INDEX OF DRAWINGS

* REPRESENTS ORIGINAL ISSUE DATE OF [illegible] UNLESS OTHERWISE NOTED

COVER SHEET

SHEET #	REV #	REVISION DATE	ISSUE DATE	TITLE	REMARKS
001			•	INDEX OF DRAWINGS - SUBSTRUCTURE	
002	1	FEB 1982	•	INDEX OF DRAWINGS - SUPERSTRUCTURE	
003			•	GENERAL NOTES - SUBSTRUCTURE	
004			•	GENERAL NOTES - SUPERSTRUCTURE	

GENERAL PLANS

SHEET #	REV #	REVISION DATE	ISSUE DATE	TITLE	REMARKS
101	2	NOV 1981	•	GENERAL PLAN AND ELEVATION	
102			•	PARTIAL PLAN AND ELEVATION (PIER 3 TO 5)	
103	1	SEPT 1981	•	PARTIAL PLAN AND ELEVATION (PIER 5 TO 7)	
104	1	SEPT 1981	•	PARTIAL PLAN AND ELEVATION (PIER 7 TO 9)	
105	1	SEPT 1981	•	PARTIAL PLAN AND ELEVATION (PIER 9 TO 11)	
106			•	PARTIAL PLAN AND ELEVATION (PIER 11 TO 13)	
107	2	FEB 1982	•	PARTIAL PLAN AND ELEVATION (PIER 13 TO 15)	
108			•	PARTIAL PLAN AND ELEVATION (PIER 15 TO 17)	
109			•	PARTIAL PLAN AND ELEVATION (PIER 17 TO 20)	
110			•	PARTIAL PLAN AND ELEVATION (PIER 20 TO 23)	
111			•	PARTIAL PLAN AND ELEVATION (PIER 23 TO 25)	
112	1	NOV 1981	•	PARTIAL PLAN AND ELEVATION (PIER 25 TO 27)	
113	1	NOV 1981	•	PARTIAL PLAN AND ELEVATION (PIER 27 TO 30)	

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SHEET #	REV #	REVISION DATE	ISSUE DATE	TITLE	REMARKS
410			•	DEPTH OF GIRDERS AND BOTTOM SLAB THICKNESS - SEGMENT 1	
420			•	DEPTH OF GIRDERS AND BOTTOM SLAB THICKNESS - SEGMENT 2	
430	2	SEPT 1981	•	DEPTH OF GIRDERS AND BOTTOM SLAB THICKNESS - SEGMENT 3	
440			•	DEPTH OF GIRDERS AND BOTTOM SLAB THICKNESS - SEGMENT 4	
441			•	BOTTOM SLAB THICKNESS - RAMP "C" - SEGMENT 4	
450			•	DEPTH OF GIRDERS AND BOTTOM SLAB THICKNESS-SEGMENT 5-E.B.L.	
451			•	DEPTH OF GIRDERS AND BOTTOM SLAB THICKNESS-SEGMENT 5-W.B.L.	
460			•	DEPTH OF GIRDERS AND BOTTOM SLAB THICKNESS-SEGMENT 6-E.B.L.	
461	1	FEB 1982	•	DEPTH OF GIRDERS AND BOTTOM SLAB THICKNESS-SEGMENT 6-W.B.L.	

BOX GIRDER CROSS SECTIONS

SHEET #	REV #	REVISION DATE	ISSUE DATE	TITLE	REMARKS
510			•	GENERAL CROSS SECTION AND SUPER ELEVATION	
511	1	FEB 1981	•	BOX CROSS SECTION REINFORCEMENT DETAILS - SEGMENT 1	
520	1	OCT 1981	•	TYPICAL BOX DIMENSIONS AND GENERAL CROSS SECTIONS	
521			•	BOX CROSS SECTION REINFORCEMENT DETAILS - SEGMENT 2	
530			•	TYPICAL BOX DIMENSIONS AND GENERAL CROSS SECTIONS	
531			•	BOX CROSS SECTION REINFORCEMENT DETAILS 1 - SEGMENT 3	
532			•	BOX CROSS SECTION REINFORCEMENT DETAILS 2 - SEGMENT 3	
533	2	FEB 1982	•	BOX CROSS SECTION REINFORCEMENT DETAILS 3 - SEGMENT 3	
540			•	BOX CROSS SECTION REINFORCEMENT DETAILS - SEGMENT 4 AND 5	
560			•	GENERAL CROSS SECTIONS - SEGMENT 6	
561			•	BOX CROSS SECTION REINFORCEMENT DETAILS - SEGMENT 6	

DIAPHRAGM DETAILS

SHEET #	REV #	REVISION DATE	ISSUE DATE	TITLE	REMARKS
610	1	SEPT 1981	•	DIAPHRAGMS AT PIER NO. 2, 3 AND 4	
611			•	DIAPHRAGMS AT PIER NO. 5 AND 6	
612			•	DIAPHRAGMS AT PIER NO. 7, 7'	
620			•	DIAPHRAGMS AT PIER NO. 8, 8', 9, 9', 10, 10' AND 11	
621			•	DIAPHRAGM AT PIER NO. 11'	
630	1	SEPT 1981	•	DIAPHRAGMS AT PIER NO. 12, 13, 15' AND 15	
631			•	DIAPHRAGMS AT PIER NO. 12' AND 13'	
632			•	DIAPHRAGMS AT PIER NO. 14, 14' AND 207	
633	1	SEPT 1981	•	DIAPHRAGM AT BOX GIRDER TRANSITION - SEGMENT 3	
640			•	DIAPHRAGMS AT PIER NO. 16, 16', 19 AND 19'	
641			•	DIAPHRAGMS AT PIER NO. 17, 17' AND 18'	
642			•	DIAPHRAGMS AT PIER NO. 18 AND 410	
643			•	DIAPHRAGMS AT PIER NO. 20, 20', 21, 21', 22, 22', 23, 23', 24 AND 24'	
644	1	JAN 1982	•	DIAPHRAGMS AT BOX GIRDER TRANSITION - SEGMENT 4	
660			•	DIAPHRAGMS AT PIER NO. 25, 25', 26, 26', 27, 28 AND 28'	
661			•	DIAPHRAGMS AT PIER NO. 27' AND 29'	
662	1	NOV 1981	•	DIAPHRAGMS AT PIER NO.'s 105, 106, 107, AND 304	
663	3	JAN 1982	•	DIAPHRAGM AT PIER NO. 108, 29, 30 AND 305	

EXPANSION JOINT DETAILS

SHEET #	REV #	REVISION DATE	ISSUE DATE	TITLE	REMARKS
710			•	HINGE PLAN AND ANCHORAGE DETAILS - EXPANSION JOINT 1	
711			•	ANCHORAGE DETAILS AT HINGE - EXPANSION JOINT 2	
720	1	MAY 1981	•	HINGE PLAN - EXPANSION JOINT 2	
721	1	SEPT 1981	•	HINGE REINFORCEMENT - EXPANSION JOINT 2	
722	1	OCT 1981	•	HINGE REINFORCEMENT - EXPANSION JOINT 2	
723			•	HINGE PLAN - EXPANSION JOINT 3	
724	1	JAN 1982	•	DIAPHRAGM JOINT DETAIL - EXPANSION JOINT 2	
730	1	JULY 1981	•	HINGE PLAN - EXPANSION JOINT 5	
731	2	OCT 1981	9/3/81	RAMP "A" - EXPANSION JOINT 4 DETAILS	ADDITION TO CONTRACT
732	1	SEPT 1981	9/3/81	RAMP "A" - EXPANSION JOINT 4 DETAILS	ADDITION TO CONTRACT
740			•	HINGE PLAN - EXPANSION JOINT 7	
741	1	DEC 1981	•	RAMP "C" EXPANSION JOINT 6	
742	1	JAN 1982	•	HINGE DETAILS - JOINTS 5 AND 7	
760	1	DEC 1981	•	EXPANSION JOINTS 8 AND 8	
761			1/12/82	RAMP "D" EXPANSION JOINT 9	ADDITION TO CONTRACT

CABLE LAYOUT AND FORCE DIAGRAMS

SHEET #	REV #	REVISION DATE	ISSUE DATE	TITLE	REMARKS
810	1	MAY 1981	•	CABLE PROFILE, FORCES AND WEB REINFORCEMENT - SEGMENT 1	
811	1	MAY 1981	•	CABLE PROFILE, FORCES AND WEB REINFORCEMENT - SEGMENT 1	
812			•	CABLE LAYOUT - SEGMENT 1	
820	2	MAY 1981	•	CABLE PROFILE, FORCES AND WEB REINFORCEMENT - SEGMENT 2	
821			•	CABLE LAYOUT - SEGMENT 2	
830			•	CABLE LAYOUT AND PROFILE, FORCES AND WEB REINFORCEMENT E.B.L. 1 - SEGMENT 3	
831			•	CABLE LAYOUT AND PROFILE, FORCES, AND WEB REINFORCEMENT E.B.L. 2 - SEGMENT 3	
832	2	NOV 1981	•	CABLE LAYOUT AND PROFILE, FORCES AND WEB REINFORCEMENT W.B.L. 1 - SEGMENT 3	
833	1	AUG 1981	•	CABLE LAYOUT AND PROFILE, FORCES AND WEB REINFORCEMENT W.B.L. - SEGMENT 2	
834	1	OCT 1981	9/30/81	CABLE PROFILE, FORCES AND WEB REINFORCEMENT - W.B.L. RAMP "A"	ADDITION TO CONTRACT
840	1	NOV 1981	•	CABLE PROFILE FORCES AND WEB REINFORCEMENT - E.B.L. 1	
841	1	NOV 1981	•	CABLE PROFILE FORCES AND WEB REINFORCEMENT - E.B.L. 2	
842	1	DEC 1981	•	CABLE PROFILE FORCES AND WEB REINFORCEMENT - W.B.L. 1	
843	1	DEC 1981	•	CABLE PROFILE FORCES AND WEB REINFORCEMENT - W.B.L. 2	
844	1	JAN 1982	•	CABLE LAYOUT - SEGMENT 4	
850	1	JAN 1982	•	CABLE PROFILE, FORCES AND WEB REINFORCEMENT - E.B.L.	
851	1	JAN 1982	•	CABLE PROFILE, FORCES AND WEB REINFORCEMENT - W.B.L.	
852	1	JAN 1982	•	CABLE LAYOUT - SEGMENT 5	
860			•	CABLE PROFILE, FORCES AND WEB REINFORCEMENT E.B.L.	
861	1	JAN 1982	•	CABLE PROFILE, FORCES AND WEB REINFORCEMENT - E.B.L. RAMP "D"	
862	1	DEC 1981	•	CABLE PROFILE, FORCES AND WEB REINFORCEMENT - W.B.L. SEGMENT 6	
863	1	FEB 1982	•	CABLE PROFILE, FORCES AND WEB REINFORCEMENT W.B.L. RAMP "B"	
864	1	JAN 1982	•	CABLE LAYOUT E.B.L. - SEGMENT 6	
865	2	FEB 1982	•	CABLE LAYOUT W.B.L. - SEGMENT 6	

PRESTRESSING DETAILS

SHEET #	REV #	REVISION DATE	ISSUE DATE	TITLE	REMARKS
901	1	FEB 1982	12/23/81	TYPE I 33 FT BLISTER	ADDITION TO CONTRACT
902	1	FEB 1982	12/23/81	TYPE II 33 FT BLISTER	ADDITION TO CONTRACT
903	1	FEB 1982	12/23/81	TYPE IA AND TYPE IIA 33 FT BLISTER	ADDITION TO CONTRACT
910	1	JUNE 1981	5/31/81	BLISTER - 3 x 21 1/2" ϕ STRANDS NEAR PIER 3	ADDITION TO CONTRACT
911	1	JUNE 1981	5/31/81	TYPE II 32 FT BLISTER - 3 x 26 to 34 1/2" ϕ STRANDS	ADDITION TO CONTRACT
912	1	JUNE 1981	5/31/81	TYPE IIA 32 FT BLISTER - 2 x 16 to 25 1/2" ϕ STRANDS	ADDITION TO CONTRACT
920	2	NOV 1981	•	TYPICAL PRESTRESSING DETAILS	"AS BUILT"; SUPERCEDED BY 920A.
920A	4	JUNE 1981	3/3/81	TYPE I 32 FT BLISTER - 3 x 26 to 34 1/2" ϕ STRANDS	ADDITION TO CONTRACT; SUPERCEDES 920.
920B			3/3/81	PRESTRESSING DETAILS - 3 x 16 to 22 1/2" ϕ STRANDS	"VOID" 11/30/80; SUPERCEDED BY 911.
921	1	SEPT 1981	•	PRESTRESSING ANCHORAGE - PIER 10'	
922	1	DEC 1981	•	ANCHORAGE AT HINGE - EXPANSION JOINT 2	"AS BUILT"; SUPERCEDED BY 922A.
922A	1	DEC 1981	3/3/81	ANCHORAGE AT EXPANSION JOINT 3 E.B.L. AND EXPANSION JOINTS 2, 5, 7, 8, 8', E.B.L. AND W.B.L.	ADDITION TO CONTRACT; SUPERCEDES 922.
923			11/3/80	PRESTRESSING DETAILS FOR TEMPORARY CONSTRUCTION JOINT	"VOID" 11/8/80; SUPERCEDED BY 923A.
923A	1	FEB 1981	11/8/80	PRESTRESSING DETAILS FOR TEMPORARY CONSTRUCTION JOINT	ADDITION TO CONTRACT
930	1	DEC 1981	•	PRESTRESSING DETAILS - ANCHORAGE AT EXPANSION JOINTS 3 AND 5	"AS BUILT"; SUPERCEDED BY 930A.
930A	1	DEC 1981	3/3/81	ANCHORAGE AT EXPANSION JOINTS 3 E.B.L. AND 5 E.B.L. and W.B.L.	ADDITION TO CONTRACT; SUPERCEDES 930.
931	1	JAN 1981	•	PRESTRESSING DETAILS - TOP ANCHORAGE DETAILS 1 - SEGMENT 3	
932	1	SEPT 1981	•	PRESTRESSING DETAILS - TOP ANCHORAGE DETAILS 2 - SEGMENT	
933	1	DEC 1981	•	PRESTRESSING DETAILS - BOTTOM ANCHORAGE DETAILS 3 - SEGMENT 3	"AS BUILT"; SUPERCEDED BY 933A.
933A	2	DEC 1981	3/10/81	PRESTRESSING DETAILS - 1 OR 2 - 19 1/2" ϕ STRANDS	ADDITION TO CONTRACT; SUPERCEDES 933.
934			•	PRESTRESSING DETAILS - TENDON LOCATION SECTIONS	
935	3	NOV 1981	•	RAMP "A" - HINGE 4 AND PRESTRESSING REQUIREMENT	
935A			1/12/82	RAMP "A" - TEMPORARY PRESTRESSING BLOCKOUTS	ADDITION TO CONTRACT
936			6/19/81	PRESTRESSING DETAILS - COUPLERS AT CONSTRUCTION JOINT	ADDITION TO CONTRACT
937	1	JULY 1981	7/27/81	COUPLER BUTTRESS DETAIL	ADDITION TO CONTRACT
938	2	OCT 1981	9/17/81	PRESTRESSING DETAILS - ANCHORAGE AT EXPANSION JOINT 4	ADDITION TO CONTRACT
939	2	DEC 1981	9/17/81	PRESTRESSING DETAILS - ANCHORAGE AT EXPANSION JOINT 4	ADDITION TO CONTRACT
940			3/3/81	PRESTRESSING DETAILS - 2 x 17 to 34 1/2" ϕ STRANDS	"VOID" 12/21/81; SUPERCEDED BY 903.
944	1	DEC 1981	11/30/81	RAMP "C" - TOP ANCHORAGE DETAILS	ADDITION TO CONTRACT
945			11/30/81	PRESTRESSING DETAILS - ANCHORAGE AT EXPANSION JOINT 6	ADDITION TO CONTRACT
960			1/12/82	RAMP "D" - TOP SLAB ANCHORAGE DETAILS	ADDITION TO CONTRACT
961			1/12/82	PRESTRESSING DETAILS - ANCHORAGE AT EXPANSION JOINT 9	ADDITION TO CONTRACT
962			1/21/82	PRESTRESSING DETAILS - COUPLERS AT CONSTRUCTION JOINT	ADDITION TO CONTRACT

MISCELLANEOUS DETAILS

SHEET #	REV #	REVISION DATE	ISSUE DATE	TITLE	REMARKS
1000	1	OCT 1981	•	BEARING PLAN AND DESIGN DATA	
1020	2	JULY 1981	•	CIRCULAR MANHOLE DETAILS AND BEARING DETAILS	
1021			2/2/82	BEARING DETAILS - EXPANSION ASSEMBLY SETTINGS	ADDITION TO CONTRACT
1030			•	SUPERSTRUCTURE DRAINAGE - PIER 2 AND STANDARD DETAILS	
1031			•	SUPERSTRUCTURE DRAINAGE - PIERS 4, 5, AND 6	
1032			•	SUPERSTRUCTURE DRAINAGE - PIER 7	
1033			•	SUPERSTRUCTURE DRAINAGE - PIERS 8, 9 AND 10	
1034			•	SUPERSTRUCTURE DRAINAGE - PIERS 11, 12, 13 AND 14	
1035			•	SUPERSTRUCTURE DRAINAGE - PIERS 15, 16, 17, 18, 19, 20, 21 AND 401	
1036			•	SUPERSTRUCTURE DRAINAGE - PIERS 22, 23, 24, 25, 26, 27, 28 AND 105	
1037			•	SUPERSTRUCTURE DRAINAGE - PIERS 206 AND ABUTMENT 301	
1038			•	SUPERSTRUCTURE DRAINAGE - ABUTMENT 29 AND 30'	
1050	1	SEPT 1981	•	CANTILEVER SIGN SUPPORT DETAILS	
1051			•	IMPACT ATTENUATOR AND LIGHT STAND DETAILS	
1052	1	SEPT 1981	•	BOX TRUSS SUPPORT DETAILS	
1053	1	FEB 1981	1/21/81	LIGHTSTAND DETAILS	ADDITION TO CONTRACT
1070	1	SEPT 1981	•	RAILING DETAILS	

CONSTRUCTION SEQUENCE

SHEET #	REV #	REVISION DATE	ISSUE DATE	TITLE	REMARKS
1100	1	MAR 1981	•	CONSTRUCTION SEQUENCE - SUPERSTRUCTURE SEGMENTS 1, 2, AND 3	
1101	1	DEC 1981	•	CONSTRUCTION SEQUENCE - SEGMENTS 3, 4, 5, AND 6	
1102	2	FEB 1982	•	CONSTRUCTION SEQUENCE - SUPERSTRUCTURE SEGMENT 3	
1103	1	DEC 1981	•	CONSTRUCTION SEQUENCE - SUPERSTRUCTURE SEGMENT 6	
1104	5	FEB 1982	•	RAMP "A" - CONSTRUCTION SEQUENCE	
1104A	1	JAN 1982	9/3/81	RAMP "A" - CONSTRUCTION SEQUENCE	ADDITION TO CONTRACT
1105	1	MAR 1981	•	CONSTRUCTION SEQUENCE - SEGMENTS 1, 2 AND 3 TENDON ARRANGEMENT	
1106	1	DEC 1981	•	CONSTRUCTION SEQUENCE - SEGMENTS 3, 4, 5 AND 6 TENDON ARRANGEMENT	
1107	1	APRIL 1981	•	CONSTRUCTION CAMBER - SEGMENT 3	

No.	REVISION	DATE
⚠1	REVISION/ADDITIONS	FEB. '82

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T. Y. LIN REGISTERED No. 18266 STATE OF [illegible] PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

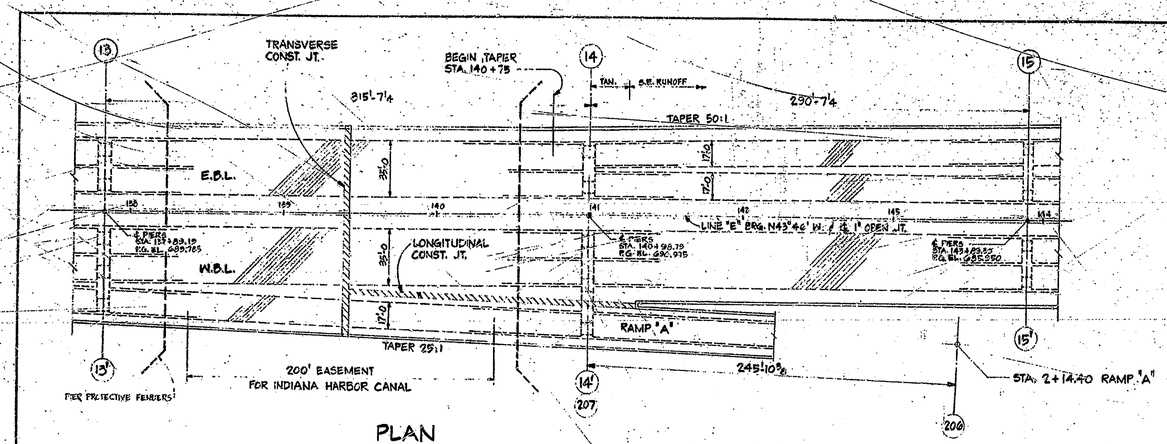
SHEET TITLE

INDEX OF DRAWINGS - SUPERSTRUCTURE

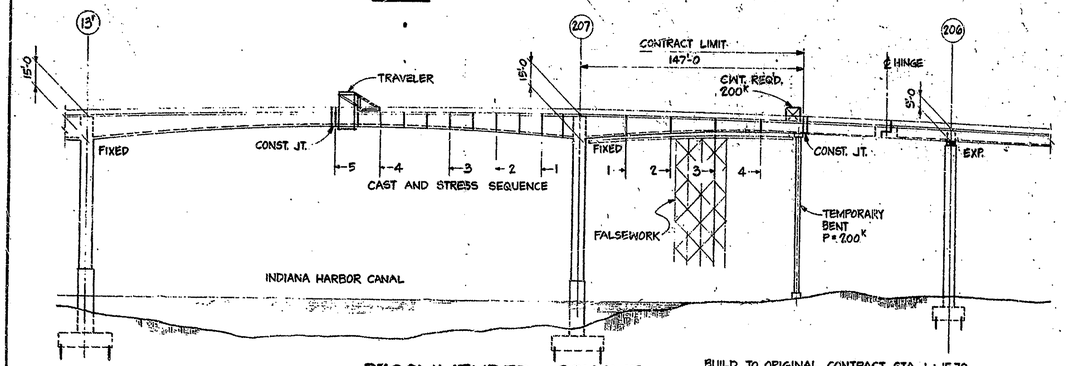
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2848 CONTRACT NO. B-11812
INDIANA STATE HIGHWAY COMMISSION

SHEET N. 002

REVISION | DATE



PLAN

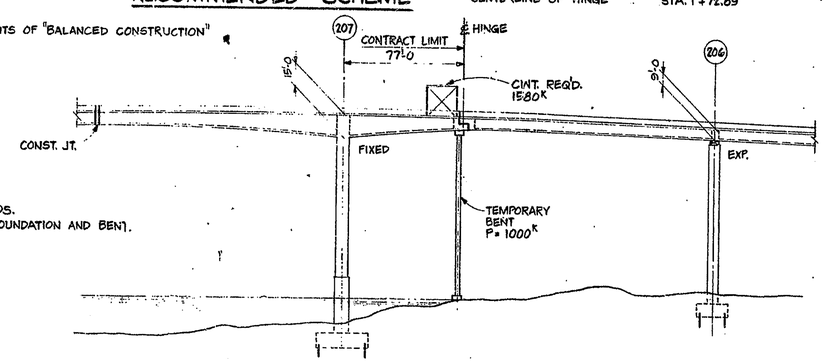


RECOMMENDED SCHEME

BUILD TO ORIGINAL CONTRACT STA. 1+15.79
CENTERLINE OF HINGE STA. 1+72.89

DISCUSSION:

1. PROVIDES FULL BENEFITS OF "BALANCED CONSTRUCTION"

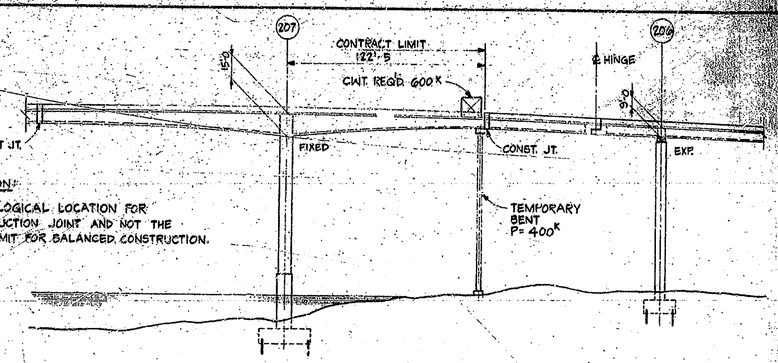


DISCUSSION:

1. EXCESSIVE CWT. LOADS.
2. COSTLY TEMPORARY FOUNDATION AND BENT.

AMENDED SCHEME

BUILD TO CENTERLINE OF HINGE STA. 0+46.84

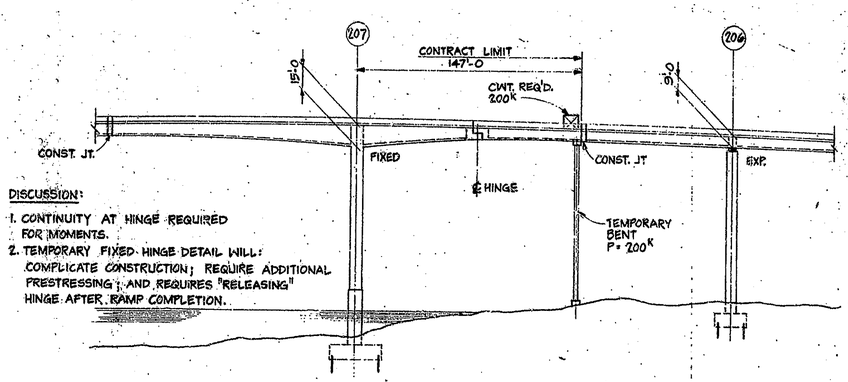


DISCUSSION:

1. NOT A LOGICAL LOCATION FOR CONSTRUCTION JOINT AND NOT THE BEST LIMIT FOR BALANCED CONSTRUCTION.

ALTERNATE SCHEME

BUILD TO MID-POINT OF PIERS STA. 0+91.60
CENTERLINE OF HINGE STA. 1+72.89



DISCUSSION:

1. CONTINUITY AT HINGE REQUIRED FOR MOMENTS.
2. TEMPORARY FIXED HINGE DETAIL WILL: COMPLICATE CONSTRUCTION; REQUIRE ADDITIONAL PRESTRESSING; AND REQUIRES "RELEASING" HINGE AFTER RAMP COMPLETION.

ORIGINAL CONTRACT SCHEME

BUILD TO CENTERLINE OF HINGE STA. 1+15.79
STA. 0+46.84

SEGMENT 3 — CAST-IN-PLACE, BALANCED CANTILEVER, CONCRETE BOX GIRDER CONSTRUCTION. *

RAMP "A" CONSTRUCTION PROCEDURE

1. CAST CONCRETE AND STRESS TENDONS - SEQUENCE AS PER "RECOMMENDED SCHEME".
2. PLACE COUNTERWEIGHT NEAR THE CONTRACT LIMIT.
3. REMOVE FALSEWORK BETWEEN PIER 207 AND THE CONTRACT LIMIT. LET THE STRUCTURE REST ON THE TOP OF THE TEMPORARY STEEL BENT.

*ESTIMATED WEIGHT OF SINGLE BOX TRAVELER APPROX. = 72 TON

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

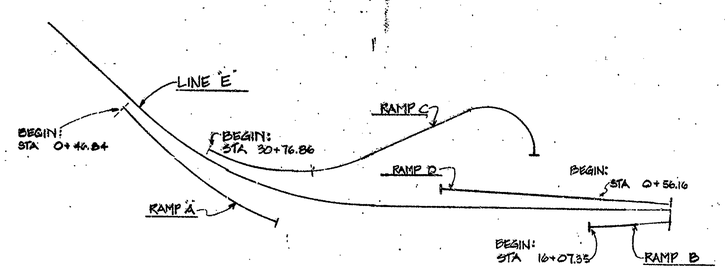
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

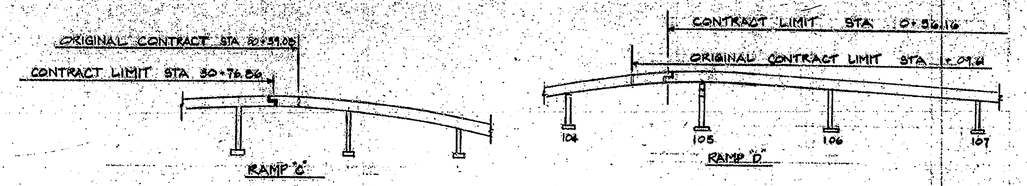
SHEET TITLE ALTERNATE CONSTRUCTION SCHEMES — RAMP "A"

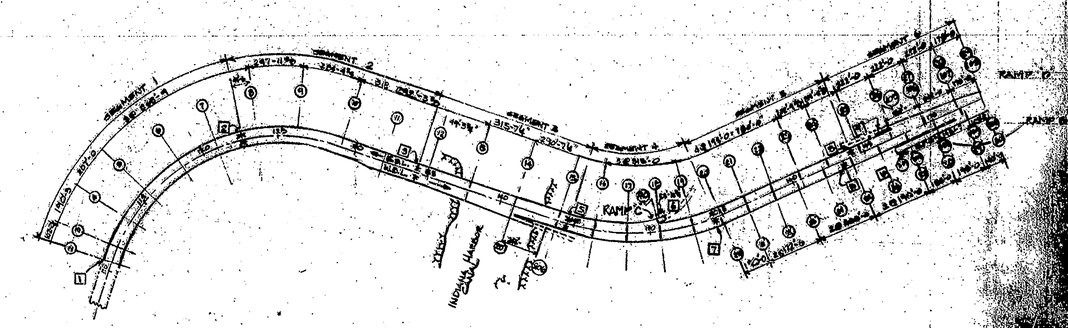
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-116-2 INDIANA STATE HIGHWAY COMMISSION

SHEET N. SK-A2



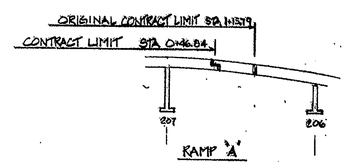
PROJECT LIMITS

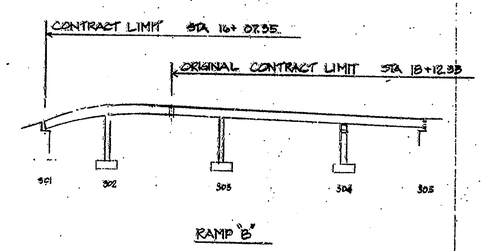




PLAN
1"=400'-0

LEGEND:
○ — PIER NO.
□ — EXPANSION JOINT NO.





N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
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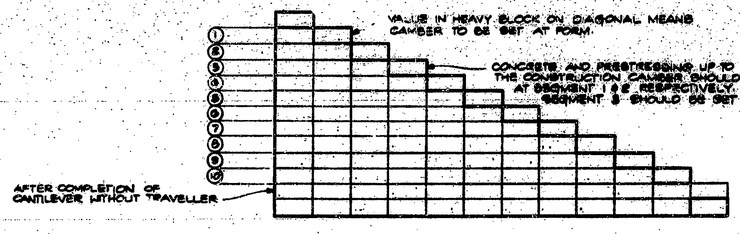
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

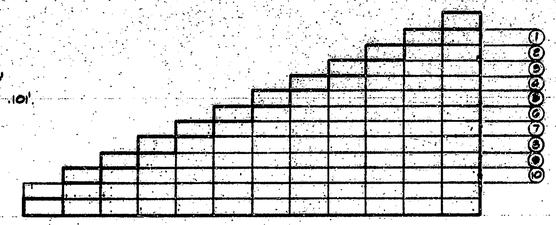
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

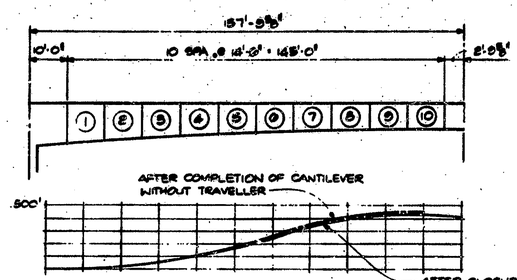
SHEET TITLE CONTRACT LIMITS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE 912-45-2546 CONTRACT NO. B-11912 INDIANA STATE HIGHWAY COMMISSION

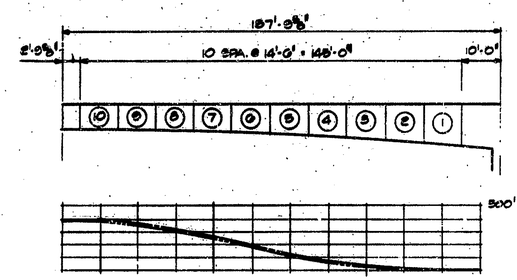
SHEET 11
SK A







PIER 13 EAST BOUND



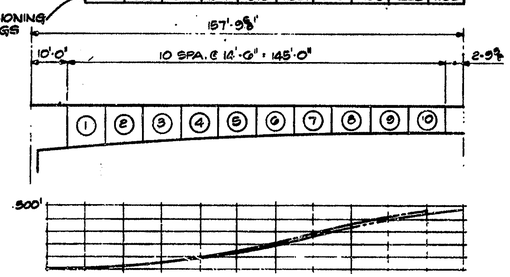
PIER 14 EAST BOUND

SEE PIER 13 EAST BOUND TYP.

NOTES

1. CAMBERS ARE IN FEET AND AT CENTER LINE OF THE BRIDGE
2. POSITIVE CAMBER IS UPWARD.
3. CAMBERS ARE TO BE ADDED TO ELEVATIONS OF THE BRIDGE.
4. THE CAMBER REQUIREMENTS ARE BASED ON THE CONSTRUCTION SEQUENCE FOR SEGMENT 3 INDICATED ON SHEET NO. 8K-68.
5. REVISION △1 IS ISSUED FOR THE CONSTRUCTION OF THE WESTBOUND LANES SEQUENCE. A LATER REVISION WILL BE ISSUED FOR THE EASTBOUND CONSTRUCTION IN THE EVENT THAT THE CONSTRUCTION SCHEDULE CHANGES.
6. CURRENT WESTBOUND CANTILEVER FROM PIER 14' IS COMPLETED APPROXIMATELY 9 MONTHS AFTER THE PIER 13' CANTILEVER.

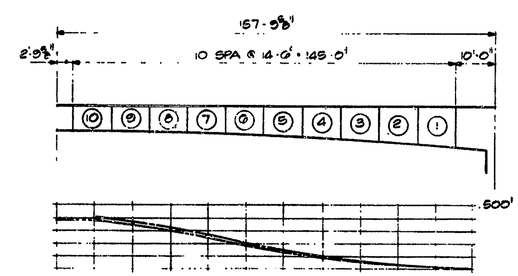
	1	2	3	4	5	6	7	8	9	10
1	.005									
2	.005	.022								
3	.006	.024	.073							
4	.006	.024	.077	.148						
5	.006	.024	.076	.147	.251					
6	.005	.022	.073	.143	.229	.329				
7	.005	.020	.067	.133	.212	.307	.422			
8	.004	.016	.060	.118	.190	.277	.384	.500		
9	.003	.012	.050	.102	.162	.236	.330	.438	.535	
10	.002	.008	.035	.081	.128	.186	.260	.349	.450	.477
AFTER COMPLETION OF CANTILEVER W/O TRAVELER	.007	.005	.035	.069	.108	.156	.217	.291	.355	.402
AFTER NINE MONTHS	.000	.000	.021	.047	.073	.104	.146	.198	.240	.257
AFTER CLOSURE POST-TENSIONING AND COMPLETION OF RAILINGS PAVEMENT	.000	.000	.015	.044	.070	.100	.139	.158	.232	.158



PIER 13' WEST BOUND

SEE PIER 13 EAST BOUND TYP.

	1	2	3	4	5	6	7	8	9	10
1	.001									
2	.001	.019								
3	.001	.021	.046							
4	.000	.022	.048	.105						
5	.000	.021	.048	.105	.176					
6	.000	.020	.045	.102	.172	.243				
7	.000	.017	.040	.096	.158	.232	.316			
8	.000	.014	.032	.078	.138	.204	.277	.377		
9	.000	.010	.023	.062	.112	.168	.235	.318	.403	
10	.000	.005	.012	.043	.082	.124	.174	.238	.312	.377
	.000	.000	.000	.021	.047	.074	.104	.146	.198	.240
	.000	.000	.000	.017	.041	.065	.094	.136	.151	.229



PIER 14' WEST BOUND

SEE PIER 13 EAST BOUND TYP.

APPROVED FOR CONSTRUCTION

W. B. ABBOTT
Assistant Engineer of Bridge Design 10-26-81

NO.	REVISION	DATE
△1	REVISED SCHEDULE	4-7-81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

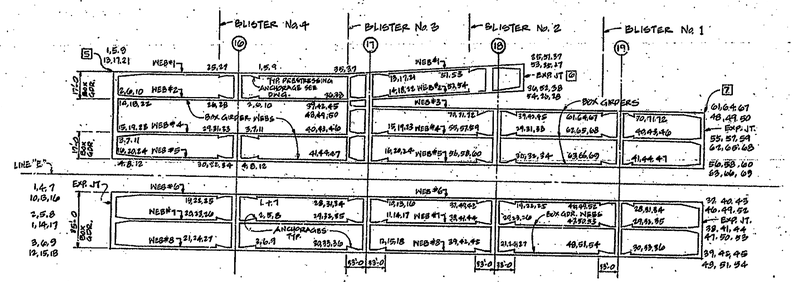
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO
DARIEN, CONNECTICUT

SHEET TITLE
CONSTRUCTION CAMBER – SEGMENT 3

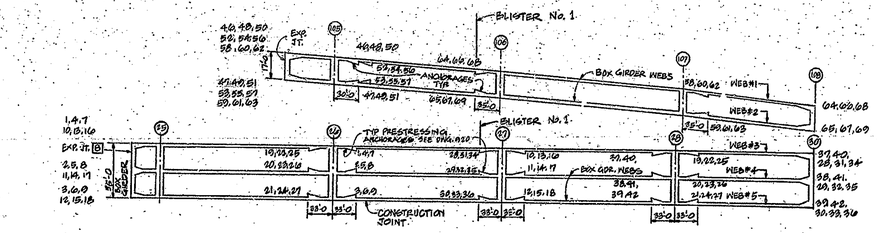
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. B-11812 INDIANA STATE HIGHWAY COMMISSION

SHEET N
1107

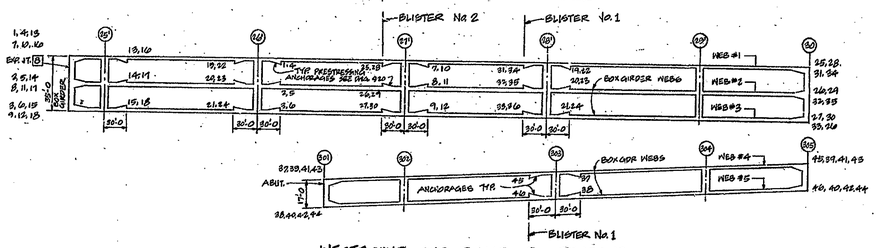


EASTBOUND AND WESTBOUND TENDONS

SEGMENT 4

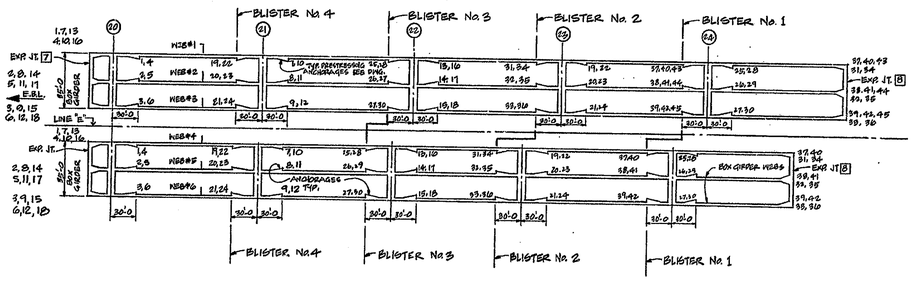


EASTBOUND AND RAMP D



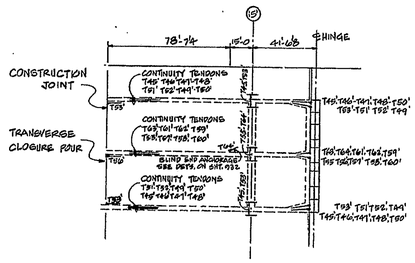
WESTBOUND AND RAMP B TENDONS

SEGMENT 6

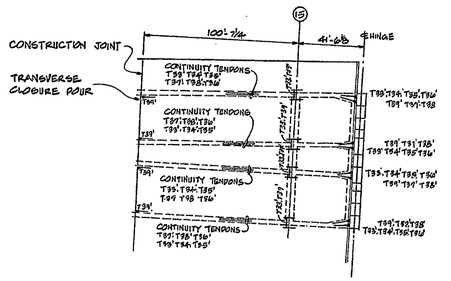


EASTBOUND AND WESTBOUND TENDONS

SEGMENT 5



WESTBOUND TENDONS



EASTBOUND TENDONS

SEGMENT 3

N	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

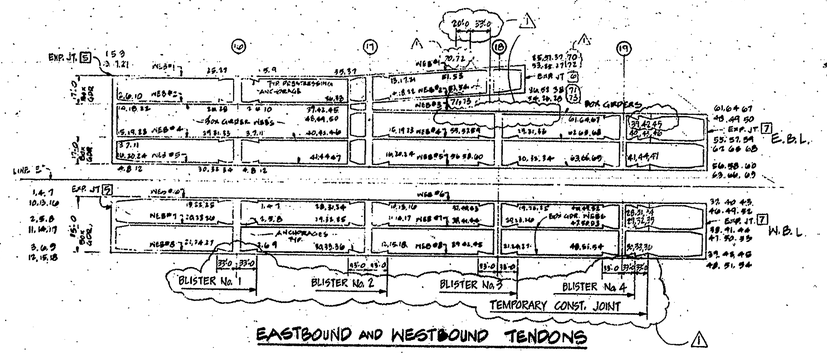
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F ATKINSON CO
DARIEN, CONNECTICUT

SHEET TITLE
CONSTRUCTION SEQUENCE SEGMENTS 3,4,5 & 6 TENDON ARRANGEMENT

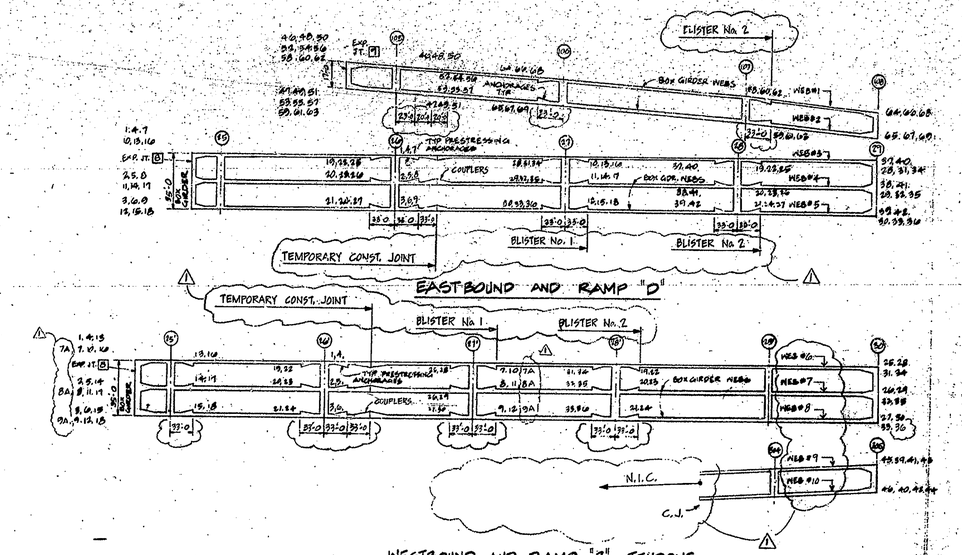
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE 912-45-2546 CONTRACT NO. B-11812
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
1106 A



EASTBOUND AND WESTBOUND TENDONS

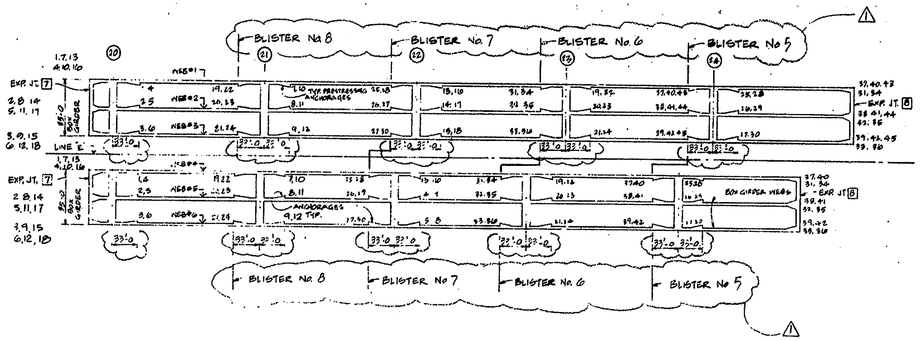
SEGMENT 4



EASTBOUND AND RAMP "D"

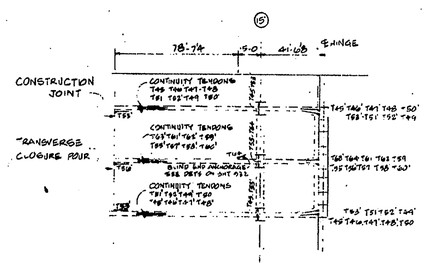
WESTBOUND AND RAMP "B" TENDONS

SEGMENT 6

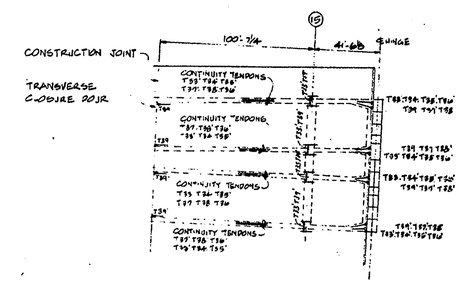


EASTBOUND AND WESTBOUND TENDONS

SEGMENT 5



WESTBOUND TENDONS



EASTBOUND TENDONS

SEGMENT 3

NOTE:

1. FOR TYPICAL PRESTRESSING ANCHORAGES IN SEGMENTS 4, 5 AND 6 SEE SHEETS 901, 902, 903, 960 AND 961.
2. FOR DETAILS OF TEMPORARY CONST. JOINTS SEE SHEET 962.

NO.	REVISION	DATE
1	TENDON NUMBERS	DEC. '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

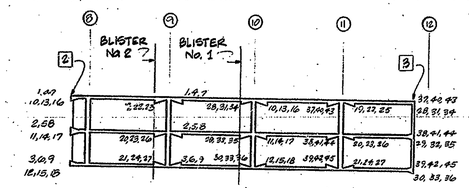
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO
DARIEN, CONNECTICUT

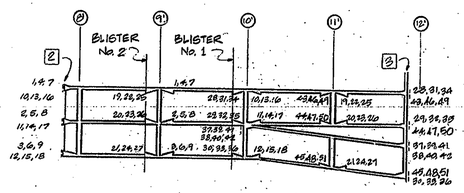
SHEET TITLE
CONSTRUCTION SEQUENCE SEGMENTS 3,4,5 & 6 TENDON ARRANGEMENT

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE 912 45 2540 CONTRACT NO. B 11612 INDIANA STATE HIGHWAY COMMISSION

SHEET NO. 1106

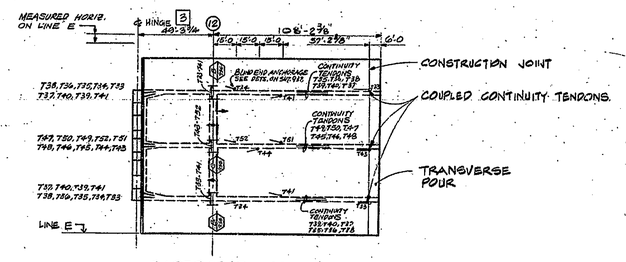


EASTBOUND TENDONS

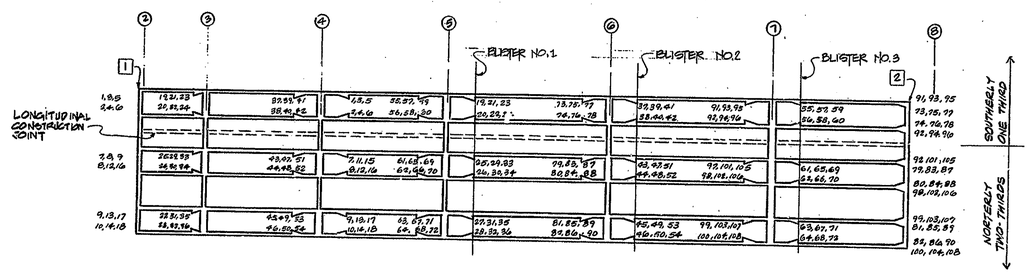


WESTBOUND TENDONS

SEGMENT 2



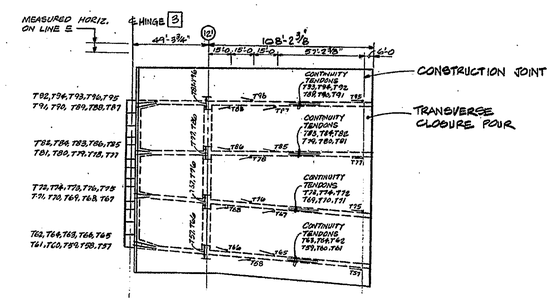
EASTBOUND TENDONS



EASTBOUND AND WESTBOUND TENDONS

CURVE AND SUPERELEVATION NOT SHOWN

SEGMENT 1



WESTBOUND TENDONS

SEGMENT 3

M.B. Oberst 6-15-81

NO.	REVISION	DATE
1	REVISED BLISTER NO.	MAY, 1981

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOC'ATES INC.
CONSULTING ENGINEERS

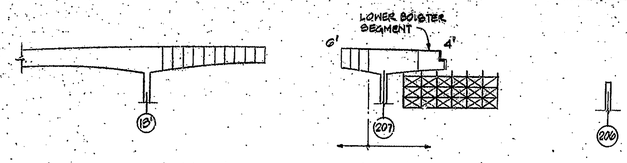
T. Y. LIN REGISTERED No. 1 STRUCTURAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
CONSTRUCTION SEQUENCE SEGMENTS 1,2&3 TENDON ARRANGEMENT

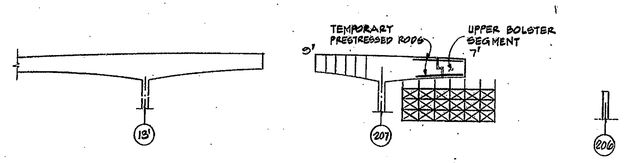
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 812-45-2546 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
1105



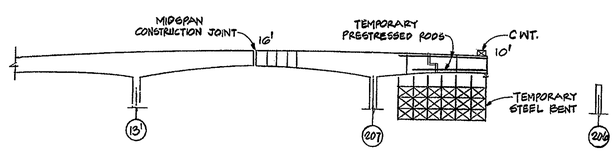
A. INSTALL FALSEWORK FROM PIER 207 TO C.J. AT STA 1 + 15.79.
B. PERFORM CANTILEVER CONSTRUCTION C.J. 6' AND BACK THRU E.J 4 C.J. 4', STRESSING TENDONS T3' THRU T6', AND T8'.
C. INSTALL 1 1/4" Ø ROD ANCHORAGES
D. INSTALL TENDON ANCHORAGES.

1. BALANCED CANTILEVER CONSTRUCTION AND CAST LOWER BOLSTER HINGE SEGMENT



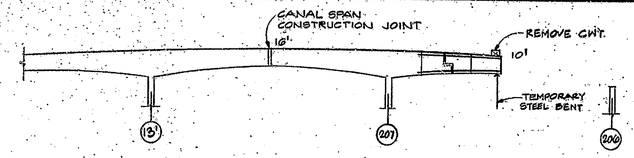
A. CAST COMPRESSION BLOCKS.
B. INSTALL BEARINGS.
C. CAST ON FALSEWORK TO C.J. 7'.
D. INSTALL AND STRESS 1 1/4" Ø RODS.
E. STRESS TENDONS T3' AND T7'.

2. CANTILEVER CONSTRUCTION AND CAST UPPER BOLSTER HINGE SEGMENT



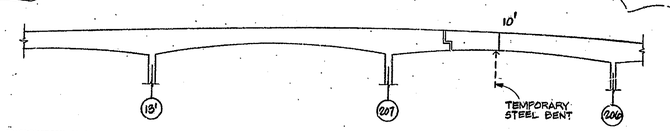
A. CAST AND STRESS 1 1/4" Ø RODS.
B. ADD 200K COUNTERWEIGHT.
C. COMPLETE CANTILEVER CONSTRUCTION.

3. CANTILEVER CONSTRUCTION AND RAMP A TO CONSTRUCTION JOINT AT STA. 1 + 15.79



A. CLOSE CONSTRUCTION JOINT IN CANAL SPAN.
B. STRESS 10 CONTINUITY TENDONS.
C. REMOVE COUNTERWEIGHT.
D. RELEASE TEMPORARY STEEL BENT TO PROVIDE 1/2" CLEAR TO GIRDER SOFFIT.
E. REMOVE FALSEWORK.

4. CLOSE CANAL SPAN CONSTRUCTION JOINT



A. COMPLETE CONSTRUCTION OF RAMP "A" GIRDER FROM PIER 206 TO C.J. 10'. (BY OTHERS)
B. INSTALL AND STRESS CONTINUOUS TENDONS FROM E.J. 4 TO BEYOND PIER 206. (BY OTHERS)
C. DETENSION ACCESSIBLE, UNGROUTED 1-1/4" Ø TEMPORARY PRESTRESSING RODS B2-1, B2-2, B2-4, B2-5, B2-8, B2-9, B2-10, B2-11, B2-13, B2-14, B2-15, B2-16, B2-19, B2-20, B2-22 and B2-23 IN TOP LAYER OF TOP SLAB; AND ALL B3 BARS IN BOTTOM SLAB.
D. REMOVE TOP CONCRETE COMPRESSION BLOCKS AND DEHINGE ALL 1-1/4" Ø TEMPORARY PRESTRESSING RODS AT E.J. 4; TOP BARS FIRST AND THEN BOTTOM BARS IN A SYMMETRICAL AND GRADUAL SEQUENCE BY CUTTING ALTERNATE BARS.
E. REMOVE BOTTOM CONCRETE COMPRESSION BLOCKS.
F. REMOVE TEMPORARY STEEL BENT AT CONSTRUCTION JOINT 10'.

5. COMPLETE RAMP A FROM PIER 206 TO C.J. STA. 1 + 15.79

REFERENCE DRAWINGS: 731, 732 — HINGE REINF.
935, 935A, 938, 939 — PRESTRESSING REINF.
1104 — CONST. SEQUENCE

APPROVED FOR CONSTRUCTION
J. D. Mattis
J. D. MATTIS
Engineer of Bridge Plans
9-7-82

NO.	REVISION	DATE
1	STEP 5 SEQ.	JAN. 82

N	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

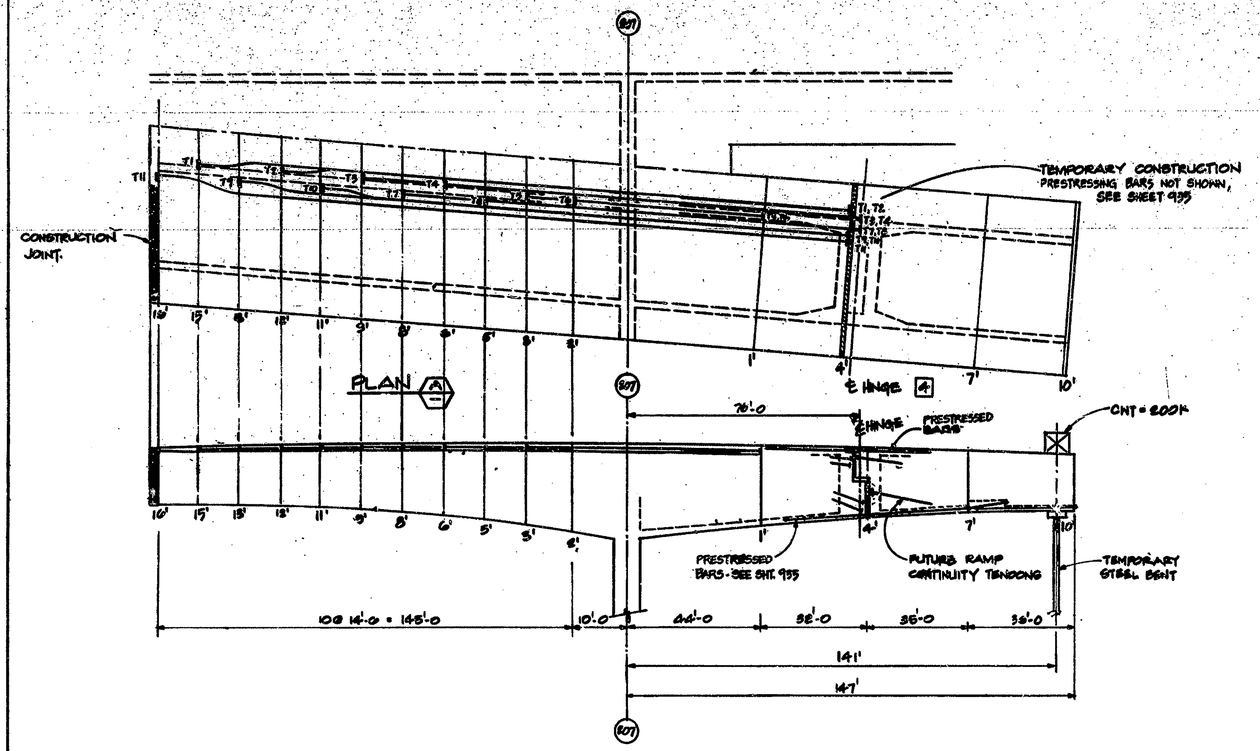
T. Y. LIN INT. REGISTERED No. 18066 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
RAMP "A" CONSTRUCTION SEQUENCE

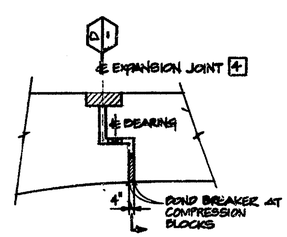
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2646 CONTRACT NO. S-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
1104A



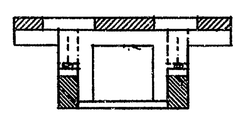
ELEVATION B
N.T.S.

RAMP "A"



ELEVATION C

▨ = C = COMPRESSION BLOCK f'_c = 5000 psi



SECTION D
N.T.S.

RAMP A

STEPS

1. CAST CONCRETE ON FALSEWORK TO CONSTRUCTION JOINT 1', THEN BUILD CANTILEVER TO C.J. 2' AND STRESS TENDONS T6'; BUILD CANTILEVER TO C.J. 8' AND STRESS TENDONS T8'.
2. CAST CONCRETE ON FALSEWORK THRU HINGE 4 TO C.J. 4'. THEN BUILD CANTILEVER TO C.J. 5' AND STRESS TENDONS T5', BUILD CANTILEVER TO C.J. 6' AND STRESS TENDONS T4'.
3. CAST CONCRETE ON FALSEWORK TO C.J. 7'. CAST TRANSVERSE COMPRESSION BLOCK AT HINGE. STRESS TEMPORARY BARS B1, B4. THEN CANTILEVER TO C.J. 8' AND STRESS TENDONS T7', BUILD CANTILEVER TO C.J. 9' AND STRESS TENDONS T9'. THEN BUILD CANTILEVER TO C.J. 11' AND STRESS TENDONS T10'.

△5

△6 4. CAST CONCRETE ON FALSEWORK TO C.J. 10'. STRESS BARS B2, B3 AND B5. PLACE COUNTERWEIGHT AND BENT

BUILD CANTILEVER TO C.J. 12' AND STRESS TENDONS T2'.
BUILD CANTILEVER TO C.J. 13' AND STRESS TENDONS T9'.
△4 BUILD CANTILEVER TO C.J. 15' AND STRESS TENDONS T1'.
BUILD CANTILEVER TO C.J. 16' AND STRESS TENDONS T11'.

△3 5. CLOSE TRANSVERSE MIDSPAN, CONSTRUCTION JOINT 16' AND STRESS CONTINUITY TENDONS, TOTAL @ 19-½"ϕ TENDONS.

6. FUTURE RAMP "A" COMPLETION WILL CLOSE C.J. 10' AND STRESS CONTINUITY TENDONS AS INDICATED BY ADJACENT CONTRACT REQUIREMENTS, REF. DWG. 1104A.

7. DEHINGE TEMPORARY BARS B1, B2, B3, B4, B5

△2

NOTES

1. READ THIS DWG. WITH SHTS. No. 835, 935, 936, 939, 731, 732 & 1104A
2. CONSTRUCTION PROCEDURE INCLUDES PROVISIONS FOR TEMPORARY PRESTRESSING BARS, CONSTRUCTION HINGE, COMPRESSION BLOCKS AND ANCHORAGE FOR FUTURE RAMP CONTINUITY TENDONS.
3. SUBMIT FINAL DETAILS OF CONSTRUCTION FOR APPROVAL BEFORE COMMENCING WORK.

△2 4. TEMPORARY PRESTRESSED BARS f'_s = 150 ksi (PRESTRESSING FORCE = 150 KIPS)

5. TEMPORARY COMPRESSION BLOCKS f'_c = 5,000 psi

△2 6. TRAVELER CAN BE MOVED FORWARD ON ANY SEGMENT, BUT ONLY AFTER PRESTRESSING OPERATIONS OF THAT SEGMENT ARE COMPLETE.

APPROVED FOR CONSTRUCTION
W. B. ABBOTT
Assistant Engineer of Bridge Design 10-26-81

APPROVED FOR CONSTRUCTION
J. D. MATTIS
Engineer of Bridge Plans 9-7-82

No.	REVISION	DATE
△6	REVISE NOTES 3 & 4	FEB '82
△4	NOTE 4	OCT. '81
△3	NOTES & STEPS	SEPT. '81
△2	BARS, BLOCKS	AUG. '81
△1	SEGMENT FOUR Nos.	AUG. '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

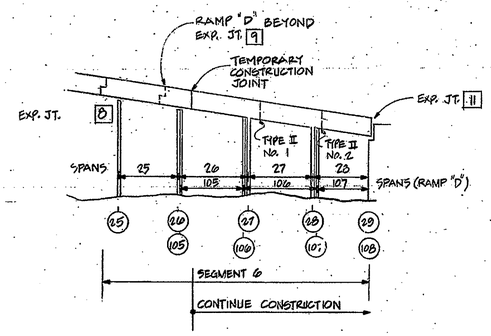
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

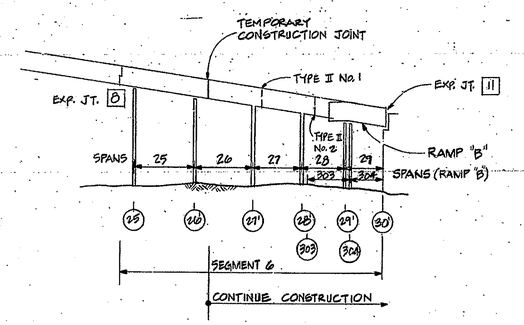
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
RAMP 'A' - CONSTRUCTION SEQUENCE

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE 912-45 2546 CONTRACT NO 8-11612 INDIANA STATE HIGHWAY COMMISSION

SHEET N
1104





SEGMENT 6
EASTBOUND LANES

1. AFTER CONCRETE IS CAST FROM TEMPORARY CONSTRUCTION JOINT IN SPAN 26 TO BLISTER TYPE II No. 1, STRESS COUPLED TENDONS 10 TO 18.
2. AFTER CONCRETE IS CAST TO BLISTER TYPE II No. 2, STRESS TENDONS 19 TO 27. FALSEWORK MAY BE REMOVED FROM SPAN 26.
3. AFTER CONCRETE IS CAST TO ABUTMENT 30, STRESS TENDONS 28 TO 36. STRESS TENDONS 37 TO 42. STRESS THESE TENDONS IN SEQUENCE WITH STEP 2 IN RAMP D CONSTRUCTION SEQUENCE. FALSEWORK MAY BE REMOVED FROM SPANS 27 & 28.

RAMP D

1. CAST CONCRETE FROM EXPANSION JOINT 9 TO BLISTER No. 2 TYPE II IN SPAN 107, STRESS TENDONS 58 TO 63. STRESS TENDONS 46 TO 57. FALSEWORK MAY BE REMOVED FROM SPAN 104.
2. CAST CONCRETE TO ABUTMENT 30, STRESS TENDONS 64 TO 69. STRESS THESE TENDONS IN SEQUENCE WITH SEGMENT 6 STEP 3. FALSEWORK MAY BE REMOVED FROM SPAN 105, 106 AND 107.

NOTE:

1. READ THIS DWG. WITH SHEET 1106.

SEGMENT 6
WESTBOUND LANES

1. AFTER CONCRETE IS CAST FROM TEMPORARY CONSTRUCTION JOINT IN SPAN 26 TO BLISTER TYPE II No. 1, STRESS COUPLED TENDONS 7 TO 12, 7A, 8A AND 9A.
2. AFTER CONCRETE IS CAST TO BLISTER TYPE II No. 2, STRESS TENDONS 13 TO 24. FALSEWORK MAY BE REMOVED FROM SPAN 26.
3. AFTER CONCRETE IS CAST TO ABUTMENT 30, STRESS TENDONS 31 TO 36. STRESS THESE TENDONS IN SEQUENCE WITH STEP IN RAMP B CONSTRUCTION SEQUENCE.

RAMP B

1. CAST CONCRETE FROM CONSTRUCTION JOINT IN SPAN 303 TO ABUTMENT 30. STRESS TENDONS 33 TO 40. FALSEWORK MAY BE REMOVED FROM SPANS 303 AND 304 AFTER STRESSING.

APPROVED FOR CONSTRUCTION
J. D. Mattis
J. D. MATTIS
Engineer of Bridge Plans
9-7-82

NO.	REVISION	DATE
1	REVISED STEPS	DEC. '81

NO.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

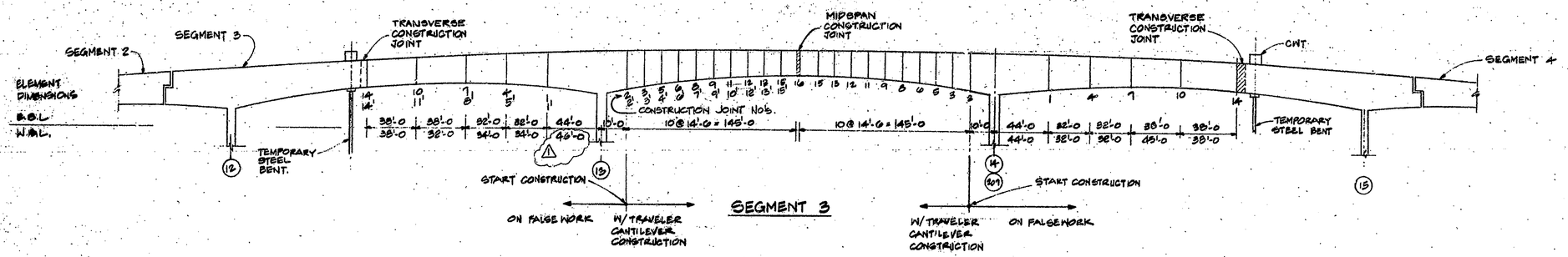
STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
CONSTRUCTION SEQUENCE – SUPERSTRUCTURE SEGMENT 6

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. B-11812 INDIANA STATE HIGHWAY COMMISSION

SHEET N.
1103



SEGMENT 3
EASTBOUND - PIER 13

STEPS

1. CAST CONCRETE ON FALSEWORK TO CONSTRUCTION JOINT 1. BUILD CANTILEVER PORTION TO C.J. 2 AND STRESS TENDONS T9, T10, T35, T40. BUILD CANTILEVER TO C.J. 3 AND STRESS TENDONS T8, T12, T33 & T38.
2. CAST CONCRETE ON FALSEWORK TO C.J. 4. BUILD CANTILEVER TO C.J. 5 AND STRESS TENDONS T7 TO T24 & T27. BUILD CANTILEVER TO C.J. 6 AND STRESS TENDONS T5, T14, & T22.
3. CAST CONCRETE ON FALSEWORK TO C.J. 7. BUILD CANTILEVER TO C.J. 8 AND STRESS TENDONS T6, T18 & T30. BUILD CANTILEVER TO C.J. 9 AND STRESS TENDONS T3, T16 & T21.
4. CAST CONCRETE ON FALSEWORK TO C.J 10. BUILD CANTILEVER TO C.J. 11 AND STRESS TENDONS T4 & T29. BUILD CANTILEVER TO C.J. 12 AND STRESS TENDONS T15 & T20. BUILD CANTILEVER TO C.J. 13 AND STRESS TENDONS T2 & T32.
5. CAST CONCRETE ON FALSEWORK TO C.J. 14. BUILD CANTILEVER TO C.J. 15 AND STRESS TENDONS T17 & T19. BUILD CANTILEVER TO C.J. 16 AND STRESS TENDONS T1 & T31.
6. CLOSE TRANSVERSE CONSTRUCTION JOINT 14 AND COUPLE AND STRESS CONTINUITY TENDONS T35, T32, T30, T25, T45 & T42. TEMPORARY STEEL BENT MAY BE REMOVED.

SEGMENT 3
WESTBOUND - PIER 13'

STEPS

1. CAST CONCRETE ON FALSEWORK TO CONSTRUCTION JOINT 1'. BUILD CANTILEVER PORTION TO C.J. 2' AND STRESS TENDONS T6, T18, T19, T31, T32, T41 & T43. BUILD CANTILEVER TO C.J. 3' AND STRESS TENDONS T5, T11, T30, T34, T50 & T46. BUILD CANTILEVER TO C.J. 4' AND STRESS TENDONS T8, T21, T29, T33, T45 & T40.
2. CAST CONCRETE ON FALSEWORK TO C.J. 5'. BUILD CANTILEVER TO C.J. 6 AND STRESS TENDONS T4, T10, T36, T51 & T43. BUILD CANTILEVER TO C.J 7' AND STRESS TENDONS T1, T20, T28, T44 & T52.
3. CAST CONCRETE ON FALSEWORK TO C.J. 8'. BUILD CANTILEVER TO C.J 9' AND STRESS TENDONS T3, T15, T35, T41 & T54. BUILD CANTILEVER TO C.J. 10.' AND STRESS TENDONS T9, T22, T37 & T42.
4. CAST CONCRETE ON FALSEWORK TO C.J. 11'. BUILD CANTILEVER TO C.J. 12' AND STRESS TENDONS T1, T14, T38 & T53. BUILD CANTILEVER TO C.J. 13.' AND STRESS TENDONS T10, T23, T26 & T40.
5. CAST CONCRETE ON FALSEWORK TO C.J 14'. BUILD CANTILEVER TO C.J. 15' AND STRESS TENDONS T2, T13, T37 & T55. BUILD CANTILEVER TO C.J. 16.' AND STRESS TENDONS T11, T24, T45 & T39.
6. CLOSE TRANSVERSE CONSTRUCTION JOINT '14' AND STRESS CONTINUITY TENDONS T59 TO T66, T60 TO 14, T19 TO T84 AND T89 TO T94. TEMPORARY STEEL BENT MAY BE REMOVED

NOTE:

CAST CONCRETE IN TOP SLAB LONGITUDINAL JOINT AFTER TRAVELER CLEARANCE IS SATISFIED.

SEGMENT 3
EASTBOUND - PIER 14

STEPS

1. CAST CONCRETE ON FALSEWORK TO CONSTRUCTION JOINT 1. BUILD CANTILEVER PORTION TO C.J. 2. AND STRESS TENDONS T9' T10', T35', & T26'. BUILD CANTILEVER TO C.J. 3. AND STRESS TENDONS T8', T12', T24' & T28'.
2. CAST CONCRETE ON FALSEWORK TO C.J. 4. BUILD CANTILEVER TO C.J. 5 AND STRESS TENDONS T7', T11', T37'. & T 23' BUILD CANTILEVER TO C.J. 6 AND STRESS TENDONS T5', T14', & T 22'.
3. CAST CONCRETE ON FALSEWORK TO C.J. 7. BUILD CANTILEVER TO C.J. 8 AND STRESS TENDONS T6', T13', & T30'. BUILD CANTILEVER TO C.J. 9 AND STRESS TENDONS T 3', T 16', & T21'.
4. CAST CONCRETE ON FALSEWORK TO C.J. 10. BUILD CANTILEVER TO C.J. 11 AND STRESS TENDONS T4'. T15', & T20'. BUILD CANTILEVER TO C.J. 12 AND STRESS TENDONS T2' & T20' BUILD CANTILEVER TO C.J 13 AND STRESS TENDONS T 15' & T 32'.
5. CAST CONCRETE ON FALSEWORK TO C.J. 14. BUILD CANTILEVER TO C.J 15 AND STRESS TENDONS T 1' & T 16'. BUILD CANTILEVER TO C.J. 16 AND STRESS TENDONS T 17' & T 31'.
6. CLOSE TRANSVERSE CONSTRUCTION JOINT 14 AND STRESS TENDONS T39' THRU T38'. TEMPORARY STEEL BENT MAY BE REMOVED AT THIS TIME.
7. CLOSE MIDSPAN CONSTRUCTION JOINT 16. STRESS 16 CONTINUITY TENDONS.

SEGMENT 3
WESTBOUND- PIER 14'- [RAMP "A"-SEE 1104]

STEPS

1. CAST CONCRETE ON FALSEWORK TO CONSTRUCTION JOINT 1 - BUILD CANTILEVER TO C.J. 2 AND STRESS TENDONS T21, T22, T31 & T38. BUILD CANTILEVER TO C.J. 3 AND STRESS TENDONS T30', T24', T36', & T40'.
2. CAST CONCRETE ON FALSEWORK TO C.J. 4. BUILD CANTILEVER TO C.J. 5 AND STRESS TENDONS T19', T23', T35' & T30'. BUILD CANTILEVER TO C.J. 6 AND STRESS TENDONS T17', T25', & T41'.
3. CAST CONCRETE ON FALSEWORK TO C.J. 7. BUILD CANTILEVER TO C.J 8 AND STRESS TENDONS T18', T26' & T33'. BUILD CANTILEVER TO C.J. 9 AND STRESS TENDONS T15', T27'. & T42'. BUILD CANTILEVER TO C.J. 11 AND STRESS TENDONS T10, T34.
4. CAST CONCRETE ON FALSEWORK TO C.J. 10.

   BUILD CANTILEVER TO C.J 12 AND STRESS TENDONS T28 & T43. BUILD CANTILEVER TO C.J 13 AND STRESS TENDONS T13 & T 31.
5. CAST CONCRETE ON FALSEWORK TO C.J. 14.

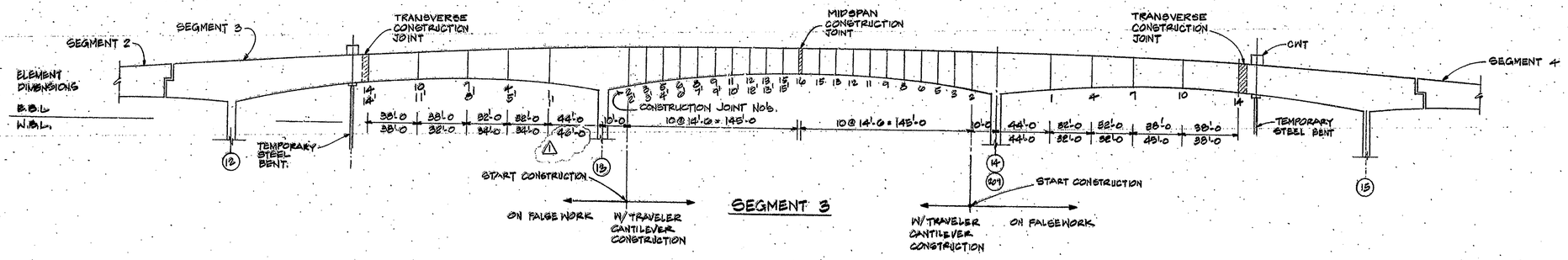
   BUILD CANTILEVER TO C.J. 15 AND STRESS TENDONS T20'. & T44'. BUILD CANTILEVER TO C.J. 16 AND STRESS TENDONS T14'. & T32'.
6. CLOSE TRANSVERSE CONSTRUCTION JOINT 14 IN DOUBLE BOX & COUPLE AND STRESS TENDONS T45'- T52', T55', T57'- T63'. TEMPORARY STEEL BENT MAY BE REMOVED AT THIS TIME.
7. CLOSE MIDSPAN CONSTRUCTION JOINT 16. STRESS 15 CONTINUITY TENDONS.

NOTE:

1. CAST CONCRETE IN TOP SLAB LONGITUDINAL JOINT AFTER TRAVELER CLEARANCE IS SATISFIED.
2. READ DRAWING WITH SHEET 880 TO 889.

No.	REVISION	DATE
2	W.B.L. PIER 14' STEPS	FEB. 82
1	SEGMENT AT PIER 13'	AUG. 81

T. Y. LIN INTERNATIONAL STRUCTURAL ENGINEERS REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC. CONSULTING ENGINEERS	WALSH CONSTRUCTION COMPANY A DIVISION OF GUY F. ATKINSON CO DARIEN, CONNECTICUT
SHEET TITLE: CONSTRUCTION SEQUENCE - SUPERSTRUCTURE SEGMENT 3	SHEET NO. 1102A
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL BRIDGE FILE 812 45-2646 CONTRACT NO 8-11812 INDIANA STATE HIGHWAY COMMISSION	



SEGMENT 3
EASTBOUND - PIER 13

STEPS

1. CAST CONCRETE ON FALSEWORK TO CONSTRICTION JOINT 1. BUILD CANTILEVER PORTION TO C.J. 2 AND STRESS TENDONS T9, T10, T25, T26. BUILD CANTILEVER TO C.J. 3 AND STRESS TENDONS T8, T. 12, T23 & T28.
2. CAST CONCRETE ON FALSEWORK TO C.J. 4. BUILD CANTILEVER TO C.J. 5 AND STRESS TENDONS T7, T11 T24 & T27. BUILD CANTILEVER TO C.J. 6 AND STRESS TENDONS T5, T14, & T22.
3. CAST CONCRETE ON FALSEWORK TO C.J. 7. BUILD CANTILEVER TO C.J. 8 AND STRESS TENDONS T6, T13 & T30. BUILD CANTILEVER TO C.J. 9 AND STRESS TENDONS T3, T16 & T21.
4. CAST CONCRETE ON FALSEWORK TO C.J. 10. BUILD CANTILEVER TO C.J. 11 AND STRESS TENDONS T4 & T29. BUILD CANTILEVER TO C.J. 12 AND STRESS TENDONS T15 & T20. BUILD CANTILEVER TO C.J. 13 AND STRESS TENDONS T2 & T32.
5. CAST CONCRETE ON FALSEWORK TO C.J. 14. BUILD CANTILEVER TO C.J. 15 AND STRESS TENDONS T17 & T19. BUILD CANTILEVER TO C.J. 16 AND STRESS TENDONS T1 & T31.
6. CLOSE TRANSVERSE CONSTRICTION JOINT 14 AND COUPLE AND STRESS CONTINUITY TENDONS T35, T38, T39, T43, T48 & T49. TEMPORARY STEEL BENT MAY BE REMOVED.

SEGMENT 3
WESTBOUND - PIER 13'

STEPS

1. CAST CONCRETE ON FALSEWORK TO CONSTRUCTION JOINT 1'. BUILD CANTILEVER PORTION TO C.J. 2' AND STRESS TENDONS T26, T18, T19, T31, T33, T49 & T43. BUILD CANTILEVER TO C.J. 3' AND STRESS TENDONS T5, T17, T20, T34, T39 & T40. BUILD CANTILEVER TO C.J. 4' AND STRESS TENDONS T8, T21, T29, T38, T45 & T49.
2. CAST CONCRETE ON FALSEWORK TO C.J. 5'. BUILD CANTILEVER TO C.J. 6 AND STRESS TENDONS T4, T16, T30, T51 & T43. BUILD CANTILEVER TO C.J 7' AND STRESS TENDONS T1, T20, T26, T44 & T52.
3. CAST CONCRETE ON FALSEWORK TO C.J. 8'. BUILD CANTILEVER TO C.J. 9' AND STRESS TENDONS T3, T15, T35, T41 & T54. BUILD CANTILEVER TO C.J. 10.' AND STRESS TENDONS T3, T32, T27 & T42.
4. CAST CONCRETE ON FALSEWORK TO C.J. 11.' BUILD CANTILEVER TO C.J. 12' AND STRESS TENDONS T1, T14, T33 & T53. BUILD CANTILEVER TO C.J. 13' AND STRESS TENDONS T10, T22, T26 & T40.
5. CAST CONCRETE ON FALSEWORK TO C.J. 14.' BUILD CANTILEVER TO C.J. 15' AND STRESS TENDONS T2, T13, T37, & T55. BUILD CANTILEVER TO C.J. 16' AND STRESS TENDONS T11, T24, T25 & T30.
6. CLOSE TRANSVERSE CONSTRUCTION JOINT 14' AND STRESS CONTINUITY TENDONS T59 TO T64, T69 TO 74, T79 TO T84 AND T89 TO T94. TEMPORARY STEEL BENT MAY BE REMOVED.

NOTE:

CAST CONCRETE IN TOP SLAB LONGITUDINAL JOINT AFTER TRAVELER CLEARANCE IS SATISFIED.

SEGMENT 3
EASTBOUND - PIER 14

STEPS

1. CAST CONCRETE ON FALSEWORK TO CONSTRUCTION JOINT 1. BUILD CANTILEVER PORTION TO C.J. 2. AND STRESS TENDONS T9', T10', T25', & T26'. BUILD CANTILEVER TO C.J. 3. AND STRESS TENDONS T8', T12', T24' & T23'.
2. CAST CONCRETE ON FALSEWORK TO C.J. 4. BUILD CANTILEVER TO C.J. 5 AND STRESS TENDONS T7', T11', T27', & T28'. BUILD CANTILEVER TO C.J. 6 AND STRESS TENDONS T5', T14', & T22'.
3. CAST CONCRETE ON FALSEWORK TO C.J. 7. BUILD CANTILEVER TO C.J. 8 AND STRESS TENDONS T6', T13', & T30'. BUILD CANTILEVER TO C.J. 9. AND STRESS TENDONS T3', T16', & T21'.
4. CAST CONCRETE ON FALSEWORK TO C.J. 10. BUILD CANTILEVER TO C.J. 11 AND STRESS TENDONS T4', T15', & T29'. BUILD CANTILEVER TO C.J. 12 AND STRESS TENDONS T2' & T20'. BUILD CANTILEVER TO C.J. 13 AND STRESS TENDONS T13' & T32'.
5. CAST CONCRETE ON FALSEWORK TO C.J. 14. BUILD CANTILEVER TO C.J 15 AND STRESS TENDONS T1' & T19'. BUILD CANTILEVER TO C.J. 16 AND STRESS TENDONS T 17' & T31'.
6. CLOSE TRANSVERSE CONSTRUCTION JOINT 14 AND STRESS TENDONS T33' THRU T37'. TEMPORARY STEEL BENT MAY BE REMOVED AT THIS TIME.
7. CLOSE MIDSPAN CONSTRUCTION JOINT 16. STRESS 16 CONTINUITY TENDONS.

SEGMENT 3
WESTBOUND- PIER 14'- [RAMP "A"- SEE 1104]

STEPS

1. CAST CONCRETE ON FALSEWORK TO CONSTRUCTION JOINT 1 BUILD CANTILEVER TO C.J. 2 AND STRESS TENDONS T9', T22', T27' & T28'. BUILD CANTILEVER TO C.J. 3 AND STRESS TENDONS T20', T24', T26', & T40'.
2. CAST CONCRETE ON FALSEWORK TO C.J. 4. BUILD CANTILEVER TO C.J. 5 AND STRESS TENDONS T19', T23', T35' & T30'. BUILD CANTILEVER TO C.J. 6 AND STRESS TENDONS T17', T25', & T41'.
3. CAST CONCRETE ON FALSEWORK TO C.J. 7. BUILD CANTILEVER TO C.J 8 AND STRESS TENDONS T18', T26' & T33'. BUILD CANTILEVER TO C.J. 9 AND STRESS TENDONS T15', T27', & T42'.
4. CAST CONCRETE ON FALSEWORK TO C.J. 10. BUILD CANTILEVER TO C.J. 11 AND STRESS TENDONS T16, T34'. BUILD CANTILEVER TO C.J. 12 AND STRESS TENDONS T28 & T43. BUILD CANTILEVER TO C.J 13 AND STRESS TENDONS T13, & T 31.
5. CAST CONCRETE ON FALSEWORK TO C.J. 14. BUILD CANTILEVER TO C.J. 15 AND STRESS TENDONS T20', & T44'. BUILD CANTILEVER TO C.J. 16 AND STRESS TENDONS T14', & T32'.
6. CLOSE TRANSVERSE CONSTRUCTION JOINT 14 IN DOUBLE BOX & COUPLE AND STRESS TENDONS T45'-T52', T55', T57'- T68'. TEMPORARY STEEL BENT MAY BE REMOVED AT THIS TIME.
7. CLOSE MIDSPAN CONSTRUCTION JOINT 16. STRESS 15 CONTINUITY TENDONS.

NOTE :

1. CAST CONCRETE IN TOP SLAB LONGITUDINAL JOINT AFTER TRAVELER CLEARANCE IS SATISFIED.
2. READ DRAWING WITH SHEET 880 TO 883.
3. RAMP "A" AND WESTBOUND LANES MAY BE CONSTRUCTED INDEPENDENTLY WITH A FINAL TOP SLAB CLOSURE STRIP.

APPROVED FOR CONSTRUCTION

W. B. ABBOTT
Assistant Engineer of Bridge Design 8-26-81

No.	REVISION	DATE
1	SEGMENT AT PIER 13'	AUG '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO
DARIEN, CONNECTICUT

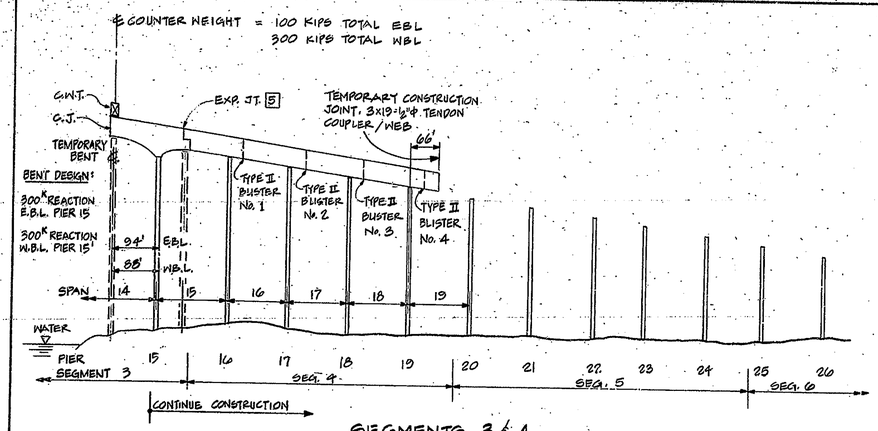
SHEET TITLE

CONSTRUCTION SEQUENCE - SUPERSTRUCTURE SEGMENT 3

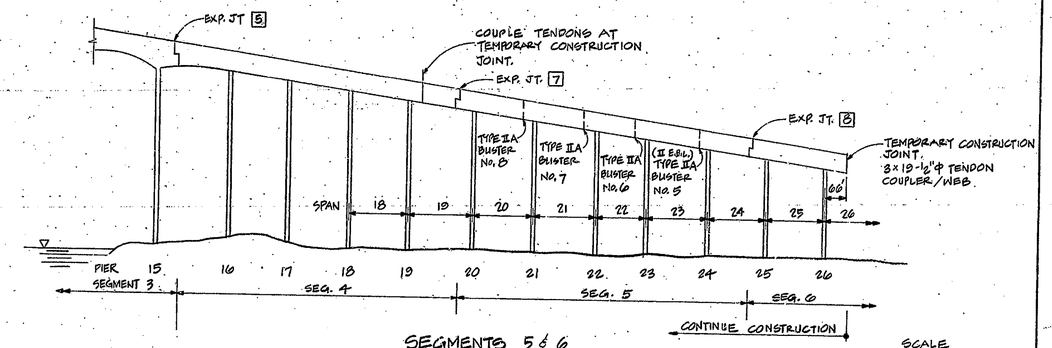
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE 912-45-2548 CONTRACT NO B-11812
INDIANA STATE HIGHWAY COMMISSION

SHEET N

1102



SEGMENTS 3 & 4



SEGMENTS 5 & 6

SCALE
HORIZ 1"=200'-0"
VERT. 1"=30'-0"

WESTBOUND LANES

1. CAST CONCRETE IN SEGMENT 3 FROM THE CONSTRUCTION JOINT TO EXPANSION JOINT 5. STRESS TENDON NOS. T46, T47, T48, AND T50 IN WEBS 4 AND 6; NOS. T55, T57, T58, AND T60 IN WEB 5. THE ABOVE TENDONS WILL BE COUPLED AT THE CONSTRUCTION JOINT IN ORDER TO FORM FINAL CONTINUITY TENDONS. ALSO STRESS TENDON NO. T53 IN WEBS 4 AND 6 AND TENDON NOS. T56 AND T64 IN WEB 5.

2. PLACE COUNTERWEIGHT NEAR CONSTRUCTION JOINT IN SEGMENT 3. CAST CONCRETE UP TO BLISTER 1 IN SEGMENT 4. STRESS TENDON NOS. 1 THROUGH 9.

3. AFTER CONCRETE IS CAST TO BLISTER 2, STRESS TENDON NOS. 10 THROUGH 18. FALSEWORK MAY BE REMOVED IN SPAN 15, LEAVING SHORING UNDER EXPANSION JOINT 5.

4. AFTER CONCRETE IS CAST TO BLISTER 3, STRESS TENDON NOS. 19 THROUGH 27. FALSEWORK MAY BE REMOVED IN SPAN 16.

5. AFTER CONCRETE IS CAST TO TEMPORARY CONSTRUCTION JOINT IN SPAN 19, (LEAVING THE DECK OFF TO STRESS TENDONS IN BLISTER 4) STRESS TENDON NOS. 28 THROUGH 36. FALSEWORK MAY BE REMOVED IN SPAN 17.

6. AFTER DECK CONCRETE IS CAST TO TEMPORARY CONSTRUCTION JOINT, USING 3 x 19-1/2" ϕ STRAND COUPLERS PER WEB, STRESS COUPLED TENDON NOS. 37 THROUGH 45. FALSEWORK MAY BE REMOVED IN SPANS 18 AND 19.

WESTBOUND SEGMENT 3 CLOSURE

1. AFTER COMPLETING SEGMENT 3 TRANSVERSE CLOSURE POUR IN SPAN 14, STRESS CONTINUITY TENDON NOS. T45 THROUGH T52, T55 AND T57 THROUGH T63. COUNTERWEIGHT, TEMPORARY BENT, AND FALSEWORK MAY BE REMOVED FROM SPAN 14 AND FALSEWORK MAY BE REMOVED UNDER EXPANSION JOINT 5.

EASTBOUND LANES

1. CAST CONCRETE IN SEGMENT 3 FROM THE CONSTRUCTION JOINT TO EXPANSION JOINT 5. STRESS TENDON NOS. T33, T34, T35 AND T36 IN WEBS 1, 2A, 2 AND 3. THE ABOVE TENDONS WILL BE COUPLED AT THE CONSTRUCTION JOINT IN ORDER TO FORM FINAL CONTINUITY TENDONS. ALSO STRESS TENDON NO. T39 IN WEBS 1, 2A, 2 AND 3.

2. PLACE COUNTERWEIGHT NEAR CONSTRUCTION JOINT IN SEGMENT 3. CAST CONCRETE UP TO BLISTER 1 IN SEGMENT 4. STRESS TENDON NOS. 1 THROUGH 12.

3. AFTER CONCRETE IS CAST TO BLISTER 2, STRESS TENDON NOS. 13 THROUGH 24. FALSEWORK MAY BE REMOVED IN SPAN 15, LEAVING SHORING UNDER EXPANSION JOINT 5.

4. AFTER CONCRETE IS CAST TO BLISTER 3 AND EXPANSION JOINT 6, STRESS TENDON NOS. 29 THROUGH 34. THEN, IN RAMP "C", STRESS TENDON NOS. 25 THROUGH 28, 35 THROUGH 38, 51 THROUGH 54 AND 70 THROUGH 73.

5. AFTER CONCRETE IS CAST TO TEMPORARY CONSTRUCTION JOINT IN SPAN 19, (LEAVING THE DECK OFF TO STRESS TENDONS IN BLISTER 4) STRESS TENDON NOS. 39 THROUGH 47. FALSEWORK MAY BE REMOVED IN SPAN 17.

6. AFTER DECK CONCRETE IS CAST TO TEMPORARY CONSTRUCTION JOINT, USING 3 x 19-1/2" ϕ STRAND COUPLERS PER WEB, STRESS COUPLED TENDON NOS. 48, 49, 50 and 55 THROUGH 60.

EASTBOUND SEGMENT 3 CLOSURE

1. AFTER COMPLETING SEGMENT 3 TRANSVERSE CLOSURE POUR IN SPAN 14, STRESS CONTINUITY TENDON NOS. T33 THROUGH T38. COUNTERWEIGHT, TEMPORARY BENT, AND FALSEWORK MAY BE REMOVED FROM SPAN 14 AND FALSEWORK MAY BE REMOVED UNDER EXPANSION JOINT 5.

WESTBOUND LANES

1. AFTER CONCRETE IS CAST FROM EXPANSION JOINT 8 TO TEMPORARY CONSTRUCTION JOINT IN SEGMENT 6, STRESS TENDON NOS. 1 THROUGH 6, THEN STRESS COUPLED TENDON NOS. 7 THROUGH 12, 7A 8A, AND 9A. THEN STRESS TENDON NOS. 1 THROUGH 6. THEN STRESS TENDON NOS. 13 THROUGH 18. FALSEWORK MAY BE REMOVED FROM SPAN 24, 25 AND 26.

2. AFTER CONCRETE IS CAST FROM EXPANSION JOINT 8 TO BLISTER TYPE IIA NO. 5 IN SEGMENT 5, STRESS TENDON NOS. 37 THROUGH 42.

3. AFTER CONCRETE IS CAST TO BLISTER TYPE IIA NO. 6 STRESS TENDON NOS. 31 THROUGH 36. BALANCE OF FALSEWORK MAY BE REMOVED FROM SPAN 24.

4. AFTER CONCRETE IS CAST TO BLISTER TYPE IIA NO. 7 STRESS TENDON NOS. 25 THROUGH 30, FALSEWORK MAY BE REMOVED FROM SPAN 23.

5. AFTER CONCRETE IS CAST TO BLISTER TYPE IIA NO. 8, STRESS TENDON NOS. 19 THROUGH 24, FALSEWORK MAY BE REMOVED FROM SPAN 22.

6. AFTER CONCRETE IS CAST TO EXPANSION JOINT 7 STRESS TENDON NOS. 13 THROUGH 18; 7 THROUGH 12 AND 1 THROUGH 6. FALSEWORK MAY BE REMOVED FROM SPAN 21.

7. CAST CONCRETE FROM EXPANSION JOINT 7 TO TEMPORARY CONSTRUCTION JOINT AND COUPLE TENDONS IN SEGMENT 4. STRESS COUPLED TENDON NOS. 37 THROUGH 45. STRESS TENDON NOS. 46 THROUGH 54. FALSEWORK MAY BE REMOVED FROM SPAN 20 AND BALANCE OF SPAN 19.

EASTBOUND LANES

1. AFTER CONCRETE IS CAST FROM EXPANSION JOINT 8 TO TEMPORARY CONSTRUCTION JOINT IN SEGMENT 6, STRESS TENDON NOS. 1 THROUGH 9, THEN STRESS COUPLED TENDON NOS. 10 THROUGH 18. FALSEWORK MAY BE REMOVED FROM SPAN 24, 25 AND 26.

2. AFTER CONCRETE IS CAST FROM EXPANSION JOINT 8 TO BLISTER TYPE IIA NO. 5, STRESS TENDON NOS. 37 THROUGH 45.

3. AFTER CONCRETE IS CAST TO BLISTER TYPE II NO. 6, STRESS TENDON NOS. 31 THROUGH 36. FALSEWORK MAY BE REMOVED FROM SPAN 24.

4. AFTER CONCRETE IS CAST TO BLISTER TYPE IIA NO. 7, STRESS TENDON NOS. 25 THROUGH 30. FALSEWORK MAY BE REMOVED FROM SPAN 23.

5. AFTER CONCRETE IS CAST TO BLISTER TYPE IIA NO. 8, STRESS TENDON NOS. 19 THROUGH 24. FALSEWORK MAY BE REMOVED FROM SPAN 22.

6. AFTER CONCRETE IS CAST TO EXPANSION JOINT 7, STRESS TENDON NOS. 13 THROUGH 18; 7 THROUGH 12 AND 1 THROUGH 6. FALSEWORK MAY BE REMOVED FROM SPAN 21.

7. CAST CONCRETE FROM EXPANSION JOINT 7 TO TEMPORARY CONSTRUCTION JOINT AND COUPLE TENDONS IN SEGMENT 4. STRESS COUPLED TENDON NOS. 55 THROUGH 60 AND 48 THROUGH 50. STRESS TENDON NOS. 61 THROUGH 68. FALSEWORK MAY BE REMOVED FROM SPAN 20 AND BALANCE OF SPAN 19.

NOTE:

1. SEE NOTES ON SHEET 1100
2. REFER TO SHEET NO. 1100 FOR TENDON ARRANGEMENT PLANS.

APPROVED FOR CONSTRUCTION

J. D. MATTIS
Engineer of Bridge Plans
9-7-82

J. D. Mattis

NO.	REVISION	DATE
1	REVISED STEPS	DEC. '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

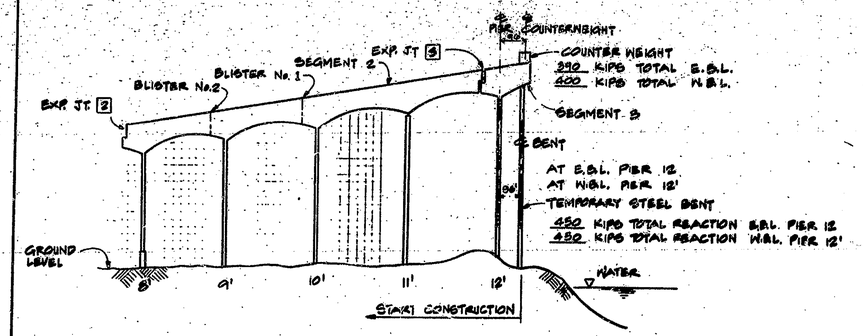
T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

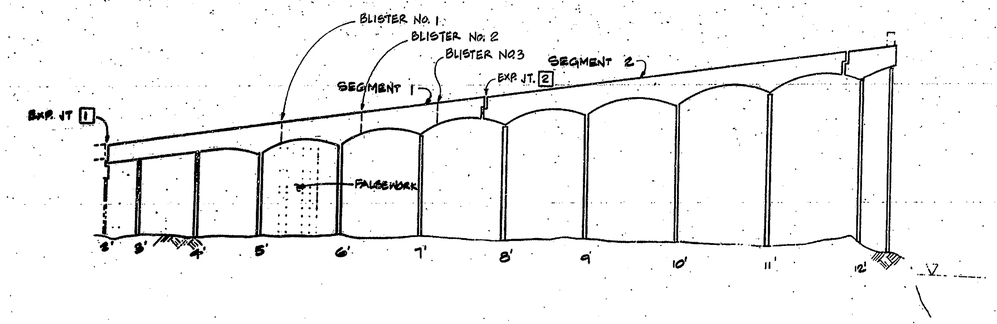
SHEET TITLE
CONSTRUCTION SEQUENCE – SEGMENTS 3,4,5 & 6

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
1101



SEGMENTS 2 & 3



SEGMENT 1

SCALE:
HORIZ. 1" = 200'-0
VERT. 1" = 30'-0

EASTBOUND LANES

STEP

1. CAST CONCRETE AND STRESS TENDONS NO'S. T 33, T34, T41, T43, T44, T51 AND T52 IN SEGMENT 3. TENDONS T35, T38, T50 OF EXT. WEB AND T45, T48, T40 OF INT. WEB WILL BE STRESSED. THESE WILL BE COUPLED AT THE CONSTRUCTION JOINT IN ORDER TO FORM FINAL CONTINUITY TENDONS.
2. PLACE THE COUNTERWEIGHT NEAR THE CONSTRUCTION JOINT. AFTER CONCRETE IS CAST BEYOND BLISTER NO. 1, IN SEGMENT 2, STRESS TENDONS NOS. 28 THRU 42.
3. REMOVE FALSEWORK BETWEEN PIER 12 AND THE CONSTRUCTION JOINT. LETTING THE STRUCTURE REST ON THE TOP OF THE TEMPORARY STEEL BENT.
4. FALSEWORK MAY THEN BE REMOVED TO PIER 11
5. AFTER CONCRETE IS CAST BEYOND BLISTER No 2, STRESS TENDON NOS. 19 THRU 27. FALSEWORK MAY THEN BE REMOVED TO PIER 10.
6. COMPLETE CONCRETE PLACEMENT AND STRESS THE REMAINDER OF THE TENDONS IN SEGMENT 2. FALSEWORK MAY BE REMOVED FROM SEGMENT 2 AT THIS TIME.

WESTBOUND LANES

STEP

1. CAST CONCRETE AND STRESS TENDONS NO'S. T37-T61, T69-T71, T75-T81 AND T85-T91 IN SEGMENT 3. TENDONS T35-T61, T69-T71, T75-T81 AND T85-T91 WILL BE COUPLED AT THE CONSTRUCTION JOINT IN ORDER TO FORM FINAL CONTINUITY TENDONS.
2. PLACE THE COUNTERWEIGHT NEAR THE CONSTRUCTION JOINT AFTER CONCRETE IS CAST BEYOND BLISTER NO. 1 IN SEGMENT No. 2, STRESS TENDONS NOS. T28 THRU T51.
3. REMOVE FALSEWORK BETWEEN PIER 12' AND THE CONSTRUCTION JOINT LETTING THE STRUCTURE REST ON THE TOP OF THE TEMPORARY STEEL BENT.
4. FALSE WORK MAY THEN BE REMOVED TO PIER 11.
5. AFTER CONCRETE IS CAST BEYOND BLISTER NO. 2, STRESS TENDONS NOS. 19 THRU 21. FALSEWORK MAY THEN BE REMOVED TO PIER 10.
6. COMPLETE CONCRETE PLACEMENT AND STRESS REMAINDER OF THE TENDONS IN SEGMENT 2. FALSEWORK MAY BE REMOVED FROM SEGMENT 2 AT THIS TIME.

NORTHERLY TWO THIRDS

STEP

1. CAST CONCRETE BEYOND BLISTER NO. 1 AND STRESS TENDONS NOS. 7 THRU 18 AND 25 THRU 30 FALSEWORK MAY BE REMOVED TO PIER 4.
2. AFTER CONCRETE IS CAST BEYOND BLISTER No. 2, STRESS TENDON NOS. 43 THRU 54. FALSEWORK MAY BE REMOVED TO PIER 5.
3. AFTER CONCRETE IS CAST BEYOND BLISTER No 3, STRESS TENDON NOS. 61 THRU 72. FALSEWORK MAY BE REMOVED TO PIER 6.
4. AFTER CONCRETE IS CAST TO EXP. JT. [2] STRESS TENDON NOS. 79 THRU 90.
5. THEN STRESS TENDONS 97 THRU 108. FALSEWORK MAY BE REMOVED TO EXP. JT. [2]. UPON COMPLETION OF HINGE CONCRETING AND STRESSING. SEGMENT 2 PORTION OF EXP. JT. [2] IS REQUIRED FOR SUPPORT.

SOUTHERLY ONE THIRD

STEP

1. CAST CONCRETE BEYOND BLISTER No. 1 AND STRESS TENDONS 1 THRU 6 AND 19 THRU 24. FALSE WORK MAY BE REMOVED TO PIER 4.
2. AFTER CONCRETE IS CAST BEYOND BLISTER No. 2, STRESS TENDON NOS. 37 THRU 42. FALSEWORK MAY BE REMOVED TO PIER 5.
3. AFTER CONCRETE IS CAST BEYOND BLISTER No. 3, STRESS TENDON NOS. 55 THRU 60. FALSEWORK MAY BE REMOVED TO PER 6
4. COMPLETE CONCRETE CASTING TO EXP. JT. [2], AND STRESS TENDONS 73 THRU 78 AND 91 THRU 96. FALSEWORK MAY BE REMOVED TO EXP. JT. [2]

NOTES:

1. REFER TO SHEET NO. 1105 FOR TENDON ARRANGEMENT PLANS
2. PLACING CONCRETE IS NOT DEPENDENT ON PRESTRESSING OPERATIONS.
3. PRESTRESSING SEQUENCE IS TO BE ARRANGED IN ORDER TO AVOID ECCENTRIC OR OVERSTRESSING CONDITIONS. FINAL SEQUENCE AND DETAILS SHALL BE APPROVED BY THE ENGINEER BEFORE COMMENCING WORK.
4. CONSTRUCTION LOADS MUST BE LESS THAN 10 P.S.F. ON ANY PARTIALLY PRESTRESSED BOX GIRDER

APPROVED FOR CONSTRUCTION
W. B. Abbott 6-15-81
W. B. ABBOTT
Chief Engineer of Bridge Design

No.	REVISION	DATE
1	CONST. SEQUENCE	MARCH 1981

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

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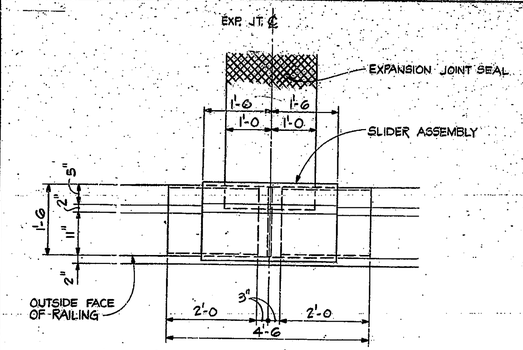
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

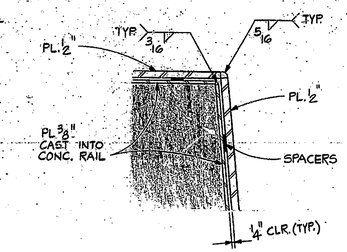
SHEET TITLE
CONSTRUCTION SEQUENCE - SUPERSTRUCTURE SEGMENTS 1, 2 & 3

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 8-11812 INDIANA STATE HIGHWAY COMMISSION

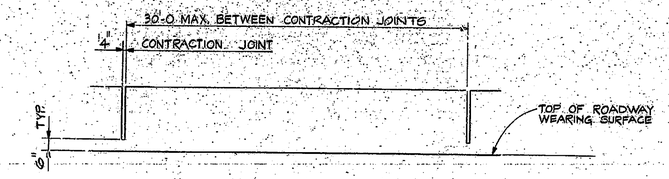
SHEET N.
1100



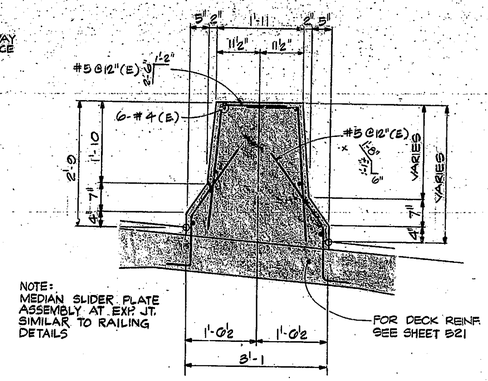
RAILING PLAN (A) AT EXP. JT.
3/4" = 1'-0



DETAIL (1)
1 1/2" = 1'-0

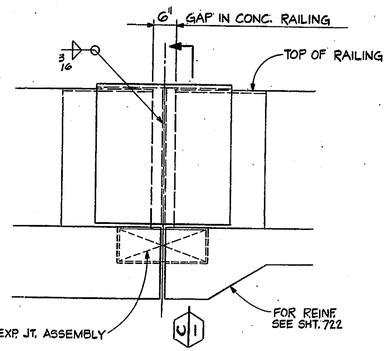


TYPICAL RAILING ELEVATION (D)
3/16" = 1'-0 HORIZ.
3/8" = 1'-0 VERT.

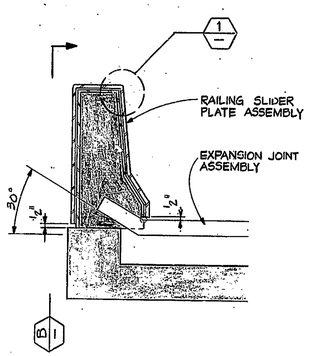


NOTE:
MEDIAN SLIDER PLATE ASSEMBLY AT EXP. JT. SIMILAR TO RAILING DETAILS

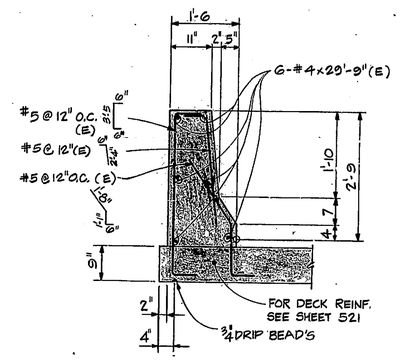
SECTION (F) AT MEDIAN BARRIER (SEGMENT 1 ONLY)
3/4" = 1'-0



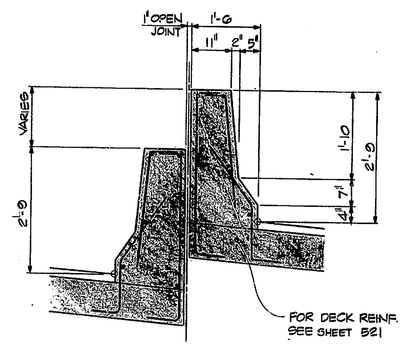
ELEVATION (B) AT EXP. JT.
3/4" = 1'-0



SECTION (C)
3/4" = 1'-0



TYPICAL RAILING REINFORCEMENT (E)
3/4" = 1'-0 REF. DWG. 500'S

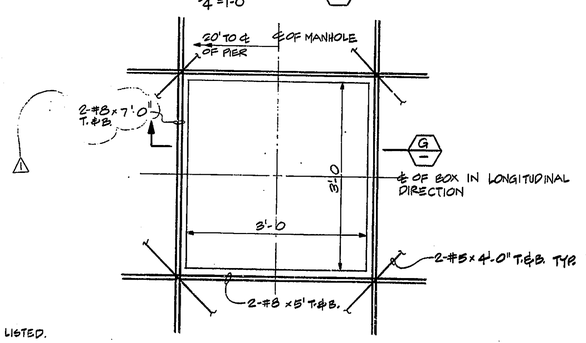


SECTION (G)
3/4" = 1'-0

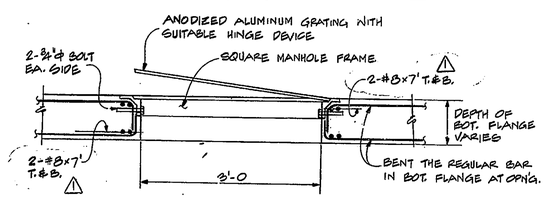
MANHOLE LIST *

LOCATION	NUMBER OF MANHOLE
20' AFTER PIER 2	3
20' AFTER PIER 8, 8'	4
20' AFTER PIER 12, 12'	4
20' BEFORE PIER 19, 19'	4
20' BEFORE PIER 24, 24'	4
20' BEFORE PIER 29, 30', 305, 103	6
20' BEFORE PIER 410	1
20' AFTER PIER 207	1
20' AFTER PIER 106	1
20' AFTER PIER 107	1
20' AFTER PIER 302	1
20' AFTER PIER 303	1
	31

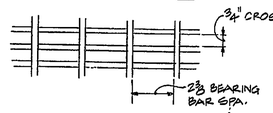
* MANHOLES UNDER THE EXP. JOINTS ARE NOT LISTED. SEE DWG. 1020



PLAN - MANHOLE, BOTTOM SLAB
1" = 1'-0



SECTION (G)
1" = 1'-0



PARTIAL GRATING PLAN
3" = 1'-0"

NOTE:
1. ALL REINF. STEEL IN RAILING AND MEDIAN BARRIER TO BE EPOXY COATED.

APPROVED FOR CONSTRUCTION
W. B. ABBOTT
Assistant Engineer of Bridge Design 10-26-81

NO.	REVISION	DATE
1	MANHOLE	SEPT '81

T. Y. LIN INTERNATIONAL
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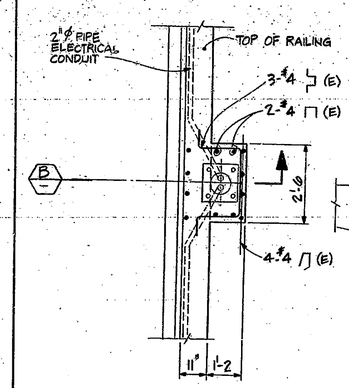
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

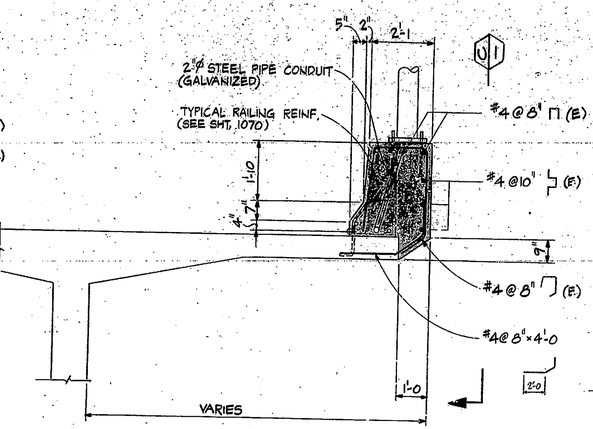
SHEET TITLE
RAILING DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

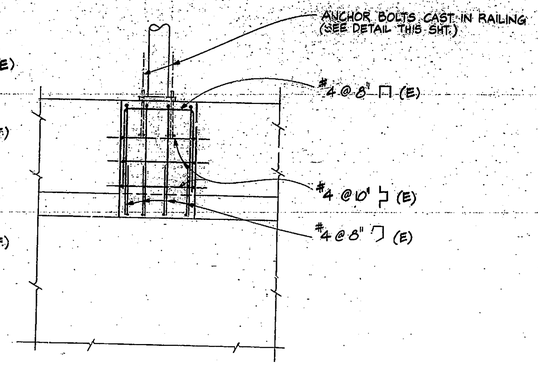
SHEET N.
1070



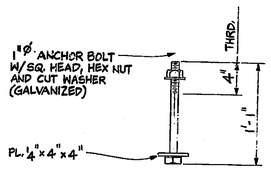
PLAN AT LIGHTSTAND (A)
½" = 1'-0



SECTION (B)
½" = 1'-0



ELEVATION (C)
½" = 1'-0



ANCHOR BOLT DETAIL (1) (4 EA./POST)
1½" = 1'-0

NOTES:

1. ALL REINFORCEMENT SHALL BE EPOXY COATED AS SHOWN (E).
2. REFER TO SHEETS 102 THROUGH 113 FOR MARK INDICATING LIGHTPOST LOCATIONS.
3. ALL LIGHTPOSTS MUST BE LOCATED 20'-0" MINIMUM AWAY FROM SIGN SUPPORT POSTS OR ADJACENT LIGHTPOSTS.
4. REBAR SHOWN ○ INDICATES TYPICAL RAILING REINF.
5. SUBMIT FINAL DETAILS OF LIGHTPOST ANCHORAGE FOR APPROVAL BY ENGINEER BEFORE COMMENCING WORK.
6. SEE I.S.H.C. BRIDGE STD. SHEET R2B (6-1-75)

APPROVED FOR CONSTRUCTION
W. B. Abbott 6-15-81
W. B. ABBOTT
Assistant Engineer of Bridge Design

NO.	REVISION	DATE
1	DECK BAR	FEB. 1981

T. Y. LIN INTERNATIONAL
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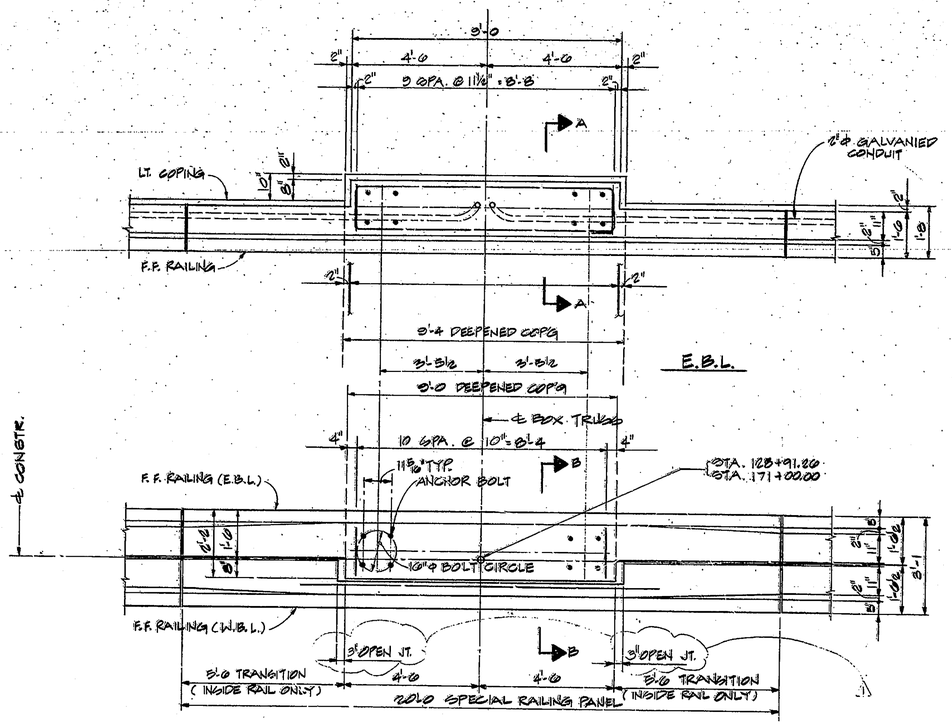
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

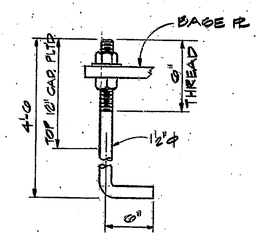
SHEET TITLE
LIGHTSTAND DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
1053

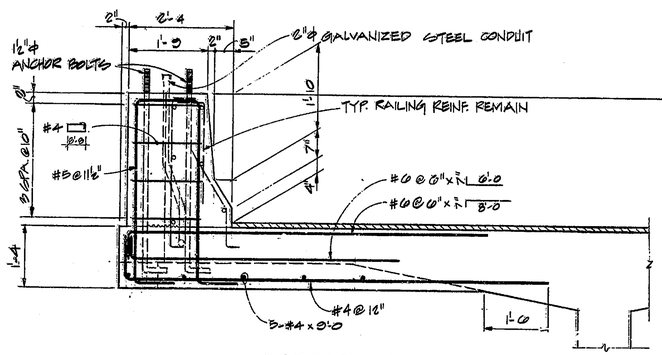


SIGN SUPPORT PLAN (BOX TRUSS)
SCALE ½" = 1'-0

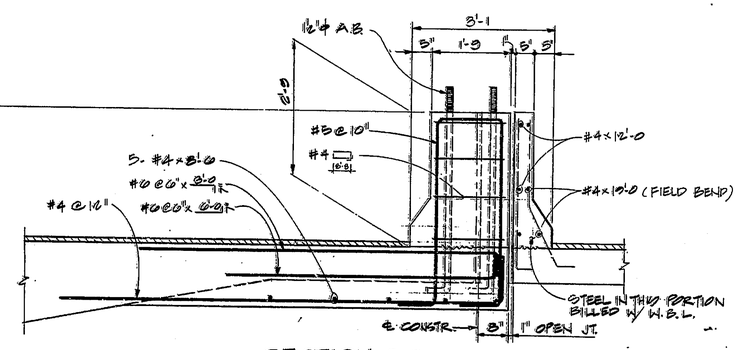


ANCHOR BOLT DETAIL
NO SCALE

NOTE:
THERE ARE TWO LOCATIONS OF BOX TRUSS
STA 128+91 EBL
STA 171+00 EBL



SECTION A-A
¾" = 1'-0



SECTION B-B
¾" = 1'-0

APPROVED FOR CONSTRUCTION
W. B. ABBOTT
Assistant Engineer of Bridge Design 10-26-81

NO.	REVISION	DATE
1	OPEN JOINT	SEPT '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

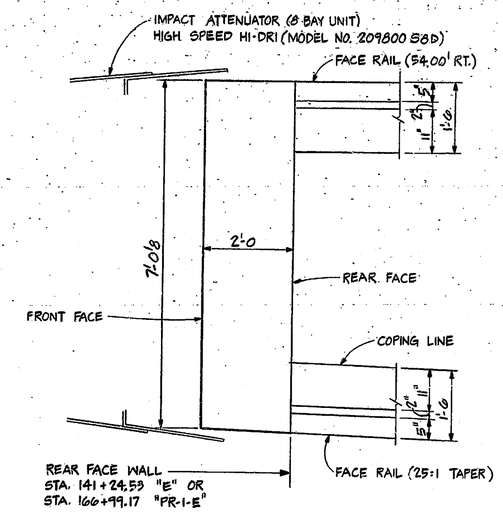
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

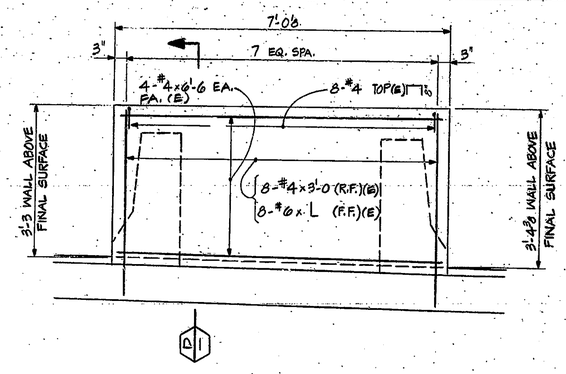
SHEET TITLE
BOX TRUSS SUPPORT DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2545 CONTRACT NO. B-11612 INDIANA STATE HIGHWAY COMMISSION

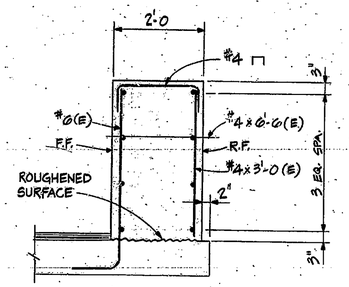
SHEET N.
1052



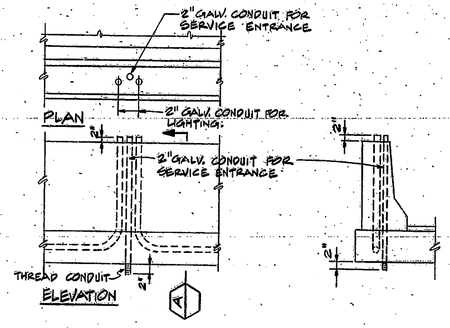
PLAN AT IMPACT ATTENUATOR
N.T.S.



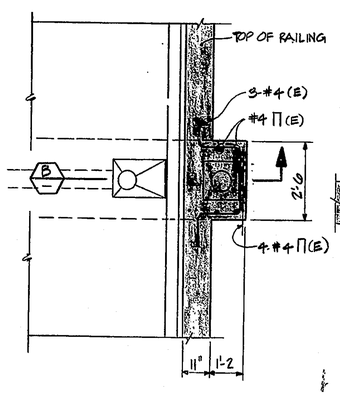
ELEVATION AT IMPACT ATTENUATOR
N.T.S.



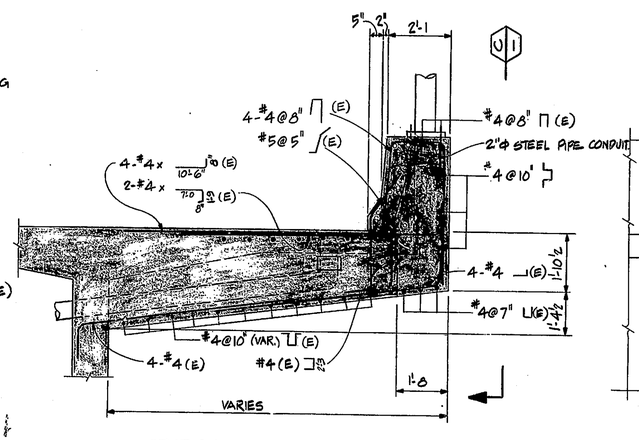
SECTION D
N.T.S.



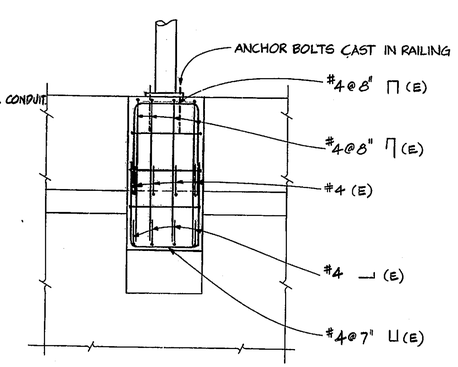
DETAIL "A" AT PIER 12' & PIER 12 SECTION A



PLAN AT LIGHTSTAND A
½"=1'-0



SECTION B
½"=1'-0



ELEVATION C
½"=1'-0

NOTES:

1. REFER TO SHEETS 102 THRU 113 FOR MARK INDICATING LIGHTPOST LOCATIONS.

N.	REVISION	DATE

Rev 8-27-80 Add Service Entr @ Pier 12

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

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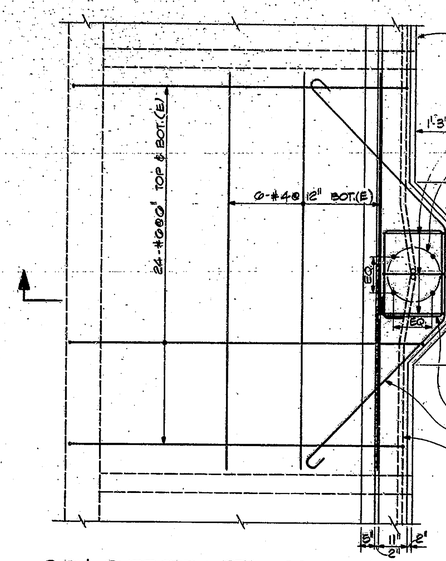
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

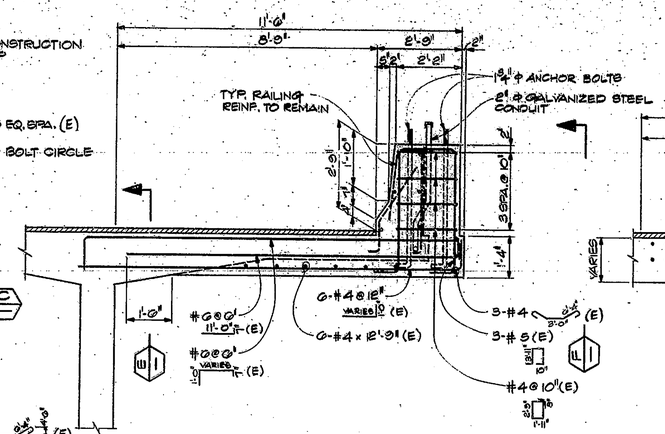
SHEET TITLE
IMPACT ATTENUATOR AND LIGHTSTAND DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612 INDIANA STATE HIGHWAY COMMISSION

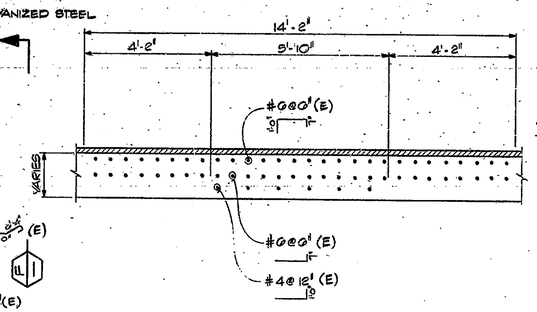
SHEET N.
1051



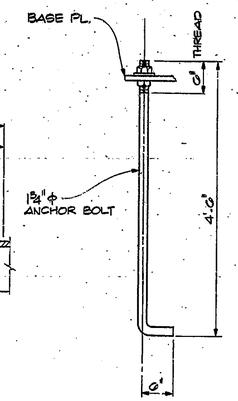
SIGN SUPPORT @ STA. 122+95 W.B.L. (A)
1/2" = 1'-0"



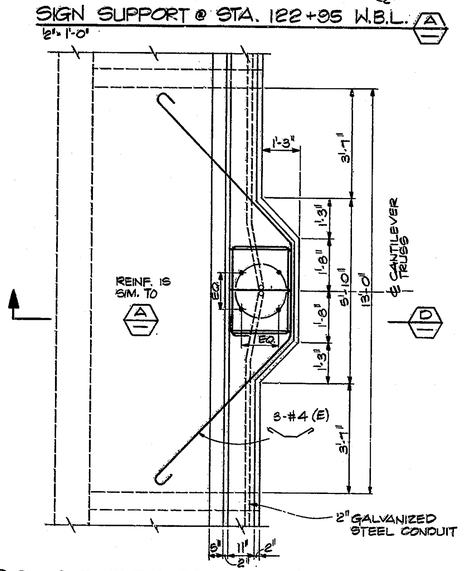
SECTION (C)
1/2" = 1'-0"



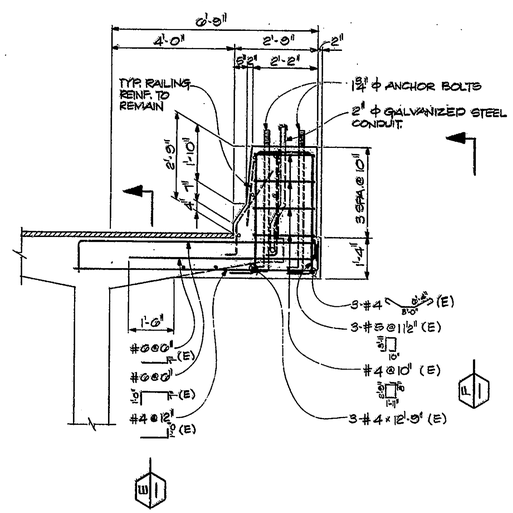
SECTION (E)
1/2" = 1'-0"



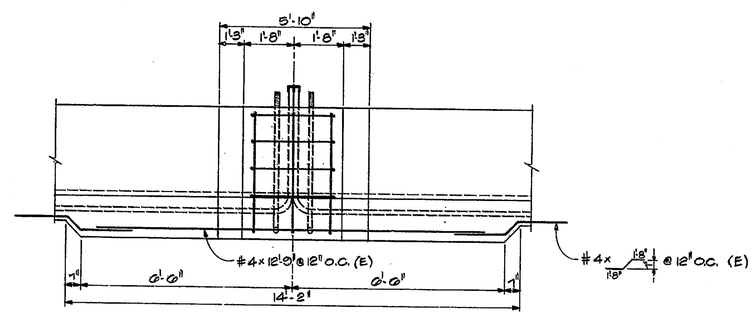
ANCHOR BOLT DETAIL
1" = 1'-0"



SIGN SUPPORT @ STA. 135+91 W.B.L. (B)
1/2" = 1'-0"



SECTION (D)
1/2" = 1'-0"



ELEVATION (F)
1/2" = 1'-0"

NOTES

1. ALL REINFORCEMENT SHALL BE EPOXY COATED AS SHOWN (E).
2. SUBMIT FINAL DETAILS OF LIGHTPOST ANCHORAGE FOR APPROVAL BY ENGINEER BEFORE COMMENCING WORK.
3. TOP SLAB & WEB REINFORCING REQUIREMENTS SHALL BE PROVIDED AS INDICATED ON DRAWINGS 500'S & 600'S.
4. REBAR SHOWN O INDICATES TYPICAL RAILING REINFORCEMENT.

N.	REVISION	DATE

REVISION △	AS PER I.S.H.C. DETAILS	SEPT. 25 80

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

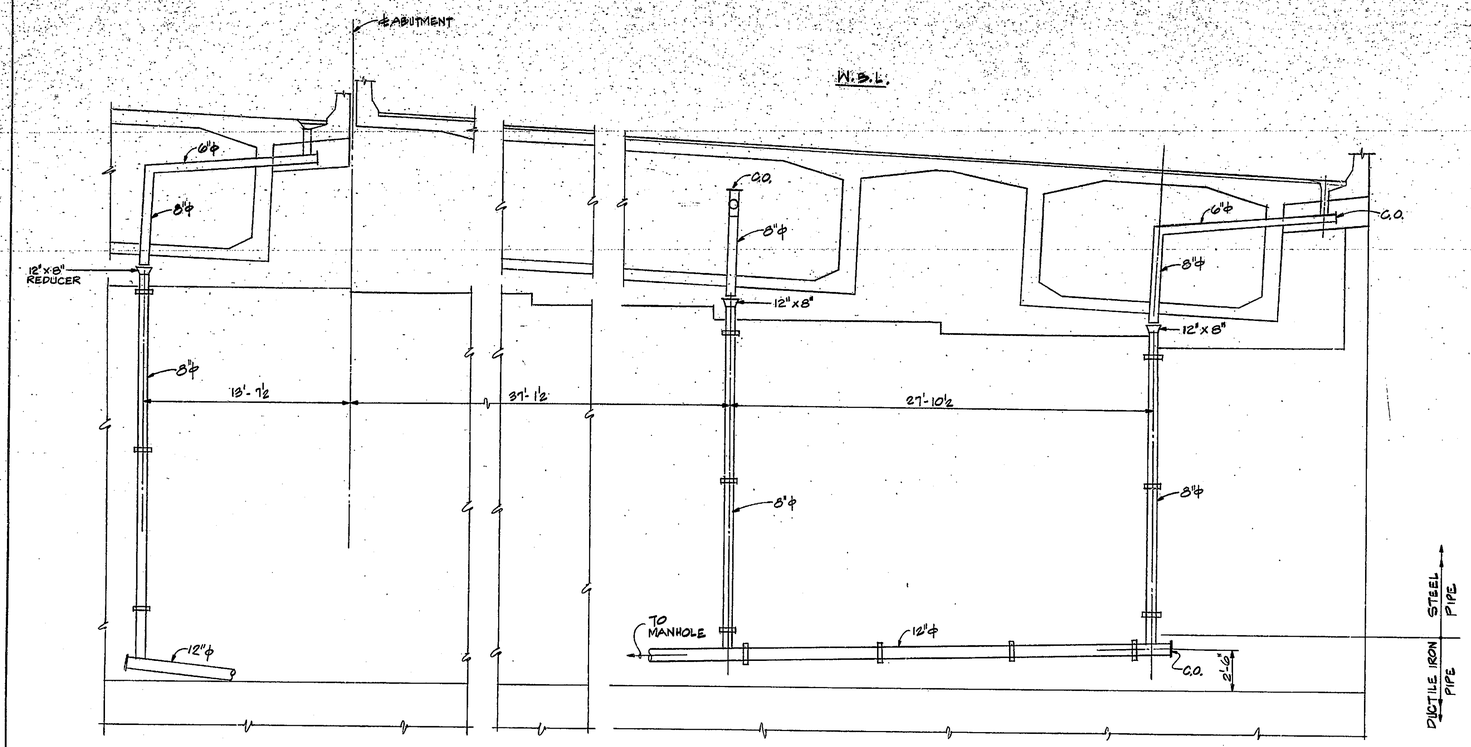
T. Y. LIN REGISTERED STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

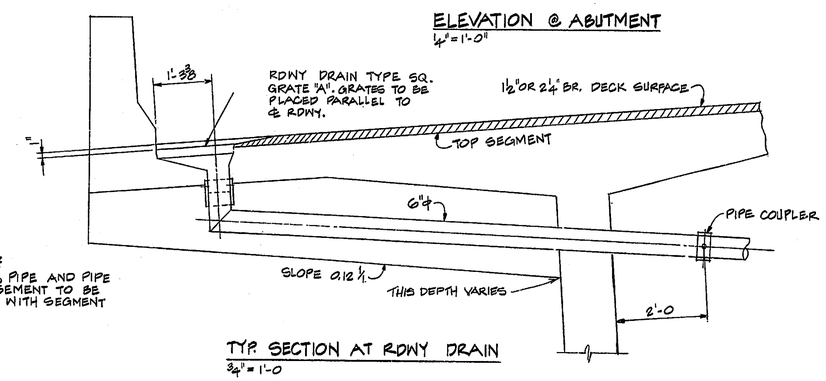
SHEET TITLE
CANTILEVER SIGN SUPPORT DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
1050



ELEVATION @ ABUTMENT
¼"=1'-0"



NOTE:
INLET, PIPE AND PIPE ENCASEMENT TO BE CAST WITH SEGMENT

TYP. SECTION AT RDWY DRAIN
¾"=1'-0

NOTES:
1. SEE NOTE SHEET 1030
2. SEE C/1050 & G/1050 FOR DRAIN REINFORCING.

REVISION	DATE
2	

T. Y. LIN INTERNATIONAL
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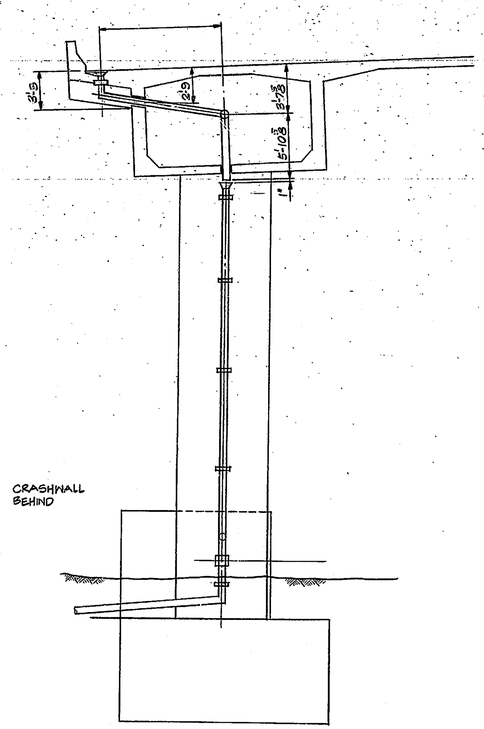
CONSULTING ENGINEERS

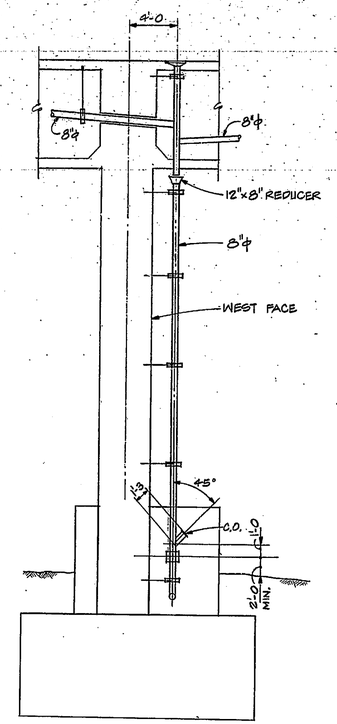
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
SUPERSTRUCTURE DRAINAGE - ABUTMENT 29, 30', & 305

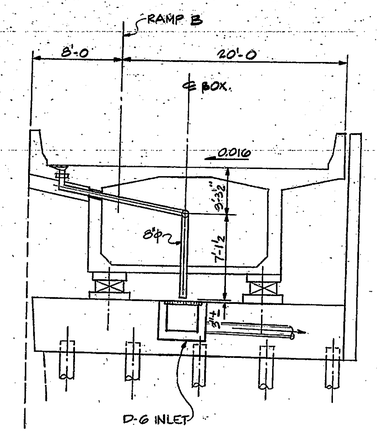
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE 912-45-2546 CONTRACT NO. 8-11612 INDIANA STATE HIGHWAY COMMISSION

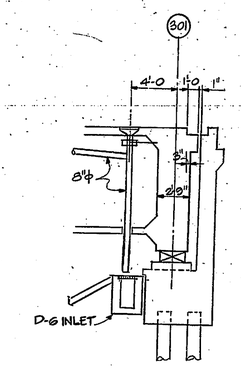
SHEET N.
1038





PIER 106
3/16" = 1'-0





ABUTMENT 301

NOTES:
1. SEE NOTES SHEET 1030

DATE	REVISION	N

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

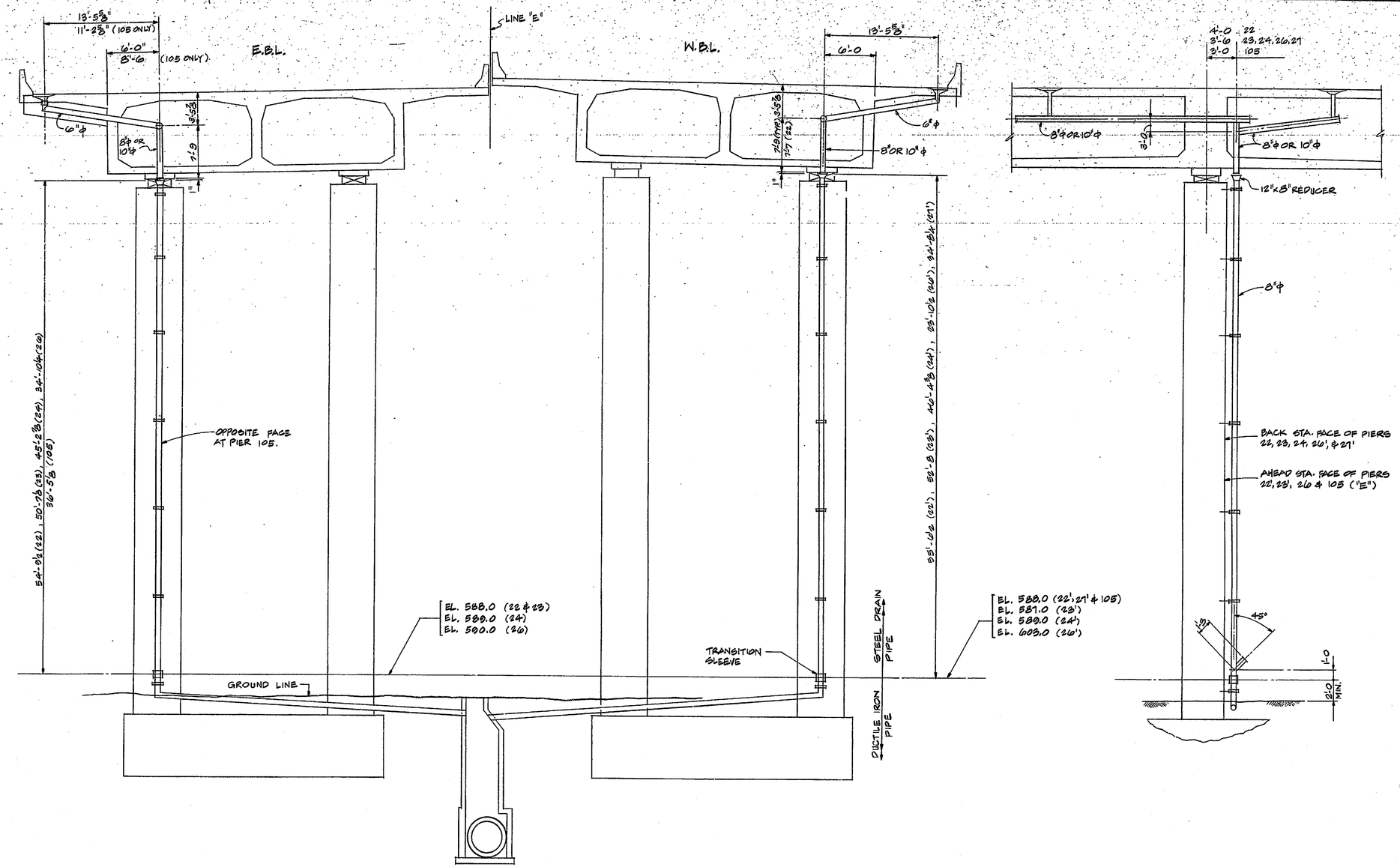
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F ATKINSON CO
DARIEN, CONNECTICUT

SHEET TITLE
SUPERSTRUCTURE DRAINAGE - PIERS 106 & ABUTMENT 301

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE. 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
1037



PIERS 22, 23, 24, 26, 27 & 28'

N	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

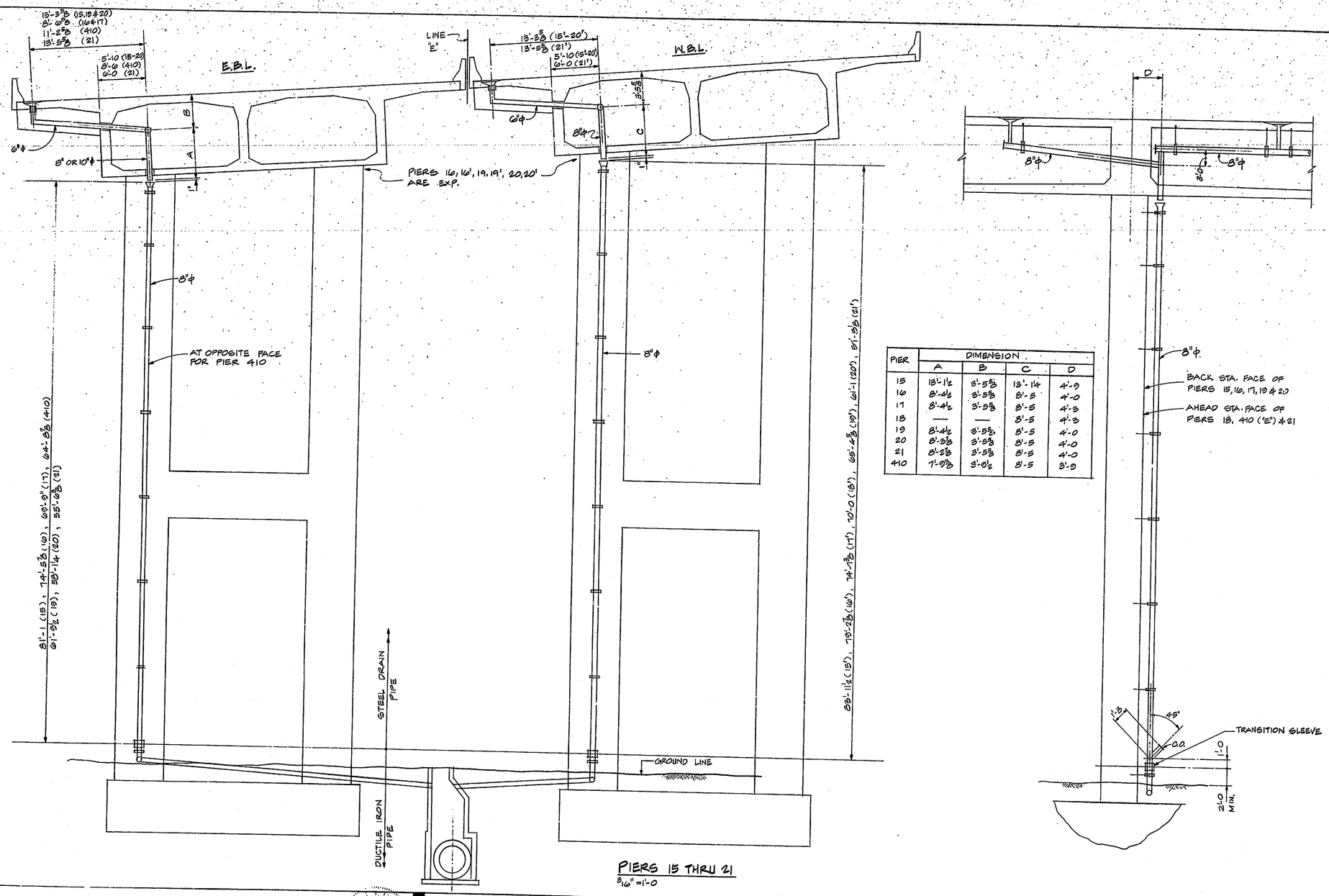
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
SUPERSTRUCTURE DRAINAGE - PIERS 22, 23, 24, 26, 27, 28 & 105

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE. 912-45-2548 CONTRACT NO. 8-11812 INDIANA STATE HIGHWAY COMMISSION

SHEET N
1036



PIER	DIMENSION			
	A	B	C	D
15	13'-1 1/2	3'-5 5/8	13'-1 1/4	4'-0
16	8'-4 1/2	3'-5 5/8	8'-5	4'-0
17	8'-4 1/2	3'-5 5/8	8'-5	4'-3
18	—	—	8'-5	4'-3
19	8'-4 1/2	3'-5 5/8	8'-5	4'-0
20	8'-3 5/8	3'-5 5/8	8'-5	4'-0
21	8'-2 5/8	3'-5 5/8	8'-5	4'-0
410	7'-0 5/8	3'-0 1/2	8'-5	3'-0

PIERS 15 THRU 21
3/16" = 1'-0

N	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

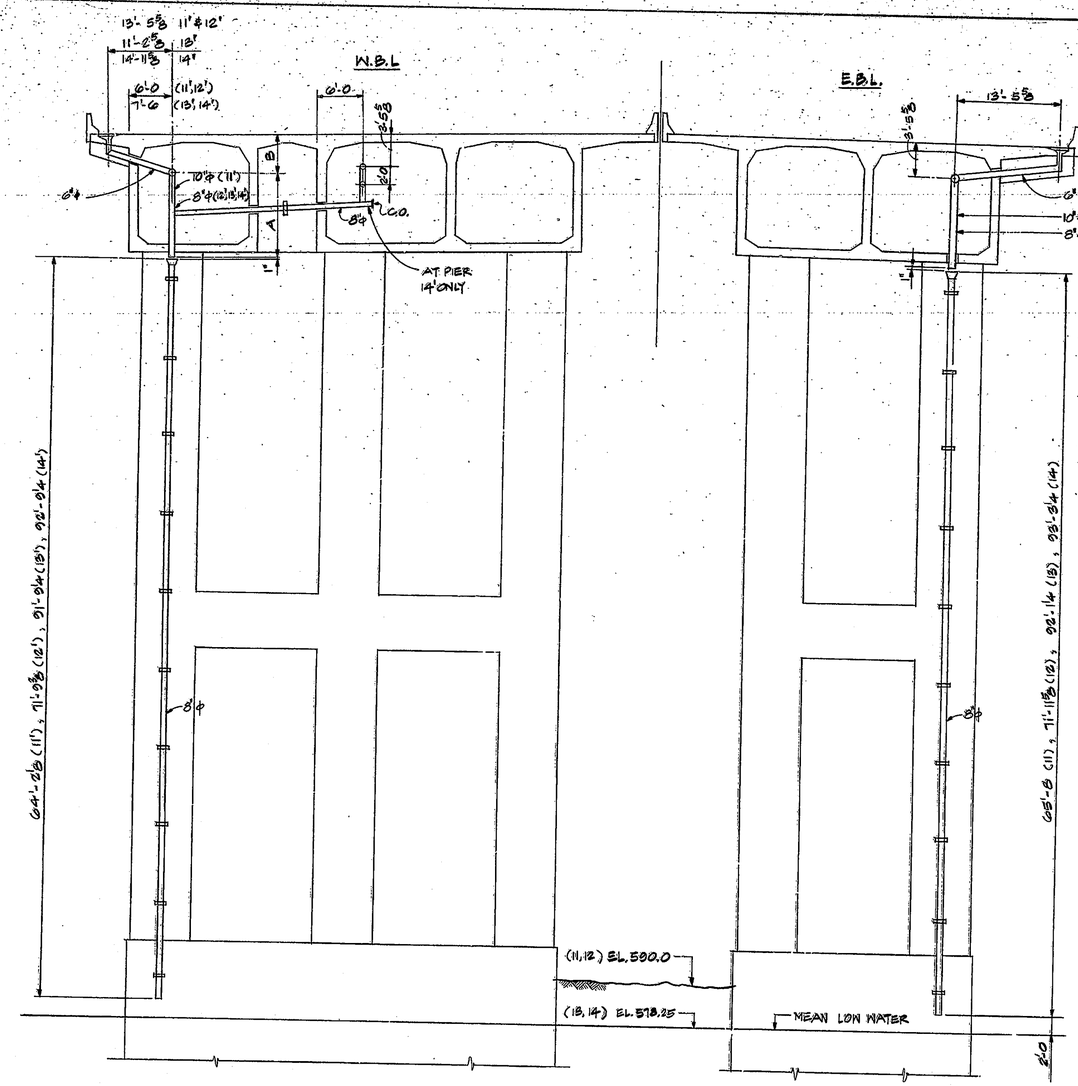
SHEET TITLE

SUPERSTRUCTURE DRAINAGE - PIERS 15, 16, 17, 18, 19, 20, 21 & 401

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE. 912-45-2546 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N

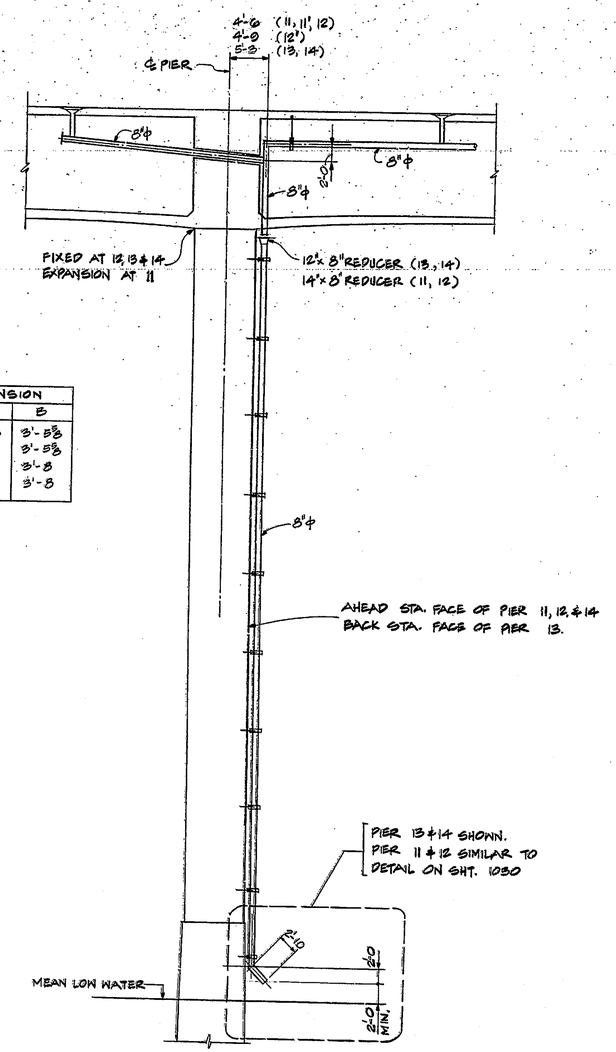
1035



PIER 14 SHOWN

PIER 11, 12, 13, & 14
⅛" = 1'-0

PIER	DIMENSION	
	A	B
11'	14'-2⅝	3'-5⅝
12'	13'-2⅝	3'-5⅝
13'	13'-6	3'-8
14'	13'-6	3'-8



NOTE:

1. SEE NOTES SHEET 1030

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T. Y. LIN REGISTERED No. 16256 INDIANA PROFESSIONAL ENGINEER

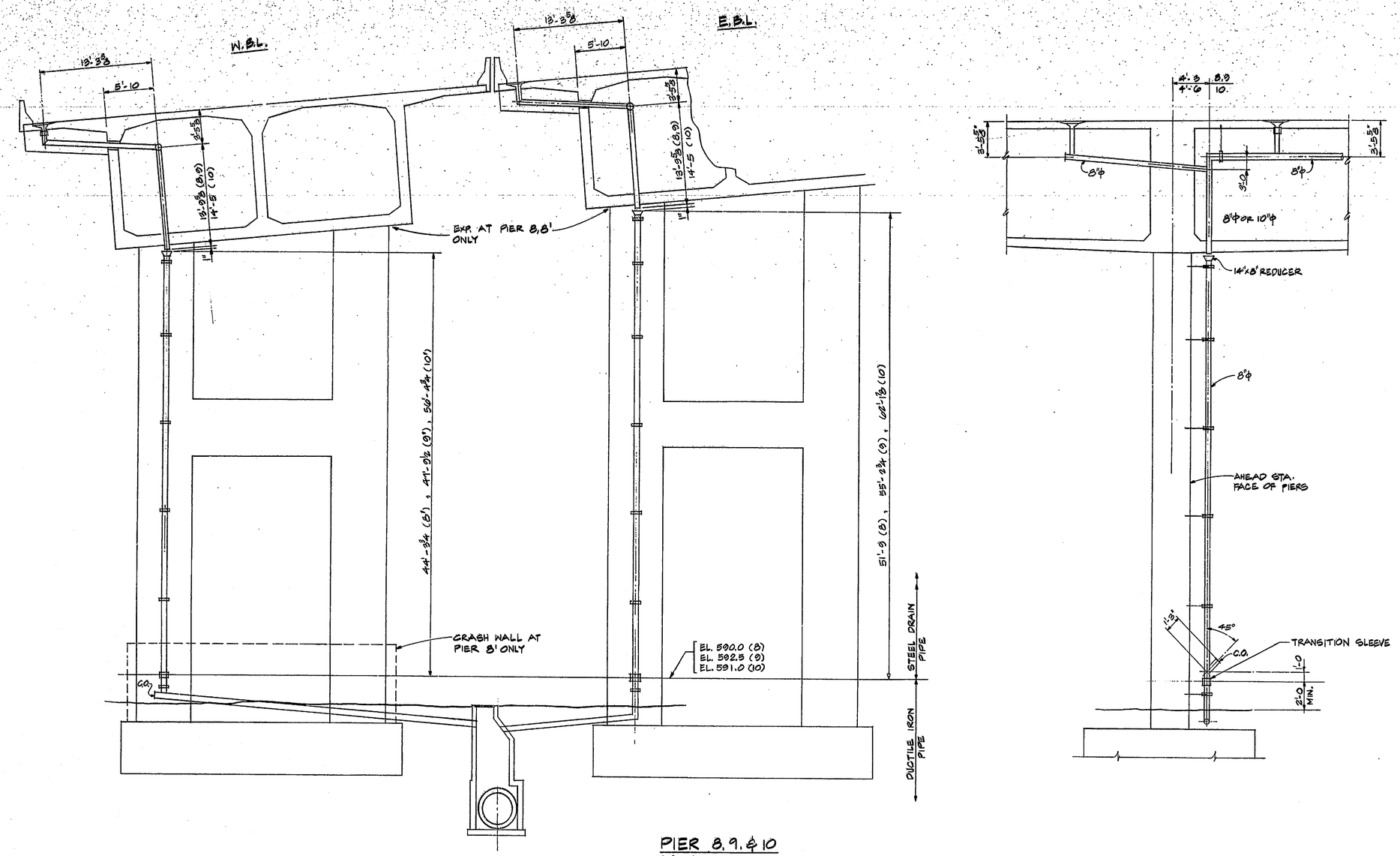
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE

SUPERSTRUCTURE DRAINAGE - PIERS 11, 12, 13 & 14

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE. 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

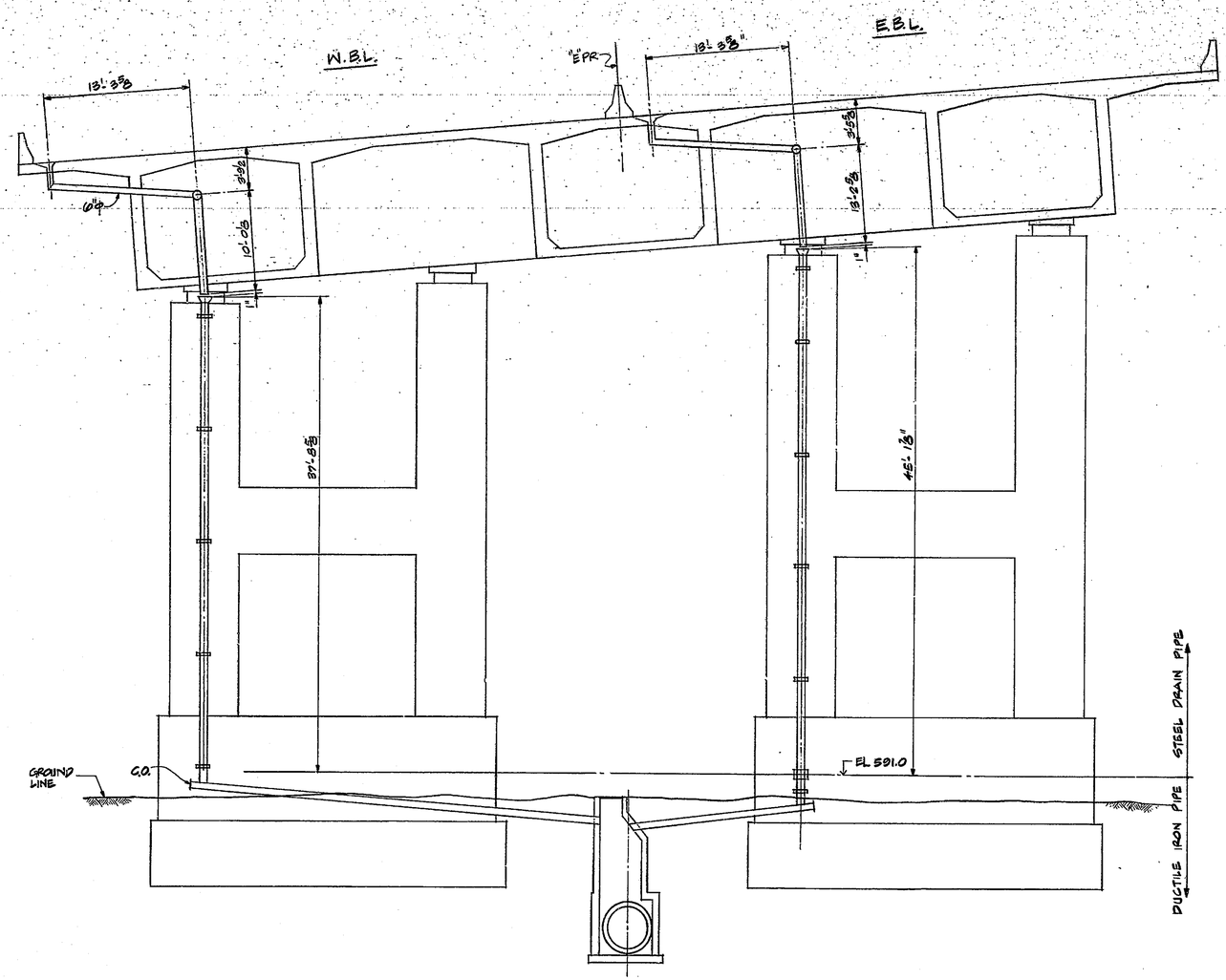
SHEET N.
1034



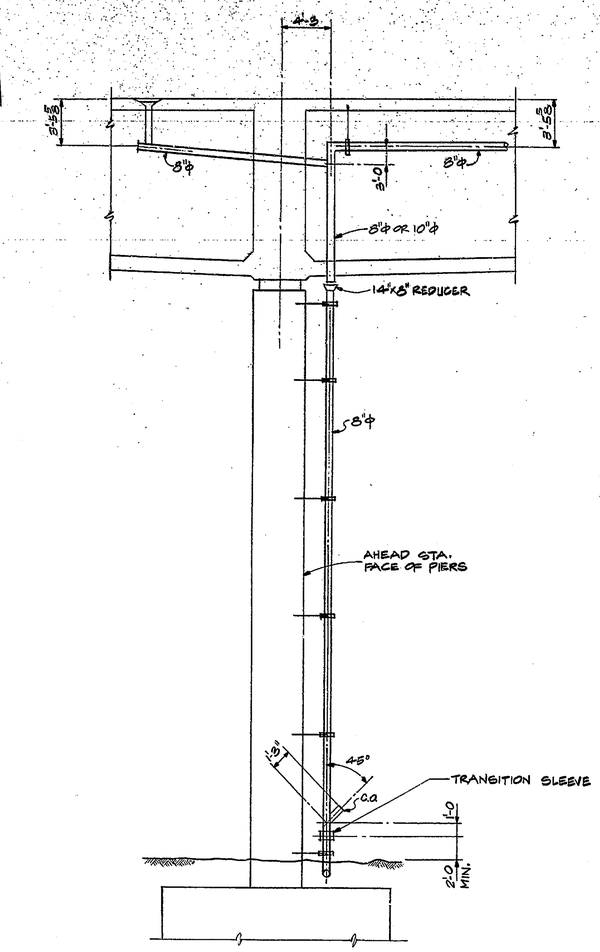
PIER 8, 9, & 10
3/16" = 1'-0

T. Y. LIN INTERNATIONAL STRUCTURAL ENGINEERS REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC. CONSULTING ENGINEERS	WALSH CONSTRUCTION COMPANY A DIVISION OF GUY F. ATKINSON CO. DARIEN, CONNECTICUT	SHEET TITLE SUPERSTRUCTURE DRAINAGE - PIERS 8, 9, & 10 CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL BRIDGE FILE: 912-45-2548 CONTRACT NO. 8-11612 INDIANA STATE HIGHWAY COMMISSION	SHEET N. 1033

N. | REVISION | DATE



PIER 7
3/16"=1'-0"



NOTE:
1. SEE NOTES SHEET 1030

N	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

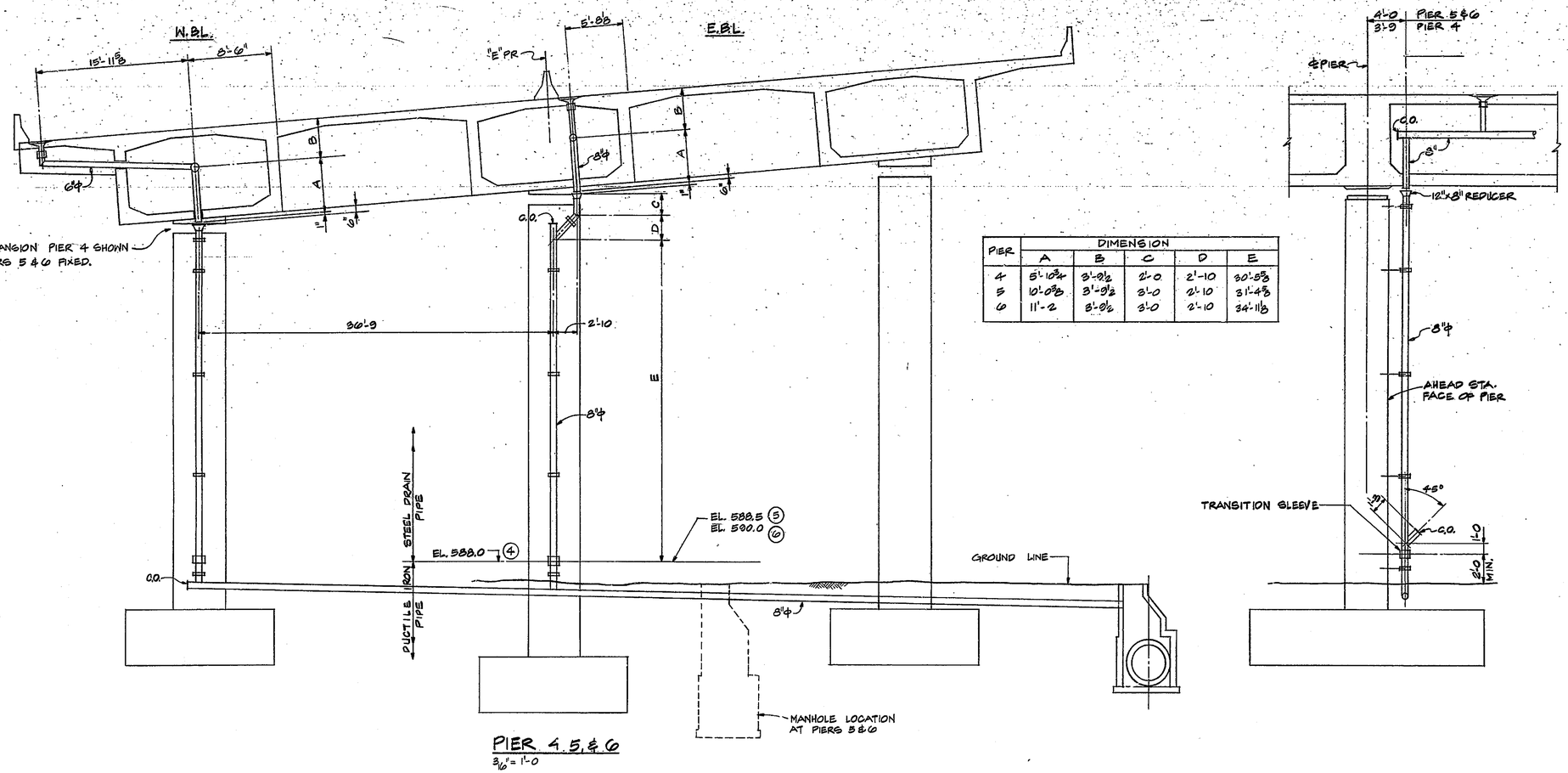
T. Y. LIN REGISTERED PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
SUPERSTRUCTURE DRAINAGE – PIER 7

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N
1032



PIER	DIMENSION				
	A	B	C	D	E
4	5'-10¾	3'-9½	2'-0	2'-10	30'-5⅝
5	10'-0⅝	3'-9½	3'-0	2'-10	31'-4⅝
6	11'-2	3'-9½	3'-0	2'-10	34'-11⅝

NOTES:

1. SEE NOTES SHEET 1030

N	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

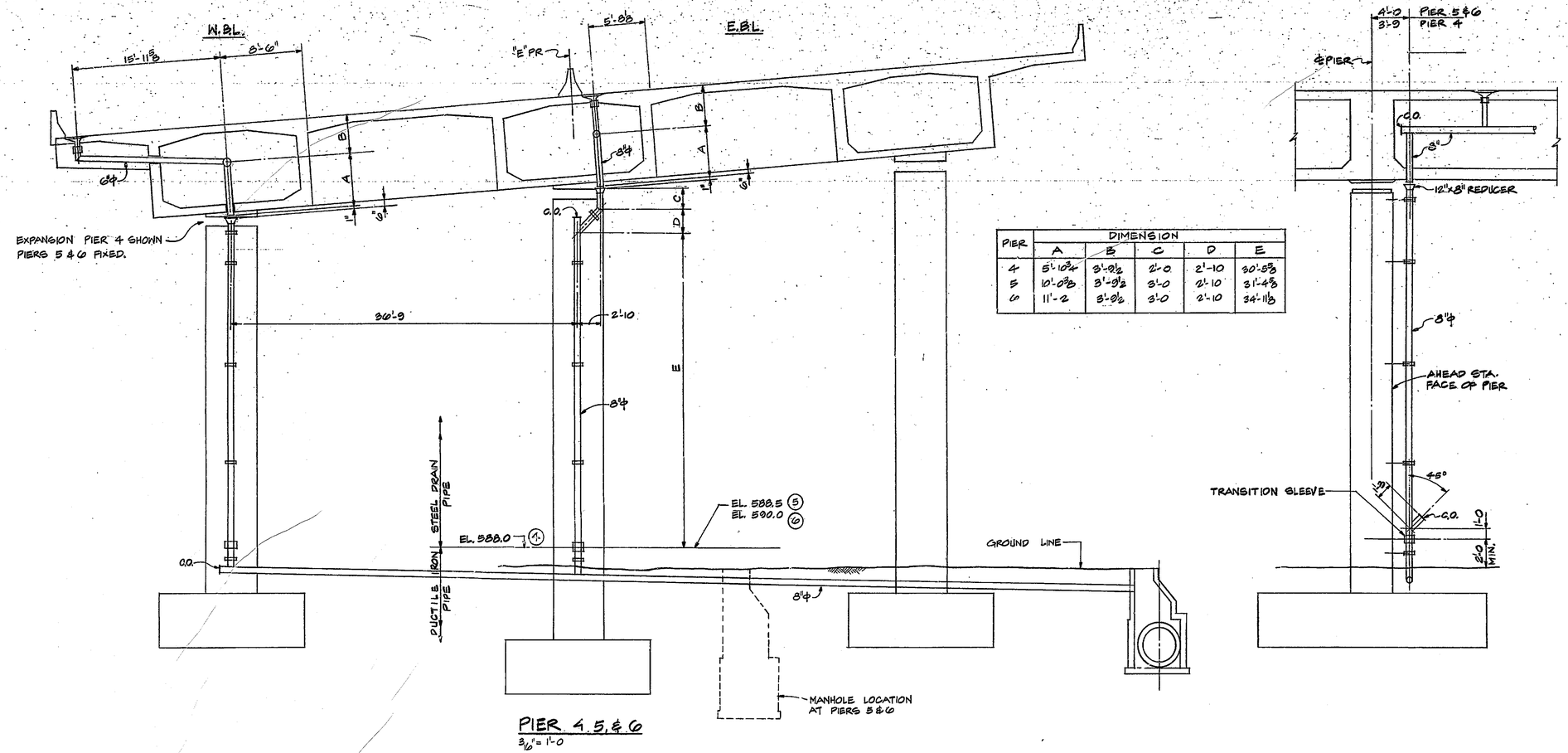
T. Y. LIN REGISTERED PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
SUPERSTRUCTURE DRAINAGE – PIER 4,5 & 6

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2549 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N
1031



PIER 4, 5, & 6
3/16" = 1'-0

PIER	DIMENSION				
	A	B	C	D	E
4	5'-10¾	3'-0½	2'-0	2'-10	30'-5⅝
5	10'-0⅝	3'-0½	3'-0	2'-10	31'-4⅝
6	11'-2	3'-0½	3'-0	2'-10	34'-11⅝

NOTES:

1. SEE NOTES SHEET 1030

REVISION	DATE
N	

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

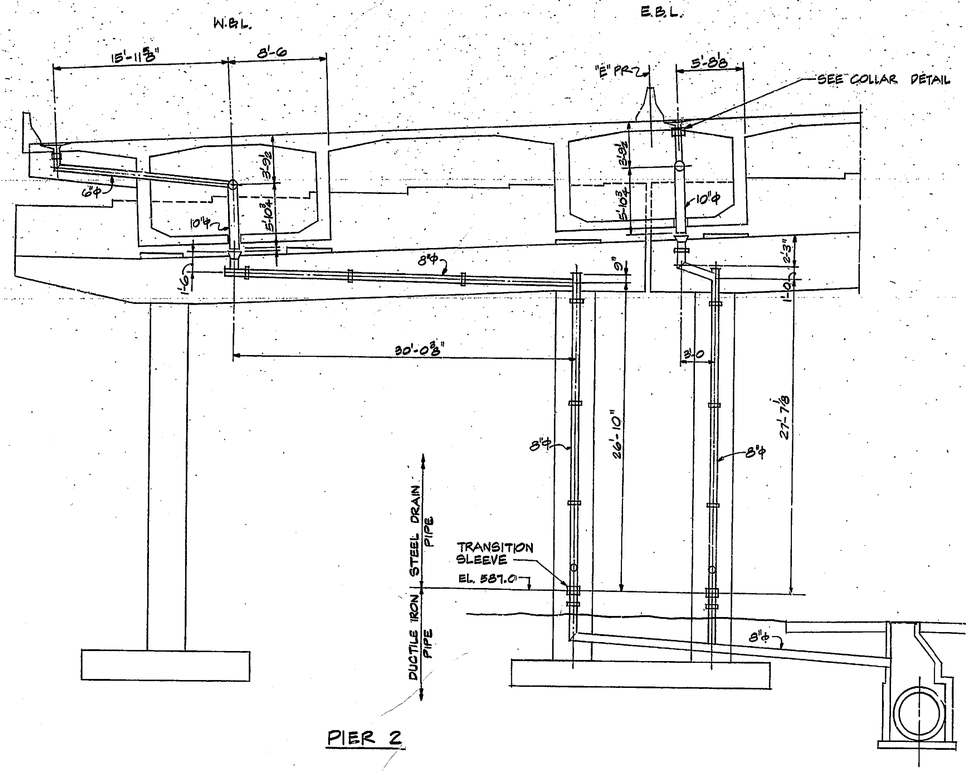
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

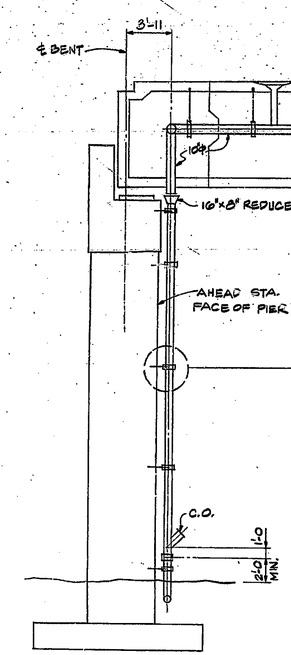
SHEET TITLE
SUPERSTRUCTURE DRAINAGE – PIER 4,5 & 6

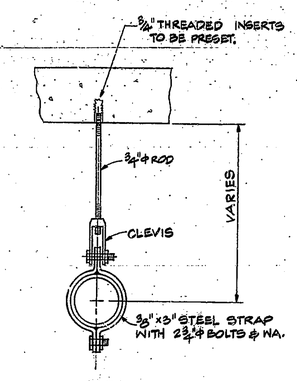
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2549 CONTRACT NO. S-11612 INDIANA STATE HIGHWAY COMMISSION

SHEET N.
1031



PIER 2

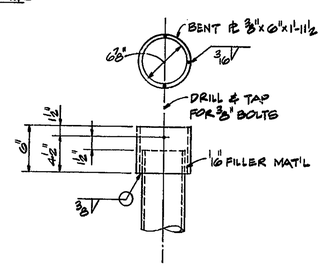




TYP. PIPE HANGER DETAIL

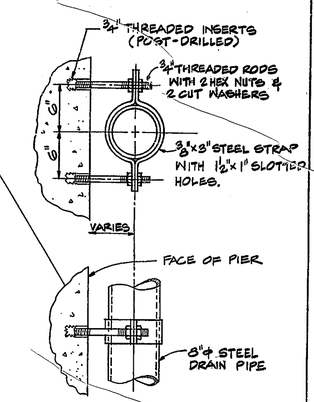
HANGERS TO BE SPACED @ 10'-0 MAX.

