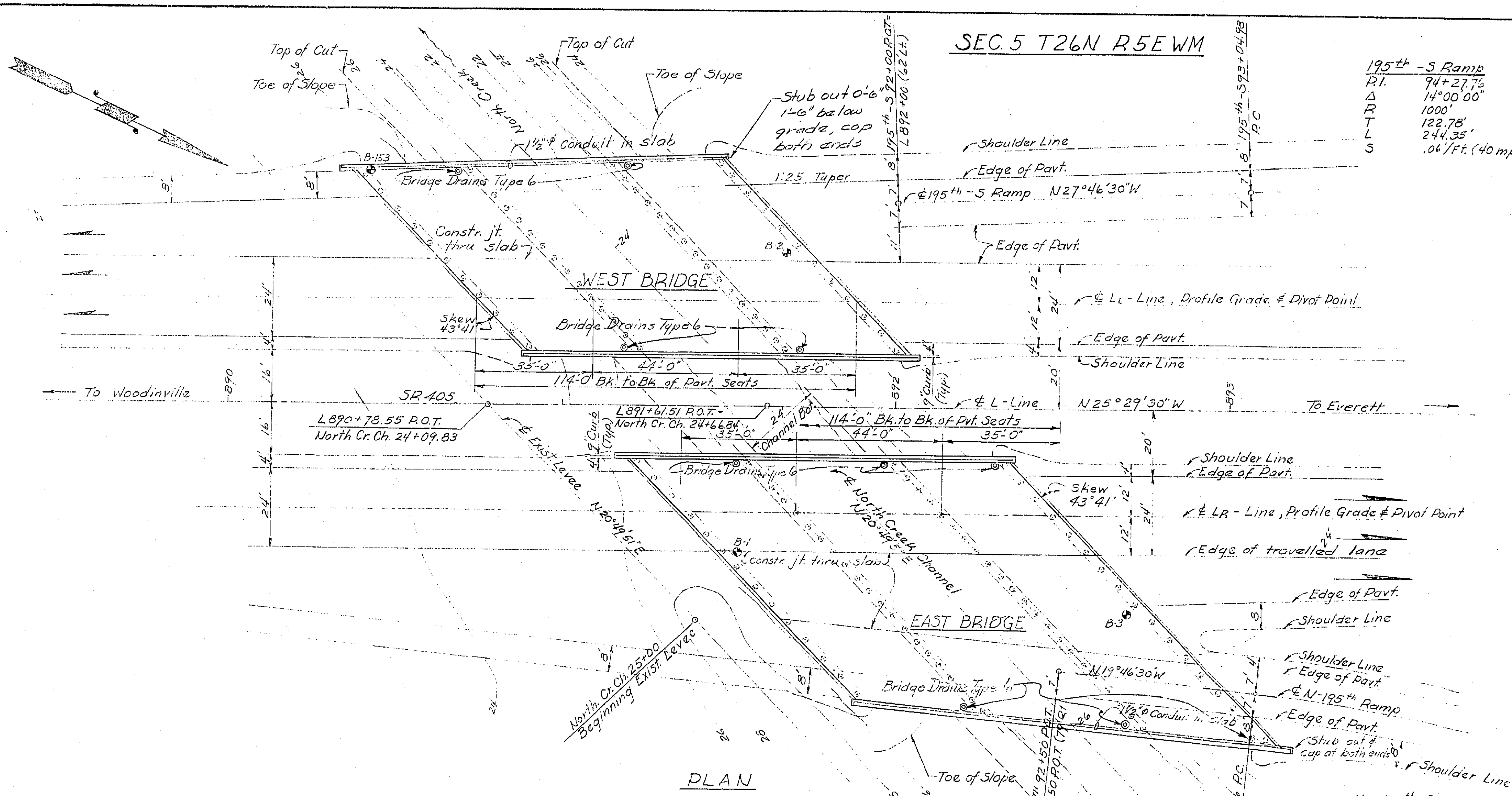
REGION NO.	STATE	FED. AID PROJECT NO.	SHEET NO.
8	WASH.	I-405-3(294)178 UNIT 1	4 OF 26



195th -S Ramp	
P.I.	94+27.76
Δ	14°00'00"
R	1000'
T	122.78'
L	244.35'
S	.06'/Ft. (40 mph)

N-195th Ramp	
P.I.	94+23.05
Δ	16°16'30"
R	800'
T	114.39'
L	227.24'
S	0.07'/ft.

GENERAL NOTES

All materials 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 & Amendment No.1 dated January 1966

All concrete shall be class AX mix.

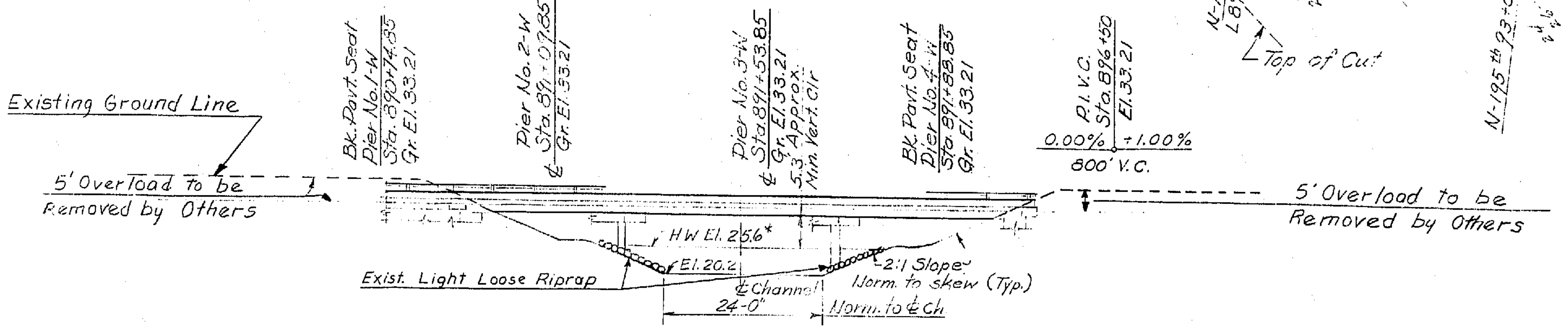
Falsework shall not be released in any span until all concrete, except that in the rail base, has been in place in all spans the required length of time and has developed sufficient strength as outlined in the Specifications. Falsework shall be carefully released to prevent impact or undue stresses in the structure. The rail base shall not be poured until the falsework has been released.

Each pile shall be driven to a depth sufficient to develop a minimum load bearing capacity of forty (40) tons. Minimum penetration shall be to Elev. -20.0'

APPROXIMATE QUANTITIES

	West Bridge	East Bridge	
Structure Excavation	65	85	Cu. Yards
Furnishing & Driving Concrete Test Piles-13"Diam.	4	4	Only
Furnishing Concrete Piling - 13 Inch Diam.	2810	3820	Lin. Ft.
Driving Concrete Piles - 13 Inch Diam	55	75	Only
Superstructure - North Creek Br.~West Br.	Lump Sum		
Superstructure - North Creek Br.~East Br.		Lump Sum	
Water Reducing	640	1130	Dollars

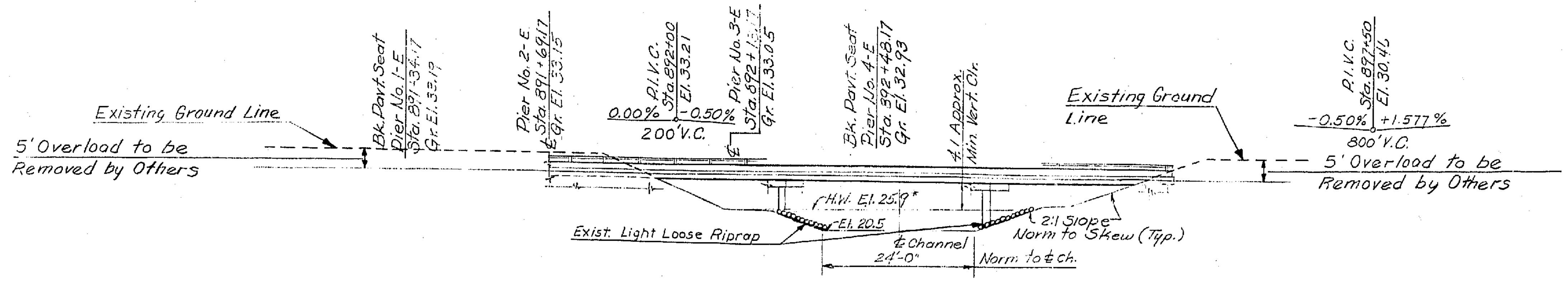
LOADING: HS-20 or
2-24K AXLES @ 4' CTRS.



ELEVATION - WEST BRIDGE

Note:
Grade elevations shown are finish grades on ℄ L_L-Line & ℄ L_R-Line and are equal to profile grade.

*) Est. 100 Yr. M.R.I.



ELEVATION - EAST BRIDGE

DATUM
U.S.C. & G.S.

DATE	REVISION	BY
12-3-67	Changed Bridge Drains	W.L.G.
11-30-67	Riprap Added at Bridge Slopes	RR

SR 405
MP 24.28 TO MP 26.37
NORTH CR. BR. AND 228TH ST. O'XING
KING & SNOHOMISH COUNTIES
NORTH CREEK BRIDGES
LAYOUT

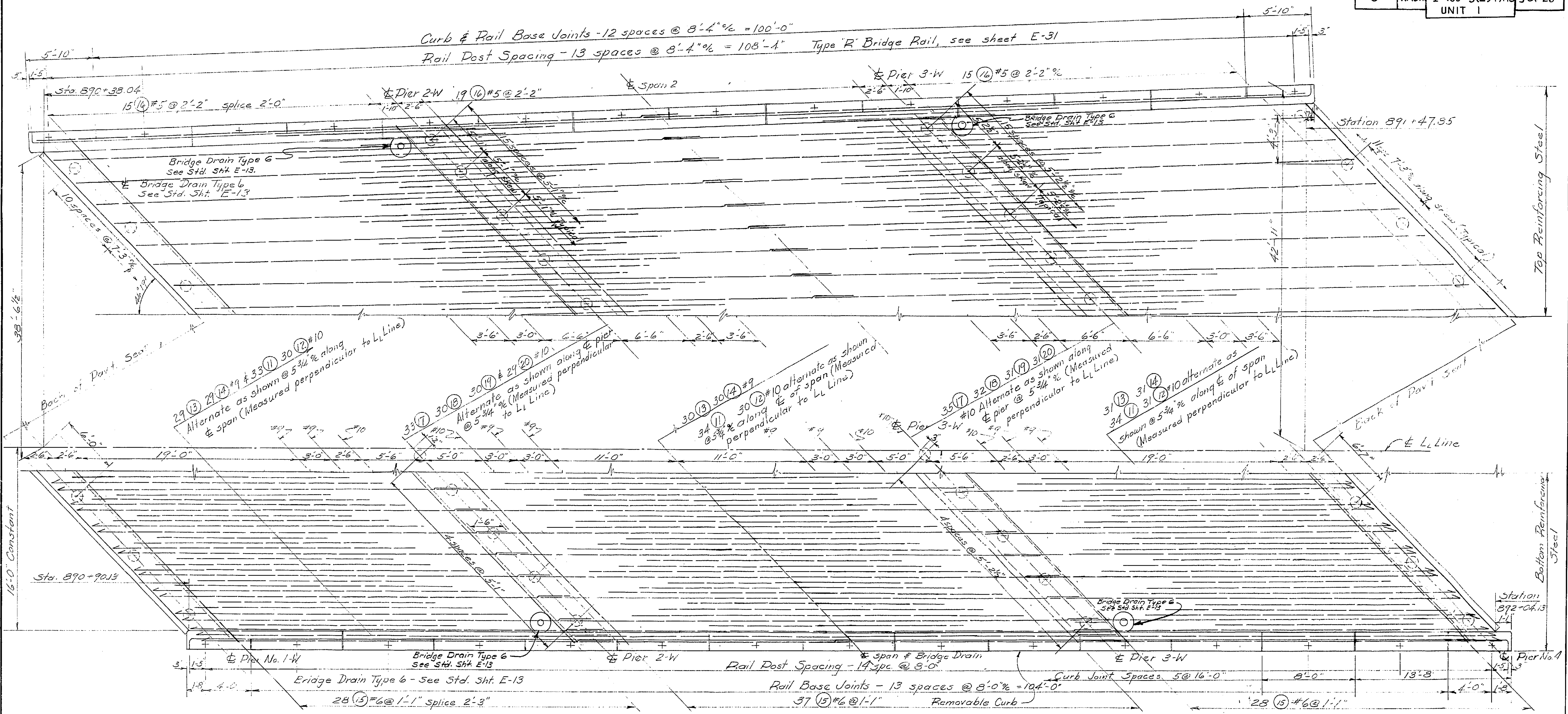
WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

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

APPROVED Nov. 22, 1967
SHEET 4 OF 26 SHEETS
CONTRACT NUMBER 8375

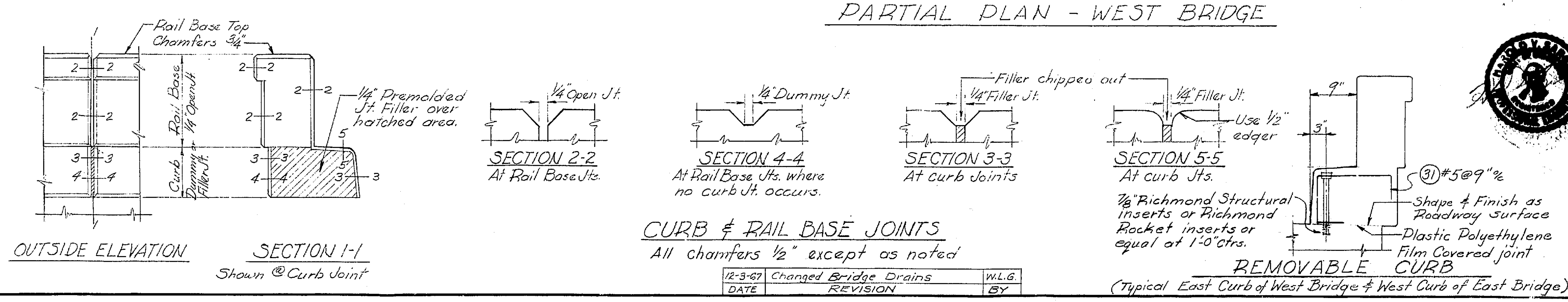
P.S.H. No 1-RE
P/1992
6/41

REGION NO.	STATE	FED. AID PROJECT NO.	SHEET NO.
8	WASH.	I-405-3(294)178 UNIT 1	5 OF 26



Curb & Rail Base Joints - 12 spaces @ 8'-4"± = 100'-0"
Rail Post Spacing - 13 spaces @ 8'-4"± = 108'-4"
Type "R" Bridge Rail, see sheet E-31
Sta. 890+38.04
15 (14) #5 @ 2'-2" splice 2'-0"
℄ Pier 2-W
19 (16) #5 @ 2'-2"
℄ Span 2
℄ Pier 3-W
15 (16) #5 @ 2'-2"
Bridge Drain Type 6 See Std. Sht. E-13
Station 891+47.85
Top Reinforcing Steel
Bottom Reinforcing Steel
10 spaces @ 7'-3"±
Back of Pav't Seat
℄ L₁ Line
16'-0" Constant
Sta. 890+90.13
Station 892+04.13
℄ Pier No. 1-W
℄ Pier 2-W
℄ Span & Bridge Drain
℄ Pier 3-W
℄ Pier No. 4
Rail Post Spacing - 14 spc. @ 8'-0"
Curb Joint Spaces 5 @ 16'-0"
Bridge Drain Type 6 - See Std. Sht. E-13
Rail Base Joints - 13 spaces @ 8'-0"± = 104'-0"
28 (15) #6 @ 1'-1" splice 2'-3"
37 (15) #6 @ 1'-1"
Removable Curb
28 (15) #6 @ 1'-1"

PARTIAL PLAN - WEST BRIDGE



Rail Base Top Chamfers ¾"
¼" Premolded Jt. Filler over hatched area.
Curb Dummy or ¼" Filler Jt.
Rail Base ¼" Open Jt.
OUTSIDE ELEVATION
SECTION 1-1
Shown @ Curb Joint
¼" Open Jt.
SECTION 2-2
At Rail Base Jts.
¼" Dummy Jt.
SECTION 4-4
At Rail Base Jts. where no curb Jt. occurs.
Filler chipped out
¼" Filler Jt.
SECTION 3-3
At curb Joints
¼" Filler Jt.
Use ½" edger
SECTION 5-5
At curb Jts.
CURB & RAIL BASE JOINTS
All chamfers ½" except as noted
(31) #5 @ 9"±
⅞" Richmond Structural inserts or Richmond Rocket inserts or equal at 1'-0" ctrs.
Shape & Finish as Roadway Surface
Plastic Polyethylene Film Covered joint
REMOVABLE CURB
(Typical East Curb of West Bridge & West Curb of East Bridge)

12-3-67	Changed Bridge Drains	W.L.G.
DATE	REVISION	BY

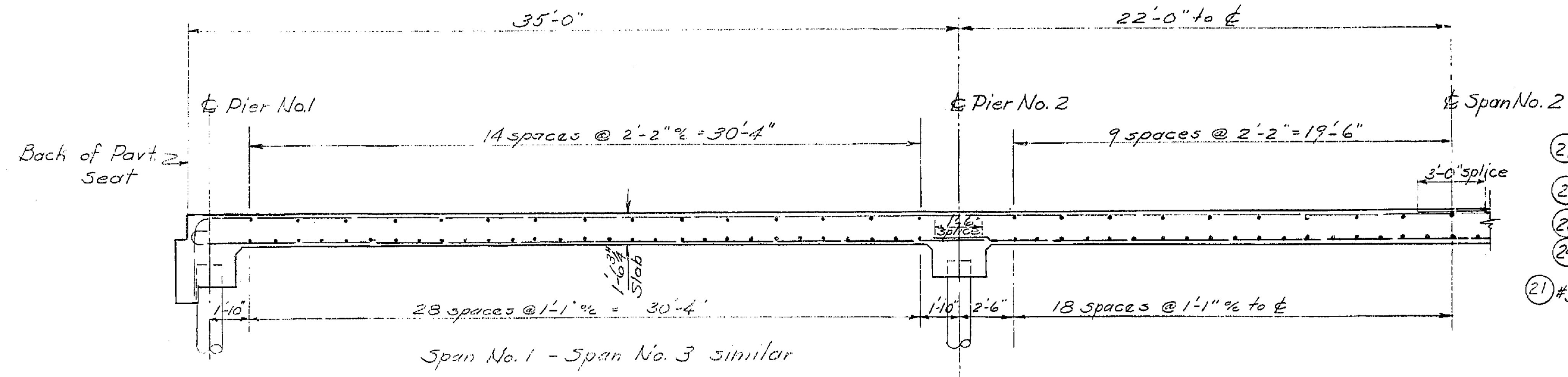
SR 405
MP 24.28 TO MP 26.37
NORTH CR. BR. AND 228TH ST. O'XING
KING & SNOHOMISH COUNTIES
NORTH CREEK BRIDGES

PARTIAL PLAN - WEST BR.

