WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

SR 405

MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE

FEDERAL AID INTERSTATE ROUTE NO. 405
KING COUNTY
FEDERAL AID INTERSTATE PROJECT NO. I-405-3 (297)178

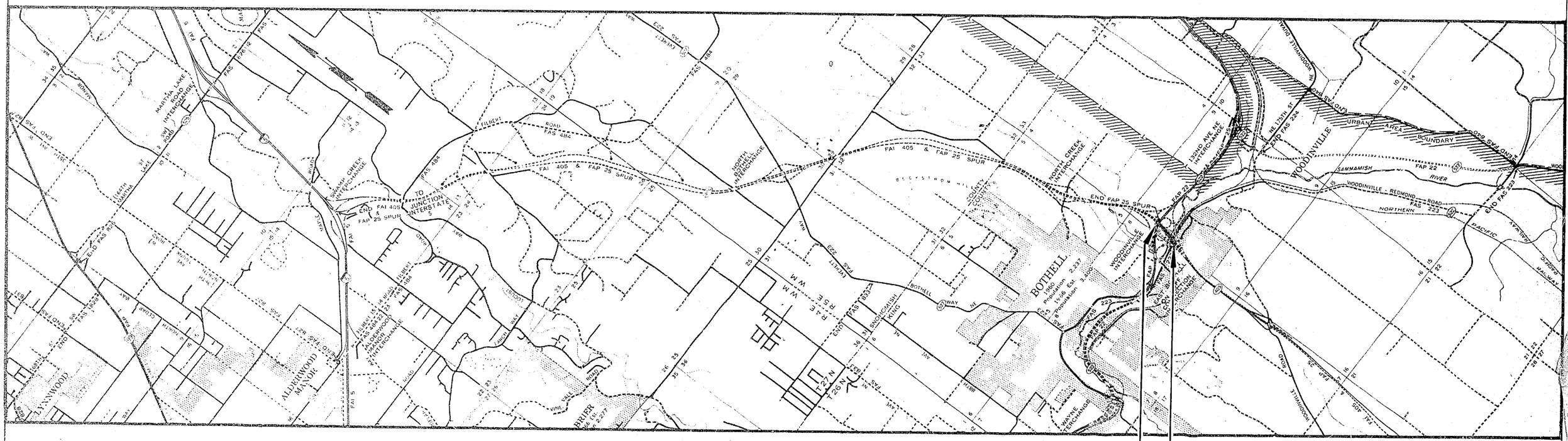
FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178		

CONVENTIONAL SIGNS

STATE AND COUNTY LINE
CORPORATE LIMITS
TOWNSHIP LINE
SECTION LINE
1/4 SECTION LINE
1/16 SECTION LINE
LAND GRANT LINE
MEANDER LINE
FENCE LINE
PROPERTY LINE
BASE OR SURVEY LINE
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY LINE
LIMITED ACCESS
EASEMENT LINE
RAILROAD
RAILROAD RIGHT WAY LINE
EXISTING ROAD
CULVERTS (EXISTING - PROPOSED)
BRIDGES (EXISTING - PROPOSED)
GUARDRAIL (EXISTING - PROPOSED)
TRANSMISSION TOWERS (WOOD - STEEL)
UTILITY POLES
MARSH
TREES

LAYOUT

GROSS LENGTH	0.261	MILE
EXCEPTION	0.000	MILE
NET LENGTH	0.261	MILE



STA. L 863+50.27
END OF I-405-3(297) 178

STA. L 849+69.64
BEG. OF I-405-3(297)178

Approved: December 7, 1967

G. H. Andrews

Assistant Director for Highway Development

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

APPROVED:

DISTRICT ENGINEER DATE

Cont. 8382

P/1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297) 178	1	297

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WOODINVILLE INTERCHANGE

KING COUNTY

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN

B. L. MIKALSON
H. WALSH

ASS'T. DIRECTOR FOR
HIGHWAY DEVELOPMENT

BAKER FERGUSON
JOHN N. RUPP

APPROVED December 7, 1967

CONTRACT NO. 8382 SHEET 1 TO 297 SHEETS INCL.

PY 1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJECT NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297) 178		2	297

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WOODINVILLE INTERCHANGE

KING COUNTY

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN

[illegible] MIKKELSON
H. WALSH

G. H. ANDREWS — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

BAKER FERGUSON
JOHN N. RUPP

APPROVED: Dec. 7, 1967

CONTRACT NO 8382 SHEET 2 OF 297 SHEETS

P/1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJECT NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178.		3	297

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KING COUNTY

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN

S. I. MIKALSON
H. WALSH

G. H. ANDREWS
STATE HIGHWAY ENGINEER
PROFESSIONAL ENGINEER

BAKER FERGUSON
JOHN N. RUPP

APPROVED: Dec. 7, 1967

CONTRACT NO. 8382 SHEET 3 OF 297 SHEETS

R/L995

FED. ROAD DIV. NO.	STATE	FED. AID PROJECT NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178		4	297

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SR 405

MP 23.49 TO MP 23.76

WOODINVILLE INTERCHANGE

KING COUNTY

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN

S. I. MIKALSON
H. WALSH

C. H. ANDREW
STATE OF WASHINGTON
REGISTERED PROFESSIONAL ENGINEER

BAKER FERGUSON
JOHN N. RUPP

APPROVED: Dec. 7, 1967

CONTRACT NO. 8382 SHEET 4 OF 297 SHEETS

P/1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJECT NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178		5	297

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WOODINVILLE INTERCHANGE

KING COUNTY

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN

P. I. MIKALSON
H. WALSH

ASS'T. DIRECTOR FOR
HIGHWAY DEVELOPMENT

C. H. ANDREWS
STATE ENGINEER
REGISTERED PROFESSIONAL ENGINEER

BAKER FERGUSON
JOHN N. RUPP

APPROVED: Dec. 7, 1967

CONTRACT NO. 8382 SHEET 5 OF 297 SHEETS

P/1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJECT NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)	178	6	297

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WOODINVILLE INTERCHANGE

KING COUNTY

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN

E. I. MIKALSON
H. WALSH

G. H. ANDREWS — STATE OF WASHINGTON — PROFESSIONAL ENGINEER

BAKER FERGUSON
JOHN N. RUPP

APPROVED: Dec. 7, 1967

CONTRACT NO. 8382 SHEET 6 OF 297 SHEETS

P/1895

FED. ROAD DIV. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178		7	297

PROJECT LIMITS:
STATION L 849+69.64 TO STATION L 863+50.27

SUMMARY OF QUANTITIES

LENGTH: 0.261 Mile

ITEM NO.	TOTAL QUANTITY	UNIT	ITEM	NORTHBOUND	SOUTHBOUND	S-E RAMP	E-N RAMP	N-W&N-E RAMP	W-S&E-S RAMP	W-S&E-S COLLISION WALL
1	LUMP SUM	L.S.	MOBILIZATION	L.S.	L.S.	L.S.	L.S.	L.S.	L.S.	L.S.
2	10	ONLY	SPECIAL CONCRETE INLETS	2	1			3	4	
3	782	LIN.FT.	DRAIN PIPE 8 INCH DIAMETER	145	120	50	67	215	185	
4	8.5	CU.YD.	HAND PLACED RIPRAP	1.5	1	0.5	0.5	2.5	2.5	
5	EST.4,000	DOLLAR	FLAGGING	EST.1,000	EST.1000			EST.1000	EST.1000	
			BRIDGE ITEMS							
6	4,014	CU.YD.	SHAFT EXCAVATION	775	961			988	1,290	
7	16,373	CU.YD.	STRUCTURE EXCAVATION	3008	2,566	1,082	415	2,381	6,913	8
8	LUMP SUM	L.S.	SHORING AND CRIBS OR EXTRA EXCAVATION	L.S.	L.S.			L.S.	L.S.	
9	2,474	LIN.FT.	PREBORING FOR CONCRETE PILES	794	594	192	294		600	
10	6	ONLY	FURNISHING AND DRIVING CONCRETE TEST PILES 18" DIAMETER	1	1	1	1		2	
11	11,632	LIN.FT.	FURNISHING CONCRETE PILING 18" DIAMETER	2,798	2,282	864	933		4,755	
12	158	ONLY	DRIVING CONCRETE PILES 18" DIAMETER	32	26	15	15		70	
13	54	ONLY	FURNISHING AND DRIVING TIMBER TEST PILES	7	7	4	2	15	19	
14	111,064	LIN.FT.	FURNISHING TIMBER PILING (CREOSOTE TREATED)	18,473	15,276	6,324	2,400	18,199	50,482	
15	2,931	ONLY	DRIVING TIMBER PILES (CREOSOTE TREATED)	470	443	168	84	548	1,218	
16	2,666,615	POUND	STEEL REINFORCING BARS	386,429	410,491	117,879	73,314	640,253	1,037,091	1,158
17	778	CU.YD.	CONCRETE CLASS D	103	112			157	406	
18	3,931	CU.YD.	SHAFT CONCRETE	765	947			964	1,255	
19	6,677	CU.YD.	CONCRETE CLASS B	1,177	1,019	474	116	1,091	2,780	20
20	2,872	CU.YD.	CONCRETE CLASS AX	310	312	85	50	845	1,270	
21	LUMP SUM	L.S.	SUPERSTRUCTURE - NORTHBOUND	L.S.						
22	LUMP SUM	L.S.	SUPERSTRUCTURE - SOUTHBOUND		L.S.					
23	LUMP SUM	L.S.	SUPERSTRUCTURE - S-E RAMP			L.S.				
24	LUMP SUM	L.S.	SUPERSTRUCTURE - E-N RAMP				L.S.			
25	LUMP SUM	L.S.	SUPERSTRUCTURE - N-W AND N-E RAMP					L.S.		
26	LUMP SUM	L.S.	SUPERSTRUCTURE - W-S AND E-S RAMP						L.S.	
27	2,782	LIN.FT.	DOWNSPOUTS	465	560	133	44	380	1,200	
28	EST.2,785	DOLLAR	WATER REDUCING ADDITIVE	EST. 316	EST.315	EST. 74	EST. 60	EST. 870	EST.1,150	

NOTE. For special features see special provisions.

DATE	REVISION	BY
Feb 8,1968	Changed Quant. Items 7, 13-16, 19 & 20	WMS.
Jan. 8,1968	Changed Quantities Items 14 & 15	D.L.M

SR 405

MP 23.49 TO MP 23.76

WOODINVILLE INTERCHANGE

KING COUNTY

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN

S. L. NIKALSON
H. WALSH

BAKER FERGUSON
JOHN N. RUPP

G. H. ANDREWS
PROFESSIONAL ENGINEER

APPROVED Dec. 7, 1967

CONTRACT NO. 8-382 SHEET 7 OF 297 SHEETS

7/1995

REGION NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
8	WASH.	I-405-3(297)178	8 of 297

T 26N. R. 5 E. W.M.

L-863+50.27
END OF PROJECT

L-849+69.64
BEGIN. OF PROJECT

BOTHELL
NW¼ SW¼ Section 9

VICINITY MAP

200 100 0 200 400 600
SCALE IN FEET

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY

VICINITY MAP

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN

R. L. RITALSON
H. WALSH
SAKER FERGUSON
JOHN H. RUPP

APPROVED December 7, 1967

CONTRACT NO. 8382

SHEET 8 OF 297 SHEETS

132nd AVE N.E. INTERCHANGE

WOODINVILLE

N

S.R.522

RIVERSIDE DRIVE

INTERSTATE 405

N.B.

S.B.

TO EVERETT

TO BELLEVUE

END PROJECT
L 863+50.27

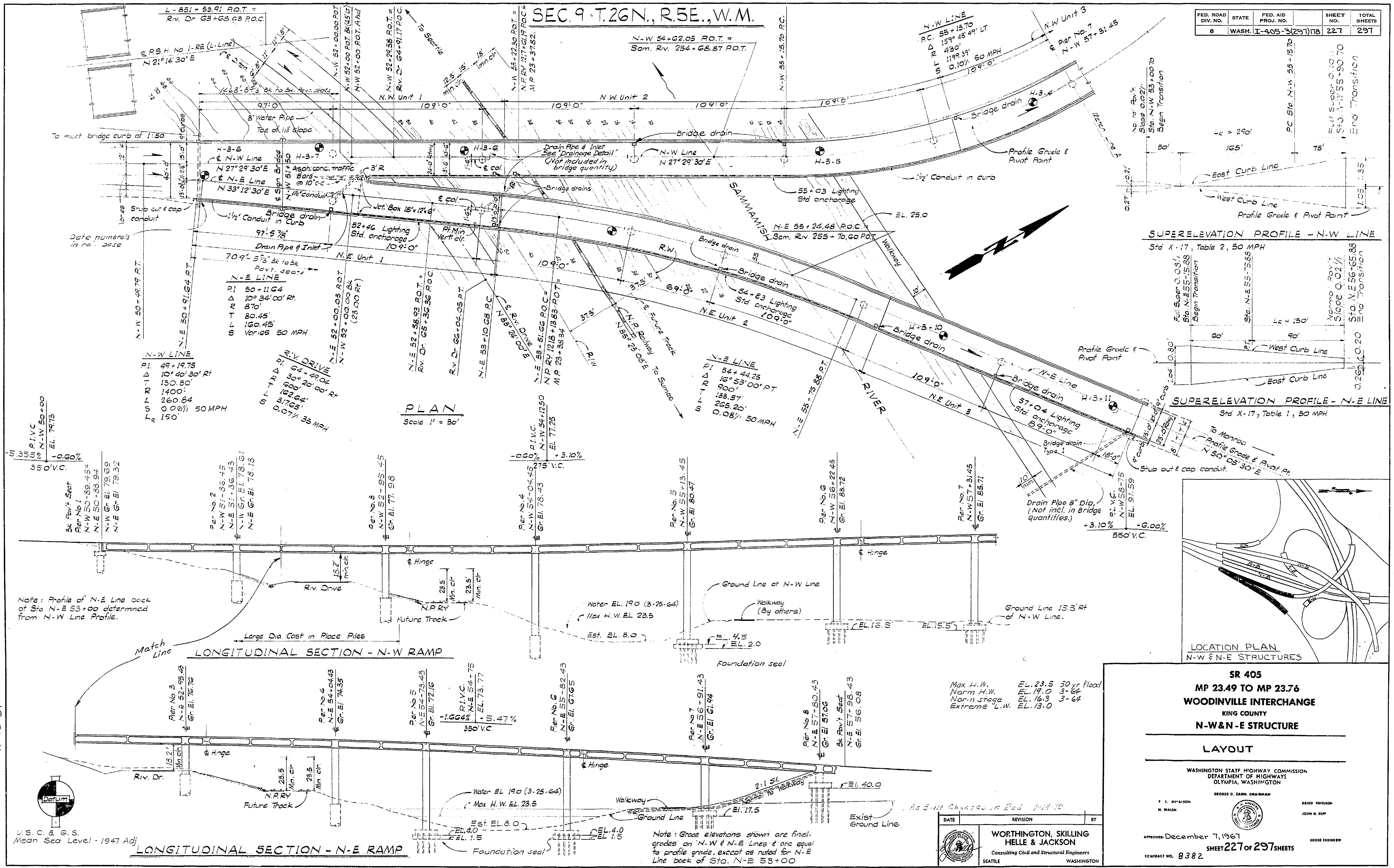
BEGIN PROJECT
L 849+69.64

113th AVE. N.E.

TO BOTHELL

WOODINVILLE INTERCHANGE

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)118		227	297



Max H.W. EL. 23.5 50 yr flood
Norm H.W. EL. 19.0 3-64
Norm stage EL. 16.3 3-64
Extreme L.W. EL. 13.0

Note: Grade elevations shown are finish grades on N-W & N-E Lines & are equal to profile grade, except as noted for N-E Line back of Sta. N-E 53+00

As Built Changes in Red 9-14-70

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W & N-E STRUCTURE

LAYOUT

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

WORTHINGTON, SKILLING
HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

APPROVED December 7, 1967
SHEET 227 OF 297 SHEETS
CONTRACT NO. 8382

WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2-BO
N-W/N-E STRUCTURE
LAYOUT
SHEET 227 OF 299
11-16-67

P/1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178		228	297

SEC. 8 & 9 T.26N., R5E. W.M.

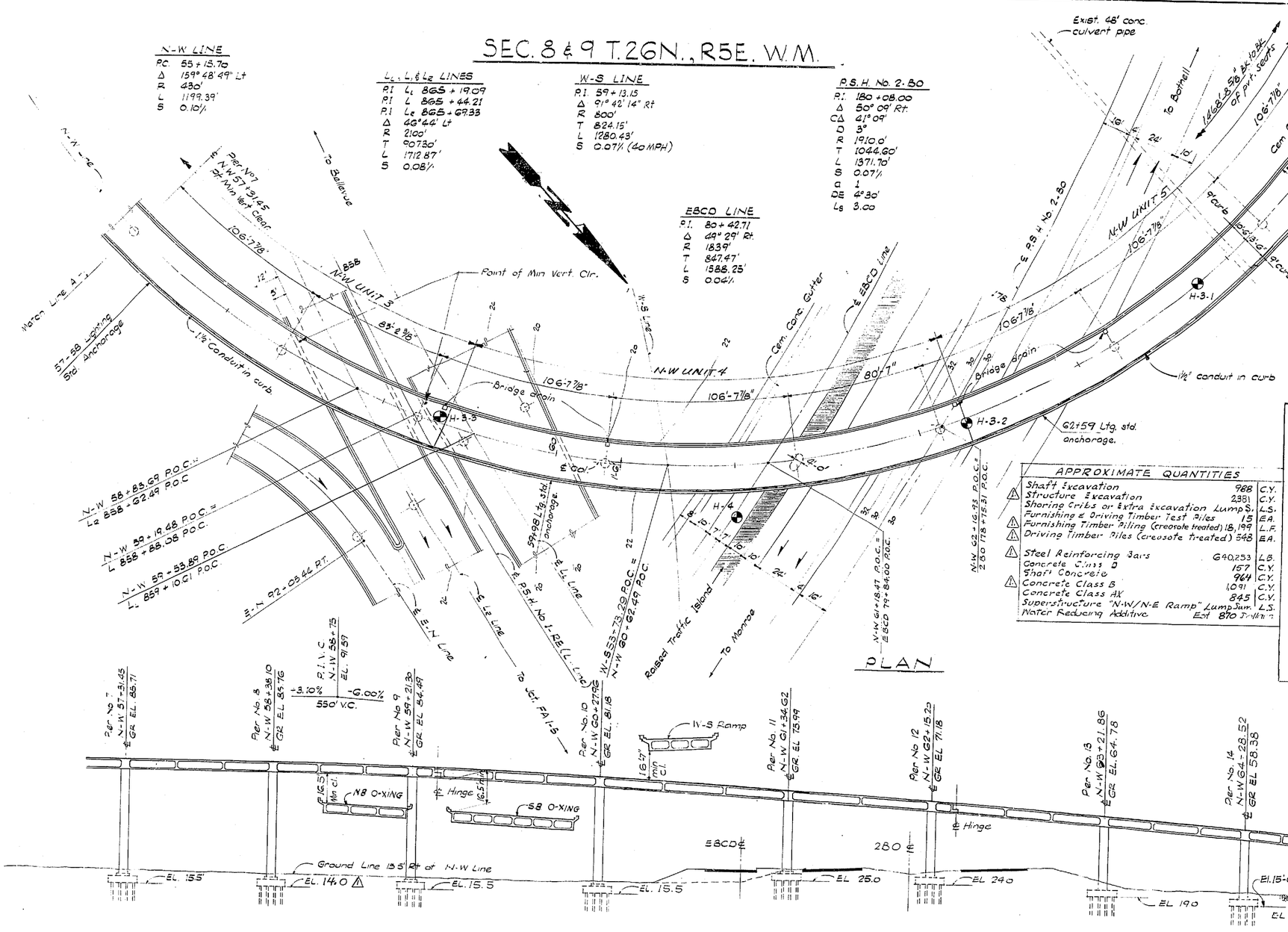
N-W LINE
PC 55+15.70
Δ 159°48'49" Lt
R 430'
L 1199.39'
S 0.10%

L_1, L_1 & L_2 LINES
P.I. L_1 BGS + 19.09
P.I. L BGS + 44.21
P.I. L_2 BGS + 69.33
Δ 46°44' Lt
R 2100'
T 907.30'
L 1712.87'
S 0.08%

W-S LINE
P.I. 59+13.15
Δ 91°42'14" Rt
R 800'
T 824.15'
L 1280.43'
S 0.07% (40 MPH)

P.S.H. No. 2-80
P.I. 180+08.00
Δ 50°09' Rt.
CΔ 41°09'
D 3°
R 1910.0'
T 1044.60'
L 1671.70'
S 0.07%
α 1
DE 4°30'
L_S 3.00

EBCD LINE
P.I. 80+42.71
Δ 49°29' Rt.
R 1839'
T 847.47'
L 1588.25'
S 0.04%



PLAN

LATERAL CLEARANCE AT RAISED TRAFFIC ISLAND

Looking back on SR 522 Stationing

APPROXIMATE QUANTITIES

Shaft Excavation	988	C.Y.
⚠ Structure Excavation	2381	C.Y.
Shoring Cribs or Extra Excavation	Lump S.	L.S.
Furnishing & Driving Timber Test Piles	15	E.A.
⚠ Furnishing Timber Piling (Creosote treated)	18,199	L.F.
⚠ Driving Timber Piles (Creosote treated)	548	E.A.
⚠ Steel Reinforcing Bars	690,253	LB.
Concrete Class P	157	C.Y.
Shaft Concrete	964	C.Y.
⚠ Concrete Class B	1091	C.Y.
Concrete Class AX	845	C.Y.
Superstructure "N-W/N-E Ramp"	Lump Sum	L.S.
Water Reducing Additive	Est 870 Gallons	

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 1963, and Amendment No. 1 dated January 1966.

Foundation elevations are subject to change depending upon foundation material encountered, and reinforcing steel for footings and columns shall not be cut until final footing elevations have been determined in the field.

Falsework shall be carefully released to prevent of undue strasses in the structure. The falsework for the concrete box girder span shall not be released in any span in a unit until all concrete in that unit, except that in the rail base, has been in place the required length of time and has been developed sufficient Strength as outline in the specifications. In addition falsework shall not be released between a hinge and the closest pier also falsework shall not be released in the span adjacent to the pier until the concrete in the adjoining unit of spans in the opposite direction from the hinge has been in place the required length of time and has developed sufficient strength as outlined in the specifications. The rail base shall not be poured until the falsework has been released.

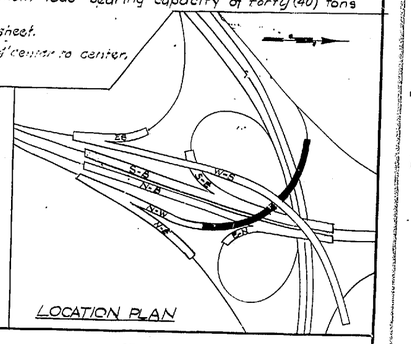
Concrete seal footings are designed for a water elevation of 19.00 ft. after the seals are poured, the cofferdams shall not be dewatered when the water surface is above elevation 19.00, and provisions shall be made to flood the cofferdam when the water level exceeds the design elevation.

All piling shall be creosote treated timber piling. Each pile shall be driven to a depth sufficient to develop a minimum load bearing capacity of forty (40) tons for timber piles.

For Boring Logs, see test hole log sheet.

Live Load: HS-20 or 2-24K axles 4'-0" center to center.

Test Hole Locations: ⊕



DEVELOPED LONGITUDINAL SECTION - N-W RAMP

Grade elevations shown are finished grade on N-W Line & are equal to profile grade.

Datum

U.S.C.&G.S.
Mean Sea Level - 1947 Adj.

DESIGNING ENGINEER	
DESIGNED	
DETAILS CHECKED	
DRAWN	
QUANTITIES FIGURED	
QUANTITIES CHECKED	

DRAWN	BY	DATE
TRACED		
CHECKED		
SUPV. ENGR.		
DIST. ENGR.		

11-16-67

WOODINVILLE INTERCHANGE
PSH NO. 1-RELL TO PSH NO. 2-80
STRUCTURE
N-W LAYOUT
SHEET 228 OF 297

⚠	2-8-68	Revised Fdg Elev. & Approx Quant	WHS
	DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

LAYOUT

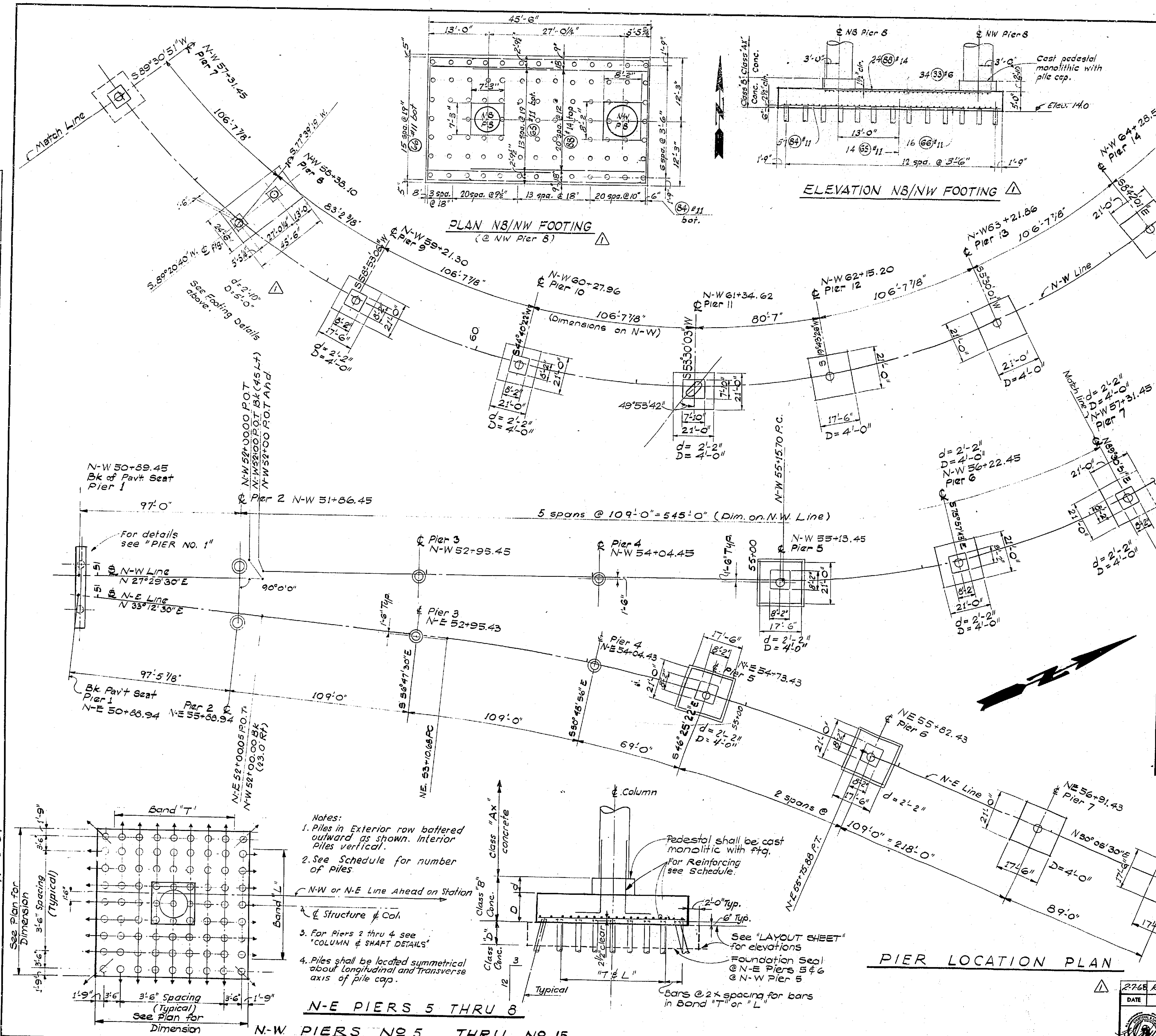
WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

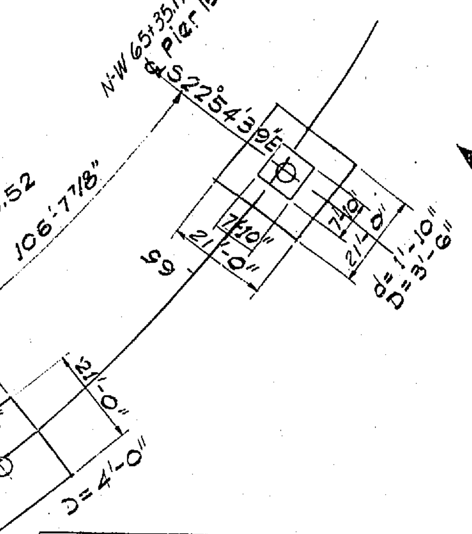
GEORGE D. ZANN, CHAIRMAN
P. T. McALEON — BAKER FERGUSON
M. WALSH — JOHN H. RUPP

APPROVED December 7, 1967 — BRIDGE ENGINEER
CONTRACT NO. 8982 — SHEET 228 OF 297 SHEETS

12/1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178	229	297





PIER FOOTING SCHEDULE

PIER Nº.	PILES/ROW LONGIT.	PILES/ROW TRANS.	TOTAL PILES	MIN TIP ELEV.			BARS IN BAND "L"	BARS IN BAND "T"	REINFORCING BARS TOT. LONGIT	TOT. TRANS	DOWELS	
N-W/N-E STRUCTURE												
									—	—	—	—
									—	—	—	—
N-W STRUCTURE												
									—	—	—	—
									—	—	—	—
5	5	6	30	-20			24@9"	32@6"	26 (54) #11	34 (55) #11	13 (56) #18	13 (53) #18
6	6	6	36	-20			35@6"	35@6"	39 (57) #11	39 (58) #11	17 (59) #14	17 (60) #14
7	6	6	36	-20			35@6"	35@6"	39 (61) #11	39 (62) #11	18 (63) #14	18 (64) #14
8	SEE DETAIL		91	-20				SEE DETAIL			16 (67) #14	16 (68) #14
9	5	6	30	-10			24@9"	32@6"	26 (69) #11	34 (70) #11	12 (71) #14	12 (72) #14
10	6	6	36	-10			35@6"	35@6"	39 (73) #11	39 (74) #11	14 (75) #14	14 (76) #14
11	6	6	36	-15			35@6"	35@6"	39 (77) #11	39 (78) #11	14 (79) #18	14 (80) #18
12	5	6	30	-20			24@9"	32@6"	26 (81) #11	34 (82) #11	26 (83) #11	26 — (134) #11
13	6	6	36	-20			35@6"	35@6"	39 (85) #11	39 (86) #11	26 (87) #11	26 — (136) #11
14	6	6	36	-15			35@6"	35@6"	39 (89) #11	39 (90) #11	26 (91) #11	26 — (138) #11
15	6	6	36	-20			35@6"	35@6"	39 (92) #11	39 (93) #11	20 (94) #14	20 (95) #14
N-E STRUCTURE												
									—	—	—	—
									—	—	—	—
									—	—	—	—
5	5	6	30	-10			24@9"	32@6"	26 (96) #11	34 (97) #11	14 (98) #18	14 (99) #18
6	5	6	30	-20			24@9"	32@6"	26 (100) #11	34 (101) #11	14 (102) #18	14 (103) #18
7	5	6	30	-15			24@9"	32@6"	26 (104) #11	34 (105) #11	19 (106) #11	19 — (150) #11
8	5	5	25	-15			25@8"	25@7"	27 (107) #9	27 (108) #9	19 (109) #11	19 — (151) #11

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W & N-E STRUCTURE

PIER LOCATION PLAN

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN

APPROVED December 7, 1967
CONTRACT NO. 8382
SHEET 229 OF 297 SHEETS

DATE	REVISION	BY
2-7-68	Revised N-W Pier 8, Ftg & Add. Det.	

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

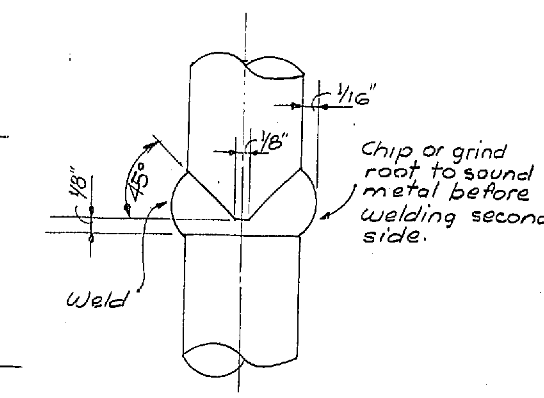
P/1995

11-16-67

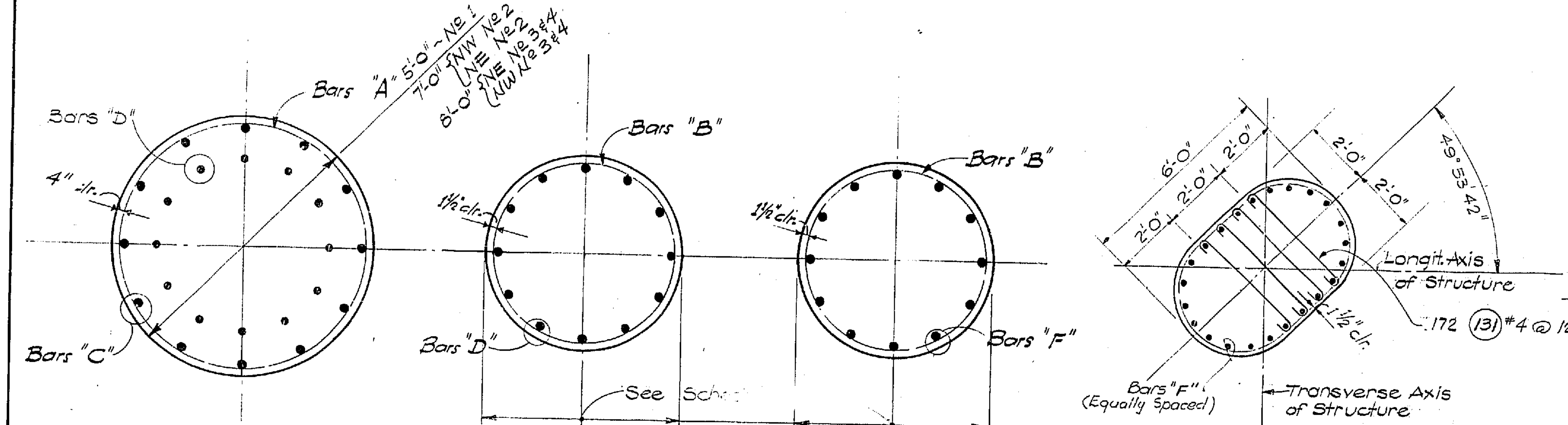
PSH NO. 1-RE/PSH NO. 2-BO
NE/NW STRUCTURE
PIER LOCATION PLAN
SHEET 21.1 OF 289

TABLE OF REINFORCING & ELEVATIONS

COLUMN	ELEV. A	ELEV. B	COLUMN DIAMETER	BAR "A"	BAR "B"	BAR "C"	BARS "D"		BARS "E"		BARS "F"		UNIT
					N-W/N-E STRUCTURE								
1			— SEE	PIER	Nº 1	PLAN	SHEET —						UNIT 1
2 East	-43.0	52.0	6'-0"	52 (35) #4	28 (111) #4	50 (36) #14	17 (112) #14	17 (113) #14	17 (37) #14	17 (38) #14	—	—	UNIT 1
2 West	-46.0	52.0	6'-0"	54 (35) #4	28 (111) #4	50 (39) #14	17 (114) #14	17 (115) #14	17 (40) #14	17 (41) #14	—	—	UNIT 1
			6'-0"	N-W	STRUCTURE								
3	-39.5	40.5	6'-0"	49 (45) #4	38 (111) #4	38 (42) #14	23 (116) #18	23 (117) #18	23 (43) #18	23 (44) #18	—	—	UNIT 1
4	-76.5	18.5	6'-0"	53 (45) #4	62 (111) #4	100 (46) #18	26 (118) #11	—	26 (47) #11	—	—	—	UNIT 1
5	4.5		6'-0"		74 (111) #4	—	—	—	—	—	13 (110) #18	13 (119) #18	N-W UNIT 2
6	16.5		6'-0"		64 (111) #4	—	—	—	—	—	17 (120) #14		N-W UNIT 2
7	15.5		6'-0"		67 (111) #4	—	—	—	—	—	18 (122) #14	18 (123) #14	N-W UNIT 3
8	15.0		6'-0"		68 (111) #4	—	—	—	—	—	16 (124) #14	16 (125) #14	N-W UNIT 3
9	15.5		6'-0"		66 (111) #4	—	—	—	—	—	12 (126) #14	12 (127) #14	N-W UNIT 3
10	15.5		6'-0"		63 (111) #4	—	—	—	—	—	14 (128) #14	14 (129) #14	N-W UNIT 4
11	25.0		See Sec C-C		48 (130) #4	—	—	—	—	—	14 (132) #18	14 (133) #18	N-W UNIT 4
12	24.0		6'-0"		44 (111) #4	—	—	—	—	—	26 (134) #11		N-W UNIT 4
13	19.0		6'-0"		43 (111) #4	—	—	—	—	—	26 (136) #11		N-W UNIT 5
14	15.0		6'-0"		40 (111) #4	—	—	—	—	—	26 (138) #11		N-W UNIT 5
15	14.0		6'-0"		36 (111) #4	—	—	—	—	—	20 (139) #14	20 (140) #14	N-W UNIT 5
				N-E	STRUCTURE								
3	-31.5	48.5	6'-0"	49 (45) #4	29 (111) #4	36 (48) #14	23 (141) #18	23 (142) #18	23 (49) #18	23 (50) #18	—	—	N-E UNIT 1
4	-51.5	28.5	5'-0"	52 (45) #4	47 (143) #4	46 (51) #18	19 (144) #11		19 (52) #11		—	—	N-E UNIT 1
5	4.0		5'-0"	—	65 (143) #4	—	—	—	—	—	14 (146) #18	14 (147) #18	N-E UNIT 2
6	4.0		5'-0"		61 (143) #4	—	—	—	—	—	14 (148) #18	14 (149) #18	N-E UNIT 2
7	19.0		5'-0"		40 (143) #4	—	—	—	—	—	19 (150) #11		N-E UNIT 3
8	40.0		5'-0"		15 (143) #4	—	—	—	—	—	19 (151) #11		N-E UNIT 3



VERTICAL BAR WELD
#14 & #18 BARS ONLY

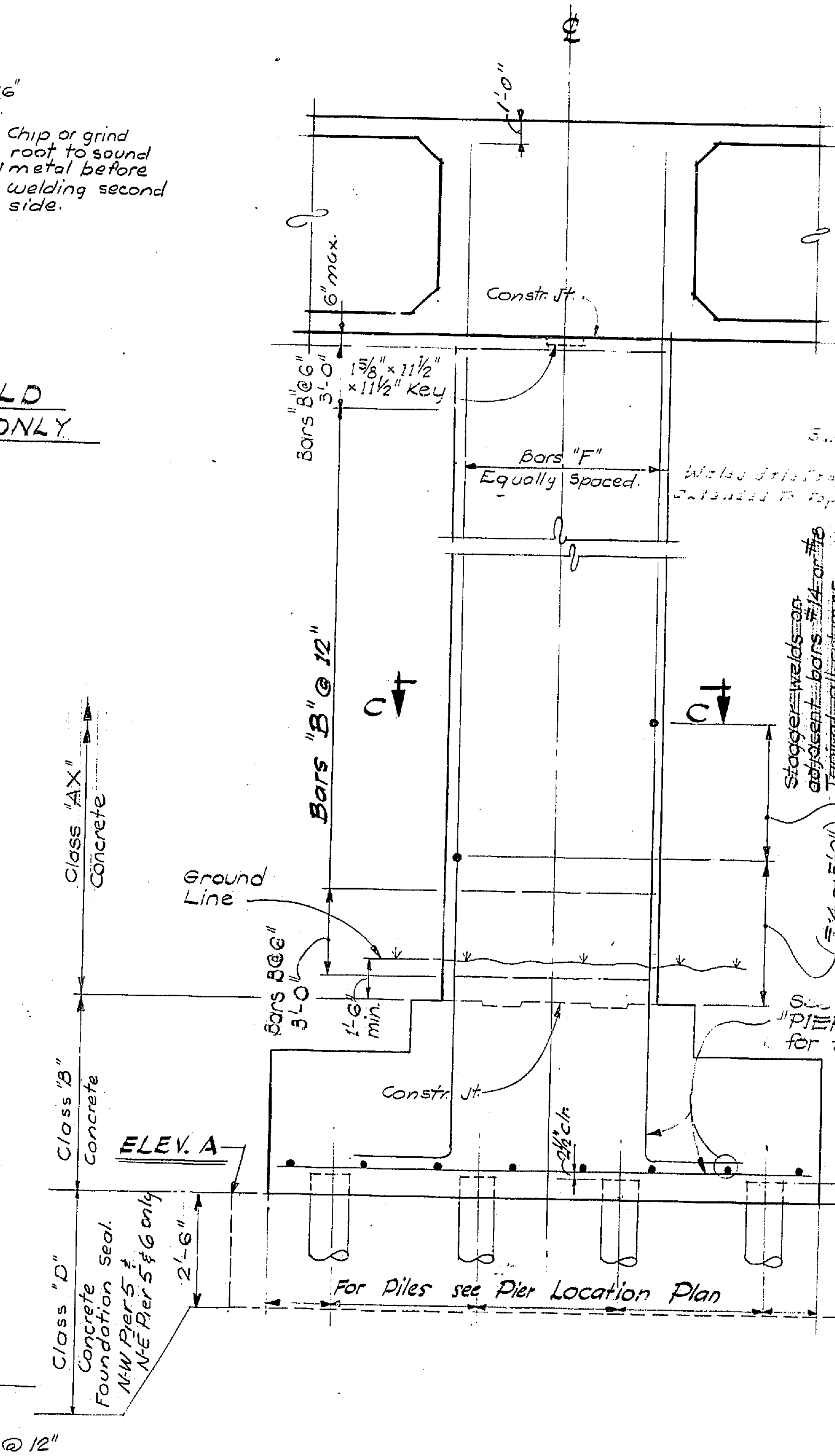


SECTION A-A

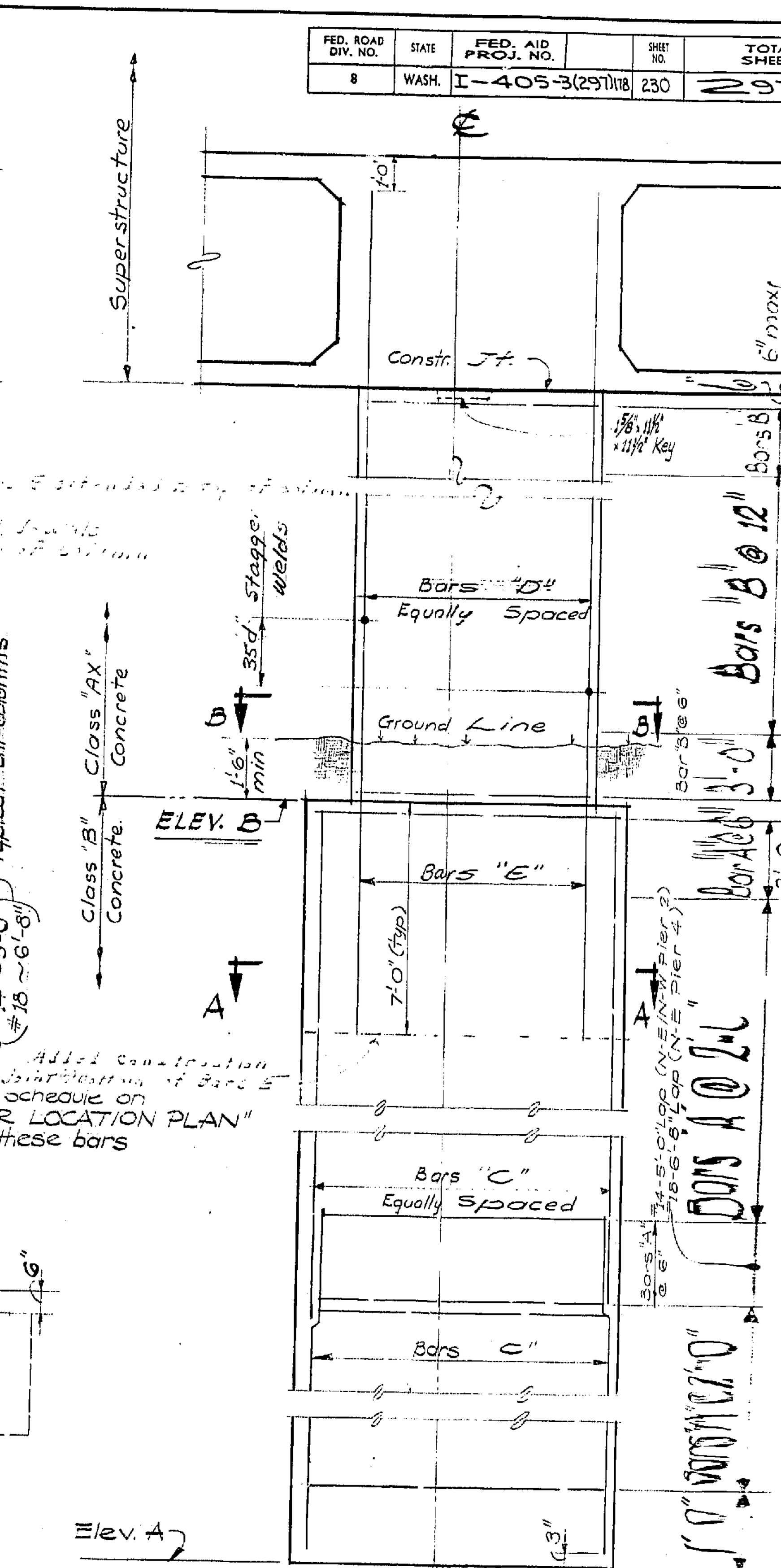
SECTION B-B

SECTION C-C

SECTION C-C
PIER Nº 11



PIER Nº 5 THRU PIER Nº 15 N-W RAMP
PIER Nº 5 THRU PIER Nº 8 N-E RAMP



PIER Nº 2 THRU PIER Nº 4 N-W RAMP
PIER Nº 2 THRU PIER Nº 4 N-E RAMP

COLUMN & SHAFT DETAILS

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(29?)118	230	297

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W & N-E STRUCTURE

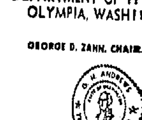
COLUMN AND SHAFT DETAILS

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON



APPROVED December 7, 1967
SHEET 230 OF 297 SHEETS
CONTRACT NO. 8382

BRIDGE ENGINEER

DESIGNED
DESIGN CHECKED
DRAWN BY
QUANTITIES FIGURED
QUANTITIES CHECKED

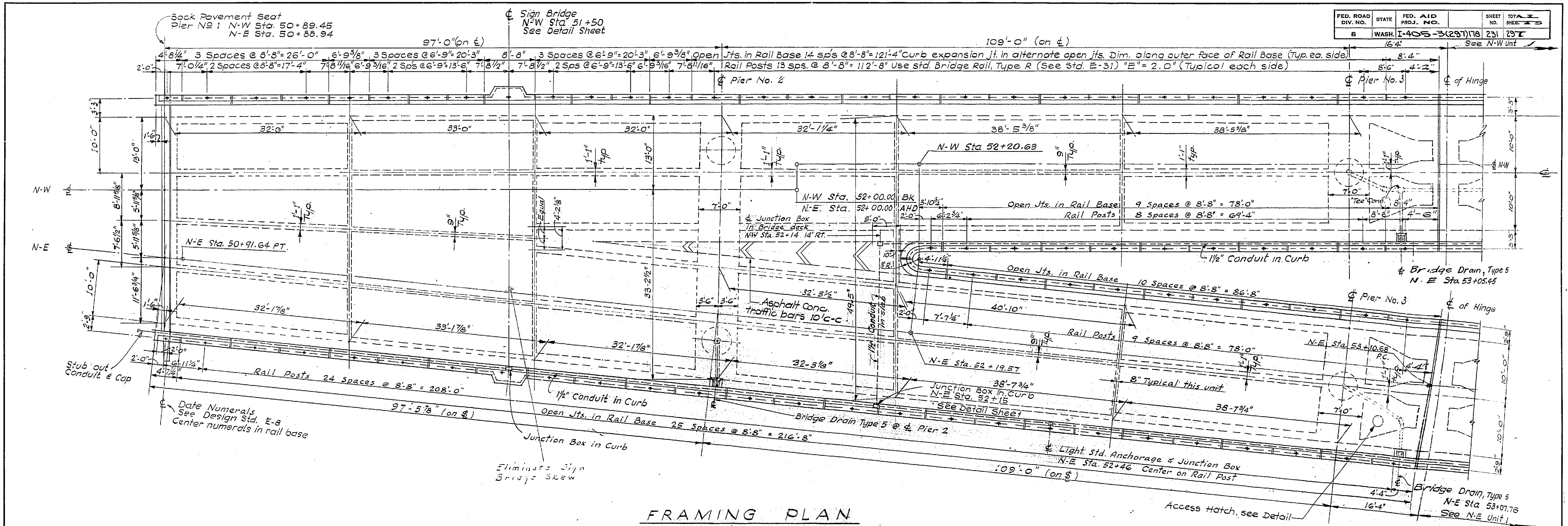
DRAWN
TRACED
CHECKED
LOC. ENGR.
DIST. ENGR.

11-16-67

As Built Changes in Red [illegible]

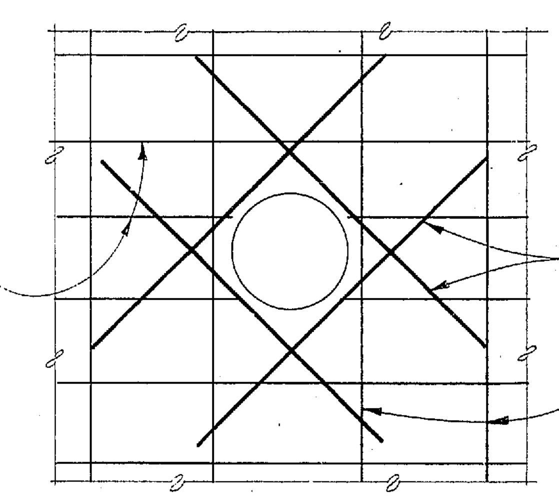
P/1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(29?)118	231	297

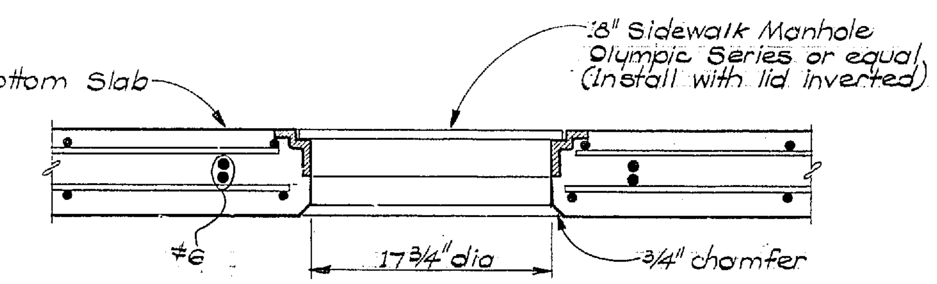


Sack Pavement Seat
Pier No 1 N-W Sta. 50+89.45
N-E Sta. 50+88.94
℄ Sign Bridge
N-W Sta 51+50
See Detail Sheet
97'-0" (on ℄)
109'-0" (on ℄)
3 Spaces @ 8'-8" = 26'-0"
Open Jts. in Rail Base 14 sp's @ 8'-8" = 121'-4" Curb expansion jt. in alternate open jts. Dim. along outer face of Rail Base (Typ. ea. side)
Rail Posts 13 sps. @ 8'-8" = 112'-8" Use std. Bridge Rail, Type R (See Std. E-31) "E" = 2.0" (Typical each side)
℄ Pier No. 2
℄ Pier No. 3
℄ of Hinge
See N-W Unit
N-W Sta 52+20.63
N-W Sta. 52+00.00 BK
N-E Sta. 52+00.00 AHD
℄ Junction Box In Bridge deck
N-E Sta. 50+91.64 PT
Open Jts. in Rail Base 9 Spaces @ 8'-8" = 78'-0"
Rail Posts 8 Spaces @ 8'-8" = 69'-4"
1½" Conduit in Curb
Open Jts. in Rail Base 10 Spaces @ 8'-8" = 86'-8"
℄ Bridge Drain, Type 5
N-E Sta 53+05.45
Asphalt Conc. traffic bars 10'c-c
Rail Posts 9 Spaces @ 8'-8" = 78'-0"
N-E Sta. 53+10.68
N-E Sta. 52+19.57
Junction Box in Curb
N-E Sta. 52+15
See Detail Sheet
8" Typical this unit
Stub out Conduit & Cap
Rail Posts 24 Spaces @ 8'-8" = 208'-0"
1½" Conduit in Curb
Bridge Drain Type 5 @ ℄ Pier 2
℄ Date Numerals
See Design Std. E-8
Center numerals in rail base
97'-5⅞" (on ℄)
Open Jts. in Rail Base 25 Spaces @ 8'-8" = 216'-8"
Junction Box in Curb
℄ Light Std. Anchorage & Junction Box
N-E Sta. 52+46 Center on Rail Post
109'-0" (on ℄)
Eliminate Sign Bridge Skew
Bridge Drain, Type 5
N-E Sta. 53+07.76
See N-E Unit 1
Access Hatch, see Detail

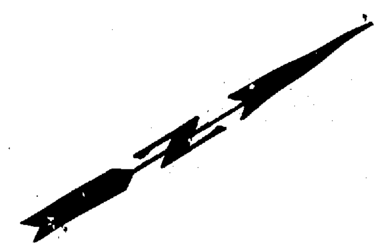
FRAMING PLAN



ACCESS HATCH PLAN



ACCESS HATCH DETAIL



GENERAL NOTES

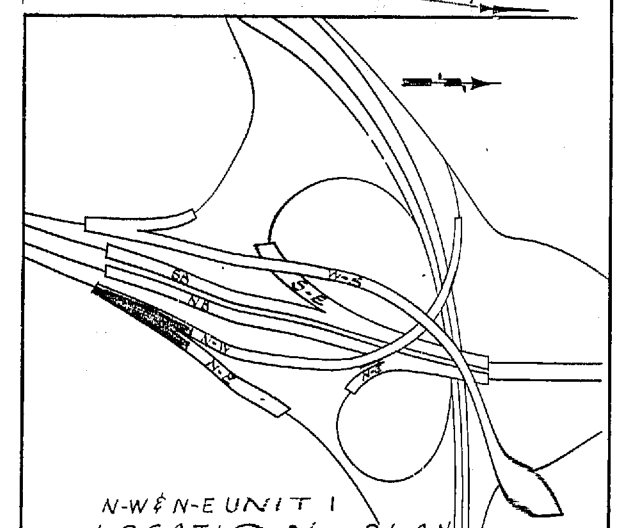
For conduit, Light Std. Anchorage, and Junction Box Details - See "ELECTRICAL DETAILS".

For hinge & expansion joint details - See "HINGE DETAILS".

For open joints in rail base and curb expansion joints See Design Std. E-29.

For rail base anchor bolt pattern See Design Std. E-31

For bridge drain and downspout details - See "DRAINAGE DETAILS".



N-W & N-E UNIT 1 LOCATION PLAN

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W & N-E STRUCTURE

FRAMING PLAN

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

APPROVED December 7, 1967
SHEET 231 OF 297 SHEETS
CONTRACT NO. 8382

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

As Built Changes in Red 9-15-70

WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2-BO
NE/NW STRUCTURE FRAMING PLAN
SHEET 223 OF 289

11-16-67

P/1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178	232	297

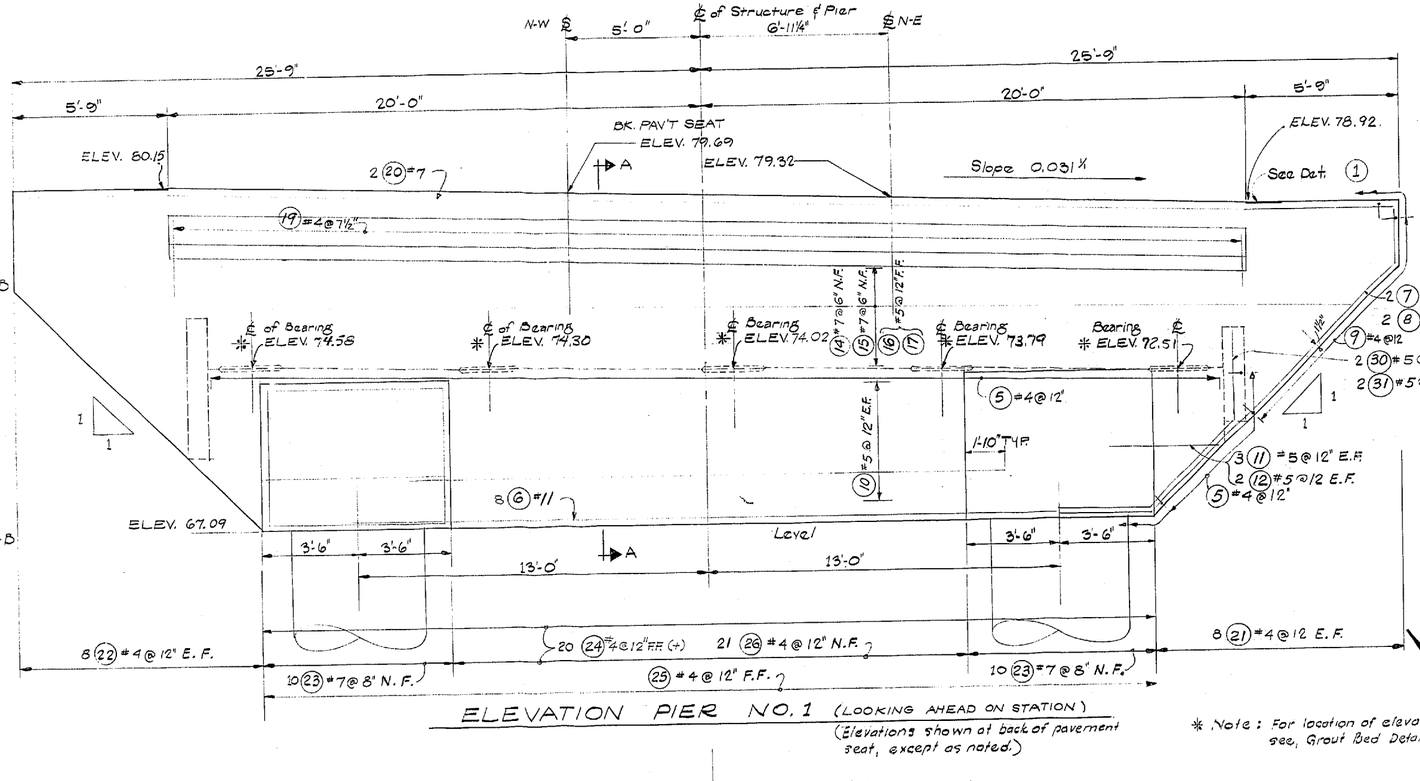
DESIGNING ENGINEER
DESIGNED
DESIGN CHECKED
DRAWN BY
QUANTITIES FIGURED
QUANTITIES CHECKED

DRAWN	DATE
TRACED	
CHECKED	
LOC. ENGR.	
DIST. ENGR.	

10

11-16-67

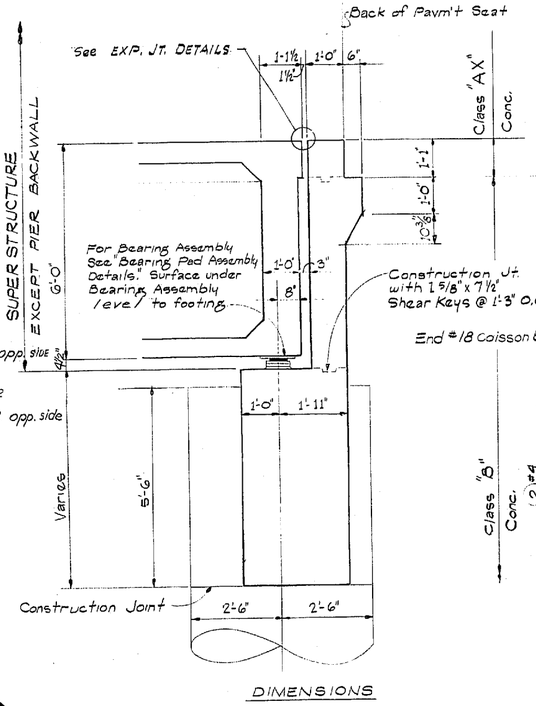
N-E/N-W STRUCTURE
PIER NO. 1
SHEET 224 OF 289



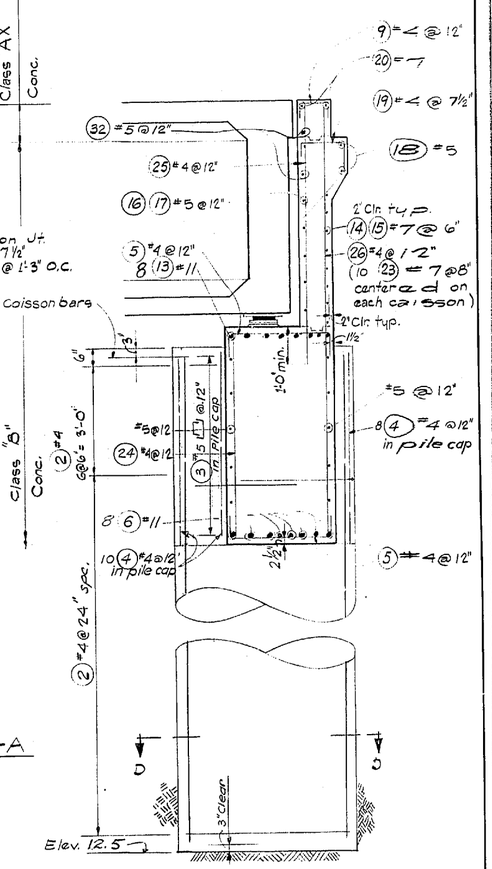
ELEVATION PIER NO. 1 (LOOKING AHEAD ON STATION)

(Elevations shown at back of pavement seat, except as noted.)

* Note: For location of elevation see, Grout Bed Detail.

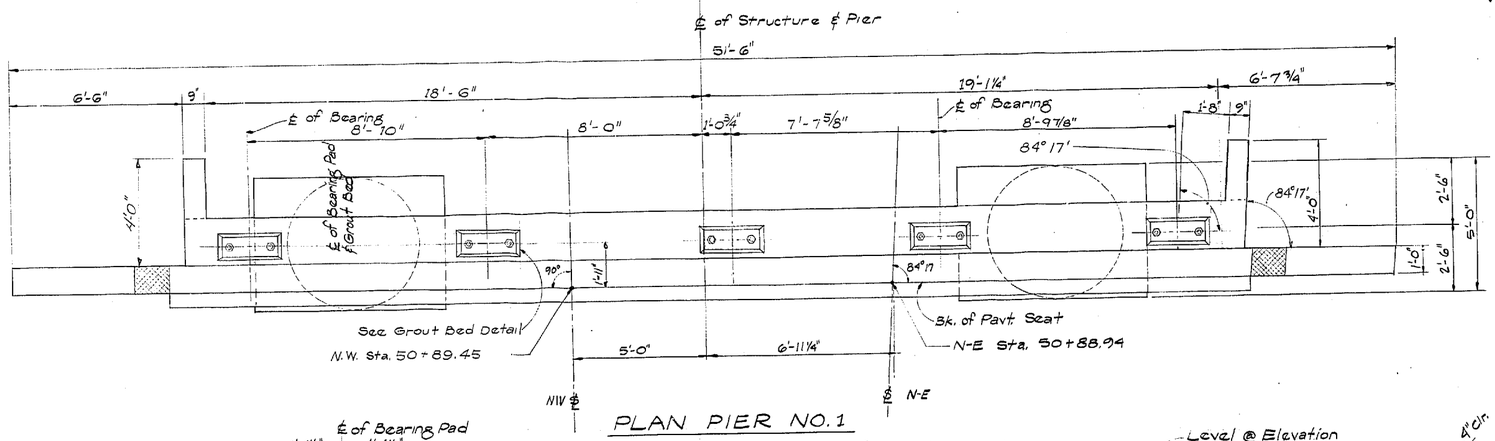


DIMENSIONS

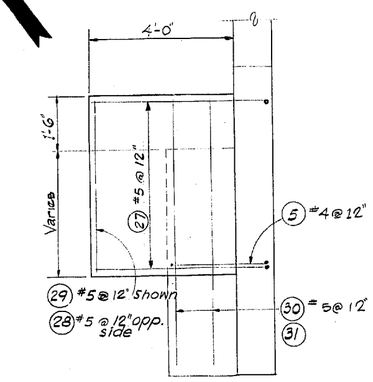


SECTION A-A

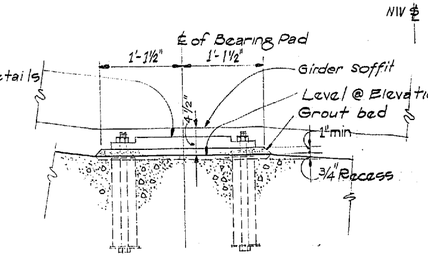
REINFORCING



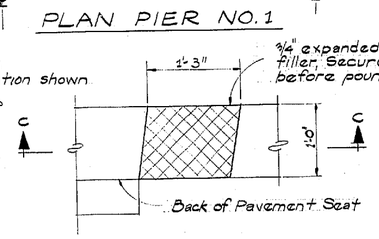
PLAN PIER NO. 1



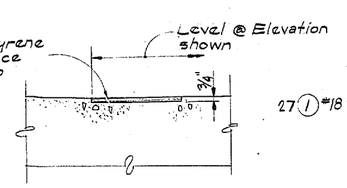
SECTION B-B



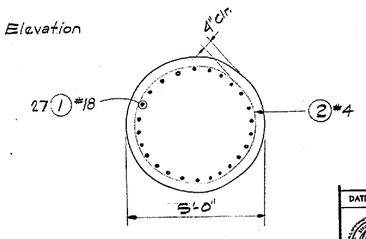
GROUT BED DETAIL



DETAIL (1)



SECTION C-C



SECTION D-D

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

PIER NO. 1

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN

P. T. McALISON — BASIL FERGUSON
M. WALSH — JOHN N. RUPP

APPROVED December 7, 1967 — BRIDGE ENGINEER

CONTRACT NO. 8382

SHEET 232 OF 297 SHEETS

P/1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178	233	297

BOTTOM SLAB — BOTTOM LAYER OF REINFORCING

BOTTOM SLAB — TOP LAYER OF REINFORCING

SECTION A-A

For D.L. Camber Curve see Next Sheet.

For Bottom Slab Cell Drain Detail see next sheet

As Built Changes in Red 9-15-70

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

N-W & N-E BOTTOM SLAB

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN
F. L. MIYALSON
H. WALSH
BAKER FERGUSON
JOHN N. RUPP

G. H. ANDREWS

APPROVED December 7, 1967
BRIDGE ENGINEER
CONTRACT NO. 8382
SHEET 233 OF 297 SHEETS

DATE	REVISION	BY

WORTHINGTON, SKILLING
HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

10/1995

WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2-BO
N-W/N-E STRUCTURE
Bottom SLAB
SHEET 233 OF 297

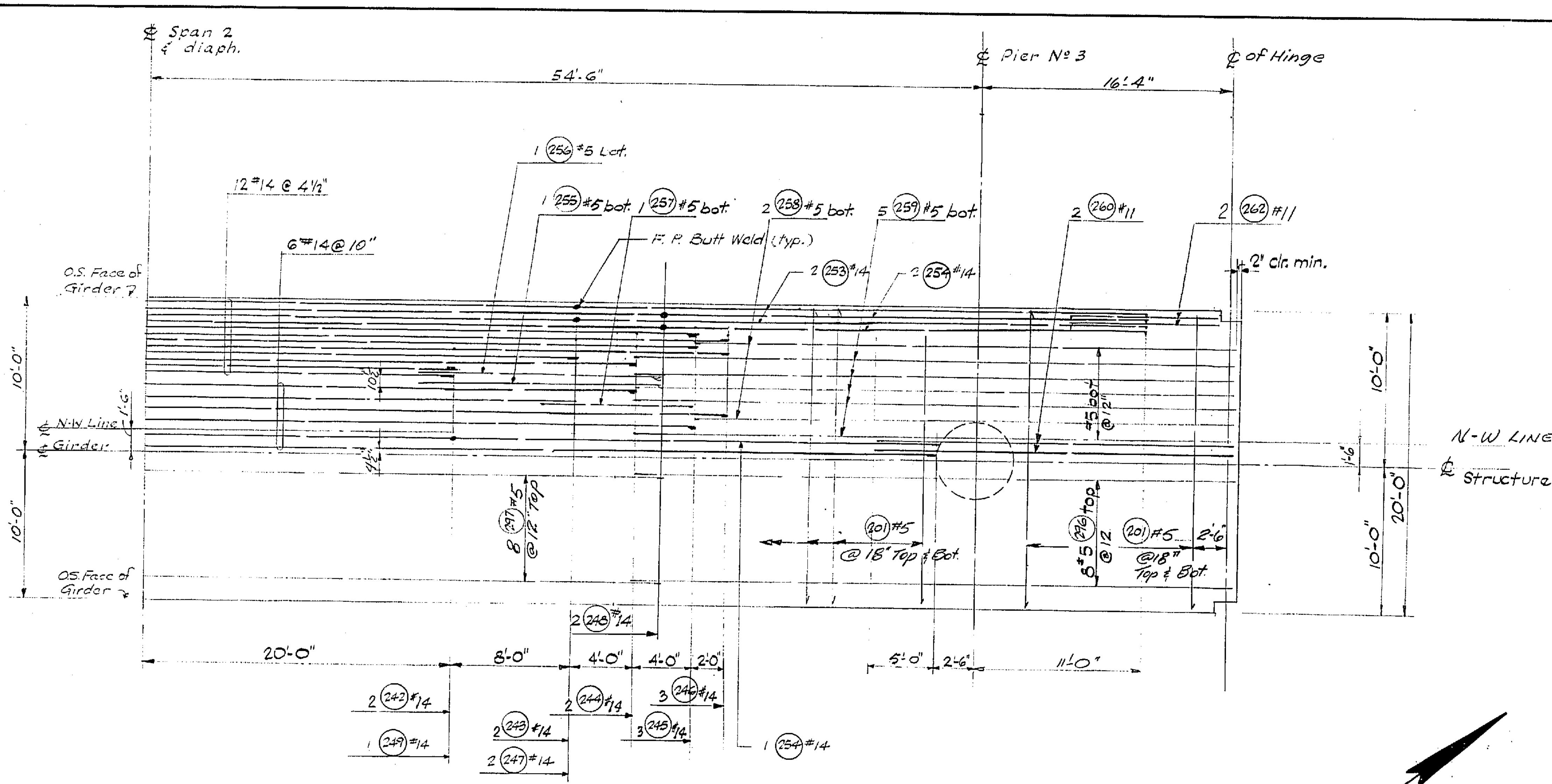
11-16-67

DESIGNING ENGINEER
DESIGNED
DESIGN CHECKED
DRAWN BY
QUANTITIES FIGURED
QUANTITIES CHECKED

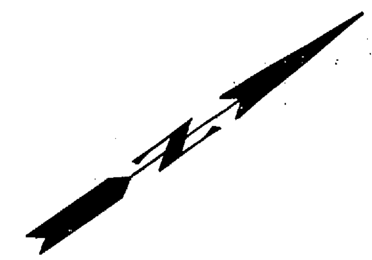
DRAWN
TRACED
CHECKED
LOC. ENGR.
DIST. ENGR.

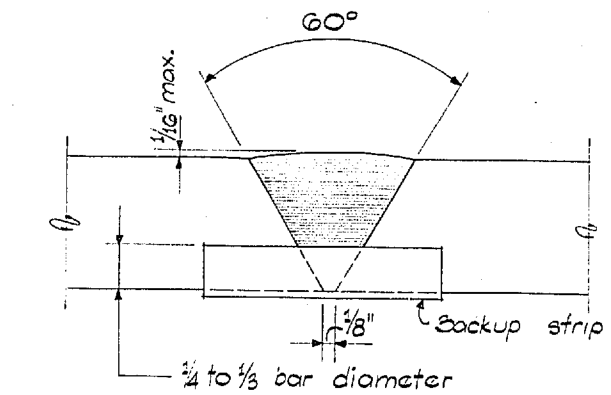
BY
DATE

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297) 178	234	297



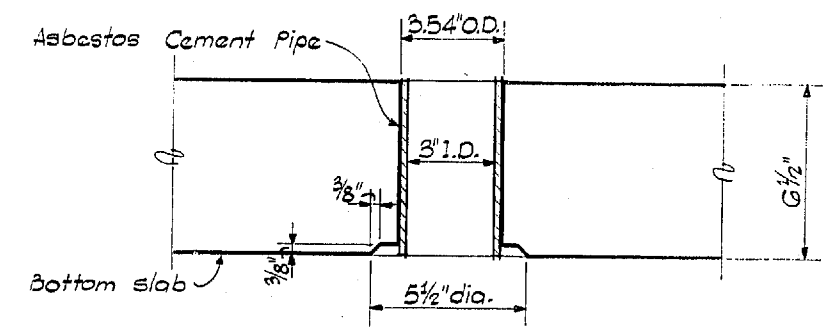
BOTTOM SLAB N-W RAMP





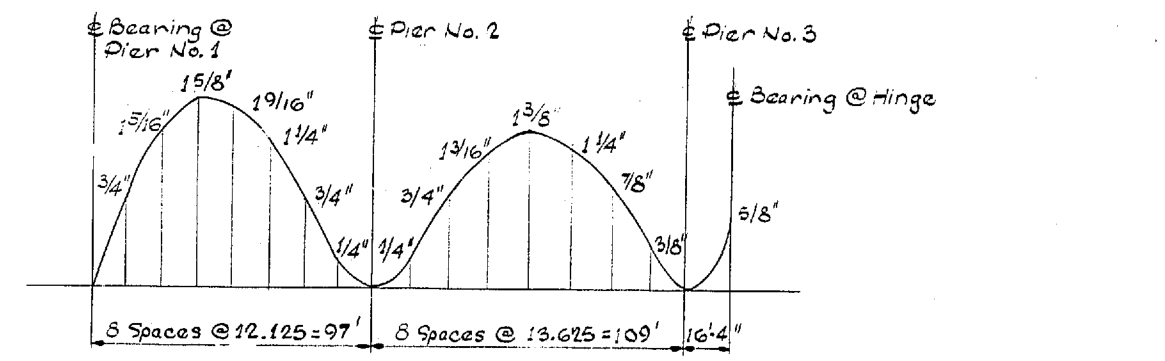
TYPICAL HORIZONTAL BAR WELD

If welding is necessary for fabrication or shipping considerations, it will be at the locations shown on the plans. Welds shall develop the ultimate strength of the bar.



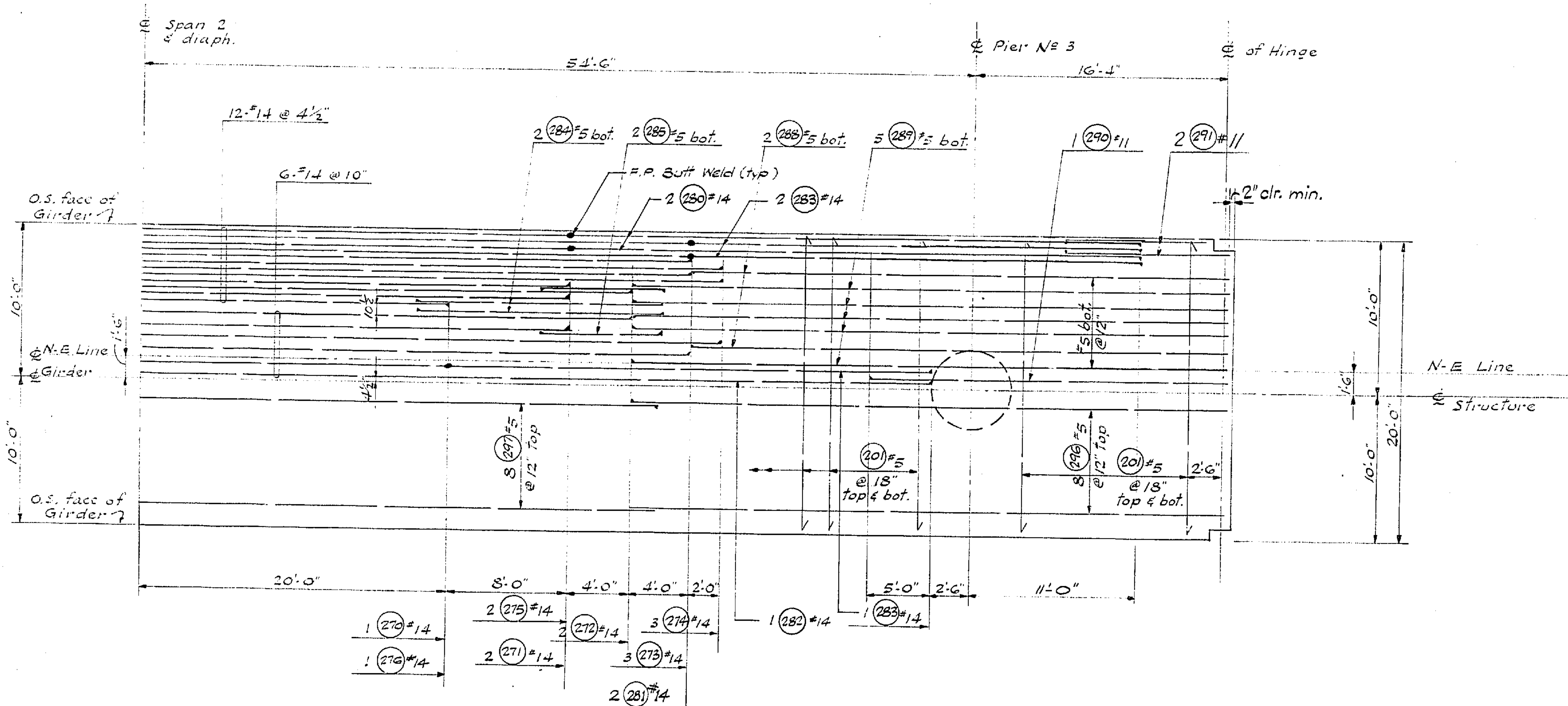
CELL DRAIN DETAIL

Place @ low corner of each cell. Typical all units.



DEAD LOAD CAMBER CURVE FOR N-W & N-E RAMPS

This curve shows D.L. Camber only and should be increased by the amount of take-up anticipated in the falsework.



BOTTOM SLAB N-E RAMP

DATE	REVISION	BY

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Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W & N-E STRUCTURE

N-W & N-E BOTTOM SLAB

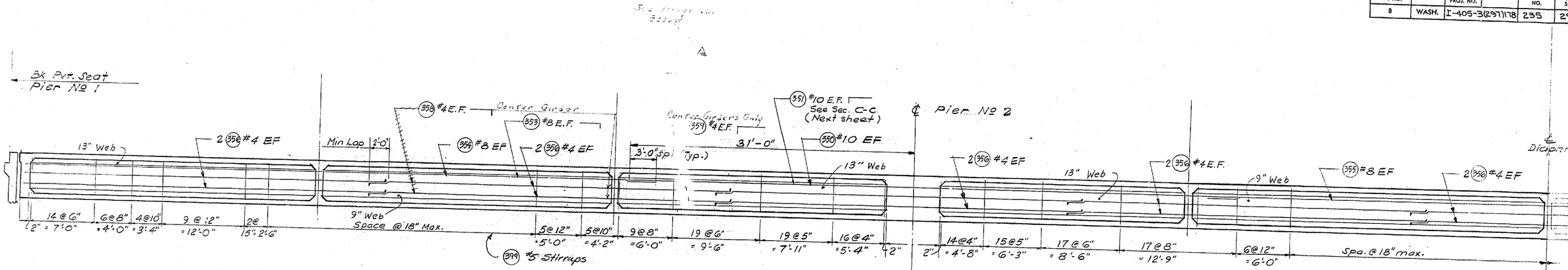
WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

APPROVED: December 7, 1967
SHEET 234 OF 297 SHEETS
CONTRACT NO. 8382
BRIDGE ENGINEER

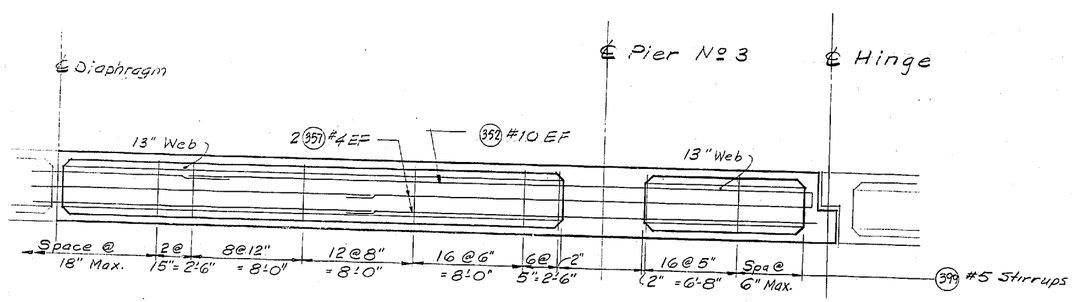
10/1995

PSH NO. 1-RE/PSH NO. 2-BO
NW/NE STRUCTURE BOTTOM SLAB
SHEET 226 OF 289
11/16/67

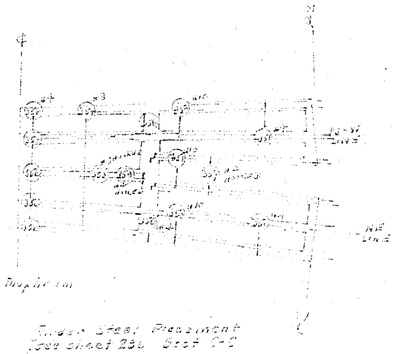
FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178		235	297



EXTERIOR & INTERIOR WEBS



EXTERIOR & INTERIOR WEBS



LONGITUDINAL SECTIONS

As Built Changes in Red 9-15-70

DESIGNING ENGINEER
DESIGNED
DETAILED CHECKED
DRAWN
QUANTITIES FIGURED
QUANTITIES CHECKED

	BY	DATE
DRAWN		
TRACED		
CHECKED		
LOC. ENGR.		
DIST. ENGR.		

11-16-67

NE/NW STRUCTURE
LONGITUDINAL SECTIONS
SHEET 227 OF 297

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

LONGITUDINAL SECTIONS N-W & N-E

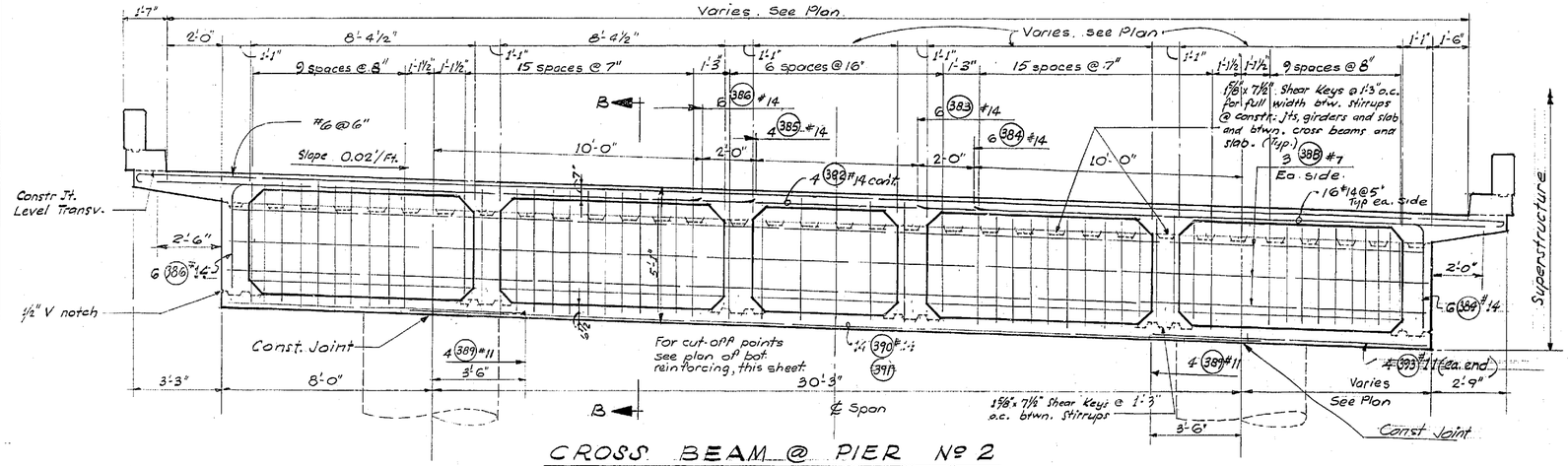
WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN
F. I. MIPALSON
H. WALSH
BAKER FERGUSON
JOHN H. RUPP

APPROVED December 7, 1967
SHEET 235 OF 297 SHEETS
CONTRACT NO. 8382
BRIDGE ENGINEER

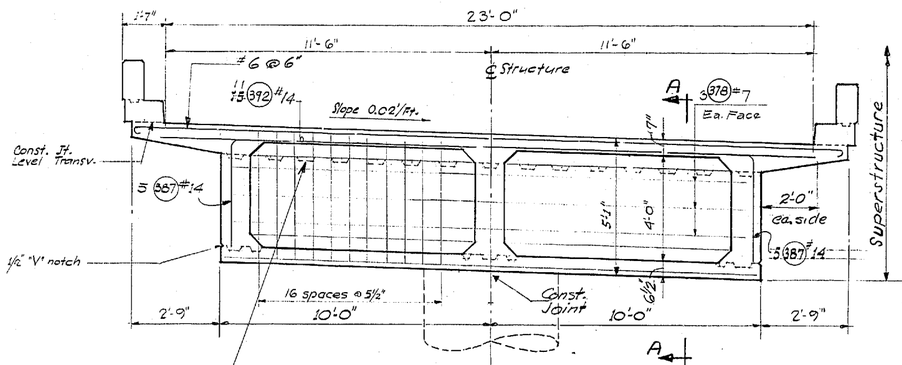
P/1996

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178		236	297

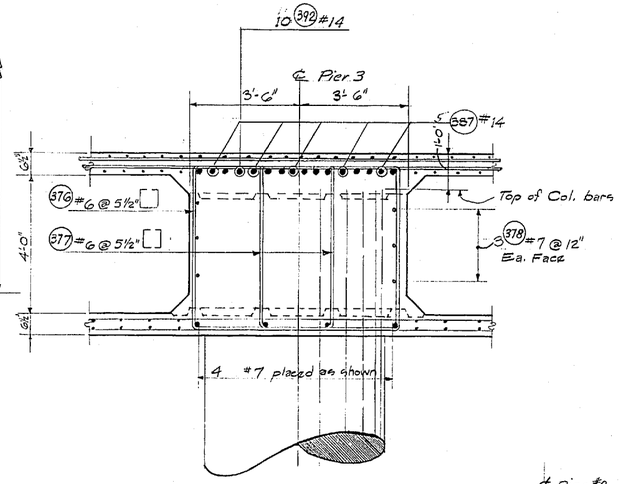


CROSS BEAM @ PIER Nº 2

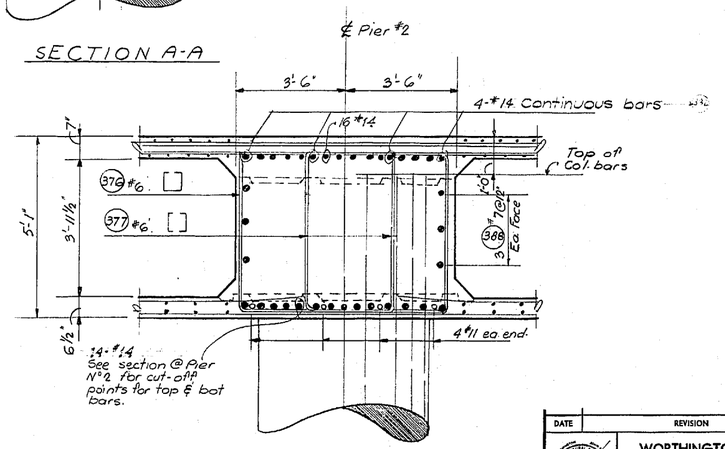
UNIT I



CROSS BEAM @ N-E PIER 3

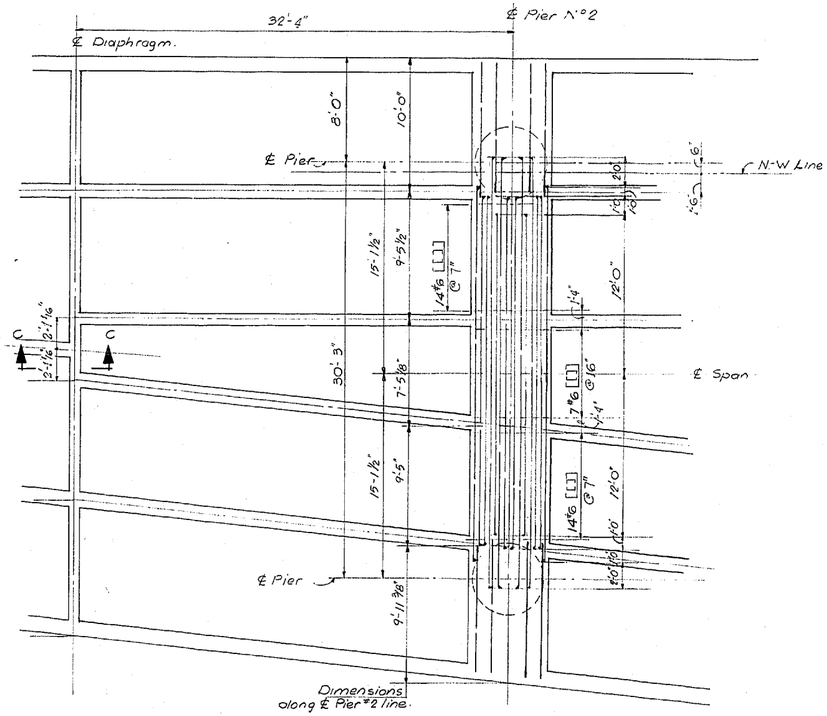


SECTION A-A

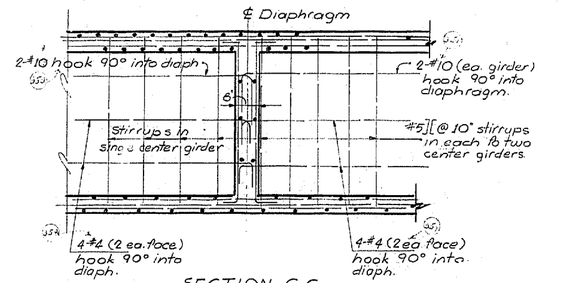


SECTION B-B

As Built Changes in red 9-15-70



BOTTOM REINF.



