	9 1/2	1	1	14.00	41 1/4		

(*) ALL TIES TO BE 11 FOOT FOR BASE BID. 14 FOOT TIES ARE FOR ADD ALT ONLY



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REVISIONS

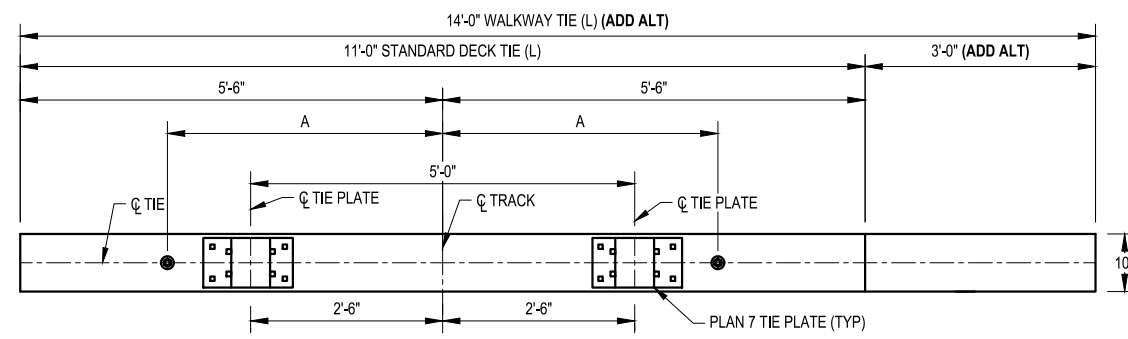
PROJECT NO: 135A.011.001
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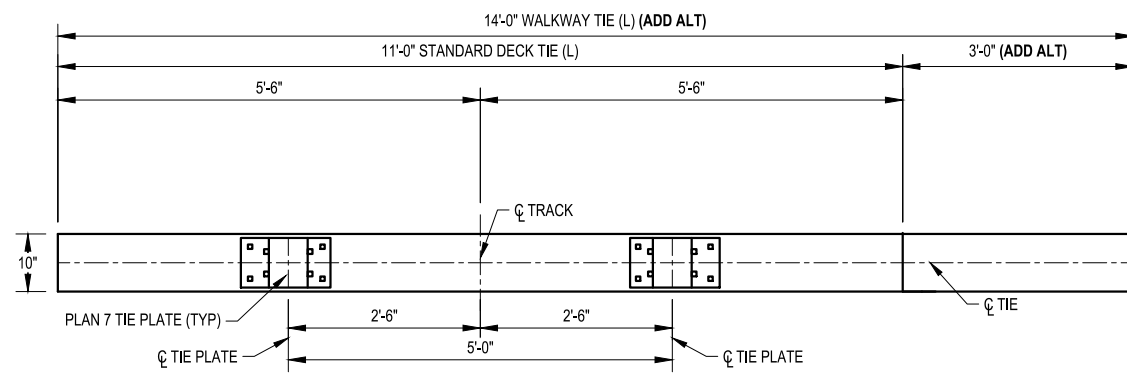
CIVIL

MP 13.94
DECK TIE TABLE
(1 OF 2)

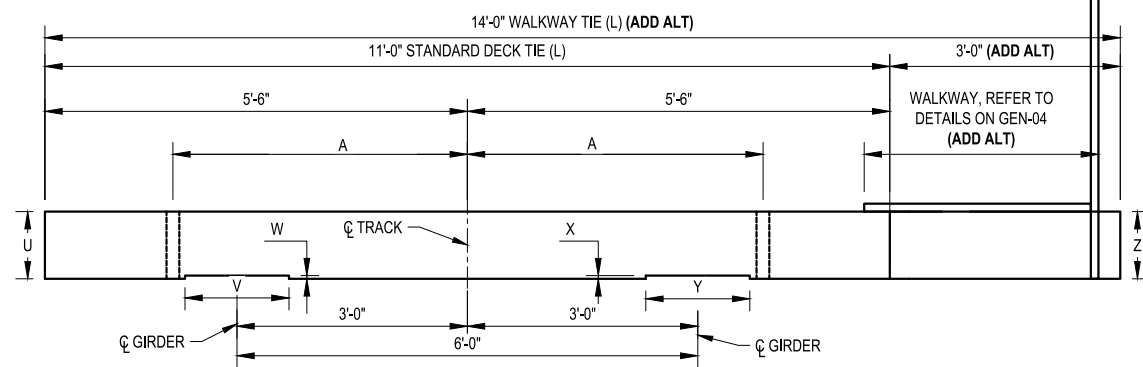
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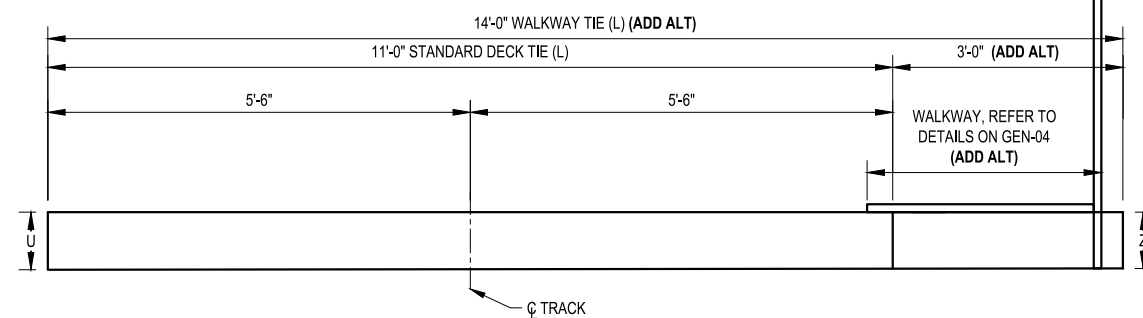
TYPICAL BRIDGE TIE PLAN
(NOT TO SCALE)