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

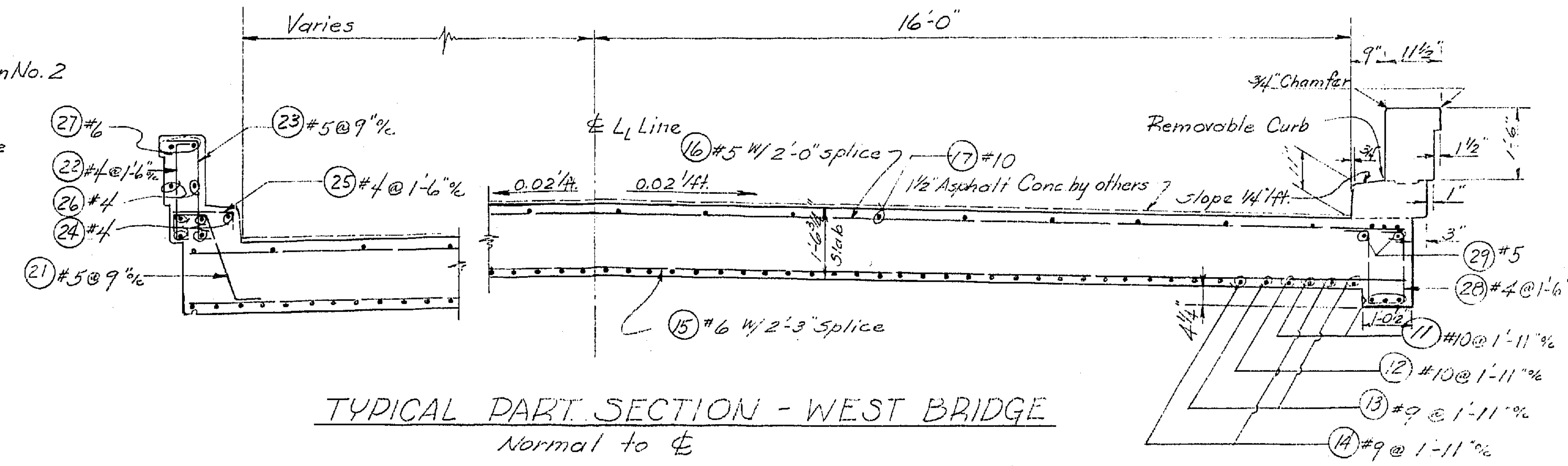
APPROVED Nov. 22, 1967
CONT. NO. 8375 SHEET 5 OF 26 SHEETS
P/1992

REGION NO.	STATE	FED. AID PROJECT NO.	SHEET NO.
8	WASH.	I-405-3(294)178 UNIT 1	6 OF 26



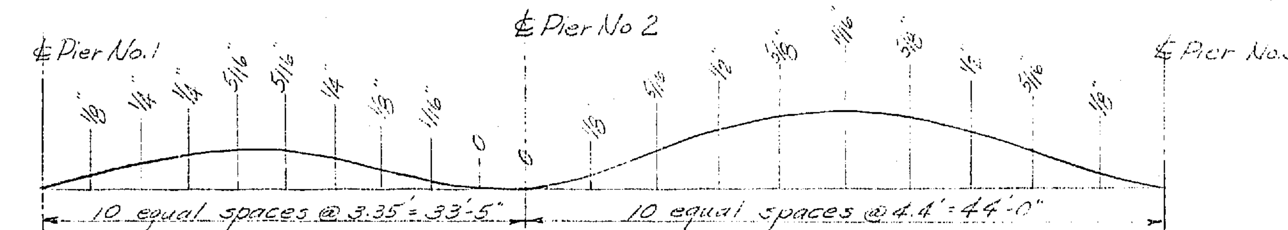
TYPICAL BOTH BRIDGES

PART LONGITUDINAL SECTION



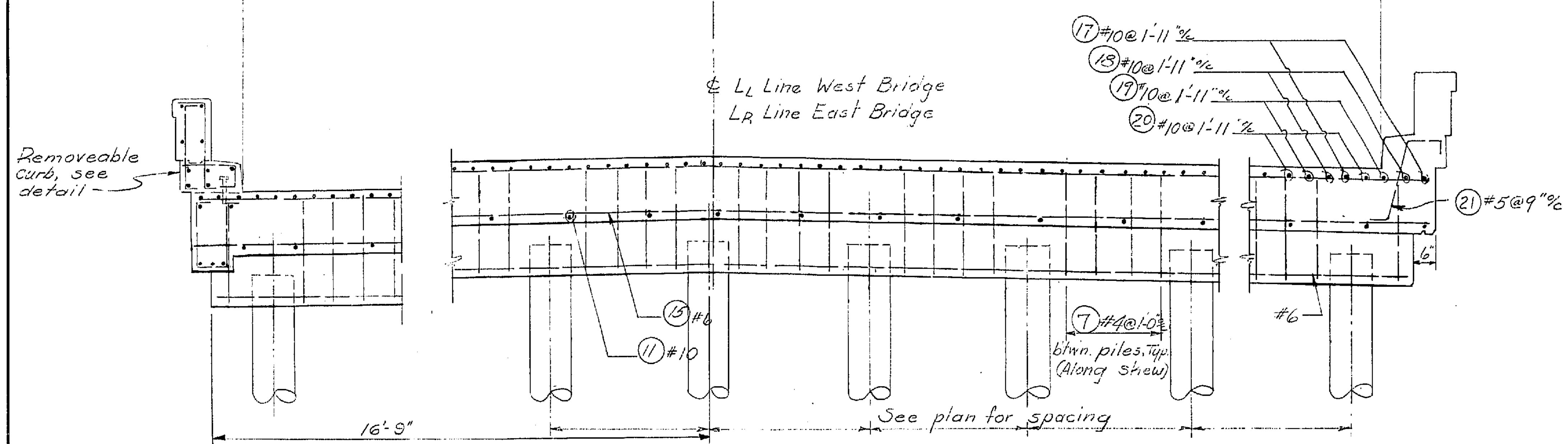
TYPICAL PART SECTION - WEST BRIDGE

Normal to ℄



DEAD LOAD CAMBER CURVE

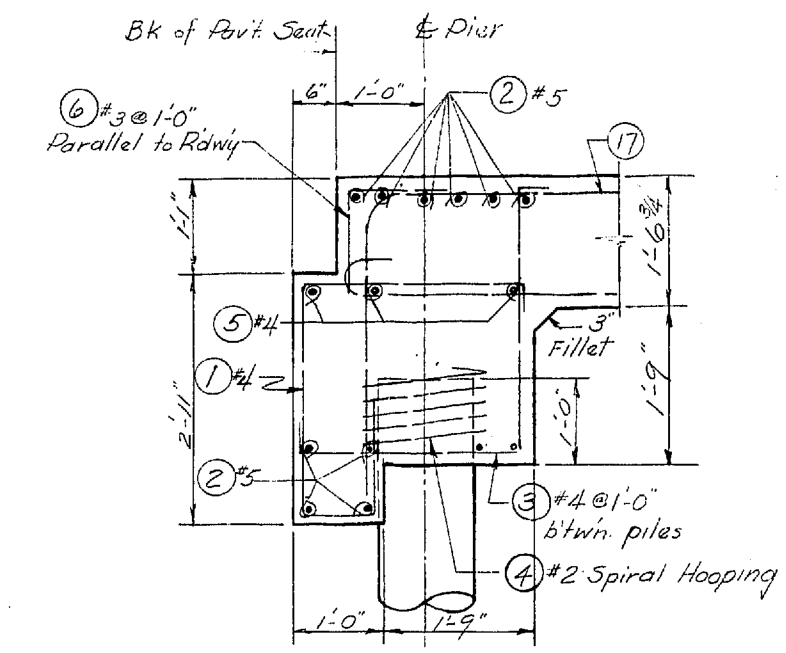
This curve shows the Dead Load Camber only and should be increased by the amount of take up anticipated in the falsework.



PART SECTION PIERS 2 & 3

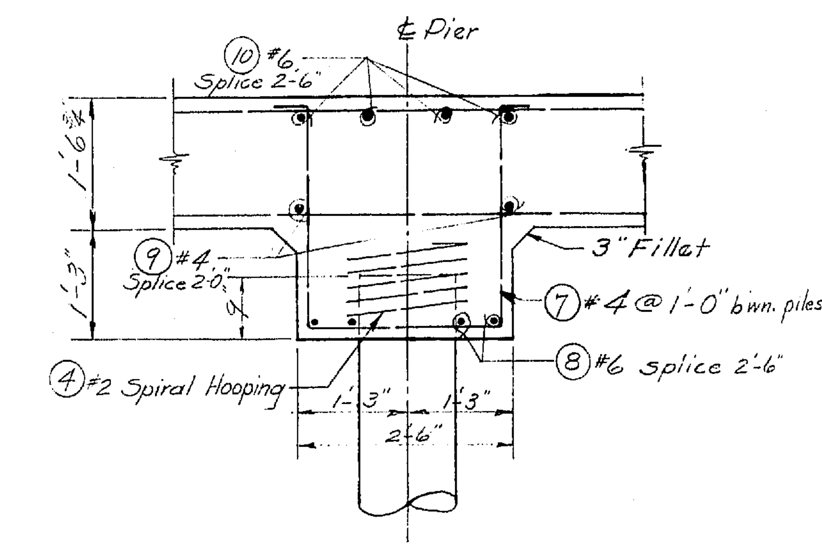
NORMAL TO ℄

East Bridge shown looking ahead on stationing. West Bridge shown looking back on stationing.



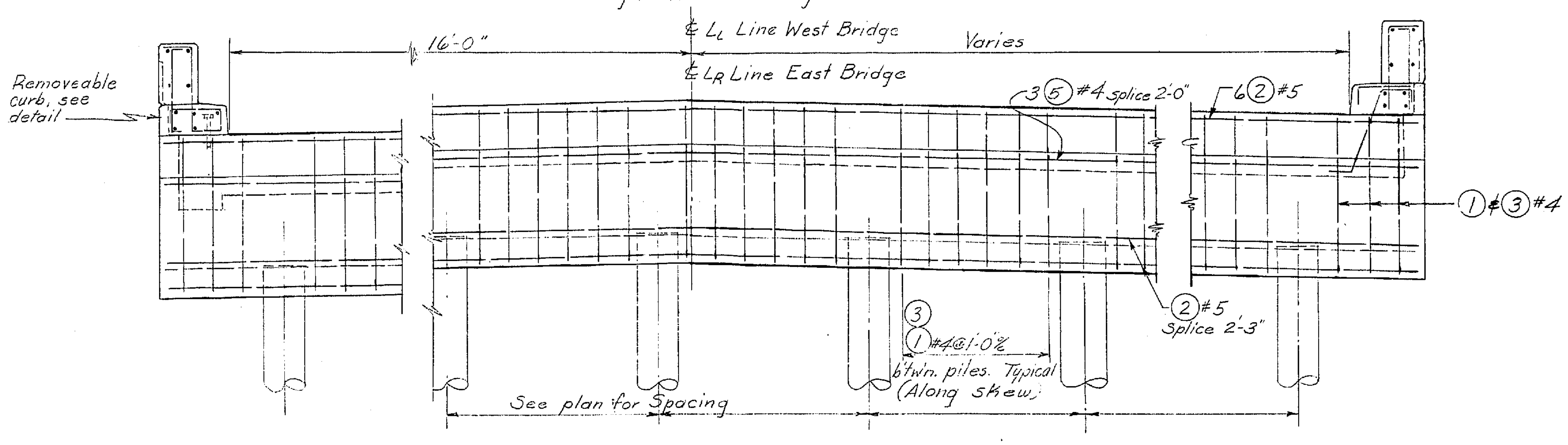
SECTION "A-A"

Typical for Piers No. 1 & 4



SECTION "B-B"

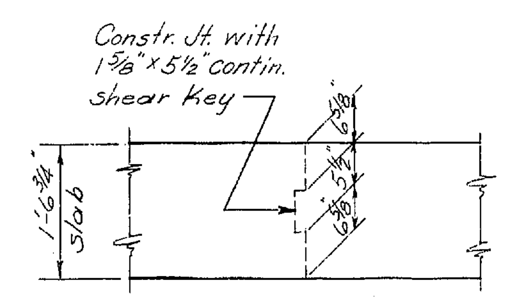
Typical for Piers No. 2 & 3



PART END ELEVATION PIERS 1 & 4

Normal to ℄

East Bridge shown looking ahead on stationing. West Bridge shown looking back on stationing.



CONSTRUCTION JOINT THRU SLAB DETAIL

Longitudinal constr. jt. permissible at locations shown on "LAYOUT." Other locations only by permission of the Engineer.

SR 405
MP 24.28 TO MP 26.37
NORTH CR. BR. AND 228TH ST. O'XING
KING & SNOHOMISH COUNTIES
NORTH CREEK BRIDGES

DETAILS

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

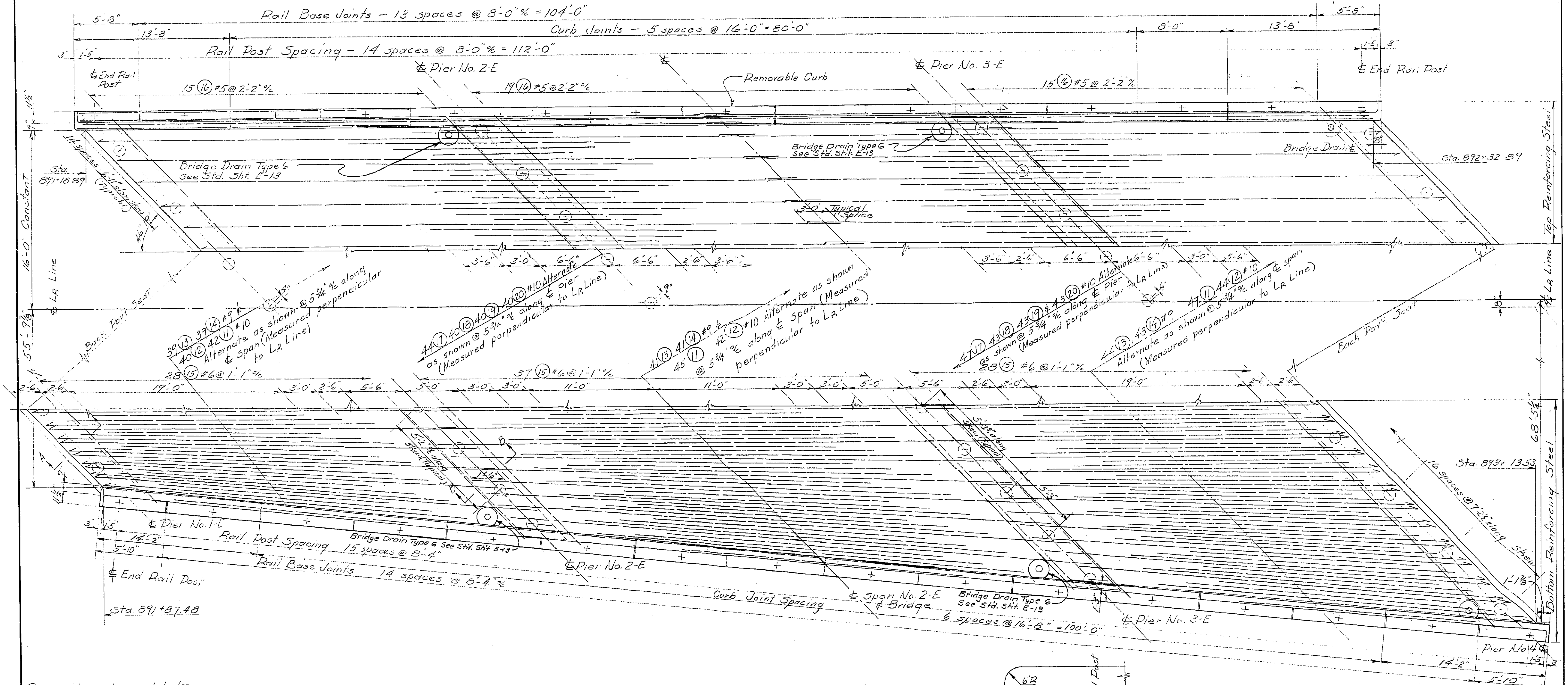
APPROVED Nov. 22, 1967

SHEET 6 OF 26 SHEETS

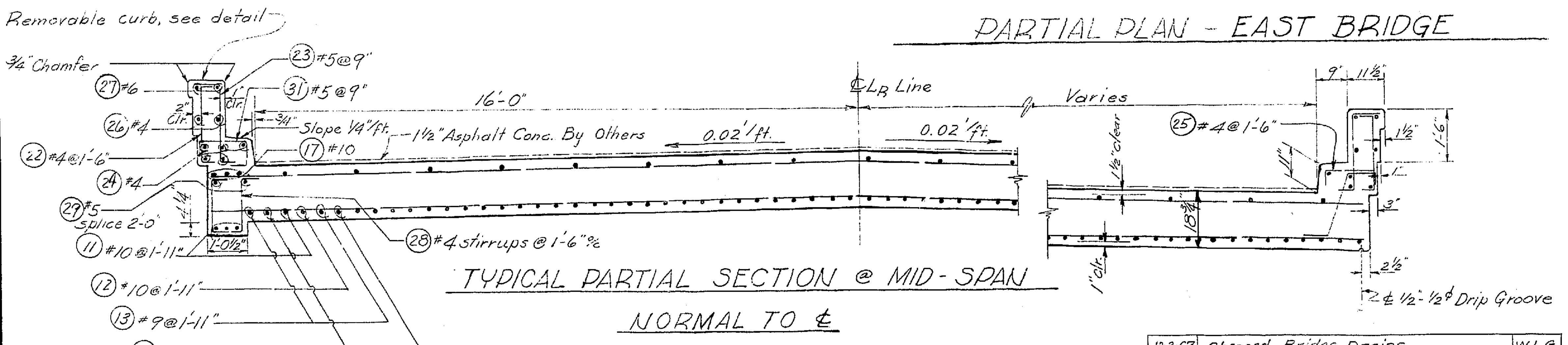
CONTRACT NUMBER 8375

P/1992

REGION NO.	STATE	FED. AID PROJECT NO.	SHEET NO.
8	WASH.	I-405-3(294)178 UNIT 1	7 of 26

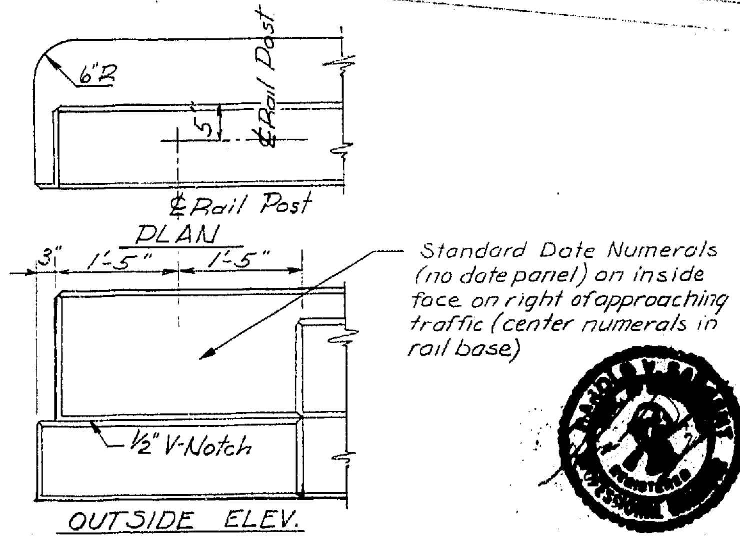


PARTIAL PLAN - EAST BRIDGE



TYPICAL PARTIAL SECTION @ MID-SPAN

NORMAL TO ℄



OUTSIDE ELEV.

RAIL BASE END

All vert. lines plumb.

12-3-67	Changed Bridge Drains	W.L.G.
DATE	REVISION	BY

SR 405
MP 24.28 TO MP 26.37
NORTH CR. BR. AND 228TH ST. O'XING
KING & SNOHOMISH COUNTIES
NORTH CREEK BRIDGES

PARTIAL PLAN - EAST BR.