SECTION C-C

DESIGNING ENGINEER
DESIGNED BY
DETAILED BY
DRAWN BY
QUANTITIES FIGURED
QUANTITIES CHECKED

DRAWN	BY	DATE
TRACED		
CHECKED		
CONST. ENGR.		
DIST. ENGR.		

WOODINVILLE INTERCHANGE
PSH NO. I-RE/PSH NO. 2-BO
N-W/N-E STRUCTURE
SHEET 225 OF SECTIONS 289
TRANSVERSE

11-16-67

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

CROSSBEAM N-W & N-E PIER 2 AND N-E PIER 3

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN

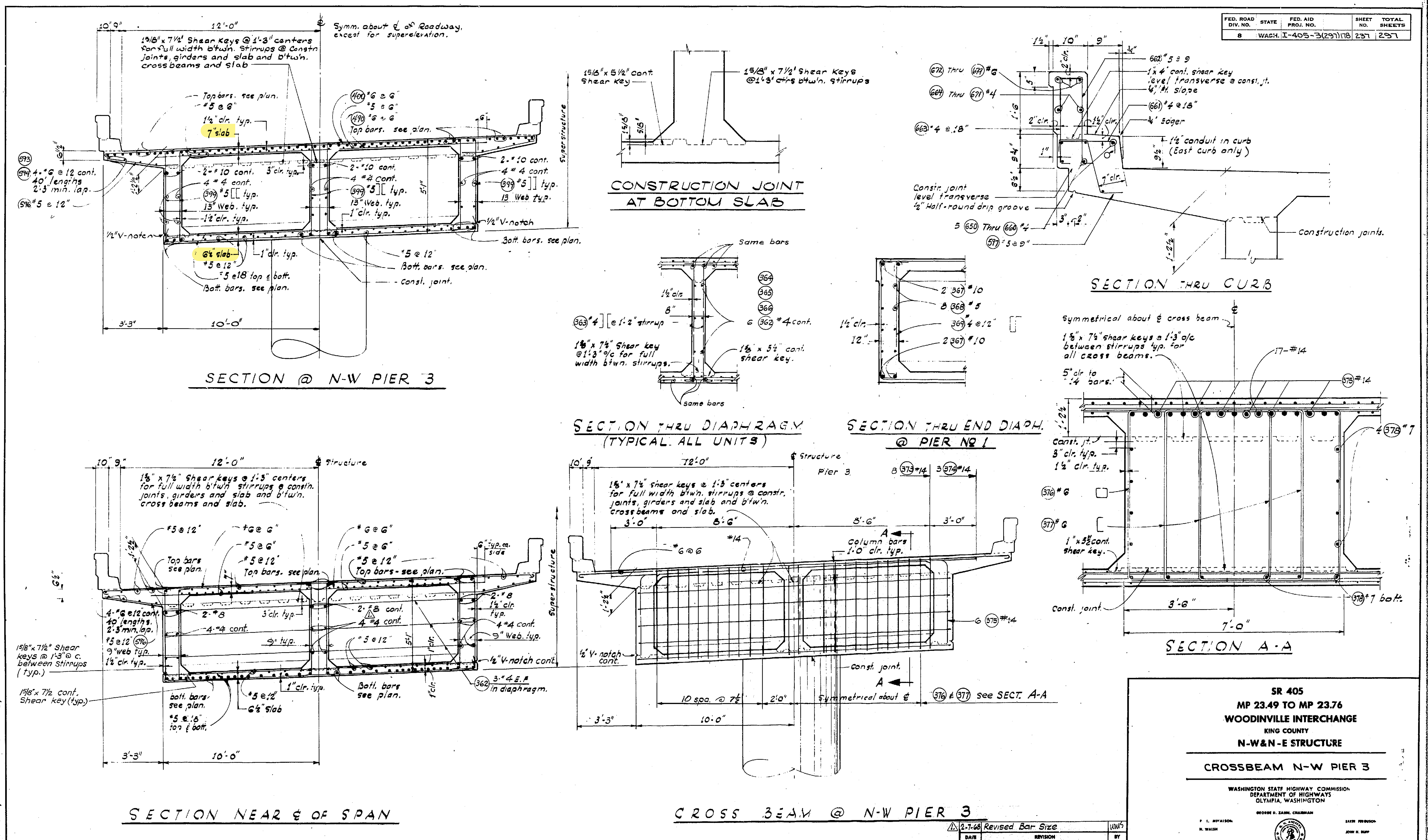
F. I. MITAITSON — EAMER FERGUSON
H. WALSH — JOHN H. RUPP

APPROVED December 7, 1967 — BRIDGE ENGINEER

CONTRACT NO. 8382

SHEET 236 OF 297 SHEETS

P/1990



FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(29)178	237	297

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W & N-E STRUCTURE

CROSSBEAM N-W PIER 3

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

APPROVED December 7, 1967
SHEET 237 OF 297 SHEETS
CONTRACT NO. 8382

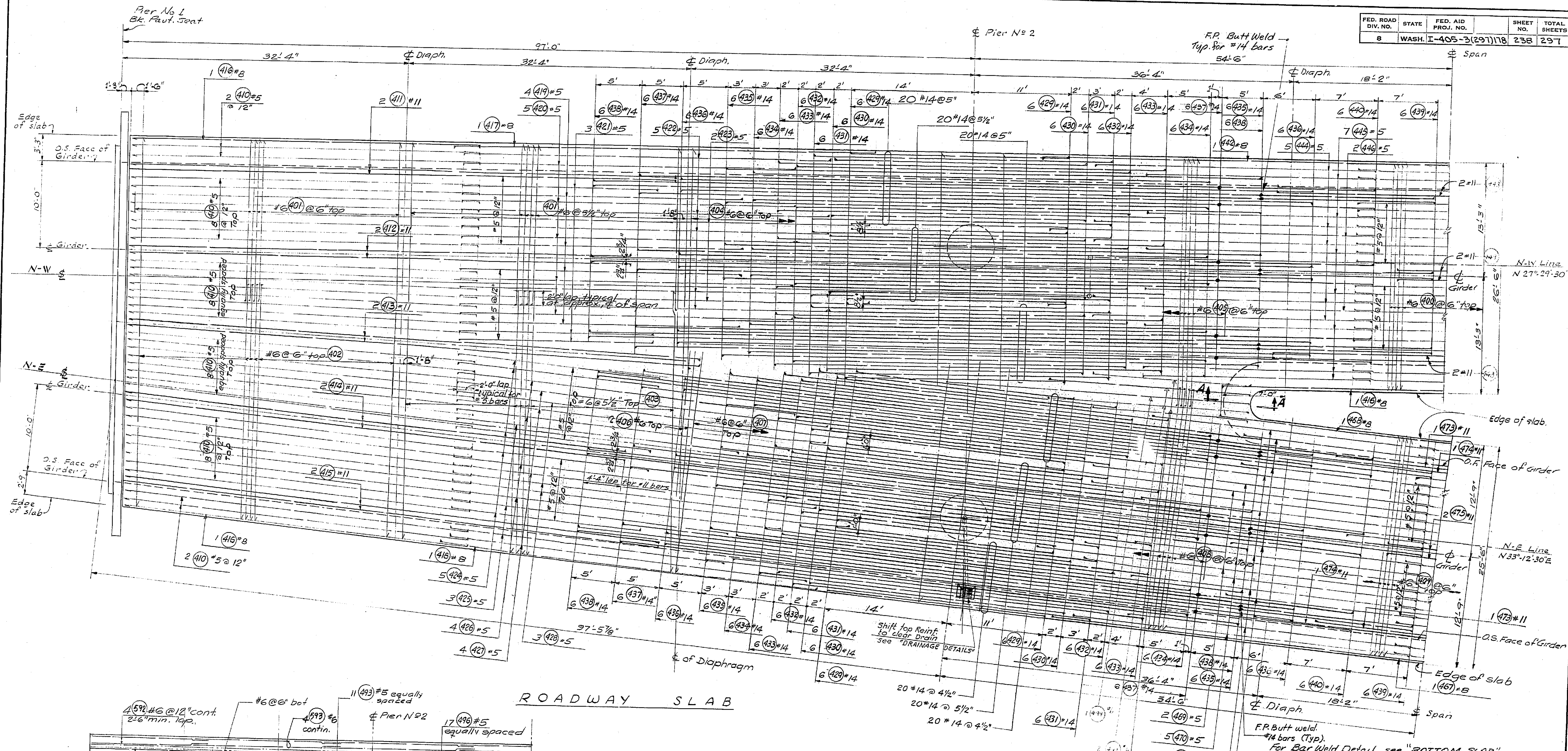
DATE	REVISION	BY
2-7-68	Revised Bar Size	WWS

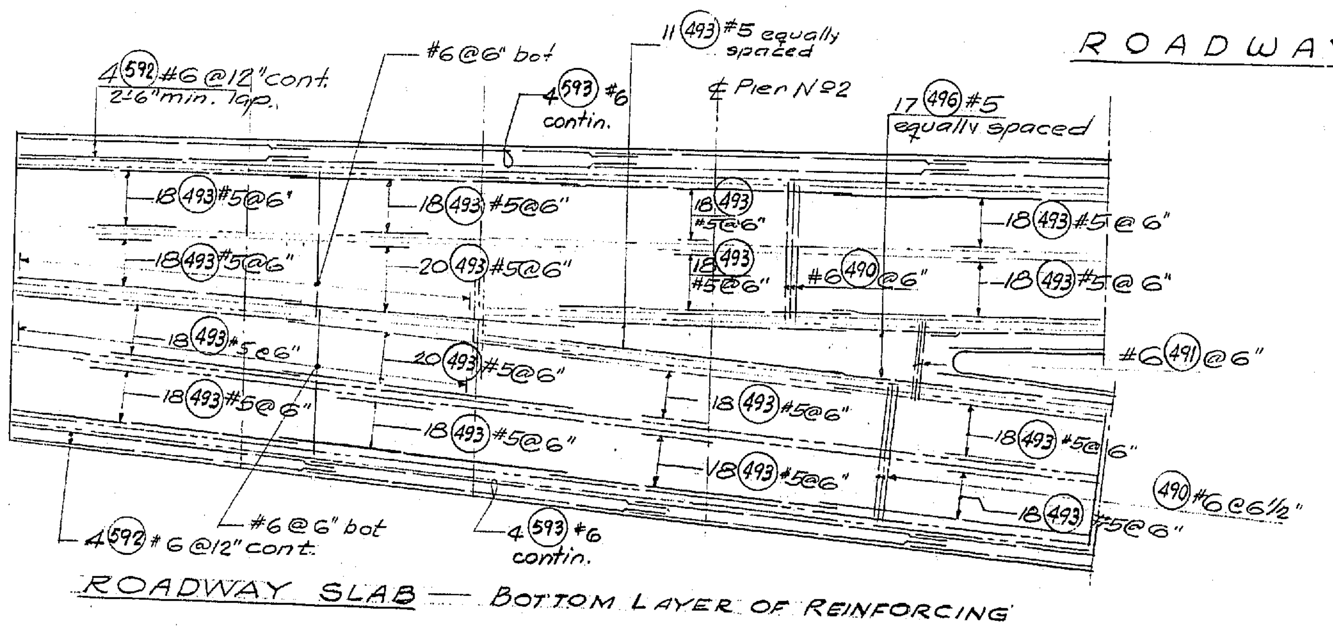
WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

WOODINVILLE INTERCHANGE
FSH NO. 1-RE/PSH NO. 2-BO
NE/NW STRUCTURE TRANSVERSE SECTIONS
SHEET 229 OF 289
11-16-67

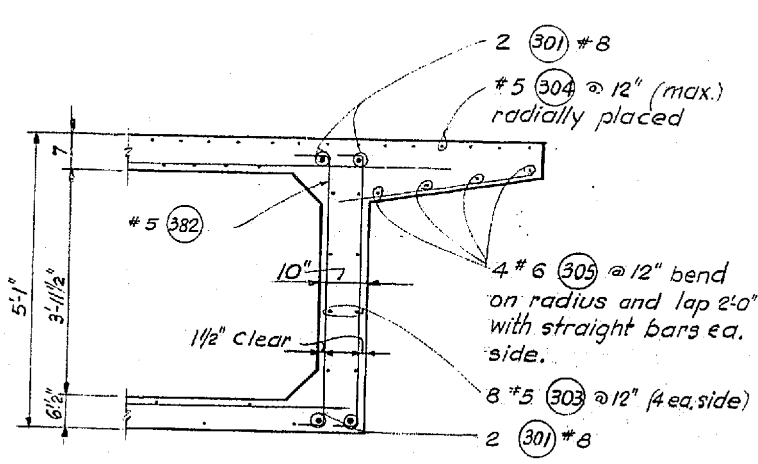
9/1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178		238	297





ROADWAY SLAB — BOTTOM LAYER OF REINFORCING



SECTION A-A

As Built Changes in Red 7-15-70

SR 405

MP 23.49 TO MP 23.76

WOODINVILLE INTERCHANGE

KING COUNTY

N-W&N-E STRUCTURE

N-W & N-E ROADWAY SLAB

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

APPROVED December 7, 1967

SHEET 238 OF 297 SHEETS

CONTRACT NO. 8382

BRIDGE ENGINEER

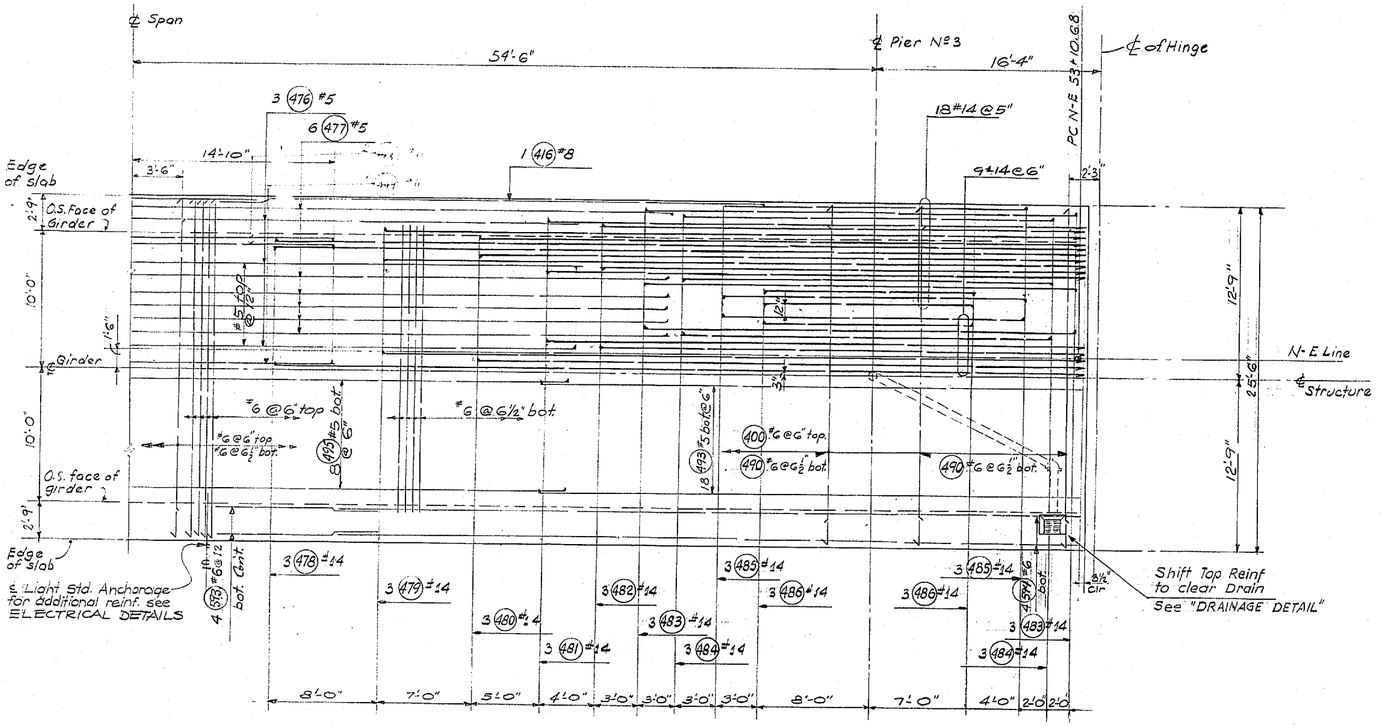
WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2-BO
NE/NW STRUCTURE ROADWAY SLAB
SHEET 230 OF 289

11-16-67

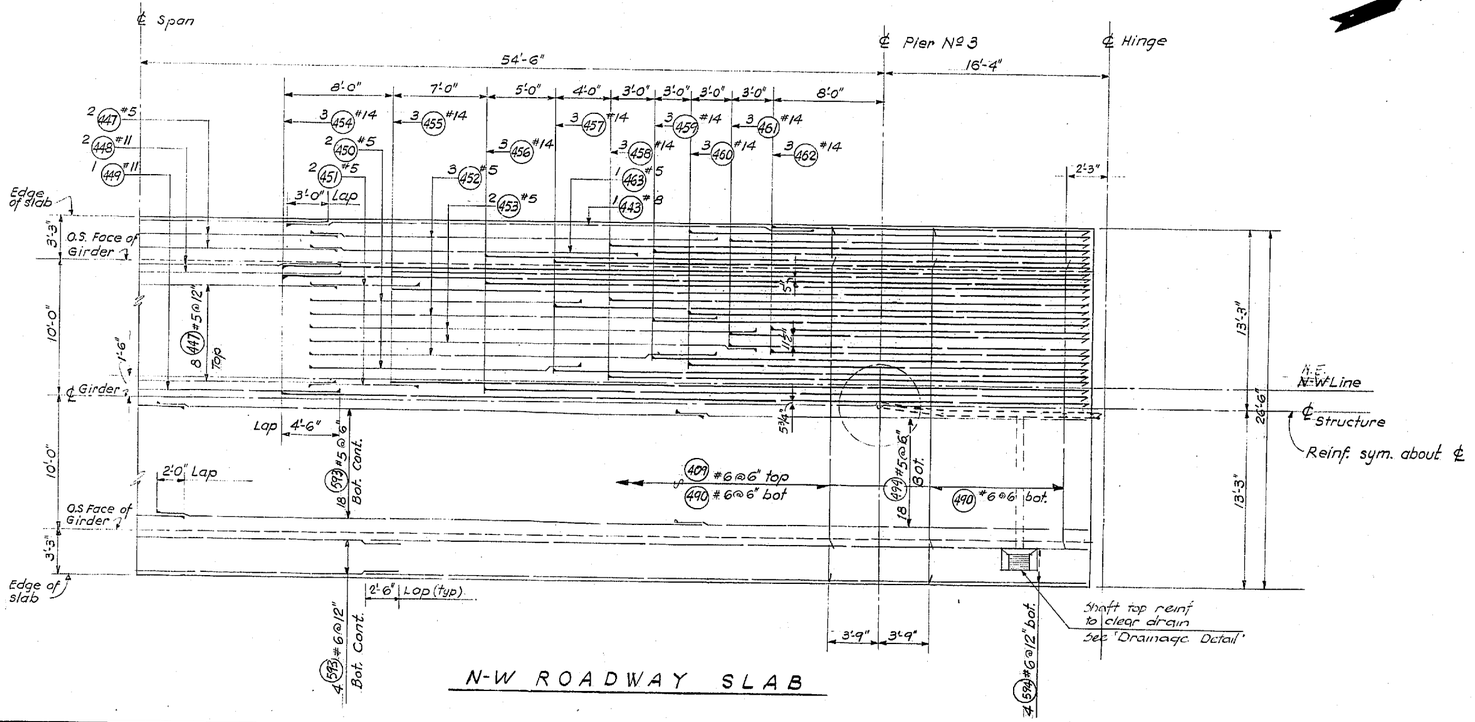
P/1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(29)118		239	297

DESIGNING ENGINEER
DESIGNED
DESIGN CHECKED
DRAWN
QUANTITIES FIGURED
QUANTITIES CHECKED



N-E ROADWAY SLAB



N-W ROADWAY SLAB

As Built Changes in Red 9-15-70

DRAWN	
TRACED	
CHECKED	
LOG. ENGR.	
DIST. ENGR.	

BY	DATE

WOODINVILLE INTERCHANGE
FSH NO. 1-RST(PSH NO. 2-B)
KING COUNTY, WASHINGTON
N-E & N-W ROADWAY SLAB
SHEET 231 OF 297

11-16-67

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W & N-E STRUCTURE

N-W & N-E ROADWAY SLAB

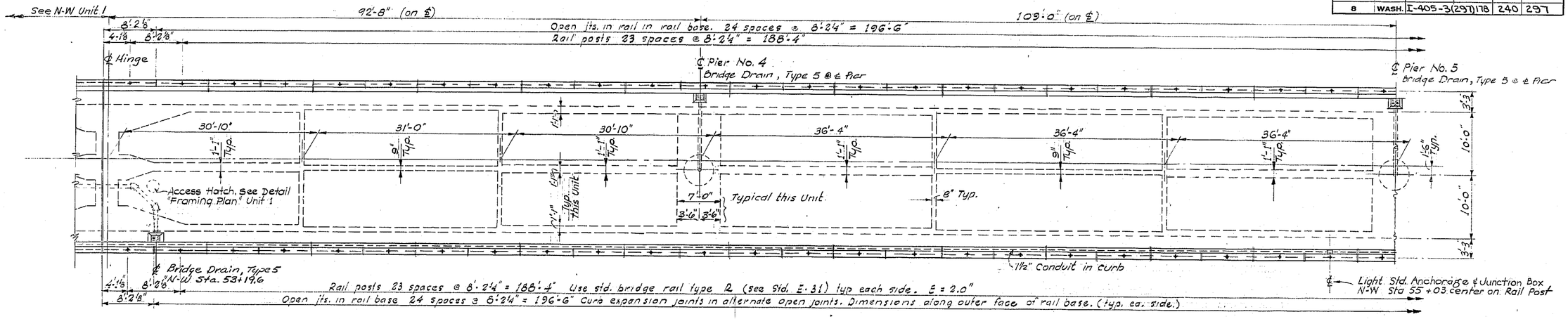
WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

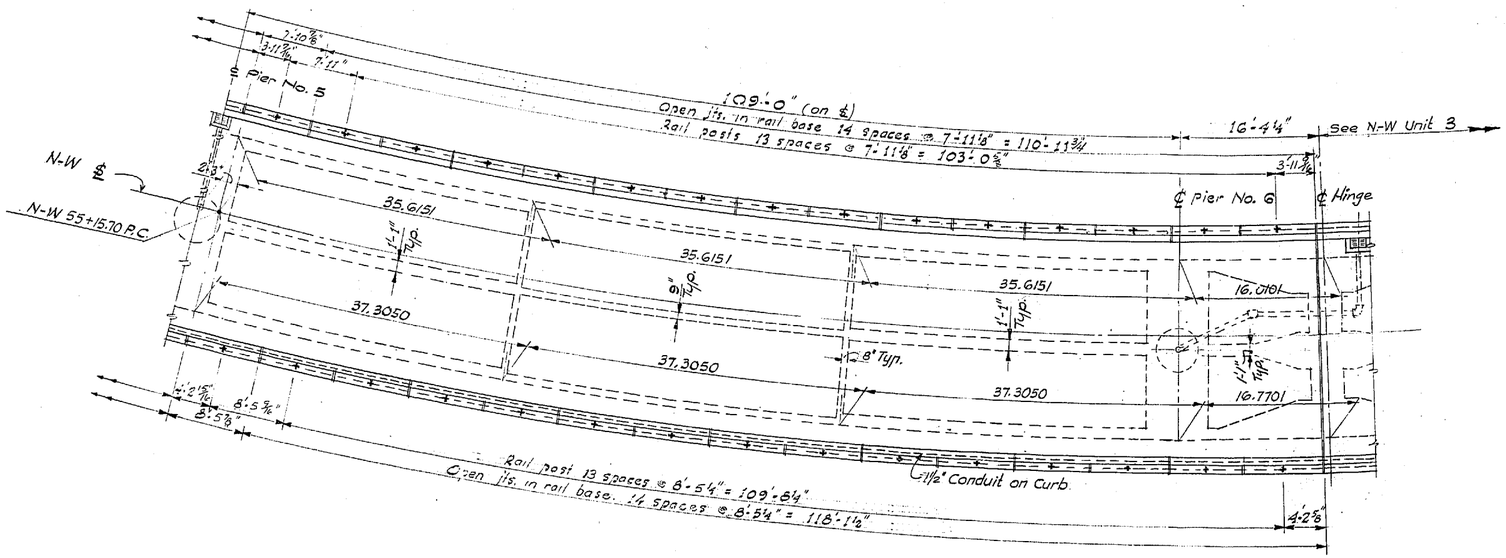
GEORGE D. ZANN, CHAIRMAN
P. T. McFARLAND — BAKER FERGUSON
H. WALSH — JOHN N. RUPP

APPROVED December 7, 1967 — BRIDGE ENGINEER
CONTRACT NO. 8382
SHEET 239 OF 297 SHEETS

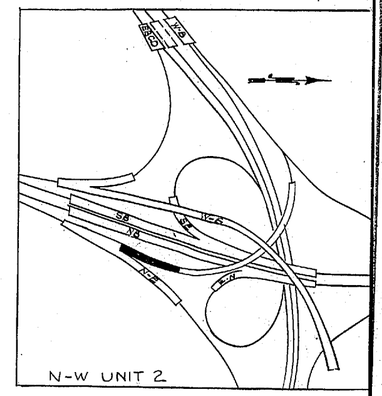
10/1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178		240	297





FRAMING PLAN



For General Notes See Unit 1 Framing Plan

DESIGNING ENGINEER
DESIGNED
DESIGN CHECKED
DRAWN BY
QUANTITIES FIGURED
QUANTITIES CHECKED

DRAWN	BY	DATE
TRACED		
CHECKED		
SUPV. ENGR.		
DIST. ENGR.		

11-16-67

WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2-BO
MP 23.49 TO MP 23.76
STRUCTURE
FRAMING PLAN
SHEET 239 OF 297 SHEETS

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

FRAMING PLAN

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN

F. I. McALISON — BAKER FERGUSON
H. WALSH — JOHN H. RUPP

APPROVED December 7, 1967 — BRIDGE ENGINEER
SHEET 240 OF 297 SHEETS
CONTRACT NO. 8382

P/1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178		241	297

DESIGNING ENGINEER
DESIGN
DESIGN CHECKED
DRAWN BY
QUANTITIES FIGURED
QUANTITIES CHECKED

℄ Hinge
34'-5" on ℄
Reinf. ref. line
92'-8" on ℄
57'-11" on ℄
℄ Pier N≥4
54'-6" on ℄
℄ Span
2 clr. min.
Edge of slab
2'-3"
10'-0"
1'-6"
℄ Girder
Edge of slab
200 #5@18" Top & Bot.
8 (225) #5@12" Top Cont.
1'-9"
1 (207) #14
1 (215) #14
1 (216) #14
2'-0" Lap (Typ.)
100 #5@18" Top & Bot.
1 (224) #14
1 (225) #14
#5@12" Bot.
4"
14=14@4½" Bot.
7=14@8" Bot.
3"
F.P. Butt Weld Typ. for #14
2 (209) #5
2 (204) #5
3 (210) #14
3 (211) #14
3 (208) #14
3 (209) #14
3 (206) #14
3 (205) #14
2 (217) #14
2 (218) #14
2 (236) #14
1 (212) #5
4 (213) #5
1 (214) #5
2'-6" Min. Lap
2 (219) #14
2 (220) #5
1 (221) #5
2 (222) #5
1 (223) #5
2 (235) #14
3"
6=14@10" Bot.
12=14@5¼" Bot.
2 (225) #14
3 (229) #14
3 (228) #14
3 (227) #14
3 (226) #14
5'
6'
7'
17'
5'
6'
5'
16'
9'
6'
6'
3'
13'
9'
5'
5'
N-W Line
℄ Structure
Reinf. sym. about ℄
20'-0"

℄ Span
℄ Pier N≥5
54'-6" on ℄
54'-6" on ℄
℄ Span
Edge of slab
10'-0"
1'-6"
℄ Girder
10'-0"
Edge of slab
1'-9"
200 #5@18" Top & Bot
200 #5@18" Top & Bot
8 (225) #5@12" Top Cont.
1 (225) #14
1 (264) #14
1 (241) #14
1 (261) #14
2'-0" Lap (Typ.)
#5@12" Bot.
#5@12" Bot.
5"
4¼"
3"
12=14@5¼" Bot.
2 (235) #14
6=14@10" Bot.
F.P. Butt Weld Typ. for #14
12=14@5¼" Bot.
6=14@10" Bot.
2 (246) #14
2 (280) #14
3 (226) #14
3 (227) #14
3 (228) #14
3 (229) #14
4 (219) #14
2 (231) #5
1 (232) #5
1 (233) #5
1 (234) #5
2'-0" min. lap
2'-0" Min. Lap
5'-0" min. lap (typ)
2 (253) #14
2 (137) #5
1 (238) #5
1 (239) #5
1 (240) #5
3 (242) #14
3 (243) #14
3 (244) #14
3 (245) #14
17'
8'
7'
5'
5'
5'
6'
20'
N-W Line
℄ Structure
Reinf. sym. about ℄
20'-0"

BOTTOM SLAB

For Bar Weld and Cell Drain Detail, see 'BOTTOM SLAB' UNIT 1.
For D.L. Camber Curve, see next sheet.

DRAWN	BY	DATE
TRACED		
CHECKED		
QUANTITIES		
DIST. ENGR.		

11-20-67

NW. STRUCTURE
BOTTOM SLAB
SHEET 239 OF 297

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

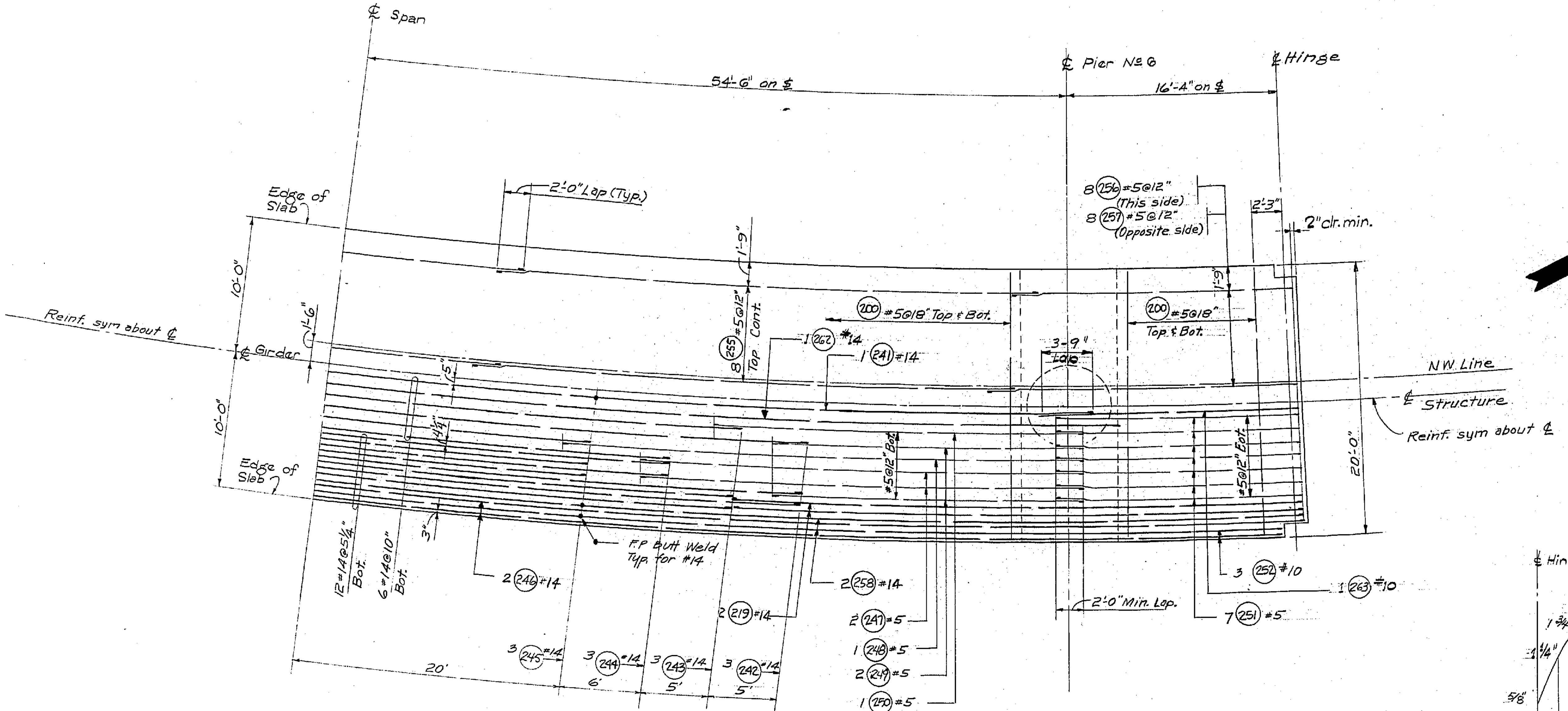
BOTTOM SLAB

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON
GEORGE D. ZAHN, CHAIRMAN
P. T. MYKLESON
H. WALSH
BAKER FERGUSON
JOHN N. BUPP

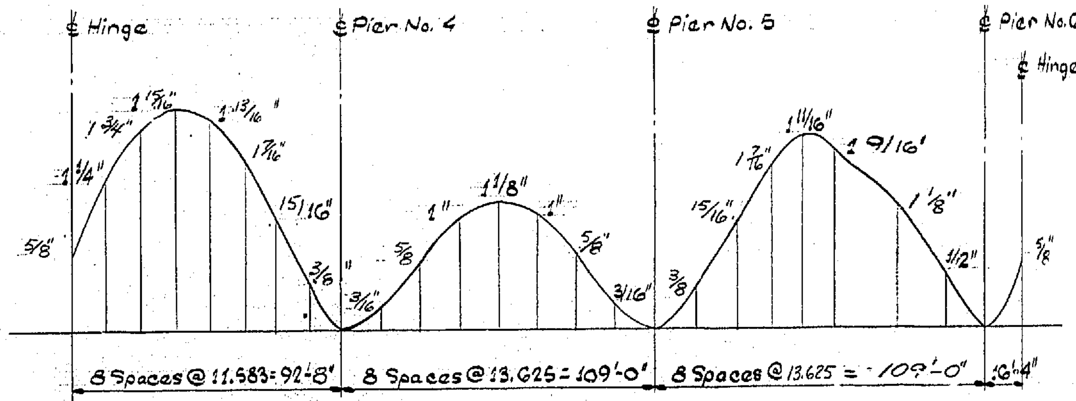
APPROVED: December 7, 1967
BRIDGE ENGINEER
CONTRACT NO. 8382
SHEET 241 OF 297 SHEETS

P/1996

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178		242	297



BOTTOM SLAB



DEAD LOAD CAMBER CURVE FOR N-W RAMP

This curve shows D.L. Camber only and should be increased by the amount of take up anticipated in the falsework.

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W & N-E STRUCTURE

BOTTOM SLAB

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

APPROVED: December 7, 1967
SHEET 242 OF 297 SHEETS
CONTRACT NO. 8382

DESIGNING ENGINEER	DESIGNED	DESIGN CHECKED	DRAWN BY	QUANTITIES FIGURED	QUANTITIES CHECKED

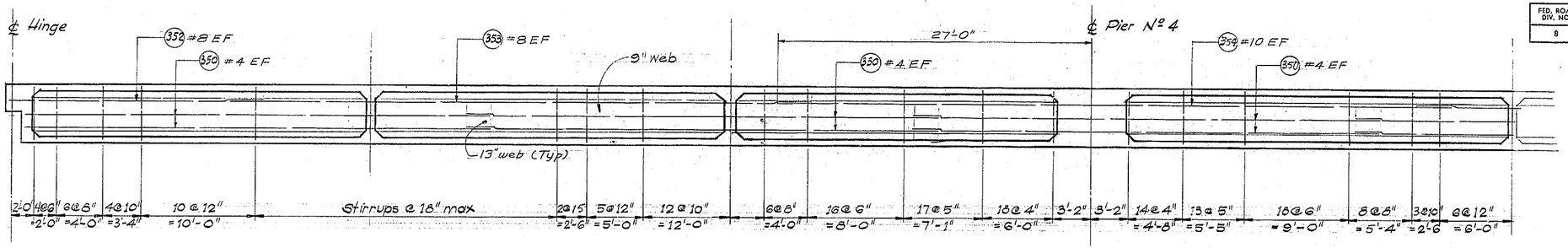
	BY	DATE
DRAWN		
TRACED		
CHECKED		
LOC. ENGR.		
DIST. ENGR.		

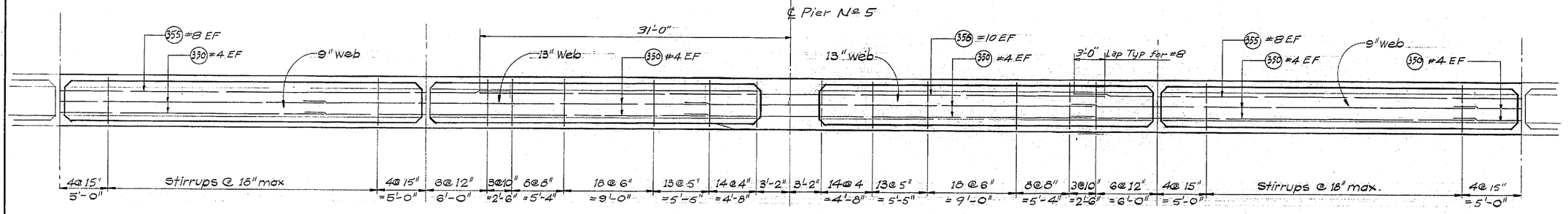
11-16-67

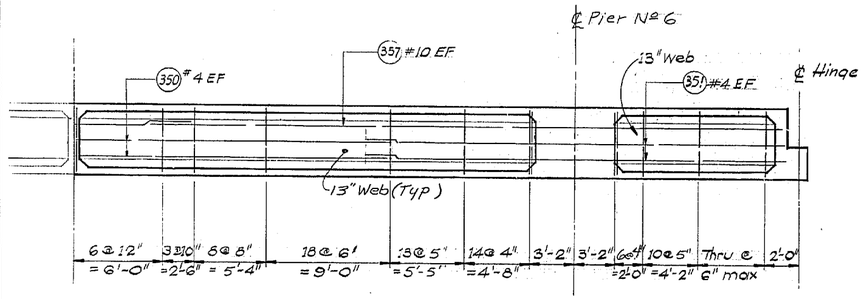
WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2-BO
NW STRUCTURE
BOTTOM SLAB
SHEET 234 OF 239

8/1996

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178		243	297







LONGITUDINAL SECTIONS

DESIGNING ENGINEER
DESIGNED
DESIGN CHECKED
DRAWN
QUANTITIES FIGURED
QUANTITIES CHECKED

DRAWN	BY	DATE
TRACED		
CHECKED		
LOC. ENGR.		
DIST. ENGR.		

WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2-90
N-W STRUCTURE
LONGIT SECTIONS
SHEET 238 OF 289

11-16-67

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

LONGITUDINAL SECTIONS

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZANN, CHAIRMAN

R. L. MIFALSON — BAKER FERGUSON
H. WALSH — JOHN H. RUPP

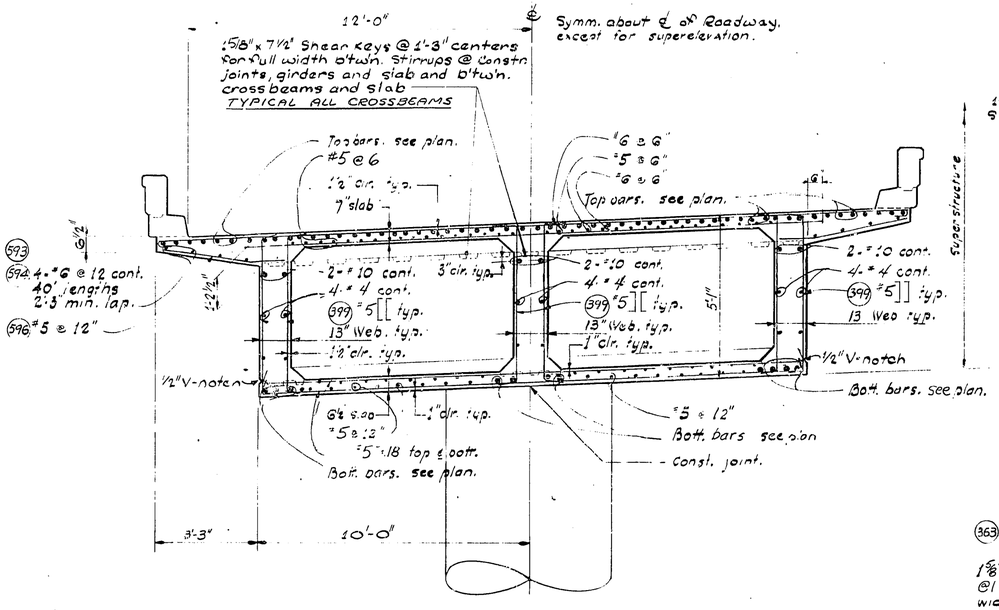
APPROVED December 7, 1967 — BRIDGE ENGINEER

SHEET 243 OF 297 SHEETS

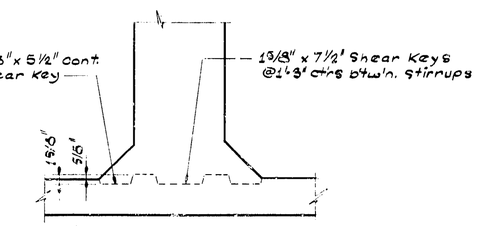
CONTRACT NO. 8382

P/1995

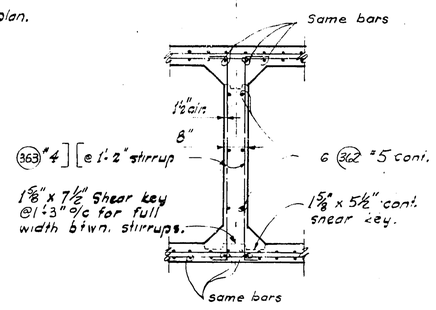
FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(29)7118		244	297



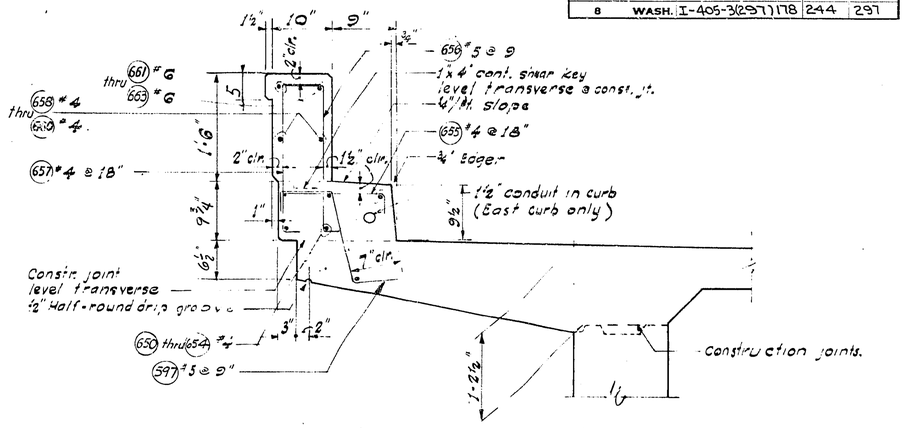
SECTION @ N-W PIERS 4 thru 6



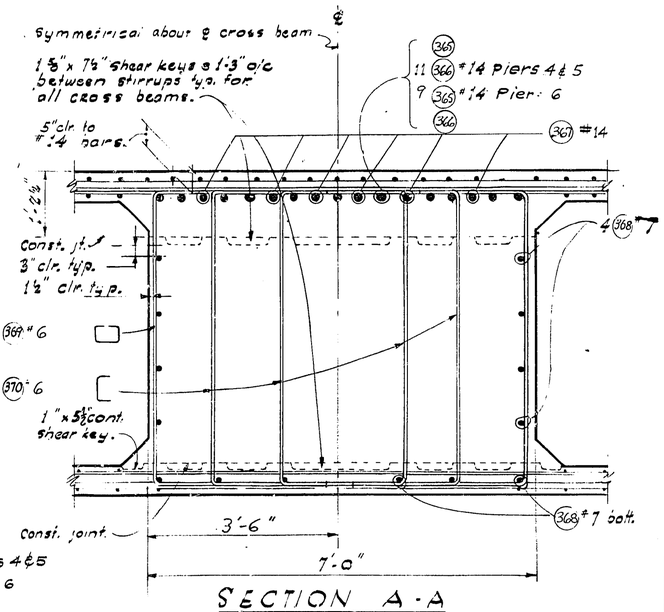
CONSTRUCTION JOINT AT BOTTOM SLAB



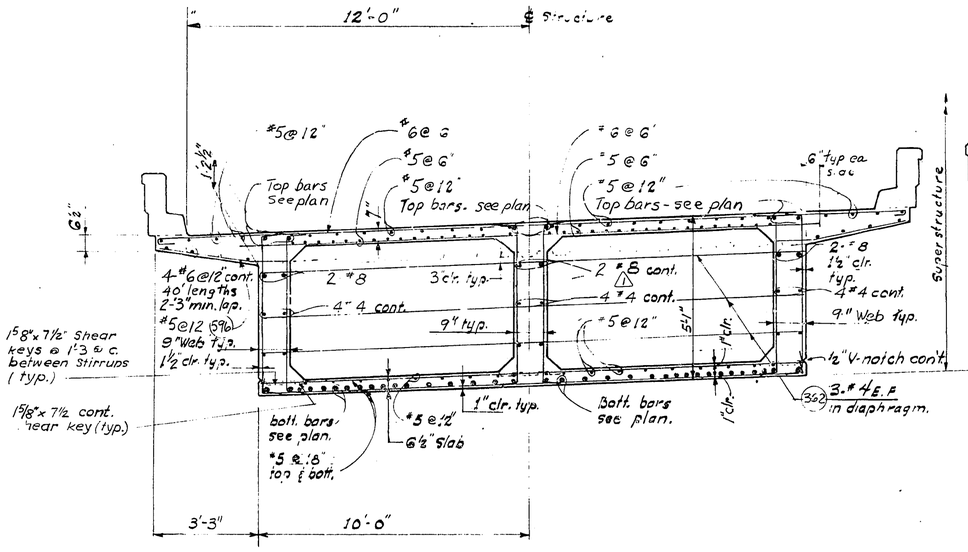
SECTION THRU DIAPHRAGM (TYPICAL ALL UNITS)



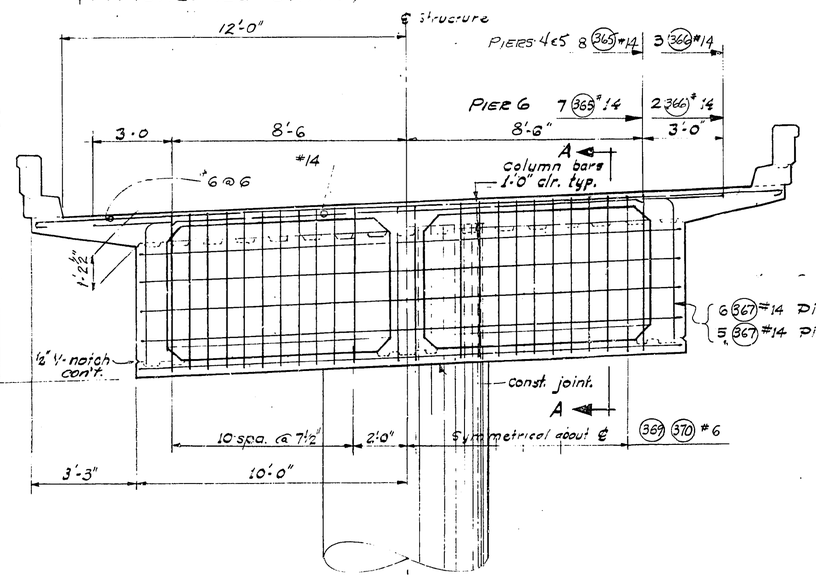
SECTION THRU CURB



SECTION A-A



SECTION NEAR ℄ OF SPAN



CROSS BEAM @ N-W PIER 4 thru 6

DRAWN	BY	DATE
TRACED		
CHECKED		
LOC. ENGR.		
BRIDGE ENGR.		

DESIGNING ENGINEER
DESIGNED
DETAILS CHECKED
DRAWN BY
QUANTITIES FIGURED
QUANTITIES CHECKED

WOODINVILLE INTERCHANGE
FSH NO. 1-RE 1FSH NO. 2-BO
N-W STRUCTURE
TRANSVERSE SECTIONS
SHEET 236 OF 289 SHEETS

11-16-67

⚠	2-7-68	Revised Bar Size	WHS
	DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W & N-E STRUCTURE

TRANSVERSE SECTIONS

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

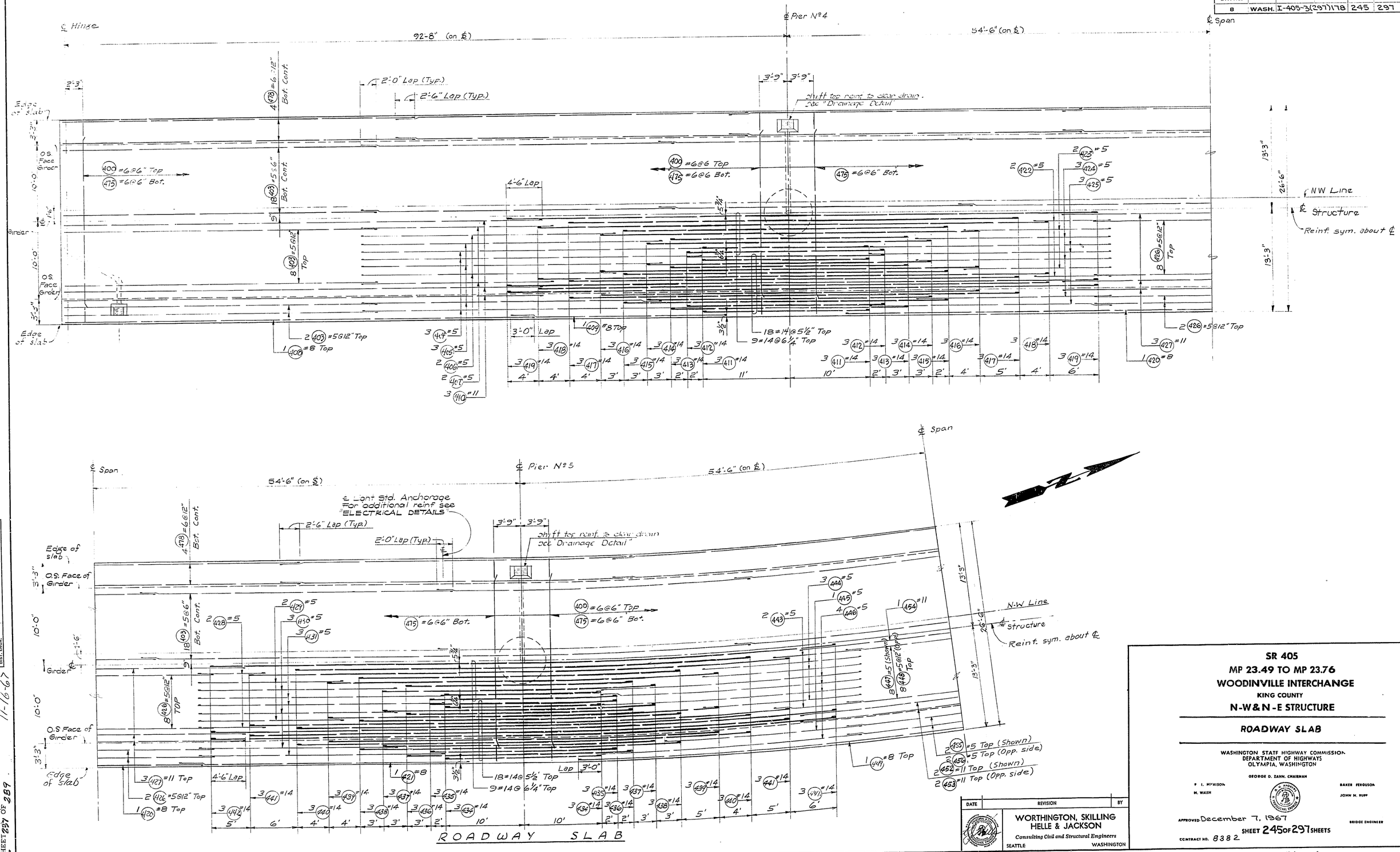
GEORGE D. ZAHN, CHAIRMAN
P. L. MEYAERS
H. WALSH
BAKER FERGUSON
JOHN N. RUPP

APPROVED December 7, 1967
BRIDGE ENGINEER

CONTRACT NO. 8382
SHEET 244 OF 297 SHEETS

12/1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178		245	297



ROADWAY SLAB

DESIGNING ENGINEER	
DESIGNED	
DESIGN CHECKED	
DRAWN BY	
TRACING PREPARED	
QUANTITIES CHECKED	

BY	DATE
DRAWN	
TRACED	
CHECKED	
LOC. ENGR.	
DIST. ENGR.	

WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2-BO
N-W STRUCTURE
ROADWAY SLAB
SHEET 237 OF 297
11-16-67

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W & N-E STRUCTURE

ROADWAY SLAB

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

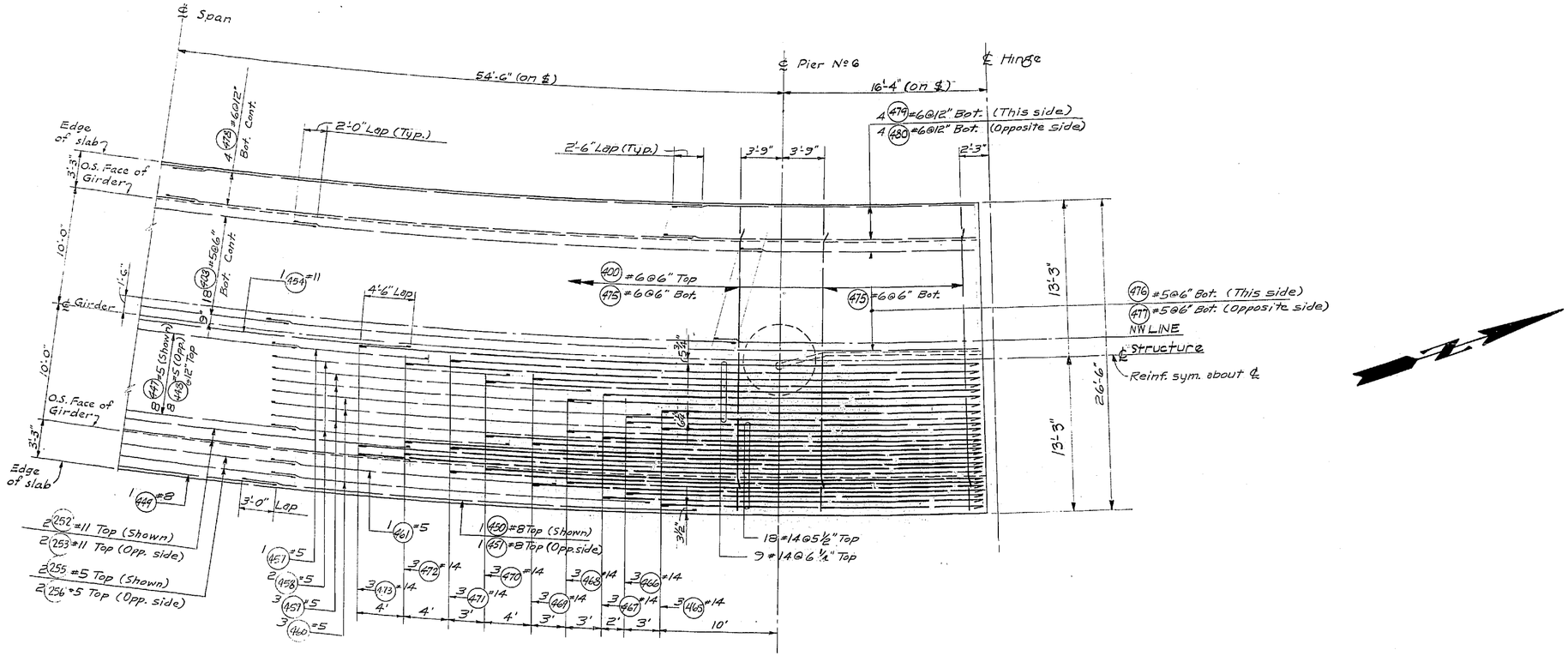
GEORGE D. ZAHN, CHAIRMAN

P. I. MYKLESON — BAKER FERGUSON
M. WALSH — JOHN M. RUPP

APPROVED December 7, 1967 — BRIDGE ENGINEER
SHEET 245 OF 297 SHEETS
CONTRACT NO. 8382

P/1996

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178		246	297



ROADWAY SLAB

DESIGNING ENGINEER
DESIGNED
DETAILED CHECKED
DRAWN BY
QUANTITIES FIGURED
QUANTITIES CHECKED

	BY	DATE
DRAWN		
TRACED		
CHECKED		
LOC. ENGR.		
DES. ENGR.		

WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2-BO
N-W STRUCTURE
SHEET ROADWAY SLAB
238 OF 289

11-16-67

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

ROADWAY SLAB

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN

P. T. MYKLESON
H. WALSH
BAKER FERGUSON
JOHN N. RUPP

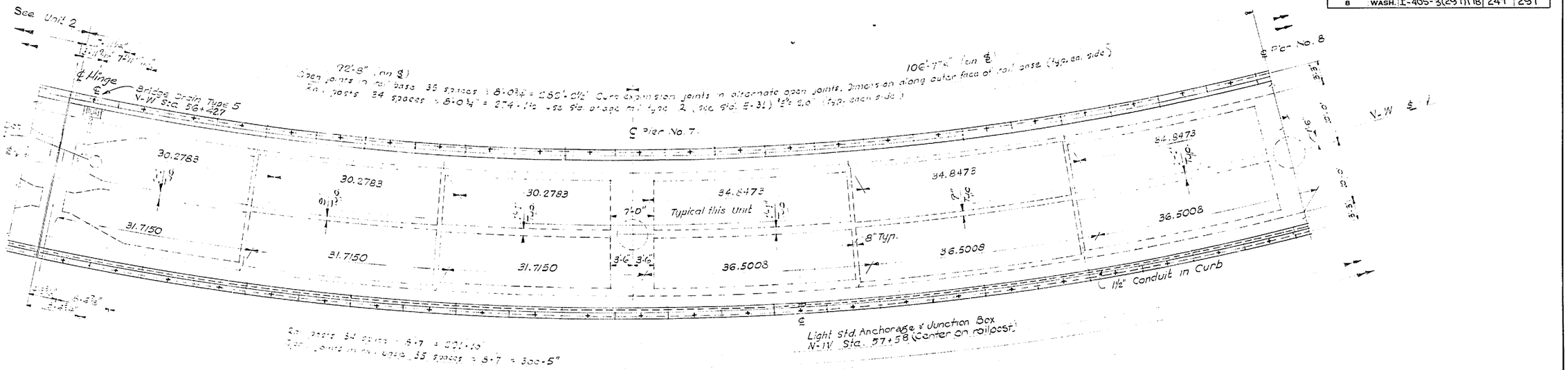
APPROVED December 7, 1967
CONTRACT NO. 8382
BRIDGE ENGINEER
SHEET 246 OF 297 SHEETS

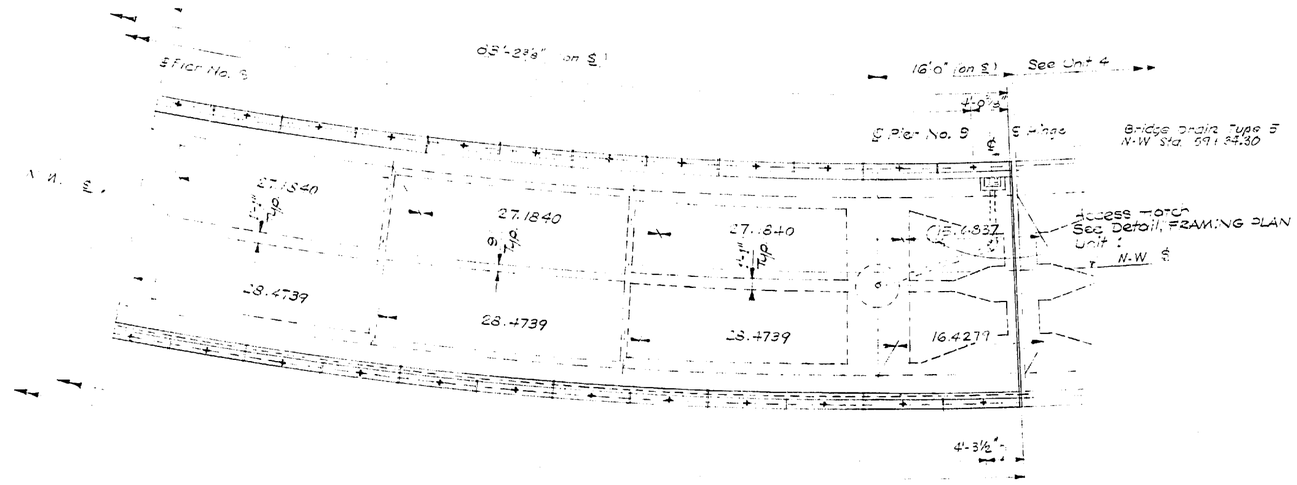
19/1990

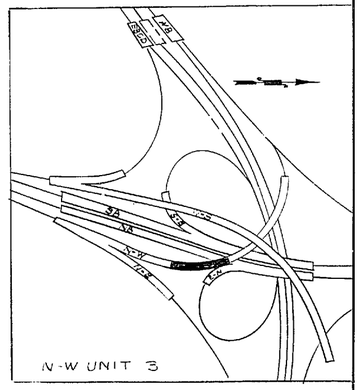
FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178		247	297

DESIGNING ENGINEER
DESIGNED
DETAILS CHECKED
DRAWN BY
QUANTITIES FIGURED
QUANTITIES CHECKED

DATE
BY
CHANGE
DRAWN
TRACED
DESIGNED
CHECKED
LOC. ENGR.
DIST. ENGR.







See Unit 1 Framing Plan for General Notes.

FRAMING PLAN

WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2-BO
STRUCTURE
SHEET 1 OF

DATE	REVISION	BY

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Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

FRAMING PLAN

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN

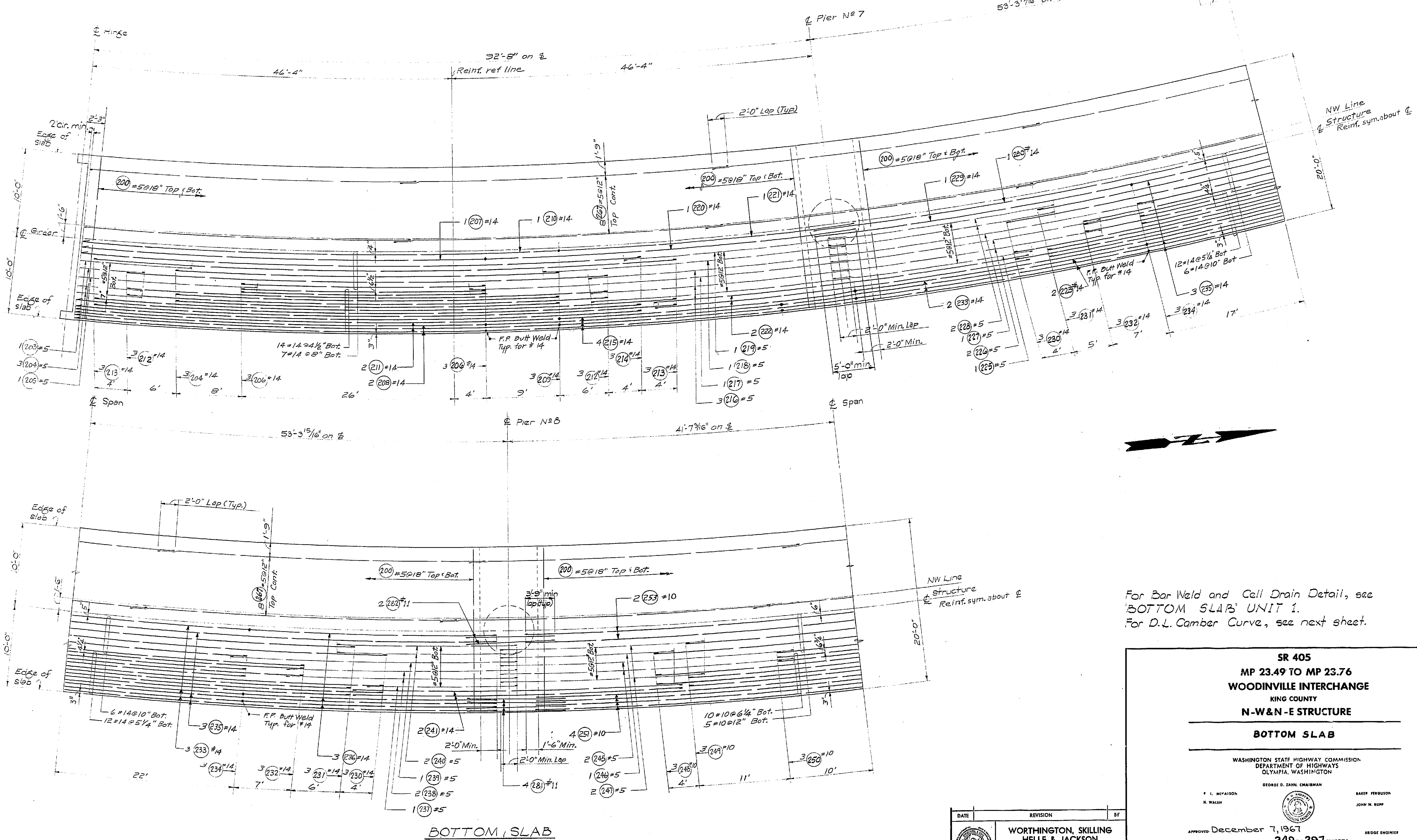
P. T. McFARLAN
M. WALSH
BAKER FERGUSON
JOHN N. RUPP

APPROVED December 7, 1967
BRIDGE ENGINEER

CONTRACT NO. 8382
SHEET 247 OF 297 SHEETS

9/1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178		248	297



For Bar Weld and Cell Drain Detail, see 'BOTTOM SLAB' UNIT 1.
For D.L. Camber Curve, see next sheet.

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

BOTTOM SLAB

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

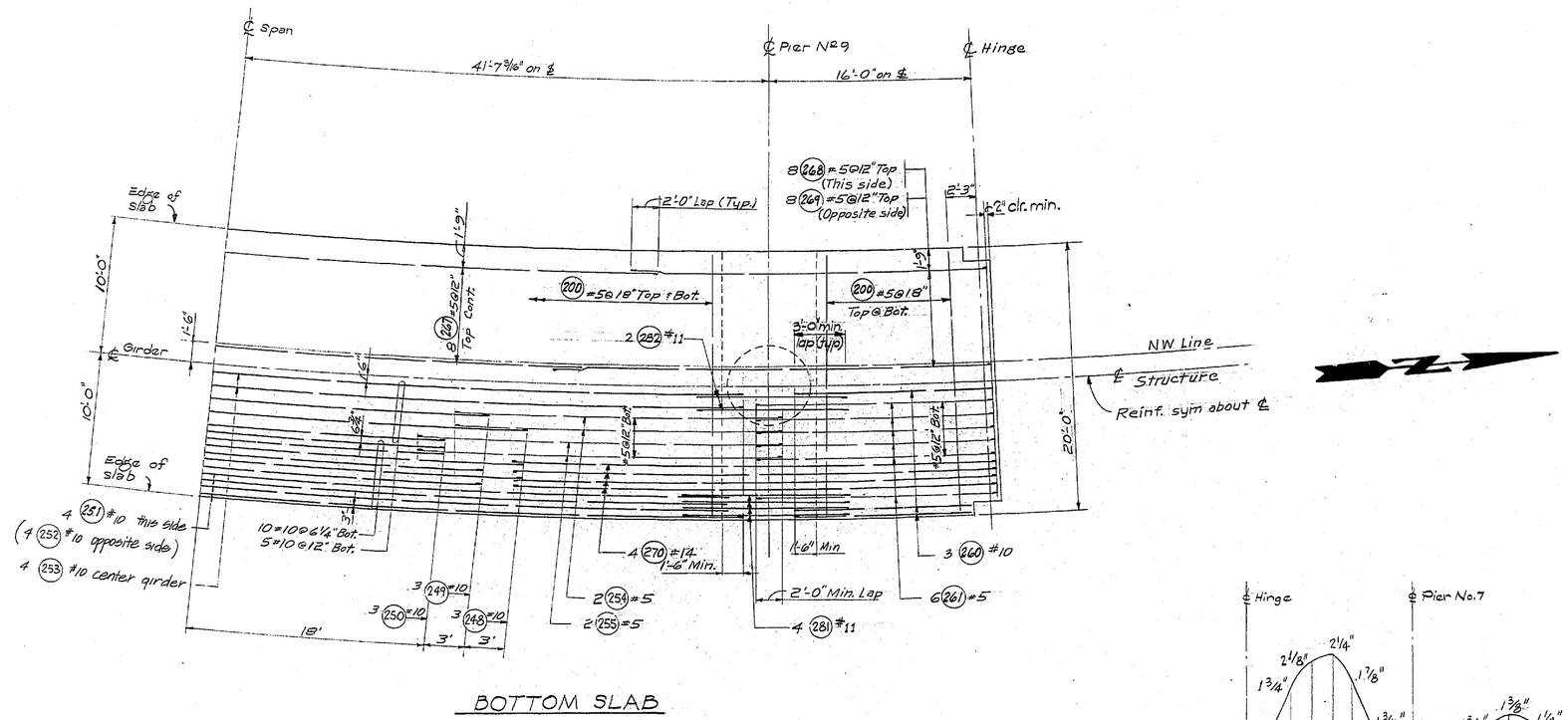
GEORGE D. ZAHN, CHAIRMAN
F. L. MIYAISON
H. WALSH
BAKER FERGUSON
JOHN N. RUPP

APPROVED December 7, 1967
BRIDGE ENGINEER
SHEET 248 OF 297 SHEETS
CONTRACT NO. 8382

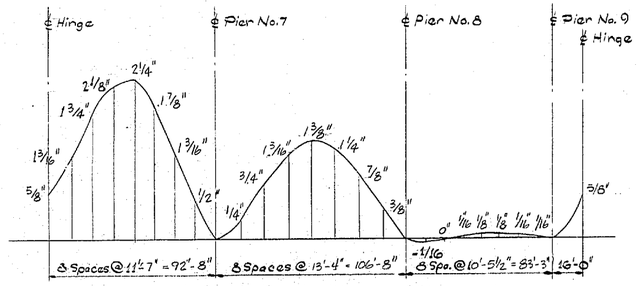
P/1995

WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2-BO
N-W STRUCTURE
SHEET 248 OF 289 BOTTOM SLAB
11-16-67

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(291)118		249	297



BOTTOM SLAB



DEAD LOAD CAMBER CURVE FOR N-W RAMP

This curve shows D. L. Camber only and should be increased by the amount of take-up anticipated in the falsework.

DESIGNING ENGINEER
DESIGNED
DETAILED CHECKED
DRAWN BY
QUANTITIES FIGURED
QUANTITIES CHECKED

	BY	DATE
DRAWN		
TRACED		
CHECKED		
LOC. ENGR.		
DIST. ENGR.		

11-16-67

WOODINVILLE INTERCHANGE
PSH NO. I-RE/PSH NO. 2-BO
N-W STRUCTURE
SHEET BOTTOM SLAB
241 OF 297

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

BOTTOM SLAB

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN

R. L. MYKLESON — BAKER FERGUSON
H. WALSH — JOHN N. RUPP

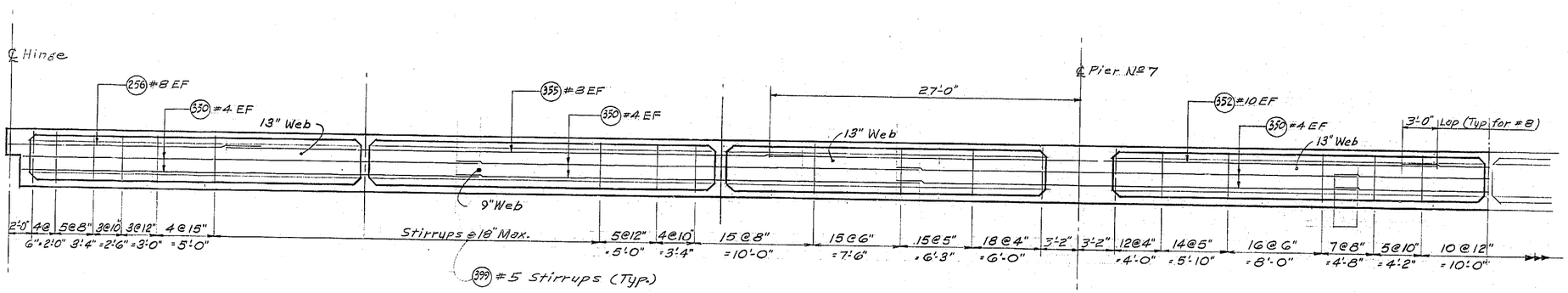
APPROVED: December 7, 1967 — BRIDGE ENGINEER

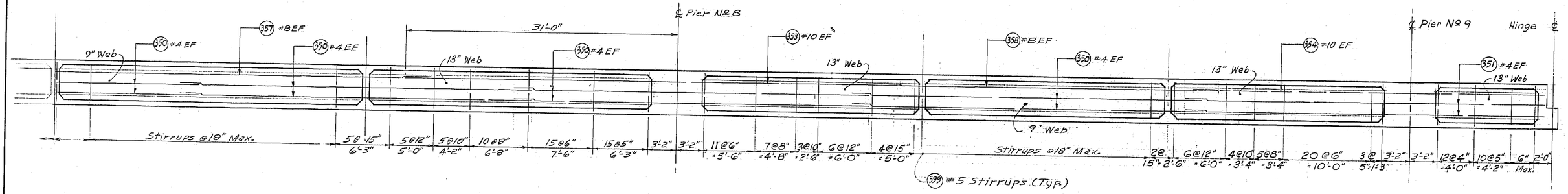
SHEET 249 OF 297 SHEETS

CONTRACT NO. 8382

P/1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178		250	297





LONGITUDINAL SECTIONS

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

LONGITUDINAL SECTIONS

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN
F. I. MIKALSON
H. WALSH
BAKER FERGUSON
JOHN N. RUPP

APPROVED December 7, 1967
SHEET 250 OF 297 SHEETS
CONTRACT NO. 8382
BRIDGE ENGINEER

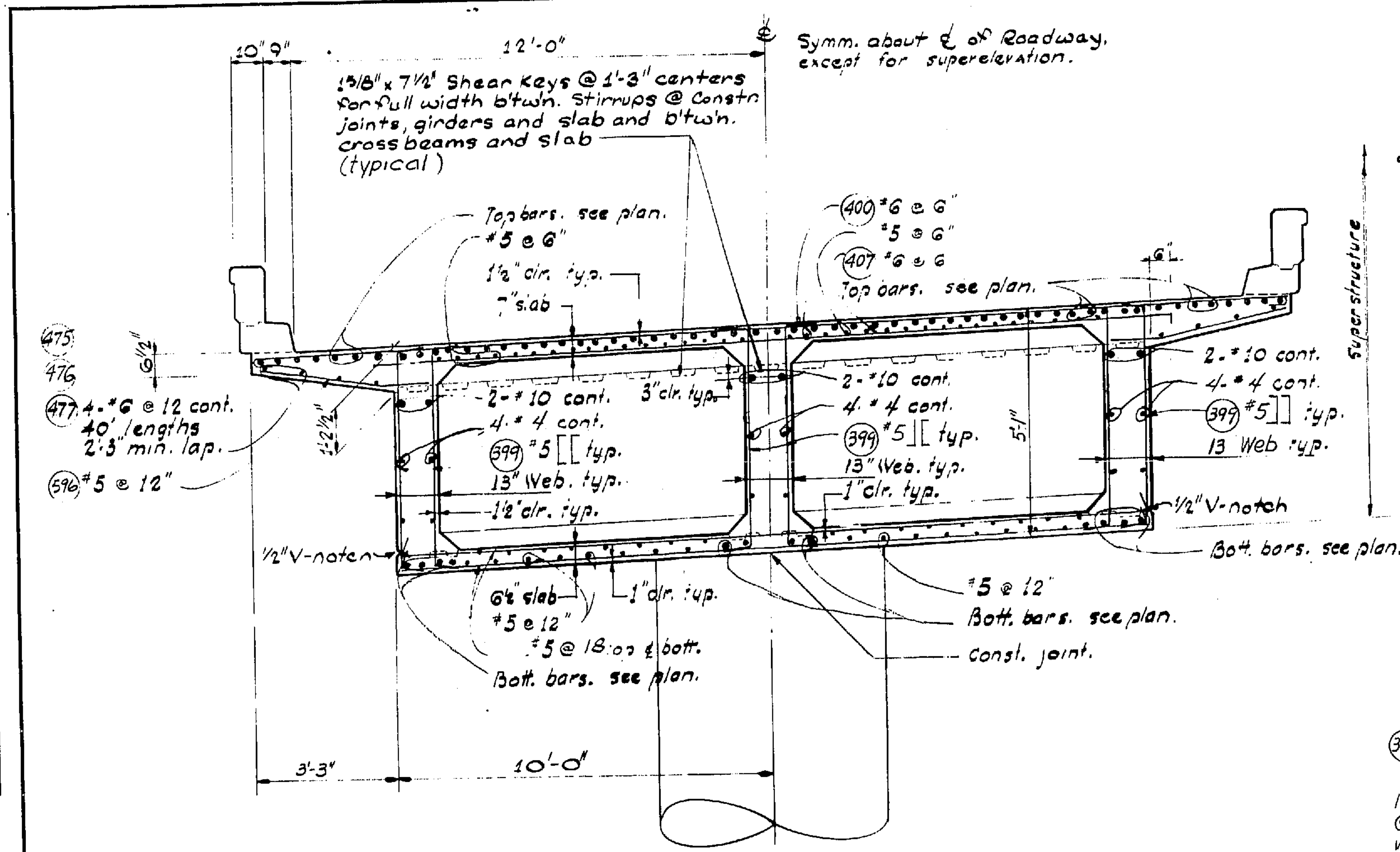
P/1995

ASSIGNING ENGINEER
DESIGNED
DETAILS CHECKED
DRAWN BY
QUANTITIES FIGURED
QUANTITIES CHECKED

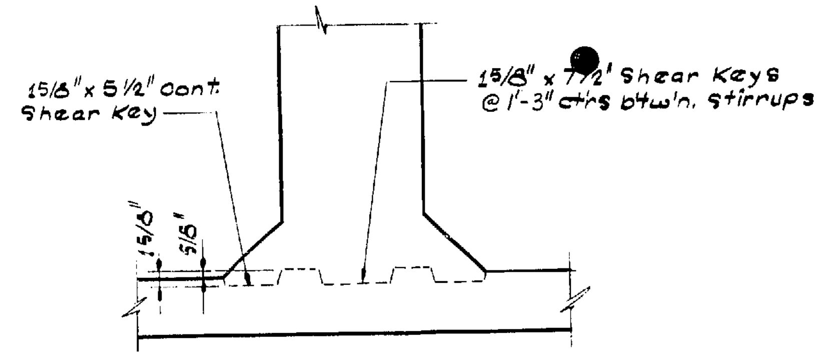
BY	DATE
DRAWN	
TRACED	
CHECKED	
LOC. ENGR.	
DIRV. ENGR.	

WOODINVILLE INTERCHANGE
PSH NO. 1-RF-PSH NO. 2-BO
N-W STRUCTURE
SHEET LONG'T. SECTIONS
242 OF 289
11-16-67

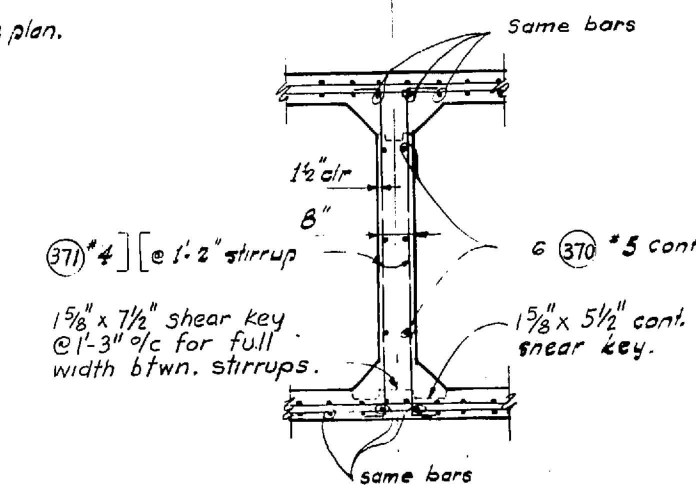
FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178		251	297



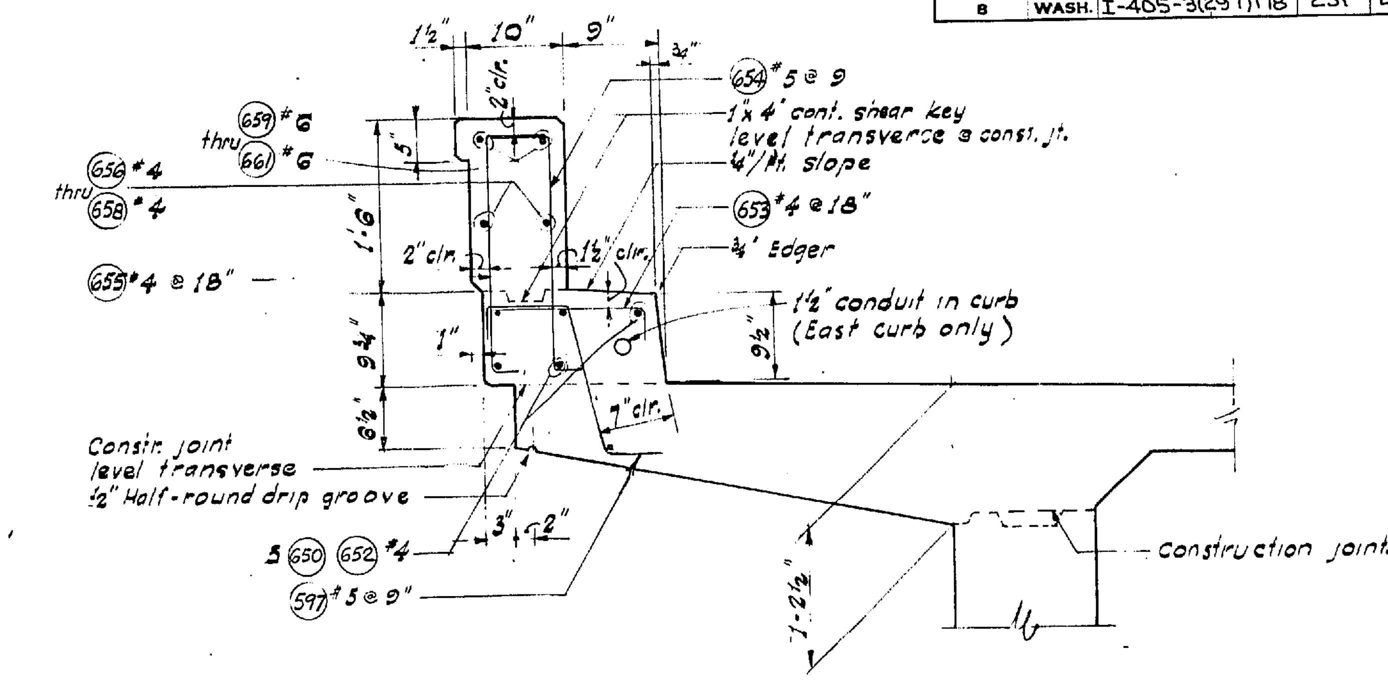
SECTION @ N-W PIERS 7 thru 9



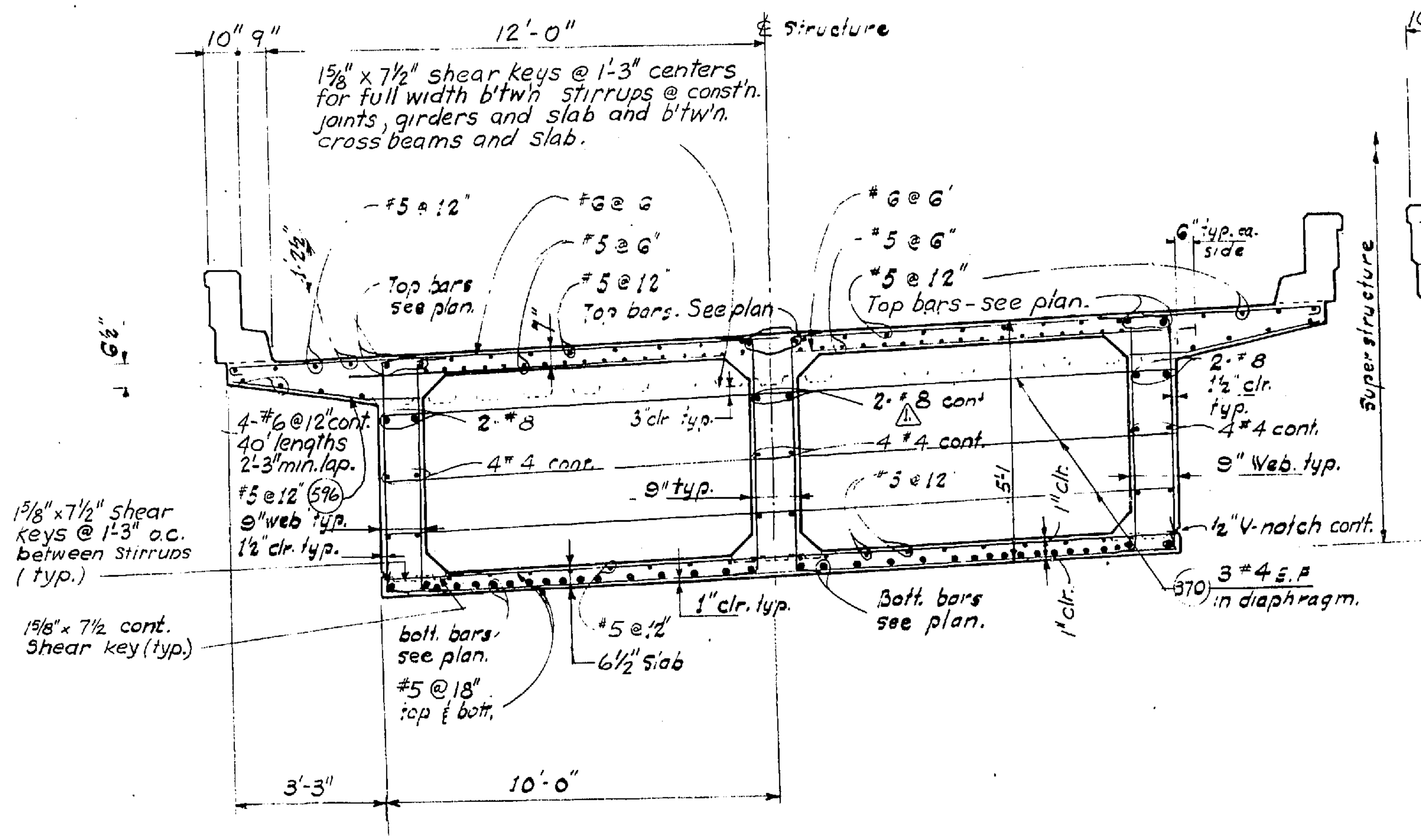
CONSTRUCTION JOINT AT BOTTOM SLAB



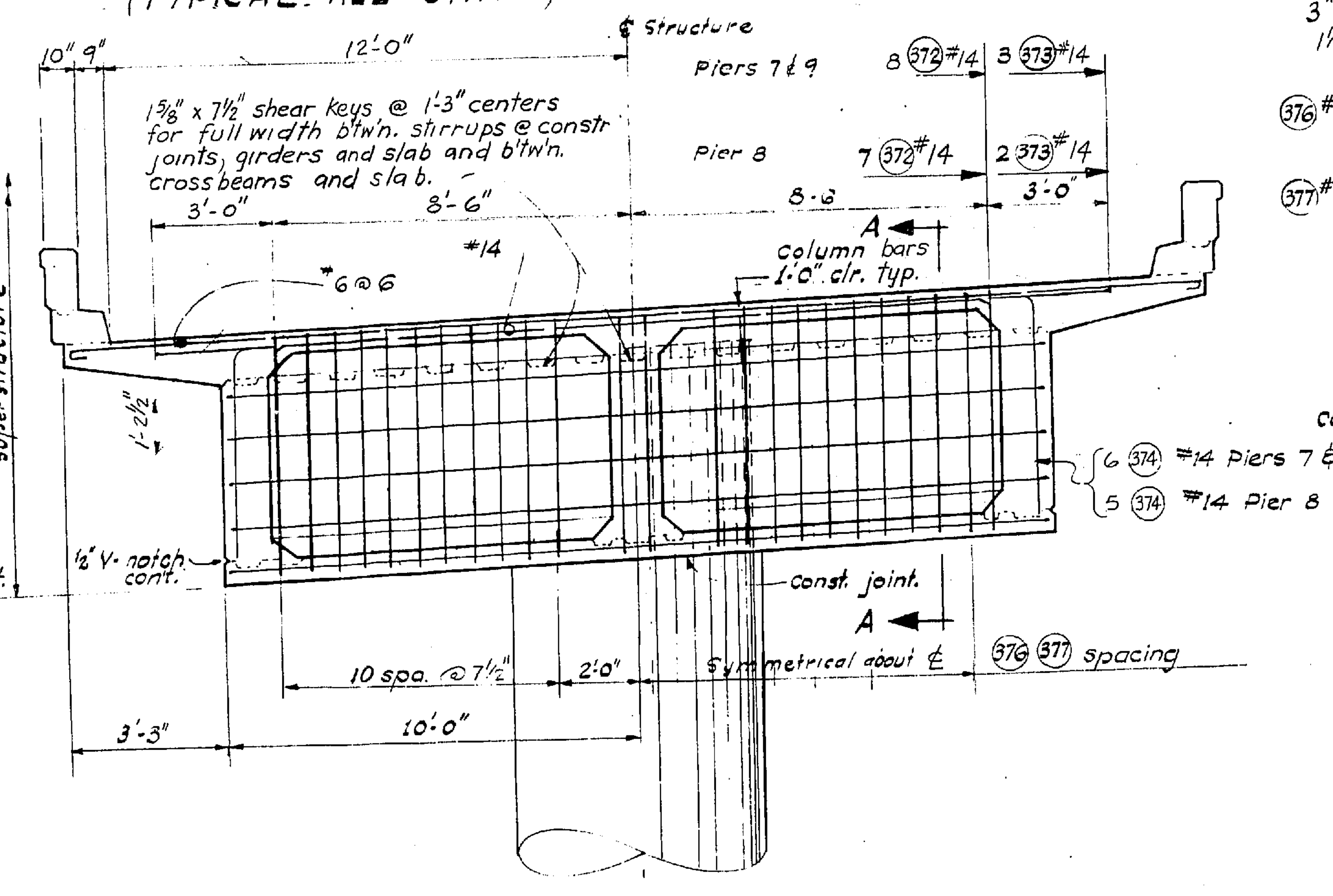
SECTION THRU DIAPHRAGM (TYPICAL ALL UNITS)



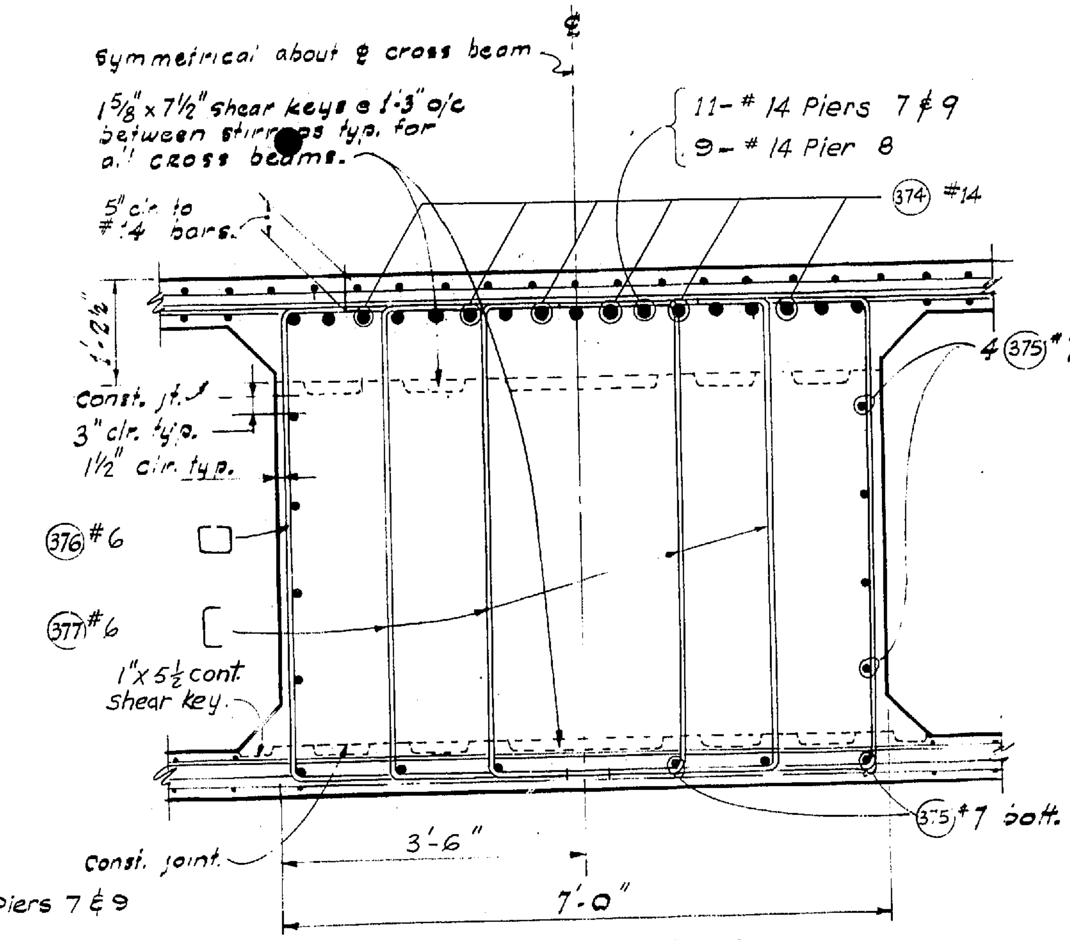
SECTION THRU CURB



SECTION NEAR ℄ OF SPAN



CROSS BEAM @ PIERS 7 thru 9



SECTION A-A

	REVISION	BY
2-7-68	Revised Bar Size	

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

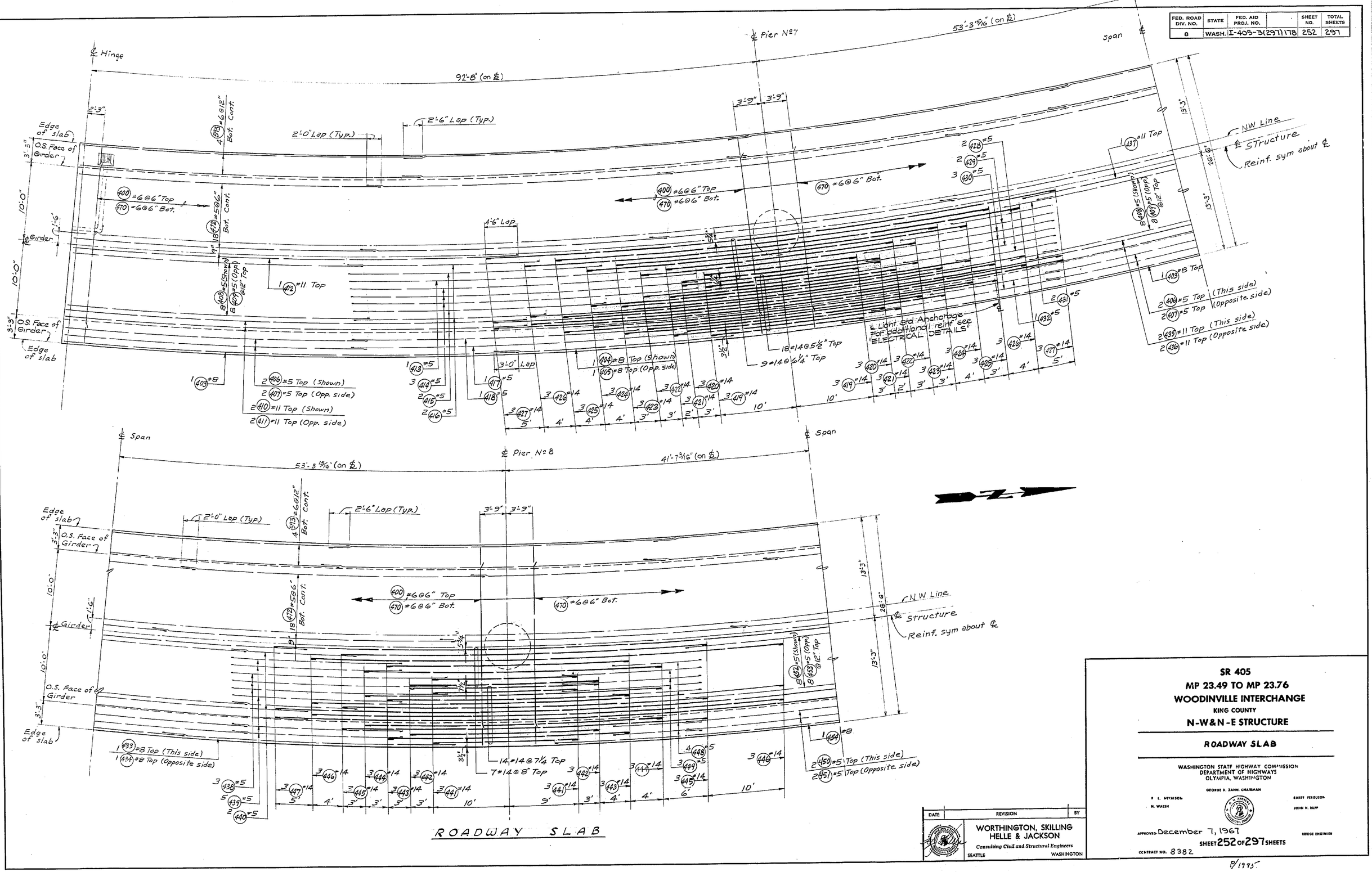
TRANSVERSE SECTIONS

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

APPROVED December 7, 1967
SHEET 251 OF 297 SHEETS
CONTRACT NO. 8382

P/1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(29)178		252	297



ROADWAY SLAB

DESIGNING ENGINEER
DESIGNED
DETAILED-CHECKED
DRAWN BY
QUANTITIES FIGURED
QUANTITIES CHECKED

DRAWN	BY	DATE
TRACED		
CHECKED		
QUAN. FIGURED		
DIST. ENGR.		

