COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF TRANSPORTATION

BUREAU OF HIGHWAY DESIGN
BRIDGE DIVISION

STANDARDS FOR OLD BRIDGES

(FROM 1918 TO 1930)

VOLUME 1

March 1983

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INDEX OF STANDARDS FOR OLD BRIDGES

(VOLUME 1)

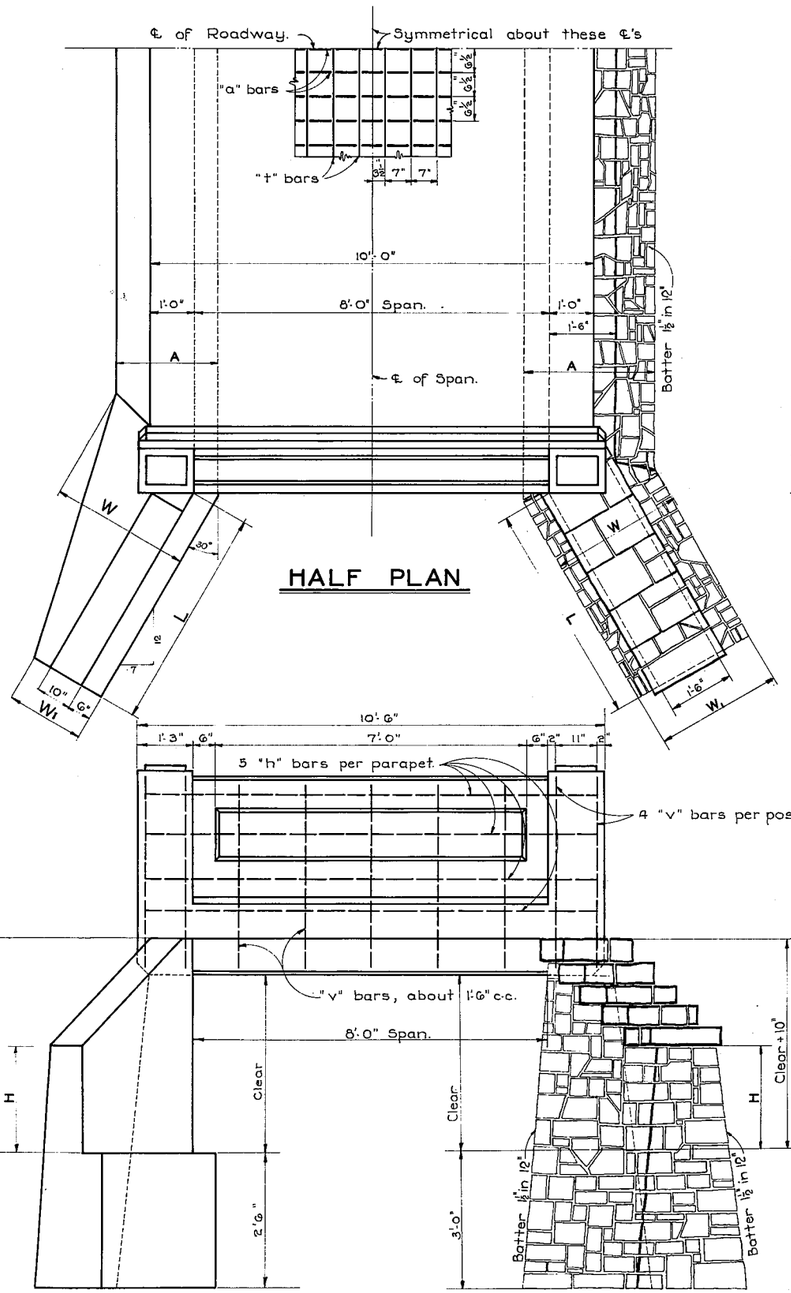
STANDARD DRAWING NO.	DATE	DESCRIPTION
REINFORCED CONCRETE BRIDGES		
608-B	Feb. 14, 1928	SPAN 8 FT.
608-B 75	Feb. 14, 1928	SPAN 8 FT. SKEW 75° L.
608 B-60	Oct. 14, 1927	SPAN 8 FT. SKEW 60° L.
610 B	Feb. 14, 1928	SPAN 10 FT.
610 B-75	Feb. 14, 1928	SPAN 10 FT. SKEW 75° L.
610 B-60	Oct. 14, 1927	SPAN 10 FT. SKEW 60° L.
610 B-45	Feb. 14, 1928	SPAN 10 FT. SKEW 45° L.
612-B	Feb. 14, 1928	SPAN 12 FT.
612-B 75	Feb. 14, 1928	SPAN 12 FT. SKEW 75° L.
612 B-60	Oct. 14, 1927	SPAN 12 FT. SKEW 60° L.
612-B 45	Feb. 14, 1928	SPAN 12 FT. SKEW 45° L.
614 B	Feb. 14, 1928	SPAN 14 FT.
614 B-75	Feb. 14, 1928	SPAN 14 FT. SKEW 75° L.
614 B-60	Oct. 14, 1927	SPAN 14 FT. SKEW 60° L.
614 B-45	Feb. 14, 1928	SPAN 14 FT. SKEW 45° L.
616-B	Feb. 14, 1928	SPAN 16 FT.
616-B 75	Feb. 14, 1928	SPAN 16 FT. SKEW 75° L.
616 B-60	Oct. 14, 1927	SPAN 16 FT. SKEW 60° L.
616-B 45	Feb. 14, 1928	SPAN 16 FT. SKEW 45° L.
618-B	Feb. 14, 1928	SPAN 18 FT.
618 B-75	Feb. 14, 1928	SPAN 18 FT. SKEW 75° L.
618 B-60	Oct. 14, 1927	SPAN 18 FT. SKEW 60° L.
618 B-45	Feb. 14, 1928	SPAN 18 FT. SKEW 45° L.
620 B	Aug. 1, 1927	SPAN 20 FT.
620 B-75	May 21, 1928	SPAN 20 FT. SKEW 75° L.
620 B-60	May 21, 1928	SPAN 20 FT. SKEW 60° L.
620 B-45	May 21, 1928	SPAN 20 FT. SKEW 45° L.
622 B	Aug. 1, 1927	SPAN 22 FT.
622 B-75	May 21, 1928	SPAN 22 FT. SKEW 75° L.
622 B-60	May 21, 1928	SPAN 22 FT. SKEW 60° L.
622 B-45	May 21, 1928	SPAN 22 FT. SKEW 45° L.
624 B	Aug 1, 1927	SPAN 24 FT.
624 B-75	May 21, 1928	SPAN 24 FT. SKEW 75° L.
624 B-60	May 21, 1928	SPAN 24 FT. SKEW 60° L.
624 B-45	May 21, 1928	SPAN 24 FT. SKEW 45° L.
626 B	Aug. 1, 1927	SPAN 26 FT.
626 B-75	May 29, 1928	SPAN 26 FT. SKEW 75° L.
626 B-60	May 21, 1928	SPAN 26 FT. SKEW 60° L.
626 B-45	May 29, 1928	SPAN 26 FT. SKEW 45° L.
628 B	Aug. 1, 1927	SPAN 28 FT.
628 B-75	May 29, 1928	SPAN 28 FT. SKEW 75° L.
628 B-60	May 21, 1928	SPAN 28 FT. SKEW 60° L.
628 B-45	May 21, 1928	SPAN 28 FT. SKEW 45° L.

STANDARD DRAWING NO.	DATE	DESCRIPTION
REINFORCED CONCRETE BRIDGES (Cont'd.)		
630 B	Aug. 1, 1927	SPAN 30 FT.
630 B-75	May 21, 1928	SPAN 30 FT. SKEW 75° L.
630 B-60	June 9, 1927	SPAN 30 FT. SKEW 60° L.
630 B-45	May 29, 1928	SPAN 30 FT. SKEW 45° L.
632 B	Aug. 1, 1927	SPAN 32 FT.
632 B-75	May 29, 1928	SPAN 32 FT. SKEW 75° L.
632 B-60	May 29, 1928	SPAN 32 FT. SKEW 60° L.
632 B-45	May 21, 1928	SPAN 32 FT. SKEW 45° L.
634 B	Aug. 1 1927	SPAN 34 FT.
634 B-75	May 29, 1928	SPAN 34 FT. SKEW 75° L.
634 B-60	May 21, 1928	SPAN 34 FT. SKEW 60° L.
634 B-45	May 29, 1928	SPAN 34 FT. SKEW 45° L.
636 B	Aug. 1, 1927	SPAN 36 FT.
636 B-75	May 21, 1928	SPAN 36 FT. SKEW 75° L.
636 B-60	May 21, 1928	SPAN 36 FT. SKEW 60° L.
636 B-45	May 21, 1928	SPAN 36 FT. SKEW 45° L.
638 B	Aug. 1, 1927	SPAN 38 FT.
638 B-75	May 21, 1928	SPAN 38 FT. SKEW 75° L.
638 B-60	May 21, 1928	SPAN 38 FT. SKEW 60° L.
638 B-45	May 29, 1928	SPAN 38 FT. SKEW 45° L.
640 B	April 6, 1927	SPAN 40 FT.
640 B-75	May 29, 1928	SPAN 40 FT. SKEW 75° L.
640 B-60	Aug. 1, 1927	SPAN 40 FT. SKEW 60° L.
640 B-45	May 21, 1928	SPAN 40 FT. SKEW 45° L.

MISCELLANEOUS		
S-201-30	Feb. 27, 1922	REINFORCED CONCRETE BRIDGE SPAN 32 FT. SKEW 30°
S-625	April 28, 1930	STANDARD SHOES FOR PLATE GIRDER
S-228	June 29, 1925	CONCRETE ARCHES SPANS 4'-0" to 12'-0"
S-367	March 3, 1924	REINFORCED CONCRETE ARCH SPAN 20 FT. CLEAR 16 FT.
S-333	Nov. 20, 1929	REINFORCED CONCRETE BOXES
S-214	Aug. 24, 1922	STANDARD PIERS SPANS 12 TO 45 FT.
W-1	Sept. 25, 1918	CONCRETE RETAINING WALL HEIGHT 4'-0" TO 8'-0"
W-2	Nov. 18, 1918	BUTTRESSED RETAINING WALL
W-3	Dec. 31, 1918	RETAINING WALLS OF CONCRETE, CEMENT RUBBLE, AND DRY RUBBLE. HEIGHTS 2 FT. TO 15 FT.
W-10	March 11, 1929	SCHUYLKILL CO. - RT 161 RETAINING WALLS

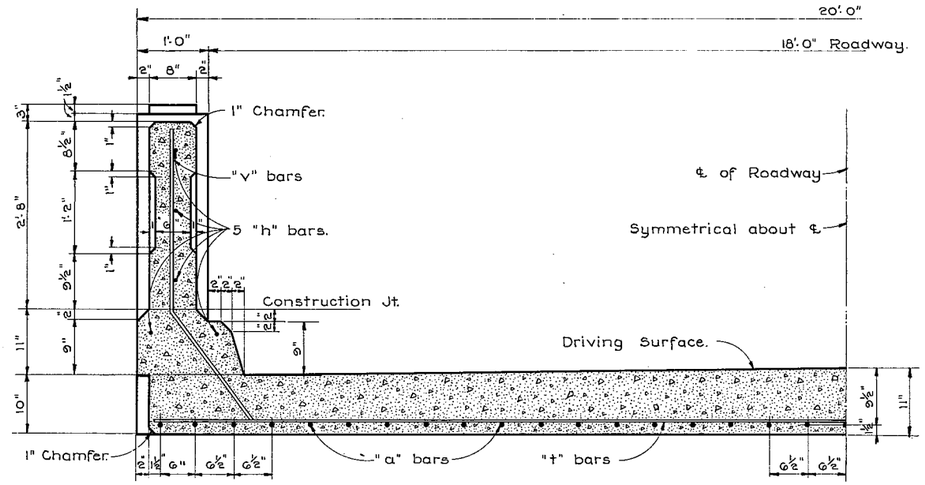
Date: March, 1983

Revised 7-23-32 W.C.T. Stone Masonry.



HALF PLAN

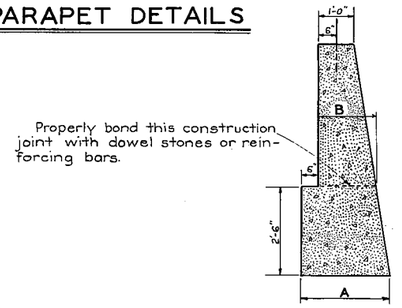
ELEVATION



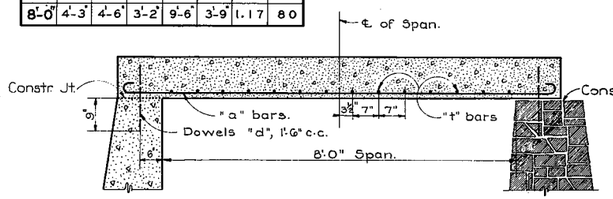
SLAB & PARAPET DETAILS

STONE ABUTMENTS & WINGS							
CLEAR	A	W	W1	L	H	CU.YDS. PER FOOT ONE ABUT.	TOTAL CU.YDS. TWO ABUT.
2'-0"	2'-9"	3'-0"	2'-7"	2'-9"	1'-6"	0.39	21
2'-6"	2'-11"	3'-1"	2'-7"	3'-3"	1'-6"	0.45	23
3'-0"	3'-0"	3'-3"	2'-8"	4'-0"	1'-9"	0.50	27
3'-6"	3'-1"	3'-4"	2'-9"	4'-6"	2'-0"	0.55	31
4'-0"	3'-3"	3'-6"	2'-10"	5'-0"	2'-3"	0.62	35
5'-0"	3'-6"	3'-9"	2'-11"	6'-0"	2'-6"	0.74	44
6'-0"	3'-9"	4'-0"	3'-0"	7'-3"	3'-0"	0.88	55
7'-0"	4'-0"	4'-3"	3'-1"	8'-3"	3'-3"	1.02	66
8'-0"	4'-3"	4'-6"	3'-2"	9'-6"	3'-9"	1.17	80

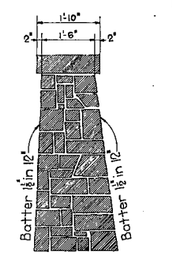
Properly bond this construction joint with dowel stones or reinforcing bars.



CLEAR	B
2'-0"	1'-1"
2'-6"	1'-1½"
3'-0"	1'-4½"
3'-6"	1'-5"
4'-0"	1'-7"
5'-0"	2'-0"
6'-0"	2'-5"
7'-0"	2-9½"
8'-0"	3'-2½"



SECTION ON ℄ OF BRIDGE



TYPICAL WING SECTION
(FOR STONE ABUTMENTS ONLY)

NOTE

Floor of bridge shall conform to grade of road. On level grade slope top of slab 1/16" per foot.

Depth of foundations to be determined by local conditions.

Quantities given are based on dimensions shown.

Wings may be changed to suit local conditions.

If bed of stream requires paving, use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.

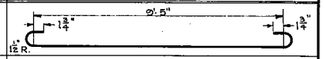
MATERIAL REQUIRED

FLOOR SYSTEM AND PARAPETS

8.9 Cu. Yds. "A" (1:2:4) Concrete. { 13¾ Bbls. Cement. 4¼ Cu. Yds. Sand 8¾ Cu. Yds. Stone.

896 lbs. Steel Reinforcing Bars

TABLE OF BARS

Mk.	Nº	Stock	Bending Diagram.
a.	37.	¾" ø x 10'-6"	
d.	28.	¾" ø x 1'-6"	Dowels in abutments
t.	14.	⅝" ø x 19'-6"	Transverse in slab.
h.	10.	½" ø x 10'-3"	Horizontal in parapets
v.	26	½" ø x 4'-6"	Vertical in parapets.

ABUTMENTS & WINGS

Clear	A	W	W1	L	H	Cu. Yds. "B" Conc. 1:2½:5	Bbls. Cement.	Cu. Yds. Sand	Cu. Yds. Stone.
2'-0"	1'-9"	1'-11"	1'-6"	2'-9"	1'-6"	11.6	15	5½	11¼
2'-6"	1'-9"	2'-2"	1'-6"	3'-3"	1'-6"	13.1	17	6¼	12½
3'-0"	1'-11"	2'-6"	1'-6"	4'-0"	1'-9"	15.8	20½	7½	15¼
3'-6"	2'-3"	2'-9"	1'-6"	4'-6"	2'-0"	19.1	24¾	9¼	18½
4'-0"	2'-6"	3'-0"	1'-6"	5'-0"	2'-3"	22.5	29¼	10¾	21¾
5'-0"	3'-0"	3'-6"	1'-8"	6'-0"	2'-6"	30.3	39¼	14½	29½
6'-0"	3'-6"	3'-11"	2'-0"	7'-3"	3'-0"	40.4	52½	19½	38¾
7'-0"	3'-11"	4'-3"	2'-2"	8'-3"	3'-3"	50.6	65¾	24¼	48¾
8'-0"	4'-5"	4'-10"	2'-5"	9'-6"	3'-9"	64.6	83¾	31	62¼

APPROVED Feb. 14, 1928
E. E. Brownlow BRIDGE ENGINEER

APPROVED
W. M. Brumbaugh ASST. CHIEF ENGINEER

COMMONWEALTH OF PENNSYLVANIA.
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION.
STANDARD
REINFORCED CONCRETE BRIDGE
SPAN 8 FT. ROADWAY 18 FT.

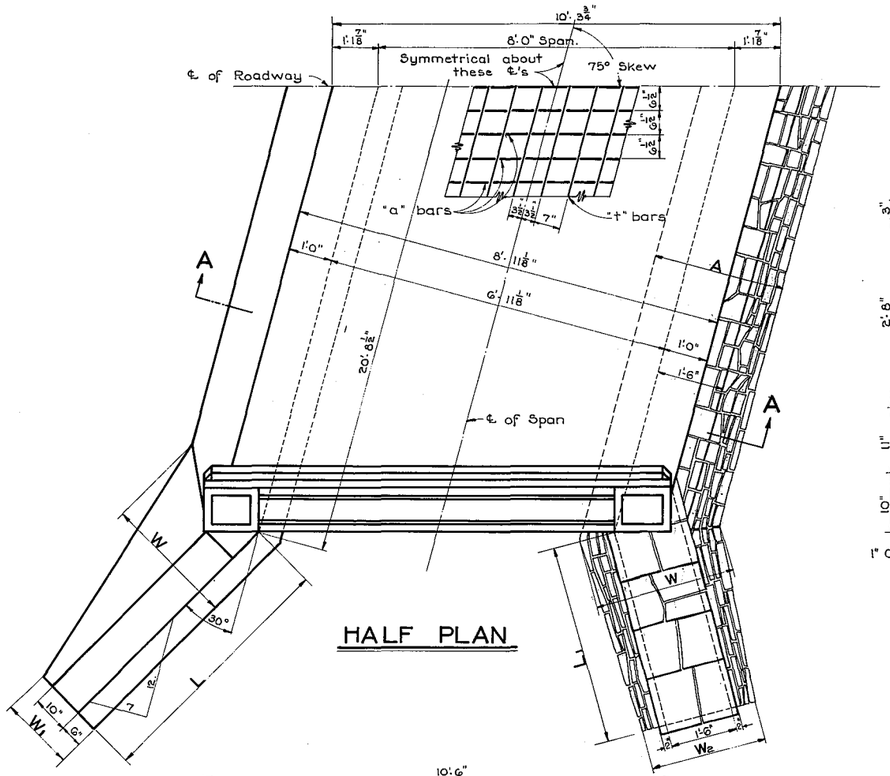
Scales ⅜" & 1" = 1'-0"

608-B

Made by : W.B.M
Checked by : W.W. 12-2-27.

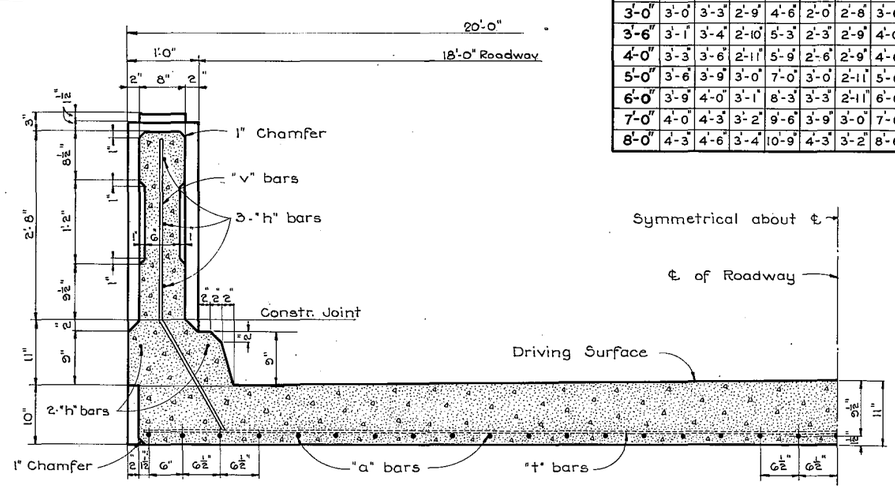
IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

Revised 7-23-32 Stone Masonry W.C.T.



HALF PLAN

ELEVATION



SLAB AND PARAPET DETAILS

NOTE

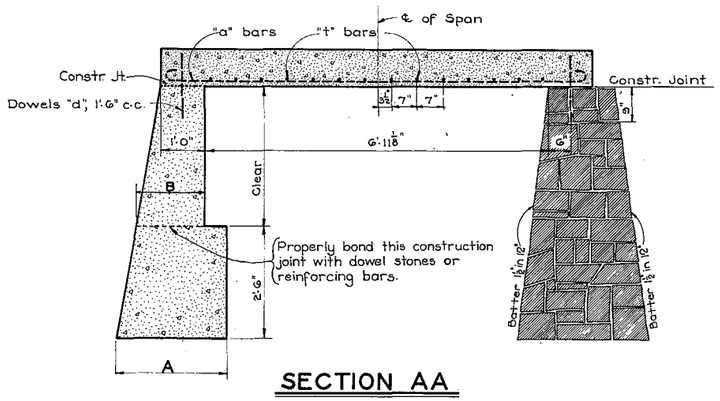
Floor of bridge shall conform to grade of road. On level grade slope top of slab at least $\frac{1}{16}$" per foot.

Depth of foundations to be determined by local conditions.

Quantities given are based on dimensions shown.

Wings may be changed to suit local conditions.

If bed of stream requires paving, use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.



SECTION AA

STONE ABUTMENTS & WINGS

CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	CU.YDS. PER FOOT ONE ABUT.	TOTAL CU.YDS. TWO ABUTS.
2'-0"	2'-9"	3'-0"	2'-8"	3'-3"	1'-9"	2'-8"	2'-6"	1'-6"	0.39	21
2'-6"	2'-11"	3'-1"	2'-9"	4'-0"	2'-0"	2'-8"	3'-0"	1'-6"	0.45	25
3'-0"	3'-0"	3'-3"	2'-9"	4'-6"	2'-0"	2'-8"	3'-6"	1'-9"	0.50	28
3'-6"	3'-1"	3'-4"	2'-10"	5'-3"	2'-3"	2'-9"	4'-0"	2'-0"	0.55	33
4'-0"	3'-3"	3'-6"	2'-11"	5'-9"	2'-6"	2'-9"	4'-6"	2'-0"	0.62	37
5'-0"	3'-6"	3'-9"	3'-0"	7'-0"	3'-0"	2'-11"	5'-6"	2'-6"	0.74	47
6'-0"	3'-9"	4'-0"	3'-1"	8'-3"	3'-3"	2'-11"	6'-6"	2'-9"	0.88	57
7'-0"	4'-0"	4'-3"	3'-2"	9'-6"	3'-9"	3'-0"	7'-6"	3'-0"	1.02	69
8'-0"	4'-3"	4'-6"	3'-4"	10'-9"	4'-3"	3'-2"	8'-6"	3'-6"	1.17	84

MATERIAL REQUIRED

FLOOR SYSTEM AND PARAPETS

9.1	Cu. Yds. "A" (1:2:4) Concrete	14 Bbls. Cement. 4¼ Cu. Yds. Sand. 6½ Cu. Yds. Stone.

899 lbs. Reinforcing Bars.

TABLE OF BARS

Mk.	№	Stock.	Bending Diagram.
a.	37.	¾"ø x 10'-6"	9'-5" ; ¾" ; 1½" R. ; ¾"
d.	28.	¾"ø x 1'-6"	Dowels in abutments.
t.	14.	⅜"ø x 20'-0"	Transverse in slab.
h.	10.	½"ø x 10'-3"	Horizontal in parapets.
v.	26.	½"ø x 4'-6"	Vertical in parapets.

APPROVED. Jan. 14, 1928

E E Thomson BRIDGE ENGINEER

APPROVED.

M Becklyn ASST. CHIEF ENGINEER

ABUTMENTS AND WINGS

Clear	A	B	W	W_1	L	H	W_2	L_1	H_1	Cu.Yds. "B" Con. 1:2½:5	Bbls. Cement.	Cu.Yds. Sand.	Cu.Yds. Stone
2'-0"	1'-9"	1'—1"	1'-11"	1'-6"	3'-3"	1'-9"	1'-6"	2'-6"	1'-6"	12.2	15¾	5¾	11¾
2'-6"	1'-9"	1'—1½"	2'-2"	1'-6"	4'-0"	2'-0"	1'-6"	3'-0"	1'-6"	14.1	18¼	6¾	13½
3'-0"	1'-11"	1'—2½"	2'-6"	1'-6"	4'-6"	2'-0"	1'-6"	3'-6"	1'-9"	16.3	21¼	7¾	15¾
3'-6"	2'-3"	1'—5"	2'-9"	1'-6"	5'-3"	2'-3"	1'-6"	4'-0"	2'-0"	20.2	26¼	9¾	19½
4'-0"	2'-6"	1'—7"	3'-0"	1'-8"	5'-9"	2'-6"	1'-6"	4'-6"	2'-0"	23.6	30½	11¼	22¾
5'-0"	3'-0"	2'—0"	3'-6"	2'-0"	7'-0"	3'-0"	1'-8"	5'-6"	2'-6"	32.4	42	15¼	31¼
6'-0"	3'-6"	2'—5"	3'-11"	2'-2"	8'-3"	3'-3"	1'-10"	6'-6"	2'-9"	42.3	55	20½	40¾
7'-0"	3'-11"	2'—9⅝"	4'-3"	2'-5"	9'-6"	3'-9"	2'-0"	7'-6"	3'-0"	53.6	69½	25¾	51½
8'-0"	4'-5"	3'—2½"	4'-10"	2'-9"	10'-9"	4'-3"	2'-3"	8'-6"	3'-6"	67.7	88	32½	65¼

COMMONWEALTH OF PENNSYLVANIA.

DEPARTMENT OF HIGHWAYS

BRIDGE DIVISION.

STANDARD

REINFORCED CONCRETE BRIDGE

SPAN 8 FT. ROADWAY 18 FT.
SKEW ~ 75° L

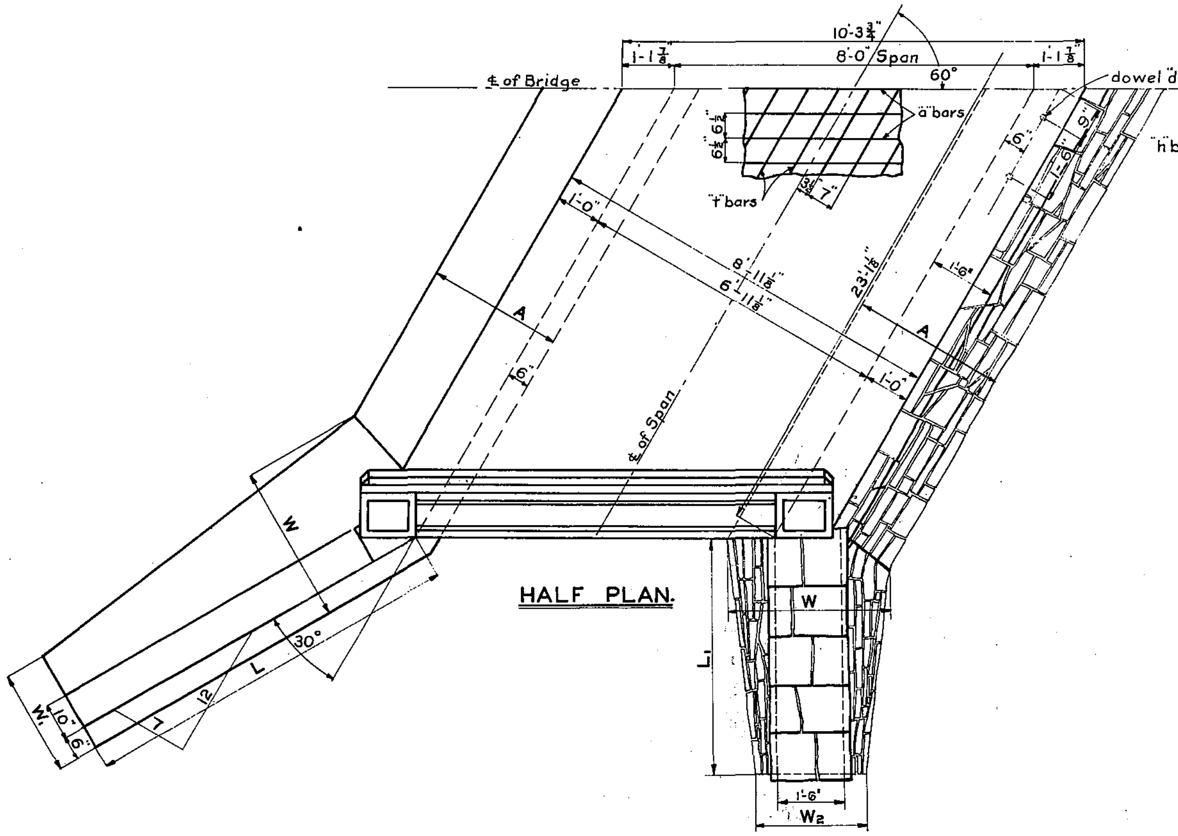
Scales ⅜" & 1" = 1'-0"

608 ~ B 75

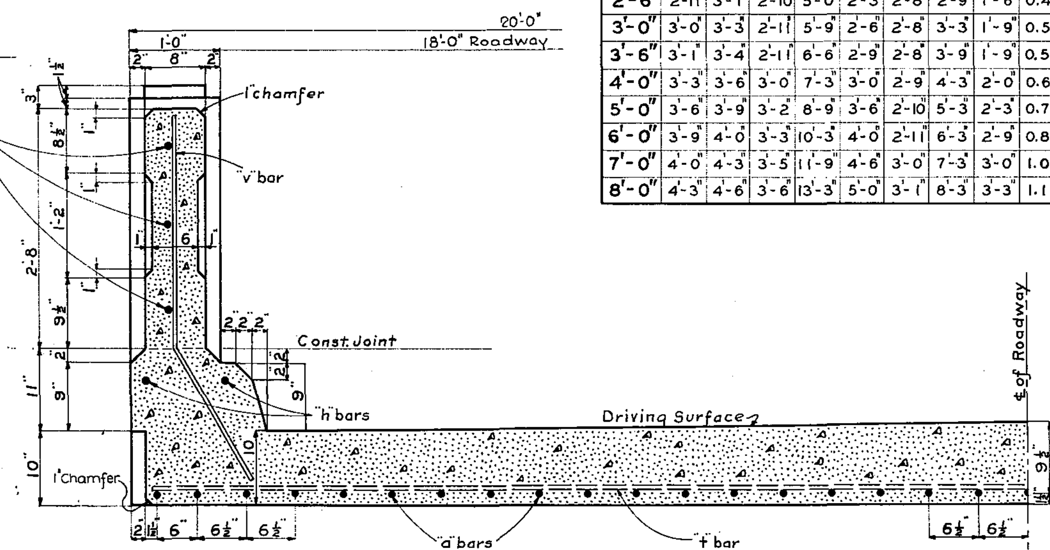
Made by:
Checked by: P.T.W. 1-30-28

IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

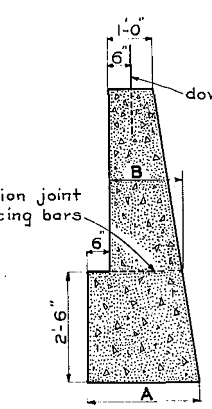
Revised 7-23-32 Stone Masonry W.C.T.



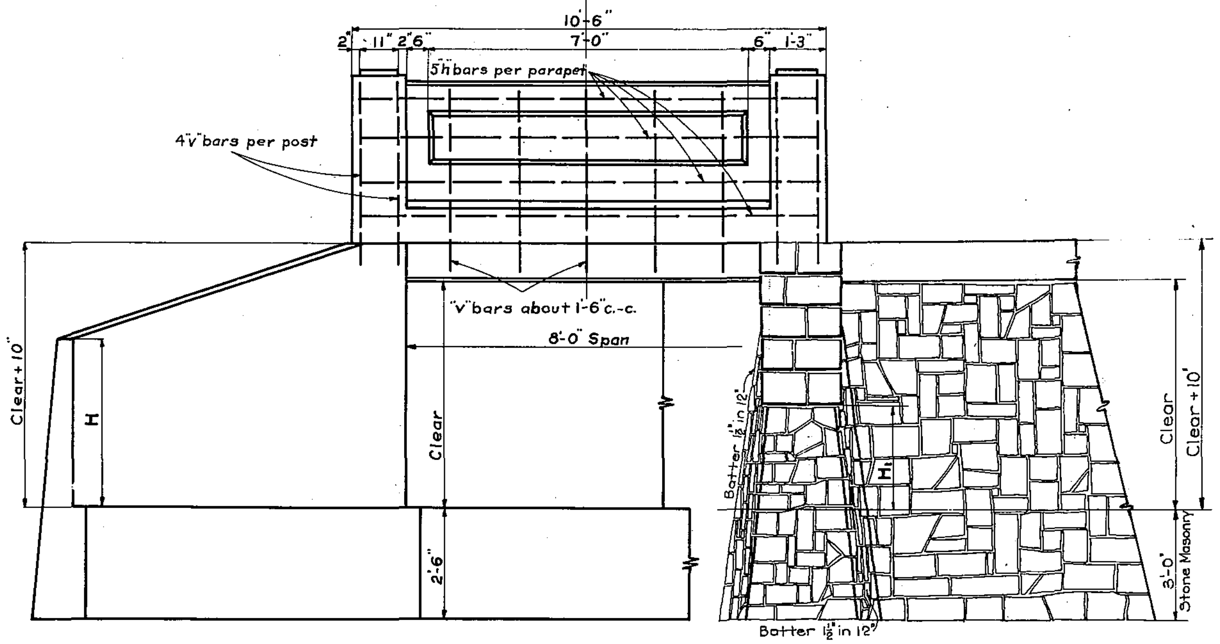
HALF PLAN.



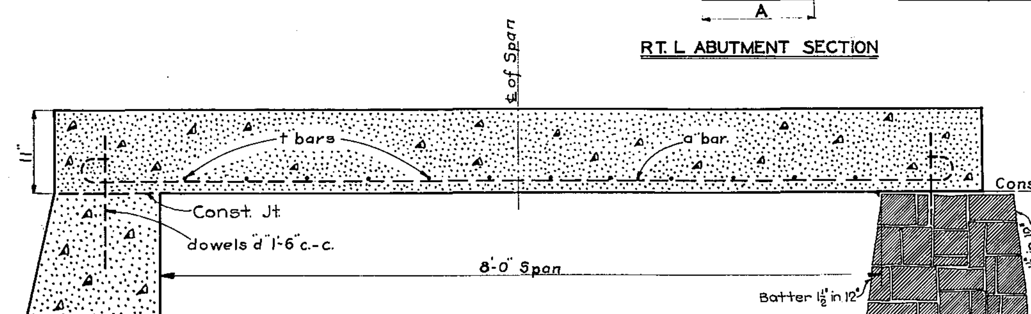
SLAB & PARAPET DETAILS



RT. L ABUTMENT SECTION



ELEVATION



SECTION ON ℄ OF BRIDGE.

STONE ABUTMENTS & WINGS

CLEAR	A	W	W₁	L	H	W₂	L₁	H₁	CU. YDS. PER FOOT ONE ABUT.	TOTAL CU. YDS. TWO ABUT.
2'-0"	2'-9"	3'-0"	2'-9"	4'-3"	2'-0"	2'-7"	2'-3"	1'-3"	0.39	23.0
2'-6"	2'-11"	3'-1"	2'-10"	5'-0"	2'-3"	2'-8"	2'-9"	1'-6"	0.45	27.0
3'-0"	3'-0"	3'-3"	2'-11"	5'-9"	2'-6"	2'-8"	3'-3"	1'-9"	0.50	31.0
3'-6"	3'-1"	3'-4"	2'-11"	6'-6"	2'-9"	2'-8"	3'-9"	1'-9"	0.55	36.0
4'-0"	3'-3"	3'-6"	3'-0"	7'-3"	3'-0"	2'-9"	4'-3"	2'-0"	0.62	41.0
5'-0"	3'-6"	3'-9"	3'-2	8'-9"	3'-6"	2'-10"	5'-3"	2'-3"	0.74	52.0
6'-0"	3'-9"	4'-0"	3'-3"	10'-3"	4'-0"	2'-11"	6'-3"	2'-9"	0.88	64.0
7'-0"	4'-0"	4'-3"	3'-5"	11'-9"	4'-6"	3'-0"	7'-3"	3'-0"	1.02	78.0
8'-0"	4'-3"	4'-6"	3'-6"	13'-3"	5'-0"	3'-1"	8'-3"	3'-3"	1.17	94.0

MATERIAL REQUIRED

FLOOR SYSTEM AND PARAPETS

9.2 Cu. Yds. "A" (1:2:4) Concrete.	14 1/4 Bbls. Cement. 4 1/4 Cu. Yds. Sand. 8 1/2 Cu. Yds. Stone.

904 Lbs. Reinforcing Bars.

TABLE OF BARS.

Mark.	No.	Stock.	Bending Diagram.
a	37	3/4"φ X 10'-6"	1 3/4" — 9'-5" — 1 3/4"; 1 1/2" R.
d	32	3/4"φ X 1'-6"	Dowels in Abutments.
t	12	3/8"φ X 22'-6"	Transverse in Slab.
h	10	1/2"φ X 10'-3"	Horizontal in Parapets.
v	26	1/2"φ X 4'-6"	Vertical in Parapets.

ABUTMENTS & WINGS.

Clear	A	B	W	W₁	L	H	W₂	L₁	H₁	Cu. Yds. "B" Conc. 1:2 1/2:5	Bbls. Cement	Cu. Yds. Sand	Cu. Yds. Stone.
2'-0"	1'-9"	1'-1"	1'-11"	1'-6"	4'-3"	2'-0"	1'-6"	2'-3"	1'-3"	13.5	17 1/2	6 1/2	13
2'-6"	1'-9"	1'-1 1/2"	2'-2"	1'-6"	5'-0"	2'-3"	1'-6"	2'-9"	1'-6"	15.3	19 3/4	7 1/4	14 3/4
3'-0"	1'-11"	1'-2 1/2"	2'-6"	1'-8"	5'-9"	2'-6"	1'-6"	3'-3"	1'-9"	18.3	23 3/4	8 3/4	17 1/2
3'-6"	2'-3"	1'-5"	2'-9"	1'-10"	6'-6"	2'-9"	1'-6"	3'-9"	1'-9"	22.5	29 1/4	10 3/4	21 3/4
4'-0"	2'-6"	1'-7"	3'-0"	2'-0"	7'-3"	3'-0"	1'-6"	4'-3"	2'-0"	26.5	34 1/2	12 3/4	25 1/2
5'-0"	3'-0"	2'-0"	3'-6"	2'-3"	8'-9"	3'-6"	1'-6"	5'-3"	2'-3"	36.3	47	17 1/2	35
6'-0"	3'-6"	2'-5"	3'-11"	2'-7"	10'-3"	4'-0"	1'-10"	6'-3"	2'-9"	48.0	62 1/4	23	46 1/4
7'-0"	3'-11"	2'-9 1/2"	4'-3"	2'-10"	11'-9"	4'-6"	2'-0"	7'-3"	3'-0"	52.0	67 1/2	25	50
8'-0"	4'-5"	3'-2 1/2"	4'-10"	3'-1"	13'-3"	5'-0"	2'-2"	8'-3"	3'-3"	76.4	99 1/4	36 3/4	73 1/2

NOTE.

Floor of bridge shall conform to grade of road. On level grade slope top of slab at least 1/16" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.

APPROVED Oct. 14, 1927
E. E. Mandow BRIDGE ENGINEER.
APPROVED
M. Buckley ASST. CHIEF ENGINEER.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION
STANDARD

REINFORCED CONCRETE BRIDGE

SPAN 8 FT. ROADWAY 18 FT.
SKEW 60° L.

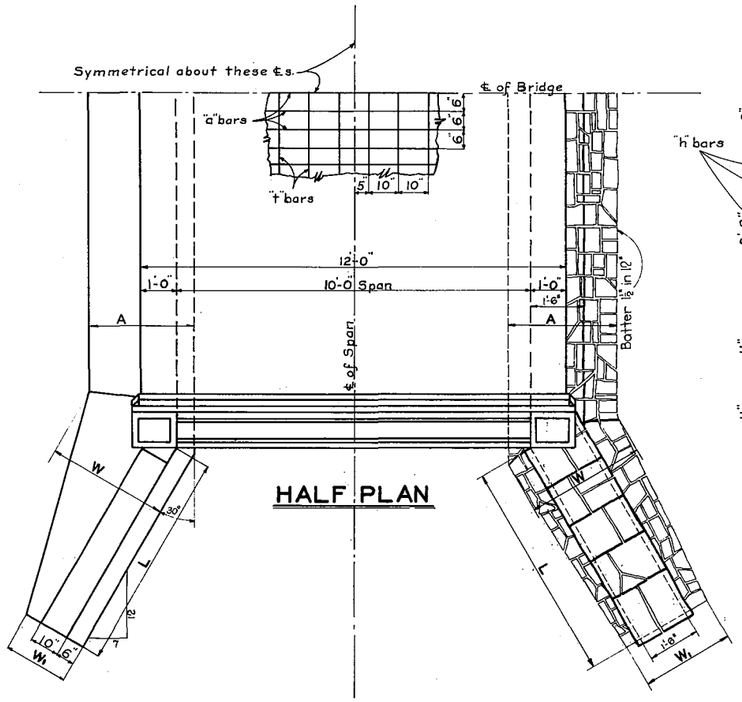
SCALE 1/2" & 1"=1'-0"

608 B-60

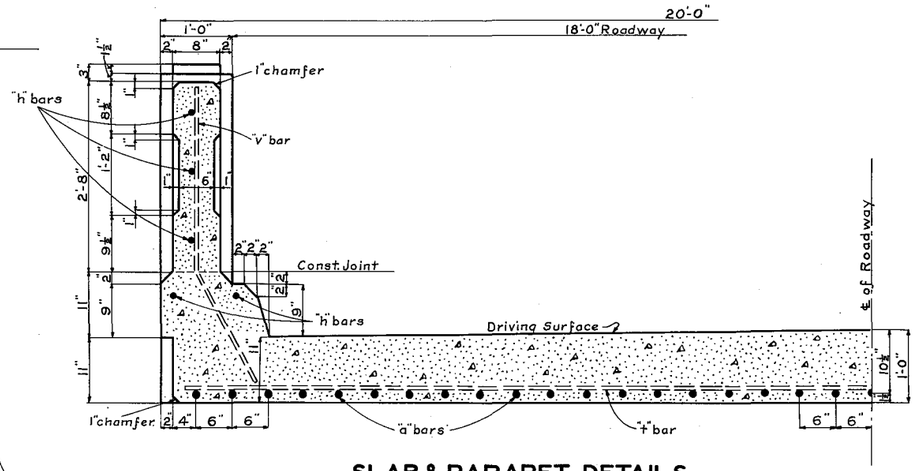
Made by - P.F.W.
Checked by - W.B.H 10-4-27.

"IMPERIAL" TRACING CLOTH K & E CO., N.Y.

Revised 7-23-32 W.C.T. Stone Masonry.



HALF PLAN



SLAB & PARAPET DETAILS

MATERIAL REQUIRED

FLOOR SYSTEM AND PARAPETS.

11.3 Cu.Yds. "A" (1:2:4) Concrete	17½ Bbls. Cement. 5¼ Cu.Yds. Sand. 10½ Cu.Yds. Stone.

1118 Lbs. Reinforcing Bars.

TABLE OF BARS.

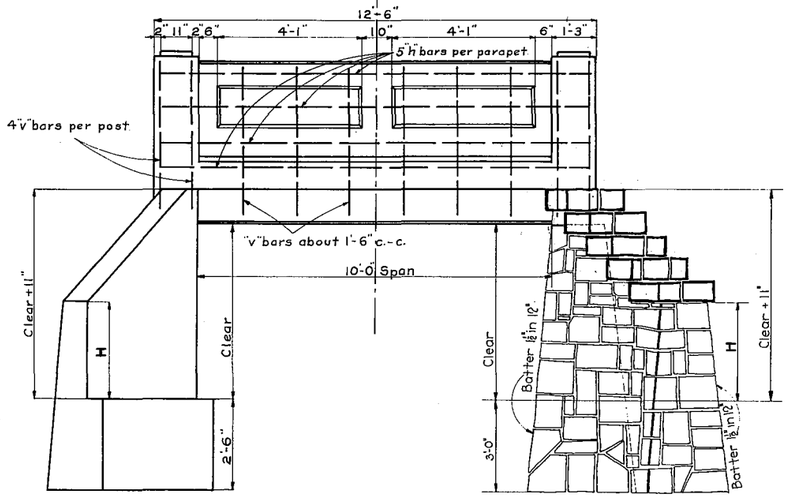
Mark	No.	Stock.	Bending Diagram.
a	39	¾" ϕ X 12'-6"	1¾" — 11'-5" — 1¾", 1½" R.
d	28	¾" ϕ X 1'-6"	Dowels in Abutments.
t	12	½" ϕ X 19'-6"	Transverse in Slab.
h	10	½" ϕ X 12'-3"	Horizontal in Parapets.
v	28	½" ϕ X 4'-6"	Vertical in Parapets.

ABUTMENTS & WINGS.

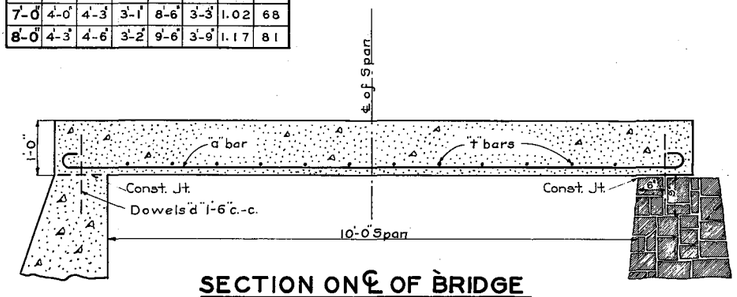
Clear	A	W	W1	L	H	Cu.Yds. Conc. 1:2½:5	Bbls. Cement	Cu.Yds. Sand.	Cu.Yds. Stone
2'-0"	1'-9"	1'-11"	1'-6"	3'-0"	1'-6"	11.9	15½	5¾	11½
2'-6"	1'-9"	2'-2"	1'-6"	3'-6"	1'-9"	13.5	17½	6½	13
3'-0"	1'-11"	2'-6"	1'-6"	4'-0"	1'-9"	16.2	21	7¾	15½
3'-6"	2'-3"	2'-9"	1'-6"	4'-6"	2'-0"	19.2	25	9¼	18½
4'-0"	2'-6"	3'-0"	1'-6"	5'-0"	2'-3"	22.5	29¼	10¾	21¾
5'-0"	3'-0"	3'-6"	1'-8"	6'-3"	2'-6"	30.7	40	14¾	29½
6'-0"	3'-6"	3'-11"	2'-0"	7'-3"	3'-0"	40.6	52¾	19½	39
7'-0"	3'-11"	4'-3"	2'-2"	8'-6"	3'-3"	51.3	66½	24¾	49¼
8'-0"	4'-5"	4'-10"	2'-5"	9'-6"	3'-9"	64.8	84	31¼	62¼

STONE ABUTMENTS & WINGS

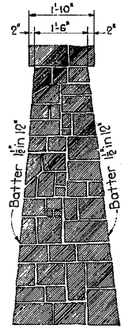
CLEAR	A	W	W1	L	H	CU.YDS. FOR FOOT ONE ABUT.	TOTAL CU. YDS. TWO ABUT.
2'-0"	2'-9"	3'-0"	2'-7"	3'-0"	1'-6"	0.39	21
2'-6"	2'-11"	3'-1"	2'-8"	3'-6"	1'-9"	0.45	24
3'-0"	3'-0"	3'-3"	2'-8"	4'-0"	1'-9"	0.50	27
3'-6"	3'-1"	3'-4"	2'-9"	4'-6"	2'-0"	0.55	31
4'-0"	3'-3"	3'-6"	2'-10"	5'-0"	2'-3"	0.62	35
5'-0"	3'-6"	3'-9"	2'-11"	6'-3"	2'-6"	0.74	45
6'-0"	3'-9"	4'-0"	3'-0"	7'-3"	3'-0"	0.88	56
7'-0"	4'-0"	4'-3"	3'-1"	8'-6"	3'-3"	1.02	68
8'-0"	4'-3"	4'-6"	3'-2"	9'-6"	3'-9"	1.17	81



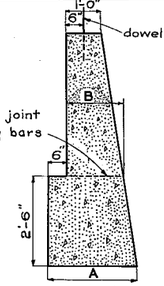
ELEVATION



SECTION ON ℄ OF BRIDGE



TYPICAL WING SECTION
(FOR STONE ABUTMENTS ONLY)



CLEAR	B
2'-0"	1'-1"
2'-6"	1'-1½"
3'-0"	1'-2½"
3'-6"	1'-5"
4'-0"	1'-7"
5'-0"	2'-0"
6'-0"	2'-5"
7'-0"	2'-9½"
8'-0"	3'-2½"

RT. L ABUTMENT SECTION

APPROVED Feb. 14, 1928
E. E. Brownlow BRIDGE ENGINEER.
APPROVED
M. H. Brumley ASST. CHIEF ENGINEER.

NOTE

Floor of bridge shall conform to grade of road. On level grade slope top of slab at least 1/16" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.

COMMONWEALTH OF PENNSYLVANIA.
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION.

STANDARD REINFORCED CONCRETE BRIDGE.

SPAN 10 FT. ROADWAY 18 FT.

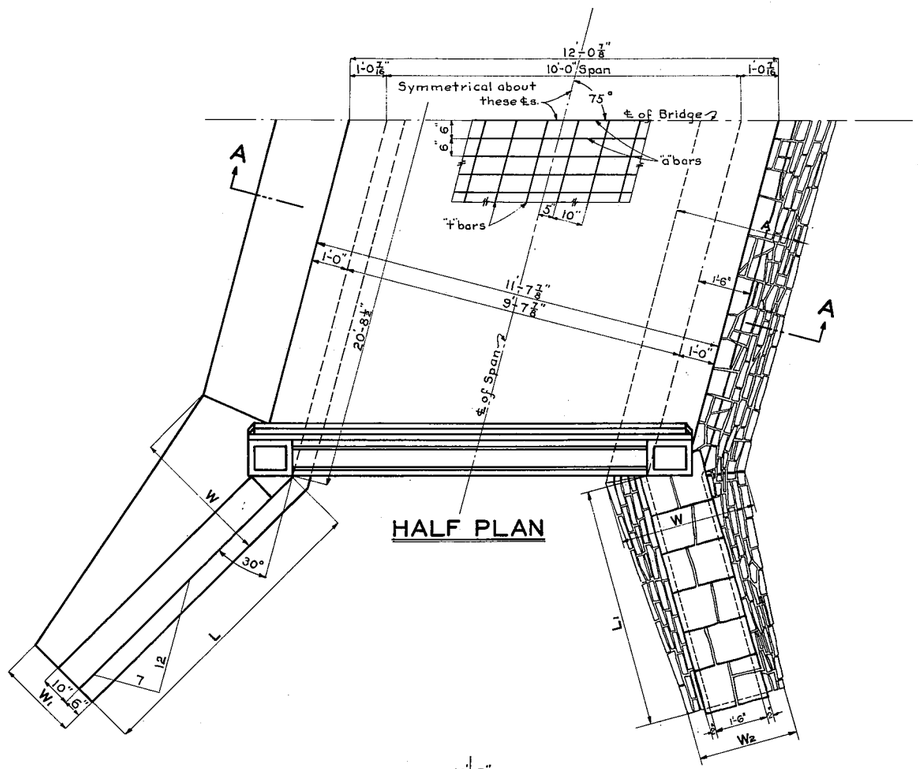
SCALE ½", ¾" & 1"-1'-0"

610B

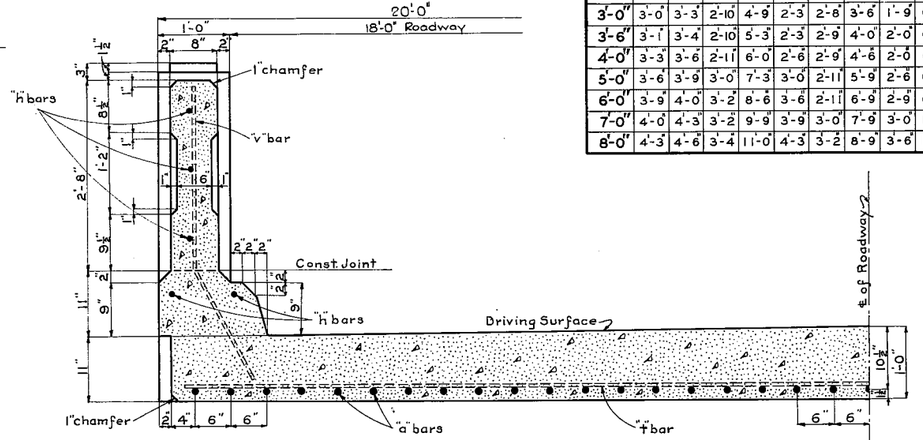
Made by - P.F.W.
Checked by - W.B.H 12-2-27

IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

Revised 7-23-32 Stone Masonry W.C.T.



HALF PLAN



SLAB & PARAPET DETAILS

STONE ABUTMENTS & WINGS

CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	CU.YDS. PER FOOT ONE ABUT.	TOTAL CU.YDS. TWO ABUT.
2'-0"	2'-9"	3'-0"	2'-8"	3'-6"	1'-9"	2'-8"	2'-6"	1'-6"	0.39	21
2'-6"	2'-11"	3'-1"	2'-9"	4'-0"	2'-0"	2'-8"	3'-0"	1'-6"	0.45	24
3'-0"	3'-0"	3'-3"	2'-10"	4'-9"	2'-3"	2'-8"	3'-6"	1'-9"	0.50	29
3'-6"	3'-1"	3'-4"	2'-10"	5'-3"	2'-3"	2'-9"	4'-0"	2'-0"	0.55	33
4'-0"	3'-3"	3'-6"	2'-11"	6'-0"	2'-6"	2'-9"	4'-6"	2'-0"	0.62	37
5'-0"	3'-6"	3'-9"	3'-0"	7'-3"	3'-0"	2'-11"	5'-9"	2'-6"	0.74	48
6'-0"	3'-9"	4'-0"	3'-2"	8'-6"	3'-6"	2'-11"	6'-9"	2'-9"	0.88	58
7'-0"	4'-0"	4'-3"	3'-2"	9'-9"	3'-9"	3'-0"	7'-9"	3'-0"	1.02	70
8'-0"	4'-3"	4'-6"	3'-4"	11'-0"	4'-3"	3'-2"	8'-9"	3'-6"	1.17	84

MATERIAL REQUIRED

FLOOR SYSTEM AND PARAPETS.

11.4 Cu.Yds. "A" (1:2:4) Concrete	17 3/4 Bbls. Cement. 5 1/4 Cu.Yds. Sand. 10 1/2 Cu.Yds. Stone.

1122 Lbs. Reinforcing Bars.

TABLE OF BARS.

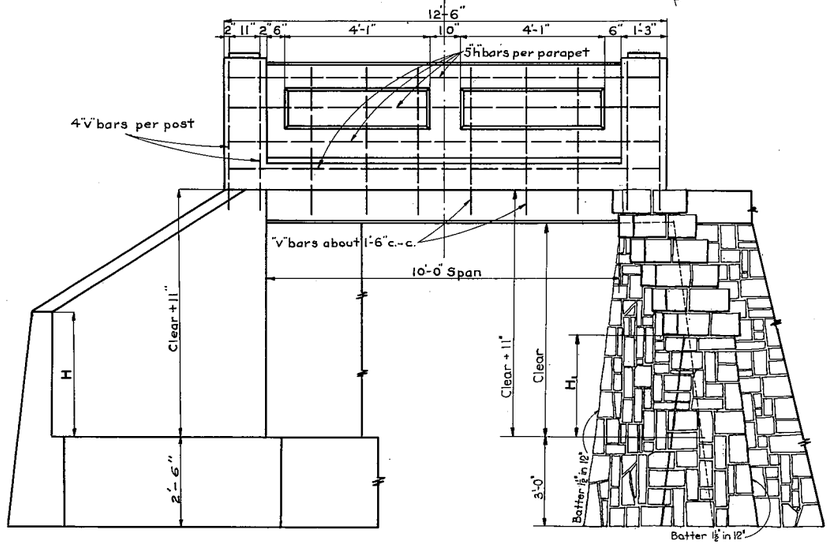
Mark.	No.	Stock.	Bending Diagram.
a	39	3/4" ϕ X 12'-6"	1 3/4", 11'-5", 1 3/4", 1 1/2" R.
d	28	3/4" ϕ X 1'-6"	Dowels in Abutments.
t	12	1/2" ϕ X 20'-0"	Transverse in Slab.
h	10	1/2" ϕ X 12'-3"	Horizontal in Parapets.
v	28	1/2" ϕ X 4'-6"	Vertical in Parapets.

NOTE.

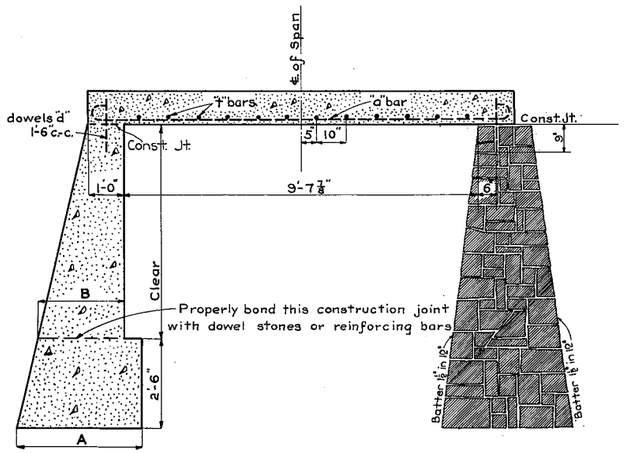
Floor of bridge shall conform to grade of road. On level grade slope top of slab at least 1/8 per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions
If bed of stream requires paving, use 6" of concrete or 8' of stone masonry and a 12' curtain wall of sufficient depth at each end.

ABUTMENTS & WINGS.

Clear.	A	B	W	W_1	L	H	W_2	L_1	H_1	Cu.Yds. "B" Conc 1:2½:5	Bbls. Cement	Cu.Yds. Sand.	Cu.Yds. Stone.
2'-0"	1'-9"	1'-1"	1'-11"	1'-6"	3'-6"	1'-9"	1'-6"	2'-6"	1'-6"	12.4	16	6	12
2'-6"	1'-9"	1'-1½"	2'-2"	1'-6"	4'-0"	2'-0"	1'-6"	3'-0"	1'-6"	13.8	18	6¾	13½
3'-0"	1'-11"	1'-2½"	2'-6"	1'-6"	4'-9"	2'-3"	1'-6"	3'-6"	1'-9"	16.6	21½	8	16
3'-6"	2'-3"	1'-5"	2'-9"	1'-6"	5'-3"	2'-3"	1'-6"	4'-0"	2'-0"	20.0	26	9¾	19¼
4'-0"	2'-6"	1'-7"	3'-0"	1'-8"	6'-0"	2'-6"	1'-6"	4'-6"	2'-0"	23.7	30¾	11½	22¾
5'-0"	3'-0"	2'-0"	3'-6"	2'-0"	7'-3"	3'-0"	1'-8"	5'-9"	2'-6"	32.4	42	15½	31¼
6'-0"	3'-6"	2'-5"	3'-11"	2'-3"	8'-6"	3'-6"	1'-10"	6'-9"	2'-9"	42.8	55½	20½	41¼
7'-0"	3'-11"	2'-9½"	4'-3"	2'-5"	9'-9"	3'-9"	2'-0"	7'-9"	3'-0"	53.6	69½	25¼	51½
8'-0"	4'-5"	3'-2½"	4'-10"	2'-9"	11'-0"	4'-3"	2'-3"	8'-9"	3'-6"	67.8	88	32½	65¼



ELEVATION



SECTION A A

APPROVED. February 14, 1928
E E Macumber BRIDGE ENGINEER.
APPROVED.
ASST. CHIEF ENGINEER.

COMMONWEALTH OF PENNSYLVANIA.
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION.

STANDARD
REINFORCED CONCRETE BRIDGE.
SPAN 10 FT. ROADWAY 18 FT.
SKEW 75° L

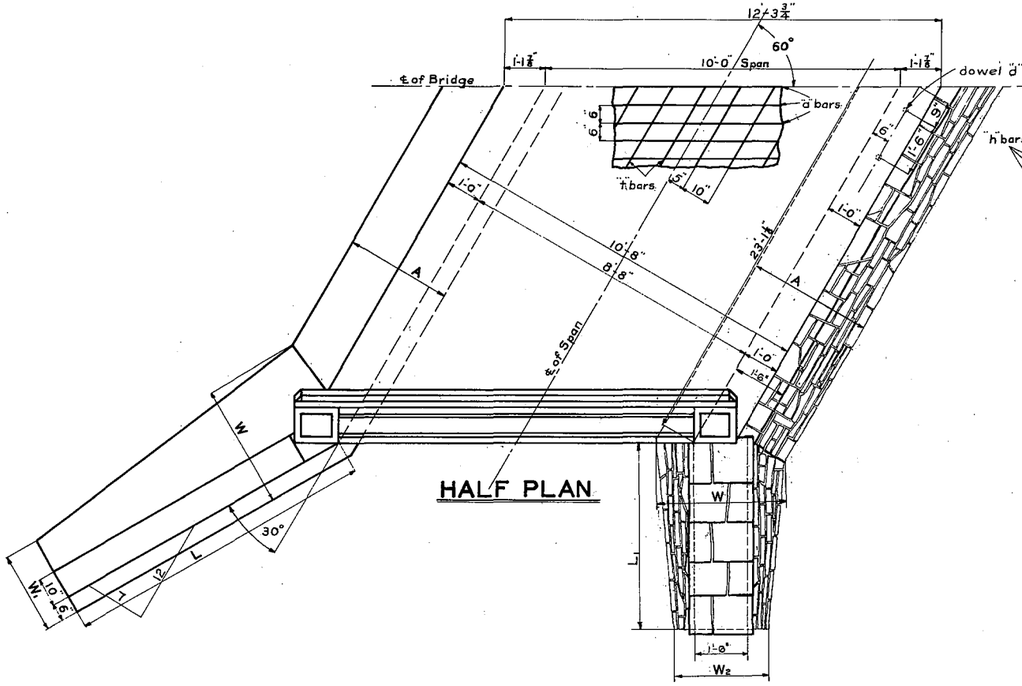
SCALES 1/2" & 1"=1'-0"

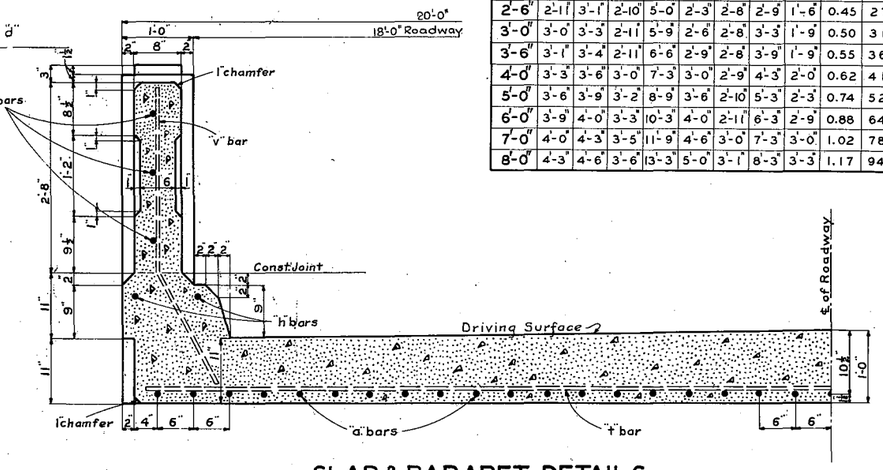
610B-75

Made by-P.F.W.
Checked by- W.B.M 2-7-28.

IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

Revised 7-23-32 Stone Masonry W.C.T.





SLAB & PARAPET DETAILS

STONE ABUTMENTS & WINGS

CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	CU.YDS. PER FOOT ONE ABUT.	CU.YDS. TOTAL TWO ABUT.
2'-0"	2'-9"	3'-0"	2'-9"	4'-3"	2'-0"	2'-7"	2'-3"	1'-3"	0.39	23.0
2'-6"	2'-11"	3'-1"	2'-10"	5'-0"	2'-3"	2'-8"	2'-9"	1'-6"	0.45	27.0
3'-0"	3'-0"	3'-3"	2'-11"	5'-9"	2'-6"	2'-8"	3'-3"	1'-9"	0.50	31.0
3'-6"	3'-1"	3'-4"	2'-11"	6'-6"	2'-9"	2'-8"	3'-9"	1'-9"	0.55	36.0
4'-0"	3'-3"	3'-6"	3'-0"	7'-3"	3'-0"	2'-9"	4'-3"	2'-0"	0.62	41.0
5'-0"	3'-6"	3'-9"	3'-2"	8'-9"	3'-6"	2'-10"	5'-3"	2'-3"	0.74	52.0
6'-0"	3'-9"	4'-0"	3'-3"	10'-3"	4'-0"	2'-11"	6'-3"	2'-9"	0.88	64.0
7'-0"	4'-0"	4'-3"	3'-5"	11'-9"	4'-6"	3'-0"	7'-3"	3'-0"	1.02	78.0
8'-0"	4'-3"	4'-6"	3'-6"	13'-3"	5'-0"	3'-1"	8'-3"	3'-3"	1.17	94.0

MATERIAL REQUIRED

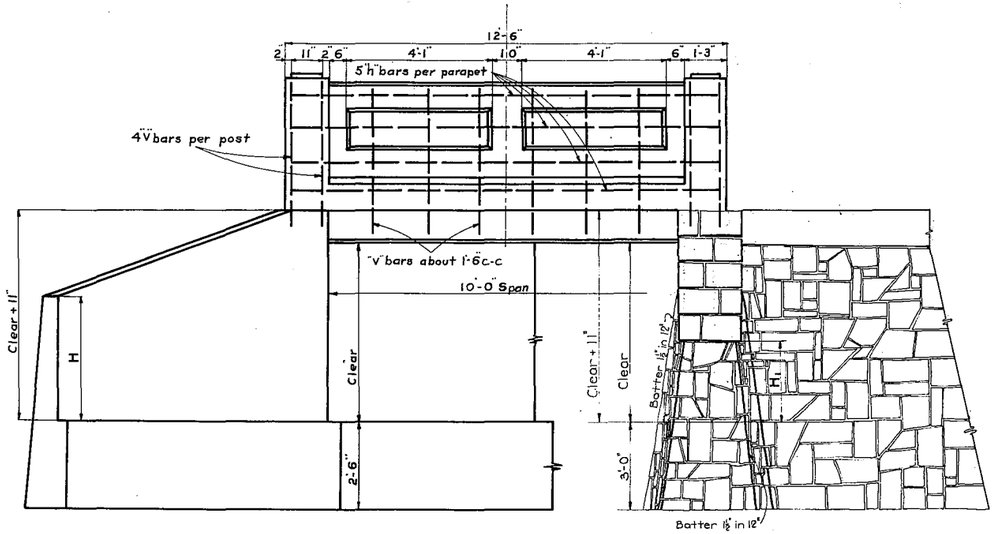
FLOOR SYSTEM AND PARAPETS

11.6 Cu.Yds. "A" (1:2:4) Concrete — 18 Bbls. Cement. 5½ Cu.Yds. Sand. 10¾ Cu.Yds. Stone.

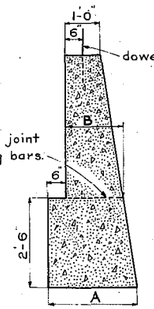
1121 Lbs. Reinforcing Bars.

TABLE OF BARS.

Mark	No.	Stock	Bending Diagram.
a	39	¾" ϕ X 12'-6"	1¾" — 11'-5" — 1¾", 1½ R.
d	32	¾" ϕ X 1'-6"	Dowels in Abutments.
t	10	½" ϕ X 22'-6"	Transverse in Slab.
h	10	½" ϕ X 12'-3"	Horizontal in Parapets.
v	28	½" ϕ X 4'-6"	Vertical in Parapets.



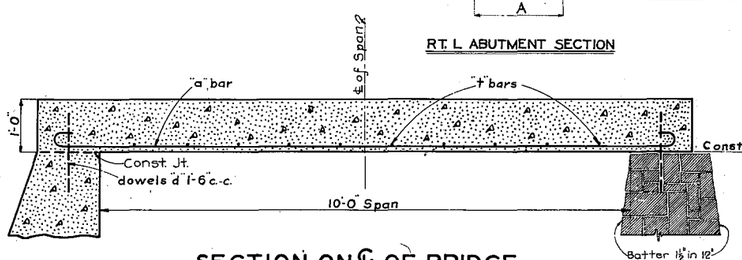
ELEVATION



Properly bond this construction joint with dowel stones or reinforcing bars.

ABUTMENTS & WINGS.

Clear	A	B	W	W_1	L	H	W_2	L_1	H_1	Cu.Yds. Concrete 1:2½:5	Bbls. Cement	Cu.Yds. Sand	Cu.Yds. Stone.
2'-0"	1'-9"	1'-1"	1'-11"	1'-6"	4'-3"	2'-0"	1'-6"	2'-3"	1'-3"	13.1	17	6¼	12½
2'-6"	1'-9"	1'-1½"	2'-2"	1'-6"	5'-0"	2'-3"	1'-6"	2'-9"	1'-6"	15.6	20¼	7½	15
3'-0"	1'-11"	1'-2½"	2'-6"	1'-8"	5'-9"	2'-6"	1'-6"	3'-3"	1'-9"	18.6	24¼	9	18
3'-6"	2'-3"	1'-5"	2'-9"	1'-10"	6'-6"	2'-9"	1'-6"	3'-9"	1'-9"	22.8	29½	11	22
4'-0"	2'-6"	1'-7"	3'-0"	2'-0"	7'-3"	3'-0"	1'-6"	4'-3"	2'-0"	26.5	34½	12¾	25½
5'-0"	3'-0"	2'-0"	3'-6"	2'-3"	8'-9"	3'-6"	1'-6"	5'-3"	2'-3"	37.0	48	17¾	35½
6'-0"	3'-6"	2'-5"	3'-11"	2'-7"	10'-3"	4'-0"	1'-10"	6'-3"	2'-9"	47.5	61¾	22¾	45¾
7'-0"	3'-11"	2'-9½"	4'-3"	2'-10"	11'-9"	4'-6"	2'-0"	7'-3"	3'-0"	60.4	78½	29	58
8'-0"	4'-5"	3'-2½"	4'-10"	3'-1"	13'-3"	5'-0"	2'-2"	8'-3"	3'-3"	76.1	98¾	36½	73¼



RT. L. ABUTMENT SECTION

SECTION ON ℄ OF BRIDGE

APPROVED Oct. 29, 1927
E. E. Brandau BRIDGE ENGINEER.
APPROVED
T. H. Cuerdsley ASST. CHIEF ENGINEER

COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION

STANDARD

REINFORCED CONCRETE BRIDGE

SPAN 10 FT. ROADWAY 18 FT.
SKEW 60° L.

SCALE 1", ½", ¾" & 1'-0"

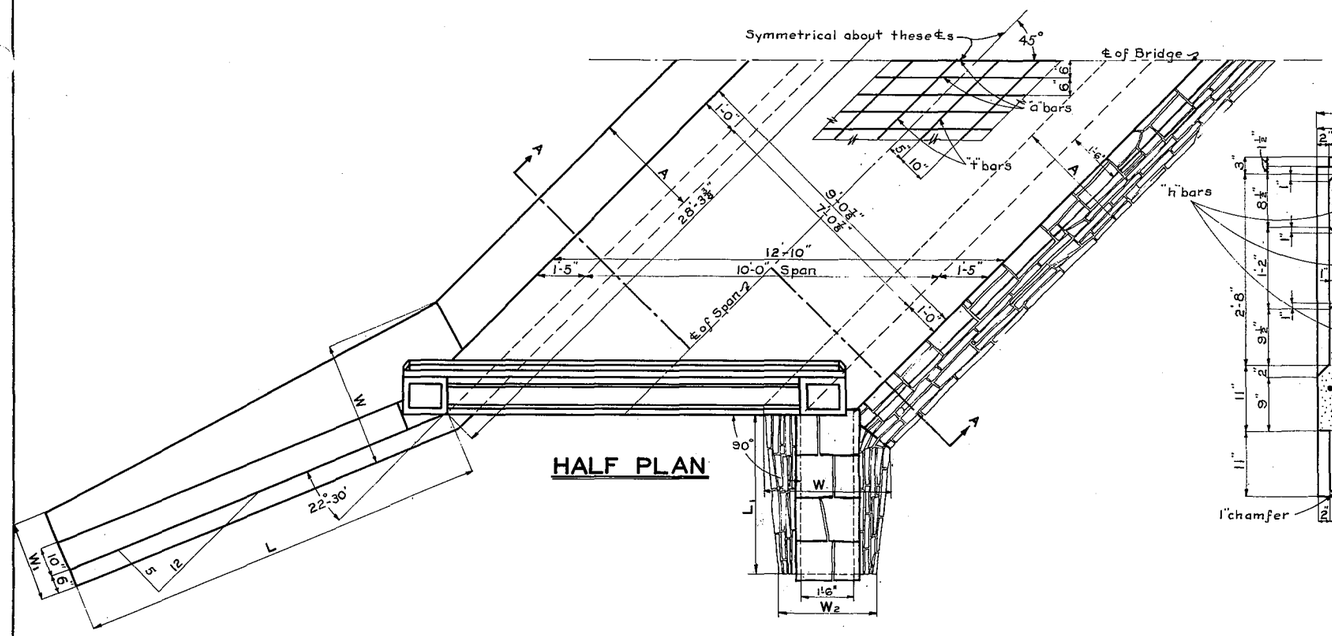
610B-60

NOTE

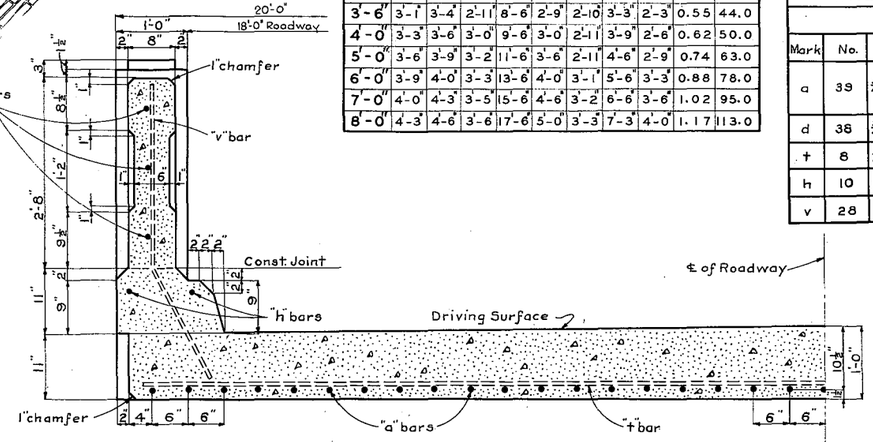
Floor of bridge shall conform to grade of road. On level grade slope top of slab at least ⅛" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving use 6" of concrete or 8' of stone masonry and a 12" curtain wall of sufficient depth at each end.

Made by - P.F.W.
Checked by - W.B.M 10-4-27.

Revised 7-23-32 Stone Masonry-W.C.T.



HALF PLAN



SLAB & PARAPET DETAILS

STONE ABUTMENTS & WINGS

CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	CU. YDS. PER FOOT ONE ABUT.	TOTAL CU. YDS. TWO ABUT.
2'-0"	2'-9"	3'-0"	2'-9"	5'-6"	2'-0"	2'-8"	2'-0"	1'-6"	0.39	28.0
2'-6"	2'-11"	3'-1"	2'-10"	6'-6"	2'-3"	2'-8"	2'-6"	1'-9"	0.45	33.0
3'-0"	3'-0"	3'-3"	2'-11"	7'-6"	2'-6"	2'-9"	2'-9"	2'-0"	0.50	38.0
3'-6"	3'-1"	3'-4"	2'-11"	8'-6"	2'-9"	2'-10"	3'-3"	2'-3"	0.55	44.0
4'-0"	3'-3"	3'-6"	3'-0"	9'-6"	3'-0"	2'-11"	3'-9"	2'-6"	0.62	50.0
5'-0"	3'-6"	3'-9"	3'-2"	11'-6"	3'-6"	2'-11"	4'-6"	2'-9"	0.74	63.0
6'-0"	3'-9"	4'-0"	3'-3"	13'-6"	4'-0"	3'-1"	5'-6"	3'-3"	0.88	78.0
7'-0"	4'-0"	4'-3"	3'-5"	15'-6"	4'-6"	3'-2"	6'-6"	3'-6"	1.02	95.0
8'-0"	4'-3"	4'-6"	3'-6"	17'-6"	5'-0"	3'-3"	7'-3"	4'-0"	1.17	113.0

MATERIAL REQUIRED

FLOOR SYSTEM AND PARAPETS

12 Cu.Yds. "A" (1:2:4) Concrete	18½ Bbls. Cement 5½ Cu.Yds. Sand. 11 Cu.Yds. Stone.

1175 Lbs. Reinforcing Bars

TABLE OF BARS

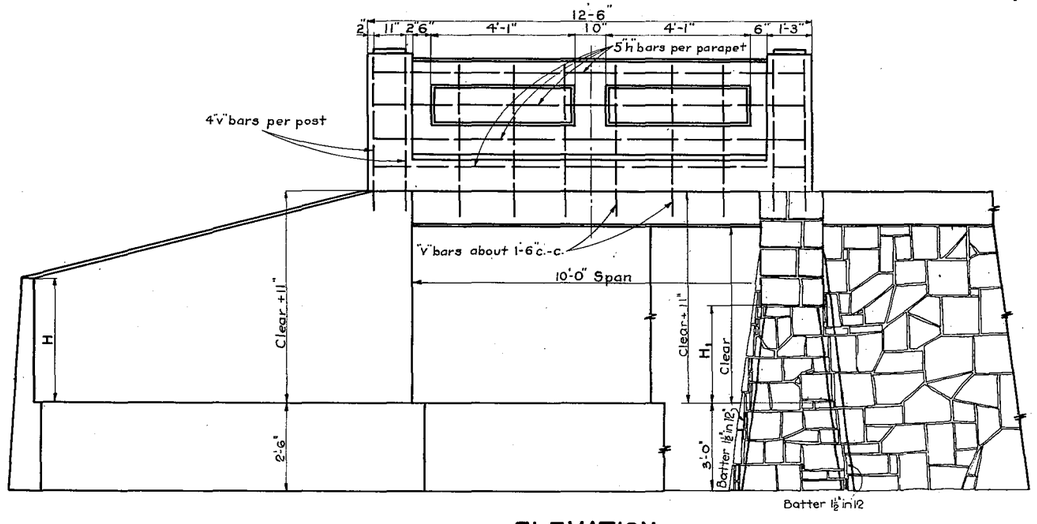
Mark	No.	Stock	Bending Diagram
a	39	¾" ⊗ X 13'-3"	12'-2" (1½" R.)
d	38	¾" ⊗ X 1'-6"	Dowels in Abutments.
t	8	⅝" ⊗ X 27'-6"	Transverse in Slab.
h	10	½" ⊗ X 12'-3"	Horizontal in Parapets.
v	28	½" ⊗ X 4'-6"	Vertical in Parapets.

NOTE

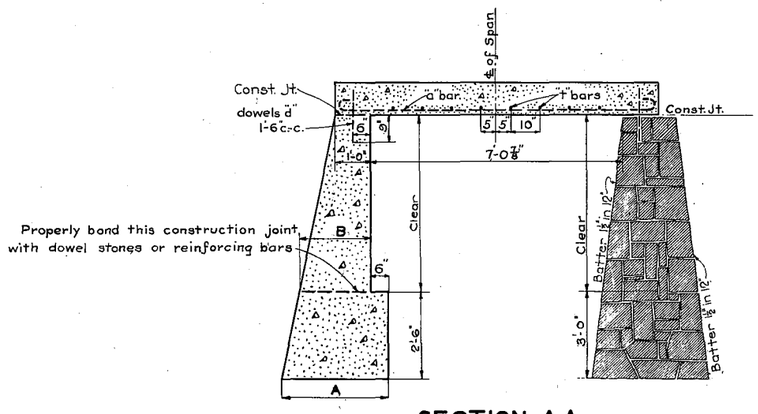
Floor of bridge shall conform to grade of road. On level grade slope top of slab at least ⅛" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.

ABUTMENTS & WINGS

Clear	A	B	W	W_1	L	H	W_2	L_1	H_1	Cu.Yds. ⅛ Conc. (1:2½:5)	Bbls. Cement	Cu.Yds. Sand.	Cu.Yds. Stone.
2'-0"	1'-9"	1'-1"	1'-11"	1'-6"	5'-6"	2'-0"	1'-6"	2'-0"	1'-6"	16.5	21½	8	16
2'-6"	1'-9"	1'-1½"	2'-2"	1'-6"	6'-6"	2'-3"	1'-6"	2'-6"	1'-9"	18.6	24¼	9	18
3'-0"	1'-11"	1'-2⅛"	2'-6"	1'-8"	7'-6"	2'-6"	1'-6"	2'-9"	2'-0"	22.4	29	10¾	21½
3'-6"	2'-3"	1'-5"	2'-9"	1'-10"	8'-6"	2'-9"	1'-6"	3'-3"	2'-3"	27.3	35½	13¼	26¼
4'-0"	2'-6"	1'-7"	3'-0"	2'-0"	9'-6"	3'-0"	1'-8"	3'-9"	2'-6"	32.5	42¼	15¾	31¼
5'-0"	3'-0"	2'-0"	3'-6"	2'-3"	11'-6"	3'-6"	1'-10"	4'-6"	2'-9"	44	57¼	21¼	42¼
6'-0"	3'-6"	2'-5"	3'-11"	2'-7"	13'-6"	4'-0"	2'-2"	5'-6"	3'-3"	58	75¼	28	55¾
7'-0"	3'-11"	2'-9⅛"	4'-3"	2'-10"	15'-6"	4'-6"	2'-3"	6'-6"	3'-6"	73.2	95	35¼	70½
8'-0"	4'-5"	3'-2⅛"	4'-10"	3'-1"	17'-6"	5'-0"	2'-7"	7'-3"	4'-0"	92.4	120	44½	89



ELEVATION



Properly bond this construction joint with dowel stones or reinforcing bars

SECTION AA

APPROVED Feb. 14, 1933
E E Brownlow BRIDGE ENGINEER
APPROVED
[illegible] ASST. CHIEF ENGINEER

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION

STANDARD REINFORCED CONCRETE BRIDGE

SPAN 10 FT ROADWAY 18 FT.
SKEW 45° L

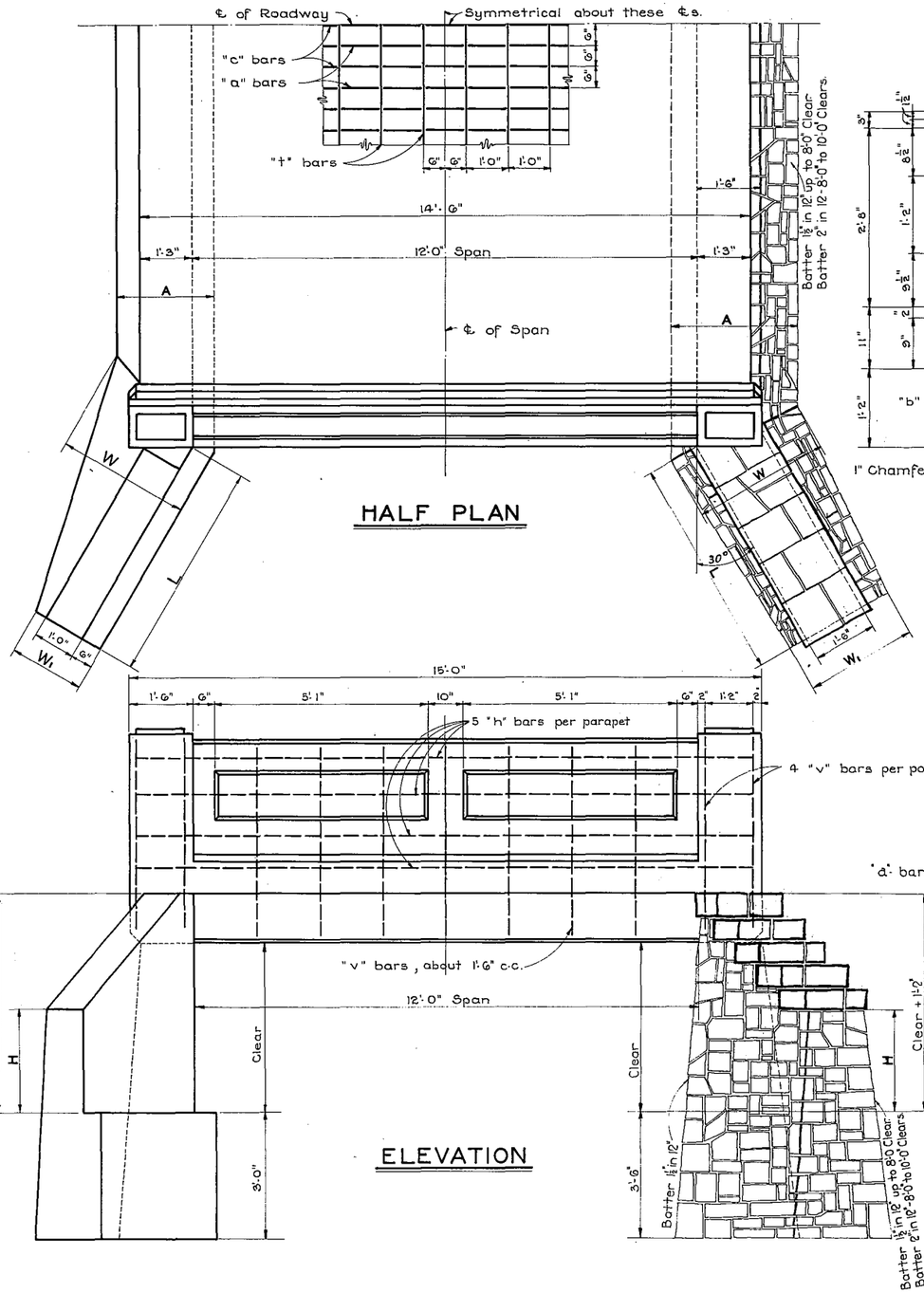
SCALE ½" & 1"-1'-0"

610B-45

Made by-R.F.W.
Checked by- W.B.H. XII-XXVII-XXVII

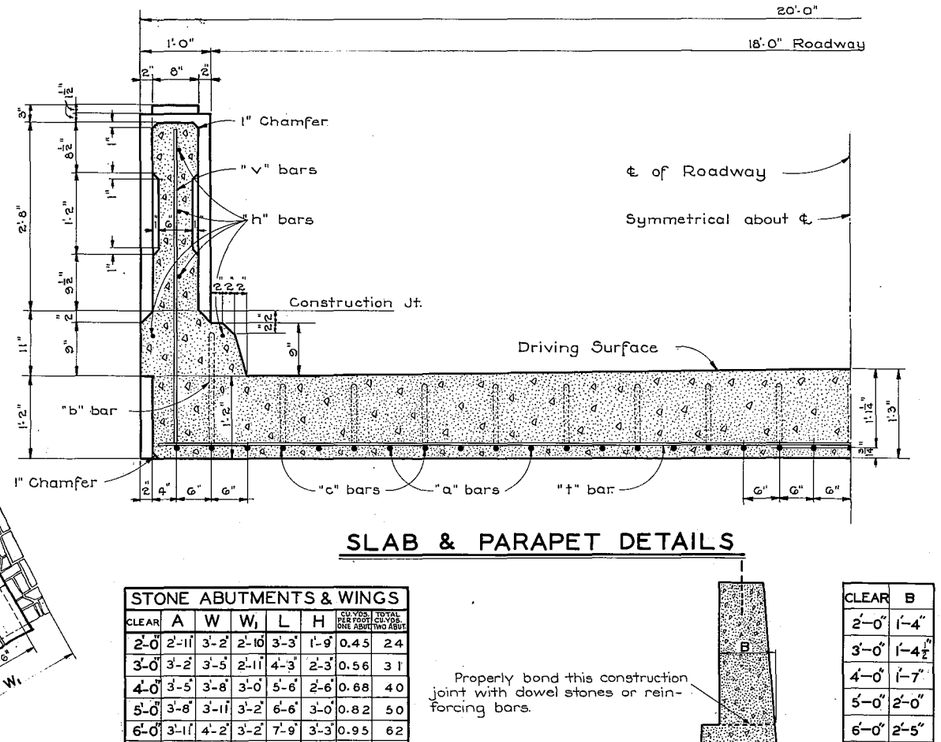
IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

Revised 7-23-32 W.C.T. Stone Masonry.



HALF PLAN

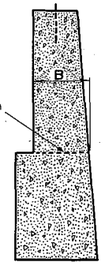
ELEVATION



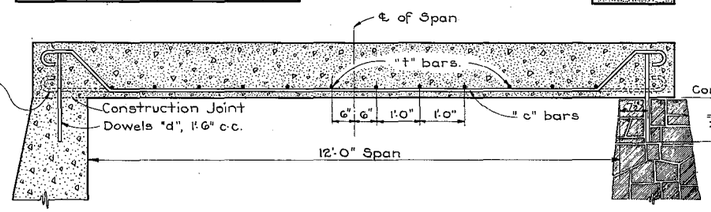
SLAB & PARAPET DETAILS

STONE ABUTMENTS & WINGS							
CLEAR	A	W	W_1	L	H	CU.YDS. FOR ONE ABUT.	TOTAL CU.YDS. FOR TWO ABUT.
2'-0"	2'-11"	3'-2"	2'-10"	3'-3"	1'-9"	0.45	24
3'-0"	3'-2"	3'-5"	2'-11"	4'-3"	2'-3"	0.56	31
4'-0"	3'-5"	3'-8"	3'-0"	5'-6"	2'-6"	0.68	40
5'-0"	3'-8"	3'-11"	3'-2"	6'-6"	3'-0"	0.82	50
6'-0"	3'-11"	4'-2"	3'-2"	7'-9"	3'-3"	0.95	62
7'-0"	4'-2"	4'-5"	3'-4"	8'-9"	3'-9"	1.10	74
8'-0"	4'-10"	5'-2"	3'-8"	9'-9"	4'-0"	1.35	95
9'-0"	5'-2"	5'-6"	3'-10"	11'-0"	4'-6"	1.54	113
10'-0"	5'-5"	5'-9"	3'-11"	12'-0"	4'-9"	1.73	130

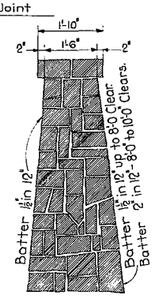
Properly bond this construction joint with dowel stones or reinforcing bars.



CLEAR	B
2'-0"	1'-4"
3'-0"	1'-4½"
4'-0"	1'-7"
5'-0"	2'-0"
6'-0"	2'-5"
7'-0"	2'-9½"
8'-0"	3'-2½"
9'-0"	3'-7"
10'-0"	4'-0"



SECTION ON ℄ OF BRIDGE



TYPICAL WING SECTION (FOR STONE ABUTMENTS ONLY)

NOTE

Floor of bridge shall conform to grade of road. On level grade slope top of slab 1/16" per foot.

Depth of foundations to be determined by local conditions.

Quantities given are based on dimensions shown.

Wings may be changed to suit local conditions.

If bed of stream requires paving, use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.

MATERIAL REQUIRED

FLOOR SYSTEM AND PARAPETS

16.3 Cu. Yds. "A" (1:2:4) Concrete — 25¼ Bbls. Cement. 7½ Cu. Yds. Sand. 15 Cu. Yds. Stone.

1667 lbs. Steel Reinforcing Bars.

TABLE OF BARS

Mk.	Nº	Stock	Bending Diagram.
a.	20.	7/8" ϕ x 15'-0"	7'-0", 1¼", 1½" R. (Symmetrical about this ℄)
b.	2.	7/8" ϕ x 17'-0"	7½", 1'-3", 5'-3", 2'-3⅛", 1½" R., 1⅛"
c.	17.	7/8" ϕ x 15'-6"	7", 1'-3", 5'-1½", 1'-0¼", 1½" R., 1⅛"
d.	28	7/8" ϕ x 1'-9"	Dowels in Abutments
t.	12.	½" ϕ x 19'-6"	Transverse in Slab.
h.	10.	½" ϕ x 14'-9"	Horizontal in Parapets.
v.	30.	½" ϕ x 4'-6"	Vertical in Parapets.

ABUTMENTS & WINGS

Clear	A	W	W_1	L	H	Cu. Yds. "B" Conc. 1:2¼:5	Bbls. Cement	Cu. Yds. Sand	Cu. Yds. Stone
2'-0"	2'-0"	2'-0"	1'-9"	3'-3"	1'-9"	16.1	21	7¾	15½
3'-0"	2'-0"	2'-8"	1'-9"	4'-3"	2'-3"	20.3	26¼	9¾	19½
4'-0"	2'-4"	3'-2"	1'-9"	5'-6"	2'-6"	27.0	35	13	26
5'-0"	2'-11"	3'-8"	1'-11"	6'-6"	3'-0"	36.5	47½	17½	35
6'-0"	3'-6"	4'-2"	2'-1"	7'-9"	3'-3"	48.1	62½	23¼	46½
7'-0"	4'-0"	4'-7"	2'-5"	8'-9"	3'-9"	60.9	79	29¼	58½
8'-0"	4'-5"	5'-1"	2'-7"	9'-9"	4'-0"	74.3	96½	35¾	71½
9'-0"	4'-11"	5'-6"	2'-10"	11'-0"	4'-6"	91.8	119¼	44¼	88¼
10'-0"	5'-4"	5'-11"	3'-0"	12'-0"	4'-9"	108.5	140¾	52¼	104½

APPROVED Feb. 14, 1928

S. E. Bradford BRIDGE ENGINEER.

APPROVED

W. H. Burnham ASST. CHIEF ENGINEER.

COMMONWEALTH OF PENNSYLVANIA.

DEPARTMENT OF HIGHWAYS

BRIDGE DIVISION.

STANDARD

REINFORCED CONCRETE BRIDGE

SPAN 12 FT. ROADWAY 18 FT.

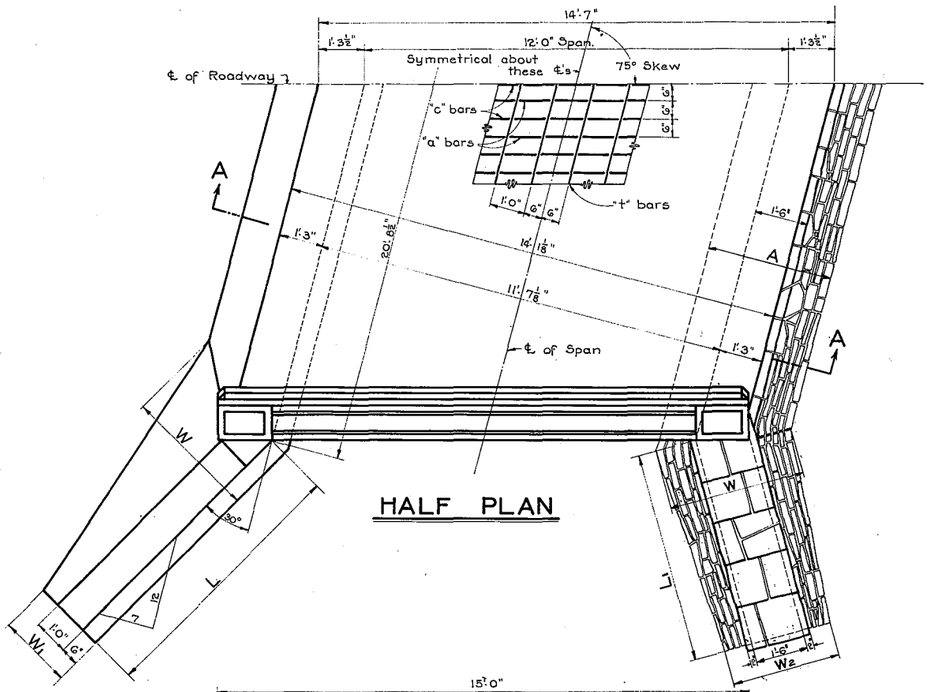
Scales ⅝" & 1" = 1'-0"

612-B

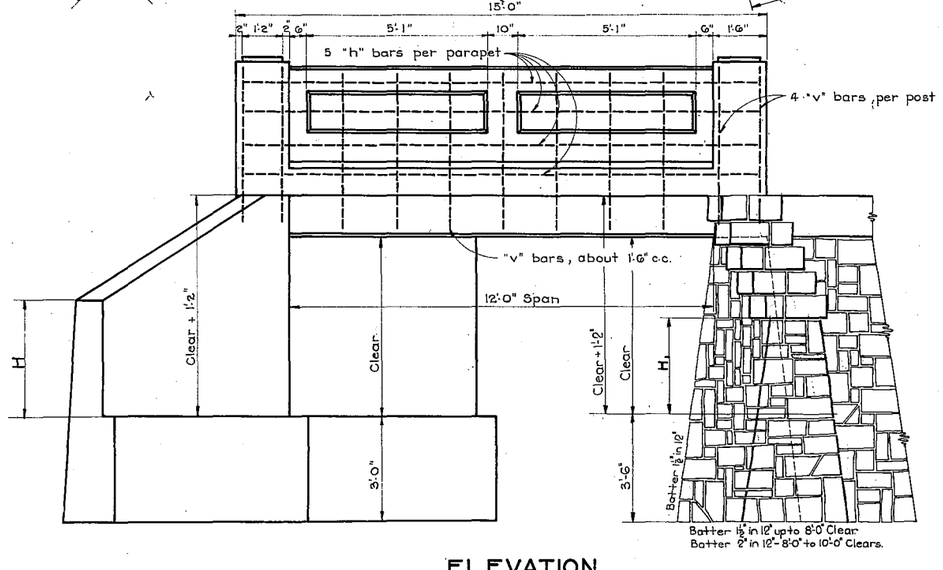
Made by : W.B.H
Checked by : O.A.W. 11-28-27.

IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

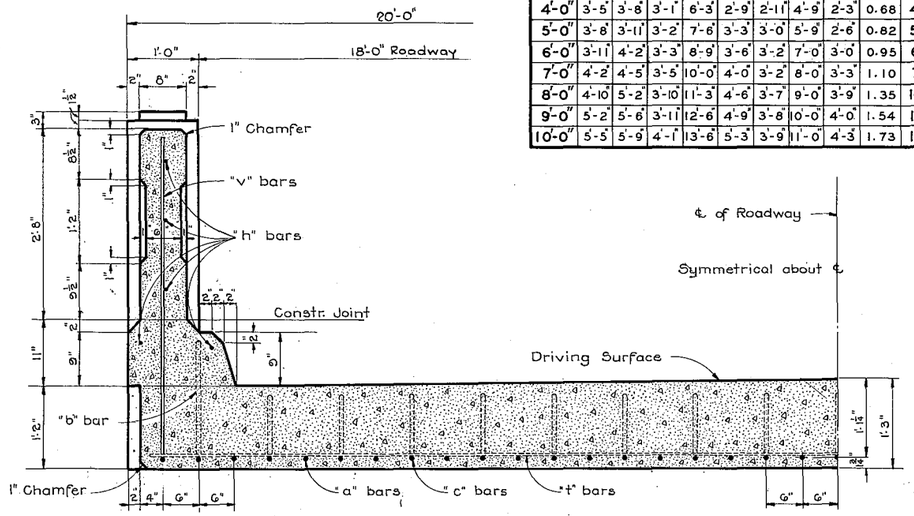
Revised 7-23-32 Stone Masonry W.C.T.



HALF PLAN



ELEVATION



SLAB & PARAPET DETAILS

STONE ABUTMENTS & WINGS

CLEAR	A	W	W1	L	H	W2	L1	H1	CU.YDS. PER FOOT ONE ABUT.	TOTAL CU.YDS. TWO ABUT.
2'-0"	2'-11"	3'-2"	2'-11"	3'-9"	2'-0"	2'-9"	2'-9"	1'-6"	0.45	24
3'-0"	3'-2"	3'-5"	2'-11"	5'-0"	2'-3"	2'-11"	3'-9"	2'-0"	0.56	32
4'-0"	3'-5"	3'-8"	3'-1"	6'-3"	2'-9"	2'-11"	4'-9"	2'-3"	0.68	41
5'-0"	3'-8"	3'-11"	3'-2"	7'-6"	3'-3"	3'-0"	5'-9"	2'-6"	0.82	52
6'-0"	3'-11"	4'-2"	3'-3"	8'-9"	3'-6"	3'-2"	7'-0"	3'-0"	0.95	64
7'-0"	4'-2"	4'-5"	3'-5"	10'-0"	4'-0"	3'-2"	8'-0"	3'-3"	1.10	77
8'-0"	4-10	5'-2"	3'-10	11'-3"	4'-6"	3'-7"	9'-0"	3'-9"	1.35	100
9'-0"	5'-2"	5'-6"	3'-11	12'-6"	4'-9"	3'-8"	10'-0"	4'-0"	1.54	117
10'-0"	5'-5"	5'-9"	4'-1"	13'-6"	5'-3"	3'-9"	11'-0"	4'-3"	1.73	135

MATERIAL REQUIRED

FLOOR SYSTEM AND PARAPETS

10.4 Cu. Yds. "A" (1:2:4) Concrete	25½ Bbls. Cement. 7⅛ Cu. Yds. Sand. 15 Cu. Yds. Stone.

1671 lbs. Steel Reinforcing Bars.

TABLE OF BARS

Mk.	Nº	Stock.	Bending Diagram.
a.	20	⅞"ø x 15'-0"	7'-0" ; 1¼" ; 1½" R. ; Symmetrical about ℄
b.	2.	⅞"ø x 17'-0"	7⅛" ; 1'-3" ; 5'-3" ; 1½" R. ; ⅜" ; 2'-1⅛"
c.	17.	⅞"ø x 15'-6"	7" ; 1'-3" ; 5'-1½" ; 1½" R. ; 1½" ; 1'-6¼"
d.	28	⅞"ø x 1'-9"	Dowels in abutments.
t.	12.	½"ø x 20'-0"	Transverse in slab.
h.	10.	½"ø x 14'-9"	Horizontal in parapets
v.	30.	½"ø x 4'-6"	Vertical in parapets.

NOTE

Bridge shall conform to grade of road. On level grade slope top of slab at least ⅛" per foot.

Depth of foundations to be determined by local conditions.

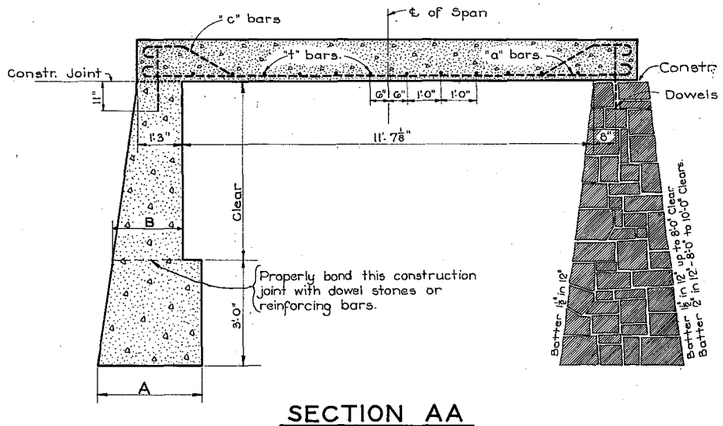
Quantities given are based on dimensions shown.

Wings may be changed to suit local conditions.

If bed of stream requires paving, use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.

ABUTMENTS AND WINGS

Clear.	A	B	W	W1	L	H	W2	L1	H1	Cu. Yds. "B" Conc. 1:3:5	Bbls. Cement	Cu. Yds. Sand.	Cu. Yds. Stone
2'-0"	2'-0"	1'-4"	2'-0"	1'-9"	3'-9"	2'-0"	1'-9"	2'-9"	1'-6"	16.6	21½	8	16
3'-0"	2'-0"	1'-4½"	2'-8"	1'-9"	5'-0"	2'-3"	1'-9"	3'-9"	2'-0"	21.0	27¼	10	20¼
4'-0"	2'-4"	1'-7"	3'-2"	1'-9"	6'-3"	2'-9"	1'-9"	4'-9"	2'-3"	28.1	36½	13½	27
5'-0"	2'-11"	2'-0"	3'-8"	2'-1"	7'-6"	3'-3"	1'-9"	5'-9"	2'-6"	37.7	49	55¾	36¼
6'-0"	3'-6"	2'-5"	4'-2"	2'-3"	8'-9"	3'-6"	1'-11"	7'-0"	3'-0"	49.5	64¼	73¼	47½
7'-0"	4'-0"	2'-9½"	4'-7"	2'-7"	10'-0"	4'-0"	2'-1"	8-0	3-3	62.6	81¼	92¾	60¼
8'-0"	4-5"	3'-2½"	5'-1"	2'-10"	11'-3"	4'-6"	2'-5"	9'-0"	3'-9"	77.6	100¾	115	74¾
9'-0"	4'-11"	3'-7"	5'-6"	3'-0"	12'-6"	4'-9"	2'-7"	10'-0"	4'-0"	94.1	122¼	139¼	90½
10'-0"	5'-4"	4'-0"	5'-11"	3'-3"	13'-6"	5'-3"	2'-8"	11'-0"	4'-3"	111.7	145	165½	107½



SECTION AA

APPROVED Feb. 14, 1928

E. E. Macumber BRIDGE ENGINEER

APPROVED

W. H. Brindley ASS'T. CHIEF ENGINEER

COMMONWEALTH OF PENNSYLVANIA.

DEPARTMENT OF HIGHWAYS

BRIDGE DIVISION.

STANDARD

REINFORCED CONCRETE BRIDGE

SPAN 12 FT. ROADWAY 18 FT.

SKEW ~75°L

Scales ½" & 1"=1'-0"

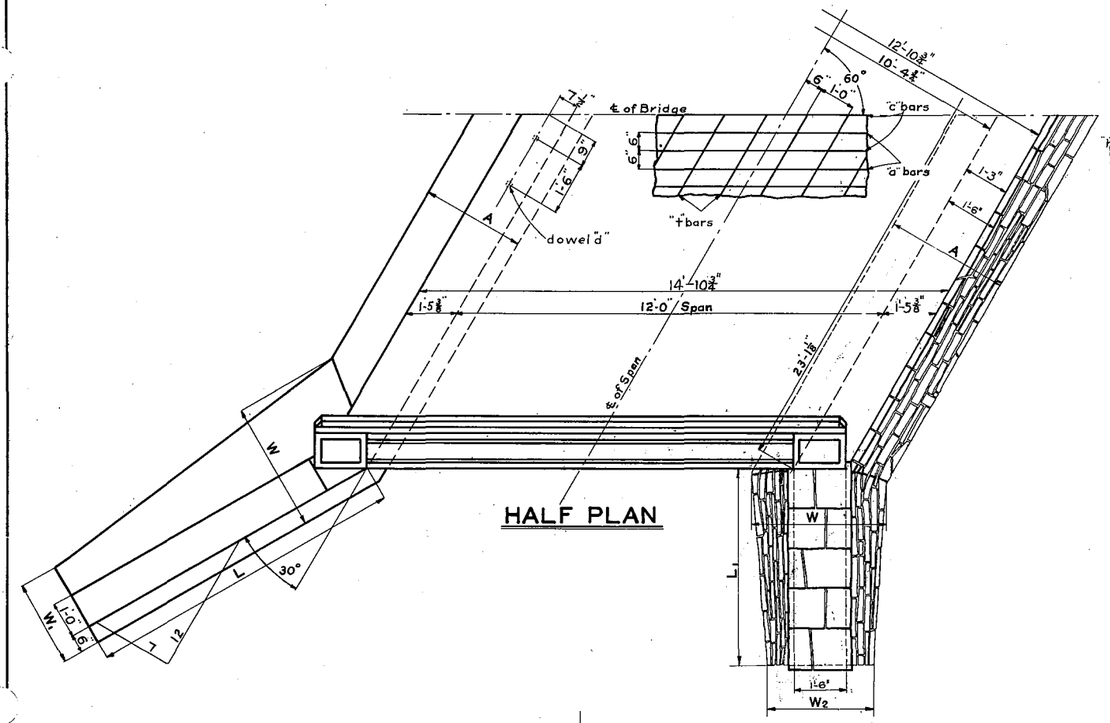
612-B 75

Made by : WBH

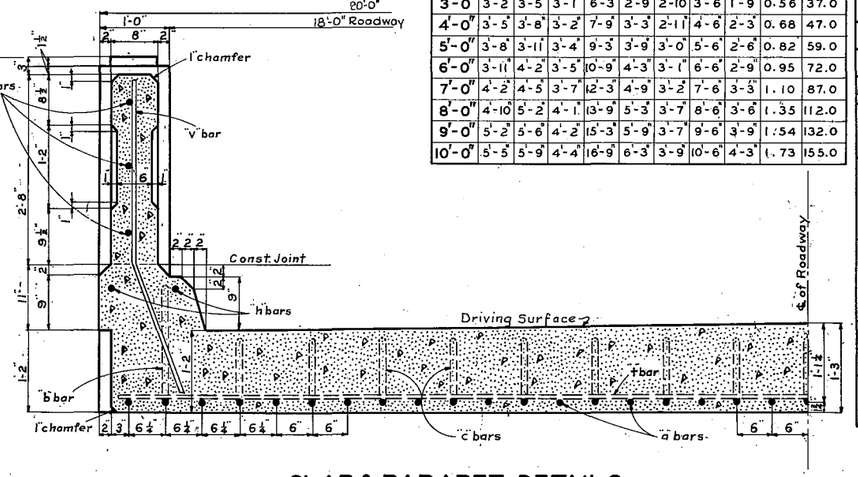
Checked by : P.W. 1-16-28.

IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

Revised 7-23-32 Stone Masonry W.C.T.



