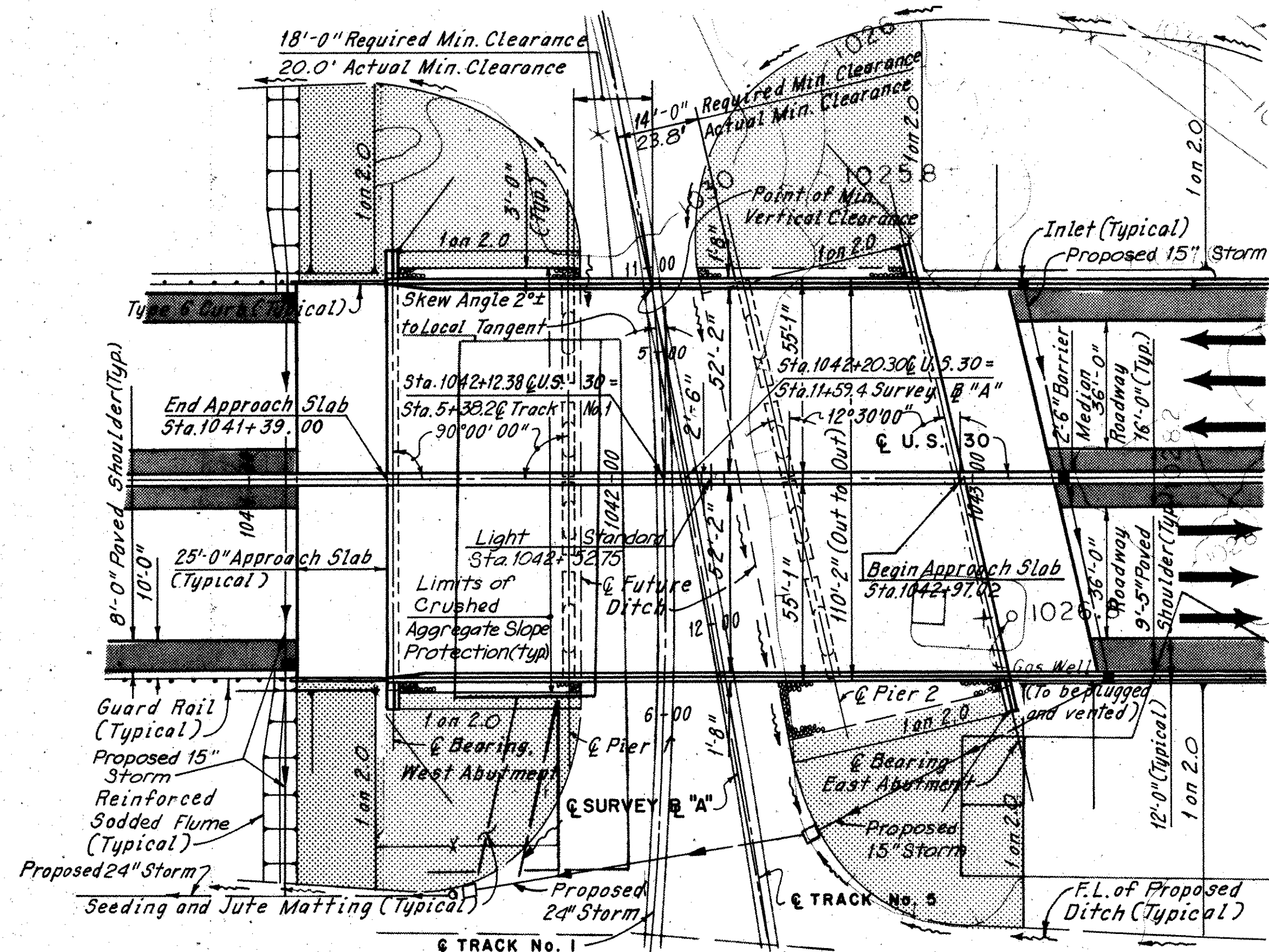
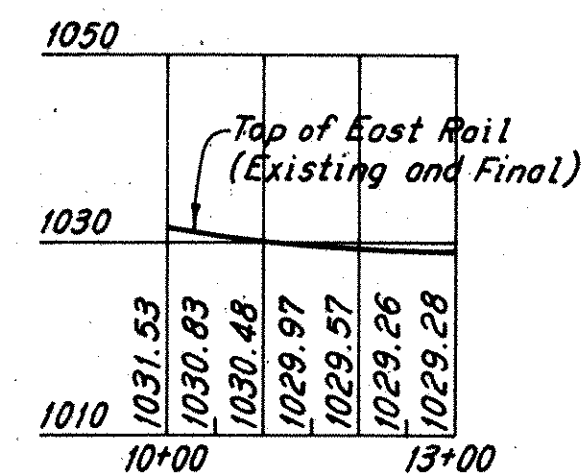


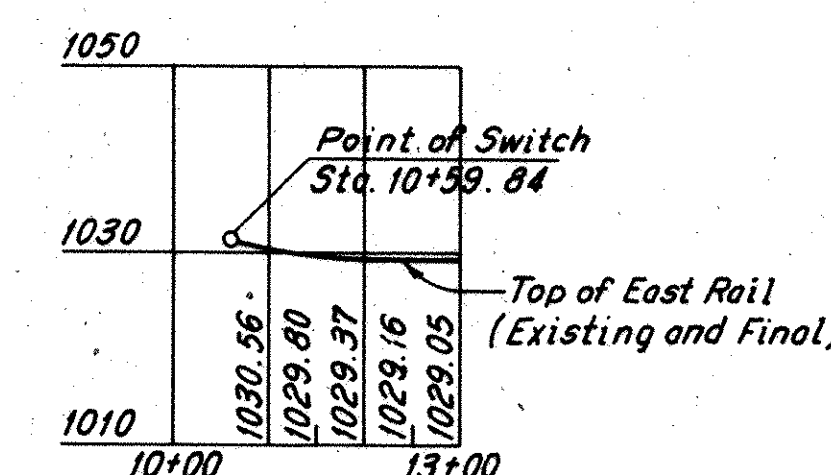
**STARK COUNTY  
STA-30-15.66**



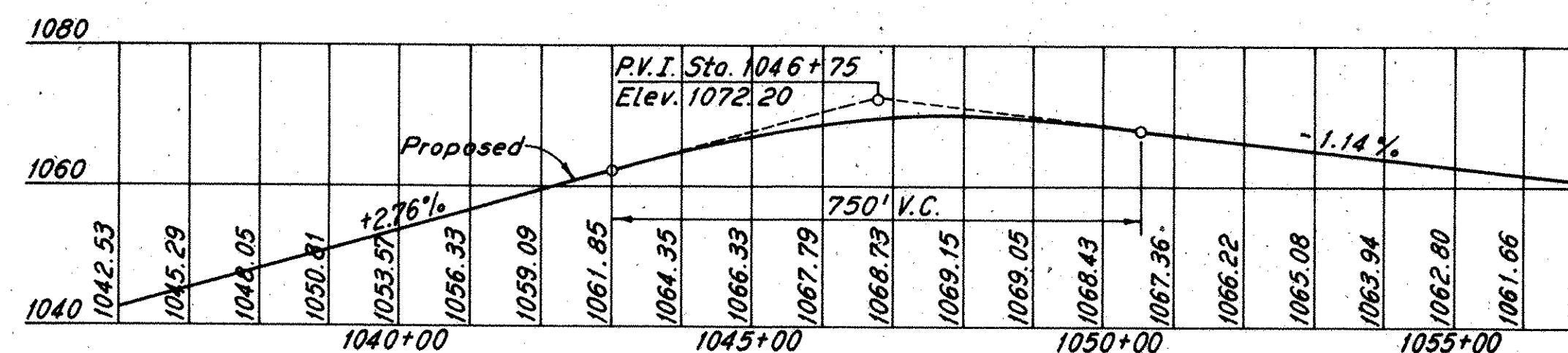
**PLAN**  
Scale: 1" = 30'



**TRACK NO. 1**



**TRACK NO. 5**

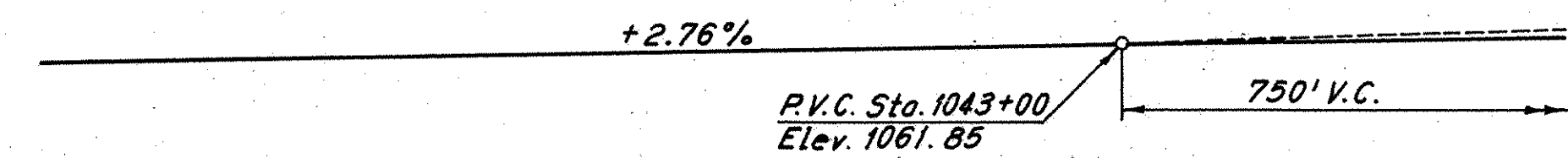


**U.S. 30**

**PROFILES**

Scale: Horiz. 1" = 200'  
Vert. 1" = 20'

(Profile Stations for tracks are along Survey B "A": Sta. 11+00. Survey B "A" = Sta. 4+80 @ Track No. 1).



**PROFILE GRADE - U.S. 30**

**PROPOSED STRUCTURE**

TYPE: Continuous rolled beams with reinforced concrete deck and substructure.  
 SPANS: 47'-0", 62'-0" and 47'-0"  
 ROADWAY: 108'-0" face to face of parapets including 2'-6" median barrier.  
 LOADING: HS 20-44 and the Alternate Military Loading, Case II.  
 SKEW: None at West Abutment and Pier 1, 12°30'00" Right Forward at Pier 2 and East Abutment.  
 WEARING SURFACE: 2" Asphalt Concrete.  
 APPROACH SLABS: A5-1-72 (25' Long). (Modified)  
 ALIGNMENT: Tangent  
 SUPERELEVATION: 0.0156' per ft.

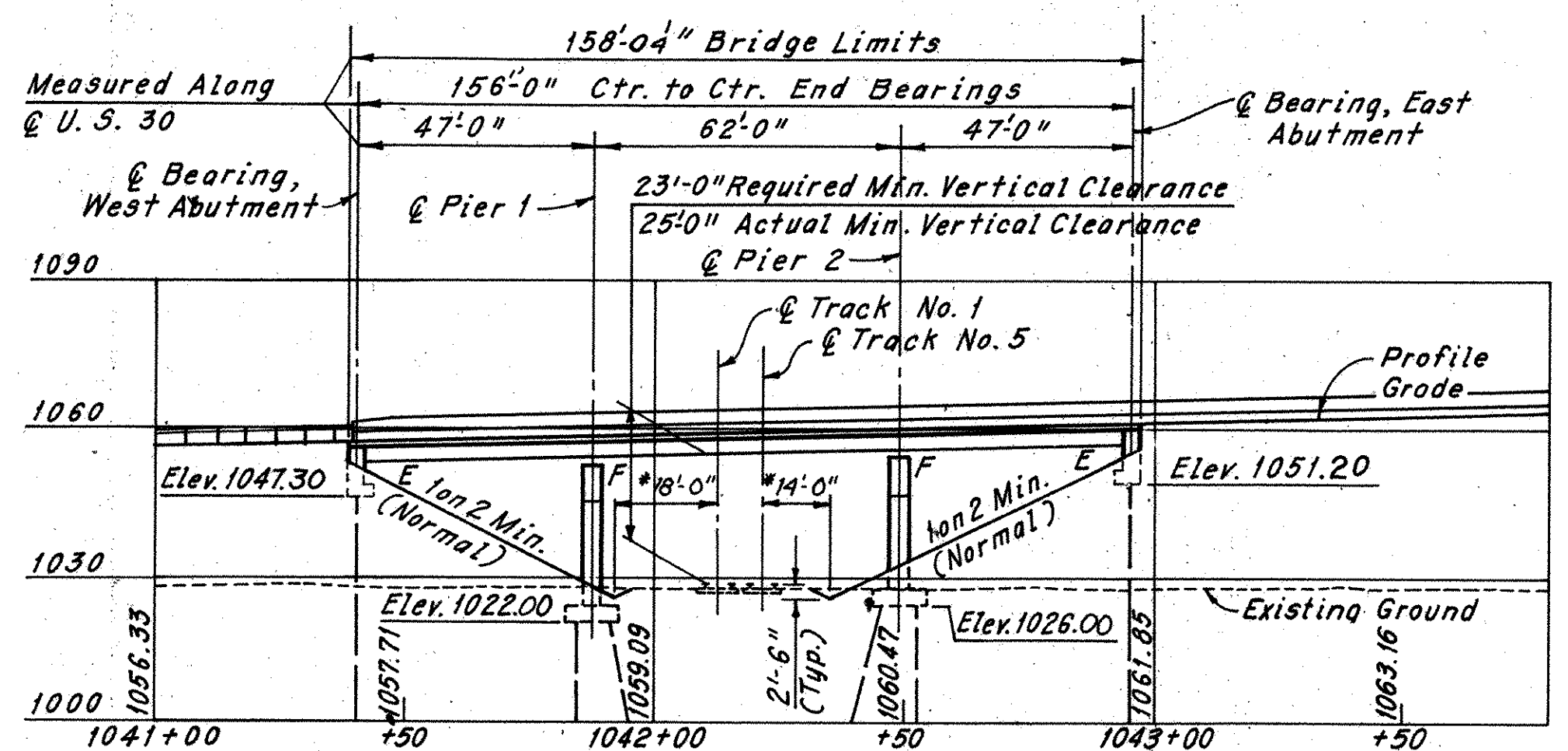
**FOUNDATION DATA:**

All substructure elements shall be founded on 12" φ C.I.P. reinforced concrete piles with a maximum design load of 45 tons per pile at the abutments and 50 tons per pile at the piers.  
 Estimated pile lengths are as follows:

- West Abutment - 75 ft.
- Pier 1 - 65 ft.
- Pier 2 - 65 ft.
- East Abutment - 75 ft.

**TRAFFIC DATA (1998)**

**U.S. 30**  
 A.D.T. 44,883 (One Way)  
 A.D.T.T. 2,245 (Based on 5% A.D.T.)



**ELEVATION**  
Scale: 1" = 30'

\* Normal dimension to PI of toe slope of ditch.

Modify Std. Drwg. AS-1-72 by providing 3" clear over the top rebar instead of the 2" shown on the Std. Drwg.. The jacking holes as called for on Std. Drwg. AS-1-72 are not required.

Note:  
 For Estimated Quantities see Sheet E3.