1½"=1'-0"



TYP. COLLAR DETAIL

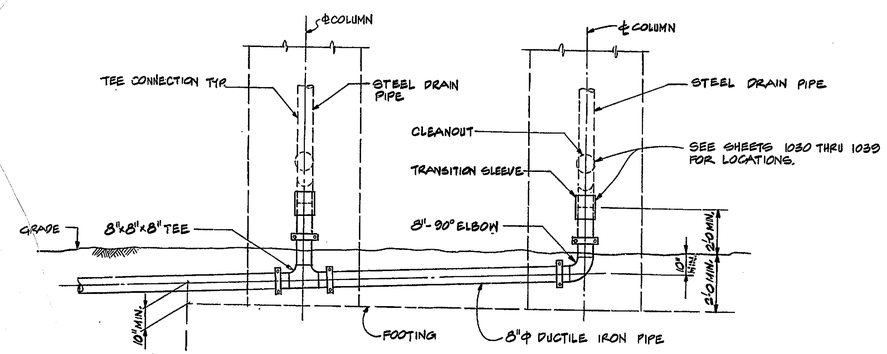
1½"=1'-0"



TYP. PIPE CONNECTION DETAIL

CLAMPS TO BE SPACED @ 10'-0 MAX.

1½"=1'-0"



TYPICAL CONNECTIONS

⅜"=1'-0"

NOTES:

1. CONTRACTOR SHALL FURNISH LENGTHS OF STEEL & DUCTILE IRON PIPE AS DETERMINED FROM INDICATED GEOMETRY AS SHOWN ON SHT 102 THRU 112 AND 1030 THRU 1039.
2. TRANSITION SLEEVES, ELBOWS, ANCHOR STRAPS, PIPE CONNECTIONS, BOLTS, REDUCERS, HANGARS AND ROADWAY DRAINS SHALL BE FURNISHED BY THE CONTRACTOR AS APPROVED BY THE ENGINEER.
3. SEE TYPICAL DRAIN GEOMETRY AND REINFORCING ON SHT. 1038 & 1050.

N	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO
DARIEN, CONNECTICUT

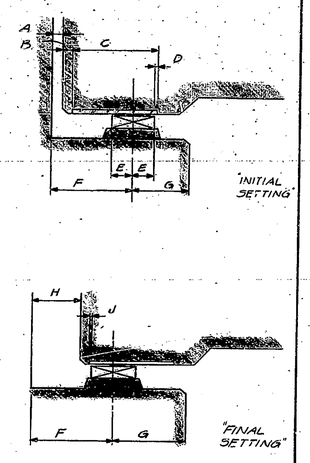
SHEET TITLE

SUPERSTRUCTURE DRAINAGE - PIER 2 & STANDARD DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE. 912-45-2548 CONTRACT NO. 8-11612 INDIANA STATE HIGHWAY COMMISSION

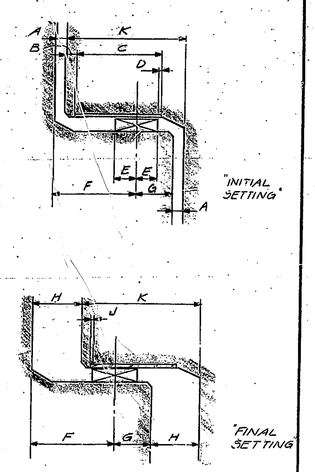
SHEET N

1030



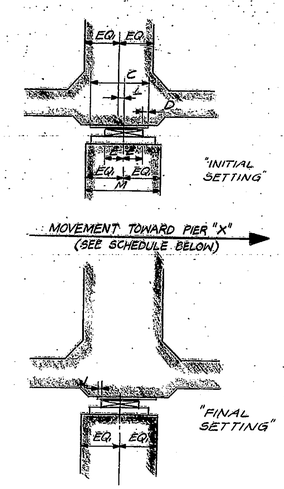
BEARING SETTING AT ABUTMENTS

DETAIL 1



BEARING SETTING AT HINGES

DETAIL 2



BEARING SETTING AT EXPANSION PIERS

DETAIL 3

NOTE:

1. MOVEMENTS AND SETTINGS OF EXPANSION JOINT ASSEMBLIES ARE DETERMINED AT MEAN TEMPERATURE 60° F.

2. TOTAL DIMENSION 'A' PLUS 'K' (FACE TO FACE OF DIAPHRAGM) FOR E.B.L. AND W.B.L. OF EXPANSION JOINT 3 EQUALS 6'-3".
   'A' PLUS 'K' FOR EXPANSION JOINTS 2, 5, 7 AND 8 EQUALS 6'-0".

BEARING SETTING SCHEDULE

DIMENSION LETTER (SEE DETAILS)	ABUTMENTS SEE DETAIL 1		HINGES SEE DETAIL 2												
	PIER NUMBERS		EXP. JT. 2		EXP. JT. 3 (SEE NOTE 2)		EXP. JT. 4 RAMP "A"	EXP. JT. 5		EXP. JT. 6 RAMP "C"	EXP. JT. 7		EXP. JT. 8		EXP. JT. 9 RAMP "D"
	2	30	INTERIOR	EXTERIOR	INTERIOR	EXTERIOR		INTERIOR	EXTERIOR		INTERIOR	EXTERIOR	INTERIOR	EXTERIOR	
A	8 4"	1'-2 7/8	3 1/2"	3 1/2"	4"	4"	4"	3 3/8"	3 3/8"	2"	3"	3"	4 1/4"	4 1/4"	2 3/8"
B	2"	6"	11"	8"	1'-1 1/4	10 1/4"	3 1/2"	1'-4 1/8	1'-1 5/8	9 3/8"	1'-7 3/8	1'-4 7/8	1'-1 1/2	11"	10"
C	2'-2	2'-5 1/2	3'-7	3'-4 1/2	3'-4 1/2	3'-10 1/2	2'-9 1/2	2'-9	3'-2	2'-3 3/4	2'-3 1/4	2'-8 1/4	3'-0 1/2	3'-5 1/2	2'-2 1/2
D	0"	3 7/8"	4"	4"	7 1/4"	7 1/4"	4"	1 7/8"	1 7/8"	0"	3"	3"	4"	4"	0"
E	4 3/4	8"	6"	5 1/2"	5 1/2"	8"	8 1/2"	6"	8 1/2"	8 1/2"	6"	8 1/2"	6"	8 1/2"	6 1/2"
F	2'-7 1/2	3'-0 1/2	3'-6 1/2	3'-6 1/2	3'-9	3'-9	2'-8	3'-8 5/8	3'-8 5/8	2'-6 1/4	3'-4 5/8	3'-4 5/8	3'-8 1/4	3'-8 1/4	2'-8 5/8
G	1'-10 1/2	2'-11 1/2	2'-2	2'-2	2'-2	2'-2	1'-2 1/2	2'-0	2'-0	1'-4 1/4	2'-4 3/8	2'-4 3/8	1'-11 1/2	1'-11 1/2	1'-1 3/8
H	1'-11 3/4	1'-8 1/2	2'-0	2'-0	2'-1 1/2	2'-1 1/2	1'-7 3/4	1'-9 1/4	1'-9 1/4	1'-1	1'-2	1'-2	1'-9	1'-9	1'-3
J	1"	4"	3"	1 1/2"	1 1/4"	1 1/4"	1 1/2"	1 1/4"	1 1/4"	0"	1 1/4"	1 1/4"	3 3/4"	3 3/4"	1 1/8"
K			5'-8 1/2	5'-8 1/2	5'-11	5'-11	3'-10 1/2	5'-8 5/8	5'-8 5/8	3'-10 1/2	5'-9	5'-9	5'-7 3/4	5'-7 3/4	3'-10 1/2
L															
M															

DIMENSION LETTER (SEE DETAILS)	EXPANSION PIERS SEE DETAIL 3																	REMARKS
AT PIER NUMBER	3	4	7, 7'	8, 8'	11	11'	16, 16'	19, 19'	20, 20'	23, 23'	24, 24'	25, 25'	26, 26'	29'	105	304		
TOWARD PIER "X"	4	5	6	9, 9'	10	10'	17, 17'	18, 18'	21, 21'	22, 22'	23, 23'	26, 26'	27, 27'	28'	106	305		
A																		
B																		
C	3'-9	3'-9	4'-0	4'-1	4'-4	4'-7	3'-4 1/2	3'-3 1/2	3'-3 1/4	3'-3 1/4	3'-7 1/4	3'-9 3/4	3'-6	3'-3	2'-10 1/4	2'-7 1/2		
D	4 3/4"	3 3/4"	4 1/4"	4 1/4"	4 3/4"	4 1/2"	3 3/8"	3 3/4"	3 1/4"	3 3/4"	3 1/4"	4"	2 3/8"	2 3/4"	3"	2 3/8"		
E	1'-3 3/8	1'-5	1'-5 1/4	1'-5 1/2	1'-6 1/2	1'-8 1/4	1'-3 3/8	1'-2 1/2	1'-2 7/8	1'-2 7/8	1'-3 3/8	1'-3 1/2	1'-4 1/4	1'-3	11 3/4	10 7/8		
F																		
G																		
H																		
J	1 1/2"	1 3/4"	2"	1 3/4"	1 3/4"	1 3/4"	2 3/8"	2 1/2"	2 1/4"	2 1/4"	3"	2 1/2"	2 3/8"	2 1/2"	2 5/8"	3 1/4"		
K																		
L	2 1/2"	1 3/4"	2 1/2"	2 3/4"	2 3/4"	2 3/4"	1 1/2"	2 3/4"	1 1/2"	1"	3"	3 1/2"	2 1/2"	2"	2 1/2"	2 1/2"		
M	4'-6	4'-6	4'-6	5'-6	6'-0	6'-0	6'-0	5'-6	5'-6	5'-0	5'-0	5'-0	5'-0	4'-6	5'-0	5'-0		

APPROVED FOR CONSTRUCTION

J. D. Mattis

J. D. MATTIS
Engineer of Bridge Plans

9-7-82

N	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T. Y. LIN REGISTERED No. 18265 STATE OF PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

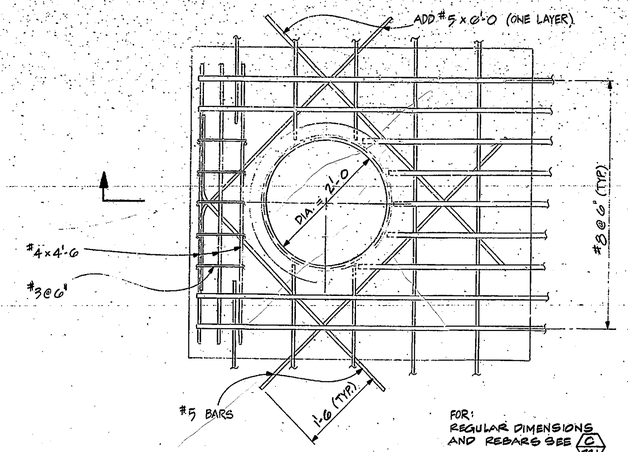
SHEET TITLE

BEARING DETAILS - EXPANSION ASSEMBLY SETTINGS

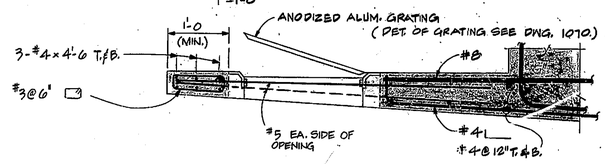
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 8-11812
INDIANA STATE HIGHWAY COMMISSION

SHEET N.

1021



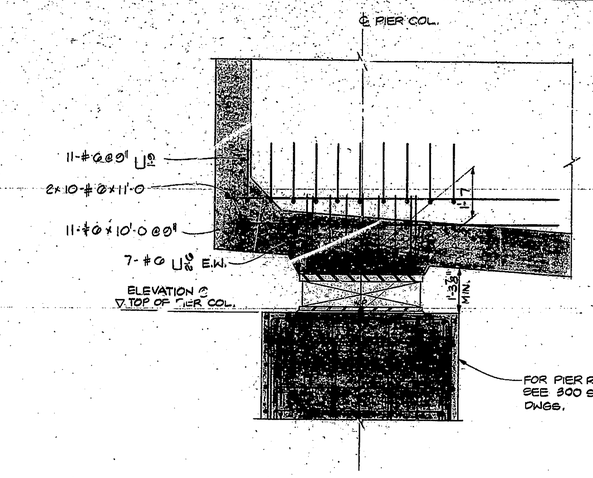
PLAN - CIRCULAR MANHOLE
1" = 1'-0



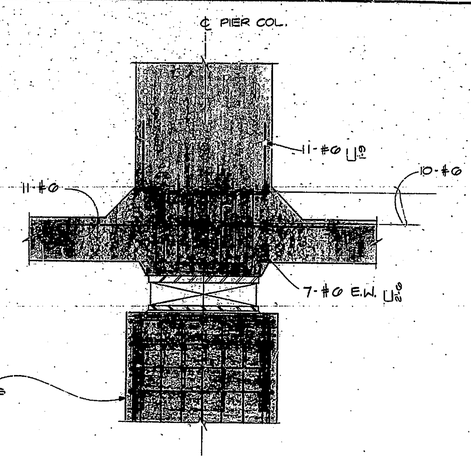
SECTION D
1" = 1'-0

CIRCULAR MANHOLES LIST

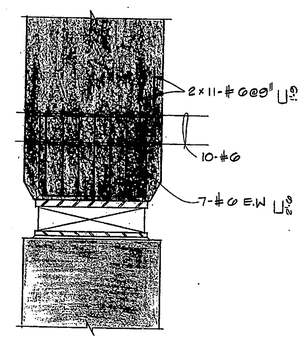
LOCATION	NUMBER
EXP. JOINT 2	5
EXP. JOINT 3	5
EXP. JOINT 5	6
EXP. JOINT 7	4
EXP. JOINT 8	2
EXP. JOINT 8	2
TOTAL	24



TRANSVERSE SECTION B
BEARING ASSEMBLY
1/2" = 1'-0



LONGITUDINAL SECTION A
BEARING ASSEMBLY
@ BOTTOM OF GIRDER
1/2" = 1'-0



LONGITUDINAL SECTION C
BEARING ASSEMBLY
BETWEEN BOX GIRDERS
1/2" = 1'-0

NOTE:

1) FINAL BEARING DETAILS MUST BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE COMMENCING WORK.

△ 2) ALL BEARINGS SHALL BE INSTALLED LEVEL.

APPROVED FOR CONSTRUCTION

W. B. ABBOTT
Assistant Engineer of Bridge Design 10-26-81

NO.	REVISION	DATE
2	MANHOLE REINF.	JULY '81
1	NOTES	MAY '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

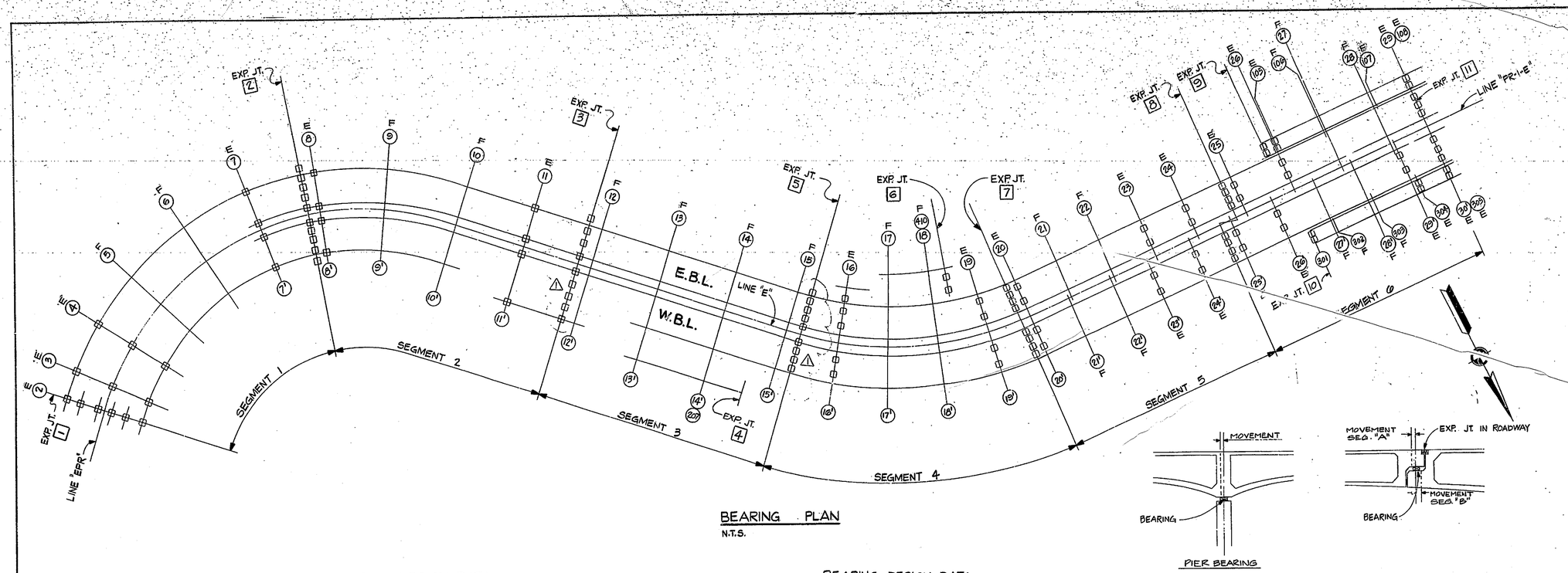
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
CIRCULAR MANHOLE DETAILS and BEARING DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
1020



BEARING PLAN

N.T.S.

BEARING DESIGN DATA

LOCATION	E.B.L	W.B.L	NUMBER OF BEARINGS	AXIAL LOAD KIPS/BRG.	LATERAL FORCE KIPS/BRG	MOVEMENT (IN) TOTAL	MOVEMENT (IN) @ 6 MONTHS	REMARKS
EXP. JT. 1	X	X	6	250	20	+0.5, -2.1	+6.2, -2.1	——
PIER No. 3	X	X	3	2580	60	+8.1, -1.7	——	——
PIER No. 4	X	X	3	3160	70	+5.5, -1.1	——	——
PIER No. 7, 7'	X	X	4	3290	80	+7.3, -1.3	——	——
EXP. JT. 2	X	X	8	400	20	+11.8, -3.0	+7.5, -2.0	FORCES @ INTERIOR MOVEMENT SEG. 1
EXP. JT. 2	X	X	2	800	20	+8.0, -3.0	+5.5, -1.4	FORCES @ EXTERIOR MOVEMENT SEG 2
PIER No. 8, 8'	X	X	4	3400	90	+8.0, -1.3	——	——
PIER No 11	X		2	3780	100	+8.5, -1.7	——	——
PIER No 11'		X	2	4470	100	+8.5, -1.7	——	——
EXP. JT. 3	X	X	4	350	20	+13.4, -3.0	+8.2, -2.2	FORCES @ INTERIOR MOVEMENT. SEG. 2
EXP. JT. 3	X	X	5	700	20	+11.5, -3.0	+5.4, -1.6	FORCES @ EXTERIOR MOVEMENT. SEG. 3
EXP. JT. 4		X	2	800	20	+7.0, -1.5 +10.4, -2.9	+4.5, -1.5 +6.8, -2.8	MOVEMENT. SEG. 3 MOVEMENT RAMP
EXP. JT. 5	X	X	4	400	20	+8.8, -1.6	+5.9, -1.6	FORCES @ INTERIOR MOVEMENT. SEG. 3
EXP. JT. 5	X	X	5	800	20	+8.4, -1.7	+5.5, -1.7	FORCES @ EXTERIOR MOVEMENT. SEG. 4
PIER No 16	X	X	5	2600	100	+4.0, -1.0	——	——
PIER No. 19	X	X	4	2300	100	+4.2, -1.1	——	——

BEARING DESIGN DATA

LOCATION	E.B.L	W.B.L	NUMBER OF BEARINGS	AXIAL LOAD KIPS/BRG.	LATERAL FORCE KIPS/BRG.	MOVEMENT (IN.) TOTAL	MOVEMENT (IN.) @ 6 MO.	REMARKS
EXP. JT. 6	X		2	800	20	+2.0, -0.2 +0.3, -1.2	+1.7, -0.5 +4.2, -1.4	MOVEMENT SEG. 4 MOVEMENT RAMP C
EXP. JT. 7	X	X	4	400	20	+6.0, -1.7	+4.5, -1.7	FORCES @ INTERIOR MOVEMENT. SEG. 4
EXP. JT. 7	X	X	4	800	20	+4.4, -1.2	+2.9, -1.2	FORCES @ EXTERIOR MOVEMENT SEG. 5
PIER No 20	X	X	4	2400	100	+3.0, -1.0	——	——
PIER No 23	X	X	4	2400	70	+3.5, -1.0	——	——
PIER No 24	X	X	4	2600	70	+6.2, -1.6	——	——
EXP. JT. 8	X	X	4	400	20	+8.0, -2.2	+6.1, -2.2	FORCES @ INTERIOR MOVEMENT. SEG. 5
EXP. JT. 8	X	X	4	800	20	+8.9, -2.0	+5.8, -2.0	FORCES @ EXTERIOR MOVEMENT. SEG. 6
PIER No 25	X	X	4	2660	70	+8.8, -1.8	——	——
PIER No 26	X	X	4	2890	70	+4.8, -1.1	——	——
PIER No 29'		X	2	2480	70	+3.7, -1.0	——	——
EXP. JT. 9	X		2	450	20	+5.7, -1.3 +6.5, -1.2	+4.2, -1.3 +4.2, -1.2	MOVEMENT SEG. 6 MOVEMENT RAMP D
EXP. JT. 10		X	—	—	—	+2.2, -0.7	+1.7, -0.7	SEE 301
PIER No. 105	X		2	1500	70	+5.2, -1.1	——	——
PIER No. 301		X	2	400	20	+2.2, -0.7	+1.7, -0.7	——
PIER No. 304		X	2	1300	70	+4.1, -0.9	——	——
EXP. JT. 11	X	X	10	700	20	+5.5, -2.0	+3.7, -2.0	——

NOTES:

1. SUPPORT CONDITIONS ARE INDICATED BY E FOR EXPANSION BEARING LOCATION AND BY F FOR FIXED MONOLITHIC CONDITION.
2. MOVEMENT INDICATED USES THE SIGN CONVENTION + FOR CONTRACTION AND − FOR EXPANSION.
3. EXPANSION JOINTS SHALL BE INSTALLED A MINIMUM SIX (6) MONTHS AFTER COMPLETION OF POST-TENSIONING.
4. BEARING PROPERTIES
   a. DISPLACEMENT RESTRAINED IN TRANSVERSE DIRECTION
   b. MINIMUM ROTATION ± 0.015 RADIANS
   c. MAXIMUM COEFFICIENT FRICTION ≤ 0.03
5. SUBMIT DETAILS OF BEARING SOLE PLATE AND MASONRY PLATE ANCHORAGE TO BOX GIRDER AND PIER COLUMNS FOR APPROVAL BEFORE COMMENCING WORK.
6. SOLE PLATES SHALL BE LOCATED TO COVER BEARING AT ALL MOVEMENTS, WITH A MINIMUM TWO INCH OVER SIZE AT PERIMETER PROVIDED FOR SAFE PERFORMANCE.
7. $\phi = 3.00$ FOR CALCULATION OF MOVEMENT
8. PROVIDE GAP AT EXPANSION JOINTS AT TIME OF CONSTRUCTION TO ALLOW FOR TEMPERATURE EFFECTS.

APPROVED FOR CONSTRUCTION

J. D. MATTIS
Engineer of Bridge Plans

9-7-82

1	BRG. QUANTITIES	OCT '81
NO.	REVISION	DATE

N. | REVISION | DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

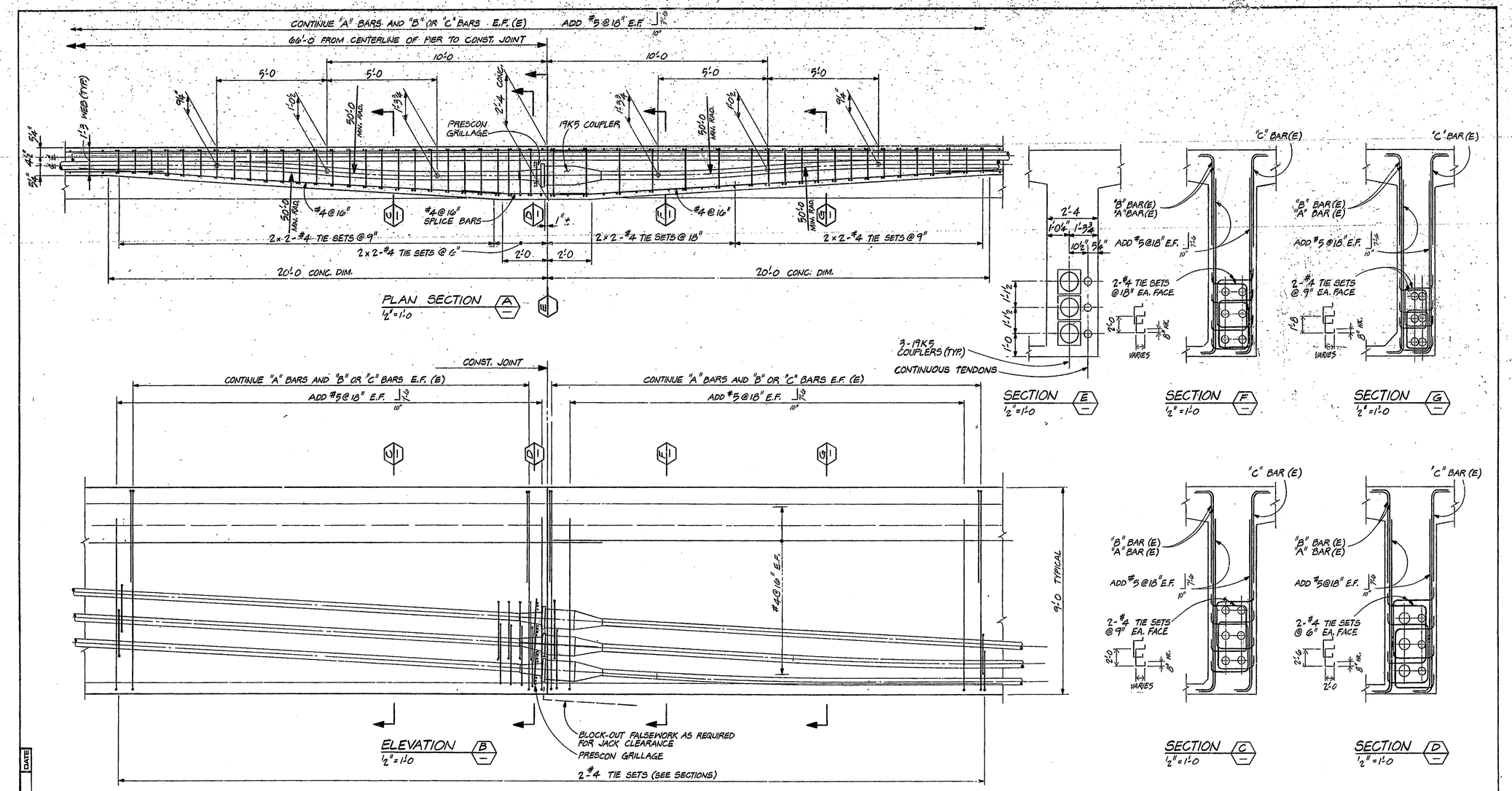
SHEET TITLE

BEARING PLAN AND DESIGN DATA

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.

1000



NOTES:

1. ALL REINF. IN TOP DECK SLAB IS EPOXY COATED, AS INDICATED BY (E).
2. REINF. SHOWN IS REQUIRED FOR ALL WEBS AT CONSTRUCTION JOINTS LOCATED 66'-0" WEST OF PIERS 19, 19', 26 AND 26'.
3. WORK THIS SHEET WITH SHEETS 841, 843, 844, 860, 862, 864 AND 865.
4. SPREAD CONTINUOUS TENDONS TO MATCH HEIGHT OF COUPLED TENDONS.

APPROVED FOR CONSTRUCTION

J. D. Mattis

J. D. MATTIS
Engineer of Bridge Plans

9-7-82

N	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T. Y. LIN INC. STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

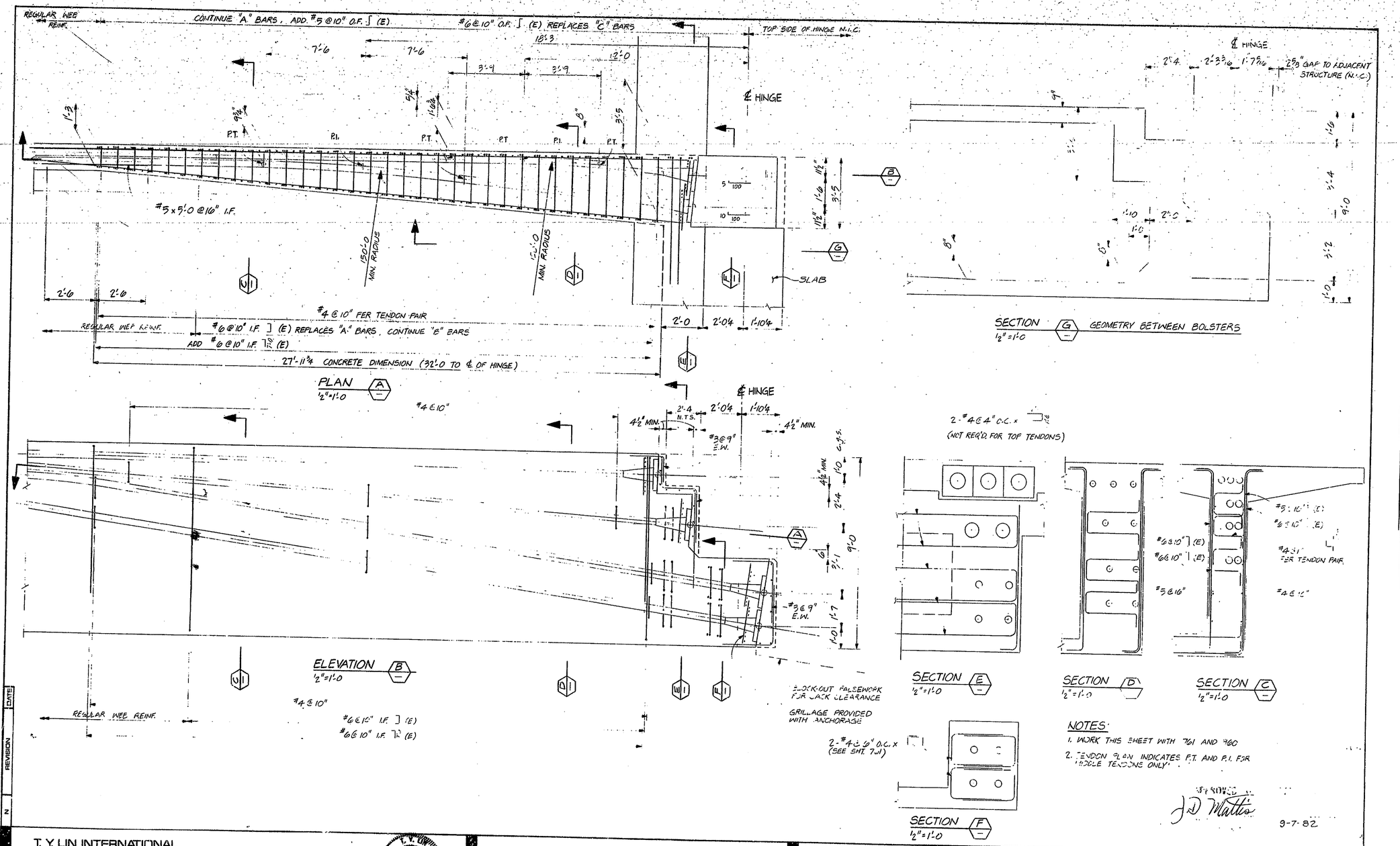
SHEET TITLE

PRESTRESSING DETAILS - COUPLERS AT CONSTRUCTION JOINT

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 8-11612 INDIANA STATE HIGHWAY COMMISSION

SHEET N.

962



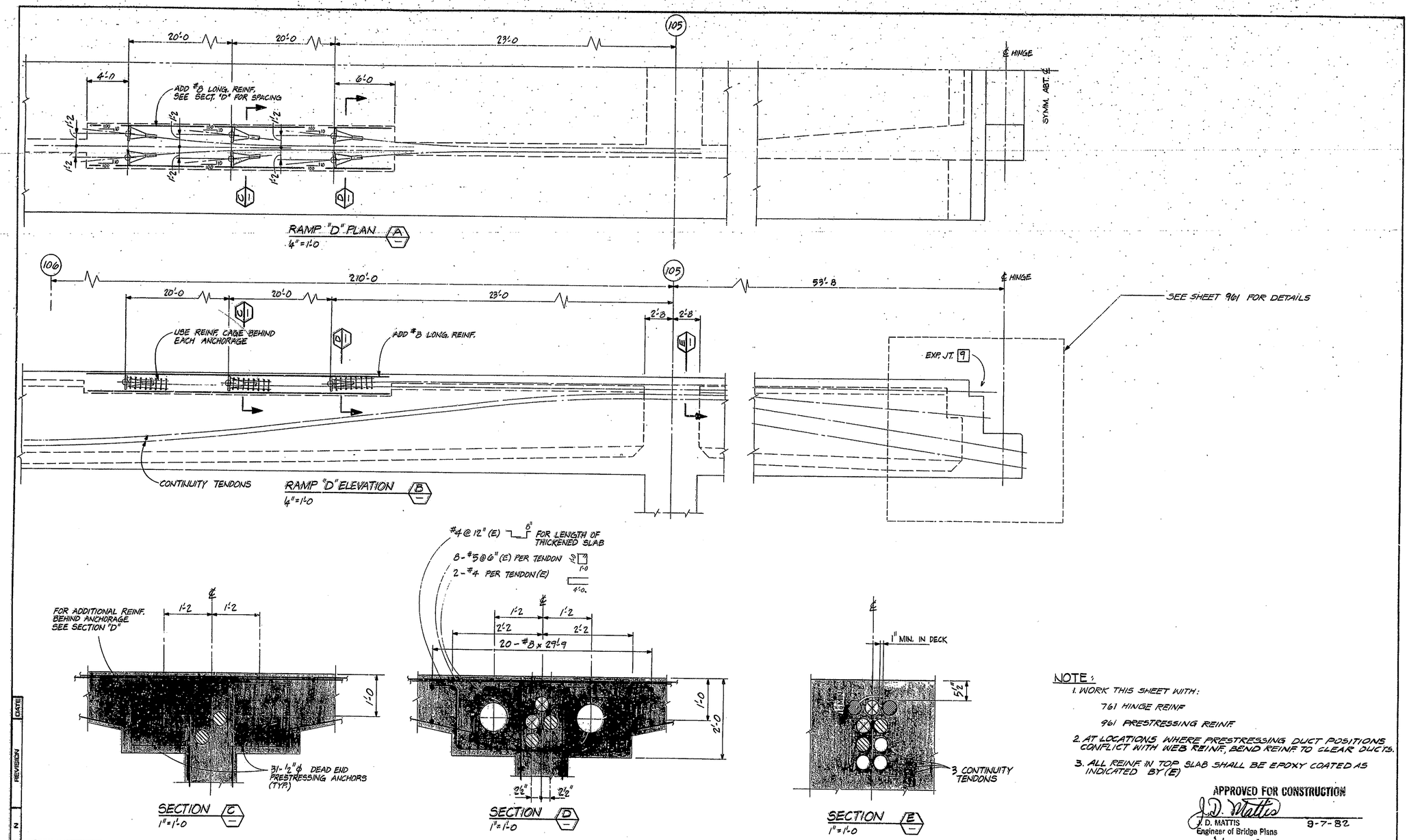
NOTES:

1. WORK THIS SHEET WITH 761 AND 960
2. TENDON PLAN INDICATES P.T. AND P.I. FOR MIDDLE TENDONS ONLY.

J.D. Mattis

9-7-82

T. Y. LIN INTERNATIONAL STRUCTURAL ENGINEERS REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC. CONSULTING ENGINEERS	WALSH CONSTRUCTION COMPANY A DIVISION OF GUY F. ATKINSON CO. DARIEN, CONNECTICUT	SHEET TITLE PRESTRESSING DETAILS - ANCHORAGE AT EXPANSION JOINT 9 CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11612 INDIANA STATE HIGHWAY COMMISSION	SHEET N. 961



NOTE:

1. WORK THIS SHEET WITH:

   761 HINGE REINF.

   961 PRESTRESSING REINF.

2. AT LOCATIONS WHERE PRESTRESSING DUCT POSITIONS CONFLICT WITH WEB REINF, BEND REINF. TO CLEAR DUCTS.

3. ALL REINF. IN TOP SLAB SHALL BE EPOXY COATED AS INDICATED BY (E)

APPROVED FOR CONSTRUCTION

J. D. Mattis
J. D. MATTIS
Engineer of Bridge Plans
9-7-82

N	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T. Y. LIN No. 38886 STATE OF INDIANA PROFESSIONAL ENGINEER

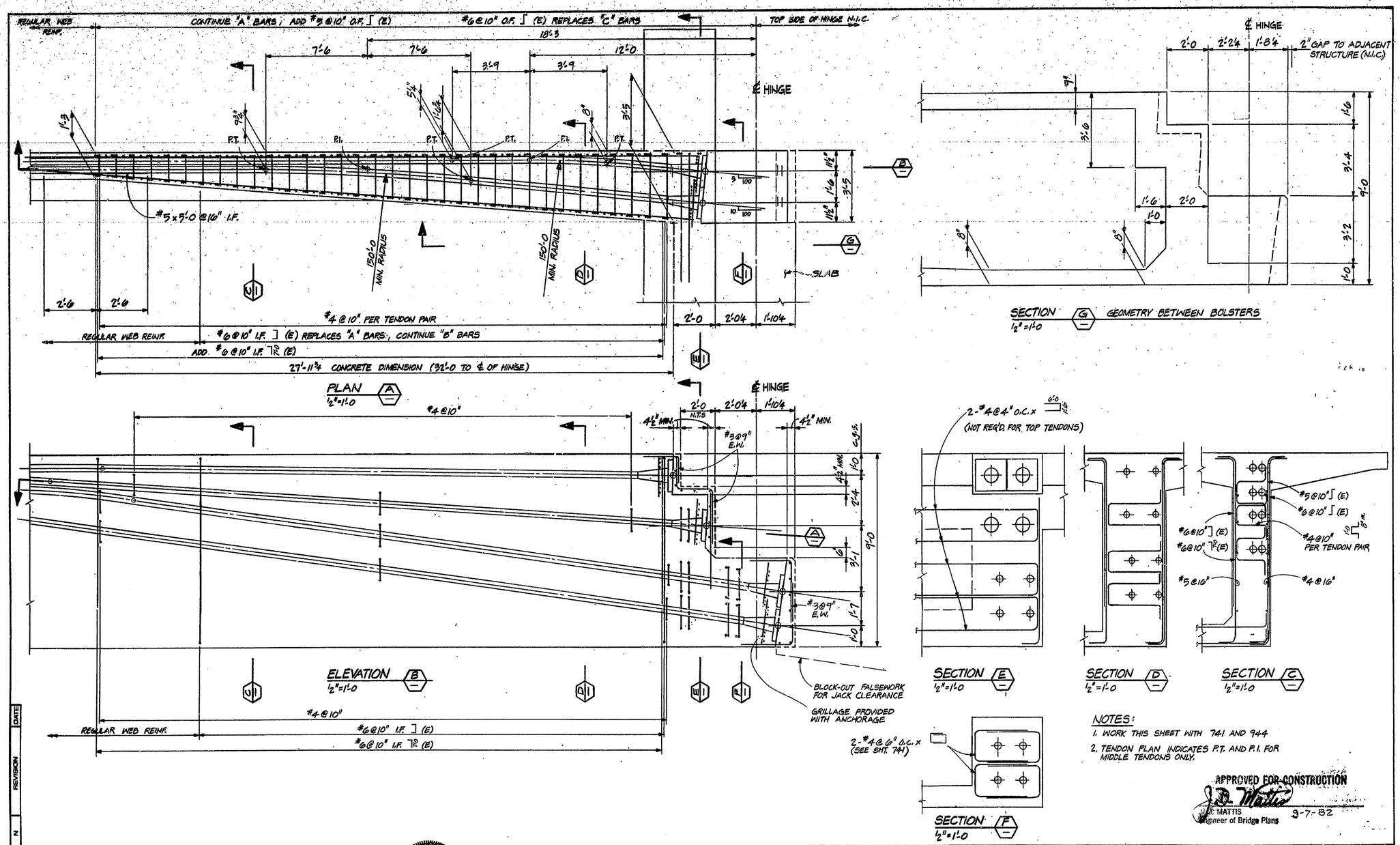
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE

RAMP "D" - TOP SLAB ANCHORAGE DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2549 CONTRACT NO. 8-11812 INDIANA STATE HIGHWAY COMMISSION

SHEET N.
960



NOTES:

1. WORK THIS SHEET WITH 741 AND 944
2. TENDON PLAN INDICATES P.T. AND P.I. FOR MIDDLE TENDONS ONLY.

APPROVED FOR CONSTRUCTION
J. D. Mattis
J. D. MATTIS
Engineer of Bridge Plans
3-7-82

DATE	REVISION	N

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

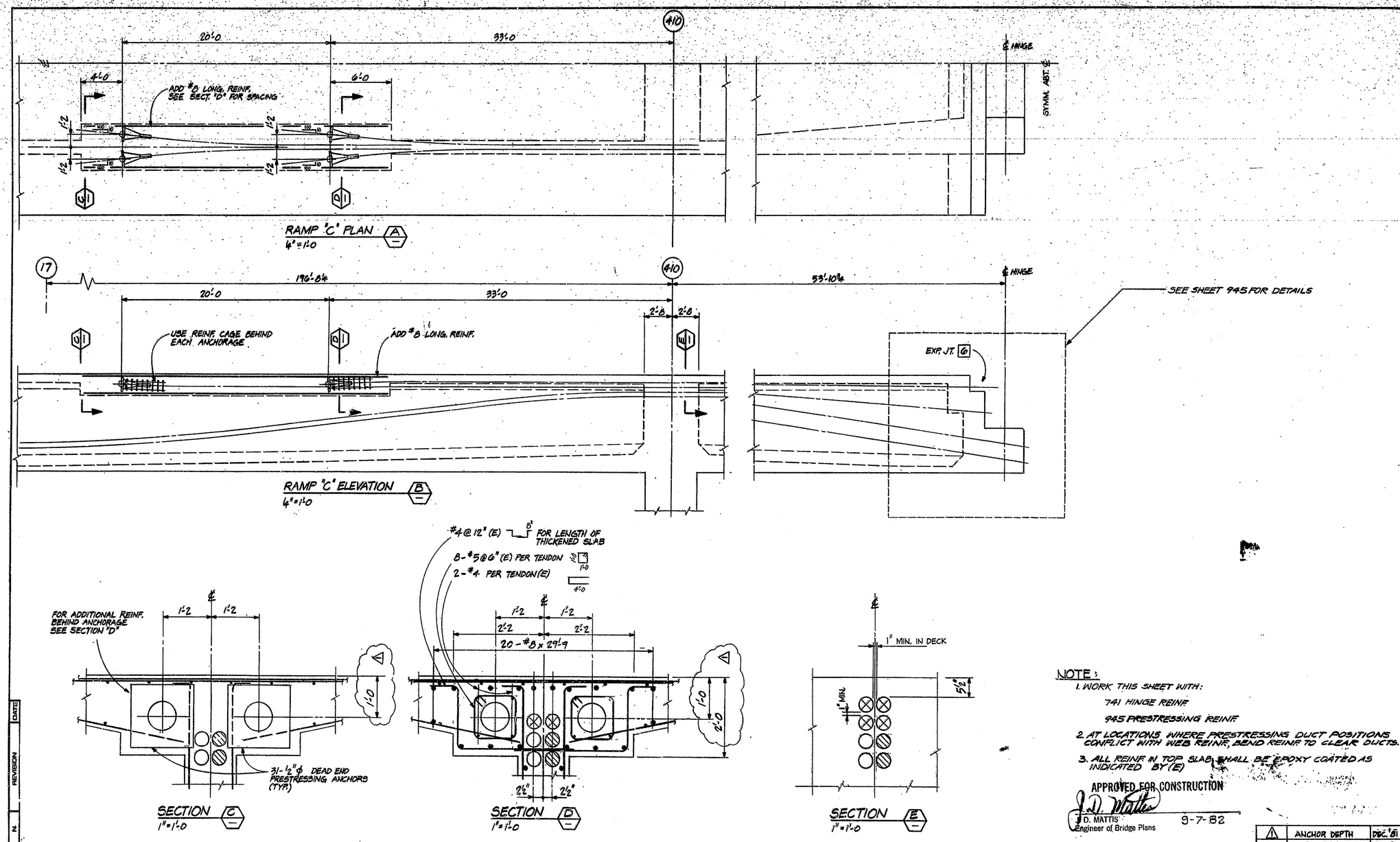
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PRESTRESSING DETAILS - ANCHORAGE AT EXPANSION JOINT 6

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 8-11612 INDIANA STATE HIGHWAY COMMISSION

SHEET N.
945



NOTE:

1. WORK THIS SHEET WITH:
   741 HINGE REINF.
   945 PRESTRESSING REINF.
2. AT LOCATIONS WHERE PRESTRESSING DUCT POSITIONS CONFLICT WITH WEB REINF., BEND REINF. TO CLEAR DUCTS.
3. ALL REINF. IN TOP SLAB SHALL BE EPOXY COATED AS INDICATED BY (E)

APPROVED FOR CONSTRUCTION

J. D. MATTIS
Engineer of Bridge Plans
9-7-82

NO.	REVISION	DATE
1	ANCHOR DEPTH	DEC. '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

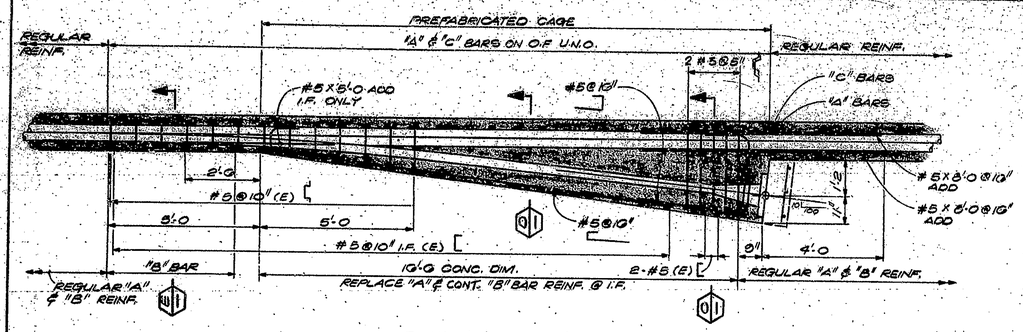
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

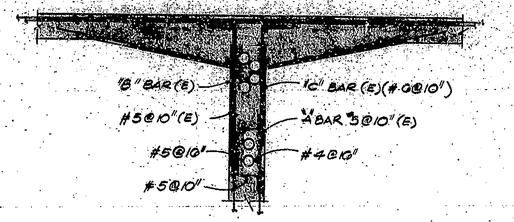
SHEET TITLE
RAMP "C" - TOP SLAB ANCHORAGE DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 812-45-2548 CONTRACT NO. S-11612 INDIANA STATE HIGHWAY COMMISSION

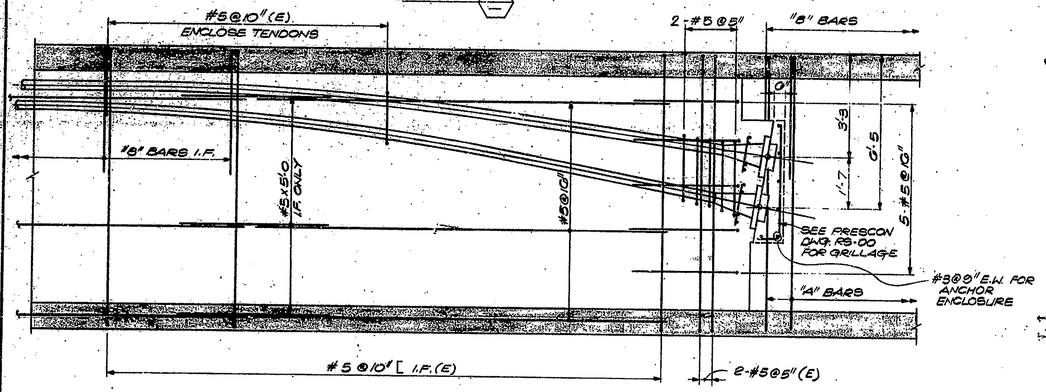
SHEET N.
944



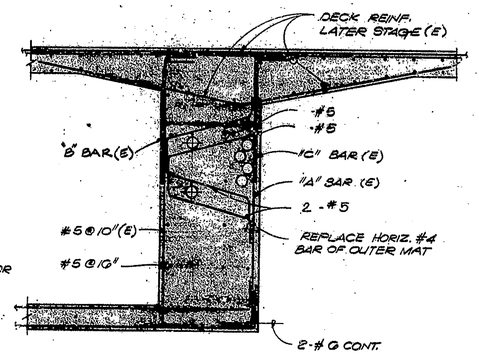
PLAN A



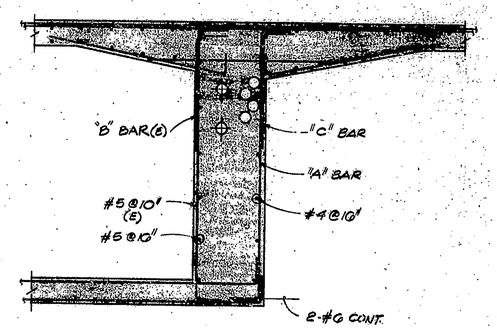
SECTION E
1/2"=1'-0



ELEVATION B
1/2"=1'-0



SECTION C
1/2"=1'-0



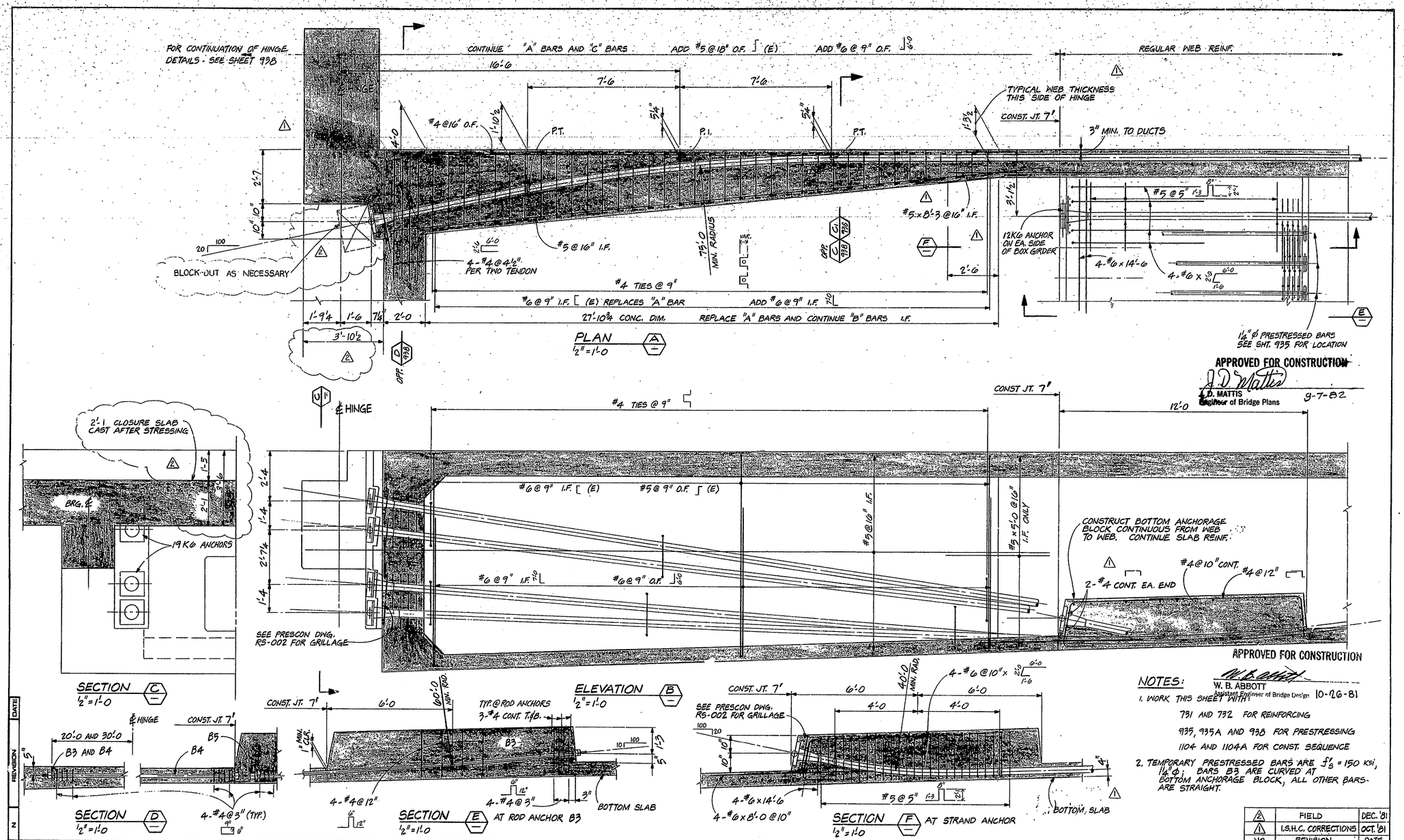
SECTION D
1/2"=1'-0

NOTES

1. BAR IN TOP DECK SLAB ARE EPOXY COATED AS INDICATED BY (E).
2. THIS BUILD-OUT IS FOR TWO TENDONS, 17 TO 34-1/2" ϕ STRAND EACH.
3. SEE DWG. 920A PRESTRESSING BUILD-OUT, THREE TENDONS, 23 TO 34-1/2" STRAND.
4. SEE DWG. 920B PRESTRESSING BUILD-OUT, THREE TENDONS, 16 TO 22-1/2" STRAND
5. SEE DWG. 933A PRESTRESSING BUILD-OUT, ONE AND TWO TENDONS BOTTOM SLAB, 18-1/2" STRAND ANCHORAGES IN SEGMENT 3.

MAR 04 1981

T. Y. LIN INTERNATIONAL STRUCTURAL ENGINEERS REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC. CONSULTING ENGINEERS	WALSH CONSTRUCTION COMPANY A DIVISION OF GUY F. ATKINSON CO. DARIEN, CONNECTICUT	SHEET TITLE PRESTRESSING DETAILS 2 X 17 TO 34-1/2" STRAND CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL BRIDGE FILE: 912-45-2548 CONTRACT NO. B-11912 INDIANA STATE HIGHWAY COMMISSION	SHEET N. 940



NOTES:

1. WORK THIS SHEET WITH:
   - 791 AND 792 FOR REINFORCING
   - 935, 935A AND 938 FOR PRESTRESSING
   - 1104 AND 1104A FOR CONST. SEQUENCE
2. TEMPORARY PRESTRESSED BARS ARE f'_s = 150 ksi, 1¼" ø; BARS B3 ARE CURVED AT BOTTOM ANCHORAGE BLOCK, ALL OTHER BARS ARE STRAIGHT.

NO.	REVISION	DATE
2	FIELD	DEC. '81
1	I.S.H.C. CORRECTIONS	OCT. '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

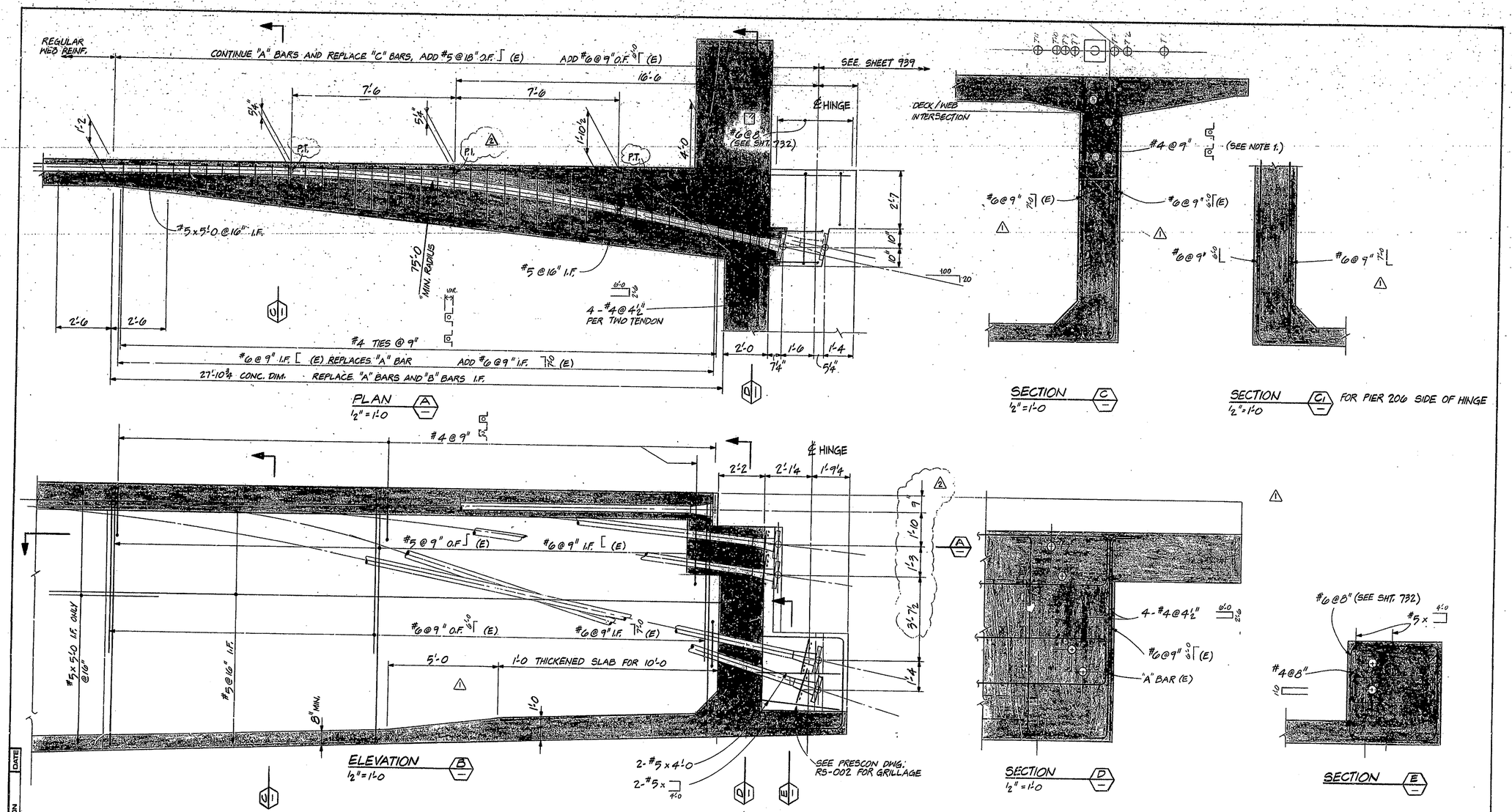
T. Y. LIN REGISTERED PROFESSIONAL ENGINEER STATE OF INDIANA

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PRESTRESSING DETAILS - ANCHORAGE AT EXPANSION JOINT 4

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 812-45-2548 CONTRACT NO. 8-11812
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
939



NOTES:

1. PROVIDE #4 @ 9" O.C. AS SHOWN IN SECTION "C" FOR DUCTS LOWER THAN ½ DUCT DIAMETER ABOVE DECK/WEB INTERSECTION.

2. WORK THIS SHEET WITH:
731 AND 732
935, 935A AND 939
1104 AND 1104A

APPROVED FOR CONSTRUCTION
W. B. ABBOTT
Assistant Engineer of Bridge Design 10-26-81

No.	REVISION	DATE
2	C.G.S. DIMS.	OCT. '81
1	SECT. C, C1 & NOTE 1.	SEPT. '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

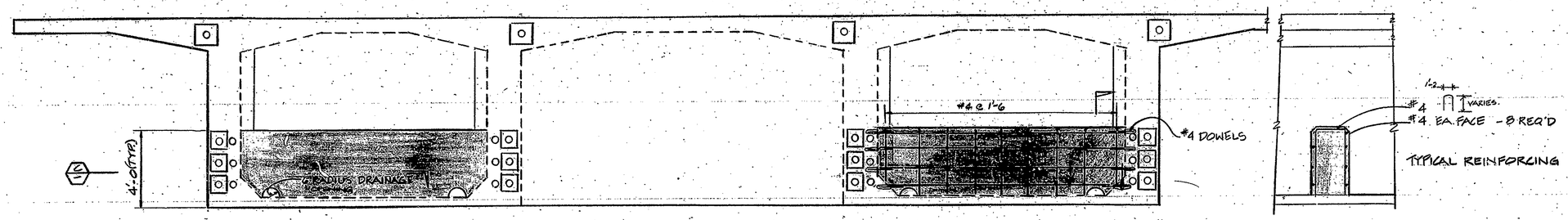
T. Y. LIN REGISTERED STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PRESTRESSING DETAILS - ANCHORAGE AT EXPANSION JOINT 4

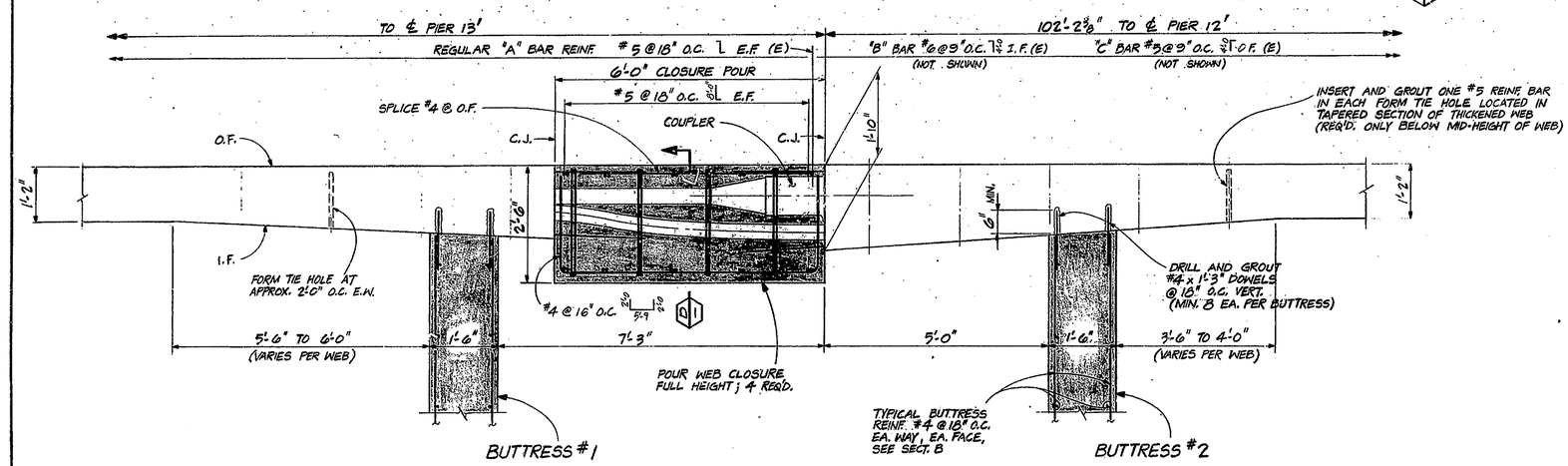
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 812-45-2548 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
938

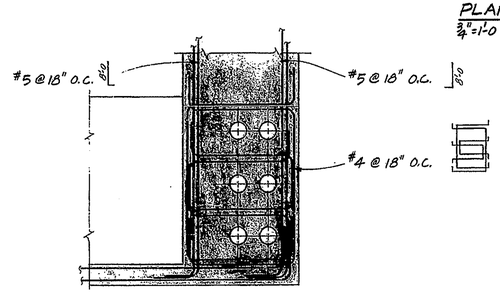


SECTION @ CONSTRUCTION JOINT (A) 3/8" = 1'-0

SECTION (B) 3/8" = 1'-0



PLAN (C) 3/4" = 1'-0 AT CLOSURE POUR



SECTION (D) 3/4" = 1'-0

NOTES:

1. BUTTRESSES SHALL BE PROVIDED AT THE CLOSURE POUR BETWEEN PIERS 12 AND 13, W.B.L. ; 4 EACH REQUIRED.

2. SPECIAL CAUTION MUST BE TAKEN TO AVOID PRESTRESSING DUCTS WHEN DRILLING DOWELS.

APPROVED FOR CONSTRUCTION
W. B. ABBOTT
Assistant Engineer of Bridge Design 10-26-81

No.	REVISION	DATE
1	ADD BUTTRESS	JULY '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

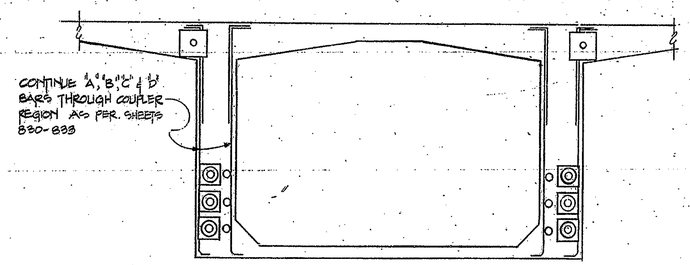
T. Y. LIN INTERNATIONAL REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
COUPLER BUTTRESS DETAIL - SEGMENT 3

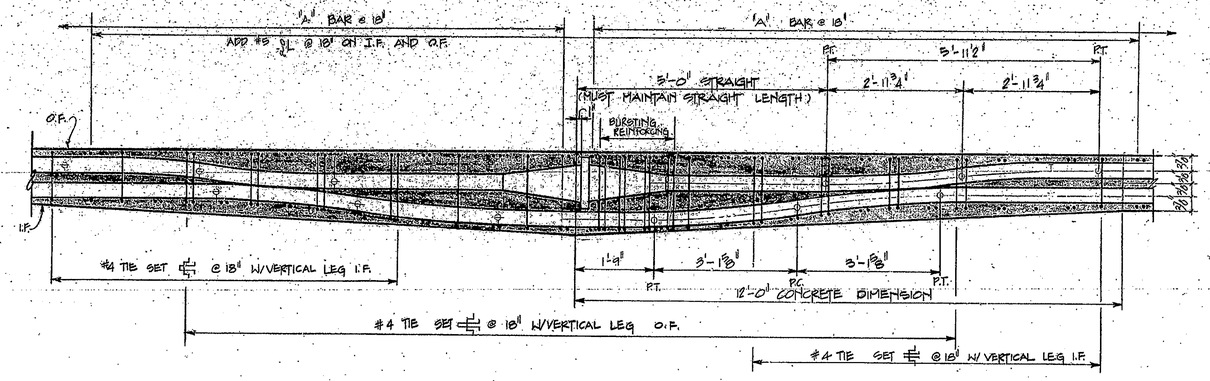
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 8-11612 INDIANA STATE HIGHWAY COMMISSION

SHEET N.
937

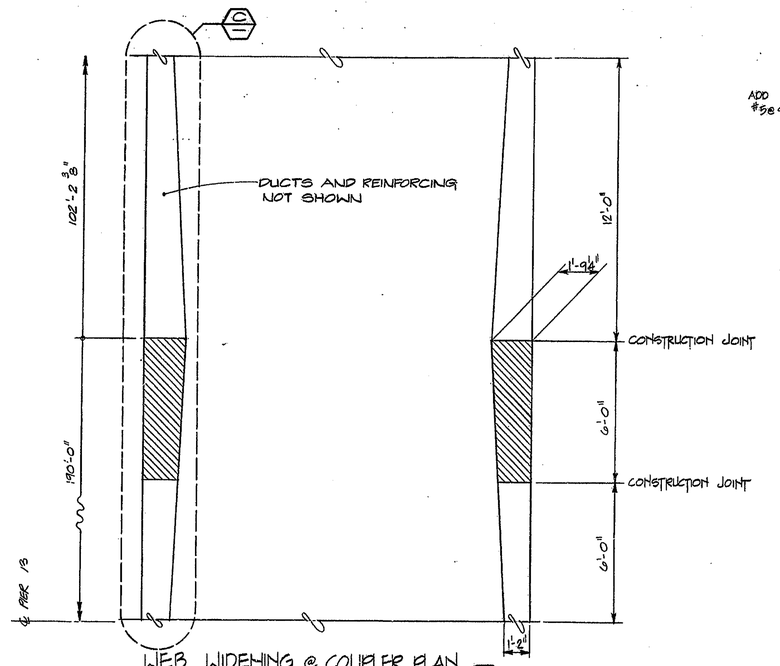


COUPLER SECTION NEAR PIER 12

3/8" = 1'-0"

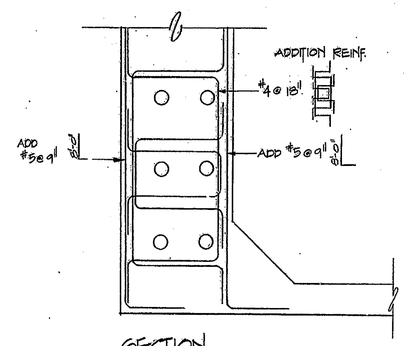


RADIAL FORCE REINFORCING



WEB WIDENING @ COUPLER PLAN

3/8" = 1'-0"



SECTION

1" = 1'-0"

NOTE:

1. DUCT CURVATURE AND LOCATION OF P.C.'S AND P.T.'S IS SYMMETRICAL ABOUT CONSTRUCTION JOINT.
2. TIE SETS AS INDICATED ARE NOT REQUIRED IN THE REGION REINFORCED BY BURSTING REINFORCING.
3. TIE SETS AND ADDED #5 BARS SHOWN ARE REQUIRED IN EACH WEB AT CONSTRUCTION JOINT.

COUPLER REINFORCING TABLE

LOCATION	NO. OF WEBS	COUPLER PER WEB	#4 TIE SET (1)	#4 BENDING REINFORCING (2)	#4 BURSTING REINFORCING (3)	REMARKS
EBL NEAR PIER 12	3	3	@18"	8'-0" 0'-10" I.F. & O.F. @ 18"	4 SETS @ 6'-0" C/C	PROVIDE #4 TIE SETS AS SHOWN ON
WBL NEAR PIER 15	3	4	@18"	8'-0" 0'-10" I.F. & O.F. @ 18"	4 SETS @ 6'-0" C/C	AS PER E.B.L. @ 12
EBL NEAR PIER 15	4	4		8'-0" 0'-10" I.F. & O.F. @ 18"	4 SETS @ 6'-0" C/C	AS PER E.B.L. @ 12
WBL NEAR PIER 12	4	3		2'-9" 8-#6 PER COUPLER	7-#5 PER COUPLER	DETAIL VARIED W/ COMBINED REINFORCING

APPROVED FOR CONSTRUCTION

W. B. ABBOTT
Assistant Engineer of Structures
10-26-81

N	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T. Y. LIN INTERNATIONAL — No. 18266 — STATE OF INDIANA — PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

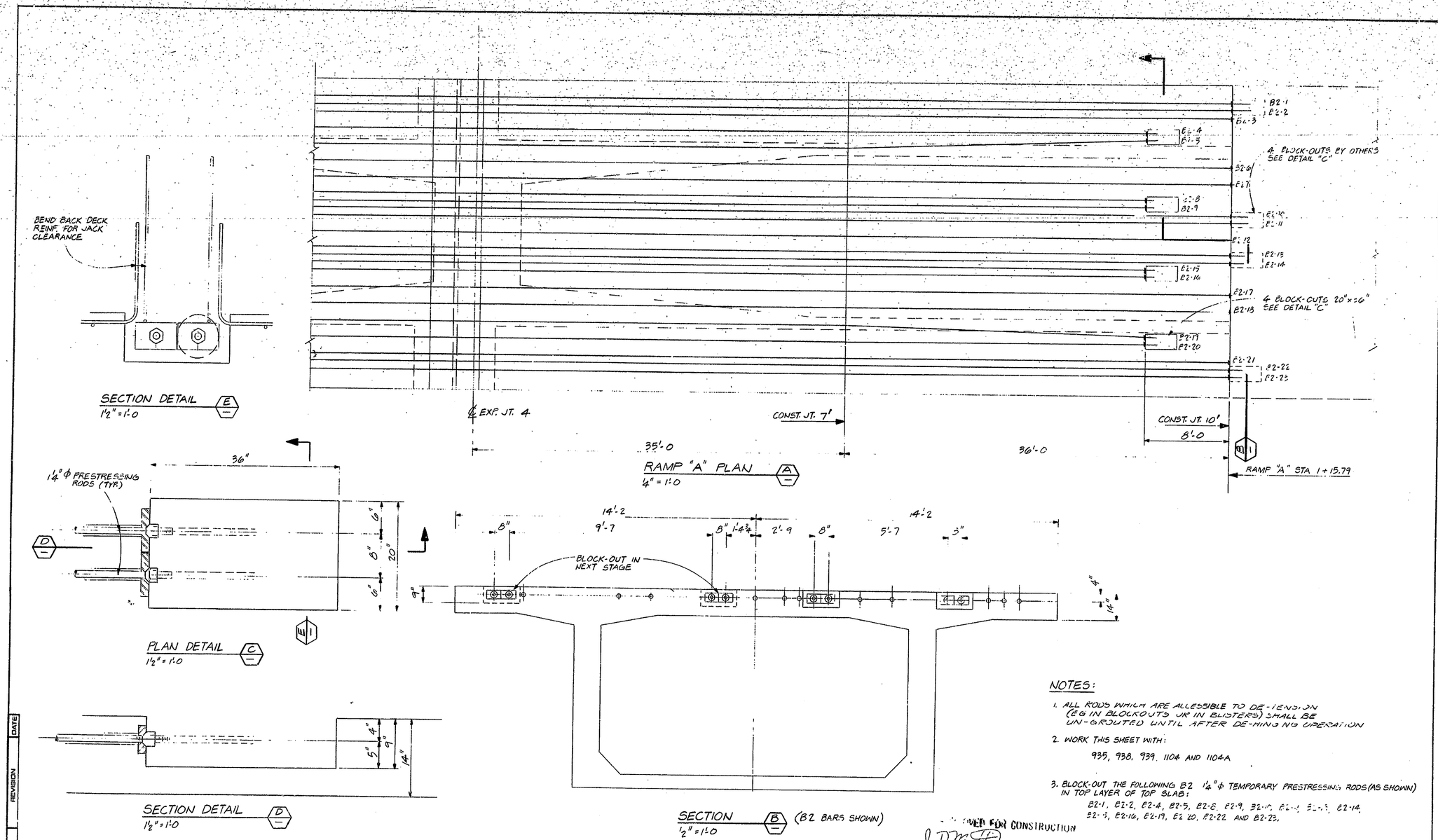
SHEET TITLE

PRESTRESSING DETAILS - COUPLERS AT CONSTRUCTION JOINT

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11812 INDIANA STATE HIGHWAY COMMISSION

SHEET N.

936



NOTES:

1. ALL RODS WHICH ARE ACCESSIBLE TO DE-TENSION (EG IN BLOCKOUTS OR IN BLISTERS) SHALL BE UN-GROUTED UNTIL AFTER DE-HINGING OPERATION
2. WORK THIS SHEET WITH:

   935, 938, 939, 1104 AND 1104A

3. BLOCK-OUT THE FOLLOWING B2 1¼" ϕ TEMPORARY PRESTRESSING RODS (AS SHOWN) IN TOP LAYER OF TOP SLAB:

   B2-1, B2-2, B2-4, B2-5, B2-8, B2-9, B2-10, B2-11, B2-13, B2-14, B2-15, B2-16, B2-19, B2-20, B2-22 AND B2-23.

APPROVED FOR CONSTRUCTION

J. D. Mattis
Engineer of Bridge Plans

6-7-82

REVISION	DATE
N	

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

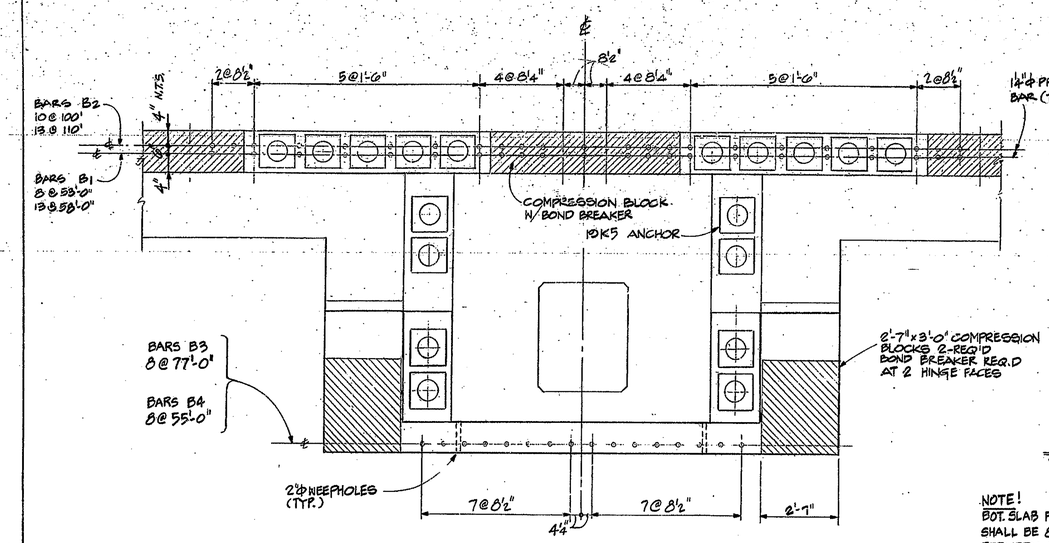
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

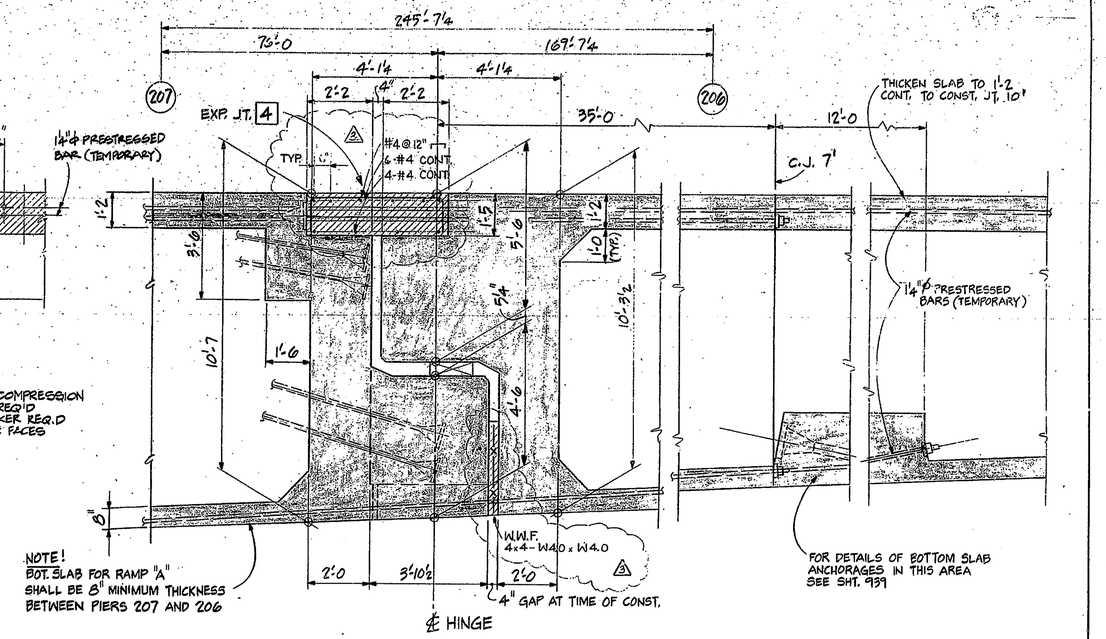
SHEET TITLE
RAMP "A" - TEMPORARY PRESTRESSING BLOCKOUTS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11812
INDIANA STATE HIGHWAY COMMISSION

SHEET N
935A

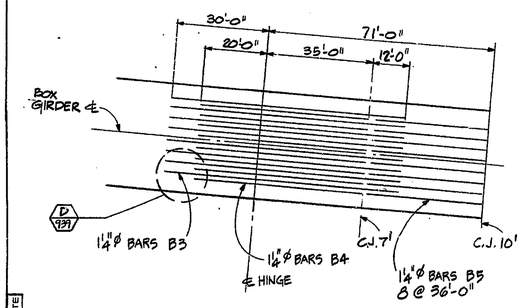


FRONT VIEW- HINGE 4 (A)
½"=1'-0

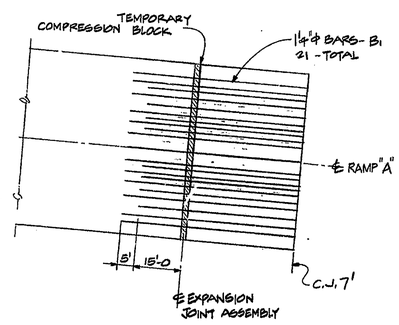


NOTE!
BOT. SLAB FOR RAMP "A" SHALL BE 8" MINIMUM THICKNESS BETWEEN PIERS 207 AND 206

DEPTH OF GIRDER AT EXPANSION BEARING (B)
½"=1'-0



BOTTOM SLAB TEMPORARY PRESTRESSING
N.T.S.

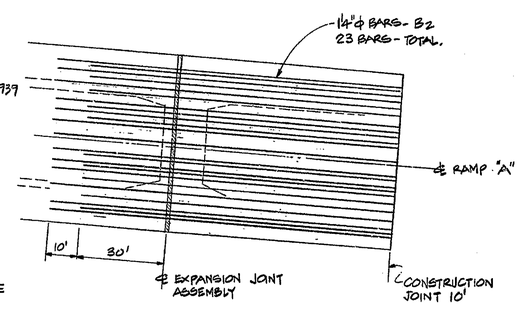


TOP SLAB (BOTTOM LAYER) TEMPORARY PRESTRESSING
N.T.S.

NOTES:

1. WORK THIS SHEET WITH 1104 AND 1104A
2. REINFORCING PRESTRESSING — SEE SHEETS: 731 & 732; SEE SHEETS: 935A, 938 AND 939
3. A MINIMUM OF 60 TEMPORARY PRESTRESSED BARS CROSS THE CENTERLINE OF THE HINGE; TOTAL NUMBER OF TEMPORARY PRESTRESSED BARS EQUALS 68.
4. FOR TEMPORARY PRESTRESSED BARS f'_s = 150 KSI
5. FOR TEMPORARY COMPRESSION BLOCKS f'_c = 5,000 PSI
6. BARS B3 ARE CURVED AT BOTTOM ANCHORAGE BLOCK, ALL OTHER BARS ARE STRAIGHT.
7. SEE GIRDER SECTION B FOR COMPRESSION BLOCK REINFORCING REQUIRED. CAST-IN-PLACE BLOCKS SHALL BE USED UNLESS PROVISIONS ARE MADE TO PROVIDE A CONTINUOUS SURFACE CONTACT FOR BOTH SIDES OF HINGE.

(3)



TOP SLAB (TOP LAYER) TEMPORARY PRESTRESSING
N.T.S.

APPROVED FOR CONSTRUCTION
W. B. ABBOTT
Assistant Engineer of Bridge Design 10-26-81

NO.	REVISION	DATE
3	COMP. BLOCK REINF.	NOV. '81
2	GEOM. & BOT. SLAB	SEPT. '81
1	PRESTRESS	AUG '81

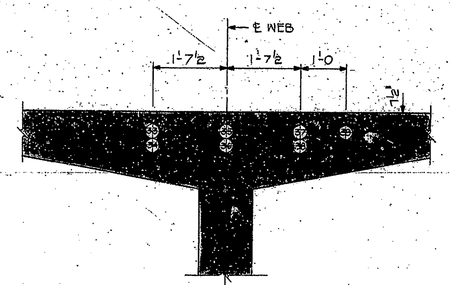
T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F ATKINSON CO
DARIEN, CONNECTICUT

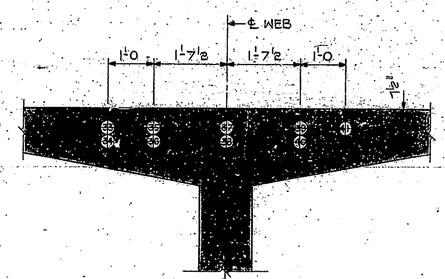
SHEET TITLE
RAMP "A" - HINGE 4 AND PRESTRESSING REQUIREMENT

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE 912-45-2546 CONTRACT NO 8-11612 INDIANA STATE HIGHWAY COMMISSION

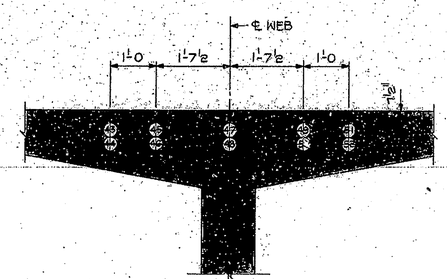
SHEET N
935



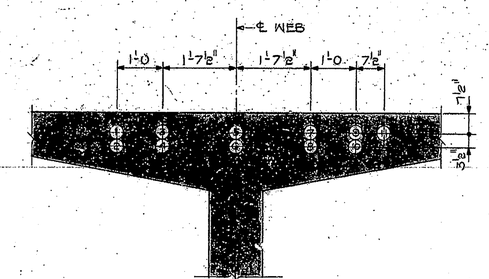
SECTION (A)
¾"=1'-0
TYPICAL FOR 7 TENDONS



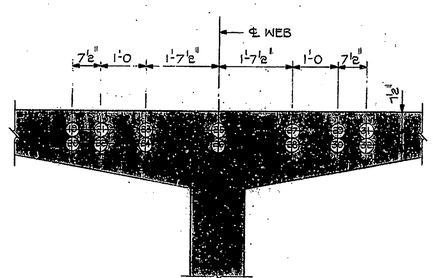
SECTION (B)
¾"=1'-0
TYPICAL FOR 9 TENDONS



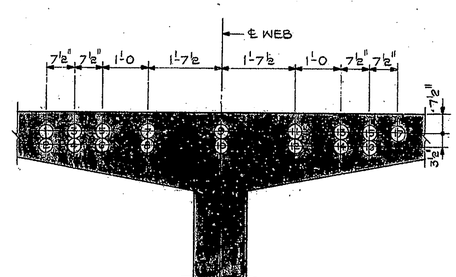
SECTION (C)
¾"=1'-0
TYPICAL FOR 10 TENDONS



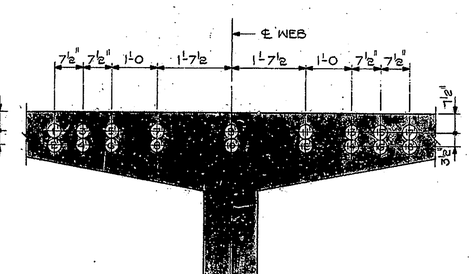
SECTION (D)
¾"=1'-0
TYPICAL FOR 11 TENDONS



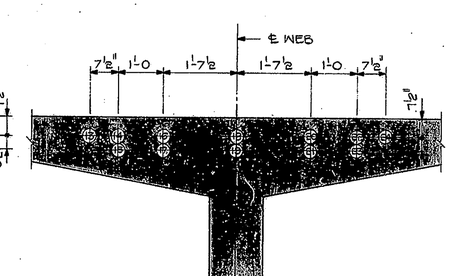
SECTION (E)
¾"=1'-0
TYPICAL FOR 14 TENDONS



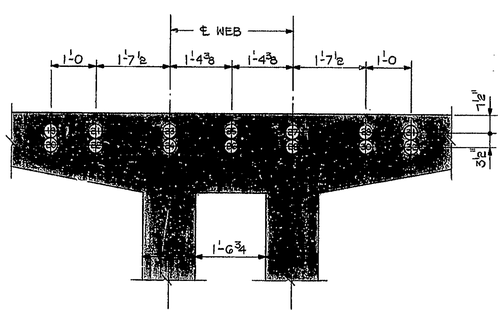
SECTION (F)
¾"=1'-0
TYPICAL FOR 17 TENDONS



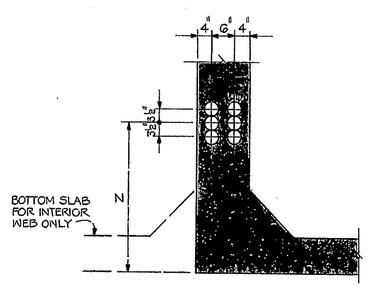
SECTION (G)
¾"=1'-0
TYPICAL FOR 18 TENDONS



SECTION (H)
¾"=1'-0

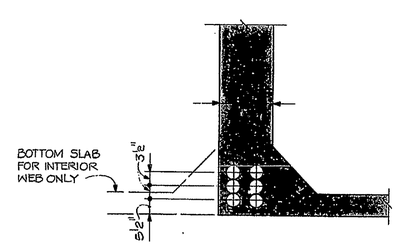


SECTION (J)
¾"=1'-0



FOR VALUES OF Z SEE SHEET 830 THRU 833

SECTION (K)
¾"=1'-0
TYPICAL DETAIL, TENDONS IN WEB



SECTION (L)
¾"=1'-0
TYPICAL DETAIL, TENDONS AT LOWEST POSITION

NOTE

1. THE TENDONS CAN BE SHIFTED SLIGHTLY FROM POSITION SHOWN, IN ORDER TO AVOID INTERFERENCE WITH MILD REINFORCEMENT.

APPROVED FOR CONSTRUCTION
J.D. Mattis
J.D. MATTIS 9-7-82
Engineer of Bridge Plans

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

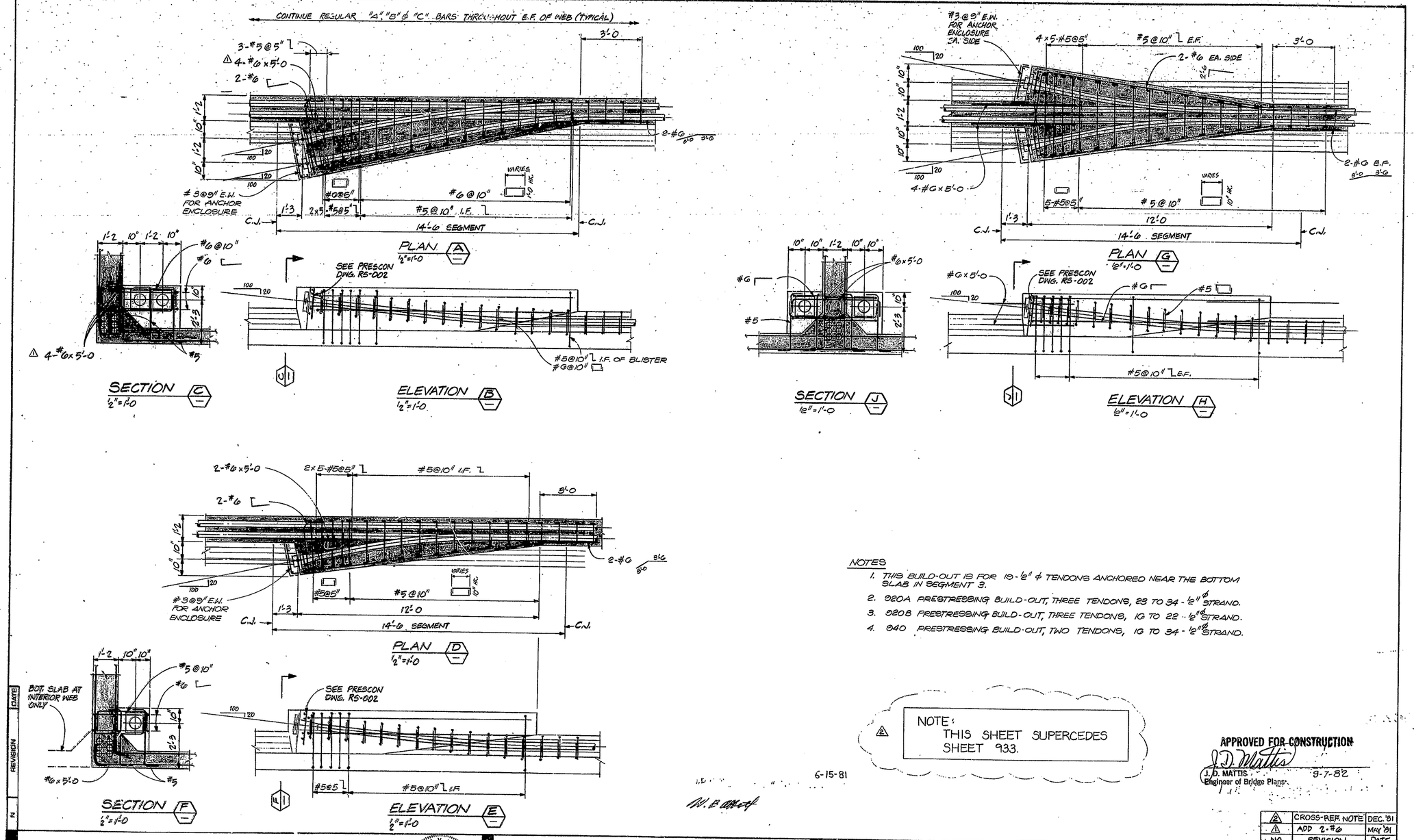
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PRESTRESSING DETAILS - TENDON LOCATION SECTIONS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-46-2546 CONTRACT NO. 9-11612 INDIANA STATE HIGHWAY COMMISSION

SHEET N. 934



NOTES

1. THIS BUILD-OUT IS FOR 19-½" ϕ TENDONS ANCHORED NEAR THE BOTTOM SLAB IN SEGMENT 3.
2. 020A PRESTRESSING BUILD-OUT, THREE TENDONS, 23 TO 34 - ½" ϕ STRAND.
3. 020B PRESTRESSING BUILD-OUT, THREE TENDONS, 16 TO 22 - ½" ϕ STRAND.
4. 040 PRESTRESSING BUILD-OUT, TWO TENDONS, 16 TO 34 - ½" ϕ STRAND.

NOTE:
THIS SHEET SUPERCEDES SHEET 933.

6-15-81

APPROVED FOR CONSTRUCTION
J. D. Mattis
J. D. MATTIS 9-7-82
Engineer of Bridge Plans

NO.	REVISION	DATE
2	CROSS-REF. NOTE	DEC. '81
1	ADD 2-#6	MAY '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

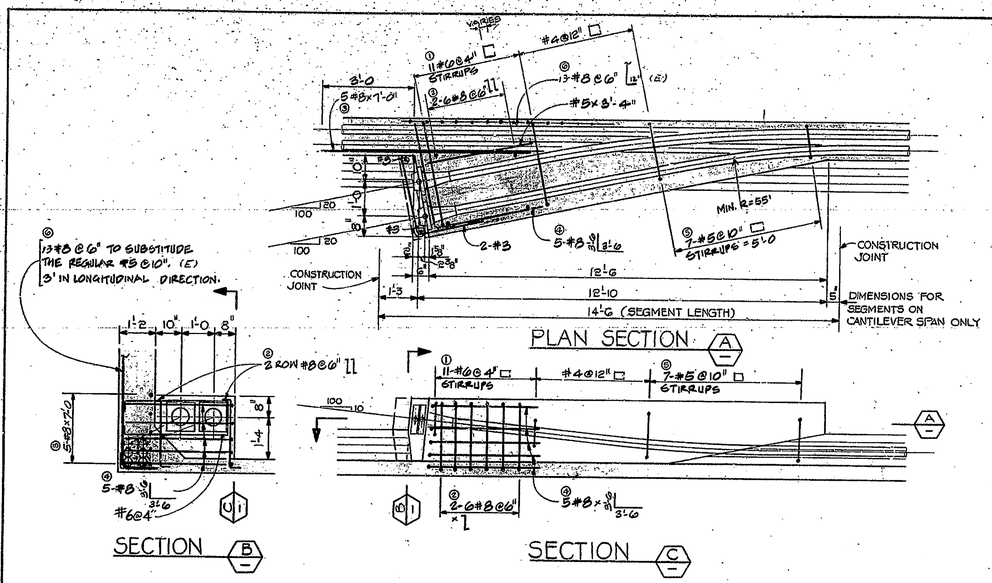
T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

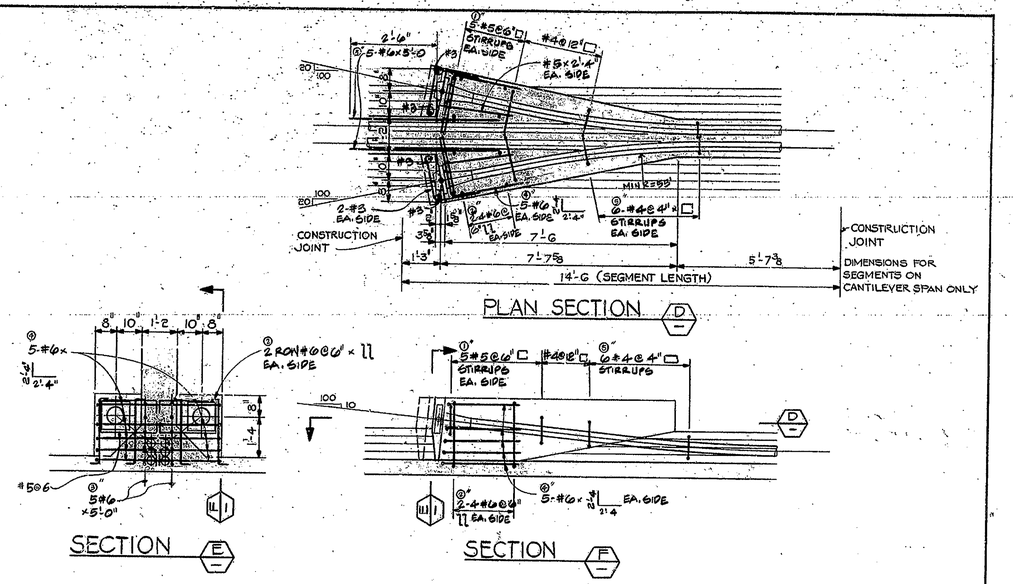
SHEET TITLE
PRESTRESSING DETAILS - 1 OR 2 19-½" STRANDS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

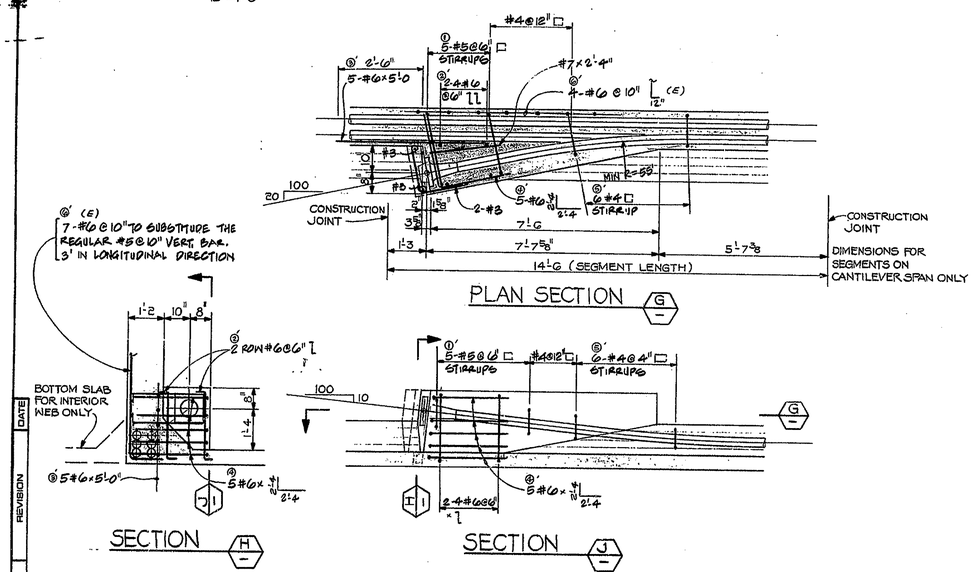
SHEET N.
933A



TYPICAL DETAILS OF 2 BOTTOM ANCHORAGES — EXTERIOR WEB
1/2" = 1'-0



TYPICAL DETAILS OF 2 BOTTOM ANCHORAGES — INTERIOR WEB
1/2" = 1'-0



TYPICAL DETAILS OF 1 BOTTOM ANCHORAGE — EXTERIOR & INTERIOR WEB
1/2" = 1'-0

NOTES:

1. THE SPIRAL NEAR THE TRUMPET ARE NOT SHOWN ON THE DWG.
2. REQUIRE SUBMITTAL AND APPROVAL OF REINFORCING DETAIL BEFORE COMMENCING WORK.

NOTE:
AS BUILT. THIS SHEET IS SUPERCEDED BY SHEET 933A.

APPROVED FOR CONSTRUCTION
J.D. MATTIS 9-7-82
Engineer of Bridge Plans

NO.	REVISION	DATE
1	CROSS-REF. NOTE	DEC. '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

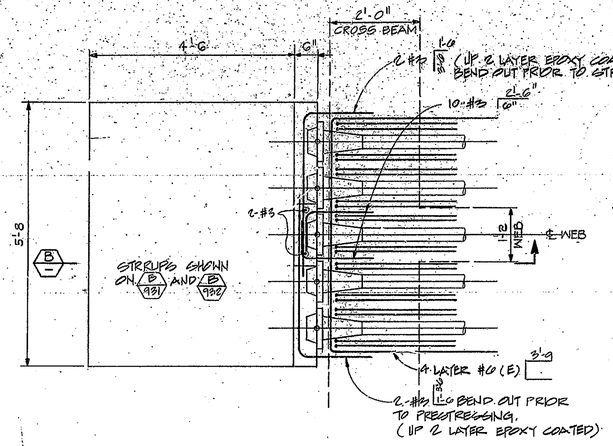
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

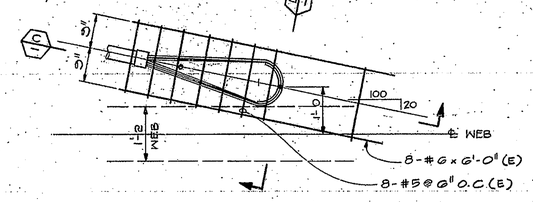
SHEET TITLE
PRESTRESSING DETAILS - BOTTOM ANCHORAGE DETAILS 3 SEGMENT 3

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11812
INDIANA STATE HIGHWAY COMMISSION

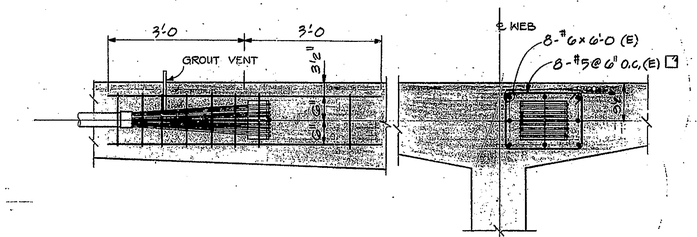
SHEET N.
933



TOP PLAN
3/4" = 1'-0



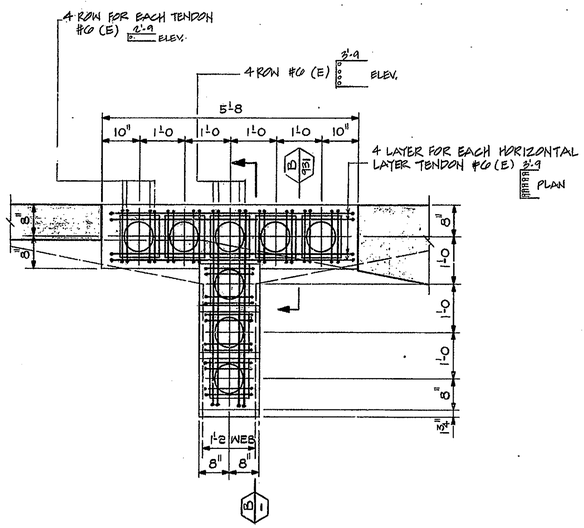
TOP PLAN
3/4" = 1'-0



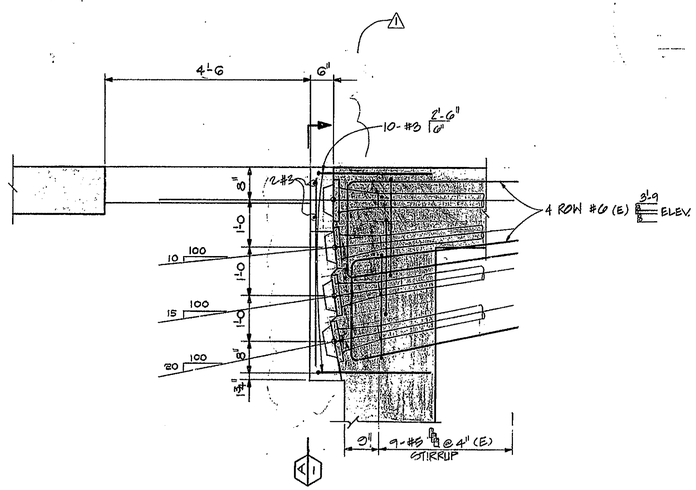
SECTION C
3/4" = 1'-0

SECTION D
3/4" = 1'-0

TYP. LOOPED ANCHOR REINF. DETAIL



SECTION A
3/4" = 1'-0



SECTION B
3/4" = 1'-0

NOTES :

1. THE SPIRAL NEAR THE TRUMPET ARE NOT SHOWN ON THE DWG.
2. REQUIRE SUBMITTAL AND APPROVAL OF REINFORCING DETAIL BEFORE COMMENCING WORK.

BLOCKOUT DETAILS

FOR LOCATION SEE SHEET 832

APPROVED FOR CONSTRUCTION

W. B. ABBOTT
Assistant Engineer of Bridge Design 10-28-81

NO.	REVISION	DATE
1	LOOPED ANCHOR	SEPT '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

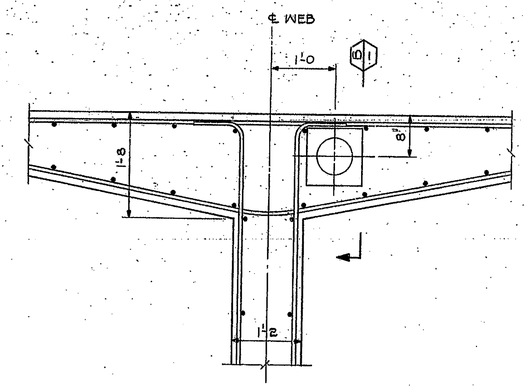
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

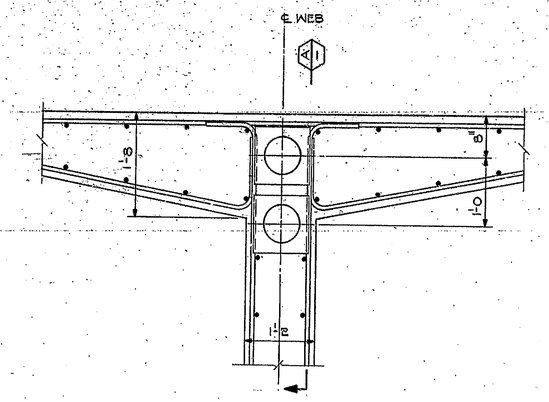
SHEET TITLE
PRESTRESSING DETAILS - TOP ANCHORAGE DETAILS 2, SEG. 3

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2646 CONTRACT NO. 8-11612 INDIANA STATE HIGHWAY COMMISSION

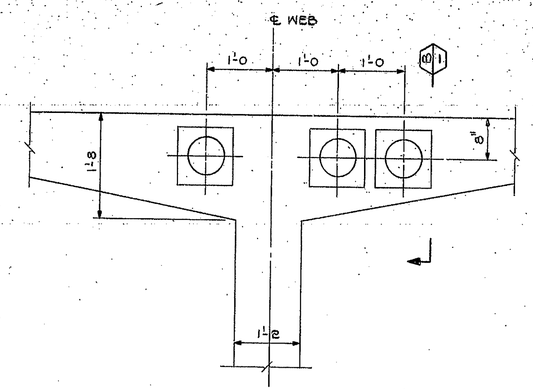
SHEET N.
932



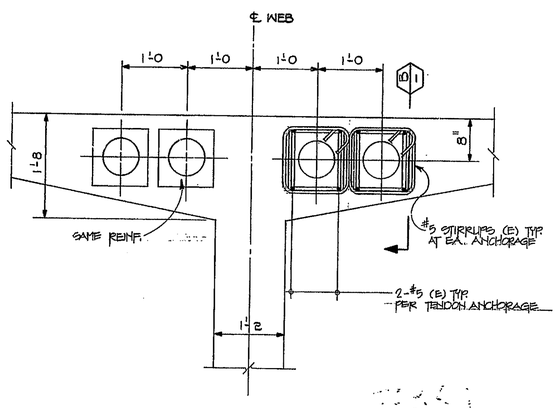
TYPICAL 1 ANCHORAGE DETAIL
1" = 1'-0



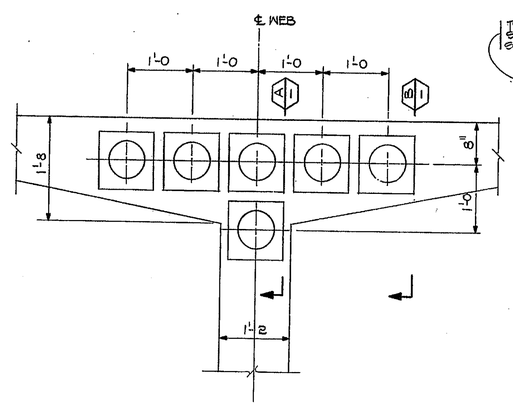
TYPICAL 2 ANCHORAGES DETAIL
1" = 1'-0



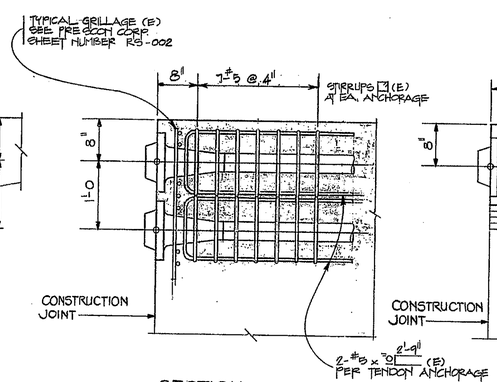
TYPICAL 3 ANCHORAGES DETAIL
1" = 1'-0
CROSS SECTION REINFORCEMENT SIMILAR TO 4 ANCHORAGE DETAIL



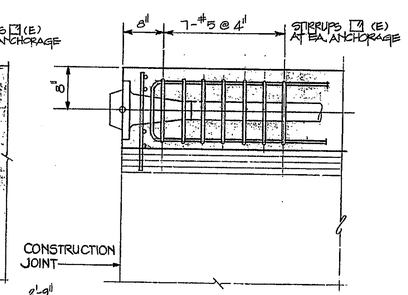
TYPICAL 4 ANCHORAGES DETAIL
1" = 1'-0



TYPICAL 6 ANCHORAGES DETAIL
1" = 1'-0
CROSS SECTION REINFORCEMENTS SAME AS 4 ANCHORAGES DETAIL.



SECTION A
1" = 1'-0



SECTION B
1" = 1'-0

NOTES:

1. REQUIRE SUBMITTAL AND APPROVAL OF REINFORCING DETAILS BEFORE COMMENCING WORK.
2. ALL REINF. IN DECK MARKED WITH NOTATION (E) SHALL BE EPOXY COATED

W. B. Wall 6-15-81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

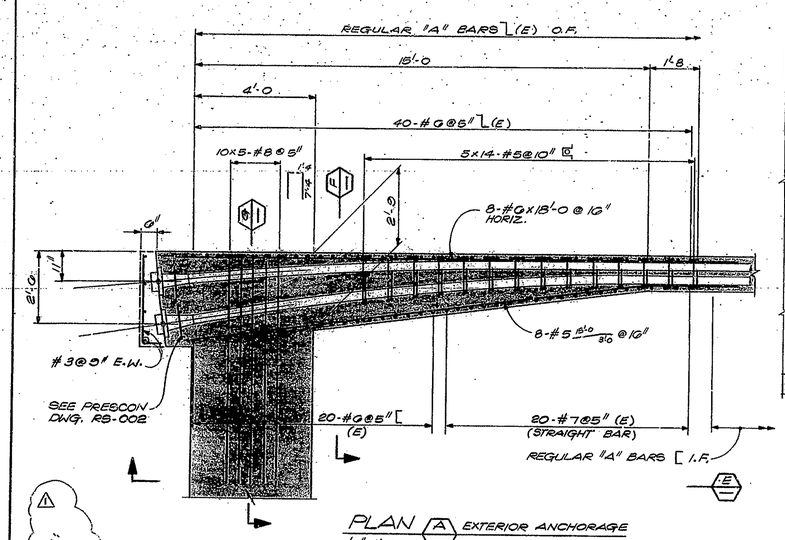
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PRESTRESSING DETAILS- TOP ANCHORAGE DETAILS 1 – SEGMENT 3

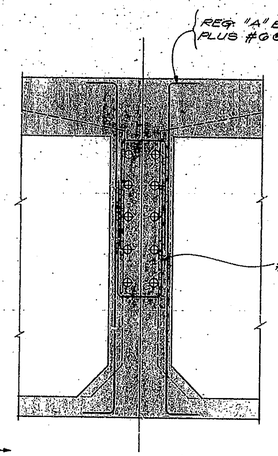
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

FIELD REVISION 1 JAN. 28, 1981

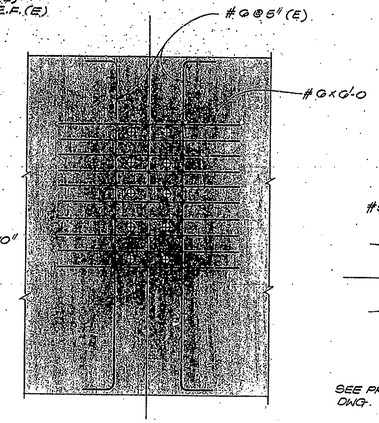
SHEET N.
931



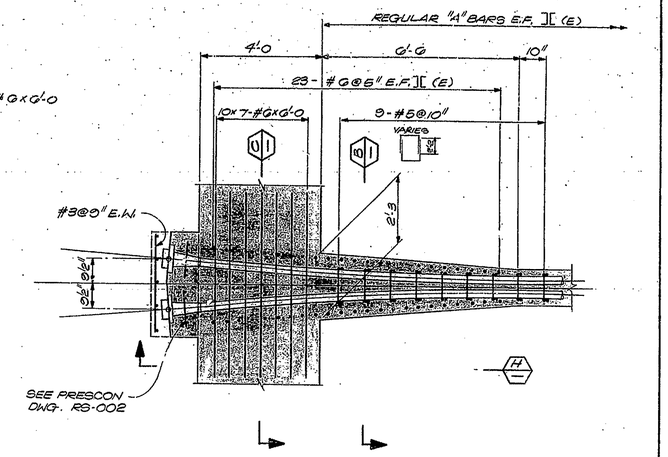
PLAN A EXTERIOR ANCHORAGE
1/2"=1'-0



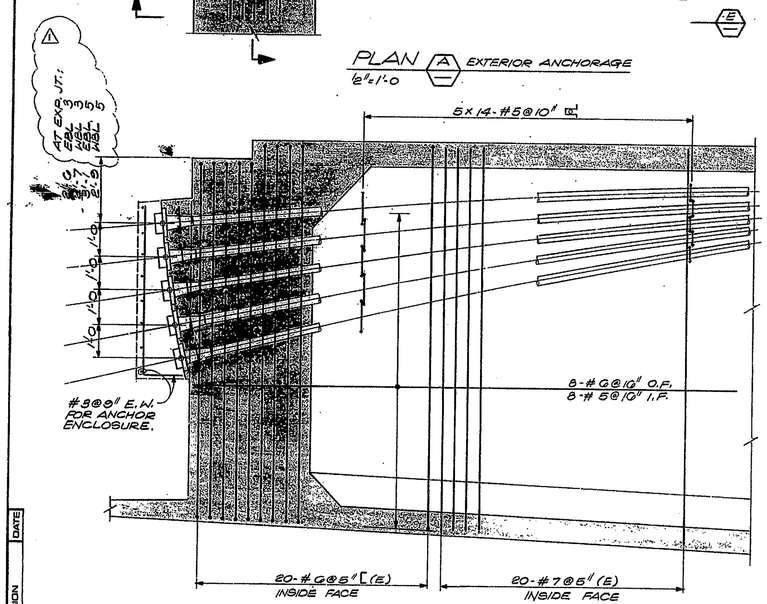
SECTION B
1/2"=1'-0



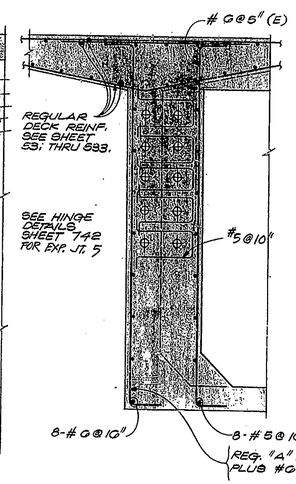
SECTION C
1/2"=1'-0



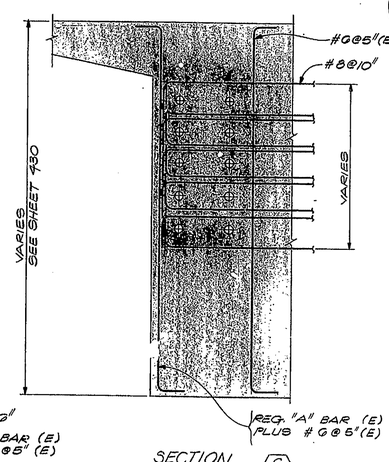
PLAN D INTERIOR ANCHORAGE
1/2"=1'-0



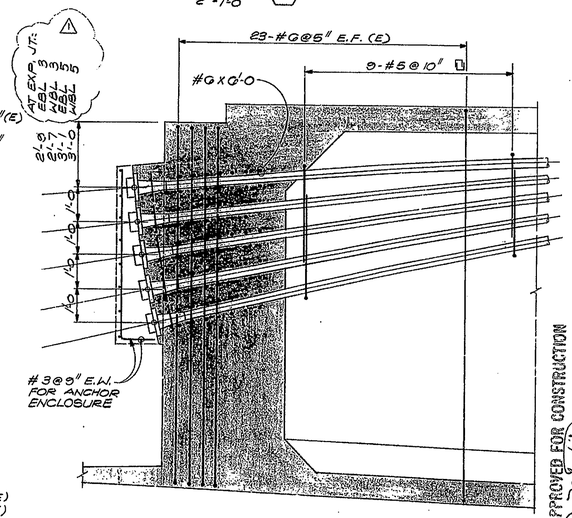
ELEVATION E
1/2"=1'-0



SECTION F
1/2"=1'-0



SECTION G
1/2"=1'-0



ELEVATION H
1/2"=1'-0

APPROVED FOR CONSTRUCTION
J.D. MATTIS
Engineer of Bridge Plans
8-7-82

NOTES:
1. BARS IN TOP DECK SLAB ARE EPOXY COATED AS INDICATED BY (E).
2. CAST ANCHOR ENCLOSURE IN PLACE AFTER STRESSING & GROUTING.
3. EXPANSION JT. 3 EBL SHOWN. REINF. FOR EXP JT. 5 EBL & WBL IS SIMILAR, NUMBER OF TENDONS VARY.

NOTE: THIS SHEET SUPERCEDES SHEET 930.

W. R. Abbott 6-15-81

NO.	REVISION	DATE
1	CROSS-REF NOTE	DEC. '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

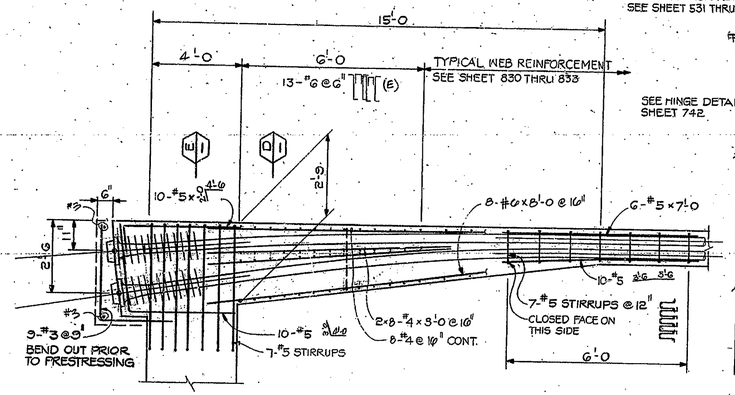
T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

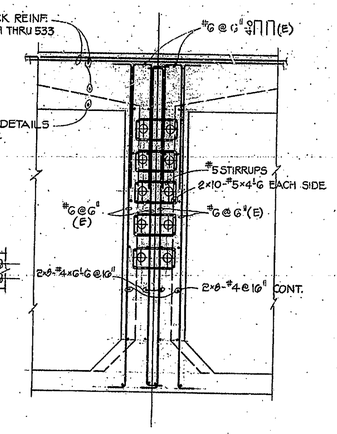
SHEET TITLE
ANCHORAGE AT EXPANSION JOINTS 3 E.B.L. & 5 E.B.L. & W.B.L.

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

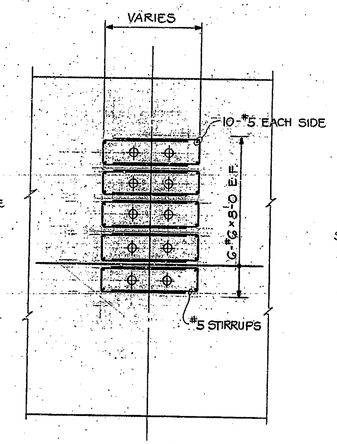
SHEET N.
930A



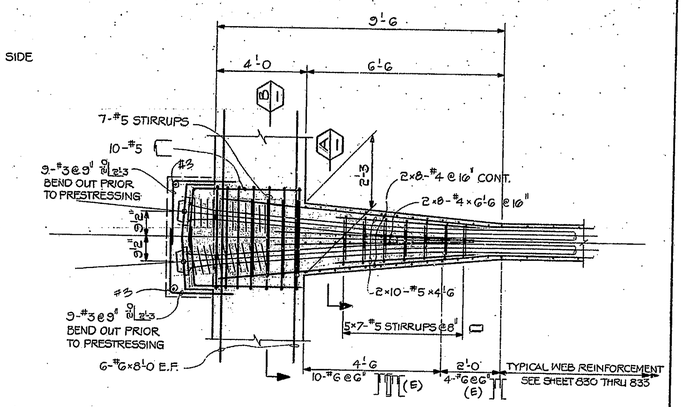
PLAN-EXTERIOR BUILDOUT (1)
1/2"=1'-0



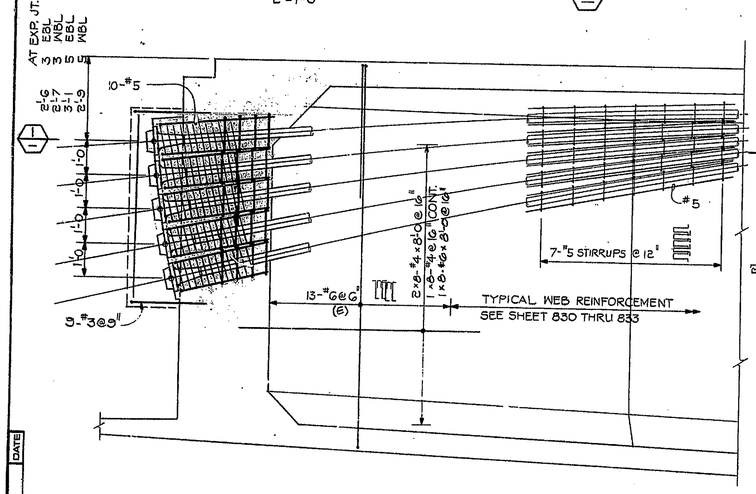
SECTION (A)
1/2"=1'-0



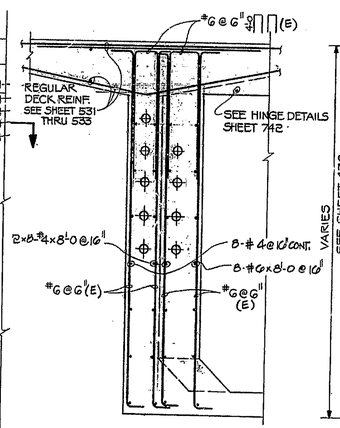
SECTION (B)
1/2"=1'-0



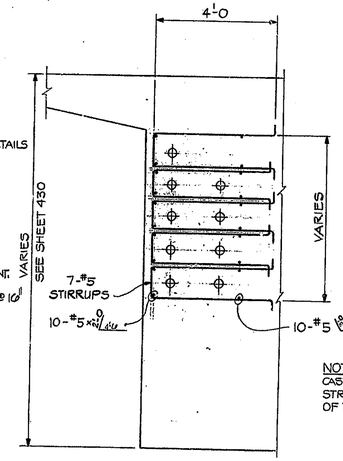
PLAN - INTERIOR BUILDOUT (2)
1/2"=1'-0



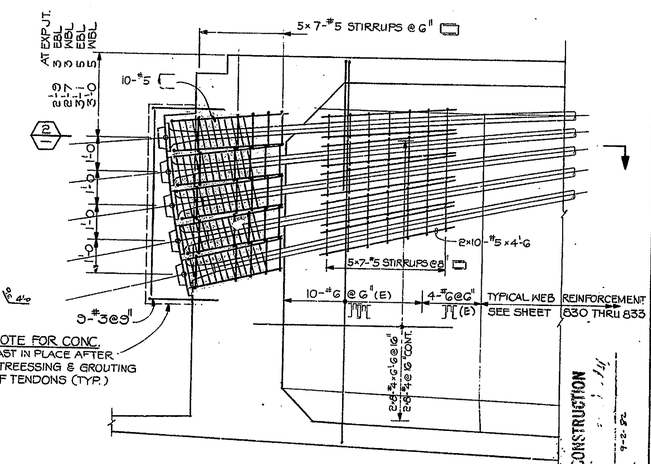
ELEVATION - EXTERIOR BUILDOUT
1/2"=1'-0



SECTION (D)
1/2"=1'-0



SECTION (E)
1/2"=1'-0



ELEVATION - INTERIOR BUILDOUT
1/2"=1'-0

NOTE:
AS BUILT. THIS SHEET IS SUPERCEDED BY SHEET 930A. (1)

NOTE
1. BARS IN TOP DECK SLAB ARE EPOXY COATED.

APPROVED FOR CONSTRUCTION
J. P. Phillips
4-2-82
DATE
CHIEF ENGINEER

NO	REVISION	DATE
1	CROSS-REF NOTE	DEC. '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

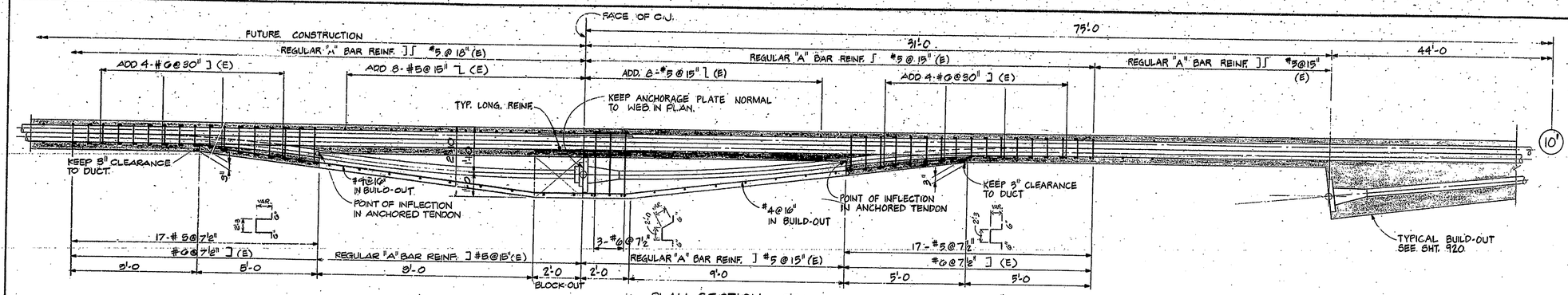
T. Y. Lin

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

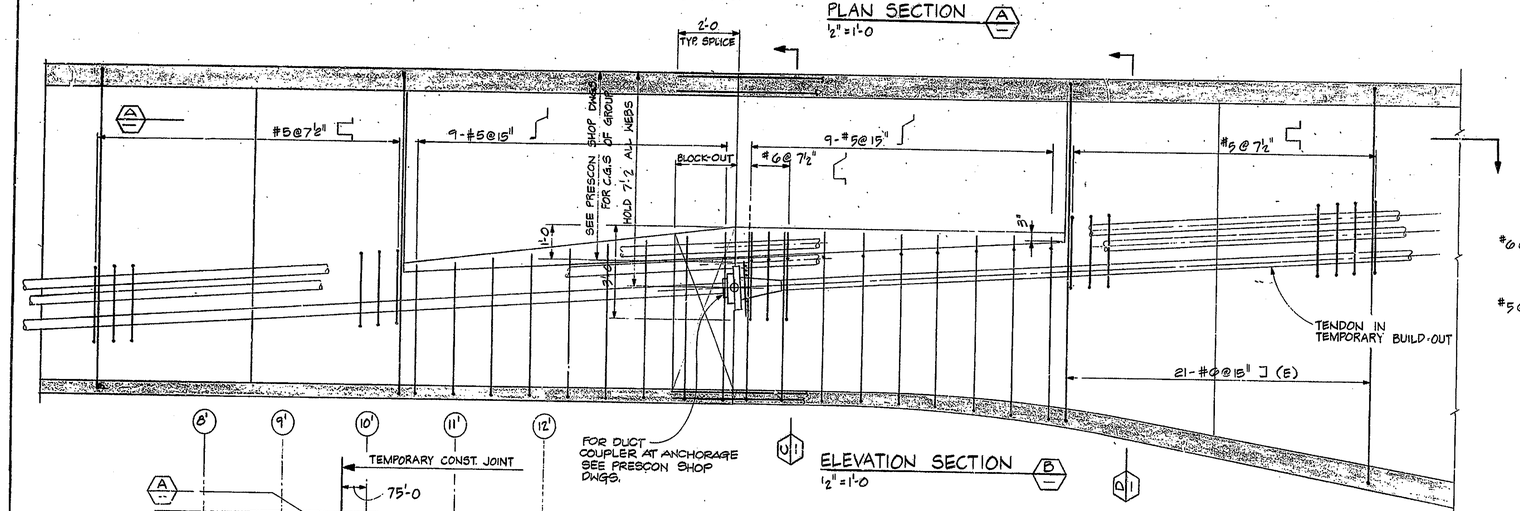
SHEET TITLE
PRESTRESSING DETAILS - ANCHORAGE AT EXPANSION JOINTS 3 & 5.

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11812
INDIANA STATE HIGHWAY COMMISSION

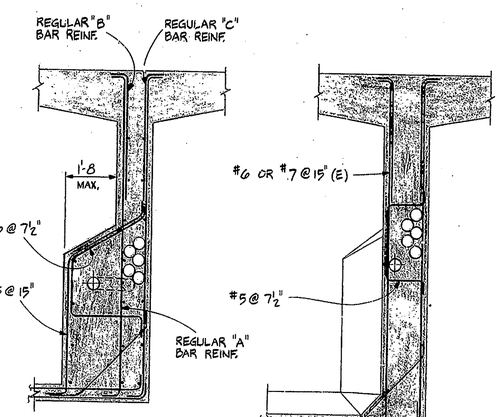
SHEET N.
930



PLAN SECTION (A)
½" = 1'-0

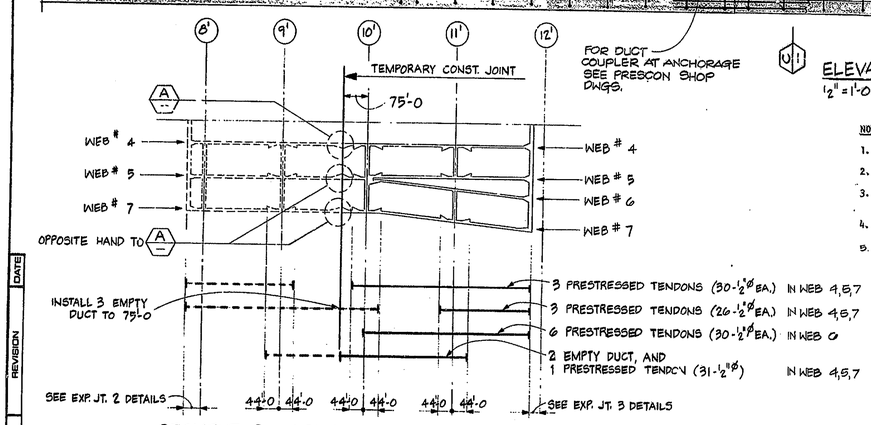


ELEVATION SECTION (B)
½" = 1'-0



SECTION (C)
½" = 1'-0

SECTION (D)
½" = 1'-0



SEGMENT 2 CABLE LAYOUT FOR W.B.L. (E)
N.T.S.

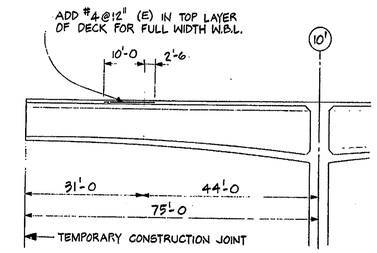
NOTES

1. All reinf. in deck marked with notation (E) shall be epoxy coated.
2. No splices allowed in vertical reinf. at build-out, unless noted.
3. Final prestressing details shall be approved by the Engineer before commencing work.
4. Add #4 bar @ 12" O.C. at top of whole width of deck as shown on (F)
5. EFFECTIVE PRESTRESSING FORCE AT MID-SPAN BETWEEN PIER 10' AND 11' FOR EACH WEB IS 770K.

CONSTRUCTION SEQUENCE BEFORE WINTER 1980

1. Refer to T.Y. Lin's Sheet #1100, following the steps from 1 to 4. Refer to Prescon's Sheet #PT2-1, latest revision, for tendon members.
2. Continue to pour concrete up to 75 feet east from centerline of Pier 10' and form a small build-out, as shown, near the end of the pour in Webs #4, #5 and #7.
3. After concrete gains strength, stress post-tensioning tendon T30 in Web #5, T27 in Web #4, and T33 in Web #7 at the temporary build-out.
4. Leave the falsework between new build-out and Pier 11' during winter.
5. In the Spring of 1981, continue to pour, stress Tendons T25, T26, T28, T29, T31, and T32 in Webs #4, #5, and #7 respectively.
6. De-tension Tendon T30 in Web #5, T27 in Web #4, and T33 in Web #7. Remove temporary strands and insert short length of duct at the block-out area, making build-out tendon one continuous duct. Concrete the block-out area and thread new, longer strands in the duct. Post-tension following original design sequence.
7. Follow all other steps listed on Drawing #1100.

W. B. Schaefer 6-15-81



KEY SECTION (F)
N.T.S.

DATE	REVISION	N

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

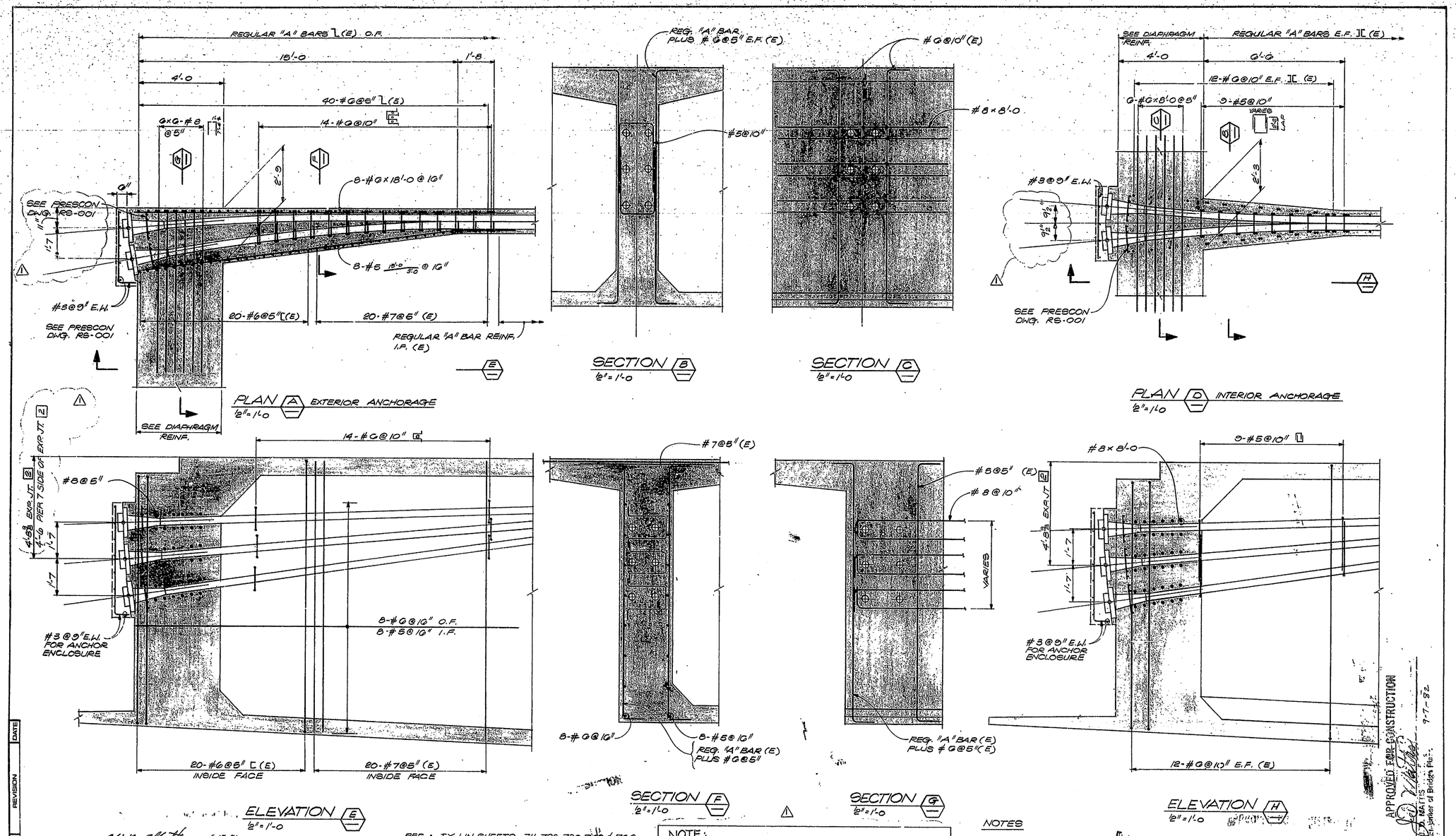
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PRESTRESSING DETAILS FOR TEMPORARY CONSTRUCTION JOINT

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2648 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

REVISION △ | FEB 1981

SHEET N.
923 A



W.B. Abbott 6-15-81

REF.: T.Y. LIN SHEETS 711, 729, 730, 740 & 760 FOR C.G.S. OF TENDON GROUP AT OTHER LOCATIONS.

NOTE: THIS SHEET SUPERCEDES SHEET 922.

NOTES

1. BARS IN TOP DECK SLAB ARE EPOXY COATED AS INDICATED BY (E).
2. CAST ANCHOR IN PLACE AFTER STRESSING AND GROUTING OF TENDONS.

APPROVED FOR CONSTRUCTION
D. MATIS
Engineer of Bridge Plans
9-7-82

NO.	REVISION	DATE
1	CROSS-REF NOTE	DEC. '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

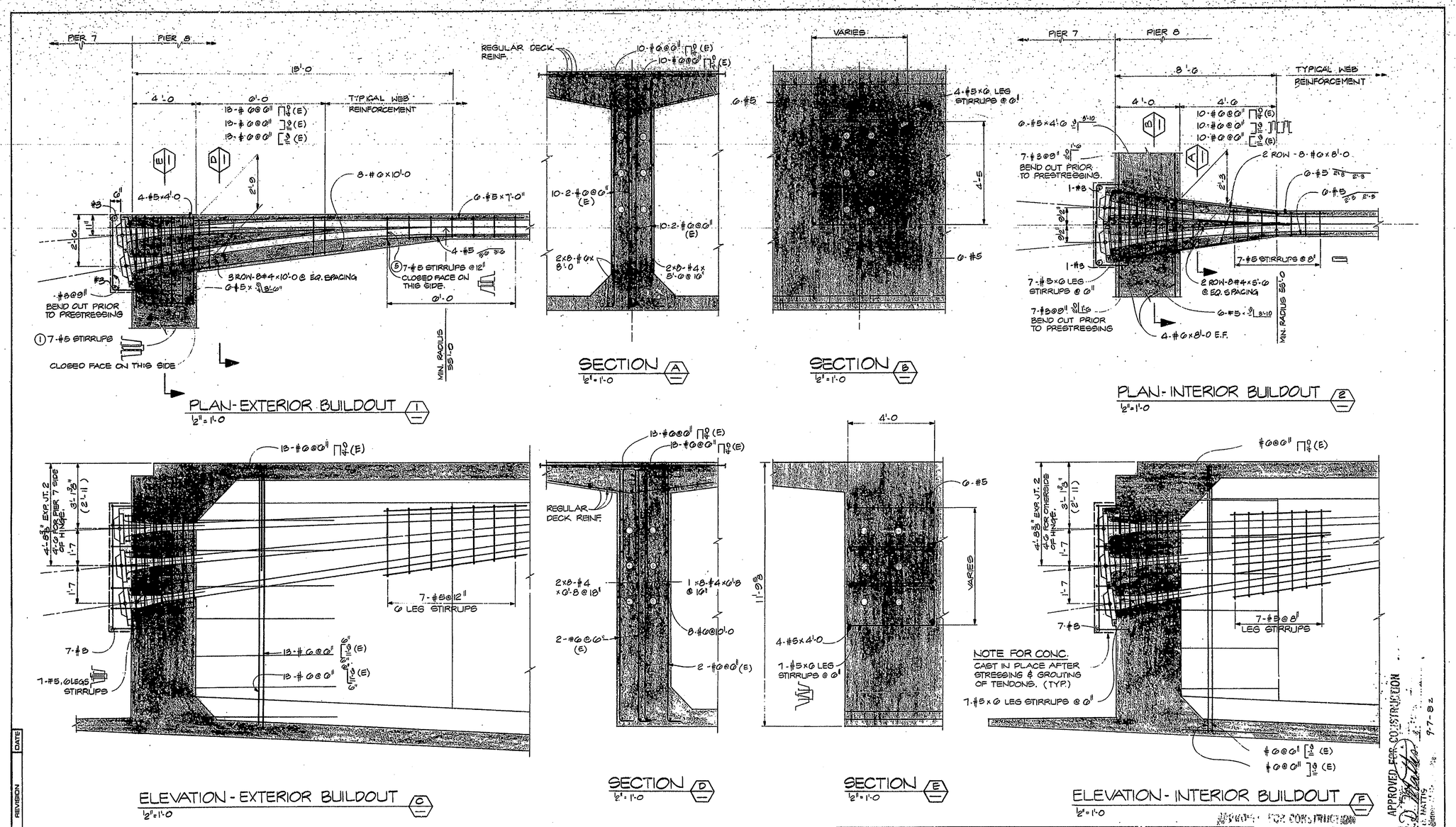
T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
ANCHORAGE AT EXPANSION JOINT 3 E.B.L., & EXPANSION JOINTS 2 5 7 8 8' E.B.L. & W.B.L.

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. B-11612 INDIANA STATE HIGHWAY COMMISSION

SHEET N.
922 A



APPROVED FOR CONSTRUCTION
9-7-82

NOTE:
AS BUILT. THIS SHEET IS SUPERCEDED BY SHEET 922A.