HALF PLAN



SLAB & PARAPET DETAILS

STONE ABUTMENTS & WINGS

CLEAR	A	W	W1	L	H	W2	L1	H1	CU.YDS. PER FOOT ONE ABUTMENT	TOTAL CU.YDS. TWO ABUT.
2'-0"	2'-11"	3'-2"	2'-11"	4'-9"	2'-3"	2'-9"	2'-6"	1'-6"	0.45	27.0
3'-0"	3'-2"	3'-5"	3'-1"	6'-3"	2'-9"	2'-10"	3'-6"	1'-9"	0.56	37.0
4'-0"	3'-5"	3'-8"	3'-2"	7'-9"	3'-3"	2'-11"	4'-6"	2'-3"	0.68	47.0
5'-0"	3'-8"	3'-11"	3'-4"	9'-3"	3'-9"	3'-0"	5'-6"	2'-6"	0.82	59.0
6'-0"	3'-11"	4'-2"	3'-5"	10'-9"	4'-3"	3'-1"	6'-6"	2'-9"	0.95	72.0
7'-0"	4'-2"	4'-5"	3'-7"	12'-3"	4'-9"	3'-2"	7'-6"	3'-3"	1.10	87.0
8'-0"	4'-10"	5'-2"	4'-1"	13'-9"	5'-3"	3'-7"	8'-6"	3'-6"	1.35	112.0
9'-0"	5'-2"	5'-6"	4'-2"	15'-3"	5'-9"	3'-7"	9'-6"	3'-9"	1.54	132.0
10'-0"	5'-5"	5'-9"	4'-4"	16'-9"	6'-3"	3'-9"	10'-6"	4'-3"	1.73	155.0

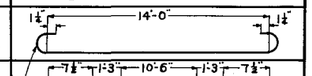
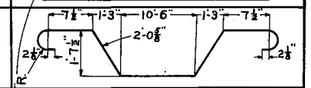
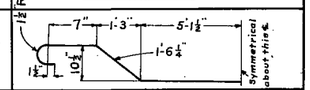
MATERIAL REQUIRED

FLOOR SYSTEM AND PARAPETS

16.7 Cu.Yds. "A" (1:2:4) Concrete. — 26 Bbls. Cement; 7¾ Cu.Yds. Sand; 15½ Cu.Yds. Stone.

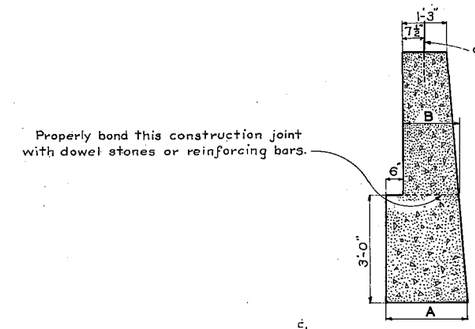
1675 Lbs. Reinforcing Bars.

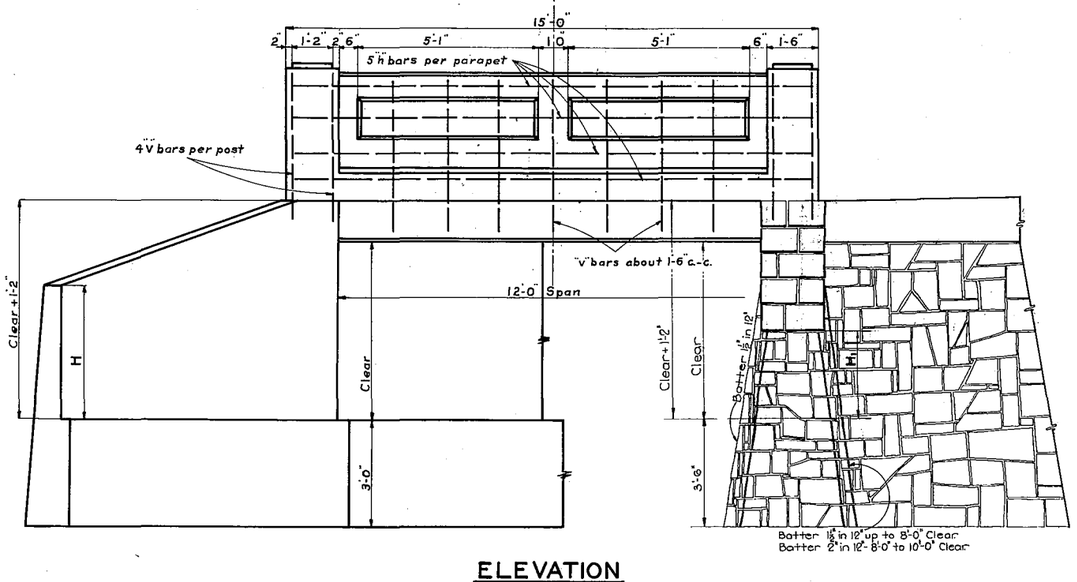
TABLE OF BARS

Mark	No.	Stock	Bending Diagram.
a	20	⅞" ℄ X 15'-0"	
b	2	⅞" ℄ X 17'-0"	
c	17	⅞" ℄ X 15'-6"	
d	32	⅞" ℄ X 1'-9"	Dowels in Abutments.
t	10	½" ℄ X 22'-6"	Transverse in Slab.
h	10	½" ℄ X 14'-9"	Horizontal in Parapets.
v	30	½" ℄ X 4'-6"	Vertical in Parapets.

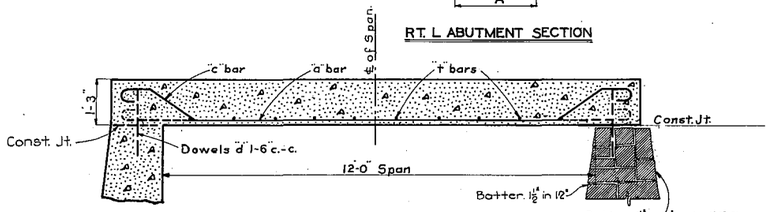
ABUTMENTS & WINGS

Clear	A	B	W	W1	L	H	W2	L1	H1	Cu.Yds. "A" Conc. 1:2½:5	Bbls. Cement	Cu.Yds. Sand.	Cu.Yds. Stone.
2'-0"	2'-0"	1'-4"	2'-0"	1'-9"	4'-9"	2'-3"	1'-9"	2'-6"	1'-6"	18.4	24	8¾	17¾
3'-0"	2'-0"	1'-4½"	2'-8"	1'-9"	6'-3"	2'-9"	1'-9"	3'-6"	1'-9"	23.2	30	11¼	22¼
4'-0"	2'-4"	1'-7"	3'-2"	2'-1"	7'-9"	3'-3"	1'-9"	4'-6"	2'-3"	31.4	40¾	15	30½
5'-0"	2'-11"	2'-0"	3'-8"	2'-5"	9'-3"	3'-9"	1'-9"	5'-6"	2'-6"	42.6	55¼	20½	41
6'-0"	3'-6"	2'-5"	4'-2"	2'-9"	10'-9"	4'-3"	1'-9"	6'-6"	2'-9"	56.3	73	27	54¼
7'-0"	4'-0"	2'-9½"	4'-7"	3'-0"	12'-3"	4'-9"	2'-1"	7'-6"	3'-3"	71.3	92½	34¼	68½
8'-0"	4'-5"	3'-2½"	5'-1"	3'-3"	13'-9"	5'-3"	2'-3"	8'-6"	3'-6"	87.8	114	42¼	84½
9'-0"	4'-11"	3'-7"	5'-6"	3'-6"	15'-3"	5'-9"	2'-5"	9'-6"	3'-9"	106.8	138¾	51½	102¾
10'-0"	5'-4"	4'-0"	5'-11"	3'-9"	16'-9"	6'-3"	2'-9"	10'-6"	4'-3"	129.1	167½	62	124¼





ELEVATION



SECTION ON ℄ OF BRIDGE

NOTE

Floor of bridge shall conform to grade of road. On level grade slope top of slab at least 1/16" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving use 6" of concrete or 8' of stone masonry and a 12' curtain wall of sufficient depth at each end.

APPROVED Oct. 19, 1927
E. E. Maudlow BRIDGE ENGINEER.
APPROVED
W. H. Sunderlin ASST. CHIEF ENGINEER.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION

STANDARD REINFORCED CONCRETE BRIDGE

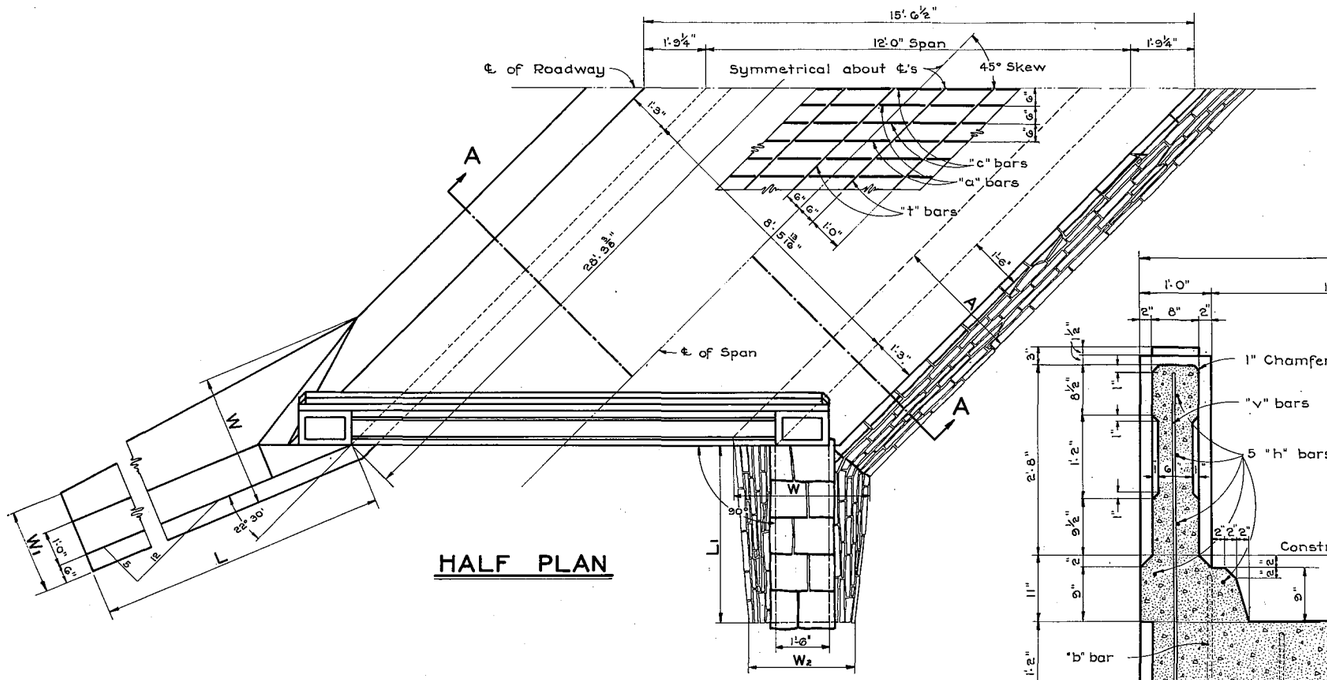
SPAN 12 FT. ROADWAY 18 FT.
SKEW 60° L.

SCALE ½" & 1'-1-0"

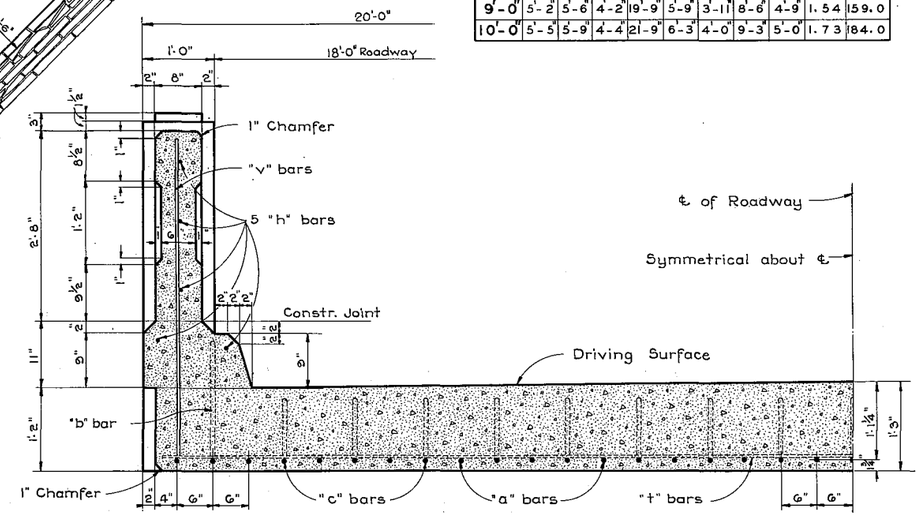
612B-60

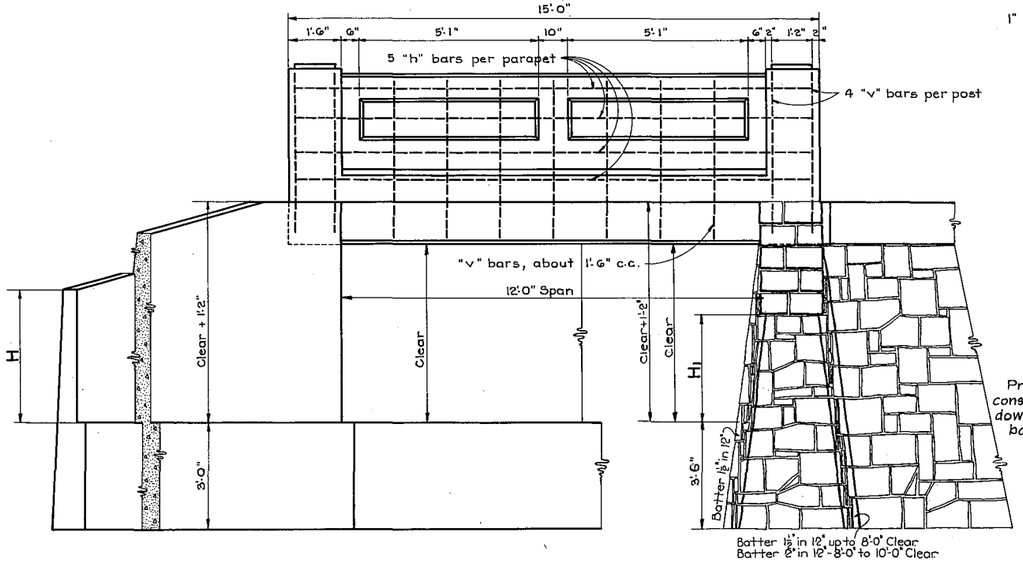
Made by - R.F.W.
Checked by - W.B.H 10-13-27

Revised 7-23-32 Stone Masonry W.C.T.



HALF PLAN





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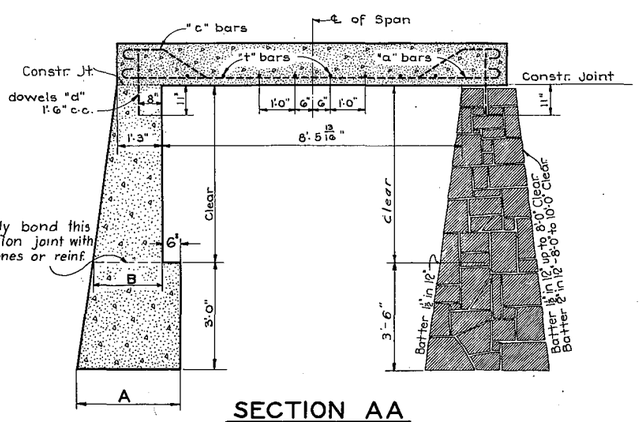


SECTION AA

SLAB & PARAPET DETAILS

NOTE

Floor of bridge shall conform to grade of road. On level grade slope top of slab ½" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving, use 6" of concrete or 8' of stone masonry and a 12' curtain wall of sufficient depth at each end.

STONE ABUTMENTS & WINGS

CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	CU YDS PER FOOT ONE ABUT	TOTAL CU YDS TWO ABUT
2'-0"	2'-11"	3'-2"	2'-11"	6'-0"	2'-3"	2'-10"	2'-3"	1'-9"	0.45	33.0
3'-0"	3'-2"	3'-5"	3'-1"	8'-0"	2'-9"	2'-11"	3'-0"	2'-0"	0.56	44.0
4'-0"	3'-5"	3'-8"	3'-2"	10'-0"	3'-3"	3'-0"	4'-0"	2'-6"	0.68	56.0
5'-0"	3'-8"	3'-11"	3'-4"	12'-0"	3'-9"	3'-2"	4'-9"	3'-0"	0.82	71.0
6'-0"	3'-11"	4'-2"	3'-5"	14'-0"	4'-3"	3'-3"	5'-9"	3'-6"	0.95	87.0
7'-0"	4'-2"	4'-5"	3'-7"	16'-0"	4'-9"	3'-4"	6'-6"	3'-9"	1.10	105.0
8'-0"	4'-10"	5'-2"	4'-1"	18'-0"	5'-3"	3'-9"	7'-6"	4'-3"	1.35	134.0
9'-0"	5'-2"	5'-6"	4'-2"	19'-9"	5'-9"	3'-11"	8'-6"	4'-9"	1.54	159.0
10'-0"	5'-5"	5'-9"	4'-4"	21'-9"	6'-3"	4'-0"	9'-3"	5'-0"	1.73	184.0

MATERIAL REQUIRED

FLOOR SYSTEM AND PARAPETS

17.3 Cu. yds. "A" (1:2:4) Concrete { 26¾ Bbls. Cement. 8 Cu. yds. Sand. 16 Cu. yds. Stone.

1773. lbs. Steel Reinforcing Bars.

TABLE OF BARS

Mk.	№	Stock	Bending Diagram.
a.	20.	⅞"ø x 16'-0"	7'-6"
b.	2.	⅞"ø x 16'-0"	1'-1½" 1'-3" 5'-3" 2'-1⅜"
c.	17.	⅞"ø x 16'-6"	1'-1" 1'-3" 5'-1½" 1'-6¼"
d.	38.	⅞"ø x 1'-9"	Dowels in abutment.
t.	8.	½"ø x 27'-6"	Transverse in slab.
h.	10.	½"ø x 14'-9"	Horizontal in parapets.
v.	30.	½"ø x 4'-6"	Vertical in parapets.

Symmetrical about ℄

APPROVED Feb. 14, 1928
E. E. Rivenburg BRIDGE ENGINEER
APPROVED
T. H. Cumpsty ASST. CHIEF ENGINEER

ABUTMENTS & WINGS

Clear	A	B	W	W_1	L	H	W_2	L_1	H_1	Cu. Yds. "B" Conc. 1:2½:3	Bbls. Cement.	Cu. Yds. Sand	Cu. Yds. Stone.
2'-0"	2'-0"	2'-10"	2'-0"	1'-9"	6'-0"	2'-3"	1'-9"	2'-3"	1'-9"	22.4	29	10¾	21½
3'-0"	2'-0"	2'-10"	2'-8"	1'-9"	8'-0"	2'-9"	1'-9"	3'-0"	2'-0"	28.4	36¾	13¾	27¼
4'-0"	2'-4"	3'-3⅜"	3'-2"	2'-1"	10'-0"	3'-3"	1'-9"	4'-0"	2'-6"	38.2	49½	18½	36¾
5'-0"	2'-11"	4'-1½"	3'-8"	2'-5"	12'-0"	3'-9"	1'-11"	4'-9"	3'-0"	51.6	67	24¾	49¾
6'-0"	3'-6"	4'-11⅝"	4'-2"	2'-8"	14'-0"	4'-3"	2'-3"	5'-9"	3'-6"	68.6	89	33	65¾
7'-0"	4'-0"	5'-7⅞"	4'-7"	3'-0"	16'-0"	4'-9"	2'-5"	6'-6"	3'-9"	86.0	111¾	41½	82¾
8'-0"	4'-5"	6'-3"	5'-1"	3'-3"	18'-0"	5'-3"	2'-8"	7'-6"	4'-3"	106.0	137½	51	102
9'-0"	4'-11"	6'-11⅝"	5'-6"	3'-6"	19'-9"	5'-9"	3'-0"	8'-6"	4'-9"	129.0	167¾	62¼	124¼
10'-0"	5'-4"	7'-6½"	5'-11"	3'-9"	21'-9"	6'-3"	3'-4"	9'-3"	5'-0"	154.3	200¼	74¼	148½

COMMONWEALTH OF PENNSYLVANIA.
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION
STANDARD

REINFORCED CONCRETE BRIDGE

SPAN 12 FT. ~ ROADWAY 18 FT.
SKEW 45° L

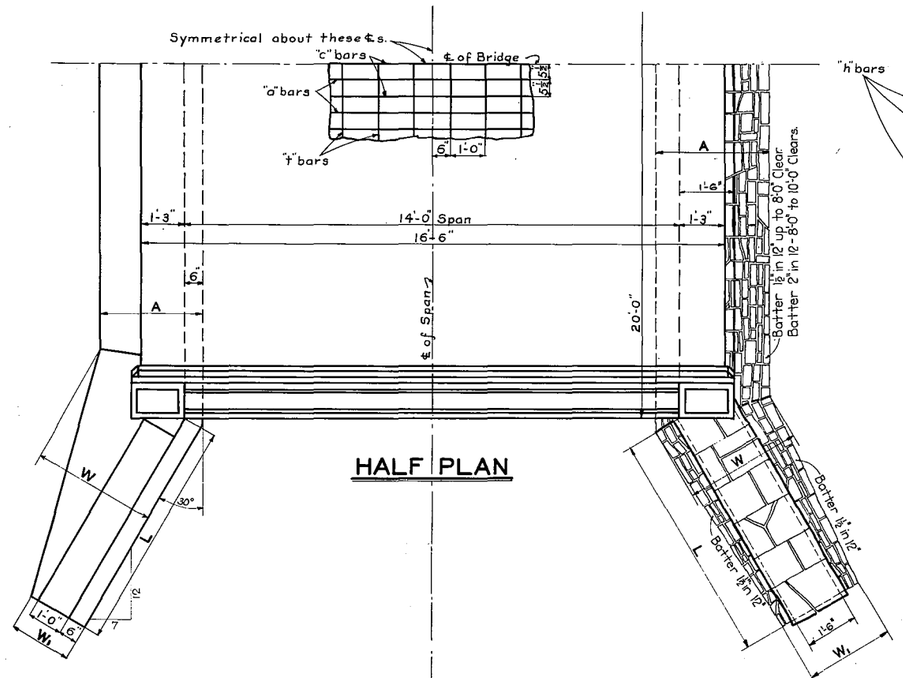
Scales ½" & 1" = 1'-0"

612-B 45

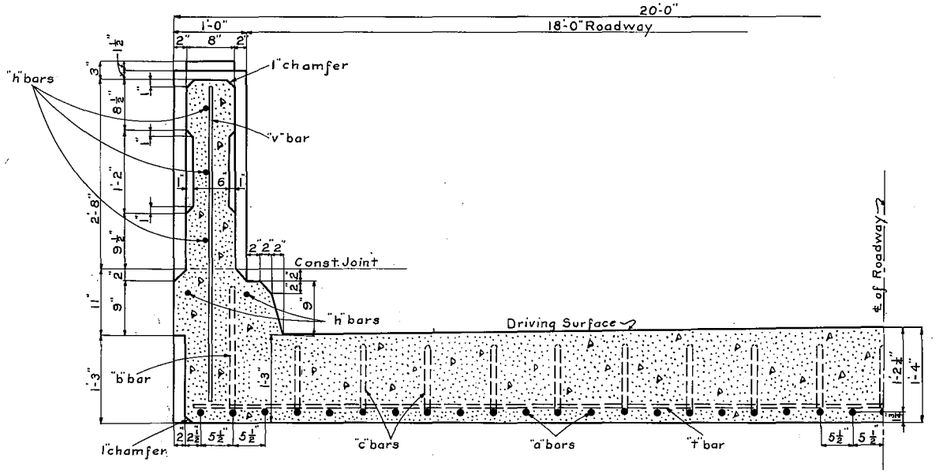
Made by : W.B.M
Checked by : R.F.W. 12-16-27.

IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

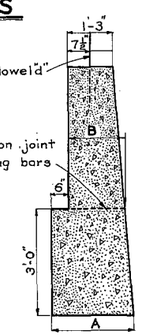
Revised 7-23-32 W.C.T. Stone Masonry.



HALF PLAN



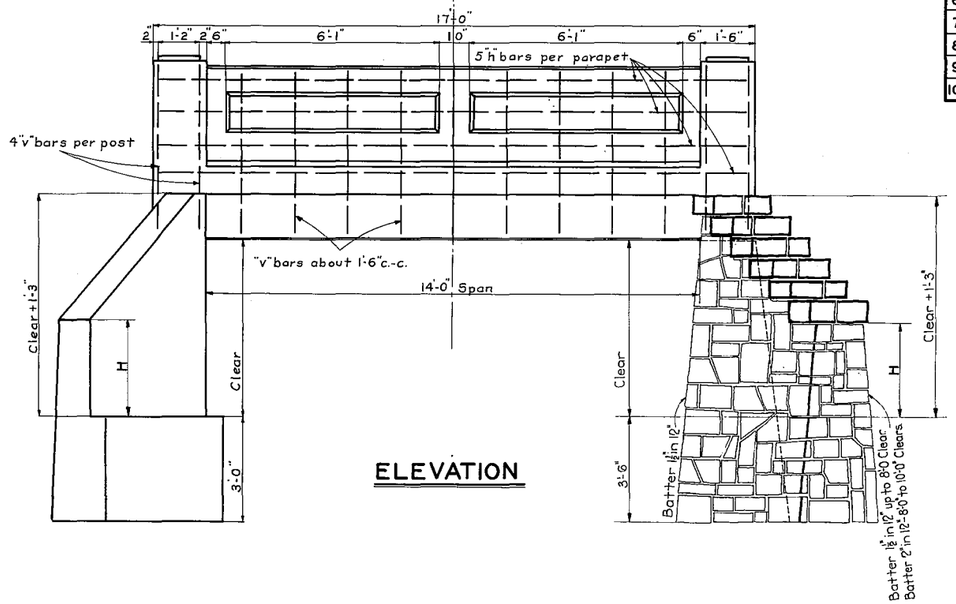
SLAB & PARAPET DETAILS



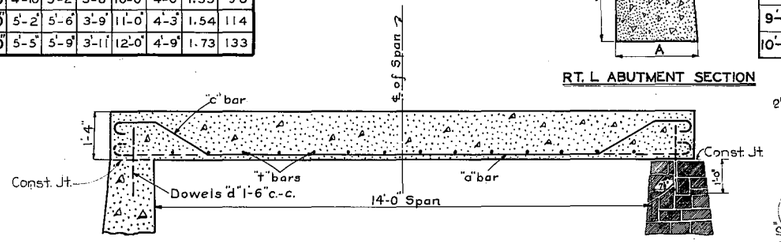
RT. L ABUTMENT SECTION

CLEAR	B
2'-0"	1'-4"
3'-0"	1'-4½"
4'-0"	1'-7"
5'-0"	2'-0"
6'-0"	2'-5"
7'-0"	2'-9½"
8'-0"	3'-2½"
9'-0"	3'-7"
10'-0"	4'-0"

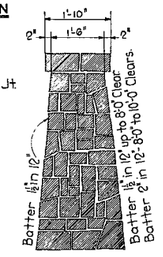
STONE ABUTMENTS & WINGS							
CLEAR	A	W	W1	L	H	CU.YDS. PER FOOT ONE ABUT.	TOTAL CU.YDS. TWO ABUT.
2'-0"	2'-11"	3'-2"	2'-10"	3'-3"	1'-9"	0.45	24
3'-0"	3'-2½"	3'-5"	2'-11"	4'-3"	2'-0"	0.56	32
4'-0"	3'-5"	3'-8"	3'-0"	5'-6"	2'-6"	0.68	42
5'-0"	3'-8"	3'-11"	3'-1"	6'-6"	2'-9"	0.82	51
6'-0"	3'-11"	4'-2"	3'-2"	7'-6"	3'-3"	0.95	62
7'-0"	4'-2"	4'-5"	3'-3"	8'-9"	3'-6"	1.10	76
8'-0"	4'-10"	5'-2"	3'-8"	10'-0"	4'-0"	1.35	98
9'-0"	5'-2"	5'-6"	3'-9"	11'-0"	4'-3"	1.54	114
10'-0"	5'-5"	5'-9"	3'-11"	12'-0"	4'-9"	1.73	133



ELEVATION



SECTION ON ℄ OF BRIDGE



TYPICAL WING SECTION
(FOR STONE ABUTMENTS ONLY)

NOTE

Floor of bridge shall conform to grade of road. On level grade slope top of slab at least 1/16" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.

MATERIAL REQUIRED

FLOOR SYSTEM AND PARAPETS.

19.5 Cu.Yds. "A" (1:2:4) Concrete	30½ Bbls. Cement 9 Cu.Yds. Sand. 18 Cu.Yds. Stone.

2043 Lbs. Reinforcing Bars.

TABLE OF BARS.

Mark.	No.	Stock.	Bending Diagram.
a	22	⅞" ℄ X17'-0"	1¼" — 16'-0" — 1¼"
b	2	⅞" ℄ X19'-0"	1'-2" — 1'-6" — 11'-0" — 1'-6" — 1'-2"; 2'-4"; 1'-9"; 1¼"; R
c	19	⅞" ℄ X17'-9"	1'-0" — 1'-6" — 5'-6"; 1'-9⅜"; 1¼"; Symmetrical about this ℄
d	28	⅞" ℄ X 2'-0"	Dowels in Abutments.
t	14	½" ℄ X19'-6"	Transverse in Slab.
h	10	½" ℄ X16'-9"	Horizontal in Parapets.
v	34	½" ℄ X 4'-6"	Vertical in Parapets.

ABUTMENTS & WINGS.

Clear.	A	W	W1	L	H	Cu.Yds. B.Conc. 1:2½:5	Bbls. Cement	Cu.Yds. Sand.	Cu.Yds. Stone
2'-0"	2'-0"	2'-1"	1'-9"	3'-3"	1'-9"	16.1	21	7¾	15½
3'-0"	2'-0"	2'-8"	1'-9"	4'-3"	2'-0"	20.2	47	9¾	19½
4'-0"	2'-4"	3'-2"	1'-9"	5'-6"	2'-6"	27.2	35¼	13	26¼
5'-0"	2'-11"	3'-8"	1'-9"	6'-6"	2'-9"	36	46¾	17½	34¾
6'-0"	3'-6"	4'-2"	2'-1"	7'-6"	3'-3"	47.6	61¾	23	45¾
7'-0"	4'-0"	4'-7"	2'-3"	8'-9"	3'-6"	60.3	78¼	29	58
8'-0"	4'-5"	5'-1"	2'-7"	10'-0"	4'-0"	75.4	97¾	36¼	72½
9'-0"	4'-11"	5'-6"	2'-9"	11'-0"	4'-3"	91.1	118¼	43¾	87¾
10'-0"	5'-4"	5'-11"	3'-0"	12'-0"	4'-9"	108.7	141	52¼	104½

APPROVED Feb. 14, 1928
E E Macumber BRIDGE ENGINEER.
APPROVED
Mabury Ayer ASST. CHIEF ENGINEER.

COMMONWEALTH OF PENNSYLVANIA.
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION.
STANDARD

REINFORCED CONCRETE BRIDGE.

SPAN 14 FT. ROADWAY 18 FT.

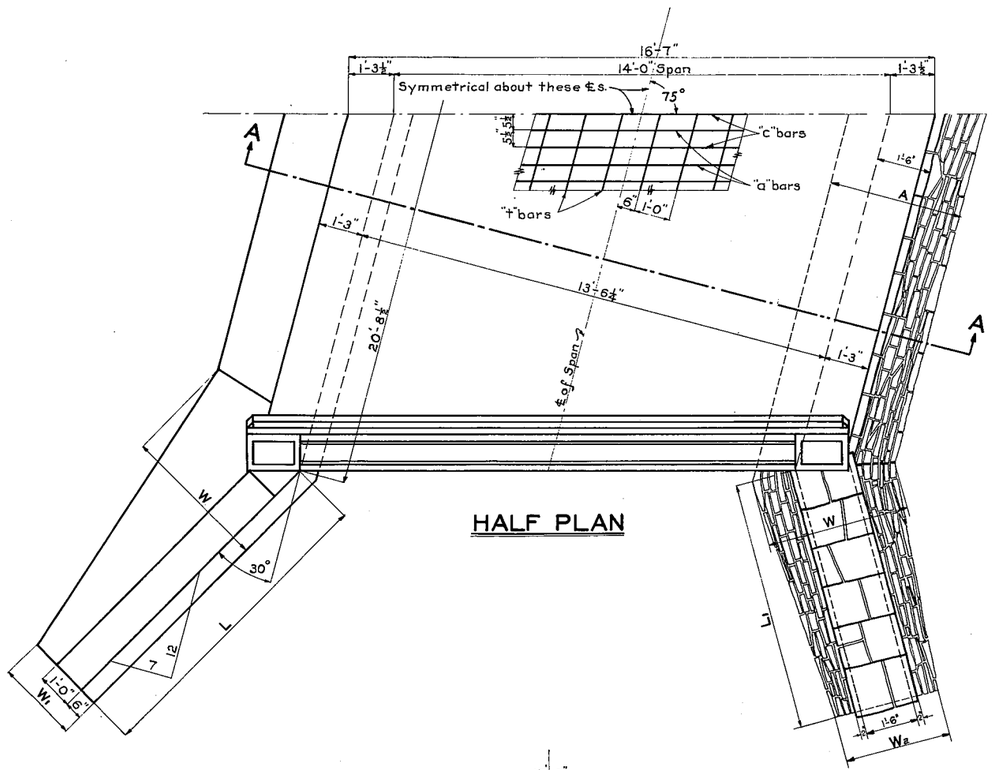
SCALE ½" & 1"=1'-0"

614 B

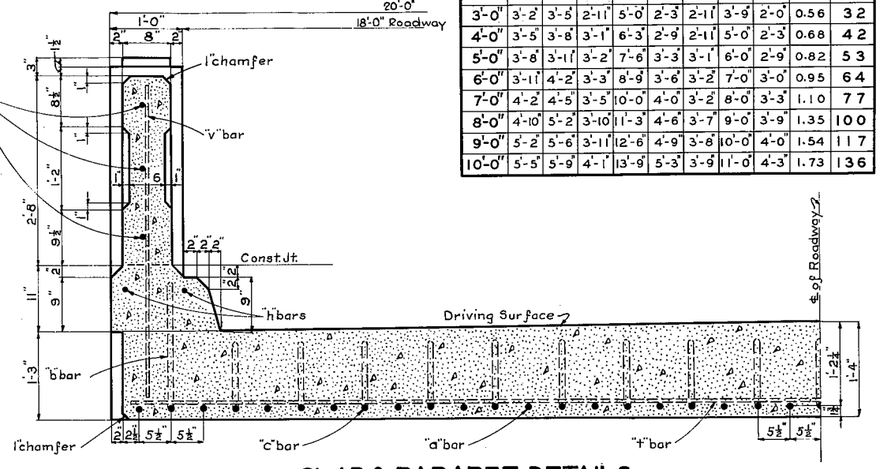
Made by - P.F.W.
Checked by - W.B.H 11-28-27

IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

Revised 7-23-32 Stone Masonry W.C.T.



HALF PLAN



SLAB & PARAPET DETAILS

STONE ABUTMENTS & WINGS

CLEAR	A	W	W1	L	H	W2	L1	H1	CU.YDS. PER FOOT ONE ABUT.	TOTAL CU. YDS. TWO ABUT.
2'-0"	2'-11"	3'-2"	2'-11"	3'-9"	2'-0"	2'-9"	2'-9"	1'-6"	0.45	24
3'-0"	3'-2"	3'-5"	2'-11"	5'-0"	2'-3"	2'-11"	3'-9"	2'-0"	0.56	32
4'-0"	3'-5"	3'-8"	3'-1"	6'-3"	2'-9"	2'-11"	5'-0"	2'-3"	0.68	42
5'-0"	3'-8"	3'-11"	3'-2"	7'-6"	3'-3"	3'-1"	6'-0"	2'-9"	0.82	53
6'-0"	3'-11"	4'-2"	3'-3"	8'-9"	3'-6"	3'-2"	7'-0"	3'-0"	0.95	64
7'-0"	4'-2"	4'-5"	3'-5"	10'-0"	4'-0"	3'-2"	8'-0"	3'-3"	1.10	77
8'-0"	4'-10"	5'-2"	3'-10"	11'-3"	4'-6"	3'-7"	9'-0"	3'-9"	1.35	100
9'-0"	5'-2"	5'-6"	3'-11"	12'-6"	4'-9"	3'-8"	10'-0"	4'-0"	1.54	117
10'-0"	5'-5"	5'-9"	4'-1"	13'-9"	5'-3"	3'-9"	11'-0"	4'-3"	1.73	136

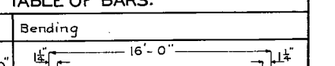
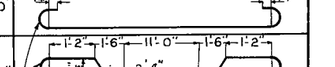
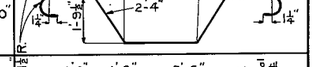
MATERIAL REQUIRED

FLOOR SYSTEM AND PARAPETS.

19.6 Cu.Yds. "A" (1:2:4) Concrete	30½ Bbls. Cement 9 Cu.Yds. Sand 18 Cu.Yds. Stone.

2047 Lbs. Reinforcing Bars.

TABLE OF BARS.

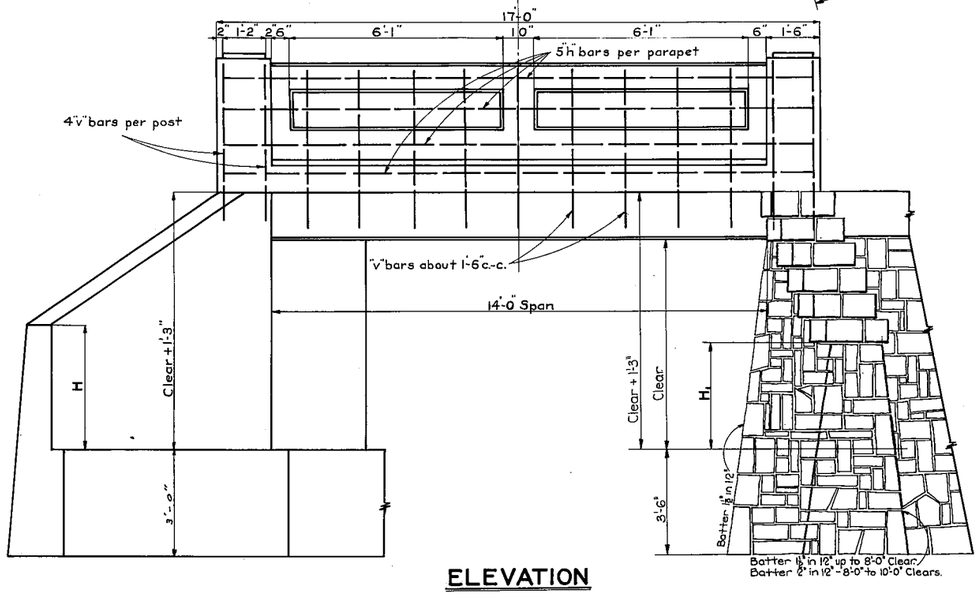
Mark	No.	Stock.	Bending
a	22	⅞" ℄ X 17'-0"	
b	2	⅞" ℄ X 19'-0"	
c	19	⅞" ℄ X 17'-9"	
d	28	⅞" ℄ X 2'-0"	Dowels in Abutments.
t	14	½" ℄ X 20'-0"	Transverse in Slab.
h	10	½" ℄ X 16'-9"	Horizontal in Parapets.
v	34	½" ℄ X 4'-6"	Vertical in Parapets.

NOTE.

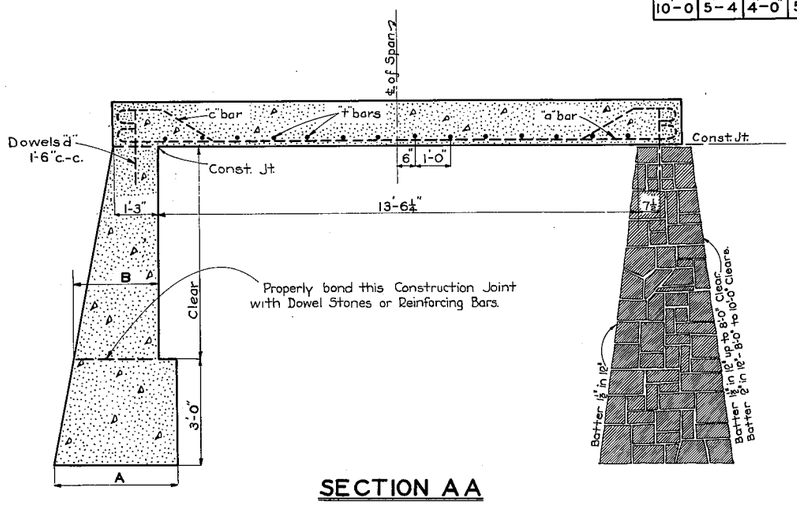
Floor of bridge shall conform to grade of road. On level grade slope top of slab at least 1/16" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving, use 6" of concrete or 8" of stone masonry and a 12 curtain wall of sufficient depth at each end.

ABUTMENTS & WINGS.

Clear	A	B	W	W1	L	H	W2	L1	H1	Cu.Yds. 1:2½:5 Conc.	Bbls. Cement	Cu.Yds. Sand	Cu.Yds. Stone.
2'-0"	2'-0"	1'-4"	2'-1"	1'-9"	3'-9"	2'-0"	1'-9"	2'-9"	1'-6"	17.1	22½	8¼	16½
3'-0"	2'-0"	1'-4½"	2'-8"	1'-9"	5'-0"	2'-3"	1'-9"	3'-9"	2'-0"	21.0	27½	10	20¼
4'-0"	2'-4"	1'-7"	3'-2"	1'-9"	6'-3"	2'-9"	1'-9"	5'-0"	2'-3"	28.4	36¾	13½	27¼
5'-0"	2'-11"	2'-0"	3'-8"	2'-1"	7'-6"	3'-3"	1'-9"	6'-0"	2'-9"	38.0	49¼	18¼	36½
6'-0"	3'-6"	2'-5"	4'-2"	2'-3"	8'-9"	3'-6"	1'-11"	7'-0"	3'-0"	49.6	64½	23¾	47¾
7'-0"	4'-0"	2'-9½"	4'-7"	2'-7"	10'-0"	4'-0"	2'-1"	8'-0"	3'-3"	62.7	81½	30¼	60¼
8'-0"	4'-5"	3'-2½"	5'-1"	2'-10"	11'-3"	4'-6"	2'-5"	9'-0"	3'-9"	77.7	100¾	37½	74¾
9'-0"	4'-11"	3'-7"	5'-6"	3'-0"	12'-6"	4'-9"	2'-7"	10'-0"	4'-0"	94.5	122¾	45½	91
10'-0"	5'-4"	4'-0"	5'-11"	3'-3"	13'-9"	5'-3"	2'-8"	11'-0"	4'-3"	112.5	146	54	108¼



ELEVATION



SECTION AA

APPROVED Feb. 14, 1928
E E Brownlow BRIDGE ENGINEER.
APPROVED
M Benyon ASST. CHIEF ENGINEER.

COMMONWEALTH OF PENNSYLVANIA.
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION.

STANDARD REINFORCED CONCRETE BRIDGE.

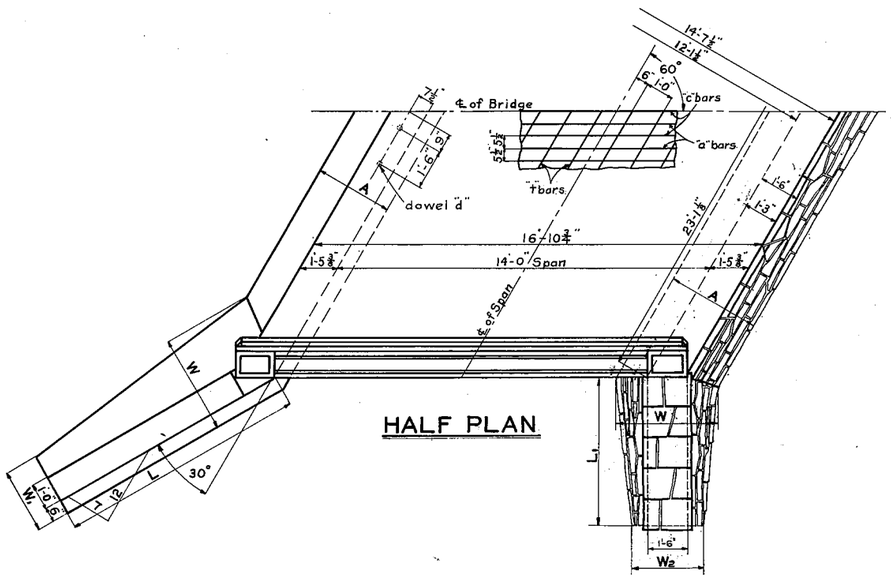
SPAN 14 FT. ROADWAY 18 FT.
SKEW 75° L.
SCALE ½" & 1"=1'-0"

614B-75

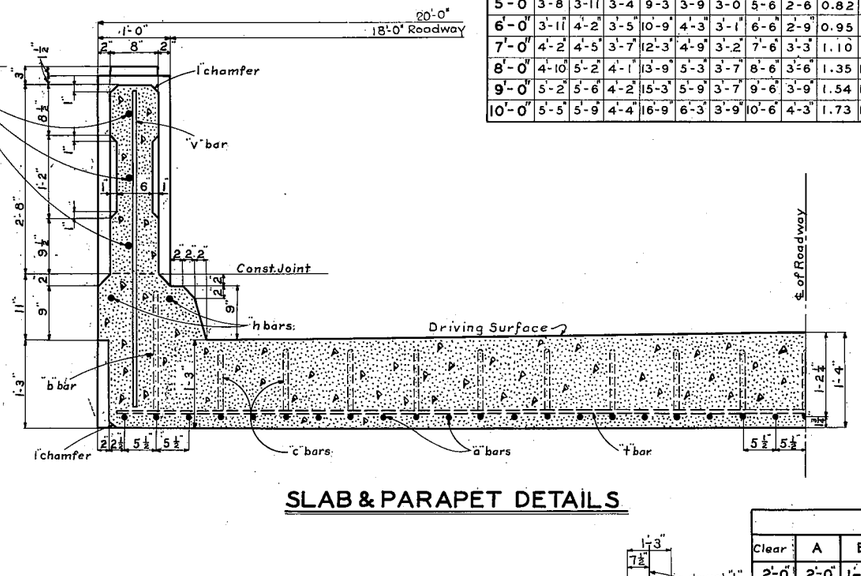
Made by-P.F.W.
Checked by- W.D.M 2-1-28

IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

Revised 7-23-32 Stone Masonry W.C.T.



HALF PLAN



SLAB & PARAPET DETAILS

STONE ABUTMENTS & WINGS

CLEAR	A	W	W₁	L	H	W₂	L₁	H₁	CU.YDS. PER FOOT ONE ABUT.	TOTAL CU. YDS. TWO ABUT.
2'-0"	2'-11"	3'-2"	2'-11"	4'-9"	2'-3"	2'-9"	2'-6"	1'-6"	0.45	27.0
3'-0"	3'-2"	3'-5"	3'-1"	6'-3"	2'-9"	2'-10"	3'-6"	1'-9"	0.56	37.0
4'-0"	3'-5"	3'-8"	3'-2"	7'-9"	3'-3"	2'-11"	4'-6"	2'-3"	0.68	47.0
5'-0"	3'-8"	3'-11"	3'-4"	9'-3"	3'-9"	3'-0"	5'-6"	2'-6"	0.82	59.0
6'-0"	3'-11"	4'-2"	3'-5"	10'-9"	4'-3"	3'-1"	6'-6"	2'-9"	0.95	72.0
7'-0"	4'-2"	4'-5"	3'-7"	12'-3"	4'-9"	3'-2"	7'-6"	3'-3"	1.10	87.0
8'-0"	4'-10"	5'-2"	4'-1"	13'-9"	5'-3"	3'-7"	8'-6"	3'-6"	1.35	112.0
9'-0"	5'-2"	5'-6"	4'-2"	15'-3"	5'-9"	3'-7"	9'-6"	3'-9"	1.54	132.0
10'-0"	5'-5"	5'-9"	4'-4"	16'-9"	6'-3"	3'-9"	10'-6"	4'-3"	1.73	155.0

MATERIAL REQUIRED

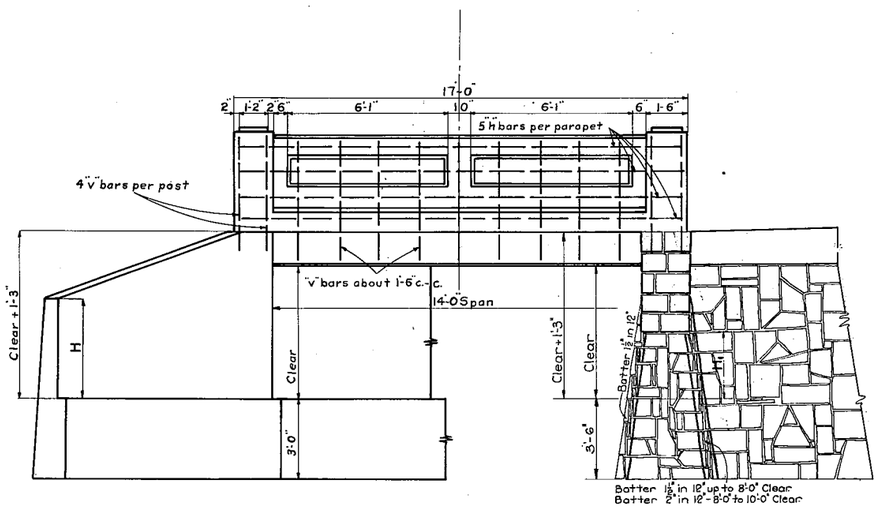
FLOOR SYSTEM AND PARAPETS

19.8 Cu.Yds. A (1:2:4) Concrete — 30¾ Bbls. Cement, 9¼ Cu.Yds. Sand, 18½ Cu.Yds. Stone.

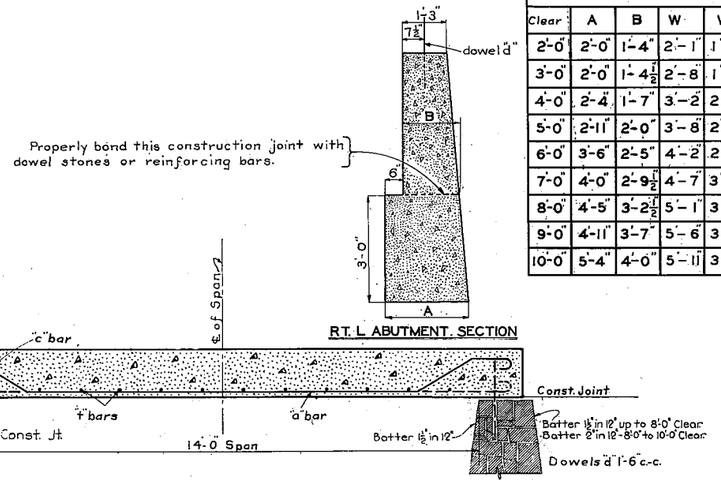
2057 Lbs. Reinforcing Bars.

TABLE OF BARS

Mark	No.	Stock	Bending Diagram.
a	22	⅞" X 17'-0"	1½", 16'-0", 1¼"
b	2	⅞" X 19'-0"	1'-2", 1'-6", 11'-0", 1'-6", 1'-2", 2'-4", 1'-9½", 1½", R
c	19	⅞" X 17'-9"	1'-0", 1'-6", 5'-6", 1'-9⅜", 1½", Symmetrical about this ℄
d	32	⅞" X 2'-0"	Dowels in Abutments.
t	12	½" X 22'-6"	Transverse in Slab.
h	10	½" X 16'-9"	Horizontal in Parapets.
v	34	½" X 4'-6"	Vertical in Parapets.



ELEVATION



SECTION ON ℄ OF BRIDGE

ABUTMENTS & WINGS

Clear	A	B	W	W₁	L	H	W₂	L₁	H₁	Cu.Yds. 1:2½:5 Conc.	Bbls. Cement	Cu.Yds. Sand	Cu.Yds. Stone.
2'-0"	2'-0"	1'-4"	2'-1"	1'-9"	4'-9"	2'-3"	1'-9"	2'-6"	1'-6"	18.4	24	8¾	17¾
3'-0"	2'-0"	1'-4½"	2'-8"	1'-9"	6'-3"	2'-9"	1'-9"	3'-6"	1'-9"	23.3	30¼	11¼	22½
4'-0"	2'-4"	1'-7"	3'-2"	2'-1"	7'-9"	3'-3"	1'-9"	4'-6"	2'-3"	31.5	41	15¼	30¼
5'-0"	2'-11"	2'-0"	3'-8"	2'-5"	9'-3"	3'-9"	1'-9"	5'-6"	2'-6"	42	55½	20½	41
6'-0"	3'-6"	2'-5"	4'-2"	2'-9"	10'-9"	4'-3"	1'-9"	6'-6"	2'-9"	56.4	73¼	27¼	54¼
7'-0"	4'-0"	2'-9½"	4'-7"	3'-0"	12'-3"	4'-9"	2'-1"	7'-6"	3'-3"	71.4	92¾	34¼	68¾
8'-0"	4'-5"	3'-2½"	5'-1"	3'-3"	13'-9"	5'-3"	2'-3"	8'-6"	3'-6"	88.0	114¼	42¼	84¾
9'-0"	4'-11"	3'-7"	5'-6"	3'-6"	15'-3"	5'-9"	2'-5"	9'-6"	3'-9"	107.0	139	51½	103
10'-0"	5'-4"	4'-0"	5'-11"	3'-9"	16'-9"	6'-3"	2'-9"	10'-6"	4'-3"	129.3	167¾	62¼	124½

APPROVED Oct. 14, 1927
E E Thomdson BRIDGE ENGINEER.
APPROVED
W. H. Burnside CHIEF ENGINEER.

NOTE

Floor of bridge shall conform to grade of road. On level grade slope top of slab at least 1/16" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving use 6" of concrete or 8" of stone masonry and a 12' curtain wall of sufficient depth at each end.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION

STANDARD REINFORCED CONCRETE BRIDGE

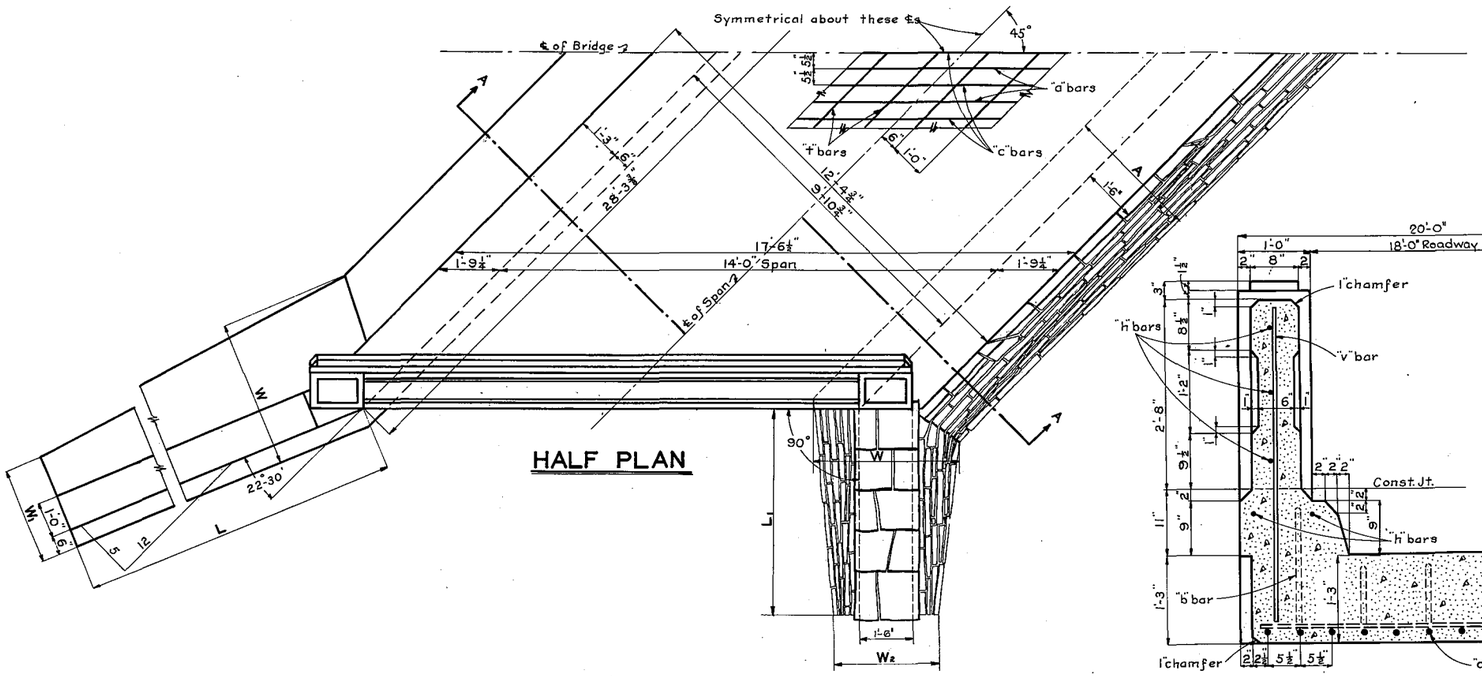
SPAN 14 FT. ROADWAY 18 FT.
SKEW 60° L.

SCALE 3"-1'-0", ½" & 1"-1'-0"

614B-60

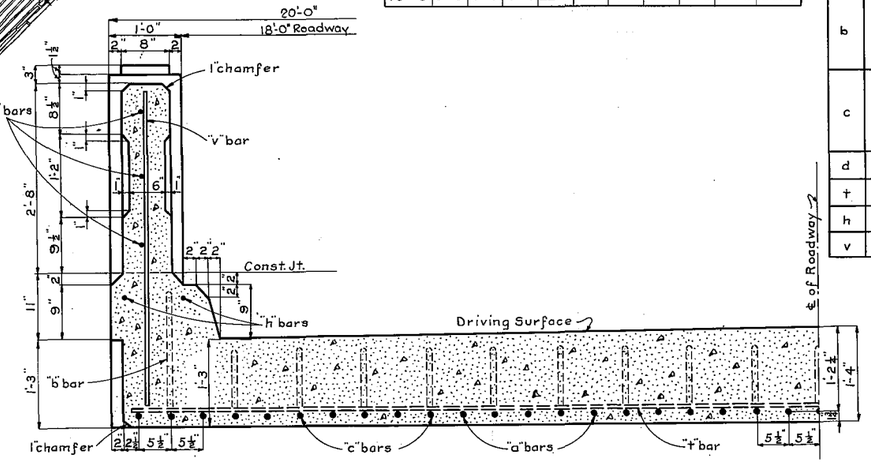
Made by - P.F.W.
Checked by - W.B.H. 10-13-27.

Revised 7-23-32 Stone Masonry W.C.T.



HALF PLAN

STONE ABUTMENTS & WINGS										
CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	CU.YDS. PER FOOT ONE ABUT.	TOTAL CU. YDS. TWO ABUT.
2'-0"	2'-11"	3'-2"	2'-11"	6'-3"	2'-3"	2'-10"	2'-3"	1'-9"	0.45	33.0
3'-0"	3'-2"	3'-5"	3'-1"	8'-3"	2'-9"	2'-11"	3'-3"	2'-3"	0.56	45.0
4'-0"	3'-5"	3'-8"	3'-2"	10'-3"	3'-3"	3'-0"	4'-0"	2'-6"	0.68	57.0
5'-0"	3'-8"	3'-11"	3'-4"	12'-3"	3'-9"	3'-2"	5'-0"	3'-0"	0.82	72.0
6'-0"	3'-11"	4'-2"	3'-5"	14'-3"	4'-3"	3'-3"	5'-9"	3'-6"	0.95	88.0
7'-0"	4'-2"	4'-5"	3'-7"	16'-0"	4'-9"	3'-4"	6'-9"	3'-9"	1.10	106.0
8'-0"	4-10	5'-2"	4'-1"	18'-0"	5'-3"	3'-9"	7'-6"	4'-3"	1.35	135.0
9'-0"	5'-2"	5'-6"	4'-2"	20'-0"	5'-9"	3'-11"	8'-6"	4'-9"	1.54	160.0
10'-0"	5'-5"	5'-9"	4'-4"	22'-0"	6'-3"	4'-0"	9'-3"	5'-0"	1.73	186.0



SLAB & PARAPET DETAILS

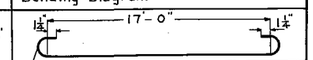
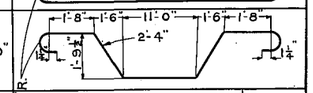
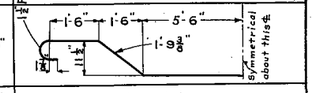
MATERIAL REQUIRED

FLOOR SYSTEM AND PARAPETS

20.5 Cu. Yds. "A" (1:2:4) Concrete — 31¾ Bbls. Cement; 9½ Cu. Yds. Sand; 18¾ Cu. Yds. Stone.

2173 Lbs. Reinforcing Bars

TABLE OF BARS

Mark	No.	Stock	Bending Diagram
a	22	⅞" ϕ X 18'-0"	
b	2	⅞" ϕ X 20'-0"	
c	19	⅞" ϕ X 18'-9"	
d	38	½" ϕ X 2'-0"	Dowels in Abutments.
t	10	½" ϕ X 27'-6"	Transverse in Slab.
h	10	½" ϕ X 16'-9"	Horizontal in Parapets.
v	34	½" ϕ X 4'-6"	Vertical in Parapets.

APPROVED Feb. 14, 1928

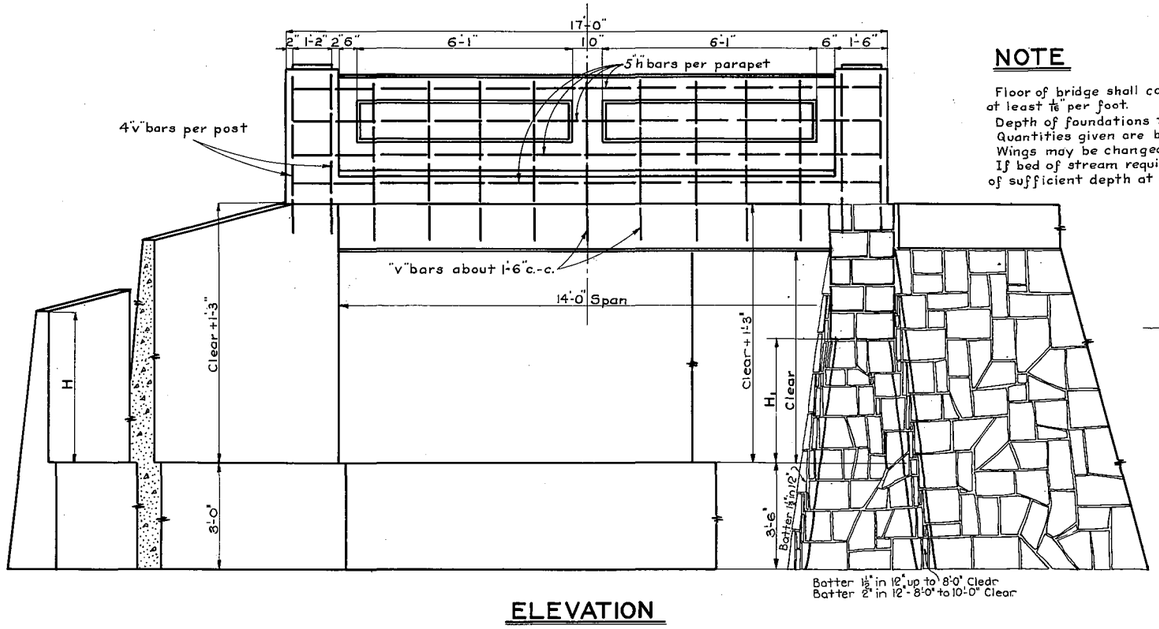
E. E. Brandon BRIDGE ENGINEER.

APPROVED _____

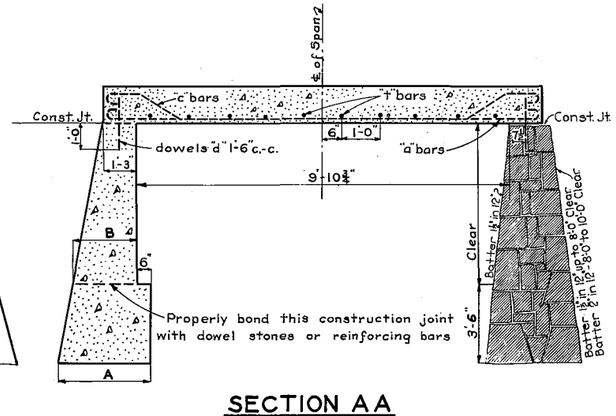
J. A. Crumlish, Jr. ASST. CHIEF ENGINEER.

NOTE

Floor of bridge shall conform to grade of road. On level grade slope top of slab at least ¼" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.



ELEVATION



SECTION AA

ABUTMENTS & WINGS													
Clear	A	B	W	W_1	L	H	W_2	L_1	H_1	Cu. Yds. "B" Conc. 1:2½:5	Bbls. Cement	Cu. Yds. Sand	Cu. Yds. Stone
2'-0"	2'-0"	1'-4"	2'-1"	1'-9"	6'-3"	2'-3"	1'-9"	2'-3"	1'-9"	22.3	29	10¾	21½
3'-0"	2'-0"	1'-4½"	2'-8"	1'-9"	8'-3"	2'-9"	1'-9"	3'-3"	2'-3"	28.8	37½	14	27¾
4'-0"	2'-4"	1'-7"	3'-2"	2'-1"	10'-3"	3'-3"	1'-9"	4'-0"	2'-6"	38.3	49¾	18½	36¾
5'-0"	2'-11"	2'-0"	3'-8"	2'-5"	12'-3"	3'-9"	1'-11"	5'-0"	3'-0"	52.4	68	25¼	50½
6'-0"	3'-6"	2'-5"	4'-2"	2'-8"	14'-3"	4'-3"	2'-3"	5'-9"	3'-6"	68.5	89	33	65¾
7'-0"	4'-0"	2'-9½"	4'-7"	3'-0"	16'-0"	4'-9"	2'-5"	6'-9"	3'-9"	86.3	112	41½	83
8'-0"	4'-5"	3'-2½"	5'-1"	3'-3"	18'-0"	5'-3"	2'-8"	7'-6"	4'-3"	106.2	137¾	51	102¼
9'-0"	4'-11"	3'-7"	5'-6"	3'-6"	20'-0"	5'-9"	3'-0"	8'-6"	4'-9"	129.9	168½	62½	125
10'-0"	5'-4"	4'-0"	5'-11"	3'-9"	22'-0"	6'-3"	3'-1"	9'-3"	5'-0"	154.2	200¼	74¼	148½

COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION
STANDARD

REINFORCED CONCRETE BRIDGE

SPAN 14 FT. ROADWAY 18 FT.
SKEW 45° L.

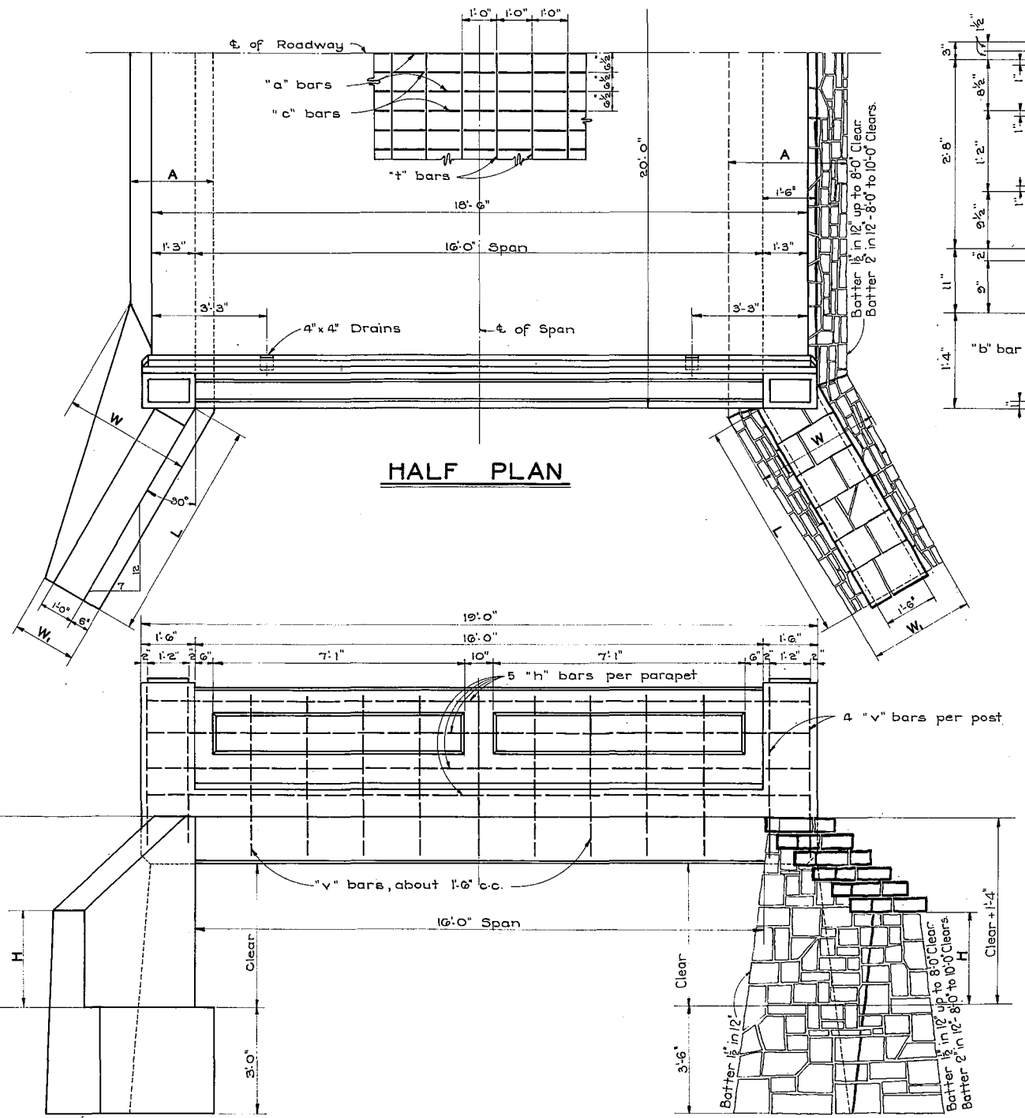
SCALE ⅜" ½" & 1"-1'-0"

614B-45

Made by - R.F.W.
Checked by - W.S.H. 12-17-27

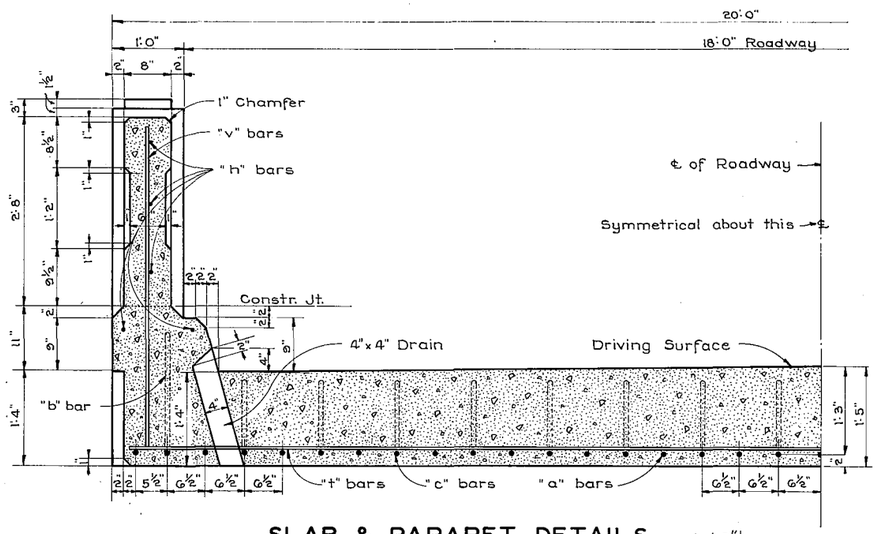
IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

Revised 7-23-32 W.C.T. Stone Masonry.



HALF PLAN

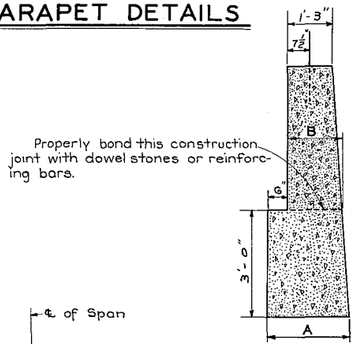
ELEVATION



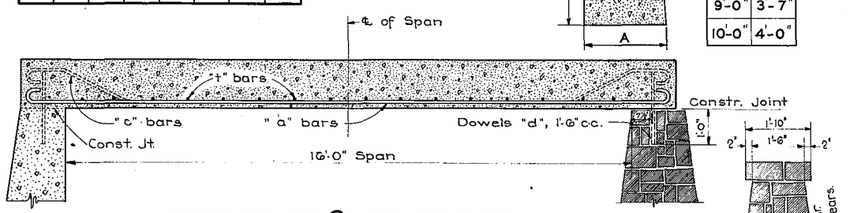
SLAB & PARAPET DETAILS

STONE ABUTMENTS & WINGS

CLEAR	A	W	W1	L	H	CU.YDS. PER FOOT ONE ABUTMENT	TOTAL CU. YDS. TWO ABUT.
2'-0"	2'-11"	3'-3"	2'-10"	3'-6"	1'-9"	0.45	24
3'-0"	3'-2"	3'-6"	2'-11"	4'-6"	2'-3"	0.56	32
4'-0"	3'-5"	3'-9"	3'-0"	5'-6"	2'-6"	0.68	41
5'-0"	3'-8"	4'-0"	3'-1"	6'-6"	2'-9"	0.82	50
6'-0"	3'-11"	4'-3"	3'-2"	7'-9"	3'-3"	0.95	62
7'-0"	4'-2"	4'-6"	3'-3"	8'-9"	3'-6"	1.10	74
8'-0"	4'-10"	5'-3"	3'-8"	10'-0"	4'-0"	1.35	98
9'-0"	5'-2"	5'-6"	3'-9"	11'-0"	4'-3"	1.54	114
10'-0"	5'-5"	5'-10"	3'-11"	12'-0"	4'-9"	1.73	133



CLEAR	B
2'-0"	1'-4"
3'-0"	1'-4½"
4'-0"	1'-7"
5'-0"	2'-0"
6'-0"	2'-5"
7'-0"	2'-9½"
8'-0"	3'-2½"
9'-0"	3'-7"
10'-0"	4'-0"



SECTION ON ℄ OF BRIDGE

TYPICAL WING SECTION (FOR STONE ABUTMENTS ONLY)

NOTE

Floor of bridge shall conform to grade of road. On level grade slope top of slab at least $\frac{1}{16}$" per foot.

Depth of foundations to be determined by local conditions.

Quantities given are based on dimensions shown.

Wings may be changed to suit local conditions.

If bed of stream requires paving, use 6" of concrete or 8" stone masonry and a 12" curtain wall of sufficient depth at each end.

MATERIAL REQUIRED

FLOOR SYSTEM AND PARAPETS

23	Cu. yds Cl. "A" (1:2:4) Conc.	35¾ Bbls. Cement. 10⅝ Cu. yds. Sand 21 Cu. yds. Stone.
2463	lbs. Steel Reinforcing Bars.	

TABLE OF BARS

Mk.	Nº	Stock	Bending Diagram.
a.	19.	1"ø x 19'-3"	8'-10½" 1'-6" 2½" R. ℄
b.	2.	1"ø x 21'-3"	2½" R. 1'-2" 1'-9" 6'-3" 2'-5" 1'-6" 5/8" 1'-6"
c.	16.	1"ø x 20'-0"	2½" R. 10½" 1'-9" 6'-3" 2'-0⅛" 1'-0" 2½" Symmetrical about ℄
d.	28.	¾"ø x 2'-0"	Dowels in abutments.
t.	16.	½"ø x 19'-6"	Transverse in slab.
h.	10.	½"ø x 18'-9"	Horizontal in parapets.
v.	34.	½"ø x 4'-6"	Vertical in parapets.

ABUTMENTS & WINGS

Clear	A	W	W1	L	H	Cu.Yds. "B" Conc. 1:2½:5	Bbls. Cement.	Cu.Yds. Sand	Cu.Yds. Stone.
2'-0"	2'-0"	2'-2"	1'-9"	3'-6"	1'-9"	16.5	21½	8	16¾
3'-0"	2'-0"	2'-9"	1'-9"	4'-6"	2'-3"	20.8	27	10	20
4'-0"	2'-4"	3'-3"	1'-9"	5'-6"	2'-6"	27.2	35¼	13	26¼
5'-0"	2'-11"	3'-9"	1'-9"	6'-6"	2'-9"	36.2	47	17½	35
6'-0"	3'-6"	4'-3"	2'-1"	7'-9"	3'-3"	48.4	62¾	23¼	46½
7'-0"	4'-0"	4'-8"	2'-3"	8'-9"	3'-6"	60.5	78½	29	58¼
8'-0"	4'-5"	5'-1"	2'-7"	10'-0"	4'-0"	75.5	98	36¼	72¾
9'-0"	4'-11"	5'-7"	2'-8"	11'-0"	4'-3"	91.2	118½	43¾	87¾
10'-0"	5'-4"	6'-0"	3'-0"	12'-0"	4'-9"	109.1	141½	52½	105

APPROVED Feb. 14, 1928

E.E. Brownlow BRIDGE ENGINEER

APPROVED

W.H. Brumbaugh ASST. CHIEF ENGINEER

COMMONWEALTH OF PENNSYLVANIA.

DEPARTMENT OF HIGHWAYS

BRIDGE DIVISION.

STANDARD

REINFORCED CONCRETE BRIDGE

SPAN 16 FT. ROADWAY 18 FT.

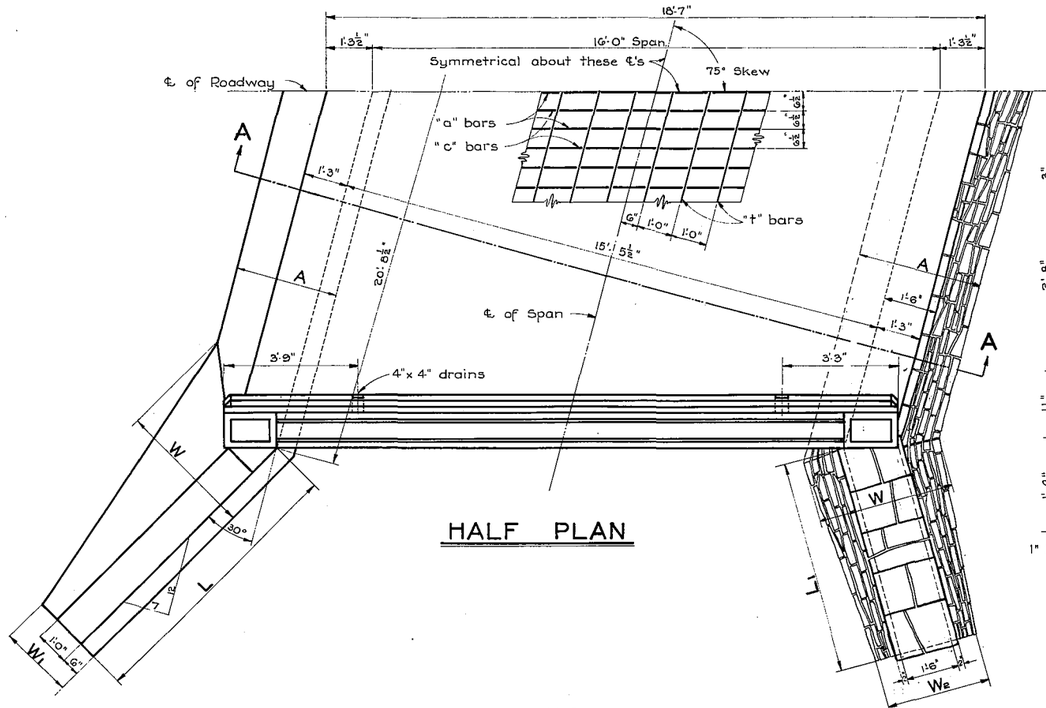
616-B

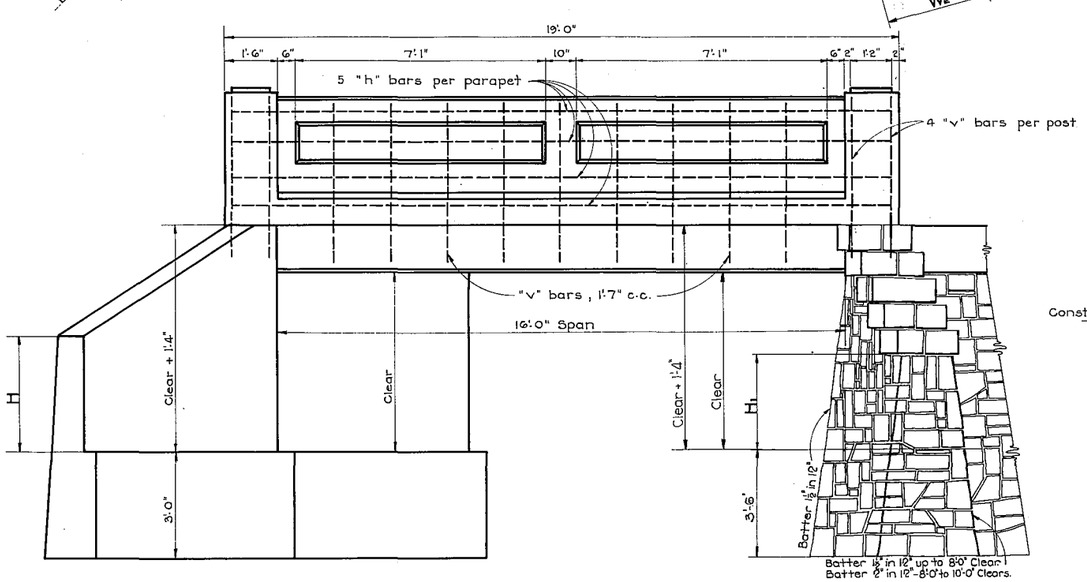
Made by : W.B.H
Checked by : A.R.W. 10-20-27

Scales ⅛" & 1" = 1'-0"

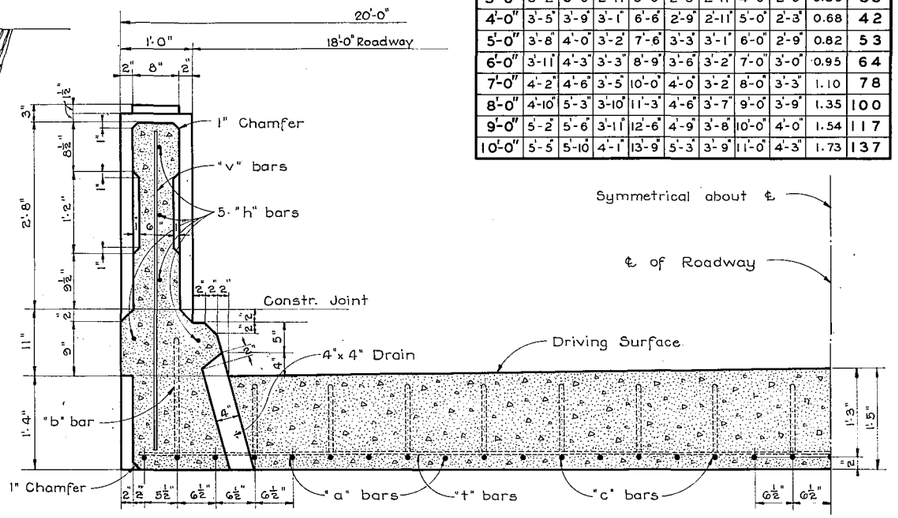
IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

Revised 7-23-32 Stone Masonry W.C.T.





ELEVATION



STONE ABUTMENTS & WINGS

CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	CU.YDS. PER FOOT ONE ABUT.	TOTAL CU.YDS. TWO ABUTS.
2'-0"	2'-11"	3'-3"	2'-11"	4'-0"	2'-0"	2'-10"	3'-0"	1'-9"	0.45	25
3'-0"	3'-2"	3'-6"	2'-11"	5'-0"	2'-3"	2'-11"	4'-0"	2'-0"	0.56	33
4'-0"	3'-5"	3'-9"	3'-1"	6'-6"	2'-9"	2'-11"	5'-0"	2'-3"	0.68	42
5'-0"	3'-8"	4'-0"	3'-2"	7'-6"	3'-3"	3'-1"	6'-0"	2'-9"	0.82	53
6'-0"	3'-11"	4'-3"	3'-3"	8'-9"	3'-6"	3'-2"	7'-0"	3'-0"	0.95	64
7'-0"	4'-2"	4'-6"	3'-5"	10'-0"	4'-0"	3'-2"	8'-0"	3'-3"	1.10	78
8'-0"	4'-10"	5'-3"	3'-10"	11'-3"	4'-6"	3'-7"	9'-0"	3'-9"	1.35	100
9'-0"	5'-2"	5'-6"	3'-11"	12'-6"	4'-9"	3'-8"	10'-0"	4'-0"	1.54	117
10'-0"	5'-5"	5'-10"	4'-1"	13'-9"	5'-3"	3'-9"	11'-0"	4'-3"	1.73	137

MATERIAL REQUIRED

FLOOR SYSTEM AND PARAPETS

23.1 Cu. yds. "A" (1:2:4) Concrete

35¾ Bbls. Cement.
10⅜ Cu. yds. Sand
21¼ Cu. yds. Stone.

2479 lbs. Steel Reinforcing Bars.

TABLE OF BARS

Mk.	№	Stock	Bending Diagram.
a.	19.	1"ϕ x 19'-3"	8'-10½"
b.	2	1"ϕ x 21'-3"	1'-2" 1'-9" 6'-3" 2'-5"
c.	16.	1"ϕ x 20'-3"	10½" 1'-9" 6'-3" 2'-0⅝"
d.	28	⅝"ϕ x 2'-0"	Dowels in abutments.
t.	16.	½"ϕ x 20'-0	Transverse in slab.
h.	10.	½"ϕ x 18'-9"	Horizontal in parapets
v.	34.	½"ϕ x 4'-6"	Vertical in parapets.

SLAB & PARAPET DETAILS

NOTE

Floor of bridge shall conform to grade of road. On level grade, slope top of slab ⅛" per foot.

Depth of foundations to be determined by local conditions.

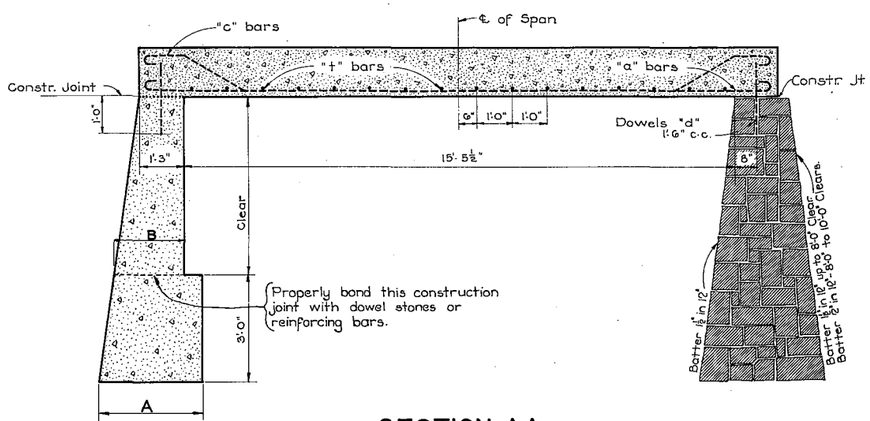
Quantities given are based on dimensions shown.

Wings may be changed to suit local conditions.

If bed of stream requires paving, use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.

ABUTMENTS AND WINGS

Clear	A	B	W	W_1	L	H	W_2	L_1	H_1	Cu. yds. "B" Con. 1:2½:3	Bbls. Cement	Cu. yds. Sand	Cu. yds. Stone.
2'-0"	2'-0"	1'-4"	2'-2"	1'-9"	4'-0"	2'-0"	1'-9"	3'-0"	1'-9"	16.9	22	8¼	16¼
3'-0"	2'-0"	1'-4½"	2'-9"	1'-9"	5'-0"	2'-3"	1'-9"	4'-0"	2'-0"	21.4	27¾	10¼	20½
4'-0"	2'-4"	1'-7"	3'-3"	1'-9"	6'-6"	2'-9"	1'-9"	5'-0"	2'-3"	28.1	36½	13½	27
5'-0"	2'-11"	2'-0"	3'-9"	2'-1"	7'-6"	3'-3"	1'-9"	6'-0"	2'-9"	38.1	49½	18¼	36¾
6'-0"	3'-6"	2'-5"	4'-3"	2'-3"	8'-9"	3'-6"	1'-11"	7'-0"	3'-0"	50.0	65	24	48
7'-0"	4'-0"	2'-9⅞"	4'-8"	2'-7"	10'-0"	4'-0"	2'-1"	8'-0"	3'-3"	63.0	81¾	30¼	60½
8'-0"	4'-5"	3'-2⅝"	5'-1"	2'-10"	11'-3"	4'-6"	2'-5"	9'-0"	3'-9"	77.8	101	37½	74¾
9'-0"	4'-11"	3'-7"	5'-7"	3'-0"	12'-6"	4'-9"	2'-7"	10'-0"	4'-0"	94.7	123	45½	91
10'-0"	5'-4"	4'-0"	6'-0"	3'-3"	13'-9"	5'-3"	2'-8"	11'-0"	4'-3"	112.8	146½	54¼	108½



SECTION AA

APPROVED Feb. 14, 1928

E E Brownlow BRIDGE ENGINEER

APPROVED.....

W A Bugler ASS'T. CHIEF ENGINEER

COMMONWEALTH OF PENNSYLVANIA.

DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION.
STANDARD

REINFORCED CONCRETE BRIDGE

SPAN 16 FT. ROADWAY 18 FT.
SKEW - 75° L

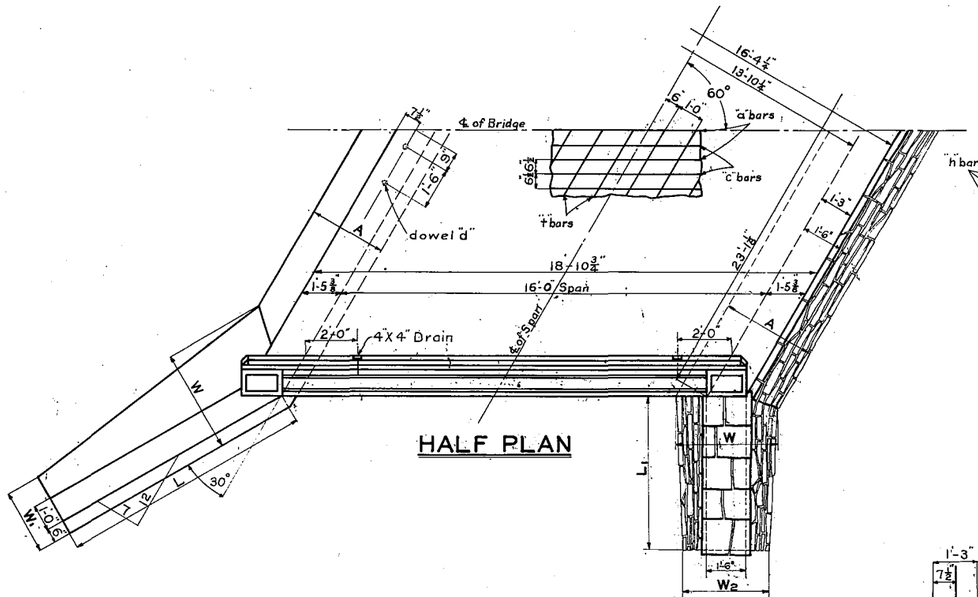
Scales ½" & 1" = 1'-0"

616-B 75

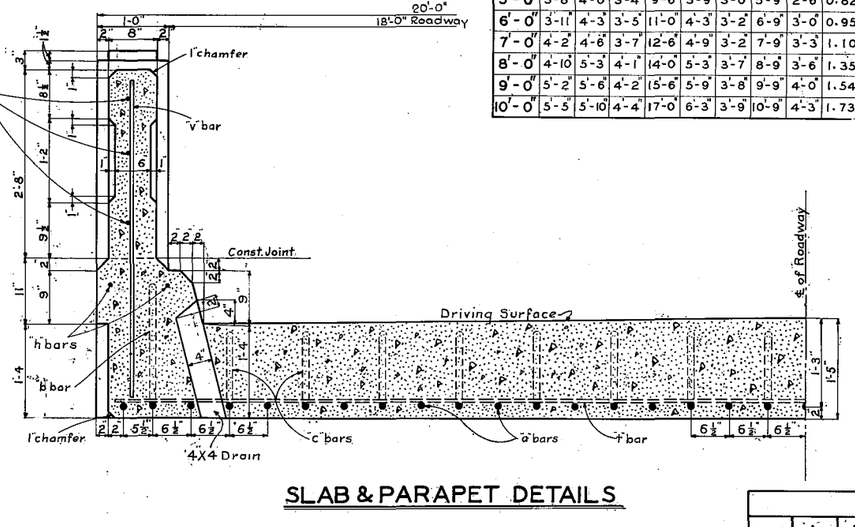
Made by : W.B.H
Checked by : A.F.W. 12-28-27.

IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

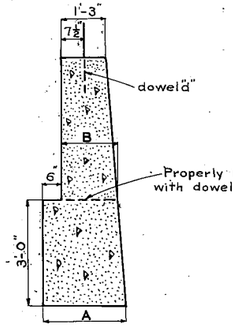
Revised 7-23-32 Stone Masonry W.C.T.



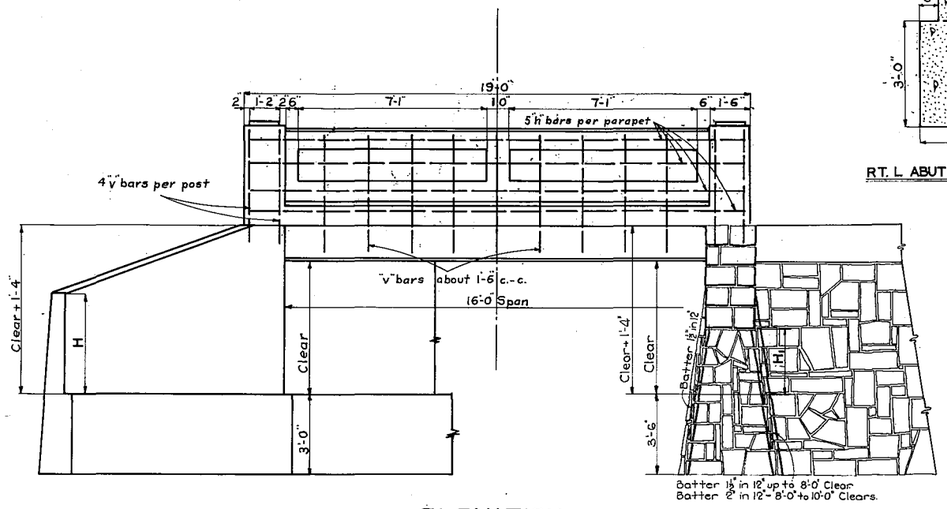
HALF PLAN



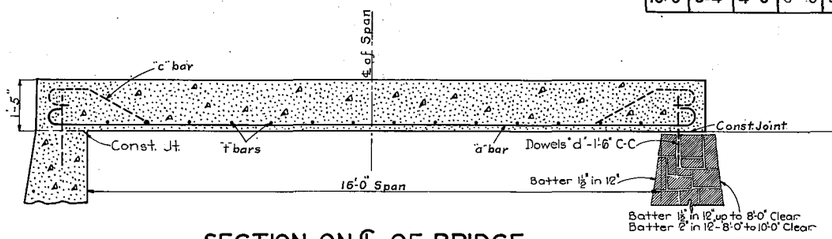
SLAB & PARAPET DETAILS



RT. L. ABUTMENT SECTION



ELEVATION



SECTION ON ℄ OF BRIDGE

NOTE

Floor of bridge shall conform to grade of road. On level grade slope top of slab at least 1/16" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.

STONE ABUTMENTS & WINGS

CLEAR	A	W	W1	L	H	W2	L1	H1	CU. YDS. PER FOOT ONE ABUT	TOTAL CU. YDS. TWO ABUT.
2'-0"	2'-11"	3'-3"	2'-11"	5'-0"	2'-3"	2'-9"	2'-9"	1'-6"	0.45	28.0
3'-0"	3'-2"	3'-6"	3'-1"	6'-6"	2'-9"	2'-11"	3'-9"	2'-0"	0.56	37.0
4'-0"	3'-5"	3'-9"	3'-2"	8'-0"	3'-3"	2'-11"	4'-9"	2'-3"	0.68	47.0
5'-0"	3'-8"	4'-0"	3'-4"	9'-6"	3'-9"	3'-0"	5'-9"	2'-6"	0.82	60.0
6'-0"	3'-11"	4'-3"	3'-5"	11'-0"	4'-3"	3'-2"	6'-9"	3'-0"	0.95	73.0
7'-0"	4'-2"	4'-6"	3'-7"	12'-6"	4'-9"	3'-2"	7'-9"	3'-3"	1.10	89.0
8'-0"	4'-10"	5'-3"	4'-1"	14'-0"	5'-3"	3'-7"	8'-9"	3'-6"	1.35	113.0
9'-0"	5'-2"	5'-6"	4'-2"	15'-6"	5'-9"	3'-8"	9'-9"	4'-0"	1.54	134.0
10'-0"	5'-5"	5'-10"	4'-4"	17'-0"	6'-3"	3'-9"	10'-9"	4'-3"	1.73	156.0

MATERIAL REQUIRED

FLOOR SYSTEM AND PARAPETS.

23.3 Cu.Yds. A (1:2:4) Concrete — 36¼ Bbls. Cement. 10¾ Cu.Yds. Sand. 21½ Cu.Yds. Stone.

2477 Lbs. Reinforcing Bars.

TABLE OF BARS.

Mark	No.	Stock.	Bending Diagram.
a	19	1"X19'-3"	1⅛", 17'-9", 1⅛"
b	2	1"X 21'-3"	1'-2", 1'-9", 12'-6", 1'-9", 1'-2", 2'-5", 1'-8", 1⅛", R 2½"
c	16	1"X20'-0"	2½", 10½", 1'-9", 6'-3", 2'-0⅛", 1'-0", symmetrical about this ℄
d	32	¾"X 2'-0"	Dowels in Abutments
t	14	½"X 22'-6"	Transverse in Slab
h	10	½"X 18'-9"	Horizontal in Parapet
v	34	½"X 4'-6"	Vertical in Parapet

ABUTMENTS & WINGS

Clear	A	B	W	W1	L	H	W2	L1	H1	Cu.Yds. B'conc. 1:2½:5	Bbls. Cement	Cu.Yds Sand	Cu.Yds Stone
2'-0"	2'-0"	1'-4"	2'-2"	1'-9"	5'-0"	2'-3"	1'-9"	2'-9"	1'-6"	18.2	23¾	8¾	17½
3'-0"	2'-0"	1'-4½"	2'-9"	1'-9"	6'-6"	2'-9"	1'-9"	3'-9"	2'-0"	24.3	31½	11¾	23½
4'-0"	2'-4"	1'-7"	3'-3"	2'-1"	8'-0"	3'-3"	1'-9"	4'-9"	2'-3"	32.4	42	15½	31¼
5'-0"	2'-11"	2'-0"	3'-9"	2'-5"	9'-6"	3'-9"	1'-9"	5'-9"	2'-6"	44.0	57	21¼	42¼
6'-0"	3'-6"	2'-5"	4'-3"	2'-9"	11'-0"	4'-3"	1'-11"	6'-9"	3'-0"	57.7	75	27¾	55½
7'-0"	4'-0"	2'-9½"	4'-8"	3'-0"	12'-6"	4'-9"	2'-1"	7'-9"	3'-3"	72.9	94¾	35	70¼
8'-0"	4'-5"	3'-2½"	5'-1"	3'-3"	14'-0"	5'-3"	2'-3"	8'-9"	3'-6"	89.6	116¼	43	86¼
9'-0"	4'-11"	3'-7"	5'-7"	3'-6"	15'-6"	5'-9"	2'-7"	9'-9"	4'-0"	109.7	142½	52¾	105½
10'-0"	5'-4"	4'-0"	6'-0"	3'-9"	17'-0"	6'-3"	2'-9"	10'-9"	4'-3"	130.9	170	63	126

APPROVED Oct. 19, 1927
E E Worthington BRIDGE ENGINEER
APPROVED
Wm. Cunningham ASST. CHIEF ENGINEER

COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION

STANDARD

REINFORCED CONCRETE BRIDGE

SPAN 16 FT. ROADWAY 18 FT.
SKEW 60° L.

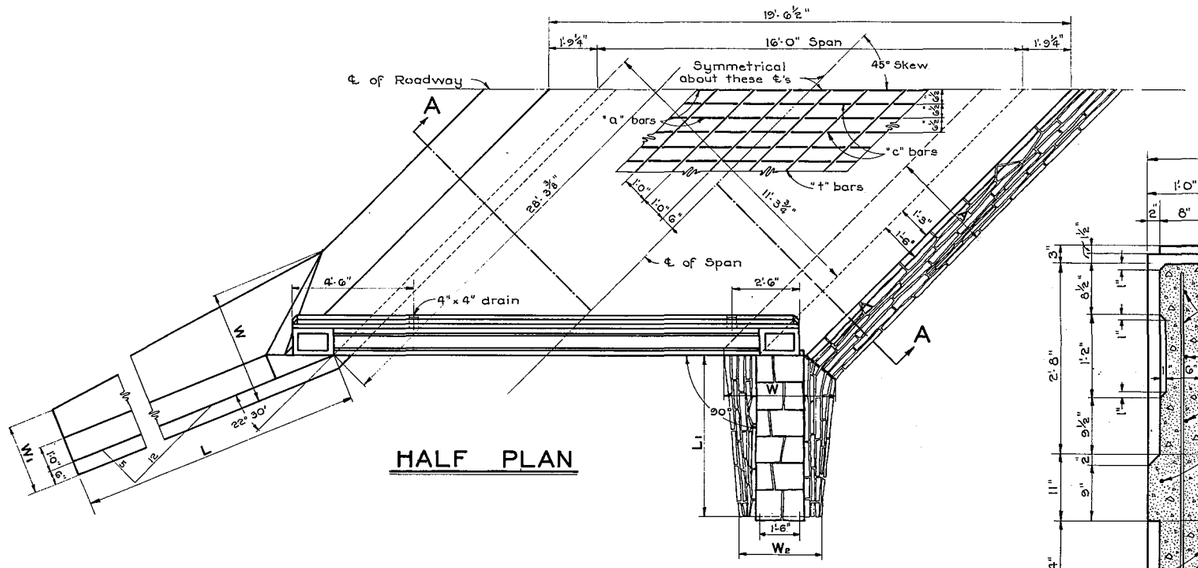
SCALE 3/8", 1/2" & 1"=1'-0"

616 B-60

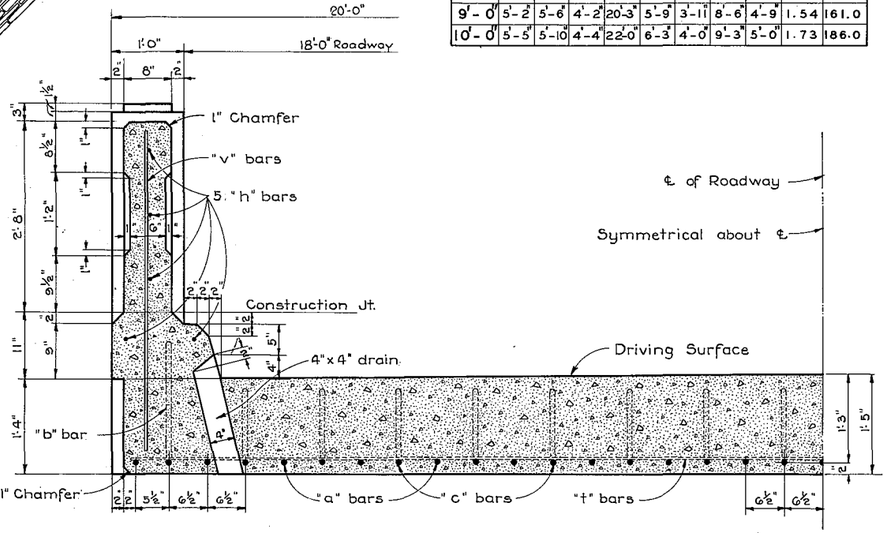
Made by-P.F.W.
Checked by- W.B.M. 10-13-27.

"IMPERIAL" TRACING CLOTH K & E CO., N.Y.

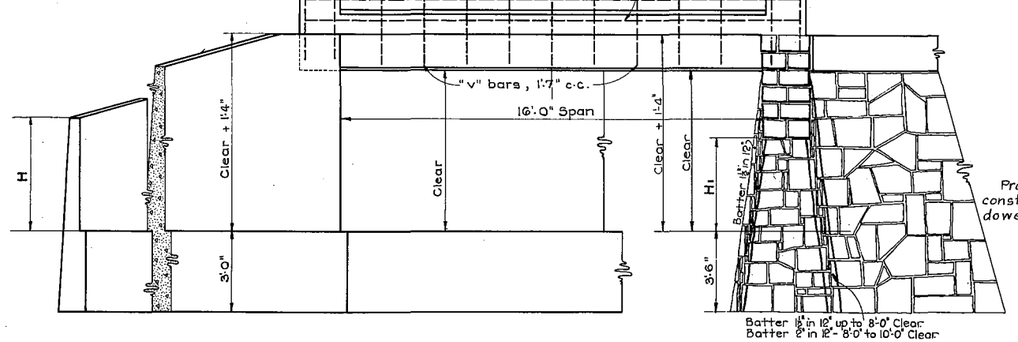
Revised 7-23-32 Stone Masonry W.C.T.



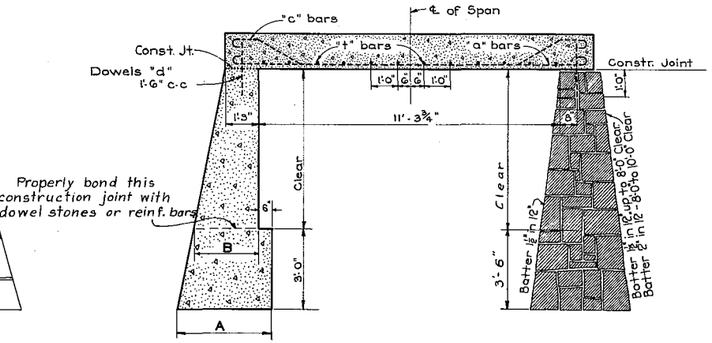
HALF PLAN



SLAB & PARAPET DETAILS



ELEVATION



SECTION AA

NOTE

Floor of bridge shall conform to grade of road. On level grade slope top of slab at least 1/16" per foot.

Depth of foundations to be determined by local conditions.

Quantities given are based on dimensions shown.

Wings may be changed to suit local conditions.

If bed of stream requires paving, use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.

STONE ABUTMENTS & WINGS

CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	CU.YDS. PER FOOT ONE ABUT.	TOTAL CU. YDS. TWO ABUT.
2'-0"	2'-11"	3'-3"	2'-11"	6'-6"	2'-3"	2'-10"	2'-3"	1'-9"	0.45	34.0
3'-0"	3'-2"	3'-6"	3'-1"	8'-6"	2'-9"	2'-11"	3'-3"	2'-3"	0.56	45.0
4'-0"	3'-5"	3'-9"	3'-2"	10'-3"	3'-3"	3'-0"	4'-0"	2'-6"	0.68	57.0
5'-0"	3'-8"	4'-0"	3'-4"	12'-3"	3'-9"	3'-2"	5'-0"	3'-0"	0.82	72.0
6'-0"	3'-11"	4'-3"	3'-5"	14'-3"	4'-3"	3'-3"	5'-9"	3'-6"	0.95	88.0
7'-0"	4'-2"	4'-6"	3'-7"	16'-3"	4'-9"	3'-4"	6'-9"	3'-9"	1.10	106.0
8'-0"	4'-10"	5'-3"	4'-1"	18'-3"	5'-3"	3'-9"	7'-6"	4'-3"	1.35	136.0
9'-0"	5'-2"	5'-6"	4'-2"	20'-3"	5'-9"	3'-11"	8'-6"	4'-9"	1.54	161.0
10'-0"	5'-5"	5'-10"	4'-4"	22'-0"	6'-3"	4'-0"	9'-3"	5'-0"	1.73	186.0

MATERIAL REQUIRED

FLOOR SYSTEM AND PARAPETS

24 Cu. yds. Class "A" (1:2:4) Conc. — 37 Bbls. Cement; 11 Cu. yds. Sand; 22 Cu. yds. Stone.

2603 lbs. Reinforcing Bars.

TABLE OF BARS

Mk.	Nº	Stock	Bending Diagram.
a	19	1"ø x 20'-3"	9'-4½" 1½" 2½" R. ℄ Symmetrical about ℄
b	2	1"ø x 22'-3"	1'-8" 1'-9" 6'-3" 2½" R 1⅝ 2'-5" 1'-6"
c	16	1"ø x 21'-0"	1'-4½" 1'-9" 6'-3" 2½" R 2½" 2'-0⅛" 1'-0"
d	38	¾"ø x 2'-0"	Dowels in abutments.
t	12	½"ø x 27'-6"	Transverse in slab.
h	10	½"ø x 18'-9"	Horizontal in parapets.
v	34	½"ø x 4'-6"	Vertical in parapets

ABUTMENTS & WINGS

Clear	A	B	W	W_1	L	H	W_2	L_1	H_1	Cu. Yds. "D" Conc. 1:2½:3	Bbls. Cement	Cu. Yds. Sand.	Cu. Yds. Stone.
2'-0"	2'-0"	2'-10"	2'-2"	1'-9"	6'-6"	2'-3"	1'-9"	2'-3"	1'-9"	22.7	29½	11	21¾
3'-0"	2'-0"	2'-10"	2'-9"	1'-9"	8'-6"	2'-9"	1'-9"	3'-3"	2'-3"	29.2	38	14	28
4'-0"	2'-4"	3'-3⅜"	3'-3"	2'-1"	10'-3"	3'-3"	1'-9"	4'-0"	2'-6"	38.8	50½	18¾	37¼
5'-0"	2'-11"	4'-1⅝"	3'-9"	2'-5"	12'-3"	3'-9"	1'-11"	5'-0"	3'-0"	53.1	69	25½	51
6'-0"	3'-6"	4'-11⅞"	4'-3"	2'-8"	14'-3"	4'-3"	2'-3"	5'-9"	3'-6"	69.0	89½	33¼	66½
7'-0"	4'-0"	5'-7⅞"	4'-8"	3'-0"	16'-3"	4'-9"	2'-5"	6'-9"	3'-9"	87.3	113¼	42	84
8'-0"	4'-5"	6'-3"	5'-1"	3'-3"	18'-3"	5'-3"	2'-8"	7'-6"	4'-3"	108.3	140½	52	104¼
9'-0"	4'-11"	6'-11⅝"	5'-7"	3'-6"	20'-3"	5'-9"	3'-0"	8'-6"	4'-9"	131.3	170½	63¼	126¼
10'-0"	5'-4"	7'-6⅛"	6'-0"	3'-9"	22'-0"	6'-3"	3'-1"	9'-3"	5'-0"	155.4	201¾	74¾	149½

APPROVED Feb. 14, 1928

E E Brownlow BRIDGE ENGINEER

APPROVED

M Bunkley ASST. CHIEF ENGINEER

COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF HIGHWAYS

BRIDGE DIVISION

STANDARD

REINFORCED CONCRETE BRIDGE

SPAN 16 FT. ~ ROADWAY 18 FT.