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

APPROVED Nov. 22, 1967

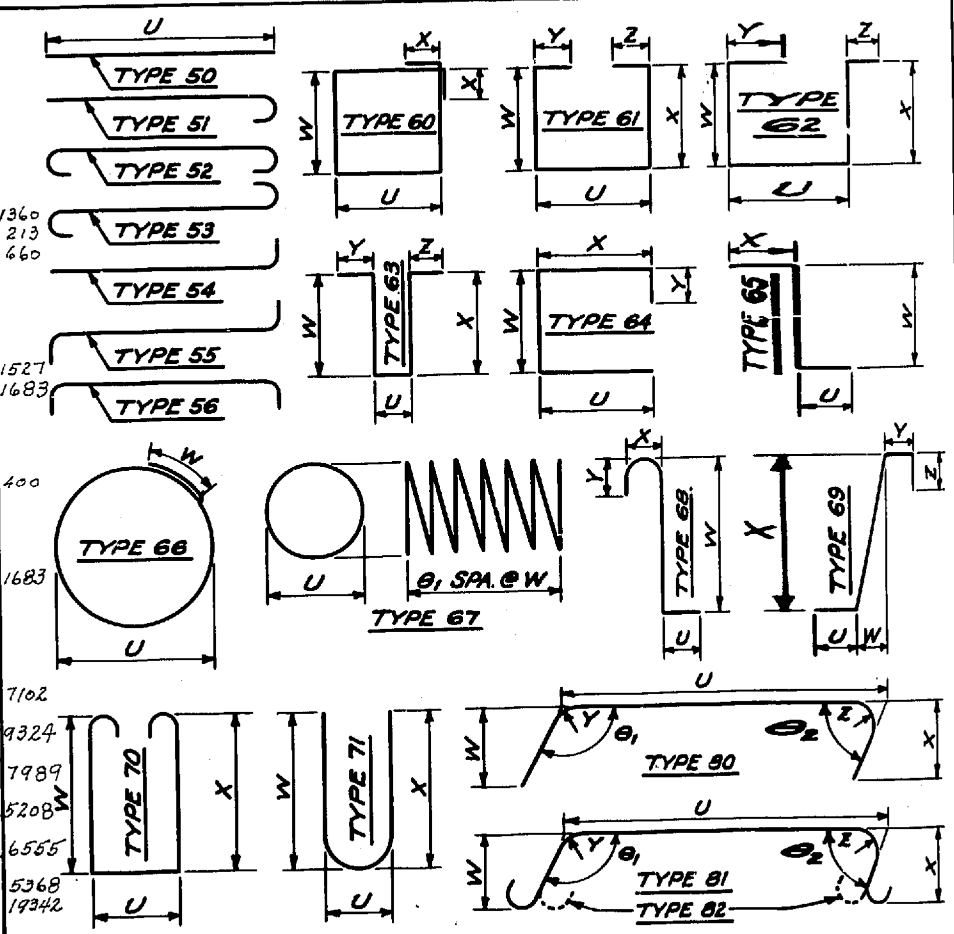
CONT. No. 8375 SHEET 7 OF 26 SHEETS

P/1992

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.
1	PIERS 1+4 W+E BRIDGES	4	330	61	T						2	8.0	2	6.0		9.0		5.0	1	5.0			7	5.	1635
2	PIERS 1+4 W+E	5	132	50							30	0.0											30	0.	4130
2	PIERS 1 W	5	12	50							24	2.0											24	2.	302
2	PIERS 4 W	5	12	50							29	2.0											29	2.	365
2	PIERS 1 E	5	12	50							20	3.0											20	3.	253
2	PIERS 4 E	5	12	50							10	2.0											10	2.	127
3	PIERS 1+4 W+E	4	330	62	T						2	6.0		5.0	3	1.0		0.0		5.0			6	2.	~~1359~~ 1360
4	PIERS 1+4+2+3 HOOPING	2	[illegible] ~~130~~	67							1	3.0		2.0							4		15	6.	~~336~~ 213
5	PIERS 1+4	4	33	50							30	0.0											30	0.	~~661~~ 660
5	PIERS 1W	4	3	50							23	8.0											23	8.	47
5	PIERS 4W	4	3	50							29	8.0											29	8.	59
5	PIERS 1E	4	3	50							20	0.0											20	0.	40
5	PIERS 4E	4	3	50							9	2.0											9	2.	18
6	PIERS 1+4 W+E	3	391	65							1	3.0	1	3.0		0.0							2	5.	355
7	PIERS 2+3 W+E	4	292	63	T						2	3.0	2	6.5	2	6.5		5.0		5.0			7	10.	~~1528~~ 1527
8	PIERS 2+3 W+E	6	28	50							40	0.0											40	0.	~~1682~~ 1683
8	PIERS 2E	6	4	50							32	0.0											32	0.	192
8	PIER 3E	6	4	50							39	0.0											39	0.	234
8	PIERS 2W	6	4	50							42	2.0											42	2.	253
8	PIER 3W	6	4	50							6	8.0											6	8.	40
9	PIERS 2+3	4	20	50							30	0.0											30	0.	~~401~~ 400
9	PIER 2W	4	2	50							23	8.0											23	8.	32
9	PIER 3W	4	2	50							25	10.0											25	10.	35
9	PIER 2E	4	2	50							23	0.0											23	0.	31
9	PIER 3E	4	2	50							29	4.0											29	4.	39
10	PIERS 2+3	6	28	50							40	0.0											40	0.	~~1682~~ 1683
10	PIER 2W	6	4	50							43	6.0											43	6.	261
10	PIER 3W	6	4	50							8	0.0											8	0.	48
10	PIER 2E	6	4	50							33	4.0											33	4.	200
10	PIER 3E	6	4	50							39	8.0											39	8.	238
11	BOTTOM LONGIT SPAN 1E	10	42	51					V	1	35 39	7.0 4.0											37 41	3. 0.	~~7063~~ 7102
11	BOTTOM LONGIT SPAN 2E	10	45	50					V	1	45 50	6.0 6.0											45 50	6. 6.	~~9294~~ 9324
11	BOTTOM LONGIT SPAN 3E	10	47	51					V	1	35 39	7.0 9.0											37 41	3. 5.	~~7946~~ 7989
11	BOTTOM LONGIT SPAN 1W	10	33	51					V	1	35 34	7.0 4.0											37 36	3. 0.	~~5195~~ 5208
11	BOTTOM LONGIT SPAN 2W	10	34	50					V	1	45 44	6.0 0.0											45 44	6. 0.	~~[illegible]~~ 6555
11	BOTTOM LONGIT SPAN 3W	10	34	51					V	1	35 34	7.0 4.0											37 36	3. 0.	~~5352~~ 5368
12	BOTTOM	10	145	51							29	4.0											31	0.	~~19316~~ 19342
12	BOTTOM	10	72	50							34	0.0											34	0.	10534
13	BOTTOM	9	71	50							28	0.0											28	0.	6759
13	BOTTOM	9	143	50							24	6.0											24	6.	11912
14	BOTTOM	9	~~71~~ 142	~~50~~ 50							19	0.0											19	0.	~~4887~~ 9173
14	BOTTOM	9	~~142~~ 71	~~50~~ 50							22	0.0											22	0.	~~10622~~ 5311
15	BOTTOM TRANSV	6	465	50							30	0.0											30	0.	~~20953~~ 20952
15	BOTTOM TRANSV SPAN 1W	6	28	50					V	1	23 24	2.0 10.0											23 24	2. 10.	~~1009~~ 1014
15	BOTTOM TRANSV SPAN 2W	6	37	50					V	1	24 27	10.0 2.0											24 27	10. 2.	~~1445~~ 1450
15	BOTTOM TRANSV SPAN 3W	6	28	50					V	1	27 29	2.0 0.0											27 29	2. 0.	~~1181~~ 1185
15	BOTTOM TRANSV SPAN 1E	6	28	50					V	1	19 24	10.0 10.0											19 24	10. 10.	~~939~~ 940
15	BOTTOM TRANSV SPAN 2E	6	37	50					V	1	24 31	10.0 5.0											24 31	10. 5.	~~1563~~ 1683
15	BOTTOM TRANSV SPAN 3E	6	28	50					V	1	31 36	5.0 10.0											31 36	5. 10.	~~1435~~ 1446
16	TOP TRANSV	5	245	50							30	0.0											30	0.	~~7666~~ 7667
16	TOP TRANSV SPAN 1W	5	15	50					V	1	22 44	8.0 4.0											22 44	8. 4.	524
16	TOP TRANSV SPAN 2W	5	19	50					V	1	24 26	4.0 9.0											24 26	4. 9.	~~506~~ 503
16	TOP TRANSV SPAN 3W	5	15	50					V	1	26 28	9.0 7.0											26 28	9. 7.	433
16	TOP TRANSV SPAN 1E	5	15	50					V	1	19 24	1.0 4.0											19 24	1. 4.	~~340~~ 341
16	TOP TRANSV SPAN 2E	5	19	50					V	1	24 31	4.0 0.0											24 31	4. 0.	548
16	TOP TRANSV SPAN 3E	5	15	50					V	1	31 35	0.0 8.0											31 35	0. 8.	521
17	TOP LONGIT EAST	10	44	80					V	1	58 64	4.0 6.0	3 3	5.0 5.0		0.0 0.0		9.0 9.0		0.0 0.0	90 90	0 0	61 67	4. 6.	~~12192~~ 12161
17	TOP LONGIT EAST	10	~~47~~ 48	80					V	1	58 64	4.0 6.0	3 3	5.0 5.0		0.0 0.0		9.0 9.0		0.0 0.0	90 90	0 0	61 67	4. 6.	~~12914~~ 13280
17	TOP LONGIT WEST	10	33	80					V	1	58 56	4.0 5.0	3 3	5.0 5.0		0.0 0.0		9.0 9.0		0.0 0.0	90 90	0 0	61 59	4. 5.	~~8566~~ 8577
17	TOP LONGIT WEST	10	35	80					V	1	58 56	4.0 5.0	3 3	5.0 5.0		0.0 0.0		9.0 9.0		0.0 0.0	90 90	0 0	61 59	4. 5.	~~9086~~ 9100
18	TOP LONGIT	10	145	50							25	6.0											25	6.	15910
19	TOP LONGIT	10	144	50							18	6.0											18	6.	11463
20	TOP LONGIT	10	143	50							13	0.0											13	0.	7999
21	CURB TIES	5	320	69	T							9.0		8.0	2	2.0		9.0		5.5			4	0.	~~1326~~ 1335
22	CURB	4	316	64	T							5.0	2	2.0		5.0		0.0					2	10.	~~598~~ 599
23	CURB	5	[illegible] ~~630~~	65	T							8.5	2	2.0		8.5							3	5.	~~2218~~ 2241
24	CURB LONGIT	4	50	50							15	9.0											15	9.	526
24	CURB LONGIT	4	30 ~~28~~	50							13	5.0											13	5.	~~179~~ 270
24	CURB LONGIT	4	55	50							16	5.0											16	5.	603
24	CURB LONGIT	4	10	50							13	9.0											13	9.	~~92~~ 52
24	CURB LONGIT	4	16 ~~10~~	50							13	11.0											13	11.	93
25	CURB	4	~~316~~	65	T							5.0	1	3.0		0.0							1	7.	~~334~~ 176
26	RAILBASE	4	52	50							7	9.0											7	9.	~~269~~ 270
26	RAILBASE	4	52	50							8	1.0											8	1.	281
26	RAILBASE	4	8	50							5	2.0											5	2.	28
26	RAILBASE	4	8	50							5	5.0											5	5.	~~29~~ 28
27	RAILBASE	6	52	50							7	9.0											7	9.	~~605~~ 606
27	RAILBASE	6	52	50							8	1.0											8	1.	631
27	RAILBASE	6	8	50							5	2.0											5	2.	62
27	RAILBASE	6	8	50							5	5.0											5	5.	66
28	EDGE BEAM STIRRUP	4	154	62	T							9.5	1	6.5	1	6.5		5.0		5.0			4	5.	~~450~~ 454
29	STIRRUP HANGER	5	16	50							30	0.0											30	0.	~~501~~ 500
31	REMOVABLE CURB	5	30? ~~306~~	64	T							6.0		9.0	1	3.0		6.0					2	8.	~~858~~ 85[illegible]
4	Piers 2&3 Hooping	2	75	67							1	4.5		2.0							4		15	6.	305

BENDING DIAGRAMS



As Built Changes in Red

Note: Bends for transverse bars due to roadway crown conditions have not been shown. These bars shall be bent as required to conform to the configuration of the structure.

SR 405
MP 24.28 TO MP 26.37
NORTH CR. BR. AND 228TH ST. O'XING
KING & SNOHOMISH COUNTIES
NORTH CREEK BRIDGES

BAR LIST

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

APPROVED Nov. 22, 1967

CONT. No. 8375 SHEET 8 OF 26 SHEETS

NORTH Creek Bridges 8/1992

Bridge Design Engineer
Supervising Bridge Engr.
Designed
Design Checked

PLOT9 09 NOV 96 s:\412347\12095\index.dgn $(username)

INDEX VOL. 3

SHEET NO.	PLAN REFERENCE NO.	TITLE
		VOLUME 3
458 - 460	I1 - I3	INDEX VOL. 1 - 4
461 - 479	NCB72E&W1 - NCB72E&W19	BRIDGE 405/72 E&W
480 - 498	NCB72NBCD1 - NCB72NBCD19	BRIDGE 405/72 NBCD
499 - 529	228B103E1 - 228B103E31	228TH BRIDGE 405/103E
530 - 560	228B103W1 - 228B103W31	228TH BRIDGE 405/103W
561 - 566	QTTC1 - QTTC6	QUANTITY TABULATIONS - TRAFFIC CONTROL
567 - 588	TC1 - TC22	TRAFFIC CONTROL PHASE 1
589 - 609	TC23 - TC43	TRAFFIC CONTROL PHASE 2 STAGE 1
610 - 622	TC44 - TC56	TRAFFIC CONTROL PHASE 2 STAGE 2
623 - 635	TC57 - TC69	TRAFFIC CONTROL PHASE 2 STAGE 3
636 - 637	TC70 - TC71	228TH ST. TRAFFIC CONTROL
638 - 648	TC72 - TC82	RAMP CLOSURE DETAILS
649 - 653	TC83 - TC87	TRAFFIC CONTROL SECTION
654	TC88	MISC. TRAFFIC CONTROL
655 - 663	TC89 - TC97	DETOUR PLANS

INDEX VOL. 4

SHEET NO.	PLAN REFERENCE NO.	TITLE
		VOLUME 4
		CONTRACT STANDARD PLANS

PLAN REFERENCE NO.
SHEET OF SHEETS

NOTE:

FOR ALL SHEET REFERENCES, FIRST NUMBERS OF STRUCTURE CODE DESIGNATIONS AND MATCH LINE SHEET REFERENCES, ETC., THROUGHOUT THE PLANS, REFER TO THE ENTRY IN THE PLAN REFERENCE NUMBER BOX

DESIGNED BY	N. ABEDIN	9/6/96			
ENTERED BY	B. SAVILLE	9/6/96			
CHECKED BY	N. ABEDIN	9/6/96			
PROJ. ENGR.	R.KINOSHITA	9/6/96			
REGIONAL ADM.	J. OKAMOTO	9/6/96			
		DATE	DATE	REVISION	BY

REGION NO.	STATE	FED.AID PROJ.NO.
10	WASH	
JOB NUMBER		
96W035		
CONTRACT NO.		
5054		

ENVIRONMENTAL AND ENGINEERING SERVICE CENTER

Washington State Department of Transportation

SR 405
BOTHELL TO SWAMP CREEK I/C
HOV LANES - STAGE 1

INDEX

I3

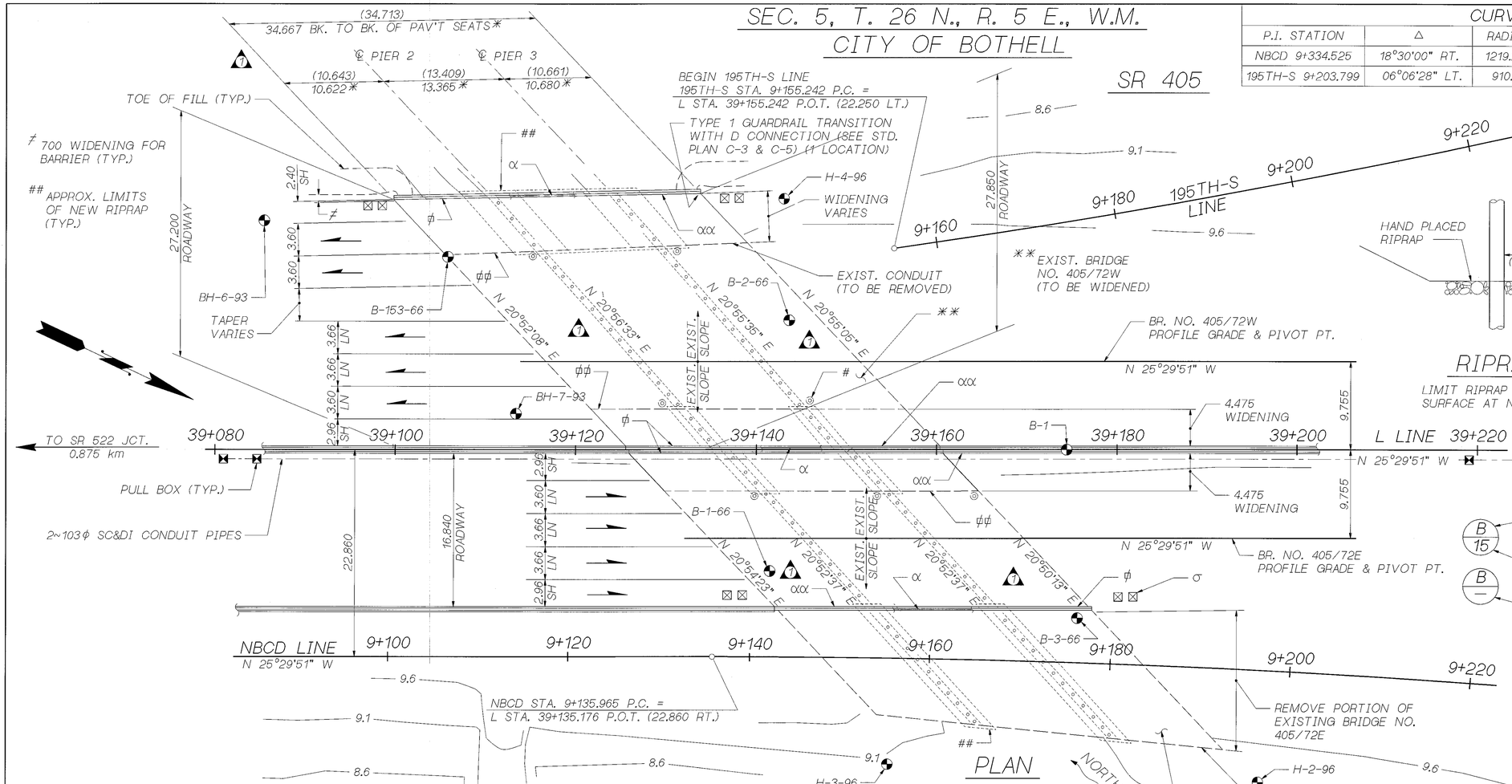
SHEET 460 OF 663 SHEETS

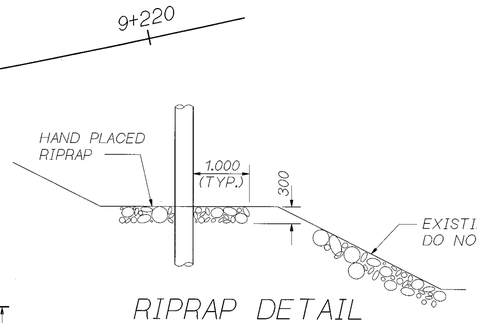
241/166

SEC. 5, T. 26 N., R. 5 E., W.M.
CITY OF BOTHELL

SR 405

CURVE DATA					
P.I. STATION	Δ	RADIUS	TANGENT	LENGTH	BK. TANGENT BRG.
NBCD 9+334.525	18°30'00" RT.	1219.202	198.560	393.663	N 25°29'51" W
195TH-S 9+203.799	06°06'28" LT.	910.135	48.557	97.021	N 26°38'41" W





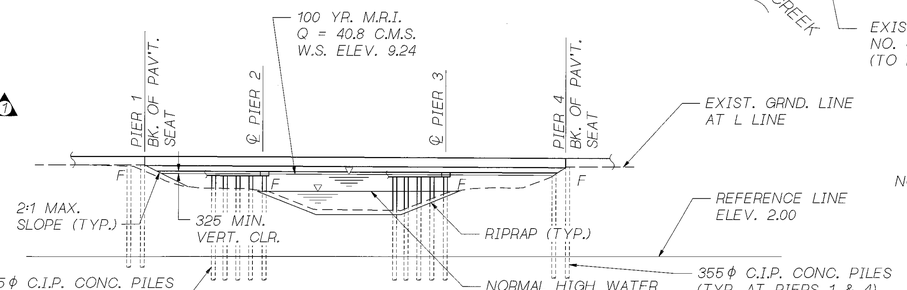
RIPRAP DETAIL

LIMIT RIPRAP TO BELOW EXISTING SURFACE AT NEW BRIDGE PIERS ONLY.