NO.	REVISION	DATE
1	CROSS-REF. NOTE	DEC '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

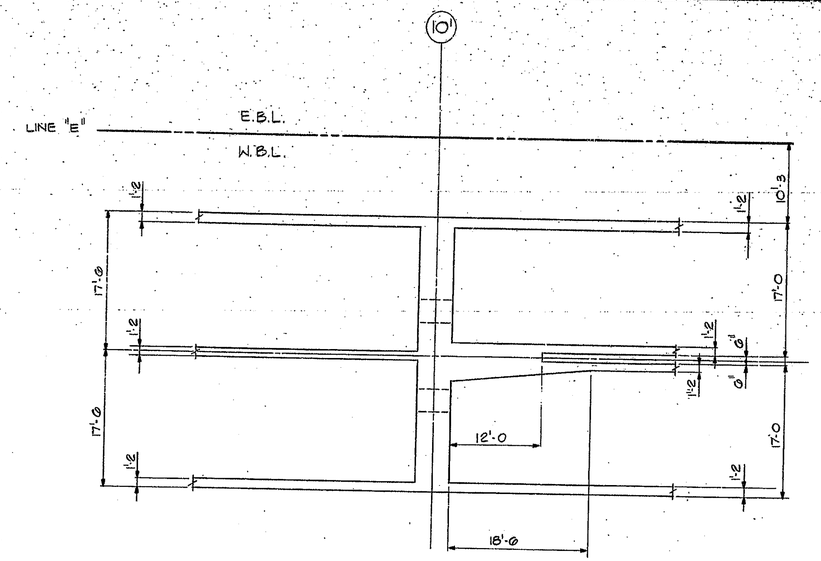
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

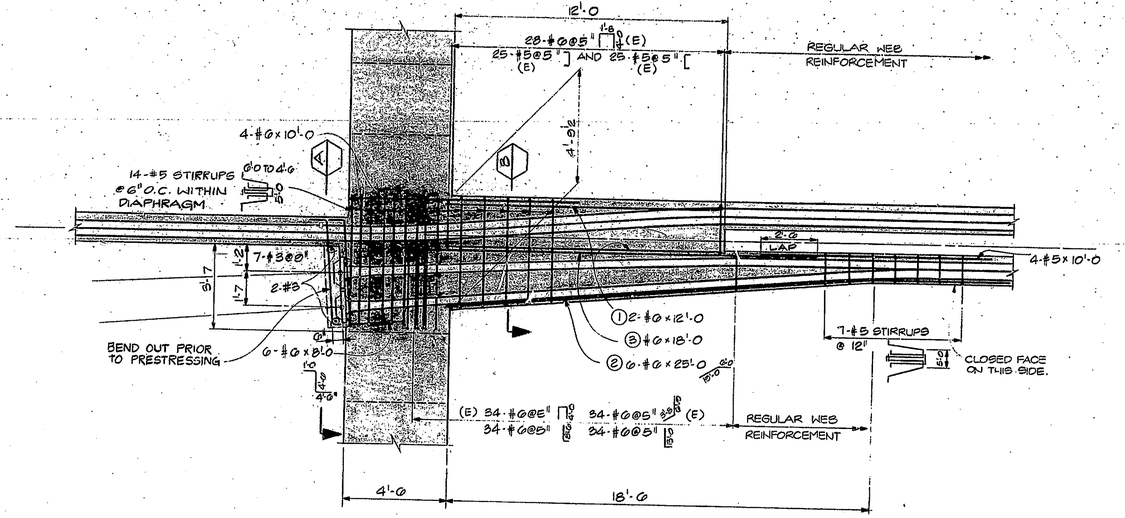
SHEET TITLE
ANCHORAGE DETAILS AT HINGE — EXPANSION JOINT 2

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612 INDIANA STATE HIGHWAY COMMISSION

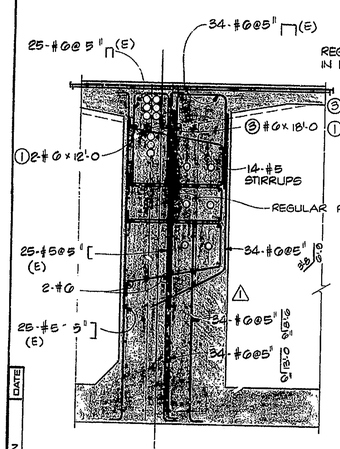
SHEET N.
922



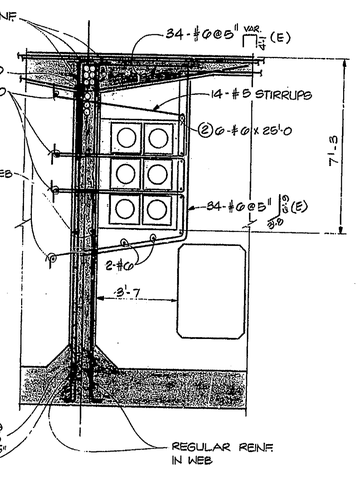
PLAN @ PIER 10'
3/8" = 1'-0



PLAN BUILDOUT @ PIER 10'
3/8" = 1'-0

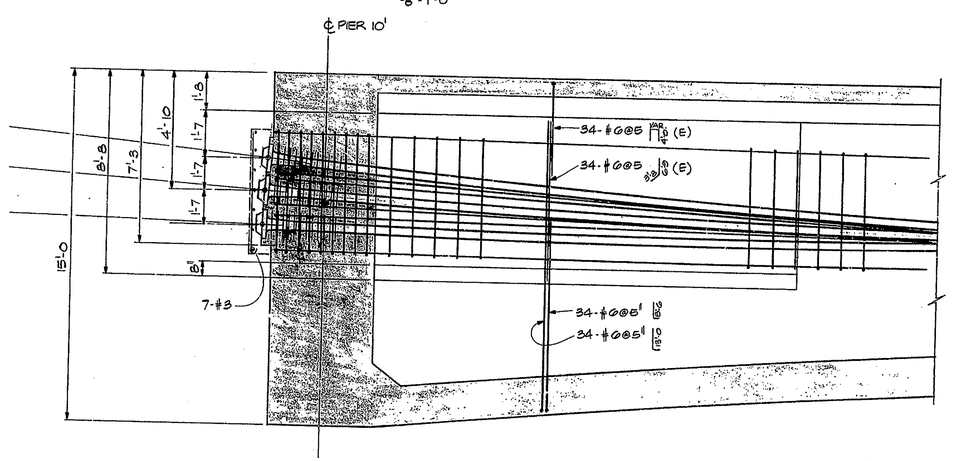


SECTION B
3/8" = 1'-0



SECTION A
3/8" = 1'-0

NOTE:
1. BARS IN TOP DECK ARE EPOXY COATED.



ELEVATION
3/8" = 1'-0

APPROVED FOR CONSTRUCTION
10-26-81

NO.	REVISION	DATE
1	DIAPH. REINF.	SEPT.'81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

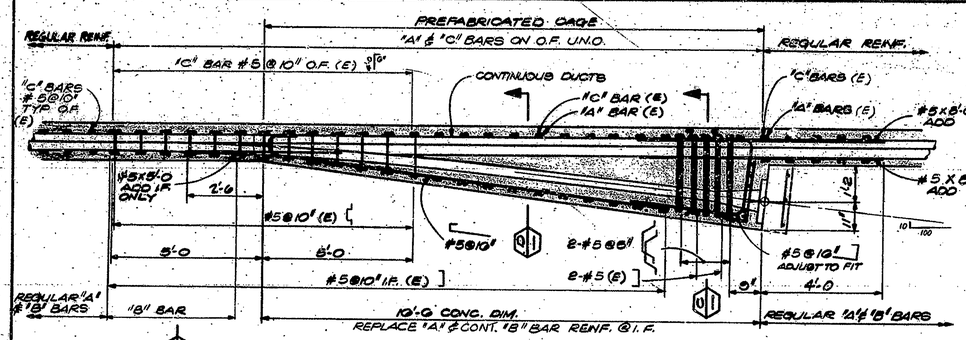
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

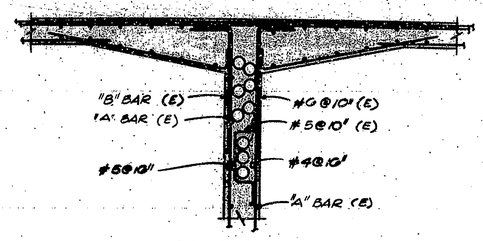
SHEET TITLE
PRESTRESSING ANCHORAGE - PIER 10'

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2646 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

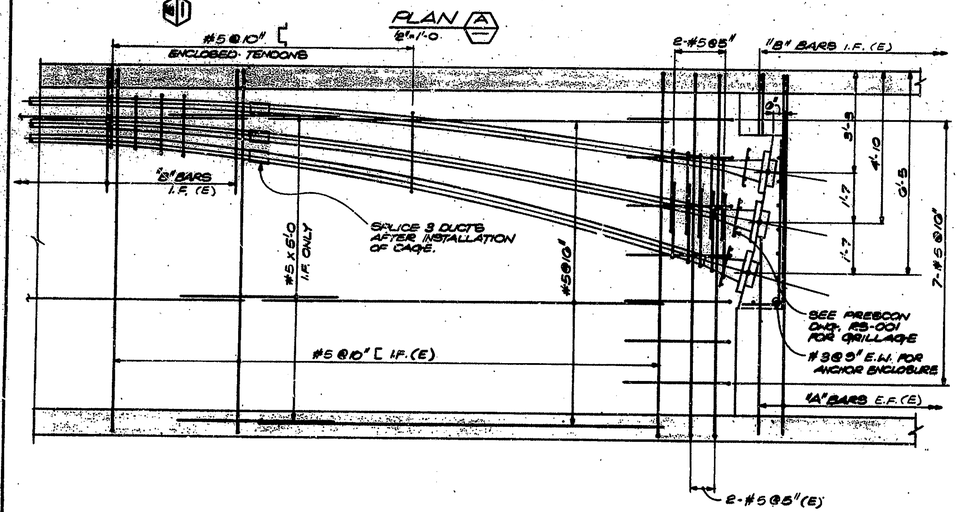
SHEET N.
921



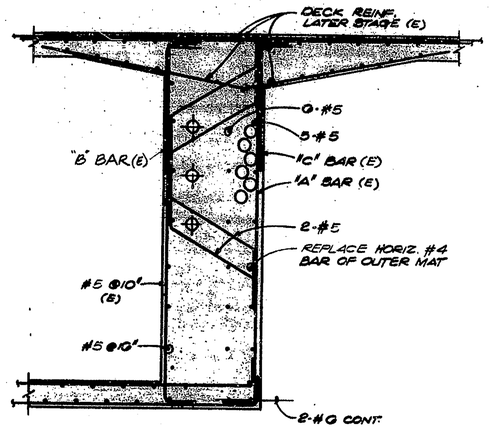
PLAN A
1/2" = 1'-0



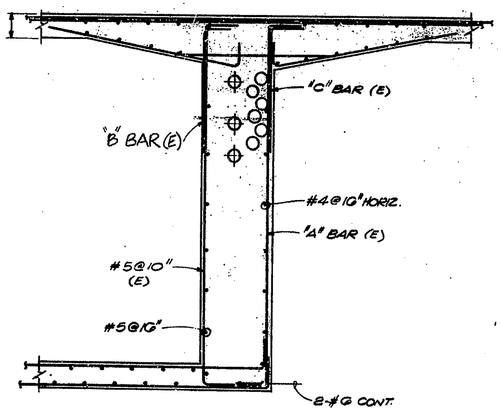
SECTION E
1/2" = 1'-0



ELEVATION B
1/2" = 1'-0



SECTION C
1/2" = 1'-0



SECTION D
1/2" = 1'-0

NOTES:

1. BAR IN TOP DECK SLAB ARE EPOXY COATED AS INDICATED BY (E).
2. THIS BUILD-OUT IS FOR THREE TENDONS, 16 TO 22 - 1/2" ϕ STRAND EACH.
3. 920 A PRESTRESSING BUILD-OUT, THREE TENDONS, 23 TO 34 - 1/2" STRAND.
4. 933A PRESTRESSING BUILD-OUT, ONE AND TWO TENDONS BOTTOM SLAB, 10 - 1/2" STRAND.
5. 940 PRESTRESSING BUILD-OUT, TWO TENDONS 17 TO 31 - 1/2" STRAND.

N	REVISION	DATE

MAR 04 1981

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T. Y. LIN REGISTERED PROFESSIONAL ENGINEER INDIANA

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

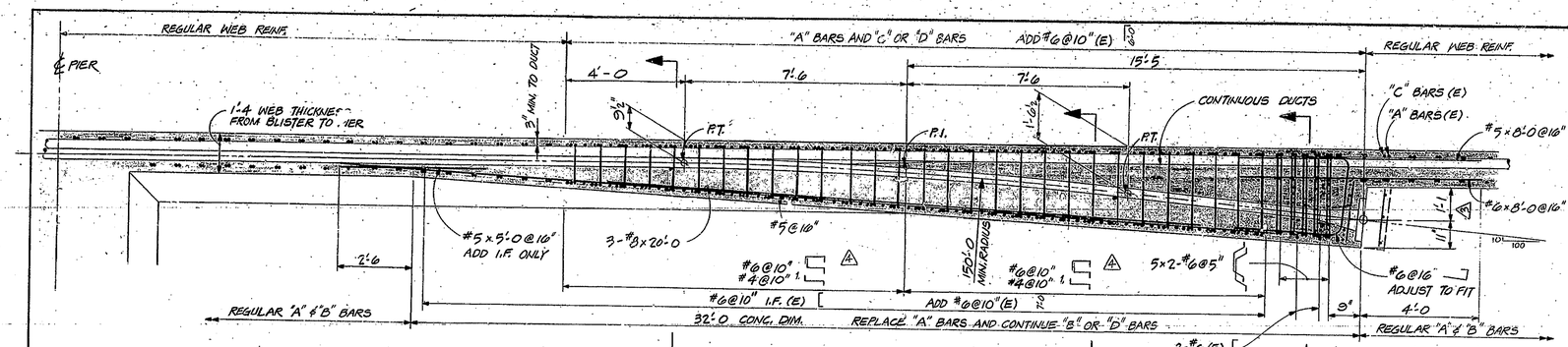
SHEET TITLE

PRESTRESSING DETAILS 3X16 TO 22 – 1/2" STRANDS

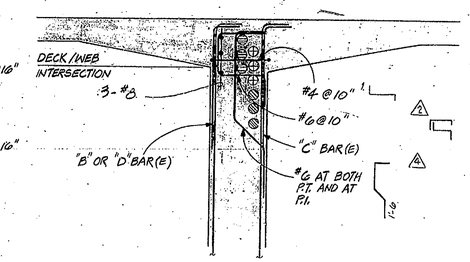
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.

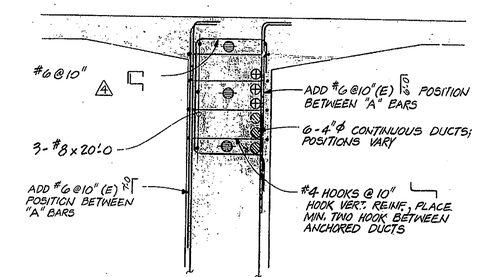
920 B



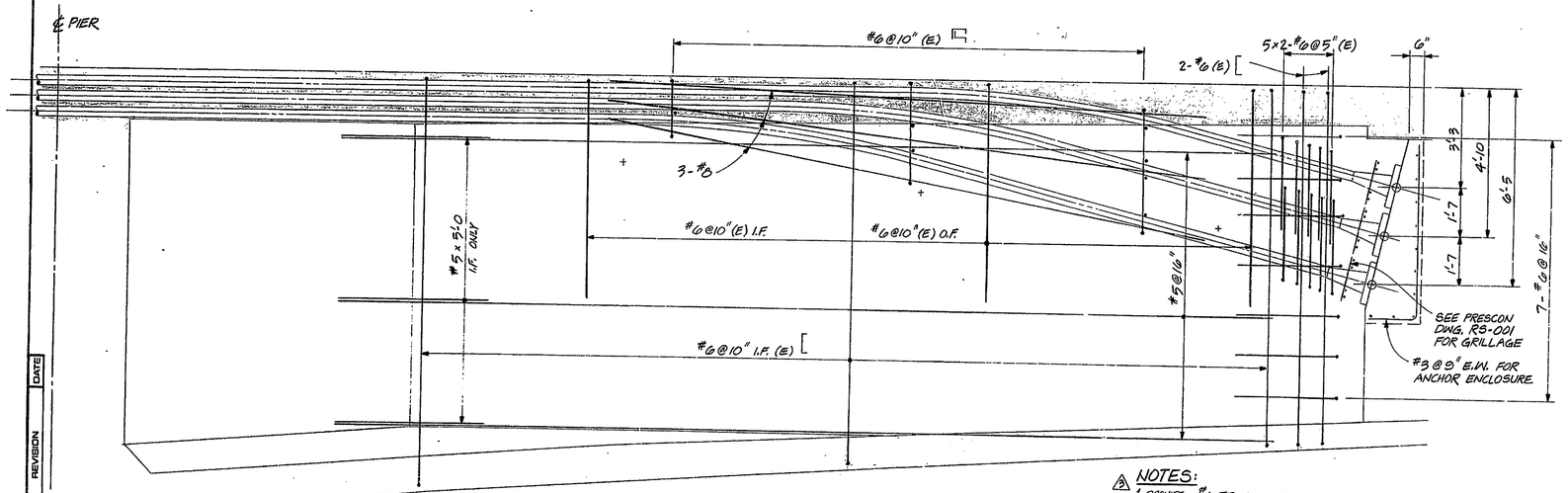
PLAN (A) "TYPE I BLISTER"
½"=1'-0



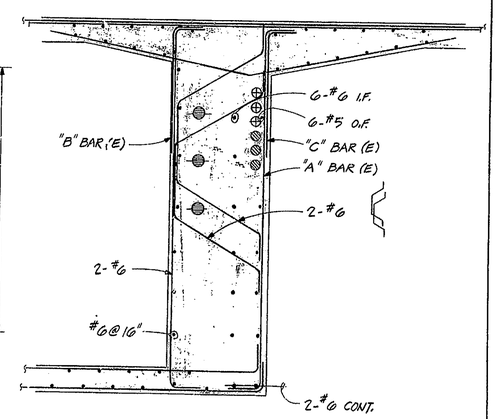
SECTION (F)
½"=1'-0



SECTION (E)
½"=1'-0



ELEVATION (C)
½"=1'-0



SECTION (D)
½"=1'-0

NOTES:
1. PROVIDE #4 TIE AS SHOWN FOR ANCHORED DUCTS LOWER THAN ½ DUCT DIAMETER ABOVE DECK/WEB INTERSECTION.
2. NO DUCT COUPLERS TO BE USED FOR ANCHORED TENDONS BETWEEN PIER AND ANCHORAGE.
3. REINF. IN TOP DECK SLAB IS EPOXY COATED, AS INDICATED BY (E).

APPROVED FOR CONSTRUCTION
W. B. Abbott 6-23-81
W. B. ABBOTT
Assistant Engineer of Bridge Design

NO.	REVISION	DATE
4	PT & PI BAR	JUNE 1981
3	REMOVE TYPE II	MAY 1981
2	OPTIONAL TIES	MAY 1981
1	LENGTHEN TO 32'-0	APRIL 1981

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

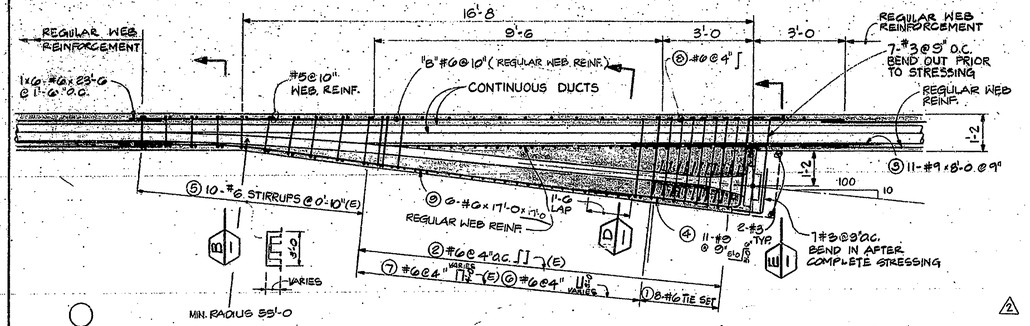
T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
TYPE I BLISTER - 3 x 23 to 34 1/2" STRANDS

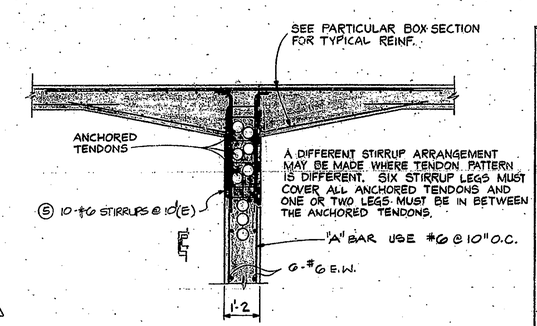
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2648 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
920A



PLAN SECTION (A) 1/2" = 1'-0

NOTE: BLISTER DETAILS ON TOP PORTION OF THIS SHEET ARE "AS BUILT" AND ARE SUPERCEDED BY SHEET 920A.

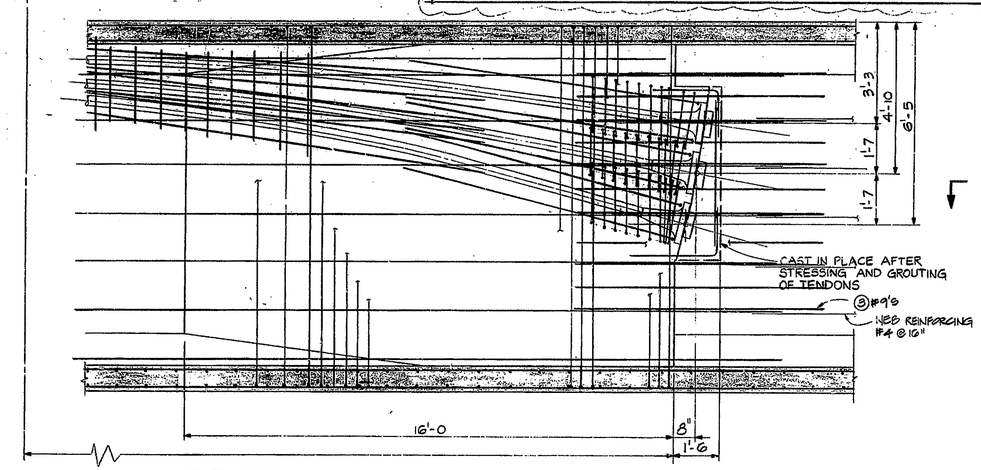


NOTES

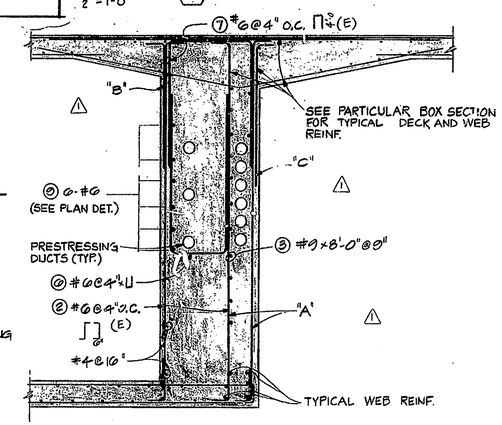
1. BARS IN TOP DECK SLAB ARE EPOXY COATED.
2. REBAR ARRANGEMENT OF DIFFERENT GROUPS OF TENDON EXCEPT SEGMENT 3.

REBAR TYPE	TENDON GROUP		
	3-29-1/2" ϕ TO 3-27-1/2" ϕ	3-13-1/2" ϕ TO 3-10-1/2" ϕ	3-12-1/2" ϕ
1	#5 TIE SET @ 4" O.C. WITH 6 LEGS.	#5 TIE SET @ 6" O.C. WITH 6 LEGS.	#4 TIE SET @ 6" O.C WITH 6 LEGS.
2	#6@4" O.C.	#5@4" O.C.	#5@6"
3	11-#8x8'-0 @ 9"	10-#8x8'-0 @ 9"	7-#8x8'-0 @ 9"
4	11-#8	10-#8	7-#8
5	10-#6 STIRRUPS 6 LEGS @ 9" O.C.	10-#5 STIRRUPS 6 LEGS @ 9" O.C.	10-#4 STIRRUPS 6 LEGS @ 12" O.C.
6	#6@6"	#5@4"	#5@6"
7	#6@6"	#5@4"	#5@6"
8	#6@4"	#5@4"	#5@4"
9	6-#6x17'-0	6-#6x17'-0	6-#5x17'-0

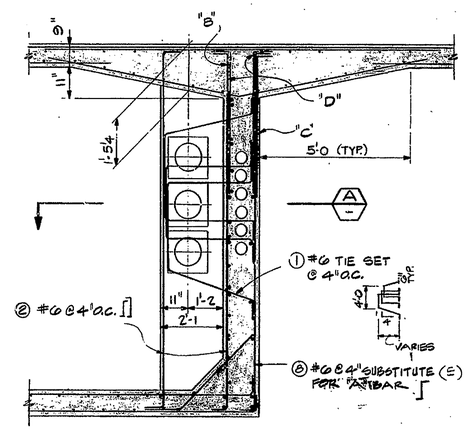
3. WEB WIDTH NEAR BLISTERS, MAYBE INCREASED TO SUIT THE REQUIREMENTS.



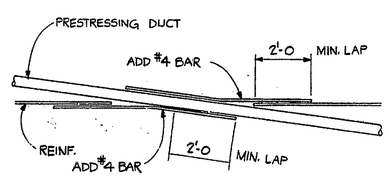
ELEVATION (C) 1/2" = 1'-0 TYP. BUILD-OUT FOR 3-31-1/2" ϕ TO 3-28-1/2 ϕ TENDONS



SECTION (D) 1/2" = 1'-0

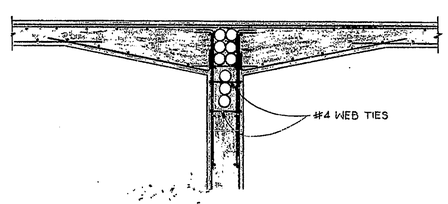


SECTION (E) 1/2" = 1'-0

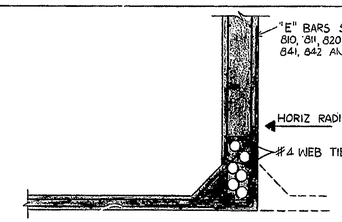


TYPICAL LONGITUDINAL REINF. ADJUSTMENT AT CONFLICTS WITH PRESTRESSING DUCTS

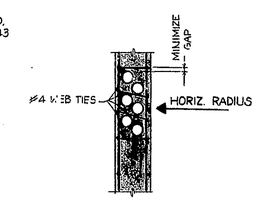
DETAIL SECTION (F) (TYP.) N.T.S.



SECTION (G) 1/2" = 1'-0 AT PIER (TYP.)
FROM SUPPORT TO 0.2ℓ POINT AND 0.8ℓ POINT TO SUPPORT



SECTION (H) 1/2" = 1'-0 AT LOW POINT (TYP.) OUTSIDE WEB
FROM 0.4ℓ POINT TO 0.6ℓ POINT



SECTION (J) 1/2" = 1'-0 AT MID-HEIGHT
FROM 0.2ℓ POINT TO 0.4ℓ POINT AND 0.6ℓ POINT TO 0.8ℓ POINT

NOTES:

1. WEB TIES FOR HORIZONTAL CURVATURE MUST BE PLACED IN ALL WEBS OF THE E.B.L AND W.B.L. BETWEEN THE FOLLOWING STATIONS:
   BEGIN P.C. 110 + 79.32 "EPR"
   END P.T. 125 + 77.46 "E"
   BEGIN P.C. 144 + 31.40 "E"
   END P.T. 154 + 81.43 "E"
2. SPACING SHALL MATCH SPACING OF "A" BARS.
3. WEB TIES ARE PLACED IN A HORIZONTAL PLANE AND MUST FIRMLY TIE TWO VERTICAL WEB BARS TOGETHER.

APPROVED FOR CONSTRUCTION
J.D. Martin
9-82

NO.	REVISION	DATE
2	WEB TIES	NOV. '81
1	"A", "B", "C" BARS	SEPT. '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

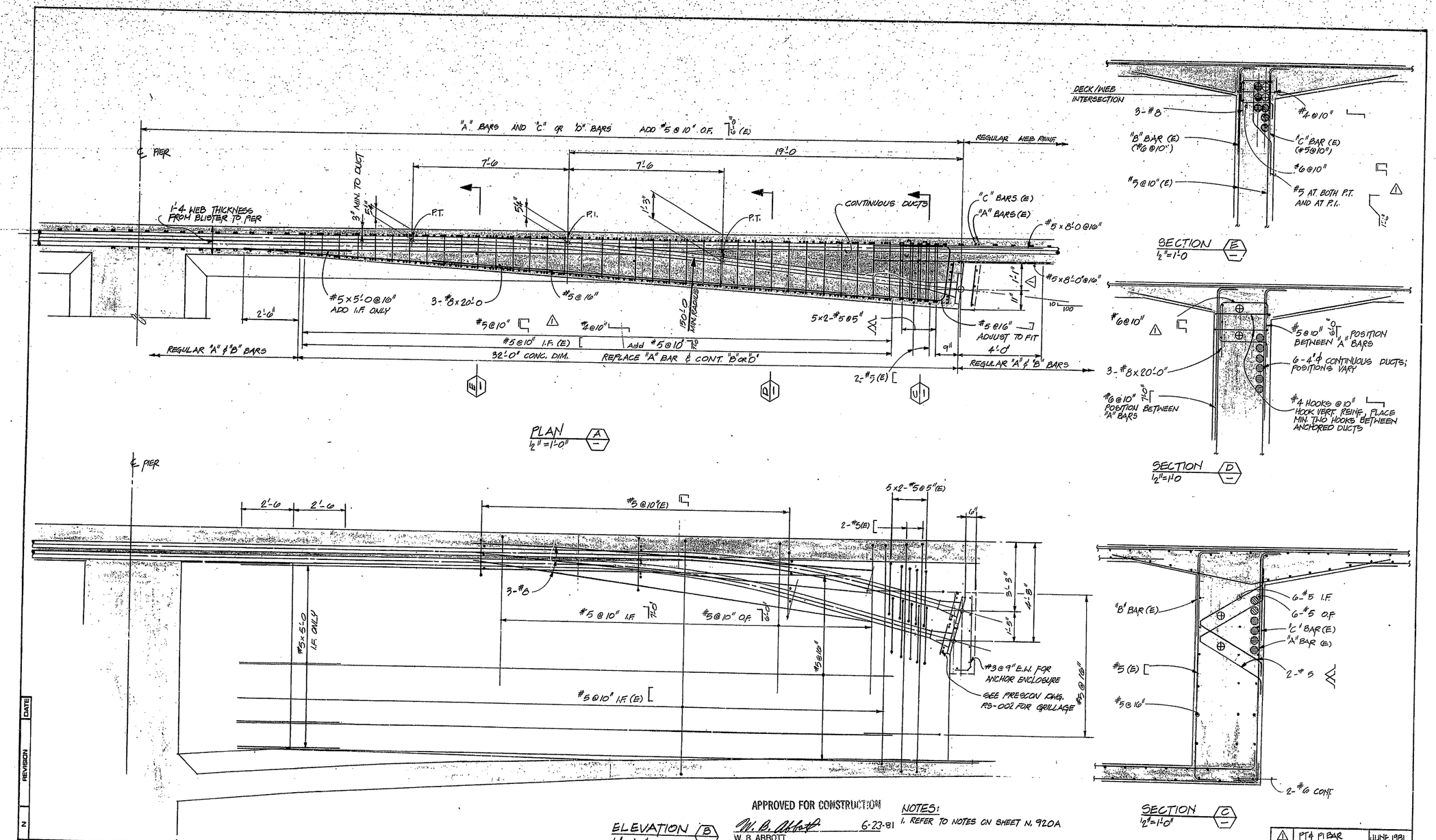
T.Y. Lin

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
TYPICAL PRESTRESSING DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 812-45-2546 CONTRACT NO. E-11812
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
920



APPROVED FOR CONSTRUCTION

W. B. Abbott 6-23-81

W. B. ABBOTT
Assistant Engineer of Bridge Design

NOTES:
1. REFER TO NOTES ON SHEET N. 920A

NO.	REVISION	DATE
1	PT & PI BAR	JUNE 1981
0	ISSUED	MAY 1981

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

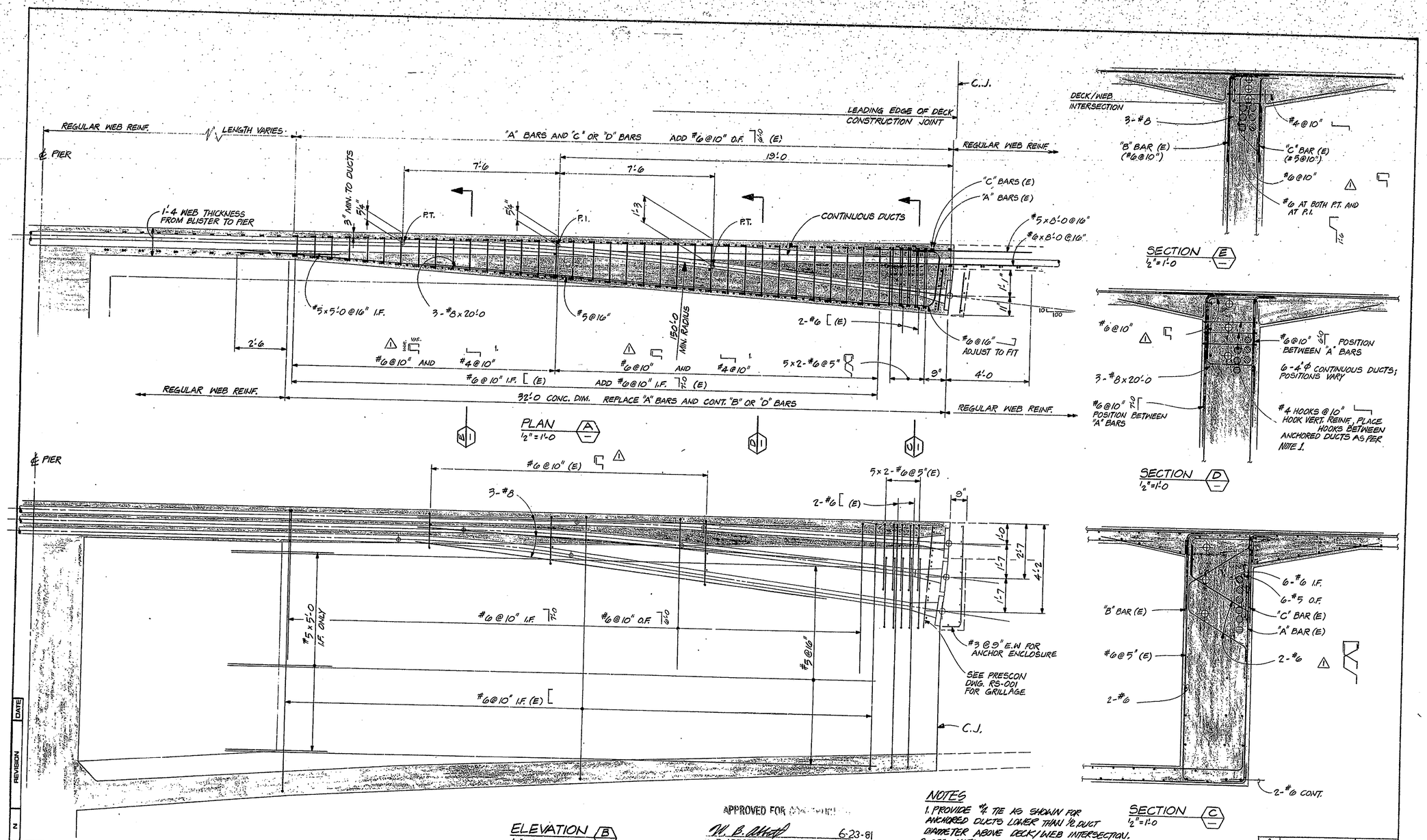
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE

TYPE II A BLISTER - 2 x 21 1/2" STRANDS NEAR PIER 5

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2848 CONTRACT NO. B-11812
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
912



APPROVED FOR CONSTRUCTION

W. B. Abbott 6-23-81
W. B. ABBOTT
Assistant Engineer of Bridge Design

NOTES

1. PROVIDE #4 TIE AS SHOWN FOR ANCHORED DUCTS LOWER THAN ½" DUCT DIAMETER ABOVE DECK/WEB INTERSECTION.
2. SEE NOTES SHEET N. 920 A

NO.	REVISION	DATE
1	PT & PI BAR	JUNE 1981
0	ISSUED	MAY 1981

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T. Y. LIN REGISTERED PROFESSIONAL ENGINEER No. 16866 STATE OF INDIANA

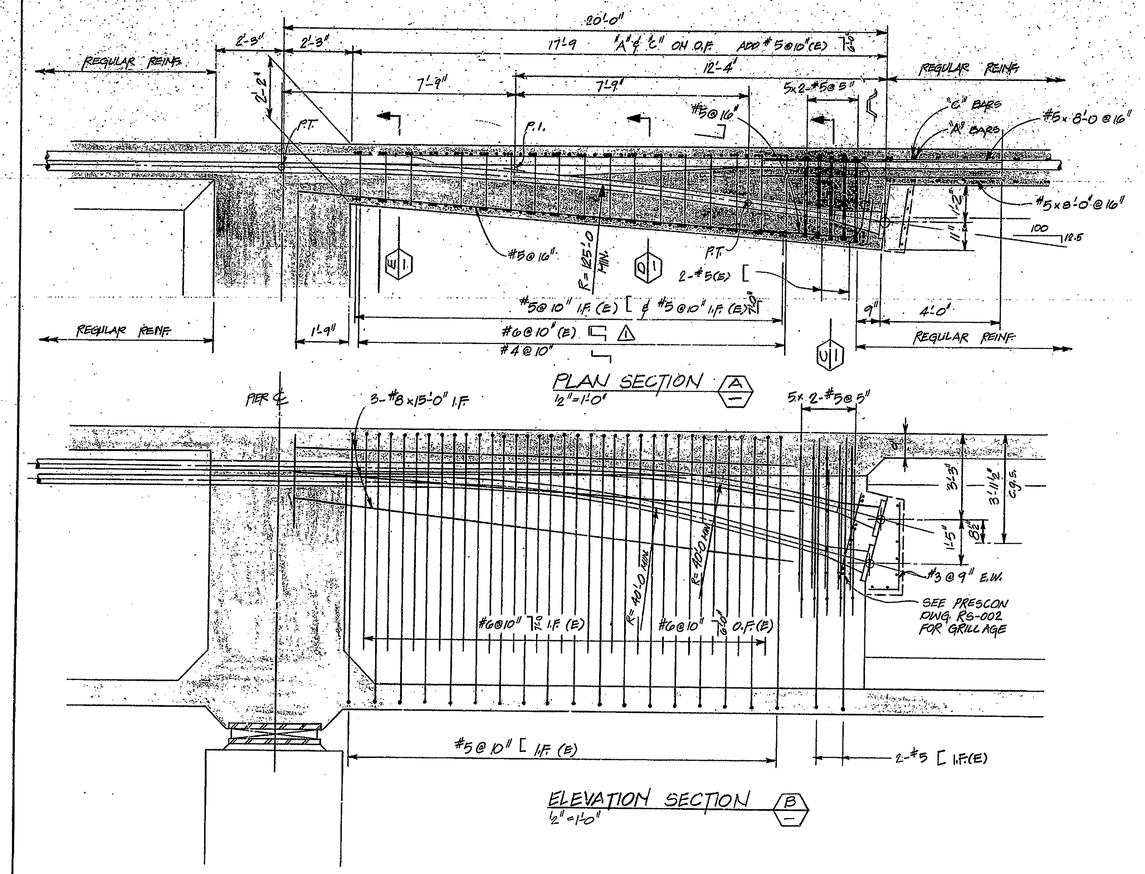
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE

TYPE II BLISTER - 3 x 23 to 34 1/2" STRANDS

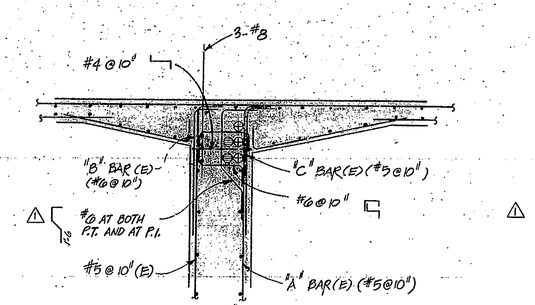
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
911

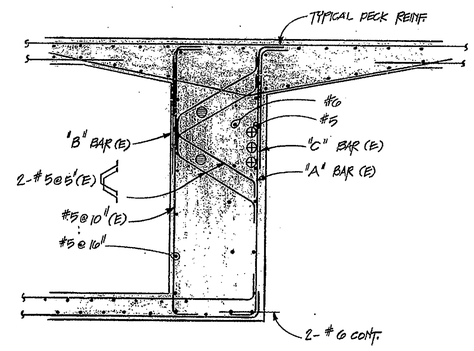


PLAN SECTION (A)
1/2"=1'-0"

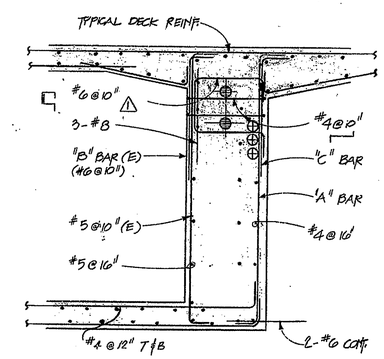
ELEVATION SECTION (B)
1/2"=1'-0"



SECTION (E)
1/2"=1'-0"



SECTION (C)
1/2"=1'-0"



SECTION (D)
1/2"=1'-0"

NOTES:
1. RE 5. IN TOP DECK SLAB IS EPOXY COATED AS INDICATED BY (E)
2. THIS BUILD-OUT IS FOR TWO TENDONS, 21 - ½"ϕ STRAND EACH LOCATED NEAR PIER 3.
3. NO DUCT COUPLERS TO BE USED FOR ANCHORED TENDONS BETWEEN PIER AND ANCHORAGE

APPROVED FOR CONSTRUCTION
W. B. Abbott 6-23-81
ABBOTT
Assistant Engineer of Bridge Design

NO.	REVISION	DATE
1	PT & PI BAR	JUNE 1981
0	ISSUED	MAY 1981

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

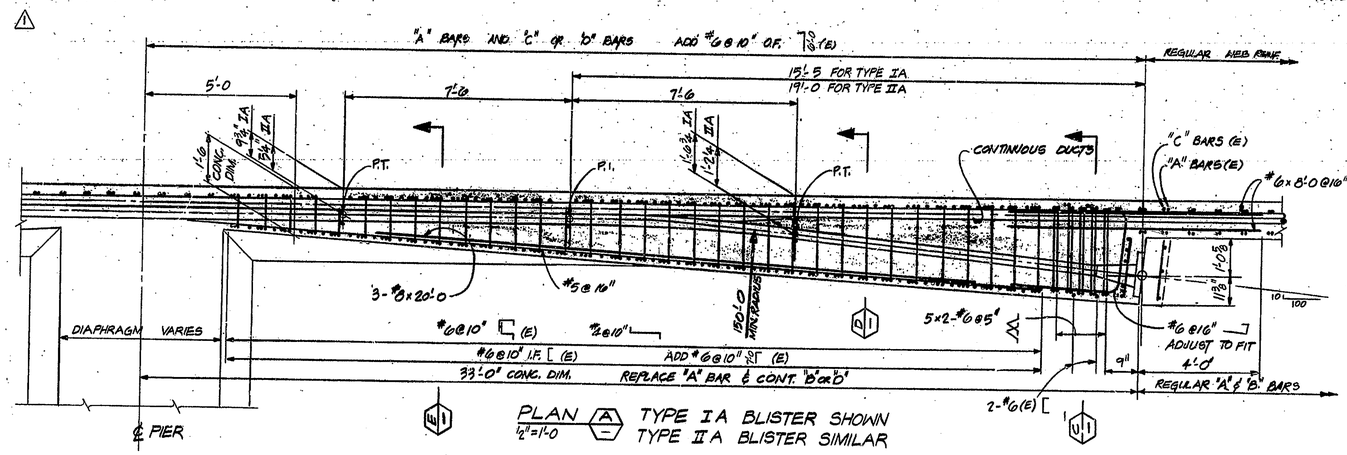
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
BLISTER - 2 x 21 1/2" STRANDS NEAR PIER 3

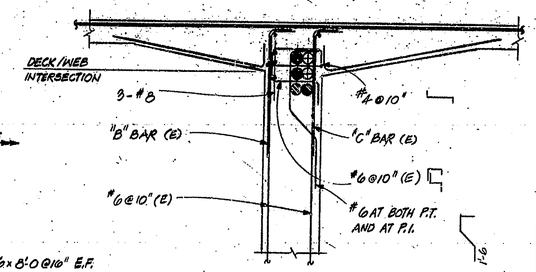
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. B-11612 INDIANA STATE HIGHWAY COMMISSION

SHEET N.
910

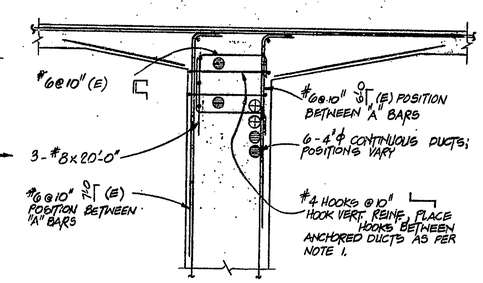
LOCATION TABLE				
SEGMENT	NEAR PIER	IN SPAN	EA.	TYPE
4 EBL	14	15	4	IA
5 EBL	20	20	3	
	21	21	3	
	22	22	3	
	23	23	3	
	24	24	3	
5 WBL	20	20	3	
	21	21	3	
	22	22	3	
	23	23	3	
	24	24	3	
6 WBL	25	25	3	
	26	25	3	
	27	26	3	
	28	27	3	
5 EBL	21	20	3	IIA
	22	21	3	
	24	23	3	
5 WBL	21	20	3	
	22	21	3	
	23	22	3	
	24	23	3	
6 WBL	26	26	3	
	28	28	3	



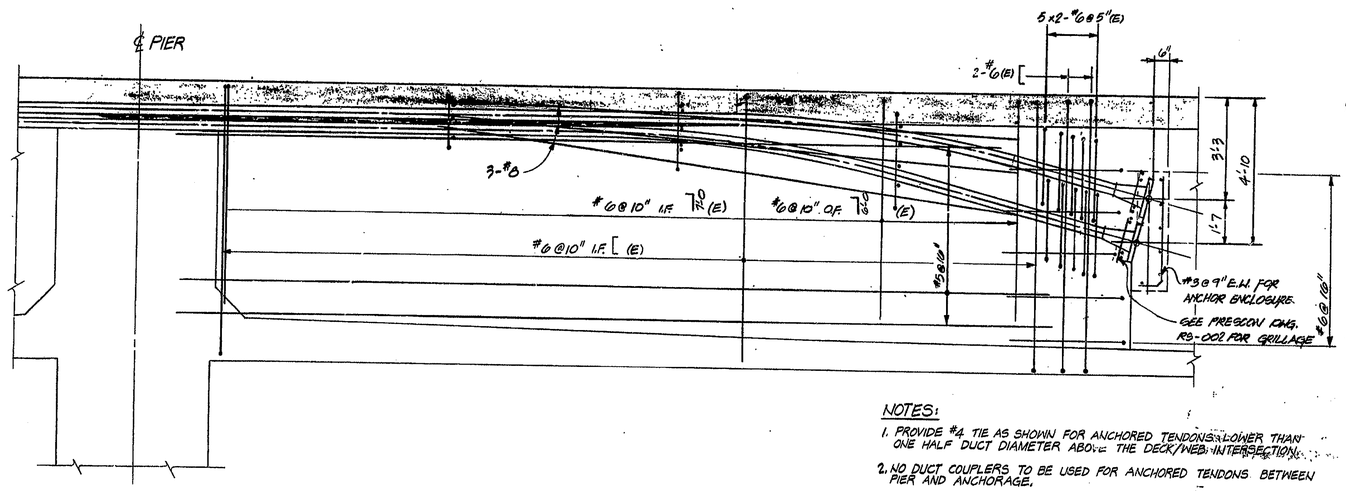
PLAN (A)
1/2" = 1'-0
TYPE IA BLISTER SHOWN
TYPE IIA BLISTER SIMILAR



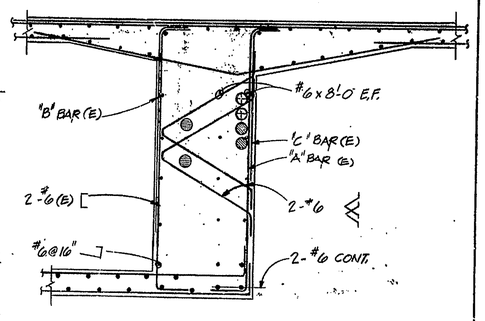
SECTION (E)
1/2" = 1'-0



SECTION (D)
1/2" = 1'-0



ELEVATION (B)
1/2" = 1'-0"



SECTION (C)
1/2" = 1'-0"

NOTES:

1. PROVIDE #4 TIE AS SHOWN FOR ANCHORED TENDONS LOWER THAN ONE HALF DUCT DIAMETER ABOVE THE DECK/WEB INTERSECTION.
2. NO DUCT COUPLERS TO BE USED FOR ANCHORED TENDONS BETWEEN PIER AND ANCHORAGE.
3. ALL REINF. IN TOP DECK SLAB IS EPOXY COATED, AS INDICATED BY (E).
4. TYPE IA AND IIA INDICATES 2 TENDON BLISTER WITH C.G.S. AT 4.04'.

APPROVED FOR CONSTRUCTION
J. C. MATTIS
Engineer of Bridge Plans
8-7-82

NO.	REVISION	DATE
1	LOCATIONS	FEB. '82
0	ISSUED	DEC. '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUESE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T. Y. LIN REGISTERED No. 18266 STATE OF ILLINOIS PROFESSIONAL ENGINEER

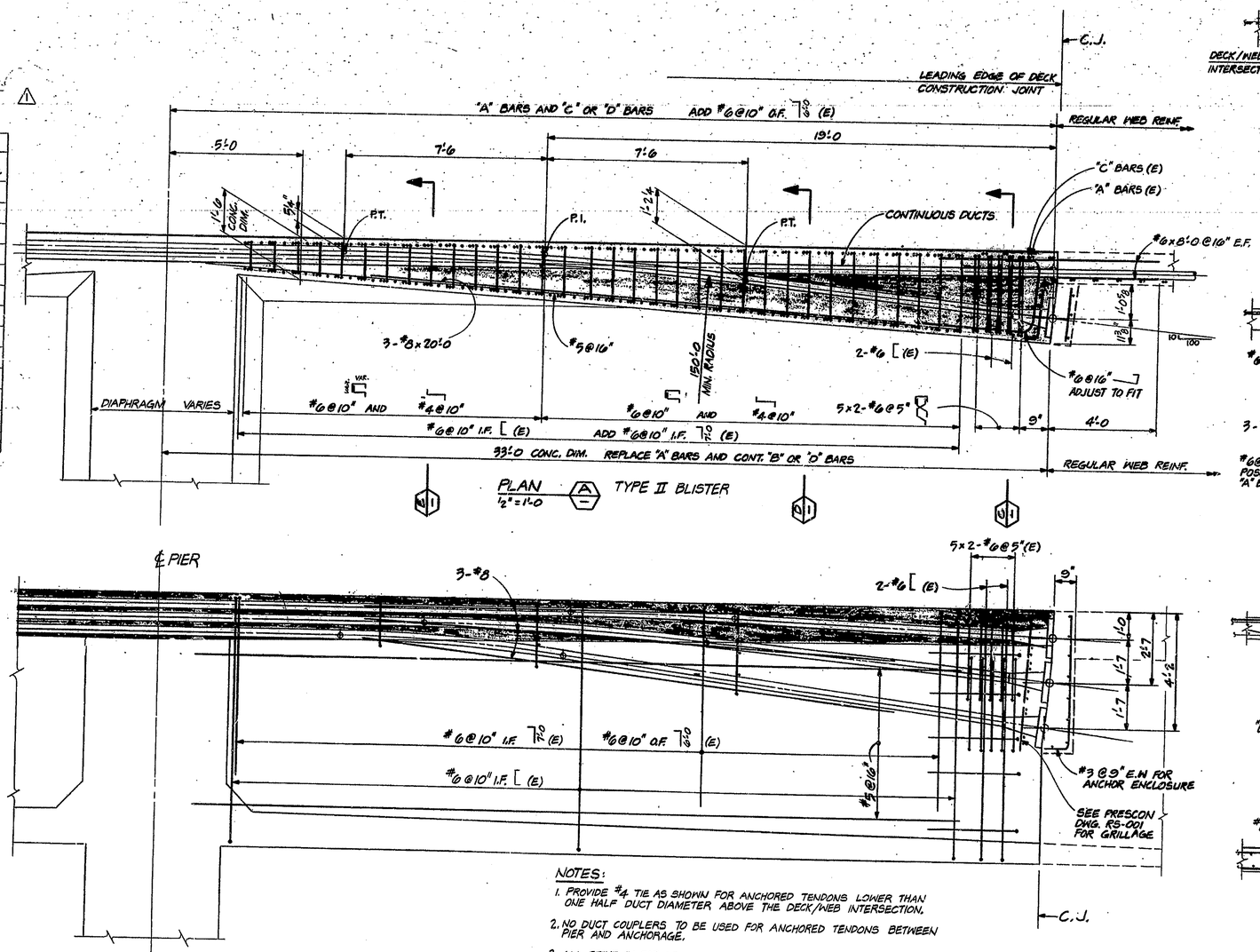
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
TYPE I A AND TYPE II A 33 FT. BLISTER

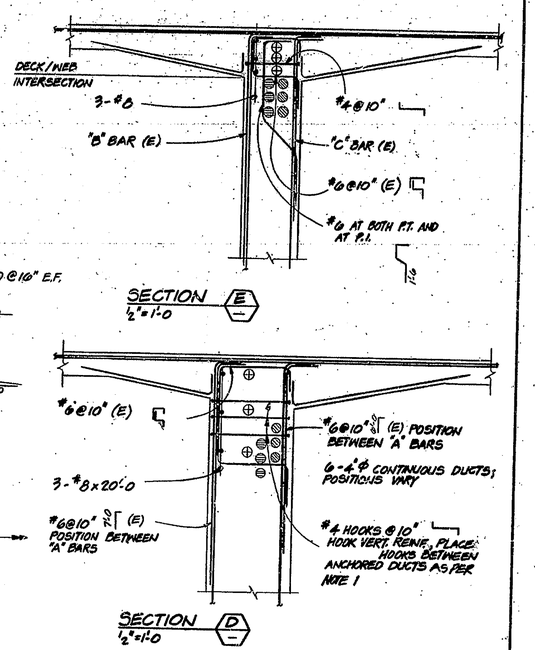
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 8-11812
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
903

LOCATION TABLE			
SEGMENT	NEAR PIER	IN SPAN	EA.
4 EBL	16	16	4
	17	17	4
	19	19	3
4 WBL	16	16	3
	17	17	3
	18	18	3
	19	19	3
5 EBL	23	22	3
6 EBL	26	26	3
	27	27	3
	28	28	3
	107	107	2
6 WBL	27	27	3

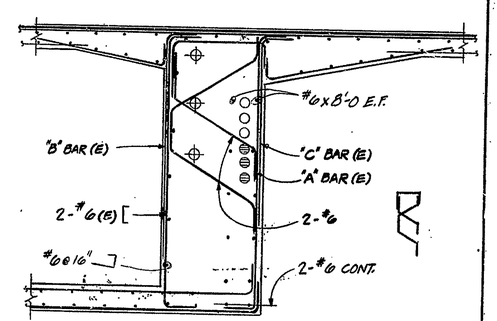


PLAN (A) TYPE II BLISTER
1/2"=1'-0



SECTION (E)
1/2"=1'-0

SECTION (D)
1/2"=1'-0



SECTION (C)
1/2"=1'-0

NOTES:

1. PROVIDE #4 TIE AS SHOWN FOR ANCHORED TENDONS LOWER THAN ONE HALF DUCT DIAMETER ABOVE THE DECK/WEB INTERSECTION.
2. NO DUCT COUPLERS TO BE USED FOR ANCHORED TENDONS BETWEEN PIER AND ANCHORAGE.
3. ALL REINF. IN TOP DECK SLAB IS EPOXY COATED, AS INDICATED BY (E).
4. TYPE II INDICATES 3 TENDON BLISTER AT A CONSTRUCTION JOINT WITH C.G.S. AT 2.58'.

ELEVATION (B)
1/2"=1'-0

APPROVED FOR CONSTRUCTION
J. D. Mattis
J. D. MATTIS
Engineer of Bridge Plans
9-7-82

NO.	REVISION	DATE
1	LOCATIONS	FEB. 1982
0	ISSUED	DEC. 1981

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

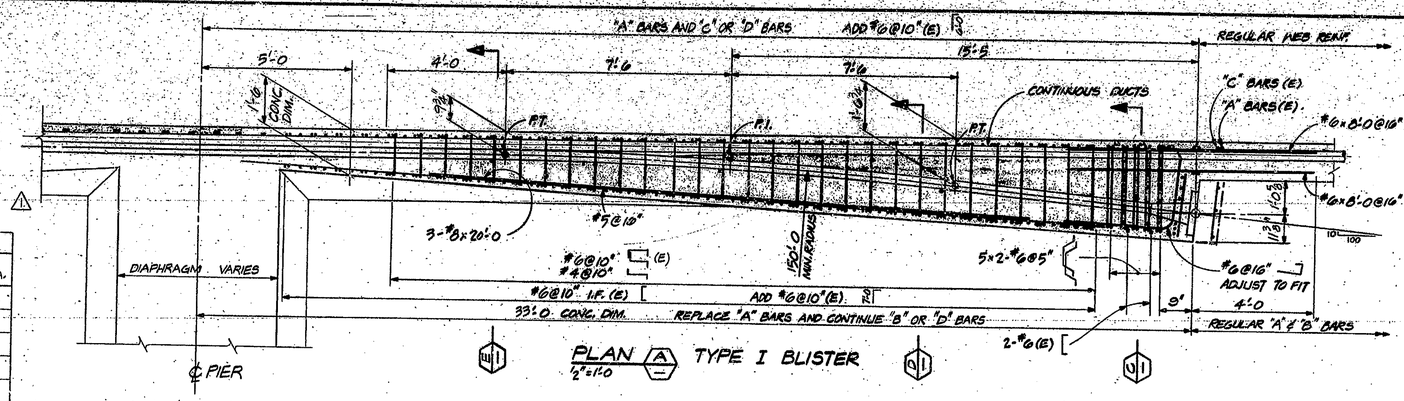
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

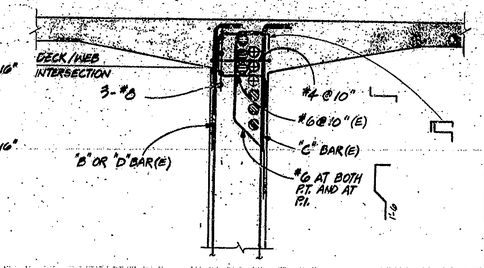
SHEET TITLE
TYPE II 33 FT. BLISTER

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2543 CONTRACT NO. S-11812
INDIANA STATE HIGHWAY COMMISSION

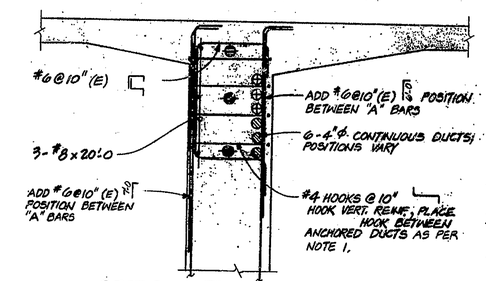
SHEET N.
902



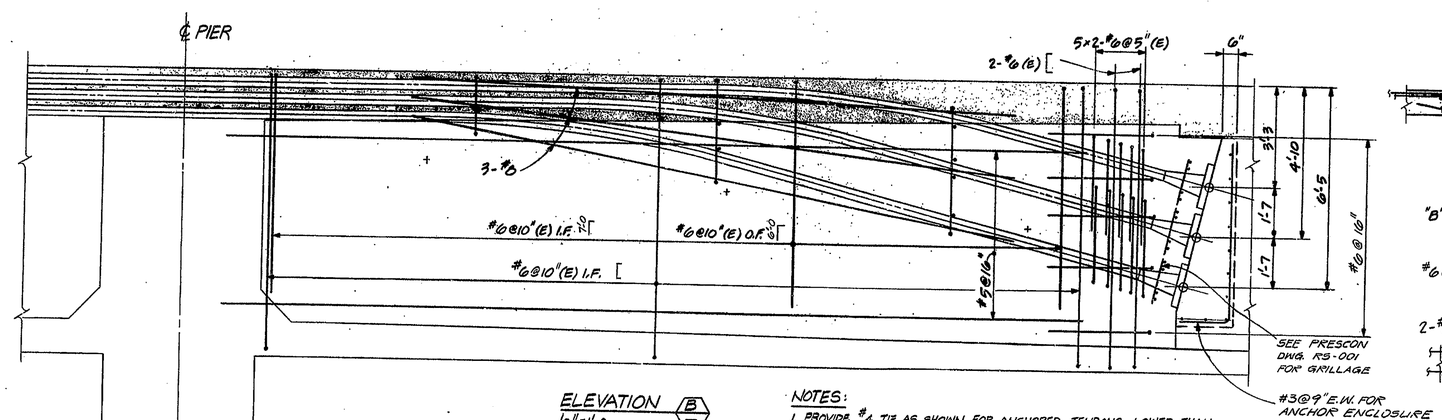
PLAN (A) TYPE I BLISTER
1/2"=1'-0



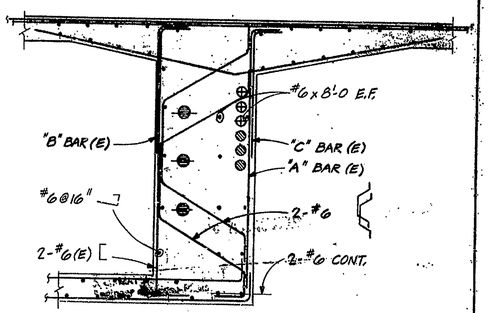
SECTION (E)
1/2"=1'-0



SECTION (D)
1/2"=1'-0



ELEVATION (B)
1/2"=1'-0



SECTION (C)
1/2"=1'-0

LOCATION TABLE

SEGMENT	NEAR PIER	IN SPAN	EA.
4 EBL	18	17	2
↓	19	18	3
4 WBL	16	15	3
↓	17	16	3
↓	18	17	3
↓	19	18	3
6 EBL	26	25	3
↓	27	26	3
↓	106	105	2
↓	28	27	3

NOTES:

1. PROVIDE #4 TIE AS SHOWN FOR ANCHORED TENDONS LOWER THAN ONE HALF DUCT DIAMETER ABOVE THE DECK/WEB INTERSECTION.
2. NO DUCT COUPLERS TO BE USED FOR ANCHORED TENDONS BETWEEN PIER AND ANCHORAGE.
3. ALL REINF. IN TOP DECK SLAB IS EPOXY COATED, AS INDICATED BY (E).
4. TYPE I INDICATES 3 TENDON BLISTER WITH C.G.S. AT 4.83'.

APPROVED FOR CONSTRUCTION
9-7-82

NO.	REVISION	DATE
1	LOCATIONS	FEB. '82
0	ISSUED	DEC. '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

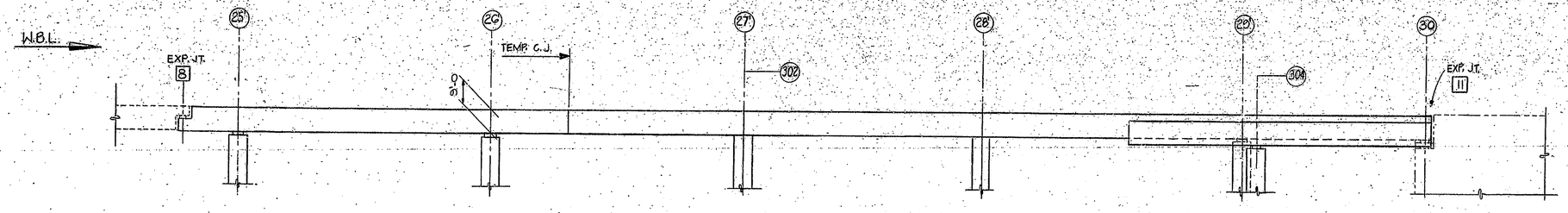
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

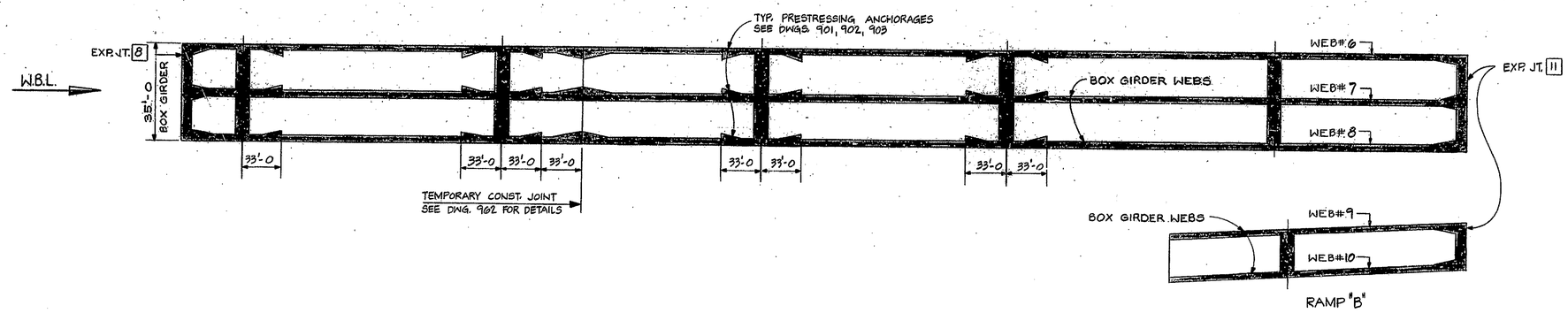
SHEET TITLE
TYPE I 33 FT. BLISTER

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

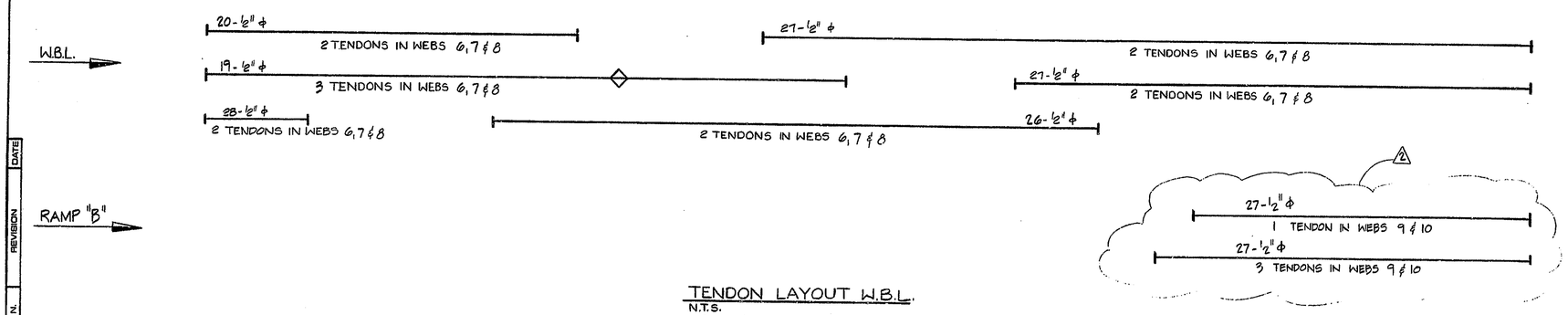
SHEET N.
901



ELEVATION - SEGMENT 6



PLAN OF BLISTERS W.B.L
N.T.S.



TENDON LAYOUT W.B.L.
N.T.S.

NOTES

1. TENDON = ONE 4" ϕ DUCT WITH UP TO 31-½" ϕ PRESTRESSING STRANDS.
2. FINAL PRESTRESSING DETAILS SHALL BE APPROVED BY THE ENGINEER BEFORE COMMENCING WORK.
3. ◇ INDICATES COUPLER LOCATION

APPROVED FOR CONSTRUCTION
J.D. MATTIS 9-7-82
Engineer of Bridge Plans

NO.	REVISION	DATE
2	RAMP "B" TENDONS	FEB. '82
1	TEMP. CONST. JOINT	DEC. '81

NO.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

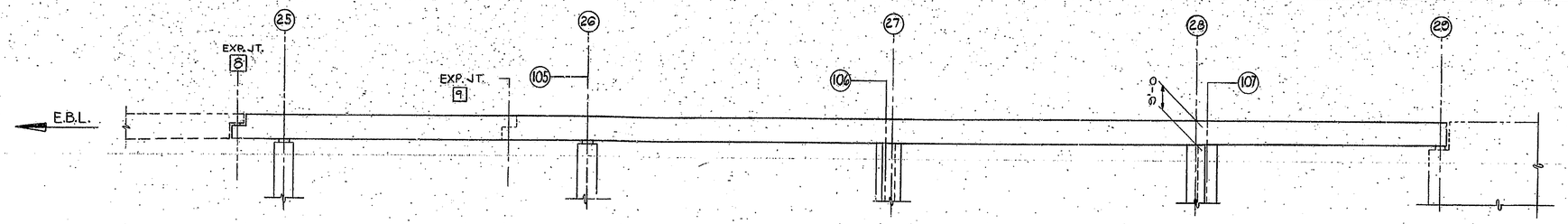
T. Y. LIN REGISTERED No. 18266 INDIANA

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

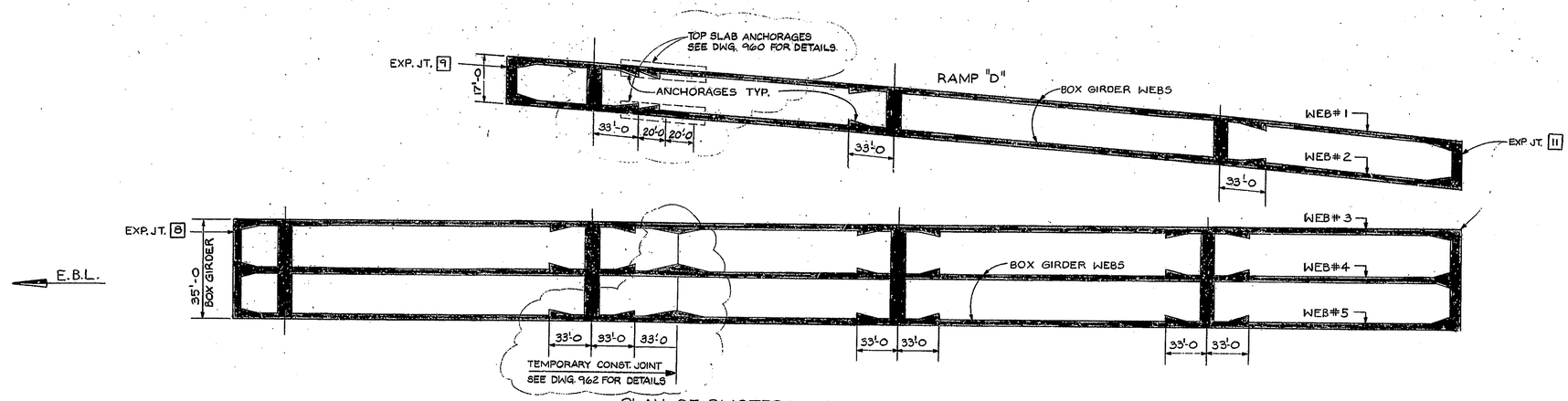
SHEET TITLE
CABLE LAYOUT W.B.L. - SEGMENT 6

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2549 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

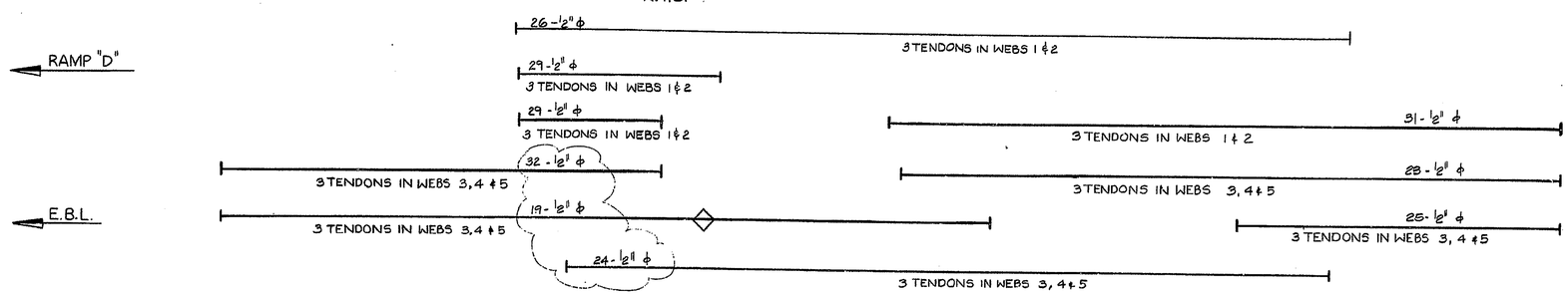
SHEET N.
865



ELEVATION - SEGMENT 6



PLAN OF BLISTERS E.B.L.
N.T.S.



TENDON LAYOUT E.B.L.
N.T.S.

NOTES

1. TENDON = ONE 4" ϕ DUCT WITH UP TO 31-1/2" ϕ PRESTRESSING STRANDS.
2. FINAL PRESTRESSING DETAILS SHALL BE APPROVED BY THE ENGINEER BEFORE COMMENCING WORK.
3. ◇ INDICATES COUPLER LOCATION.

APPROVED FOR CONST. JOINT
J. D. MATTIS
Engineer of Bridge Plans
9-7-82

NO.	REVISION	DATE
1	TEMP. CONST. JOINT	DEC.'81

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

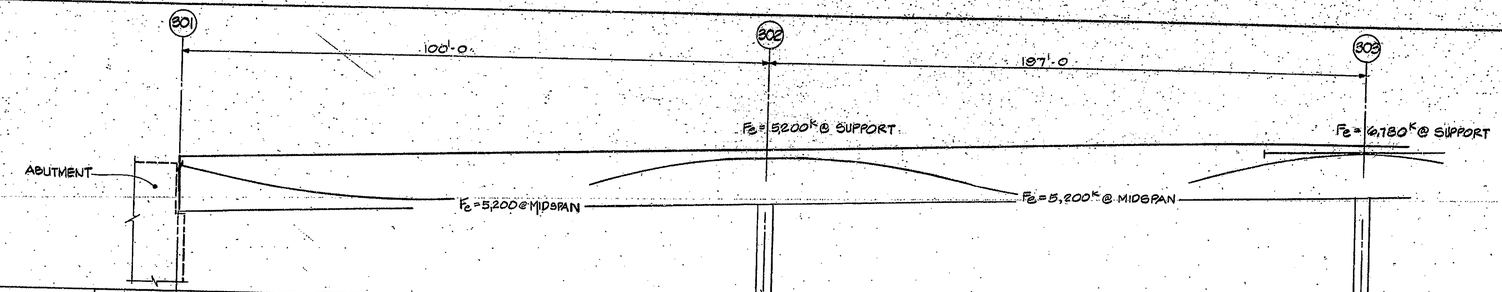
REGISTERED PROFESSIONAL ENGINEER No. 18765 STATE OF INDIANA

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

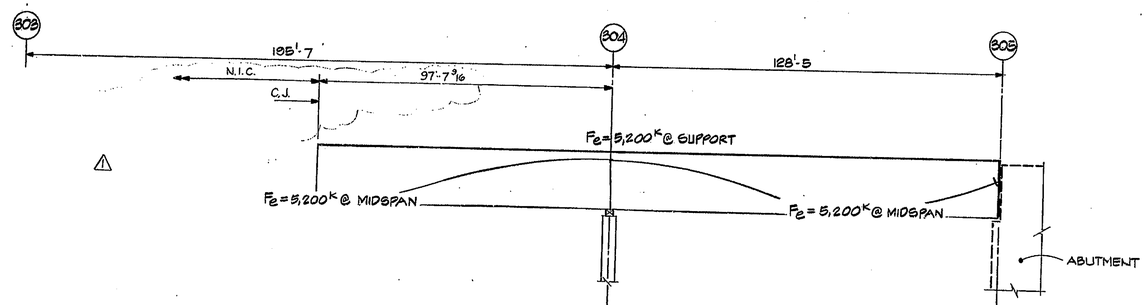
SHEET TITLE
CABLE LAYOUT E.B.L. - SEGMENT 6

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
864



LOCATION		℄ OF BRG. JT.	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	℄ OF PIER	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	℄ OF PIER
DEFLECTION OR CAMBER: DL. & PRES. (IN)							0.0 ↓									0.5 ↓			1.0 ↓		0.4 ↓	
DEFLECTION OR CAMBER: CREEP (IN.)							0.0 ↓									1.0 ↓			2.0 ↓		0.8 ↓	
C.G.S. MEASURED FROM BOT. FLG. (FT.)	W.B.L.	5.40	5.05	4.88	4.75	4.81	5.00	5.33	5.79	6.38	7.12	7.75	6.18	3.99	2.42	1.48	0.5L	0.6L	0.7L	0.8L	0.9L	1.25
C.G.S. MEASURED FROM TOP FLG. (FT.)	W.B.L.	3.60	3.95	4.17	4.25	4.19	4.00	3.67	3.21	2.62	1.88	1.25	2.82	5.01	6.58	7.52	7.83	7.52	6.58	5.01	2.82	7.75
WEB REINFORCEMENT	REINF. "A"	#5@10	#5@18								#5@10			#5@18						#5@10		
	REINF. "B"	#6@10	#6@9								#6@10			#6@9						#6@10		
	REINF. "C"	#5@10	#5@9								#5@10			#5@9						#5@10		



					0.1 ↓											0 ↓						
					0.2 ↓											0.0 ↓						
7.83	1.17	0.5L	0.6L	0.7L	0.8L	0.9L																
7.52	1.48	6.58	2.42	3.99	5.01	2.82	6.18	7.75	1.25	2.31	6.69	5.50	3.50	4.43	4.57	3.09	3.91	5.50	3.50	5.64	3.36	5.53	3.47	5.15	3.85	4.50	4.50	3.60	5.40
#5@18						#5@10						#5@18										#5@10
#6@9						#6@10						#6@9										#6@10
#5@9						#5@10						#5@9										#5@10

NOTE

SEE NOTES DWG. 850.

APPROVED FOR CONSTRUCTION

J. D. MATTIS
Engineer of Bridge Plans
9-7-82

NO.	REVISION	DATE
△	RAMP "B" C.G.S.	FEB.'82

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

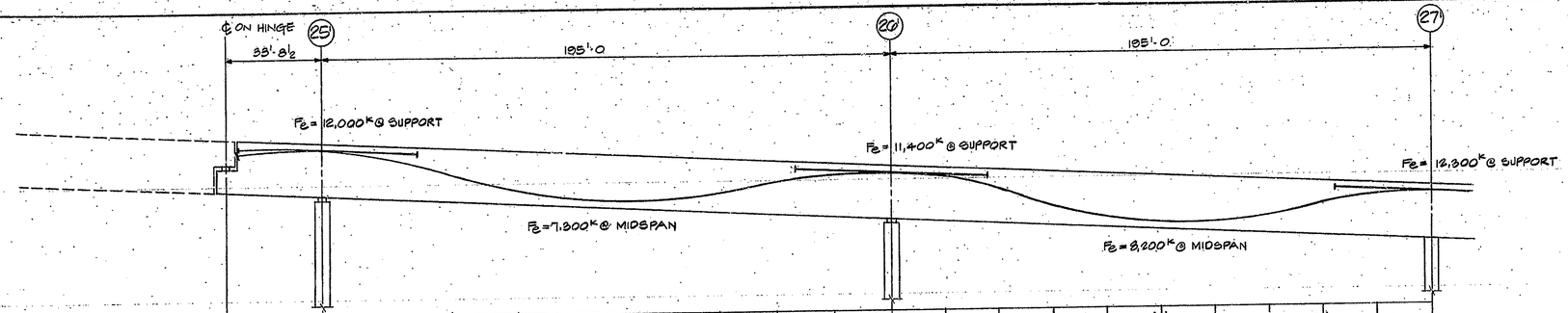
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

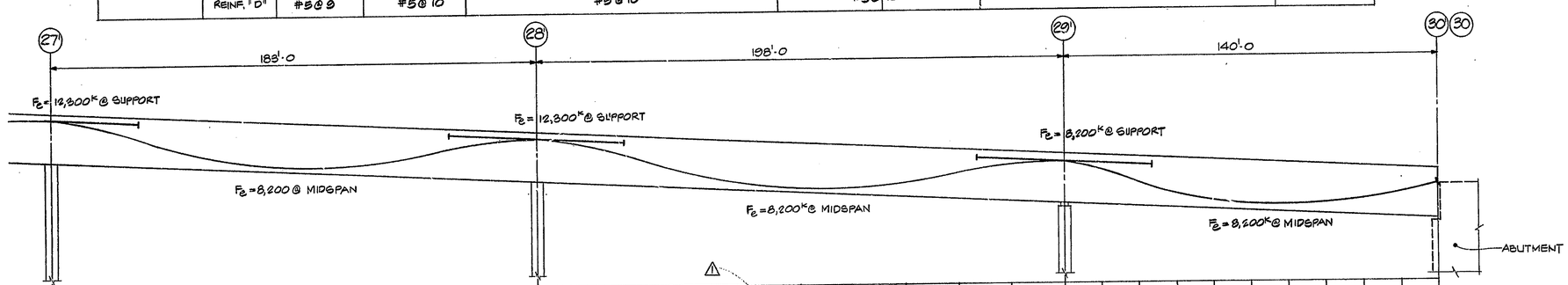
SHEET TITLE
CABLE PROFILE FORCES AND WEB REINFORCEMENT - W.B.L. SEGMENT 6

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
863



DEFLECTION OR CAMBER	DL. & PRES. (IN.)				0.5			1.0			0.4				0.1			0.4			0.1		
	CREEP (IN.)				1.0			2.0			0.8				0.2			0.8			0.2		
LOCATION			1.25 7.75 ℄ OF PIER	2.82 6.18 0.1L	5.01 3.99 0.2L	6.58 2.42 0.3L	7.52 1.48 0.4L	7.83 1.17 0.5L	7.52 1.48 0.6L	6.58 2.42 0.7L	5.01 3.99 0.8L	2.82 6.18 0.9L	1.25 7.75 ℄ OF PIER	2.82 6.18 0.1L	5.01 3.99 0.2L	6.58 2.42 0.3L	7.52 1.48 0.4L	7.83 1.17 0.5L	7.52 1.48 0.6L	6.58 2.42 0.7L	5.01 3.99 0.8L	2.82 6.18 0.9L	1.25 7.75 ℄ OF PIER
C.G.S. MEASURED FROM BOT. FLG. (FT)	W.B.L	5.08																					
C.G.S. MEASURED FROM TOP FLG. (FT)	W.B.L.	3.92																					
WEB REINFORCEMENT	REINF. "A"		#6@9	#5@10	#5@18							#5@10				#5@18					#5@10		
	REINF. "B"		#6@9	#6@10	#6@9							#6@10				#6@9					#6@10		
	REINF. "C"		#5@9	#5@10	#5@10							#5@10				#5@9					#5@10		
	REINF. "D"		#5@9	#5@10	#5@10							#5@10				#5@9					#5@10		



		0.1			0.4			0.1				0.1			0.5			0.4				0.0	
		0.2			0.8			0.2				0.2			1.0			0.8				0.0	
1.25 7.75 ℄ OF PIER	2.82 6.18 0.1L	5.01 3.99 0.2L	6.58 2.42 0.3L	7.52 1.48 0.4L	7.83 1.17 0.5L	7.52 1.48 0.6L	6.58 2.42 0.7L	5.01 3.99 0.8L	2.82 6.18 0.9L	1.25 7.75 ℄ OF PIER	2.82 6.18 0.1L	5.01 3.99 0.2L	6.58 2.42 0.3L	7.52 1.48 0.4L	7.83 1.17 0.5L	7.52 1.48 0.6L	6.58 2.42 0.7L	5.01 3.99 0.8L	2.82 6.18 0.9L	1.25 7.75 ℄ OF PIER	2.30 6.70 0.1L	3.49 5.51 0.2L	4.48 4.58 0.3L	5.08 3.91 0.4L	5.50 3.50 0.5L	5.65 3.35 0.6L	5.54 3.46 0.7L	5.17 3.83 0.8L	4.54 4.46 0.9L	3.65 5.35 ℄ OF EXP. JT.
#5@10			#5@18					#5@10					#5@18						#5@10					#5@18					#5@10
#6@10			#6@9					#6@10					#6@9						#5@10					#6@9					#6@10
#5@10			#5@9					#5@10					#5@9						#5@10					#5@9					#5@10
#5@10			#5@9					#5@10					#5@9						#5@10					#5@9					#5@10

NOTE
SEE NOTES DWG. 850

APPROVED FOR CONSTRUCTION
J. D. MATHS
Engineer of Bridge Plans
9-7-82

NO	REVISION	DATE
1	C.G.S. SPAN 28'	DEC.'81

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

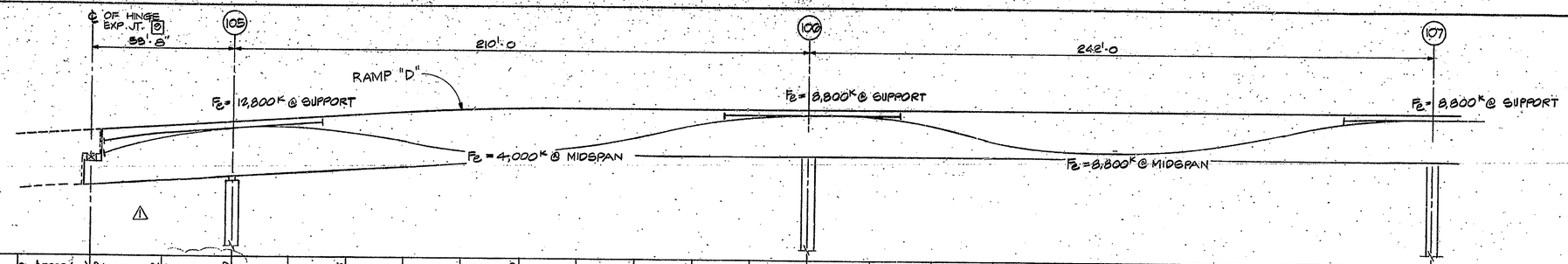
T. Y. LIN REGISTERED PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

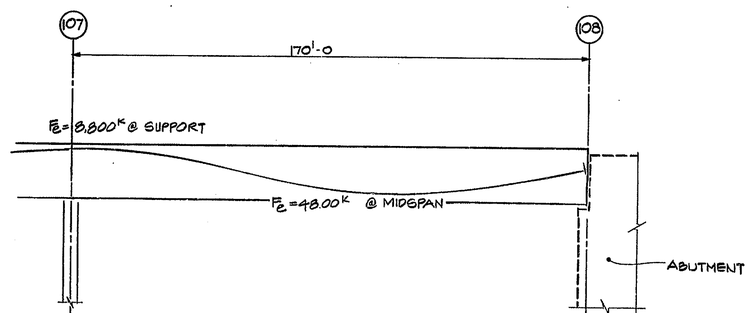
SHEET TITLE
CABLE PROFILE FORCES AND WEB REINFORCEMENT - W.B.L. SEGMENT 6

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 812-45-2548 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
862



DEFLECTION OR CAMBER	DL. & PRES. (IN.)	0.0	0.2			0.5			1.0			0.4			0.1			0.4			0.1		
	CREEP (IN.)	1.2	0.4		0.0	1.0			2.0			0.8			0.2			0.8			0.2		
LOCATION			0.5L		℄ OF PIER	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	0.9L	℄ OF PIER	0.9L	0.8L	0.7L	0.6L	0.5L	0.4L	0.3L	0.2L	℄ OF PIER
C.G.S. MEASURED FROM BOT. FLG. (FT.)	E.B.L.	5.08			7.75	6.18	3.99	2.42	1.48	1.17	1.48	2.42	3.99	6.18	7.75		6.18	2.42	1.48	1.17	1.48	2.42	3.99	6.18	7.75
C.G.S. MEASURED FROM TOP FLG. (FT.)	E.B.L.	2.92			1.25	2.82	5.01	6.58	7.52	7.83	7.52	6.58	5.01	2.82	1.25	2.82	5.01	6.58	7.52	7.83	7.52	6.58	5.01	2.82	1.25
WEB REINFORCEMENT	REINF. "A"	#5@10	#6@10	#5@10		#5@18								#5@10			#5@18							#5@10	
	REINF. "B"	#6@10	#6@10	#6@10		#6@9								#6@10			#6@9							#6@10	
	REINF. "C"	#5@10	#5@10	#5@10		#5@9								#5@10			#5@9							#5@10	



					0.0					
					0.2					
1.25	7.75	℄ OF PIER								℄ OF ABUT.
	2.30	1.70	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	
	3.49	5.51	0.2L	0.4L	0.6L	0.8L	1.0L	1.2L	1.4L	1.6L	1.8L	
	4.42	4.58	0.3L	0.6L	0.9L	1.2L	1.5L	1.8L	2.1L	2.4L	2.7L	
	5.09	3.91	0.4L	0.8L	1.2L	1.6L	2.0L	2.4L	2.8L	3.2L	3.6L	
	5.50	3.50	0.5L	1.0L	1.5L	2.0L	2.5L	3.0L	3.5L	4.0L	4.5L	
	5.65	3.35	0.6L	1.2L	1.8L	2.4L	3.0L	3.6L	4.2L	4.8L	5.4L	
	5.64	3.40	0.7L	1.4L	2.1L	2.8L	3.5L	4.2L	4.9L	5.6L	6.3L	
	5.17	4.83	0.8L	1.6L	2.4L	3.2L	4.0L	4.8L	5.6L	6.4L	7.2L	
	4.54	4.46	0.9L	1.8L	2.7L	3.6L	4.5L	5.4L	6.3L	7.2L	8.1L	
	3.55	3.65	1.0L	2.0L	3.0L	4.0L	5.0L	6.0L	7.0L	8.0L	9.0L	
	#5@10		#5@18								#5@10	
	#6@10		#6@9								#6@10	
	#5@10		#5@9								#5@10	

APPROVED FOR CONSTRUCTION
9-7-82

NO.	REVISION	DATE
1	RAMP "D" CAMBER	JAN. '82

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

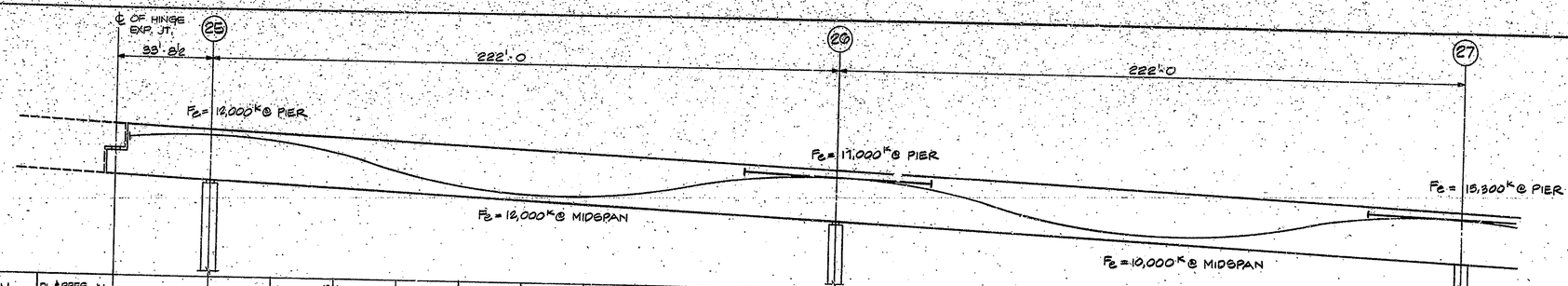
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

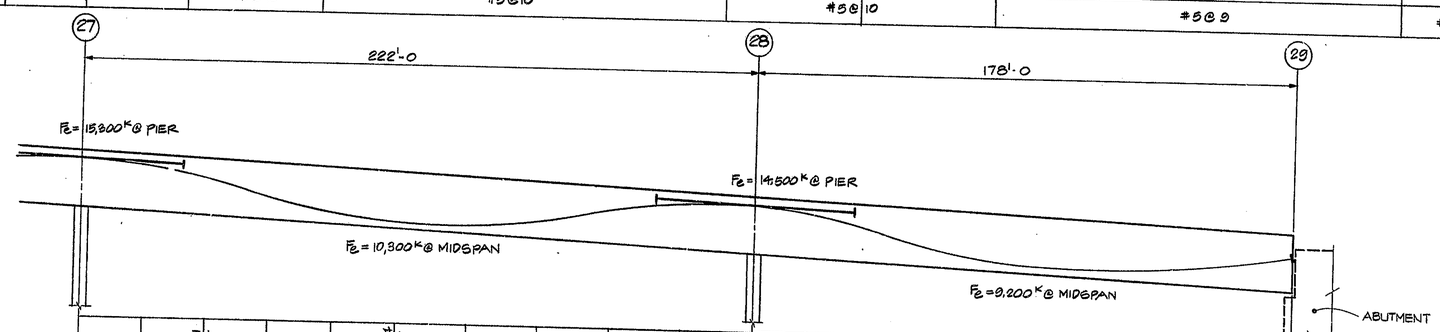
SHEET TITLE
CABLE PROFILE, FORCES AND WEB REINFORCEMENT - E.B.L. SEGMENT 6

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 8-11812
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
861



DEFLECTION OR CAMBER	DL & PRES. IN.																									
	CREEP IN.					0.5				1.0				0.4				0.1				0.4				0.1
LOCATION						1.0				2.0				0.8				0.2				0.8				0.2
C.G.S. MEASURED FROM BOT. FLG. FT.	E.B.L.	5.08	℄ OF PIER 7.75	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	℄ OF PIER	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	℄ OF PIER
C.G.S. MEASURED FROM TOP FLG. FT.	E.B.L.	3.92	1.25	2.82	5.01	6.58	7.52	7.83	7.52	6.58	5.01	2.82	1.25	2.82	5.01	6.58	7.52	7.83	7.52	6.58	5.01	2.82	1.25
WEB REINFORCEMENT	REINF. "A"	#6@9		#5@10		#5@18								#5@10				#5@18					
	REINF. "B"	#6@9		#6@10		#6@9								#6@10				#6@9				#5@10	
	REINF. "C"	#5@9		#5@10		#5@10								#5@10				#5@9				#6@10	
	REINF. "D"	#5@9		#5@10		#5@10								#5@10				#5@9				#5@10	
																						#5@10	



			0.1				0.4				0.1				0.1			0.5				0.4				
			0.2				0.8				0.2				0.2			1.0				0.8				
1.25	7.75 ℄ OF PIER	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	℄ OF PIER	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	℄ OF EXP. JT.
2.82	6.18	5.01	6.58	7.52	7.83	7.52	6.58	5.01	2.82	1.25	2.95	6.05	4.89	4.17	6.26	7.74	7.89	7.77	7.75	7.81	7.42	6.57	5.26	3.74	3.50	5.50
#5@10		#5@18							#5@10				#5@18												#5@10	
#6@10		#6@9							#6@10				#6@9												#6@10	
#5@10		#5@9							#5@10				#5@9												#5@10	
#5@10		#5@9							#5@10				#5@9												#5@10	

NOTE
SEE NOTES DWG. 850.

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

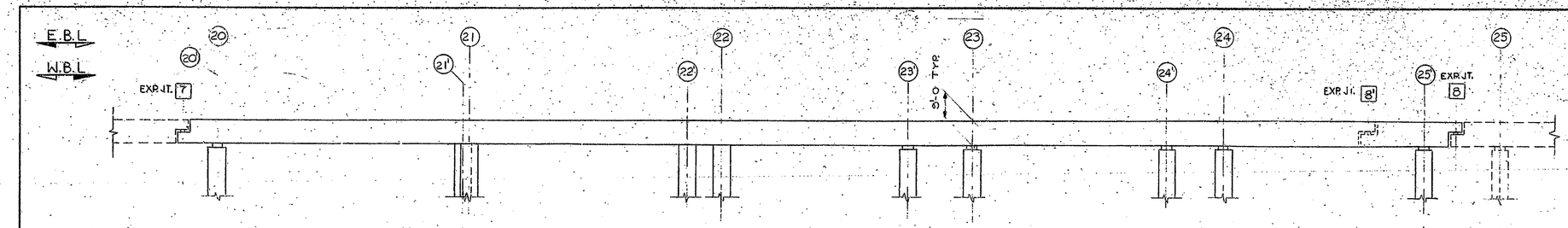
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

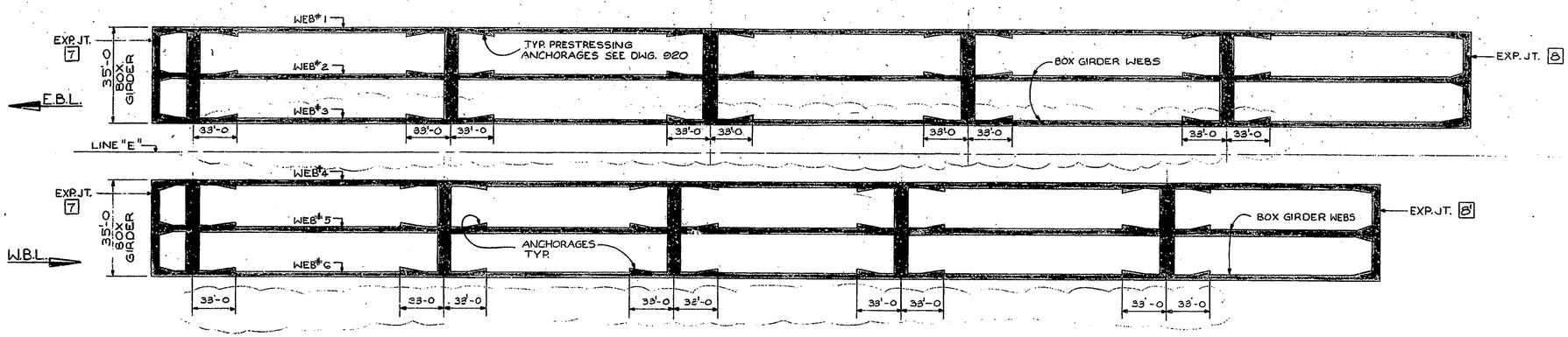
SHEET TITLE
CABLE PROFILE, FORCES AND WEB REINFORCEMENT - E.B.L. SEGMENT - 6

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

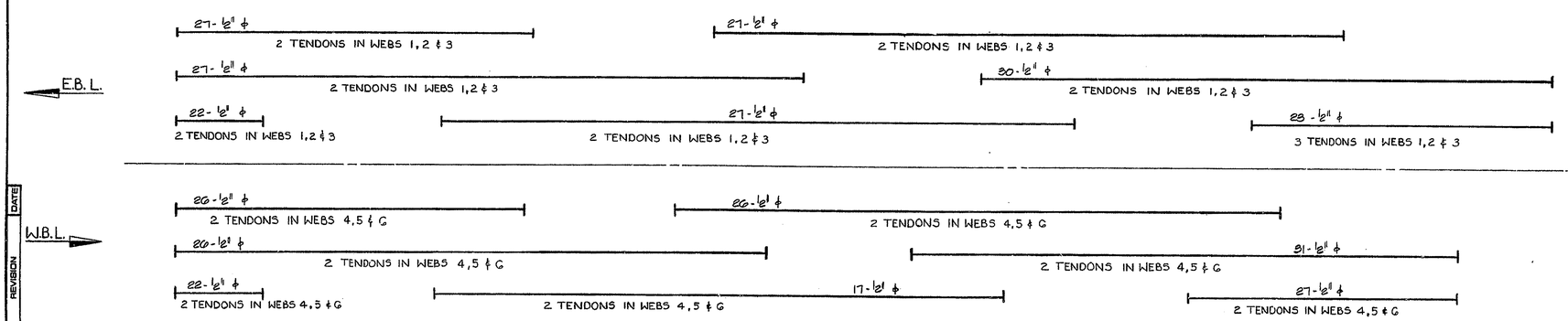
SHEET N.
860



ELEVATION - SEGMENT 5



PLAN OF BLISTERS
N.T.S.



TENDON LAYOUT
N.T.S.

NOTE

1. TENDON = ONE 4" ϕ DUCT WITH UP TO 31-½" ϕ PRESTRESSING STRANDS.
2. FINAL PRESTRESSING DETAILS SHALL BE APPROVED BY THE ENGINEER BEFORE COMMENCING WORK.

APPROVED FOR CONSTRUCTION
J. D. Mattis
J. D. MATTIS
Engineer of Bridge Plans
9-7-82

NO.	REVISION	DATE
1	BLISTER LOCATION	DEC. '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

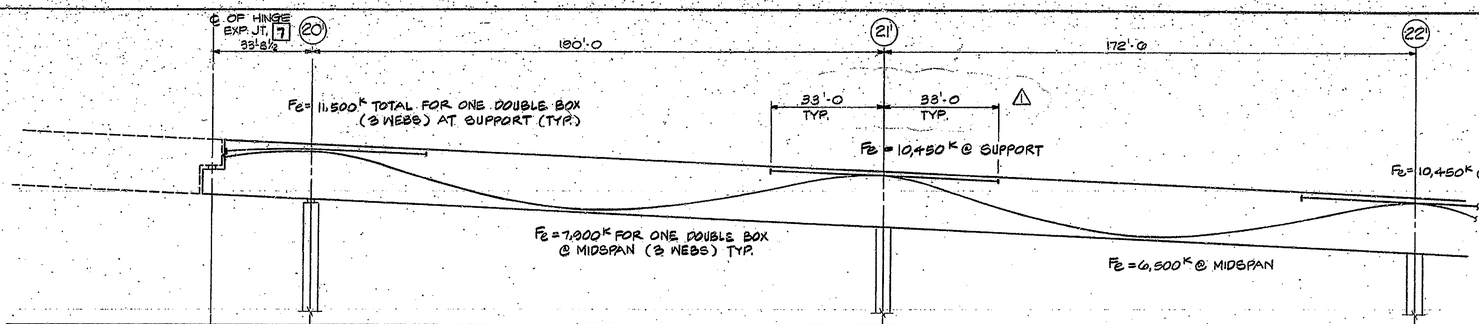
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
CABLE LAYOUT - SEGMENT 5

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 812-45-2548 CONTRACT NO. B-11612 INDIANA STATE HIGHWAY COMMISSION

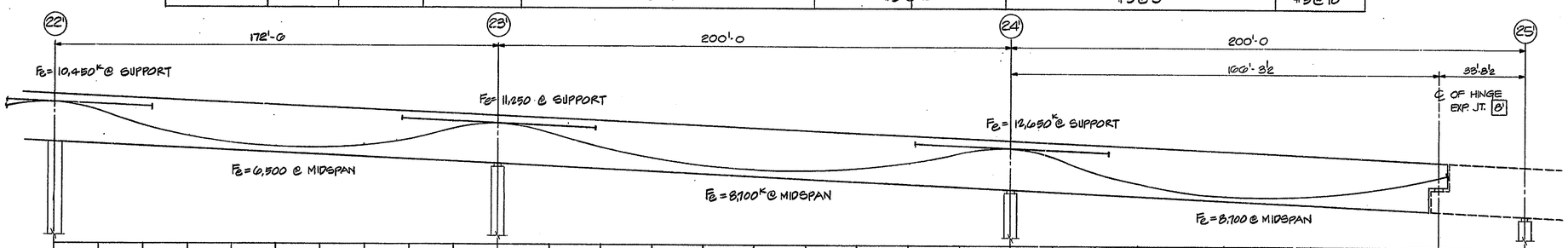
SHEET N.
852



DEFLECTION OR CAMBER	DL & PRES. (IN.)					0.5				1.0				0.4				0.1				0.4				0.1					
	CREEP (IN.)					1.0				2.0				0.8				0.2				0.8				0.2					
LOCATION			7.75 ℄ OF PIER	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	0.9L	0.8L	0.7L	0.6L	0.5L	0.4L	0.3L	0.2L	0.1L	0.9L	0.8L	0.7L	0.6L	0.5L	0.4L	0.3L	0.2L	0.1L	7.75 ℄ OF PIER
C.G.S. MEASURED FROM BOT. FLG. (FT.)	W.B.L.	5.08		6.18	6.18	3.99	2.42	1.48	1.17	1.17	1.48	2.42	3.99	6.18	6.18	3.99	2.42	1.48	1.17	1.17	1.48	2.42	3.99	6.18	6.18	3.99	2.42	1.48	1.17	1.17	1.48
C.G.S. MEASURED FROM TOP FLG. (FT.)	W.B.L.	3.92	1.25	2.82	2.82	5.01	6.58	7.92	7.83	7.92	6.58	5.01	3.09	2.82	2.82	5.01	6.58	7.92	7.83	7.92	6.58	5.01	3.09	2.82	2.82	5.01	6.58	7.92	7.83	7.92	6.58
WEB REINFORCEMENT	REINF. "A"	#6@9		#5@10		#5@18							#5@10							#5@18											#5@10
	REINF. "B"	#6@9		#6@10		#6@9							#6@10							#6@9											#6@10
	REINF. "C"	#5@9		#5@10		#5@9							#5@10							#5@9											#5@10
	REINF. "D"	#5@9		#5@10		#5@9							#5@10							#5@9											#5@10

NOTE

1. SEE NOTES DWG. 850.



			0.1				1.1				0.1				0.1				1.0				0.1				0.1				
			0.2				2.2				0.2				0.2				2.0				0.2				0.2				
7.75 ℄ OF PIER	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	7.75 ℄ OF PIER	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	7.75 ℄ OF PIER	0.05	0.1L	0.2L	0.3L	0.4L	0.5L	1.0	1.0	0.5	0.4L	0.8	0.4	5.50 ℄ OF EXP. JT.
1.25	2.82	6.18	5.01	3.09	6.58	2.42	1.48	1.17	1.48	2.42	3.09	5.01	6.18	2.82	1.25	6.18	2.42	1.48	1.17	1.48	2.42	3.09	5.01	6.18	2.82	1.25	2.95	4.17	6.20	7.74	7.23	1.77	1.25	1.19	1.48	2.48	0.91	2.40	3.74	5.50
#5@10			#5@18						#5@10		#5@9				#5@18						#5@9						#5@18						#5@10
#6@10			#6@9						#6@10		#6@9				#6@9						#6@9						#6@9						#6@10
#5@10			#5@9						#5@10		#5@9				#5@9						#5@9						#5@9						#5@10
#5@10			#5@9						#5@10		#5@9				#5@9						#5@9						#5@9						#5@10

APPROVED FOR CONSTRUCTION
Chief Bridge Plans
9-7-82

NO.	REVISION	DATE
1	BUSTER LENGTH	JAN. '82

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

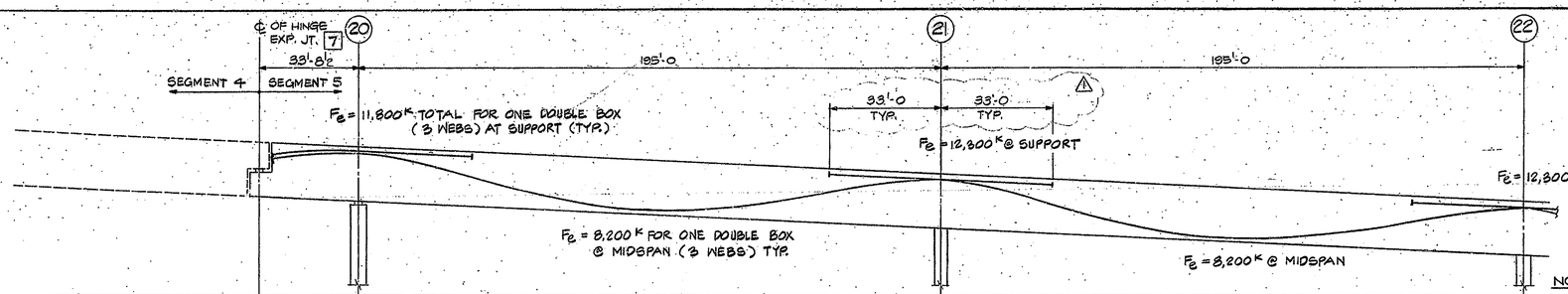
T. Y. LIN INTERNATIONAL — T. Y. Lin — ILLINOIS ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
CABLE PROFILE FORCES AND WEB REINFORCEMENT – W.B.L.

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. B-11612 INDIANA STATE HIGHWAY COMMISSION

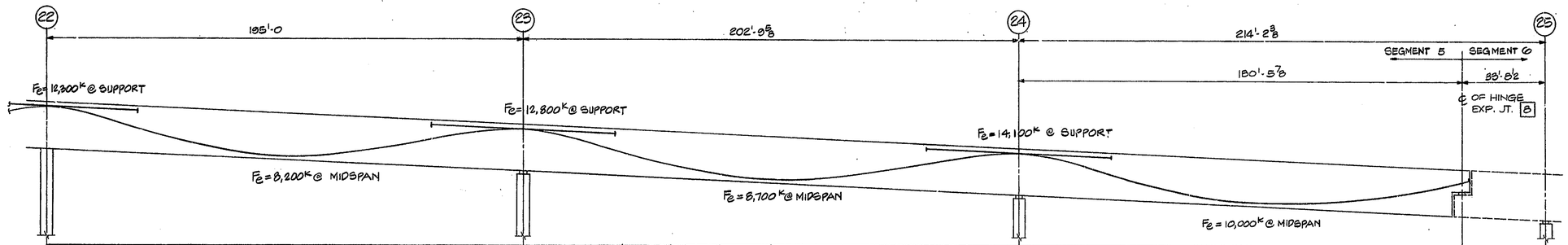
SHEET N.
851



DEFLECTION OR CAMBER	DL & PRES. (IN.)				0.5				1.0				0.4				0.1				0.4				0.1		
	CREEP (IN.)				1.0				2.0				0.8				0.2				0.8				0.2		
LOCATION			7.75 ℄ OF PIER	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	0.9L	7.75 ℄ OF PIER	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	7.75 ℄ OF PIER
C.G.S. MEASURED FROM BOT. FLG. (FT.)	E.B.L.	5.08	7.75	6.18	9.99	2.42	1.48	1.17	1.48	2.42	9.99	6.18	7.75	6.18	9.99	2.42	1.48	1.17	1.48	2.42	9.99	6.18	7.75	5.08
C.G.S. MEASURED FROM TOP FLG. (FT.)	E.B.L.	3.22	1.25	2.82	5.01	6.58	7.92	7.83	7.92	6.58	5.01	2.82	1.25	2.82	5.01	6.58	7.92	7.83	7.92	6.58	5.01	2.82	1.25	3.22
WEB REINFORCEMENT	REINF. "A"		#6@9	#5@10	#5@18							#5@10						#5@18						#5@10
	REINF. "B"		#6@9	#6@10	#6@9							#6@10						#6@9						#6@10
	REINF. "C"		#5@9	#5@10	#5@9							#5@10						#5@9						#5@10
	REINF. "D"		#5@9	#5@10	#5@9							#5@10						#5@9						#5@10

NOTE

1. MINIMUM CONSTRUCTION CAMBER SHALL BE EQUAL TO THE SUM OF D.L. & PRES. & CREEP DEFLECTION. THE SYMBOL ↓ INDICATES DOWNWARD DEFLECTION, THEREFORE CAMBER DEFLECTION IS UP ↑.
2. SEE DWG. 540 FOR 'A', 'B', 'C' & 'D' BARS.



		0.1			1.1			0.1				0.1			1.0			0.1				0.1			0.5			0.4			
		0.2			2.2			0.2				0.2			2.0			0.2				0.2			1.0			0.8			
7.75 ℄ OF PIER	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	7.75 ℄ OF PIER	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	7.75 ℄ OF PIER										8.80 ℄ OF EXP. JT.	
1.25	2.82	6.18	9.99	2.42	1.48	1.17	1.48	2.42	9.99	6.18	2.82	1.25	2.82	6.18	9.99	2.42	1.48	1.17	1.48	2.42	9.99	6.18	1.25	2.82	6.18	4.41	2.84	1.76	1.17	1.04	1.44	2.31	3.66	5.80	8.80
#5@10		#5@18						#5@10						#5@18						#5@10						#5@18						#5@10	
#6@10		#6@9						#6@10						#6@9						#6@10						#6@9						#6@10	
#5@10		#5@9						#5@10						#5@9						#5@10						#5@9						#5@9	
#5@10		#5@9						#5@10						#5@9						#5@10						#5@9						#5@10	

APPROVED FOR CONSTRUCTION
A. D. MATTE
Engineer of Bridge Plans
9-7-82

NO.	REVISION	DATE
1	BLISTER LENGTH	JAN. '82

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

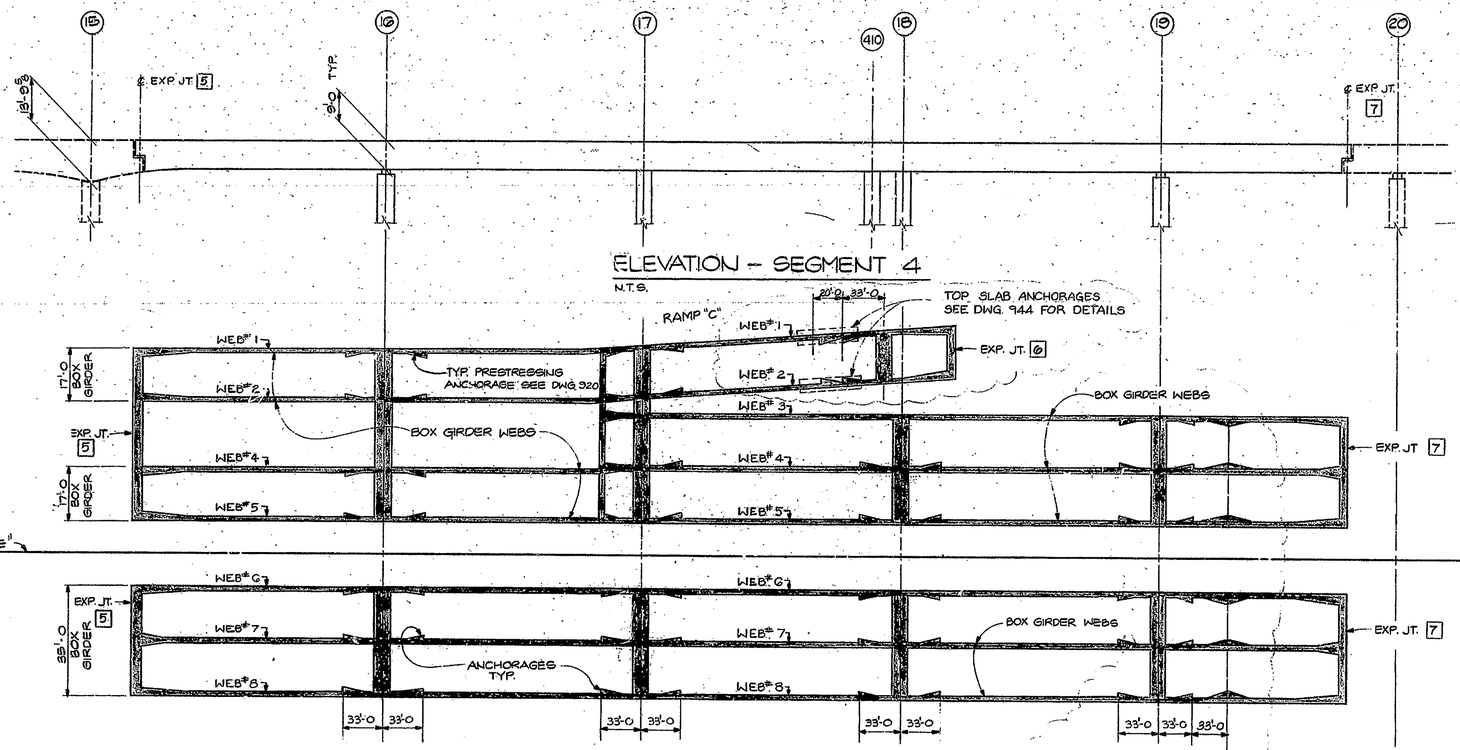
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
CABLE PROFILE FORCES AND WEB REINFORCEMENT — E.B.L.

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 9-11612 INDIANA STATE HIGHWAY COMMISSION

SHEET N.
850



APPROVED FOR CONSTRUCTION
J. D. Mattis
J. D. MATTIS
Engineer of Bridge Plans
9-7-82

NOTE

1. TENDON = ONE 4" ϕ DUCT WITH UP TO 31 - ½" ϕ PRESTRESSING STRANDS.
2. FINAL PRESTRESSING DETAILS SHALL BE APPROVED BY THE ENGINEER BEFORE COMMENCING WORK.
3. ◇ INDICATES COUPLER LOCATION

NO.	REVISION	DATE
1	CONST. JT.	DEC. '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

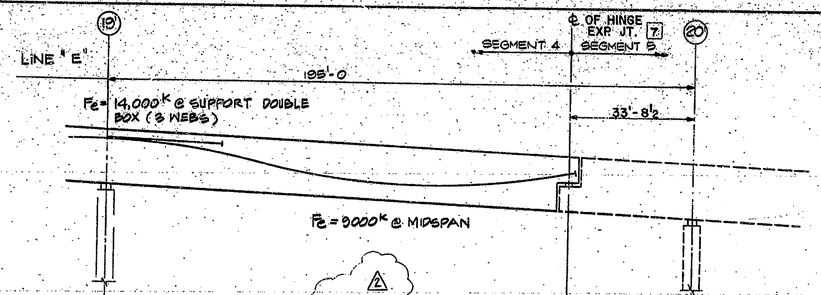
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
CABLE LAYOUT - SEGMENT 4

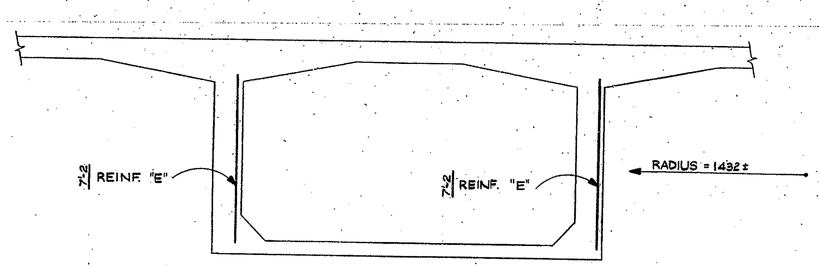
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 8-11612 INDIANA STATE HIGHWAY COMMISSION

SHEET N.
844



DEFLECTION OR CAMBER	DL. & PRES. (IN.)			0.1 ↓			0.15 ↓			0.1 ↓			
	CREEP (IN.)			0.2 ↓			0.3 ↓			0.2 ↓			
LOCATION		℄ OF PIER	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	℄ OF E.J.	
C.G.S. MEASURED FROM BOT. FLG. (FT.)	W.B.L.	7.75	6.05	4.17	2.74	1.77	1.25	1.19	1.58	2.43	3.74	5.50	
C.G.S. MEASURED FROM TOP. FLG. (FT.)	W.B.L.	1.25	2.95	4.83	6.26	7.23	7.75	7.81	7.42	6.57	5.26	3.50	
WEB REINFORCEMENT	REINF. "A"	#5@8	#5@10	#5@18							#5@10		
	REINF. "B"	#6@8	#6@10	#6@9							#6@10		
	REINF. "C"	#5@8	#5@8	#5@9							#5@10		
	REINF. "D"	#5@8	#5@8	#5@9							#5@10		
	REINF. "E"				#5@18				#5@18				

EDGE OF BLISTER (TYP.)



GIRDER SECTION
3/8" = 1'-0

NOTE

1. SEE NOTES DWG 840
2. "E" BAR SHOWN FOR ALL WEBS (8) FOR SEGMENT 4 AS INDICATED ON DWGS. 840, 841, 842 & 843.
3. LOCATE BAR BETWEEN "A" BARS ON WEB FACE WHICH IS ON INSIDE OF RADIUS. (SEE SECT. ABOVE)
4. "E" BARS ARE NOT REQUIRED IN BLISTER AREAS.

APPROVED FOR CONSTRUCTION
J. D. Mattis
J. D. MATTIS
Engineer of Bridge Plans
10-13-82

NO.	REVISION	DATE
2	DEFLECTION-CAMBER	JULY '82
1	ADD "E" BAR	DEC. '81

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

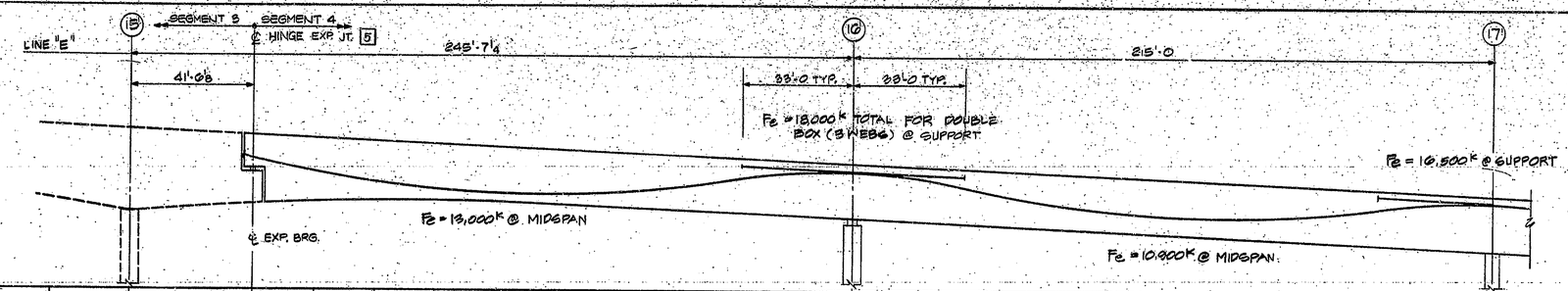
T. Y. LIN REGISTERED PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

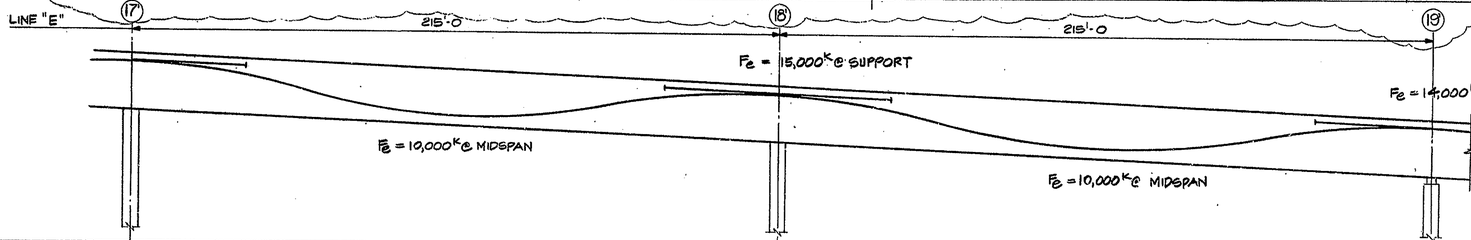
SHEET TITLE
CABLE PROFILE FORCES AND WEB REINFORCEMENT – W.B.L.-2

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
843



DEFLECTION OR CAMBER	DL & PRES. (IN.)				0.3 ↓			0.6 ↓			0.3 ↓			0.1 ↓			0.3 ↓			0.1 ↓		
	CREEP (IN.)				0.6 ↓			1.2 ↓			0.6 ↓			0.2 ↓			0.6 ↓			0.2 ↓		
LOCATION			4.70 ℄ OF EXP. JT.	0.9L	0.8L	0.7L	0.6L	0.5L	0.4L	0.3L	0.2L	0.1L	℄ OF PIER	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	℄ OF PIER
C.G.S. MEASURED FROM BOT. FLG. (FT.)	W.B.L.		6.20	4.29	2.61	1.41	0.96	1.17	1.86	2.99	4.55	2.44	7.75	6.18	3.99	2.42	1.48	1.17	1.48	2.42	3.99	6.18	7.75
C.G.S. MEASURED FROM TOP FLG. (FT.)	W.B.L.		7.27	6.20	7.27	7.89	8.08	7.83	7.14	6.01	4.45	5.56	1.25	2.82	5.01	6.58	7.52	7.83	7.52	6.58	5.01	2.82	1.25
WEB REINFORCEMENT	REINF. 'A'		#5@10	#5@18									#5@9	#5@9	#5@18							#5@9	
	REINF. 'B'		#6@10	#6@9									#6@9	#6@9	#6@9							#6@9	
	REINF. 'C'		#5@10	#5@9									#5@9	#5@9	#5@9							#5@9	
	REINF. 'D'		#5@10	#5@9									#5@9	#5@9	#5@9							#5@9	
	REINF. 'E'			#5@18					#5@18							#5@18				#5@18			



DEFLECTION OR CAMBER	DL & PRES. (IN.)			0.2 ↓			0.3 ↓			0.2 ↓				0.1 ↓			0.4 ↓			0.1 ↓		
	CREEP (IN.)			0.4 ↓			0.6 ↓			0.4 ↓				0.2 ↓			0.8 ↓			0.2 ↓		
LOCATION		℄ OF PIER	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	℄ OF PIER	0.1L	0.2L	0.3L	0.4L	0.5L	0.6	0.7	0.8	0.9	℄ OF PIER
C.G.S. MEASURED FROM BOT. FLG. (FT.)	W.B.L.	7.75	6.18	3.99	2.42	1.48	1.17	1.48	2.42	3.99	6.18	7.75	6.18	3.99	2.42	1.48	1.17	1.48	2.42	3.99	6.18	7.75
C.G.S. MEASURED FROM TOP FLG. (FT.)	W.B.L.	1.25	2.82	5.01	6.58	7.52	7.83	7.52	6.58	5.01	2.82	1.25	2.82	5.01	6.58	7.52	7.83	7.52	6.58	5.01	2.82	1.25
WEB REINFORCEMENT	REINF. 'A'		#5@9	#5@18							#5@9		#5@9	#5@18							#5@10	#5@8
	REINF. 'B'		#6@9	#6@9							#6@9		#6@9	#6@9							#6@10	#6@8
	REINF. 'C'		#5@9	#5@9							#5@9		#5@9	#5@9							#5@10	#5@8
	REINF. 'D'		#5@9	#5@9							#5@9		#5@9	#5@9							#5@10	#5@8
	REINF. 'E'			#5@18				#5@18							#5@18					#5@18		

EDGE OF BLISTER (TYP.)

NOTE

1. SEE NOTES DWG. 841.
2. SEE DWG. 843 △1 FOR LOCATING "E" BAR. "E" BARS ARE NOT REQUIRED IN BLISTER AREAS.

APPROVED FOR CONSTRUCTION
J. D. Mattis 9-7-82
J. D. MATTIS
Engineer of Bridge Plans

NO.	REVISION	DATE
△1	ADD "E" BAR	DEC. '81

N	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

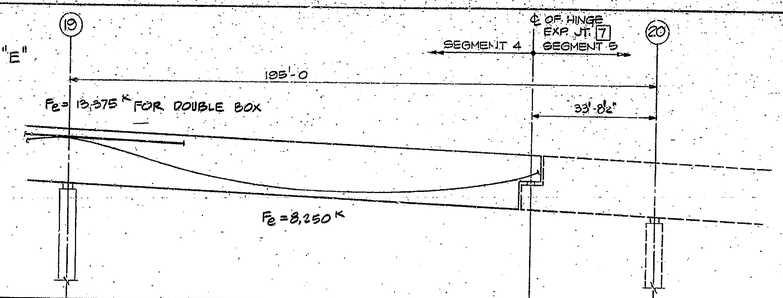
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

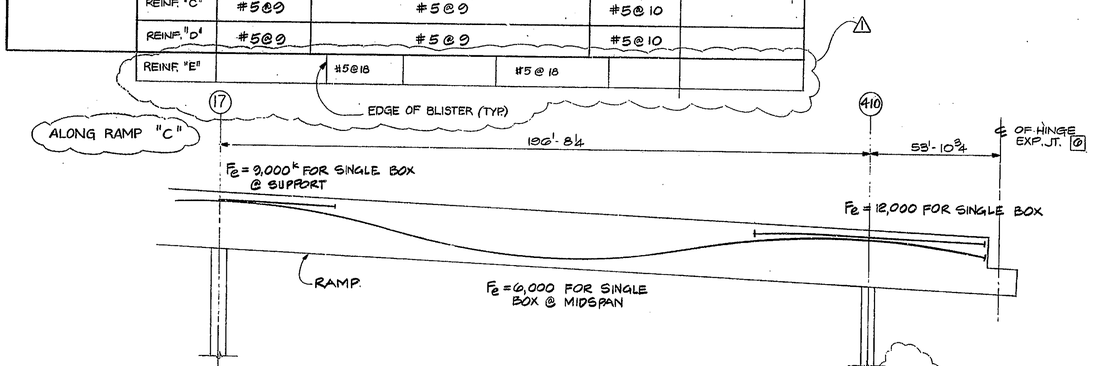
SHEET TITLE
CABLE PROFILE FORCES AND WEB REINFORCEMENT – W.B.L. – 1

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2549 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N
842



DEFLECTION OR CAMBER	D.L.&PRES.(IN.)			0.1 ↓			0.15 ↓			0.1 ↓				
	CREEP (IN.)			0.2 ↓			0.3 ↓			0.2 ↓				
LOCATION		℄ OF PIER	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	℄ OF E.J.		
C.G.S. MEASURED FROM BOT. FLG. (FT.)	E.B.L.	7.75	6.46	4.41	2.84	1.76	1.17	1.06	1.44	2.31	6.66	5.50		
C.G.S. MEASURED FROM TOP FLG. (FT.)	E.B.L.	1.25	2.54	4.59	6.16	7.24	7.83	7.94	7.56	6.69	5.34	3.50		
WEB REINFORCEMENT	REINF. "A"	#5@9		#5@18						#5@10				
	REINF. "B"	#6@9		#6@9						#6@10				
	REINF. "C"	#5@9		#5@9						#5@10				
	REINF. "D"	#5@9		#5@9						#5@10				
	REINF. "E"			#5@18			#5@18							



DEFLECTION OR CAMBER	D.L.&PRES.(IN.)			0.3 ↓			0.5 ↓			0.1 ↓		0.0	0.2 ↓	0.6 ↓
	CREEP (IN.)			0.5 ↓			1.0 ↓			0.2 ↓		0.0	0.4 ↓	1.2 ↓
LOCATION		℄ OF PIER	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	℄ OF PIER	0.5L	℄ OF E.J.
C.G.S. MEASURED FROM BOT FLG (FT)	E.B.L.	7.75	6.18	3.99	2.42	1.48	1.17	1.48	2.42	3.99	6.18	7.75		5.10
C.G.S MEASURED FROM TOP FLG. (FT.)	E.B.L.	1.25	2.82	5.01	6.58	7.52	7.83	7.52	6.58	5.01	2.82	1.25		3.50
WEB REINFORCEMENT	REINF. "A"	#5@8	#5@10	#5@18						#5@10	#5@8	#6@10	#5@10	
	REINF. "B"	#6@8	#6@10	#6@9						#6@10	#6@8	#6@10	#6@10	
	REINF. "C"	#5@8	#5@8	#5@9						#5@10	#5@8	#5@10	#5@10	
	REINF. "D"	#5@8	#5@8	#5@9						#5@10	#5@8	#5@10	#5@10	
	REINF. "E"			#5@18			#5@18							

NOTE

1. SEE NOTES DWG. 840.
2. SEE DWG 843 △1 FOR LOCATING "E" BAR. "E" BARS ARE NOT REQUIRED IN BLISTER AREAS.

APPROVED ... D. MATTIS Engineer of Bridge Plans 9-7-82

NO.	REVISION	DATE
△1	"E" BAR AND CAMBER	NOV. '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

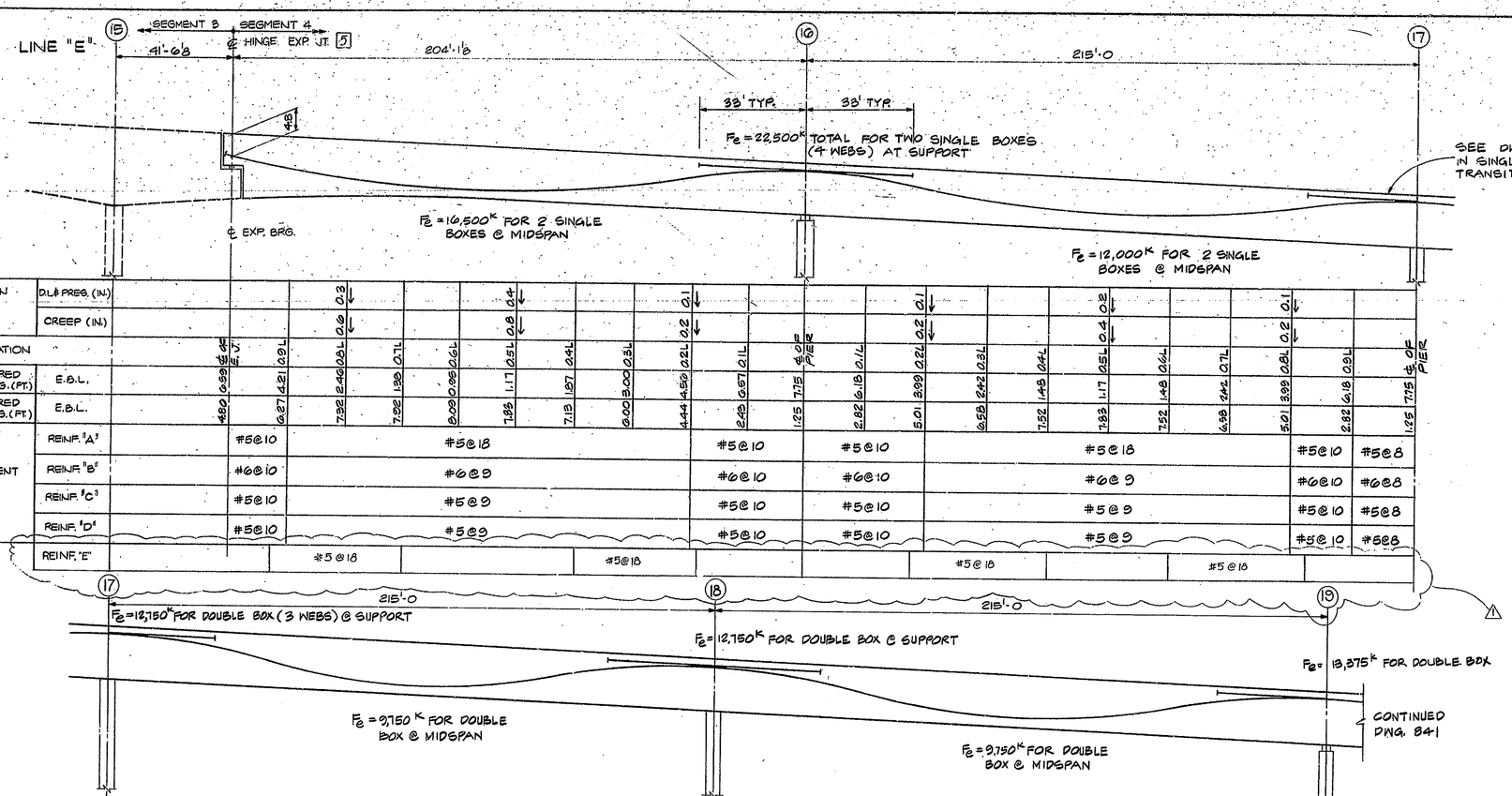
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
CABLE PROFILE FORCES AND WEB REINFORCEMENT – E.B.L. 2

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N. 841



DEFLECTION OR CAMBER	D.L.& PRES. (IN.)				0.3 ↓			0.4 ↓			0.1 ↓				0.1 ↓			0.2 ↓			0.1 ↓		
	CREEP (IN.)				0.6 ↓			0.8 ↓			0.2 ↓				0.2 ↓			0.4 ↓			0.2 ↓		
LOCATION			℄ E.J.	0.2L	0.4L	0.6L	0.7L	0.5L	0.4L	0.3L	0.2L	0.1L	℄ OF PIER	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	℄ OF PIER
C.G.S. MEASURED FROM BOT. FLG. (FT.)	E.B.L.		4.80	6.27	7.32	7.92	8.09	7.85	7.13	6.00	4.44	2.48	1.25	2.82	5.01	6.58	7.52	7.83	7.52	6.58	5.01	2.82	1.25
C.G.S. MEASURED FROM TOP FLG. (FT.)	E.B.L.		0.59	4.21	2.46	1.20	0.99	1.17	1.87	3.00	4.56	6.67	7.75	6.18	3.99	2.42	1.48	1.17	1.48	2.42	3.99	6.18	7.75
WEB REINFORCEMENT	REINF. "A"		#5@10	#5@18								#5@10		#5@10	#5@18						#5@10	#5@8	
	REINF. "B"		#6@10	#6@9								#6@10		#6@10	#6@9						#6@10	#6@8	
	REINF. "C"		#5@10	#5@9								#5@10		#5@10	#5@9						#5@10	#5@8	
	REINF. "D"		#5@10	#5@9								#5@10		#5@10	#5@9						#5@10	#5@8	
	REINF. "E"			#5@18				#5@18							#5@18					#5@18			

DEFLECTION OR CAMBER ↓ DOWN	DL & PRES. (IN.)			0.3 ↓			0.5 ↓			0.1 ↓				0.1 ↓			0.2 ↓			0.1 ↓		
	CREEP (IN.)			0.5 ↓			1.0 ↓			0.2 ↓				0.2 ↓			0.4 ↓			0.2 ↓		
LOCATION		℄ OF PIER	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	℄ OF PIER	0.1L	0.2L	0.3L	0.4L	0.5L	0.6	0.7	0.8	0.9	℄ OF PIER
C.G.S. MEASURED FROM BOT. FLG. (FT.)	E.B.L.	1.75	6.18	3.99	2.42	1.48	1.17	1.48	2.42	3.99	6.18	7.75	6.18	3.99	2.42	1.48	1.17	1.48	2.42	3.99	6.18	7.75
C.G.S. MEASURED FROM TOP FLG. (FT.)	E.B.L.	1.25	2.82	5.01	6.58	7.52	7.83	7.52	6.58	5.01	2.82	1.25	2.82	5.01	6.58	7.52	7.83	7.52	6.58	5.01	2.82	1.25
WEB REINFORCEMENT	REINF. "A"	#5@8	#5@10	#5@18						#5@10	#5@8	#5@8	#5@10	#5@18							#5@9	
	REINF. "B"	#6@8	#6@10	#6@9						#6@10	#6@8	#6@6	#6@10	#6@9							#6@9	
	REINF. "C"	#5@8	#5@10	#5@9						#5@10	#5@8	#5@8	#5@10	#5@9							#5@9	
	REINF. "D"	#5@8	#5@10	#5@9						#5@10	#5@8	#5@8	#5@10	#5@9							#5@9	
	REINF. "E"			#5@18				#5@18							#5@18					#5@18		

EDGE OF BLISTER (TYP.)

NOTE

1. MINIMUM CONSTRUCTION CAMBER SHALL BE EQUAL TO THE SUM OF D.L. & PRES. & CREEP DEFLECTION. THE SYMBOL ↓ INDICATES DOWNWARD DEFLECTION, THEREFORE CAMBER DIRECTION IS UP ↑.
2. SEE DWG. 540 FOR "A", "B", "C", & "D" BAR.
3. SEE DWG. 843 △1 FOR LOCATING "E" BAR. "E" BARS ARE NOT REQUIRED IN BLISTER AREAS.

APPROVED FOR CONSTRUCTION
J. C. MATTIS
Engineer of Bridge Plans
9-7-82

NO.	REVISION	DATE
△1	ADD "E" BAR	NOV. '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

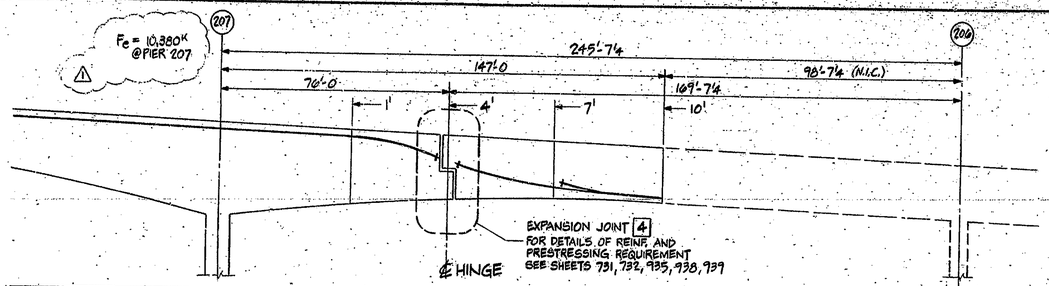
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
CABLE PROFILE FORCES AND WEB REINFORCEMENT – E.B.L. I

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
840



DEFLECTION OR CAMBER	D.L. & PRES. (IN.)					0.33 ↓	0.04 ↓	0.23 ↑	0.46 ↑	0.72 ↑						
	CREEP (IN.)															
LOCATION		0.25L	0.40L	0.50L	0.75L		0.10L	0.20L	0.30L	0.40L	0.50L	0.60L	0.70L	0.80L	0.90L	
C.G.S. MEASURED FROM BOT. FLG. (FT.)	W.B.L.	2.47	11.42	11.42	10.38	2.82 (SEE 935) 4.77 (SEE 939)	6.12	9.03	2.18	0.58	0.50					
C.G.S MEASURED FROM TOP FLG. (FT.)	W.B.L.	0.125	0.125	0.125	1.30		3.69	6.41	7.71	9.44						
WEB REINFORCEMENT	REINF. "A"	#5 @ 10"				#5 @ 15"		#5 @ 15"								
	REINF. "B"	#6 @ 10"						#6 @ 15"								
	REINF. "C"	#5 @ 10"						#5 @ 15"								
	REINF. "D"	(NOT USED)														

END OF CONTRACT
RAMP "A" STA. 1+15.79

NOTES:

1. REF. SHEET 531 FOR PLACEMENT OF WEB REINF. "A", "B" AND "C" BARS.
2. REF. SHEET 430 FOR DEPTH OF GIRDER AND BOTTOM SLAB THICKNESS.
3. PLACEMENT OF DUCTS FROM HINGE TO PIER 206 SHALL BE IN ACCORDANCE WITH THE C.G.S. NOTED ON THIS SHEET AND THE ASSOCIATED DRAWINGS OF THE ADJACENT CONTRACT. CARE SHOULD BE TAKEN TO ENSURE A SMOOTH TRANSITION OF PRESTRESSING TENDONS AT THIS LOCATION.
4. MINIMUM CONSTRUCTION CAMBER SHALL BE EQUAL TO THE SUM OF THE D.L. AND PRESTRESSING AND CREEP DEFLECTION. THE SYMBOL ↓ INDICATES DOWNWARD DEFLECTION, THEREFORE, CAMBER DIRECTION IS UP.

APPROVED FOR CONSTRUCTION

W. B. ABBOTT
Assistant Engineer of Bridge Design 10-26-81

No.	REVISION	DATE
1	EFFECTIVE FORCE	OCT. '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T. Y. LIN REGISTERED PROFESSIONAL ENGINEER INDIANA

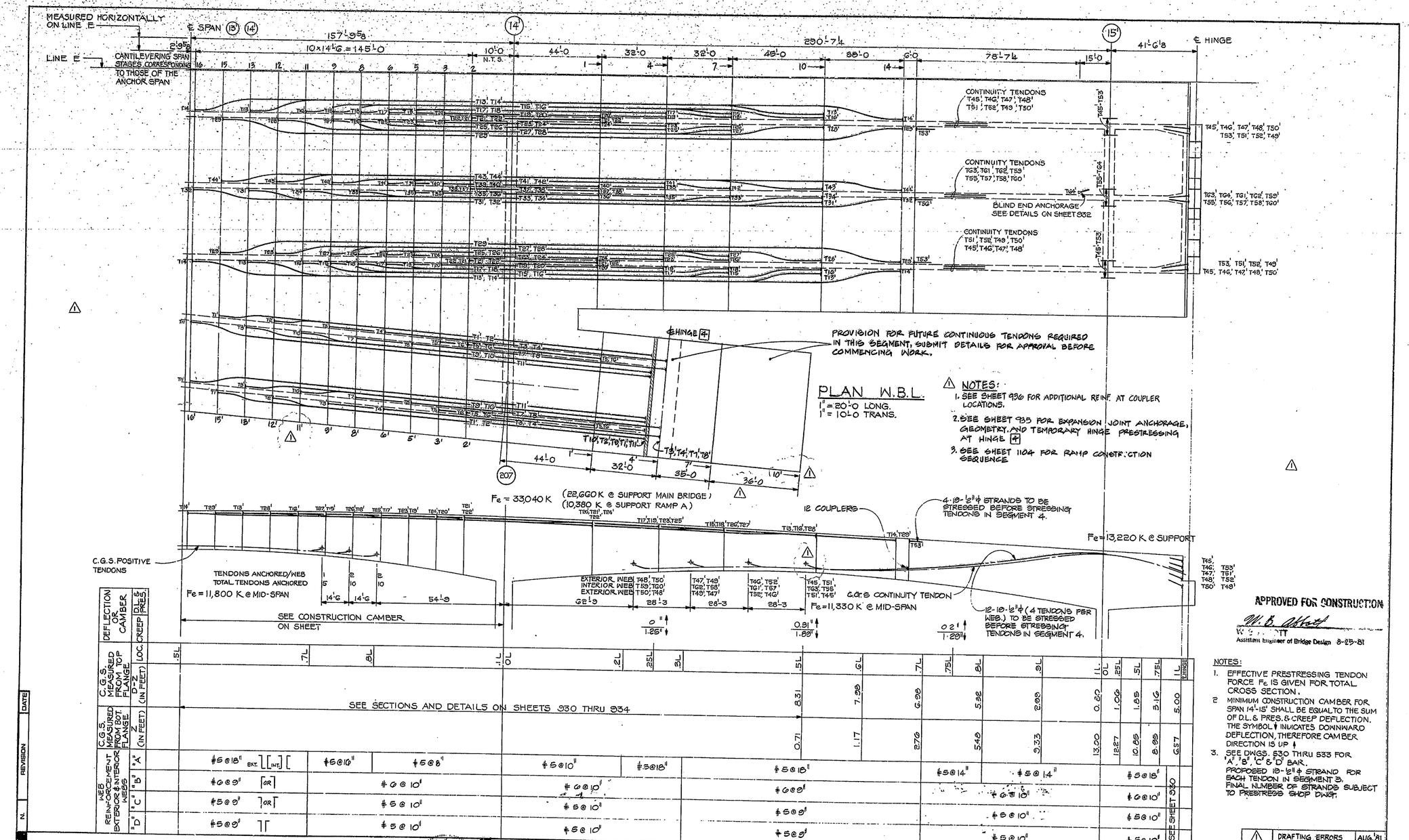
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE

CABLE PROFILE, FORCES AND WEB REINF. - W.B.L. RAMP "A"

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. B-11812 INDIANA STATE HIGHWAY COMMISSION

SHEET N.
834



NOTES:

1. SEE SHEET 936 FOR ADDITIONAL REINF. AT COUPLER LOCATIONS.
2. SEE SHEET 935 FOR EXPANSION JOINT ANCHORAGE, GEOMETRY, AND TEMPORARY HINGE PRESTRESSING AT HINGE ⊞
3. SEE SHEET 1104 FOR RAMP CONSTRUCTION SEQUENCE

APPROVED FOR CONSTRUCTION

W. B. Abbott

Assistant Engineer of Bridge Design 8-25-81

NOTES:

1. EFFECTIVE PRESTRESSING TENDON FORCE Fe IS GIVEN FOR TOTAL CROSS SECTION.
2. MINIMUM CONSTRUCTION CAMBER FOR SPAN 14'-15' SHALL BE EQUAL TO THE SUM OF D.L. & PRES. & CREEP DEFLECTION. THE SYMBOL ↑ INDICATES DOWNWARD DEFLECTION, THEREFORE CAMBER DIRECTION IS UP ↑
3. SEE DWGS. 530 THRU 533 FOR 'A', 'B', 'C' & 'D' BAR. PROPOSED 19-½"ϕ STRAND FOR EACH TENDON IN SEGMENT 3. FINAL NUMBER OF STRANDS SUBJECT TO PRESTRESS SHOP DWGS.

No.	REVISION	DATE
1	DRAFTING ERRORS	AUG. '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

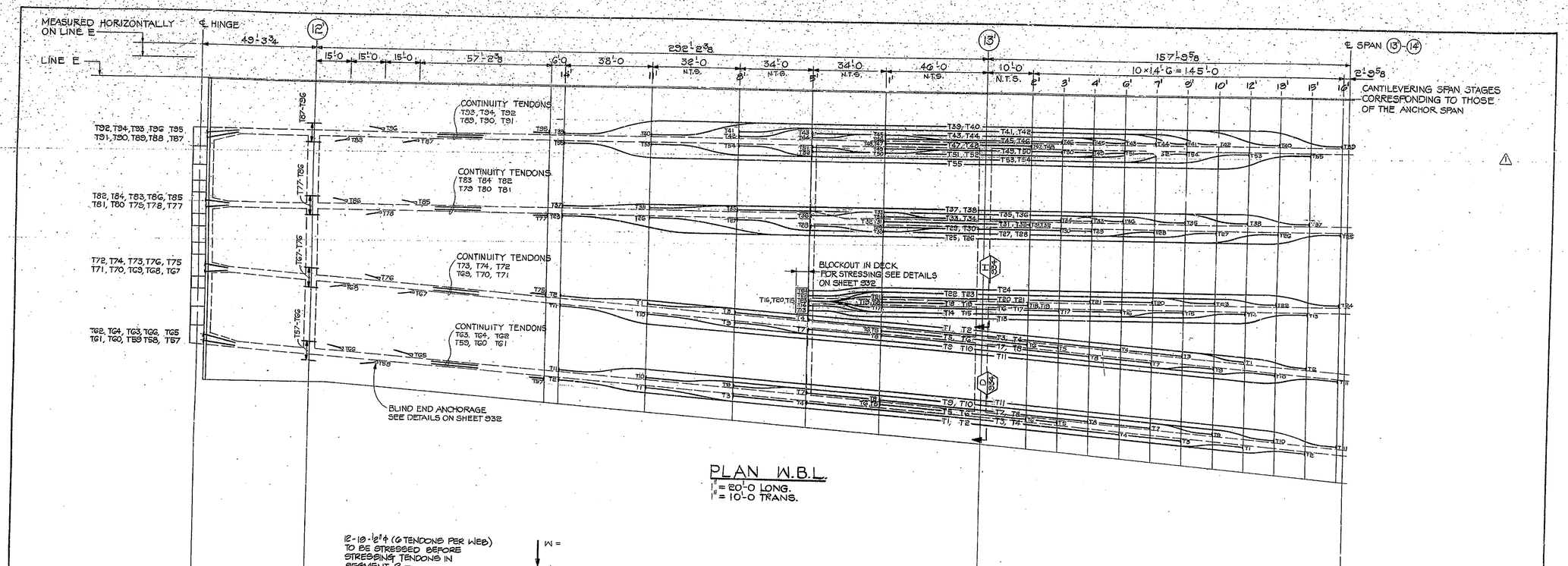
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE **CABLE LAYOUT AND PROFILE, FORCES AND WEB REINFORCEMENT W.B.L. 2 – SEGMENT 3**

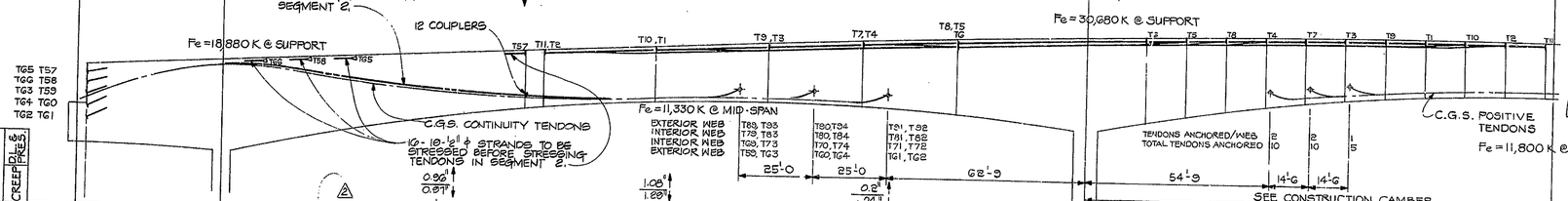
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11812 INDIANA STATE HIGHWAY COMMISSION

SHEET N. **833**



PLAN W.B.L.

1" = 20'-0 LONG.
1" = 10'-0 TRANS.



DEFLECTION OR CAMBER	DL & PRES.																												
	CREEP																												
	LOC.	℄ HINGE OL	.25L	.5L	.75L	1L	OL	.1L	.2L	.25L	.3L	.4L	.5L	.7L	.75L	.8L	1L	OL	.2L	.3L	.5L								
C.G.S. MEASURED FROM TOP FLANGE	(IN FEET)	4.60	2.94	1.75	1.04	0.80		3.00	5.32		6.57	7.28	8.30																
C.G.S. MEASURED FROM BOT. FLANGE	(IN FEET)	7.40	9.77	11.73	13.28	14.20		10.09	6.09		3.13	1.34	0.71																
WEB REINFORCEMENT EXTERIOR & INTERIOR WEBS	# "A"	SEE SHEET 930	#5@10" EXT. [INT. [					#5@18"		#5@18"			#5@18"				#5@16"	#5@16"	#5@8"		#5@16"	#5@18"							
	# "B"		#6@10" [OR]					#6@10"					#6@9"					#6@10"	#6@10"			#6@9"							
	# "C"		#5@10"]OR[					#5@10"					#5@9"					#5@10"	#5@10"			#5@6"							
	# "D"		#5@10"]T[					#5@10"					#5@9"					#5@10"	#5@10"			#5@6"							

APPROVED FOR CONSTRUCTION
J. D. Matthews
J. D. Matthews
Engineer of Bridges
9-7-82

APPROVED FOR CONSTRUCTION
W. B. Abbott
W. B. ABBOTT
Assistant Engineer of Bridge Design 10-26-81

NOTES:

1. EFFECTIVE PRESTRESSING TENDON FORCE F_e IS GIVEN FOR TOTAL CROSS SECTION.
2. DEAD WEIGHT IS PLACED BEFORE STRESSING THE TENDONS AT HINGE AND BEFORE CLOSING THE SIDE GAP. DWG. 1102
3. MINIMUM CONSTRUCTION CAMBER FOR SPAN 12-13 SHALL BE EQUAL TO THE SUM OF D.L.&PRES.& CREEP DEFLECTION. THE SYMBOL ↓ INDICATES DOWNWARD DEFLECTION, THEREFORE CAMBER DIRECTION IS UP ↑
4. SEE DWGS. 530 THRU 533 FOR "A", "B", "C" & "D" BAR.
5. PROPOSED 10-1/2"ϕ STRANDS FOR EACH TENDON IN "SEGMENT" 3. FINAL NUMBER OF STRANDS SUBJECT TO PRESTRESS SHOP DWG.

NO.	REVISION	DATE
2	"A" BAR	SEPT. '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

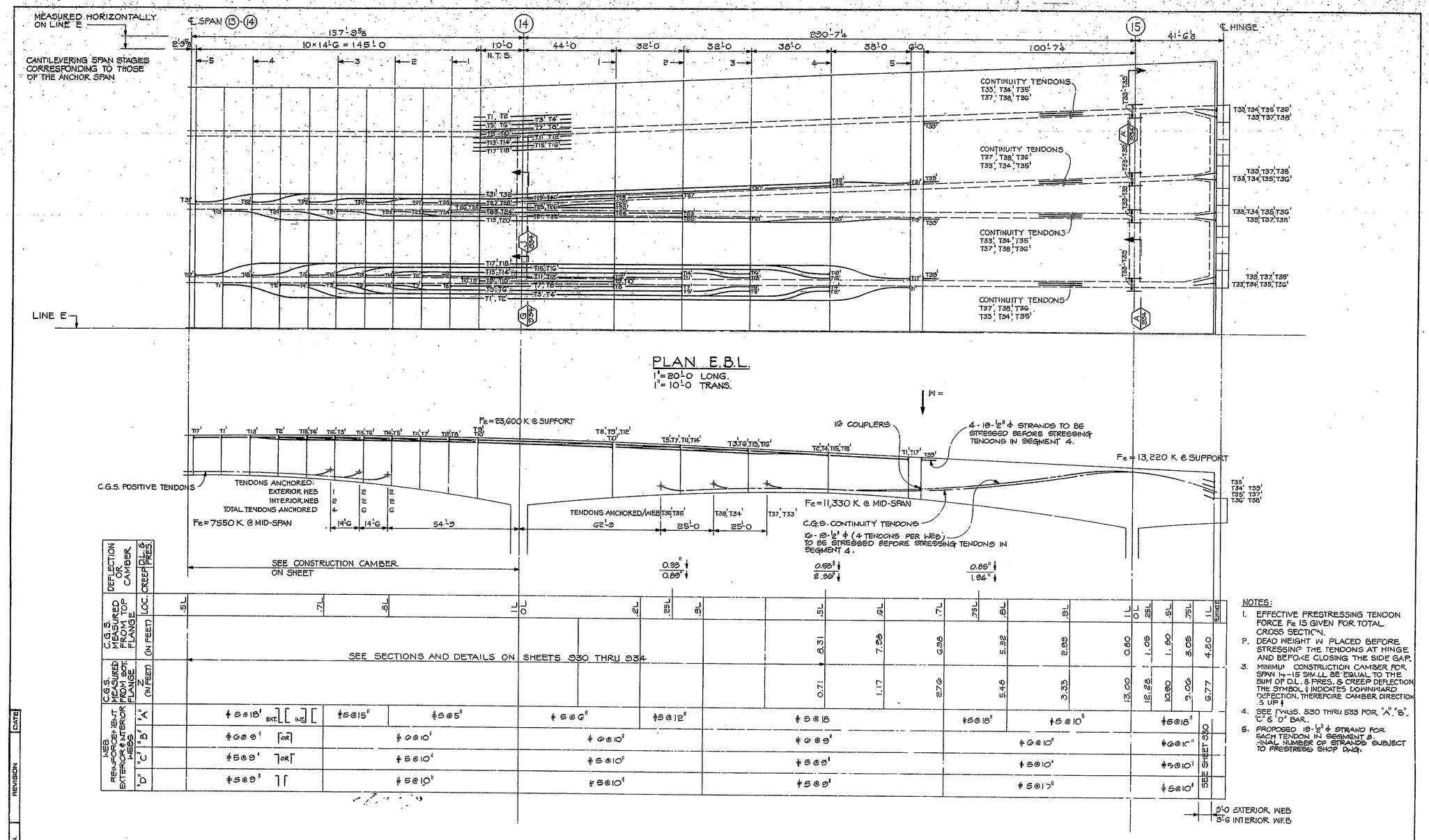
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
CABLE LAYOUT AND PROFILE, FORCES AND WEB REINFORCEMENT
W.B.L. 1 – SEGMENT 3

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
832



NOTES:

1. EFFECTIVE PRESTRESSING TENDON FORCE Fe IS GIVEN FOR TOTAL CROSS SECTION.
2. DEAD WEIGHT W PLACED BEFORE STRESSING THE TENDONS AT HINGE AND BEFORE CLOSING THE SIDE GAP.
3. MINIMUM CONSTRUCTION CAMBER FOR SPAN 14-15 SHALL BE EQUAL TO THE SUM OF D.L. & PRES. & CREEP DEFLECTION. THE SYMBOL ↓ INDICATES DOWNWARD DEFECTION, THEREFORE CAMBER DIRECTION IS UP ↑
4. SEE FIGS. 530 THRU 533 FOR "A", "B", "C" & "D" BAR.
5. PROPOSED 19-½" ϕ STRAND FOR EACH TENDON IN SEGMENT 3. FINAL NUMBER OF STRANDS SUBJECT TO PRESTRESS SHOP DWG.

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

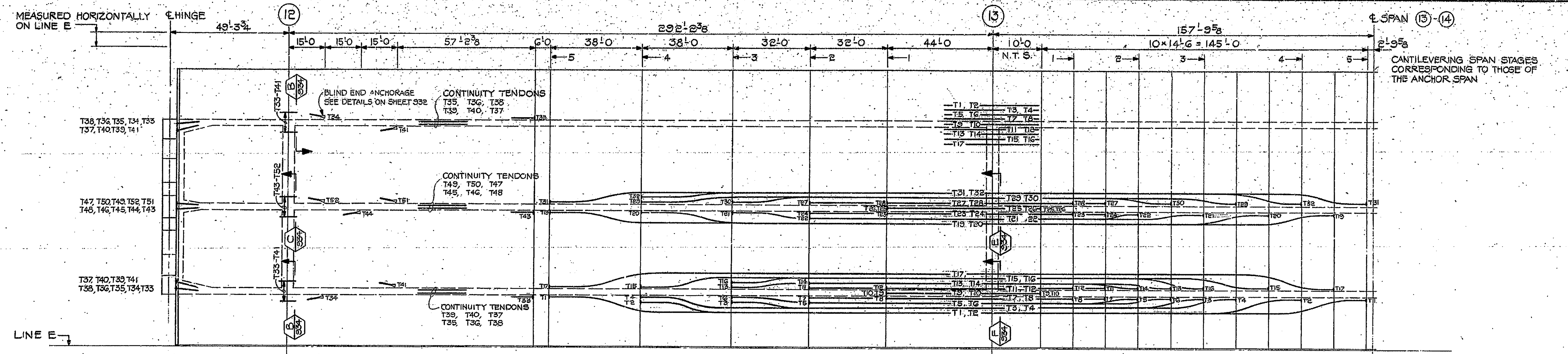
REID, QUERE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

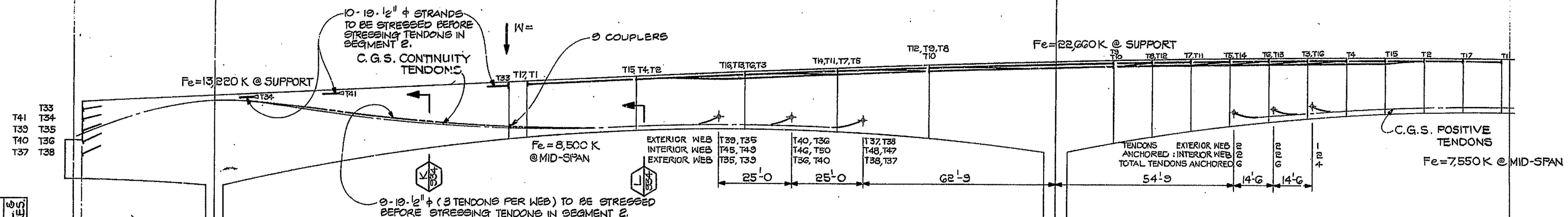
SHEET TITLE **CABLE LAYOUT AND PROFILE, FORCES AND WEB REINFORCEMENT E.B.L. 2 – SEGMENT 3**

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. B-11812 INDIANA STATE HIGHWAY COMMISSION

SHEET N. 831



PLAN E.B.L.
1" = 20'-0 LONG.
1" = 10'-0 TRANS.