SKEW 45° L

Scales 3/8" & 1"=1'-0"

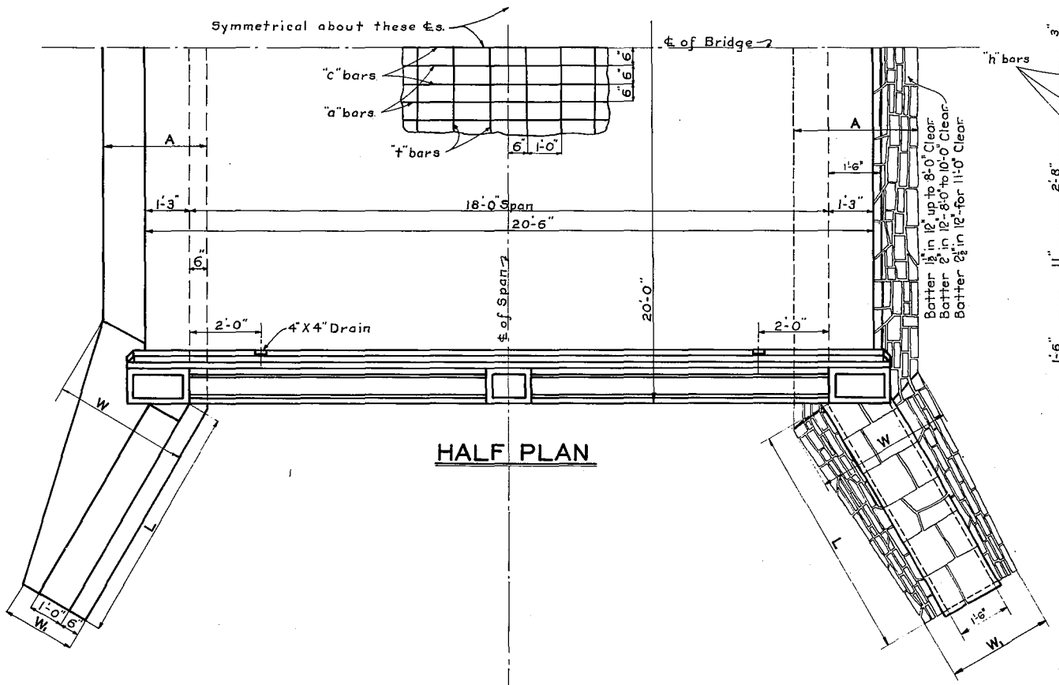
616-B 45

Made by: W.B.H

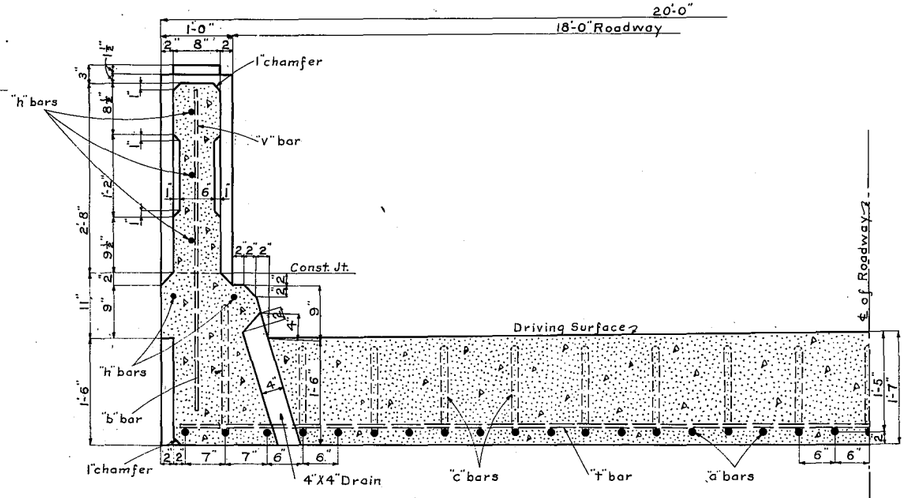
Checked by: O.T.W. 12-12-27.

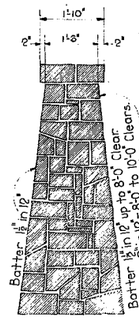
IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

Revised 7-23-32 W.C.T. Stone Masonry.



HALF PLAN

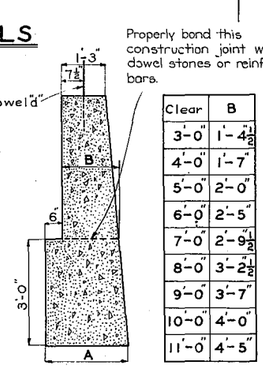




TYPICAL WING SECTION
(FOR STONE ABUTMENTS ONLY)

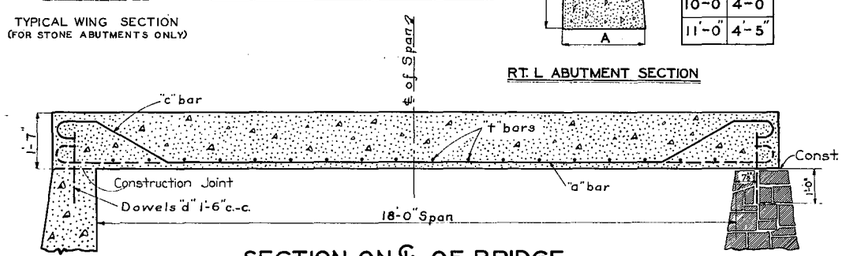
SLAB & PARAPET DETAILS

STONE ABUTMENTS & WINGS							
CLEAR	A	W	W1	L	H	CU.YDS. PER FOOT ONE ABUT.	TOTAL CU.YDS. TWO ABUT.
3'-0"	3'-2"	3'-6"	2'-11"	4'-6"	2'-3"	0.56	33
4'-0"	3'-5"	3'-9"	3'-0"	5'-9"	2'-6"	0.68	42
5'-0"	3'-8"	4'-0"	3'-2"	6'-9"	3'-0"	0.82	53
6'-0"	3'-11"	4'-3"	3'-2"	8'-0"	3'-3"	0.95	65
7'-0"	4'-2"	4'-6"	3'-4"	9'-0"	3'-9"	1.10	78
8'-0"	4'-10"	5'-4"	3'-8"	10'-0"	4'-0"	1.35	99
9'-0"	5'-2"	5'-7"	3'-10"	11'-3"	4'-6"	1.54	116
10'-0"	5'-5"	5'-11"	3'-11"	12'-3"	4'-9"	1.73	135
11'-0"	6'-4"	6'-10"	4'-5"	13'-6"	5'-3"	2.10	169

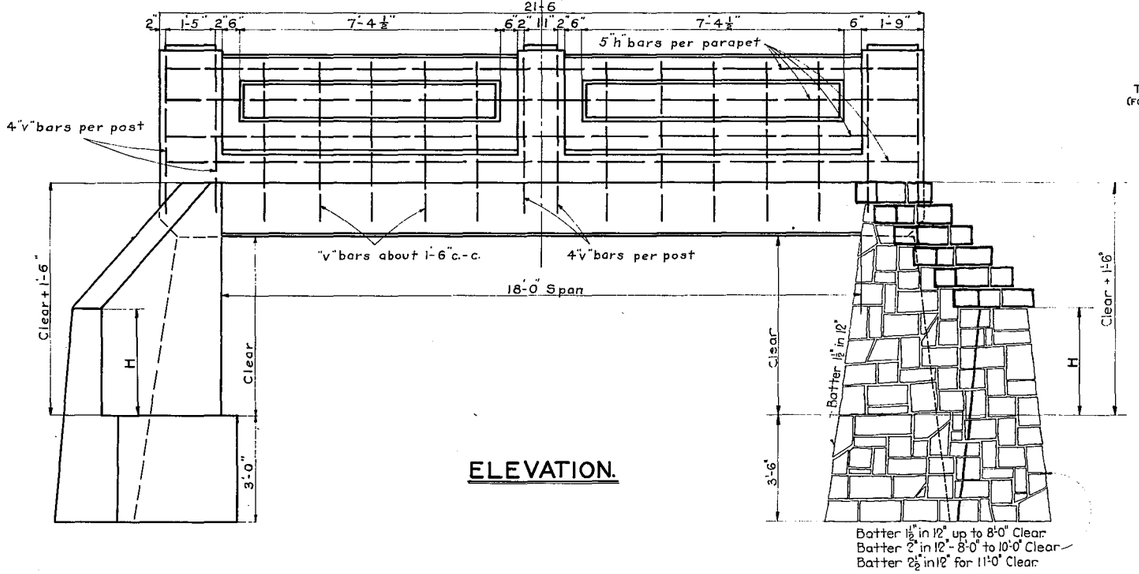


Clear	B
3'-0"	1'-4½"
4'-0"	1'-7"
5'-0"	2'-0"
6'-0"	2'-5"
7'-0"	2'-9½"
8'-0"	3'-2½"
9'-0"	3'-7"
10'-0"	4'-0"
11'-0"	4'-5"

R.T. L. ABUTMENT SECTION



SECTION ON ℄ OF BRIDGE.



ELEVATION.

NOTE

Floor of bridge shall conform to grade of road. On level grade slope top of slab at least 1/16" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.

MATERIAL REQUIRED

FLOOR SYSTEM AND PARAPETS.

28.2 Cu.Yds. "A" (1:2:4) Concrete	43¾ Bbls. Cement 13 Cu.Yds. Sand. 26 Cu.Yds. Stone.

2838 Lbs. Reinforcing Bars.

TABLE OF BARS.

Mark.	No.	Stock.	Bending Diagram.
a	20	1"ϕ X 21'-3"	19'-9"
b	2	1"ϕ X 23'-6"	1'-5" 2'-0" 13'-9" 2'-0" 1'-5" 2'-8"
c	17	1"ϕ X 21'-9"	9½" 2'-0" 7'-0" 2'-3¾" Symmetrical about this ℄
d	28	¾"ϕ X 2'-0"	Dowels in Abutments.
t	18	½"ϕ X 19'-6"	Transverse in Slab.
h	10	½"ϕ X 21'-3"	Horizontal in Parapets.
v	44	½"ϕ X 4'-6"	Vertical in Parapets.

ABUTMENTS & WINGS.

Clear	A	W	W1	L	H	Cu.Yds. of Conc. 1:2:4 in 1 Abut.	Bbls. Cement	Cu.Yds. Sand.	Cu.Yds. Stone.
3'-0"	2'-0"	2'-10"	2'-0"	4'-6"	2'-3"	21¼	27½	10¼	20½
4'-0"	2'-4"	3'-4"	2'-0"	5'-9"	2'-6"	28¼	36¾	13½	27¼
5'-0"	2'-11"	3'-10"	2'-0"	6'-9"	3'-0"	37¾	49	18¼	36½
6'-0"	3'-6"	4'-4"	2'-1"	8'-0"	3'-3"	49½	62¼	23¾	47½
7'-0"	4'-0"	4'-9"	2'-5"	9'-0"	3'-9"	62½	81¼	30	60¼
8'-0"	4'-5"	5'-2"	2'-7"	10'-0"	4'-0"	76¼	99	36¾	73¼
9'-0"	4'-11"	5'-7"	2'-10"	11'-3"	4'-6"	93¾	121¾	45	90¼
10'-0"	5'-4"	6'-0"	3'-0"	12'-3"	4'-9"	111	144	53½	106¾
11'-0"	5'-9"	6'-6"	3'-3"	13'-6"	5'-3"	132¾	172¼	63¾	124¾

APPROVED Feb. 14, 1928
E E Brandow BRIDGE ENGINEER.
APPROVED
M Eberlein ASST. CHIEF ENGINEER.

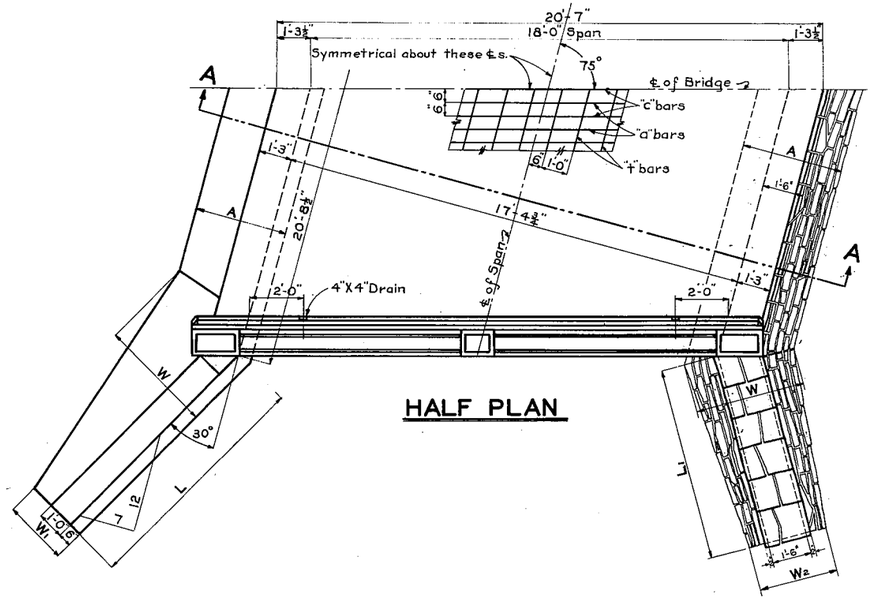
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION
STANDARD
REINFORCED CONCRETE BRIDGE.
SPAN 18 FT. ROADWAY 18 FT.

Made by - P.F.W.
Checked by - W.B.H 10-20-27.

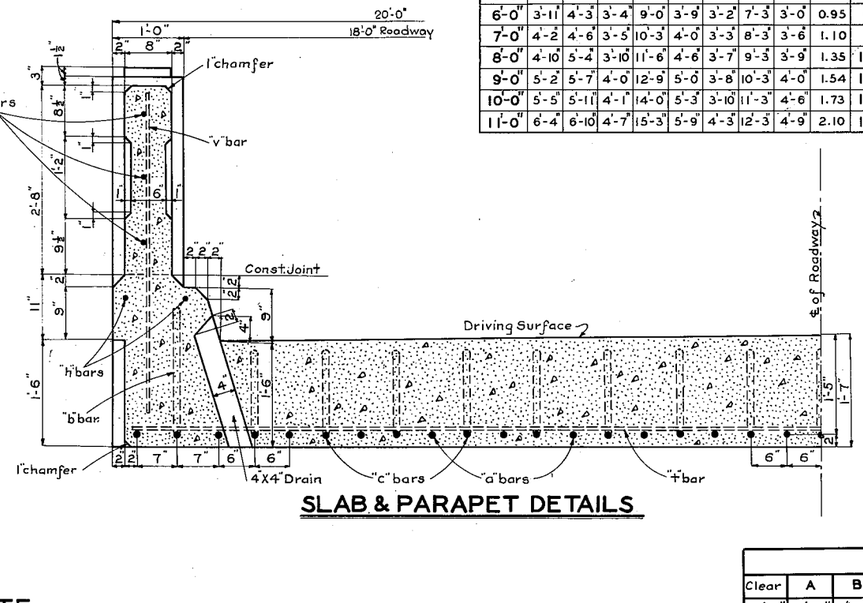
SCALE ½" & 1'-1-0"

618-B

Revised 7-23-32 Stone Masonry W.C.T.



HALF PLAN



SLAB & PARAPET DETAILS

STONE ABUTMENTS & WINGS

CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	CU.YDS. PER FOOT ONE ABUTTING ABUT.	TOTAL CU.YDS. TWO ABUTTING ABUT.
3'-0"	3'-2"	3'-6"	3'-0"	5'-3"	2'-6"	2'-11"	4'-0"	2'-0"	0.56	33
4'-0"	3'-5"	3'-9"	3'-1"	6'-6"	2'-9"	2'-11"	5'-0"	2'-3"	0.68	42
5'-0"	3'-8"	4'-0"	3'-2"	7'-9"	3'-3"	3'-1"	6'-3"	2'-9"	0.82	54
6'-0"	3'-11"	4'-3"	3'-4"	9'-0"	3'-9"	3'-2"	7'-3"	3'-0"	0.95	66
7'-0"	4'-2"	4'-6"	3'-5"	10'-3"	4'-0"	3'-3"	8'-3"	3'-6"	1.10	80
8'-0"	4'-10"	5'-4"	3'-10"	11'-6"	4'-6"	3'-7"	9'-3"	3'-9"	1.35	101
9'-0"	5'-2"	5'-7"	4'-0"	12'-9"	5'-0"	3'-8"	10'-3"	4'-0"	1.54	119
10'-0"	5'-5"	5'-11"	4'-1"	14'-0"	5'-3"	3'-10"	11'-3"	4'-6"	1.73	138
11'-0"	6'-4"	6'-10"	4'-7"	15'-3"	5'-9"	4'-3"	12'-3"	4'-9"	2.10	177

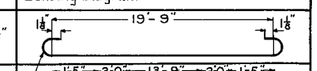
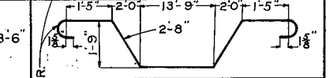
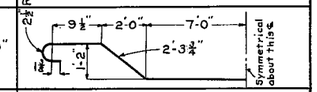
MATERIAL REQUIRED.

FLOOR SYSTEM AND PARAPETS.

28.2 Cu.Yds. "A" (1:2:4) Concrete. — 43¾ Bbls. Cement; 13 Cu.Yds. Sand; 26 Cu.Yds. Stone.

2844 Lbs. Reinforcing Bars.

TABLE OF BARS.

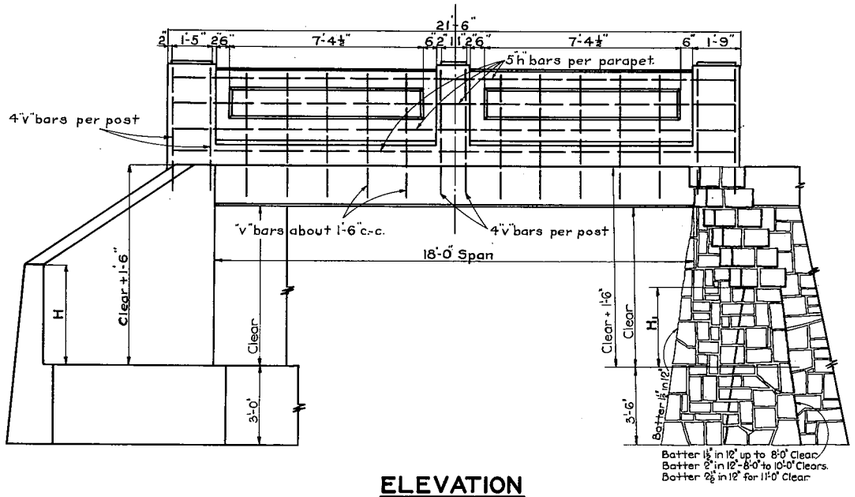
Mark.	No.	Stock.	Bending Diagram.
a	20	1"ϕ X 21'-3"	
b	2	1"ϕ X 23'-6"	
c	17	1"ϕ X 21'-9"	
d	28	¾"ϕ X 2'-0"	Dowels in Abutments.
t	18	½"ϕ X 20'-0"	Transverse in Slab.
h	10	½"ϕ X 21'-3"	Horizontal in Parapets.
v	44	½"ϕ 4'-6"	Vertical in Parapets.

NOTE

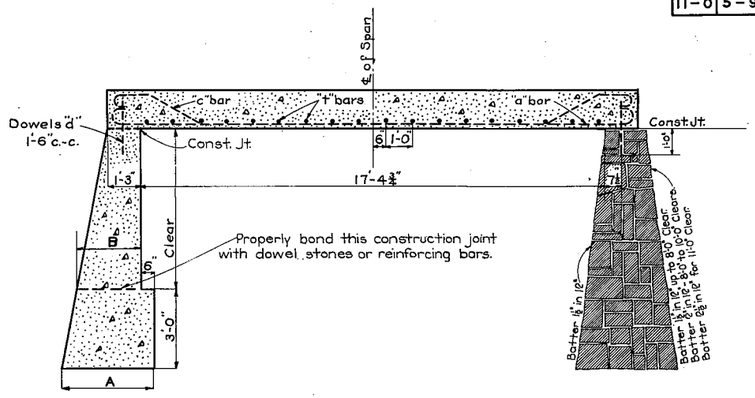
Floor of bridge shall conform to grade of road. On level grade slope top of slab at least ⅛" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving, use 6" of concrete or 8' of stone masonry and a 12" curtain wall of sufficient depth at each end.

ABUTMENTS & WINGS.

Clear	A	B	W	W_1	L	H	W_2	L_1	H_1	Cu.Yds. "A" Concr. (1:2½:5)	Bbls. Cement	Cu.Yds. Sand	Cu.Yds. Stone.
3'-0"	2'-0"	1'-4½"	2'-10"	2'-0"	5'-3"	2'-6"	2'-0"	4'-0"	2'-0"	22.2	28¾	10½	21¼
4'-0"	2'-4"	1'-7"	3'-4"	2'-0"	6'-6"	2'-9"	2'-0"	5'-0"	2'-3"	29.2	38	14	28
5'-0"	2'-11"	2'-0"	3'-10"	2'-1"	7'-9"	3'-3"	2'-0"	6'-3"	2'-9"	39.3	51	19	37¾
6'-0"	3'-6"	2'-5"	4'-4"	2'-5"	9'-0"	3'-9"	2'-0"	7'-3"	3'-0"	51.3	66½	24¾	49¼
7'-0"	4'-0"	2'-9½"	4'-9"	2'-7"	10'-3"	4'-0"	2'-3"	8'-3"	3'-6"	64.5	83¾	31	62
8'-0"	4'-5"	3'-2½"	5'-2"	2'-10"	11'-6"	4'-6"	2'-5"	9'-3"	3'-9"	79.1	102¾	38	76
9'-0"	4'-11"	3'-7"	5'-7"	3'-1"	12'-9"	5'-0"	2'-7"	10'-3"	4'-0"	96.5	125¼	46½	92¾
10'-0"	5'-4"	4'-0"	6'-0"	3'-3"	14'-0"	5'-3"	2'-10"	11'-3"	4'-6"	114.8	149	55½	110½
11'-0"	5'-9"	4'-5"	6'-6"	3'-6"	15'-3"	5'-9"	3'-0"	12'-3"	4'-9"	135.9	176½	65¼	130¾



ELEVATION



SECTION AA

APPROVED Feb. 14, 1928
E.E. Brownlow — BRIDGE ENGINEER.
APPROVED
W.H. Sunpley — ASST. CHIEF ENGINEER.

COMMONWEALTH OF PENNSYLVANIA.
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION.

STANDARD REINFORCED CONCRETE BRIDGE.

SPAN 18 FT. ROADWAY 18 FT.
SKEW 75° L

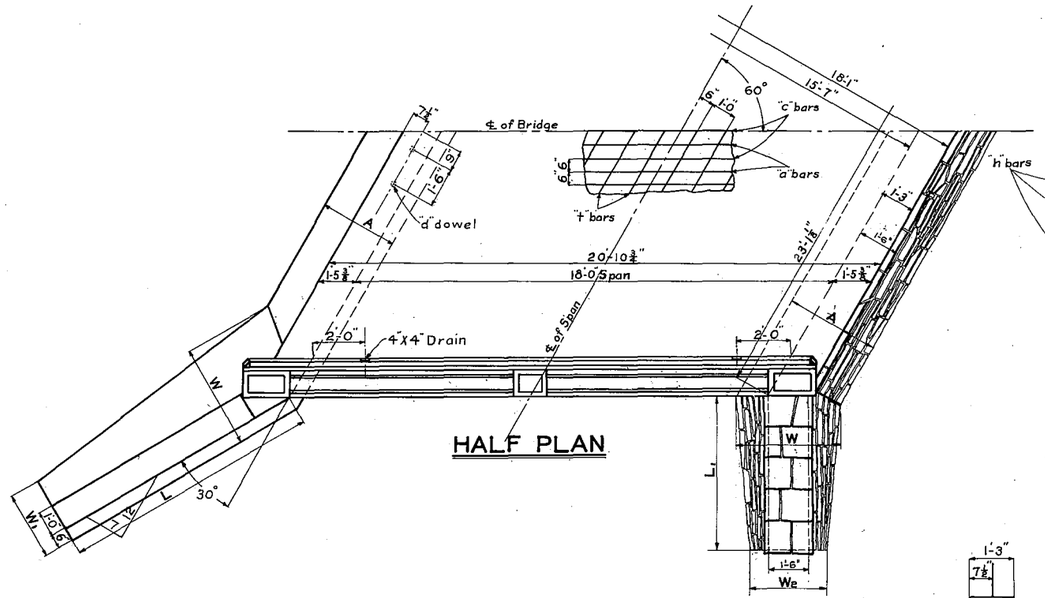
SCALE ⅜" & 1'-1'-0"

618B-75

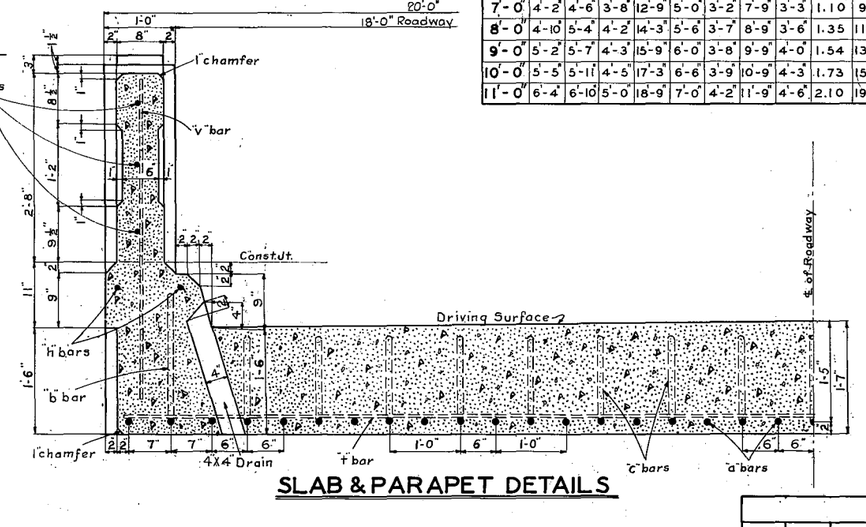
Made by - P.F.W.
Checked by - W.B.M. 2-1-28

IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INCL., N. Y.

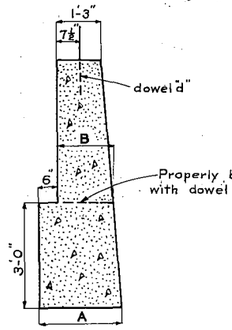
Revised 7-23-32 Stone Masonry W.C.T.



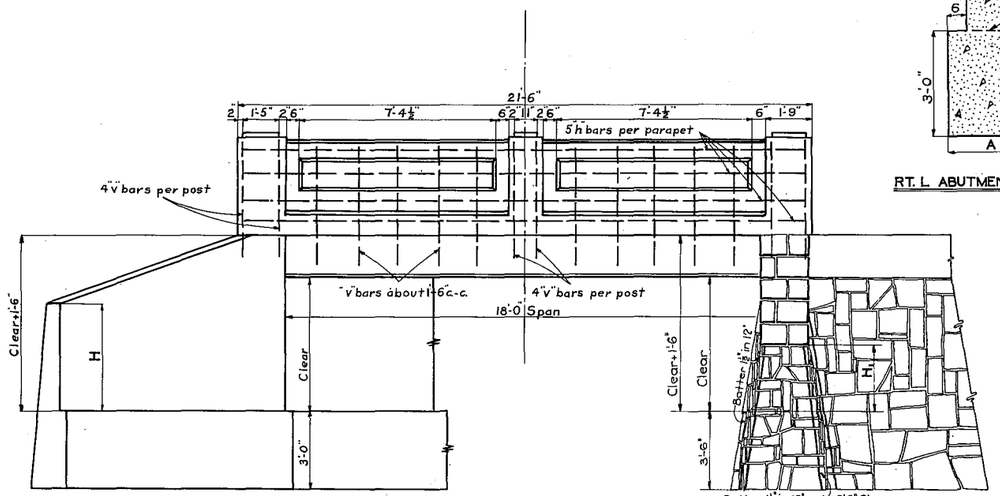
HALF PLAN



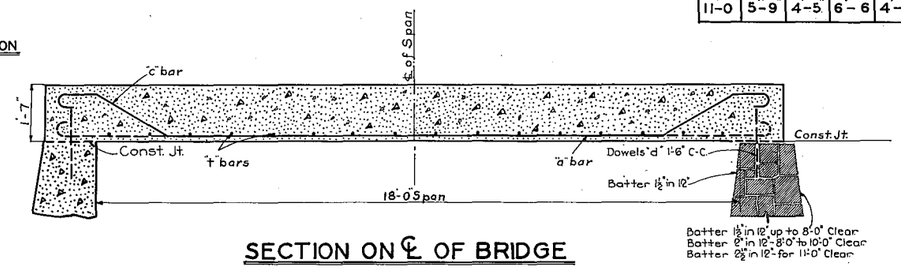
SLAB & PARAPET DETAILS



RT. L. ABUTMENT SECTION



ELEVATION



SECTION ON ℄ OF BRIDGE

STONE ABUTMENTS & WINGS

CLEAR	A	W	W1	L	H	W2	L1	H1	CU.YDS. PER FOOT ONE ABUT.	TOTAL CU.YDS. TWO ABUT.
3'-0"	3'-2"	3'-6"	3'-2"	6'-9"	3'-0"	2'-11"	3'-9"	2'-0"	0.56	38.0
4'-0"	3'-5"	3'-9"	3'-3"	8'-3"	3'-6"	2'-11"	4'-9"	2'-3"	0.68	49.0
5'-0"	3'-8"	4'-0"	3'-5"	9'-9"	4'-0"	3'-0"	5'-9"	2'-6"	0.82	61.0
6'-0"	3'-11"	4'-3"	3'-6"	11'-3"	4'-6"	3'-2"	6'-9"	3'-0"	0.95	75.0
7'-0"	4'-2"	4'-6"	3'-8"	12'-9"	5'-0"	3'-2"	7'-9"	3'-3"	1.10	90.0
8'-0"	4'-10"	5'-4"	4'-2"	14'-3"	5'-6"	3'-7"	8'-9"	3'-6"	1.35	115.0
9'-0"	5'-2"	5'-7"	4'-3"	15'-9"	6'-0"	3'-8"	9'-9"	4'-0"	1.54	136.0
10'-0"	5'-5"	5'-11"	4'-5"	17'-3"	6'-6"	3'-9"	10'-9"	4'-3"	1.73	159.0
11'-0"	6'-4"	6'-10"	5'-0"	18'-9"	7'-0"	4'-2"	11'-9"	4'-6"	2.10	198.0

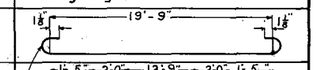
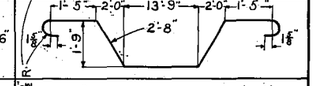
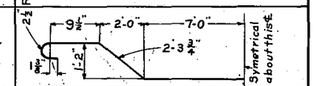
MATERIAL REQUIRED

FLOOR SYSTEM AND PARAPETS

28.6 Cu.Yds. "A" Concrete	44¼ Bbls. Cement. 13¾ Cu.Yds. Sand. 26¾ Cu.Yds. Stone.

2856 Lbs. Reinforcing Bars

TABLE OF BARS

Mark	No.	Stock	Bending Diagram
a	20	1"X21'-3"	
b	2	1"X23'-6"	
c	17	1"X21'-9"	
d	32	¾"X2'-0"	Dowels in Abutments
t	16	½"X22'-6"	Transverse in Slab
h	10	½"X21'-3"	Horizontal in Parapet
v	44	½"X4'-6"	Vertical in Parapet

ABUTMENTS & WINGS

Clear	A	B	W	W1	L	H	W2	L1	H1	Cu.Yds. 1:2:4 Conc.	Bbls. Cement	Cu.Yds. Sand	Cu.Yds. Stone
3'-0"	2'-0"	1'-4⅛"	2'-10"	2'-0"	6'-9"	3'-0"	2'-0"	3'-9"	2'-0"	25.1	32½	12	24¼
4'-0"	2'-4"	1'-7"	3'-4"	2'-3"	8'-3"	3'-6"	2'-0"	4'-9"	2'-3"	33.4	43¼	16	32¼
5'-0"	2'-11"	2'-0"	3'-10"	2'-7"	9'-9"	4'-0"	2'-0"	5'-9"	2'-6"	45.1	58½	21¾	43½
6'-0"	3'-6"	2'-5"	4'-4"	2'-10"	11'-3"	4'-6"	2'-0"	6'-9"	3'-0"	59.0	76½	28½	56¾
7'-0"	4'-0"	2'-9⅛"	4'-9"	3'-1"	12'-9"	5'-0"	2'-1"	7'-9"	3'-3"	74.4	96½	35¾	71½
8'-0"	4'-5"	3'-2⅛"	5'-2"	3'-4"	14'-3"	5'-6"	2'-3"	8'-9"	3'-6"	91.2	118½	43¾	87¾
9'-0"	4'-11"	3'-7"	5'-7"	3'-7"	15'-9"	6'-0"	2'-7"	9'-9"	4'-0"	111.5	144¾	53¾	107¼
10'-0"	5'-4"	4'-0"	6'-0"	3'-10"	17'-3"	6'-6"	2'-9"	10'-9"	4'-3"	132.9	172½	64	127¾
11'-0"	5'-9"	4'-5"	6'-6"	4'-1"	18'-9"	7'-0"	2'-10"	11'-9"	4'-6"	154.4	200½	74¼	148½

NOTE

Floor of bridge shall conform to grade of road. On level grade slope top of slab at least $\frac{1}{16}$" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.

APPROVED Oct. 19, 1927
E E Brownlow BRIDGE ENGINEER
APPROVED
ASST. CHIEF ENGINEER

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION

STANDARD
REINFORCED CONCRETE BRIDGE
SPAN 18 FT. ROADWAY 18 FT.
SKEW 60° L.

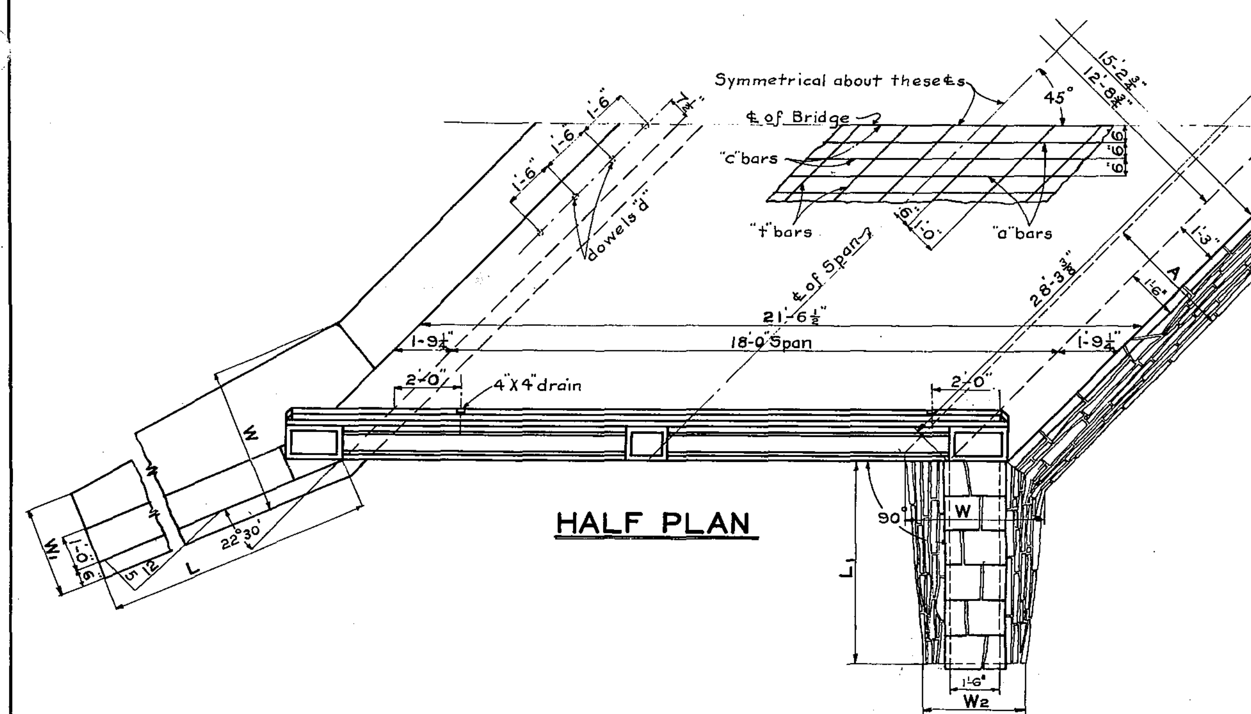
SCALE ⅜" & ½" = 1'-0"

618B-60

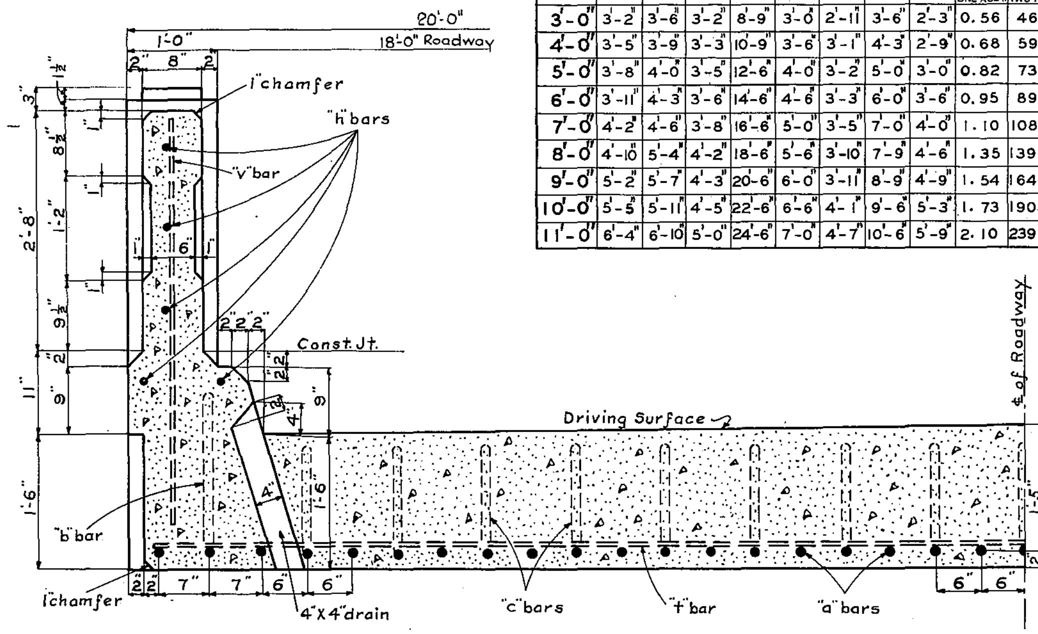
Made by - R.F.W.
Checked by - W.B.H 10-13-27

"Imperial" Tracing Cloth K & E Co., N.Y.

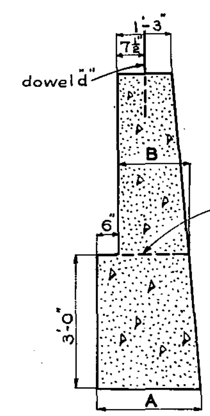
Revised 7-23-32 Stone Masonry W.C.T.



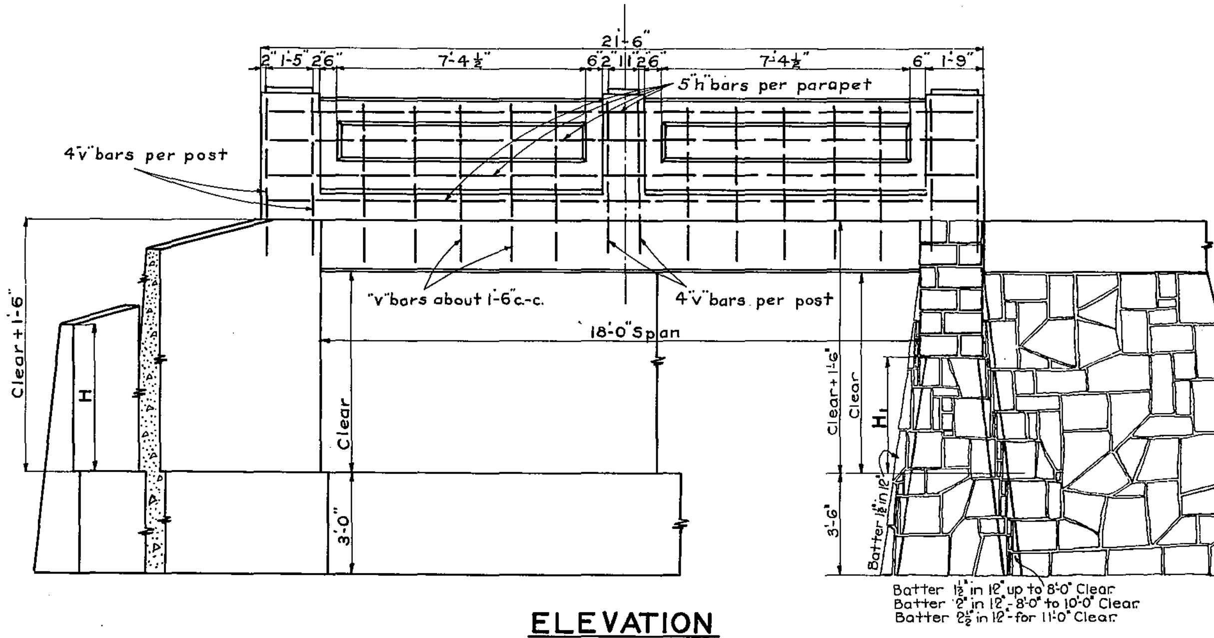
HALF PLAN



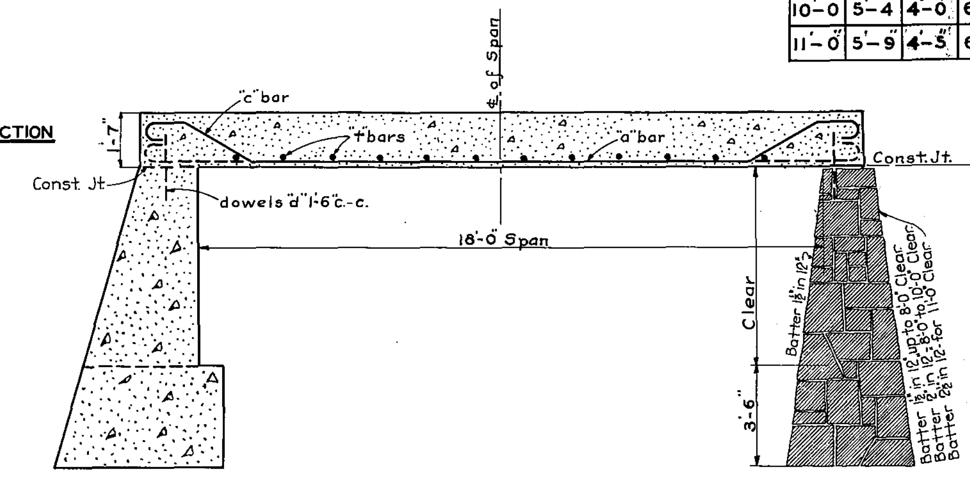
SLAB & PARAPET DETAILS



RT. L ABUTMENT SECTION



ELEVATION



SECTION ON ℄ OF BRIDGE

STONE ABUTMENTS & WINGS

CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	CU.YDS. PER FOOT ONE ABUT.	TOTAL CU.YDS. TWO ABUT.
3'-0"	3'-2"	3'-6"	3'-2"	8'-9"	3'-0"	2'-11"	3'-6"	2'-3"	0.56	46.0
4'-0"	3'-5"	3'-9"	3'-3"	10'-9"	3'-6"	3'-1"	4'-3"	2'-9"	0.68	59.0
5'-0"	3'-8"	4'-0"	3'-5"	12'-6"	4'-0"	3'-2"	5'-0"	3'-0"	0.82	73.0
6'-0"	3'-11"	4'-3"	3'-6"	14'-6"	4'-6"	3'-3"	6'-0"	3'-6"	0.95	89.0
7'-0"	4'-2"	4'-6"	3'-8"	16'-6"	5'-0"	3'-5"	7'-0"	4'-0"	1.10	108.0
8'-0"	4'-10"	5'-4"	4'-2"	18'-6"	5'-6"	3'-10"	7'-9"	4'-6"	1.35	139.0
9'-0"	5'-2"	5'-7"	4'-3"	20'-6"	6'-0"	3'-11"	8'-9"	4'-9"	1.54	164.0
10'-0"	5'-5"	5'-11"	4'-5"	22'-6"	6'-6"	4'-1"	9'-6"	5'-3"	1.73	190.0
11'-0"	6'-4"	6'-10"	5'-0"	24'-6"	7'-0"	4'-7"	10'-6"	5'-9"	2.10	239.0

MATERIAL REQUIRED

FLOOR SYSTEM AND PARAPETS

29.3 Cu.Yds. "A" (1:2:4) Concrete	45½ Bbls. Cement. 13½ Cu.Yds. Sand. 27 Cu.Yds. Stone.

2958 Lbs. Reinforcing Bars

TABLE OF BARS

Mark	No.	Stock	Bending Diagram
a	20	1"ϕ X 22'-3"	1⅛" — 20'-9" — 1⅛"
b	2	1"ϕ X 24'-6"	1'-11" — 2'-0" — 13'-9" — 2'-0" — 1'-11"; 2'-8"; 1'-9"; 1⅝"; 2½" R.
c	17	1"ϕ X 22'-9"	1'-3½" — 2'-0" — 7'-0"; 2'-3¾"; 1'-2"; 1⅜"; Symmetrical about this ℄
d	38	¾"ϕ X 2'-0"	Dowels in Abutments.
t	12	½"ϕ X 27'-6"	Transverse in Slab.
h	10	½"ϕ X 21'-3"	Horizontal in Parapets.
v	44	½"ϕ X 4'-6"	Vertical in Parapets.

ABUTMENTS & WINGS

Clear	A	B	W	W_1	L	H	W_2	L_1	H_1	Cu.Yds. "B" Conc. 1:2½:5	Bbls. Cement	Cu.Yds. Sand.	Cu.Yds. Stone.
3'-0"	2'-0"	1'-4½"	2'-10"	2'-0"	8'-9"	3'-0"	2'-0"	3'-6"	2'-3"	30.5	39½	14¾	29¼
4'-0"	2'-4"	1'-7"	3'-4"	2'-3"	10'-9"	3'-6"	2'-0"	4'-3"	2'-9"	40.5	52½	19½	39
5'-0"	2'-11"	2'-0"	3'-10"	2'-7"	12'-6"	4'-0"	2'-0"	5'-0"	3'-0"	54.5	70½	26¼	52¼
6'-0"	3'-6"	2'-5"	4'-4"	2'-10"	14'-6"	4'-6"	2'-3"	6'-0"	3'-6"	71.1	92¼	34¼	68½
7'-0"	4'-0"	2'-9½"	4'-9"	3'-1"	16'-6"	5'-0"	2'-7"	7'-0"	4'-0"	89.9	116¾	43¾	86½
8'-0"	4'-5"	3'-2½"	5'-2"	3'-4"	18'-6"	5'-6"	2'-10"	7'-9"	4'-6"	110	142¾	53	105¾
9'-0"	4'-11"	3'-7"	5'-7"	3'-7"	20'-6"	6'-0"	3'-0"	8'-9"	4'-9"	133.8	173¾	64¼	128¾
10'-0"	5'-4"	4'-0"	6'-0"	3'-10"	22'-6"	6'-6"	3'-3"	9'-6"	5'-3"	157.5	204½	75¾	151½
11'-0"	5'-9"	4'-5"	6'-6"	4'-1"	24'-6"	7'-0"	3'-6"	10'-6"	5'-9"	189.4	245¾	91¼	182¼

NOTE

Floor of bridge shall conform to grade of road. On level grade slope top of slab at least $\frac{1}{16}$" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.

APPROVED Feb. 14, 1928
E.E. Meadows BRIDGE ENGINEER
APPROVED
[signature] ASST. CHIEF ENGINEER

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION
STANDARD

REINFORCED CONCRETE BRIDGE

SPAN 18 FT. ROADWAY 18 FT.
SKEW 45° L.

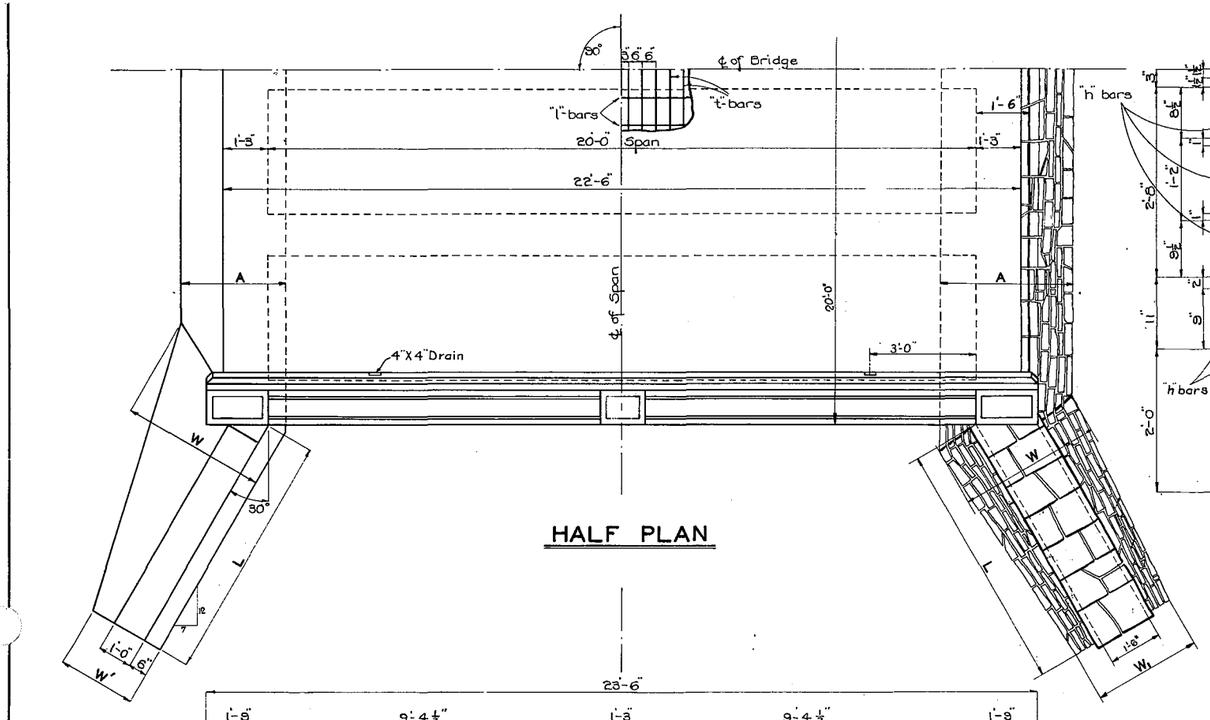
SCALE ⅜" & 1" = 1'-0"

618B-45

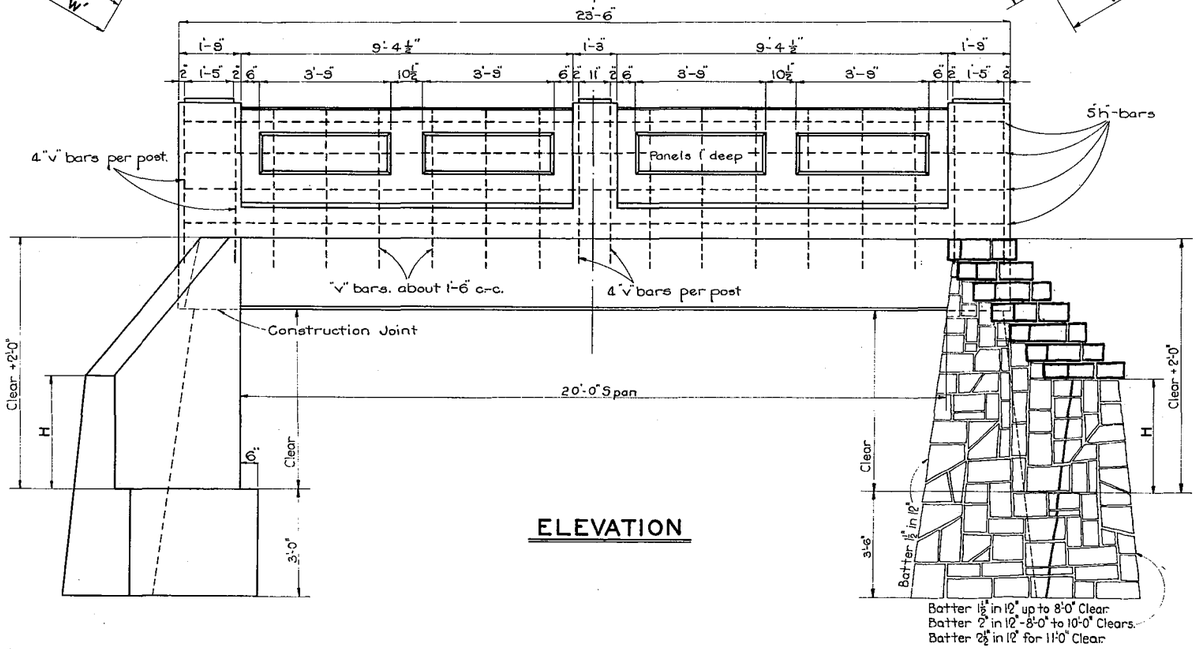
Made by - P.F.W.
Checked by - W.B.H. 12-12-27.

IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

Revised 5-25-28 W.B.D.
" 6-5-29 Str. Steel Quan. R.F.W.
" 7-23-32 W.C.T. Stone Masonry.

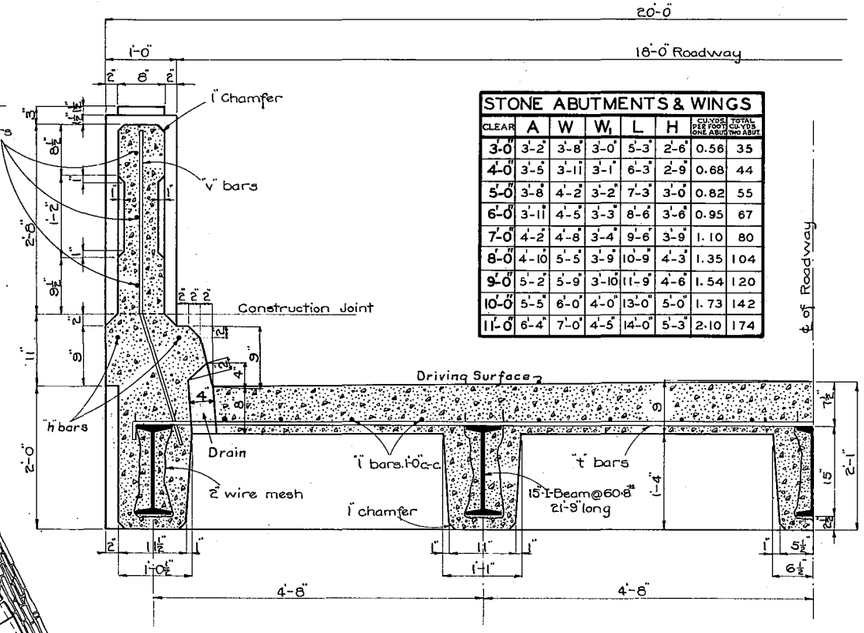


HALF PLAN



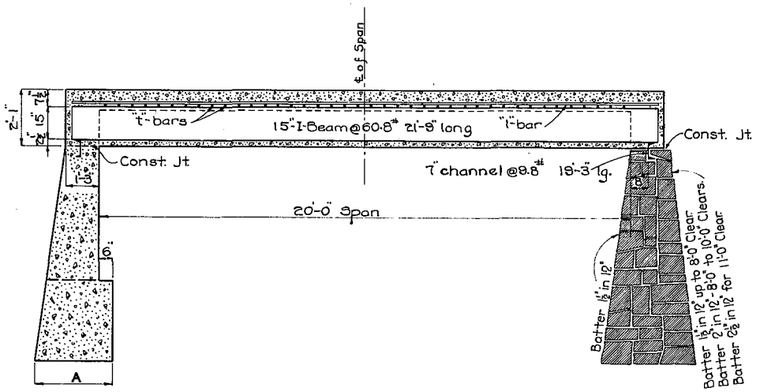
ELEVATION

Batter 1½" in 12" up to 8'-0" Clear
Batter 2" in 12" -8'-0" to 10'-0" Clears.
Batter 2½" in 12" for 11'-0" Clear



STONE ABUTMENTS & WINGS							
CLEAR	A	W	W1	L	H	CU.YDS. PER FOOT ONE ABUT.	TOTAL CU.YDS. TWO ABUT.
3'-0"	3'-2"	3'-8"	3'-0"	5'-3"	2'-6"	0.56	35
4'-0"	3'-5"	3'-11"	3'-1"	6'-3"	2'-9"	0.68	44
5'-0"	3'-8"	4'-2"	3'-2"	7'-3"	3'-0"	0.82	55
6'-0"	3'-11"	4'-5"	3'-3"	8'-6"	3'-6"	0.95	67
7'-0"	4'-2"	4'-8"	3'-4"	9'-6"	3'-9"	1.10	80
8'-0"	4'-10"	5'-5"	3'-9"	10'-9"	4'-3"	1.35	104
9'-0"	5'-2"	5'-9"	3'-10"	11'-9"	4'-6"	1.54	120
10'-0"	5'-5"	6'-0"	4'-0"	13'-0"	5'-0"	1.73	142
11'-0"	6'-4"	7'-0"	4'-5"	14'-0"	5'-3"	2.10	174

BEAMS & PARAPET DETAILS



SECTION ON ℄ OF BRIDGE

NOTE

Floor of Bridge shall conform to grade of road. On level grade, slope top of slab at least ⅛" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving, use 6" of concrete, or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.

MATERIAL REQUIRED

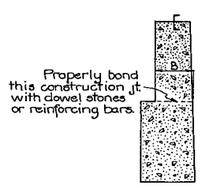
24.5 Cu. Yds. "A" Concrete.	38	Bbls. Cement.
	11¼	Cu. Yds. Sand.
	22½	Cu. Yds. Stone.
1719 Lbs. Reinforcing Bars.		
6990 Lbs. Structural Steel.	5-15" I-Beams @ 60.8#	21'-8" long.
	2-7" Channels @ 9.8#	19'-3" long.
400 Sq. ft. 2" Wire Mesh.		

TABLE OF BARS

l	16	½"ø x 21'-9"	Longitudinal in Slab.
t	40	⅝"ø x 18'-9"	Transverse in Slab.
h	10	½"ø x 23'-3"	Longitudinal in Parapet.
V	48	½"ø x 4'-6"	Vertical in Parapet.

ABUTMENTS & WINGS

CLEAR	A	W	W'	L	H	Cu.Yds. B. Con.	Bbls. Cement	Cu.Yds. Sand.	Cu.Yds. Stone.
3'-0"	2'-0"	3'-1"	2'-0"	5'-3"	2'-6"	23.1	30	11¼	22¼
4'-0"	2'-4"	3'-7"	2'-0"	6'-3"	2'-9"	29.9	39	14½	28¾
5'-0"	2'-11"	4'-1"	2'-0"	7'-3"	3'-0"	39.0	50¾	18¾	37½
6'-0"	3'-6"	4'-6"	2'-3"	8'-6"	3'-6"	51.3	66¾	24¾	49½
7'-0"	4'-0"	5'-0"	2'-5"	9'-6"	3'-9"	64.0	83	30¾	61½
8'-0"	4'-5"	5'-5"	2'-8"	10'-9"	4'-3"	78.8	102½	38	76
9'-0"	4'-11"	5'-10"	2'-10"	11'-9"	4'-6"	94.6	122¾	45½	91
10'-0"	5'-4"	6'-3"	3'-1"	13'-0"	5'-0"	114.4	148½	55	110
11'-0"	5'-9"	6'-8"	3'-3"	14'-0"	5'-3"	134.1	174	64½	129



CLEAR	B
3'-0"	1'-4½"
4'-0"	1'-7"
5'-0"	2'-0"
6'-0"	2'-5"
7'-0"	2'-9½"
8'-0"	3'-2½"
9'-0"	3'-7"
10'-0"	4'-0"
11'-0"	4'-5"

APPROVED August 1, 1927
E E Bowlsby BRIDGE ENGINEER.
APPROVED
Sam Rinale CHIEF ENGINEER.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION

STANDARD

REINFORCED CONCRETE BRIDGE.

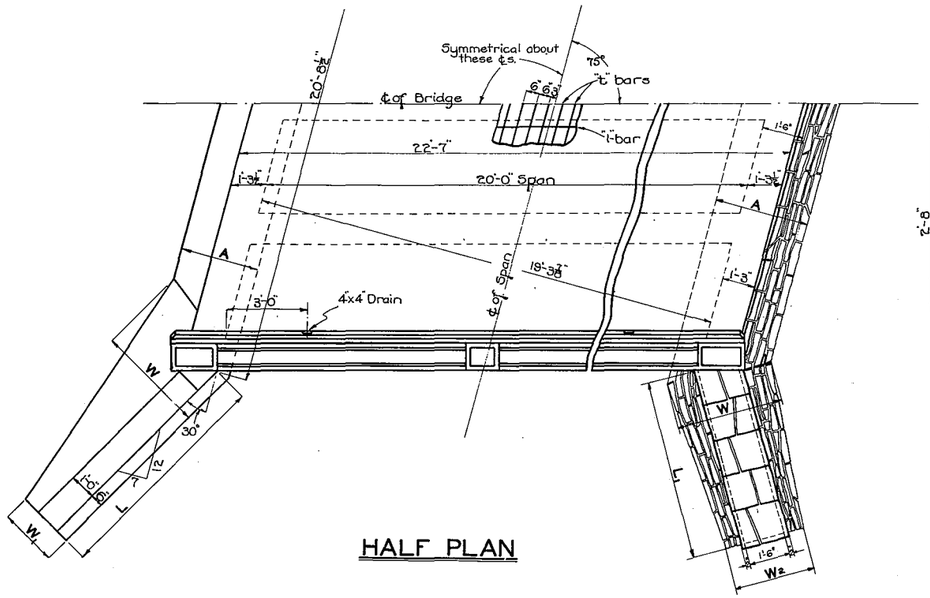
SPAN 20 FT. ROADWAY 18 FT.

SCALE ⅜", ½" & 1"-1'-0"

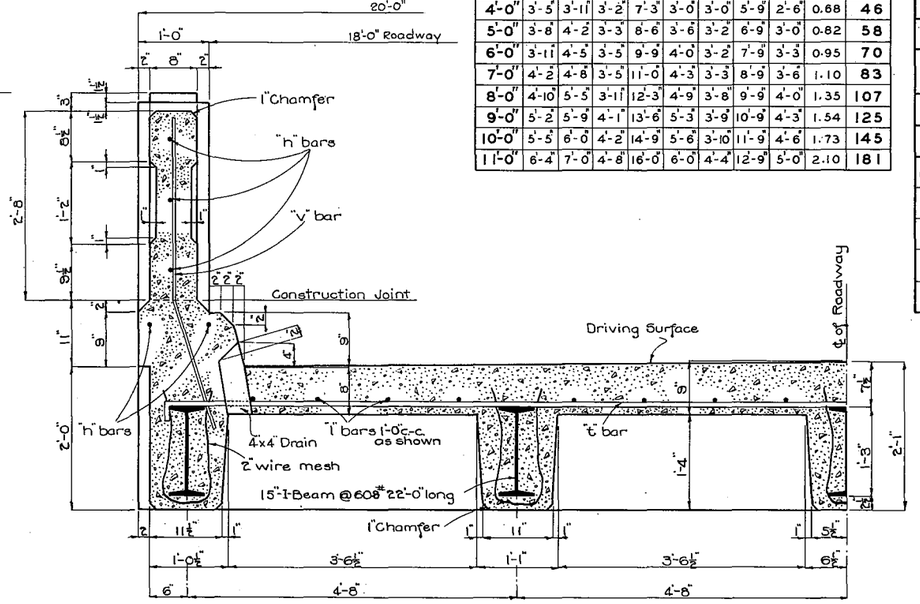
620B

Made by W.B.D.
Checked by R.F.W. 6/2/27

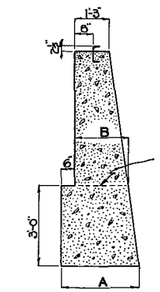
Revised 7-23-32 Stone Masonry W.C.T.



HALF PLAN



BEAMS & PARAPET DETAILS



RT. L. ABUTMENT SECTION

STONE ABUTMENTS & WINGS

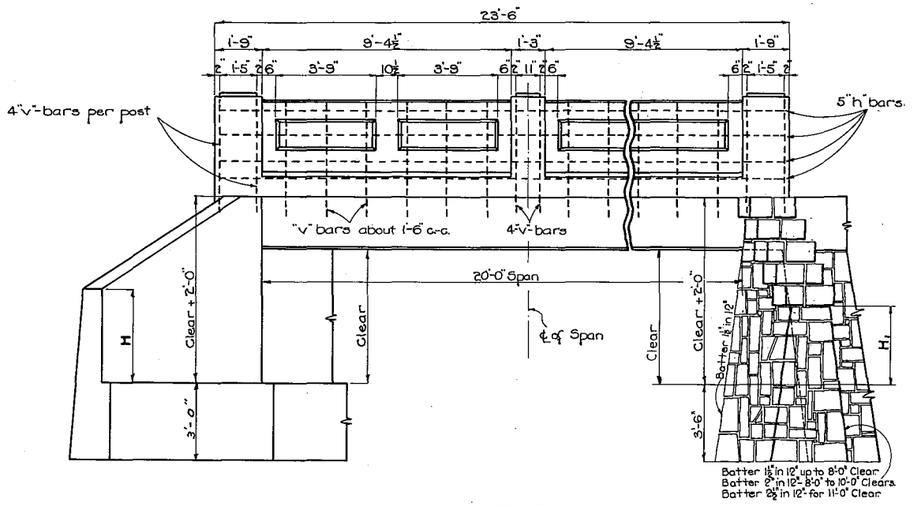
CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	CU.YDS. PER FOOT ONE ABUT.	TOTAL CU. YDS. TWO ABUT.
3'-0"	3'-2"	3'-8"	3'-1"	6'-0"	2'-9"	2'-11"	4'-6"	2'-3"	0.56	36
4'-0"	3'-5"	3'-11"	3'-2"	7'-3"	3'-0"	3'-0"	5'-9"	2'-6"	0.68	46
5'-0"	3'-8"	4'-2"	3'-3"	8'-6"	3'-6"	3'-2"	6'-9"	3'-0"	0.82	58
6'-0"	3'-11"	4'-5"	3'-5"	9'-9"	4'-0"	3'-2"	7'-9"	3'-3"	0.95	70
7'-0"	4'-2"	4'-8"	3'-5"	11'-0"	4'-3"	3'-3"	8'-9"	3'-6"	1.10	83
8'-0"	4'-10"	5'-5"	3'-11"	12'-3"	4'-9"	3'-8"	9'-9"	4'-0"	1.35	107
9'-0"	5'-2"	5'-9"	4'-1"	13'-6"	5'-3"	3'-9"	10'-9"	4'-3"	1.54	125
10'-0"	5'-5"	6'-0"	4'-2"	14'-9"	5'-6"	3'-10"	11'-9"	4'-6"	1.73	145
11'-0"	6'-4"	7'-0"	4'-8"	16'-0"	6'-0"	4'-4"	12'-9"	5'-0"	2.10	181

MATERIAL REQUIRED

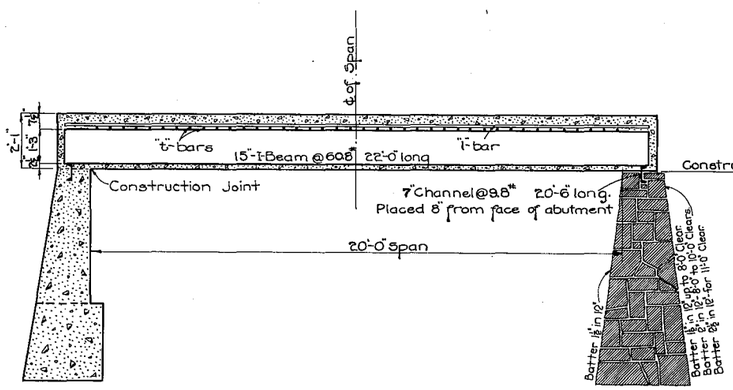
24-6 Cu. Yds. "A" Concrete.	38 Bbls. Cement. 11¼ Cu. Yds. Sand. 22½ Cu. Yds. Stone.
1786 Lbs. Reinforcing Bars.	
7080 Lbs. Structural Steel	5-15"-I-Beams @ 60# 22'-0" long. 2-7"-Channels @ 9.8# 20'-6" long.
400 Sq. Ft. 2" Wire Mesh.	

TABLE OF BARS

Mark	No.	Stock.	Description.
l	16	½"ø x 22'-0"	Longitudinal in Slab.
t	40	⅝"ø x 21'-0"	Transverse in Slab.
h	10	½"ø x 23'-3"	Horizontal in Parapet.
v	48	½"ø x 4'-6"	Vertical in Parapet.



ELEVATION



SECTION ON ℄ OF BRIDGE

ABUTMENTS & WINGS

CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	B	Cu.Yds. B'Con.	Bbls. Cement	Cu.Yds. Sand.	Cu.Yds. Stone
3'-0"	2'-0"	3'-1"	2'-0"	6'-0"	2'-9"	2'-0"	4'-6"	2'-3"	1'-4½"	24.0	31¼	11½	23
4'-0"	2'-4"	3'-7"	2'-0"	7'-3"	3'-0"	2'-0"	5'-9"	2'-6"	1'-7"	31.0	40¼	15	29¾
5'-0"	2'-11"	4'-1"	2'-3"	8'-6"	3'-6"	2'-0"	6'-9"	3'-0"	2'-0"	42.0	54½	20¼	40½
6'-0"	3'-6"	4'-6"	2'-7"	9'-9"	4'-0"	2'-1"	7'-9"	3'-3"	2'-5"	55.0	71½	26½	53
7'-0"	4'-0"	5'-0"	2'-8"	11'-0"	4'-3"	2'-3"	8'-9"	3'-6"	2'-9½"	61.0	79¼	29¼	58¾
8'-0"	4'-5"	5'-5"	3'-0"	12'-3"	4'-9"	2'-7"	9'-9"	4'-0"	3'-2½"	84.5	109¾	40¾	81¼
9'-0"	4'-11"	5'-10"	3'-3"	13'-6"	5'-3"	2'-8"	10'-9"	4'-3"	3'-7"	101.8	152¼	49	98
10'-0"	5'-4"	6'-3"	3'-4"	14'-9"	5'-6"	2'-10"	11'-9"	4'-6"	4'-0"	120.8	156¾	58	116¼
11'-0"	5'-10"	6'-8"	3'-7"	16'-0"	6'-0"	3'-1	12'-9"	5'-0"	4'-5"	143.8	186¾	69¼	138¼

NOTE

Floor of Bridge shall conform to grade of road. On level grade, slope top of slab at least ½ per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving, use 6" of concrete or 8" of stone masonry and 12" curtain wall wall of sufficient depth at each end.

APPROVED May 21, 1928
E E Thurnau BRIDGE ENGINEER
APPROVED May 24, 1928
Sam C Lewis CHIEF ENGINEER

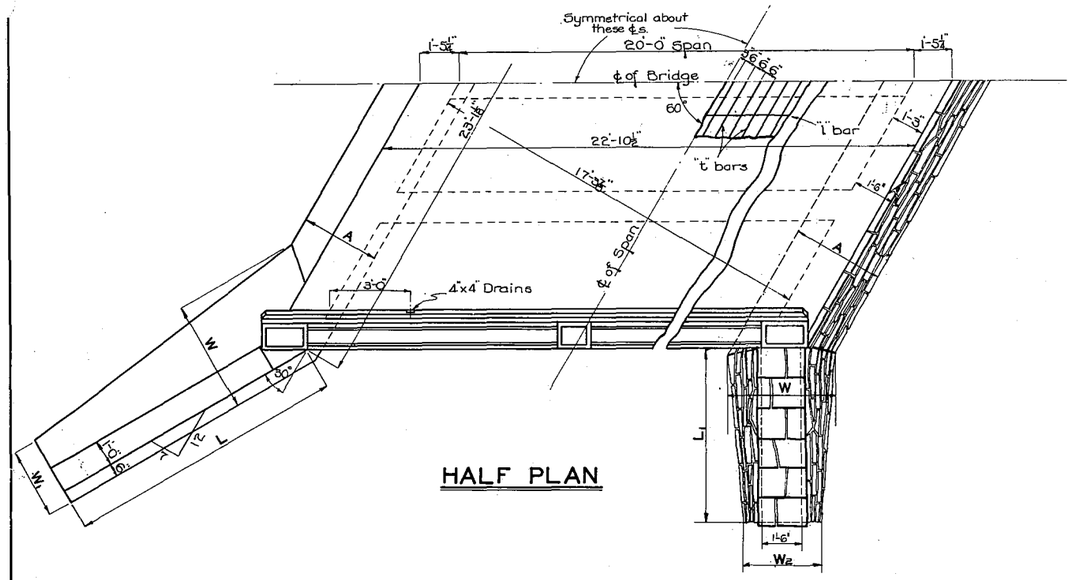
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION
STANDARD
REINFORCED CONCRETE BRIDGE
SPAN 20 FT. ROADWAY 18 FT.
SKEW 75° L.

SCALE ⅜ & 1'-1'-0"

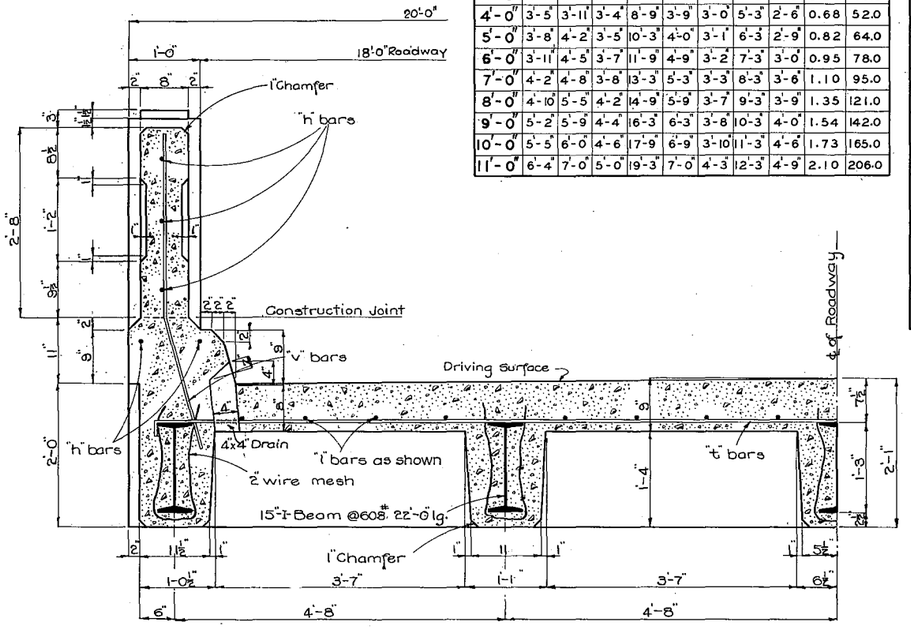
620 B-75

Made by W.B.D.
Checked by J.E.M. 5-8-28.

Revised 7-23-32 Stone Masonry W.C.T.



HALF PLAN



BEAMS & PARAPET DETAILS

STONE ABUTMENTS & WINGS

CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	CU.YDS. PER FOOT ONE ABUTMENT	TOTAL CU.YDS. TWO ABUT.
3'-0"	3'-2"	3'-8"	3'-2"	7'-3"	3'-0"	2'-11"	4'-3"	2'-0"	0.56	40.0
4'-0"	3'-5"	3'-11"	3'-4"	8'-9"	3'-9"	3'-0"	5'-3"	2'-6"	0.68	52.0
5'-0"	3'-8"	4'-2"	3'-5"	10'-3"	4'-0"	3'-1"	6'-3"	2'-9"	0.82	64.0
6'-0"	3'-11"	4'-5"	3'-7"	11'-9"	4'-9"	3'-2"	7'-3"	3'-0"	0.95	78.0
7'-0"	4'-2"	4'-8"	3'-8"	13'-3"	5'-3"	3'-3"	8'-3"	3'-6"	1.10	95.0
8'-0"	4'-10"	5'-5"	4'-2"	14'-9"	5'-9"	3'-7"	9'-3"	3'-9"	1.35	121.0
9'-0"	5'-2"	5'-9"	4'-4"	16'-3"	6'-3"	3'-8"	10'-3"	4'-0"	1.54	142.0
10'-0"	5'-5"	6'-0"	4'-6"	17'-9"	6'-9"	3'-10"	11'-3"	4'-6"	1.73	165.0
11'-0"	6'-4"	7'-0"	5'-0"	19'-3"	7'-0"	4'-3"	12'-3"	4'-9"	2.10	206.0

MATERIAL REQUIRED

25 Cu. Yds. "A" Concrete. — 30¾ Bbls. Cement. 11½ Cu. Yds. Sand. 23 Cu. Yds. Stone.

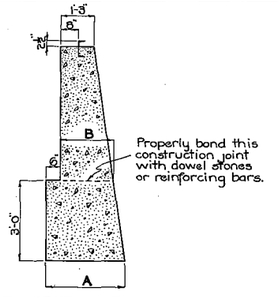
1722 Lbs. Reinforcing Bars

7129 Lbs. Structural Steel. 5-15"I-Beams @60# 22'-0" lg. 2-7"Channels@9.8# 22'-6" lg.

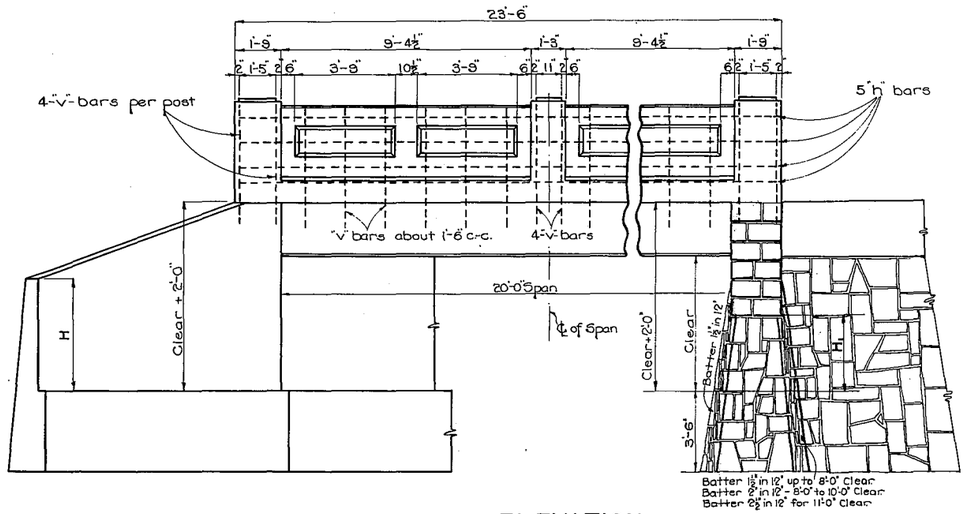
400 Sq. Ft. 2" Wire Mesh.

TABLE OF BARS

Mark	No.	Stock	Description
l	16	⅝"ø x 22'-0"	Longitudinal in Slab.
t	34	⅝"ø x 23'-3"	Transverse in Slab.
h	10	½"ø x 23'-3"	Horizontal in Parapet.
v	48	½"ø x 4'-6"	Vertical in Parapet.



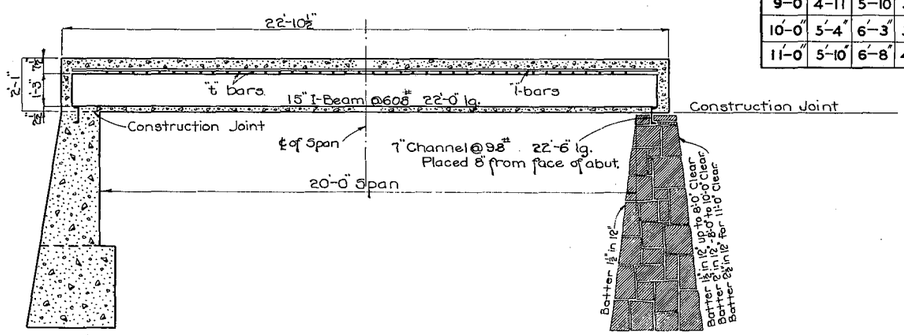
RT. L. ABUTMENT SECTION



ELEVATION

NOTE

Floor of Bridge shall conform to grade of road. On level grade, slope top of slab at least ¼" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving, use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.



SECTION ON ℄ OF BRIDGE

ABUTMENTS & WINGS

CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	B	Cu.Yds. C. Con.	Bbls. Cement	Cu.Yds. Sand	Cu.Yds. Stone
3'-0"	2'-0"	3'-1"	2'-0"	7'-3"	3'-0"	2'-0"	4'-3"	2'-0"	1'-4½"	26.7	34¾	12¾	25¾
4'-0"	2'-4"	3'-7"	2'-5"	8'-9"	3'-9"	2'-0"	5'-3"	2'-6"	1'-7"	35.8	46½	17¼	34½
5'-0"	2'-11"	4'-1"	2'-9"	10'-3"	4'-0"	2'-0"	6'-3"	2'-9"	2'-0"	47.9	62¼	23	46
6'-0"	3'-6"	4'-6"	3'-0"	11'-9"	4'-9"	2'-0"	7'-3"	3'-0"	2'-5"	62.1	80½	29¾	59¾
7'-0"	4'-0"	5'-0"	3'-3"	13'-3"	5'-3"	2'-3"	8'-3"	3'-6"	2'-9½"	78.4	101¾	37¾	75½
8'-0"	4'-5"	5'-5"	3'-6"	14'-9"	5'-9"	2'-5"	9'-3"	3'-9"	3'-2½"	95.6	124	46	92
9'-0"	4'-11"	5'-10"	3'-9"	16'-3"	6'-3"	2'-7"	10'-3"	4'-0"	3'-7"	116.3	151	56	112
10'-0"	5'-4"	6'-3"	3'-11"	17'-9"	6'-9"	2'-10"	11'-3"	4'-6"	4'-0"	138.9	180¼	66¾	133½
11'-0"	5'-10"	6'-8"	4'-1"	19'-3"	7'-0"	3'-0"	12'-3"	4'-9"	4'-5"	163.8	212½	78¾	157½

COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION

STANDARD
REINFORCED CONCRETE BRIDGE
SPAN 20 FT. ROADWAY 18 FT.
SKEW 60° L.

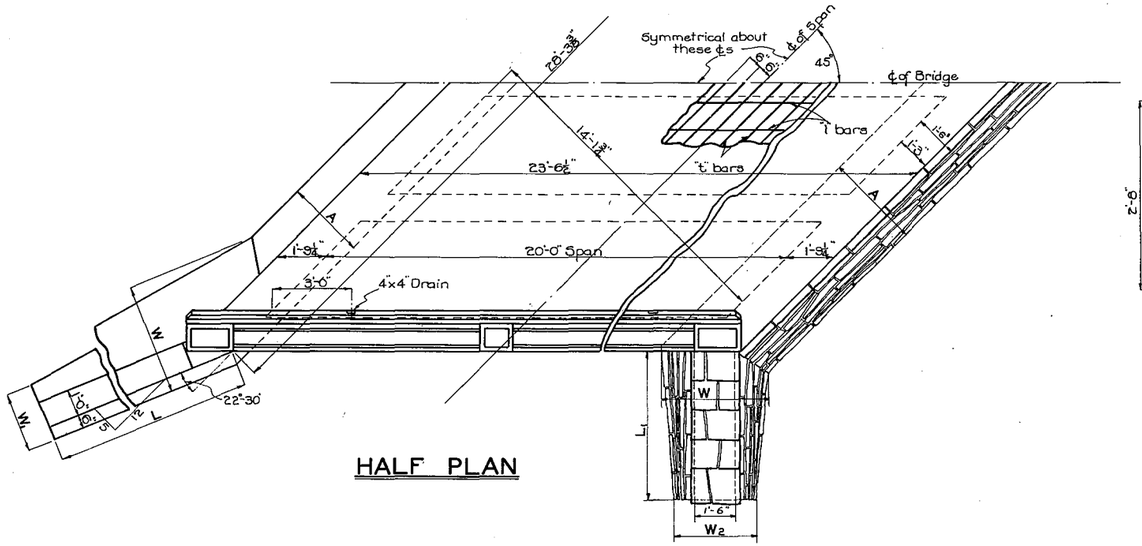
APPROVED May 21, 1928
E E Pomeroy BRIDGE ENGINEER
APPROVED May 24, 1928
Samuel Eckels CHIEF ENGINEER

SCALE 3/8" & 1"=1'-0"

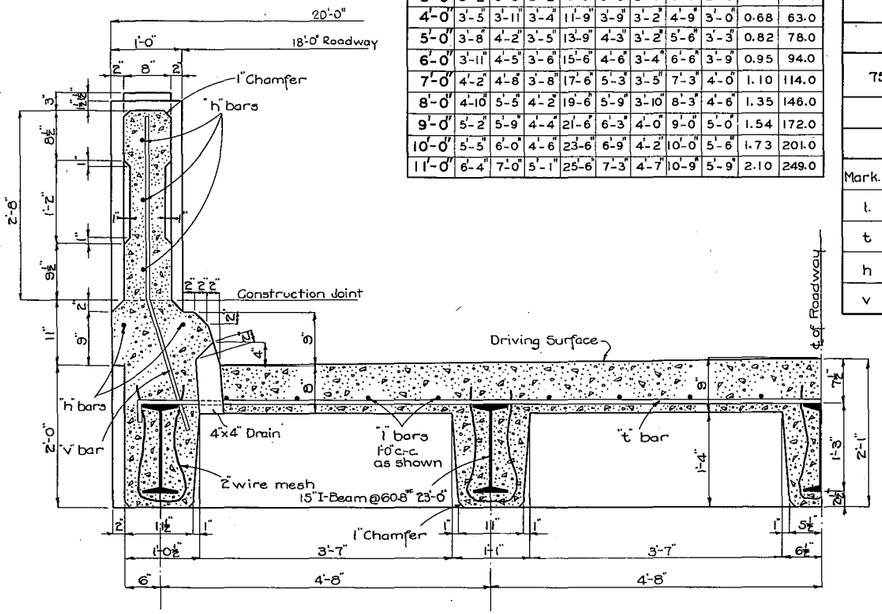
620B-60

Made by. W.B.D.
Checked by. W.B.H 5-21-28

Revised 7-23-32 Stone Masonry W.C.T.



HALF PLAN



BEAMS & PARAPET DETAILS

STONE ABUTMENTS & WINGS

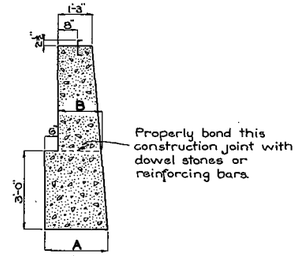
CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	CU.YDS. PER FOOT ONE ABUT.	TOTAL CU.YDS. TWO ABUT.
3'-0"	3'-2"	3'-8"	3'-2"	9'-9"	3'-3"	3'-0"	3'-9"	2'-6"	0.56	49.0
4'-0"	3'-5"	3'-11"	3'-4"	11'-9"	3'-9"	3'-2"	4'-9"	3'-0"	0.68	63.0
5'-0"	3'-8"	4'-2"	3'-5"	13'-9"	4'-3"	3'-2"	5'-6"	3'-3"	0.82	78.0
6'-0"	3'-11"	4'-5"	3'-6"	15'-6"	4'-6"	3'-4"	6'-6"	3'-9"	0.95	94.0
7'-0"	4'-2"	4'-8"	3'-8"	17'-6"	5'-3"	3'-5"	7'-3"	4'-0"	1.10	114.0
8'-0"	4'-10"	5'-5"	4'-2"	19'-6"	5'-9"	3'-10"	8'-3"	4'-6"	1.35	146.0
9'-0"	5'-2"	5'-9"	4'-4"	21'-6"	6'-3"	4'-0"	9'-0"	5'-0"	1.54	172.0
10'-0"	5'-5"	6'-0"	4'-6"	23'-6"	6'-9"	4'-2"	10'-0"	5'-6"	1.73	201.0
11'-0"	6'-4"	7'-0"	5'-1"	25'-6"	7'-3"	4'-7"	10'-9"	5'-9"	2.10	249.0

MATERIAL REQUIRED

26.1 Cu.Yds. "A" Concrete.	40½ Bbls. Cement. 12 Cu.Yds. Sand. 24 Cu.Yds. Stone.
1765 Lbs. Reinforcing Bars.	
7541 Lbs. Structural Steel.	5-15" I-Beams @ 60.8# 23'-0" long. 2-7" Channels @ 9.8# 28'-0" long.
400 Sq. Ft. 2" Wire Mesh.	

TABLE OF BARS

Mark.	No.	Stock.	Description.
l.	16	½"ø x 23'-0"	Longitudinal in Slab.
t	29	¾"ø x 26'-0"	Transverse in Slab.
h	10	½"ø x 23'-3"	Horizontal in Parapet.
v	48	½"ø x 4'-6"	Vertical in Parapet.



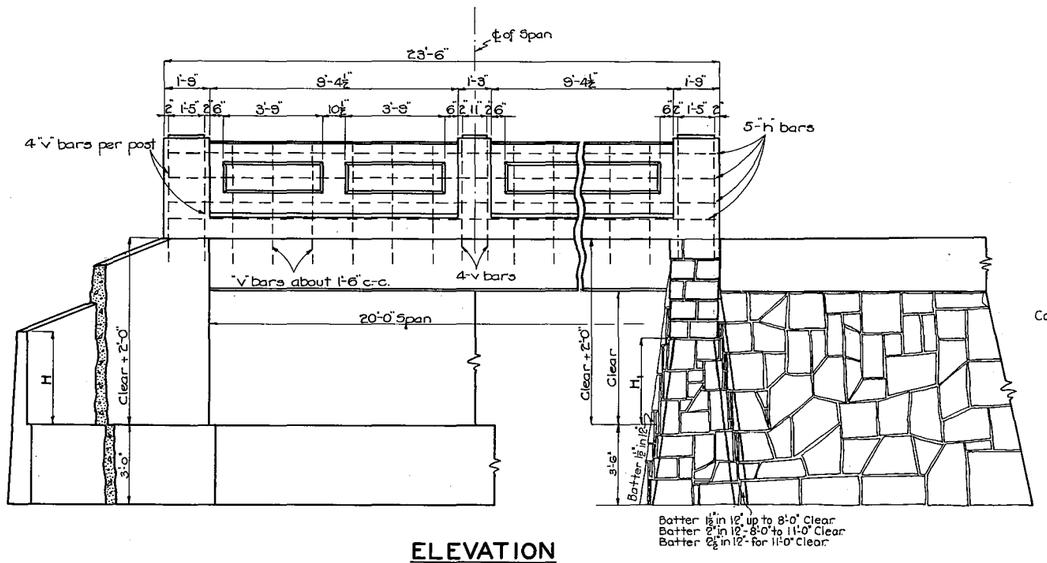
RT. L. ABUTMENT SECTION

ABUTMENTS & WINGS

CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	B	Cu.Yds. Con.	Bbls. Cement	Cu.Yds. Sand	Cu.Yds. Stone
3'-0"	2'-0"	3'-1"	2'-1"	9'-9"	3'-3"	2'-0"	3'-9"	2'-6"	1'-4½"	32.7	42½	15¾	31½
4'-0"	2'-4"	3'-7"	2'-5"	11'-9"	3'-9"	2'-0"	4'-9"	3'-0"	1'-7"	43.7	56¾	21	42
5'-0"	2'-11"	4'-1"	2'-8"	13'-9"	4'-3"	2'-3"	5'-6"	3'-3"	2'-0"	58.5	76	28¼	56¼
6'-0"	3'-6"	4'-6"	2'-10"	15'-6"	4'-6"	2'-5"	6'-6"	3'-9"	2'-5"	77.8	101	37½	74¾
7'-0"	4'-0"	5'-0"	3'-3"	17'-6"	5'-3"	2'-7"	7'-3"	4'-0"	2'-9½"	95.2	123½	45¾	91½
8'-0"	4'-5"	5'-5"	3'-6"	19'-6"	5'-9"	2'-10"	8'-3"	4'-6"	3'-2½"	117.2	152¼	56½	112¾
9'-0"	4'-11"	5'-10"	3'-9"	21'-6"	6'-3"	3'-1"	9'-0"	5'-0"	3'-7"	141.8	184¼	68¼	136½
10'-0"	5'-4"	6'-3"	3'-11"	23'-6"	6'-9"	3'-4"	10'-0"	5'-6"	4'-0"	168.8	219¼	81¼	162½
11'-0"	5'-9"	6'-8"	4'-2"	25'-6"	7'-3"	3'-6"	10'-9"	5'-9"	4'-5"	198.2	257½	95¼	190¾

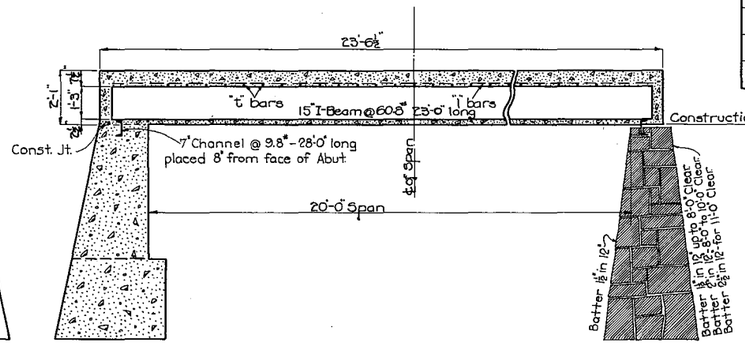
NOTE

Floor of Bridge shall conform to grade of road. On level grade, slope top of slab at least ½" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving, use 6" of concrete or 8" of stone masonry and a 12 curtain wall of sufficient depth at each end.



Batter 1⅛ in 12" up to 8'-0" Clear
Batter 2" in 12" - 8'-0" to 11'-0" Clear
Batter 2⅝ in 12" - for 11'-0" clear

ELEVATION



SECTION ON ℄ OF BRIDGE

APPROVED May 21, 1928
E E Mardow BRIDGE ENGINEER.
APPROVED May 21, 1928
Samuel Eckels CHIEF ENGINEER.

COMMONWEALTH OF PENNSYLVANIA.
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION.
STANDARD
REINFORCED CONCRETE BRIDGE.
SPAN 20 FT. ROADWAY 18 FT.
SKEW 45° L.

SCALE ¾" & 1"=1'-0"

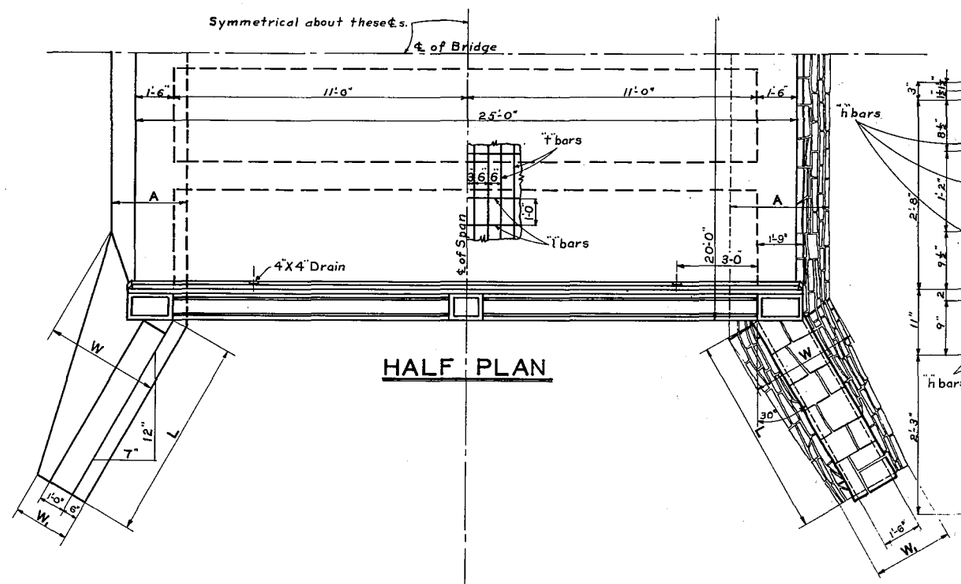
620 B-45

Made by W.B.D.
Checked by J.E.M. 5-8-28.

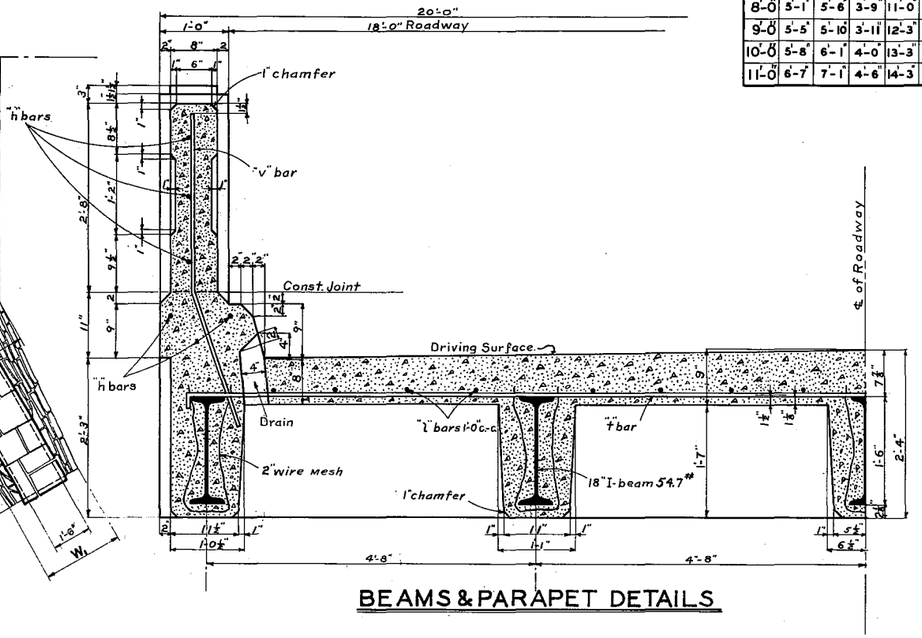
IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

Revised 5-25-28 W.B.D.
" 7-23-32 W.C.T. Stone Masonry.

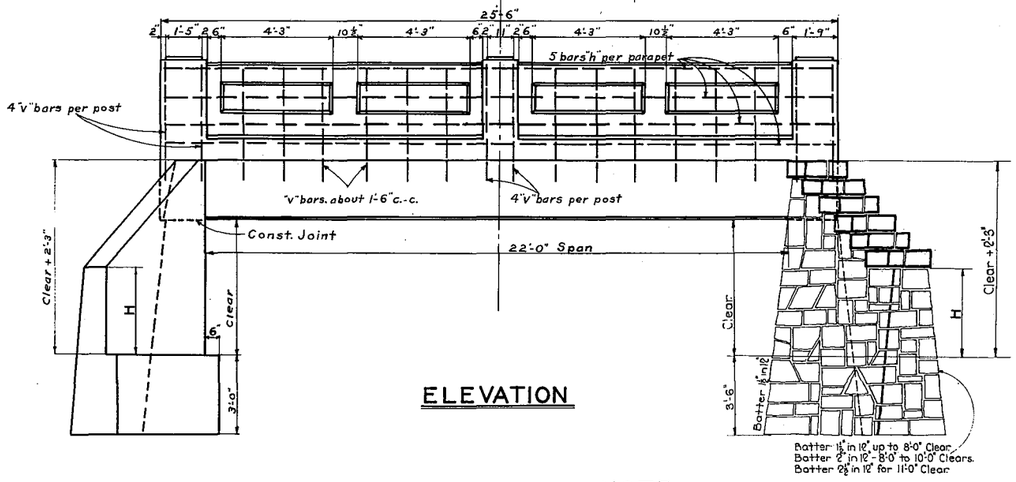
STONE ABUTMENTS & WINGS							
CLEAR	A	W	W_1	L	H	CU.YDS. PER FOOT ONE ABUTTMENT	TOTAL CU.YDS. BOTH ABUTTMENTS
3'-0"	3'-5"	3'-8"	3'-0"	5'-6"	2'-6"	0.62	38
4'-0"	3'-8"	3'-11"	3'-1"	6'-6"	2'-9"	0.75	48
5'-0"	3'-11"	4'-2"	3'-2"	7'-6"	3'-0"	0.89	59
6'-0"	4'-2"	4'-5"	3'-3"	8'-6"	3'-6"	1.04	72
7'-0"	4'-5"	4'-8"	3'-4"	9'-9"	3'-9"	1.20	86
8'-0"	5'-1"	5'-6"	3'-9"	11'-0"	4'-3"	1.45	110
9'-0"	5'-5"	5'-10"	3'-11"	12'-3"	4'-9"	1.66	130
10'-0"	5'-8"	6'-1"	4'-0"	13'-3"	5'-0"	1.86	149
11'-0"	6'-7"	7'-1"	4'-6"	14'-3"	5'-6"	2.23	183



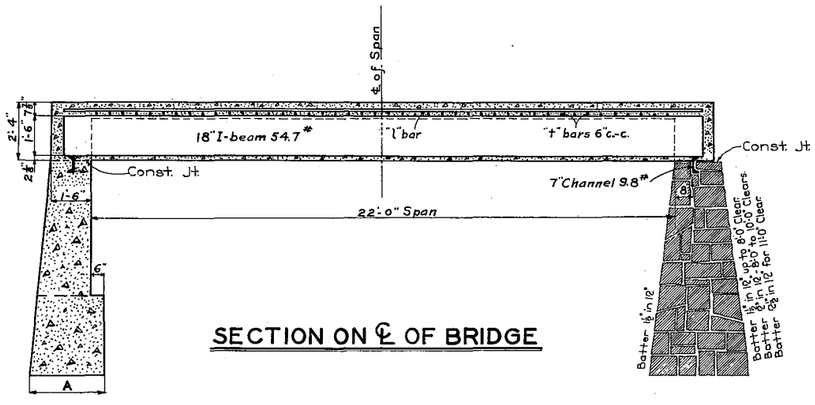
HALF PLAN



BEAMS & PARAPET DETAILS



ELEVATION



SECTION ON ℄ OF BRIDGE

NOTE

Floor of bridge shall conform to grade of road. On level grade slope top of slab at least ⅛" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving, use 6" of concrete or 8" stone masonry and a 12" curtain wall of sufficient depth at each end.

Made by - P.F.W.
Checked by - W.C.T. 7-29-32

MATERIAL REQUIRED.

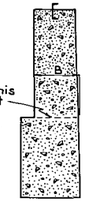
28.7 Cu. Yds. "A" Concrete.	44½ Bbls. Cement. 13¼ Cu. Yds. Sand. 26½ Cu. Yds. Stone.
1872 Lbs. Reinforcing Bars.	
6873 Lbs. Structural Steel.	5-18" I-beams @ 54.7# - 23'-9" long. 2-7" Channels @ 9.8# - 19'-3" long.
500 Sq. Ft. 2" Wire Mesh.	

TABLE OF BARS.

l	16	½" X 23'-9"	Longitudinal in Slab.
t	44	¾" X 19'-9"	Transverse in Slab.
h	10	½" X 25'-3"	Horizontal in Parapets.
v	48	½" X 4'-6"	Vertical in Parapets.

ABUTMENTS & WINGS.

CLEAR	A	W	W_1	L	H	Cu.Yds. Conc. 1:2½:5	Bbls. Cement	Cu.Yds. Sand.	Cu.Yds. Stone.
3'-0"	2'-0"	3'-3"	2'-0"	5'-6"	2'-6"	25.2	32¾	12¼	24¼
4'-0"	2'-2"	3'-9"	2'-0"	6'-6"	2'-9"	31.6	41	15¼	30½
5'-0"	2'-10"	4'-2"	2'-0"	7'-6"	3'-0"	41.3	53¾	20	39¾
6'-0"	3'-4"	4'-8"	2'-3"	8'-6"	3'-6"	528	68½	25½	51
7'-0"	3'-10"	5'-1"	2'-5"	9'-9"	3'-9"	66.1	86	32	63¾
8'-0"	4'-4"	5'-6"	2'-8"	11'-0"	4'-3"	82.1	106¾	39½	79
9'-0"	4'-10"	5'-11"	3'-0"	12'-3"	4'-9"	100.6	130¾	48½	96¾
10'-0"	5'-3"	6'-4"	3'-1"	13'-3"	5'-0"	117.8	153	56¾	113½
11'-0"	5'-8"	6'-9"	3'-4"	14'-3"	5'-6"	138.2	179½	66½	133



CLEAR	B
3'-0"	1'-6"
4'-0"	1'-7"
5'-0"	2'-0"
6'-0"	2'-5"
7'-0"	2'-9½"
8'-0"	3'-2½"
9'-0"	3'-7"
10'-0"	4'-0"
11'-0"	4'-5"

APPROVED August 1, 1932
E E Brandon BRIDGE ENGINEER.
APPROVED
Sam Rhoads CHIEF ENGINEER.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION

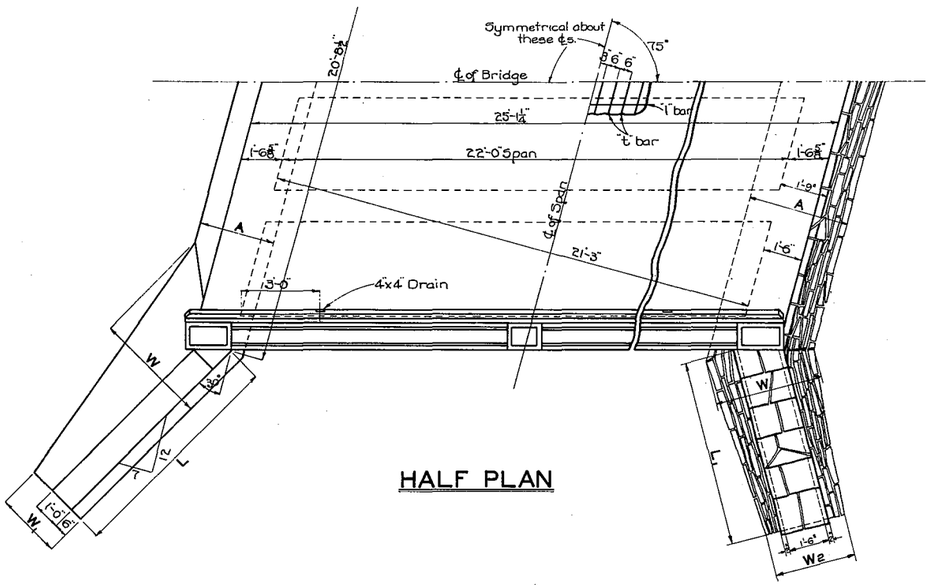
STANDARD REINFORCED CONCRETE BRIDGE

SPAN 22 FT. ROADWAY 18 FT.

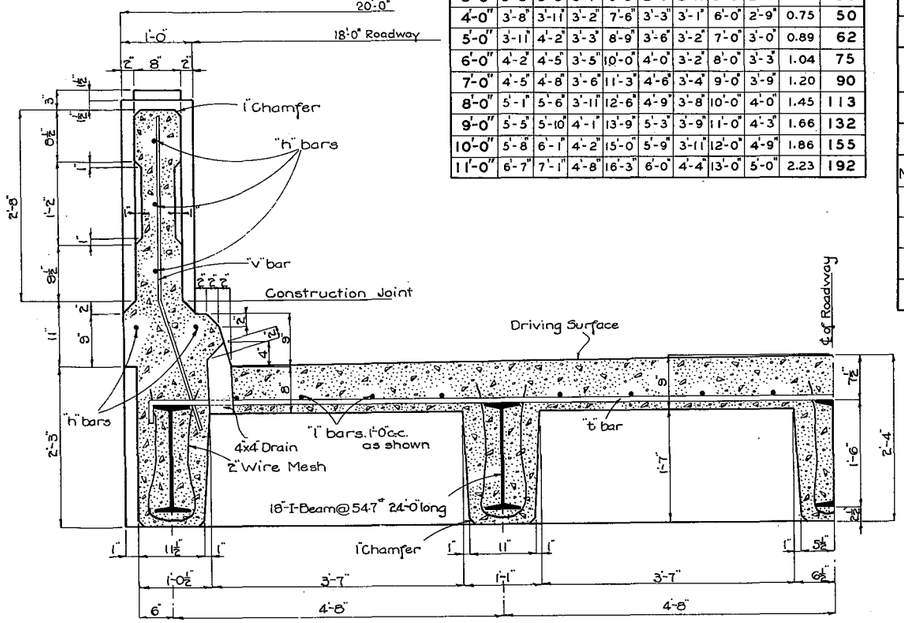
SCALE ⅜" & 1"=1'-0"

622B

Revised 7-23-32 Stone Masonry WCT



HALF PLAN



BEAMS & PARAPET DETAILS

STONE ABUTMENTS & WINGS

CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	CU.YDS. PER FOOT ONE ABUT.	TOTAL CU.YDS. TWO ABUT.
3'-0"	3'-5"	3'-8"	3'-1"	6'-3"	2'-9"	2'-11"	5'-0"	2'-3"	0.62	39
4'-0"	3'-8"	3'-11"	3'-2"	7'-6"	3'-3"	3'-1"	6'-0"	2'-9"	0.75	50
5'-0"	3'-11"	4'-2"	3'-3"	8'-9"	3'-6"	3'-2"	7'-0"	3'-0"	0.89	62
6'-0"	4'-2"	4'-5"	3'-5"	10'-0"	4'-0"	3'-2"	8'-0"	3'-3"	1.04	75
7'-0"	4'-5"	4'-8"	3'-6"	11'-3"	4'-6"	3'-4"	9'-0"	3'-9"	1.20	90
8'-0"	5'-1"	5'-6"	3'-11"	12'-6"	4'-9"	3'-8"	10'-0"	4'-0"	1.45	113
9'-0"	5'-5"	5'-10"	4'-1"	13'-9"	5'-3"	3'-9"	11'-0"	4'-3"	1.66	132
10'-0"	5'-8"	6'-1"	4'-2"	15'-0"	5'-9"	3'-11"	12'-0"	4'-9"	1.86	155
11'-0"	6'-7"	7'-1"	4'-8"	16'-3"	6'-0"	4'-4"	13'-0"	5'-0"	2.23	192

MATERIAL REQUIRED

289 Cu. Yds. "A" Concrete.

44¾ Bbls. Cement.
18¼ Cu. Yds. Sand.
26½ Cu. Yds. Stone.

