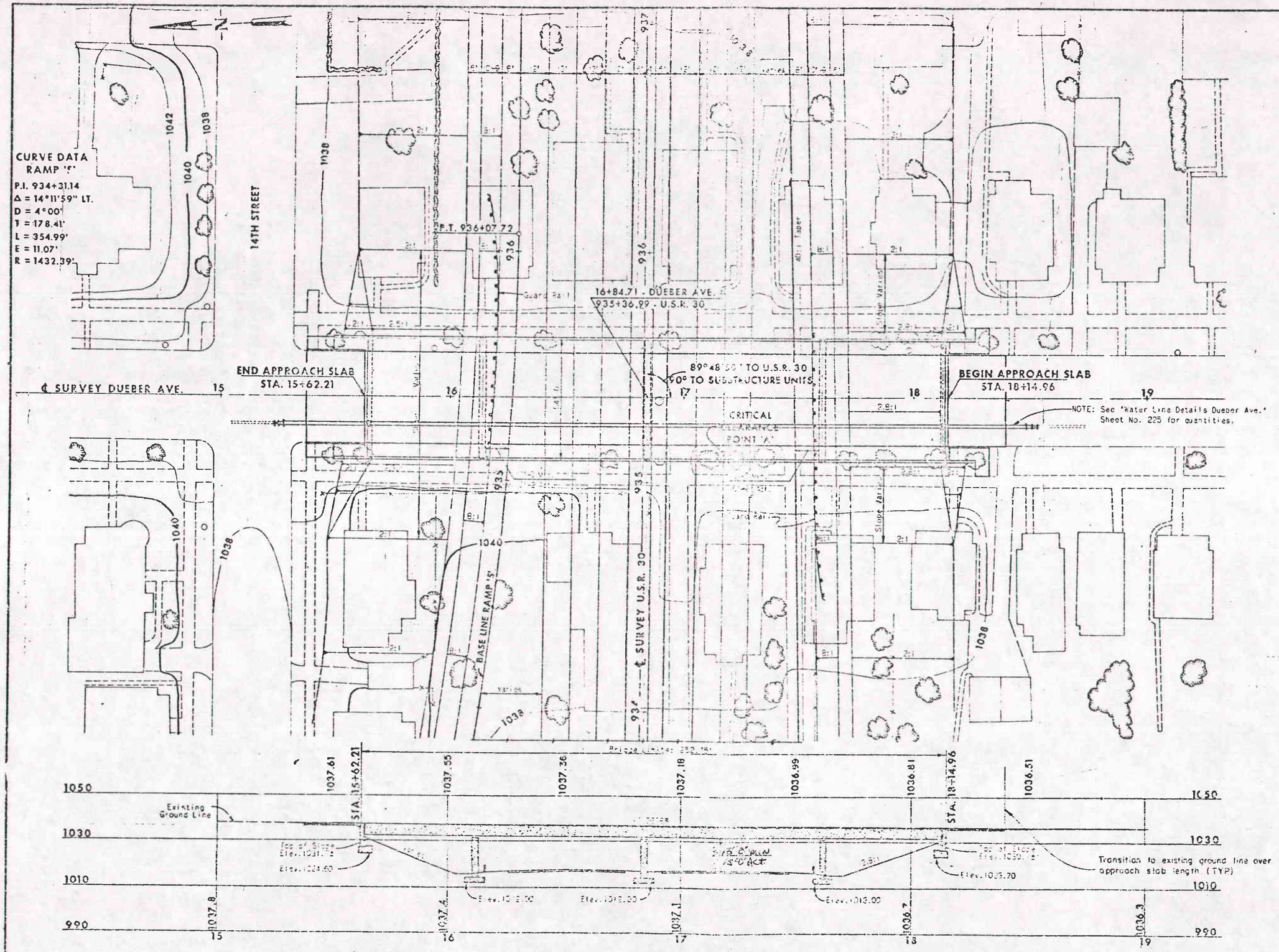
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STARK COUNTY
STA-30-12.47
In Canton



B. M. ELEV. 1030.93 — Mine Spike in power pole #819C2/T-22 at S.E. corner of 15th St. S.W. and Scoville Ave. S.W.

PROPOSED STRUCTURE

TYPE: Continuous steel beams with reinforced concrete deck and substructure.
SPANS: 49.5' - 70.75 - 75.25' - 52.75'
ROADWAY: 40'-0 f/f 6'-0 sidewalks
LIVE LOAD: HS-20-44
SKEW: 0°
SURFACE COURSE: 1½" Asphalt Concrete
APPROACH SLAB: AS-1-72, 25' long, modified
ALIGNMENT: Tangent

1985 ADT DUEBER AVE.:
1985 ADT U.S.R. 30: 57,396

Earthwork limits shown are schematic. Actual slopes shall conform to plan cross-sections.

W.E.Q. BRIDGE 6
SHEET NO. 1 OF 11

W. E. QUICKSALL AND ASSOCIATES, INC.
CONSULTING ENGINEERS NEW PHILADELPHIA, OHIO

SITE PLAN
BRIDGE NO. STA-30-1443
U.S.R. 30 under DUEBER AVE.

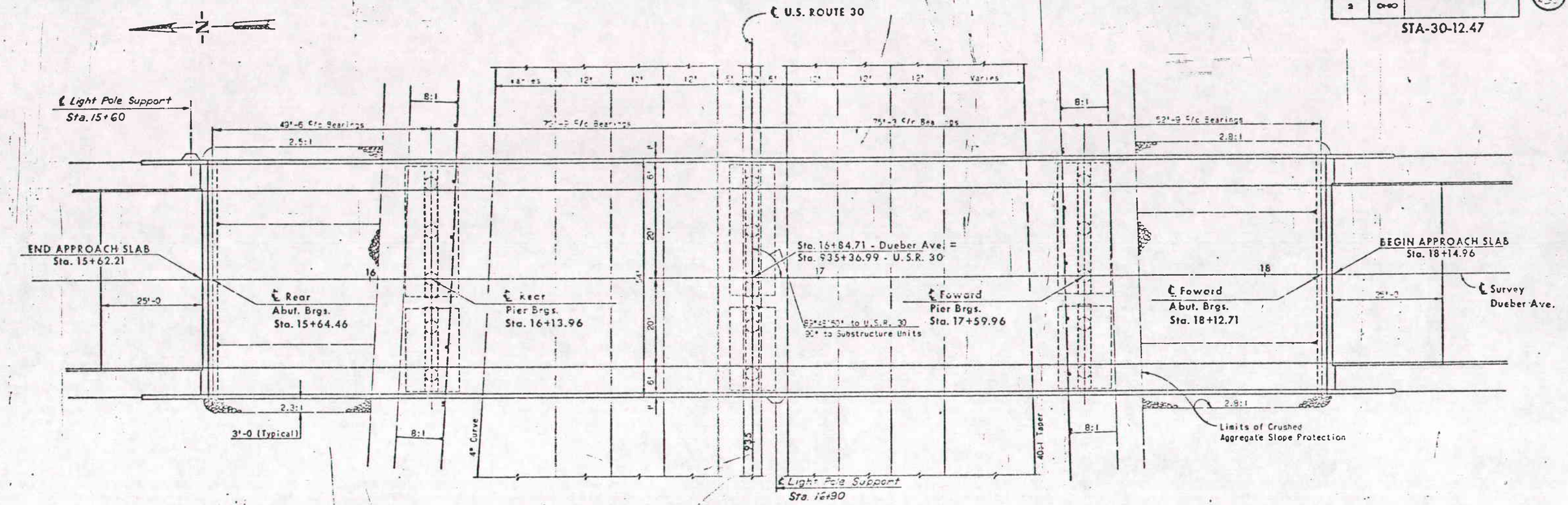
STARK COUNTY

DESIGNED	DRAWN	CHECKED	SHEET	SHEETS	
Kucera	SSM	2	2	20	

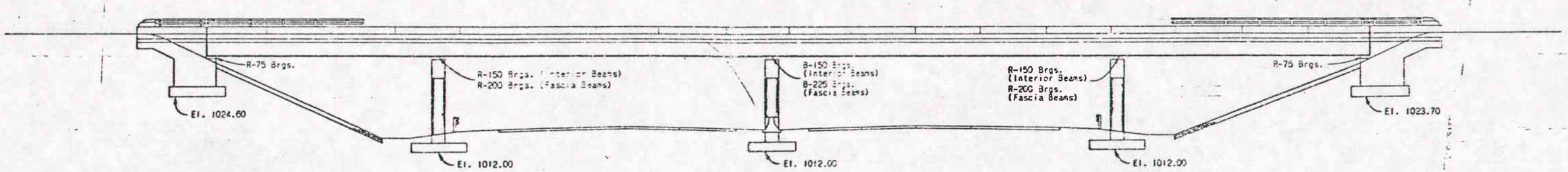
W.E. QUICKSALL & ASSOCIATES INC. Consulting Engineers

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STA-30-12.47



PLAN



ELEVATION

W.E.Q. BRIDGE
SHEET NO. 2 OF

W. E. QUICKSALL AND ASSOCIATES, INC.
CONSULTING ENGINEERS • NEW PHILADELPHIA, OHIO

GENERAL PLAN & ELEVATION

BRIDGE NO. STA-30-1443

U.S.R. 30 under DUEBER AVE.