Span	LOC.	C.G.S. measured from top flange (in feet)	C.G.S. measured from bot. flange Z (in feet)	Deflection or camber: Creep / D.L. & Pres.
	℄ Hinge			
12	0L	4.75	7.25	
12	.25L	3.02	9.69	
12	.5L	1.79	11.69	
12	.75L	1.05	13.27	
12	1L	0.80	14.20	
12-13	0L			
12-13	.1L	3.00	10.06	
12-13	.2L	5.32	6.03	
12-13	.25L			0.47" ↑ / 0.79" ↓
12-13	.3L	6.97	3.13	
12-13	.4L	7.98	1.34	
12-13	.5L	8.30	0.71	.97" ↑ / 1.57" ↓
12-13	.7L	SEE SECTIONS AND DETAILS ON SHEETS 930 THRU 934		
12-13	.75L			.77" ↑ / 1.10" ↓
12-13	.8L			
12-13	1L	0.80	14.20'	
13-14	0L, .1L, .2L, .3L, .4L, .5L			SEE CONSTRUCTION CAMBER ON SHEET

Web reinforcement, exterior & interior webs:

Range	"A"	"B"	"C"	"D"
Hinge region	SEE SHEET 930			
0L–1L	#5@10" EXT. [INT.] [	#6@10" [OR]	#5@10"] OR [	#5@10"] [
0L–.2L	#5@12"	#6@10"	#5@10"	#5@10"
.2L–.3L	#5@18"			
.3L–.7L	#5@18"	#6@9"	#5@9"	#5@9"
.7L–.8L	#5@18"	#6@10"	#5@10"	#5@10"
.8L–1L	#5@9"			
0L–.2L (span 13-14)	#5@5"	#6@10"	#5@10"	#5@10"
.2L–.3L	#5@15"			
.3L–.5L	#5@18"	#6@9"	#5@9"	#5@9"

9'-0 EXTERIOR WEB
9'-6 INTERIOR WEB

NOTES:
1. EFFECTIVE PRESTRESSING TENDON FORCE Fe IS GIVEN FOR TOTAL CROSS SECTION.
2. DEAD WEIGHT W PLACED BEFORE STRESSING THE TENDONS AT HINGE AND BEFORE CLOSING THE SIDE GAP. (SEE DWG. 1102.
3. MINIMUM CONST CTION CAMBER FOR SPAN 12-13 SHALL BE EQUAL TO THE SUM OF D.L. & PRES. & CREEP DEFLECTION. THE SYMBOL ↓ INDICATES DOWNWARD DEFLECTION, THEREFORE CAMBER DIRECTION IS UP ↑
4. SEE DWGS. 530 THRU 533 FOR "A", "B", "C" & "D" BAR.
5. PROPOSED 19-½" ϕ STRAND FOR EACH TENDON IN SEGMENT 3. FINAL NUMBER OF STRANDS SUBJECT TO PRESTRESS SHOP DWG.

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

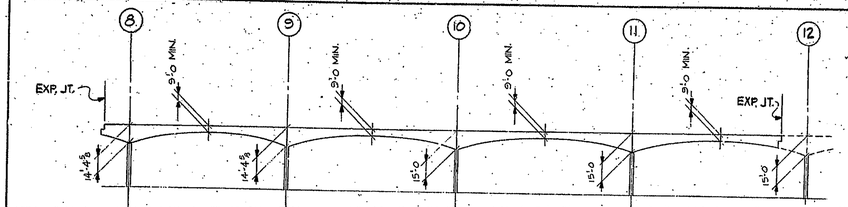
T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

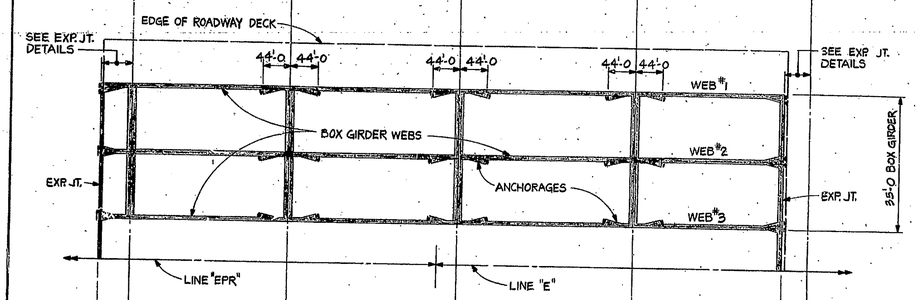
SHEET TITLE **CABLE LAYOUT AND PROFILE, FORCES AND WEB REINFORCEMENT E.B.L. I - SEGMENT 3**

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612 INDIANA STATE HIGHWAY COMMISSION

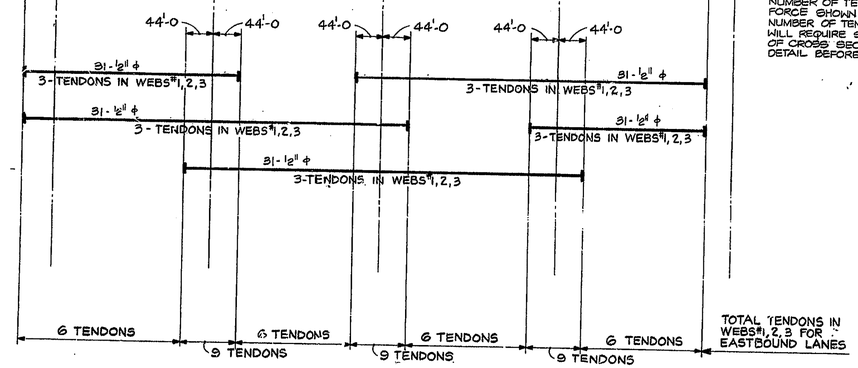
SHEET N. 830



EASTBOUND LANES (E.B.L.) ELEVATION - SEGMENT 2
N.T.S.



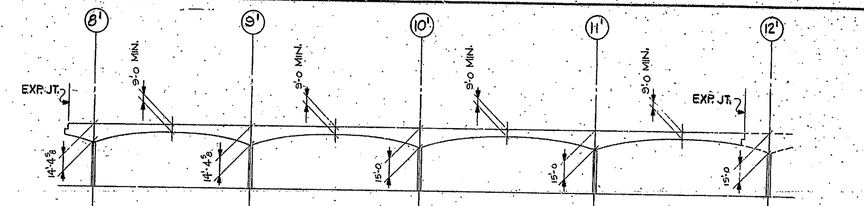
DIAGRAMATIC PLAN OF BLISTERS (E.B.L.)



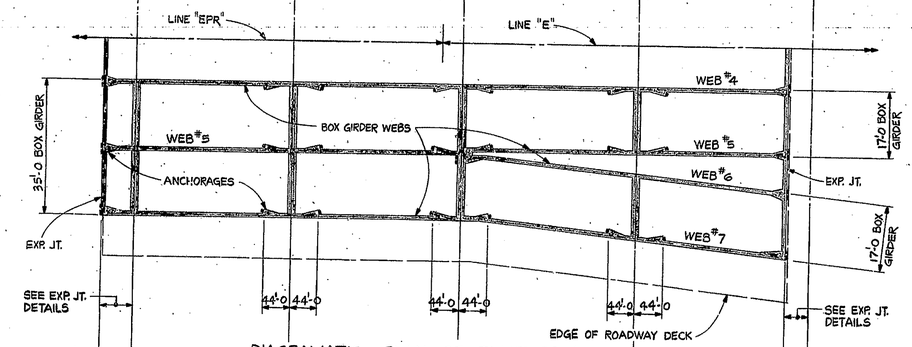
TENDON LAYOUT (E.B.L.)
N.T.S.

NOTE

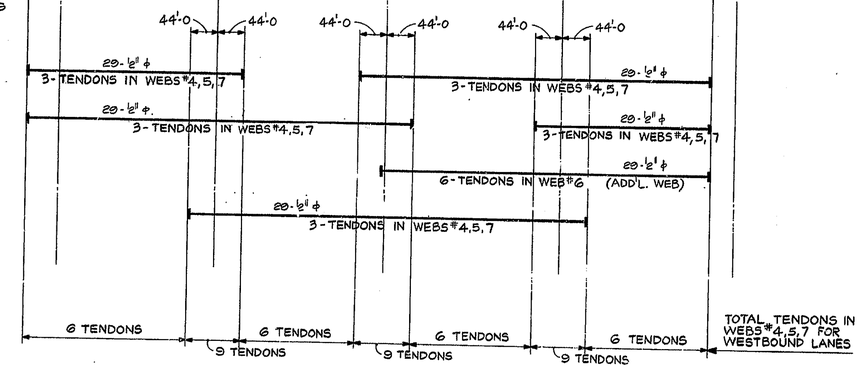
NUMBER OF TENDONS INDICATED ARE THE FORCE SHOWN ON DWG. 820. CHANGING NUMBER OF TENDONS FOR REQUIRED FORCES WILL REQUIRE SUBMITTAL AND APPROVAL OF CROSS SECTION AND REINFORCING DETAIL BEFORE COMMENCING WORK.



WESTBOUND LANES (W.B.L.) ELEVATION - SEGMENT 2
N.T.S.



DIAGRAMATIC PLAN OF BLISTERS (W.B.L.)



TENDON LAYOUT (W.B.L.)
N.T.S.

NO.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

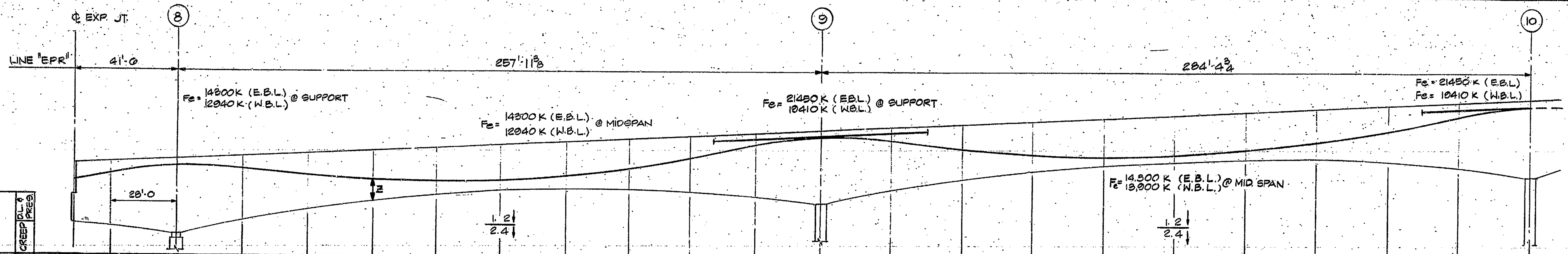
T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
CABLE LAYOUT - SEGMENT 2

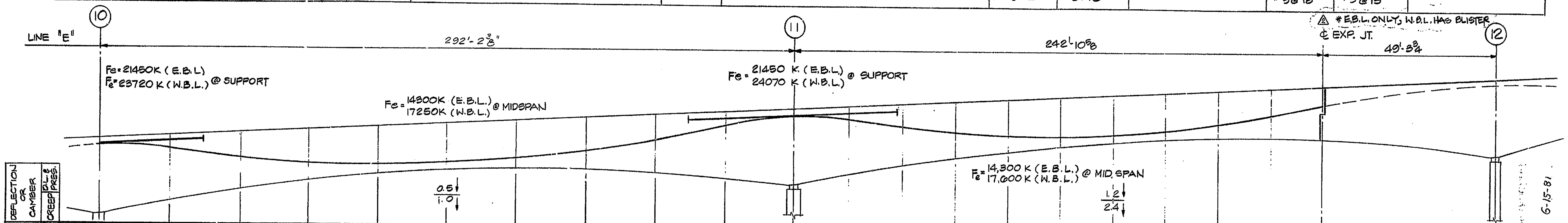
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET NO.
821



		℄ EXP. JT.	28'-0 FROM PIER 8	℄ PIER 8	.1L	.2L	.3L	.4L	.5L	.6L	.7L	.8L	.9L	℄ PIER 9	.1L	.2L	.3L	.4L	.5L	.6L	.7L	.8L	.9L	℄ PIER 10
DEFLECTION OR CAMBER	CREEP / D.L. & PRES.								1.2 / 2.4										1.2 / 2.4					
C.G.S. MEASURED FROM BOT. FLANGE	EBL	7.1'	9.43'	13.14'	10.23'	6.80'	4.30'	2.72'	2.00'	2.72	4.30'	6.80'	10.23'	13.14'	9.75'	6.00'	3.33'	1.70'	1.17'	1.84'	3.58'	6.38'	10.26'	13.75'
	WBL	7.1'	9.43'	13.14'	10.23'	6.80	4.30'	2.72'	2.50'	2.72	4.30'	6.80	10.23'	13.14'	9.75	6.00	3.33'	1.70'	1.17'	1.84'	3.58'	6.38'	10.26'	13.75'
C.G.S. MEASURED FROM TOP FLANGE	EBL	4.70'	3.18'	1.25'	2.52'	4.48'	5.88'	6.72'	7.00'	6.72'	5.88'	4.48'	2.52'	1.25'	2.83'	5.02'	6.59'	7.54	7.85	7.54'	6.59'	5.02'	2.83'	1.25
	WBL	4.70'	3.18'	1.25'	2.52'	4.48'	5.88'	6.72'	7.00'	6.72'	5.88'	4.48'	2.52'	1.25'	2.83'	5.02'	6.59'	7.54'	7.85'	7.54'	6.59'	5.02'	2.83'	1.25
WEB REINFORCEMENT E.B.L. & W.B.L. (SEE DWG. 821)	"A"	#6 @ 10" EXT.][INT.][			#5 @ 10"		#5 @ 15"	#5 @ 18"				#5 @ 15"	#5 @ 10"		#5 @ 10"		#5 @ 15"	#5 @ 18"				#5 @ 15"	#5 @ 10"	
	"B"	#6 @ 10" [OR]			#6 @ 10"			#6 @ 9"				#6 @ 10"			#6 @ 10"			#6 @ 9"				#6 @ 10"		
	"C"	#5 @ 10"] OR [			#5 @ 10"			#5 @ 9"				#5 @ 10"			#5 @ 10"			#5 @ 9"				#5 @ 10"		
	"D"	#5 @ 10"][			#5 @ 10"			#5 @ 9"				#5 @ 10"			#5 @ 10"			#5 @ 9"				#5 @ 10"		
	"E"(1)	#5@18" |					#5@15	#5@18"				#5@15"					#5@15"	#5@18"			* #5@18"	*#5@15"		

△2 * E.B.L. ONLY, W.B.L. HAS BLISTER



		℄ EXP. JT.	.1L	.2L	.3L	.4L	.5L	.6L	.7L	.8L	.9L	℄ PIER 11	.1L	.2L	.3L	.4L	.5L	.6L	.7L	.8L	.9L	℄ EXP. JT.
DEFLECTION OR CAMBER	CREEP / D.L. & PRES.						0.5 / 1.0											1.2 / 2.4				
C.G.S. MEASURED FROM BOT. FLANGE	EBL		10.70'	7.17'	4.63'	3.08'	2.50'	3.08'	4.63'	7.17'	10.70'	13.75'	11.05'	7.62'	4.92'	2.95'	1.70'	1.17'	1.50'	2.49'	4.27'	0.89'
	WBL		10.70'	7.17'	4.63'	3.08'	2.50'	3.08'	4.63'	7.17'	10.70'	13.75'	11.05'	7.62'	4.92'	2.95'	1.70'	1.17'	1.50'	2.49'	4.27'	0.89'
C.G.S. MEASURED FROM TOP FLANGE	EBL		2.34'	4.16'	5.40'	6.24'	6.50'	6.24'	5.40'	4.16'	2.34'	1.25'	2.32'	4.23'	5.74'	6.84'	7.54'	7.83'	7.71'	7.19'	6.26'	4.92'
	WBL		2.34'	4.16'	5.40'	6.24'	6.50'	6.24'	5.40'	4.16'	2.34'	1.25'	2.32'	4.23'	5.74'	6.84'	7.54'	7.83'	7.71'	7.19'	6.26'	4.92'
WEB REINFORCEMENT E.B.L. & W.B.L.	"A"		#5@10" EXT.][INT.][		#5@15"	#5@18"				#5@15"	#5@10"		#5@10"		#5@15"	#5@18"				#5@15"		
	"B"		#6@10" [OR]			#6@9"				#6@10"			#6@10"			#6@9"				#6@10"		
	"C"		#5@10"] OR [			#5@9"				#5@10"			#5@10"			#5@9"				#5@10"		
	"D"		#5@10"][			#5@9"				#5@10"			#5@10"			#5@9"				#5@10"		

NOTE. 1 SEE DWG. 811 FOR LOCATION OF "E" BAR.

NO	REVISION	DATE
△2	ADD NOTE	MAY 5 81
△1	ADD "E" BAR	MAY 4 81

W. B. Abbott 6-15-81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

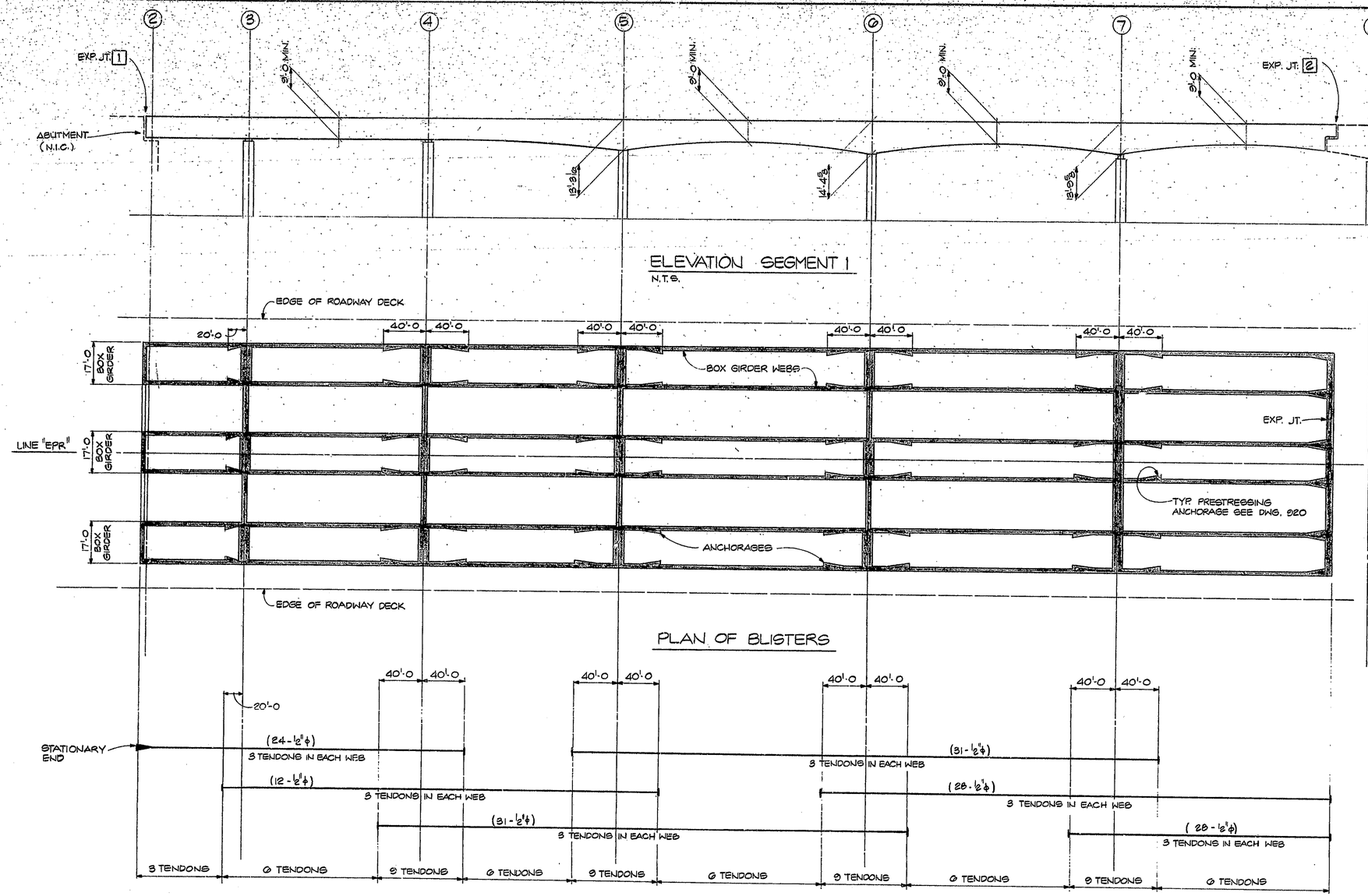
T. Y. LIN REGISTERED ... 18266 ... ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
CABLE PROFILE FORCES AND WEB REINFORCEMENT

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2646 CONTRACT NO. B-11512 INDIANA STATE HIGHWAY COMMISSION

SHEET N.
820



NOTE:

1. NUMBER OF TENDONS INDICATED ARE THE FORCES SHOWN ON DWGS. 810 AND 811. CHANGING NUMBER OF TENDONS FOR THE REQUIRED FORCES WILL REQUIRE SUBMITTAL AND APPROVAL OF CROSS SECTION AND REINFORCING DETAIL BEFORE COMMENCING WORK.
2. PROPOSED STRAND ARRANGEMENT. FINAL NUMBER OF STRANDS SUBJECT TO PRESTRESS SHOP DRAWING.
3. TENDON = ONE 4" φ DUCT WITH UP TO 31-½" φ PRESTRESSING STRANDS.

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

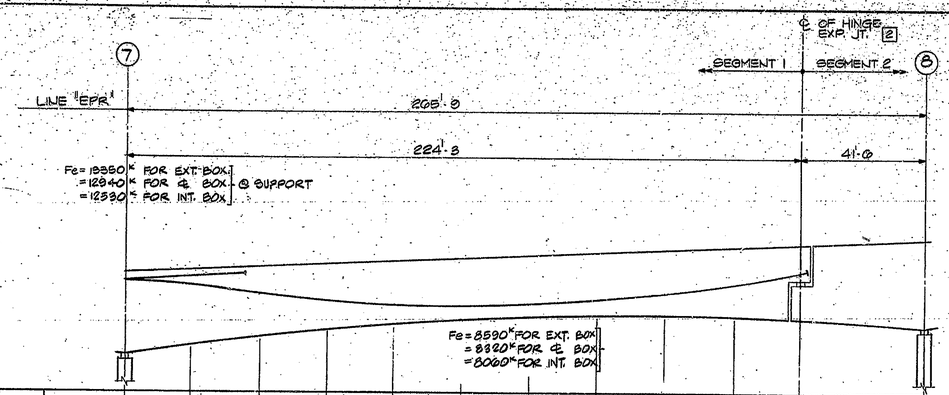
SHEET TITLE

CABLE LAYOUT – SEGMENT 1

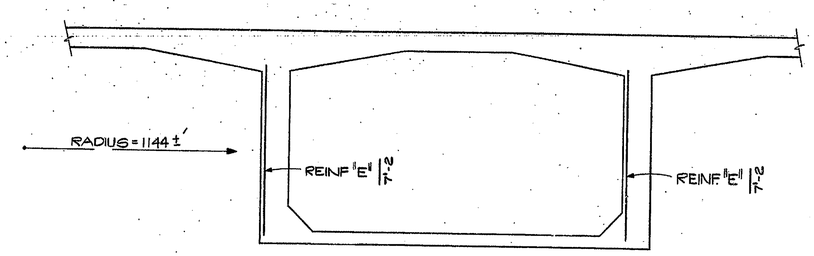
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 812-45-2546 CONTRACT NO. 8-11812 INDIANA STATE HIGHWAY COMMISSION

SHEET N.

812



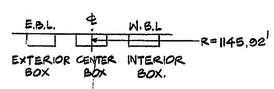
DEFLECTION OR CAMBER	D.L. & PRES.(IN)						↓0.5					
	CREEP(IN)						↓1.0					
LOCATION		0 PIER	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	1 & EXP. JT.
C.G.S. MEASURED FROM BOT. FLANGE (FT.)	E.B.L. & W.B.L.	12.55	10.08	6.88	4.38	2.64	1.51	1.17	1.45	2.83	4.12	7.81
C.G.S. MEASURED FROM TOP FLANGE (FT.)	E.B.L. & W.B.L.	1.25	3.39	4.35	5.82	6.97	7.64	7.87	7.68	7.05	5.89	4.50
WEB REINFORCEMENT E.B.L. & W.B.L. (SEE DWG. 810.)	REINF. "A" #5 BAR	@ 10"				@ 18"				@ 10"		
	REINF. "B" #6 BAR	@ 10"				@ 9"				@ 10"		
	REINF. "C" #5 BAR	@ 10"				@ 9"				@ 10"		
	REINF. "E" #5 BAR				@ 18"							



GIRDER SECTION
3/8" = 1'-0

NOTE:
1) 'E' BARS SHOWN FOR ALL WEBS (G) FOR SEGMENTS 1 & 2 AS INDICATED ON DWGS 810, 811 & 820.
2) LOCATE BAR BETWEEN 'A' BARS ON WEB FACE WHICH IS ON INSIDE OF RADIUS.

NOTE :

1. 

2. Fe INDICATED ARE FOR ONE SINGLE CELL. BOX. (TWO WEBS)
3. MINIMUM CONSTRUCTION CAMBER SHALL BE EQUAL TO THE SUM OF D.L. PRESTRESSING FORCE AND CREEP DEFLECTION, THE SYMBOL ↓ INDICATES DOWNWARD DEFLECTION, THEREFORE CAMBER DIRECTION IS UP ↑.

APPROVED FOR CONSTRUCTION
W. R. Abbott 6-15-81
ASSISTANT

NO.	REVISION	DATE
1	ADD "E" BAR	MAY 4 81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

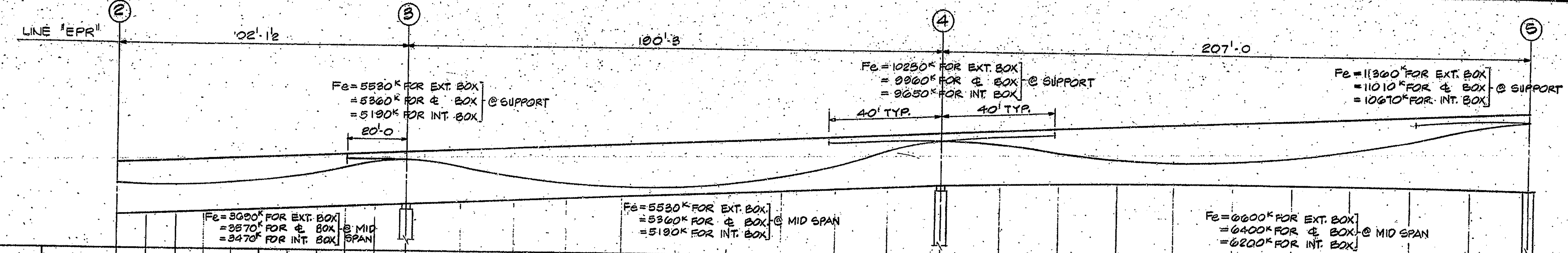
T. Y. LIN REGISTERED No. 16866 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
CABLE PROFILE FORCES AND WEB REINFORCEMENT SEGMENT 1

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-43-2546 CONTRACT NO. 8-11812
INDIANA STATE HIGHWAY COMMISSION

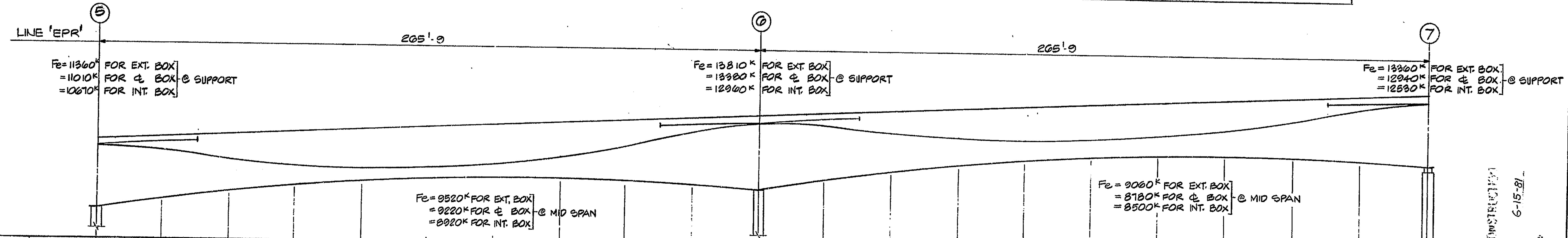
SHEET N.
811



LOCATION	¢ OF PIER (2)	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	¢ PIER (3)	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	¢ PIER (4)	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	¢ PIER (5)
DEFLECTION OR CAMBER – D.L. & PRES. (IN.)						0.0										↓0.3										↓0.5					
DEFLECTION OR CAMBER – CREEP (IN.)						0.5↓										↓0.6										↓1.0					
C.G.S. MEASURED FROM BOT. FLANGE (FT.) E.B.L. & W.B.L.	5.47	4.46	3.74	3.30	3.14	3.27	3.68	4.38	5.36	6.62	7.75	6.18	3.99	2.42	1.48	1.17	1.48	2.42	3.99	6.18	7.75	6.66	4.84	3.54	2.76	2.66	3.34	4.71	5.86	9.77	12.01
C.G.S. MEASURED FROM TOP FLANGE (FT.) E.B.L. & W.B.L.	3.53	4.54	5.26	5.70	5.86	5.73	5.32	4.62	3.64	2.38	1.25	2.82	5.01	6.58	7.52	7.83	7.52	6.58	5.01	2.82	1.25	2.34	4.10	5.46	6.24	6.50	6.24	5.46	4.16	2.34	1.25

WEB REINFORCEMENT E.B.L. & W.B.L. (SEE DWG. 511)

REINF.	Spacings (left to right, pier 2 to pier 5)
REINF. "A" #5 BAR	@ 10" · @ 18" · @ 10" · @ 9" · @ 18" · @ 10" · @ 10" · @ 18" · @ 10"
REINF. "B" #6 BAR	@ 10" · @ 9" · @ 10" · @ 9" · @ 10" · @ 10" · @ 9" · @ 10"
REINF. "C" #5 BAR	@ 10" · @ 9" · @ 10" · @ 9' · @ 10" · @ 10" · @ 9" · @ 10"
REINF. "E" #5 BAR	@ 18' · @ 18' · @ 18"



LOCATION	¢ PIER (5)	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	¢ PIER (6)	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	¢ PIER (7)
DEFLECTION OR CAMBER – D.L. & PRES. (IN.)						↓1.0										↓1.0					
DEFLECTION OR CAMBER – CREEP (IN.)						↓2.0										↓2.0					
C.G.S. MEASURED FROM BOT. FLANGE (FT.) E.B.L. & W.B.L.	12.01	8.95	5.50	3.09	1.61	1.20	1.85	3.51	6.19	9.88	13.14	10.36	7.04	4.63	3.13	2.53	2.99	4.38	6.68	9.88	12.55
C.G.S. MEASURED FROM TOP FLANGE (FT.) E.B.L. & W.B.L.	1.25	2.82	5.01	6.58	7.52	7.83	7.52	6.58	5.01	2.82	1.25	2.34	4.10	5.46	6.24	6.50	6.24	5.46	4.16	2.34	1.25

WEB REINFORCEMENT E.B.L. & W.B.L. (SEE DWG. 511)

REINF.	Spacings (left to right, pier 5 to pier 7)
REINF. "A" #5 BAR	@ 10" · @ 18" · @ 10" · @ 10" · @ 18" · @ 10"
REINF. "B" #6 BAR	@ 10" · @ 9" · @ 10" · @ 10" · @ 9" · @ 10"
REINF. "C" #5 BAR	@ 10" · @ 9" · @ 10" · @ 10" · @ 9" · @ 10"
REINF. "E" #5 BAR	@ 18' · @ 18' · @ 18"

NOTE: SEE DWG 811 △ FOR LOCATING "E" BAR.

NO.	REVISION	DATE
△	ADD "E" BAR	MAY 4 81

APPROVED FOR CONSTRUCTION 6-15-81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID. QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
CABLE PROFILE FORCES AND WEB REINFORCEMENT SEGMENT I

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N. 810

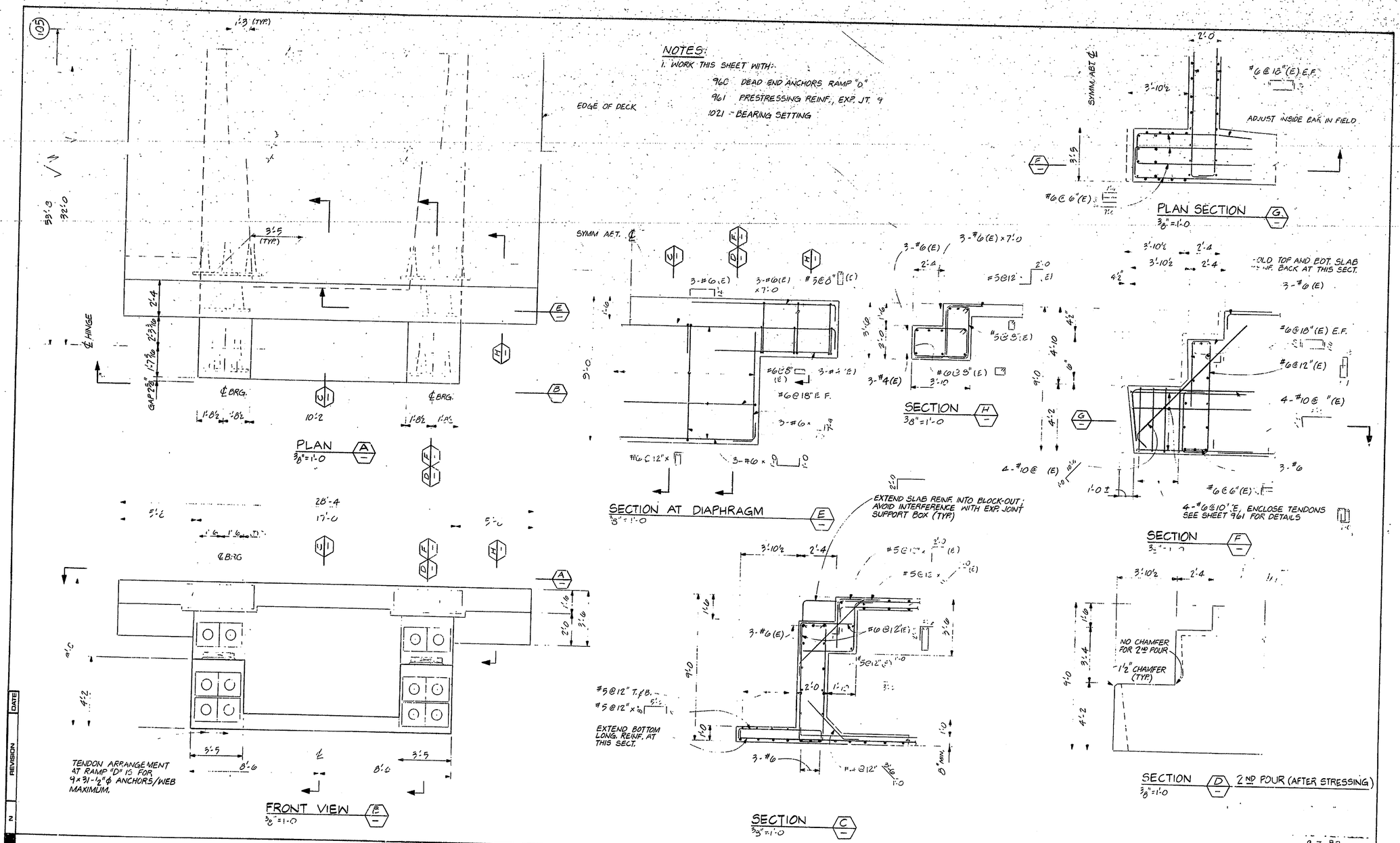
NOTES:

1. WORK THIS SHEET WITH:

960 DEAD END ANCHORS RAMP "D"

961 PRESTRESSING REINF., EXP. JT. 9

1021 - BEARING SETTING



DATE	REVISION
	2

9-7-82

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T. Y. LIN REGISTERED No. 18256 STATE OF INDIANA PROFESSIONAL ENGINEER

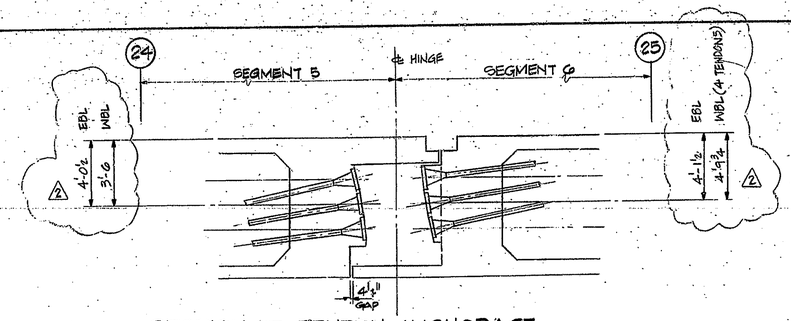
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE: **RAMP "D" EXPANSION JOINT 9**

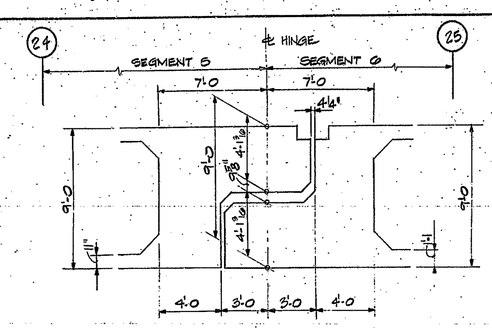
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N. **761**

NOTES:
1. SEE NOTES ON G. 780.

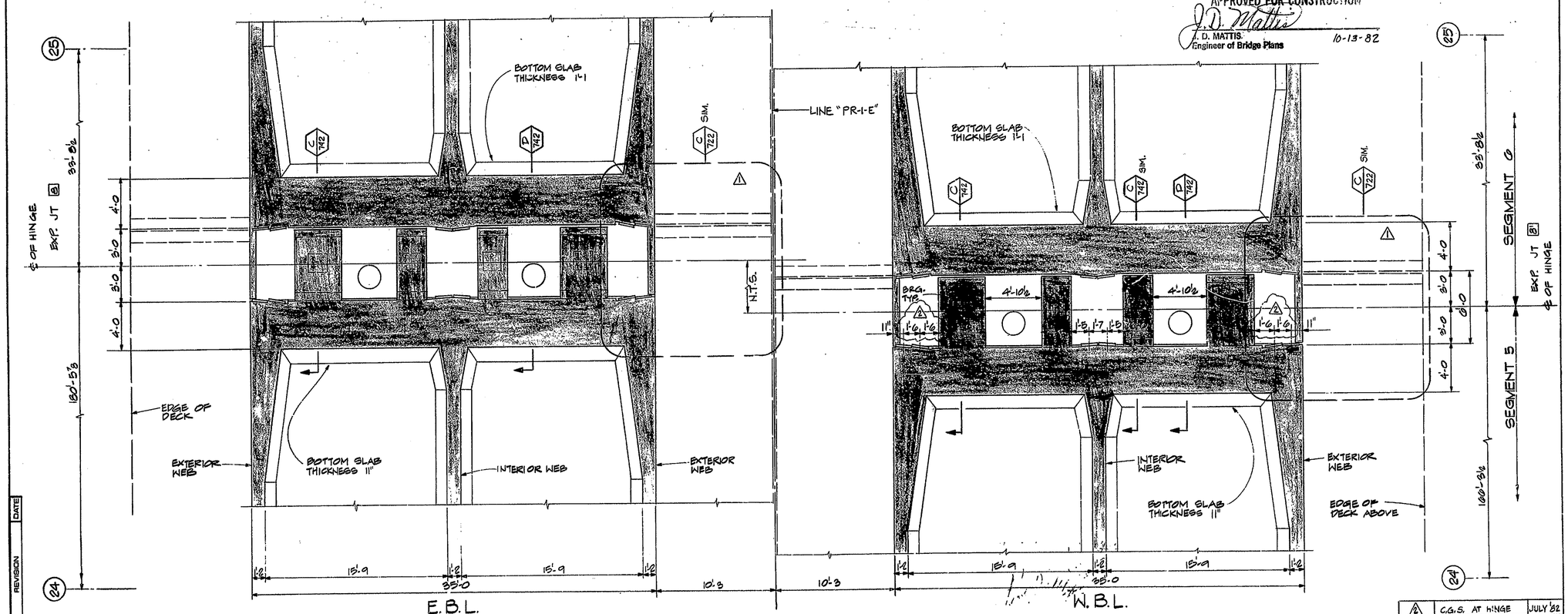


SECTION (C) TENDON ANCHORAGE AT EXP. JT. 8 & 8'
1/4" = 1'-0



SECTION (B) DEPTH OF GIRDER AT EXPANSION BEARING
1/4" = 1'-0

APPROVED FOR CONSTRUCTION
J. D. Mattis
J. D. MATTIS
Engineer of Bridge Plans
10-13-82



PLAN SECTION (A)
1/4" = 1'-0

NO.	REVISION	DATE
2	C.G.S. AT HINGE	JULY '82
1	SECTION MARK	DEC. '81

NO.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

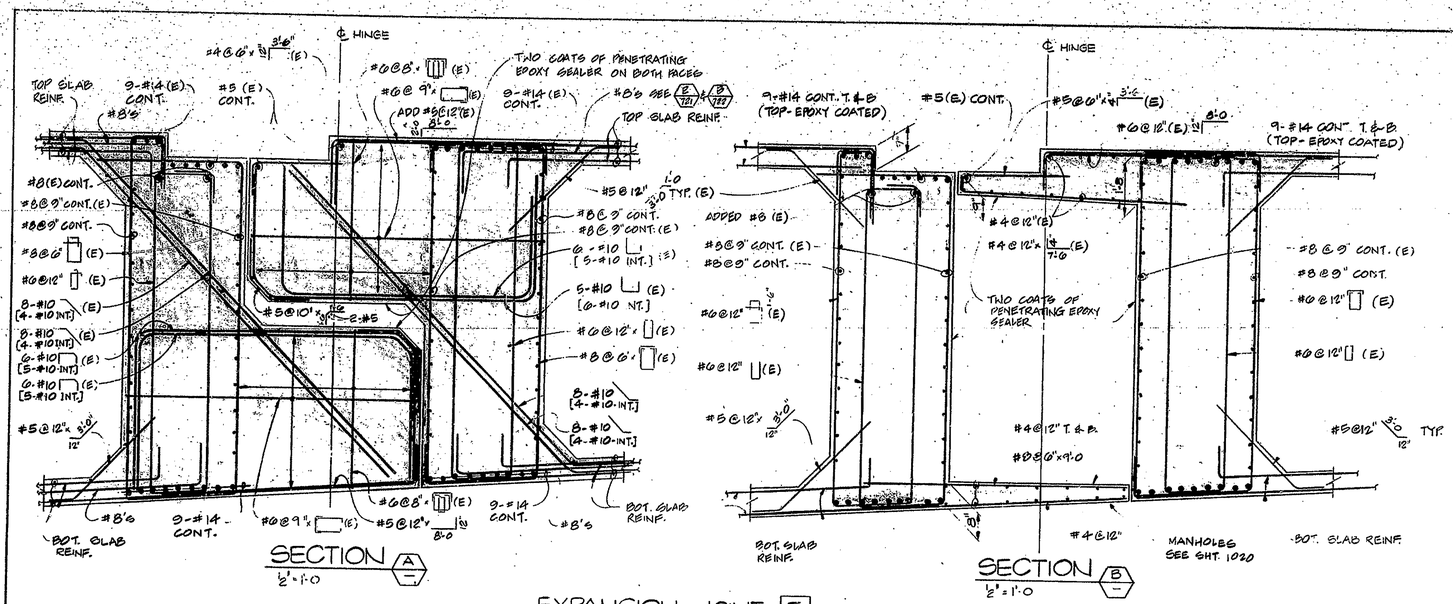
T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
HINGE PLAN – EXPANSION JOINT 8 & 8'

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-46-2548 CONTRACT NO. 8-11612 INDIANA STATE HIGHWAY COMMISSION

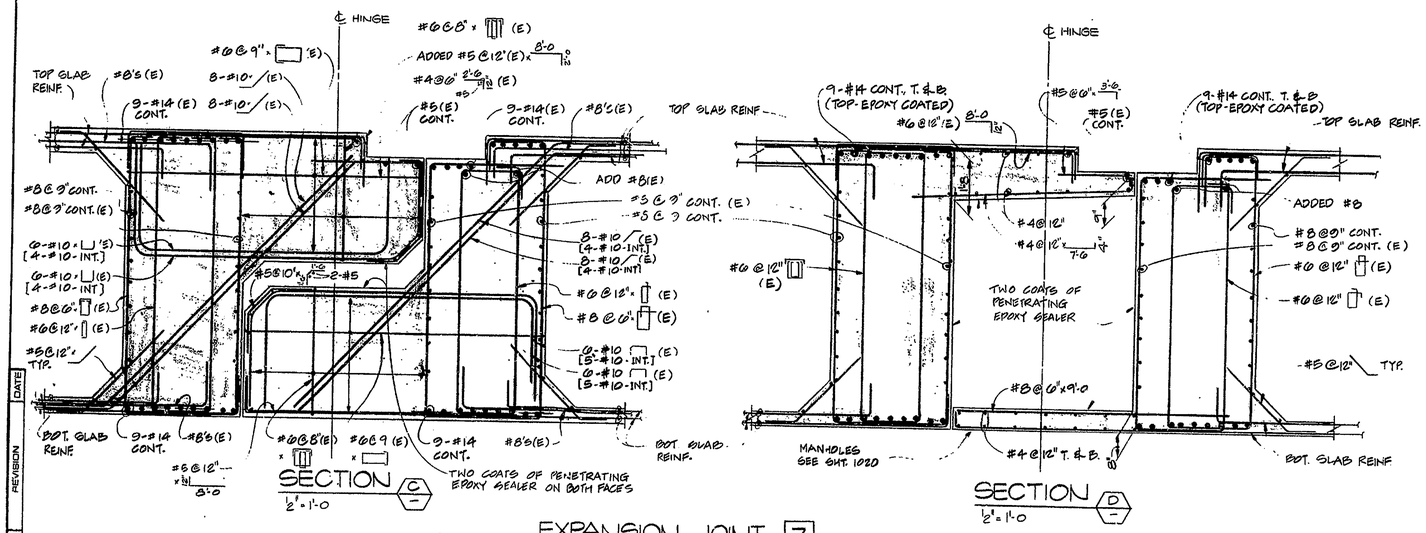
SHEET N.
760



EXPANSION JOINT 5

NOTE:

1. REFER TO DETAIL A/721 FOR INTERIOR HINGE REINFORCING ARRANGEMENT AND TO DETAIL A/721 FOR EXTERIOR.
2. READ THIS DRAWING WITH SHEET 721 AND 722.
3. SEE NOTES SHEET 721.
4. EXTERIOR (4'-0") & INTERIOR (2'-6") HINGE REINF. IS INDICATED. INT. IS FOR THE 2'-6" HINGE. AMOUNT AND DETAILS OF REINFORCING ARE SIMILAR TO B/721 FOR EXT. AND B/722 FOR INTERIOR.



EXPANSION JOINT 7

9-7-82

NO	REVISION	DATE
1	BLOCK-OUT DIMS.	JAN '82

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

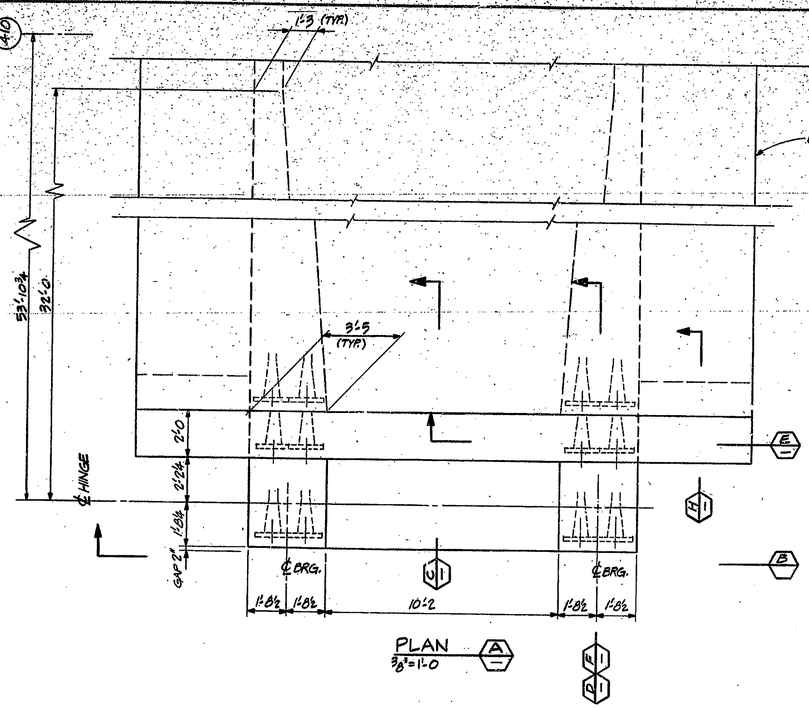
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
HINGE DETAILS – JOINTS 5 AND 7

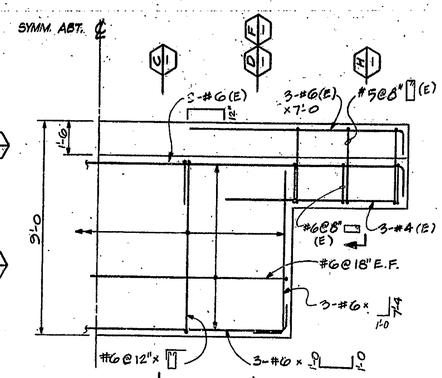
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
742

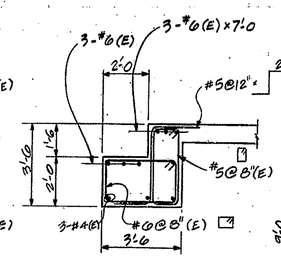
NOTES:
1. WORK THIS SHEET WITH:
944 DEAD END ANCHORS, RAMP "C"
945 PRESTRESSING REINF., EXP. JT. 6
1021 BEARING SETTING



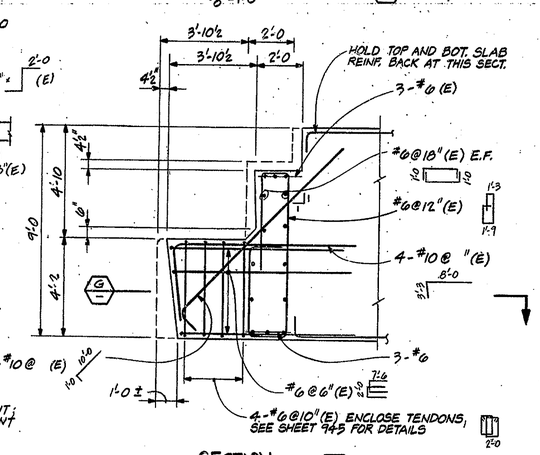
PLAN (A) 3/8"=1'-0



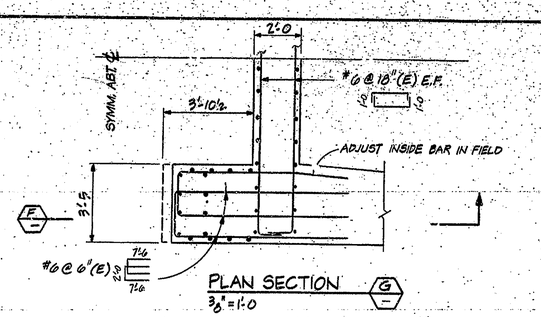
SECTION AT DIAPHRAGM (E) 3/8"=1'-0



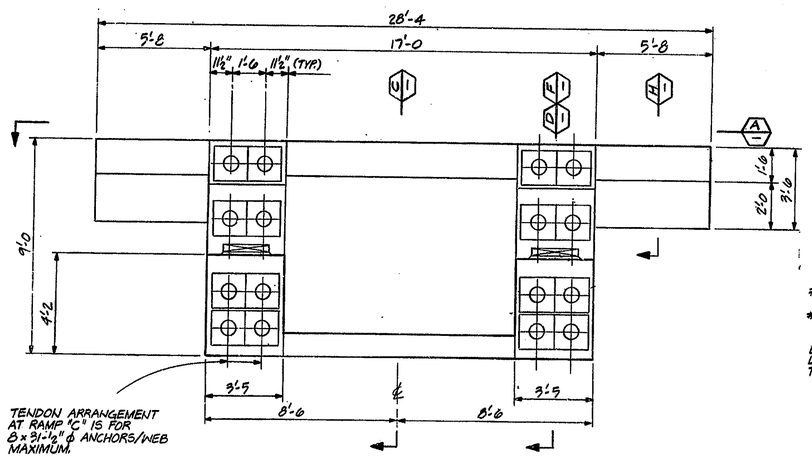
SECTION (H) 3/8"=1'-0



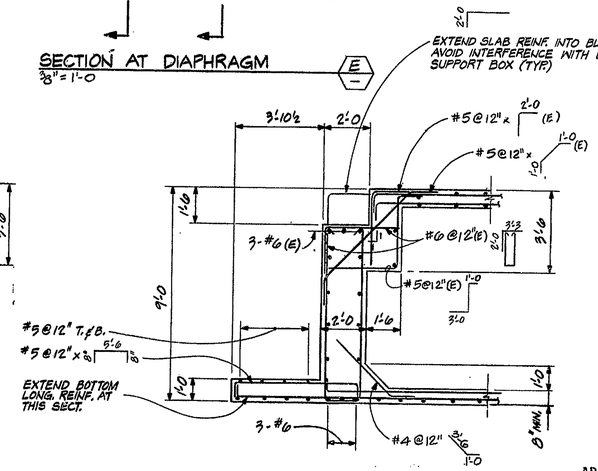
SECTION (F) 3/8"=1'-0



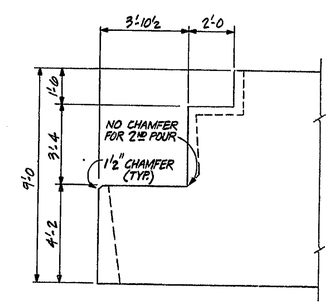
PLAN SECTION (G) 3/8"=1'-0



FRONT VIEW (B) 3/8"=1'-0



SECTION (C) 3/8"=1'-0



SECTION (D) 2ND POUR (AFTER STRESSING) 3/8"=1'-0

APPROVED FOR CONSTRUCTION
J. D. MATTIS
Engineer of Bridge Plans
9-7-82

No.	REVISION	DATE
1	RAMP "C" ONLY	DEC. '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUIEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

REGISTERED PROFESSIONAL ENGINEER 18266 STATE OF INDIANA

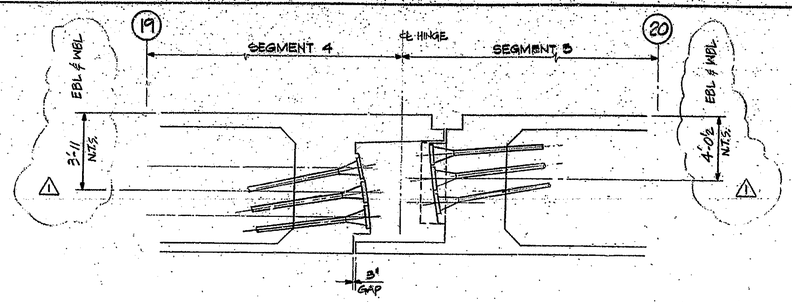
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
RAMP "C" EXPANSION JOINT 6

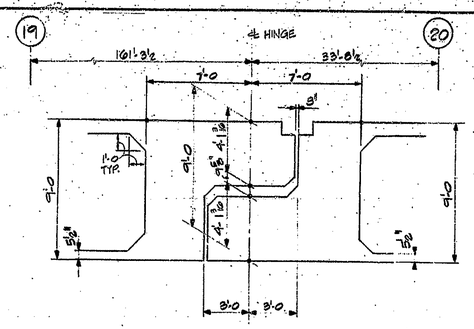
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
741

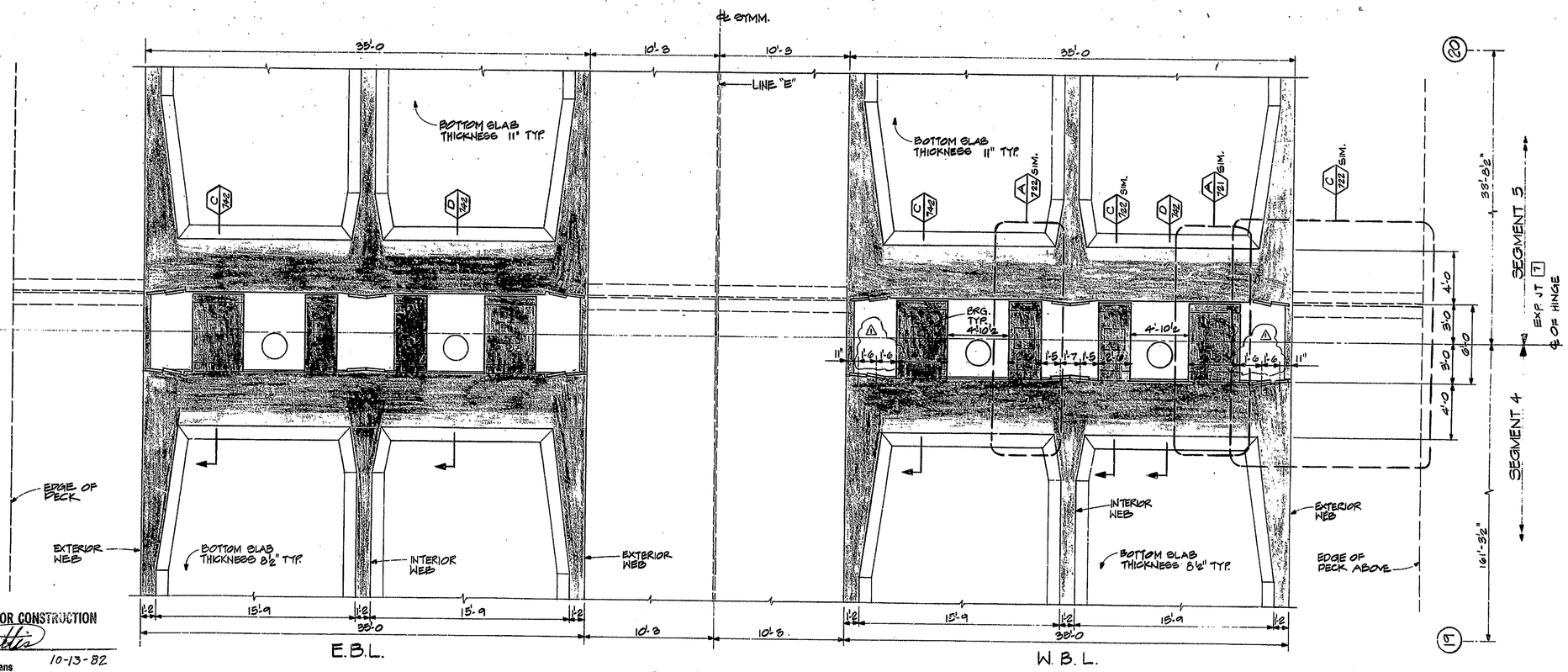
NOTES:
1. SEE NOTES DWG. 730



SECTION C TENDON ANCHORAGE AT EXP. JT. 7
1/4" = 1'-0



SECTION B DEPTH OF GIRDER AT EXPANSION BEARING
1/4" = 1'-0



PLAN SECTION A
1/4" = 1'-0

APPROVED FOR CONSTRUCTION
J. D. Mattis
J. D. MATTIS
Engineer of Bridge Plans
10-13-82

NO.	REVISION	DATE
1	C.G.S. AT HINGE	JULY '82

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

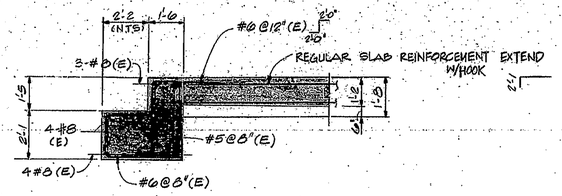
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

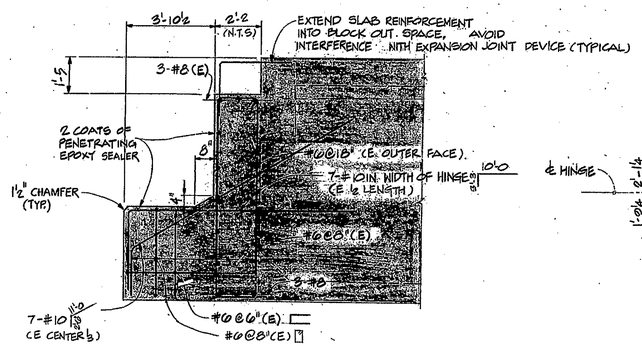
SHEET TITLE
HINGE PLAN – EXPANSION JOINT 7

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11612 INDIANA STATE HIGHWAY COMMISSION

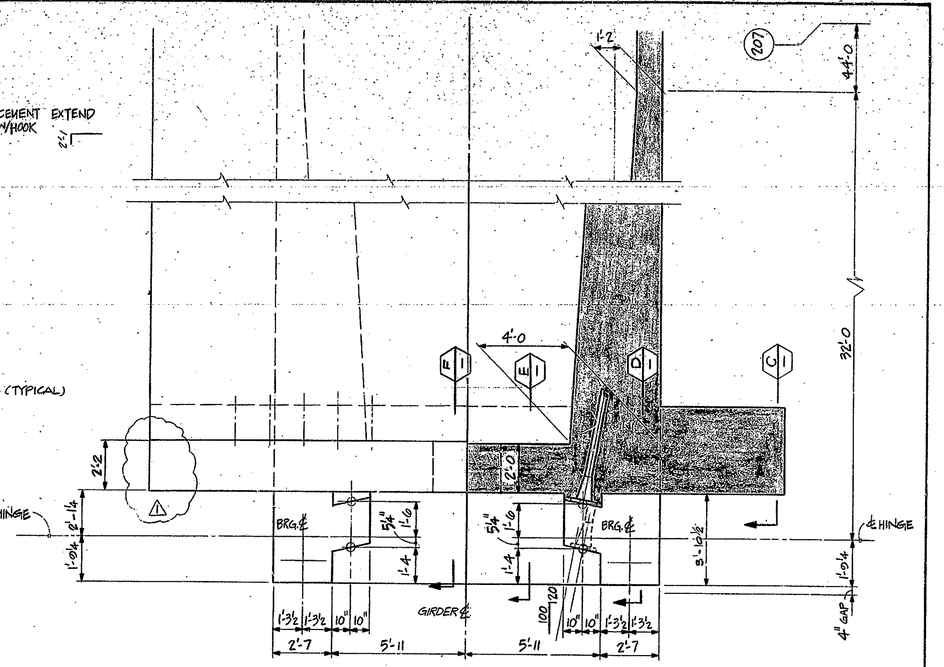
SHEET N.
740



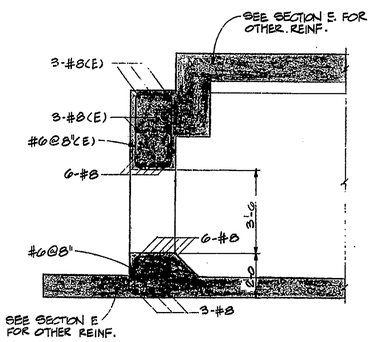
SECTION C
3/8" = 1'-0



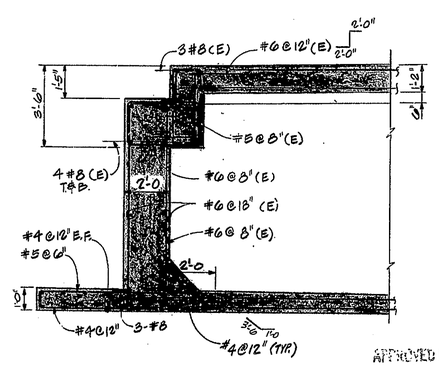
SECTION D
3/8" = 1'-0



PLAN SECTION A
3/8" = 1'-0

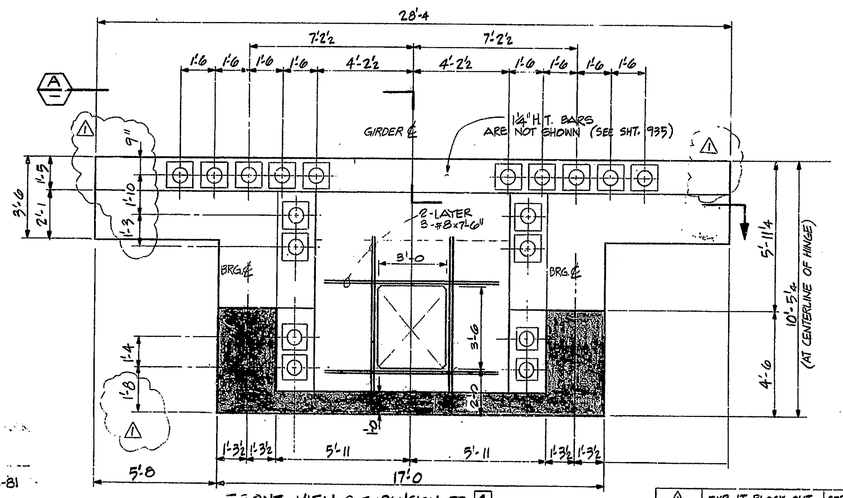


SECTION F
3/8" = 1'-0



SECTION E
3/8" = 1'-0

APPROVED FOR CONSTRUCTION
W. B. ABBOTT
Assistant Engineer of Bridge Design 10-26-81



FRONT VIEW @ EXPANSION JT. 4

NOTES:

1. WORK THIS SHEET WITH:
   - 731 FOR REINFORCING
   - 933, 933A, 93B, 939 FOR PRESTRESSING
   - 1104 AND 1104A FOR CONST. SEQUENCE

No.	REVISION	DATE
1	EXP. JT. BLOCK-OUT	SEPT. '01

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

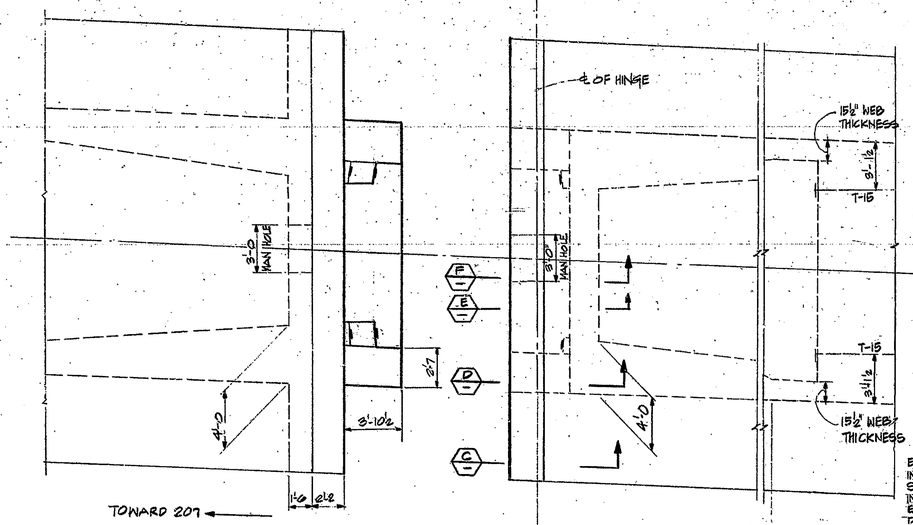
T. Y. LIN REGISTERED PROFESSIONAL ENGINEER STATE OF INDIANA

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

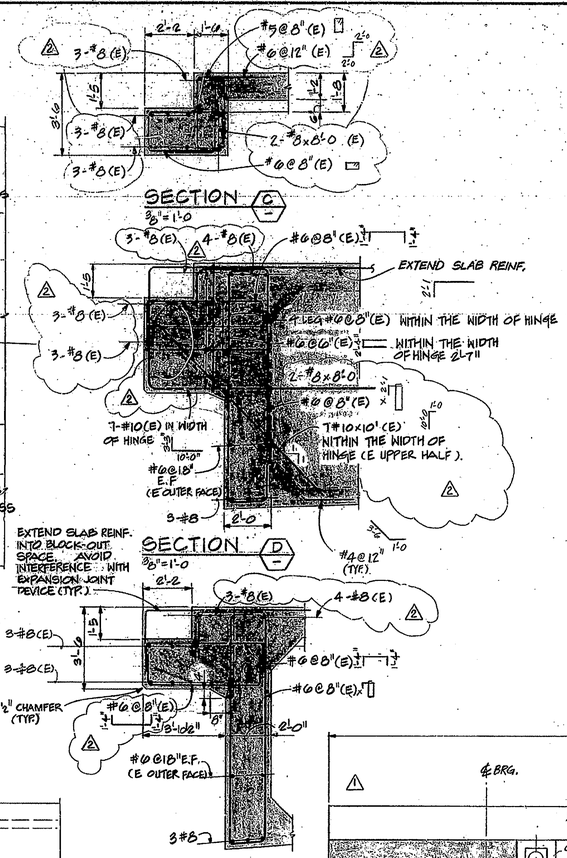
SHEET TITLE
RAMP "A" - EXPANSION JOINT 4 DETAILS

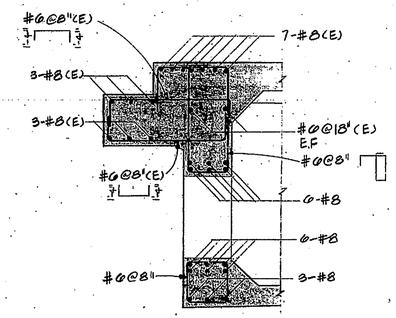
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 812-45-2549 CONTRACT NO. 8-11812
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
732

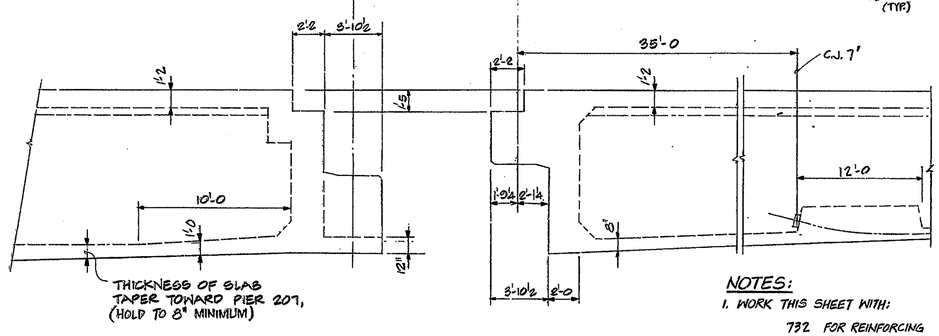


PLAN HINGE 4 (A)
1/4"=1'-0





SECTION (F)
3/8"=1'-0



LONGITUDINAL SECTION HINGE 4 (B)
1/4"=1'-0

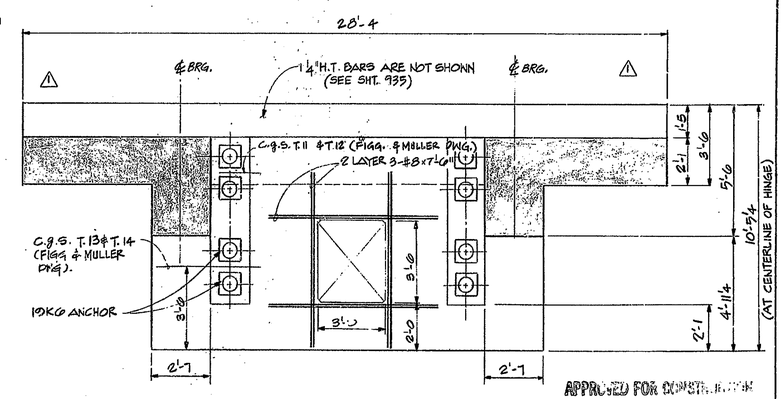
NOTES:

1. WORK THIS SHEET WITH:

732 FOR REINFORCING

935, 935A, 938, 939 FOR PRESTRESSING

1104 AND 1104A FOR CONST. SEQUENCE



FRONT VIEW @ EXPANSION JT. 4
3/8"=1'-0 (LOOKING TOWARD PIER 206)

APPROVED FOR CONSTRUCTION

W. B. ABBOTT
Assistant Engineer of Bridge 10-26-81

No.	REVISION	DATE
2	SECT. "D", "E", "F"	OCT. '81
1	EXP. JT. BLOCK-OUT	SEPT. '81

DATE	REVISION	N

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T. Y. LIN REGISTERED ARCHITECT INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

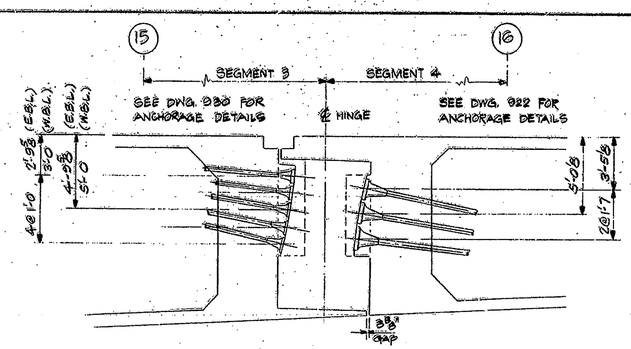
SHEET TITLE: RAMP "A" EXPANSION JOINT 4 DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO: B-11812 INDIANA STATE HIGHWAY COMMISSION

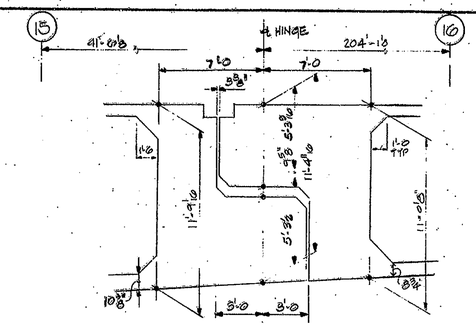
SHEET N. 731

NOTES:

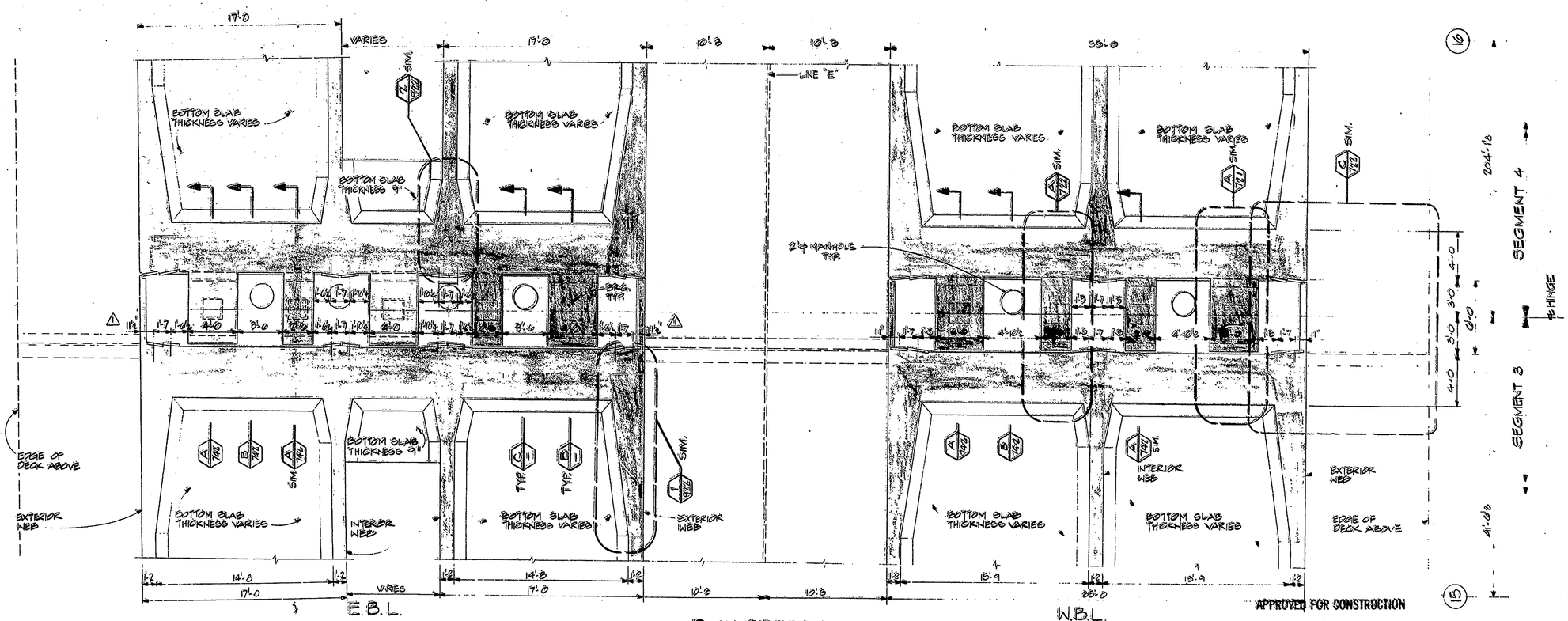
1. SUBMIT FINAL DETAILS OF BEARINGS AND EXPANSION JOINTS FOR APPROVAL BY THE ENGINEER BEFORE COMMENCING WORK



SECTION (C) TENDON ANCHORAGE AT EXP. JT. 5
1/4" = 1'-0



SECTION (B) DEPTH OF GIRDER AT EXPANSION BEARING
1/4" = 1'-0



PLAN SECTION (A)
1/4" = 1'-0

N.	REVISION	DATE
1	TRANSVERSE DIMS.	JULY 81

W. B. ABBOTT
Assistant Engineer of Bridge Design 8-25-81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

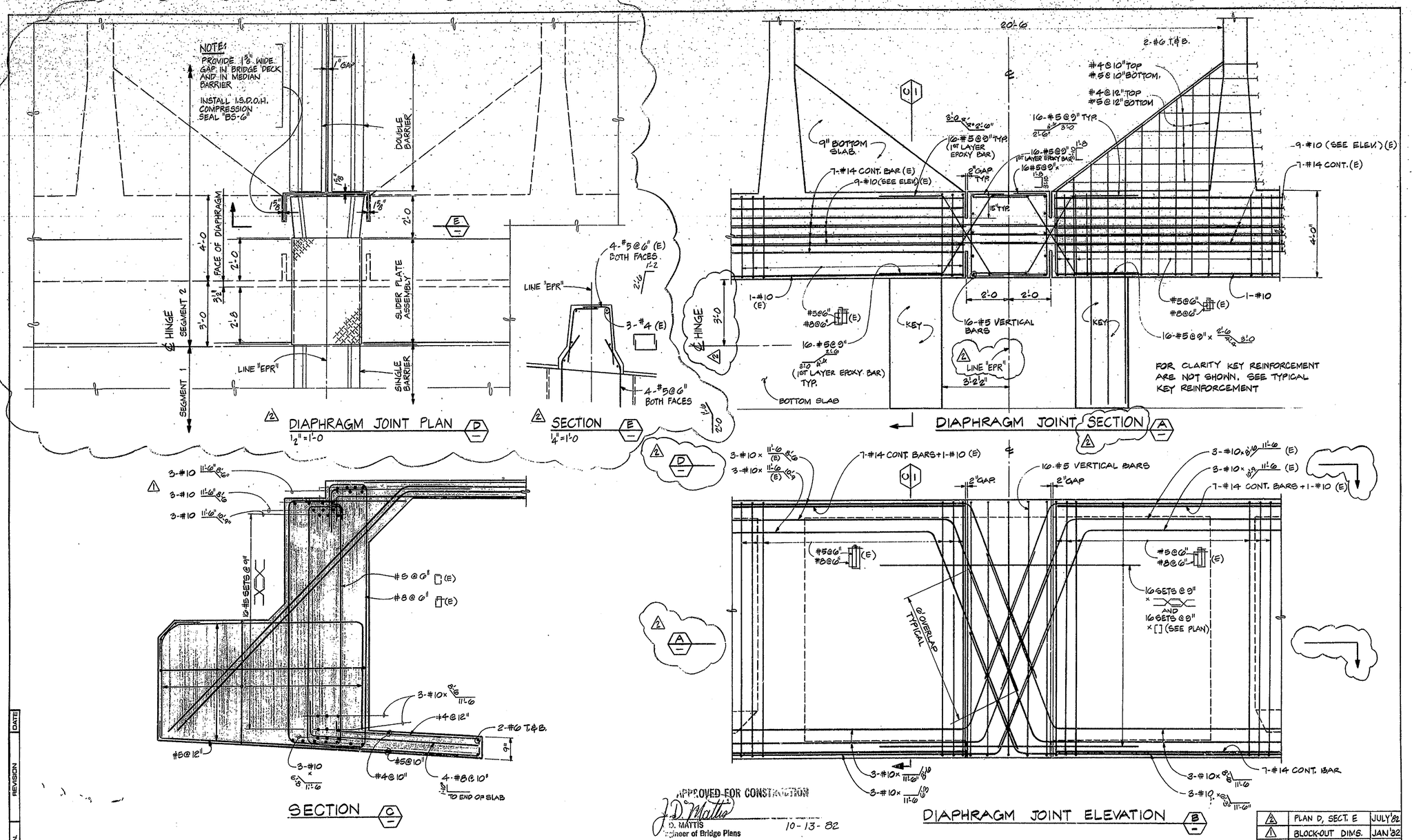
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE

HINGE PLAN - EXPANSION JOINT 5

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 612-45-2548 CONTRACT NO. 8-11612 INDIANA STATE HIGHWAY COMMISSION

SHEET N.
730



APPROVED FOR CONSTRUCTION
J. D. MATTIS
Engineer of Bridge Plans
10-13-82

NO.	REVISION	DATE
2	PLAN D, SECT. E	JULY '82
1	BLOCK-OUT DIMS.	JAN '82

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

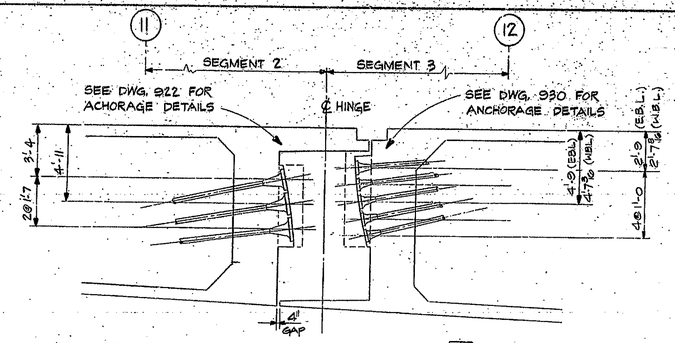
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

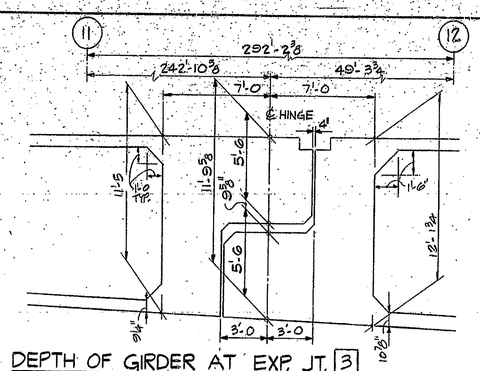
SHEET TITLE
DIAPHRAGM JOINT DETAIL - EXPANSION JOINT 2

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 9-11612 INDIANA STATE HIGHWAY COMMISSION

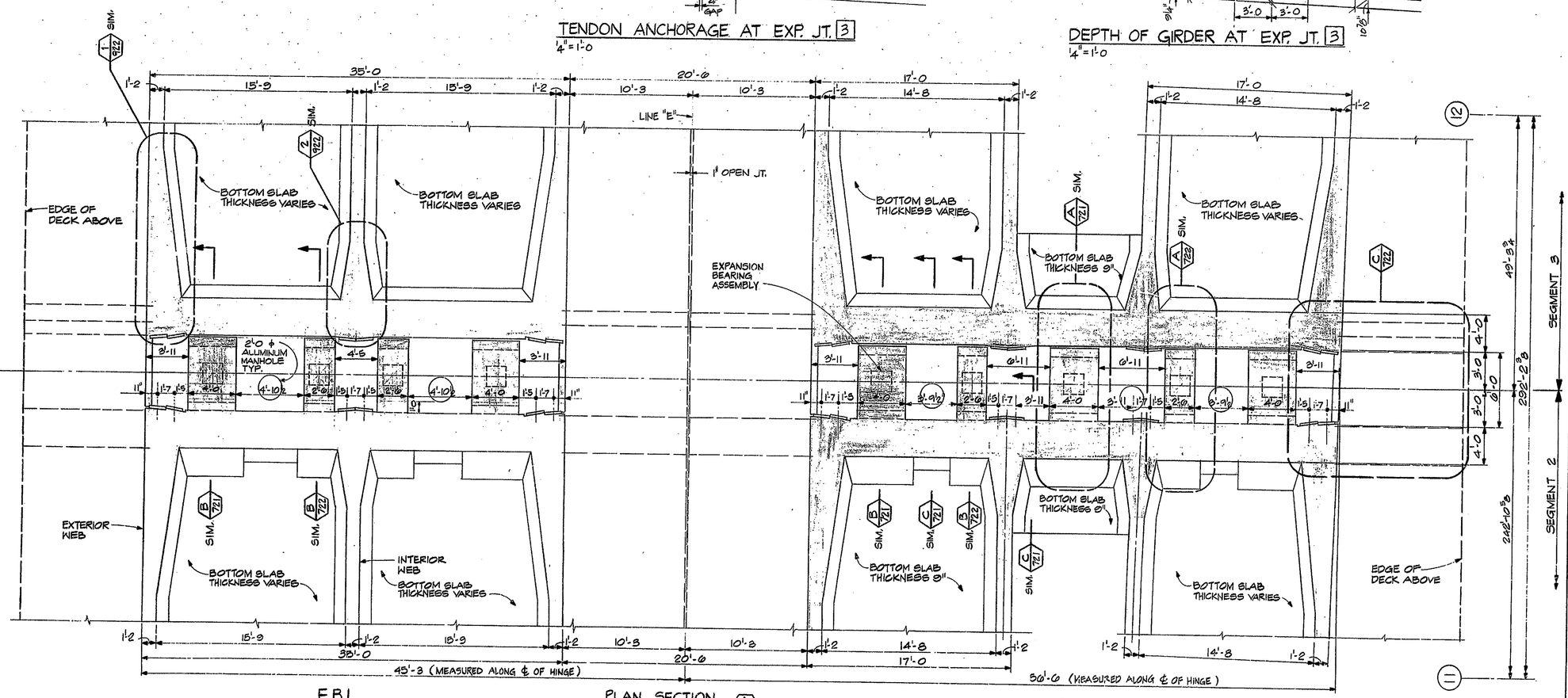
SHEET N.
724



TENDON ANCHORAGE AT EXP. JT. 3
4" = 1'-0



DEPTH OF GIRDER AT EXP. JT. 3
4" = 1'-0



PLAN SECTION A
4" = 1'-0

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

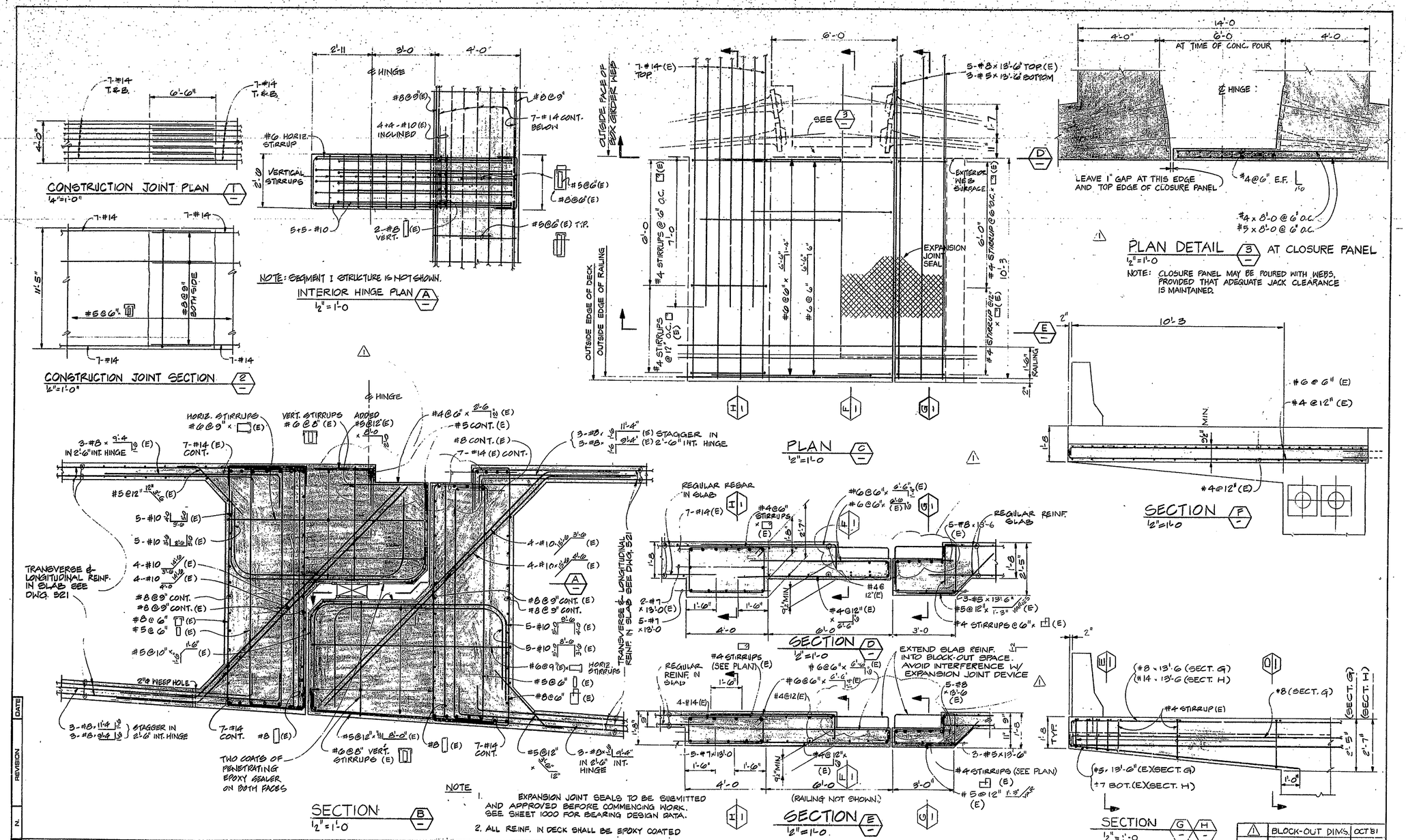
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE

HINGE PLAN – EXPANSION JOINT 3

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
723



T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE

HINGE REINFORCEMENT – EXPANSION JOINT 2

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2848 CONTRACT NO. B-11912
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
722

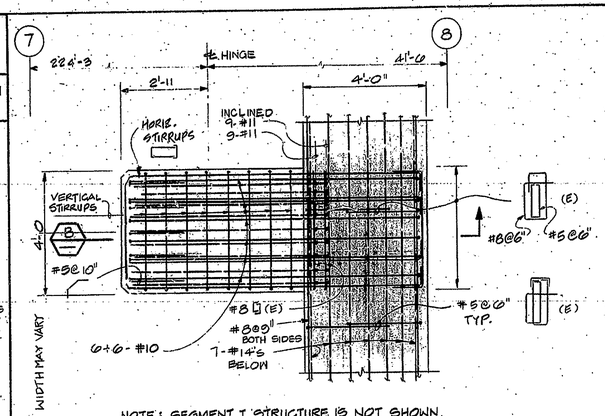
*CONSTRUCTION & STRESSING SEQUENCE FOR EXPANSION JOINT 2 – SEGMENT 1 & 2

K L M N
EBL WBL EBL WBL — CONSTRUCTION ELEMENTS
SEGMENT 1 SEGMENT 2

IN ORDER TO AVOID THE UNEQUAL CONC. CREEP IN DIFFERENT SECTIONS, THE FOLLOWING SEQUENCE MUST BE FOLLOWED.

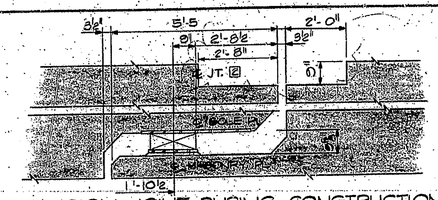
1. BUILD M OR N AND STRESS TENDONS TO 100%.
2. BUILD REMAINING M OR N WITH 4'-0" GAP IN TRANSVERSE EXPANSION JT. DIAPHRAGM SEE (B) DWG. 720. STRESS TO 100%.
3. BUILD K OR L AND STRESS TENDONS TO 100%.
4. BUILD K OR L WITH 6'-0" GAP IN TRANSVERSE DIAPHRAGM AND STRESS TENDONS TO 100%.
5. CLOSE 4'-0" GAP BET. M & N. } AT LEAST 6 MONTHS AFTER COMPLETING ABOVE SEQUENCE.
6. CLOSE 6'-0" GAP BET. K & L.
7. INSTALL EXPANSION JT. AFTER COMPLETING ABOVE SEQUENCE.

* SUBMIT FINAL PROCEDURES AND DETAILS FOR APPROVAL BY ENGINEER, BEFORE COMMENCING WORK.

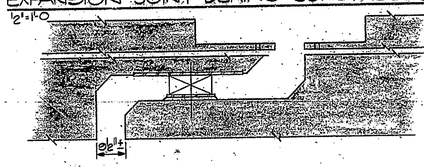


NOTE: SEGMENT 1 STRUCTURE IS NOT SHOWN.

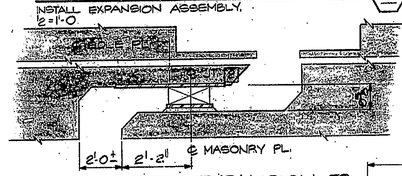
EXTERIOR HINGE PLAN (A)
1/8" = 1'-0"



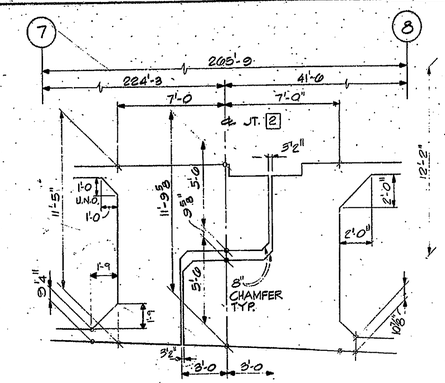
EXPANSION JOINT DURING CONSTRUCTION (D)
1/2" = 1'-0"



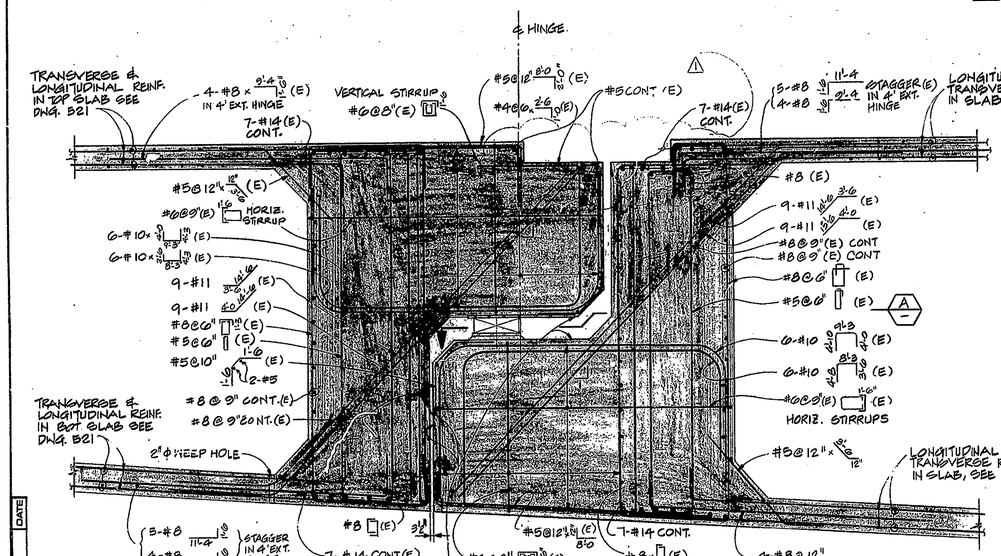
EXPANSION JOINT @ SIX MONTHS (E)
INSTALL EXPANSION ASSEMBLY.
1/2" = 1'-0"



LONG TERM EXPANSION (F)
1/2" = 1'-0"

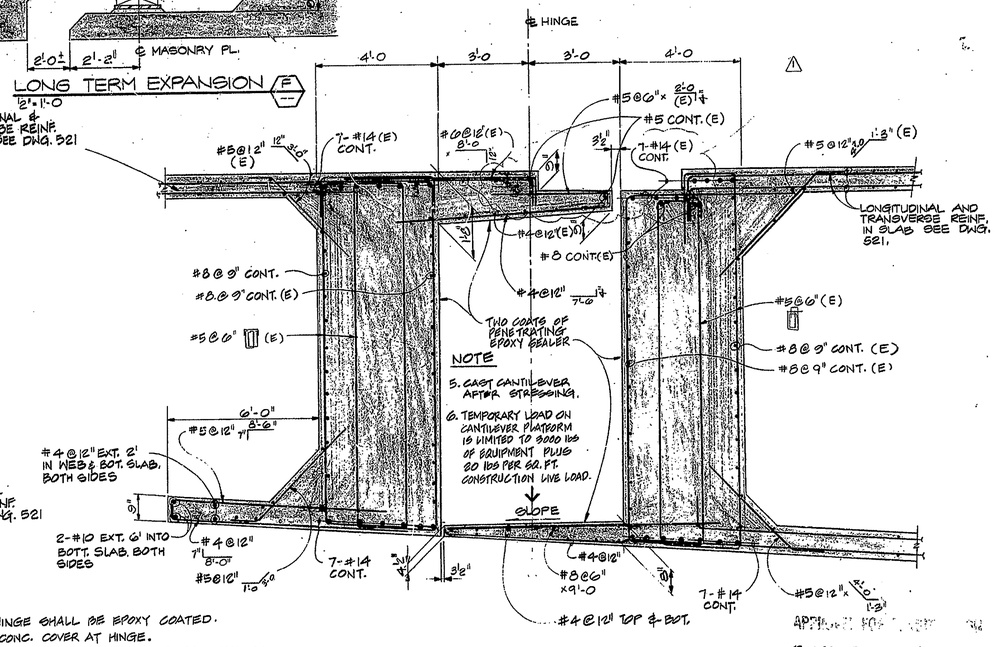


DEPTH OF GIRDER AT EXPANSION BEARING (G)
1/4" = 1'-0 (EXP. JT. 2)



NOTES:
1. ALL REINF. @ HINGE SHALL BE EPOXY COATED.
2. INCREASE 1/2" CONC. COVER AT HINGE.
3. TWO COATS OF PENETRATING EPOXY SEALER SHALL BE APPLIED AS SHOWN ON DETAILS.
4. READ THIS SHEET WITH DWG. 720 & 722.

SECTION (B)
1/2" = 1'-0



NOTE
5. CAST CANTILEVER AFTER STRESSING.
6. TEMPORARY LOAD ON CANTILEVER PLATFORM IS LIMITED TO 3000 LBS OF EQUIPMENT PLUS 20 LBS PER SQ. FT. CONSTRUCTION LIVE LOAD.

SLOPE

SECTION (C)
1/2" = 1'-0

APPROVED FOR CONSTRUCTION
J. B. [illegible]
Sr. Vice President of Walsh Const. Co. 10-26-81

NO.	REVISION	DATE
1	BLACK-OUT DIMS	SEPT 81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

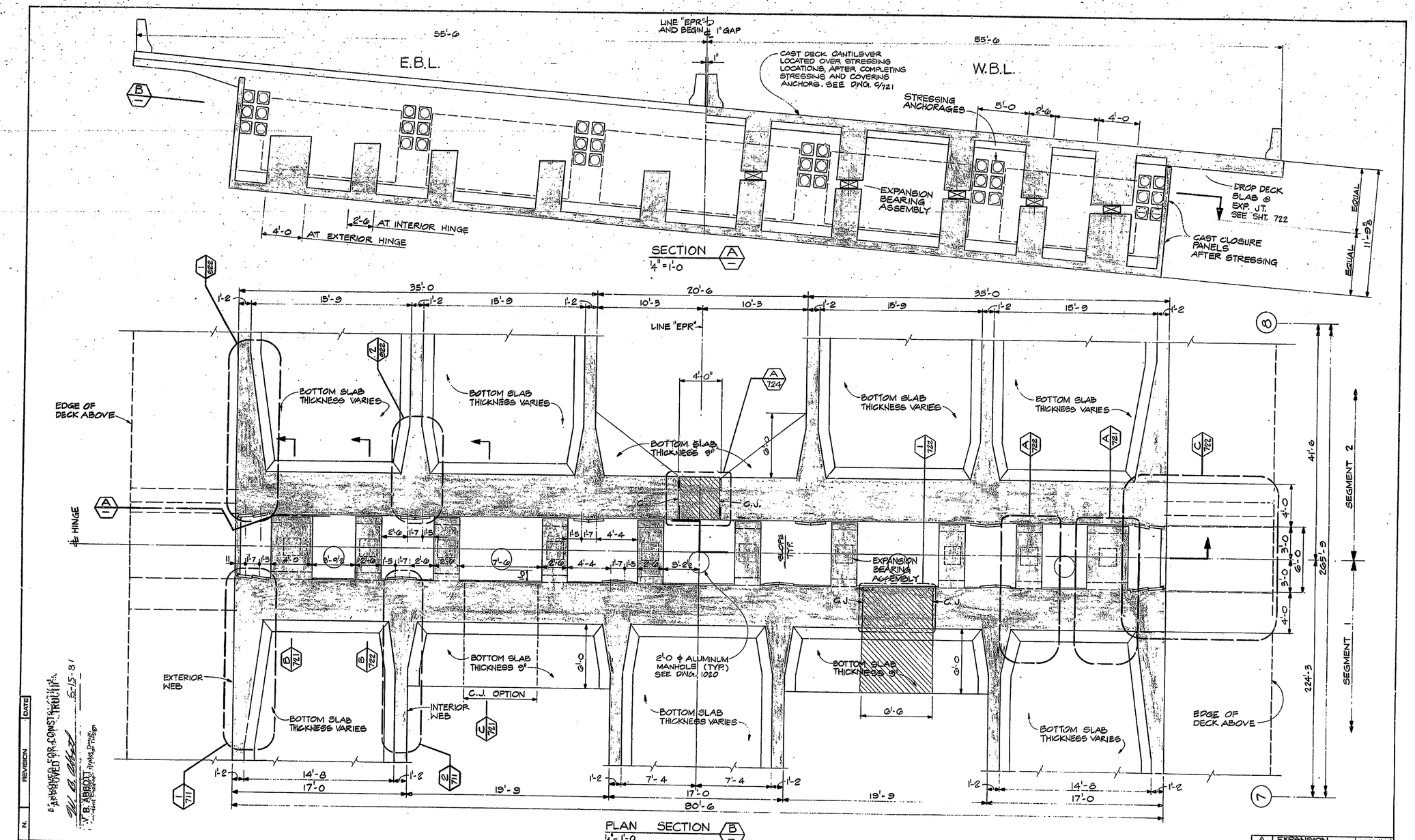
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
HINGE REINFORCEMENT – EXPANSION JOINT 2

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 8-11512 INDIANA STATE HIGHWAY COMMISSION

SHEET N.
721



NO	REVISION	DATE
1	EXPANSION BEARING ASSEMBLY	MAY '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

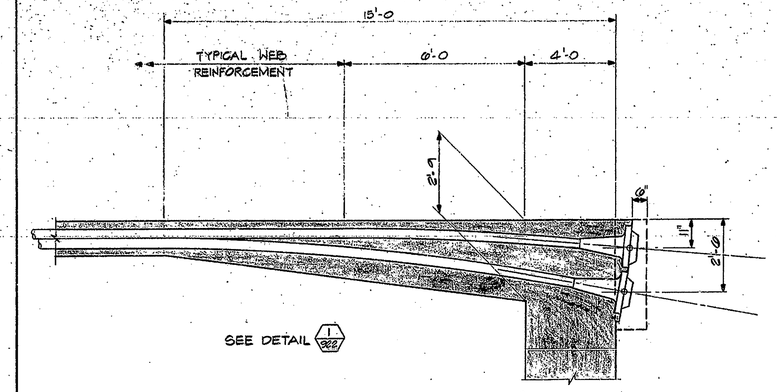
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE

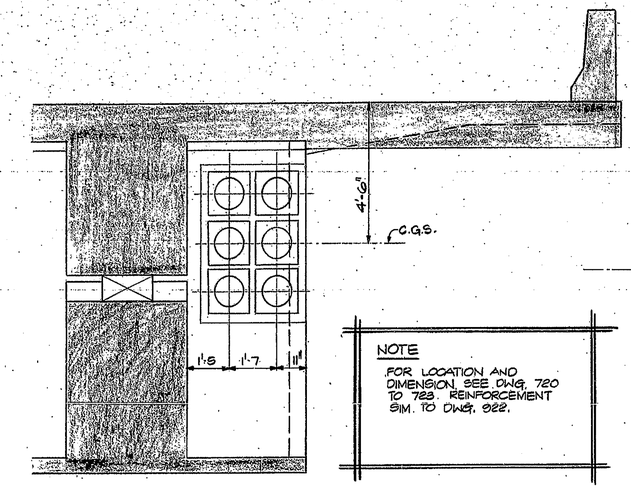
HINGE PLAN – EXPANSION JOINT 2

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
720



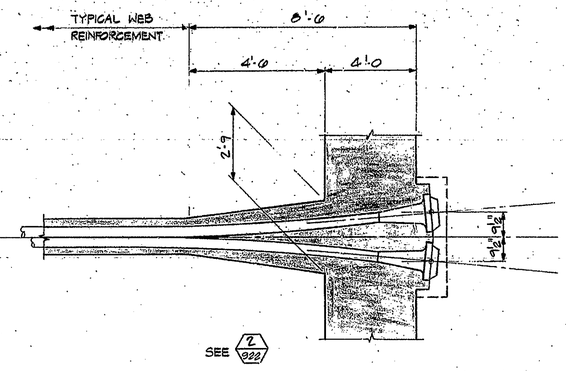
PLAN-EXTERIOR BUILDOUT 1
½"=1'-0



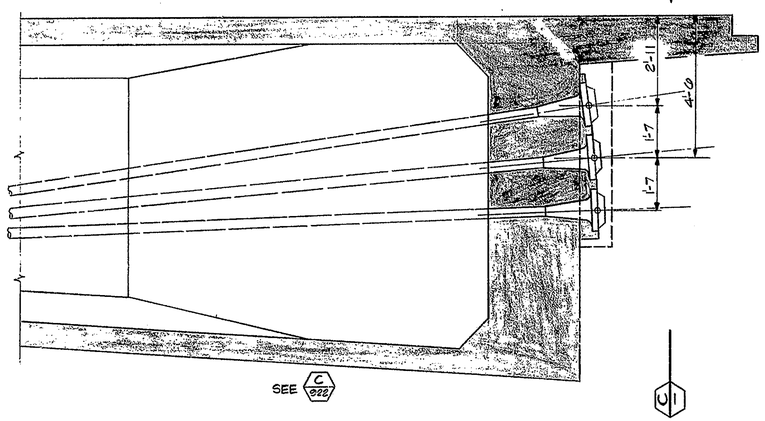
NOTE

FOR LOCATION AND DIMENSION, SEE DWG. 720 TO 723. REINFORCEMENT SIM. TO DWG. 922.

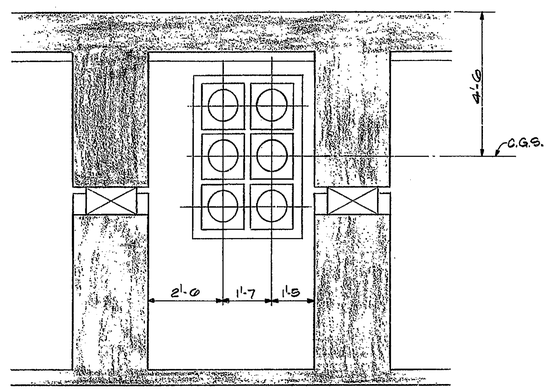
SECTION - EXTERIOR C
½"=1'-0



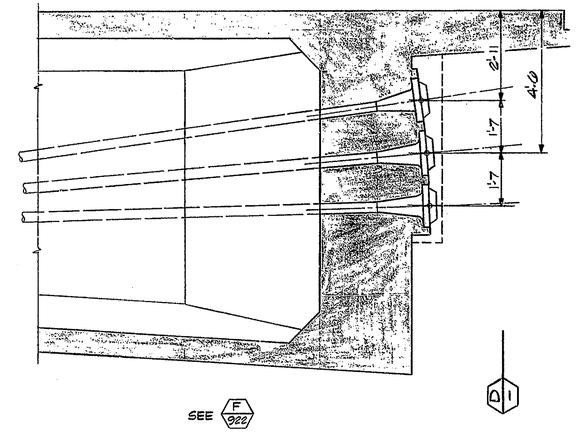
PLAN-INTERIOR BUILDOUT 2
½"=1'-0



ELEVATION-EXTERIOR BUILDOUT A
½"=1'-0



SECTION - INTERIOR D
½"=1'-0



ELEVATION-INTERIOR BUILDOUT B
½"=1'-0

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

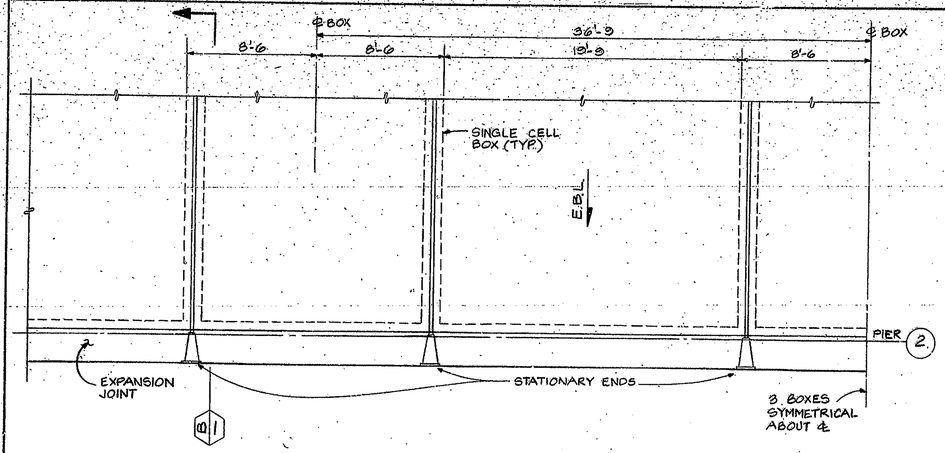
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
ANCHORAGE DETAILS AT HINGE – EXPANSION JOINT 2

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11812 INDIANA STATE HIGHWAY COMMISSION

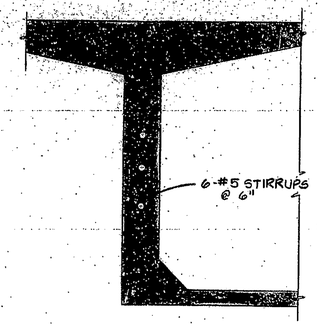
SHEET N.
711



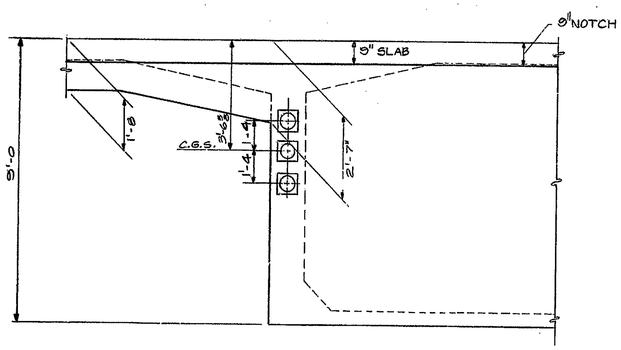
TENDON ANCHORAGE PLAN (A)
1/4"=1'-0"

NOTES

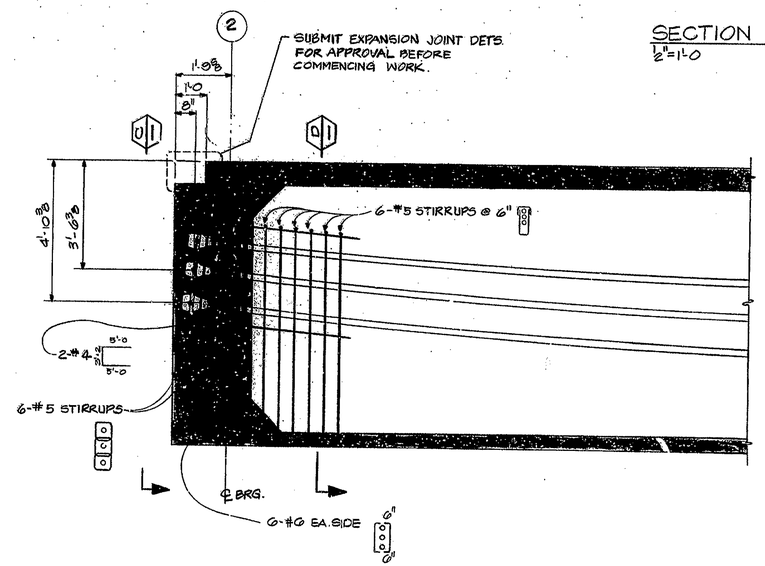
1. REBAR IN DECK WEB, BOTTOM SLAB AND DIAPHRAGM ARE NOT SHOWN IN DWG.
2. ANCHORAGE DETAIL ASSUME "FREYSSINET" 27 K.S. BLIND END ANCHORS.



SECTION (D)
1/2"=1'-0



TENDON ANCHORS (C)
1/2"=1'-0



LONGITUDINAL SECTION (B)
1/2"=1'-0

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

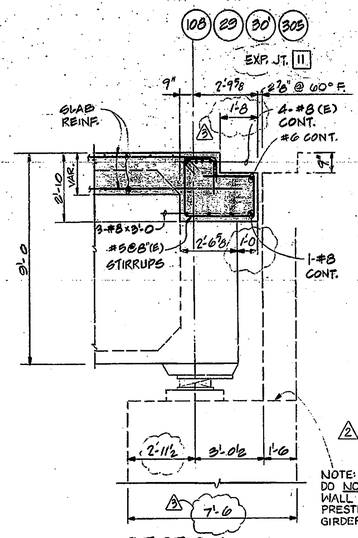
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
HINGE PLAN AND ANCHORAGE DETAILS — EXPANSION JOINT 1

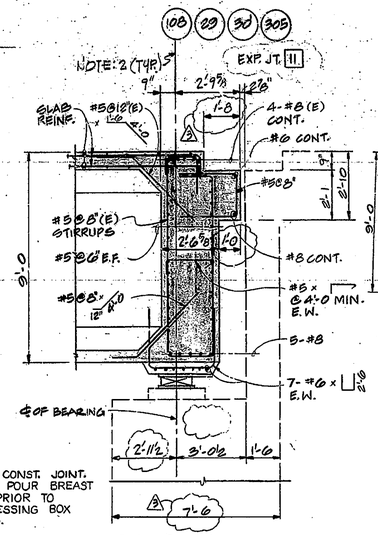
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2549 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
710

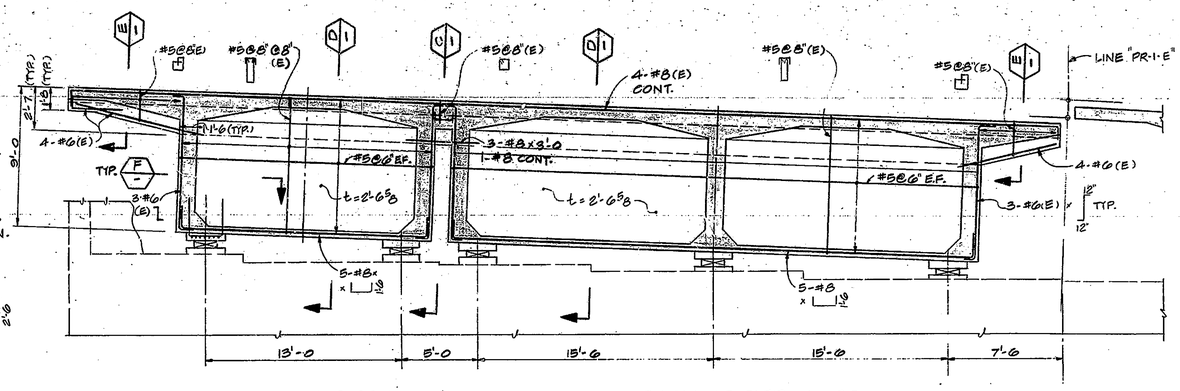


NOTE: CONST. JOINT. DO NOT POUR BREAST WALL PRIOR TO PRESTRESSING BOX GIRDERS.

SECTION C
3/8" = 1'-0



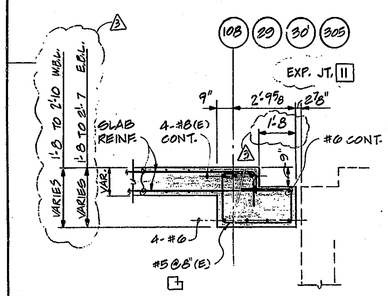
SECTION D
3/8" = 1'-0



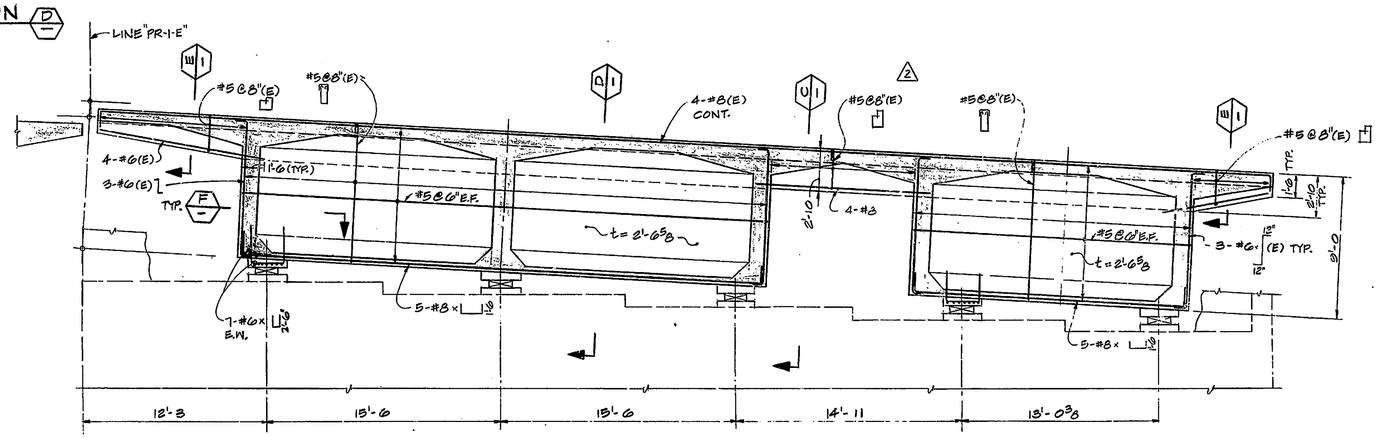
DIAPHRAGM AT PIER No. 108

DIAPHRAGM AT PIER No. 29

SECTION A
1/4" = 1'-0



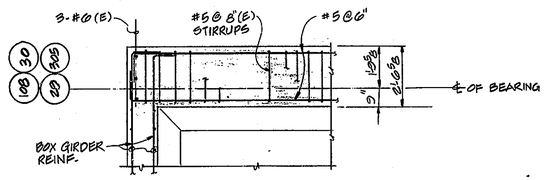
SECTION E
3/8" = 1'-0



DIAPHRAGM AT PIER No. 30'

DIAPHRAGM AT PIER No. 305

SECTION B
1/4" = 1'-0



SECTION F
3/8" = 1'-0

NOTES:

1. ALL REINF. IN TOP DECK SHALL BE EPOXY COATED AS INDICATED BY (E).
2. GAP BETWEEN CONC. GIRDER AND ADJACENT ABUTMENT RETAINING WALL SHOULD BE 3½" AT TIME OF EXP. JOINT ASSEMBLY INSTALLATION.

APPROVED FOR CONSTRUCTION
J. D. MATTIS
Engineer of Bridge Plans
9-7-82

NO.	REVISION	DATE
3	EXP. JT. 11	JAN. '82
2	REINF.	NOV '81
1	EXP. JT 11	OCT '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

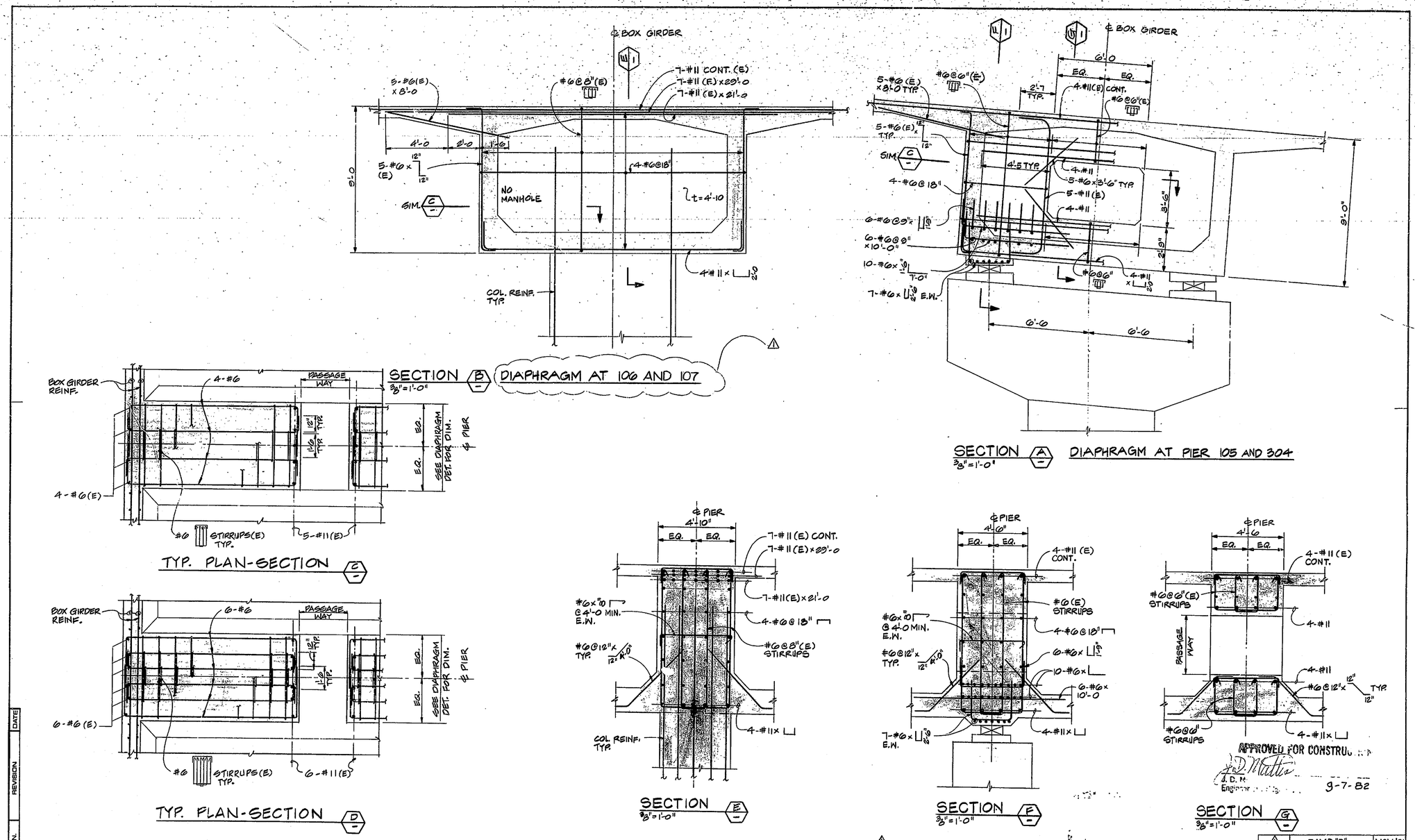
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
DIAPHRAGMS AT PIER No. 108, 29, 30 & 305

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-116:2
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
663



NOTE: SAME AS DWG. 610.

NO.	REVISION	DATE
1	RAMP "B"	NOV. '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

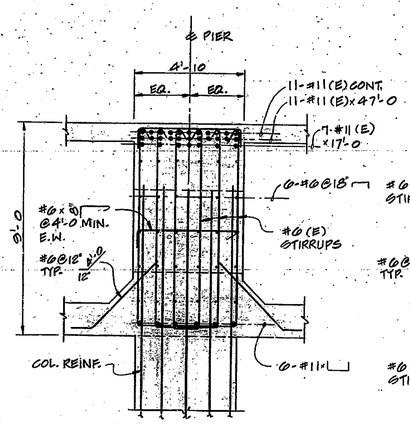
T. Y. LIN REGISTERED 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

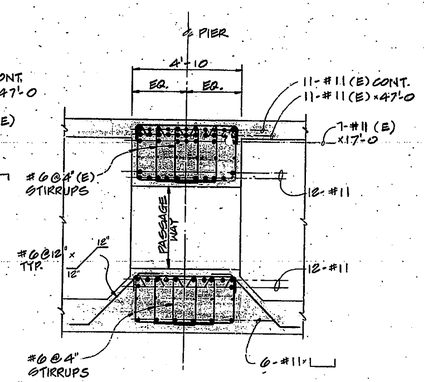
SHEET TITLE
DIAPHRAGMS AT PIER NO. 105, 106, 107 & 304

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

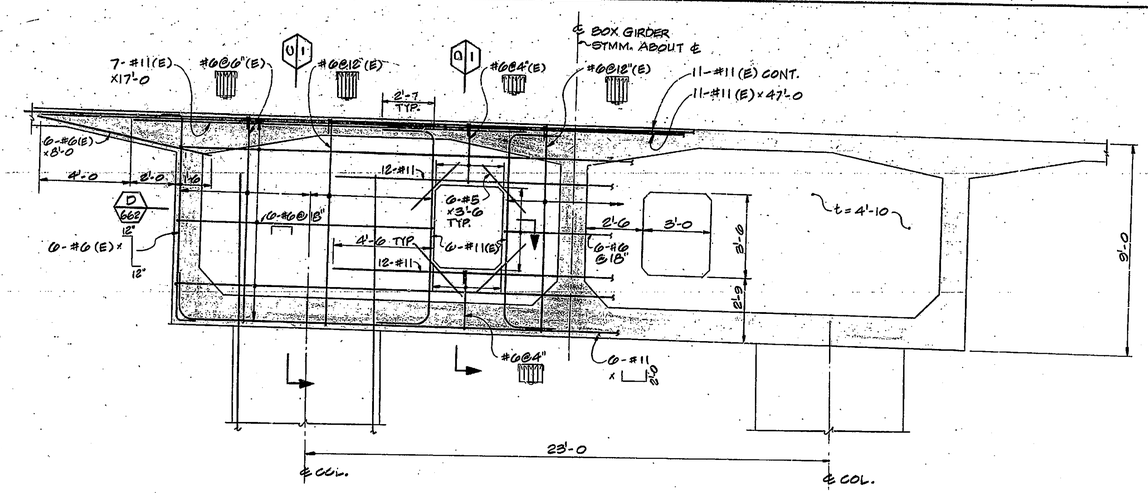
SHEET N.
662



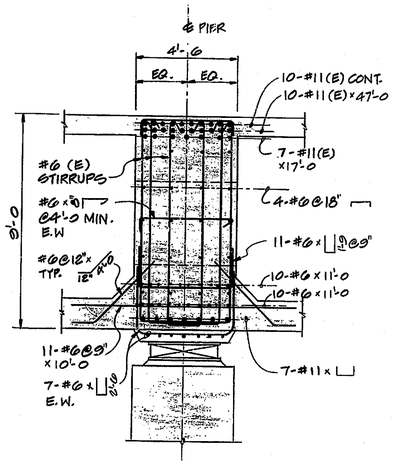
SECTION C
3/8"=1'-0



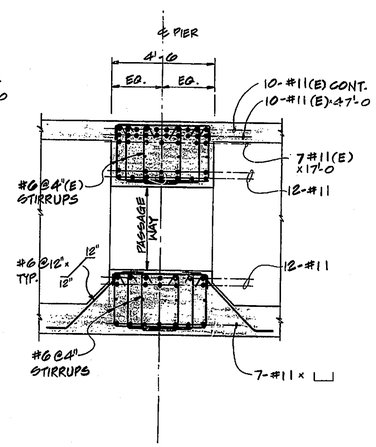
SECTION D
3/8"=1'-0



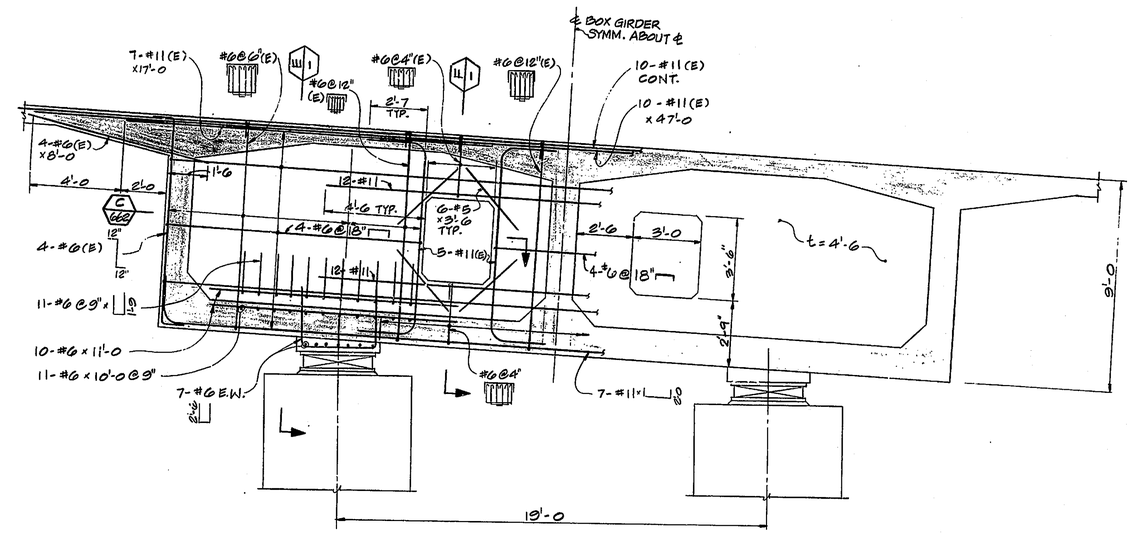
SECTION A DIAPHRAGM AT PIER No. 27'
3/8"=1'-0



SECTION E
3/8"=1'-0



SECTION F
3/8"=1'-0



SECTION B DIAPHRAGM AT PIER No. 29'
3/8"=1'-0

NOTE: SAME AS DWG. 610

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

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CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
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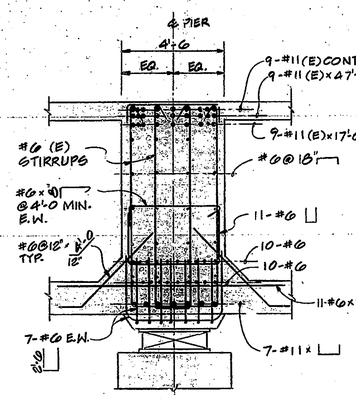
DARIEN, CONNECTICUT

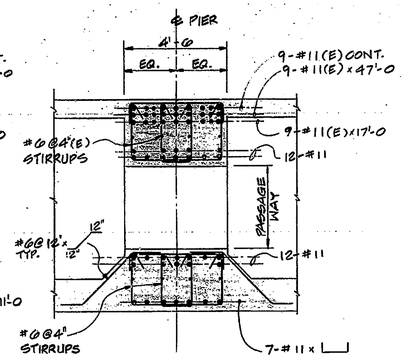
SHEET TITLE
DIAPHRAGMS AT PIER No. 27' & 29'

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. B-11812
INDIANA STATE HIGHWAY COMMISSION

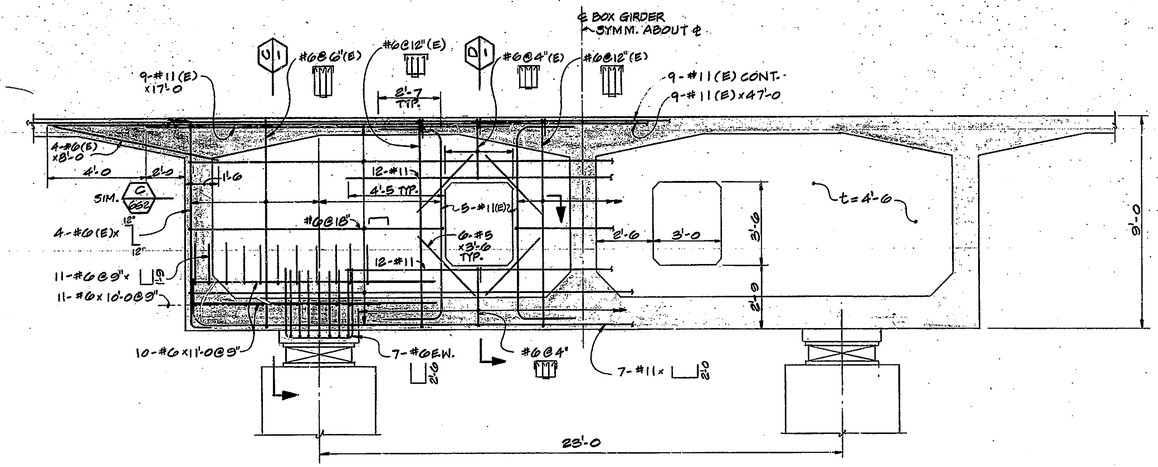
SHEET N.
661



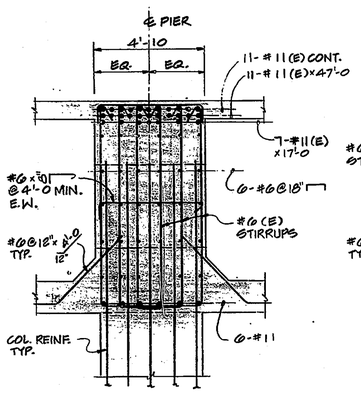
SECTION C
3/8"=1'-0



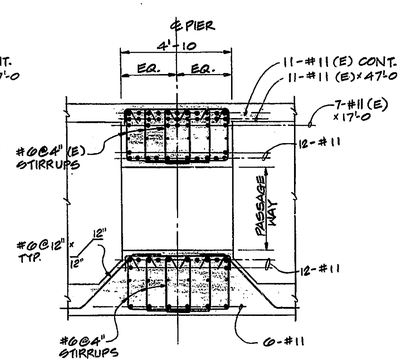
SECTION D
3/8"=1'-0



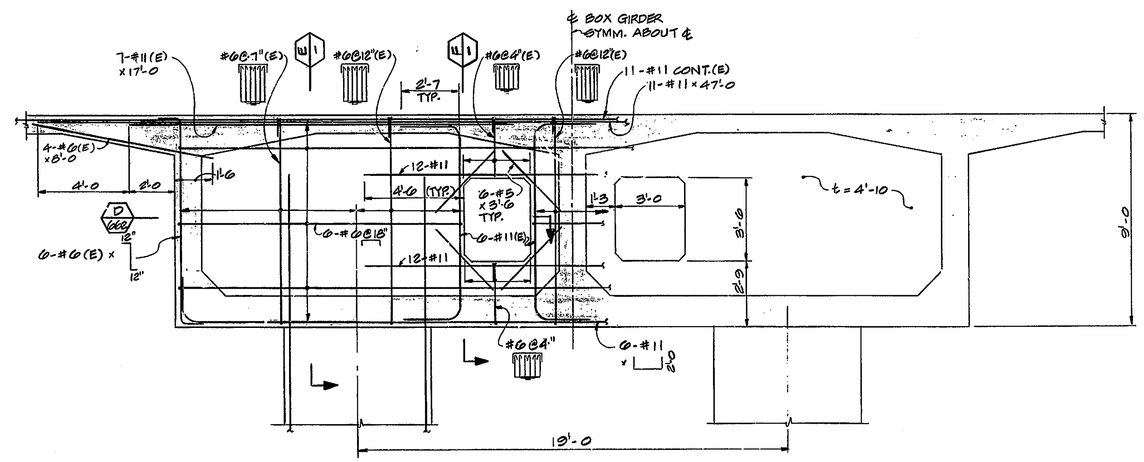
SECTION A DIAPHRAGM AT PIER No. 25, 25', 26, 26'
3/8"=1'-0



SECTION E
3/8"=1'-0



SECTION F
3/8"=1'-0



SECTION B DIAPHRAGM AT PIER No. 27, 28 & 28'
3/8"=1'-0

NOTE: SAME AS DWG. 610

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

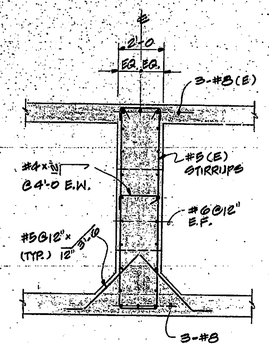
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

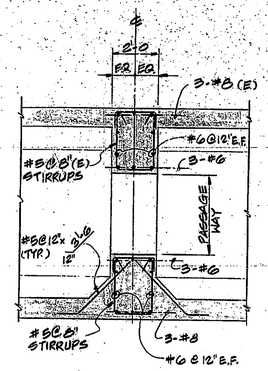
SHEET TITLE
DIAPHRAGMS AT PIER No. 25, 25', 26, 26', 27, 28 & 28'

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612 INDIANA STATE HIGHWAY COMMISSION

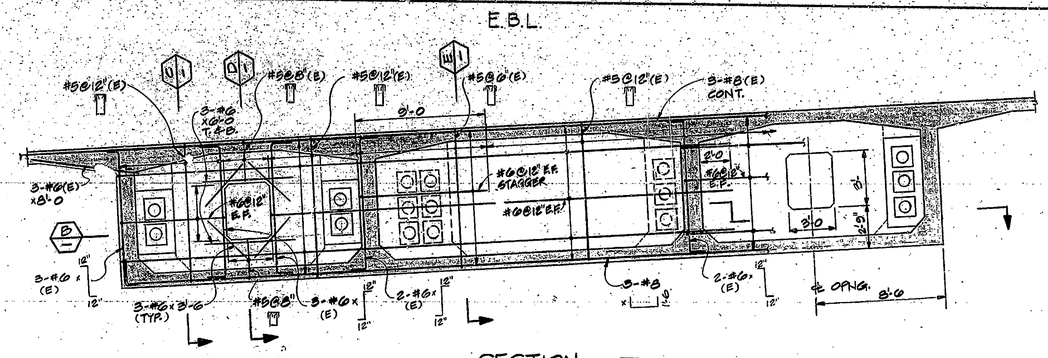
SHEET N.
660



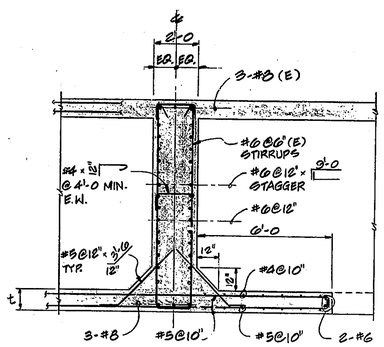
SECTION C
3/8" = 1'-0



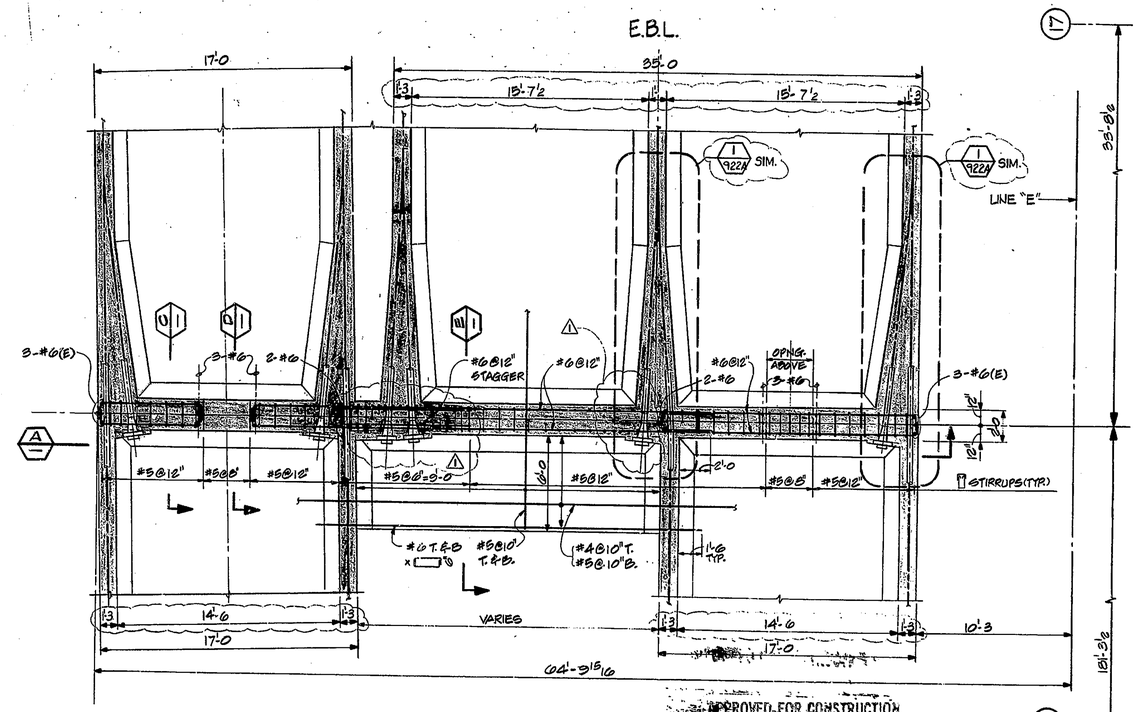
SECTION D
3/8" = 1'-0



SECTION A
1/4" = 1'-0



SECTION E
3/8" = 1'-0



PLAN SECTION B
1/4" = 1'-0

APPROVED FOR CONSTRUCTION
J.D. Martin
J.D. Martin
Engineer of Bridge Design
9-7-82

NOTE: SAME AS DWG. 610

No.	REVISION	DATE
1	ANCHOR CLEARANCE	JAN. '82

NO.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

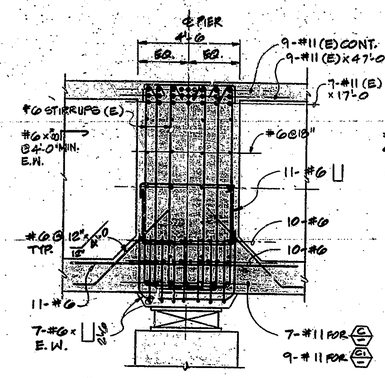
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

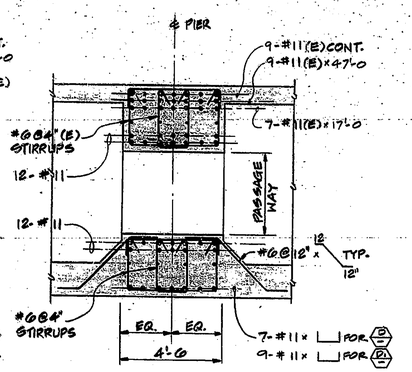
SHEET TITLE
DIAPHRAGM AT BOX GIRDER TRANSITION – SEGMENT 4

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

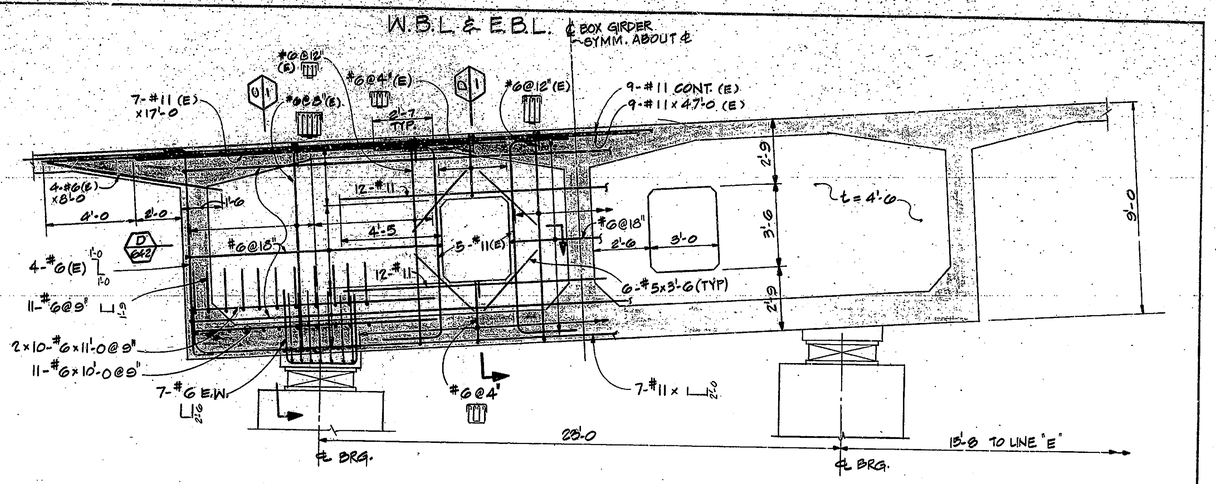
SHEET N.
644



SECTION C C1
3/8"=1'-0

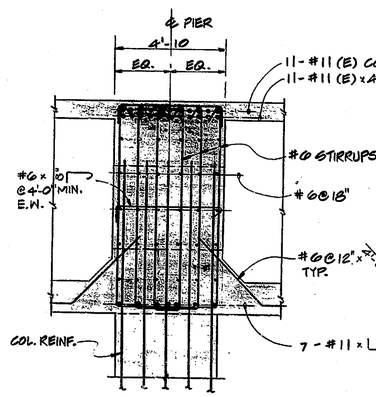


SECTION D D1
3/8"=1'-0

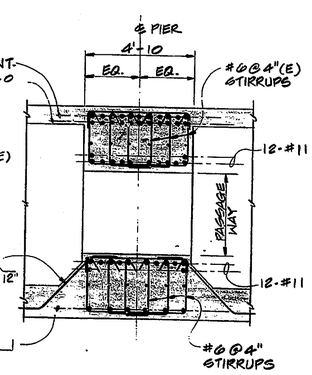


SECTION A DIAPHRAGM AT PIER No. 20, 20', 23, 23', 24 & 24'
3/8"=1'-0

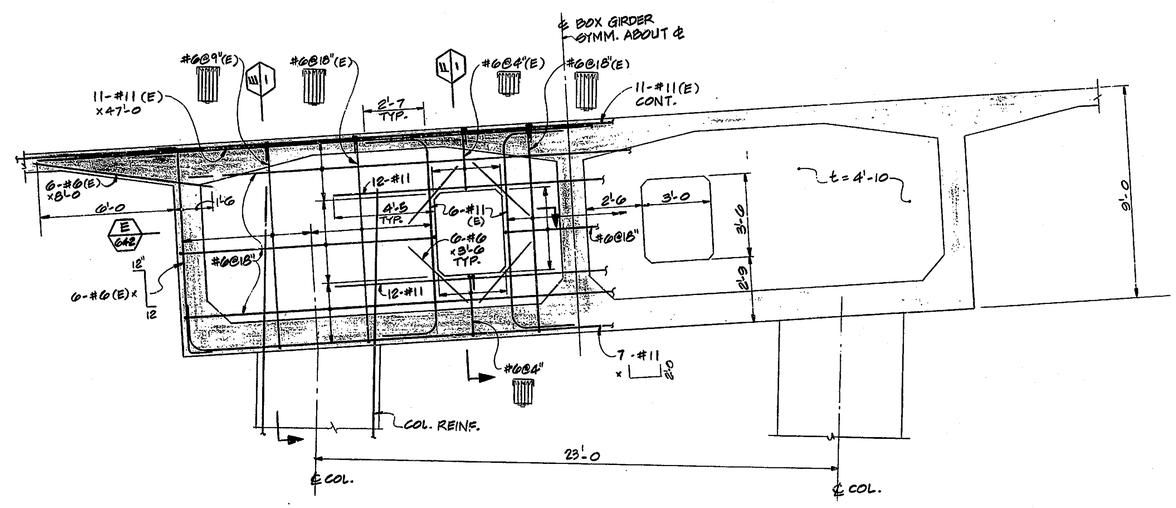
W.B.L. OR E.B.L.