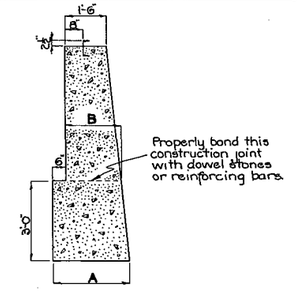
1906 Lbs. Reinforcing Bars.

6966 Lbs. Structural Steel. 5-18"-I-Beams @ 54.7# 24'-0" long. 2-7" Channels @ 9.8# 20'-6" long.

500 Sq. Ft. 2" Wire Mesh.

TABLE OF BARS

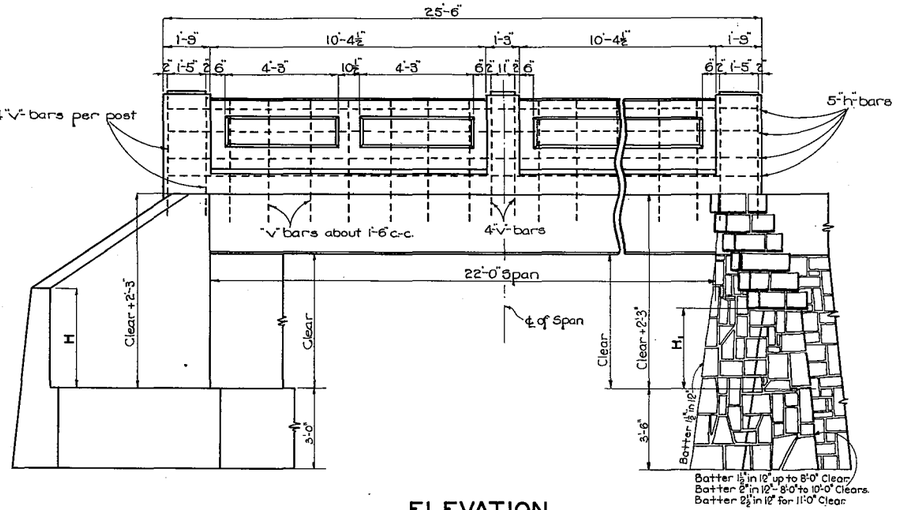
Mark.	No.	Stock.	Description.
l	16	½" x 24'-0"	Longitudinal in Slab.
t	42	5/8" x 21'-0"	Transverse in Slab.
h	10	½" x 25'-3"	Horizontal in Parapet.
v	52	½" x 4'-6"	Vertical in Parapet.



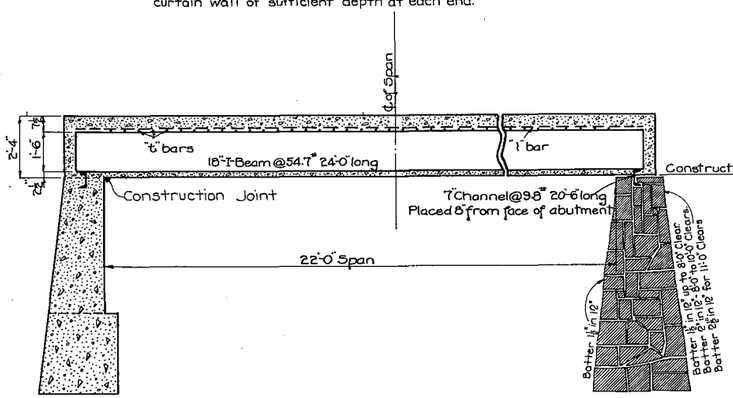
RT. L. ABUTMENT SECTION

NOTE

Floor of Bridge shall conform to grade of road. On level grade, slope top of slab at least ½ per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving, use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.



ELEVATION



SECTION ON ℄ OF BRIDGE

ABUTMENTS & WINGS

CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	B	Cu.Yds. ℄ Con.	Bbls. Cement	Cu.Yds. Sand.	Cu.Yds. Stone.
3'-0"	2'-0"	3'-3"	2'-0"	6'-3"	2'-9"	2'-0"	5'-0"	2'-3"	1'-6"	26.1	34	12½	25
4'-0"	2'-2"	3'-9"	2'-1"	7'-6"	3'-3"	2'-0"	6'-0"	2'-9"	1'-7"	34.0	44¼	16½	32¾
5'-0"	2'-10"	4'-2"	2'-3"	8'-9"	3'-6"	2'-0"	7'-0"	3'-0"	2'-0"	44.2	57½	21¼	42½
6'-0"	3'-4"	4'-8"	2'-7"	10'-0"	4'-0"	2'-1"	8'-0"	3'-3"	2'-5"	56.4	73¼	27¼	54¼
7'-0"	3'-10"	5'-1"	2'-10"	11'-3"	4'-6"	2'-5"	9'-0"	3'-9"	2'-9½"	72.4	94	34¾	69¾
8'-0"	4'-4"	5'-6"	3'-0"	12'-6"	4'-9"	2'-7"	10'-0"	4'-0"	3'-2½"	87.6	113¾	42¼	84¼
9'-0"	4'-10"	5'-11"	3'-3"	13'-9"	5'-3"	2'-8"	11'-0"	4'-3"	3'-7"	105.7	137¼	50¾	101¾
10'-0"	5'-3"	6'-4"	3'-6"	15'-0"	5'-9"	3'-0"	12'-0"	4'-9"	4'-0"	125.1	162½	60¼	120¼
11'-0"	5'-8"	6'-9"	3'-7"	16'-3"	6'-0"	3'-1"	13'-0"	5'-0"	4'-5"	147.7	191¾	71	142

APPROVED May 21, 1928
E E Brandow BRIDGE ENGINEER
APPROVED May 24, 1928
Sam Lewis CHIEF ENGINEER

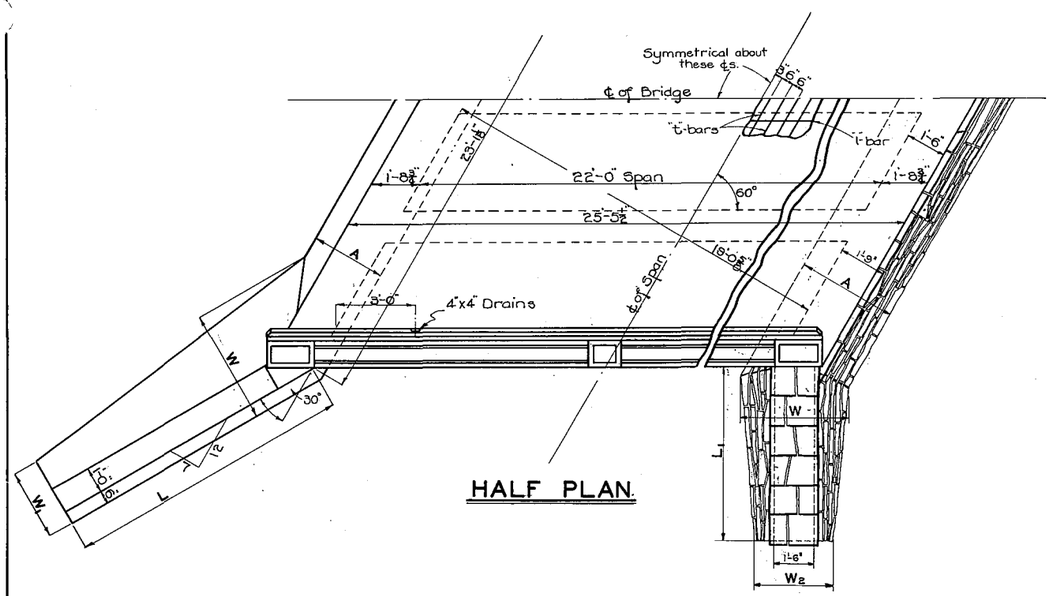
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION
STANDARD
REINFORCED CONCRETE BRIDGE
SPAN 22 FT. ROADWAY 18 FT.
SKEW 75° L.

SCALE ⅜" = 1'-0"

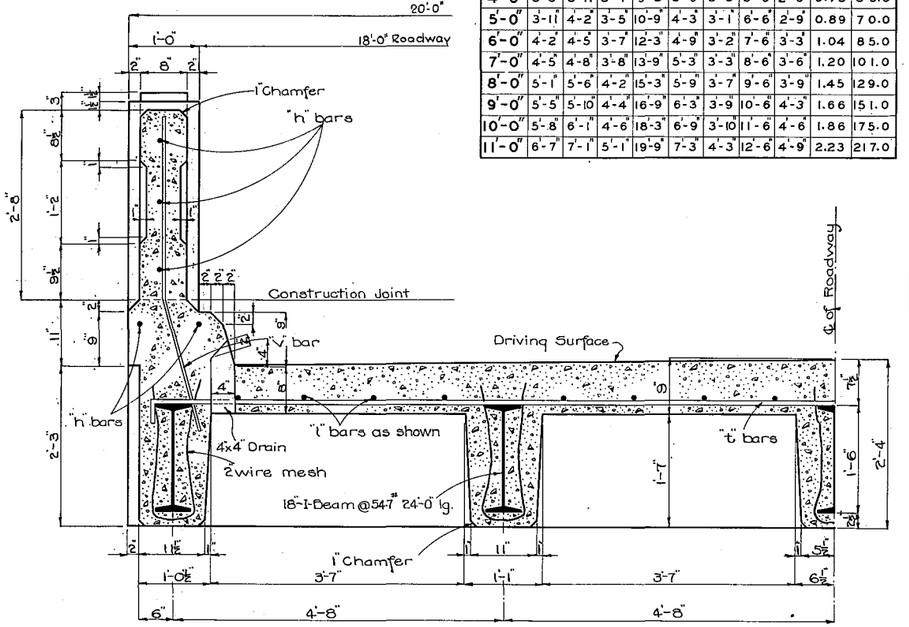
622 B-75

Made by W.B.D.
Checked by J.E.M. 5-8-28.

Revised 7-23-32 Stone Masonry W.C.T.
" 4-21-38



HALF PLAN.



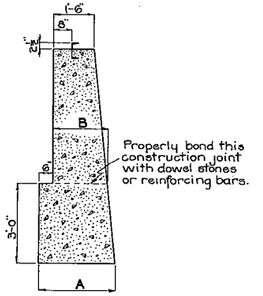
STONE ABUTMENTS & WINGS										
CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	CU YDS PER FOOT ONE ABUT	TOTAL CU YDS TWO ABUT
3'-0"	3'-5"	3'-8"	3'-2"	7'-9"	3'-3"	2'-11"	4'-6"	2'-3"	0.62	44.0
4'-0"	3'-8"	3'-11"	3'-4"	9'-3"	3'-9"	3'-0"	5'-6"	2'-6"	0.75	56.0
5'-0"	3'-11"	4'-2"	3'-5"	10'-9"	4'-3"	3'-1"	6'-6"	2'-9"	0.89	70.0
6'-0"	4'-2"	4'-5"	3'-7"	12'-3"	4'-9"	3'-2"	7'-6"	3'-3"	1.04	85.0
7'-0"	4'-5"	4'-8"	3'-8"	13'-9"	5'-3"	3'-3"	8'-6"	3'-6"	1.20	101.0
8'-0"	5'-1"	5'-6"	4'-2"	15'-3"	5'-9"	3'-7"	9'-6"	3'-9"	1.45	129.0
9'-0"	5'-5"	5'-10"	4'-4"	16'-9"	6'-3"	3'-9"	10'-6"	4'-3"	1.66	151.0
10'-0"	5'-8"	6'-1"	4'-6"	18'-3"	6'-9"	3'-10"	11'-6"	4'-6"	1.86	175.0
11'-0"	6'-7"	7'-1"	5'-1"	19'-9"	7'-3"	4'-3"	12'-6"	4'-9"	2.23	217.0

MATERIAL REQUIRED

29.55 Cu. Yds. "A" Concrete.	45¾ Bbls. Cement. 13½ Cu. Yds. Sand. 27 Cu. Yds. Stone.
1909 Lbs. Reinforcing Bars	
7005 Lbs. Structural Steel	5-18"-I-Beams @ 54.7# 24'-0" lg. 2-7" Channels @ 9.8 22'-6" lg.
495 Sq. Ft. 2" Wire Mesh	

TABLE OF BARS

Mark	No.	Stock	Description
l	16	½" ℄ x 24'-0"	Longitudinal in Slab.
t	38	¾" ℄ x 23'-3"	Transverse in Slab.
h	10	½" ℄ x 25'-3"	Horizontal in Parapet.
v	52	½" ℄ x 4'-6"	Vertical in Parapet.

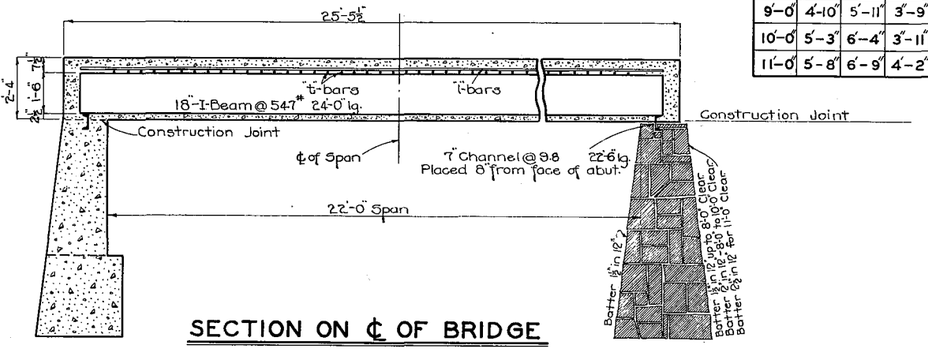


RT. L. ABUTMENT SECTION

BEAMS & PARAPET DETAILS

NOTE

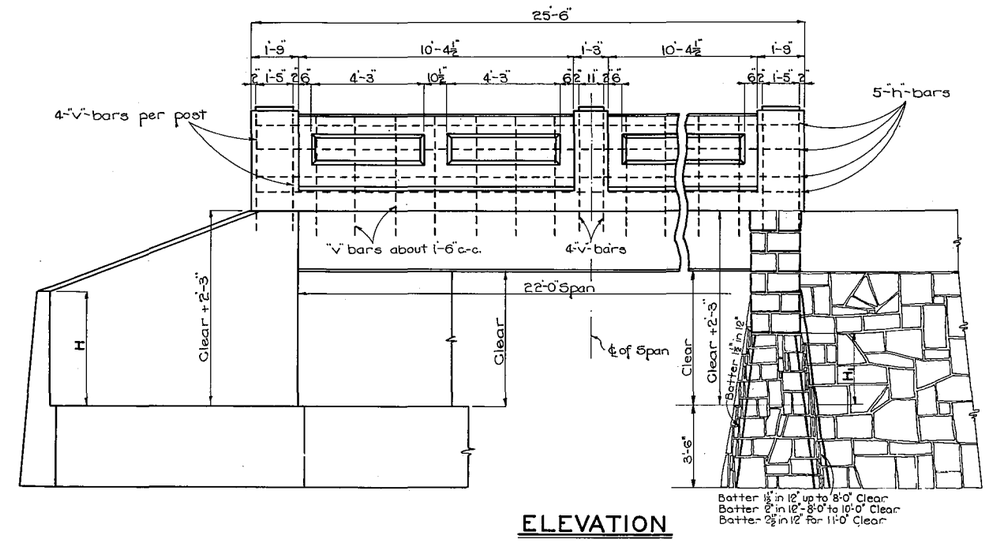
Floor of Bridge shall conform to grade of road. On level grade, slope top of slab at least ⅛" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving, use 6" of concrete or 8' of stone masonry and a 12" curtain wall of sufficient depth at each end.



SECTION ON ℄ OF BRIDGE

ABUTMENTS & WINGS

CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	B	Cu. Yds. ℄ Con.	Bbls. Cement	Cu. Yds. Sand	Cu. Yds. Stone
3'-0"	2'-0"	3'-3"	2'-1"	7'-9"	3'-3"	2'-0"	4'-6"	2'-3"	1'-6"	29.1	37¾	14	28
4'-0"	2'-2"	3'-9"	2'-5"	9'-3"	3'-9"	2'-0"	5'-6"	2'-6"	1'-7"	37.7	49	18¼	36¼
5'-0"	2'-10"	4'-2"	2'-8"	10'-9"	4'-3"	2'-0"	6'-6"	2'-9"	2'-0"	50.3	65¼	24¼	48½
6'-0"	3'-4"	4'-8"	3'-0"	12'-3"	4'-9"	2'-1"	7'-6"	3'-3"	2'-5"	64.9	84¼	31¼	62½
7'-0"	3'-10"	5'-1"	3'-3"	13'-9"	5'-3"	2'-3"	8'-6"	3'-6"	2'-9½"	81.3	105½	39	78¼
8'-0"	4'-4"	5'-6"	3'-6"	15'-3"	5'-9"	2'-5"	9'-6"	3'-9"	3'-2½"	100.0	129¾	48	96¼
9'-0"	4'-10"	5'-11"	3'-9"	16'-9"	6'-3"	2'-8"	10'-6"	4'-3"	3'-7"	121.1	157¼	58¼	116½
10'-0"	5'-3"	6'-4"	3'-11"	18'-3"	6'-9"	2'-10"	11'-6"	4'-6"	4'-0"	143.7	186½	69	138¼
11'-0"	5'-8"	6'-9"	4'-2"	19'-9"	7'-3"	3'-0"	12'-6"	4'-9"	4'-5"	168.9	219¼	81¼	162½



ELEVATION

APPROVED May 24, 1928
E E Brownlee BRIDGE ENGINEER
APPROVED May 24, 1928
Samuel Vauclain CHIEF ENGINEER

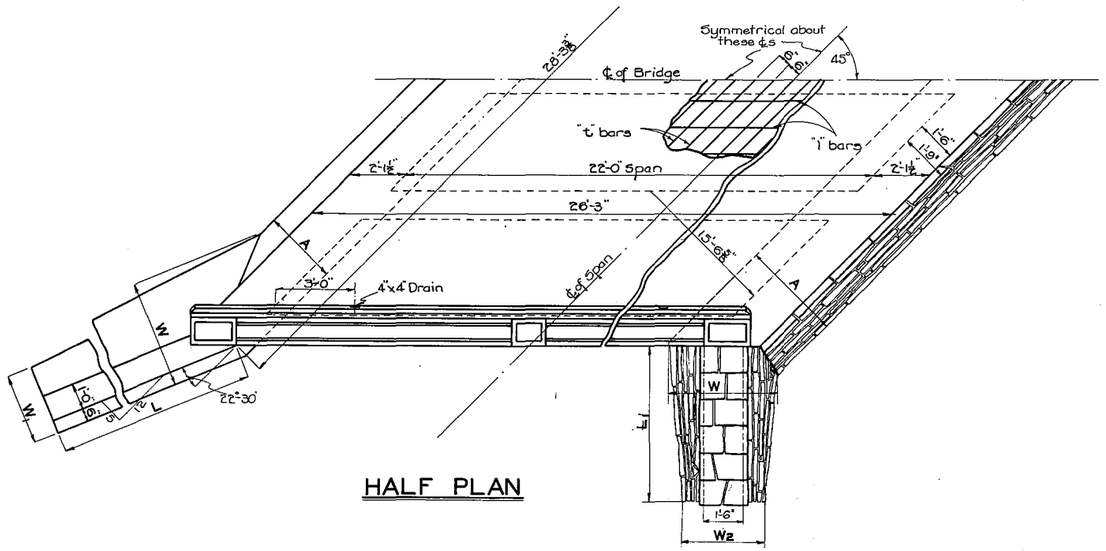
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION
STANDARD
REINFORCED CONCRETE BRIDGE
SPAN 22 FT. ROADWAY 18 FT.
SKEW 60° L.

SCALE ⅜" & 1"=1'-0"

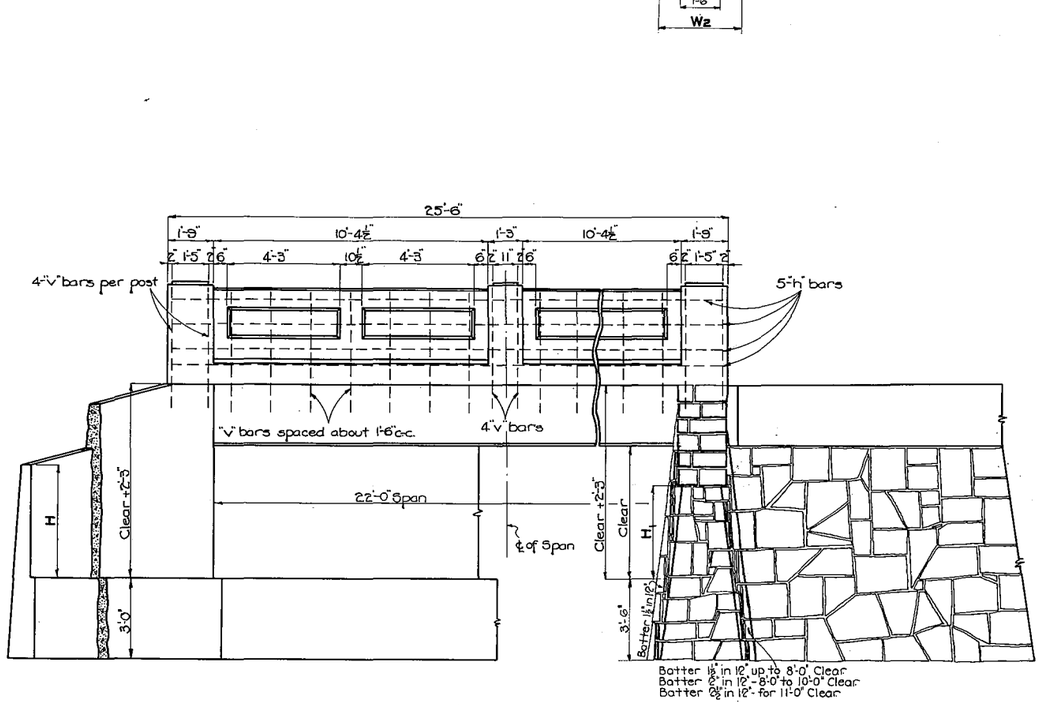
622 B-60

Made by W.B.D.
Checked by W.B.H. 5.21.28

Revised 7-23-32 Stone Masonry W.C.T.

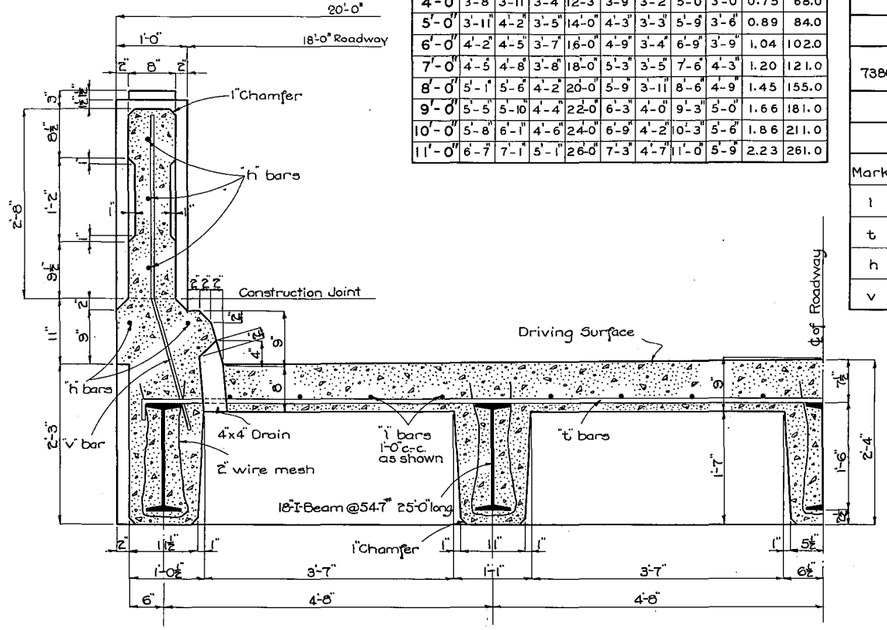


HALF PLAN

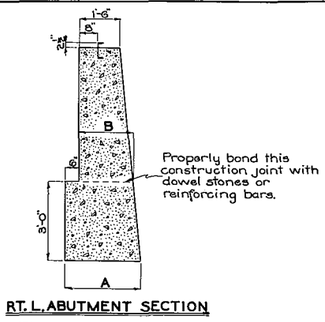


ELEVATION

STONE ABUTMENTS & WINGS										
CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	CU YDS PER FOOT ONE ABUT.	TOTAL CU YDS TWO ABUT.
3'-0"	3'-5"	3'-8"	3'-2"	10'-3"	3'-3"	3'-0"	4'-0"	2'-6"	0.62	53.0
4'-0"	3'-8"	3'-11"	3'-4"	12'-3"	3'-9"	3'-2"	5'-0"	3'-0"	0.75	68.0
5'-0"	3'-11"	4'-2"	3'-5"	14'-0"	4'-3"	3'-3"	5'-9"	3'-6"	0.89	84.0
6'-0"	4'-2"	4'-5"	3'-7"	16'-0"	4'-9"	3'-4"	6'-9"	3'-9"	1.04	102.0
7'-0"	4'-5"	4'-8"	3'-8"	18'-0"	5'-3"	3'-5"	7'-6"	4'-3"	1.20	121.0
8'-0"	5'-1"	5'-6"	4'-2"	20'-0"	5'-9"	3'-11"	8'-6"	4'-9"	1.45	155.0
9'-0"	5'-5"	5'-10"	4'-4"	22'-0"	6'-3"	4'-0"	9'-3"	5'-0"	1.66	181.0
10'-0"	5'-8"	6'-1"	4'-6"	24'-0"	6'-9"	4'-2"	10'-3"	5'-6"	1.86	211.0
11'-0"	6'-7"	7'-1"	5'-1"	26'-0"	7'-3"	4'-7"	11'-0"	5'-9"	2.23	261.0



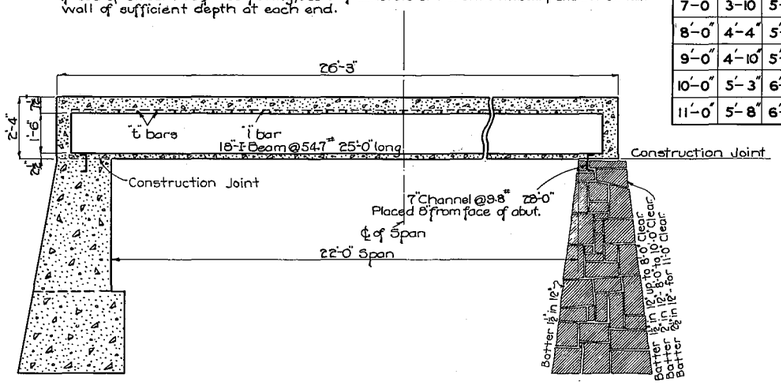
BEAMS & PARAPET DETAILS



RT. L. ABUTMENT SECTION

NOTE

Floor of Bridge shall conform to grade of road. On level grade, slope top of slab at least ⅛" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving, use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.



SECTION ON ℄ OF BRIDGE

MATERIAL REQUIRED

31 Cu. Yds. "A" Concrete.	48 Bbls. Cement. 14¼ Cu. Yds. Sand. 28½ Cu. Yds. Stone.
1896 Lbs. Reinforcing Bars.	
7386 Lbs. Structural Steel.	5-16"-I-Beams @54.7# 25'-0" long. 2-7"-Channels @9.8# 28'-0" long.
500 Sq. Ft. 2" Wire Mesh.	

TABLE OF BARS

Mark.	No.	Stock.	Description.
l	16	½"ø x 25'-0"	Longitudinal in Slab.
t	31	¾"ø x 26'-0"	Transverse in Slab.
h	10	½"ø x 25'-3"	Horizontal in Parapet.
v	52	½"ø x 4'-6"	Vertical in Parapet.

ABUTMENTS & WINGS

CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	B	Cu.Yds. ℄ Con.	Bbls. Cement	Cu.Yds. Sand	Cu.Yds. Stone
3'-0"	2'-0"	3'-3"	2'-1"	10'-3"	3'-3"	2'-0"	4'-0"	2'-6"	1'-6"	35	45½	16¾	33¾
4'-0"	2'-2"	3'-9"	2'-5"	12'-3"	3'-9"	2'-0"	5'-0"	3'-0"	1'-7"	45.6	59¼	22	43¾
5'-0"	2'-10"	4'-2"	2'-8"	14'-0"	4'-3"	2'-3"	5'-9"	3'-6"	2'-0"	61.6	78	29¾	59¼
6'-0"	3'-4"	4'-8"	3'-0"	16'-0"	4'-9"	2'-5"	6'-9"	3'-9"	2'-5"	78.8	102¼	38	75¾
7'-0"	3'-10"	5'-1"	3'-3"	18'-0"	5'-3"	2'-8"	7'-6"	4'-3"	2'-9½"	98.7	128¼	47½	95
8'-0"	4'-4"	5'-6"	3'-6"	20'-0"	5'-9"	3'-0"	8'-6"	4'-9"	3'-2½"	121.6	157¾	58½	117
9'-0"	4'-10"	5'-11"	3'-9"	22'-0"	6'-3"	3'-1"	9'-3"	5'-0"	3'-7"	146.6	190¼	70½	141
10'-0"	5'-3"	6'-4"	4'-0"	24'-0"	6'-9"	3'-4"	10'-3"	5'-6"	4'-0"	174.6	226¾	84	168
11'-0"	5'-8"	6'-9"	4'-2"	26'-0"	7'-3"	3'-6"	11'-0"	5'-9"	4'-5"	205.3	266½	98¾	197½

COMMONWEALTH OF PENNSYLVANIA.

DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION.

STANDARD REINFORCED CONCRETE BRIDGE

SPAN 22 FT. ROADWAY 18 FT. SKEW 45° L

APPROVED May 21, 1928
E. E. Macadams BRIDGE ENGINEER
APPROVED May 24, 1928
Sam Lewis CHIEF ENGINEER

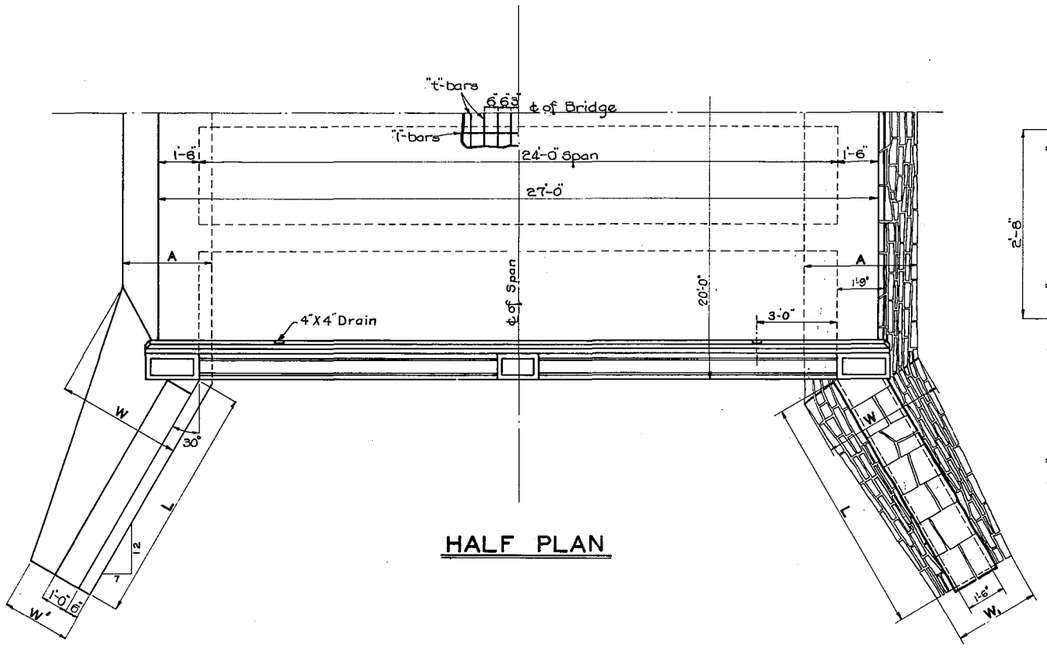
SCALE ¾ & 1"=1'-0"

622 B-45

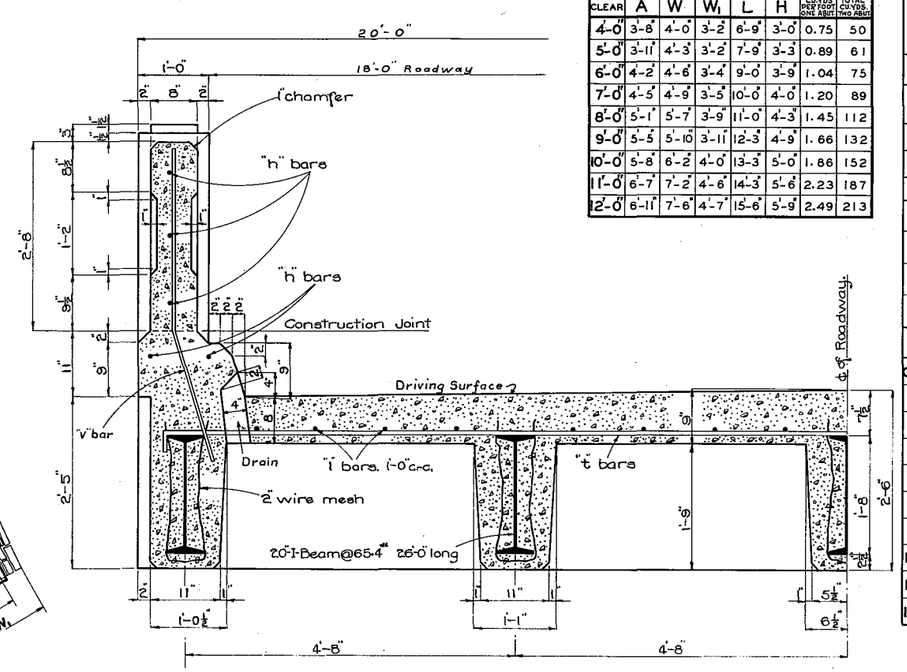
Made by W.B.D.
Checked by J.E.M. 5-8-28

IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

Revised 5-25-28 W.B.D.
" 7-23-32 W.C.T. Stone Masonry.



HALF PLAN



BEAMS & PARAPET DETAILS

STONE ABUTMENTS & WINGS							
CLEAR	A	W	W_1	L	H	CU.YDS. PER FOOT ONE ABUT.	TOTAL CU.YDS. TWO ABUT.
4'-0"	3'-8"	4'-0"	3'-2"	6'-9"	3'-0"	0.75	50
5'-0"	3'-11"	4'-3"	3'-2"	7'-9"	3'-3"	0.89	61
6'-0"	4'-2"	4'-6"	3'-4"	9'-0"	3'-9"	1.04	75
7'-0"	4'-5"	4'-9"	3'-5"	10'-0"	4'-0"	1.20	89
8'-0"	5'-1"	5'-7"	3'-9"	11'-0"	4'-3"	1.45	112
9'-0"	5'-5"	5'-10"	3'-11"	12'-3"	4'-9"	1.66	132
10'-0"	5'-8"	6'-2"	4'-0"	13'-3"	5'-0"	1.86	152
11'-0"	6'-7"	7'-2"	4'-6"	14'-3"	5'-6"	2.23	187
12'-0"	6'-11"	7'-6"	4'-7"	15'-6"	5'-9"	2.49	213

MATERIAL REQUIRED

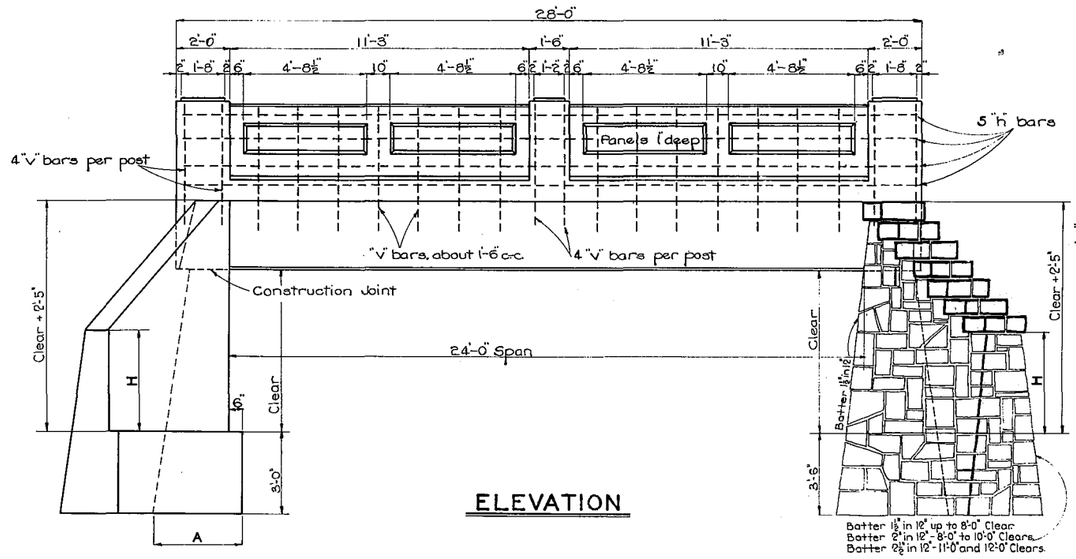
32.2 Cu. Yds. "A" Concrete.	50 Bbls. Cement. 14¾ Cu. Yds. Sand. 29½ Cu. Yds. Stone.
2044 Lbs. Reinforcing Bars.	
8945 Lbs. Structural Steel	5-20" I-Beams@65.4# 26'0" 2-6" Channels @11.5# -18'-3"
600 Sq. ft. 2" Wire Mesh.	

TABLE OF BARS

Mark.	No.	Stock.	Bending Diagram.
l.	16	⅝"x26'-0"	Longitudinal in Slab.
t	48	⅝"x19'-9"	Transverse in Slab.
h	10	⅝"x27'-5"	Longitudinal in Parapet.
v	52	⅝"x4'-6"	Vertical in Parapet.

ABUTMENTS & WINGS

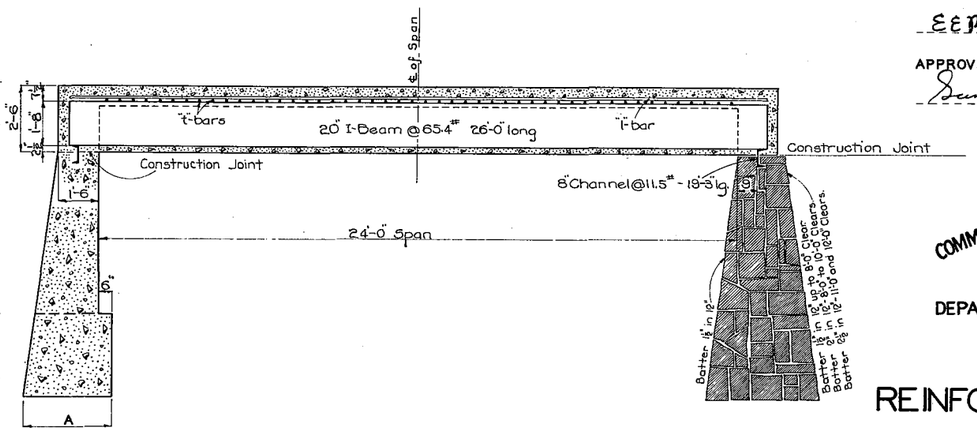
CLEAR	A	W	W'	L	H	Cu.Yds. Conc.	Bbls. Cement	Cu.Yds. Sand.	Cu.Yds. Stone
4'-0"	2'-2"	3'-10"	2'-0"	6'-9"	3'-0"	32.6	42½	15¾	31½
5'-0"	2'-10"	4'-3"	2'-0"	7'-9"	3'-3"	42.5	55¼	20½	41
6'-0"	3'-4"	4'-9"	2'-5"	9'-0"	3'-9"	55.3	71¾	26¾	53¼
7'-0"	3'-10"	5'-2"	2'-7"	10'-0"	4'-0"	68.2	88½	33	65¾
8'-0"	4'-4"	5'-7"	2'-9"	11'-0"	4'-3"	82.7	107½	39¾	79½
9'-0"	4'-10"	6'-0"	3'-0"	12'-3"	4'-9"	101.2	131½	48¾	97½
10'-0"	5'-3"	6'-5"	3'-1"	13'-3"	5'-0"	118.4	153¾	57	114
11'-0"	5'-8"	6'-10"	3'-4"	14'-3"	5'-6"	138.7	180	66¾	133½
12'-0"	6'-2"	7'-3"	3'-6"	15'-6"	5'-9"	162.7	211¼	78¼	156½



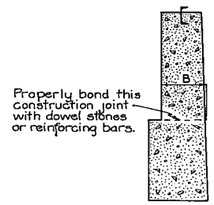
ELEVATION

NOTE

Floor of Bridge shall conform to grade of road. On level grade, slope top of slab at least 1/16" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving, use 6" of concrete, or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.



SECTION ON ℄ OF BRIDGE



CLEAR	B
4'-0"	1'-7"
5'-0"	2'-0"
6'-0"	2'-5"
7'-0"	2'-9½"
8'-0"	3'-2½"
9'-0"	3'-7"
10'-0"	4'-0"
11'-0"	4'-5"
12'-0"	4'-9½"

APPROVED August 1, 1927.
E E Brandon BRIDGE ENGINEER
APPROVED
Sam Rivals CHIEF ENGINEER.

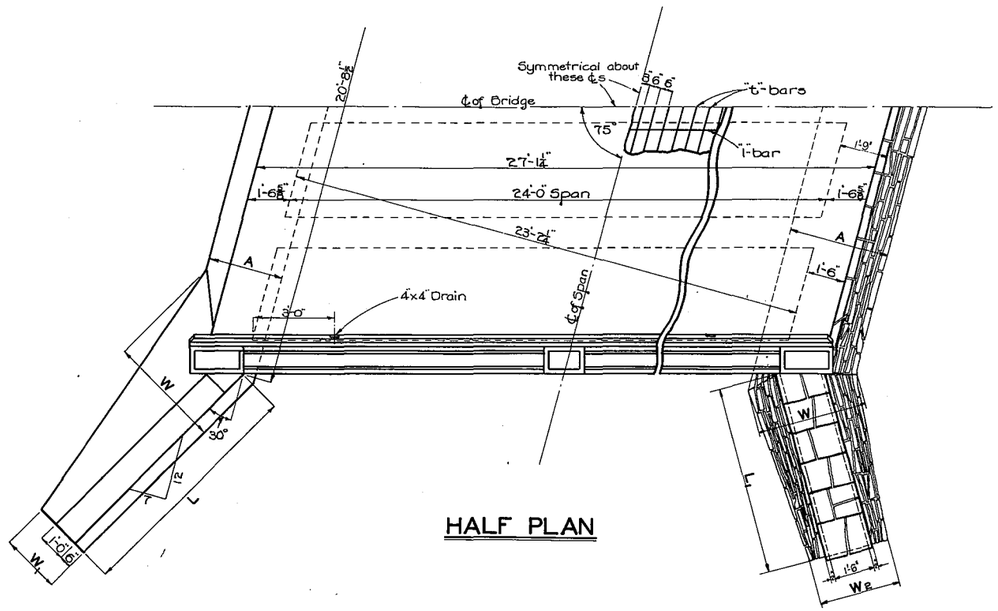
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION
STANDARD
REINFORCED CONCRETE BRIDGE.
SPAN 24 FT. ROADWAY 18 FT.

SCALE ⅜" & 1"=1'-0"

624B

Made by W.B.D.
Checked by A.A.W. 5/31/27

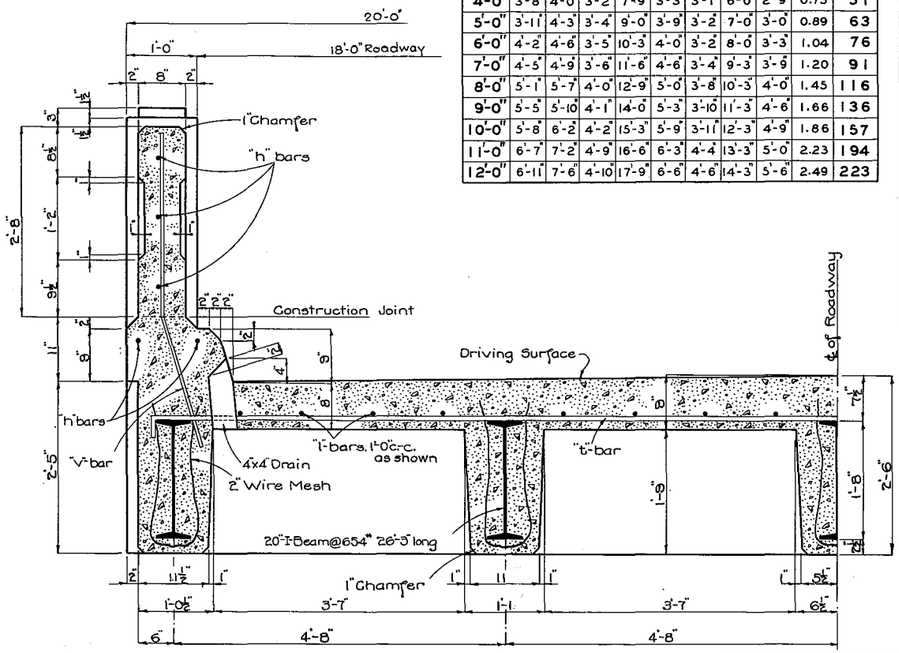
Revised 7-23-32 Stone Masonry W.C.T.



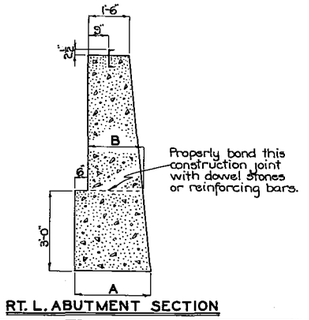
HALF PLAN

STONE ABUTMENTS & WINGS

CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	CU.YDS. PER FOOT ONE ABUT.	TOTAL CU. YDS. TWO ABUT.
4'-0"	3'-8"	4'-0"	3'-2"	7'-9"	3'-3"	3'-1"	6'-0"	2'-9"	0.75	51
5'-0"	3'-11"	4'-3"	3'-4"	9'-0"	3'-9"	3'-2"	7'-0"	3'-0"	0.89	63
6'-0"	4'-2"	4'-6"	3'-5"	10'-3"	4'-0"	3'-2"	8'-0"	3'-3"	1.04	76
7'-0"	4'-5"	4'-9"	3'-6"	11'-6"	4'-6"	3'-4"	9'-3"	3'-6"	1.20	91
8'-0"	5'-1"	5'-7"	4'-0"	12'-9"	5'-0"	3'-8"	10'-3"	4'-0"	1.45	116
9'-0"	5'-5"	5'-10"	4'-1"	14'-0"	5'-3"	3'-10"	11'-3"	4'-6"	1.66	136
10'-0"	5'-8"	6'-2"	4'-2"	15'-3"	5'-9"	3'-11"	12'-3"	4'-9"	1.86	157
11'-0"	6'-7"	7'-2"	4'-9"	16'-6"	6'-3"	4'-4"	13'-3"	5'-0"	2.23	194
12'-0"	6'-11"	7'-6"	4-10"	17'-9"	6'-6"	4'-6"	14'-3"	5'-6"	2.49	223



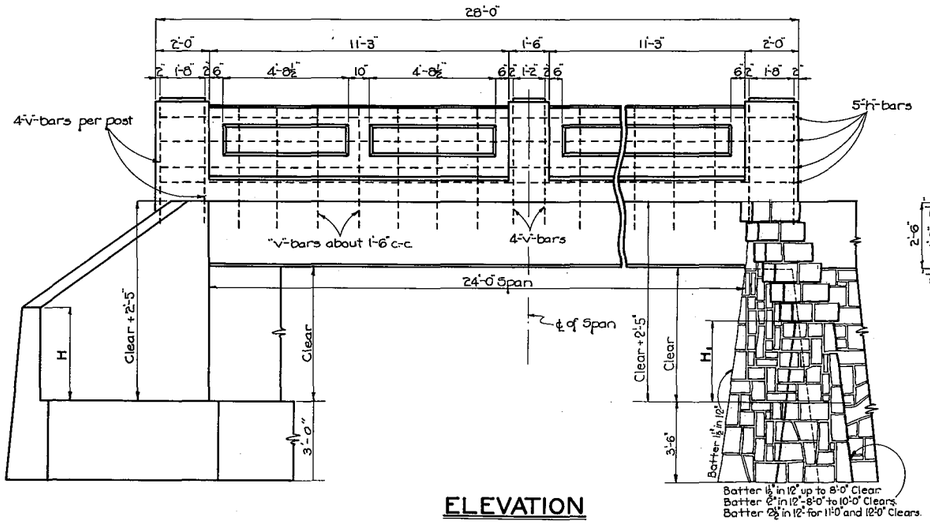
BEAMS & PARAPET DETAILS



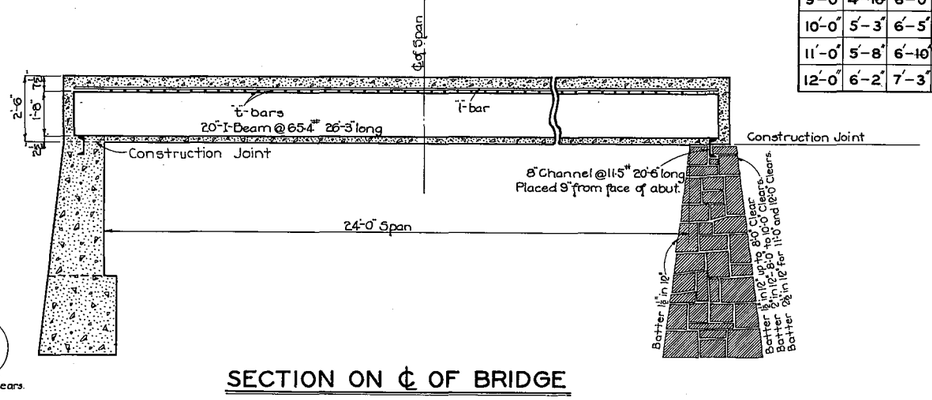
RT. L. ABUTMENT SECTION

NOTE

Floor of Bridge shall conform to grade of road. On level grade, slope top of slab at least ⅛ per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.



ELEVATION



SECTION ON ℄ OF BRIDGE

MATERIAL REQUIRED

32.5 Cu. Yds. "A" Concrete	50¼ Bbls. Cement 15 Cu. Yds. Sand. 29¾ Cu. Yds. Stone.
2073 Lbs. Reinforcing Bars.	
9055 Lbs. Structural Steel	5-20"-I-Beams @ 65.4# 26'-3" long. 2-8" Channels @ 11.5# 20'-6" long.
600 Sq. Ft. 2" Wire Mesh.	

TABLE OF BARS

Mark.	No.	Stock.	Description.
l	16	½" x 26'-3"	Longitudinal in Slab.
t.	46	⅜" x 21'-0"	Transverse in Slab.
h	10	½" x 27'-9"	Horizontal in Parapet.
v	52	½" x 4'-6"	Vertical in Parapet.

ABUTMENTS & WINGS

CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	B	Cu. Yds. "B" Con.	Bbls. Cement	Cu. Yds. Sand.	Cu. Yds. Stone.
4'-0"	2'-2"	3'-10"	2'-1"	7'-9"	3'-3"	2'-0"	6'-0"	2'-9"	1'-7"	34.0	44¼	16¼	32¾
5'-0"	2'-10"	4'-3"	2'-5"	9'-0"	3'-9"	2'-0"	7'-0"	3'-0"	2'-0"	45.4	59	21¾	43¾
6'-0"	3'-4"	4'-9"	2'-7"	10'-3"	4'-0"	2'-1"	8'-0"	3'-3"	2'-5"	57.3	74½	27½	55½
7'-0"	3'-10"	5'-2"	2'-10"	11'-6"	4'-6"	2'-5"	9'-3"	3'-9"	2'-9½"	73.2	95	35¼	70½
8'-0"	4'-4"	5'-7"	3'-1"	12"-9"	5'-0"	2'-7"	10'-3"	4'-0"	3'-2½"	89.5	116¼	43	86
9'-0"	4'-10"	6'-0"	3'-3"	14'-0"	5'-3"	2'-10"	11'-3"	4'-6"	3'-7"	108.5	140¾	52¼	104½
10'-0"	5'-3"	6'-5"	3'-6"	15'-3"	5'-9"	3'-0"	12'-3"	4'-9"	4'-0"	132.5	172	63¾	127½
11'-0"	5'-8"	6'-10"	3'-9"	16'-6"	6'-3"	3'-1"	13'-3"	5'-0"	4'-5"	151.0	196	72¾	145¼
12'-0"	6'-2"	7'-3"	3'-10"	17'-9"	6'-6"	3'-4"	14'-3"	5'-6"	4'-9½"	175.7	228	84½	169

APPROVED May 21, 1928
E E Thompson BRIDGE ENGINEER
APPROVED May 24 1928
Sam Lewis CHIEF ENGINEER

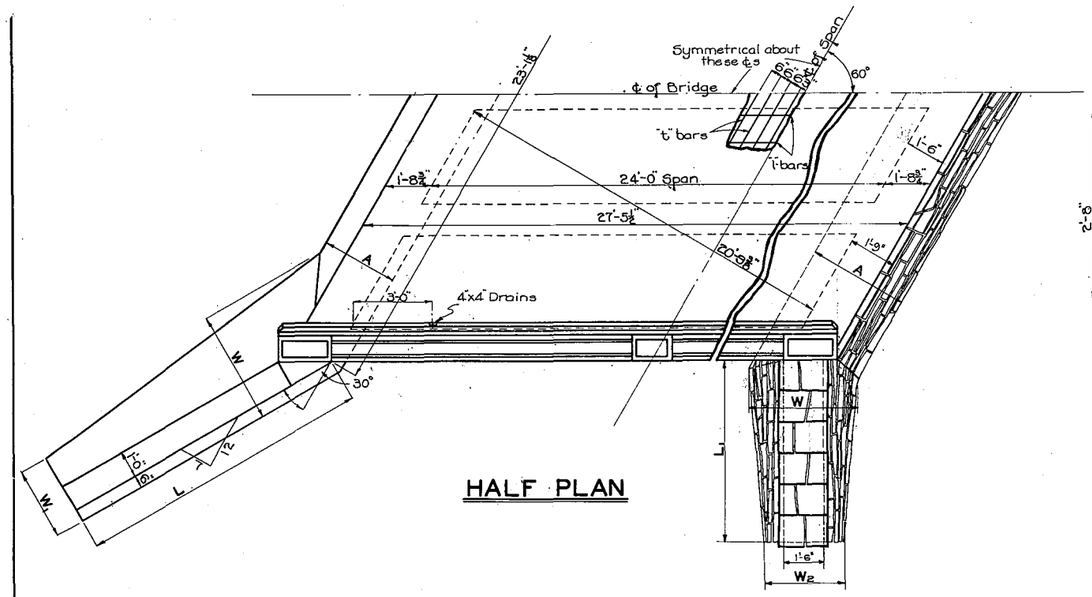
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION
STANDARD
REINFORCED CONCRETE BRIDGE
SPAN 24 FT. ROADWAY 18 FT.
SKEW 75° L.

SCALE ⅜" = 1'-0"

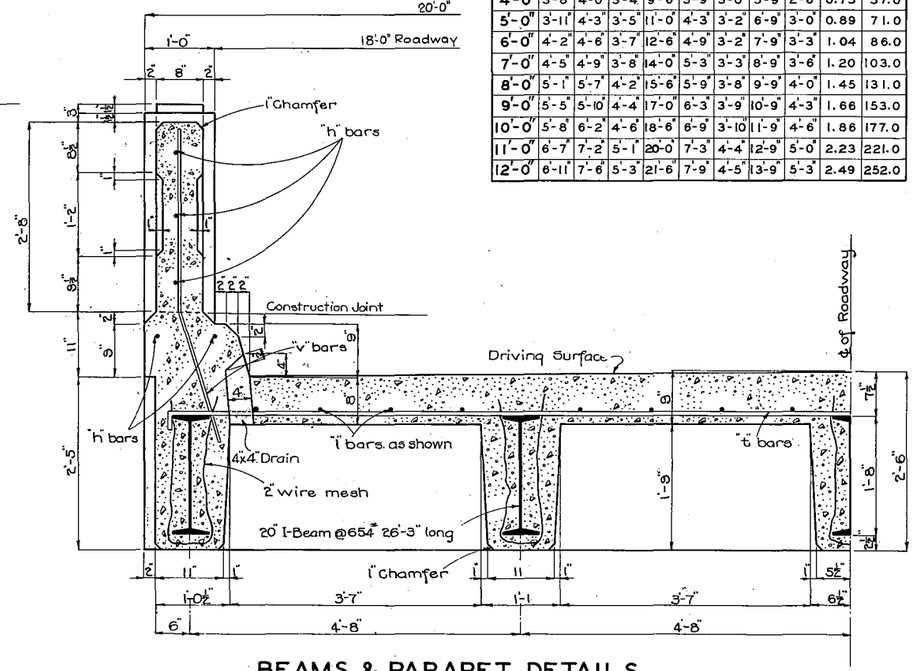
624 B-75

Made by. W.B.D.
Checked by. J.E.M. 5-8-28.

Revised 7-23-32 Stone Masonry W.C.T.



HALF PLAN



BEAMS & PARAPET DETAILS

STONE ABUTMENTS & WINGS

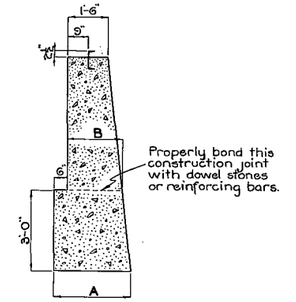
CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	CU.YDS. PER FOOT ONE ABUT	TOTAL CU.YDS. TWO ABUT.
4'-0"	3'-8"	4'-0"	3'-4"	9'-6"	3'-9"	3'-0"	5'-9"	2'-6"	0.75	57.0
5'-0"	3'-11"	4'-3"	3'-5"	11'-0"	4'-3"	3'-2"	6'-9"	3'-0"	0.89	71.0
6'-0"	4'-2"	4'-6"	3'-7"	12'-6"	4'-9"	3'-2"	7'-9"	3'-3"	1.04	86.0
7'-0"	4'-5"	4'-9"	3'-8"	14'-0"	5'-3"	3'-3"	8'-9"	3'-6"	1.20	103.0
8'-0"	5'-1"	5'-7"	4'-2"	15'-6"	5'-9"	3'-8"	9'-9"	4'-0"	1.45	131.0
9'-0"	5'-5"	5'-10"	4'-4"	17'-0"	6'-3"	3'-9"	10'-9"	4'-3"	1.66	153.0
10'-0"	5'-8"	6'-2"	4'-6"	18'-6"	6'-9"	3'-10"	11'-9"	4'-6"	1.86	177.0
11'-0"	6'-7"	7'-2"	5'-1"	20'-0"	7'-3"	4'-4"	12'-9"	5'-0"	2.23	221.0
12'-0"	6'-11"	7'-6"	5'-3"	21'-6"	7'-9"	4'-5"	13'-9"	5'-3"	2.49	252.0

MATERIAL REQUIRED

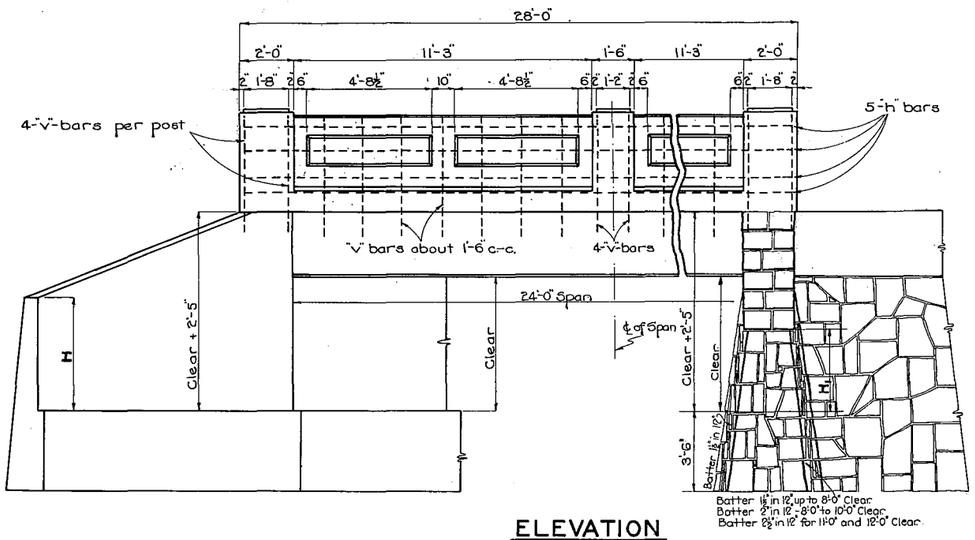
33.1 Cu. Yds. "A" Concrete.	51¼ Bbls. Cement. 15½ Cu. Yds. Sand. 30¾ Cu. Yds. Stone.
2088 Lbs. Reinforcing Bars.	
9102 Lbs. Structural Steel	5-20"I-Beams @65.4# 26'-3" long. 2-8"Channels@11.5# 22'-6" lg.
600 Sq. Ft. 2" Wire Mesh.	

TABLE OF BARS

Mark	No.	Stock	Description.
l	16	½"ø x 26'-3"	Longitudinal in Slab.
t	42	¾"ø x 23'-3"	Transverse in Slab.
h	10	½"ø x 27'-9"	Horizontal in Parapet.
v	52	½"ø x 4'-6"	Vertical in Parapet.



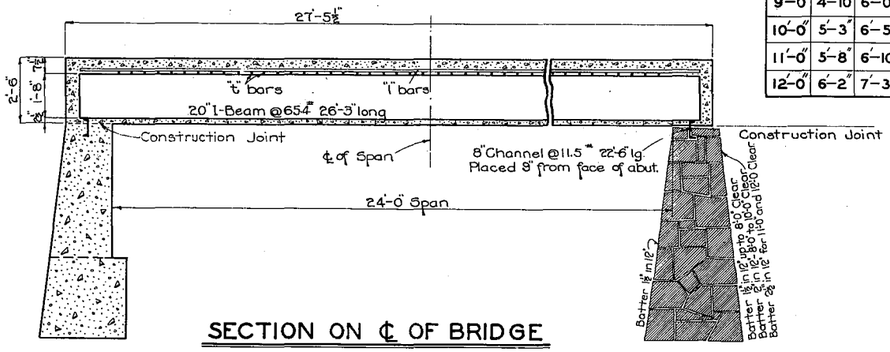
RT. L. ABUTMENT SECTION



ELEVATION

NOTE

Floor of Bridge shall conform to grade of road. On level grade, slope top of slab at least ½" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving, use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.



SECTION ON ℄ OF BRIDGE

ABUTMENTS & WINGS

CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	B	Cu.Yds. C. Con.	Bbls. Cement	Cu.Yds. Sand.	Cu.Yds. Stone.
4'-0"	2'-2"	3'-10"	2'-5"	9'-6"	3'-9"	2'-0"	5'-9"	2'-6"	1'-7"	37.3	48½	18	36
5'-0"	2'-10"	4'-3"	2'-8"	11'-0"	4'-3"	2'-0"	6'-9"	3'-0"	2'-0"	51.4	66¾	24¾	49½
6'-0"	3'-4"	4'-9"	3'-0"	12'-6"	4'-9"	2'-1"	7'-9"	3'-3"	2'-5"	66.6	86½	32	64
7'-0"	3'-10"	5'-2"	3'-3"	14'-0"	5'-3"	2'-3"	8'-9"	3'-6"	2'-9½"	83.6	108½	40¼	80½
8'-0"	4'-4"	5'-7"	3'-6"	15'-6"	5'-9"	2'-7"	9'-9"	4'-0"	3'-2½"	104.8	136	50½	100¾
9'-0"	4'-10"	6'-0"	3'-9"	17'-0"	6'-3"	2'-8"	10'-9"	4'-3"	3'-7"	123.0	159¾	59¼	118¼
10'-0"	5'-3"	6'-5"	4'-0"	18'-6"	6'-9"	2'-10"	11'-9"	4'-6"	4'-0"	143.4	186¼	69	138
11'-0"	5'-8"	6'-10"	4'-2"	20'-0"	7'-3"	3'-1"	12'-9"	5'-0"	4'-5"	171.9	223¼	82¾	165¼
12'-0"	6'-2"	7'-3"	4'-5"	21'-6"	7'-9"	3'-3"	13'-9"	5'-3"	4'-9½"	204.9	266	98½	197

APPROVED May 21, 1928
E E Rhoades BRIDGE ENGINEER
APPROVED May 21, 1928
Samuel Eckels CHIEF ENGINEER

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION
STANDARD
REINFORCED CONCRETE BRIDGE
SPAN 24 FT. ROADWAY 18 FT.
SKEW 60° L.

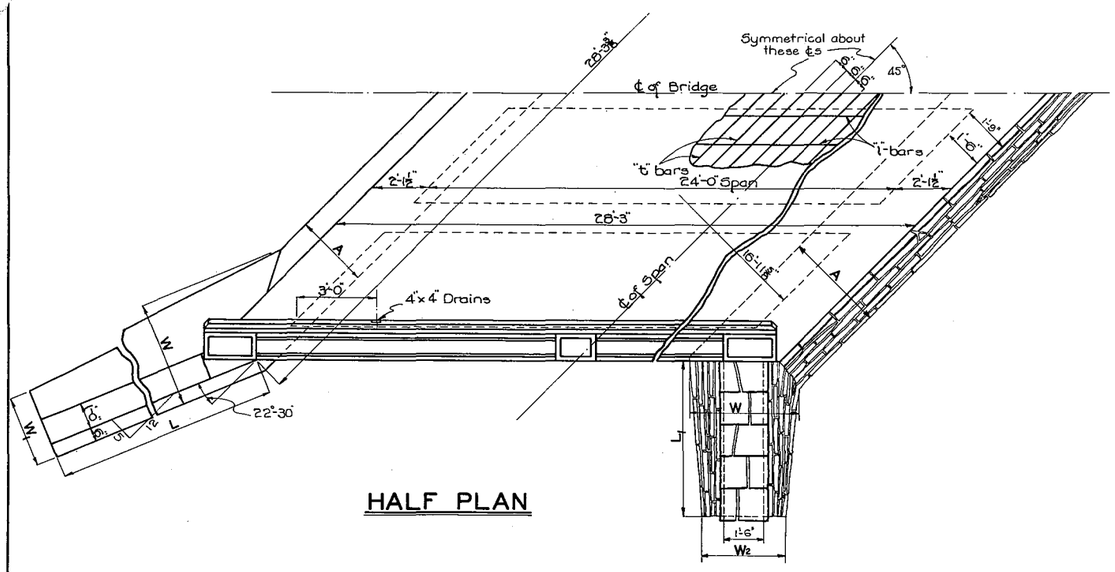
SCALE ¾" & 1"=1'-0"

624 B-60

Made by W.B.D.
Checked by W.B.H. 5-21-28.

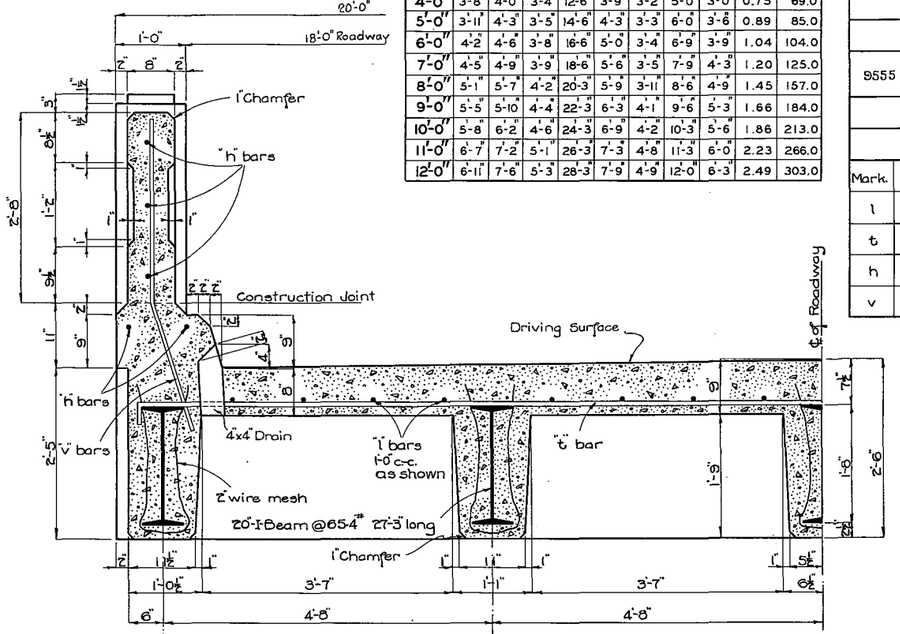
"IMPERIAL" TRACING CLOTH
K & E CO., N.Y.

Revised 7-23-32 Stone Masonry W.C.T.

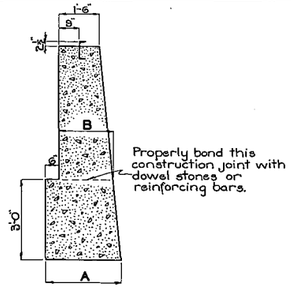


HALF PLAN

STONE ABUTMENTS & WINGS										
CLEAR	A	W	W₁	L	H	W₂	L₁	H₁	CU. YDS. PER FOOT ONE ABUT.	TOTAL CU. YDS. TWO ABUT.
4'-0"	3'-8"	4'-0"	3'-4"	12'-6"	3'-9"	3'-2"	5'-0"	3'-0"	0.75	69.0
5'-0"	3'-11"	4'-3"	3'-5"	14'-6"	4'-3"	3'-3"	6'-0"	3'-6"	0.89	85.0
6'-0"	4'-2"	4'-6"	3'-8"	16'-6"	5'-0"	3'-4"	6'-9"	3'-9"	1.04	104.0
7'-0"	4'-5"	4'-9"	3'-9"	18'-6"	5'-6"	3'-5"	7'-9"	4'-3"	1.20	125.0
8'-0"	5'-1"	5'-7"	4'-2"	20'-3"	5'-9"	3'-11"	8'-6"	4'-9"	1.45	157.0
9'-0"	5'-5"	5'-10"	4'-4"	22'-3"	6'-3"	4'-1"	9'-6"	5'-3"	1.66	184.0
10'-0"	5'-8"	6'-2"	4'-6"	24'-3"	6'-9"	4'-2"	10'-3"	5'-6"	1.86	213.0
11'-0"	6'-7"	7'-2"	5'-1"	26'-3"	7'-3"	4'-8"	11'-3"	6'-0"	2.23	266.0
12'-0"	6'-11"	7'-6"	5'-3"	28'-3"	7'-9"	4'-9"	12'-0"	6'-3"	2.49	303.0



BEAMS & PARAPET DETAILS



RT. L. ABUTMENT SECTION

NOTE

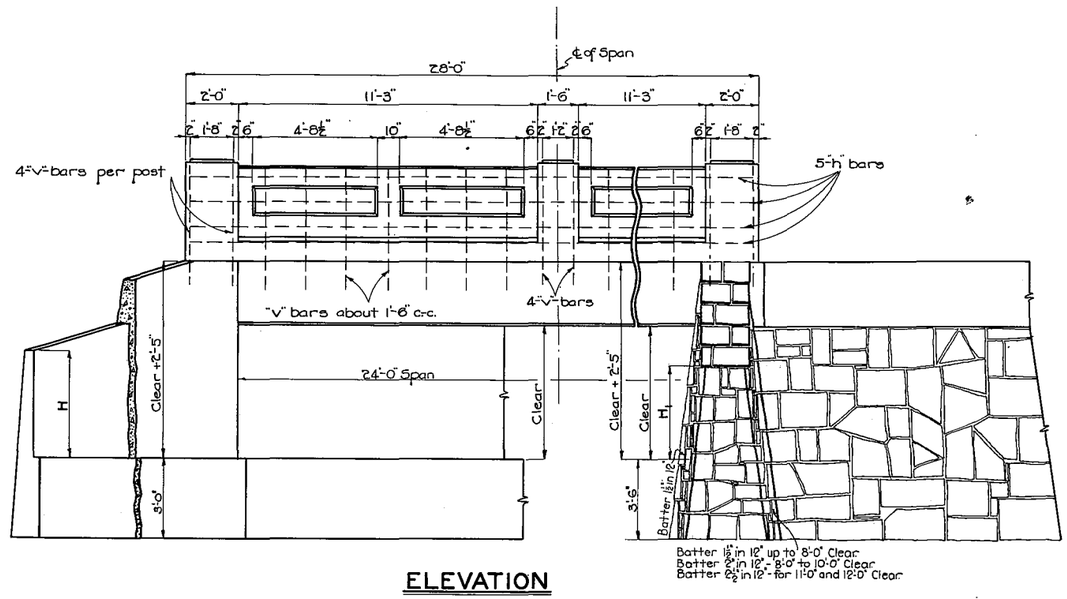
Floor of Bridge shall conform to grade of road. On level grade, slope top of slab at least ½ per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving, use 6" of concrete or 8" of stone masonry & a 12" curtain wall of sufficient depth at each end.

MATERIAL REQUIRED

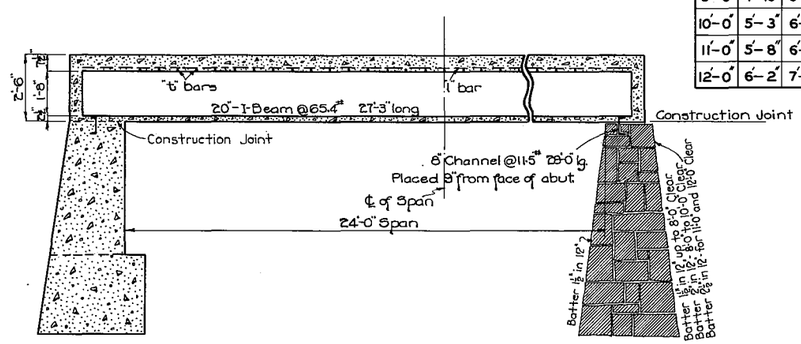
34.4 Cu. Yds. "A" Concrete.	53¼ Bbls. Cement. 15¾ Cu. Yds. Sand. 31½ Cu. Yds. Stone.
2021 Lbs. Reinforcing Bars.	
9555 Lbs. Structural Steel.	5-20"-I-Beams @65.4# 27'-3" long. 2-8" Channels @11.5# 28'-0" long.
600 Sq. Ft. 2" Wire Mesh.	

TABLE OF BARS

Mark.	No.	Stock.	Description.
l	16	1½"x27'-3"	Longitudinal in Slab.
t	33	¾"x28'-0"	Transverse in Slab.
h	10	½"x27'-3"	Horizontal in Parapet.
v	52	½"x4'-6"	Vertical in Parapet.



ELEVATION



SECTION ON ℄ OF BRIDGE

ABUTMENTS & WINGS

CLEAR	A	W	W₁	L	H	W₂	L₁	H₁	B	Cu.Yds. B Con.	Bbls. Cement	Cu.Yds. Sand	Cu.Yds. Stone
4'-0"	2'-2"	3'-10"	2'-5"	12'-6"	3'-9"	2'-0"	5'-0"	3'-0"	1'-7"	46.5	60½	22¼	46¾
5'-0"	2'-10"	4'-3"	2'-8"	14'-6"	4'-3"	2'-3"	6'-0"	3'-6"	2'-0"	61.5	79¾	29½	59¼
6'-0"	3'-4"	4'-9"	3'-1"	16'-6"	5'-0"	2'-5"	6'-9"	3'-9"	2'-5"	81	105¼	39	78
7'-0"	3'-10"	5'-2"	3'-4"	18'-6"	5'-6"	2'-8"	7'-9"	4'-3"	2'-9½"	101.5	131¾	48¾	97¾
8'-0"	4'-4"	5'-7"	3'-6"	20'-3"	5'-9"	3'-0"	8'-6"	4'-9"	3'-2½"	123.4	160¼	59¼	118¾
9'-0"	4'-10"	6'-0"	3'-9"	22'-3"	6'-3"	3'-3"	9'-6"	5'-3"	3'-7"	149.6	194¼	72	144
10'-0"	5'-3"	6'-5"	4'-0"	24'-3"	6'-9"	3'-4"	10'-3"	5'-6"	4'-0"	176.8	229½	85	170
11'-0"	5'-8"	6'-10"	4'-2"	26'-3"	7'-3"	3'-7"	11'-3"	6'-0"	4'-5"	207.3	269	99¾	199½
12'-0"	6'-2"	7'-3"	4'-5"	28'-3"	7'-9"	3'-9"	12'-0"	6'-3"	4'-9½"	242.3	314½	116½	233

APPROVED May 21, 1928
E E Brownlow BRIDGE ENGINEER
APPROVED May 24, 1928
Samuel Rea CHIEF ENGINEER

COMMONWEALTH OF PENNSYLVANIA.
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION.
STANDARD
REINFORCED CONCRETE BRIDGE.
SPAN 24 FT. ROADWAY 18 FT.
SKEW 45° L.

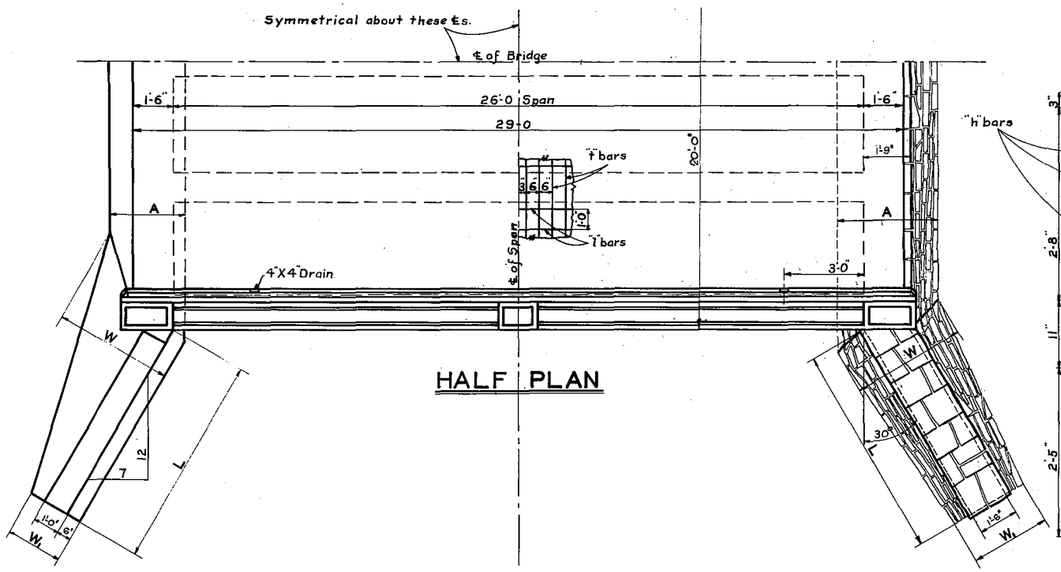
SCALE ⅜" & 1"=1'-0"

624 B-45

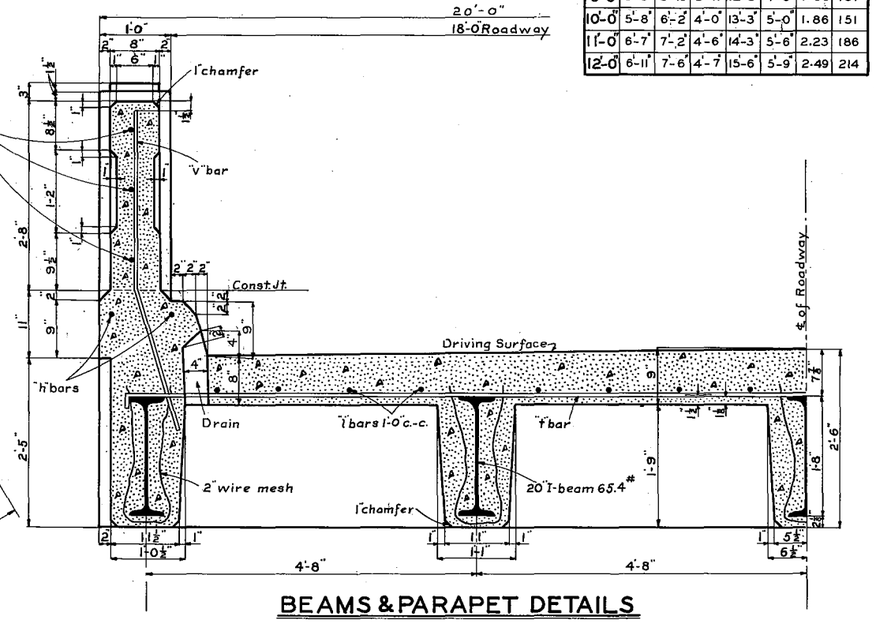
Made by. W.B.D.
Checked by. J.E.M. 5-5-28.

IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

Revised 5-25-28 W.B.D.
" 7-23-32 W.C.T. Stone Masonry.
" 4-21-36



HALF PLAN



BEAMS & PARAPET DETAILS

STONE ABUTMENTS & WINGS							
CLEAR	A	W	W1	L	H	CU.YDS. PER FOOT ONE ABUTTING ABUT.	TOTAL CU.YDS. BOTH ABUTTING ABUT.
4'-0"	3'-8"	4'-0"	3'-2"	6'-9"	3'-0"	0.75	49
5'-0"	3'-11"	4'-3"	3'-2"	7'-9"	3'-3"	0.89	61
6'-0"	4'-2"	4'-6"	3'-4"	9'-0"	3'-9"	1.04	74
7'-0"	4'-5"	4'-9"	3'-5"	10'-0"	4'-0"	1.20	88
8'-0"	5'-1"	5'-7"	3'-9"	11'-0"	4'-3"	1.45	111
9'-0"	5'-5"	5'-10"	3'-11"	12'-3"	4'-9"	1.66	131
10'-0"	5'-8"	6'-2"	4'-0"	13'-3"	5'-0"	1.86	151
11'-0"	6'-7"	7'-2"	4'-6"	14'-3"	5'-6"	2.23	186
12'-0"	6'-11"	7'-6"	4'-7"	15'-6"	5'-9"	2.49	214

MATERIAL REQUIRED

34.3 Cu.Yds. Class "A" (1:2:4) Concrete | 53 Bbls. Cement. 15¾ Cu.Yds. Sand. 31½ Cu.Yds. Stone.

2209 Lbs. Reinforcing Bars.

9599 Lbs. Structural Steel. | 5-20" I-beams @ 65.4# - 28'-0" lg. 2-8" Channels @ 11.5# - 19'-3½" lg.

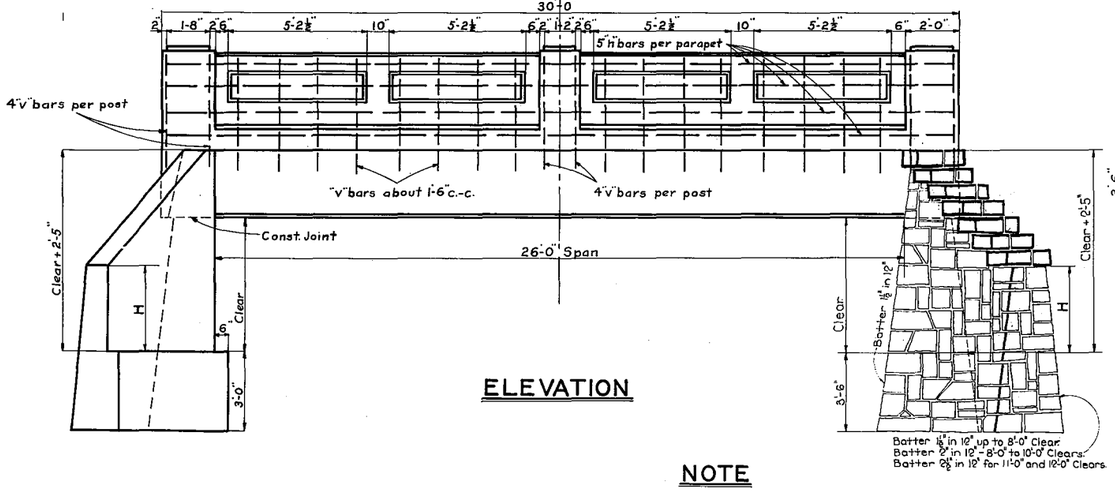
650 Sq.Ft. 2" Wire Mesh.

TABLE OF BARS.

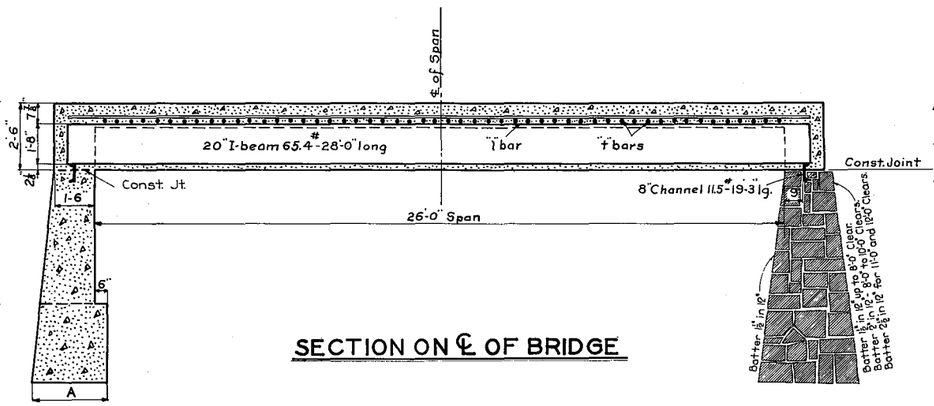
Mark.	No.	Stock.	Description.
l	16	½" ϕ X 28'-0"	Longitudinal in Slab.
t	52	¾" ϕ X 1'-9"	Transverse in Slab.
h	10	½" ϕ X 29'-9"	Horizontal in Parapets.
v	56	½" ϕ X 4'-6"	Vertical in Parapets.

ABUTMENTS & WINGS.

CLEAR	A	W	W1	L	H	Cu.Yds. B'Conc 1:2½:5	Bbls. Cement.	Cu.Yds. Sand.	Cu.Yds. Stone.
4'-0"	2'-2"	3'-10"	2'-0"	6'-9"	3'-0"	32.6	42½	15¾	31½
5'-0"	2'-10"	4'-3"	2'-1"	7'-9"	3'-3"	42.5	55¼	20½	41
6'-0"	3'-4"	4'-9"	2'-5"	9'-0"	3'-9"	55.3	71¾	26¾	53½
7'-0"	3'-10"	5'-2"	2'-7"	10'-0"	4'-0"	68.2	88½	33	65¾
8'-0"	4'-4"	5'-7"	2'-9"	11'-0"	4'-3"	82.7	107½	39¾	79½
9'-0"	4'-10"	6'-0"	3'-0"	12'-3"	4'-9"	101.2	131½	48¾	97½
10'-0"	5'-3"	6'-5"	3'-1"	13'-3"	5'-0"	118.4	153¾	57	114
11'-0"	5'-8"	6'-10"	3'-4"	14'-3"	5'-6"	138.7	180	66¾	133½
12'-0"	6'-2"	7'-3"	3'-6"	15'-6"	5'-9"	162.7	211¼	78¼	156½



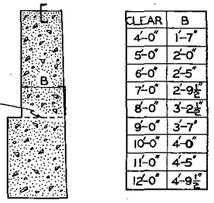
ELEVATION



SECTION ON ℄ OF BRIDGE

NOTE

Floor of bridge shall conform to grade of road. On level grade slope top of slab at least 1/16" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving use 6" of concrete or 8" stone masonry and a 12" curtain wall of sufficient depth at each end.



CLEAR	B
4'-0"	1'-7"
5'-0"	2'-0"
6'-0"	2'-5"
7'-0"	2'-9½"
8'-0"	3'-2½"
9'-0"	3'-7"
10'-0"	4'-0"
11'-0"	4'-5"
12'-0"	4'-9½"

APPROVED August 1, 1927.
E. E. Brandon BRIDGE ENGINEER.
APPROVED
Samuel Rea CHIEF ENGINEER.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION

STANDARD

REINFORCED CONCRETE BRIDGE.

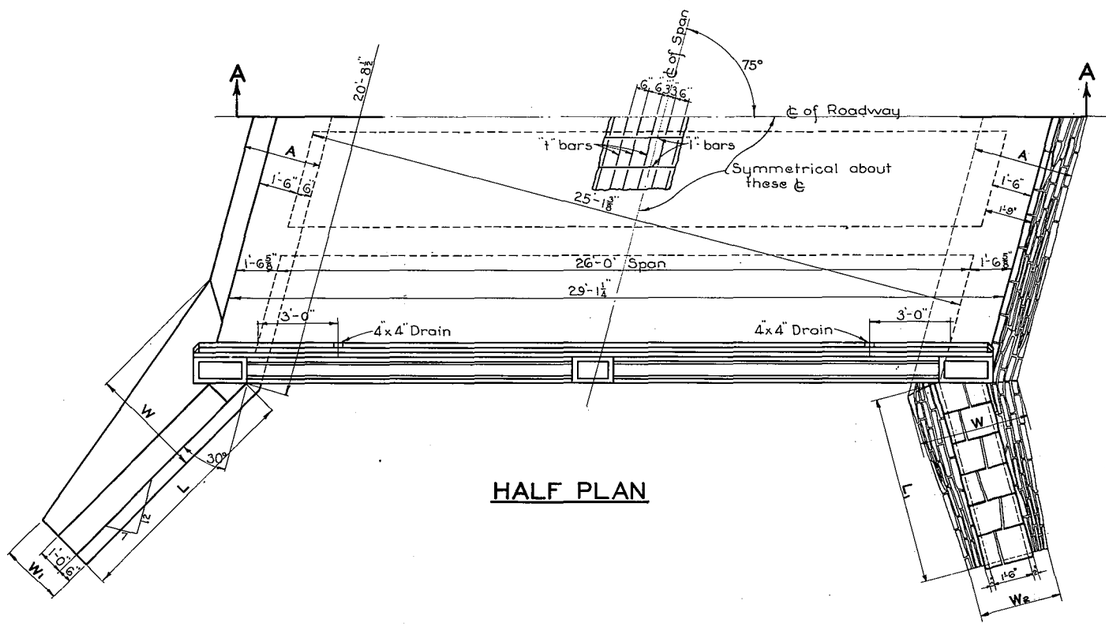
SPAN 26 FT. ROADWAY 18 FT.

SCALE ⅜" & 1"=1'-0"

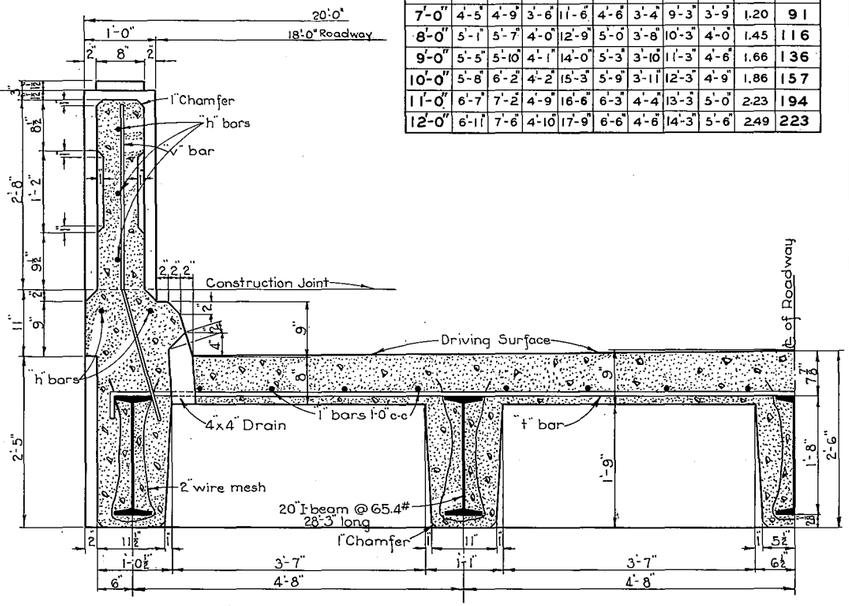
626B

Made by - P.F.W.
Checked by - W.B.D. 7/29/27

Revised 7-23-32 Stone Masonry W.C.T.



HALF PLAN



BEAMS & PARAPET DETAILS

STONE ABUTMENTS & WINGS

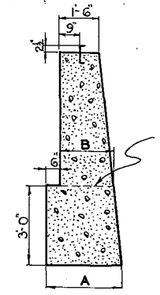
CLEAR	A	W	W1	L	H	W2	L1	H1	CU YDS PER FOOT ONE ABUT	TOTAL CU YDS TWO ABUT.
4'-0"	3'-8"	4'-0"	3'-2"	7'-9"	3'-3"	3'-1"	6'-0"	2'-9"	0.75	51
5'-0"	3'-11"	4'-3"	3'-4"	9'-0"	3'-9"	3'-2"	7'-0"	3'-0"	0.89	63
6'-0"	4'-2"	4'-6"	3'-5"	10'-3"	4'-0"	3'-2"	8'-0"	3'-3"	1.04	76
7'-0"	4'-5"	4'-9"	3'-6"	11'-6"	4'-6"	3'-4"	9'-3"	3'-9"	1.20	91
8'-0"	5'-1"	5'-7"	4'-0"	12'-9"	5'-0"	3'-8"	10'-3"	4'-0"	1.45	116
9'-0"	5'-5"	5'-10"	4'-1"	14'-0"	5'-3"	3'-10"	11'-3"	4'-6"	1.66	136
10'-0"	5'-8"	6'-2"	4'-2"	15'-3"	5'-9"	3'-11"	12'-3"	4'-9"	1.86	157
11'-0"	6'-7"	7'-2"	4'-9"	16'-6"	6'-3"	4'-4"	13'-3"	5'-0"	2.23	194
12'-0"	6'-11"	7'-6"	4'-10"	17'-9"	6'-6"	4'-6"	14'-3"	5'-6"	2.49	223

MATERIAL REQUIRED

34½ Cu. Yds. Class "A" Con.	53½	Bbls. Cement.
	15¾	Cu. Yds. Sand
	31½	Cu. Yds. Stone
2246 Lbs. Reinforcing Bars.		
9709 Lbs. Structural Steel	5-20" I-beams @ 65.4# 28'-3" lg. 2-8" Channels @ 11.5# 20'-6" lg.	
650 Sq. Ft. 2" Wire Mesh.		

TABLE OF BARS

Mark	No.	Stock	Description.
l	16	½" ø x 28'-3"	Longitudinal in Slab.
t	50	¾" ø x 21'-0"	Transverse in Slab.
h	10	½" ø x 29'-9"	Horizontal in Parapet.
v	56	½" ø x 4'-6"	Vertical in Parapet.



Properly bond this construction joint with dowel stones or reinforcing bars.

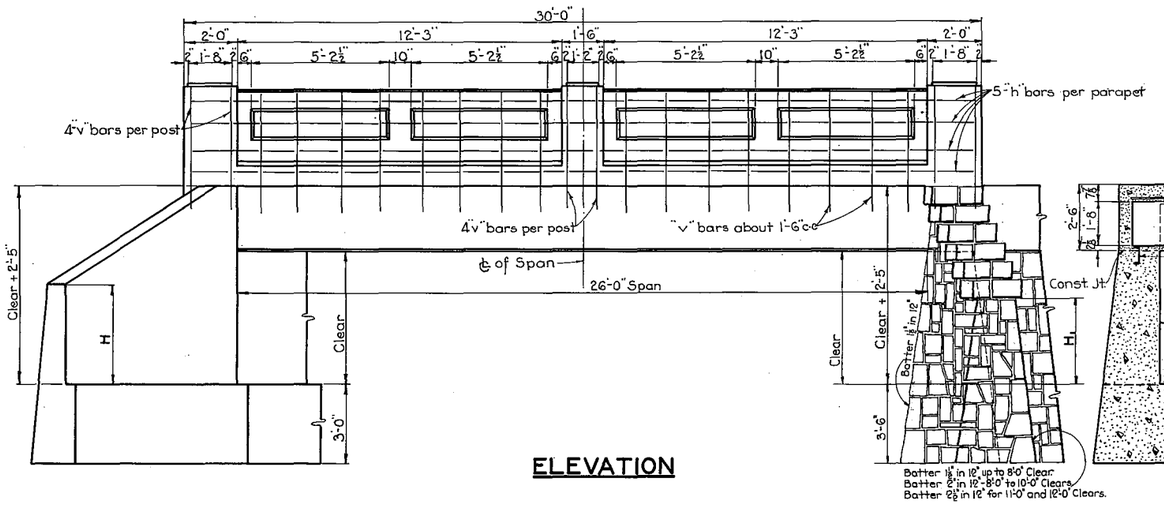
RT. L ABUTMENT SECTION

NOTE

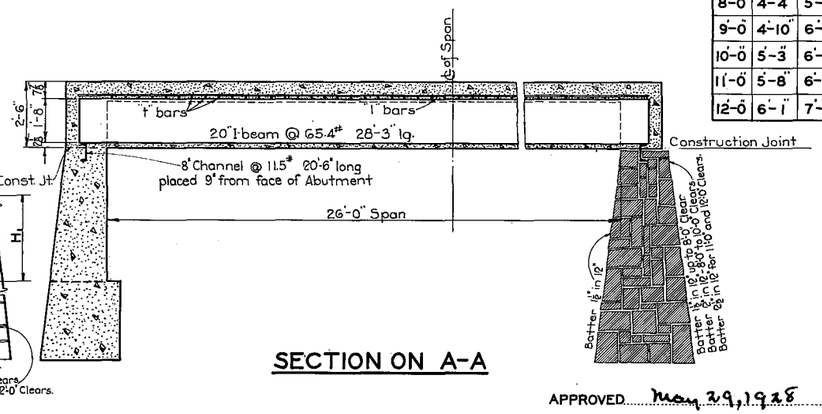
Floor of bridge shall conform to grade of road. On level grade slope top of slab at least ⅛ per foot
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving use ℄ of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.

ABUTMENTS & WINGS

CLEAR	A	W	W1	L	H	W2	L1	H1	B	Cu.Yds. B Con.	Bbls. Cement	Cu.Yds. Sand	Cu.Yds. Stone
4'-0"	2'-2"	3'-10"	2'-1"	7'-9"	3'-3"	2'-0"	6'-0"	2'-9"	1'-7"	34.0	44¼	16¼	32¾
5'-0"	2'-10"	4'-3"	2'-5"	9'-0"	3'-9"	2'-0"	7'-0"	3'-0"	2'-0"	45.4	59	21¾	43¾
6'-0"	3'-4"	4'-9"	2'-7"	10'-3"	4'-0"	2'-1"	8'-0"	3'-3"	2'-5"	57.3	74½	27½	55½
7'-0"	3'-10"	5'-2"	2'-10"	11'-6"	4'-6"	2'-5"	9'-3"	3'-9"	2'-9½"	73.2	95	35¼	70½
8'-0"	4'-4"	5'-7"	3'-1"	12'-9"	5'-0"	2'-7"	10'-3"	4'-0"	3'-2½"	89.5	116¼	43	86
9'-0"	4'-10"	6'-0"	3'-3"	14'-0"	5'-3"	2'-10"	11'-3"	4'-6"	3'-7"	108.5	140¾	52¼	104½
10'-0"	5'-3"	6'-5"	3'-6"	15'-3"	5'-9"	3'-0"	12'-3"	4'-9"	4'-0"	132.5	172	63¾	127½
11'-0"	5'-8"	6'-10"	3'-9"	16'-6"	6'-3"	3'-1"	13'-3"	5'-0"	4'-5"	151.0	196	72¾	145¼
12'-0"	6'-1"	7'-3"	3'-10"	17'-9"	6'-6"	3'-4"	14'-3"	5'-6"	4'-9½"	175.7	228	84½	169



ELEVATION



SECTION ON A-A

APPROVED May 29, 1928
E E Praudlow BRIDGE ENGINEER

APPROVED
Sam Lewis CHIEF ENGINEER

COMMONWEALTH OF PENNSYLVANIA.
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION.
STANDARD

REINFORCED CONCRETE BRIDGE

SPAN 26 FT. ROADWAY 18 FT.
SKEW 75° L

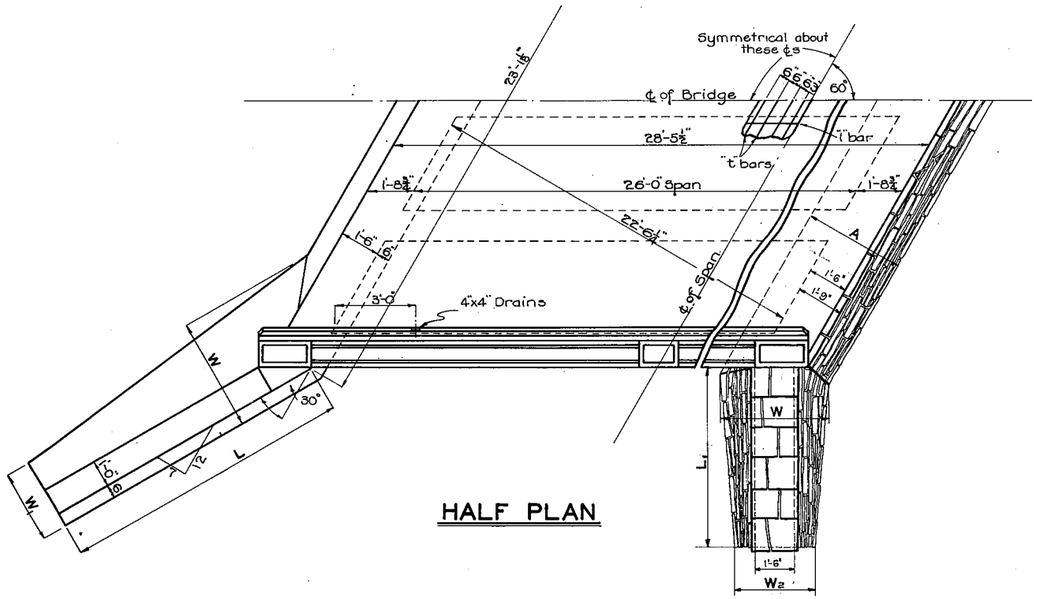
SCALE = ⅜" & 1"-1'-0"

626B-75

MADE BY- J.E.M.
CHECKED BY- W.C.T. 5-28-28.

IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

Revised 7-23-32 Stone Masonry W.C.T.



HALF PLAN

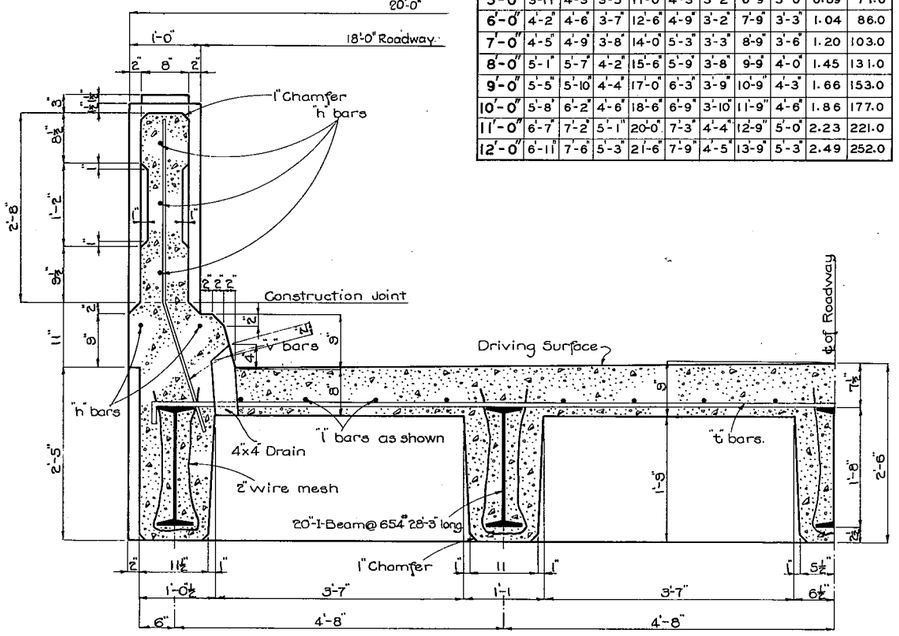
STONE ABUTMENTS & WINGS										
CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	CU.YDS. PER FOOT ONE ABUT	TOTAL CU.YDS. TWO ABUT.
4'-0"	3'-8"	4'-0"	3'-4"	9'-6"	3'-9"	3'-0"	5'-9"	2'-6"	0.75	57.0
5'-0"	3'-11"	4'-3"	3'-5"	11'-0"	4'-3"	3'-2"	6'-9"	3'-0"	0.89	71.0
6'-0"	4'-2"	4'-6"	3'-7"	12'-6"	4'-9"	3'-2"	7'-9"	3'-3"	1.04	86.0
7'-0"	4'-5"	4'-9"	3'-8"	14'-0"	5'-3"	3'-3"	8'-9"	3'-6"	1.20	103.0
8'-0"	5'-1"	5'-7"	4'-2"	15'-6"	5'-9"	3'-8"	9'-9"	4'-0"	1.45	131.0
9'-0"	5'-5"	5'-10"	4'-4"	17'-0"	6'-3"	3'-9"	10'-9"	4'-3"	1.66	153.0
10'-0"	5'-8"	6'-2"	4'-6"	18'-6"	6'-9"	3'-10"	11'-9"	4'-6"	1.86	177.0
11'-0"	6'-7"	7'-2"	5'-1"	20'-0"	7'-3"	4'-4"	12'-9"	5'-0"	2.23	221.0
12'-0"	6'-11"	7'-6"	5'-3"	21'-6"	7'-9"	4'-5"	13'-9"	5'-3"	2.49	252.0

MATERIAL REQUIRED

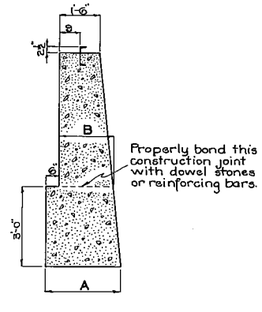
34.7 Cu. Yds. "A" Concrete.	53¾ Bbls. Cement 16 Cu. Yds. Sand. 31¾ Cu. Yds. Stone.
2276 Lbs. Reinforcing Bars.	
9767 Lbs. Structural Steel	5-20"-I-Beams @ 65.4# 28'-5" long. 2-15"Channels @ 11.5# 23'-0" long.
650 Sq. Ft. 2" Wire Mesh.	

TABLE OF BARS

Mark	No.	Stock	Description
l	16	½"ϕ x 28'-5"	Longitudinal in Slab.
t	46	⅝"ϕ x 23'-3"	Transverse in Slab.
h	10	½"ϕ x 29'-9"	Horizontal in Parapet.
v	56	½"ϕ x 4'-6"	Vertical in Parapet.



BEAMS & PARAPET DETAILS

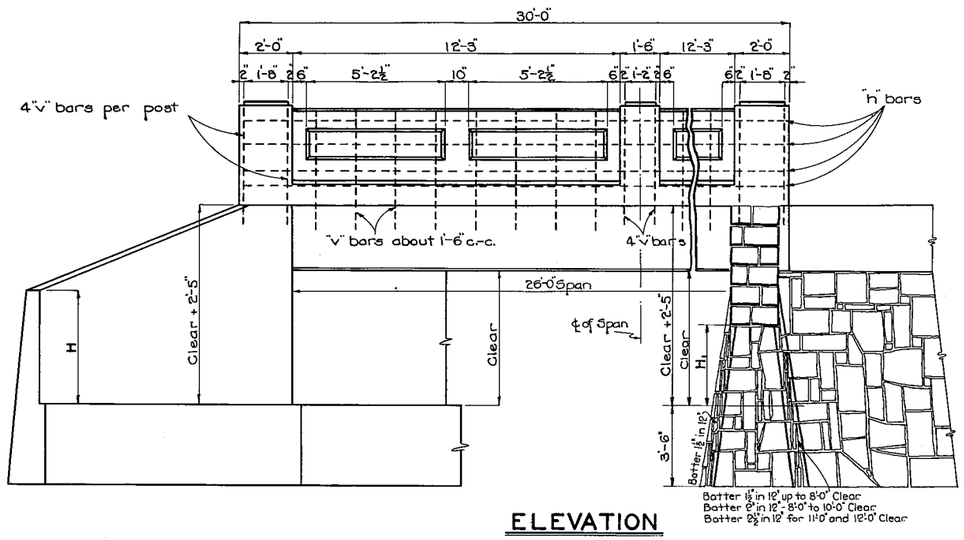


RT. L. ABUTMENT SECTION

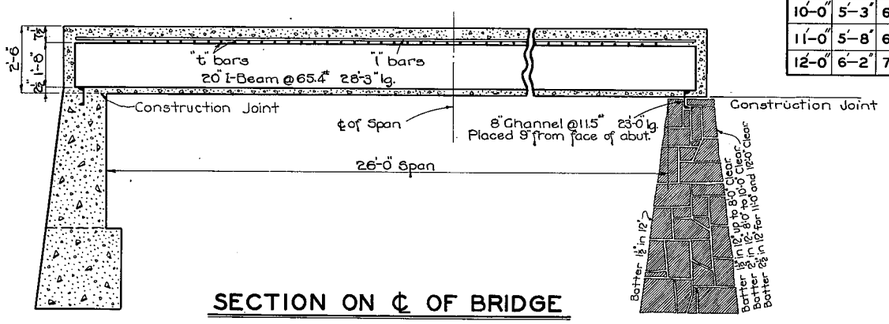
NOTE

Floor of Bridge shall conform to grade of road. On level grade, slope top of slab at least ⅛ per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving, use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.