LEGEND

- B / 15 — IDENTIFIES SECTION, VIEW OR DETAIL
- TAKEN OR SHOWN ON BRIDGE SHEET 15
- B / — TAKEN OR SHOWN ON THE SAME SHEET
- BORING LOCATION
- * DIMENSIONS IN PARENTHESIS FOR BRIDGE NO. 405/72W OTHER DIMENSIONS FOR BRIDGE NO. 405/72E
- # EXIST. DRAIN TO BE PLUGGED (7 LOCATIONS)
- ϕ C.I.P. CONC. SINGLE SLOPE BARRIER FOR BRIDGE ONLY
- α 2 ~ 53ϕ CONDUIT PIPES IN CONCRETE BARRIER
- σ TYPE 1 JUNCTION BOX (TYP.)
- ϕϕ EXIST. CURB LINE
- αα NEW CURB LINE

PIER NO.	BR. NO. 405/72W	BR. NO. 405/72E
PIER 1 BK. OF PAV'T. SEAT	STA. 39+125.888	STA. 39+125.408
PIER 2	STA. 39+136.530	STA. 39+136.030
PIER 3	STA. 39+149.939	STA. 39+149.395
PIER 4 BK. OF PAV'T. SEAT	STA. 39+160.600	STA. 39+160.075



ELEVATION

METRIC LEGEND

126.175 DENOTES METERS
175 DENOTES MILLIMETERS

NOTE: 500 YR. M.R.I. Q=51.3 C.M.S. W.S. ELEV. 9.48

L LINE STATION

9.755 OFFSET LT. FOR BR. NO. 405/72W
9.755 OFFSET RT. FOR BR. NO. 405/72E

DATUM

U.S.C. & G.S.

SEE STANDARD PLAN H-9 FOR EMBANKMENT DETAILS AT BRIDGE ENDS.

REINFORCED CONCRETE SLAB WIDENING LOADING: HS-25 OR TWO 107kN AXLES @ 1.220 CTRS.

Bridge Design Engr. C. C. RUTH	4/96	S:\405\D72ROOT:[FGB]LAYOUT.FGB;1		REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor R.T. SHAEFER / W. WILSON	6/96			10	WASH.			
Designed By J. CHEN	6/96			JOB NUMBER 96W035				
Checked By C. CORNELL	6/96							
Detailed By L. ANDREOTTI, A. CHU	3/96							
Bridge Projects Engr. K. N. KIRKER	3/96							
Prelim. Plan By A. CHU	3/96	7/97	⚠ CONTRACTOR SURVEY - FIT EXIST.					
Architect/Specialist A. YOUNG	3/96	DATE	REVISION	BY	APP'D	5054		

16-OCT-97

WARREN E. WILSON — STATE OF WASHINGTON — 20527 REGISTERED PROFESSIONAL ENGINEER — EXPIRES 8 04 98

Washington State Department of Transportation

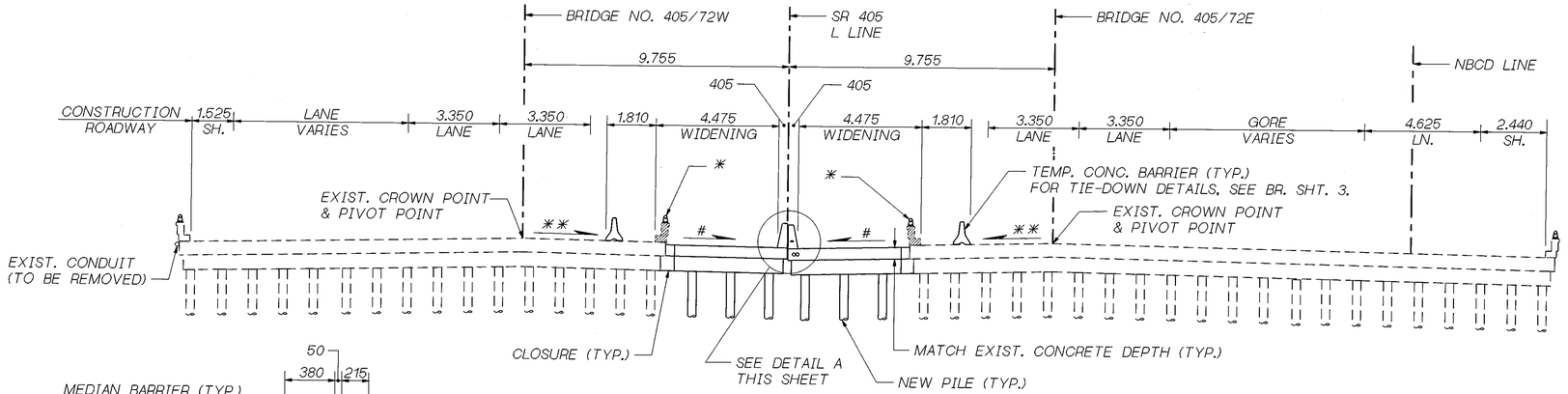
SR 405
BOTHELL TO SWAMP CREEK I/C
HOV LANES - STAGE 1
NORTH CREEK BRIDGE 405/72 E-W

LAYOUT

BRIDGE SHEET NO. 1
SHEET 461 OF 663 SHEETS

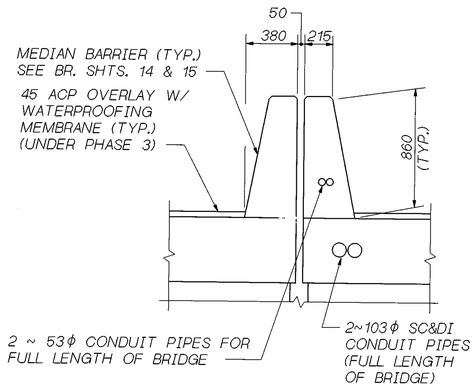
SR 405 JOB NO. 7071 SHEET 1

C.S. 1752 ~ PROJ. NO. OL-2095A ~ NW REGION ~ BOTHELL TO SWAMP CR. ~ SR 405 ~ N. CR. BRIDGE ~ 405/72 E&W WIDENING



TYPICAL SECTION PHASE 1

SHOWN NEAR AN INTERMEDIATE PIER
DIMENSIONS SHOWN ARE PERPENDICULAR TO ℄ L LINE.



DETAIL A

* EXIST. CURB AND RAIL BASE (TO BE REMOVED) EXIST. RAILS TO BE SALVAGED (SEE SPECIAL PROVISIONS)

** EXIST. SLOPE

\# MATCH EXIST. SLOPE

45 ACP OVERLAY WITH MEMBRANE WATERPROOFING (82 ACP OVERLAY ON WESTERLY PORTION OF WEST BRIDGE & EASTERLY PORTION OF EAST BRIDGE)

CONSTRUCTION SEQUENCE

PHASE 1:

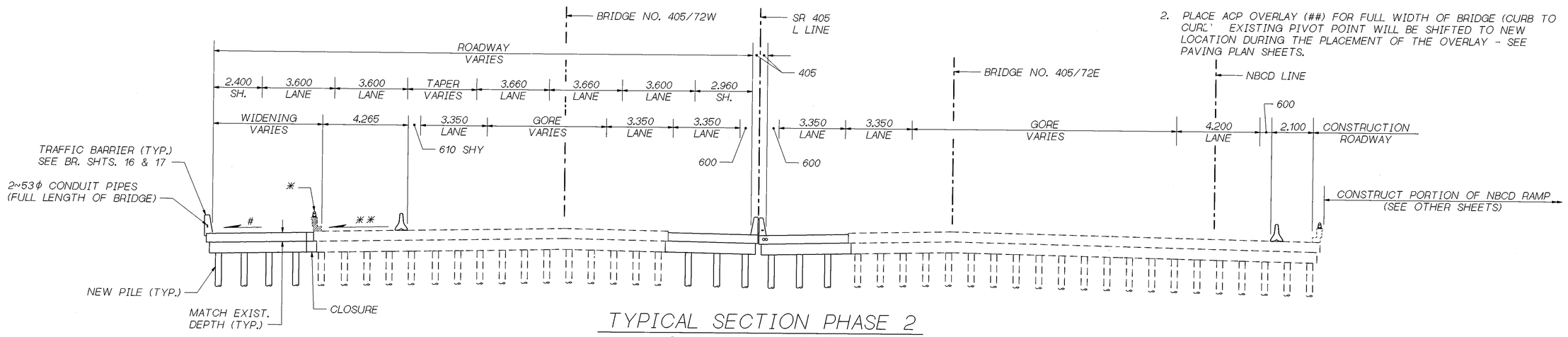
1. SET TEMPORARY CONCRETE BARRIER. REMOVE EXISTING CURB AND RAIL BASE FROM MEDIAN PORTIONS.
2. CONSTRUCT MEDIAN PORTIONS OF PIERS 1 THRU 4 EXCEPT AT THE CLOSURE.
3. CONSTRUCT MEDIAN PORTIONS OF THE DECK SLAB EXCEPT AT THE CLOSURE.
4. ALLOW 30 CALENDAR DAYS PRIOR TO SUBSTRUCTURE AND DECK SLAB CLOSURE.
5. PLACE SUBSTRUCTURE AND DECK SLAB CLOSURES.
6. PLACE TRAFFIC BARRIER.

PHASE 2:

1. SET TEMPORARY CONCRETE BARRIER. REMOVE EXISTING CURB AND RAILBASE.
2. CONSTRUCT OUTBOARD PORTION OF PIERS 1 THRU 4 OF BR. NO. 405/72W EXCEPT AT THE CLOSURE.
3. CONSTRUCT OUTBOARD PORTION OF THE DECK SLAB OF BR. NO. 405/72W EXCEPT AT THE CLOSURE.
4. ALLOW 30 CALENDAR DAYS PRIOR TO SUBSTRUCTURE AND DECK SLAB CLOSURE.
5. PLACE SUBSTRUCTURE AND DECK SLAB CLOSURES.
6. PLACE TRAFFIC BARRIER.

PHASE 3:

1. PLACE MEMBRANE WATERPROOFING (DECK SEAL FOR FULL WIDTH OF BRIDGES (CURB TO CURB)
2. PLACE ACP OVERLAY (##) FOR FULL WIDTH OF BRIDGE (CURB TO CURB) EXISTING PIVOT POINT WILL BE SHIFTED TO NEW LOCATION DURING THE PLACEMENT OF THE OVERLAY - SEE PAVING PLAN SHEETS.



TYPICAL SECTION PHASE 2

SHOWN NEAR AN INTERMEDIATE PIER
DIMENSIONS SHOWN ARE PERPENDICULAR TO ℄ L LINE.

Bridge Design Engr. C. C. RUTH	4/96	S405D72ROOT:[000000.FGB]STAGING.FGB;1			REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor R.T. SHAEFER / W. WILSON					10	WASH.			
Designed By C. CORNELL	6/96								
Checked By	6/96				JOB NUMBER				
Detailed By D.W. PULSE JR.	6/96				96W035				
Bridge Projects Engr. K. N. KIRKER	3/96								
Prelim. Plan By A. CHU	3/96				5054				
Architect/Specialist A. YOUNG	3/96	DATE	REVISION	BY APP'D					

12-NOV-96

WARREN E. WILSON — STATE OF WASHINGTON — 20527 — REGISTERED PROFESSIONAL ENGINEER — EXPIRES 12/8/98

Washington State Department of Transportation

SR 405
BOTHELL TO SWAMP CREEK I/C
HOV LANES - STAGE 1
NORTH CREEK BRIDGE 405/72 E-W

CONSTRUCTION STAGING

BRIDGE SHEET NO. 2

SHEET 462 OF 663 SHEETS

SR 405 JOB NO. 7071 SHEET 2

24|164

⑥ BRIDGE 405/72W SHOULDER WIDENING

L-LINE STATION	EXIST. OFFSET	EXIST. ELEV. AT CURB LINE	PROPOSED OFFSET	PROPOSED ELEV. AT CURB LINE
39+099.322	–	–	27.864 LT.	9.684
39+105.405	21.482 LT.	9.823	27.984 LT.	9.693
39+109.991	21.672 LT	9.828	28.075 LT.	9.700
39+114.970	21.870 LT.	9.828	28.173 LT.	9.702
39+119.979	22.064 LT.	9.816	28.272 LT.	9.698
39+124.962	22.262 LT.	9.815	28.371 LT.	9.696
39+129.968	22.455 LT.	9.814	28.470 LT.	9.694
39+133.438	–	–	28.538 LT.	9.691
39+134.973	22.670 LT.	9.809	–	–
39+138.851	22.820 LT.	9.807	–	–

⑦ BRIDGE 405/72W MEDIAN WIDENING

L-LINE STATION	EXIST. OFFSET	EXIST. ELEV. AT CURB LINE	PROPOSED OFFSET	PROPOSED ELEV. AT CURB LINE
39+121.271	4.856 LT.	9.969	–	–
39+125.026	4.862 LT.	9.972	–	–
39+125.864	–	–	0.025 LT.	9.877
39+130.017	4.853 LT.	9.983	0.025 LT.	9.880
39+135.005	4.855 LT.	9.977	0.025 LT.	9.885
39+139.992	4.838 LT.	9.991	0.025 LT.	9.895
39+145.009	4.827 LT.	10.002	0.025 LT.	9.906
39+150.001	4.827 LT.	10.006	0.025 LT.	9.910
39+155.007	4.813 LT.	10.024	0.025 LT.	9.928
39+155.996	4.818 LT.	10.021	–	–
39+160.576	–	–	0.025 LT.	9.911

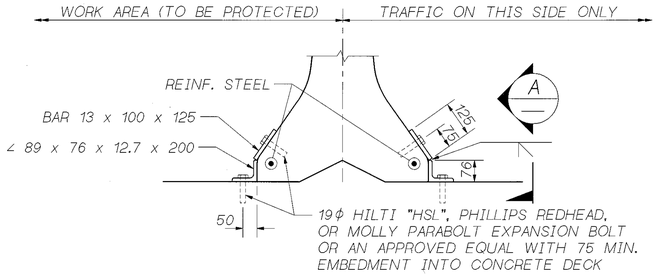
⑦ BRIDGE 405/72E MEDIAN WIDENING

L-LINE STATION	EXIST. OFFSET	EXIST. ELEV. AT CURB LINE	PROPOSED OFFSET	PROPOSED ELEV. AT CURB LINE
39+125.431	–	–	0.025 RT.	9.887
39+130.083	4.927 RT.	9.980	0.025 RT.	9.882
39+135.008	4.949 RT.	9.983	0.025 RT.	9.885
39+140.007	4.945 RT.	9.997	0.025 RT.	9.899
39+145.029	4.949 RT.	9.996	0.025 RT.	9.898
39+150.008	4.956 RT.	9.996	0.025 RT.	9.897
39+155.018	4.929 RT.	10.003	0.025 RT.	9.905
39+160.026	4.937 RT.	10.010	0.025 RT.	9.912
39+160.099	–	–	0.025 RT.	9.912
39+164.792	4.946 RT.	10.007	–	–

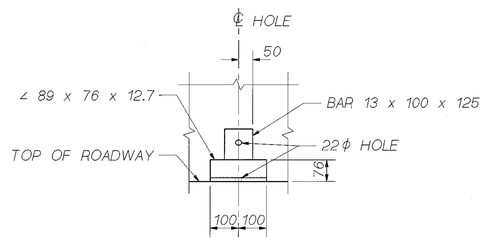
⑦ NOTE: ELEVATIONS ARE AT TOP OF CONCRETE DECK.

GENERAL NOTES

1. ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE STATE OF WASHINGTON, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION METRIC DATED 1996 AND AMENDMENTS.
2. THE WIDENED PORTION OF THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES FIFTEENTH EDITION - 1992 AND INTERIM SPECIFICATIONS THROUGH 1995. ALL NEW STRUCTURAL ELEMENTS HAVE BEEN DESIGNED IN ACCORDANCE WITH LOAD FACTOR DESIGN. SEISMIC DESIGN OF THIS STRUCTURE HAS BEEN PERFORMED USING AN ACCELERATION COEFFICIENT OF 0.25 AND A TYPE III SOIL PROFILE RESPONSE SPECTRUM.
3. SUBSTRUCTURE DETAILS ARE SUBJECT TO CHANGE DEPENDING UPON FOUNDATION MATERIAL ENCOUNTERED. REINFORCING STEEL FOR PILES SHALL NOT BE CUT UNTIL FINAL ELEVATIONS HAVE BEEN DETERMINED AND SUBSTRUCTURE DETAILS HAVE BEEN MODIFIED, IF NECESSARY.
4. CONCRETE IN THE PILES SHALL BE CLASS 28P. CONCRETE IN THE ROADWAY SLAB SHALL BE CLASS 28D. ALL OTHER CONCRETE, EXCEPT WHERE SPECIFICALLY SHOWN OTHERWISE ON THE PLANS, SHALL BE CLASS 28.
5. THE ULTIMATE DESIGN LOAD FOR THE PILES FOR PIERS 1 & 4 IS 1320 kN. THE ULTIMATE DESIGN LOAD FOR PIERS 2 & 3 IS 1590 kN. A DOWNDRAG FORCE OF 230 kN WAS INCLUDED IN THE ULTIMATE DESIGN LOAD. A FACTOR OF SAFETY OF 2.5 WAS USED IN THE DETERMINATION OF THE ULTIMATE DESIGN LOAD.
6. FALSEWORK SHALL BE CAREFULLY RELEASED TO PREVENT IMPACT OR UNDUE STRESS IN THE STRUCTURE. THE TRAFFIC BARRIER CONCRETE SHALL NOT BE PLACED UNTIL THE FALSEWORK HAS BEEN RELEASED.
7. ALL EXISTING DIMENSIONS AND ELEVATIONS SHALL BE MEASURED IN THE FIELD BY THE CONTRACTOR PRIOR TO ORDERING OR FABRICATING ANY MATERIAL (SEE SPECIAL PROVISIONS).
8. UNLESS OTHERWISE SHOWN ON THE PLANS, CLEAR CONCRETE COVER FROM THE TOP OF THE ROADWAY SLAB TO ANY REINFORCEMENT SHALL BE 50, 25 FROM THE BOTTOM OF THE ROADWAY SLAB, 75 FROM THE BOTTOM OF THE PILES, 190 FROM THE BOTTOM OF FOOTINGS WITH PILES, AND 40 FROM ALL OTHER CONCRETE SURFACES.