WOODINVILLE INTERCHANGE
FSH NO. 1-RE/FSH NO. 2-BO
N-W & N-E STRUCTURE
ROADWAY SLAB
SHEET 244 OF 297
11-16-67

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

ROADWAY SLAB

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZASNI, CHAIRMAN

P. L. MYVAISON — RAKEY FERGUSON
H. WALSH — JOHN N. RUPP

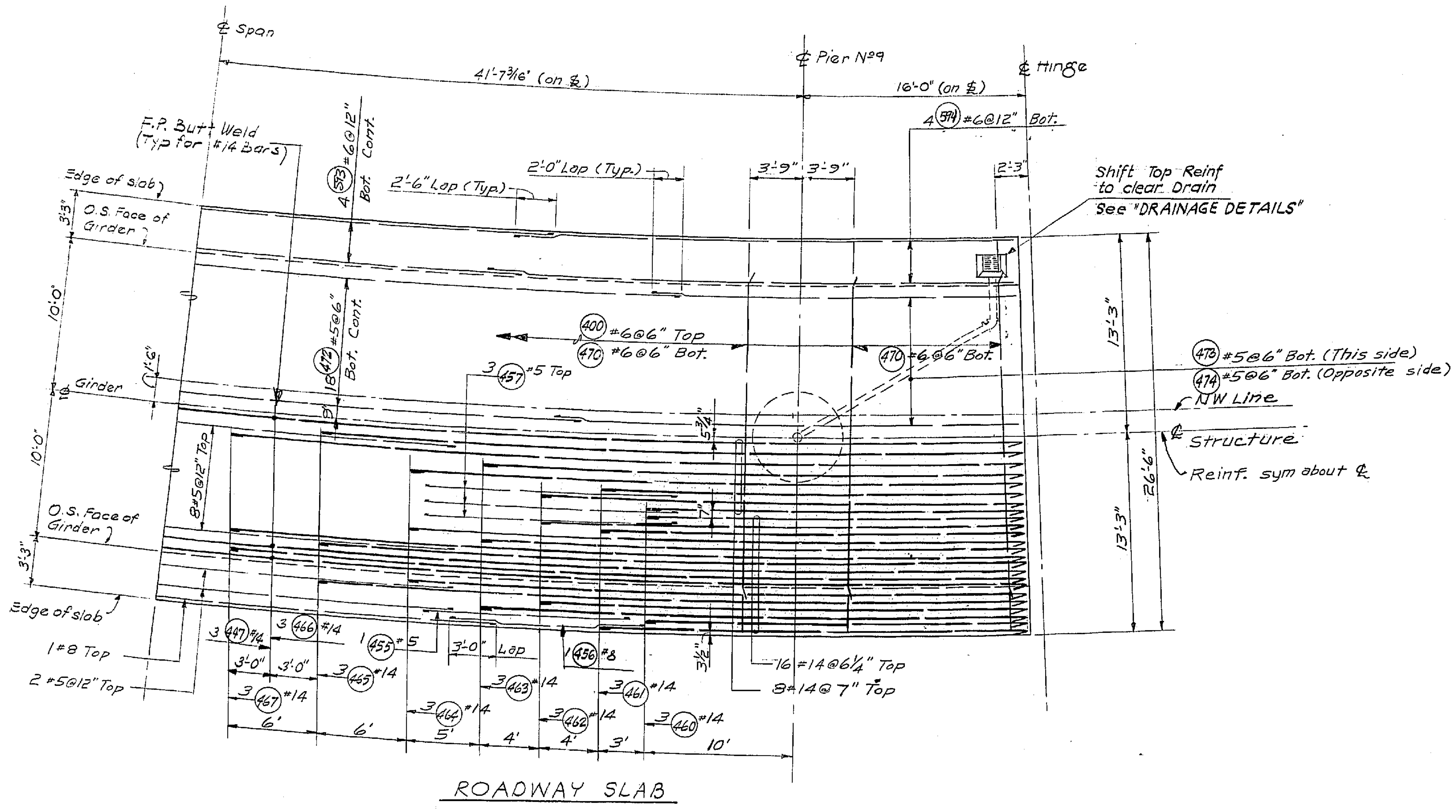
APPROVED December 7, 1967 — BRIDGE ENGINEER

SHEET 252 OF 297 SHEETS

CONTRACT NO. 8382

8/1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178		253	297



ROADWAY SLAB

For Bar Weld Detail see "BOTTOM SLAB", UNIT 1

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

ROADWAY SLAB

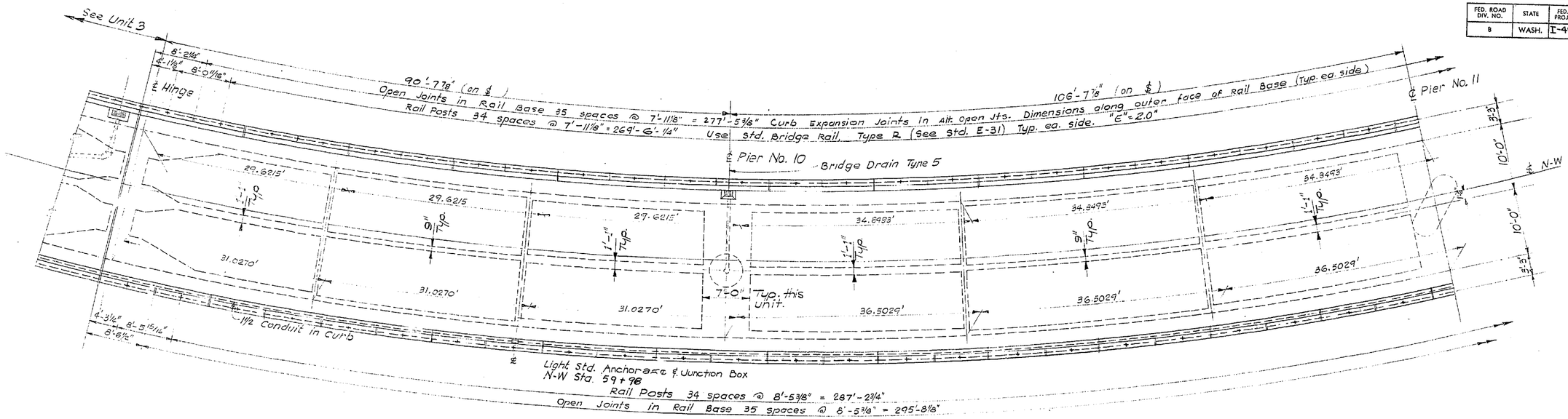
WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

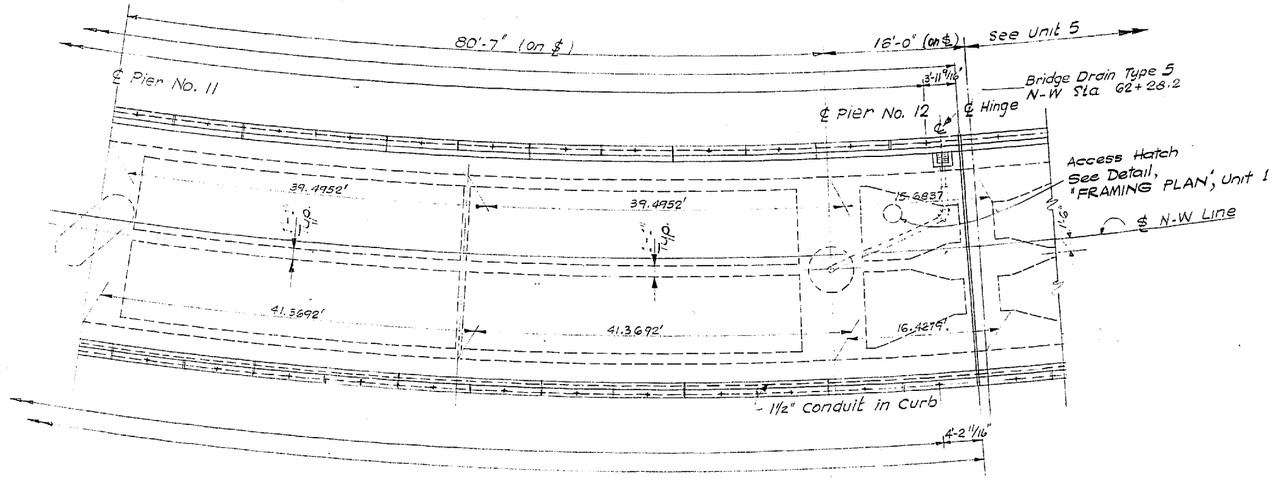
WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

APPROVED December 7, 1967
SHEET 253 OF 297 SHEETS
CONTRACT NO. 8382

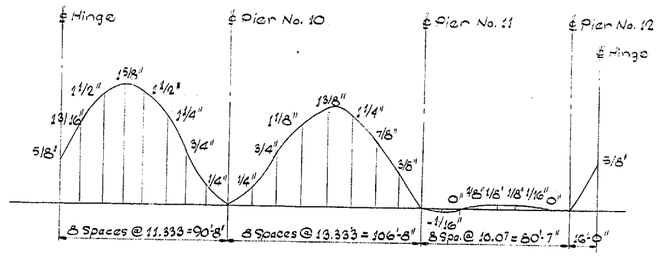
WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2-BO
N-W STRUCTURE ROADWAY SLAB
SHEET 245 OF 289
11-16-67

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178		254	297





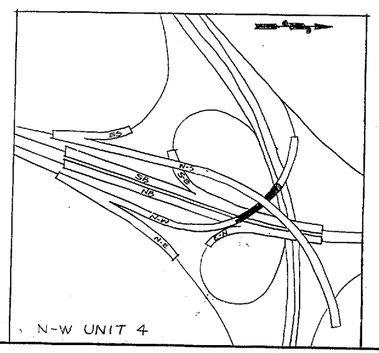
FRAMING PLAN



DEAD LOAD CAMBER CURVE FOR N-W RAMP

This curve shows D.L. Camber only and should be increased by the amount of take-up anticipated in the falsework.

For General Notes See Unit 1 Framing Plan.



DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W & N-E STRUCTURE

FRAMING PLAN

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN
R. E. MYKLEBON
H. WALSH
BAXTER FERGUSON
JOHN N. RUPP

APPROVED December 7, 1967 BRIDGE ENGINEER
SHEET 254 OF 297 SHEETS
CONTRACT NO. 8382

P/1995

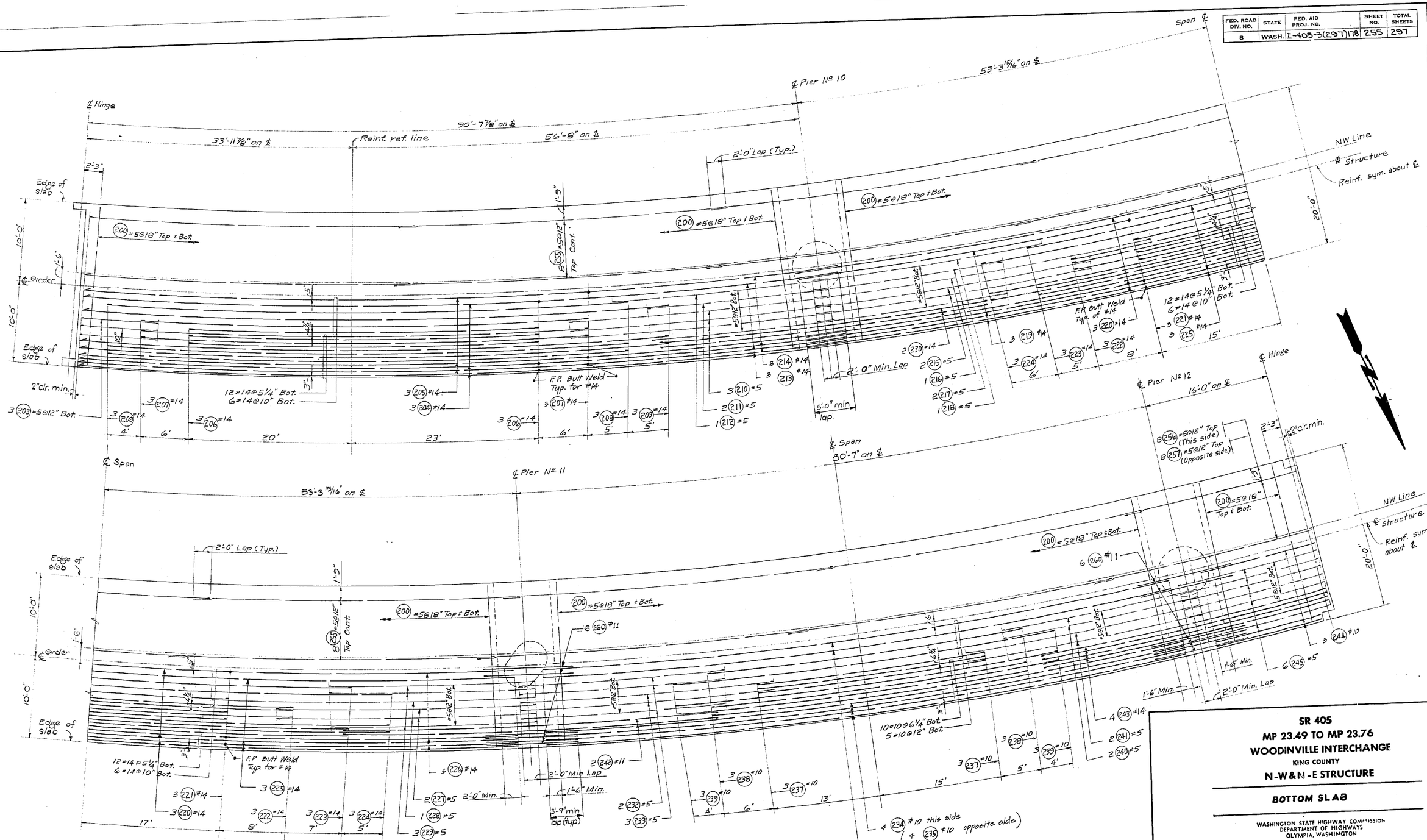
DESIGNING ENGINEER
DESIGNED
DESIGN CHECKED
DRAWN BY
DRAWING CHECKED
QUANTITIES FIGURED
QUANTITIES CHECKED

DRAWN	BY	DATE
TRACED		
CHECKED		
LOC. ENGR.		
DEP. ADMIN.		

WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2-B0
N-W STRUCTURE
FRAMING PLAN
SHEET 254 OF 297

11-16-67

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178	255	297



BOTTOM SLAB

For D.L. Camber Curve, see "FRAMING PLAN" UNIT 4.
For Bar Weld and Call Drain Detail, see "BOTTOM SLAB" UNIT 1.

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

BOTTOM SLAB

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZANN, CHAIRMAN
P. L. MCPHERSON — BAKER FERGUSON
N. WALSH — JOHN M. RUPP

APPROVED: December 7, 1967 — BRIDGE ENGINEER

SHEET 255 OF 297 SHEETS

CONTRACT NO. 8382

1/1995

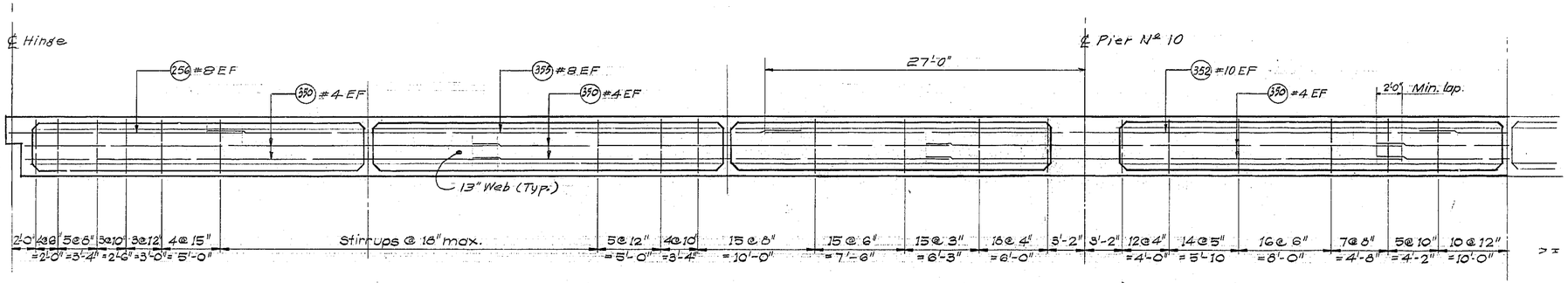
DRAWING ENGINEER
DESIGNED
DESIGN CHECKED
DRAWN
QUANTITIES FIGURED
QUANTITIES CHECKED

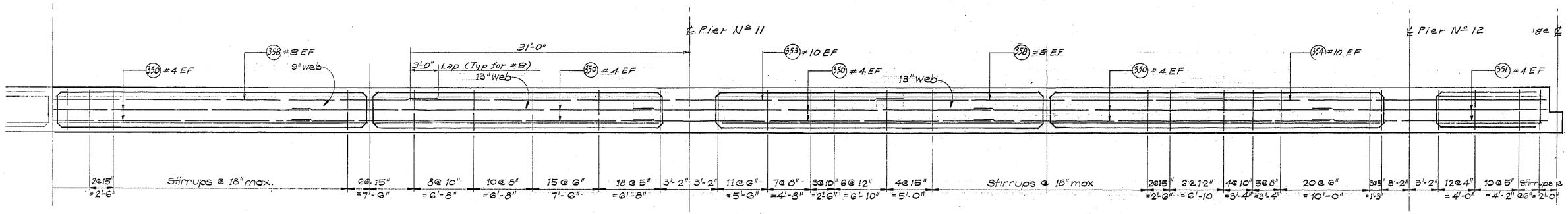
DATE	BY
DRAWN	
TRACED	
CHECKED	
LOC. ENGR.	
DIST. ENGR.	

11-1667

WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2-BO
N-W STRUCTURE
SHEET 247 OF 289
80704 36.49

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178	256	297





LONGITUDINAL SECTIONS

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

LONGITUDINAL SECTIONS

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZANN, CHAIRMAN

P. T. MYRAISON — BAKER FERGUSON
H. WALSH — JOHN H. RUPP

APPROVED December 7, 1967 — BRIDGE ENGINEER

CONTRACT NO. 8382

SHEET 256 OF 297 SHEETS

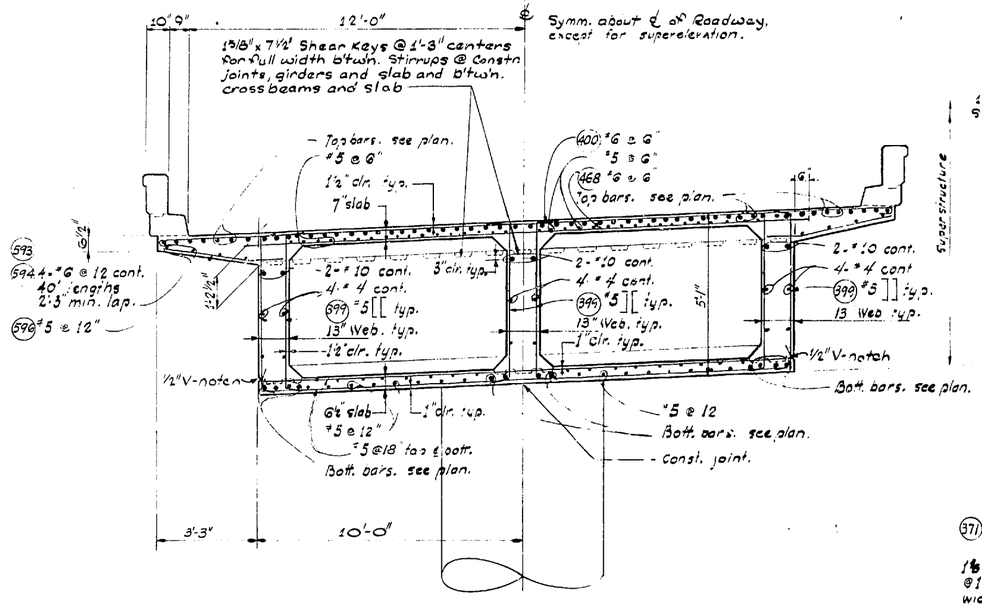
DESIGNING ENGINEER
DETAILED
DESIGN CHECKED
DRAWN BY
QUANTITIES FIGURED
QUANTITIES CHECKED

	BY	DATE
DRAWN		
TRACED		
CHECKED		
LOC. ENGR.		
BRDG. ENGR.		

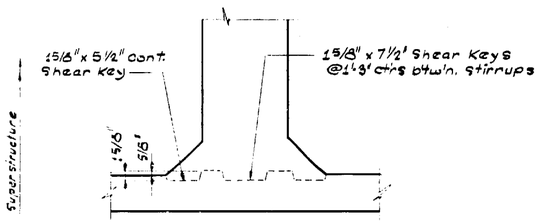
WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2-BO
N-W&N-E STRUCTURE
SHEET 248 OF 289
11-16-67

P/1995

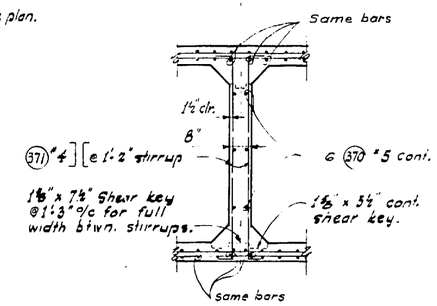
FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297) 178	257	297



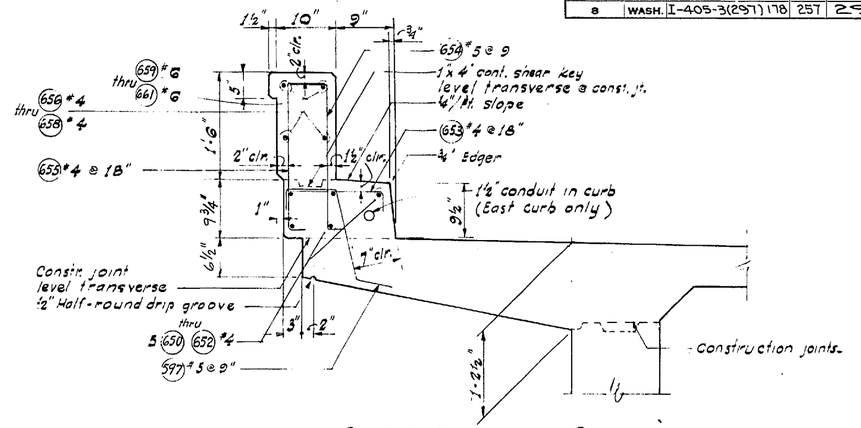
SECTION @ N-W PIERS 10 thru 12



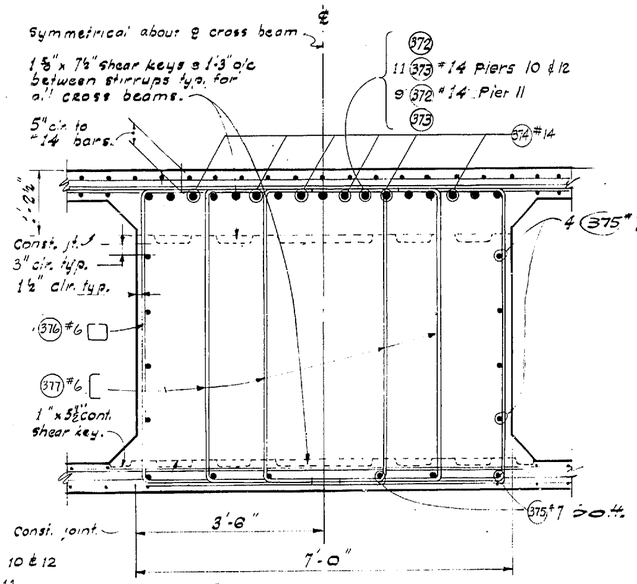
CONSTRUCTION JOINT AT BOTTOM SLAB



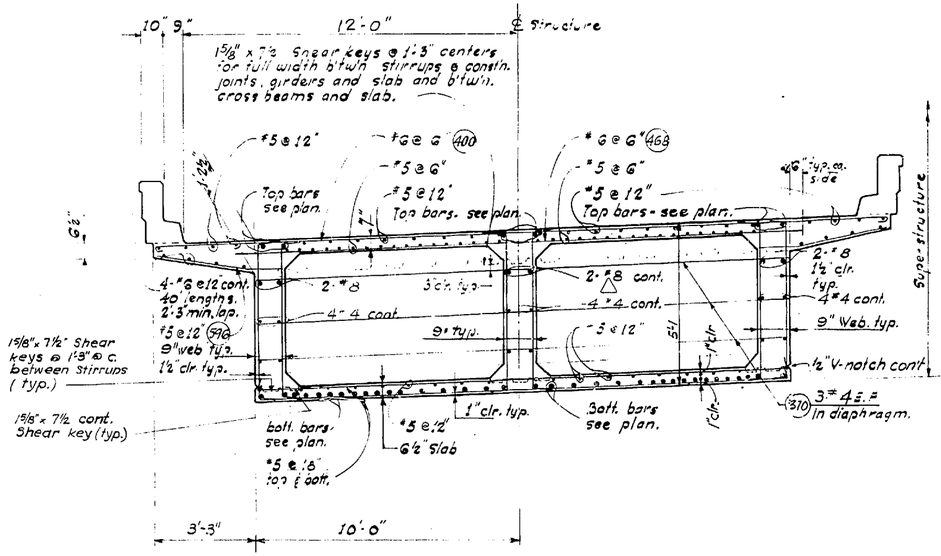
SECTION THRU DIAPHRAGM (TYPICAL ALL UNITS)



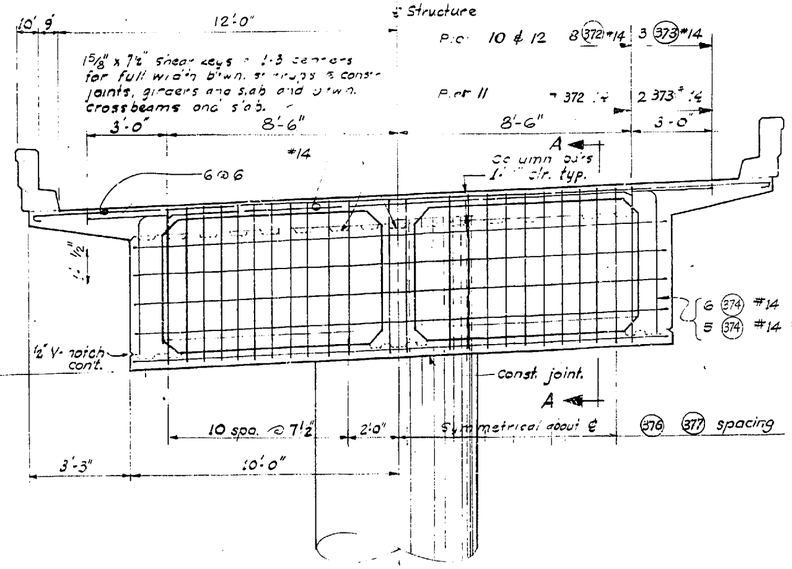
SECTION THRU CURB



SECTION A-A



SECTION NEAR ℄ OF SPAN



CROSS BEAM @ PIERS 10 thru 12

DATE	REVISION	BY
2-7-68	Revised bar size	WMS

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W & N-E STRUCTURE

TRANSVERSE SECTIONS

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZANN, CHAIRMAN

P. L. McALISON — BAKER FERGUSON
H. WALSH — JOHN H. RUPP

APPROVED December 7, 1967 — BRIDGE ENGINEER

CONTRACT NO. 8382

SHEET 257 OF 297 SHEETS

P/1995

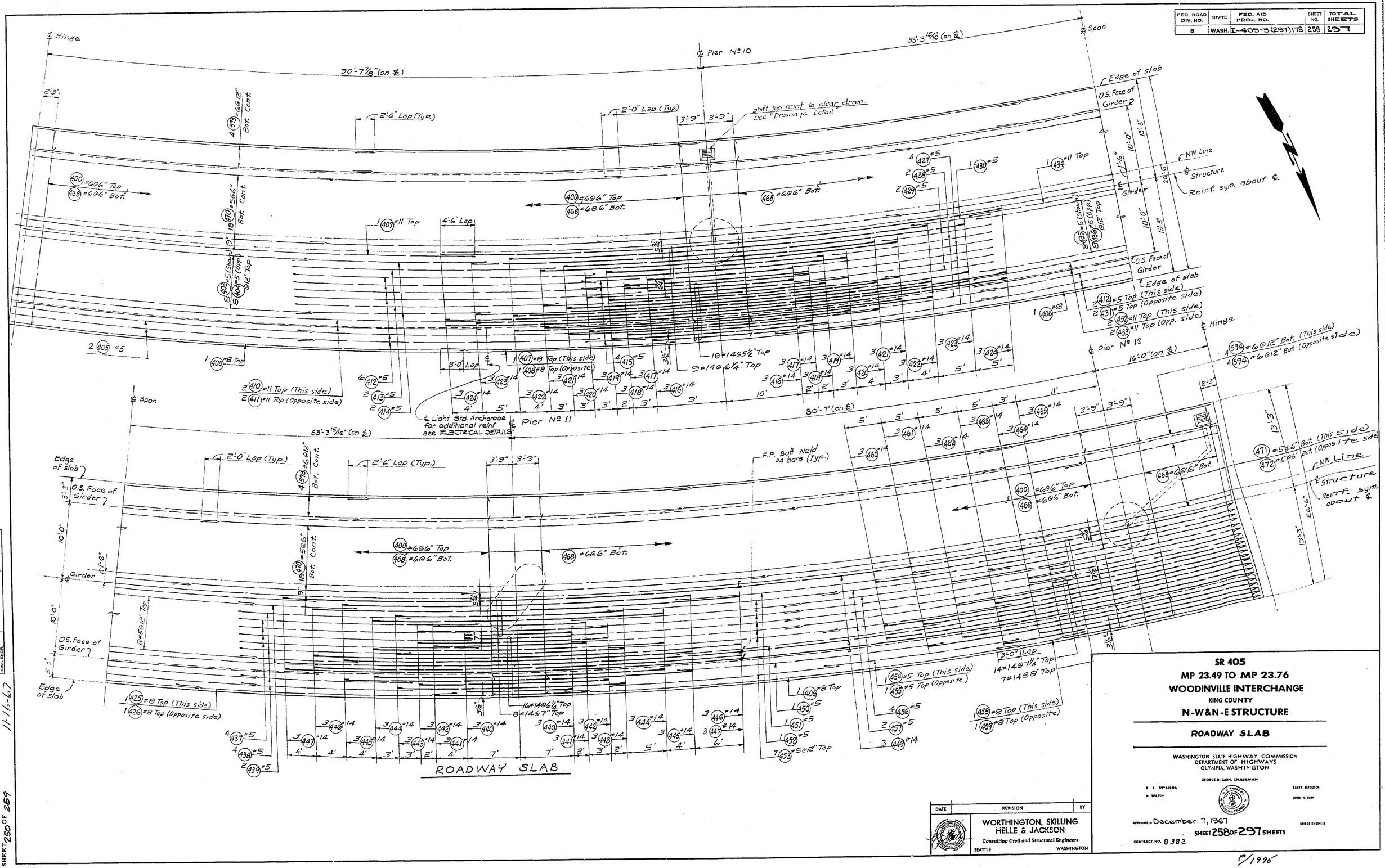
DESIGNING ENGINEER
DESIGNED
DRAWN
TRACED
CHECKED
DETAILS CHECKED
QUANTITIES FIGURED
QUANTITIES CHECKED

DRAWN | TRACED | DESIGNED | DETAILS CHECKED | QUANTITIES FIGURED | QUANTITIES CHECKED | DATE | BY

N-W TRANSV. & CROSS BEAMS

WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2-BO
N-W STRUCTURE
SHEET 249 OF 297
TRANSVERSE SECTIONS
11-16-67

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178	258	297



DESIGNING ENGINEER
DESIGNED
DETAILS CHECKED
DRAWN BY
QUANTITIES FIGURED
QUANTITIES CHECKED

DRAWN	DATE
TRACED	
CHECKED	BY
LAYOUT CHECK	
DIST. ENGR.	

WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2-BO
N-W ST RUCTURE
ROADWAY SLAB
SHEET 250 OF 297
11-11-67

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE
ROADWAY SLAB

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZANN, CHAIRMAN

P. T. McALSON — BARRY FERGUSON
M. WALSH — JOHN H. RUPP

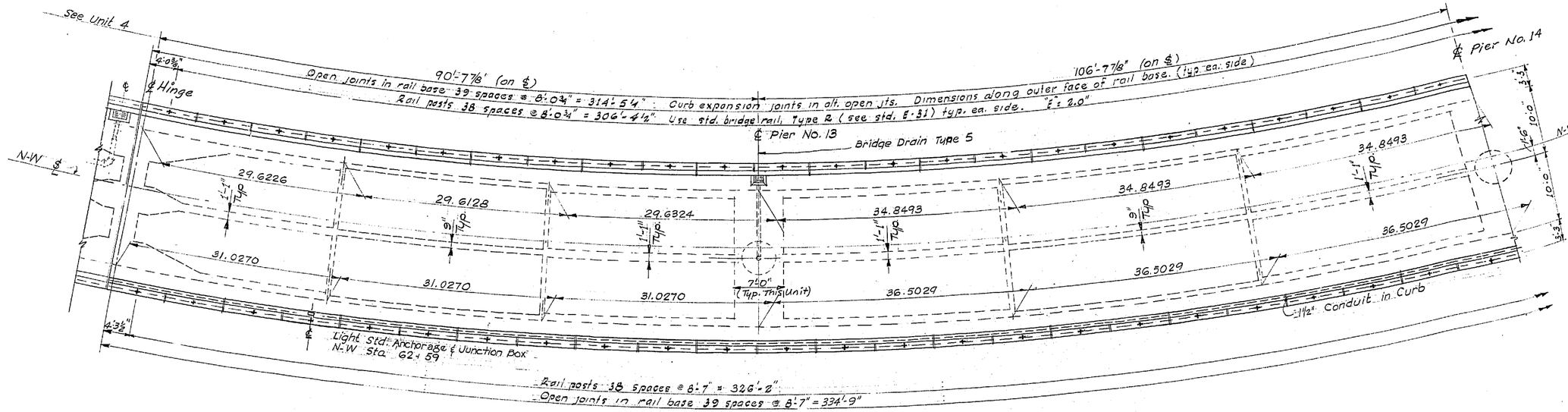
APPROVED December 7, 1967 — BRIDGE ENGINEER

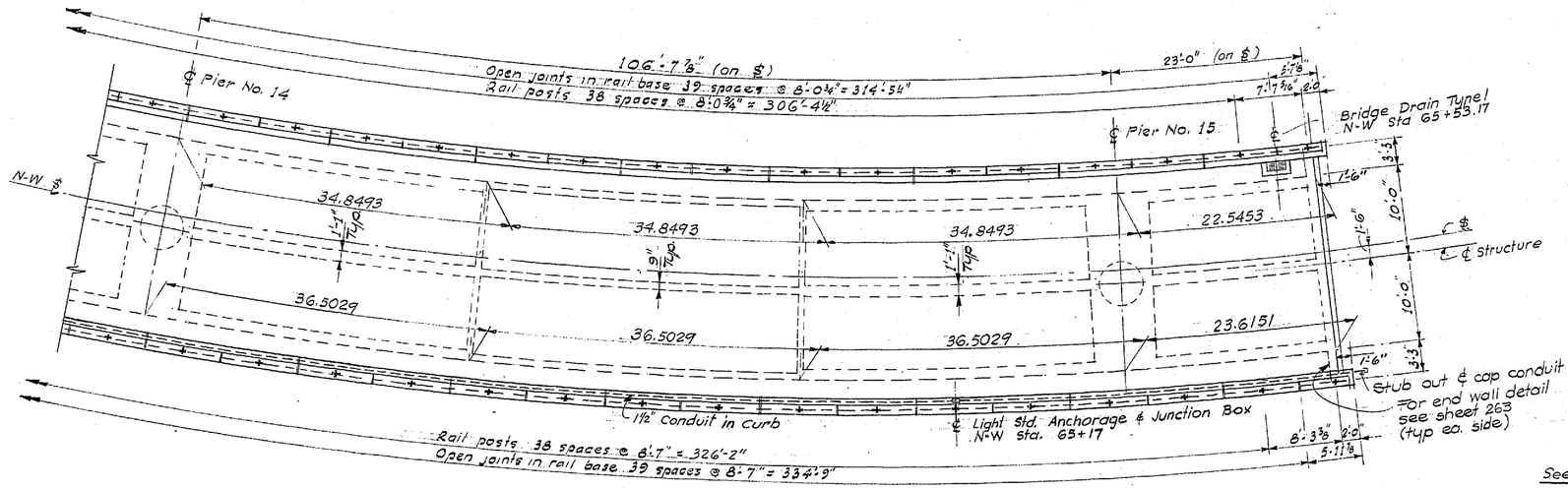
SHEET 258 OF 297 SHEETS

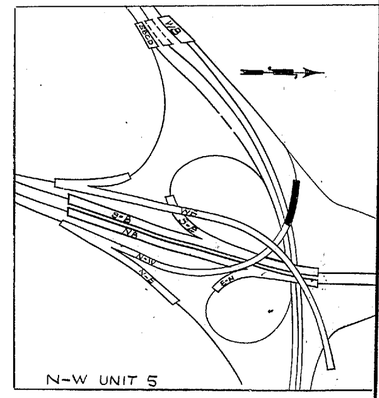
CONTRACT NO. 8382

P/1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(237)178	259	297







FRAMING PLAN

See Unit 1 Framing Plan for General Notes

DESIGNING ENGINEER
DESIGNED
DETAILED CHECKED
DRAWN BY
QUANTITIES FIGURED
QUANTITIES CHECKED

BY	DATE
DRAWN	
TRACED	
CHECKED	
LOC. ENGR.	
ASST. ENGR.	

WOODINVILLE INTERCHANGE
FSH NO. I-RE/PSH NO. 2-BO
N-W STRUCTURE
FRAMING PLAN
SHEET 251 OF 297

11-16-67

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

FRAMING PLAN

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

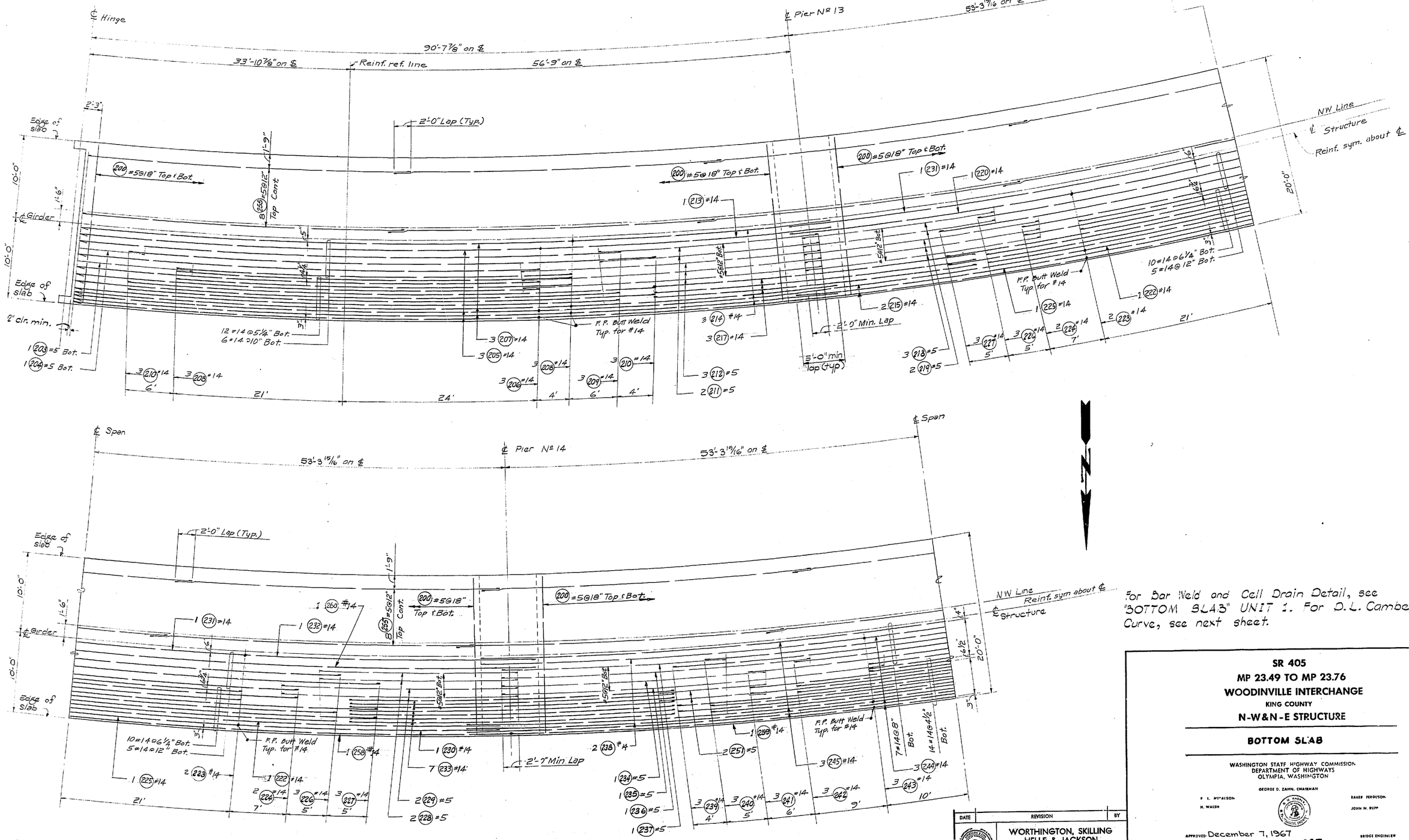
GEORGE D. ZAHN, CHAIRMAN

F. L. McALSON — BAKER FERGUSON
H. WALSH — JOHN H. RUPP

APPROVED December 7, 1967 — BRIDGE ENGINEER
CONTRACT NO. 8382
SHEET 259 OF 297 SHEETS

P/1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(29)178	260	297



BOTTOM SLAB

For Bar Weld and Cell Drain Detail, see "BOTTOM SLAB" UNIT 1. For D.L. Camber Curve, see next sheet.

DESIGNING ENGINEER
DESIGNED
DRAWN BY CHECKED
QUANTITIES FIGURED
QUANTITIES CHECKED

BY	DATE
DRAWN	
TRACED	
CHECKED	
LOC. ENGR.	
DIST. ENGR.	

11-16-67

WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2-BO
N-W&N STRUCTURE
SHEET 25 OF 289
BOTTOM SLAB

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

BOTTOM SLAB

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN
R. L. McALISON — BAKER FERGUSON
H. WALSH — JOHN N. RUPP

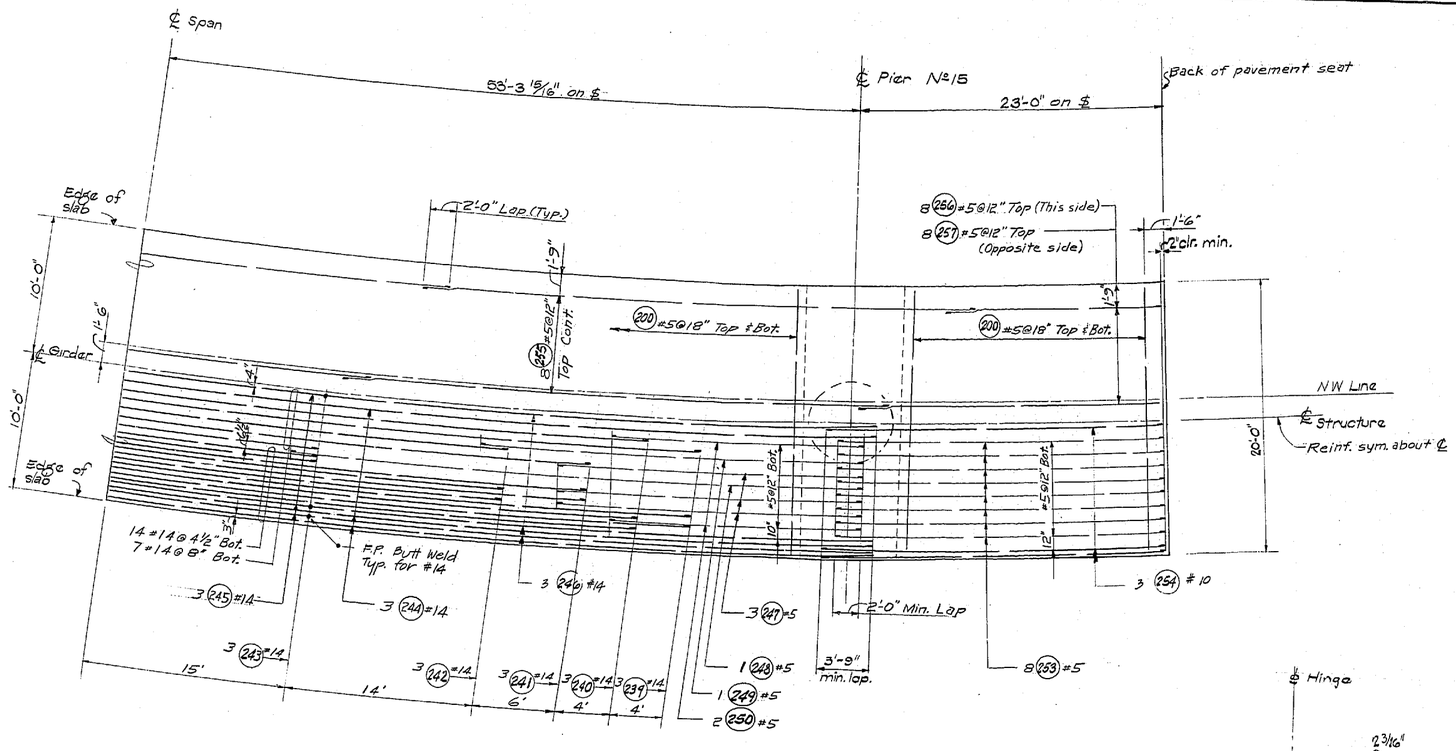
APPROVED December 7, 1967 — BRIDGE ENGINEER
SHEET 260 OF 297 SHEETS
CONTRACT NO. 8382

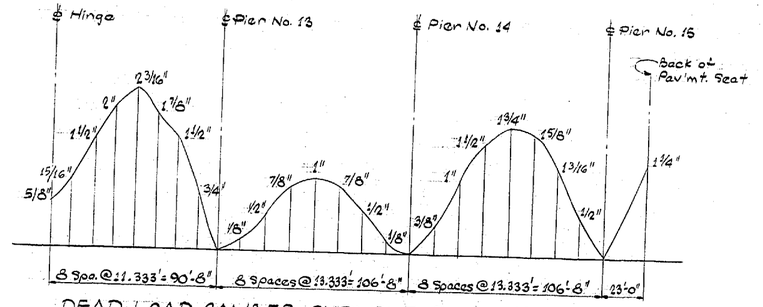
DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

9/1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178	261	297





DEAD LOAD CAMBER CURVE FOR N-W RAMP

This curve shows D.L. camber only and should be increased by the amount of take-up anticipated in the falsework.

BOTTOM SLAB

DESIGNING ENGINEER
DESIGNED
DESIGN CHECKED
DRAWN BY
QUANTITIES FIGURED
QUANTITIES CHECKED

	BY	DATE
DRAWN		
TRACED		
CHECKED		
LOC. ENGR.		
DIST. ENGR.		

WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2-B9
N-W STRUCTURE
BOTTOM SLAB
SHEET 253 OF 289
11-16-67

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

BOTTOM SLAB

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN

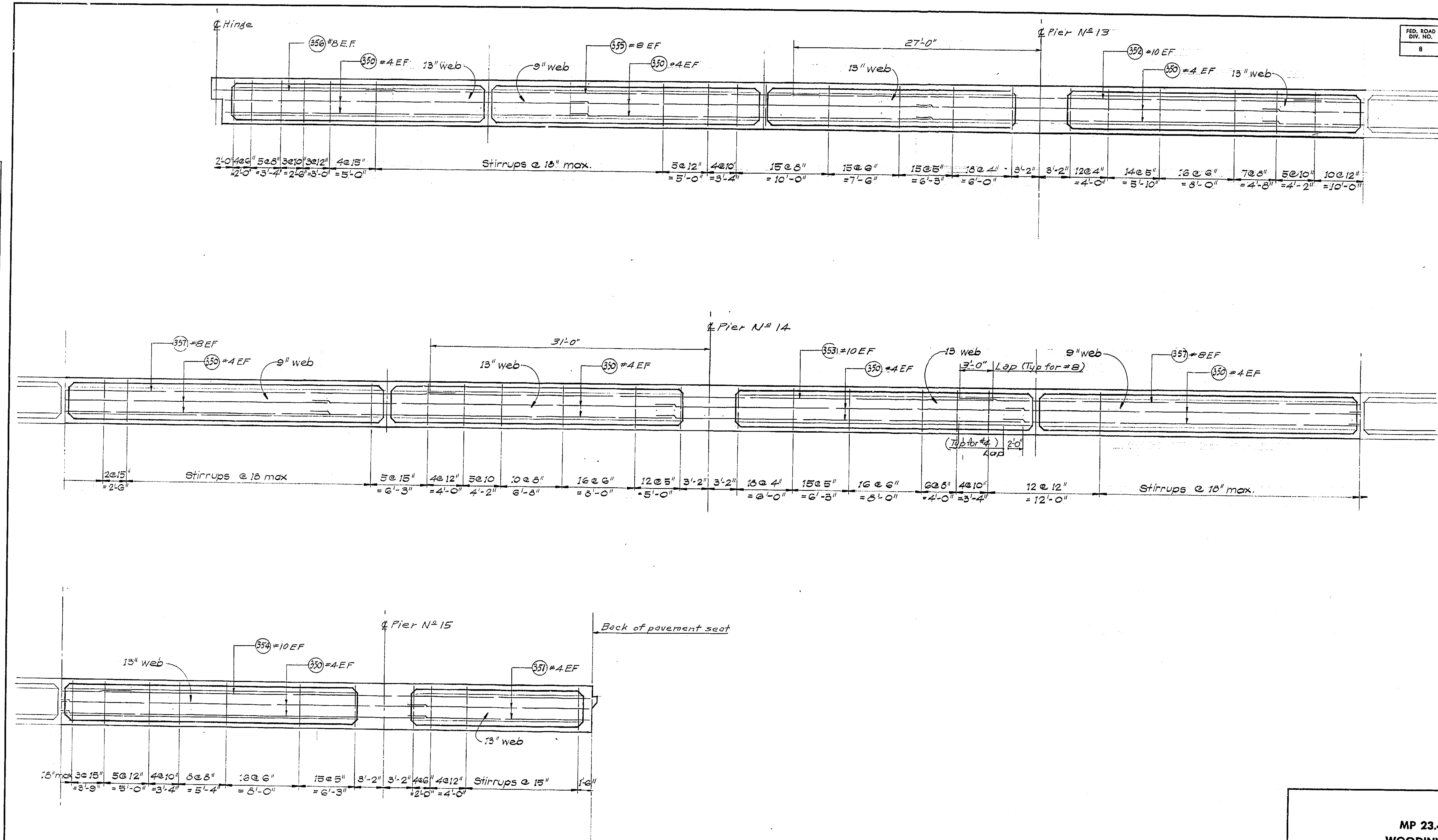
P. T. MITCHELSON
R. WALSH
BAKER FERGUSON
JOHN N. RUPP

APPROVED December 7, 1967
BRIDGE ENGINEER

CONTRACT NO. 8382
SHEET 261 OF 297 SHEETS

SP/1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178	262	297



LONGITUDINAL SECTIONS

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

LONGITUDINAL SECTIONS

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN
R. L. MCVAISON
H. WALSH
BAKER FERGUSON
JOHN N. RUPP

APPROVED December 7, 1967
BRIDGE ENGINEER
CONTRACT NO. 8382
SHEET 262 OF 297 SHEETS

DATE	REVISION	BY

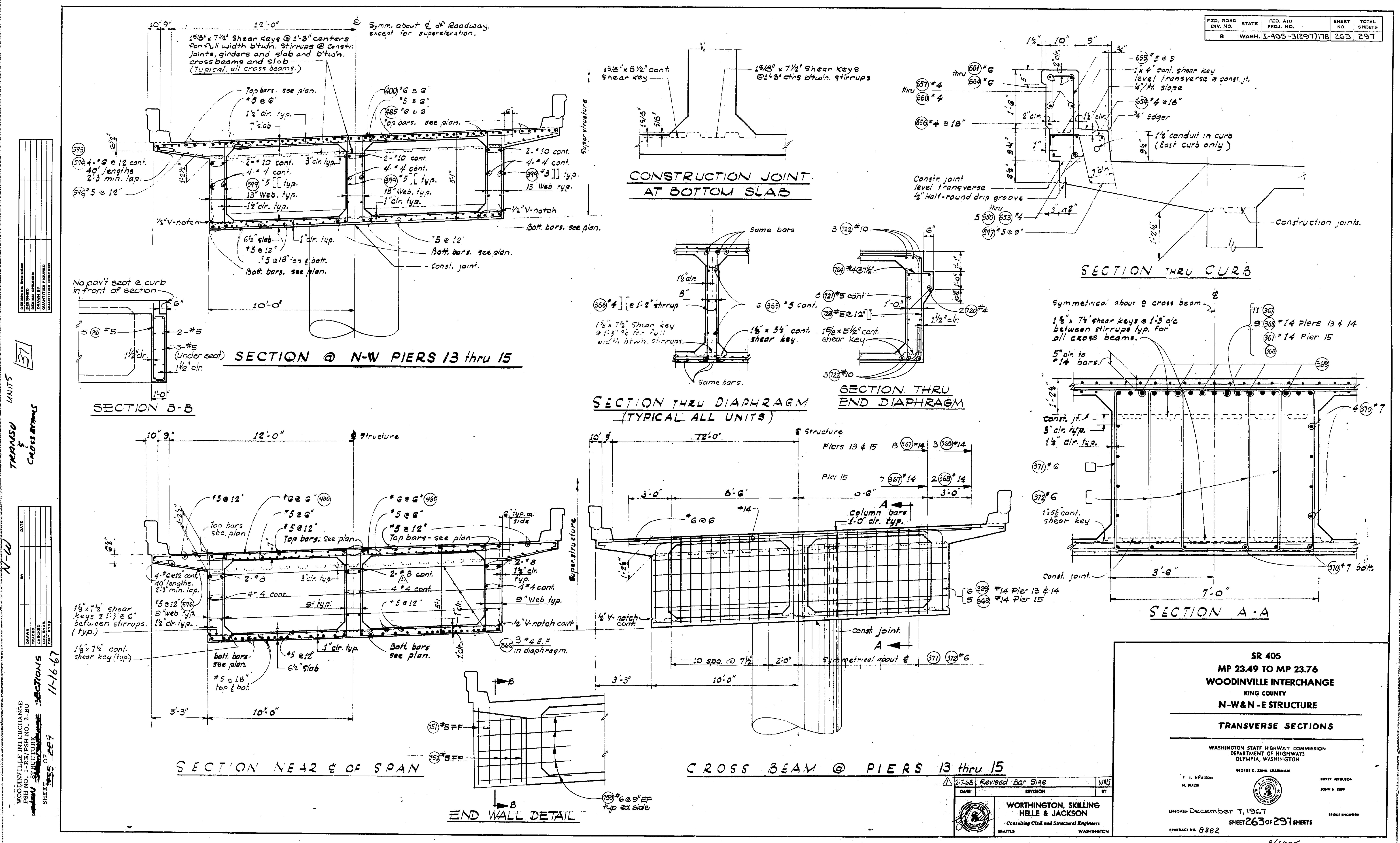
WORTHINGTON, SKILLING
HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

DRAWN	TRACED	CHECKED	LOC. ENGR.	DIST. ENGR.

DESIGNING ENGINEER	DESIGNED	DESIGN CHECKED	DRAWN BY	QUANTITIES FIGURED	QUANTITIES CHECKED

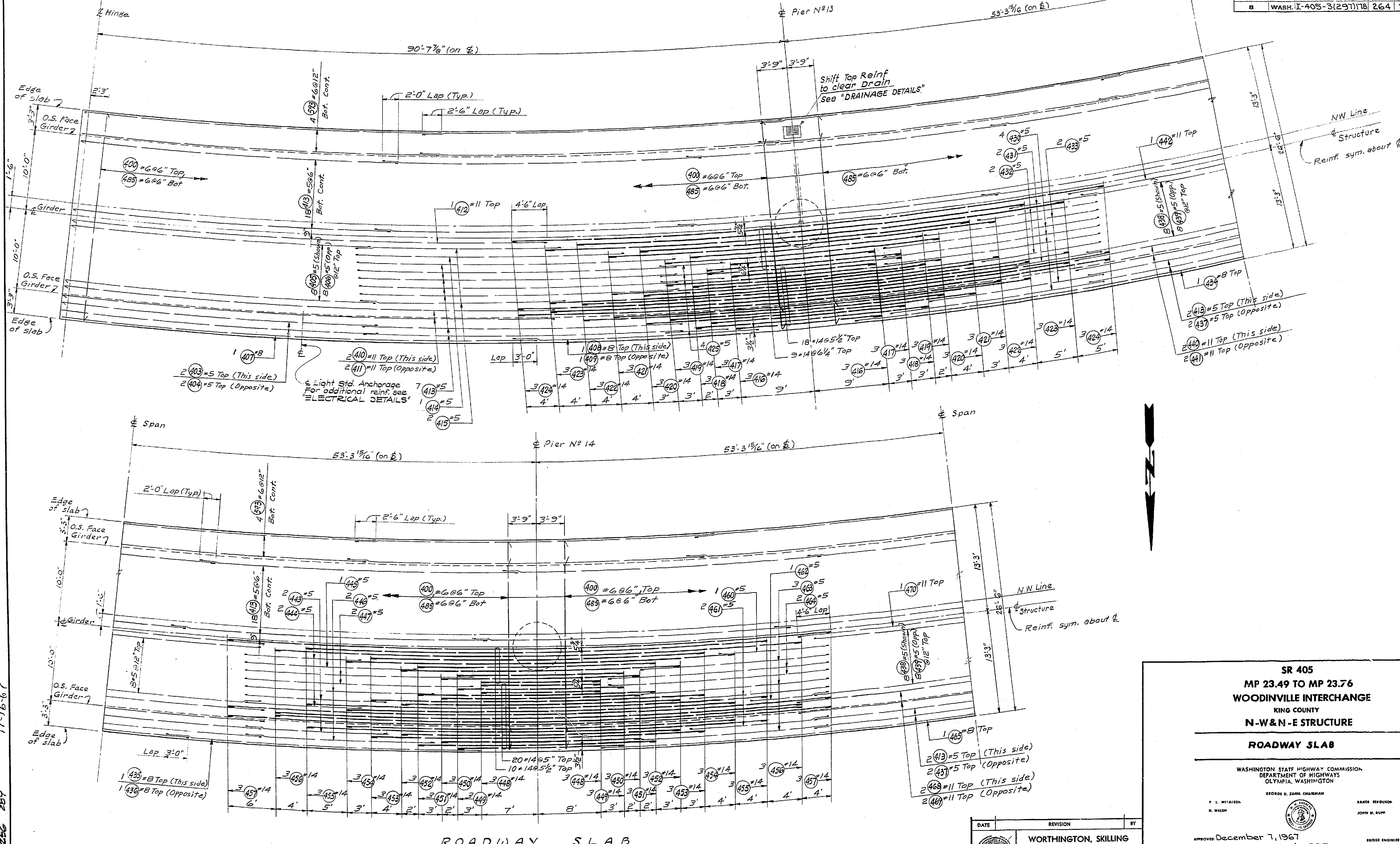
WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2-BO
N-W STRUCTURE
LONGIT SECTIONS
SHEET 264 OF 289
11-16-67

P/1995



FED. ROAD DIV. NO. 8
STATE WASH.
FED. AID PROJ. NO. I-405-3(297)178
SHEET NO. 263
TOTAL SHEETS 297
SECTION @ N-W PIERS 13 thru 15
Symm. about ℄ of Roadway, except for superelevation.
15/8" x 7½" Shear Keys @ 1'-3" centers for full width b'twn. Stirrups @ Constr. joints, girders and slab and b'twn. cross beams and slab (Typical, all cross beams.)
SECTION B-B
No pav't seat & curb in front of section
CONSTRUCTION JOINT AT BOTTOM SLAB
SECTION THRU DIAPHRAGM (TYPICAL ALL UNITS)
SECTION THRU END DIAPHRAGM
SECTION THRU CURB
SECTION A-A
Symmetrical about ℄ cross beam
SECTION NEAR ℄ OF SPAN
END WALL DETAIL
CROSS BEAM @ PIERS 13 thru 15
⚠ 2-7-68 Revised Bar Size
DATE REVISION BY
WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON
SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W & N-E STRUCTURE
TRANSVERSE SECTIONS
WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON
APPROVED December 7, 1967
SHEET 263 OF 297 SHEETS
CONTRACT NO. 8382
WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2-BO
SHEET 264 OF
11-16-67
P/1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178	264	297



WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2-BO
N-W STRUCTURE ROADWAY SLAB
SHEET 256 OF 289

11-16-67

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W & N-E STRUCTURE
ROADWAY SLAB

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN

APPROVED December 7, 1967

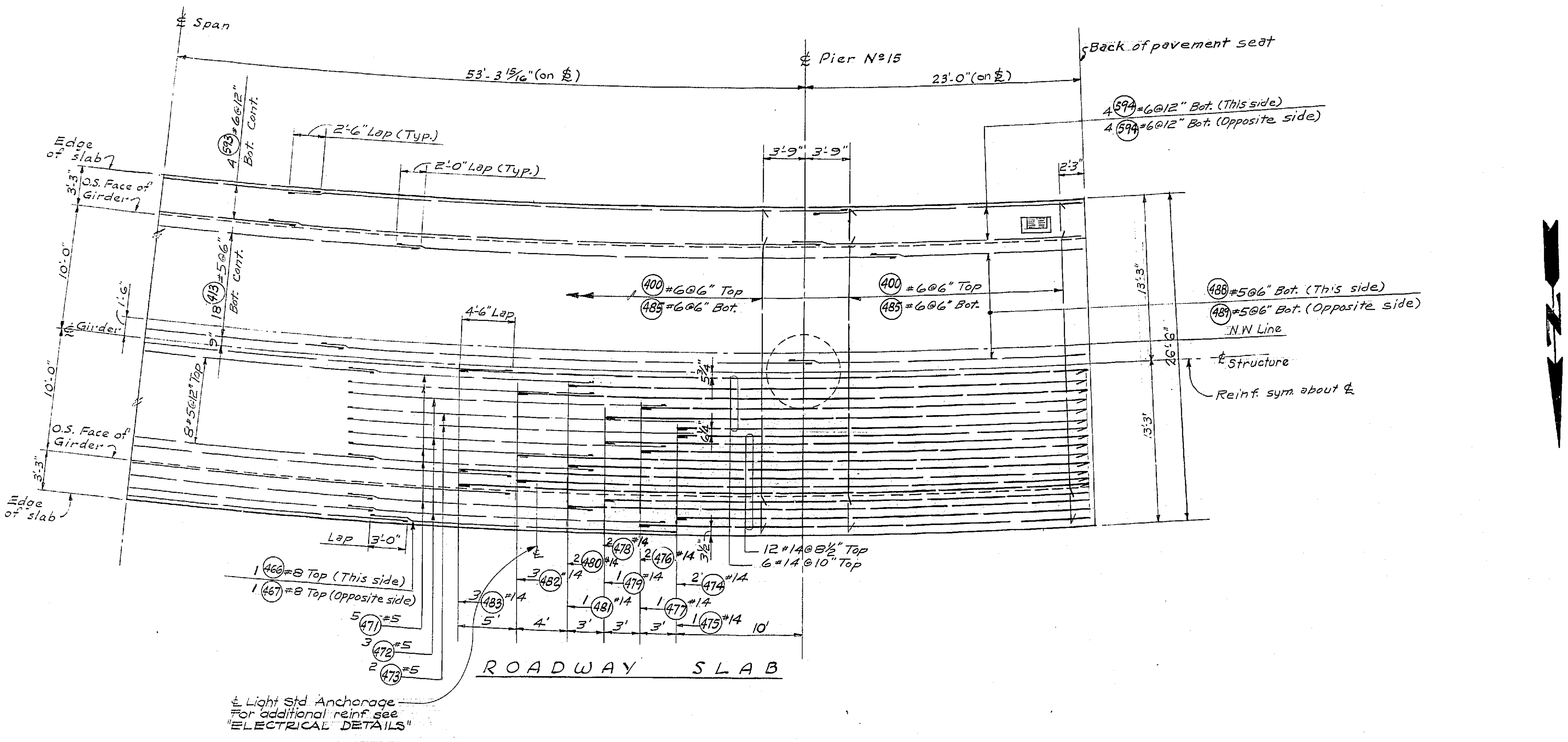
SHEET 264 OF 297 SHEETS

CONTRACT NO. 8382

BRIDGE ENGINEER

P/1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178	265	297



DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

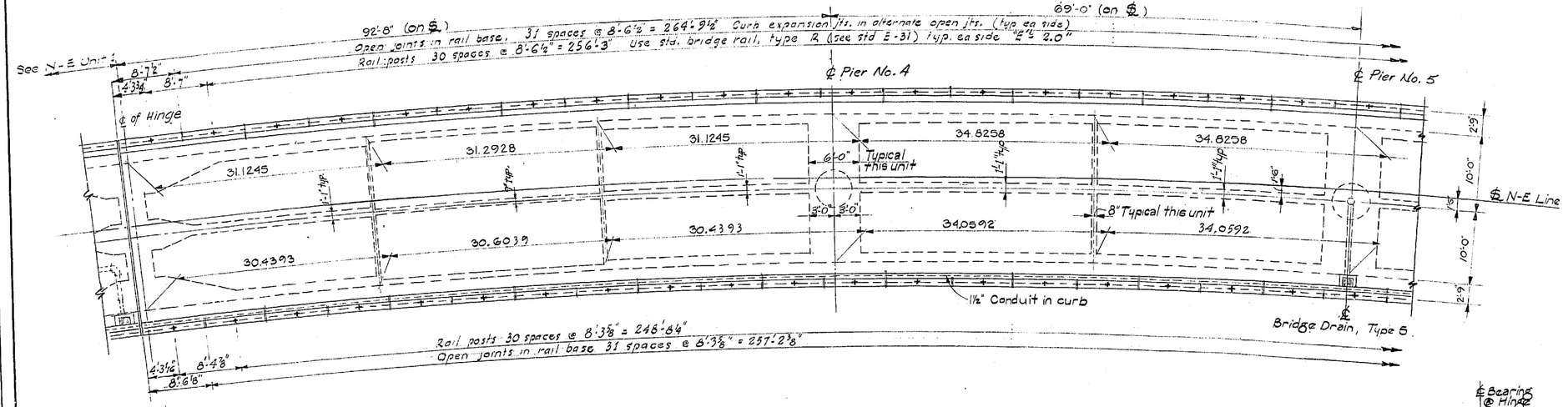
ROADWAY SLAB

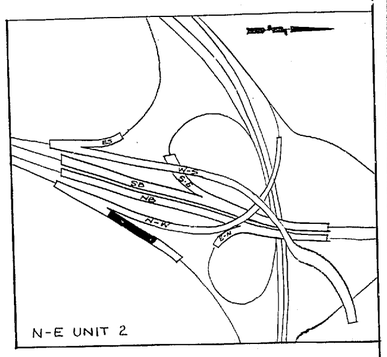
WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

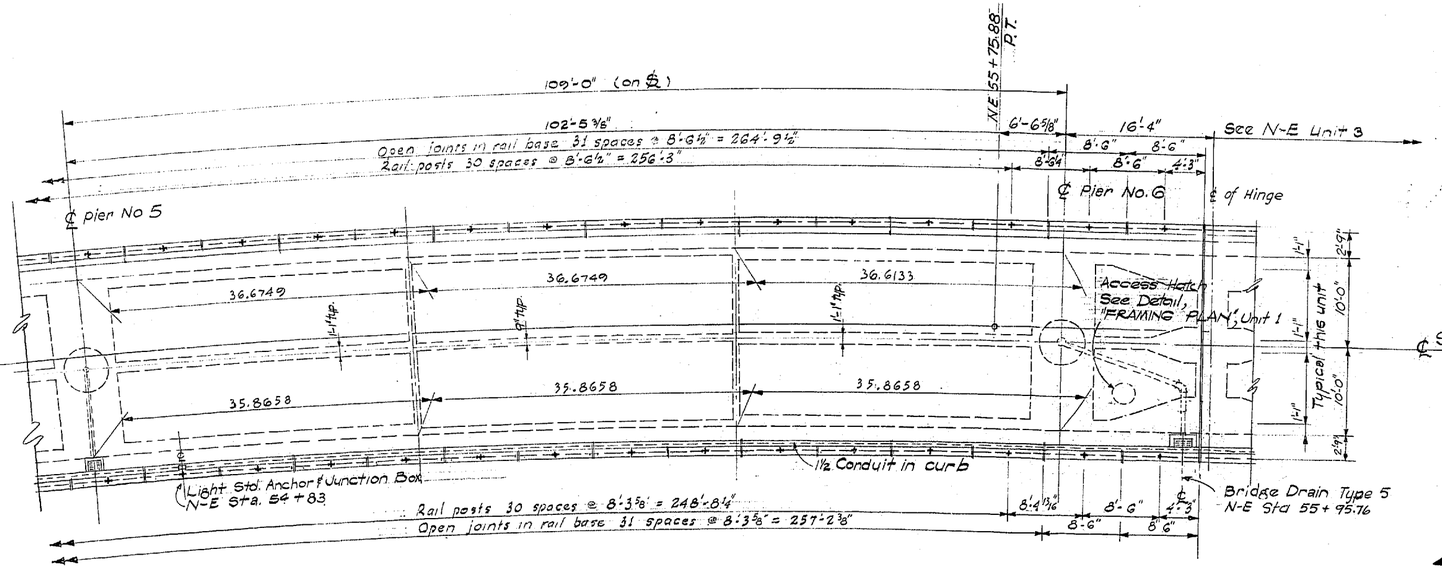
APPROVED December 7, 1967
SHEET 265 OF 297 SHEETS
CONTRACT NO. 8382

WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2-BO
N-W STRUCTURE ROADWAY SLAB
SHEET 267 OF 299
11-16-67

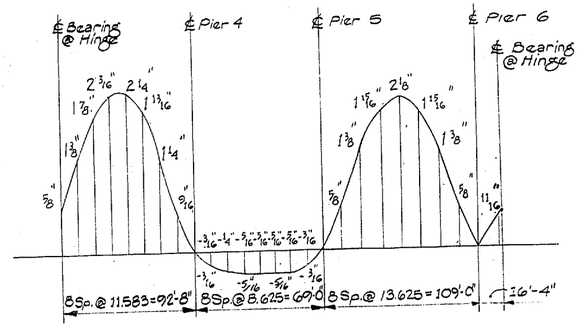
DIV. NO.				
8	WASH.	I-405-3(297)178	266	297







FRAMING PLAN



DEAD LOAD CAMBER CURVE FOR N.E. RAMP

THIS CURVE SHOWS D.L. CAMBER ONLY AND SHOULD BE INCREASED BY THE AMOUNT OF TAKE-UP ANTICIPATED IN THE FALSEWORK.

For General Notes See Unit 1 Framing Plan

DESIGNING ENGINEER
DESIGNED
DESIGN CHECKED
DRAWN BY
QUANTITIES FIGURED
QUANTITIES CHECKED

DRAWN	BY	DATE
TRACED		
CHECKED		
LOCL. ENGR.		
ASST. ENGR.		

WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2-BO
N-E & N-W STRUCTURES
FRAMING PLAN
SHEET 266 OF 297
11-16-67

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

FRAMING PLAN

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

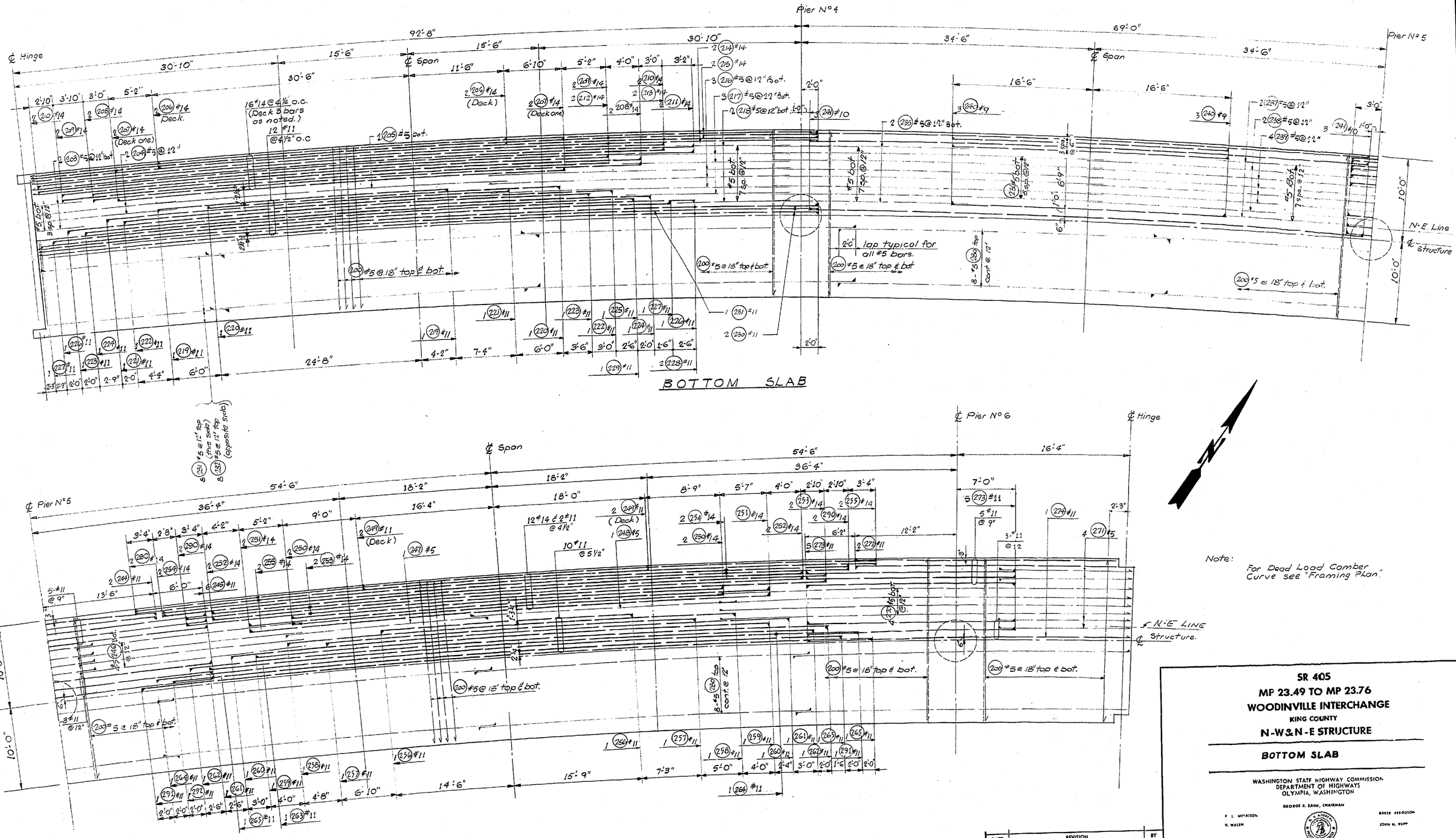
GEORGE D. ZAHN, CHAIRMAN
P. L. McALISON — REXIE FERGUSON
H. WALSH — JOHN H. RUPP

APPROVED December 7, 1967
SHEET 266 OF 297 SHEETS
CONTRACT NO. 8382

P/1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)118	267	297

DESIGNING ENGINEER
DESIGNED
DETAILED
DRAWN
CHECKED
QUANTITIES FIGURED
QUANTITIES CHECKED



Note: For Dead Load Camber Curve see "Framing Plan."

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

BOTTOM SLAB

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZANN, CHAIRMAN

P. L. McCAISON — BAKER FERGUSON
N. WALSH — JOHN N. RUPP

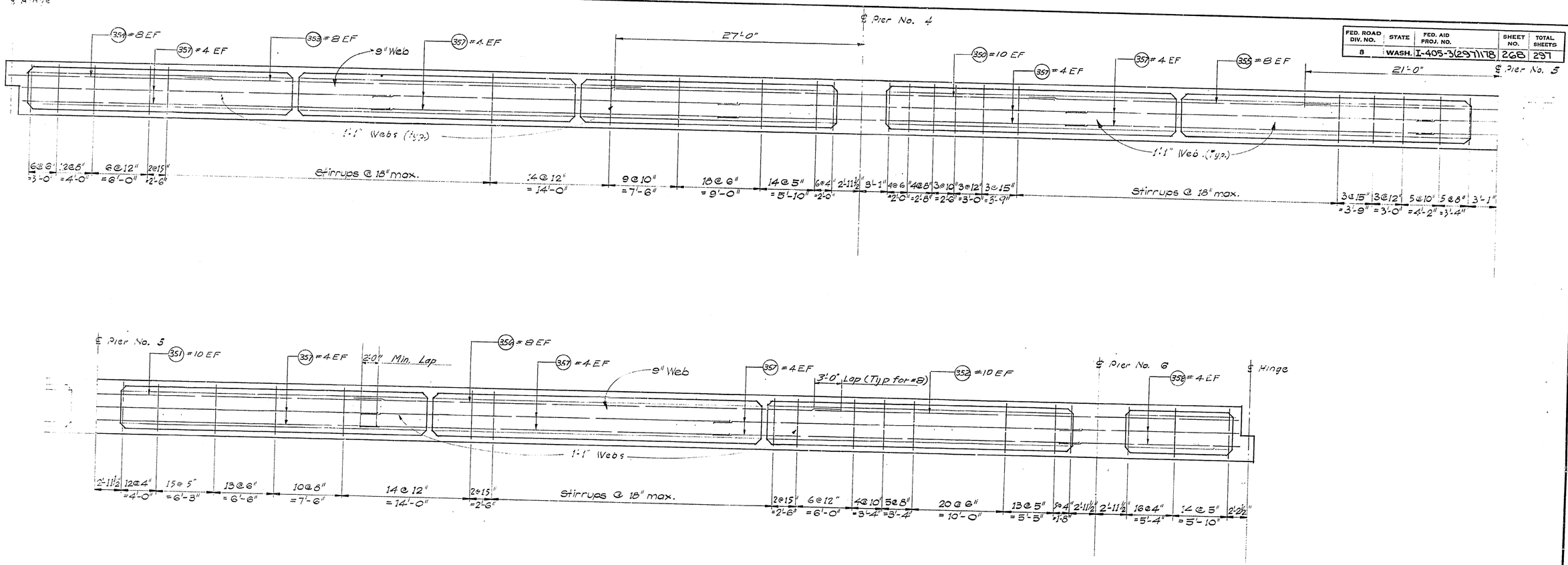
APPROVED December 7, 1967 — BRIDGE ENGINEER
SHEET 267 OF 297 SHEETS
CONTRACT NO. 8382

1/1995

DATE	BY
DRAWN	
TRACED	
CHECKED	
LOC. ENGR.	
DIST. ENGR.	

WOODINVILLE INTERCHANGE
FSH NO. 1-RE(115)H NO. 2-80
N-E STRUCTURE
SHEET BOTTOM SLAB
SHEET 259 OF 289

11-16-67



FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(29)1178	268	297

DESIGNING ENGINEER
DETAILED
DESIGN CHECKED
DRAWN BY
QUANTITIES FIGURED
QUANTITIES CHECKED

DRAWN	BY	DATE
TRACED		
CHECKED		
LOC. ENGR.		
BRDG. ENGR.		