ABUTMENTS & WINGS														
CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	B	Cu.Yds. C Con.	Bbls. Cement	Cu.Yds. Sand.	Cu.Yds. Stone.
4'-0"	2'-2"	3'-10"	2'-5"	9'-6"	3'-9"	2'-0"	5'-9"	2'-6"	1'-7"	37.4	48½	18	36
5'-0"	2'-10"	4'-3"	2'-8"	11'-0"	4'-3"	2'-0"	6'-9"	3'-0"	2'-0"	51.4	66¾	24¾	49½
6'-0"	3'-4"	4'-9"	3'-0"	12'-6"	4'-9"	2'-1"	7'-9"	3'-3"	2'-5"	66.6	86½	32	64
7'-0"	3'-10"	5'-2"	3'-3"	14'-0"	5'-3"	2'-3"	8'-9"	3'-6"	2'-9½"	83.6	108½	40¼	80½
8'-0"	4'-4"	5'-7"	3'-6"	15'-6"	5'-9"	2'-7"	9'-9"	4'-0"	3'-2½"	104.8	136	50½	100¾
9'-0"	4'-10"	6'-0"	3'-9"	17'-0"	6'-3"	2'-8"	10'-9"	4'-3"	3'-7"	123.0	159¾	59¼	118¼
10'-0"	5'-3"	6'-5"	4'-0"	18'-6"	6'-9"	2'-10"	11'-9"	4'-6"	4'-0"	143.4	186¼	69	138
11'-0"	5'-8"	6'-10"	4'-2"	20'-0"	7'-3"	3'-1"	12'-9"	5'-0"	4'-5"	171.9	223¼	82¾	165½
12'-0"	6'-2"	7'-3"	4'-5"	21'-6"	7'-9"	3'-3"	13'-9"	5'-3"	4'-9½"	204.9	266	98½	197



ELEVATION



SECTION ON ℄ OF BRIDGE

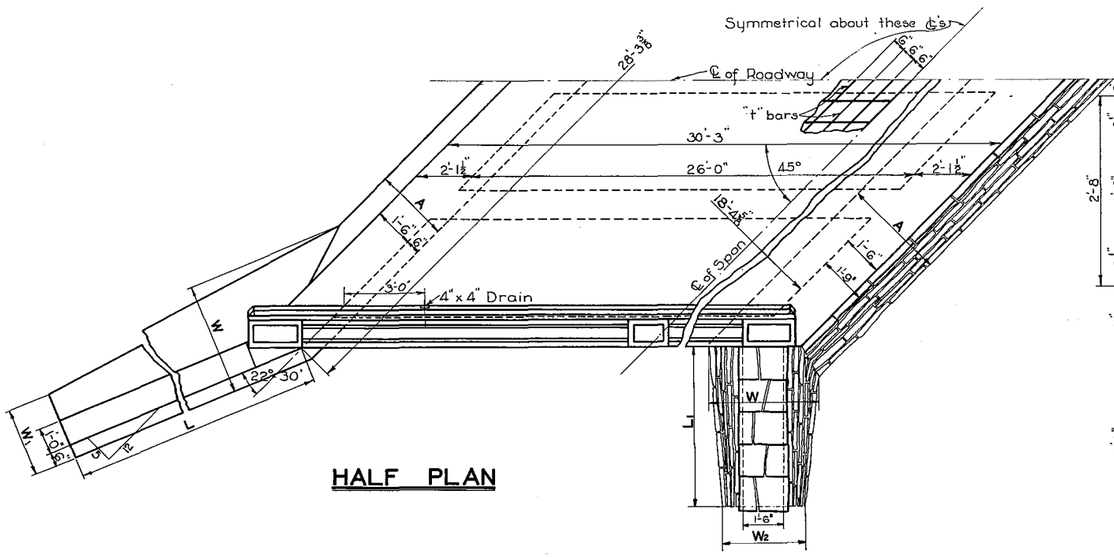
APPROVED May 21, 1928
E E Brandon BRIDGE ENGINEER
APPROVED May 24, 1928
Sam Lewis CHIEF ENGINEER

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION
STANDARD
REINFORCED CONCRETE BRIDGE
SPAN 26 FT. ROADWAY 18 FT.
SKEW 60° L.

SCALE ¾" & 1'-0" 626 B-60

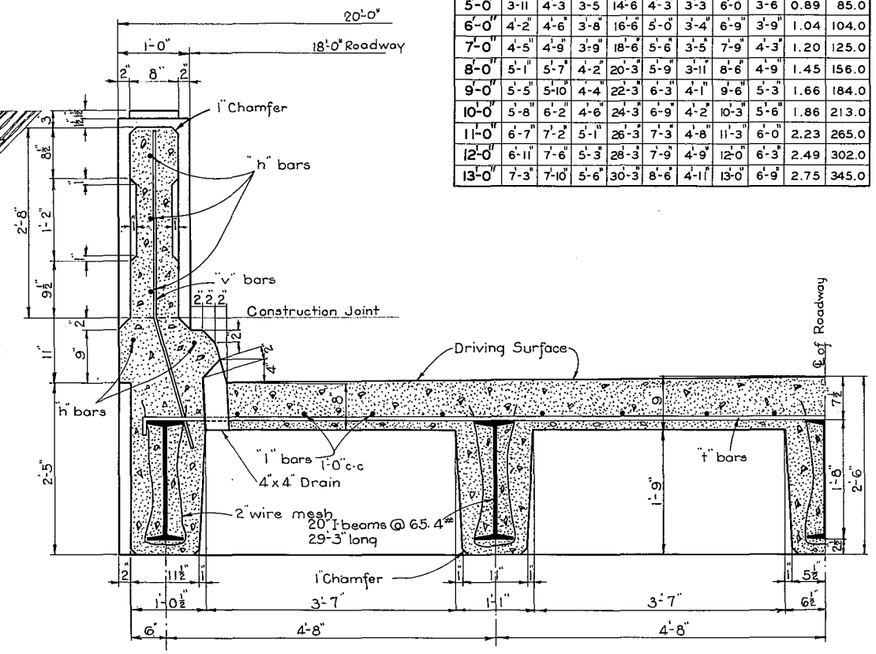
Made by W.B.D.
Checked by W.B. H. 4-16-28

Revised 7-23-32 Stone Masonry - W.C.T.



HALF PLAN

STONE ABUTMENTS & WINGS									
CLEAR	A	W	W1	L	H	W2	L1	H1	CU.YDS. PER FOOT ONE ABUT.	TOTAL CU.YDS. TWO ABUT.
5'-0"	3'-11"	4'-3"	3'-5"	14'-6"	4'-3"	3'-3"	6'-0"	3'-6"	0.89	85.0
6'-0"	4'-2"	4'-6"	3'-8"	16'-6"	5'-0"	3'-4"	6'-9"	3'-9"	1.04	104.0
7'-0"	4'-5"	4'-9"	3'-9"	18'-6"	5'-6"	3'-5"	7'-9"	4'-3"	1.20	125.0
8'-0"	5'-1"	5'-7"	4'-2"	20'-3"	5'-9"	3'-11"	8'-6"	4'-9"	1.45	156.0
9'-0"	5'-5"	5'-10"	4'-4"	22'-3"	6'-3"	4'-1"	9'-6"	5'-3"	1.66	184.0
10'-0"	5'-8"	6'-2"	4'-6"	24'-3"	6'-9"	4'-2"	10'-3"	5'-6"	1.86	213.0
11'-0"	6'-7"	7'-2"	5'-1"	26'-3"	7'-3"	4'-8"	11'-3"	6'-0"	2.23	265.0
12'-0"	6'-11"	7'-6"	5'-3"	28'-3"	7'-9"	4'-9"	12'-0"	6'-3"	2.49	302.0
13'-0"	7'-3"	7'-10"	5'-6"	30'-3"	8'-6"	4'-11"	13'-0"	6'-9"	2.75	345.0



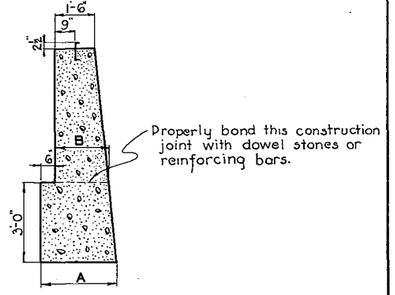
BEAMS & PARAPET DETAILS

MATERIAL REQUIRED

36.6 Cu.Yds. Class "A" Concrete	56½	Bbls. Cement.
	16¾	Cu.Yds. Sand.
	33½	Cu.Yds. Stone.
2233	Lbs. Reinforcing Bars.	
10209	Lbs. Structural Steel.	5-20" I-Bms @ 65.4# 29'-3½" lg. 2-8" Channels @ 11.5# 28'-0"
650	Sq.Ft. 2" Wire Mesh.	

TABLE OF BARS

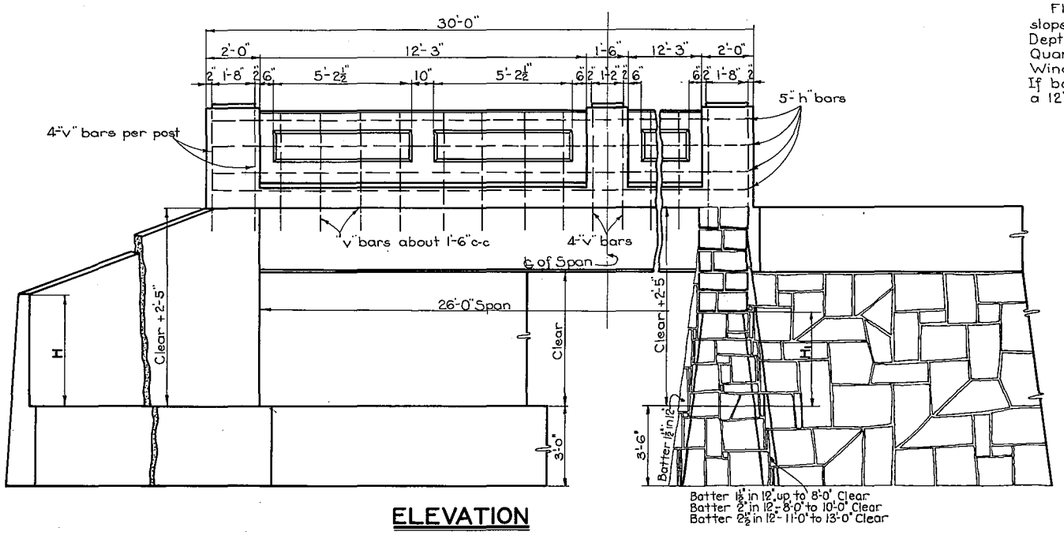
Mark.	No	Stock.	Description.
l	16	½"ø x 29'-3"	Longitudinal in slab.
t	37	¾"ø x 28'-0"	Transverse in slab.
h	10	½"ø x 29'-9"	Horizontal in Parapet
v	56	½"ø x 4'-6"	Vertical in Parapet.



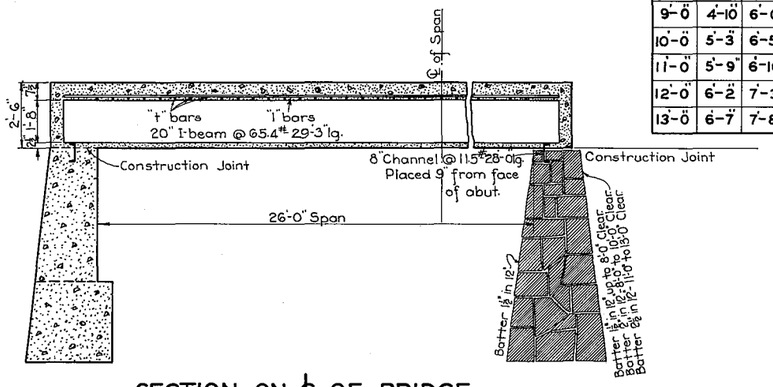
RT. L ABUTMENT SECTION

NOTE

Floor of bridge shall conform to grade of road. On level grade, slope top of slab at least 1/16 per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving use 6" of concrete, or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.



ELEVATION



SECTION ON ℄ OF BRIDGE

ABUTMENTS & WINGS

CLEAR	A	W	W1	L	H	W2	L1	H1	B	Cu.Yds. B'Con.	Bbls. Cement	Cu.Yds. Sand	Cu.Yds. Stone
5'-0"	2'-10"	4'-3"	2'-8"	14'-6"	4'-3"	2'-3"	6'-0"	3'-6"	2'-0"	61.5	79¾	29½	59¼
6'-0"	3'-4"	4'-9"	3'-1"	16'-6"	5'-0"	2'-5"	6'-9"	3'-9"	2'-5"	81.	105¼	39	78
7'-0"	3'-10"	5'-2"	3'-4"	18'-6"	5'-6"	2'-8"	7'-9"	4'-3"	2'-9½"	101.5	131¾	48¾	97¾
8'-0"	4'-4"	5'-7"	3'-6"	20'-3"	5'-9"	3'-0"	8'-6"	4'-9"	3'-2½"	123.4	160¼	59¼	118¾
9'-0"	4'-10"	6'-0"	3'-9"	22'-3"	6'-3"	3'-3"	9'-6"	5'-3"	3'-7"	149.6	194¼	72	144
10'-0"	5'-3"	6'-5"	4'-0"	24'-3"	6'-9"	3'-4"	10'-3"	5'-6"	4'-0"	176.8	229½	85	170
11'-0"	5'-9"	6'-10"	4'-2"	26'-3"	7'-3"	3'-7"	11'-3"	6'-0"	4'-5"	207.3	269	99¾	199½
12'-0"	6'-2"	7'-3"	4'-5"	28'-3"	7'-9"	3'-9"	12'-0"	6'-3"	4'-9½"	242.3	314½	116½	233
13'-0"	6'-7"	7'-8"	4'-9"	30'-3"	8'-6"	4'-0"	13'-0"	6'-9"	5'-2½"	282.7	367	136	272

APPROVED May 29, 1928
E.E. Brandow BRIDGE ENGINEER
APPROVED
Sam Lewis CHIEF ENGINEER

COMMONWEALTH OF PENNSYLVANIA.
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION.
STANDARD
REINFORCED CONCRETE BRIDGE
SPAN 26 FT. ROADWAY 18 FT.
SKEW 45° L

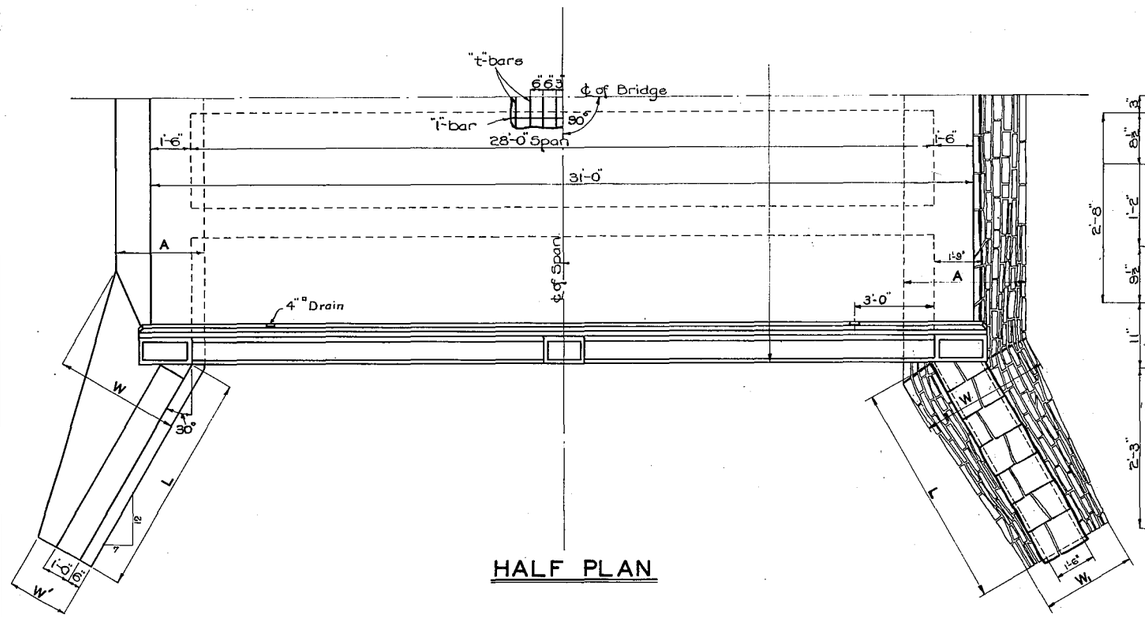
Scale: ⅜" & 1" = 1'-0"

626B-45

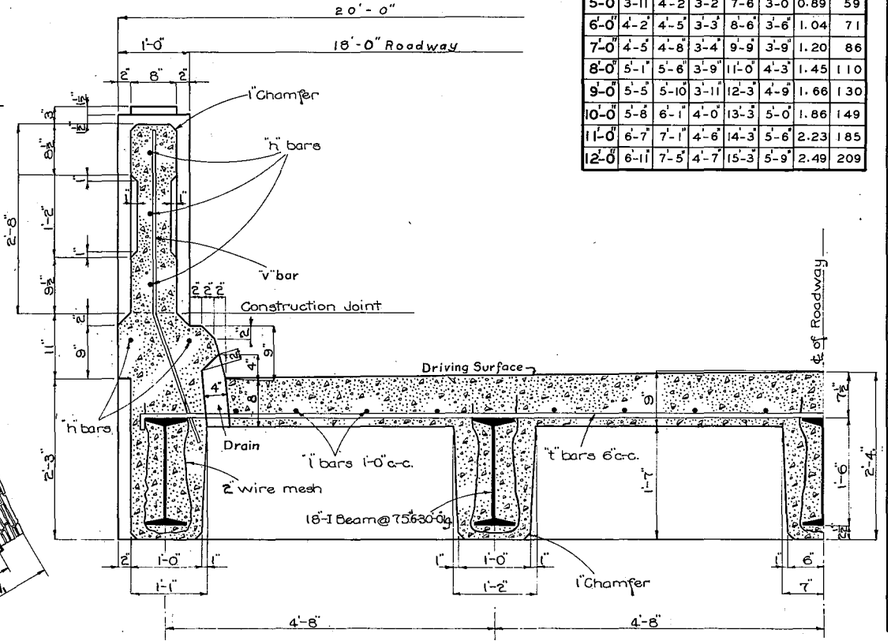
Made by J.E.M.
Checked by W.P.O. 5-28-28

IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

Revised 5-25-28 W.B.D.
" 7-23-32 W.C.T. Stone Masonry.



HALF PLAN



STONE ABUTMENTS & WINGS							
CLEAR	A	W	W1	L	H	CU.YDS. PER FOOT ONE ABUT.	TOTAL CU.YDS. TWO ABUTS.
4'-0"	3'-8"	3'-11"	3'-1"	6'-6"	2'-9"	0.75	48
5'-0"	3'-11"	4'-2"	3'-2"	7'-6"	3'-0"	0.89	59
6'-0"	4'-2"	4'-5"	3'-3"	8'-6"	3'-6"	1.04	71
7'-0"	4'-5"	4'-8"	3'-4"	9'-9"	3'-9"	1.20	86
8'-0"	5'-1"	5'-6"	3'-9"	11'-0"	4'-3"	1.45	110
9'-0"	5'-5"	5'-10"	3'-11"	12'-3"	4'-9"	1.66	130
10'-0"	5'-8"	6'-1"	4'-0"	13'-3"	5'-0"	1.86	149
11'-0"	6'-7"	7'-1"	4'-6"	14'-3"	5'-6"	2.23	185
12'-0"	6'-11"	7'-5"	4'-7"	15'-3"	5'-9"	2.49	209

MATERIAL REQUIRED

35.7 Cu. Yds. "A" Concrete.	55¼ Bbls. Cement. 16½ Cu. Yds Sand 32¾ Cu. Yds Stone.
2374 Lbs. Reinforcing Bars.	
11783 Lbs. Structural Steel.	5-18"-I Beams @ 75.6 30'0" lg 2-8" Channels @ 11.5# 18'-3" lg
630 Sq. ft. 2" Wire Mesh.	

TABLE OF BARS

Mark	No.	Stock.	Description.
l	16	½"ø x 30'-0"	Longitudinal in Slab.
t	56	⅝"ø x 18'-8"	Transverse in Slab.
h	10	½"ø x 31'-8"	Longitudinal in Parapet.
v	60	½"ø x 4'-6"	Vertical in Parapet.

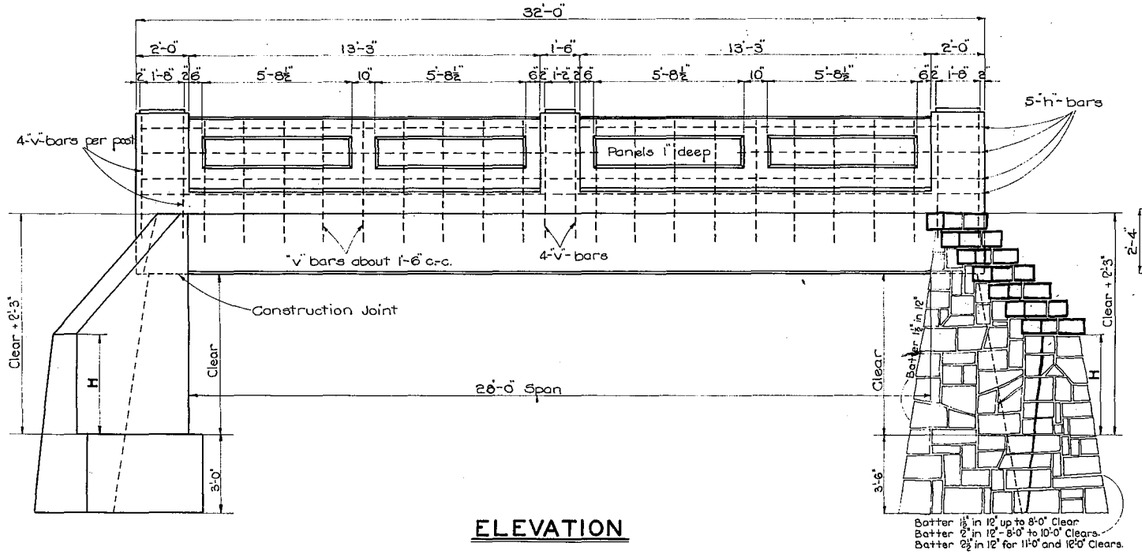
ABUTMENTS & WINGS

CLEAR	A	W	W'	L	H	Cu.Yds. B'Con.	Bbls. Cement	Cu.Yds. Sand	Cu.Yds. Stone
4'-0"	2'-2"	3'-9"	2'-0"	6'-6"	2'-9"	31.6	41	15¼	30½
5'-0"	2'-10"	4'-2"	2'-0"	7'-6"	3'-0"	41.3	53¾	20	39¾
6'-0"	3'-4"	4'-8"	2'-3"	8'-6"	3'-6"	52.8	68½	25½	51
7'-0"	3'-10"	5'-1"	2'-5"	9'-9"	3'-9"	66.1	86	32	63¾
8'-0"	4'-4"	5'-6"	2'-8"	11'-0"	4'-3"	82.1	106¾	39½	79
9'-0"	4'-10"	5'-11"	3'-0"	12'-3"	4'-9"	100.6	130¾	48½	96¾
10'-0"	5'-3"	6'-4"	3'-1"	13'-3"	5'-0"	117.8	153	56¾	113½
11'-0"	5'-8"	6'-9"	3'-4"	14'-3"	5'-6"	138.2	179½	66½	133
12'-0"	6'-2"	7'-2"	3'-6"	15'-3"	5'-9"	160.6	208½	77¼	154½

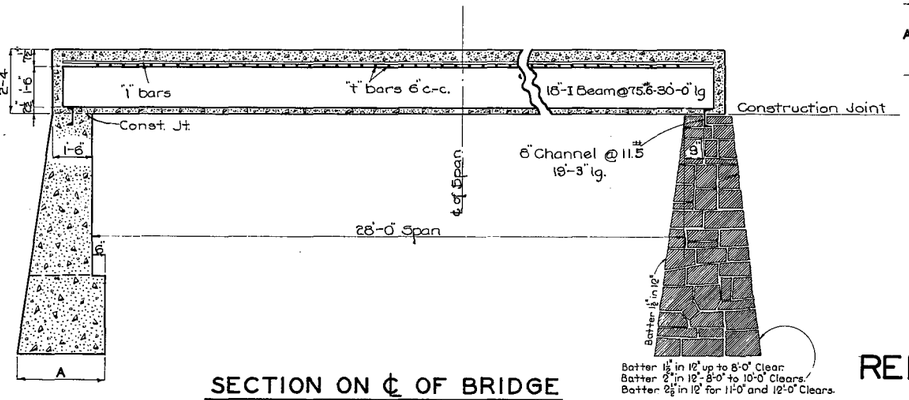
BEAMS & PARAPET DETAILS

NOTE

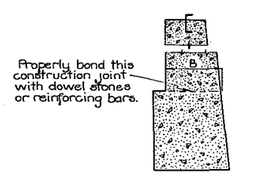
Floor of Bridge shall conform to grade of road. On level grade, slope top of slab at least ⅛" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions,
If bed of stream requires paving, use 6" of concrete or 8" stone masonry and a 12" curtain wall of sufficient depth at each end.



ELEVATION



SECTION ON ℄ OF BRIDGE



CLEAR	B
4'-0"	1'-7"
5'-0"	2'-0"
6'-0"	2'-5"
7'-0"	2'-9½"
8'-0"	3'-2½"
9'-0"	3'-7"
10'-0"	4'-0"
11'-0"	4'-5"
12'-0"	4'-9½"

APPROVED August 1, 1927
E E Howdour BRIDGE ENGINEER.

APPROVED
Sam Rivale CHIEF ENGINEER.

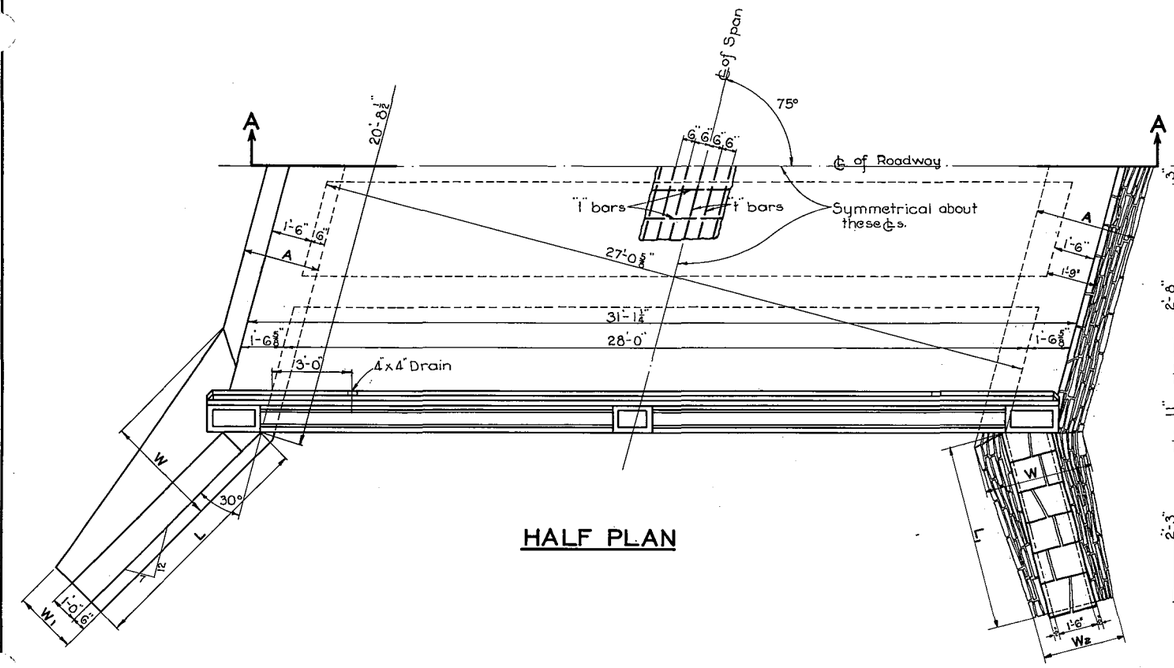
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION
STANDARD
REINFORCED CONCRETE BRIDGE.
SPAN 28 FT. ROADWAY 18 FT.

Made by W.B.D.
Checked by A.T.W. 6/1/27.

SCALE ⅜" & 1"=1'-0"

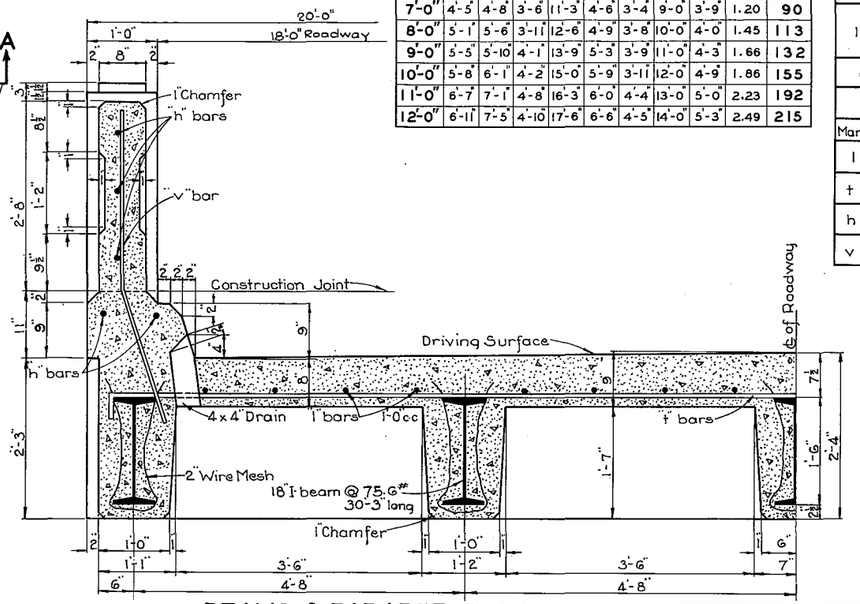
628 B

Revised 7-23-32 Stone Masonry W.C.T.

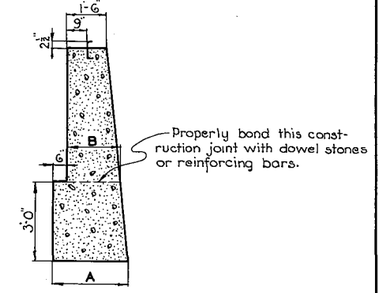


HALF PLAN

STONE ABUTMENTS & WINGS										
CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	CU.YDS. PER FOOT ONE ABUT.	TOTAL CU. YDS. TWO ABUT.
4'-0"	3'-8"	3'-11"	3'-2"	7'-6"	3'-3"	3'-1"	6'-0"	2'-9"	0.75	50
5'-0"	3'-11"	4'-2"	3'-3"	8'-9"	3'-6"	3'-2"	7'-0"	3'-0"	0.89	62
6'-0"	4'-2"	4'-5"	3'-5"	10'-0"	4'-0"	3'-2"	8'-0"	3'-3"	1.04	75
7'-0"	4'-5"	4'-8"	3'-6"	11'-3"	4'-6"	3'-4"	9'-0"	3'-9"	1.20	90
8'-0"	5'-1"	5'-6"	3'-11"	12'-6"	4'-9"	3'-8"	10'-0"	4'-0"	1.45	113
9'-0"	5'-5"	5'-10"	4'-1"	13'-9"	5'-3"	3'-9"	11'-0"	4'-3"	1.66	132
10'-0"	5'-8"	6'-1"	4'-2"	15'-0"	5'-9"	3'-11"	12'-0"	4'-9"	1.86	155
11'-0"	6'-7"	7'-1"	4'-8"	16'-3"	6'-0"	4'-4"	13'-0"	5'-0"	2.23	192
12'-0"	6'-11"	7'-5"	4'-10"	17'-6"	6'-6"	4'-5"	14'-0"	5'-3"	2.49	215



BEAMS & PARAPET DETAILS



RT. L ABUTMENT SECTION

MATERIAL REQUIRED

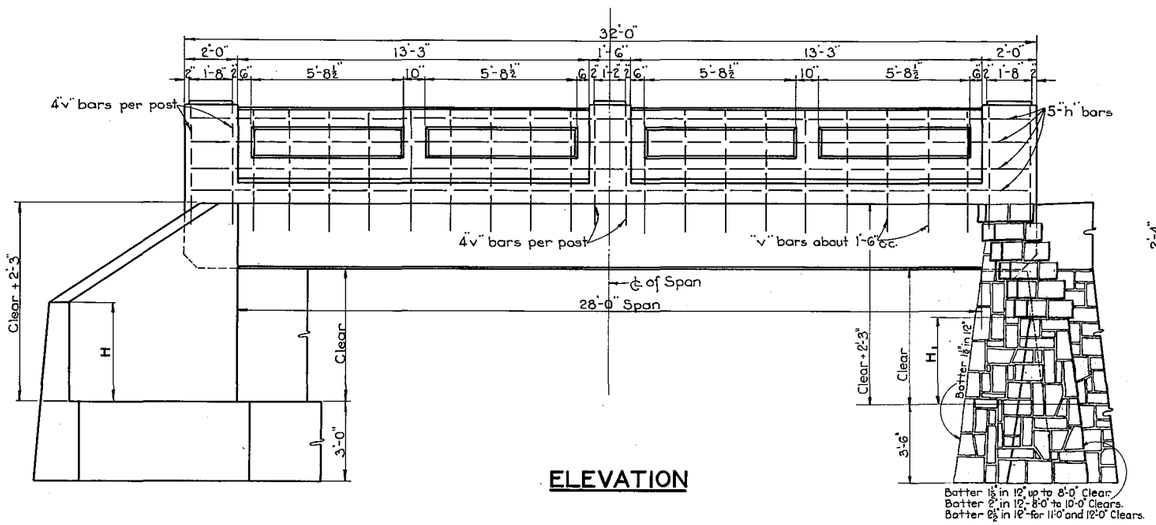
36 Cu. Yds. Class "A" Concrete	55¾	Bbls. Cement
	16½	Cu. Yds. Sand
	33	Cu. Yds. Stone
2419	Lbs. Reinforcing Steel	
11906	Lbs. Structural Steel	5-18" I-beams @ 75.6# 30'-3" lg. 2-8" Channels @ 11.5# 20'-6" lg.
630	Sq. Ft. of 2" Wire Mesh	

TABLE OF BARS

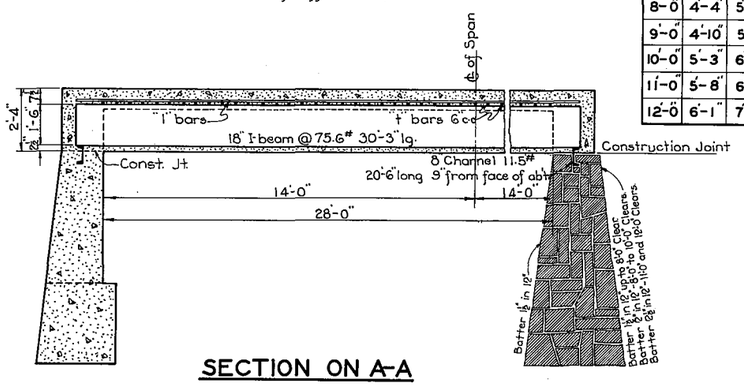
Mark	No	Stock	Description
l	16	½"ø x 30'-3"	Longitudinal in Slab
t	54	¾"ø x 21'-0"	Transverse in Slab
h	10	½"ø x 3'-9"	Horizontal in Parapet
v	60	½"ø x 4'-6"	Vertical in Parapet.

NOTE

Floor of bridge shall conform to grade of road. On level grade, slope top of slab at least 1/16" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving use 6" of concrete or 8" of stone masonry and a 12" curtain of sufficient depth at each end.



ELEVATION



SECTION ON A-A

ABUTMENTS & WINGS													
CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	B	Cu. Yds. B' Con.	Bbls. Cement	Cu. Yds. Sand	Cu. Yds. Stone
4'-0"	2'-2"	3'-9"	2'-1"	7'-6"	3'-3"	2'-0"	6'-0"	2'-9"	1'-7"	33.9	44	16¼	32½
5'-0"	2'-10"	4'-2"	2'-3"	8'-9"	3'-6"	2'-0"	7'-0"	3'-0"	2'-0"	44.2	57½	21¼	42½
6'-0"	3'-4"	4'-8"	2'-7"	10'-0"	4'-0"	2'-1"	8'-0"	3'-3"	2'-5"	56.3	73	27	54¼
7'-0"	3'-10"	5'-1"	2'-10"	11'-3"	4'-6"	2'-5"	9'-0"	3'-9"	2'-9½"	72.4	94	34¾	69¾
8'-0"	4'-4"	5'-6"	3'-0"	12'-6"	4'-9"	2'-7"	10'-0"	4'-0"	3'-2½"	87.6	113¾	42¼	84½
9'-0"	4'-10"	5'-11"	3'-3"	13'-9"	5'-3"	2'-8"	11'-0"	4'-3"	3'-7"	105.7	137¼	50¾	101¾
10'-0"	5'-3"	6'-4"	3'-6"	15'-0"	5'-9"	3'-0"	12'-0"	4'-9"	4'-0"	125.0	162¼	60¼	120¼
11'-0"	5'-8"	6'-9"	3'-7"	16'-3"	6'-0"	3'-1"	13'-0"	5'-0"	4'-5	147.6	191½	71	142
12'-0"	6'-1"	7'-2"	3'-10"	17'-6"	6'-6"	3'-3"	14'-0"	5'-3"	4'-9½"	175.0	227¼	84¼	168¼

APPROVED May 29, 1928
E E Thornton BRIDGE ENGINEER

APPROVED
Sam Kendall CHIEF ENGINEER

COMMONWEALTH OF PENNSYLVANIA.
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION.
STANDARD

REINFORCED CONCRETE BRIDGE

SPAN 28 FT. ROADWAY 18 FT.
SKEW 75° L

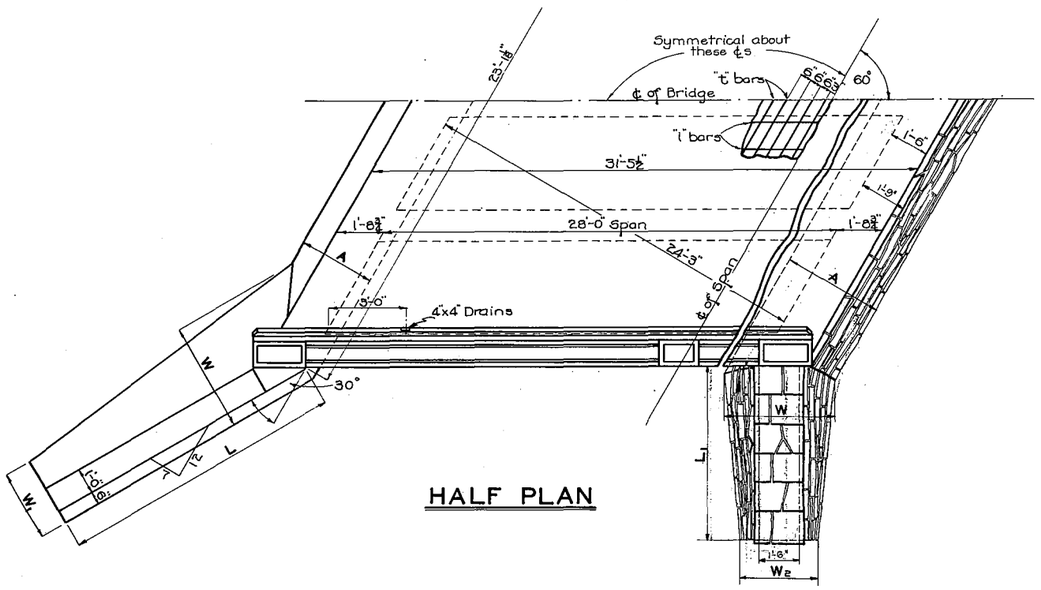
SCALE ⅜" & 1" = 1'-0"

628 B-75

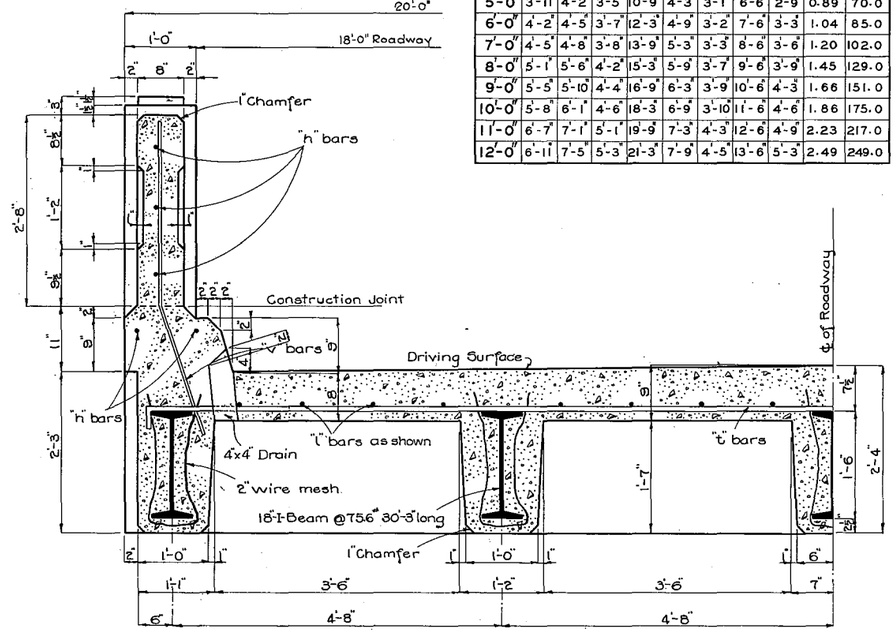
MADE BY J.E.M.
CHECKED BY W.C.T. 5-28-28.

IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

Revised 7-23-32 Stone Masonry W.C.T.



HALF PLAN



BEAMS & PARAPET DETAILS

STONE ABUTMENTS & WINGS

CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	CU. YDS. PER FOOT ONE ABUT.	TOTAL CU. YDS. TWO ABUT.
4'-0"	3'-8"	3'-11"	3'-4"	9'-3"	3'-9"	3'-0"	5'-6"	2'-6"	0.75	56.0
5'-0"	3'-11"	4'-2"	3'-5"	10'-9"	4'-3"	3'-1"	6'-6"	2-9	0.89	70.0
6'-0"	4'-2"	4'-5"	3'-7"	12'-3"	4'-9"	3'-2"	7'-6"	3'-3"	1.04	85.0
7'-0"	4'-5"	4'-8"	3'-8"	13'-9"	5'-3"	3'-3"	8'-6"	3'-6"	1.20	102.0
8'-0"	5'-1"	5'-6"	4'-2"	15'-3"	5'-9"	3'-7"	9'-6"	3'-9"	1.45	129.0
9'-0"	5'-5"	5'-10"	4'-4"	16'-9"	6'-3"	3'-9"	10'-6"	4'-3"	1.66	151.0
10'-0"	5'-8"	6'-1"	4'-6"	18'-3"	6'-9"	3'-10"	11'-6"	4'-6"	1.86	175.0
11'-0"	6'-7"	7'-1"	5'-1"	19'-9"	7'-3"	4'-3"	12'-6"	4'-9"	2.23	217.0
12'-0"	6'-11"	7'-5"	5'-3"	21'-3"	7'-9"	4'-5"	13'-6"	5'-3"	2.49	249.0

MATERIAL REQUIRED

365 Cu. Yds. "A" Concrete. — 56½ Bbls. Cement; 16¾ Cu. Yds. Sand; 33½ Cu. Yds. Stone.

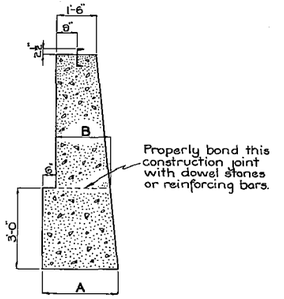
2380 Lbs Reinforcing Bars.

11964 Lbs. Structural Steel. — 5-16"-I-Beams @T56" 30'-3" long; 2-8" Channels @11.5 23'-0" long.

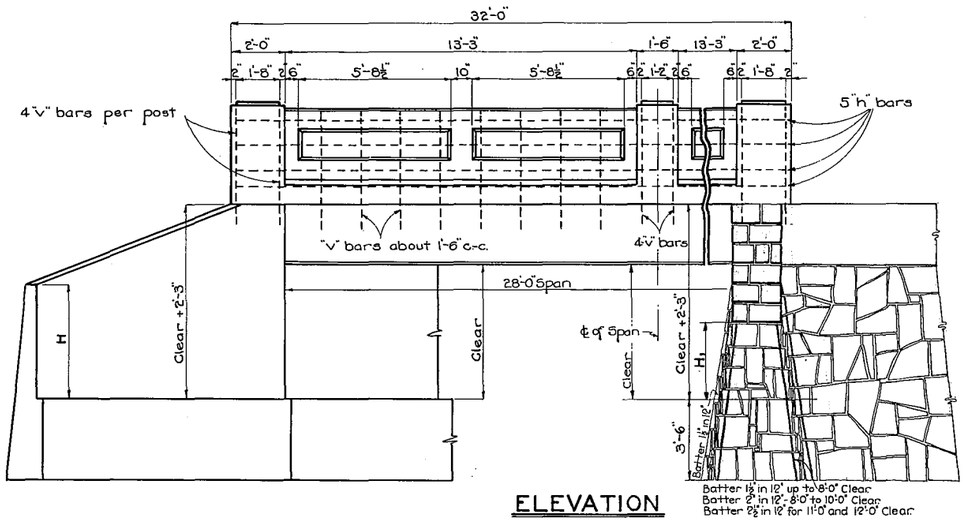
630 Sq. Ft. 2" Wire Mesh.

TABLE OF BARS

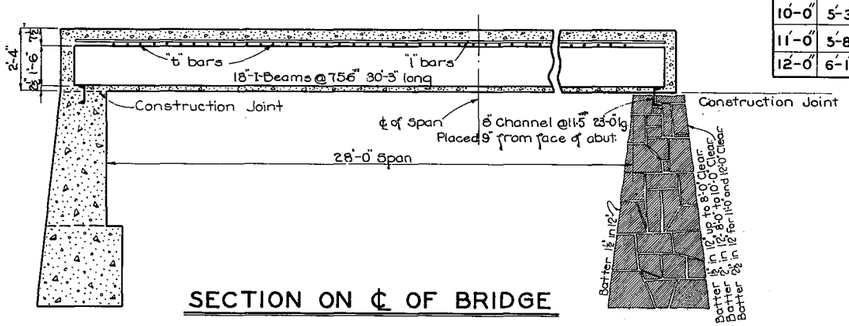
Mark	No.	Stock	Description
l	16	½"ϕ x 30'-3"	Longitudinal in Slab.
t	48	⅝"ϕ x 23'-3"	Transverse in Slab.
h	10	½"ϕ x 31'-9"	Horizontal in Parapet.
v	56	½"ϕ x 4'-6"	Vertical in Parapet.



RT. L. ABUTMENT SECTION



ELEVATION



SECTION ON ℄ OF BRIDGE

NOTE

Floor of Bridge shall conform to grade of road. On level grade, slope top of slab at least ½" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving, use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.

ABUTMENTS & WINGS

CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	B	Cu. Yds. "B" Conc.	Bbls. Cement	Cu. Yds. Sand	Cu. Yds. Stone
4'-0"	2'-2"	3'-9"	2'-5"	9'-3"	3'-9"	2'-0"	5'-6"	2'-6"	1'-7"	38.6	50	18½	37¼
5'-0"	2'-10"	4'-2"	2'-8"	10'-9"	4'-3"	2'-0"	6'-6"	2'-9"	2'-0"	51.4	66¾	24¾	49½
6'-0"	3'-4"	4'-8"	3'-0"	12'-3"	4'-9"	2'-1"	7'-6"	3'-3"	2'-5"	66.2	86	31¾	63¾
7'-0"	3'-10"	5'-1"	3'-3"	13'-9"	5'-3"	2'-3"	8'-6"	3'-6"	2'-9½"	82.1	107¼	39¾	79½
8'-0"	4'-4"	5'-6"	3'-6"	15'-3"	5'-9"	2'-5"	9'-6"	3'-9"	3'-2½"	101.6	132	48¾	97¾
9'-0"	4'-10"	5'-11"	3'-9"	16'-9"	6'-3"	2'-8"	10'-6"	4'-3"	3'-7"	121.1	157¼	58¼	116½
10'-0"	5'-3"	6'-4"	3'-11"	18'-3"	6'-9"	2'-10"	11'-6"	4'-6"	4'-0"	143.8	186¾	69¼	138¼
11'-0"	5'-8"	6'-9"	4'-2"	19'-9"	7'-3"	3'-0"	12'-6"	4'-9"	4'-5"	168.9	219¼	81¼	162½
12'-0"	6'-1"	7'-2"	4'-5"	21'-3"	7'-9"	3'-3"	13'-6"	5'-3"	4'-9½"	198.0	257	95¼	190½

APPROVED May 21, 1928
E E Brandon BRIDGE ENGINEER
APPROVED May 24, 1928
Samuel Rea CHIEF ENGINEER

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION
STANDARD
REINFORCED CONCRETE BRIDGE
SPAN 28 FT. ROADWAY 18 FT.
SKEW 60° L.

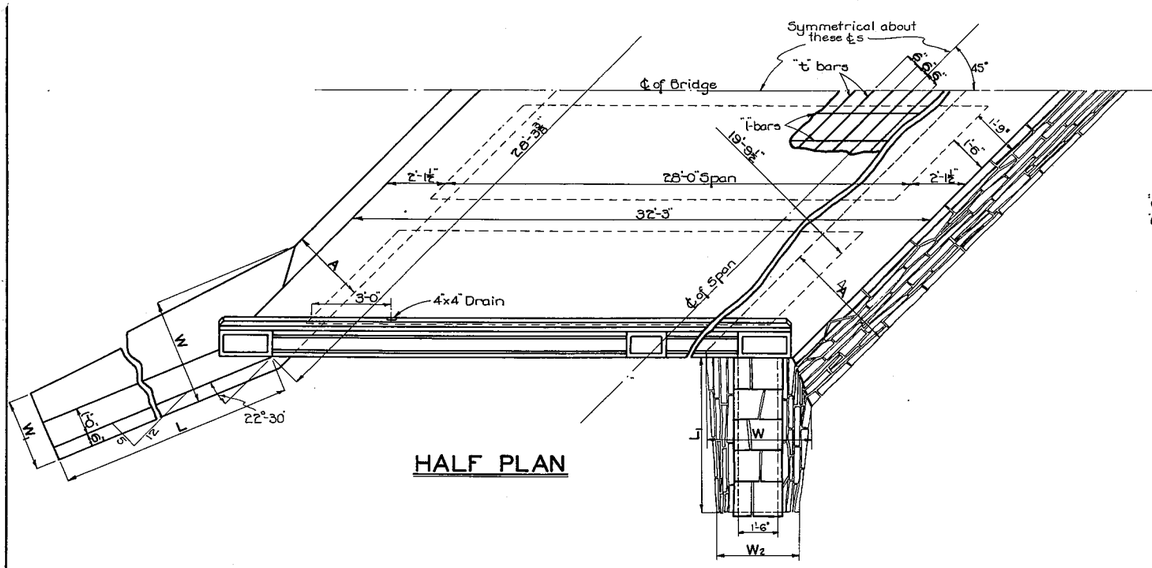
SCALE ⅜ & 1"=1'-0"

628 B-60

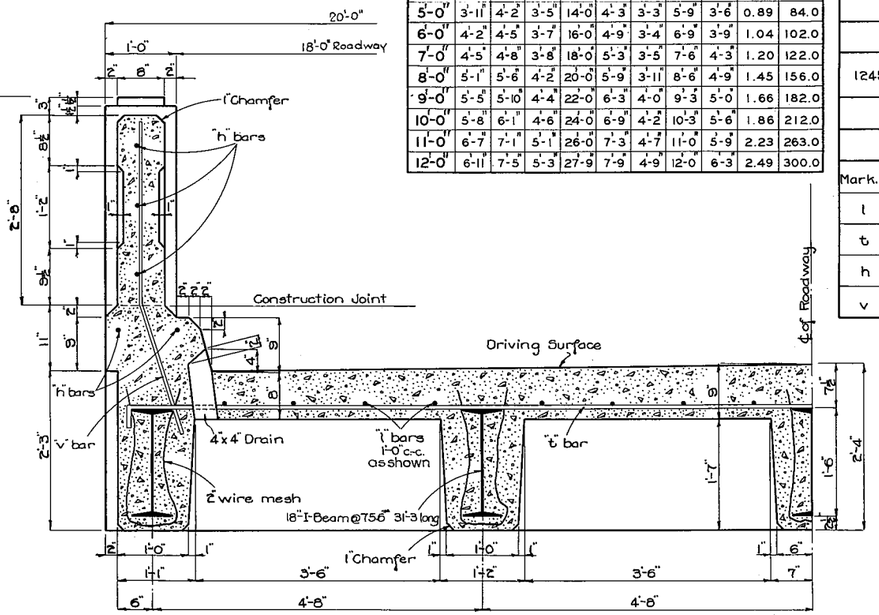
Made by W.B.D.
Checked by W.B.H. 4-16-28

"IMPERIAL" TRADING CLOTH K & E CO., N.Y.

Revised 7-23-32 Stone Masonry W.C.T.



HALF PLAN



BEAMS & PARAPET DETAILS

STONE ABUTMENTS & WINGS

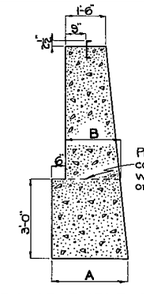
CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	CU.YDS PER FOOT ONE ABUTMENT	TOTAL CU.YDS TWO ABUT.
4'-0"	3'-8"	3'-11"	3'-4"	12'-3"	3'-9"	3'-2"	5'-0"	3'-0"	0.75	68.0
5'-0"	3'-11"	4'-2"	3'-5"	14'-0"	4'-3"	3'-3"	5'-9"	3'-6"	0.89	84.0
6'-0"	4'-2"	4'-5"	3'-7"	16'-0"	4'-9"	3'-4"	6'-9"	3'-9"	1.04	102.0
7'-0"	4'-5"	4'-8"	3'-8"	18'-0"	5'-3"	3'-5"	7'-6"	4'-3"	1.20	122.0
8'-0"	5'-1"	5'-6"	4'-2"	20'-0"	5'-9"	3'-11"	8'-6"	4'-9"	1.45	156.0
9'-0"	5'-5"	5'-10"	4'-4"	22'-0"	6'-3"	4'-0"	9'-3"	5'-0"	1.66	182.0
10'-0"	5'-8"	6'-1"	4'-6"	24'-0"	6'-9"	4'-2"	10'-3"	5'-6"	1.86	212.0
11'-0"	6'-7"	7'-1"	5'-1"	26'-0"	7'-3"	4'-7"	11'-0"	5'-9"	2.23	263.0
12'-0"	6'-11"	7'-5"	5'-3"	27'-9"	7'-9"	4'-9"	12'-0"	6'-3"	2.49	300.0

MATERIAL REQUIRED

368 Cu.Yds. "A" Concrete.	57	Bbls. Cement.
	17	Cu.Yds. Sand.
	33⅜	Cu.Yds. Stone.
2355 Lbs. Reinforcing Bars.		
12457 Lbs. Structural Steel.	5-18"-I-Beams @ 75.6	31'-3" long.
	2-8" Channels @ 11.5	28'-0" long.
630 Sq.Ft. 2" Wire Mesh.		

TABLE OF BARS

Mark.	No.	Stock.	Description.
l	16	½"ϱ x 31'-3"	Longitudinal in Slab.
t	39	¾"ϱ x 28'-0"	Transverse in Slab.
h	10	½"ϱ x 3'-9"	Horizontal in Parapet.
v	56	½"ϱ x 4'-6"	Vertical in Parapet.



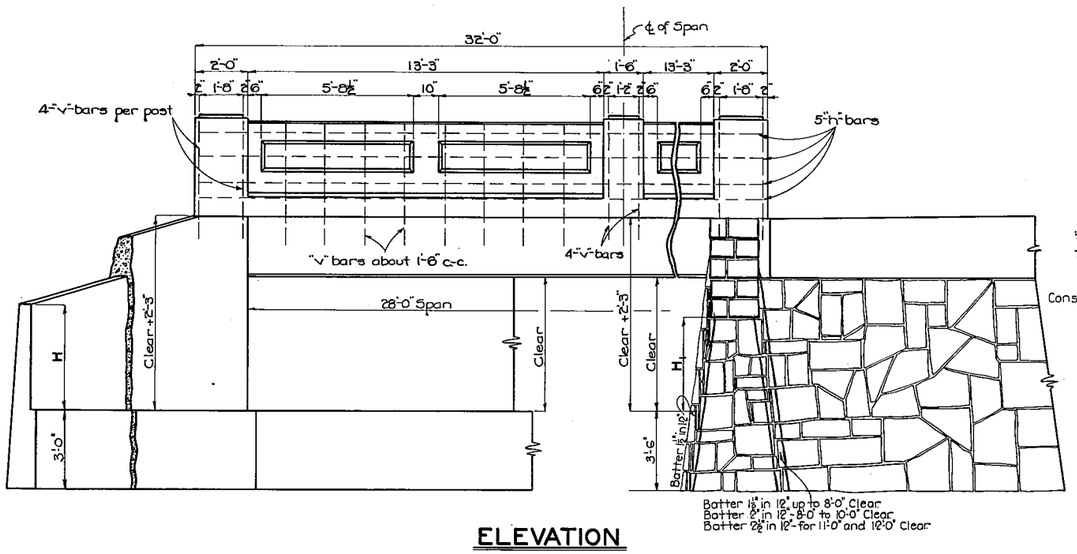
RT. L. ABUTMENT SECTION

NOTE

Floor of Bridge shall conform to grade of road. On level grade, slope top of slab at least ¼" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving, use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.

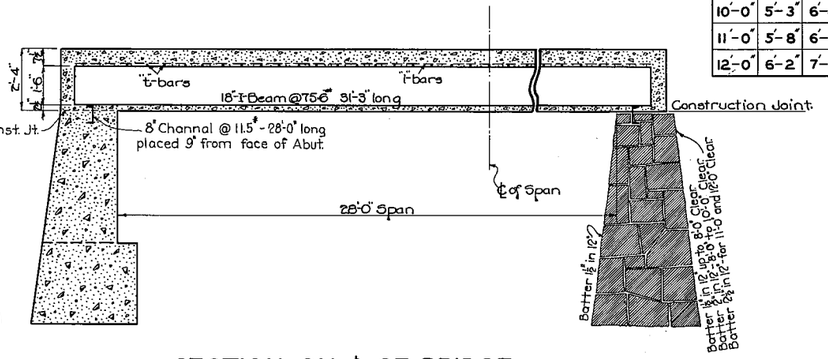
ABUTMENTS & WINGS

CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	B	Cu.Yds. B Con.	Bbls. Cement	Cu.Yds. Sand.	Cu.Yds. Stone.
4'-0"	2'-2"	3'-9"	2'-5"	12'-3"	3'-9"	2'-0"	5'-0"	3'-0"	1'-7"	45.6	59¼	22	43¾
5'-0"	2'-10"	4'-2"	2'-8"	14'-0"	4'-3"	2'-3"	5'-9"	3'-6"	2'-0"	61.6	78	29¾	59¼
6'-0"	3'-4"	4'-8"	3'-0"	16'-0"	4'-9"	2'-5"	6'-9"	3'-9"	2'-5"	78.8	102¼	38	75¾
7'-0"	3'-10"	5'-1"	3'-3"	18'-0"	5'-3"	2'-8"	7'-6"	4'-3"	2'-9½"	98.7	128¼	47½	95
8'-0"	4'-4"	5'-6"	3'-6"	20'-0"	5'-9"	3'-0"	8'-6"	4'-9"	3'-2½"	121.6	157¾	58½	117
9'-0"	4'-10"	5'-11"	3'-9"	22'-0"	6'-3"	3'-1"	9'-3"	5'-0"	3'-7"	146.6	190¼	70½	141
10'-0"	5'-3"	6'-4"	4'-0"	24'-0"	6'-9"	3'-4"	10'-3"	5'-6"	4'-0"	174.6	226¾	84	168
11'-0"	5'-8"	6'-9"	4'-2"	26'-0"	7'-3"	3'-6"	11'-0"	5'-9"	4'-5"	205.3	266½	98¾	197½
12'-0"	6'-2"	7'-2"	4'-5"	27'-9"	7'-9"	3'-9"	12'-0"	6'-3"	4'-9½"	240.7	312½	115¾	231½



ELEVATION

Batter 1" in 12" up to 8'-0" Clear
Batter 2" in 12" - 8'-0" to 10'-0" Clear
Batter 2½" in 12" - for 11'-0" and 12'-0" Clear



SECTION ON ℄ OF BRIDGE

COMMONWEALTH OF PENNSYLVANIA.

DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION.

STANDARD
REINFORCED CONCRETE BRIDGE.
SPAN 28 FT. ROADWAY 18 FT.
SKEW 45° L.

APPROVED May 21, 1928
E. E. Brandows BRIDGE ENGINEER
APPROVED May 21, 1928
Samuel Rea CHIEF ENGINEER

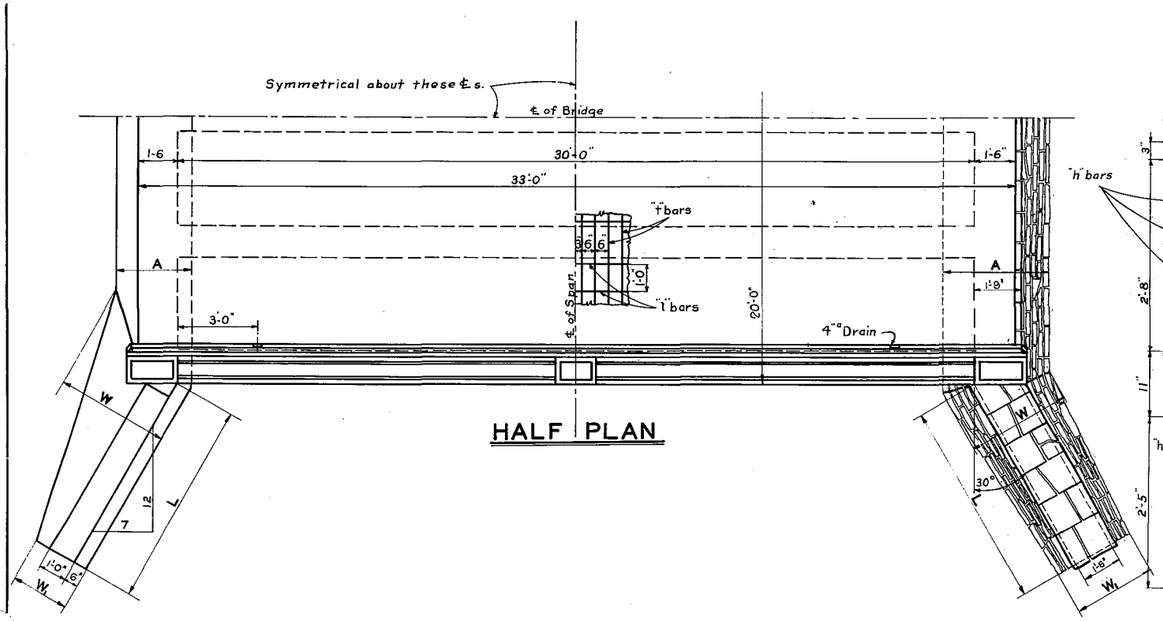
Made by. W.B.D.
Checked by. J.E.M. 5-5-28.

SCALE ⅜ & 1"=1'-0"

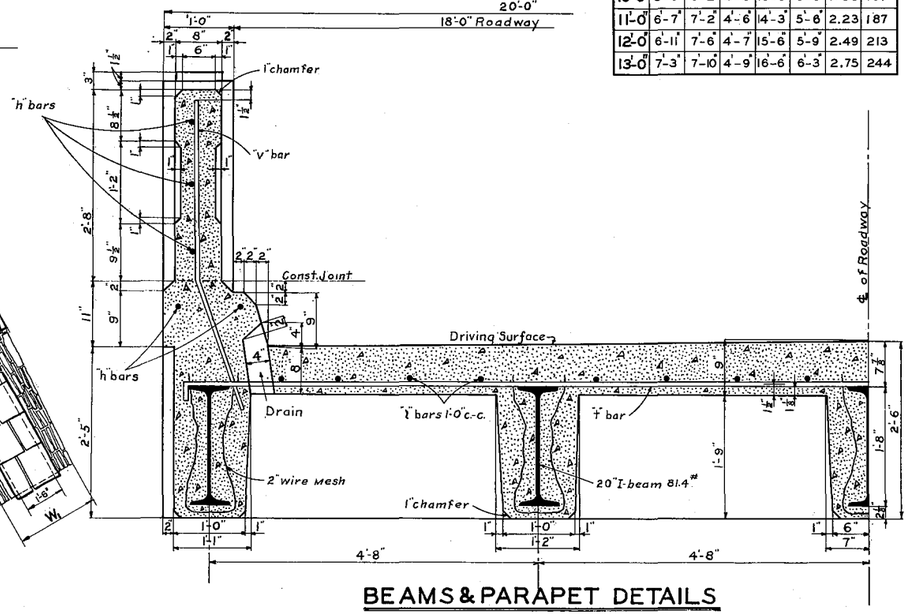
628 B-45

IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

Revised 5-25-28 W.B.D.
" 7-23-32 W.C.T. Stone Masonry.



HALF PLAN



BEAMS & PARAPET DETAILS

STONE ABUTMENTS & WINGS							
CLEAR	A	W	W_1	L	H	CU.YDS. PER FOOT ONE ABUT.	TOTAL CU.YDS. TWO ABUT.
5'-0"	3'-11"	4'-3"	3'-2"	7'-9"	3'-3"	0.89	61
6'-0"	4'-2"	4'-6"	3'-4"	9'-0"	3'-9"	1.04	66
7'-0"	4'-5"	4'-9"	3'-5"	10'-0"	4'-0"	1.20	88
8'-0"	5'-1"	5'-7"	3'-9"	11'-0"	4'-3"	1.45	111
9'-0"	5'-5"	5'-10"	3'-11"	12'-3"	4'-9"	1.66	131
10'-0"	5'-8"	6'-2"	4'-0"	13'-3"	5'-0"	1.86	151
11'-0"	6'-7"	7'-2"	4'-6"	14'-3"	5'-6"	2.23	187
12'-0"	6'-11"	7'-6"	4'-7"	15'-6"	5'-9"	2.49	213
13'-0"	7'-3"	7'-10"	4'-9"	16'-6"	6'-3"	2.75	244

MATERIAL REQUIRED.

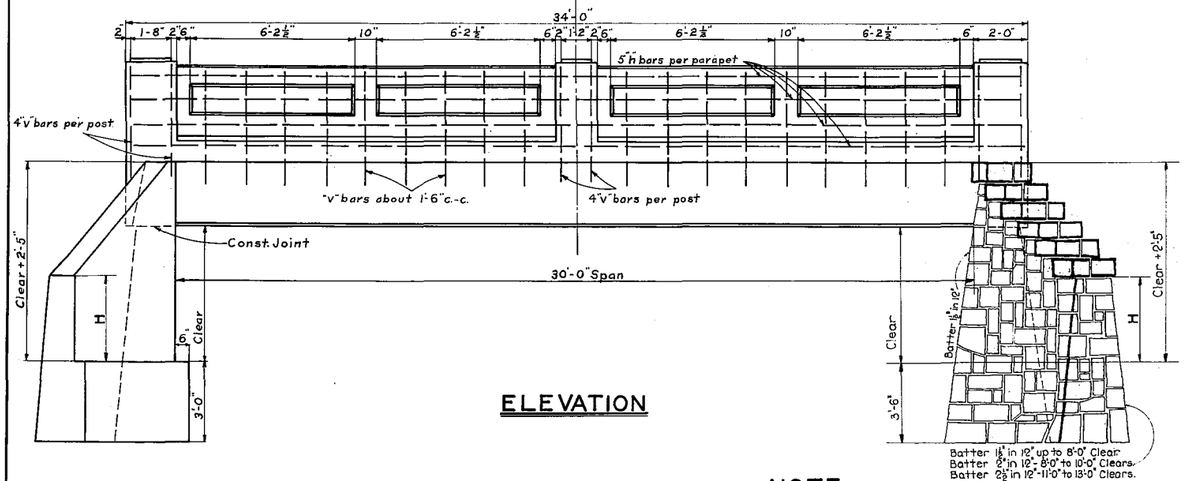
39.2 Cu. Yds. "A" Concrete.	60¾ Bbls. Cement. 18 Cu. Yds. Sand. 36 Cu. Yds. Stone.
2528 Lbs. Reinforcing Bars.	
13467 Lbs. Structural Steel.	5-20" I-beams @ 81.4# - 32'-0" lg. 2-8" Channels @ 11.5# 19'-3" lg.
750 Sq. Ft. 2" Wire Mesh.	

TABLE OF BARS.

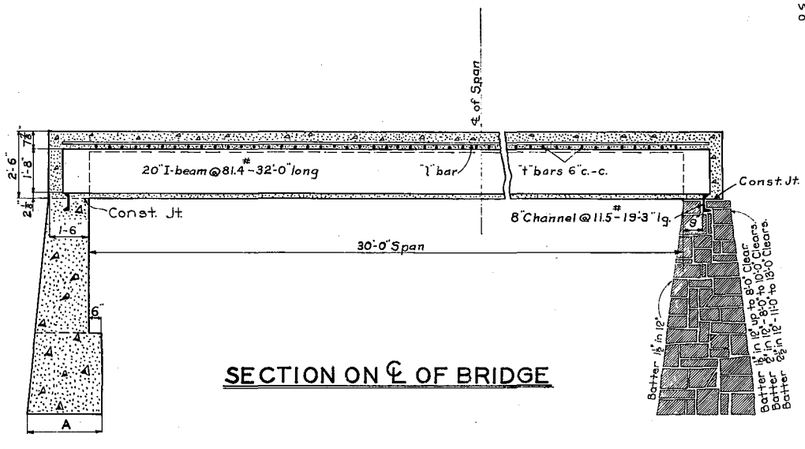
Mark.	No.	Stock.	Description.
l	16	½"ø X 32'-0"	Longitudinal in Slab.
t	60	¾"ø X 19'-9"	Transverse in Slab.
h	10	½"ø X 33'-9"	Horizontal in Parapets.
v	60	½"ø X 4'-6"	Vertical in Parapets.

ABUTMENTS & WINGS.

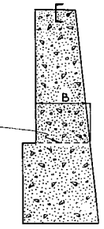
CLEAR	A	W	W_1	L	H	Cu.Yds. B Conc. 1:2½:5	Bbls. Cement	Cu.Yds. Sand.	Cu.Yds. Stone.
5'-0"	2'-10"	4'-3"	2'-0"	7'-9"	3'-3"	42.5	55¼	20½	41
6'-0"	3'-4"	4'-9"	2'-5"	9'-0"	3'-9"	55.3	71¾	26¾	53¼
7'-0"	3'-10"	5'-2"	2'-7"	10'-0"	4'-0"	68.2	88½	33	65¾
8'-0"	4'-4"	5'-7"	2'-9"	11'-0"	4'-3"	82.7	107½	39¾	79½
9'-0"	4'-10"	6'-0"	3'-0"	12'-3"	4'-9"	101.2	131½	48¾	97½
10'-0"	5'-3"	6'-5"	3'-1"	13'-3"	5'-0"	118.4	153¾	57	114
11'-0"	5'-8"	6'-10"	3'-4"	14'-3"	5'-6"	138.7	180	66¾	133½
12'-0"	6'-2"	7'-3"	3'-6"	15'-6"	5'-9"	162.7	211¼	78¼	156½
13'-0"	6'-7"	7'-8"	3'-9"	16'-6"	6'-3"	187.8	243¾	90½	180¾



ELEVATION



SECTION ON ℄ OF BRIDGE



CLEAR	B
5'-0"	2'-0"
6'-0"	2'-5"
7'-0"	2'-9½"
8'-0"	3'-2½"
9'-0"	3'-7"
10'-0"	4'-0"
11'-0"	4'-5"
12'-0"	4'-9½"
13'-0"	5'-2½"

NOTE

Floor of bridge shall conform to grade of road. On level grade slope top of slab at least ⅛" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.

APPROVED August 1, 1927
E E Macdonald BRIDGE ENGINEER.
APPROVED
Sam Hunsicker CHIEF ENGINEER.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION

STANDARD

REINFORCED CONCRETE BRIDGE.

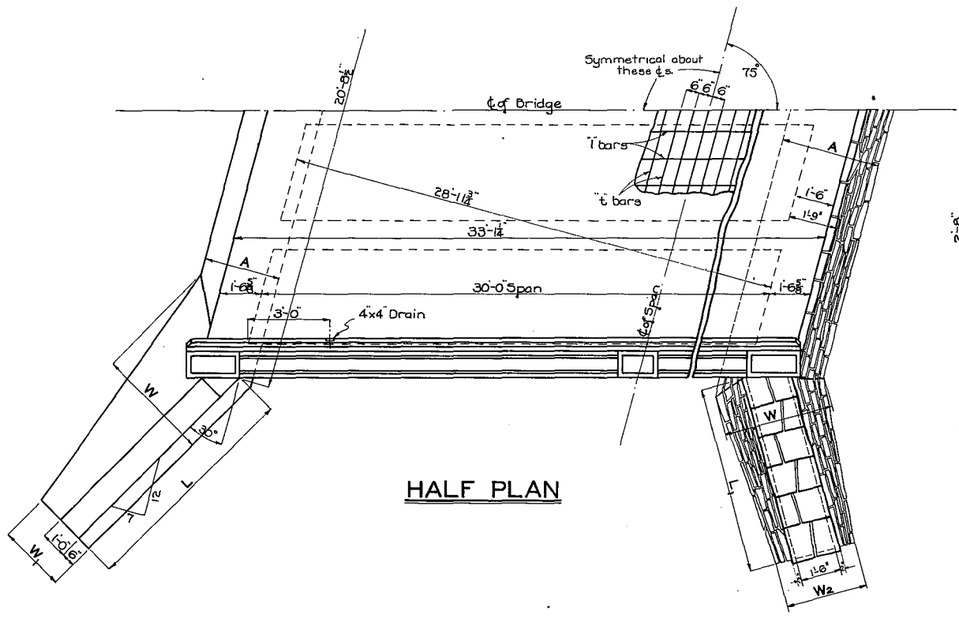
SPAN 30 FT. ROADWAY 18 FT.

630B

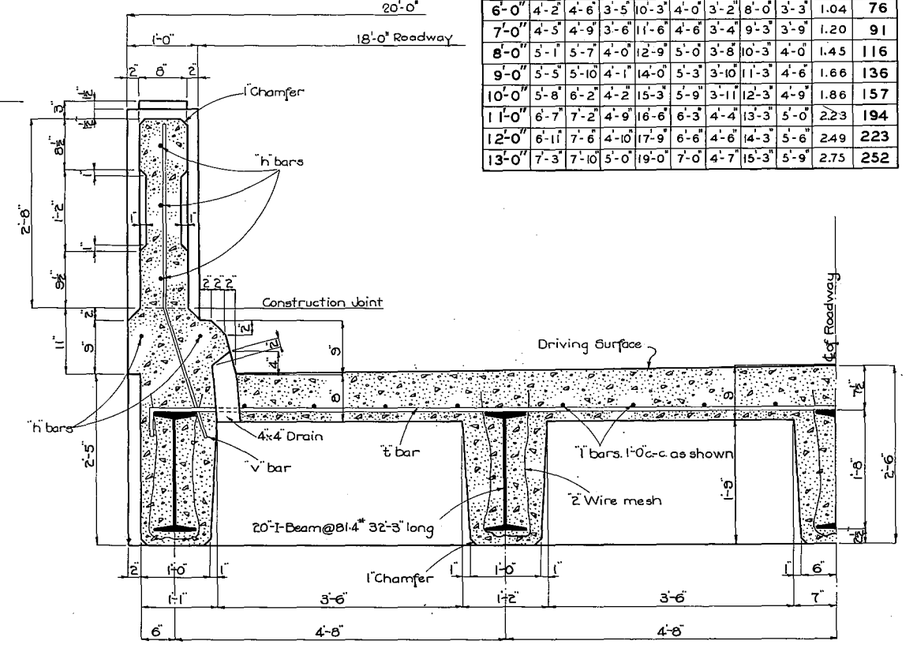
Made by - P.F.W.
Checked by - W.R.B.Q. 7/29/27

SCALE ⅜" & 1'-1'-0"

Revised 7-23-32 Stone Masonry W.C.T.



HALF PLAN



BEAMS & PARAPET DETAILS

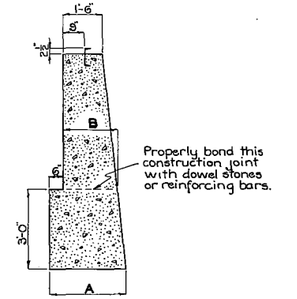
STONE ABUTMENTS & WINGS										
CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	CU YDS. PER FOOT ONE ABUT	TOTAL CU YDS. TWO ABUT
5'-0"	3'-11"	4'-3"	3'-4"	9'-0"	3'-9"	3'-2"	7'-0"	3'-0"	0.89	63
6'-0"	4'-2"	4'-6"	3'-5"	10'-3"	4'-0"	3'-2"	8'-0"	3'-3"	1.04	76
7'-0"	4'-5"	4'-9"	3'-6"	11'-6"	4'-6"	3'-4"	9'-3"	3'-9"	1.20	91
8'-0"	5'-1"	5'-7"	4'-0"	12'-9"	5'-0"	3'-8"	10'-3"	4'-0"	1.45	116
9'-0"	5'-5"	5'-10"	4'-1"	14'-0"	5'-3"	3'-10"	11'-3"	4'-6"	1.66	136
10'-0"	5'-8"	6'-2"	4'-2"	15'-3"	5'-9"	3'-11"	12'-3"	4'-9"	1.86	157
11'-0"	6'-7"	7'-2"	4'-9"	16'-6"	6'-3"	4'-4"	13'-3"	5'-0"	2.23	194
12'-0"	6'-11"	7'-6"	4'-10"	17'-9"	6'-6"	4'-6"	14'-3"	5'-6"	2.49	223
13'-0"	7'-3"	7'-10"	5'-0"	19'-0"	7'-0"	4'-7"	15'-3"	5'-9"	2.75	252

MATERIAL REQUIRED

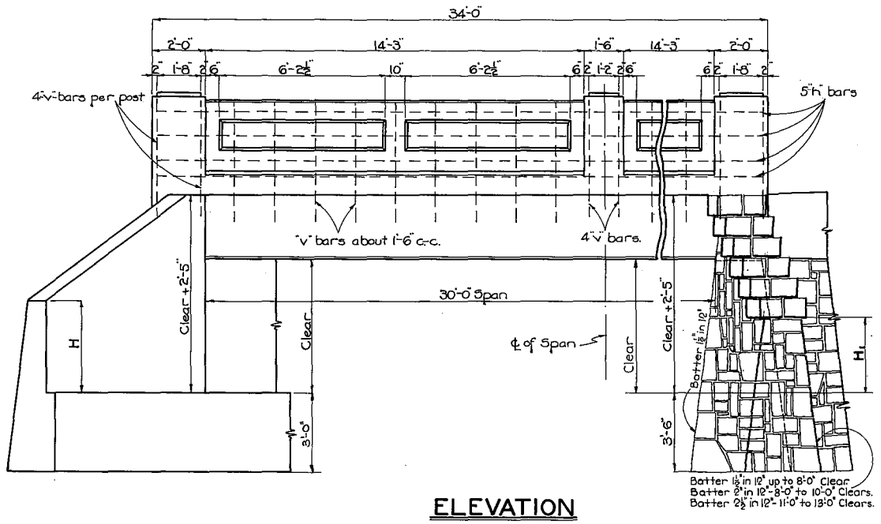
39.4 Cu. Yds. "A" Concrete.	61 Bbls. Cement. 18 Cu. Yds. Sand. 36¾ Cu. Yds. Stone.
2612 Lbs. Reinforcing Bars	
13587 Lbs. Structural Steel.	5-20"-I-Beams @ 81.4# 32'-3" long. 2-8"-Channels @ 11.5# 20'-6" long.
750 Sq. Ft. 2" Wire Mesh.	

TABLE OF BARS

Mark.	No.	Stock.	Description
l	16	½"x32'-3"	Longitudinal in Slab.
t	59	¾"x21'-0"	Transverse in Slab.
h	10	½"x33'-8"	Horizontal in Parapet.
v	60	½"x4'-6"	Vertical in Parapet.

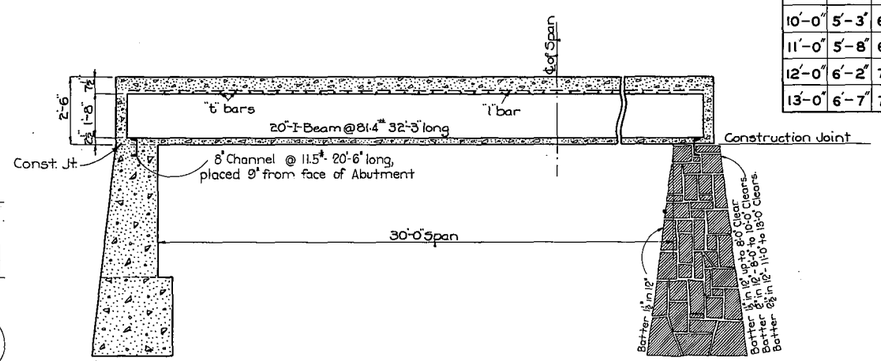


RT. L. ABUTMENT SECTION



ELEVATION

Floor of Bridge shall conform to grade of road. On level grade, slope top of slab at least ½" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving, use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.



SECTION ON ℄ OF BRIDGE

ABUTMENTS & WINGS													
CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	B	Cu. Yds. Con.	Bbls. Cement	Cu. Yds. Sand.	Cu. Yds. Stone
5'-0"	2'-10"	4'-3"	2'-5"	9'-0"	3'-9"	2'-0"	7'-0"	3'-0"	2'-0"	45.4	59	21½	43¾
6'-0"	3'-4"	4'-9"	2'-7"	10'-3"	4'-0"	2'-1"	8'-0"	3'-3"	2'-5"	57.3	74½	27½	55½
7'-0"	3'-10"	5'-2"	2'-10"	11'-6"	4'-6"	2'-5"	9'-3"	3'-9"	2'-9½"	73.2	95	35¼	70½
8'-0"	4'-4"	5'-7"	3'-1"	12'-9"	5'-0"	2'-7"	10'-3"	4'-0"	3'-2½"	89.2	116¼	43	86
9'-0"	4'-10"	6'-0"	3'-3"	14'-0"	5'-3"	2'-10"	11'-3"	4'-6"	3'-7"	108.5	140¾	52¼	104½
10'-0"	5'-3"	6'-5"	3'-6"	15'-3"	5'-9"	3'-0"	12'-3"	4'-9"	4'-0"	132.5	172	63¾	127½
11'-0"	5'-8"	6'-10"	3'-9"	16'-6"	6'-3"	3'-1"	13'-3"	5'-0"	4'-5"	151.0	196	72¾	145¼
12'-0"	6'-2"	7'-3"	3'-10"	17'-9"	6'-6"	3'-4"	14'-3"	5'-6"	4'-9½"	175.7	228	84½	169
13'-0"	6'-7"	7'-8"	4'-1"	19'-0"	7'-0"	3'-6"	15'-3"	5'-9"	5'-2½"	202.5	262¾	97½	194¾

COMMONWEALTH OF PENNSYLVANIA.

DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION.

STANDARD

REINFORCED CONCRETE BRIDGE

SPAN 30 FT. ROADWAY 18 FT.
SKEW 75° L.

APPROVED May 21, 1928
E. E. Brownlow BRIDGE ENGINEER

APPROVED May 21, 1928
CHIEF ENGINEER

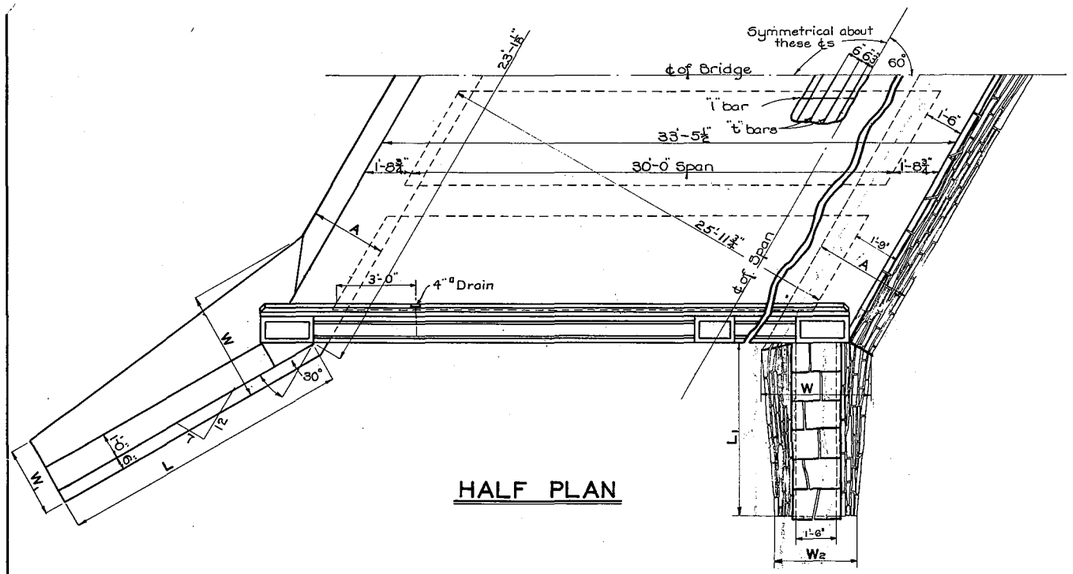
SCALE ⅜" & 1'-0"

630 B-75

Made by W.B.D.
Checked by J.E.M. 5-8-28.

IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

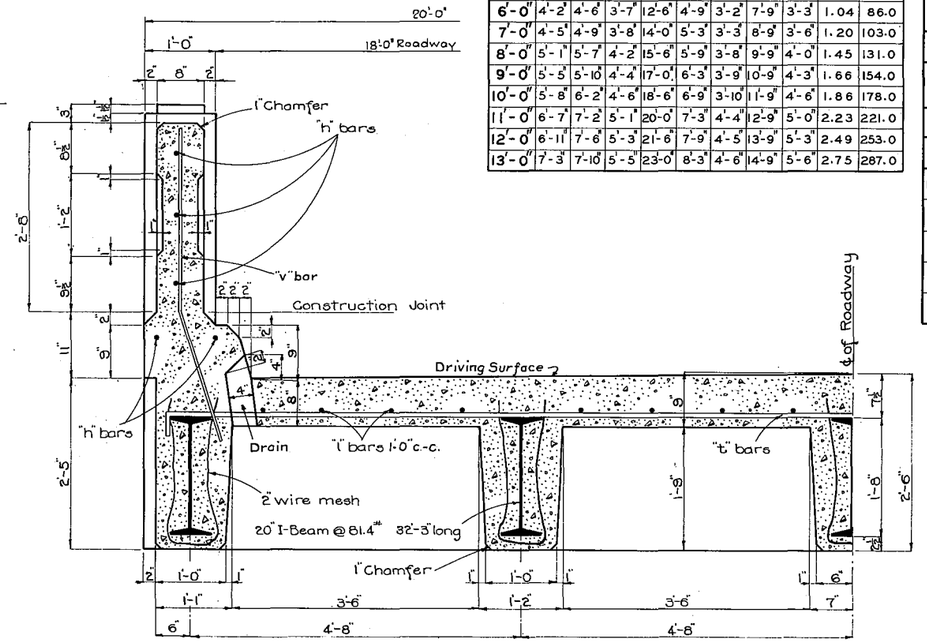
Revised 7-23-32 Stone Masonry W.C.T.



HALF PLAN

STONE ABUTMENTS & WINGS

CLEAR	A	W	W1	L	H	W2	L1	H1	CU.YDS. PER FOOT ONE ABUT.	TOTAL CU.YDS. TWO ABUT.
5'-0"	3'-11"	4'-3"	3'-5"	11'-0"	4'-3"	3'-2"	6'-9"	3'-0"	0.89	71.0
6'-0"	4'-2"	4'-6"	3'-7"	12'-6"	4'-9"	3'-2"	7'-9"	3'-3"	1.04	86.0
7'-0"	4'-5"	4'-9"	3'-8"	14'-0"	5'-3"	3'-3"	8'-9"	3'-6"	1.20	103.0
8'-0"	5'-1"	5'-7"	4'-2"	15'-6"	5'-9"	3'-8"	9'-9"	4'-0"	1.45	131.0
9'-0"	5'-5"	5'-10"	4'-4"	17'-0"	6'-3"	3'-9"	10'-9"	4'-3"	1.66	154.0
10'-0"	5'-8"	6'-2"	4'-6"	18'-6"	6'-9"	3'-10"	11'-9"	4'-6"	1.86	178.0
11'-0"	6'-7"	7'-2"	5'-1"	20'-0"	7'-3"	4'-4"	12'-9"	5'-0"	2.23	221.0
12'-0"	6'-11"	7'-6"	5'-3"	21'-6"	7'-9"	4'-5"	13'-9"	5'-3"	2.49	253.0
13'-0"	7'-3"	7'-10"	5'-5"	23'-0"	8'-3"	4'-6"	14'-9"	5'-6"	2.75	287.0



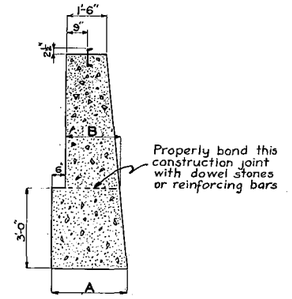
BEAMS & PARAPET DETAILS

MATERIAL REQUIRED

40 Cu. Yds. "A" Concrete	62 Bbls. Cement. 18½ Cu. Yds. Sand. 36¾ Cu. Yds. Stone.
2547 Lbs. Reinforcing Bars	
13649 Lbs. Structural Steel	5-20" I-Beams @ 81.4# 32'-3" long. 2-8" Channels @ 11.5# 22'-9" long.
750 Sq. Ft. 2" Wire Mesh	

TABLE OF BARS

Mark	No.	Stock	Description
l	16	½" ø x 32'-3"	Longitudinal in Slab.
t	52	¾" ø x 23'-0"	Transverse in Slab
h	10	½" ø x 33'-9"	Horizontal in Parapet.
v	60	½" ø x 4'-6"	Vertical in Parapet.



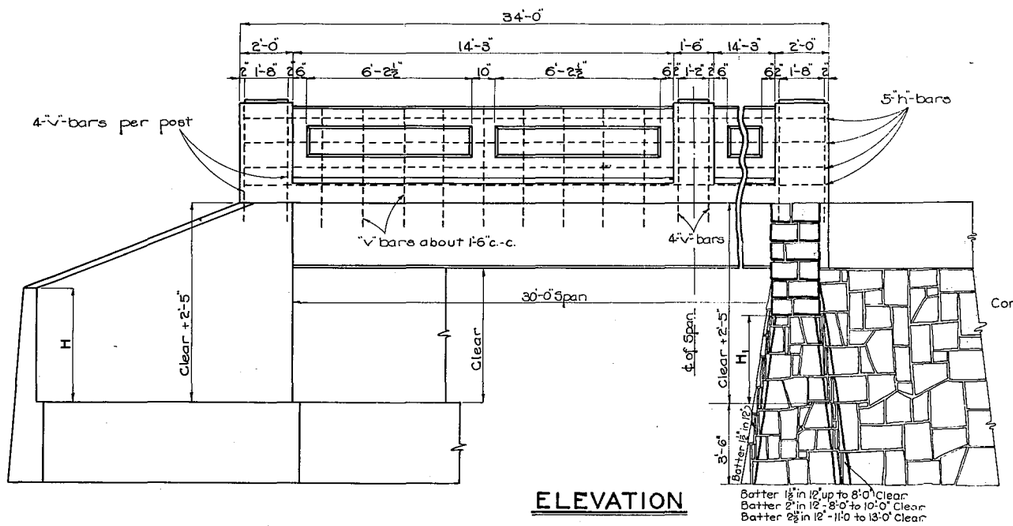
RT. L. ABUTMENT SECTION

NOTE

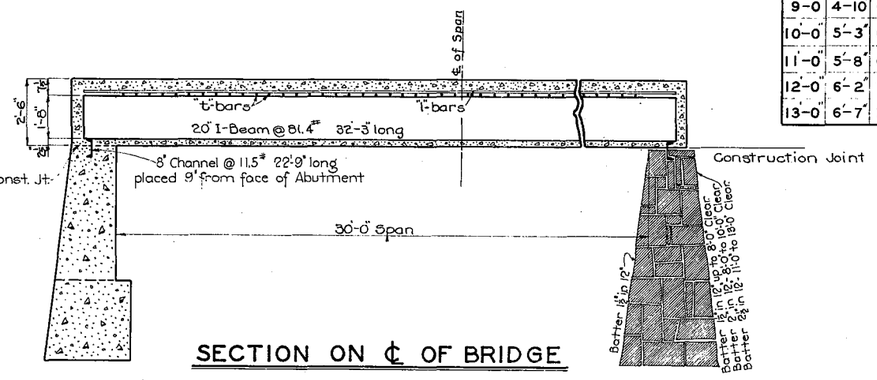
Floor of Bridge shall conform to grade of road. On level grade, slope top of slab at least ¼" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving, use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.

ABUTMENTS & WINGS

CLEAR	A	W	W1	L	H	W2	L1	H1	B	Cu.Yds. ℄ Con.	Bbls. Cement	Cu.Yds. Sand.	Cu.Yds. Stone
5'-0"	2'-10"	4'-3"	2'-8"	11'-0"	4'-3"	2'-0"	6'-9"	3'-0"	2'-0"	51.5	66¾	24¾	49½
6'-0"	3'-4"	4'-9"	3'-0"	12'-6"	4'-9"	2'-1"	7'-9"	3'-3"	2'-5"	66.6	86½	32	64
7'-0"	3'-10"	5'-2	3'-3"	14'-0"	5'-3"	2'-3"	8'-9"	3'-6"	2'-9½"	83.6	108½	40¼	80½
8'-0"	4'-4"	5'-7"	3'-6"	15'-6"	5'-9"	2'-7"	9'-9"	4'-0"	3'-2½"	104.8	136	50½	100¾
9'-0"	4'-10"	6'-0"	3'-9"	17'-0"	6'-3"	2'-8"	10'-9"	4'-3"	3'-7"	123.0	159¾	59¼	118¼
10'-0"	5'-3"	6'-5"	4'-0"	18'-6"	6'-9"	2'-10"	11'-9"	4'-6"	4'-0"	143.4	186½	69	138
11'-0"	5'-8"	6'-10"	4'-2"	20'-0"	7'-3"	3'-1"	12'-9"	5'-0"	4'-5"	172.0	223¼	82¾	165¼
12'-0"	6'-2"	7'-3"	4'-5"	21'-6"	7'-9"	3'-3"	13'-9"	5'-3"	4'-9½"	205.0	266	98½	197
13'-0"	6'-7"	7'-8"	4'-8"	23'-0"	8'-3"	3'-4"	14'-9"	5'-6"	5'-2½"	231.5	300½	111¼	222¾



ELEVATION



SECTION ON ℄ OF BRIDGE

APPROVED June 9, 1927
E E Boudeau BRIDGE ENGINEER
APPROVED
Samuel Eckels CHIEF ENGINEER

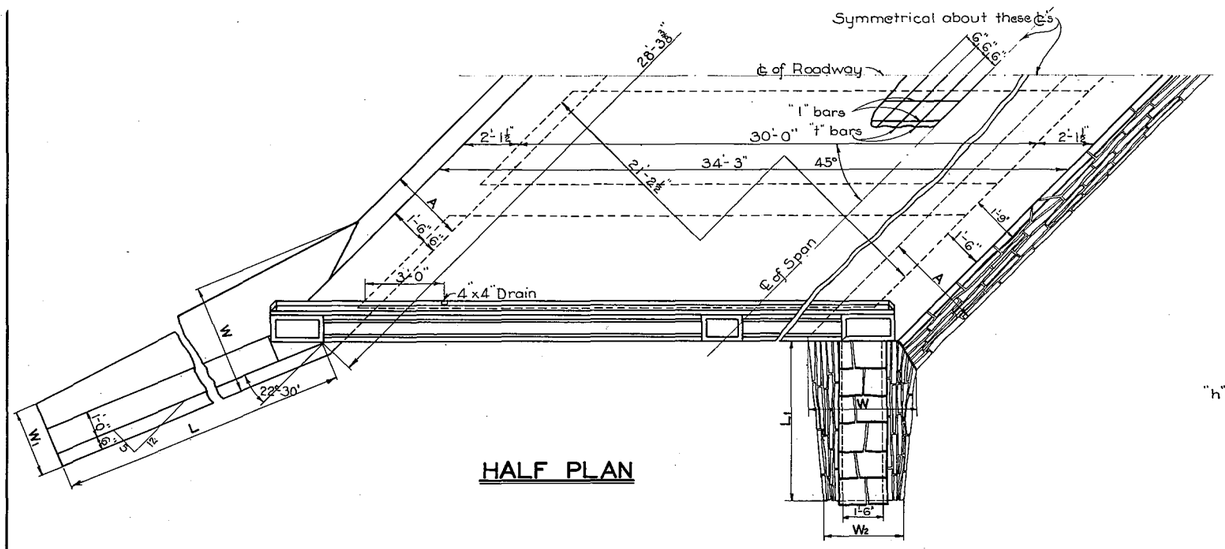
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION
STANDARD
REINFORCED CONCRETE BRIDGE
SPAN 30 FT. ROADWAY 18 FT.
SKEW 60° L.

SCALE ⅜" & 1"-1'-0"

630B-60

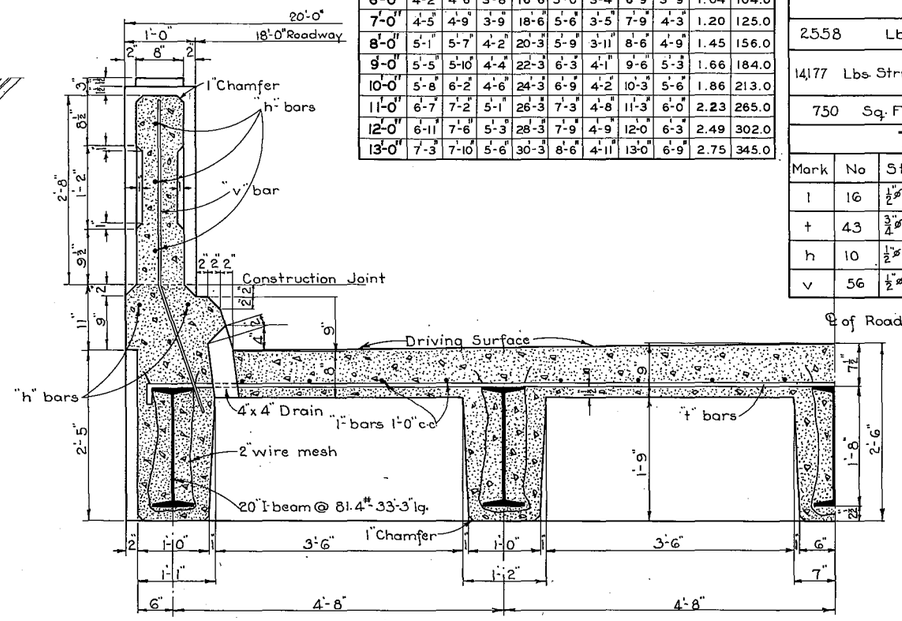
Made by W.B.D.
Checked by O.K.W 6/9/27

Revised 7-23-32 Stone Masonry W.C.T.

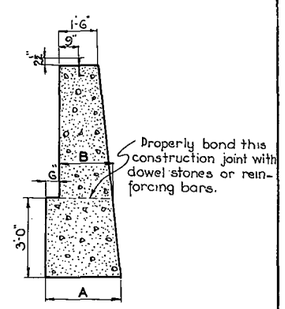


HALF PLAN

STONE ABUTMENTS & WINGS										
CLEAR	A	W	W1	L	H	W2	L1	H1	CU.YDS PER FOOT ONE ABUT	TOTAL CU. YDS. TWO ABUT
5'-0"	3'-11"	4'-3"	3'-5"	14'-6"	4'-3"	3'-3"	6'-0"	3'-6"	0.89	85.0
6'-0"	4'-2"	4'-6"	3'-8"	16'-6"	5'-0"	3'-4"	6'-9"	3'-9"	1.04	104.0
7'-0"	4'-5"	4'-9"	3'-9"	18'-6"	5'-6"	3'-5"	7'-9"	4'-3"	1.20	125.0
8'-0"	5'-1"	5'-7"	4'-2"	20'-3"	5'-9"	3'-11"	8'-6"	4'-9"	1.45	156.0
9'-0"	5'-5"	5'-10"	4'-4"	22'-3"	6'-3"	4'-1"	9'-6"	5'-3"	1.66	184.0
10'-0"	5'-8"	6'-2"	4'-6"	24'-3"	6'-9"	4'-2"	10'-3"	5'-6"	1.86	213.0
11'-0"	6'-7"	7'-2"	5'-1"	26'-3"	7'-3"	4'-8"	11'-3"	6'-0"	2.23	265.0
12'-0"	6'-11"	7'-6"	5'-3"	28'-3"	7'-9"	4'-9"	12'-0"	6'-3"	2.49	302.0
13'-0"	7'-3"	7'-10"	5'-6"	30'-3"	8'-6"	4'-11"	13'-0"	6'-9"	2.75	345.0



BEAMS & PARAPET DETAILS



RT. L ABUTMENT SECTION

MATERIAL REQUIRED

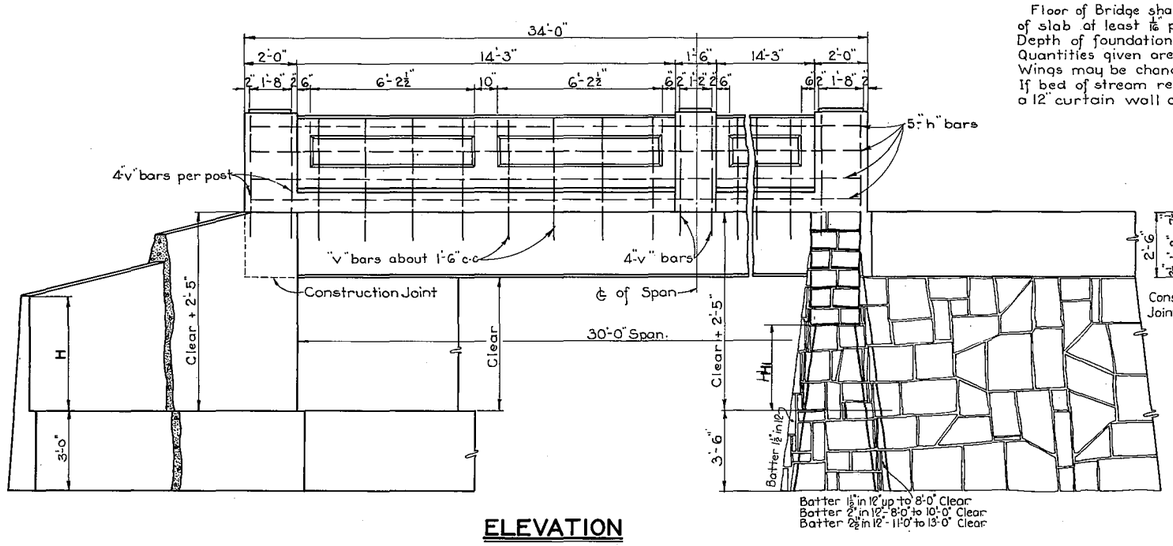
41½ Cu. Yds. Class "A" Concrete.	64¼ Bbls. Cement. 19 Cu. Yds. Sand. 38 Cu. Yds. Stone.
2,558 Lbs. of Reinforcing Bars.	
14,177 Lbs. Structural Steel.	5-20" I-Beams @ 81.4# 33'-3" lg. 2-8" Channels @ 11.5# 28'-0" lg.
750 Sq. Ft. 2" Mesh Woven Wire	

TABLE OF BARS

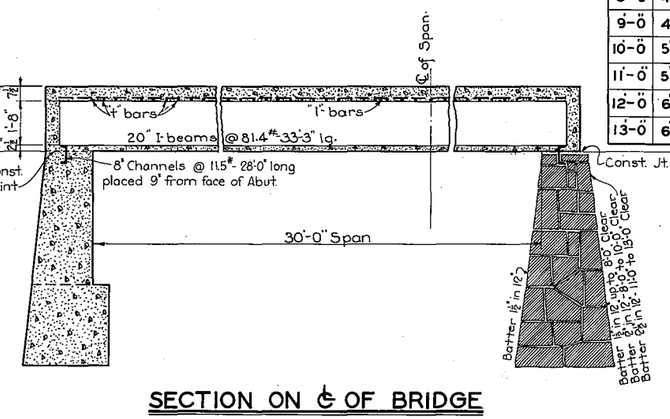
Mark	No	Stock	Descriptions
l	16	½" ø x 33'-3"	Longitudinol in slab.
t	43	¾" ø x 28'-0"	Transverse in slab.
h	10	½" ø x 33'-9"	Horizontal in Parapet.
v	56	½" ø x 4'-6"	Vertical in Parapet.

NOTE

Floor of Bridge shall conform to grade of road. On level grade, slope top of slab at least ⅛" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.



ELEVATION



SECTION ON ℄ OF BRIDGE

ABUTMENTS & WINGS

CLEAR	A	W	W1	L	H	W2	L1	H1	B	Cu.Yds. B Con.	Bbls. Cement	Cu.Yds. Sand	Cu.Yds. Stone.
5'-0"	2'-10"	4'-3"	2'-8"	14'-6"	4'-3"	2'-3"	6'-0"	3'-6"	2'-0"	61.5	79¾	29½	59¼
6'-0"	3'-4"	4'-9"	3'-1"	16'-6"	5'-0"	2'-5"	6'-9"	3'-9"	2'-5"	81	105¼	39	78
7'-0"	3'-10"	5'-2"	3'-4"	18'-6"	5'-6"	2'-8"	7'-9"	4'-3"	2'-9½"	101.5	131¾	48¾	97¾
8'-0"	4'-4"	5'-7"	3'-6"	20'-3"	5'-9"	3'-0"	8'-6"	4'-9"	3'-2½"	123.4	160¼	59¼	118¾
9'-0"	4'-10"	6'-0"	3'-9"	22'-3"	6'-3"	3'-3"	9'-6"	5'-3"	3'-7"	149.6	194¼	72	144
10'-0"	5'-3"	6'-5"	4'-0"	24'-3"	6'-9"	3'-4"	10'-3"	5'-6"	4'-0"	176.8	229½	85	170
11'-0"	5'-9"	6'-10"	4'-2"	26'-3"	7'-3"	3'-7"	11'-3"	6'-0"	4'-5"	207.3	269	99¾	199½
12'-0"	6'-2"	7'-3"	4'-5"	28'-3"	7'-9"	3'-9"	12'-0"	6'-3"	4'-9½"	242.3	314½	116½	233
13'-0"	6'-7"	7'-8"	4'-9"	30'-3"	8'-6"	4'-0"	13'-0"	6'-9"	5'-2½"	282.7	367	136	272

APPROVED May 29, 1928
E E Brandon BRIDGE ENGINEER
APPROVED
Sam Rinehart CHIEF ENGINEER

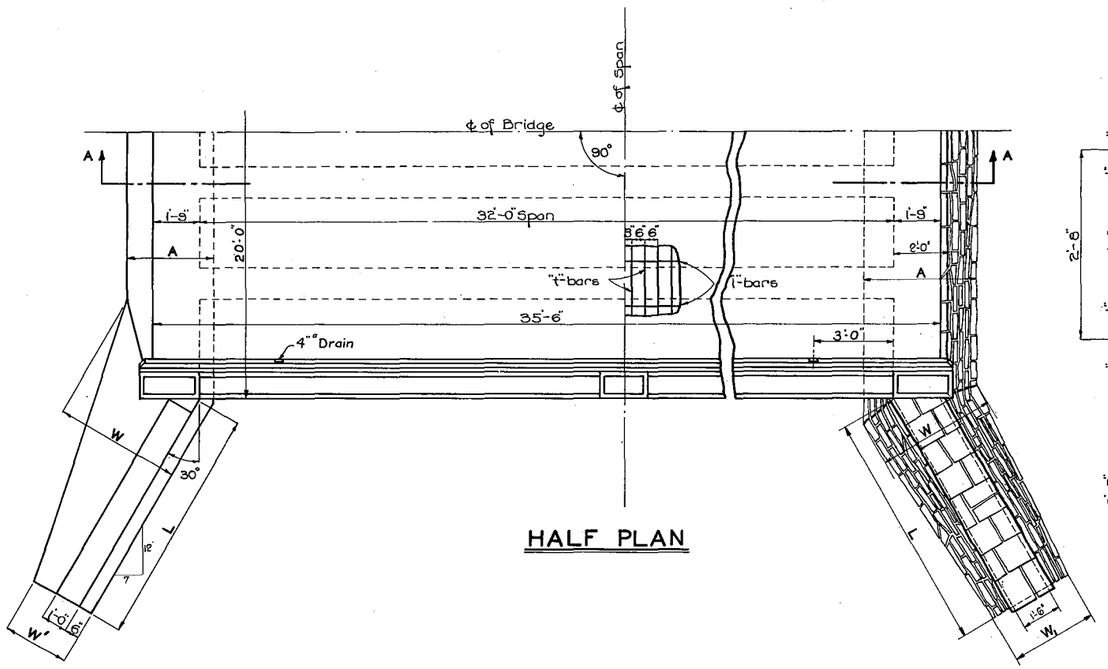
COMMONWEALTH OF PENNSYLVANIA.
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION.
STANDARD
REINFORCED CONCRETE BRIDGE
SPAN 30 FT. ROADWAY 18 FT.
SKEW 45° L.

SCALE ¾" = 1'-0" 630B-45

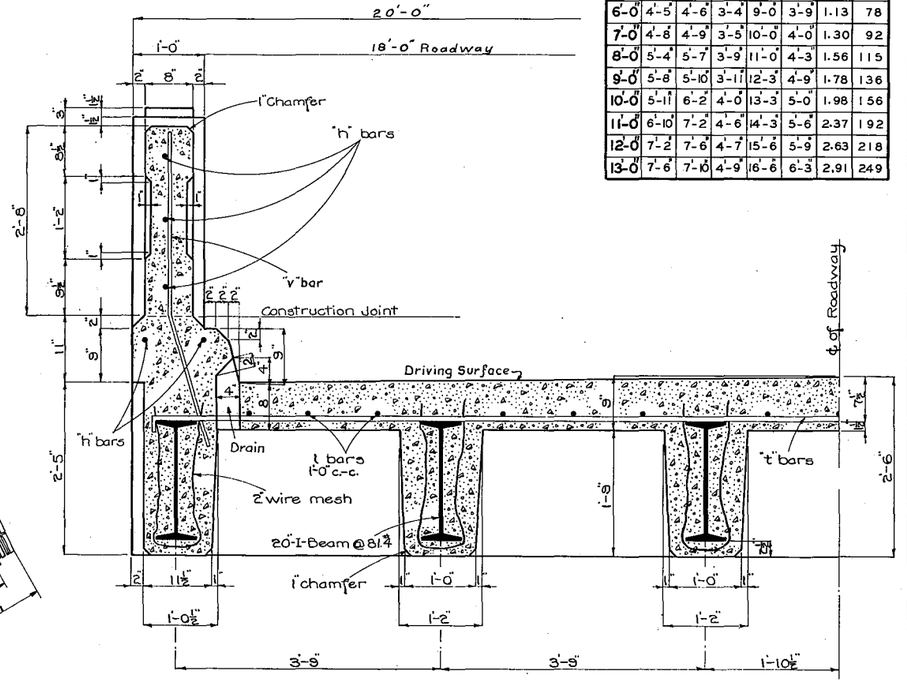
Made by J.E.M.
Checked by W.C.T. 5-28-28.

IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

Revised 5-25-28 W.B.D.
" 7-23-32 W.C.T. Stone Masonry.