ANCHOR ASSEMBLY DETAIL



SECTION (A)

METRIC LEGEND

126.175 DENOTES METERS
175 DENOTES MILLIMETERS

SR 405 JOB NO. 7071 SHEET 3

Bridge Design Engr. C. C. RUTH 4/96	S405D72ROOT:[FGB]GEO.FGB;1			REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
Supervisor R.T. SHAEFER / W. WILSON				10	WASH.				
Designed By C. CORNELL									
Checked By				JOB NUMBER					
Detailed By G. A. T. WALDRON 3/96				96W035					
Bridge Projects Engr. K. N. KIRKER 3/96									
Prelim. Plan By A. CHU 3/96	7/97	① CONTRACTOR SURVEY - FIT EXIST.							
Architect/Specialist A. YOUNG 3/96	DATE	REVISION	BY APP'D	5054					

16-OCT-97

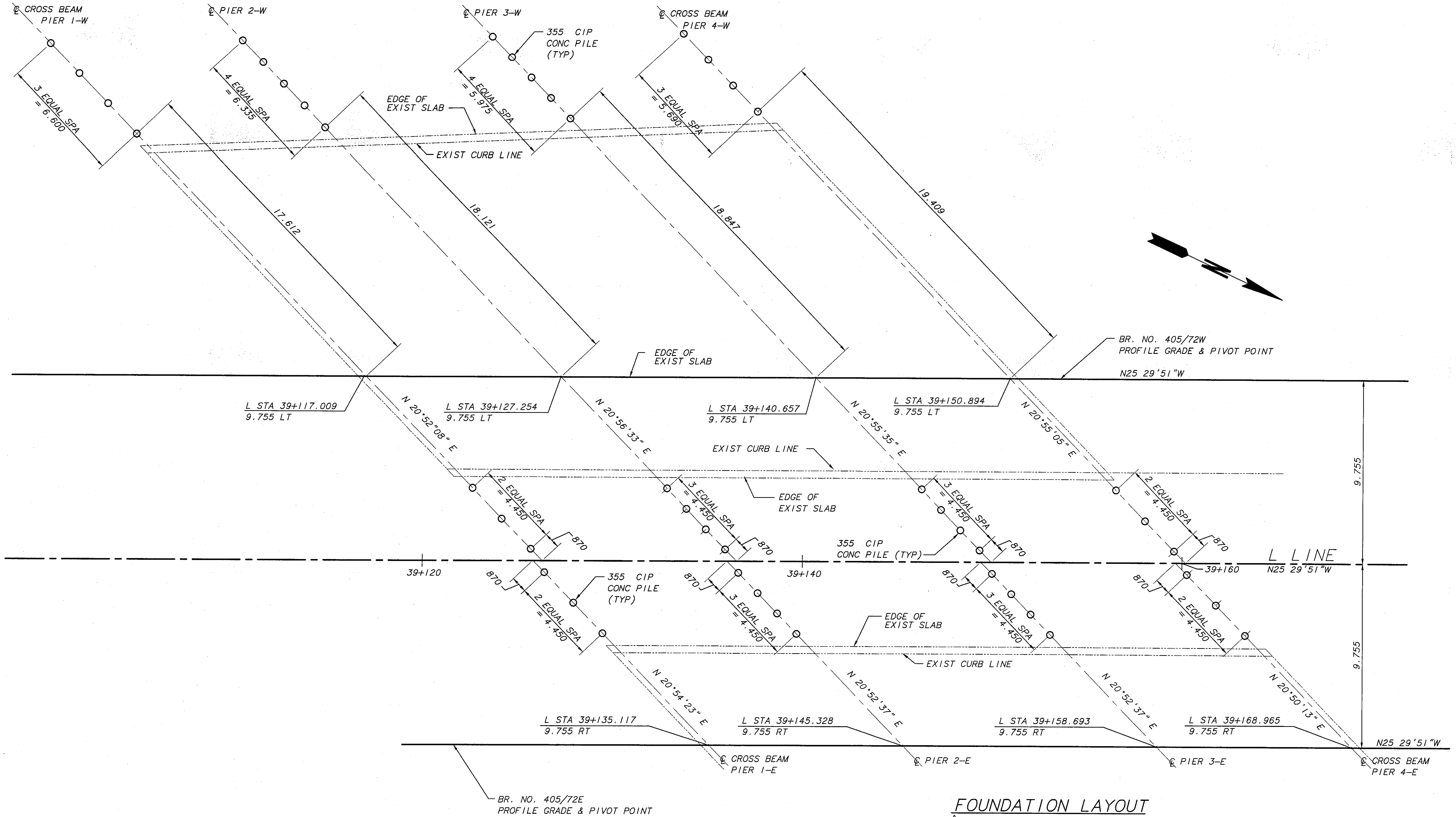
WARREN E. WILSON — STATE OF WASHINGTON — 21027 — REGISTERED PROFESSIONAL ENGINEER
EXPIRES 8 OCT 98

Washington State Department of Transportation

SR 405
BOTHELL TO SWAMP CREEK I/C
HOV LANES - STAGE 1
NORTH CREEK BRIDGE 405/72 E-W

GEOMETRY & GENERAL NOTES

BRIDGE SHEET NO. 3
SHEET 463 OF 663 SHEETS



FOUNDATION LAYOUT

(1) REDRAWN

BRIDGE DESIGN ENGR			
SUPERVISOR			
DESIGNED BY	J. CHEN	6/96	
CHECKED BY	C. CORNELL	6/96	
DETAILED BY	T. BRENNAN	6/96	
BRIDGE PROJECTS ENGR			
PRELIM PLAN BY			
ARCHITECT/SPECIALIST			

DATE	REVISION	BY	APPR
7/97 (1)	CONTRACTORS SURVEY DATA- FIT EXISTING	WEW	

REGION NO	STATE	FED AID PROJ NO	SHEET NO	TOTAL SHEETS
10	WASH			

JOB NUMBER 96W035
CONTRACT NO. 5054

WARREN E. WILSON — STATE OF WASHINGTON — 20527 — REGISTERED PROFESSIONAL ENGINEER
EXPIRES OCTOBER 8, 1998

BERGER/ABAM ENGINEERS INC.
33301 9TH AVENUE SOUTH
FEDERAL WAY, WASHINGTON 98003-6395
(206)431-2300 FAX:(206)431-2250

Washington State Department of Transportation

SR 405
BOTHELL TO SWAMP CREEK I/C
HOV LANES – STAGE 1
NORTH CREEK BRIDGE 405/72 E-W
FOUNDATION LAYOUT (MEDIAN & OUTBOARD WIDENING)

BRIDGE SHEET NO. 4
SHEET 464 OF 663 SHEETS

SR 405 JOB NO. 7071 SHEET 4 OF 19

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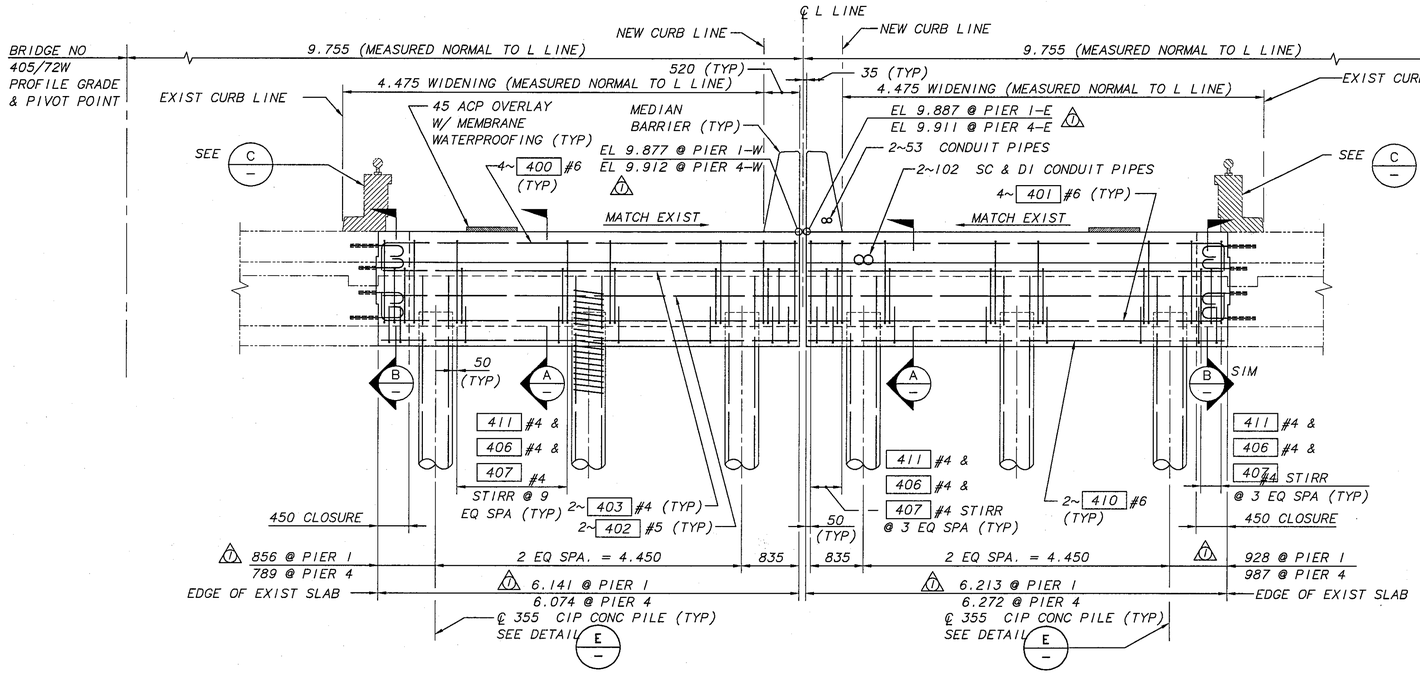
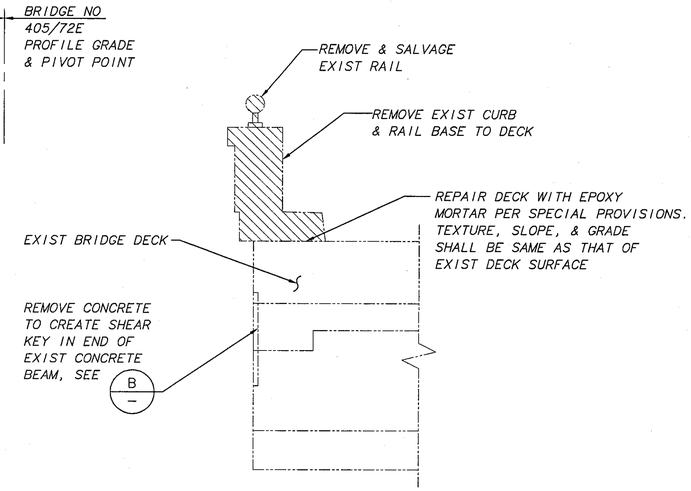
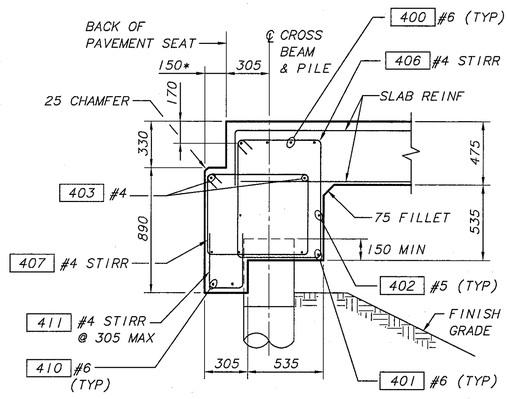


ELEVATION – PIER 1 & 4 (MEDIAN WIDENING)

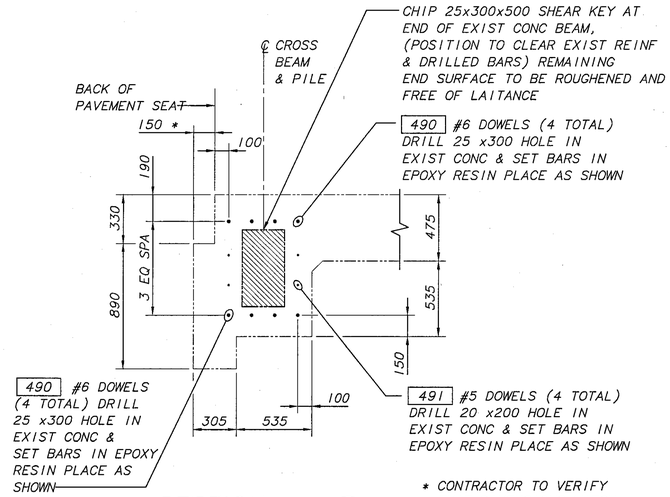
(LOOKING AHEAD ON STATION – PIER 1)
(LOOKING BACK ON STATION – PIER 4)
(ALL DIMENSIONS ARE MEASURED ALONG THE ℄ CROSS BEAM UNLESS NOTED OTHERWISE)



DETAIL – EXIST CURB & RAIL REMOVAL (C –,6,7,8 & 9)



SECTION (A –)



SECTION (B –)

BRIDGE DESIGN ENGR						REGION NO	STATE	FED AID PROJ NO	SHEET NO	TOTAL SHEETS	
SUPERVISOR						10	WASH				
DESIGNED BY	J. CHEN	6/96				JOB NUMBER 96W035					
CHECKED BY	C. CORNELL	6/96									
DETAILED BY	T. BRENNAN	6/96									
BRIDGE PROJECTS ENGR											
PRELIM PLAN BY			7/97 ⚠	CONTRACTOR SURVEY DATA– FIT EXISTING	WEW	CONTRACT NO. 5054					
ARCHITECT/SPECIALIST			DATE	REVISION	BY	APPR					

WARREN E. WILSON — STATE OF WASHINGTON — 20627 — REGISTERED PROFESSIONAL ENGINEER — EXPIRES OCTOBER 8, 1998

BERGER/ABAM ENGINEERS INC.
33301 9TH AVENUE SOUTH
FEDERAL WAY, WASHINGTON 98003-6385
(206)431-2300 FAX:(206)431-2250

Washington State Department of Transportation

SR 405
BOTHELL TO SWAMP CREEK I/C
HOV LANES – STAGE 1
NORTH CREEK BRIDGE 405/72 E-W

PIER 1 & 4 (MEDIAN WIDENING)

BRIDGE SHEET NO. 5

SHEET 465 OF 663 SHEETS

SR 405 JOB NO. 7071 SHEET 5 OF 19

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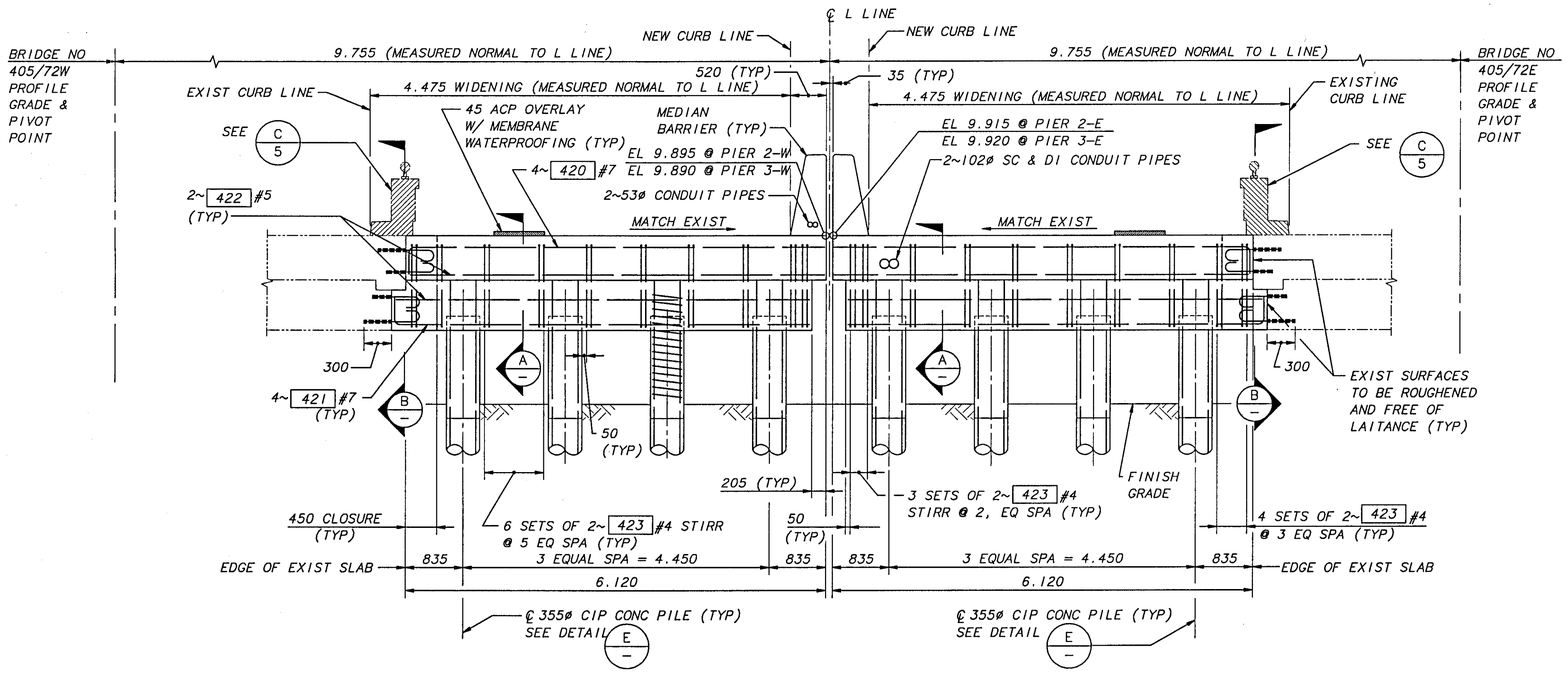
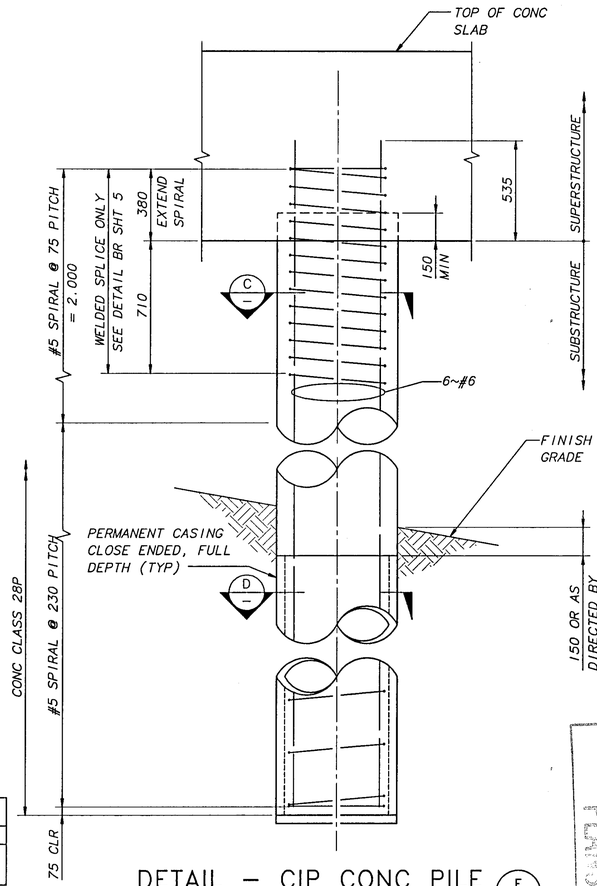