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 FEB 15 1985

**H.N.T.B. BRIDGE NO. 20**

HOWARD, NEEDLES, TAMMEN & BERGENDOFF  
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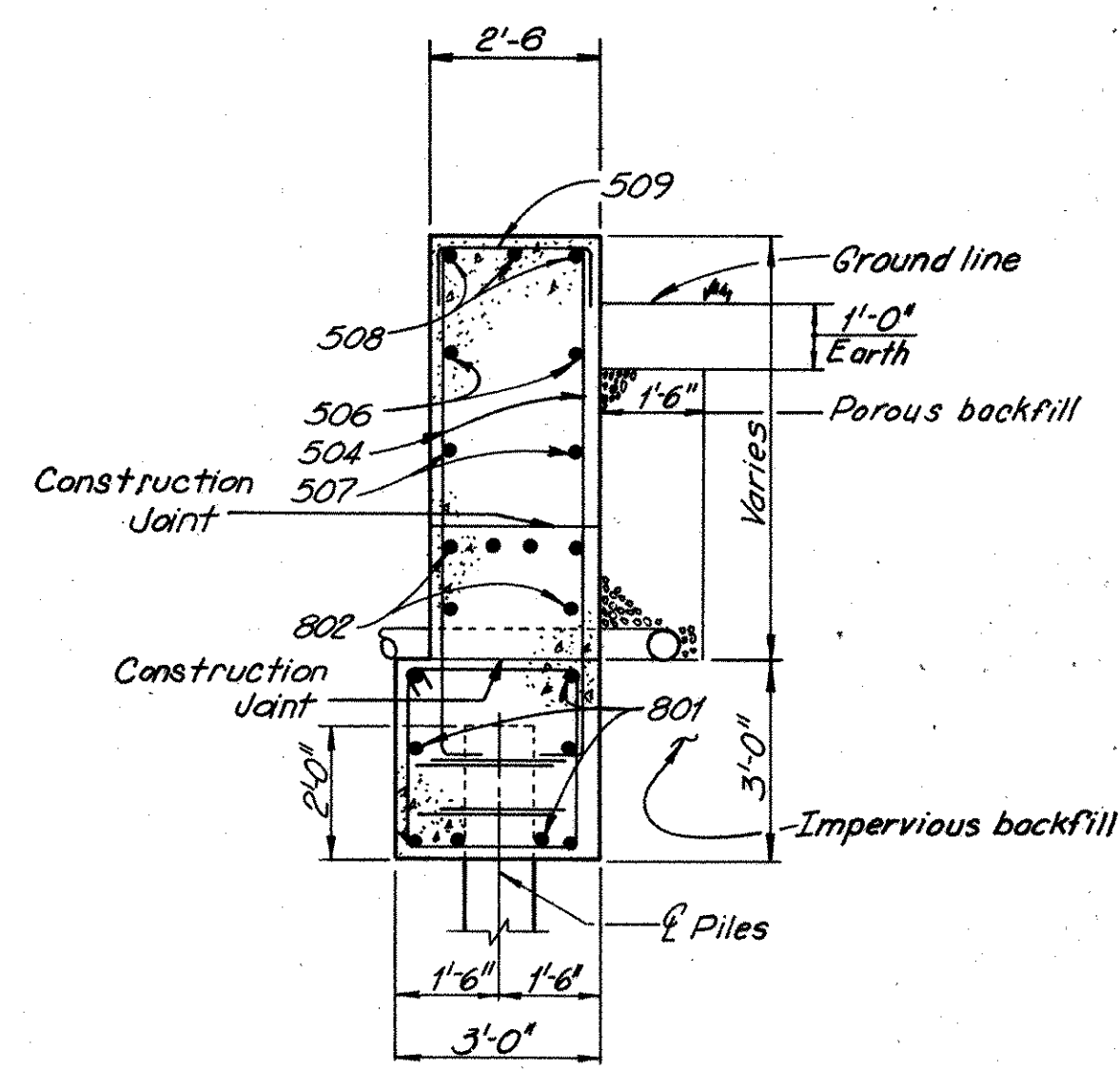
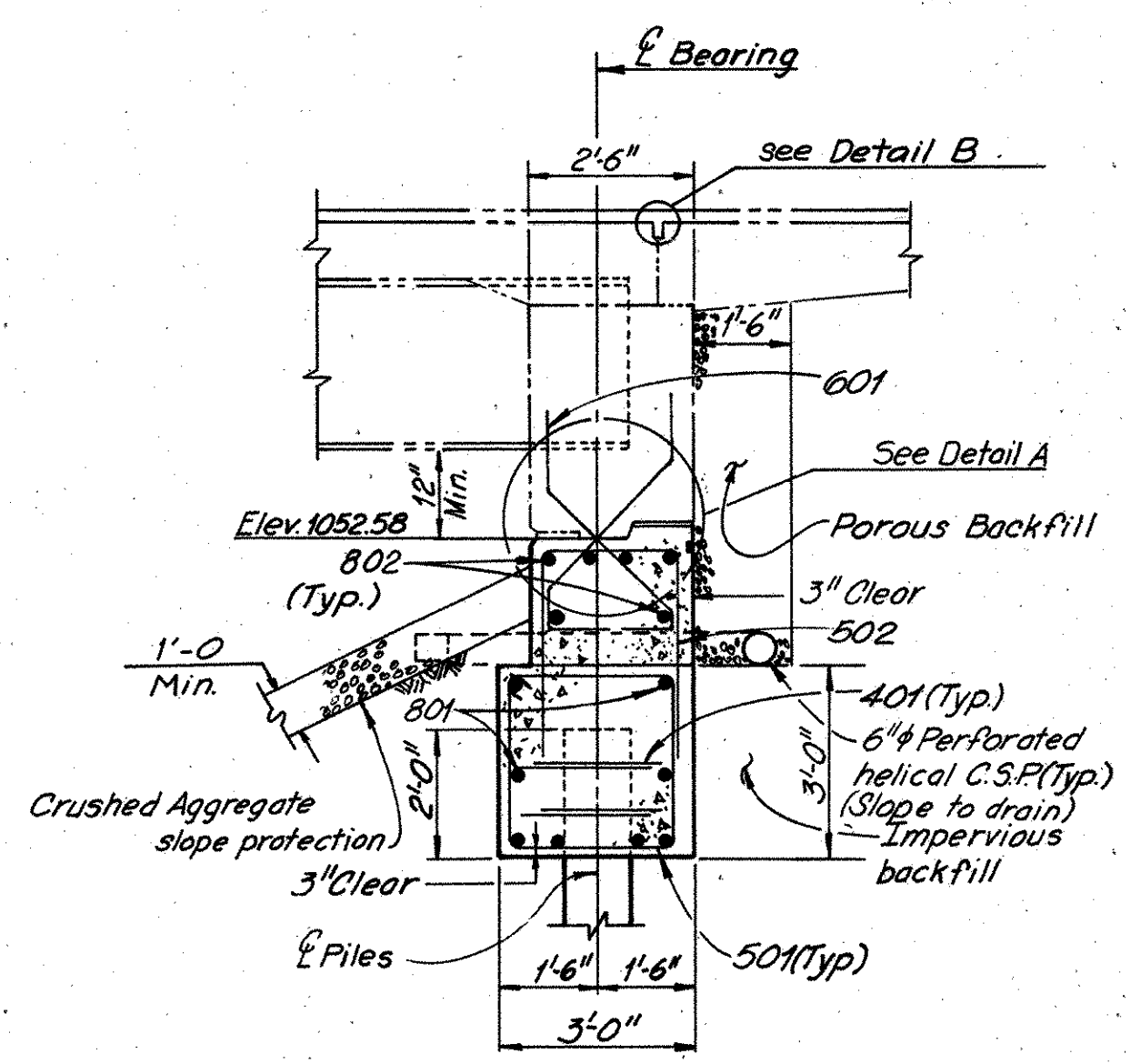
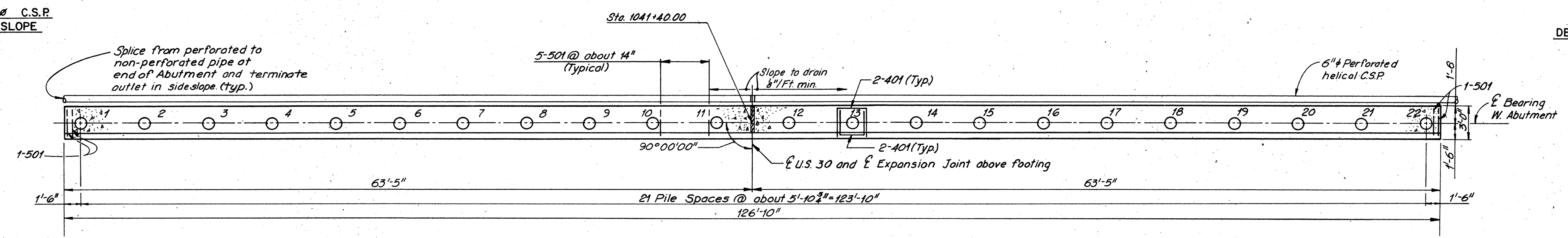
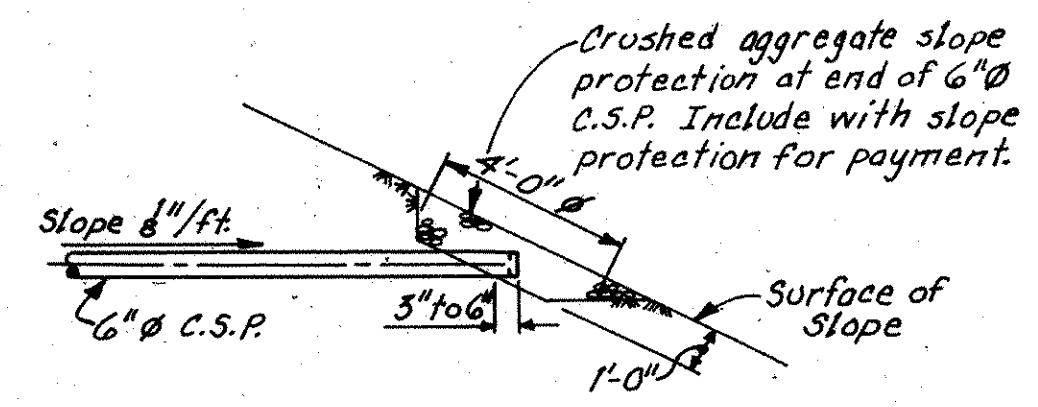
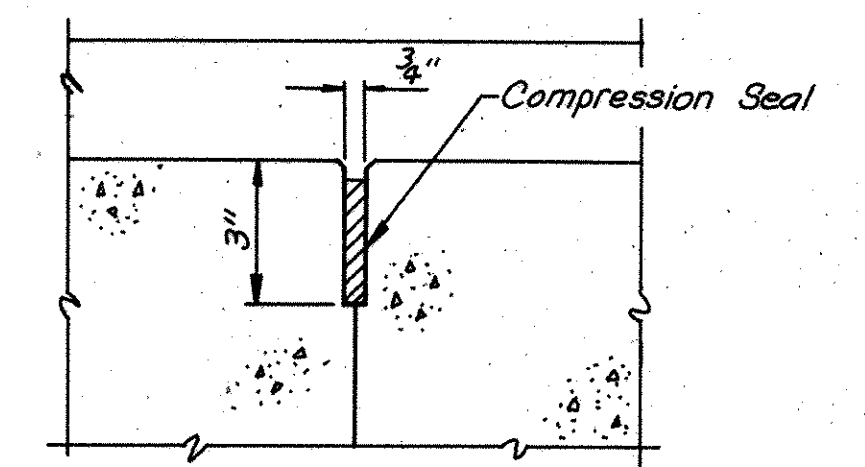
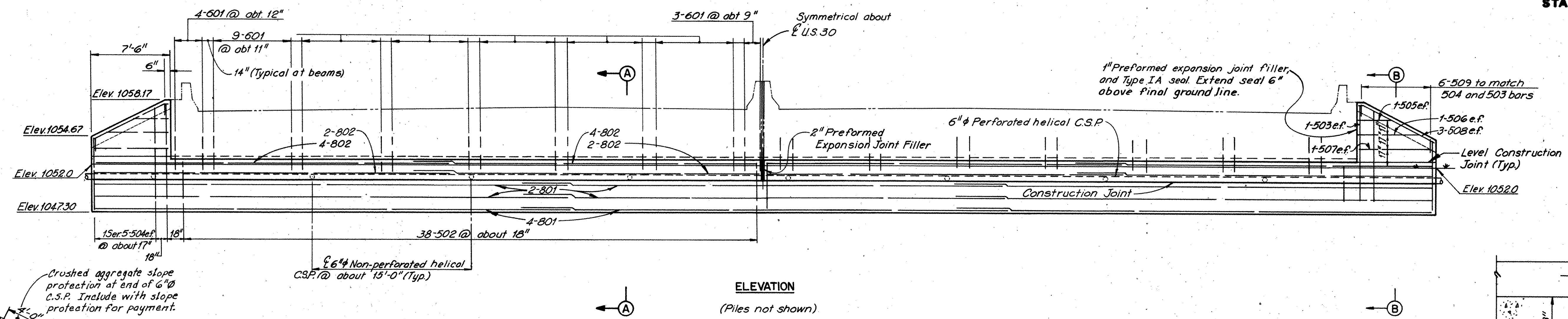
**SITE PLAN**

U.S. 30 OVER N & W R.R. (SIDING TRACKS)  
 BR. NO. STA-30-1641 STA. 1041+39.00  
 SCALE: AS SHOWN STA. 1042+97.02  
**RELOCATED U.S. 30**

CANTON STARK COUNTY OHIO

DRAWN/R.A.S.	TRACED/L.R.	CHECKED	REVIEWED	REVISED
DATE 2-17-79	DATE 2-22-79	DATE 6-28-79	DATE	

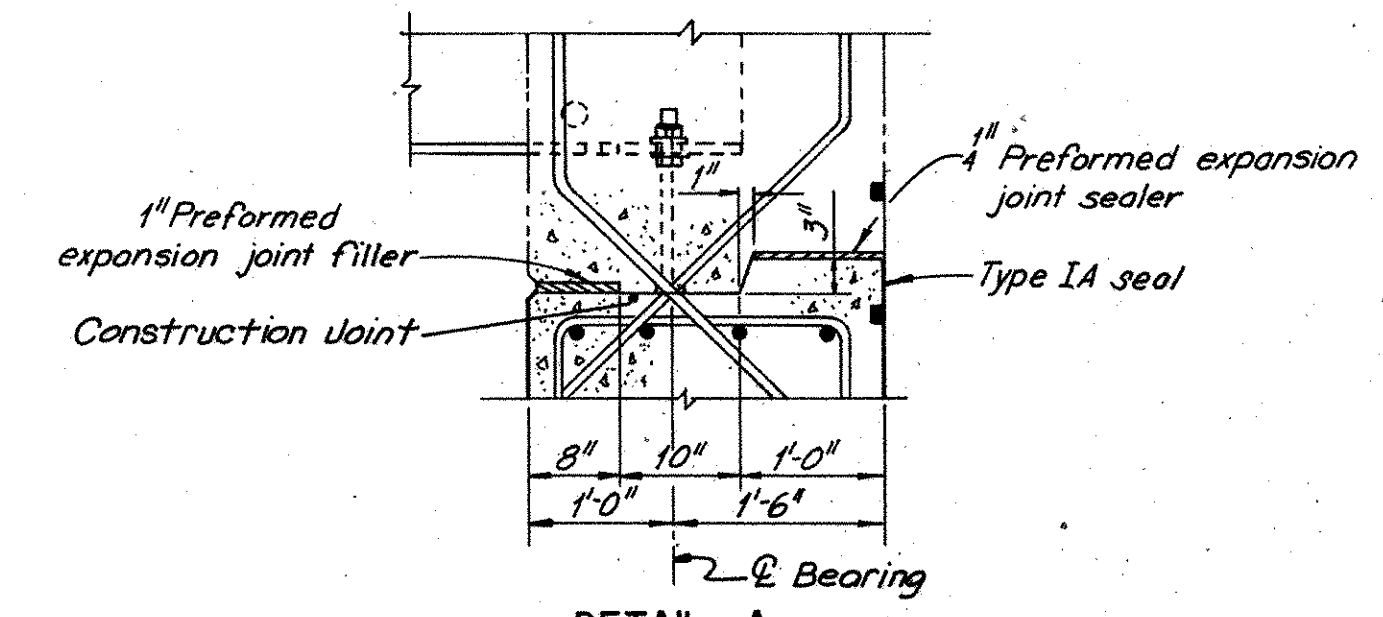
**STARK COUNTY**  
**STA-30-15.66**



Note: All reinforcing bar marks shall be prefixed: WA

**REQUIRED LAP LENGTHS**  
No. 5 Bars 1'-4" Min.  
No. 8 Bars 4'-9" Min.

Note: For notes see Sheet 3/8.