HALF PLAN



BEAMS & PARAPET DETAILS

STONE ABUTMENTS & WINGS							
CLEAR	A	W	W_1	L	H	CU YDS PER FOOT ONE ABUT	TOTAL CU YDS TWO ABUT
5'-0"	4'-2"	4'-3"	3'-2"	7'-9"	3'-3"	0.97	64
6'-0"	4'-5"	4'-6"	3'-4"	9'-0"	3'-9"	1.13	78
7'-0"	4'-8"	4'-9"	3'-5"	10'-0"	4'-0"	1.30	92
8'-0"	5'-4"	5'-7"	3'-9"	11'-0"	4'-3"	1.56	115
9'-0"	5'-8"	5'-10"	3'-11"	12'-3"	4'-9"	1.78	136
10'-0"	5'-11"	6'-2"	4'-0"	13'-3"	5'-0"	1.98	156
11'-0"	6'-10"	7'-2"	4'-6"	14'-3"	5'-6"	2.37	192
12'-0"	7'-2"	7'-6"	4'-7"	15'-6"	5'-9"	2.63	218
13'-0"	7'-6"	7'-10"	4'-9"	16'-6"	6'-3"	2.91	249

MATERIAL REQUIRED

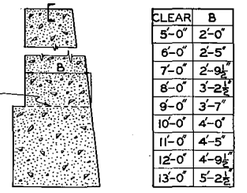
44.4 Cu.Yds. "A" Concrete.	68¾ Bbls. Cement. 20½ Cu.Yds. Sand. 40¾ Cu.Yds. Stone.
2113 Lbs. Reinforcing Bars.	
17176 Lbs. Structural Steel.	6-20" I-Beams @ 81.4 - 34'-3" lg. 2-8" Channels @ 11.5 - 19'-6" lg.
960 Sq. Ft. 2" Wire Mesh.	

TABLE OF BARS

Mark.	No.	Stock.	Description.
l	15	½"x34'-3"	Longitudinal in Slab.
t	64	⅝"x20'-0"	Transverse in Slab.
h	10	½"x36'-3"	Longitudinal in Parapet.
v	64	½"x4'-6"	Vertical in Parapet.

ABUTMENTS & WINGS

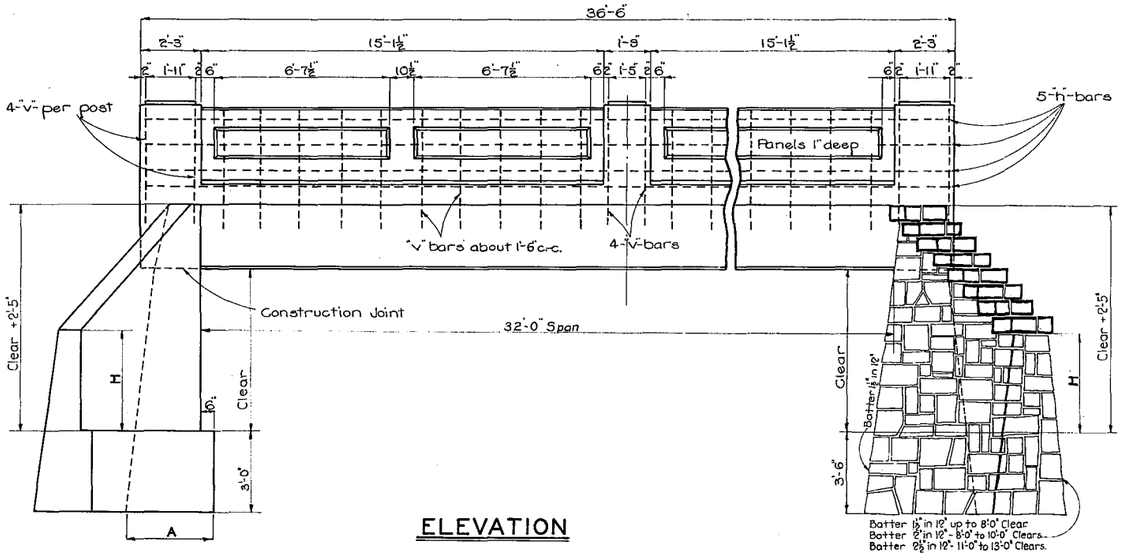
CLEAR	A	W	W'	L	H	Cu.Yds. B.Con.	Bbls. Cement	Cu.Yds. Sand	Cu.Yds. Stone
5'-0"	2'-8"	4'-3"	2'-0"	7'-9"	3'-3"	43.6	56¾	21	42
6'-0"	3'-3"	4'-9"	2'-5"	9'-0"	3'-9"	57.0	74	27½	55
7'-0"	3'-9"	5'-2"	2'-7"	10'-0"	4'-0"	70.0	91	33¾	67½
8'-0"	4'-3"	5'-7"	2'-9"	11'-0"	4'-3"	84.7	110	40¾	81½
9'-0"	4'-9"	6'-0"	3'-0"	12'-3"	4'-9"	103.2	134	49¾	99¼
10'-0"	5'-2"	6'-5"	3'-1"	13'-3"	5'-0"	120.9	157	58¼	116½
11'-0"	5'-8"	6'-10"	3'-4"	14'-3"	5'-6"	142.0	184½	68½	136¾
12'-0"	6'-1"	7'-3"	3'-6"	15'-6"	5'-9"	165.6	215	79¾	159½
13'-0"	6'-6"	7'-8"	3'-9"	16'-6"	6'-3"	191.0	248	92	183¾



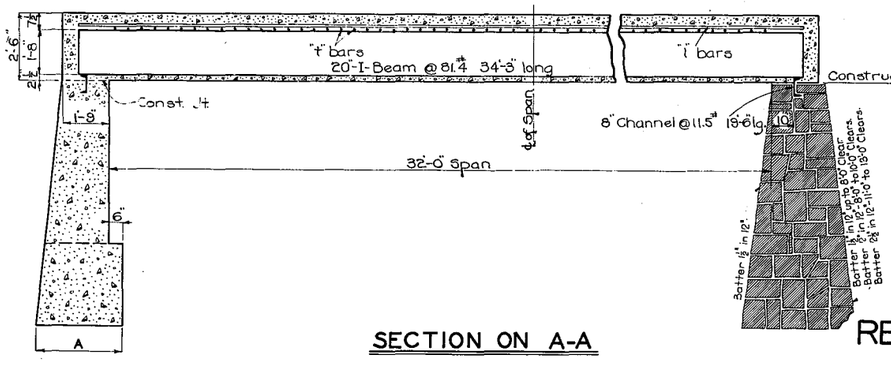
CLEAR	B
5'-0"	2'-0"
6'-0"	2'-5"
7'-0"	2'-9½"
8'-0"	3'-2½"
9'-0"	3'-7"
10'-0"	4'-0"
11'-0"	4'-5"
12'-0"	4'-9½"
13'-0"	5'-2½"

APPROVED August 1, 1927
E E Brandon BRIDGE ENGINEER.

APPROVED
Sam Rinehart CHIEF ENGINEER.



ELEVATION



SECTION ON A-A

NOTE

Floor of Bridge shall conform to grade of road. On level grade, slope top of slab at least 1/16" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving, use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION
STANDARD

REINFORCED CONCRETE BRIDGE.

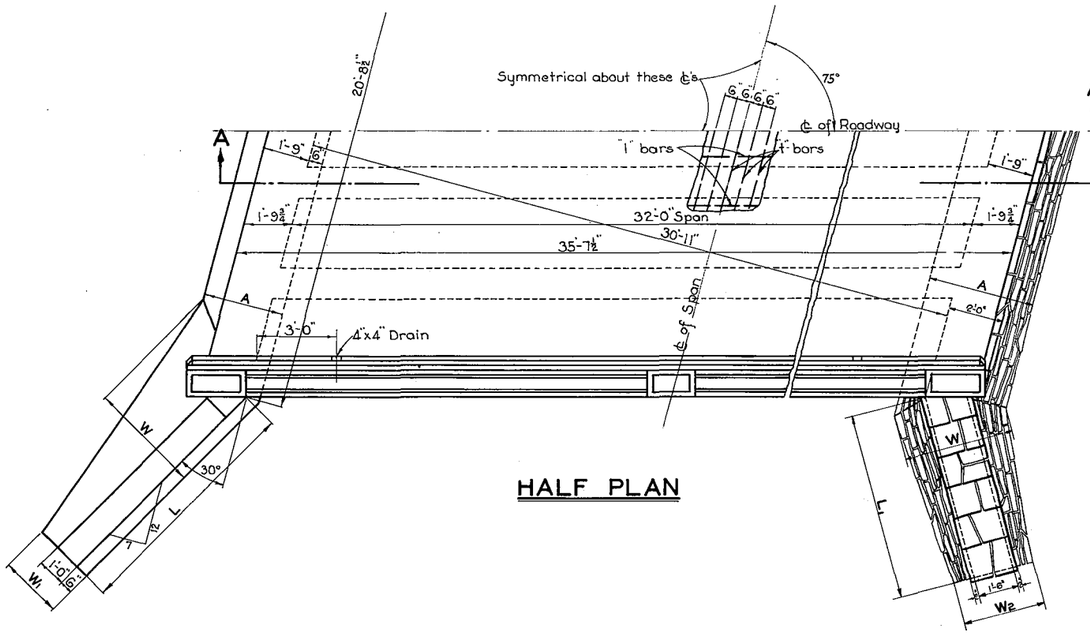
SPAN 32 FT. ROADWAY 18 FT.

Made by W.B.D.
Checked by. C.H.W. 5/25/27

SCALE ⅜" & 1'-1'-0"

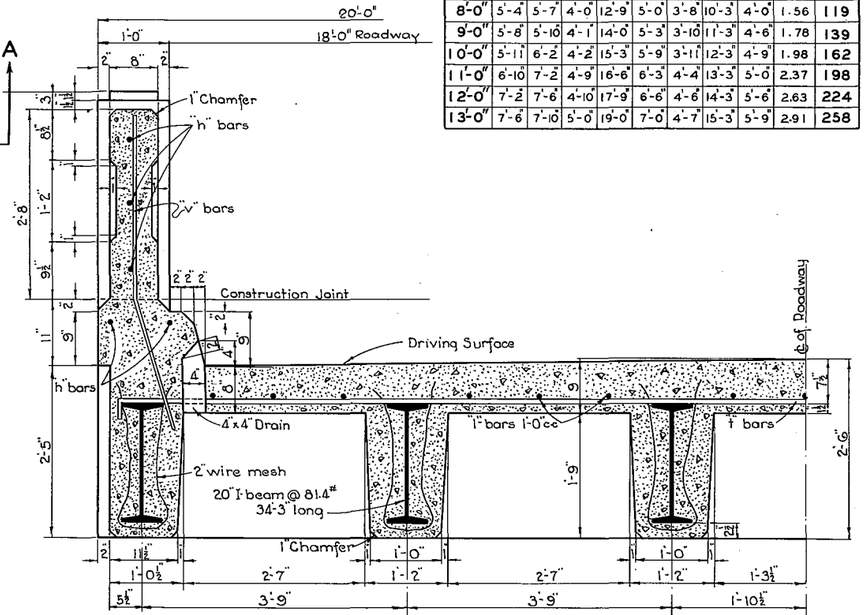
632B

Revised 7-23-32 Stone Masonry W.C.T.



HALF PLAN

STONE ABUTMENTS & WINGS										
CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	CU.YDS. PER FOOT ONE ABUT.	TOTAL CU.YDS. TWO ABUT.
5'-0"	4'-2"	4'-3"	3'-4"	9'-0"	3'-9"	3'-2"	7'-0"	3'-0"	0.97	66
6'-0"	4'-5"	4'-6"	3'-5"	10'-3"	4'-0"	3'-2"	8'-0"	3'-3"	1.13	79
7'-0"	4'-8"	4'-9"	3'-6"	11'-6"	4'-6"	3'-4"	9'-3"	3'-9"	1.30	95
8'-0"	5'-4"	5'-7"	4'-0"	12'-9"	5'-0"	3'-8"	10'-3"	4'-0"	1.56	119
9'-0"	5'-8"	5'-10"	4'-1"	14'-0"	5'-3"	3'-10"	11'-3"	4'-6"	1.78	139
10'-0"	5'-11"	6'-2"	4'-2"	15'-3"	5'-9"	3'-11"	12'-3"	4'-9"	1.98	162
11'-0"	6'-10"	7'-2"	4'-9"	16'-6"	6'-3"	4'-4"	13'-3"	5'-0"	2.37	198
12'-0"	7'-2"	7'-6"	4'-10"	17'-9"	6'-6"	4'-6"	14'-3"	5'-6"	2.63	224
13'-0"	7'-6"	7'-10"	5'-0"	19'-0"	7'-0"	4'-7"	15'-3"	5'-9"	2.91	258



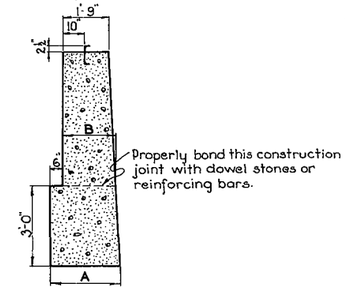
BEAMS & PARAPET DETAILS

MATERIAL REQUIRED

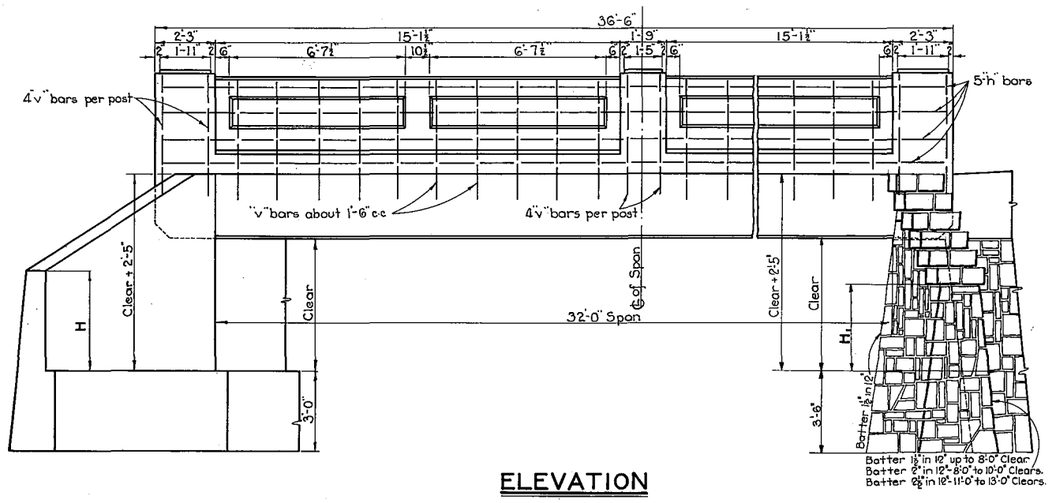
44¾	Cu.Yds. Class "A" Concrete	69¼	Bbls. Cement
		20½	Cu.Yds Sand
		41	Cu.Yds. Stone
2114	Reinforcing Bars		
17199	Structural Steel	6- 20" I-beams @ 81.4# 34'-3" lg.	
		2- 8" Channels @ 11.5# 20'-6" lg.	
960	Sq. Ft. 2" Wire Mesh		

TABLE OF BARS

Mark	No	Stock	Description
1	15	1½"ø x 34'-3"	Longitudinal in Slab
t	61	⅝"ø x 21'-0"	Transverse in Slab
h	10	½"ø x 36'-3"	Horizontal in Parapet
v	64	½"ø x 4'-6"	Vertical in Parapet



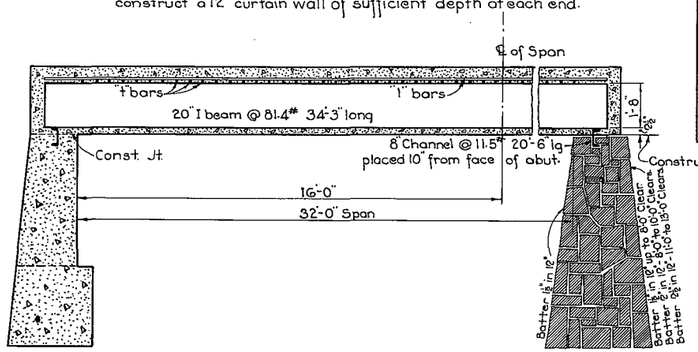
RT.L ABUTMENT SECTION



ELEVATION

NOTE

Floor of bridge shall conform to grade of road. On level grade slope top of slab at least ⅛" per foot.
Depth of foundation to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving use 6" of concrete, or 8" of stone masonry, construct a 12" curtain wall of sufficient depth at each end.



SECTION ON A-A

ABUTMENTS & WINGS

CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	B	Cu.Yds. Con.	Bbls. Cement	Cu.Yds. Sand	Cu.Yds. Stone
5'-0"	2'-8"	4'-3"	2'-5"	9'-0"	3'-9"	2'-0"	7'-0"	3'-0"	2'-0"	50.2	65¼	24¼	48¼
6'-0"	3'-3"	4'-9"	2'-7"	10'-3"	4'-0"	2'-1"	8'-0"	3'-3"	2'-5"	68.6	82½	30½	61¼
7'-0"	3'-9"	5'-2"	2'-10"	11'-6"	4'-6"	2'-5"	9'-3"	3'-9"	2'-9½"	79.5	103¼	38¼	76½
8'-0"	4'-3"	5'-7"	3'-1"	12'-9"	5'-0"	2'-7"	10'-3"	4'-0"	3'-2½"	96.7	125½	46½	93
9'-0"	4'-9"	6'-0"	3'-3"	14'-0"	5'-3"	2'-10"	11'-3"	4'-6"	3'-7"	115.8	150¼	55¾	111½
10'-0"	5'-2"	6'-5"	3'-6"	15'-3"	5'-9"	3'-0"	12'-3"	4'-9"	4'-0"	136.6	177¼	65¾	131½
11'-0"	5'-7"	6'-10"	3'-9"	16'-6"	6'-3"	3'-1"	13'-3"	5'-0"	4'-5"	159.3	206¾	76¾	153¼
12'-0"	6'-1"	7'-3"	3'-10"	17'-9"	6'-6"	3'-4"	14'-3"	5'-6"	4'-9½"	185.2	240¼	89	178¼
13'-0"	6'-6"	7'-8"	4'-1"	19'-0"	7'-0"	3'-6"	15'-3"	5'-9"	5'-2½"	212.7	276	102¼	204½

COMMONWEALTH OF PENNSYLVANIA.

DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION.
STANDARD

REINFORCED CONCRETE BRIDGE

SPAN 32 FT. ROADWAY 18 FT.
SKEW 75° L.

SCALE ⅜" = 1'-0"

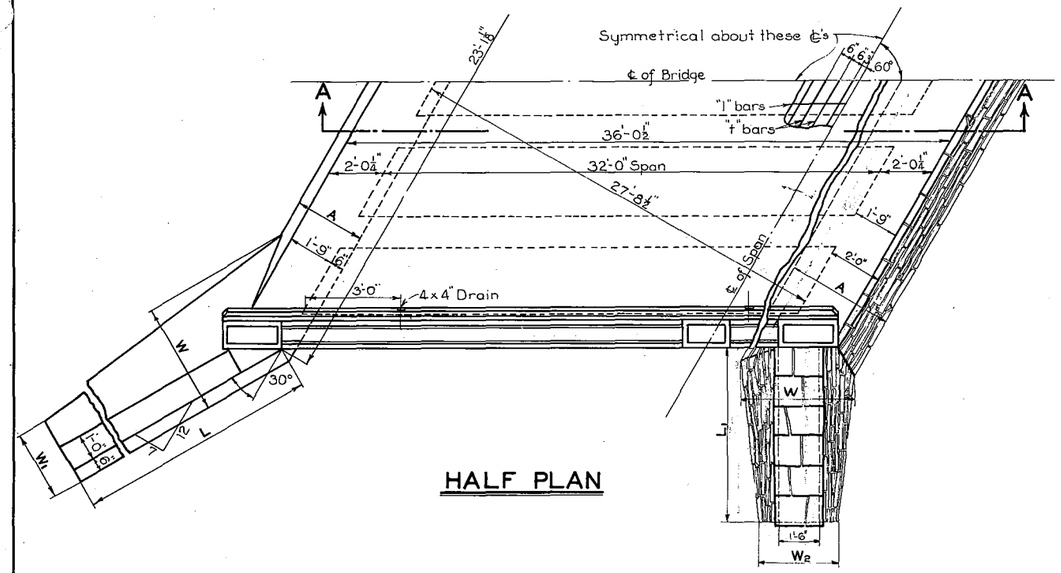
632B-75

APPROVED May 29, 1928
E E Brandon BRIDGE ENGINEER
APPROVED
Sam Lewis CHIEF ENGINEER

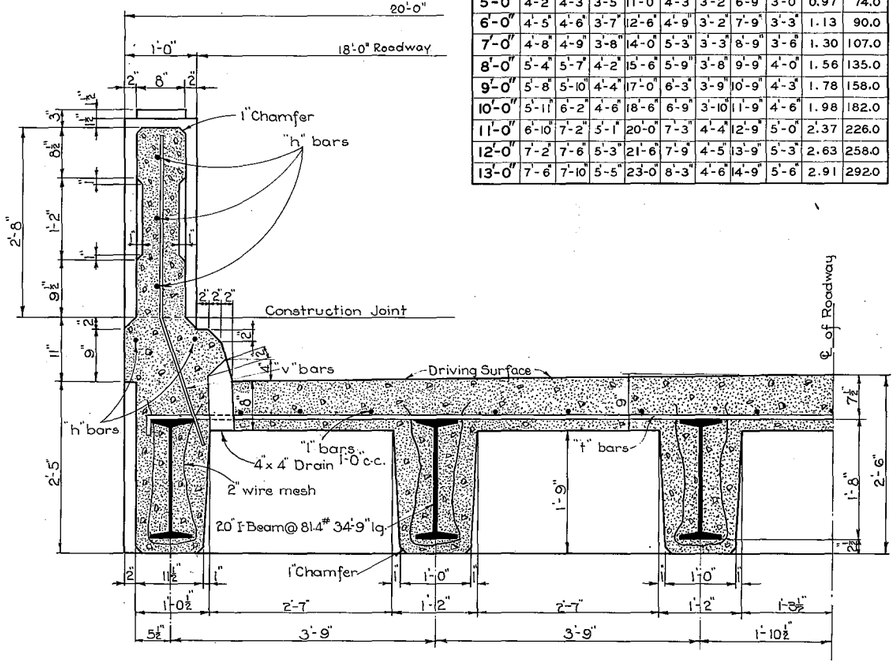
Made by J.E.M.
Checked by W.T.O 5-28-28

IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

Revised 7-23-32 Stone Masonry W.C.T.



HALF PLAN



BEAMS & PARAPET DETAILS

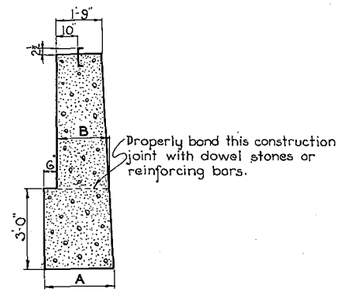
STONE ABUTMENTS & WINGS										
CLEAR	A	W	W1	L	H	W2	L1	H1	CU YDS. PER FOOT ONE ABUT	TOTAL CU YDS. TWO ABUT.
5'-0"	4'-2"	4'-3"	3'-5"	11'-0"	4'-3"	3'-2"	6'-9"	3'-0"	0.97	74.0
6'-0"	4'-5"	4'-6"	3'-7"	12'-6"	4'-9"	3'-2"	7'-9"	3'-3"	1.13	90.0
7'-0"	4'-8"	4'-9"	3'-8"	14'-0"	5'-3"	3'-3"	8'-9"	3'-6"	1.30	107.0
8'-0"	5'-4"	5'-7"	4'-2"	15'-6"	5'-9"	3'-8"	9'-9"	4'-0"	1.56	135.0
9'-0"	5'-8"	5'-10"	4'-4"	17'-0"	6'-3"	3'-9"	10'-9"	4'-3"	1.78	158.0
10'-0"	5'-11"	6'-2"	4'-6"	18'-6"	6'-9"	3'-10"	11'-9"	4'-6"	1.98	182.0
11'-0"	6'-10"	7'-2"	5'-1"	20'-0"	7'-3"	4'-4"	12'-9"	5'-0"	2.37	226.0
12'-0"	7'-2"	7'-6"	5'-3"	21'-6"	7'-9"	4'-5"	13'-9"	5'-3"	2.63	258.0
13'-0"	7'-6"	7'-10"	5'-5"	23'-0"	8'-3"	4'-6"	14'-9"	5'-6"	2.91	292.0

MATERIAL REQUIRED

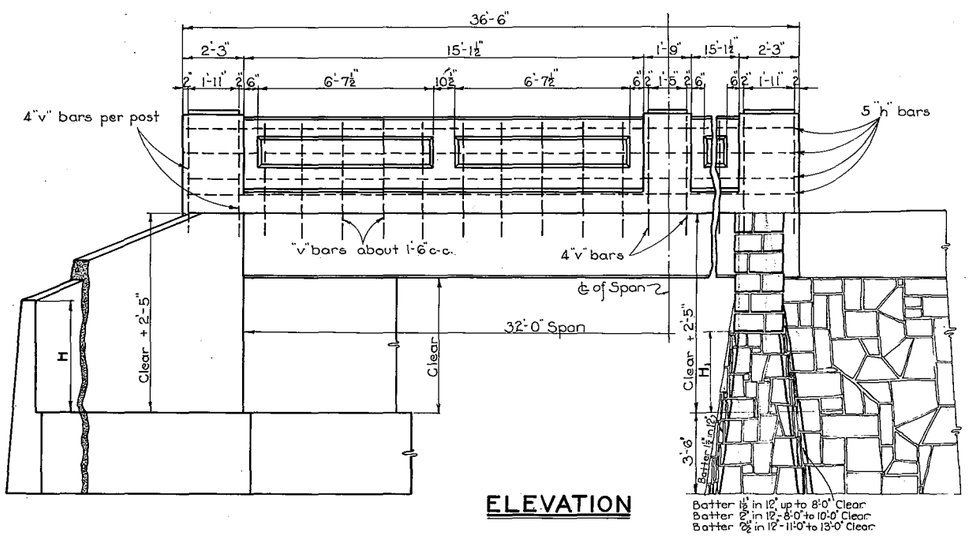
45½	Cu. Yds. "A" Concrete.	70½	Bbls. Cement
		21	Cu. Yds. Sand.
		41¾	Cu. Yds. Stone.
2,738	Lbs. Reinforcing Bars.		
17,489	Lbs. Structural Steel	6-20"I Beams @ 81.4# 34'-9" long. 2-8" Channels @ 11.5# 22'-6" long.	
960	Sq. Ft. 2" Wire Mesh.		

TABLE OF BARS

Mark	No.	Stock	Description
l	15	½"ø x 34'-9"	Longitudinal in Slab.
t	56	¾"ø x 23'-3"	Transverse in Slab.
h	10	½"ø x 36'-3"	Horizontal in Parapet
v	64	½"ø x 4'-6"	Vertical in Parapet.



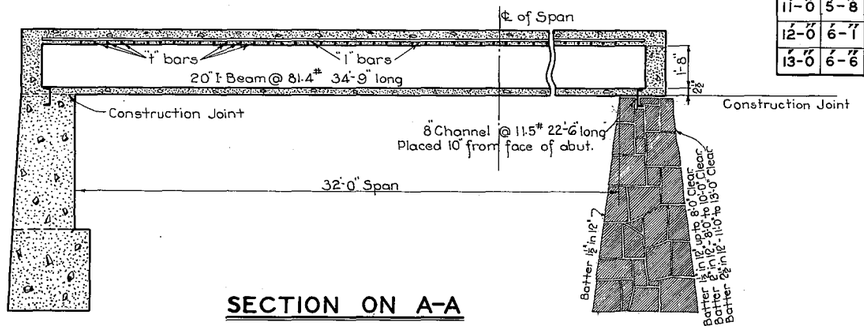
RT. L ABUTMENT SECTION



ELEVATION

NOTE

Floor of Bridge shall conform to grade of road. On level grade, slope top of slab at least ⅛ per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.



SECTION ON A-A

ABUTMENTS & WINGS

CLEAR	A	W	W1	L	H	W2	L1	H1	B	Cu Yds. B' Con.	Bbls. Cement	Cu Yds. Sand	Cu Yds. Stone.
5'-0"	2'-8"	4'-3"	2'-8"	11'-0"	4'-3"	2'-0"	6'-9"	3'-0"	2'-0"	51.7	67	24¾	49¾
6'-0"	3'-3"	4'-9"	3'-0"	12'-6"	4'-9"	2'-1"	7'-9"	3'-3"	2'-5"	66.8	86¾	32¼	64½
7'-0"	3'-9"	5'-2"	3'-3"	14'-0"	5'-3"	2'-3"	8'-9"	3'-6"	2'-9½"	84.6	109¾	40¾	81½
8'-0"	4'-3"	5'-7"	3'-6"	15'-6"	5'-9"	2'-7"	9'-9"	4'-0"	3'-2½"	104.7	136	50¼	100¾
9'-0"	4'-9"	6'-0"	3'-9"	17'-0"	6'-3"	2'-8"	10'-9"	4'-3"	3'-7"	124.5	161½	60	119¾
10'-0"	5'-2"	6'-5"	4'-0"	18'-6"	6'-9"	2'-10"	11'-9"	4'-6"	4'-0"	148.0	192	71¼	142½
11'-0"	5'-8"	6'-10"	4'-2"	20'-0"	7'-3"	3'-1"	12'-9"	5'-0"	4'-5"	174.4	226½	84	167¾
12'-0"	6'-1"	7'-3"	4'-5"	21'-6"	7'-9"	3'-3"	13'-9"	5'-3"	4'-9½"	203.1	263½	97¾	195½
13'-0"	6'-6"	7'-8"	4'-8"	23'-0"	8'-3"	3'-4"	14'-9"	5'-6"	5'-2½"	234.0	303¾	112½	225

APPROVED May 29, 1928
E E Brandon BRIDGE ENGINEER
APPROVED
Sam Lewis CHIEF ENGINEER

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION.
STANDARD
REINFORCED CONCRETE BRIDGE
SPAN 32 FT. ROADWAY 18 FT.
SKEW 60° L

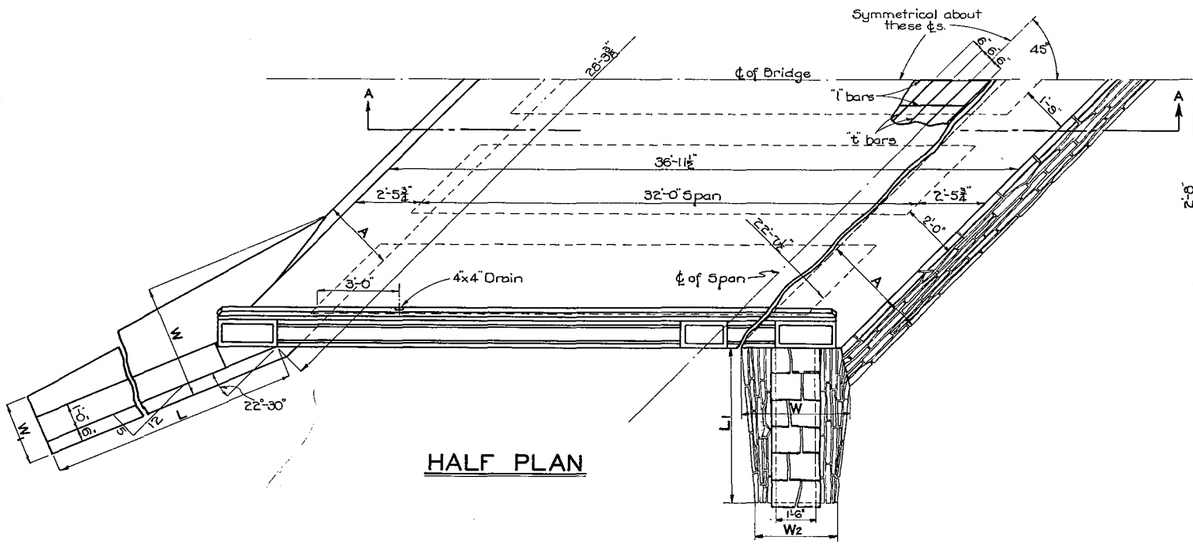
SCALE ⅜" & 1"=1'-0"

632B-60

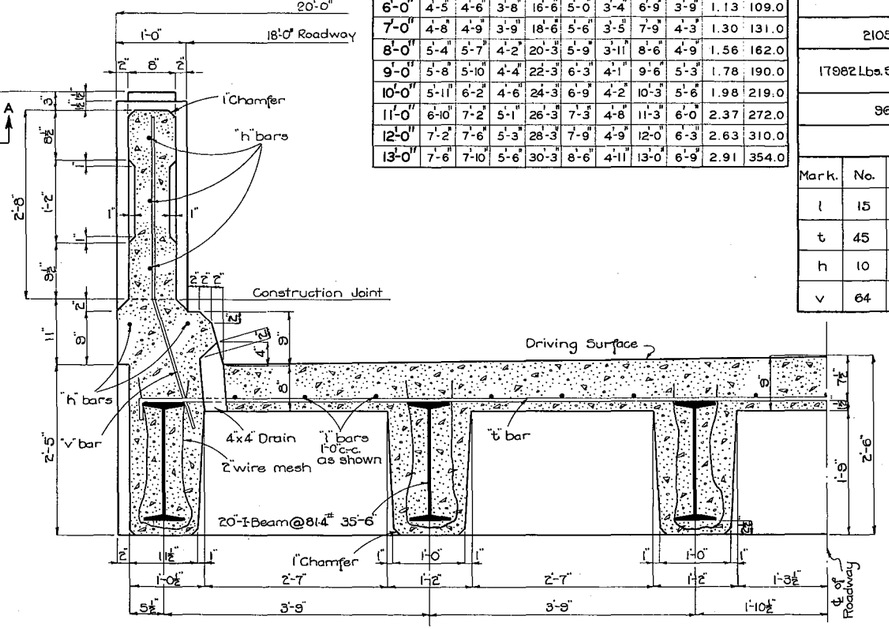
Made by- J.E.M.
Checked by- W.R.D. 2/8/28

IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

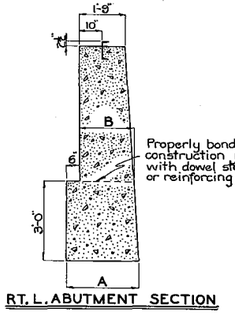
Revised 7-23-32 Stone Masonry W.C.T.



HALF PLAN



BEAMS & PARAPET DETAILS



RT. L. ABUTMENT SECTION

STONE ABUTMENTS & WINGS

CLEAR	A	W	W1	L	H	W2	L1	H1	CU.YDS PER FOOT ONE ABUT	TOTAL CU.YDS. TWO ABUT
5'-0"	4'-2"	4'-3"	3'-5"	14'-6"	4'-3"	3'-3"	6'-0"	3'-6"	0.97	90.0
6'-0"	4'-5"	4'-6"	3'-8"	16'-6"	5'-0"	3'-4"	6'-9"	3'-9"	1.13	109.0
7'-0"	4'-8"	4'-9"	3'-9"	18'-6"	5'-6"	3'-5"	7'-9"	4'-3"	1.30	131.0
8'-0"	5'-4"	5'-7"	4'-2"	20'-3"	5'-9"	3'-11"	8'-6"	4'-9"	1.56	162.0
9'-0"	5'-8"	5'-10"	4'-4"	22'-3"	6'-3"	4'-1"	9'-6"	5'-3"	1.78	190.0
10'-0"	5'-11"	6'-2"	4'-6"	24'-3"	6'-9"	4'-2"	10'-3"	5'-6"	1.98	219.0
11'-0"	6'-10"	7'-2"	5'-1"	26'-3"	7'-3"	4'-8"	11'-3"	6'-0"	2.37	272.0
12'-0"	7'-2"	7'-6"	5'-3"	28'-3"	7'-9"	4'-9"	12'-0"	6'-3"	2.63	310.0
13'-0"	7'-6"	7'-10"	5'-6"	30'-3"	8'-6"	4'-11"	13'-0"	6'-9"	2.91	354.0

MATERIAL REQUIRED

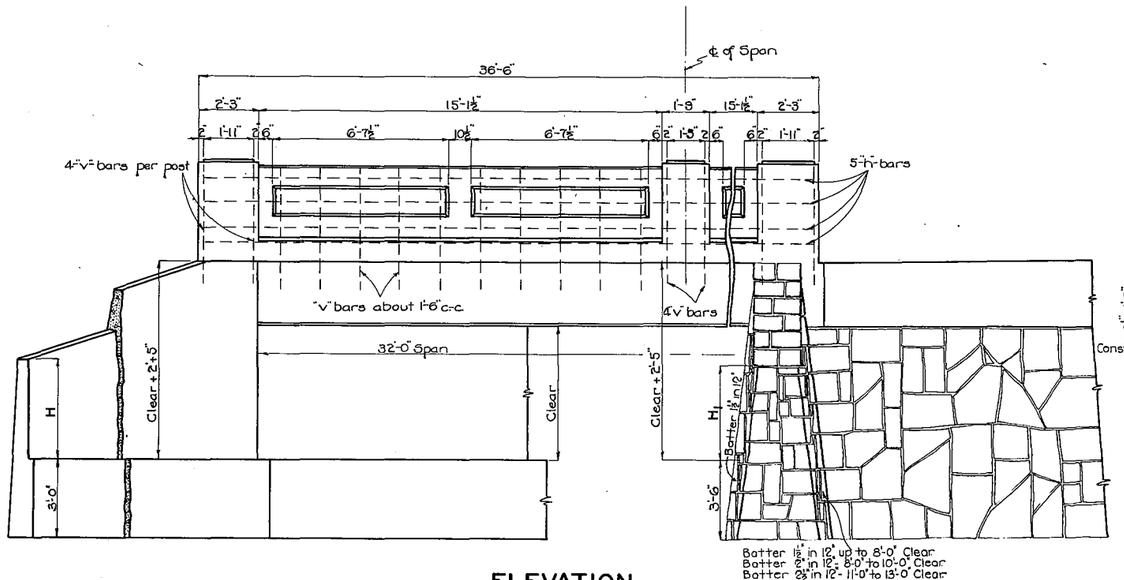
47.2 Cu. Yds. "A" Concrete.	73 Bbls. Cement. 21¾ Cu. Yds. Sand. 43¼ Cu. Yds. Stone.
2105 Lbs. Reinforcing Bars.	
17982 Lbs. Structural Steel.	6-20"-I-Beams @ 81.4# 35'-6" long. 2-8" Channels @ 11.5# 28'-0" long.
960 Sq. Ft. 2" Wire Mesh.	

TABLE OF BARS

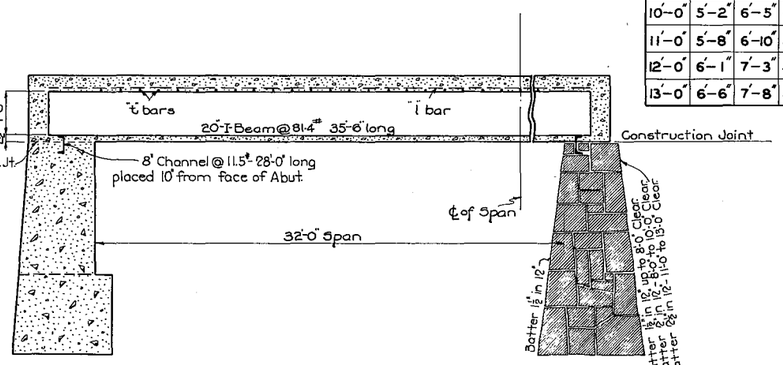
Mark.	No.	Stock.	Description
l	15	½"ϕ x 35'-6"	Longitudinal in Slab.
t	45	⅝"ϕ x 28'-0"	Transverse in Slab.
h	10	½"ϕ x 36'-3"	Horizontal in Parapet.
v	64	½"ϕ x 4'-6"	Vertical in Parapet.

NOTE

Floor of Bridge shall conform to grade of road. On level grade, slope top of slab at least ½" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving, use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.



ELEVATION



SECTION ON A-A

ABUTMENTS & WINGS

CLEAR	A	W	W1	L	H	W2	L1	H1	B	Cu.Yds. ℄ Con.	Bbls. Cement	Cu.Yds. Sand	Cu.Yds. Stone
5'-0"	2'-8"	4'-3"	2'-8"	14'-6"	4'-3"	2'-3"	6'-0"	3'-6"	2'-0"	63.2	82	30½	60¾
6'-0"	3'-3"	4'-9"	3'-1"	16'-6"	5'-0"	2'-5"	6'-9"	3'-9"	2'-5"	81	105¼	39	79
7'-0"	3'-9"	5'-2"	3'-4"	18'-6"	5'-6"	2'-8"	7'-9"	4'-3"	2'-9½"	102.9	133½	49½	99
8'-0"	4'-3"	5'-7"	3'-6"	20'-3"	5'-9"	3'-0"	8'-6"	4'-9"	3'-2½"	125	162¼	60¼	120¼
9'-0"	4'-9"	6'-0"	3'-9"	22'-3"	6'-3"	3'-3"	9'-6"	5'-3"	3'-7"	151.2	196¼	72¾	145½
10'-0"	5'-2"	6'-5"	4'-0"	24'-3"	6'-9"	3'-4"	10'-3"	5'-6"	4'-0"	179	232¼	86	172¼
11'-0"	5'-8"	6'-10"	4'-2"	26'-3"	7'-3"	3'-7"	11'-3"	6'-0"	4'-5"	211.1	274	101½	203
12'-0"	6'-1"	7'-3"	4'-5"	28'-3"	7'-9"	3'-9"	12'-0"	6'-3"	4'-9½"	245	318	117¾	235¾
13'-0"	6'-6"	7'-8"	4'-9"	30'-3"	8'-6"	4'-0"	13'-0"	6'-9"	5'-2½"	285.4	370½	137¼	274½

COMMONWEALTH OF PENNSYLVANIA.

DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION.

STANDARD
REINFORCED CONCRETE BRIDGE
SPAN 32 FT. ROADWAY 18 FT.
SKEW 45° L.

APPROVED May 21, 1928
E.E. Brownlow BRIDGE ENGINEER
APPROVED May 21, 1928
CHIEF ENGINEER

SCALE ⅜ & 1"=1'-0"

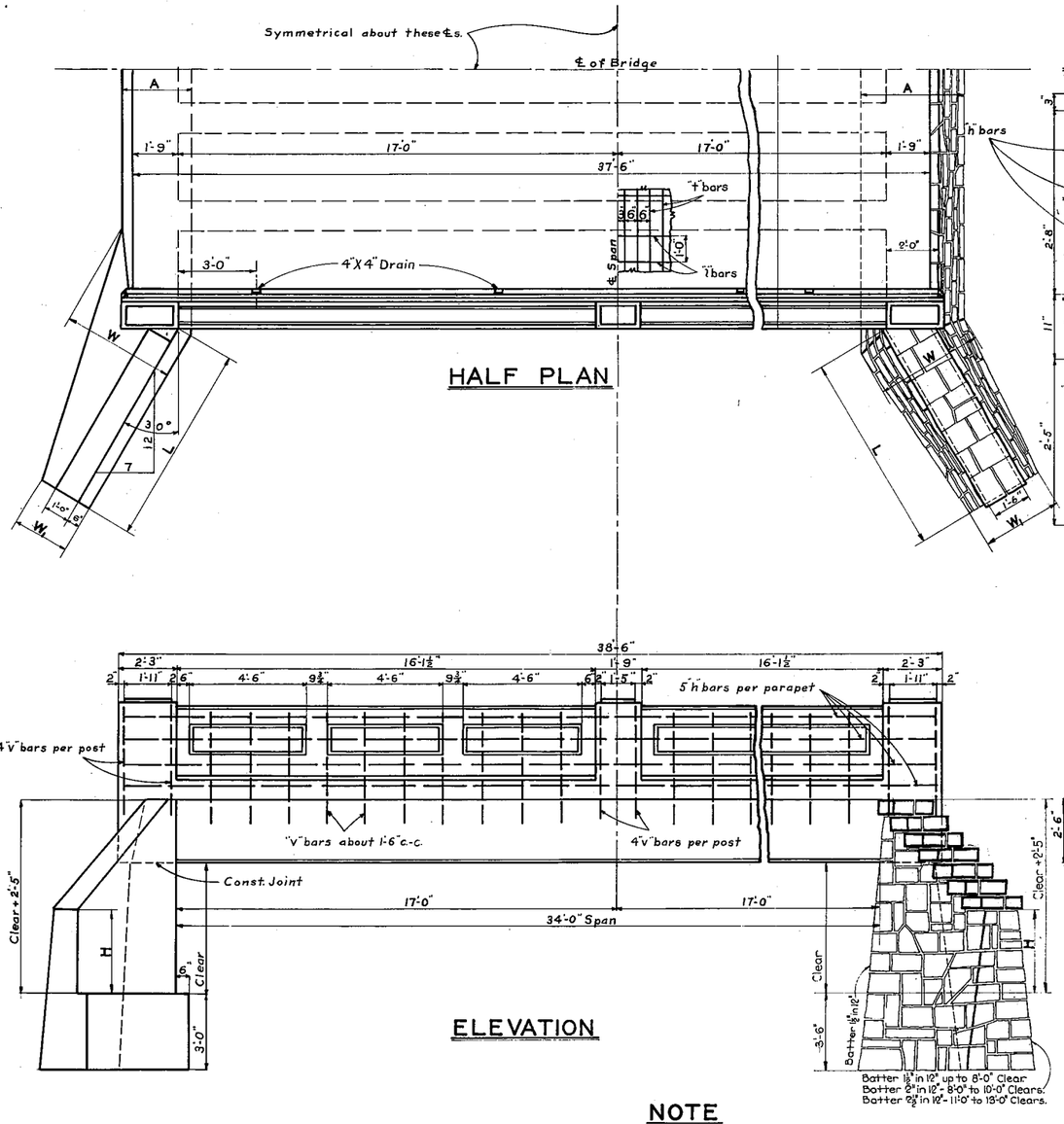
632 B-45

Made by W.B.D.
Checked by J.E.M. 5-5-28.

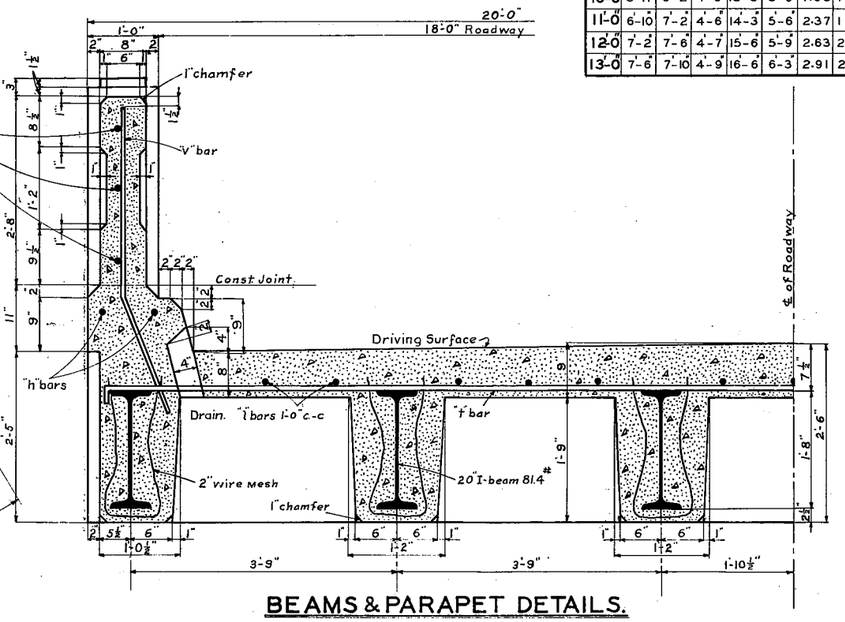
IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

Revised 5-25-28. W.B.D.
" 7-23-32 W.C.T. Stone Masonry.

STONE ABUTMENTS & WINGS							
CLEAR	A	W	W_1	L	H	CU.YDS. PER FOOT ONE ABUT.	TOTAL CU.YDS. TWO ABUT.
5'-0"	4'-2"	4'-3"	3'-2"	7'-9"	3'-3"	0.97	64
6'-0"	4'-5"	4'-6"	3'-4"	9'-0"	3'-9"	1.13	78
7'-0"	4'-8"	4'-9"	3'-5"	10'-0"	4'-0"	1.30	92
8'-0"	5'-4"	5'-7"	3'-9"	11'-0"	4'-3"	1.56	115
9'-0"	5'-8"	5'-10"	3'-11"	12'-3"	4'-9"	1.78	136
10'-0"	5'-11"	6'-2"	4'-0"	13'-3"	5'-0"	1.98	156
11'-0"	6'-10"	7'-2"	4'-6"	14'-3"	5'-6"	2.37	192
12'-0"	7'-2"	7'-6"	4'-7"	15'-6"	5'-9"	2.63	218
13'-0"	7'-6"	7'-10"	4'-9"	16'-6"	6'-3"	2.91	249

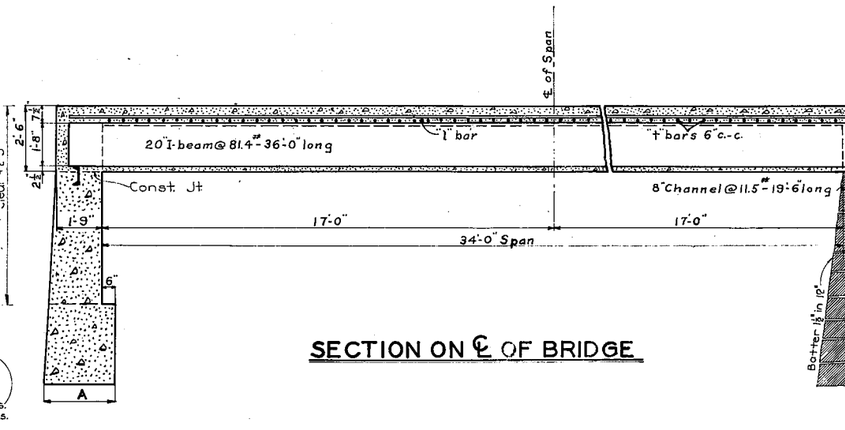


HALF PLAN



BEAMS & PARAPET DETAILS.

ELEVATION



SECTION ON ℄ OF BRIDGE

NOTE

Floor of bridge shall conform to grade of road. On level grade slope top of slab at least 1/16" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.

MATERIAL REQUIRED.

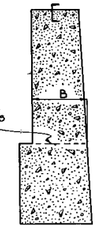
46.7 Cu.Yds. "A" Concrete	72¼ Bbls. Cement. 21½ Cu.Yds. Sand. 43 Cu.Yds. Stone.
2227 Lbs. Reinforcing Bars.	
18031 Lbs. Structural Steel.	6-20" I-beams @ 81.4# - 36'-0" lg. 2-8" Channels @ 11.5# - 19'-6" lg.
1020 Sq.Ft. 2" Wire Mesh.	

TABLE OF BARS.

Mark.	No.	Stock.	Description.
l	15	½"ø X 36'-0"	Longitudinal in Slab.
t	68	⅝"ø X 20'-0"	Transverse in Slab.
h	10	½"ø X 38'-3"	Horizontal in Parapets.
v	64	½"ø X 4'-6"	Vertical in Parapets.

ABUTMENTS & WINGS.

CLEAR	A	W	W_1	L	H	Cu.Yds. Conc. 1:2½:5	Bbls. Cement	Cu.Yds. Sand.	Cu.Yds. Stone.
5'-0"	2'-8"	4'-3"	2'-0"	7'-9"	3'-3"	43.6	56¾	21	42
6'-0"	3'-3"	4'-9"	2'-5"	9'-0"	3'-9"	57.0	74	27½	55
7'-0"	3'-9"	5'-2"	2'-7"	10'-0"	4'-0"	70.0	91	33¾	67½
8'-0"	4'-3"	5'-7"	2'-9"	11'-0"	4'-3"	84.7	110	40¾	81½
9'-0"	4'-9"	6'-0"	3'-0"	12'-3"	4'-9"	103.2	134	49¾	99¼
10'-0"	5'-2"	6'-5"	3'-1"	13'-3"	5'-0"	120.9	157	58¼	116½
11'-0"	5'-8"	6'-10"	3'-4"	14'-3"	5'-6"	142.0	184½	68½	136¾
12'-0"	6'-1"	7'-3"	3'-6"	15'-6"	5'-9"	165.6	215	79¾	159½
13'-0"	6'-6"	7'-8"	3'-9"	16'-6"	6'-3"	191.0	248	92	183¾



CLEAR	B
5'-0"	2'-0"
6'-0"	2'-5"
7'-0"	2'-9½"
8'-0"	3'-2½"
9'-0"	3'-7"
10'-0"	4'-0"
11'-0"	4'-5"
12'-0"	4'-9½"
13'-0"	5'-2½"

APPROVED August 1, 1927
E E Worthington BRIDGE ENGINEER.
APPROVED 8-1-27
Sam Rinaldi CHIEF ENGINEER.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION
STANDARD

REINFORCED CONCRETE BRIDGE.

SPAN 34 FT. ROADWAY 18 FT.

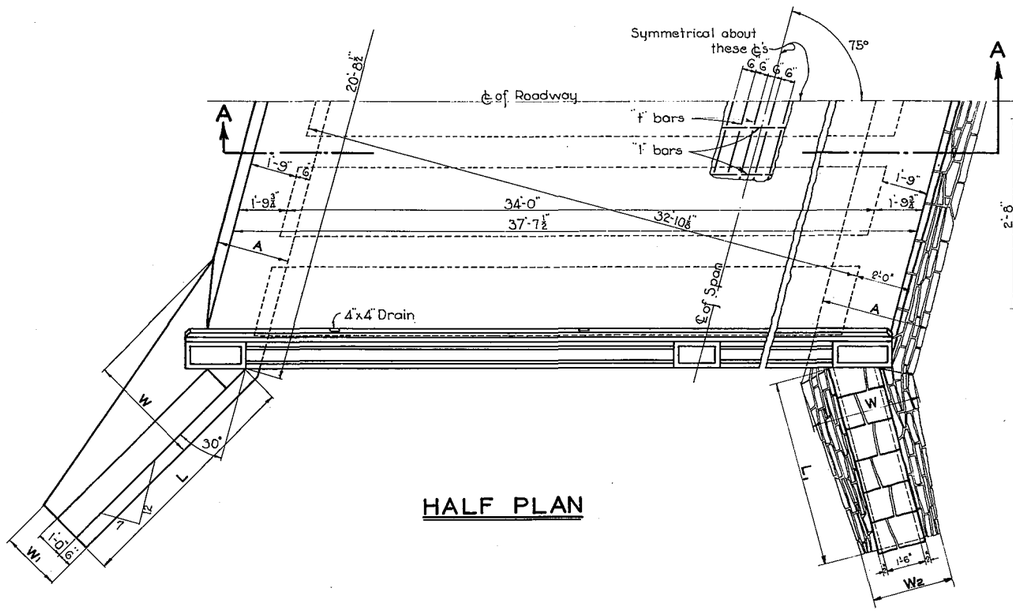
SCALE ⅜" & 1'-1'-0"

634B

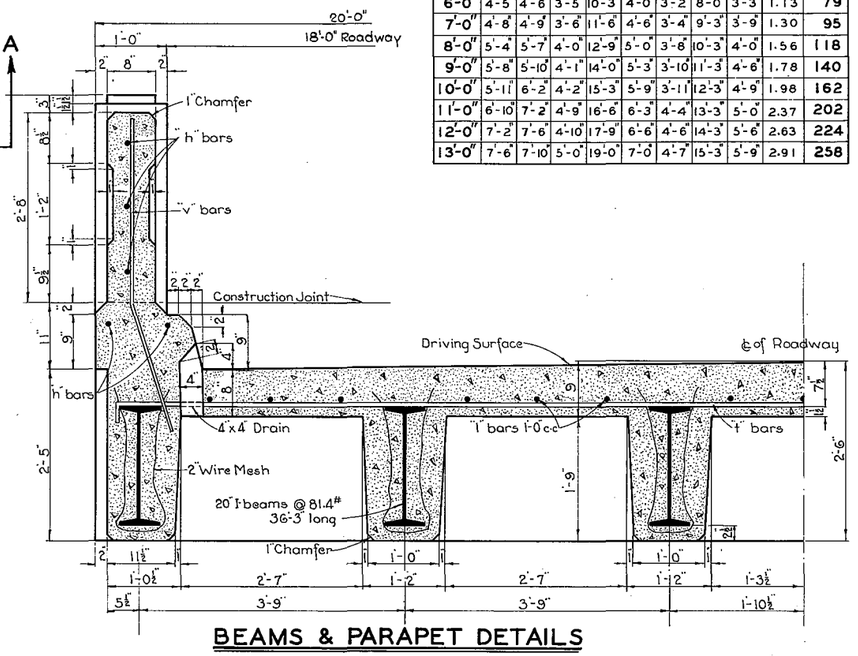
Made by - P.F.W.
Checked by - W.B.D. 7/29/27

"PENRAY" TRACING CLOTH
K & E CO., N.Y.

Revised 7-23-32 Stone Masonry W.C.T.



HALF PLAN



BEAMS & PARAPET DETAILS

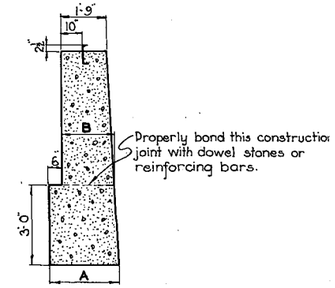
STONE ABUTMENTS & WINGS										
CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	CU YDS PER FOOT ONE ABUT	TOTAL CU YDS TWO ABUT
5'-0"	4'-2"	4'-3"	3'-4"	9'-0"	3'-9"	3'-2"	7'-0"	3'-0"	0.97	66
6'-0"	4'-5"	4'-6"	3'-5"	10'-3"	4'-0"	3'-2"	8'-0"	3'-3"	1.13	79
7'-0"	4'-8"	4'-9"	3'-6"	11'-6"	4'-6"	3'-4"	9'-3"	3'-9"	1.30	95
8'-0"	5'-4"	5'-7"	4'-0"	12'-9"	5'-0"	3'-8"	10'-3"	4'-0"	1.56	118
9'-0"	5'-8"	5'-10"	4'-1"	14'-0"	5'-3"	3'-10"	11'-3"	4'-6"	1.78	140
10'-0"	5'-11"	6'-2"	4'-2"	15'-3"	5'-9"	3'-11"	12'-3"	4'-9"	1.98	162
11'-0"	6'-10"	7'-2"	4'-9"	16'-6"	6'-3"	4'-4"	13'-3"	5'-0"	2.37	202
12'-0"	7'-2"	7'-6"	4'-10"	17'-9"	6'-6"	4'-6"	14'-3"	5'-6"	2.63	224
13'-0"	7'-6"	7'-10"	5'-0"	19'-0"	7'-0"	4'-7"	15'-3"	5'-9"	2.91	258

MATERIAL REQUIRED

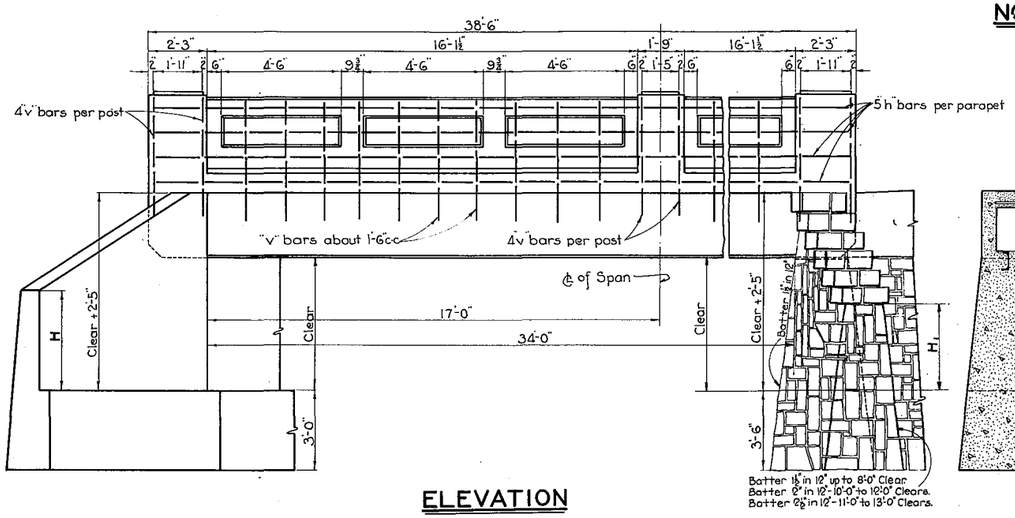
47	Cu. Yds. Class A Concrete	72¾	Bbls. Cement
		21½	Cu. Yds Sand
		43	Cu. Yds Stone
2258	Lbs. Reinforcing Steel		
18,176	Lbs Structural Steel.	6-20" I beams @ 81.4# 36'-3" long. 2-8" Channels @ 11.5 # 20'-6" long.	
1020	Sq. Ft. 2" Wire Mesh.		

TABLE OF BARS

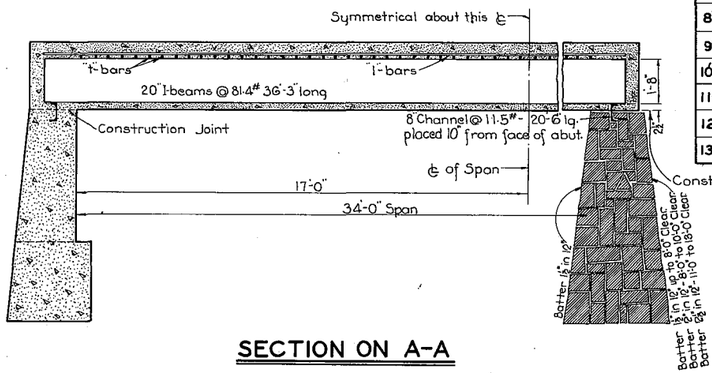
Mark.	No	Stock	Description.
l	15	1" ø x 36'-3"	Longitudinal in Slab
t	66	⅝" ø x 21'-0"	Transverse in Slab.
h	10	½" ø x 38'-3"	Horizontal in Parapet.
v	64	½" ø x 4'-6"	Vertical in Parapet



R.T.L. ABUTMENT SECTION



ELEVATION



SECTION ON A-A

NOTE Floor of bridge shall conform to grade of road. On level grade slope top of slab at least ⅛" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown
Wings may be changed to suit local conditions.
If bed of stream requires paving use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.

ABUTMENTS & WINGS

CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	B	Cu.Yds. B. Con.	Bbls. Cement	Cu.Yds. Sand.	Cu.Yds Stone
5'-0"	2'-8"	4'-3"	2'-5"	9'-0"	3'-9"	2'-0"	7'-0"	3'-0"	2'-0"	50.2	65¼	24¼	48¼
6'-0"	3'-3"	4'-9"	2'-7"	10'-3"	4'-0"	2'-1"	8'-0"	3'-3"	2'-5"	68.6	82½	30½	61¼
7'-0"	3'-9"	5'-2"	2'-10"	11'-6"	4'-6"	2'-5"	9'-3"	3'-9"	2'-9½"	79.5	103¼	38¼	76½
8'-0"	4'-3"	5'-7"	3'-1"	12'-9"	5'-0"	2'-7"	10'-3"	4'-0"	3'-2½"	96.7	125½	46½	93
9'-0"	4'-9"	6'-0"	3'-3"	14'-0"	5'-3"	2'-10"	11'-3"	4'-6"	3'-7"	115.8	150¼	55¾	111½
10'-0"	5'-2"	6'-5"	3'-6"	15'-3"	5'-9"	3'-0"	12'-3"	4'-9"	4'-0"	136.6	177¼	65¾	131½
11'-0"	5'-7"	6'-10"	3'-9"	16'-6"	6'-3"	3'-1"	13'-3"	5'-0"	4'-5"	159.3	206¾	76¾	153¼
12'-0"	6'-1"	7'-3"	3'-10"	17'-9"	6'-6"	3'-4"	14'-3"	5'-6"	4'-9½"	185.2	240½	89	178½
13'-0"	6'-6"	7'-8"	4'-1"	19'-0"	7'-0"	3'-6"	15'-3"	5'-9"	5'-2½"	212.7	276	102½	204½

APPROVED May 29, 1928
E E Bauslaugh BRIDGE ENGINEER
APPROVED
Samuel Hunter CHIEF ENGINEER

COMMONWEALTH OF PENNSYLVANIA.
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION.
STANDARD

REINFORCED CONCRETE BRIDGE

SPAN 34 FT. ROADWAY 18 FT.
SKEW 75° L.

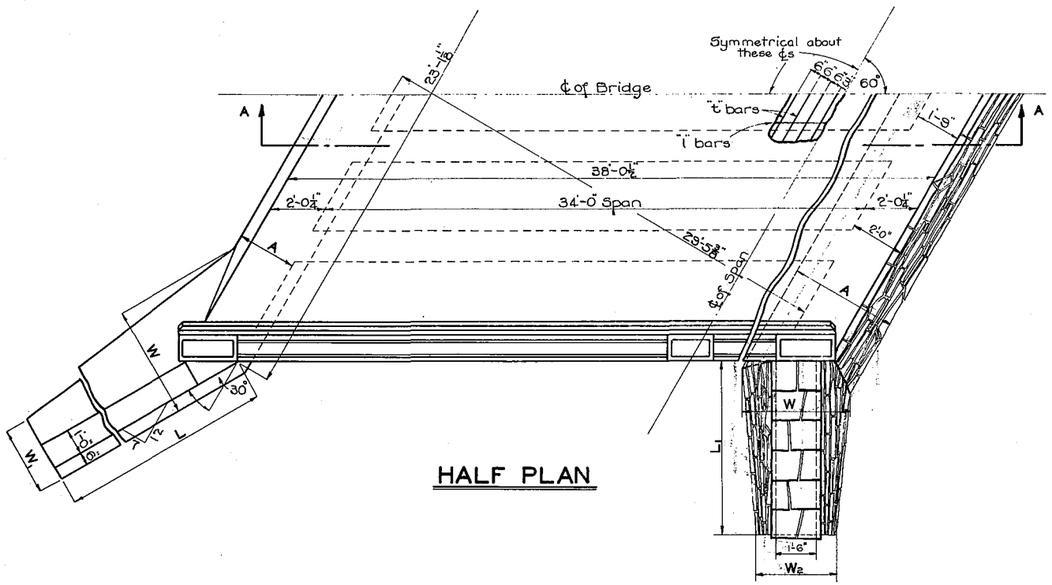
SCALE ⅜ & 1" = 1'-0"

634B-75

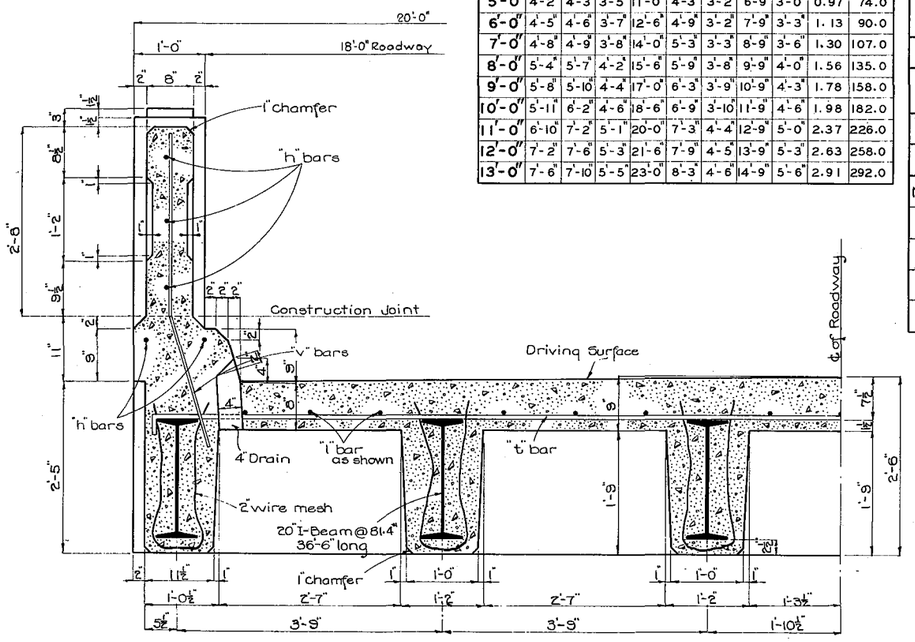
MADE BY J.E.M.
CHECKED BY W.T.O. 5-28-28

IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

Revised 7-23-32 Stone Masonry W.C.T.



HALF PLAN



BEAMS & PARAPET DETAILS

STONE ABUTMENTS & WINGS

CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	CU YDS. PER FOOT	TOTAL CU YDS. ONE ABUT.	TWO ABUT.
5'-0"	4'-2"	4'-3"	3'-5"	11'-0"	4'-3"	3'-2"	6'-9"	3'-0"	0.97	74.0	
6'-0"	4'-5"	4'-6"	3'-7"	12'-6"	4'-9"	3'-2"	7'-9"	3'-3"	1.13	90.0	
7'-0"	4'-8"	4'-9"	3'-8"	14'-0"	5'-3"	3'-3"	8'-9"	3'-6"	1.30	107.0	
8'-0"	5'-4"	5'-7"	4'-2"	15'-6"	5'-9"	3'-8"	9'-9"	4'-0"	1.56	135.0	
9'-0"	5'-8"	5'-10"	4'-4"	17'-0"	6'-3"	3'-9"	10'-9"	4'-3"	1.78	158.0	
10'-0"	5'-11"	6'-2"	4'-6"	18'-6"	6'-9"	3'-10"	11'-9"	4'-6"	1.98	182.0	
11'-0"	6'-10"	7'-2"	5'-1"	20'-0"	7'-3"	4'-4"	12'-9"	5'-0"	2.37	226.0	
12'-0"	7'-2"	7'-6"	5'-3"	21'-6"	7'-9"	4'-5"	13'-9"	5'-3"	2.63	258.0	
13'-0"	7'-6"	7'-10"	5'-5"	23'-0"	8'-3"	4'-6"	14'-9"	5'-6"	2.91	292.0	

MATERIAL REQUIRED

47.75 Cu. Yds. "A" Concrete.
74 Bbls. Cement.
22 Cu. Yds. Sand.
43¾ Cu. Yds. Stone.

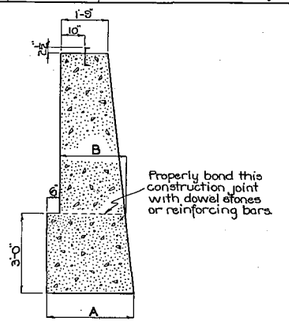
2218 Lbs. Reinforcing Bars.

18356 Lbs. Structural Steel. 6-20"I-Beams @81.4# 36'-6" long. 2-8"Channels @11.5# 23'-0" long.

1020 Sq. Ft. 2" Wire Mesh.

TABLE OF BARS

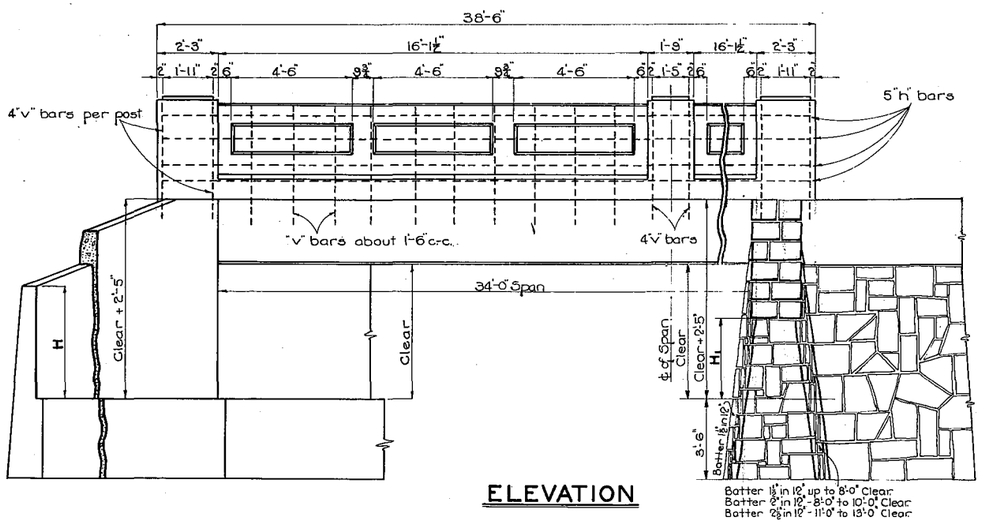
Mark	No.	Stock	Description
l	15	½"ϕ x 36'-6"	Longitudinal in Slab.
t	58	⅝"ϕ x 23'-3"	Transverse in Slab.
h	10	½"ϕ x 36'-3"	Horizontal in Parapet.
v	64	½"ϕ x 4'-6"	Vertical in Parapet.



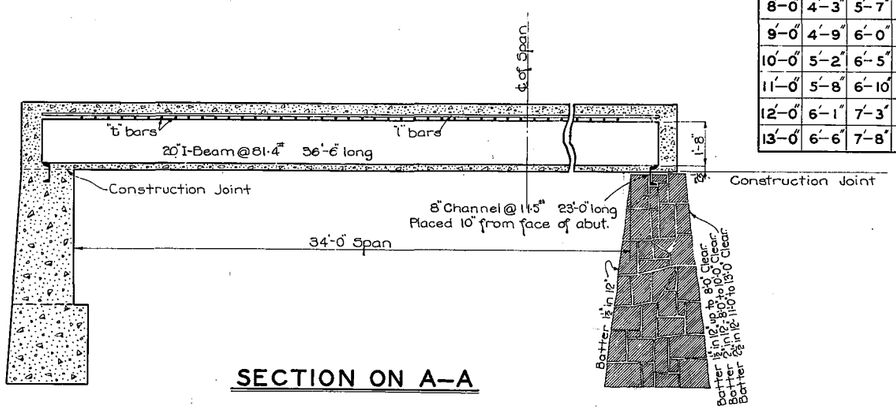
RT. L. ABUTMENT SECTION

NOTE

Floor of Bridge shall conform to grade of road. On level grade, slope top of slab at least ½" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving, use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.



ELEVATION



SECTION ON A–A

RT. L. ABUTMENT SECTION

ABUTMENTS & WINGS

CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	B	Cu. Yds. Con.	Bbls. Cement	Cu. Yds. Sand	Cu. Yds. Stone
5'-0"	2'-8"	4'-3"	2'-8"	11'-0"	4'-3"	2'-0"	6'-9"	3'-0"	2'-0"	51.7	67	24¾	49¾
6'-0"	3'-3"	4'-9"	3'-0"	12'-6"	4'-9"	2'-1"	7'-9"	3'-3"	2'-5½"	66.8	86¾	32¼	64¼
7'-0"	3'-9"	5'-2"	3'-3"	14'-0"	5'-3"	2'-3"	8'-9"	3'-6"	2'-9½"	84.6	109¾	40¾	81½
8'-0"	4'-3"	5'-7"	3'-6"	15'-6"	5'-9"	2'-7"	9'-9"	4'-0"	3'-2½"	104.7	136	50¼	100¾
9'-0"	4'-9"	6'-0"	3'-9"	17'-0"	6'-3"	2'-8"	10'-9"	4'-3"	3'-7½"	124.5	161½	60	119¾
10'-0"	5'-2"	6'-5"	4'-0"	18'-6"	6'-9"	2'-10"	11'-9"	4'-6"	4'-0"	148.0	192	71¼	142¼
11'-0"	5'-8"	6'-10"	4'-2"	20'-0"	7'-3"	3'-1"	12'-9"	5'-0"	4'-5½"	174.4	226½	84	167¾
12'-0"	6'-1"	7'-3"	4'-5"	21'-6"	7'-9"	3'-3"	13'-9"	5'-3"	4'-9½"	203.1	263¾	97¾	195½
13'-0"	6'-6"	7'-8"	4'-8"	23'-0"	8'-3"	3'-4"	14'-9"	5'-6"	5'-2½"	234.0	303¾	112½	225

COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION

STANDARD
REINFORCED CONCRETE BRIDGE
SPAN 34 FT. ROADWAY 18 FT.
SKEW 60° L.

SCALE ¾" & ⅛"=1'-0"

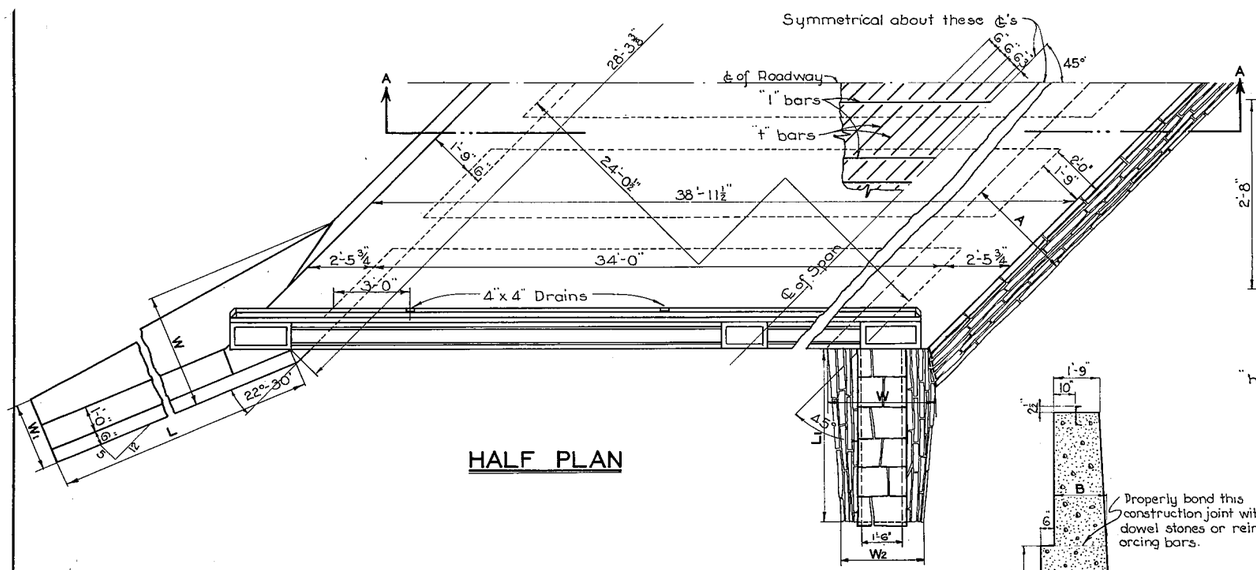
634 B-60

APPROVED May 21, 1928
E E Brandow BRIDGE ENGINEER
APPROVED May 21, 1928
Sam Hirsh CHIEF ENGINEER

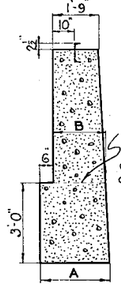
Made by W.B.D.
Checked by W.B.H. 4-16-28.

"IRONCLAD" TRACING CLOTH
H. B. Co., N.Y.

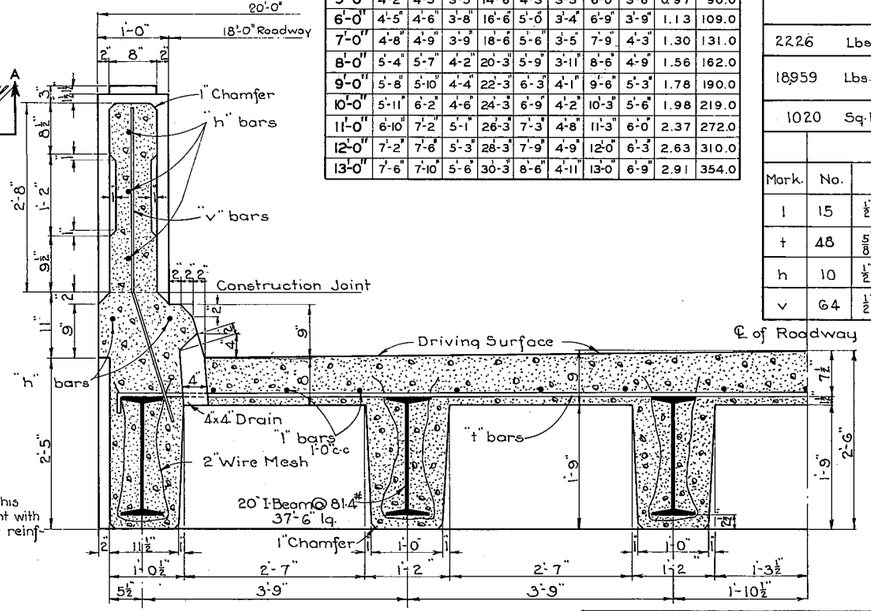
Revised 7-23-32 Stone Masonry W.C.T.



HALF PLAN



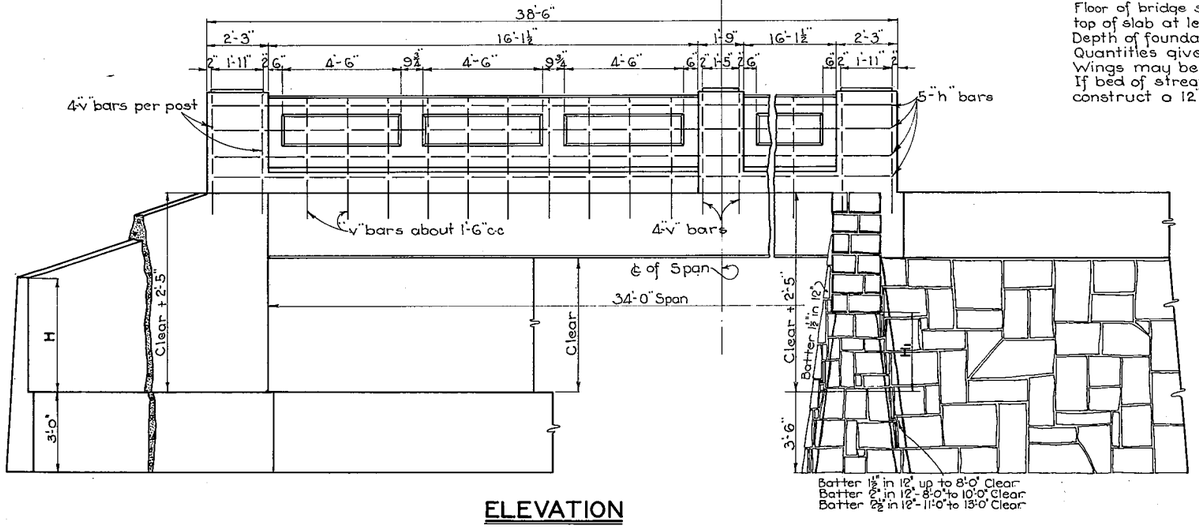
RT. L ABUTMENT SECTION



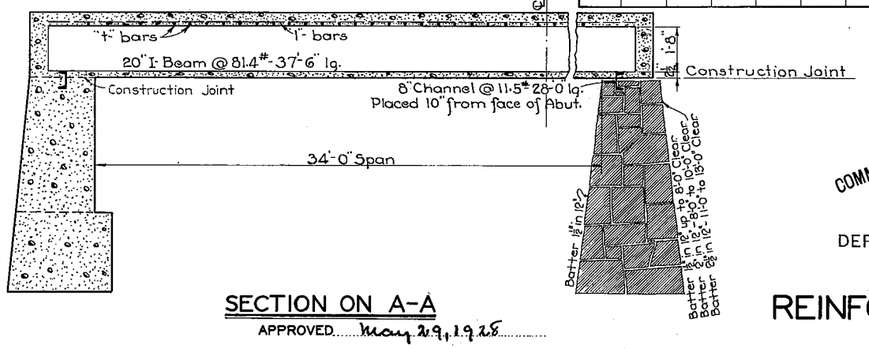
BEAMS & PARAPET DETAILS

NOTE

Floor of bridge shall conform to grade of road. On level grade, slope top of slab at least ⅛" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving use 6" of concrete or 8' of stone masonry and construct a 12" curtain wall of sufficient depth at each end.



ELEVATION



SECTION ON A-A

APPROVED May 29, 1928
E E Brandon BRIDGE ENGINEER
APPROVED
CHIEF ENGINEER

STONE ABUTMENTS & WINGS

CLEAR	A	W	W1	L	H	W2	L1	H1	CU. YDS. PER FOOT ONE ABUT.	TOTAL CU. YDS. TWO ABUT.
5'-0"	4'-2"	4'-3"	3'-5"	14'-6"	4'-3"	3'-3"	6'-0"	3'-6"	0.97	90.0
6'-0"	4'-5"	4'-6"	3'-8"	16'-6"	5'-0"	3'-4"	6'-9"	3'-9"	1.13	109.0
7'-0"	4'-8"	4'-9"	3'-9"	18'-6"	5'-6"	3'-5"	7'-9"	4'-3"	1.30	131.0
8'-0"	5'-4"	5'-7"	4'-2"	20'-3"	5'-9"	3'-11"	8'-6"	4'-9"	1.56	162.0
9'-0"	5'-8"	5'-10"	4'-4"	22'-3"	6'-3"	4'-1"	9'-6"	5'-3"	1.78	190.0
10'-0"	5'-11"	6'-2"	4'-6"	24'-3"	6'-9"	4'-2"	10'-3"	5'-6"	1.98	219.0
11'-0"	6'-10"	7'-2"	5'-1"	26'-3"	7'-3"	4'-8"	11'-3"	6'-0"	2.37	272.0
12'-0"	7'-2"	7'-6"	5'-3"	28'-3"	7'-9"	4'-9"	12'-0"	6'-3"	2.63	310.0
13'-0"	7'-6"	7'-10"	5'-6"	30'-3"	8'-6"	4'-11"	13'-0"	6'-9"	2.91	354.0

MATERIAL REQUIRED

49½ Cu. Yds. Class "A" Concrete	76½ Bbls. Cement 22¾ Cu. Yds. Sand 45½ Cu. Yds. Stone.
2226 Lbs. Reinforcing Bars	
18959 Lbs. Structural Steel	6-20" I-Beams @ 81.4# 37'-6" lg. 2-8" Channels @ 11.5# 28-0 lg.
1020 Sq. Ft. of 2" Wire Mesh.	

TABLE OF BARS

Mark.	No.	Stock.	Description.
l	15	½" ø x 37'-6"	Longitudinal in Slab.
t	48	⅝" ø x 28'-0	Transverse in Slab.
h	10	½" ø x 38'-3"	Horizontal in Parapet.
v	64	½" ø x 4'-6"	Vertical in Parapet.

ABUTMENTS & WINGS

CLEAR	A	W	W1	L	H	W2	L1	H1	B	Cu. Yds Con.	Bbls. Cement	Cu. Yds Sand	Cu. Yds Stone
5'-0"	2'-8"	4'-3"	2'-8"	14'-6"	4'-3"	2'-3"	6'-0"	3'-6"	2'-0"	63.2	82	30½	60¾
6'-0"	3'-3"	4'-9"	3'-1"	16'-6"	5'-0"	2'-5"	6'-9"	3'-9"	2'-5"	81	105¼	39	79
7'-0"	3'-9"	5'-2"	3'-4"	18'-6"	5'-6"	2'-8"	7'-9"	4'-3"	2'-9½"	102.9	133½	49½	99
8'-0"	4'-3"	5'-7"	3'-6"	20'-3"	5'-9"	3'-0"	8'-6"	4'-9"	3'-2½"	125	162¼	60¼	120¼
9'-0"	4'-9"	6'-0"	3'-9"	22'-3"	6'-3"	3'-3"	9'-6"	5'-3"	3'-7"	151.2	196¼	72¾	145½
10'-0"	5'-2"	6'-5"	4'-0"	24'-3"	6'-9"	3'-4"	10'-3"	5'-6"	4'-0"	179	232¼	86	172¼
11'-0"	5'-8"	6'-10"	4'-2"	26'-3"	7'-3"	3'-7"	11'-3"	6'-0"	4'-5"	211.1	274	101½	203
12'-0"	6'-1"	7'-3"	4'-5"	28'-3"	7'-9"	3'-9"	12'-0"	6'-3"	4'-9½"	245	318	117¾	235¾
13'-0"	6'-6"	7'-8"	4'-9"	30'-3"	8'-6"	4'-0"	13'-0"	6'-9"	5'-2½"	285.4	370½	137¼	274½

COMMONWEALTH OF PENNSYLVANIA.

DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION.

STANDARD REINFORCED CONCRETE BRIDGE

SPAN 34 FT. ROADWAY 18 FT.
SKEW 45° L.

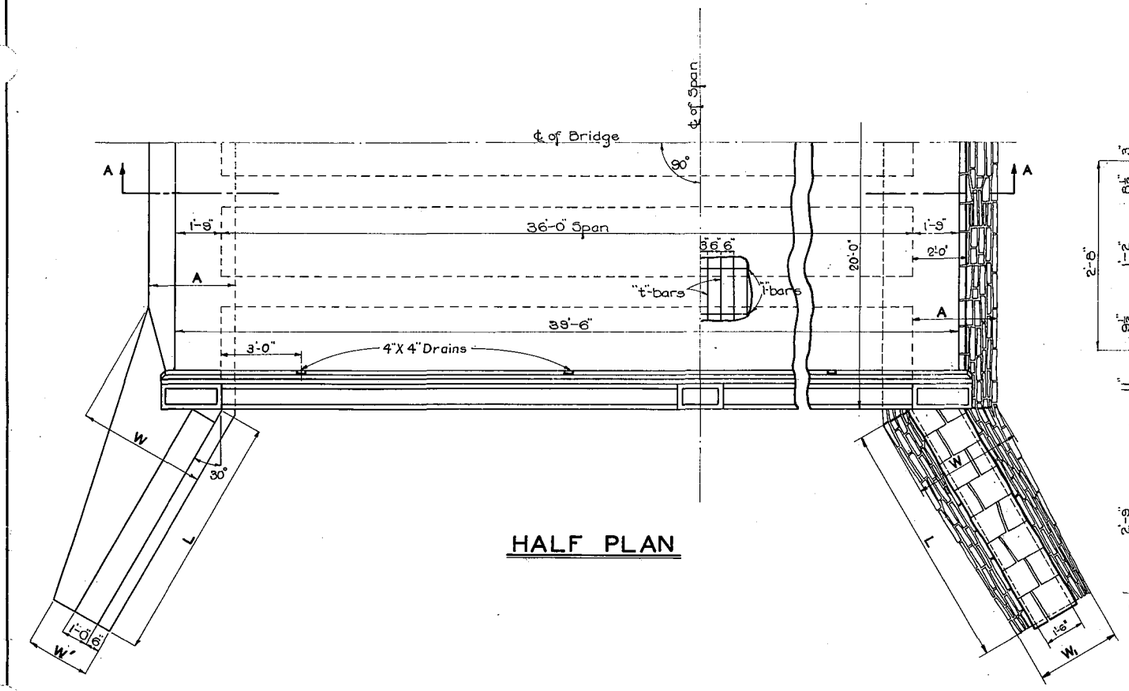
SCALE ⅜" & 1" = 1'-0"

634B-45

Made by J.E.M.
Checked by. W.C.T. 5-28-28.

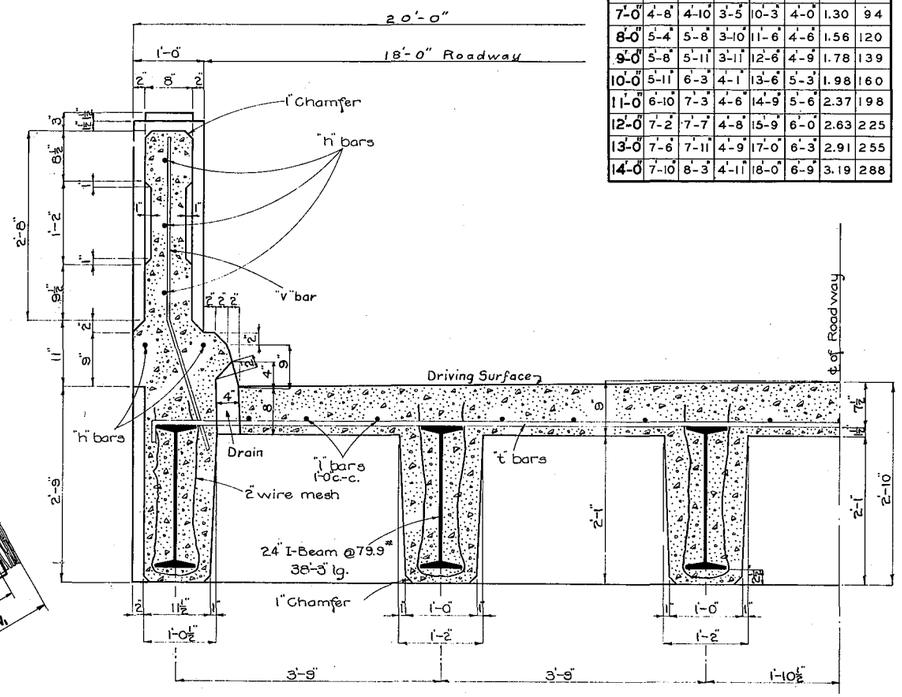
IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

Revised 5-25-28. W.B.D.
" 7-23-32 W.C.T. Stone Masonry.



HALF PLAN

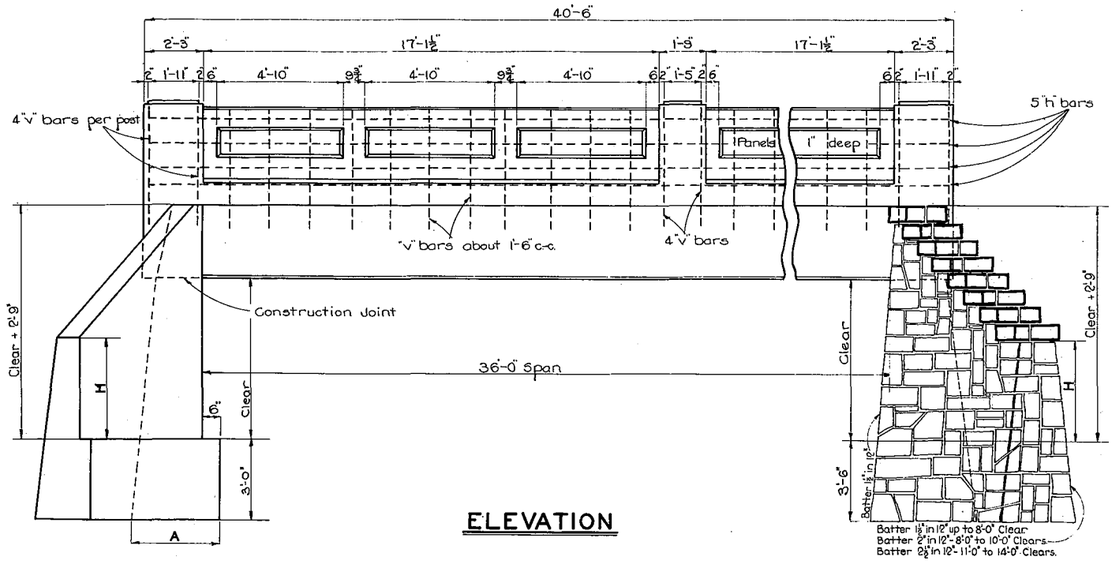
STONE ABUTMENTS & WINGS							
CLEAR	A	W	W'	L	H	CU.YDS. PER FOOT ONE ABUT.	TOTAL CU.YDS. TWO ABUT.
6'-0"	4'-5"	4'-7"	3'-4"	9'-3"	3'-9"	1.13	80
7'-0"	4'-8"	4'-10"	3'-5"	10'-3"	4'-0"	1.30	94
8'-0"	5'-4"	5'-8"	3'-10"	11'-6"	4'-6"	1.56	120
9'-0"	5'-8"	5'-11"	3'-11"	12'-6"	4'-9"	1.78	139
10'-0"	5'-11"	6'-3"	4'-1"	13'-6"	5'-3"	1.98	160
11'-0"	6'-10"	7'-3"	4'-6"	14'-9"	5'-6"	2.37	198
12'-0"	7'-2"	7'-7"	4'-8"	15'-9"	6'-0"	2.63	225
13'-0"	7'-6"	7'-11"	4'-9"	17'-0"	6'-3"	2.91	255
14'-0"	7'-10"	8'-3"	4'-11"	18'-0"	6'-9"	3.19	288



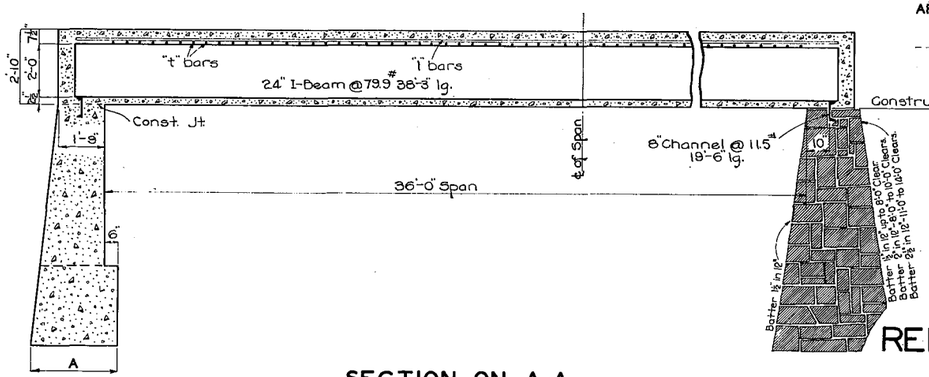
BEAMS & PARAPET DETAILS

NOTE

Floor of Bridge shall conform to grade of road. On level grade, slope top of slab at least 1/8" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving, use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.



ELEVATION



SECTION ON A-A

MATERIAL REQUIRED

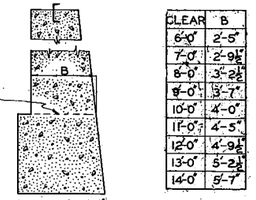
526 Cu. Yds. "A" Concrete.	81½ Bbls. Cement. 24¼ Cu. Yds. Sand. 48¼ Cu. Yds. Stone
2359 Lbs. Reinforcing Bars.	
18786 Lbs. Structural Steel.	6-24" I-Beams @79.9# 38'-3" lg. 2-8" Channels @11.5# 19'-6" lg.
1200 Sq. Ft. 2" Wire Mesh.	

TABLE OF BARS

Mark	No.	Stock.	Description.
l	15	⅝"x38'-3"	Longitudinal in Slab.
t	72	⅝"x20'-0"	Transverse in Slab.
h	10	½"x40'-3"	Horizontal in Parapet.
v	68	½"x4'-6"	Vertical in Parapet.

ABUTMENTS & WINGS

CLEAR	A	W	W'	L	H	Cu.Yds. 'D' Con.	Bbls. Cement	Cu.Yds. Sand.	Cu.Yds. Stone
6'-0"	3'-3"	4'-10"	2'-5"	9'-3"	3'-9"	58.4	76	28¼	56¼
7'-0"	3'-9"	5'-4"	2'-7"	10'-3"	4'-0"	71.9	93½	34¾	69¼
8'-0"	4'-3"	5'-9"	2'-10"	11'-6"	4'-6"	88.5	115	42¾	85¼
9'-0"	4'-9"	6'-2"	3'-0"	12'-6"	4'-9"	105.7	137¼	51	101¾
10'-0"	5'-2"	6'-7"	3'-3"	13'-6"	5'-3"	124.9	162¼	60¼	120¼
11'-0"	5'-8"	7'-0"	3'-4"	14'-9"	5'-6"	146.6	190¼	70½	141
12'-0"	6'-0"	7'-5"	3'-7"	15'-9"	6'-0"	169.0	219½	81¼	162¾
13'-0"	6'-6"	7'-10"	3'-9"	17'-0"	6'-3"	195.9	254¼	94¼	188½
14'-0"	6'-11"	8'-3"	3'-11"	18'-0"	6'-9"	223.1	289¾	107½	214¾



CLEAR	B
6'-0"	2'-5"
7'-0"	2'-9½"
8'-0"	3'-2½"
9'-0"	3'-7"
10'-0"	4'-0"
11'-0"	4'-5"
12'-0"	4'-9½"
13'-0"	5'-2½"
14'-0"	5'-7"

APPROVED August 1, 1927
E.E. Meadows BRIDGE ENGINEER
APPROVED
Sam Rea CHIEF ENGINEER

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION
STANDARD
REINFORCED CONCRETE BRIDGE.
SPAN 36 FT. ROADWAY 18 FT.

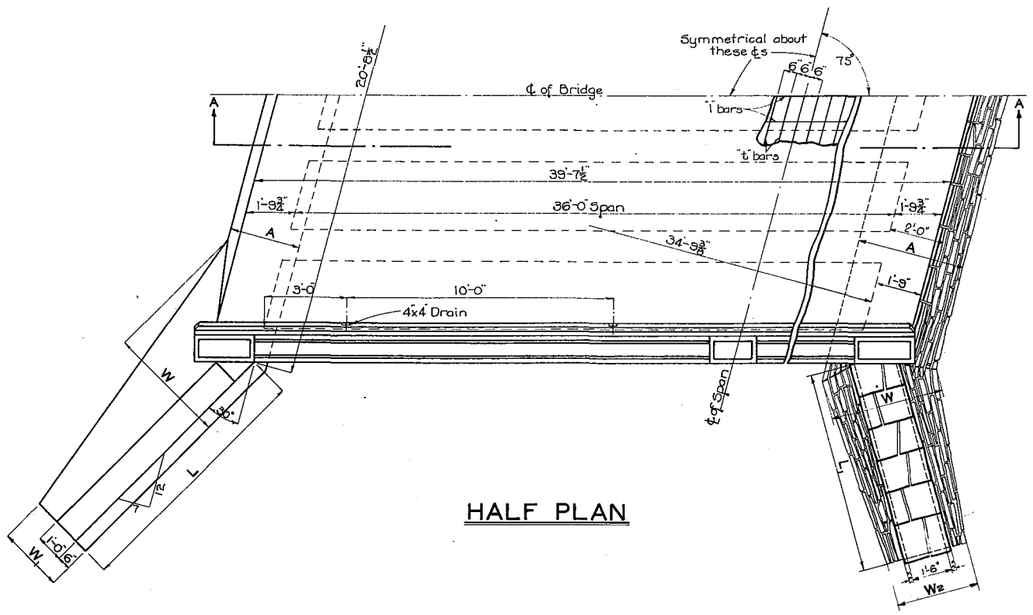
SCALE ⅜" & 1'-1'-0"

636B

Made by. W.B.D.
Checked by. W.C.T. 5/24/27

"GENERAL" STANDARD CUTTER
E & E CO., N.Y.

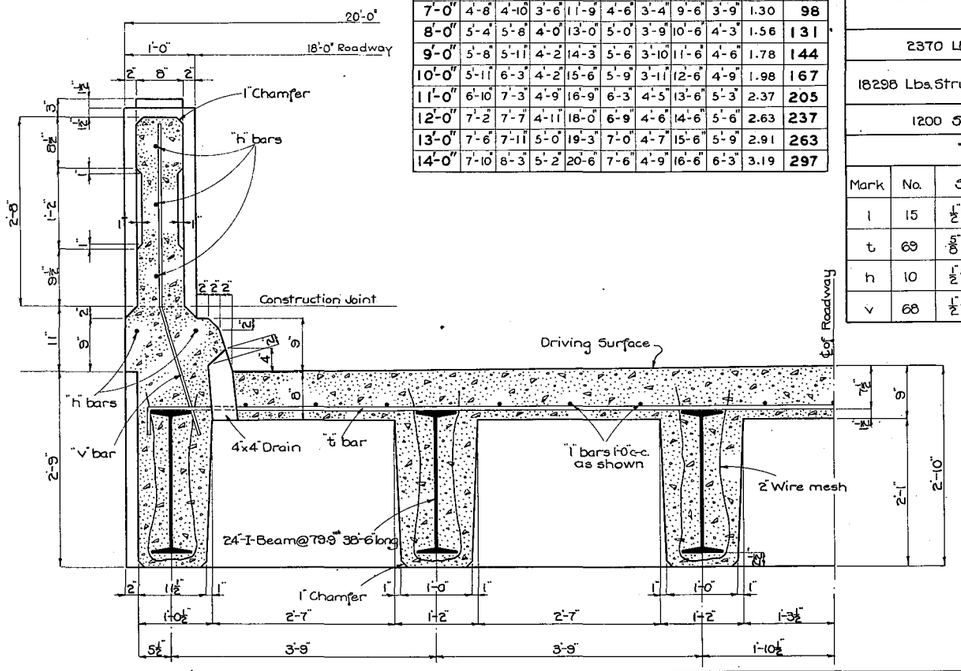
Revised 7-23-32 Stone Masonry W.C.T.



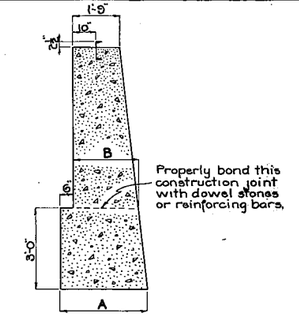
HALF PLAN

STONE ABUTMENTS & WINGS

CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	CU.YDS. PER FOOT ONE ABUT.	TOTAL CU.YDS. TWO ABUTS.
6'-0"	4'-5"	4'-7"	3'-5"	10'-9"	4'-3"	3'-3"	8'-6"	3'-6"	1.13	83
7'-0"	4'-8"	4'-10"	3'-6"	11'-9"	4'-6"	3'-4"	9'-6"	3'-9"	1.30	98
8'-0"	5'-4"	5'-8"	4'-0"	13'-0"	5'-0"	3'-9"	10'-6"	4'-3"	1.56	131
9'-0"	5'-8"	5'-11"	4'-2"	14'-3"	5'-6"	3'-10"	11'-6"	4'-6"	1.78	144
10'-0"	5'-11"	6'-3"	4'-2"	15'-6"	5'-9"	3'-11"	12'-6"	4'-9"	1.98	167
11'-0"	6'-10"	7'-3"	4'-9"	16'-9"	6'-3"	4'-5"	13'-6"	5'-3"	2.37	205
12'-0"	7'-2"	7'-7"	4'-11"	18'-0"	6'-9"	4'-6"	14'-6"	5'-6"	2.63	237
13'-0"	7'-6"	7'-11"	5'-0"	19'-3"	7'-0"	4'-7"	15'-6"	5'-9"	2.91	263
14'-0"	7'-10"	8'-3"	5'-2"	20'-6"	7'-6"	4'-9"	16'-6"	6'-3"	3.19	297



BEAMS & PARAPET DETAILS



RT. L. ABUTMENT SECTION

NOTE

Floor of Bridge shall conform to grade of road. On level grade, slope top of slab at least ½" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving, use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.

MATERIAL REQUIRED

53 Cu. Yds. 'A' Concrete.

82 Bbls. Cement.
24½ Cu. Yds. Sand.
48½ Cu. Yds. Stone.

2370 Lbs. Reinforcing Bars.

18298 Lbs. Structural Steel. 6-24"-I-Beams@79.9# 38'-6" long. 2-8"Channels@11.5# 20'-6" long.

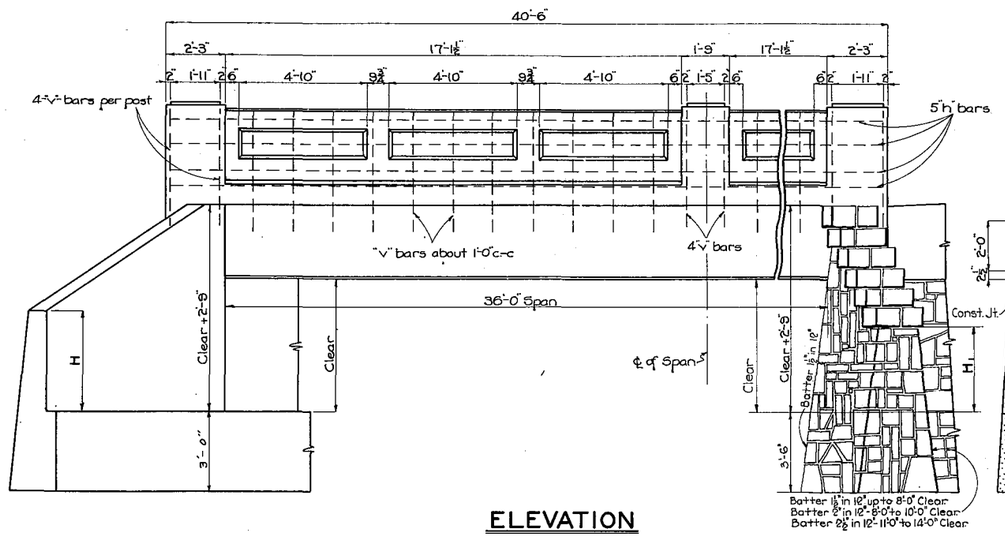
1200 Sq. Ft. 2" Wire Mesh.

TABLE OF BARS

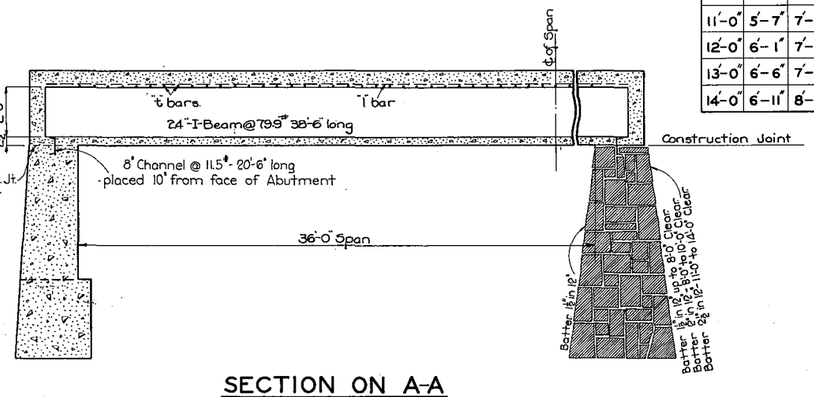
Mark	No.	Stock	Description.
l	15	½" x 38'-6"	Longitudinal in Slab.
t	69	⅝" x 21'-0"	Transverse in Slab.
h	10	½" x 40'-3"	Horizontal in Parapet.
v	68	½" x 4'-6"	Vertical in Parapet.

ABUTMENTS & WINGS

CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	B	Cu.Yds. B.Con.	Bbls. Cement	Cu.Yds. Sand	Cu.Yds. Stone.
6'-0"	3'-3"	4'-10"	2'-8"	10'-9"	4'-3"	2'-3"	8'-6"	3'-6"	2'-5"	61.5	79¾	29½	59¼
7'-0"	3'-9"	5'-4"	3'-0"	11'-9"	4'-6"	2'-5"	9'-6"	3'-9"	2'-9½"	76.3	99	36¾	73½
8'-0"	4'-3"	5'-9"	3'-1"	13'-0"	5'-0"	2'-8"	10'-6"	4'-3"	3'-2½"	93.4	121¼	45	89¾
9'-0"	4'-9"	6'-2"	3'-4"	14'-3"	5'-6"	2'-10"	11'-6"	4'-6"	3'-7"	113.3	147	54½	109
10'-0"	5'-2"	6'-7"	3'-6"	15'-6"	5'-9"	3'-0"	12'-6"	4'-9"	4'-0"	133.0	172¾	64	128
11'-0"	5'-7"	7'-0"	3'-9"	16'-9"	6'-3"	3'-3"	13'-6"	5'-3"	4'-5"	155.4	201¾	74¾	149½
12'-0"	6'-1"	7'-5"	3'-11"	18'-0"	6'-9"	3'-4"	14'-6"	5'-6"	4'-9½"	182.1	236½	87½	175¼
13'-0"	6'-6"	7'-10"	4'-1"	19'-3"	7'-0"	3'-6"	15'-6"	5'-9"	5'-2½"	209.8	272¼	101	201¾
14'-0"	6'-11"	8'-3"	4'-4"	20'-6"	7'-6"	3'-9"	16'-6"	6'-3"	5'-7"	241.6	313½	116¼	232½



ELEVATION



SECTION ON A-A

APPROVED May 21, 1928
E E Thompson BRIDGE ENGINEER
APPROVED May 24, 1928
Samuel Eckels CHIEF ENGINEER

COMMONWEALTH OF PENNSYLVANIA.
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION.
STANDARD
REINFORCED CONCRETE BRIDGE
SPAN 36 FT. ROADWAY 18 FT.
SKEW 75° L.