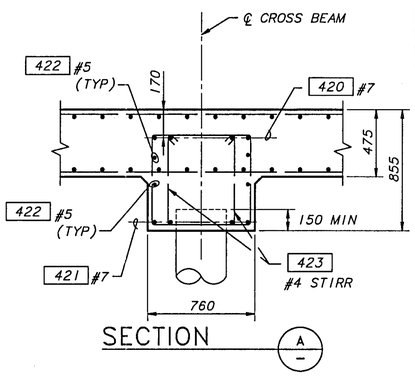
ELEVATION – PIER 2 & 3 (MEDIAN WIDENING)

(LOOKING AHEAD ON STATION)
(ALL DIMENSIONS ARE MEASURED ALONG ℄ CROSS BEAM UNLESS NOTED OTHERWISE)

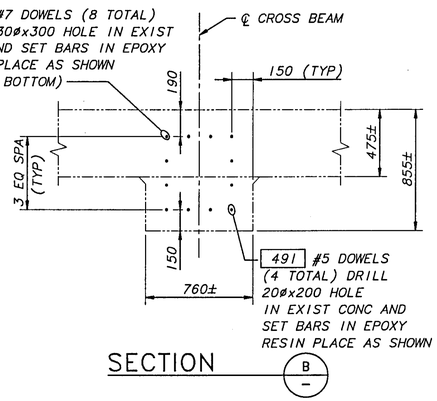
SPIRAL ALTERNATIVES			
DEFORMED BARS	PLAIN SMOOTH BARS	COLD DRAWN WIRE	DEFORMED WIRE
#4	13ø	W20	D20



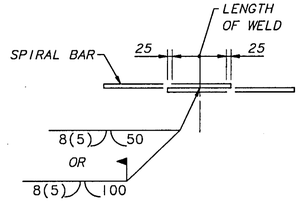
DETAIL – CIP CONC PILE E/-,8



SECTION A/-



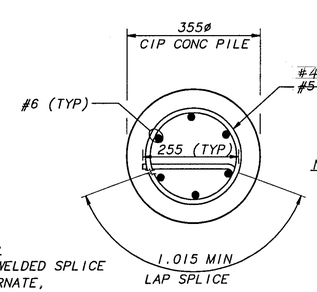
SECTION B/-



FOR SPIRAL SPLICE, TERMINUS OR BREAK, WELD BACK ONTO SELF

NOTE: FOR SPIRAL ALTERNATIVES SEE TABLE ABOVE

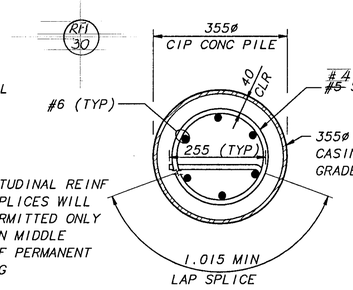
DETAIL F/5,-



NOTE: FOR WELDED SPLICE ALTERNATE, SEE F/-

HOOKS SHALL BE PLACED TO AVOID VERTICAL REINFORCEMENT

SECTION C/-



NOTE: LONGITUDINAL REINF LAP SPLICES WILL BE PERMITTED ONLY WITHIN MIDDLE 1/2 OF PERMANENT CASING

NOTE: FOR WELDED SPLICE ALTERNATE, SEE F/-

HOOKS SHALL BE PLACED TO AVOID VERTICAL REINFORCEMENT

SECTION D/-

FOR "AS CONSTRUCTED PLANS" ONLY

BRIDGE DESIGN ENGR						REGION NO	STATE	FED AID PROJ NO	SHEET NO	TOTAL SHEETS
SUPERVISOR						1	WASH			
DESIGNED BY	J. CHEN	6/96				JOB NUMBER				
CHECKED BY	C. CORNELL	6/96				96W035				
DETAILED BY	T. BRENNAN	6/96				CONTRACT NO.				
BRIDGE PROJECTS ENGR						5054				
PRELIM PLAN BY		6/3/97	RFI-30	ALM						
ARCHITECT/SPECIALIST		DATE	REVISION	BY	APPR					

WARREN E. WILSON — STATE OF WASHINGTON — 20527 — REGISTERED PROFESSIONAL ENGINEER — EXPIRES 10/8/98

BERGER/ABAM ENGINEERS INC.
33301 9TH AVENUE SOUTH
FEDERAL WAY, WASHINGTON 98003-8395
(206)431-2300 FAX:(206)431-2250

Washington State Department of Transportation

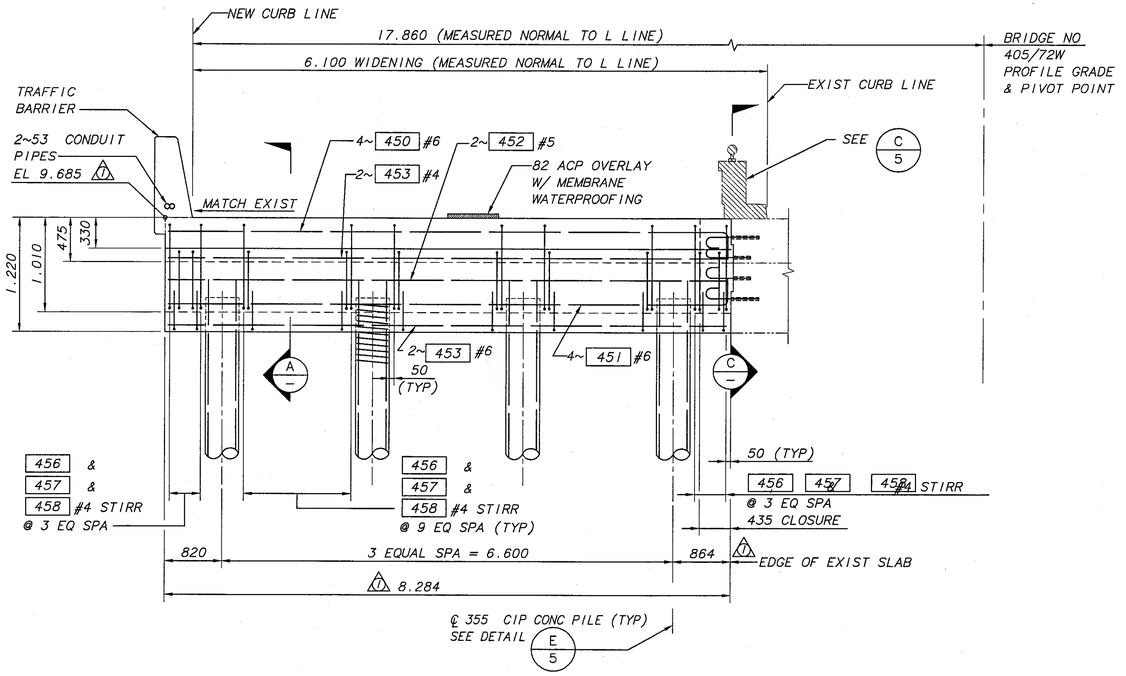
SR 405
BOTHELL TO SWAMP CREEK I/C
HOV LANES – STAGE 1
NORTH CREEK BRIDGE 405/72 E-W

PIER 2 & 3 (MEDIAN WIDENING)

BRIDGE SHEET NO. 6
SHEET 466 OF 663 SHEETS

SR 405 JOB NO. 7071 SHEET 6 OF 19

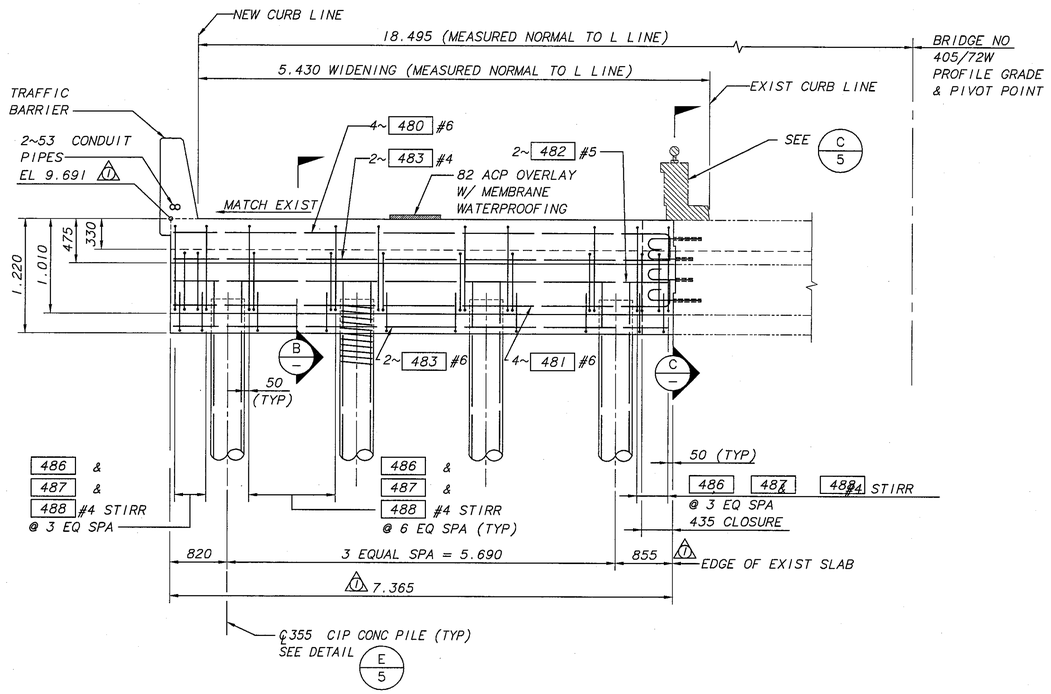
PLOTTED: Tue Nov 12 1996 11:23am FILENAME: X:\A96077\BR72\EW\6.DWG SCALE: 30



ELEVATION – PIER 1–W (OUTBOARD WIDENING)

(LOOKING AHEAD ON STATION)

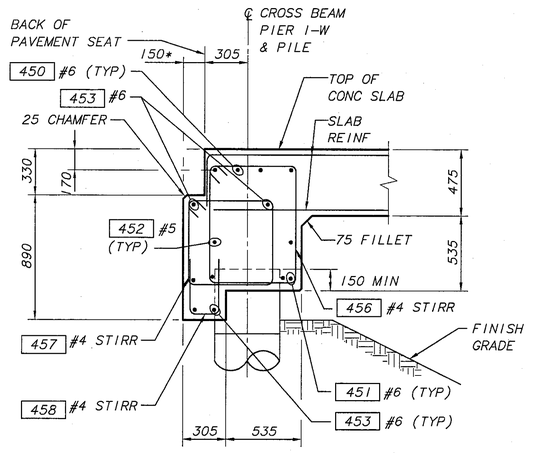
NOTES: 1. ALL DIMENSIONS ARE MEASURED ALONG THE ℄ CROSS BEAM UNLESS NOTED OTHERWISE.
2. SEE BRIDGE SHEET 16 FOR PLACEMENT OF 2–53 DIAMETER CONDUITS AT END PIER.



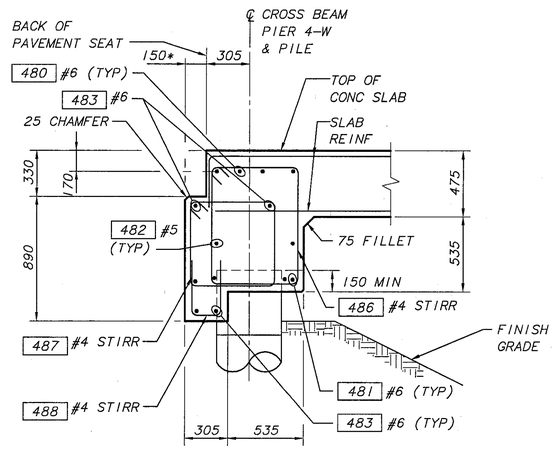
ELEVATION – PIER 4–W (OUTBOARD WIDENING)

(LOOKING AHEAD ON STATION)

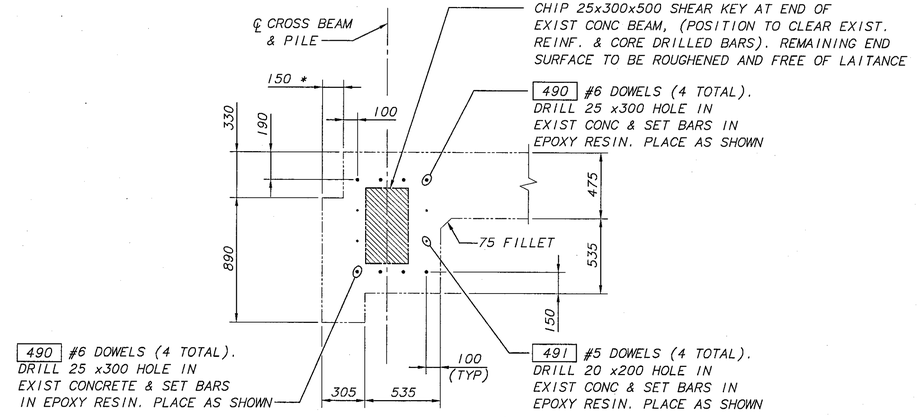
NOTES: 1. ALL DIMENSIONS ARE MEASURED ALONG THE ℄ CROSS BEAM UNLESS NOTED OTHERWISE.
2. SEE BRIDGE SHEET 16 FOR PLACEMENT OF 2–53 DIAMETER CONDUITS AT END PIER.



SECTION A/–



SECTION B/–



* CONTRACTOR TO VERIFY THAT DIMENSIONS MATCH EXISTING MEMBER SIZES

SECTION C/–

BRIDGE DESIGN ENGR					
SUPERVISOR					
DESIGNED BY	J. CHEN	6/96			
CHECKED BY	C. CORNELL	6/96			
DETAILED BY	T. BRENNAN	6/96			
BRIDGE PROJECTS ENGR					
PRELIM PLAN BY		7/97 (2)	CONTRACTORS SURVEY DATA– FIT EXISTING	WEW	
ARCHITECT/SPECIALIST		DATE	REVISION	BY	APPR

REGION NO	STATE	FED AID PROJ NO	SHEET NO	TOTAL SHEETS
10	WASH			
JOB NUMBER 96W035				
CONTRACT NO. 5054				

WARREN E. WILSON — STATE OF WASHINGTON — 20527 — REGISTERED PROFESSIONAL ENGINEER — EXPIRES OCTOBER 6, 1996

BERGER/ABAM ENGINEERS INC.
33301 9TH AVENUE SOUTH
FEDERAL WAY, WASHINGTON 98003–6395
(206)431–2300 FAX:(206)431–2250

Washington State Department of Transportation

SR 405
BOTHELL TO SWAMP CREEK I/C
HOV LANES – STAGE 1
NORTH CREEK BRIDGE 405/72 E–W

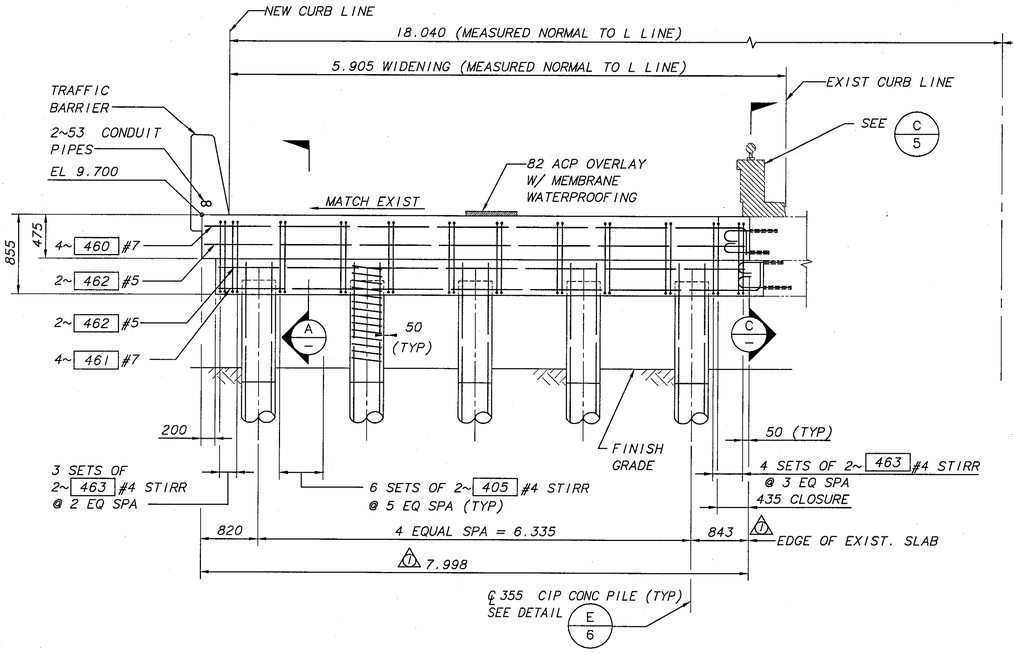
PIER 1–W & 4–W (OUTBOARD WIDENING)

BRIDGE SHEET NO. 7

SHEET 467 OF 663 SHEETS

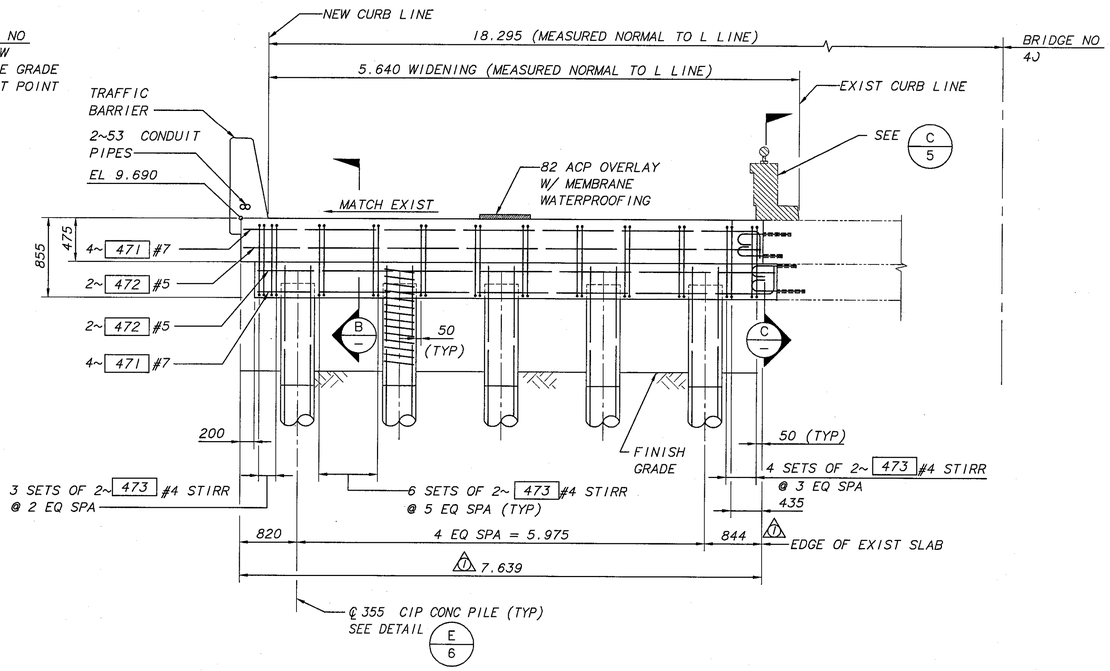
SR 405 JOB NO. 7071 SHEET 7 OF 19

PLOTTED: Sat Jul 12 1997 11:12am FILENAME: X:\A96077\BR72\EW\REV\TR1.DWG SCALE: 30



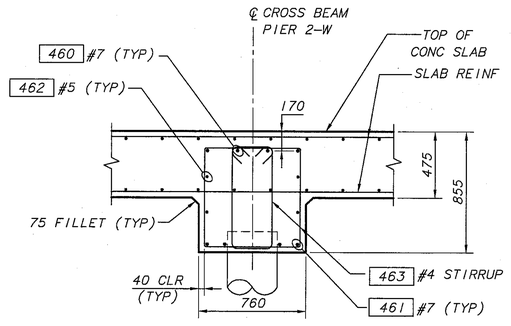
ELEVATION – PIER 2–W (OUTBOARD WIDENING)