STARK COUNTY STA. 935+36.99

	2		DO	2241	3/68

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

366/435

STA-30-12.47

ESTIMATED QUANTITIES

Item	Total	Unit	Description	Abuts	Piers	Super	Gen'l.
404	31	Cu Yd	Asphalt Concrete, AC 20			31	
503	545	Cu. Yds.	Unclassified Excavation	202	343		
509	159,545	Lbs.	Reinforcing Steel	10,988	34,593	114,064	
511	470	Cu.Yds.	Class C Concrete – Superstructure (See Proposal Note)			470	
511	122	Cu.Yds.	Class C Concrete – Piers above footings		122		
511	145	Cu.Yds.	Class C Concrete – Abutments above footings	145			
511	205	Cu.Yds.	Class C Concrete – Footings	64	141		
512	19	Lin. Ft.	Premolded Sealing Strip	19			
* 513	310,600	Lbs.	Structural Steel			310,600	
* 514	310,600	Lbs.	Field Painting of Structural Steel			310,600	
517	560.50'	Lin. Ft.	Bridge Railing (ER-2-67)	60		500.50	
518	59	Cu.Yds.	Porous Backfill	59			
518	10	Each	Scupper, including supports			10	
518	72	Lin. Ft.	6" Non-Perforated Helical C.M.P. including specials 70701	72			
518	116	Lin. Ft.	6" Perforated Helical C.M.P. 70701	116			
518	24	Each	Subdrainage for wearing course (as per plan)			24	
601	538	Sq.Yds.	Crushed Aggregate Slope Protection	538			
S625			See Sheet for lighting summary				
808	470	Units	Chemical admixture for concrete, Type A, B or D			470	
Special	15	Cu Yd	Asphaltic Protective Course (See Proposal note)			15	
Special	1122	Sq Yd	Membrane Waterproofing, sheet type (See Proposal note)			1122	

* 25 pounds of Steel to be paid for by the East Ohio Gas Co.

ELEVATIONS TOP OF DECK SLAB

STATION	PROFILE GRADE △	CURB LINES *
15+54.46	1037.68	1037.25
15+75	1037.64	1037.23
16+00	1037.55	1037.13
16+13.96	1037.49	1037.06
16+25	1037.45	1037.05
16+50	1037.36	1037.00
16+75	1037.27	1036.86
16+84.71	1037.24	1036.80
17+00	1037.18	1036.79
17+25	1037.09	1036.75
17+50	1036.99	1036.59
17+59.96	1036.96	1036.53
17+75	1036.90	1036.46
18+00	1036.81	1036.41
18+12.71	1036.76	1036.33

NOTE:

Elevations shown are at the intersection of face of curb, centerline of bearings of abutments and piers, and at even 25 foot stations.

Elevations are those required before deck concrete is placed to allow for dead load deflection caused by the weight of the concrete.

* Top of reinf. conc. deck

△ Top of asphalt conc. surface.

GENERAL NOTES

REFERENCE shall be made to:

Standard Drawings:

BR-2-67, revised 10-15-71
RS-1-55, revised 2-2-59
SD-1-69, dated 6-12-69
HL-4,5,7 revised 9-6-73

Supplemental Specifications:
808, dated 1-1-71
836 dated 3-12-75

DESIGN SPECIFICATIONS: This structure conforms to "Standard Specifications for Highway Bridges" adopted by the American Association of State Highway Officials, 1965, including the Ohio "Supplement" to these specifications.

DESIGN INFORMATION:

Design Loading	-	HS20-44
Concrete Class "C"	-	Unit stress, 1333 p.s.i. for substructure
Concrete Class "C"	-	Unit stress, 1200 p.s.i. for superstructure
Structural Steel	-	ASTM A36 - Unit stress, 20000 p.s.i.
Reinforcing Steel	-	ASTM A615, A616 or A617 Unit stress 20,000 p.s.i.

Spiral Reinforcement shall be plain bars ASTM A82 or A615

FOUNDATION BEARING PRESSURE: All footings are designed for a maximum bearing pressure of 2.5 tons per square foot.

STEEL ERECTION: During the erection of end dams and crossframes care shall be taken to insure that stringers, bearing parts and bridge seats remain in bearing contact.

THE EAST OHIO GAS COMPANY shall furnish all the materials including the brackets for attaching their gas line to the bridge and qualified personnel to perform the work. The address of the Gas Co. is:

*The East Ohio Gas Co.
332 Second Street, N.W.
Canton, Ohio 44702*

W.E.Q. BRIDGE 6
SHEET NO. 3 OF 11

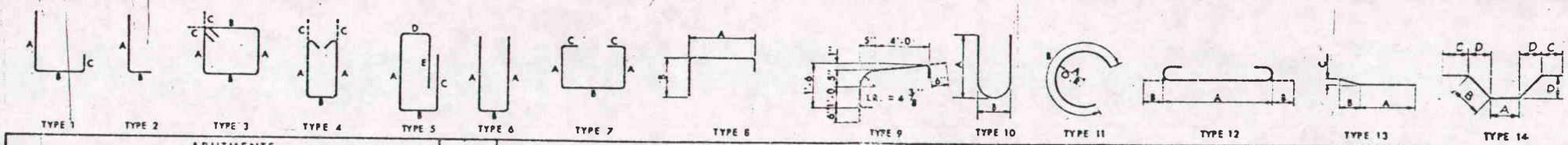
W. E. QUICKSALL AND ASSOCIATES, INC.
CONSULTING ENGINEERS • NEW PHILADELPHIA, OHIO

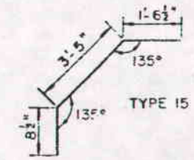
GENERAL NOTES,
ESTIMATED QUANTITIES
& SLAB ELEVATIONS
BRIDGE NO. STA-30-1443
U.S.R. 30 under DUEBER AVE.
STARK COUNTY
STA. 935+36.09

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	RR		PMZ 1-29-68	DLM	5/68	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STA-30-12.47





ABUTMENTS

MARK	TYPE	A	B	C	D	E	NO.	LENGTH	WEIGHT
A501	Str.						16	29'-8	589
A502	2	7'-9	5'-5				72	12'-0	1476
A503	Str.						8	11'-8	140
A504	Str.						4	7'-7	45
A505	5	6'-3	1'-5	4'-7	11"	3'-0	82	15'-6	1929
A506	6	7'-3	1'-5				24	15'-7	562
A507	6	8'-7	1'-2				16	20'-0	491
D801	15						54	5'-6"	793
A501	5	1'-10	3'-5				72	6'-10	513
A502	2	7'-9	7½"				72	8'-3	620
A503	13	6'-4	7"				24	7'-6	188
A504	4	2'-2	8"				28	5'-7	163
A505	Str.						38	29'-0	1110
A506	Str.						38	24'-7	974
A507	Str.						4	6'-2	26
A508	Str.						32	14'-8	490
A509	Str.						24	8'-8	217
A510	Str.						8	6'-8	56
A511	Str.						4	5'-9	24
A512	2	4'-11	7½"				36	5'-5	204
A513	2	3'-8	7½"				16	4'-2	70
A514	6	2'-7	1'-2				16	6'-1	102
L501	1	7½"	2'-1"	7½"			4	3'-1"	13
L502	1	2'-9"	2'-1"	2'-9"			4	7'-4"	31
L503	14	1'-4"	2'-11"	6"	2'-1"		6	8'-0"	50
L504	Str.						4	2'-9"	11

RAILING

R501	Str.						6	14'-8	•
R502	4	3'-2	8"	5"			16	7'-7	•
R503	9	(See Detail)					9	6'-7	•
R504	8	4'-8	3'-2				8	8'-3	•
R505	Str.						8	12'-8	•
R506	Str.						80	12'-8	•
R507	10	1'-6	6½"				10	8'-3	•
R508	Str.						8	4'-8	•
R509	Str.						24	4'-8	•

PIERS

MARK	TYPE	A	B	C	D	E	NO.	LENGTH	WEIGHT
P1101	Str.						8	8'-0	66
P1102	Str.						36	10'-2	1945
P901	Str.						60	29'-0	5916
P902	Str.						12	29'-5	1200
P903	Str.						12	18'-8	762
P904	2	5'-0	1'-3				150	6'-0	3060
P905	Str.						50	17'-3	2933
P906	Str.						50	17'-0	2890
P907	Str.						50	16'-9	2848
P908	Str.						24	10'-0	816
P801	Str.						45	18'-3	2193
P802	Str.						51	10'-0	1362
P701	Str.						12	29'-5	722
P702	Str.						9	18'-8	343
P601	Str.						78	10'-0	1172
P501	Str.						12	29'-5	368
P502	Str.						12	18'-8	234
P503	6	2'-11	2'-8				138	7'-3	1187