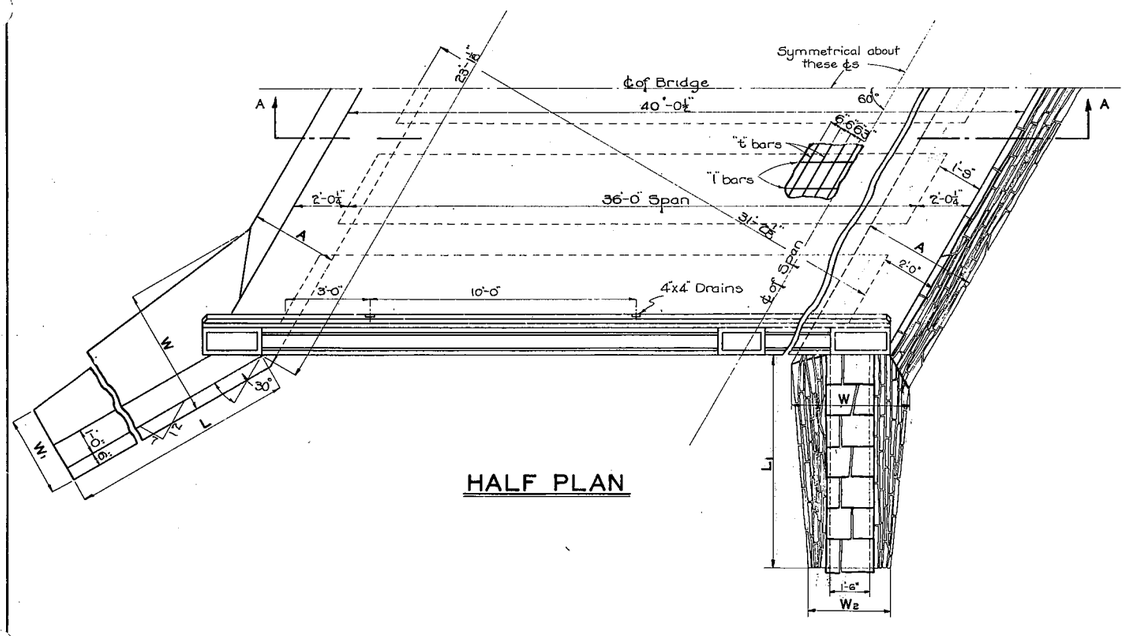
SCALE ⅜"=1'-0"

636 B-75

Made by. W.B.D.
Checked by. J.E.M. 5-8-28.

IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

Revised 7-23-32 Stone Masonry W.C.T.



HALF PLAN

STONE ABUTMENTS & WINGS

CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	CU.YDS. PER FOOT ONE ABUT	TOTAL CU.YDS. TWO ABUT.
6'-0"	4'-5"	4'-7"	3'-8"	13'-0"	5'-0"	3'-2"	8'-0"	3'-3"	1.13	93.0
7'-0"	4'-8"	4'-10"	3'-9"	14'-6"	5'-6"	3'-4"	9'-0"	3'-9"	1.30	111.0
8'-0"	5'-4"	5'-8"	4'-3"	16'-0"	6'-0"	3'-8"	10'-0"	4'-0"	1.56	139.0
9'-0"	5'-8"	5'-11"	4'-5"	17'-6"	6'-6"	3'-9"	11'-0"	4'-3"	1.78	163.0
10'-0"	5'-11"	6'-3"	4'-7"	19'-0"	7'-0"	3'-11"	12'-0"	4'-9"	1.98	188.0
11'-0"	6'-10"	7'-3"	5'-2"	20'-6"	7'-6"	4'-4"	13'-0"	5'-0"	2.37	232.0
12'-0"	7'-2"	7'-7"	5'-4"	22'-0"	8'-0"	4'-5"	14'-0"	5'-3"	2.63	265.0
13'-0"	7'-6"	7'-11"	5'-6"	23'-6"	8'-6"	4'-7"	15'-0"	5'-9"	2.91	302.0
14'-0"	7'-10"	8'-3"	5'-8"	25'-0"	9'-0"	4'-8"	16'-0"	6'-0"	3.19	338.0

MATERIAL REQUIRED

5385 Cu. Yds. "A" Concrete — 83¼ Bbls. Cement. 24¾ Cu. Yds. Sand. 49½ Cu. Yds. Stone.

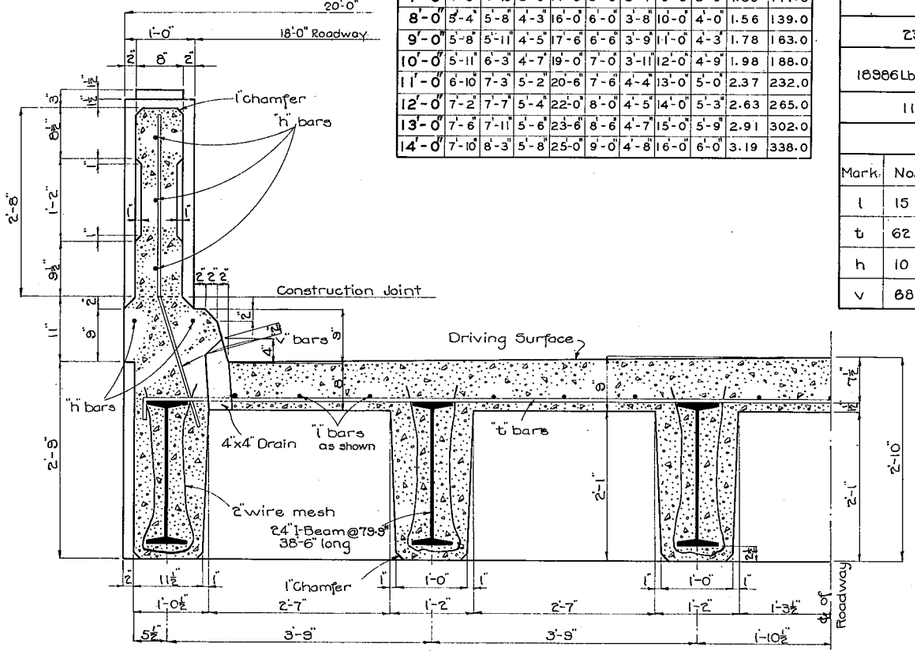
2363 Lbs. Reinforcing Bars.

18986 Lbs. Structural Steel: 6-24" I-Beams @79.9# 38'-6" long. 2-8" Channels @11.5# 23'-0" long.

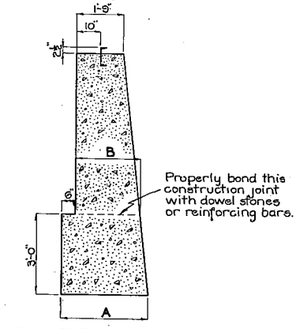
1188 Sq. Ft. 2" Wire Mesh.

TABLE OF BARS

Mark.	No.	Stock	Description.
l	15	½"ϕ x 38'-6"	Longitudinal in Slab.
t	62	⅝"ϕ x 23'-3"	Transverse in Slab.
h	10	½"ϕ x 40'-3"	Horizontal in Parapet.
v	88	½"ϕ x 4'-6"	Vertical in Parapet.



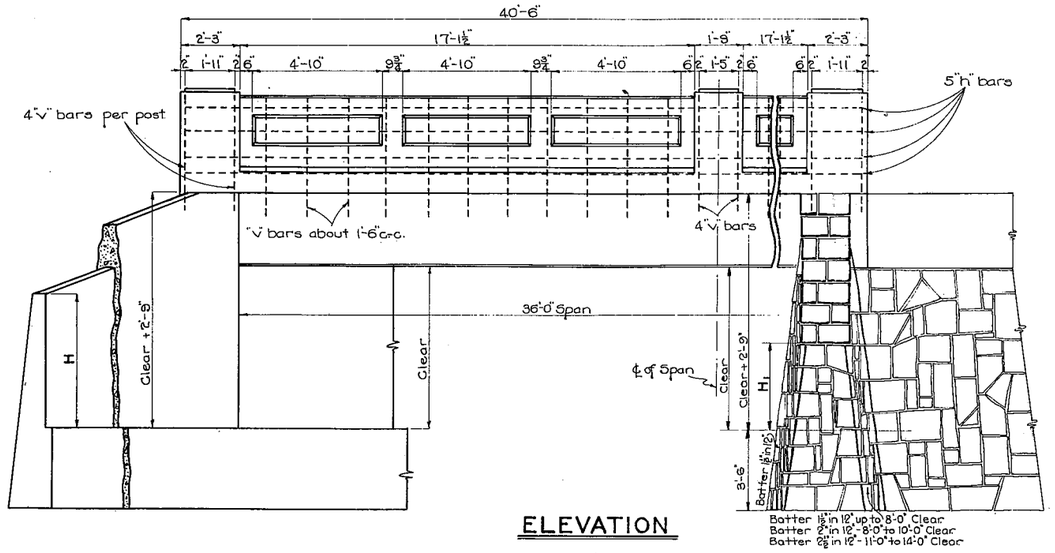
BEAMS & PARAPET DETAILS



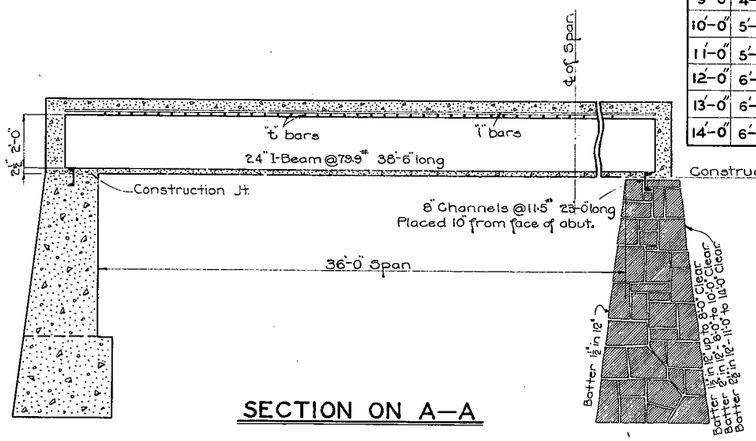
RT. L. ABUTMENT SECTION

ABUTMENTS & WINGS

CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	B	Cu. Yds. ℄ Con.	Bbls. Cement	Cu. Yds. Sand	Cu. Yds. Stone
6'-0"	3'-3"	4'-10"	3'-1"	13'-0"	5'-0"	2'-1"	8'-0"	3'-3"	2'-5"	69.8	90½	33½	67¼
7'-0"	3'-9"	5'-4"	3'-4"	14'-6"	5'-6"	2'-5"	9'-0"	3'-9"	2'-9½"	87.2	113¼	42	84
8'-0"	4'-3"	5'-9"	3'-7"	16'-0"	6'-0"	2'-7"	10'-0"	4'-0"	3'-2½"	107.4	139½	51¾	103¾
9'-0"	4'-9"	6'-2"	3'-10"	17'-6"	6'-6"	2'-8"	11'-0"	4'-3"	3'-7"	129.6	168¼	62¼	124¾
10'-0"	5'-2"	6'-7"	4'-1"	19'-0"	7'-0"	3'-0"	12'-0"	4'-9"	4'-0"	153.7	199½	74	147¾
11'-0"	5'-8"	7'-0"	4'-4"	20'-6"	7'-6"	3'-1"	13'-0"	5'-0"	4'-5"	181.1	235	87	174¼
12'-0"	6'-1"	7'-5"	4'-6"	22'-0"	8'-0"	3'-3"	14'-0"	5'-3"	4'-9½"	210.1	272¾	101	202
13'-0"	6'-6"	7'-10"	4'-9"	23'-6"	8'-6"	3'-6"	15'-0"	5'-9"	5'-2½"	242.5	314¾	116¾	233¼
14'-0"	6'-11"	8'-3"	5'-0"	25'-0"	9'-0"	3'-7"	16'-0"	6'-0"	5'-7"	277.7	360½	133½	267¼



ELEVATION



SECTION ON A—A

NOTE

Floor of Bridge shall conform to grade of road. On level grade, slope top of slab at least ½" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving, use 6" of concrete or 8" of stone masonry and a 12' curtain wall of sufficient depth at each end.

APPROVED May 21, 1928
E E Brandon BRIDGE ENGINEER

APPROVED
Samuel Lewis CHIEF ENGINEER

COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION

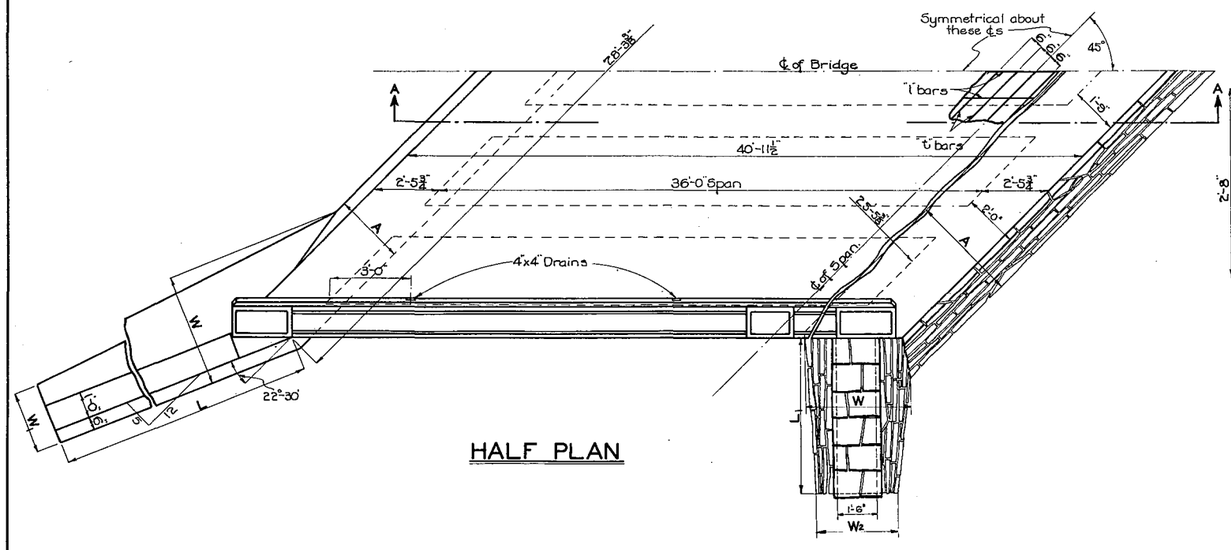
STANDARD
REINFORCED CONCRETE BRIDGE
SPAN 36 FT. ROADWAY 18 FT.
SKEW 60° L.

SCALE ⅜" & 1"=1'-0"

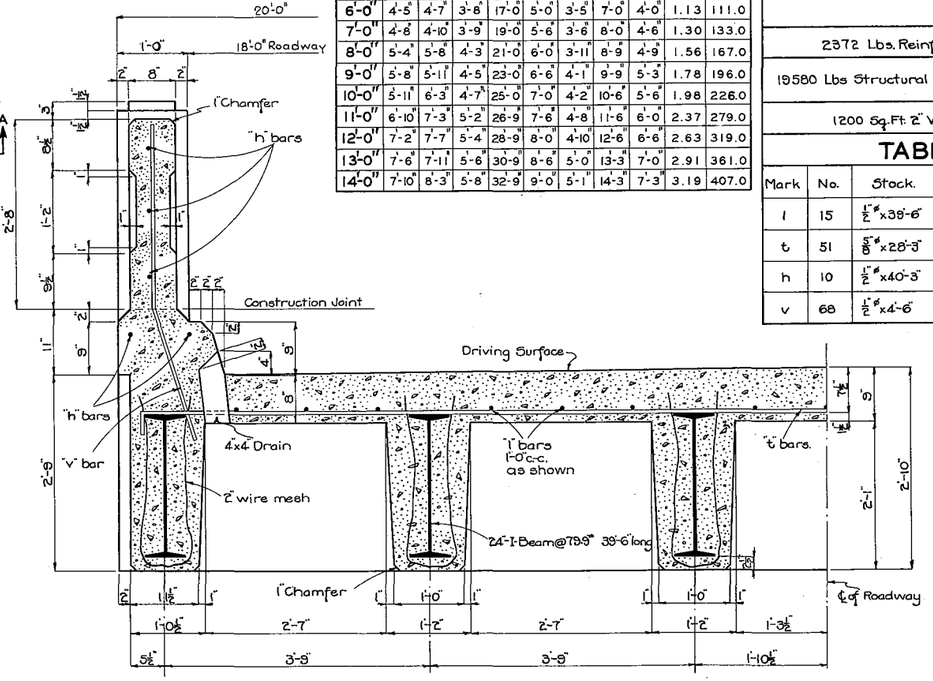
636 B-60

Made by: W.B.D.
Checked by: W.S.H. 4-12-28

Revised 3-26-29 Reinforcing Bars.
Revised 7-23-32 Stone Masonry W.C.T.



HALF PLAN



STONE ABUTMENTS & WINGS

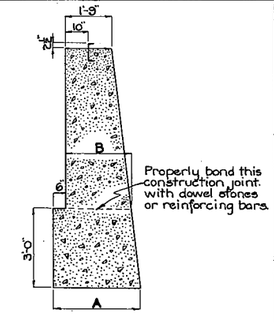
CLEAR	A	W	W1	L	H	W2	L1	H1	CU.YDS. PER FOOT ONE ABUT.	TOTAL CU.YDS. TWO ABUT.
6'-0"	4'-5"	4'-7"	3'-8"	17'-0"	5'-0"	3'-5"	7'-0"	4'-0"	1.13	111.0
7'-0"	4'-8"	4'-10"	3'-9"	19'-0"	5'-6"	3'-6"	8'-0"	4'-6"	1.30	133.0
8'-0"	5'-4"	5'-8"	4'-3"	21'-0"	6'-0"	3'-11"	8'-9"	4'-9"	1.56	167.0
9'-0"	5'-8"	5'-11"	4'-5"	23'-0"	6'-6"	4'-1"	9'-9"	5'-3"	1.78	196.0
10'-0"	5'-11"	6'-3"	4'-7"	25'-0"	7'-0"	4'-2"	10'-6"	5'-6"	1.98	226.0
11'-0"	6'-10"	7'-3"	5'-2"	26'-9"	7'-6"	4'-8"	11'-6"	6'-0"	2.37	279.0
12'-0"	7'-2"	7'-7"	5'-4"	28'-9"	8'-0"	4'-10"	12'-6"	6'-6"	2.63	319.0
13'-0"	7'-6"	7'-11"	5'-6"	30'-9"	8'-6"	5'-0"	13'-3"	7'-0"	2.91	361.0
14'-0"	7'-10"	8'-3"	5'-8"	32'-9"	9'-0"	5'-1"	14'-3"	7'-3"	3.19	407.0

MATERIAL REQUIRED

55.7 Cu.Yds. "A" Concrete.	86¼ Bbls. Cement.
	25½ Cu.Yds. Sand.
	59½ Cu.Yds. Stone.
2372 Lbs. Reinforcing Bars.	
19580 Lbs Structural Steel.	6-24"-I-Beams@79.9# 39'-6" long.
	2-8"Channels@11.5# 28'-0" long.
1200 Sq.Ft. 2" Wire Mesh.	

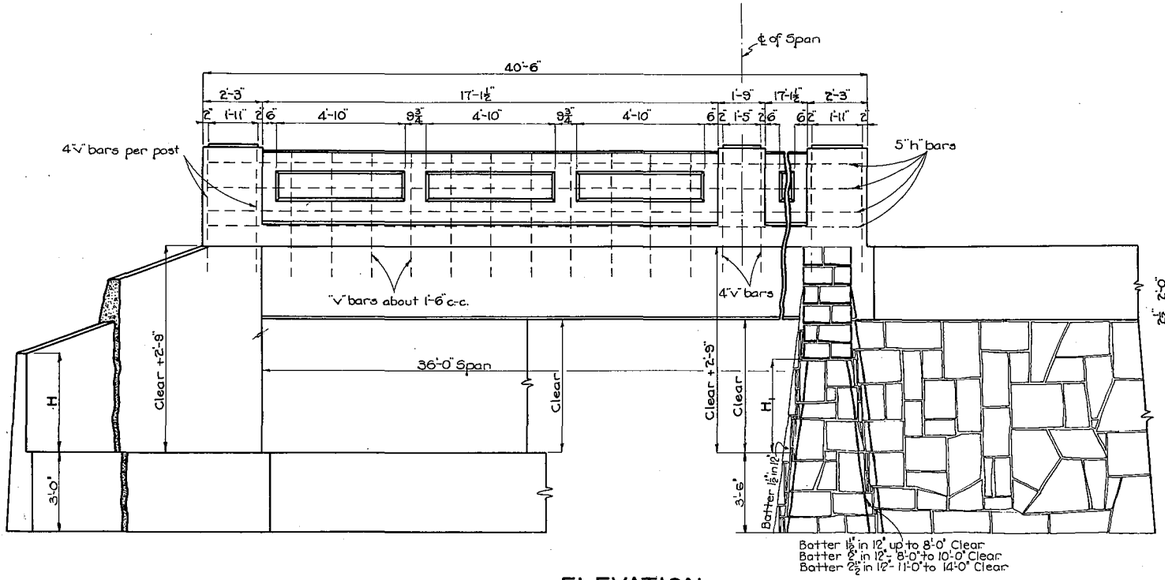
TABLE OF BARS

Mark	No.	Stock.	Description.
l	15	½"ø x 38'-6"	Longitudinal in Slab.
t	51	⅝"ø x 28'-3"	Transverse in Slab.
h	10	½"ø x 40'-3"	Horizontal in Parapet.
v	68	½"ø x 4'-6"	Vertical in Parapet.



RT. L. ABUTMENT SECTION

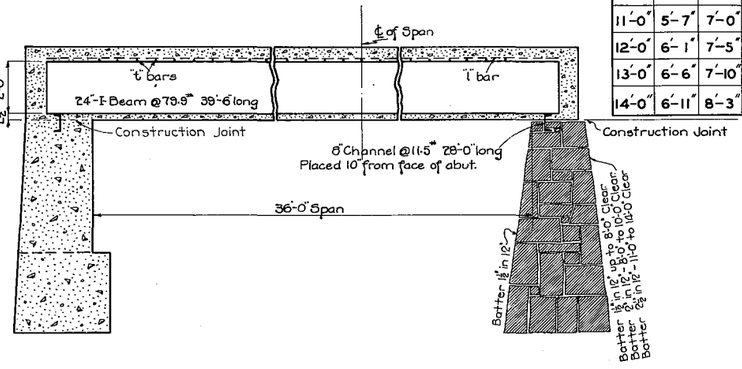
BEAMS & PARAPET DETAILS



ELEVATION

NOTE

Floor of Bridge shall conform to grade of road. On level grade, slope top of slab at least ½ per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving, use 6" of concrete or 8" of stone masonry & a 12" curtain wall of sufficient depth at each end.



SECTION ON A-A

ABUTMENTS & WINGS

CLEAR	A	W	W1	L	H	W2	L1	H1	B	Cu.Yds. B Con.	Bbls. Cement	Cu.Yds. Sand.	Cu.Yds. Stone.
6'-0"	3'-3"	4'-10"	3'-1"	17'-0"	5'-0"	2'-7"	7'-0"	4'-0"	2'-5"	84.6	109¾	40¾	81½
7'-0"	3'-9"	5'-4"	3'-4"	19'-0"	5'-6"	2'-10"	8'-0"	4'-6"	2'-9½"	106.3	138	51¼	102¼
8'-0"	4'-3"	5'-9"	3'-7"	21'-0"	6'-0"	3'-0"	8'-9"	4'-9"	3'-2½"	129.6	168¼	62¼	124¾
9'-0"	4'-9"	6'-2"	3'-10"	23'-0"	6'-6"	3'-3"	9'-9"	5'-3"	3'-7"	157.0	203¾	75½	151
10'-0"	5'-2"	6'-7"	4'-1"	25'-0"	7'-0"	3'-4"	10'-6"	5'-6"	4'-0"	185.2	240½	89	178¼
11'-0"	5'-7"	7'-0"	4'-4"	26'-9"	7'-6"	3'-7"	11'-6"	6'-0"	4'-5"	217.0	281¾	104½	208¾
12'-0"	6'-1"	7'-5"	4'-6"	28'-9"	8'-0"	3'-10"	12'-6"	6'-6"	4'-9½"	253.4	329	122	243¾
13'-0"	6'-6"	7'-10"	4'-9"	30'-9"	8'-6"	4'-1"	13'-3"	7'-0"	5'-2½"	292.4	379½	140¾	281¼
14'-0"	6'-11"	8'-3"	5'-0"	32'-9"	9'-0"	4'-2"	14'-3"	7'-3"	5'-7"	334.5	434¼	161	321¾

APPROVED May 21, 1928
E.E. Worthington BRIDGE ENGINEER
APPROVED May 21, 1928
Sam Hecksher CHIEF ENGINEER

COMMONWEALTH OF PENNSYLVANIA.
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION.
STANDARD
REINFORCED CONCRETE BRIDGE
SPAN 36 FT. ROADWAY 18 FT.
SKEW 45° L.

SCALE ⅜" & 1'-1'-0"

636 B-45

Made by: W.B.D.
Checked by: J.E.M. 5-5-28.

IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

Revised 5-25-28 W.B.D.
7-23-32 W.C.T. Stone Masonry.

STONE ABUTMENTS & WINGS							
CLEAR	A	W	W_1	L	H	CU.YDS. PER FOOT ONE ABUT.	TOTAL CU. YDS. TWO ABUTS.
6'-0"	4'-8"	4'-7"	3'-4"	9'-3"	3'-9"	1.22	83
7'-0"	4'-11"	4'-10"	3'-5"	10'-3"	4'-0"	1.40	99
8'-0"	5'-7"	5'-8"	3'-10"	11'-6"	4'-6"	1.67	124
9'-0"	5'-11"	5'-11"	3'-11"	12'-6"	4'-9"	1.89	143
10'-0"	6'-2"	6'-3"	4'-1"	13'-6"	5'-3"	2.11	165
11'-0"	7'-1"	7'-3"	4'-6"	14'-9"	5'-6"	2.50	203
12'-0"	7'-5"	7'-7"	4'-8"	15'-9"	6'-0"	2.77	231
13'-0"	7'-9"	7'-11"	4'-9"	17'-0"	6'-3"	3.06	262
14'-0"	8'-1"	8'-3"	4'-11"	18'-0"	6'-9"	3.35	294

MATERIAL REQUIRED.

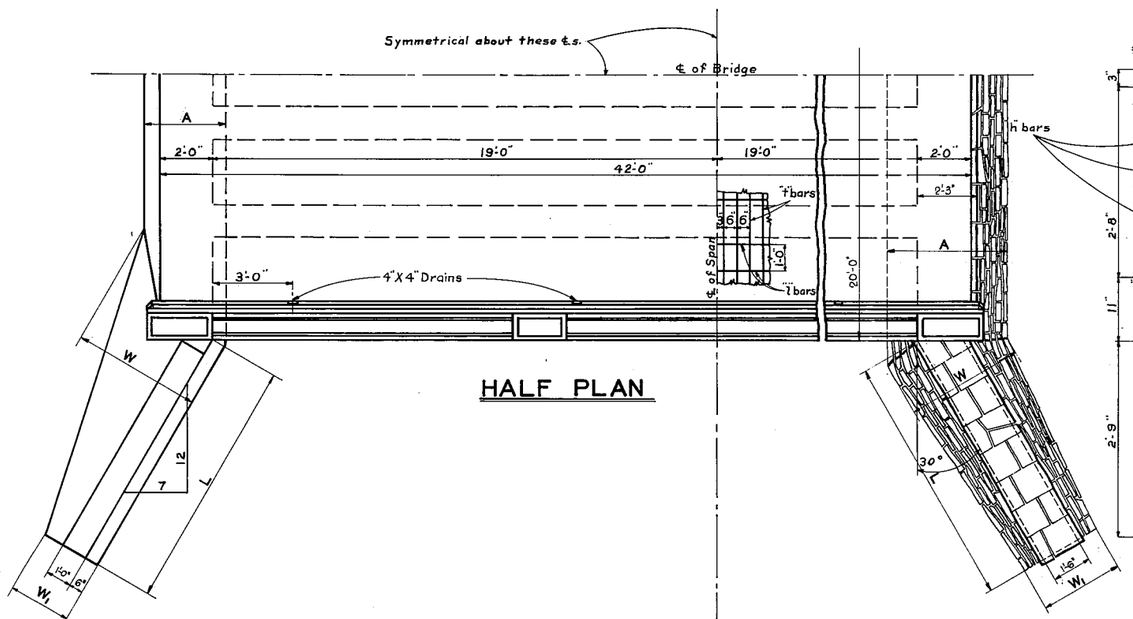
58.9 Cu.Yds. "A" Concrete.	91¼ Bbls. Cement. 27 Cu.Yds. Sand. 54 Cu.Yds. Stone.
2455 Lbs. Reinforcing Bars.	
25853 Lbs. Structural Steel.	6-24" I-beams @ 105.9# - 40'-0" lg. 2-8" Channels @ 11.5# - 19'-6" lg.
1370 Sq.Ft. 2" Wire Mesh.	

TABLE OF BARS.

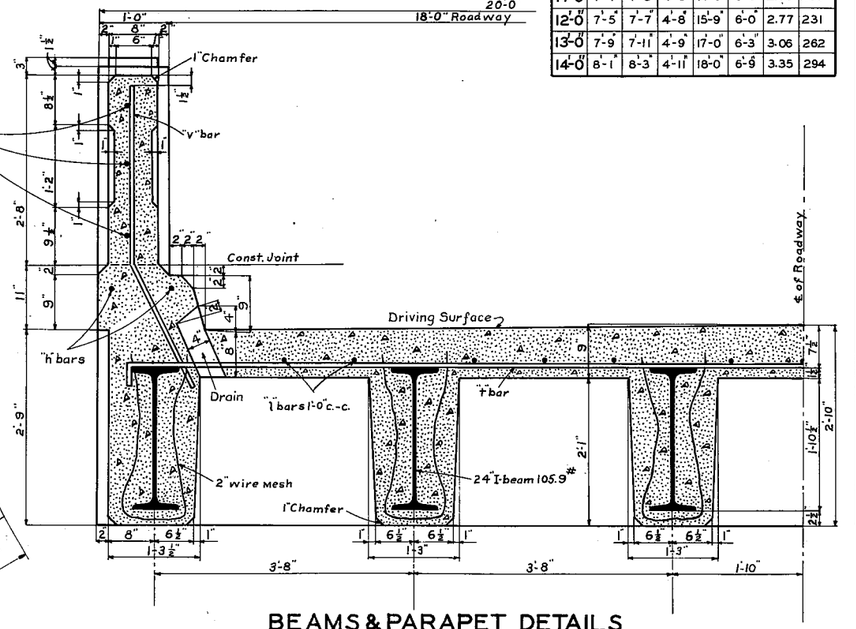
Mark.	No.	Stock.	Description.
l	15	½"ø X 40'-0"	Longitudinal in Slab.
t	76	⅝"ø X 19'-6"	Transverse in Slab.
h	10	½"ø X 42'-9"	Horizontal in Parapets.
v	74	½"ø X 4'-6"	Vertical in Parapets.

ABUTMENTS & WINGS.

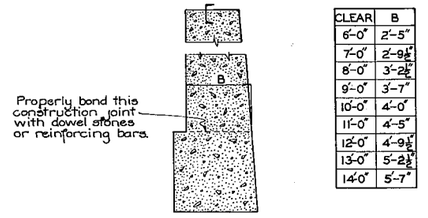
CLEAR	A	W	W_1	L	H	Cu.Yds. "B" Conc. 1:2½:5	Bbls. Cement.	Cu.Yds. Sand.	Cu.Yds. Stone.
6'-0"	3'-1"	4'-10"	2'-5"	9'-3"	3'-9"	59.0	76½	28½	56¾
7'-0"	3'-8"	5'-4"	2'-7"	10'-3"	4'-0"	73.0	94¾	35¼	70¼
8'-0"	4'-2"	5'-9"	2'-10"	11'-6"	4'-6"	90.0	117	43¼	86½
9'-0"	4'-8"	6'-2"	3'-0"	12'-6"	4'-9"	108.5	141	52¼	104½
10'-0"	5'-1"	6'-7"	3'-3"	13'-6"	5'-3"	128.3	166½	61¾	123½
11'-0"	5'-7"	7'-0"	3'-4"	14'-9"	5'-6"	150.7	195½	72½	145
12'-0"	6'-0"	7'-5"	3'-7"	15'-9"	6'-0"	175.0	227	84½	169
13'-0"	6'-5"	7'-10"	3'-9"	17'-0"	6'-3"	202.5	263	97½	195
14'-0"	6'-10"	8'-3"	3'-11"	18'-0"	6'-9"	230.3	299	110¾	221½



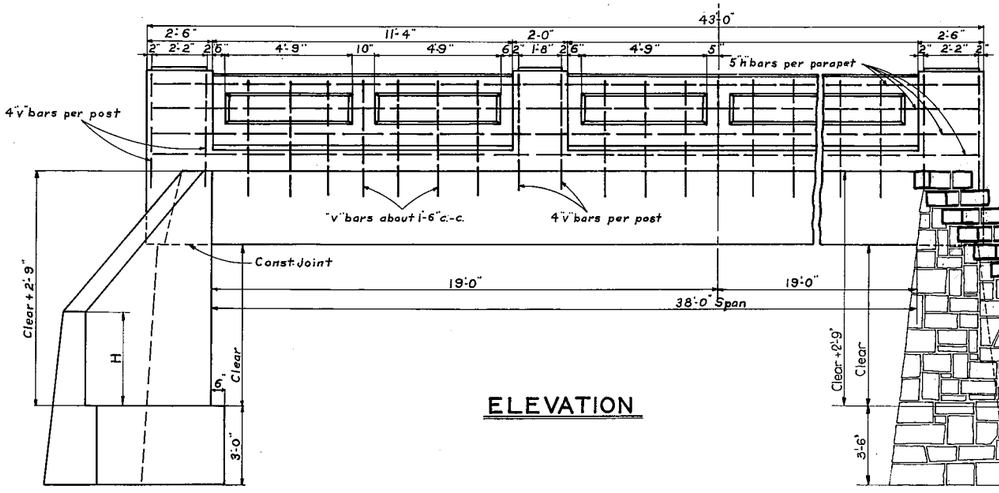
HALF PLAN



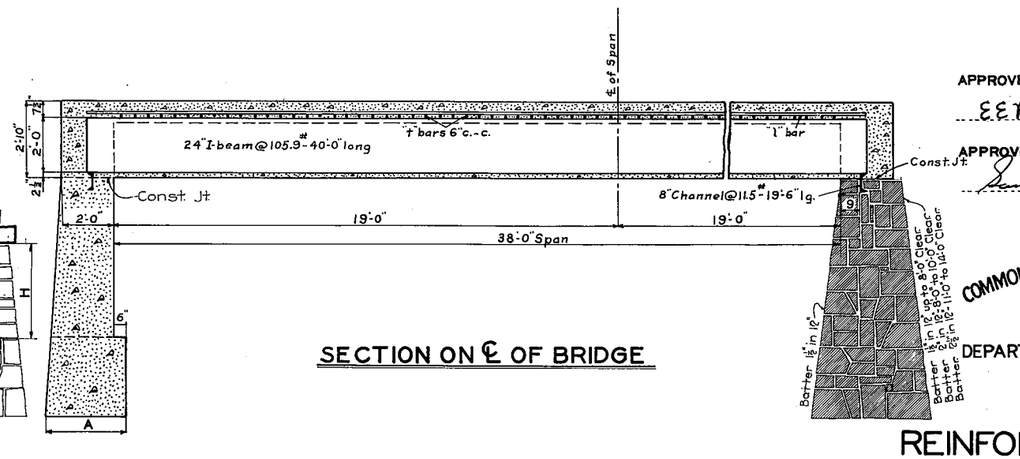
BEAMS & PARAPET DETAILS



CLEAR	B
6'-0"	2'-5"
7'-0"	2'-9½"
8'-0"	3'-2½"
9'-0"	3'-7"
10'-0"	4'-0"
11'-0"	4'-5"
12'-0"	4'-9½"
13'-0"	5'-2½"
14'-0"	5'-7"



ELEVATION



SECTION ON ℄ OF BRIDGE

APPROVED August 1, 1927
E E Marcuse BRIDGE ENGINEER.
APPROVED
Sam Hunter CHIEF ENGINEER.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION
STANDARD

REINFORCED CONCRETE BRIDGE.

SPAN 38 FT. ROADWAY 18 FT.

NOTE

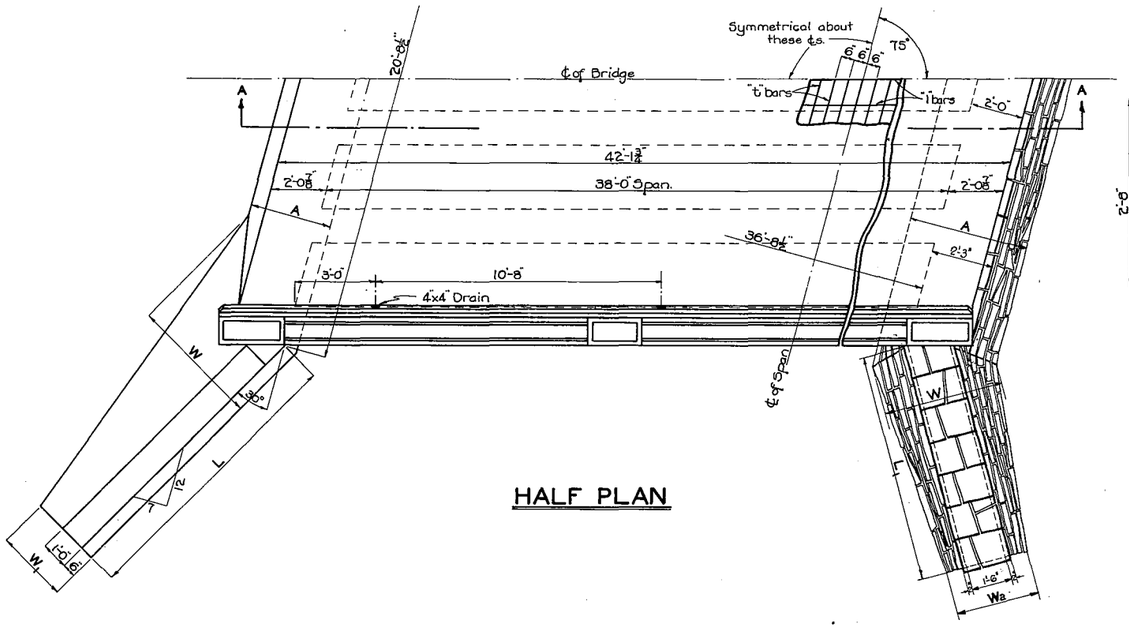
Floor of bridge shall conform to grade of road. On level grade slope top of slab at least $\frac{1}{16}$" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.

Made by - P.F.W.
Checked by - TRRN 4/28/27

SCALE ⅜" & 1"-1'-0"

638B

Revised 7-23-32 Stone Masonry W.C.T.



HALF PLAN

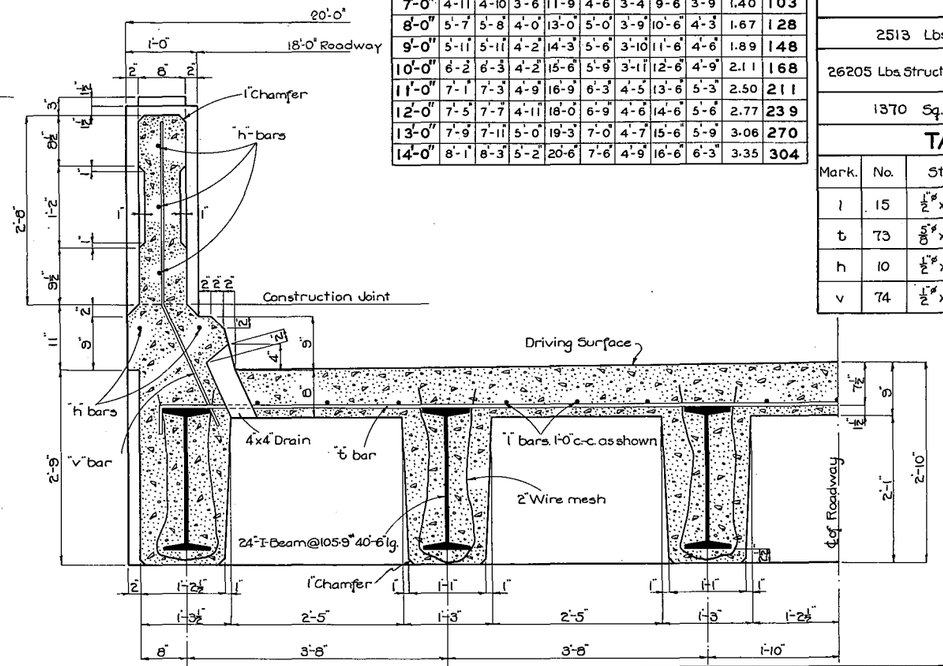
STONE ABUTMENTS & WINGS										
CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	CU.YDS. PER FOOT ONE ABUT.	TOTAL CU.YDS. TWO ABUT.
6'-0"	4'-8"	4'-7"	3'-5"	10'-9"	4'-3"	3'-3"	8'-6"	3'-6"	1.22	87
7'-0"	4'-11"	4'-10"	3'-6"	11'-9"	4'-6"	3'-4"	9'-6"	3'-9"	1.40	103
8'-0"	5'-7"	5'-8"	4'-0"	13'-0"	5'-0"	3'-9"	10'-6"	4'-3"	1.67	128
9'-0"	5'-11"	5'-11"	4'-2"	14'-3"	5'-6"	3'-10"	11'-6"	4'-6"	1.89	148
10'-0"	6'-2"	6'-3"	4'-2"	15'-6"	5'-9"	3'-11"	12'-6"	4'-9"	2.11	168
11'-0"	7'-1"	7'-3"	4'-9"	16'-9"	6'-3"	4'-5"	13'-6"	5'-3"	2.50	211
12'-0"	7'-5"	7'-7"	4'-11"	18'-0"	6'-9"	4'-6"	14'-6"	5'-6"	2.77	239
13'-0"	7'-9"	7'-11"	5'-0"	19'-3"	7'-0"	4'-7"	15'-6"	5'-9"	3.06	270
14'-0"	8'-1"	8'-3"	5'-2"	20'-6"	7'-6"	4'-9"	16'-6"	6'-3"	3.35	304

MATERIAL REQUIRED

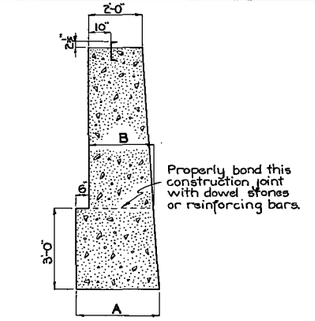
593 Cu.Yds."A" Concrete	91¾ Bbls. Cement. 27¼ Cu.Yds. Sand. 54½ Cu.Yds. Stone.
2513 Lbs. Reinforcing Bars.	
26205 Lbs. Structural Steel.	6-24"-I-Beams @ 105.9# 40'-6" long. 2-8"Channels @ 11.5# 20'-6" long.
1370 Sq.Ft. 2" Wire Mesh.	

TABLE OF BARS

Mark.	No.	Stock.	Description
l	15	½"ø x 40'-6"	Longitudinal in Slab.
t	73	⅝"ø x 21'-0"	Transverse in Slab.
h	10	½"ø x 42'-9"	Horizontal in Parapet.
v	74	½"ø x 4'-6"	Vertical in Parapet.



BEAMS & PARAPET DETAILS

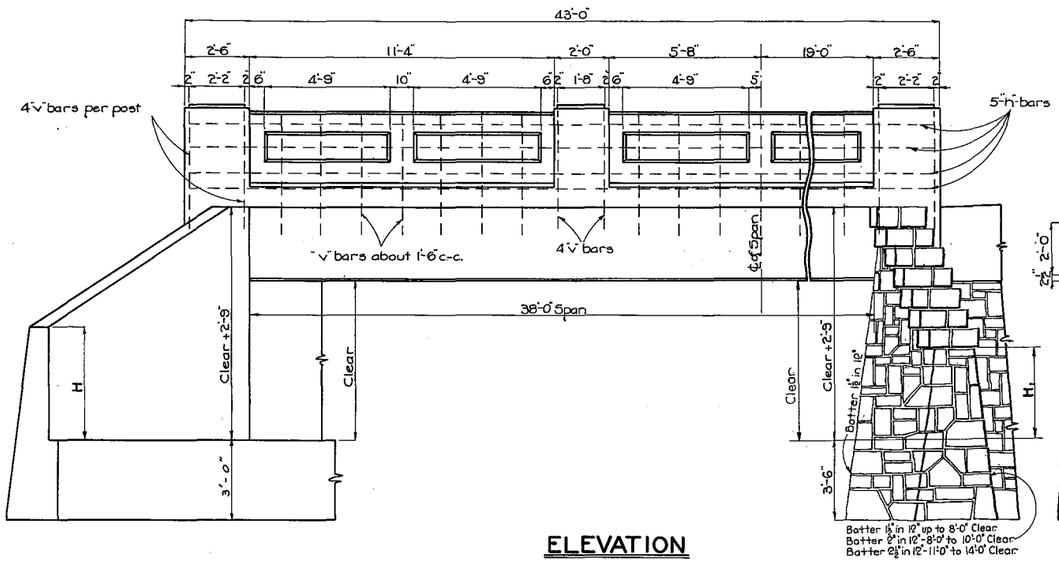


RT. L. ABUTMENT SECTION

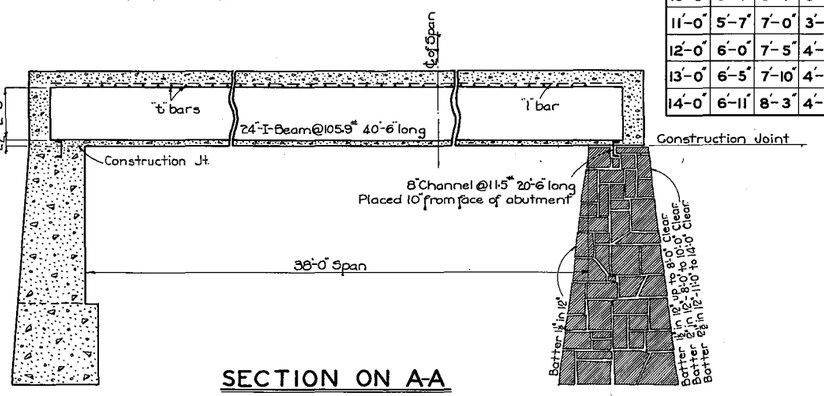
NOTE

Floor of Bridge shall conform to grade of road. On level grade slope top of slab at least ½" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving, use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.

ABUTMENTS & WINGS													
CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	B	Cu.Yds. B'Con.	Bbls. Cement	Cu.Yds. Sand.	Cu.Yds. Stone
6'-0"	3'-1"	4'-10"	2'-8"	10'-9"	4'-3"	2'-3"	8'-6"	3'-6"	2'-5"	61.8	80¼	29¾	59½
7'-0"	3'-8"	5'-4"	3'-0"	11'-9"	4'-6"	2'-5"	9'-6"	3'-9"	2'-9½"	79.4	103	38¼	76½
8'-0"	4'-2"	5'-9"	3'-1"	13'-0"	5'-0"	2'-8"	10'-6"	4'-3"	3'-2½"	94.5	122¾	45½	91
9'-0"	4'-8"	6'-2"	3'-4"	14'-3"	5'-6"	2'-10"	11'-6"	4'-6"	3'-7"	114.5	148¾	55	110¼
10'-0"	5'-1"	6'-7"	3'-6"	15'-6"	5'-9"	3'-0"	12'-6"	4'-9"	4'-0"	134.0	174	64½	129
11'-0"	5'-7"	7'-0"	3'-9"	16'-9"	6'-3"	3'-3"	13'-6"	5'-3"	4'-5"	161.2	209¼	77½	155
12'-0"	6'-0"	7'-5"	4'-0"	18'-0"	6'-9"	3'-4"	14'-6"	5'-6"	4'-9½"	183.6	238¼	88½	176¾
13'-0"	6'-5"	7'-10"	4'-1"	19'-3"	7'-0"	3'-6"	15'-6"	5'-9"	5'-2½"	211.1	274	101½	203
14'-0"	6'-11"	8'-3"	4'-4"	20'-6"	7'-6"	3'-9"	16'-6"	6'-3"	5'-7"	244.4	317¼	117½	235



ELEVATION



SECTION ON A-A

APPROVED May 21, 1928
E E Thompson BRIDGE ENGINEER
APPROVED May 21, 1928
Burd Brown CHIEF ENGINEER

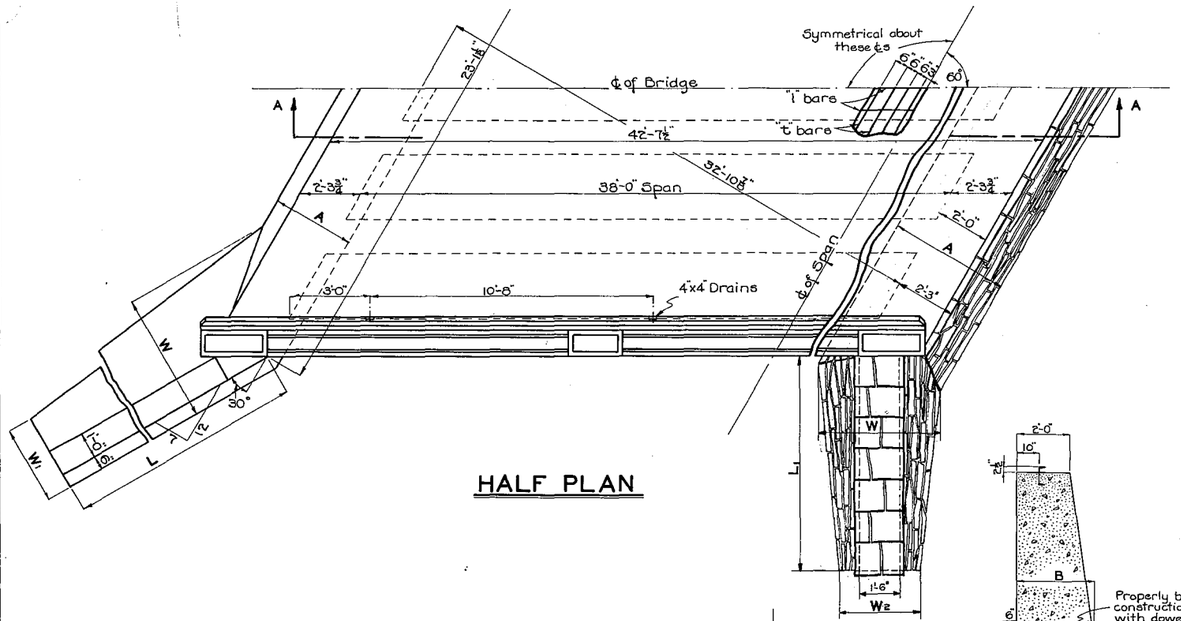
COMMONWEALTH OF PENNSYLVANIA.
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION.
STANDARD
REINFORCED CONCRETE BRIDGE
SPAN 38 FT. ROADWAY 18 FT.
SKEW 75° L.

SCALE ¾"&1"=1'-0" 638 B-75

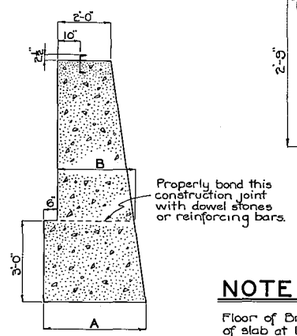
Made by W.B.D.
Checked by J.E.M. 5-8-28.

IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

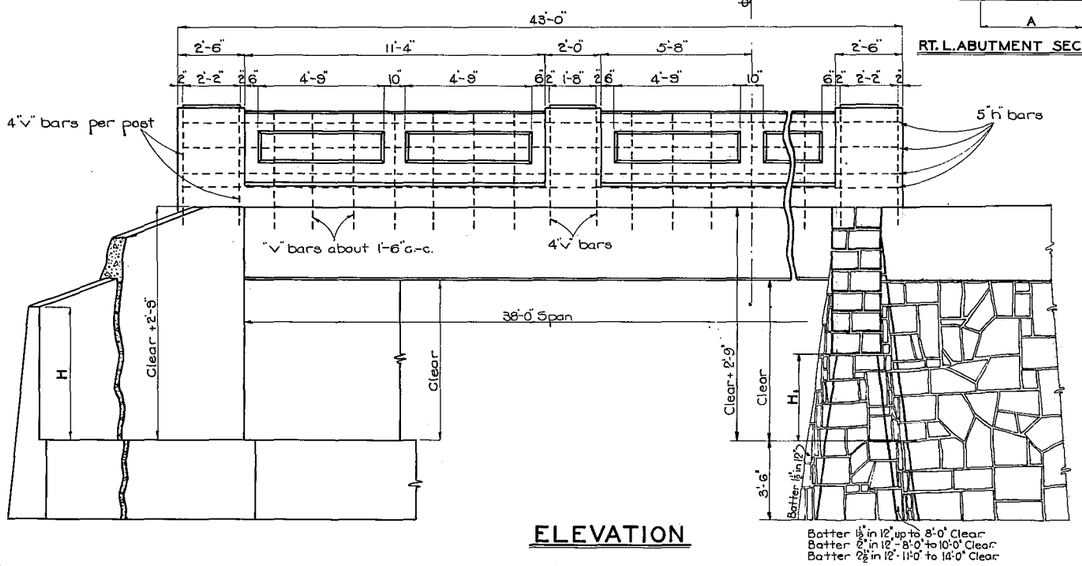
Revised 7-23-32 Stone Masonry W.C.T.



HALF PLAN



RT. L. ABUTMENT SECTION



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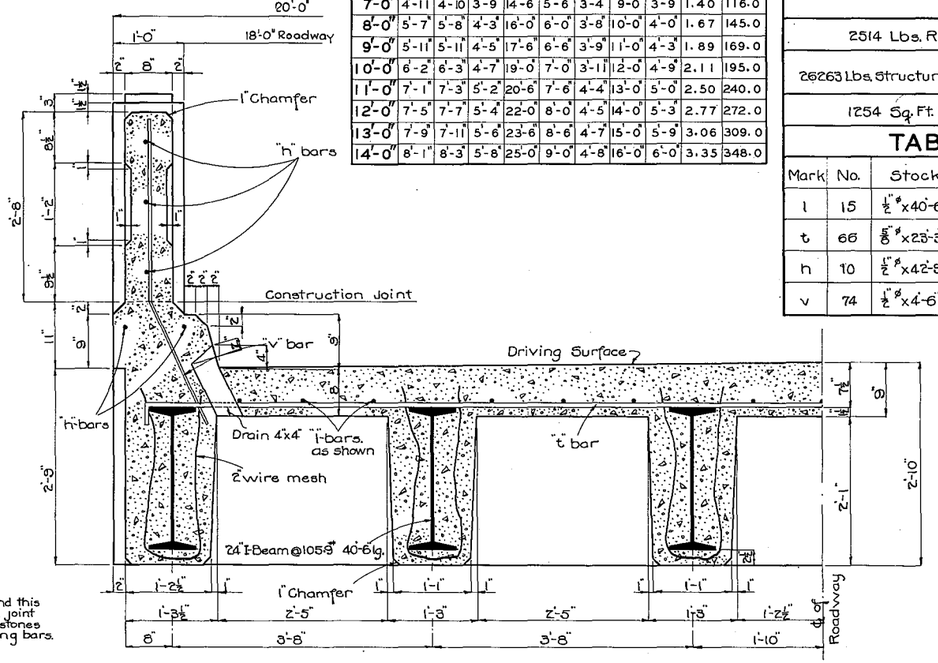
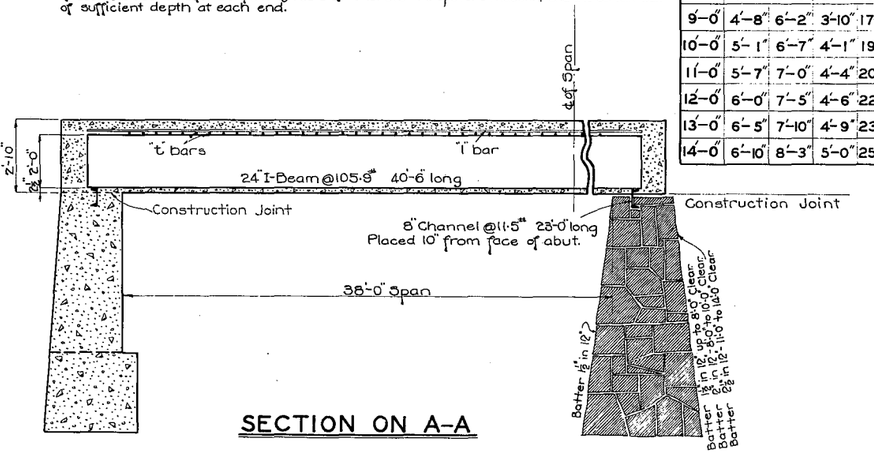


BEAMS & PARAPET DETAILS

NOTE

Floor of Bridge shall conform to grade of road. On level grade, slope top of slab at least ½ per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving, use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.



SECTION ON A-A

APPROVED May 21, 1928
EEPmaudsley BRIDGE ENGINEER
APPROVED May 21, 1928
Samuel Lewis CHIEF ENGINEER

Made by. W.B.D.
Checked by. W.A.H. 4-12-28.

STONE ABUTMENTS & WINGS

CLEAR	A	W	W1	L	H	W2	L1	H1	CU YDS. PER FOOT ONE ABUT.	TOTAL CU YDS. TWO ABUT.
6'-0"	4'-8"	4'-7"	3'-8"	13'-0"	5'-0"	3'-2"	8'-0"	3'-3"	1.22	97.0
7'-0"	4'-11"	4'-10"	3'-9"	14'-6"	5'-6"	3'-4"	9'-0"	3'-9"	1.40	116.0
8'-0"	5'-7"	5'-8"	4'-3"	16'-0"	6'-0"	3'-8"	10'-0"	4'-0"	1.67	145.0
9'-0"	5'-11"	5'-11"	4'-5"	17'-6"	6'-6"	3'-9"	11'-0"	4'-3"	1.89	169.0
10'-0"	6'-2"	6'-3"	4'-7"	19'-0"	7'-0"	3'-11"	12'-0"	4'-9"	2.11	195.0
11'-0"	7'-1"	7'-3"	5'-2"	20'-6"	7'-6"	4'-4"	13'-0"	5'-0"	2.50	240.0
12'-0"	7'-5"	7'-7"	5'-4"	22'-0"	8'-0"	4'-5"	14'-0"	5'-3"	2.77	272.0
13'-0"	7'-9"	7'-11"	5'-6"	23'-6"	8'-6"	4'-7"	15'-0"	5'-9"	3.06	309.0
14'-0"	8'-1"	8'-3"	5'-8"	25'-0"	9'-0"	4'-8"	16'-0"	6'-0"	3.35	348.0

MATERIAL REQUIRED

603 Cu. Yds. Class "A" Con.	93¼ Bbls. Cement. 27⅞ Cu. Yds. Sand. 55¼ Cu. Yds. Stone.
2514 Lbs. Reinforcing Bars.	
26263 Lbs. Structural Steel	6-24" I-Beams @ 105.8# 40'-6" long. 2-8" Channels @ 11.5# 23'-0" long.
1254 Sq. Ft. 2" Wire Mesh	

TABLE OF BARS

Mark	No.	Stock	Description
l	15	½" ♯ x 40'-6"	Longitudinal in Slab.
t	66	⅝" ♯ x 23'-3"	Transverse in Slab.
h	10	½" ♯ x 42'-8"	Horizontal in Parapet.
v	74	½" ♯ x 4'-6"	Vertical in Parapet.

ABUTMENTS & WINGS

CLEAR	A	W	W1	L	H	W2	L1	H1	B	Cu. Yds. in Con.	Bbls. Cement	Cu. Yds. Sand	Cu. Yds. Stone
6'-0"	3'-1"	4'-10"	3'-1"	13'-0"	5'-0"	2'-1"	8'-0"	3'-3"	2'-5"	69.8	90½	33½	67¼
7'-0"	3'-8"	5'-4"	3'-4"	14'-6"	5'-6"	2'-5"	9'-0"	3'-9"	2'-9½"	88.0	114¼	42½	84¾
8'-0"	4'-2"	5'-9"	3'-7"	16'-0"	6'-0"	2'-7"	10'-0"	4'-0"	3'-2½"	108.2	140½	52	104
9'-0"	4'-8"	6'-2"	3'-10"	17'-6"	6'-6"	2'-8"	11'-0"	4'-3"	3'-7"	130.4	169¼	62¾	125½
10'-0"	5'-1"	6'-7"	4'-1"	19'-0"	7'-0"	3'-0"	12'-0"	4'-9"	4'-0"	154.7	200¾	74½	148¾
11'-0"	5'-7"	7'-0"	4'-4"	20'-6"	7'-6"	3'-1"	13'-0"	5'-0"	4'-5"	183.6	238¼	88¼	176¾
12'-0"	6'-0"	7'-5"	4'-6"	22'-0"	8'-0"	3'-3"	14'-0"	5'-3"	4'-9½"	210.8	273½	101½	202¾
13'-0"	6'-5"	7'-10"	4'-9"	23'-6"	8'-6"	3'-6"	15'-0"	5'-9"	5'-2½"	243.8	316½	117¼	234½
14'-0"	6'-10"	8'-3"	5'-0"	25'-0"	9'-0"	3'-7"	16'-0"	6'-0"	5'-7"	280.0	363½	134¾	269¼

COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION
STANDARD

REINFORCED CONCRETE BRIDGE

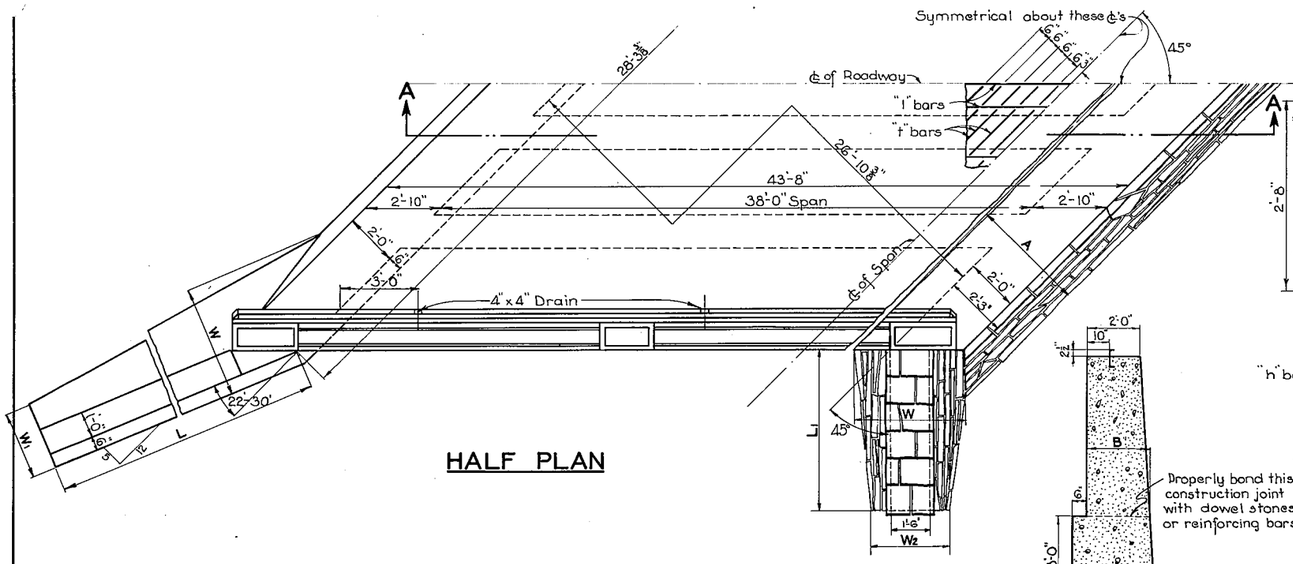
SPAN 38 FT. ROADWAY 18 FT.
SKEW 60° L.

SCALE ¾" & 1"=1'-0"

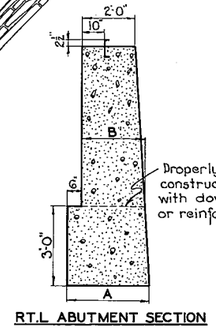
638 B-60

"KEYSTONE" ENGINEERING CO. & B.C.CO., N.Y.

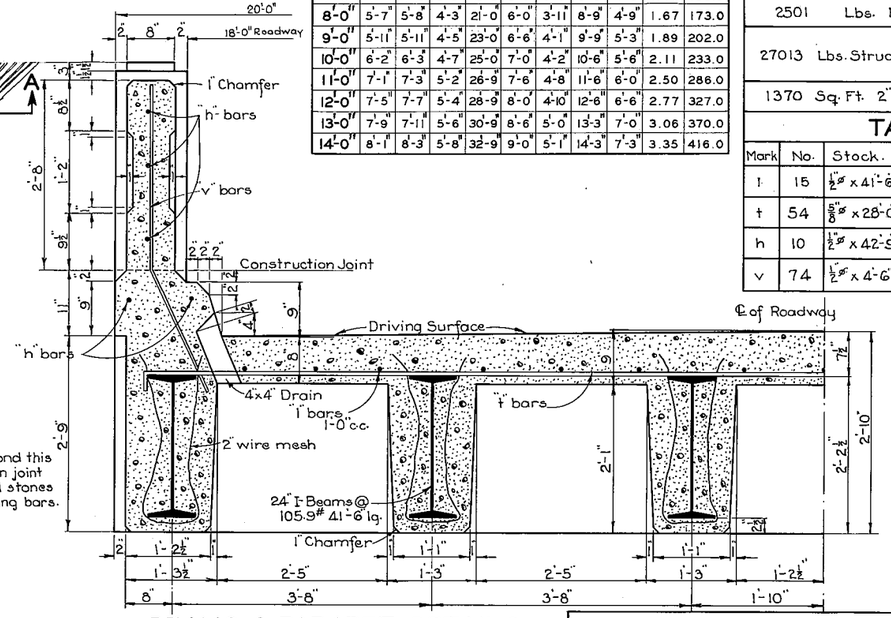
Revised 7-23-32 Stone Masonry W.C.T.



HALF PLAN



RT.L ABUTMENT SECTION



BEAMS & PARAPET DETAILS

STONE ABUTMENTS & WINGS

CLEAR	A	W	W1	L	H	W2	L1	H1	CU. YDS. PER FOOT ONE ABUT.	TOTAL CU YDS. TWO ABUT.
6'-0"	4'-8"	4'-7"	3'-8"	17'-0"	5'-0"	3'-5"	7'-0"	4'-0"	1.22	116.0
7'-0"	4'-11"	4'-10"	3'-9"	19'-0"	5'-6"	3'-6"	8'-0"	4'-6"	1.40	139.0
8'-0"	5'-7"	5'-8"	4'-3"	21'-0"	6'-0"	3'-11"	8'-9"	4'-9"	1.67	173.0
9'-0"	5'-11"	5'-11"	4'-5"	23'-0"	6'-6"	4'-1"	9'-9"	5'-3"	1.89	202.0
10'-0"	6'-2"	6'-3"	4'-7"	25'-0"	7'-0"	4'-2"	10'-6"	5'-6"	2.11	233.0
11'-0"	7'-1"	7'-3"	5'-2"	26'-9"	7'-6"	4'-8"	11'-6"	6'-0"	2.50	286.0
12'-0"	7'-5"	7'-7"	5'-4"	28'-9"	8'-0"	4'-10"	12'-6"	6'-6"	2.77	327.0
13'-0"	7'-9"	7'-11"	5'-6"	30'-9"	8'-6"	5'-0"	13'-3"	7'-0"	3.06	370.0
14'-0"	8'-1"	8'-3"	5'-8"	32'-9"	9'-0"	5'-1"	14'-3"	7'-3"	3.35	416.0

MATERIAL REQUIRED

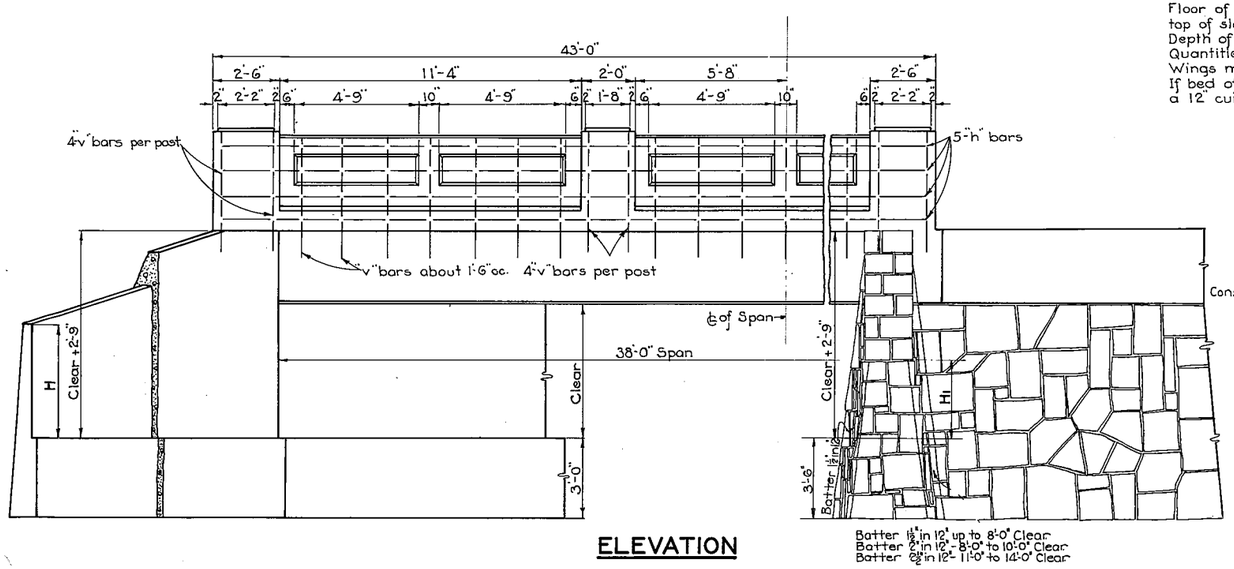
62½ Cu. Yds. Class "A" Concrete	96¾ Bbls. Cement 28¾ Cu. Yds. Sand 57½ Cu. Yds. Stone
2501 Lbs. Reinforcing Bars.	
27013 Lbs. Structural Steel.	6-24" I beams @ 105.9# 41'-6" long 2-8" Channels @ 11.5# 28'-0" long
1370 Sq. Ft. 2" Wire Mesh	

TABLE OF BARS

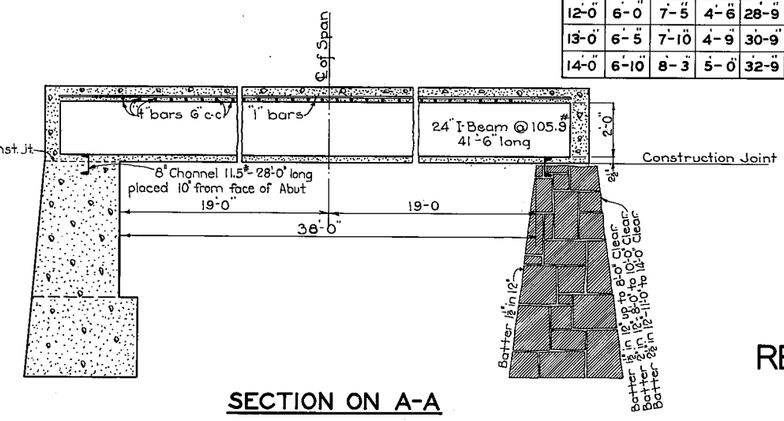
Mark	No.	Stock.	Description
l	15	½"ø x 41'-6"	Longitudinal in Slab
t	54	0.85"ø x 28'-0"	Transverse in Slab.
h	10	½"ø x 42'-9"	Horizontal in Parapet.
v	74	½"ø x 4'-6"	Vertical in Parapet.

NOTE

Floor of bridge shall conform to grdde of road. On level grade slope top of slab at least ⅛ per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.



ELEVATION



SECTION ON A-A

ABUTMENTS & WINGS

CLEAR	A	W	W1	L	H	W2	L1	H1	B	Cu. Yds. Con.	Bbls. Cement	Cu. Yds. Sand	Cu. Yds. Stone
6'-0"	3'-1"	4'-10"	3'-1"	17'-0"	5'-0"	2'-7"	7'-0"	4'-0"	2'-5"	85.3	110¼	41	82
7'-0"	3'-8"	5'-4"	3'-4"	19'-0"	5'-6"	2'-10"	8'-0"	4'-6"	2'-9½"	107.8	140	51¾	103¾
8'-0"	4'-2"	5'-9"	3'-7"	21'-0"	6'-0"	3'-0"	8'-9"	4'-9"	3'-2½"	131.6	170¾	63¼	126½
9'-0"	4'-8"	6'-2"	3'-10"	23'-0"	6'-6"	3'-3"	9'-9"	5'-3"	3'-7"	158.8	206	76½	152¾
10'-0"	5'-1"	6'-7"	4'-1"	25'-0"	7'-0"	3'-4"	10'-6"	5'-6"	4'-0"	187.1	242¾	90	180
11'-0"	5'-7"	7'-0"	4'-4"	26'-9"	7'-6"	3'-7"	11'-6"	6'-0"	4'-5"	220.3	286	106	212
12'-0"	6'-0"	7'-5"	4'-6"	28'-9"	8'-0"	3'-10"	12'-6"	6'-6"	4'-9½"	256.2	332½	123¼	246½
13'-0"	6'-5"	7'-10"	4'-9"	30'-9"	8'-6"	4'-1"	13'-3"	7'-0"	5'-2½"	294.7	382½	141¾	283½
14'-0"	6'-10"	8'-3"	5'-0"	32'-9"	9'-0"	4'-2"	14'-3"	7'-3"	5'-7"	338.	438¾	162½	325¼

APPROVED May 29, 1928
E E Moundour BRIDGE ENGINEER
APPROVED
CHIEF ENGINEER
COMMONWEALTH OF PENNSYLVANIA.

DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION.
STANDARD
REINFORCED CONCRETE BRIDGE
SPAN 38 FT. ROADWAY 18 FT.
SKEW 45L

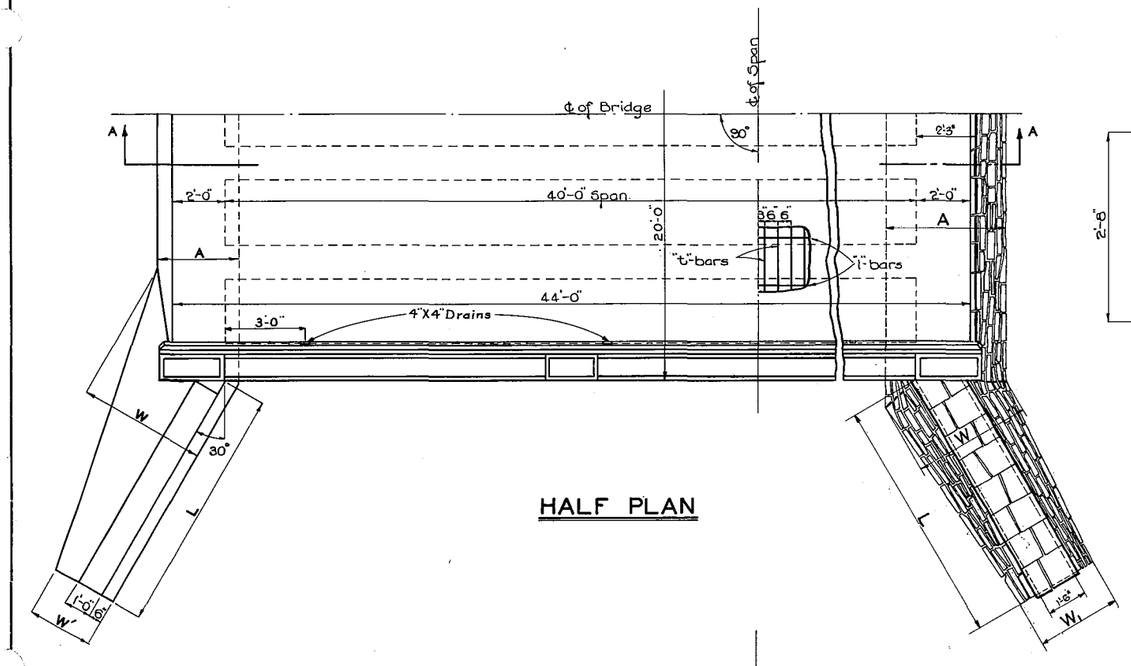
638B-45

SCALE ⅜" & 1" = 1'-0"

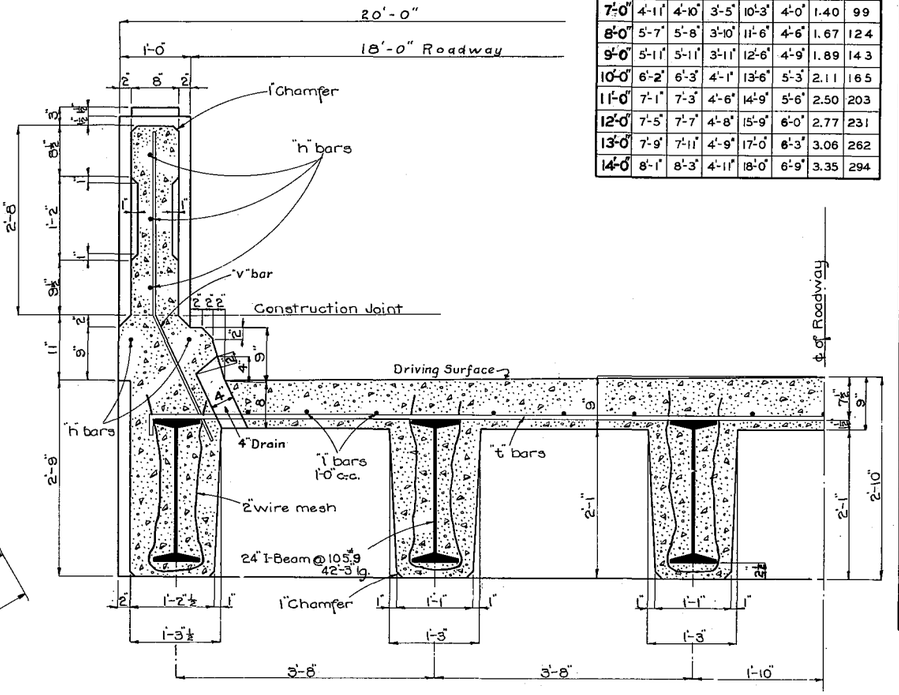
MADE BY J.E.M
Checked by W.T.G 5-28-28.

IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

Revised 5-25-28 W.B.D.
" 7-23-32 W.C.T. Stone Masonry.



HALF PLAN

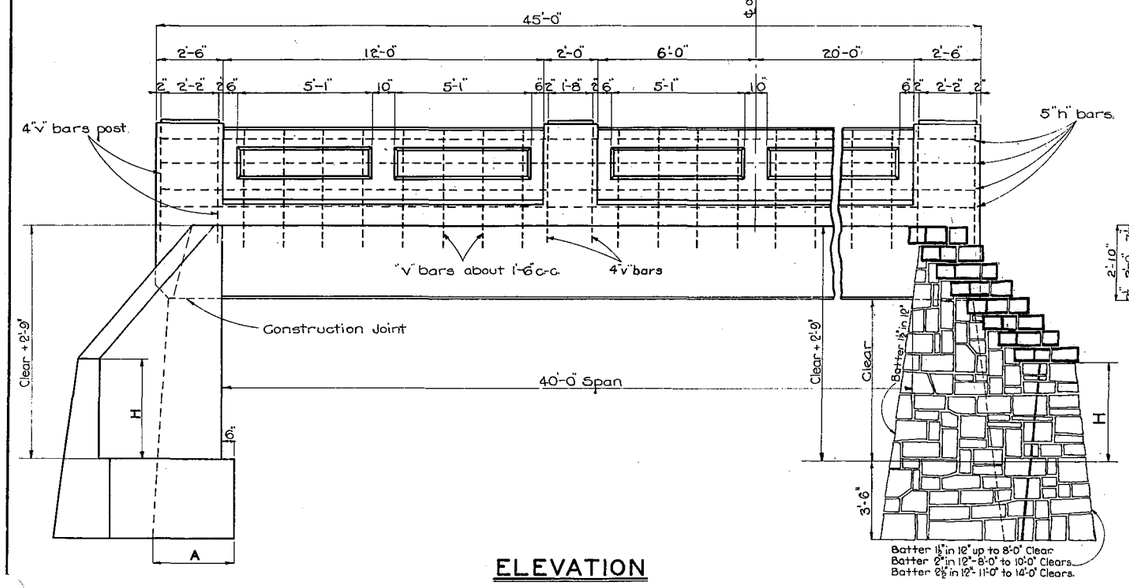


BEAMS & PARAPET DETAILS

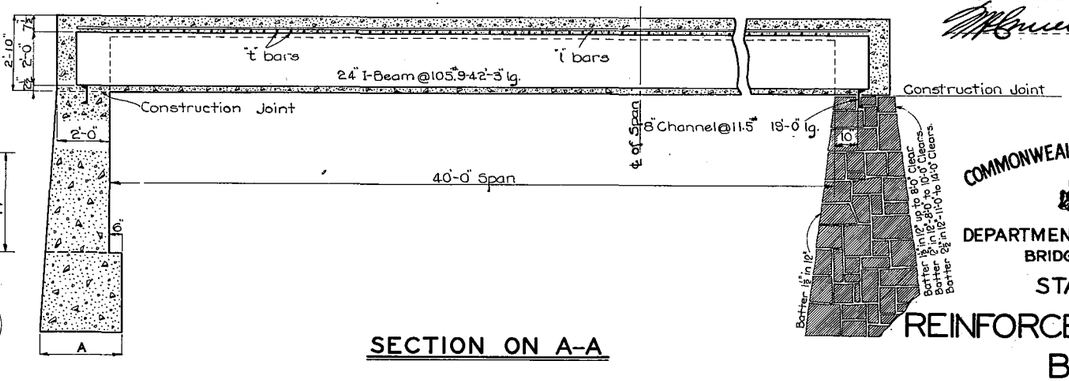
STONE ABUTMENTS & WINGS							
CLEAR	A	W	W1	L	H	CU.YDS. PER FOOT (ONE ABUT.)	TOTAL CU.YDS. (TWO ABUTS.)
6'-0"	4'-8"	4'-7"	3'-4"	9'-3"	3'-9"	1.22	83
7'-0"	4'-11"	4'-10"	3'-5"	10'-3"	4'-0"	1.40	99
8'-0"	5'-7"	5'-8"	3'-10"	11'-6"	4'-6"	1.67	124
9'-0"	5'-11"	5'-11"	3'-11"	12'-6"	4'-9"	1.89	143
10'-0"	6'-2"	6'-3"	4'-1"	13'-6"	5'-3"	2.11	165
11'-0"	7'-1"	7'-3"	4'-6"	14'-9"	5'-6"	2.50	203
12'-0"	7'-5"	7'-7"	4'-8"	15'-9"	6'-0"	2.77	231
13'-0"	7'-9"	7'-11"	4'-9"	17'-0"	6'-3"	3.06	262
14'-0"	8'-1"	8'-3"	4'-11"	18'-0"	6'-9"	3.35	294

NOTE

Floor of Bridge shall conform to grade of road. On level grade, slope top of slab at least 1/16" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving, use 6" of concrete or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.



ELEVATION



SECTION ON A-A

MATERIAL REQUIRED

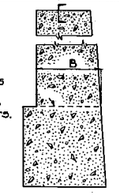
61.5 Cu. Yds. "A" Concrete.	95 ♯ Bbls. Cement. 28 ♯ Cu. Yds. Sand. 56 ♯ Cu. Yds. Stone.
2590 Lbs. Reinforcing Bars.	
27283 Lbs. Structural Steel.	6-24" I-Beams @ 105.9 42'-3" lg. 2-8" Channels @ 11.5 18'-0" lg.
1320 Sq. Ft. 2" Wire Mesh.	

TABLE OF BARS

Mark.	No.	Stock.	Description.
l	15	1/2" ϕ x 42'-3"	Longitudinal in Slab.
t	80	5/8" ϕ x 18'-6"	Transverse in Slab.
h	10	1/2" ϕ x 44'-9"	Horizontal in Parapet.
v	80	1/2" ϕ x 4'-6"	Vertical in Parapet.

ABUTMENTS & WINGS

CLEAR	A	W	W'	L	H	Cu.Yds. Con.	Bbls. Cement	Cu.Yds. Sand	Cu.Yds. Stone.
6'-0"	3'-1"	4'-10"	2'-5"	9'-3"	3'-9"	59.0	76½	28½	56¾
7'-0"	3'-8"	5'-4"	2'-7"	10'-3"	4'-0"	73.0	94¾	35¼	70¼
8'-0"	4'-2"	5'-9"	2'-10"	11'-6"	4'-6"	90.0	117	43¾	86½
9'-0"	4'-8"	6'-2"	3'-0"	12'-6"	4'-9"	108.5	141	52¼	104½
10'-0"	5'-1"	6'-7"	3'-3"	13'-6"	5'-3"	128.3	166½	61¾	123½
11'-0"	5'-7"	7'-0"	3'-4"	14'-9"	5'-6"	150.7	195½	72½	145
12'-0"	6'-0"	7'-5"	3'-7"	15'-9"	6'-0"	175.0	227	84½	169
13'-0"	6'-5"	7'-10"	3'-9"	17'-0"	6'-3"	202.5	263	97½	195
14'-0"	6'-10"	8'-3"	3'-11"	18'-0"	6'-9"	230.3	299	110¾	221½



Properly bond this construction joint with dowel stones or reinforcing bars.

CLEAR	B
6'-0"	2'-5"
7'-0"	2'-9⅛"
8'-0"	3'-2⅛"
9'-0"	3'-7"
10'-0"	4'-0"
11'-0"	4'-5"
12'-0"	4'-9⅛"
13'-0"	5'-2⅛"
14'-0"	5'-7"

APPROVED April 6, 1927
E. E. Brandow BRIDGE ENGINEER

APPROVED
ENG. EXECUTIVE AND DEP. SEC. OF HIGHWAYS.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION
STANDARD

REINFORCED CONCRETE BRIDGE

SPAN 40 FT. ROADWAY 18 FT.

Made by. W.B.D.
Checked by. R.J.W. 4-4-27

SCALE 3/8" & 1'-1'-0"

640B

"IMPERIAL" TRACING CLOTH K. & E. CO., N. Y.

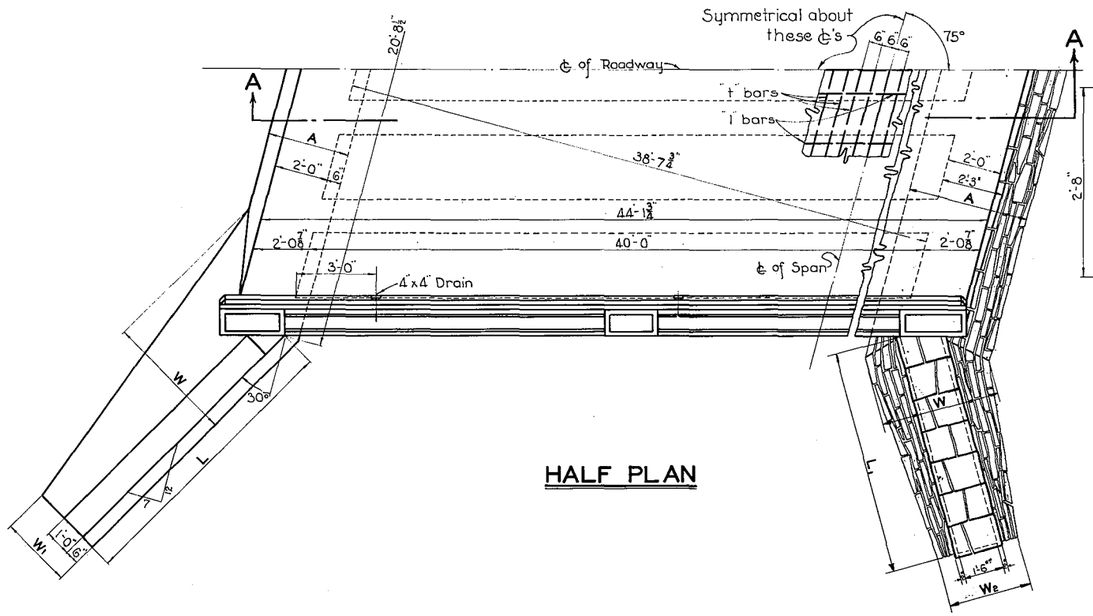
Revised 7-23-32 Stone Masonry W.C.T.

MATERIAL REQUIRED

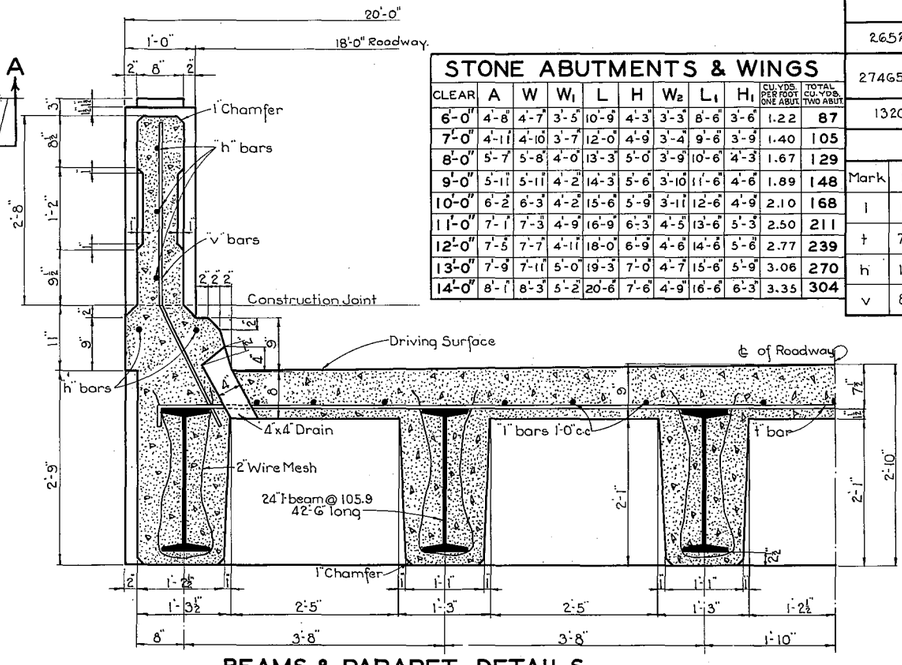
61.9	Cu. Yds. Class "A" Concrete	95¾	Bbls Cement
		28½	Cu. Yds Sand
		56¾	Cu. Yds Stone
2652	Lbs. Reinforcing Steel Bars		
27465	Lbs. Structural Steel	6-24" I-beams @ 105.9# 42'-6" lg.	
		2-8" Channels @ 11.5# 20'-0" lg.	
1320	Sq. Ft. 2" Wire Mesh		

TABLE OF BARS

Mark	No	Stock	Description
l	15	½" x 42'-6"	Longitudinal in Slab
t	77	⅝" x 21'-0"	Transverse in Slab.
h	10	½ x 44'-9"	Horizontal in Parapet
v	80	½ x 4'-6"	Vertical in Parapet.

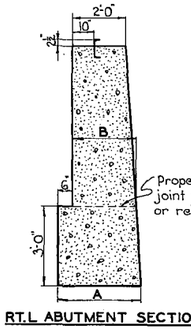


HALF PLAN



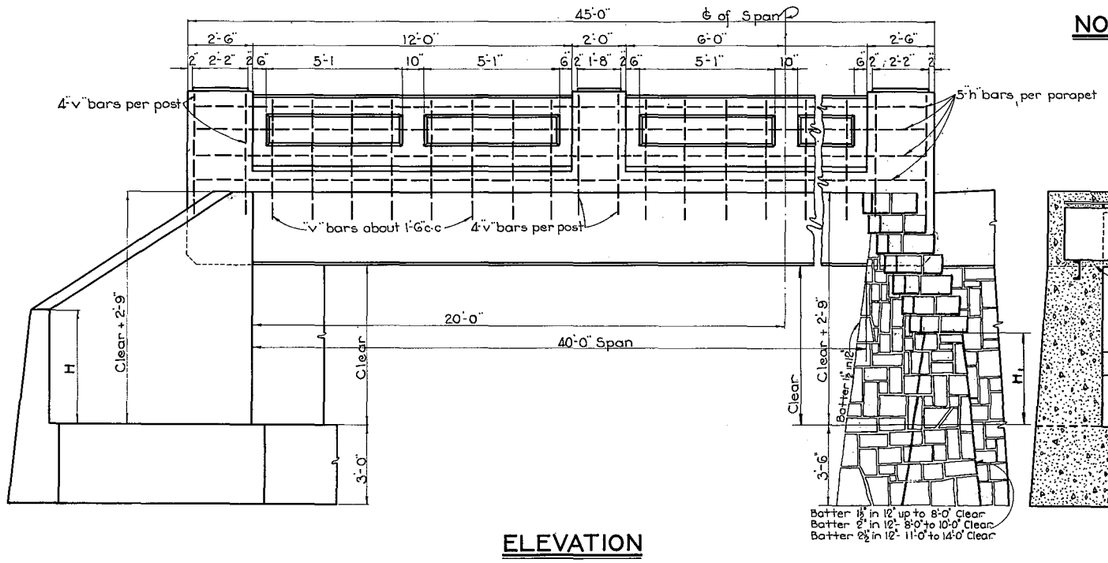
STONE ABUTMENTS & WINGS

CLEAR	A	W	W1	L	H	W2	L1	H1	CU. YDS. PER FOOT ONE ABUT.	TOTAL CU. YDS. TWO ABUT.
6'-0"	4'-8"	4'-7"	3'-5"	10'-9"	4'-3"	3'-3"	8'-6"	3'-6"	1.22	87
7'-0"	4'-11"	4'-10"	3'-7"	12'-0"	4'-9"	3'-4"	9'-6"	3'-9"	1.40	105
8'-0"	5'-7"	5'-8"	4'-0"	13'-3"	5'-0"	3'-9"	10'-6"	4'-3"	1.67	129
9'-0"	5'-11"	5'-11"	4'-2"	14'-3"	5'-6"	3'-10"	11'-6"	4'-6"	1.89	148
10'-0"	6'-2"	6'-3"	4'-2"	15'-6"	5'-9"	3'-11"	12'-6"	4'-9"	2.10	168
11'-0"	7'-1"	7'-3"	4'-9"	16'-9"	6'-3"	4'-5"	13'-6"	5'-3"	2.50	211
12'-0"	7'-5"	7'-7"	4'-11"	18'-0"	6'-9"	4'-6"	14'-6"	5'-6"	2.77	239
13'-0"	7'-9"	7'-11"	5'-0"	19'-3"	7'-0"	4'-7"	15'-6"	5'-9"	3.06	270
14'-0"	8'-1"	8'-3"	5'-2"	20'-6"	7'-6"	4'-9"	16'-6"	6'-3"	3.35	304



RT. L. ABUTMENT SECTION

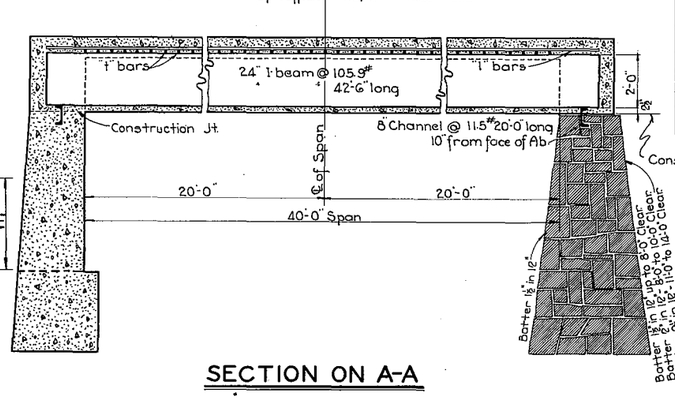
BEAMS & PARAPET DETAILS



ELEVATION

NOTE

Floor of bridge shall conform to grade of road. On level grade slope top of slab at least ¼" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving use 6" of conc. or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.



SECTION ON A-A

ABUTMENTS & WINGS

CLEAR	A	W	W1	L	H	W2	L1	H1	B	Cu.Yds. B.Con.	Bbls. Cement	Cu.Yds. Sand	Cu.Yds. Stone
6'-0"	3'-1"	4'-10"	2'-8"	10'-9"	4'-3"	2'-3"	8'-6"	3'-6"	2'-5"	61.8	80¼	29¾	59½
7'-0"	3'-8"	5'-4"	3'-0"	12'-0"	4'-9"	2'-5"	9'-6"	3'-9"	2'-9½"	79.4	103	38¼	76½
8'-0"	4'-2"	5'-9"	3'-1"	13'-3"	5'-0"	2'-8"	10'-6"	4'-3"	3'-2½"	94.5	122¾	45½	91
9'-0"	4'-8"	6'-2"	3'-4"	14'-3"	5'-6"	2'-10"	11'-6"	4'-6"	3'-7"	114.5	148¾	55	110¼
10'-0"	5'-1"	6'-7"	3'-6"	15'-6"	5'-9"	3'-0"	12'-6"	4'-9"	4'-0"	134.0	174	64½	129
11'-0"	5'-7"	7'-0"	3'-9"	16'-9"	6'-3"	3'-3"	13'-6"	5'-3"	4'-5"	161.2	209¼	77½	155
12'-0"	6'-0"	7'-4"	3'-11"	18'-0"	6'-9"	3'-4"	14'-6"	5'-6"	4'-9½"	183.6	238¼	88¼	176¾
13'-0"	6'-5"	7'-10"	4'-1"	19'-3"	7'-0"	3'-6"	15'-6"	5'-9"	5'-2½"	211.1	274	101½	203
14'-0"	6'-11"	8'-3"	4'-4"	20'-6"	7'-6"	3'-9"	16'-6"	6'-3"	5'-7"	244.4	317¼	117½	235

APPROVED May 29, 1928
E E Brandow BRIDGE ENGINEER
APPROVED
Sam Reeves CHIEF ENGINEER

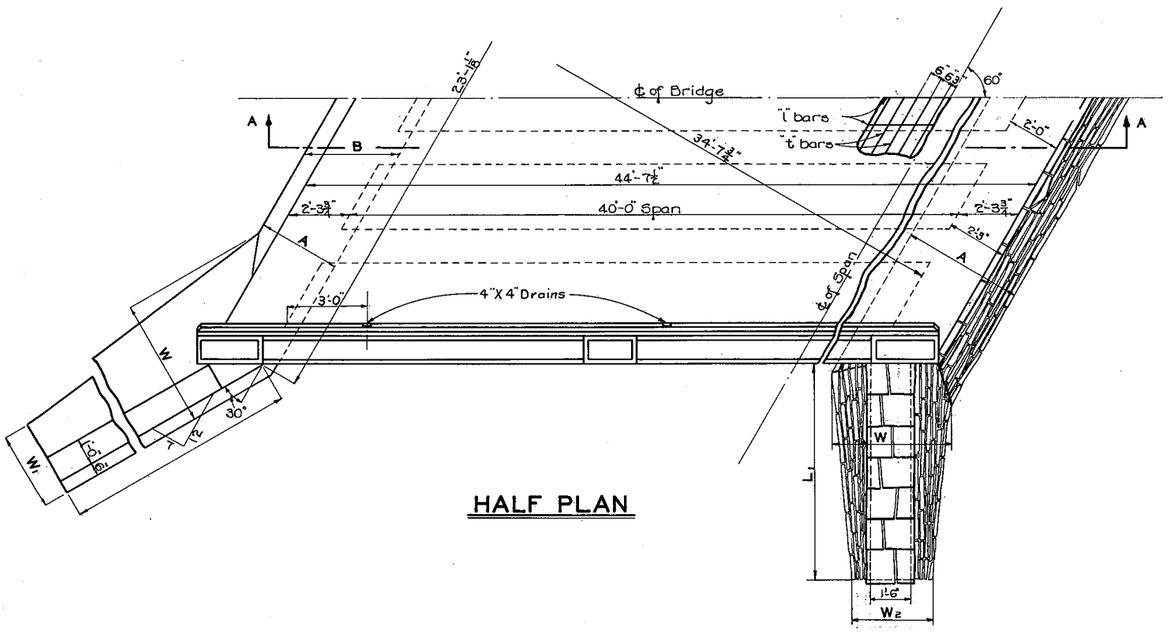
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION.
STANDARD
REINFORCED CONCRETE BRIDGE
SPAN 40 FT. ROADWAY 18 FT.
SKEW 75° L.

SCALE ½" & 1" = 1'-0" 640-B-75

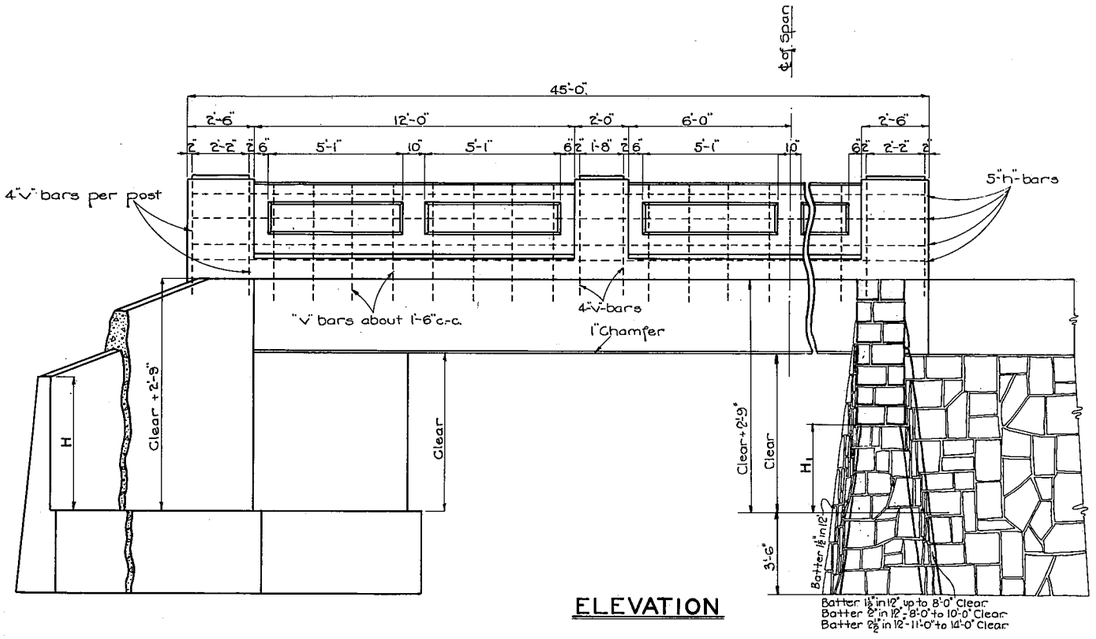
MADE BY J.E.M.
CHECKED BY W.C.T. 5-28-28

IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

Revised 5-25-28 W.B.D.
7-23-32 Stone Masonry W.C.T.



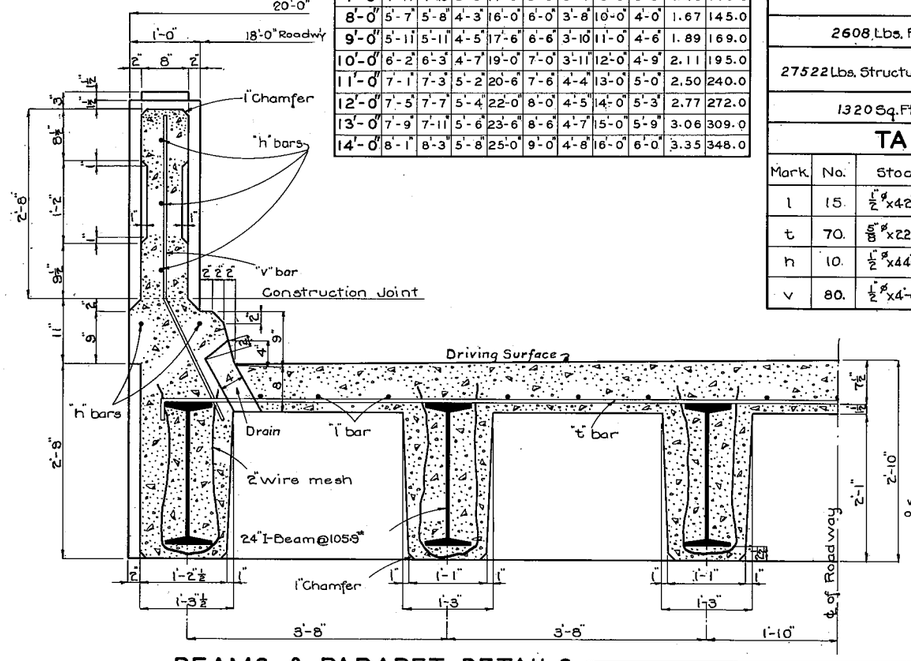
HALF PLAN

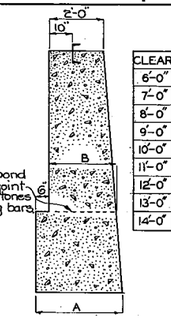


ELEVATION

Made by W.B.D.
Checked by P.C.W. 6/27/27

STONE ABUTMENTS & WINGS										
CLEAR	A	W	W1	L	H	W2	L1	H1	CU. YDS PER FOOT ONE ABUT	TOTAL CU. YDS TWO ABUT
6'-0"	4'-8"	4'-7"	3'-8"	13'-0"	5'-0"	3'-2"	8'-0"	3'-3"	1.22	97.0
7'-0"	4'-11"	4'-10"	3'-9"	14'-6"	5'-6"	3'-4"	9'-0"	3'-9"	1.40	116.0
8'-0"	5'-7"	5'-8"	4'-3"	16'-0"	6'-0"	3'-8"	10'-0"	4'-0"	1.67	145.0
9'-0"	5'-11"	5'-11"	4'-5"	17'-6"	6'-6"	3'-10"	11'-0"	4'-6"	1.89	169.0
10'-0"	6'-2"	6'-3"	4'-7"	19'-0"	7'-0"	3'-11"	12'-0"	4'-9"	2.11	195.0
11'-0"	7'-1"	7'-3"	5'-2"	20'-6"	7'-6"	4'-4"	13'-0"	5'-0"	2.50	240.0
12'-0"	7'-5"	7'-7"	5'-4"	22'-0"	8'-0"	4'-5"	14'-0"	5'-3"	2.77	272.0
13'-0"	7'-9"	7'-11"	5'-6"	23'-6"	8'-6"	4'-7"	15'-0"	5'-9"	3.06	309.0
14'-0"	8'-1"	8'-3"	5'-8"	25'-0"	9'-0"	4'-8"	16'-0"	6'-0"	3.35	348.0





CLEAR	B
6'-0"	2'-5"
7'-0"	2'-9½"
8'-0"	3'-2½"
9'-0"	3'-7"
10'-0"	4'-0"
11'-0"	4'-5"
12'-0"	4'-9½"
13'-0"	5'-2½"
14'-0"	5'-7"

RT. L. ABUTMENT SECTION

MATERIAL REQUIRED

63 Cu. Yds. "A" Concrete.	97½ Bbls. Cement. 29 Cu. Yds. Sand. 57¾ Cu. Yds. Stone.
2608 Lbs. Reinforcing Bars.	
27522 Lbs. Structural Steel	6-24"I-Beam@105.8# 42'-6" long. 2-8"Channels@11.5# 22'-6" long.
13205q. Ft. 2"Wire Mesh.	

TABLE OF BARS

Mark.	No.	Stock.	Description.
l	15.	½"ø x42'-6"	Longitudinal in Slab.
t	70.	⅝"ø x22'-6"	Transverse in Slab.
h	10.	½"ø x44'-8"	Horizontal in Parapet.
v	80.	½"ø x4'-6"	Vertical in Parapet.

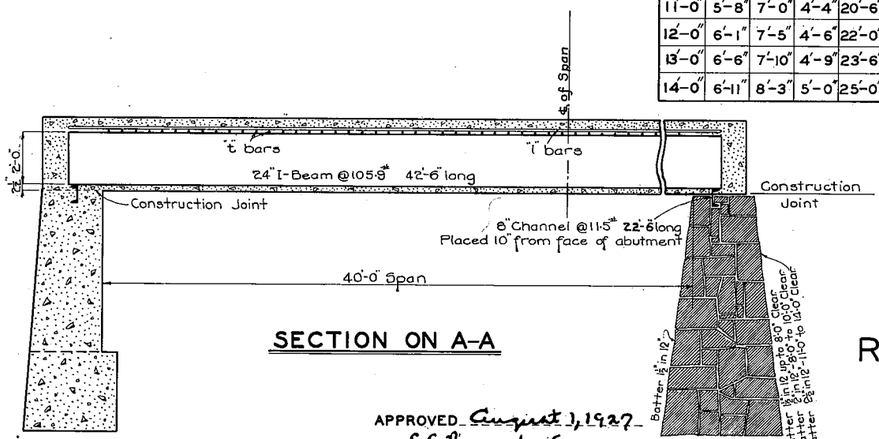
BEAMS & PARAPET DETAILS

NOTE

Floor of Bridge shall conform to grade of road. On level grade, slope top of slab at least ½" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving, use 6" of conc. or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.