PSH NO. 1-RE/PSH NO. 2-80
N-E STRUCTURE
SHEET 280 OF 289
11-16-67

LONGITUDINAL SECTIONS

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

LONGITUDINAL SECTIONS

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZANN, CHAIRMAN

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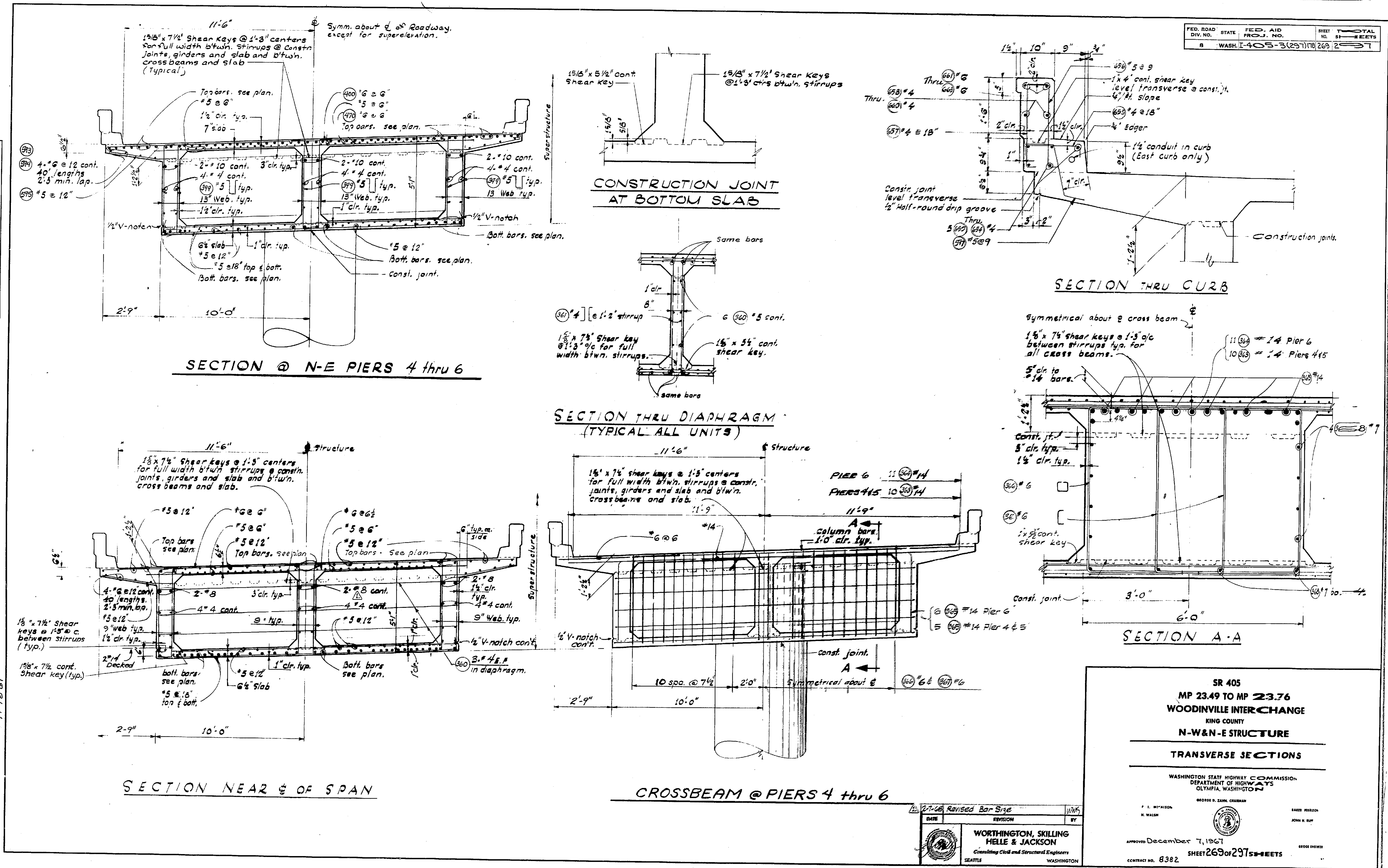
M. WALSH
BAKER FERGUSON
JOHN M. RUPP

APPROVED December 7, 1967
SHEET 268 OF 297 SHEETS
BRIDGE ENGINEER
CONTRACT NO. 8382

9/1995


FED. ROAD DIV. NO. 8 | STATE WASH. | FED. AID PROJ. NO. I-405-3(297)178 | SHEET NO. 269 | TOTAL SHEETS 297
SECTION @ N-E PIERS 4 thru 6
CONSTRUCTION JOINT AT BOTTOM SLAB
SECTION THRU DIAPHRAGM (TYPICAL ALL UNITS)
SECTION THRU CURB
SECTION A-A
SECTION NEAR ℄ OF SPAN
CROSSBEAM @ PIERS 4 thru 6
Symm. about ℄ of Roadway, except for superelevation.
Symmetrical about ℄ cross beam
Construction joints.
SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE
TRANSVERSE SECTIONS
WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON
APPROVED December 7, 1967
SHEET 269 OF 297 SHEETS
CONTRACT NO. 8382
WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

2-7-68 Revised Bar Size

WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2-BO
N-E STRUCTURE TRANSVERSE SECTIONS
SHEET 261 OF 289
11-16-67

N-E Unit 2 TRANSV. & CROSS BEAMS 43

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178	270	297

ROADWAY SLAB

For Bar Weld Detail see "BOTTOM SLAB" UNIT 1

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

ROADWAY SLAB

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN
F. L. McMAHON — BAKER FERGUSON
H. WALSH — JOHN N. RUPP

APPROVED December 7, 1967 — BRIDGE ENGINEER
SHEET 270 OF 297 SHEETS
CONTRACT NO. 8382

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE — WASHINGTON

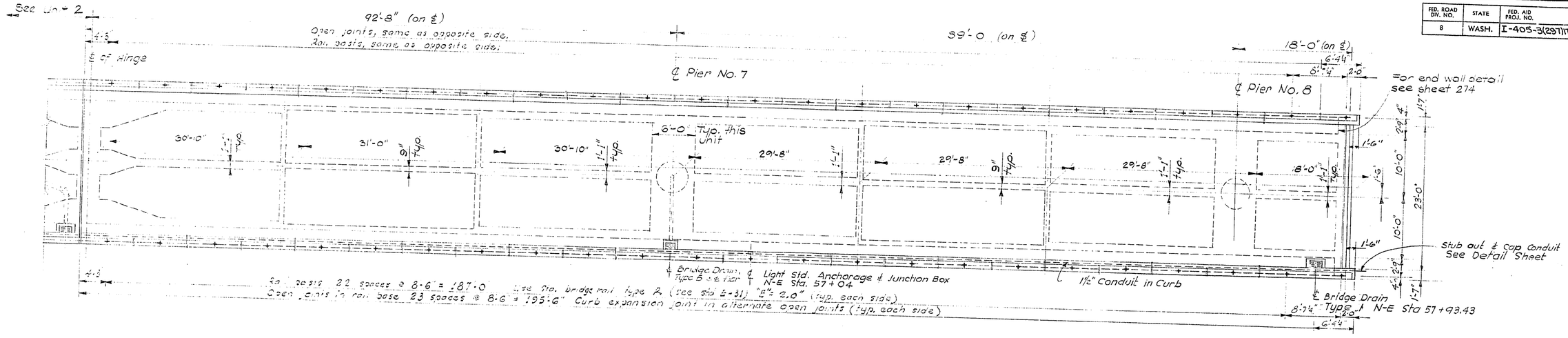
WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2-BO
N-E STRUCTURE ROADWAY SLAB
SHEET 262 OF 289
11-16-67

DESIGNING ENGINEER / DESIGNED / DESIGN CHECKED / DRAWN BY / QUANTITIES FIGURED / QUANTITIES CHECKED

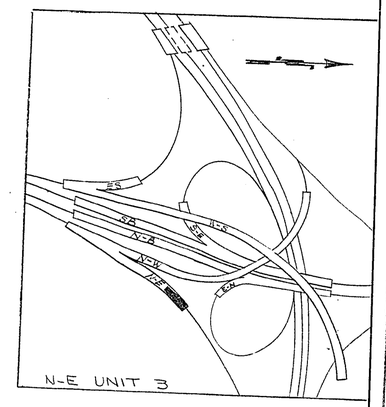
DRAWN / TRACED / CHECKED / LOC. ENGR. / DIST. ENGR. — BY — DATE

P/1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178	271	297



FRAMING PLAN



For General Notes See Unit 1 Framing Plan.

DESIGNED
DESIGN CHECKED
DRAWN BY
QUANTITIES FIGURED
QUANTITIES CHECKED

CHECKED
LOC. ENGR.
DIST. ENGR.

11/16/67

SHEET 213 OF 297

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

FRAMING PLAN

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZANN, CHAIRMAN

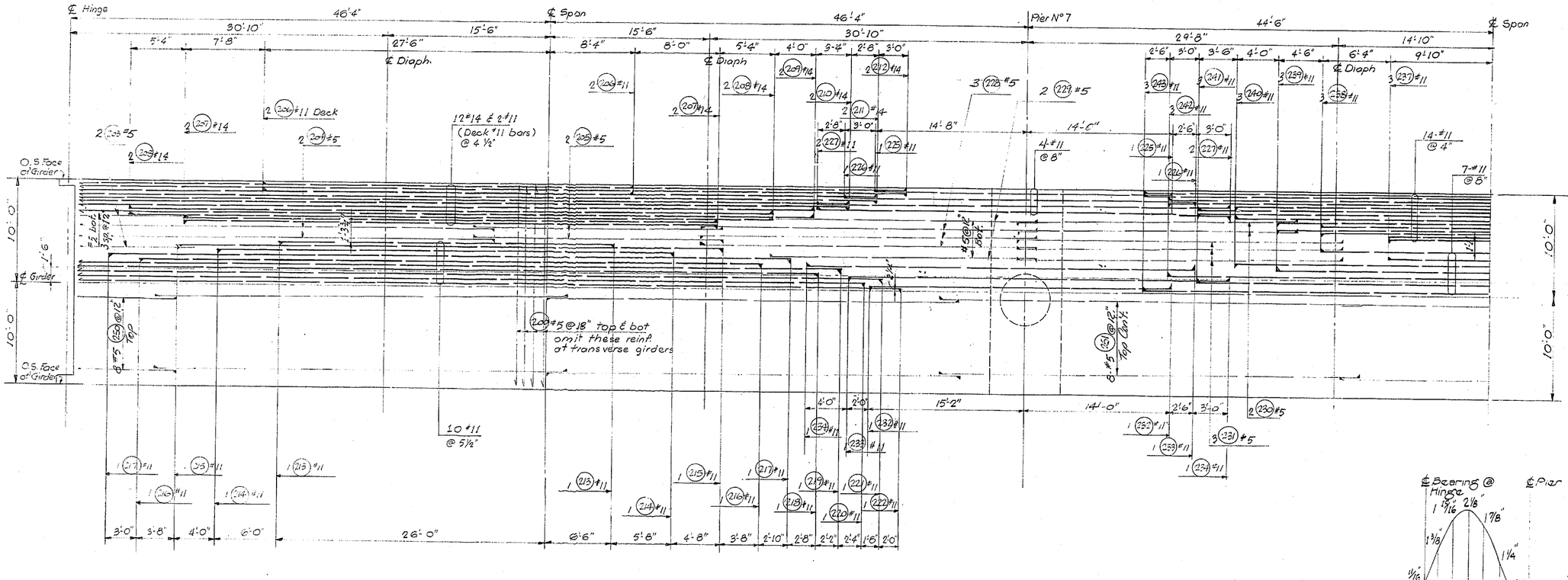
P. L. MILLIKEN — BAKER FERGUSON
M. WALSH — JOHN N. RUPP

APPROVED December 7, 1967
BRIDGE ENGINEER

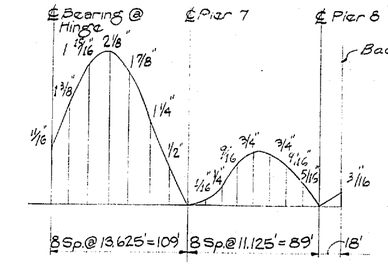
CONTRACT NO. 8382
SHEET 271 OF 297 SHEETS

P/1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178	272	297

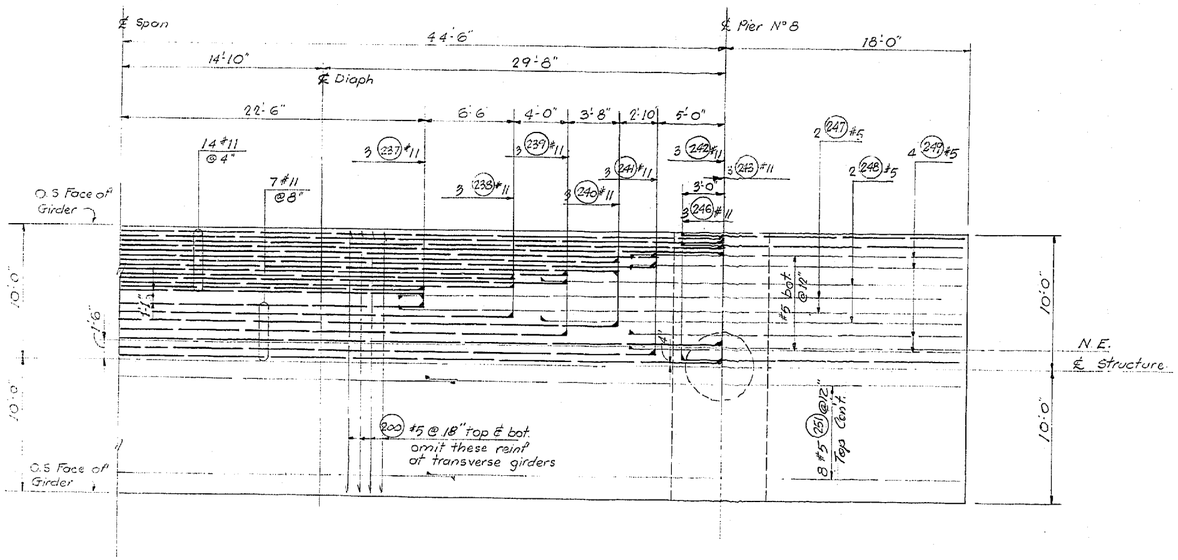


BOTTOM SLAB



DEAD LOAD CAMBER CURVE FOR N.E. RAMP

THIS CURVE SHOWS D.L. CAMBER ONLY AND SHOULD BE INCREASED BY THE AMOUNT OF TAKE-UP ANTICIPATED IN THE FALSEWORK.



BOTTOM SLAB
3/16" = 1'0"

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

BOTTOM SLAB

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN

R. L. McALISON
H. WALSH
BAKER FERGUSON
JOHN N. RUPP

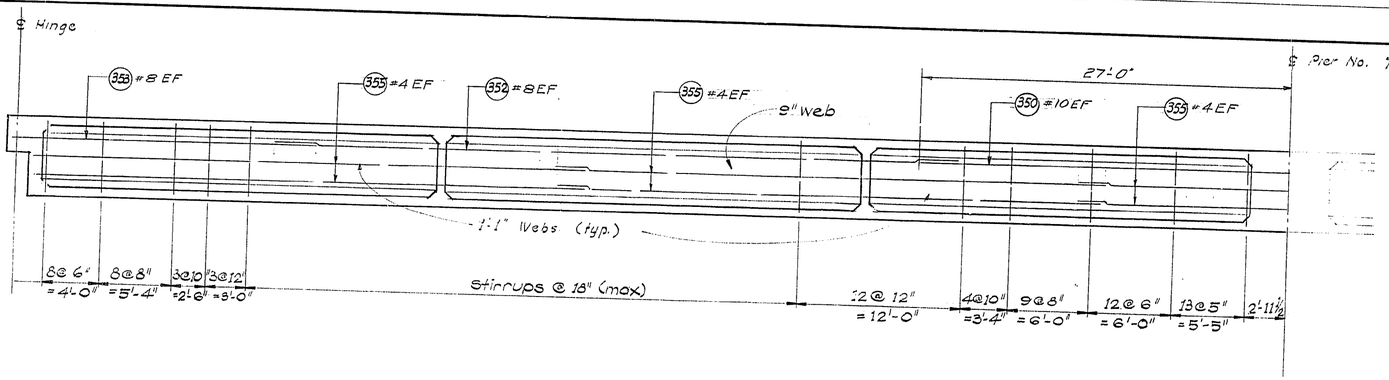
APPROVED December 7, 1967 BRIDGE ENGINEER
SHEET 272 OF 297 SHEETS
CONTRACT NO. 8382

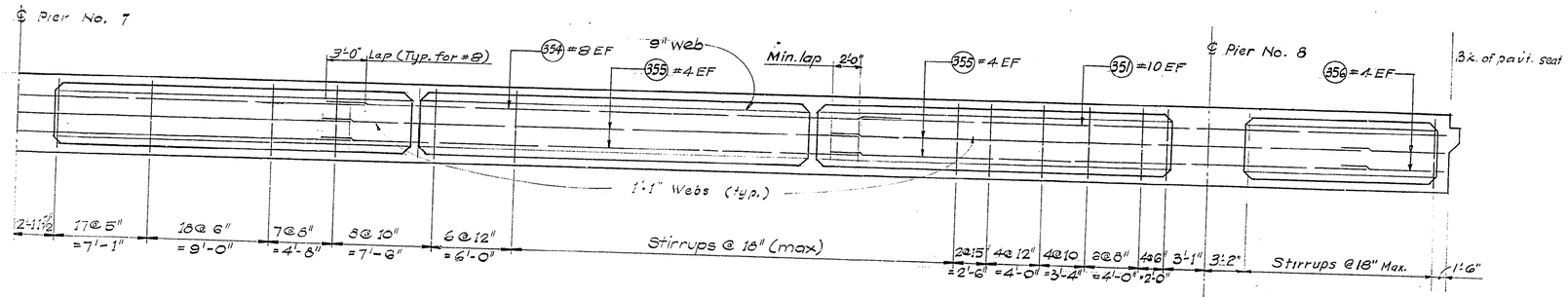
DESIGNING ENGINEER
DETAILED
DESIGN CHECKED
DRAWN BY
QUANTITIES FIGURED
QUANTITIES CHECKED

DRAWN
TRACED
DESIGN CHKD.
LOC. ENGR.
DIST. ENGR.
DATE
BY

WOODINVILLE INTERCHANGE
FED. AID PROJ. NO. I-405-3(297)178
N-S STRUCTURE
SHEET 284 OF 297
11-10-67

P/1995





FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)118	273	297

DESIGNED ENGINEER
DESIGN CHECKED
DRAWN BY
QUANTITIES FIGURED
QUANTITIES CHECKED

INSPECTED
APPROVED
LOC. ENGR.
DIST. ENGR.

11-18-67

SHEET NO. OF SHEETS

LONGITUDINAL SECTIONS

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

LONGITUDINAL SECTIONS

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN
P. T. MYKLESON
H. WALSH
BAKER FERGUSON
JOHN N. BUPP

APPROVED December 7, 1967
BRIDGE ENGINEER

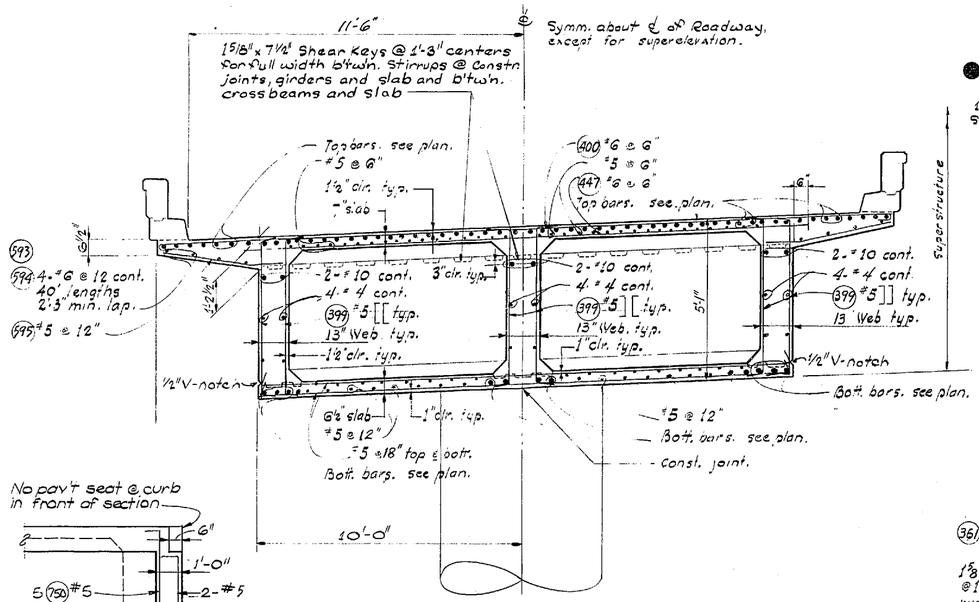
CONTRACT NO. 8382
SHEET 273 OF 297 SHEETS

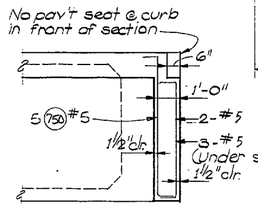
8/1990

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(257)178	274	297

DESIGNING ENGINEER | DESIGNED | DETAILED | DRAWN BY | QUANTITIES FIGURED | QUANTITIES CHECKED

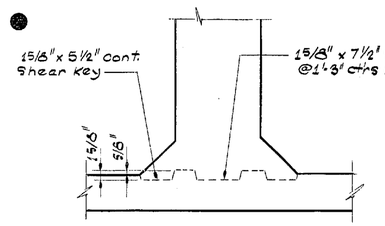
WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2-BO
N-E STRUCTURE
TRANSVERSE SECTIONS
SHEET 266 OF 289
11-18-67



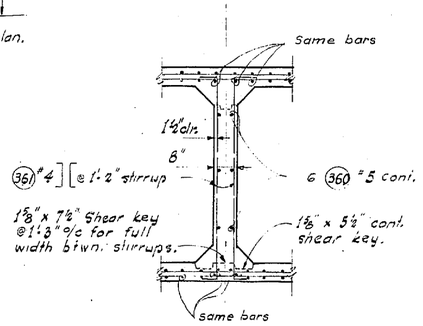


SECTION @ N-E PIERS 7 & 8

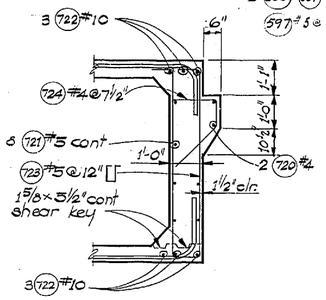
SECTION B-B



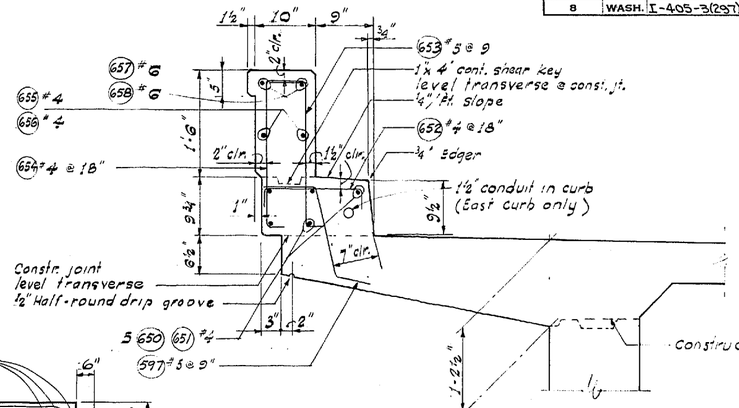
CONSTRUCTION JOINT AT BOTTOM SLAB



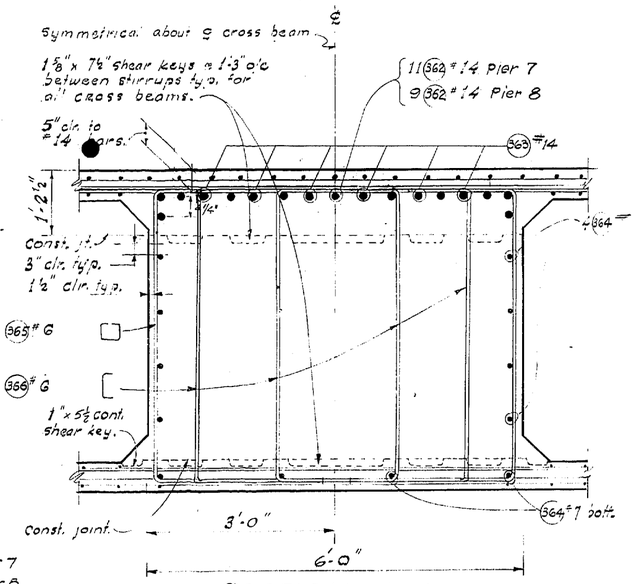
SECTION THRU DIAPHRAGM (TYPICAL ALL UNITS)



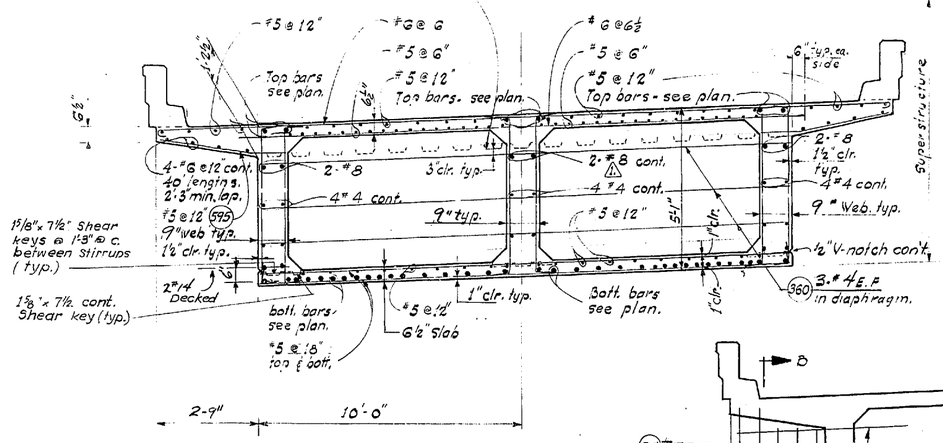
SECTION THRU END DIAPHRAGM



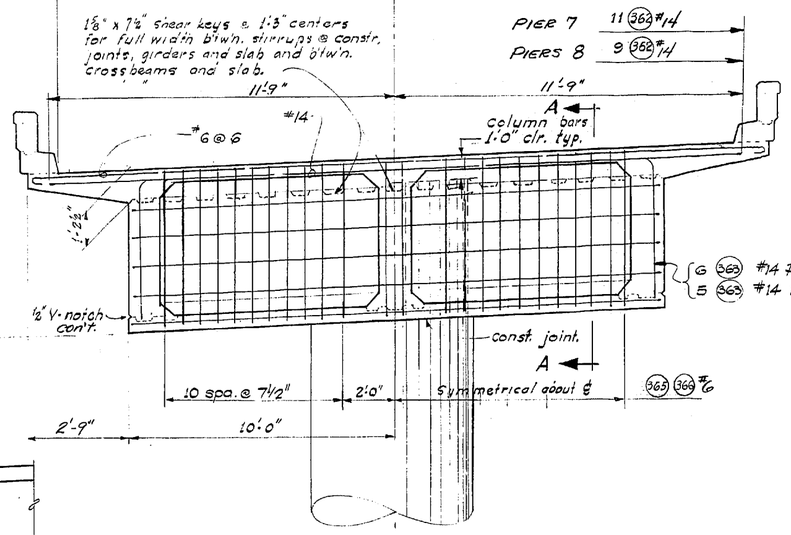
SECTION THRU CURB



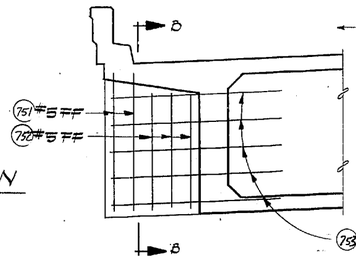
SECTION A-A



SECTION NEAR ℄ OF SPAN



CROSSBEAM @ PIERS 7 & 8



DATE	REVISION	BY
2-7-68	Revised Bar Size	WMS

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

TRANSVERSE SECTIONS

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

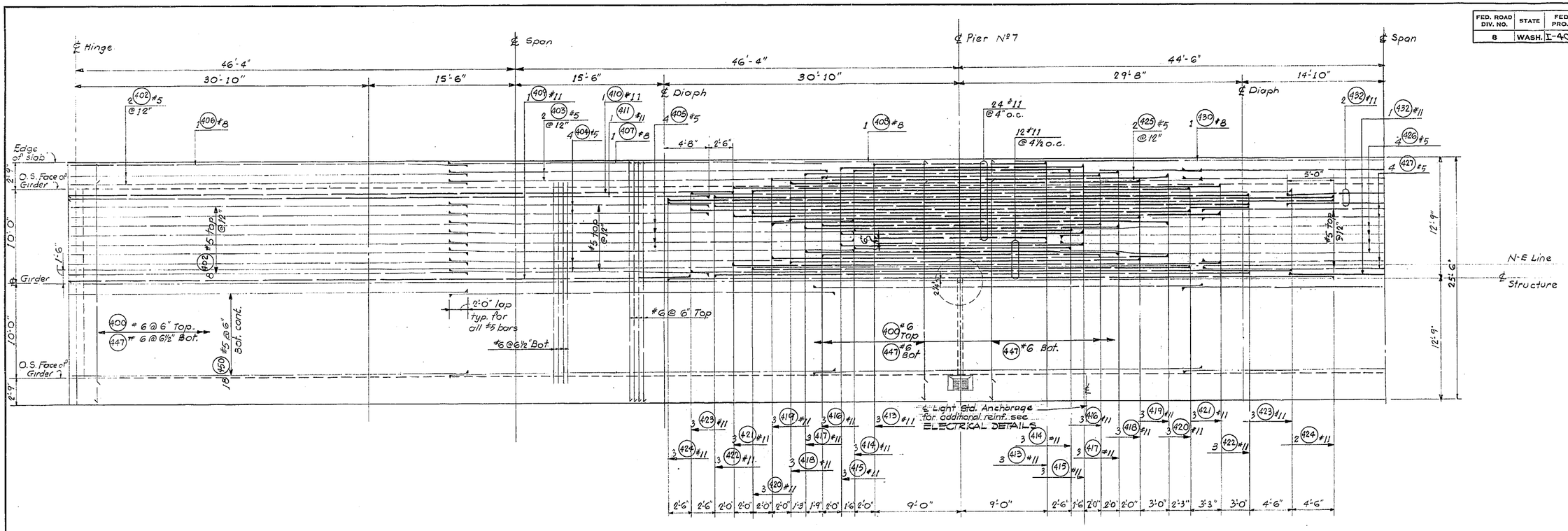
GEORGE D. ZAHN, CHAIRMAN
P. L. MILLIKAN
H. WALSH
BAKER FERGUSON
JOHN H. RUPP

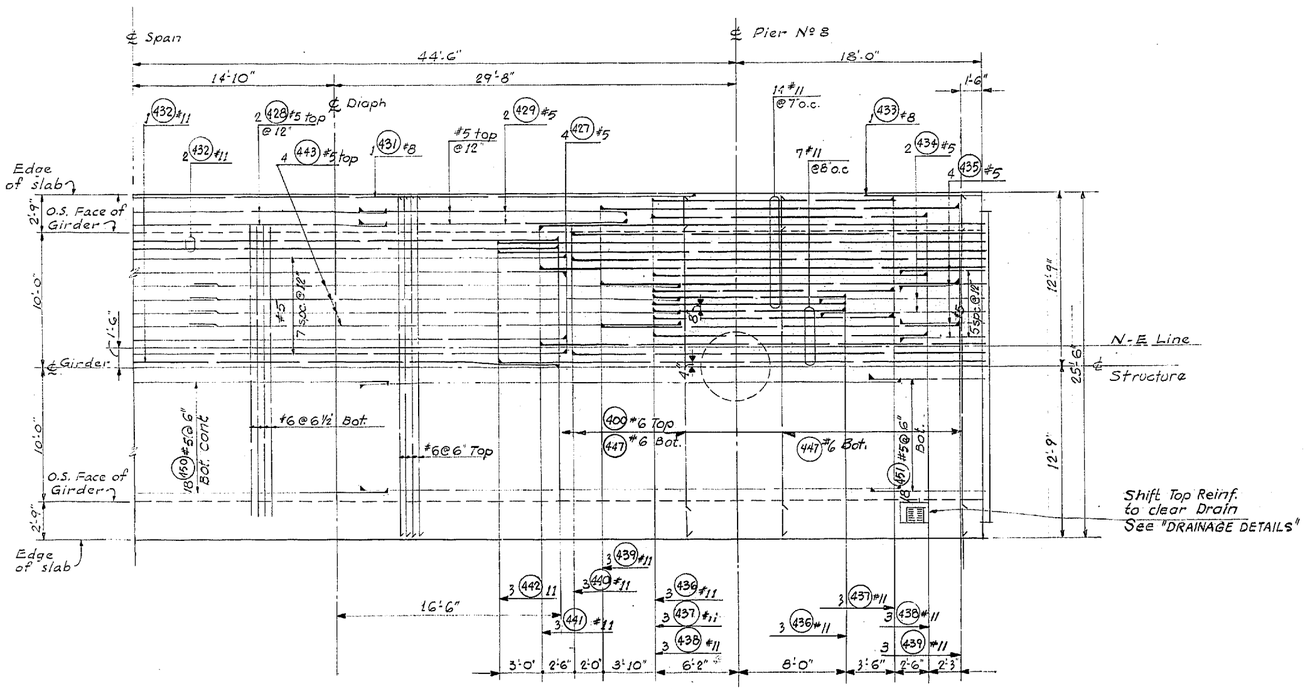
APPROVED: December 7, 1967
BRIDGE ENGINEER

CONTRACT NO. 8382
SHEET 274 OF 297 SHEETS

8/1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178	275	297





ROADWAY SLAB

DESIGNING ENGINEER
DESIGNED
DESIGN CHECKED
DRAWN
QUANTITIES FIGURED
QUANTITIES CHECKED

DRAWN	BY	DATE
TRACED		
CHECKED		
SUP. ENGR.		
DIST. ENGR.		

11-16-67

WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2-BO
N-E STRUCTURE
ROADWAY SLAB
SHEET 275 OF 297

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

ROADWAY SLAB

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

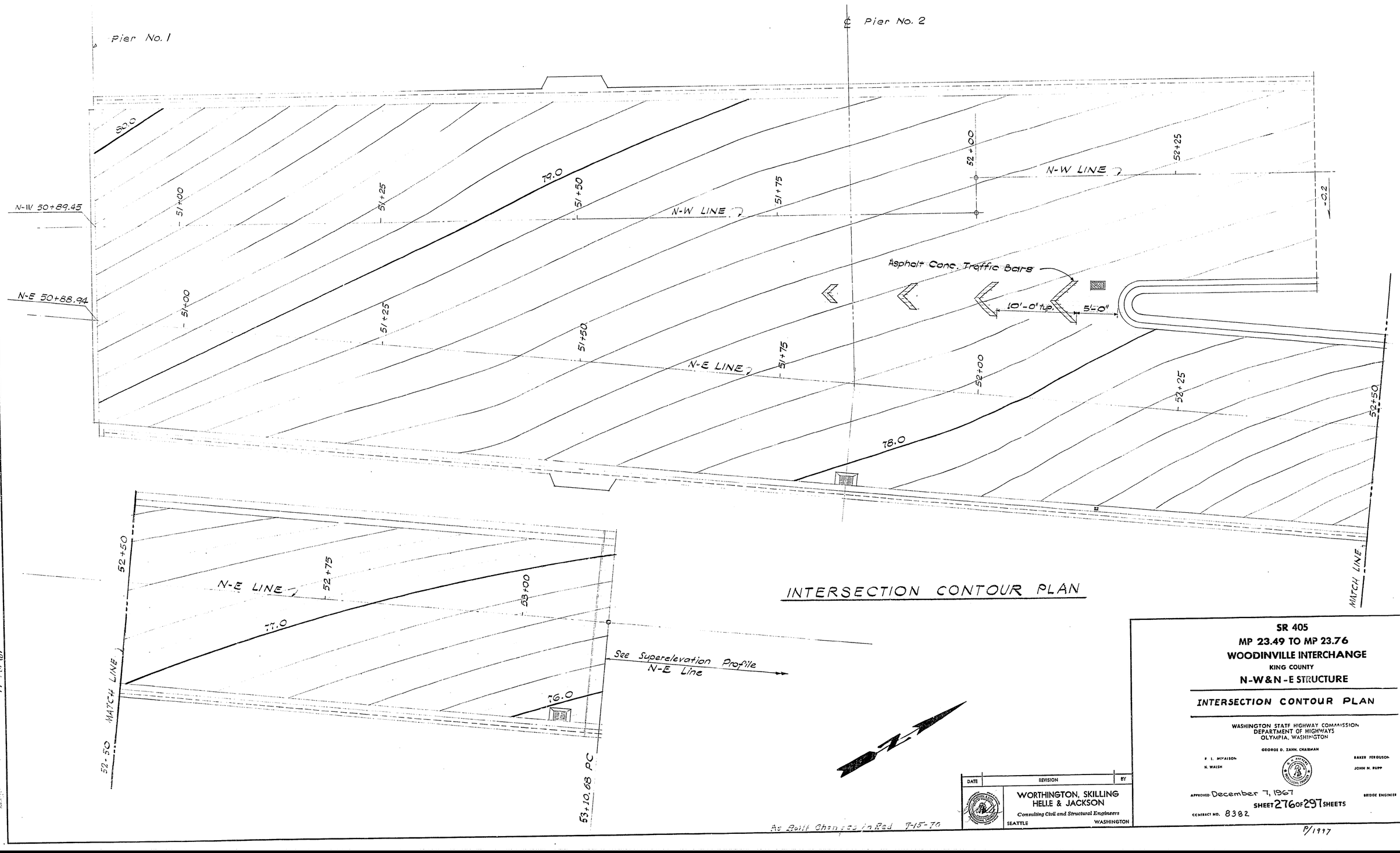
GEORGE D. ZANN, CHAIRMAN
P. L. McALISON
H. WALSH
BAKER FERGUSON
JOHN N. RUPP

APPROVED December 7, 1967
BRIDGE ENGINEER

CONTRACT NO. 8382
SHEET 275 OF 297 SHEETS

8/1997

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(291)178	276	297



INTERSECTION CONTOUR PLAN

As Built Changes in Red 7-15-76

DESIGNING ENGINEER
DESIGNED
DESIGN CHECKED
DRAWN
QUANTITIES FIGURED
QUANTITIES CHECKED

	BY	DATE
DRAWN		
TRACED		
CHECKED		
LOC. ENGR.		
DIST. ENGR.		

WOODINVILLE INTERCHANGE
P.S.H. NO. 1-RE/P.S.H. NO. 2-BO
N-W & N-E STRUCTURE
SHEET ___ OF ___ SHEETS

11-16-67

N-W & N-E

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W & N-E STRUCTURE

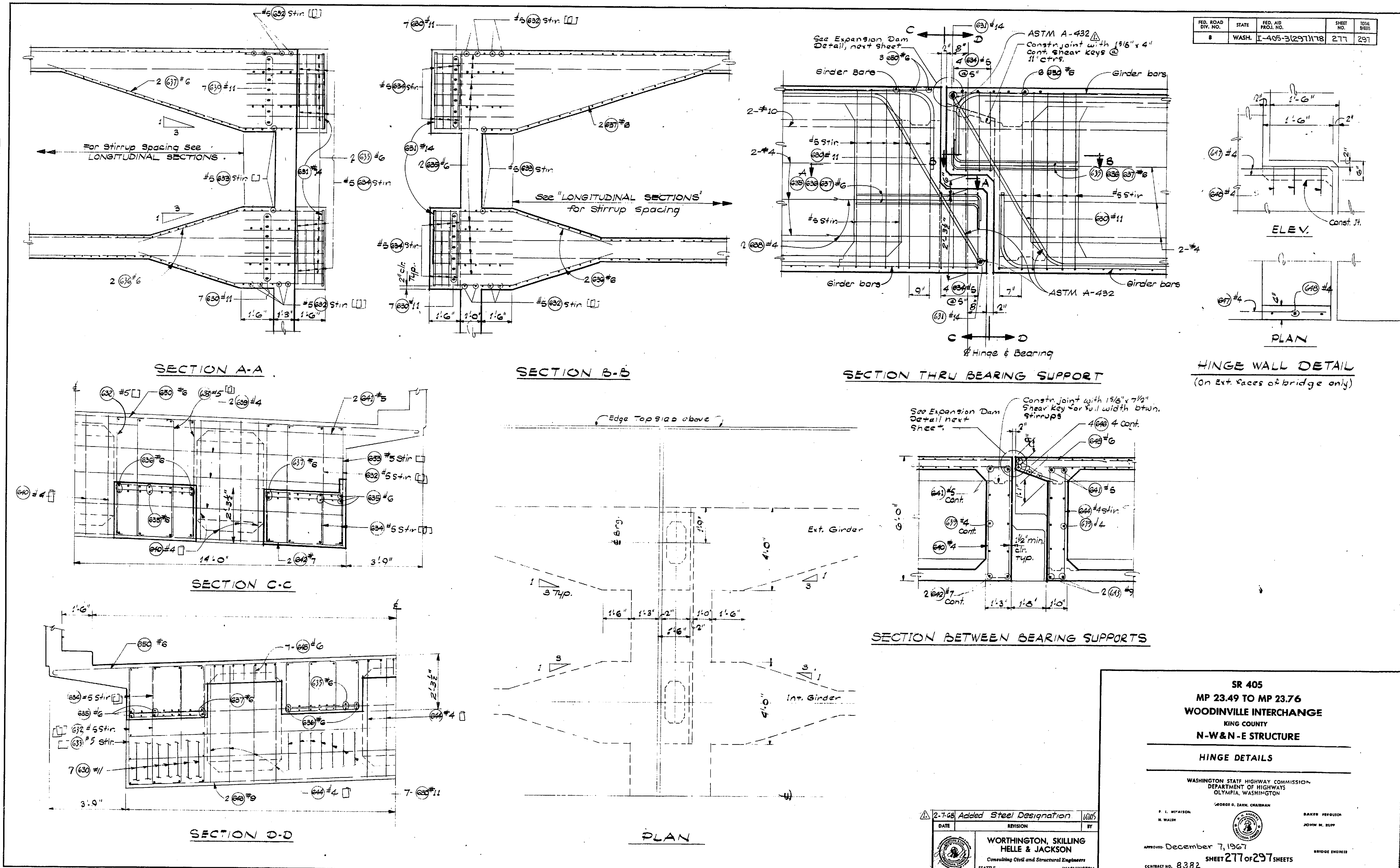
INTERSECTION CONTOUR PLAN

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

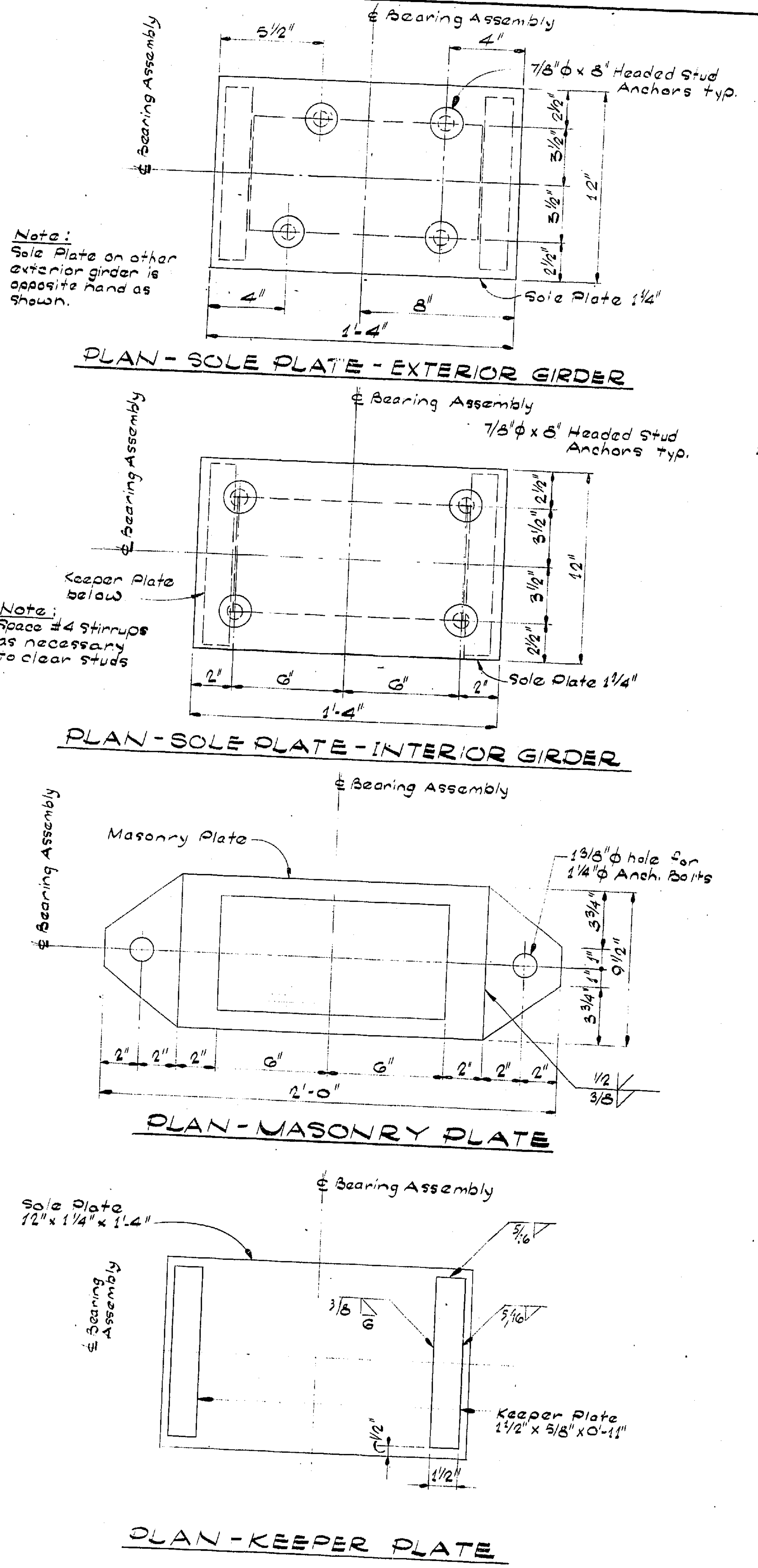
GEORGE D. ZANN, CHAIRMAN
P. L. MEYAISON — BAKER FERGUSON
N. WALSH — JOHN N. RUPP

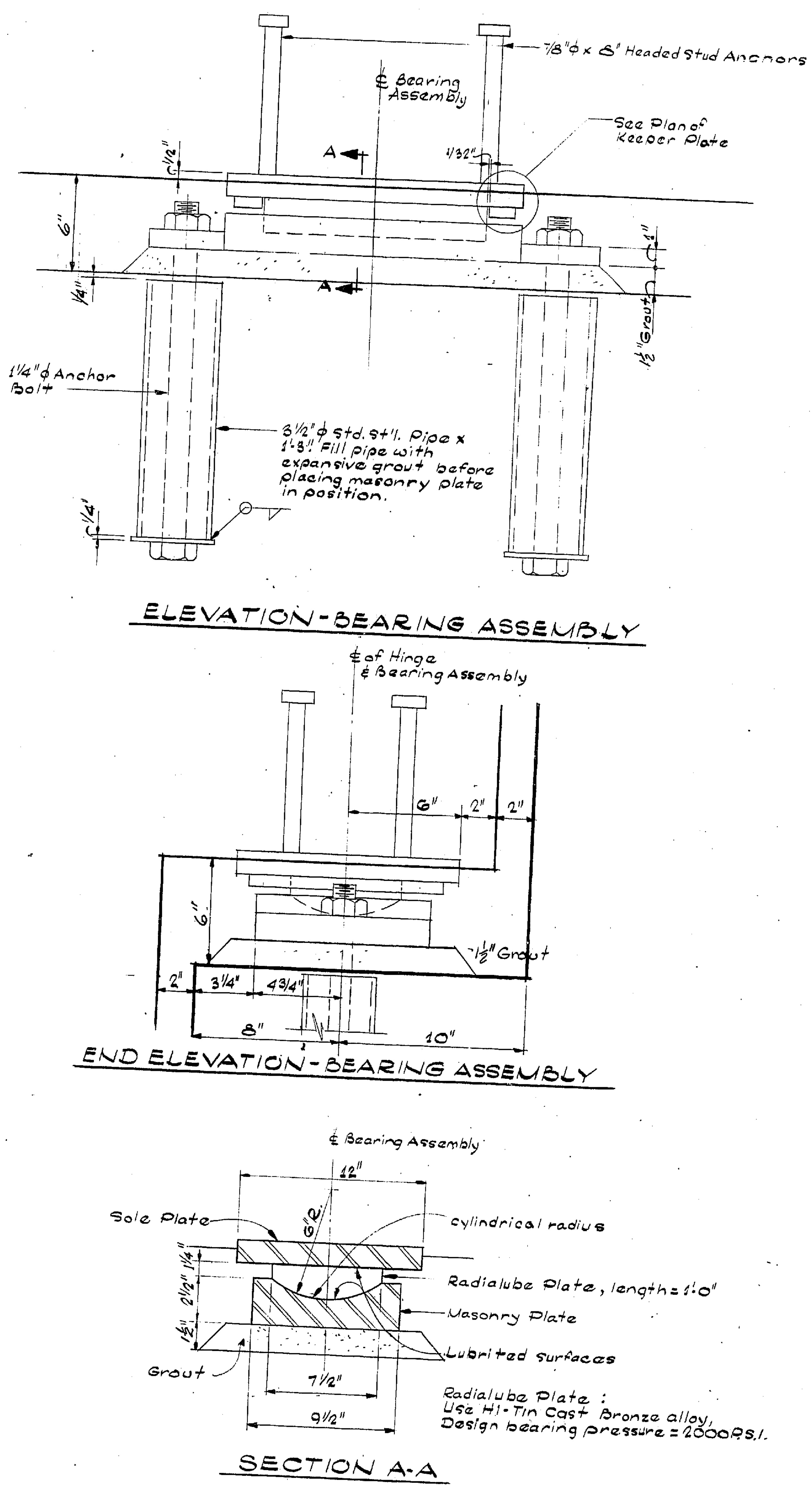
APPROVED December 7, 1967 — BRIDGE ENGINEER
CONTRACT NO. 8382
SHEET 276 OF 297 SHEETS

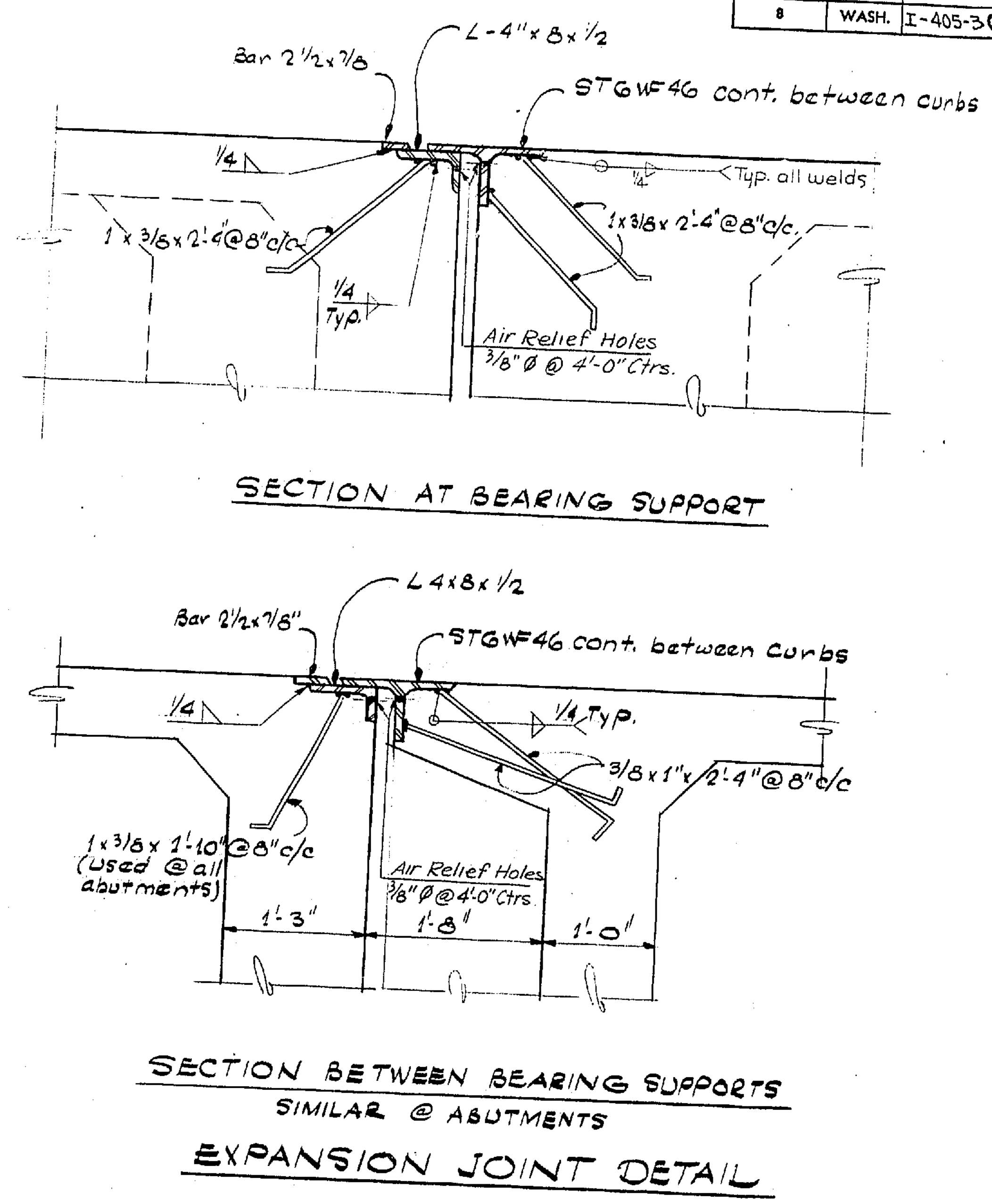
P/1997


FED. ROAD DIV. NO. 8
STATE WASH.
FED. AID PROJ. NO. I-405-3(29?)178
SHEET NO. 277
TOTAL SHEETS 297
SECTION A-A
SECTION B-B
SECTION THRU BEARING SUPPORT
HINGE WALL DETAIL
(On Ext. faces of bridge only)
ELEV.
PLAN
SECTION C-C
SECTION D-D
PLAN
SECTION BETWEEN BEARING SUPPORTS
For Stirrup Spacing See LONGITUDINAL SECTIONS.
See "LONGITUDINAL SECTIONS" for Stirrup Spacing
See Expansion Dam Detail, next Sheet
ASTM A-432
Constr. joint with 1 5/8" x 4" Cont. shear keys @ 11" ctrs.
Girder bars
℄ Hinge & Bearing
Constr. joint with 1 5/8" x 7 1/2" Shear key for full width btwn. stirrups
Edge Top slab above
Ext. Girder
Int. Girder
Const. Jt.
2-7-68 Added Steel Designation
DATE REVISION BY
WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON
SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE
HINGE DETAILS
WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON
APPROVED December 7, 1967
CONTRACT NO. 8382
SHEET 277 OF 297 SHEETS
BRIDGE ENGINEER
PSH NO 1-RE/ASN 2-80 NE/NW STRUCTURE - HINGE DETAILS - SHEET 269 OF 289 11-16-67

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178	278	297







SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W & N-E STRUCTURE

BEARING ASSEMBLY & EXPANSION JOINT DETAILS

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN

APPROVED December 7, 1967
CONTRACT NO. 8382 SHEET 278 OF 297 SHEETS

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

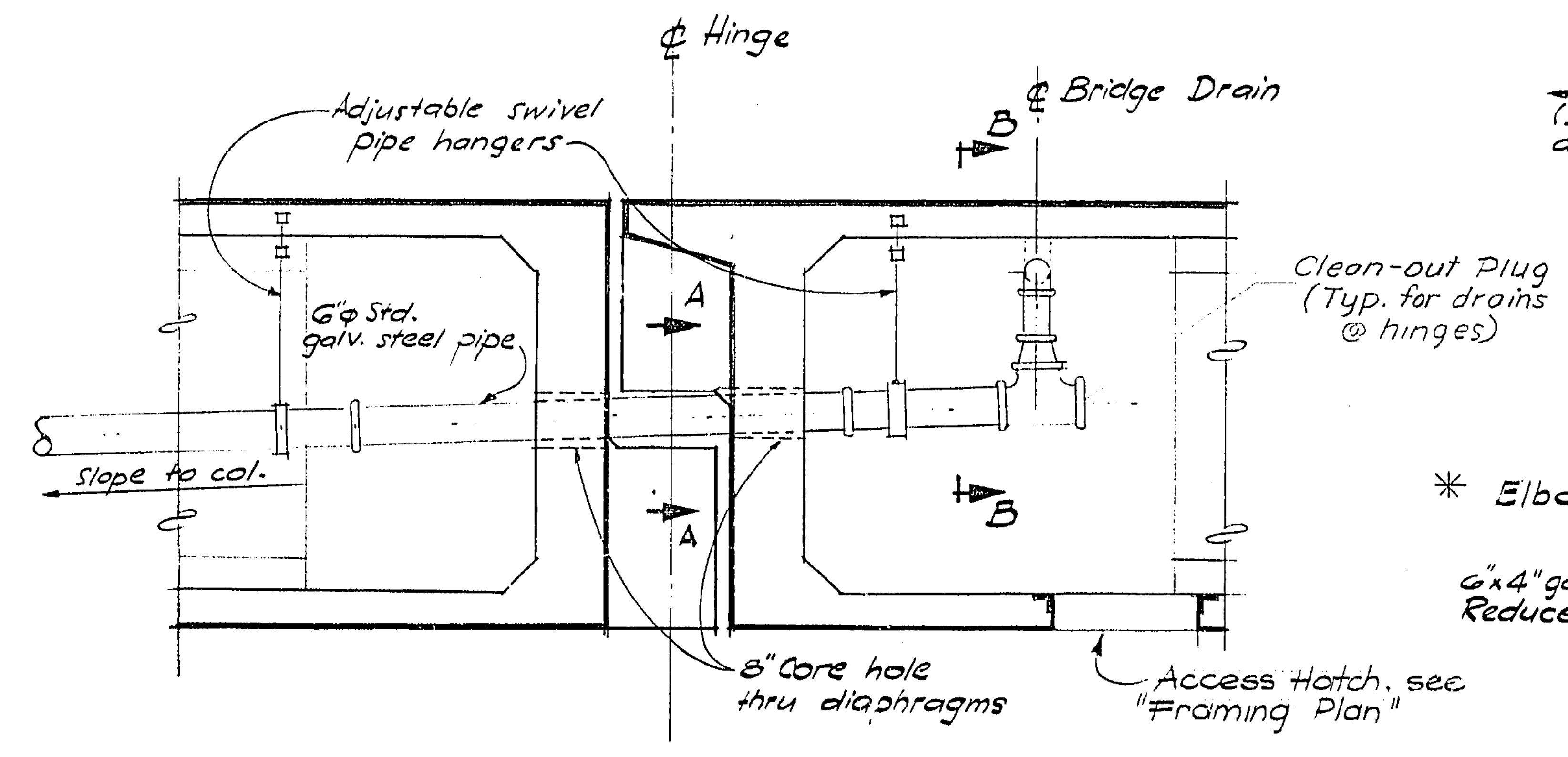
WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2-BO
STRUCTURE
BEARING ASSEMBLY & EXP. JT DETAIL
SHEET 270 OF 289
11-16-67

P/1995

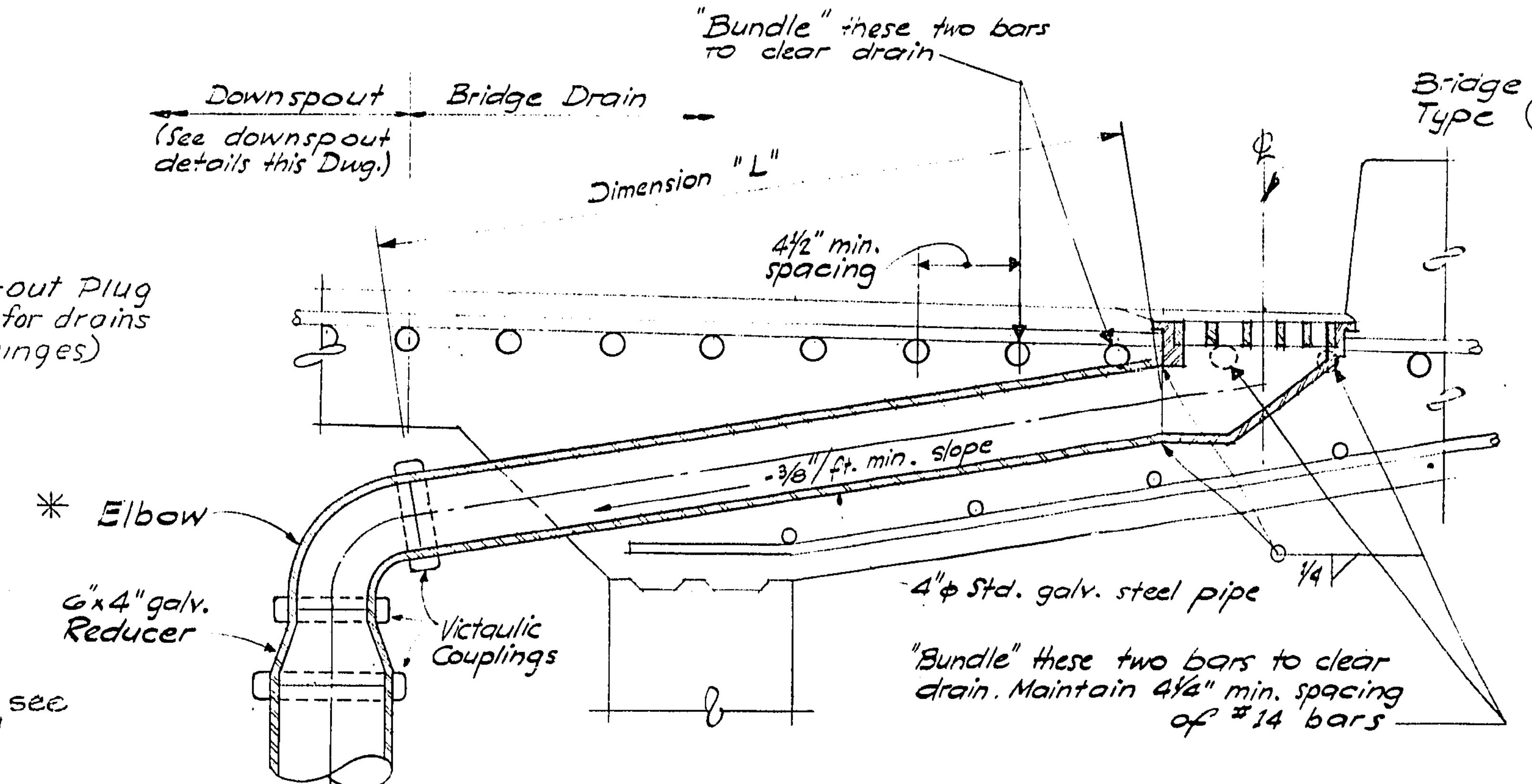
FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178	279	297

SCHEDULE OF BRIDGE DRAINS

DRAIN TYPE	STATION & LOCATION	PIER	DIM. "L"	TYPE DRAINAGE	DRAIN PIPE LENGTH
N-W STRUCTURE					
5	53 + 05.45 RT	Exp. Jt.	3'-3"	S.B	-
5	53 + 19.6 RT	Exp. Jt.	3'-3"	S.B	-
5	54 + 04.45 LT	4	3'-3"	S.B	-
5	55 + 13.45 LT	5	3'-3"	S.B	-
5	56 + 42.75 LT	Exp. Jt.	3'-3"	S.B	-
5	59 + 34.30 LT	Exp. Jt.	3'-3"	S.B	-
5	60 + 27.96 LT	10	3'-3"	S.B	-
5	62 + 28.2 LT	Exp. Jt.	3'-3"	S.B	-
5	63 + 21.86 LT	13	3'-3"	D.P.+	-
1	65 + 53.17 LT	15	5'-6"	D.P.	50'
N-E STRUCTURE					
5	51 + 86.43 Rt.	2	2'-9"	D.P.+	25'
5	53 + 07.76 Rt.	Exp. Jt.	2'-9"	D.P.+	35'
5	54 + 73.43 Rt	5	2'-9"	Alt. "A"	-
5	55 + 94.76 Rt.	Exp. Jt.	2'-9"	Alt "A"	-
5	56 + 91.43 Rt.	7	2'-9"	S.B	-
1	57 + 98.43 Rt.	8	5'-6"	D.P.	90'

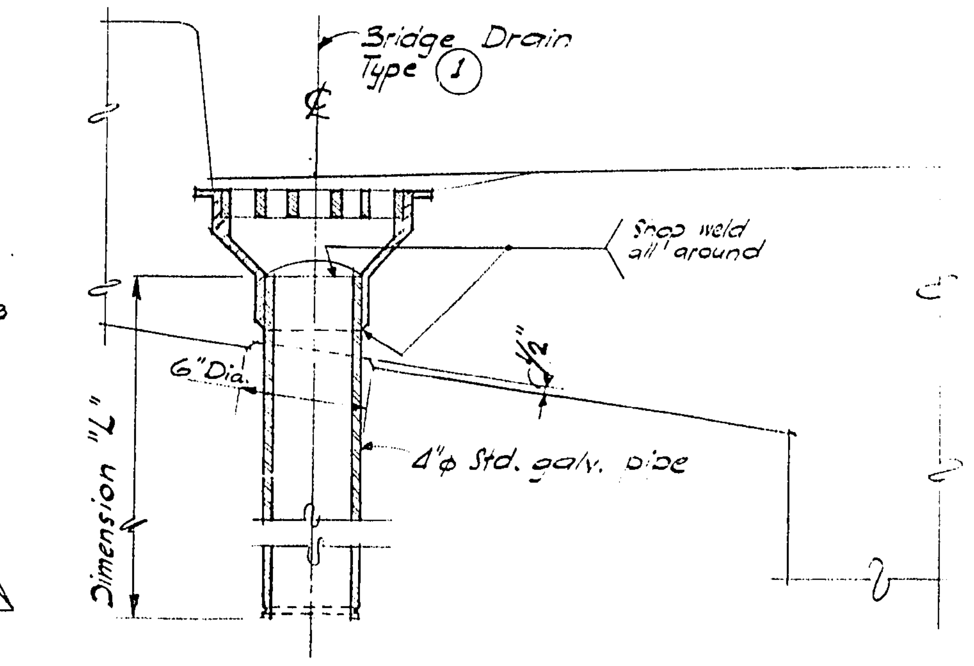


DOWNSPOUT DETAIL @ HINGE

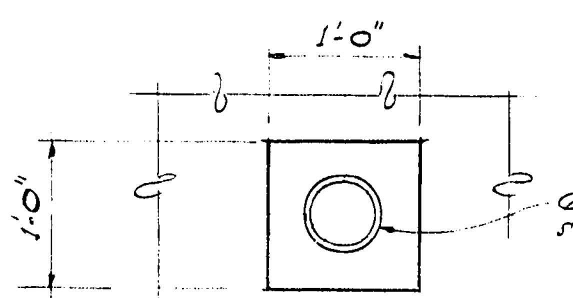


TYPE 5 BRIDGE DRAIN DETAIL

(* Omit elbow for drains at piers.)

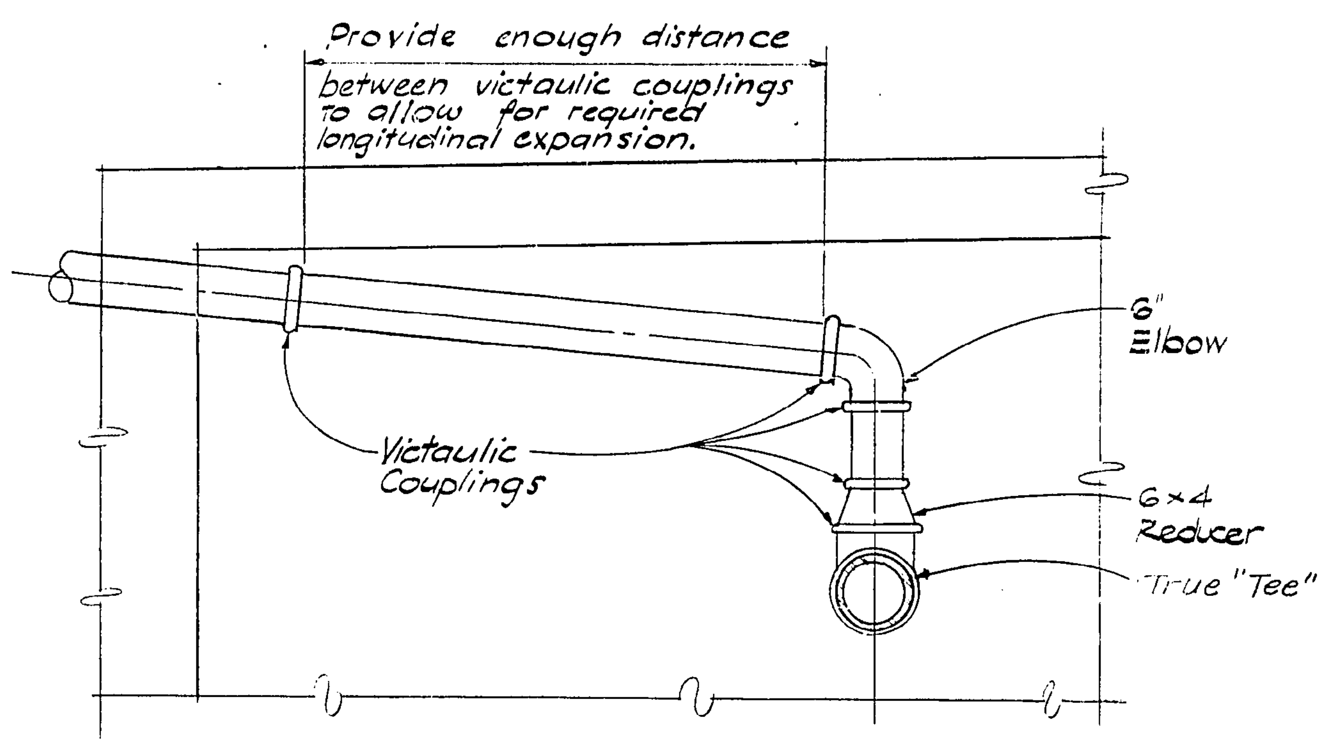


TYPE 1 BRIDGE DRAIN DETAIL

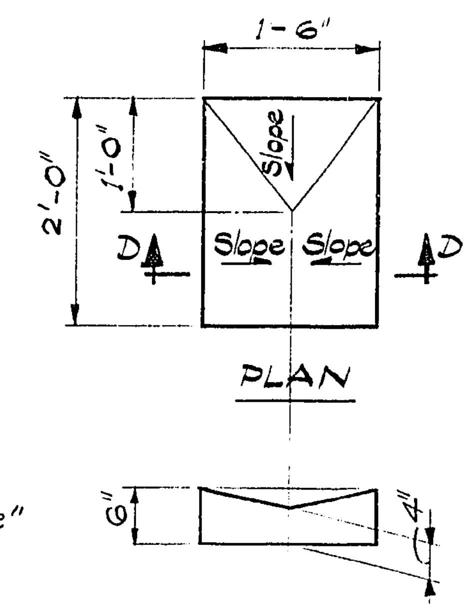


S.B. ~ Splash Block
D.P.+ ~ Drain Pipe & Conc. Inlet
D.P. ~ Drain Pipe

VIEW A-A

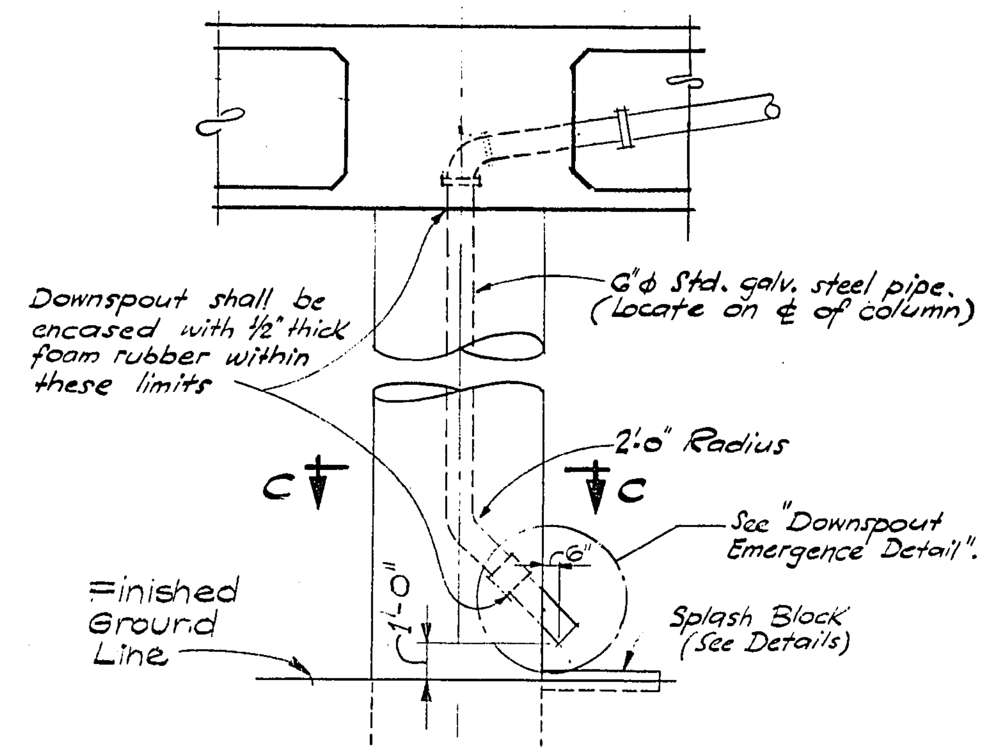


SECTION B-B

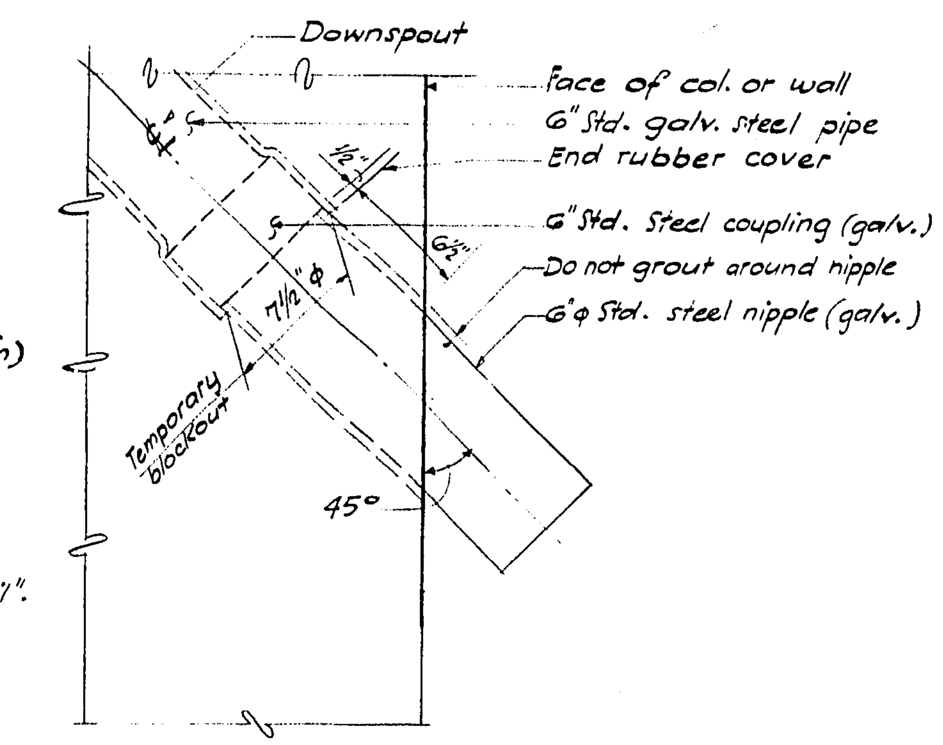


SECTION D-D

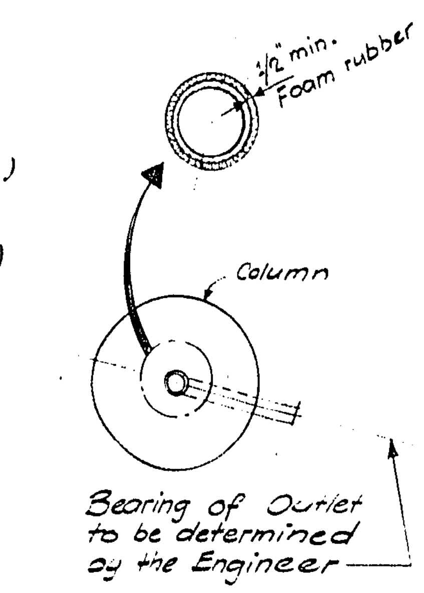
SPLASH BLOCK DETAILS



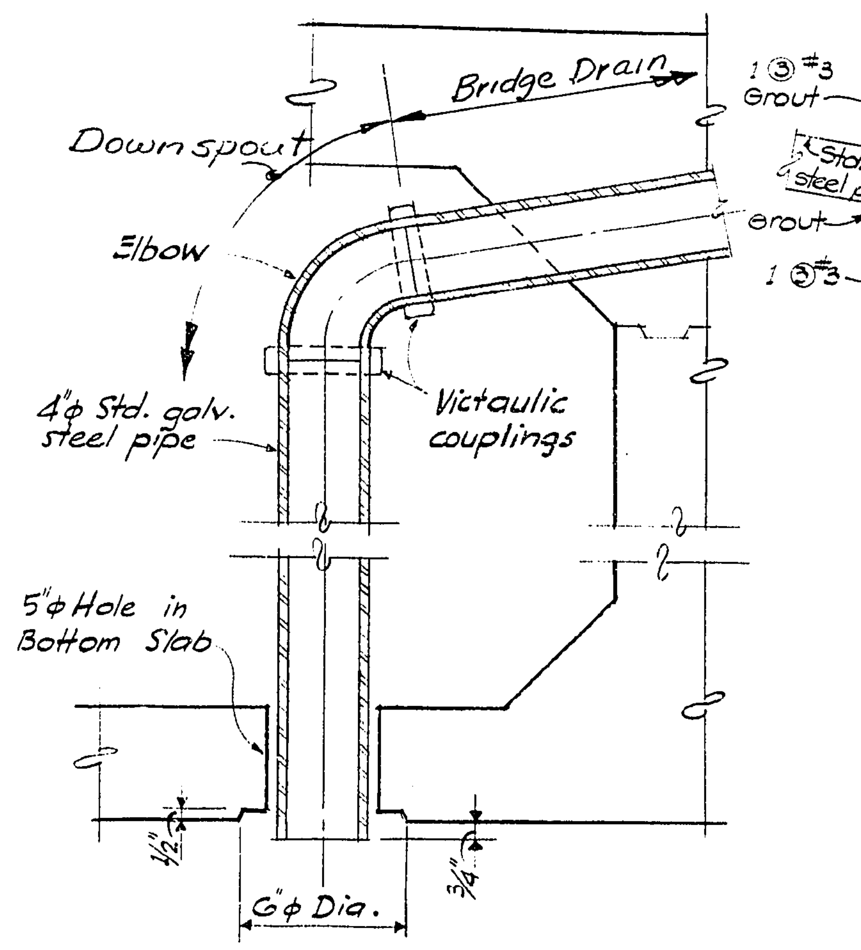
ELEVATION
DOWNSPOUT DETAILS



DOWNSPOUT EMERGENCE DETAIL

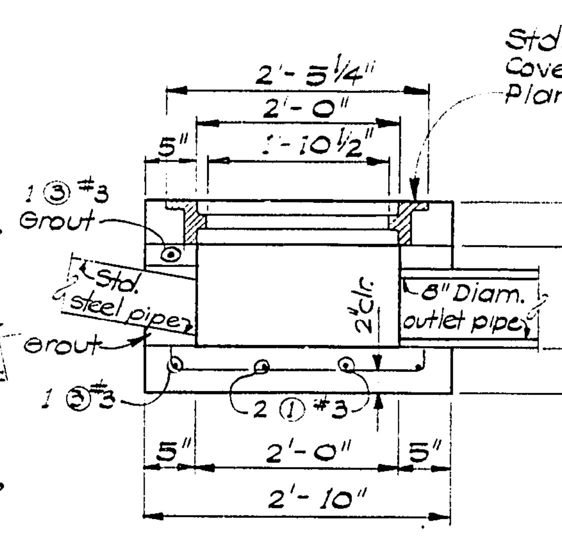


SECTION C-C

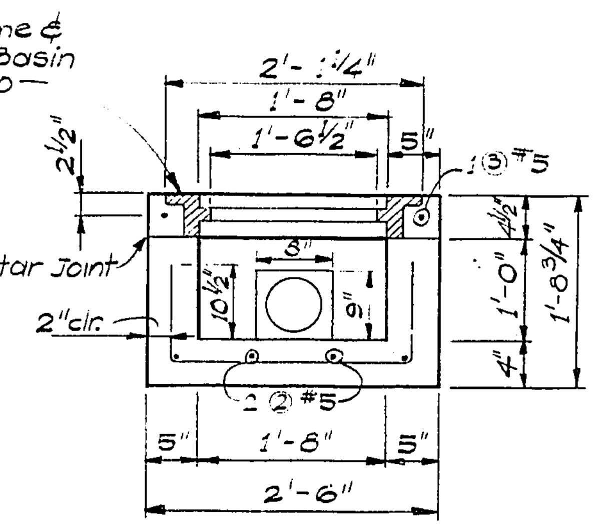


DOWNSPOUT ALTERNATE "A"

TYPICAL OVER RIVER



SECTION A-A



SECTION B-B

BAR LIST ALL DIMENSIONS ARE OUT TO OUT					
MARK	LOCATION	NO	SIZE	LENGTH	BENDING-DIAGRAM
1	Bottom Slab & Side Walls	2	3	4'-3"	① 2'-2"; ② 2'-6"; 1'-1½"
2	Bottom Slab & Side Walls	2	3	4'-7"	
3	Side Walls & Top Ring	3	3	9'-8"	2'-5"; 2'-1"; 4"; 4"

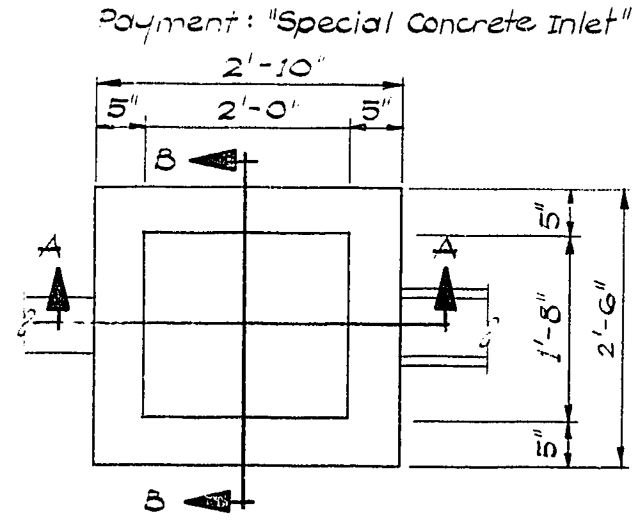
NOTES

The contractor shall have the option of furnishing the Special Concrete Inlet precast or cast in place. When cast in place, the first 12 inches above the base may be constructed of Cement Concrete Brick, the top ring shall be precast. When precast, Concrete shall be Class A; otherwise, all concrete shall be Class C.

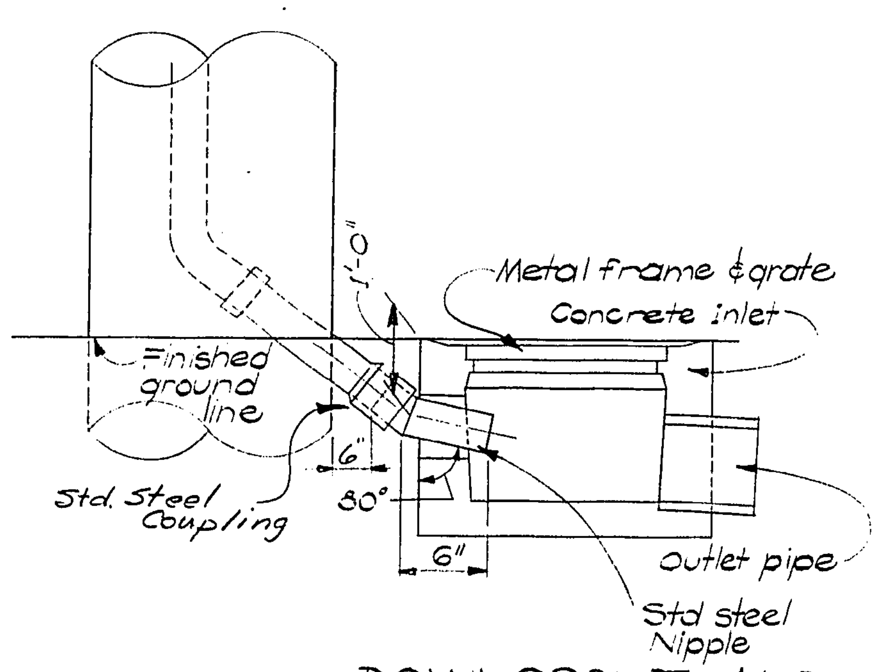
Steel reinforcing bars shall conform to ASTM Spec. A-305. When cast in place, steel reinforcing bars are omitted except for top ring.

The Standard Metal Frame and Cover shall be furnished and installed as indicated hereon and shall conform to the requirements of standard plan B-19 Solid Metal Cover for catch basin, and standard plan B-20 Metal Frame and Grate for Catch Basin, even though standard plans B-19 and B-20 are not included herewith. Prints of these plans are available from the Director of Highways, Olympia. See the Standard Specifications for further requirements. See Special Provisions.

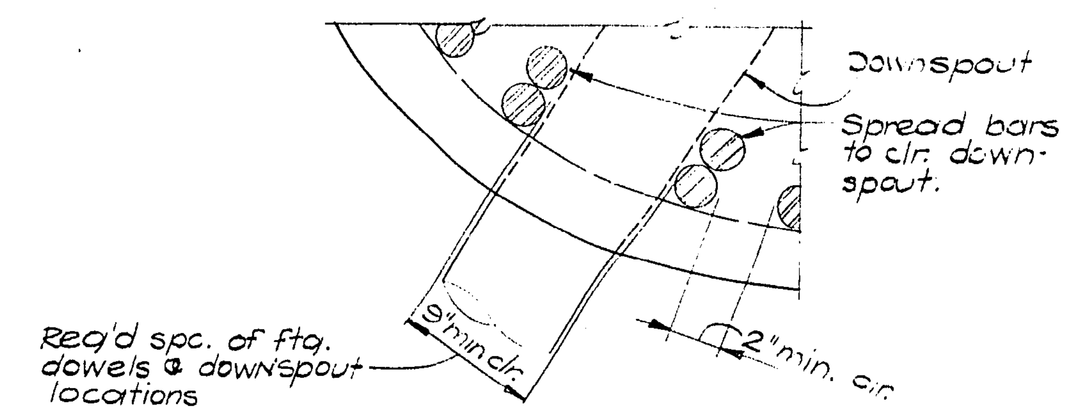
Payment: "Special Concrete Inlet" Per each.



PLAN



DOWNSPOUT AND INLET CONNECTION



TYP. COLUMN SECTION @ DOWNSPOUT EMERGENCE

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

DRAINAGE DETAILS

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN
F. L. MIVAISON — BAKER FERGUSON
N. WALSH — JOHN N. RUPP

APPROVED December 7, 1967 — BRIDGE ENGINEER

CONTRACT NO. 8382 — SHEET 279 OF 297 SHEETS

P/1995

QUANTITIES CHECKED

11-16-67

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178		280	297

DESIGNING ENGINEER
DESIGNED
DRAWN CHECKED
QUANTITIES FIGURED
QUANTITIES CHECKED

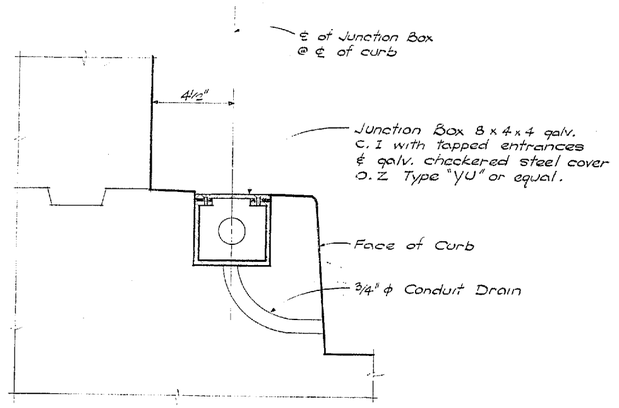
54

N-W & N-E Structure
ELECTRICAL DETAILS

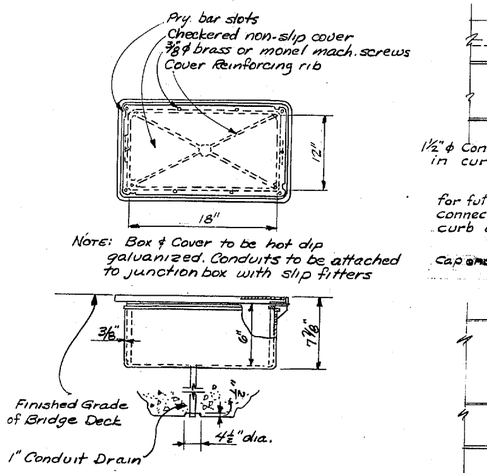
	BY	DATE
DRAWN		
TRACED		
CHECKED		
LOC. ENGR.		
DIST. ENGR.		

11-18-67

WOODINVILLE INTERCHANGE
N-E/N-W STRUCTURE
ELECTRICAL DETAILS SHEET 272 OF 297



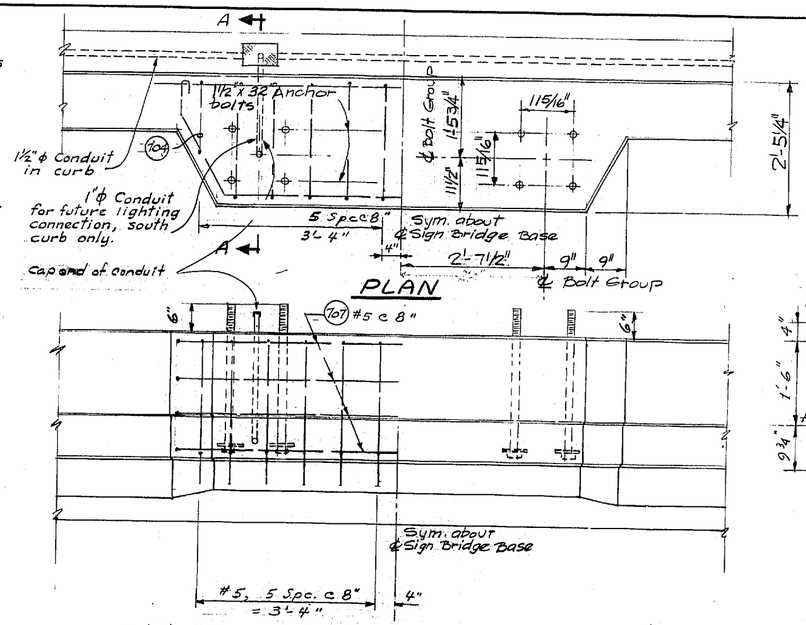
JUNCTION BOX IN CURB



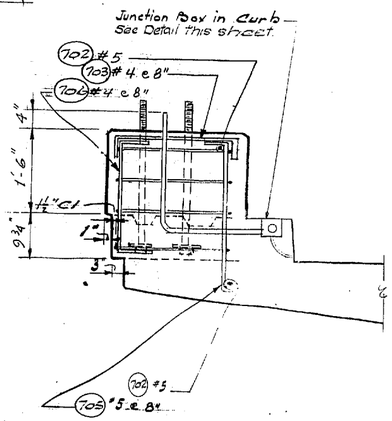
Note: Box & Cover to be hot dip galvanized. Conduits to be attached to junction box with slip fitters

JUNCTION BOX FOR BRIDGE DECK INSTALLATION

(Typical @ nosing locations)



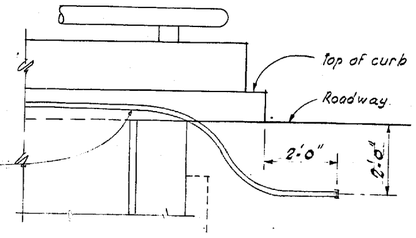
ELEVATION OF OUTSIDE FACE



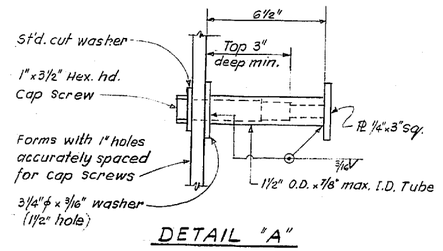
SECTION A-A

SIGN BRIDGE BASE DETAIL

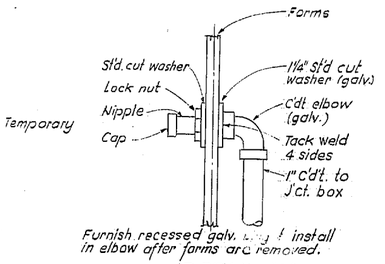
Bolts 1½"ϕ x 32" with square heads A.S.T.M. A-307 Grade A. Two heavy hex. nuts with 5x5x⅝" ℄ washer ea. bolt. Reinforcing shown is in addition to curb and rail base reinforcement. East sign Bridge Base shown, West sign Bridge Base is opposite hand.