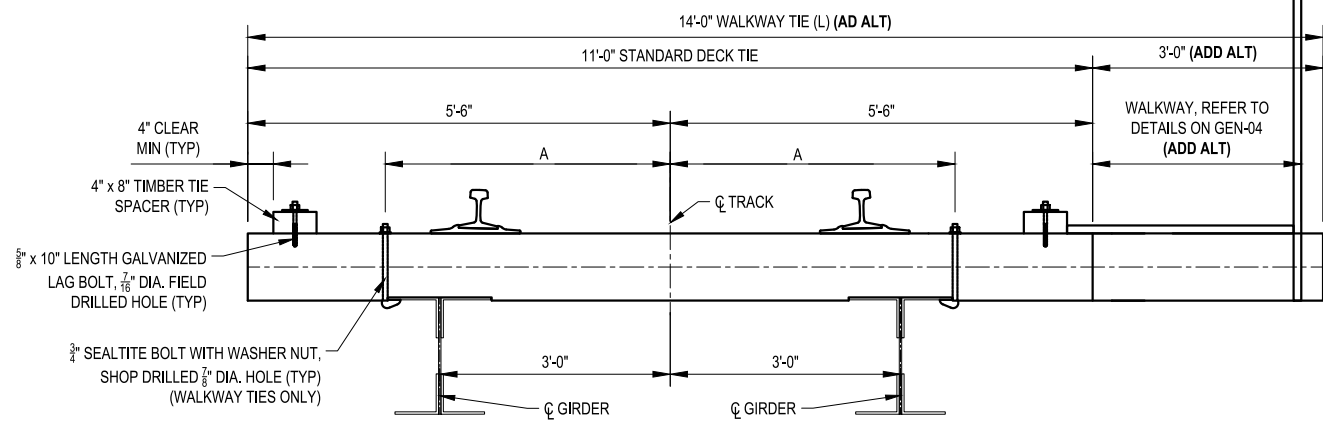
TYPICAL BACKWALL & MASONRY ABUTMENT TIE PLAN
(NOT TO SCALE)



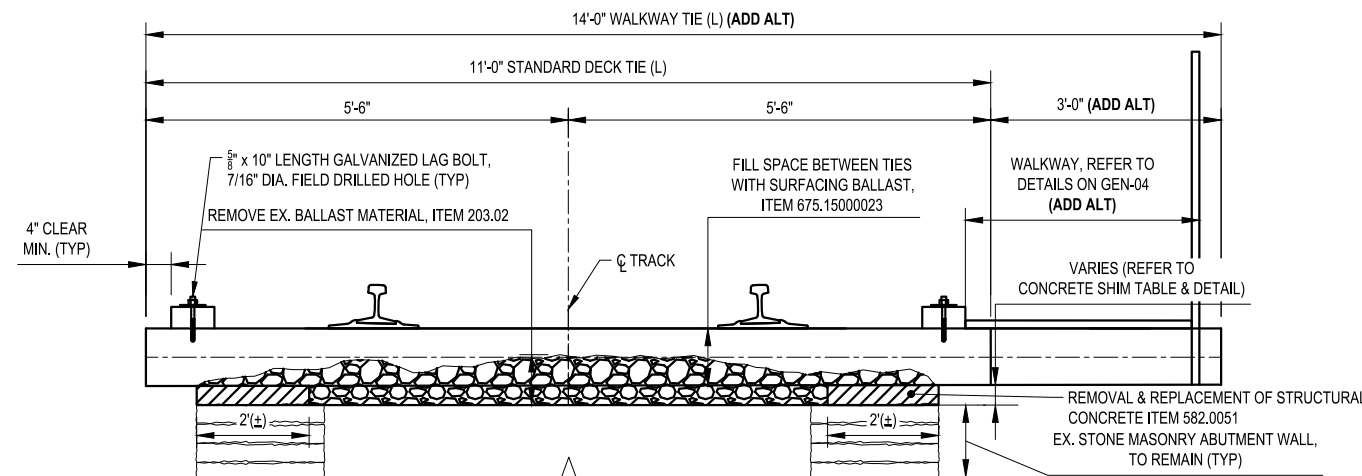
TYPICAL BRIDGE TIE ELEVATION
(NOT TO SCALE)



TYPICAL BACKWALL & STONE MASONRY ABUTMENT TIE ELEVATION
(NOT TO SCALE)



TYPICAL BRIDGE CROSS SECTION A-A
(NOT TO SCALE)



TYPICAL STONE MASONRY ABUTMENT SECTION B-B
(NOT TO SCALE)

NOTE:
1. REFER TO BRIDGE MP 13.94 DECK TIE TABLES FOR DIMENSIONS A, L, U, V, W, X, Y, Z.

