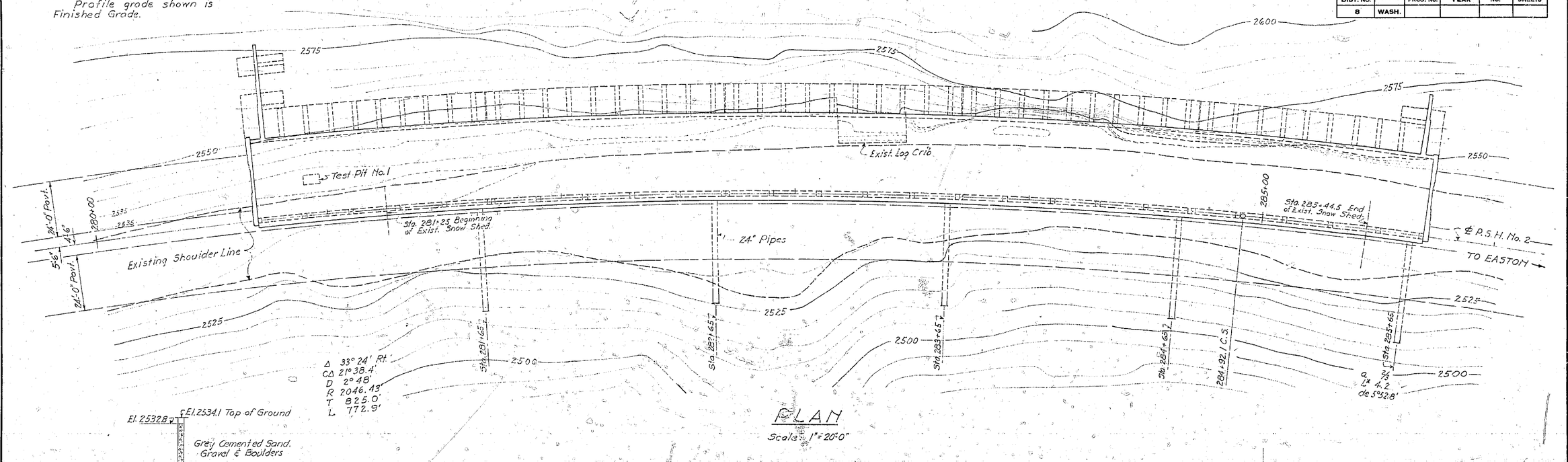
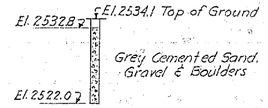
Designing Engineer	O.R. Dinsmore Oct 1949
Designed	P.C.Y. Sept. 1949
Design Checked	C.C.Y. Oct. 1949
Quantities By	P.C.Y. Sept. 1949
Quantities Figured	
Quantities Checked	

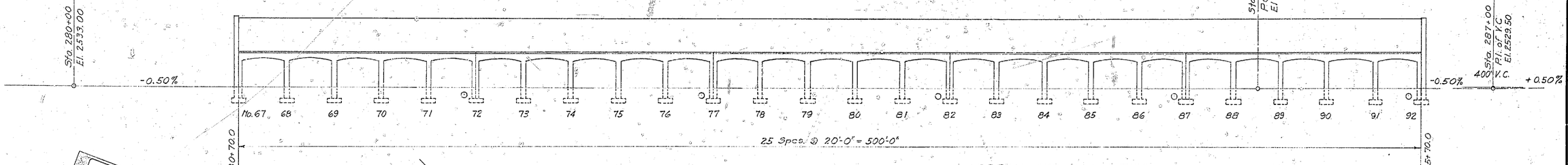
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	WASH.				

Note:
Profile grade shown is Finished Grade.

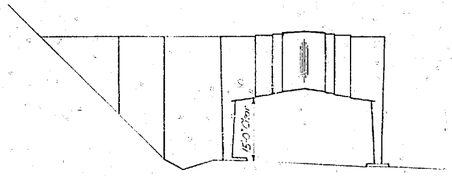




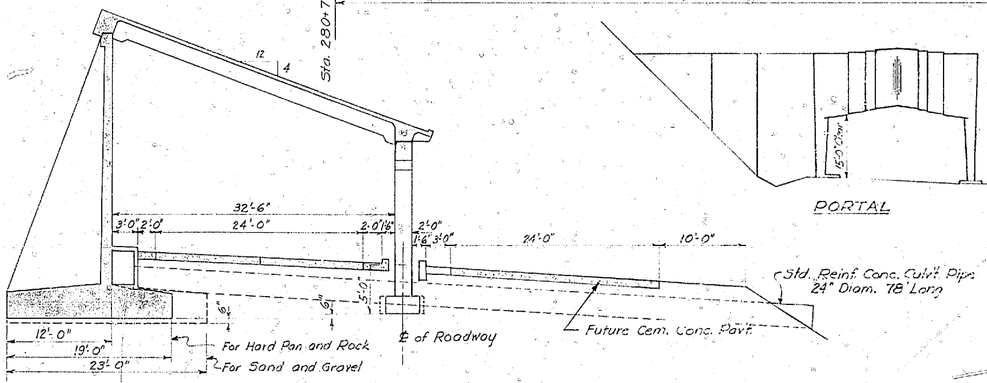
TEST PIT NO. 1



ELEVATION
(Developed along centerline)



PORTAL



TYPICAL SECTION

APPROXIMATE QUANTITIES

ITEM NO.	ITEM	QUANTITY	UNIT
10	Structure Excavation	10,000	Cu. Yds
11	Mechanical Tampers	15	Days
12	Concrete Class "A"	1,200	Cu. Yds.
13	Concrete Class "B"	2,650	Cu. Yds.
14	Steel Reinforcing Bars	700,000	Pounds
15	Std. Reinf. Conc. Culv't Pipe 24" Diam	375	Lin. Ft.
16	Removing Existing Structure	Lump Sum.	

DATE	REVISION	BY	APP'R.
11-28-49	Edge of outside pav't to curb dimen. to 3'-0	P.Y.	O.R.D.

PRIMARY STATE HIGHWAY NO. 2
LAKE KEECHELUS SNOWSHED
KITTITAS COUNTY
STATE OF WASHINGTON
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON
APPROVED: Oct 11, 1949

O.R. DINSMORE — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

ASST. DIRECTOR OF HIGHWAYS

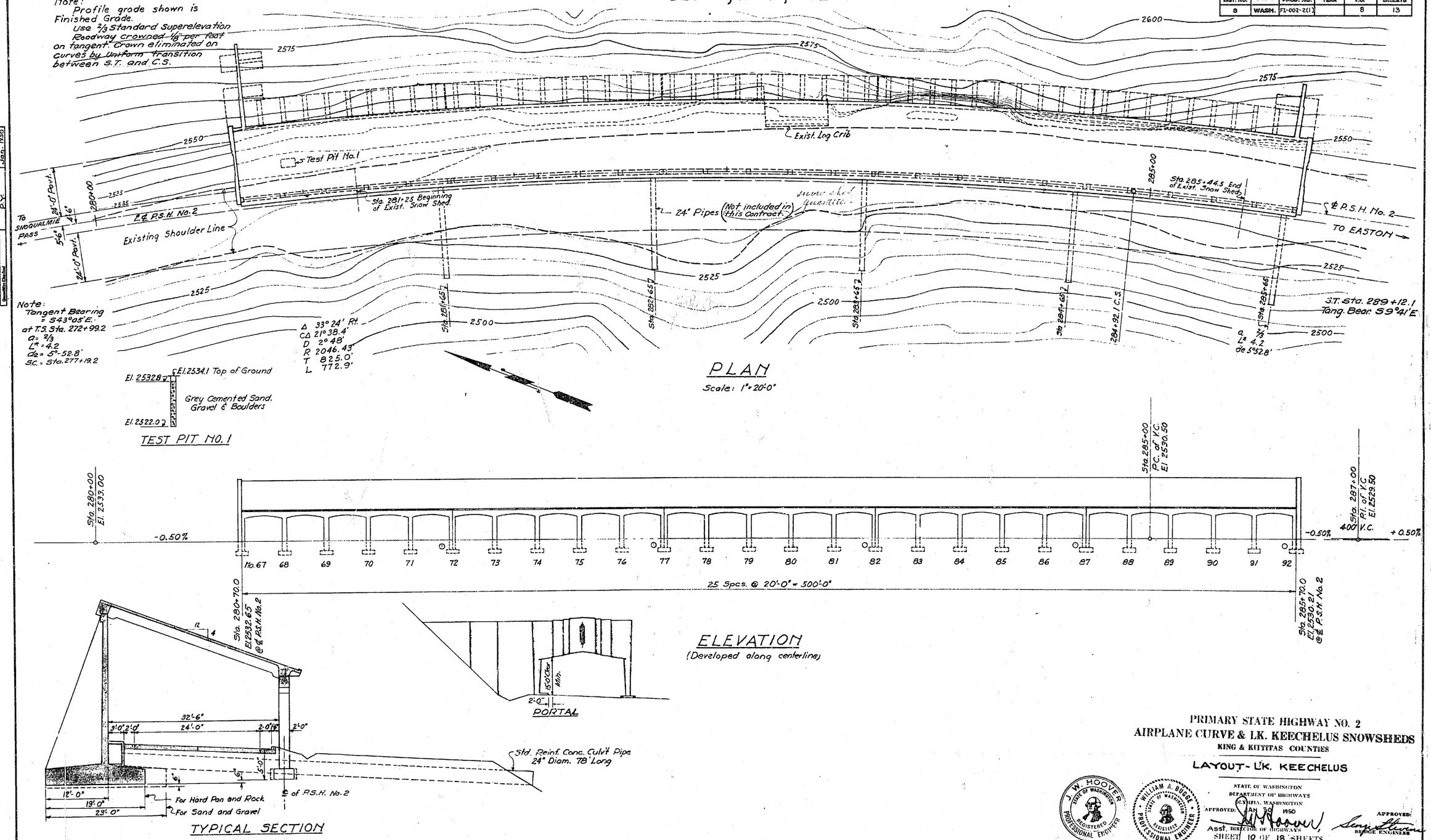
SHEET 2 OF 2 SHEETS
CONTRACT NUMBER

72/185

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	WASH.	FI-002-2(1)		8	13

SEC. 35, T. 22 N., R. 11 E. W.M.

Note:
Profile grade shown is Finished Grade.
Use 2/3 Standard Superelevation
Roadway crowned 1/8" per foot on tangent. Crown eliminated on curves by Uniform transition between S.T. and C.S.



Designing Engineer	P.Y.	Jan. 1950
Designed	C.C.N.	Sept. 1949
Design Checked	C.C.N. (RCK)	Oct. 1949
Drawn by	P.Y.	Sept. 1949
Quantities Figured	C.C.N.	Dec. "
Quantities Checked	P.Y.	Jan. 1950

PRIMARY STATE HIGHWAY NO. 2
AIRPLANE CURVE & LK. KEECHELUS SNOWSHEDS
KING & KITTITAS COUNTIES

LAYOUT - LK. KEECHELUS

STATE OF WASHINGTON
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON
APPROVED: JAN 30 1950
Asst. DIRECTOR OF HIGHWAYS
SHEET 10 OF 18 SHEETS
CONTRACT NUMBER 3754

J. W. HOOVER — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER
WILLIAM A. BUGGE — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

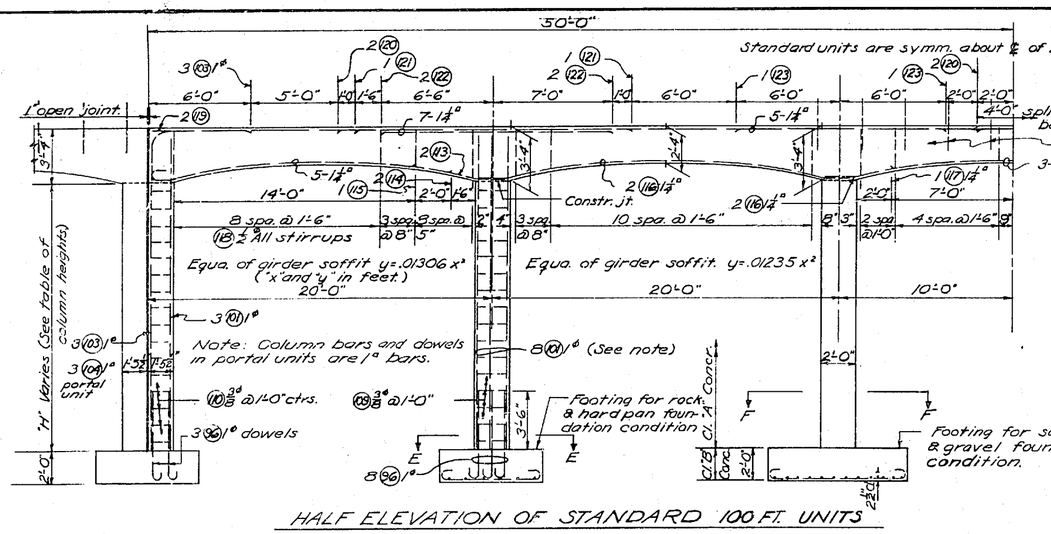
APPROVED:
BRIDGE ENGINEER

S/685

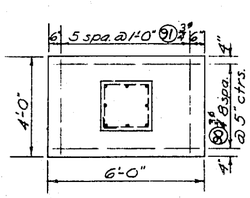
72/194

Designation Engineer	J.W. Hoover Jan. 1950
Designed	B.V. Sept. 1949
Design Checked	G.G.H. (E.C.E.) Sept. 1949
Drawn by	G.G.H. Oct. 1949
Quantities Figured	C.C.K. Dec. 1949
Quantities Checked	P.V. Jan. 1950

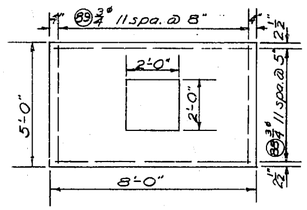
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	WASH.	F1-002-1(13)		7	11
		F1-002-2(1)		9	13