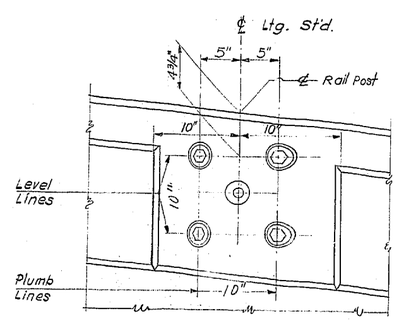
CONDUIT STUB-OUT DETAIL



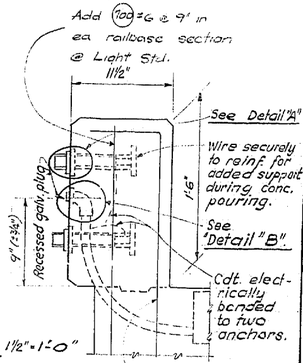
DETAIL "A"



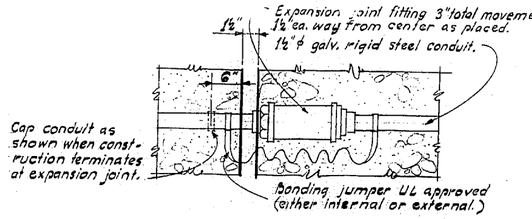
DETAIL "B"



OUTSIDE ELEVATIONS 1½"=1'-0"



LIGHTING BRACKET ANCHORAGE



CONDUIT EXPANSION JOINT

Use at all bridge expansion joints.

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

As Built Changes in Red 7-10-70

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

ELECTRICAL DETAILS

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN
P. L. MIVALSEN
H. WALSH
BAKER FERGUSON
JOHN H. RUPP

APPROVED December 7, 1967
BRIDGE ENGINEER

CONTRACT NO. 8382

SHEET 280 OF 297 SHEETS

P/1996

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178		281	297

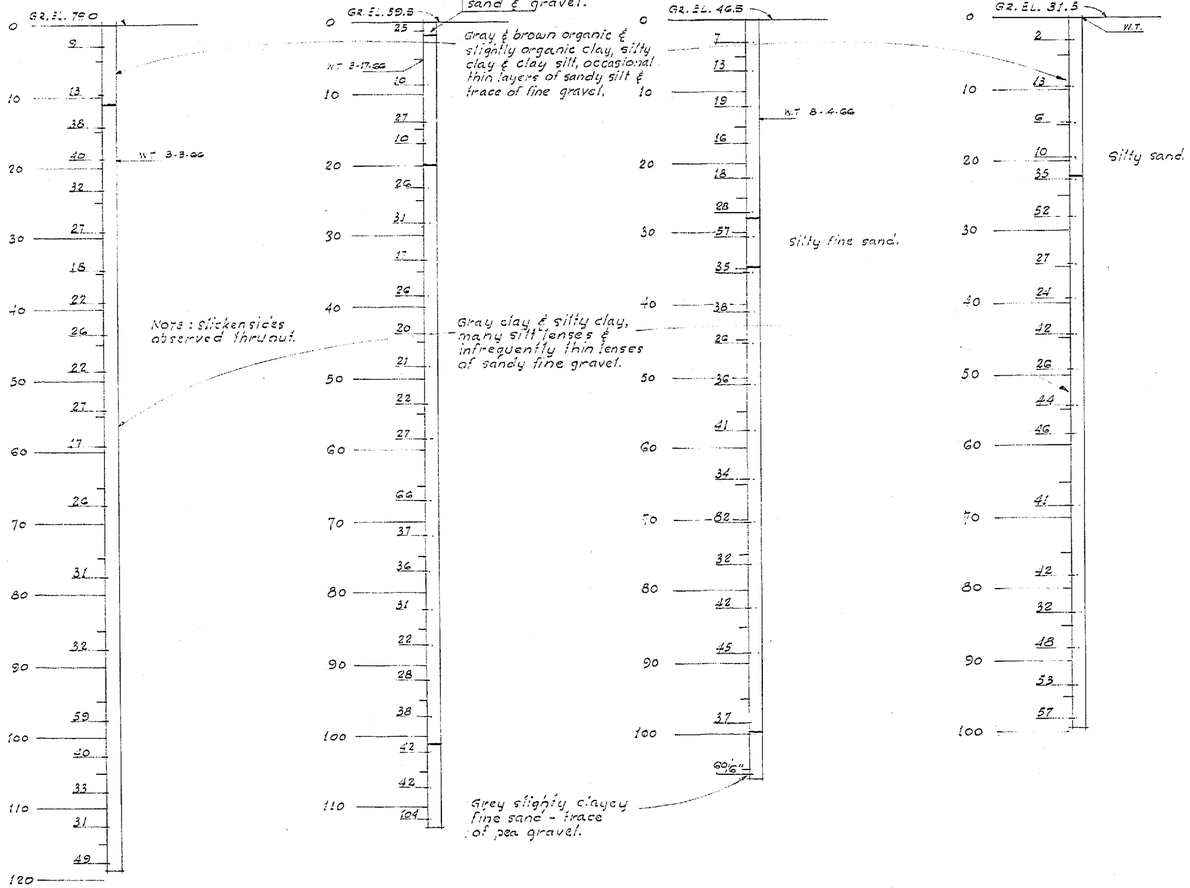
DESIGNING ENGINEER
DESIGNED
DETAILED & CHECKED
DRAWN BY
QUANTITIES FIGURED
QUANTITIES CHECKED

BY	DATE

DRAWN
TRACED
CHECKED
LEAD ENGR.
DIST. ENGR.

WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2-BO
N-W STRUCTURE
SHEET 122 OF 289 HOLE DATA

11467



TEST HOLE H-3-8

Sta. N-W 50+79.0 11'-0" Rt.

TEST HOLE H-3-7

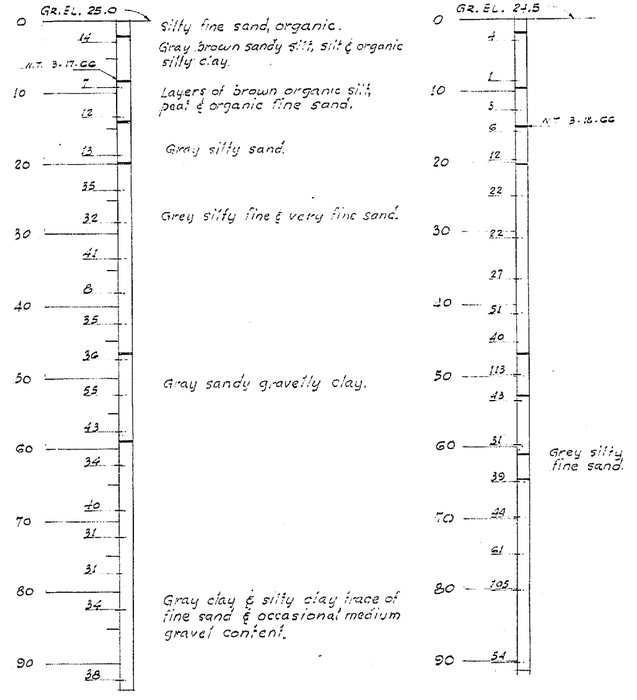
Sta. N-W 51+65.0 12:0" Lt.

TEST HOLE H-3-6

Sta. N-W 52+78.0 2:0" Rt. ℄

TEST HOLE H-3-9

Sta. N-W 53+93.0 53:0" Rt.

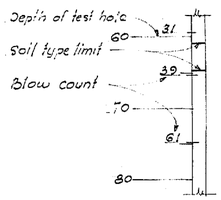


TEST HOLE H-3-5

Sta. N-W 55+39 2:0" Lt. ℄

TEST HOLE H-3-4

Sta. N-W 56+99.0 on ℄



TEST HOLE LEGEND

DATUM

USC & G.S.

MEAN SEA LEVEL-1947 ADJ.

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

N-W TEST HOLE DATA

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZANN, CHAIRMAN

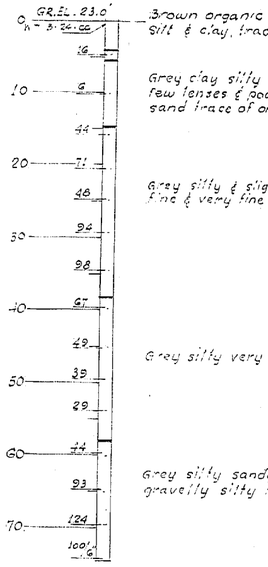
R. L. McPHERSON — BAKER FERGUSON
H. WALSH — JOHN M. RUPP

APPROVED December 7, 1967 — BRIDGE ENGINEER
SHEET 281 OF 297 SHEETS
CONTRACT NO. 8382

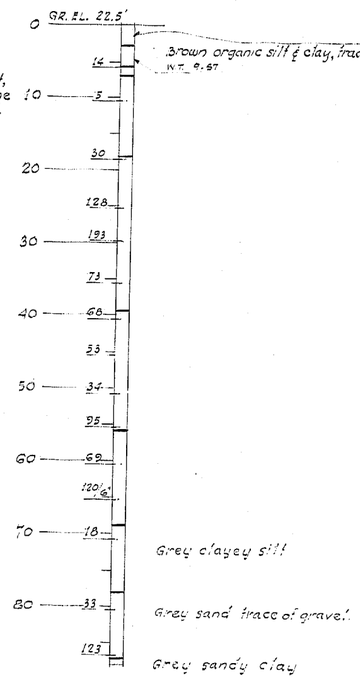
P/1996

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178		282	297

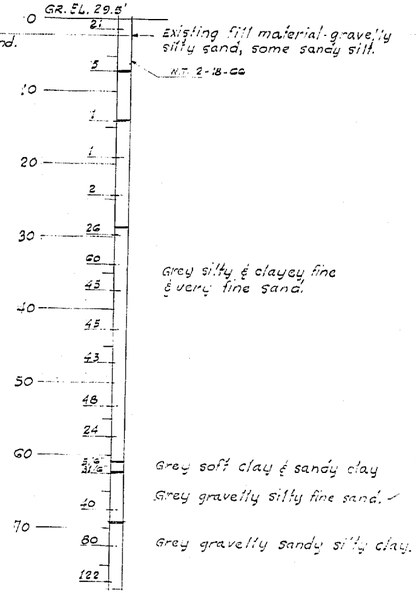
DESIGNING ENGINEER
DESIGNED
DESIGN CHECKED
DRAWN BY
QUANTITIES FIGURED
QUANTITIES CHECKED



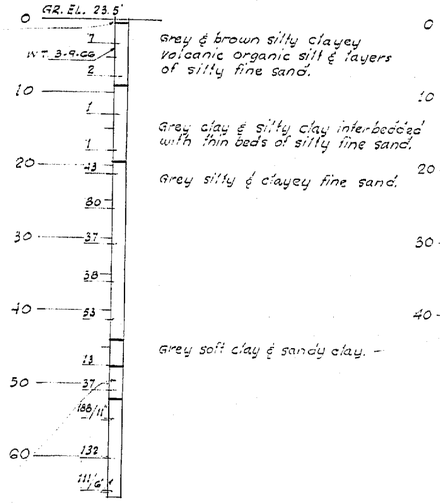
TEST HOLE H-3-3
Sta. N-W. 59+30.0 on ℄



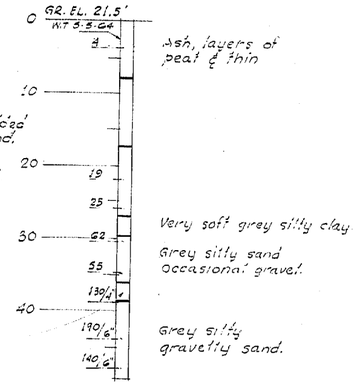
TEST HOLE H-4
Sta. N-W. 60+97 30'-0" Rt. ℄



TEST HOLE H-3-2
Sta. N-W. 62+12.0 41'-0" Rt. ℄



TEST HOLE H-3-1
Sta. N-W. 63+82.0 on ℄



TEST HOLE H-10
Sta. N-W. 65+51.0 25'-0" Rt. ℄

DATUM

USC & G.S.
MEAN SEA LEVEL-1947 ADJ.

depth of test hole 70
soil type limit 33
Blow count 80 123

TEST HOLE LEGEND

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

N-W TEST HOLE DATA

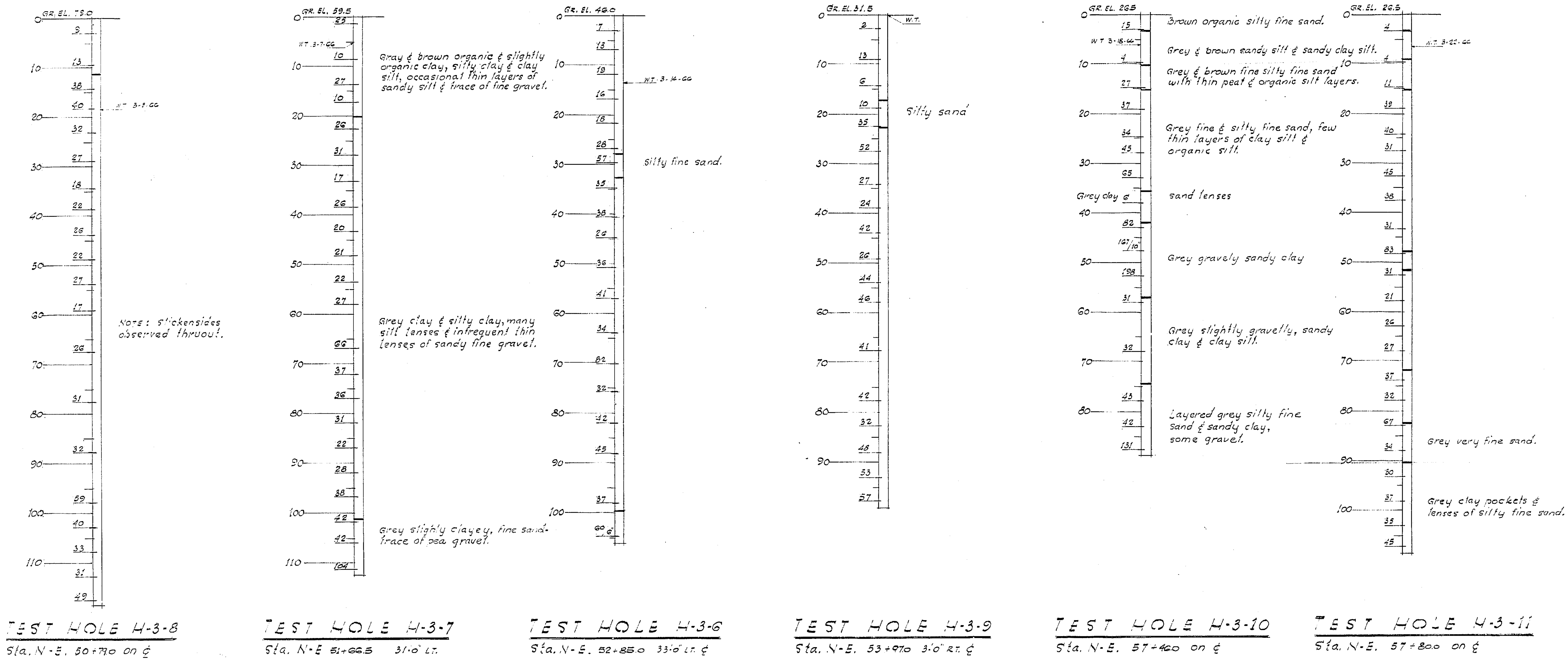
WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON
GEORGE D. ZANN, CHAIRMAN
P. L. MYKLEBON
H. WALSH
BAKER HEROUTON
JOHN N. RUPP
APPROVED December 7, 1967
BRIDGE ENGINEER
CONTRACT NO. 8382
SHEET 282 OF 297 SHEETS

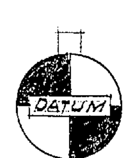
DRAWN
TRACED
DESIGNED
LOC. ENGR.
DIST. ENGR.
DATE

FED. NO. I-RE/PSH NO. 2-80
I-405 ST. HEIGHTS DATA
TEST HOLE DATA
SHEET 274 OF 289
11-1967

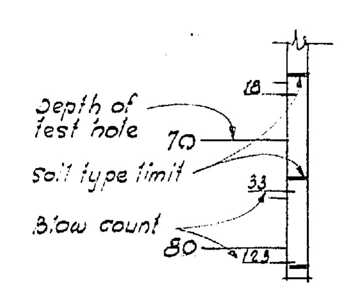
P/1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178		283	297





USC & G.S.
MEAN SEA LEVEL-1947 ADJ.



TEST HOLE LEGEND

DATE	REVISION	BY

WORTHINGTON, SKILLING HELLE & JACKSON
Consulting Civil and Structural Engineers
SEATTLE WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

N-W TEST HOLE DATA

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

APPROVED December 7, 1967
SHEET 283 OF 297 SHEETS
CONTRACT NO. 8382

DESIGNING ENGINEER / DESIGNED / DESIGN CHECKED / DRAWN BY / QUANTITIES FIGURED / QUANTITIES CHECKED

DRAWN / TRACED / CHECKED / LOC. ENGR. / DIST. ENGR. — BY — DATE

11-16-67

WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2-BO
N-W & N-E STRUCTURE
SHEET OF

9/1996

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178	284	297

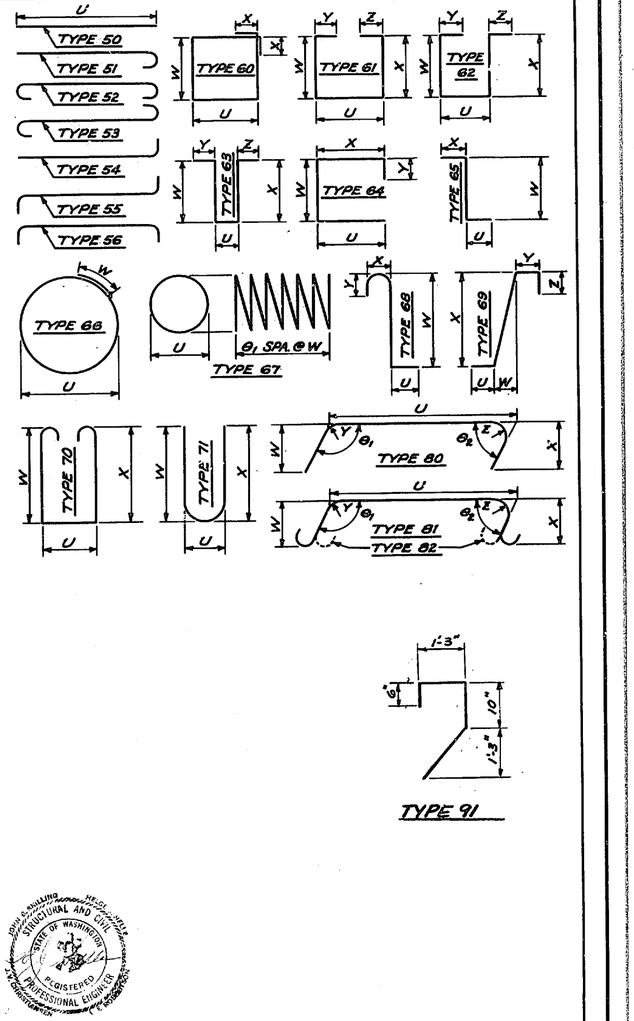
S = Bar is included in substructure quantities.
F = Bar to be field welded.
T = Tie or Stirrup.
H = A.S.T.M. A-432.
V = Bar dimensions vary between dimensions shown on this line and the following line.

MARK NO.	LOCATION	SIZE	NO. REQ'D.	BEND TYPE	TIE OR STIR	FLD. WELD	SUBSTR.	A-432	VARIES	NO. EACH	U Ft.	U In.	W Ft.	W In.	X Ft.	X In	Y Ft.	Y In.	Z Ft.	Z In.	θ1 Deg.	θ2 Deg.	LENGTH Ft.	LENGTH In.	WEIGHT Lbs.
	[illegible] N-W/N-E UNIT 1																								
1	NW PIER 1 CAISSON VERT	18	54	50			S				31	1.0											31	1.	22828
2	NW PIER 1 CAISSON TIES	4	42	66			S				4	4.0	1	6.0									15	0.	420
3	NW PIER 1 CAISSON CAP TIE	5	24	61	T		S				6	8.0	3	3.0	3	3.0		0.0		0.0			12	9.	319
4	NW PIER 1 CAISSON CAP VER	4	36	50			S				5	2.0											5	2.	124
5	NW PIER 1 ABUT TIES	4	82	56	T		S				2	7.5											3	3.	180
6	NW PIER 1 ABUT BOT	11	8	50			S				26	0.0											26	0.	829
7	NW PIER 1 ABUT BOT	7	2	80			S				13	0.0	2	0.0	2	7.0		6.1		6.1	135	135	20	6.	84
8	NW PIER 1 ABUT BOT	7	2	80			S				13	0.0	2	4.0	2	7.0		6.1		6.1	135	135	21	0.	86
9	NW PIER 1 ABUT TIES	4	70	56	T		S					8.5											1	4.	64
10	NW PIER 1 ABUT HORIZ EF C	5	10	50			S				23	0.0											23	0.	240
11	NW PIER 1 ABUT HORIZ EF E	5	12	50			S		V	4	2	9.0											3	9.	47
											4	9.0													
12	NW PIER 1 ABUT HORIZ EF E	5	8	50			S				4	9.0											4	9.	40
13	NW PIER 1 ABUT HORIZ TOP	11	8	50			S				38	6.0											38	6.	1636
14	NW PIFR 1 ABUT HORIZ N F	7	5	50			S		V	1	45	0.0											47	0.	480
											49	0.0													
15	NW PIFR 1 ABUT HORIZ NF	7	3	50			S		V	1	49	6.0											50	0.	307
											50	6.0													
16	NW PIER 1 ABUT HORIZ FF	5	3	50			S		V	1	45	0.0											47	0.	147
											49	0.0													
17	NW PIER 1 ABUT HORIZ FF	5	1	50			S				50	0.0											50	0.	52
18	NW PIER 1 PAVT SEAT HOR	5	3	50			S				39	8.0											39	8.	124
19	NW PIER 1 PAVT SEAT TIE	4	67	91	T		S				4	4.0											4	4.	194
20	NW PIER 1 ABUT HORIZ TOP	7	2	69			S				5	7.0	1	3.0	40	0.0	5	7.0					51	2.	209
21	NW PIER 1 ABUT VERT	4	16	50			S		V	2	3	0.0											6	6.	69
											10	0.0													
22	NW PIFR 1 ABUT VERT	4	16	50			S		V	2	4	6.0											8	0.	86
											11	6.0													
23	NW PIER 1 ABUT VERT	7	20	50			S				11	6.0											11	6.	470
24	NW PIER 1 ABUT VERT	4	20	50			S		V	10	5	3.0											5	4.	72
											5	6.0													
25	NW PIER 1 ABUT VERT	4	34	50			S				8	0.0											8	0.	182
26	NW PIER 1 ABUT VERT	4	21	50			S		V	7	11	7.0											12	0.	168
											12	5.0													
27	NW PIER 1 ABUT HOR	5	11	54			S				4	8.0											5	6.	63
28	NW PIER 1 ABUT VERT	5	3	50			S				3	3.0											3	3.	10
29	NW PIER 1 ABUT VERT	5	3	50			S				5	0.0											5	0.	16
30	NW PIFR 1 ABUT END	5	2	80			S				4	6.0	2	6.0	2	6.0		4.4		4.4	135	135	12	4.	26
31	NW PIER 1 ABUT END	5	2	80			S				3	6.0	3	6.0	3	6.0		4.4		4.4	135	135	14	2.	29
32	ABUT HORIZ FF	5	2	50			S				51	0.0											51	0.	106
35	NW/NE STR. PIER 2E TIES	4	52	66			S				6	4.0	1	6.0									21	3.	739
36	NW/NE STR. PIER 2E VERT	14	50	50			S				50	0.0											45	0.	17212
37	NW/NE STR. PIER 2E DOWEL	14	17	50		F	S				12	0.0											12	0.	1561
38	NW/NE STR. PIER 2E DOWEL	14	17	50		F	S				17	0.0											17	0.	2211
39	NW/NE STR. PIER 2W TIES	4	54	66			S				6	4.0	1	6.0									21	3.	767
39	NW/NE STR. PIER 2W VERT	14	50	50			S				51	6.0											46	6.	17786
40	NW/NE STR. PIER 2W DOWEL	14	17	50		F	S				12	0.0											12	0.	1561
41	NW/NE STR. PIER 2W DOWEL	14	17	50		F	S				17	0.0											17	0.	2211
42	NW STRUCT PIER 3 VERT	14	38	50			S				79	6.0											79	6.	23111
43	NW STRUCT PIER 3 DOWELS	18	21	50		F	S				13	8.0											13	8.	3903
44	NW STRUCT PIER 3 DOWELS	18	21	50		F	S				20	4.0											20	4.	5807
45	NW STRUCT PIER 3 TIES	4	49	66			S				7	3.0	1	6.0									24	2.	790
45	NE STRUCT PIER 3 TIES	4	49	66			S				7	3.0	1	6.0									24	2.	790
48	NW STRUCT PIER 3 VERT	14	38	50			S				79	6.0											79	6.	23111
49	NE STRUCT PIER 3 DOWELS	18	23	50		F	S				13	8.0											13	8.	4275
50	NE STRUCT PIER 3 DOWELS	18	23	50		F	S				20	4.0											20	4.	6360
111	NW/NE STRUCT COL 2E TIES	4	28	66			S				5	9.0	1	6.0									19	5.	363
112	NW/NE STRUCT COL 2E VERT	14	17	50		F	S				12	3.0											12	3.	1593
113	NW/NE STRUCT COL 2E VERT	14	17	50		F	S				19	0.0											19	0.	2471
111	NW/NE STRUCT COL 2W TIES	4	28	66			S				5	9.0	1	6.0									19	5.	363
114	NW/NE STRUCT COL 2W VERT	14	17	50		F	S				11	10.0											11	10.	1539
115	NW/NE STRUCT COL 2W VERT	14	17	50		F	S				18	6.0											18	6.	2406
111	NW STRUCT COL 3 TIES	4	38	66			S				5	9.0	1	6.0									19	5.	493
116	NW STRUCT COL 3 VFRT	18	23	50		F	S				23	3.0											23	3.	7273
117	NW STRUCT COL 3 VERT	18	23	50		F	S				29	11.0											29	11.	9358
111	NE STRUCT COL 3 TIES	4	29	66			S				5	9.0	1	6.0									19	5.	376
141	NE STRUCT COL 3 VERT	18	23	50		F	S				14	0.0											14	0.	4379
142	NE STRUCT COL 3 VERT	18	23	50		F	S				20	8.0											20	8.	6465
200	BOTTOM SLAB BOT TRANSV	5	126	65					V	3	24	3.0	1	0.0									22	0.	2891
											19	3.0													
201	BOTTOM SLAB BOT TRANSV	5	165	61							19	8.0	1	0.0	1	0.0							21	2.	3643
202	BOTTOM SLAB BOT TRANSV	5	18	50					V	2	11	0.0											12	6.	235
											14	0.0													
203	BOTTOM SLAB BOT LONG P1-P3	5	1	50							6	0.0											6	0.	6
204	BOTTOM SLAB BOT LONG P1-P3	5	5	50							10	0.0											10	0.	52
205	BOTTOM SLAB BOT LONG P1-P3	5	3	50							20	9.0											20	9.	65
206	BOTTOM SLAB BOT LONG P1-P3	5	2	50							14	0.0											14	0.	29
207	BOTTOM SLAB BOT LONG P1-P3	5	3	50							9	6.0											9	6.	30
208	BOTTOM SLAB BOT LONG P1-P3	14	6	50							37	0.0											37	0.	1698
209	BOTTOM SLAB BOT LONG P1-P3	14	6	50							53	0.0											53	0.	2433
210	BOTTOM SLAB BOT LONG P1-P3	14	6	50							59	3.0											59	3.	2720
211	BOTTOM SLAB BOT LONG P1-P3	14	6	50							67	3.0											67	3.	3087
212	BOTTOM SLAB BOT LONG P1-P3	14	6	54							74	0.0											76	1.	3492
213	BOTTOM SLAB BOT LONG P1-P3	14	6	54							77	0.0											79	1.	3630
214	BOTTOM SLAB BOT LONG P1-P3	14	6	54		F					73	0.0											75	1.	3446
215	BOTTOM SLAB BOT LONG P1-P3	14	6	54		F					78	0.0											80	1.	3676
216	BOTTOM SLAB BOT LONG P1-P3	14	6	50		F					21	3.0											21	3.	975
217	BOTTOM SLAB BOT LONG P1-P3	14	6	50		F					25	3.0											25	3.	1159
218	BOTTOM SLAB BOT LONG P1-P3	5	14	50							32	6.0											32	6.	475
219	BOTTOM SLAB BOT LONG P1-P3	5	4	50							25	0.0											25	0.	104
220	BOTTOM SLAB BOT LONG P1-P3	5	4	50							25	6.0											25	6.	106
221	BOTTOM SLAB BOT LONG P1-P3	5	3	50							22	6.0											22	6.	70
222	BOTTOM SLAB BOT LONG P1-P3	5	1	50							42	0.0											42	0.	44
223	BOTTOM SLAB BOT LONG P1-P3	5	1	50							31	0.0											31	0.	32
224	BOTTOM SLAB BOT LONG P1-P3	5	1	50							24	6.0											24	6.	26
225	BOTTOM SLAB BOT LONG P1-P3	5	1	50							43	0.0											43	0.	45
226	BOTTOM SLAB BOT LONG P1-P3	14	4	50							38	0.0											38	0.	1163

S = Bar is included in substructure quantities.
F = Bar to be field welded.
T = Tie or Stirrup
H = A.S.T.M. A-432.
V = Bar dimensions vary between dimensions shown on this line and the following line.

MARK NO.	LOCATION	SIZE	NO. REQ'D.	BEND TYPE	TIE OR STIR	FLD. WELD	SUBSTR.	A-432	VARIES	NO. EACH	U Ft.	U In	W Ft.	W In.	X Ft.	X In	Y Ft.	Y In.	Z Ft.	Z In.	θ1 Deg.	θ2 Deg.	LENGTH Ft.	LENGTH In.	WEIGHT Lbs.
227	BOTTOM SLAB BOT LONG P1-P3	14	4	50							54	0.0											54	0.	1652
228	BOTTOM SLAB BOT LONG P1-P2	14	4	50							60	0.0											60	0.	1836
229	BOTTOM SLAB BOT LONG P1-P2	14	4	50							68	0.0											68	0.	2081
230	BOTTOM SLAB BOT LONG P1-P2	14	4	54					V	2	74	3.0											76	11.	2355
											75	6.0													
231	BOTTOM SLAB BOT LONG P1-P2	14	4	54					V	2	77	3.0											79	11.	2447
											78	6.0													
232	BOTTOM SLAB BOT LONG P1-P2	14	4	54		F			V	2	71	6.0											75	1.	2298
											74	6.0													
233	BOTTOM SLAB BOT LONG P1-P2	14	4	54		F			V	2	76	6.0											79	10.	2443
											79	0.0													
234	BOTTOM SLAB BOT LONG P1-P2	14	2	50		F					20	0.0											20	0.	306
235	BOTTOM SLAB BOT LONG P1-P2	14	2	50		F					20	0.0											20	0.	306
236	BOTTOM SLAB BOT LONG P1-P2	14	2	50		F					51	6.0											51	6.	788
237	BOTTOM SLAB BOT LONG P1-P2	14	2	50		F					21	0.0											21	0.	321
240	BOTTOM SLAB BOT LG P2-3 NW	5	6	50							20	6.0											20	6.	128
241	BOTTOM SLAB BOT LG P2-3 NW	5	6	50							32	9.0											32	9.	205
242	BOTTOM SLAB BOT LG P2-3 NW	14	4	50							37	0.0											37	0.	1132
243	BOTTOM SLAB BOT LG P2-3 NW	14	4	50							53	0.0											53	0.	1622
244	BOTTOM SLAB BOT LG P2-3 NW	14	4	50							62	0.0											62	0.	1897
245	BOTTOM SLAB BOT LG P2-3 NW	14	6	50							69	0.0											69	0.	3167
246	BOTTOM SLAB BOT LG P2-3 NW	14	6	50							75	0.0											75	0.	3442
247	BOTTOM SLAB BOT LG P2-3 NW	14	4	50		F					80	0.0											80	0.	2448
248	BOTTOM SLAB BOT LG P2-3 NW	14	4	50		F					58	0.0											58	0.	1775
249	BOTTOM SLAB BOT LG P2-3 NW	14	2	50		F					77	0.0											77	0.	1178
250	BOTTOM SLAB BOT LG P2-3 NW	14	2	50		F					69	0.0											69	0.	1056
251	BOTTOM SLAB BOT LG P2-3 NW	14	4	50		F					31	9.0											31	9.	972
252	BOTTOM SLAB BOT LG P2-3 NW	14	2	50		F					39	6.0											39	6.	604
253	BOTTOM SLAB BOT LG P2-3 NW	14	4	50		F					37	6.0											37	6.	1147
254	BOTTOM SLAB BOT LG P2-3 NW	14	6	50		F					32	0.0											32	0.	1469
255	BOTTOM SLAB BOT LG P2-3 NW	5	2	50							16	0.0											16	0.	33
256	BOTTOM SLAB BOT LG P2-3 NW	5	2	50							18	0.0											18	0.	38
257	BOTTOM SLAB BOT LG P2-3 NW	5	2	50							8	0.0											8	0.	17
258	BOTTOM SLAB BOT LG P3 NW	5	4	50							35	6.0											35	6.	148
259	BOTTOM SLAB BOT LG P3 NW	5	10	50							40	0.0											40	0.	417
260	BOTTOM SLAB BOT LG P3 NW	11	4	50							24	0.0											24	0.	510
261	BOTTOM SLAB BOT LG P2-P3	5	2	50							24	6.0											24	6.	51
262	BOTTOM SLAB BOT LG P3 NW	11	4	50							10	0.0											10	0.	213
264	BOTTOM SLAB BOT LG P2-3 NW	5	2	50							31	6.0											31	6.	66
265	BOTTOM SLAB BOT LG P2-3 NW	5	6	50							30	6.0											30	6.	191
266	BOTTOM SLAB BOT LG P2-3 NE	5	2	50							20	6.0											20	6.	43
267	BOTTOM SLAB BOT LG P2-3 NE	5	5	50							33	0.0											33	0.	172
268	BOTTOM SLAB BOT LG P2-3 NE	5	5	50							32	0.0											32	0.	167
269	BOTTOM SLAB BOT LG P2-3 NE	5	2	50							20	0.0											20	0.	42
270	BOTTOM SLAB BOT LG P2-3 NE	14	2	50							37	0.0											37	0.	566
271	BOTTOM SLAB BOT LG P2-3 NE	14	6	50							53	0.0											53	0.	2433
272	BOTTOM SLAB BOT LG P2-3 NE	14	4	50							62	0.0											62	0.	1897
273	BOTTOM SLAB BOT LG P2-3 NE	14	6	50							69	0.0											69	0.	3167
274	BOTTOM SLAB BOT LG P2-3 NE	14	6	50							75	0.0											75	0.	3442
275	BOTTOM SLAB BOT LG P2-3 NE	14	4	50		F			V	2	80	0.0											79	6.	2433
											79	0.0													
276	BOTTOM SLAB BOT LG P2-3 NE	14	2	50		F					77	6.0											77	6.	1186
277	BOTTOM SLAB BOT LG P2-3 NE	14	2	50		F					33	0.0											33	0.	505
278	BOTTOM SLAB BOT LG P2-3 NE	14	2	50		F					39	9.0											39	9.	608
279	BOTTOM SLAB BOT LG P2-3 NE	14	1	50		F					47	0.0											47	0.	360
280	BOTTOM SLAB BOT LG P2-3 NE	14	4	50		F					58	0.0											38	0.	1163
281	BOTTOM SLAB BOT LG P2-3 NE	14	4	50		F					58	0.0											58	0.	1775
282	BOTTOM SLAB BOT LG P2-3 NE	14	2	50		F					69	0.0											69	0.	1056
283	BOTTOM SLAB BOT LG P2-3 NE	14	6	50		F					32	0.0											32	0.	1469
284	BOTTOM SLAB BOT LG P2-3 NE	5	4	50							16	0.0											16	0.	67
285	BOTTOM-SLAB BOT LG P2-3 NE	5	4	50							8	0.0											8	0.	33
288	BOTTOM SLAB BOT LG P3 NE	5	4	50							36	0.0											36	0.	150
289	BOTTOM SLAB BOT LG P3 NE	5	10	50							39	6.0											39	6.	412
290	BOTTOM SLAB BOT LG P3 NE	11	2	50							24	0.0											24	0.	255
291	BOTTOM SLAB BOT LG P3 NE	11	4	50							10	0.0											10	0.	213
292	BOTTOM SLAB TOP TRANSV	5	126	65					V	3	24	3.0	1	0.0	1	0.0							22	6.	2957
											19	3.0													
201	BOTTOM SLAB TOP TRANSV	5	165	61							19	8.0	1	0.0	1	0.0							21	2.	3643
202	BOTTOM SLAB TOP TRANSV	5	18	50					V	2	11	0.0											12	6.	235
											14	0.0													
296	BOTTOM SLAB TOP LONGIT	5	185	50							40	0.0											40	0.	7718
297	BOTTOM SLAB TOP LONGIT	5	32	50							35	0.0											35	0.	1168
298	BOTTOM SLAB TOP LONGIT	5	9	50							14	0.0											14	0.	131
301	BOTTOM SLAB BEAM SECT A-A	8	4	50							16	0.0											16	0.	171
302	BOTTOM SLAB BEAM SECT A-A	5	16	63	T							7.0	4	7.0	4	7.0		8.0		8.0			10	8.	178
303	BOTTOM SLAB BEAM SECT A-A	5	8	56							11	0.0											12	7.	105
304	BOTTOM SLAB BEAM SECT A-A	5	12	50					V	4	3	6.0											4	6.	56
											5	6.0													
305	BOTTOM SLAB BEAM SECT A-A	6	4	71					V	1	4	0.0	2	0.0	2	0.0							7	11.	47
											10	0.0	2	0.0	2	0.0									
306	BOT SLAB BOT AT P2	14	1	50		F					21	0.0											21	0.	161
307	BOT SLAB BOT AT P2	14	1	50		F					47	6.0											47	6.	363
308	BOT SLAB BOT AT P2	14	1	50		F					16	6.0											16	6.	126
309	BOT SLAB BOT AT P2	14	1	50		F					52	6.0											52	6.	402
310	BOT SLAB BOT AT P2	14	1	50		F					35	0.0											35	0.	268
311	BOT SLAB BOT AT P2	14	2	50		F					26	0.0											26	0.	398
315	BOTTOM SLAB BOT LONG P2	11	6	50							13	4.0											13	4.	425
350	INT & EXT WEB LONGIT TOP	10	8	50							66	0.0											66	0.	2272
351	INT & EXT WEB LONGIT TOP	10	4	54							67	3.0											68	10.	1185
352	INT & EXT WEB LONGIT TOP	10	12	50							45	3.0											45	3.	2337
353	INT & EXT WEB LONGIT TOP	8	2	54							64	6.0											65	8.	351
354	INT & EXT WEB LONGIT TOP	8	8	50							68	3.0											68	3.	1458
355	INT & EXT WEB LONGIT TOP	8	12	50							50	9.0											50	9.	1626
356	INT & EXT WEB LONGIT CTR	4	108	50							40	0.0											40	0.	2886
357	INT & EXT WEB LONGIT CTR	4	24	50							33	0.0											33	0.	529
358	INT & EXT WEB LONGIT CTR	4	4	54							27	0.0											27	8.	74
359	INT & EXT WEB LONGIT CTR	4	8	54							13	0.0											13	8.	73

BENDING DIAGRAMS



TYPE 91

J.V. CHRISTIANSEN

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

BAR LIST N-W & N-E UNIT I

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN
F. L. MIKALSON
H. WALSH
BAKER FERGUSON
JOHN N. RUPP

C. H. ANDREWS

APPROVED December 7, 1967
BRIDGE ENGINEER

As-Built Changes in [illegible]
CONTRACT NO. 8382
SHEET 284 OF 297 SHEETS

P/1995

Bridge Design Engineer
Supervising Bridge Engr.
Designed
Design Checked

NW/NE STRUCTURE BAR LIST-UNIT 1
SHEET 276 OF 289 11-16-67

S = Bar is included in substructure quantities.
F = Bar to be field welded.
T = Tie or Stirrup.
H = A.S.T.M. A-432.
V = Bar dimensions vary between dimensions shown on this line and the following line.

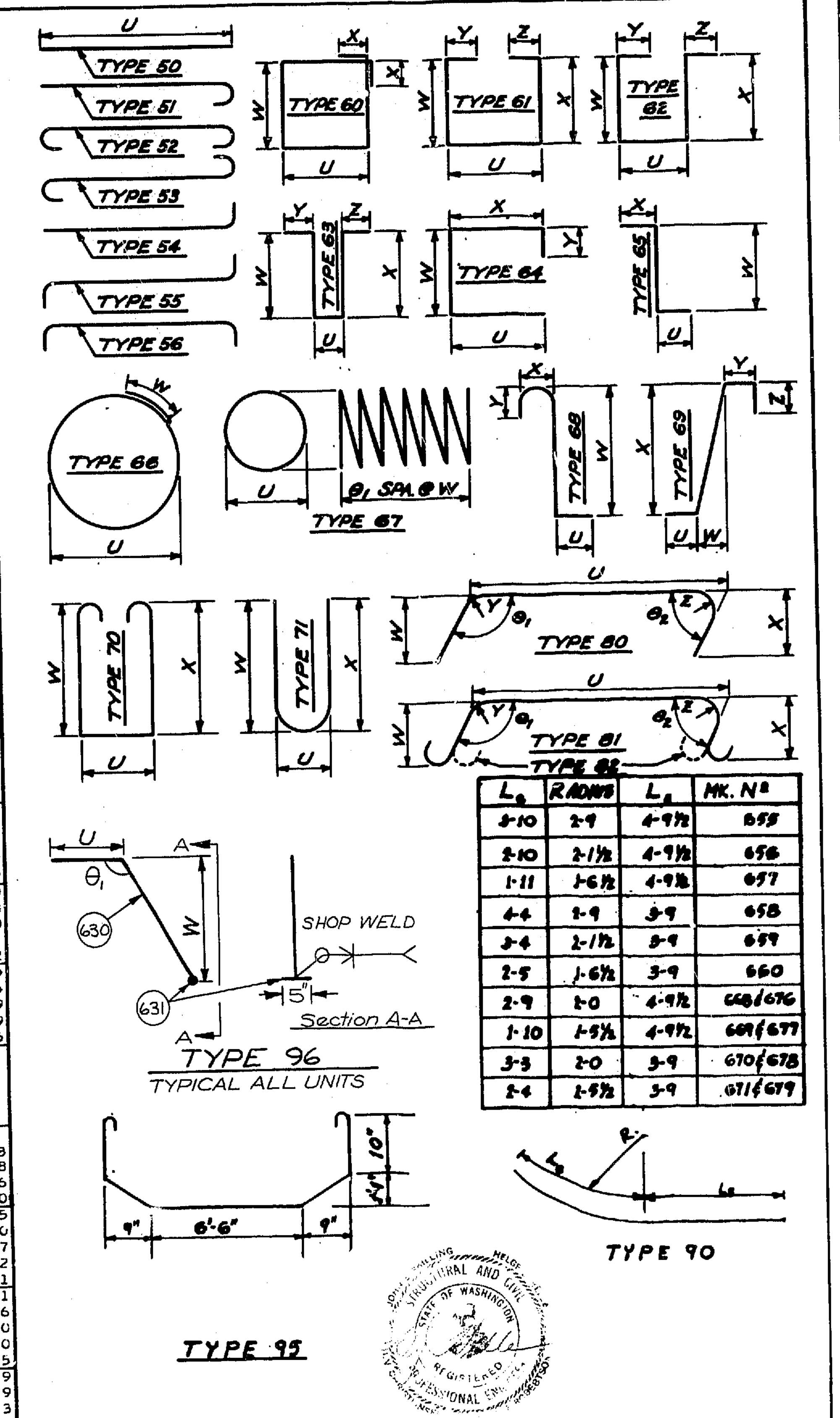
Mark No.	Location	Size	No. Req'd.	Bend Type	Tie or Stir.	Fld. Weld	Substr.	A-432	Varies	No. Each	U Ft.	U In.	W Ft.	W In.	X Ft.	X In.	Y Ft.	Y In.	Z Ft.	Z In.	θ1 Deg.	θ2 Deg.	Length Ft.	Length In.	Weight Lbs.
399	INT & EXT WEB STIRRUPS	5	3412	64	T							6.0	4	10.5		6.0							5	7.	19797
362	INT DIAPH HORIZ NEAR P3	4	12	50							19	9.0											19	9.	158
363	INT DIAPH STIRRUPS	4	290	64	T							6.0	4	8.0		6.0							5	5.	1049
364	INT DIAPH HORIZ P1 TO P2	4	12	50							20	9.0											20	9.	166
365	INT DIAPH HORIZ P1 TO P2	4	12	50							22	3.0											22	3.	178
366	INT DIAPH HORIZ P2 TO P3	4	12	50							25	3.0											25	3.	202
367	END DIAPH HORIZ	10	4	50							36	3.0											36	3.	624
368	END DIAPH HORIZ	5	8	50							36	3.0											36	3.	302
369	END DIAPH STIRRUPS	4	37	62	T							9.0	4	9.0	4	9.0		6.0		6.0			10	11.	270
373	CROSS BEAM NW P3 HORIZ	14	8	50							17	0.0											17	0.	1040
374	CROSS BEAM NW P3 HORIZ	14	3	50							23	0.0											23	0.	528
375	CROSS BEAM NW P3 HORIZ	14	6	61							19	4.0	4	1.0	4	1.0							25	6.	1170
376	CROSS BEAM P2 AND 3 STIRU	6	120	61							6	9.0	4	7.0	4	7.0	1	3.0	1	3.0			17	9.	3199
377	CROSS BEAM P2 AND 3 STIRU	6	240	64							1	3.0	4	7.0	1	3.0							6	7.	2373
378	CROSS BEAM P2 AND 3 HORIZ	7	24	50							19	8.0											19	8.	965
382	CROSS BEAM PIER 2 HORIZ T	14	4	50							50	9.0											50	9.	1553
383	CROSS BEAM PIER 2 HORIZ T	14	6	50							21	0.5											21	0.	966
384	CROSS BEAM PIER 2 HORIZ T	14	6	61							16	0.0	4	1.0	4	1.0							22	2.	1017
385	CROSS BEAM PIER 2 HORIZ T	14	4	50							22	6.0											22	6.	688
386	CROSS BEAM PIER 2 HORIZ T	14	6	61							17	8.0	4	1.0	4	1.0							23	10.	1094
387	CROSS BEAM P 2+3 HORIZ T	14	5	61							19	4.0	4	1.0	4	1.0							25	6.	975
388	CROSS BEAM PIER 2 HORIZ T	7	6	50					V	3	45	6.5											45	10.	563
											46	2.5													
389	CROSS BEAM PIER 2 HORIZ B	11	8	50					V	4	11	4.0											12	4.	524
											13	4.0													
390	CROSS BEAM PIER 2 HORIZ B	18	4	50					V	2	24	0.0											26	0.	1414
											28	0.0													
391	CROSS BEAM PIER 2 HORIZ B	14	8	50					V	4	26	0.0											29	0.	1775
											32	0.0													
392	CROSS BEAM PIER 3 HORIZ T	14	10	50							24	0.0											24	0.	1836
630	HINGE DIAGONAL	11	21	96		F		H			3	0.0	4	6.5							120		10	1.	1126
631	BRG SUPPORT HORIZ	14	21	50							0	5.0											0	5.	84
632	BRG SUPPORT STIRRUPS	5	24	61	T						2	9.0	4	10.0	4	10.0		6.0		6.0			13	0.	325
633	BRG SUPPORT STIRRUPS	5	3	61	T						3	9.0	4	10.0	4	10.0		6.0		6.0			14	0.	44
634	BRG SUPPORT STIRRUPS	5	24	61	T						3	9.0	2	0.5	2	0.5		6.0		6.0			8	5.	211
635	BRG SUPPORT HORIZ	6	40	50							4	0.0											4	0.	240
636	BRG SUPPORT HORIZ	6	4	69							3	10.0	5	0.0	1	8.0							9	0.	54
637	BRG SUPPORT HORIZ	6	4	69							3	10.0	9	6.0	3	2.0							13	9.	82
638	WEB HORIZ BOT	4	12	50							5	0.0											5	0.	40
639	WEB HORIZ BOT	4	6	50							19	9.0											19	9.	79
640	DIAPHRAM STIRRUPS	4	8	60	T						1	0.0	4	6.6		6.0							11	8.	62
641	DIAPHRAM HORIZ TOP	5	2	50							23	0.0											23	0.	48
642	DIAPHRAM HORIZ BOT	7	2	50							19	9.0											19	9.	81
647	HINGE WALL HORIZ	4	4	50							2	0.0											2	0.	5
648	HINGE WALL VERT	4	6	50							2	0.0											2	0.	8
650	TOP TRANSV	6	3	52							25	3.0											26	7.	120
630	HINGE DIAGONAL	11	21	96		F		H			3	0.0	4	6.5							120		10	1.	1126
631	BRG SUPPORT HORIZ	14	21	50							0	5.0											0	5.	84
632	BRG SUPPORT STIRRUPS	5	24	61	T						2	9.0	4	10.0	4	10.0		6.0		6.0			13	0.	325
633	BRG SUPPORT STIRRUPS	5	3	61	T						3	9.0	4	10.0	4	10.0		6.0		6.0			14	0.	44
634	BRG SUPPORT STIRRUPS	5	24	61	T						3	9.0	2	0.5	2	0.5		6.0		6.0			8	5.	211
635	BRG SUPPORT HORIZ	6	40	50							4	0.0											4	0.	240
636	BRG SUPPORT HORIZ	6	4	69							3	10.0	5	0.0	1	8.0							9	0.	54
637	BRG SUPPORT HORIZ	6	4	69							3	10.0	9	6.0	3	2.0							13	9.	82
638	WEB HORIZ BOT	4	12	50							5	0.0											5	0.	40
639	WEB HORIZ BOT	4	6	50							19	9.0											19	9.	79
640	DIAPHRAM STIRRUPS	4	8	60	T						1	0.0	4	6.6		6.0							11	8.	62
641	DIAPHRAM HORIZ TOP	5	2	50							23	0.0											23	0.	48
642	DIAPHRAM HORIZ BOT	7	2	50							19	9.0											19	9.	81
647	HINGE WALL HORIZ	4	4	50							2	0.0											2	0.	5
648	HINGE WALL VERT	4	6	50							2	0.0											2	0.	8
650	TOP TRANSV	6	3	52							25	3.0											26	7.	120
400	ROADWAY SLAB TOP TRANSV	6	214	56							25	2.0											27	0.	8679
401	ROADWAY SLAB TOP TRANSV	6	128	54							18	6.0											19	5.	3733
402	ROADWAY SLAB TOP TRANSV	6	60	54					V	3	26	3.0											28	7.	2572
											29	0.0													
403	ROADWAY SLAB TOP TRANSV	6	69	54					V	3	29	6.0											31	8.	3282
											32	0.0													
404	ROADWAY SLAB TOP TRANSV	6	58	54					V	2	25	3.0											26	11.	2345
											26	9.0													
405	ROADWAY SLAB TOP TRANSV	6	54	54					V	3	26	10.0											28	7.	2318
											28	6.0													
406	ROADWAY SLAB TOP TRANSV	6	2	50							17	0.0											17	0.	51
407	ROADWAY SLAB TOP TRANSV	6	57	54					V	3	25	6.0											27	5.	2347
											27	6.0													
408	ROADWAY SLAB TOP TRANSV	6	54	54							28	0.0											28	11.	2345
409	ROADWAY SLAB TOP TRANSV	6	190	56							26	2.											28	0.	7991
410	ROADWAY SLAB TOP LONG P1-2	5	36	54							40	0.0											40	10.	1532
411	ROADWAY SLAB TOP LONG P1-2	11	2	54							62	3.0											64	0.	680
412	ROADWAY SLAB TOP LONG P1-2	11	2	54							57	3.0											59	0.	627
413	ROADWAY SLAB TOP LONG P1-2	11	2	54							66	0.0											67	9.	720
414	ROADWAY SLAB TOP LONG P1-2	11	2	54							57	6.0											59	3.	630
415	ROADWAY SLAB TOP LONG P1-2	11	2	54							61	6.0											63	3.	672
416	ROADWAY SLAB TOP LONG. P1-2	8	2	54							40	0.0											41	2.	220
417	ROADWAY SLAB TOP LONG P1-2	8	1	50							48	0.0											48	0.	128
419	ROADWAY SLAB TOP LONG P1-2	8	1	50							43	6.0											43	6.	116
419	ROADWAY SLAB TOP LONG P1-2	5	4	50							32	0.0											32	0.	134
420	ROADWAY SLAB TOP LONG P1-2	5	5	50							38	0.0											38	0.	198
421	ROADWAY SLAB TOP LONG P1-2	5	3	50							22	0.0											22	0.	69
422	ROADWAY SLAB TOP LONG P1-2	5	5	50							41	9.0											41	9.	218
423	ROADWAY SLAB TOP LONG P1-2	5	2	50							46	6.0											46	6.	97
424	ROADWAY SLAB TOP LONG P1-2	5	5	50							22	0.0											22	0.	115
425	ROADWAY SLAB TOP LONG P1-2	5	3	50							31	9.0											31	9.	99
426	ROADWAY SLAB TOP LONG P1-2	5	4	50							37	9.0											37	9.	157
427	ROADWAY SLAB TOP LONG P1-2	5	4	50							41	0.0											41	0.	171
428	ROADWAY SLAB TOP LONG P1-2	5	3	50							45	6.0											45	6.	142
429	ROADWAY SLAB TOP LONG P2	14	12	50							25	0.0											25	0.	2295
430	ROADWAY SLAB TOP LONG P2	14	12	50							29	0.0											29	0.	2662
431	ROADWAY SLAB TOP LONG P2	14	12	50							34	0.0											34	0.	3121
432	ROADWAY SLAB TOP LONG P2	14	12	50							38	0.0											38	0.	3488

S = Bar is included in substructure quantities.
F = Bar to be field welded.
T = Tie or Stirrup
H = A.S.T.M. A-432.
V = Bar dimensions vary between dimensions shown on this line and the following line.

Mark No.	Location	Size	No. Req'd.	Bend Type	Tie or Stir.	Fld. Weld	Substr.	A-432	Varies	No. Each	U Ft.	U In.	W Ft.	W In.	X Ft.	X In.	Y Ft.	Y In.	Z Ft.	Z In.	θ1 Deg.	θ2 Deg.	Length Ft.	Length In.	Weight Lbs.
433	ROADWAY SLAB TOP LONG P2	14	12	50							44	0.0											44	0.	4039
434	ROADWAY SLAB TOP LONG P2	14	12	50							52	0.0											52	0.	4774
435	ROADWAY SLAB TOP LONG P2	14	12	50							61	0.0											61	0.	5600
436	ROADWAY SLAB TOP LONG P2	14	12	50							72	0.0											72	0.	6610
437	ROADWAY SLAB TOP LONG P2	14	12	50		F					66	0.0											66	0.	6059
438	ROADWAY SLAB TOP LONG P2	14	12	50		F					76	0.0											76	0.	6977
439	ROADWAY SLAB TOP LONG P2	14	12	50		F					20	0.0											20	0.	1836
440	ROADWAY SLAB TOP LONG P2	14	12	50		F					18	0.0											18	0.	1652
422	ROADWAY SLAB TOP LG P2-3NW	8	1	50							60	9.0											60	9.	162
416	ROADWAY SLAB TOP LG P2-3NW	8	1	50							40	0.0											40	0.	107
443	ROADWAY SLAB TOP LG P2-3NW	8	2	50							39	0.0											39	0.	208
444	ROADWAY SLAB TOP LG P2-3NW	5	5	50							32	6.0											32	6.	169
445	ROADWAY SLAB TOP LG P2-3NW	5	7	50							26	6.0											26	6.	193
446	ROADWAY SLAB TOP LG P2-3NW	5	2	50							37	6.0											37	6.	78
447	ROADWAY SLAB TOP LG P2-3NW	5	20	50							25	0.0											25	0.	521
448	ROADWAY SLAB TOP LG P2-3NW	11	4	50							35	0.0											35	0.	744
449	ROADWAY SLAB TOP LG P2-3NW	11	2	50							20	9.0											20	9.	220
450	ROADWAY SLAB TOP LG P2-3NW	5	4	50							20	0.0											20	0.	83
451	ROADWAY SLAB TOP LG P2-3NW	5	4	50							8	0.0											8	0.	33
452	ROADWAY SLAB TOP LG P2-3NW	5	6	50							30	0.0											30	0.	188
453	ROADWAY SLAB TOP LG P2-3NW	5	4	50							33	0.0											33	0.	138
454	ROADWAY SLAB TOP LG P2-3NW	14	6	54							59	6.0											61	7.	2827
455	ROADWAY SLAB TOP LG P2-3NW	14	6	54							51	6.0											53	7.	2459
456	ROADWAY SLAB TOP LG P2-3NW	14	6	54							44	6.0											46	7.	2138
457	ROADWAY SLAB TOP LG P2-3NW	14	6	54							39	6.0											41	7.	1909
458	ROADWAY SLAB TOP LG P2-3NW	14	6	54							35	6.0											37	7.	1725
459	ROADWAY SLAB TOP LG P2-3NW	14	6	54							32	6.0											34	7.	1587
460	ROADWAY SLAB TOP LG P2-3NW	14	6	54							29	6.0											31	7.	1450
461	ROADWAY SLAB TOP LG P2-3NW	14	6	54							26	6.0											28	7.	1312
462	ROADWAY SLAB TOP LG P2-3NW	14	6	54							23	6.0											25	7.	1174
463	ROADWAY SLAB TOP LG P2-3NW	5	2	50							24	0.0											24	0.	50
467	ROADWAY SLAB TOP LG P2-3NE	8	1	50							52	6.0											52	6.	140
468	ROADWAY SLAB TOP LG P2-3NE	8	1	50							36	6.0											36	6.	97
416	ROADWAY SLAB TOP LG P2-3NE	8	2	50							40	0.0											40	0.	214
469	ROADWAY SLAB TOP LG P2-3NE	5	2	50							44	0.0											44	0.	92
470	ROADWAY SLAB TOP LG P2-3NE	5	5	50							39	0.0											39	0.	203
471	ROADWAY SLAB TOP LG P2-3NE	5	6	50							33	0.0											33	0.	207
472	ROADWAY SLAB TOP LG P2-3NE	5	4	50							22	0.0											22	0.	92
473	ROADWAY SLAB TOP LG P2-3NE	11	2	50							28	0.0											28	0.	298
474	ROADWAY SLAB TOP LG P2-3NE	11	2	50							35	0.0											35	0.	372
475	ROADWAY SLAB TOP LG P2-3NE	11	2	50							21	0.0											21	0.	223
476	ROADWAY SLAB TOP LG P2-3NE	5	6	50							36	0.0											36	0.	225
477	ROADWAY SLAB TOP LG P2-3NE	5	12	50							43	0.0											43	0.	538
478	ROADWAY SLAB TOP LG P2-3NE	14	6	54							60	0.0											62	1.	2850
479	ROADWAY SLAB TOP LG P2-3NE	14	6	54							52	0.0											54	1.	2482
480	ROADWAY SLAB TOP LG P2-3NE	14	6	54							45	0.0											47	1.	2161
481	ROADWAY SLAB TOP LG P2-3NE	14	6	54							40	0.0											42	1.	1932
482	ROADWAY SLAB TOP LG P2-3NE	14	6	54							36	0.0											38	1.	1748
483	ROADWAY SLAB TOP LG P2-3NE	14	6	50							32	0.0											32	0.	1469
484	ROADWAY SLAB TOP LG P2-3NE	14	6	50							27	0.0											27	0.	1239
485	ROADWAY SLAB TOP LG P2-3NE	14	6	50							22	0.0											22	0.	1010
486	ROADWAY SLAB TOP LG P2-3NE	14	6	50							15	0.0											15	0.	688
490	ROADWAY SLAB BOT TRANSV	6	0	50							22	0.0											22	0.	0
491	ROADWAY SLAB BOT TRANSV	6	110	50					V	2	12	0.0											8	0.	1322
											4	0.0													
493	ROADWAY SLAB BOT LONGIT	5	375	50							40	0.0											40	0.	15645
494	ROADWAY SLAB BOT LONGIT	5	36	50							31	0.0											31	0.	1164
495	ROADWAY SLAB BOT LONGIT	5	36	50							33	0.0											33	0.	1239
496	ROADWAY SLAB BOT LONGIT	5	17	50							18	0.0											18	0.	319
592	ROADWAY SLAB BOT LONGIT	6	8	50							42	0.0											42	0.	505
593	ROADWAY SLAB BOT LONGIT	6	32	50							45	0.0											45	0.	2163
594	ROADWAY SLAB BOT LONGIT	6	16	50							54	0.0											54	0.	1298
595	SLAB CANTL TRANS	5	322	69							1	0.0	2	6.0		7.5							3	6.	1166
596	SLAB CANTL TRANS	5	320	69							1	0.0	3	0.0		7.5							3	11.	1320
597	SLAB DWL TO CURB	5	857	69	T							6.0		3.5	1	3.0		8.0		6.0			2	11.	2615
650	CURBS LONGIT E AND W	4	140	50							17	0.0											17	0.	1590
651	CURBS LONGIT END E AND W	4	10	50							13	0.0											13	0.	87
652	CURBS LONGIT W BTWN P 1-2	4	15	50							13	2.0											13	2.	132
653	CURBS LONGIT W BTWN P 1-2	4	10	50							15	1.0											15	1.	101
654	CURBS LONGIT W AND E NW	4	10	50							16	8.0											16	8.	111
655	CURBS LONGIT WEST ON NE	4	1	90							8	7.5											8	7.	6
656	CURBS LONGIT WEST ON NE	4	2	90							7	2.0											7	2.	10
657	CURBS LONGIT WEST ON NE	4	2	90							7	2.0											7	2.	10
658	CURBS LONGIT EAST ON NW	4	1	90							8	1.0											8	1.	5
659	CURBS LONGIT EAST ON NW	4	2	90							6	7.5											6	7.	9
660	CURBS LONGIT EAST ON NW	4	2	90							6	7.5											6	7.	9
661	CURBS TRANSV	4	442	65	T							5.0	1	3.0		0.0							1	6.	443
662	RAIL BASE VERT I.S. FACE	5	884	65	T							8.5	2	0.5		8.5							3	3.	2997
663	RAIL BASE VERT O.S.	4	442	64	T							5.0	2	0.5		5.0		0.0					2	8.	775
664	RAIL BASE LONGIT E AND W	4	124	50							8	4.0											8	4.	690
665	RAIL BASE LONG F.W. ON NW	4	4	50							8	2.0											8	2.	22
666	RAIL BASE LONG E.W. AT P1	4	4	50							3	9.5											3	10.	10
667	RAIL BASE LONG WEST P1-P2	4	16	50							6	5.5											6	5.	69
668	RAIL BASE LONG WEST ON NE	4	1	90							7	1.0											7	1.	5
669	RAIL BASE LONG WEST ON NE	4	1	90							7	1.0											7	1.	5
670	RAIL BASE LONG EAST ON NW	4	1	90							6	6.5											6	6.	4
671	RAIL BASE LONG EAST ON NW	4	1	90							6	6.5											6	6.	4
672	RAIL BASE LONG E AND W	6	124	50							8	4.0											8	4.	1552

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178	285	297

BENDING DIAGRAMS



L_o	RADIUS	L_1	MK. No.
3-10	2-9	4-9½	655
2-10	2-1½	4-9½	656
1-11	1-6½	4-9½	657
4-4	1-9	3-9	658
3-4	2-1½	3-9	659
2-5	1-6½	3-9	660
2-9	2-0	4-9½	668/676
1-10	1-5½	4-9½	669/677
3-3	2-0	3-9	670/678
2-4	1-5½	3-9	671/679

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

BAR LIST N-W & N-E UNIT I

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN
F. L. MCTAISON — BAKER FERGUSON
H. WALSH — JOHN H. RUPP

APPROVED December 7, 1967 — BRIDGE ENGINEER

As Built Changes in Red 7-16-70

SHEET 285 OF 297 SHEETS
CONTRACT NO. 8382

10/1995

N-W/N-E STRUCTURE BAR LIST-UNIT 1 SHEET 277 OF 289 11-16-67

S = Bar is included in substructure quantities.
F = Bar to be field welded.
T = Tie or Stirrup.
H = A.S.T.M. A-432.
V = Bar dimensions vary between dimensions shown on this line and the following line.

MARK NO.	LOCATION	SIZE	NO. REQ'D.	BEND TYPE	TIE OR STIR.	FLD. WELD	SUBSTR.	A-432	VARIES	NO. EACH	U Ft.	U In.	W Ft.	W In.	X Ft.	X In.	Y Ft.	Y In.	Z Ft.	Z In.	θ1 Deg.	θ2 Deg.	LENGTH Ft.	LENGTH In.	WEIGHT Lbs.
673	RAIL BASE LONG E.W. ON NW	6	4	50							8	2.0											8	2.	49
674	RAIL BASE LONG E.W. AT P1	6	4	50							3	9.5											3	10.	23
675	RAIL BASE LONG WEST P1-P2	6	16	50							6	5.5											6	5.	155
676	RAIL BASE LONG WEST ON NE	6	1	90							7	1.0											7	1.	11
677	RAIL BASE LONG WEST ON NE	6	1	90							7	1.0											7	1.	11
678	RAIL BASE LONG EAST ON NW	4	1	90							6	6.5											6	6.	4
679	RAIL BASE LONG EAST ON NW	4	1	90							6	6.5											6	6.	4
702	SIGN BRIDGE BASE	5	10	50							9	0.0											9	0.	94
703	SIGN BRIDGE BASE	4	20	56	T						2	2.0											2	10.	38
704	SIGN BRIDGE BASE	4	4	56	T						1	3.0											1	11.	5
705	SIGN BRIDGE BASE	5	24	65	T							6.0											0	4.	7
706	SIGN BRIDGE BASE	4	24	56	T						2	0.0											2	8.	43
707	SIGN BRIDGE BASE	5	8	95							13	3.0											13	3.	111
700	LIGHT STD ANCHORAGE	6	12	64							0	5.0	2	0.5	0	5.0							2	4.	43
701	LIGHT STD ANCHORAGE	6	6	65							0	8.5	2	0.5	0	8.5							3	1.	28
740	ACCESS HATCH	6	8	50							5	0.0											5	0.0	60

N-W/N-E UNIT 1
****
BAR LIST TOTALS

SUBSTRUCTURE A-432	GRAND TOTAL	0.
SUBSTRUCTURE A-15/A-408	GRAND TOTAL	178982.
SUPERSTRUCTURE A-432	GRAND TOTAL	2251.
SUPERSTRUCTURE A-15/A-408	GRAND TOTAL	345781 .

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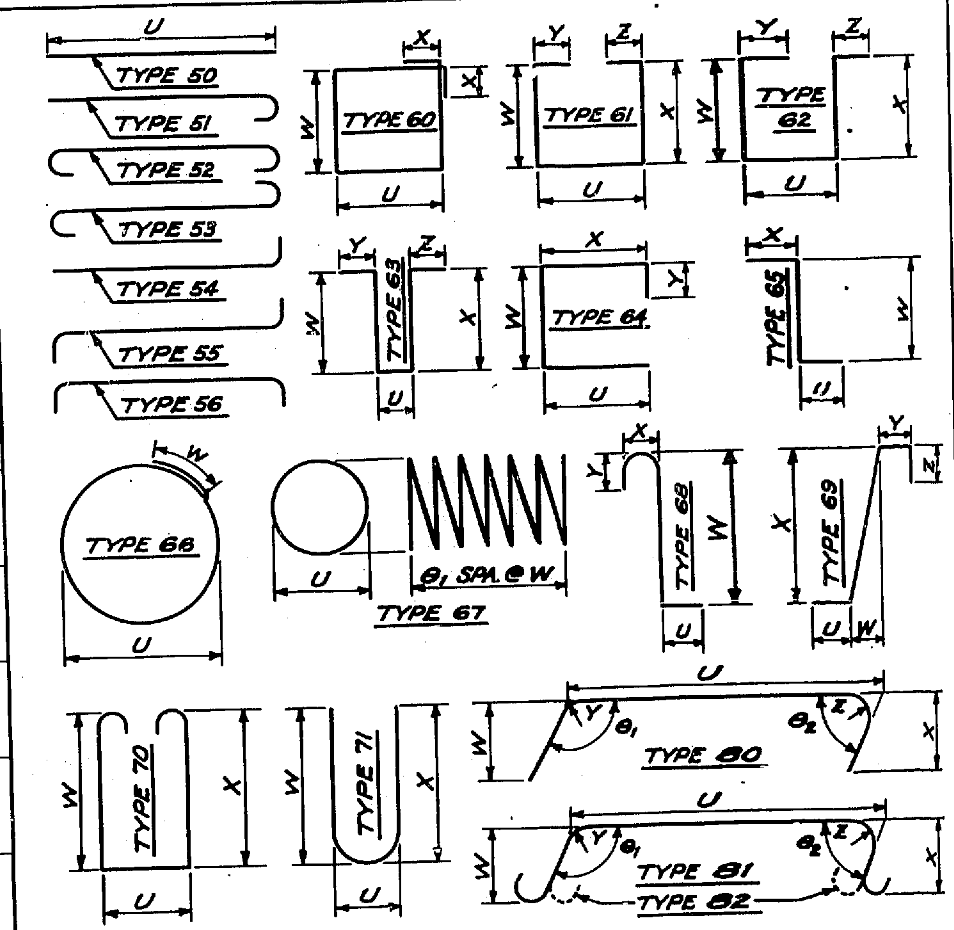
T = Tie or Stirrup
H = A.S.T.M. A-432.
V = Bar dimensions vary between dimensions shown on this line and the following line.

MARK NO.	LOCATION	SIZE	NO. REQ'D.	BEND TYPE	TIE OR STIR.	FLD. WELD	SUBSTR.	A-432	VARIES	NO. EACH	U Ft.	U In	W Ft.	W In.	X Ft.	X In	Y Ft.	Y In.	Z Ft.	Z In.	θ1 Deg.	θ2 Deg.	LENGTH Ft.	LENGTH In.	WEIGHT Lbs.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(29?)178	286	297

BENDING DIAGRAMS



REGISTERED PROFESSIONAL ENGINEER

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W & N-E STRUCTURE

BAR LIST N-W & N-E UNIT I

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN

F. L. McVALSON — BAKER FERGUSON
H. WALSH — JOHN N. RUPP

APPROVED: December 7, 1967 — BRIDGE ENGINEER

SHEET 286 OF 297 SHEETS
CONTRACT NO. 8382

8/1995

PSH NO. 1-RE/PSH NO. 2-BO
N-W/N-E STRUCTURE
BAR LIST-UNIT 1
SHEET 278 OF 259 11-16-67

S = Bar is included in substructure quantities.
F = Bar to be field welded.
T = Tie or Stirrup.
H = A.S.T.M. A-432.
V = Bar dimensions vary between dimensions shown on this line and the following line.

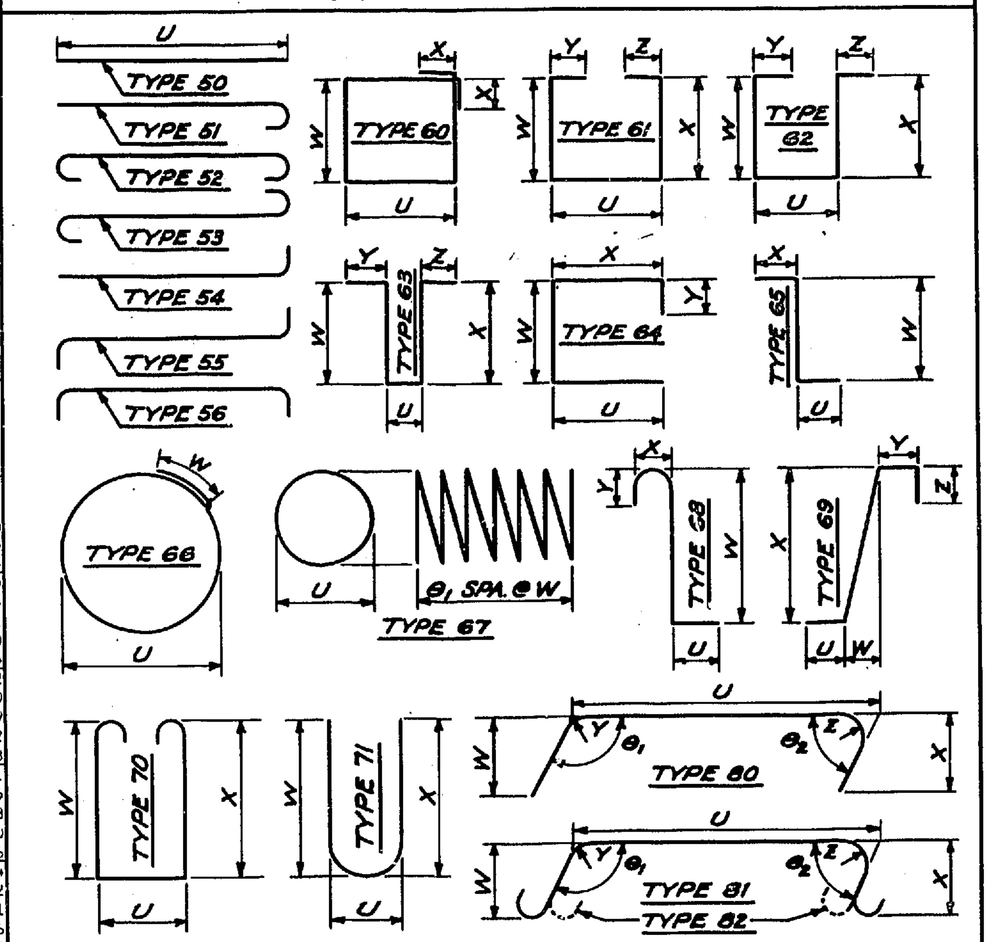
N-W UNIT 2

MARK NO.	LOCATION	SIZE	NO. REQ'D.	BEND TYPE	TIE OR STIR.	FLD. WELD	SUBSTR.	A-432	VARIES	NO. EACH	DIMENSIONS (Out to out) U		W		X		Y		Z		θ1	θ2	LENGTH		WEIGHT
											Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Deg.	Deg.	Ft.	In.	Lbs.
45	NW STRUCT PIER 4 TIES	4	58	66			S				7	3.0	1	6.0									24	2.	935
46	NW STRUCT PIER 4 VERT	18	100	50			S				50	10.0											50	10.	32767
47	NW STRUCT PIER 4 DOWL	11	26	50			S				11	2.0											11	2.	1543
54	NW STRUCT PIER 5 LONG	11	26	50			S				20	6.0											20	6.	2490
55	NW STRUCT PIER 5 TRAN	11	34	50			S				20	6.0											20	6.	3700
56	NW STRUCT PIER 5 DOWL	18	13	54			S				11	10.0											14	7.	1278
57	NW STRUCT PIER 6 LONG	11	39	50			S				20	6.0											20	6.	4030
58	NW STRUCT PIER 6 TRAN	11	39	50			S				20	6.0											20	6.	4030
59	NW STRUCT PIER 6 DOWL	14	17	54		F	S				10	11.0											13	0.	1691
60	NW STRUCT PIER 6 DOWL	14	17	54		F	S				15	11.0											18	0.	2341
111	NW STRUCT COL 4 TIES	4	62	66			S				5	9.0	1	6.0									19	5.	805
118	NW STRUCT COL 4 VERT	11	26	50			S				59	0.0											59	0.	8150
111	NW STRUCT COL 5 TIES	4	74	66			S				5	9.0	1	6.0									19	5.	961
119	NW STRUCT COL 5 VERT	18	13	50			S				60	2.0											60	2.	9532
111	NW STRUCT COL 6 TIES	4	64	66			S				5	9.0	1	6.0									19	5.	831
120	NW STRUCT COL 6 VERT	14	17	50		F	S				49	7.0											49	7.	6448
121	NW STRUCT COL 6 VERT	14	17	50		F	S				54	7.0											54	7.	7099
200	BOTTOM SLAB BOT TRANSV	5	206	61							19	8.0	1	0.0	1	0.0							21	2.	4548
203	BOT SLAB BOT LONG HING-P4	5	4	50							14	0.0											14	0.	58
204	BOT SLAB BOT LONG HING-P4	5	4	50							23	0.0											23	0.	96
205	BOT SLAB BOT LONG HING-P4	14	6	54		F					50	0.0											52	1.	2391
206	BOT SLAB BOT LONG HING-P4	14	6	50							29	0.0											29	0.	1331
207	BOT SLAB BOT LONG HING-P4	14	2	54		F					59	0.0											61	1.	935
208	BOT SLAB BOT LONG HING-P4	14	6	50							47	0.0											47	0.	2157
209	BOT SLAB BOT LONG HING-P4	14	6	50							58	0.0											58	0.	2662
210	BOT SLAB BOT LONG HING-P4	14	6	50							69	0.0											69	0.	3167
211	BOT SLAB BOT LONG HING-P4	14	6	54							74	0.0											76	1.	3492
212	BOT SLAB BOT LONG HING-P4	5	2	50							45	0.0											45	0.	94
213	BOT SLAB BOT LONG HING-P4	5	8	50							36	0.0											36	0.	300
214	BOT SLAB BOT LONG HING-P4	5	2	50							24	0.0											24	0.	50
215	BOT SLAB BOT LONG HING-P4	14	2	50		F					44	9.0											44	9.	685
216	BOT SLAB BOT LONG HING-P4	14	2	50		F					35	9.0											35	9.	547
217	BOT SLAB BOT LONG HING-P4	14	4	50		F					79	9.0											79	9.	2440
218	BOT SLAB BOT LONG HING-P4	14	4	54		F					74	0.0											76	1.	2328
219	BOT SLAB BOT LONG OVER P5	14	12	50							42	0.0											42	0.	3856
220	BOTTOM SLAB BOT LONG P4-P5	5	4	50							33	0.0											33	0.	138
221	BOTTOM SLAB BOT LONG P4-P5	5	2	50							40	9.0											40	9.	85
222	BOTTOM SLAB BOT LONG P4-P5	5	4	50							22	9.0											22	9.	95
223	BOTTOM SLAB BOT LONG P4-P5	5	2	50							27	9.0											27	9.	58
224	BOTTOM SLAB BOT LONG P4-P5	14	2	50		F					40	0.0											40	0.	612
225	BOTTOM SLAB BOT LONG P4-P5	14	6	50		F					70	0.0											70	0.	3213
226	BOTTOM SLAB BOT LONG P4-P5	14	6	50							34	0.0											34	0.	1561
2[illegible]	BOTTOM SLAB BOT LONG P4-P5	14	6	50							49	0.0											49	0.	2249
228	BOTTOM SLAB BOT LONG P4-P5	14	6	50							62	0.0											62	0.	2846
229	BOTTOM SLAB BOT LONG P4-P5	14	6	50							72	0.0											72	0.	3305
230	BOTTOM SLAB BOT LONG P4-P5	14	6	50		F					40	3.0											40	3.	1847
231	BOTTOM SLAB BOT LONG P4-P5	5	4	50							33	0.0											33	0.	138
232	BOTTOM SLAB BOT LONG P4-P5	5	2	50							41	0.0											41	0.	86
233	BOTTOM SLAB BOT LONG P4-P5	5	2	50							21	0.0											21	0.	44
234	BOTTOM SLAB BOT LONG P4-P5	5	2	50							25	6.0											25	6.	53
235	BOTTOM SLAB BOT LONG P4-P5	14	4	50		F					66	0.0											66	0.	2020
236	BOTTOM SLAB BOT LONG P5-P6	14	4	50		F					24	0.0											24	0.	734
237	BOTTOM SLAB BOT LONG P5-P6	5	4	50							33	0.0											33	0.	138
238	BOTTOM SLAB BOT LONG P5-P6	5	2	50							38	6.0											38	6.	80
239	BOTTOM SLAB BOT LONG P5-P6	5	2	50							23	6.0											23	0.	48
240	BOTTOM SLAB BOT LONG P5-P6	5	2	50							27	6.0											27	6.	57
53	N-W STRUCT PIER 5 DOWL	18	13	54		F	S				18	6.0											21	3.	3800
110	N-W STRUCT PIER 5 VERT	18	13	50		F	S				53	6.0											53	6.	4500
241	BOTTOM SLAB BOT LONG P5-P6	14	4	50		F					35	7.5											35	7.	1090
260	BOTTOM SLAB BOT LONG P5-P6	14	8	50		F			V	2	79	0.0													
											78	0.0											78	6.	4804
262	BOTTOM SLAB BOT LONG P5-P6	14	2	50		F					79	6.0											79	6.	1216
263	BOTTOM SLAB BOT LONG P6	14	2	50							20	10.5											20	10.	319
264	BOTTOM SLAB BOT LONG P-6	14	2	50		F					74	0.0											74	0.	1132
242	BOTTOM SLAB BOT LONG P5-P6	14	6	50							72	3.0											72	3.	3316
243	BOTTOM SLAB BOT LONG P5-P6	14	6	50							62	3.0											62	3.	2857
244	BOTTOM SLAB BOT LONG P5-P6	14	6	50							52	3.0											52	3.	2398
245	BOTTOM SLAB BOT LONG P5-P6	14	6	50							40	3.0											40	3.	1847
246	BOTTOM SLAB BOT LONG P5-P6	14	4	50		F			V	2	75	0.0													
											74	0.0											74	6.	2280
247	BOTTOM SLAB BOT LONG P5-P6	5	4	50							33	3.0											33	3.	139
248	BOTTOM SLAB BOT LONG P5-P6	5	2	50							38	9.0											38	9.	81
249	BOTTOM SLAB BOT LONG P5-P6	5	4	50							23	3.0											23	3.	97
250	BOTTOM SLAB BOT LONG P5-P6	5	2	50							27	6.0											27	6.	57
251	BOTTOM SLAB BOT LONG P-6	5	14	50							18	3.0											18	3.	266
252	BOTTOM SLAB BOT LONG P-6	10	4	50		F					17	6.0											17	6.	301
253	BOTTOM SLAB BOT LONG P5	14	4	50							37	9.0											37	9.	1155
200	BOTTOM SLAB TOP TRANSV	5	206	61							19	8.0	1	0.0	1	0.0							21	2.	4548
255	BOTTOM SLAB TOP LONGIT	5	128	50							40	0.0											40	0.	5340
256	BOTTOM SLAB TOP LONGIT	5	8	50					V	2	21	0.0													
											23	0.0											22	0.	184
257	BOTTOM SLAB TOP LONGIT	5	8	50					V	2	23	9.0													
											26	0.0											24	10.	208
258	BOTTOM SLAB TOP LONGIT	14	4	50					V	2	52	0.0													
											50	0.0											51	0.	1561
350	WEB LONGIT	4	96	50							40	0.0											40	0.	2565
351	WEB LONGIT	4	12	50					V	4	24	0.0													
											19	0.0											21	6.	172
352	WEB LONGIT	8	6	50							22	0.0											22	0.	352
353	WEB LONGIT	8	6	50							50	0.0											50	0.	801
354	WEB LONGIT	10	6	50							58	0.0											58	0.	1497
355	WEB LONGIT	8	12	50							53	0.0											53	0.	1698
356	WEB LONGIT	10	6	50							62	0.0											62	0.	1601
357	WEB LONGIT	10	6	50					V	2	46	9.0													
											46	0.0											46	4.	1197
399	WEB STIRRUPS	5	2576	64	T							6.0	4	10.5		6.0							5	7.	15527
362	DIAPH HORIZ	5	36	50							19	8.0											19	8.	738
363	DIAPH STIRRUPS	4	216	54	T							6.0	4	7.0		6.0							5	4.	770
365	CROSS BMS TOP P4.5.6	14	23	50							17	0.0											17	0.	2991
366	CROSS BMS TOP P4.5.6	14	8	50							23	0.0											23	0.	1408
367	CROSS BMS TOP P4.5.6	14	17	61							19	4.0	4	1.0	4	1.0							25	6.	3316
368	CROSS BMS TOP P4.5.6	7	36	50							19	8.0											19	8.	1447
369	CROSS BMS STIRRUPS	6	66	61							6	9.0	4	7.0	4	7.0	1	3.0	1	3.0			17	9.	1760
370	CROSS BMS STIRRUPS	6	264	64							1	3.0	4	7.0	1	3.0							6	7.	2610
630	HINGE DIAGONAL	11	21	96		F		H			3	0.0	4	6.5							120		10	1.	1126

MARK NO.	LOCATION	SIZE	NO. REQ'D.	BEND TYPE	TIE OR STIR.	FLD. WELD	SUBSTR.	A-432	VARIES	NO. EACH	DIMENSIONS (Out to out) U		W		X		Y		Z		θ1	θ2	LENGTH		WEIGHT
											Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Deg.	Deg.	Ft.	In.	Lbs.
631	BRG SUPPORT HORIZ	14	21	50							0	5.0											0	5.	84
632	BRG SUPPORT STIRRUPS	5	24	61	T						2	9.0	4	10.0	4	10.0		6.0		6.0			13	0.	325
633	BRG SUPPORT STIRRUPS	5	3	61	T						3	9.0	4	10.0	4	10.0		6.0		6.0			14	0.	44
634	BRG SUPPORT STIRRUPS	5	24	61	T						3	9.0	2	0.5	2	0.5		6.0		6.0			8	5.	211
635	BRG SUPPORT HORIZ	6	40	50							4	0.0											4	0.	240
636	BRG SUPPORT HORIZ	6	4	69							3	10.0	5	0.0	1	8.0							9	0.	54
637	BRG SUPPORT HORIZ	6	4	69							3	10.0	9	6.0	3	2.0							13	9.	82
639	WEB HORIZ	4	6	50							19	9.0											19	9.	79
641	DIAPHRAM HORIZ TOP	5	2	50							23	0.0											23	0.	48
643	DIAPHRAM HORIZ BOT	9	2	50							19	9.0											19	9.	134
644	DIAPHRAM STIRRUPS	4	8	60	T							9.0	4	6.6		6.0							11	2.	60
645	CANTILEVER TOP	6	14	80							4	0.0	1	0.0				3.0			11		3	10.	81
646	CANTILEVER TRANSV	4	4	50							19	9.0											19	9.	53
650	TOP TRANSV	6	6	52							25	3.0											26	7.	240
630	HINGE DIAGONAL	11	21	96		F		H			3	0.0	4	6.5							120		10	1.	1126
631	BRG SUPPORT HORIZ	14	21	50							0	5.0											0	5.	84
632	BRG SUPPORT STIRRUPS	5	24	61	T						2	9.0	4	10.0	4	10.0		6.0		6.0			13	0.	325
633	BRG SUPPORT STIRRUPS	5	3	61	T						3	9.0	4	10.0	4	10.0		6.0		6.0			14	0.	44
634	BRG SUPPORT STIRRUPS	5	24	61	T						3	9.0	2	0.5	2	0.5		6.0		6.0			8	5.	211
635	BRG SUPPORT HORIZ	6	40	50							4	0.0											4	0.	240
636	BRG SUPPORT HORIZ	6	4	69							3	10.0	5	0.0	1	8.0							9	0.	54
637	BRG SUPPORT HORIZ	6	4	69							3	10.0	9	6.0	3	2.0							13	9.	82
638	WEB HORIZ BOT	4	12	50							5	0.0											5	0.	40
639	WEB HORIZ BOT	4	6	50							19	9.0											19	9.	79
640	DIAPHRAM STIRRUPS	4	8	60	T						1	0.0	4	6.6		6.0							11	8.	62
641	DIAPHRAM HORIZ TOP	5	2	50							23	0.0											23	0.	48
642	DIAPHRAM HORIZ BOT	7	2	50							19	9.0											19	9.	81
647	HINGE WALL HORIZ	4	4	50							2	0.0											2	0.	5
648	HINGE WALL VERT	4	6	50							2	0.0											2	0.	8
650	TOP TRANSV	6	3	52							25	3.0											26	7.	120
400	ROADWAY SLAB TOP TRANSV	6	645	56							26	2.0											28	0.	27126
403	ROADWAY SLAB TOP LG HNG-P4	5	20	50							40	0.0											40	0.	834
404	ROADWAY SLAB TOP LG HNG-P4	5	6	50							43	6.0											43	6.	272
405	ROADWAY SLAB TOP LG HNG-P4	5	6	50							38	6.0											38	6.	241
406	ROADWAY SLAB TOP LG HNG-P4	5	4	50							32	6.0											32	6.	136
407	ROADWAY SLAB TOP LG HNG-P4	5	4	50							24	6.0											24	6.	102
408	ROADWAY SLAB TOP LG HNG-P4	8	2	50							60	0.0											60	0.	320
409	ROADWAY SLAB TOP LG HNG-P4	8	2	50							27	6.0											27	6.	147
410	ROADWAY SLAB TOP LG HNG-P4	11	6	50							61	0.0											61	0.	1945
411	ROADWAY SLAB TOP LG AT P4	14	6	50							21	0.0											21	0.	964
412	ROADWAY SLAB TOP LG AT P4	14	6	50							25	0.0											25	0.	1147
413	ROADWAY SLAB TOP LG AT P4	14	6	50							30	0.0											30	0.	1377
414	ROADWAY SLAB TOP LG AT P4	14	6	50							36	0.0											36	0.	1652
415	ROADWAY SLAB TOP LG AT P4	14	6	50							41	0.0											41	0.	1882
416	ROADWAY SLAB TOP LG AT P4	14	6	50							48	0.0											48	0.	2203
417	ROADWAY SLAB TOP LG AT P4	14	6	50							57	0.0											57	0.	2616
418	ROADWAY SLAB TOP LG AT P4	14	6	50							65	0.0											65	0.	2983
419	ROADWAY SLAB TOP LG AT P4	14	6	50							75	0.0											75	0.	3442
420	ROADWAY SLAB TOP LG P4-P5	8	2	50							60	0.0											60	0.	320
421	ROADWAY SLAB TOP LG P4-P5	8	2	50							38	0.0											38	0.	203
422	ROADWAY SLAB TOP LG P4-P5	5	4	50							10	0.0											10	0.	42
423	ROADWAY SLAB TOP LG P4-P5	5	4	50							19	0.0											19	0.	79
424	ROADWAY SLAB TOP LG P4-P5	5	6	50							25	0.0											25	0.	156
425	ROADWAY SLAB TOP LG P4-P5	5	6	50							31	0.0											31	0.	194
426	ROADWAY SLAB TOP LG P4-P5	5	20	50							30	0.0											30	0.	626
427	ROADWAY SLAB TOP LG P4-P5	11	6	50							39	0.0											39	0.	1243
428	ROADWAY SLAB TOP LG P4-P5	4	4	50							9	0.0											9	0.	24
429	ROADWAY SLAB TOP LG P4-P5	4	4	50							19	0.0											19	0.	51
430	ROADWAY SLAB TOP LG P4-P5	5	6	50							26	0.0											26	0.	163
431	ROADWAY SLAB TOP LG P4-P5	5	6	50							32	0.0											32	0.	200
434	ROADWAY SLAB TOP LONG P5	14	6	50							20	0.0											20	0.	918
435	ROADWAY SLAB TOP LONG P5	14	6	50							24	0.0											24	0.	1102
436	ROADWAY SLAB TOP LONG P5	14	6	50							29	0.0											29	0.	1331
437	ROADWAY SLAB TOP LONG P5	14	6	50							35	0.0											35	0.	1606
438	ROADWAY SLAB TOP LONG P5	14	6	50							41	0.0											41	0.	1882
439	ROADWAY SLAB TOP LONG P5	14	6	50							50	0.0											50	0.	2295
440	ROADWAY SLAB TOP LONG P5	14	6	50							58	0.0											58	0.	2662
441	ROADWAY SLAB TOP LONG P5	14	6	50							69	0.0											69	0.	3167
442	ROADWAY SLAB TOP LONG P5	14	6	50							80	0.0											80	0.	3672
443	ROADWAY SLAB TOP LONG P5-6	5	4	50							11	6.0											11	6.	48
444	ROADWAY SLAB TOP LONG P5-6	5	6	50							20	6.0											20	6.	128
445	ROADWAY SLAB TOP LONG P5-6	5	2	50							25	6.0											25	6.	53

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178	287	297

BENDING DIAGRAMS



VARIOUS STEEL REINFORCING BARS, INCLUDING THOSE IN CROSSBEAMS, ARE SHOWN AS STRAIGHT ON THE "BAR LIST" SHEETS OF THE ATTACHED PLANS. THE CONTRACTOR SHALL BEND THESE BARS AS REQUIRED TO CONFRON TO THE GEOMETRY OF THE STRUCTURE AND AS DETAILED ON THE PLANS.