SPIRAL REINFORCING (PIERS)

MARK	CORE DIA.	PITCH		NO.	LENGTH	WEIGHT
SP401	32"	4½"		5	13'-5½"	1287
SP402	32"	4½"		5	13'-1½"	1256
SP403	32"	4½"		5	12'-10½"	1238

Other details in accordance with CRSI Standard practice

SUPERSTRUCTURE

MARK	TYPE	A	B	C	D	E	NO.	LENGTH	WEIGHT
S701	7	1'-1	[illegible]	[illegible]			[illegible]	[illegible]	[illegible]
S702	Str.						528	27'-11	3423
S703	Str.						252	23'-11	1817
S601	Str.						712	33'-0	32083
S602	Str.						80	34'-5	3064
S603	Str.						96	31'-0	4470
S501	4	2'-2	8"	5"			356	5'-7	2073
S502	6	7½"	6'-6				300	7'-6	2347
S503	6	7½"	1'-6				300	2'-6	782
S504	6	7½"	1'-3				300	2'-3	704
L501	1	7½"	2'-1"	7½"			4	3'-1"	13
L502	1	2'-9"	2'-1"	2'-9"			4	7'-4"	31
L503	14	1'-4"	2'-11"	6"	2'-1"		6	8'-0"	50
L504	Str.						4	2'-9"	11

NOTES

Refer to CMS Sections 106.03, 700, 709.01 through 709.05 and 709.08. Sufficient additional reinforcing steel shall be provided for sampling. Random samples shall be replaced in the structures by the additional steel, spliced in accordance with 509.08.

All dimensions are out-to-out.

Str. in the "TYPE" column indicates straight bars.

• Include with railing for payment.

W.E.Q. BRIDGE 6
SHEET NO. 4 OF 1[illegible]

W. E. QUICKSALL AND ASSOCIATES, INC.
CONSULTING ENGINEERS • NEW PHILADELPHIA, OHIO

REINFORCING BAR SCHEDULE

BRIDGE NO. STA-30-1443

U.S.R. 30 under DUEBER AVE.

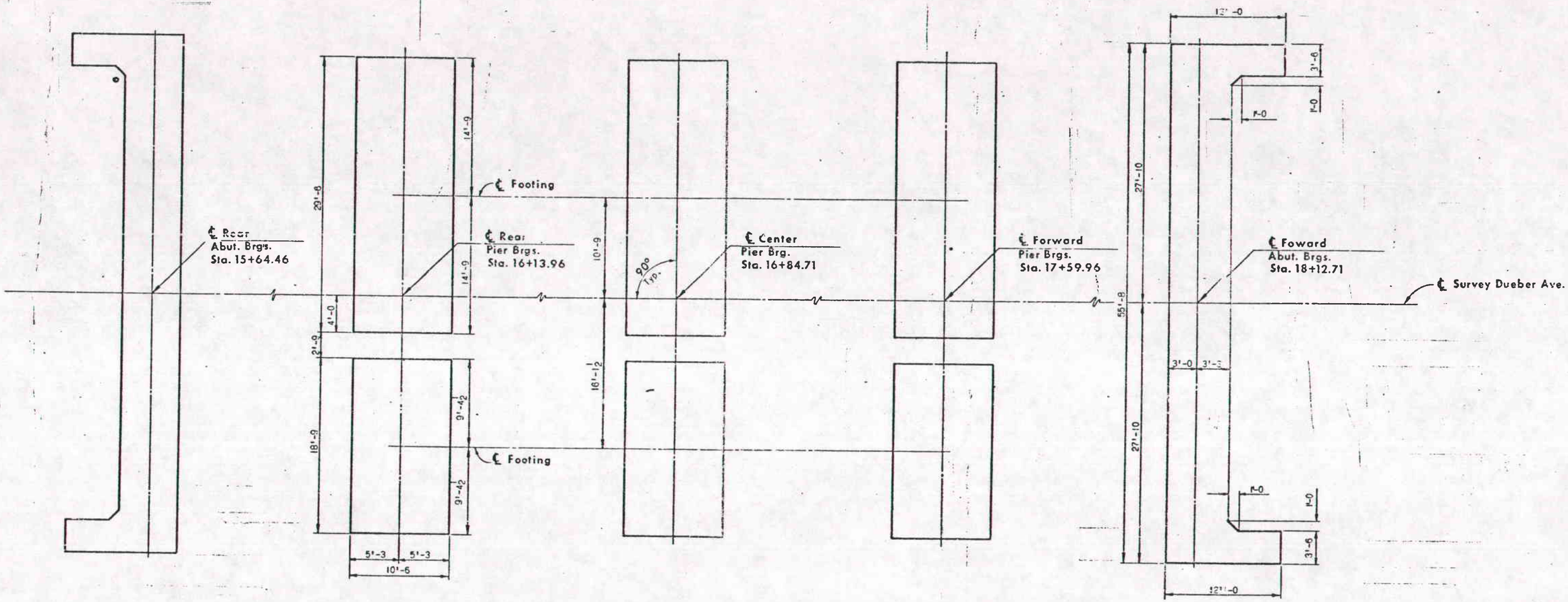
STARK COUNTY

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE
R		bo	DLAJ	3/68

W.E. QUICKSALL & ASSOCIATES INC. Consulting Engineers

FED RD DIVISION	STATE	PROJECT	
2	OHIO		

STA-30-12.47



NOTE:
Dimensions shown for Forward Abutment are typical for Rear Abutment.

Dimensions shown for Rear Pier are typical for Center & Forward Piers.

W.E.Q. BRIDGE 4
SHEET NO. 5 OF 11

W. E. QUICKSALL AND ASSOCIATES, INC.
CONSULTING ENGINEERS • NEW PHILADELPHIA, OHIO

FOOTING PLAN

BRIDGE NO. STA-30-1443

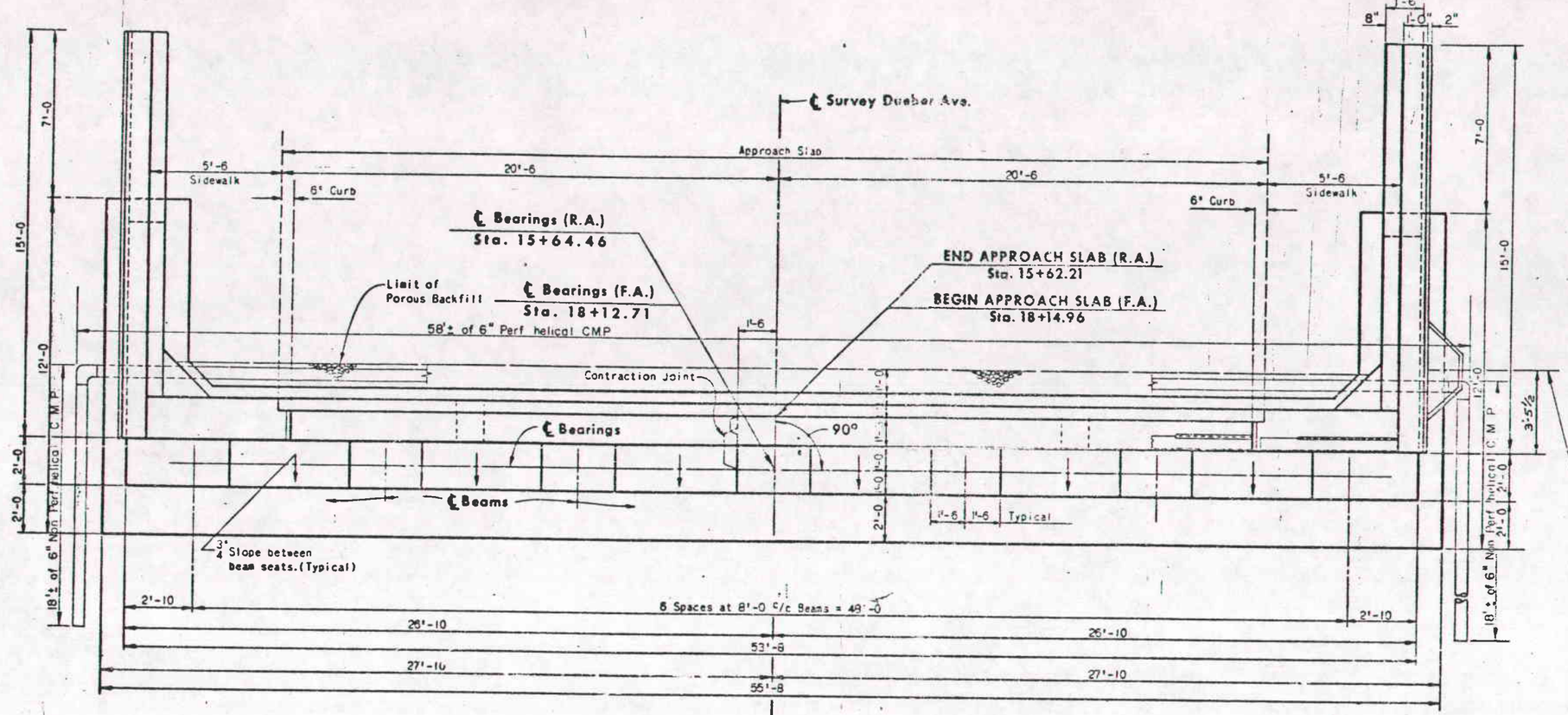
U.S.R. 30 under DUEBER AVE.