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FEB 15 1965

H.N.T.B. BRIDGE NO. 20

HOWARD, NEEDLES, TAMMEN & BERGENDOFF 2/8  
CONSULTING ENGINEERS  
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**WEST ABUTMENT**  
U.S. 30 OVER N&W R.R. (SIDING TRACKS)  
BR. NO. STA-30-1641 STA. 1041 39.00  
STA. 1042 97.00

**RELOCATED U.S. 30**

CANTON STARK COUNTY OHIO

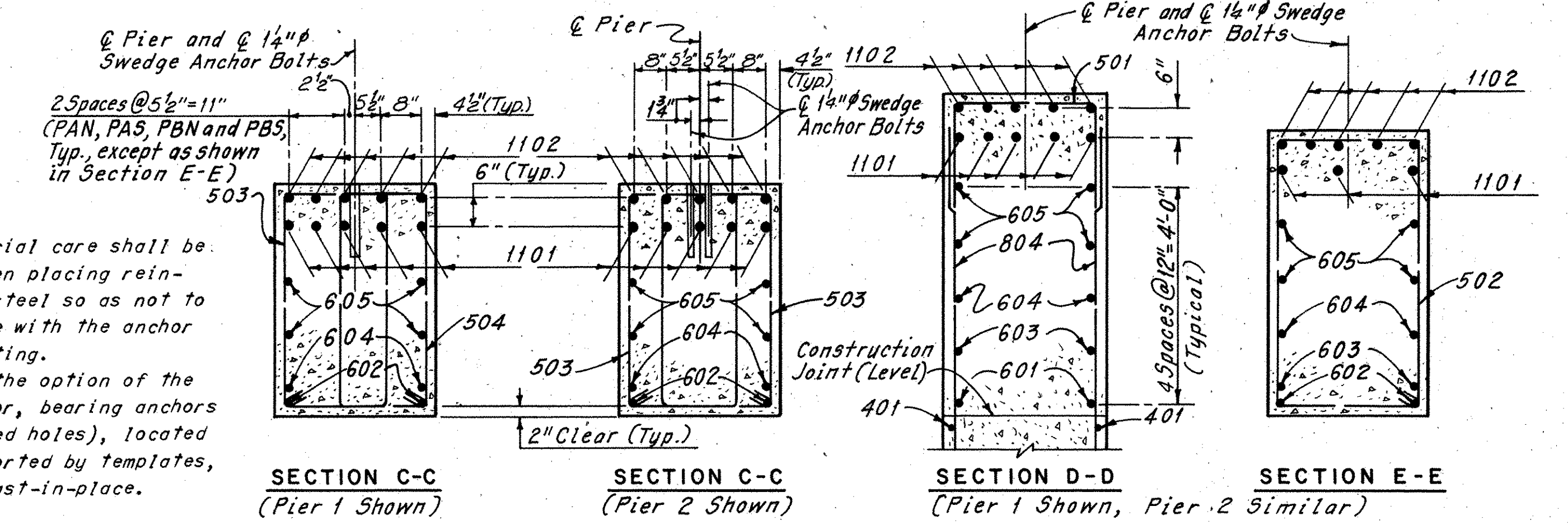
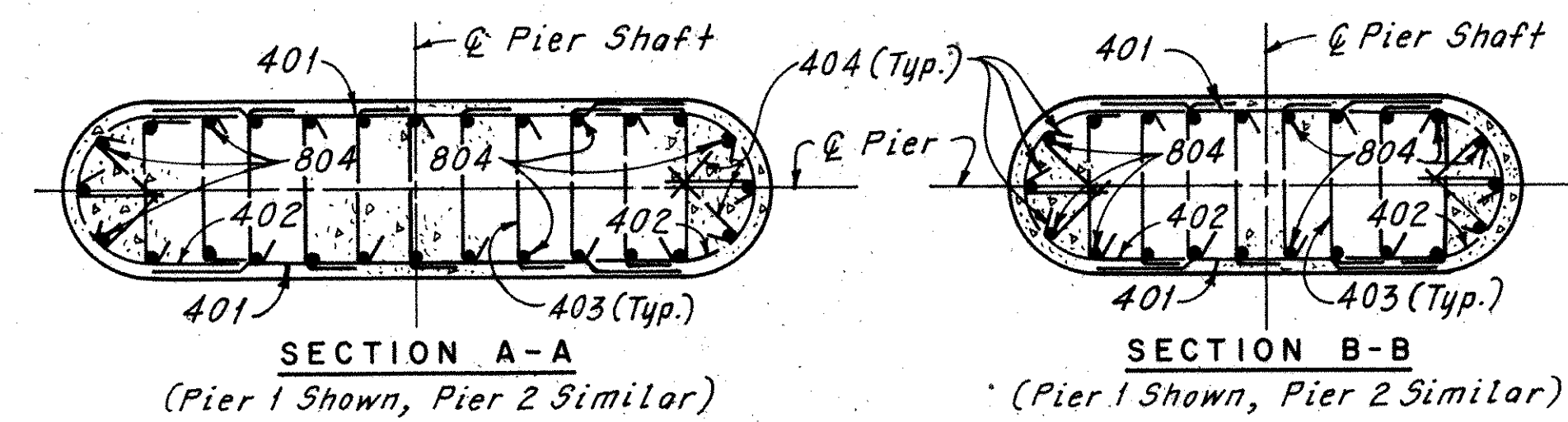
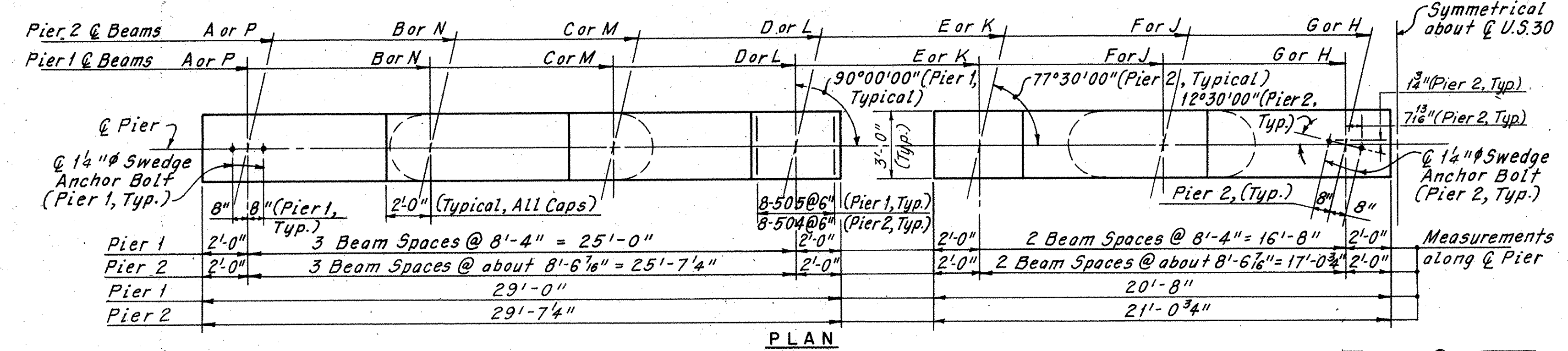
DRAWN RAS	TRACED TZW	CHECKED JLV	REVIEWED	REVISED
DATE 2-23-78	DATE 3-2-79	DATE 3-31-79	DATE	DATE



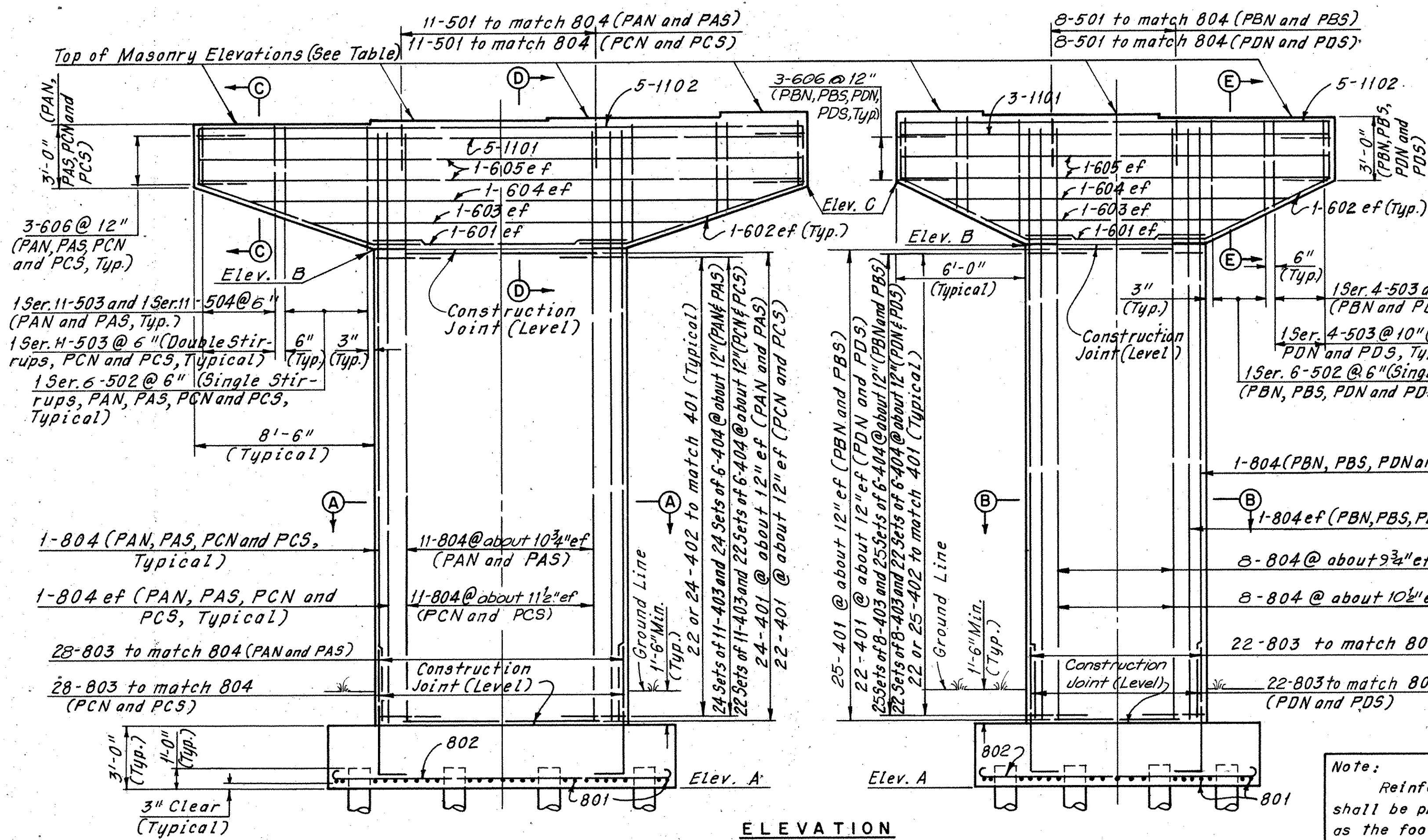




**STARK COUNTY  
STA-30-15.66**



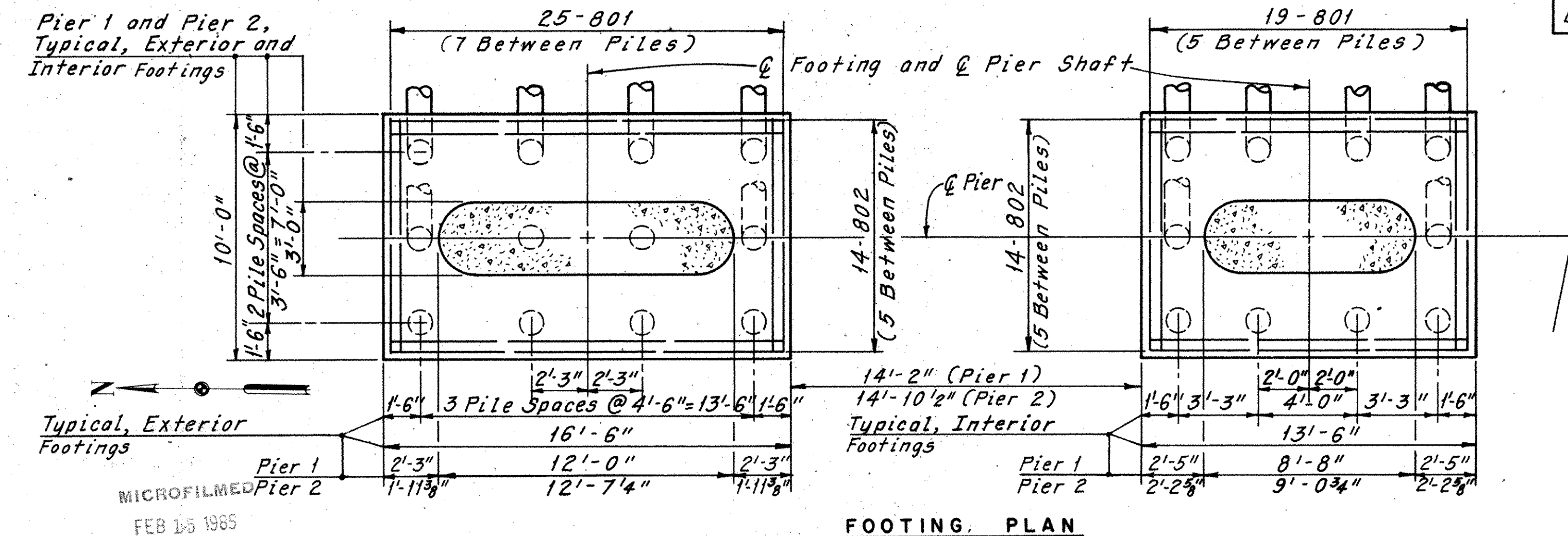
Note:  
Special care shall be taken when placing reinforcing steel so as not to interfere with the anchor bolt setting.  
At the option of the Contractor, bearing anchors (or formed holes), located and supported by templates, may be cast-in-place.



