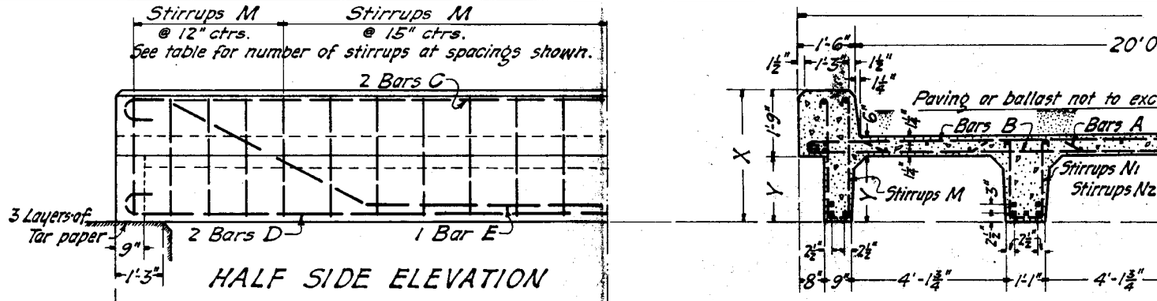
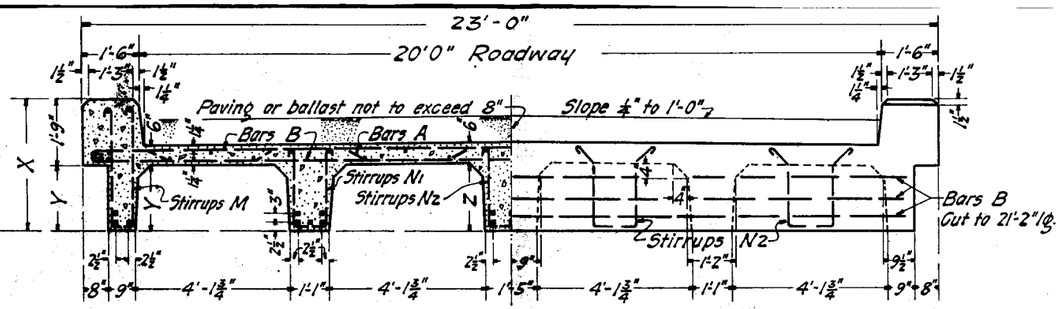
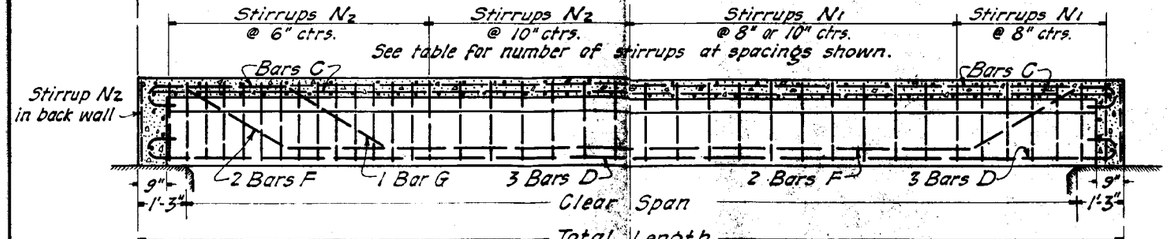