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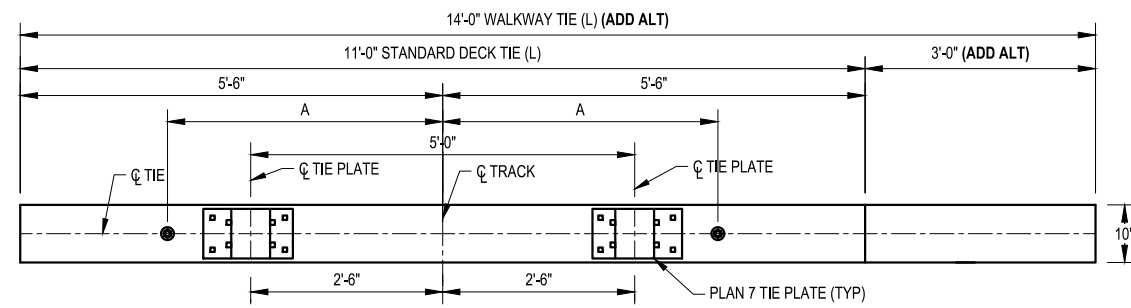
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MP 13.94
 DECK TIE
 DETAILS

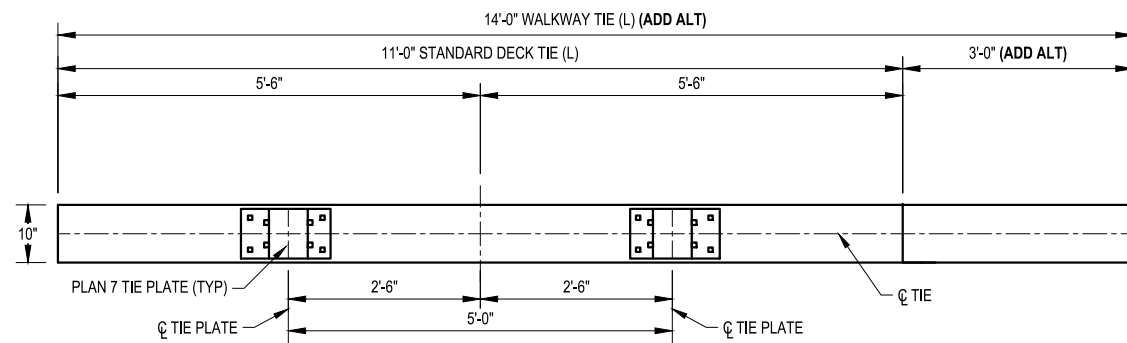
ST1-02



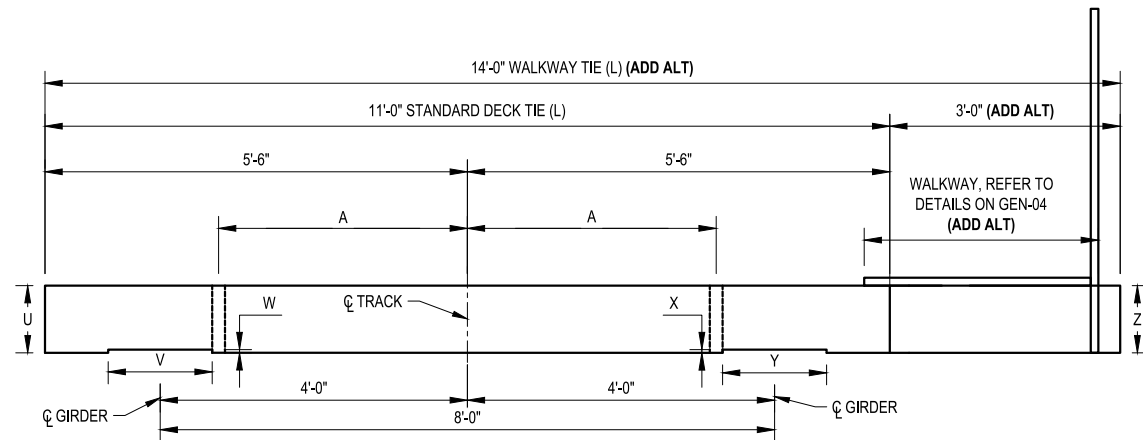
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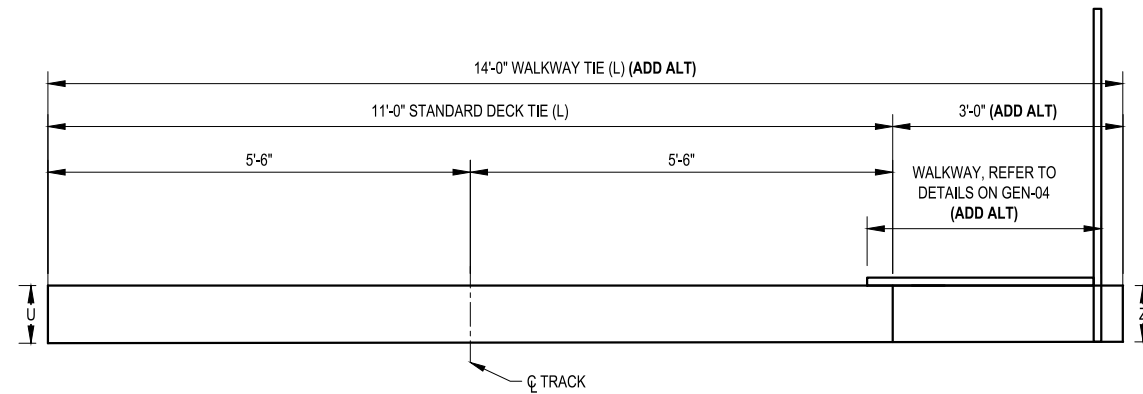
TYPICAL BRIDGE TIE PLAN
(NOT TO SCALE)