STARK COUNTY STA. 935+38.63

DES. SPEC.	LAYOUT	TRACED	CHECKED	REVIEWED	DATE	PLANS
	TG		DO	DLM	3/63	

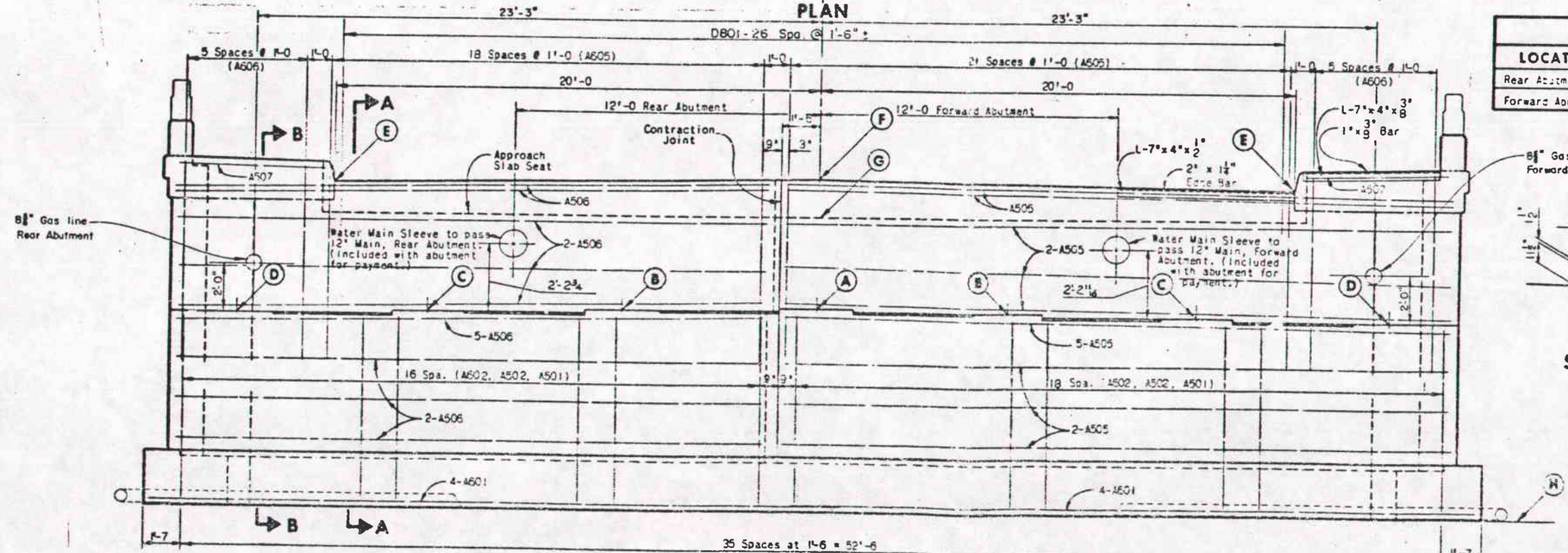
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

STA-30-12.47



BACKWALL CONCRETE: In addition to the provisions of 511.08, backwall concrete shall not be placed until after the deck concrete in the span adjacent to the backwall has been placed.

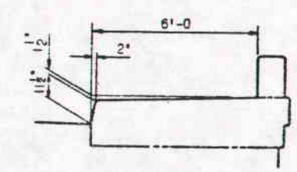
PLAN



ELEVATION

ELEVATIONS

LOCATION	A	B	C	D	E	F	G	H
Rear Abutment	1033.12	1032.99	1032.87	1032.74	1037.35	1037.66	1035.92	1024.60
Forward Abutment	1032.23	1032.10	1031.98	1031.85	1036.43	1036.74	1035.00	1023.70



SIDEWALK DETAIL

Legend

R.A. = Rear Abutment
F.A. = Forward Abutment

For Additional Details See Sheet No. 7.

W.E.Q. BRIDGE 6
SHEET NO. 6 OF 11

W. E. QUICKSALL AND ASSOCIATES, INC.
CONSULTING ENGINEERS • NEW PHILADELPHIA, OHIO

ABUTMENT DETAILS

BRIDGE NO. STA-30-1443

U.S.R. 30 under DUEBER AVE.

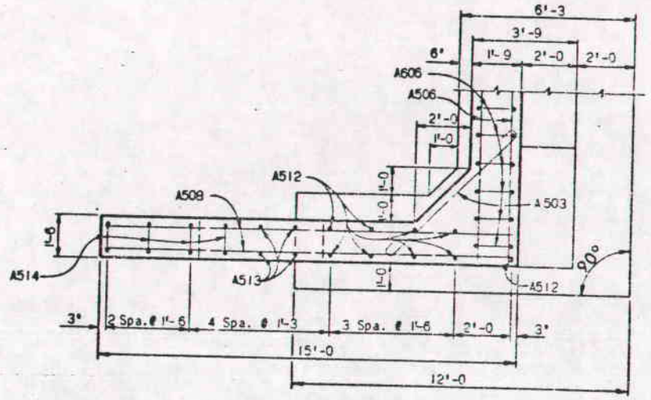
STARK COUNTY STA. 935+36.99

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	RG		bo	DLM	3/63	

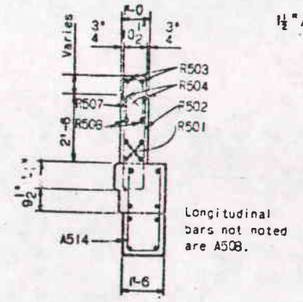
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

370
193

STA-30-12.47

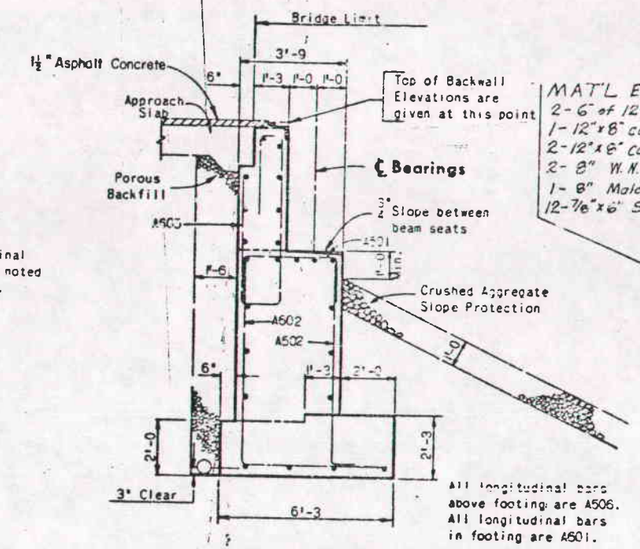


SECTION E-E



Longitudinal bars not noted are A508.

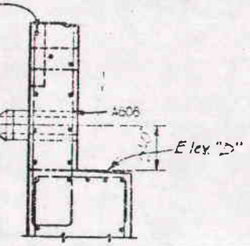
SECTION D-D



All longitudinal bars above footing are A506. All longitudinal bars in footing are A501.