Beam	A	B	C	D	E	F	G	H	J	K	L	M	N	P
Pier 1	1054.56	1054.69	1054.82	1054.95	1055.05	1054.92	1054.79	1054.79	1054.92	1055.04	1054.94	1054.80	1054.67	1054.54
Pier 2	1055.95	1056.13	1056.31	1056.49	1056.64	1056.57	1056.49	1056.51	1056.70	1056.86	1056.82	1056.72	1056.65	1056.57

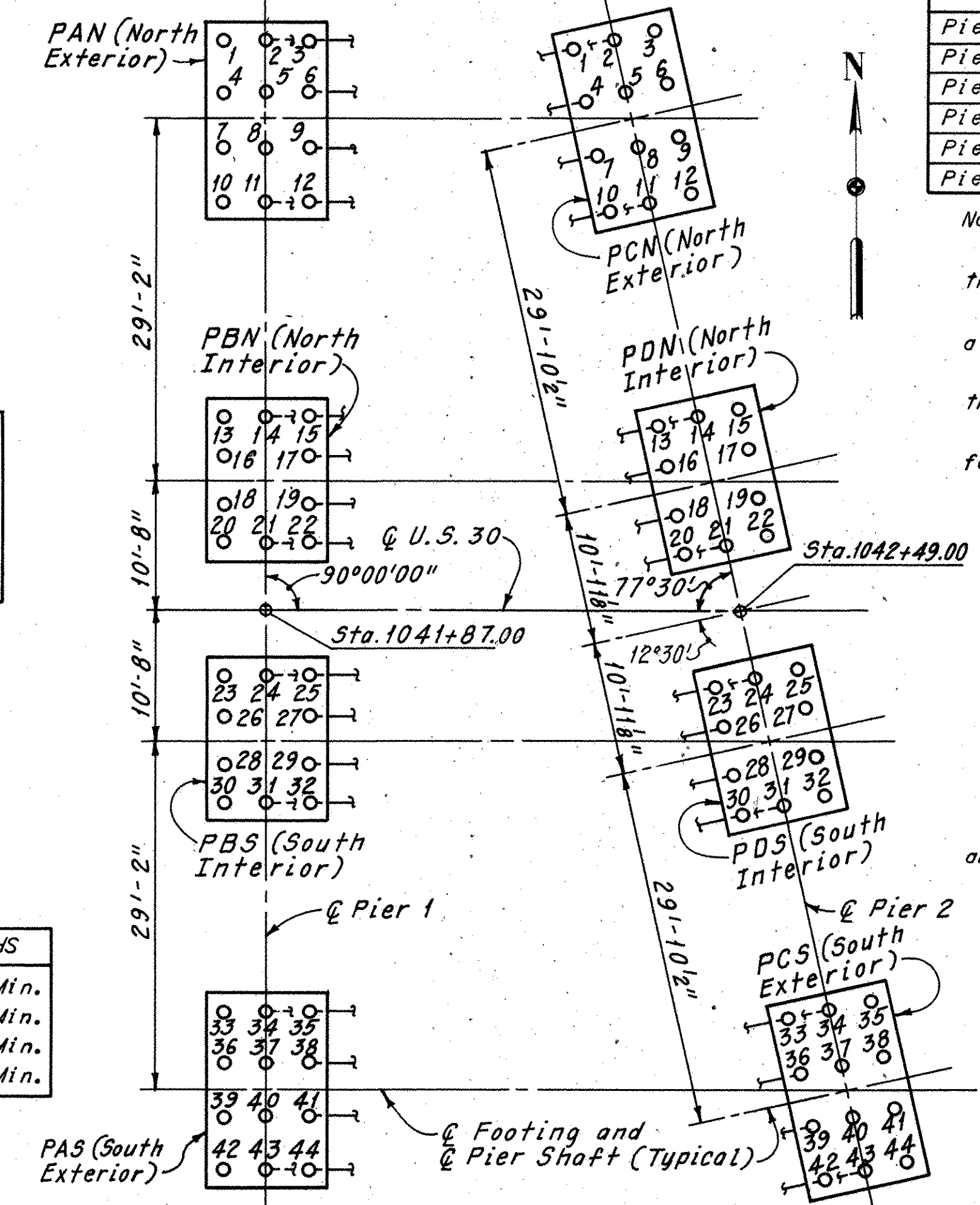
Location	Elevation	North Exterior	North Interior	South Interior	South Exterior
Pier 1	A	1022.00	1022.00	1022.00	1022.00
Pier 1	B	1048.56	1048.79	1048.79	1048.54
Pier 1	C	1051.56	1051.79	1051.79	1051.54
Pier 2	A	1026.00	1026.00	1026.00	1026.00
Pier 2	B	1049.95	1050.49	1050.51	1050.57
Pier 2	C	1052.95	1053.49	1053.51	1053.57

Notes:  
All cap stirrups shall be placed with the hook at the bottom of the cap.  
All piles are 12" C.I.P. reinforced concrete with a design load of 50 tons per pile.  
All battered piles shall be inclined 3 in 12 in the direction shown.  
Pile layout dimensions are shown along bottom of footing.  
For Elastomeric Bearing Details, see Sheet CD/6.  
The following abbreviations are used:  
PAN = Pier 1, North Exterior  
PAS = Pier 1, South Exterior  
PBN = Pier 1, North Interior  
PBS = Pier 1, South Interior  
PCN = Pier 2, North Exterior  
PCS = Pier 2, South Exterior  
PDN = Pier 2, North Interior  
PDS = Pier 2, South Interior  
Typ. = Typical ef = each face  
For Reinforcement Schedule, see Sheets R1 and R2.



Note:  
Reinforcing bar marks shall be prefixed the same as the footing prefixes shown on the Pier Footing Layout Diagram.

No. 4 Bars	= 1'-5" Min.
No. 5 Bars	= 1'-4" Min.
No. 6 Bars	= 2'-2" Min.
No. 8 Bars	= 3'-5" Min.



**H.N.T.B. BRIDGE NO. 20**  
HOWARD, NEEDLES, TAMMEN & BERGENDOFF 4/8  
CONSULTING ENGINEERS  
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**PIERS 1 AND 2**  
U.S. 30 OVER N & W R.R. (SIDING TRACKS)  
BR. NO. STA-30-1641 STA. 1041+39.00  
STA. 1042+97.02

**RELOCATED U.S. 30**

CANTON STARK COUNTY OHIO

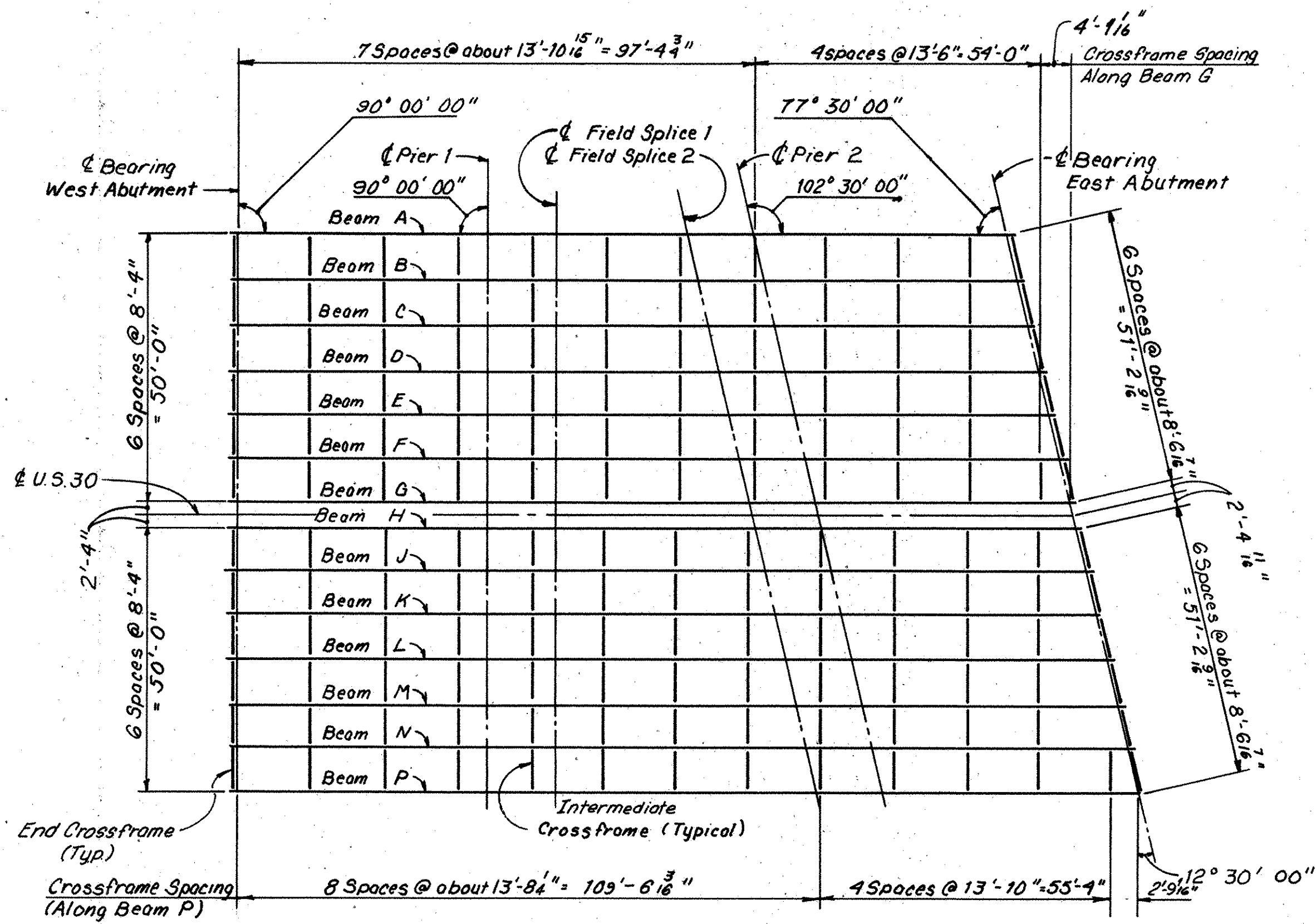
DRAWN C.P.	TRACED C.P.	CHECKED J.V.	REVIEWED	REVISED
DATE 2-23-79	DATE 3-5-79	DATE 4-6-79	DATE	DATE

FEB 1-5 1985

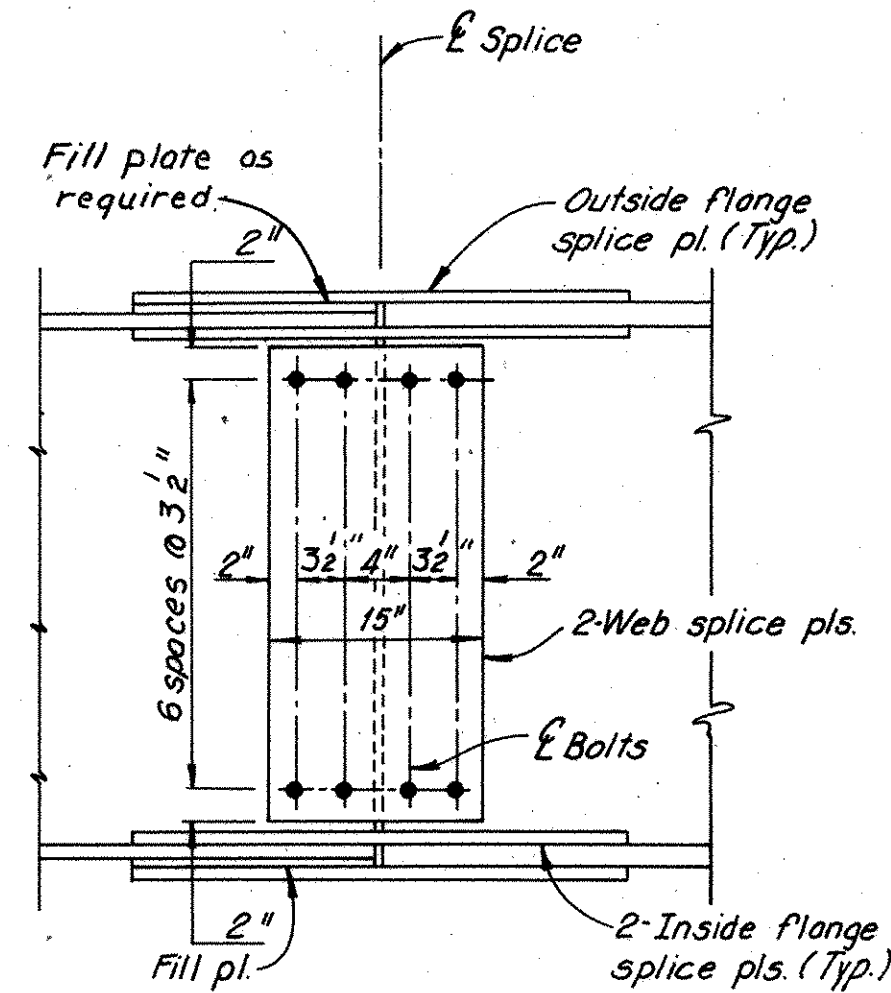
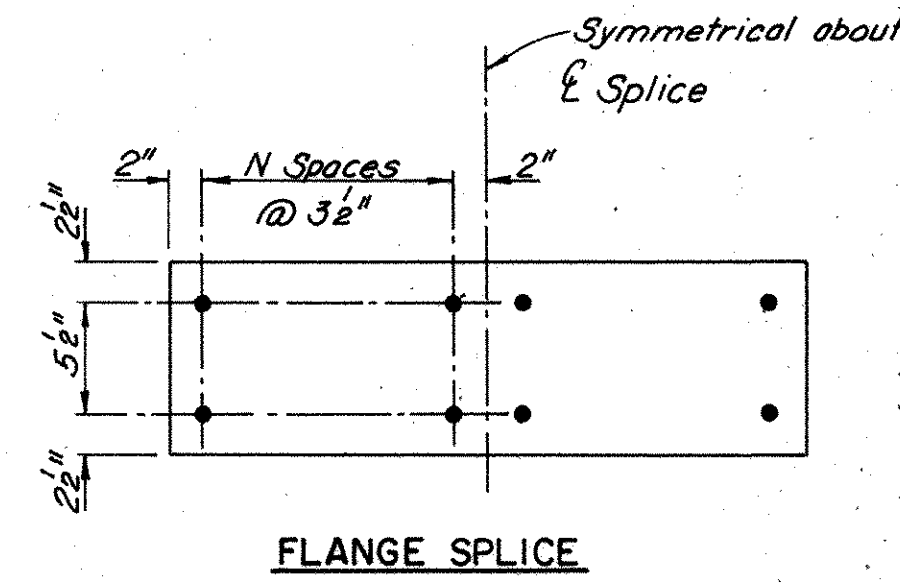
(Pier 1 North Footings Shown, Pier 2 Similar, except pile batter direction is opposite hand. See Pier Footing Layout Diagram)