HALF ELEVATION OF STANDARD 100 FT. UNITS

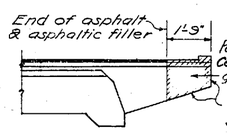


SECTION E-E

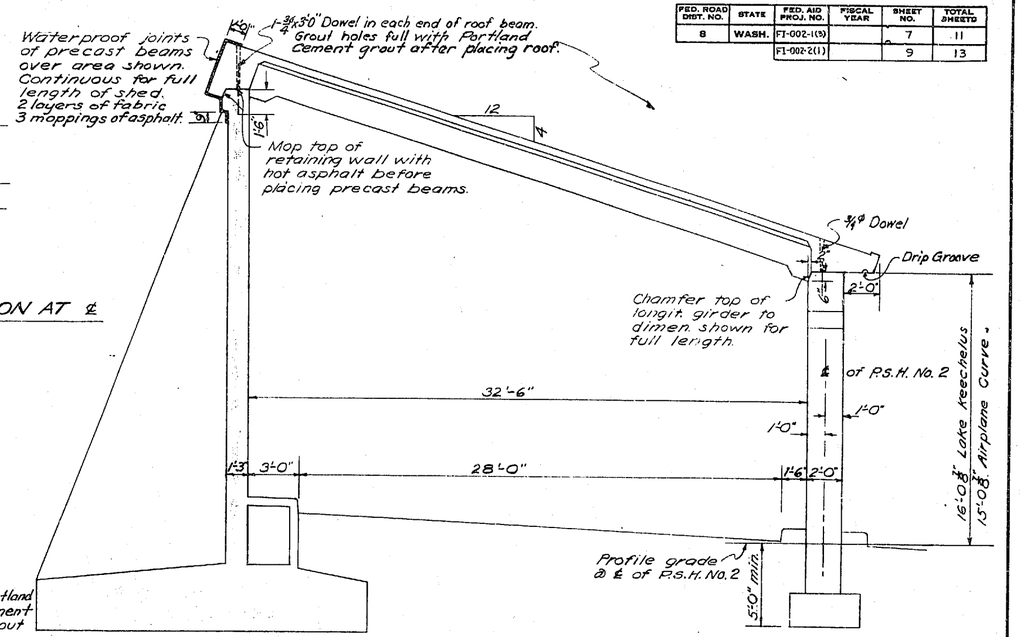


SECTION F-F

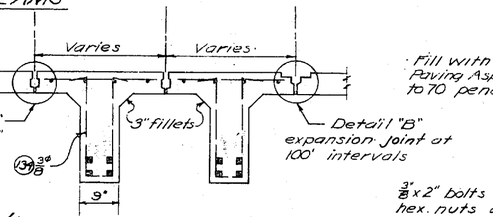
Scale ⅜" = 1'-0"



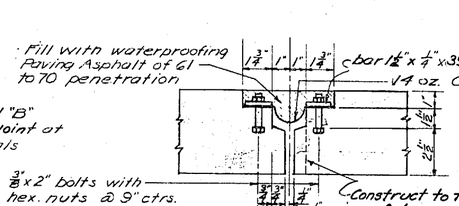
END DETAIL OF ROOF BEAMS
(except joint at 100' intervals.)



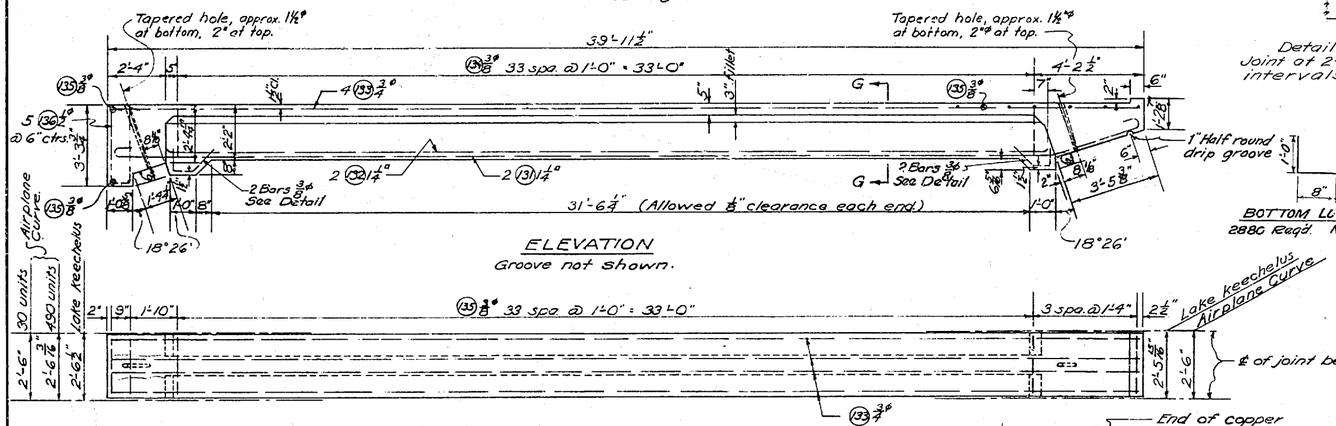
ELEVATION OF ASSEMBLED UNITS
Scale ¼" = 1'-0"



SECTION G-G
Scale ¾" = 1'-0"



DETAIL "B"
Scale 1" = 1"

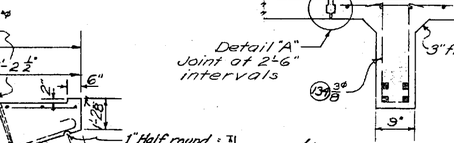


ELEVATION
Groove not shown.

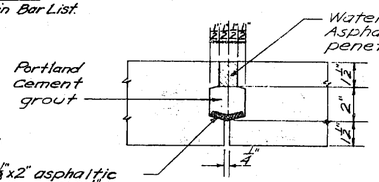
PLAN
Scale ⅜" = 1'-0"

Note: Roof beams shall be lifted only with stem downward as in their final position and shall be supported at all times by blocks or slings placed not more than 10 feet from each end.

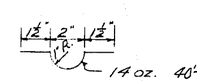
TYPICAL PRECAST ROOF BEAM
520 Units reqd at Airplane curve.
200 " " " Lake Keechelus.



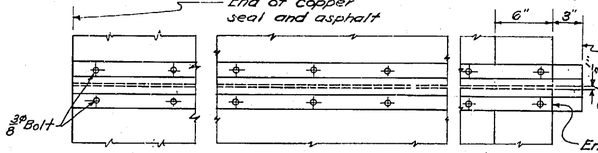
BOTTOM LUG STIRRUPS
288 Req'd. Not shown in Bar List.



DETAIL "A"
Scale 1" = 1"



COPPER SEAL
16 required



BEAM END DETAILS AT 100 FT. INTERVALS
Not to scale

5-18-50	Added bottom lug Stirrups in Rec'd Bms	P.Y.		W.H.R.
DATE	REVISION	BY	CHECKED	APPR.

PRIMARY STATE HIGHWAY NO. 2
AIRPLANE CURVE & LK. KEECHELUS SNOWSHEDS
KING & KITTITAS COUNTIES

ROOF & FRAME DETAILS

STATE OF WASHINGTON
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON
APPROVED JAN 30 1950
J.W. Hoover
ASST. DIRECTOR OF HIGHWAYS

APPROVED:
BRIDGE ENGINEER

SHEET 11 OF 18 SHEETS
CONTRACT NUMBER 3754

J. W. HOOVER STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER

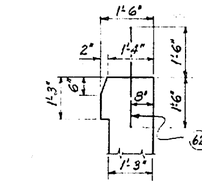
WILLIAM A. BUGGE STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER

5/685

7/1/93

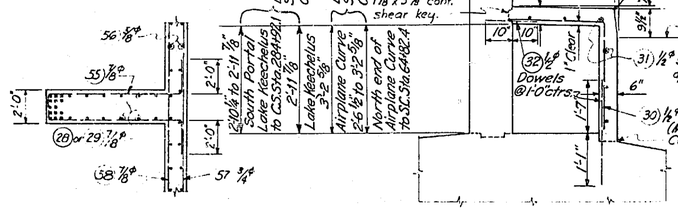
Designed	W.H.D. Jr. Engineer	Jan. 1948
Detailed		Sept. 1949
Traced	C.P.Y.	Sept. 1949
Checked		
Quantities Figured	C.C.N.	Dec. '49
Quantities Checked	P.Y.	Jan. 1950

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	WASH.	F1-002-1(5)		8	11
		F1-002-2(1)		10	13

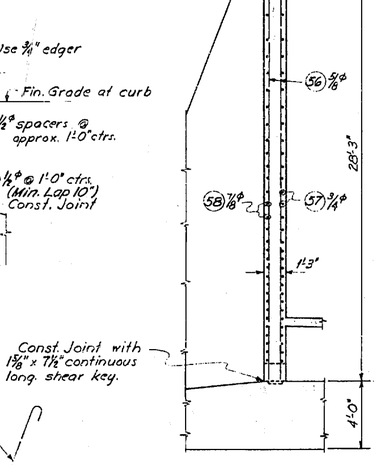


SECTION C-C

Scale: 1/2" = 1'-0"



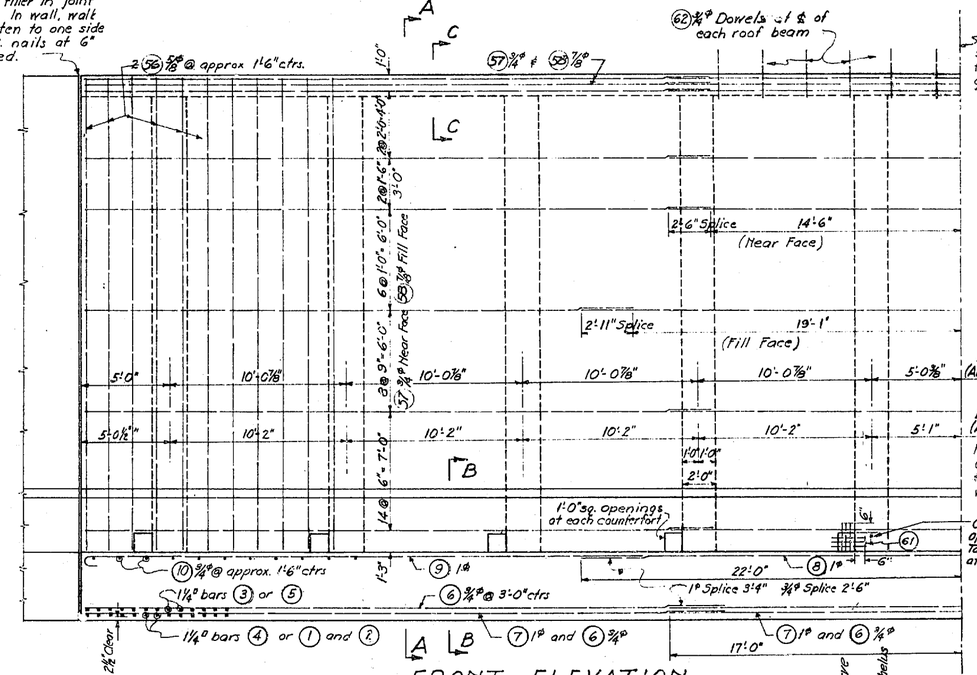
SECTION D-D



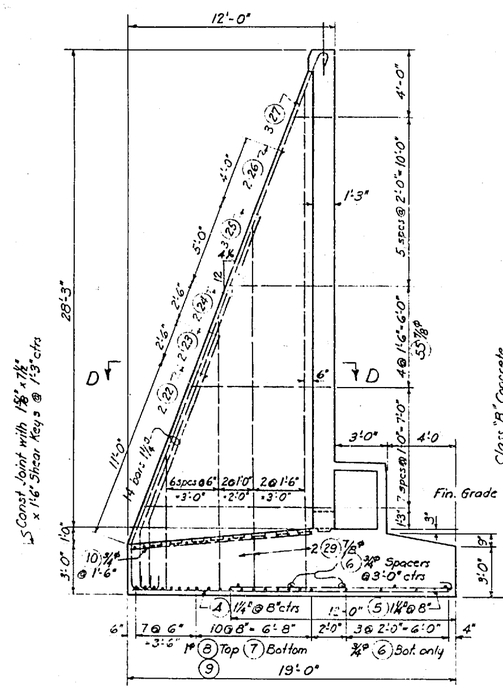
SECTION B-B

Scale: 1/2" = 1'-0"

SECTION A-A

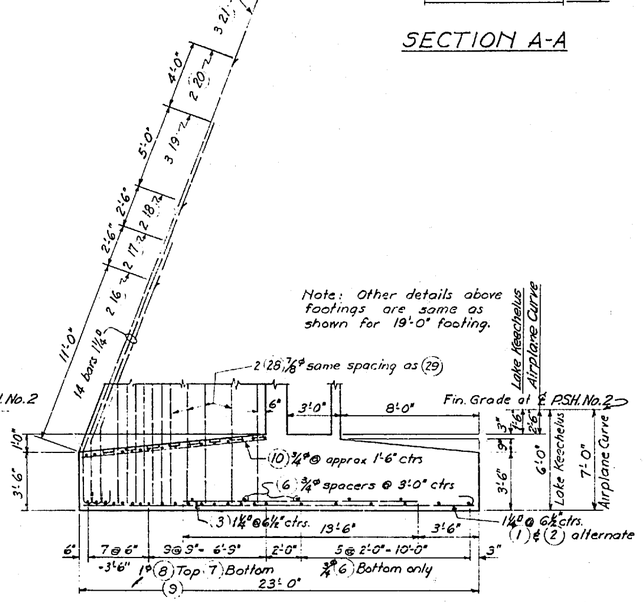


FRONT ELEVATION



TYPICAL WALL SECTION

Sta. 281+70.0 to Sta. 285+70.0 (Lake Keechelus)
Sta. 69+50.0 to Sta. 76+50.0 (Airplane Curve)

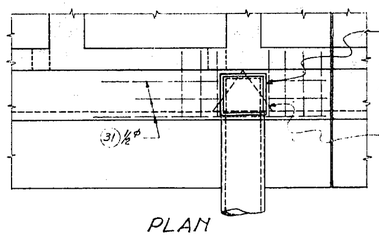


TYPICAL FOOTING SECTION

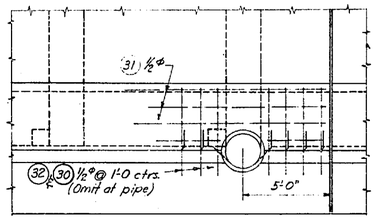
Sta. 280+70.0 to Sta. 281+70.0 (Lake Keechelus)

This footing section to be used on Airplane Curve only where suitable foundation material for the 19'-0" footing is not found.

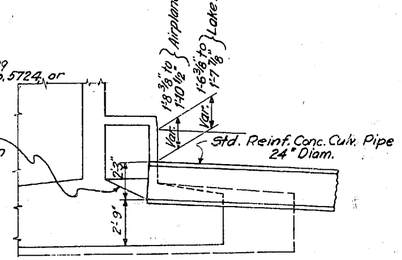
Note: All scales 1/4" = 1'-0" except as noted.



PLAN



ELEVATION



SECTION AT DRAIN

DETAIL OF DRAIN

24" Pipe drain and sidewalk manhole to be placed at lower end of each wall unit.

PRIMARY STATE HIGHWAY NO. 2

AIRPLANE CURVE & LK. KEECHELUS SNOWSHEDS

KING & KITTITAS COUNTIES

RETAINING WALL DETAILS

DATE	REVISION	BY	CHECKED	APPR.
4-12-50	Changed Bar (30) added (32) in Sidwk	P.Y.	C.C.N.	W.H.D. Jr.