(LOOKING AHEAD ON STATION)
(ALL DIMENSIONS ARE MEASURED ALONG THE ℄ CROSS BEAM UNLESS NOTED OTHERWISE)

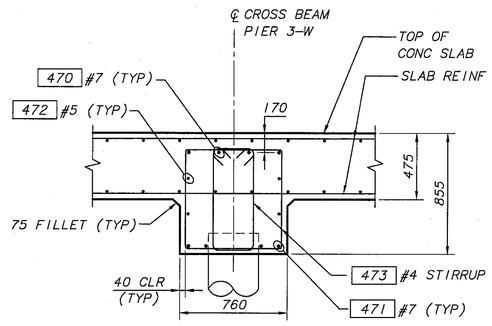


ELEVATION – PIER 3–W (OUTBOARD WIDENING)

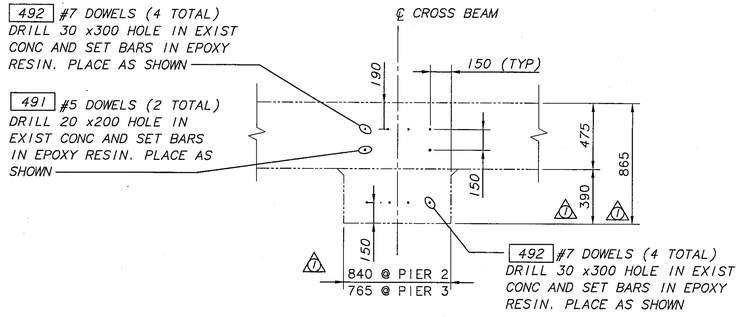
(LOOKING AHEAD ON STATION)
(ALL DIMENSIONS ARE MEASURED ALONG THE ℄ CROSS BEAM UNLESS NOTED OTHERWISE)



SECTION A/–



SECTION B/–



SECTION C/–

SR 405 JOB NO. 7071 SHEET 8 OF 19

PLOTTED: Wed Oct 22 1997 11:41am FILENAME: V:\A96077\BR72\EW\8.dwg SCALE: 30

BRIDGE DESIGN ENGR						REGION NO	STATE	FED AID PROJ NO	SHEET NO	TOTAL SHEETS
SUPERVISOR						10	WASH			
DESIGNED BY	J. CHEN	6/96				JOB NUMBER 96W035				
CHECKED BY	C. CORNELL	6/96				CONTRACT NO. 5054				
DETAILED BY	T. BRENNAN	6/96								
BRIDGE PROJECTS ENGR										
PRELIM PLAN BY			7/97 ⚠1	CONTRACTOR SURVEY DATA– FIT EXISTING	WEW					
ARCHITECT/SPECIALIST			DATE	REVISION	BY	APPR				

WARREN E. WILSON — STATE OF WASHINGTON — 20527 — REGISTERED PROFESSIONAL ENGINEER
EXPIRES OCTOBER 8, 1998

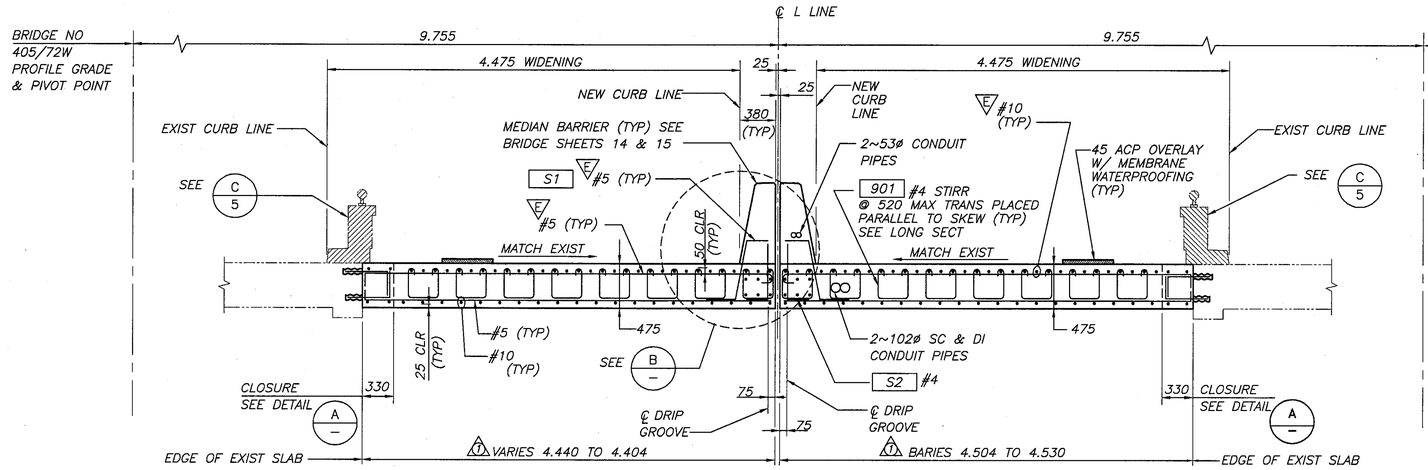
BERGER/ABAM ENGINEERS INC.
33301 9TH AVENUE SOUTH
FEDERAL WAY, WASHINGTON 98003-6395
(206)431-2300 FAX:(206)431-2250

Washington State Department of Transportation

SR 405
BOTHELL TO SWAMP CREEK I/C
HOV LANES – STAGE 1
NORTH CREEK BRIDGE 405/72 E–W

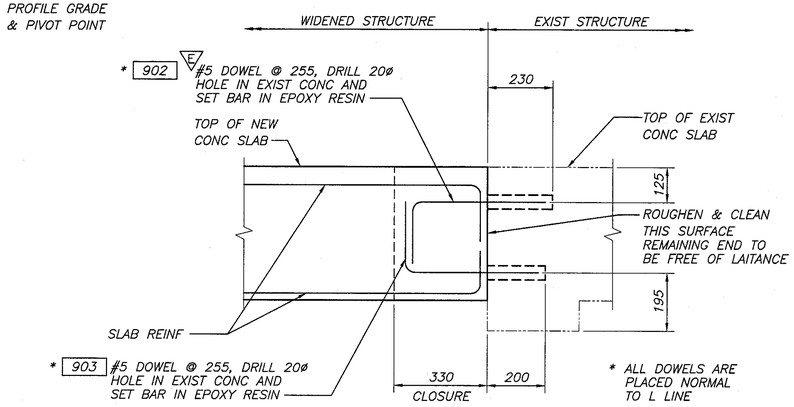
PIER 2–W & 3–W (OUTBOARD WIDENING)

BRIDGE SHEET NO. 8
SHEET 468 OF 663 SHEETS

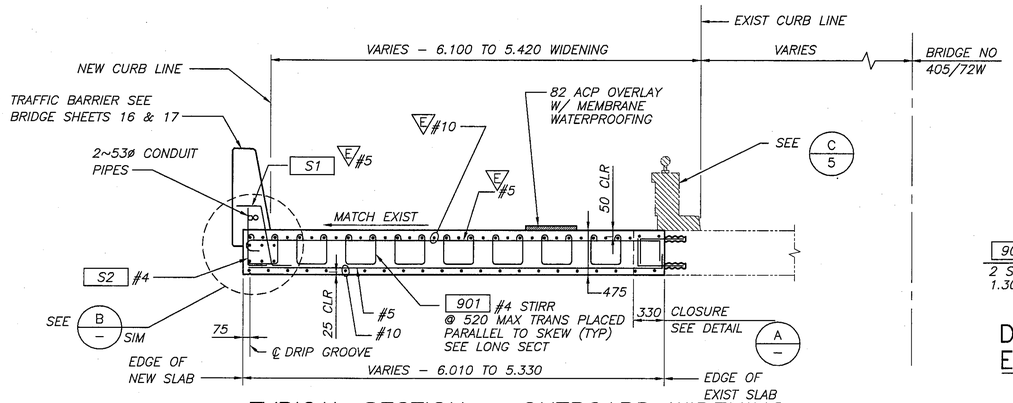


TYPICAL SECTION – MEDIAN WIDENING

(LOOKING AHEAD ON STATION)
ALL DIMENSIONS ARE MEASURED NORMAL TO THE L LINE UNLESS NOTED OTHERWISE
(NEAR SPAN ℄ FOR BOTTOM REINF. & NEAR PIER ℄ FOR TOP REINF.)

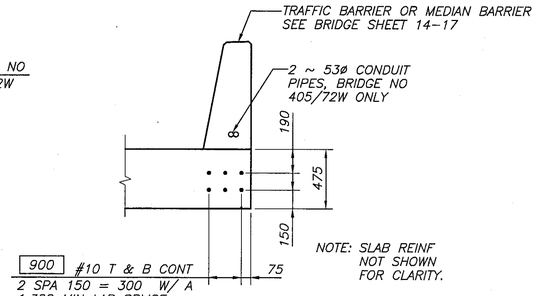


DETAIL – CLOSURE A –

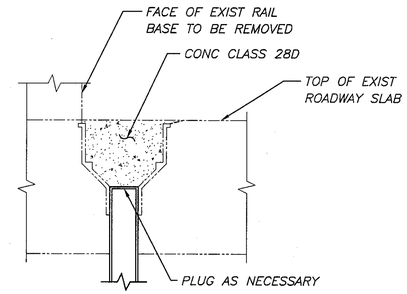


TYPICAL SECTION – OUTBOARD WIDENING

(LOOKING AHEAD ON STATION)
ALL DIMENSIONS ARE MEASURED NORMAL TO THE L LINE UNLESS NOTED OTHERWISE
(TOP REINFORCEMENT SHOWN NEAR ℄ PIER. BOT. REINF. SHOWN NEAR ℄ SPAN)



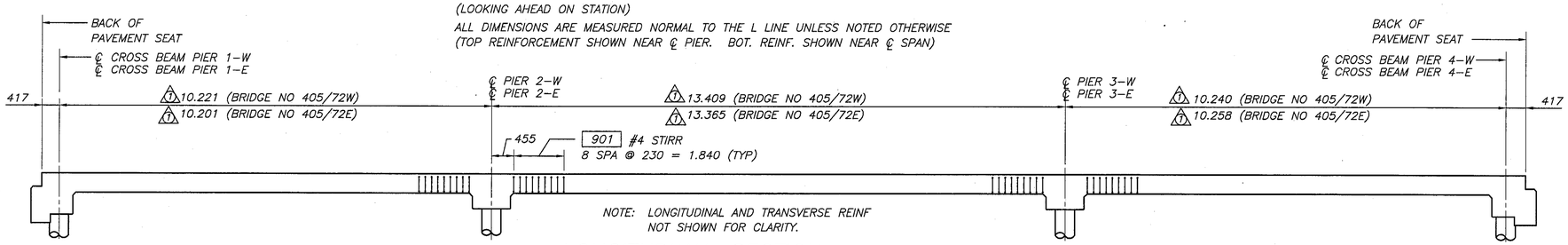
DETAIL – LONGITUDINAL EDGE BEAM B –



NOTE: REMOVE DRAIN GRATING & GALV STEEL CHAIN FILL DRAIN WITH CONC CLASS 28D AFTER PLUGGING.

DETAIL – BRIDGE DRAIN PLUG

(7 LOCATIONS)



LONGITUDINAL SECTION

(ALL DIMENSIONS ARE MEASURED ALONG THE L LINE UNLESS NOTED OTHERWISE)

BRIDGE DESIGN ENGR						REGION NO	STATE	FED AID PROJ NO	SHEET NO	TOTAL SHEETS	
SUPERVISOR						10	WASH				
DESIGNED BY	J. CHEN	6/96				JOB NUMBER					
CHECKED BY	C. CORNELL	6/96				96W035					
DETAILED BY	T. BRENNAN	6/96				CONTRACT NO.					
BRIDGE PROJECTS ENGR						5054					
PRELIM PLAN BY		7/97	1 CONTRACTOR SURVEY DATA– FIT EXISTING	WEW							
ARCHITECT/SPECIALIST		DATE	REVISION	BY	APPR						

MAUREEN E. WILSON, STATE OF WASHINGTON, 20627, REGISTERED PROFESSIONAL ENGINEER, EXPIRES OCTOBER 6, 1998

BERGER/ABAM ENGINEERS INC.
33301 8TH AVENUE SOUTH
FEDERAL WAY, WASHINGTON 98003–6395
(206)431–2300 FAX:(206)431–2250

Washington State Department of Transportation

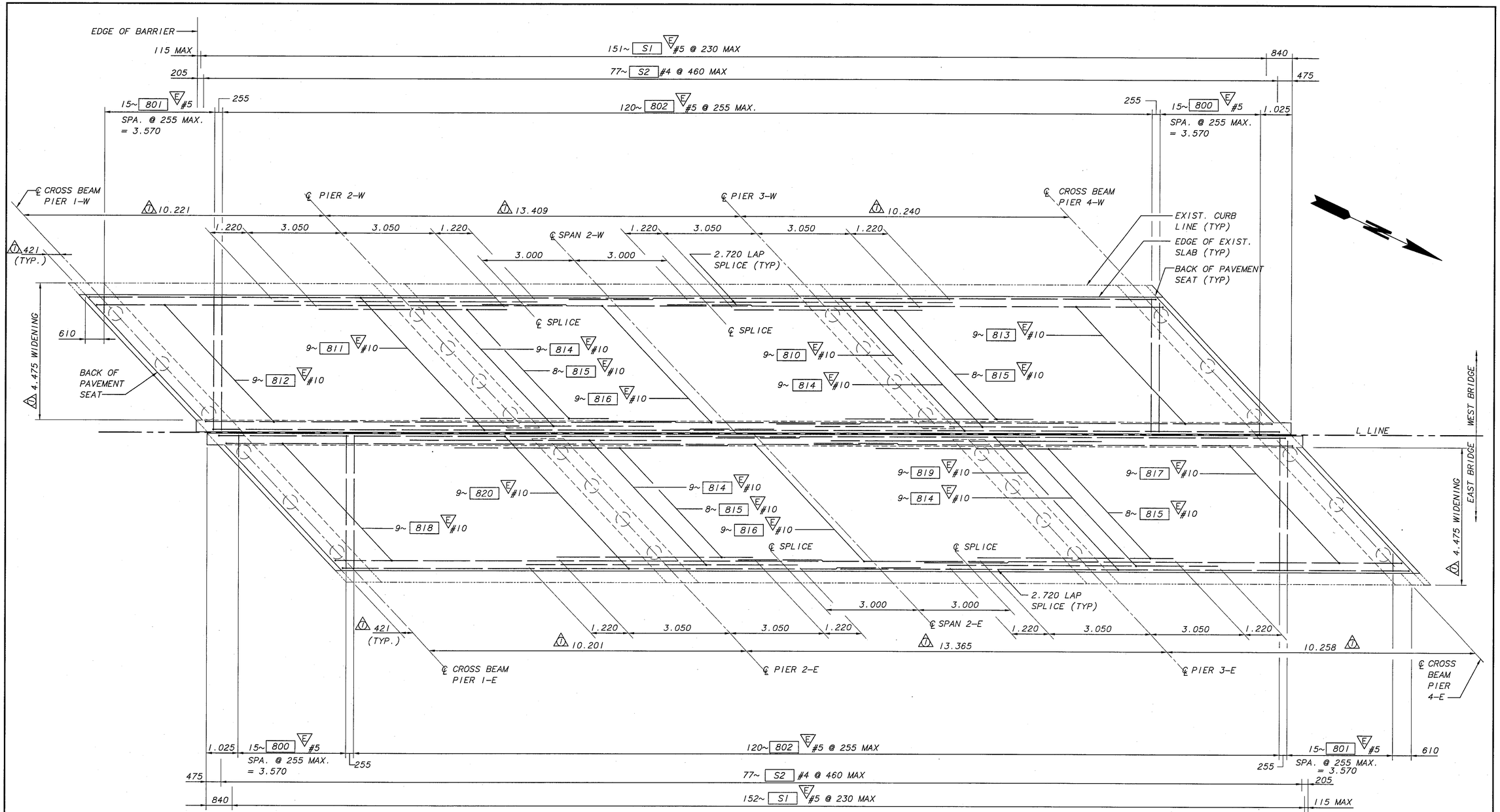
SR 405
BOTHELL TO SWAMP CREEK I/C
HOV LANES – STAGE 1
NORTH CREEK BRIDGE 405/72 E–W

TYPICAL SECTIONS

BRIDGE SHEET NO. 9
SHEET 469 OF 663 SHEETS

SR 405 JOB NO. 7071 SHEET 9 OF 19

PLOTTED: Sat Jul 12 1997 11:11am FILENAME: K:\A96077\BR72\EW\REV1\GR1.DWG SCALE: 30



REINFORCEMENT PLAN – TOP MAT (MEDIAN WIDENING)

(ALL DIMENSIONS MEASURED ALONG L LINE UNLESS OTHERWISE NOTED)

BRIDGE DESIGN ENGR					
SUPERVISOR					
DESIGNED BY	J. CHEN	6/96			
CHECKED BY	C. CORNELL	6/96			
DETAILED BY	T. BRENNAN	6/96			
BRIDGE PROJECTS ENGR					
PRELIM PLAN BY			7/97 △1	CONTRACTOR SURVEY DATA- FIT EXISTING	WEW
ARCHITECT/SPECIALIST			DATE	REVISION	BY APPR