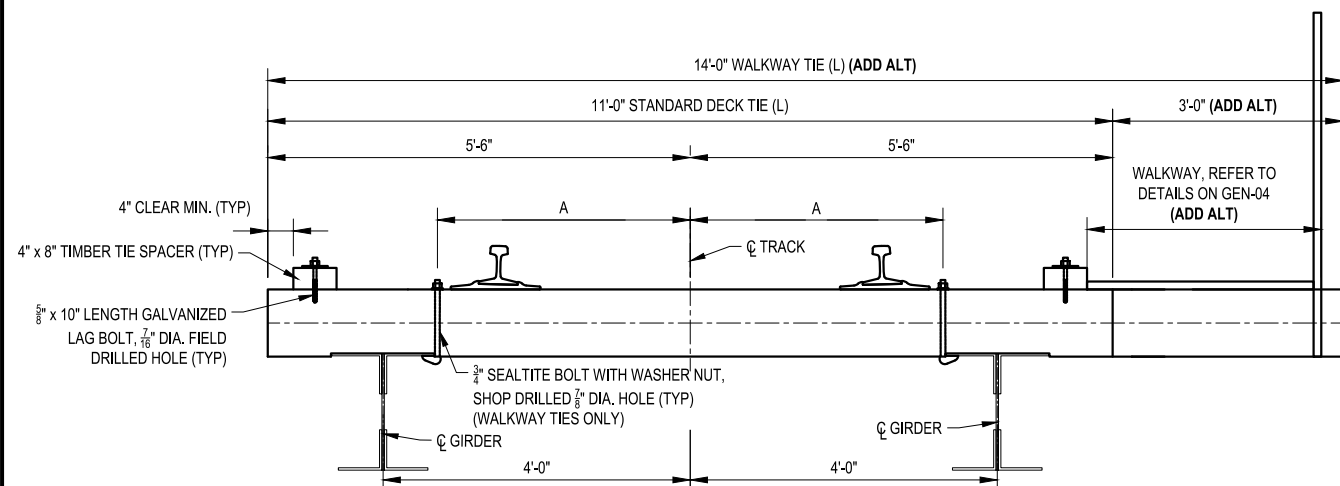
TYPICAL BACKWALL & MASONRY ABUTMENT TIE PLAN
(NOT TO SCALE)



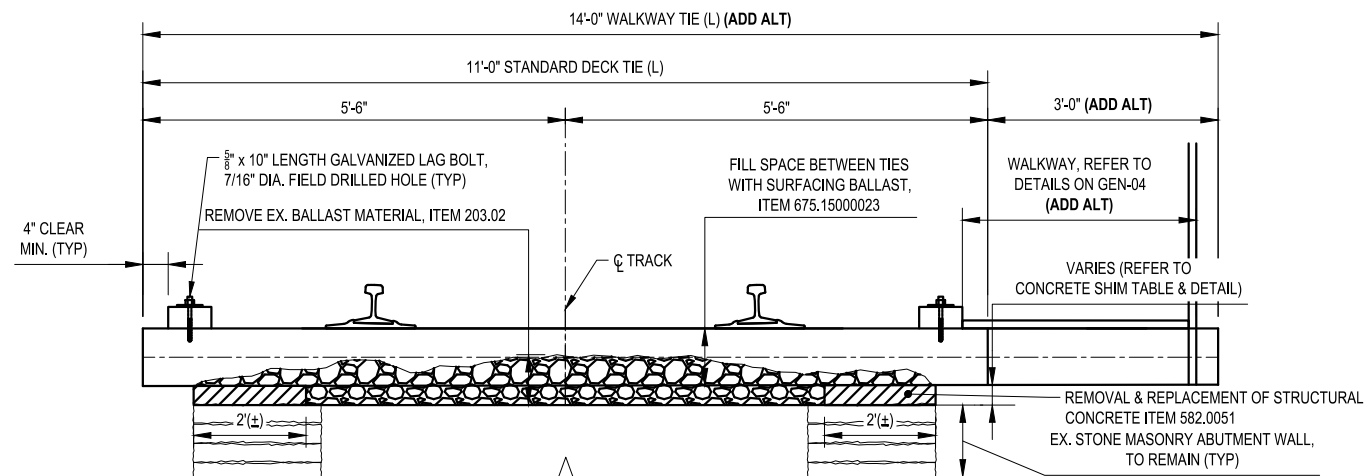
TYPICAL BRIDGE TIE ELEVATION
(NOT TO SCALE)