J. W. HOOVER — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

WILLIAM A. BUGGE — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

STATE OF WASHINGTON
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

APPROVED: MAR 10 1950

Asst. DIRECTOR OF HIGHWAYS

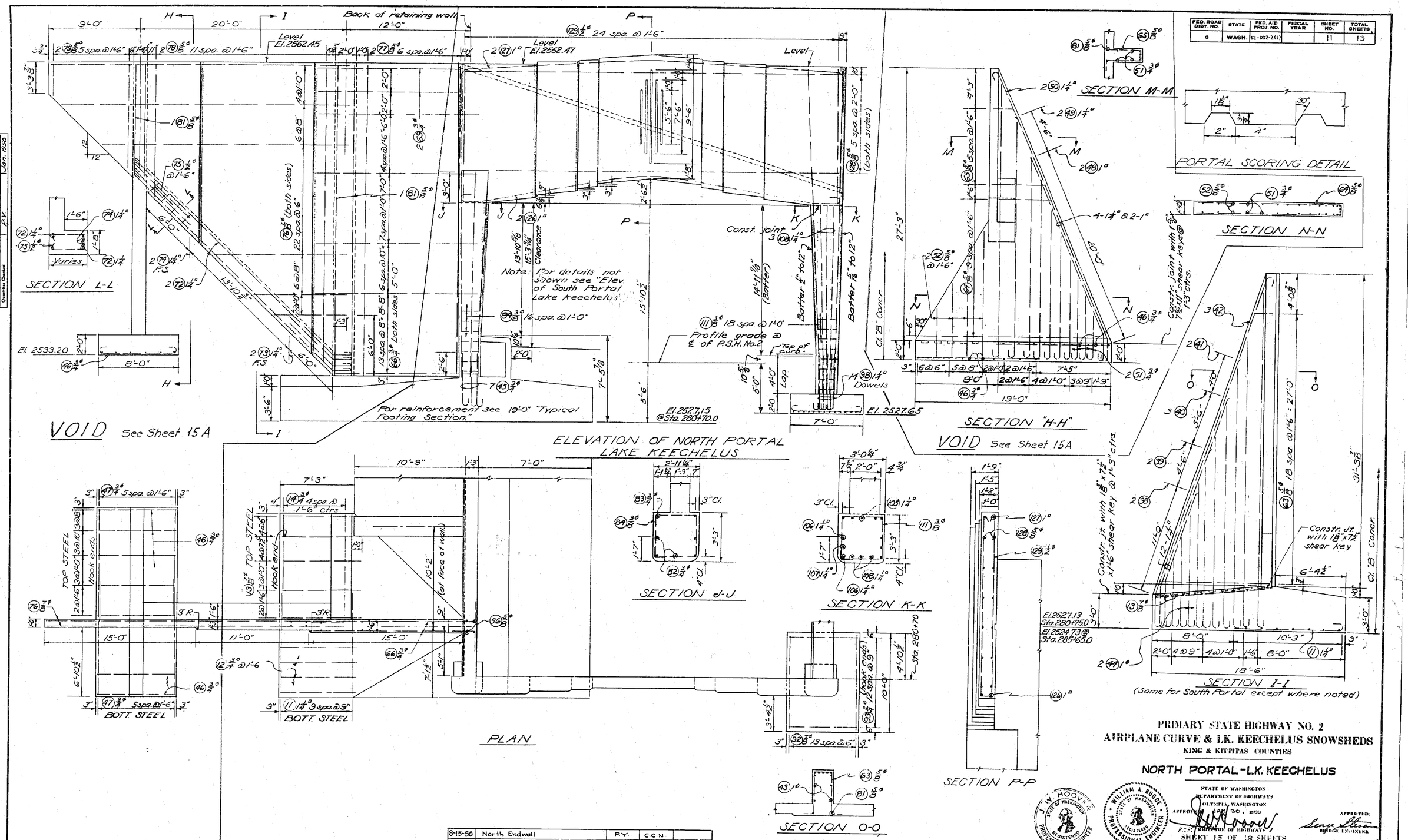
SHEET 12 OF 18 SHEETS

CONTRACT NUMBER 3754

APPROVED:

BRIDGE ENGINEER

S 685



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	WASH.	FI-002-2(1)		11	13

Designing Engineer	W. V. Rodgers	Jan. 1950
Designed	C.C.N.	Nov. 1949
Design Checked	P.Y. (R.C.K.)	" "
Drawn by	C.C.N.	" "
Quantities Figured	C.C.N.	Dec. "
Quantities Checked	P.Y.	Jan. 1950

DATE	REVISION	BY	CK'D	APPROVED
8-15-50	North Endwall	P.Y.	C.C.N.	

PRIMARY STATE HIGHWAY NO. 2
AIRPLANE CURVE & LK. KEECHELUS SNOWSHEDS
KING & KITTITAS COUNTIES

NORTH PORTAL - LK. KEECHELUS

STATE OF WASHINGTON
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON
APPROVED JAN. 30, 1950
Asst. DIRECTOR OF HIGHWAYS

J. W. HOOVER — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

WILLIAM A. BUGGE — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

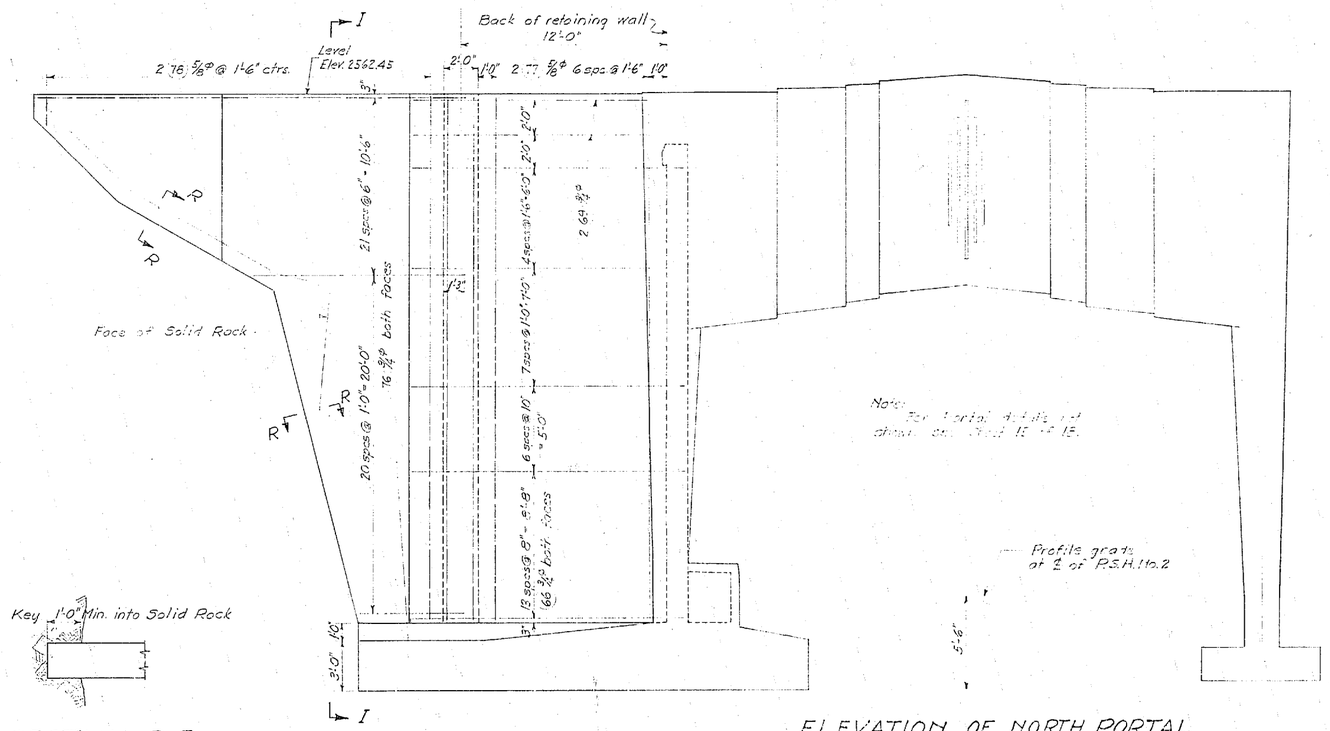
APPROVED: Senge Stevens
BRIDGE ENGINEER

SHEET 15 OF 18 SHEETS
CONTRACT NUMBER 3734

S
685

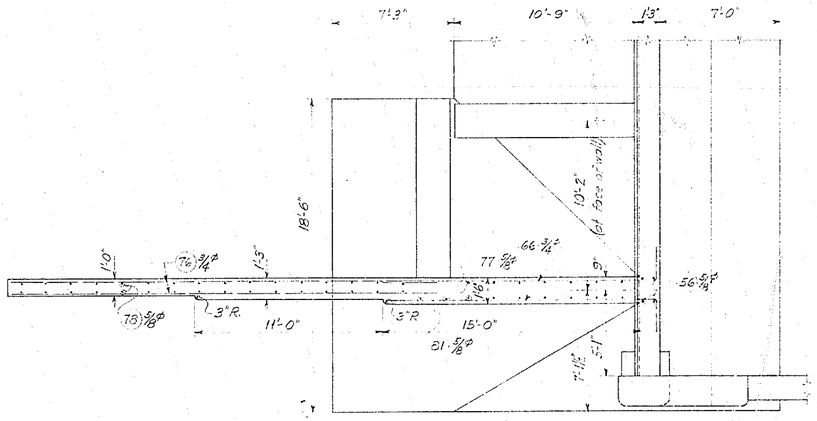
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	WASH.	FI-002-2(1)			

Designed	P. Y.	Aug. 1950
Design Checked	C. C. H.	Aug. 1950
Drawn by	P. Y.	Aug. 1950
Quantities Figured		
Quantities Checked		



SECTION R-R

ELEVATION OF NORTH PORTAL LAKE KEECHELUS



PART PLAN

Note:
Endwall details shown here supersede those shown on Sheet 15 of 18 sheets.

PRIMARY STATE HIGHWAY NO. 2
AIRPLANE CURVE & LK. KEECHELUS SNOWSHEDS
KING & KITTITAS COUNTIES

REVISED NORTH PORTAL - LAKE KEECHELUS

STATE OF WASHINGTON
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

APPROVED AUGUST 1950

George Stevens
BRIDGE ENGINEER

SHEET 15-A OF 18 SHEETS
CONTRACT NO. 3754

72/188A

DIETZGEN-POST CO. PRINTED ON CLEARPRINT NO. 1000H

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
0	WASH.	FI-002-2(1)		12	13

Designing Engineer	W. T. Robertson	Jan. 1950
Designed	C.C.N. & P.Y.	Nov. 1949
Design Checked	(R.C.K.) P.Y. & C.C.N.	Dec. "
Drawn by	C.C.N.	"
Quantities Figured	C.C.N.	"
Quantities Checked	P.Y.	Jan. 1950

DATE	REVISION	BY	CHECKED	APPR.
4-12-50	Added Bar 32 at Cap.	P.Y.	C.C.N.	[signature]

PRIMARY STATE HIGHWAY NO. 2
AIRPLANE CURVE & LK. KEECHELUS SNOWSHEDS
KING & KITTITAS COUNTIES

SOUTH PORTAL-LK. KEECHELUS

J. W. HOOVER — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER
WILLIAM A. BUGGE — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

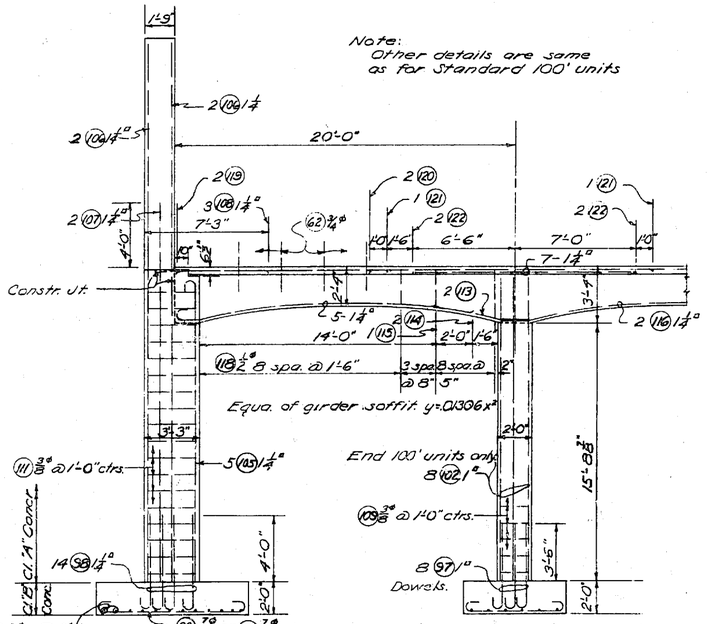
STATE OF WASHINGTON
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON
APPROVED: JAN 30, 1950
ASST. DIRECTOR OF HIGHWAYS
APPROVED: BRIDGE ENGINEER
SHEET 16 OF 18 SHEETS
CONTRACT NUMBER 3754

S/685

Designing Engineer	W.H.P.	Submitted	Nov. 1949
Designed	P.Y.	C.C.N. (1951)	"
Detailed	C.C.N.	C.C.N.	Dec. "
Checked	C.C.N.	C.C.N.	"
Drawn by	C.C.N.	C.C.N.	"
Quantities Figured	P.Y.	C.C.N.	Jan. 1950
Quantities Checked	P.Y.		