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

BAR LIST N-W UNIT 2

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN
F. L. MIMAISON
H. WALSH
BAKER FERGUSON
JOHN N. RUPP

APPROVED December 7, 1967
BRIDGE ENGINEER

As Built Changes in Red

SHEET 287 OF 297 SHEETS

CONTRACT NO. 8382

P/1995

N-W STRUCTURE BAR LIST - UNIT 2 11-16-67
SHEET 279 OF 289

S= Bar is included in substructure quantities.
F= Bar to be field welded.
T= Tie or Stirrup.
H= A.S.T.M. A-432.
V= Bar dimensions vary between dimensions shown on this line and the following line.

MARK NO.	LOCATION	SIZE	NO. REQ'D.	BEND TYPE	TIE OR STIRR.	FLD. WELD	SUBSTR.	A-432	VARIES	NO. EACH	U Ft.	U In.	W Ft.	W In.	X Ft.	X In.	Y Ft.	Y In.	Z Ft.	Z In.	θ1 Deg.	θ2 Deg.	LENGTH Ft.	LENGTH In.	WEIGHT Lbs.
	See Note Sheet 25[illegible]																								
446	ROADWAY SLAB TOP LONG P5-6	5	8	50							33	6.0											33	6.	280
447	ROADWAY SLAB TOP LONG P5-6	5	8	50					V	1	29	0.0													
											27	3.0											28	1.	235
448	ROADWAY SLAB TOP LONG P5-6	5	8	50					V	1	26	3.0													
											24	6.0											25	4.	212
449	ROADWAY SLAB TOP LONG P5-6	8	2	50							63	0.0											63	0.	336
450	ROADWAY SLAB TOP LONG P5-6	8	1	50							39	6.0											39	6.	105
451	ROADWAY SLAB TOP LONG P5-6	8	1	50							34	0.0											34	0.	91
452	ROADWAY SLAB TOP LONG P5-6	11	2	50							45	0.0											45	0.	478
453	ROADWAY SLAB TOP LONG P5-6	11	2	50							40	0.0											40	0.	425
454	ROADWAY SLAB TOP LONG P5-6	11	2	50							42	6.0											42	6.	452
455	ROADWAY SLAB TOP LONG P5-6	5	2	50							24	0.0											24	0.	50
456	ROADWAY SLAB TOP LONG P5-6	5	2	50							19	0.0											19	0.	40
457	ROADWAY SLAB TOP LONG P5-6	5	2	50							13	6.0											13	6.	28
458	ROADWAY SLAB TOP LONG P5-6	5	4	50							20	6.0											20	6.	86
459	ROADWAY SLAB TOP LONG P5-6	5	6	50							27	6.0											27	6.	172
460	ROADWAY SLAB TOP LONG P5-6	5	6	50							32	6.0											32	6.	203
461	ROADWAY SLAB TOP LONG P5-6	5	2	50							24	6.0											24	6.	51
465	ROADWAY SLAB TOP LONG P6	14	6	54							25	9.0											27	10.	1278
466	ROADWAY SLAB TOP LONG P6	14	6	54							28	9.0											30	10.	1415
467	ROADWAY SLAB TOP LONG P6	14	6	54							30	9.0											32	10.	1507
468	ROADWAY SLAB TOP LONG P6	14	6	54							33	9.0											35	10.	1645
469	ROADWAY SLAB TOP LONG P6	14	6	54							36	9.0											38	10.	1782
470	ROADWAY SLAB TOP LONG P6	14	6	54							40	9.0											42	10.	1966
471	ROADWAY SLAB TOP LONG P6	14	6	54							43	9.0											45	10.	2104
472	ROADWAY SLAB TOP LONG P6	14	6	54							47	9.0											49	10.	2287
473	ROADWAY SLAB TOP LONG P6	14	6	54							51	9.0											53	10.	2471
475	ROADWAY SLAB BOT TRANSV	6	606	50							22	0.0											22	0.	20025
403	ROADWAY SLAB BOT LONGIT	5	288	50							40	0.0											40	0.	12015
476	ROADWAY SLAB BOT LONGIT	5	18	50					V	2	26	3.0													
											23	6.0											24	10.	467
477	ROADWAY SLAB BOT LONGIT	5	18	50					V	2	23	0.0													
											21	3.0											22	1.	415
478	ROADWAY SLAB BOT LONGIT	6	56	50							45	0.0											45	0.	3785
479	ROADWAY SLAB BOT LONGIT	6	4	50							24	3.0											24	3.	146
480	ROADWAY SLAB BOT LONGIT	6	4	50							21	9.0											21	9.	131
596		5	324	69							1	0.0	3	0.0		7.5							3	11.	1337
597		5	432	69	T							6.0		3.5	1	3.0		8.0		6.0			2	11.	1318
650	CURB LONGIT EAST AND WEST	4	120	50							16	1.0											16	1.	1289
651	CURB LONGIT WEST	4	35	50							15	7.0											15	7.	364
652	CURB LONGIT WEST	4	5	50							15	9.0											15	9.	53
653	CURB LONGIT EAST	4	35	50							16	7.0											16	7.	388
654	CURB LONGIT EAST	4	5	50							16	5.0											16	5.	55
655	CURB TRANSV	4	472	65	T							5.0	1	3.0									1	6.	473
656	RAIL BASE VERT I.S. FACE	5	944	65	T							8.5	2	0.5		8.5							3	3.	3200
657	RAIL BASE VERT O.S. FACE	4	472	64	T							5.0	2	0.5		5.0							2	8.	826
658	RAIL BASE LONGIT E.W.	4	100	50							7	10.0											7	10.	523
659	RAIL BASE LONGIT WEST	4	30	50							7	7.0											7	7.	152
660	RAIL BASE LONGIT EAST	4	30	50							8	1.5											8	1.	163
661	RAIL BASE LONGIT E.W.	6	100	50							7	10.0											7	10.	1177
662	RAIL BASE LONGIT WEST	6	30	50							7	7.0											7	7.	342
663	RAIL B[illegible]E LONGIT EAST	6	30	50							8	1.5											8	1.	366
700	LIGHT STD ANCHORAGE	6	12	64	T							5.0	2	0.5		5.0							2	5.	44
701	LIGHT STD ANCHORAGE	6	6	65	T							8.5	2	0.5		8.5							3	2.	29
740	ACCESS HATCH	6	4	50							5	0.0											5	0.0	30

N-W UNIT 2

BAR LIST TOTALS

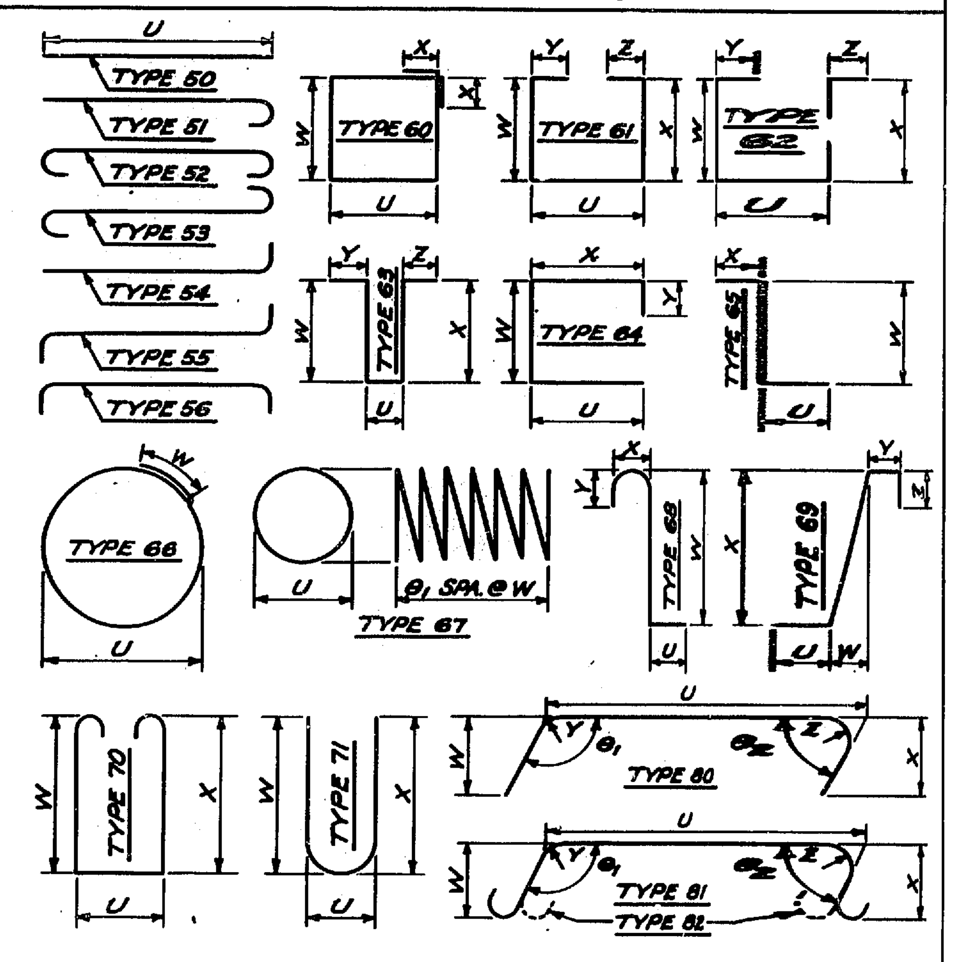
SUBSTRUCTURE A-432	GRAND TOTAL	0.
SUBSTRUCTURE A-15/A-408	GRAND TOTAL	138645.
SUPERSTRUCTURE A-432	GRAND TOTAL	2251.
SUPERSTRUCTURE A-15/A-408	GRAND TOTAL	269779.

S= Bar is included in substructure quantities.
F= Bar to be field welded.
T= Tie or Stirrup.
H= A.S.T.M. A-432.
V= Bar dimensions vary between dimensions shown on this line and the following line.

MARK NO.	LOCATION	SIZE	NO. REQ'D.	BEND TYPE	TIE OR STIRR.	FLD. WELD	SUBSTR.	A-432	VARIES	NO. EACH	U Ft.	U In.	W Ft.	W In.	X Ft.	X In.	Y Ft.	Y In.	Z Ft.	Z In.	θ1 Deg.	θ2 Deg.	LENGTH Ft.	LENGTH In.	WEIGHT Lbs.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178	288	297

BENDING DIAGRAMS



SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W & N-E STRUCTURE

BAR LIST N-W UNIT 2

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN

F. I. MI[illegible]AISON — BAKER FERGUSON
H. WALSH — JOHN N. RUPP

APPROVED December 7, 1967 — BRIDGE ENGINEER

As Built Changes in [illegible]
SHEET 288 OF 297 SHEETS
CONTRACT NO. 8382

P/1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178	289	297

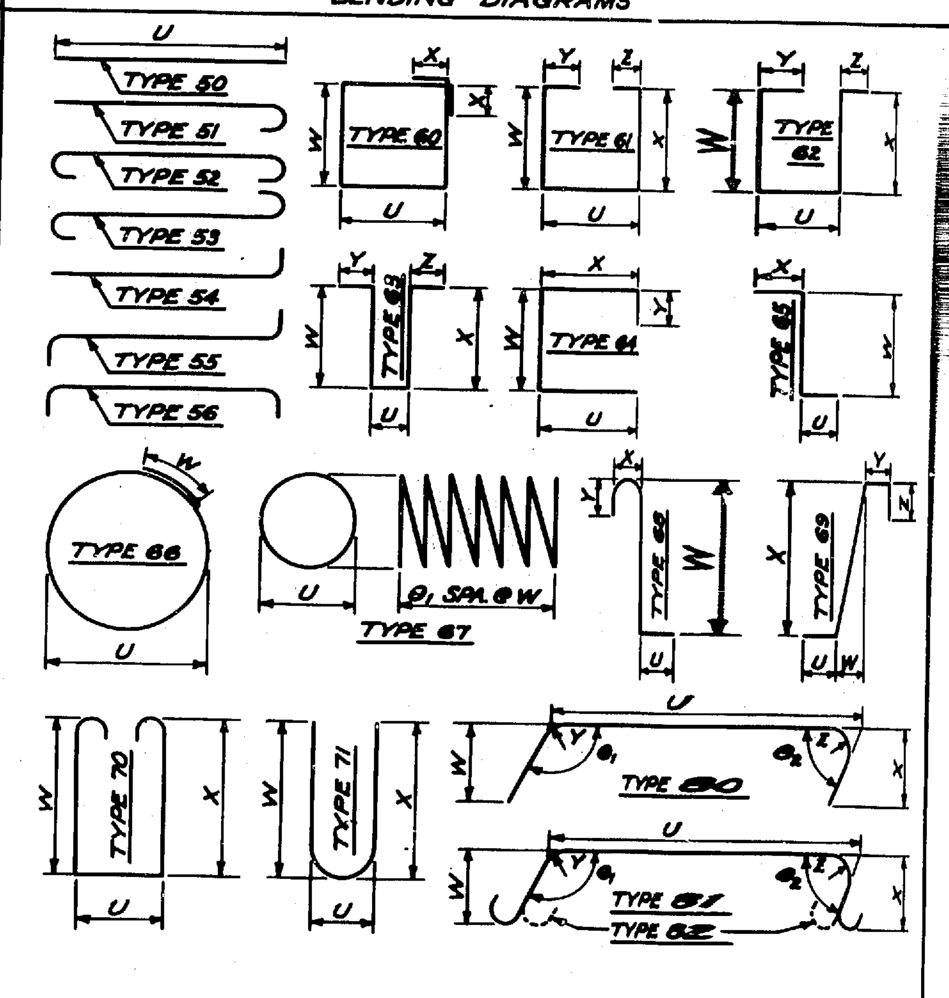
S = Bar is included in substructure quantities.
F = Bar to be field welded.
T = Tie or Stirrup.
H = A.S.T.M. A-432.
V = Bar dimensions vary between dimensions shown on this line and the following line.

N-W UNIT 3

MARK NO.	LOCATION	SIZE	NO. REQ'D.	BEND TYPE	TIE OR STIR.	FLD. WELD	SUBSTR.	A-432	VARIES	NO. EACH	U Ft.	U In.	W Ft.	W In.	X Ft.	X In.	Y Ft.	Y In.	Z Ft.	Z In.	θ1 Deg.	θ2 Deg.	LENGTH Ft.	LENGTH In.	WEIGHT Lbs.
61	NW STRUCT PIER 7 FTG LONG	11	39	50			S				20	6.0													
62	NW STRUCT PIER 7 FTG TRAN	11	37	50			S				20	6.0											20	6.	4030
63	NW STRUCT PIER 7 FTG DOWL	14	18	54		F	S				10	11.0											20	6.	4030
64	NW STRUCT PIER 7 FTG DOWL	14	18	54		F	S				15	11.0											13	0.	1790
⚠ 65	NW STRUCT PIER 8 FTG LONG	11	14	50			S				26	0.0											18	0.	2479
66	NW STRUCT PIER 8 FTG TRAN	11	16	50			S				45	0.0											26	0.	1932
67	NW STRUCT PIER 8 FTG DOWL	14	16	54		F	S				10	11.0											45	0.	3835
68	NW STRUCT PIER 8 FTG DOWL	14	16	54		F	S				15	11.0											13	0.	1591
69	NW STRUCT PIER 9 FTG LONG	11	26	50			S				17	0.0											18	0.	2203
⚠ 70	NW STRUCT PIER 9 FTG TRAN	11	34	50			S				20	6.0											17	0.	2348
71	NW STRUCT PIER 9 FTG DOWL	14	12	54		F	S				10	11.0											20	6.	3700
72	NW STRUCT PIER 9 FTG DOWL	14	12	54		F	S				15	11.0											13	0.	1193
111	NW STRUCT COL 7 TIES	4	67	66			S				5	9.0	1	6.0									18	0.	1652
122	NW STRUCT COL 7 VERT	14	18	50		F	S				52	7.0											19	5.	870
123	NW STRUCT COL 7 VERT	14	18	50		F	S				57	7.0											52	7.	7241
111	NW STRUCT COL 8 TIES	4	68	66			S				5	9.0	1	6.0									57	7.	7929
124	NW STRUCT COL 8 VERT	14	16	50		F	S				53	9.0											19	5.	883
125	NW STRUCT COL 8 VERT	14	16	50		F	S				58	9.0											53	9.	6579
111	NW STRUCT COL 9 TIES	4	66	66			S				5	9.0	1	6.0									58	9.	7191
126	NW STRUCT COL 9 VERT	14	12	50		F	S				51	4.0											19	5.	857
127	NW STRUCT COL 9 VERT	14	12	50		F	S				56	4.0											51	4.	4712
200	BOTTOM SLAB BOT TRANSV	5	195	61							19	8.0	1	0.0	1	0.0							56	4.	5171
203	BOT SLAB BOT LONG HING-P7	5	2	50							14	9.0											21	2.	4305
204	BOT SLAB BOT LONG HING-P7	5	6	50							08	0.0											14	9.	31
205	BOT SLAB BOT LONG HING-P7	5	2	50							22	0.0											8	0.	50
206	BOT SLAB BOT LONG HING-P7	14	6	50							30	0.0											22	0.	46
207	BOT SLAB BOT LONG HING-P7	14	2	54		F					49	9.0											30	0.	1377
208	BOT SLAB BOT LONG HING-P7	14	4	54		F			V	2	50	6.0											51	10.	793
											44	0.0													
209	BOT SLAB BOT LONG HING-P7	14	6	50							47	0.0											49	4.	1510
211	BOT SLAB BOT LONG HING-P7	14	4	54		F			V	2	59	6.0											47	0.	2157
											55	0.0													
210	BOT SLAB BOT LONG HING-P7	14	2	54		F					58	9.0											59	4.	1816
212	BOT SLAB BOT LONG HING-P7	14	6	50							59	3.0											60	10.	931
213	BOT SLAB BOT LONG HING-P7	14	6	50							71	3.0											59	3.	2720
214	BOT SLAB BOT LONG HING-P7	14	6	54					V	2	69	6.0											71	3.	3270
											67	6.0													
215	BOT SLAB BOT LONG HING-P7	5	8	50		F					36	0.0											70	7.	3240
216	BOT SLAB BOT LONG HING-P7	5	6	50							31	6.0											36	0.	300
217	BOT SLAB BOT LONG HING-P7	5	2	50							46	0.0											31	6.	197
218	BOT SLAB BOT LONG HING-P7	5	2	50							37	0.0											46	0.	96
219	BOT SLAB BOT LONG HING-P7	5	2	50							27	0.0											37	0.	77
220	BOT SLAB BOT LONG HING-P7	14	2	50		F					44	9.0											27	0.	56
221	BOT SLAB BOT LONG HING-P7	14	2	50		F					35	9.0											44	9.	685
222	BOT SLAB BOT LONG HING-P7	14	4	50							46	0.0											35	9.	547
223	BOT SLAB BOT LONG HING-P7	14	4	50		F					45	6.0											46	0.	1408
225	BOTTOM SLAB BOT LONG P7-P8	5	2	50							24	6.0											45	6.	1392
226	BOTTOM SLAB BOT LONG P7-P8	5	4	50							33	6.0											24	6.	51
227	BOTTOM SLAB BOT LONG P7-P8	5	2	50							40	0.0											33	6.	140
228	BOTTOM SLAB BOT LONG P7-P8	5	4	50							27	9.0											40	0.	83
229	BOTTOM SLAB BOT LONG P7-P8	14	2	50		F					39	3.0											27	9.	116
230	BOTTOM SLAB BOT LONG P7-P8	14	6	50							72	6.0											39	3.	501
231	BOTTOM SLAB BOT LONG P7-P8	14	6	50							64	6.0											72	6.	3328
232	BOTTOM SLAB BOT LONG P7-P8	14	6	50							53	4.0											64	6.	2961
233	BOTTOM SLAB BOT LONG P7-P8	14	4	50		F			V	2	75	3.0											53	4.	2448
											74	6.0													
234	BOTTOM SLAB BOT LONG P7-P8	14	6	50							39	3.0											74	10.	2291
84	NW STRUCT FTG TRANS BOT	11	57	50			S				27	6.0											39	3.	1802
⚠ 86	NW STRUCT FTG LONGIT TOP	14	23	50			S				33	0.0											27	6.	8330
33	NW STRUCT TRANS BOT	6	34	50			S				27	6.0											33	0.	5800
																							27	6.	1404
235	BOTTOM SLAB BOT LONG P7-P8	14	6	50		F			V	2	70	3.0													
											68	3.0													
236	BOTTOM SLAB BOT LONG P7-P8	14	6	50					V	2	31	6.0											69	3.	3179
											29	6.0													
237	BOTTOM SLAD BOT LONG P7-P8	5	4	50							18	6.0											30	6.	1400
238	BOTTOM SLAB BOT LONG P7-P8	5	4	50							28	6.0											18	6.	77
239	BOTTOM SLAB BOT LONG P7-P8	5	2	50							35	6.0											28	6.	119
240	BOTTOM SLAB BOT LONG P7-P8	5	4	50							22	0.0											35	6.	74
241	BOTTOM SLAB BOT LONG P7-P8	14	4	50							40	0.0											22	0.	92
280	BOTTOM SLAB BOT LONG P7-P8	14	2	50		F					78	0.0											40	0.	1224
245	BOTTOM SLAB BOT LONG P8-P	8	4	50							35	9.0											78	0.	1193
246	BOTTOM SLAB BOT LONG P8-P	5	4	50							21	0.0											35	9.	382
247	BOTTOM SLAB BOT LONG P8-P	5	4	50							25	0.0											21	0.	88
248	BOTTOM SLAB BOT LONG P8-P	10	6	50							49	3.0											25	0.	104
249	BOTTOM SLAB BOT LONG P8-P	10	6	50							42	3.0											49	3.	1272
250	BOTTOM SLAB BOT LONG P8-P	10	6	50							28	3.0											42	3.	1091
251	BOTTOM SLAB BOT LONG P8-P	10	4	50							80	0.0											28	3.	729
252	BOTTOM SLAB BOT LONG P8-P	10	4	50							78	0.0											80	0.	1377
253	BOTTOM SLAB BOT LONG P8-P	10	4	50							80	0.0											78	0.	1343
254	BOTTOM SLAB BOT LONG P8-P	5	4	50							24	9.0											80	0.	1377
255	BOTTOM SLAB BOT LONG P8-P	5	4	50							27	6.0											24	9.	103
281	BOTTOM SLAB BOT LONG P8	11	16	50							12	6.0											27	6.	115
282	BOTTOM SLAB BOT LONG P9	11	8	50							11	6.0											12	6.	1063
260	BOT SLAB BOT LONG P9-HING	10	6	50							14	6.0											11	6.	489
261	BOT SLAB BOT LONG P9-HING	5	12	50							18	0.0											14	6.	374
264	BOTTOM SLAB TOP TRANSV	5	195	61							19	8.0	1	0.0	1	0.0							18	0.	225
267	BOTTOM SLAB TOP LONGIT	5	112	50							40	0.0											21	2.	4305
268	BOTTOM SLAB TOP LONGIT	5	8	50					V	2	27	6.0											40	0.	4673
											34	0.0													
269	BOTTOM SLAB TOP LONGIT	5	8	50					V	2	35	0.0											30	9.	257
											41	6.0													
270	BOTTOM SLAB TOP LONGIT	14	8	50					V	4	36	0.0											38	3.	319
											34	0.0													
350	WEB LONGIT	4	84	50							40	0.0											35	0.	2142
351	WEB LONGIT	4	12	50					V	4	40	0.0											40	0.	2244
											27	0.0													
352	WEB LONGIT	10	6	50							58	0.0											33	6.	269
353	WEB LONGIT	10	6	50							56	0.0											58	0.	1497
354	WEB LONGIT	10	6	50							41	6.0											56	0.	1446
355	WEB LONGIT	8	6	50							50	0.0											41	6.	1071
356	WEB LONGIT	8	6	50					V	2	24	0.0											50	0.	801

MARK NO.	LOCATION	SIZE	NO. REQ'D.	BEND TYPE	TIE OR STIR.	FLD. WELD	SUBSTR.	A-432	VARIES	NO. EACH	U Ft.	U In.	W Ft.	W In.	X Ft.	X In.	Y Ft.	Y In.	Z Ft.	Z In.	θ1 Deg.	θ2 Deg.	LENGTH Ft.	LENGTH In.	WEIGHT Lbs.
											19	8.0											21	10.	350
357	WEB LONGIT	8	6	50					V	2	53	6.0													
											48	6.0													
358	WEB LONGIT	8	6	50					V	2	41	6.0											51	0.	817
											37	8.0													
399	WEB STIRRUPS	5	2250	64	T							6.0	4	10.5		6.0							39	7.	634
370	DIAPH HORIZ	5	36	50							19	8.0											5	7.	13055
371	DIAPH STIRRUPS	4	216	64	T							6.0	4	7.0		6.0							19	8.	738
372	CROSS BM TOP P 7,8,9	14	23	50							17	0.0											5	4.	770
373	CROSS BM TOP P 7,8,9	14	8	50							23	0.0											17	0.	2991
374	CROSS BM TOP P 7,8,9	14	17	61							19	4.0	4	1.0	4	1.0							23	0.	1408
375	CROSS BM TOP P 7,8,9	7	36	50							19	8.0											25	6.	3316
376	CROSS BM STIRRUPS	6	66	61							6	9.0	4	7.0	4	7.0	1	3.0	1	3.0			19	8.	1447
377	CROSS BM STIRRUPS	6	264	64							1	3.0	4	7.0	1	3.0	0	0.0					17	9.	1760
630	HINGE DIAGONAL	11	21	96		F		H			3	0.0	4	6.5									6	7.	2610
631	BRG SUPPORT HORIZ	14	21	50							0	5.0									120		10	1.	1126
632	BRG SUPPORT STIRRUPS	5	24	61	T						2	9.0	4	10.0	4	10.0		6.0		6.0			0	5.	84
633	BRG SUPPORT STIRRUPS	5	3	61	T						3	9.0	4	10.0	4	10.0		6.0		6.0			13	0.	325
																							14	0.	44
634	BRG SUPPORT STIRRUPS	5	24	61	T																				
635	BRG SUPPORT HORIZ	6	40	50							3	9.0	2	0.5	2	0.5		6.0		6.0			8	5.	211
636	BRG SUPPORT HORIZ	6	4	69							4	0.0											4	0.	240
637	BRG SUPPORT HORIZ	6	4	69							3	10.0	5	0.0	1	8.0							9	0.	54
639	WEB HORIZ	4	6	50							3	10.0	9	6.0	3	2.0							13	9.	82
641	DIAPHRAM HORIZ TOP	5	2	50							19	9.0											19	9.	79
643	DIAPHRAM HORIZ BOT	9	2	50							23	0.0											23	0.	48
644	DIAPHRAM STIRRUPS	4	8	60	T						19	9.0											19	9.	134
645	CANTILEVER TOP	6	14	80								9.0	4	6.6		6.0							11	2.	60
646	CANTILEVER TRANSV	4	4	50							4	0.0	1	0.0				3.0			11		3	10.	81
650	TOP TRANSV	6	6	52							19	9.0											19	9.	53
630	HINGE DIAGONAL	11	21	96		F		H			25	3.0											26	7.	240
631	BRG SUPPORT HORIZ	14	21	50							3	0.0	4	6.5							120		10	1.	1126
632	BRG SUPPORT STIRRUPS	5	24	61	T						0	5.0											0	5.	84
633	BRG SUPPORT STIRRUPS	5	3	61	T						2	9.0	4	10.0	4	10.0		6.0		6.0			13	0.	325
634	BRG SUPPORT STIRRUPS	5	24	61	T						3	9.0	4	10.0	4	10.0		6.0		6.0			14	0.	44
635	BRG SUPPORT HORIZ	6	40	50							3	9.0	2	0.5	2	0.5		6.0		6.0			8	5.	211
636	BRG SUPPORT HORIZ	6	4	69							4	0.0											4	0.	240
637	BRG SUPPORT HORIZ	6	4	69							3	10.0	5	0.0	1	8.0							9	0.	54
638	WEB HORIZ BOT	4	12	50							3	10.0	9	6.0	3	2.0							13	9.	82
639	WEB HORIZ BOT	4	6	50							5	0.0											5	0.	40
640	DIAPHRAM STIRRUPS	4	8	60	T						19	9.0											19	9.	79
641	DIAPHRAM HORIZ TOP	5	2	50							1	0.0	4	6.6		6.0							11	8.	62
642	DIAPHRAM HORIZ BOT	7	2	50							23	0.0											23	0.	48
647	HINGE WALL HORIZ	4	4	50							19	9.0											19	9.	81
648	HINGE WALL VERT	4	6	50							2	0.0											2	0.	5
650	TOP TRANSV	6	3	52							2	0.0											2	0.	8
400	ROADWAY SLAB TOP TRANSV	6	624	56							25	3.0											26	7.	120
403	ROADWAY SLAB TOP LG HNG-P7	8	2	50							26	2.0											28	0.	26243
404	ROADWAY SLAB TOP LG HNG-P7	8	1	50							60	0.0											60	0.	320
405	ROADWAY SLAB TOP LG HNG-P7	8	1	50							31	9.0											31	9.	85
406	ROADWAY SLAB TOP LG HNG-P7	5	2	50							23	0.0											23	0.	61
407	ROADWAY SLAB TOP LG HNG-P7	5	2	50							40	0.0											40	0.	85
408	ROADWAY SLAB TOP LG HNG-P7	5	8	50					V	1	35	6.0											35	6.	74
											40	3.0													
											38	6.0													
409	ROADWAY SLAB TOP LG HNG-P7	5	8	50					V	1	38	0.0											39	4.	329
											36	6.0													
410	ROADWAY SLAB TOP LG HNG-P7	11	2	54							61	0.0											37	3.	311
411	ROADWAY SLAB TOP LG HNG-P7	11	2	54							57	6.0											62	9.	667
412	ROADWAY SLAB TOP LG HNG-P7	11	2	54							59	3.0											59	3.	630
413	ROADWAY SLAB TOP LG HNG-P7	5	2	50							40	6.0											61	0.	648
414	ROADWAY SLAB TOP LG HNG-P7	5	6	50							45	6.0											40	6.	84
415	ROADWAY SLAB TOP LG HNG-P7	5	4	50							33	6.0											45	6.	285
416	ROADWAY SLAB TOP LG HNG-P7	5	4	50							25	6.0											33	6.	140
417	ROADWAY SLAB TOP LG HNG-P7	5	2	50							44	3.0											25	6.	106
418	ROADWAY SLAB TOP LG HNG-P7	5	2	50							38	0.0											44	3.	92
419	ROADWAY SLAB TOP LG AT P7	14	6	50							20	0.0											38	0.	79
420	ROADWAY SLAB TOP LG AT P7	14	6	50							26	0.0											20	0.	918
421	ROADWAY SLAB TOP LG AT P7	14	6	50							30	0.0											26	0.	1193
422	ROADWAY SLAB TOP LG AT P7	14	6	50							36	0.0											30	0.	1377
423	ROADWAY SLAB TOP LG AT P7	14	6	50							42	0.0											36	0.	1652
424	ROADWAY SLAB TOP LG AT P7	14	6	50							50	0.0											42	0.	1928
425	ROADWAY SLAB TOP LG AT P7	14	6	50							57	0.0											50	0.	2295
426	ROADWAY SLAB TOP LG AT P7	14	6	50							65	0.0											57	0.	2616
427	ROADWAY SLAB TOP LG AT P7	14	6	50							75	0.0											65	0.	2983
428	ROADWAY SLAB TOP LONG P7-8	5	4	50							13	6.0											75	0.	3442
429	ROADWAY SLAB TOP LONG P7-8	5	4	50							20	6.0											13	6.	56
430	ROADWAY SLAB TOP LONG P7-8	5	6	50							25	6.0											20	6.	86
431	ROADWAY SLAB TOP LONG P7-8	5	4	50							6	6.0											25	6.	160
432	ROADWAY SLAB TOP LONG P7-8	5	2	50							17	6.0											6	6.	27
																							17	6.	37

BENDING DIAGRAMS



VARIOUS STEEL REINFORCING BARS, INCLUDING THOSE IN CROSSBEAMS, ARE SHOWN AS STRAIGHT ON THE "BAR LIST" SHEETS OF THE ATTACHED PLANS. THE CONTRACTOR SHALL BEND THESE BARS AS REQUIRED TO CONFORM TO THE GEOMETRY OF THE STRUCTURE AND AS DETAILED ON THE PLANS.

REGISTERED PROFESSIONAL ENGINEER — STRUCTURAL AND CIVIL — STATE OF WASHINGTON

⚠ 2/6/68 REV. PIERS 8 & 11 REINF. STEEL

SR 405

MP 23.49 TO MP 23.76

WOODINVILLE INTERCHANGE

KING COUNTY

N-W & N-E STRUCTURE

BAR LIST N-W UNIT 3 ⚠

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN

F. L. McFAISON — BAKER FERGUSON
H. WALSH — JOHN N. RUPP

APPROVED December 7, 1967 — BRIDGE ENGINEER

CONTRACT NO. 8382 — SHEET 289 OF 297 SHEETS

P/1995

WOODINVILLE INTERCHANGE
PSH NO. 1-RE/PSH NO. 2.50
N-W STRUCTURE
BAR LIST - UNIT 3
SHEET 251 OF 289
11-16-67

Bridge Design Engineer
Supervising Bridge Engr.
Designed
Design Checked

S = Bar is included in substructure quantities.
F = Bar to be field welded.
T = Tie or Stirrup.
H = A.S.T.M. A-432.
V = Bar dimensions vary between dimensions shown on this line and the following line.

MARK NO.	LOCATION	SIZE	NO. REQ'D.	BEND TYPE	TIE OR STIR.	FLD. WELD	SUBSTR.	A-432	VARIES	NO. EACH	U Ft.	U In.	W Ft.	W In.	X Ft.	X In.	Y Ft.	Y In.	Z Ft.	Z In.	θ1 Deg.	θ2 Deg.	LENGTH Ft.	LENGTH In.	WEIGHT Lbs.
403	ROADWAY SLAB TOP LONG P7-8	8	2	50							60	0.0											60	0.	320
433	ROADWAY SLAB TOP LONG P7-8	8	1	50							39	0.0											39	0.	104
434	ROADWAY SLAB TOP LONG P7-8	8	1	50							33	0.0											33	0.	88
406	ROADWAY SLAB TOP LONG P7-8	5	2	50							40	0.0											40	0.	83
407	ROADWAY SLAB TOP LONG P7-8	5	2	50							35	6.0											35	6.	74
435	ROADWAY SLAB TOP LONG P7-8	11	2	50							50	0.0											50	0.	531
436	ROADWAY SLAB TOP LONG P7-8	11	2	50							45	9.0											45	9.	486
437	ROADWAY SLAB TOP LONG P7-8	11	2	50							48	0.0											48	0.	510
408	ROADWAY SLAB TOP LONG P7-8	5	8	50					V	1	40	3.0													
											38	6.0											39	4.	329
409	ROADWAY SLAB TOP LONG P7-8	5	8	50					V	1	38	0.0													
											36	6.0											37	3.	311
438	ROADWAY SLAB TOP LONG P7-8	5	6	50							28	6.0											28	6.	178
439	ROADWAY SLAB TOP LONG P7-8	5	10	50							22	6.0											22	6.	235
440	ROADWAY SLAB TOP LONG P7-8	5	4	50							16	6.0											16	6.	69
441	ROADWAY SLAB TOP LONG P8	14	6	50							19	0.0											19	0.	872
442	ROADWAY SLAB TOP LONG P8	14	6	50							25	0.0											25	0.	1147
443	ROADWAY SLAB TOP LONG P8	14	6	50							32	0.0											32	0.	1469
444	ROADWAY SLAB TOP LONG P8	14	6	50							39	0.0											39	0.	1790
445	ROADWAY SLAB TOP LONG P8	14	6	50							48	0.0											48	0.	2203
446	ROADWAY SLAB TOP LONG P8	14	6	50							62	0.0											62	0.	2846
447	ROADWAY SLAB TOP LONG P8	14	6	50		F			V	2	82	6.0													
|											78	3.0											80	4.	3689
448	ROADWAY SLAB TOP LONG P8	5	8	50							11	6.0											11	6.	96
449	ROADWAY SLAB TOP LONG P8	5	6	50							18	6.0											18	6.	116
450	ROADWAY SLAB TOP LONG P8	5	2	50							40	3.0											40	3.	84
451	ROADWAY SLAB TOP LONG P8	5	2	50							36	0.0											36	0.	75
452	ROADWAY SLAB TOP LONG P8	5	8	50							39	0.0											39	0.	325
453	ROADWAY SLAB TOP LONG P8	5	8	50							37	0.0											37	0.	309
454	ROADWAY SLAB TOP LONG P8	8	2	50					V	1	60	6.0													
											55	6.0											58	0.	310
455	ROADWAY SLAB TOP LONG P8	5	2	50							14	0.0											14	0.	29
456	ROADWAY SLAB TOP LONG P8	8	2	50							13	0.0											13	0.	69
457	ROADWAY SLAB TOP LONG P8	5	6	50							17	0.0											17	0.	106
460	ROADWAY SLAB TOP LG P9-HNG	14	6	54							25	6.0											27	7.	1266
461	ROADWAY SLAB TOP LG P9-HNG	14	6	54							28	6.0											30	7.	1404
462	ROADWAY SLAB TOP LG P9-HNG	14	6	54							32	6.0											34	7.	1587
463	ROADWAY SLAB TOP LG P9-HNG	14	6	54							36	6.0											38	7.	1771
464	ROADWAY SLAB TOP LG P9-HNG	14	6	54							41	6.0											43	7.	2000
465	ROADWAY SLAB TOP LG P9-HNG	14	6	54							47	6.0											49	7.	2276
466	ROADWAY SLAB TOP LG P9-HNG	14	6	54		F					50	6.0											52	7.	2414
467	ROADWAY SLAB TOP LG P9-HNG	14	6	54							53	6.0											55	7.	2551
470	ROADWAY SLAB BOT TRANSV	6	585	50							22	0.0											22	0.	19331
47	ROADWAY SLAB BOT LONGIT	5	252	50							40	0.0											40	0.	10513
47[illegible]	ROADWAY SLAB BOT LONGIT	5	18	50					V	2	24	6.0													
											31	6.0											28	0.	526
474	ROADWAY SLAB BOT LONGIT	5	18	50					V	2	32	6.0													
											39	6.0											36	0.	676
593	ROADWAY SLAB BOT LONGIT	6	48	50							45	0.0											45	0.	3244
594	ROADWAY SLAB BOT LONGIT	6	8	50					V	4	54	0.0													
											36	0.0											45	0.	541
596	SLAB CANTL TRANSV BOT	5	598	69							1	0.0	3	0.0		7.5							3	11.	2467
597	SLAB DOWEL TO CURB	5	798	69	T							6.0		3.5	1	3.0		6.0		6.0			2	11.	2435
650	CURB LONGIT WEST	4	85	50							15	9.0											15	9.	894
651	CURB LONGIT WEST	4	5	50							15	7.0											15	7.	52
652	CURB LONGIT EAST	4	90	50							16	9.0											16	9.	1007
653	CURB TRANSV	4	402	65	T							5.0	1	3.0									1	6.	403
654	RAIL BASE VERT I.S. FACE	5	804	65	T							8.5	2	0.5		8.5							3	3.	2726
655	RAIL BASE VERT O.S. FACE	4	402	64	T							5.0	2	0.5		5.0							2	8.	705
656	RAIL BASE LONGIT WEST	4	70	50							7	9.0											7	9.	362
657	RAIL BASE LONGIT WEST	4	2	50							7	7.0											7	7.	10
658	RAIL BASE LONGIT EAST	4	72	50							8	3.0											8	3.	397
659	RAIL BASE LONGIT WEST	6	70	50							7	9.0											7	9.	815
660	RAIL BASE LONGIT WEST	6	2	50							7	7.0											7	7.	23
661	RAIL BASE LONGIT EAST	6	72	50							8	3.0											8	3.	892
700	LIGHT STD ANCHORAGE	6	12	64	T							5.0	2	0.5		5.0							2	5.	44
701	LIGHT STD ANCHORAGE	6	6	65	T							8.5	2	0.5		8.5							3	2.	29
740	ACCESS HATCH	6	8	50							5	0.0											5	0.0	60

N-W UNIT 3

BAR LIST TOTALS

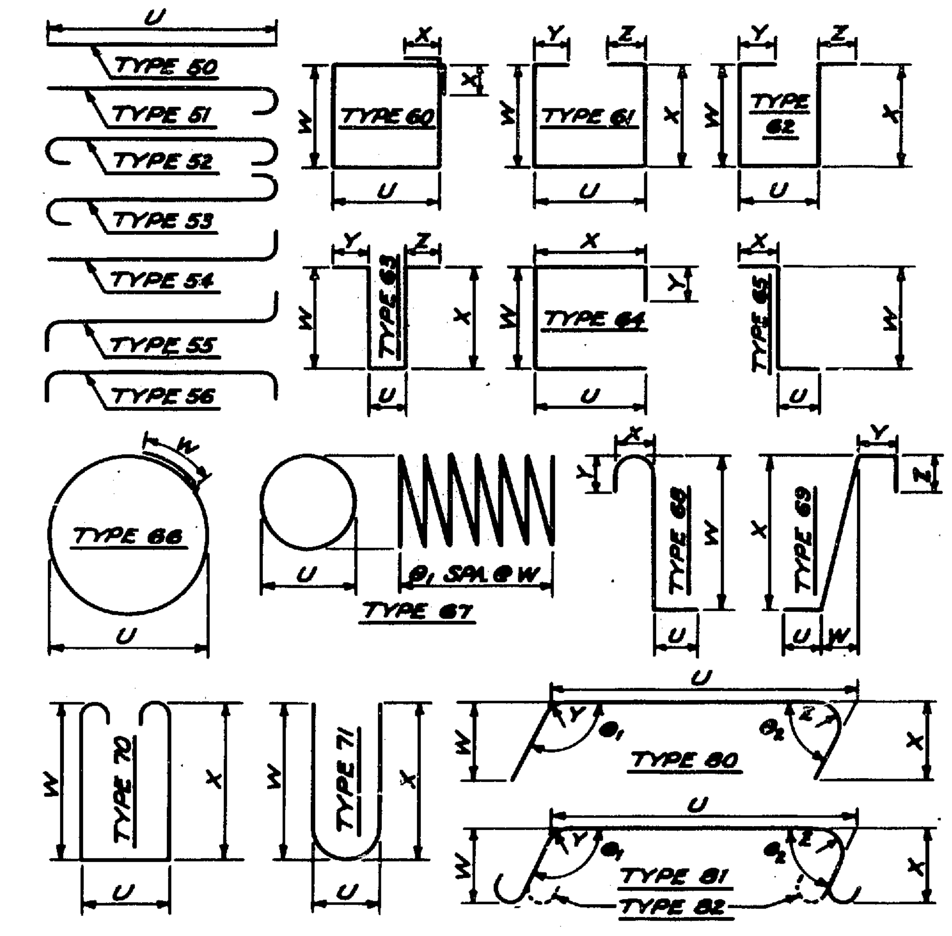
SUBSTRUCTURE A-432	GRAND TOTAL	0.
SUBSTRUCTURE A-15/A-408	GRAND TOTAL	87,751
SUPERSTRUCTURE A-432	GRAND TOTAL	2251.
SUPERSTRUCTURE A-15/A-408	GRAND TOTAL	241733.

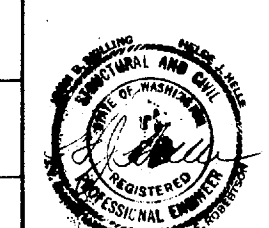
S = Bar is included in substructure quantities.
F = Bar to be field welded.
T = Tie or Stirrup
H = A.S.T.M. A-432.
V = Bar dimensions vary between dimensions shown on this line and the following line.

MARK NO.	LOCATION	SIZE	NO. REQ'D.	BEND TYPE	TIE OR STIR.	FLD. WELD	SUBSTR.	A-432	VARIES	NO. EACH	U Ft.	U In.	W Ft.	W In.	X Ft.	X In.	Y Ft.	Y In.	Z Ft.	Z In.	θ1 Deg.	θ2 Deg.	LENGTH Ft.	LENGTH In.	WEIGHT Lbs.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178	290	297

BENDING DIAGRAMS





⚠ 2/6/68 REVISED TOTAL SUBST. LWS

SR 405

MP 23.49 TO MP 23.76

WOODINVILLE INTERCHANGE

KING COUNTY

N-W & N-E STRUCTURE

BAR LIST N-W UNIT 3

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN

F. L. MCALISON
H. WALSH
BAKER FERGUSON
JOHN N. RUPP

APPROVED December 7, 1967

BRIDGE ENGINEER

As Built Changes in Red 7-16-70 SHEET 290 OF 297 SHEETS

CONTRACT NO. 8382

P/1995

BAR LIST - UNIT 3
SHEET 282 OF 289 11-16-67

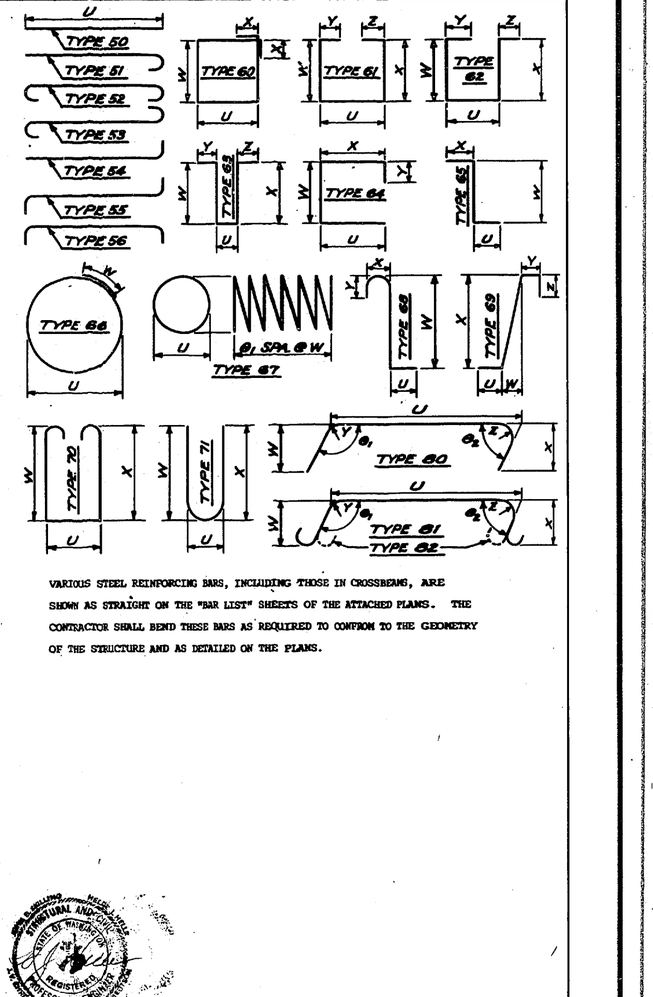
S = Bar is included in substructure quantities.
F = Bar to be field welded.
T = Tie or Stirrup
H = A.S.T.M. A-432.
V = Bar dimensions vary between dimensions shown on this line and the following line.

MARK NO.	LOCATION	SIZE	NO. REQ'D.	BEND TYPE	TIE OR STIRR.	FIELD WELD	SUBSTR.	A-432	VARIES	NO. EACH	DIMENSIONS (Out to out) U Ft	U In	W Ft	W In	X Ft	X In	Y Ft	Y In	Z Ft	Z In	θ1 Deg.	θ2 Deg.	LENGTH Ft.	LENGTH In.	WEIGHT Lbs.
	N-W UNIT 4																								
73	NW STRUCT PIER 10 FTG LONG	11	39	50			S				20	6.0											20	6.	4030
74	NW STRUCT PIER 10 FTG TRAN	11	39	50			S				20	6.0											20	6.	4030
75	NW STRUCT PIER 10 FTG DOWL	14	14	54		F	S				10	11.0											13	0.	1392
76	NW STRUCT PIER 10 FTG DOWL	14	14	54		F	S				15	11.0											18	0.	1928
77	NW STRUCT PIER 11 FTG LONG	11	39	50			S				20	6.0											20	6.	4030
78	NW STRUCT PIER 11 FTG TRAN	11	39	50			S				20	6.0											20	6.	4030
79	NW STRUCT PIER 11 FTG DOWL	18	14	54		F	S				12	8.0											15	6.	2243
80	NW STRUCT PIER 11 FTG DOWL	18	14	54		F	S				19	4.0											22	2.	4213
81	NW STRUCT PIER 12 FTG LONG	11	26	50			S				16	6.0											16	6.	2279
82	NW STRUCT PIER 12 FTG TRAN	11	34	50			S				20	6.0											20	6.	3700
83	NW STRUCT PIER 12 FTG DOWL	11	26	54			S				8	3.0											10	0.	1381
111	NW STRUCT COL 10 TIES	4	63	66			S				5	9.0	1	6.0									13	5.	814
128	NW STRUCT COL 10 VERT	14	14	50		F	S				48	0.0											48	0.	5141
129	NW STRUCT COL 10 VERT	14	14	50		F	S				53	0.0											53	0.	5676
130	NW STRUCT COL 11 TIES	4	48	98			S				3	9.0											4	9.	546
131	NW STRUCT COL 11 TIES	4	172	52	T		S				3	9.0											4	9.	546
132	NW STRUCT COL 11 VERT	18	14	50		F	S				30	0.0											30	0.	5712
133	NW STRUCT COL 11 VERT	18	14	50		F	S				36	8.0											36	0.	6921
111	NW STRUCT COL 12 TIES	4	44	66			S				5	9.0	1	6.0									19	5.	571
134	NW STRUCT COL 12 VERT	11	26	50			S				39	5.0											39	5.	5445
200	BOTTOM SLAB BOT TRANSV	5	195	61							19	8.0	1	0.0	1	0.0							21	2.	4305
203	BOT SLAB BOT LONG MIN-P10	5	6	50							9	6.0											9	6.	59
204	BOT SLAB BOT LONG MIN-P10	14	6	54		F			V	2	57	0.0													
											53	3.0											58	2.	2672
205	BOT SLAB BOT LONG MIN-P10	14	6	54		F			V	2	63	0.0													
											61	3.0											64	2.	2947
206	BOT SLAB BOT LONG MIN-P10	14	6	50							43	3.0											43	3.	1985
207	BOT SLAB BOT LONG MIN-P10	14	6	50							55	3.0											55	3.	2536
208	BOT SLAB BOT LONG MIN-P10	14	6	50							64	6.0											64	6.	2961
209	BOT SLAB BOT LONG MIN-P10	14	6	54					V	2	73	0.0													
											71	9.0											74	5.	3418
210	BOT SLAB BOT LONG MIN-P10	5	6	50							32	0.0											32	0.	200
211	BOT SLAB BOT LONG MIN-P10	5	4	50							22	0.0											22	0.	92
212	BOT SLAB BOT LONG MIN-P10	5	2	50							26	3.0											26	3.	55
213	BOT SLAB BOT LONG MIN-P10	14	6	50		F			V	2	37	9.0													
											35	0.0											36	4.	1670
214	BOT SLAB BOT LONG MIN-P10	14	6	50		F			V	2	31	9.0													
											29	0.0											30	4.	1394
260	BOT SLAB BOT LONG P11&P12	11	24	50							11	6.0											11	6.	1466
215	BOT SLAB BOT LONG P10-P11	5	4	50							34	6.0											34	6.	144
216	BOT SLAB BOT LONG P10-P11	5	2	50							42	0.0											42	0.	88
217	BOT SLAB BOT LONG P10-P11	5	2	50							23	6.0											23	6.	98
218	BOT SLAB BOT LONG P10-P11	5	2	50							28	6.0											28	6.	59
219	BOT SLAB BOT LONG P10-P11	14	6	50		F			V	2	38	6.0													
											36	0.0											37	3.	1710
220	BOT SLAB BOT LONG P10-P11	14	6	50		F			V	2	72	0.0													
											69	6.0											70	9.	3247
221	BOT SLAB BOT LONG P10-P11	14	6	50							32	0.0											32	0.	1469
222	BOT SLAB BOT LONG P10-P11	14	6	50							48	0.0											48	0.	2203
223	BOT SLAB BOT LONG P10-P11	14	6	50							60	0.0											60	0.	2754
224	BOT SLAB BOT LONG P10-P11	14	6	50							71	0.0											71	0.	3259
225	BOT SLAB BOT LONG P10-P11	14	6	50		F			V	2	68	3.0													
											65	9.0											67	0.	3075
226	BOT SLAB BOT LONG P10-P11	14	6	50		F			V	2	36	3.0													
											33	9.0											35	0.	1606
227	BOT SLAB BOT LONG P10-P11	5	4	50							32	3.0											32	3.	139
228	BOT SLAB BOT LONG P10-P11	5	2	50							40	9.0											40	0.	83
229	BOT SLAB BOT LONG P10-P11	5	6	50							25	6.0											25	6.	160
230	BOT SLAB BOT LONG P10-P11	14	4	50							40	0.0											40	0.	1224
232	BOT SLAB BOT LONG P11-P12	5	4	50							31	0.0											31	0.	129
233	BOT SLAB BOT LONG P11-P12	5	6	50							25	3.0											25	3.	158
234	BOT SLAB BOT LONG P11-P12	10	4	50							78	9.0											78	9.	1359
235	BOT SLAB BOT LONG P11-P12	10	4	50							76	0.0											76	0.	1308
236	BOT SLAB BOT LONG P11-P12	10	4	50							77	6.0											77	6.	1334
237	BOT SLAB BOT LONG P11-P12	10	6	50							28	3.0											28	3.	729
238	BOT SLAB BOT LONG P11-P12	10	6	50							39	3.0											39	3.	1013
239	BOT SLAB BOT LONG P11-P12	10	6	50							47	3.0											47	3.	1220
240	BOT SLAB BOT LONG P11-P12	5	4	50							24	6.0											24	6.	102
241	BOT SLAB BOT LONG P11-P12	5	4	50							29	6.0											29	6.	123
242	BOT SLAB BOT LONG P11-P12	11	4	50							46	0.0											46	0.	978
243	BOT SLAB BOT LONG P11-P12	14	8	50							36	0.0											36	0.	2203
244	BOT SLAB BOT LONG P12-MIN	10	6	50							13	6.0											13	6.	349
245	BOT SLAB BOT LONG P12-MIN	5	16	50							18	0.0											18	0.	309
200	BOTTOM SLAB TOP TRANSV	5	195	61							19	8.0	1	0.0	1	0.0							21	2.	4305
255	BOTTOM SLAB TOP LONGIT	5	128	50							40	0.0											40	0.	5340
256	BOTTOM SLAB TOP LONGIT	5	8	50					V	2	22	0.0													
											28	0.0											25	0.	209
257	BOTTOM SLAB TOP LONGIT	5	8	50					V	2	29	6.0													
											35	0.0											32	3.	269
350	WEB LONGIT	4	84	50							40	0.0											40	0.	2244
351	WEB LONGIT	4	12	50					V	4	33	9.0													
											20	0.0											26	10.	215
352	WEB LONGIT	10	6	50							58	0.0											58	0.	1497
353	WEB LONGIT	10	6	50							55	0.0											55	0.	1420
354	WEB LONGIT	10	6	50							39	0.0											39	0.	1007
355	WEB LONGIT	9	6	50							50	0.0											50	0.	801
356	WEB LONGIT	8	6	50					V	2	26	3.0													
											22	1.0											24	2.	387
357	WEB LONGIT	9	6	50					V	2	53	6.0													
											48	6.0											51	0.	817
358	WEB LONGIT	8	6	50					V	2	41	0.0													
											37	0.0											39	0.	625
399	WEB STIRRUPS	5	2226	64	T						6.0		4	10.5		6.0							5	7.	12916
370	DIAPH HORIZ	5	30	50							19	8.0											19	8.	615
371	STIRRUPS	4	180	64	T						6.0		4	7.0		6.0							5	4.	641
372	CROSS AM P 10-11-12 TOP	14	23	50							17	0.0											17	0.	2991
373	CROSS AM P 10-11-12 TOP	14	8	50							23	0.0											23	0.	1408
374	CROSS AM P 10-11-12 TOP	14	17	61							19	4.0	4	1.0	4	1.0							25	6.	3316
375	CROSS AM P 10-11-12 TOP	7	36	50							19	8.0											19	8.	1447
376	CROSS AM STIRRUPS	6	66	61							6	9.0	4	7.0	4	7.0	1	3.0	1	3.0			17	9.	1760
377	CROSS AM STIRRUPS	6	264	64							1	3.0	4	7.0	1	3.0							6	7.	2610
630	HINGE DIAGONAL	11	21	96		F		H			3	0.0	4	6.5								120	10	1.	1126

S = Bar is included in substructure quantities.
F = Bar to be field welded.
T = Tie or Stirrup
H = A.S.T.M. A-432.
V = Bar dimensions vary between dimensions shown on this line and the following line.

MARK NO.	LOCATION	SIZE	NO. REQ'D.	BEND TYPE	TIE OR STIRR.	FIELD WELD	SUBSTR.	A-432	VARIES	NO. EACH	DIMENSIONS (Out to out) U Ft	U In	W Ft	W In	X Ft	X In	Y Ft	Y In	Z Ft	Z In	θ1 Deg.	θ2 Deg.	LENGTH Ft.	LENGTH In.	WEIGHT Lbs.
631	BRG SUPPORT HORIZ	14	21	50							0	5.0											0	5.	84
632	BRG SUPPORT STIRRUPS	5	24	61	T						2	9.0	4	10.0	4	10.0		6.0		6.0			13	0.	325
633	BRG SUPPORT STIRRUPS	5	3	61	T						3	9.0	4	10.0	4	10.0		6.0		6.0			14	0.	44
634	BRG SUPPORT STIRRUPS	5	24	61	T						3	9.0	2	0.5	2	0.5		6.0		6.0			8	5.	211
635	BRG SUPPORT HORIZ	6	40	50							4	0.0											4	0.	240
636	BRG SUPPORT HORIZ	6	4	69							3	10.0	5	0.0	1	8.0							9	0.	54
637	BRG SUPPORT HORIZ	6	4	69							3	10.0	9	6.0	3	2.0							13	9.	82
639	WEB HORIZ	4	6	50							19	9.0											19	9.	79
641	DIAPHRAM HORIZ TOP	5	2	50							23	0.0											23	0.	48
643	DIAPHRAM HORIZ BOT	9	2	50							19	9.0											19	9.	134
644	DIAPHRAM STIRRUPS	4	8	60	T						6	9.0	4	6.6		6.0							11	2.	60
645	CANTILEVER TOP	6	14	80							4	0.0	1	0.0				3.0			11		3	10.	81
646	CANTILEVER TRANSV	4	4	50							19	9.0											19	9.	53
650	TOP TRANSV	6	6	52							25	3.0											26	7.	240
630	HINGE DIAGONAL	11	21	96		F		H			3	0.0	4	6.5								120	10	1.	1126
631	BRG SUPPORT HORIZ	14	21	50							0	5.0											0	5.	84
632	BRG SUPPORT STIRRUPS	5	24	61	T						2	9.0	4	10.0	4	10.0		6.0		6.0			13	0.	325
633	BRG SUPPORT STIRRUPS	5	3	61	T						3	9.0	4	10.0	4	10.0		6.0		6.0			14	0.	44
634	BRG SUPPORT STIRRUPS	5	24	61	T						3	9.0	2	0.5	2	0.5		6.0		6.0			8	5.	211
635	BRG SUPPORT HORIZ	6	40	50							4	0.0											4	0.	240
636	BRG SUPPORT HORIZ	6	4	69							3	10.0	5	0.0	1	8.0							9	0.	54
637	BRG SUPPORT HORIZ	6	4	69							3	10.0	9	6.0	3	2.0							13	9.	82
638	WEB HORIZ BOT	4	12	50							5	0.0											5	0.	40
639	WEB HORIZ BOT	4	6	50							19	9.0											19	9.	79
640	DIAPHRAM STIRRUPS	4	8	60	T						1	0.0	4	6.6		6.0							11	8.	62
641	DIAPHRAM HORIZ TOP	5	2	50							23	0.0											23	0.	48
642	DIAPHRAM HORIZ BOT	7	2	50							19	9.0											19	9.	81
647	HINGE WALL HORIZ	4	4	50							2	0.0											2	0.	5
648	HINGE WALL VERT	4	6	50							2	0.0											2	0.	8
650	TOP TRANSV	6	3	52							25	3.0											26	7.	120
400	ROADWAY SLAB TOP TRANSV	6	623	56							26	2.0											28	0.	26201
403	ROADWAY SLAB TOP LONG H1-P	5	8	50					V	2	39	6.0													
											38	3.0											38	10.	324
404	ROADWAY SLAB TOP LONG H1-P	5	8	50					V	2	37	6.0													
											36	0.0											36	9.	307
405	ROADWAY SLAB TOP LONG H1-P	5	4	50					V	2	40	0.0													
											35	8.0											37	10.	158
406	ROADWAY SLAB TOP LONG H1-P	8	2	50							60	0.0											60	0.	320
407	ROADWAY SLAB TOP LONG H1-P	8	1	50							31	0.0											31	0.	83
408	ROADWAY SLAB TOP LONG H1-P	8	1	50							26	0.0											26	0.	69
409	ROADWAY SLAB TOP LONG H1-P	11	2	54							60	0.0											61	9.	656
410	ROADWAY SLAB TOP LONG H1-P	11	2	54							62	0.0											63	9.	677
411	ROADWAY SLAB TOP LONG H1-P	11	2	54							58	0.0											59	9.	635
412	ROADWAY SLAB TOP LONG H1-P	5	12	50							40	0.0											40	0.	501
413	ROADWAY SLAB TOP LONG H1-P	5	4	50							35	0.0											35	0.	146
414	ROADWAY SLAB TOP LONG H1-P	5	4	50							26	0.0											26	0.	108
415	ROADWAY SLAB TOP LONG H1-P	5	8	50							8	0.0											8	0.	67
416	ROADWAY SLAB TOP LONG AT P	14	6	50							19	0.0											19	0.	872
417	ROADWAY SLAB TOP LONG AT P	14	6	50							24	0.0											24	0.	1102
418	ROADWAY SLAB TOP LONG AT P	14	6	50							28	0.0											28	0.	1285
419	ROADWAY SLAB TOP LONG AT P	14	6	50							34	0.0											34	0.	1561
420	ROADWAY SLAB TOP LONG AT P	14	6	50							41	0.0											41	0.	1882
421	ROADWAY SLAB TOP LONG AT P	14	6	50							47	0.0											47	0.	2157
422	ROADWAY SLAB TOP LONG AT P	14	6	50							55	0.0											55	0.	2524
423	ROADWAY SLAB TOP LONG AT P	14	6	50							65	0.0											65	0.	2983
424	ROADWAY SLAB TOP LONG AT P	14	6	50							74	0.0											74	0.	3397
406	ROADWAY SLAB TOP LG P10-11	8	2	50							60	0.0											60	0.	320
425	ROADWAY SLAB TOP LG P10-11	8	1	50							37	6.0											37	6.	104
426	ROADWAY SLAB TOP LG P10-11	8	1	50							31	0.0											31	0.	83
427	ROADWAY SLAB TOP LG P10-11	5	8	50							26	6.0											26	6.	221
428	ROADWAY SLAB TOP LG P10-11	5	4	50							21	6.0											21	6.	90
429	ROADWAY SLAB TOP LG P10-11	5	4	50							14	6.0											14	6.	60
430	ROADWAY SLAB TOP LG P10-11	5	2	50							10	6.0											10	6.	22
412	ROADWAY SLAB TOP LG P10-11	5	2	50							40	0.0											40	0.	83
431	ROADWAY SLAB TOP LG P10-11	5	2	50							34	6.0											34	6.	72
432	ROADWAY SLAB TOP LG P10-11	11	2	50							48	9.0											48	9.	518
433	ROADWAY SLAB TOP LG P10-11	11	2	50							44	3.0											44	3.	470
434	ROADWAY SLAB TOP LG P10-11	11	2	50							46	6.0											46	6.	494
435	ROADWAY SLAB TOP LG P10-11	5	8	50							39	0.0											39	0.	329
436	ROADWAY SLAB TOP LG P10-11	5	8	50							37	0.0											37	0.	309
437	ROADWAY SLAB TOP LG P10-11	5	8	50							31	9.0											31	9.	265
438	ROADWAY SLAB TOP LG P10-11	5	8	50							22	9.0											22	9.	190
439	ROADWAY SLAB TOP LG P10-11	5	4	50							15	9.0											15	9.	66
440	ROADWAY SLAB TOP LG AT P11	14	6	50							14	0.0											14	0.	643
441	ROADWAY SLAB TOP LG AT P11	14	6	50							20	0.0											20	0.	918
442	ROADWAY SLAB TOP LG AT P11	14	6	50							25	0.0											25	0.	1147
443	ROADWAY SLAB TOP LG AT P11	14	6	50							30	0.0											30	0.	1377
444	ROADWAY SLAB TOP LG AT P11	14	6	50							38	0.0											38	0.	1744
445	ROADWAY SLAB TOP LG AT P11	14	6	50							46	0.0											46	0.	2111
446	ROADWAY SLAB TOP LG AT P11	14	6	50							56	0.0											56	0.	2570
447	ROADWAY SLAB TOP LG AT P11	14	6	50		F					60	0.0											60	0.	2754
449	ROADWAY SLAB TOP LG P11-HG	14	6	54		F			V	2	68	9.0													
											64	9.0											68	10.	3159

BENDING DIAGRAMS



VARIOUS STEEL REINFORCING BARS, INCLUDING THOSE IN CROSSBEAMS, ARE SHOWN AS STRAIGHT ON THE "BAR LIST" SHEETS OF THE ATTACHED PLANS. THE CONTRACTOR SHALL BEND THESE BARS AS REQUIRED TO CONFORM TO THE GEOMETRY OF THE STRUCTURE AND AS DETAILED ON THE PLANS.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(29)118	291	297	

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

BAR LIST N-W UNIT 4

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZANN, CHAIRMAN
P. T. McFARLAND — BAKER FERGUSON
H. WALSH — JOHN M. RUPP

APPROVED December 7, 1967 — BRIDGE ENGINEER
As Built Changes in Red 5-1-70 SHEET 291 OF 297 SHEETS
CONTRACT NO. 8382

WOODINVILLE INTERCHANGE
FOR NO. 1 - RE/PSH NO. 2-BO
N-W & N-E STRUCTURE
BAR LISTS
SHEET 289 OF 289 SHEETS

Bridge Design Engineer
Superviding Bridge Engr.
Detailed
Design Checked

N-W UNIT 4
11-16-67

19/1995

S = Bar is included in substructure quantities.
F = Bar to be field welded.
T = Tie or Stirrup.
H = A.S.T.M. A-432.
V = Bar dimensions vary between dimensions shown on this line and the following line.

MARK NO.	LOCATION	SIZE	NO. REQ'D.	BEND TYPE	T	F	H	V	NO. EACH	DIMENSIONS (Out to out) U Ft.	U In.	W Ft.	W In.	X Ft.	X In.	Y Ft.	Y In.	Z Ft.	Z In.	θ1 Deg.	θ2 Deg.	LENGTH Ft.	LENGTH In.	WEIGHT Lbs.
	See Note Sheet 3 of 4																							
406	ROADWAY SLAB TOP LG P11=HG	8	2	50						60	0.0											60	0.	320
450	ROADWAY SLAB TOP LG P11=HG	5	2	50						35	0.0											35	0.	73
451	ROADWAY SLAB TOP LG P11	5	2	50						35	0.0											35	0.	73
452	ROADWAY SLAB TOP LG P11	5	2	50						33	6.0											33	6.	70
453	ROADWAY SLAB TOP LG P11	5	14	50						30	0.0											30	0.	438
454	ROADWAY SLAB TOP LG P11	5	1	50						26	0.0											26	0.	27
455	ROADWAY SLAB TOP LG P11	5	1	50						22	0.0											22	0.	23
456	ROADWAY SLAB TOP LG P11	5	8	50						38	0.0											38	0.	317
457	ROADWAY SLAB TOP LG P11	5	4	50						25	6.0											25	6.	106
458	ROADWAY SLAB TOP LG P11	8	1	50						12	0.0											12	0.	32
459	ROADWAY SLAB TOP LG P11	8	1	50						8	0.0											8	0.	21
460	ROADWAY SLAB TOP LG P11	14	6	54						49	0.0											51	1.	2345
461	ROADWAY SLAB TOP LG P11	14	6	54						44	0.0											46	1.	2115
462	ROADWAY SLAB TOP LG P11	14	6	54						39	0.0											41	1.	1886
463	ROADWAY SLAB TOP LG P11	14	6	54						34	0.0											36	1.	1656
464	ROADWAY SLAB TOP LG P11	14	6	54						29	0.0											31	1.	1427
465	ROADWAY SLAB TOP LG P11	14	6	54						26	0.0											28	1.	1289
468	ROADWAY SLAB BOTT TRANSV	6	585	50						21	0.0											21	0.	18452
470	ROADWAY SLAB BOTT LONGIT	5	252	50						40	0.0											40	0.	10513
471	ROADWAY SLAB BOTT LONGIT	5	18	50				V	2	21	0.0													
										27	9.0											24	4.	458
472	ROADWAY SLAB BOTT LONGIT	5	18	50				V	2	28	3.0													
										35	0.0											31	7.	594
593	ROADWAY SLAB BOTT LONGIT	6	48	50						45	0.0											45	0.	3244
594	ROADWAY SLAB BOTT LONGIT	6	8	50				V	4	32	0.0													
										49	6.0											40	9.	490
596	SLAB CANT TRANSV HOT	5	588	69						1	0.0	3	0.0		7.5							3	11.	2426
597	SLAB DWL TO CURB	5	784	69							6.0		3.5	1	3.0		8.0		6.0			2	11.	2375
650	CURB LONGIT WEST	4	85	50						15	7.0											15	7.	885
651	CURB LONGIT WEST	4	5	50						15	9.0											15	9.	53
652	CURB LONGIT EAST	4	90	50						16	7.0											16	7.	997
653	CURB TRANSV	4	440	65	T						5.0	1	3.0									1	6.	441
654	RAIL BASE VERT 1.5 FACE	5	980	65	T						8.5	2	0.5		8.5							3	3.	2983
65	RAIL BASE VERT 0.5 FACE	4	440	64	T						5.0	2	0.5		5.0							2	8.	772
656	RAIL BASE LONGIT WEST	4	70	50						7	7.0											7	7.	355
657	RAIL BASE LONGIT WEST	4	2	50						7	10.0											7	10.	10
658	RAIL BASE LONGIT EAST	4	72	50						8	2.0											8	2.	393
659	RAIL BASE LONGIT WEST	6	70	50						7	7.0											7	7.	797
660	RAIL BASE LONGIT WEST	6	2	50						7	10.0											7	10.	24
661	RAIL BASE LONGIT EAST	6	72	50						8	2.0											8	2.	883
700	LIGHT STD ANCHORAGE	6	12	64							5.0	2	0.5		5.0							2	4.	43
701	LIGHT STD ANCHORAGE	6	6	65							8.5	2	0.5		8.5							3	1.	28
740	ACCESS HATCH	6	4	50						5	0.0											5	0.0	30

N-W UNIT 4

BAR LIST TOTALS

SUBSTRUCTURE	A-432	GRAND TOTAL 0.
SUBSTRUCTURE	A-15/A-408	GRAND TOTAL 65402.
SUPERSTRUCTURE	A-432	GRAND TOTAL 2251.
SUPERSTRUCTURE	A-15/A-408	GRAND TOTAL 236028

S = Bar is included in substructure quantities.
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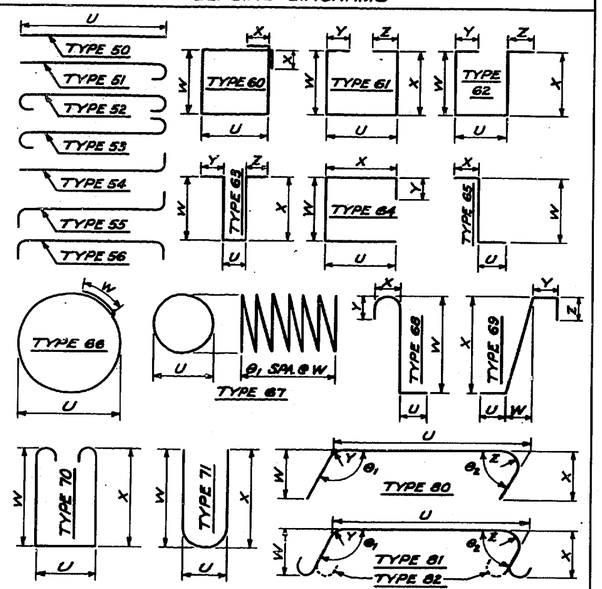
H = A.S.T.M. A-432.
V = Bar dimensions vary between dimensions shown on this line and the following line.

MARK NO.	LOCATION	SIZE	NO. REQ'D.	BEND TYPE	T	F	H	V	NO. EACH	DIMENSIONS (Out to out) U Ft.	U In.	W Ft.	W In.	X Ft.	X In.	Y Ft.	Y In.	Z Ft.	Z In.	θ1 Deg.	θ2 Deg.	LENGTH Ft.	LENGTH In.	WEIGHT Lbs.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)118		292	297

BENDING DIAGRAMS



STRUCTURAL AND CIVIL ENGINEER STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W & N-E STRUCTURE

BAR LIST N-W UNIT 4

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN

P. T. MORRISON
N. WALSH
BAKER FERGUSON
JOHN N. RUPP

APPROVED December 7, 1967
BRIDGE ENGINEER

As Built Changes in Red 9-1970

SHEET 292 OF 297 SHEETS
CONTRACT NO. 8382

9/1995

N-W STRUCTURE
BAR LIST UNIT 4
SHEET 284 OF 289 11-16-67

S = Bar is included in substructure quantities.
F = Bar to be field welded.
T = Tie or Stirrup
H = A.S.T.M. A-432.
V = Bar dimensions vary between dimensions shown on this line and the following line.

MARK NO.	LOCATION	SIZE	NO. REQ'D.	BEND TYPE	TIE OR STIR	F.L.D. WELD	SUBSTR. A-432	VARIES	NO. EACH	DIMENSIONS (Out to out) U Ft.	U In.	W Ft.	W In.	X Ft.	X In.	Y Ft.	Y In.	Z Ft.	Z In.	θ1 Deg.	θ2 Deg.	LENGTH Ft.	LENGTH In.	WEIGHT Lbs.
	See Site Sheet 884																							
	N-W UNIT 5																							
85	NW STRUCT PIER 13 FTC LONG	11	39	50			S			20	0.0											20 0.0	3719	4258
86	NW STRUCT PIER 13 FTC TRAN	11	39	50			S			20	0.0											20 0.0	3719	4258
87	NW STRUCT PIER 13 FTC DOWL	11	26	54			S			7	6.0											9	3.	1278
89	NW STRUCT PIER 14 FTG LONG	11	37	50			S			20	6.0											20	6.	4030	4248
90	NW STRUCT PIER 14 FTG TRAN	11	37	50			S			20	6.0											20	6.	4030	4248
91	NW STRUCT PIER 14 FTG DOWL	11	26	54			S			10	2.0											11	11.	1646
92	NW STRUCT PIER 15 FTG LONG	11	37	50			S			20	6.0											20	6.	2254	4248
93	NW STRUCT PIER 15 FTG TRAN	11	37	50			S			20	6.0											20	6.	2254	4248
94	NW STRUCT PIER 15 FTG DOWL	14	20	54	F	S				9	7.0											11	8.	1785	5865
95	NW STRUCT PIER 15 FTG DOWL	14	20	54	F	S				14	7.0											16	8.	2550	5865
111	NW STRUCT COL 13 TIES	4	43	66		S				5	9.0	1	6.0									19	5.	556	548
136	NW STRUCT COL 13 VERT	11	26	50		S				38	1.0											38	1.0	5261	5429
111	NW STRUCT COL 14 TIES	4	40	66		S				5	9.0	1	6.0									19	5.	519	533
138	NW STRUCT COL 14 VERT	11	26	50		S				35	8.0											35	8.	4927	5397
111	NW STRUCT COL 15 TIES	4	36	66		S				5	9.0	1	6.0									19	5.	467	
139	NW STRUCT COL 15 VERT	14	14	50	F	S				20	8.0											20	8.	2213	
140	NW STRUCT COL 15 VERT	14	14	50	F	S				25	8.0											25	8.	2769	
200	BOTTOM SLAB BOT TRANSV	5	215	61						19	8.0	1	0.0	1	0.0							21	2.	4747	
203	BOT SLAB BOT LONG HIN-P13	5	2	50						14	6.0											14	6.	30	
204	BOT SLAB BOT LONG HIN-P13	5	2	50						8	6.0											8	6.	18	
205	BOT SLAB BOT LONG HIN-P13	14	6	54	F			V	2	57	9.0														
										56	6.0											59	2.	2718	
206	BOT SLAB BOT LONG HIN-P13	14	6	54				V	3	57	6.0														
										56	6.0											59	1.	2712	
207	BOT SLAB BOT LONG HIN-P13	14	6	54	F			V	2	61	9.0														
										60	6.0											63	2.	2901	
208	BOT SLAB BOT LONG HIN-P13	14	6	50						49	3.0											49	3.	2261	
209	BOT SLAB BOT LONG HIN-P13	14	6	54				V	2	68	0.0														
										66	6.0											69	4.	3182	
210	BOT SLAB BOT LONG HIN-P13	14	6	50						65	0.0											65	0.	2983	
211	BOT SLAB BOT LONG HIN-P13	5	4	50						27	0.0											27	0.	113	
212	BOT SLAB BOT LONG HIN-P13	5	6	50						36	9.0											36	9.	230	
213	BOT SLAB BOT LONG HIN-P13	14	2	50	F					35	0.0											35	6.	543	
214	BOT SLAB BOT LONG HIN-P13	14	6	50	F			V	2	32	9.0														
										30	3.0											31	6.	1446	
215	BOT SLAB BOT LONG HIN-P13	14	4	50	F			V	2	68	0.0														
										63	3.0											65	7.	2008	
217	BOT SLAB BOT LONG P13-P14	14	4	50						40	0.0											40	0.	1224	
218	BOT SLAB BOT LONG P13-P14	5	6	50						29	6.0											29	6.	185	
219	BOT SLAB BOT LONG P13-P14	5	4	50						24	0.0											24	0.	101	
220	BOT SLAB BOT LONG P13-P14	14	2	50	F					35	2.0											35	2.	538	
222	BOT SLAB BOT LONG P13-P14	14	2	50	F			V	1	74	9.0														
										72	3.0											73	6.	1125	
22.	BOT SLAB BOT LONG P13-P14	14	4	50						42	3.0											42	3.	1293	
224	BOT SLAB BOT LONG P13-P14	14	4	50						56	3.0											56	3.	1721	
225	BOT SLAB BOT LONG P13-P14	14	2	50	F			V	1	78	6.0														
										72	6.0											75	6.	1155	
226	BOT SLAB BOT LONG P13-P14	14	6	50						66	3.0											66	3.	3041	
227	BOT SLAB BOT LONG P13-P14	14	6	50						76	3.0											76	3.	3500	
228	BOT SLAB BOT LONG P13-P14	5	4	50						24	9.0											24	9.	103	
229	BOT SLAB BOT LONG P13-P14	5	4	50						29	6.0											29	6.	123	
230	BOT SLAB BOT LONG P13-P14	14	2	50	F			V	1	32	6.0														
										30	6.0											31	6.	482	
231	BOT SLAB BOT LONG P13-P14	14	2	50	F					77	6.0											77	6.	1186	
258	BOT SLAB BOT LONG P13-P14	14	2	50	F			V	1	76	3.0														
										73	9.0											75	0.	1147	
259	BOT SLAB BOT LONG P13-P14	14	2	50	F			V	1	44	10.0														
										42	6.0											43	8.	668	
260	BOT SLAB BOT LONG P13-P14	14	2	50	F					77	6.0											77	6.	1186	
232	BOT SLAB BOT LONG P13-P14	14	2	50	F					35	6.0											35	6.	543	
233	BOT SLAB BOT LONG P13-P14	14	14	50						40	0.0											40	0.	4284	
234	BOT SLAB BOT LONG P14-P15	5	2	50						32	6.0											32	6.	66	
235	BOT SLAB BOT LONG P14-P15	5	2	50						47	6.0											47	6.	99	
236	BOT SLAB BOT LONG P14-P15	5	2	50						38	6.0											38	6.	80	
237	BOT SLAB BOT LONG P14-P15	5	2	50						27	6.0											27	6.	57	
238	BOT SLAB BOT LONG P14-P15	14	6	50	F			V	2	47	4.0														
										45	0.0											46	2.	2119	
239	BOT SLAB BOT LONG P14-P15	14	6	50						77	6.0											77	6.	3557	
240	BOT SLAB BOT LONG P14-P15	14	6	50						69	6.0											69	6.	3190	
241	BOT SLAB BOT LONG P14-P15	14	6	50						60	6.0											60	6.	2777	
242	BOT SLAB BOT LONG P14-P15	14	6	50						48	3.0											48	3.	2219	
243	BOT SLAB BOT LONG P14-P15	14	6	50						25	0.0											25	0.	1147	
244	BOT SLAB BOT LONG P14-P15	14	6	50	F			V	2	66	8.0														
										64	8.0											65	8.	3014	
245	BOT SLAB BOT LONG P14-P15	14	6	50	F			V	2	76	3.0														
										74	3.0											75	3.	3454	
246	BOT SLAB BOT LONG P14-P15	14	6	50				V	2	41	8.0														
										39	8.0											40	8.	1867	
247	BOT SLAB BOT LONG P14-P15	5	6	50						22	6.0											22	6.	141	
248	BOT SLAB BOT LONG P14-P15	5	2	50						42	6.0											42	6.	89	
249	BOT SLAB BOT LONG P14-P15	5	2	50						28	6.0											28	6.	59	
250	BOT SLAB BOT LONG P14-P15	5	4	50						18	6.0											18	6.	77	
251	BOT SLAB BOT LONG P14-P15	5	4	50						14	0.0											14	0.	58	
253	BOT SLAB BOT LONG P15-HIN	5	16	50						24	6.0											24	6.	409	
254	BOT SLAB BOT LONG P15-HIN	10	6	50						25	5.0											25	5.	656	
200	BOTTOM SLAB TOP TRANSV	5	215	61						19	8.0	1	0.0	1	0.0							21	2.	4747	
255	BOTTOM SLAB TOP LONGIT	5	128	50						40	0.0											40	0.	5340	
256	BOTTOM SLAB TOP LONGIT	5	8	50				V	2	16	0.0														
										22	0.0											19	0.	159	
257	BOTTOM SLAB TOP LONGIT	5	8	50				V	2	24	6.0														

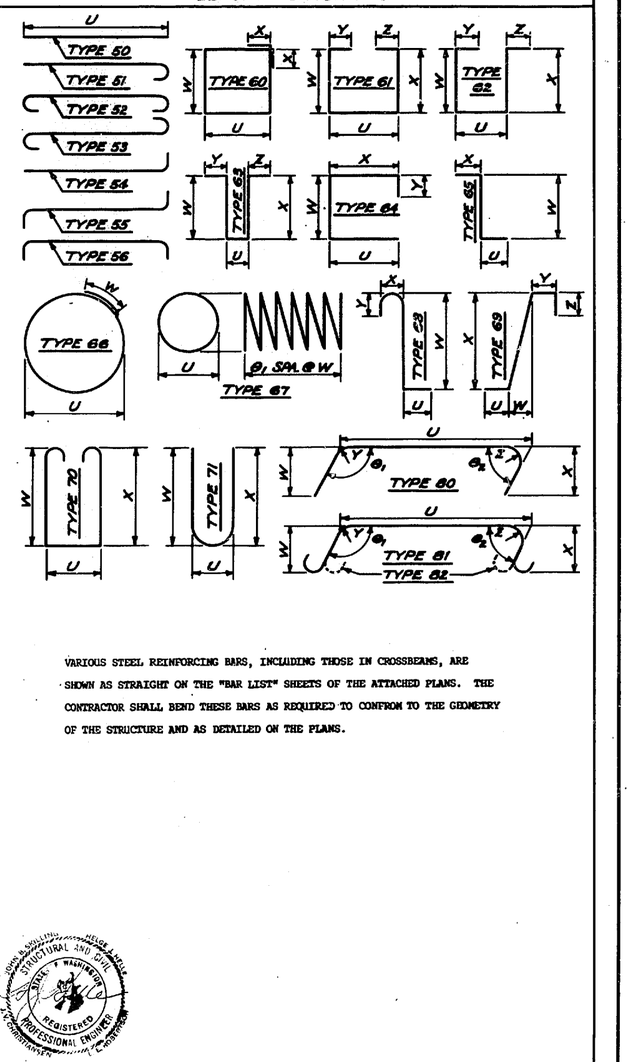
S = Bar is included in substructure quantities.
F = Bar to be field welded.
T = Tie or Stirrup
H = A.S.T.M. A-432.
V = Bar dimensions vary between dimensions shown on this line and the following line.

MARK NO.	LOCATION	SIZE	NO. REQ'D.	BEND TYPE	TIE OR STIR	F.L.D. WELD	SUBSTR. A-432	VARIES	NO. EACH	DIMENSIONS (Out to out) U Ft.	U In.	W Ft.	W In.	X Ft.	X In.	Y Ft.	Y In.	Z Ft.	Z In.	θ1 Deg.	θ2 Deg.	LENGTH Ft.	LENGTH In.	WEIGHT Lbs.
350	WEB LONGIT	4	96	50						30	6.0											27	6.	229
351	WEB LONGIT	4	12	50				V	4	30	9.0													
										15	0.0											22	6.	180
352	WEB LONGIT	10	6	50						58	0.0											58	0.	1497
353	WEB LONGIT	10	6	50						62	0.0											62	0.	1601
354	WEB LONGIT	10	6	50						54	0.0											54	0.	1394
355	WEB LONGIT	8	6	50						50	0.0											50	0.	801
356	WEB LONGIT	8	6	50				V	2	22	0.0													
										18	0.0											20	0.	320
357	WEB LONGIT	8	12	50				V	4	53	6.0													
										48	6.0											51	0.	1634
399	WEB STIRRUPS	5	2454	64	T							6.0	4	10.5		6.0						5	7.	14239
365	DIAPH HORIZ	5	36	50	T					19	8.0											19	8.	738
366	DIAPH STIRRUPS	4	216	64	T							6.0	4	7.0		6.0						5	4.	770
367	CROSS BM PR 13+14+15 TOP	14	23	50						17	0.0											17	0.	2991
368	CROSS BM PR 13+14+15 TOP	14	8	50						23	0.0											23	0.	1408
369	CROSS BM PR 13+14+15 TOP	14	17	61						19	4.0	4	1.0									25	0.	3316
370	CROSS BM PR 13+14+15 TOP	7	36	50						19	8.0											19	8.	1447
371	CROSS BM STIRRUPS	6	66	61						6	9.0	4	7.0	4	7.0	1	3.0	1	3.0			17	9.	1760
372	CROSS BM STIRRUPS	6	264	64						1	3.0	4	7.0	1	3.0							6	7.	2610
750	END WALL VERT	5	10	65	T						8.0	4	8.5		8.0							5	10.	61
751	END WALL VERT	5	4	64	T						8.0	4	8.5		8.0	0	0					5	9.	24
752	END WALL VERT	5	6	64	T						8.0	3	9.0		8.0	0	0					4	9.	30
753	END WALL HORIZ	6	20	50						6	6.0											6	6.	195
720	PAVT SEAT LONG	4	2	50	T					23	6.0											23	6.	31
721	END DIAP LONG	5	8	50	T					19	6.0											19	6.	163
722	END DIAP LONG	10	6	50						19	6.0											19	6.	503
723	END DIAP STIRRUPS	5	20	62	T						9.0	4	9.5	4	9.5	6.0		6.0				10	11.	228
724	PAVT SEAT TIES	4	39	91	T					4	4.0											4	4.	113
630	HINGE DIAGONAL	11	21	96		F		H		3	0.0	4	6.5							120		10	1.	1126
631	BRG SUPPORT HORIZ	14	21	50	T						9.0											0	5.	84
632	BRG SUPPORT STIRRUPS	5	24	61	T					2	9.0	4	10.0	4	10.0	6.0		6.0				13	0.	325
633	BRG SUPPORT STIRRUPS	5	3	61	T					3	9.0	4	10.0	4	10.0	6.0		6.0				14	0.	44
634	BRG SUPPORT STIRRUPS	5	24	61	T					3	9.0	2	0.5	2	0.5	6.0		6.0				8	5.	211
635	BRG SUPPORT HORIZ	6	40	50						4	0.0											4	0.	240
636	BRG SUPPORT HORIZ	6	4	69						3	10.0	5	0.0	1	8.0							9	0.	54
637	BRG SUPPORT HORIZ	6	4	69						3	10.0	9	6.0	3	2.0							13	9.	82
639	WEB HORIZ	4	6	50						19	9.0											19	9.	79
641	DIAPHRAM HORIZ TOP	5	2	50						23	0.0											23	0.	48
643	DIAPHRAM HORIZ BOT	9	2	50						19	9.0											19	9.	134
644	DIAPHRAM STIRRUPS	4	8	60	T						9.0	4	6.0		6.0							11	2.	60
645	CANTILEVER TOP	6	14	80						4	0.0	1	0.0			3.0				11		3	10.	81
646	CANTILEVER TRANSV	4	4	50						19	9.0											19	9.	53
650	TOP TRANSV	6	6	52						25	3.0											26	7.	240
400	ROADWAY SLAB TOP TRANSV	6	653	56						26	2.0											28	0.	27463
403	ROADWAY SLAB TOP LG HING-P	5	2	50						40	0.0											40	0.	83
404	ROADWAY SLAB TOP LG HING-P	5	2	50						35	6.0											35	6.	74
405	ROADWAY SLAB TOP LG HING-P	5	8	50				V	1	39	6.0													
										38	0.0											38	9.	323
406	ROADWAY SLAB TOP LG HING-P	5	8	50				V	1	37	6.0													
										36	0.0											36	9.	307
407	ROADWAY SLAB TOP LG HING-P	8	2	50						60	0.0											60	0.	320
408	ROADWAY SLAB TOP LG HING-P	8	1	50						31	0.0											31	0.	83
409	ROADWAY SLAB TOP LG HING-P	8	1	50						26	0.0											26	0.	69
410	ROADWAY SLAB TOP LG HING-P	11	2	54						62	0.0											63	9.	677
411	ROADWAY SLAB TOP LG HING-P	11	2	54						58	6.0											60	3.	640
412	ROADWAY SLAB TOP LG HING-P	11	2	54						60	3.0											62	0.	659
413	ROADWAY SLAB TOP LG HING-P	5	14	50						40	0.0											40	0.	584
414	ROADWAY SLAB TOP LG HING-P	5	2	50						34	0.0											34	0.	71
415	ROADWAY SLAB TOP LG HING-P	5	4	50						26	0.0											26	0.	108
416	ROADWAY SLAB TOP LG AT P13	14	8	50						18	0.0											18	0.	826
417	ROADWAY SLAB TOP LG AT P13	14	6	50						24	0.0											24	0.	1102
418	ROADWAY SLAB TOP LG AT P13	14	6	50						29	0.0											29	0.	1331
419	ROADWAY SLAB TOP LG AT P13	14	6	50						31	0.0											31	0.	1423
420	ROADWAY SLAB TOP LG AT P13	14	6	50						41	0.0											41	0.	1882
421	ROADWAY SLAB TOP LG AT P13	14	6	50						48	0.0											48	0.	2203
422	ROADWAY SLAB TOP LG AT P13	14	6	50						56	0.0											56	0.	2570
423	ROADWAY SLAB TOP LG AT P13	14	6	50						66	0.0											66	0.	3029
424	ROADWAY SLAB TOP LG AT P13	14	6	50						75	0.0											75	0.	3442
425	ROADWAY SLAB TOP LG AT P13	5	8	50						8	0.0											8	0.	67

WOODINVILLE INTERCHANGE
N-W & N-E STRUCTURE
BAR LIST - UNIT 5
SHEET 285 OF 289 11-16-67

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.		SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(29)118		293	297

BENDING DIAGRAMS



VARIOUS STEEL REINFORCING BARS, INCLUDING THOSE IN CROSSBEAMS, ARE SHOWN AS STRAIGHT ON THE "BAR LIST" SHEETS OF THE ATTACHED PLANS. THE CONTRACTOR SHALL BEND THESE BARS AS REQUIRED TO CONFROM TO THE GEOMETRY OF THE STRUCTURE AND AS DETAILED ON THE PLANS.