TYPICAL BACKWALL & STONE MASONRY ABUTMENT TIE ELEVATION
(NOT TO SCALE)



TYPICAL BRIDGE CROSS SECTION
(NOT TO SCALE)



TYPICAL STONE MASONRY ABUTMENT SECTION B-B
(NOT TO SCALE)

NOTE:
1. REFER TO BRIDGE MP 15.85 DECK TIE TABLES FOR DIMENSIONS A, L, U, V, W, X, Y, Z.

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1	12/10/24	UPDATED NOTE

REVISIONS

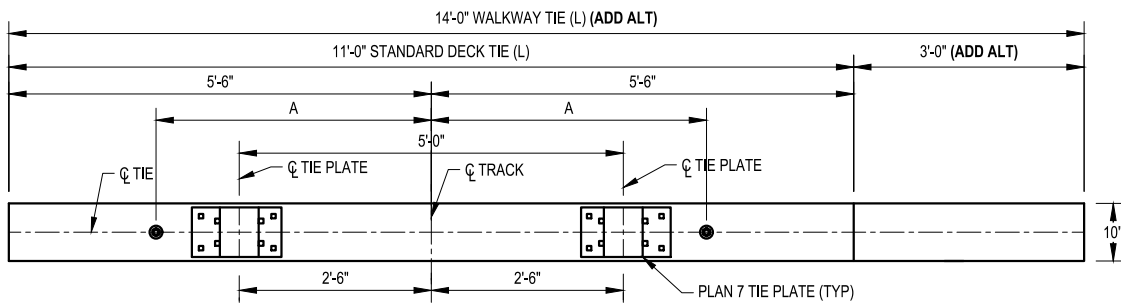
PROJECT NO:	135A.011.001
DATE:	NOVEMBER 19, 2024
DRAWN BY:	YTS
DESIGNED BY:	YTS
CHECKED BY:	CWR

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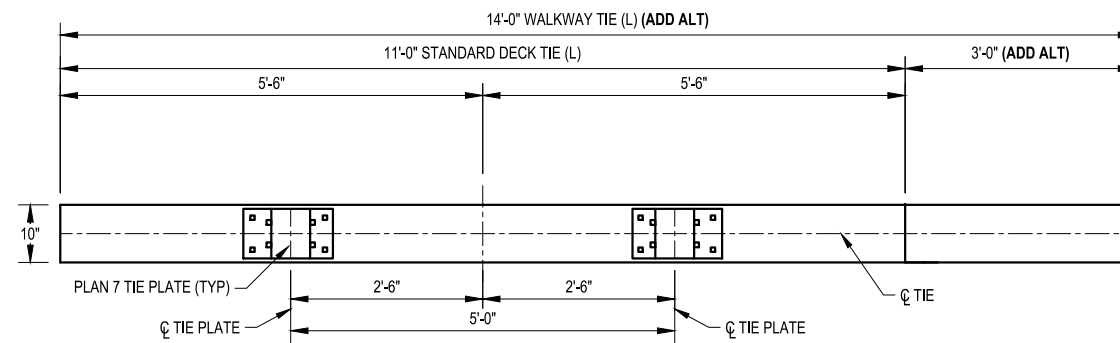
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MP 15.85
DECK TIE
DETAILS