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	WASH.	FI-002-2(1)		13	13

Note:
Other details are same
as for Standard 100' units

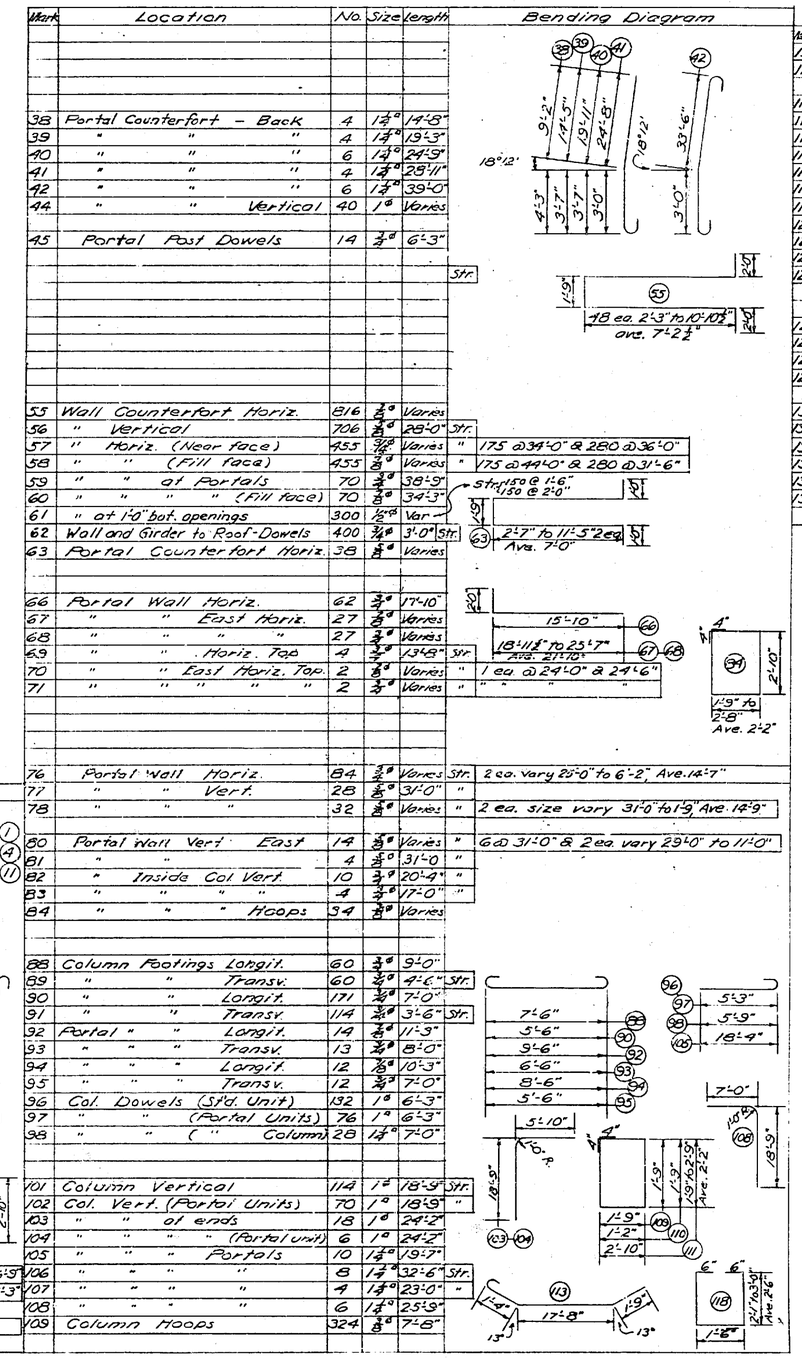


PART INSIDE ELEV. OF PORTAL UNIT

BAR LIST ~ LAKE KEECHELUS

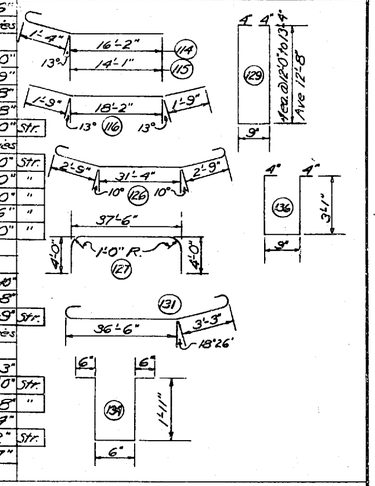
All dimensions are out to out

Mark	Location	No.	Size	Length	Bending Diagram
1	Wall footing bott. trans.	96	1¼"	23'-3"	
2	" " " "	95	1¼"	22'-6"	Str.
3	" " " "	191	1¼"	13'-6"	"
4	" " " "	611	1¼"	19'-9"	"
5	" " " "	611	1¼"	12'-9"	Str.
6	" " " Spacers	141	⅜"	Varies	" 47 @ 34'-0", 74 @ 36'-0" & 20 @ 35'-2"
7	" " " Longit.	267	1"	Varies	" 89 @ 34'-0", 143 @ 36'-10" & 35 @ 39'-0"
8	" " Top Longit.	89	1"	44'-0"	"
9	" " " "	178	1"	Varies	
10	" " " Spacers	342	⅜"	10'-6"	Str.
11	Portal " Bott. Longit.	20	1¼"	11'-6"	
12	" " " Transv.	14	⅜"	7'-9"	Str.
13	" " Top "	28	⅝"	8'-8"	
14	" " " Longit.	10	¾"	10'-9"	Str.
16	Wall Counterforts ~ Back	18	1¼"	15'-2"	
17	" " "	18	1¼"	17'-8"	
18	" " "	18	1¼"	20'-3"	
19	" " "	27	1¼"	25'-3"	
20	" " "	18	1¼"	29'-5"	
21	" " "	27	1¼"	36'-9"	
22	" " "	78	1¼"	14'-5"	
23	" " "	78	1¼"	17'-2"	
24	" " "	78	1¼"	19'-9"	
25	" " "	117	1¼"	24'-9"	
26	" " "	78	1¼"	28'-11"	
27	" " "	117	1¼"	36'-3"	
28	" " Vertical	198	⅝"	Varies	Str. 18 ea. size vary 8'-6" to 29'-10" ave. 16'-3"
29	" " "	858	⅝"	Varies	" 78 " " 8'-0" to 29'-4" ave. 16'-3"
30	Sidewalk Transv.	50	½"	5'-6"	
31	" Longit.	135	½"	Varies	Str. 90 @ 30'-0", 6 @ 18'-4", 9 @ 16'-3", 3 @ 12'-0"
					12 @ 10'-0", 3 @ 5'-6" & 12 @ 3'-6"
32	Sidewalk Dowels	1020	½"	Varies	Str. 510 ea. @ 1'-8" & 2'-8"



Mark	Location	No.	Size	Length	Bending Diagram
38	Portal Counterfort ~ Back	4	1¼"	14'-8"	
39	" " "	4	1¼"	19'-3"	
40	" " "	6	1¼"	24'-5"	
41	" " "	4	1¼"	28'-11"	
42	" " "	6	1¼"	33'-0"	
44	" " Vertical	40	1"	Varies	
45	Portal Post Dowels	14	¾"	6'-3"	Str.
55	Wall Counterfort Horiz.	816	⅝"	Varies	
56	" Vertical	706	⅝"	28'-0"	Str.
57	" Horiz. (Near face)	455	⅝"	Varies	" 175 @ 34'-0" & 280 @ 36'-0"
58	" " (Fill face)	455	⅝"	Varies	" 175 @ 44'-0" & 280 @ 31'-6"
59	" " at Portals	70	¾"	38'-9"	Str. #5 at 1'-6" & #50 @ 2'-0"
60	" " " (Fill face)	70	⅝"	34'-3"	
61	" at 1'-0" bot. openings	300	½"	Var	
62	Wall and Girder to Roof ~ Dowels	400	¾"	3'-0"	Str. 2'-7" to 11'-5" 2 eq. Ave. 7'-0"
63	Portal Counterfort Horiz.	38	⅝"	Varies	
66	Portal Wall Horiz.	62	¾"	17'-10"	
67	" " East Horiz.	27	⅝"	Varies	
68	" " "	27	¾"	Varies	
69	" " Horiz. Top	4	¾"	13'-8"	Str.
70	" " East Horiz. Top	2	⅝"	Varies	" 1 ea @ 24'-0" & 24'-6"
71	" " " " "	2	¾"	Varies	" " " " "
76	Portal Wall Horiz.	84	¾"	Varies	Str. 2 ea. vary 25'-0" to 6'-2", Ave. 14'-7"
77	" " Vert.	28	⅝"	31'-0"	"
78	" " "	32	⅝"	Varies	" 2 ea. size vary 31'-0" to 19", Ave. 12'-9"
80	Portal Wall Vert. East	14	⅝"	Varies	" 6 @ 31'-0" & 2 ea. vary 29'-0" to 11'-0"
81	" "	4	⅝"	31'-0	"
82	" Inside Col. Vert.	10	¾"	20'-4"	"
83	" " " "	4	¾"	17'-0"	"
84	" " " Hoops	34	⅝"	Varies	
88	Column Footings Longit.	60	¾"	9'-0"	
89	" " Transv.	60	⅝"	4'-6"	Str.
90	" " Longit.	171	⅝"	7'-0"	
91	" " Transv.	1114	⅝"	3'-6"	Str.
92	Portal " " Longit.	14	⅝"	11'-3"	
93	" " " Transv.	13	⅝"	8'-0"	
94	" " " Longit.	12	⅝"	10'-3"	
95	" " " Transv.	12	⅝"	7'-0"	
96	Col. Dowels (Std. Unit)	132	1"	6'-3"	
97	" " (Portal Units)	76	1"	6'-3"	
98	" " (" Columns)	28	1¼"	7'-0"	
101	Column Vertical	114	1"	18'-3"	Str.
102	Col. Vert. (Portal Units)	70	1"	18'-9"	"
103	" " at ends	18	1"	24'-2"	
104	" " " (Portal unit)	6	1"	24'-2"	
105	" " " Portals	10	1¼"	19'-7"	
106	" " " "	8	1¼"	32'-6"	Str.
107	" " " "	4	1¼"	23'-0"	"
108	" " "	6	1¼"	25'-9"	
109	Column Hoops	324	⅝"	7'-8"	

Mark	Location	No.	Size	Length	Bending Diagram
110	Col. hoops @ end of unit	128	⅝"	6'-6"	
111	" " " Portal	38	⅝"	Varies	
113	Longit. Girder Bott.	20	1¼"	22'-0"	
114	" " "	20	1¼"	18'-9"	
115	" " "	10	1¼"	16'-8"	
116	" " "	30	1¼"	21'-8"	
117	" " "	5	1¼"	14'-0"	Str.
118	" " Stirrups	410	⅝"	Varies	
119	" " Top	20	1¼"	52'-0"	Str.
120	" " "	20	1¼"	37'-0"	"
121	" " "	10	1¼"	16'-0"	"
122	" " "	20	1¼"	13'-6"	"
123	" " "	10	1¼"	12'-0"	"
126	Portal Bott.	4	1"	38'-10"	
127	" Top	4	1"	49'-8"	
128	" Horiz.	24	⅝"	36'-9"	Str.
129	" Vert.	50	½"	Varies	
131	Roof Beam longit. Bott.	400	1¼"	42'-3"	
132	" " " "	400	1¼"	34'-0"	Str.
133	" " " Top.	800	⅝"	39'-5"	"
134	" " Stirrups	6800	⅝"	5'-4"	
135	" " Transv.	8200	⅝"	2'-2"	Str.
136	" " End stirrups	1000	½"	7'-7"	



C.C.N.	P.Y.	8-15-50	North End wall and Footing
C.C.N.	P.Y.	4-12-50	Changed Bar (62) added Bar (62)
CHECKED	BY	DATE	REVISION

PRIMARY STATE HIGHWAY NO. 2
AIRPLANE CURVE & LK. KEECHELUS SNOWSHEDS
KING & KITTITAS COUNTIES

BAR LIST & END FRAME
LAKE KEECHELUS

STATE OF WASHINGTON
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

APPROVED: JAN 30 1950
Asst. Chief Engineer of Highways

APPROVED:
Bridge Engineer

J. W. HOOD — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

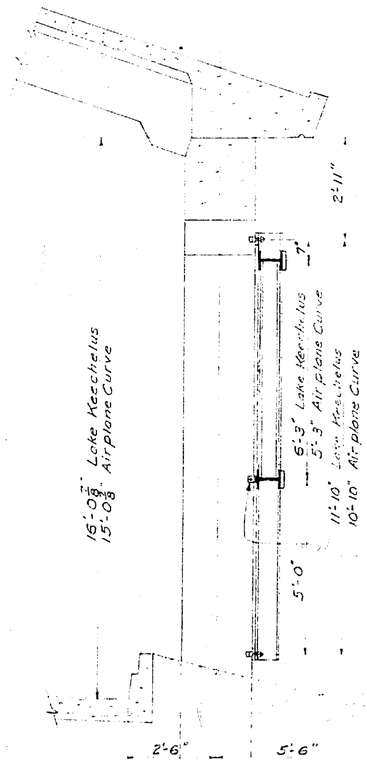
WILLIAM A. BUGGE — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

SHEET 18 OF 18 SHEETS
CONTRACT NUMBER 3754

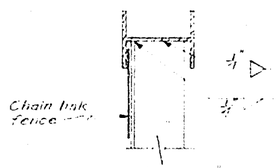
2/685

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	WASH.				

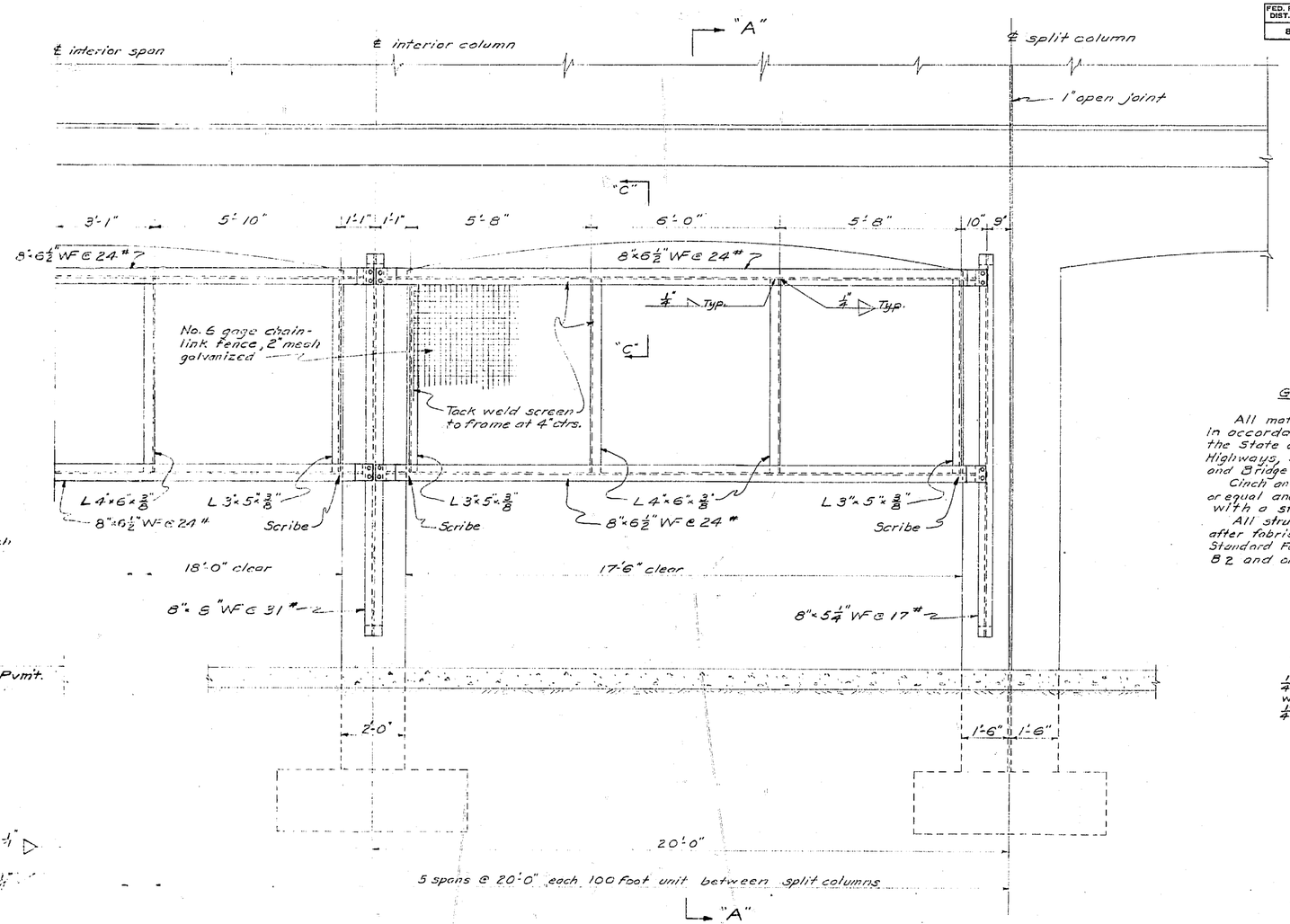
Designed	G.H.A.	April '51
Detailed		
Checked		
Drawn by		
Quantities Checked		