SECTION A-A

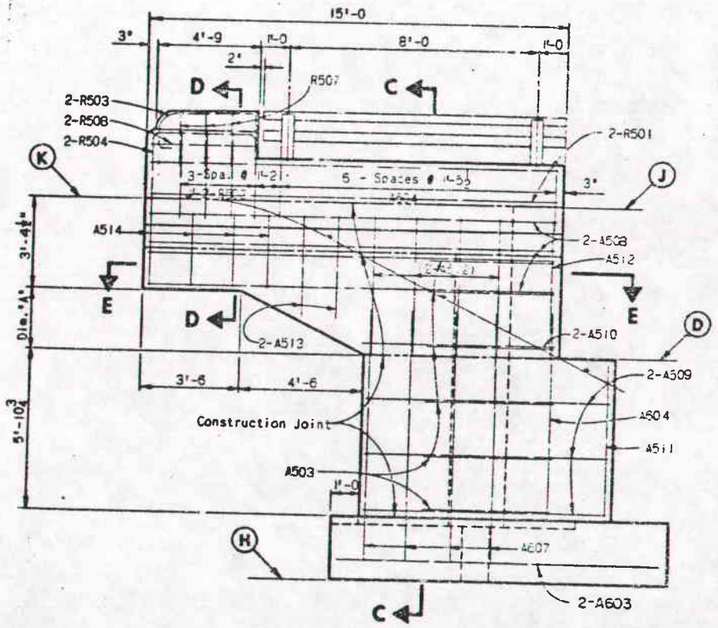
MAT'L EACH ABUTMENT
2- 6" of 12" pipe (sleeve)
1- 12"x8" casing seal
2- 12"x6" casing spacers
2- 8" W. N. FLG'S 300#, A507
1- 8" Maloney Ins. 340#
12- 7/8"x6" Stud Bolts



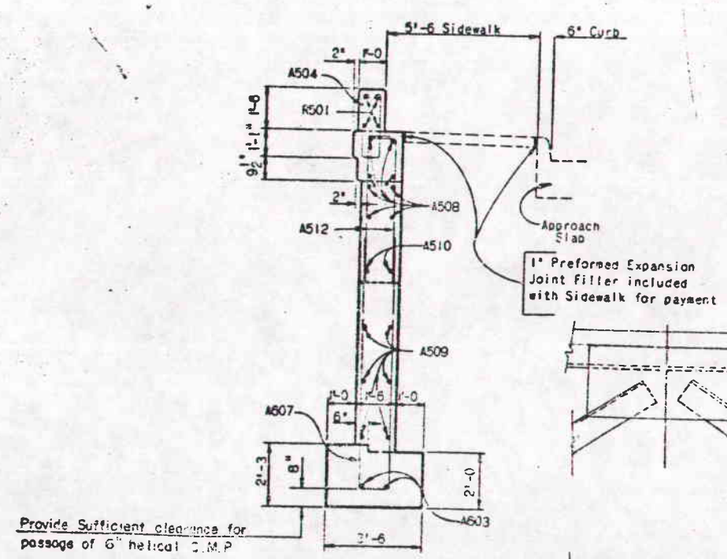
For bars and details not shown, see Section A-A.

PARTIAL SECTION B-B

ELEVATIONS AND DIMENSIONS					
LOCATION	Dim 'A'	D	H	J	K
Rear Abutment	2'-3 1/4	1032.74	1034.60	1038.33	1038.38
Forward Abutment	2'-1 1/2	1031.55	1033.70	1037.41	1037.35

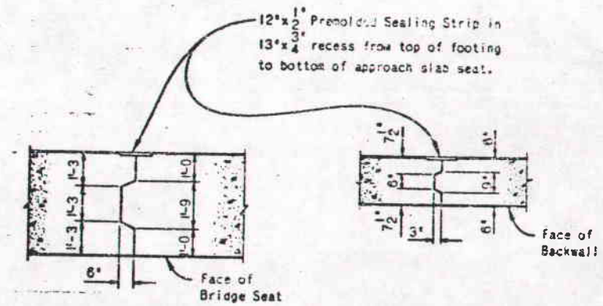


TYPICAL WING ELEVATION



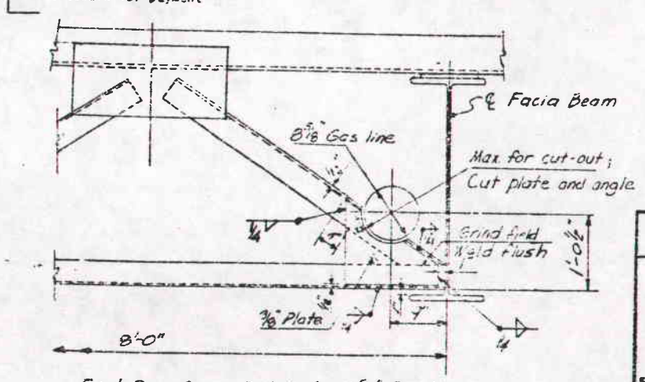
Provide Sufficient clearance for passage of 6" helical C.M.P

SECTION C-C



CONTRACTION JOINT DETAILS

For Additional Details See sheet No. 6.



End Crossframe Details for 8 5/8" Gas Line (3/8" Plate furnished by East Ohio Gas Co.)

W.E.Q. BRIDGE 6
SHEET NO. 7 OF 11

W. E. QUICKSALL AND ASSOCIATES, INC.
CONSULTING ENGINEERS • NEW PHILADELPHIA, OHIO

ABUTMENT DETAILS

BRIDGE NO. STA-30-1443

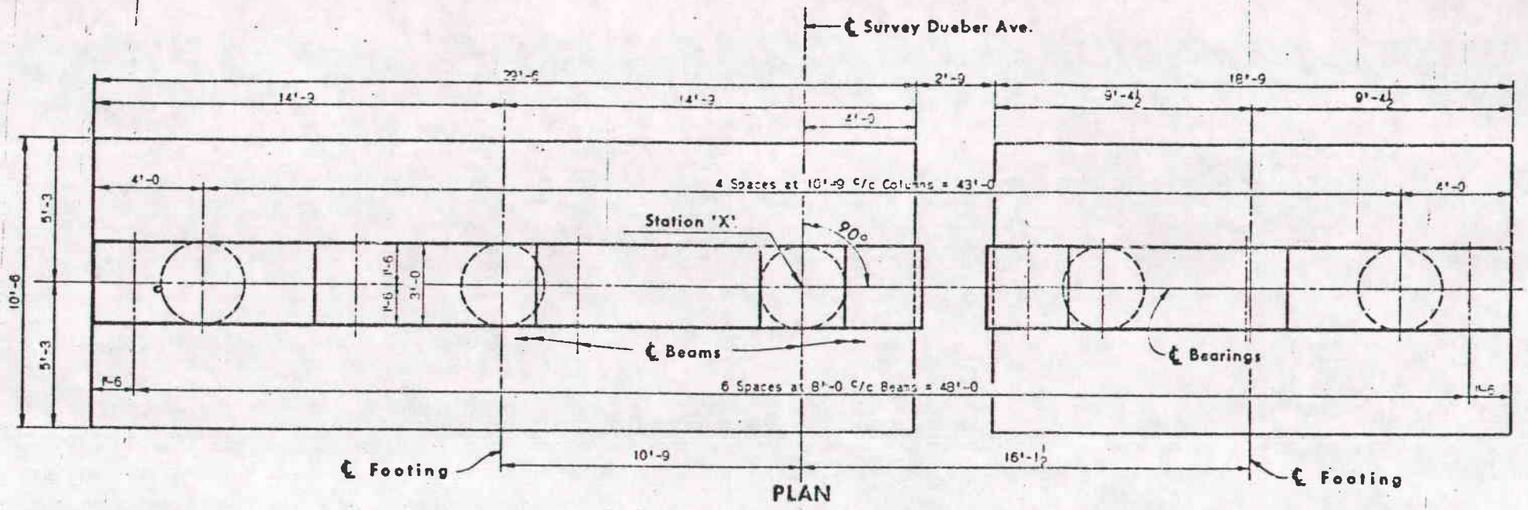
U.S.R. 30 under DUEBER AVE.