JOHN B. SOLLITTO — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

BAR LIST N-W UNIT 5

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZANN, CHAIRMAN
F. E. McMAHON — BAKER FERGUSON
N. WALSH — JOHN M. RUPP

APPROVED December 7, 1967 — BRIDGE ENGINEER
SHEET 293 OF 297 SHEETS
CONTRACT NO. 8382

As Built Plans as in Red Ink
P/1995

S = Bar is included in substructure quantities.
F = Bar to be field welded.
T = Tie or Stirrup.
H = A.S.T.M. A-432.
V = Bar dimensions vary between dimensions shown on this line and the following line.

Mark No.	Location	Size	No. Req'd	Bend Type	Tie or Stir.	Fld. Weld	Substr.	A-432	Varies	No. Each	U Ft.	U In.	W Ft.	W In.	X Ft.	X In.	Y Ft.	Y In.	Z Ft.	Z In.	θ1 Deg.	θ2 Deg.	Length Ft.	Length In.	Weight Lbs.
430	ROADWAY SLAB TOP LG P13-15	5	8	50							27	6.0											27	6.	229
431	ROADWAY SLAB TOP LG P13-15	5	4	50							11	6.0											11	6.	48
432	ROADWAY SLAB TOP LG P13-15	5	4	50							15	3.0											15	3.	64
433	ROADWAY SLAB TOP LG P13-15	5	4	50							22	0.0											22	0.	92
434	ROADWAY SLAB TOP LG P13-15	8	2	50							60	0.0											60	0.	320
435	ROADWAY SLAB TOP LG P13-15	8	1	50							40	0.0											40	0.	107
436	ROADWAY SLAB TOP LG P13-15	8	1	50							34	6.0											34	6.	92
413	ROADWAY SLAB TOP LG P13-15	5	2	50							40	0.0											40	0.	83
437	ROADWAY SLAB TOP LG P13-15	5	2	50							35	0.0											35	0.	73
438	ROADWAY SLAB TOP LG P13-15	5	8	50							39	0.0											39	0.	325
439	ROADWAY SLAB TOP LG P13-15	5	8	50							37	0.0											37	0.	309
440	ROADWAY SLAB TOP LG P13-15	11	2	50							41	0.0											41	0.	436
441	ROADWAY SLAB TOP LG P13-15	11	2	50							37	0.0											37	0.	393
442	ROADWAY SLAB TOP LG P13-15	11	2	50							39	0.0											39	0.	414
443	ROADWAY SLAB TOP LG P13-15	5	4	50							18	0.0											18	0.	75
444	ROADWAY SLAB TOP LG P13-15	5	4	50							15	0.0											15	0.	63
445	ROADWAY SLAB TOP LG P13-15	5	2	50							22	0.0											22	0.	46
446	ROADWAY SLAB TOP LG P13-15	5	4	50							24	0.0											24	0.	100
447	ROADWAY SLAB TOP LG P13-15	5	4	50							29	0.0											29	0.	121
448	ROADWAY SLAB TOP LG AT P14	14	6	50							15	0.0											15	0.	688
449	ROADWAY SLAB TOP LG AT P14	14	6	50							21	0.0											21	0.	964
450	ROADWAY SLAB TOP LG AT P14	14	6	50							25	0.0											25	0.	1147
451	ROADWAY SLAB TOP LG AT P14	14	6	50							30	0.0											30	0.	1377
452	ROADWAY SLAB TOP LG AT P14	14	6	50							35	0.0											35	0.	1606
453	ROADWAY SLAB TOP LG AT P14	14	6	50							42	0.0											42	0.	1928
454	ROADWAY SLAB TOP LG AT P14	14	6	50							49	0.0											49	0.	2249
455	ROADWAY SLAB TOP LG AT P14	14	6	50							58	0.0											58	0.	2662
456	ROADWAY SLAB TOP LG AT P14	14	6	50							66	0.0											66	0.	3029
457	ROADWAY SLAB TOP LG AT P14	14	6	50							76	0.0											76	0.	3488
460	ROADWAY SLAB TOP LG P14-15	5	2	50							14	0.0											14	0.	29
461	ROADWAY SLAB TOP LG P14-15	5	4	50							18	0.0											18	0.	75
462	ROADWAY SLAB TOP LG P14-15	5	2	50							10	0.0											10	0.	21
463	ROADWAY SLAB TOP LG P14-15	5	6	50							24	0.0											24	0.	150
464	ROADWAY SLAB TOP LG P14-15	5	4	50							28	0.0											28	0.	117
465	ROADWAY SLAB TOP LG P14-15	8	2	50							70	0.0											70	0.	374
466	ROADWAY SLAB TOP LG P14-15	8	1	50							25	0.0											25	0.	67
467	ROADWAY SLAB TOP LG P14-15	8	1	50							19	6.0											19	6.	52
413	ROADWAY SLAB TOP LG P14-15	5	2	50							40	0.0											40	0.	83
437	ROADWAY SLAB TOP LG P14-15	5	2	50							35	0.0											35	0.	73
438	ROADWAY SLAB TOP LG P14-15	5	8	50							39	0.0											39	0.	325
439	ROADWAY SLAB TOP LG P14-15	5	8	50							37	0.0											37	0.	309
468	ROADWAY SLAB TOP LG P14-15	11	2	50							53	0.0											53	0.	563
469	ROADWAY SLAB TOP LG P14-15	11	2	50							49	0.0											49	0.	521
470	ROADWAY SLAB TOP LG P14-15	11	2	50							51	0.0											51	0.	542
471	ROADWAY SLAB TOP LG P14-15	5	10	50							20	0.0											20	0.	209
472	ROADWAY SLAB TOP LG P14-15	5	6	50							26	0.0											26	0.	163
473	ROADWAY SLAB TOP LG P14-15	5	4	50							29	0.0											29	0.	121
474	ROADWAY SLAB TOP LG AT P15	14	4	54							33	6.0											35	7.	1089
475	ROADWAY SLAB TOP LG AT P15	14	2	50							33	6.0											33	6.	513
476	ROADWAY SLAB TOP LG AT P15	14	4	54							36	6.0											38	7.	1181
477	ROADWAY SLAB TOP LG AT P15	14	2	50							36	6.0											36	6.	558
478	ROADWAY SLAB TOP LG AT P15	14	4	54							39	6.0											41	7.	1272
479	ROADWAY SLAB TOP LG AT P15	14	2	50							39	6.0											39	6.	604
480	ROADWAY SLAB TOP LG AT P15	14	4	54							42	6.0											44	7.	1364
481	ROADWAY SLAB TOP LG AT P15	14	2	50							42	6.0											42	6.	650
482	ROADWAY SLAB TOP LG AT P15	14	6	54							46	6.0											48	7.	2230
483	ROADWAY SLAB TOP LG AT P15	14	6	54							51	6.0											53	7.	2459
485	ROADWAY SLAB BOT TRANSV	6	614	50							21	0.0											21	0.	19367
413	ROADWAY SLAB BOT LONGIT	5	288	50							40	0.0											40	0.	12015
488	ROADWAY SLAB BOT LONGIT	5	18	50					V	1	17 24	6.0 0.0											20	9.	390
489	ROADWAY SLAB BOT LONGIT	5	18	50					V	1	25 32	9.0 3.0											29	0.	544
593	ROADWAY SLAB BOT LONGIT	6	51	50							45	0.0											45	0.	3447
594	ROADWAY SLAB BOT LONGIT	6	8	50					V	4	23 43	6.0 6.0											33	6.	403
596	SLAB CANT TRANS BOT	5	656	69							1	0.0	3	0.0		7.5		0.0		0.0			3	11.	2706
597	SLAB DOWEL TO CURB	5	876	69								6.0		3.5	1	3.0		8.0		6.0			2	11.	2654
650	CURB LONGIT SOUTH	4	95	50							15	9.0											15	9.	999
651	URB LONGIT SOUTH	4	5	50							13	4.0											13	4.	45
652	CURB LONGIT NORTH	4	95	50							16	9.0											16	9.	1063
653	CURB LONGIT NORTH	4	5	50							14	3.0											14	3.	48
654	CURB TRANSV	4	457	65	T							5.0	1	3.0									1	6.	458
655	RAIL BASE VERT I.S. FACE	5	914	65	T							8.5	2	0.5		8.5							3	3.	3099
656	RAIL BASE VERT O.S. FACE	4	457	64	T							5.0	2	0.5		5.0							2	8.	801
657	RAIL BASE LONGIT SOUTH	4	78	50							7	9.0											7	9.	404
658	RAIL BASE LONGIT SOUTH	4	2	50							4	10.0											4	10.	6
659	RAIL BASE LONGIT NORTH	4	78	50							8	3.0											8	3.	430
660	RAIL BASE LONGIT NORTH	4	2	50							5	8.0											5	8.	8
661	RAIL BASE LONGIT SOUTH	6	78	50							7	9.0											7	9.	908
662	RAIL BASE LONGIT SOUTH	6	2	50							4	10.0											4	10.	15
663	RAIL BASE VERT NORTH	6	78	50							8	3.0											8	3.	967
664	RAIL BASE VERT NORTH	6	2	50							5	8.0											5	8.	17
700	LIGHT STD ANCHORAGE	6	24	64								5.0	2	0.5		5.0							2	4.	86
701	LIGHT STD ANCHORAGE	6	12	65								8.5	2	0.5		8.5							3	1.	56

N-W UNIT 5
****

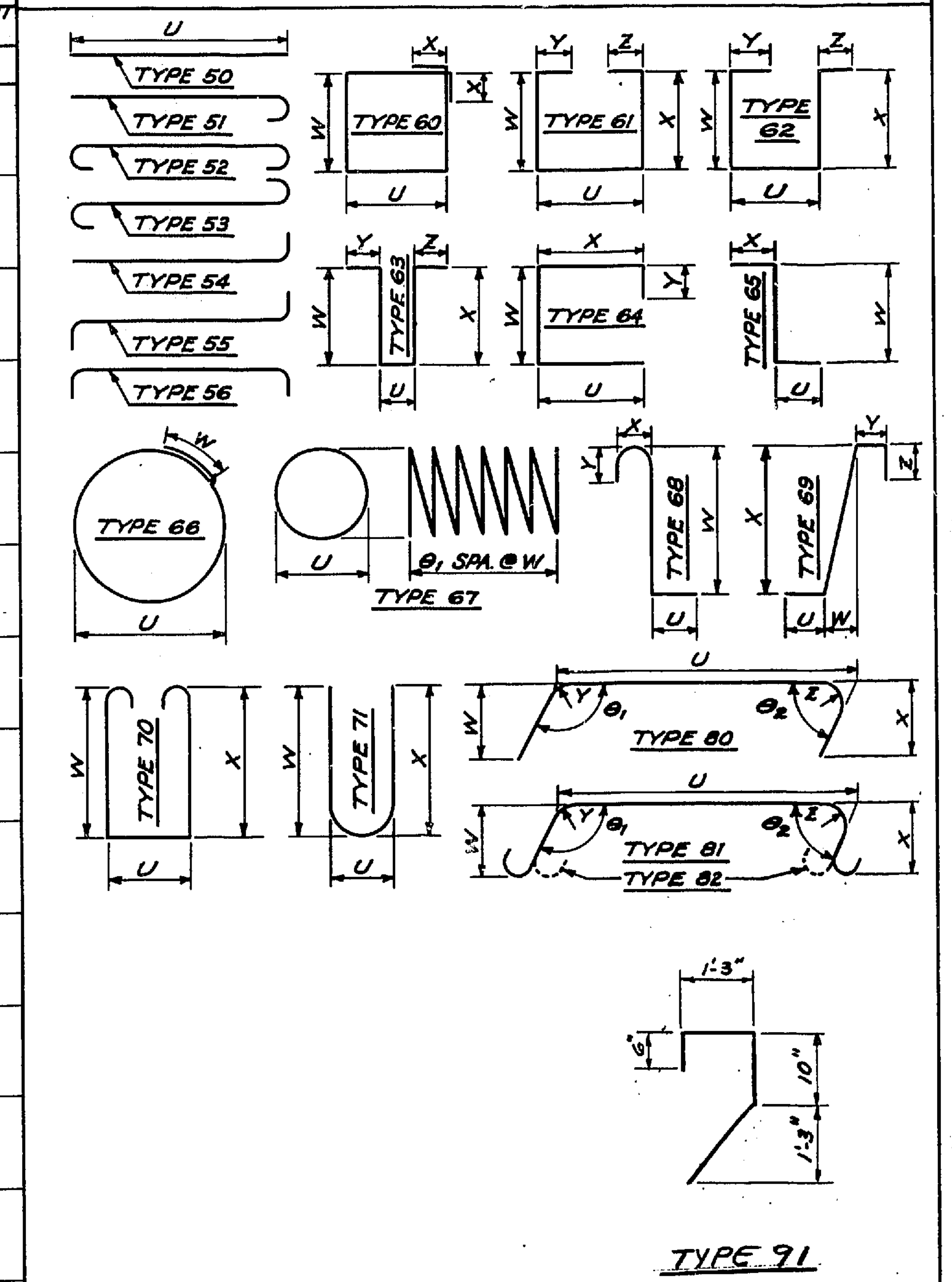
BAR LIST TOTALS

SUBSTRUCTURE A-432	GRAND TOTAL	.0.
SUBSTRUCTURE A-15/A-408	GRAND TOTAL	43960.
SUPERSTRUCTURE A-432	GRAND TOTAL	1126.
SUPERSTRUCTURE A-15/A-408	GRAND TOTAL	267749.

Mark No.	Location	Size	No. Req'd	Bend Type	Tie or Stir.	Fld. Weld	Substr.	A-432	Varies	No. Each	U Ft.	U In.	W Ft.	W In.	X Ft.	X In.	Y Ft.	Y In.	Z Ft.	Z In.	θ1 Deg.	θ2 Deg.	Length Ft.	Length In.	Weight Lbs.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178	294	297

BENDING DIAGRAMS



SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W & N-E STRUCTURE

BAR LIST N-W UNIT 5

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN

H. WALSH
BAKER FERGUSON
JOHN N. RUPP

APPROVED December 7, 1967
BRIDGE ENGINEER

As Built Changes in Red
CONTRACT NO. 8382
SHEET 294 OF 297 SHEETS

P/1996

BAR LIST - UNIT 5 11-16-67
SHEET 286 OF 289

S = Bar is included in substructure quantities.
F = Bar to be field welded.
T = Tie or Stirrup.
H = A.S.T.M. A-432.
V = Bar dimensions vary between dimensions shown on this line and the following line.

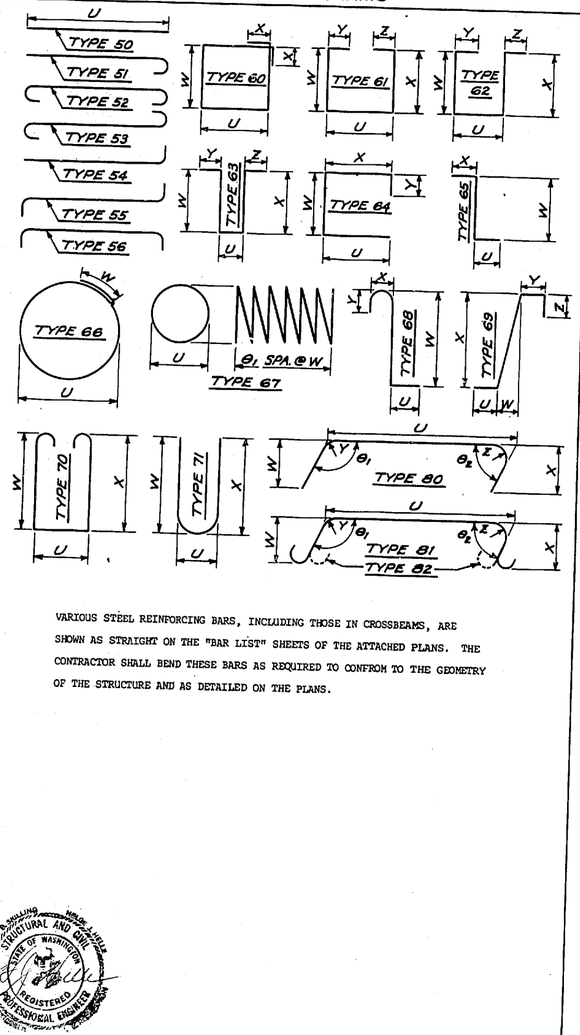
MARK NO.	LOCATION	SIZE	NO. REQ'D.	BEND TYPE	TIE OR STIR	FLD. WELD	SUBSTR.	A-432	VARIES	NO. EACH	DIMENSIONS (Out to out) U Ft.	U In.	W Ft.	W In.	X Ft.	X In.	Y Ft.	Y In.	Z Ft.	Z In.	θ1 Deg.	θ2 Deg.	LENGTH Ft.	LENGTH In.	WEIGHT Lbs.
	Sub Main Sheet 2 of 3																								
	N-E UNIT 2																								
45	NE STRUCT PIER 4 TIES	4	52	66			S			7	4.0	1	6.0									24	5.	848
51	NE STRUCT PIER 4 VERT	18	46	50			S			79	6.0											79	6.	32767
52	NE STRUCT PIER 4 DOWEL	11	19	50			S			11	2.0											11	2.	1127
96	NE STRUCT PIER 5 FTG LONG	11	26	50			S			17	0.0											17	0.	2360
97	NE STRUCT PIER 5 FTG TRANS	11	34	50			S			20	6.0											20	6.	3700
98	NE STRUCT PIER 5 FTG DOWEL	18	14	54	F	S				12	7.0											15	4.	1381
100	NE STRUCT PIER 6 FTG LONG	11	26	50	F	S				17	0.0											17	0.	2360
101	NE STRUCT PIER 6 FTG TRANS	11	34	50	F	S				20	6.0											20	6.	3700
102	NE STRUCT PIER 6 FTG DOWEL	18	14	54	F	S				11	10.0											14	7.	934
143	NE STRUCT COL 4 TIES	4	47	66			S			4	9.0	1	6.0									16	3.	511
144	NE STRUCT COL 4 VERT	11	19	50			S			44	7.0											44	7.	4501
145	NE STRUCT COL 5 TIES	5	65	66			S			4	9.0	1	6.0									16	3.	707
146	NE STRUCT COL 5 VERT	18	14	50	F	S				44	4.0											44	4.	7344
147	NE STRUCT COL 6 TIES	4	61	66			S			4	9.0	1	6.0									16	3.	664
148	NE STRUCT COL 6 VERT	18	14	50	F	S				46	6.0											46	6.	4576
200	BOTT SLAB BOTT TRANSV	5	188	61						19	8.0	1	0.0	1	0.0							21	2.	4150
203	BOTT SLAB BOTT LONG P4	5	4	50						6	0.0											6	0.	25
204	BOTT SLAB BOTT LONG P4	5	4	50						17	0.0											17	0.	71
205	BOTT SLAB BOTT LONG P4	5	2	50						42	6.0											42	6.	69
206	BOTT SLAB BOTT LONG P4	14	4	50						42	3.0											42	3.	1293
207	BOTT SLAB BOTT LONG P4	14	4	50						54	3.0											54	3.	1660
208	BOTT SLAB BOTT LONG P4	14	4	50						65	6.0											66	6.	2035
209	BOTT SLAB BOTT LONG P4	14	4	50						66	4.0											66	4.	2036
210	BOTT SLAB BOTT LONG P4	14	4	50						76	0.0											76	0.	2326
211	BOTT SLAB BOTT LONG P4	14	4	54						80	0.0											82	1.	2512
212	BOTT SLAB BOTT LONG P4	14	4	54	F					69	9.0											71	10.	2198
213	BOTT SLAB BOTT LONG P4	14	4	54	F					76	9.0											78	10.	2412
214	BOTT SLAB BOTT LONG P4	14	4	50	F			V	2	25	0.0														
215	BOTT SLAB BOTT LONG P4	14	4	50	F			V	2	23	0.0											24	0.	734
										18	0.0														
216	BOTT SLAB BOTT LONG P4	5	6	50						16	0.0											17	0.	520
217	BOTT SLAB BOTT LONG P4	5	6	50						36	6.0											36	6.	2218
218	BOTT SLAB BOTT LONG P4	5	4	50						20	0.0											20	0.	125
219	BOTT SLAB BOTT LONG P4	11	2	50						14	0.0											14	0.	58
220	BOTT SLAB BOTT LONG P4	11	2	50						35	0.0											35	0.	372
221	BOTT SLAB BOTT LONG P4	11	2	50						42	6.0											42	6.	452
222	BOTT SLAB BOTT LONG P4	11	2	50						48	9.0											48	9.	518
223	BOTT SLAB BOTT LONG P4	11	2	50						59	0.0											59	0.	627
224	BOTT SLAB BOTT LONG P4	11	2	50						63	0.0											63	0.	669
225	BOTT SLAB BOTT LONG P4	11	2	54						68	6.0											68	6.	728
226	BOTT SLAB BOTT LONG P4	11	2	50						72	0.0											73	9.	784
227	BOTT SLAB BOTT LONG P4	11	2	50						77	6.0											77	6.	824
228	BOTT SLAB BOTT LONG P4	11	4	54	F					76	6.0											76	6.	813
229	BOTT SLAB BOTT LONG P4	11	2	54	F					78	0.0											79	9.	1695
230	BOTT SLAB BOTT LONG P4	11	4	50	F					72	9.0											73	9.	784
231	BOTT SLAB BOTT LONG P4	11	2	50	F					15	0.0											19	0.	319
235	BOTT SLAB BOTT LONG P 4-5	5	4	50						22	0.0											22	0.	234
236	BOTT SLAB BOTT LONG P 4-5	5	12	50						24	0.0											24	0.	100
237	BOTT SLAB BOTT LONG P 4-5	5	4	50						40	0.0											40	0.	501
290	BOTT SLAB BOTT LONG P5-P6	14	12	50	F					19	6.0											19	6.	81
291	BOTT SLAB BOTT LONG P5-P6	11	4	50	F					15	0.0											15	0.	1377
292	BOTT SLAB BOTT LONG P5-P6	11	2	50	F					10	0.0											10	0.	213
238	BOTT SLAB BOTT LONG P 4-5	5	4	50						11	0.0											11	0.	117
239	BOTT SLAB BOTT LONG P 4-5	5	8	50						35	0.0											35	0.	146
240	BOTT SLAB BOTT LONG P 4-5	9	6	50						40	6.0											40	6.	338
241	BOTT SLAB BOTT LONG P 4-5	10	6	50						33	0.0											33	0.	673
										67	8.0											67	8.	1747
99	NE STRUCT PIER 5 FIG DWL	18	14	54	F	S				19	3.0											22	0.	489
103	NE STRUCT PIER 6 FIG DWL	18	14	54	F	S				18	6.0											21	3.	4046
147	NE STRUCT COL 5 VERT	18	14	50	F	S				37	8.0											37	8.	7172
149	NE STRUCT COL 6 VERT	18	14	50	F	S				39	10.0											39	10.	7584
244	BOTT SLAB BOTT LONG P 5-6	11	4	50						16	6.0											16	6.	351
245	BOTT SLAB BOTT LONG P 5-6	11	12	50						22	6.0											22	6.	1435
246	BOTT SLAB BOTT LONG P 5-6	5	8	50						27	6.0											27	6.	229
247	BOTT SLAB BOTT LONG P 5-6	5	2	50						25	0.0											25	0.	92
248	BOTT SLAB BOTT LONG P 5-6	5	2	50						32	0.0											32	0.	67
249	BOTT SLAB BOTT LONG P 5-6	11	4	50						34	4.0											34	4.	730
250	BOTT SLAB BOTT LONG P 5-6	14	4	50						52	3.0											52	3.	1599
251	BOTT SLAB BOTT LONG P 5-6	14	4	50						63	0.0											63	0.	1928
252	BOTT SLAB BOTT LONG P 5-6	14	4	50						77	2.0											77	2.	2361
253	BOTT SLAB BOTT LONG P 5-6	14	4	50	F					67	4.0											67	4.	2060
254	BOTT SLAB BOTT LONG P 5-6	14	4	50	F					74	10.0											74	10.	2290
255	BOTT SLAB BOTT LONG P 5-6	14	4	50	F					73	6.0											73	6.	2249
256	BOTT SLAB BOTT LONG P 5-6	11	2	50						30	3.0											30	3.	321
257	BOTT SLAB BOTT LONG P 5-6	11	2	50						44	6.0											44	6.	473
258	BOTT SLAB BOTT LONG P 5-6	11	2	50						54	3.0											54	3.	576
259	BOTT SLAB BOTT LONG P 5-6	11	2	50						62	3.0											62	3.	661
260	BOTT SLAB BOTT LONG P 5-6	11	2	50						67	7.0											67	7.	718
261	BOTT SLAB BOTT LONG P 5-6	11	2	50						73	3.0											73	3.	778
262	BOTT SLAB BOTT LONG P 5-6	11	2	50						77	9.0											77	9.	826
263	BOTT SLAB BOTT LONG P 5-6	11	2	50	F					70	3.0											70	3.	746
264	BOTT SLAB BOTT LONG P 5-6	11	2	50	F					75	3.0											75	3.	800
265	BOTT SLAB BOTT LONG P 5-6	11	2	50	F					79	3.0											79	3.	842
270	BOTT SLAB BOTT LONG P6	5	8	54						50	0.0											50	10.	424
271	BOTT SLAB BOTT LONG P6	5	8	54						16	0.0											16	10.	140
272	BOTT SLAB BOTT LONG P6	11	4	50						31	6.0											31	6.	669
273	BOTT SLAB BOTT LONG P6	11	10	50						25	3.0											25	3.	1342
274	BOTT SLAB BOTT LONG P6	11	2	54						38	9.0											40	6.	430
200	BOTT SLAB TOP TRANSV	5	188	61						19	8.0	1	0.0	1	0.0							21	2.	4150
280	BOTT SLAB TOP LONGIT	5	112	50						40	0.0											40	0.	4673
241	BOTT SLAB TOP LONGIT	5	8	50				V	2	22	0.0														
282	BOTT SLAB TOP LONGIT	5	8	50				V	2	24	0.0											23	0.	192
										26	9.0														
350	INT & EXT WEB LONGIT TOP	10	6	50						48	0.0											25	9.	215
351	INT & EXT WEB LONGIT TOP	10	6	50						52	0.0											48	0.	1239
521	INT & EXT WEB LONGIT TOP	10	5	50						46	0.0											52	0.	1343
352	INT & EXT WEB LONGIT TOP	8	6	50						28	0.0											46	0.	1188
354	INT & EXT WEB LONGIT TOP	8	6	50						22	6.0											50	0.	801
355	INT & EXT WEB LONGIT TOP	8	6	50						33	0.0											22	6.	360
356	INT & EXT WEB LONGIT TOP	8	6	50						53	0.0											33	0.	529
357	INT & EXT WEB LONGIT CENT	4	8	50						55	0.0											55	0.	849
358	INT & EXT WEB LONGIT CENT	4	12	50				V	4	40	0.0											40	0.	2244

S = Bar is included in substructure quantities.
F = Bar to be field welded.
T = Tie or Stirrup
H = A.S.T.M. A-432.
V = Bar dimensions vary between dimensions shown on this line and the following line.

MARK NO.	LOCATION	SIZE	NO. REQ'D.	BEND TYPE	TIE OR STIR	FLD. WELD	SUBSTR.	A-432	VARIES	NO. EACH	DIMENSIONS (Out to out) U Ft.	U In.	W Ft.	W In.	X Ft.	X In.	Y Ft.	Y In.	Z Ft.	Z In.	θ1 Deg.	θ2 Deg.	LENGTH Ft.	LENGTH In.	WEIGHT Lbs.
399	INT & EXT WEB STIRRUPS	5	2064	64	T					15	0.0														
360	DIAPH HORIZ	5	36	50							6.0	4	10.5		6.0										
361	DIAPH STIRRUPS	4	90	64	T					19	8.0														
363	CROSS BEAM PIER 4,5	14	20	50							6.0	4	8.0		6.0		0.0								
364	CROSS BEAM PIER 6									23	6.0														
365	CROSS BEAM AT TOP SLAB	14	11	50						23	6.0														
366	CROSS BEAM STIRRUPS	14	16	61						19	4.0	4	1.0	4	1.0										
367	CROSS BEAM STIRRUPS	6	66	61							9.0	4	7.0	4	7.0	1	3.0	1	3.0						
368	CROSS BEAM HORIZ	6	132	64						5	6.0	4	7.0		6.0		0.0								
630	HINGE DIAGONAL	7	36	50						19	8.0														
631	BRG SUPPORT HORIZ	11	21	96	F		H			3	0.0	4	6.5												
632	BRG SUPPORT STIRRUPS	14	21	50						3	0.5														
633	BRG SUPPORT STIRRUPS	5	24	61	T					2	9.0	4	10.0	4	10.0		6.0		6.0						
634	BRG SUPPORT STIRRUPS	5	3	61	T					3	9.0	4	10.0	4	10.0		6.0		6.0						
635	BRG SUPPORT HORIZ	5	24	61	T					3	9.0	2	0.5	2	0.5		6.0		6.0						
636	BRG SUPPORT HORIZ	6	40	50						4	0.0														
		6	4	69						3	10.0	5	0.0	1	8.0										
637	BRG SUPPORT HORIZ	6	4	69						3	10.0	9	6.0	3	2.0										
639	WEB HORIZ	4	6	50						19	9.0														
641	DIAPHRAM HORIZ TOP	5	2	50						23	0.0														
643	DIAPHRAM HORIZ BOT	9	2	50						19	9.0														
645	CANTILEVER TOP	6	14	80						4	0.0	1	0.0				3.0			11					
646	CANTILEVER TRANSV	4	4	50						19	9.0														
650	TOP TRANSV	6	6	52						25	3.0														
630	HINGE DIAGONAL	11	21	96	F		H			3	0.0	4	6.5												
631	BRG SUPPORT HORIZ	14	21	50						0	5.0														
632	BRG SUPPORT STIRRUPS	5	24	61	T					2	9.0	4	10.0	4	10.0		6.0		6.0						
633	BRG SUPPORT STIRRUPS	5	3	61	T					3	9.0	4	10.0	4	10.0		6.0		6.0						
634	BRG SUPPORT STIRRUPS	5	24	61	T					3	9.0	2	0.5	2	0.5		6.0		6.0						
635	BRG SUPPORT HORIZ	6	40	50						4	0.0														
636	BRG SUPPORT HORIZ	6	4	69						3	10.0	5	0.0	1	8.0										
		6	4	69						3	10.0	9	6.0	3	2.0										
639	WEB HORIZ BOT	4	6	50						5	0.0														
640	DIAPHRAM STIRRUPS	4	8	60	T					19	9.0														
641	DIAPHRAM HORIZ TOP	5	2	50						1	0.0	4	6.6		6.0										
642	DIAPHRAM HORIZ BOT	7	2	50						23	0.0														
644	DIAPHRAM STIRRUPS	4	8	60	T					19	9.0														
647	HINGE WALL HORIZ	4	6	50							9.0	4	6.6		6.0										
648	HINGE WALL VERT	4	4	50						2	0.0														
650	TOP TRANSV	4	6	50						2	0.0														
400	ROADWAY SLAB TOP TRANSV	6	3	52						25	3.0														
403	ROADWAY SLAB TOP LG HNG=P4	6	568	56						25	2.0														
404	ROADWAY SLAB TOP LG HNG=P4	8	2	50				V	1	40	0.0														
										13	0.0														
405	ROADWAY SLAB TOP LG HNG=P4	5	20	50						10	0.0														
406	ROADWAY SLAB TOP LG HNG=P4	11	4	54						40	0.0														
407	ROADWAY SLAB TOP LG HNG=P4	11	2	54						40	0.0														
408	ROADWAY SLAB TOP LG HNG=P4	11	2	50						68	9.0														
								V	1	37	6.0														
409	ROADWAY SLAB TOP LG HNG=P4	11	2	50						36	6.0														
								V	1	34	3.0														
410	ROADWAY SLAB TOP LG HNG=P4	5	4	50				V	2	33	3.0														
										42	6.0														
411	ROADWAY SLAB TOP LG HNG=P4	5	6	50						39	6.0														
412	ROADWAY SLAB TOP LG HNG=P4	5	2	50						32	0.0														
413	ROADWAY SLAB TOP LG HNG=P4	5	8	50						41	0.0														
414	ROADWAY SLAB TOP LG AT P4	11	6	50						46	9.0														
415	ROADWAY SLAB TOP LG AT P4	11	6	50						15	0.0														
416	ROADWAY SLAB TOP LG AT P4	11	6	50						18	0.0														
417	ROADWAY SLAB TOP LG AT P4	11	6	50						22	6.0														
418	ROADWAY SLAB TOP LG AT P4	11	6	50						26	6.0														
419	ROADWAY SLAB TOP LG AT P4	11	6	50						30	6.0														
420	ROADWAY SLAB TOP LG AT P4	11	6	50						37	0.0														
421	ROADWAY SLAB TOP LG AT P4	11	6	50						43	0.0														
422	ROADWAY SLAB TOP LG AT P4	11	6	50						51	6.0														
423	ROADWAY SLAB TOP LG AT P4	11	6	50	F					59	8.0														
424	ROADWAY SLAB TOP LG AT P4	11	6	50						62	8.0														
42	5ROADWAY SLAB TOP LG P4=P5	8	2	50						65	8.0														
426	ROADWAY SLAB TOP LG P4=P5	8	2	50				V	1	36	6.0														
										25	0.0														
427	ROADWAY SLAB TOP LG P4=P5	5	8	50						23	0.0														
428	ROADWAY SLAB TOP LG P4=P5	5	4	50						40	0.0														
429	ROADWAY SLAB TOP LG P4=P5	5	8	50						34	6.0														
430	ROADWAY SLAB TOP LG AT P5	11	6	50						16	0.0														
431	ROADWAY SLAB TOP LG AT P5	11	6	50						16	6.0														
432	ROADWAY SLAB TOP LG AT P5	11	6	50						18	6.0														
										23	6.0														

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)118	295	297

BENDING DIAGRAMS



VARIOUS STEEL REINFORCING BARS, INCLUDING THOSE IN CROSSBEAMS, ARE SHOWN AS STRAIGHT ON THE "BAR LIST" SHEETS OF THE ATTACHED PLANS. THE CONTRACTOR SHALL BEND THESE BARS AS REQUIRED TO CONFROM TO THE GEOMETRY OF THE STRUCTURE AND AS DETAILED ON THE PLANS.

JOHN B. SKILLING — STRUCTURAL AND CIVIL — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

BAR LIST N-E UNIT 2

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN
P. L. MCALISON — BAKER FERGUSON
H. WALSH — JOHN N. RUFF

APPROVED: December 7, 1967
As Built Changes in Red Dated
BRIDGE ENGINEER

CONTRACT NO. 8382

SHEET 295 OF 297 SHEETS

P/1995

SHEET 287 OF 289 SHEETS — Sub Main Sheet 2 of 3 — N-E UNIT 2 — 11-16-67

S = Bar is included in substructure quantities.
F = Bar to be field welded.
T = Tie or Stirrup.
H = A.S.T.M. A-432.
V = Bar dimensions vary between dimensions shown on this line and the following line.

MARK NO.	LOCATION	SIZE	NO. REQ'D.	BEND TYPE	TIE OR STIR.	FLD. WELD	SUBSTR.	A-432	VARIES	NO. EACH	U Ft.	U In.	W Ft.	W In.	X Ft.	X In.	Y Ft.	Y In.	Z Ft.	Z In.	θ1 Deg.	θ2 Deg.	LENGTH Ft.	LENGTH In.	WEIGHT Lbs.
433	ROADWAY SLAB TOP LG AT P5	11	6	50							28	6.0											28	6.	909
434	ROADWAY SLAB TOP LG AT P5	11	6	50							33	0.0											33	0.	1052
435	ROADWAY SLAB TOP LG AT P5	11	6	50							38	6.0											38	6.	1227
436	ROADWAY SLAB TOP LG AT P5	11	6	50							46	0.0											46	0.	1466
437	ROADWAY SLAB TOP LG AT P5	11	6	50							54	6.0											54	6.	1737
438	ROADWAY SLAB TOP LG AT P5	11	6	50		F			V	2	58	9.0													
											58	3.0											58	6.	1865
439	ROADWAY SLAB TOP LG AT P5	11	6	50							65	8.0											65	8.	2093
440	ROADWAY SLAB TOP LG AT P5	11	6	50							68	2.0											68	2.	2173
444	ROADWAY SLAB TOP LG P5-P6	8	2	50							34	6.0											34	6.	184
403	ROADWAY SLAB TOP LG P5-P6	8	2	50							40	0.0											40	0.	214
445	ROADWAY SLAB TOP LG P5-P6	8	2	50					V	1	29	0.0													
											25	0.0											27	0.	144
446	ROADWAY SLAB TOP LG P5-P6	5	8	50							27	6.0											27	6.	229
447	ROADWAY SLAB TOP LG P5-P6	5	8	50							17	6.0											17	6.	146
448	ROADWAY SLAB TOP LG P5-P6	5	4	50							22	0.0											22	0.	92
427	ROADWAY SLAB TOP LG P5-P6	5	20	50							40	0.0											40	0.	834
449	ROADWAY SLAB TOP LG P5-P6	11	4	50					V	2	63	8.0													
											62	10.0											63	3.	1344
450	ROADWAY SLAB TOP LG P5-P6	11	2	50							58	6.0											58	6.	622
451	ROADWAY SLAB TOP LG P5-P6	5	4	50							26	6.0											26	6.	111
452	ROADWAY SLAB TOP LG P5-P6	5	8	50							19	6.0											19	6.	163
453	ROADWAY SLAB TOP LG P5-P6	5	8	50							32	6.0											32	6.	271
454	ROADWAY SLAB TOP LG P6-HGE	8	2	50							11	0.0											11	0.	59
455	ROADWAY SLAB TOP LG P6-HGE	11	6	50							14	6.0											14	6.	462
456	ROADWAY SLAB TOP LG P6-HGE	11	6	50							19	0.0											19	0.	606
457	ROADWAY SLAB TOP LG P6-HGE	11	6	50							19	6.0											19	6.	622
458	ROADWAY SLAB TOP LG P6-HGE	11	6	50							24	0.0											24	0.	765
459	ROADWAY SLAB TOP LG P6-HGE	11	6	50							28	0.0											28	0.	893
460	ROADWAY SLAB TOP LG P6-HGE	11	6	54							31	0.0											32	9.	1044
461	ROADWAY SLAB TOP LG P6-HGE	11	6	54							32	9.0											34	6.	1100
462	ROADWAY SLAB TOP LG P6-HGE	11	6	54							34	9.0											36	6.	1164
463	ROADWAY SLAB TOP LG P6-HGE	11	6	54							36	6.0											38	3.	1219
464	ROADWAY SLAB TOP LG P6-HGE	11	6	54							38	9.0											40	6.	1291
465	ROADWAY SLAB TOP LG P6-HGE	11	6	54							42	0.0											43	9.	1395
466	ROADWAY SLAB TOP LG P6-HGE	11	6	54							45	6.0											47	3.	1506
470	ROADWAY SLAB BOT TRANS	6	495	50							21	0.0											21	0.	15613
471	ROADWAY SLAB BOT TRANS	5	252	50							40	0.0											40	0.	10513
472	ROADWAY SLAB BOT TRANS	5	36	50					V	2	24	6.0													
											17	6.0											21	0.	789
593	SLAB CANT BOT LONGIT	6	56	50							40	0.0											40	0.	3364
594	SLAB CANT BOT LONGIT	6	8	50					V	4	21	6.0													
											16	0.0											18	9.	225
595	SLAB CANT TRANSV	5	576	69							1	0.0	2	6.0		7.5							3	6.	2065
597	SLAB DWL TO CURB	5	742	69								6.0		3.5	1	3.0		8.0		6.0			2	11.	2248
650	CURB LONGIT EAST, WEST	4	10	50							16	8.0											16	8.	111
651	CURB LONGIT EAST	4	75	50							16	3.0											16	3.	814
652	CURB LONGIT EAST	4	5	50							16	5.5											16	5.	55
653	CURB LONGIT WEST	4	75	50							16	9.0											16	9.	839
654	CURB LONGIT WEST	4	5	50							16	10.0											16	10.	56
655	CURB TRANSV	4	382	65	T							5.0	1	3.0									1	6.	383
656	RAIL BASE VERT I.S. FACE	5	764	65	T							8.5	2	0.5		8.5							3	3.	2590
657	RAIL BASE VERT O.S. FACE	4	382	64	T							5.0	2	0.5		5.0							2	8.	670
658	RAIL BASE LONGIT E. W	4	72	50							8	2.0											8	2.	393
659	RAIL BASE LONGIT EAST	4	62	50							8	0.0											8	0.	331
660	RAIL BASE LONGIT WEST	4	2	50							8	3.0											8	3.	11
661	RAIL BASE LONGIT E. W	6	72	50							8	2.0											8	2.	883
662	RAIL BASE LONGIT EAST	6	62	50							8	0.0											8	0.	745
663	RAIL BASE LONGIT WEST	6	2	50							8	3.0											8	3.	25
700	LIGHT STD ANCHORAGE	6	12	64								5.0	2	0.5		5.0							2	4.	43
701	LIGHT STD ANCHORAGE	6	6	65								8.5	2	0.5		8.5							3	1.	28
740	ACCESS HATCH	6	4	50							5	0.0											5	0.0	30

N-F UNIT 2

BAR LIST TOTALS

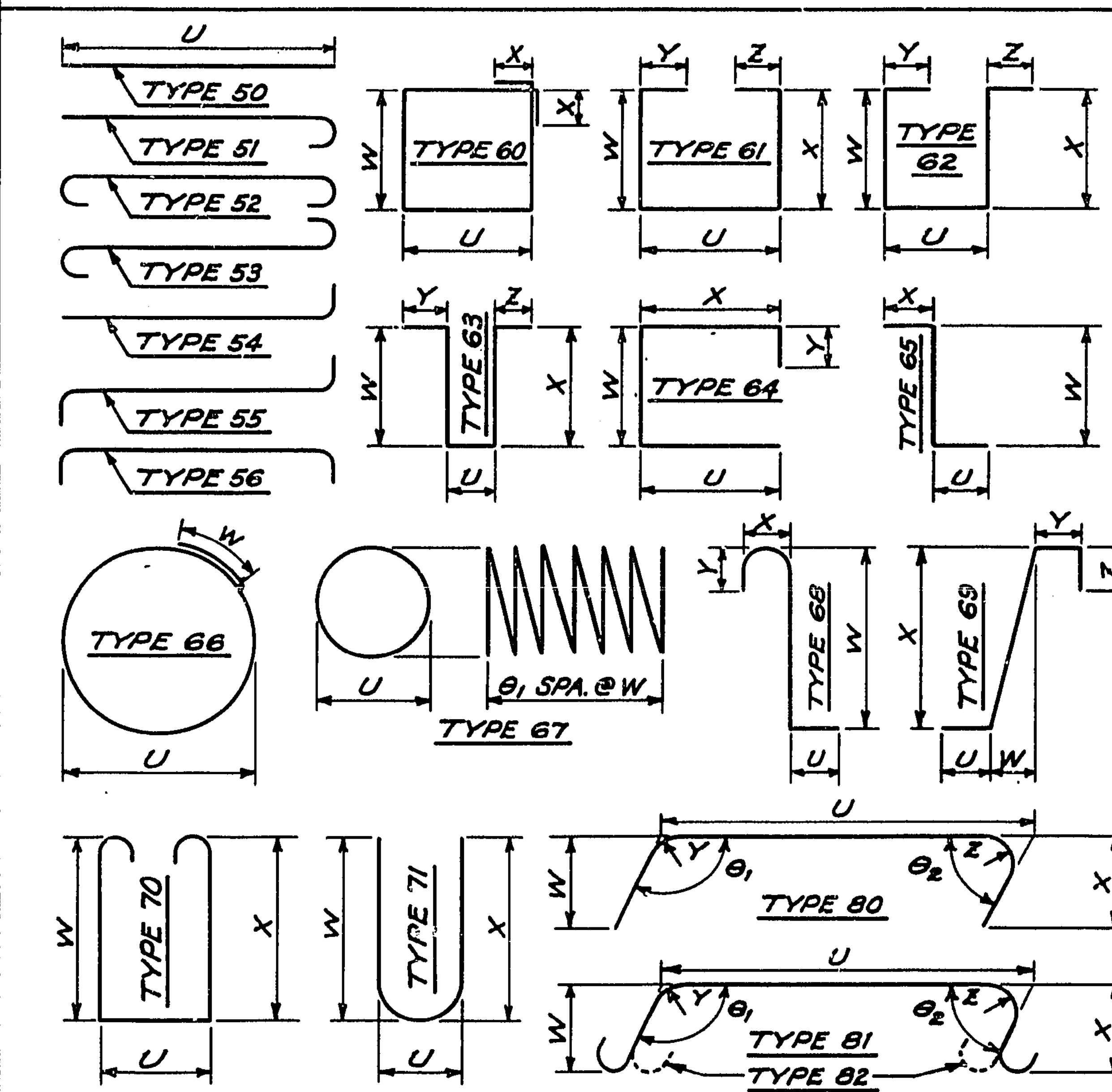
SUBSTRUCTURE A-432	GRAND TOTAL	0.
SUBSTRUCTURE A-15/A-408	GRAND TOTAL	108441.
SUPERSTRUCTURE A-432	GRAND TOTAL	2251.
SUPERSTRUCTURE A-15/A-408	GRAND TOTAL	224681

S = Bar is included in substructure quantities.
F = Bar to be field welded.
T = Tie or Stirrup
H = A.S.T.M. A-432.
V = Bar dimensions vary between dimensions shown on this line and the following line.

MARK NO.	LOCATION	SIZE	NO. REQ'D.	BEND TYPE	TIE OR STIR.	FLD. WELD	SUBSTR.	A-432	VARIES	NO. EACH	U Ft.	U In.	W Ft.	W In.	X Ft.	X In.	Y Ft.	Y In.	Z Ft.	Z In.	θ1 Deg.	θ2 Deg.	LENGTH Ft.	LENGTH In.	WEIGHT Lbs.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178	296	297

BENDING DIAGRAMS



REGISTERED PROFESSIONAL ENGINEER — STATE OF WASHINGTON

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W & N-E STRUCTURE

BAR LIST N-E UNIT 2

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN
F. I. MCAISON
H. WALSH
BAKER FERGUSON
JOHN N. RUPP

APPROVED December 7, 1967
BRIDGE ENGINEER

As Built Changes in Red 9-17-70
CONTRACT NO. 8382
SHEET 296 OF 297 SHEETS

P/1995

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	WASH.	I-405-3(297)178	297	297

S= Bar is included in substructure quantities.
F= Bar to be field welded.
T= Tie or Stirrup.
H= A.S.T.M. A-432.
V= Bar dimensions vary between dimensions shown on this line and the following line.

See Note Sheet 284.

N-E UNIT 3

MARK NO.	LOCATION	SIZE	NO. REQ'D.	BEND TYPE	TIE OR STIR.	FLD. WELD	SUBSTR.	A-432	VARIES	NO. EACH	U Ft.	U In.	W Ft.	W In.	X Ft.	X In	Y Ft.	Y In.	Z Ft.	Z In.	θ1 Deg.	θ2 Deg.	LENGTH Ft.	LENGTH In.	WEIGHT Lbs.
104	NE STRUCT PIER 7 FTG LONG	11	26	50			S																		
105	NE STRUCT PIER 7 FTG TRAN	11	34	50			S				17	0.0													
106	NE STRUCT PIER 7. FTG DOWL	11	19	54			S				20	6.0											17	0.	2360
107	NE STRUCT PIER 8 FTG LONG	9	27	50			S				7	6.0											20	6.	3700
108	NE STRUCT PIER 8 FTG TRAN	9	27	50			S				17	0.0											9	3.	934
109	NE STRUCT PIER 8 FTG DOWL	11	19	54			S				17	0.0											17	0.	1147
143	NE STRUCT COL 7 TIES	4	40	66			S				7	3.0											17	0.	1561
150	NE STRUCT COL 7 VERT	11	19	50			S				4	9.0	1	6.0									9	0.	909
143	NE STRUCT COL 8 TIES	4	15	66			S				36	0.0											16	3.	435
151	NE STRUCT COL 8 VERT	11	19	50			S				4	9.0	1	6.0									38	0.	3836
200	BOTTOM SLAB BOT TRANSV	5	130	61			S				20	1.0											16	3.	163
203	BOTTOM SLAB BOT LONG P7	5	4	50							19	8.0	1	0.0	1	0.0							20	1.	2027
204	BOTTOM SLAB BOT LONG P7	5	4	50							12	0.0											21	2.	2870
205	BOTTOM SLAB BOT LONG P7	5	4	50							40	0.0											12	0.	50
206	BOTTOM SLAB BOT LONG P7	11	4	50							24	0.0											40	0.	167
207	BOTTOM SLAB BOT LONG P7	14	4	50							35	10.0											24	0.	100
208	BOTTOM SLAB BOT LONG P7	14	4	50							51	6.0											35	10.	762
209	BOTTOM SLAB BOT LONG P7	14	4	54							62	2.0											51	6.	1576
210	BOTTOM SLAB BOT LONG P7	14	4	54							71	2.0											62	2.	1902
211	BOTTOM SLAB BOT LONG P7	14	4	54							74	6.0											73	3.	2241
212	BOTTOM SLAB BOT LONG P7	14	4	54							77	2.0											76	7.	2343
213	BOTTOM SLAB BOT LONG P7	11	2	50							80	2.0											79	3.	2425
214	BOTTOM SLAB BOT LONG P7	11	2	50							32	6.0											82	3.	2517
215	BOTTOM SLAB BOT LONG P7	11	2	50							44	2.0											32	6.	345
216	BOTTOM SLAB BOT LONG P7	11	2	50							52	10.0											44	2.	469
217	BOTTOM SLAB BOT LONG P7	11	2	50							60	2.0											52	10.	561
218	BOTTOM SLAB BOT LONG P7	11	2	50							66	0.0											60	2.	639
219	BOTTOM SLAB BOT LONG P7	11	2	54							71	8.0											66	0.	701
220	BOTTOM SLAB BOT LONG P7	11	2	54							73	10.0											73	5.	780
221	BOTTOM SLAB BOT LONG P7	11	2	54							76	2.0											75	7.	803
222	BOTTOM SLAB BOT LONG P7	11	2	54							77	10.0											77	11.	828
225	BOTTOM SLAB BOT LONG AT P7	11	2	50							79	10.0											79	7.	846
226	BOTTOM SLAB BOT LONG AT P7	11	2	50							28	8.0											81	7.	867
227	BOTTOM SLAB BOT LONG AT P7	11	4	50							34	2.0											28	8.	305
228	BOTTOM SLAB BOT LONG AT P7	5	6	50							39	10.0											34	2.	363
229	BOTTOM SLAB BOT LONG AT P7	5	4	50							33	0.0											39	10.	847
230	BOTTOM SLAB BOT LONG AT P7	5	4	50							26	0.0											33	0.	207
231	BOTTOM SLAB BOT LONG AT P7	5	6	50							27	0.0											26	0.	108
232	BOTTOM SLAB BOT LONG AT P7	11	2	50							31	6.0											27	0.	113
233	BOTTOM SLAB BOT LONG AT P7	11	2	50							29	2.0											31	6.	197
234	BOTTOM SLAB BOT LONG AT P7	11	2	50							33	8.0											29	2.	310
237	BOTTOM SLAB BOT LONG P7-P8	11	6	50							40	8.0											33	8.	358
238	BOTTOM SLAB BOT LONG P7-P8	11	6	50							32	4.0											40	8.	432
239	BOTTOM SLAB BOT LONG P7-P8	11	6	50							45	2.0											32	4.	1031
240	BOTTOM SLAB BOT LONG P7-P8	11	6	50							53	8.0											45	2.	1440
241	BOTTOM SLAB BOT LONG P7-P8	11	6	50							61	4.0											53	8.	1711
242	BOTTOM SLAB BOT LONG P7-P8	11	6	50							67	8.0											61	4.	1955
243	BOTTOM SLAB BOT LONG P7-P8	11	6	50							75	8.0											67	8.	2157
246	BOTTOM SLAB BOT LONG AT P8	11	6	50							78	2.0											75	8.	2412
247	BOTTOM SLAB BOT LONG AT P8	5	4	50							21	0.0											78	2.	2492
248	BOTTOM SLAB BOT LONG AT P8	5	4	50							42	0.0											21	0.	669
249	BOTTOM SLAB BOT LONG AT P8	5	8	50							31	6.0											42	0.	175
200	BOTTOM SLAB TOP TRANSV	5	130	61							25	0.0											31	6.	131
250	BOTTOM SLAB TOP LONGIT	5	16	50							19	8.0	1	0.0	1	0.0							25	0.	209
251	BOTTOM SLAB TOP LONGIT	5	80	50							9	6.0											21	2.	2870
350	INT & EXT WEB LONGIT TOP	10	6	50							40	0.0											9	6.	159
51	INT & EXT WEB LONGIT TOP	10	6	50							53	0.0											40	0.	3338
											43	6.0											53	0.	1368
																							43	6.	1123
352	INT & EXT WEB LONGIT TOP	8	6	50																					
353	INT & EXT WEB LONGIT TOP	8	6	50							50	0.0													
354	INT & EXT WEB LONGIT TOP	8	6	50							22	0.0											50	0.	801
355	INT & EXT WEB LONGIT CENT	4	60	50							43	0.0											22	0.	352
356	INT & EXT WEB LONGIT CENT	4	6	50							40	0.0											43	0.	689
399	INT & EXT WEB STIRRUPS	5	1254	64	T						8	0.0											40	0.	1603
360	DIAPH HORIZ	5	24	50								6.0	4	10.5		6.0							9	0.	32
361	DIAPH STIRRUPS	4	144	64	T						19	8.0											5	7.	7276
362	CROSS BEAM TOP P 7•8	14	20	50								6.0	4	7.0		6.0		0.0					19	8.	492
363	CROSS BEAM TOP P 7•8	14	11	61							23	6.0											5	4.	513
364	CROSS BEAM P 7•8	7	24	50							19	4.0	4	1.0	4	1.0							23	6.	3595
365	CROSS BEAM STIRRUPS	6	44	61							19	8.0											25	6.	2146
366	CROSS BEAM STIRRUPS	6	88	64							5	9.0	4	7.0	4	7.0	1	3.0	1	3.0			19	8.	965
720	PAVT SEAT LONG	4	2	50	T						1	3.0	4	7.0	1	3.0							16	9.	1107
721	END DIAP LONG	5	8	50	T						22	6.0											6	7.	870
722	END DIAP LONG	10	6	50							19	6.0											22	6.	30
723	END DIAP STIRRUP	5	20	62	T						19	6.0											19	6.	163
724	PAVT SEAT TIES	4	[illegible]8	91	T							9.0	4	9.5	4	9.5		6.0		6.0			19	6.	503
750	END WALL VERT	5	10	65	T						4	4.0											10	11.	228
751	END WALL VERT	5	4	64	T							8.0	4	8.5		8.0							4	4.	110
752	END WALL VERT	5	6	64	T							8.0	4	8.5		8.0		0.0					5	10.	61
753	END WALL HORIZ	6	20	50								8.0	3	9.0		8.0		0.0					5	9.	24
630	HINGE DIAGONAL	11	21	96		F		H			6	6.0											4	9.	30
631	BRG SUPPORT HORIZ	14	21	50							3	0.0	4	6.5									6	6.	195
632	BRG SUPPORT STIRRUPS	5	24	61	T						0	5.0									120		10	1.	1126
633	BRG SUPPORT STIRRUPS	5	3	61	T						2	9.0	4	10.0	4	10.0		6.0		6.0			0	5.	84
634	BRG SUPPORT STIRRUPS	5	24	61	T						3	9.0	4	10.0	4	10.0		6.0		6.0			13	0.	525
635	BRG SUPPORT HORIZ	6	40	50							3	9.0	2	0.5	2	0.5		6.0		6.0			14	0.	44
636	BRG SUPPORT HORIZ	6	4	69							4	0.0											8	5.	211
637	BRG SUPPORT HORIZ	6	4	69							3	10.0	5	0.0	1	8.0							4	0.	240
639	WEB HORIZ	4	6	50							3	10.0	9	6.0	3	2.0							9	0.	54
641	DIAPHRAM HORIZ TOP	5	2	50							19	9.0											13	9.	82
643	DIAPHRAM HORIZ BOT	9	2	50							23	0.0											19	9.	79
644	DIAPHRAM STIRRUPS	4	8	60	T						19	9.0											23	0.	48
645	CANTILEVER TOP	6	14	80								9.0	4	6.6		6.0							19	9.	134
646	CANTILEVER TRANSV	4	4	50							4	0.0	1	0.0				3.0			11		11	2.	60
650	TOP TRANSV	8	6	52							19	9.0											3	10.	81
											25	3.0											19	9.	53
																							26	7.	240

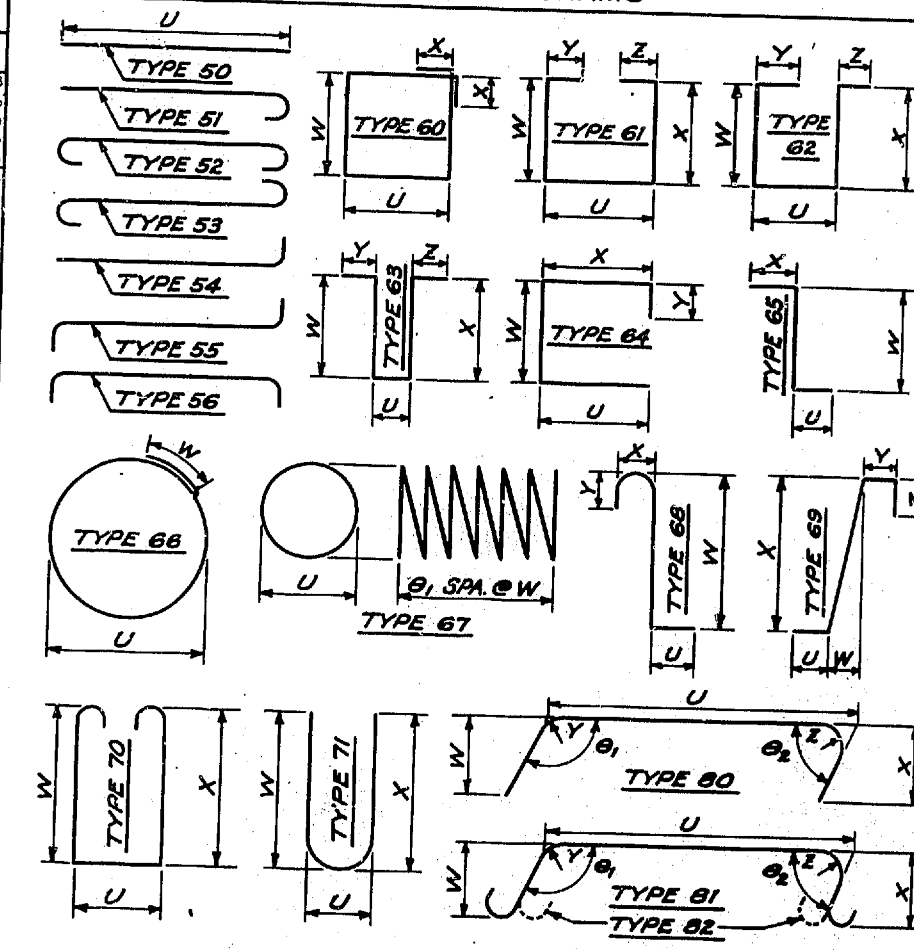
MARK NO.	LOCATION	SIZE	NO. REQ'D.	BEND TYPE	TIE OR STIR.	FLD. WELD	SUBSTR.	A-432	VARIES	NO. EACH	U Ft.	U In	W Ft.	W In.	X Ft.	X In	Y Ft.	Y In.	Z Ft.	Z In.	θ1 Deg.	θ2 Deg.	LENGTH Ft.	LENGTH In.	WEIGHT Lbs.
400	ROADWAY SLAB TOP TRANSV	6	392	52							25	2.0													
402	ROADWAY SLAB TOP LONG P7	5	20	50							42	0.0											26	6.	15603
403	ROADWAY SLAB TOP LONG P7	5	4	50							39	6.0											42	0.	876
404	ROADWAY SLAB TOP LONG P7	5	8	50							27	6.0											39	6.	165
405	ROADWAY SLAB TOP LONG P7	5	8	50							42	6.0											27	6.	229
406	ROADWAY SLAB TOP LONG P7	8	2	50							42	0.0											42	6.	355
407	ROADWAY SLAB TOP LONG P7	8	2	50							39	0.0											42	0.	224
408	ROADWAY SLAB TOP LONG P7	8	2	50							11	0.0											39	0.	208
409	ROADWAY SLAB TOP LONG P7	11	2	54							65	6.0											11	0.	59
410	ROADWAY SLAB TOP LONG P7	11	2	54							70	0.0											67	3.	715
411	ROADWAY SLAB TOP LONG P7	11	2	54							68	0.0											71	9.	762
413	ROADWAY SLAB TOP LONG P7	11	6	50							18	0.0											69	9.	741
414	ROADWAY SLAB TOP LONG P7	11	6	50							22	6.0											18	0.	574
415	ROADWAY SLAB TOP LONG P7	11	6	50							25	6.0											22	6.	717
416	ROADWAY SLAB TOP LONG P7	11	6	50							29	6.0											25	6.	813
417	ROADWAY SLAB TOP LONG P7	11	6	50							33	3.0											29	6.	940
418	ROADWAY SLAB TOP LONG P7	11	6	50							36	6.0											33	3.	1060
419	ROADWAY SLAB TOP LONG P7	11	6	50							41	6.0											36	6.	1164
420	ROADWAY SLAB TOP LONG P7	11	6	50							45	9.0											41	6.	1323
421	ROADWAY SLAB TOP LONG P7	11	6	50							51	0.0											45	9.	1458
422	ROADWAY SLAB TOP LONG P7	11	6	50							56	0.0											51	0.	1626
423	ROADWAY SLAB TOP LONG P7	11	6	50							63	0.0											56	0.	1785
																							63	0.	2008
424	ROADWAY SLAB TOP LONG P7	11	6	50																					
425	ROADWAY SLAB TOP LONG P7-8	5	4	50							70	0.0													
426	ROADWAY SLAB TOP LONG P7-8	5	8	50							11	0.0											70	0.	2231
427	ROADWAY SLAB TOP LONG P7-8	5	8	50							40	0.0											11	0.	46
428	ROADWAY SLAB TOP LONG P7-8	5	4	50							51	6.0											40	0.	334
429	ROADWAY SLAB TOP LONG P7-8	5	4	50							40	0.0											51	6.	430
430	ROADWAY SLAB TOP LONG P7-8	8	2	50							20	0.0											40	0.	167
431	ROADWAY SLAB TOP LONG P7-8	8	2	50							40	0.0											20	0.	83
432	ROADWAY SLAB TOP LONG P7-8	11	6	50							43	6.0											40	0.	214
433	ROADWAY SLAB TOP LONG P8	8	2	50							42	0.0											43	6.	232
434	ROADWAY SLAB TOP LONG P8	5	4	50							9	0.0											42	0.	1339
435	ROADWAY SLAB TOP LONG P8	5	8	50							12	6.0											9	0.	48
436	ROADWAY SLAB TOP LONG P8	11	6	50							6	3.0											12	6.	52
437	ROADWAY SLAB TOP LONG P8	11	6	50							14	2.0											6	3.	52
438	ROADWAY SLAB TOP LONG P8	11	6	50							17	8.0											14	2.	452
439	ROADWAY SLAB TOP LONG P8	11	6	50							20	2.0											17	8.	563
440	ROADWAY SLAB TOP LONG P8	11	6	54							26	3.0											20	2.	643
441	ROADWAY SLAB TOP LONG P8	11	6	54							30	6.0											26	3.	837
442	ROADWAY SLAB TOP LONG P8	11	6	54							33	0.0											32	3.	1026
443	ROADWAY SLAB TOP LONG P7-8	5	8	50							36	0.0											34	9.	1108
447	ROADWAY SLAB BOT TRANSV	6	350	50							36	6.0											37	9.	1203
450	ROADWAY SLAB BOT LONGIT	5	180	50							21	6.0											36	6.	305
451	ROADWAY SLAB BOT LONGIT	5	36	50							40	0.0											21	6.	11303
650	CURB LONGIT	4	10	50							11	0.0											40	0.	7510
651	CURB LONGIT	4	110	50							14	6.0											11	0.	413
652	CURB TRANSV	4	286	65	T						16	8.0											14	6.	97
653	RAIL BASE VERT I.S. FACE	5	572	65	T							5.0	1	3.0									16	8.	1225
654	RAIL BASE VERT O.S. FACE	4	286	64	T							8.5	2	0.5		8.5							1	6.	287
655	RAIL BASE LONGIT	4	92	50								5.0	2	0.5		5.0							3	3.	1939
656	RAIL BASE LONGIT	4	4	50							8	2.0											2	8.	502
657	RAIL BASE LONGIT	6	92	50							6	0.0											8	2.	502
658	RAIL BASE LONGIT	6	4	50							8	2.0											6	0.	16
700	LIGHT STD ANCHORAGE	6	12	64							6	0.0											8	2.	1129
701	LIGHT STD ANCHORAGE	6	6	65								5.0	2	0.5		5.0							6	0.	36
												8.5	2	0.5		8.5							2	4.	43
																							3	1.	28

N-E UNIT 3

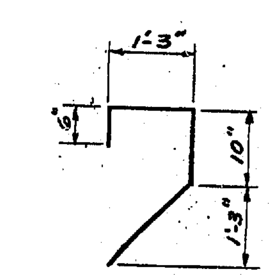
BAR LIST TOTALS

SUBSTRUCTURE A-432	GRAND TOTAL	0.
SUBSTRUCTURE A-15/A-408	GRAND TOTAL	17072.
SUPERSTRUCTURE A-432	GRAND TOTAL	1126.
SUPERSTRUCTURE A-15/A-408	GRAND TOTAL	143592.

BENDING DIAGRAMS



VARIOUS STEEL REINFORCING BARS, INCLUDING THOSE IN CROSSBEAMS, ARE SHOWN AS STRAIGHT ON THE "BAR LIST" SHEETS OF THE ATTACHED PLANS. THE CONTRACTOR SHALL BEND THESE BARS AS REQUIRED TO CONFROM TO THE GEOMETRY OF THE STRUCTURE AND AS DETAILED ON THE PLANS.



TYPE 91

SR 405
MP 23.49 TO MP 23.76
WOODINVILLE INTERCHANGE
KING COUNTY
N-W&N-E STRUCTURE

BAR LIST N-E UNIT 3

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

GEORGE D. ZAHN, CHAIRMAN
F. L. MIKALSON
H. WALSH
BAKER FERGUSON
JOHN N. RUPP

BRIDGE ENGINEER

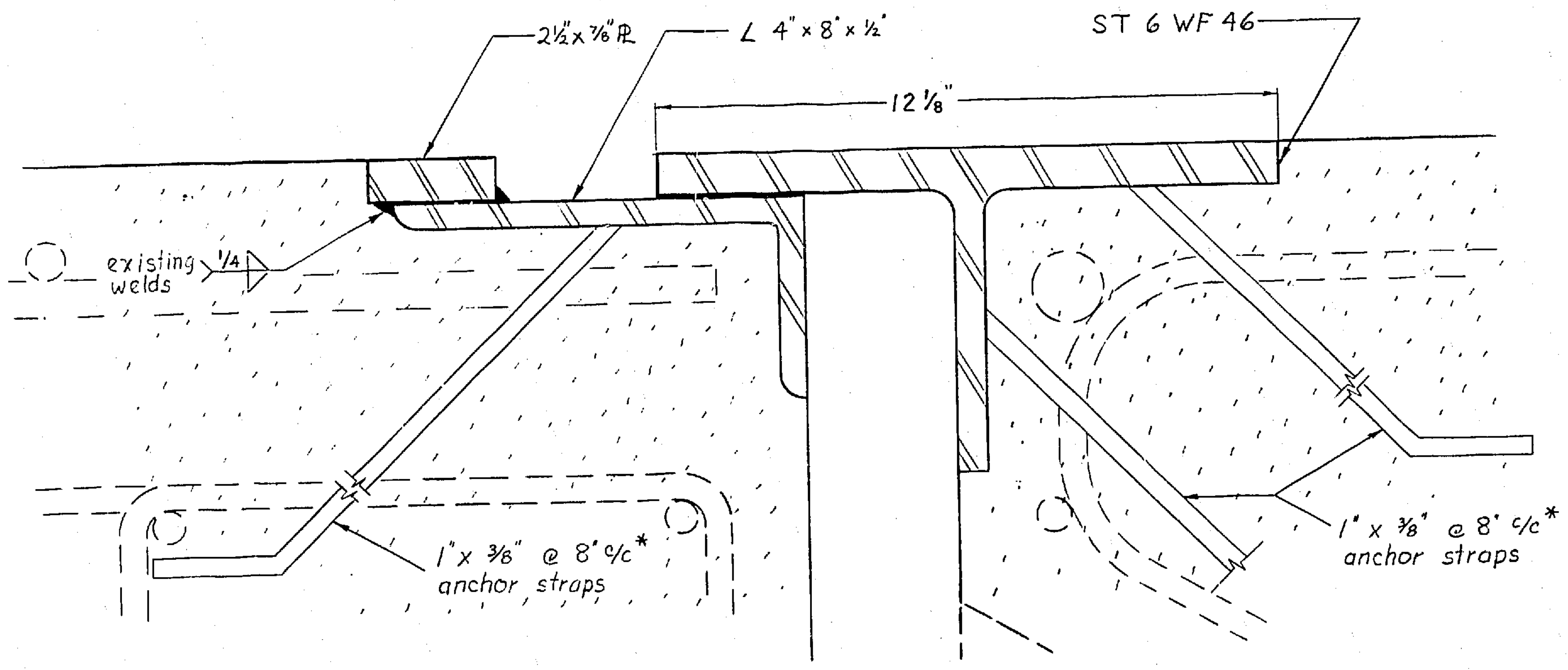
APPROVED: December 7, 1967

As Built Changes in Red 9-17-70
8382

SHEET 297 OF 297 SHEETS

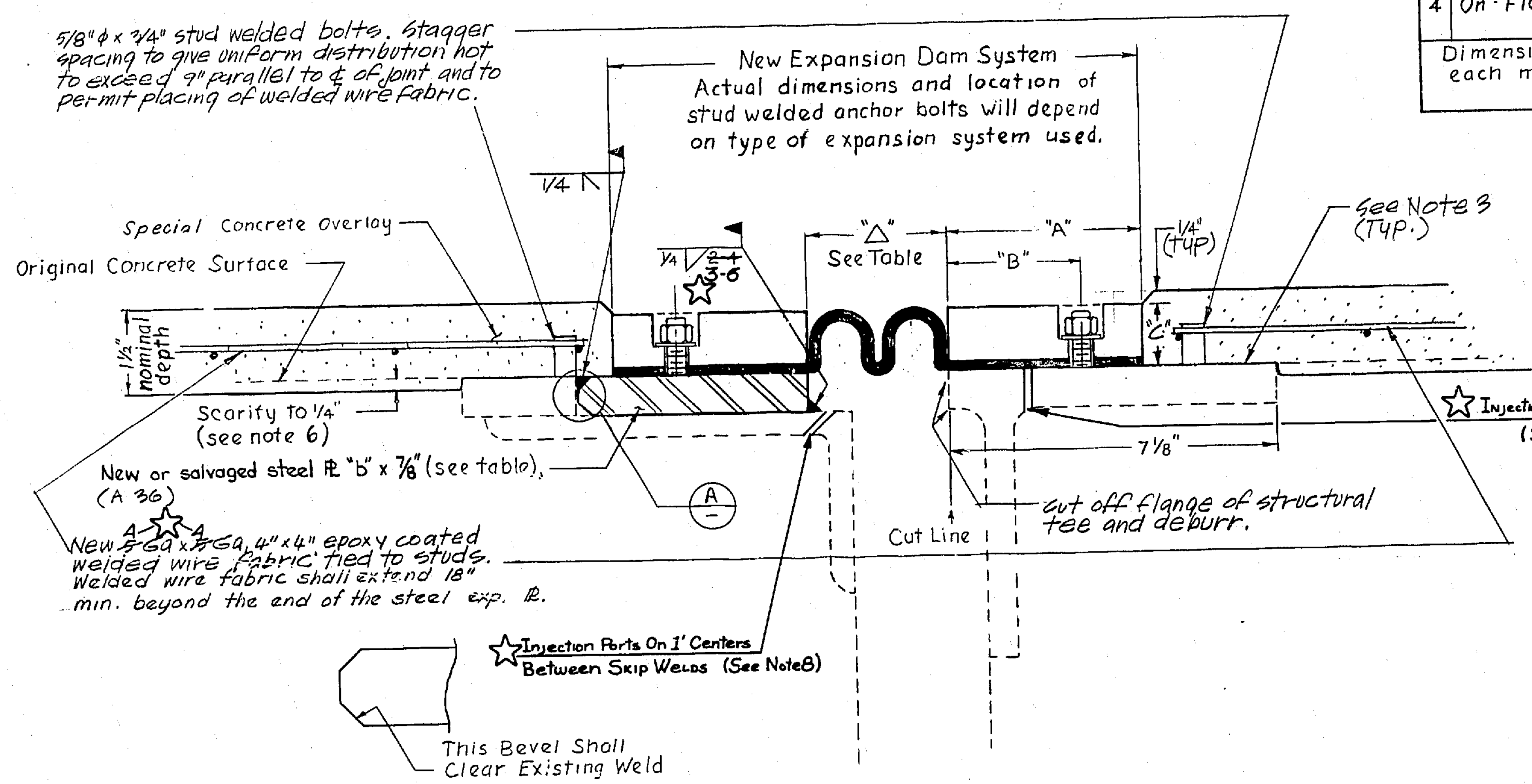
P/1995

SHEET 289 OF 289 11-16-67



EXISTING EXPANSION JOINT DETAIL-TYPICAL

* spacing is approximate



MODIFIED EXPANSION DAM DETAIL
TYPICAL

WOODINVILLE INTERCHANGE

Bridge No.	Joint Location	Length (note2)	Skew	Exp. System	"Δ" (in) @ 0°F	"Δ" (in) @ 64°F	"Δ" (in) @ 100°F	Dimensions b"	Dimensions t"
405/70W	W 853+06	33'-0"	0°	1,2,3or4	4½	2¼	1	4¾	7/8"
"	W 856+59	33'-0"	0°	"	3¾	2¼	1½	5	
"	W 860+06	46'-0"	0°	"	4¼	2 7/16	1⅜	5¼	
"	W 863+41	33'-0"	0°	"	3½	2½	1⅞	5	
405/70S-E	S-E 69+19	25'-0"	0°	"	3 1/16	2⅜	2	5	
"	S-E 72+37	25'-0"	0°	"	3	2⅜	2	5	
405/70E	E 850+07	33'-0"	0°	"	3	2 3/16	1¾	5	
"	E 853+26	33'-0"	0°	"	3½	2	1⅛	5	
"	E 856+81	33'-0"	0°	"	4¼	2⅜	1⅜	5½	
"	E 860+30	59'-0"	0°	"	3 13/16	2⅜	1 9/16	5¼	
"	E 863+58	45'-0"	0°	"	4⅛	2 7/16	1½	5¼	
405/70N-E	N-E 50+88	40'-0"	0°	"	2¼	2 1/16	1⅞	5	
"	N-E 53+11	23'-0"	0°	"	2⅞	1⅞	1¼	5	
"	N-E 55+98	23'-0"	0°	"	4	2⅝	1 13/16	5	
405/70N-W	N-W 53+11	24'-0"	0°	"	3⅛	2 1/16	1 7/16	5	
"	N-W 56+38	24'-0"	0°	"	4	2 7/16	1½	5	
"	N-W 59+37	24'-0"	0°	"	3¾	2⅜	1½	5	
"	N-W 62+31	24'-0"	0°	"	3¼	2	1¼	5	
522/30W-S	W-S 45+83	33'-0"	0°	"	3⅜	2 1/16	1 5/16	5	
	W-S 50+22	33'-0"	0°	"	2⅞	2 1/16	1 9/16	5	
	W-S 53+66	33'-0"	0°	"	3½	2	1⅛	4½	
	W-S 58+33	33'-0"	0°	"	2⅞	2	1 7/16	5	
	W-S 61+88	33'-0"	0°	"	3½	2 1/16	1¼	5	
	W-S 66+16	33'-0"	0°	"	3 3/16	2 5/16	1⅞	5	
522/30E-S	E-S 77+96	45'-0"	35°±	4 only	3⅞	2¼	1⅜	5"	7/8"

Expansion dam systems and dimensions have been selected based on joint movement histories.

List of Expansion Dam Systems			Range
1	Acme	Trojan TR-400	¾"-4¾"
2	Watson-Bowman	WABO Elastoflex	½"-4½"
3	Fel-Pro	Fel-span T-40 A-CS	½"-4½"
4	On-Flex	On-flex E-Last-On w/model #40 membrane	1"~5"
Dimensions A, B, & C will vary with each manufacturer.			

NOTES

1. EXPANSION DAM SYSTEMS SHALL BE IN PLACE BEFORE PLACEMENT OF THE CONCRETE OVERLAY AND SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
2. MODIFY EACH EXPANSION JOINT FULL LENGTH CURB TO CURB. CONTRACTOR SHALL VERIFY ACTUAL LENGTH REQUIRED AT EACH JOINT.
3. IMMEDIATELY PRIOR TO PLACEMENT OF THE OVERLAY, APPLY AN EPOXY RESIN BONDING AGENT TO ALL STEEL SURFACES TO BE COVERED BY THE OVERLAY.
4. THE DEPTH OF THE OVERLAY AT THE EXPANSION DAM WILL VARY WITH THE EXPANSION SYSTEM CHOSEN. THE OVERLAY SHALL BE FEATHERED AWAY FROM THE JOINT AT A RATE OF 0.10 INCHES IN 10 FEET TO THE NOMINAL OVERLAY DEPTH.
5. USE 5/8" DIA. STUD WELDED ANCHOR BOLTS WHENEVER POSSIBLE (1/2" DIA. MINIMUM). SIZE, INSTALLATION, AND LOCATION OF BOLTS SHALL CONFORM TO THE EXPANSION DAM MANUFACTURER'S SPECIFICATIONS.
6. CARE SHALL BE EXERCISED DURING SCARIFICATION OF THE CONCRETE BRIDGE DECK TO PREVENT DAMAGE TO THE EXISTING EXPANSION PLATES AND ANCHORAGES.
7. (1) BOLT HOLE CAVITIES IN EXPANSION JOINT PANELS SHALL BE CLEANED AND FILLED WITH MANUFACTURER'S RECOMMENDED SEALANT AFTER JOINT SYSTEM HAS BEEN INSTALLED AND CHECKED FOR LEAKAGE.

☆ 8. Change Order No.3, Item No.46, & Change Order No.7 Item No. 48

☆ As-Built Changes 1-24-89

Bridge Design Engineer	[signature]	9/84	Added Note # 7 (1)	JED
Supervisor	Willis ... 8-84			
Reviewed By	S. Hanna 8-84			
Designed By	R.C. Mason 7-84			
Checked By	J.R. Dorffeld 7-84			
Detailed By	R.C. Mason 7-84			
Architect				
Preliminary Plan By		DATE	REVISION	BY / APP'D

REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10	WASH	IR-405-3(521) FHWA DEMO. NO.39		

JOB NUMBER 84W054

CONTRACT NO. 2814

BRIDGES AND STRUCTURES

May 14, 1984
APPROVED

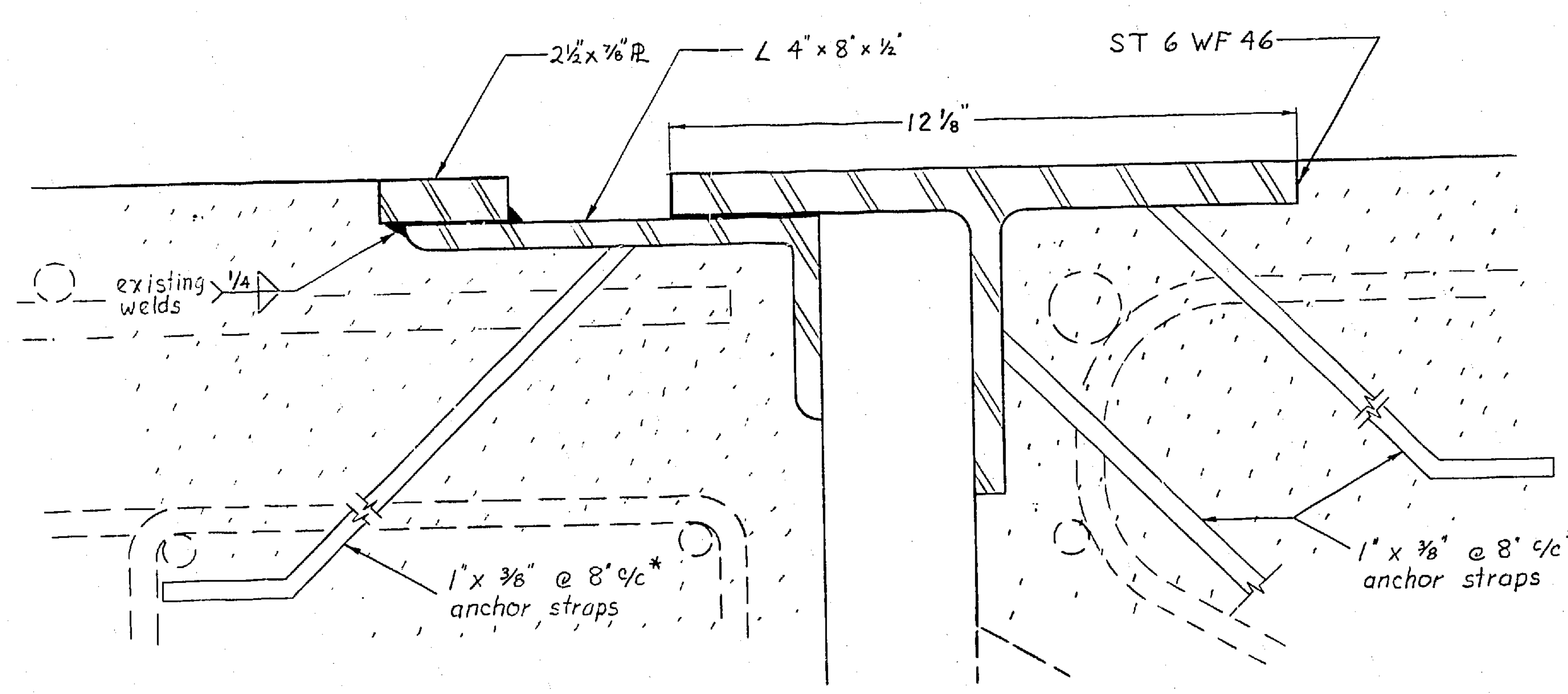
Washington State Department of Transportation

SR 405
WOODINVILLE I/C BRIDGE DECKS - RESURFACING

EXPANSION DAM MODIFICATION DETAILS

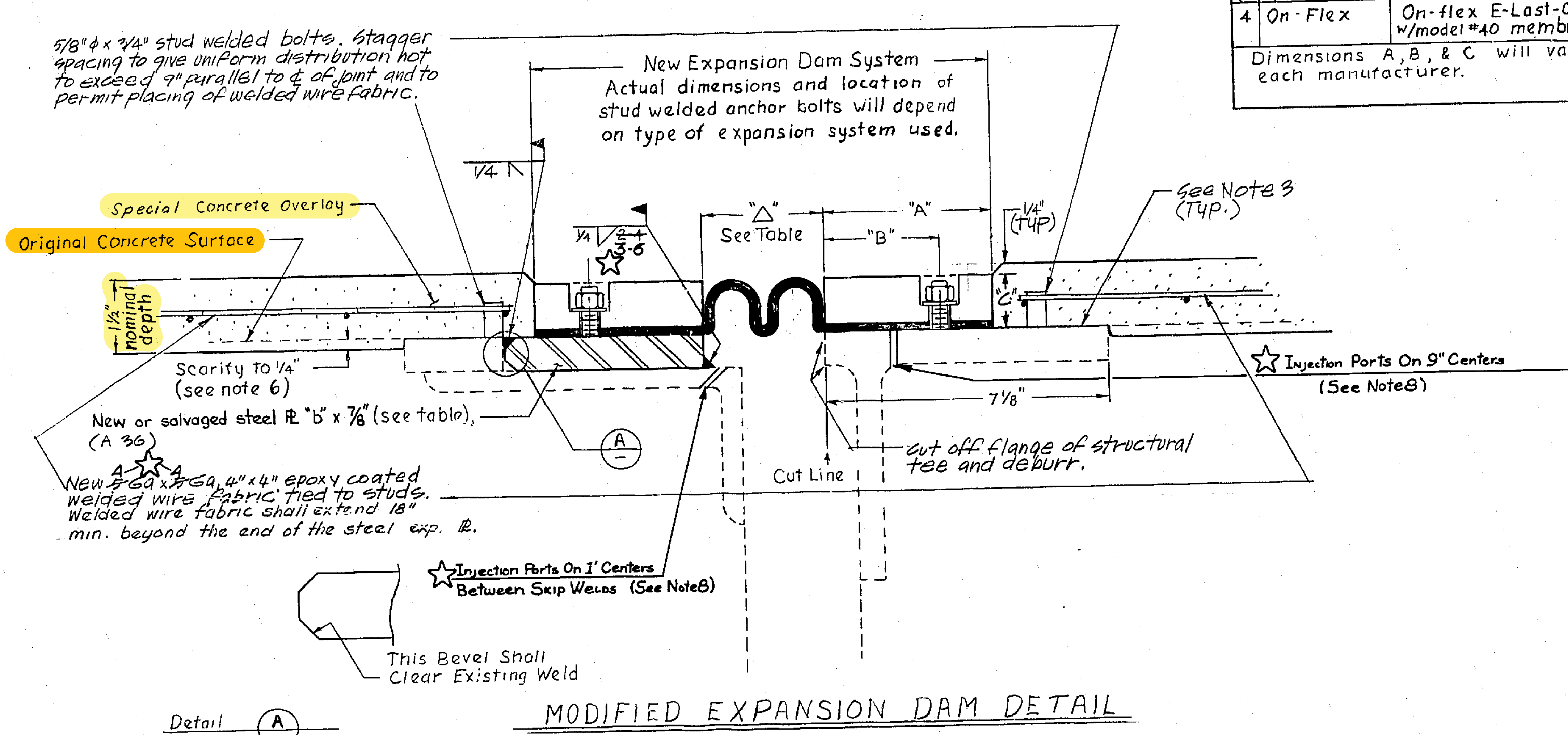
BRIDGE SHEET NO. I
SHEET 10 OF 2? SHEETS

SR 405/112



EXISTING EXPANSION JOINT DETAIL-TYPICAL

* spacing is approximate



MODIFIED EXPANSION DAM DETAIL
TYPICAL

WOODINVILLE INTERCHANGE

Bridge No.	Joint Location	Length (note 2)	Skew	Exp. System	"Δ" (in) @ 0°F	"Δ" (in) @ 64°F	"Δ" (in) @ 100°F	Dimensions b"	Dimensions t"
405/70W	W 853+06	33'-0"	0°	1,2,3 or 4	4½	2¼	1	4¾	⅞"
"	W 856+59	33'-0"	0°	"	3¾	2¼	1½	5	
"	W 860+06	46'-0"	0°	"	4¼	2 7/16	1⅜	5¼	
"	W 863+41	33'-0"	0°	"	3½	2½	1⅞	5	
405/70S-E	S-E 69+19	25'-0"	0°	"	3 1/16	2⅜	2	5	
"	S-E 72+37	25'-0"	0°	"	3	2⅜	2	5	
405/70E	E 850+07	33'-0"	0°	"	3	2 3/16	1¾	5	
"	E 853+26	33'-0"	0°	"	3½	2	1⅛	5	
"	E 856+81	33'-0"	0°	"	4¼	2⅜	1⅜	5½	
"	E 860+30	59'-0"	0°	"	3 13/16	2⅜	1 9/16	5¼	
"	E 863+58	45'-0"	0°	"	4⅛	2 7/16	1½	5¼	
405/70N-E	N-E 50+88	40'-0"	0°	"	2¼	2 1/16	1⅞	5	
"	N-E 53+11	23'-0"	0°	"	2⅞	1⅞	1¼	5	
"	N-E 55+98	23'-0"	0°	"	4	2⅝	1 13/16	5	
405/70N-W	N-W 53+11	24'-0"	0°	"	3⅛	2 1/16	1 7/16	5	
"	N-W 56+38	24'-0"	0°	"	4	2 7/16	1½	5	
"	N-W 59+37	24'-0"	0°	"	3¾	2⅜	1½	5	
"	N-W 62+31	24'-0"	0°	"	3¼	2	1¼	5	
522/30W-S	W-S 45+83	33'-0"	0°	"	3⅜	2 1/16	1 5/16	5	
	W-S 50+22	33'-0"	0°	"	2⅞	2 1/16	1 9/16	5	
	W-S 53+66	33'-0"	0°	"	3½	2	1⅛	4½	
	W-S 58+33	33'-0"	0°	"	2⅞	2	1 7/16	5	
	W-S 61+88	33'-0"	0°	"	3½	2 1/16	1¼	5	
	W-S 66+16	33'-0"	0°	"	3 3/16	2 5/16	1⅞	5	
522/30E-S	E-S 77+96	45'-0"	35°±	4 only	3⅞	2¼	1⅜	5	⅞"

Expansion dam systems and dimensions have been selected based on joint movement histories.