HALF SIDE ELEVATION

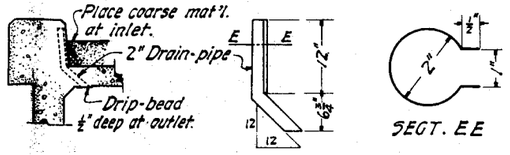


HALF SECTION AA

HALF END ELEVATION



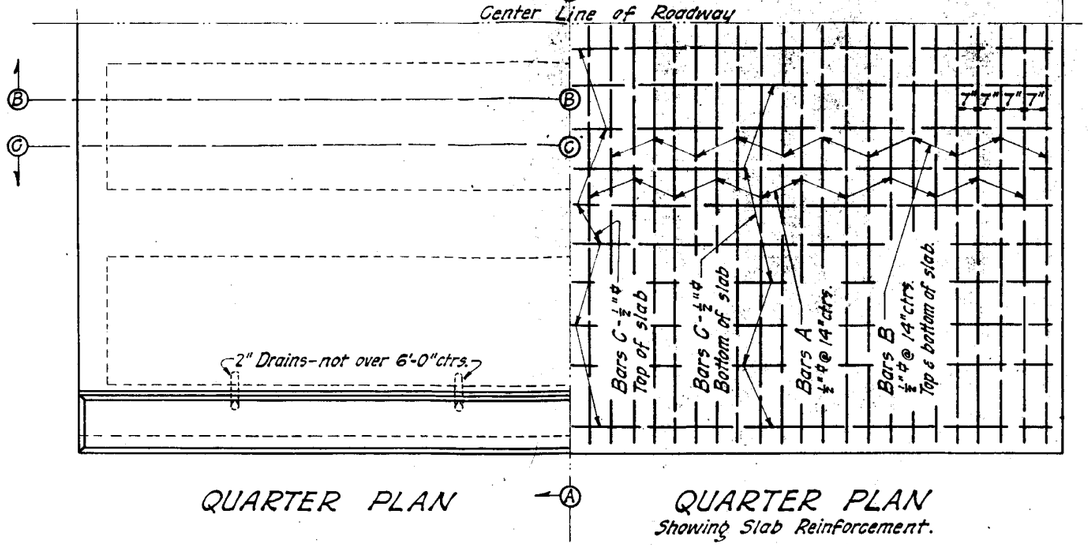
HALF SECTION BB



DETAIL OF ROADWAY DRAIN

SECT. EE

HALF SECTION CC



QUARTER PLAN

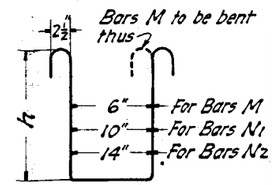
QUARTER PLAN
Showing Slab Reinforcement.

DIMENSIONS & QUANTITIES

Clear Span Feet	Total Length Ft. In.	Dimensions X	Y	Z	Stirrup Spacing Exterior Beam Stirrups M	Interior Beam Stirrups N1	Interior Beam Stirrups N2	Quantities Concrete Cu. yds.	Steel Lbs.
16	18'-6"	2'-11"	1'-2"	1'-4"	3 Spcs. @ 12" 9 " " 15" 3 " " 12"	26 Spcs. @ 8"	10 Spcs. @ 6" 9 " " 10" 10 " " 6"	16.5	3510
18	20'-6"	3'-1"	1'-4"	1'-6"	4 " " 12" 9 " " 15" 4 " " 12"	29 " " 8"	11 " " 6" 10 " " 10" 11 " " 6"	19.0	3880
20	22'-6"	3'-2"	1'-5"	1'-7"	4 " " 12" 10 " " 15" 4 " " 12"	32 " " 8"	11 " " 6" 12 " " 10" 11 " " 6"	21.1	4760
22	24'-6"	3'-3"	1'-6"	1'-8"	4 " " 12" 12 " " 15" 4 " " 12"	6 " " 8" 18 " " 10" 6 " " 8"	12 " " 6" 13 " " 10" 12 " " 6"	23.3	5140
24	26'-6"	3'-4"	1'-7"	1'-9"	4 " " 12" 14 " " 15" 4 " " 12"	6 " " 8" 21 " " 10" 6 " " 8"	14 " " 6" 13 " " 10" 14 " " 6"	25.7	6230
26	28'-6"	3'-5"	1'-8"	1'-10"	4 " " 12" 15 " " 15" 4 " " 12"	6 " " 8" 23 " " 10" 6 " " 8"	15 " " 6" 15 " " 10" 15 " " 6"	28.0	6670