STARK COUNTY STA. 935+36.97

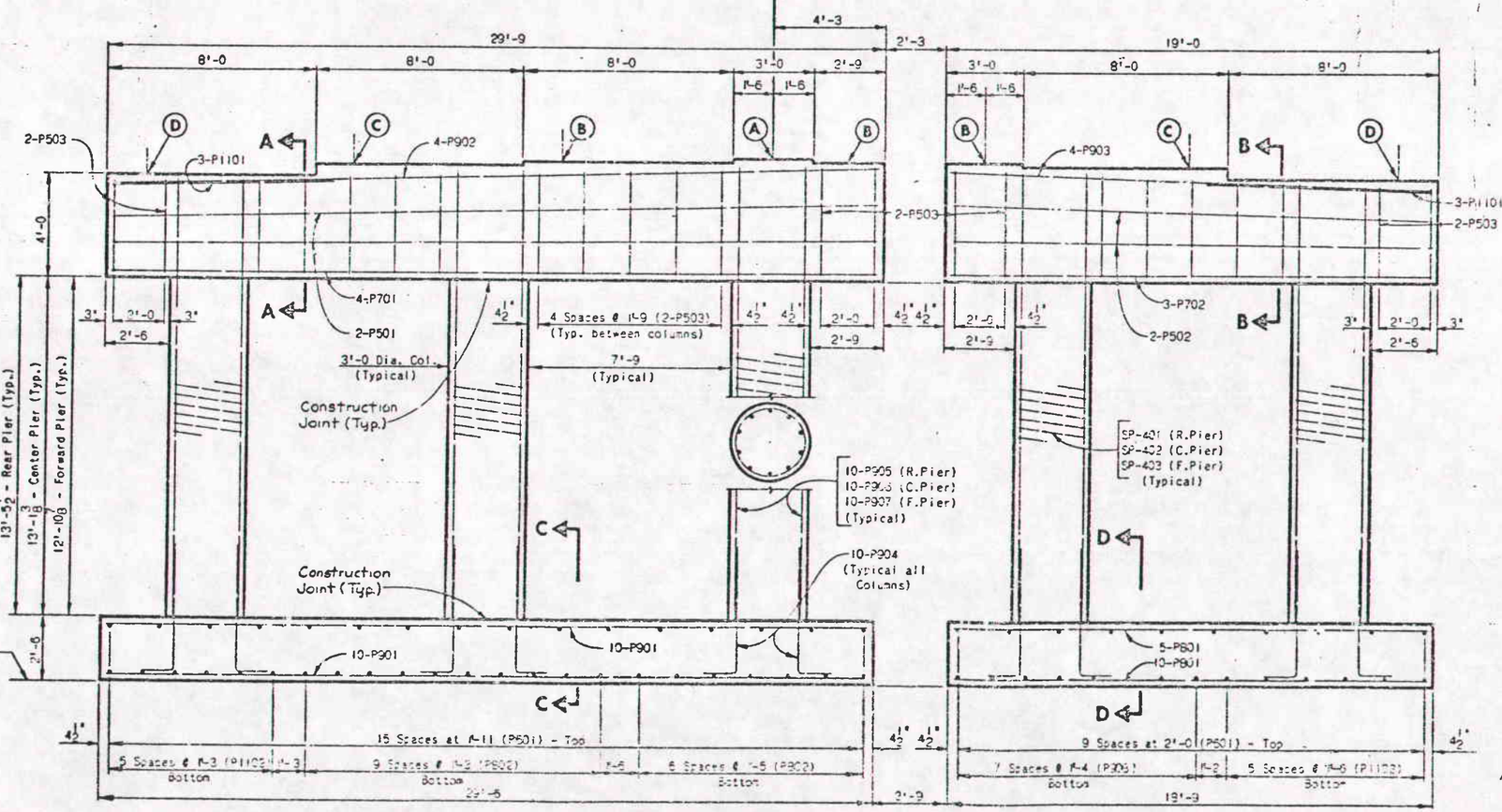
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	RG		bo	DLM	3/68	

FED. RD. DIST. NO.	STATE	PROJECT	
2	OHIO		

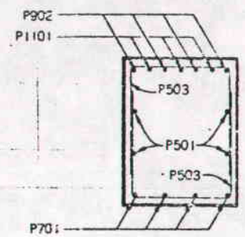
STA-30-12.47



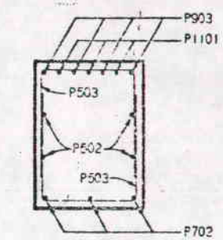
PLAN



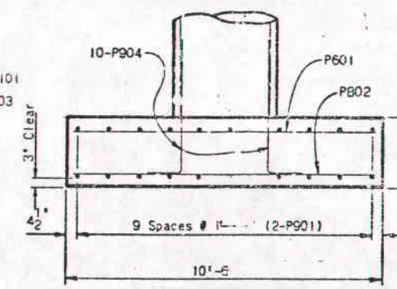
ELEVATION



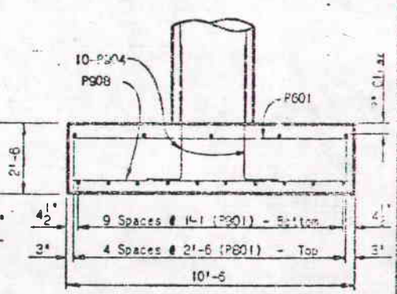
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

STATIONS AND ELEVATIONS					
LOCATION	Station 'X'	A	B	C	D
Rear Pier	16+13.96	1032.59	1032.47	1032.34	1031.86
Center Pier	16+34.71	1032.31	1032.19	1032.06	1031.67
Forward Pier	17+59.96	1032.06	1031.93	1031.81	1031.41

Note: BEARING ANCHORS: At the option of the Contractor, bearing anchors (or formed holes), located and supported by templates may be cast in place.

W.E.O. BRIDGE 6
SHEET NO. 8 OF 11

W. E. QUICKSALL AND ASSOCIATES, INC.
CONSULTING ENGINEERS • NEW PHILADELPHIA, OHIO

PIER DETAILS

BRIDGE NO. STA-30-1443

U.S.R. 30 under DUEBER AVE.

STARK COUNTY

STA. 935-36.77

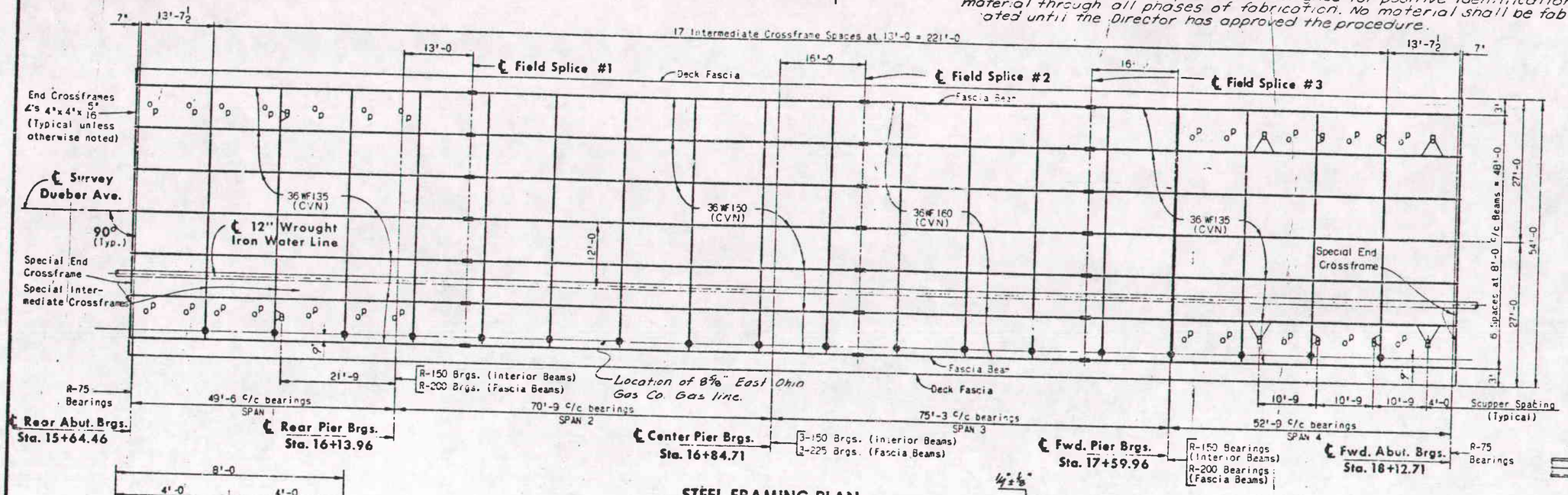
CHECKED	APPROVED	CHECKED	REVISED	DATE	APPROVED
		bo	DLM	3/67	

Where "(CVN)" follows a shape or plate size designation, the material shall meet specified minimum notch toughness requirements. The Fabricator shall submit to the Director a procedure designed for positive identification of material through all phases of fabrication. No material shall be fabricated until the Director has approved the procedure.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

372 / 435

STA-30-12.47



STEEL FRAMING PLAN

SUPERSTRUCTURE NOTES

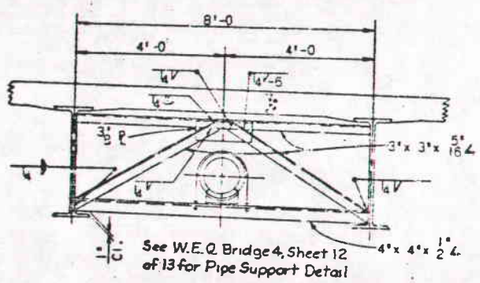
ADDITIONAL DETAILS: Refer to Standard Drawings SD-1-69, sheets 1, 2 and 3 & 4 RB-1-55 and BR-2-67 for details not shown.

For Scupper details, see Std. Drg. SD-1-69 sheet 3 of 4 and sht. 372/435

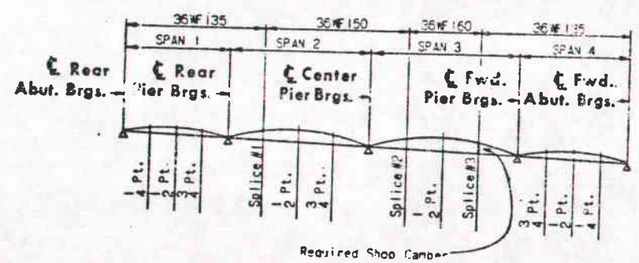
● Denotes position of gas pipe support. For Subdrainage detail, see sht. 374A/435

WATER LINE structural steel supports and U-Bolts included with structural steel for payment.