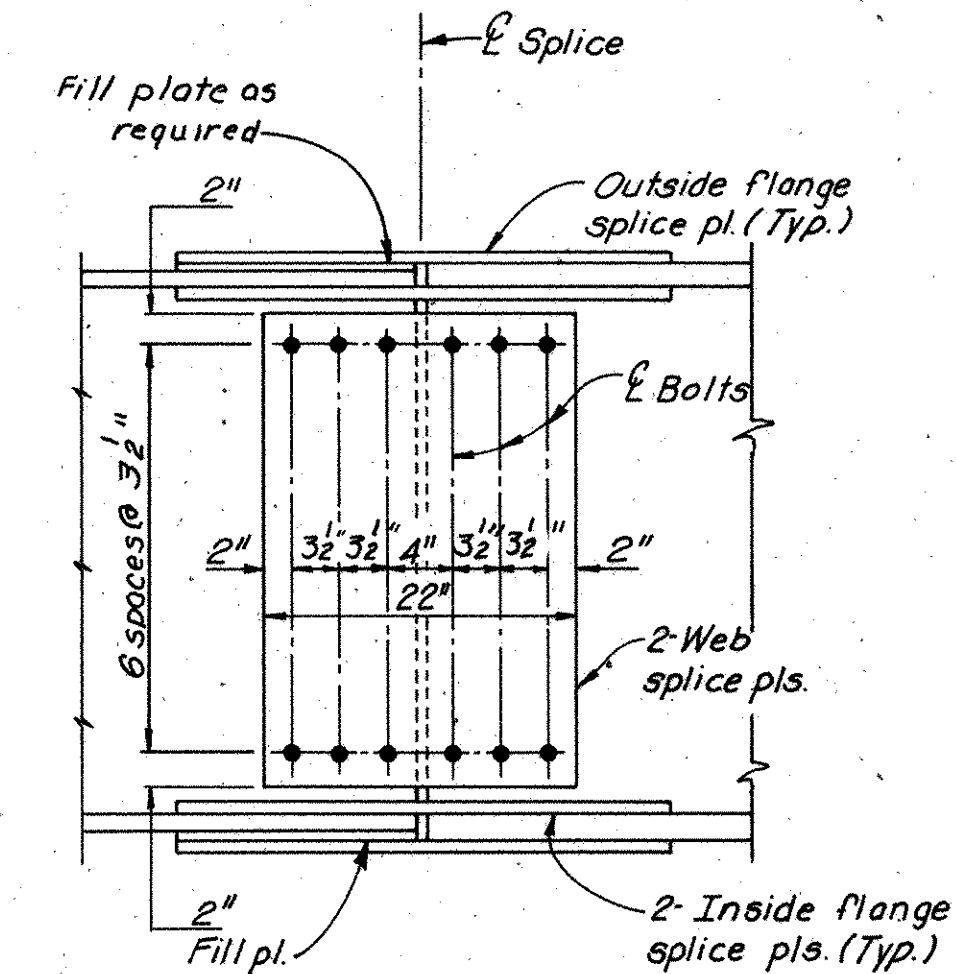
**STARK COUNTY**  
**STA-30-15.66**



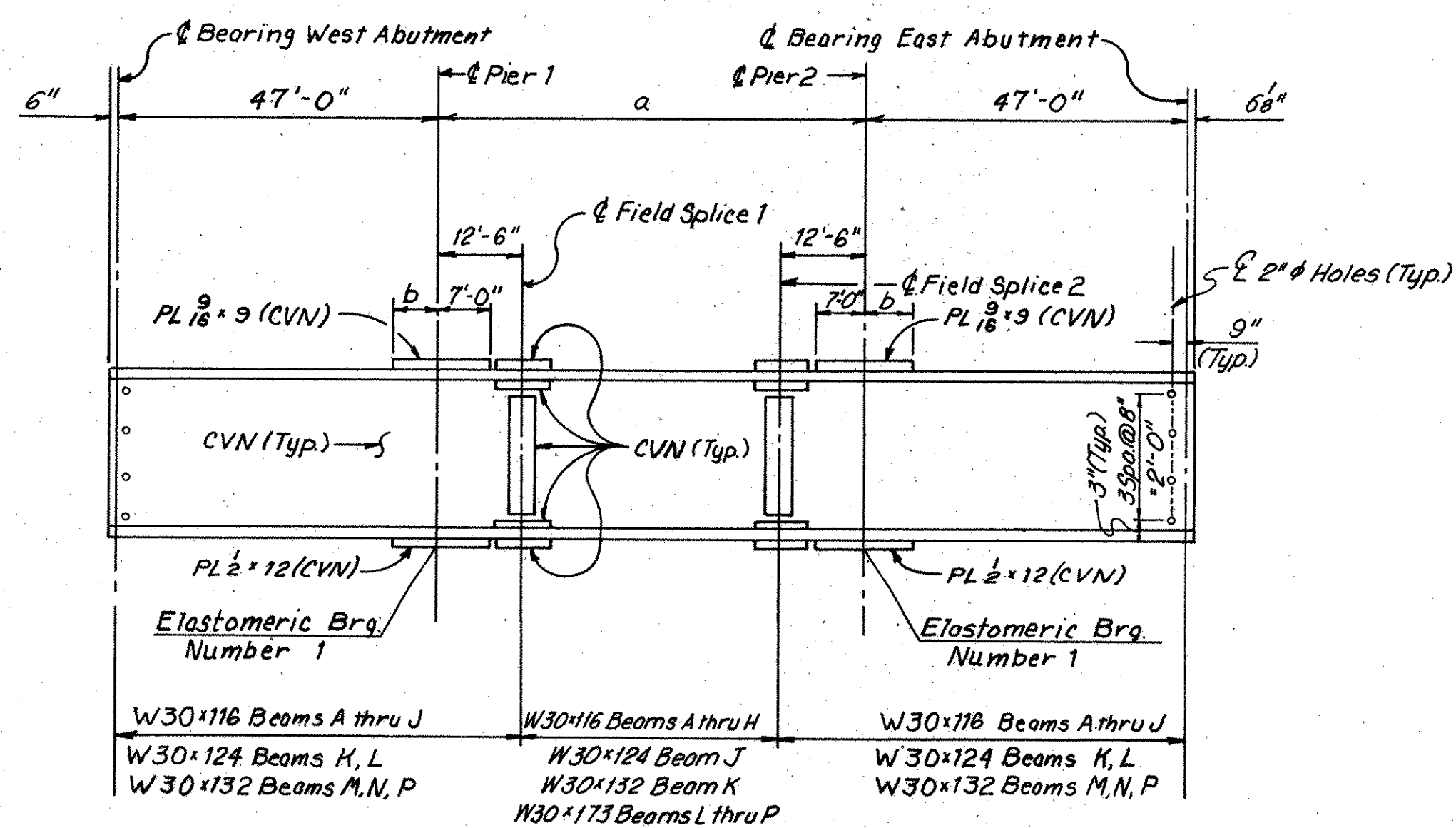
**FRAMING PLAN**



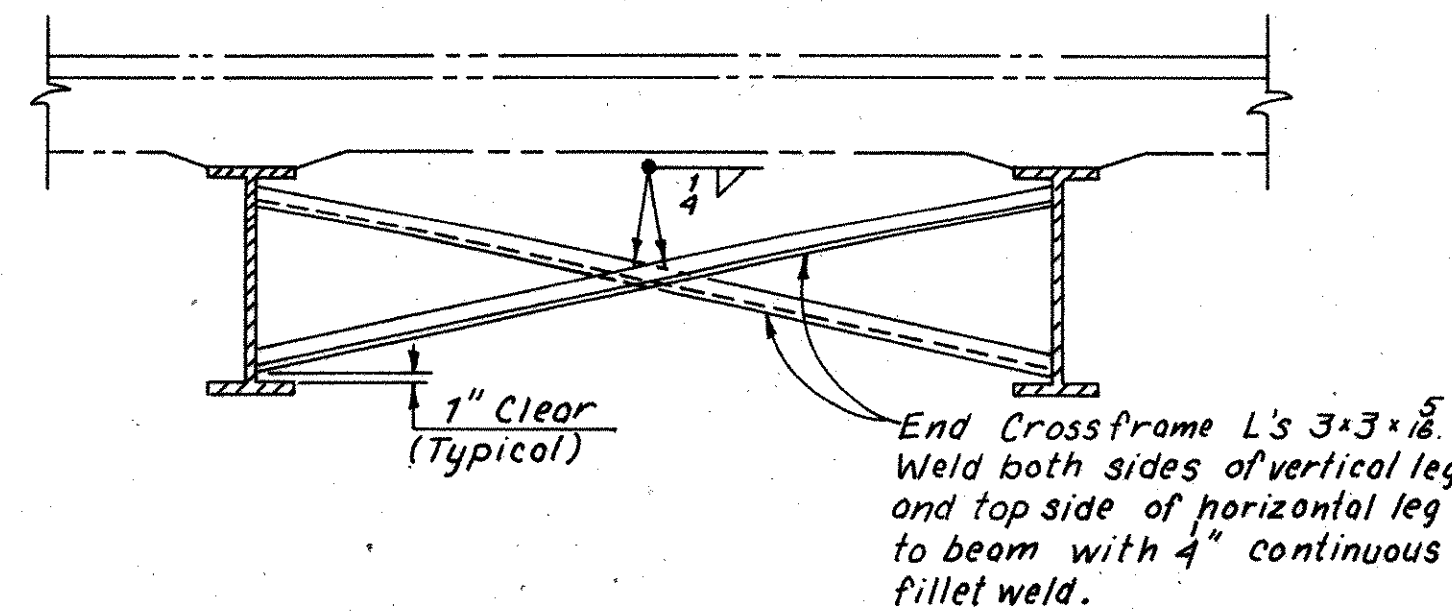
**BEAM SPLICE TYPE A**



**BEAM SPLICE TYPE B**



**BEAM ELEVATION**



**END CROSSFRAME**

BEAM	FLANGE SPLICE				WEB SPLICE			
	OUTSIDE PLATE	INSIDE PLATE	FILL PL.	N	No. of BOLTS	TYPE	WEB PLATE	No. of BOLTS
W30x116 to W30x116	10 1/2 x 1/2 x 2'-5"	4 1/2 x 1/2 x 2'-5"	-	3	32	A	15 x 1/2 x 2'-1"	28
W30x116 to W30x124	10 1/2 x 1/2 x 2'-5"	4 1/2 x 1/2 x 2'-5"	1/4"	3	32	A	15 x 1/2 x 2'-1"	28
W30x124 to W30x132	10 1/2 x 1/2 x 2'-5"	4 1/2 x 1/2 x 2'-5"	1/4"	3	32	B	22 x 1/2 x 2'-1"	42
W30x124 to W30x173	10 1/2 x 1/2 x 2'-5"	4 1/2 x 1/2 x 2'-5"	1/4"	3	32	B	22 x 1/2 x 2'-1"	42
W30x132 to W30x173	10 1/2 x 1/2 x 2'-5"	4 1/2 x 1/2 x 2'-5"	1/4"	3	32	B	22 x 1/2 x 2'-1"	42

Note: All Beam Splice bolts are 1/2"  $\phi$  ASTM A-490, Type 3 Bolts.

**Beam Notes:**  
For Elastomeric Bearing details, see Sheet **CD 6**.  
For intermediate crossframe details, see Sheet **7 / 8**.  
For details of moment plate connection see Ohio Standard Drawing SD-1-69, Sheet 3 of 4.  
For Deflection and Camber, see Sheet **6 / 6**.  
All steel shall be ASTM A-588.  
CVN- see Sheet **GN 1**.  
Welded attachments can be made at any location on the top flange of fascia beams.

Beam	a	b
A	50'-9 3/4"	7'-0"
B	52'-2 15/16"	7'-0"
C	54'-1 1/8"	7'-0"
D	55'-11 1/4"	7'-0"
E	57'-9 7/8"	7'-0"
F	59'-7 3/8"	7'-0"
G	61'-5 13/16"	7'-0"
H	62'-6 1/8"	7'-0"
J	64'-4 3/8"	7'-0"
K	66'-2 3/8"	7'-0"
L	68'-0 3/4"	8'-0"
M	69'-10 3/8"	8'-0"
N	71'-9 1/16"	9'-0"
P	73'-7 1/4"	9'-0"

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**H.N.T.B. BRIDGE NO. 20**  
HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS  
KANSAS CITY CLEVELAND NEW YORK

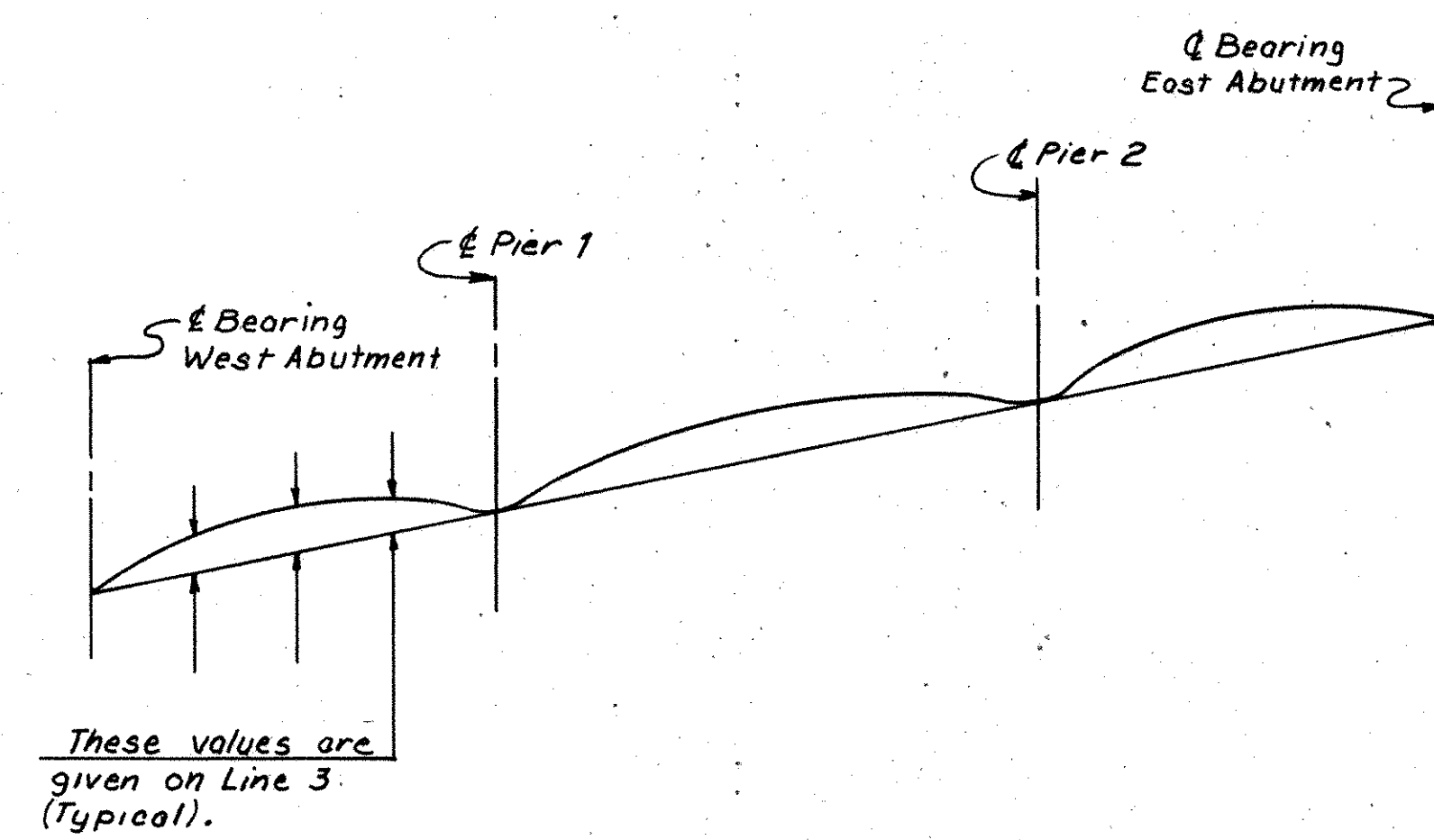
**FRAMING PLAN**  
U.S.30 OVER N&W R.R. (SIDING TRACKS)  
BR. NO STA-30-1641 STA. 1041+39.00  
STA. 1042+97.02

**RELOCATED U.S. 30**  
CANTON STARK COUNTY OHIO

DRAWN DRJ TRACED DRJ CHECKED J/J REVIEWED REVISOR  
DATE 2-28-73 DATE 3-2-73 DATE 4-4-79 DATE

**STARK COUNTY**  
**STA-30-15.66**

DEFLECTION AND CAMBER															
	West Abut.	.25	.50	.75	Pier 1	FS. 1	.25	.50	.75	FS. 2	Pier 2	.25	.50	.75	East Abut.
Beam A	1	0			0						0				0
	2														
	3														
Beam B	1														
	2														
	3														
Beam C	1														
	2														
	3														
Beam D	1														
	2														
	3														
Beam E	1														
	2														
	3														
Beam F	1														
	2														
	3														
Beam G	1														
	2														
	3														
Beam H	1														
	2														
	3														
Beam I	1														
	2														
	3														
Beam J	1														
	2														
	3														
Beam K	1														
	2														
	3														
Beam L	1														
	2														
	3														
Beam M	1														
	2														
	3														
Beam N	1														
	2														
	3														
Beam O	1														
	2														
	3														
Beam P	1														
	2														
	3	0			0			1			0				0



SCHEMATIC DETAIL

Notes:  
 Line 1. Deflections due to the weight of steel.  
 Line 2. Deflections due to the remaining dead load.  
 Line 3. Required shop camber.  
 Values given in the table are to 1/16".  
 FS indicates Field Splice.