SECTION E
3/8"=1'-0



SECTION F
3/8"=1'-0



SECTION B DIAPHRAGM AT PIER No. 21, 21', 22 & 22'
3/8"=1'-0

NOTE: SAME AS DWG. 610

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

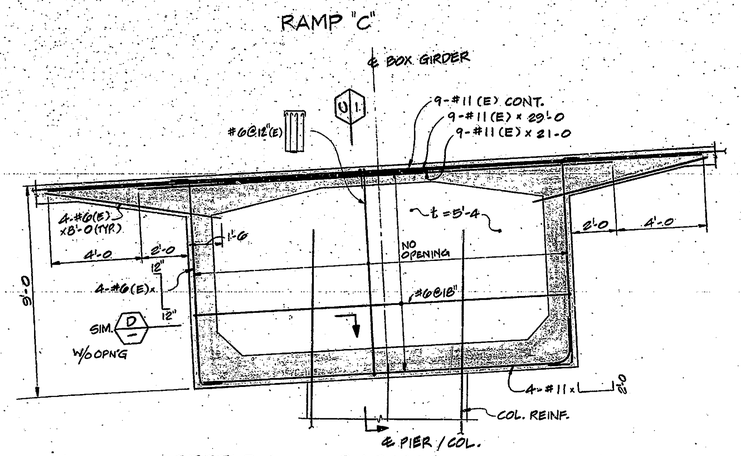
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

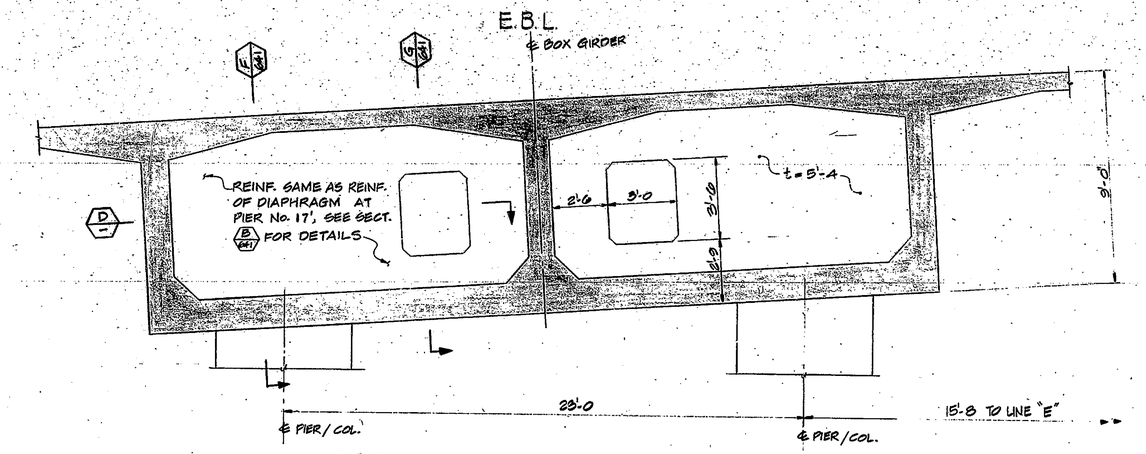
SHEET TITLE
DIAPHRAGMS AT PIER No. 20, 20', 21, 21', 22, 22', 23, 23', 24 & 24'

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

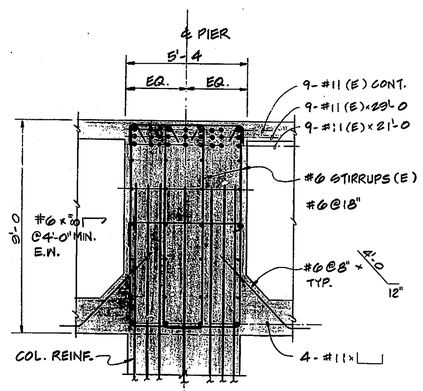
SHEET N.
643



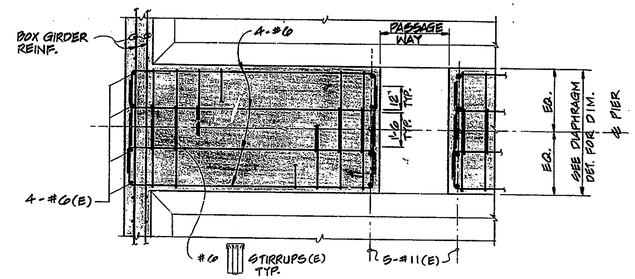
SECTION B DIAPHRAGM AT PIER No. 410
3/8" = 1'-0



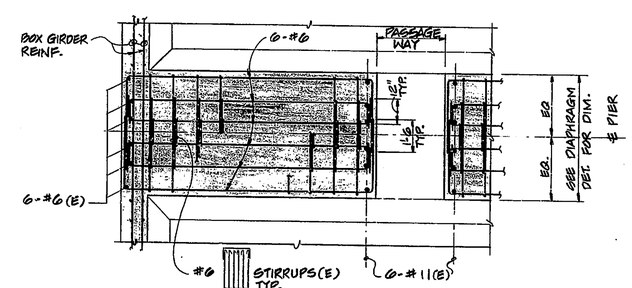
SECTION A DIAPHRAGM AT PIER No. 18
3/8" = 1'-0"



SECTION C
3/8" = 1'-0



TYP. PLAN-SECTION D



TYP. PLAN-SECTION E

NOTE: SAME AS DWG 610

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

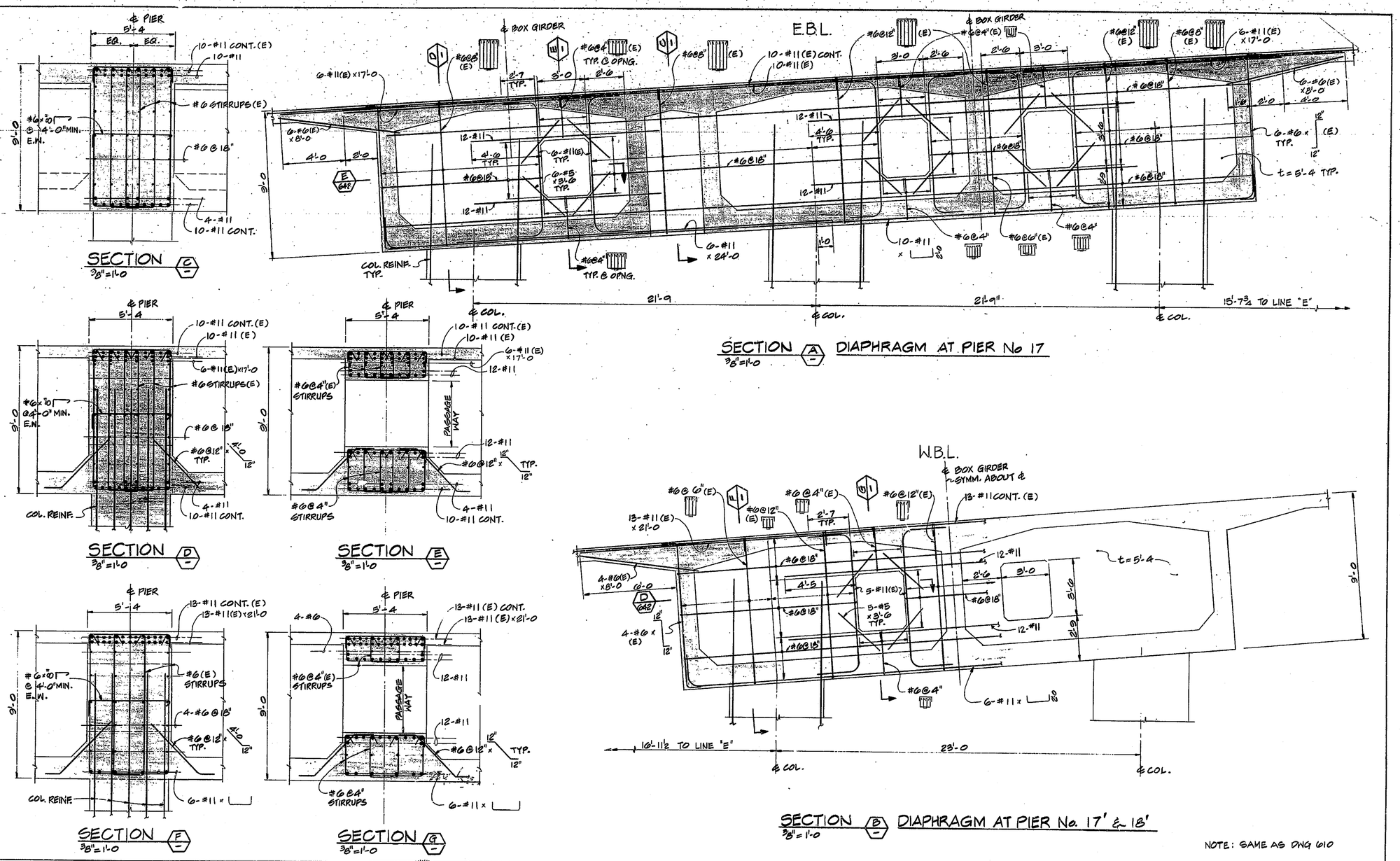
T. Y. LIN REGISTERED No. 18266 PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
DIAPHRAGMS AT PIER No. 18 & 410

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
642



NOTE: SAME AS DWG 610

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

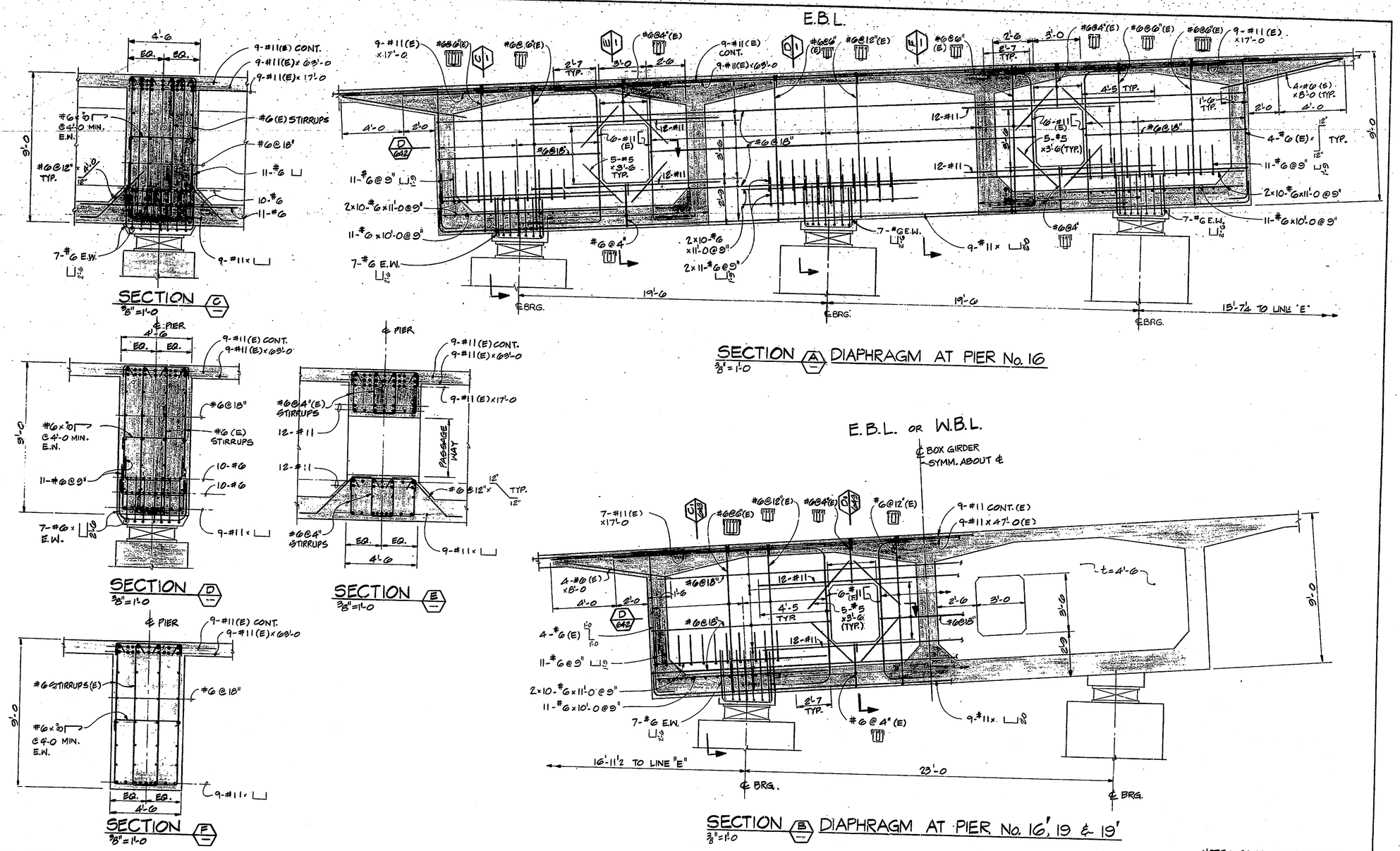
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
DIAPHRAGM AT PIER No. 17, 17' & 18'

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
641



T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

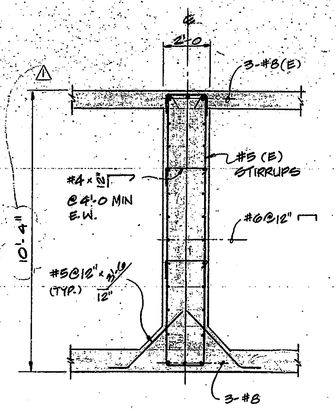
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
DIAPHRAGM AT PIER No. 16, 16', 19 & 19'

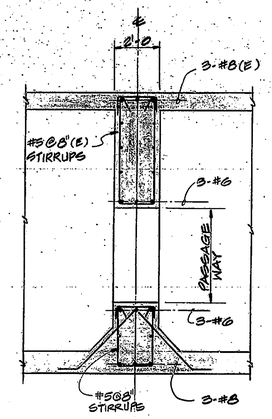
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
640

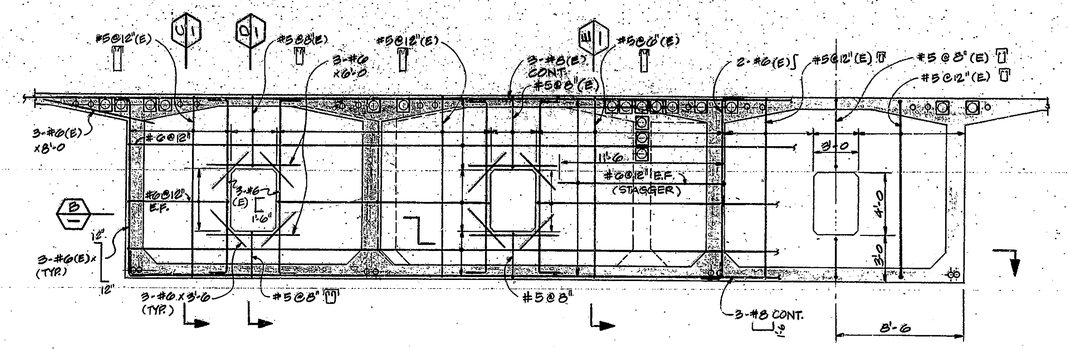
N. | REVISION | DATE



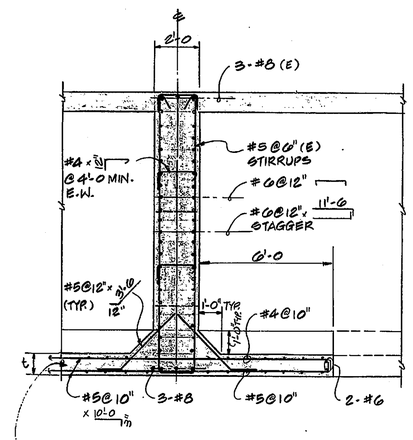
SECTION E
3/8" = 1'-0



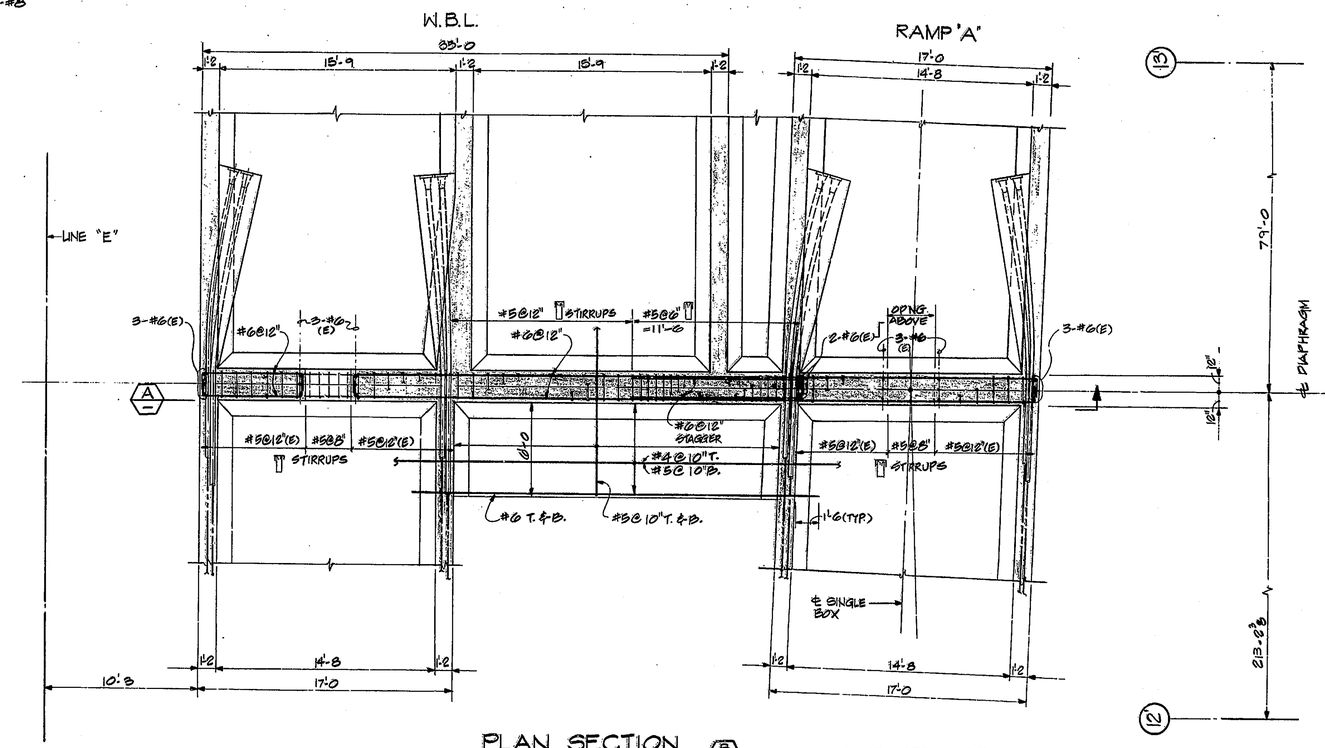
SECTION D
3/8" = 1'-0



SECTION A
1/4" = 1'-0



SECTION E
3/8" = 1'-0



PLAN SECTION B
1/4" = 1'-0

NOTE: SEE SHEET 6 TO FOR CONSTRUCTION

W. B. ABBOTT 10-20-81
Assistant Director of Bridge Design

NO.	REVISION	DATE
1	DIAPH. DEPTH	SEPT'81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

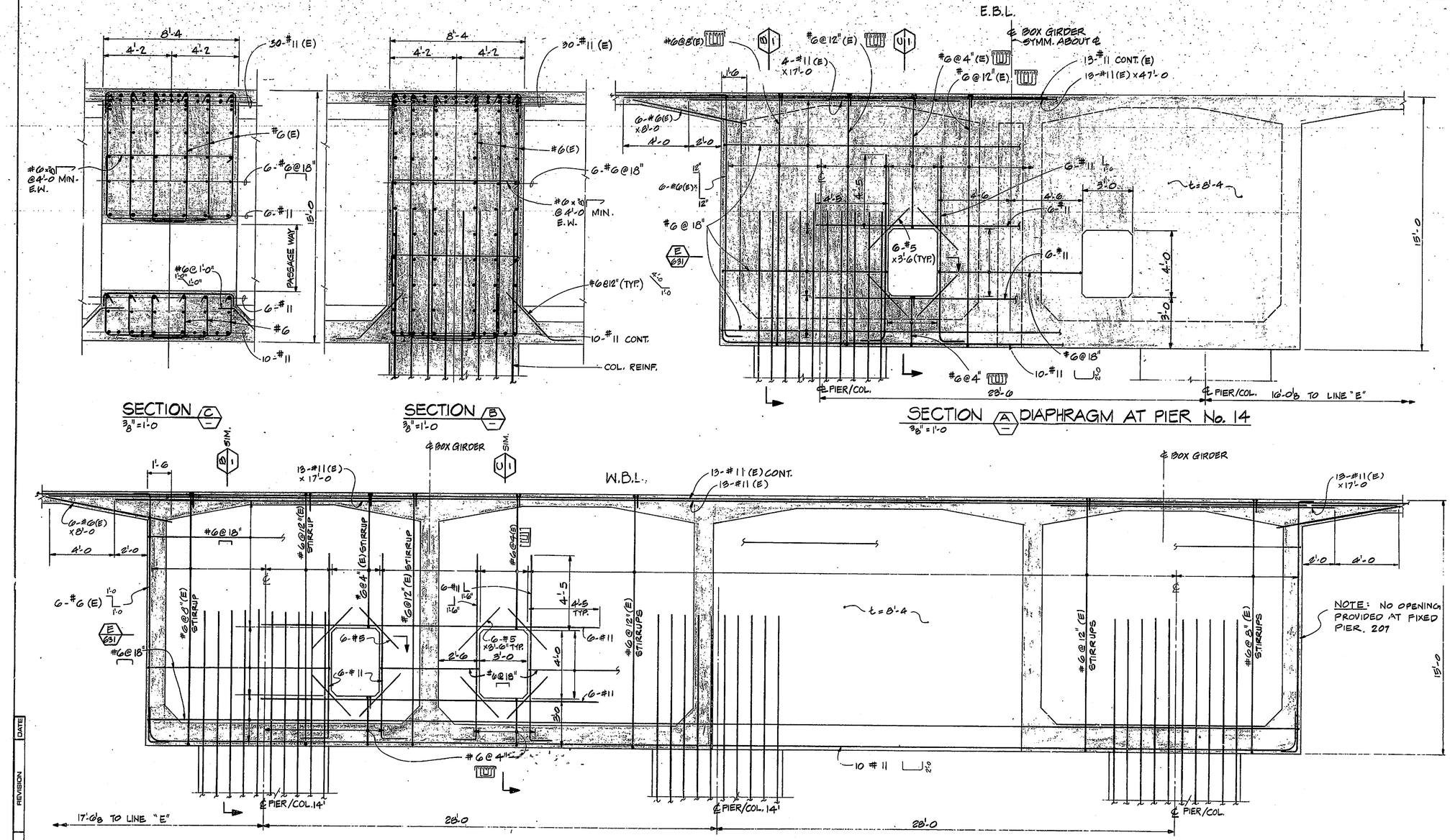
T. Y. LIN REGISTERED No. 18266 PROFESSIONAL ENGINEER INDIANA

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
DIAPHRAGM AT BOX GIRDER TRANSITION – SEGMENT 3

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 8-11612 INDIANA STATE HIGHWAY COMMISSION

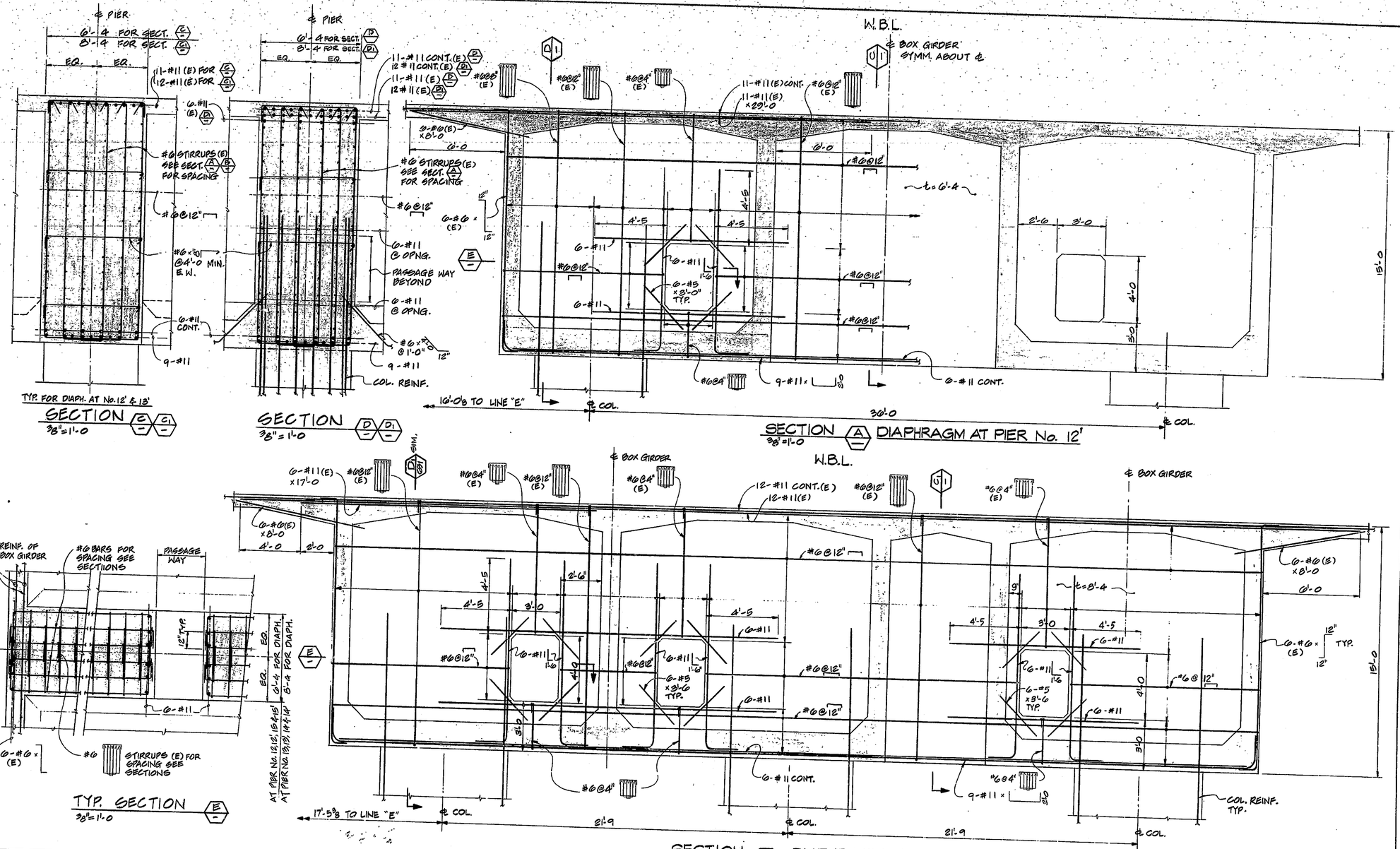
SHEET N.
633



NOTE: SEE SHEET 610

T. Y. LIN INTERNATIONAL STRUCTURAL ENGINEERS REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC. CONSULTING ENGINEERS	WALSH CONSTRUCTION COMPANY A DIVISION OF GUY F. ATKINSON CO. DARIEN, CONNECTICUT	SHEET TITLE DIAPHRAGMS AT PIER No. 14, 14', 207 CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL BRIDGE FILE: 912-45-2548 CONTRACT NO. B-11612 INDIANA STATE HIGHWAY COMMISSION	SHEET N. 632

DATE | REVISION | N.



NO.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

REGISTERED PROFESSIONAL ENGINEER No. 18266 STATE OF INDIANA

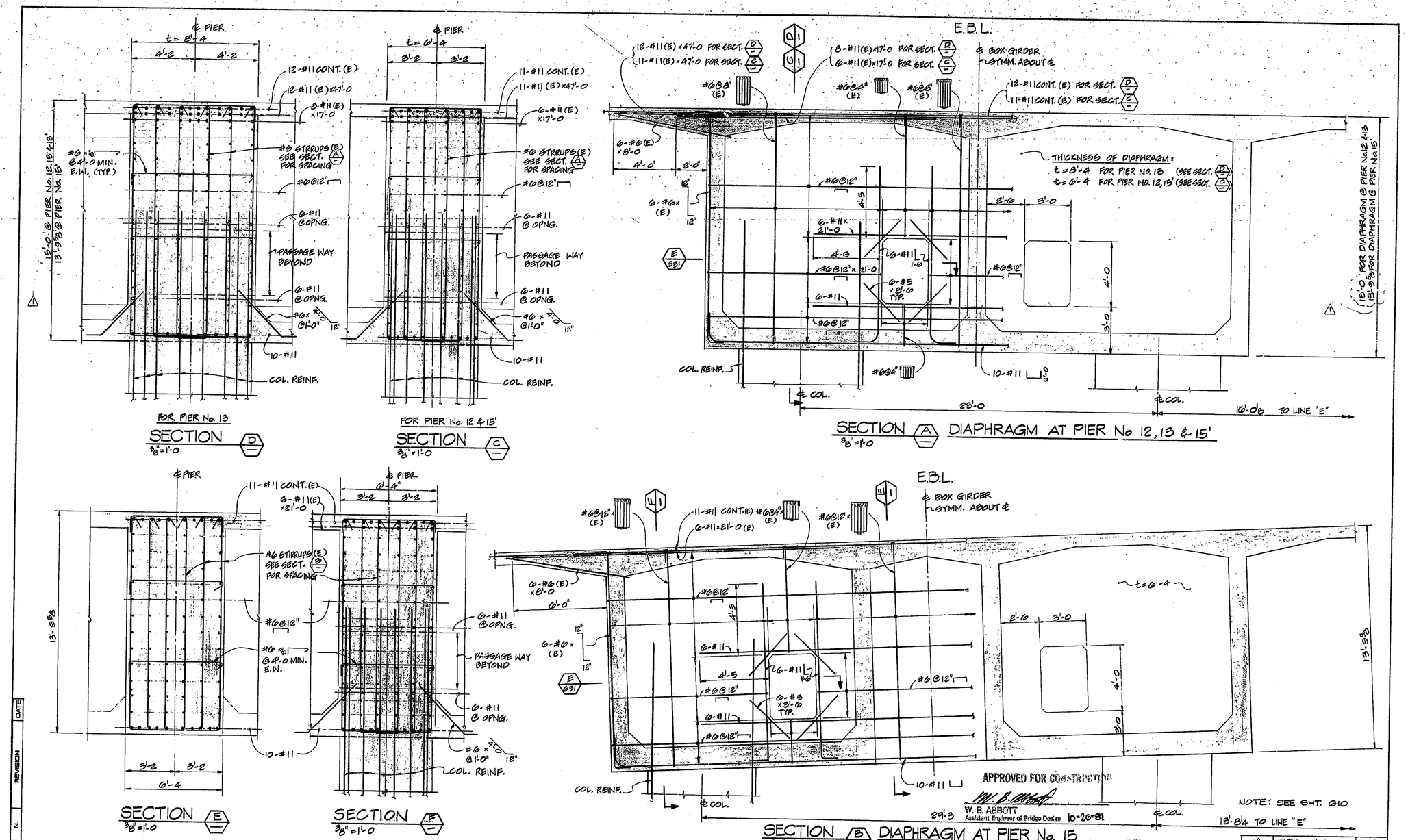
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE

DIAPHRAGMS AT PIER No. 12', 13'

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-43-2548 CONTRACT NO. 8-11812
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
631



NO.	REVISION	DATE
1	PIER 15' DEPTH	SEPT '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

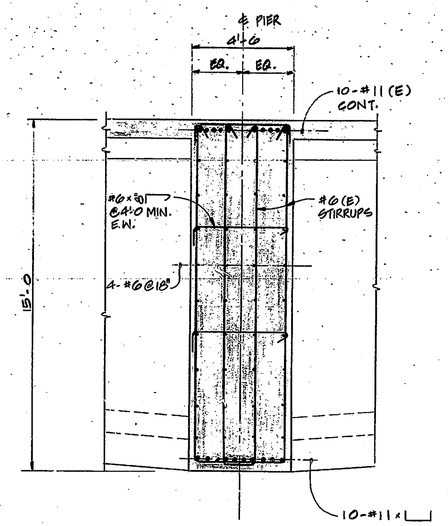
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE

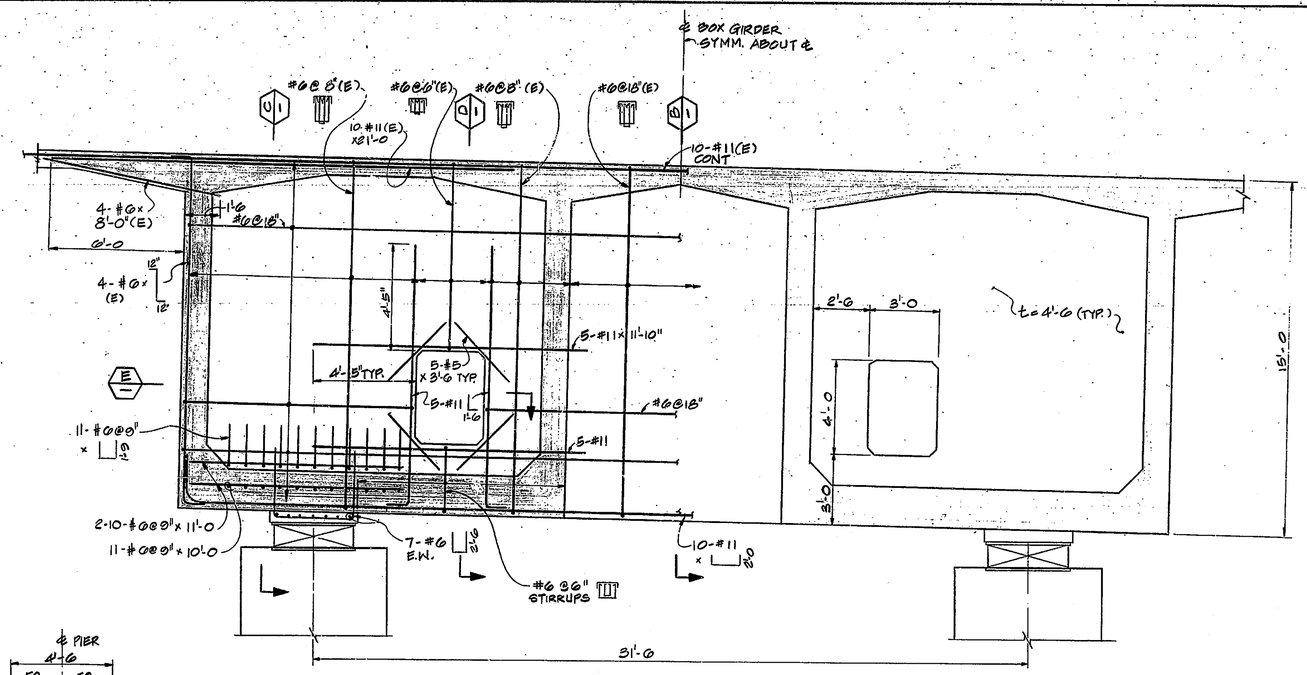
DIAPHRAGMS AT PIER No. 12, 13, 15' & 15

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 812-45-2546 CONTRACT NO. 8-11812
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
630

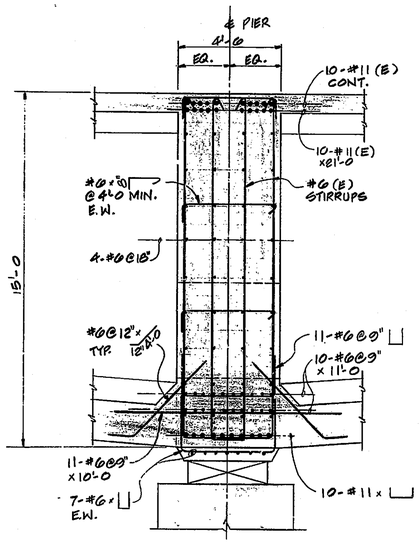


SECTION B
3/8" = 1'-0

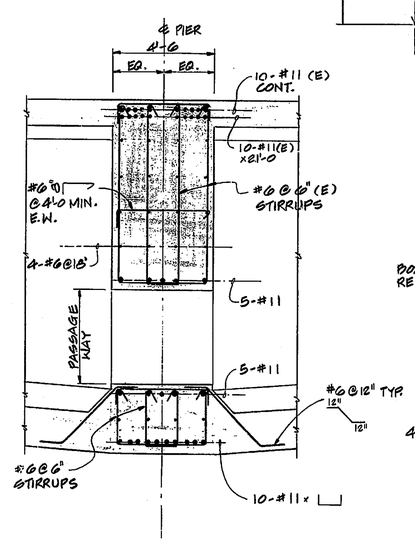


SECTION A
3/8" = 1'-0

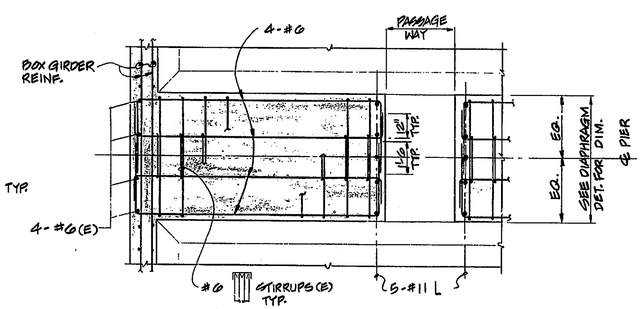
DIAPHRAGM AT PIER No. 11'



SECTION C
3/8" = 1'-0



SECTION D
3/8" = 1'-0



TYP. PLAN - SECTION E

NOTE: SEE SHEET 610

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

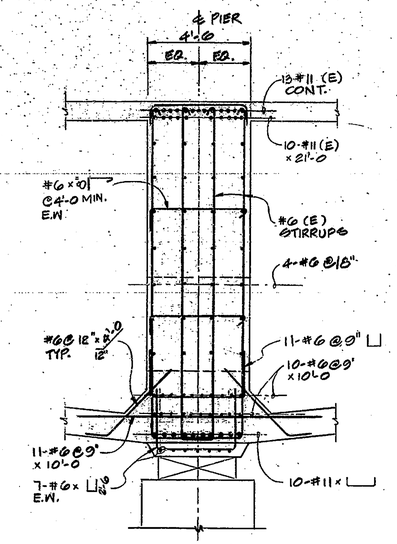
T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

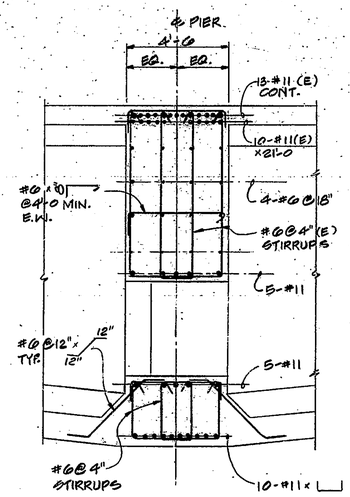
SHEET TITLE
DIAPHRAGM AT PIER No. 11'

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 812-45-2546 CONTRACT NO. B-11612 INDIANA STATE HIGHWAY COMMISSION

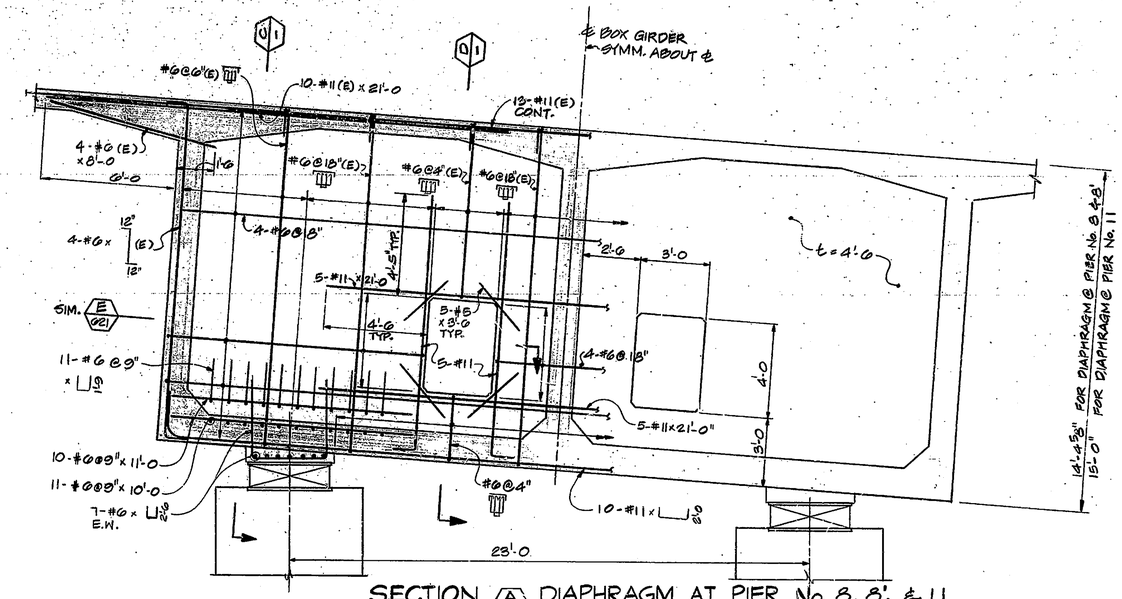
SHEET N.
621



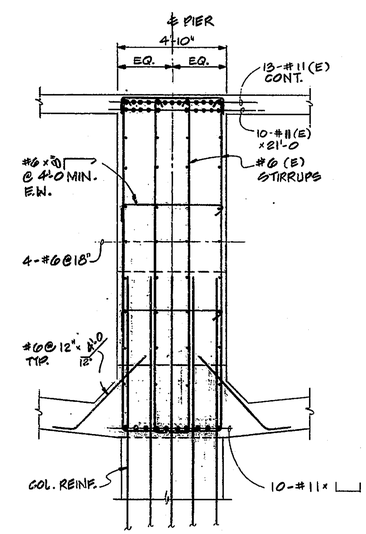
SECTION C
3/8" = 1'-0



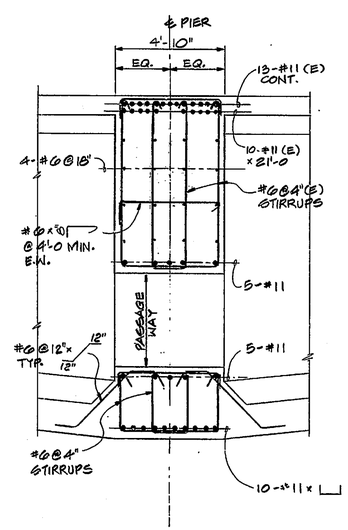
SECTION D
3/8" = 1'-0



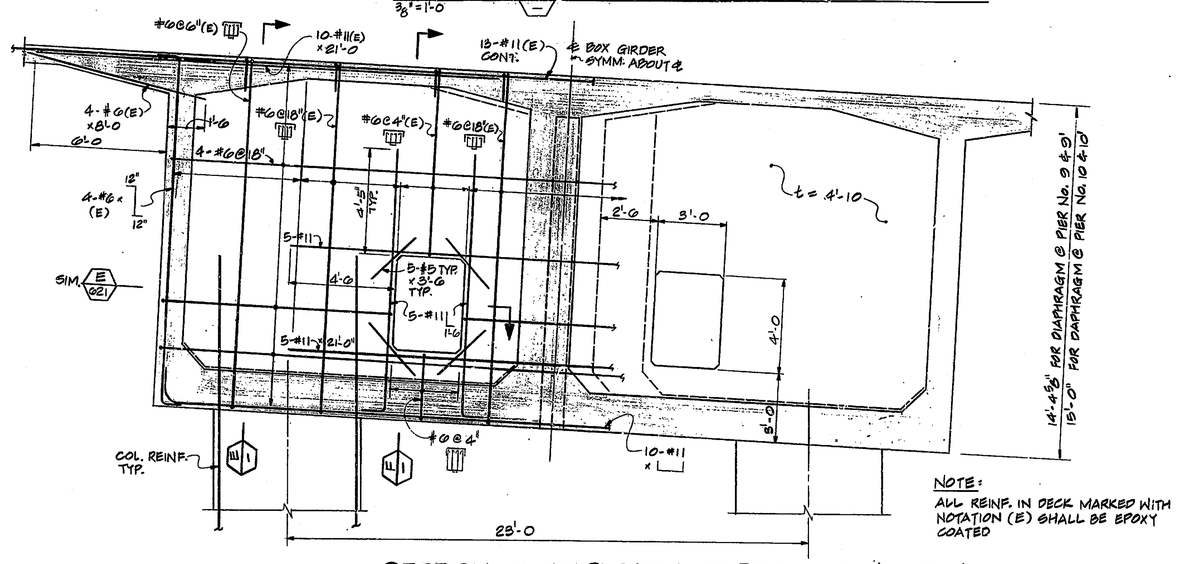
SECTION A DIAPHRAGM AT PIER No. 8, 8', & 11
3/8" = 1'-0



SECTION E
3/8" = 1'-0



SECTION F
3/8" = 1'-0



SECTION B DIAPHRAGM AT PIER No. 9, 9', 10 & 10'
3/8" = 1'-0

NOTE:
ALL REINF. IN DECK MARKED WITH NOTATION (E) SHALL BE EPOXY COATED

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

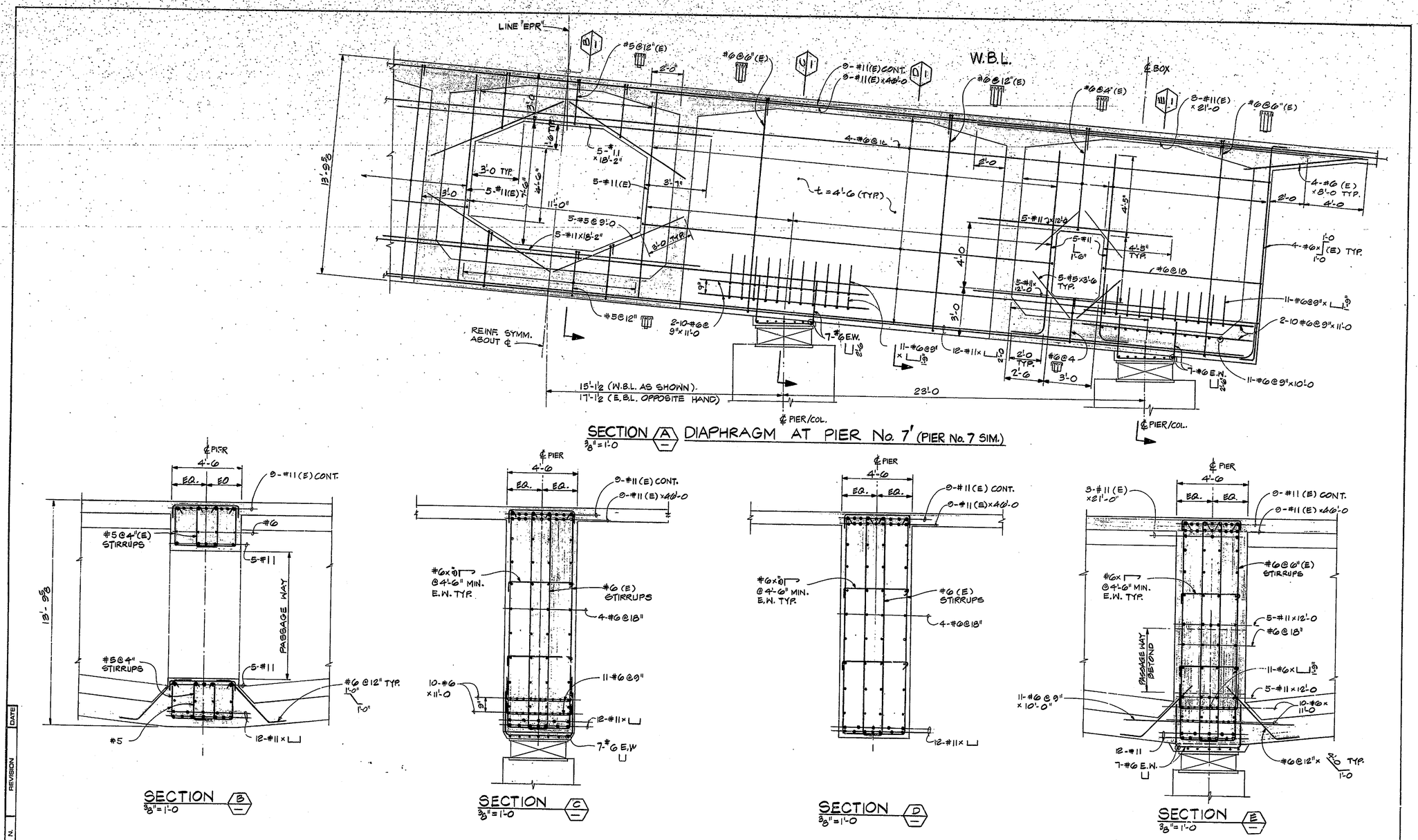
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
DIAPHRAGMS AT PIER No. 8, 8', 9, 9', 10, 10', & 11

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-46-2548 CONTRACT NO. B-11612 INDIANA STATE HIGHWAY COMMISSION

SHEET N.
620



SECTION (A) DIAPHRAGM AT PIER No. 7' (PIER No. 7 SIM.)
3/8" = 1'-0

SECTION (B)
3/8" = 1'-0

SECTION (C)
3/8" = 1'-0

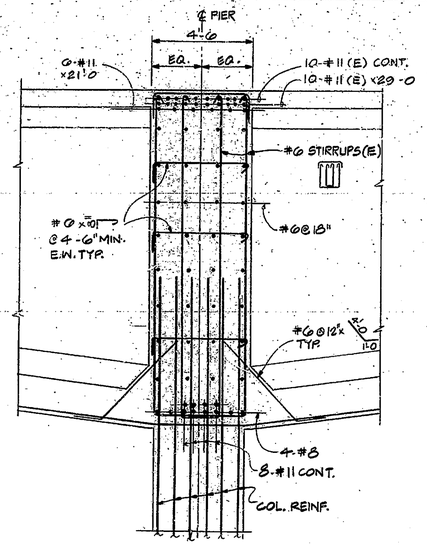
SECTION (D)
3/8" = 1'-0

SECTION (E)
3/8" = 1'-0

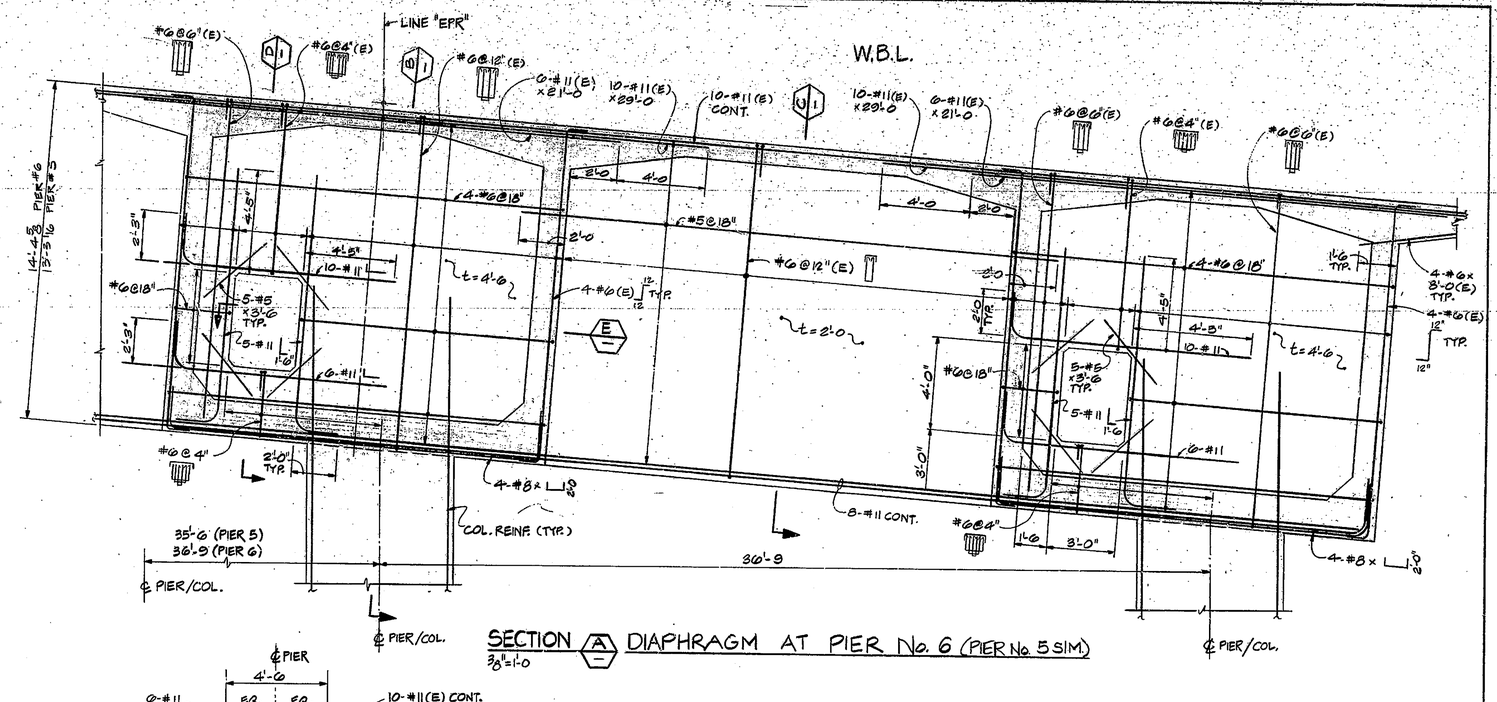
NOTE: SEE SHEET 610

T. Y. LIN INTERNATIONAL STRUCTURAL ENGINEERS REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC. CONSULTING ENGINEERS	WALSH CONSTRUCTION COMPANY A DIVISION OF GUY F. ATKINSON CO. DARIEN, CONNECTICUT	SHEET TITLE DIAPHRAGM AT PIER No. 7 AND 7' CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL BRIDGE FILE: 912-45-2548 CONTRACT NO. B-11612 INDIANA STATE HIGHWAY COMMISSION	SHEET N. 612

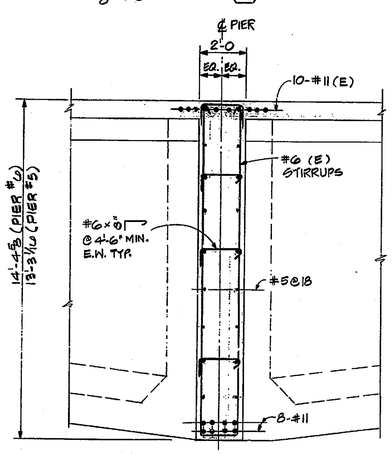
N. | REVISION | DATE



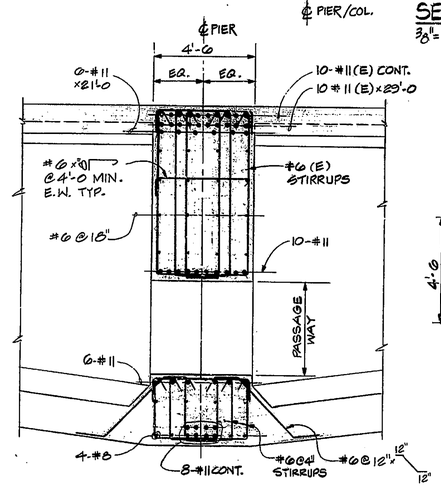
SECTION B
3/8" = 1'-0



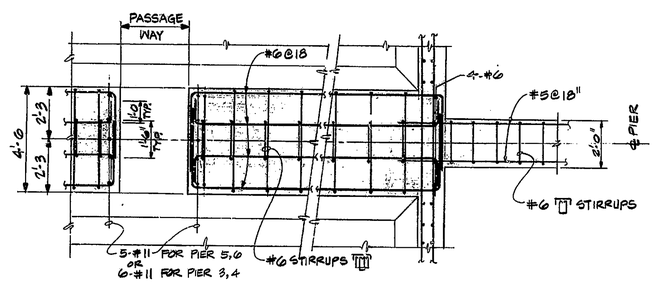
SECTION A DIAPHRAGM AT PIER No. 6 (PIER No. 5 SIM.)
3/8" = 1'-0



SECTION C
3/8" = 1'-0



SECTION D
3/8" = 1'-0



TYP. PLAN-SECTION E

NOTE: SEE SHEET 610

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

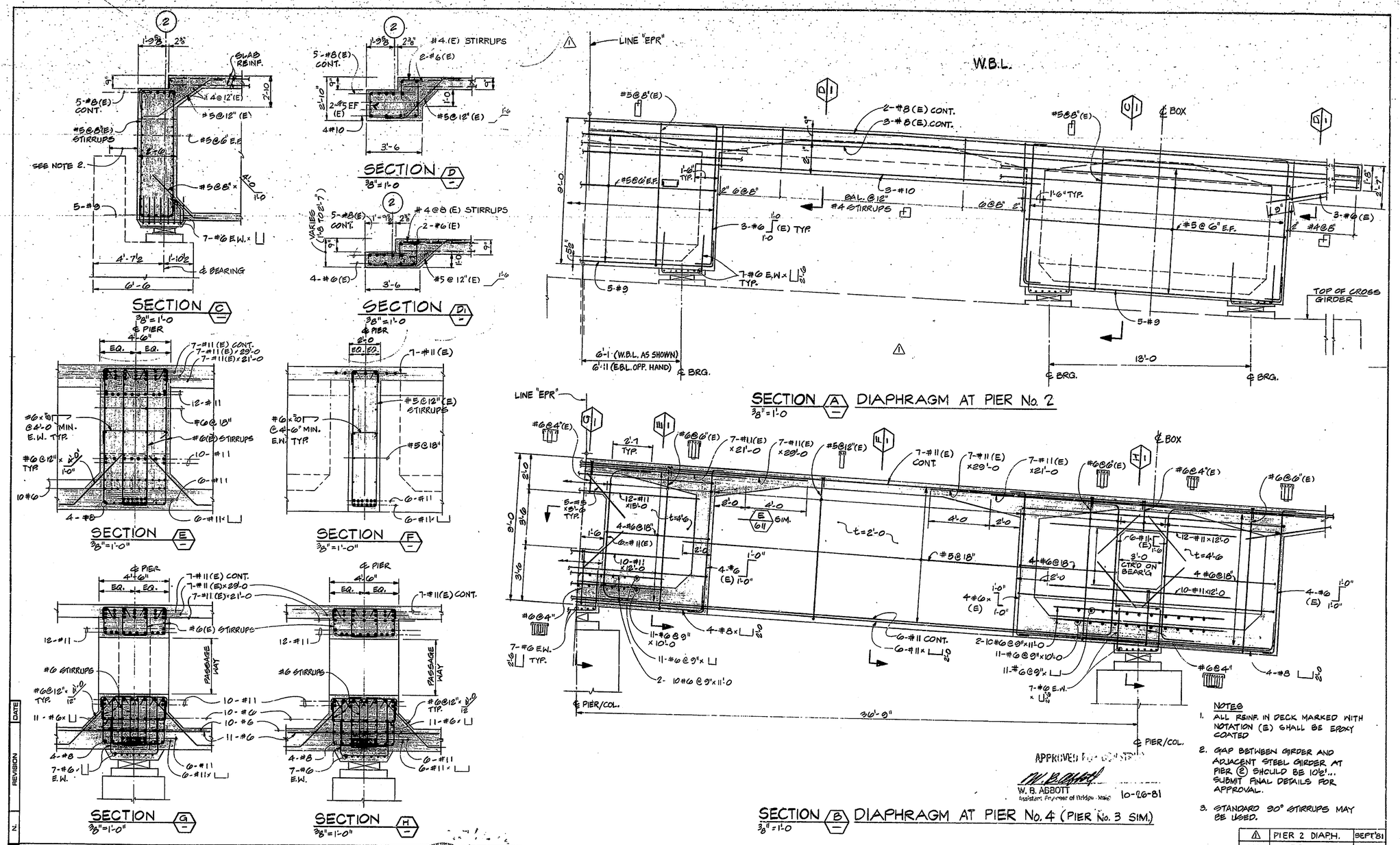
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
DIAPHRAGMS AT PIER No. 5 AND 6

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
611



NOTES

1. ALL REINF. IN DECK MARKED WITH NOTATION (E) SHALL BE EPOXY COATED
2. GAP BETWEEN GIRDER AND ADJACENT STEEL GIRDER AT PIER (2) SHOULD BE 10½".. SUBMIT FINAL DETAILS FOR APPROVAL.
3. STANDARD 90° STIRRUPS MAY BE USED.

NO.	REVISION	DATE
1	PIER 2 DIAPH.	SEPT'81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

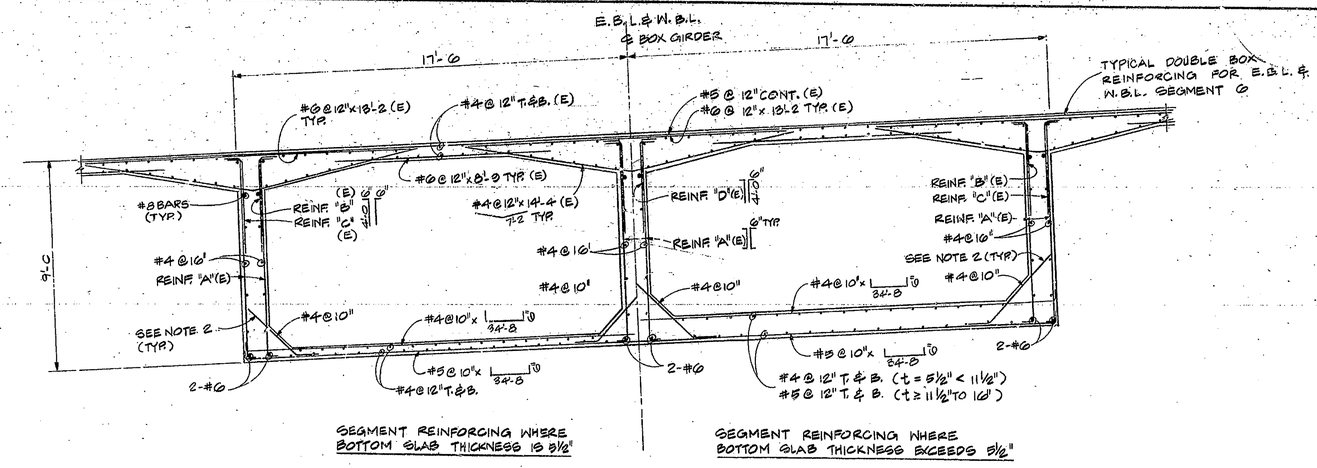
T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

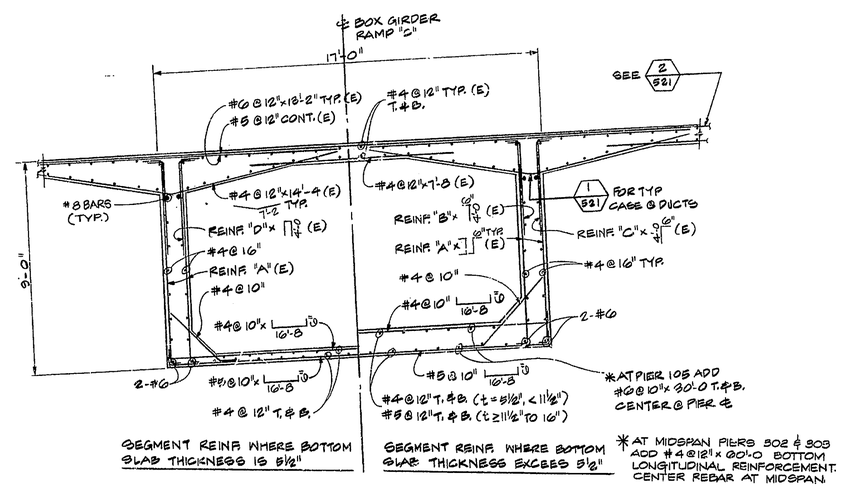
SHEET TITLE
DIAPHRAGMS AT PIER No. 2, 3 AND 4

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-46-2546 CONTRACT NO. 8-11812 INDIANA STATE HIGHWAY COMMISSION

SHEET N. 610



SECTION A
3/8" = 1'-0



*AT MIDSPAN PIERS 302 & 303 ADD #4 @ 12" x 90'-0 BOTTOM LONGITUDINAL REINFORCEMENT. CENTER REBAR AT MIDSPAN.

SECTION B
3/8" = 1'-0"

NOTE

1. FOR WEB REINF. "A", "B", "C" & "D" SEE DWGS. 860 TO 868
2. AT LOCATIONS WHERE PRESTRESSING DUCT POSITION CONFLICTS WITH WEB REINF BEND REINF. TO CLEAR DUCTS AND DOUBLE UP REINF. AT BOTH ENDS OF INTERFERENCE LENGTH.
3. PROVIDE AT LEAST ONE WEB FACE, AT ALL WEBS, WITH A 3" SPACE BETWEEN DUCTS AND FORMS.
4. ALL REINFORCEMENT IN DECK AND RAILING SHALL BE EPOXY COATED, AS INDICATED BY (E)

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

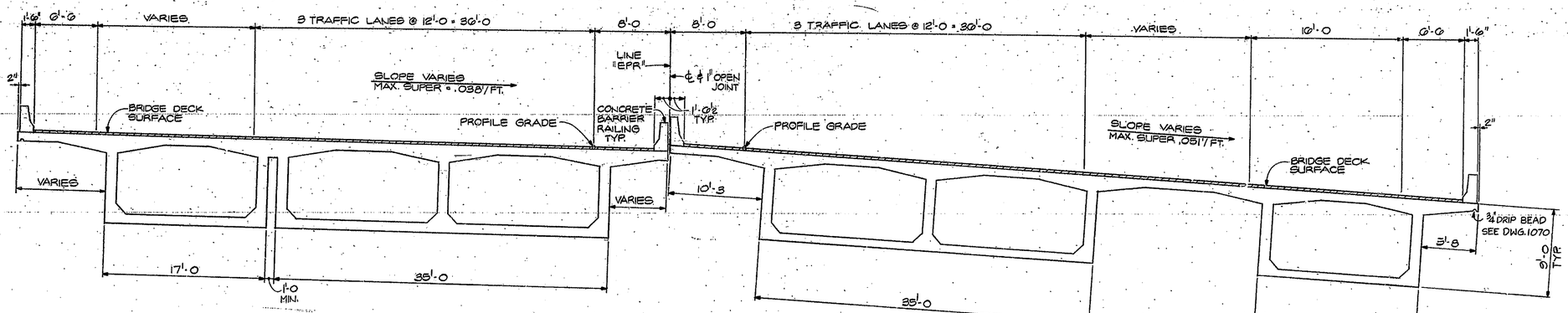
T. Y. LIN REGISTERED No. 18266 STATE OF NATIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
BOX CROSS SECTION REINFORCEMENT DETAILS - SEGMENT 6

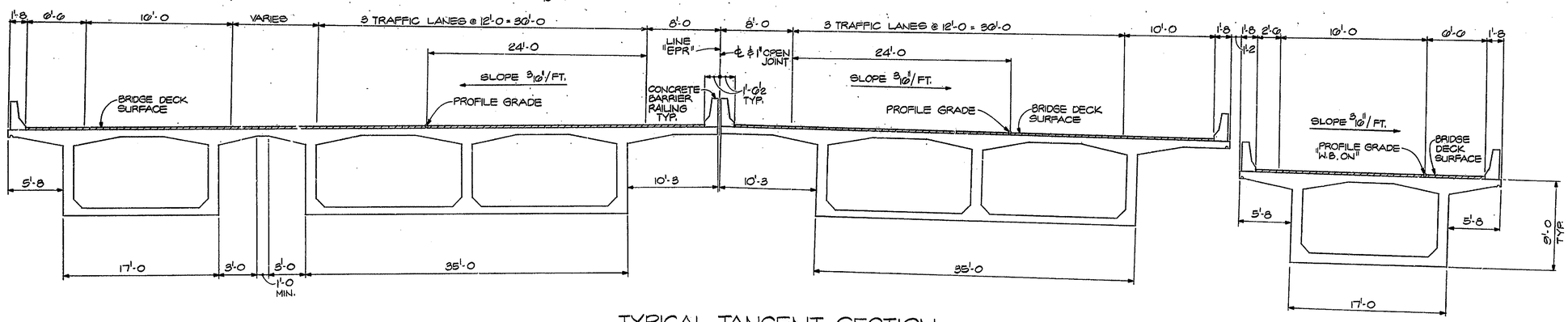
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 8-11612 INDIANA STATE HIGHWAY COMMISSION

SHEET N.
561



TYPICAL SUPERELEVATION SECTION

3/16" = 1'-0



TYPICAL TANGENT SECTION

3/16" = 1'-0

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

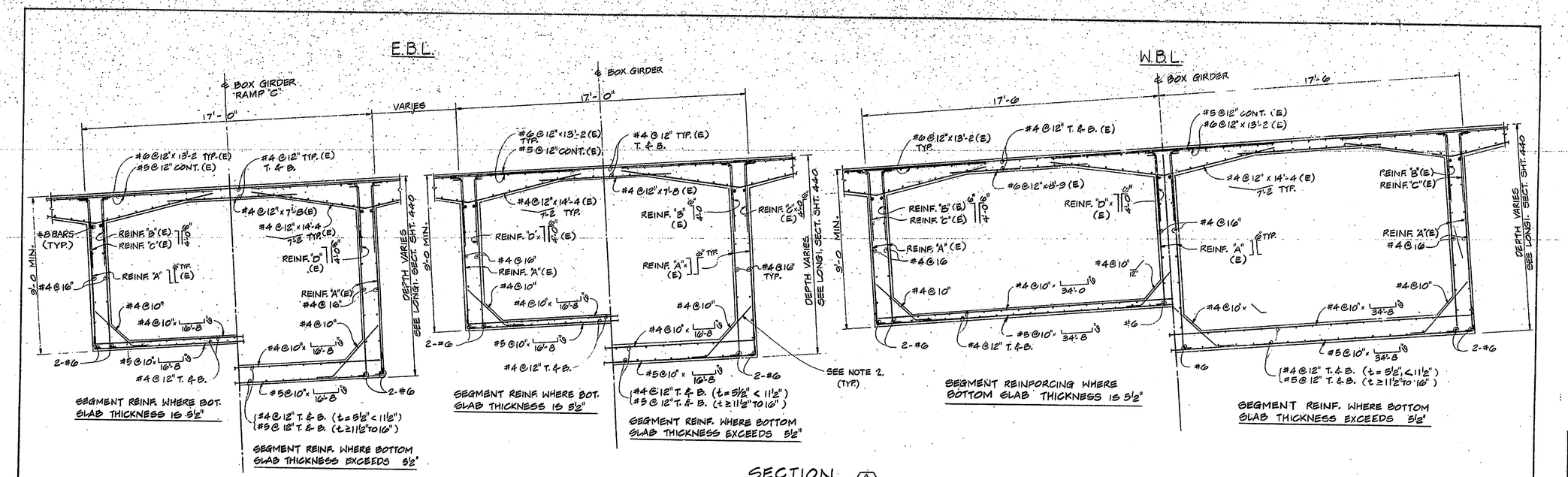
T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

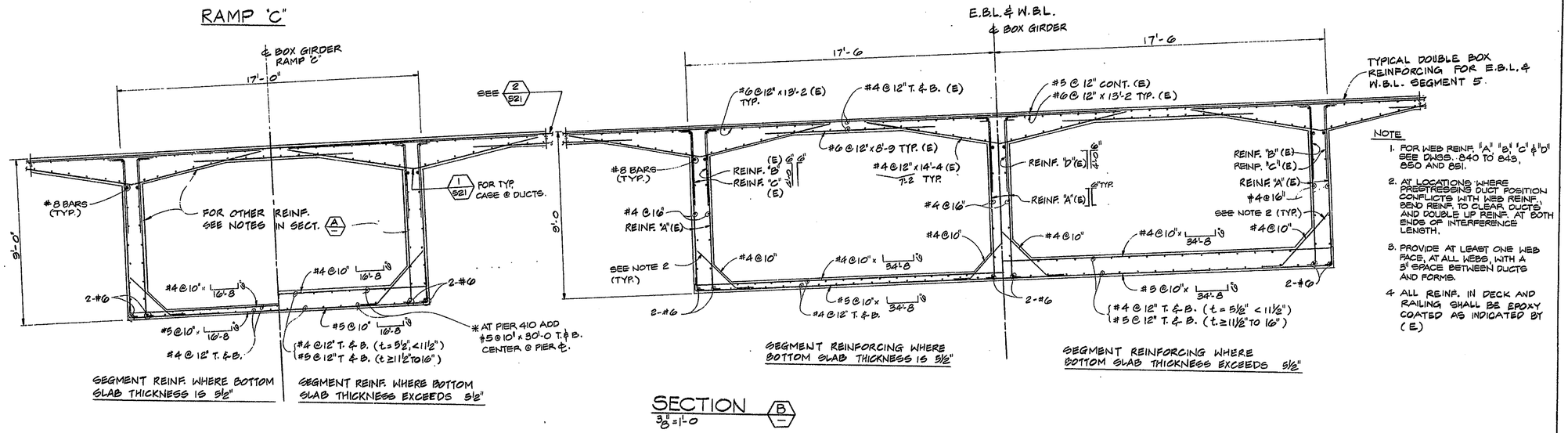
SHEET TITLE
GENERAL CROSS SECTIONS – SEGMENT 6

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 6-11613
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
560



SECTION A
3/8" = 1'-0



SECTION B
3/8" = 1'-0

NOTE

1. FOR WEB REINF. "A" "B" "C" & "D" SEE DWGS. 840 TO 843, 850 AND 851.
2. AT LOCATIONS WHERE PRESTRESSING DUCT POSITION CONFLICTS WITH WEB REINF., BEND REINF. TO CLEAR DUCTS AND DOUBLE UP REINF. AT BOTH ENDS OF INTERFERENCE LENGTH.
3. PROVIDE AT LEAST ONE WEB FACE, AT ALL WEBS, WITH A 3" SPACE BETWEEN DUCTS AND FORMS.
4. ALL REINF. IN DECK AND RAILING SHALL BE EPOXY COATED AS INDICATED BY (E)

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T. Y. LIN INTERNATIONAL SYSTEMS — NO. 18256 — STATE OF INDIANA — REGISTERED PROFESSIONAL ENGINEER

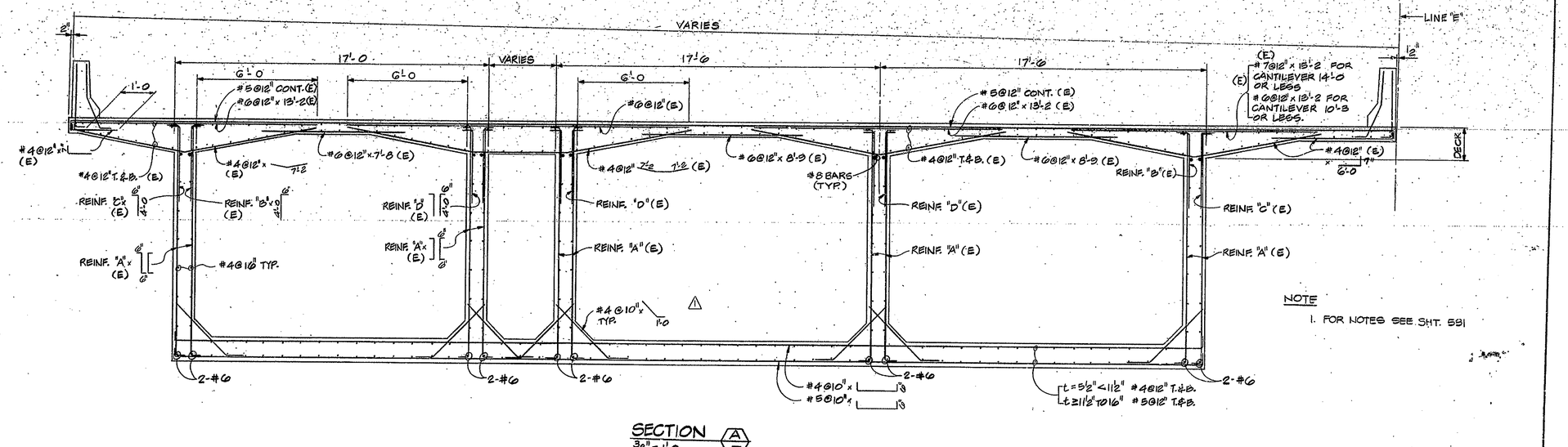
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE

BOX CROSS SECTION REINFORCEMENT DETAILS - SEGMENT 4 AND 5

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11612 INDIANA STATE HIGHWAY COMMISSION

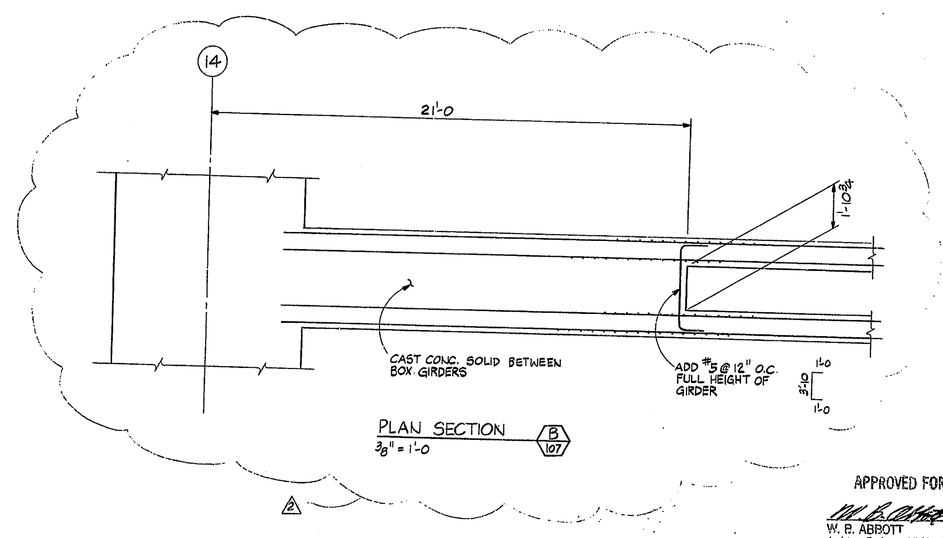
SHEET N.
540



SECTION A
3/8" = 1'-0

NOTE

1. FOR NOTES SEE SHT. 531



PLAN SECTION B
3/8" = 1'-0 107

APPROVED FOR CONSTRUCTION
W. B. ABBOTT
Assistant Engineer of Bridge Design 10-26-81

APPROVED FOR CONSTRUCTION
J. D. MATTIS
Engineer of Bridge Plans 6-22-82 Rev. 2

NO.	REVISION	DATE
2	ADD PLAN SECT. B	FEB. '82
1	FILLET BAR	SEPT. '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

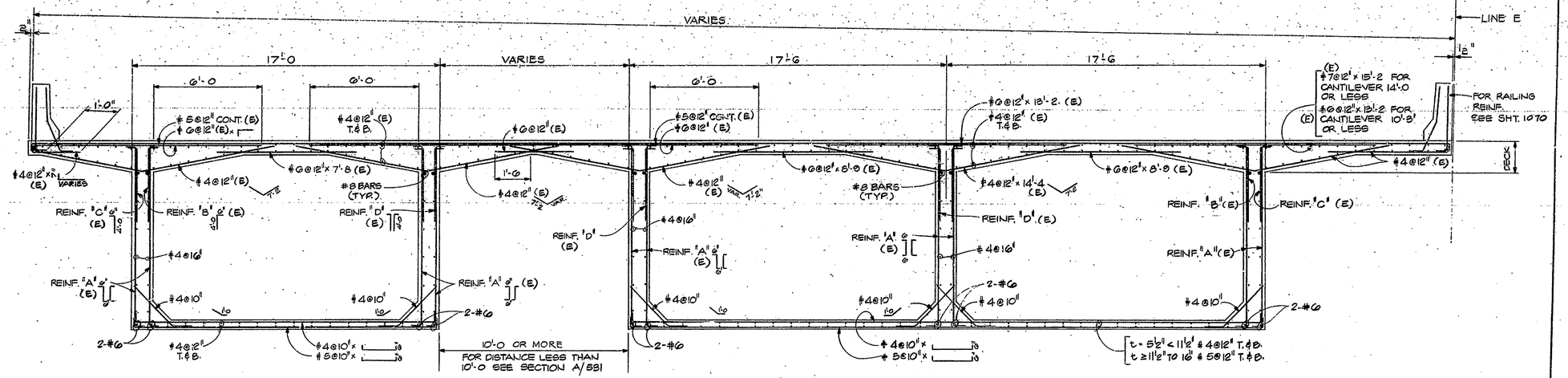
T. Y. LIN INTERNATIONAL REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

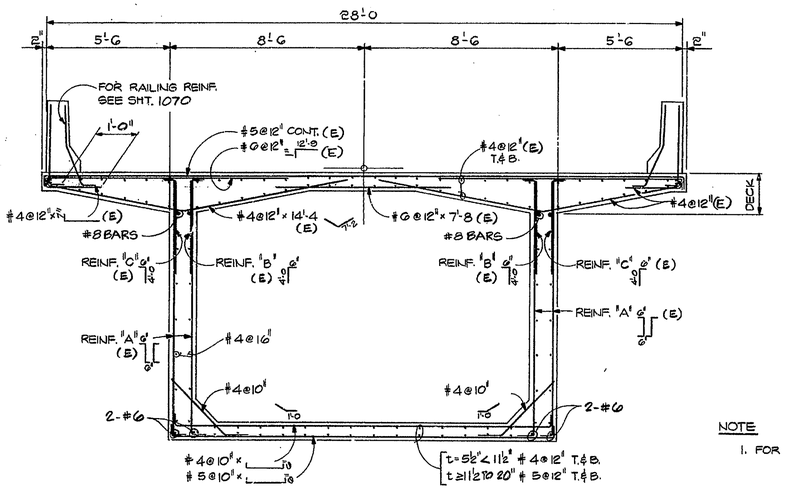
SHEET TITLE
BOX CROSS SECTION REINFORCEMENT DETAILS 3 – SEGMENT 3

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2646 CONTRACT NO. B-11912
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
533



SECTION B
3/8" = 1'-0



NOTE

1. FOR NOTES SEE SHT 531

SECTION C
3/8" = 1'-0

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

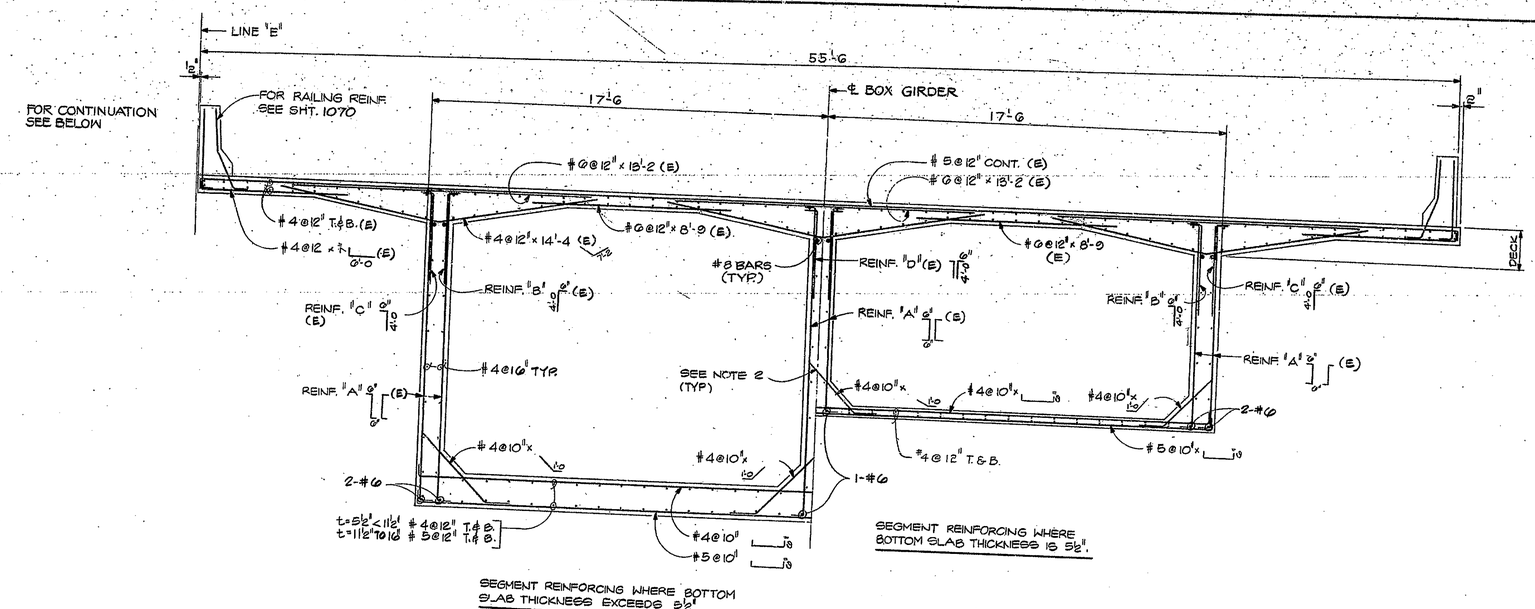
T. Y. LIN REGISTERED No. 18265 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
BOX CROSS SECTION REINFORCEMENT DETAILS 2 – SEGMENT 3

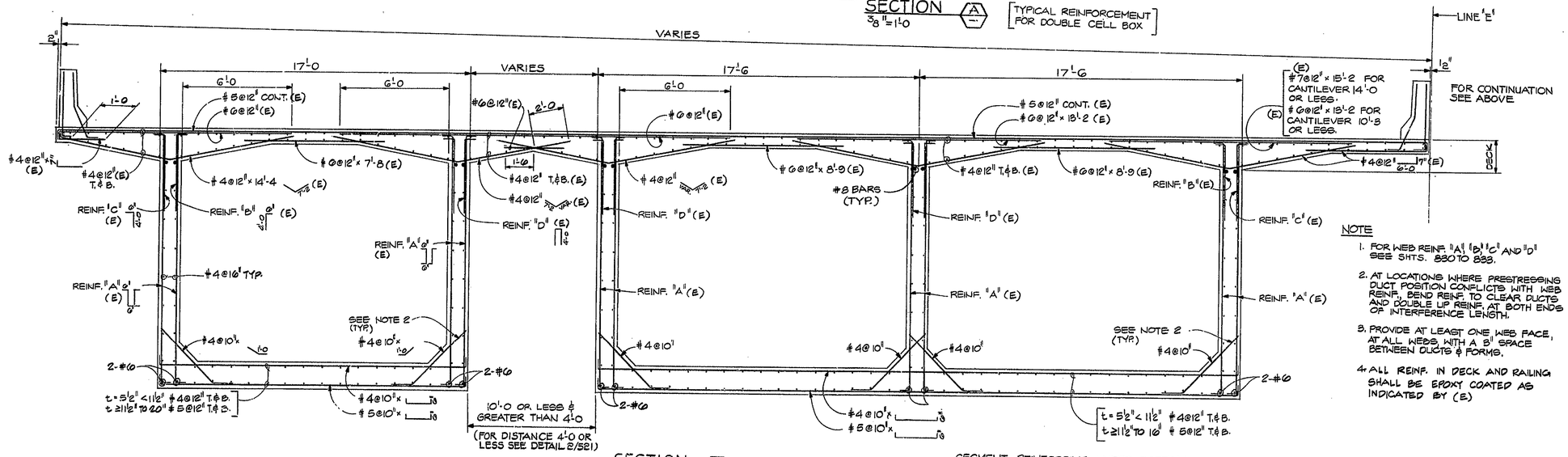
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
532



SECTION A
3/8" = 1'-0

[TYPICAL REINFORCEMENT FOR DOUBLE CELL BOX]



SEGMENT REINFORCING WHERE BOTTOM SLAB THICKNESS EXCEEDS 5½".

SECTION A
3/8" = 1'-0

NOTE

1. FOR WEB REINF. "A", "B", "C" AND "D" SEE SHTS. 830 TO 833.
2. AT LOCATIONS WHERE PRESTRESSING DUCT POSITION CONFLICTS WITH WEB REINF., BEND REINF. TO CLEAR DUCTS AND DOUBLE UP REINF. AT BOTH ENDS OF INTERFERENCE LENGTH.
3. PROVIDE AT LEAST ONE WEB FACE, AT ALL WEBS, WITH A 3" SPACE BETWEEN DUCTS & FORMS.
4. ALL REINF. IN DECK AND RAILING SHALL BE EPOXY COATED AS INDICATED BY (E).

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

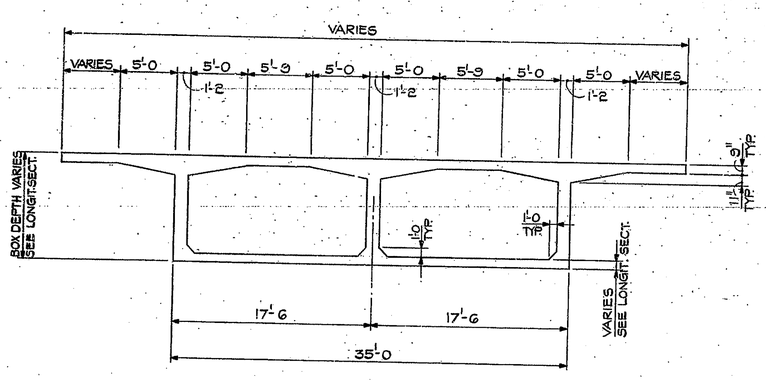
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE

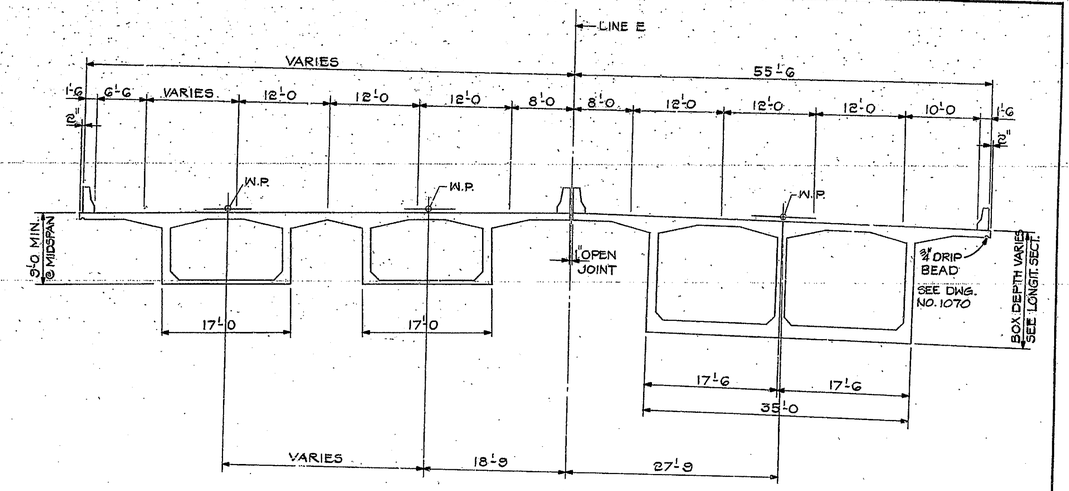
BOX CROSS SECTION REINFORCEMENT DETAILS I – SEGMENT 3

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

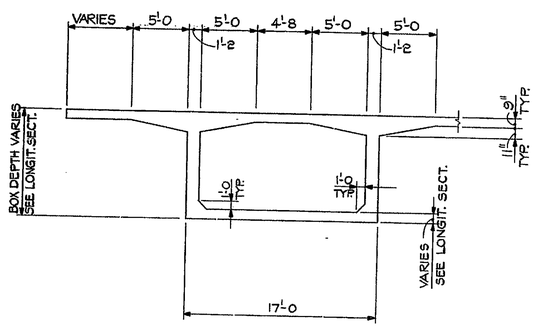
SHEET N.
531



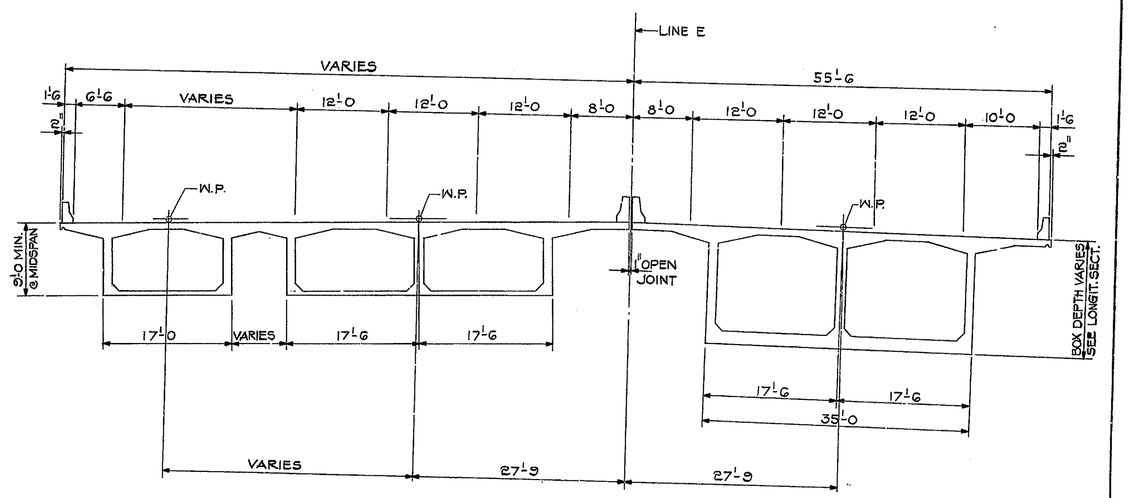
TYP. CROSS SECTION DIMENSIONS
3/16" = 1'-0 (DOUBLE CELL)



GENERAL CROSS SECTION (A)
1/8" = 1'-0



TYP. CROSS SECTION DIMENSIONS
3/16" = 1'-0 (SINGLE CELL)



GENERAL CROSS SECTION (B)
1/8" = 1'-0

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

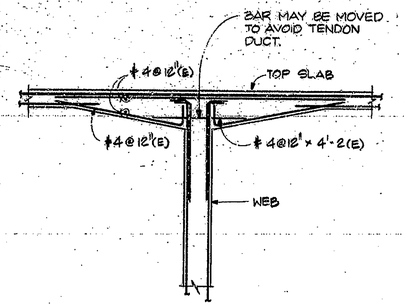
T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
TYPICAL BOX DIMENSIONS AND GENERAL CROSS SECTIONS-SEGMENT 3

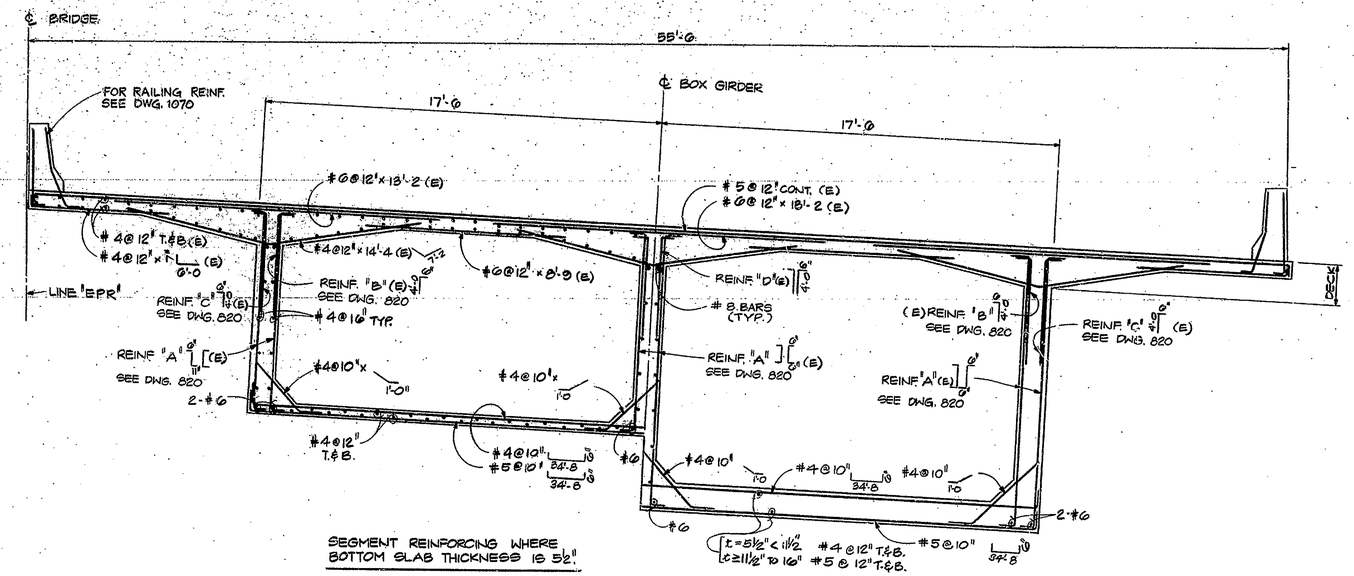
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 812-45-2546 CONTRACT NO. 8-11612 INDIANA STATE HIGHWAY COMMISSION

SHEET N.
530



OPTIONAL REINF. ARRANGEMENT WHERE PRESTRESSING TENDONS INTERFERE WITH SLAB BOT. REINF. NEAR SUPPORTS.

DETAIL 1
3/8" = 1'-0

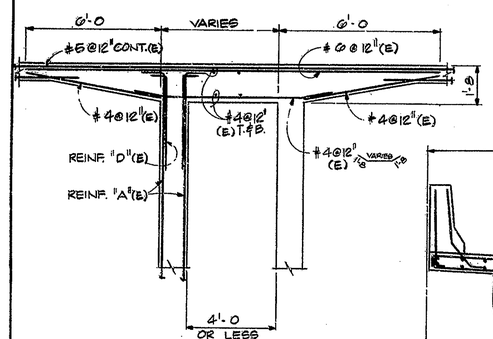


SEGMENT REINFORCING WHERE BOTTOM SLAB THICKNESS IS 5½".

SEGMENT REINFORCING WHERE BOTTOM SLAB THICKNESS EXCEEDS 5½".

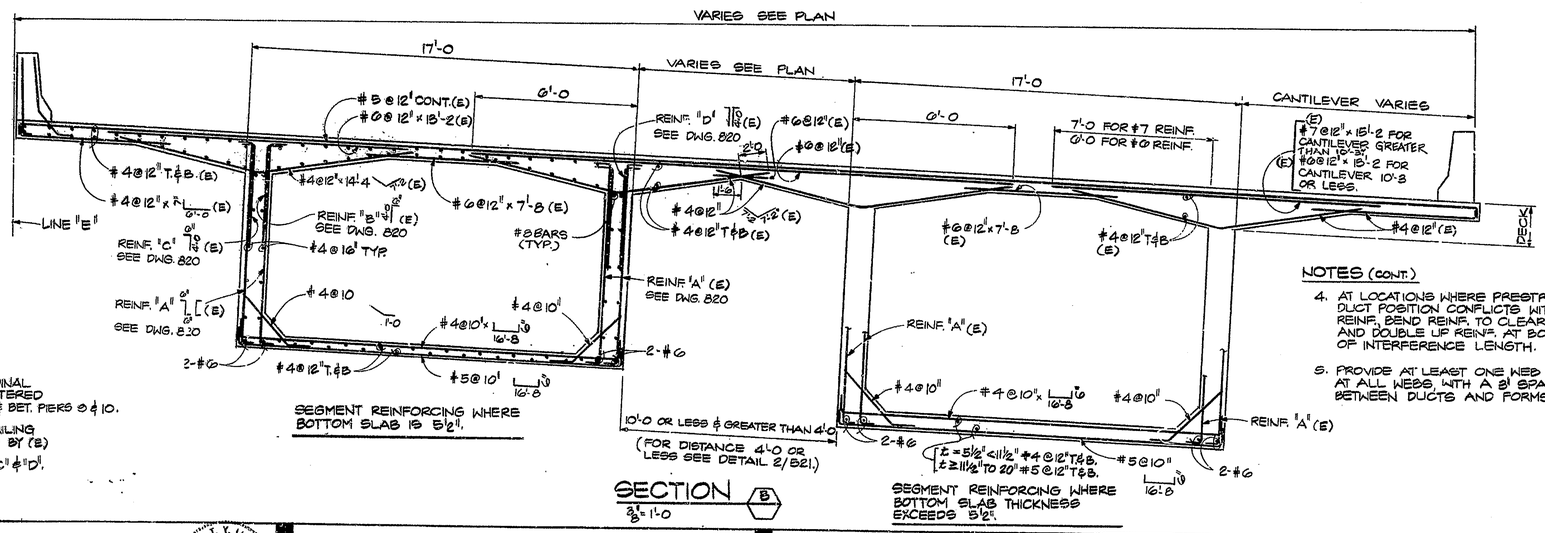
SECTION A
3/8" = 1'-0

[TYPICAL REINFORCEMENT FOR DOUBLE CELL BOX]



SEGMENT PARTIAL REINF. WHERE DISTANCE BETWEEN WEBS IS 4'-0 OR LESS.

DETAIL 2
3/8" = 1'-0



SEGMENT REINFORCING WHERE BOTTOM SLAB IS 5½".

SEGMENT REINFORCING WHERE BOTTOM SLAB THICKNESS EXCEEDS 5½".

SECTION B
3/8" = 1'-0

NOTES

1. ADD #4@12" x 100'-0 BOTTOM LONGITUDINAL REINFORCEMENT IN BOTTOM SLAB, CENTERED 121'-0 FROM PIER 11 TOWARDS PIER 12 & BET. PIERS 9 & 10.
2. ALL REINFORCEMENT IN DECK AND RAILING SHALL BE EPOXY COATED, AS INDICATED BY (E)
3. SEE DWG. 820 FOR WEB REINF. "A", "B", "C" & "D".

NOTES (CONT.)

4. AT LOCATIONS WHERE PRESTRESSING DUCT POSITION CONFLICTS WITH WEB REINF., BEND REINF. TO CLEAR DUCTS AND DOUBLE UP REINF. AT BOTH ENDS OF INTERFERENCE LENGTH.
5. PROVIDE AT LEAST ONE WEB FACE, AT ALL WEBS, WITH A 3" SPACE BETWEEN DUCTS AND FORMS.

NO.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

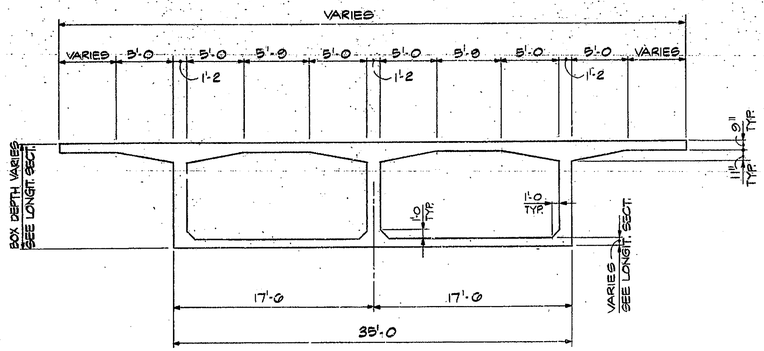
T. Y. LIN REGISTERED STATE OF ILLINOIS No. 18266 PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
BOX CROSS SECTION REINFORCEMENT DETAILS - SEGMENT 2

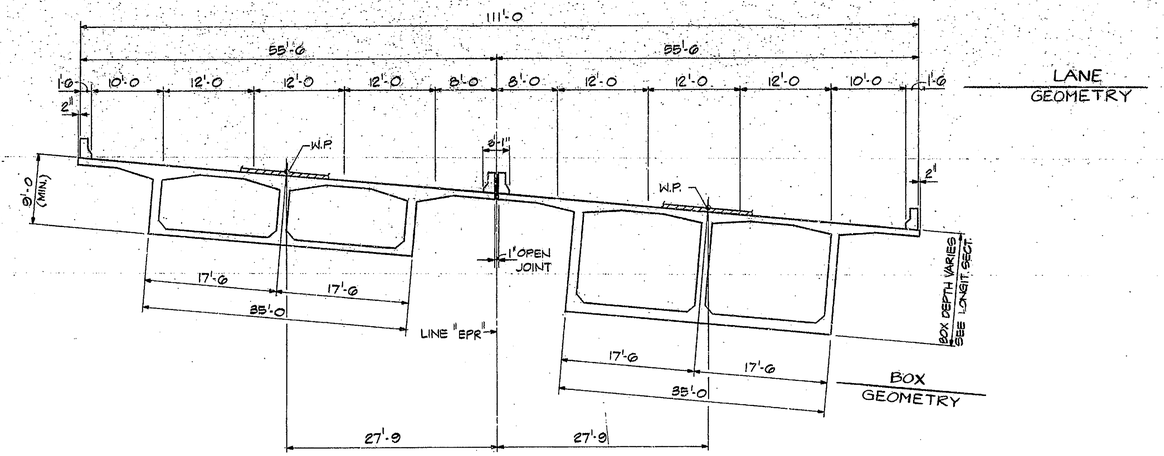
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
521



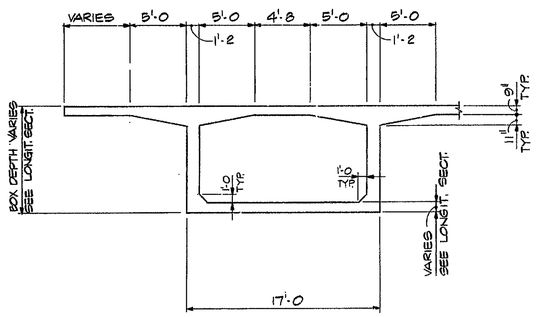
TYP. CROSS SECTION DIMENSIONS

3/16" = 1'-0 (DOUBLE CELL)



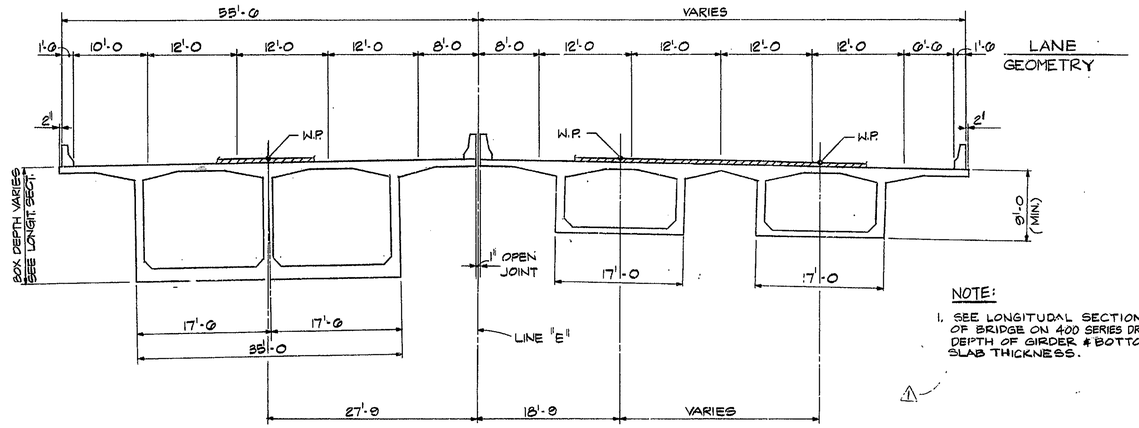
GENERAL CROSS SECTION (A)

1/8" = 1'-0



TYP. CROSS SECTION DIMENSIONS

3/16" = 1'-0 (SINGLE CELL)



GENERAL CROSS SECTION (B)

1/8" = 1'-0

NOTE:

1. SEE LONGITUDAL SECTIONS OF BRIDGE ON 400 SERIES DRAWINGS; DEPTH OF GIRDER & BOTTOM SLAB THICKNESS.

APPROVED FOR CONSTRUCTION

W. B. ABBOTT
Assistant Engineer of Bridge Design 10-26-81

NO.	REVISION	DATE
1	NOTE 1,	OCT '81

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T. Y. LIN REGISTERED No. 18266 INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

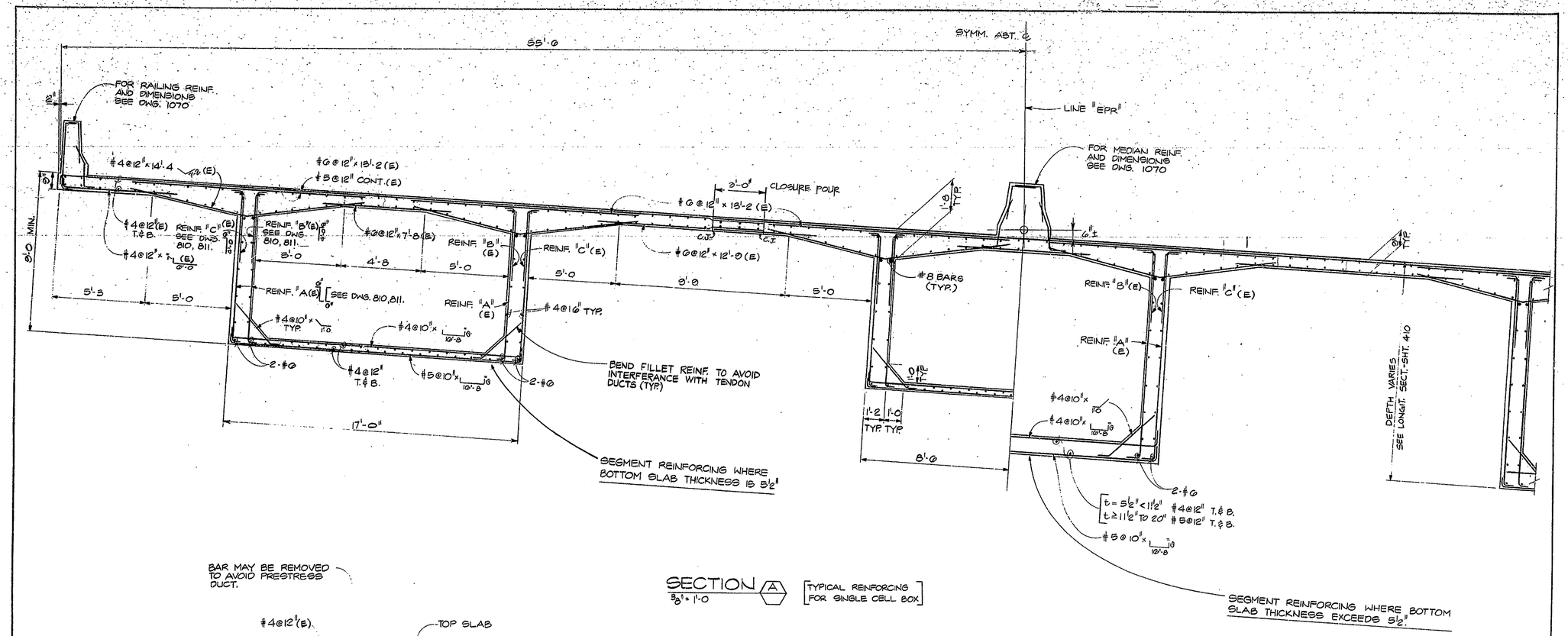
SHEET TITLE

TYPICAL BOX DIMENSIONS AND GENERAL CROSS SECTIONS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. B-11612 INDIANA STATE HIGHWAY COMMISSION

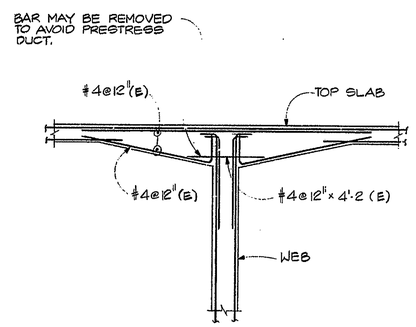
SHEET N.

520



SECTION A
3/8" = 1'-0

[TYPICAL REINFORCING FOR SINGLE CELL BOX]

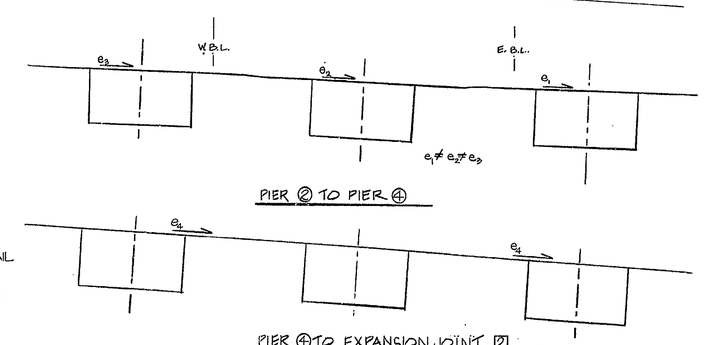


OPTIONAL REINF. ARRANGEMENT WHERE PRESTRESSING TENDONS INTERFERE WITH SLAB BOTTOM REINF. NEAR SUPPORTS.

DETAIL I
3/8" = 1'-0

NOTE:

1. ALL REINFORCING IN DECK AND RAILING SHALL BE EPOXY COATED. AS INDICATED BY (E)
2. AT LOCATIONS WHERE PRESTRESSING DUCT POSITION CONFLICTS WITH WEB REINF., CUT REINF. TO CLEAR DUCTS AND ADD SPLICE BARS TOP AND BOTTOM, SEE DETAIL "F" SHEET 920.
3. PROVIDE AT LEAST ONE WEB FACE, AT ALL WEBS WITH A 3" SPACE BETWEEN DUCTS AND FORMS.
4. FOR REINF. "A", "B" & "C" SEE SHEET NO. 810
5. DIM. SHOWN FROM CENTERLINE TO EDGE OF DECK OR FROM EDGE OF DECK TO EDGE OF DECK ON GENERAL PLANS AND BOX GIRDER CROSS SECTION SHEETS ARE MEASURED IN A HORIZONTAL PLANE.



SINGLE BOX SUPERELEVATION

APPROVED FOR CONSTRUCTION
W. B. [illegible] 6-15-81
W. B. [illegible]
Assistant Engineer of Bridge Design

NO.	REVISION	DATE
1	HORIZ. CONTROL	FEB. 1981

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

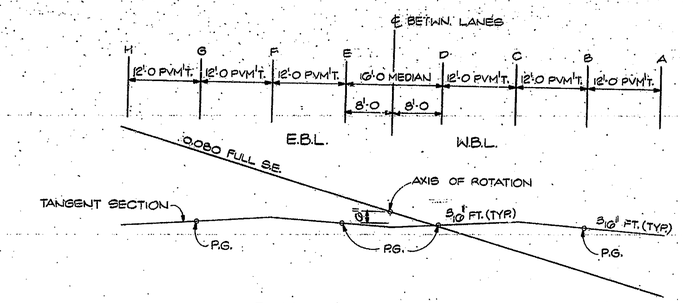
No. 16266 STATE OF ILLINOIS PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

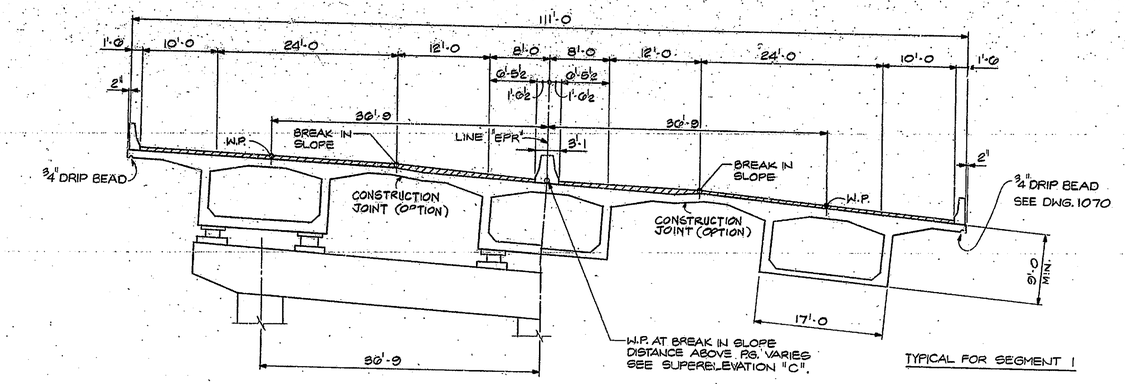
SHEET TITLE
BOX CROSS SECTION REINFORCEMENT DETAILS - SEGMENT I

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-46-2546 CONTRACT NO. B-11812 INDIANA STATE HIGHWAY COMMISSION

SHEET N.
511

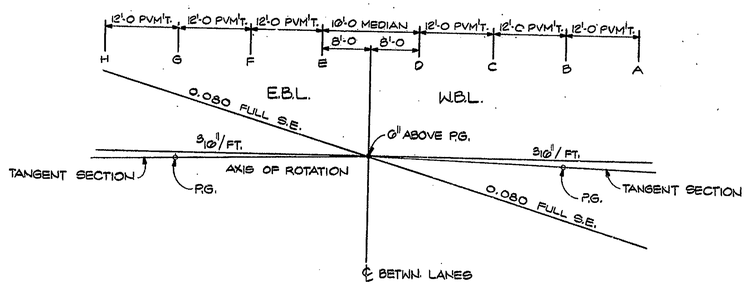


SUPERELEVATION (C)
STA. 110+07.03 TO 120+0.00
HORIZ: 1" = 25'-0
VERT: 1" = 040'

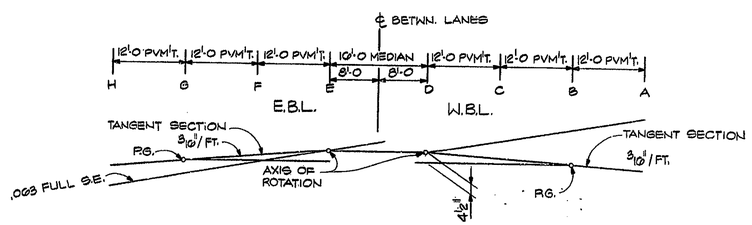


TYPICAL FOR SEGMENT 1

GENERAL CROSS SECTION (A)
3/8" = 1'-0

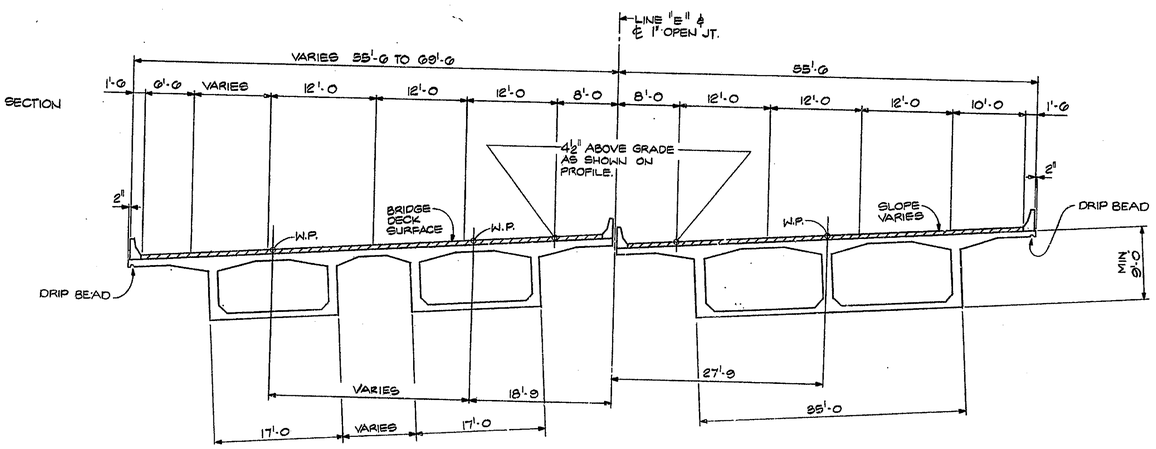


SUPERELEVATION (D)
STA. 120+00.0 TO 141+25
HORIZ: 1" = 25'-0
VERT: 1" = 040'



SUPERELEVATION (E)
STA. 141+25 TO 173+21
HORIZ: 1" = 25'-0
VERT: 1" = 040'

NOTE:
OPPOSITE HAND
FOR STA. 193+25 TO 168+00.



GENERAL CROSS SECTION (B)
3/8" = 1'-0

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

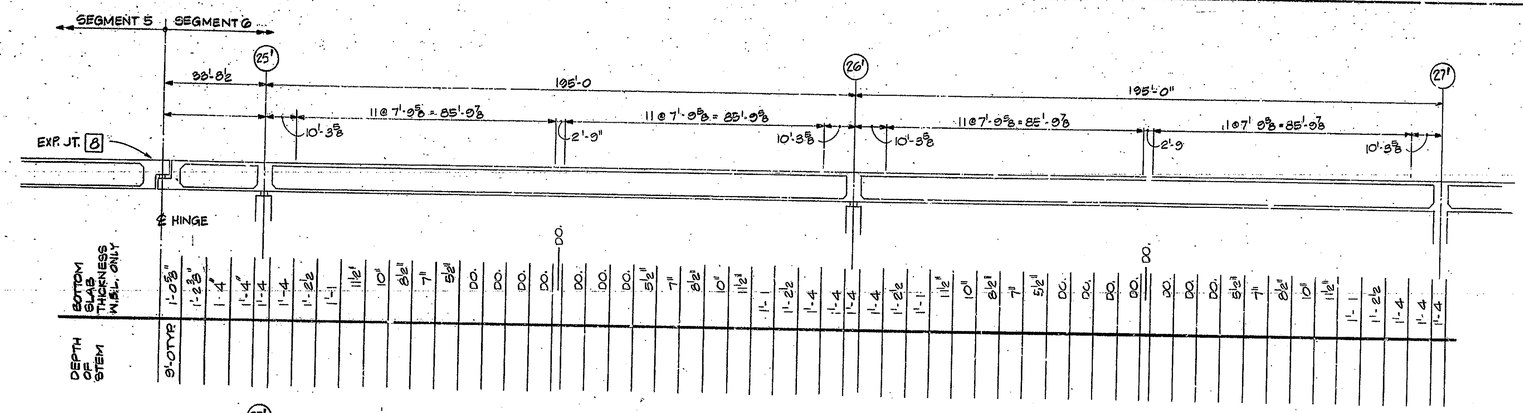
T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

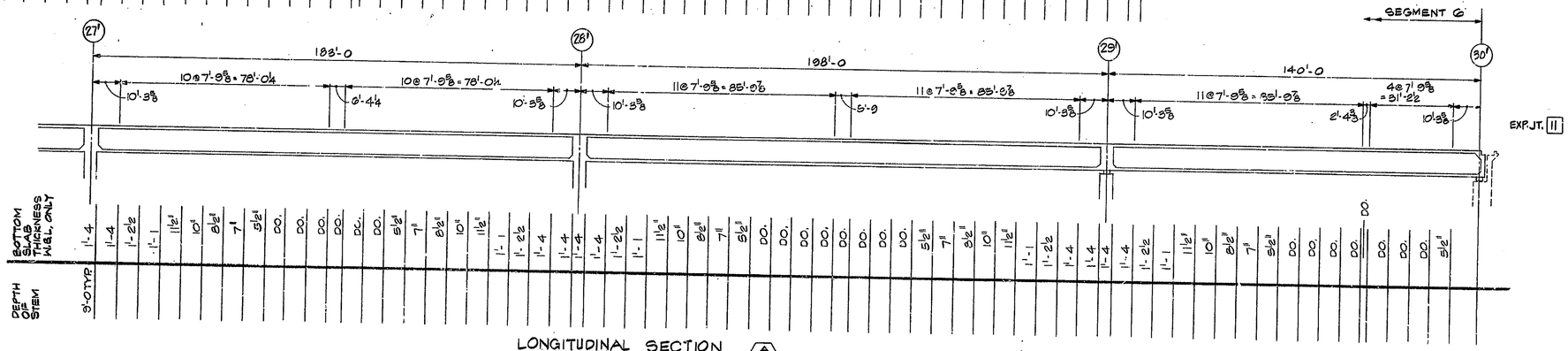
SHEET TITLE
GENERAL CROSS SECTIONS AND SUPERELEVATION

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 812-45-2848 CONTRACT NO. 8-11812
INDIANA STATE HIGHWAY COMMISSION

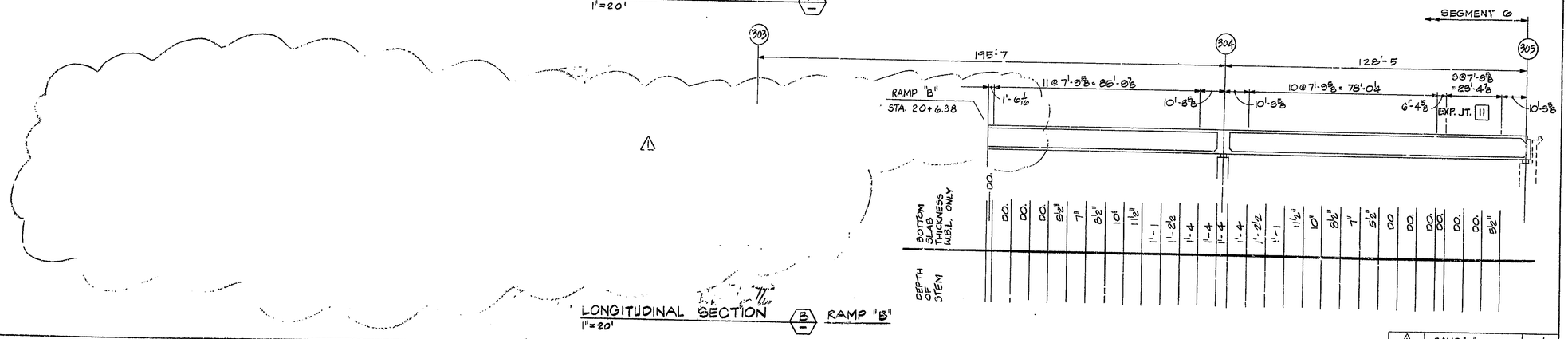
SHEET N.
510



APPROVED FOR CONSTRUCTION
J. D. MATTIS
Engineer of Bridge Plans
10-13-82



LONGITUDINAL SECTION (A)
1" = 20'



LONGITUDINAL SECTION (B) RAMP "B"
1" = 20'

NO.	REVISION	DATE
1	RAMP "B" LIMITS	FEB. '82

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

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CONSULTING ENGINEERS

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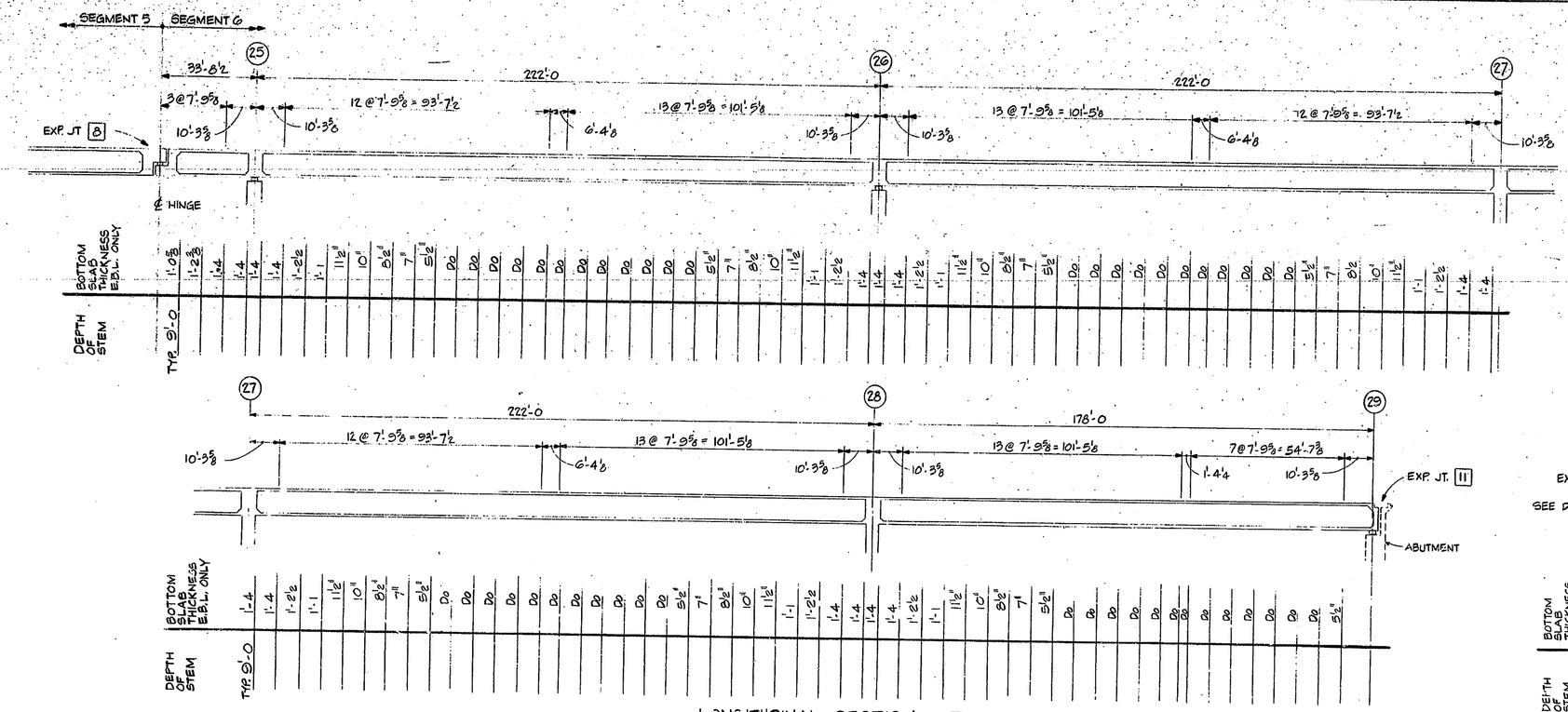
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

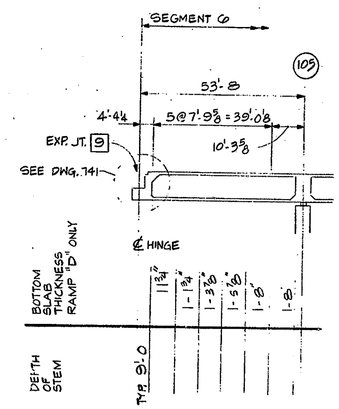
SHEET TITLE: DEPTH OF GIRDERS AND BOTTOM SLAB THICKNESS
SEGMENT 6 – WESTBOUND LANES

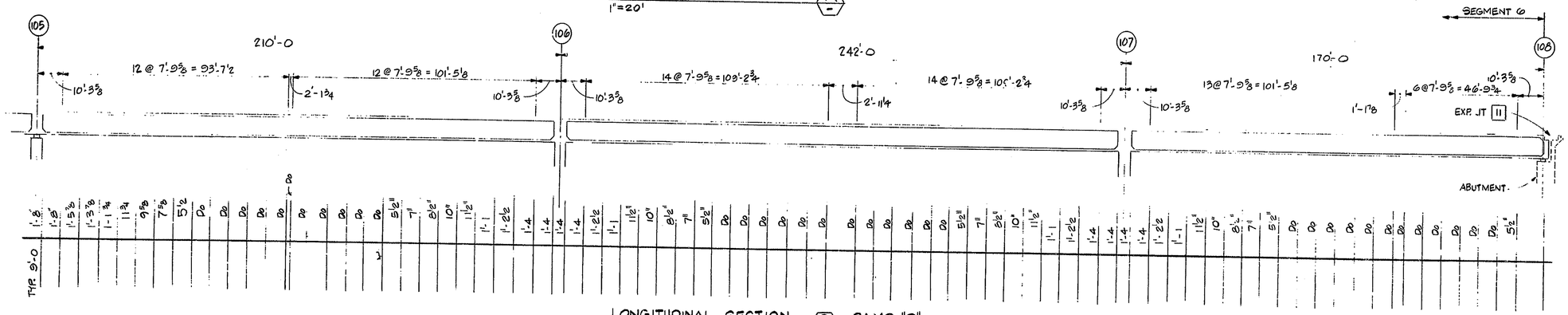
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11912
INDIANA STATE HIGHWAY COMMISSION

SHEET N. 461



LONGITUDINAL SECTION (A)
1"=20'





LONGITUDINAL SECTION (B) RAMP "D"
1"=20'

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

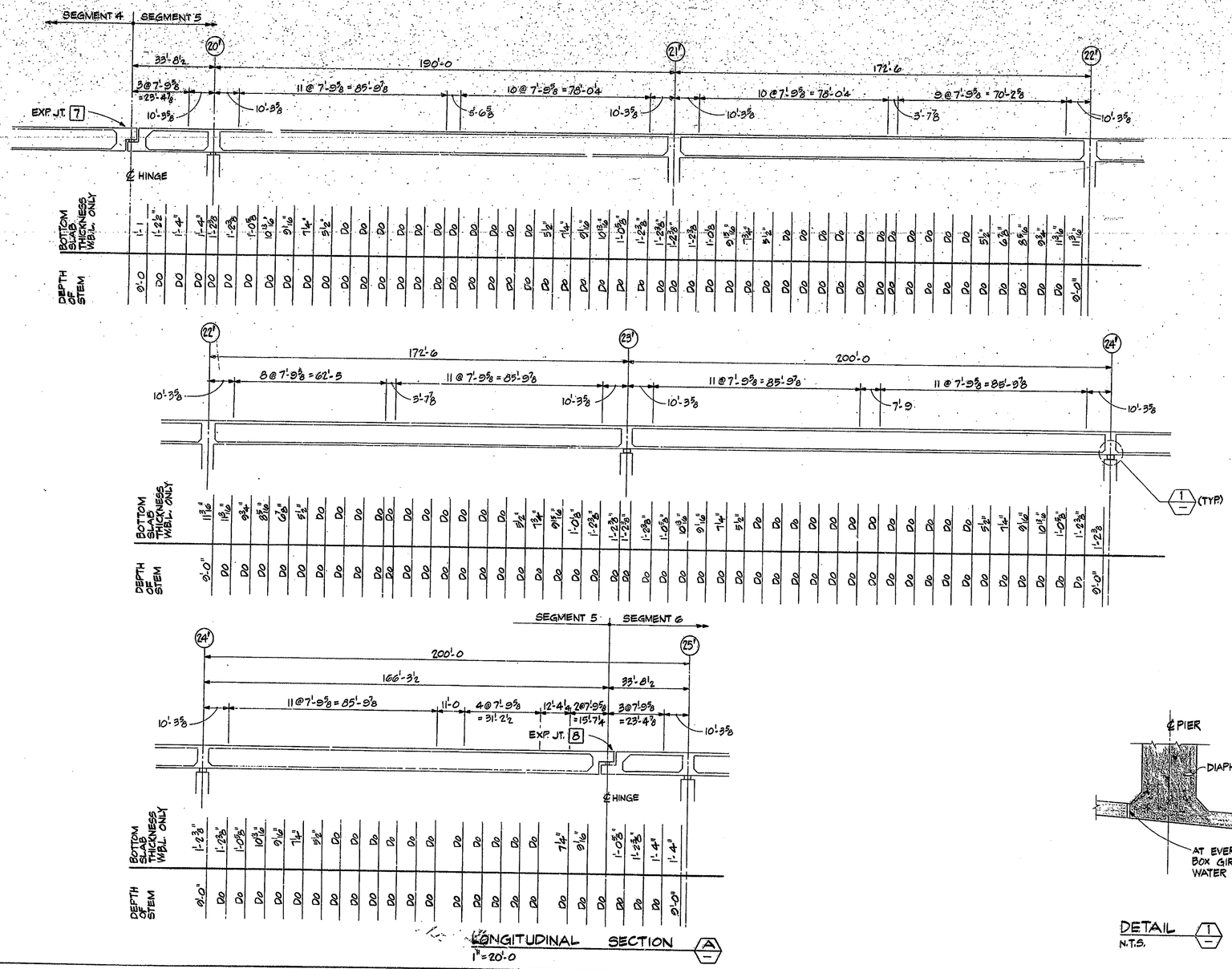
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

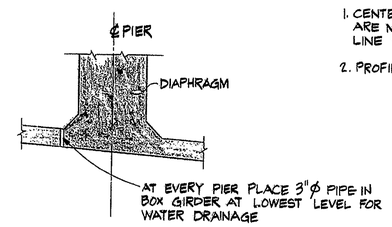
SHEET TITLE
DEPTH OF GIRDERS AND BOTTOM SLAB THICKNESS
SEGMENT 6 – EASTBOUND LANES

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
460



LONGITUDINAL SECTION A
1" = 20'-0



DETAIL 1
N.T.S.

NOTE:

1. CENTER TO CENTER PIER DIMENSIONS ARE MEASURED HORIZONTALLY ALONG LINE "E".
2. PROFILE DRAWN LEVEL FOR CLARITY.

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

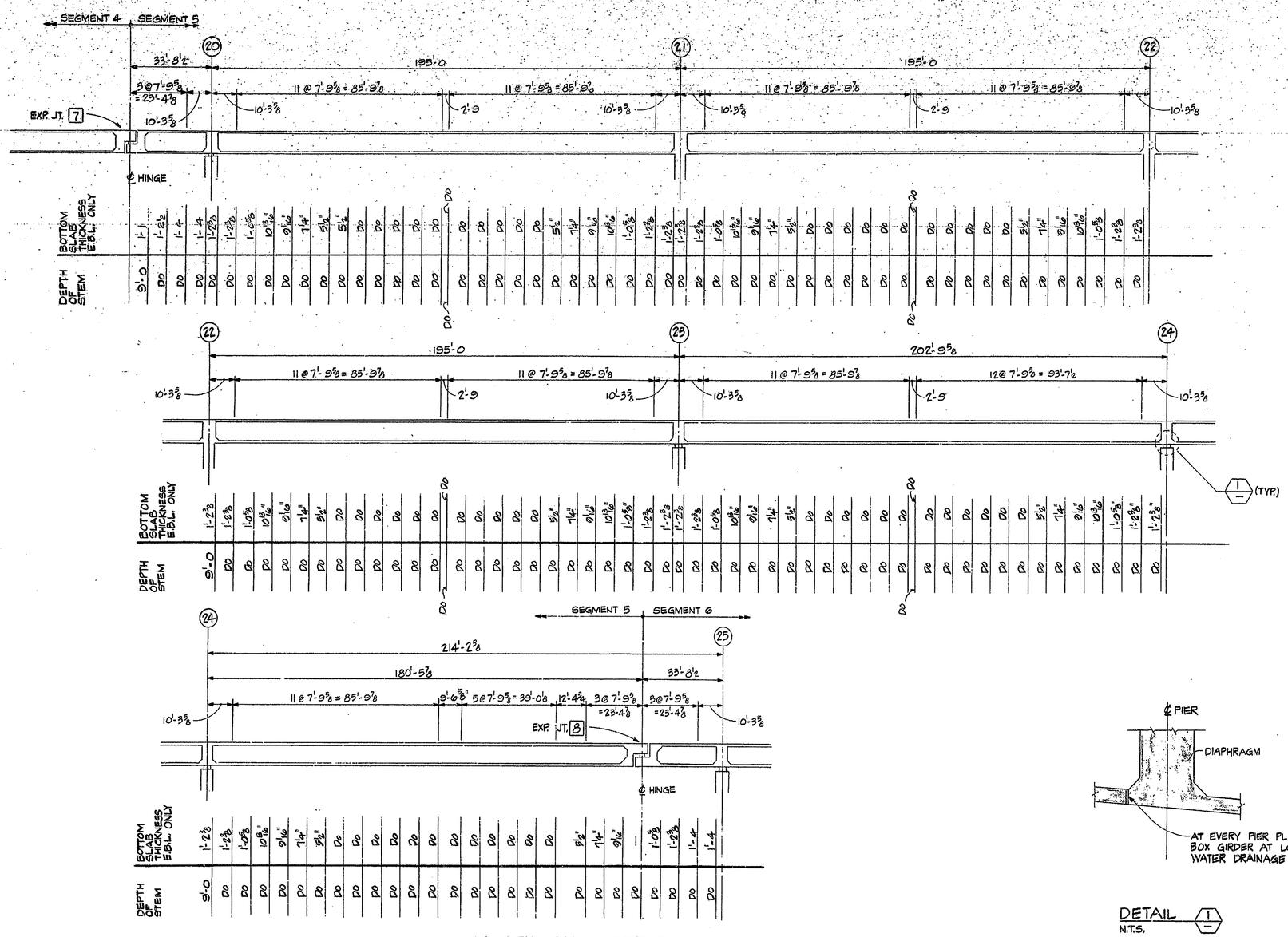
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

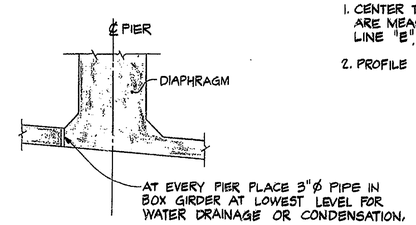
SHEET TITLE
DEPTH OF GIRDERS AND BOTTOM SLAB THICKNESS
SEGMENT 5 — WESTBOUND LANES

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
451



LONGITUDINAL SECTION (A)
1" = 20'-0



DETAIL (I)
N.T.S.

NOTE:

1. CENTER TO CENTER PIER DIMENSIONS ARE MEASURED HORIZONTALLY ALONG LINE "E".
2. PROFILE DRAWN LEVEL FOR CLARITY.

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

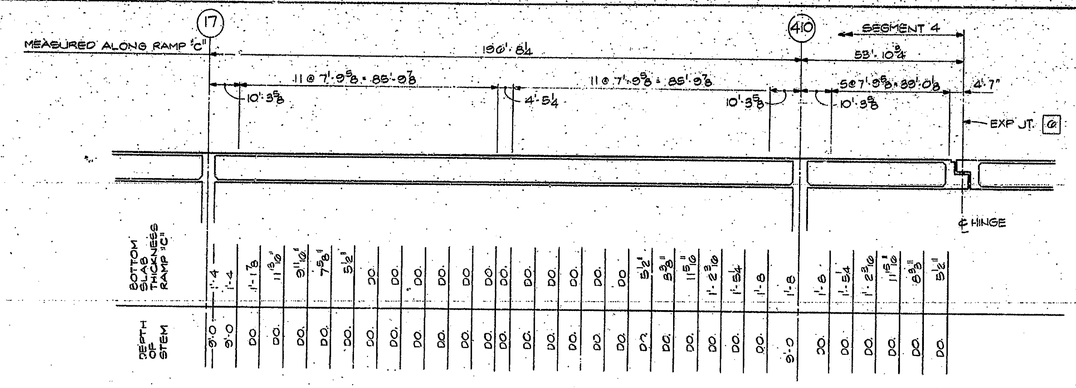
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE

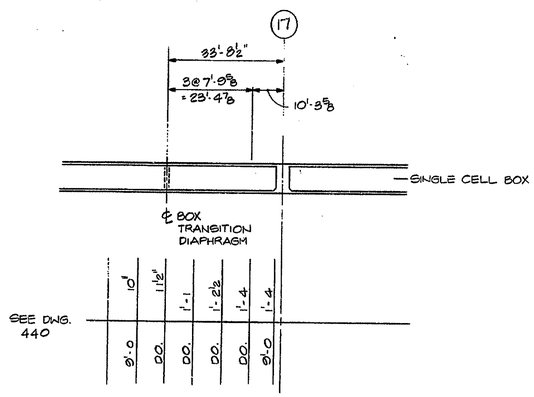
DEPTH OF GIRDERS AND BOTTOM SLAB THICKNESS SEGMENT 5 — EASTBOUND LANES

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2646 CONTRACT NO. 8-11612 INDIANA STATE HIGHWAY COMMISSION

SHEET N.
450



LONGITUDINAL SECTION B
1" = 20'



LONGITUDINAL SECTION A
1" = 20'

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
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REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

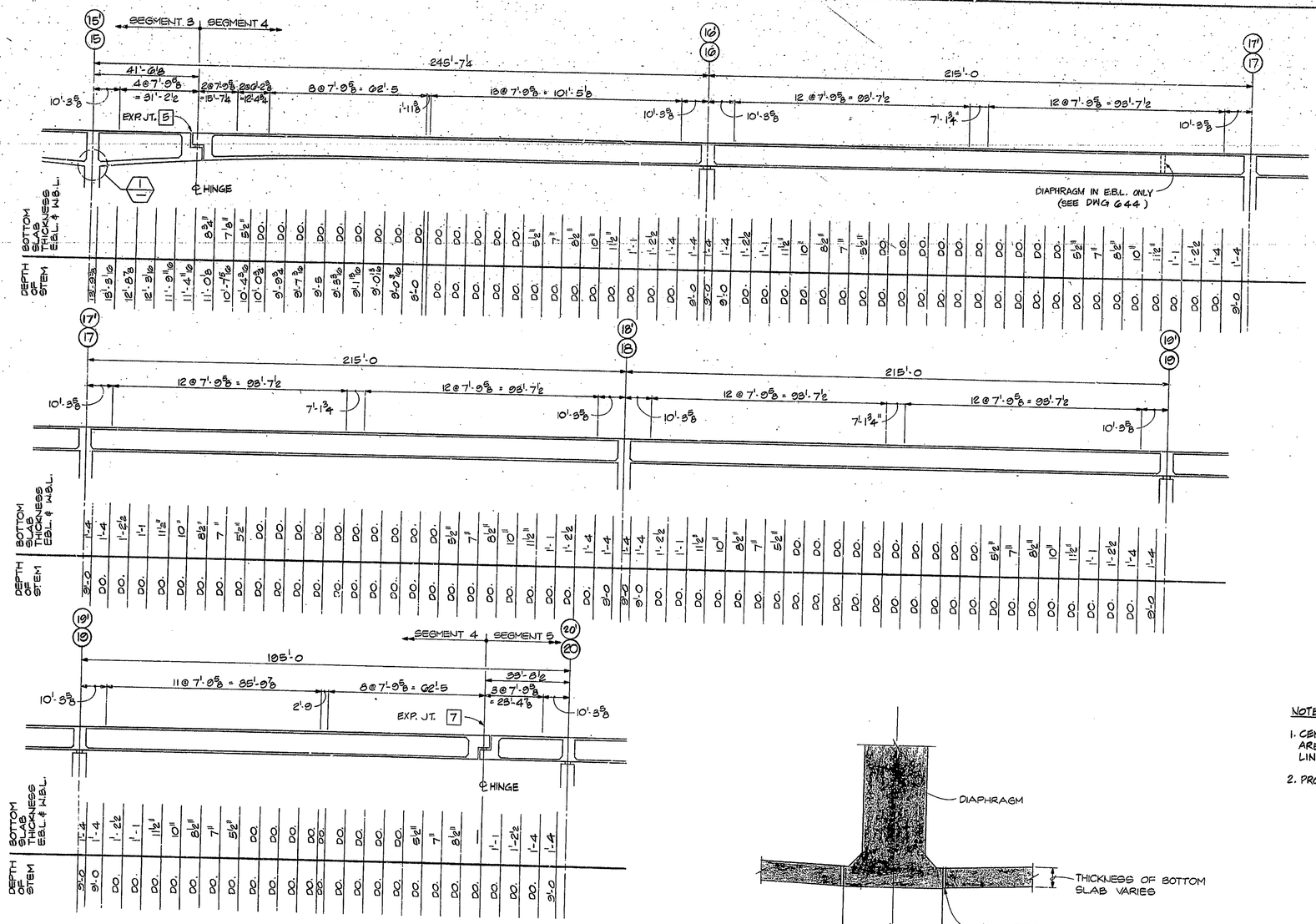
T. Y. Lin

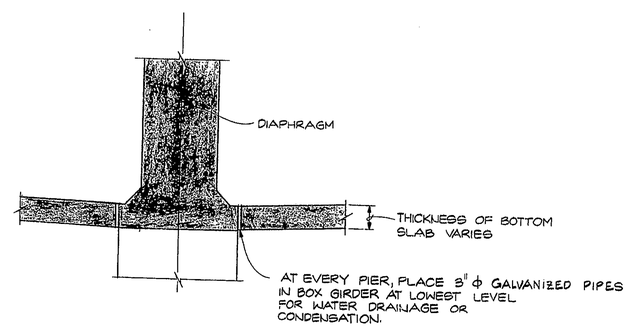
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
BOTTOM SLAB THICKNESS - RAMP C - SEGMENT 4

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 8-11612 INDIANA STATE HIGHWAY COMMISSION

SHEET N.
441





DETAIL 1/1
N.T.S.

NOTE:

1. CENTER TO CENTER PIER DIMENSIONS ARE MEASURED HORIZONTALLY ALONG LINE "E".
2. PROFILE DRAWN LEVEL FOR CLARITY

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

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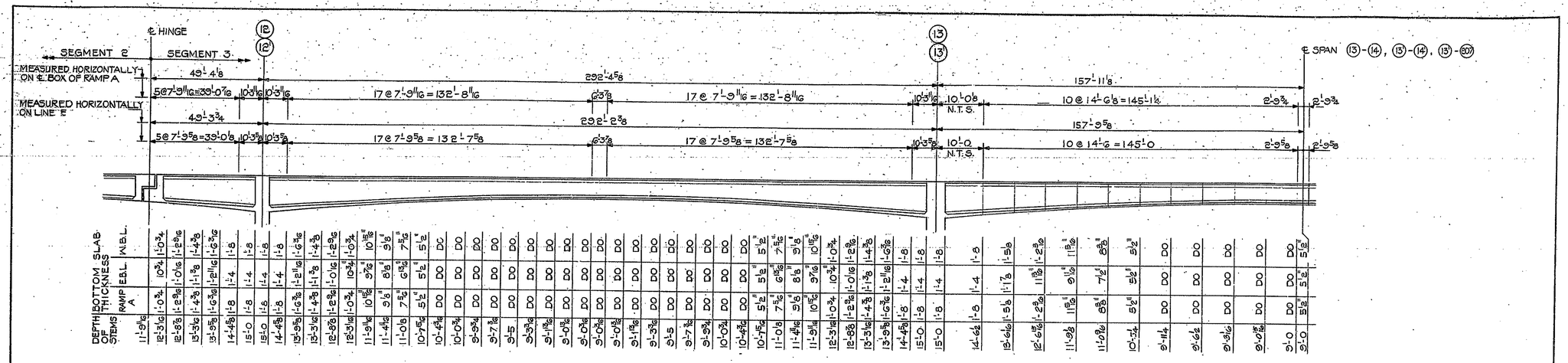
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

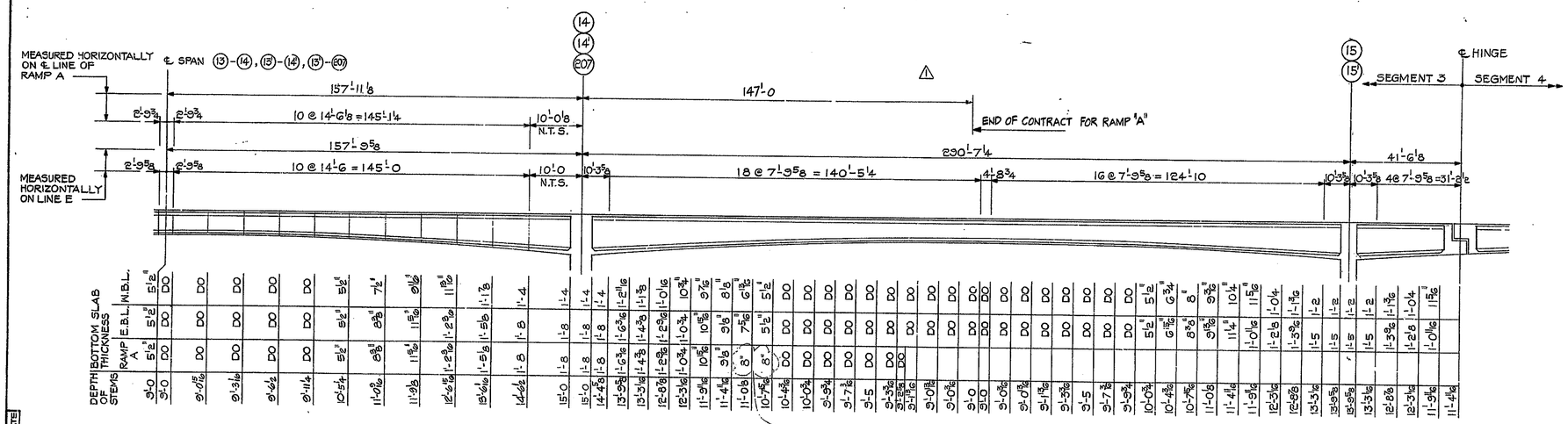
SHEET TITLE
DEPTH OF GIRDERS AND BOTTOM SLAB THICKNESS – SEGMENT 4

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-46-2546 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
440



LONGITUDINAL SECTION
1" = 20'-0



LONGITUDINAL SECTION
1" = 20'-0

APPROVED FOR CONSTRUCTION
J. D. MATTIS
Engineer of Bridge Plans
9-7-82

APPROVED FOR CONSTRUCTION
W. B. ABBOTT
Assistant Engineer of Bridge Design 8-25-81

No.	REVISION	DATE
2	RAMP "A", BOT SLAB	SEPT '81
1	RAMP "A" DIMS.	JULY '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

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WALSH CONSTRUCTION COMPANY
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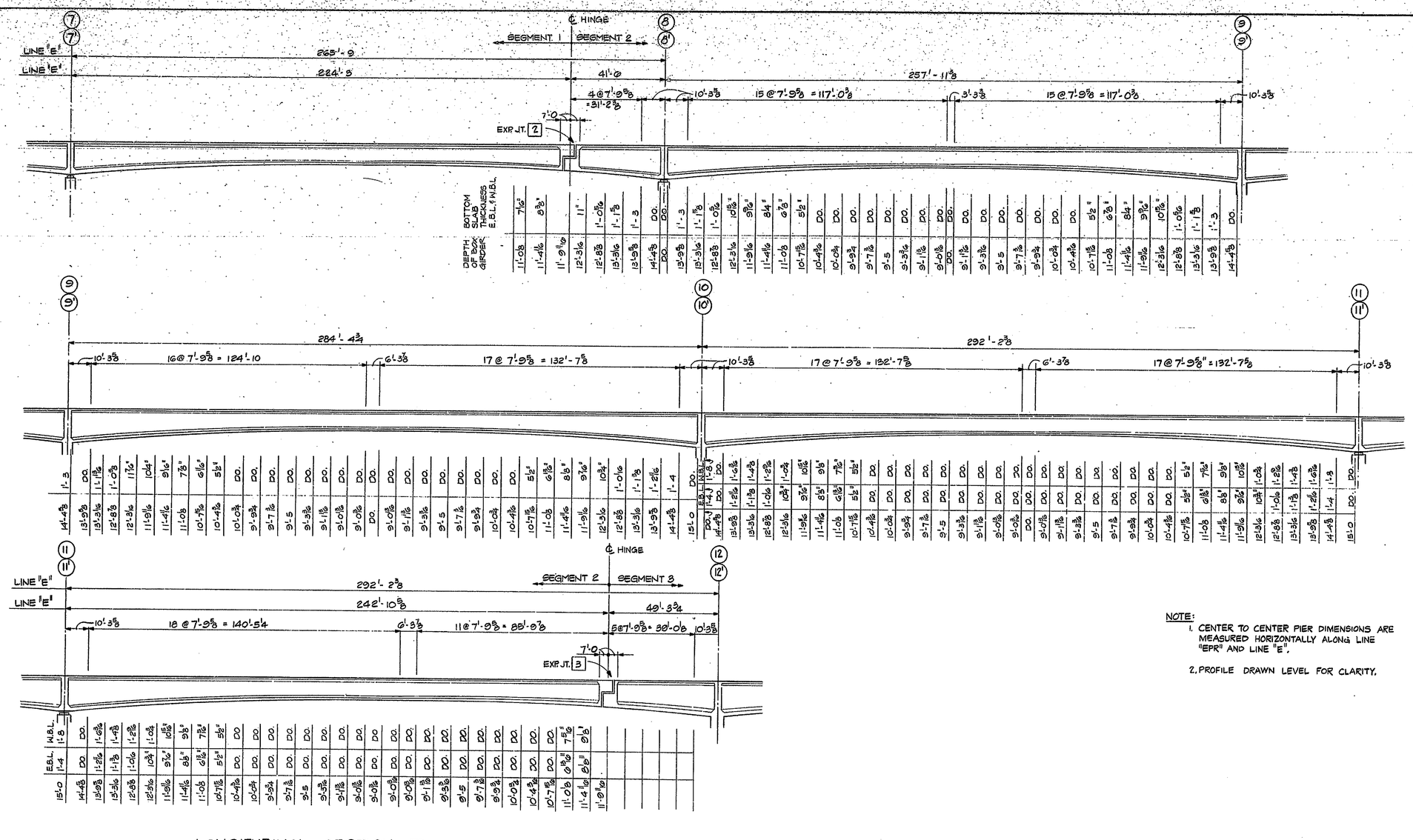
DARIEN, CONNECTICUT

SHEET TITLE
DEPTH OF GIRDERS AND BOTTOM SLAB THICKNESS – SEGMENT 3

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
430



NOTE:

1. CENTER TO CENTER PIER DIMENSIONS ARE MEASURED HORIZONTALLY ALONG LINE "EPR" AND LINE "E".
2. PROFILE DRAWN LEVEL FOR CLARITY.

LONGITUDINAL SECTION (A)
1" = 20'-0

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

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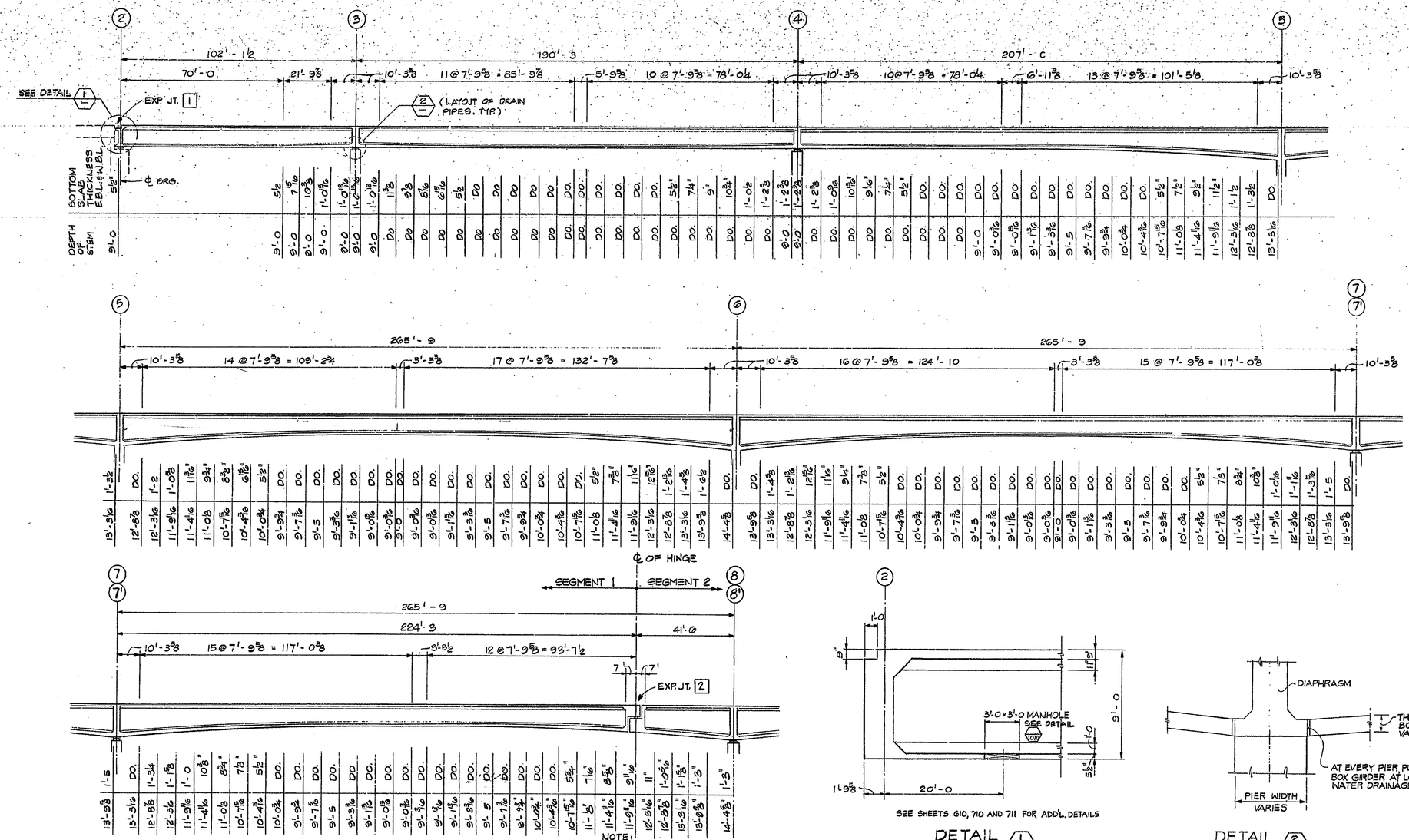
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
DEPTH OF GIRDERS AND BOTTOM SLAB THICKNESS — SEGMENT 2

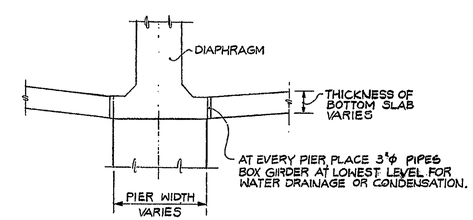
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11912
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
420



LONGITUDINAL SECTION
1/20" = 1'-0

DETAIL 1
4" = 1'-0



DETAIL 2
NO SCALE

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

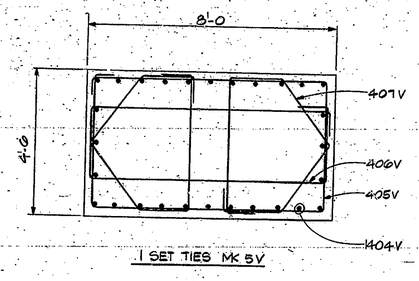
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
DEPTH OF GIRDERS AND BOTTOM SLAB THICKNESS - SEGMENT 1

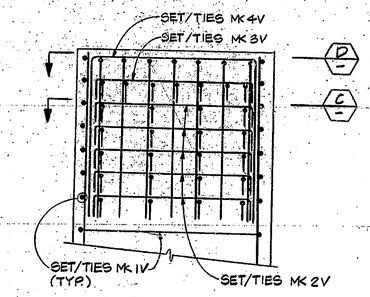
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
410

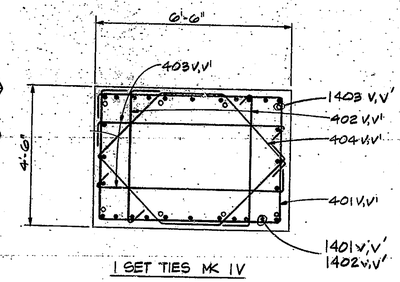


1 SET TIES MK 5V

SECTION E
½"=1'-0

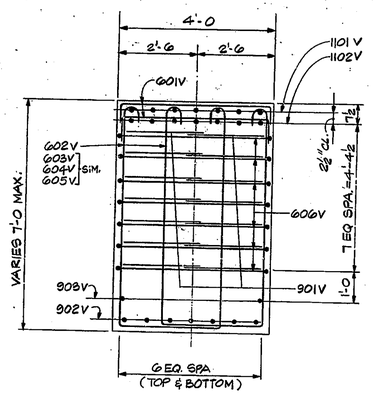


DETAIL I
½"=1'-0

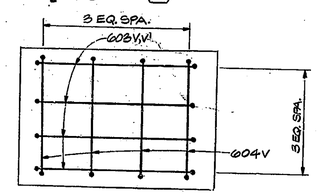


1 SET TIES MK 1V

SECTION A
½"=1'-0

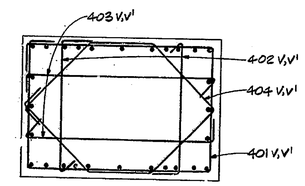


SECTION F
½"=1'-0



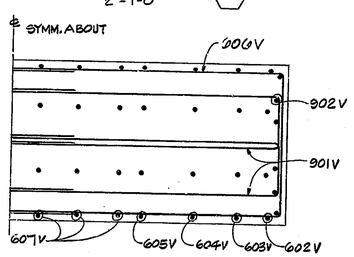
1 SET/BEARING REINF. MK 2V
(VERT REINF & SET/TIES MK IV NOT SHOWN FOR CLARITY.)

SECTION C
½"=1'-0

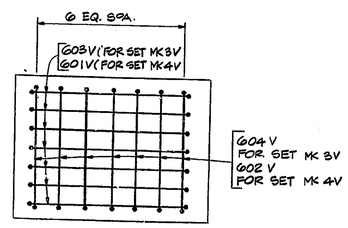


1 SET TIES MK 1V

SECTION B
½"=1'-0

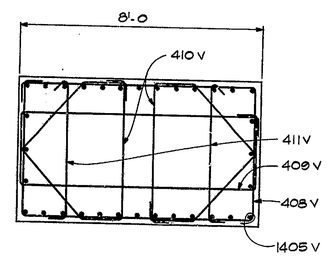


SECTION G
½"=1'-0

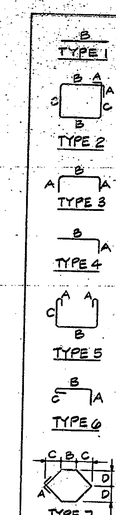


1 SET/BEARING REINF. MK 3
1 SET/BEARING REINF. MK 4

SECTION D
½"=1'-0



SECTION H
½"=1'-0



MARK NO	TYPE	NO REQD	A	B	C	D	E	LGTH	WEIGHT LBS.
PIER NO. 29'									
401V'	2	67	0'-8	6'-3	4'-3			22-4	
402V'	6	134	0'-8	4'-3	0'-8			5'-6	
403V'	6	134	0'-8	6'-3	0'-8			7'-6	
404V'	7	67	0'-8	2'-1	2'-1	2'-1		12'-1	
TOTAL #4									2,704
601V'		14	4'-6	6'-3				15'-3	
602V'		14	4'-6	4'-3				13'-3	
603V'		54	0'-11	6'-3				7'-2	
604V'		54	0'-11	4'-3				5'-2	
TOTAL #6									1,600
1401V'	4	28	2'-7	36'-1				38'-8	
1402V'	4	28	2'-7	35'-1				37'-8	
1403V'	1	16		21'-6				21'-6	
TOTAL #14									18,980
TOTAL REINF									23,284
CONC. f'c = 5000 P.S.I.									
TOTAL PIER CONCRETE VOLUME									65.4 C.Y.
PIER NO. 304									
405V	2	21	0'-8	7'-9	4'-3			25-4	
406V	2	21	0'-8	7'-9	2'-2			21-2	
407V	8	42	0'-8	1'-7	1'-7	2'-2		14-4	
TOTAL #4									1,054
601V	3	44	0-10	4'-8				6'-4	
602V	5	4	0-10	3'-3	4-9			14'-5	
603V	5	4	0-10	5'-3	5'-4			15'-7	
604V	5	4	0-10	3'-3	6'-0			16'-11	
605V	5	4	0-10	3'-3	6'-7			18'-1	
606V	5	12	0-10	3'-3	6'-7			18'-1	
607V	3	14	10'-10	4'-9				26'-5	
TOTAL #6									2,745
901V	3	28	10'-10	2'-4				24'-0	
902V	9	7	4'-8	2'-0	4'-9	8'-0		27'-8	
903V	1	2		12'-0				12'-0	
TOTAL #9									3,025
1101V	3	7	2'-0	17'-0				21'-0	
1101V	3	7	2'-0	16'-0				20'-0	
TOTAL #11									4,508
1404V	4	28	2'-7	30'-4				32'-11	
TOTAL #14									7,050
TOTAL REINF.									18,442
CONC. f'c = 5000 P.S.I.									
TOTAL PIER CONCRETE VOLUME									48.6 C.Y.
PIER NO. 302									
408V	2	28	0'-8	4'-3	7'-9			23'-4	
409V	2	28	0'-8	4'-3	2'-1			14'-0	
410V	8	56	0'-8	1'-4	1'-11	2'-1		18'-10	
411V	4	56	0'-8	2'-3	0'-8			5'-7	
TOTAL #4									1,450
1405V	4	84	2'-7	30'-1				41'-8	
TOTAL #14									10,840
TOTAL REINF.									12,290
CONC. f'c = 5,000 P.S.I.									
TOTAL PIER CONCRETE VOLUME									33.0 C.Y.

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
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WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

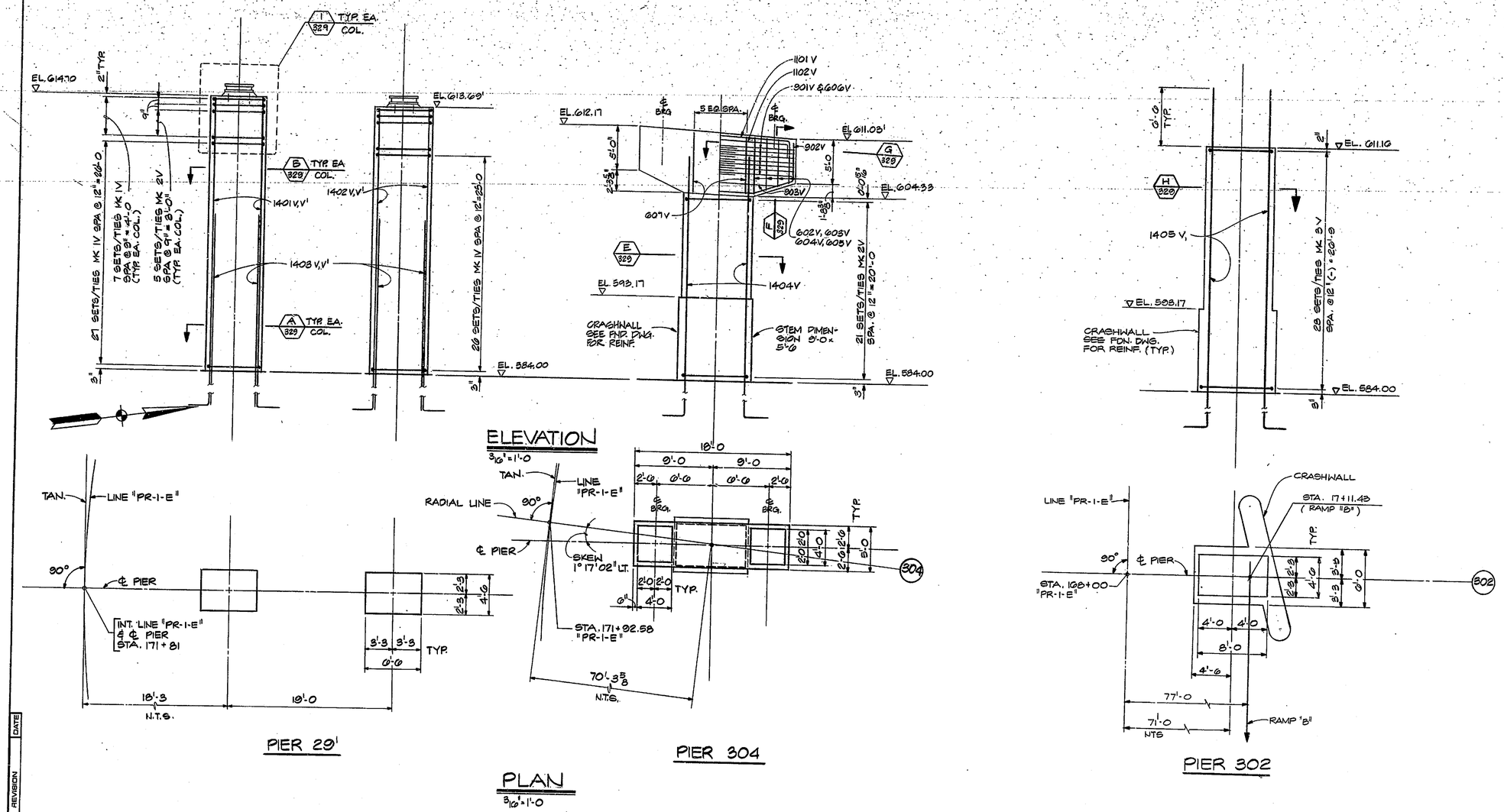
SHEET TITLE

PIER No. 304 AND 29' W.B.L. COLUMN DETAILS (II)

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 3-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.

329



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SHEET TITLE

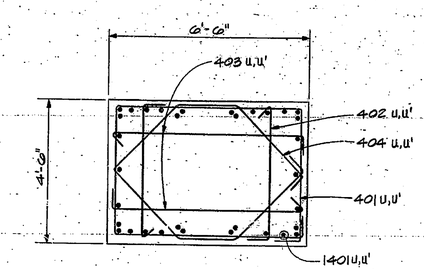
PIER No. 304 AND 29' W.B.L. COLUMN DETAILS (I)

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

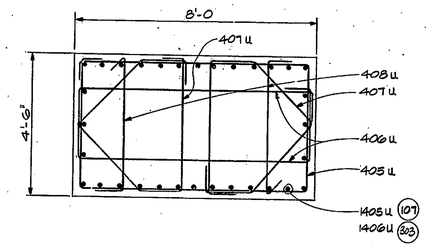
SHEET N.