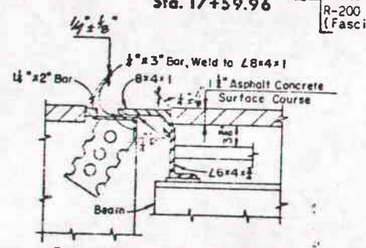
Subdrainage pipe locations are indicated "P", see sht. 374A/435 for additional location restrictions.



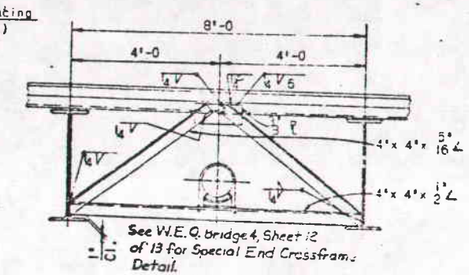
SPECIAL INTERMEDIATE CROSSFRAME DETAIL



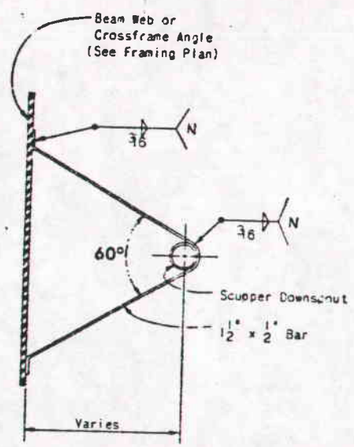
DEFLECTION & CAMBER DIAGRAM



END DAM DETAILS



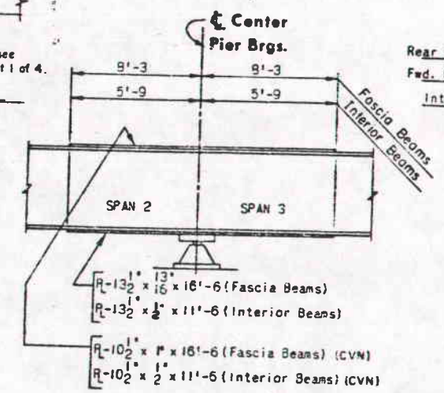
SPECIAL END CROSSFRAME DETAIL

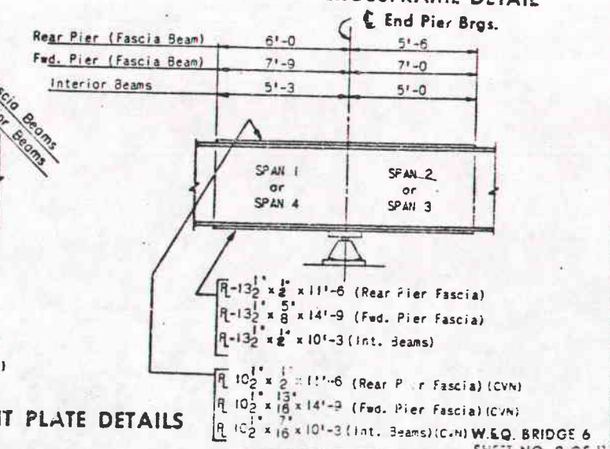


TYPICAL SCUPPER BRACING DETAIL

DEFLECTION & CAMBER

	LOCATION	SPAN 1			SPAN 2			SPAN 3			SPAN 4		
		1/4 Pt.	1/2 Pt.	3/4 Pt.	1/4 Pt.	1/2 Pt.	3/4 Pt.	1/4 Pt.	1/2 Pt.	3/4 Pt.	1/4 Pt.	1/2 Pt.	3/4 Pt.
Interior Beams	Deflection due to weight of steel	0	0	0	0	1/16	0	1/16	1/8	1/16	0	1/16	0
	Deflection due to remaining dead load	1/8	1/8	1/16	1/8	5/16	1/8	3/16	1/2	1/4	1/16	3/16	3/16
	Required Shop Camber	1/8	1/8	1/16	1/8	3/8	1/8	1/4	1/2	5/16	1/16	1/4	3/16
Fascia Beams	Deflection due to weight of steel	0	0	0	0	1/16	0	1/16	1/8	1/16	0	1/16	0
	Deflection due to remaining dead load	5/16	3/8	1/8	5/16	13/16	3/8	9/16	1 1/16	5/8	1/8	7/16	1/4
	Required Shop Camber	5/16	3/8	1/8	5/16	7/8	3/8	9/16	1 1/16	5/8	1/8	7/16	1/4





MOMENT PLATE DETAILS

All splice material shall be CVN.

NOTE:
For additional details see sheet no. 10 & 11.

W.E.Q. BRIDGE 6
SHEET NO. 9 OF 11

W. E. QUICKSALL AND ASSOCIATES, INC.
CONSULTING ENGINEERS • NEW PHILADELPHIA, OHIO

SUPERSTRUCTURE DETAILS

BRIDGE NO. STA-30-1443

U.S.R. 30 under DUEBER AVE.

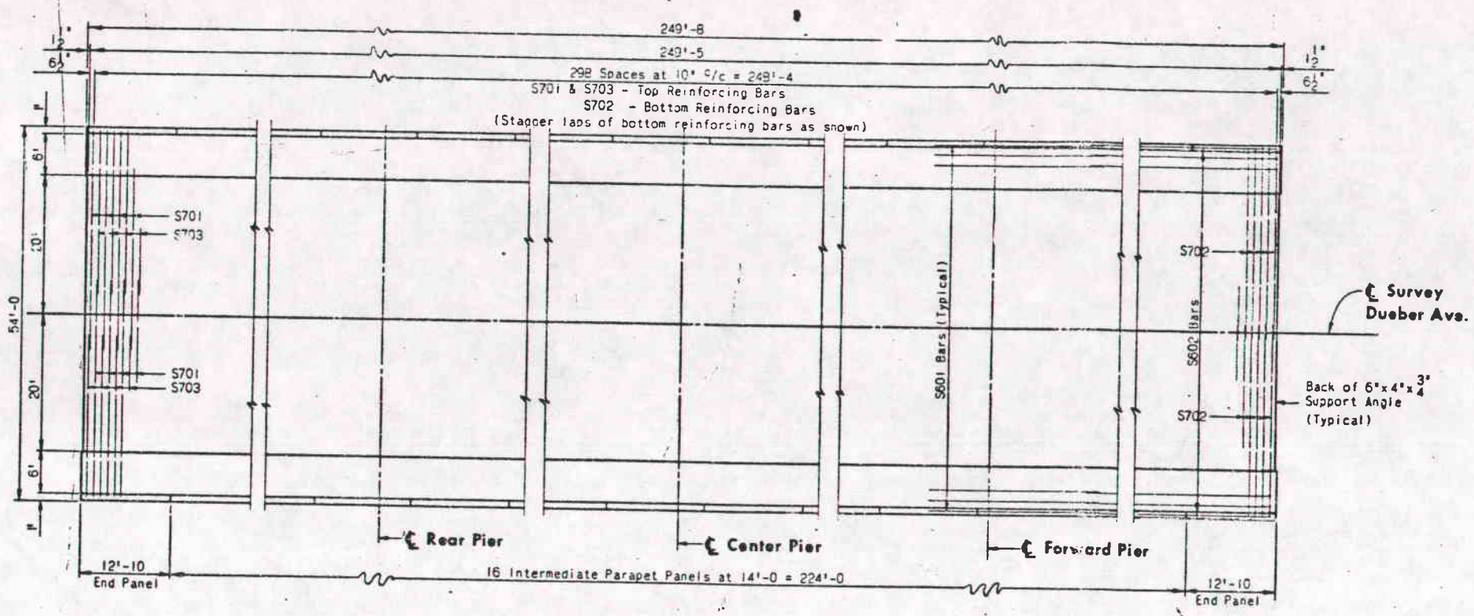
STARK COUNTY — STA. 935-36.99

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REV.
	RS		bo	DLM	3/68	

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

373/435

STA-30-12.47



PLAN OF DECK REINFORCING STEEL

NOTE:
Lap S502, S504 bars with S502 bars.