ABUTMENTS & WINGS

CLEAR	A	W	W1	L	H	W2	L1	H1	B	Cu. Yds. B. Con.	Bbls. Cement	Cu. Yds. Sand.	Cu. Yds. Stone.
6'-0"	3'-3"	4'-11"	3'-1"	13'-0"	5'-0"	2'-1"	8'-0"	3'-3"	3'-9"	69.8	90½	33½	67¼
7'-0"	3'-9"	5'-4"	3'-4"	14'-6"	5'-6"	2'-5"	9'-0"	3'-9"	4'-4"	88.0	114¼	42½	84¾
8'-0"	4'-3"	5'-9"	3'-7"	16'-0"	6'-0"	2'-7"	10'-0"	4'-0"	4'-10⅞"	108.2	140½	52	104
9'-0"	4'-9"	6'-2"	3'-10"	17'-6"	6'-6"	2'-10"	11'-0"	4'-6"	5'-5⅜"	130.4	169¼	62¾	125½
10'-0"	5'-2"	6'-7"	4'-1"	19'-0"	7'-0"	3'-0"	12'-0"	4'-9"	5'-11⅝"	154.7	200¾	74½	148¾
11'-0"	5'-8"	7'-0"	4'-4"	20'-6"	7'-6"	3'-1"	13'-0"	5'-0"	6'-6½"	183.6	238¼	88¼	171¾
12'-0"	6'-1"	7'-5"	4'-6"	22'-0"	8'-0"	3'-3"	14'-0"	5'-3"	7'-0⅜"	210.8	273½	101½	202¾
13'-0"	6'-6"	7'-10"	4'-9"	23'-6"	8'-6"	3'-6"	15'-0"	5'-9"	7'-6"	243.8	316½	117¼	234½
14'-0"	6'-11"	8'-3"	5'-0"	25'-0"	9'-0"	3'-7"	16'-0"	6'-0"	8'-0"	280.0	363½	134¾	269¼



SECTION ON A-A

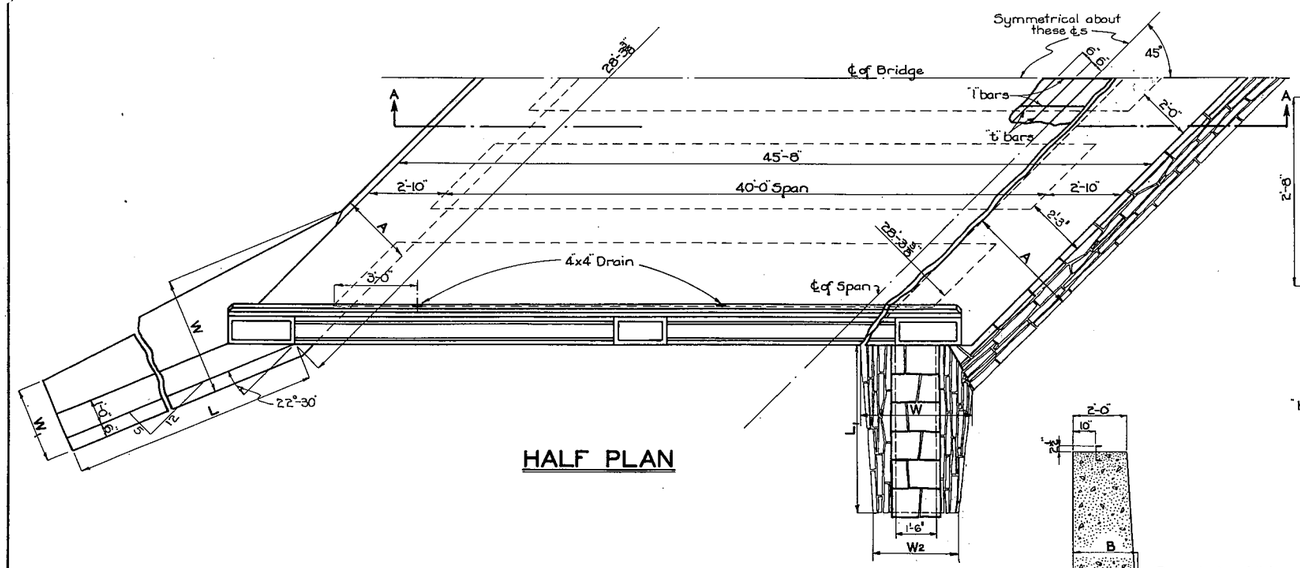
APPROVED August 1, 1927
E. E. Brandon BRIDGE ENGINEER
APPROVED
Sam Rivers CHIEF ENGINEER

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION
STANDARD
REINFORCED CONCRETE BRIDGE
SPAN 40 FT. ROADWAY 18 FT.
SKEW 60° L.

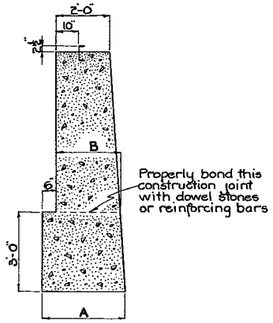
SCALE ⅜" & 1"=1'-0"

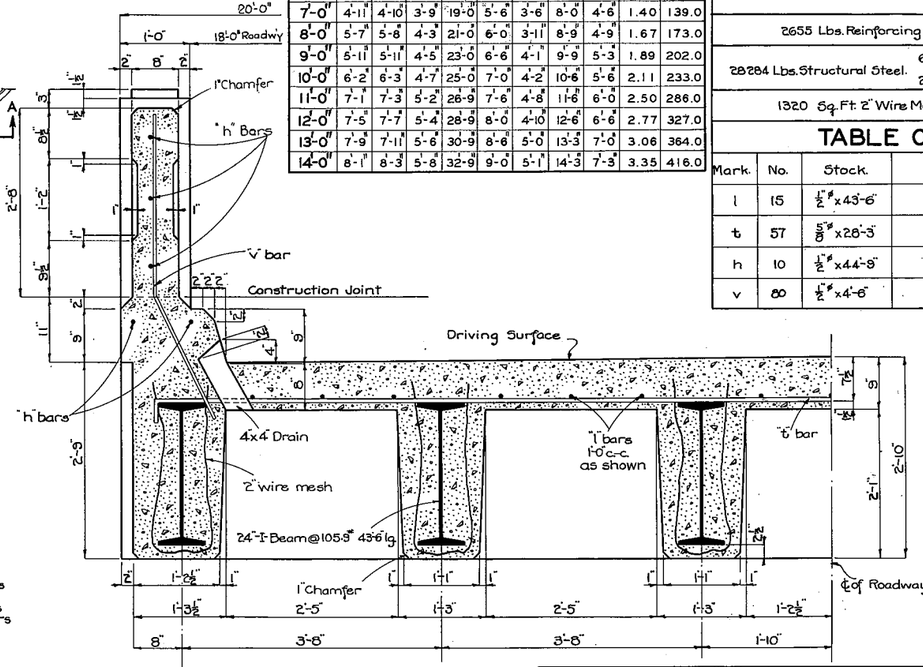
640B-60

Revised 7-23-32 Stone Masonry W.C.T.



HALF PLAN





BEAMS & PARAPET DETAILS

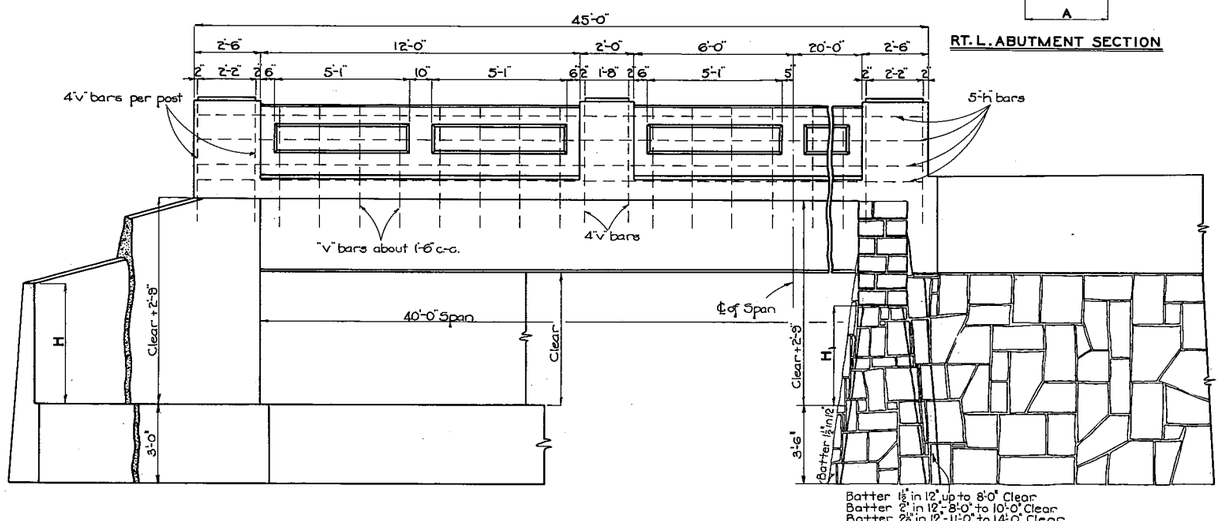
STONE ABUTMENTS & WINGS										
CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	CU. YDS. PER FOOT ONE ABUT.	TOTAL CU. YDS. TWO ABUT.
6'-0"	4'-8"	4'-7"	3'-8"	17'-0"	5'-0"	3'-5"	7'-0"	4'-0"	1.22	116.0
7'-0"	4'-11"	4'-10"	3'-9"	19'-0"	5'-6"	3'-6"	8'-0"	4'-6"	1.40	139.0
8'-0"	5'-7"	5'-8"	4'-3"	21'-0"	6'-0"	3'-11"	8'-9"	4'-9"	1.67	173.0
9'-0"	5'-11"	5'-11"	4'-5"	23'-0"	6'-6"	4'-1"	9'-9"	5'-3"	1.89	202.0
10'-0"	6'-2"	6'-3"	4'-7"	25'-0"	7'-0"	4'-2"	10'-6"	5'-6"	2.11	233.0
11'-0"	7'-1"	7'-3"	5'-2"	26'-9"	7'-6"	4'-8"	11'-6"	6'-0"	2.50	286.0
12'-0"	7'-5"	7'-7"	5'-4"	28'-9"	8'-0"	4'-10"	12'-6"	6'-6"	2.77	327.0
13'-0"	7'-9"	7'-11"	5'-6"	30'-9"	8'-6"	5'-0"	13'-3"	7'-0"	3.06	364.0
14'-0"	8'-1"	8'-3"	5'-8"	32'-9"	9'-0"	5'-1"	14'-3"	7'-3"	3.35	416.0

MATERIAL REQUIRED

65 Cu. Yds. "A" Concrete.	100½ Bbls. Cement. 29¾ Cu. Yds. Sand. 59½ Cu. Yds. Stone.
2655 Lbs. Reinforcing Bars.	
28284 Lbs. Structural Steel.	6-24"-I-Beams @ 105.8# 43'-6" long. 2-8" Channels @ 11.5# 28'-0" long.
1320 Sq. Ft. 2" Wire Mesh.	

TABLE OF BARS

Mark.	No.	Stock.	Description
l	15	½" x 43'-6"	Longitudinal in Slab.
t	57	⅝" x 28'-3"	Transverse in Slab.
h	10	½" x 44'-8"	Horizontal in Parapet.
v	80	½" x 4'-6"	Vertical in Parapet.

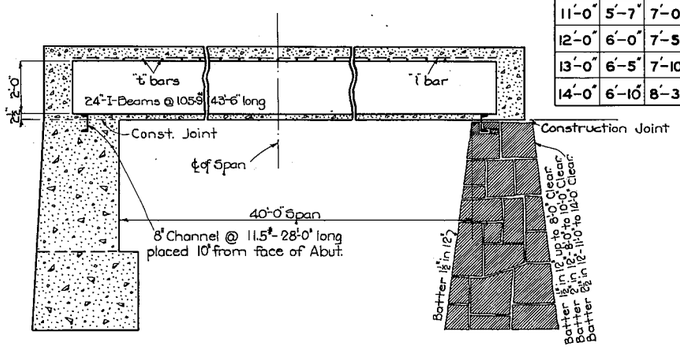


RT. L. ABUTMENT SECTION

ELEVATION

NOTE

Floor of Bridge shall conform to grade of road. On level grade, slope top of slab at least ½" per foot.
Depth of foundations to be determined by local conditions.
Quantities given are based on dimensions shown.
Wings may be changed to suit local conditions.
If bed of stream requires paving, use 6" of conc. or 8" of stone masonry and a 12" curtain wall of sufficient depth at each end.



SECTION ON A-A

ABUTMENTS & WINGS													
CLEAR	A	W	W_1	L	H	W_2	L_1	H_1	B	Cu. Yds. "S" Con.	Bbls. Cement	Cu. Yds. Sand	Cu. Yds. Stone
6'-0"	3'-1"	4'-10"	3'-1"	17'-0"	5'-0"	2'-7"	7'-0"	4'-0"	2'-5"	85.3	110¼	41	82
7'-0"	3'-8"	5'-4"	3'-4"	19'-0"	5'-6"	2'-10"	8'-0"	4'-6"	2'-9½"	107.8	140	51¾	103¾
8'-0"	4'-2"	5'-9"	3'-7"	21'-0"	6'-0"	3'-0"	8'-9"	4'-9"	3'-2½"	131.6	170¾	63¼	126½
9'-0"	4'-8"	6'-2"	3'-10"	23'-0"	6'-6"	3'-3"	9'-9"	5'-3"	3'-7"	158.8	206	76½	152¾
10'-0"	5'-1"	6'-7"	4'-1"	25'-0"	7'-0"	3'-4"	10'-6"	5'-6"	4'-0"	187.1	242¾	90	180
11'-0"	5'-7"	7'-0"	4'-4"	26'-9"	7'-6"	3'-7"	11'-6"	6'-0"	4'-5"	220.3	286	106	212
12'-0"	6'-0"	7'-5"	4'-6"	28'-9"	8'-0"	3'-10"	12'-6"	6'-6"	4'-9½"	256.2	232½	123½	246½
13'-0"	6'-5"	7'-10"	4'-9"	30'-9"	8'-6"	4'-1"	13'-3"	7'-0"	5'-2½"	294.7	382½	141¾	283½
14'-0"	6'-10"	8'-3"	5'-0"	32'-9"	9'-0"	4'-2"	14'-3"	7'-3"	5'-7"	338	438¾	162¼	325¼

APPROVED May 21, 1928
E. E. Brownlow BRIDGE ENGINEER
APPROVED May 21, 1928
Sam Lewis CHIEF ENGINEER

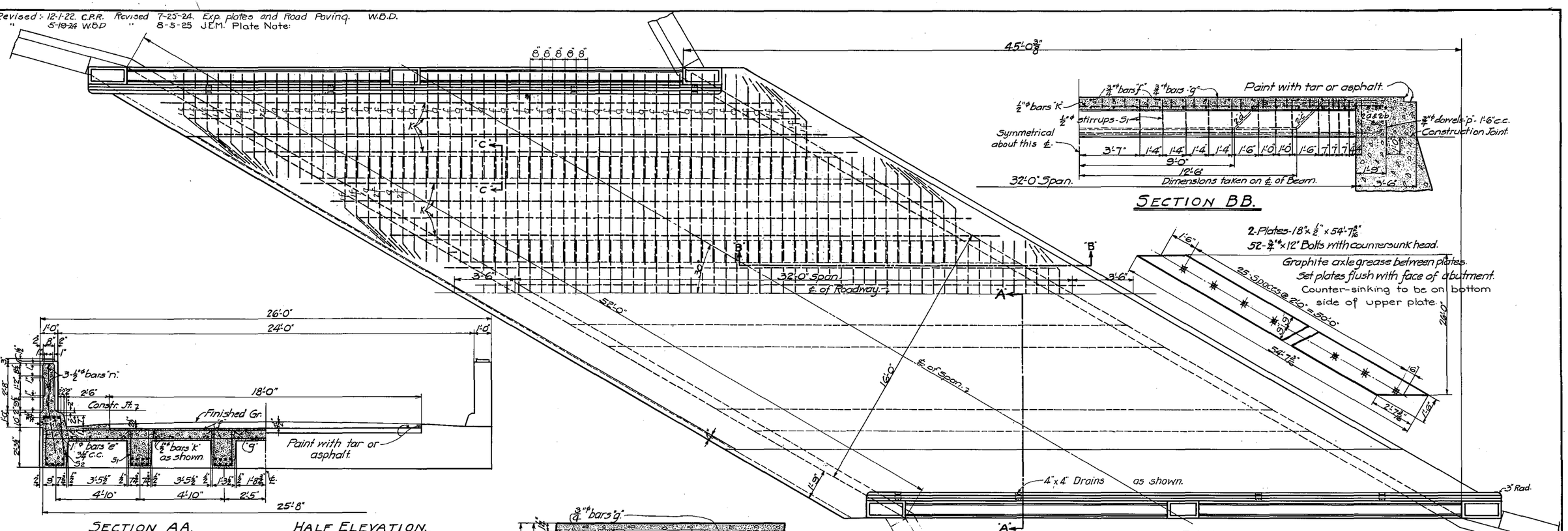
COMMONWEALTH OF PENNSYLVANIA.
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION.
STANDARD
REINFORCED CONCRETE BRIDGE
SPAN 40 FT. ROADWAY 18 FT.
SKEW 45° L.

SCALE ⅜" & 1'-0" 640 B-45

Made by. W.B.D.
Checked by. J.E.M. 5-5-28.

IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.

Revised:- 12-1-22. C.P.R. Revised 7-25-24. Exp. plates and Road Paving. W.B.D.
" 5-10-24 W.B.D " 8-5-25 J.E.M. Plate Note:

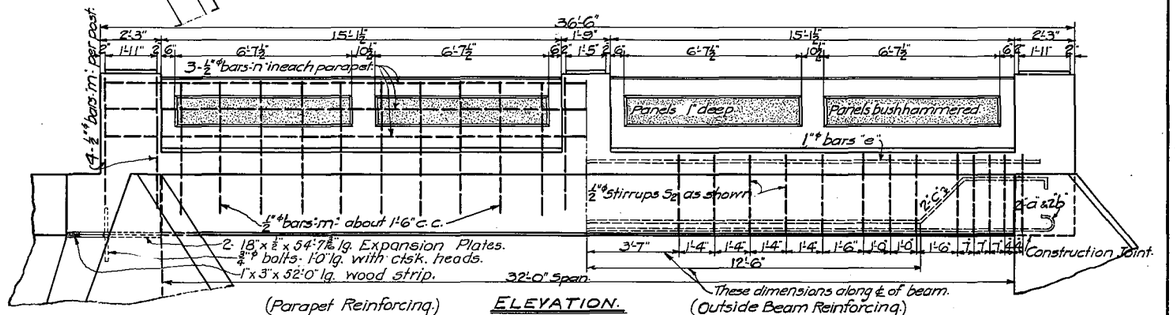


SECTION AA.

HALF ELEVATION.

SECTION - CC.

PLAN.



NOTE

Camber bridge to equal 1/8 inch per foot.
All panels to be bush hammered. Other exposed surfaces to have a rubbed finish.
Where splicing is necessary, lap bars 50 diameters, stagger splices and wire securely, except bars "f" and "g".
All steel dimensions are to centers of bars.
Construction joints to be clean and free from laitance.
Curb height and pavement slot as shown are for concrete paving.
For abutments see S-181; for piers see S-214.

MATERIAL REQUIRED.

62- Cu.yds. Class "A" Concrete. { 90½ - Bbls. Cement. 27¼ - Cu.yds. Sand. 55¾ - Cu.yds. Stone.
613 - Sq.yds Roadway Surfacing.
3261 - lbs. Structural Steel.
13553 - lbs. Steel Reinforcing Bars.

Mark	No.	Size.	Bending Diagram.
a	12	1 1/4" ϕ x 36'-6"	34'-6", 2½, 2½
b	12	1 1/8" ϕ x 36'-6"	3" Rad., 34'-6", 2½, 2½
c	12	1 1/8" ϕ x 36'-6"	3'-1", 1'-1¾", 12'-6", ℄
d	8	1 1/8" ϕ x 29'-0"	3'-2⅜", 1'-1¾", 9'-0", 1'-1¾"
e	8	1" ϕ x 34'-0"	Top of Outside Beams.
f	270	¾" ϕ x 7'-0"	6'-0", 1¼", 1¼", 1½ Rad.
g	115	¾" ϕ x 7'-6"	1'-3", 6", 2'-6", 6", 1'-3", 1¼", 1¼"

Mark	No.	Size.	Bending Diagram.
K	20	½" ϕ x 35'-0"	Longitudinal in floor slab.
m	64	½" ϕ x 5'-0"	2'-8", 2'-4", 6"
n	6	½" ϕ x 36'-3"	Longitudinal in parapet.
5₁	104	½" ϕ x 5'-8"	3'-11", 2'-0½"
5₂	52	½" ϕ x 8'-0"	1'-0½", 2'-3½", 2'-3⅜", 3'-1⅛", 6", 1'-1"
p	34	¾" ϕ x 2'-0"	Dowels in abutment.

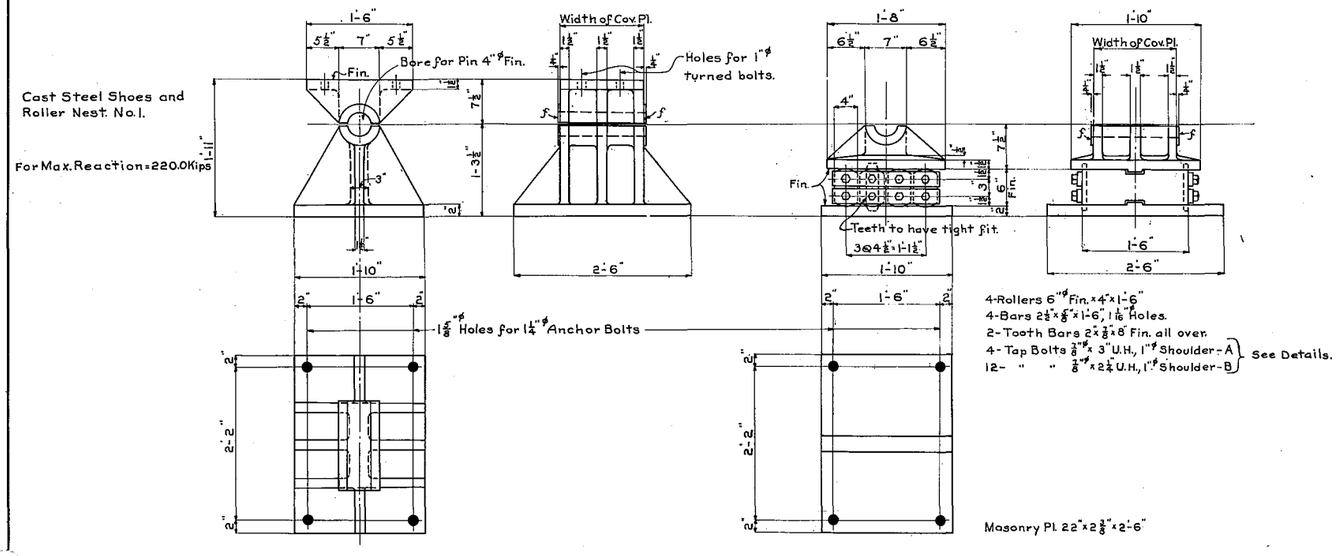
Made by EAW
Checked by G.H.G. 2-24-22

Approved Feb 27th 1922
E E Brandau Bridge Engineer.

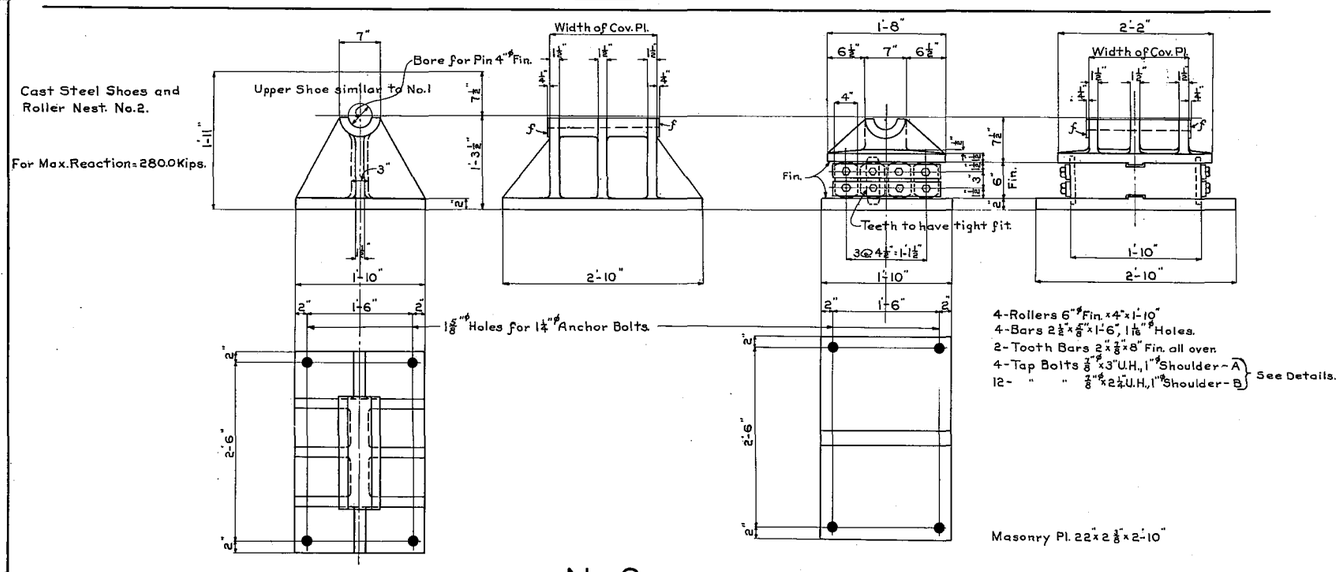
Approved 2/27-1922
Chief Engineer.

COMMONWEALTH of PENNSYLVANIA
STATE HIGHWAY DEPARTMENT,
BRIDGE DIVISION
STANDARD
REINFORCED CONCRETE BRIDGE
SPAN 32 FEET
Scale 3/8" & 1½" = 1'-0". SKEW 30°

S-201-30



No. 1



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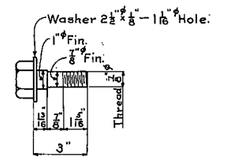
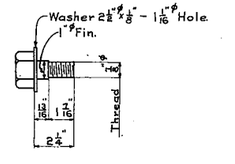
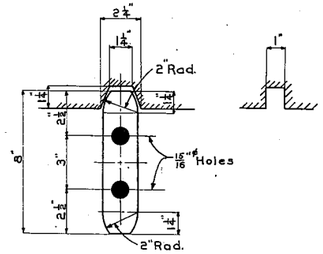


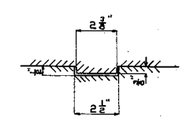
Tap Bolt A



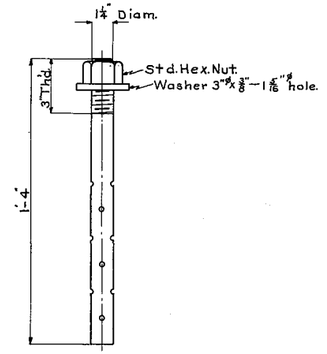
Tap Bolt B



Tooth Bar.



Tongue and grove - Exp. End.



Anchor Bolt
(Swedged)

Material for 1 Set, for 1 Span.

4-Upper Shoes.
2-Fixed Shoes.
2-Expansion Shoes.
2-Roller Nests.
2-Bed Plates.
4-Pins and 8 Lomd's Nuts.
16-Anchor Bolts, Nuts and Washers.

WEIGHTS

Width of Cover Plate	1 Set No. 1	1 Set No. 2
14 inches	5660 Lbs.	6155 Lbs.
16 "	5925 "	6420 "
18 "		6680 "

GENERAL NOTES

Castings to be annealed.

Machined surfaces to be painted with one coat of White Lead and Tallow.

Sides of Rockers must be straight and smooth but need not be finished.

COMMONWEALTH OF PENNSYLVANIA.
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION.

STANDARD SHOES FOR PLATE GIRDER

APPROVED April 28/30
E. E. Brownlow
BRIDGE ENGINEER

Designed by C.B.C.
Made by P.F.W.
Checked by J.L.B. 4/26/30

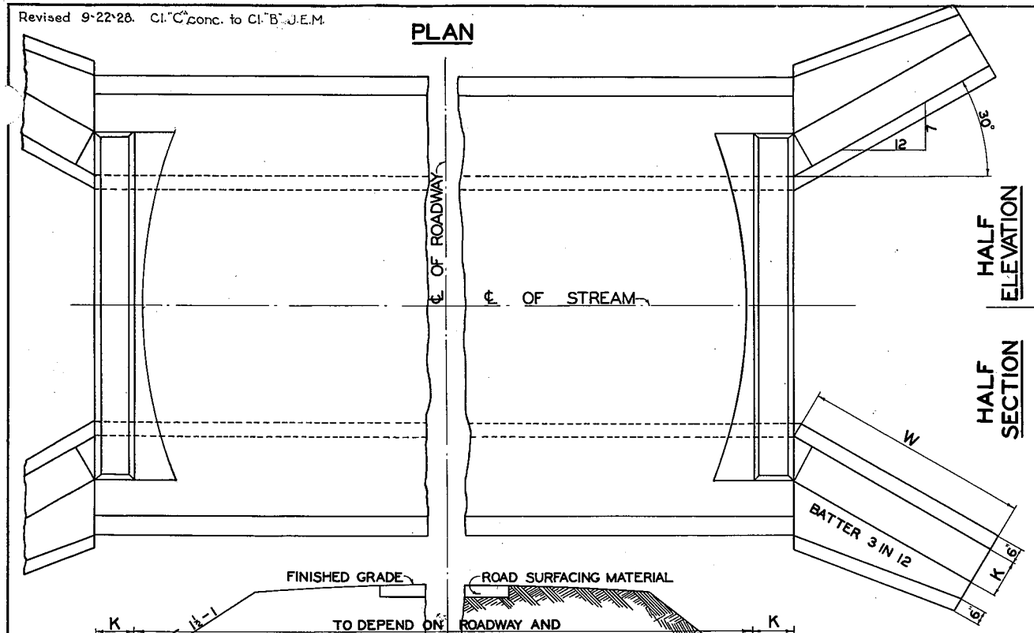
Revised 6-18-30 (Weights added.)

S-625

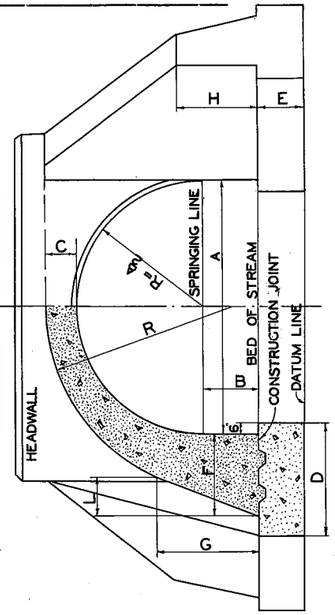
IMPERIAL 600 8-30

Revised 9-22-28. Cl."C" conc. to Cl."B" J.E.M.

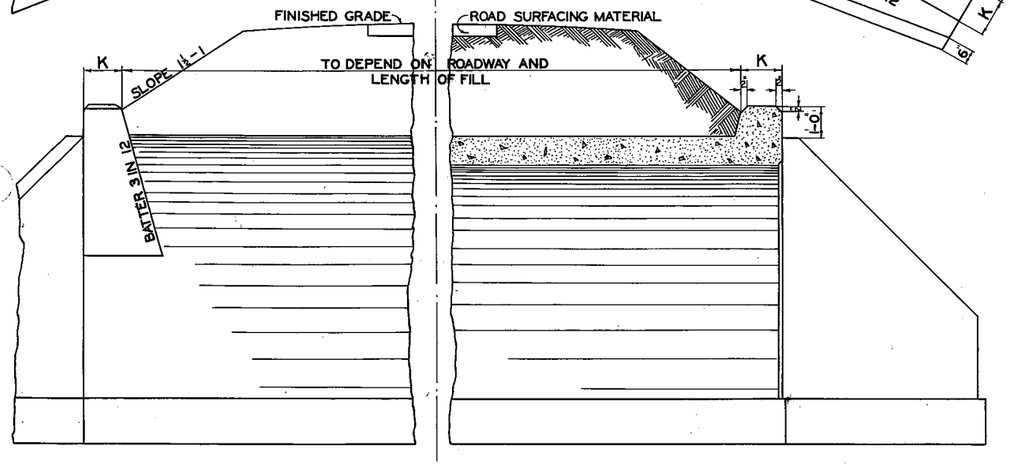
PLAN



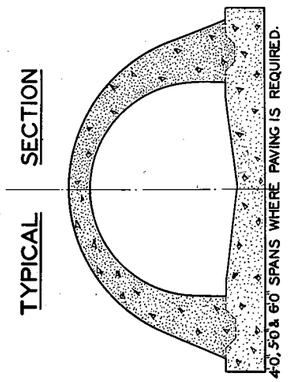
HALF ELEVATION



HALF SECTION



TYPICAL SECTION

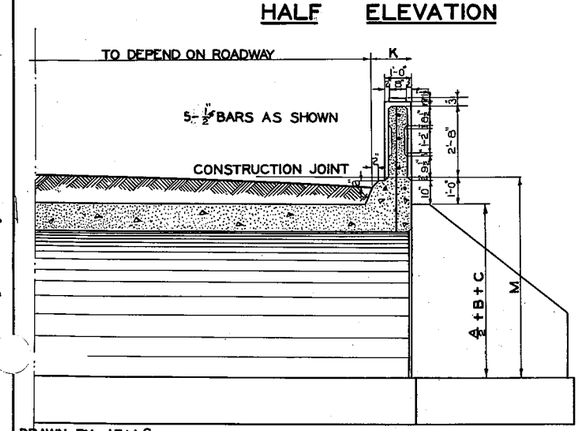


TYPICAL ELEVATION

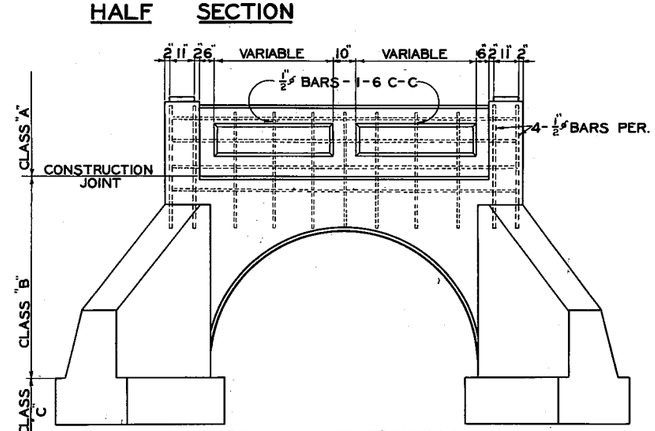
DIMENSIONS AND QUANTITIES

SUB. NUMBER	SQ. FEET OF WATERWAY	MIN. HEIGHT	SPAN	SIDEWALL	CROWN	FOOTING DEPTH	FOOTING WIDTH	SIDEWALL FOOTING	OUTER RADIUS	BATTER HEIGHT	BATTER WIDTH	WING LENGTH	FREE END	WING & H.W. TOP	LIN. FT. OF RING ABOVE FOOTING	ARCH FOOTING	TWO HEADWALLS	FOUR WINGS	WING FOOTING	TWO PARAPETS	STEEL IN PARAPETS
		M	A	B	C	E	D	F	R	G	L	W	H	K	Cu Yds B	Cu Yds B	Cu Yds B	Cu Yds B	Cu Yds B	Cu Yds A	LBS.
1	8.3	4-2		6"			2-3	1-4		1-4	6¼"	3-2½	1-4		.265	.167		1.44	1.07		
2	10.3	4-8	4-0"	1'-0"	8"	1'-0"	2-5½	1-6½	3'-0"	1-10"	9¼"	3'-9"	1-6½	1'-2"	.319	.182		2.00	1.31		
3	12.3	5-2		1'-6"			2-8	1-9		2-4	11¾"	4-3½	1-8½		.380	.197	1.31	2.69	1.57		
4	14.3	5-8		2'-0"			2-10½	1-11½		2-10	1-2¼	4-10	1-10½		.449	.213		3.5	1.84		
5	12.3	4-9		6"			2-5½	1-6½		1-5½	7¼	3-10	1-6½		.373	.184		2.08	1.34		
6	14.8	5-3		1'-0"			2-8½	1-9½		1-11	9¼	4-4¼	1-8½		.435	.198		2.78	1.61		
7	17.3	5-9	5-0"	1'-6"	9"	1'-0"	2-10¾	1-11½	3'-9"	2-5½	1-0¼	4-11"	1'-11"	1'-2"	.505	.215	1.50	3.65	1.87		
8	19.8	6-3		2'-0"			3-1¼	2-2½		2-11¼	1-2¼	5'-6	2-1"		.582	.230		4.63	2.17		
9	22.3	6-9		2'-6"			3-3¾	2-4½		3-5½	1-5½	6'-0½	2'-3"		.667	.245		5.74	2.48		
10	17.1	5-4		6"			2-10	1-9½		1-6¾	7¾	4'-5"	1'-9"		.502	.262		3.05	2.02		
11	20.1	5-10		1'-0"			3-0¾	2-0½		2-0½	10¾"	5'-0"	1'-11"		.573	.282		3.97	2.38		
12	23.1	6-4	6-0"	1'-6"	10"	1'-3	3-3"	2-2½	4'-6"	2-6½	1-0¾	5'-6½	2-1½	1'-3"	.653	.301	1.92	5.02	2.75	1.44	#3 @ 12" 26-½" BARS-4-6" LG. 10-½" BARS-9'-9" LG.
13	26.1	6-10		2'-0"			3'-5½	2-5½		3-0½	1-3½	6'-1"	2'-3½		.739	.320		6.18	3.14		
14	29.1	7'-4		2'-6"			3'-8	2-7¾		3-6¾	1-5¾	6-7⅞	2'-6		.833	.339		7.54	3.52		
15	32.1	7'-10		3'-0"			3'-10¾	2'-10½		4'-0¾	1'-8¼	7'-2"	2'-8		.936	.359		9.03	3.93		
16	29.1	6'-5		6"			3-2¾	2-1¼		1-10½	9½	5'-7½	2'-2		.723	.359		5.48	3.50		
17	33.1	6'11"		1'-0"			3'-5½	2'3¾		2'-4	1'-0	6'-2½	2'-4		.804	.382		6.75	3.98		
18	37.1	7'-5"		1'-6"			3'-7¾	2'-6¼		2'-10½	1'-2⅛	6'-9	2'-6½		.894	.405		8.18	4.49		
19	41.1	7'-11	8-0"	2'-0"	11"	1'-6"	3'10¾	2'8¼	5'-9"	3'-4½	1'-5"	7'-3½	2'-8½	1'-4"	.990	.428	2.80	9.75	4.98	1.71	#3 @ 12" 28-½" BARS-4'-5" LG. 10-½" BARS-11'-7" LG.
20	45.1	8'-5"		2'-6"			4'-0¾	2'11¼		3'10½	1'-7⅞	7'10	2'-10½		1.097	.451		11.50	5.50		
21	49.1	8'11"		3'-0"			4'-3¾	3'-1½		4'4½	1'-10⅛	8'-4½	3'-1"		1.210	.475		13.52	6.03		
22	53.1	9'-5		3'-6			4'-5¾	3'-4½		4'-10½	2'-0⅛	8'11"	3'-3"		1.330	.497		15.61	6.60		
23	57.1	9'-11		4'-0			4'6¾	3'6½		5'-4½	2'-3"	9'-6	3'-5"		1.459	.521		18.01	7.20		
24	44.3	7'-6		6"			3'-7¾	2'-4½		2'-2½	11"	6'-9	2'-7		.977	.469		8.64	5.37		#178
25	49.3	8'-0		1'-0"			3'-9¾	2'-7		2'-6⅛	1'-1⅛	7'-4	2'-9		1.069	.494		10.38	6.03		
26	54.3	8'-6		1'-6"			4'-0¾	2'-9½		3'-2¼	1'-4"	7'11"	2'-11½		1.168	.523		12.40	6.70		
27	59.3	9'-0		2'-0"			4'2¾	3'-0"		3'-8⅛	1'-6¾	8'-5½	3'-1½		1.276	.548		14.33	7.31		
28	64.3	9'-6	10'-0"	2'-6"	12"	1'-9"	4'-5¾	3'-3½	7'-0"	4'-2½	1'-9"	9'-0"	3'-4	1'-5"	1.391	.576	3.90	16.56	7.92	202	
29	69.3	10'-0		3'-0"			4'-7¾	3'-5		4'-6¾	1'-11⅛	9'-6½	3'-6		1.514	.602		19.02	8.63		
30	74.3	10'-6		3'-6			4'10¾	3'-7½		5'-2¼	2'-2	10'-1	3'-8½		1.645	.629		21.68	9.40		
31	79.3	11'-0		4'-0"			5'-0¾	3'10		5'-6¾	2'-4½	10'-8	3'10½		1.783	.656		24.64	10.20		
32	84.3	11'-6		4'-6			5'-3¾	4'-0½		6'-2¼	2'-7"	11'-2½	4'-1"		1.930	.683		27.81	10.90		
33	89.3	12'-0		5'-0"			5'-5¾	4'-3		6'-6¾	2'-9⅛	11'-9	4'-3		2084	.710		31.06	11.60		
34	62.6	8'-7		6"			4'-2	2'-10		2'-4½	11⅝"	8'-0	3'-0		1.333	.617		13.10	7.84		#200
35	68.6	9'-1		1'-0"			4'-4½	3'0½		2'-10¼	1'-2⅛	8'6½	3'-2		1.443	.648		15.20	8.65		
36	74.6	9'-7		1'-6"			4'-7"	3'-3		3'-4¼	1'-4¾	9'-1"	3'-4		1.559	.679		17.50	9.45		
37	80.6	10'-1		2'-0"			4'-9⅜	3'-5½		3'10¾	1'-7½	9'-7½	3'-6½		1.683	.709		20.19	10.20		
38	86.6	10'-7		2'-6"			5'-0	3'-8		4'-4½	1'-9¾	10'-2	3'-8½		1.815	.740		22.81	11.00		
39	92.6	11'-1	12'-0"	3'-0"	1'-1"	2'-0"	5'-2¾	3'10½	8'-6"	4'10¼	2'-0⅛	10'-9	3'10½	1'-6"	1.956	.771	5.15	25.91	11.90	2.32	32-½" BARS-4'-7" LG. 10-½" BARS-15'-3 LG.
40	98.6	11'-7		3'-6			5'-5¾	4'-1"		5'-1¼	2'-2⅛	11'-3½	4'-1"		2.103	.802		29.10	12.80		
41	104.6	12'-1		4'-0"			5'-7¾	4'-3½		5'10¼	2'-3½	11'-10	4'-3		2.259	.833		32.60	13.70		
42	110.6	12'-7		4'-6			5'-10	4'-6		6'-4½	2'-7⅜	12'-4½	4'-5		2.422	.864		36.30	14.60		
43	116.6	13'-1		5'-0"			6'-0¾	4'-8½		6'10½	2'10½	12'-11	4'-7½		2.592	.895		40.30	15.60		
44	122.6	13'-7		5'-6			6'-3¾	4'-11		7'-4½	3'-0⅝	13'-6	4'-9½		2.772	.926		44.68	16.60		
45	128.6	14'-1		6'-0			6'-5⅞	5'-1⅛		7'10½	3'-3⅛	14'-0⅝	5'-0		2960	957		49.21	17.70		

HALF ELEVATION



HALF SECTION



DRAWN BY J.E.M. 6-24-25
CHECKED BY P.F.W.

TYPICAL SECTION

TYPICAL ELEVATION

NOTE

FILL, INCLUDING PAVING OVER CROWN TO BE NOT LESS THAN 12 INCHES.

BACK OF ARCH TO BE TROWELLED SMOOTH 1-2 CEMENT AND SAND MORTAR BEFORE INITIAL SET IN CONCRETE.

CHAMFER ALL EXPOSED EDGES 1 INCH UNLESS OTHERWISE SHOWN.

"H" & "W" ARE COMPUTED FOR 1½ TO 1 SLOPE, "W" MAY BE INCREASED BY MAINTAINING THE PROPER SLOPE.

PARAPETS ON 6 & 8 FOOT SPANS TO HAVE BUT ONE PANEL.

APPROVED June 29th 1925

E.E. Brandon BRIDGE ENGINEER

APPROVED June 29th 1925

ENG. EXECUTIVE AND DEP. SEC. OF HIGHWAYS

COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION

STANDARD CONCRETE ARCHES

SPANS 4'-0" TO 12'-0"

SCALE ¾"-1'-0"

S-228

MATERIAL REQUIRED

60.5 ~~124~~ Cu.Yds. Class "A" Conc.	~~181~~ Bbls. Cement. ~~54½~~ Cu.Yds. Sand. ~~110½~~ Cu.Yds. Stone.
165.5 ~~224~~ Cu.Yds. Class "B" Conc.	~~277~~ Bbls. Cement. ~~103~~ Cu.Yds. Sand. ~~206~~ Cu.Yds. Stone.
82.5 ~~121~~ Cu.Yds. Class "C" Conc.	~~120¼~~ Bbls. Cement. ~~50~~ Cu.Yds. Sand. ~~111½~~ Cu.Yds. Stone.

~~15,440~~ Lbs. Steel Reinforcing Bars.

8184

TABLE OF BARS

Letter	No.	Size.	Location.
a.	70 ~~110~~	½"φ x 25'-9" ~~…~~	Transverse in Ring
b.	37 ~~74~~	⅞"φ x 44'-6"	Extrados
c.	37 ~~74~~	⅞"φ x 40'-0"	Intrados
~~d.~~	~~4~~	~~½"φ x 22'-0"~~	~~Spandrel Wall.~~
e.	56	½"φ x 2'-0"	Abutments and Wings.
m	18	½"φ x 4'-6"	Vert. in Parapets
m.	32	¾"φ x 4'-6"	" " "
n	16	½"φ x 23'-0"	Hor. " "

Approved: March 3rd 1924
E E Brandow Bridge Engineer.

Approved: March 3 1924
[signature] Dep. Sec. of Highways and Engineering Executive.

COMMONWEALTH OF PENNSYLVANIA

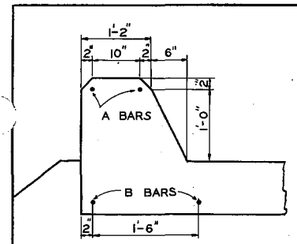
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION

REINFORCED CONCRETE ARCH

SPAN 20 FT. CLEAR 16 FT.

SCALE 5/16" = 1'-0"

S-367

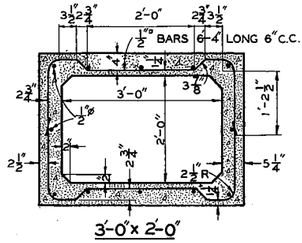


CURB DETAIL

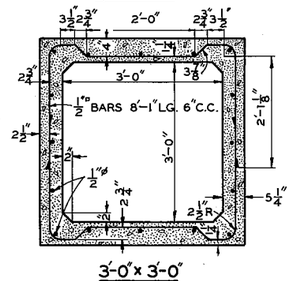
"A" BARS $\frac{5}{8}$" STRAIGHT.

"B" BARS $\frac{3}{4}$" WITH 6" HOOK EACH END TO BE USED ONLY ON SKEWS OF 60° AND LESS.

ON SKEWED BOXES CUT BARS WHERE NECESSARY AND TIE WITH "B" BARS.



3'-0" x 2'-0"



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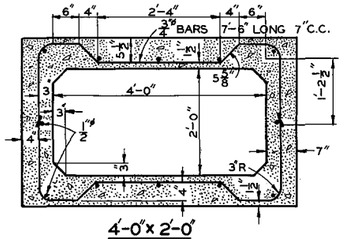

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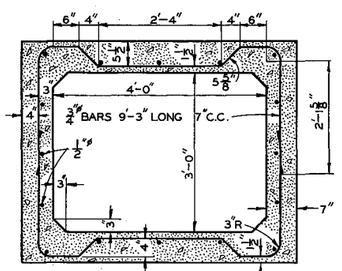

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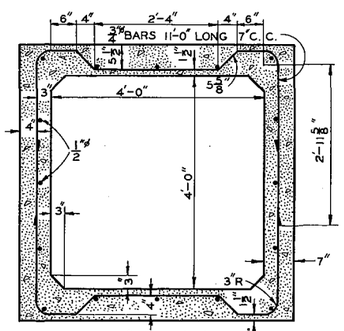

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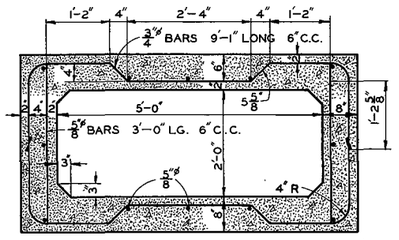

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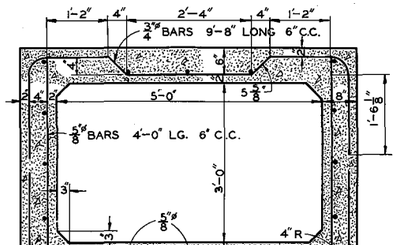

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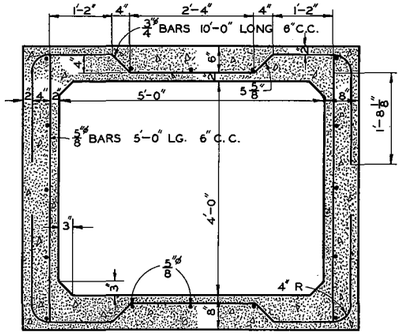

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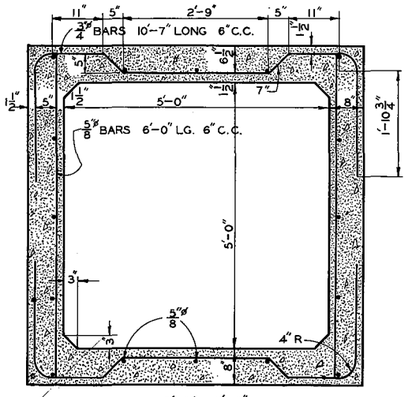

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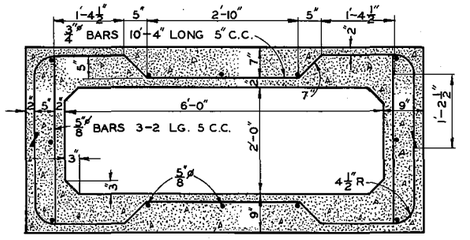

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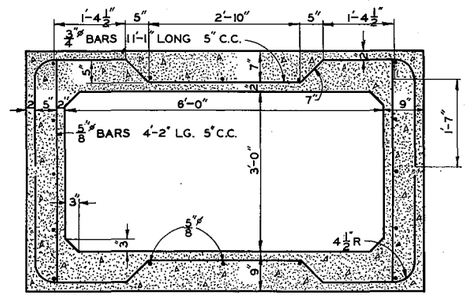

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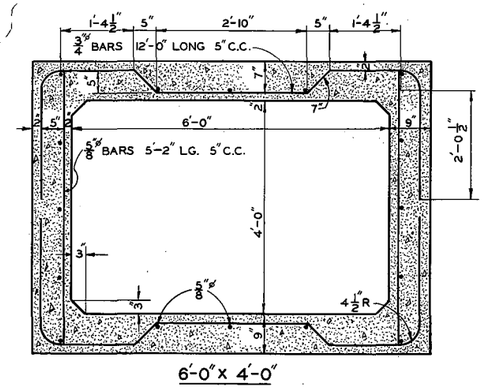

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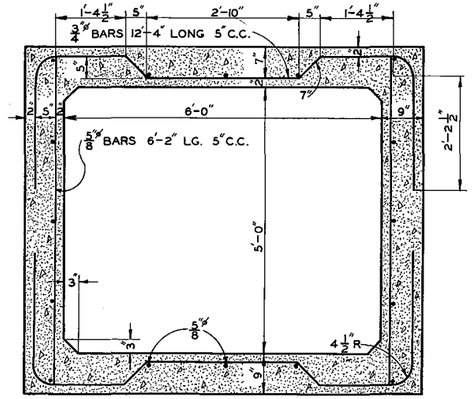
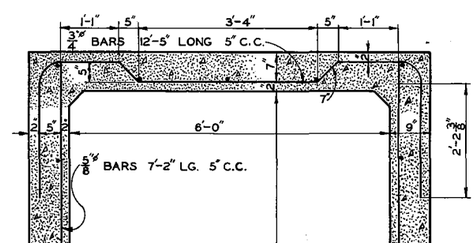


6'-0" x 5'-0"



6'-0" x 6'-0"

NOTE:
FOR WINGS SEE S-180

QUANTITIES PER LINEAR FOOT OF CULVERT

SIZE CULVERT	CONCRETE CLASS A	REINFORCING STEEL (EXCL. CURBS)	EXCAVATION	SIZE CULVERT	CONCRETE CLASS A	REINFORCING STEEL (EXCL. CURBS)	EXCAVATION
				4'-0"x4'-0"	.401	67.3	1.37
				5'-0"x2'-0"	.416	80.0	1.03
				5'-0"x3'-0"	.465	91.0	1.34
2'-0"x1'-0"	.079	9.3	.269	5'-0"x4'-0"	.515	98.0	1.65
2'-0"x1'-6"	.090	10.3	.354	5'-0"x5'-0"	.564	105.0	1.95
2'-0"x2'-0"	.101	11.5	.437	6'-0"x2'-0"	.532	103.0	1.23
3'-0"x2'-0"	.192	29.5	.625	6'-0"x3'-0"	.588	118.0	1.58
3'-0"x3'-0"	.225	38.0	.843	6'-0"x4'-0"	.644	129.0	1.93
4'-0"x2'-0"	.314	46.6	.841	6'-0"x5'-0"	.699	136.0	2.28
4'-0"x3'-0"	.358	58.3	1.11	6'-0"x6'-0"	.755	142.0	2.64

APPROVED... Nov. 20/29
E.E. Brownlow
BRIDGE ENGINEER
APPROVED... Nov. 20-1929.
ASST. CHIEF ENGINEER

COMMONWEALTH OF PENNSYLVANIA.
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION.

STANDARD REINFORCED CONCRETE BOXES

MADE BY: G.H.G.
TRACED BY: M.H.D.
CHECKED BY: H.E.K. 11/13/29

REVISED 6-25-37

S-333

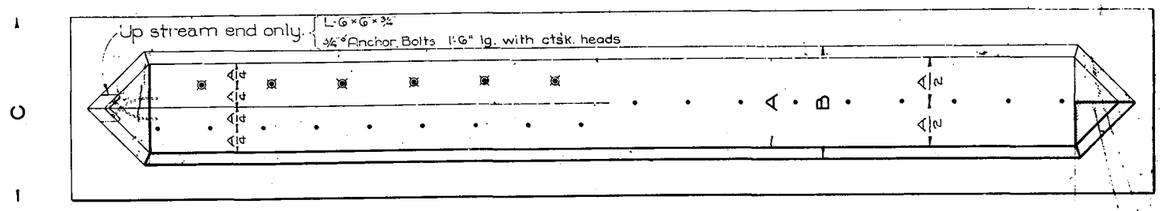
MATERIAL 600 6-28

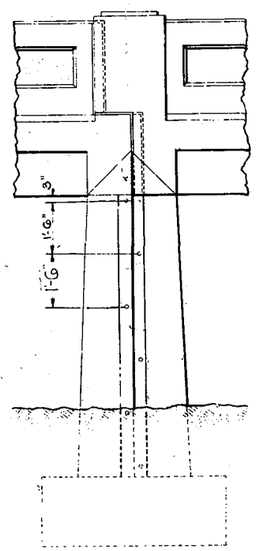
Revised 6-1-26 Notes. WBH 6-18-26 WBH: Pier Nosing.

SPAN	CLEAR	A TOP	B BASE	C FOOTING	D LEN. OF NOSE AT BASE	E LEN. OF FOOTING	CU. YDS. "B" CONC. PER LIN FT PIER	CU. YDS. CLASS "B" CONCRETE	FLOOR SHEET No.
12	2'-0"	2'-6"	2'-10"	4'-10"	1'-6"	30'-0"	.75	21.6	S-191
	3'-0"		2'-11"	4'-11"	1'-6½"	30'-1"	.87	24.8	
	4'-0"		3'-0"	5'-0"	1'-7¼"	30'-2½"	.98	28.1	
	5'-0"		3'-1"	5'-1"	1'-8"	30'-4"	1.10	31.4	
	6'-0"		3'-2"	5'-2"	1'-8½"	30'-5"	1.22	34.9	
	7'-0"		3'-3"	5'-3"	1'-9¼"	30'-7"	1.35	38.5	
	8'-0"		3'-4"	5'-4"	1'-10"	30'-8½"	1.48	42.2	
	9'-0"		3'-5"	5'-5"	1'-10½"	30'-9½"	1.61	45.9	
	10'-0"		3'-6"	5'-6"	1'-11½"	30'-11"	1.74	49.8	
14'	2'-0"	2'-6"	2'-10"	4'-10"	1'-6"	30'-0"	.75	21.6	S-192
	3'-0"		2'-11"	4'-11"	1'-6½"	30'-1"	.87	24.8	
	4'-0"		3'-0"	5'-0"	1'-7¼"	30'-2½"	.98	28.1	
	5'-0"		3'-1"	5'-1"	1'-8"	30'-4"	1.10	31.4	
	6'-0"		3'-2"	5'-2"	1'-8½"	30'-5"	1.22	34.9	
	7'-0"		3'-3"	5'-3"	1'-9¼"	30'-7"	1.35	38.5	
	8'-0"		3'-4"	5'-4"	1'-10"	30'-8½"	1.48	42.2	
	9'-0"		3'-5"	5'-5"	1'-10½"	30'-9½"	1.61	45.9	
	10'-0"		3'-6"	5'-6"	1'-11½"	30'-11"	1.74	49.8	
16	2'-0"	2'-6"	2'-10"	4'-10"	1'-6"	30'-0"	.75	21.6	S-193
	3'-0"		2'-11"	4'-11"	1'-6½"	30'-1"	.87	24.8	
	4'-0"		3'-0"	5'-0"	1'-7¼"	30'-2½"	.98	28.1	
	5'-0"		3'-1"	5'-1"	1'-8"	30'-4"	1.10	31.4	
	6'-0"		3'-2"	5'-2"	1'-8½"	30'-5"	1.22	34.9	
	7'-0"		3'-3"	5'-3"	1'-9¼"	30'-7"	1.35	38.5	
	8'-0"		3'-4"	5'-4"	1'-10"	30'-8½"	1.48	42.2	
	9'-0"		3'-5"	5'-5"	1'-10½"	30'-9½"	1.61	45.9	
	10'-0"		3'-6"	5'-6"	1'-11½"	30'-11"	1.74	49.8	
18'	3'-0"	2'-6"	2'-11"	4'-11"	1'-6½"	30'-1"	.87	24.8	S-194
	4'-0"		3'-0"	5'-0"	1'-7¼"	30'-2½"	.98	28.1	
	5'-0"		3'-1"	5'-1"	1'-8"	30'-4"	1.10	31.4	
	6'-0"		3'-2"	5'-2"	1'-8½"	30'-5"	1.22	34.9	
	7'-0"		3'-3"	5'-3"	1'-9¼"	30'-7"	1.35	38.5	
	8'-0"		3'-4"	5'-4"	1'-10"	30'-8½"	1.48	42.2	
	9'-0"		3'-5"	5'-5"	1'-10½"	30'-9½"	1.61	45.9	
	10'-0"		3'-6"	5'-6"	1'-11½"	30'-11"	1.74	49.8	
	11'-0"		3'-7"	5'-7"	2'-0¼"	31'-0½"	1.88	53.7	
20'	3'-0"	2'-6"	2'-11"	4'-11"	1'-6½"	30'-1"	.87	24.8	S-195
	4'-0"		3'-0"	5'-0"	1'-7¼"	30'-2½"	.98	28.1	
	5'-0"		3'-1"	5'-1"	1'-8"	30'-4"	1.10	31.4	
	6'-0"		3'-2"	5'-2"	1'-8½"	30'-5"	1.22	34.9	
	7'-0"		3'-3"	5'-3"	1'-9¼"	30'-7"	1.35	38.5	
	8'-0"		3'-4"	5'-4"	1'-10"	30'-8½"	1.48	42.2	
	9'-0"		3'-5"	5'-5"	1'-10½"	30'-9½"	1.61	45.9	
	10'-0"		3'-6"	5'-6"	1'-11½"	30'-11"	1.74	49.8	
	11'-0"		3'-7"	5'-7"	2'-0¼"	31'-0½"	1.88	53.7	
22'	3'-0"	2'-9"	3'-2"	5'-2"	1'-8"	30'-4"	.93	26.8	S-196
	4'-0"		3'-3"	5'-3"	1'-8½"	30'-5½"	1.06	30.4	
	5'-0"		3'-4"	5'-4"	1'-9¼"	30'-7"	1.18	34.0	
	6'-0"		3'-5"	5'-5"	1'-10"	30'-8½"	1.31	37.7	
	7'-0"		3'-6"	5'-6"	1'-11"	30'-10"	1.45	41.6	
	8'-0"		3'-7"	5'-7"	1'-11½"	30'-11½"	1.59	45.6	
	9'-0"		3'-8"	5'-8"	2'-0¼"	31'-0½"	1.73	49.6	
	10'-0"		3'-9"	5'-9"	2'-1"	31'-2"	1.87	53.7	
	11'-0"		3'-10"	5'-10"	2'-1⅝"	31'-3½"	2.02	57.9	
24'	4'-0"	2'-9"	3'-3"	5'-3"	1'-8½"	30'-5½"	1.06	30.4	S-197
	5'-0"		3'-4"	5'-4"	1'-9½"	30'-7"	1.18	34.0	
	6'-0"		3'-5"	5'-5"	1'-10⅛"	30'-8½"	1.31	37.7	
	7'-0"		3'-6"	5'-6"	1'-11"	30'-10"	1.45	41.6	
	8'-0"		3'-7"	5'-7"	1'-11⅝"	30'-11⅛"	1.59	45.6	
	9'-0"		3'-8"	5'-8"	2'-0⅜"	31'-0⅝"	1.73	49.6	
	10'-0"		3'-9"	5'-9"	2'-1"	31'-2"	1.87	53.7	
	11'-0"		3'-10"	5'-10"	2'-1⅝"	31'-3½"	2.02	57.9	
	12'-0"		3'-11"	5'-11"	2'-2½"	31'-5"	2.17	62.2	
26	4'-0"	2'-9"	3'-3"	5'-3"	1'-8½"	30'-5½"	1.06	30.4	S-198
	5'-0"		3'-4"	5'-4"	1'-9½"	30'-7"	1.18	34.0	
	6'-0"		3'-5"	5'-5"	1'-10⅛"	30'-8½"	1.31	37.7	
	7'-0"		3'-6"	5'-6"	1'-11"	30'-10"	1.45	41.6	
	8'-0"		3'-7"	5'-7"	1'-11⅝"	30'-11⅛"	1.59	45.6	
	9'-0"		3'-8"	5'-8"	2'-0⅜"	31'-0⅝"	1.73	49.6	
	10'-0"		3'-9"	5'-9"	2'-1"	31'-2"	1.87	53.7	
	11'-0"		3'-10"	5'-10"	2'-1⅝"	31'-3½"	2.02	57.9	
	12'-0"		3'-11"	5'-11"	2'-2½"	31'-5"	2.17	62.2	

SPAN	CLEAR	A TOP	B BASE	C FOOTING	D LEN. OF NOSE AT BASE	E LEN. OF FOOTING	CU. YDS. "B" CONC. PER LIN FT PIER	CU. YDS. CLASS "B" CONCRETE	FLOOR SHEET No.
28	4'-0"	2'-9"	3'-3"	5'-3"	1'-8½"	30'-5½"	1.06	30.4	S-199
	5'-0"		3'-4"	5'-4"	1'-9¼"	30'-7"	1.18	34.0	
	6'-0"		3'-5"	5'-5"	1'-10⅛"	30'-8½"	1.31	37.7	
	7'-0"		3'-6"	5'-6"	1'-11"	30'-10"	1.45	41.6	
	8'-0"		3'-7"	5'-7"	1'-11⅝"	30'-11⅛"	1.59	45.6	
	9'-0"		3'-8"	5'-8"	2'-0⅜"	31'-0⅝"	1.73	49.6	
	10'-0"		3'-9"	5'-9"	2'-1"	31'-2"	1.87	53.7	
	11'-0"		3'-10"	5'-10"	2'-1⅝"	31'-3½"	2.02	57.9	
	12'-0"		3'-11"	5'-11"	2'-2½"	31'-5"	2.17	62.2	
30	5'-0"	3'-0"	3'-7"	5'-7"	1'-11"	30'-10"	1.27	36.6	S-200
	6'-0"		3'-8"	5'-8"	1'-11½"	30'-11"	1.41	40.7	
	7'-0"		3'-9"	5'-9"	2'-0⅛"	31'-1"	1.55	44.9	
	8'-0"		3'-10"	5'-10"	2'-1"	31'-2"	1.70	48.9	
	9'-0"		3'-11"	5'-11"	2'-1⅝"	31'-3½"	1.85	53.3	
	10'-0"		4'-0"	6'-0"	2'-2⅛"	31'-5"	2.00	57.7	
	11'-0"		4'-1"	6'-1"	2'-3¼"	31'-6½"	2.15	62.2	
	12'-0"		4'-2"	6'-2"	2'-3⅞"	31'-7½"	2.31	66.8	
	13'-0"		4'-3"	6'-3"	2'-4¾"	31'-9½"	2.48	71.7	
32	5'-0"	3'-0"	3'-7"	5'-7"	1'-11"	30'-10"	1.27	36.6	S-201
	6'-0"		3'-8"	5'-8"	1'-11½"	30'-11"	1.41	40.7	
	7'-0"		3'-9"	5'-9"	2'-0⅛"	31'-1"	1.55	44.9	
	8'-0"		3'-10"	5'-10"	2'-1"	31'-2"	1.70	48.9	
	9'-0"		3'-11"	5'-11"	2'-1⅝"	31'-3½"	1.85	53.3	
	10'-0"		4'-0"	6'-0"	2'-2⅛"	31'-5"	2.00	57.7	
	11'-0"		4'-1"	6'-1"	2'-3¼"	31'-6½"	2.15	62.2	
	12'-0"		4'-2"	6'-2"	2'-3⅞"	31'-7½"	2.31	66.8	
	13'-0"		4'-3"	6'-3"	2'-4¾"	31'-9½"	2.48	71.7	
34'	5'-0"	3'-0"	3'-7"	5'-7"	1'-11"	30'-10"	1.27	36.6	S-202
	6'-0"		3'-8"	5'-8"	1'-11½"	30'-11"	1.41	40.7	
	7'-0"		3'-9"	5'-9"	2'-0⅛"	31'-1"	1.55	44.9	
	8'-0"		3'-10"	5'-10"	2'-1"	31'-2"	1.70	48.9	
	9'-0"		3'-11"	5'-11"	2'-1⅝"	31'-3½"	1.85	53.3	
	10'-0"		4'-0"	6'-0"	2'-2⅛"	31'-5"	2.00	57.7	
	11'-0"		4'-1"	6'-1"	2'-3¼"	31'-6½"	2.15	62.2	
	12'-0"		4'-2"	6'-2"	2'-3⅞"	31'-7½"	2.31	66.8	
	13'-0"		4'-3"	6'-3"	2'-4¾"	31'-9½"	2.48	71.7	
36'	6'-0"	3'-0"	3'-8"	5'-8"	1'-11½"	30'-11"	1.41	40.7	S-203
	7'-0"		3'-9"	5'-9"	2'-0⅛"	31'-1"	1.55	44.9	
	8'-0"		3'-10"	5'-10"	2'-1"	31'-2"	1.70	48.9	
	9'-0"		3'-11"	5'-11"	2'-1⅝"	31'-3½"	1.85	53.3	
	10'-0"		4'-0"	6'-0"	2'-2⅛"	31'-5"	2.00	57.7	
	11'-0"		4'-1"	6'-1"	2'-3¼"	31'-6½"	2.15	62.2	
	12'-0"		4'-2"	6'-2"	2'-3⅞"	31'-7½"	2.31	66.8	
	13'-0"		4'-3"	6'-3"	2'-4¾"	31'-9½"	2.48	71.7	
	14'-0"		4'-4"	6'-4"	2'-5⅝"	31'-10½"	2.64	76.5	
38'	6'-0"	3'-0"	3'-8"	5'-8"	1'-11½"	30'-11"	1.41	40.7	S-204
	7'-0"		3'-9"	5'-9"	2'-0⅛"	31'-1"	1.55	44.9	
	8'-0"		3'-10"	5'-10"	2'-1"	31'-2"	1.70	48.9	
	9'-0"		3'-11"	5'-11"	2'-1⅝"	31'-3½"	1.85	53.3	
	10'-0"		4'-0"	6'-0"	2'-2⅛"	31'-5"	2.00	57.7	
	11'-0"		4'-1"	6'-1"	2'-3¼"	31'-6½"	2.15	62.2	
	12'-0"		4'-2"	6'-2"	2'-3⅞"	31'-7½"	2.31	66.8	
	13'-0"		4'-3"	6'-3"	2'-4¾"	31'-9½"	2.48	71.7	
	14'-0"		4'-4"	6'-4"	2'-5⅝"	31'-10½"	2.64	76.5	
40'	6'-0"	3'-0"	3'-8"	5'-8"	1'-11½"	30'-11"	1.41	40.7	S-205
	7'-0"		3'-9"	5'-9"	2'-0⅛"	31'-1"	1.55	44.9	
	8'-0"		3'-10"	5'-10"	2'-1"	31'-2"	1.70	48.9	
	9'-0"		3'-11"	5'-11"	2'-1⅝"	31'-3½"	1.85	53.3	
	10'-0"		4'-0"	6'-0"	2'-2⅛"	31'-5"	2.00	57.7	
	11'-0"		4'-1"	6'-1"	2'-3¼"	31'-6½"	2.15	62.2	
	12'-0"		4'-2"	6'-2"	2'-3⅞"	31'-7½"	2.31	66.8	
	13'-0"		4'-3"	6'-3"	2'-4¾"	31'-9½"	2.48	71.7	
	14'-0"		4'-4"	6'-4"	2'-5⅝"	31'-10½"	2.64	76.5	
42'	7'-0"	3'-0"	3'-9"	5'-9"	2'-0⅛"	31'-1"	1.55	44.9	S-309
	8'-0"		3'-10"	5'-10"	2'-1"	31'-2"	1.70	48.9	
	9'-0"		3'-11"	5'-11"	2'-1⅝"	31'-3½"	1.85	53.3	
	10'-0"		4'-0"	6'-0"	2'-2⅛"	31'-5"	2.00	57.7	
	11'-0"		4'-1"	6'-1"	2'-3¼"	31'-6½"	2.15	62.2	
	12'-0"		4'-2"	6'-2"	2'-3⅞"	31'-7½"	2.31	66.8	
	13'-0"		4'-3"	6'-3"	2'-4¾"	31'-9½"	2.48	71.7	
	14'-0"		4'-4"	6'-4"	2'-5⅝"	31'-10½"	2.64	76.5	
	15'-0"		4'-5"	6'-5"	2'-6⅜"	32'-0"	2.81	81.3	
45'	7'-0"	3'-0"	3'-9"	5'-9"	2'-0⅛"	31'-1"	1.55	44.9	S-310
	8'-0"		3'-10"	5'-10"	2'-1"	31'-2"	1.70	48.9	
	9'-0"		3'-11"	5'-11"	2'-1⅝"	31'-3½"	1.85	53.3	
	10'-0"		4'-0"	6'-0"	2'-2⅛"	31'-5"	2.00	57.7	
	11'-0"		4'-1"	6'-1"	2'-3¼"	31'-6½"	2.15	62.2	
	12'-0"		4'-2"	6'-2"	2'-3⅞"	31'-7½"	2.31	66.8	
	13'-0"		4'-3"	6'-3"	2'-4¾"	31'-9½"	2.48	71.7	
	14'-0"		4'-4"	6'-4"	2'-5⅝"	31'-10½"	2.64	76.5	
	15'-0"		4'-5"	6'-5"	2'-6⅜"	32'-0"	2.81	81.3	

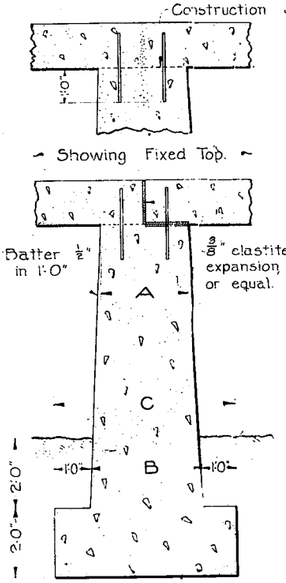
Made by: W.B.H Checked by: G.H.D & J.M.S.





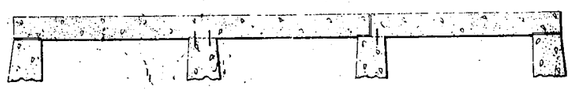
END ELEVATION

HALF PLAN
Expansion.



Showing Expansion Top For 3 or more Spans 24 Ft. and Over.

TYPICAL SECTION

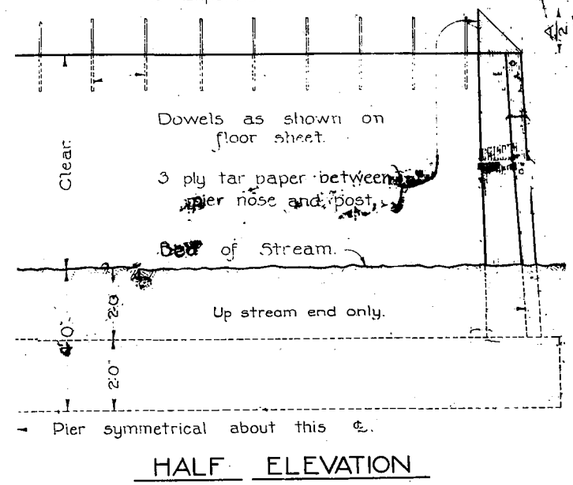


MULTIPLE SPAN EXPANSION DIAGRAM

Approved: Aug. 24, 1927
E. E. Brandow Bridge Engineer.
Approved: Aug 24, 1927
Chief Engineer.

26'-0"

HALF PLAN
No Expansion.



Pier symmetrical about this ℄.

HALF ELEVATION

NOTE

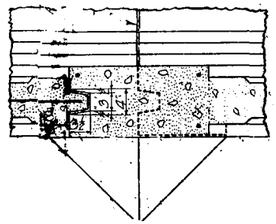
Provide for expansion as shown, on 3 or more spans of 24 ft. or greater, and on single spans of 30 ft. or greater.

For 3 spans of 22 ft. or less use 3 ply tar paper or equal.

For 2 or more spans where expansion is necessary, both abutments to have expansion

For details, see floor sheets.

⅜ elastite expansion joint or equal.

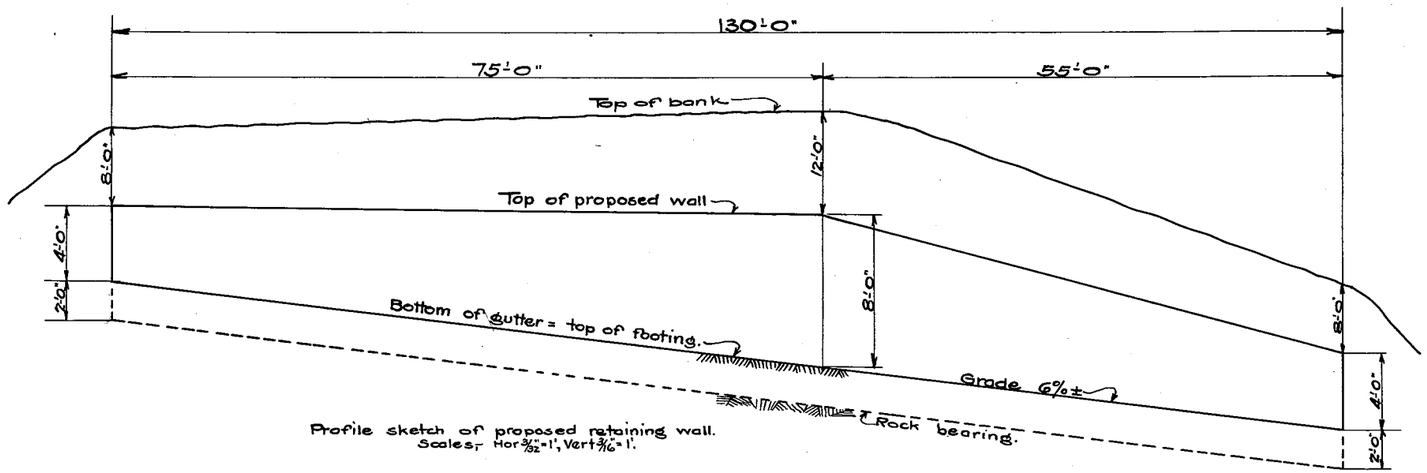


EXPANSION DETAILS THROUGH POST

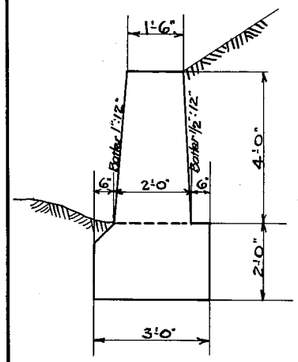
COMMONWEALTH OF PENNSYLVANIA
STATE HIGHWAY DEPARTMENT
BRIDGE DIVISION

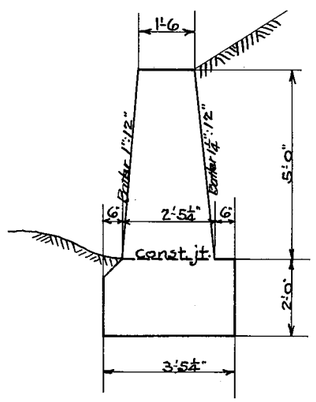
STANDARD PIERS
SPANS 12 TO 45 FT.

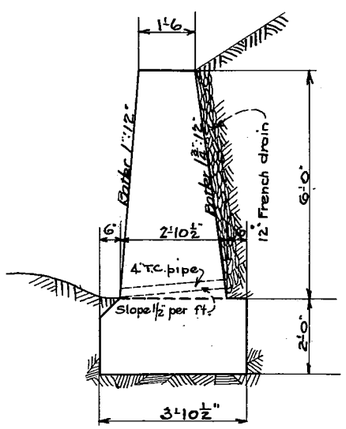
S-21

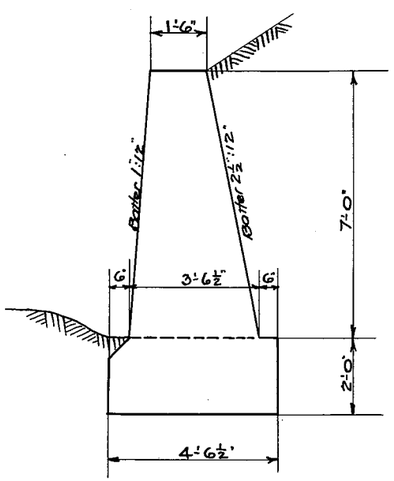


Profile sketch of proposed retaining wall.
Scales, Hor 3/32"=1', Vert 3/16"=1'.

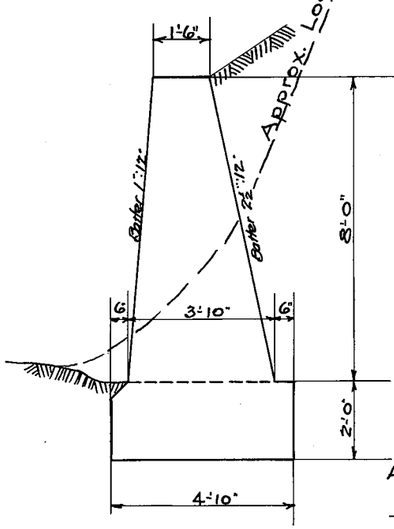








Scale 3/8"=1', All sections.



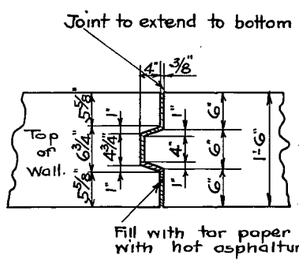
Section of bank at highest point.

For cement rubble masonry construction, add 6" to top and bottom thickness of wall and footing.
Expansion joints every 26'-0". See detail on plan.
Place 4" terra cotta pipe drains every 10'-0" as indicated in wall section above.
Place 12" of broken stone at back of wall thruout entire length to secure drainage.
Wall above footing to be class "B" concrete. (1-2½-5 Mix)
Footings to be class "C" concrete. (1-3-6 Mix).
Construction joints between "B" and "C" concrete shall be free from laitance and be thoroughly bonded with clean bond stones.
No other joints will be permitted.
Depth of footing may be changed to suit conditions in field.
Quantities given are for dimensions shown on plan.
Where rock bearing is not obtainable, footing depth shall be 3'-0".

Material Required.

64 cu yds class "B" concrete.	77 bbls cement.
	29 cu. yds. sand.
	59 cu yds stone.
38 cu yds class "C" concrete	40 bbls cement.
	18 cu yds sand.
	37 cu yds stone.
38 ft of 4" terra cotta pipe	
29 cu. yds. of broken stone back fill.	

Designed by C.E.B.M.
Checked by G.M.O. 9-24-18
Willis White 9/24/18 Bridge Engineer.



All joints 26'-0" c-c.

Plan of Expansion Joint.
Scale, 3/4"=1'.

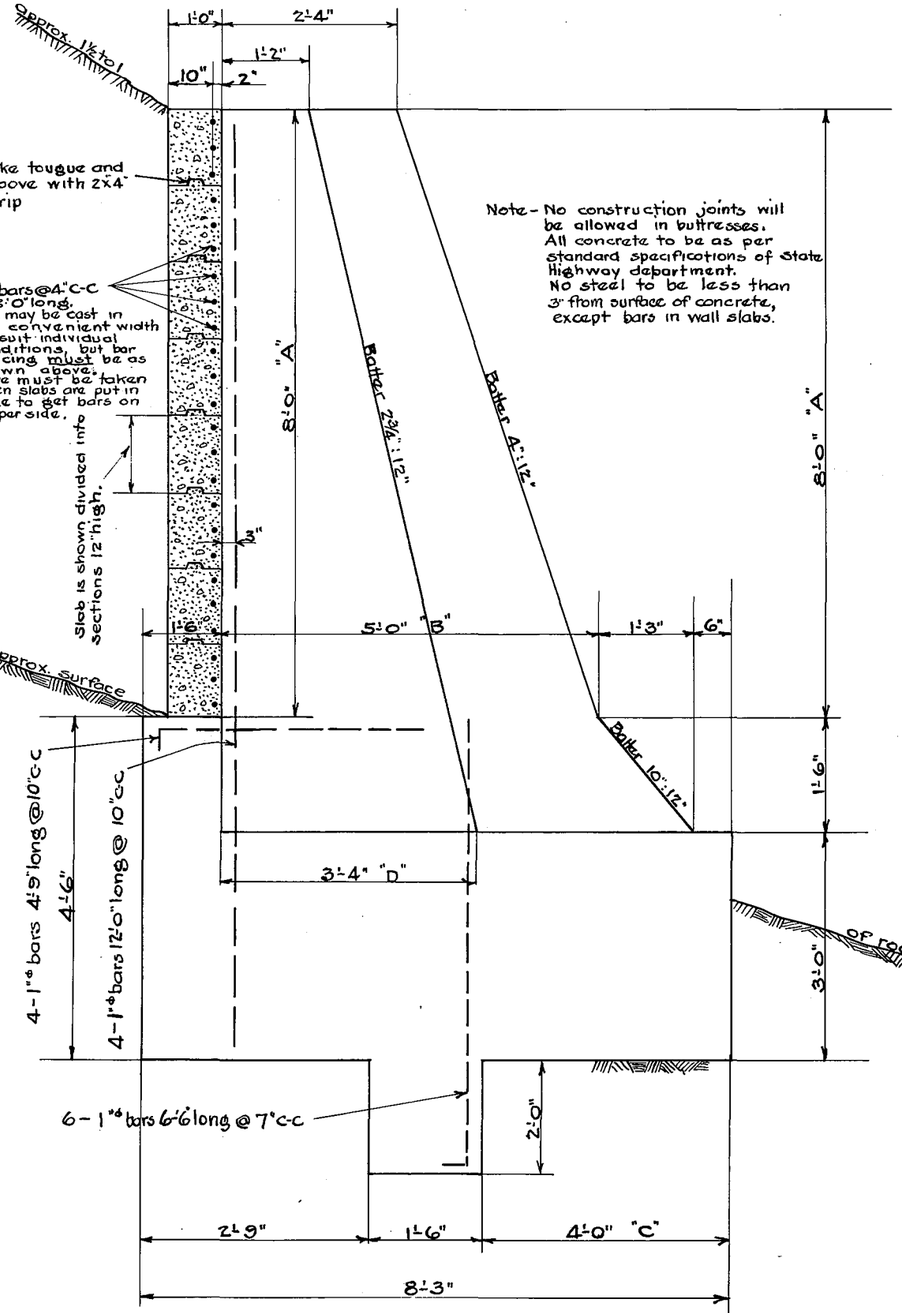
Approved, September 25, 1918.

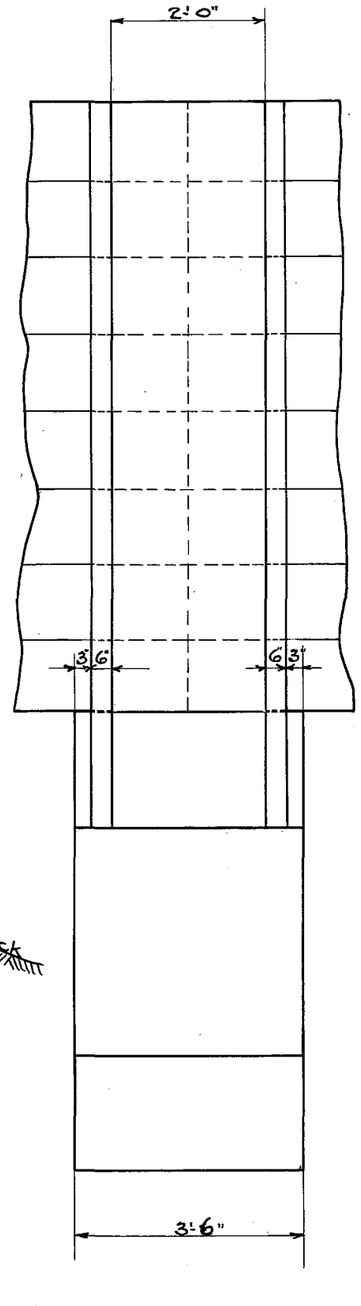
J. Dunn — Commissioner.
Joseph W. Hunter — First Dep. Commissioner.
Geo. H. Wiles — Acting Chief Engineer.
——— Superintendent.

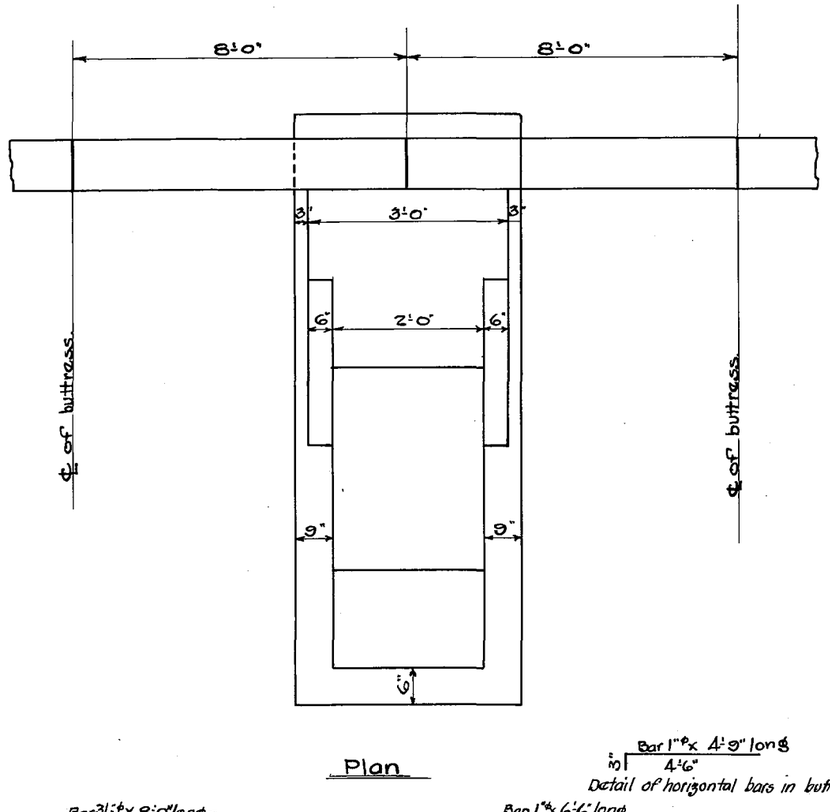
COMMONWEALTH OF PENNSYLVANIA
STATE HIGHWAY DEPARTMENT,
BUREAU OF TOWNSHIP HIGHWAYS
BRIDGE DIVISION

CONCRETE RETAINING WALL.
HEIGHT 4'-0" TO 8'-0".
ON ROAD FROM PT. MARION TO ROSEDALE,
DUNKARD TWP — GREENE CO.
Scale as noted on plan.

W-1.







Plan

Bar 1"ϕ x 4'-9" long

4'-6"

Detail of horizontal bars in buttress.

Bar ¾"ϕ x 8'-0" long

7'-6"

Detail of bar in wall slab.

Bar 1"ϕ x 6'-6" long

6'-3"

Detail of bars in base of buttress.

MATERIAL REQUIRED FOR 1 BUTTRESS AND 8'-0" x 8'-0" SECTION OF WALL.

2½ cu. yds class A concrete (wall slab only)	3¾ bbls cement. 1 cu yds sand. 2 cu yds stone.
7½ " " " B " (Buttress only)	9 bbls cement. 3½ cu yds sand. 7 cu yds stone.
571 lbs steel reinforcing bars	24 - ¾"ϕ bars x 8'-0" long, see sketch above. 6 - 1"ϕ " x 6'-6" " " " " 4 - 1"ϕ " x 4'-9" " " " " 4 - 1"ϕ " x 12'-0" "

Approved, Nov. 18 1918
Willis Whitson
Engineer of Bridges.

Approved, Nov 8th 1918
George H. Biles
Acting Chief Engineer.

Note:- For heights "A" less than those shown, diminish dimensions "B" and "C". 4" per foot of change in "A". Dimension "D" to be determined by batter for hights other than shown. Height "A" of 8'-0" must not be exceeded without increasing total width of base.

Made by CEBM.

Checked by G.M.Q. 11-6-18.

Side Elevation

Front Elevation.

PENNA. STATE HIGHWAY DEPARTMENT - BRIDGE DIVISION.

BUTTRESSED RETAINING WALL

MOON AND HOPEWELL TOWNSHIPS BEAVER CO.

APPLICATIONS #254 and #294

Scale ¾" = 1'

W-2

WALLS SUSTAINING ROADWAY WITH 20 TON ROLLER SURCHARGE.

CONCRETE					CEMENT RUBBLE					DRY RUBBLE				
H	T	B	Yds per lin ft of Wall Class B	Class C	H	T	B	Yds per lin ft of Wall: Wall	Footing	H	T	B	Yds per lin. ft. of Wall: Wall	Footing
2'-0"	2'-0"	2'-4"	0.160	0.417	2'-0"	2'-0"	2'-7"	0.170	0.398	2'-0"	2'-3"	2'-9"	0.185	0.417
3'-0"	2-0	2'-10"	0.270	0.472	3'-0"	2'-0"	3'-1"	0.282	0.454	3'-0"	2'-3"	3'-3"	0.305	0.472
4'-0"	2-0	3'-4"	0.396	0.528	4'-0"	2'-0"	3'-7"	0.413	0.510	4'-0"	2'-3"	3'-9"	0.444	0.528
5'-0"	2-0	3'-10"	0.547	0.583	5'-0"	2'-0"	4'-1"	0.563	0.565	5'-0"	2'-3"	4'-3"	0.607	0.583
6'-0"	2-0	4'-4"	0.702	0.639	6'-0"	2'-0"	4'-7"	0.732	0.621	6'-0"	2'-3"	4'-9"	0.703	0.639
7'-0"	2-0	4'-10"	0.887	0.694	7'-0"	2'-0"	5'-1"	0.917	0.676	7'-0"	2'-3"	5'-3"	0.972	0.694
8'-0"	2-0	5'-4"	1.084	0.750	8'-0"	2'-0"	5'-7"	1.121	0.732	8'-0"	2'-3"	5'-9"	1.184	0.750
9'-0"	2-0	5'-10"	1.307	0.805	9'-0"	2'-0"	6'-1"	1.345	0.787	9'-0"	2'-3"	6'-3"	1.416	0.805
10'-0"	2-0	6'-4"	1.541	0.861	10'-0"	2'-0"	6'-7"	1.590	0.843	10'-0"	2'-3"	6'-9"	1.666	0.861
11'-0"	2-0	6'-10"	1.800	0.916	11'-0"	2'-0"	7'-1"	1.850	0.898	11'-0"	2'-3"	7'-3"	1.934	0.916
12'-0"	2-0	7'-4"	2.071	0.972	12'-0"	2'-0"	7'-7"	2.129	0.953	12'-0"	2'-3"	7'-9"	2.221	0.972
13'-0"	2-0	7'-10"	2.370	1.027	13'-0"	2'-0"	8'-1"	2.427	1.008	13'-0"	2'-3"	8'-3"	2.525	1.027
14'-0"	2-0	8'-4"	2.676	1.082	14'-0"	2'-0"	8'-7"	2.740	1.063	14'-0"	2'-3"	8'-9"	2.852	1.082
15'-0"	2-0	8'10"	3.011	1.138	15'-0"	2'-0"	9'-1"	3.077	1.120	15'-0"	2'-3"	9'-3"	3.194	1.138

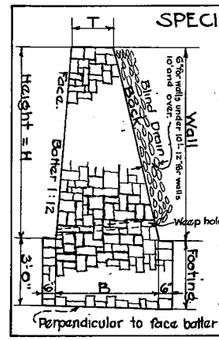
Walls calculated for earth that will stand on a 1½ to 1 slope and weighing 100# per ft³.

WALLS SUSTAINING SLOPING BANKS OF EARTH.

CONCRETE					CEMENT RUBBLE					DRY RUBBLE.				
H	T	B	Yds per lin. ft. of Wall Class B	Class C	H	T	B	Yds per lin. ft. of Wall. Wall	Footing	H	T	B	Yds per lin ft of Wall Wall	Footing
2'-0"	2'-0"	2'-2"	0.154	0.398	2'-0"	2'-0"	2'-2"	0.154	0.351	2'-0"	2'-3"	2'-5"	0.173	0.380
3'-0"	2'-0"	2'-5"	0.245	0.426	3'-0"	2'-0"	2'-5"	0.245	0.380	3'-0"	2'-3"	2'-7"	0.269	0.398
4'-0"	2'-0"	2'-8"	0.346	0.453	4'-0"	2'-0"	2'-9"	0.352	0.417	4'-0"	2'-3"	2'-11"	0.383	0.436
5'-0"	2'-0"	3'-1"	0.470	0.500	5'-0"	2'-0"	3'-2"	0.477	0.463	5'-0"	2'-3"	3'-4"	0.518	0.481
6'-0"	2'-0"	3'-7"	0.620	0.555	6'-0"	2'-0"	3'-8"	0.628	0.518	6'-0"	2'-3"	3'-10"	0.676	0.537
7'-0"	2'-0"	4'-2"	0.800	0.620	7'-0"	2'-0"	4'-3"	0.811	0.583	7'-0"	2'-3"	4'-5"	0.863	0.602
8'-0"	2'-0"	4'-9"	1.000	0.685	8'-0"	2'-0"	4'-11"	1.024	0.658	8'-0"	2'-3"	5'-1"	1.082	0.676
9'-0"	2'-0"	5'-4"	1.220	0.750	9'-0"	2'-0"	5'-6"	1.248	0.723	9'-0"	2'-3"	5'-8"	1.320	0.740
10'-0"	2'-0"	6'-0"	1.482	0.824	10'-0"	2'-0"	6'-2"	1.511	0.796	10'-0"	2'-3"	6'-4"	1.589	0.815
11'-0"	2'-0"	6'-8"	1.765	0.900	11'-0"	2'-0"	6'-10"	1.800	0.871	11'-0"	2'-3"	7'-0"	1.881	0.888
12'-0"	2'-0"	7'-3"	2.055	0.963	12'-0"	2'-0"	7'-6"	2,106	0.944	12'-0"	2'-3"	7'-7"	2.184	0.953
13'-0"	2'-0"	7'-10"	2.370	1.027	13'-0"	2'-0"	8'-1"	2,427	1.008	13'-0"	2'-3"	8'-2"	2.506	1.018
14'-0"	2'-0"	8'-5"	2.700	1.092	14'-0"	2'-0"	8'-9"	2.785	1.082	14'-0"	2'-3"	8'-10"	2.870	1.091
15'-0"	2'-0"	9'-0"	3,055	1.157	15'-0"	2'-0"	9'-5"	3,166	1.158	15'-0"	2'-3"	9'-6"	3.262	1.167

Walls calculated for earth that will stand on a 1½ to 1 slope and weighing 100# per ft³.

SPECIFICATIONS FOR RUBBLE MASONRY WALLS.



All walls to have typical cross section shown in adjoining sketch.

Masonry courses shall be perpendicular to face batter in wall and footing, and shall be laid in such manner that no course will be continuous through thickness of wall.

Footing shall be 3'-0" minimum depth except when wall stands on rock.

Faces of all walls shall be pointed.

When necessary protect wall from water with weep holes and blind drains.

Back filling shall be done with acceptable material placed in layers 6" thick and thoroughly rammed.

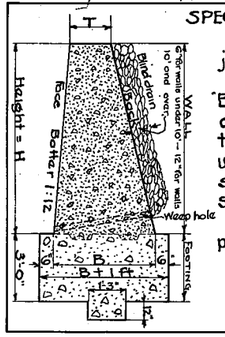
WALLS SUSTAINING LEVEL BANKS OF EARTH

CONCRETE.					CEMENT RUBBLE.					DRY RUBBLE.				
H	T	B	Yds per lin ft of Wall Class B	Class C	H	T	B	Yds per lin ft of Wall: Wall	Footing	H	T	B	Yds per lin ft of Wall Wall	Footing
2'-0"	1'-6"	1'-8"	0.117	0.342	2'-0"	2'-0"	2'-2"	0.154	0.351	2'-0"	2'-3"	2'-5"	0.173	0.380
3'-0"	1'-6"	1'-9"	0.181	0.352	3'-0"	2'-0"	2'-3"	0.236	0.361	3'-0"	2'-3"	2'-6"	0.264	0.389
4'-0"	1'-6"	2'-0"	0.259	0.380	4'-0"	2'-0"	2'-5"	0.327	0.380	4'-0"	2'-3"	2'-8"	0.364	0.408
5'-0"	1'-6"	2'-4"	0.355	0.417	5'-0"	2'-0"	2'-8"	0.432	0.407	5'-0"	2'-3"	2'-11"	0478	0.436
6'-0"	1'-6"	2'-10"	0.480	0.472	6'-0"	2'-0"	3'-1"	0.565	0.454	6'-0"	2'-3"	3'-4"	0.621	0.481
7'-0"	1'-6"	3'-4"	0.627	0.528	7'-0"	2'-0"	3'-6"	0.713	0.500	7'-0"	2'-3"	3'-9"	0.778	0.528
8'-0"	1'-6"	3'-9"	0.778	0.574	8'-0"	2'-0"	4'-0"	0.889	0.556	8'-0"	2'-3"	4'-3"	0.964	0.583
9'-0"	1'-6"	4'-3"	0.958	0.629	9'-0"	2'-0"	4'-5"	1.169	0.603	9'-0"	2'-3"	4'-8"	1.150	0.630
10'-0"	1'-6"	4'-9"	1.157	0.684	10'-0"	2'-0"	4'-11"	1.281	0.658	10'-0"	2'-3"	5'-2"	1.372	0.684
11'-0"	1'-6"	5'-3"	1.375	0.740	11'-0"	2'-0"	5'-5"	1.511	0.713	11'-0"	2'-3"	5'-7"	1.595	0.732
12'-0"	1'-6"	5'-8"	1.591	0.788	12'-0"	2'-0"	5'-10"	1.740	0.760	12'-0"	2'-3"	6'-0"	1.833	0.778
13'-0"	1'-6"	6'-2"	1.844	0.843	13'-0"	2'-0"	6'-4"	2.003	0.815	13'-0"	2'-3"	6'-6"	2.103	0.833
14'-0"	1'-6"	6'-8"	2.115	0.899	14'-0"	2'-0"	6'-9"	2.268	0.861	14'-0"	2'-3"	6'-11"	2.375	0.880
15'-0"	1'-6"	7'-2"	2.407	0.953	15'-0"	2'-0"	7'-3"	2.565	0.916	15'-0"	2'-3"	7'-5"	2.681	0.934

Walls calculated for earth that will stand on a 1½ to 1 slope and weighing 100# per ft³.

Stones not less than 6" thick, not less than 12" long. Width not less than thickness.

SPECIFICATIONS FOR CONCRETE WALLS.



All walls to have typical cross section shown in adjoining sketch.

The main or wall portion shall be constructed of class "B" (1-2½-5 mix) concrete. The footing shall be constructed of class "C" (1-3-6 mix) concrete. The joint between these parts shall be free from laitance and thoroughly bonded with keys or clean bond stones. The shoulder on base of footing shall be bonded in the same manner.

Expansion joints of approved design shall be placed every 25 to 30 ft.

Footing shall be 3'-0" deep; except when wall is on rock.

Wall to be thoroughly protected from water.

Backfilling to be placed in an approved manner.

PENNSYLVANIA STATE HIGHWAY DEPARTMENT.

RETAINING WALLS

—OF—

CONCRETE, CEMENT RUBBLE, AND DRY RUBBLE.

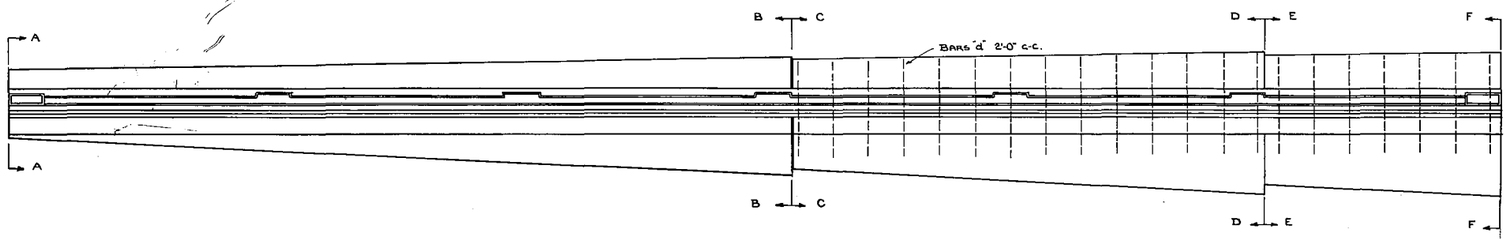
HEIGHTS, 2 FT. TO 15 FT.

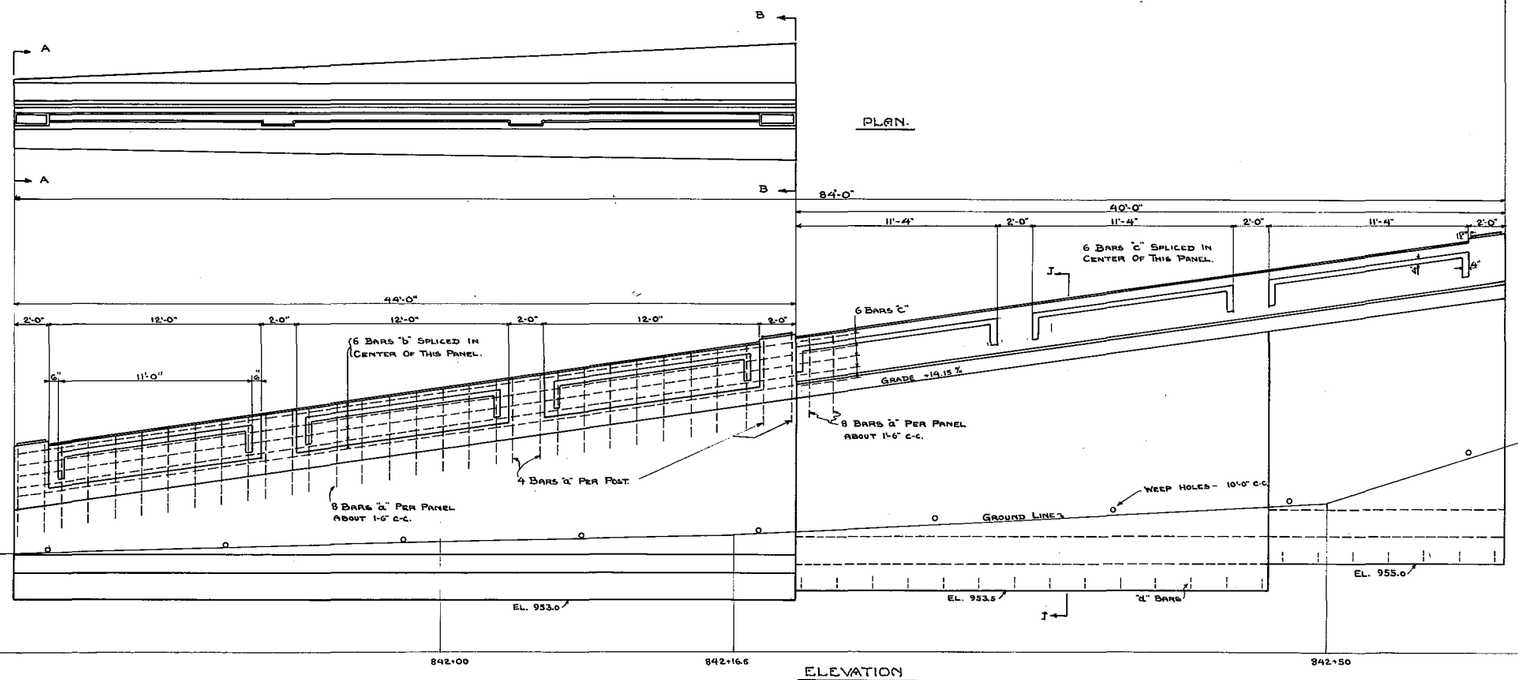
Made by CEPM.

Checked by CEPM 12-31-18.

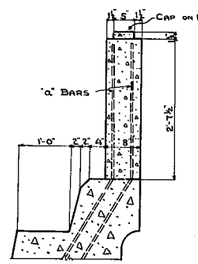
Willis M Hunter Engineer of Bridges.

W-3.

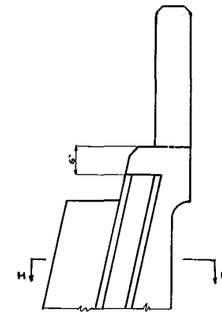




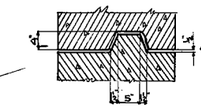
ELEVATION



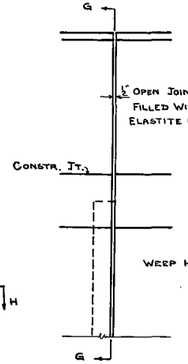
SECT. THRU END POSTS

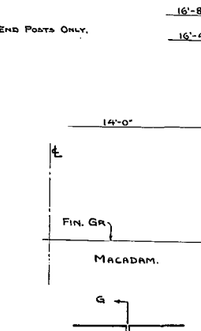


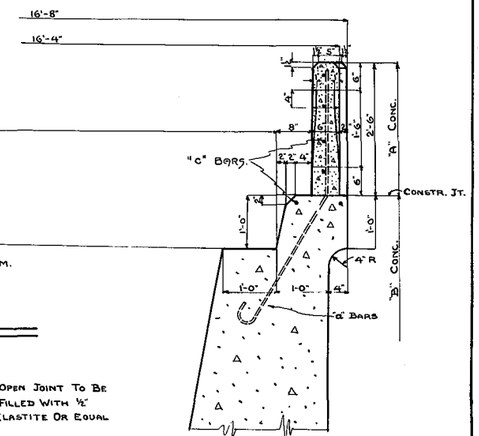
SECT GG

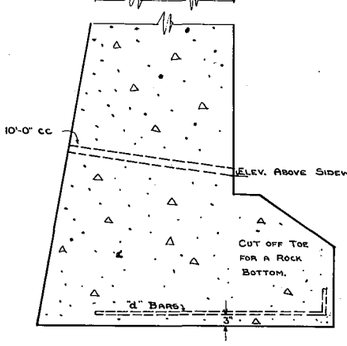


SECT. HH.









SECTION JJ

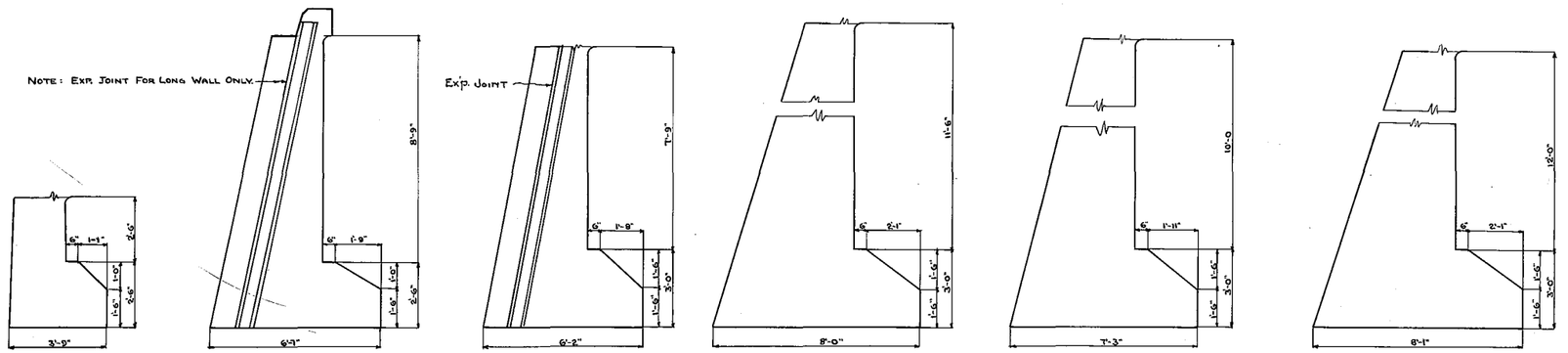
EXP. JOINT DETAILS.

MATERIAL REQUIRED	
6.5	Cu. Yds. "A" Concrete
10¼	Bbls. Cement
3	Cu. Yds Sand
6	Cu. Yds. Stone
167	Cu Yds "B" Concrete
217	Bbls. Cement
80½	Cu. Yds. Sand.
160¾	Cu. Yds. Stone
1153	Lbs. Reinf. Bars.

TABLE OF BARS.

Mark	No	Stock	Bending Diagram.
"a"	116	1" sq. 5'-6"	1'-8" R, 2'-4"
"b"	24	1" sq. 23'-0"	
"c"	12	1" sq. 21'-0"	
"d"	21	3/4" sq. 6'-0"	6" 5'-0"

APPROVED Nov 11 1929
E S Bowers



SECTS: AA BB CC DD EE FF

If A Rock Or Good Hard-Pan Bottom Is Found The Toe Beyond The 6" Ledge As Well As The Reinforcing In Bottom Of Foundation May Be Omitted.

Made By: DNL & W.G.H.
Checked By: W.G.H & Dahl.

COMMONWEALTH OF PENNSYLVANIA.
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION.

SCHUYLKILL CO-RT 161
RETAINING WALLS
FOR
ASHLAND BORO

SCALES: 1"- ⅜"- ¾"- 1'-0"

W-10

IMPERIAL TRACING CLOTH
EUGENE DIETZGEN CO., INC., N. Y.