328

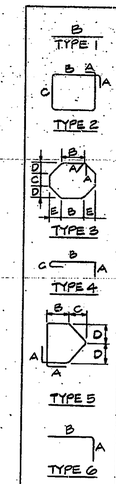
N.	REVISION	DATE



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



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



MARK NO.	TYPE	NO REQ'D	A	B	C	D	E	LGTH	WEIGHT LBS.
PIER No. 28 & 28'									
401 u,u'	2	142	0'-8	6'-3	4'-3			22'-4	
402 u,u'	4	284	0'-8	4'-3	0'-8			5'-7	
403 u,u'	4	284	0'-8	6'-3	0'-8			7'-7	
404 u,u'	2	142	0'-8	2'-1	2'-1	2'-1		17'-6	
								TOTAL # 4	6276
1401 u	6	34	2'-7	46'-4				48'-11	
1402 u	6	34	2'-7	45'-4				47'-11	
1403 u'	6	34	2'-7	48'-2				50'-9	
1404 u'	6	34	2'-7	45'-9				48'-4	
								TOTAL # 14	50,940
TOTAL REINF.									57,216
CONC. f_c' = 5000 P.S.I.									
TOTAL PIER CONCRETE VOLUME									138.1 C.Y.
PIER No. 107									
405 u	2	35	0'-8	4'-3	7'-9			25'-4	
406 u	2	35	0'-8	4'-3	2'-1			14'-0	
407 u	5	70	0'-8	1'-4	1'-11	2'-1		13'-10	
408 u	4	70	0'-8	4'-3	0'-8			5'-7	
								TOTAL # 4	1828
1405 u	6	32	2'-7	48'-10				51'-5	
								TOTAL # 14	12,582
TOTAL REINF.									14,410
CONC. f_c' = 5000 P.S.I.									
TOTAL PIER CONCRETE VOLUME									46.0 C.Y.
PIER No. 303									
405 u	2	35	0'-8	4'-3	7'-9			25'-4	
406 u	2	35	0'-8	4'-3	2'-1			14'-0	
407 u	5	70	0'-8	1'-4	1'-11	2'-1		13'-10	
408 u	4	70	0'-8	4'-3	0'-8			5'-7	
								TOTAL # 4	1828
1406 u	6	34	2'-7	45'-9				48'-1"	
								TOTAL # 14	12,563
TOTAL REINF.									14,391
CONC. f_c' = 5000 P.S.I.									
TOTAL PIER CONCRETE VOLUME									45.0 C.Y.

N.	REVISION	DATE

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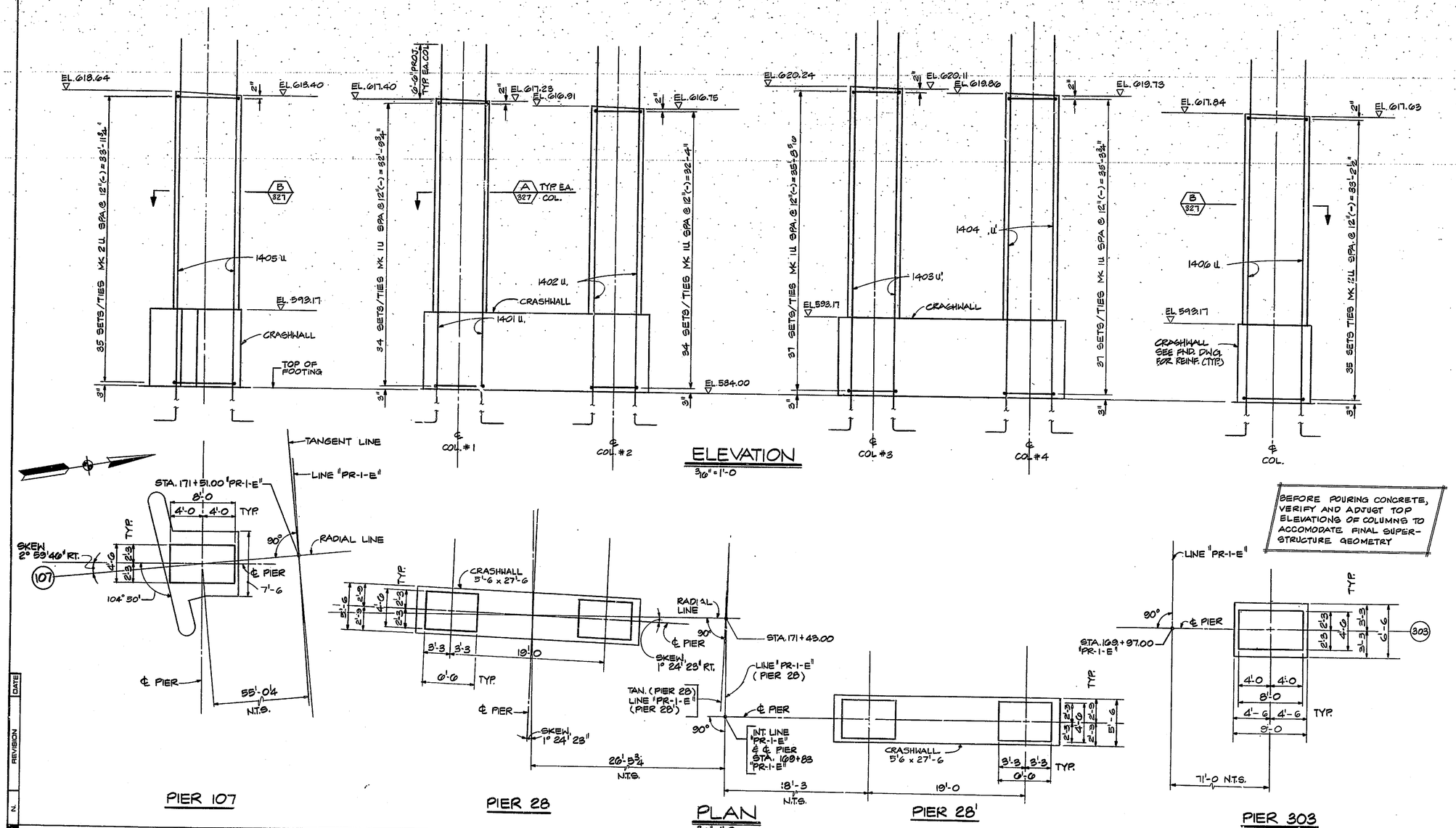
DARIEN, CONNECTICUT

SHEET TITLE
PIER No. 107, 303 AND 28 E.B.L. AND W.B.L. COLUMN DETAILS (II)

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 8-11812 INDIANA STATE HIGHWAY COMMISSION

SHEET N.
327



N.	REVISION	DATE

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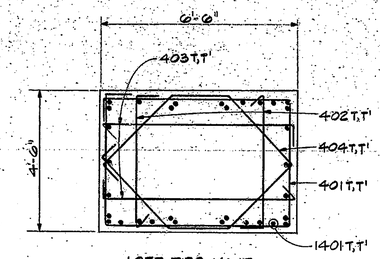
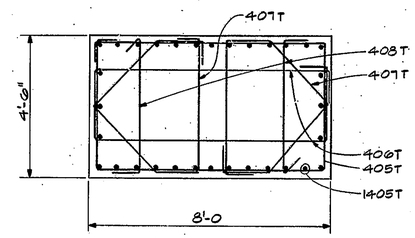
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
326



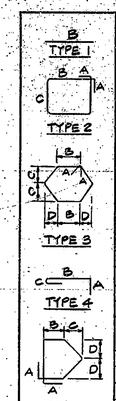
1 SET TIES MK 1T

SECTION A
½"=1'-0"



1 SET TIES MK 2T

SECTION B
½"=1'-0"



MARK NO	TYPE	NO REQD	A	B	C	D	E	LGTH	WEIGHT LBS
PIER NO. 27 AND 27'									
401T,T'	2	161	0'-8	6'-3	4'-3			22'-4	
402T,T'	4	322	0'-8	4'-3	0'-8			5'-7	
403T,T'	4	322	0'-8	6'-3	0'-8			7'-7	
404T,T'	3	161	0'-8	2'-1	2'-1	2'-1		17'-0	
TOTAL #4									7116
1401T,T'	6	34	2'-7	49'-3				51'-10	
1402T,T'	6	34	2'-7	49'-7				52'-2	
1403T,T'	6	34	2'-7	53'-2				55'-9	
1404T,T'	6	34	2'-7	52'-10				55'-5	
TOTAL #14									5595B
TOTAL REINF.									63,075
CONC. f'_c = 5000 P.S.I.									
TOTAL PIER CONCRETE VOLUME									170.1 C.Y.
PIER NO. 106									
405T	2	39	0'-8	4'-3	7'-9			25'-4	
406T	2	39	0'-8	4'-3	2'-1			14'-0	
407T	5	78	0'-8	1'-4	7'-11	2'-1		13'-10	
408T	4	78	0'-8	4'-3	0'-8			5'-7	
TOTAL #4									2086
1405T	6	34	2'-7	51'-5				55'-0	
TOTAL #14									14,306
TOTAL REINF.									16,342
CONC. f'_c = 5000 P.S.I									
TOTAL PIER CONCRETE VOLUME									50.5 C.Y.

NO.	REVISION	DATE

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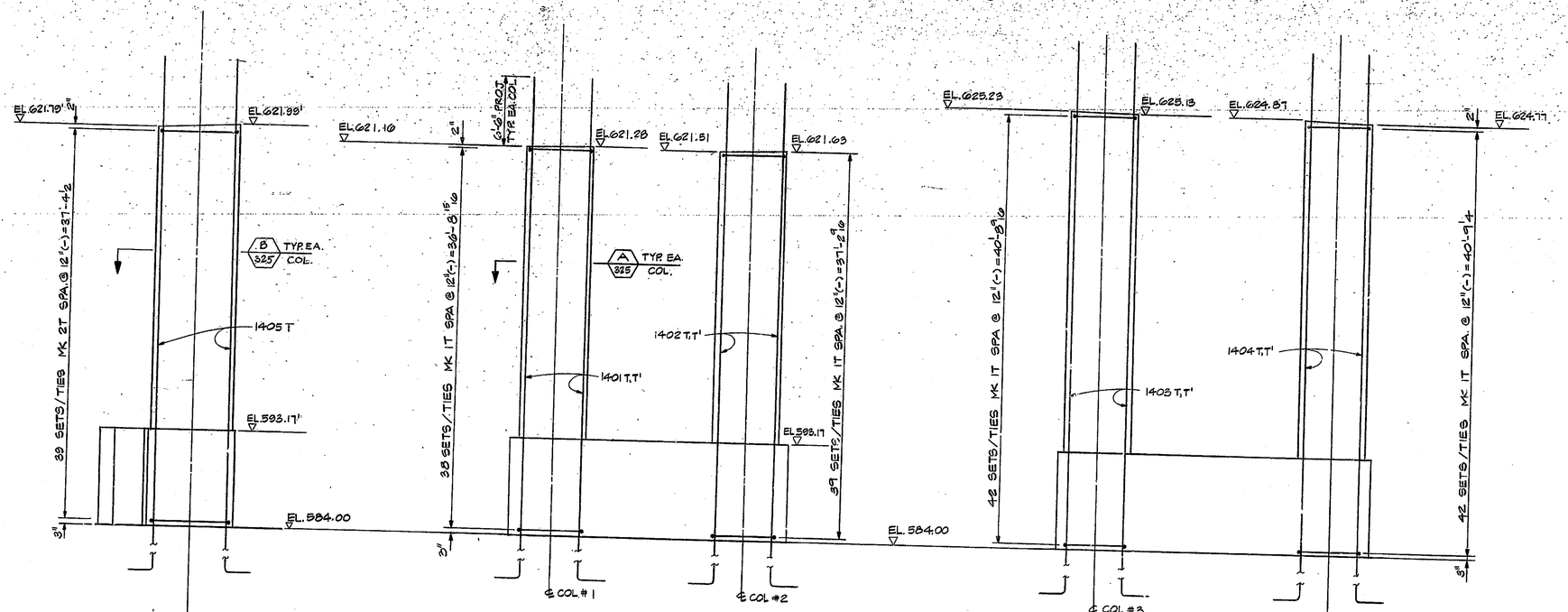
DARIEN, CONNECTICUT

SHEET TITLE
PIER No. 106 AND 27 E.B.L. AND W.B.L. COLUMN DETAILS (II)

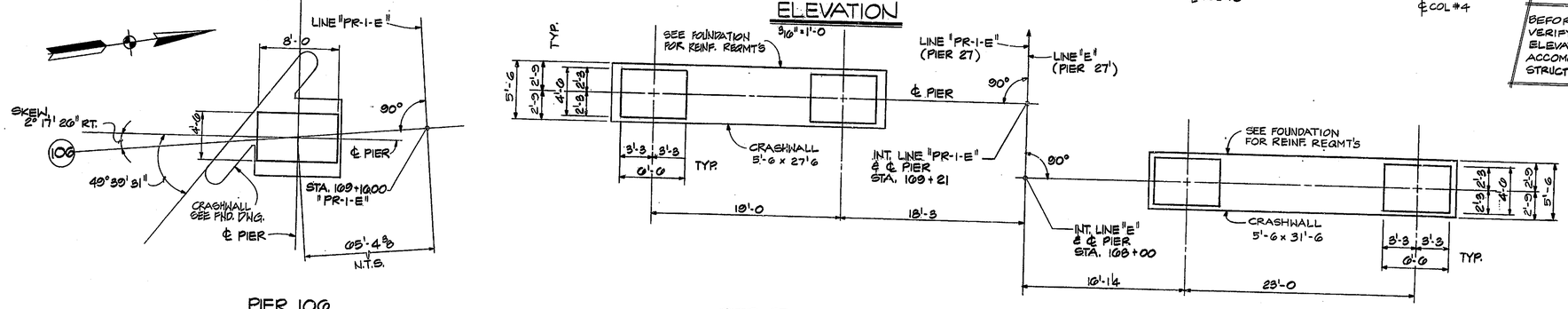
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11812 INDIANA STATE HIGHWAY COMMISSION

SHEET N.
325



ELEVATION

BEFORE POURING CONCRETE, VERIFY AND ADJUST TOP ELEVATIONS OF COLUMNS TO ACCOMODATE FINAL SUPER-STRUCTURE GEOMETRY



PIER 106

PIER 27

PIER 27'

PLAN

3/16" = 1'-0

N.	REVISION	DATE

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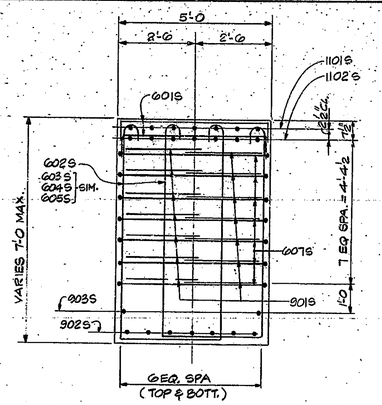
DARIEN, CONNECTICUT

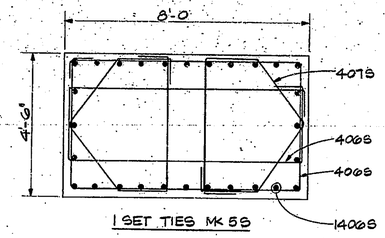
SHEET TITLE
PIER No. 106 AND 27 E.B.L. AND W.B.L. COLUMN DETAILS (I)

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2648 CONTRACT NO. 3-11812
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
324

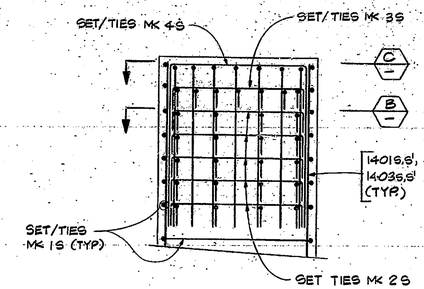


SECTION F
½"=1'-0

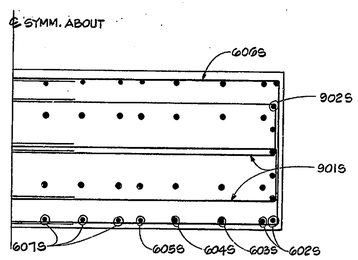


1 SET TIES MK 5S

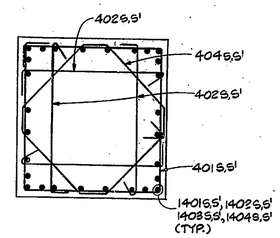
SECTION E
½"=1'-0



DETAIL 1
½"=1'-0

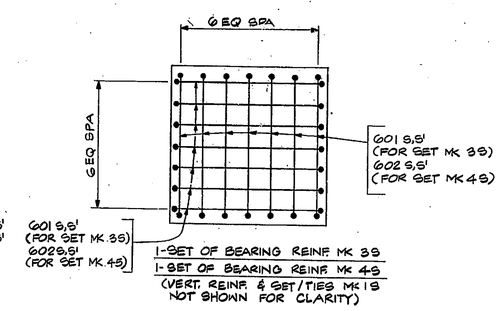


SECTION G
½"=1'-0"



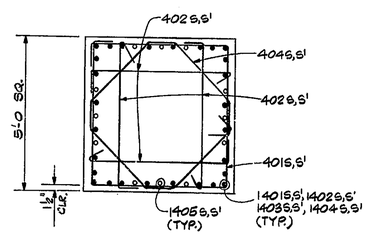
1 SET TIES MK 1S

SECTION B
½"=1'-0"



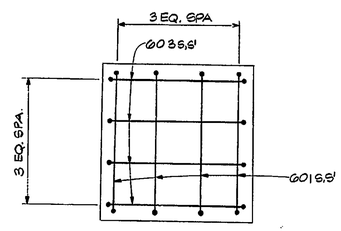
1-SET OF BEARING REINF. MK 3S
1-SET OF BEARING REINF. MK 4S
(VERT. REINF. & SET/TIES MK 1S NOT SHOWN FOR CLARITY)

SECTION D
½"=1'-0



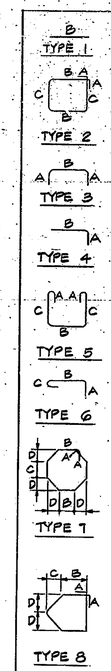
1-SET OF TIES MK 1S

SECTION A
½"=1'-0



1-SET OF BEARING REINF. MK 2S
(VERT. REINF. & SET/TIES MK 1S NOT SHOWN FOR CLARITY.)

SECTION C
½"=1'-0



MARK No.	TYPE	No REQD	A	B	C	D	E	LGTH	WEIGHT LBS.
PIER No. 25 & 25'									
4015,S	2	197	0'-8	4'-9	4'-9			20'-4	
4025,S	6	394	0'-8	4'-9	0'-8			6'-1	
4045,S	7	197	0'-8	1'-0	1'-0	1'-10		15'-10	
TOTAL #4									6360
6015,S'	3	56	4'-6	4'-7				13'-7	
6025,S'	3	216	0'-11	4'-7				6'-5	
TOTAL #6									3,224
1401S	4	28	2'-7	50'-7				44'-1	
1402S	4	28	2'-7	52'-1				44'-5	
1403S	4	28	2'-7	52'-1				45'-6	
1404S	4	28	2'-7	52'-5				45'-11	
1405S	1	48		21'-2				21'-2	
PIER No. 25 TOTAL #14									54,565
TOTAL REINF.									64,149
CONC. f'_c = 5000 P.S.I.									
TOTAL PIER CONCRETE VOLUME									170.7 C.Y.
PIER No. 26 & 26'									
4015,S	2	173	0'-8	4'-9	4'-9			20'-4	
4025,S	6	346	0'-8	4'-9	0'-8			6'-1	
4045,S	7	173	0'-8	1'-0	1'-0	1'-10		15'-10	
TOTAL #4									5,580
6015,S	3	56	4'-6	4'-7				13'-7	
6025,S	3	216	0'-11	4'-7				6'-5	
TOTAL #6									3224
1401S	4	28	2'-7	45'-1				38'-7	
1402S	4	28	2'-7	45'-5				38'-11	
1403S	4	28	2'-7	45'-10				41'-4	
1404S	4	28	2'-7	46'-3				41'-8	
1405S	1	48		21'-2				21'-2	
PIER No. 26 TOTAL #14									49,071
TOTAL REINF.									57,881
CONC. f'_c = 5000 P.S.I.									
TOTAL PIER CONCRETE VOLUME									148.9 C.Y.
PIER No. 105									
4055	2	33	0'-8	7'-9	4'-3			25'-4	
4065	2	33	0'-8	7'-9	2'-2			21'-2	
4075	8	66	0'-8	1'-7	1'-7	2'-2		14'-4	
TOTAL #4									1,057
6015	3	44	0'-10	4'-8				6'-4	
6025	5	4	0'-10	8'-3	4'-9			14'-5	
6035	5	4	0'-10	8'-3	5'-4			15'-7	
6045	5	4	0'-10	8'-3	6'-0			16'-11	
6055	5	4	0'-10	8'-3	6'-7			18'-1	
6065	5	12	0'-10	8'-3	6'-7			18'-1	
6075	3	14	0'-10	4'-9				20'-5	
TOTAL #6									1,691
9015	3	28	10'-10	2'-4				24'-0	
9025	9	7	4'-8	2'-0	4'-9	8'-0		27'-8	
9035	7	2	12'-0					12'-0	
TOTAL #9									3025
1101S	3	7	2'-0	17'-6				21'-6	
1102S	3	7	2'-0	17'-0				21'-0	
TOTAL #11									1,580
1406S	4	28	2'-7	32'-4				35'-4	
TOTAL #14									9,618
PIER No. 105 TOTAL REINF.									17,571
CONC. f'_c = 5000 P.S.I.									
TOTAL PIER CONCRETE VOLUME									72.9 C.Y.

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

T. Y. Lin

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

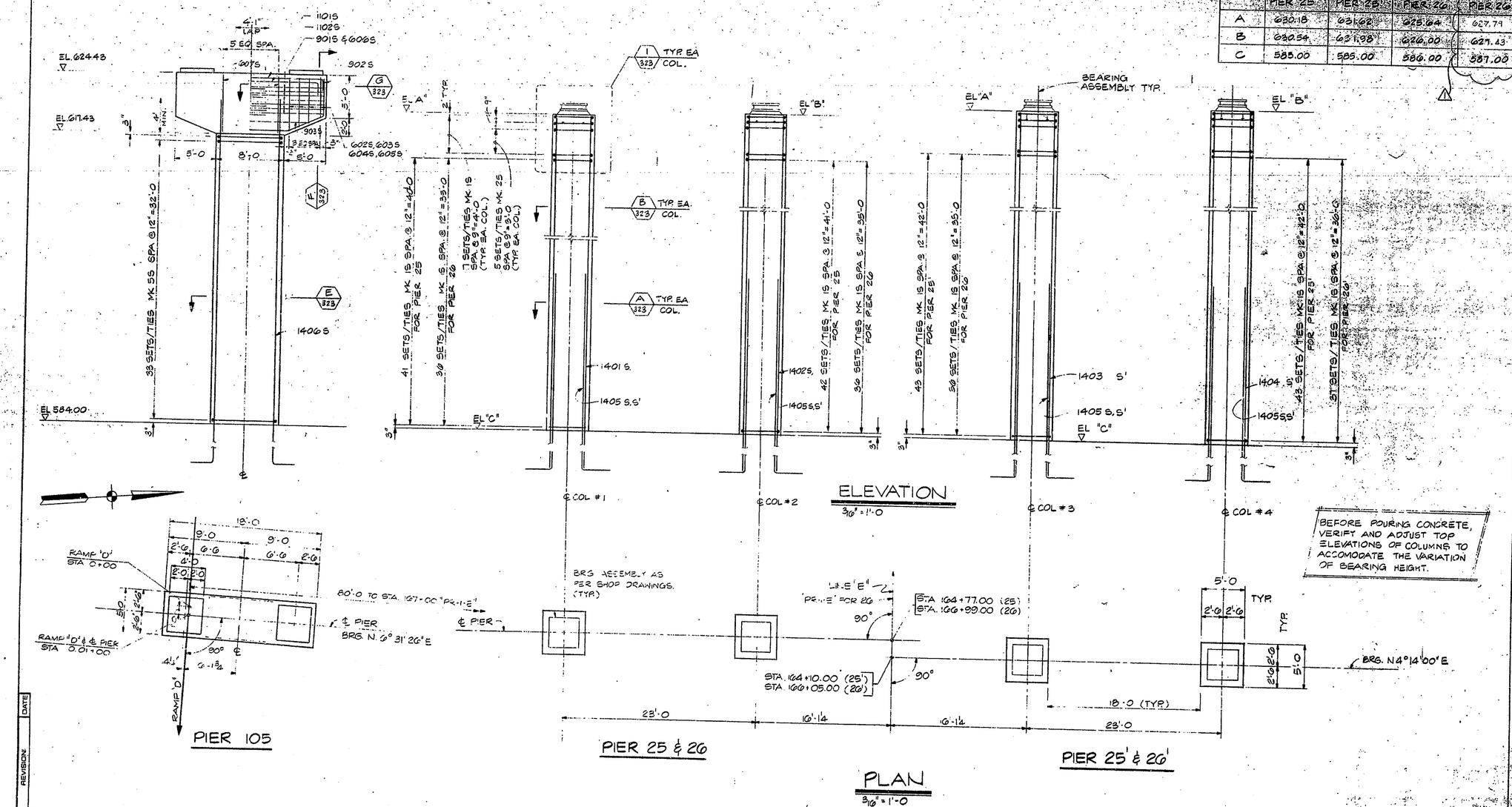
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN CONNECTICUT

SHEET TITLE
PIER No. 25 AND 26 E.B.L. AND W.B.L. AND PIER 105 COLUMN DETAILS (II)

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11812
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
323

TABLE OF ELEVATIONS				
	PIER 25	PIER 25'	PIER 26	PIER 26'
A	630.18	631.62	625.64	627.79
B	630.54	631.98	626.00	627.43
C	585.00	585.00	586.00	587.00



NO.	REVISION	DATE
1	COLUMN #3 ELEV.	10-24-79

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

T. Y. Lin

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

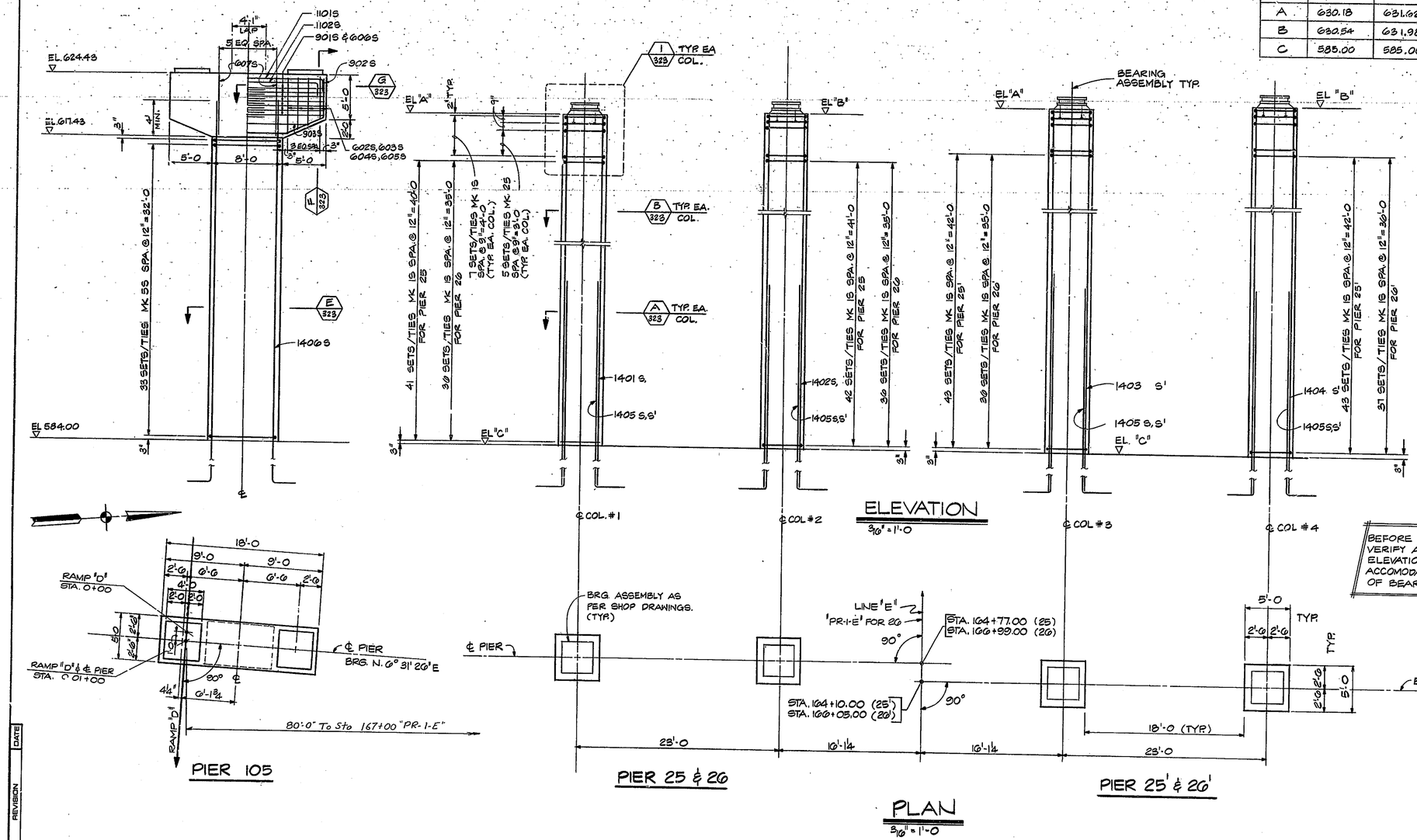
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PIER No. 25 AND 26 E.B.L. AND W.B.L. AND PIER No. 105 COLUMN DETAILS (I)

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE. 912-45-2546 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N. 322A

TABLE OF ELEVATIONS				
	PIER 25	PIER 25'	PIER 26	PIER 26'
A	630.18	631.62	625.64	627.43
B	630.54	631.98	626.00	627.79
C	585.00	585.00	586.00	587.00



N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

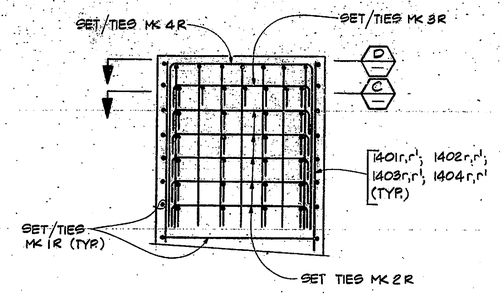
T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

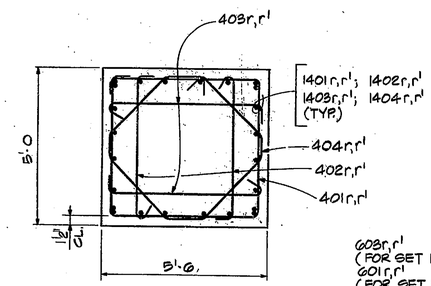
SHEET TITLE
PIER No. 25 AND 26 E.B.L. AND W.B.L. AND PIER No. 105 COLUMN DETAILS (I)

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
322

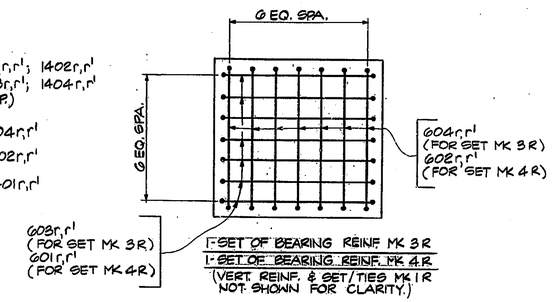


DETAIL 1
½"=1'-0



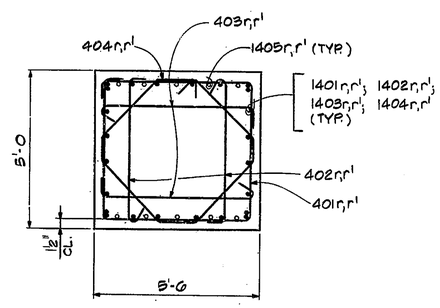
1-SET OF TIES MK 1R

SECTION B
½"=1'-0



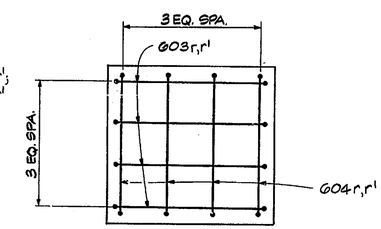
1-SET OF BEARING REINF. MK 3R
1-SET OF BEARING REINF. MK 4R
(VERT. REINF. & SET/TIES MK 1R NOT SHOWN FOR CLARITY.)

SECTION D
½"=1'-0



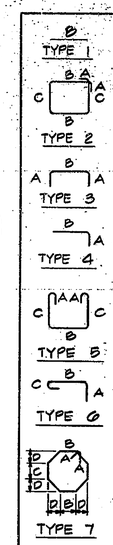
1-SET OF TIES MK 1R

SECTION A
½"=1'-0



1-SET OF BEARING REINF. MK 2R
(VERT. REINF. & SET/TIES MK 1R NOT SHOWN FOR CLARITY.)

SECTION C
½"=1'-0



MARK Nº	TYPE	Nº REQ'D	A	B	C	D	E	LGTH.	WEIGHT LBS.
PIER No. 23 & 23'									
401r	2	236	0'-8	5'-3	4'-9			21'-4	
402r	6	472	0'-8	4'-9	0'-8			6'-1	
403r	6	472	0'-8	5'-3	0'-8			6'-7	
404r	7	236	0'-8	1'-5	0'-11	1'-11		10'-10	
							TOTAL #4		10,012
601r	3	28	4'-6	5'-1				14'-1	
602r	3	28	4'-6	4'-7				13'-7	
603r	3	108	0'-11	5'-1				6'-11	
604r	3	108	0'-11	4'-7				6'-5	
							TOTAL #6		3320
1401r	4	24	2'-7	60'-6				63'-1	
1402r	4	24	2'-7	60'-10				63'-5	
1403r	4	24	2'-7	62'-11				65'-6	
1404r	4	24	2'-7	62'-7				65'-2	
1405r	4	40	2'-7	38'-6				30'-1	
							TOTAL #14		58,258
TOTAL REINF.									71,590
CONC. fc' = 5,000 P.S.I.									
TOTAL PIER CONCRETE VOLUME									229.0 C.Y.
PIER No. 24 & 24'									
401r'	2	212	0'-8	5'-3	4'-9			21'-4	
402r'	6	424	0'-8	4'-9	0'-8			6'-1	
403r'	6	424	0'-8	5'-3	0'-8			6'-7	
404r'	7	212	0'-8	1'-5	0'-11	1'-11			
							TOTAL #4		8,994
601r'	3	28	4'-6	5'-1				14'-1	
602r'	3	28	4'-6	4'-7				13'-7	
603r'	3	108	0'-11	5'-1				6'-11	
604r'	3	108	0'-11	4'-7				6'-5	
							TOTAL #6		3,326
1401r'	4	24	2'-7	55'-2				57'-9	
1402r'	4	24	2'-7	53'-6				56'-1	
1403r'	4	24	2'-7	56'-7				59'-2	
1404r'	4	24	2'-7	56'-3				58'-10	
1405r'	4	40	2'-7	30'-6				33'-1	
							TOTAL #14		52,688
TOTAL REINF.									65,008
CONC. fc' = 5,000 P.S.I.									
TOTAL PIER CONCRETE VOLUME									205.0 C.Y.

9-26-80 ADD THIS SHEET

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

8-12-1978

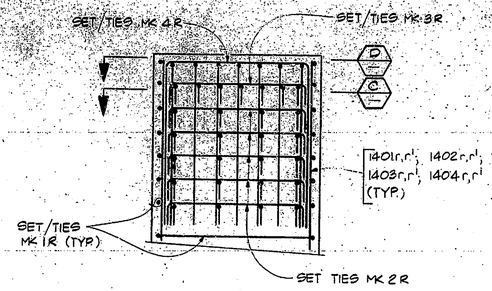
T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

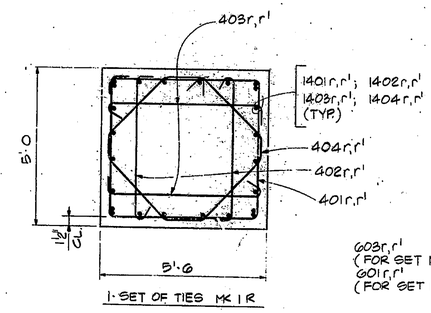
SHEET, TITLE
PIER No. 23 AND 24 E.B.L. AND W.B.L. COLUMN DETAILS (2)

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

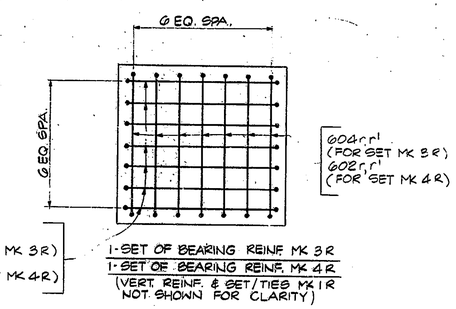
SHEET N.
321A



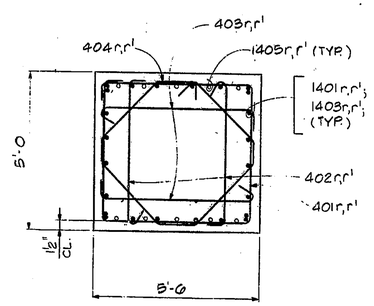
DETAIL 1
½" = 1'-0



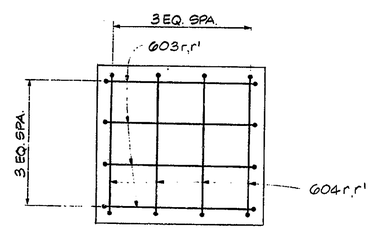
SECTION B
½" = 1'-0



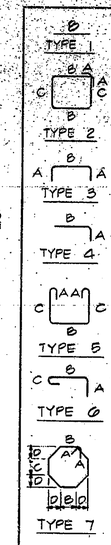
SECTION D
½" = 1'-0



SECTION A
½" = 1'-0



SECTION C
½" = 1'-0



MARK Nº	TYPE	Nº REQD.	A	B	C	D	E	LGTH.	WEIGHT LBS.
PIER No. 23 & 23'									
401r	2	280	0'-8	5'-3	4'-9			21'-4	
402r	6	472	0'-8	4'-9	0'-8			6'-1	
403r	6	472	0'-8	5'-3	0'-8			6'-7	
404r	7	280	0'-8	1'-5	0'-11	1'-11		10'-10	
							TOTAL #4		10,012
601r	3	28	4'-6	5'-1				14'-1	
602r	3	28	4'-6	4'-7				13'-7	
603r	3	108	0'-11	5'-1				6'-11	
604r	3	108	0'-11	4'-7				6'-5	
							TOTAL #6		3320
1401r	4	24	2'-7	60'-6				65'-1	
1402r	4	24	2'-7	60'-10				65'-5	
1403r	4	24	2'-7	62'-11				65'-6	
1404r	4	24	2'-7	62'-7				65'-2	
1405r	4	40	2'-7	33'-6				36'-1	
							TOTAL #14		58,258
TOTAL REINF.									71,986
CONC. fc' = 3,000 P.S.I.									
TOTAL PIER CONCRETE VOLUME									229.6 C.Y.
PIER No. 24 & 24'									
401r'	2	212	0'-8	5'-3	4'-9			21'-4	
402r'	6	424	0'-8	4'-9	0'-8			6'-1	
403r'	6	424	0'-8	5'-3	0'-8			6'-7	
404r'	7	212	0'-8	1'-5	0'-11	1'-11			
							TOTAL #4		8,994
601r'	3	28	4'-6	5'-1				14'-1	
602r'	3	28	4'-6	4'-7				13'-7	
603r'	3	108	0'-11	5'-1				6'-11	
604r'	3	108	0'-11	4'-7				6'-5	
							TOTAL #6		3,320
1401r'	4	24	2'-7	55'-2				57'-9	
1402r'	4	24	2'-7	55'-6				58'-1	
1403r'	4	24	2'-7	56'-7				59'-2	
1404r'	4	24	2'-7	56'-3				58'-10	
1405r'	4	40	2'-7	30'-6				33'-1	
							TOTAL #14		53,055
TOTAL REINF									65,375
CONC fc' = 3,000 P.S.I.									
TOTAL PIER CONCRETE VOLUME									205.0 C.Y.

9-26-80 DELETE THIS SHEET

DATE	REVISION	N

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

9-12-1978

T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PIER No. 23 AND 24 E.B.L. AND W.B.L. COLUMN DETAILS (2)

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE 912-45-2546 CONTRACT NO 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N
321

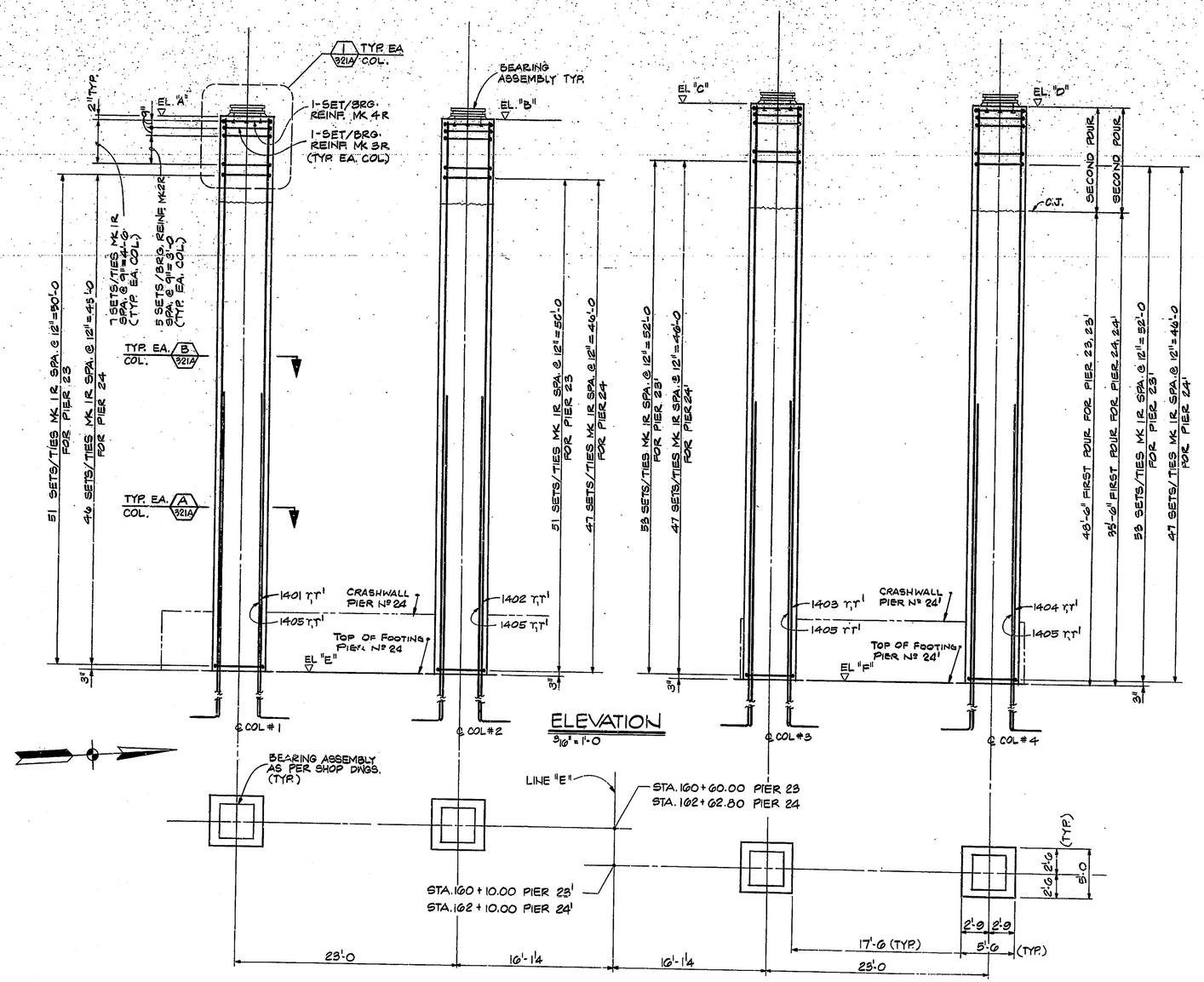


TABLE OF ELEVATIONS			
	PIER 23 & 23'	PIER 24	PIER 24'
A	639.15	634.79	——
B	639.50	635.14	——
C	640.58	——	636.28
D	640.22	——	635.92
E	584.00	584.00	——
F	583.00	——	584.50

BEFORE POURING CONCRETE, VERIFY AND ADJUST TOP ELEVATIONS OF COLUMNS TO ACCOMODATE THE VARIATION OF BEARING HEIGHTS.

9-26-80 ADD THIS SHEET

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

9-12-1978

T. Y. LIN REGISTERED No. 18285 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE

PIER No. 23 AND 24 E.B.L. AND W.B.L. COLUMN DETAILS (1)

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2648 CONTRACT NO. B-11812
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
320A

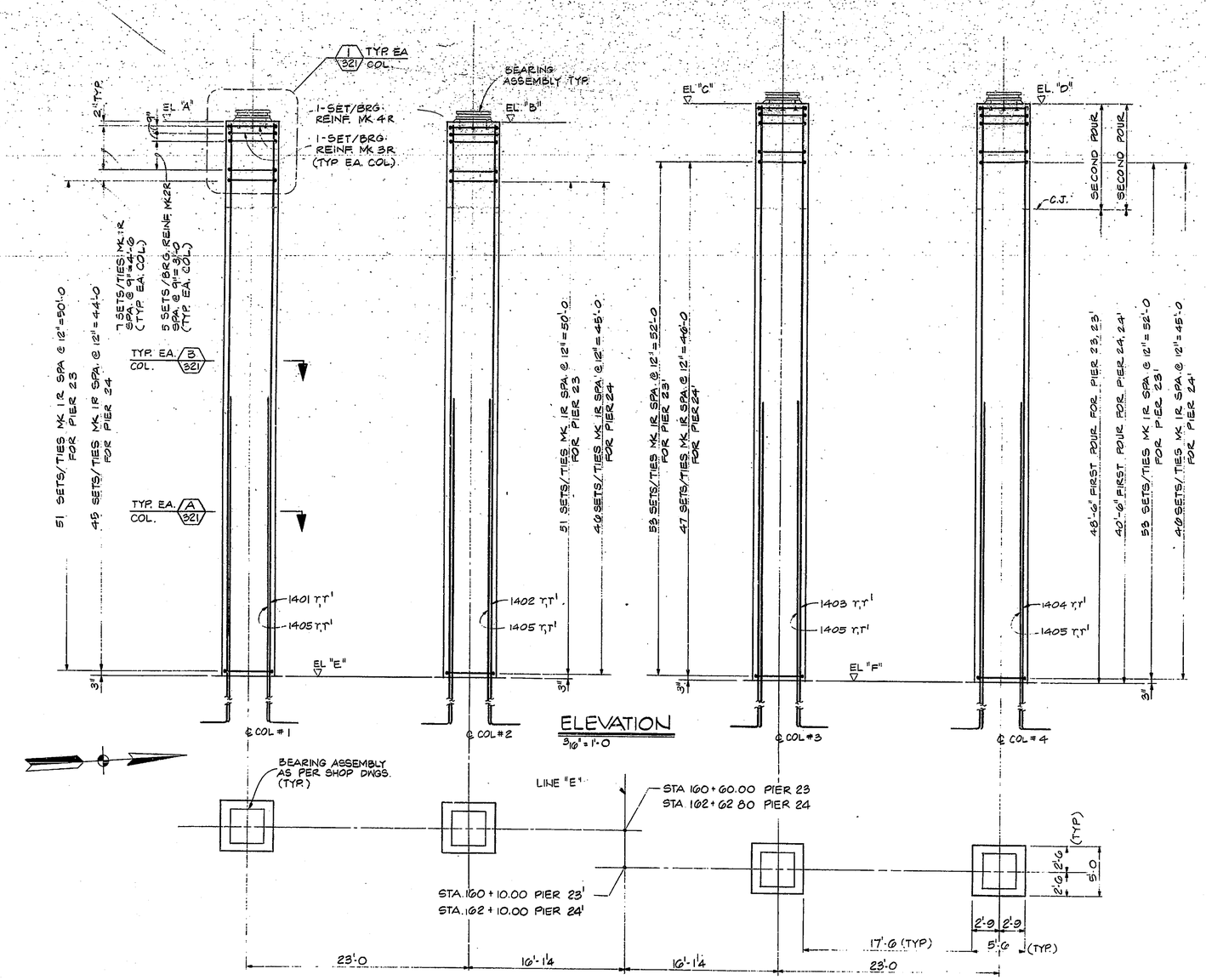


TABLE OF ELEVATIONS		
	PIER 23&23'	PIER 24&24'
A	639.15	634.79
B	639.50	635.14
C	640.58	636.28
D	640.22	635.92
E	584.00	585.00
F	583.00	585.00

BEFORE POURING CONCRETE, VERIFY AND ADJUST TOP ELEVATIONS OF COLUMNS TO ACCOMODATE THE VARIATION OF BEARING HEIGHTS.

9-26-80 DELETE THIS SHEET

NO.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

9-12-1979

T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PIER No. 23 AND 24 E.B.L. AND W.B.L. COLUMN DETAILS (1)

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
320

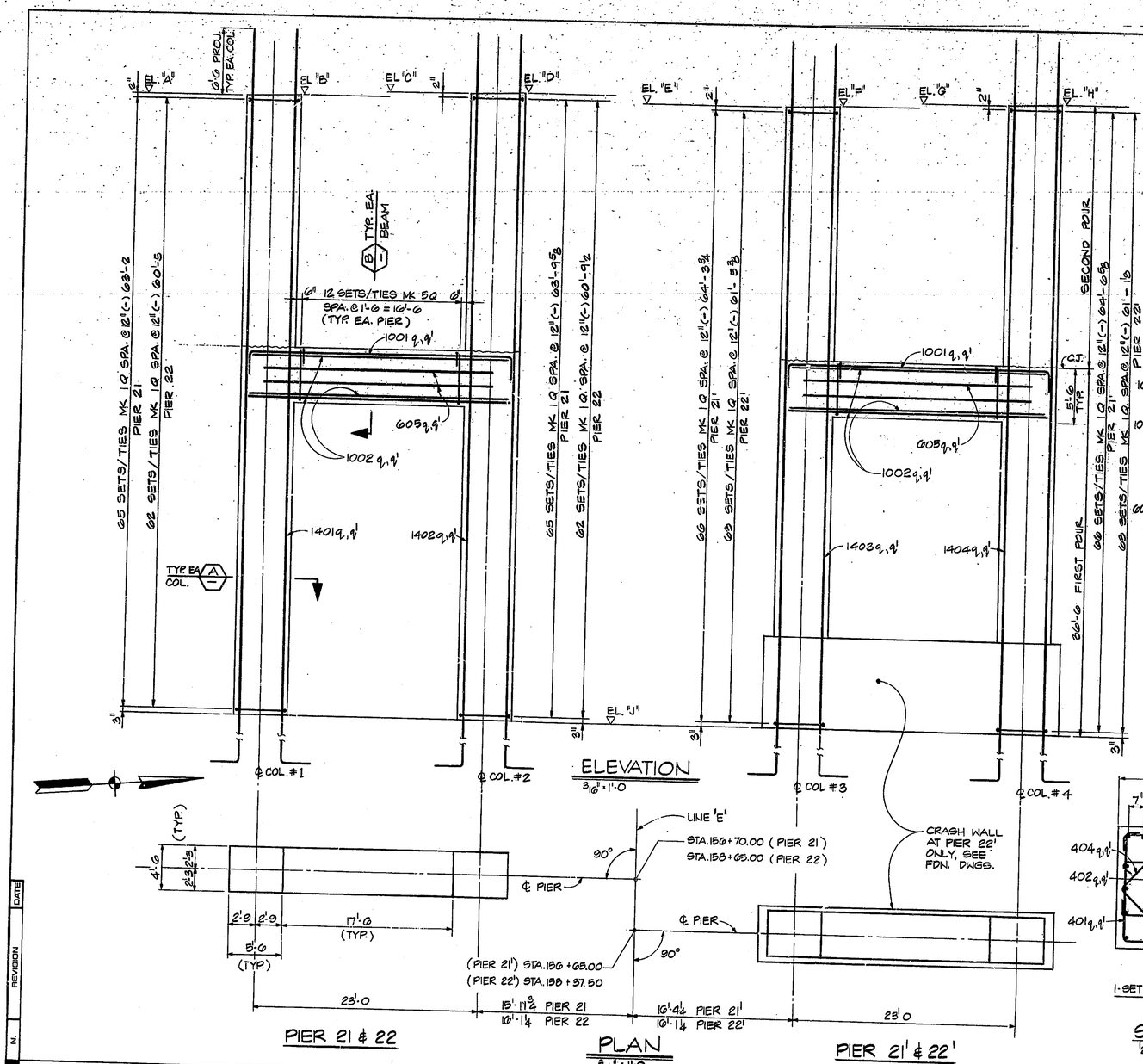
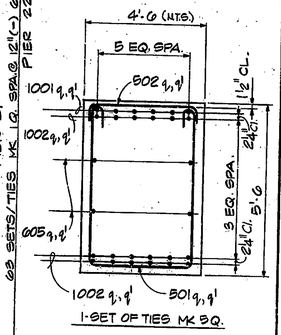
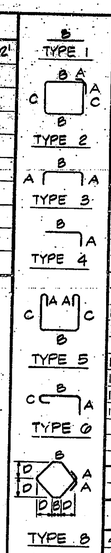


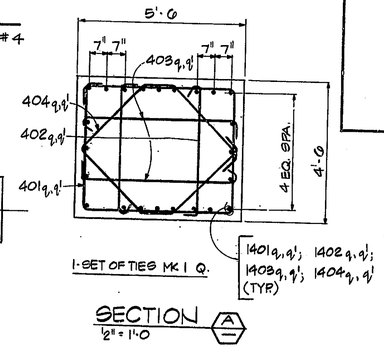
TABLE OF ELEVATIONS		
	PIER 21, 21'	PIER 22, 22'
A	648.39	644.84
B	648.75	644.92
C	649.25	645.20
D	649.41	645.28
E	649.73	645.87
F	649.79	645.79
G	649.97	645.51
H	650.03	645.43
J	585.00	584.00



SECTION B
½" = 1'-0



MARK Nº	TYPE	Nº REQ'D	A	B	C	D	E	LGTH	WEIGHT LBS.
PIER No. 21 & 21'									
401 q	2	262	0'-8	5'-3	4'-3			20'-4	
402 q	6	524	0'-8	4'-3	0'-8			5'-7	
403 q	6	524	0'-8	5'-3	0'-8			6'-7	
404 q	8	262	0'-8	1'-0	-	2'-1½		15'-4	
							TOTAL	#4	10,503
501 q	5	24	0'-7	4'-3	5'-3			15'-11	
502 q	3	24	0'-9	4'-3				5'-0	
							TOTAL	#5	543
605 q	1	8		23'-0				23'-0	276
1001 q	3	12	1'-7	28'-0				31'-2	
1002 q	1	36		27'-6				27'-6	
							TOTAL	#10	5,870
1401 q	4	24	2'-7	76'-5				79'-0	
1402 q	4	24	2'-7	77'-1				79'-8	
1403 q	4	24	2'-7	77'-6				80'-1	
1404 q	4	24	2'-7	77'-9				80'-4	
							TOTAL	#14	50,584
							TOTAL REINF.		75,776
							CONC. f'c = 3,000 P.S.I.		
							TOTAL PIER CONCRETE VOLUME		208.4 C.Y.
PIER No 22 & 22'									
401 q'	2	250	0'-8	5'-3	4'-3			20'-4	
402 q'	6	500	0'-8	4'-3	0'-8			5'-7	
403 q'	6	500	0'-8	5'-3	0'-8			6'-7	
404 q'	8	250	0'-8	1'-0	-	2'-1½		15'-4	
							TOTAL	#4	10,022
501 q'	5	24	0'-7	4'-3	5'-3			15'-11	
502 q'	3	24	0'-9	4'-3				5'-0	
							TOTAL	#5	543
605 q'	1	8		23'-0				23'-0	276
1001 q'	3	12	1'-7	28'-0				31'-2	
1002 q'	1	36		27'-6				27'-6	
							TOTAL	#10	5,870
1401 q'	4	24	2'-7	75'-7				76'-2	
1402 q'	4	24	2'-7	76'-0				76'-7	
1403 q'	4	24	2'-7	76'-10				76'-5	
1404 q'	4	24	2'-7	76'-6				76'-1	
							TOTAL	#14	50,044
							TOTAL REINF.		72,755
							CONC. f'c = 3,000 P.S.I.		
							TOTAL PIER CONCRETE VOLUME		257.1 C.Y.



SECTION A
½" = 1'-0

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

9-12-1979

T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

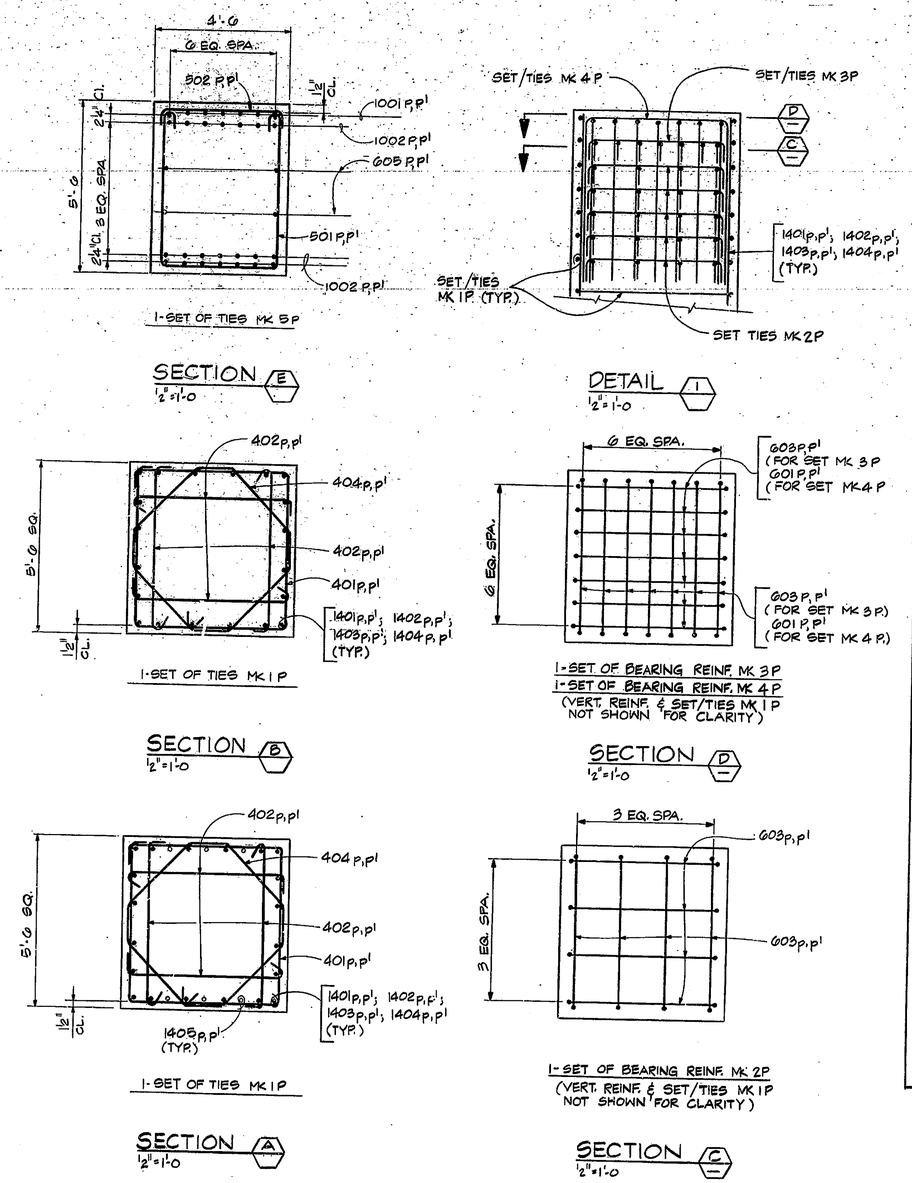
SHEET TITLE

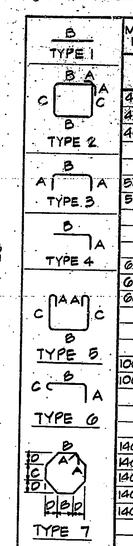
PIER No. 21 AND 22 E.B.L. AND W.B.L. COLUMN DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.

319





MARK Nº	TYPE	Nº REQD	A	B	C	D	E	LGTH.	WEIGHT LBS.
PIER No. 19 & 19'									
401P	2	280	0'-8	5'-3	5'-3			22'-4	
402P	6	1100	0'-8	5'-3	0'-8			6'-7	
404P	7	290	0'-8	1'-5	1'-5	1'-11		17'-10	
							TOTAL #4		12,883
501P	5	24	0'-7	4'-3	5'-3			15'-11	
502P	3	24	0'-9	4'-3				5'-9	
							TOTAL #5		542
601P	3	50	4'-6	5'-1				14'-1	
603P	3	216	0'-11	5'-1				6'-11	
605P	1	8		28'-0				28'-0	
							TOTAL #6		3,705
1001P	3	14	1'-7	28'-0			31'-2		
1002P	1	42		27'-6			27'-6		
							TOTAL #10		6,848
1401P	4	20	2'-7	72'-3				74'-10	
1402P	4	20	2'-7	73'-9				76'-4	
1403P	4	20	2'-7	74'-11				77'-6	
1404P	4	20	2'-7	76'-8				79'-3	
1405P	4	24	2'-7	44'-10				47'-5	
							TOTAL #14		55,818
							TOTAL REINF.		79,796
							CONC. fc' = 5,000 P.S.I.		
							TOTAL PIER CONCRETE VOLUME		346.0C.Y.
PIER No. 20 & 20'									
401P'	2	274	0'-8	5'-3	5'-3			22'-4	
402P'	6	1096	0'-8	5'-3	0'-8			6'-7	
404P'	7	274	0'-8	1'-5	1'-5	1'-11		17'-10	
							TOTAL #4		12,172
501P'	5	24	0'-7	4'-3	5'-3			15'-11	
502P'	3	24	0'-9	4'-3				5'-9	
							TOTAL #5		542
601P'	3	50	4'-6	5'-1				14'-1	
603P'	3	216	0'-11	5'-1				6'-11	
605P'	1	8		28'-0				28'-0	
							TOTAL #6		3,705
1001P'	3	14	1'-7	28'-0			31'-2		
1002P'	1	42		27'-6			27'-6		
							TOTAL #10		6,848
1401P'	4	20	2'-7	69'-1				71'-8	
1402P'	4	20	2'-7	70'-2				72'-0	
1403P'	4	20	2'-7	71'-0				73'-7	
1404P'	4	20	2'-7	72'-1				74'-8	
1405P'	4	24	2'-7	40'-0				43'-5	
							TOTAL #14		52,780
							TOTAL REINF.		69,169
							CONC. fc' = 5,000 P.S.I.		
							TOTAL PIER CONCRETE VOLUME		328.8C.Y.

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

8-12-1979

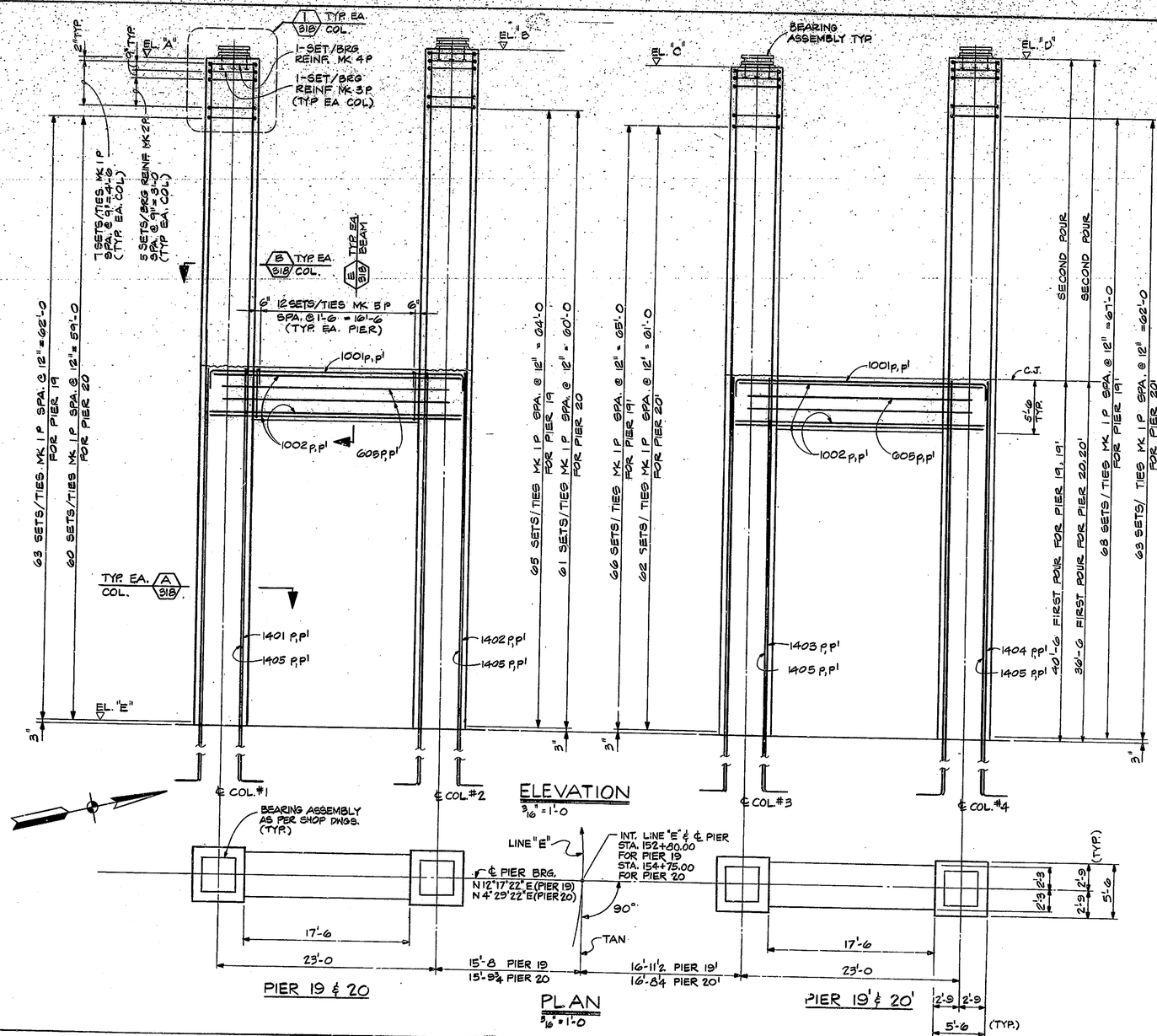
T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PIER No. 19 AND 20, E.B.L. AND W.B.L. COLUMN DETAILS (2)

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11812
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
318



ELEVATION
3/16" = 1'-0

TABLE OF ELEVATIONS		
	PIER 19 & 19'	PIER 20 & 20'
A	654.44	650.72
B	655.90	651.83
C	657.07	652.61
D	658.84	653.71
E	586.50	586.00

BEFORE POURING CONCRETE, VERIFY AND ADJUST TOP ELEVATIONS OF COLUMNS TO ACCOMODATE THE VARIATION OF BEARING HEIGHTS.

PLAN
3/16" = 1'-0

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T.Y.L. 9-12-1979

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WALSH CONSTRUCTION COMPANY
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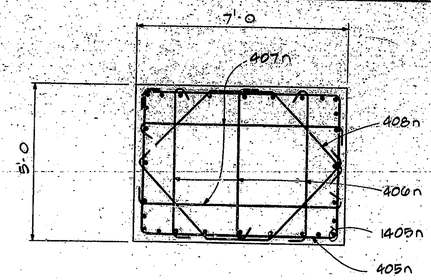
DARIEN, CONNECTICUT

SHEET TITLE
PIER No. 19 AND 20 E.B.L. AND W.B.L. COLUMN DETAILS (1)

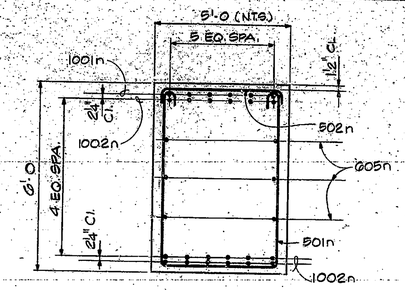
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
317



1-SET OF TIES MK 2N

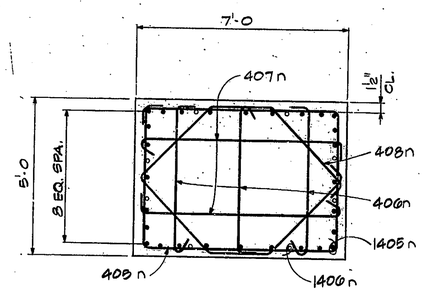
SECTION D



1-SET OF TIES MK 5N

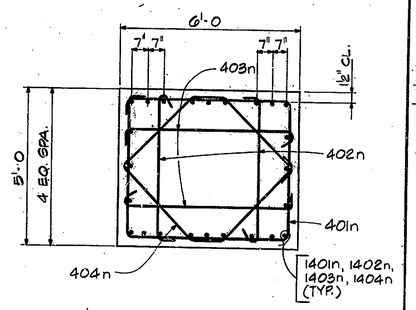
SECTION B

½" = 1'-0



1-SET OF TIES MK 2N

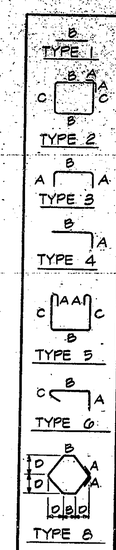
SECTION C



1-SET OF TIES MK 1N

SECTION A

½" = 1'-0



MARK No	TYPE	No REQ'D	A	B	C	D	E	LGTH	WEIGHT LBS.
PIER No. 18 & 18'									
401n	2	307	0'-8	5'-9	4'-9			22'-4	
402n	6	614	0'-8	4'-9	0'-8			6'-1	
403n	6	614	0'-8	5'-9	0'-8			7'-1	
404n	8	307	0'-8	1'-0	-	2'-4½		10'-9	
							TOTAL #4		13,417
501n	5	20	0'-7	4'-9	5'-9			17'-5	
502n	3	20	0'-9	4'-9				6'-3	
							TOTAL #5		642
605n	1	12		28'-0				28'-0	415
1001n	3	12	1'-7	28'-0				31'-8	
1002n	3	36		28'-0				28'-0	
							TOTAL #10		3,973
1401n	4	24	2'-7	88'-11				88'-6	
1402n	4	24	2'-7	87'-4				89'-11	
1403n	4	24	2'-7	88'-6				91'-1	
1404n	4	24	2'-7	90'-9				92'-10	
							TOTAL #14		66,524
							TOTAL REINF.		86,971
CONC. f'c = 5,000 P.S.I.									
TOTAL PIER CONCRETE VOLUME									376.6 C.Y.
PIER No. 410									
403n	2	73	0'-8	6'-9	4'-9			24'-4	
406n	6	219	0'-8	4'-9	0'-8			6'-1	
407n	6	146	0'-8	6'-9	0'-8			8'-1	
408n	8	73	0'-8	2'-0	-	2'-4½		18'-9	
							TOTAL #4		3,779
1405n	4	28	2'-7	88'-11				86'-6	
1406n	1	8	-	42'-6				42'-6	
							TOTAL #14		21,358
							TOTAL REINF.		25,337
CONC. f'c = 5,000 P.S.I.									
TOTAL PIER CONCRETE VOLUME									93.6 C.Y.

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T. Y. Lin
9-12-1979

T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

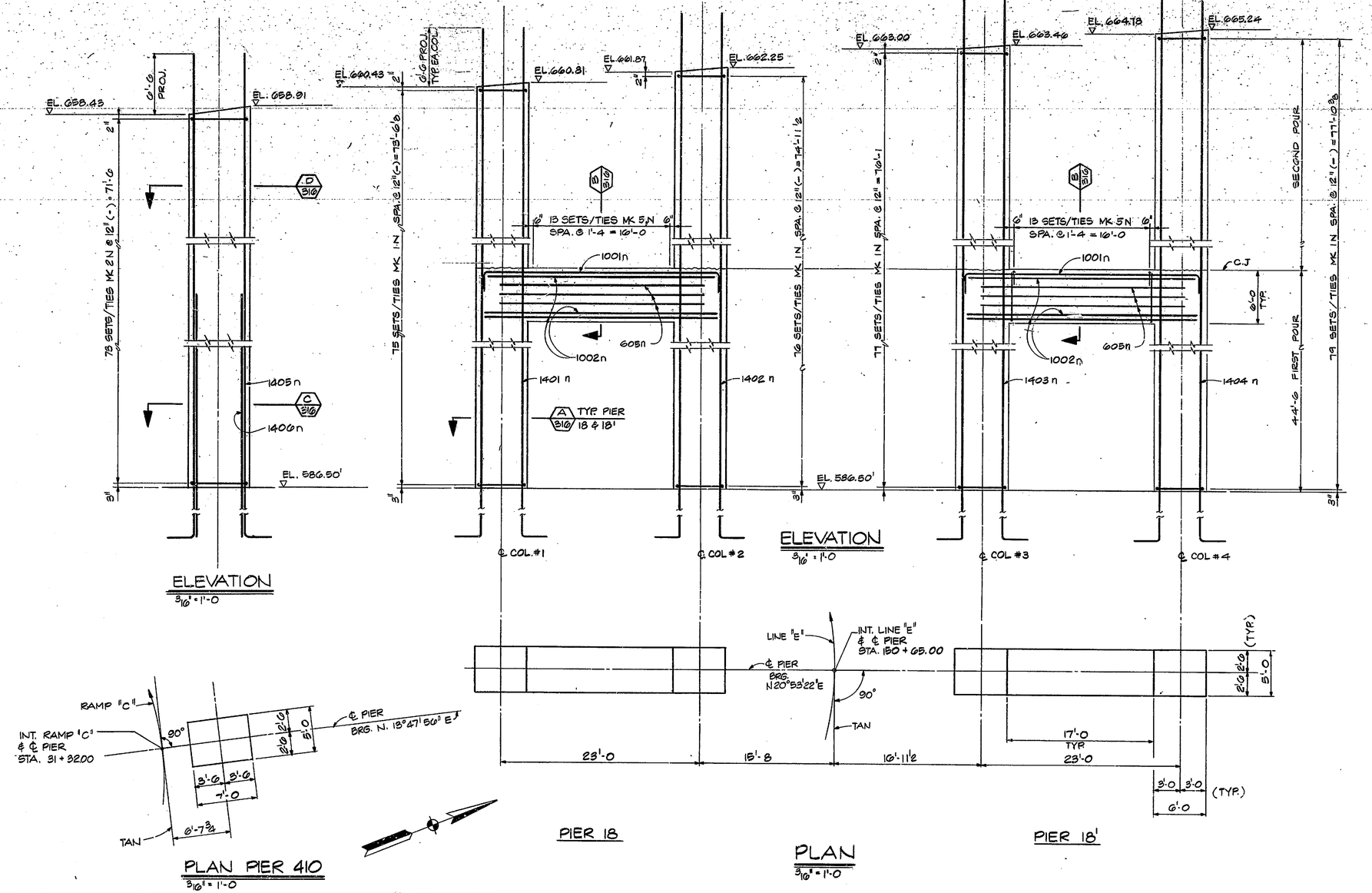
SHEET TITLE

PIER No. 18 E.B.L AND W.B.L. AND PIER No. 410 COLUMN DETAILS (2)

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11612 INDIANA STATE HIGHWAY COMMISSION

SHEET N.

316



N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

9-12-1978

T. Y. LIN REGISTERED No. 18265 STATE OF OHIO PROFESSIONAL ENGINEER

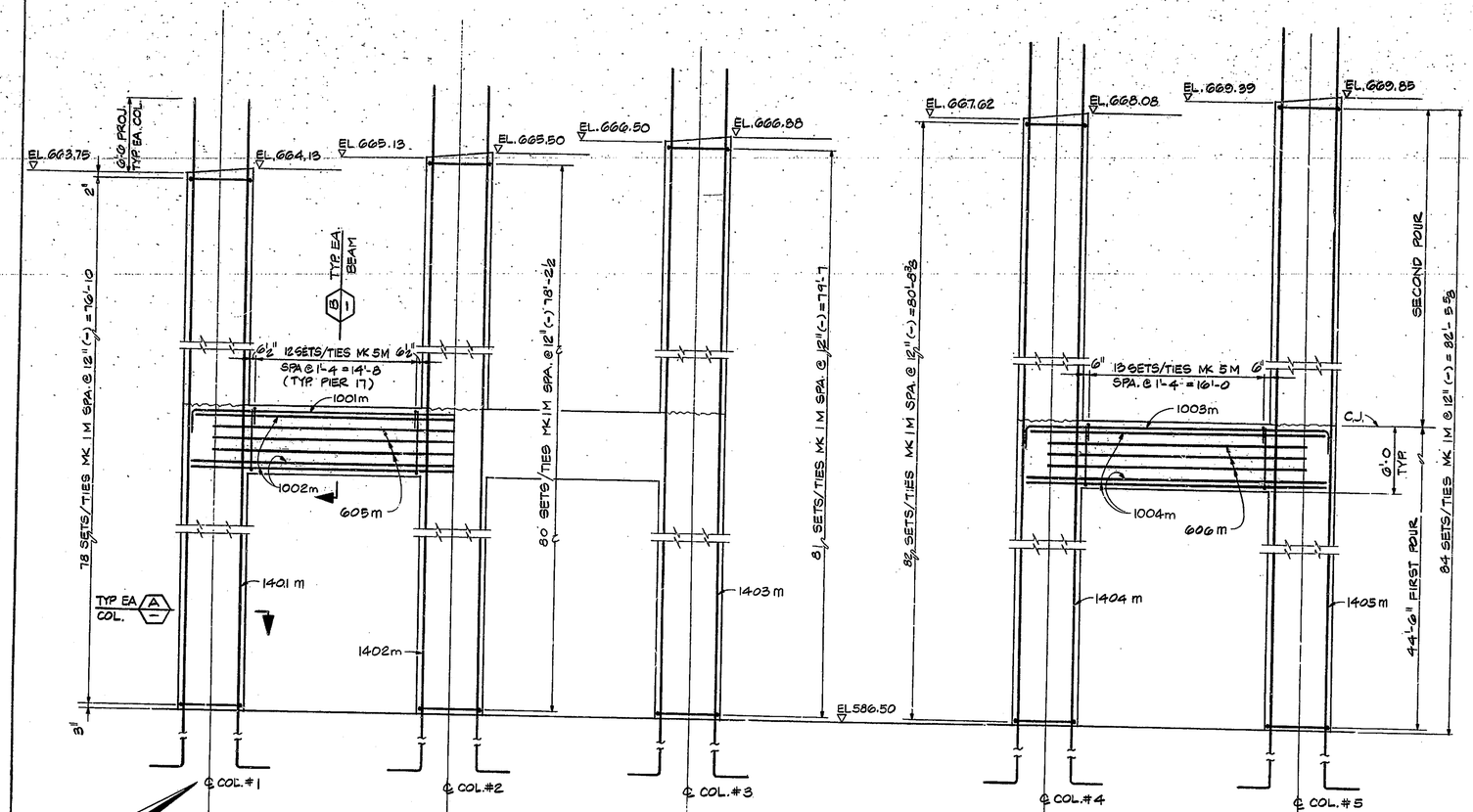
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE

PIER No. 18 E.B.L. AND W.B.L. AND PIER No. 410 COLUMN DETAILS (1)

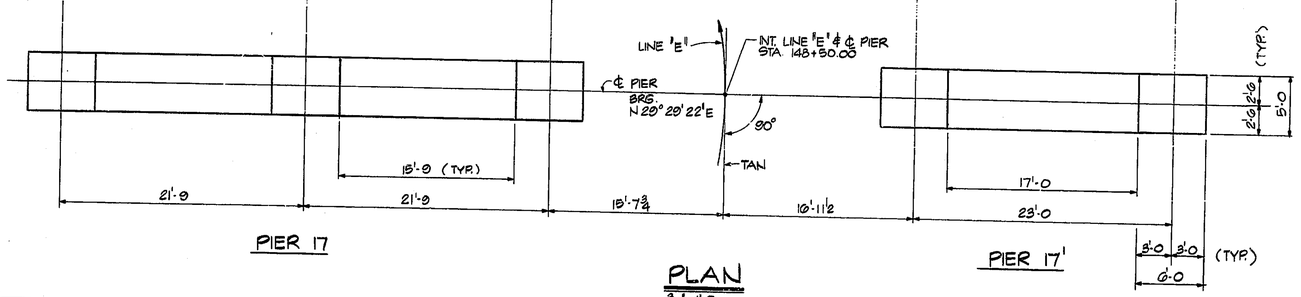
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612 INDIANA STATE HIGHWAY COMMISSION

SHEET N.
315



ELEVATION

3/16" = 1'-0



PIER 17

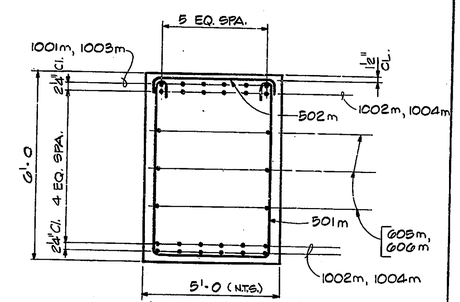
PIER 17'

PLAN

3/16" = 1'-0

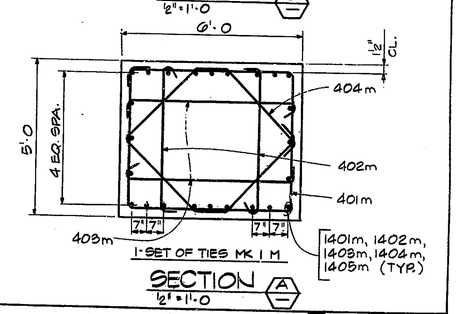
MARK Nº	TYPE	Nº REQ'D	A	B	C	D	E	LGTH	WEIGHT LBS.
401m	2	405	0'-8	5'-9	4'-9			22'-4	
402m	6	810	0'-8	4'-9	0'-8			6'-1	
403m	6	810	0'-8	5'-9	0'-8			7'-1	
404m	8	405	0'-8	1'-0		2'-4½		16'-9	
TOTAL #4									17,700
501m	5	37	0'-7	4'-9	5'-9			17'-5	
502m	3	37	0'-9	4'-9				6'-3	
TOTAL #5									914
605m	1	6		43'-6				43'-6	
606m	1	6		23'-0				23'-0	
TOTAL #6									599
1001m	3	6	1'-7	49'-0				52'-2	
1002m	1	18		48'-6				48'-0	
1003m	3	6	1'-7	28'-6				31'-5	
1004m	1	18		28'-0				28'-0	
TOTAL #10									8,031
1401m	4	24	2'-7	88'-3				91'-10	
1402m	4	24	2'-7	90'-7				93'-2	
1403m	4	24	2'-7	92'-0				94'-7	
1404m	4	24	2'-7	93'-1				95'-8	
1405m	4	24	2'-7	94'-10				97'-5	
TOTAL #14									86,782
TOTAL REINF.									114,040
CONC. fc' = 3,000 P.S.I.									
TOTAL PIER CONCRETE VOLUME									499.4 C.Y.

TYPE 1 · TYPE 2 · TYPE 3 · TYPE 4 · TYPE 5 · TYPE 6 · TYPE 8



SECTION B

½" = 1'-0



SECTION A

½" = 1'-0

N.	REVISION	DATE

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STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
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9-12-1979

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WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

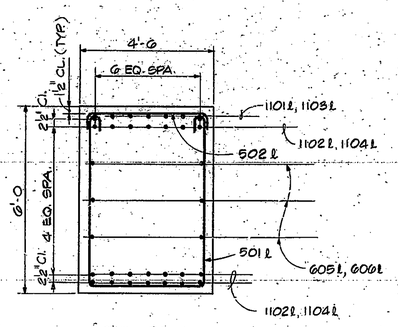
SHEET TITLE

PIER No. 17 E.B.L. AND W.B.L. COLUMN DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 812-45-2546 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

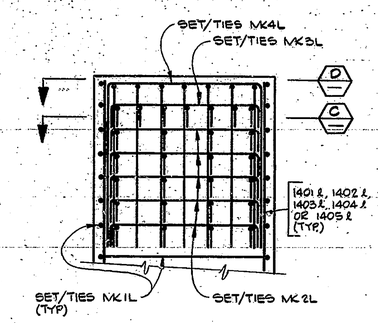
SHEET N.

314

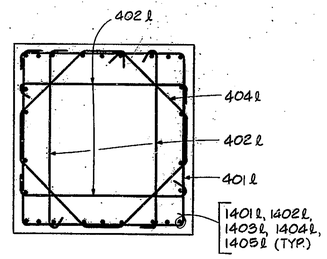


1-SET TIES MK 5L

SECTION E
½" = 1'-0

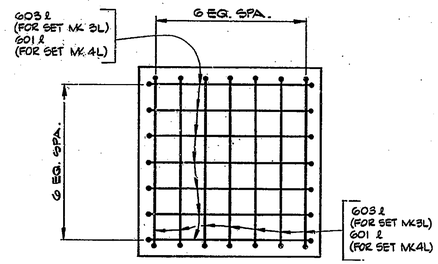


DETAIL 1
½" = 1'-0



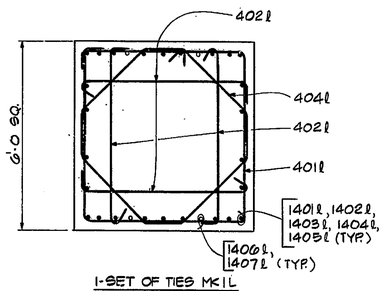
1-SET OF TIES MK 1L

SECTION B
½" = 1'-0



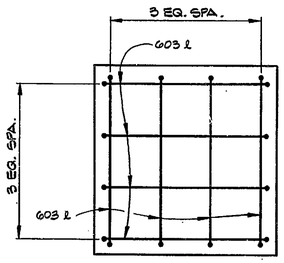
1-SET OF BEARING REINF. MK 3L
1-SET OF BEARING REINF. MK 4L
(VERT. REINF & SET/TIES MK 1L NOT SHOWN FOR CLARITY)

SECTION D
½" = 1'-0



1-SET OF TIES MK 1L

SECTION A
½" = 1'-0



1-SET OF BEARING REINF. MK 2L
(VERT. REINF. & SET/TIES MK 1L NOT SHOWN FOR CLARITY)

SECTION C
½" = 1'-0

MARK Nº	TYPE	Nº REQ'D.	A	B	C	D	E	LGTH.	WEIGHT LBS.
TYPE 1									
401ℓ	2	420	0'-8	5'-9	5'-9			24'-4	
402ℓ	6	1716	0'-8	5'-9	0'-8			7'-1	
404ℓ	7	420	0'-8	1'-5	1'-5	2'-2		19'-3	
TYPE 2									
							TOTAL	#4	20,608
501ℓ	5	45	0'-7	4'-3	5'-9			10'-11	
502ℓ	3	45	0'-9	4'-3	–			5'-9	
TYPE 3									
							TOTAL	#5	1,004
601ℓ	3	70	4'-6	5'-7				14'-7	
603ℓ	3	270	0'-11	5'-7				7'-5	
605ℓ	1	6		30'-0				30'-0	
606ℓ	1	6		23'-0				23'-0	
TYPE 4									
							TOTAL	#6	5,100
1101ℓ	3	7	1'-9	44'-0				48'-0	
1102ℓ	1	21		44'-0				44'-0	
1103ℓ	3	7	1'-9	28'-0				32'-0	
1104ℓ	1	21		28'-0				28'-0	
TYPE 5									
							TOTAL	#11	11,008
1401ℓ	4	26	2'-7	85'-2				87'-9	
1402ℓ	4	26	2'-7	86'-5				89'-0	
1403ℓ	4	26	2'-7	87'-7				90'-2	
1404ℓ	4	26	2'-7	88'-6				92'-1	
1405ℓ	4	26	2'-7	91'-4				93'-11	
1406ℓ	4	12	2'-7	46'-10				51'-5	
1407ℓ	4	8	2'-7	49'-7				52'-2	
TYPE 6									
TYPE 7									
							TOTAL	#14	27,999
							TOTAL REINF.		135,779
CONC. f'c = 5,000 P.S.I.									
TOTAL PIER CONCRETE VOLUME									601.0 C.Y.

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

9-12-1979

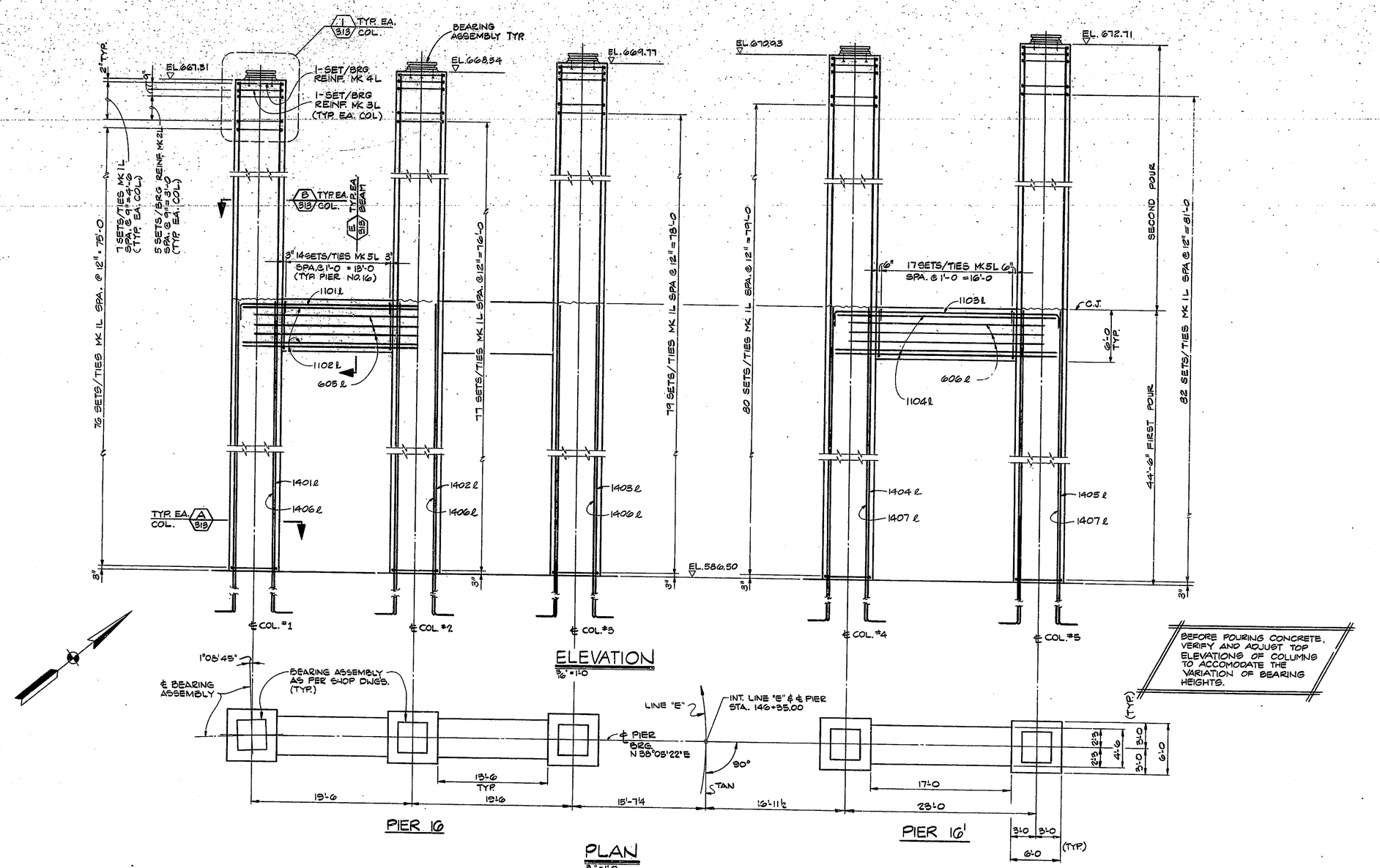
T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PIER No. 16 E.B.L. AND W.B.L. COLUMN DETAILS (2)

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. B-11612 INDIANA STATE HIGHWAY COMMISSION

SHEET N.
313



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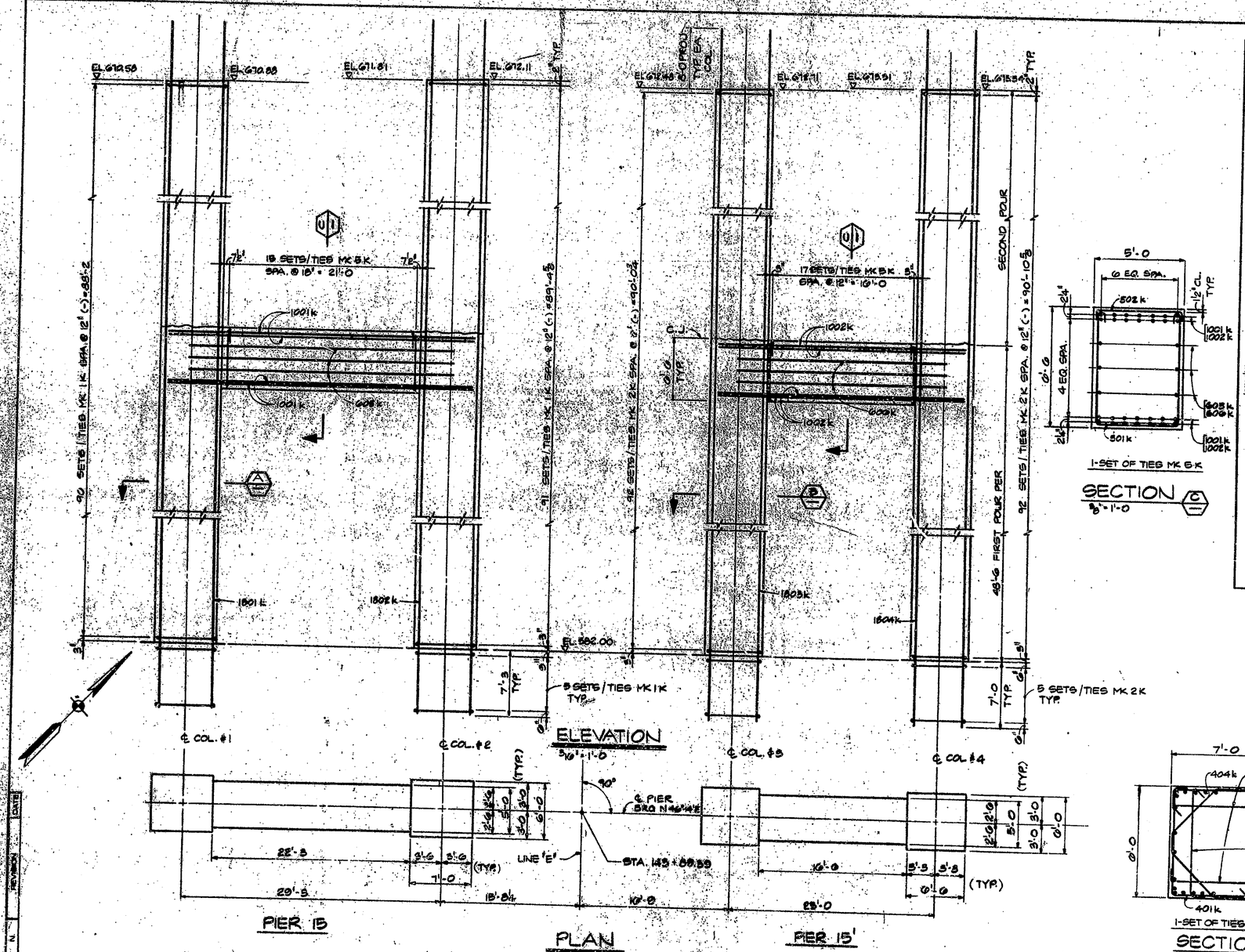
DARIEN, CONNECTICUT

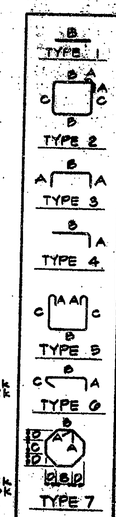
SHEET TITLE
PIER No. 16 E.B.L. AND W.B.L. COLUMN DETAILS (1)

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 812-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

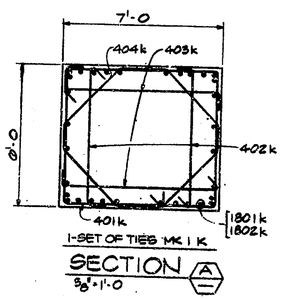
SHEET N.
312

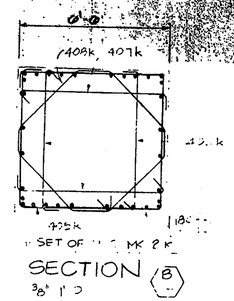
N. | REVISION | DATE





MARK No.	TYPE	No. REQD	A	B	C	D	E	F	G
PIER No. 15									
401k	2	191	0-8	6-8	5-4			[illegible]	
402k	6	382	0-8	5-4	0-8			[illegible]	
403k	6	382	0-8	6-4	0-8			[illegible]	
404k	7	191	0-8	2-1	1-1	2-4		[illegible]	
TOTAL								[illegible]	[illegible]
501k	5	15	0-7	4-9	6-8			[illegible]	
502k	5	15	0-9	4-9				[illegible]	
TOTAL								[illegible]	[illegible]
605k	1	6		29-3				[illegible]	[illegible]
1001k	1	28		25-9				[illegible]	[illegible]
1801k	1	32		105-0				[illegible]	
1802k	1	32		105-1				[illegible]	
TOTAL								[illegible]	[illegible]
TOTAL								[illegible]	[illegible]
CONC. f'c = 5000									
TOTAL PIER CONCRETE									
PIER No. 15									
405k	2	194	0-8	6-8	5-4			[illegible]	
406k	6	388	0-8	5-4	0-8			[illegible]	
407k	6	388	0-8	6-8	0-8			[illegible]	
408k	7	194	0-8	1-7	1-1	2-4		[illegible]	
TOTAL								[illegible]	[illegible]
501k	5	17	0-7	4-9	6-8			[illegible]	
502k	5	17	0-9	4-9				[illegible]	
TOTAL								[illegible]	[illegible]
606k	1	6		23-0				[illegible]	[illegible]
1002k	1	28		29-0				[illegible]	[illegible]
1803k	1	32		105-0				[illegible]	
1804k	1	32		105-4				[illegible]	
TOTAL								[illegible]	[illegible]
TOTAL								[illegible]	[illegible]
CONC. f'c = 5000									
TOTAL PIER CONCRETE VOLUME									





No.	REVISION	DATE
1	SECTION MARK	MARCH [illegible]

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

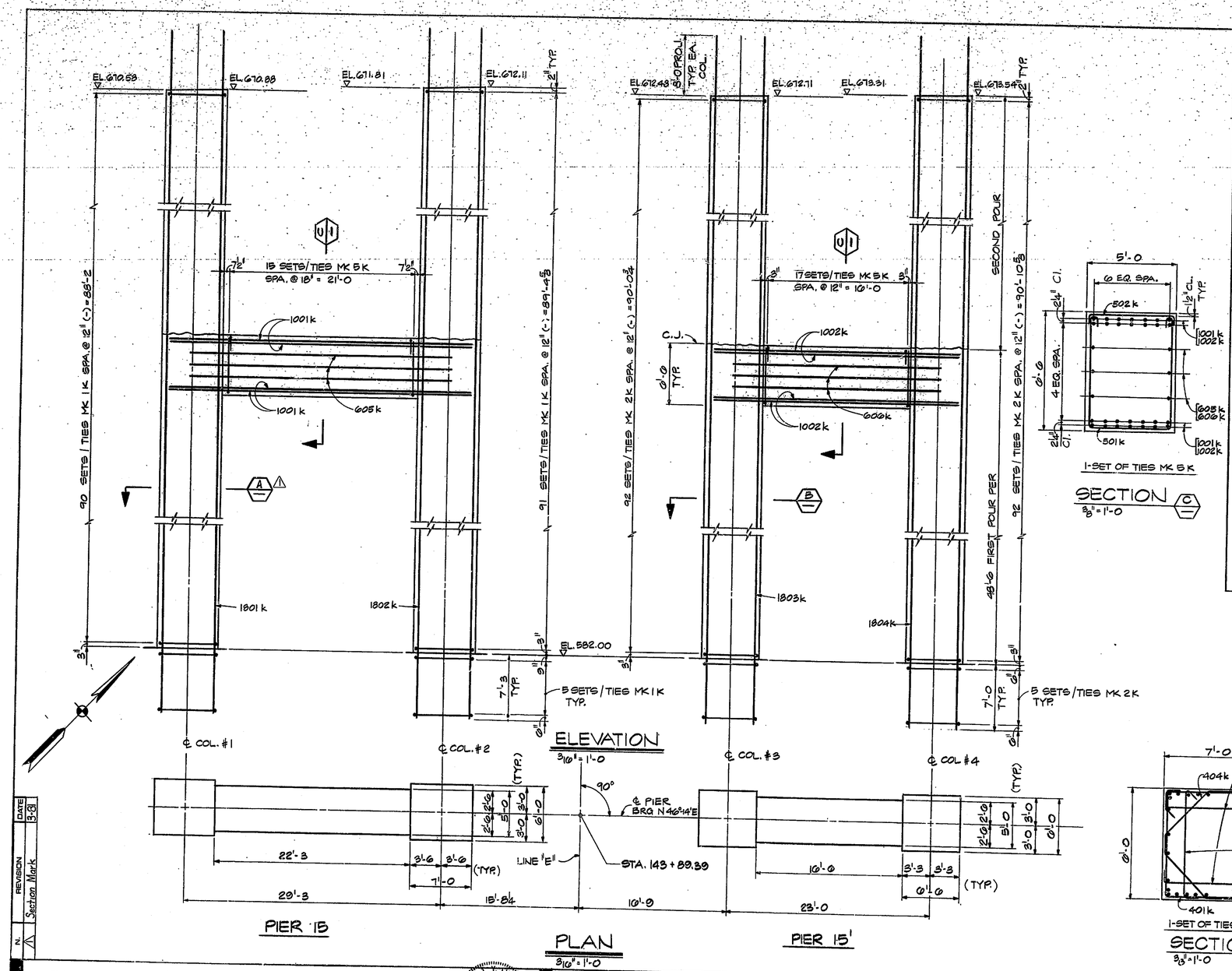
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DAVIDS, CONNECTICUT

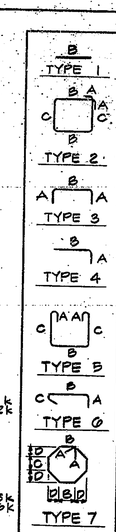
SHEET TITLE

PIER No. 15 E.B.L. AND W.B.L. COLUMN DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. G-11812 INDIANA STATE HIGHWAY COMMISSION

3119





MARK No.	TYPE	No REQD	A	B	C	D	E	LGTH	WEIGHT LBS.
PIER No. 15									
401k	2	191	0-8	6'-9	5'-9			26-4	
402k	6	388	0-8	5'-9	0-8			7-1	
403k	6	388	0-8	6'-9	0-8			8'-1	
404k	7	191	0-8	2'-1	1'-1	2'-4		20'-10	
TOTAL #4									9,880
501k	5	18	0-7	4'-9	6'-3			18'-5	
502k	3	18	0-9	4'-9				6'-3	
TOTAL #5									380
605k	1	6		29'-3				29'-3	204
1001k	1	28		35'-9				35'-9	4,307
1801k	1	32		103'-10				103'-10	
1802k	1	32		103'-1				103'-1	
TOTAL #18									20,922
TOTAL REINF.									105,708
CONC f'c = 5000 P.S.I.									
TOTAL PIER CONCRETE VOLUME									304.8C.Y.
PIER No. 15'									
405k	2	194	0-8	6'-3	5'-9			25'-4	
406k	6	388	0-8	5'-9	0'-8			7'-1	
407k	6	388	0-8	6'-3	0'-8			7'-7	
408k	7	194	0-8	1'-9	1'-1	2'-4		19'-10	
TOTAL #4									9,050
501k	5	17	0-7	4'-9	6'-3			18'-5	
502k	3	17	0-9	4'-9				6'-3	
TOTAL #5									438
606k	1	6		23'-0				23'-0	207
1002k	1	28		29'-0				29'-0	3,494
1803k	1	32		105'-0				105'-0	
1804k	1	32		106'-4				106'-4	
TOTAL #18									22,193
TOTAL REINF.									
CONC. f'c = 5000 P.S.I.									105,888
TOTAL PIER CONCRETE VOLUME									282.8C.Y.

N.	REVISION	DATE
1	Section Mark	3-8

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T. Y. Lin

T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

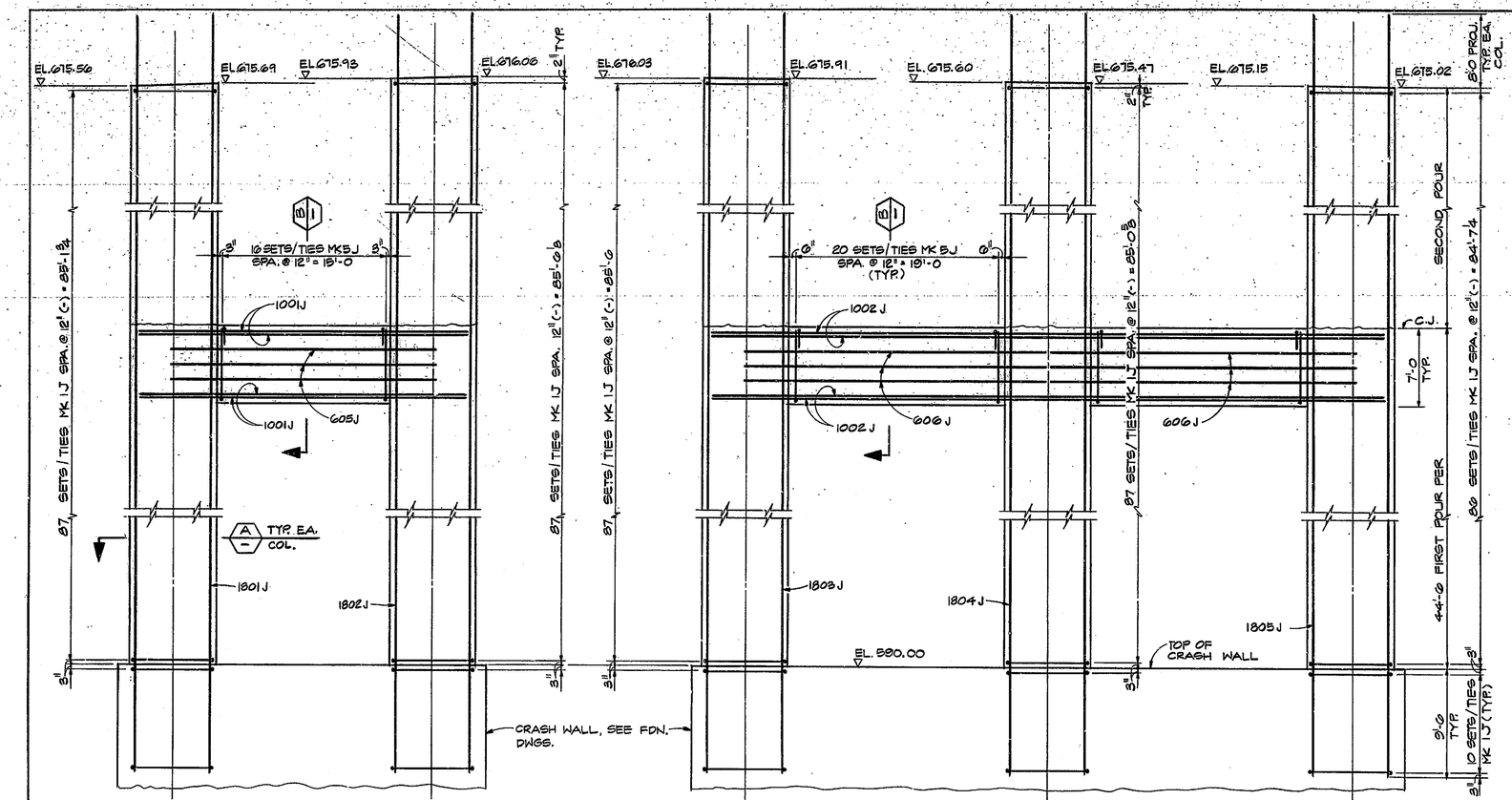
ISSUED FOR APPROVAL
8-4-70

SHEET TITLE

PIER No. 15 E.B.L. AND W.B.L. COLUMN DETAILS

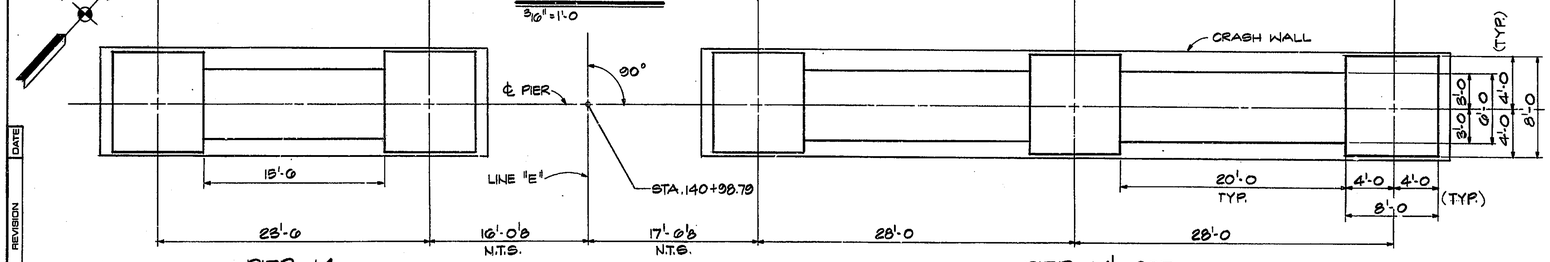
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11912
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
311



ELEVATION

3/16" = 1'-0

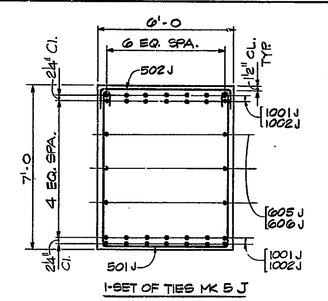


PLAN

3/16" = 1'-0

MARK Nº	TYPE	Nº REQ'D	A	B	C	D	E	LGTH	WEIGHT LBS.
401 J	2	484	0-8	7-9	7-9			32'-4	
402 J	6	1936	0-8	7-9	0-8			9'-1	
404 J	7	484	0-8	2'-3	2'-3	2'-9		25'-11	
								TOTAL #4	30,576
501 J	5	56	0-7	5'-9	6'-9			20'-5	
502 J	3	56	0-9	5'-9				7'-3	
								TOTAL #5	1,016
605 J	1	6		23'-6				23'-6	
606 J	1	12		28'-0				28'-0	
								TOTAL #6	716
1001 J	1	28		31'-0				31'-0	
1002 J	1	28		68'-6				68'-6	
								TOTAL #10	11,384
1801 J	1	32		103'-0				103'-0	
1802 J	1	32		103'-5				103'-5	
1803 J	1	32		103'-5				103'-5	
1804 J	1	32		102'-11				102'-11	
1805 J	1	32		102'-6				102'-6	
								TOTAL #18	224,237
								TOTAL REINF.	266,531
CONC. f'c = 5000 P.S.I.									
TOTAL PIER CONCRETE VOLUME									1101.4 C.Y.

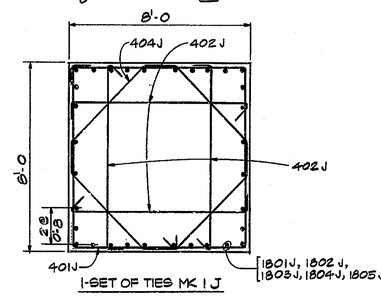
TYPE 1 · TYPE 2 · TYPE 3 · TYPE 4 · TYPE 5 · TYPE 6 · TYPE 7



1-SET OF TIES MK 5 J

SECTION B

3/8" = 1'-0



1-SET OF TIES MK 1 J

SECTION A

3/8" = 1'-0

ISSUED FOR APPROVAL 9-4-79

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T. Y. Lin

REGISTERED T. Y. LIN No. 18265 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

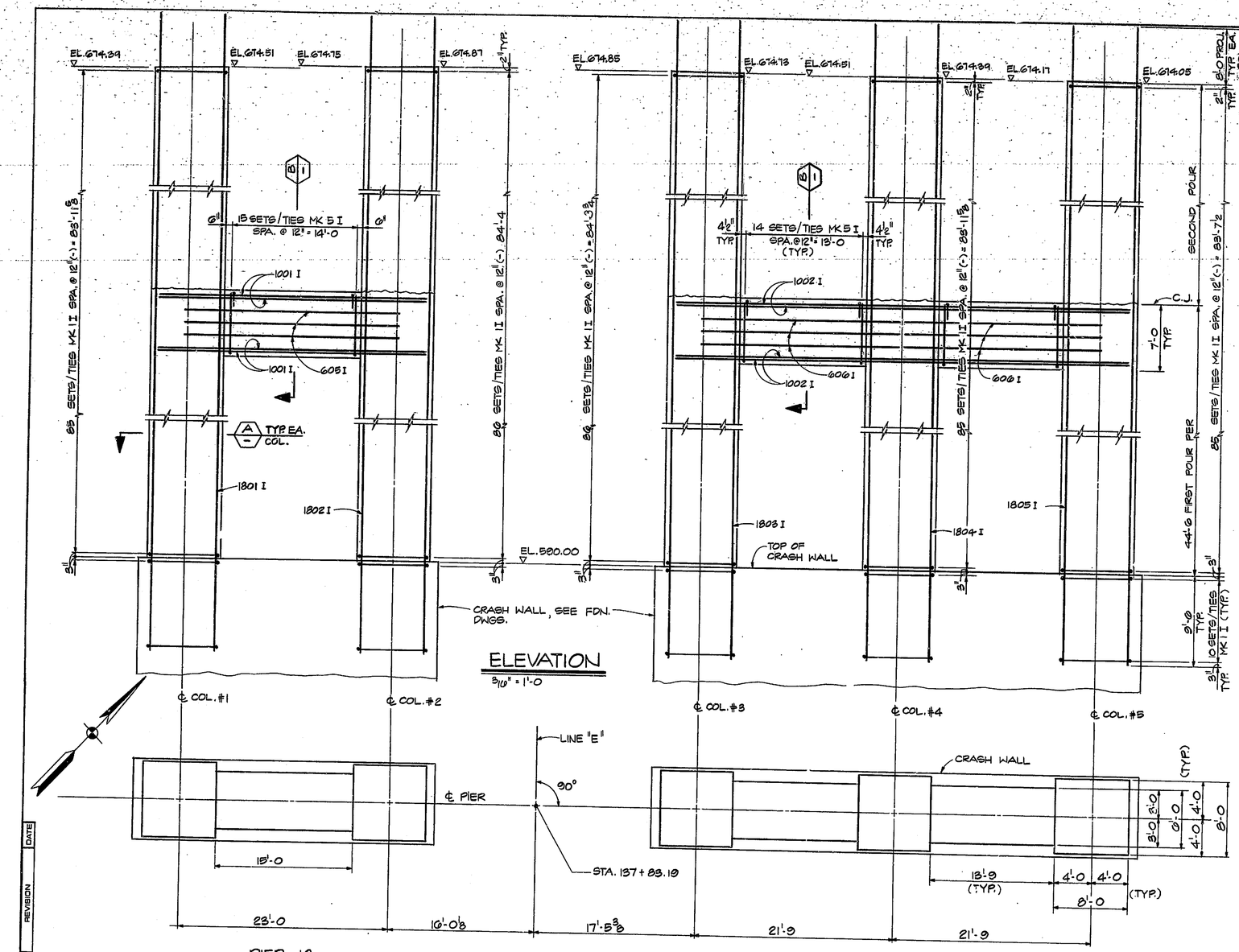
SHEET TITLE

PIER No. 14 E.B.L. AND W.B.L. AND PIER 207 COLUMN DETAILS

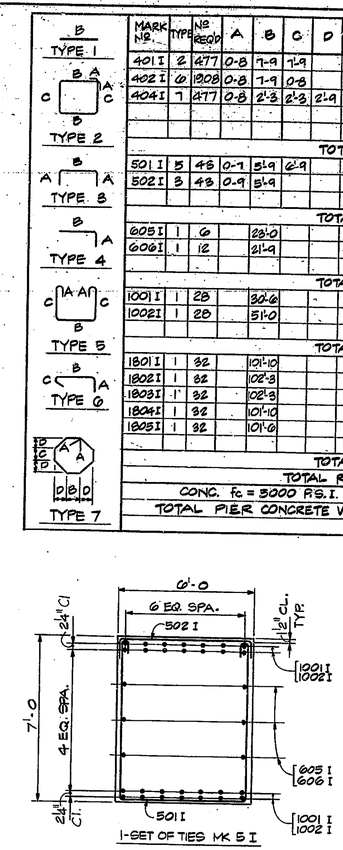
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-46-2646 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.

310



MARK NO.	TYPE	NO. REQ'D	A	B	C	D	E	LGTH	WEIGHT LBS.
401 I	2	477	0-8	7-9	7-9			32'-4	
402 I	6	1808	0-8	7-9	0-8			9'-1	
404 I	7	477	0-8	2'-3	2'-3	2'-9		25'-11	
								TOTAL #4	30,134
501 I	5	48	0-9	5'-9	6'-9			20'-5	
502 I	5	48	0-9	5'-9				7'-3	
								TOTAL #5	1,242
605 I	1	6		23'-0				23'-0	
606 I	1	12		21'-9				21'-9	
								TOTAL #6	600
1001 I	1	28		30'-6				30'-6	
1002 I	1	28		51'-0				51'-0	
								TOTAL #10	9,820
1801 I	1	32		101'-10				101'-10	
1802 I	1	32		102'-3				102'-3	
1803 I	1	32		102'-3				102'-3	
1804 I	1	32		101'-10				101'-10	
1805 I	1	32		101'-6				101'-6	
								TOTAL #18	221,808
								TOTAL REINF.	268,804
								CONC. fc = 3000 P.S.I.	
								TOTAL PIER CONCRETE VOLUME	1007.9 C.Y.



ISSUED FOR APPROVAL 9-4-70

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T. Y. Lin

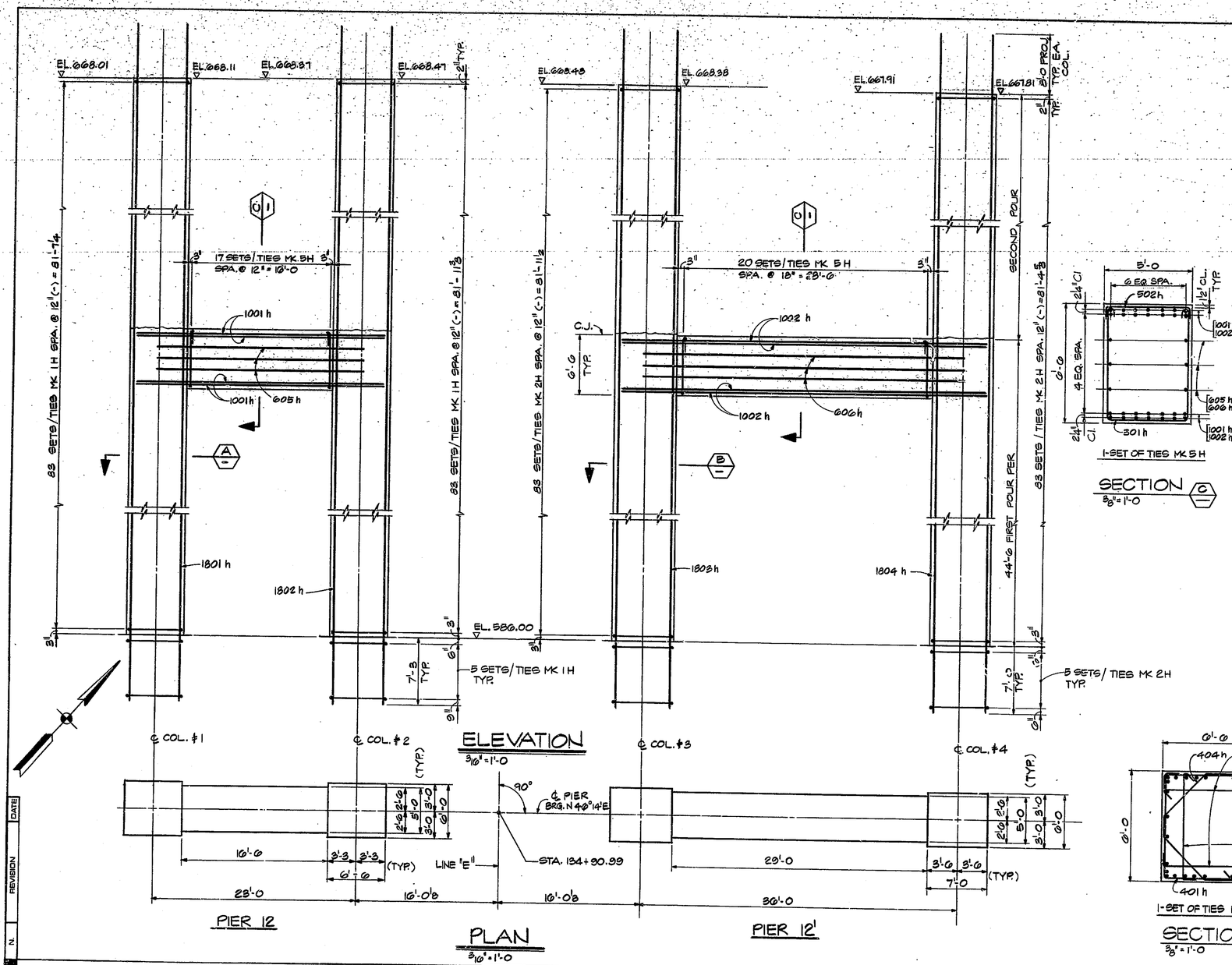
REGISTERED PROFESSIONAL ENGINEER No. 18266 STATE OF INDIANA

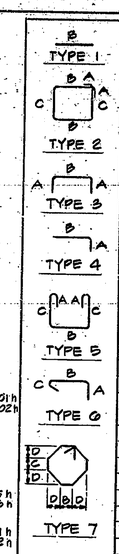
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PIER No. 13 E.B.L. AND W.B.L. COLUMN DETAILS

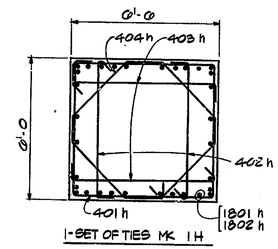
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
309



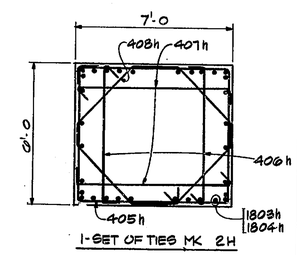


MARK Nº	TYPE	Nº REQ'D	A	B	C	D	E	LGTH	WEIGHT LBS.
PIER No. 12									
401 h	2	176	0'-8	6'-3	5'-9			25'-4	
402 h	6	352	0'-8	5'-9	0'-8			7'-1	
403 h	6	352	0'-8	6'-3	0'-8			7'-7	
404 h	7	176	0'-8	1'-7	1'-1	2'-4		19'-10	
TOTAL # 4									8,700
501 h	5	17	0'-7	4'-9	6'-3			18'-5	
502 h	3	17	0'-9	4'-9				6'-3	
TOTAL # 5									438
605 h	1	6		23'-0				23'-0	207
1001 h	1	28		24'-0				24'-0	3,494
1801 h	1	32		97'-3				97'-3	
1802 h	1	32		97'-7				97'-7	
TOTAL # 18									84,700
TOTAL REINF.									97,059
CONC. f'_c = 5000 P.S.I.									
TOTAL PIER CONCRETE VOLUME									257.5CY.
PIER No. 12'									
405 h	2	176	0'-8	6'-9	5'-9			26'-4	
406 h	6	352	0'-8	5'-9	0'-8			7'-1	
407 h	6	352	0'-8	6'-9	0'-8			8'-1	
408 h	7	176	0'-8	2'-1	1'-1	2'-4		20'-10	
TOTAL # 4									9118
501 h	5	20	0'-7	4'-9	6'-3			18'-5	
502 h	3	20	0'-9	4'-9				6'-3	
TOTAL # 5									515
606 h	1	6		26'-0				26'-0	525
1002 h	1	28		42'-6				42'-6	5,120
1803 h	1	32		97'-4				97'-4	
1804 h	1	32		90'-10				90'-10	
TOTAL # 18									84,503
TOTAL REINF.									99,570
CONC. f'_c = 5000 P.S.I.									
TOTAL PIER CONCRETE VOLUME									290.5CY.



1-SET OF TIES MK 1H

SECTION A
3/8" = 1'-0



1-SET OF TIES MK 2H

SECTION B
3/8" = 1'-0

ISSUED FOR APPROVAL
9-4-79

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T.Y. Lin

T. Y. LIN REGISTERED No. 15266 STATE OF INDIANA PROFESSIONAL ENGINEER

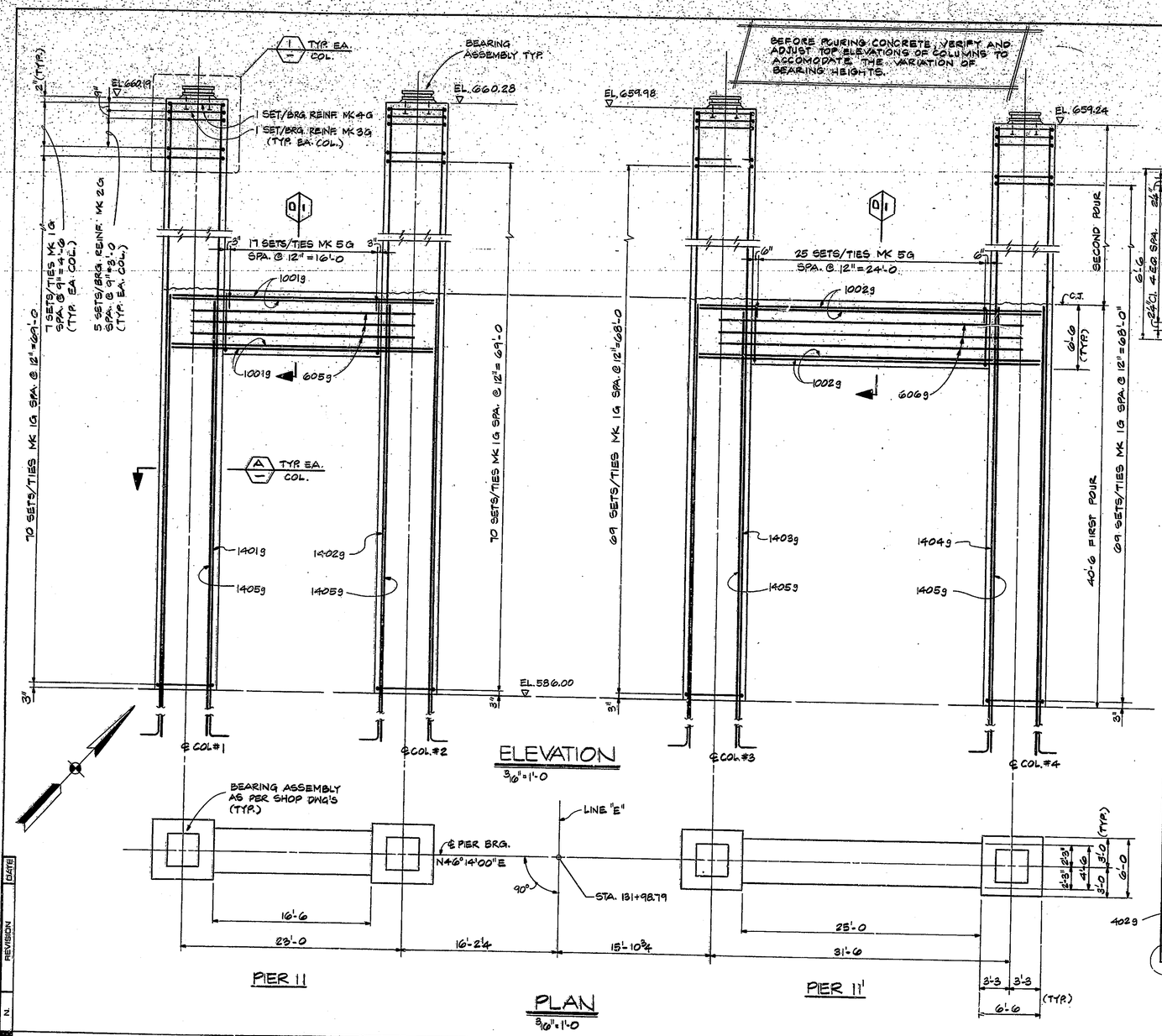
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE

PIER No. 12 E.B.L. AND W.B.L. COLUMN DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
308



MARK Nº	TYPE	Nº REQ'D	A	B	C	D	E	LGTH	WEIGHT LBS.
4019	2	300	0'-8	6'-3	5'-9			25'-4	
4029	6	612	0'-8	5'-9	0'-8			7'-1	
4039	6	612	0'-8	6'-3	0'-8			7'-7	
4049	7	300	0'-8	1'-11	1'-5	2'-2		20'-3	
							TOTAL	#4	15,314
5019	5	42	0'-7	4'-3	6'-3			17'-11	
5029	3	42	0'-9	4'-3				5'-9	
							TOTAL	#5	1,037
6019	3	28	4'-6	6'-1				15'-1	
6029	3	28	4'-6	5'-7				14'-7	
6039	3	108	0'-11	6'-1				7'-11	
6049	3	108	0'-11	5'-7				7'-5	
6059	1	6		28'-0				28'-0	
6069	1	6		31'-6				31'-6	
							TOTAL	#6	4,226
10019	1	24		29'-0				29'-0	
10029	1	24		31'-6				31'-6	
							TOTAL	#10	6,168
14019	4	28	2'-7	81'-0				83'-7	
14029	4	28	2'-7	81'-1				83'-8	
14039	4	28	2'-7	80'-10				83'-5	
14049	4	28	2'-7	80'-1				82'-8	
14059	1	16		47'-4				47'-4	
							TOTAL	#14	77,196
							TOTAL REINF.		104,041
							CONC. f'c' = 5000 P.S.I.		
							TOTAL PIER CONCRETE VOLUME		472.0 C.Y.

TYPE 1 · TYPE 2 · TYPE 3 · TYPE 4 · TYPE 5 · TYPE 6 · TYPE 7

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T. Y. Lin
9-12-1979

T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

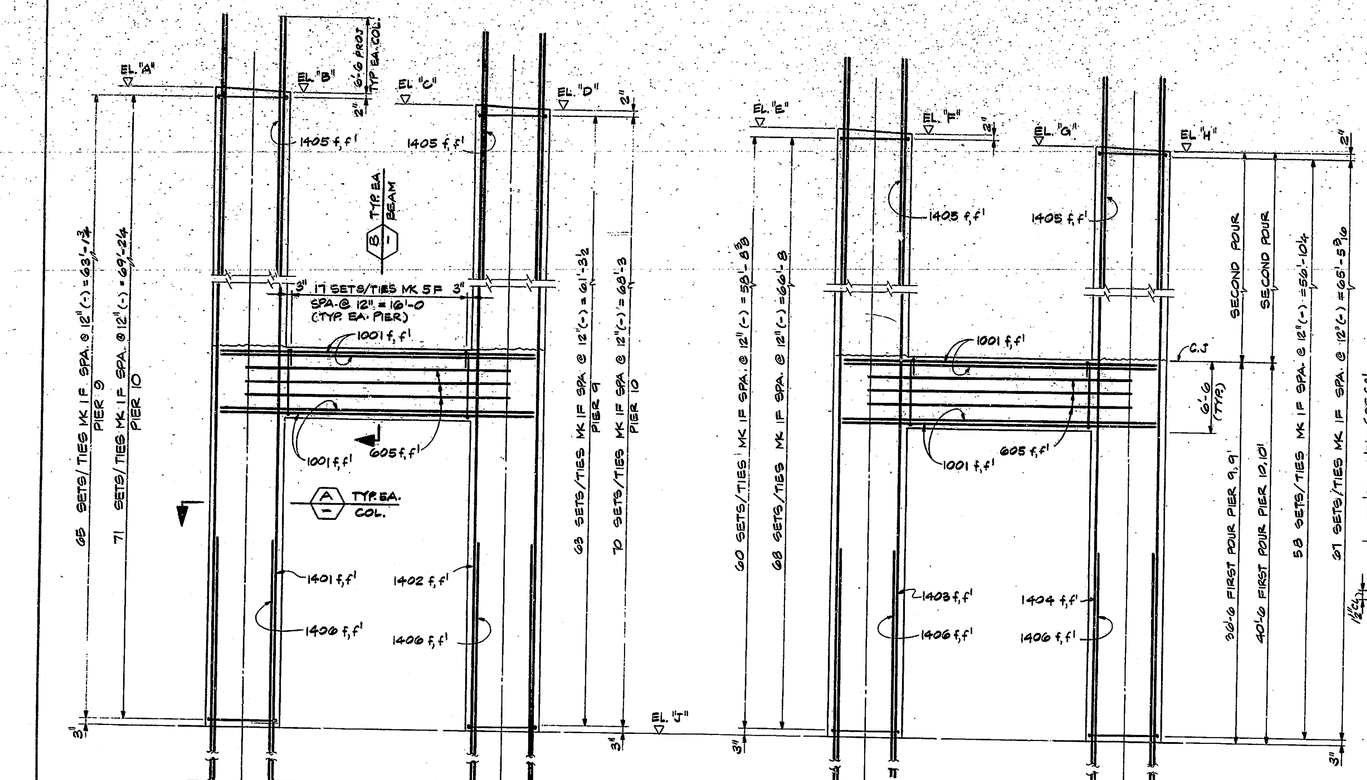
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE

PIER No. 11 E.B.L. AND W.B.L. COLUMN DETAILS

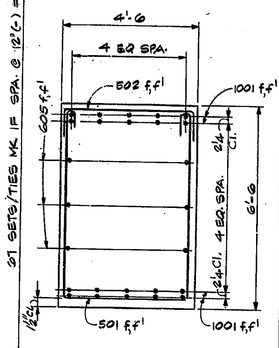
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. B-11812
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
307



ELEVATION

3/16" = 1'-0

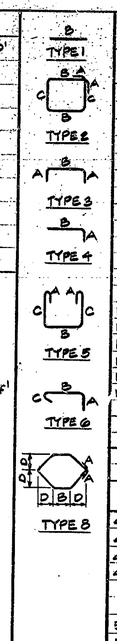


1. SET OF TIES MK 5 F

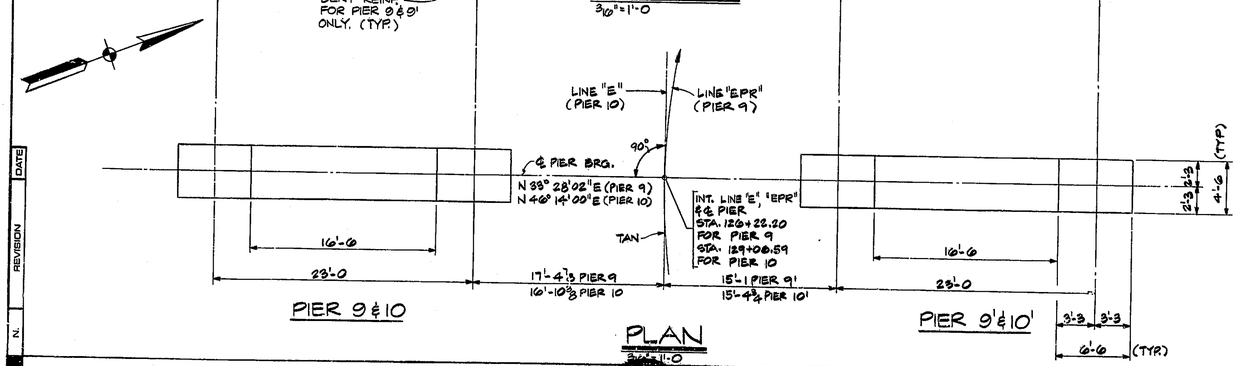
SECTION B

12" = 1'-0

TABLE OF ELEVATIONS		
	PIER 9, 9'	PIER 10, 10'
A	652.58	656.86
B	652.06	656.60
C	650.73	655.92
D	650.21	655.66
E	648.14	654.43
F	647.62	654.09
G	646.29	653.20
H	645.77	652.86
J	588.50	587.00



MARK NO	TYPE	NO REQD	A	B	C	D	E	LGTH	WEIGHT LBS
PIER NO. 9 & 9'									
401 f	2	246	0'-8	6'-3	4'-3			22'-4	
402 f	6	492	0'-8	4'-3	0'-8			5'-7	
403 f	6	492	0'-8	6'-3	0'-8			7'-7	
404 f	8	246	0'-8	2'-0	–	2'-1½		17'-4	
							TOTAL	#4	10,847
501 f	5	34	0'-7	4'-3	6'-3			17'-11	
502 f	3	34	0'-9	4'-3				5'-9	
							TOTAL	#5	840
605 f	1	12		28'-0				28'-0	415
1001 f	1	40		29'-0				29'-0	4,992
1401 f	4	26	2'-7	76'-3				78'-10	
1402 f	4	26	2'-7	74'-5				77'-0	
1403 f	4	26	2'-7	71'-10				74'-5	
1404 f	4	26	2'-7	70'-0				72'-7	
1405 f	1	32		22'-0				22'-0	
1406 f	4	32	2'-7	42'-7				45'-2	
							TOTAL	#14	76,800
							TOTAL REINF.		96,904
							CONC. f'c = 5000 P.S.I.		
							TOTAL PIER CONCRETE VOLUME		298.7 C.Y.
PIER NO. 10 & 10'									
401 f'	2	276	0'-8	6'-3	4'-3			22'-4	
402 f'	6	552	0'-8	4'-3	0'-8			5'-7	
403 f'	6	552	0'-8	6'-3	0'-8			7'-7	
404 f'	8	276	0'-8	2'-0		2'-1½		17'-4	
							TOTAL	#4	12,170
501 f'	5	34	0'-7	4'-3	6'-3			17'-11	
502 f'	3	34	0'-9	4'-3				5'-9	
							TOTAL	#5	840
605 f'	1	12		28'-0				28'-0	415
1001 f'	1	40		29'-0				29'-0	4,992
1401 f'	4	26	2'-7	88'-1				88'-8	
1402 f'	4	26	2'-7	82'-1				84'-8	
1403 f'	4	26	2'-7	80'-7				83'-2	
1404 f'	4	26	2'-7	78'-4				81'-11	
1405 f'	1	32		22'-0				22'-0	
1406 f'	1	32		47'-4				47'-4	
							TOTAL	#14	83,812
							TOTAL REINF.		102,229
							CONC. f'c = 5000 P.S.I.		
							TOTAL PIER CONCRETE VOLUME		330.2 C.Y.

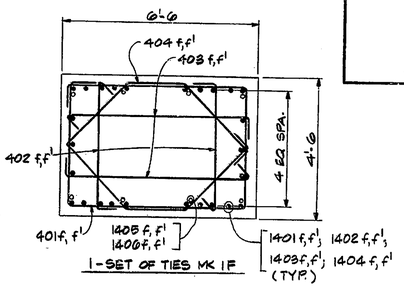


PIER 9 & 10

PIER 9' & 10'

PLAN

3/16" = 1'-0



1-SET OF TIES MK 1 F

SECTION A

12" = 1'-0

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

9-12-18-79

T. Y. LIN INTERNATIONAL REGISTERED No. 18256 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

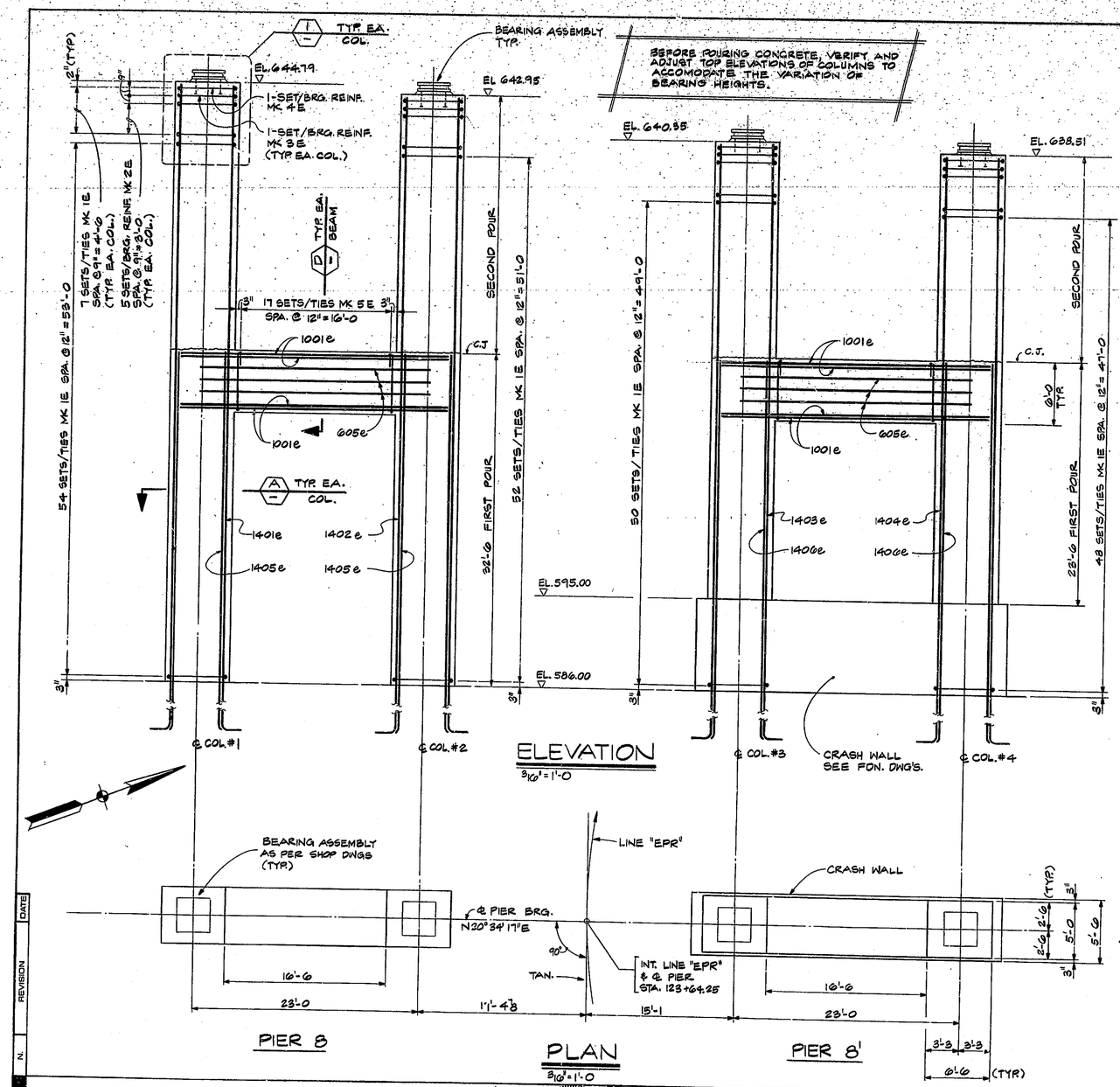
SHEET TITLE

PIER No. 9 AND 10 E.B.L. AND W.B.L. COLUMN DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 3-11612
INDIANA STATE HIGHWAY COMMISSION

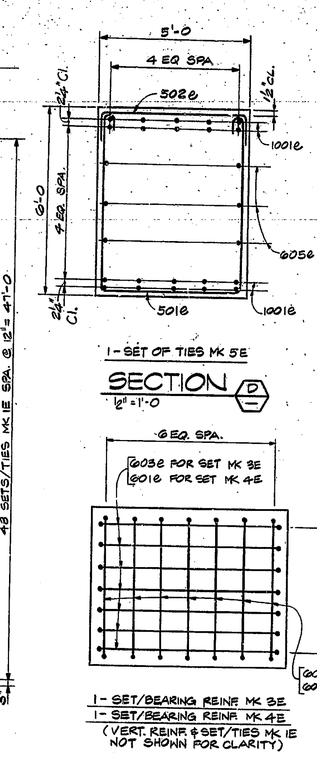
SHEET N.

306



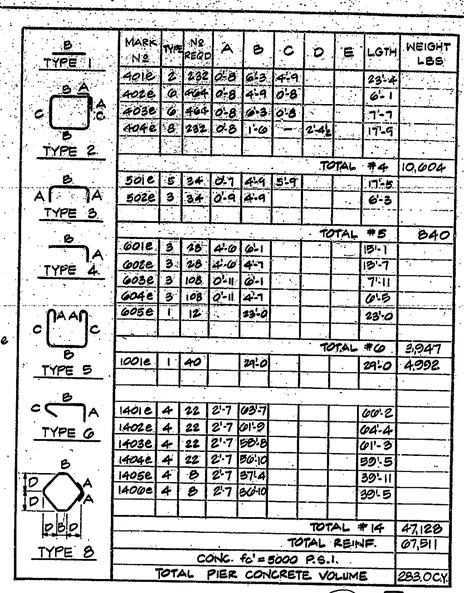
BEFORE POURING CONCRETE, VERIFY AND ADJUST TOP ELEVATIONS OF COLUMNS TO ACCOMODATE THE VARIATION OF BEARING HEIGHTS.

ELEVATION
3/16" = 1'-0

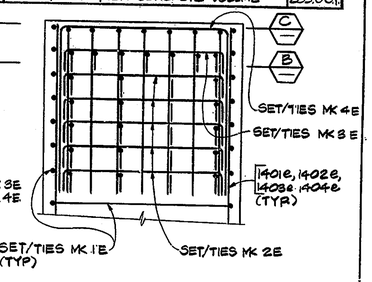


SECTION D
½" = 1'-0

SECTION
½" = 1'-0

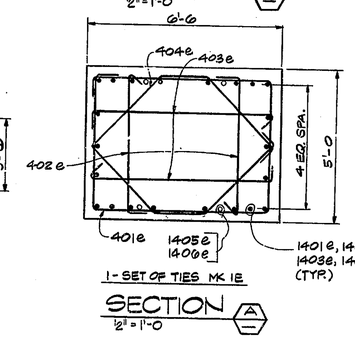


MARK N2	TYPE	N2 REQ'D	A	B	C	D	E	LGTH	WEIGHT LBS
401e	2	232	0'-8	6'-3	4'-9			23'-4	
402e	2	464	0'-8	4'-9	0'-8			6'-1	
403e	2	464	0'-8	6'-3	0'-8			7'-7	
404e	8	232	0'-8	1'-6	—	2'-4½		17'-9	
							TOTAL #4		10,604
501e	5	34	0'-7	4'-9	5'-9			17'-5	
502e	3	34	0'-9	4'-9				6'-3	
							TOTAL #5		840
601e	3	28	4'-0	6'-1				13'-1	
602e	3	28	4'-0	4'-7				13'-7	
603e	3	108	0'-11	6'-1				7'-11	
604e	3	108	0'-11	4'-7				6'-5	
605e	1	12		23'-0				23'-0	
							TOTAL #6		3,947
1001e	1	40		24'-0				24'-0	4,992
1401e	4	22	2'-7	60'-7				66'-2	
1402e	4	22	2'-7	61'-9				64'-4	
1403e	4	22	2'-7	59'-8				61'-3	
1404e	4	22	2'-7	60'-10				59'-5	
1405e	4	8	2'-7	37'-4				39'-11	
1406e	4	8	2'-7	60'-10				39'-5	
							TOTAL #14		47,128
							TOTAL REINF.		67,911
							CONC. f'c = 5000 P.S.I.		
							TOTAL PIER CONCRETE VOLUME		283.0 C.Y.

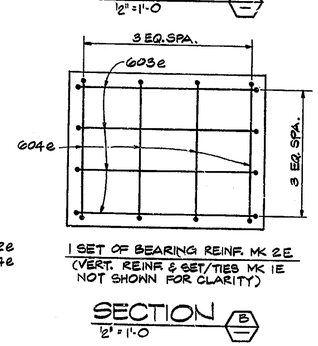


DETAIL C
½" = 1'-0

PLAN
3/16" = 1'-0



SECTION A
½" = 1'-0



SECTION B
½" = 1'-0

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T. Y. Lin
9-12-1979

REGISTERED T. Y. LIN No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

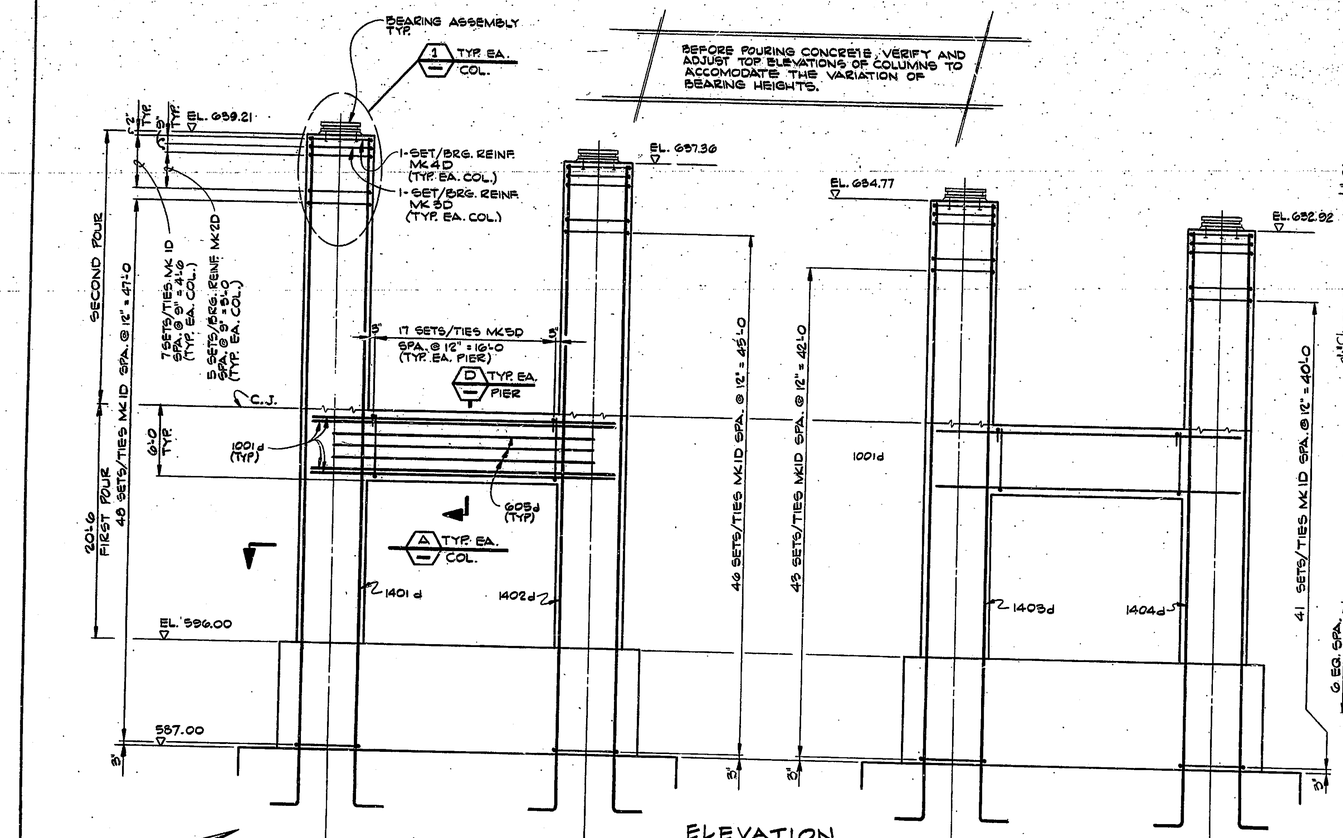
SHEET TITLE

PIER No. 8 E.B.L. AND W.B.L. COLUMN DETAILS

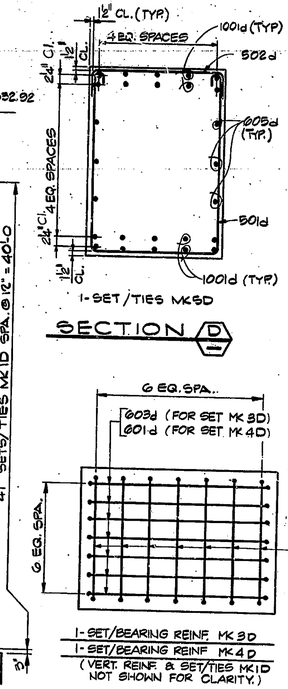
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
305

BEFORE POURING CONCRETE, VERIFY AND ADJUST TOP ELEVATIONS OF COLUMNS TO ACCOMODATE THE VARIATION OF BEARING HEIGHTS.

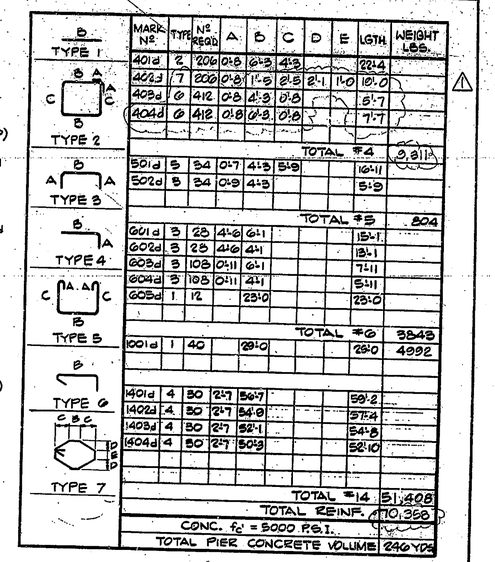


ELEVATION
3/16" = 1'-0



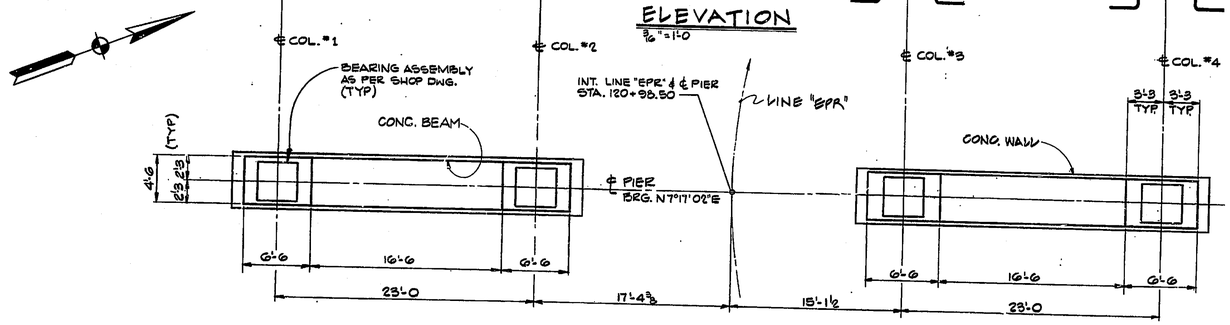
SECTION D

SECTION C
1/2" = 1'-0

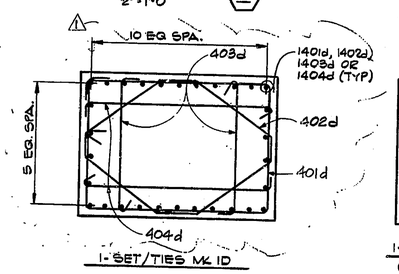


MARK No.	TYPE	No. REQD	A	B	C	D	E	LGTH.	WEIGHT LBS.
401d	2	206	0'-8	6'-3	4'-3			22'-4	
402d	7	202	0'-8	1'-5	2'-5	2'-1	1'-0	10'-0	
403d	6	412	0'-8	4'-3	0'-8			5'-7	
404d	6	412	0'-8	0'-8	0'-8			7'-7	
							TOTAL #4		9,811#
501d	5	34	0'-7	4'-3	5'-9			10'-11	
502d	5	34	0'-9	4'-3				5'-9	
							TOTAL #5		804
601d	3	28	4'-6	6'-1				15'-1	
602d	3	28	4'-6	4'-1				12'-1	
603d	3	108	0'-11	6'-1				7'-11	
604d	3	108	0'-11	4'-1				5'-11	
605d	1	12		23'-0				23'-0	
							TOTAL #6		3848
1001d	1	40		29'-0				29'-0	4992
1401d	4	50	2'-7	56'-7				59'-2	
1402d	4	50	2'-7	54'-0				57'-4	
1403d	4	50	2'-7	52'-1				54'-8	
1404d	4	50	2'-7	50'-3				52'-10	
							TOTAL #14		51,408
							TOTAL REINF.		70,368
							CONC. f'c = 5000 P.S.I.		
							TOTAL PIER CONCRETE VOLUME		240 YDS

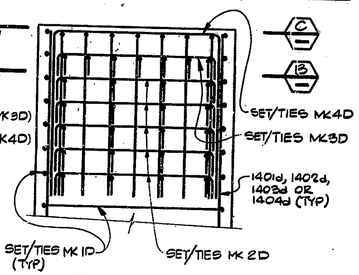
TYPE 1 · TYPE 2 · TYPE 3 · TYPE 4 · TYPE 5 · TYPE 6 · TYPE 7



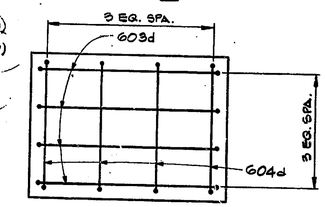
PIER-7 · PLAN 3/16" = 1'-0 · PIER-7'



SECTION A
1/2" = 1'-0



DETAIL 1
1/2" = 1'-0



1-SET/BEARING REINF. MK 2D
(VERT. REINF. & SET/TIES MK 1D NOT SHOWN FOR CLARITY.)