BILL OF STEEL

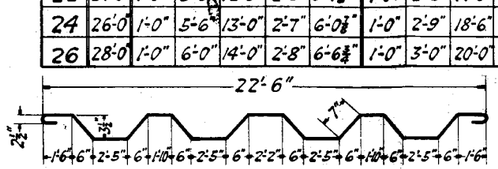
Clear Span	Bars A-½"ϕ Slab Reinf.		Bars B-½"ϕ Slab Reinf.		Bars C-½"ϕ Spacing Bars		Bars D Ext. & Int. Bm. Reinf.			Bars E Exterior Bm. Reinf.			Bars F Interior Bm. Reinf.			Bars G Interior Bm. Reinf.			Bars M-½"ϕ Stirrup-Ext. Bm.		Bars N-½"ϕ Stirrup-Int. Bm	
FEET	NO.	L'GTH.	NO.	L'GTH.	NO.	L'GTH.	NO.	SIZE	L'GTH.	NO.	SIZE	L'GTH.	NO.	SIZE	L'GTH.	NO.	SIZE	L'GTH.	NO.	L'GTH.	NO.	L'GTH.
16	15	24'-0"	38	23'-4"	26	18'-0"	13	1"ϕ	19'-8"	2	1"ϕ	21'-0"	6	1"ϕ	20'-4"	1	1"ϕ	20'-4"	32	6'-6"	54 38	4'-8" 5'-2"
18	17	24'-0"	40	23'-4"	26	20'-0"	13	1"ϕ	21'-8"	2	1"ϕ	23'-0"	6	1"ϕ	22'-4"	1	1"ϕ	22'-4"	36	6'-10"	60 41	5'-0" 5'-6"
20	19	24'-0"	44	23'-4"	26	22'-0"	13	1⅛"ϕ	23'-10"	2	1⅛"ϕ	25'-0"	6	1⅛"ϕ	24'-8"	1	1⅛"ϕ	24'-8"	38	7'-0"	66 43	5'-2" 5'-8"
22	20	24'-0"	48	23'-4"	26	24'-0"	13	1⅛"ϕ	25'-10"	2	1⅛"ϕ	27'-0"	6	1⅛"ϕ	26'-8"	1	1⅛"ϕ	26'-8"	42	7'-2"	62 46	5'-4" 5'-10"
24	22	24'-0"	52	23'-4"	26	26'-0"	13	1¼"ϕ	28'-0"	2	1¼"ϕ	29'-3"	6	1¼"ϕ	28'-10"	1	1¼"ϕ	28'-10"	46	7'-4"	68 50	5'-6" 6'-0"
26	24	24'-0"	54	23'-4"	26	28'-0"	13	1¼"ϕ	30'-0"	2	1¼"ϕ	31'-3"	6	1¼"ϕ	30'-10"	1	1¼"ϕ	30'-10"	48	7'-6"	72 54	5'-8" 6'-2"