MICROFILMED FEB 15 1965  
 MICROFILMED FEB 15 1965

**H.N.T.B. BRIDGE NO. 20**

HOWARD, NEEDLES, TAMMEN & BERGENDOFF 6/8  
 CONSULTING ENGINEERS  
 KANSAS CITY CLEVELAND NEW YORK

**DEFLECTION AND CAMBER**  
 U.S. 30 OVER N & W R.R. (SIDING TRACKS)  
 BR. NO. STA-30-1641 STA. 1041+39.00  
 STA. 1042+97.02

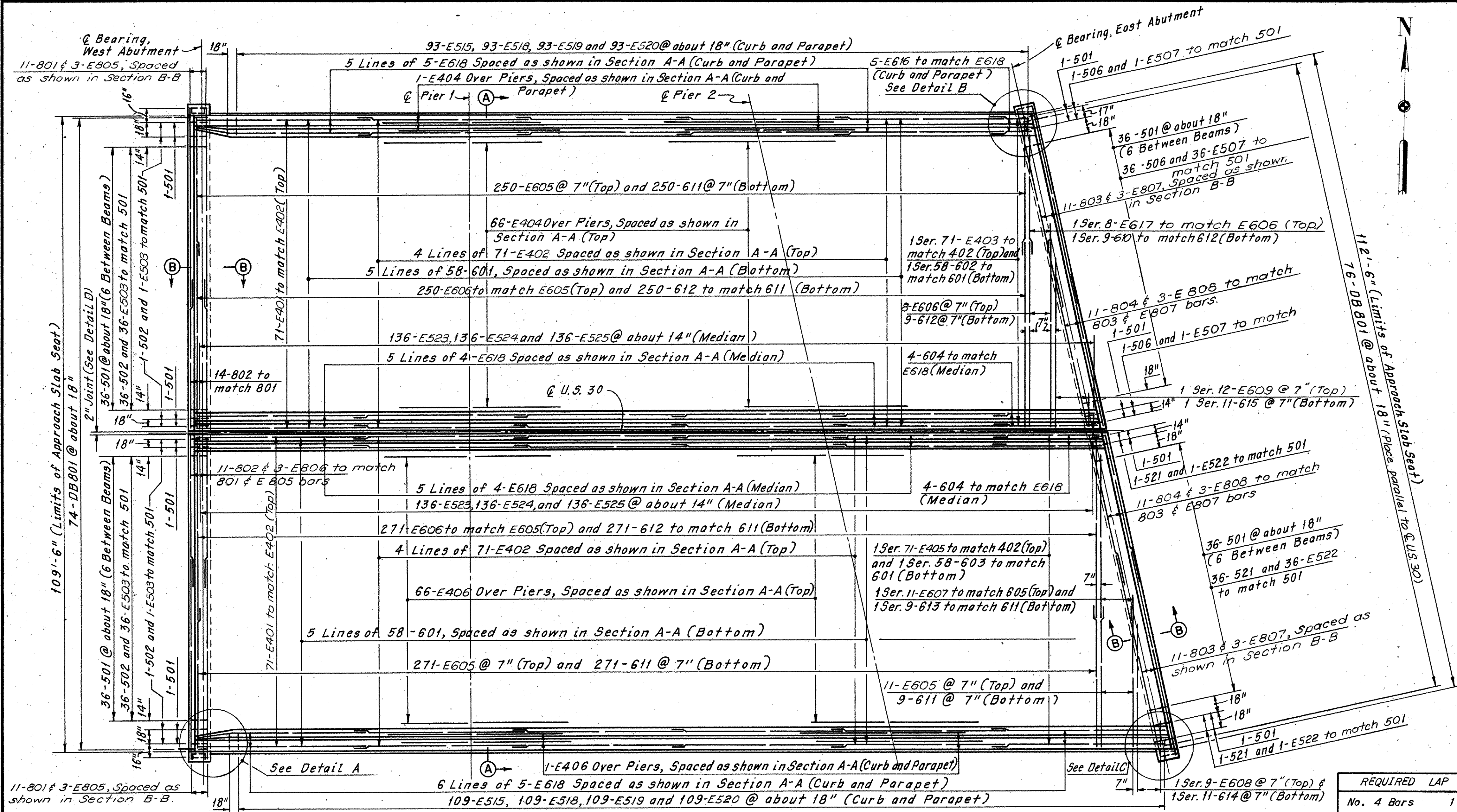
**RELOCATED U.S. 30**  
 CANTON STARK COUNTY OHIO

DRAWN *DRJ* TRACED *DRJ* CHECKED *JV* REVIEWED *JV*  
 DATE 2-28-79 DATE 3-2-79 DATE 4-4-79 DATE

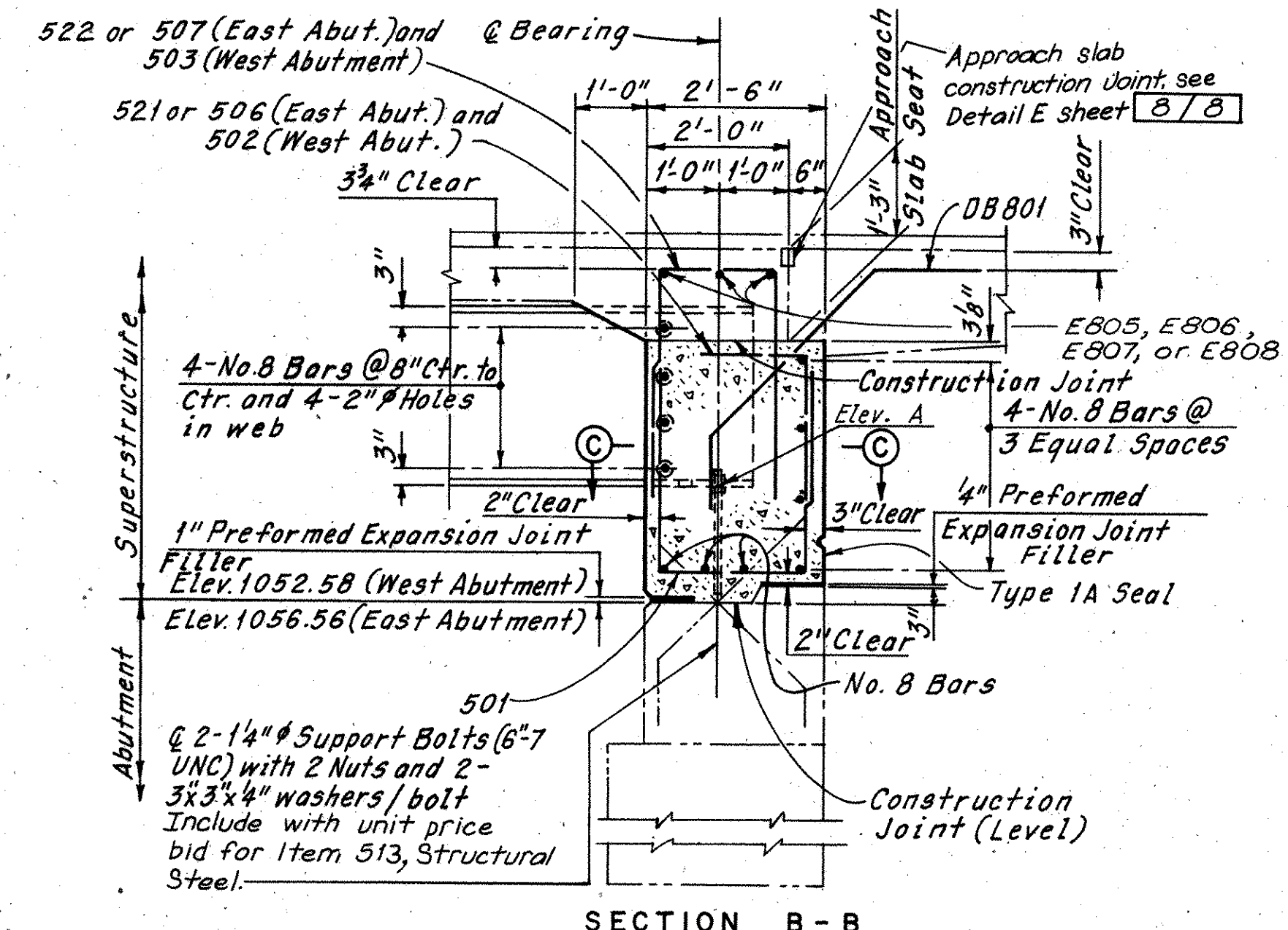


MICROFILMED  
FEB 15 1985

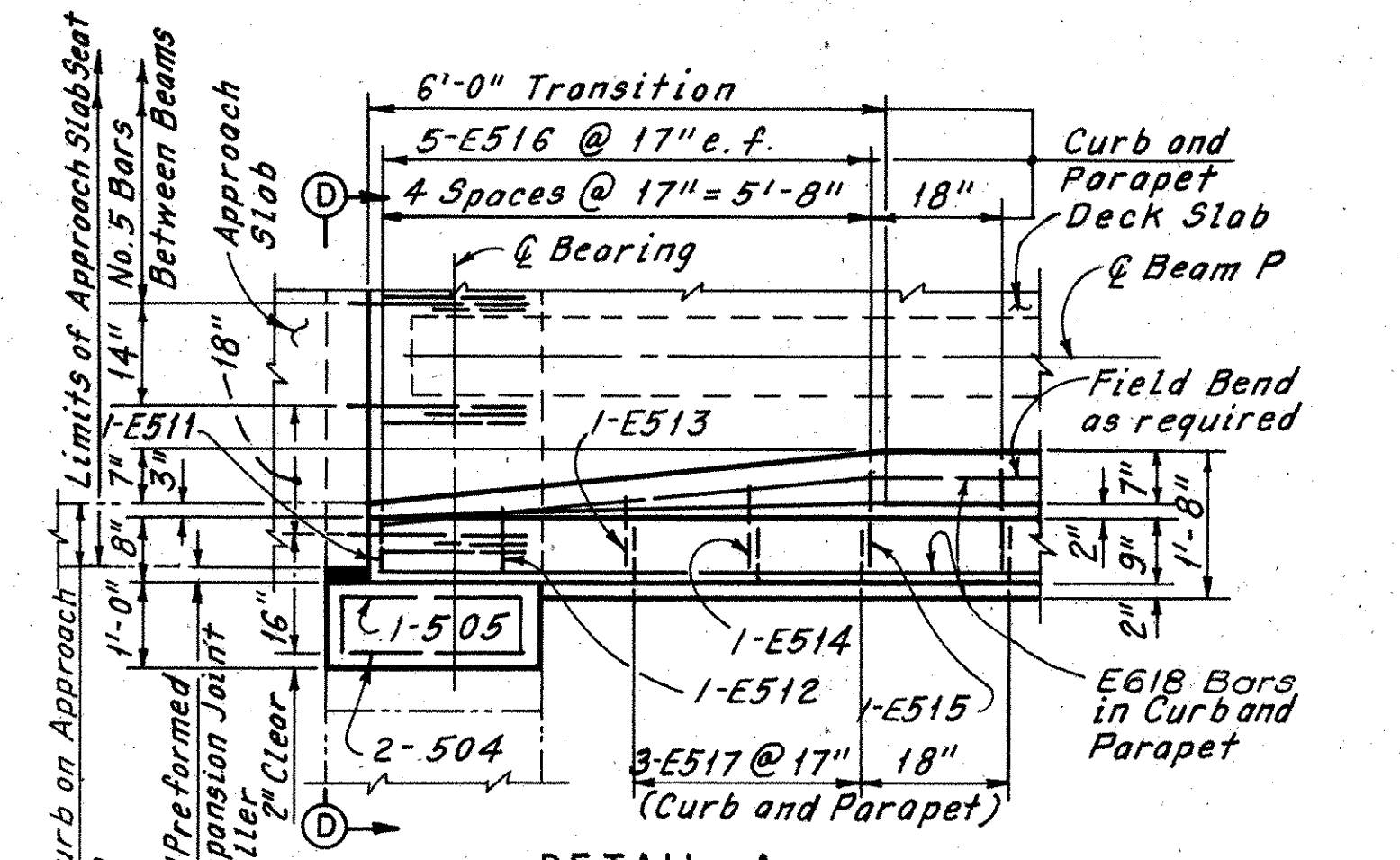
**STARK COUNTY**  
**STA-30-15.66**



**PLAN**

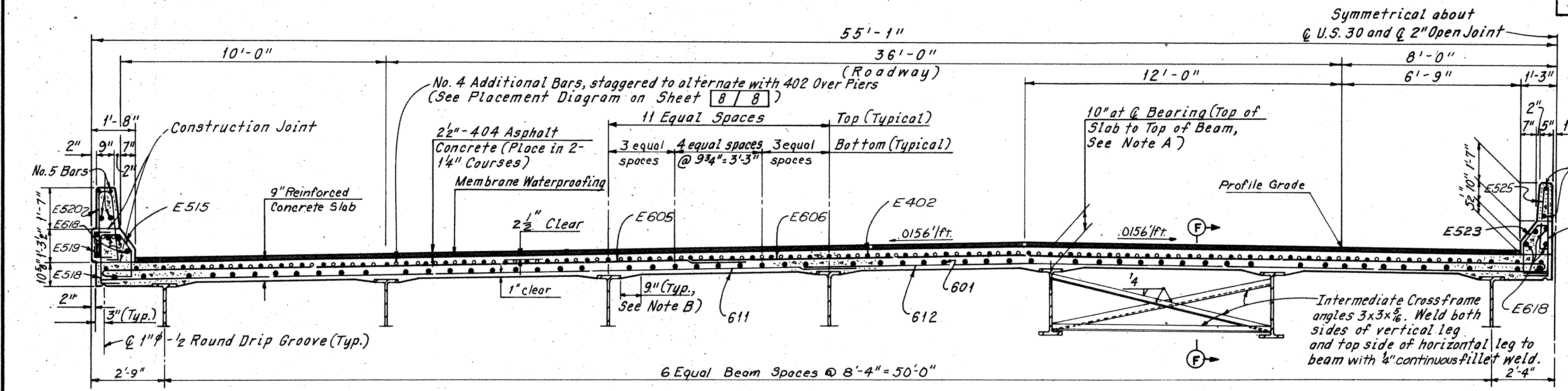


**SECTION B - B**  
(Slab Reinforcement Not Shown)  
(East Abutment shown, West Abutment Similar)



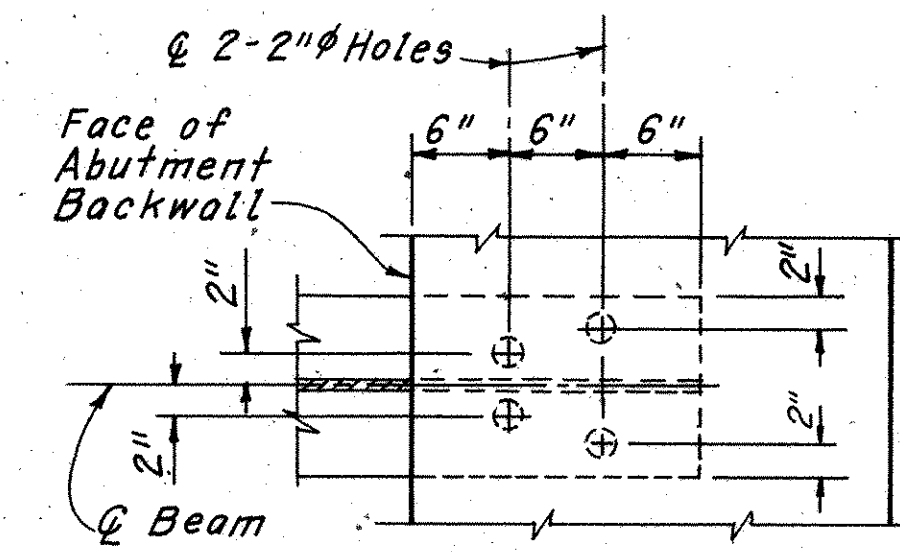
**DETAIL A**  
(South End of West Abutment Shown, North End Similar, except Opposite Hand)

REQUIRED LAP LENGTHS	
No. 4 Bars	1'-4" Min.
No. 5 Bars	1'-10" Min.
No. 6 Bars	2'-0" Min.
No. 8 Bars	4'-9" Min.