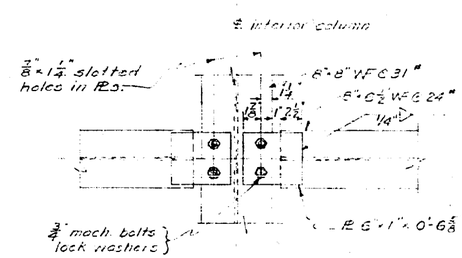


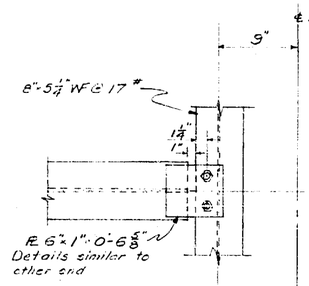
SECTION "A-A"



SECTION "C-C"

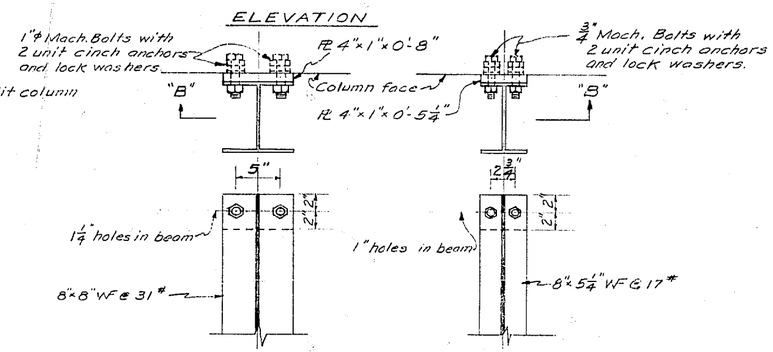






FRAME END CONNECTION DETAILS

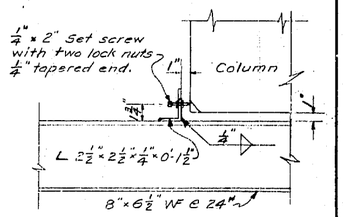
ELEVATION



SECTION "B-B"

VERTICAL BEAM CONNECTION

Bottom connection similar



SCRIBE DETAIL

After installing frame, tighten set screws firmly against column and set lock nuts

GENERAL NOTES

All material and workmanship shall be in accordance with the requirements of the State of Washington, Department of Highways, Standard Specifications for Road and Bridge Construction, Dated April 1948

Cinch anchors shall be National Lead Co. or equal and holes shall be drilled in columns with a star concrete drill.

All structural steel shall be painted, after fabricating, one first coat of State Standard Formula A2, one second coat of B2 and one final coat of Grey C3.

PRIMARY STATE HIGHWAY NO. 2
AIRPLANE CURVE & LK. KEECHELUS SNOWSHEDS
KING & KITTITAS COUNTIES

SNOW FENCE

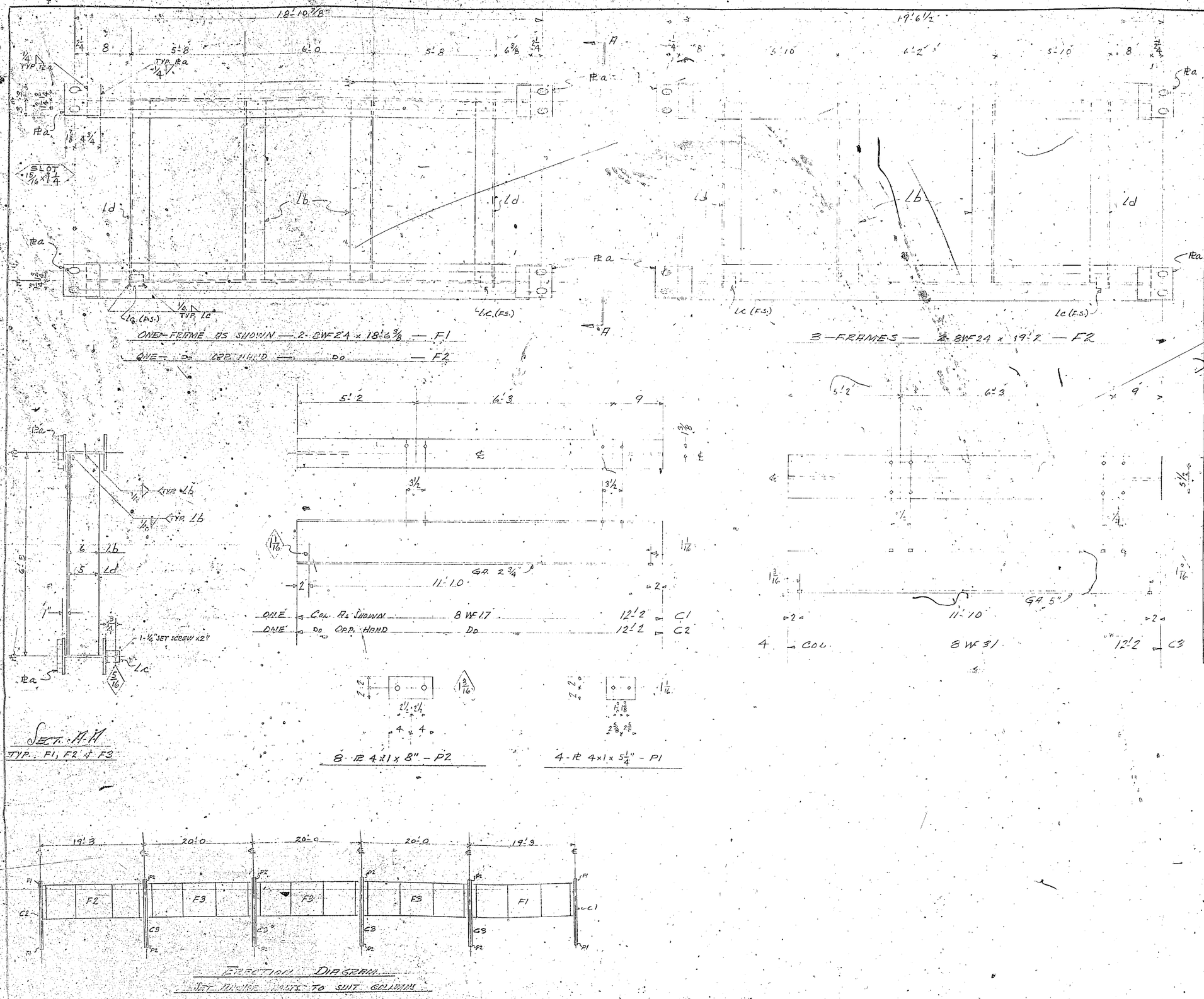
STATE OF WASHINGTON
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

APPROVED:

DIRECTOR OF HIGHWAYS — BRIDGE ENGINEER

72/195-A

DIETZGEN-POST CO. PRINTED ON CLEARPRINT NO. 1000H



No. to Chip	Ship Mark	Assy. Mark	No. of Pcs.	Section	Length Ft.	Length In.	Remarks	Weight
1	F1		4	8WF24	18	6 3/8		
1	F2							
		a	8	PL 6 x 1	0	6 5/8		
		b	4	L6 x 4 x 3/8	6	2 3/4		
		c	4	L2 1/2 x 2 1/2 x 1/4	0	2		
			4	1/4" SET SCREW	0	2	2 LOCK NUTS TAPERED END	
		d	4	L5 x 3 1/2 x 3/8	6	2 3/4		
3	F2		6	8WF24	19	2		
		a	12	PL 6 x 1	0	6 5/8		
		b	6	L6 x 4 x 3/8	6	2 3/4		
		c	6	L2 1/2 x 2 1/2 x 1/4	0	2		
			6	1/4" SET SCREW	0	2	DO	
		d	6	L5 x 3 1/2 x 3/8	6	2 3/4		
1	C1		2	8WF17	12	2		
1	C2							
4	C3		4	8WF31	12	2		
4	P1		4	PL 4 x 1	0	5 1/4		
8	P2		8	PL 4 x 1	0	8		
FIELD BOLTS								
40			40	3/4" M.B.	0	2 1/2	1 LOCK WASHER	
ANCHOR BOLTS								
16			16	1" ϕ M.B.			LOCK WASHER	
16			16	1" CINCH ANCHOR			2 UNIT	
8			8	3/4" M.B.			LOCK WASHER	
8			8	3/4" CINCH ANCHOR			2 UNIT	

RIVETS ____ HOLES 13/16" ϕ UNLESS NOTED
EDGE DISTANCE NOTED
PAINT STATE A-2
FIELD CONNS.
INSPECTION BY

STANDARD STEEL FABRICATING CO., INC.
1040 W. HANFORD STREET, SEATTLE

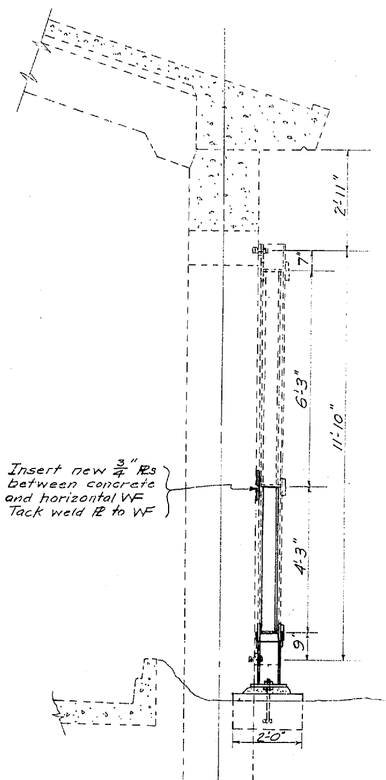
SNOW FENCE FRAME
LAKE KEECHELUS SNOWSHEDS

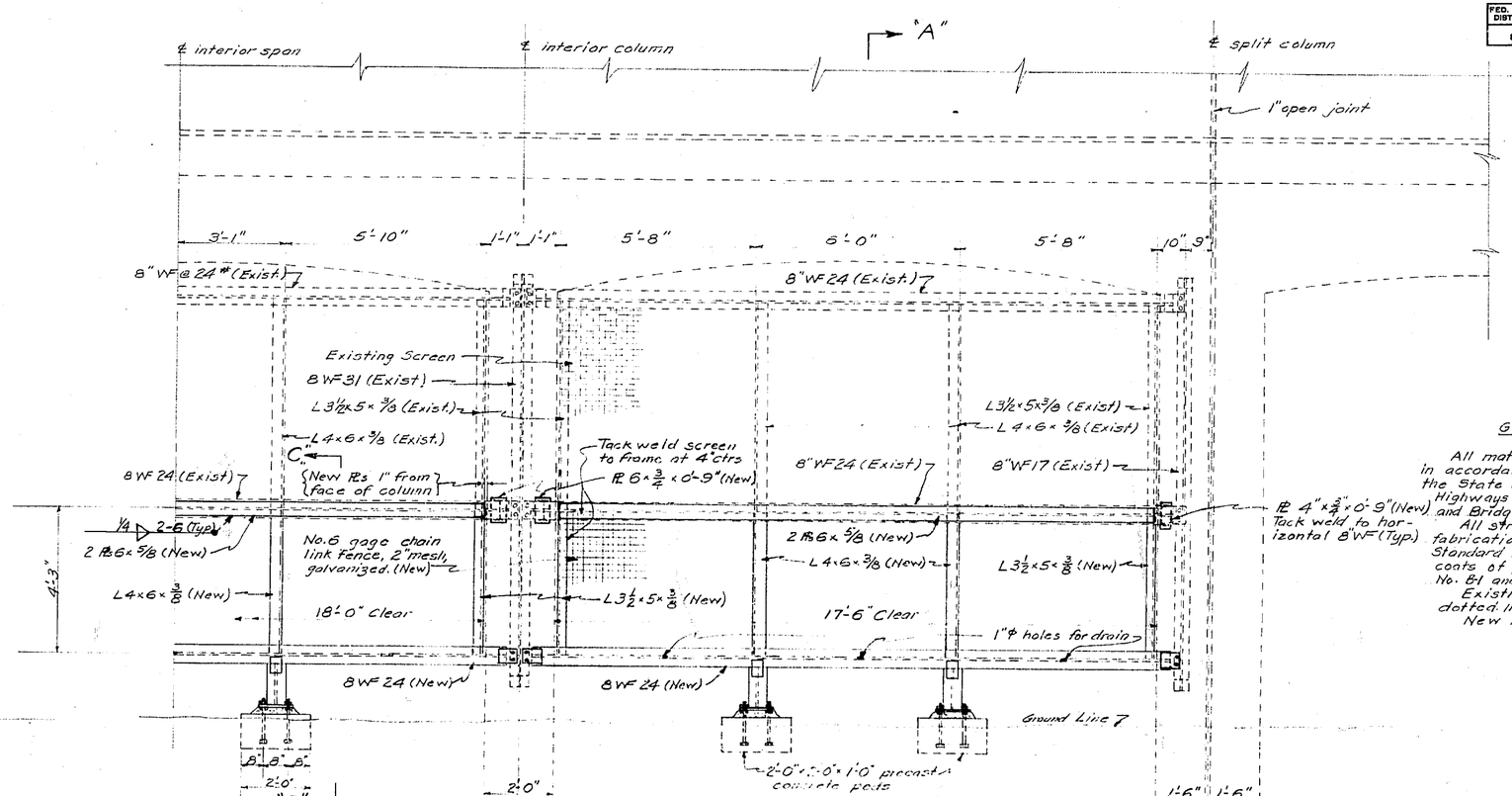
WASHINGTON STATE HIGHWAY DEPARTMENT.