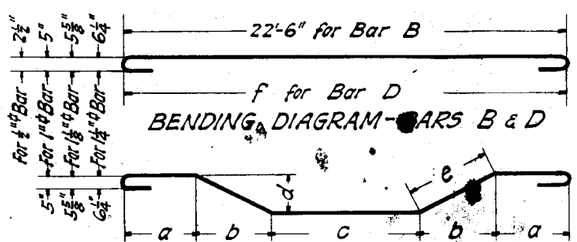
BENDING DIAGRAM BARS M & N

STEEL BENDING TABLE

Clear Span Feet	Bars D	Bars E					Bars F					Bars G					Bars M	Bars N1	Bars N2
	f	a	b	c	d	e	a	b	c	d	e	a	b	c	d	e	h	h	h
16	18'-0"	1'-0"	3'-6"	9'-0"	2'-2"	4'-1⅝"	1'-0"	1'-9"	12'-6"	1'-1"	2'-0⅝"	2'-9"	1'-9"	9'-3"	1'-1"	2'-0⅝"	2'-7"	1'-6"	1'-7"
18	20'-0"	1'-0"	4'-0"	10'-0"	2'-4"	4'-7⅝"	1'-0"	2'-0"	14'-0"	1'-3"	2'-4¼"	3'-0"	2'-0"	10'-0"	1'-3"	2'-4¼"	2'-9"	1'-8"	1'-9"
20	22'-0"	1'-0"	4'-6"	11'-0"	2'-5"	5'-1¼"	1'-0"	2'-3"	15'-6"	1'-4"	2'-7⅝"	3'-3"	2'-3"	11'-0"	1'-4"	2'-7⅝"	2'-10"	1'-9"	1'-10"
22	24'-0"	1'-0"	5'-0"	12'-0"	2'-6"	5'-7⅛"	1'-0"	2'-6"	17'-0"	1'-5"	2'-10½"	3'-6"	2'-6"	12'-0"	1'-5"	2'-10½"	2'-11"	1'-10"	1'-11"
24	26'-0"	1'-0"	5'-6"	13'-0"	2'-7"	6'-0⅝"	1'-0"	2'-9"	18'-6"	1'-6"	3'-1⅝"	3'-9"	2'-9"	13'-0"	1'-6"	3'-1⅝"	3'-0"	1'-11"	2'-0"
26	28'-0"	1'-0"	6'-0"	14'-0"	2'-8"	6'-6¾"	1'-0"	3'-0"	20'-0"	1'-7"	3'-4¾"	4'-0"	3'-0"	14'-0"	1'-7"	3'-4¾"	3'-1"	2'-0"	2'-1"



BENDING DIAGRAM- BAR A



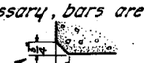
BENDING DIAGRAM- BARS B & D

BENDING DIAGRAM- BARS E, F & G

GENERAL NOTES & DESIGN DATA.

Specifications — — — — — — B.P.R. 1918.
Concentrated load — — Typical 15 ton truck.
Impact allowance — — — — — 30 per cent.
Paving or ballast — — Not to exceed 80 lbs. per sq.ft.
Steel in tension — — — — — 16000 " " sq.in.
Concrete in compression — — — 650 " " "
Reinforced concrete in shear — — — 110 " " "
The table is based on the net area of bars as follows:
½"ϕ = 0.25 sq.in. 1"ϕ = 1.00 sq.in. 1⅛"ϕ = 1.2656 sq.in.
1¼"ϕ = 1.5625 sq.in.

Concrete to be a 1:2:4 mixture.
Maximum size of aggregate - 1½".
All reinforcing steel shall be deformed bars.
(Square twisted bars not to be considered as deformed.)
All dimensions relating to reinforcement are to centers of bars.
Where splicing of reinforcement is necessary, bars are to be lapped 40 diameters.
All exposed corners (except as indicated) to be chamfered thus:



Railings designed to suit local conditions to be placed on curbs where necessary, and provision made therefore when pouring curb. For types of railing, see Drawing No. G-211.
Curbs, slab and beam-stems must be poured at same time, allowing no time for initial set to take place between them.

DESIGNED	H.C. Grover	DATE Feb. 1919.
DRAWN	H.C.J.	Mar. 1919.
TRACED	H.C.J.	Mar. 1919.
CHECKED	J.M. Moore, J.S. Clay	Mar. 1919.

U.S. BUREAU OF PUBLIC ROADS
WASHINGTON, D.C.

CONCRETE DECK GIRDER SPANS

SPANS 16'-0" TO 26'-0" ROADWAY 20'-0"
MARCH 1919

CORRECT O. L. Grover BRIDGE ENGINEER
APPROVED P. J. Mclean CHIEF ENGINEER

G-265