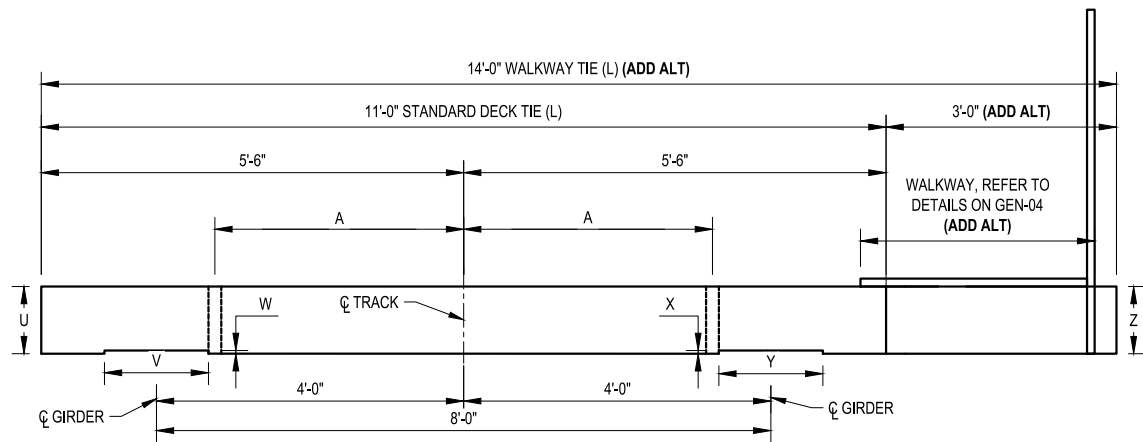
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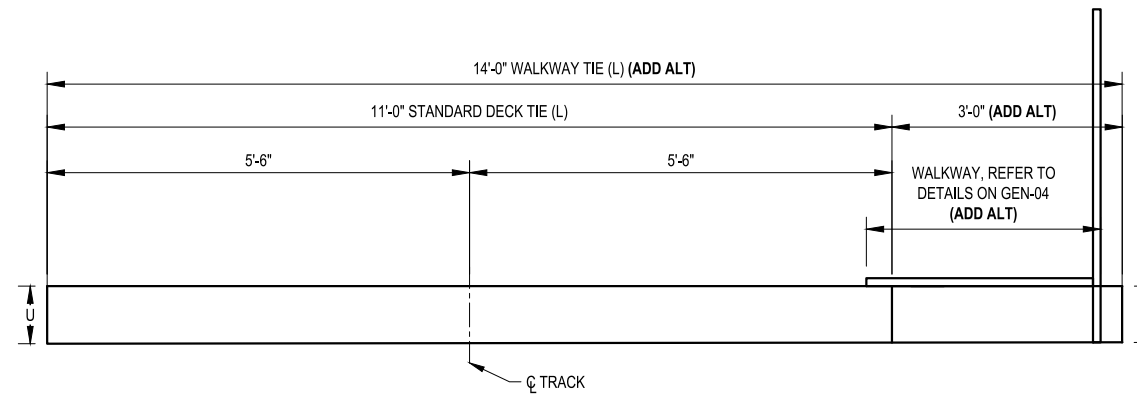
TYPICAL BRIDGE TIE PLAN
(NOT TO SCALE)



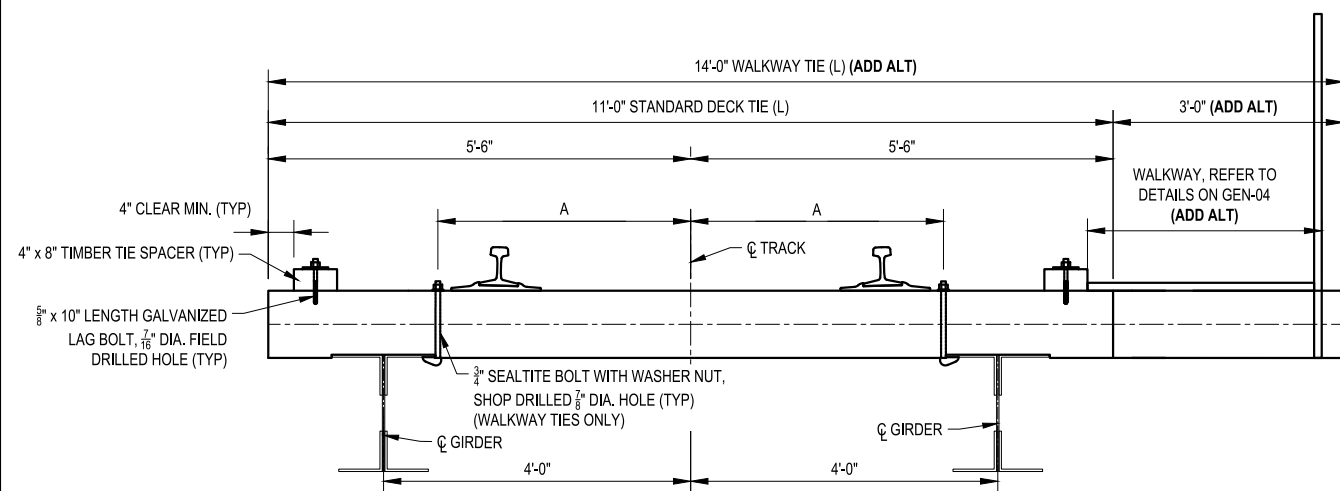
TYPICAL BACKWALL & MASONRY ABUTMENT TIE PLAN
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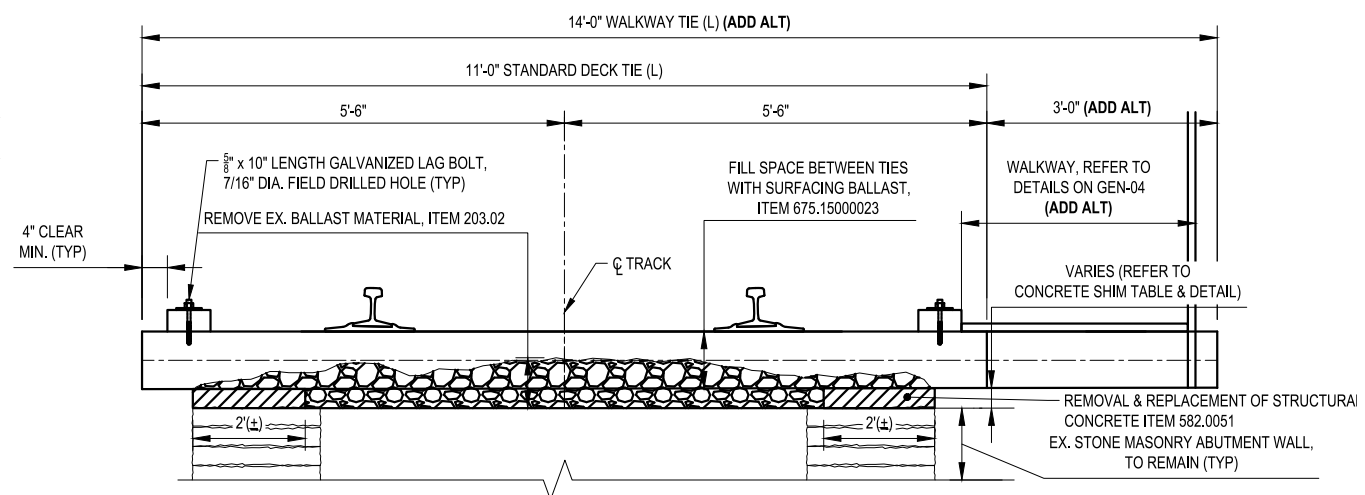
TYPICAL BRIDGE TIE ELEVATION
(NOT TO SCALE)