**SECTION A - A**

Note A:  
Deck Slab Depth: The distance shown from top of deck slab to top of steel beam is the design dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.



**SECTION C - C**  
(Support Bolts not shown)

Notes: For Section F-F see sheet 8/8.  
For Details B, C, D and View D-D, see Sheet 8/8.  
For Type 1A Seal, see Sheet CD7.  
The following abbreviations are used:  
Abut. = Abutment  
e.f. = each face  
Typ. = Typical  
For elevations A, see Sheet 8/8.  
For subdrainage for surface course details, see Sheet CD1.  
For Reinforcement Schedule, see Sheet R.

H.N.T.B.R. NO. 20

HOWARD, NEEDLES, TAMMEN & BERGENDOFF  
CONSULTING ENGINEERS  
KANSAS CITY CLEVELAND NEW YORK

**DECK SLAB PLAN AND INTEGRAL BACKWALL DETAILS**

U.S.30 OVER N & W R.R. (SIDING TRACKS)  
BR. NO. STA-30-1641 STA. 1041 3900  
STA. 1042 9702

**RELOCATED U.S. 30**

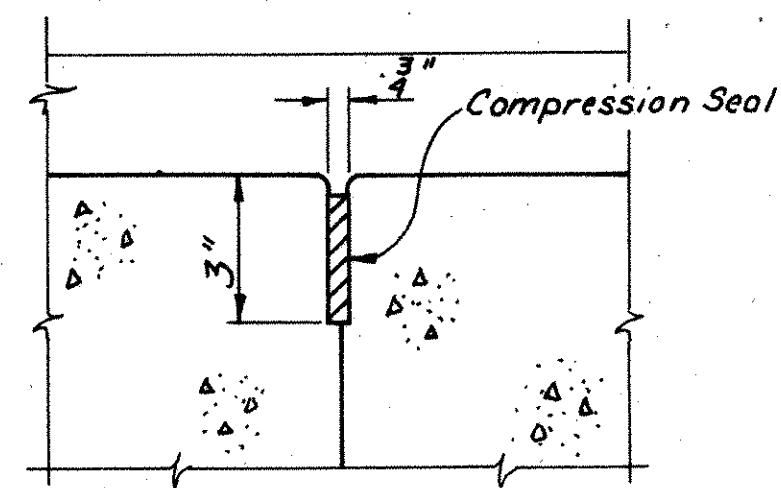
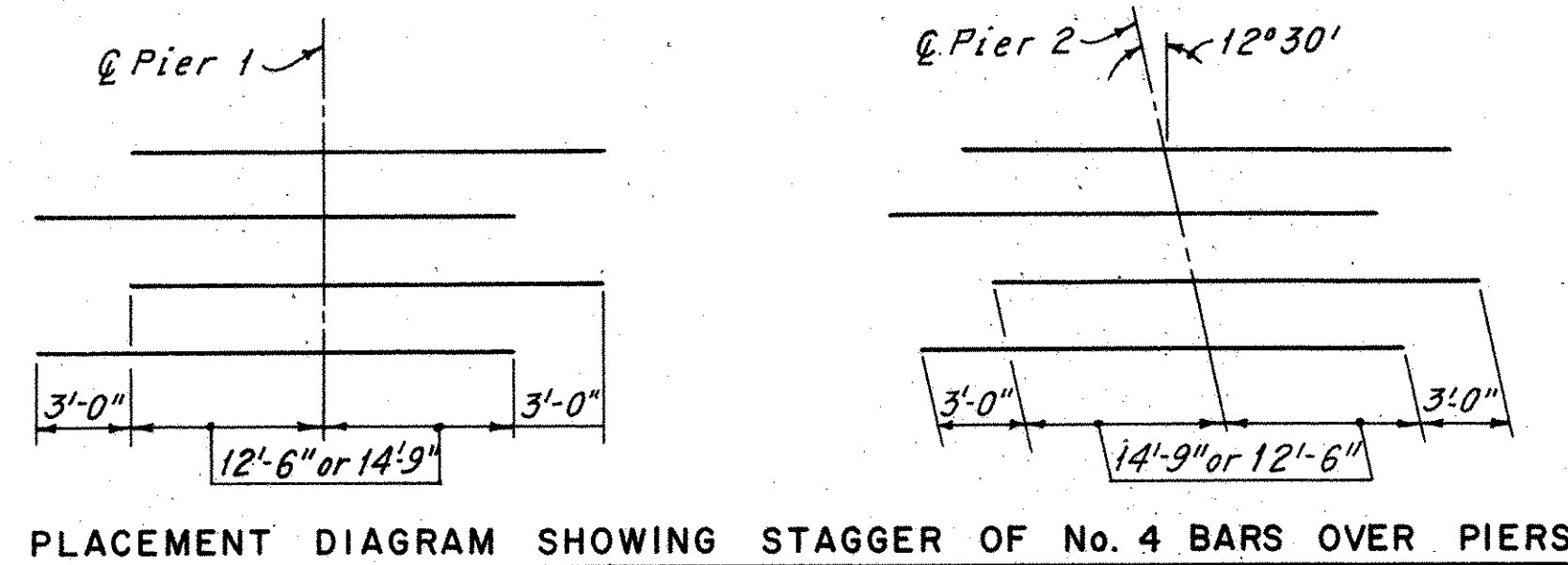
CANTON STARK COUNTY OHIO

DRAWN C.P.	TRACED C.P.	CHECKED P.A.S.	REVIEWED	REVISED
DATE 2-6-79	DATE 2-13-79	DATE 6-18-79	DATE	DATE

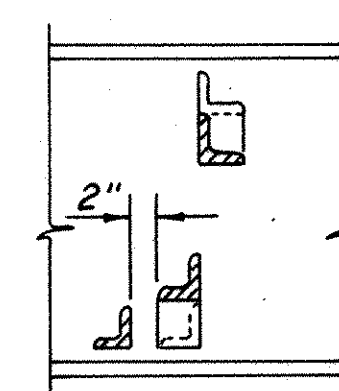
Note B:  
A typical haunch width of 9" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1.4 for a haunch less than 9" in width.