SECTION B
1/2" = 1'-0

REVISED 4-10-80

Rev 10-3-79 Section D

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T. Y. Lin
JULY 20, 1979

T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PIER No. 7 E.B.L. AND W.B.L COLUMN DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
304

N. | REVISION | DATE

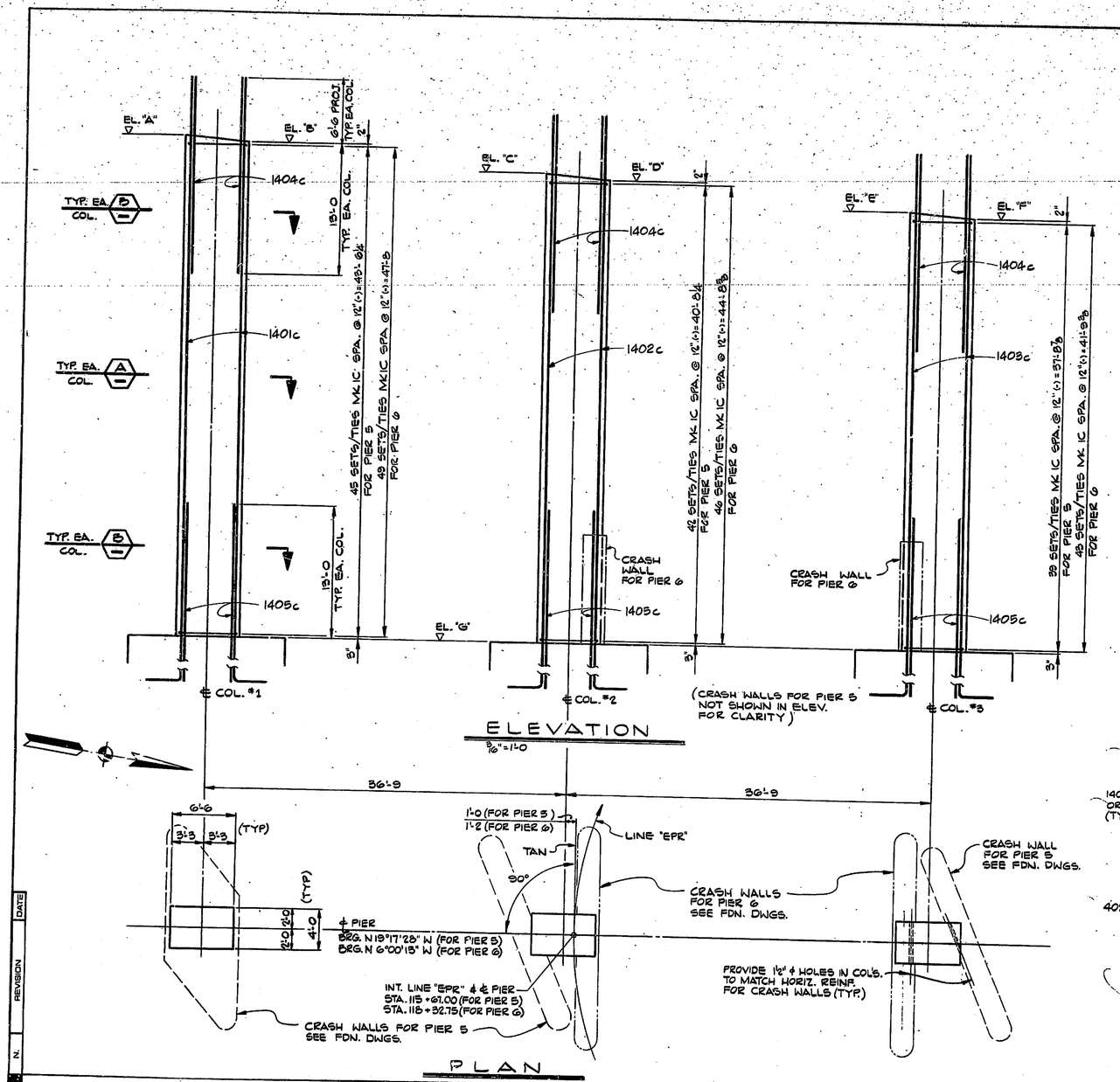
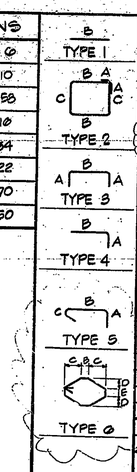
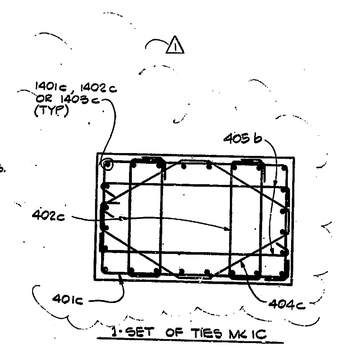


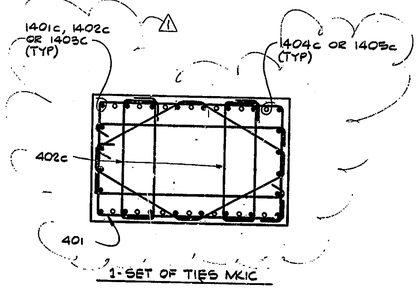
TABLE OF ELEVATIONS	PIER 5	PIER 6
A	628.90	634.10
B	628.44	633.58
C	626.12	631.10
D	625.60	630.64
E	623.18	628.22
F	622.60	627.70
G	584.50	585.50



MARK Nº	TYPE	Nº REQ'D	A	B	C	D	E	LGTH.	WEIGHT LBS.
PIER No. 5									
401C	2	126	0'-8	6'-3	3'-9			21'-4	
402C	2	252	0'-8	1'-1	3'-9			11'-0	
404C	6	126	0'-8	11'-0	3'-1	1'-5	0'-10	18'-7	
405C	5	252	0'-8	6'-3	0'-8			7'-7	
TOTAL #4									6,488
1401C	4	24	2'-7	58'-8				59'-3	
1402C	4	24	2'-7	58'-10				59'-5	
1403C	4	24	2'-7	58'-11				59'-6	
1404C	1	42	-	19'-6				19'-6	
1405C	1	42	-	19'-3				19'-3	
TOTAL #14									43,539
TOTAL REINF									50,025
CONC f_c' = 5000 P.S.I.									
TOTAL PIER CONCRETE VOLUME									120.2 C.Y.
PIER No. 6									
401C	2	138	0'-8	6'-3	3'-9			21'-4	
402C	2	276	0'-8	1'-1	3'-9			11'-0	
404C	6	138	0'-8	11'-0	3'-1	1'-5	0'-10	18'-7	
405C	5	276	0'-8	6'-3	0'-8			7'-7	
TOTAL #4									7,105
1401C	4	24	2'-7	61'-10				64'-5	
1402C	4	24	2'-7	58'-10				61'-5	
1403C	4	24	2'-7	58'-11				58'-6	
1404C	1	42	-	19'-6				19'-6	
1405C	1	42	-	20'-3				20'-3	
TOTAL #14									46,040
TOTAL REINF									53,751
CONC. f_c' = 5000 P.S.I.									
TOTAL PIER CONCRETE VOLUME									131.9 C.Y.



SECTION A
½" = 1'-0



SECTION B
½" = 1'-0

1 REVISED 4-10-80

DATE	REVISION	N.

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

JULY 20, 1979

T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

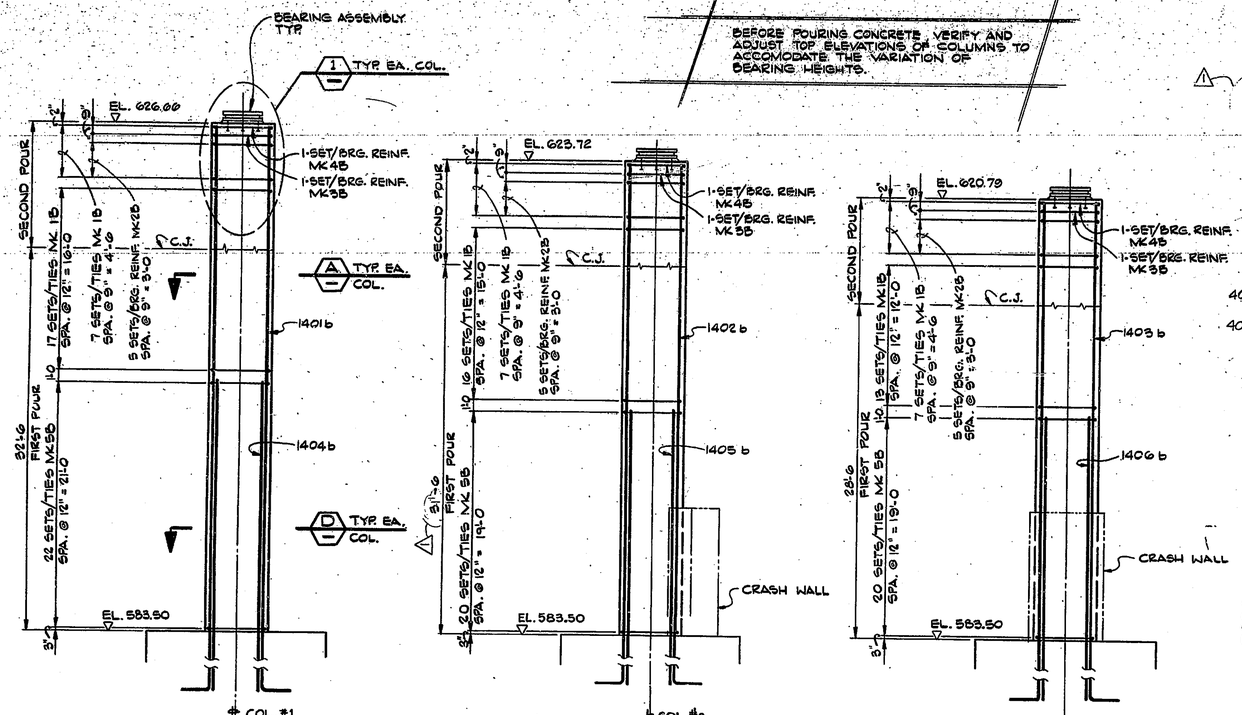
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PIER No. 5 AND 6 COLUMN DETAILS

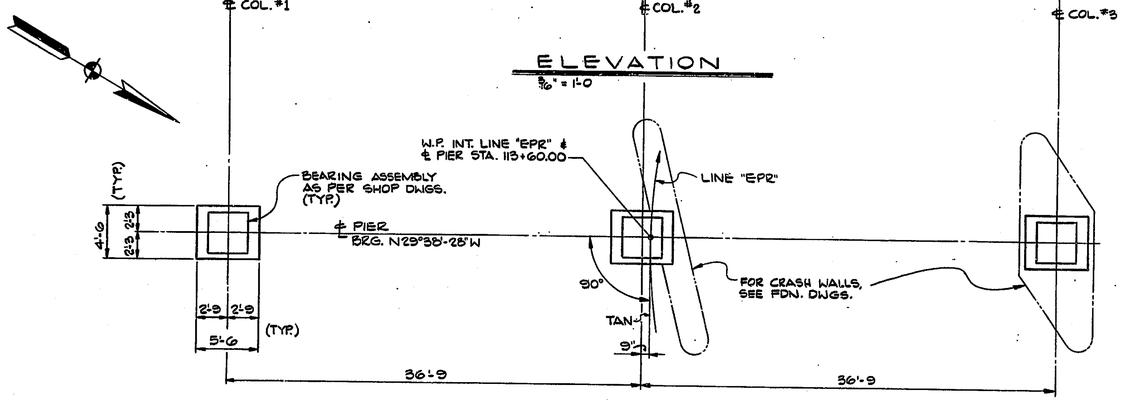
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
303

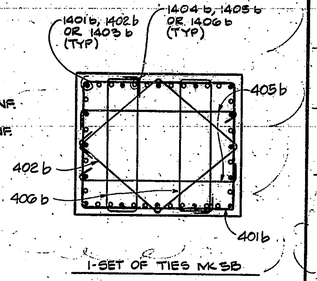
BEFORE POURING CONCRETE, VERIFY AND ADJUST TOP ELEVATIONS OF COLUMNS TO ACCOMODATE THE VARIATION OF BEARING HEIGHTS.



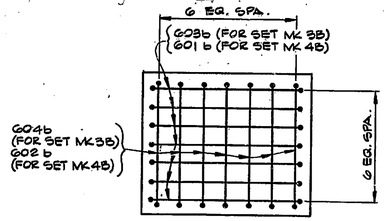
ELEVATION
3/16" = 1'-0



PLAN
3/16" = 1'-0

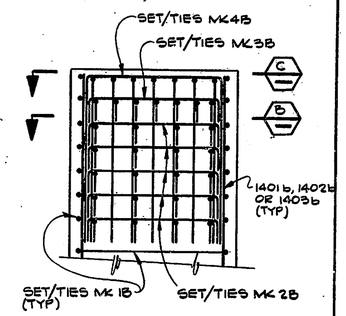


SECTION D
1/2" = 1'-0

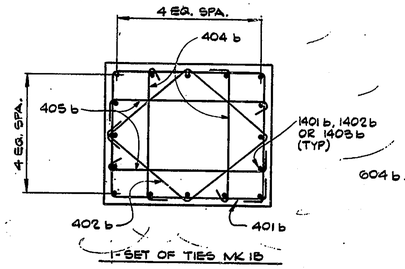


1-SET/BEARING REINF. MK 3B
1-SET/BEARING REINF. MK 4B
(VERT. REINF. & SET/TIES MK1B NOT SHOWN FOR CLARITY)

SECTION C
1/2" = 1'-0

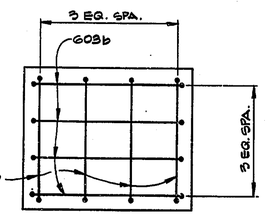


DETAIL 1
1/2" = 1'-0



1-SET OF TIES MK 1B

SECTION A
1/2" = 1'-0



1-SET/BEARING REINF. MK2B
(VERT. REINF. & SET/TIES MK 1B NOT SHOWN FOR CLARITY)

SECTION B
1/2" = 1'-0

B	MARK NO.	TYPE	NO. REQ'D	A	B	C	D	E	LGTH.	WEIGHT LBS.
TYPE 1	401 b	2	129	0'-8	5'-3	4'-3			20'-4	
	402 b	7	128	0'-8	2'-0	2'-2			15'-1	
TYPE 2	404 b	6	154	0'-8	4'-3	0'-8			5'-7	
	405 b	6	288	0'-8	5'-3	0'-8			6'-7	
	406 b	2	124	0'-8	1'-1	4'-3			12'-0	
TYPE 3										
									TOTAL # 4	5,080
TYPE 4	601 b	3	21	4'-6	5'-1				14'-1	
	602 b	3	21	4'-6	4'-1				13'-1	
	603 b	3	81	0'-11	5'-1				6'-11	
	604 b	3	81	0'-11	4'-1				5'-11	
TYPE 6										
									TOTAL # 6	1646
TYPE 7	1401 b	4	16	2-7	49'-0				51'-7	
	1402 b	4	16	2-7	46'-1				48'-8	
	1403 b	4	16	2-7	43'-8				45'-9	
	1404 b	1	24	-	27'-3				27'-3	
	1405 b	1	24	-	25'-3				25'-3	
	1406 b	1	24	-	25'-3				25'-3	
									TOTAL # 14	32,166
	TOTAL REINF.									39,491
	CONCRETE f_c' = 5000 PSI									
	TOTAL PIER CONCRETE VOLUME									110.8 CY.

12-14-79 ADD THIS SHEET

△1 REVISED 4-10-80

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

DECEMBER 14, 1979

T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

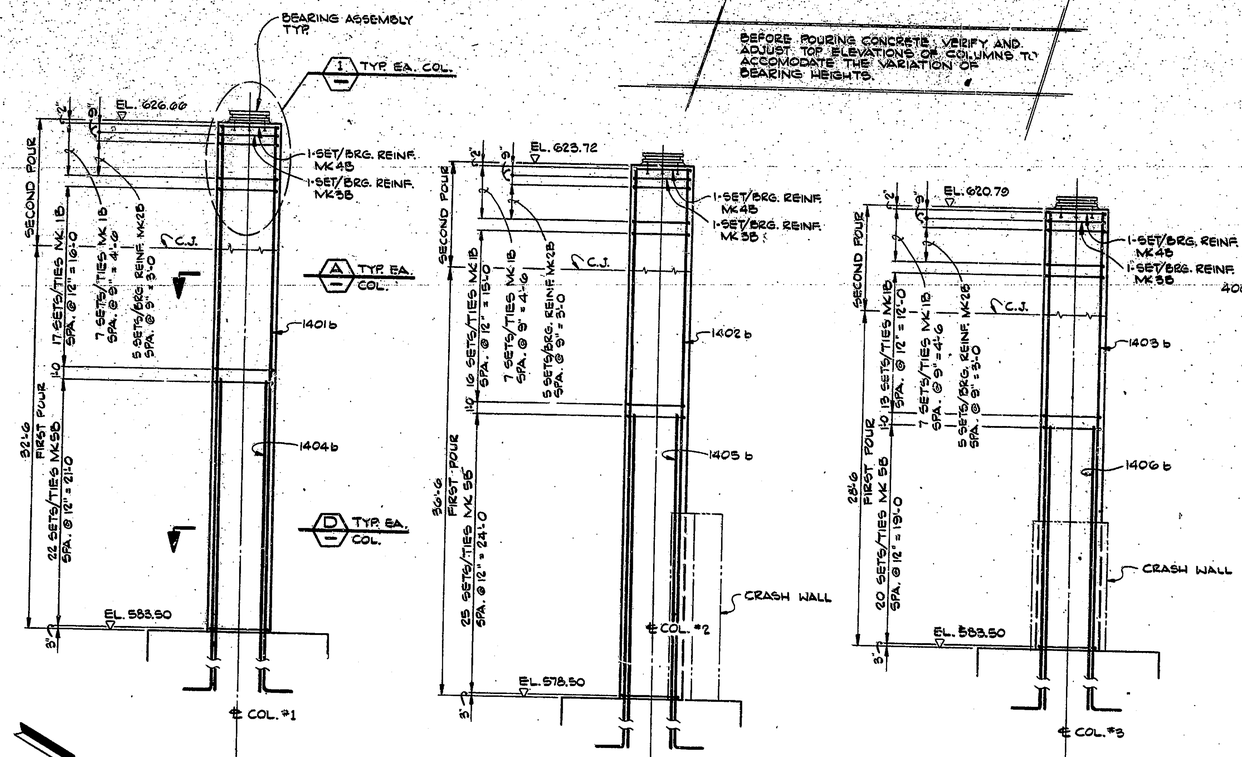
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PIER No. 4 COLUMN DETAILS

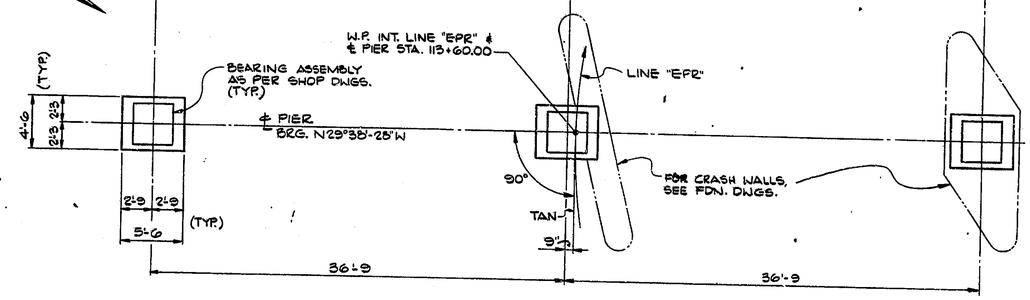
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
302A

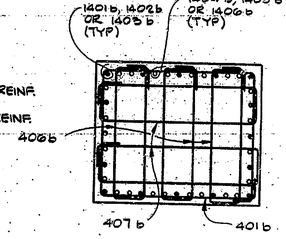
BEFORE POURING CONCRETE, VERIFY AND ADJUST TOP ELEVATIONS OF COLUMNS TO ACCOMODATE THE VARIATION OF BEARING HEIGHTS.



ELEVATION
3/16" = 1'-0

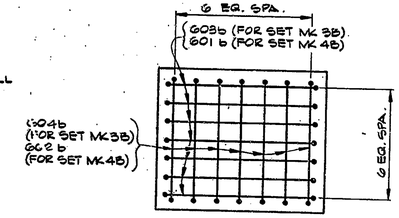


PLAN
3/16" = 1'-0



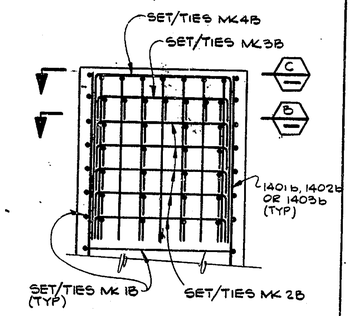
1-SET OF TIES MK 5B

SECTION D
1/2" = 1'-0

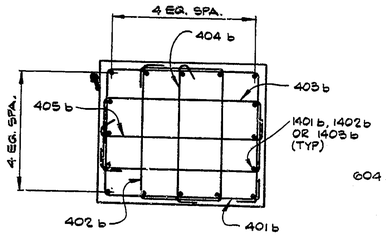


1-SET/BEARING REINF. MK 3B
1-SET/BEARING REINF. MK 4B
(VERT. REINF. & SET/TIES MK1B NOT SHOWN FOR CLARITY)

SECTION C
1/2" = 1'-0

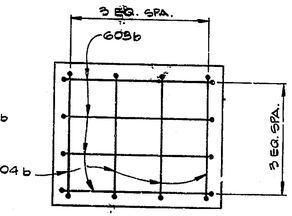


DETAIL 1
1/2" = 1'-0



1-SET OF TIES MK 1B

SECTION A
1/2" = 1'-0



1-SET/BEARING REINF. MK2B
(VERT. REINF. & SET/TIES MK 1B NOT SHOWN FOR CLARITY)

SECTION B
1/2" = 1'-0

MARK Nº	TYPE	Nº REQ'D	A	B	C	D	E	LGTH.	WEIGHT LBS.
401b	2	134	0'-8	5'-3	4'-3			20'-4	
402b	2	67	0'-8	2'-9	4'-3			15'-4	
403b	2	67	0'-8	5'-3	2'-3			16'-4	
404b	6	67	0'-8	4'-3	0'-8			5'-7	
405b	6	67	0'-8	5'-3	0'-8			6'-7	
406b	2	201	0'-8	1'-1	4'-3			12'-0	
407b	2	134	0'-8	5'-3	1'-3			14'-4	
								TOTAL #4	6676
601 b	3	21	4'-6	5'-1				14'-1	
602b	3	21	4'-6	4'-1				13'-1	
603b	3	81	0'-11	5'-1				6'-11	
604b	3	81	0'-11	4'-1				5'-11	
								TOTAL #6	1646
1401b	4	16	2'-7	49'-0				51'-7	
1402b	4	16	2'-7	51'-1				53'-8	
1403b	4	16	2'-7	43'-8				45'-9	
1404b	1	24	-	27'-3				27'-3	
1405b	1	24	-	30'-3				30'-3	
1406b	1	24	-	25'-3				25'-3	
								TOTAL #14	33696
TOTAL REINF.									42018
CONCRETE $f_c' = 5000$ PSI									
TOTAL PIER CONCRETE VOLUME									115.4 C.Y.

REVISED 12-14-79, DELETE THIS SHEET

N. | REVISION | DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

JULY 20, 1979

T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE

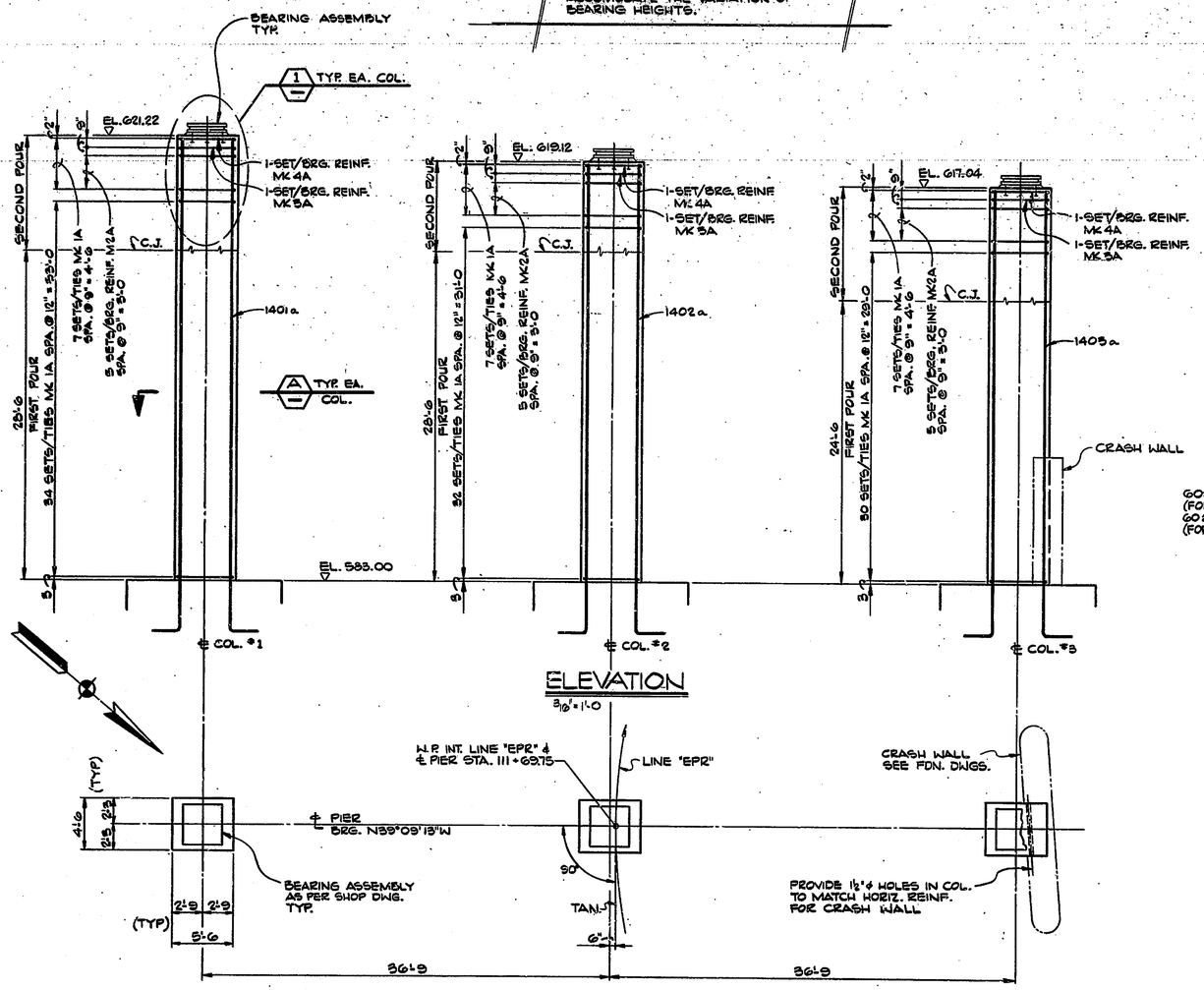
PIER No. 4 COLUMN DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 812-45-2546 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

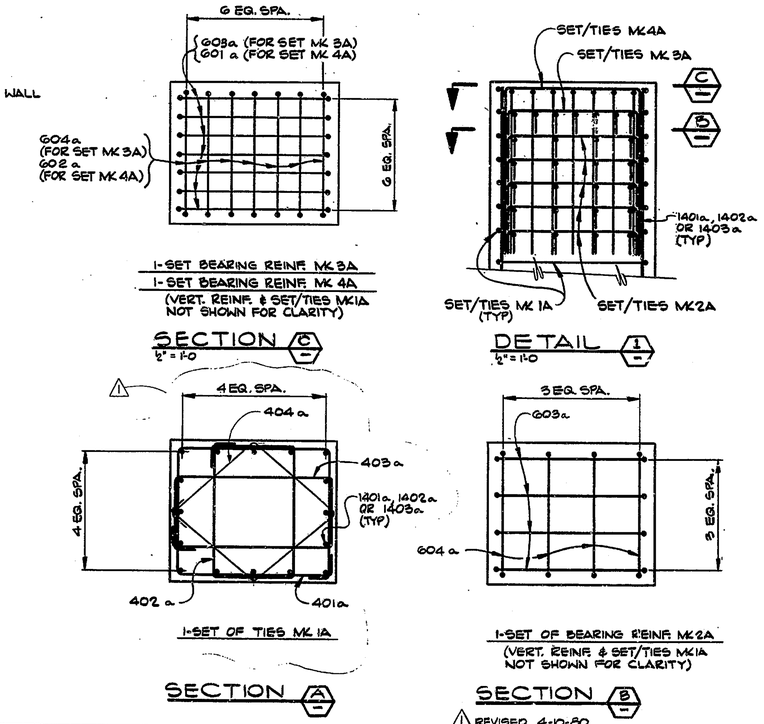
SHEET N

302

BEFORE POURING CONCRETE, VERIFY AND ADJUST TOP ELEVATIONS OF COLUMNS TO ACCOMODATE THE VARIATION OF BEARING HEIGHTS.



	MARK Nº	TYPE	Nº REQ'D	A	B	C	D	E	LGTH.	WEIGHT LBS.
TYPE 1	401a	2	117	0'-8	5'-3	4'-3			20'-4	
TYPE 2	402a	2	117	0'-8	2'-8	4'-3			15'-4	
	403a	2	117	0'-8	5'-3	2'-3			16'-4	
	404a	2	117	0'-8	2'-7	2'-1			14'-8	
TYPE 3								TOTAL #4		5,210
TYPE 4	601a	3	21	4'-6	5'-1				14'-1	
	602a	3	21	4'-6	4'-1				13'-1	
	603a	3	81	0'-11	5'-1				6'-11	
	604a	3	81	0'-11	4'-1				5'-11	
TYPE 7								TOTAL #6		1046
	1401a	4	16	2'-7	43'-1				43'-8	
	1402a	4	16	2'-7	41'-0				43'-7	
	1403a	4	16	2'-7	38'-11				41'-6	
								TOTAL #14		16035
								TOTAL REINF.		22,891
	CONC. f'_c = 5000 PSI									
	TOTAL PIER CONCRETE VOLUME									99.6 C.Y.



1 REVISED 4-10-80

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T. Y. Lin
JULY 20, 1979

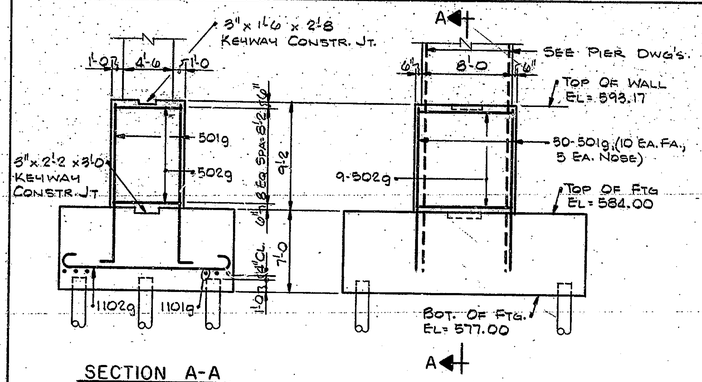
T. Y. LIN REGISTERED No. 15266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

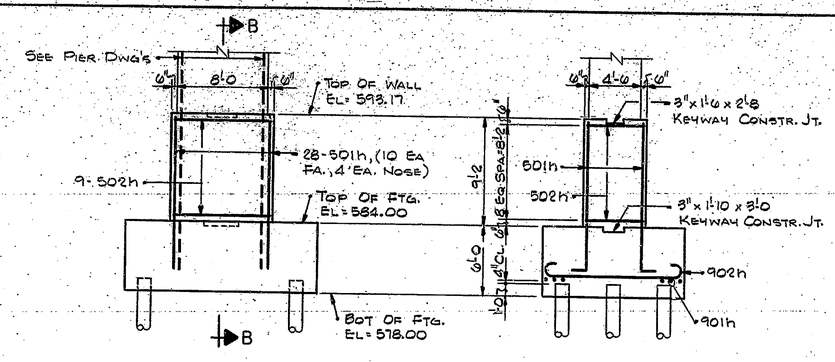
SHEET TITLE
PIER No. 3 COLUMN DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 8-11512
INDIANA STATE HIGHWAY COMMISSION

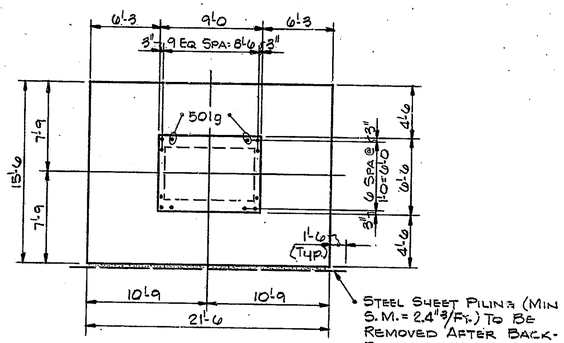
SHEET N.
301



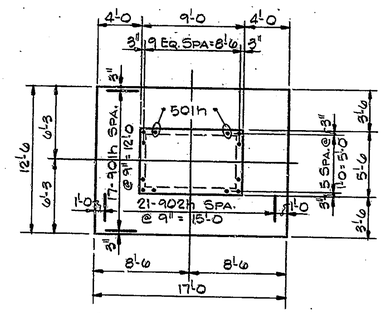
SECTION A-A



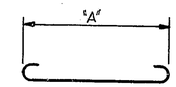
SECTION B-B



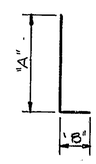
SHOWING CONC. DIMENSIONS



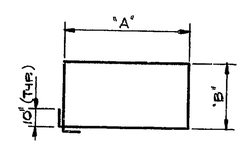
SHOWING CONC. DIMENSIONS & FTG & WALL REINF.



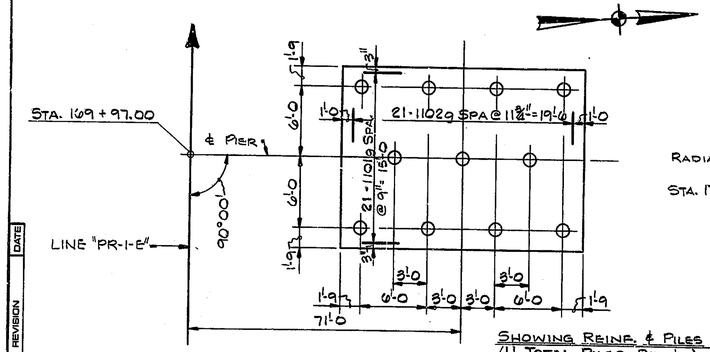
MARK	"A"	"L"
1101g	21'-0	24'-2
1102g	15'-0	18'-2
901h	16'-6	19'-0
902h	12'-0	14'-6



MARK	"A"	"B"	"L"
501g	14'-10	10"	15'-8
501h	13'-10	10"	14'-8



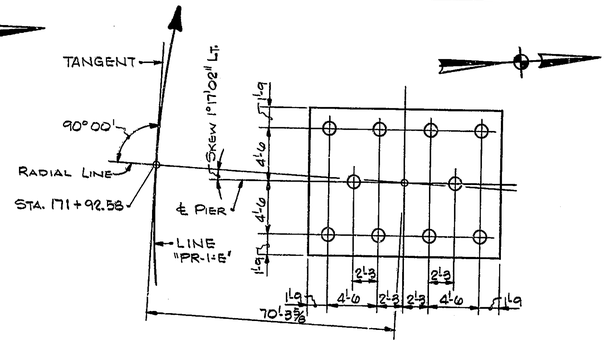
MARK	"A"	"B"	"L"
502g	8'-8	6'-2	31'-4
502h	8'-8	5'-2	29'-4



SHOWING REINF. & PILES (11 TOTAL PILES REQ'D)

PIER Nº 303

SCALE 3/16"= 1'-0



SHOWING PILING (10 TOTAL PILES REQ'D)

PIER Nº 304

SCALE 3/16"= 1'-0

BILL OF MATERIALS

PIER Nº 303

REINFORCING STEEL			
SIZE & MARK	Nº OF BARS	LENGTH	WEIGHT (LBS.)
1101g	21	24'-2	
1102g	21	18'-2	
	TOTAL #11		4,723
501g	30	15'-8	
502g	9	31'-4	
	TOTAL #5		784
	TOTAL REINF.		5,507
CONCRETE (f'_c=4000 PSI)			CYS.
CRASHWALL			19.9
FOOTING			87.8
MISCELLANEOUS			QTY.
11- HIGH CAPACITY PILES @ 75 LFT. EA. (APPROX)			825 LFT.
STEEL SHEET PILING			343 SFT.

℄ INCLUDES 1.4 CYS. ADDITIONAL CONCRETE BTWN. FOOTING & SHEET PILING.

PIER Nº 304

SIZE & MARK	Nº OF BARS	LENGTH	WEIGHT (LBS.)
901h	17	19'-0	
902h	21	14'-6	
	TOTAL #9		2134
501h	28	14'-8	
502h	9	29'-4	
	TOTAL #5		704
	TOTAL REINF.		2838
CONCRETE (f'_c=4000 PSI)			CYS.
CRASHWALL			16.8
FOOTING			47.2
MISCELLANEOUS			QTY.
10- HIGH CAPACITY PILES @ 75 LFT. EA. (APPROX)			750 LFT.

NOTES:

FOR REINF. BAR NOTES, SEE BR. STD. C1.
FOR ADDITIONAL NOTES AND DETAILS, SEE SHEET Nº 201.

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

APRIL 24, 1980

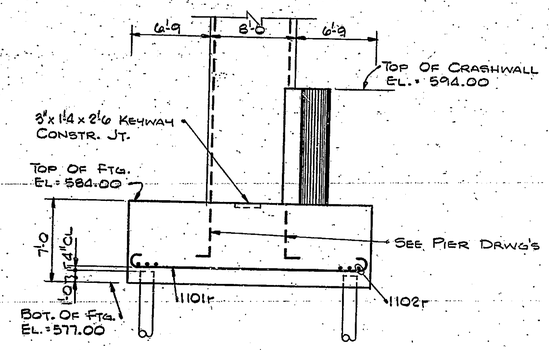
NORMAN D. PAVLEY REGISTERED No. 13050 STATE OF INDIANA PROFESSIONAL ENGINEER

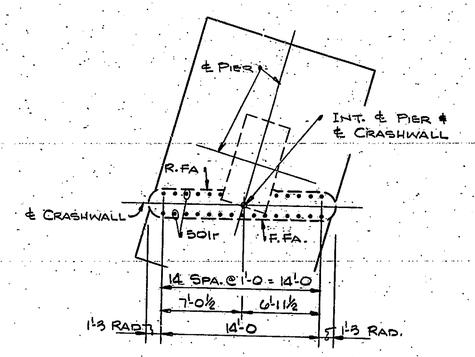
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

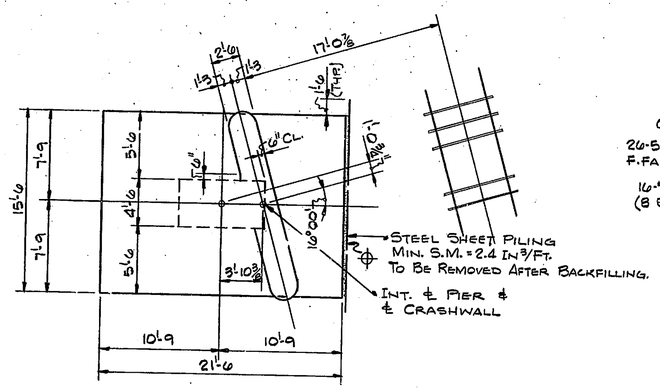
SHEET TITLE
PIER Nº 303 & 304 FOOTING & CRASHWALL DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. B-11512
INDIANA STATE HIGHWAY COMMISSION

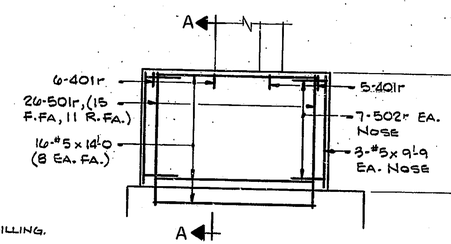
SHEET N.
236



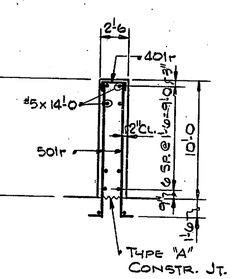




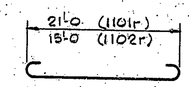
Showing Conc. Dimensions & Crashwall Tie-Up



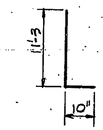
CRASHWALL DETAIL
Scale 3/16" = 1'-0



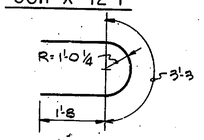
SECTION A-A
Scale 3/16" = 1'-0



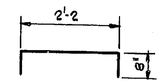
1101r X 24'-2
1102r X 18'-2



501r X 12'-1



502r X 6'-7



401r X 3'-6

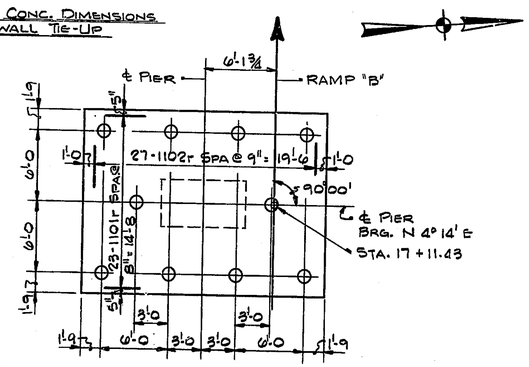
BILL OF MATERIALS

REINFORCING STEEL			
Size & Mark	No. of Bars	Length	Weight (Lbs.)
1101r	23	24'-2	
1102r	27	18'-2	
	Total #11		5,559
501r	26	12'-1	
502r	14	6'-7	
#5	16	14'-0	
#5	6	9'-9	
	Total #5		718
401r	11	3'-6	
	Total #4		26
	Total Reinf.		6,303
Concrete (f'c = 4000 psi)			Cys.
Ftg. Conc.			87.4
Crashwall			12.6
Miscellaneous			Qty.
10 High Capacity Piles @ 85 Lft. Ea. Approx.			850 Lft.
Steel Sheet Piling			222 Sft.

⊕ Includes 1.0 cys Additional Conc. Btwn. Sheet Piling & Footing

Notes

For Type "A" Constr. Jt., See Br. Std. C3.
For Reinf. Bar Notes, See Br. Std. C1.
For Additional Notes & Details, See Sheet 201.



Showing Piles & Ftg. Reinf.
10 Piles Req'd.

PIER No 302
Scale 3/16" = 1'-0

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS
APRIL 24, 1980

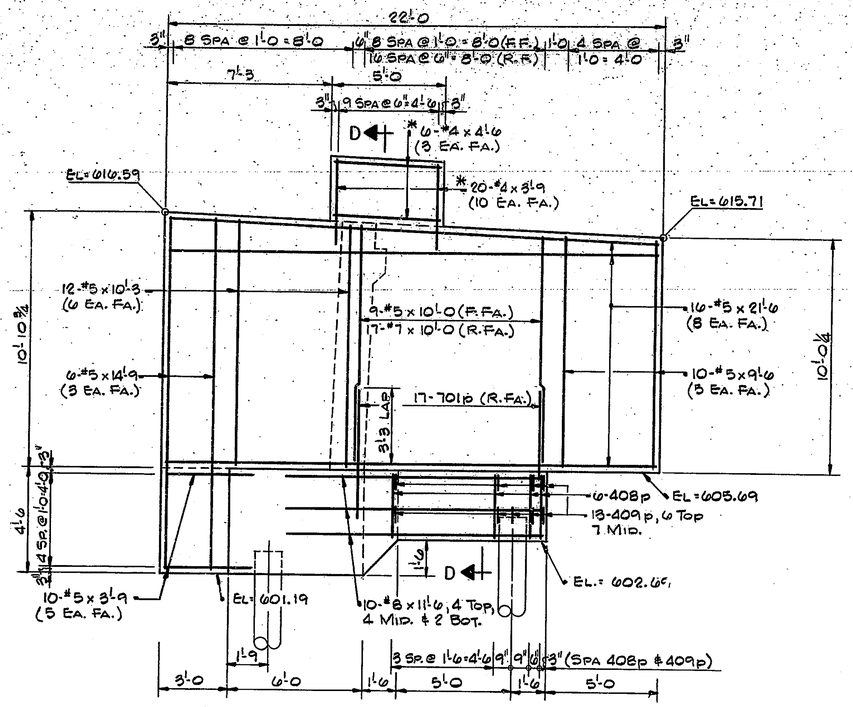
HAMAN D. PAYEL
REGISTERED
No. 13050
STATE OF INDIANA
PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

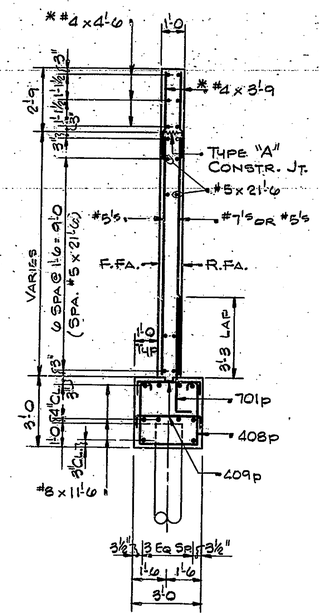
SHEET TITLE
PIER No 302 FOOTING & CRASHWALL DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
235

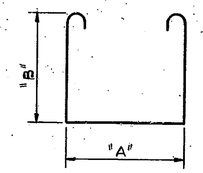


WING ELEVATION
SCALE 3/8" = 1'-0

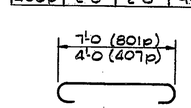


SECTION D-D
SCALE 3/8" = 1'-0

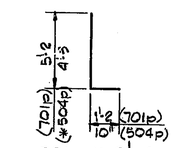
MARK	"A"	"B"	"L"
501p	1'-3	11'-7	24'-5
502p	1'-3	9'-7	20'-5
504p	4'-1	2'-4	8'-9
402p	3'-8	8"	7'-0
404p	3'-11	8"	5'-3
406p	1'-1	2'-0	5'-1
409p	2'-8	8"	4'-0
410p	3'-2	1'-6	6'-2



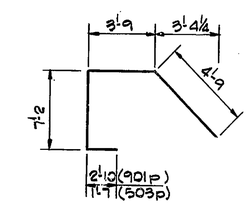
MARK	"A"	"B"	"L"
401p	5'-8	4'-2	15'-0
403p	3'-11	4'-2	13'-3
408p	2'-8	2'-8	9'-0



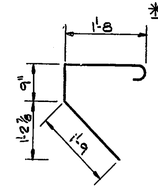
407p X 5'-0
801p X 8'-10



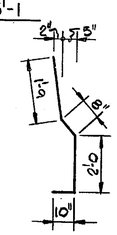
701p X 6'-4
*504p X 5'-1



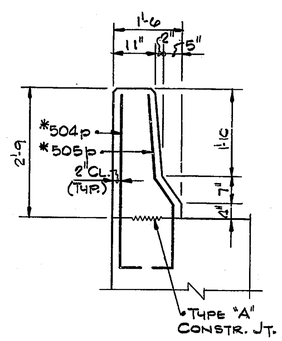
901p X 18'-6
503p X 17'-3



405p X 4'-8



*505p X 5'-3



SECTION C-C
SCALE 3/8" = 1'-0

Notes:
* Indicates Epoxy Coated Reinf. Req'd.
For Reinf. Bar Notes, See Br. Std. C1.
For Type "A" Constr. Jt., See Br. Std. C8.
For Additional Notes & Details, See Sht. 201

BILL OF MATERIALS

REINFORCING STEEL			
Size & Mark	No. of Bars	Length	Weight (Lbs.)
901p	3	18'-6	
#9	20	27'-9	
	Total #9		2,076
801p	3	8'-10	
#8	10	11'-6	
	Total #8		378
701p	17	6'-4	
#7	17	10'-0	
	Total #7		568
501p	27	24'-5	
502p	2	20'-5	
503p	1	17'-3	
* 504p	3	5'-1	
* 505p	3	5'-3	
506p	4	8'-9	
#5	2	27'-9	
#5	16	21'-6	
#5	6	12'-9	
#5	12	10'-3	
#5	9	10'-0	
#5	10	9'-6	
#5	10	3'-9	
	Total #5 E.C.		32
	Total #5		1,654
401p	21	15'-0	
402p	47	7'-0	
403p	4	13'-3	
404p	9	5'-3	
405p	27	4'-8	
406p	8	5'-1	
407p	7	5'-0	
408p	6	9'-0	
409p	13	4'-0	
410p	28	6'-2	
#4	18	28'-0	
#4	2	26'-3	
* #4	6	4'-6	
* #4	20	3'-9	
	Total #4 E.C.		68
	Total #4		1,189
Total Reinf. E.C.			100
Total Reinf.			5,865
Concrete			Cys.
Class "A" Conc.			
Pour No. 1			27.1
Pour No. 2			8.5
Pour No. 3			9.0
Pour No. 4			10.7
Pour No. 5			4.7
Pour No. 6			0.5
Total Class "A" Conc.			60.5
Class "C" In Barrier Railing			0.2
Miscellaneous			Q.Ty.
7 High Capacity Piles @ 110 Lft. Ea. Approx.			770 Lft.
7 Steel Pipe Sleeves @ 85 Lft. Ea. Approx.			595 Lft.

N. | REVISION | DATE

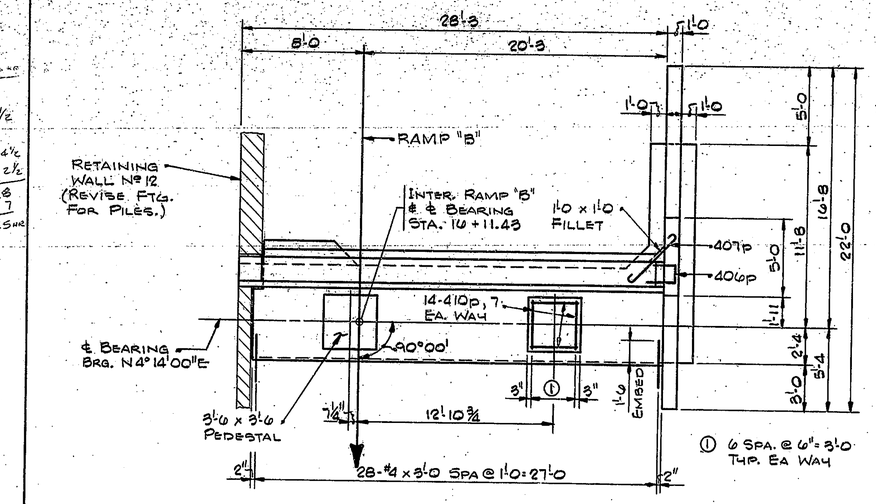
T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS
APRIL 24, 1980

HANAN C. WILCOX REGISTERED No. 13050 STATE OF INDIANA PROFESSIONAL ENGINEER

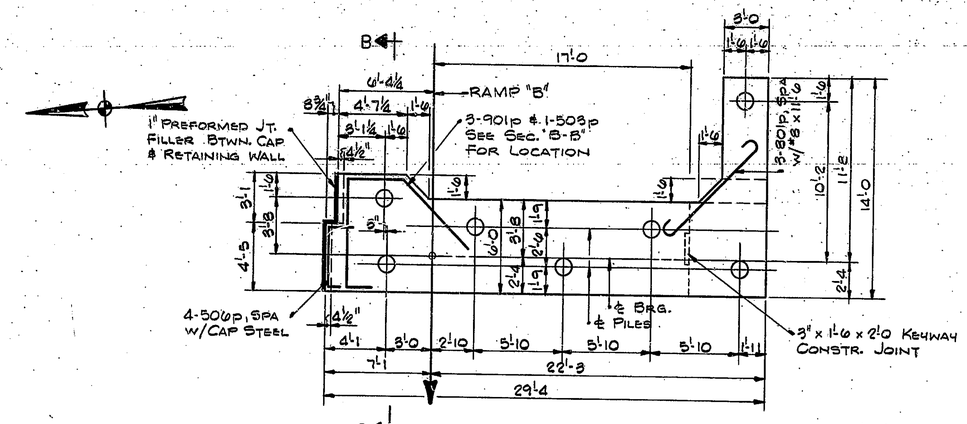
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
BENT No. 301 DETAILS & BILL OF MATERIALS
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11G12
INDIANA STATE HIGHWAY COMMISSION

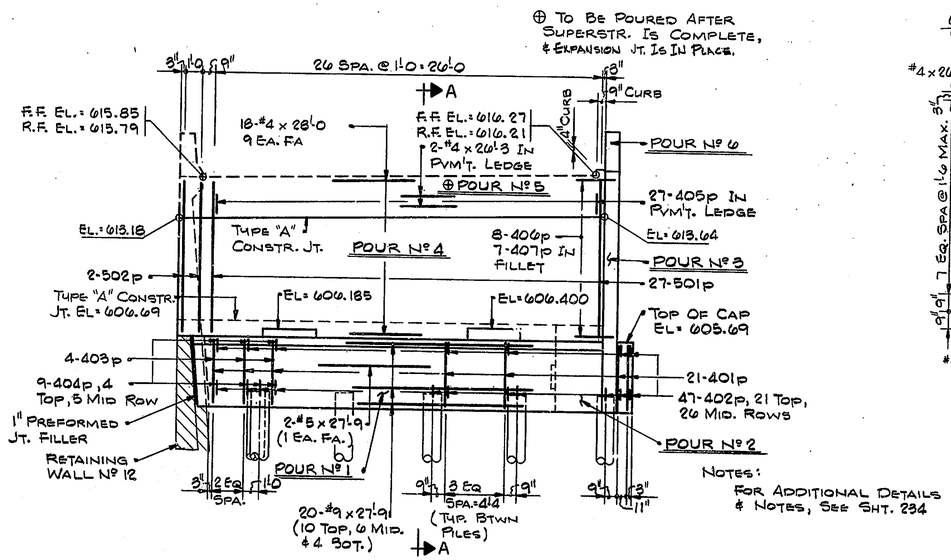
SHEET N.
234



PLAN
SCALE ¼" = 1'-0

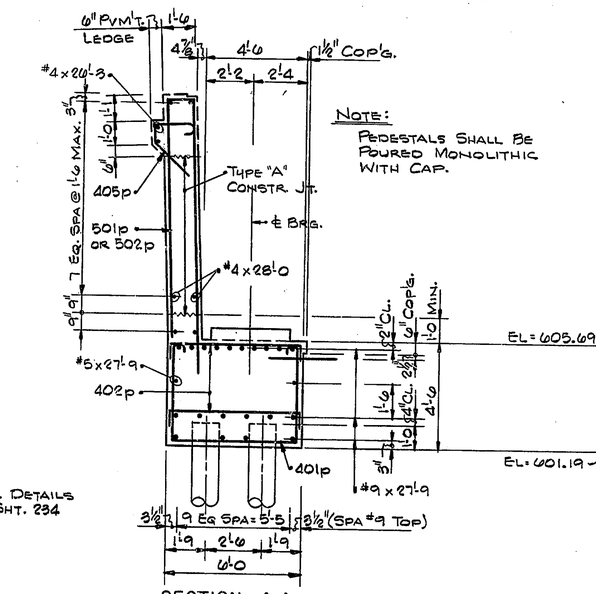


PILING PLAN
SCALE ¼" = 1'-0



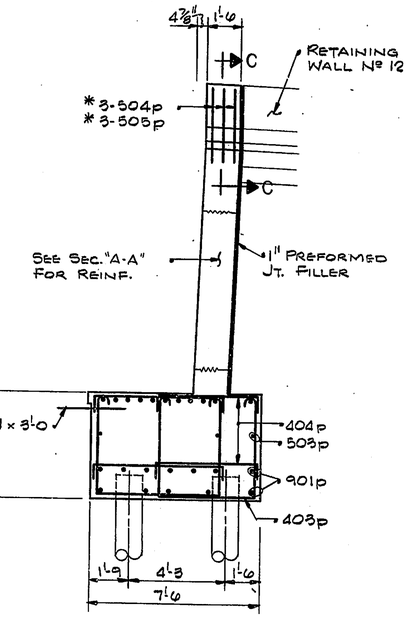
NOTES:
FOR ADDITIONAL DETAILS & NOTES, SEE SHT. 234

ELEVATION
SCALE ¼" = 1'-0



NOTE:
PEDESTALS SHALL BE POURED MONOLITHIC WITH CAP.

SECTION A-A
SCALE ⅜" = 1'-0



SECTION B-B
SCALE ⅜" = 1'-0

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL.
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

APRIL 24, 1980

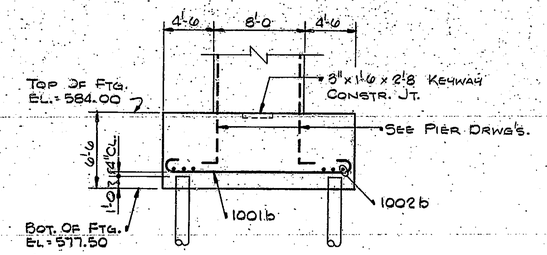
REGISTERED No. 13050 STATE OF INDIANA PROFESSIONAL ENGINEER

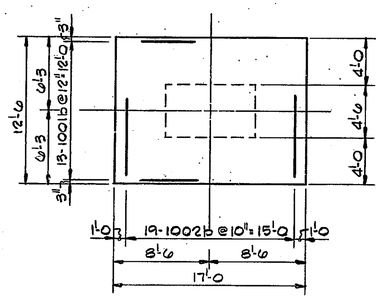
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
BENT Nº 301 DETAILS

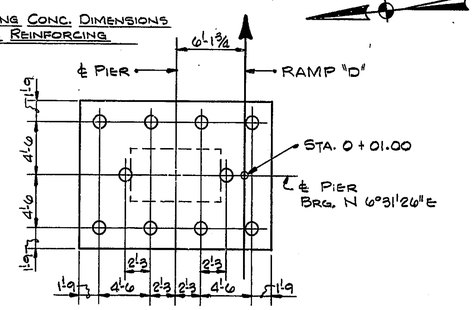
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
233





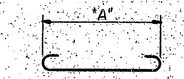
Showing Conc. Dimensions & Ftg. Reinforcing



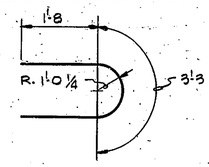
Showing Piles
(10 Piles Req'd)

PIER Nº 105

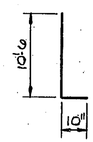
Scale 3/16"=1'-0



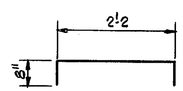
Mark	"A"	"L"
1001b	16'-6	19'-4
1002b	12'-0	14'-10
1001e	17'-0	19'-10
1002e	18'-0	20'-10
1101f	22'-0	25'-2
901f	12'-0	14'-6



502 X 6'-7



501 X 11'-4



401 X 3'-6

BILL OF MATERIALS

PIER Nº 105 REINFORCING STEEL			
Size & Mark	Nº Of Bars	Length	Weight (Lbs.)
1001b	18	19'-4	
1002b	19	14'-10	
	Total Reinf.		2,294
Concrete (f'_c=4000 psi)			Cys.
Ftg. Conc.			51.2
Miscellaneous			Qty.
10 High Capacity Piles @ 79 Lft. Ea. Approx.			790 Lft.

PIER Nº 106 REINFORCING STEEL			
Size & Mark	Nº Of Bars	Length	Weight (Lbs.)
1001e	26	19'-10	
1002e	18	20'-10	
	Total #10		3,833
501e	27	11'-4	
502e	14	6'-7	
#5	16	14'-0	
#5	6	8'-9	
	Total #5		704
401e	12	3'-6	
	Total #4		28
	Total Reinf.		4,565
Concrete (f'_c=4000 psi)			Cys.
Ftg. Conc.			101.9
Crashwall			12.2
Miscellaneous			Qty.
12 High Capacity Piles @ 75 Lft. Ea. Approx.			900 Lft.
Steel Sheet Piling			148 SFT

⊕ Includes 0.1 Cys. Additional Conc. Btwn. Sheet Piling & Footing

PIER Nº 107 REINFORCING STEEL			
Size & Mark	Nº Of Bars	Length	Weight (Lbs.)
1101f	27	25'-2	
	Total #11		3,610
901f	42	14'-6	
	Total #9		2,071
501f	24	11'-4	
502f	14	6'-7	
#5	16	15'-0	
#5	9	8'-9	
	Total #5		712
401f	11	3'-6	
	Total #4		26
	Total Reinf.		6,419
Concrete (f'_c=4000 psi)			Cys.
Ftg. Conc.			87.5
Crashwall			12.2
Miscellaneous			Qty.
13 High Capacity Piles @ 75 Lft. Ea. Approx.			975 Lft
Steel Sheet Piling			384 SFT.

⊕ Includes 1.8 Cys. Additional Conc. Btwn. Sheet Piling & Footing

Notes:

For Reinf. Bar Notes, See Br. Std. C1.
For Pier Nº 106 & 107, See Sheet 231
For Additional Notes & Details, See Sheet 201.

N.	Revision	Date

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

April 24, 1980

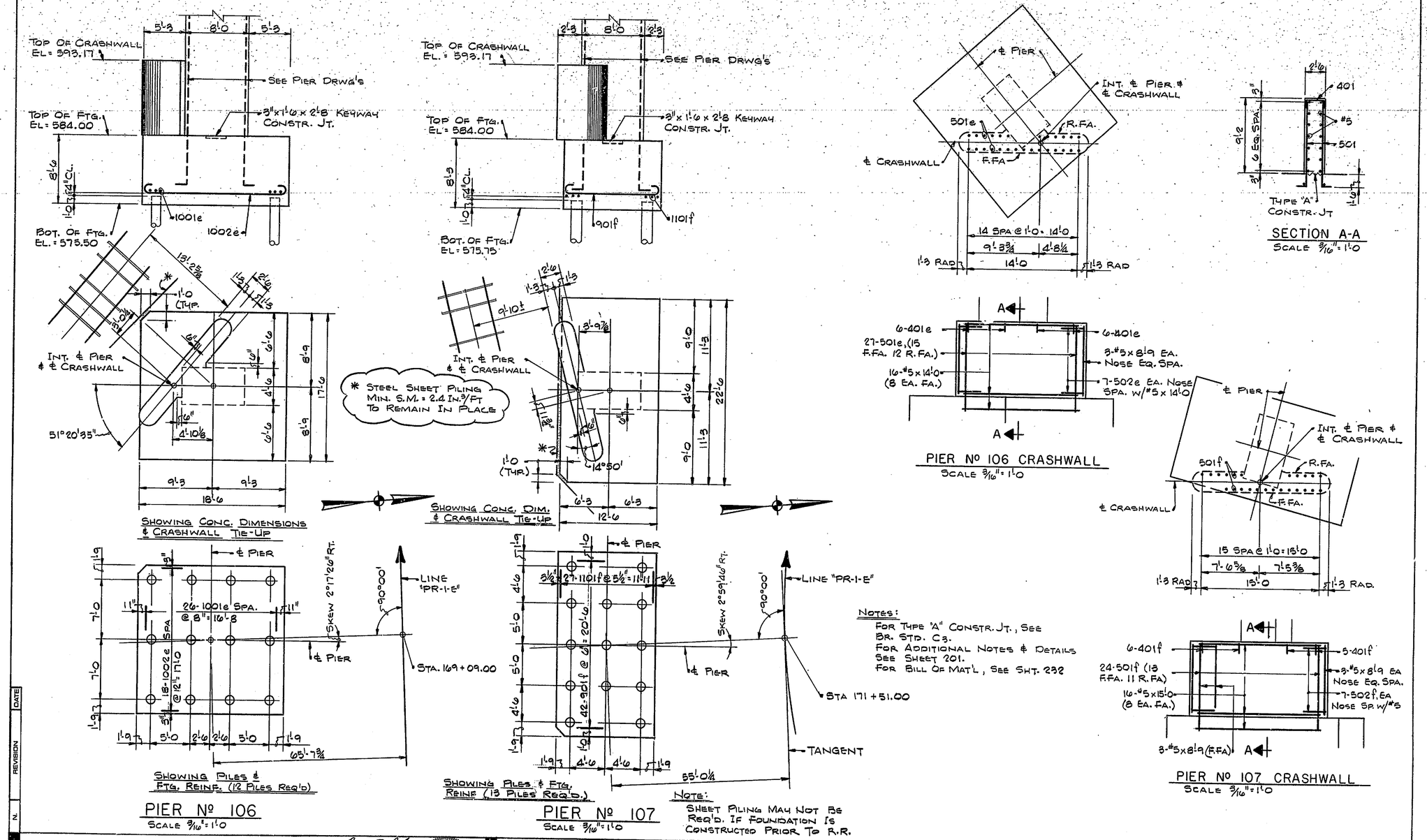
Norman D. Fryer Registered No. 13050 State of Indiana Professional Engineer

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

Sheet Title
PIER Nº 105, 106 & 107 FOOTING DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
Bridge File 812-45-2548 Contract No. B-11812 Indiana State Highway Commission

Sheet N.
232



NOTES:
FOR TYPE "A" CONSTR. JT., SEE BR. STD. C3.
FOR ADDITIONAL NOTES & DETAILS SEE SHEET 201.
FOR BILL OF MAT'L, SEE SHT. 232

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

APRIL 24, 1980

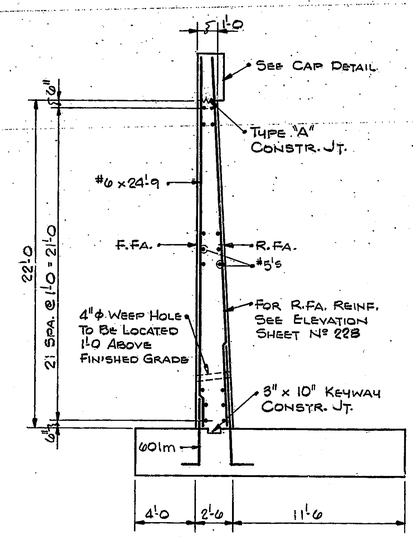
HARMAN D. PATEL REGISTERED No. 13050 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

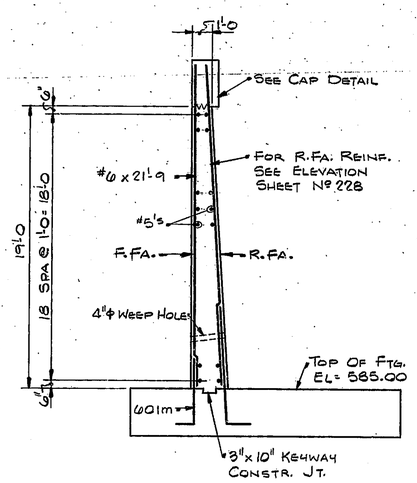
SHEET TITLE
PIER Nº 105, 106 & 107 FOOTING DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

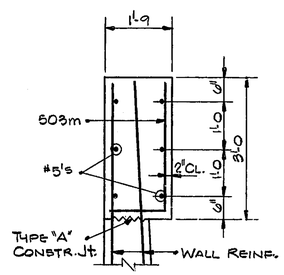
SHEET N.
231



SECTION A-A
Scale 1/2" = 1'-0

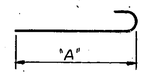


SECTION B-B
Scale 1/2" = 1'-0

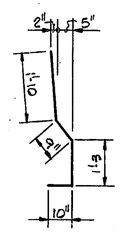


CAP DETAIL
No Scale

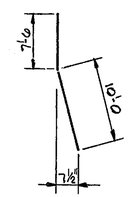
Mark	"A"	"B"	"L"
503m	2'-8	1'-5	4'-1
* 505m	4'-3	10"	5'-1
601m	4'-7	1'-0	5'-7
801m	13'-8	1'-4	15'-0
901m	7'-8	1'-7	9'-3
1001m	14'-8	1'-10	16'-6
1002m	7'-11	1'-10	9'-9
1101m	7'-8	2'-0	9'-8
1102m	16'-2	2'-0	18'-2



Mark	"A"	"L"
501m	33'-6	34'-1
502m	40'-3	40'-10
504m	10'-6	11'-1



* 506m X 4'-8



602m X 17'-6

BILL OF MATERIALS

REINFORCING STEEL (CON'T.)			
Size & Mark	Nº Of Bars	Length	Weight (Lbs.)
501m	25	34'-1	
502m	22	40'-10	
503m	167	4'-1	
504m	47	11'-1	
* 505m	27	5'-1	
* 506m	27	4'-8	
#5	48	40'-6	
	66	40'-3	
	18	40'-0	
	75	33'-6	
	80	13'-0	
	70	12'-0	
#5	47	10'-6	
	Total #5		13,726
	Total #5 E.C.		275
* #4	6	13'-0	
* #4	6	12'-0	
	Total #4 E.C.		100
	Total Reinf.		96,422
	Total E.C. Reinf.		375
Concrete (f'c = 4000 psi)			C4S
Class "B" In Ftg.			
Pour Nº 1			88.2
Pour Nº 2			84.8
Pour Nº 3			92.2
Pour Nº 4			85.2
Total Class "B"			350.4
Class "A" In Substr.			
Pour Nº 5			35.4
Pour Nº 6			35.6
Pour Nº 7			35.6
Pour Nº 8			36.9
Pour Nº 9			34.7
Pour Nº 10			36.9
Pour Nº 11			30.6
Pour Nº 12			14.7
Pour Nº 13			1.5
Pour Nº 14			25.3
Pour Nº 15			12.8
Pour Nº 16			1.4
Pour Nº 17			14.6
Pour Nº 18			17.2
Total Class "A"			333.2

REINFORCING STEEL			
Size & Mark	Nº Of Bars	Length	Weight (Lbs)
1101m	13	9'-8	
1102m	14	18'-2	
#11	59	21'-6	
	Total #11		8,758
1001m	159	16'-6	
1002m	155	9'-9	
#10	237	17'-6	
#10	24	5'-0	
	Total #10		36,155
901m	12	9'-3	
#9	31	21'-6	
	Total #9		2,044
801m	13	15'-0	
#8	14	24'-0	
#8	71	17'-9	
#8	84	14'-9	
#8	13	9'-9	
	Total #8		8,429
601m	194	5'-7	
602m	14	17'-6	
#6	48	40'-9	
	18	40'-6	
	77	24'-9	
	14	24'-0	
	102	21'-9	
	2	21'-6	
	13	21'-0	
	196	17'-6	
	99	14'-9	
	22	13'-0	
	13	12'-9	
	22	12'-6	
	12	12'-0	
	86	11'-9	
	13	10'-0	
	4	7'-0	
	24	6'-0	
#6	384	5'-0	
	Total #6		26,710

Notes:
For Reinf. Bar Notes, See Br. Std. C1.
* Indicates Epoxy Coated Reinf. Bars Req'd.
For Type "A" Constr. Jt., See Br. Std. C3.

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

APRIL 24, 1980

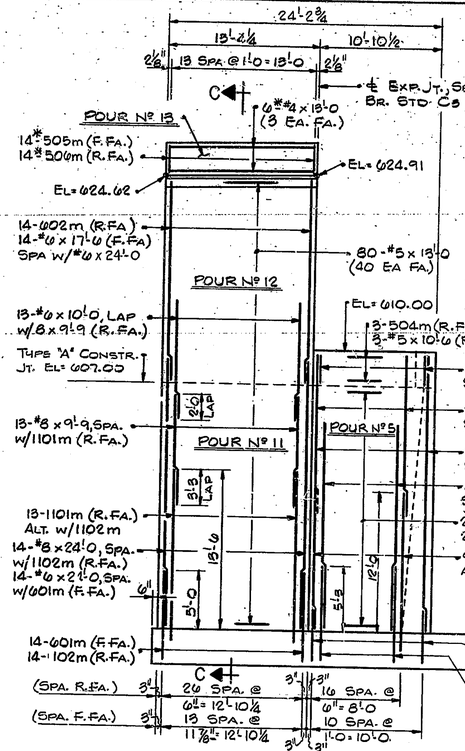
SHAWN D. FAIRE REGISTERED No. 13050 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

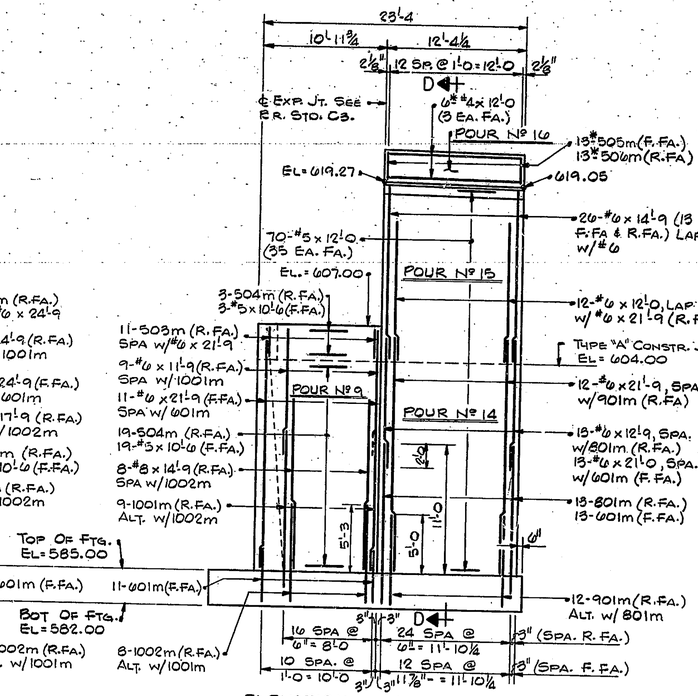
SHEET TITLE
RETAINING WALL DETAILS & BILL OF MATERIALS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE. 912-45-2546 CONTRACT NO. 8-11612 INDIANA STATE HIGHWAY COMMISSION

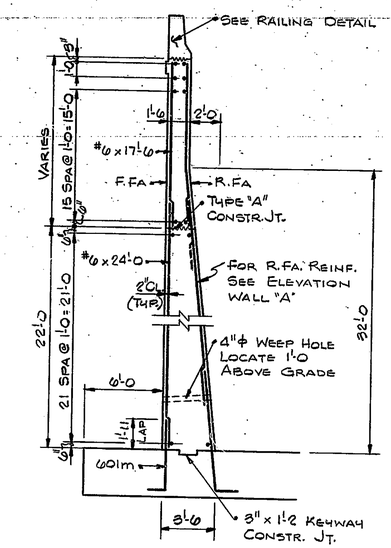
SHEET N.
230



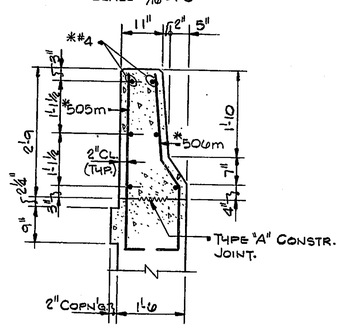
ELEVATION – WALL A
SCALE 3/16" = 1'-0



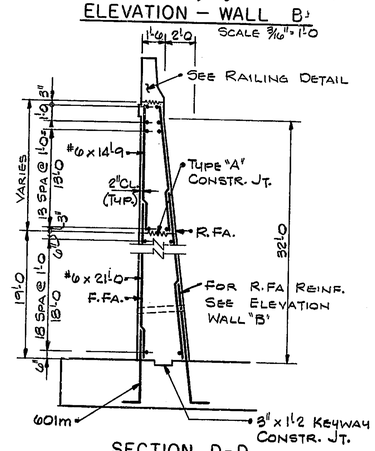
ELEVATION – WALL B
SCALE 3/16" = 1'-0



SECTION C-C
SCALE 3/16" = 1'-0



RAILING DETAIL
SCALE 3/4" = 1'-0



SECTION D-D
SCALE 3/16" = 1'-0

NOTES:
* INDICATES EPOXY COATED REINF. BARS REQ'D.
FOR ADDITIONAL NOTES & DETAILS, SEE SHEETS 228 & 230
FOR LIMITS OF FOUNDATION EXCAVATION, SEE CONTRACT DRAWING RW-12-1.

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEEJE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

APRIL 24, 1980

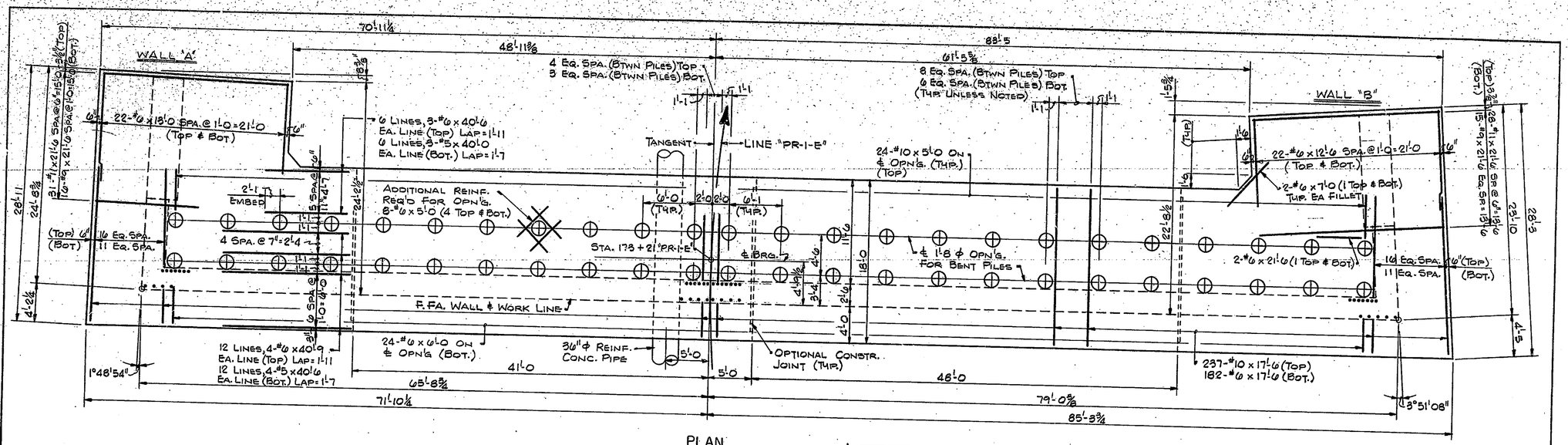
HARMAN D. PATEL REGISTERED No. 13050 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
RETAINING WALL DETAILS

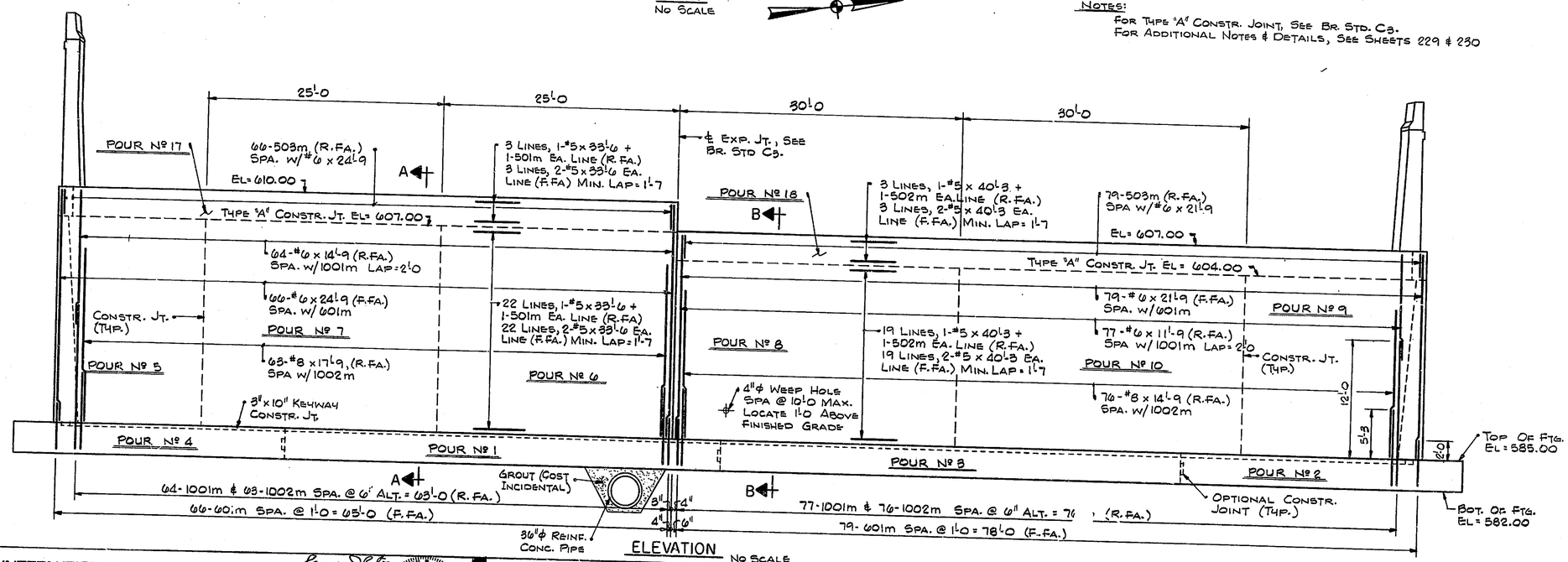
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
229



PLAN
No Scale

NOTES:
FOR TYPE "A" CONSTR. JOINT, SEE BR. STD. C3.
FOR ADDITIONAL NOTES & DETAILS, SEE SHEETS 229 & 230



ELEVATION
No Scale

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS
APRIL 24, 1980

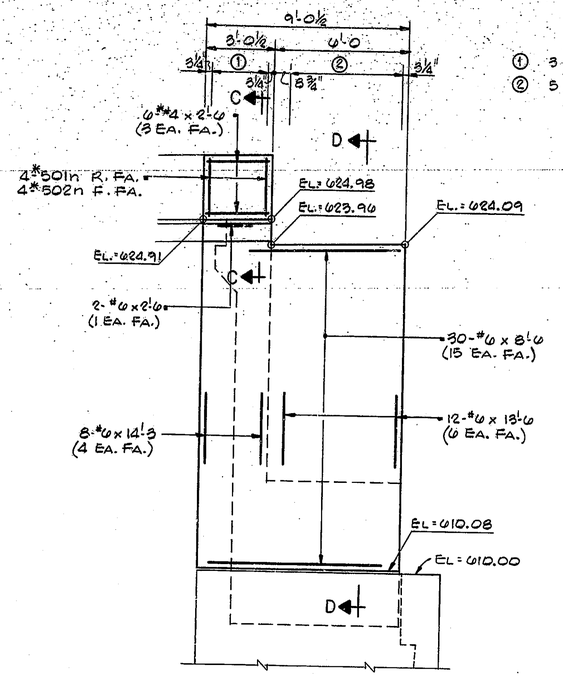
HARMAN D. PAVEY
REGISTERED
No. 13050
STATE OF INDIANA
PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

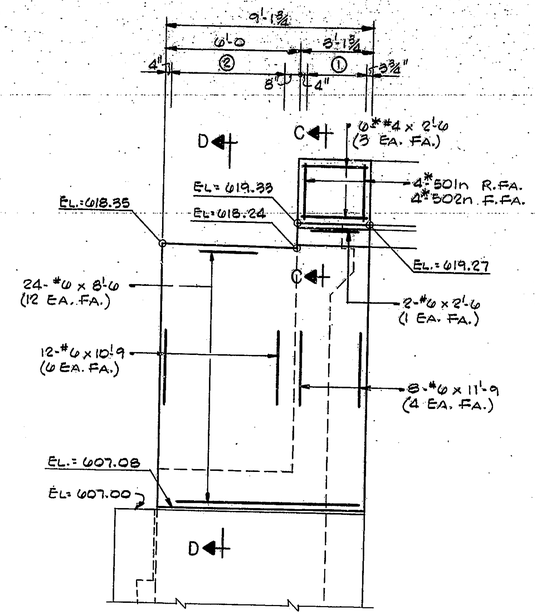
SHEET TITLE
RETAINING WALL DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 8-11812
INDIANA STATE HIGHWAY COMMISSION

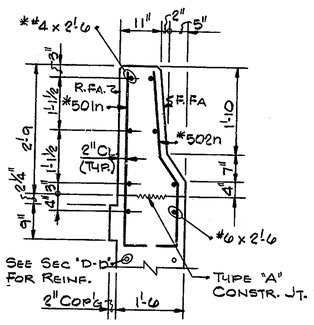
SHEET N.
228



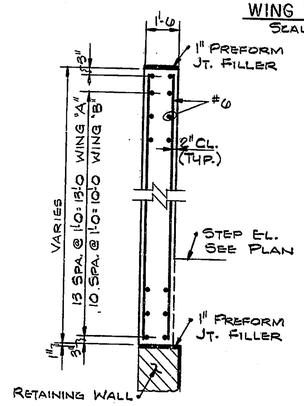
WING "A" ELEVATION
SCALE 3/8" = 1'-0



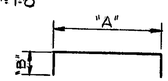
WING "B" ELEVATION
SCALE 3/8" = 1'-0



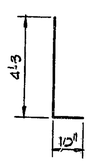
SECTION C-C
SCALE 3/8" = 1'-0



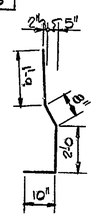
SECTION D-D
SCALE 3/8" = 1'-0



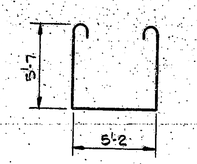
MARK	"A"	"B"	"L"
* 503n	1'-2	12'-6	26'-2
402n	7'-2	8"	8'-6
403n	7'-1	1'-3	9'-7
* 406n	1'-1	2'-3	3'-7
408n	2'-8	1'-6	5'-8



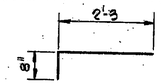
*501n X 5'-1



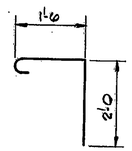
*502n X 5'-3



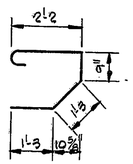
401n X 17'-4



*407n X 2'-11



*405n X 4'-0



*404n X 5'-5

BILL OF MATERIALS

E.B.L. REINFORCING STEEL			
SIZE & MARK	Nº OF BARS	LENGTH	WEIGHT (LBS.)
#8	22	35'-0	
#8	22	33'-9	
	TOTAL #8		4,038
#6	8	14'-3	
#6	12	13'-6	
#6	30	8'-6	
#6	2	2'-6	
	TOTAL #6		805
* 501n	4	5'-1	
* 502n	4	5'-3	
* 503n	64	26'-2	
#5	8	33'-6	
* #5	34	32'-6	
	TOTAL #5 E.C.		2992
	TOTAL #5		280
401n	88	17'-4	
402n	95	8'-6	
403n	10	9'-7	
* 404n	64	5'-5	
* 405n	64	4'-0	
* 406n	9	5'-7	
* 407n	2	2'-11	
408n	60	5'-8	
#4	4	16'-6	
#4	4	13'-6	
#4	4	12'-6	
#4	4	10'-9	
#4	4	9'-6	
* #4	6	2'-6	
	TOTAL #4 E.C.		718
	TOTAL #4		1751
	TOTAL E.C. REINF.		3660
	TOTAL REINF.		1751
CONCRETE (f'_c=4000 PSI)			CYS.
CLASS "A" CONC.			
POUR Nº 1			45.0
POUR Nº 2			31.2
POUR Nº 3			44.6
POUR Nº 4			4.5
POUR Nº 5			23.1
POUR Nº 7			13.3
TOTAL CLASS "A" CONC.			161.7
CLASS "C" CONC			
POUR Nº 6			0.4
MISCELLANEOUS			QTY.
22 HIGH CAPACITY PILES @ 105 LFT. EA. APPROX.			2310 LFT
** 22 STEEL PIPE SLEEVES @ 80 LFT. EA. APPROX			1760 LFT.

W.B.L. REINFORCING STEEL			
SIZE & MARK	Nº OF BARS	LENGTH	WEIGHT (LBS.)
#8	22	41'-6	
#8	22	40'-6	
	TOTAL #8		4,817
#6	8	11'-9	
#6	12	10'-9	
#6	24	8'-6	
#6	2	2'-6	
	TOTAL #6		649
* 501n	4	5'-1	
* 502n	4	5'-3	
* 503n	77	26'-2	
* #5	34	33'-3	
#5	8	33'-0	
	TOTAL #5 E.C.		3536
	TOTAL #5		325
401n	104	17'-4	
402n	115	8'-6	
403n	10	9'-7	
* 404n	77	5'-5	
* 405n	77	4'-0	
* 406n	9	5'-7	
* 407n	2	2'-11	
408n	60	5'-8	
#4	4	19'-6	
#4	4	15'-9	
#4	4	14'-9	
#4	4	14'-0	
#4	4	13'-3	
* #4	6	2'-6	
	TOTAL #4 E.C.		532
	TOTAL #4		2355
	TOTAL E.C. REINF		4068
	TOTAL REINF		3,146
CONCRETE (f'_c=4000 PSI)			CYS.
CLASS "A" CONC.			
POUR Nº 1			68.2
POUR Nº 2			22.5
POUR Nº 3			54.1
POUR Nº 4			4.4
POUR Nº 5			27.2
POUR Nº 7			16.0
TOTAL CLASS "A" CONC.			192.4
CLASS "C" CONC			
POUR Nº 6			0.4
MISCELLANEOUS			QTY.
26 HIGH CAPACITY PILES @ 105 LFT. EA. APPROX.			2730 LFT.
26 STEEL PIPE SLEEVES @ 80 LFT. EA. APPROX.			2080 LFT.

NOTES:
FOR REINF. BAR NOTES, SEE BR. STD. C1.
* INDICATES EPOXY COATED REINF. REQ'D.
FOR TYPE "A" CONSTR. JT., SEE BR. STD. C3.
FOR ADDITIONAL NOTES & DETAILS, SEE SHEET 201.
△** SEE DETAIL 'A', SHEET No. 201.

N.	REVISION	DATE
△	ADD ** NOTE	2/1/88

APPROVED FOR CONSTRUCTION
J. D. Mattis
J. D. MATTIS
Engineer of Bridge Plans
3-9-83

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS
APRIL 24, 1980

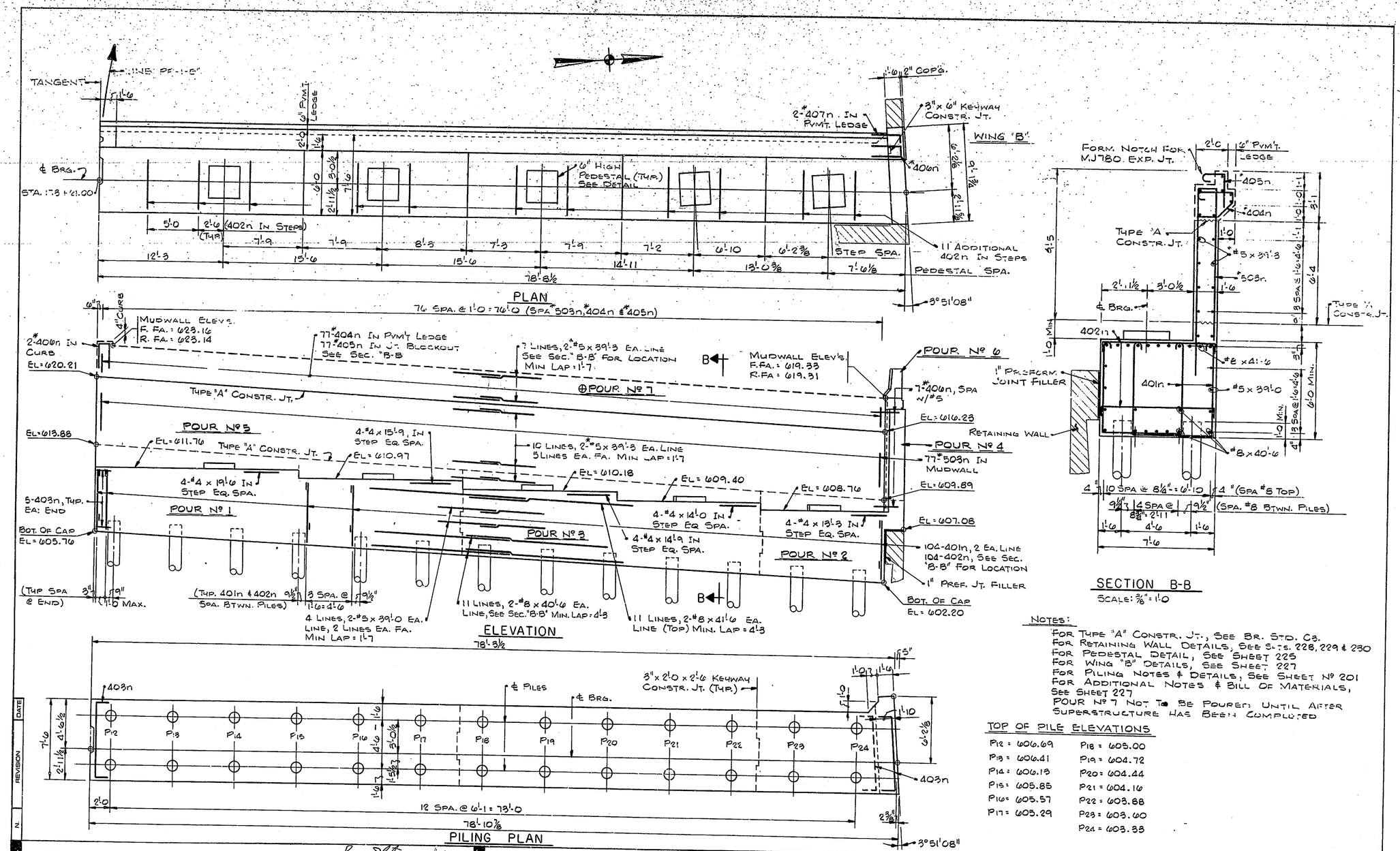
HUMAN D. PATEL REGISTERED No. 13050 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
BENT Nº 30 E.B.L. & W.B.L. DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
227



NOTES:

FOR TYPE "A" CONSTR. JT., SEE BR. STD. C3.
FOR RETAINING WALL DETAILS, SEE SHTS. 228, 229 & 230
FOR PEDESTAL DETAIL, SEE SHEET 225
FOR WING "B" DETAILS, SEE SHEET 227
FOR PILING NOTES & DETAILS, SEE SHEET Nº 201
FOR ADDITIONAL NOTES & BILL OF MATERIALS, SEE SHEET 227
POUR Nº 7 NOT TO BE POURED UNTIL AFTER SUPERSTRUCTURE HAS BEEN COMPLETED

TOP OF PILE ELEVATIONS

P12 = 606.69	P18 = 605.00
P13 = 606.41	P19 = 604.72
P14 = 606.13	P20 = 604.44
P15 = 605.85	P21 = 604.16
P16 = 605.57	P22 = 603.88
P17 = 605.29	P23 = 603.60
	P24 = 603.33

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

APRIL 24, 1980

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

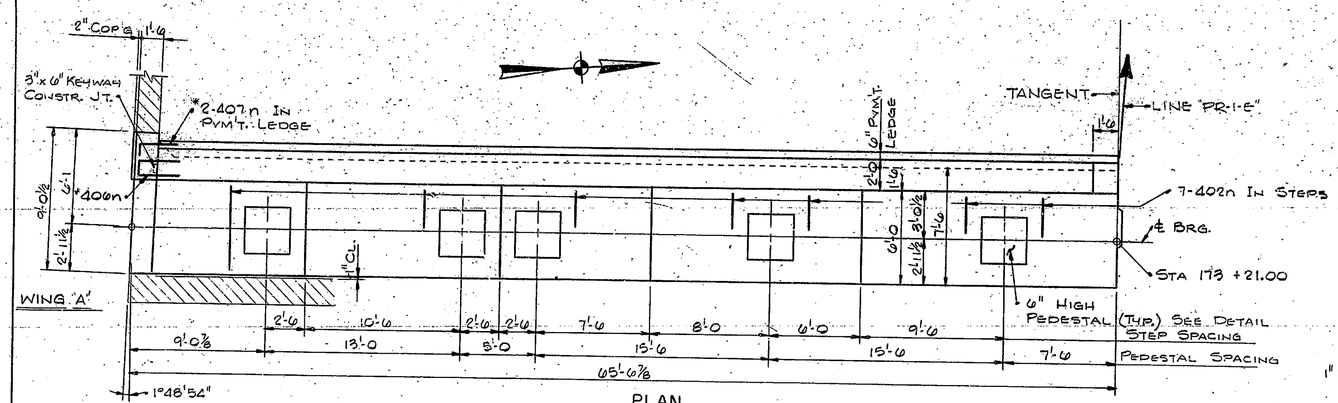
SHEET TITLE

BENT Nº 30 W.B.L. DETAILS

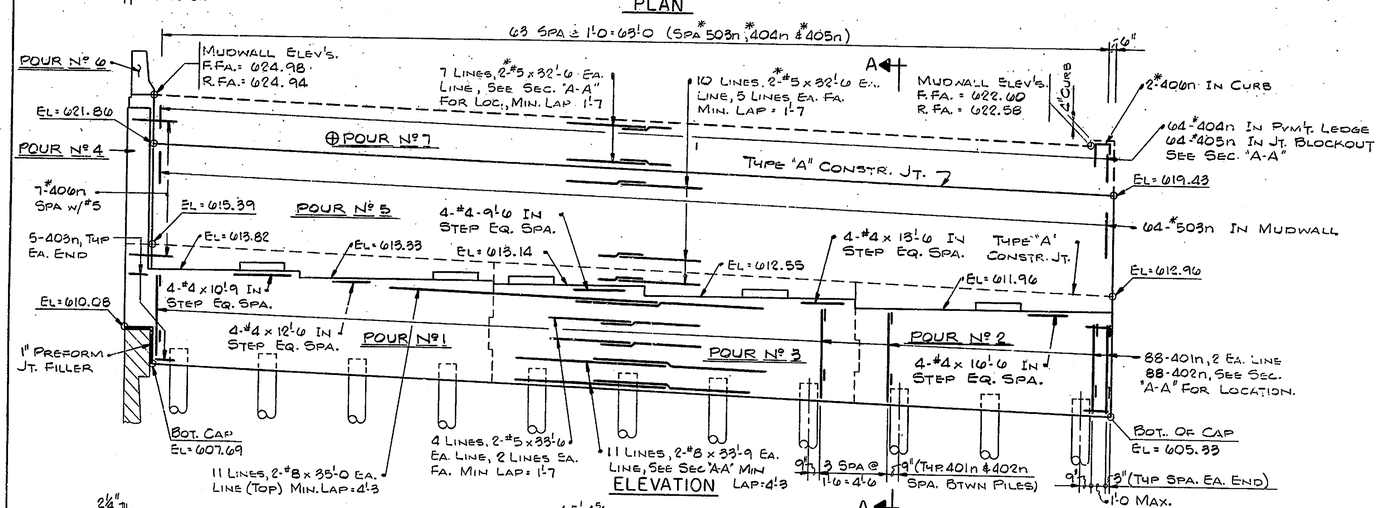
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
226

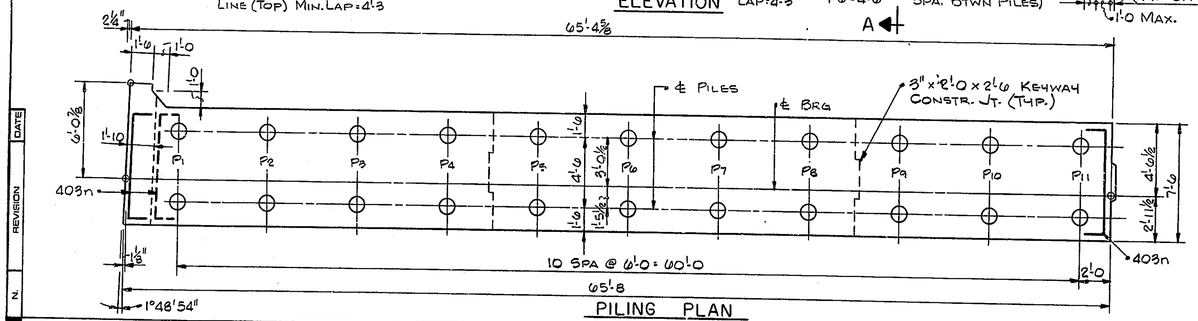
DATE | REVISION | N.



PLAN

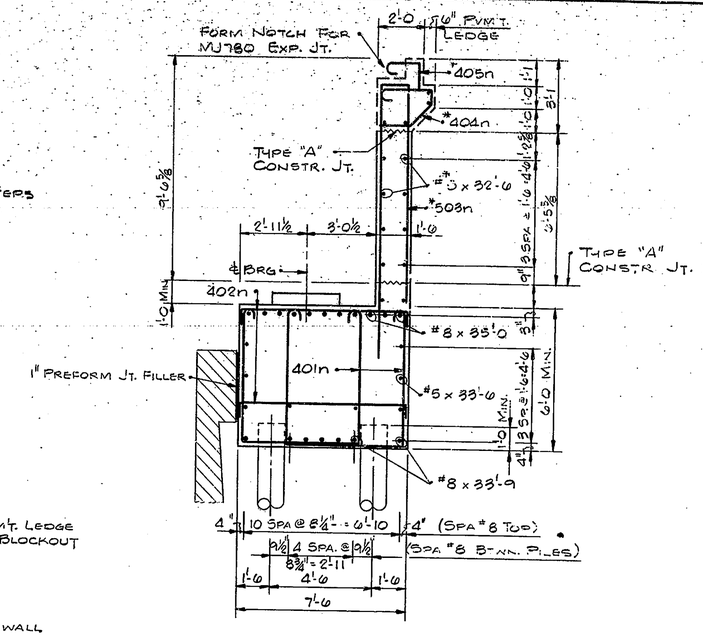


ELEVATION

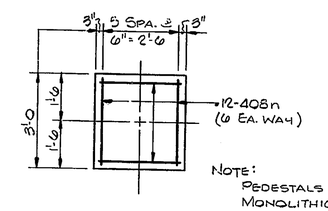


PILING PLAN

Top of Pile Elevations	
P1 = 608.65	P6 = 607.54
P2 = 608.42	P7 = 607.31
P3 = 608.20	P8 = 607.09
P4 = 607.98	P9 = 606.87
P5 = 607.76	P10 = 606.65
	P11 = 606.43



SECTION A-A



Note:
Pedestals Shall Be Poured Monolithic With Cap.

PEDESTAL DETAIL

Notes:

For Type "A" Constr. Jt., See Br. Std. C3.
For Retaining Wall Details, See Sht's. 228, 229 & 230
For Wing "A" Details, See Sheet 227
For Piling Notes & Details, See Sheet Nº 201.
For Additional Notes & Bill Of Materials, See Sheet 227
⊕ Pour Nº 7 Not To Be Poured Until After Superstructure Has Been Completed
* Indicates Epoxy Coated Reinforcement required

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

APRIL 24, 1980

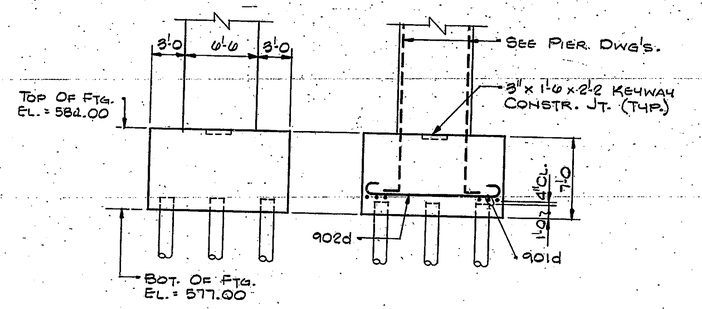
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

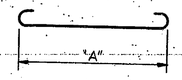
SHEET TITLE

BENT Nº 30 E.B.L. DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2545 CONTRACT NO 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
225



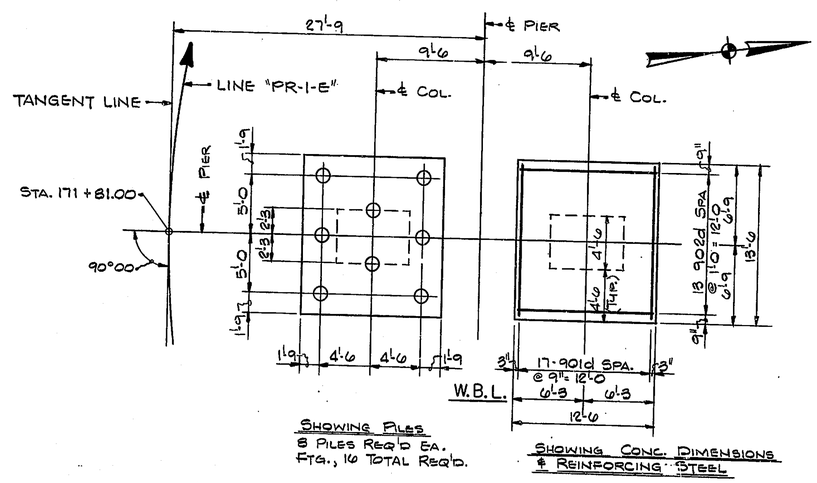


MARK	"A"	"L"
901d	13'-0	15'-6
902d	12'-0	14'-6

BILL OF MATERIALS

REINFORCING STEEL			
SIZE & MARK	No. OF BARS	LENGTH	WEIGHT (LBS.)
901d	34	15'-6	
902d	26	14'-6	
	TOTAL REINF.		3,073
CONCRETE (f'_c=4,000 PSI)			C.Y.S.
FTG. 2 @ 43.8.			87.6
MISCELLANEOUS			QTY.
16" HIGH CAPACITY PILES @ 75 L.F. EA. (APPROX.)			1200 L.F.

NOTES:
FOR REINF. BAR NOTES, SEE BR. STD. C1.
FOR ADDITIONAL NOTES & DETAILS. SEE SHEET 201.



Showing Piles
8 Piles Req'd Ea. Ftg., 16 Total Req'd.

Showing Conc. Dimensions & Reinforcing Steel

PIER Nº 29
Scale 3/16" = 1'-0

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

APRIL 24, 1980

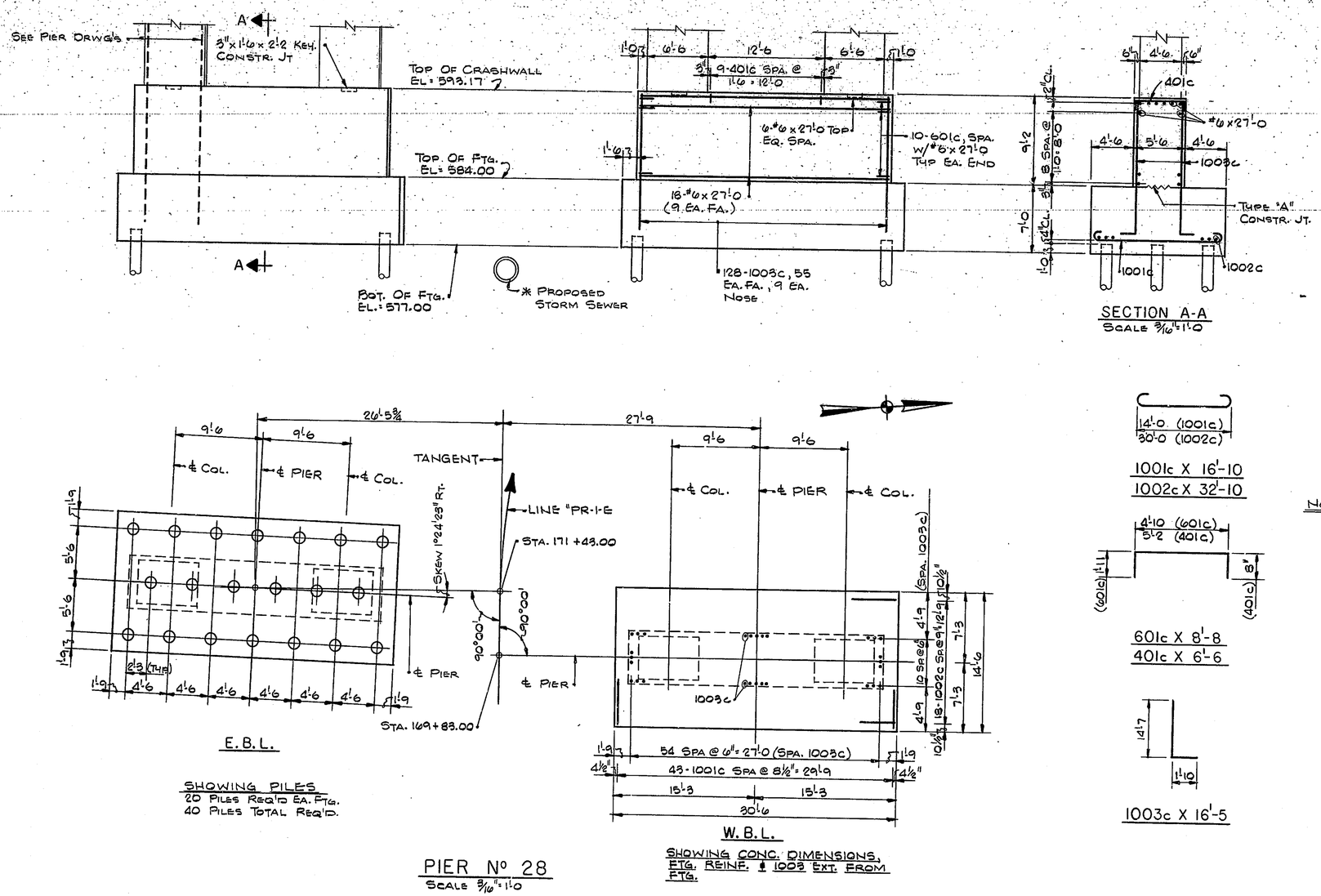
REGISTERED No. 13050 STATE OF Indiana PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PIER Nº 29 W.B.L. FOOTING DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
224



BILL OF MATERIALS

REINFORCING STEEL			
SIZE & MARK	Nº OF BARS	LENGTH	WEIGHT (LBS.)
1001C	86	16'-10	
1002C	36	32'-10	
1003C	256	16'-5	
	TOTAL #10		29,400
601C	40	8'-8	
#6	48	27'-0	
	TOTAL #6		2,467
401C	18	6'-6	
	TOTAL #4		78
	TOTAL REINF.		31,945
CONCRETE (f'_c=4000 PSI)			CYS.
FTG CONC. 2@114.7			229.4
SUBSTR. CONC, 2@51.4			102.8
MISCELLANEOUS			QTY
40 HIGH CAPACITY PILES @ 75 LFT. EA. APPROX.			3000 LFT

NOTES:

FOR TYPE "A" CONSTR. JT., SEE BR. STD. C3.
FOR REINF. BAR NOTES, SEE BR. STD. C1.
FOR ADDITIONAL NOTES & DETAILS, SEE SHEET 201.
* LOCATION OF THIS LINE APPROXIMATE ONLY. CONTRACTOR TO TAKE NECESSARY PRECAUTIONS DURING FOUNDATION EXCAVATION.

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

APRIL 24, 1980

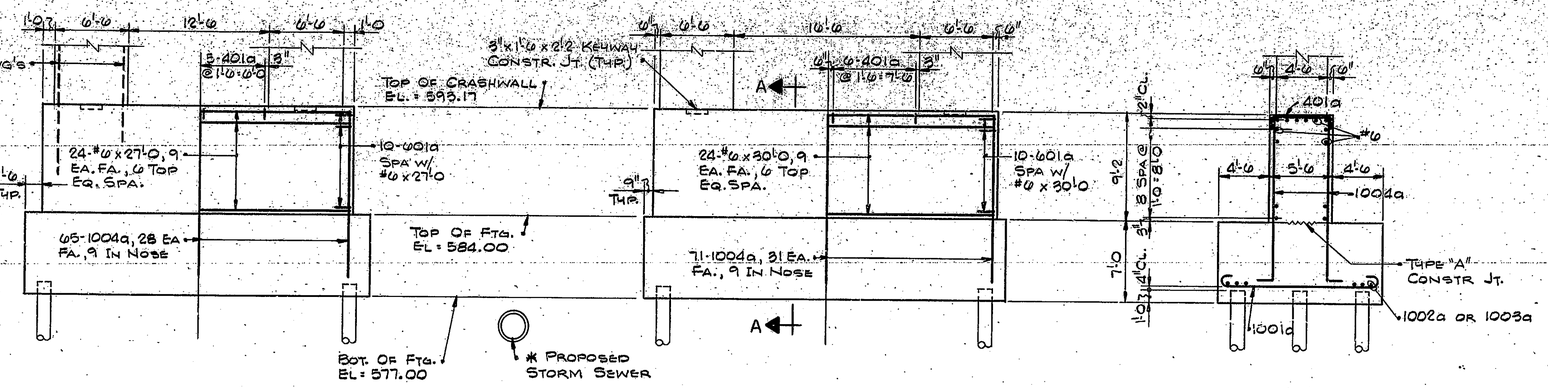
HAMAN D. PATEL REGISTERED No. 13050 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

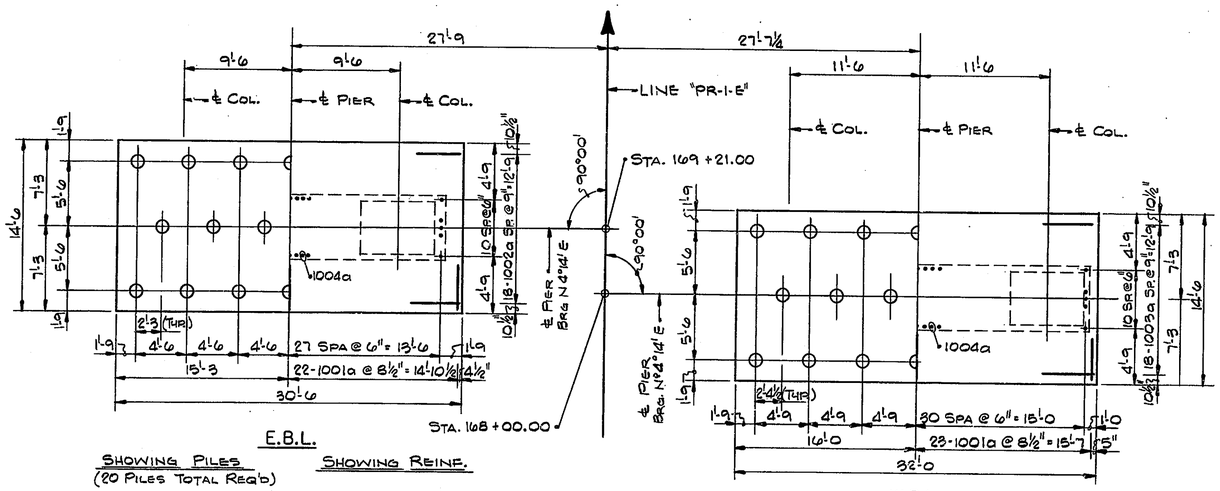
SHEET TITLE
PIER Nº 28 E.B.L. & W.B.L. FOOTING & CRASHWALL DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
223



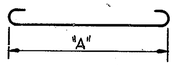
SECTION A A
Scale 3/16" = 1'-0



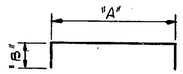
E.B.L.
Showing Piles (20 Piles Total Req'd)
Showing Reinf.

W.B.L.
Showing Piles (20 Piles Total Req'd)
Showing Reinf.

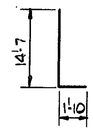
PIER Nº 27
Scale 3/16" = 1'-0



Mark	"A"	"L"
1001a	14'-0	16'-10
1002a	30'-0	32'-10
1003a	31'-6	34'-4



Mark	"A"	"B"	"L"
601a	4'-10	1'-11	8'-8
401c	5'-2	8"	6'-6



1004a X 16'-5

BILL OF MATERIALS

Reinforcing Steel			
Size & Mark	Nº of Bars	Length	Weight (Lbs.)
1001a	88	16'-10	
1002a	18	32'-10	
1003a	18	34'-4	
1004a	268	16'-5	
	Total #10		30,508
601a	40	8'-8	
#6	24	27'-0	
#6	24	30'-0	
	Total #6		2,575
401a	21	6'-6	
	Total #4		91
	Total Reinf.		33,174

Concrete (f'c = 4,000 psi)		Cys.
Ftg. Conc.	E.B.L.	114.7
	W.B.L.	120.3
Total Ftg. Conc.		235.0
Substr. Conc.		
(Crashwall)	E.B.L.	51.4
	W.B.L.	57.0
Total Substr. Conc.		108.4

Miscellaneous	Qty.
E.B.L.; 20 High Capac. Piles @ 75 Lft. Ea. Approx.	1500 Lft.
W.B.L.; 20 High Capac. Piles @ 79 Lft. Ea. Approx.	1580 Lft.

Notes:
For Type "A" Constr. Jt., See Br. Std. C3.
For Reinf. Bar Notes, See Br. Std. C1.
For Additional Notes & Details, See Sht. 201.
* Location of This Line Approximate Only. Contractor To Take Necessary Precautions During Foundation Excavation. Details Are Symm. About ℄ Pier.

N.	Revision	Date

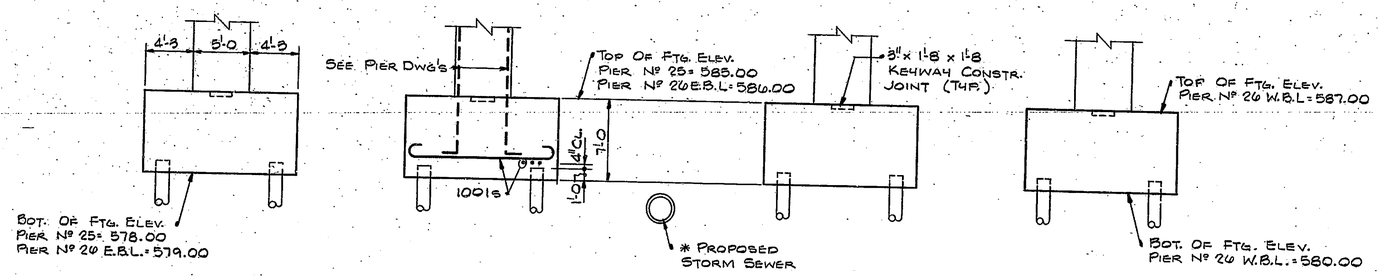
T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS
APRIL 24, 1980

HAMAN D. PATEL REGISTERED No. 13050 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PIER Nº 27 E.B.L. & W.B.L. FOOTING & CRASHWALL DETAILS
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11812
INDIANA STATE HIGHWAY COMMISSION

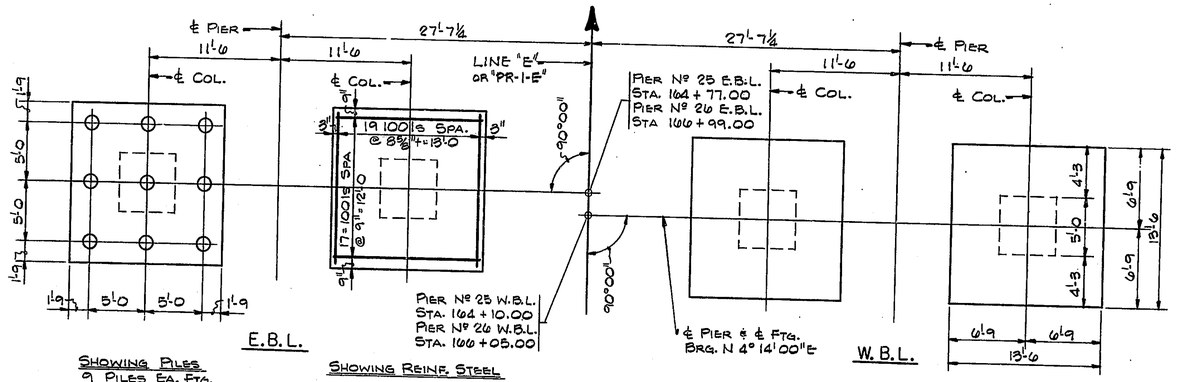
SHEET N.
222



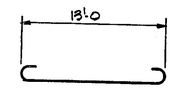
BILL OF MATERIALS

PIER Nº 25			
REINFORCING STEEL			
SIZE & MARK	Nº OF BARS	LENGTH	WEIGHT (LBS.)
1001s	144	15'-10	
	TOTAL #10		9811
CONCRETE (f'_c = 4000 PSI)			CYS.
FTG'S E.B.L. = 2 @ 47.3			94.6
FTG'S W.B.L. = 2 @ 47.3			94.6
TOTAL FTG. CONC.			189.2
MISCELLANEOUS			QTY.
PIER Nº 25 E.B.L. & W.B.L. 36 HIGH CAPACITY PILES @ 80' LFT. EA. (APPROX.)			2880 LFT
PIER Nº 26 E.B.L. 18 HIGH CAPACITY PILES @ 82' LFT. EA. (APPROX.)			1476 LFT
PIER Nº 26 W.B.L. 18 HIGH CAPACITY PILES @ 80' LFT. EA. (APPROX.)			1440 LFT
36 STEEL PIPE SLEEVES @ 60' LFT. EA. (APPROX.)			2160 LFT

NOTE:
PIER Nº 26 SAME UNLESS OTHERWISE NOTED.



PIER Nº 25 & 26
SCALE 3/16" = 1'-0



1001s X 15'-10

NOTES:
FOR REINF. BAR NOTES, SEE BR. STD. C1.
FOR ADDITIONAL NOTES AND DETAILS, SEE SHEET 201.
* LOCATION OF THIS LINE APPROXIMATE ONLY. CONTRACTOR TO TAKE NECESSARY PRECAUTIONS DURING FOUNDATION EXCAVATION.

N.	REVISION	DATE

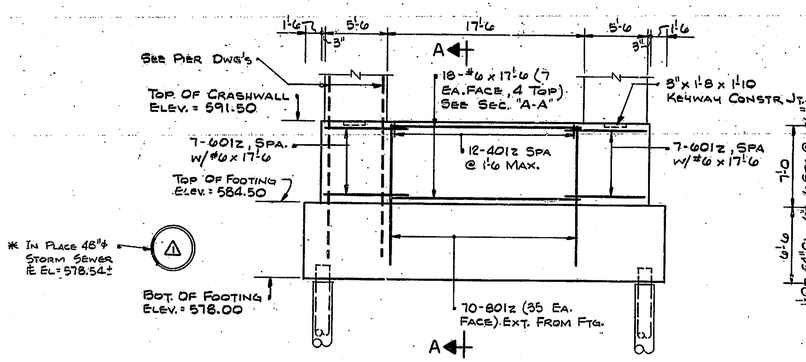
T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS
APRIL 24, 1980

RAMAN D. PATEL REGISTERED No. 13050 STATE OF INDIANA PROFESSIONAL ENGINEER

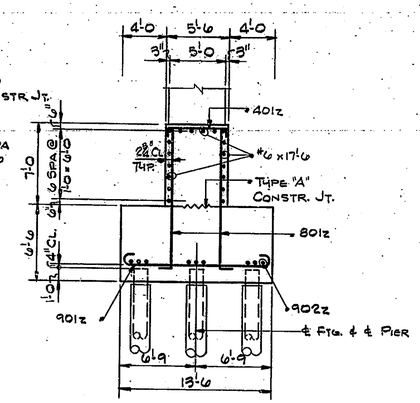
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PIER Nº 25 & 26 E.B.L. & W.B.L. FOOTING DETAILS
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

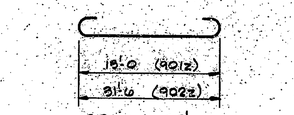
SHEET N.
221



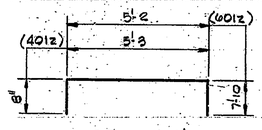
ELEVATION
Scale 3/16" = 1'-0



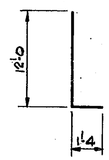
SECTION A-A
Scale 3/16" = 1'-0



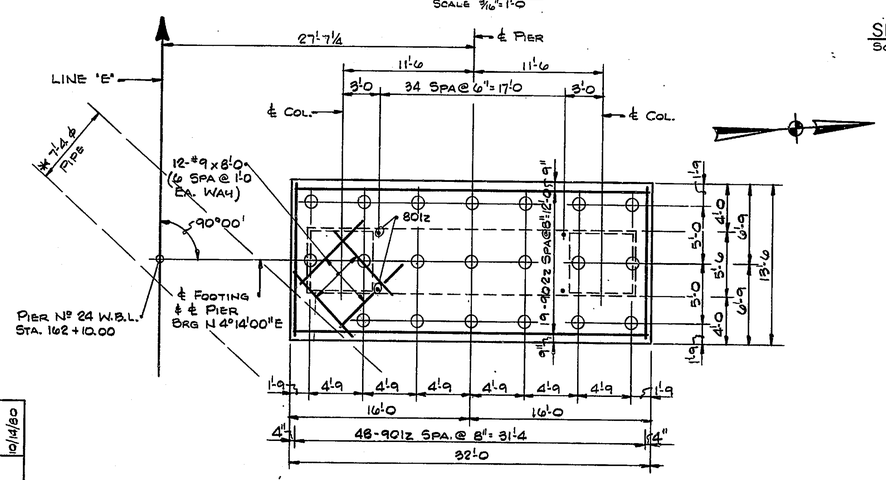
901z X 15'-6
902z X 34'-0



601z X 20'-10
401z X 6'-7



801z X 13'-4



PLAN
Scale 3/16" = 1'-0

20 Piles w/ Steel Pipe Sleeves Required

BILL OF MATERIALS

Reinforcing Steel			
Size & Mark	Nº of Bars	Length	Weight (Lbs.)
901z	48	15'-6	
902z	19	34'-0	
#9	12	8'-0	
	Total #9		5,052
801z	70	13'-4	
	Total #8		2,492
601z	14	20'-10	
#6	18	17'-6	
	Total #6		911
401z	12	6'-7	
	Total #4		53
	Total Reinf.		8508
Concrete (f'c = 4,000 psi)			Cys
Total Ftg. Conc.			104.0
Substructure Conc. (Crashwall)			41.4
Miscellaneous			Qty.
20-High Capacity Piles @ 79 Lft. Ea. (Approx.)			1580 Lft.
20-Steel Pipe Sleeves @ 60 Lft. Ea.			1200 Lft.

Notes:

For Reinf. Bar Notes, See Br. Std. C1.
For Additional Notes And Details, See Sheet Nº 201
For Type "A" Constr. Jt., See Br. Std. C3.
Steel Pipe Sleeves Shall Be Cored To 7'-4φ Pipe ℄ Elev. Min.
* Location Of This Line Is Approximate Only. Contractor To Take Necessary Precautions During Foundation Excavation.

N.	Revision	Date
1	Added 48"φ Storm Sewer	10/14/80

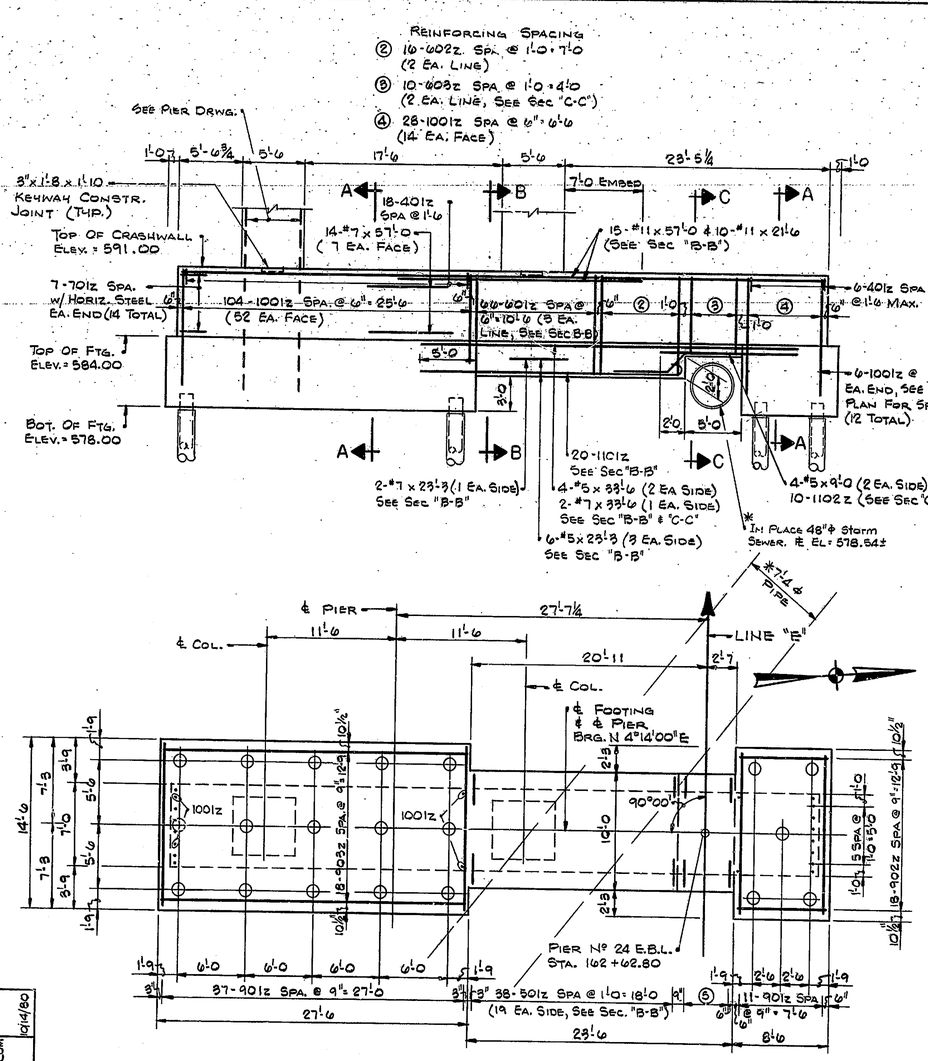
T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS
SEPT. 29, 1980

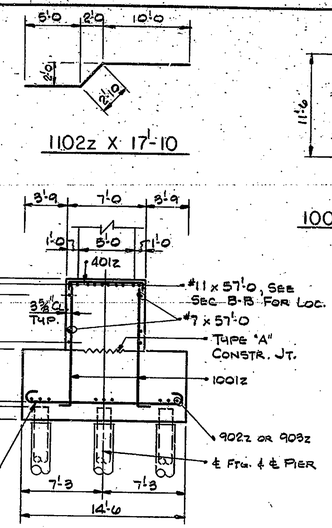
Ramon D. Peters
Registered No. 13050 State of Indiana Professional Engineer

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

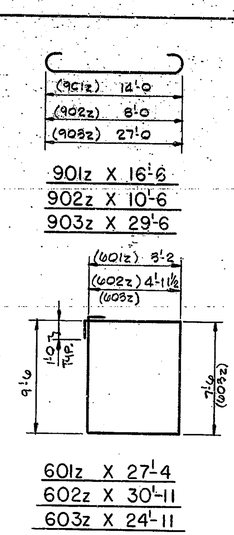
SHEET TITLE
PIER Nº 24 W.B.L. FOOTING DETAILS
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
220B





SECTION "A-A"
SCALE 3/16" = 1'-0

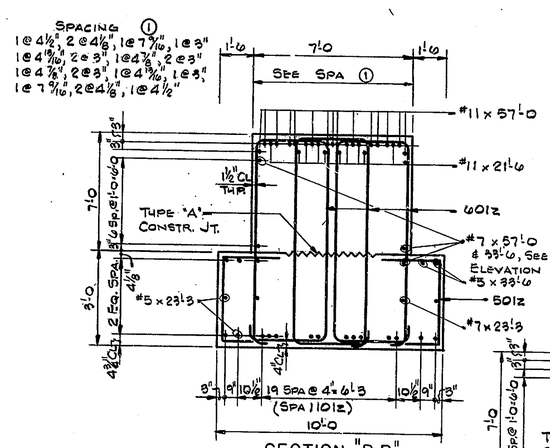


BILL OF MATERIALS

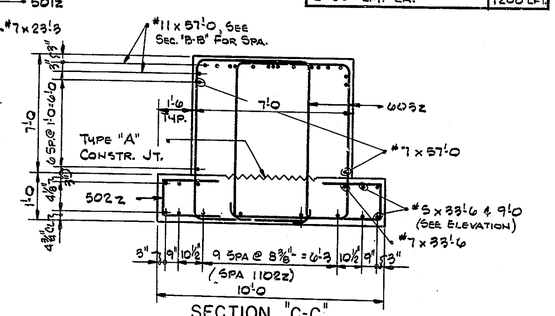
REINFORCING STEEL			
SIZE & MARK	Nº OF BARS	LENGTH	WEIGHT (LBS.)
1101z	20	24'-10	
1102z	10	17'-10	
#11	15	57'-0	
#11	10	21'-6	
	TOTAL #11		9,272
1001z	144	13'-4	
	TOTAL #10		8,262
901z	48	16'-6	
902z	18	10'-6	
903z	18	29'-6	
	TOTAL #9		5,141
701z	14	11'-0	
#7	14	57'-0	
#7	2	33'-6	
#7	2	23'-3	
	TOTAL #7		2,178
601z	66	27'-4	
602z	16	30'-11	
603z	10	24'-11	
	TOTAL #6		3,827
501z	38	8'-0	
502z	10	6'-1	
#5	4	33'-6	
#5	6	23'-3	
#5	4	9'-0	
	TOTAL #5		703
401z	24	8'-1	
	TOTAL #4		130
	TOTAL REINF		29,513
CONCRETE (f'_c = 4000 psi)			C.Y.S.
TOTAL FTG. CONC.			138.4
SUBSTRUCTURE CONC. (CRASHWALL)			104.4
MISCELLANEOUS			QTY.
20-HIGH CAPACITY PILES @ 79 LFT. EA. (APPROX.)			1580 LFT.
20-STEEL PIPE SLEEVES @ 60 LFT. EA.			1200 LFT.

MARK	"A"	"B"	"L"
401z	6'-9	8"	8'-1
501z	2'-6	2'-9	8'-0
701z	6'-8	2'-2	11'-0
502z	7"	2'-9	6'-1

PLAN
SCALE 3/16" = 1'-0



SECTION "B-B"
SCALE 3/8" = 1'-0



SECTION "C-C"
SCALE 3/8" = 1'-0

NOTES:

FOR REINF. BAR NOTES, SEE BR. STD. C1.
FOR ADDITIONAL NOTES AND DETAILS, SEE SHEET Nº 201.
FOR TYPE "A" CONSTR. JT., SEE BR. STD. C3.
STEEL PIPE SLEEVES SHALL BE CORED TO 7'-4 ϕ PIPE ℄ ELEV. MIN.
* LOCATION OF THIS LINE IS APPROXIMATE ONLY. CONTRACTOR TO TAKE NECESSARY PRECAUTIONS DURING FOUNDATION EXCAVATION.

N.	REVISION	DATE
△	REVISED TO ACCOM. MOVED 48"ϕ STORM SEWER	10/14/80

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS
SEPT. 29, 1980

WILLIAM H. HUSTED REGISTERED No. 13050 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PIER Nº 24 E.B.L. FOOTING DETAILS

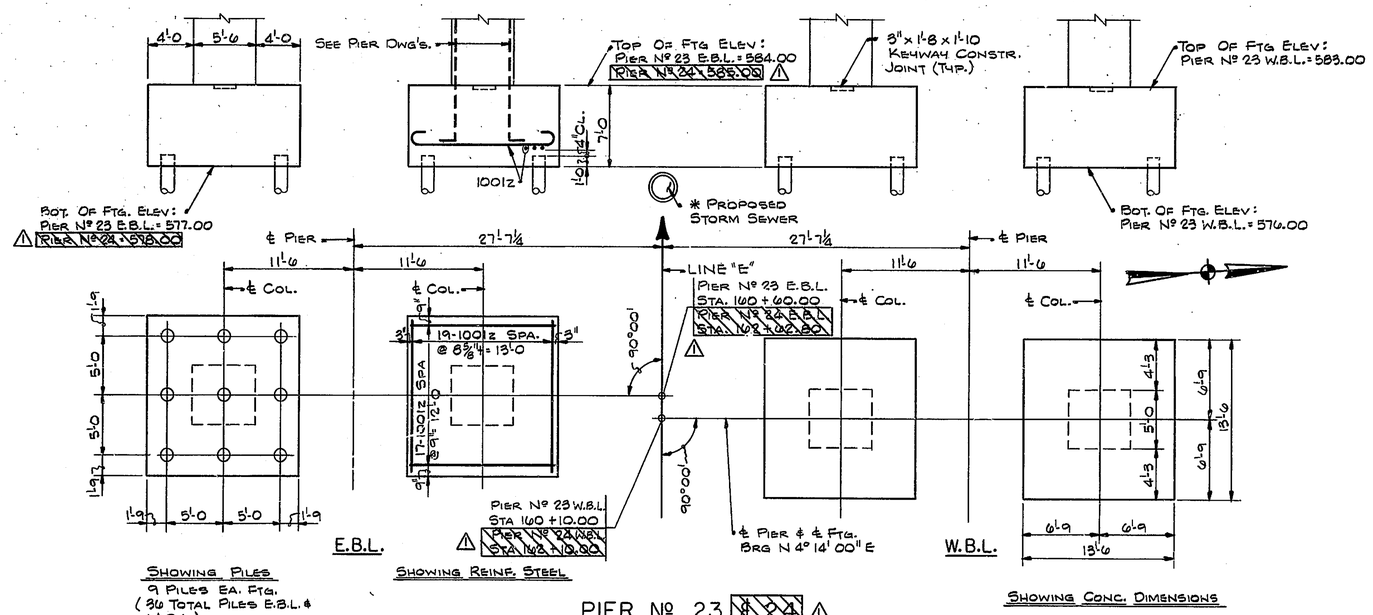
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 812-45-2546 CONTRACT NO. B-11512
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
220A

BILL OF MATERIALS

PIER Nº 23			
REINFORCING STEEL			
SIZE & MARK	Nº OF BARS	LENGTH	WEIGHT (LBS.)
1001z	144	15'-10	
	TOTAL REINF.		9811
CONCRETE (f'_c=4,000 PSI)			C45
FTG's. E.B.L. 2 @ 47.3			94.6
FTG's. W.B.L. 2 @ 47.3			94.6
TOTAL FTG. CONC			189.2
MISCELLANEOUS			QTY.
PIER Nº 23 E.B.L. 18 HIGH CAPACITY PILES x 78' LFT. EA. (APPROX.)			1404 LFT.
PIER Nº 23 W.B.L. 18 HIGH CAPACITY PILES x 77' LFT. EA. (APPROX.)			1386 LFT.
⚠ ~~PIER Nº 24 E.B.L. & W.B.L. 36 HIGH CAPACITY PILES x 79' LFT. EA. (APPROX.)~~			~~2844 LFT.~~
30 STEEL PIPE SLEEVES x 60 LFT. EA			2160 LFT.

⚠ ~~NOTE: PIER Nº 24 SAME UNLESS OTHERWISE NOTED.~~

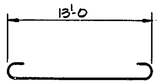


SHOWING PILES
9 PILES EA. FTG.
(36 TOTAL PILES E.B.L. & W.B.L.)

SHOWING REINF. STEEL

SHOWING CONC. DIMENSIONS

PIER Nº 23 ~~& 24~~ ⚠
SCALE 3/16" = 1'-0



1001z X 15'-10

NOTES:
FOR REINF. BAR NOTES, SEE BR. STD. C1.
FOR ADDITIONAL NOTES AND DETAILS, SEE SHEET 201.
* LOCATION OF THIS LINE APPROXIMATE ONLY. CONTRACTOR TO TAKE NECESSARY PRECAUTIONS DURING FOUNDATION EXCAVATION.

N.	REVISION	DATE
⚠	DELETED PIER Nº 24 E.B.L. & W.B.L.	9/10/85

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS
SEPT. 12, 1979

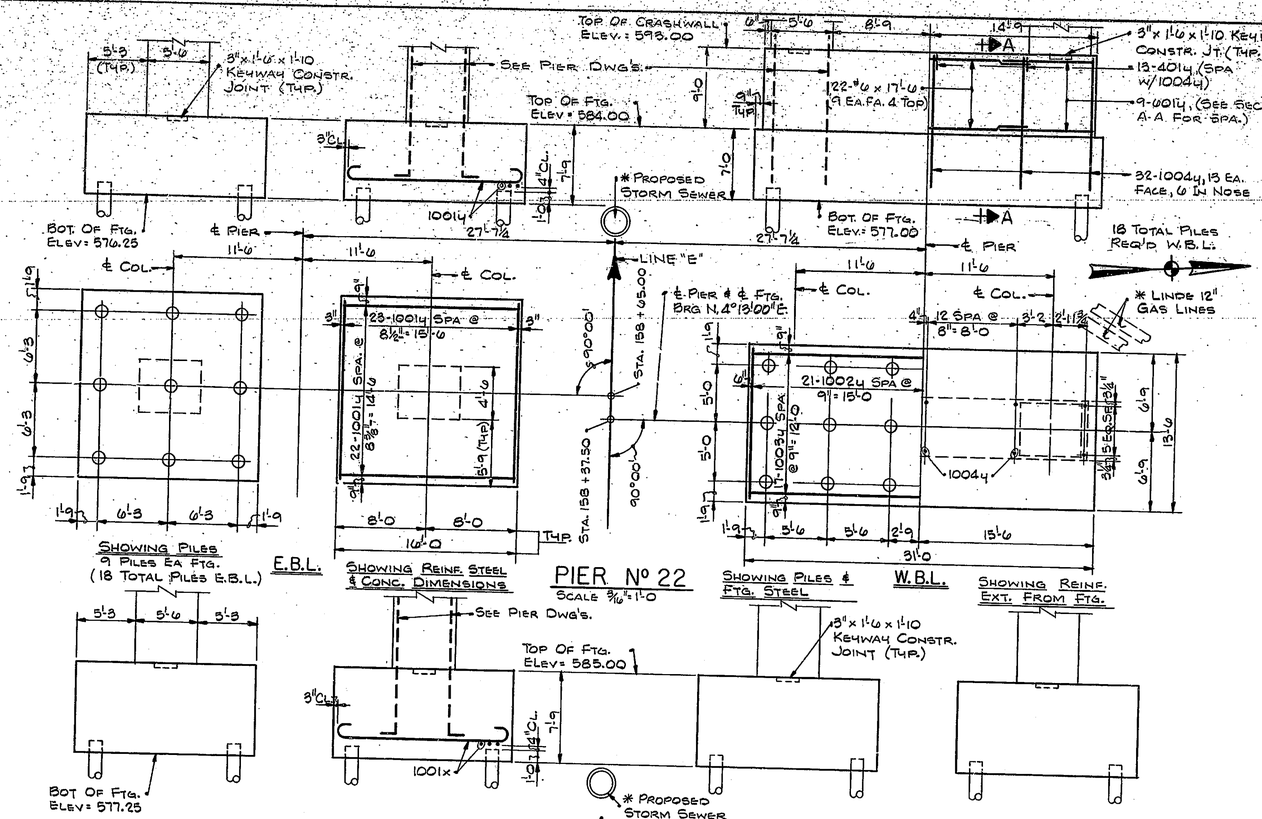
No. 13050 STATE OF INDIANA

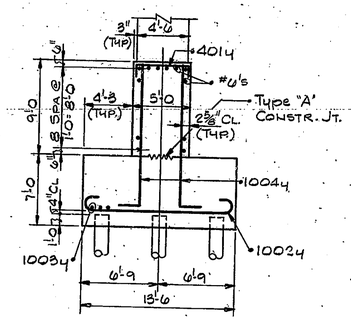
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

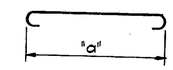
SHEET TITLE
PIER Nº 23 ~~& 24~~ ⚠ E.B.L. & W.B.L. FOOTING DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-46-2548 CONTRACT NO. B-11812 INDIANA STATE HIGHWAY COMMISSION

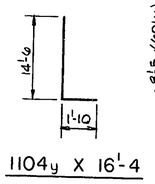
SHEET N.
220

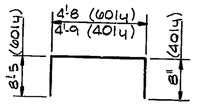






MARK	"a"	"L"
1001x	15'-6	18'-4
1001y	15'-6	18'-4
1002y	13'-0	15'-10
1003y	30'-6	33'-4





601y X 21'-6
401y X 6'-1

BILL OF MATERIALS

PIER Nº 21 REINFORCING STEEL			
SIZE & MARK	Nº OF BARS	LENGTH	WEIGHT (LBS.)
1001x	180	18'-4	
	TOTAL REINF		14,200
CONCRETE (f'_c=4,000 PSI)			CYS.
FTG'S E.B.L. 2 @ 73.5			147.0
FTG'S W.B.L. 2 @ 73.5			147.0
TOTAL FTG. CONC			294.0
MISCELLANEOUS			QTY.
E.B.L.; 18 HIGH CAPACITY PILES @ 79' LFT. EA. (APPROX.)			1422 LFT.
W.B.L.; 18 HIGH CAPACITY PILES @ 80' LFT. EA. (APPROX.)			1440 LFT.

PIER Nº 22 REINFORCING STEEL			
SIZE & MARK	Nº OF BARS	LENGTH	WEIGHT (LBS.)
1001y	90	18'-4	
1002y	41	15'-10	
1003y	17	33'-4	
1004y	64	16'-4	
	TOTAL #10		10,830
601y	18	21'-6	
#6	22	17'-6	
	TOTAL #6		1,160
401y	26	6'-1	
	TOTAL #4		106
	TOTAL REINF.		18,096
CONCRETE (f'_c=4000 PSI)			CYS.
FTG'S E.B.L. 2 @ 73.5			147.0
FTG W.B.L.			108.5
TOTAL FTG. CONC			255.5
SUBSTRUCTURE CONC. (CRASHWALL) W.B.L.			49.2
MISCELLANEOUS			QTY.
36-HIGH CAPACITY PILES @ 78' LFT. EA. (APPROX.)			2808 LFT.
18 STEEL PIPE SLEEVES @ 60' LFT EA. (E.B.L.)			1080 LFT.

NOTES:

FOR REINF. BAR NOTES, SEE BR. STD. C1.
FOR TYPE "A" CONSTR. JT., SEE BR. STD. C3.
FOR ADDITIONAL NOTES AND DETAILS, SEE SHEET 201.
* LOCATION OF THIS LINE APPROXIMATE ONLY. CONTRACTOR TO TAKE NECESSARY PRECAUTIONS DURING FOUNDATION EXCAVATION.

N. | REVISION | DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

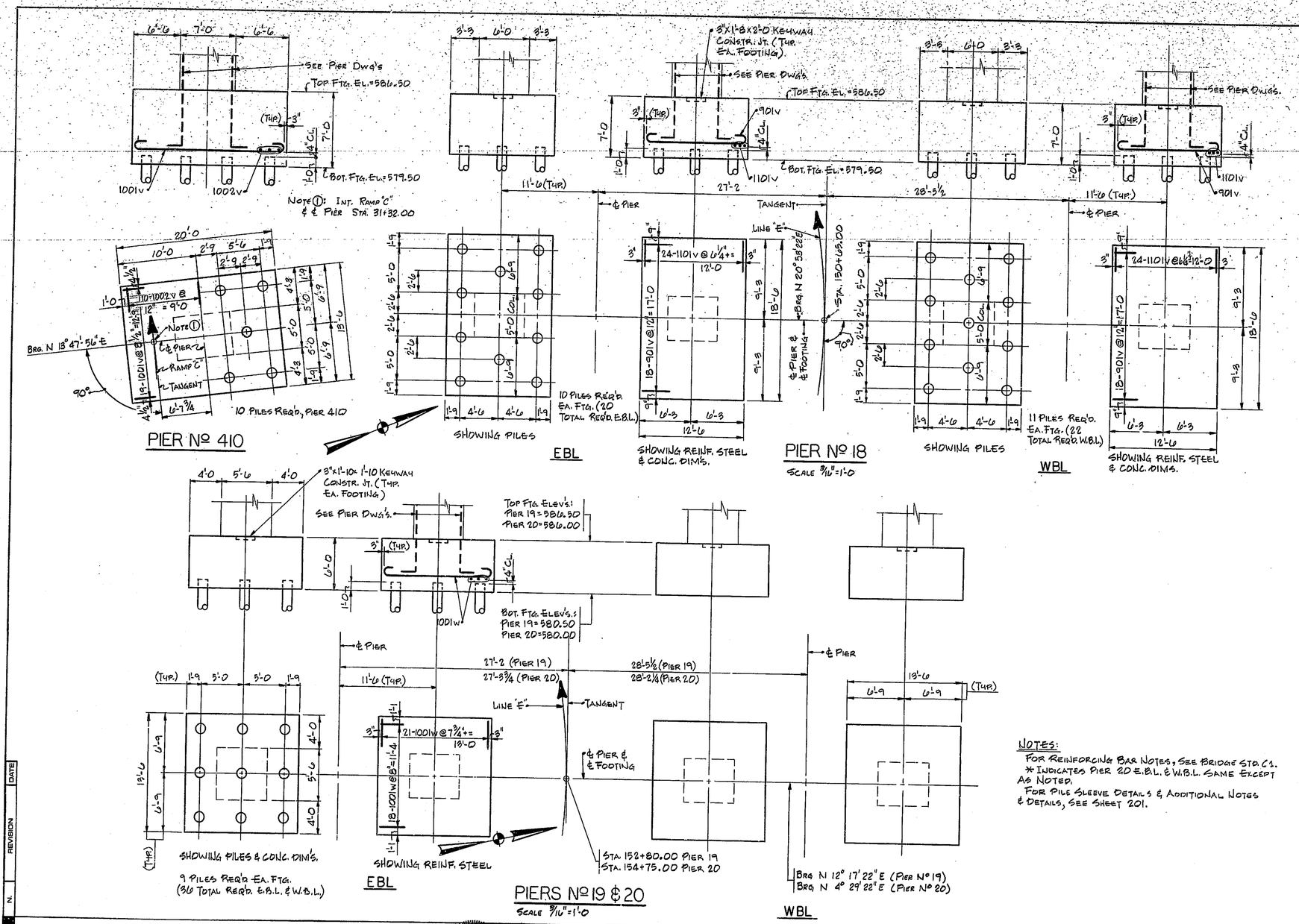
SEPT. 12, 1979

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PIER Nº 21 & 22 E.B.L. & W.B.L. FOOTING DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 9-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N. 219



MARK	"A"	LENGTH
901V	12'-0	14'-6
1001V	19'-6	22'-4
1002V	13'-0	15'-10
1101V	18'-0	21'-2
1001W	18'-0	15'-10

PIER Nº 410

REINFORCING STEEL

SIZE & MARK	Nº OF BARS	LENGTH	WEIGHT (LBS.)
1001V	19	22'-4	
1002V	19	15'-10	
TOTAL #10 & TOTAL REINF.			3120
CONCRETE (f'c=4000 PSI)			CYS.
FOOTING			70.0 CYS.
MISCELLANEOUS			QTY.
10-HIGH CAPACITY PILES X 80 L/FT. EA. (APPROX.) =			800 L/FT.

PIER Nº 18 E.B.L. & W.B.L.

REINFORCING STEEL

SIZE & MARK	Nº OF BARS	LENGTH	WEIGHT (LBS)
901V	72	14'-6	3550
1101V	96	21'-2	10796
	TOTAL REINF.		14346
CONCRETE (f'c=4000 PSI)			CYS
4 FTGS. @ 60.0 CYS. EA. =			240.0
MISCELLANEOUS			QTY.
42-HIGH CAPACITY PILES X 80 L/FT. EA. (APPROX.) =			3360 L/FT.

*PIER Nº 19 E.B.L. & W.B.L.

REINFORCING STEEL

SIZE & MARK	Nº OF BARS	LENGTH	WEIGHT (LBS.)
1101W	156	15'-10	
TOTAL #10 & TOTAL REINF.			10628
CONCRETE (f'c=4000 PSI)			CYS.
4 FTGS. @ 40.5 CYS. EA. =			162.0
MISCELLANEOUS			QTY.
PIER 19 EBL & WBL: 36 HIGH CAPACITY PILES X 81 L/FT. EA. (APPROX) =			2916 L/FT.
PIER 19 W.B.L. ONLY: 18 STEEL PIPE SLEEVES X 60' =			1080 L/FT.
PIER 20 E.B.L. & W.B.L. 36 HIGH CAPACITY PILES X 80 L/FT. EA. (APPROX.)			2880 L/FT.
PIER 20 W.B.L. ONLY: 18 STEEL PIPE SLEEVES X 60' =			1080 L/FT.

NOTES:

FOR REINFORCING BAR NOTES, SEE BRIDGE STD. C1.

* INDICATES PIER 20 E.B.L. & W.B.L. SAME EXCEPT AS NOTED.

FOR PILE SLEEVE DETAILS & ADDITIONAL NOTES & DETAILS, SEE SHEET 201.

REVISION | DATE | N.

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

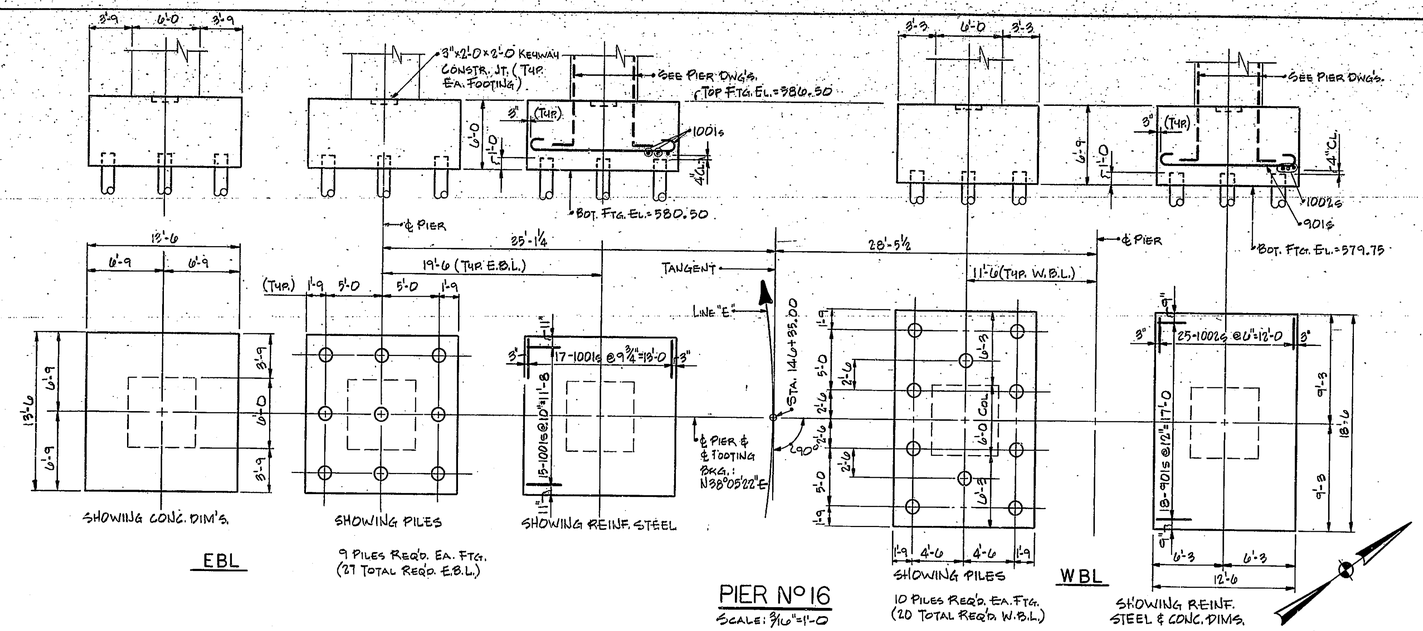
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS
SEPT. 12, 1979

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PIERS Nº 18, 19, & 20 EBL & WBL & 410 FOOTING DETAILS

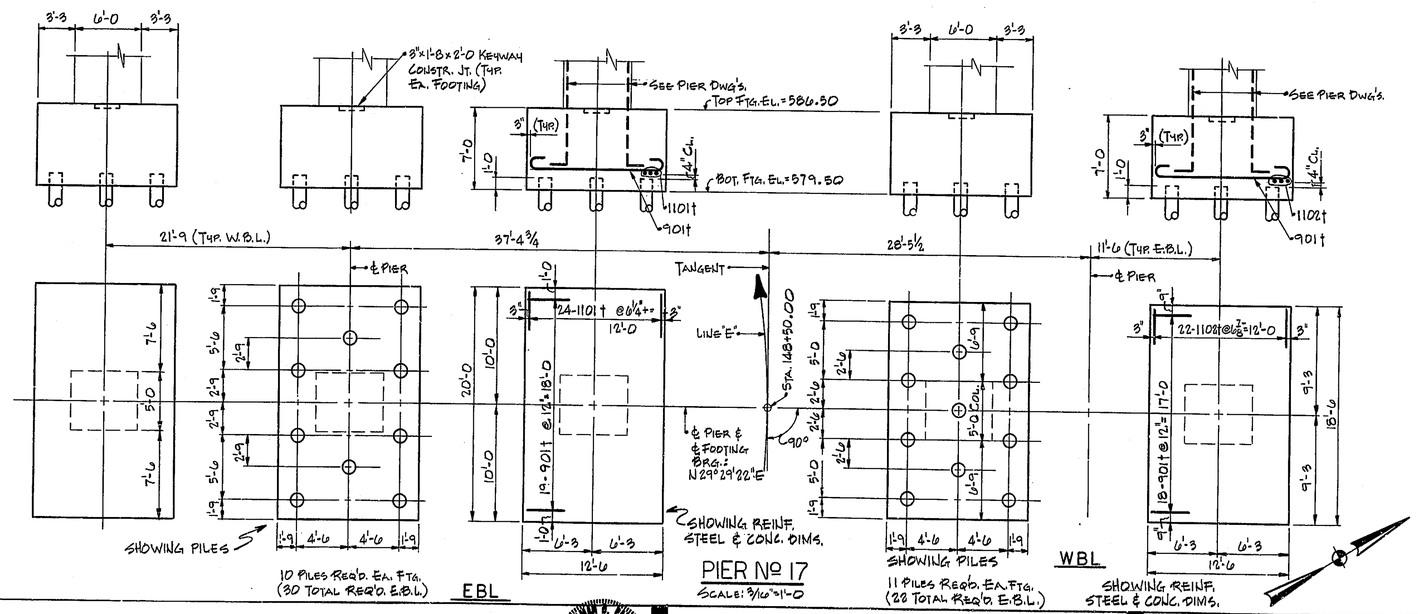
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
218



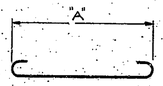
PIER Nº 16

SCALE: 3/16"=1'-0



PIER Nº 17

SCALE: 3/16"=1'-0



MARK	"A"	LENGTH
901S	12'-0	14'-6
1001S	13'-0	15'-10
1002S	18'-0	20'-10
901F	12'-0	14'-6
1101F	19'-6	22'-8
1102F	18'-0	21'-2

BILLS OF MATERIALS

PIER Nº 16 E.B.L. & W.B.L.			
REINFORCING STEEL			
SIZE & MARK	Nº OF BARS	LENGTH	WEIGHT (LBS.)
901S	316	14'-6	
	TOTAL #9		4,775
1001S	96	15'-10	
1002S	50	20'-10	
	TOTAL #10		11,023
	TOTAL REINF.		12,798
CONCRETE (f'c=4000 P.S.I.)			C.Y.S.
FOOTINGS E.B.L., 3 @ 40.3 EA.=			121.3
FOOTINGS W.B.L., 2 @ 57.8 EA.=			115.6
TOTAL			237.1
MISCELLANEOUS			QTY.
27-HIGH CAPACITY PILES X 81 L/FT. EA. (APPROX) =			3807 L/FT.

PIER Nº 17 E.B.L. & W.B.L.			
REINFORCING STEEL			
SIZE & MARK	Nº OF BARS	LENGTH	WEIGHT (LBS.)
901F	93	14'-6	
	TOTAL #9		4,585
1101F	72	22'-8	
1102F	44	21'-2	
	TOTAL #11		13,619
	TOTAL REINF.		18,204
CONCRETE (f'c=4000 P.S.I.)			C.Y.S.
FOOTINGS E.B.L., 3 @ 64.8 EA.=			194.4
FOOTINGS W.B.L., 2 @ 60.0 EA.=			120.0
TOTAL =			314.4
MISCELLANEOUS			QTY.
52-HIGH CAPACITY PILES X 81 L/FT. EA. (APPROX.) =			4212 L/FT.

NOTES:

FOR REINFORCING BAR NOTES, SEE BRIDGE STD. C3.
FOR ADDITIONAL DETAILS, SEE SHEET 201.

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

SEPT. 12, 1979

REGISTERED No. 13050 STATE OF INDIANA

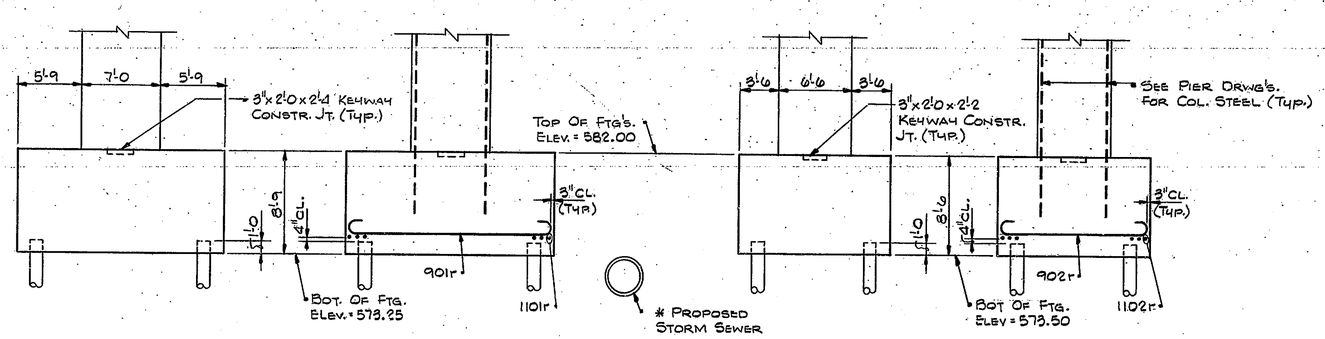
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PIERS Nº 16 & 17 EBL & WBL FOOTING DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 812-45-2546 CONTRACT NO. B-11812 INDIANA STATE HIGHWAY COMMISSION

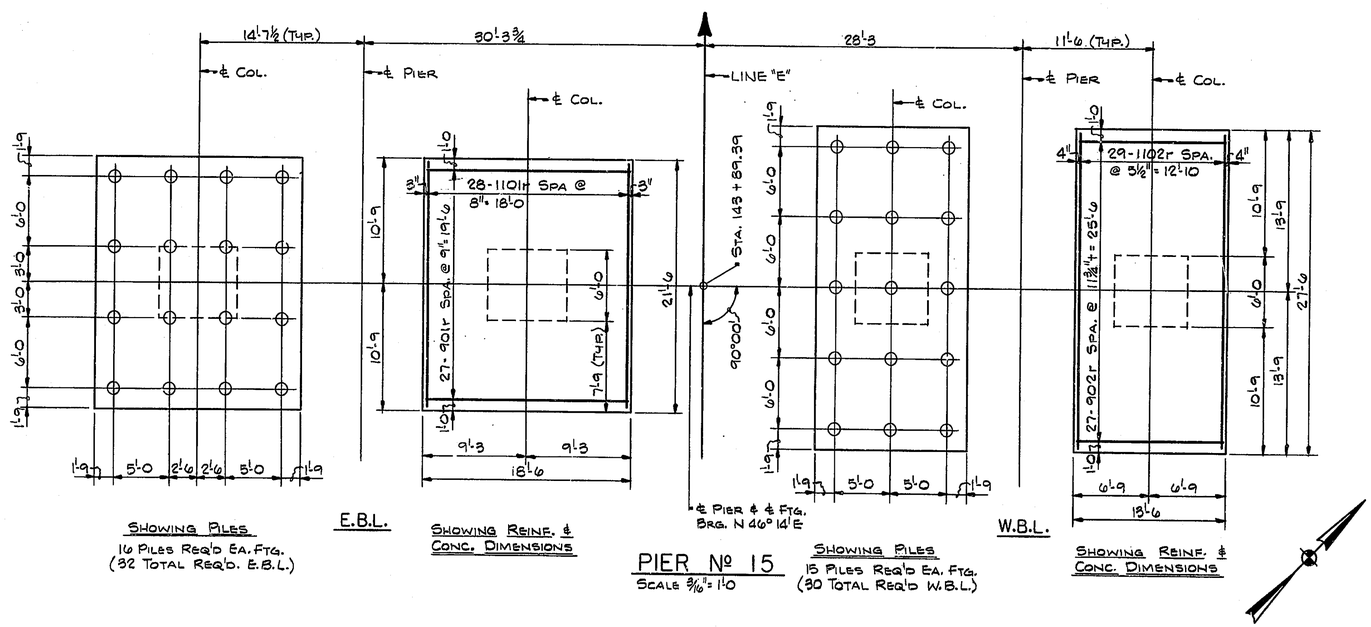
SHEET N.
217

4:30 - 6:30
7:25 - 12:00 G.H.R.