TYPICAL BACKWALL & STONE MASONRY ABUTMENT TIE ELEVATION
(NOT TO SCALE)



TYPICAL BRIDGE CROSS SECTION A-A
(NOT TO SCALE)



TYPICAL STONE MASONRY ABUTMENT SECTION B-B
(NOT TO SCALE)

NOTE:
1. REFER TO BRIDGE MP 22.25 DECK TIE TABLES FOR DIMENSIONS A, L, U, V, W, X, Y, Z.

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By: NGBISON



C&S Engineers, Inc.
499 Col. Eileen Collins Blvd.
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MP 2.70 TO MP 32.90
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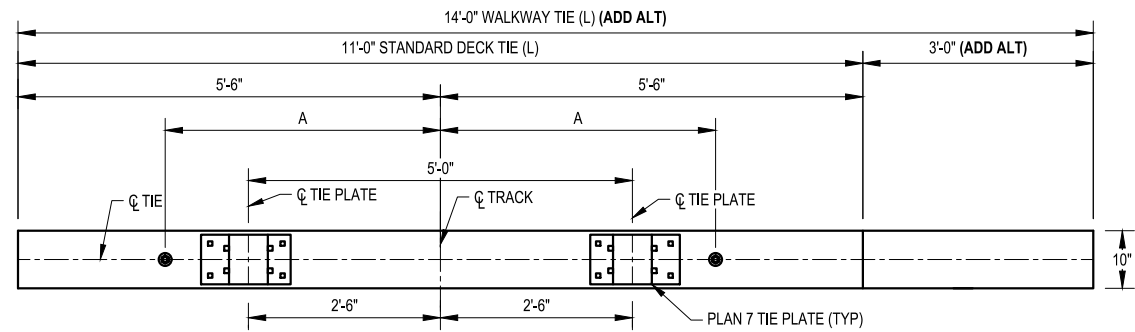
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1	12/10/24	UPDATED NOTE