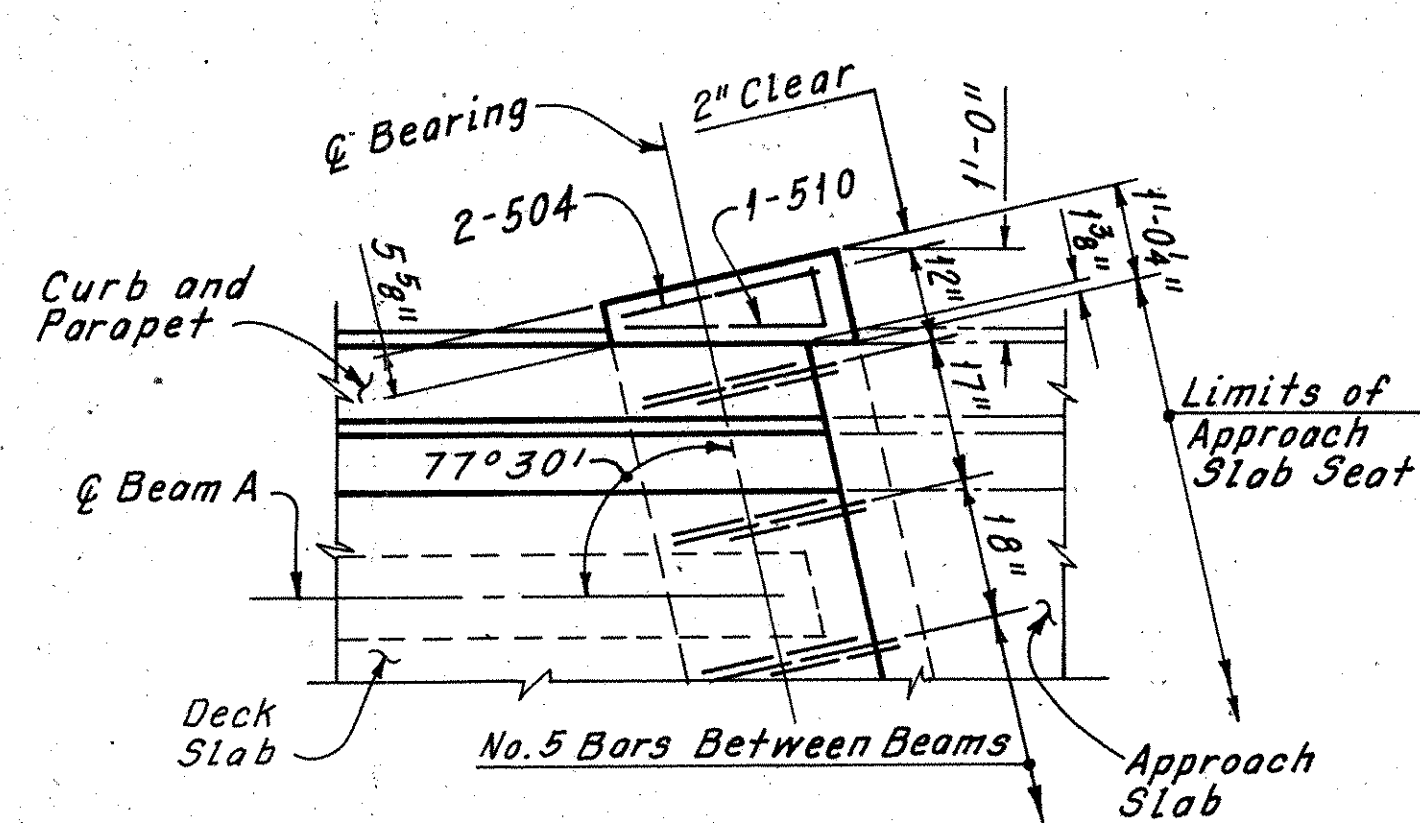
**STARK COUNTY**  
**STA-30-15.66**



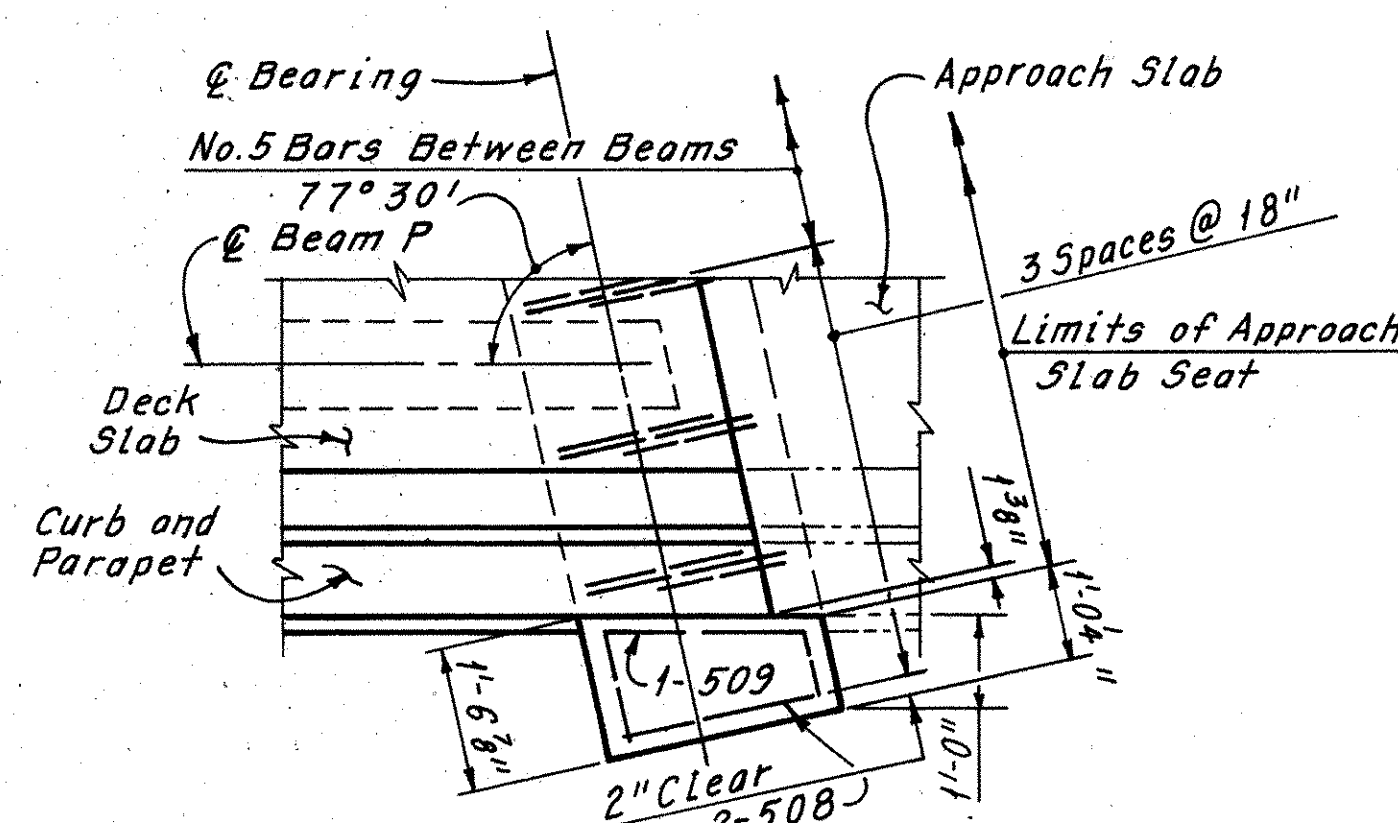
DETAIL E



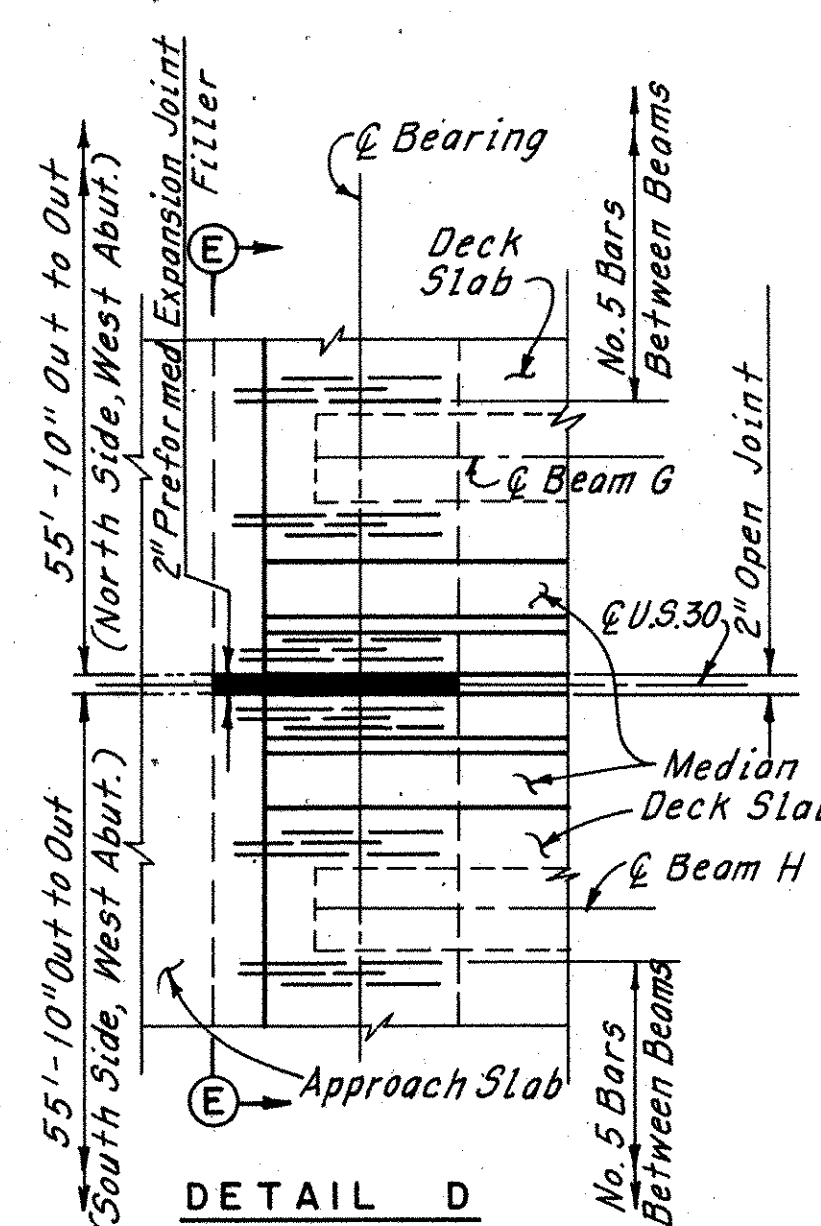
SECTION F-F



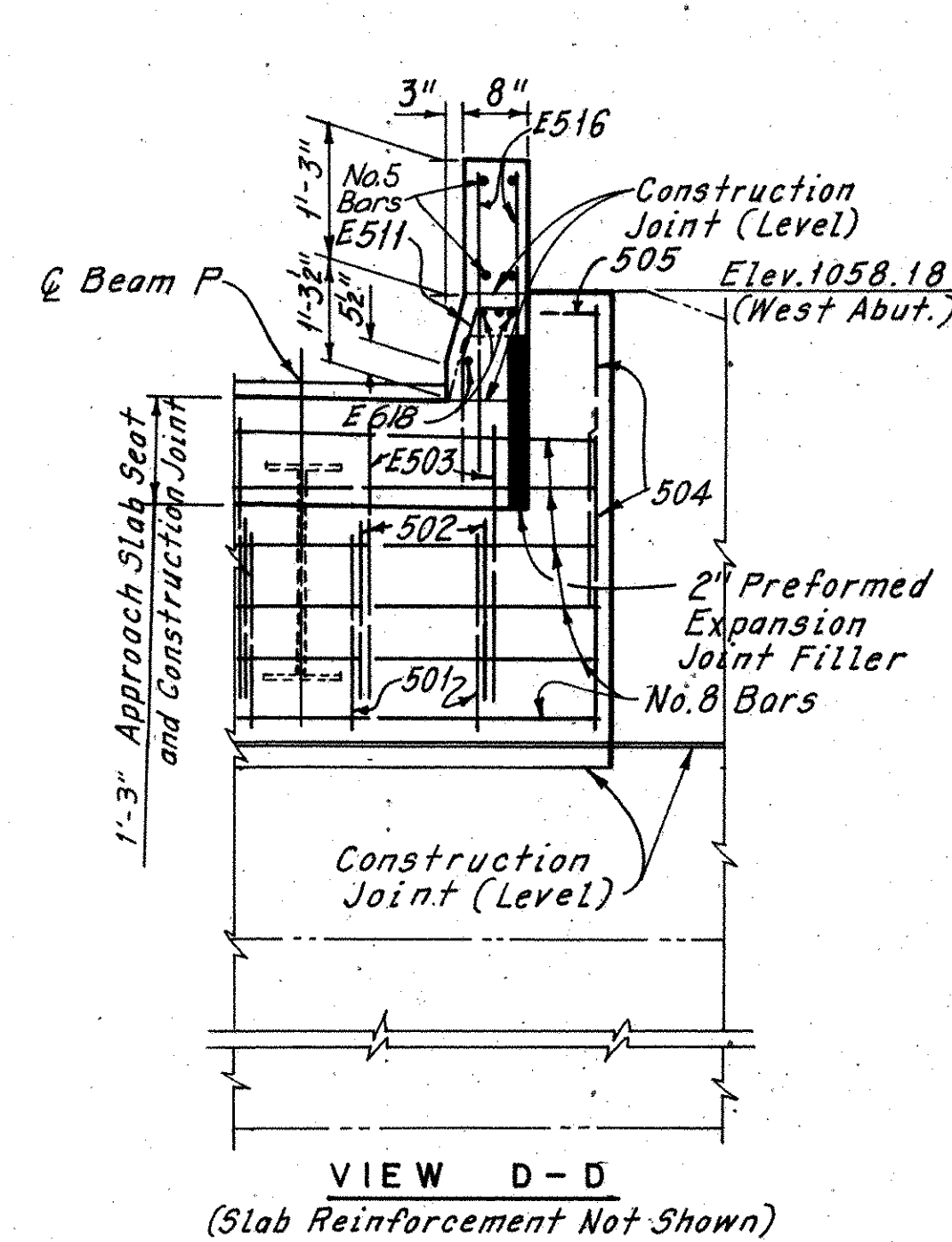
DETAIL B



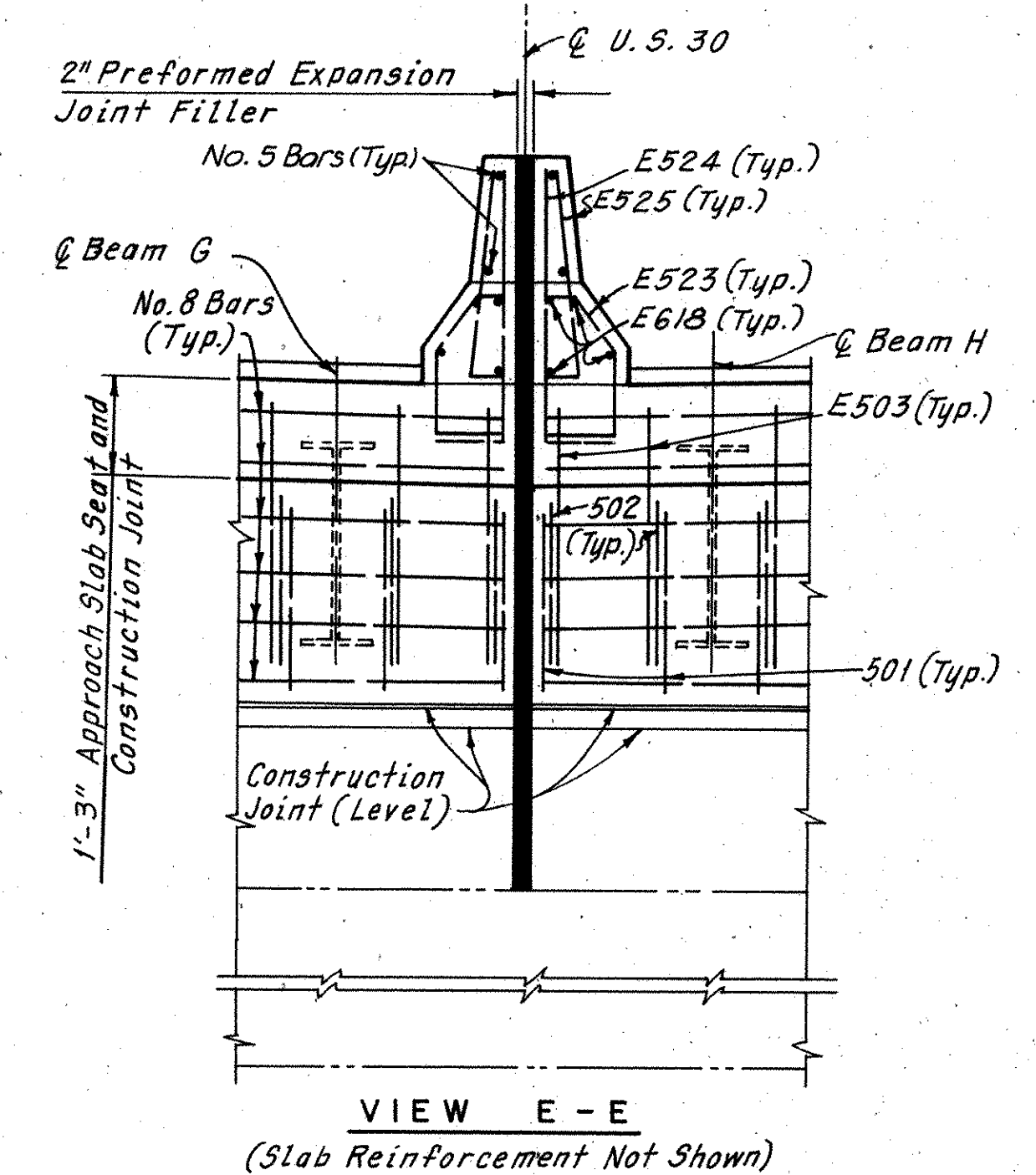
DETAIL C



DETAIL D



VIEW D-D  
(Slab Reinforcement Not Shown)



VIEW E-E  
(Slab Reinforcement Not Shown)

TOP OF PORTLAND CEMENT CONCRETE ELEVATIONS															
Beam	W. Abut.	.25	.50	.75	Pier 1	F.S. 1	.25	.50	.75	F.S. 2	Pier 2	.25	.50	.75	E. Abut.
A	1056.91	1057.23	1057.56	1057.88	1058.21	1058.55	1058.55	1058.90	1059.25	1059.25	1059.60	1059.92	1060.25	1060.57	1060.89
B	1057.04	1057.36	1057.69	1058.01	1058.34	1058.68	1058.70	1059.08	1059.42	1059.43	1059.78	1060.10	1060.43	1060.75	1061.08
C	1057.17	1057.49	1057.82	1058.14	1058.47	1058.81	1058.84	1059.21	1059.59	1059.61	1059.96	1060.28	1060.61	1060.93	1061.25
D	1057.30	1057.62	1057.95	1058.27	1058.60	1058.94	1058.98	1059.37	1059.75	1059.80	1060.14	1060.46	1060.79	1061.11	1061.44
E	1057.40	1057.72	1058.05	1058.37	1058.70	1059.04	1059.09	1059.49	1059.89	1059.95	1060.29	1060.61	1060.94	1061.26	1061.59
F	1057.27	1057.59	1057.92	1058.24	1058.57	1058.91	1058.98	1059.39	1059.80	1059.87	1060.21	1060.54	1060.86	1061.18	1061.51
G	1057.14	1057.46	1057.79	1058.11	1058.44	1058.78	1058.86	1059.28	1059.71	1059.79	1060.13	1060.46	1060.78	1061.11	1061.43
H	1057.14	1057.46	1057.79	1058.11	1058.44	1058.78	1058.87	1059.30	1059.73	1059.82	1060.16	1060.49	1060.81	1061.13	1061.46
J	1057.27	1057.59	1057.92	1058.24	1058.57	1058.91	1059.01	1059.45	1059.90	1060.00	1060.34	1060.67	1060.99	1061.31	1061.64
K	1057.40	1057.72	1058.05	1058.37	1058.70	1059.04	1059.15	1059.61	1060.07	1060.18	1060.52	1060.85	1061.17	1061.50	1061.82
L	1057.30	1057.62	1057.95	1058.27	1058.60	1058.94	1059.07	1059.54	1060.01	1060.13	1060.47	1060.80	1061.12	1061.45	1061.77
M	1057.17	1057.49	1057.82	1058.14	1058.48	1058.81	1058.95	1059.43	1059.91	1060.05	1060.40	1060.72	1061.04	1061.37	1061.69
N	1057.04	1057.36	1057.69	1058.01	1058.34	1058.68	1058.83	1059.33	1059.82	1059.97	1060.32	1060.64	1060.97	1061.29	1061.61
P	1056.91	1057.23	1057.56	1057.88	1058.21	1058.55	1058.71	1059.22	1059.73	1059.89	1060.24	1060.56	1060.89	1061.21	1061.53

GUTTERLINE ELEVATIONS														
	West Abutment	.25	.50	.75	Pier 1	.25	.50	.75	Pier 2	.25	.50	.75	East Abutment	
North Gutterline	1056.89	1057.23	1057.57	1057.88	1058.19	1058.54	1058.89	1059.23	1059.58	1059.92	1060.26	1060.57	1060.88	
N. Gutterline of Med	1057.12	1057.46	1057.79	1058.10	1058.42	1058.86	1059.30	1059.71	1060.11	1060.45	1060.78	1061.11	1061.41	
S. Gutterline of Med	1057.12	1057.46	1057.79	1058.10	1058.42	1058.87	1059.32	1059.73	1060.14	1060.48	1060.81	1061.13	1061.44	
South Gutterline	1056.89	1057.22	1057.55	1057.88	1058.19	1058.74	1059.28	1059.75	1060.22	1060.54	1060.88	1061.20	1061.51	

Note:  
The gutterline elevations shown have been adjusted for dead load deflections due to the weight of the concrete and wearing course, and are the elevations required before the concrete deck is placed.

Notes:  
For location of Detail B, C, D and View D-D see Sheet 7/8.  
For location of Elevation A see Sheet 7/8.  
The following abbreviations are used:  
Typ. = Typical  
Elev. = Elevation

ELEVATION A															
BEAM	A	B	C	D	E	F	G	H	J	K	L	M	N	P	
West Abutment	1053.57	1053.70	1053.83	1053.96	1054.06	1053.93	1053.80	1053.80	1053.93	1054.05	1053.95	1053.81	1053.68	1053.55	
East Abutment	1057.56	1057.74	1057.92	1058.10	1058.25	1058.17	1058.10	1058.12	1058.30	1058.47	1058.43	1058.33	1058.25	1058.17	

H.N.T.B. BR. NO. 20  
HOWARD, NEEDLES, TAMMEN & BERGENOFF 8/8  
CONSULTING ENGINEERS  
KANSAS CITY CLEVELAND NEW YORK

**INTEGRAL BACKWALL DETAILS AND PAVEMENT ELEVATIONS**

U.S. 30 OVER N & W R.R. (SIDING TRACKS)  
BR. NO. STA-30-1641 STA. 1041 39.00  
STA. 1042 97.02

**RELOCATED U.S. 30**

CANTON STARK COUNTY OHIO

DRAWN C.P.P. TRACED C.P.P. CHECKED T.A.S. REVIEWED REVISION  
DATE 2-13-79 DATE 6-18-79 DATE

MICROFILMED  
FEB 15 1985