DRAWN RLK 8/20/51	APPROVED	DWG. No. 1
TRACED	DATE	
CHECKED	SCALE	JOB No. 5372

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	WASH.				

Designing Engineer	
Designed	
Design Checked	
Drawn by	
Quantities Figured	
Quantities Checked	





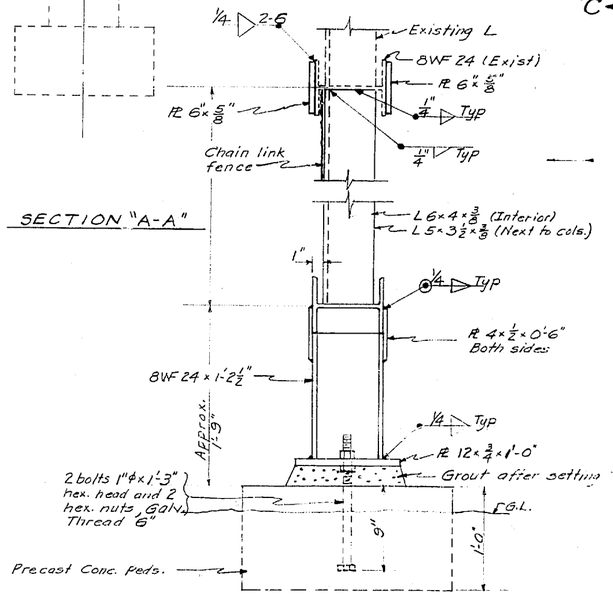
GENERAL NOTES

All material and workmanship shall be in accordance with the requirements of the State of Washington, Department of Highways Standard Specifications for Road and Bridge Construction, Dated April, 1948.

All structural steel shall be paint, after fabrication, one shop coat of Paint, State Standard Formula No. A-1, and two field coats of paint, State Standard Formulas No. B-1 and C-2

Existing structure and fence shown dotted lines.

New material shown solid lines.

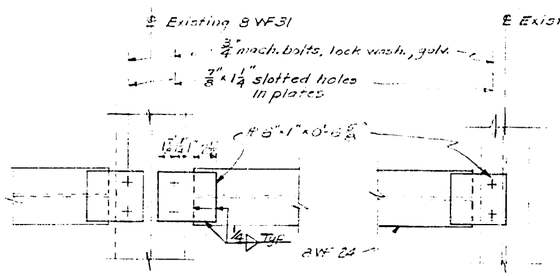


SECTION "A-A"

SECTION "C-C"

5 spans @ 20'-0" each 100 foot unit between split columns

One Only 100 foot unit to be constructed this project



FRAME END CONNECTION DETAILS

ALTERNATE VERTICAL SUPPORTS

This support may be substituted for that shown in Elev. View and Section "C-C" if local source of concrete is available. First place fence frames and 8 WF 24 support. Then cast concrete pads around WF in place.

PRIMARY STATE HIGHWAY NO. 2
LAKE KEECHELUS SNOWSHED
KITTITAS COUNTY

SNOW FENCE — ADDITION

STATE OF WASHINGTON
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

APPROVED:

Leroy Stevens
BRIDGE ENGINEER

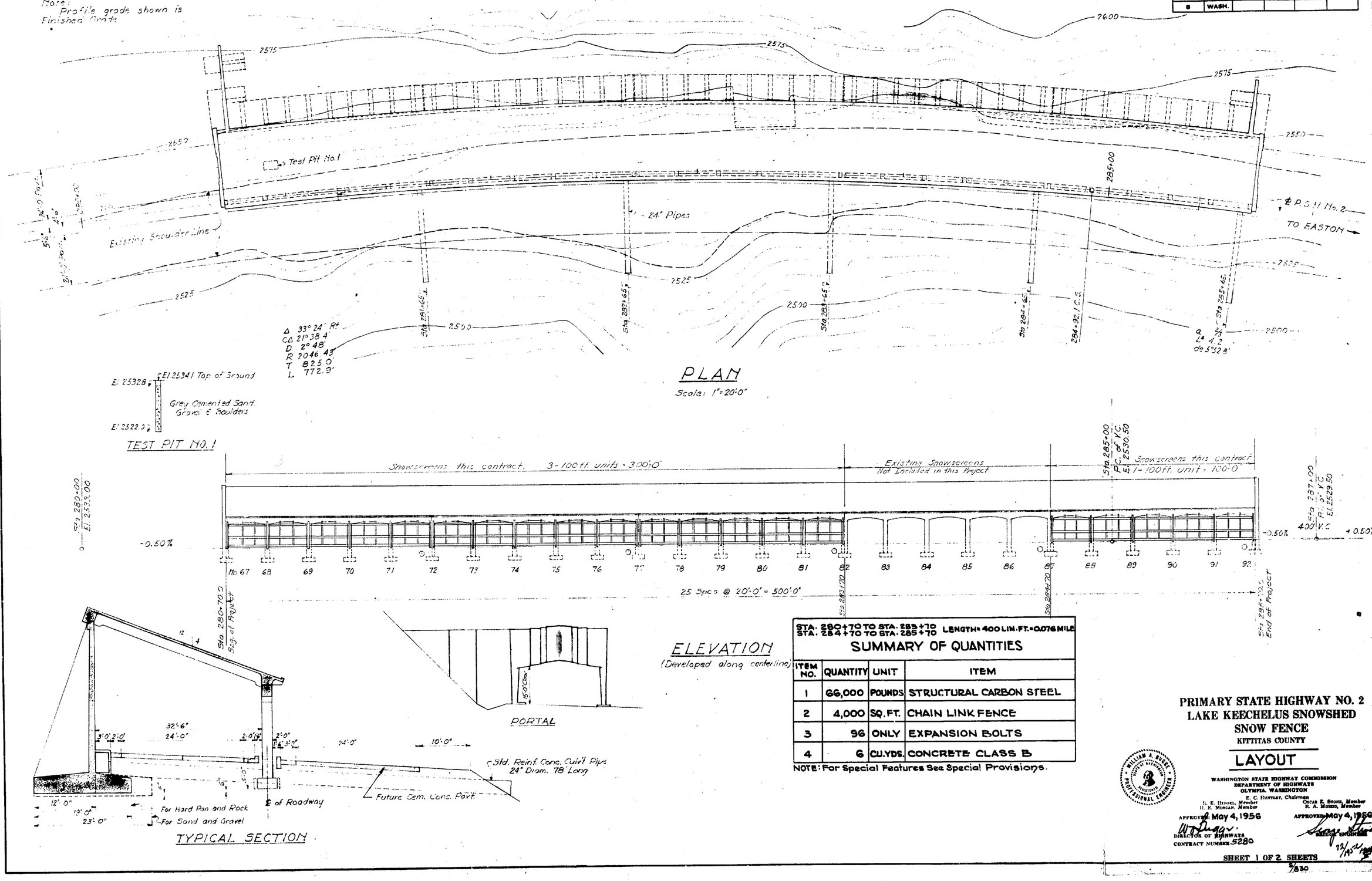
JUNE 30, 1955
DATE

72/195-B

DIETZGEN-POST CO. PRINTED ON CLEARPRINT NO. 1000H

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	WASH.				

Note:
Profile grade shown is Finished Grade



PLAN
Scale: 1" = 20'-0"

ELEVATION
(Developed along centerline)

TYPICAL SECTION

STA. 280+70 TO STA. 283+70
STA. 284+70 TO STA. 285+70 LENGTH = 400 LIN. FT. = 0.076 MILE

SUMMARY OF QUANTITIES

ITEM NO.	QUANTITY	UNIT	ITEM
1	66,000	POUNDS	STRUCTURAL CARBON STEEL
2	4,000	SQ. FT.	CHAIN LINK FENCE
3	96	ONLY	EXPANSION BOLTS
4	6	CU. YDS.	CONCRETE CLASS B

NOTE: For Special Features See Special Provisions.

PRIMARY STATE HIGHWAY NO. 2
LAKE KEECHELUS SNOWSHED
SNOW FENCE
KITTITAS COUNTY

LAYOUT

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

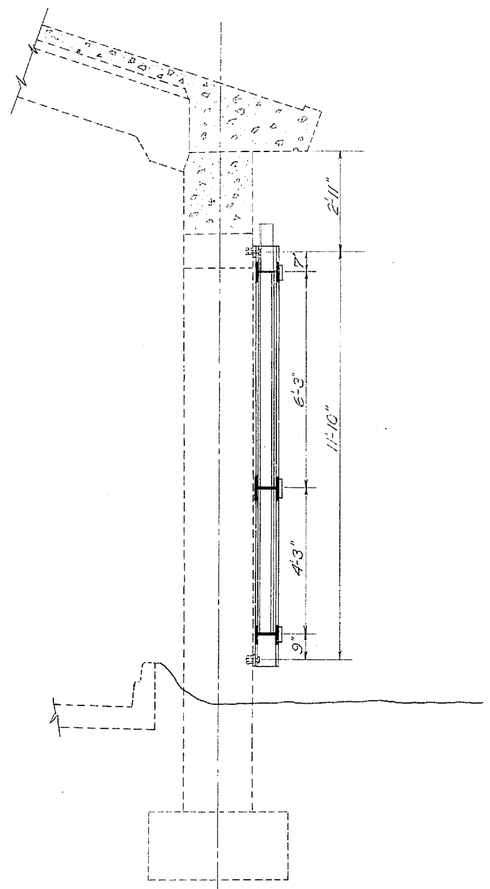
E. C. HUNTLEY, Chairman
R. E. HENSEL, Member — OSCAR E. STONE, Member
H. E. MORGAN, Member — R. A. MOIZIO, Member

APPROVED May 4, 1956 — APPROVED May 4, 1956
W. D. Fuggy — DIRECTOR OF HIGHWAYS — BRIDGE ENGINEER
CONTRACT NUMBER 5280

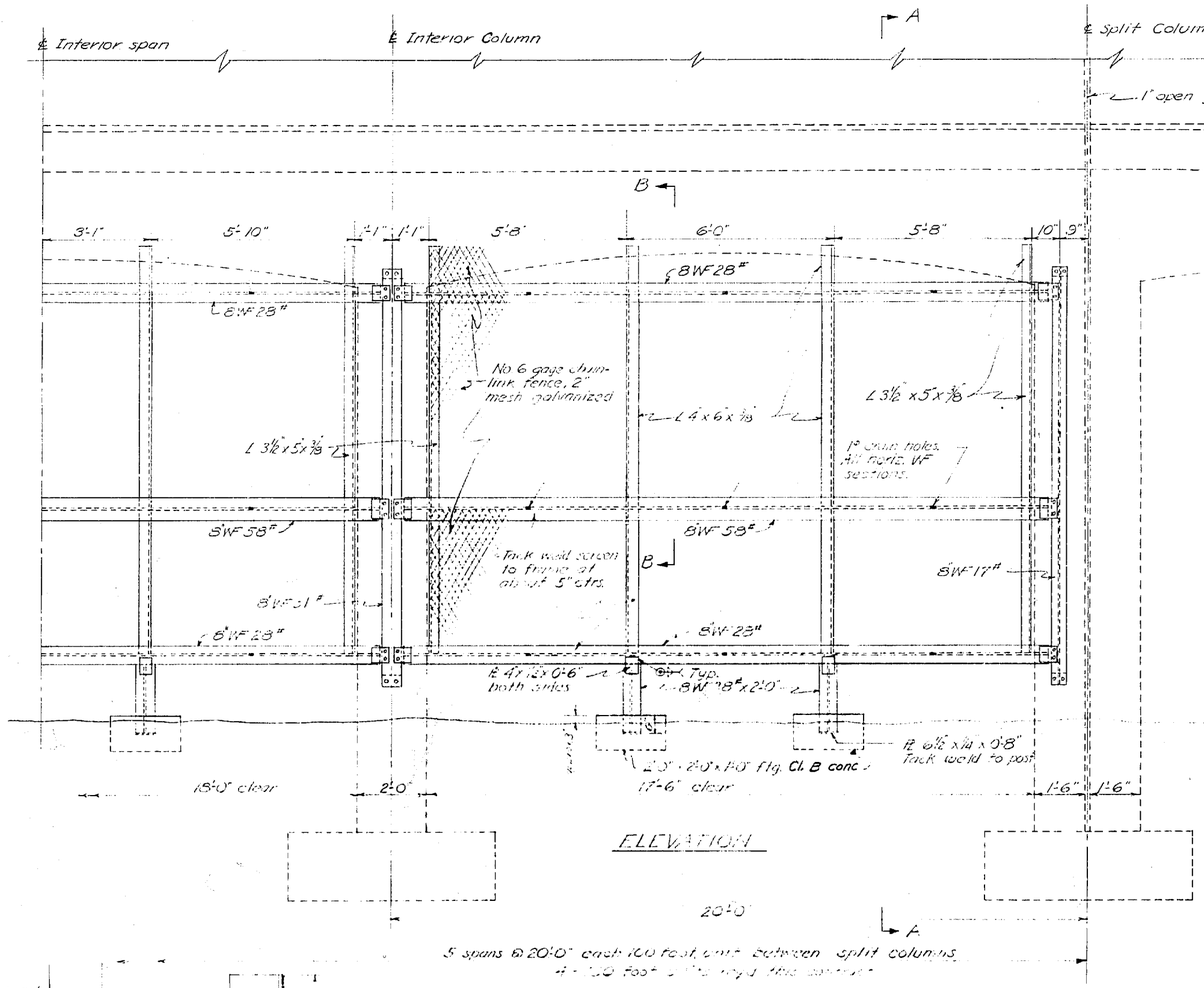
SHEET 1 OF 2 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	WASH.				