R506 - Inter. Parapet Panels
R505 - End Parapet Panels

Included with railing for payment

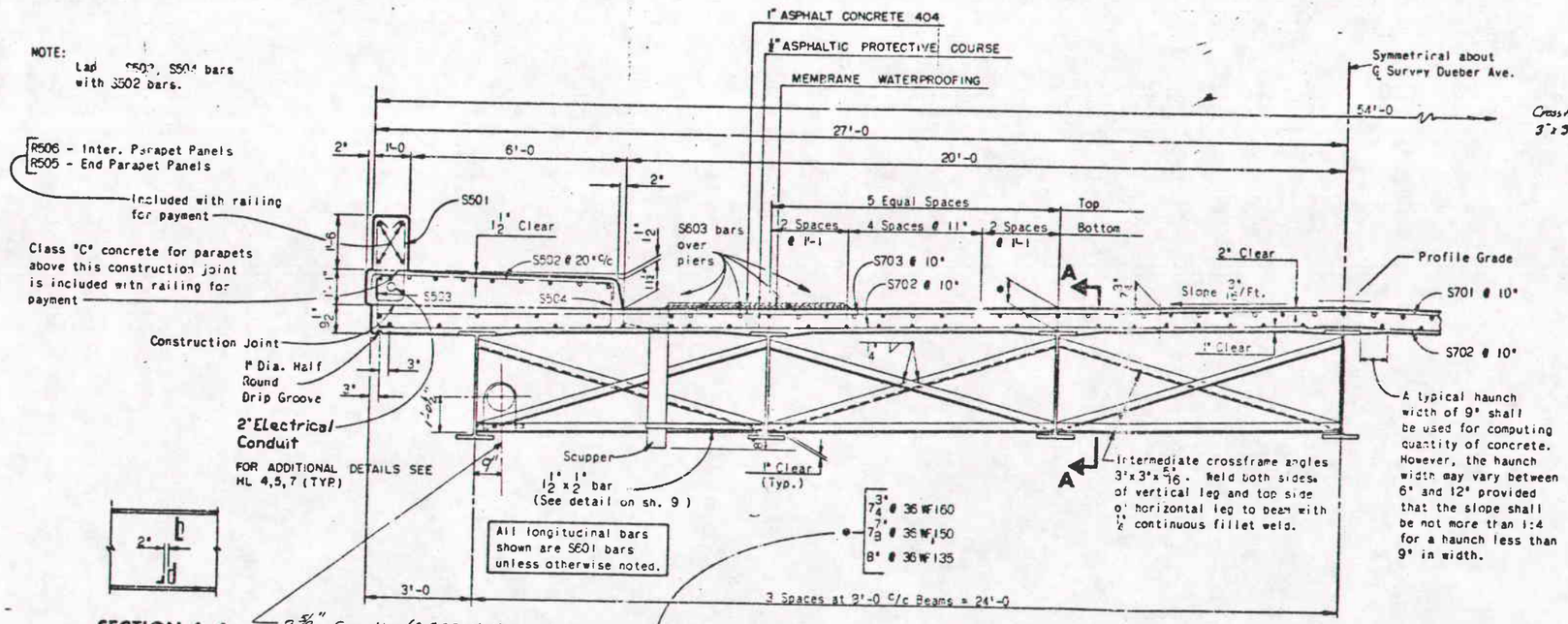
Class "C" concrete for parapets above this construction joint is included with railing for payment

Construction Joint

1" Dia. Half Round Drip Groove

2" Electrical Conduit

FOR ADDITIONAL DETAILS SEE HL 4,5,7 (TYP.)



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.

Intermediate crossframe angles 3"x3"x5/16". Weld both sides of vertical leg and top side of horizontal leg to beam with 1/4" continuous fillet weld.

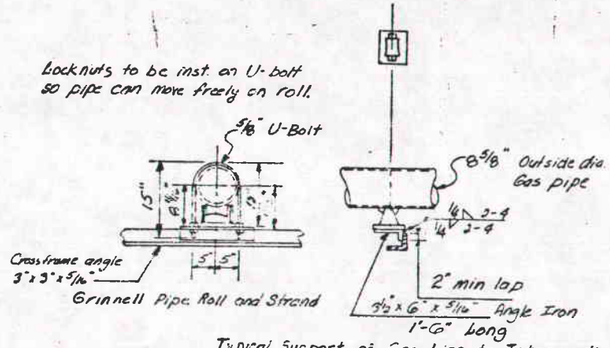
HALF TRANSVERSE SECTION

This dimension is the nominal dimension. The quantity of deck concrete to be paid for is 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. Deduction shall be made for volume of encased steel plates as per Sec. 511.19 of the Construction and Material Specifications.

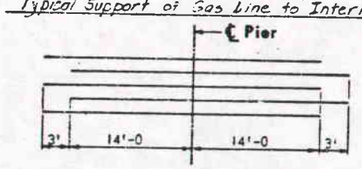
SECTION A-A

8 5/8" Gas line (0.322 Wall, Grade B, BK PE Bare) on West Focia Beam

Locknuts to be inst. on U-bolt so pipe can move freely on roll.



Typical Support of Gas Line to Intermediate Crossframes



ALTERNATE STAGGER SYSTEM OF S603 BARS OVER PIERS

For addition details see sheets 9 & 11.

W.E.Q. BRIDGE 6
SHEET NO. 10 OF 11

W. E. QUICKSALL AND ASSOCIATES, INC.
CONSULTING ENGINEERS • NEW PHILADELPHIA, OHIO

SUPERSTRUCTURE DETAILS

BRIDGE NO. STA-30-1443

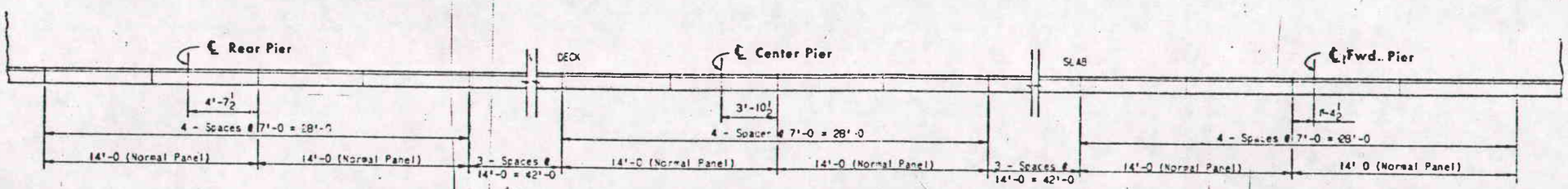
U.S.R. 30 under DUEBER AVE.

STARK COUNTY STA. 935+36.99

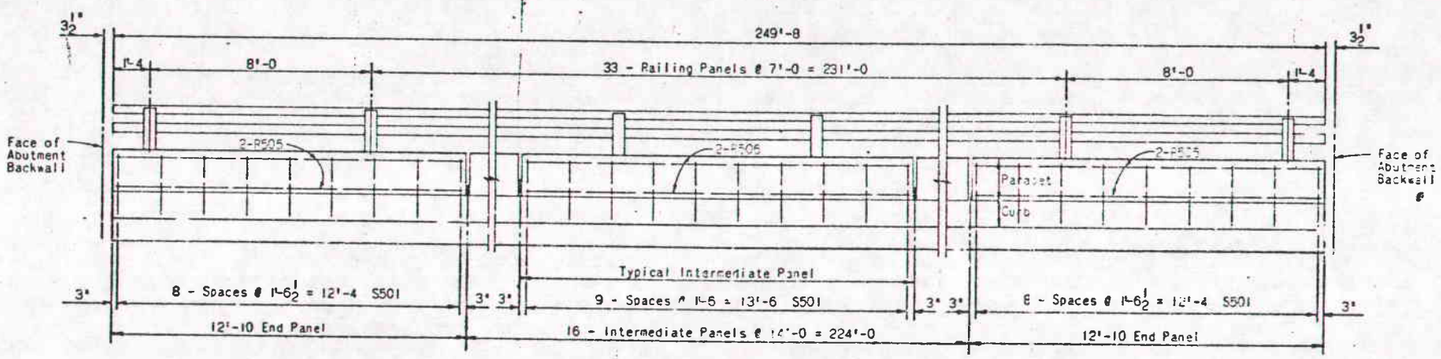
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	R		bo	DLM	3/68	

FED. RD. DIVISION	STATE	PROJECT	
3	OHIO		

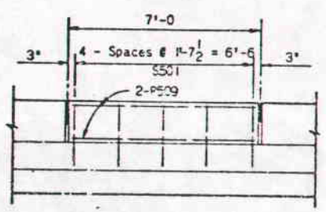
STA-30-12.47



PLAN OF PARAPET DEFLECTION JOINTS OVER PIERS



CURB AND PARAPET DETAIL



TYPICAL 7'-0 PARAPET PANEL

For additional details see sheets No. 9 and 10.

W.E.Q. BRIDGE 6
SHEET NO. 11 OF 11

W. E. CUCKSALL AND ASSOCIATES, INC.
CONSULTING ENGINEERS • NEW PHILADELPHIA, OHIO

SUPERSTRUCTURE DETAILS
BRIDGE NO. STA-30-1443
U.S.R. 30 under DUEBER AVE

STARK COUNTY STA. 935+36.95

DESIGNED	DRAWN	TRACED	CHECKED	REVISED	DATE	REV.
	PMZ		WEB	DLA1	3/63	