List of Expansion Dam Systems			Range
1	Acme	Trojan TR-400	¾"-4¾"
2	Watson-Bowman	WABO Elastoflex	½"-4½"
3	Fel-Pro	Fel-span T-40 A-CS	½"-4½"
4	On-Flex	On-flex E-Last-On w/model #40 membrane	1"~5"

Dimensions A, B, & C will vary with each manufacturer.

NOTES

1. EXPANSION DAM SYSTEMS SHALL BE IN PLACE BEFORE PLACEMENT OF THE CONCRETE OVERLAY AND SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
2. MODIFY EACH EXPANSION JOINT FULL LENGTH CURB TO CURB. CONTRACTOR SHALL VERIFY ACTUAL LENGTH REQUIRED AT EACH JOINT.
3. IMMEDIATELY PRIOR TO PLACEMENT OF THE OVERLAY, APPLY AN EPOXY RESIN BONDING AGENT TO ALL STEEL SURFACES TO BE COVERED BY THE OVERLAY.
4. THE DEPTH OF THE OVERLAY AT THE EXPANSION DAM WILL VARY WITH THE EXPANSION SYSTEM CHOSEN. THE OVERLAY SHALL BE FEATHERED AWAY FROM THE JOINT AT A RATE OF 0.10 INCHES IN 10 FEET TO THE NOMINAL OVERLAY DEPTH.
5. USE 5/8" DIA. STUD WELDED ANCHOR BOLTS WHENEVER POSSIBLE (1/2" DIA. MINIMUM). SIZE, INSTALLATION, AND LOCATION OF BOLTS SHALL CONFORM TO THE EXPANSION DAM MANUFACTURER'S SPECIFICATIONS.
6. CARE SHALL BE EXERCISED DURING SCARIFICATION OF THE CONCRETE BRIDGE DECK TO PREVENT DAMAGE TO THE EXISTING EXPANSION PLATES AND ANCHORAGES.
7. (Revision 1) BOLT HOLE CAVITIES IN EXPANSION JOINT PANELS SHALL BE CLEANED AND FILLED WITH MANUFACTURER'S RECOMMENDED SEALANT AFTER JOINT SYSTEM HAS BEEN INSTALLED AND CHECKED FOR LEAKAGE.
8. ☆ Change Order No.3, Item No.46, & Change Order No.7 Item No.48

☆ As-Built Changes 1-24-89

Bridge Design Engineer	Robert H. Krier 8/84	9/84	Added Note # 7 (Revision 1)	JRD	RHK
Supervisor	Willis A. Whitney 8-84				
Reviewed By	S. Hanna 8-84				
Designed By	R.C. Mason 7-84				
Checked By	J.R. Dorffeld 7-84				
Detailed By	R.C. Mason 7-84				
Architect					
Preliminary Plan By		DATE	REVISION	BY	APP'D

REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10	WASH	IR-405-3(521) FHWA DEMO. NO.34		

JOB NUMBER 84W054

CONTRACT NO. 2814

BRIDGES AND STRUCTURES

May 14, 1984
APPROVED
C. S. Gloyd

Washington State Department of Transportation

SR 405
WOODINVILLE I/C BRIDGE DECKS - RESURFACING

EXPANSION DAM MODIFICATION DETAILS

BRIDGE SHEET NO. I

SHEET 1 OF 2 SHEETS

SR 405/112

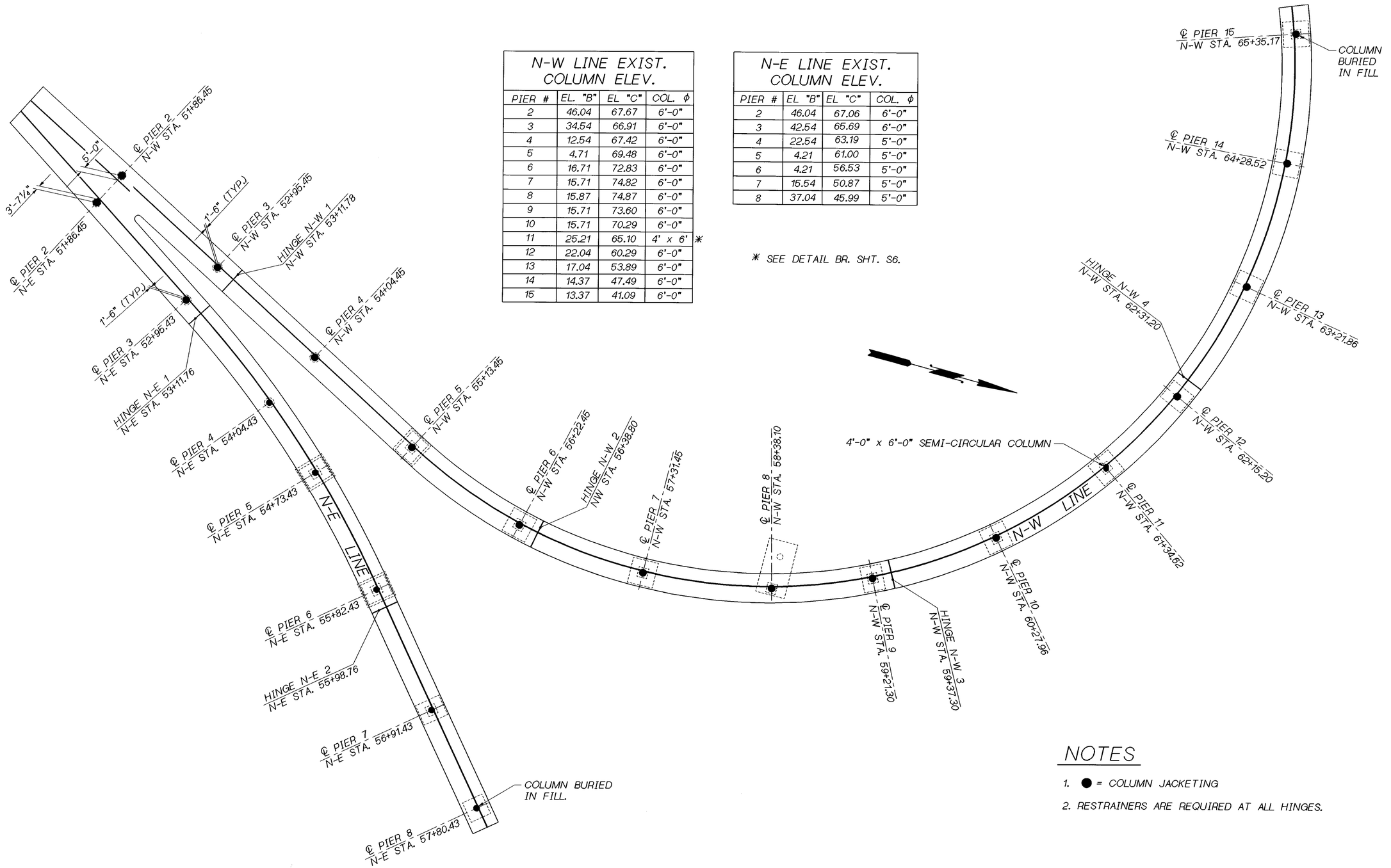
154/61

SR — JOB NO. — SHEET — REVISION — DATE — BY — APP'D

N-W LINE EXIST. COLUMN ELEV.			
PIER #	EL. "B"	EL "C"	COL. ϕ
2	46.04	67.67	6'-0"
3	34.54	66.91	6'-0"
4	12.54	67.42	6'-0"
5	4.71	69.48	6'-0"
6	16.71	72.83	6'-0"
7	15.71	74.82	6'-0"
8	15.87	74.87	6'-0"
9	15.71	73.60	6'-0"
10	15.71	70.29	6'-0"
11	25.21	65.10	4' x 6' *
12	22.04	60.29	6'-0"
13	17.04	53.89	6'-0"
14	14.37	47.49	6'-0"
15	13.37	41.09	6'-0"

N-E LINE EXIST. COLUMN ELEV.			
PIER #	EL "B"	EL "C"	COL. ϕ
2	46.04	67.06	6'-0"
3	42.54	65.69	6'-0"
4	22.54	63.19	5'-0"
5	4.21	61.00	5'-0"
6	4.21	56.53	5'-0"
7	15.54	50.87	5'-0"
8	37.04	45.99	5'-0"

* SEE DETAIL BR. SHT. S6.



NOTES

1. ● = COLUMN JACKETING
2. RESTRAINERS ARE REQUIRED AT ALL HINGES.

SR 405 JOB NO. 7056 SHEET S3

Bridge Design Engr. C. C. RUTH					REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	BRIDGE AND STRUCTURES OFFICE
Supervisor J. A. VAN LUND					10	WASH.				JOHN A. VAN LUND III 6/4/96 SUPERVISING BRIDGE ENGINEER
Designed By T.M. MOORE 4/95					JOB NUMBER 96W020					CHARLES C. RUTH 6-5-96 BRIDGE DESIGN ENGINEER
Checked By J. MERTH 5/95										EXPIRES 12/23/97 EXPIRES 5/3/98
Detailed By V.B. SCHICCHI 4/95										
Bridge Projects Engr.										
Prelim. Plan By										
Architect/Specialist	DATE	REVISION	BY	APP'D	4944					

Washington State Department of Transportation

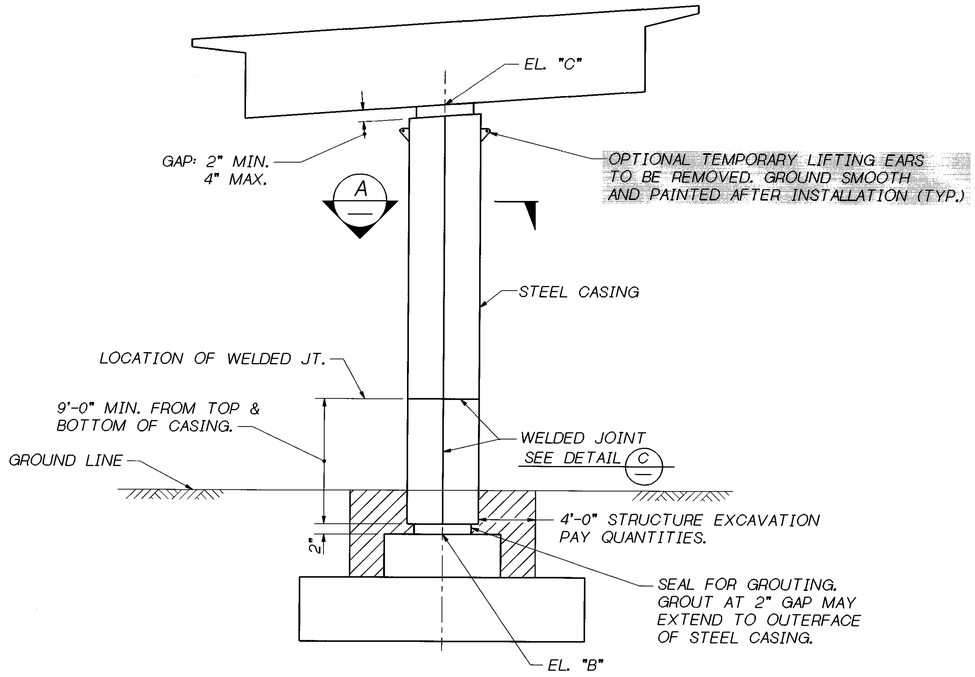
SR 405
WOODINVILLE INTERCHANGE
HOV WIDENING
SEISMIC RETROFIT

RETROFIT LAYOUTS AND COLUMN JACKETING - NW

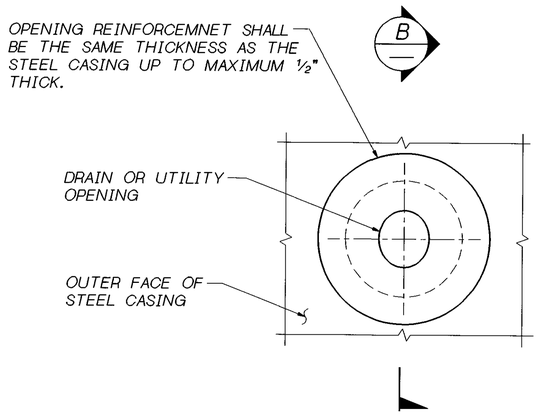
BRIDGE SHEET NO. S3
SHEET 413 OF 452 SHEETS

31-MAY-96

405_70WROOT:\000000.FGB.RETRO.FGB\NW_NE_RETRO_JACKET.FGB; 1



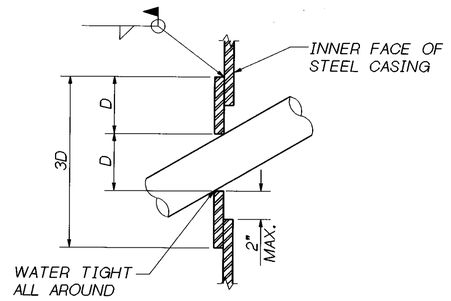
ROUND COLUMN



NOTE: OPENING REINFORCEMENT REQUIRED FOR DRAIN OR UTILITY OPENINGS LARGER THAN 4".

DRAINS WILL BE PLUGGED ON THE FOLLOWING BRIDGES (OPENING IN JACKET IS NOT REQUIRED):

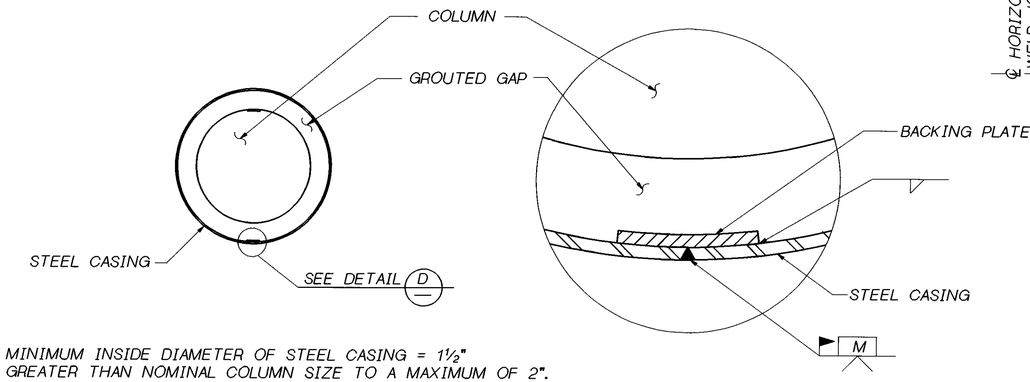
SOUTHBOUND PIERS - EXIST. COLUMNS 4, 6, 7, 8 & 11
NORTHBOUND PIERS - EXIST. COLUMNS 2, 6 & 8



D = PIPE EXTENSION OUTSIDE DIAMETER

SECTION B

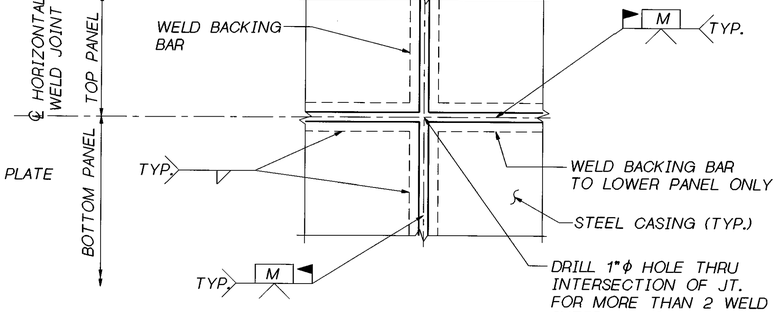
CASING OPENING



MINIMUM INSIDE DIAMETER OF STEEL CASING = 1½" GREATER THAN NOMINAL COLUMN SIZE TO A MAXIMUM OF 2".

SECTION A

DETAIL D



(TWO WELDED INTERSECTION JOINT)

DETAIL C

NOTES

1. APPROPRIATE INJECTION NOZZLES TO BE PROVIDED ON CASING, AND SHALL BE REMOVED, GROUND FLUSH AND PAINTED FOLLOWING COMPLETION OF GROUTING OPERATION.
2. ALL VOIDS BETWEEN STEEL CASING AND EXISTING COLUMN SURFACE SHALL BE FILLED WITH CEMENT GROUT.
3. THE LOCATION AND NUMBER OF VERTICAL AND HORIZONTAL WELDS SHALL BE DETERMINED BY THE CONTRACTOR, AND SUBJECT TO THE APPROVAL OF THE ENGINEER . THE LOCATION OF CASING WELDS ARE FOR ILLUSTRATION. THERE SHALL BE NO SKIP WELDS.
4. CASING THICKNESS SHALL BE 1/4" FOR CIRCULAR COLUMNS 4'-0" DIA. OR LESS AND 3/8" FOR COLUMNS OVER 4'-0" DIA. THE THICKNESS OF CASING FOR SEMI-CIRCULAR SHAPED COLUMNS IS 1/2".
5. CASINGS SHALL BE FABRICATED FROM AASHTO M 183 STRUCTURAL STEEL AND PAINTED IN ACCORDANCE TO THE SPECIAL PROVISIONS.
6. ELEVATIONS SHOWN ON LAYOUT SHEETS ARE BASED ON AS-BUILT DRAWINGS. THE CONTRACTOR SHALL FIELD MEASURE ELEVATIONS PRIOR TO FABRICATION OF CASING.
7. EXISTING COLUMNS THAT HAVE DRAIN PIPE OR CONDUIT MOUNTED ON SURFACE THAT IS TO REMAIN SHALL BE CAREFULLY REMOVED, JACKET INSTALLED AND REPLACED IN KIND. REATTACHMENT DETAILS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

SR 405 JOB NO. 7056 SHEET S5

Bridge Design Engr. C. C. RUTH					REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
Supervisor J. A. VAN LUND					10	WASH.				
Designed By T.M. MOORE 1/96					JOB NUMBER 96W020					
Checked By J. MERTH										
Detailed By J. PLESHA 1/96										
Bridge Projects Engr.										
Prelim. Plan By	7-31-96	REVISED NOTE	TM	CL	4944					
Architect/Specialist	DATE	REVISION	BY	APP'D						

BRIDGE AND STRUCTURES OFFICE

JOHN A. VAN LUND — STATE OF WASHINGTON — 12999 — REGISTERED PROFESSIONAL ENGINEER — EXPIRES 12/23/97 — 7-25-96 SUPERVISING BRIDGE ENGINEER

CHARLES C. RUTH — STATE OF WASHINGTON — 13822 — REGISTERED PROFESSIONAL ENGINEER — EXPIRES 5/3/98 — 7-25-96 BRIDGE DESIGN ENGINEER

Washington State Department of Transportation

SR 405
WOODINVILLE INTERCHANGE
HOV WIDENING
SEISMIC RETROFIT

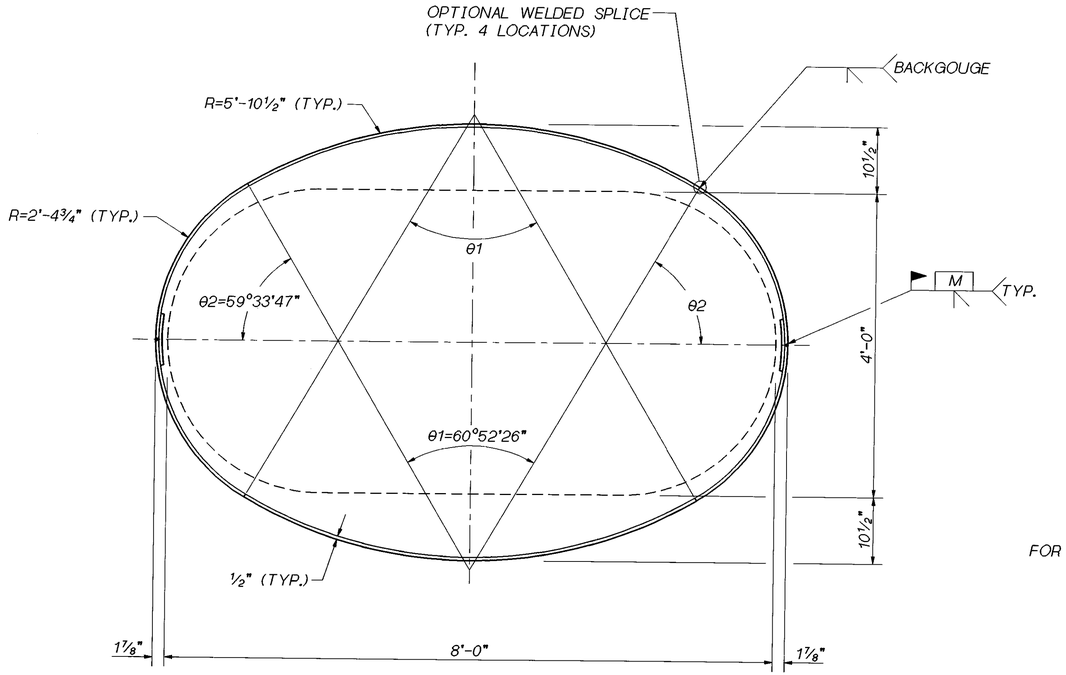
COLUMN JACKETING DETAILS

BRIDGE SHEET NO. S5

SHEET 415 OF 452 SHEETS

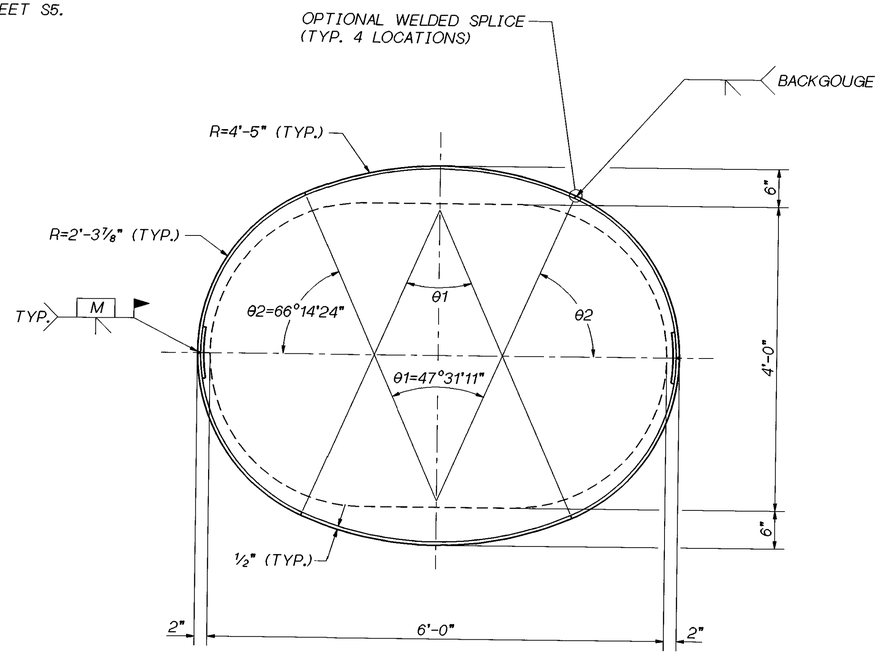
25-JLY-96

405_70RETROROOT:\FGB\COL_JACK_DETAIL.FGB; 1



PIER 12 W-S COLUMN JACKET

FOR NOTES SEE BRIDGE SHEET S5.



PIER 11 NW COLUMN JACKET

SR 405 JOB NO. 7056 SHEET S6

Bridge Design Engr. C. C. RUTH					REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	BRIDGE AND STRUCTURES OFFICE
Supervisor J. A. VAN LUND					10	WASH.				JOHN A. VAN LUND — STATE OF WASHINGTON — 22666 — REGISTERED PROFESSIONAL ENGINEER — EXPIRES 12/23/97 — 6/4/96 SUPERVISING BRIDGE ENGINEER
Designed By T.M. MOORE 1/96					JOB NUMBER 96W020					CHARLES C. RUTH — STATE OF WASHINGTON — 10625 — REGISTERED PROFESSIONAL ENGINEER — EXPIRES 5/3/98 — 6-5-96 BRIDGE DESIGN ENGINEER
Checked By J. MERTH 1/96										
Detailed By V.B. SCHICCHI 1/96										
Bridge Projects Engr.										
Prelim. Plan By										
Architect/Specialist	DATE	REVISION	BY	APP'D	4944					

Washington State Department of Transportation

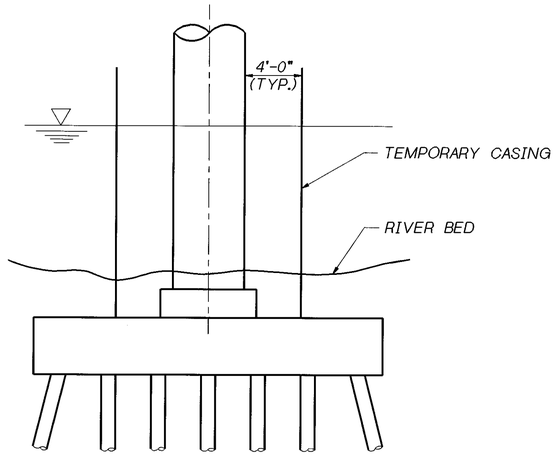
SR 405
WOODINVILLE INTERCHANGE
HOV WIDENING
SEISMIC RETROFIT

COLUMN JACKETING DETAILS

BRIDGE SHEET NO. S6
SHEET 416 OF 452 SHEETS

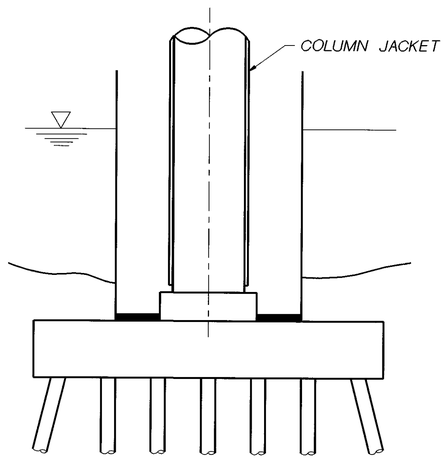
31-MAY-96

405_70WROOT:\000000.FGB.RETRO.FGB\JAX_COLUMN.FGB; 1



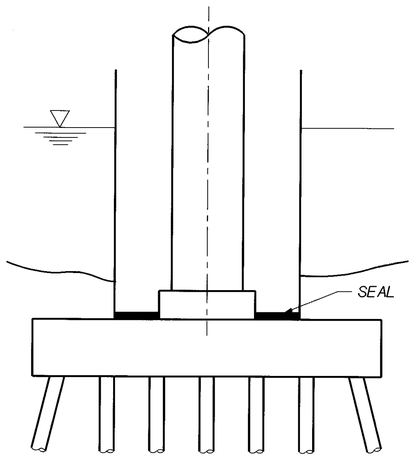
STAGE I

SET TEMPORARY CASING TO TOP OF FOOTING OR BELOW TOP OF EXISTING SHAFT.



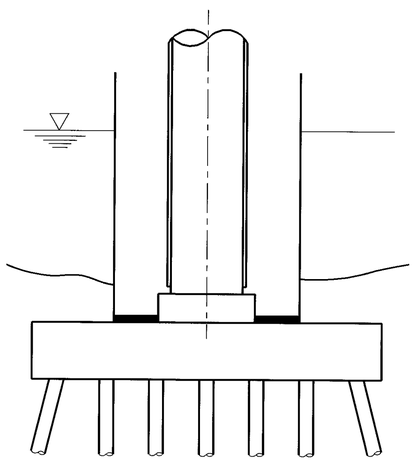
STAGE III

INSTALL STEEL JACKET ON COLUMN. GROUT INSIDE OF JACKET. PAINT JACKET.



STAGE II

EXCAVATE TO TOP OF FOOTING. SEAL CASING AND DEWATER AS DESIGNED BY THE CONTRACTOR.



STAGE IV

REMOVE TEMPORARY CASING.

SR 405 JOB NO. 7056 SHEET S7

Bridge Design Engr. C. C. RUTH					REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
Supervisor J. A. VAN LUND					10	W.A.SH.				
Designed By T.M. MOORE 1/96					JOB NUMBER					
Checked By J. MERTH 2/96					96W020					
Detailed By V.B. SCHICCHI 2/96										
Bridge Projects Engr.										
Prelim. Plan By										
Architect/Specialist	DATE	REVISION	BY	APP'D	4944					

BRIDGE AND STRUCTURES OFFICE

JOHN A. VAN LUND III — STATE OF WASHINGTON — 22066 — REGISTERED PROFESSIONAL ENGINEER — EXPIRES 12/23/97

6/14/96 SUPERVISING BRIDGE ENGINEER

CHARLES C. RUTH — STATE OF WASHINGTON — 13622 — REGISTERED PROFESSIONAL ENGINEER — EXPIRES 5/3/98

6-5-96 BRIDGE DESIGN ENGINEER

Washington State Department of Transportation

SR 405
WOODINVILLE INTERCHANGE
HOV WIDENING
SEISMIC RETROFIT

COLUMN JACKETING
RIVER CONSTRUCTION SEQUENCE

BRIDGE SHEET NO. S7

SHEET 417 OF 452 SHEETS

31-MAY-96

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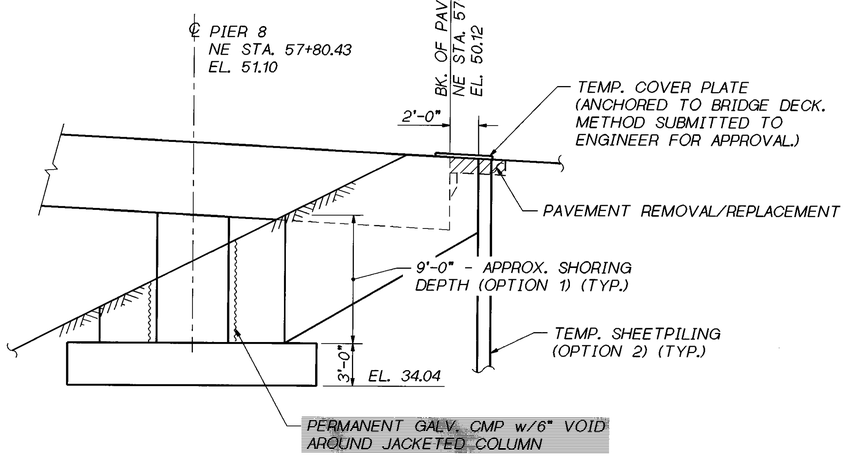
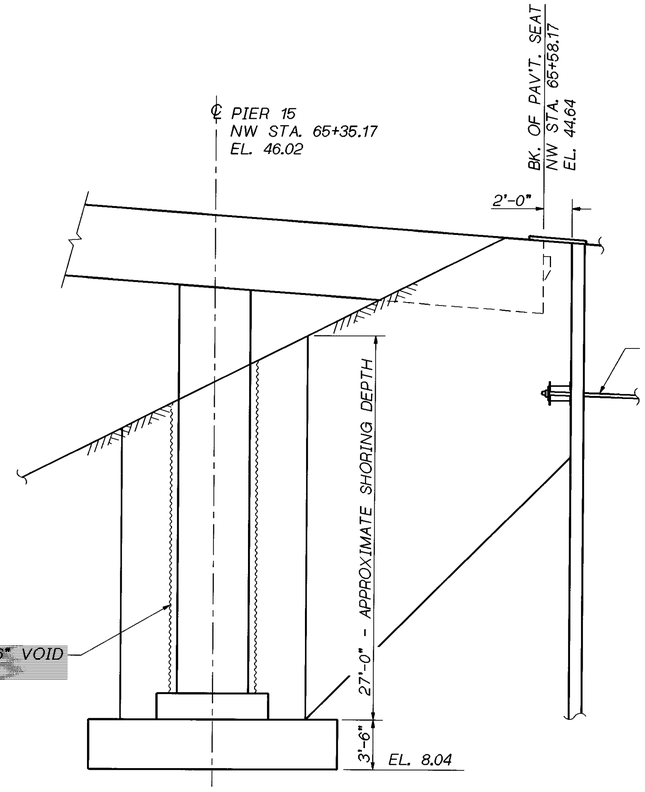
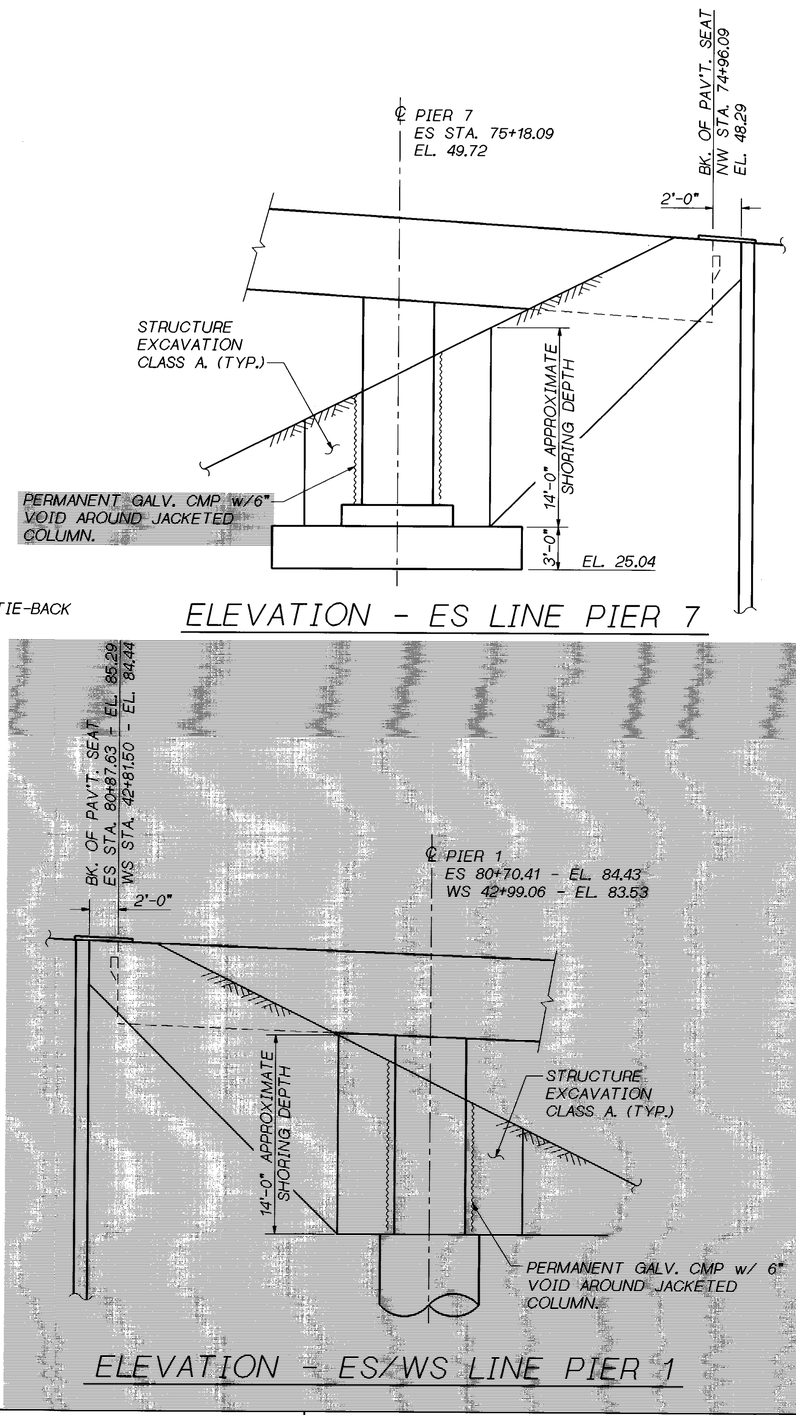


ELEVATION - NE LINE PIER 8



ELEVATION - NW LINE PIER 15



ELEVATION - ES LINE PIER 7

ELEVATION - ES/WS LINE PIER 1

SHORING NOTES:

1. PAY QUANTITIES BASED ON OPTION 1.
2. METHOD OF SHORING SHALL BE DESIGNED AND DETAILED BY THE CONTRACTOR IN ACCORDANCE TO STD. SPEC.
3. NO CONCRETE APPROACH SLABS ARE PRESENT FOR THESE PIERS SHOWN.
4. RELOCATE EXISTING UTILITIES THAT INTERFERE WITH SHORING WALL.

SR 405 JOB NO. 7056 SHEET S8

Bridge Design Engr. C. C. RUTH	405_70RETROROOT:[FGB]JAX_END_PRS.FGB;1				REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
Supervisor J. A. VAN LUND					10	WASH.				
Designed By T.M.M. MOORE 1/96										
Checked By J. MERTH 2/96					JOB NUMBER					
Detailed By V.B. SCHICCHI 2/96					96W020					
Bridge Projects Engr.										
Prelim. Plan By	8/96	ADDED ES/WS PIER 1 & GALV. CALLOUT	TM	CK	4944					
Architect/Specialist	DATE	REVISION	BY	APP'D						

08-AUG-96

BRIDGE AND STRUCTURES OFFICE

JOHN A. VAN LUND — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER — EXPIRES 12/23/97
8-8-96 SUPERVISING BRIDGE ENGINEER

CHARLES C. RUTH — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER — EXPIRES 5/3/98
8-8-96 BRIDGE DESIGN ENGINEER

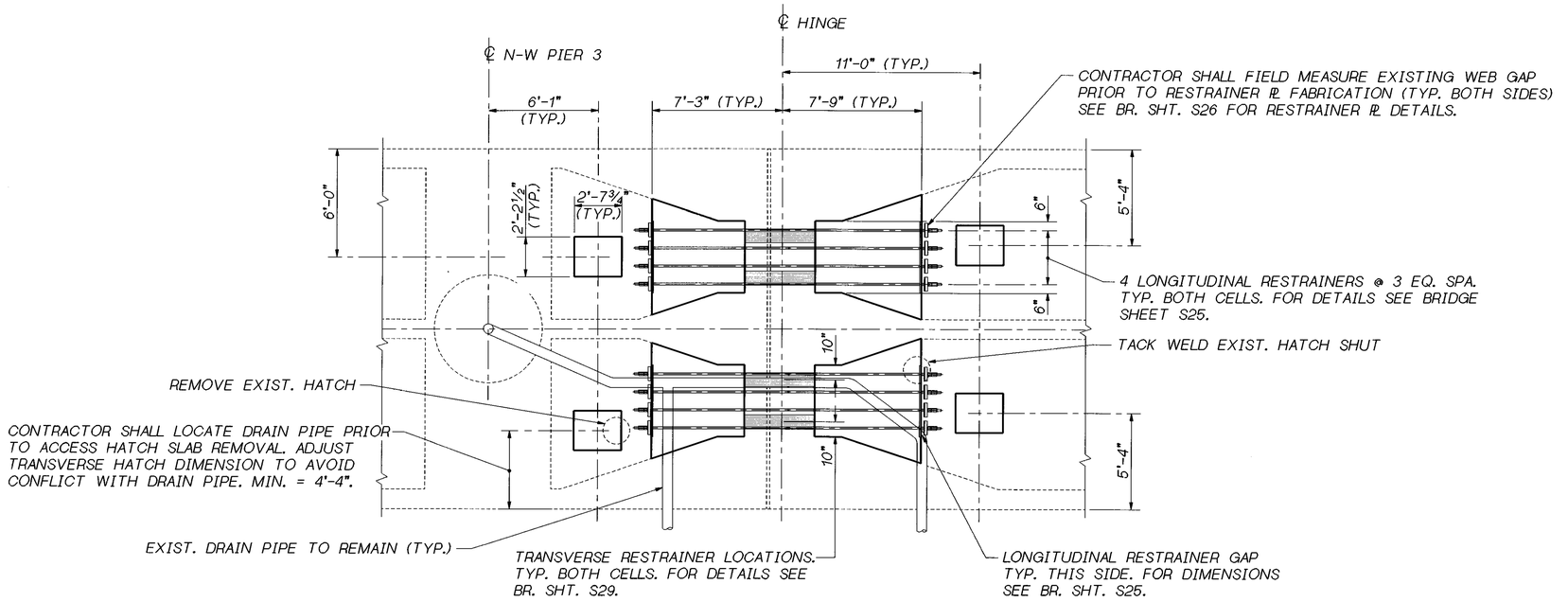
Washington State Department of Transportation

SR 405
WOODINVILLE INTERCHANGE
HOV WIDENING
SEISMIC RETROFIT

COLUMN JACKETING
END PIER EXCAVATION

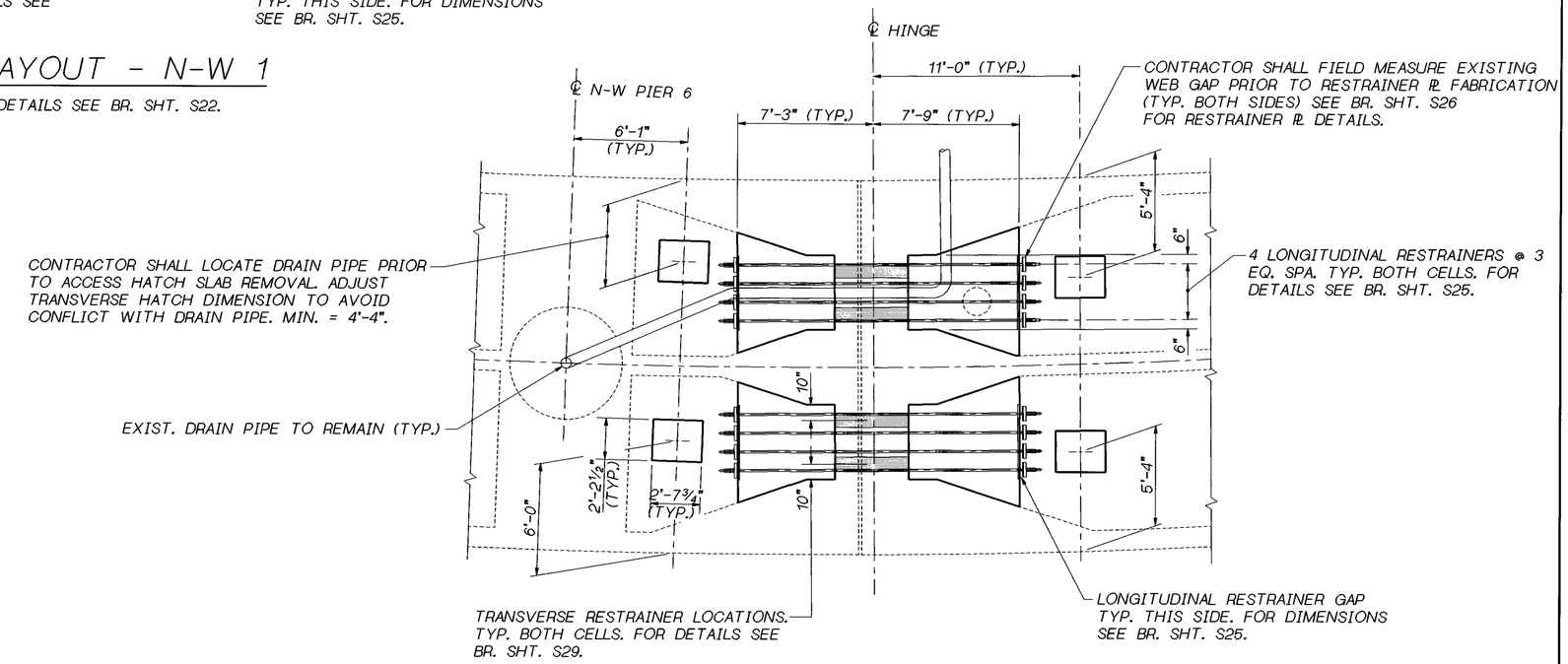
BRIDGE SHEET NO. S8

SHEET 418 OF 452 SHEETS



RESTRAINER LAYOUT - N-W 1

FOR REINFORCEMENT DETAILS SEE BR. SHT. S22.



RESTRAINER LAYOUT - NW 2

FOR REINFORCEMENT DETAILS SEE BR. SHT. S22.
TACK WELD EXISTING ACCESS HATCH SHUT.
RESTRAINERS ARE NORMAL TO ℄ OF HINGE

Bridge Design Engr. C. C. RUTH					REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	BRIDGE AND STRUCTURES OFFICE
Supervisor J. A. VAN LUND					10	WASH.				
Designed By J. MERTH 2/96										
Checked By J. WEI 2/96					JOB NUMBER 96W020					
Detailed By V.B. SCHICCHI 2/96										
Bridge Projects Engr.										
Prelim. Plan By										
Architect/Specialist	DATE	REVISION	BY	APP'D	7944					

JOHN A. VAN LUND — STATE OF WASHINGTON — 22906 — REGISTERED PROFESSIONAL ENGINEER — EXPIRES 12/23/97
6/4/96 SUPERVISING BRIDGE ENGINEER
CHARLES C. RUTH — STATE OF WASHINGTON — 19002 — REGISTERED PROFESSIONAL ENGINEER — EXPIRES 5/3/98
6-5-96 BRIDGE DESIGN ENGINEER

Washington State Department of Transportation

SR 405
WOODINVILLE INTERCHANGE
HOV WIDENING
SEISMIC RETROFIT

RESTRAINER LAYOUT
N-W 1, N-W 2

BRIDGE SHEET NO. S16
SHEET 426 OF 452 SHEETS

SR 405 JOB NO. 7056 SHEET S16

31-MAY-96

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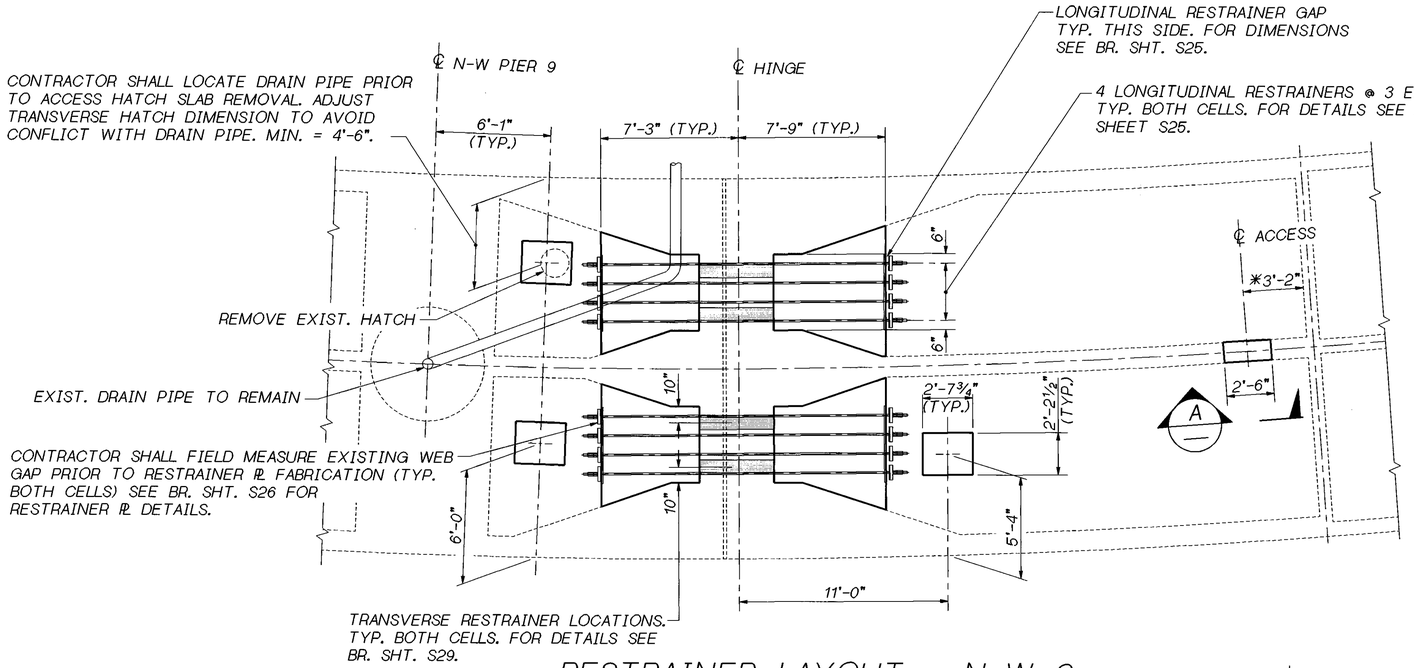
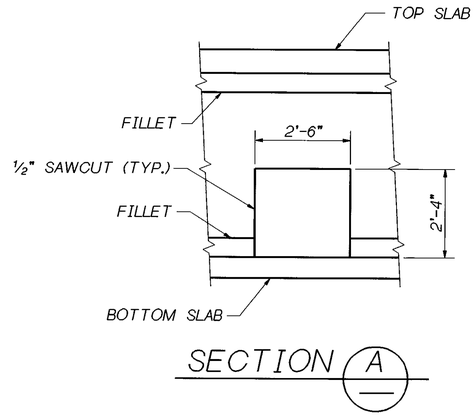
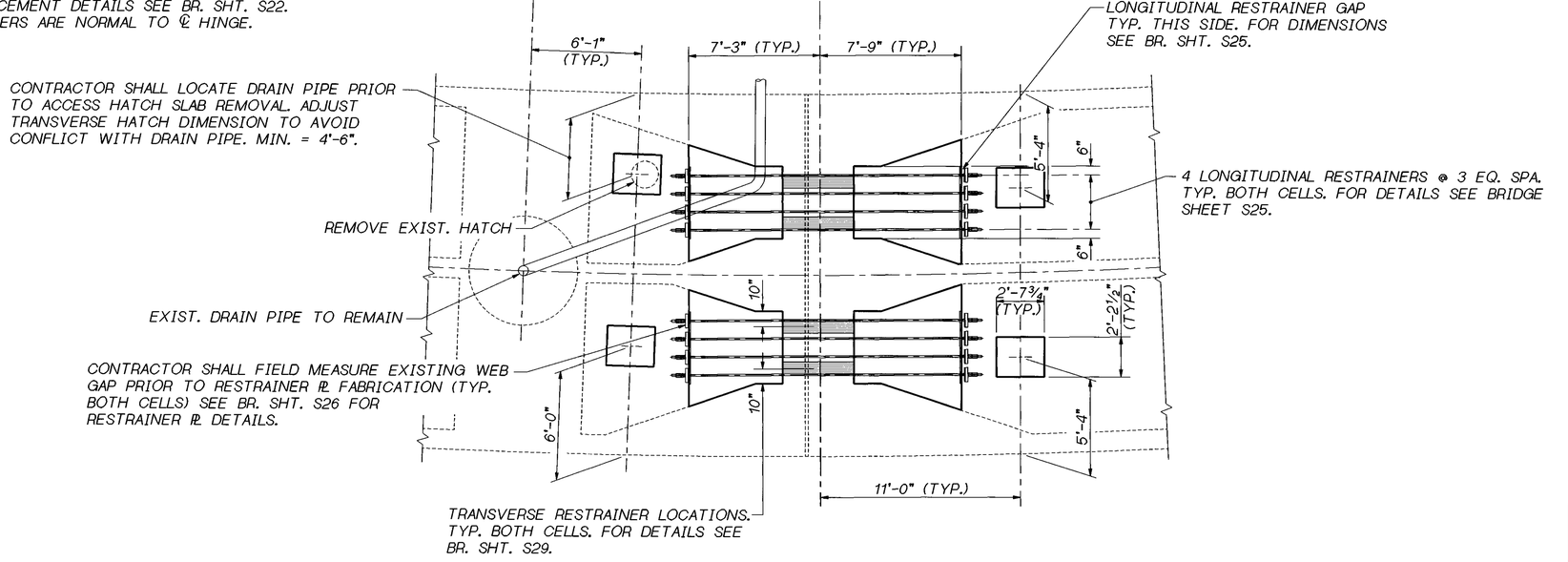




RESTRAINER LAYOUT - N-W 3

FOR REINFORCEMENT DETAILS SEE BR. SHT. S22.
RESTRAINERS ARE NORMAL TO ℄ HINGE.



RESTRAINER LAYOUT - N-W 4

FOR REINFORCEMENT DETAILS SEE BR. SHT. S22.
RESTRAINERS ARE NORMAL TO ℄ HINGE.

SR ____ JOB NO. ____ SHEET S17

Bridge Design Engr. C. C. RUTH					REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
Supervisor J. A. VAN LUND					10	WASH.				
Designed By J. MERTH 2/96										
Checked By J. WEI 2/96					JOB NUMBER 96W020					
Detailed By V.B. SCHICCHI 2/96										
Bridge Projects Engr.					4944					
Prelim. Plan By										
Architect/Specialist	DATE	REVISION	BY	APP'D						

BRIDGE AND STRUCTURES OFFICE

JOHN A. VAN LUND III — STATE OF WASHINGTON — 12000 — REGISTERED PROFESSIONAL ENGINEER — EXPIRES 12/23/97
6/5/96
SUPERVISING BRIDGE ENGINEER

CHARLES C. RUTH — STATE OF WASHINGTON — 13822 — REGISTERED PROFESSIONAL ENGINEER — EXPIRES 5/3/98
6-5-96
BRIDGE DESIGN ENGINEER

Washington State Department of Transportation

SR 405
WOODINVILLE INTERCHANGE
HOV WIDENING
SEISMIC RETROFIT

RESTRAINER LAYOUTS
N-W 3, N-W 4

BRIDGE SHEET NO. S17

SHEET 427 OF 452 SHEETS

31-MAY-96

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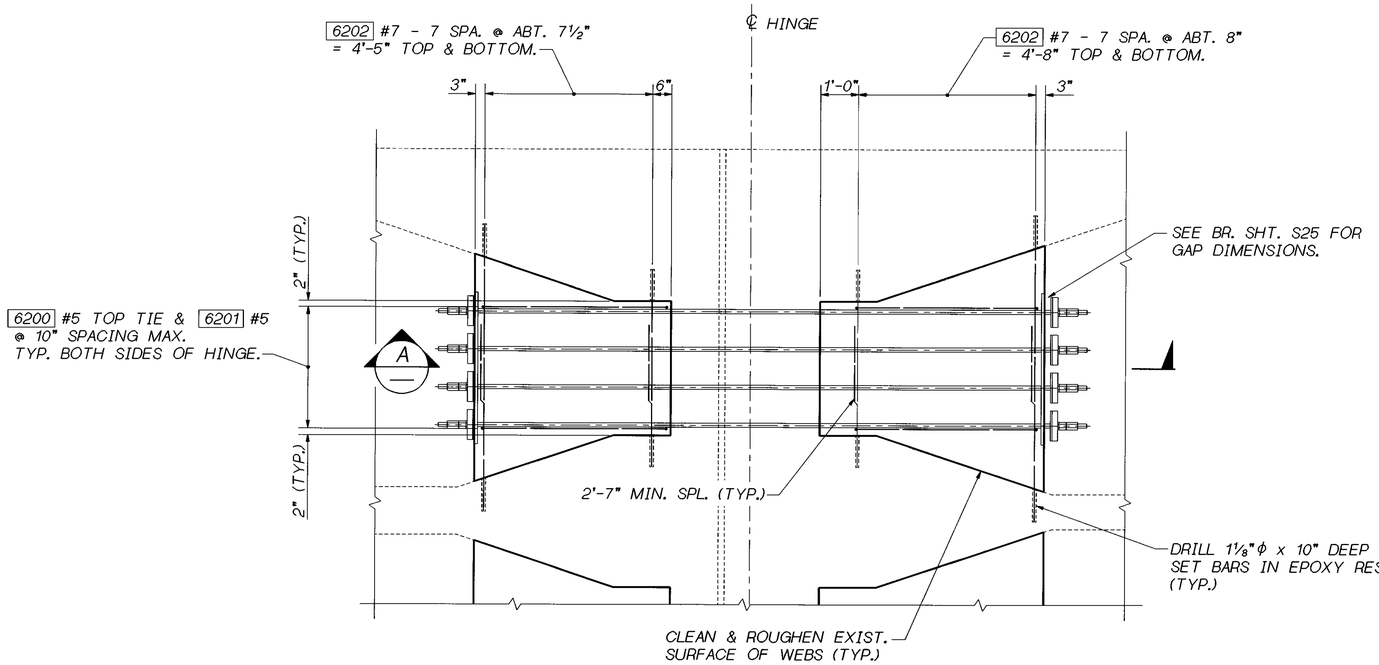
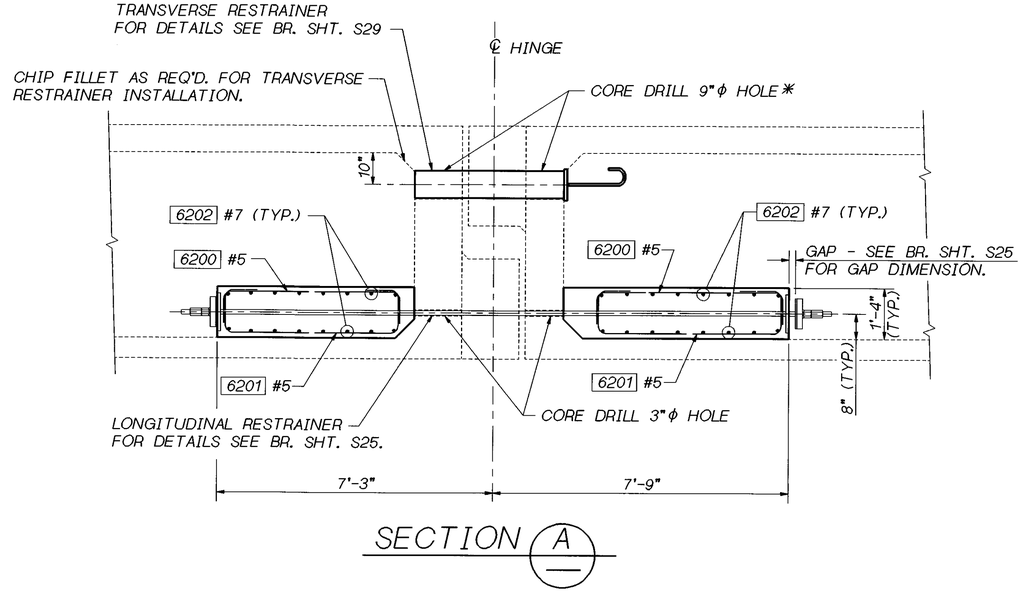


TYPICAL REINFORCEMENT

REINF. FOR 3 RESTRAINERS PER CELL SIMILAR.

FOR HINGES LL-1, LL-2, LL-3, N-W 1, N-W 2, N-W 3, N-W 4, S-E 1, N-E 1, N-E 2, W-S 1, W-S 2, W-S 3, W-S 4 & W-S 5.

* CONTRACTOR SHALL LOCATE EXISTING WEB REINFORCEMENT PRIOR TO DRILLING. ADJUST LOCATION OF DRILLED HOLE TO CLEAR EXISTING REINFORCEMENT.



SECTION A

SR 405 JOB NO. 7056 SHEET S22

Bridge Design Engr. C. C. RUTH					REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	BRIDGE AND STRUCTURES OFFICE	
Supervisor J. A. VAN LUND					10	WASH.				JOHN A. VAN LUND STATE OF WASHINGTON 22000 REGISTERED PROFESSIONAL ENGINEER	6/5/96
Designed By J. MERTH 2/96										SUPERVISING BRIDGE ENGINEER	
Checked By J. WEI 2/96					JOB NUMBER 96W020					CHARLES C. FAITH STATE OF WASHINGTON 13825 REGISTERED PROFESSIONAL ENGINEER	6-5-96
Detailed By V.B. SCHICCHI 11/95 2/96										BRIDGE DESIGN ENGINEER	
Bridge Projects Engr.											
Prelim. Plan By					4944						
Architect/Specialist	DATE	REVISION	BY	APP'D							

Washington State Department of Transportation

SR 405
WOODINVILLE INTERCHANGE
HOV WIDENING
SEISMIC RETROFIT

BOLSTER REINFORCING TYPICAL DETAILS

BRIDGE SHEET NO. S22

SHEET 432 OF 452 SHEETS

31-MAY-96

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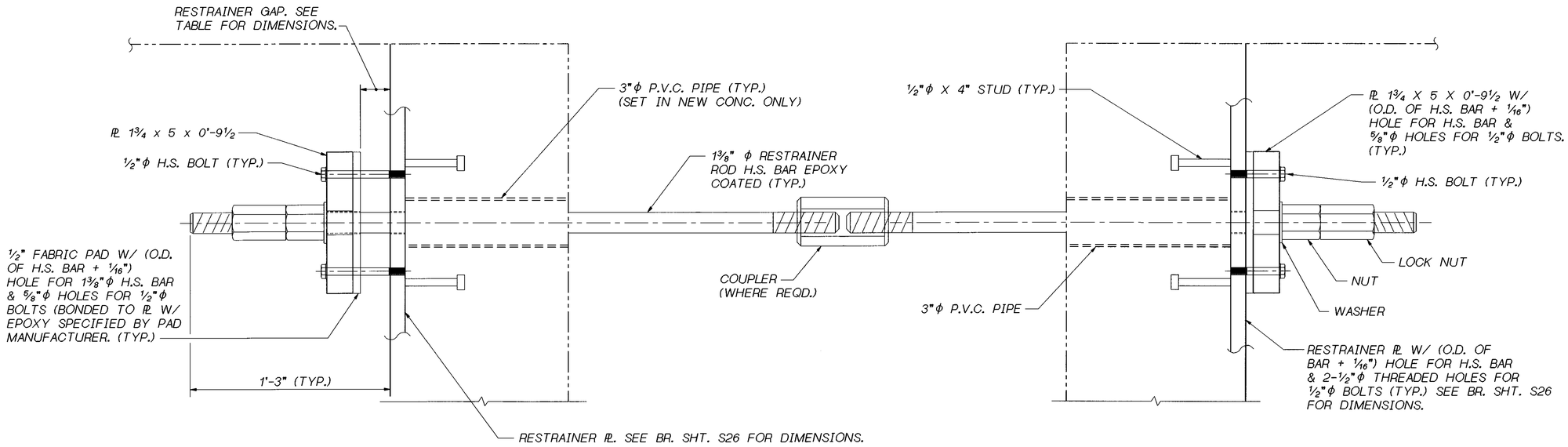

TYPICAL LONGITUDINAL RESTRAINER DETAIL
PLAN VIEW

NOTE:
ALL PLATES AND HARDWARE SHALL BE FABRICATED FROM AASHTO M183 STRUCTURAL STEEL AND SHALL BE HOT-DIPPED GALVANIZED PER AASHTO M111.

LONGIT. RESTR. GAP				
BRIDGE	HINGE #	40 F	64 F	80 F
SB	1	2⅛"	2¾"	3⅛"
	2	2"	2⅝"	3"
	3	2"	2⅝"	3"
S-E	1	1⅞"	2½"	2¾"
N-W	1	1⅝"	2⅛"	2⅜"
	2	1⅞"	2⅜"	2¾"
	3	1¾"	2¼"	2⅝"
	4	1¾"	2⅜"	2¾"
N-E	1	1½"	2"	2¼"
	2	1½"	2"	2⅛"
W-S	1	2⅛"	2¾"	3¼"
	2	2¼"	3"	3⅜"
	3	2⅜"	3⅛"	3½"
	4	2⅜"	3⅛"	3⅝"
	5	2¼"	3"	3⅜"
E-S	1	1¾"	2¼"	2⅝"

NOTE: TEMPERATURE IN ABOVE TABLE REFERS TO TEMPERATURE OF AMBIENT AIR AT TIME OF INSTALLATION.

LONGITUDINAL RESTRAINER SHOWN IS TYPICAL FOR HINGES LL-1, LL-2, LL-3, N-W 1, N-W 2, N-W 3, N-W 4, N-E 1, N-E 2, S-E 1, W-S 1, W-S 2, W-S 3, W-S 4, W-S 5 & E-S 1

Bridge Design Engr. C. C. RUTH					REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	BRIDGE AND STRUCTURES OFFICE
Supervisor J. A. VAN LUND					10	WASH.				JOHN A. VAN LUND, STATE OF WASHINGTON, 22060, REGISTERED PROFESSIONAL ENGINEER, EXPIRES 12/23/97 — 6/5/96 SUPERVISING BRIDGE ENGINEER
Designed By J. MERTH 2/96					JOB NUMBER 96W020					CHARLES C. RUTH, STATE OF WASHINGTON, 13622, REGISTERED PROFESSIONAL ENGINEER, EXPIRES 5/3/98 — 6-5-96 BRIDGE DESIGN ENGINEER
Checked By J. WEI 2/96										
Detailed By V.B. SCHICCHI 2/96										
Bridge Projects Engr.										
Prelim. Plan By										
Architect/Specialist	DATE	REVISION	BY	APP'D	4944					

Washington State Department of Transportation

SR 405
WOODINVILLE INTERCHANGE
HOV WIDENING
SEISMIC RETROFIT

RESTRAINER DETAILS
LONGITUDINAL

BRIDGE SHEET NO. S25
SHEET 435 OF 452 SHEETS

SR 405 JOB NO. 7056 SHEET S25

93W084

31-MAY-96

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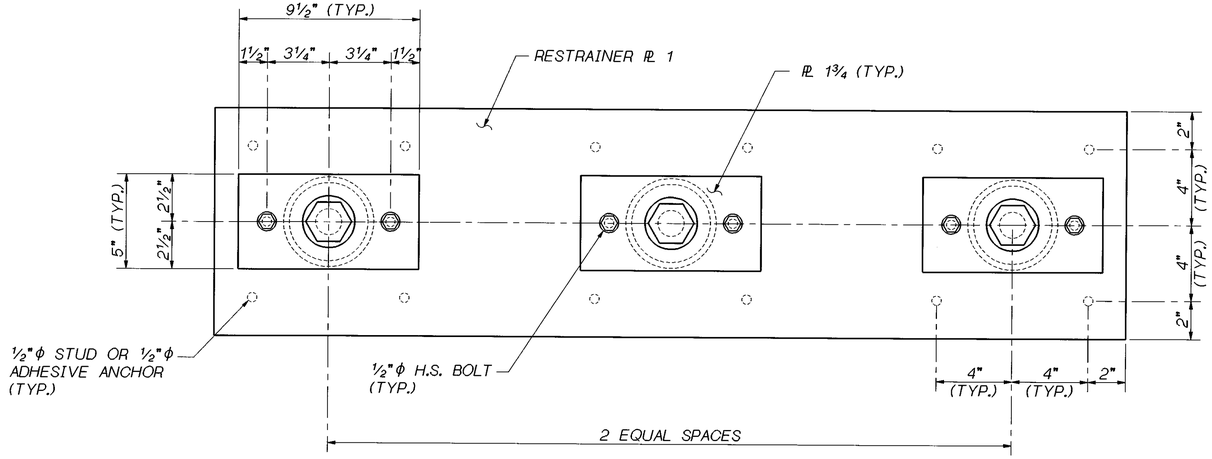
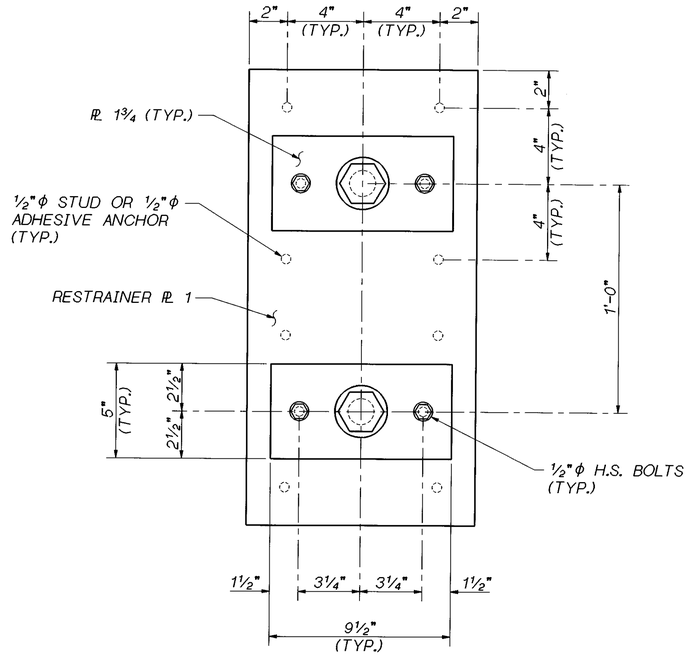


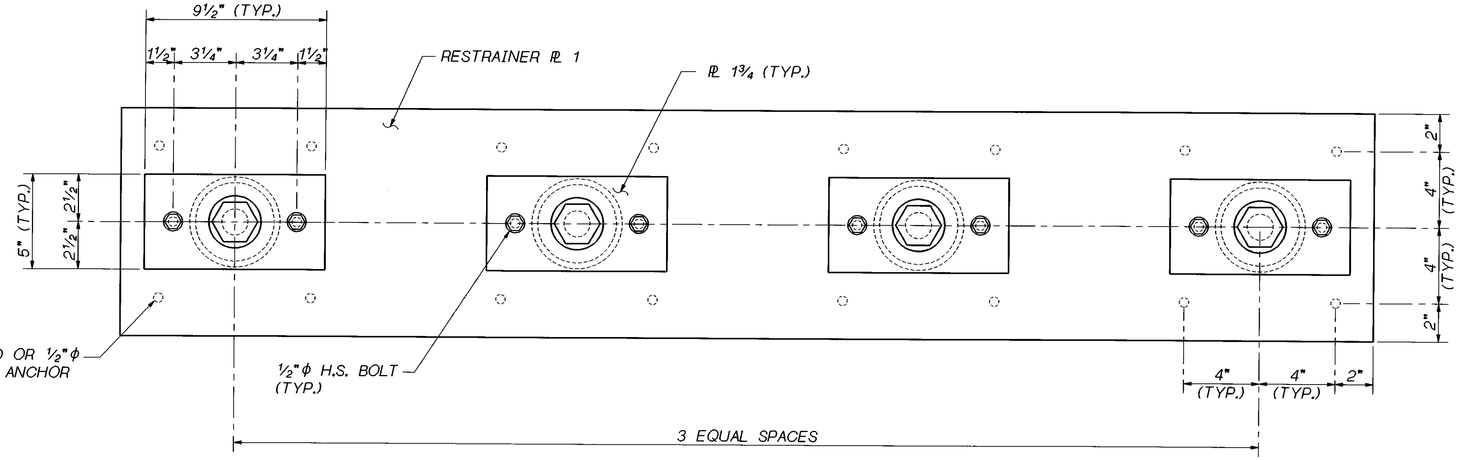
LONGITUDINAL RESTRAINER - END VIEW

TYP. FOR 3 RESTRAINER ASSEMBLY. CONTRACTOR SHALL FIELD MEASURE WEB GAP PRIOR TO RESTRAINER PLATE FABRICATION.



LONGITUDINAL RESTRAINER END VIEW

TYPICAL FOR WIDENED SECTION



LONGITUDINAL RESTRAINER - END VIEW

TYP. FOR 4 RESTRAINER ASSEMBLY. CONTRACTOR SHALL FIELD MEASURE WEB GAP PRIOR TO RESTRAINER PLATE FABRICATION.

PLATES SHOWN ARE TYPICAL FOR HINGES LL-1, LL-2, LL-3, N-W 1, N-W 2, N-W 3, N-W 4, N-E 1, N-E 2, S-E 1, W-S 1, W-S 2, W-S 3, W-S 4, W-S 5 & E-S 1.

SR 405 JOB NO. 7056 SHEET S26

Bridge Design Engr. C. C. RUTH					REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
Supervisor J. A. VAN LUND					10	WASH.				
Designed By J. MERTH	2/96									
Checked By J. WEI	2/96				JOB NUMBER					
Detailed By V.B. SCHICCHI	2/96				96W020					
Bridge Projects Engr.										
Prelim. Plan By										
Architect/Specialist	DATE	REVISION	BY	APP'D	4944					

JOHN A. VAN LUND — STATE OF WASHINGTON — 22006 — REGISTERED PROFESSIONAL ENGINEER — EXPIRES 12/23/97

BRIDGE AND STRUCTURES OFFICE

6/5/96 SUPERVISING BRIDGE ENGINEER

CHARLES C. RUTH — STATE OF WASHINGTON — 13022 — REGISTERED PROFESSIONAL ENGINEER — EXPIRES 5/31/98

6-5-96 BRIDGE DESIGN ENGINEER

Washington State Department of Transportation

SR 405
WOODINVILLE INTERCHANGE
HOV WIDENING
SEISMIC RETROFIT

RESTRAINER DETAILS PLATES

BRIDGE SHEET NO. S26

SHEET 436 OF 452 SHEETS

93W084

31-MAY-96

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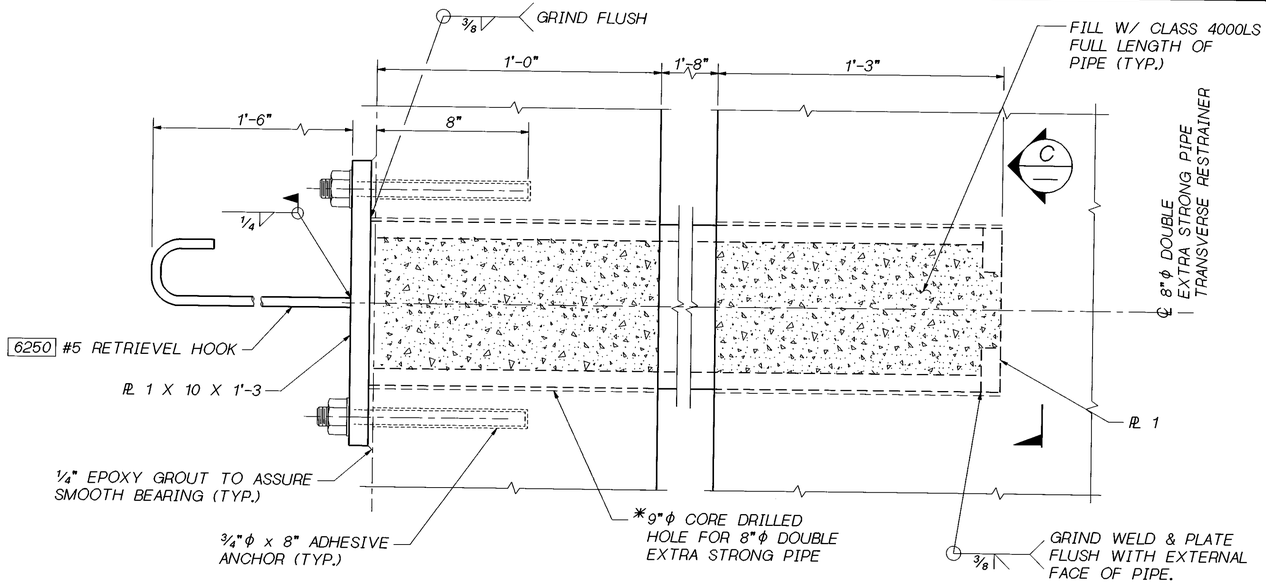
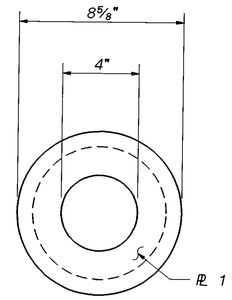


SECTION A
PLAN VIEW



VIEW C

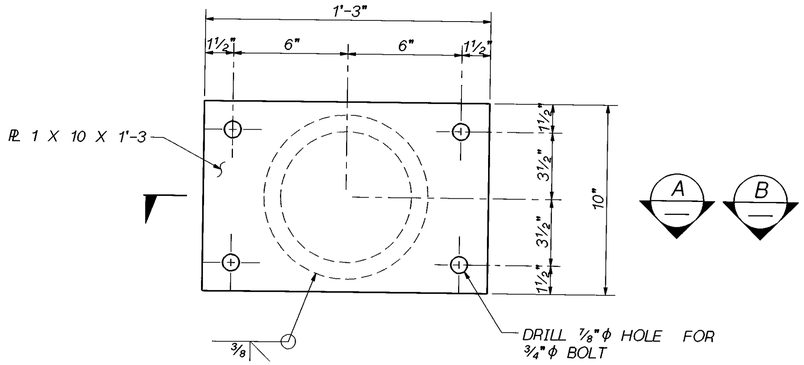
NOTE:

DOUBLE EXTRA STRONG PIPE SHALL CONFORM TO ASTM SPECIFICATION A53 GR. B.

* CONTRACTOR SHALL LOCATE EXISTING REINFORCING PRIOR TO CORE DRILLING. LOCATION OF CORE DRILLED HOLE TO BE MOVED TO CLEAR EXISTING REINFORCING.

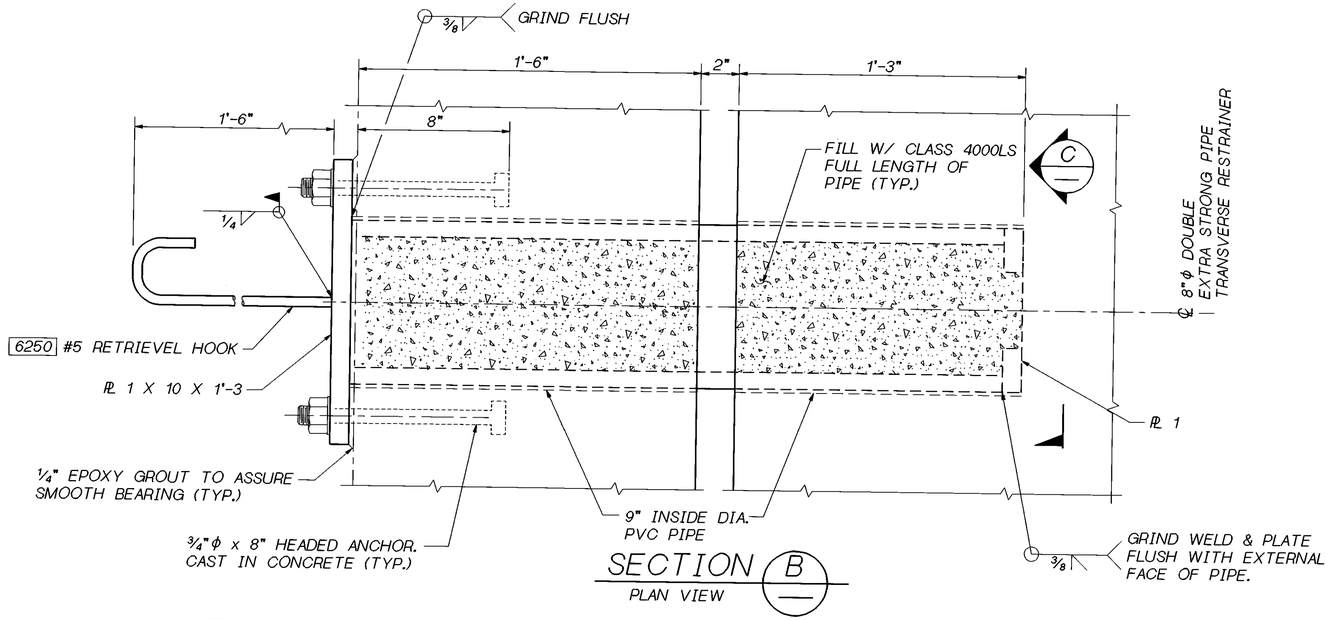
TRANSVERSE RESTRAINERS SHOWN ARE TYPICAL FOR HINGES LL-1, LL-2, LL-3, N-W 1, N-W 2, N-W 3, N-W 4, N-E 1, N-E 2, S-E 1, W-S 1, W-S 2, W-S 3, W-S 4 & W-S 5.

TYPICAL TRANSVERSE RESTRAINER DETAIL EXISTING SECTION



END PLATE DETAIL

END PL TO BE MOUNTED FLUSH WITH BACK FACE OF DIAPHRAGM. CHIP AWAY FILLET AS REQUIRED.



SECTION B
PLAN VIEW

TYPICAL TRANSVERSE RESTRAINER DETAIL - WIDENED SECTION

SR 405 JOB NO. 7056 SHEET S29

Bridge Design Engr. C. C. RUTH					REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	BRIDGE AND STRUCTURES OFFICE
Supervisor J. A. VAN LUND					10	WASH.				
Designed By J. MERTH	2/96				JOB NUMBER 96W020					
Checked By J. WEI	2/96									
Detailed By V.B. SCHICCHI	2/96									
Bridge Projects Engr.										
Prelim. Plan By										
Architect/Specialist	DATE	REVISION	BY	APP'D	4944					

TONY A. VAN LUND II — STATE OF WASHINGTON — 22066 — REGISTERED PROFESSIONAL ENGINEER — EXPIRES 12/23/97
6/5/96 SUPERVISING BRIDGE ENGINEER

CHARLES C. RUTH — STATE OF WASHINGTON — 13852 — REGISTERED PROFESSIONAL ENGINEER — EXPIRES 5/3/98
6-5-96 BRIDGE DESIGN ENGINEER

Washington State Department of Transportation

SR 405
WOODINVILLE INTERCHANGE
HOV WIDENING
SEISMIC RETROFIT

RESTRAINER DETAILS TRANSVERSE

BRIDGE SHEET NO. S29
SHEET 439 OF 452 SHEETS

31-MAY-96

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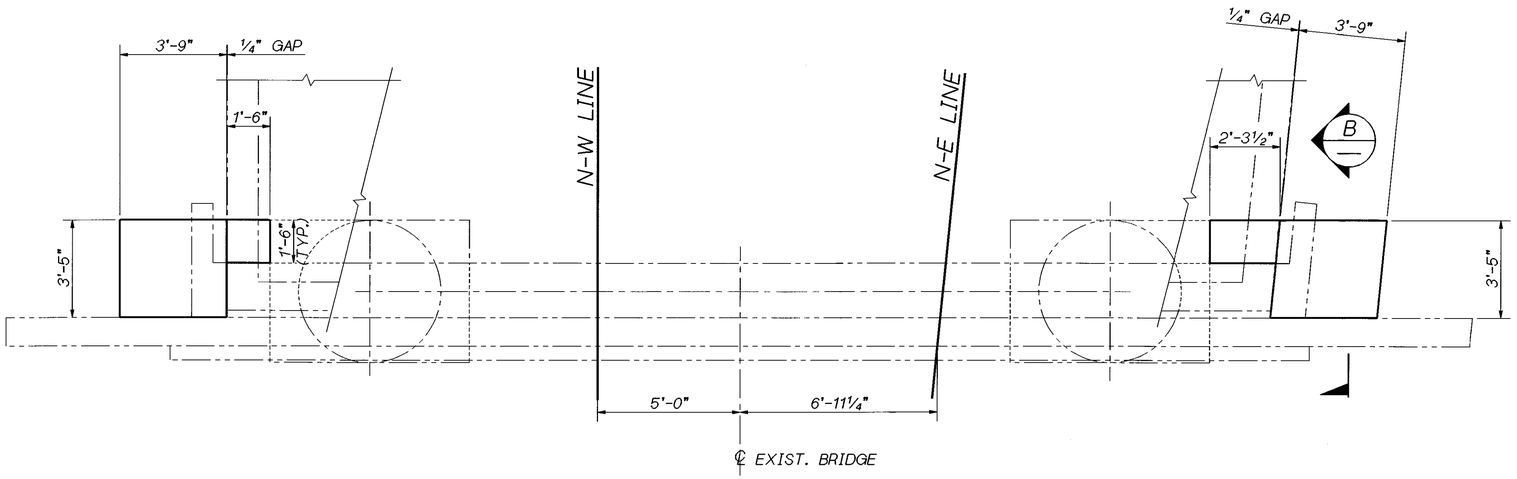
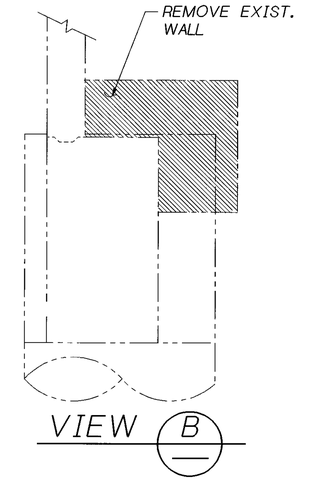
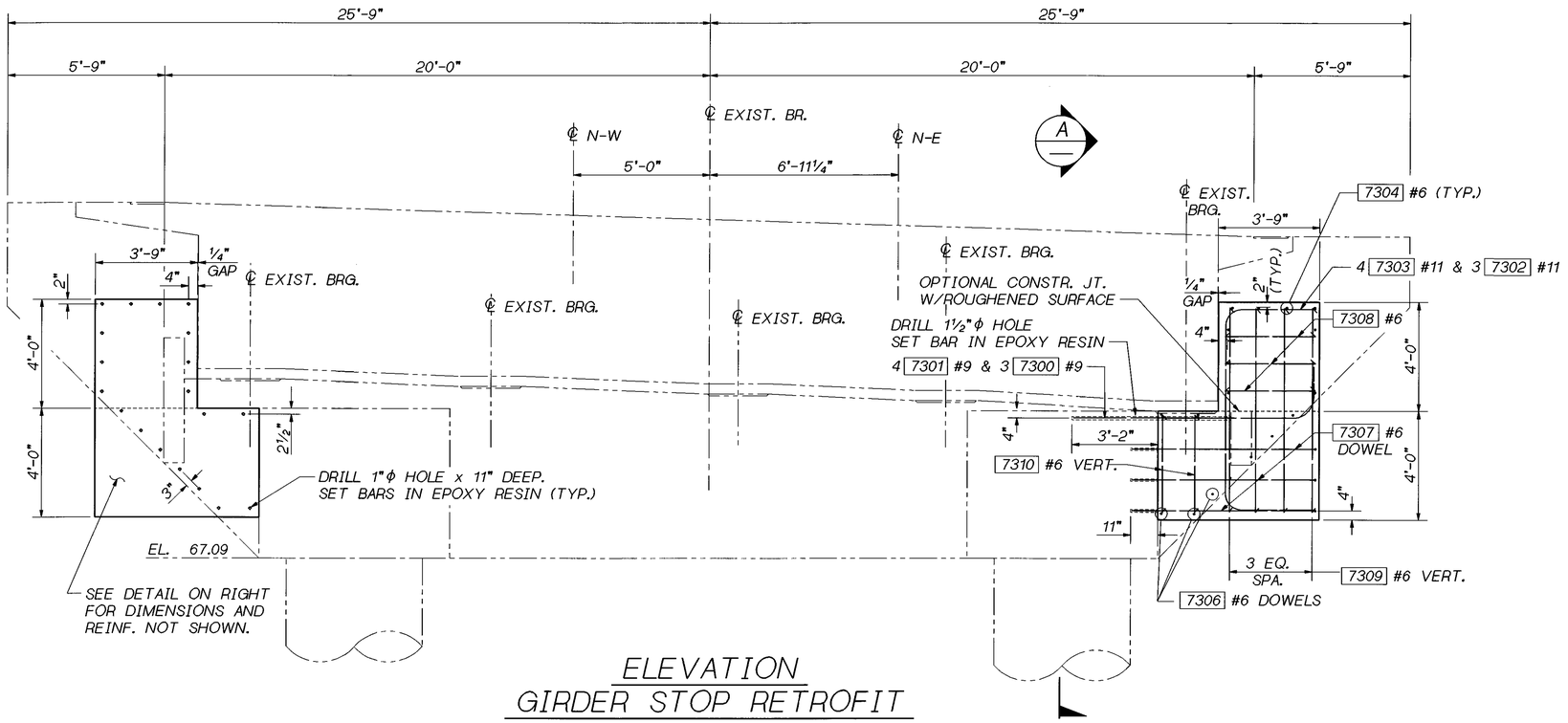


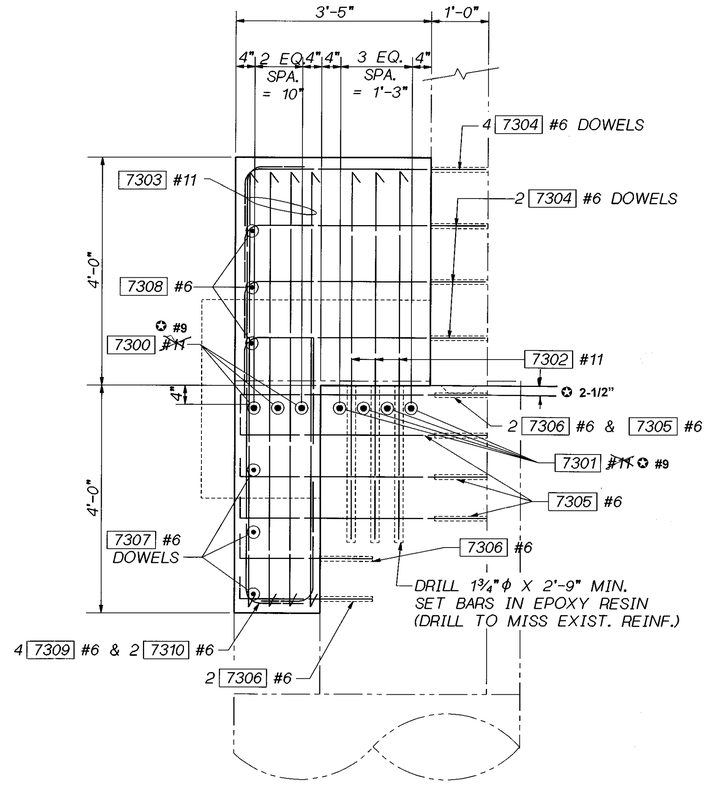
PLAN



REMOVAL DETAIL



ELEVATION
GIRDER STOP RETROFIT



VIEW A

AS BUILT CHANGES 4/2000

SR 405 JOB NO. 7056 SHEET S41

					REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Bridge Design Engr. C. C. RUTH					10	WASH.			
Supervisor J. A. VAN LUND									
Designed By M. SHEIKHIZADEH					JOB NUMBER 96W020				
Checked By T.M. MOORE									
Detailed By L. ANDREOTTI									
Bridge Projects Engr.									
Prelim. Plan By									
Architect/Specialist	DATE	REVISION	BY	APP'D	4944				

BRIDGE AND STRUCTURES OFFICE

JOHN A. VAN LUND — STATE OF WASHINGTON — 20066 — REGISTERED PROFESSIONAL ENGINEER — EXPIRES 12/23/97
6/5/96 SUPERVISING BRIDGE ENGINEER

CHARLES C. RUTH — STATE OF WASHINGTON — 12822 — REGISTERED PROFESSIONAL ENGINEER — EXPIRES 5/3/98
6-5-96 BRIDGE DESIGN ENGINEER

Washington State Department of Transportation

SR 405
WOODINVILLE INTERCHANGE
HOV WIDENING
SEISMIC RETROFIT

NW & NE RAMP
PIER 1 RETROFIT

BRIDGE SHEET NO. S41

SHEET 451 OF 452 SHEETS

31-MAY-96

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