BILL OF MATERIALS

REINFORCING STEEL			
Size & Mark	Nº Of Bars	Length	Weight (Lbs)
1101r	56	24'-2	
1102r	58	30'-2	
	Total #11		16,486
901r	54	20'-6	
902r	54	15'-6	
	Total #9		6610
	Total Reinf.		23,096
Concrete (f'_c=4000psi)			Cys
Ftg's E.B.L. 2 @ 128.9 Ea.			257.8
Ftg's W.B.L. 2 @ 116.9 Ea.			233.8
	Total		491.6
Miscellaneous			Qty.
62-High Capacity Piles @ 75'-0 Lft. Ea. (Approx.)			4650 Lft



Showing Piles
16 Piles Req'd Ea. Ftg.
(32 Total Req'd. E.B.L.)

E.B.L.

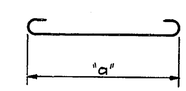
Showing Reinf. & Conc. Dimensions

Showing Piles
15 Piles Req'd Ea. Ftg.
(30 Total Req'd W.B.L.)

W.B.L.

Showing Reinf. & Conc. Dimensions

PIER Nº 15
Scale 3/16" = 1'-0



Mark	"a"	"L"
1101r	21'-0	24'-2
1102r	27'-0	30'-2
901r	18'-0	20'-6
902r	13'-0	15'-6

Notes:
For Reinforcing Bar Notes, See Br. Std. C1.
For Additional Notes And Details, See Sht. 201.
* Location Of This Line Approximate Only.
Contractor To Take Necessary Precautions During Foundation Excavation.

N. | REVISION | DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

Raman D. Patel
APRIL 24, 1980

RAMAN D. PATEL REGISTERED No. 13050 STATE OF INDIANA PROFESSIONAL ENGINEER

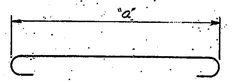
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PIER Nº 15 E.B.L. & W.B.L. FOOTING DETAILS

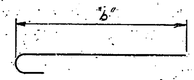
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
216

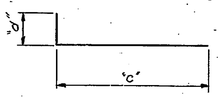
BILLS OF MATERIALS



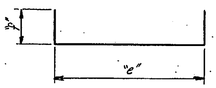
MARK	"a"	LENGTH
1101n	28'-0	31'-2
901n	38'-0	40'-6
602n	32'-8	34'-0
501n	8'-9	9'-11
1101p	28'-0	31'-2
1102p	36'-0	39'-2
603p	33'-2	34'-6
501p	8'-9	9'-11



MARK	"b"	LENGTH
902n	31'-3	32'-6
603n	28'-0	28'-8
1001p	37'-5	38'-10
604p	34'-2	34'-10



MARK	"c"	"d"	LENGTH
1102n	15'-5	2'-0	17'-5
601n	4'-3	1'-0	5'-3
1103p	15'-10	2'-0	17'-10
1104p	15'-1	2'-0	17'-1
601p	4'-3	1'-0	5'-3



MARK	"e"	"f"	LENGTH
502n	8'-9	10"	10'-5
502p	8'-9	10"	10'-5

PIER Nº 13 EBL

REINFORCING STEEL			
SIZE & MARK	Nº OF BARS	LENGTH	WEIGHT (LBS.)
1101n	77	31'-2	
1102n	164	17'-5	
#11	164	34'-9	
	TOTAL #11		58,205
901n	54	40'-6	
	TOTAL #9		7,486
601n	32	5'-3	
602n	72	34'-0	
#6	32	34'-9	
#6	9	32'-9	
	TOTAL #6		6,082
501n	576	9'-11	
502n	72	10'-5	
	TOTAL #5		6,740
#4	28	38'-0	
#4	39	28'-0	
	TOTAL #4		1,440
TOTAL REINFORCING			79,863
CONCRETE (f'c=4,000 P.S.I.)			
POUR Nº 1			192.5 C.Y.S.
POUR Nº 2			192.5 C.Y.S.
TOTAL SUBSTR. CONC.			385.0 C.Y.S
FTG. CONC.			325.1 C.Y.S
MISCELLANEOUS			
44 HIGH CAPACITY PILES @ 78 L/FT LONG EA. (APPROX.)			3432 L.F.
FOUND. SEAL CONC.			193.7 C.Y.S

PIER Nº 13 WBL

REINFORCING STEEL			
SIZE & MARK	Nº OF BARS	LENGTH	WEIGHT (LBS.)
1101n	116	31'-2	
1102n	246	17'-5	
#11	246	35'-8	
	TOTAL #11		87,878
902n	108	32'-6	
	TOTAL #9		11,934
601n	52	5'-3	
603n	144	28'-8	
#6	52	35'-8	
#6	18	28'-0	
	TOTAL #6		10,120
501n	936	9'-11	
502n	72	10'-5	
	TOTAL #5		10,463
#4	56	30'-0	
#4	58	28'-0	
	TOTAL #4		2,207
TOTAL REINFORCING			122,603
CONCRETE (f'c=4,000 P.S.I.)			
POUR Nº 1 2@120.0			240.0 C.Y.S
POUR Nº 2			51.0 C.Y.S
POUR Nº 3 2@116.66			233.3 C.Y.S
POUR Nº 4			78.8 C.Y.S
TOTAL SUBSTR. CONC.			633.1 C.Y.S
FTG. CONC.			455.2 C.Y.S
MISCELLANEOUS			
60 HIGH CAPACITY PILES @ 78 L/FT LONG EA. (APPROX.)			4,680 L.F.
FOUND. SEAL CONC.			282.3 C.Y.S

PIER Nº 14 EBL

REINFORCING STEEL			
SIZE & MARK	Nº OF BARS	LENGTH	WEIGHT (LBS.)
1101p	87	31'-2	
1102p	37	39'-2	
1103p	166	17'-10	
#11	166	34'-0	
	TOTAL #11		67,820
601p	82	5'-3	
602p	70	34'-6	
#6	32	34'-0	
#6	9	33'-0	
	TOTAL #6		5,960
501p	560	9'-11	
502p	70	10'-5	
	TOTAL #5		6,553
#4	28	36'-0	
#4	37	28'-0	
	TOTAL #4		1,365
TOTAL REINFORCING			81,698
CONCRETE (f'c=4,000 P.S.I.)			
POUR Nº 1			187.0 C.Y.S
POUR Nº 2			195.4 C.Y.S
TOTAL SUBSTR. CONC.			382.4 C.Y.S
FTG. CONC.			337.1 C.Y.S
MISCELLANEOUS			
40 HIGH CAPACITY PILES @ 78 L/FT LONG EA. (APPROX.)			3120 L.F.
FOUND. SEAL CONC.			184.3 C.Y.S

PIER Nº 14 WBL – 207

REINFORCING STEEL			
SIZE & MARK	Nº OF BARS	LENGTH	WEIGHT (LBS.)
1101p	187	31'-2	
1104p	296	17'-1	
#11	294	34'-9	
	TOTAL #11		104,201
1001p	82	38'-10	
	TOTAL #10		15,702
601p	64	5'-3	
603p	140	33'-10	
#6	64	34'-9	
#6	18	33'-8	
	TOTAL #6		12,096
501p	1120	9'-11	
502p	70	10'-5	
	TOTAL #5		12,845
#4	56	35'-0	
#4	69	28'-0	
	TOTAL #4		2,600
TOTAL REINFORCING			144,944
CONCRETE (f'c=4,000 P.S.I.)			
POUR Nº 1 2@151.7			303.4 C.Y.S
POUR Nº 2			81.7 C.Y.S
POUR Nº 3 2@151.7			303.4 C.Y.S
POUR Nº 4			81.7 C.Y.S
TOTAL SUBSTR. CONC.			770.2 C.Y.S
FTG. CONC.			578.4 C.Y.S
MISCELLANEOUS			
62 HIGH CAPACITY PILES @ 78 L/FT LONG EA. (APPROX.)			4836 L.F.
FOUND. SEAL CONC.			333.7 C.Y.S

Note:
FOR REINF. BAR NOTES, SEE BR. STD. C1.
FOR ADDITIONAL NOTES & DETAILS, SEE SHT. 201.

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

APRIL 24, 1980

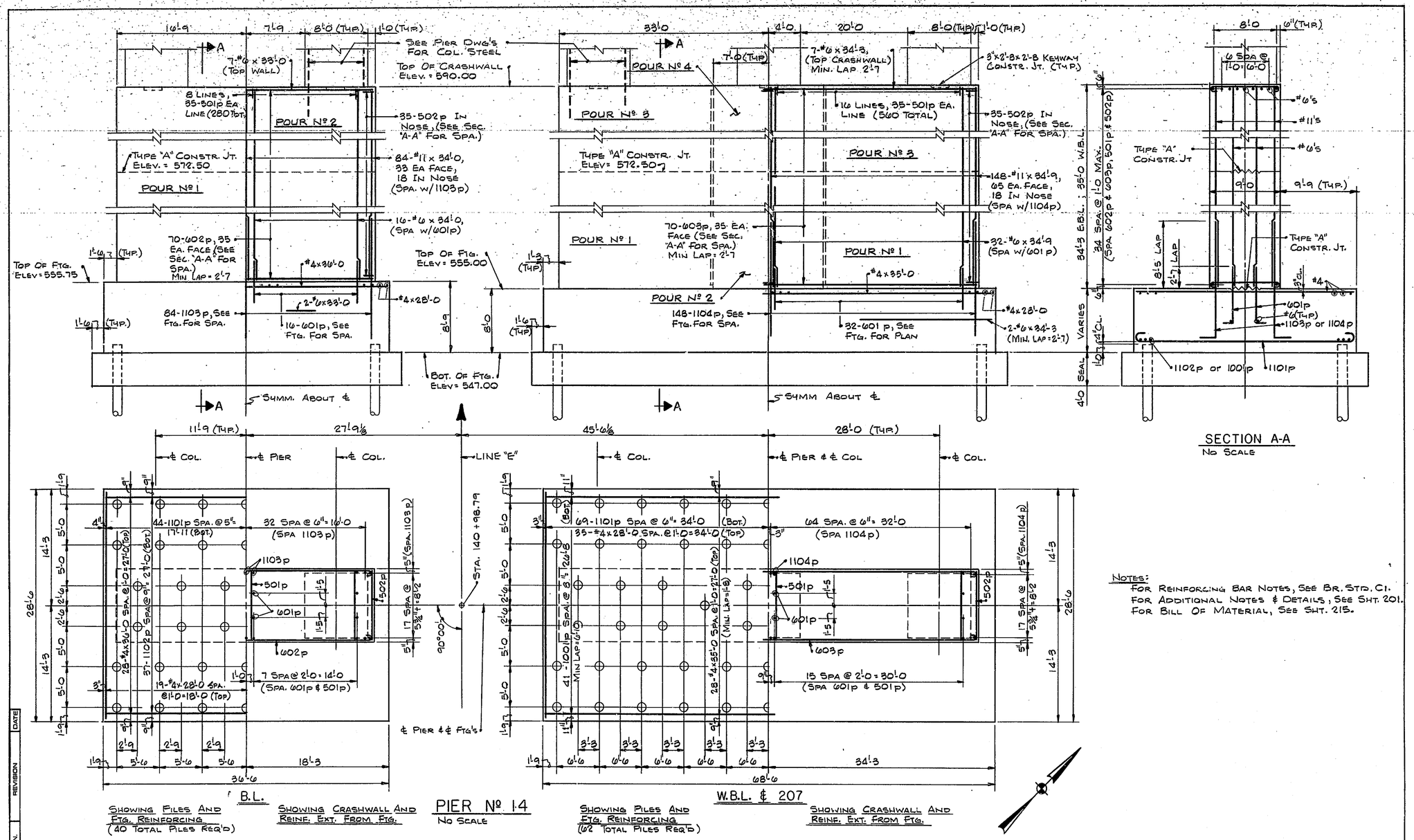
NORMAN D. PAVEY REGISTERED No. 13050 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PIERS Nº 13 & 14 E.B.L. & W.B.L. & PIER Nº 207 FOOTING DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 8-11812 INDIANA STATE HIGHWAY COMMISSION

SHEET N.
215



NOTES:
FOR REINFORCING BAR NOTES, SEE BR. STD. C1.
FOR ADDITIONAL NOTES & DETAILS, SEE SHT. 201.
FOR BILL OF MATERIAL, SEE SHT. 215.

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

APRIL 24, 1980

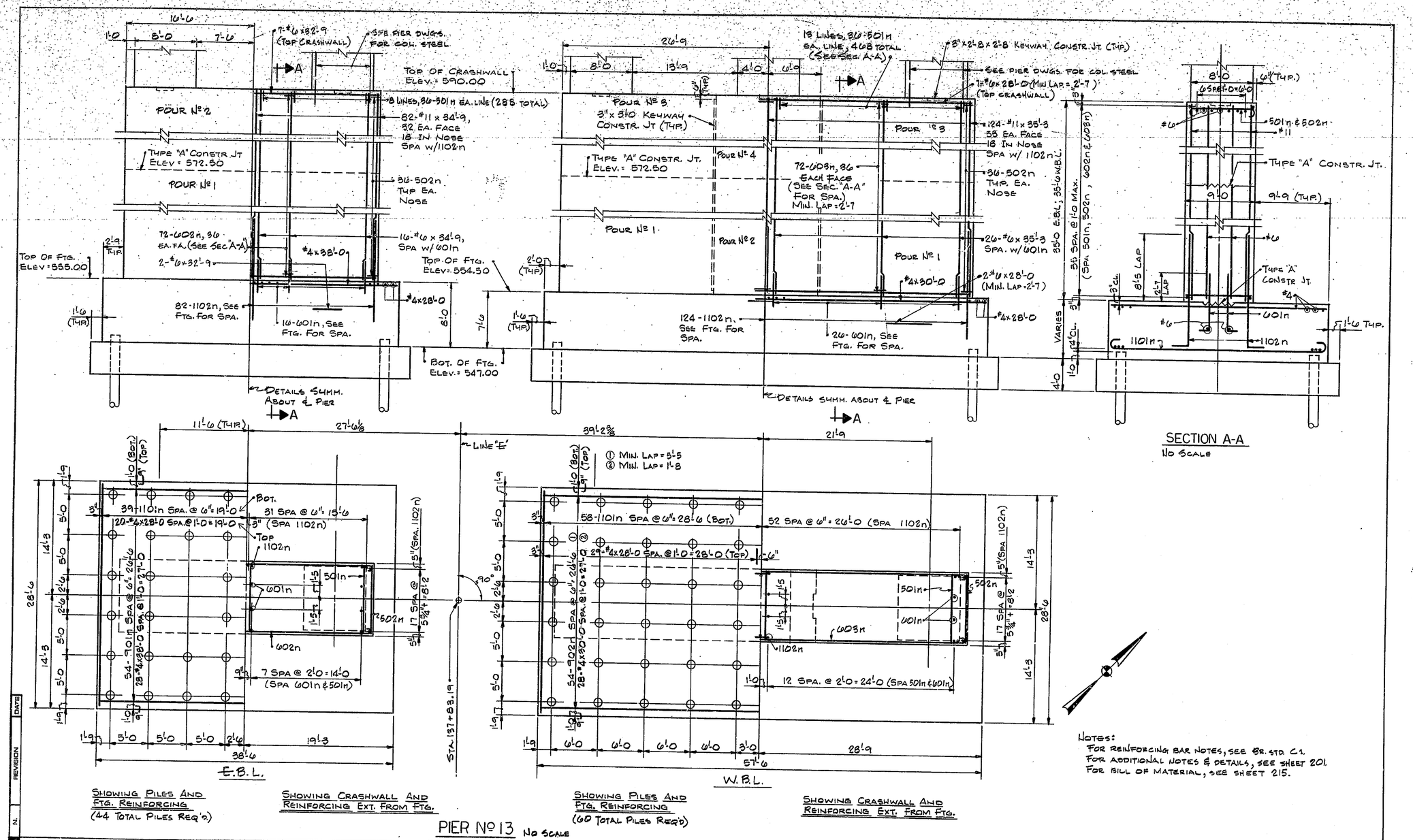
WILLIAM D. PAVIN REGISTERED No. 13050 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PIER Nº14 E.B.L. & W.B.L. & PIER Nº207 FOOTING DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
214



PIER Nº 13 NO SCALE

NOTES:
FOR REINFORCING BAR NOTES, SEE BR. STD. C1.
FOR ADDITIONAL NOTES & DETAILS, SEE SHEET 201.
FOR BILL OF MATERIAL, SEE SHEET 215.

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

APRIL 24, 1980

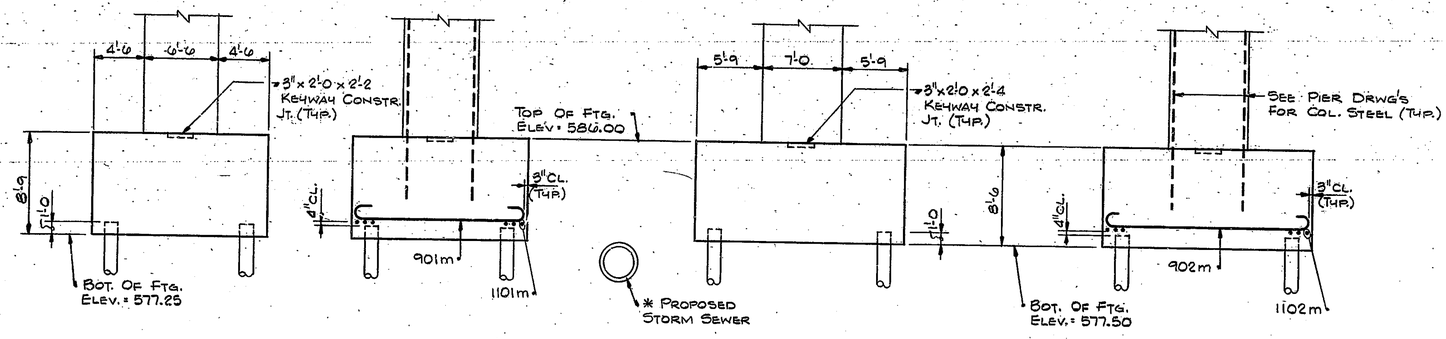
YAMAN B. PAYEL REGISTERED No. 13050 STATE OF INDIANA PROFESSIONAL ENGINEER

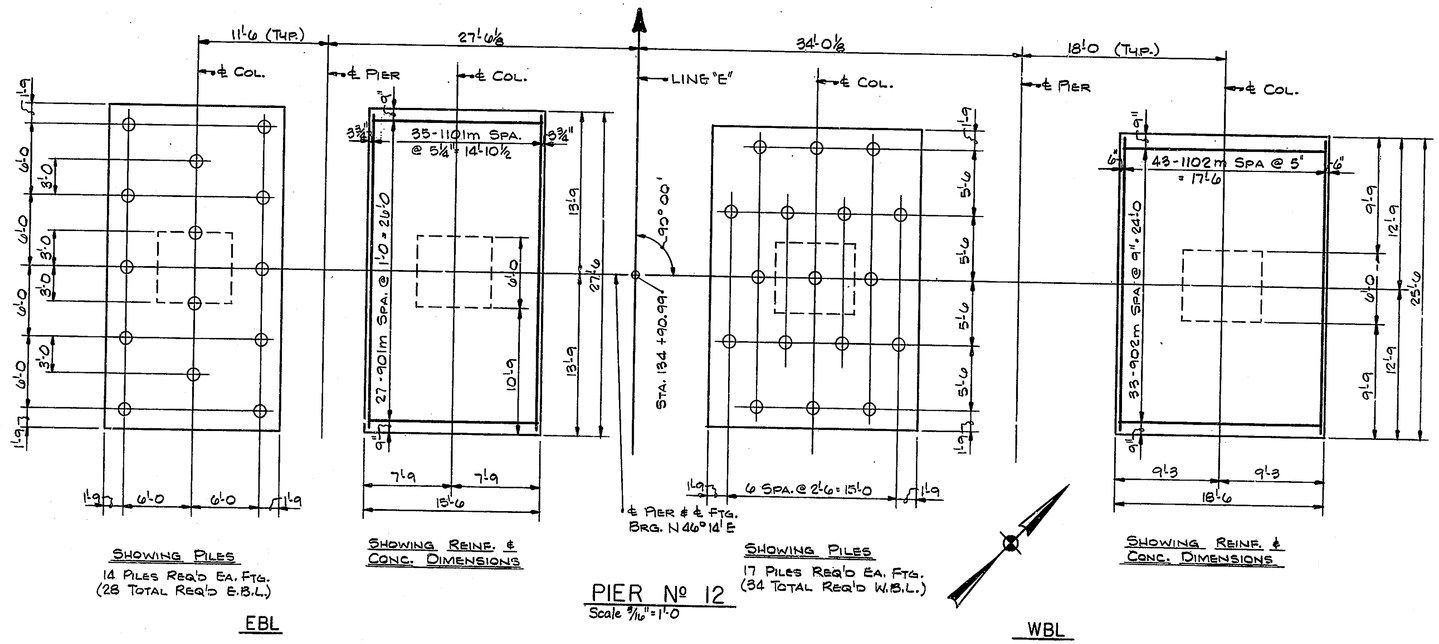
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PIER Nº 13 E.B.L. & W.B.L. FOOTING DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
213





SHOWING PILES
14 PILES REQ'D EA. FTG.
(28 TOTAL REQ'D E.B.L.)

SHOWING REINF. & CONC. DIMENSIONS

SHOWING PILES
17 PILES REQ'D EA. FTG.
(34 TOTAL REQ'D W.B.L.)

SHOWING REINF. & CONC. DIMENSIONS

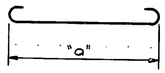
EBL

PIER Nº 12
Scale 3/16" = 1'-0

WBL

BILL OF MATERIALS

REINFORCING STEEL			
SIZE & MARK	Nº OF BARS	LENGTH	WEIGHT (LBS)
1101m	70	30'-2	
1102m	86	28'-2	
	TOTAL #11		24,090
901m	54	17'-6	
902m	66	20'-6	
	TOTAL #9		7,813
	TOTAL REINF.		31,903
CONCRETE (f'_c = 4000 PSI)			CYS.
FTG'S E.B.L. 2 @ 138.1 EA			276.2
FTG'S W.B.L. 2 @ 148.5 EA			297.0
TOTAL			573.2
MISCELLANEOUS			QTY.
28 HIGH CAPACITY PILES @ 109 Lft. EA. (E.B.L.)			3052 Lft.
34 HIGH CAPACITY PILES @ 110 Lft. EA. (W.B.L.)			3740 Lft.



MARK	"a"	L
1101m	27'-0	30'-2
1102m	25'-0	28'-2
901m	15'-0	17'-6
902m	18'-0	20'-6

NOTES:

FOR REINFORCING BAR NOTES, SEE BR STD. C1.
FOR ADDITIONAL NOTES AND DETAILS, SEE SHT. 201
* LOCATION OF THIS LINE APPROXIMATE ONLY.
CONTRACTOR TO TAKE NECESSARY PRECAUTIONS DURING FOUNDATION EXCAVATION.

N. | REVISION | DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

APRIL 24, 1980

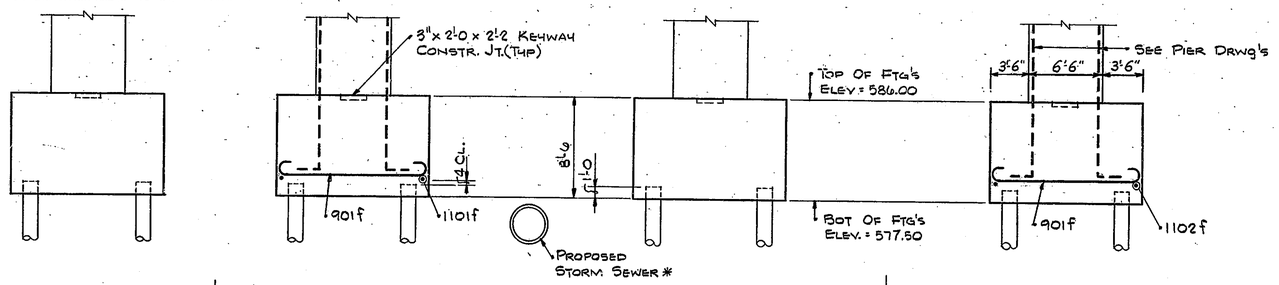
HAMAN U. PATEL REGISTERED No. 13050 STATE OF INDIANA PROFESSIONAL ENGINEER

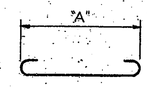
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PIER Nº 12 E.B.L. & W.B.L. FOOTING DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11812
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
212

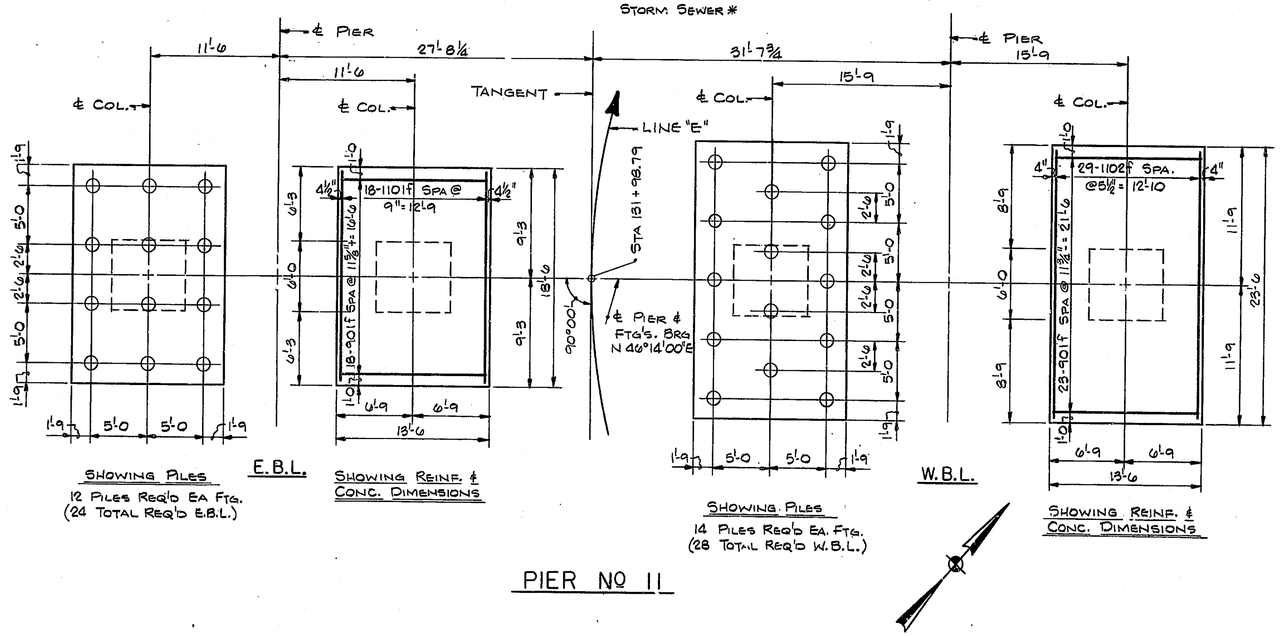




MARK	"A"	LENGTH
1101f	18'-0	21'-2
1102f	23'-0	26'-2
901f	13'-0	15'-6

BILL OF MATERIALS

REINFORCING STEEL			
SIZE & MARK	Nº OF BARS	LENGTH	WEIGHT (LBS.)
1101f	36	21'-2	
1102f	58	26'-2	
	TOTAL #11		12,112
901f	82	15'-6	
	TOTAL #9		4,321
	TOTAL REINF.		16,433
CONCRETE (f'c = 4000 P.S.I.)			C.Y.S
FTG'S E.B.L. 2 @ 78.6 EA.			157.2
FTG'S W.B.L. 2 @ 99.9 EA.			199.8
		TOTAL	357.0
MISCELLANEOUS			QTY.
52-HIGH CAPACITY PILE x 109 LFT. EA (APPROX)			5668 LFT.



SHOWING PILES
12 PILES REQ'D EA FTG.
(24 TOTAL REQ'D E.B.L.)

SHOWING REINF. & CONC. DIMENSIONS

SHOWING PILES
14 PILES REQ'D EA. FTG.
(28 TOTAL REQ'D W.B.L.)

SHOWING REINF. & CONC. DIMENSIONS

PIER Nº 11

NOTE:
FOR REINFORCING BAR NOTES, SEE BR. STD. C1.
FOR ADDITIONAL NOTES & DETAILS, SEE SHEET 201.
* LOCATION OF THIS LINE IS APPROXIMATE ONLY.
CONTRACTOR TO TAKE NECESSARY PRECAUTIONS DURING FOUNDATION EXCAVATION.

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS
SEPT. 12, 1979

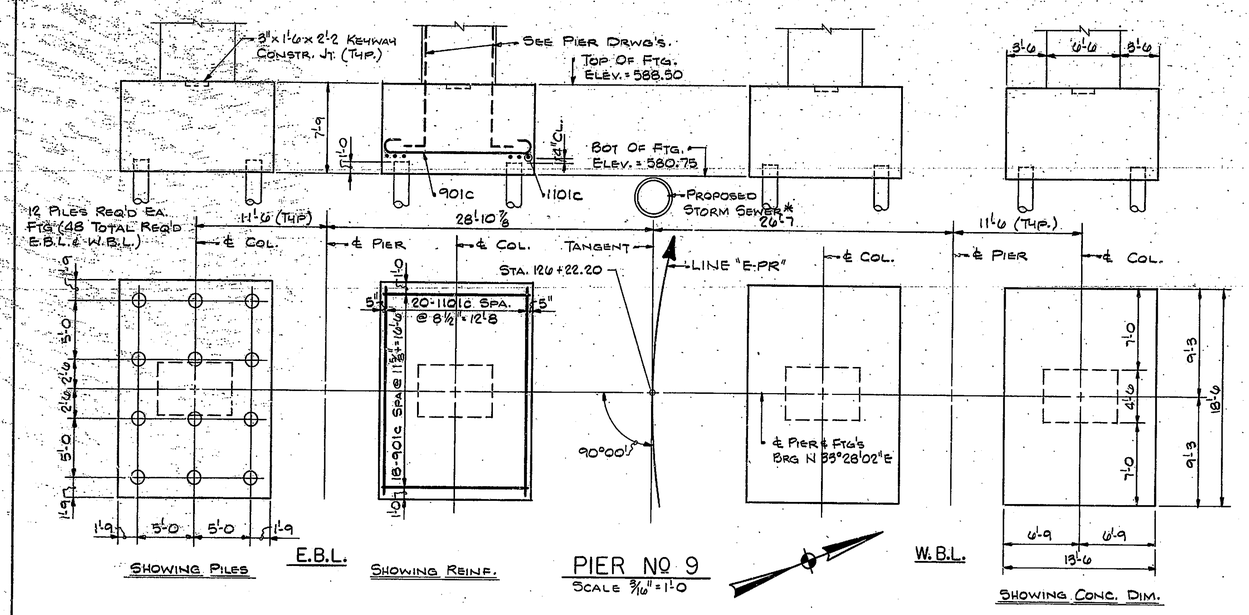
No. 13050 STATE OF INDIANA

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

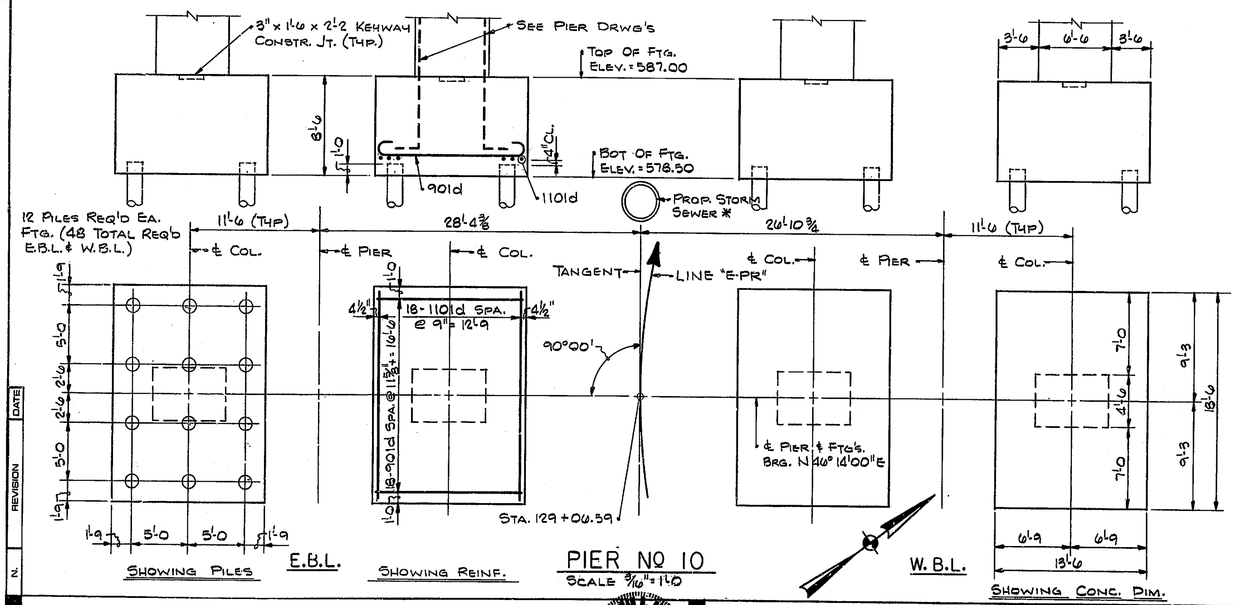
SHEET TITLE
PIER Nº 11 E.B.L. & W.B.L. FOOTING DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

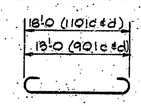
SHEET N.
211
OF



PIER No 9
Scale 3/16" = 1'-0



PIER No 10
Scale 3/16" = 1'-0



1101c & d X 21'-2
901c & d X 15'-6

BILL OF MATERIALS

PIER No 9 E.B.L. & W.B.L. REINFORCING STEEL			
Size & Mark	No of Bars	Length	Weight (Lbs.)
1101c	80	21'-2	
	Total #11		8997
901c	72	15'-6	
	Total #9		3794
	Total Reinf		12,791
Concrete (f'_c=4000 P.S.I)			Cys.
Ftg's E.B.L. 2 @ 71.7 Ea			143.4
Ftg's W.B.L. 2 @ 71.7 Ea			143.4
		Total	286.8
Miscellaneous			Qty
48-High Capacity Piles x 111 Lft Ea. (Approx)			5328 Lft

PIER No 10 E.B.L. & W.B.L. REINFORCING STEEL			
Size & Mark	No of Bars	Length	Weight (Lbs.)
1101d	72	21'-2	
	Total #11		8097
901d	72	15'-6	
	Total #9		3794
	Total Reinf.		11,891
Concrete (f'_c=4000 P.S.I)			Cys.
Ftg's E.B.L. 2 @ 78.6 Ea.			157.2
Ftg's W.B.L. 2 @ 78.6 Ea.			157.2
		Total	314.4
Miscellaneous			Qty
48-High Capacity Piles x 110 Lft. Ea. (Approx.)			5280 Lft

Notes:
For Reinforcing Bar Notes, See Br. Std. C1.
For Additional Notes & Details, See Sht. 201.
* Location Of This Line Is Approximate Only.
Contractor To Take Necessary Precautions During Foundation Excavation.

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

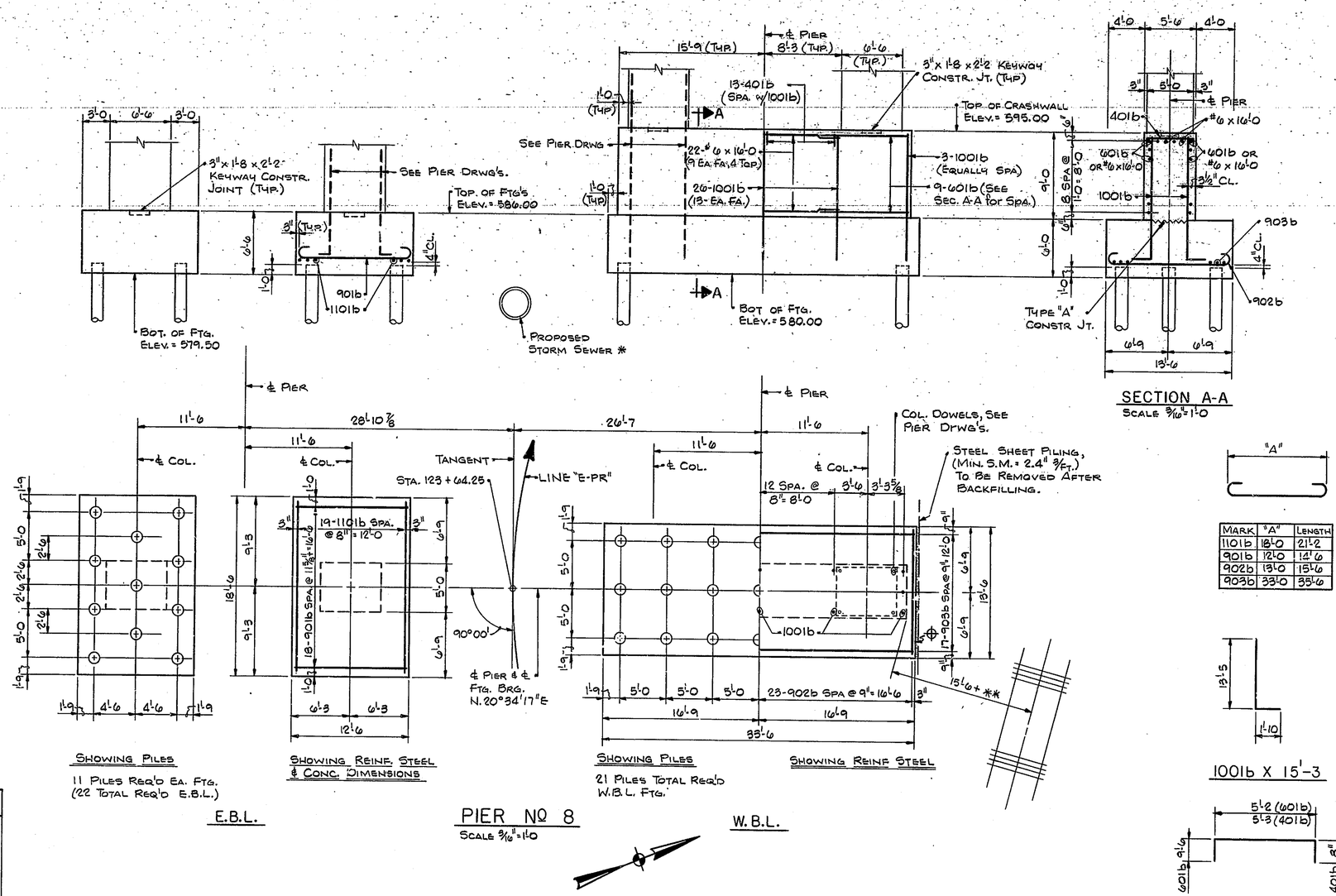
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS
SEPT. 12, 1979

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PIER No 9 & 10 E.B.L. & W.B.L. FOOTING DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
210
OF



SECTION A-A
Scale 3/16" = 1'-0

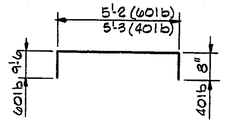
E.B.L.

PIER Nº 8
Scale 3/16" = 1'-0

W.B.L.

Mark	"A"	Length
1101b	18'-0	21'-2
901b	12'-0	14'-6
902b	13'-0	15'-6
903b	33'-0	35'-6

1001b X 15'-3



601b X 24'-2
401b X 6'-7

BILL OF MATERIALS

Reinforcing Steel			
Size & Mark	Nº of Bars	Length	Weight (Lbs.)
1101b	38	21'-2	
	Total #11		4273
1001b	56	15'-3	
	Total #10		3675
901b	36	14'-6	
902b	45	15'-6	
903b	17	35'-6	
	Total #9		6198
601b	18	24'-2	
#6	22	16'-0	
	Total #6		1182
401b	25	6'-7	
	Total #4		110
	Total Reinf.		15,438
Concrete (f'_c = 4,000 PSI)			Cys.
Ftg's E.B.L. 2 @ 55.7 Ea			111.4
Ftg. W.B.L.			101.8
Total Ftg. Conc			213.2
Substr. Conc. (Crashwall) W.B.L			57.8
Miscellaneous			Qty.
43-High Capacity Piles x 111 Lft. Ea (Approx.)			4773 Lft.

⊕ Includes .8 Cys. Additional Concrete Between Sheet Piling And W.B.L. Footing

Notes:
- For Reinforcing Bar Notes, See Br. Std. C1.
- For Type "A" Constr. Joint, See Br Std C3.
- For Additional Notes And Details, See Sheet 201.
- * Location Of This Line Approximate Only.
- Contractor To Take Necessary Precautions During Foundation Excavation
- ** Dimension Is From Original Contract Drawings (Scaled From Aerials.)

N.	Revision	Date

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS
SEPT. 12, 1979

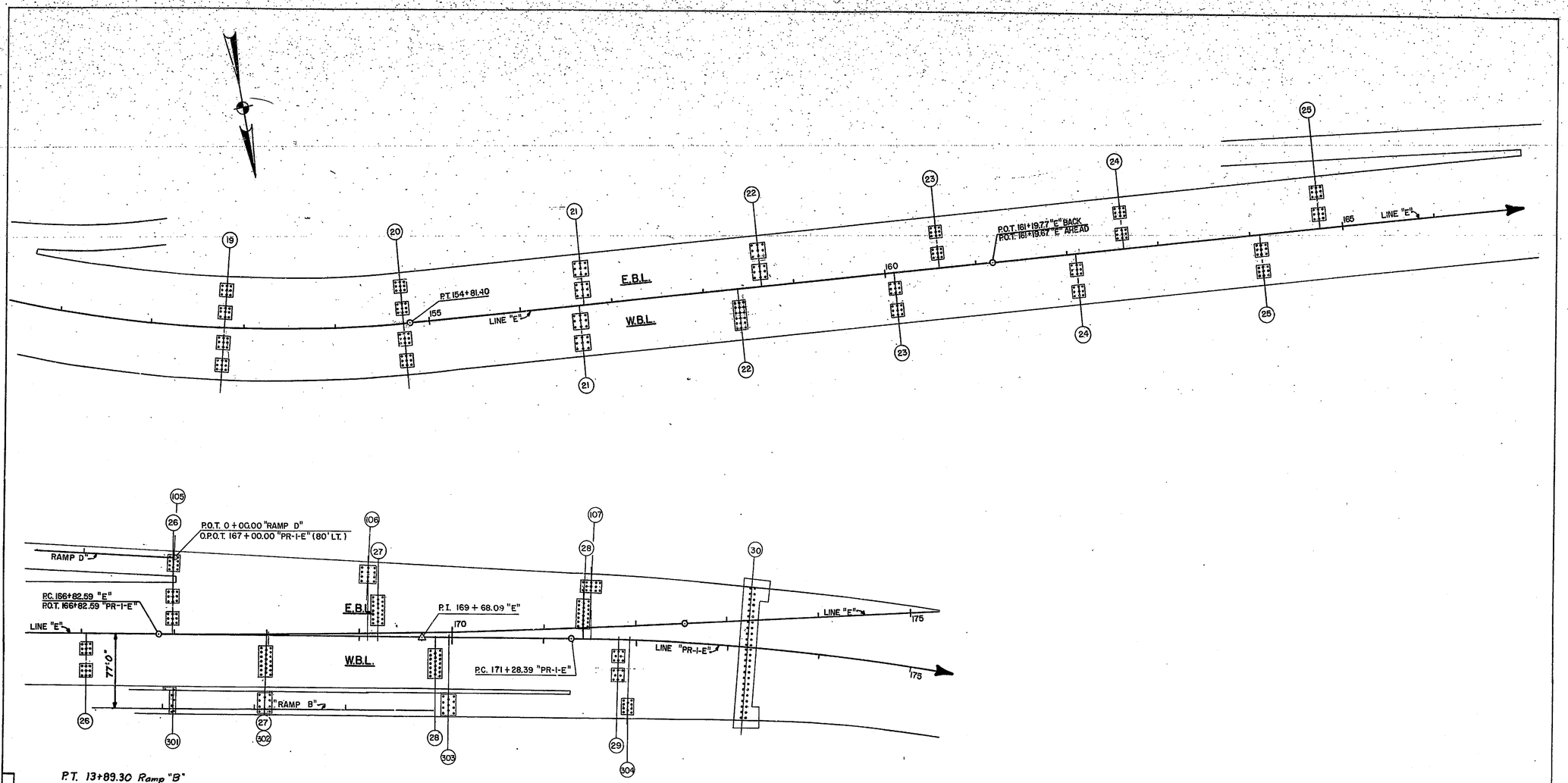
Registered No. 13050 State of Indiana

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PIER Nº 8 E.B.L. & W.B.L. FOOTING DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
209
OF



N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

APRIL 24, 1980

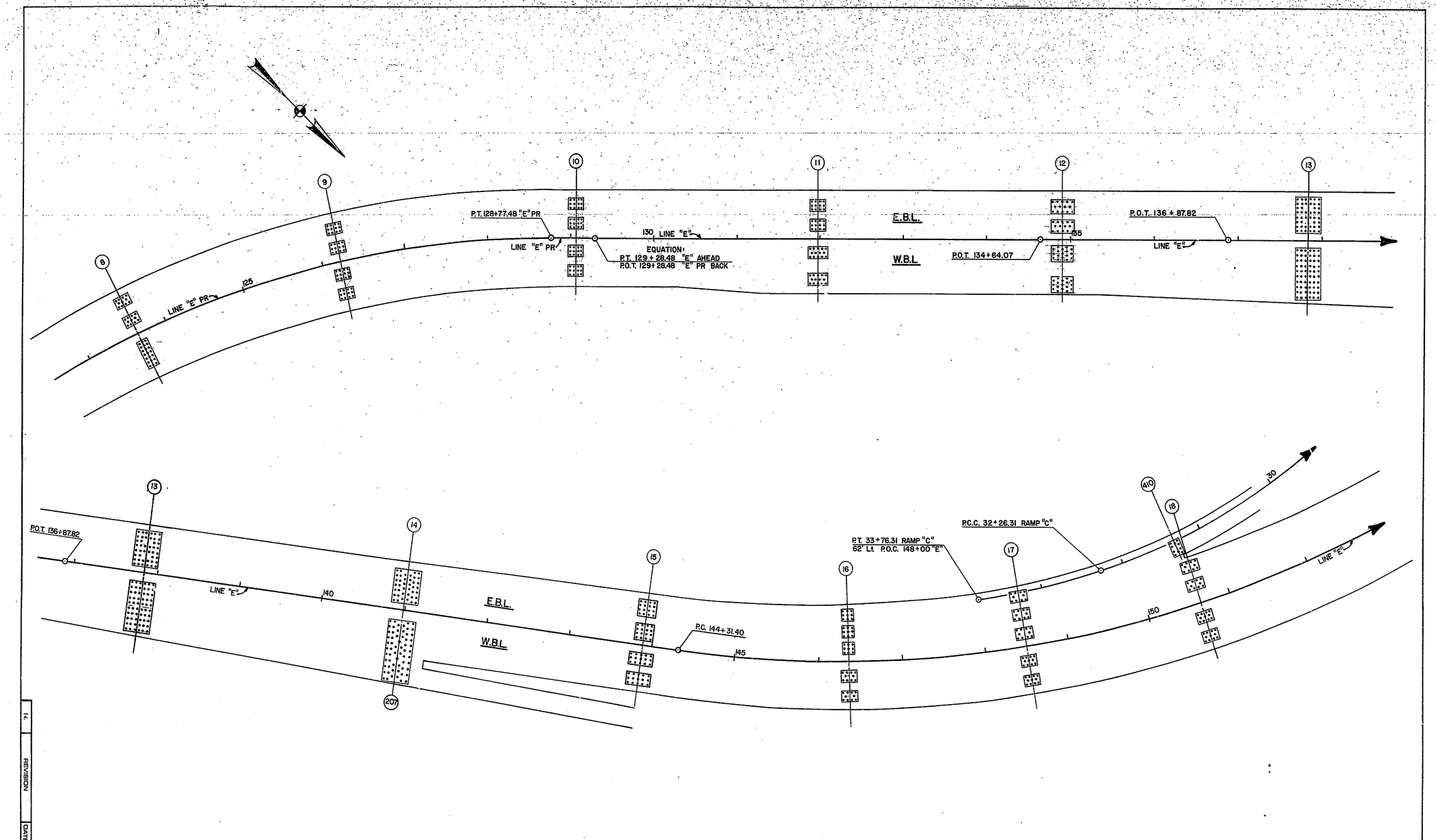
NAMAN D. PAYEL
REGISTERED
No. 13050
STATE OF INDIANA
PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
FOUNDATION SCHEMATIC

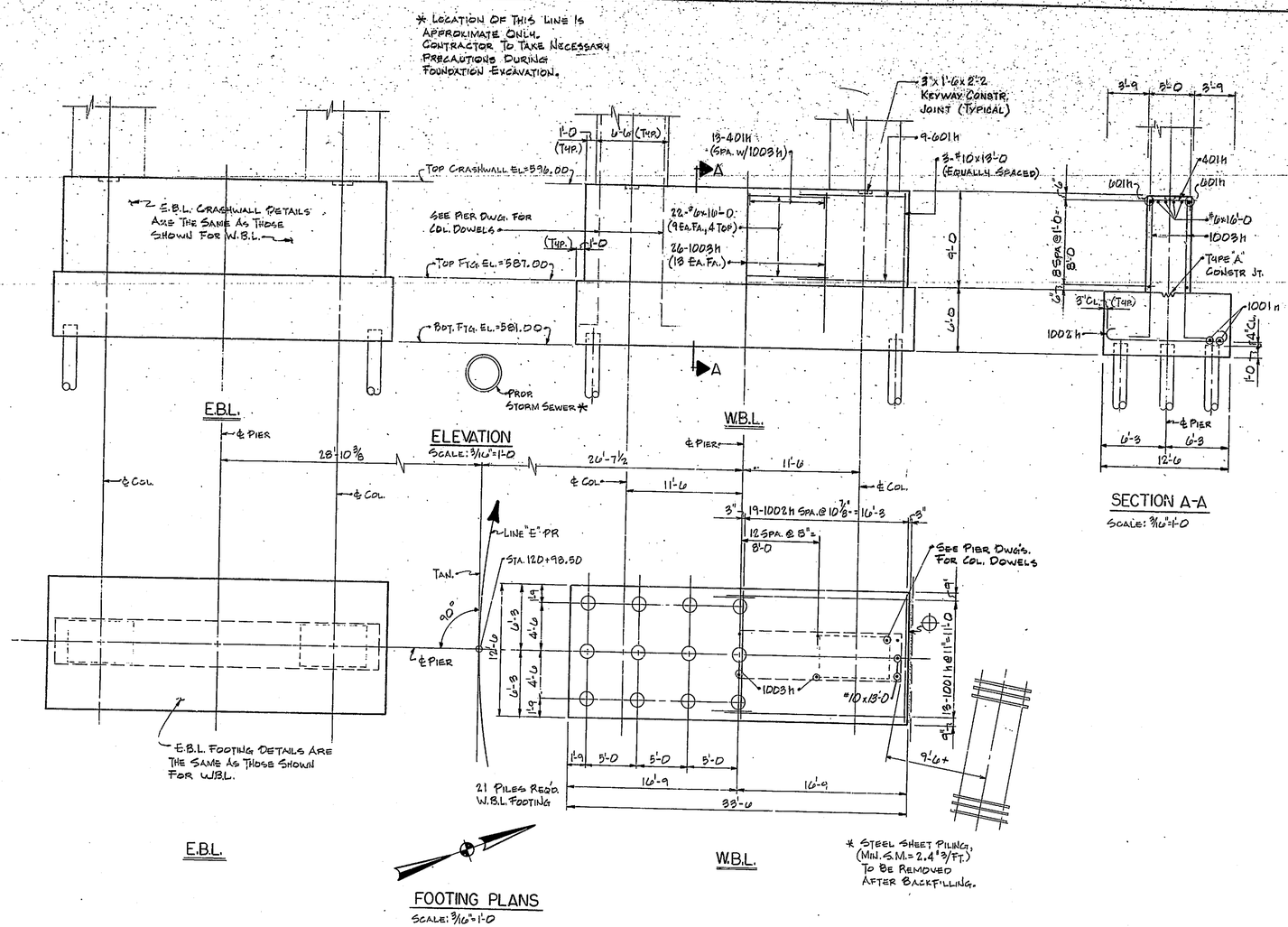
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

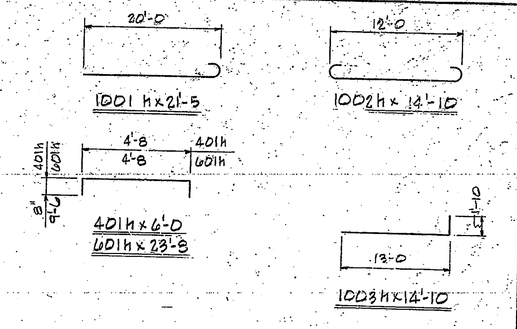
SHEET N.
208



T. Y. LIN INTERNATIONAL STRUCTURAL ENGINEERS REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC. CONSULTING ENGINEERS APRIL 24, 1980	RAMAN D. PATEL REGISTERED No. 13050 STATE OF INDIANA PROFESSIONAL ENGINEER	WALSH CONSTRUCTION COMPANY A DIVISION OF GUY F. ATKINSON CO. DARIEN, CONNECTICUT	SHEET TITLE FOUNDATION SCHEMATIC CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL BRIDGE FILE: 812-45-2546 CONTRACT NO. B-11612 INDIANA STATE HIGHWAY COMMISSION	SHEET N. 207

REVISION	DATE
14.	





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

BILL OF MATERIALS

REINFORCING STEEL			
SIZE & MARK	No OF BARS	LENGTH	WEIGHT (LBS.)
1001h	52	21'-5	
1002h	76	14'-10	
1003h	100	14'-10	
#10	12	13'-0	
	TOTAL #10		16,697
601h	36	23'-8	
#6	44	16'-0	
	TOTAL #6		2337
401h	50	6'-0	
	TOTAL #4		200
TOTAL REINF. STEEL			19,234
CONCRETE (f'c=4000 P.S.I.)			
CRASHWALLS, 2@52.5 EA.=			105.0 CYS.
⊕ FOOTINGS, 2@93.1 EA =			186.9 CYS.
MISCELLANEOUS			
42 HIGH CAPACITY PILES @ 110 L/FT. LONG EA. (APPROX.)=			4620 L/FT.

① INCLUDES .7 CYS. ADDITIONAL CONCRETE BETWEEN SHEET PILING & W.B.L. FOOTING.

NOTES:
FOR TYPE "A" CONSTR. JOINT, SEE BRIDGE STD. C3.
FOR REINFORCING BAR NOTES, SEE BRIDGE STD. C1.
FOR ADDITIONAL FOOTING, SHEET PILING, & HIGH CAPACITY PILE NOTES & DETAILS, SEE SHEET 201.

N | REVISION | DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

JULY 26, 1979

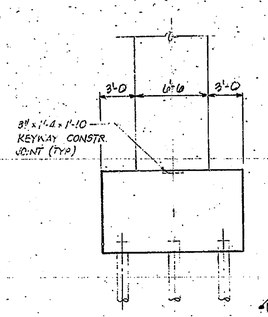
RAMAN D. PATEL REGISTERED No. 13050 STATE OF INDIANA PROFESSIONAL ENGINEER

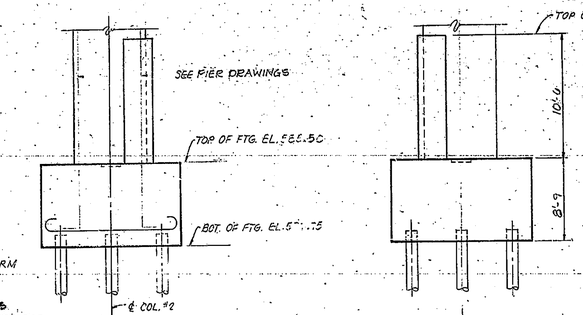
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PIER No 7 E.B.L. & W.B.L. FOOTING & CRASHWALL DETAILS

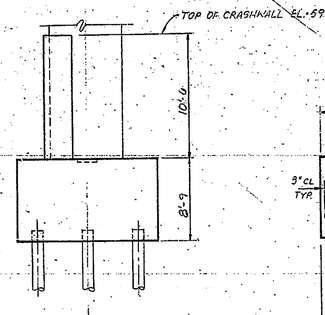
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

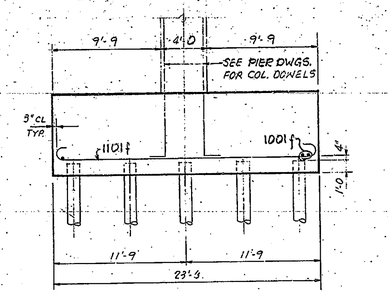
SHEET N. 206 OF



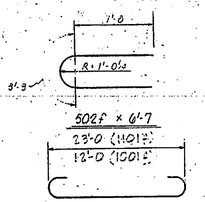


ELEVATION
SCALE: 3/16" = 1'-0



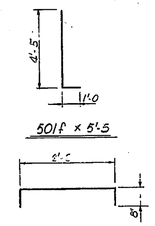


SECTION "A-A"
SCALE: 3/16" = 1'-0



502f × 6'-7
23'-0 (110 1 f)
12'-0 (100 1 f)

110 1 f × 26'-3
100 1 f × 14'-10

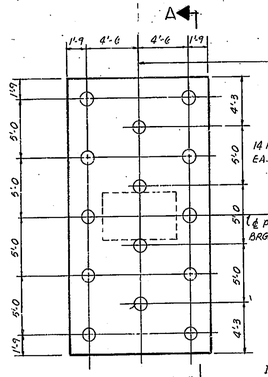


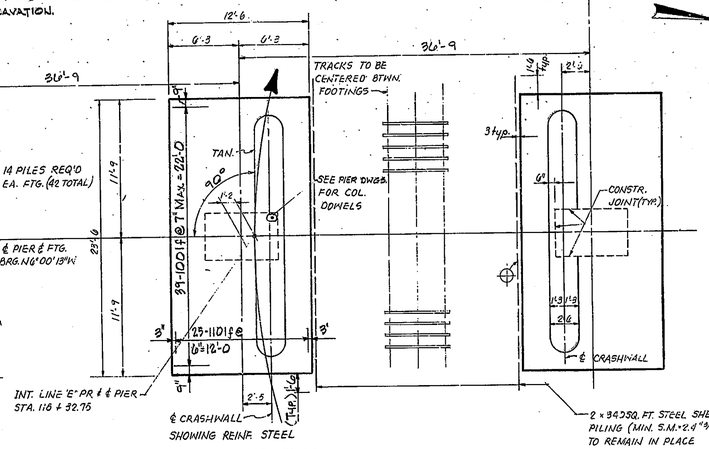
501f × 5'-5

401f × 3'-6

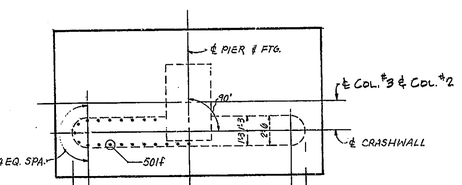
PROP. STORM SEWER

LOCATION OF THIS LINE IS APPROXIMATE ONLY. CONTRACTOR TO TAKE NECESSARY PRECAUTIONS DURING FOUNDATION EXCAVATION.

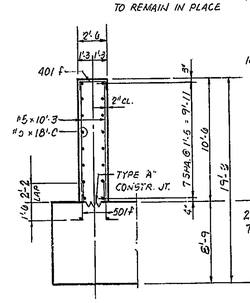




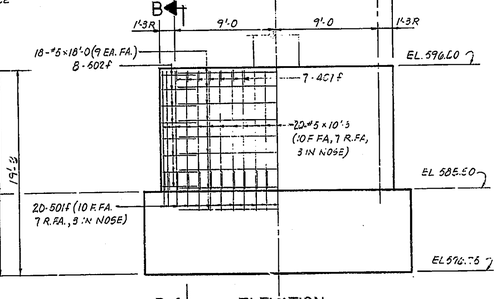
FOOTING PLAN
SCALE: 3/16" = 1'-0



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



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



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

BILL OF MATERIALS

REINFORCING STEEL			
SIZE & MARK	Nº OF BARS	LENGTH	WEIGHT (LBS)
1101f	78	26'-2	
TOTAL #11			10,428
1001f	117	14'-10	
TOTAL #10			7,469
501f	78	5'-5	
502f	32	6'-7	
#5	36	18'-0	
#5	78	10'-3	
TOTAL #5			2,170
401f	28	3'-6	
TOTAL #4			65
TOTAL REINF. STEEL			20,132
CONCRETE (f'_c = 4000 P.S.I.)			
CRASHWALLS @ COL. #2 & #3: 2 @ 16.3 CUS. EA. =			32.6 CUS.
⊕ FTG. CONC., 3 @ 95.2 EA. =			289.4 CUS.
MISCELLANEOUS			
42 HIGH CAPACITY PILES @ 110 L/FT. LONG EA. (APPROX) =			4620 L/FT.
STEEL SHEET PILING			6505/FT.

⊕ INCLUDES 3.8 CUS. ADDITIONAL CONCRETE BETWEEN SHEET PILING & FOOTINGS.

NOTES:
FOR TYPE "A" CONSTR. JOINT, SEE BRIDGE STD. C3.
FOR REINFORCING BAR NOTES, SEE BRIDGE STD. C2.
FOR ADDITIONAL FOOTING, SHEET PILING, & HIGH CAPACITY PILE NOTES & DETAILS, SEE SHEET 201.

N	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

JULY 26, 1979

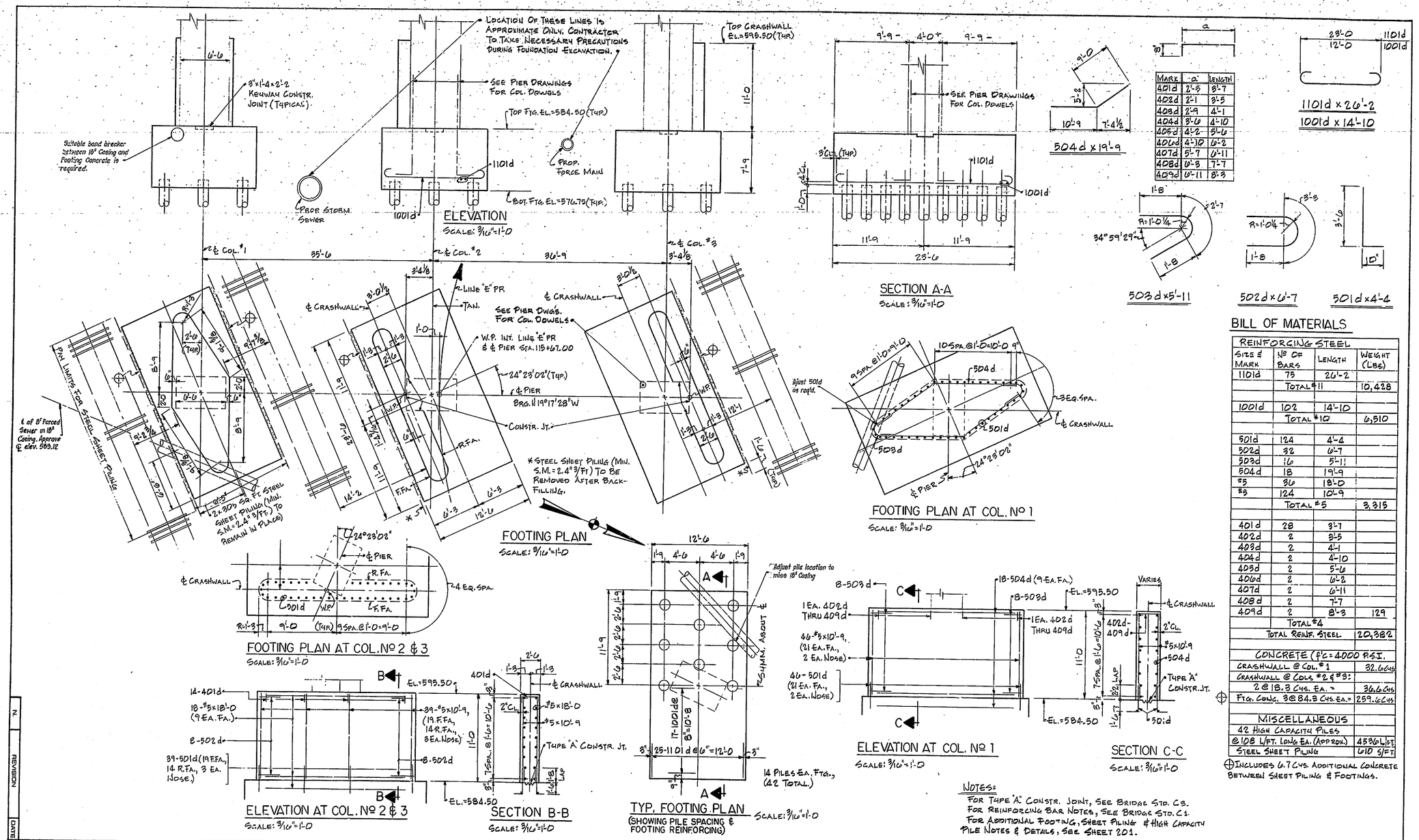
RAMON R. REID REGISTERED No. 13050 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PIER Nº6 FOOTING & CRASHWALL DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11612 INDIANA STATE HIGHWAY COMMISSION

SHEET N.
205
OF



Mark	"a"	Length
401d	2'-3	3'-7
402d	2'-1	3'-5
403d	2'-9	4'-1
404d	3'-6	4'-10
405d	4'-2	5'-6
406d	4'-10	6'-2
407d	5'-7	6'-11
408d	6'-3	7'-7
409d	6'-11	8'-3

BILL OF MATERIALS

Reinforcing Steel			
Size & Mark	No. of Bars	Length	Weight (Lbs)
1101d	75	26'-2	
	Total #11		10,428
1001d	102	14'-10	
	Total #10		6,310
501d	124	4'-4	
502d	32	6'-7	
503d	16	5'-11	
504d	18	19'-9	
#5	36	18'-0	
#3	124	10'-9	
	Total #5		3,315
401d	28	3'-7	
402d	2	3'-5	
403d	2	4'-1	
404d	2	4'-10	
405d	2	5'-6	
406d	2	6'-2	
407d	2	6'-11	
408d	2	7'-7	
409d	2	8'-3	129
	Total #4		
Total Reinf. Steel			20,382
Concrete (f'c=4000 P.S.I.)			
Crashwall @ Col. #1			32.6 Cys.
Crashwall @ Cols #2 & #3:			
2 @ 18.3 Cys. Ea. =			36.6 Cys.
Ftg. Conc. 3 @ 84.3 Cys. Ea. =			259.6 Cys.
Miscellaneous			
42 High Capacity Piles			
@ 108 L/Ft. Long Ea. (Approx.)			4536 L/Ft.
Steel Sheet Piling			610 S/Ft.

⊕ Includes 6.7 Cys. Additional Concrete Between Sheet Piling & Footings.

N	Revision	Date

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS
JULY 26, 1979

Revised Plans
Melvin R. Wyllie Registered No. 13050 State of Indiana Professional Engineer

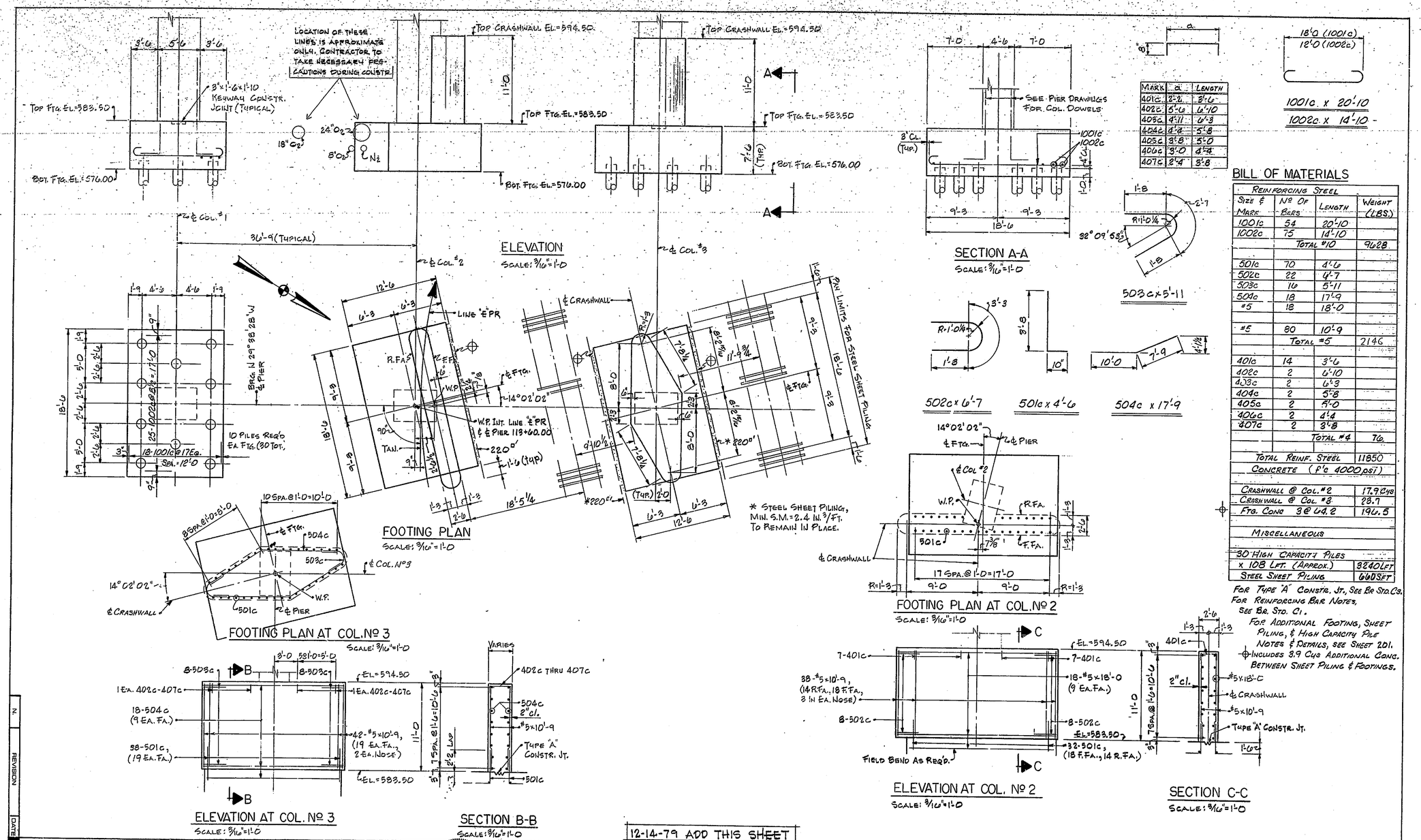
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

Sheet Title
PIER No 5 FOOTING & CRASHWALL DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11812
INDIANA STATE HIGHWAY COMMISSION

Sheet N. 204 OF

Rev. 12-14-79 8" Forced Sewer



BILL OF MATERIALS

REINFORCING STEEL			
SIZE & MARK	Nº OF BARS	LENGTH	WEIGHT (LBS.)
1001c	54	20'-10	
1002c	75	14'-10	
	TOTAL #10		9628
501c	70	4'-6	
502c	22	4'-7	
503c	10	5'-11	
504c	18	17'-9	
#5	18	18'-0	
#5	80	10'-9	
	TOTAL #5		2146
401c	14	3'-6	
402c	2	6'-10	
403c	2	6'-3	
404c	2	5'-8	
405c	2	5'-0	
406c	2	4'-4	
407c	2	3'-8	
	TOTAL #4		TO.
TOTAL REINF. STEEL			11850
CONCRETE (f'c 4000 psi)			
CRASHWALL @ COL. #2			17.9 CYS
CRASHWALL @ COL. #3			28.7
FTG. CONC 3@ 44.2			132.5
MISCELLANEOUS			
30 HIGH CAPACITY PILES			
x 108 LFT. (APPROX.)			3240 LFT
STEEL SHEET PILING			660 SFT

FOR TYPE "A" CONSTR. JT., SEE BR. STD. C3.
FOR REINFORCING BAR NOTES, SEE BR. STD. C1.
FOR ADDITIONAL FOOTING, SHEET PILING, & HIGH CAPACITY PILE NOTES & DETAILS, SEE SHEET 201.
INCLUDES 3.9 CYS ADDITIONAL CONC. BETWEEN SHEET PILING & FOOTINGS.

N.	REVISION	DATE

12-14-79 ADD THIS SHEET

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS
DECEMBER 14, 1979

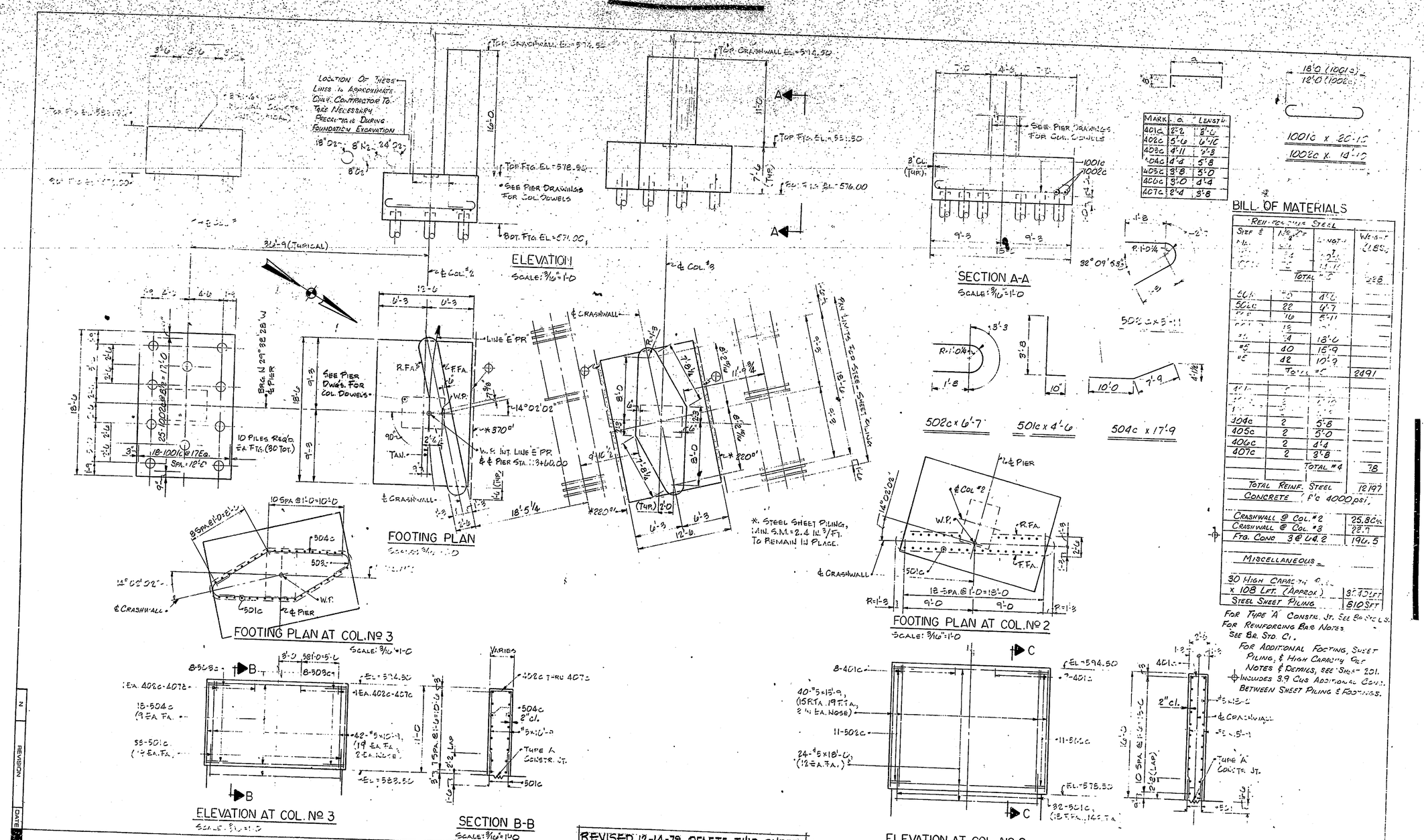
WILLIAM R. PAVIER REGISTERED No. 13050 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PIER Nº 4 FOOTING & CRASHWALL DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 812-45-2546 CONTRACT NO. 8-11812
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
203A
OF



MARK	O.	LENGTH
401c	2'-2	3'-6
402c	5'-6	6'-10
403c	4'-11	6'-8
404c	4'-4	5'-8
405c	3'-8	5'-0
406c	3'-0	4'-4
407c	2'-4	3'-8

BILL OF MATERIALS

REINFORCING STEEL			
SIZE & MK.	NO. OF	LENGTH	WEIGHT (LBS.)
[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	
	TOTAL #5		628
501c	70	4'-6	
502c	22	4'-7	
[illegible]	16	5'-11	
[illegible]	13	[illegible]	
[illegible]	24	18'-6	
#5	40	15'-9	
#5	42	10'-9	
	TOTAL #5		2491
[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	
404c	2	5'-8	
405c	2	5'-0	
406c	2	4'-4	
407c	2	3'-8	
	TOTAL #4		78
TOTAL REINF. STEEL			12197
CONCRETE (f'c 4000 psi)			
CRASHWALL @ COL. #2			25.8 CYS
CRASHWALL @ COL. #3			22.7
FTG. CONC. 3 @ 64.2			196.5
MISCELLANEOUS			
30 HIGH CAPACITY PILE x 108 LFT. (APPROX.)			3240 LFT
STEEL SHEET PILING			810 SFT

FOR TYPE 'A' CONSTR. JT. SEE BR. STD. C1.
FOR REINFORCING BAR NOTES SEE BR. STD. C1.
FOR ADDITIONAL FOOTING, SHEET PILING, & HIGH CAPACITY PILE NOTES & DETAILS, SEE SHEET 201.
INCLUDES 3.9 CYS ADDITIONAL CONC. BETWEEN SHEET PILING & FOOTINGS.

REVISED 12-14-79, DELETE THIS SHEET

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

JULY 26, 1979

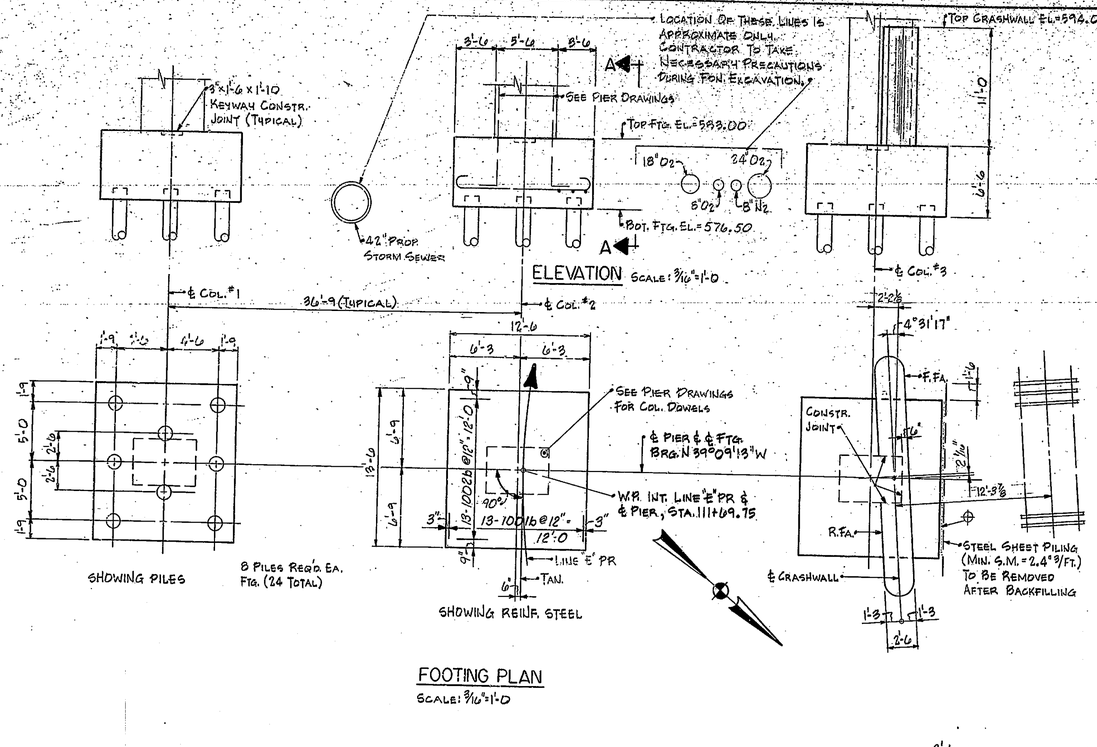
RAMAN D. PATEL REGISTERED No. 13050 STATE OF INDIANA PROFESSIONAL ENGINEER

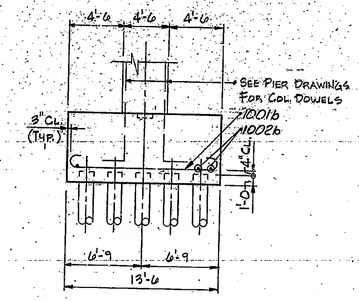
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

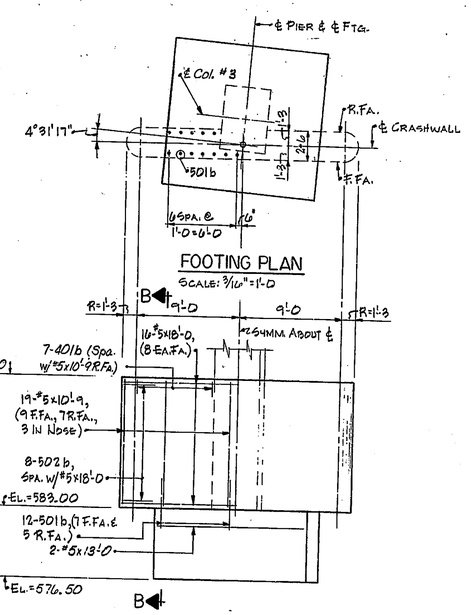
SHEET TITLE
PIER Nº 4 FOOTING & CRASHWALL DETAILS

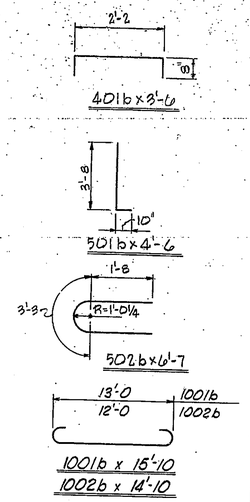
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

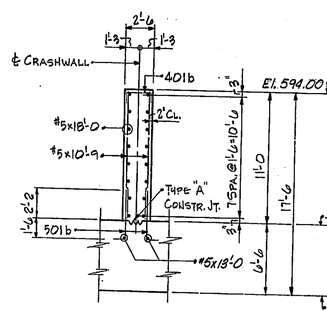
SHEET NO. 203 OF











CRASHWALL DETAILS

BILL OF MATERIALS

REINFORCING STEEL			
SIZE & MARK	Nº OF BARS	LENGTH	WEIGHT (LBS)
1001b	39	15'-10	
1002b	39	14'-10	
	TOTAL #10		5146
501b	28	4'-6	
502b	16	6'-7	
#5	16	18'-0	
#5	2	13'-0	
#5	38	10'-9	
	TOTAL #5		976
401b	14	3'-6	
	TOTAL #4		33
TOTAL REINF. STEEL			6155
CONCRETE (f'c=4000 psi)			
CRASHWALL @ COL #3			17.3 CYS.
⊕ FTG. CONC. @ 40.6			122.6 CYS.
MISCELLANEOUS			
24 HIGH CAPACITY PILES			
@ 107 LFT. (APPROX.)			2568 LFT.

NOTES:

FOR TYPE 'A' CONSTR. JT., SEE BRIDGE STD. C3.
FOR REINFORCING BAR NOTES, SEE BRIDGE STD. C1.
⊕ INCLUDES 0.8 CYS. ADDITIONAL CONCRETE BETWEEN SHEET PILING AND FOOTING AT COL. Nº 3.
FOR ADDITIONAL FOOTING, SHEET PILING, & HIGH CAPACITY PILE NOTES & DETAILS, SEE SHEET 201.

NO.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

JULY 26, 1979

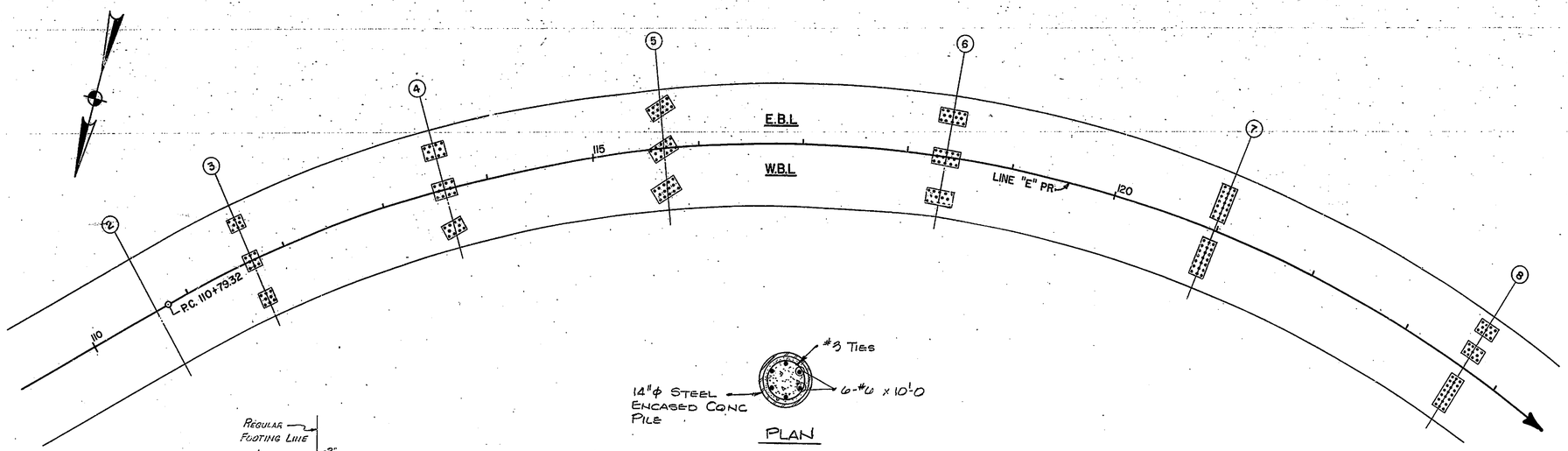
HERMAN B. WAGNER REGISTERED No. 13050 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

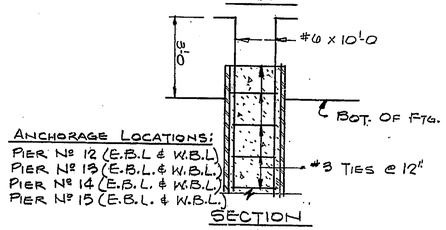
SHEET TITLE
PIER Nº 3 FOOTING & CRASHWALL DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11812
INDIANA STATE HIGHWAY COMMISSION

SHEET N. 202 OF



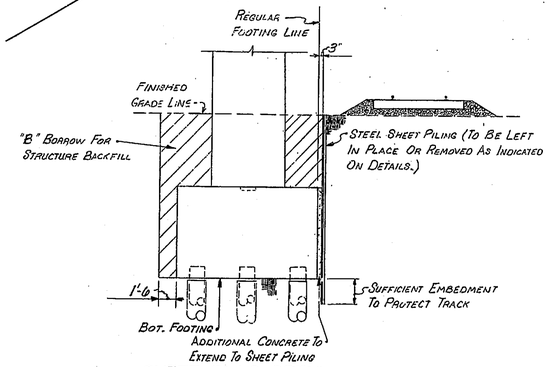
PLAN



Anchorage Locations:
Pier № 12 (E.B.L & W.B.L)
Pier № 13 (E.B.L. & W.B.L.)
Pier № 14 (E.B.L. & W.B.L.)
Pier № 15 (E.B.L. & W.B.L.)

SECTION

PILE ANCHORAGE DETAIL
No Scale



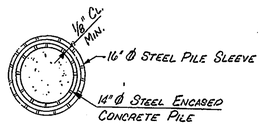
SHEET PILING DETAIL
No Scale

1. If Steel Sheet Piling Is To Be Removed After Backfilling Is Completed, It Will Not Be Billed. The Cost Of Driving And Removing Steel Sheet Piling Is To Be Included In The Cost Of Concrete In Footing.
2. If Steel Sheet Piling Is To Be Left In Place It Will Be Billed As "Steel Sheet Piling" (S.F.T).
3. Rail Traffic Must Be Maintained During Construction, See Special Provisions.
4. All Steel Sheet Piling Is To Have A Minimum Section Modulus Of 2.4 IN^3/FT.
5. Steel Sheet Piling Shall Extend Beyond The Footing Limits A Distance Sufficient To Protect The Track And Footing Excavation.

PILE SLEEVE LOCATION

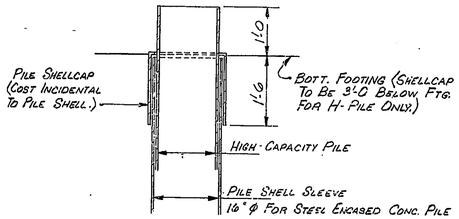
Piling To Be Sleeved At Locations Indicated. Steel Sleeving Shall Extend From Approximate Bottom Footing Elevation To Elev. 520.0. Piles Shall Be Sleeved At The Following Locations:

Pier № 19 (W.B.L)	Pier 23 & 23' (E.B.L. & W.B.L.)
Pier № 20 (W.B.L)	Pier 24 & 24' (E.B.L. & W.B.L.)
Pier № 22 (E.B.L.)	Pier 25 & 25' (E.B.L. & W.B.L.)
	Pier 26 & 26' (E.B.L. & W.B.L.)
	Bent 30 (E.B.L. & W.B.L.)

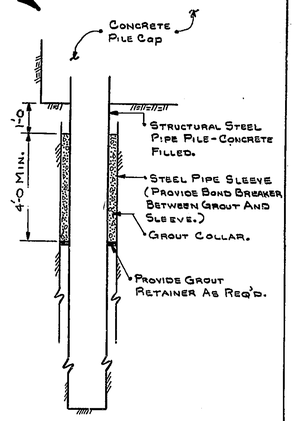


PILE SLEEVE NOTE:

The 16" ϕ Steel Pile Sleeve Shall Have A Minimum Wall Thickness Of 0.312" For The Lower 30' Of Each Sleeve. A Minimum Sleeve Thickness Of #7 Gage May Be Used For The Remaining Upper Portions Of The Sleeve.



TYP. PILE CAP DETAIL (Req'd For Sleeved Piles)
No Scale



△ DETAIL A
BENT 30 PILE CAP
SLEEVED PIPE PILES
GROUT COLLAR

APPROVED FOR CONSTRUCTION
J. D. Mattis
J. D. MATTIS
Engineer of Bridge Plans
3-9-83

NO.	REVISION	DATE
△	Add Detail A	2-19-83

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS
APRIL 24, 1980

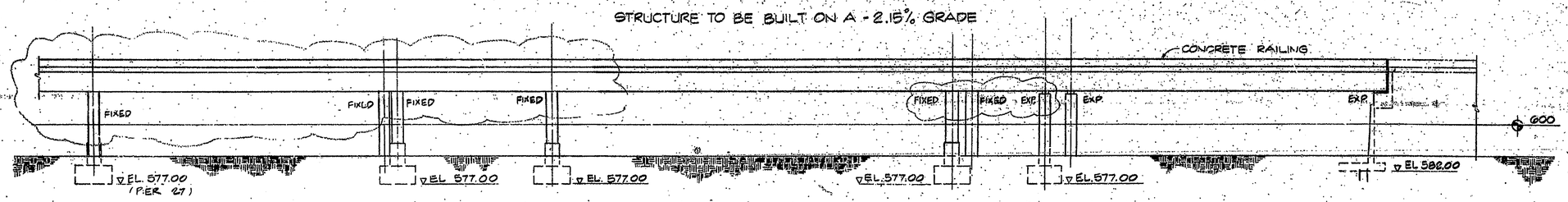
WILLIAM D. PAVEY REGISTERED No. 13050 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

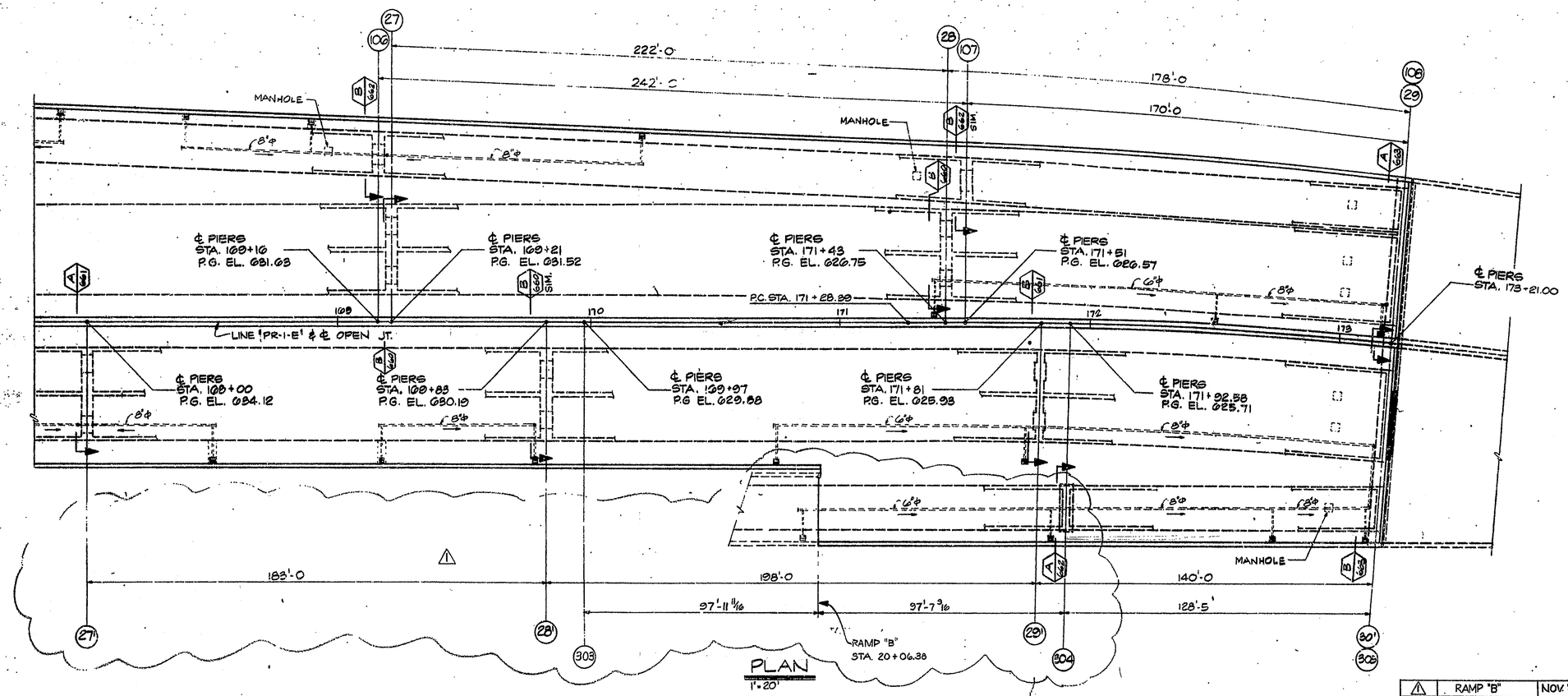
SHEET TITLE
FOUNDATION SCHEMATIC & TYPICAL DETAILS

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. B-11812
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
201



ELEVATION
1"=20'



PLAN
1"=20'

NO.	REVISION	DATE
1	RAMP "B"	NOV '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T.Y. Lin

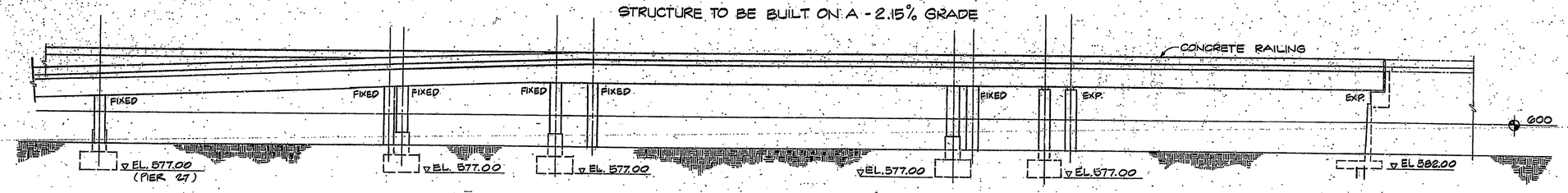
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY. F ATKINSON CO
DARIEN, CONNECTICUT

SHEET TITLE
PARTIAL PLAN AND ELEVATION (PIER 27 TO 30)

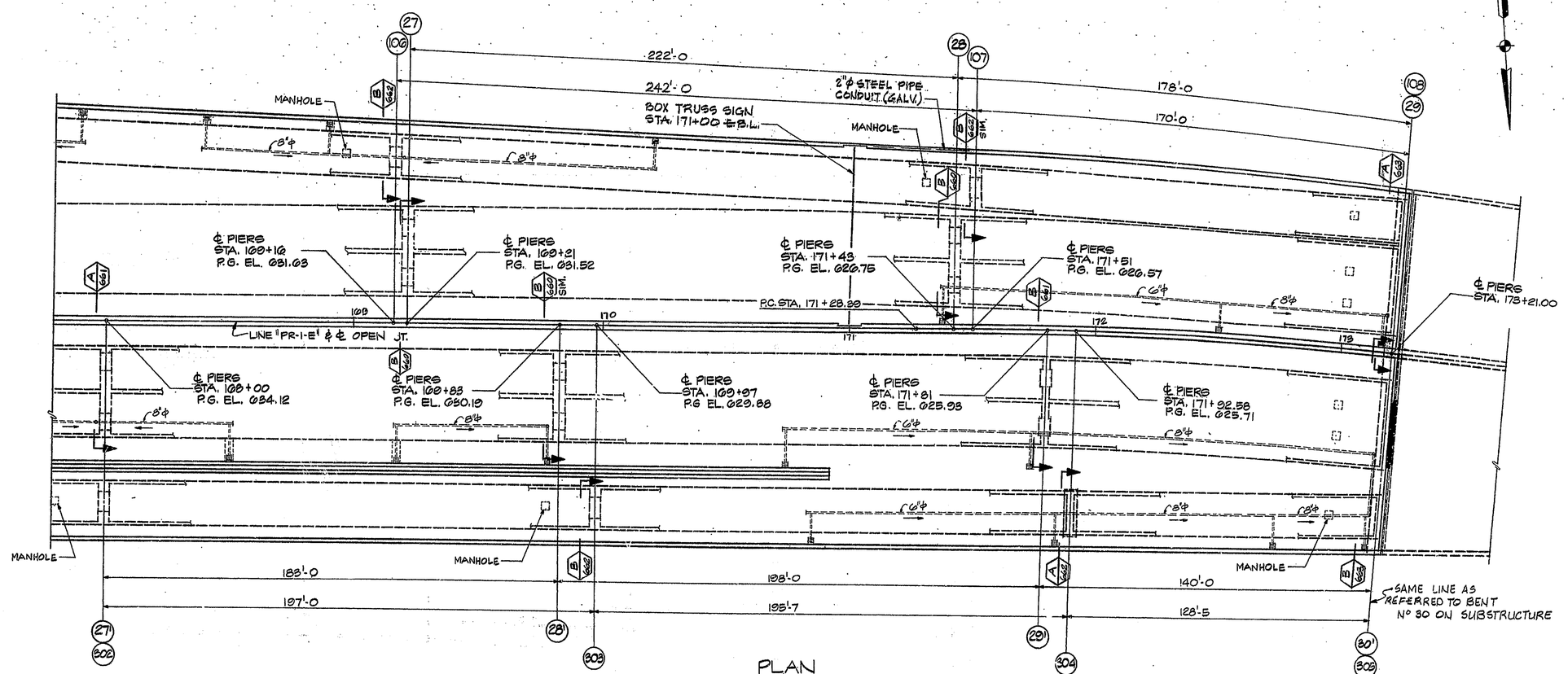
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE 912-45-2546 CONTRACT NO 8-11912 INDIANA STATE HIGHWAY COMMISSION

SHEET N.
113 A

STRUCTURE TO BE BUILT ON A - 2.15% GRADE



ELEVATION
1"=20'



PLAN
1"=20'

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

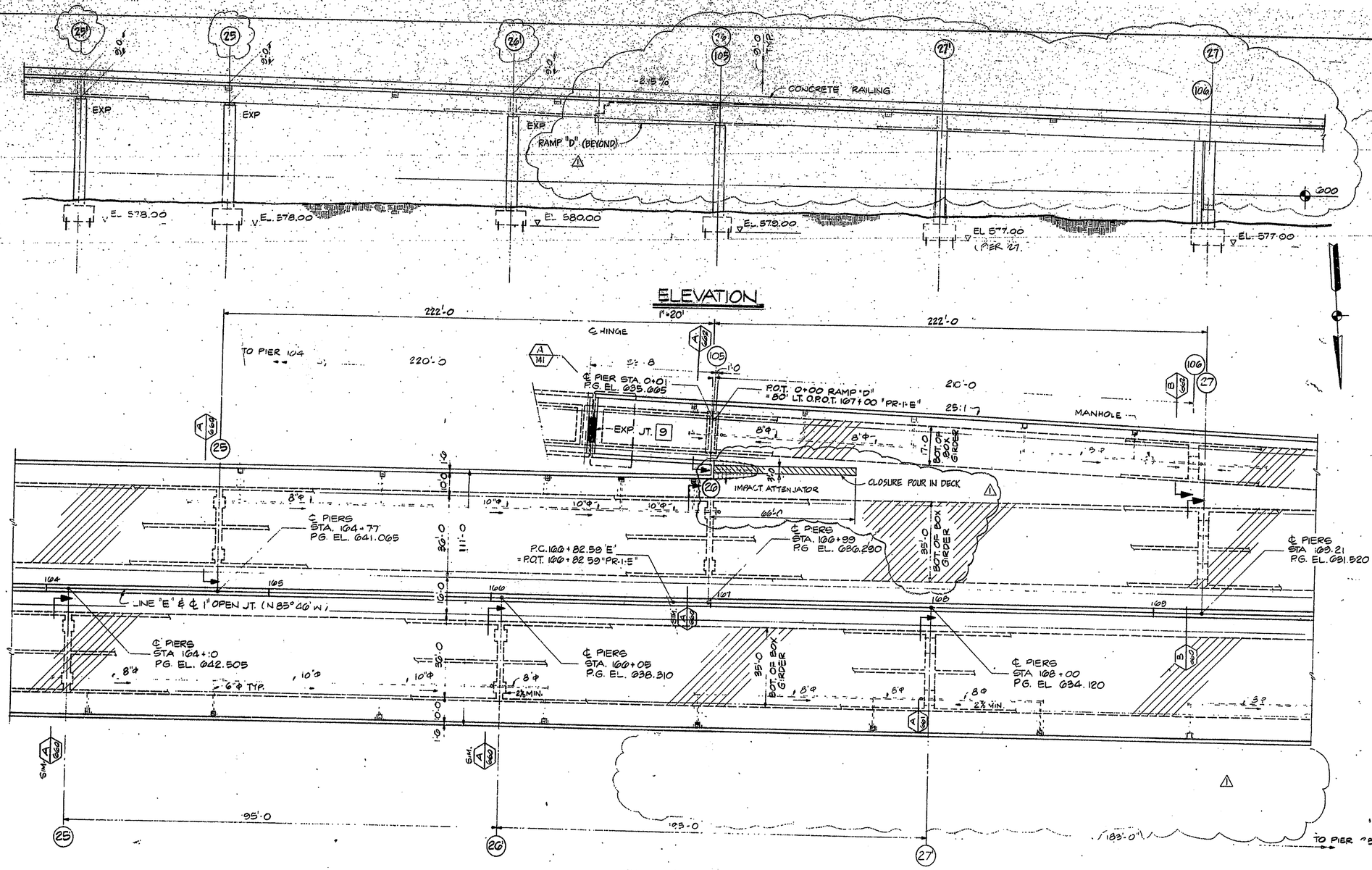
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE

PARTIAL PLAN AND ELEVATION (PIER 27 TO 30)

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-46-2548 CONTRACT NO. S-11812 INDIANA STATE HIGHWAY COMMISSION

SHEET N.
113



NO.	REVISION	DATE
1	RAMP "B" & "D"	NOV '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T.Y. Lin

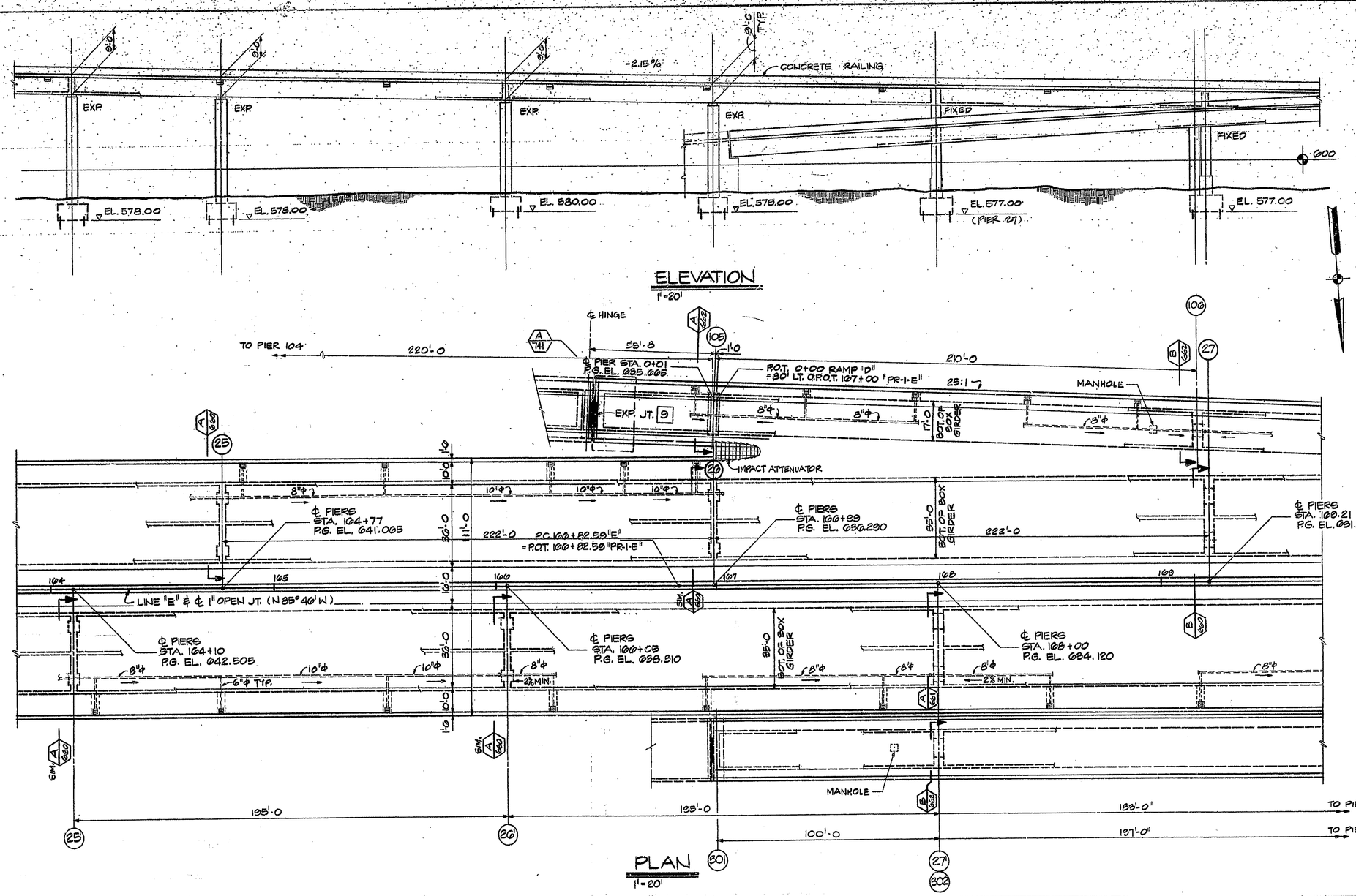
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO
DARIEN CONNECTICUT

SHEET TITLE

PARTIAL PLAN AND ELEVATION (PIER 25 TO 27)

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE B12 45-2548-CONTRACT NO. B 11812
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
112 A



NO.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

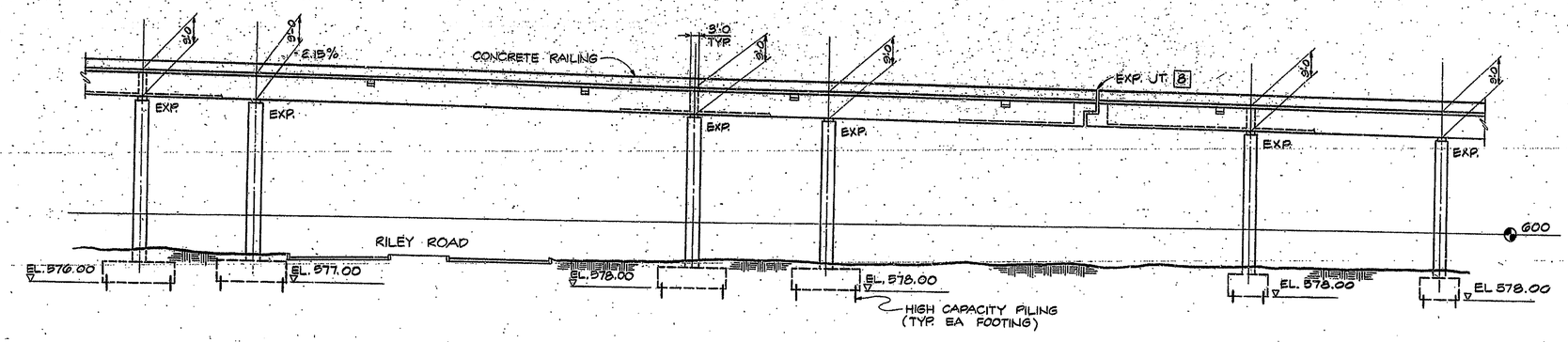
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE

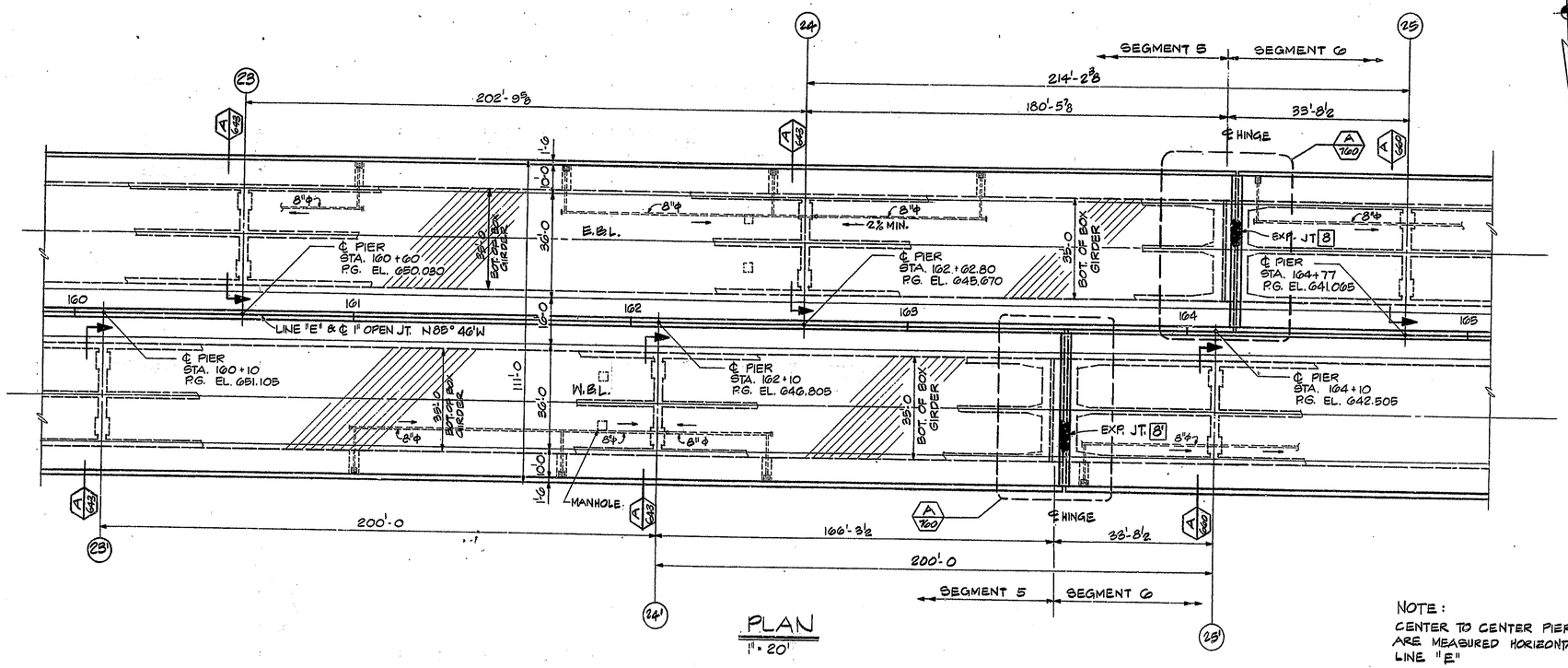
PARTIAL PLAN AND ELEVATION (PIER 25 TO 27)

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612 INDIANA STATE HIGHWAY COMMISSION

SHEET N.
112



ELEVATION
1" = 20'



PLAN
1" = 20'

NOTE:
CENTER TO CENTER PIER DIMENSIONS ARE MEASURED HORIZONTALLY ALONG LINE "E"

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

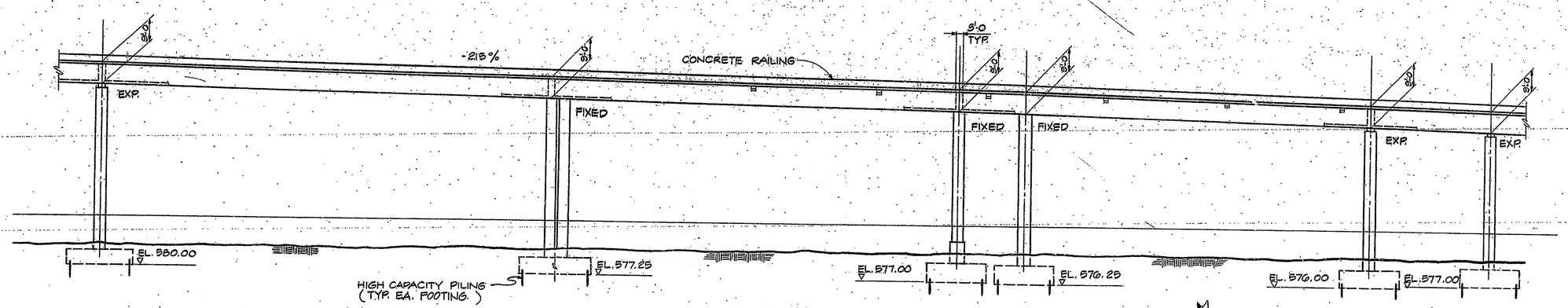
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

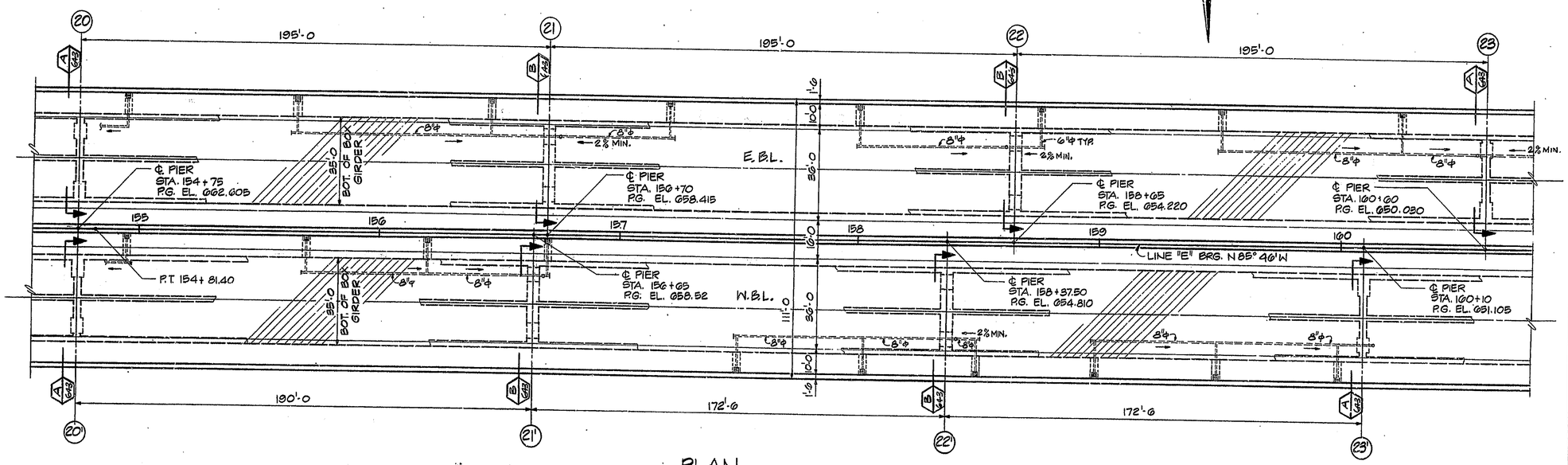
SHEET TITLE
PARTIAL PLAN AND ELEVATION (PIER 23 TO 25)

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
111



ELEVATION
1" = 20'



PLAN
1" = 20'

NOTE:
CENTER TO CENTER PIER DIMENSIONS ARE MEASURED HORIZONTALLY ALONG LINE "E"

N	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

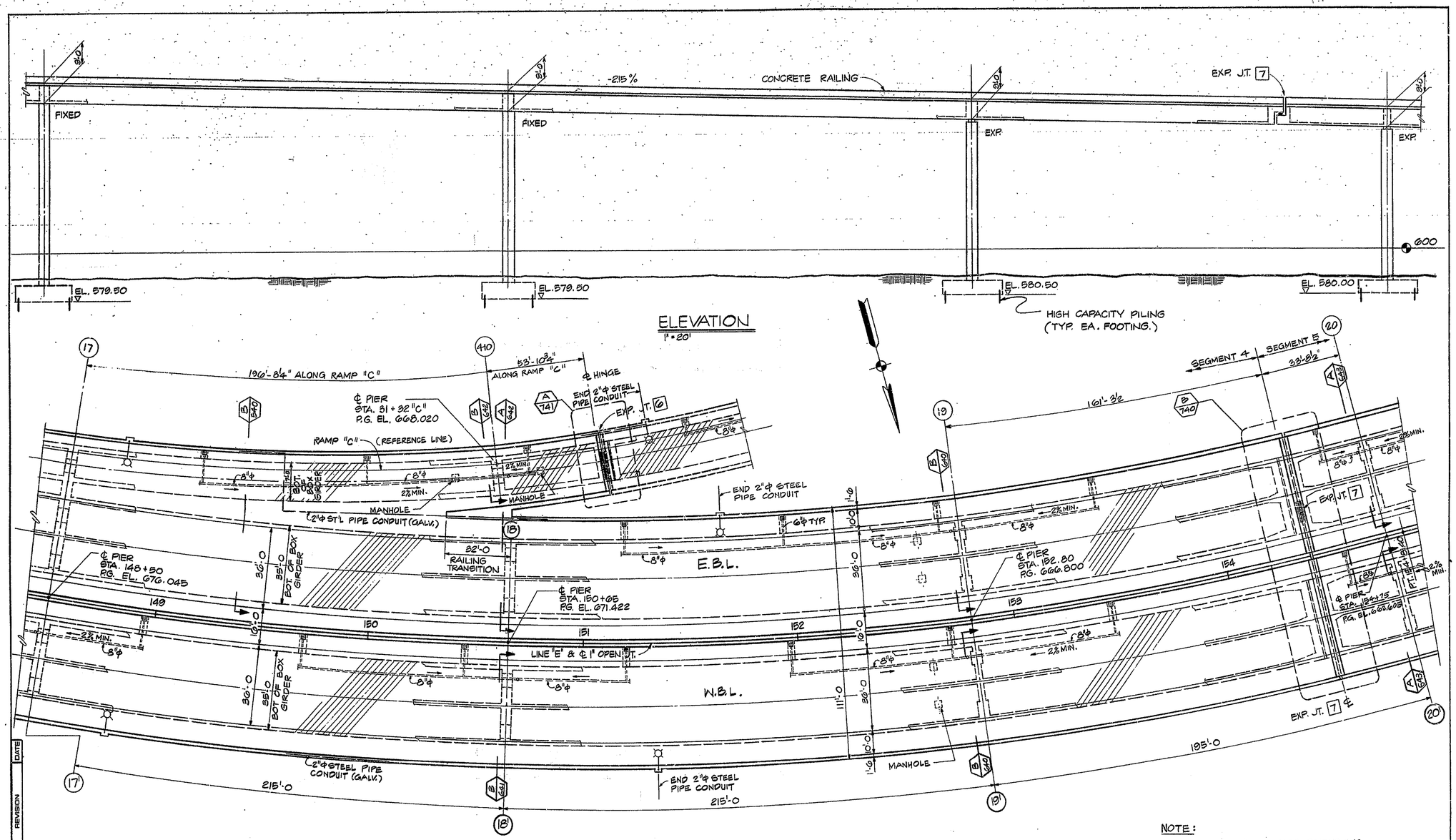
T. Y. LIN INTERNATIONAL REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PARTIAL PLAN AND ELEVATION (PIER 20 TO 23)

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2648 CONTRACT NO. B-11812
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
110

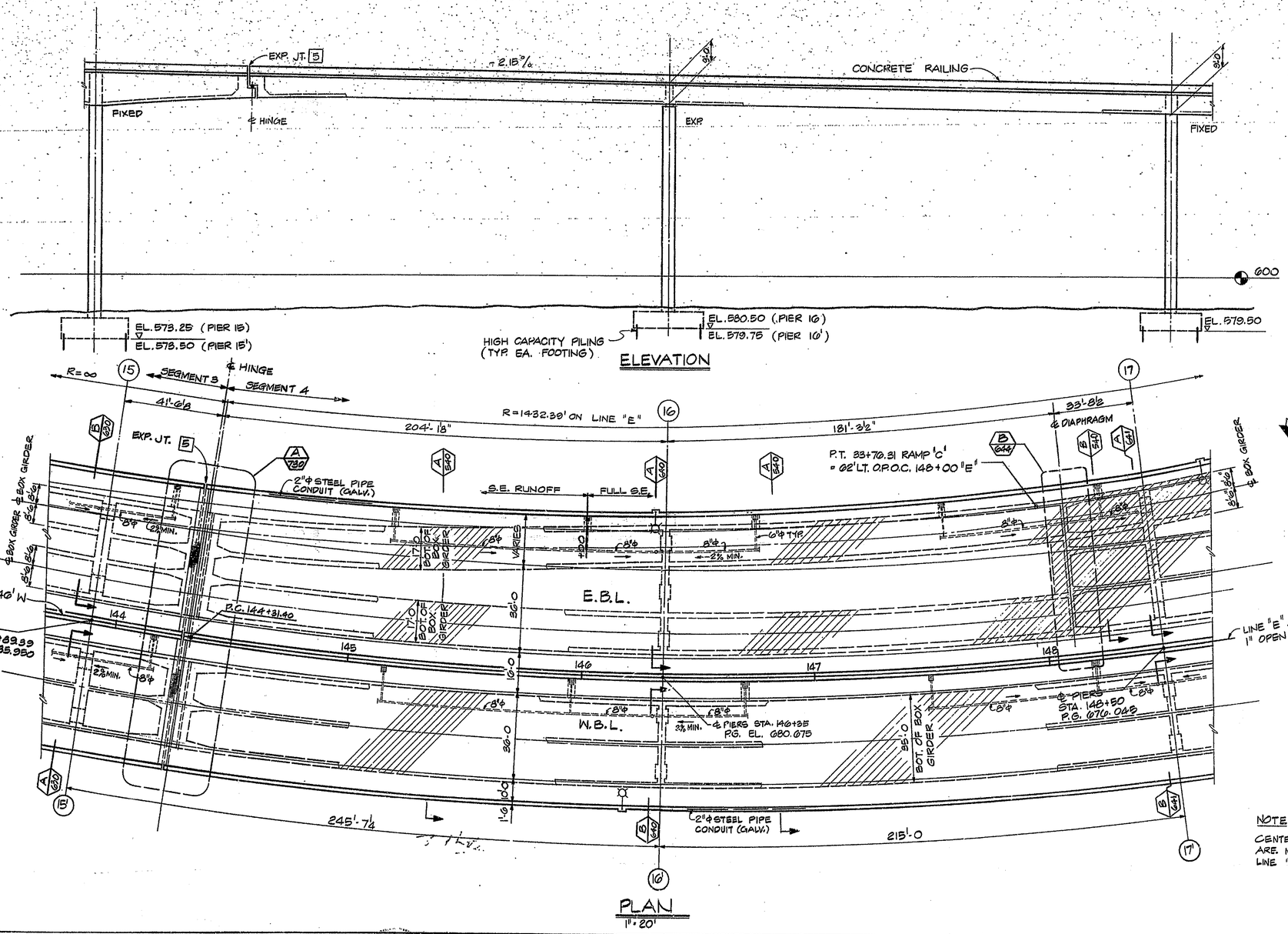


NOTE:

CENTER TO CENTER PIER DIMENSIONS ARE MEASURED HORIZONTALLY ALONG LINE "E"

T. Y. LIN INTERNATIONAL STRUCTURAL ENGINEERS REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC. CONSULTING ENGINEERS	**WALSH CONSTRUCTION COMPANY** A DIVISION OF GUY F. ATKINSON CO. DARIEN, CONNECTICUT	SHEET TITLE **PARTIAL PLAN AND ELEVATION (PIER 17 TO 20)** CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL BRIDGE FILE: 912-45-2548 CONTRACT NO. 8-11812 INDIANA STATE HIGHWAY COMMISSION	SHEET N. 109

N. | REVISION | DATE



NOTE:

CENTER TO CENTER PIER DIMENSIONS ARE MEASURED HORIZONTALLY ALONG LINE "E"

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

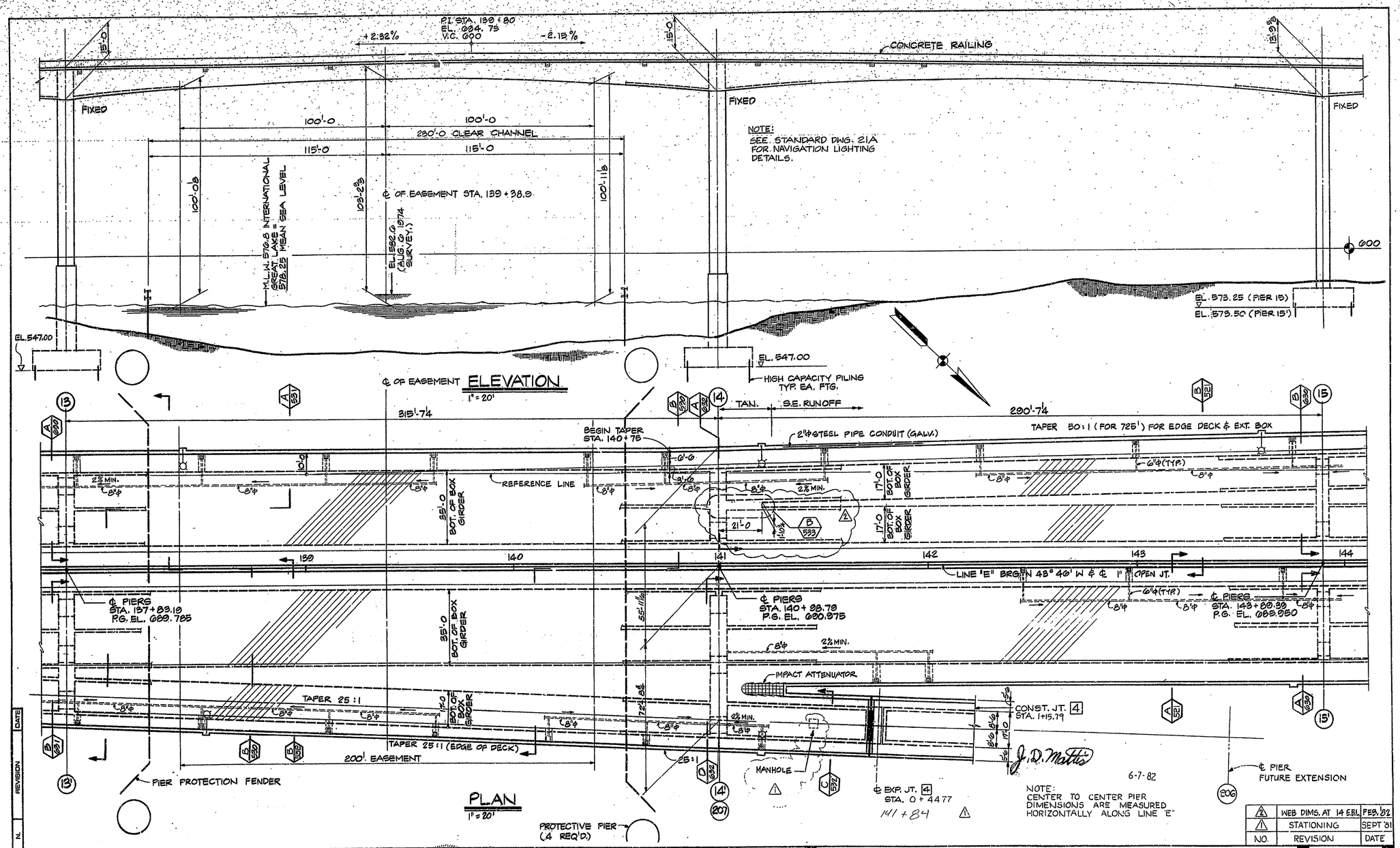
SHEET TITLE

PARTIAL PLAN AND ELEVATION (PIER 15 TO 17)

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2646 CONTRACT NO. 8-11612 INDIANA STATE HIGHWAY COMMISSION

SHEET N.

108



NO.	REVISION	DATE
2	WEB DIMS. AT 14 E.B.L.	FEB. '82
1	STATIONING	SEPT '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

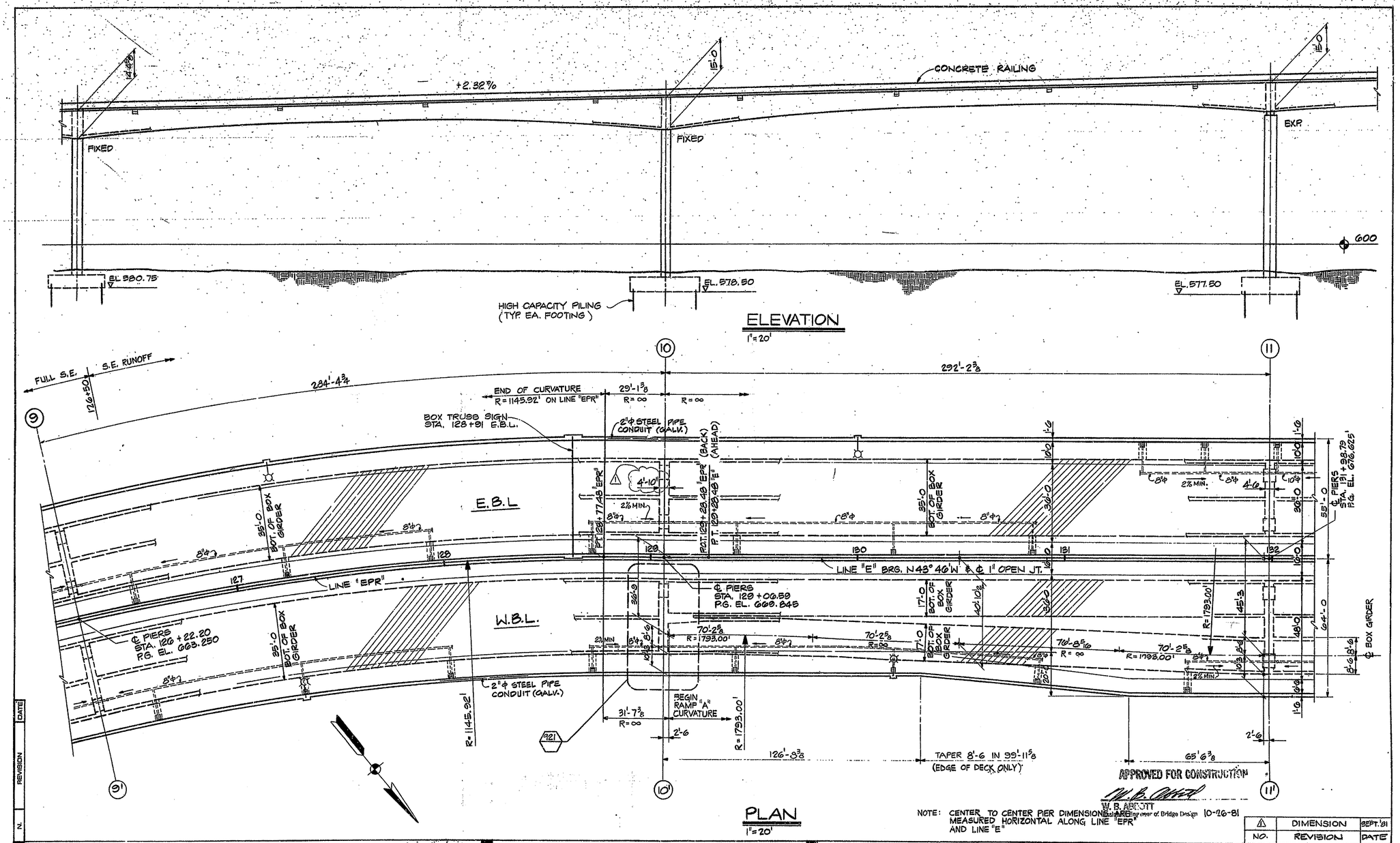
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PARTIAL PLAN AND ELEVATION (PIER 13 TO 15)

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11612 INDIANA STATE HIGHWAY COMMISSION

SHEET N.
107



APPROVED FOR CONSTRUCTION
W. B. ABBOTT
Supervisor of Bridge Design 10-26-81

NOTE: CENTER TO CENTER PIER DIMENSIONS ARE MEASURED HORIZONTAL ALONG LINE "EPR" AND LINE "E"

NO.	REVISION	DATE
1	DIMENSION	SEPT. '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

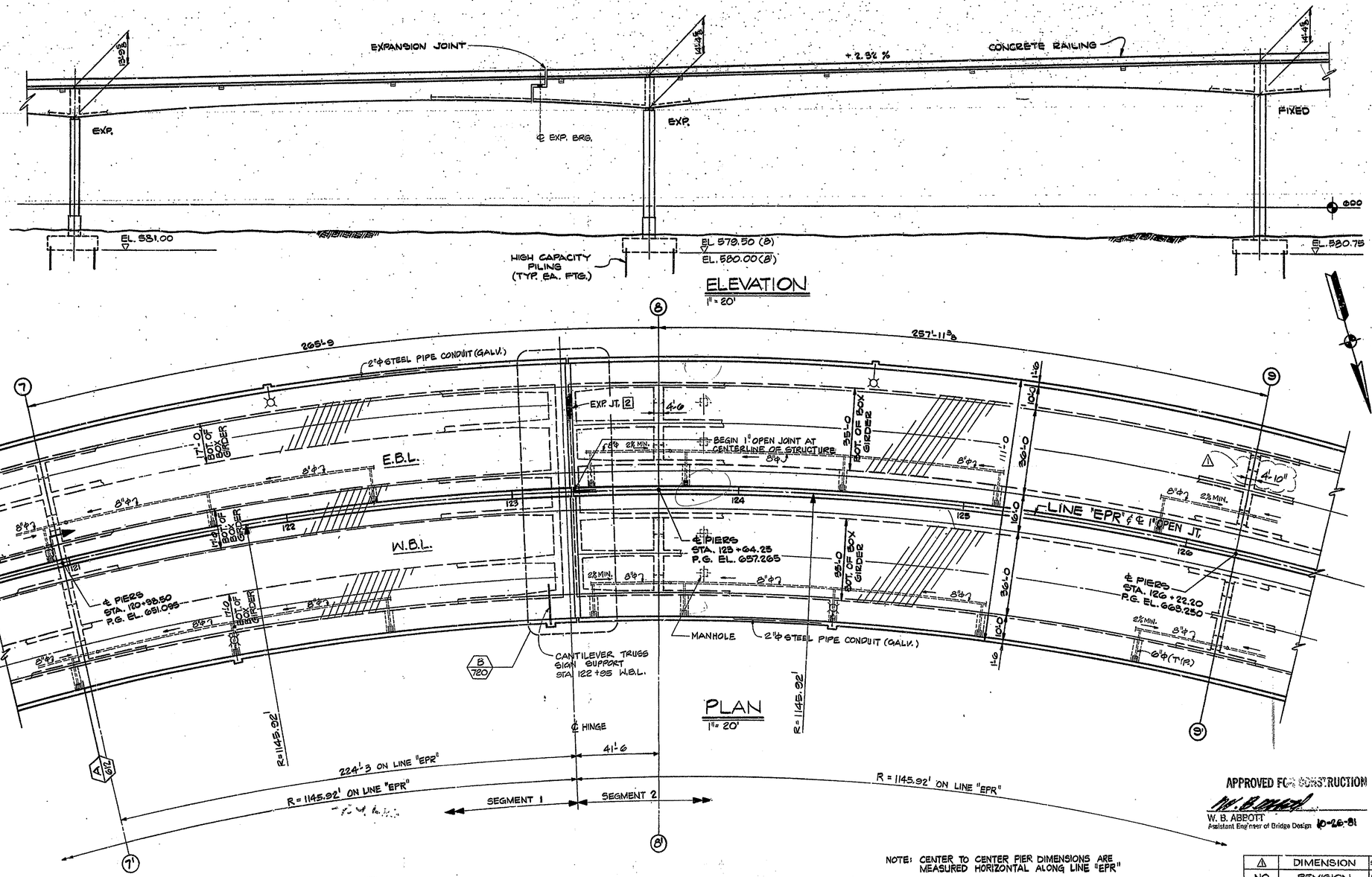
REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PARTIAL PLAN AND ELEVATION (PIER 9 TO 11)

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2549 CONTRACT NO. B-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
105



APPROVED FOR CONSTRUCTION

W. B. ABBOTT
Assistant Engineer of Bridge Design 10-26-81

NOTE: CENTER TO CENTER PIER DIMENSIONS ARE MEASURED HORIZONTAL ALONG LINE "EPR"

NO.	REVISION	DATE
1	DIMENSION	SEPT. '81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

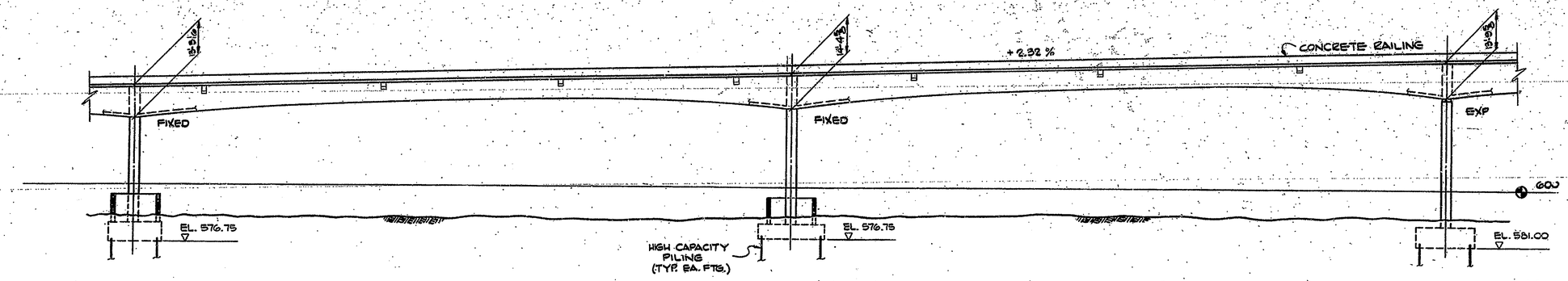
T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE
PARTIAL PLAN AND ELEVATION (PIER 7 TO 9)

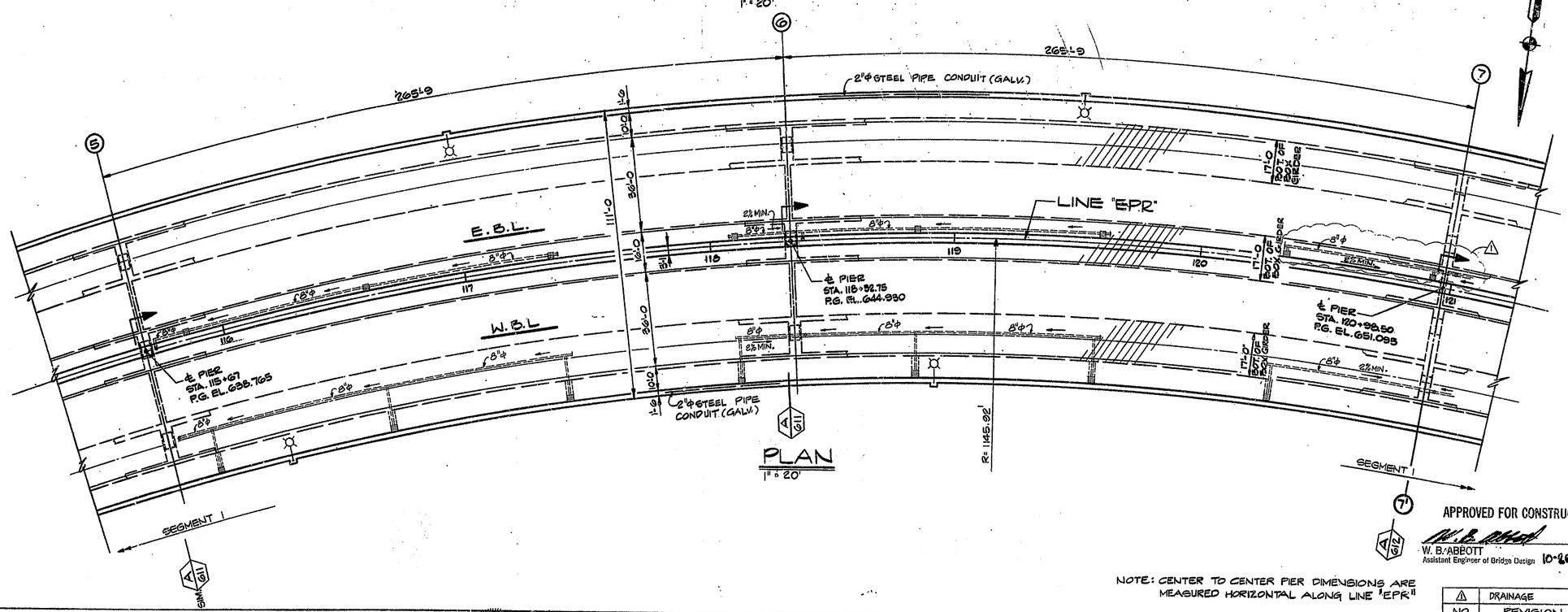
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 8-11612 INDIANA STATE HIGHWAY COMMISSION

SHEET N.
104



ELEVATION

1" = 20'



PLAN

1" = 20'

APPROVED FOR CONSTRUCTION

W. B. ABBOTT
Assistant Engineer of Bridge Design 10-26-81

NOTE: CENTER TO CENTER PIER DIMENSIONS ARE MEASURED HORIZONTAL ALONG LINE "EPR"

NO.	REVISION	DATE
1	DRAINAGE	SEPT'81

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T. Y. LIN REGISTERED No. 18266 STATE OF INDIANA PROFESSIONAL ENGINEER

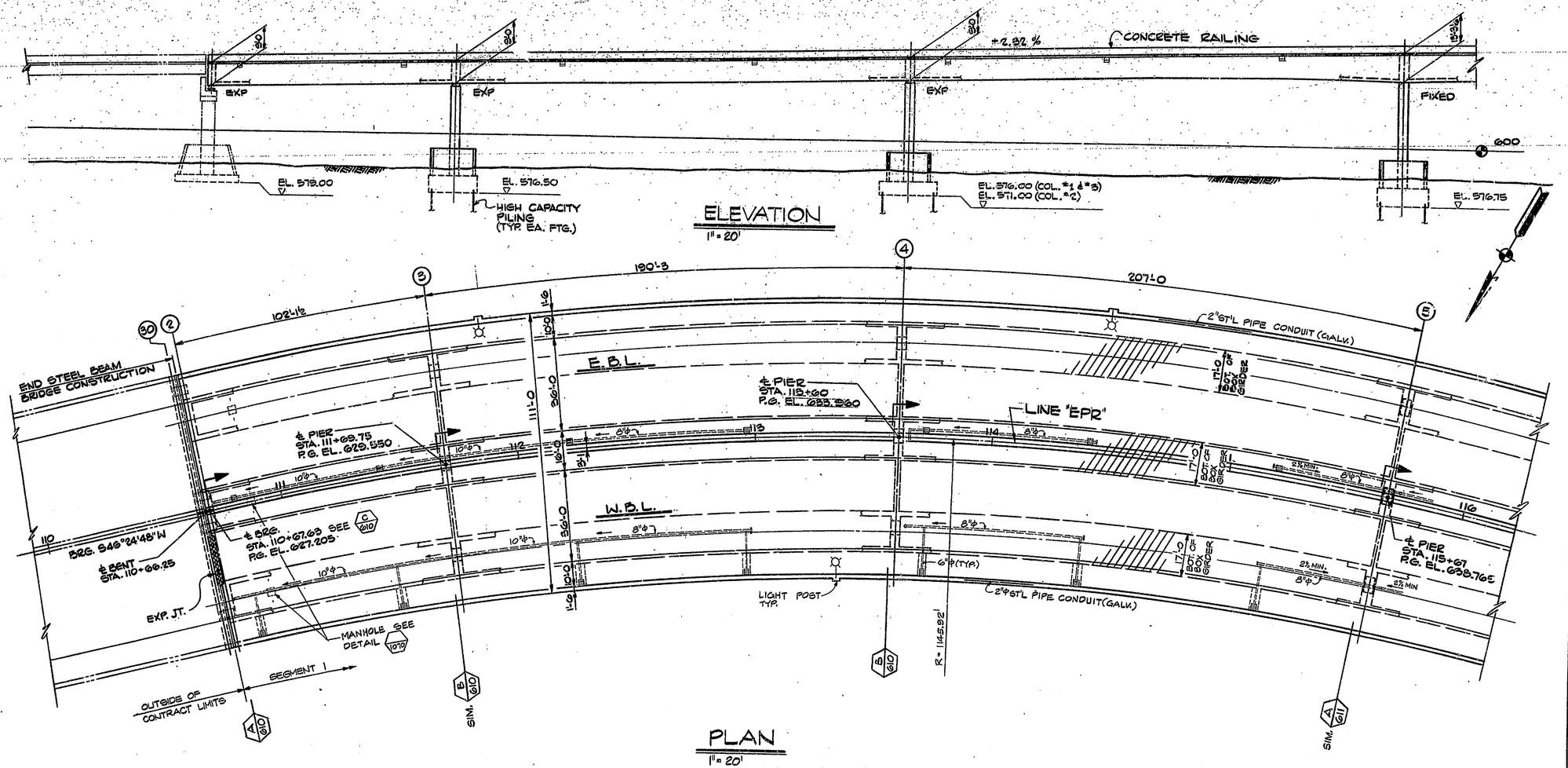
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE

PARTIAL PLAN AND ELEVATION (PIER 5 TO 7)

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 812-45-2548 CONTRACT NO. B-11612 INDIANA STATE HIGHWAY COMMISSION

SHEET N. 103



NOTE: CENTER TO CENTER PIER DIMENSIONS ARE MEASURED HORIZONTAL ALONG LINE "E.P.R."

N.	REVISION	DATE

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS

T. Y. LIN REGISTERED No. 18265 STATE OF INDIANA PROFESSIONAL ENGINEER

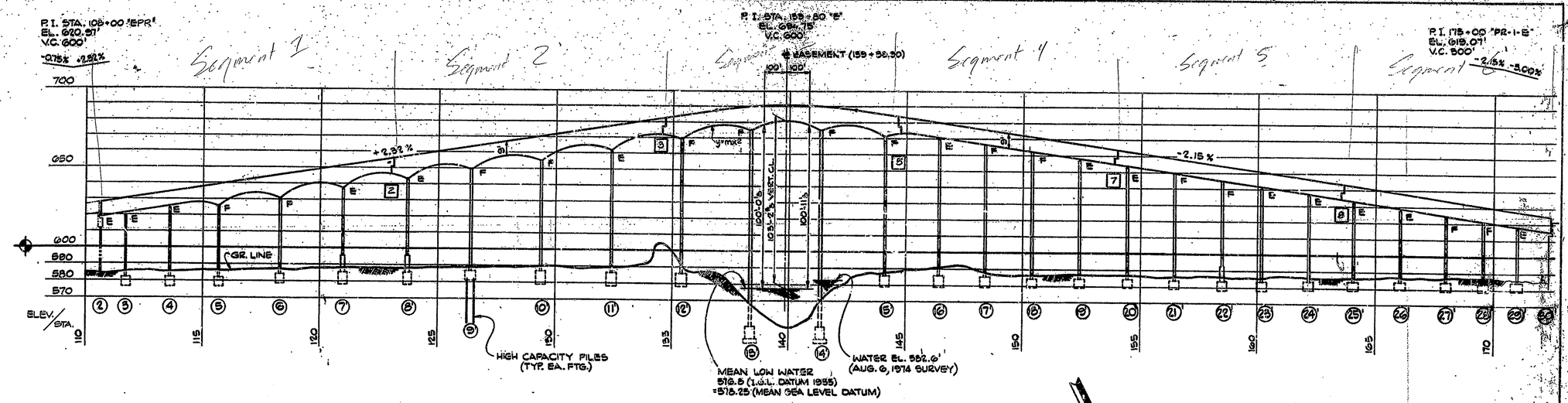
WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE

PARTIAL PLAN AND ELEVATION (PIER 2 TO 5)

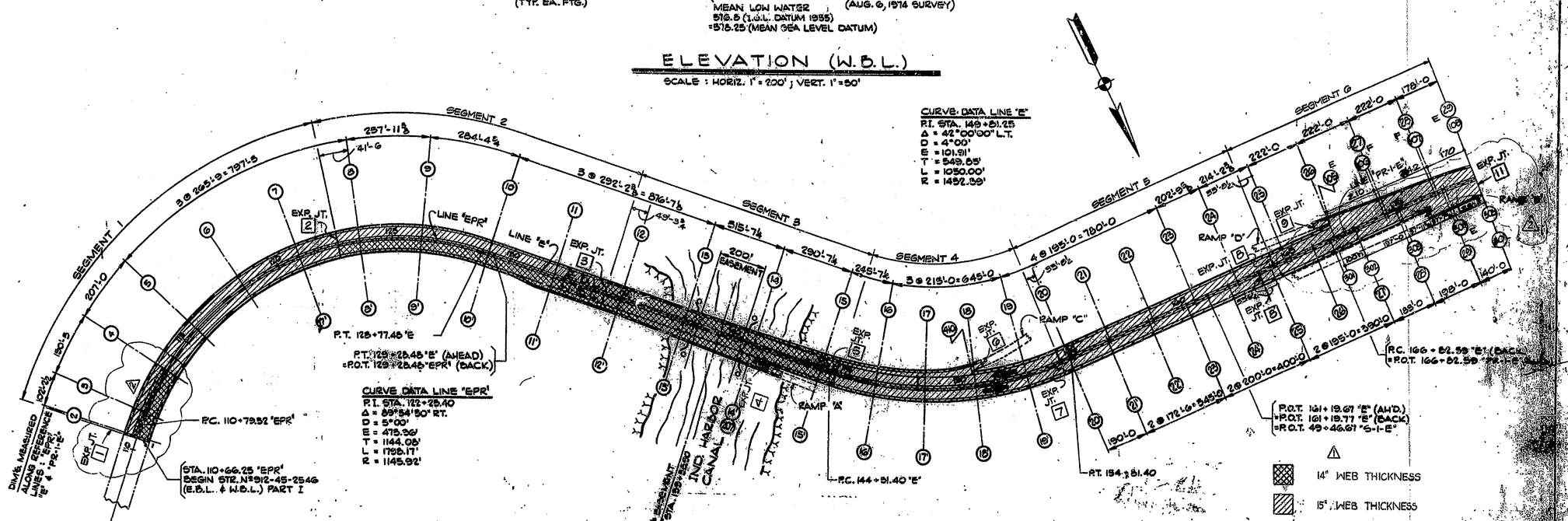
CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2546 CONTRACT NO. 8-11612
INDIANA STATE HIGHWAY COMMISSION

SHEET N.
102



ELEVATION (W.B.L.)

SCALE : HORIZ. 1" = 200' ; VERT. 1" = 50'



PLAN

SCALE : 1" = 200'

APPROVED FOR CONSTRUCTION

J. D. Mattis 6-7-82

J. D. MATTIS
Engineer of Bridge Plans

NO.	REVISION	DATE
2	RAMP "B"	[illegible]
1	WEB THICKNESS	OCT. 9

T. Y. LIN INTERNATIONAL
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REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
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T. Y. LIN REGISTERED No. 18266 STATE OF ILLINOIS

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE: GENERAL PLAN AND ELEVATION

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL

SHEET NO. 10

GENERAL

1. STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES ADOPTED BY THE AASHTO ELEVENTH EDITION 1977.

2. BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI-318-77).

LIVE LOAD

1. AASHTO HS 20-44.

2. MILITARY LOADING:
   THIS LOADING CONSISTS OF ONE MILITARY VEHICLE PER LANE HAVING 2 AXLES SPACED AT 4' C. TO C. THE WHEEL SPACING IS 6'. TOTAL WIDTH OF VEHICLE IS 10'. AXLE LOADS ARE 24 kips. CENTER OF WHEEL TO EDGE OF CURB IS 2 FT.

3. TOLLROAD LOADING:
   THIS LOAD CONSISTS OF ONE VEHICLE TRAIN PER LANE HAVING 7 AXLES SPACED AT 10', 4', 26', 4', 12', 20' RESPECTIVELY, MEASURED FROM THE FIRST AXLE ONWARDS, WHEEL SPACING IS 6'. WIDTH OF VEHICLE IS 10'. AXLE LOADS ARE 18 kips. PER LANE.

DEAD LOAD

1. SUPERSTRUCTURE CONCRETE: UNIT WEIGHT OF CONCRETE IS 0.156 K/CU.FT. (INCLUDES REBAR & PRESTRESSING.)

2. BRIDGE DECK OVERLAYS:
   USED FOR DESIGN: 1½" OVERLAY PLUS ALLOWANCE FOR FUTURE WEARING SURFACE TOTALS 0.05375 K/SQ.FT.

3. CURBS AND BARRIERS
   AT EDGES OF STRUCTURE: 0.45 K/LIN. FT., AT MIDDLE OF STRUCTURE: 0.57 K/LIN. FT.

OTHER LOADINGS

1. DIFFERENTIAL TEMPERATURE:
   ASSUMED THAT THE TOP SLAB CAN BE 18°F WARMER OR 9°F COLDER THAN THE REST OF THE BOX GIRDER.

2. UNIFORMLY DISTRIBUTED WORKING LOAD:
   SUPERSTRUCTURE HAS BEEN DESIGNED TO CARRY CONSTRUCTION LOADS OF 0.01 K/SQ. FT.

MATERIAL PROPERTIES

1. COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS: $F_c' = 5000$ psi

2. ALLOWABLE STRESSES AT SERVICE CONDITIONS:
   COMPRESSION: 0.4 x 5000 = 2000 psi
   TENSION: =0 psi (SEE DESIGN DATA # 7)

3. ALLOWABLE STRESSES AT TRANSFER:
   COMPRESSION: 0.55 x f_{ci}' (4000) = 2200 psi
   TENSION: =0 psi (SEE MISC. DESIGN DATA # 7)

4. SHEAR STRESSES:
   TENSION: $v_c = 2\sqrt{F_c'} = 141$ psi.

5. THERMAL COEFFICIENT = 6×10^{-6} / °F

6. SHRINKAGE STRAIN: $\epsilon = 200 \times 10^{-6}$

7. CREEP COEFFICIENT: $\phi = 2.00$ (SEE NOTE 7 DWG. SHEET 1000)

8. MILD STEEL REINFORCEMENT USED IS GRADE 60 STEEL.

9. PRESTRESSING STEEL:
   STRANDS SHALL BE 7-WIRE LOW RELAXATION STRAND IN ACCORDANCE WITH ASTM A416 GRADE 270 STEEL. PRESTRESSING FORCES SHOWN ON DRAWINGS ARE TENDON EFFECTIVE FORCES AFTER LOSSES DUE TO SHORTENING, CREEP, RELAXATION AND FRICTION TAKE PLACE.

MISCELLANEOUS DESIGN DATA

1. TEMPERATURE INTERVAL
   AT CONSTRUCTION: ASSUMED 60°F
   MAX. FALL: -45°F
   MAX. RISE: +40°F

2. CONCRETE COVER
   TOP STEEL IN TOP SLAB: 1½" MIN.
   ALL OTHER FACES: 1" MIN.

3. CONSTRUCTION WAGON (TRAVELLER) WEIGHT, FOR EITHER E.B.L. OR W.B.L., TOTAL WEIGHT OF EACH CONSTRUCTION WAGON, INCLUDING COUNTERWEIGHTS, SCAFFOLDINGS, FORMS AND ALL CONSTRUCTION LOADS SHALL NOT EXCEED 130 TONS.

4. THE MINIMUM THICKNESS OF THE BOTTOM-SLAB SHALL NOT BE LESS THAN 1/30 OF THE CLEAR SPAN BETWEEN THE FILLETS OR 5½" WHICHEVER IS GREATER.

5. DIMENSIONS SHOWN FOR THE WEB THICKNESS OF THE BOX GIRDERS ARE THE MINIMUM REQUIRED. DIMENSIONS OF THE WEB THICKNESS MAY BE INCREASED TO PROVIDE THE NECESSARY PRESTRESSING CLEARANCES.

6. DEVELOPMENT OF REINFORCEMENT:
   REINFORCEMENT LAPS, HOOKS, AND SPLICES SHALL SATISFY PROVISIONS OF AASHTO SECTION 1.5.13 THROUGH 1.5.22.

7. ALLOWABLE STRESSES:
   ADEQUATE NON-PRESTRESSED REINFORCEMENT IS PROVIDED TO SUPPORT ANY CONCRETE TENSION STRESSES DURING CONSTRUCTION AND LONG-TERM LOADINGS.

8. MECHANICAL, ELECTRICAL & PRESTRESSING DUCTS:
   PROVIDE PENETRATIONS AS REQUIRED FOR PRESTRESSING DUCTS, SUPERSTRUCTURE DRAINAGE AND ELECTRIC CONDUIT IN GIRDERS, DIAPHRAGMS AND EXPANSION JOINTS.

9. REINFORCING
   DETAILS OF REINFORCING AT LOCATIONS NOT EXPLICITLY SHOWN SHALL BE REINFORCED AS INDICATED FOR SIMILAR CONDITIONS.

N.	REVISION	DATE

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DARIEN, CONNECTICUT

SHEET TITLE
GENERAL NOTES - SUPERSTRUCTURE

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 912-45-2548 CONTRACT NO. 8-11612 INDIANA STATE HIGHWAY COMMISSION

SHEET N.
004

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1100 TO 1107 CONSTRUCTION SEQUENCE

NO.	REVISION	DATE

T. Y. LIN INTERNATIONAL
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REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
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T. Y. LIN INTERNATIONAL 12/56 PROFESSIONAL ENGINEER

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DARIEN, CONNECTICUT

SHEET TITLE

INDEX OF DRAWINGS - SUPERSTRUCTURE

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 9-2-45-2548 CONTRACT NO. 8-11612 INDIANA STATE HIGHWAY COMMISSION

SHEET N.

002 A

CLINE AVENUE EXTENSION
OVER
INDIANA HARBOR CANAL

SEGMENT NO. 1 THRU 6

Rev. 10-3-79 Sheet 304
Rev. 12-14-79 Sheet 204, Delete 203, 302, Add 203A, 302A

INDIANA STATE HIGHWAY COMMISSION

BRIDGE FILE: 912-45-2546 **CONTRACT NO. B-11612**

WALSH CONSTRUCTION COMPANY
A DIVISION OF GUY F. ATKINSON COMPANY
DARIEN, CONNECTICUT

Certified by: _____ Date: _____

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

Certified by: _____ Date: _____

REID, QUEBE, ALLISON, WILCOX & ASSOC., INC.
CONSULTING ENGINEERS

Certified by: _____ Date: _____

INDIANA STATE HIGHWAY COMMISSION
STATE OF INDIANA

Recommended for Approval: _____

CHIEF OF BRIDGE DIVISION

INDIANA STATE HIGHWAY COMMISSION
STATE OF INDIANA

Approved: _____

CHIEF HIGHWAY ENGINEER

mm-220-1(5)