Designing Engineer	C.C.H.	4-56
Designed	C.H.A.	4-56
Design Checked	C.C.H.	4-56
Drawn by		
Quantities Figured		
Quantities Checked		



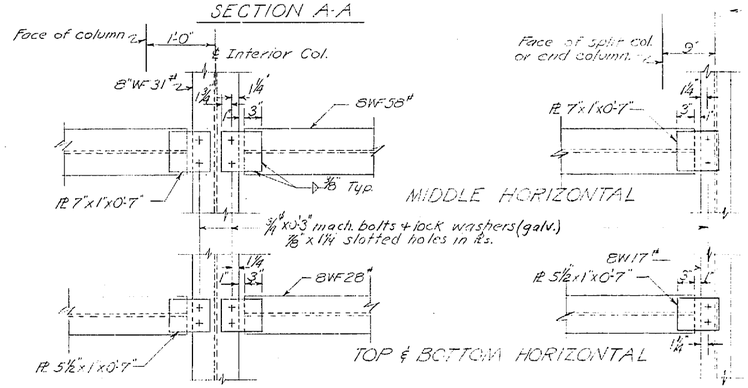
SECTION A-A

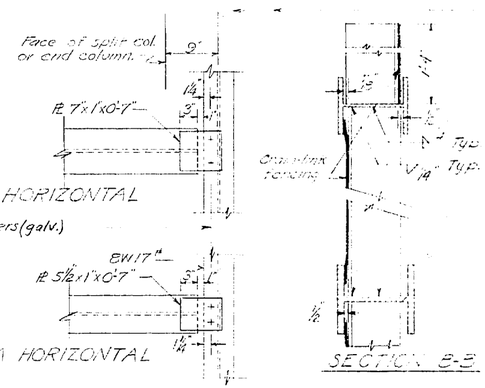


ELEVATION

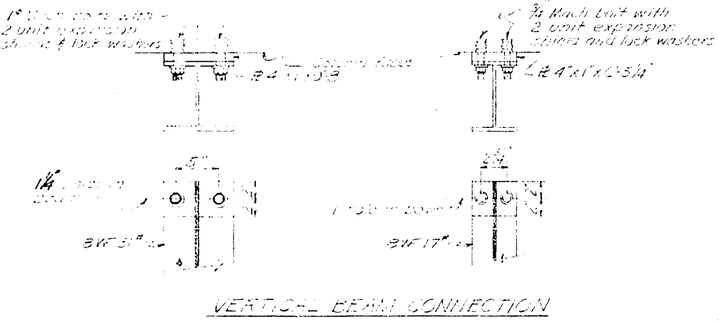
20'-0"

5 spans @ 20'-0" each = 100 feet, c. to c. between split columns
= 100 feet ± 0.01 ft. (by this survey)





FRAME END CONNECTION DETAILS



VERTICAL BEAM CONNECTION

BOTTOM CONNECTION SIMILAR

GENERAL NOTES

All material and workmanship shall be in accordance with the requirements of the State of Washington, Department of Highways Standard Specifications for Road and Bridge Construction, Dated April, 1948.

All structural steel shall be painted, after fabrication, one shop coat of paint, State Standard Formula No. A-1, and two field coats of paint, State Standard Formula No. B-1 and C-2.

PRIMARY STATE HIGHWAY NO. 2
LAKE KEECHELUS SNOWSHED SNOW FENCE
KITTITAS COUNTY

DETAILS

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

E. C. HUNTLEY, Chairman
E. E. HENSEL, Member — OSCAR E. STONE, Member
E. E. MORGAN, Member — R. A. MOSIO, Member

APPROVED: May 4, 1956
W. A. Bugge
DIRECTOR OF HIGHWAYS

APPROVED: May 4, 1956
Serge Lumm
BRIDGE ENGINEER

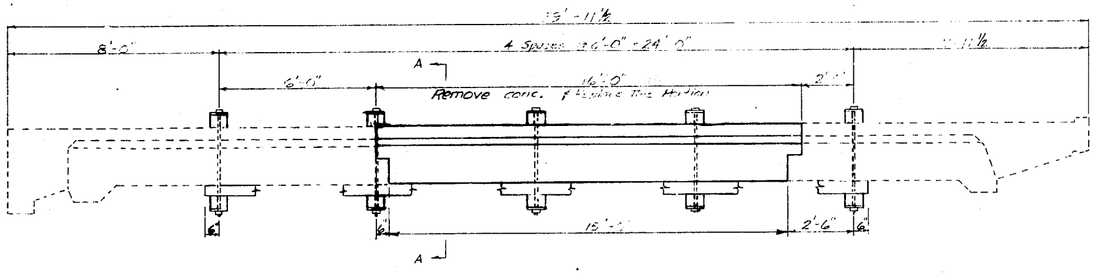
CONTRACT NUMBER 5280

SHEET 2 OF 2 SHEETS

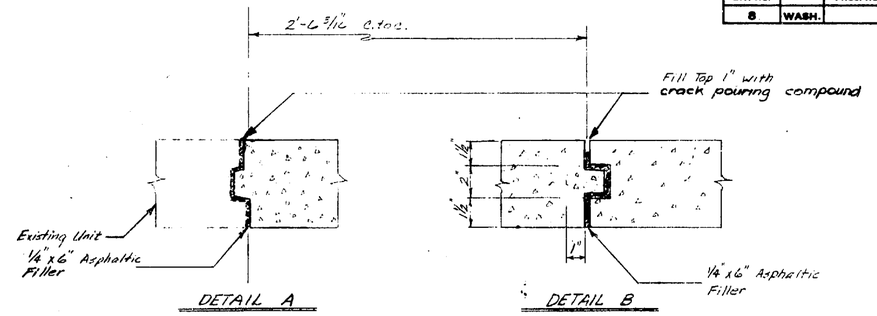
72/195-D

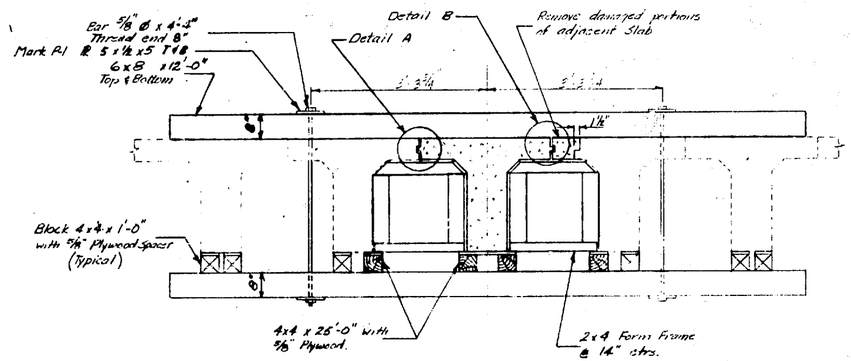
S
830

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	WASH.				

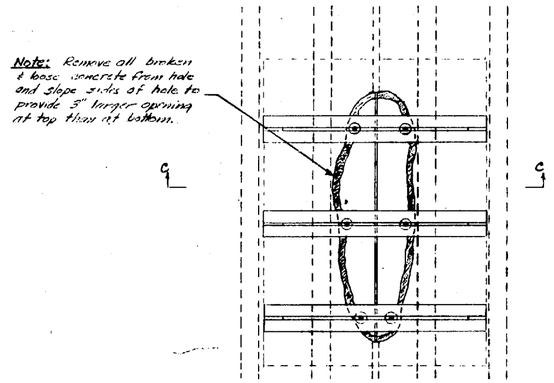


ELEVATION





SECTION A-A



TYPICAL DECK HOLE

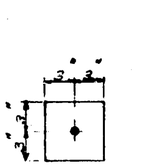
GENERAL NOTES

All material and work shall be in accordance with the State of Washington, Department of Highways Standard Specifications for Road and Bridge Construction dated July 1957.

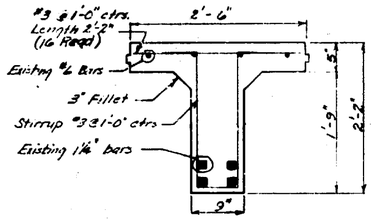
All broken, cracked & loose concrete shall be removed from damaged areas. Existing reinforcing steel shall be thoroughly cleaned before placing concrete. Existing conc. shall be clean and good bond between new and old conc. shall be provided.

All conc. shall be class "A"

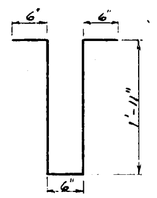
Roof shall be water proofed in damaged area by placing 2 layers of fabric & 3 moppings of asphalt.



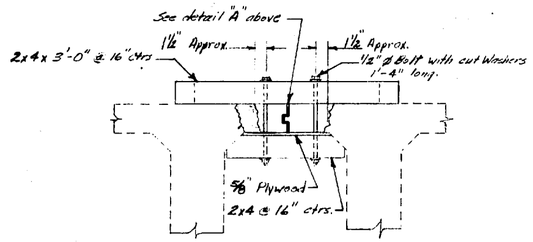
Mark P.1
PL 5 x ¼ x 6"
20 Required



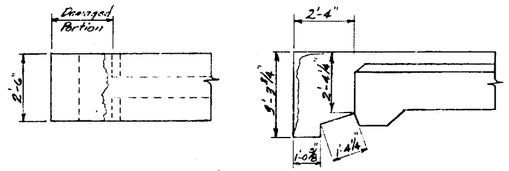
BEAM SECTION



Stirrup #3 bar
16 Required



SECTION C-C



END SECTION PRECAST BEAM

Note:
Waterproof joints of Beam units with 2 layers of fabric 3 moppings of asphalt to match existing structure.

PRIMARY STATE HIGHWAY NO. 2
AIRPLANE CURVE & L.K. KEECHELUS SNOWSHEDS
KING & KITTITAS COUNTIES

BEAM & SLAB REPAIR

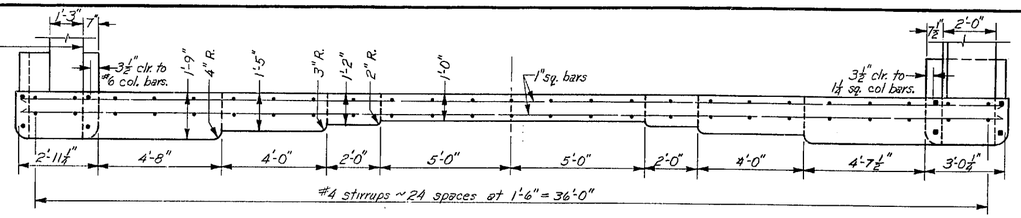
APPROVED July 30 1962

BRIDGE ENGINEER

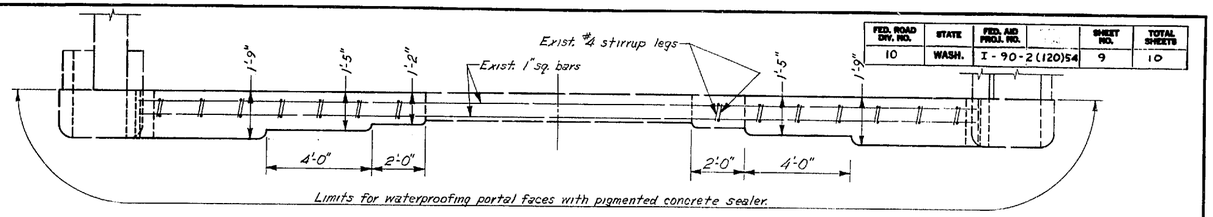
SHEET 1 OF 1 SHEETS

72/193-A

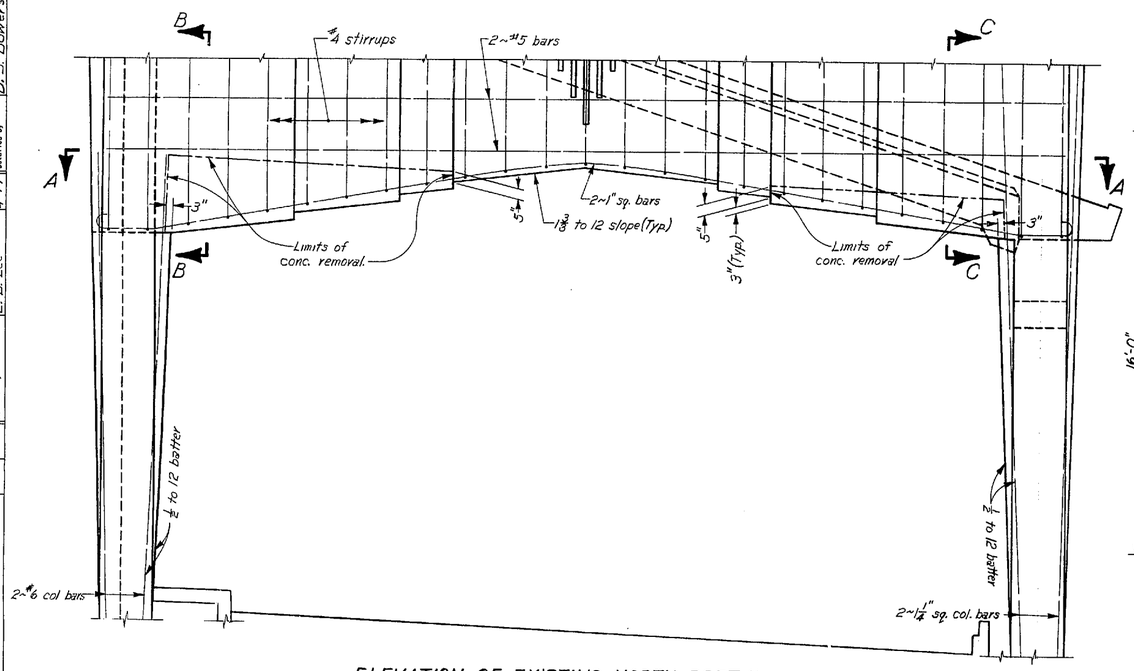
FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
10	WASH.	I-90-2(120)54		9	10



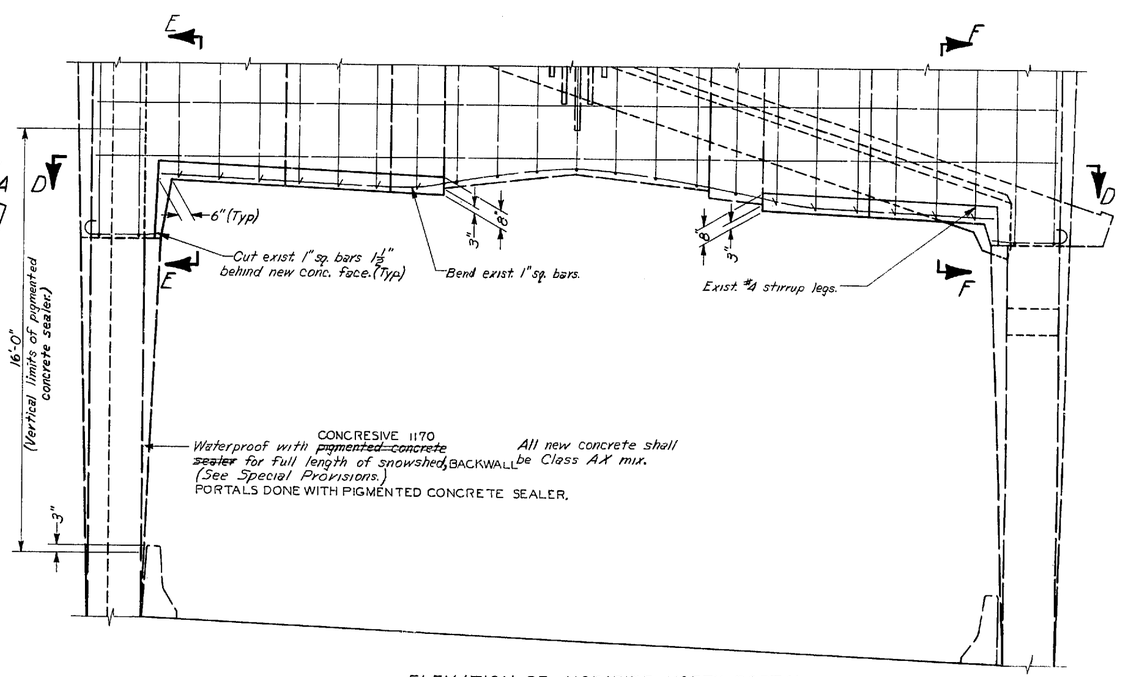
SECTION A-A
Roof beams not shown.