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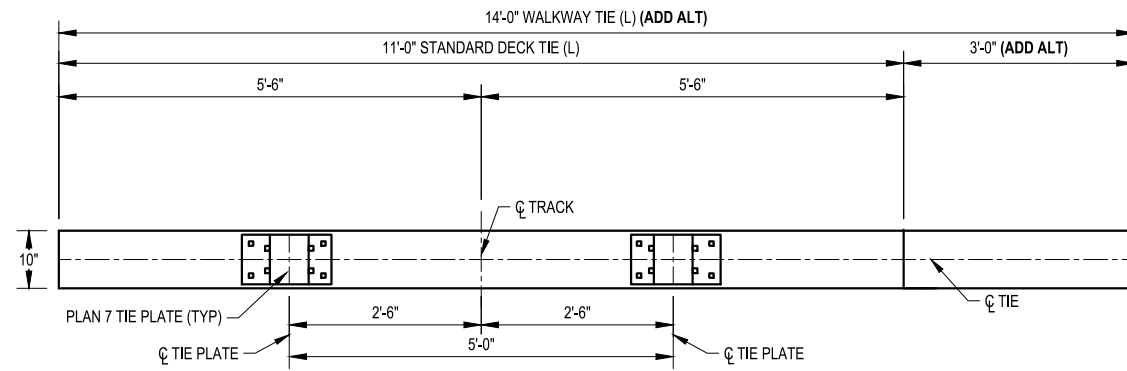
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DATE: NOVEMBER 19, 2024
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DECK TIE
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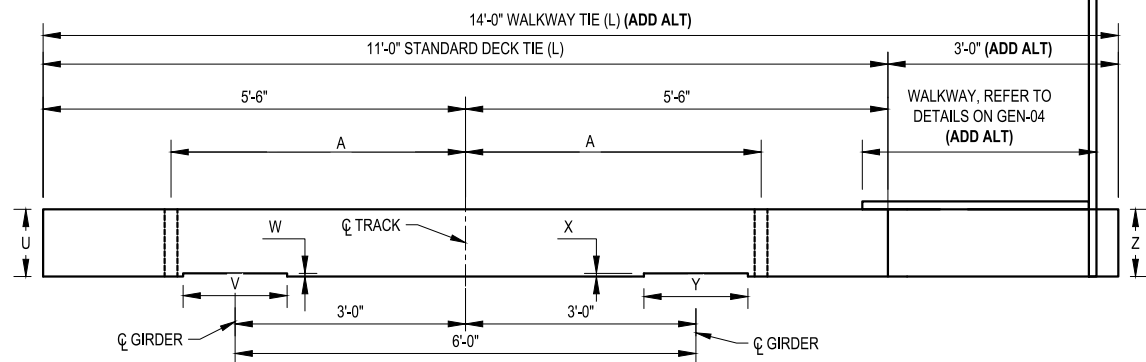
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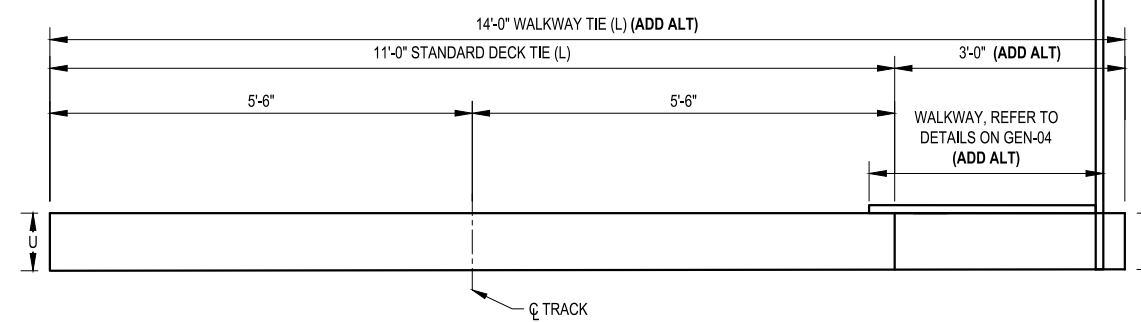
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(NOT TO SCALE)



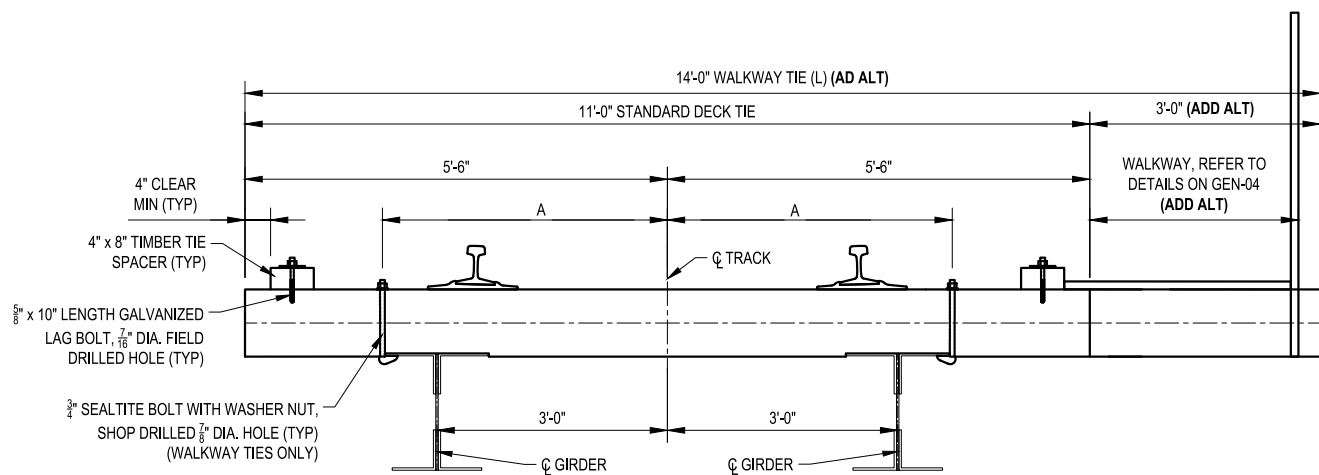
TYPICAL BACKWALL TIE PLAN
(NOT TO SCALE)



TYPICAL BRIDGE TIE ELEVATION
(NOT TO SCALE)



TYPICAL BACKWALL TIE ELEVATION
(NOT TO SCALE)



TYPICAL BRIDGE CROSS SECTION
(NOT TO SCALE)

NOTE:
1. REFER TO BRIDGE MP 32.90 DECK TIE TABLES FOR DIMENSIONS A, L, U, V, W, X, Y, Z.



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