SECTION D-D
Roof beams not shown

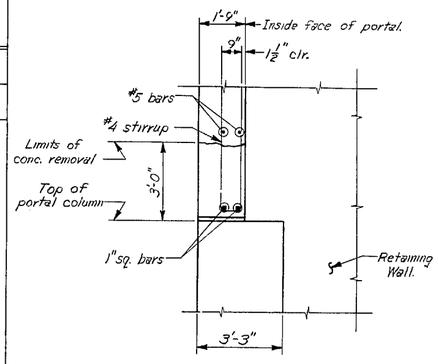


ELEVATION OF EXISTING NORTH PORTAL
LAKE KEECHELUS
South Portal similar.

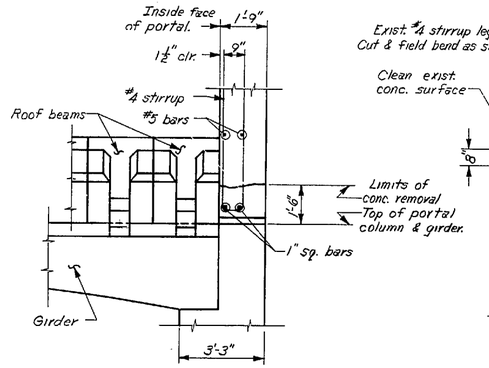


ELEVATION OF MODIFIED NORTH PORTAL
LAKE KEECHELUS
South Portal similar

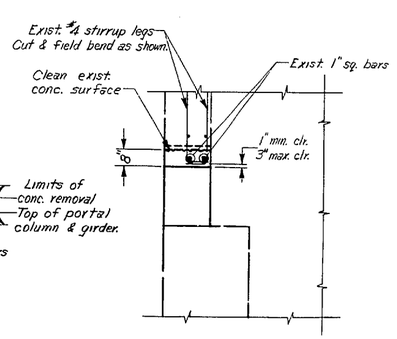
Note:
See next sheet for General Notes and Approximate Quantities related to the work shown on this sheet and the following sheet.



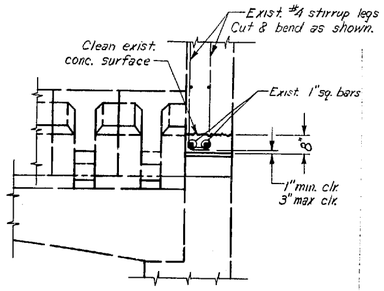
SECTION B-B



SECTION C-C



SECTION E-E



SECTION F-F

SR 90 **MP 57.99 TO MP 61.45**

LAKE KEECHELUS SNOWSHED VIC.
SAFETY IMPROVEMENTS
KITTITAS COUNTY

SNOWSHED MODIFICATION PLAN

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

W. A. BULLEY — DIRECTOR OF HIGHWAYS

C. S. Lloyd — BRIDGE ENGINEER — APPROVED June 3, 1977

CONTRACT NUMBER 0791 — SHEET 11 OF 12 SHEETS

AS BUILT CHANGES IN RED 1-11-79

APP'D	Engineer of Bridge Design		
	Supervising Bridge Engr.	Jerry Nowicki / K.F. Lee	10-77 / 11-77
	Reviewed By	E. D. Lee	4-77
BY	Designed By	D. S. Bowers	4-77
	Design Checked By	M. R. Wallace	4-77
	Detailed By	D. S. Bowers	4-77
	Layout By		
	Layout Checked By		
	Traced By		

APP'D	DATE	REVISION
RB		
	7-1-77	Rev. MP & Sheet No.

SR 90 JOB NO. SHEET

115/130

7

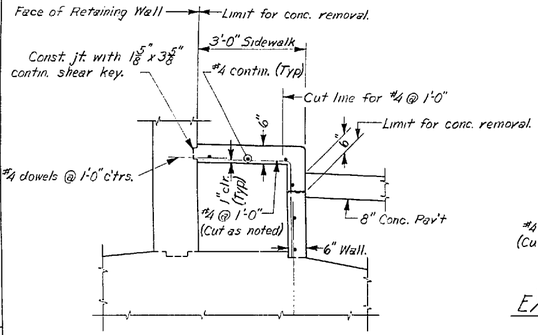
SR 90/

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
10	WASH.	I-90-2(120)54		10	10

BAR LIST

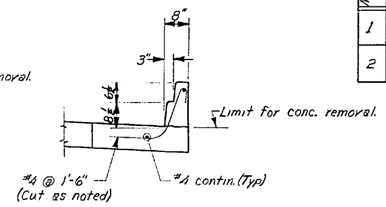
A.S.T.M. A-615 Grade 60. Dimensions are out to out.

Mark No.	Location	Size	No. Req'd	Bend Type	Length per Bar	Total Weight
1	Longitudinal Slab	4	54	Straight	30'-0"	1082.
2	Transverse Slab	6	500	2¼" Rad. 3'-7" 4½"	4'-2"	3130.

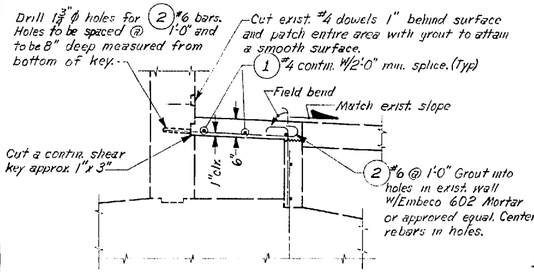


TYPICAL SECTION~EXISTING SIDEWALK

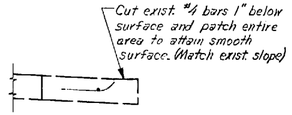
As sidewalk is removed, shoring will be req'd to prevent 6" wall from collapsing.



TYPICAL SECTION
EXISTING CURB & GUTTER

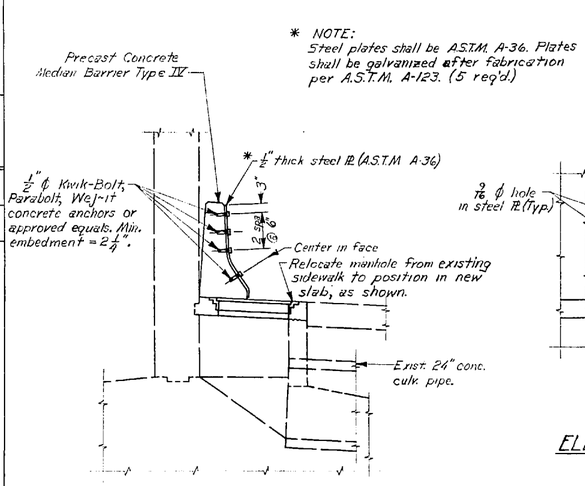


MODIFIED SECTION~SIDEWALK SIDE



MODIFIED SECTION
CURB & GUTTER SIDE

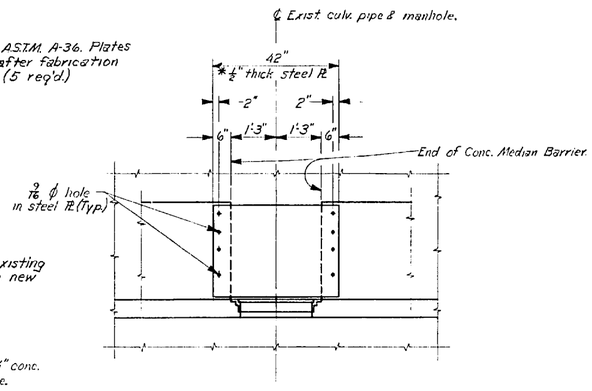
All new concrete shall be Class AX mix.



SECTION THRU MANHOLE COVER

Detail typical at 5 locations.

* NOTE:
Steel plates shall be A.S.T.M. A-36. Plates shall be galvanized after fabrication per A.S.T.M. A-123. (5 req'd.)



ELEVATION VIEW AT MANHOLE COVER

GENERAL NOTES

All material and work shall be in accordance with the requirements of the State of Washington, Department of Highways, Standard Specifications for Road and Bridge Construction dated 1977.

APPROXIMATE QUANTITIES

Steel Reinforcing Bar for Structure	4200 Lbs.
Concrete Class AX for Structure	32 C.Y.
Removing Portions of Existing Structure	L.S. Lump Sum
Waterproofing with Pigmented Concrete Sealer	970 S.Y.

SR 90 MP 57.99 TO MP 61.45

LAKE KEECHELUS SNOWSHED VIC.
SAFETY IMPROVEMENTS
KITTITAS COUNTY

SNOWSHED MODIFICATION PLAN

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

W. A. BULLEY DIRECTOR OF HIGHWAYS

C. S. Gloyd
BRIDGE ENGINEER

APPROVED June 3, 1977

CONTRACT NUMBER 0791 SHEET 12 OF 12 SHEETS

DATE	REVISION	BY	APP'D	DATE	REVISION	BY	APP'D
7-1-77	Rev. MP & Sheet No.	R.B.					

SR 90 JOB NO. SHEET

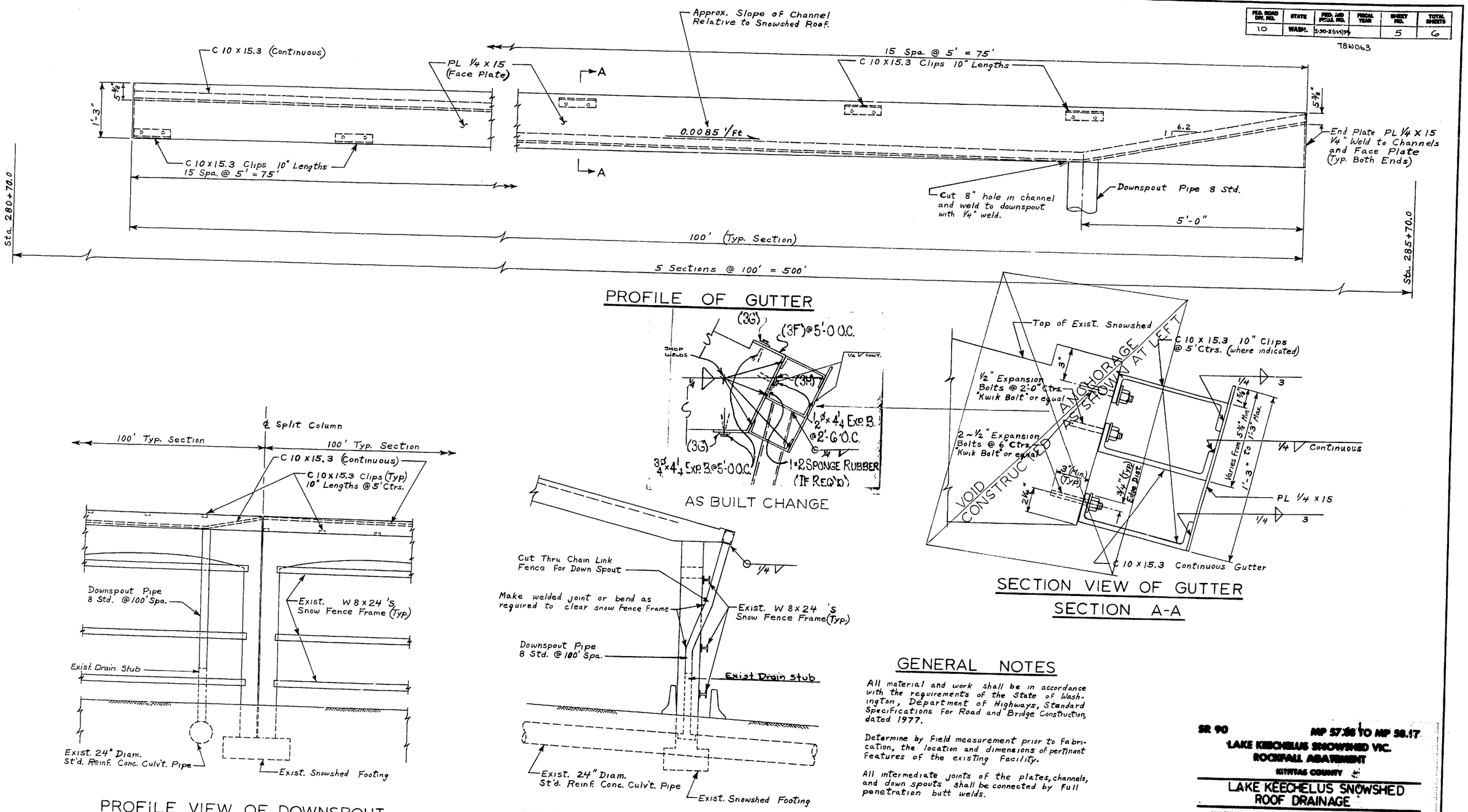
Engineer of Bridge Design: [signature] 5-77
Supervising Bridge Engr.: [signature] 4-77
Reviewed By: E. D. Lee 4-77
Designed By: D. S. Bowers 4-77
Design Checked By: M. R. Wallace 4-77
Detailed By: D. S. Bowers 4-77
Layout By
Layout Checked By
Traced By

115/129

SR 90/417

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
10	WASH.	I-90-2(125)54		5	6

78W063



GENERAL NOTES

All material and work shall be in accordance with the requirements of the State of Washington, Department of Highways, Standard Specifications for Road and Bridge Construction, dated 1977.

Determine by field measurement prior to fabrication, the location and dimensions of pertinent features of the existing facility.

All intermediate joints of the plates, channels, and down spouts shall be connected by full penetration butt welds.

SR 90 MP 57.88 TO MP 58.17
LAKE KEECHELUS SNOWSHED VIC.
ROCKFALL ABATEMENT
KITTITAS COUNTY

LAKE KEECHELUS SNOWSHED ROOF DRAINAGE

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
OLYMPIA, WASHINGTON

W. A. BULLEY SECRETARY

C. S. Gloyd
CHIEF ENGINEER
1098
APPROVED March 24, 1978
SHEET 5 OF 6 SHEETS

AS BUILT CHANGE 4-11-80

DATE	REVISION	BY	APP'D	DATE	REVISION	BY	APP'D
5-12-78	New Sheet	R.B.					

SR 90 JOB NO. SHEET

Engineer of Bridge Design	R. H. Kries	9-77	Designed By	M.J. Witecki	8-77
Supervising Bridge Engr.	J.L. McIntosh	8-77	Design Checked By	J.L. McIntosh	8-77
Reviewed By			Detailed By	M.J. Witecki	8-77
			Layout By		
			Layout Checked By		
			Traced By		

119/110

SR 90/431