REGION NO	STATE	FED AID PROJ NO	SHEET NO	TOTAL SHEETS
10	WASH			

JOB NUMBER 96W035

CONTRACT NO. 5054

WARREN E. WILSON — STATE OF WASHINGTON — 20587 — REGISTERED PROFESSIONAL ENGINEER

EXPIRES OCTOBER 8, 1998

BERGER/ABAM ENGINEERS INC.
33301 9TH AVENUE SOUTH
FEDERAL WAY, WASHINGTON 98003-8395
(206)431-2300 FAX:(206)431-2250

Washington State Department of Transportation

SR 405
BOTHELL TO SWAMP CREEK I/C
HOV LANES – STAGE 1
NORTH CREEK BRIDGE 405/72 E-W

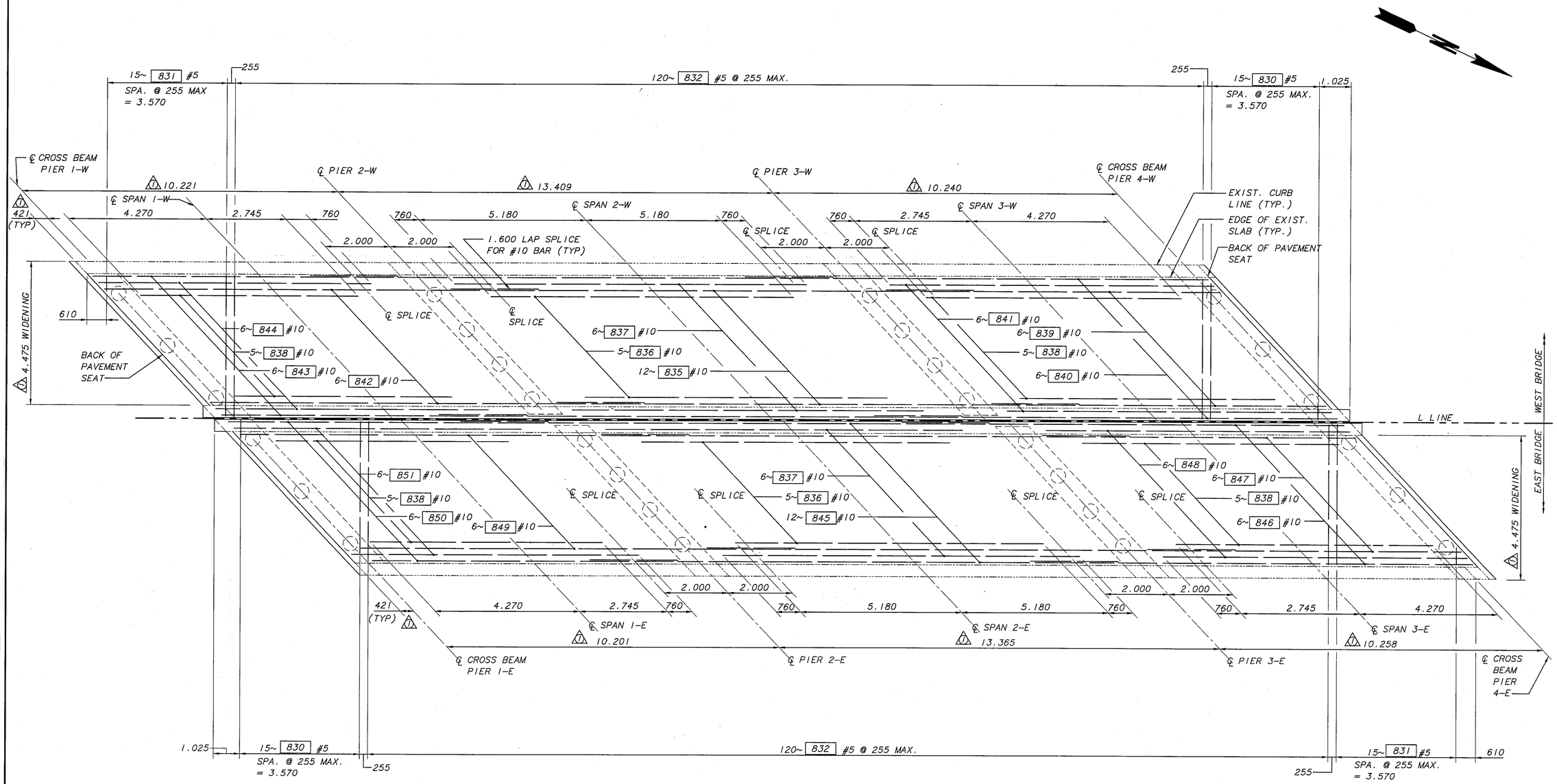
REINF. PLAN – TOP MAT (MEDIAN WIDENING)

BRIDGE SHEET NO. 10

SHEET 470 OF 663 SHEETS

SR 405 JOB NO. 7071 SHEET 10 OF 19

PLOTTED: Sat Jul 12 1997 11:10am FILENAME: X:\A960771\BR72\EW\REV1\10R1.DWG SCALE: 60



REINFORCEMENT PLAN – BOTTOM MAT (MEDIAN WIDENING)

(ALL DIMENSIONS MEASURED ALONG L LINE UNLESS OTHERWISE NOTED)

BRIDGE DESIGN ENGR						REGION NO	STATE	FED AID PROJ NO	SHEET NO	TOTAL SHEETS	
SUPERVISOR						10	WASH				
DESIGNED BY	J. CHEN	6/96				JOB NUMBER 96W035					
CHECKED BY	C. CORNELL	6/96				CONTRACT NO. 5054					
DETAILED BY	T. BRENNAN	6/96									
BRIDGE PROJECTS ENGR											
PRELIM PLAN BY			7/97 △1 CONTRACTOR SURVEY DATA- FIT EXISTING		WEW						
ARCHITECT/SPECIALIST			DATE	REVISION	BY	APPR					

WARREN E. WILSON — STATE OF WASHINGTON — 20587 — REGISTERED PROFESSIONAL ENGINEER — EXPIRES OCTOBER 8, 1998

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SR 405
BOTHELL TO SWAMP CREEK I/C
HOV LANES – STAGE 1
NORTH CREEK BRIDGE 405/72 E-W

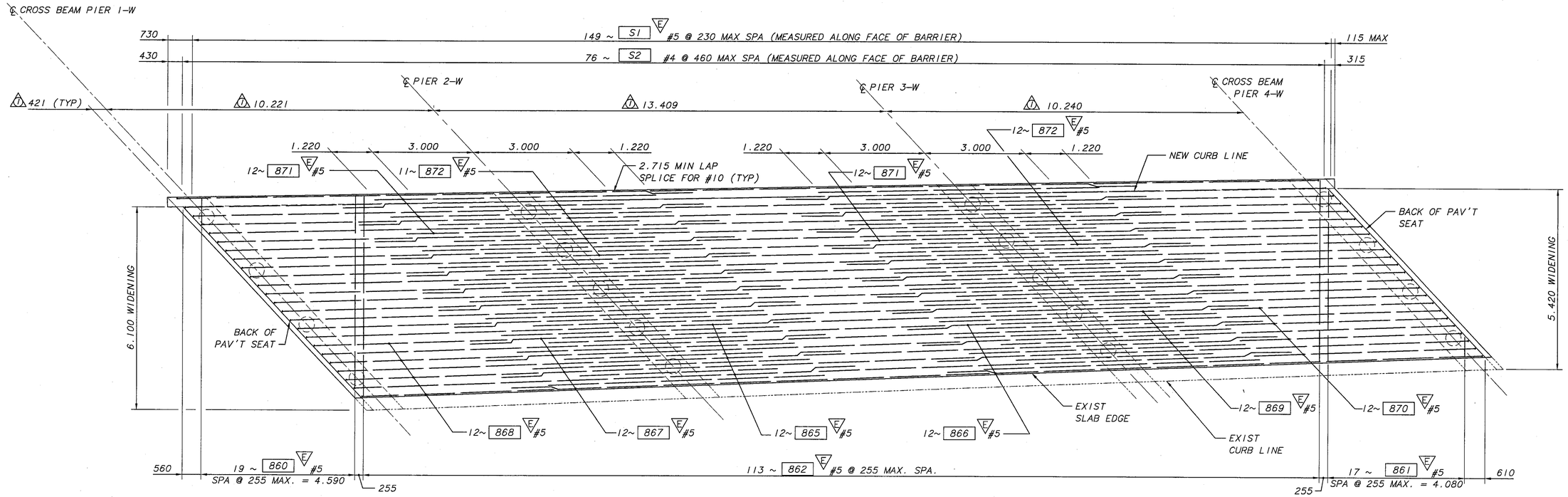
REINF. PLAN – BOTTOM MAT (MEDIAN WIDENING)

BRIDGE SHEET NO. 11

SHEET 471 OF 663 SHEETS

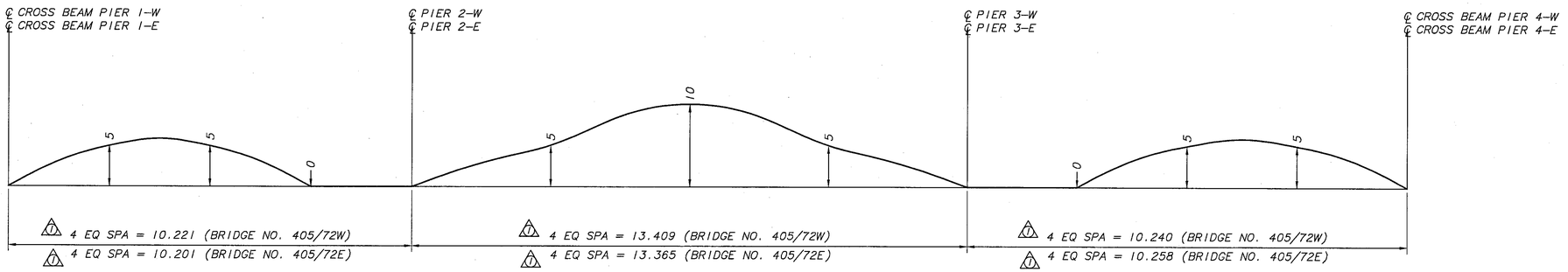
SR 405 JOB NO. 7071 SHEET 11 OF 19

PLOTTED: Sat Jul 12 1997 11:08am FILENAME: X:\A9607\BR72\EW\REV\11R1.DWG SCALE: 60



REINFORCEMENT PLAN – TOP MAT (OUTBOARD WIDENING)

(ALL DIMENSIONS MEASURED ALONG L LINE UNLESS OTHERWISE NOTED)



CAMBER DIAGRAM (BRIDGE 405/72 E & W)

NOTE: THIS DIAGRAM SHOWS THE DEAD LOAD CAMBER ONLY AND SHALL BE INCREASED BY THE AMOUNT OF ANTICIPATED TAKEUP IN THE FALSEWORK. (ALL DIMENSIONS ARE MEASURED ALONG ℄ L LINE)

BRIDGE DESIGN ENGR						REGION NO	STATE	FED AID PROJ NO	SHEET NO	TOTAL SHEETS
SUPERVISOR						10	WASH			
DESIGNED BY	J. CHEN	6/96								
CHECKED BY	C. CORNELL	6/96				JOB NUMBER 96W035				
DETAILED BY	T. BRENNAN	6/96								
BRIDGE PROJECTS ENGR										
PRELIM PLAN BY			7/97 1 CONTRACTOR SURVEY DATA- FIT EXISTING		WEW	CONTRACT NO. 5054				
ARCHITECT/SPECIALIST			DATE	REVISION	BY	APPR				

WARREN E. WILSON — STATE OF WASHINGTON — 20527 — REGISTERED PROFESSIONAL ENGINEER — EXPIRES OCTOBER 8, 1998

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FEDERAL WAY, WASHINGTON 98003-6395
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SR 405
BOTHELL TO SWAMP CREEK I/C
HOV LANES – STAGE 1
NORTH CREEK BRIDGE 405/72 E-W

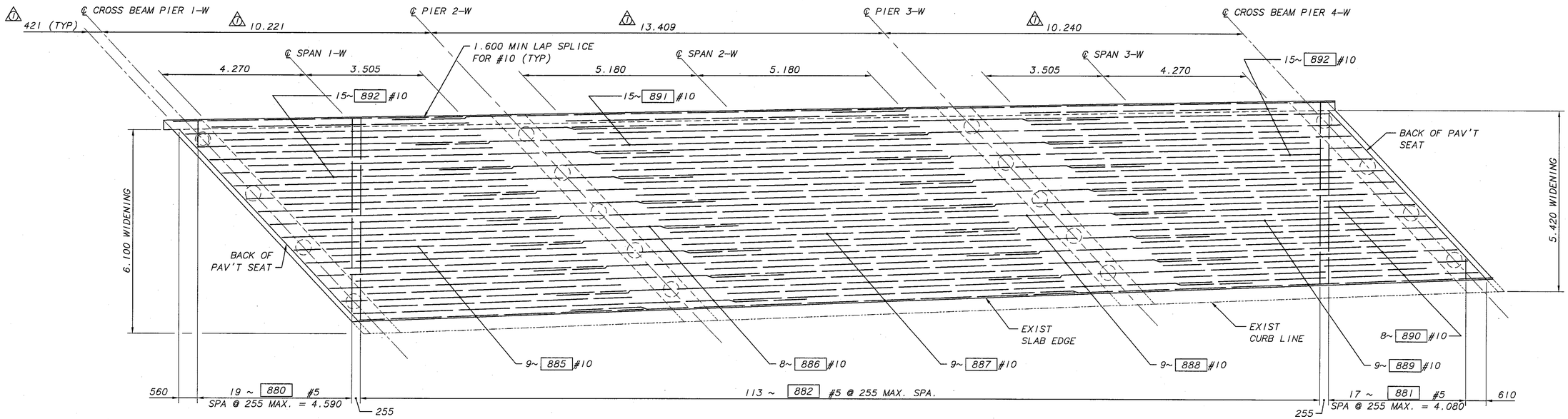
REINF. PLAN – TOP MAT (OUTBOARD WIDENING)

BRIDGE SHEET NO. 12

SHEET 472 OF 663 SHEETS

SR 405 JOB NO. 7071 SHEET 12 OF 19

PLOTTED: Fri Jul 11 1997 8:03pm FILENAME: X:\A960771\BRT2\EW\REV1\12R1.DWG SCALE: 60



REINFORCEMENT PLAN – BOTTOM MAT (OUTBOARD WIDENING)

(ALL DIMENSIONS MEASURED ALONG L LINE UNLESS OTHERWISE NOTED)

SR 405 JOB NO. 7071 SHEET 13 OF 19

PLOTTED: Fri Jul 11 1997 8:05pm FILENAME: X:\A96077\BR72\EW\REV1\JR1.DWG SCALE: 60

BRIDGE DESIGN ENGR					
SUPERVISOR					
DESIGNED BY	J. CHEN	6/96			
CHECKED BY	C. CORNELL	6/96			
DETAILED BY	T. BRENNAN	6/96			
BRIDGE PROJECTS ENGR					
PRELIM PLAN BY			7/97 ⚠	CONTRACTORS SURVEY DATA- FIT EXISTING	WEW
ARCHITECT/SPECIALIST			DATE	REVISION	BY APPR

REGION NO	STATE	FED AID PROJ NO	SHEET NO	TOTAL SHEETS
10	WASH			
JOB NUMBER 96W035				
CONTRACT NO. 5054				

WARREN E. WILSON — STATE OF WASHINGTON — 20527 — REGISTERED PROFESSIONAL ENGINEER
EXPIRES OCTOBER 8, 1998

BERGER/ABAM ENGINEERS INC.
33301 9TH AVENUE SOUTH
FEDERAL WAY, WASHINGTON 98003-6395
(206)431-2300 FAX:(206)431-2250

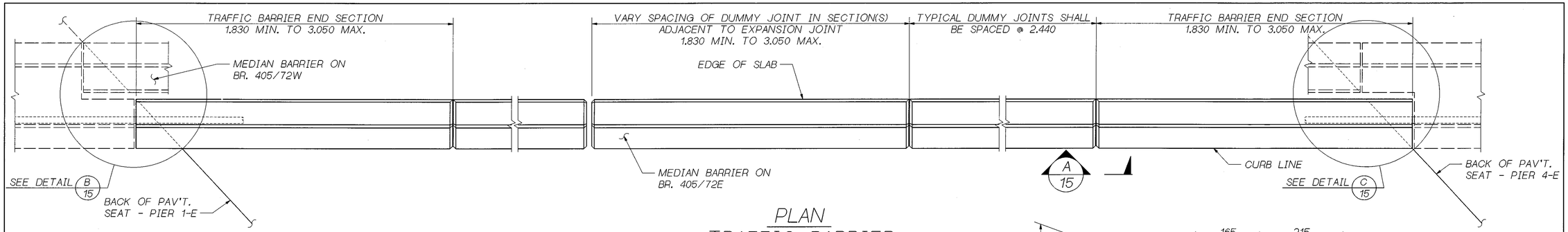
Washington State Department of Transportation

SR 405
BOTHELL TO SWAMP CREEK I/C
HOV LANES – STAGE 1
NORTH CREEK BRIDGE 405/72 E-W

REINF. PLAN – BOT. MAT (OUTBOARD WIDENING)

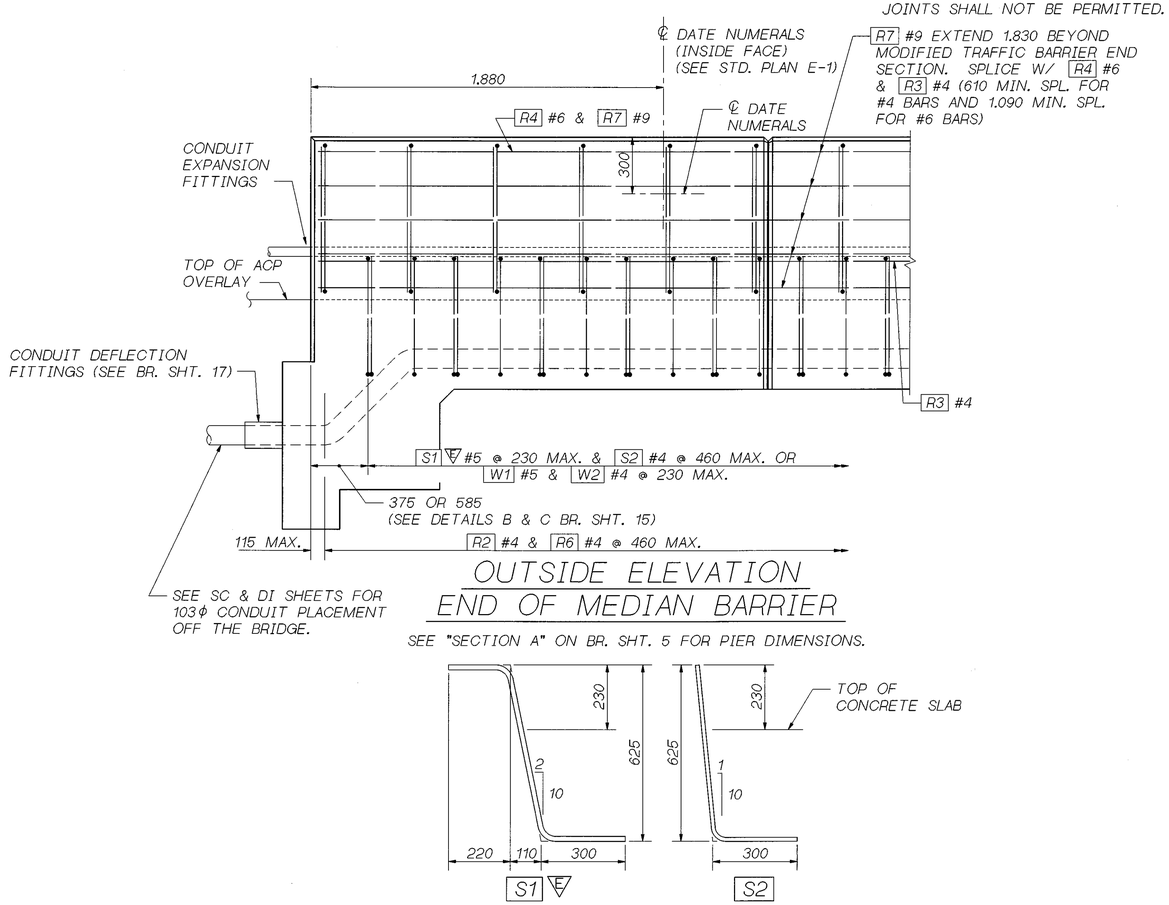
BRIDGE SHEET NO. 13

SHEET 473 OF 663 SHEETS



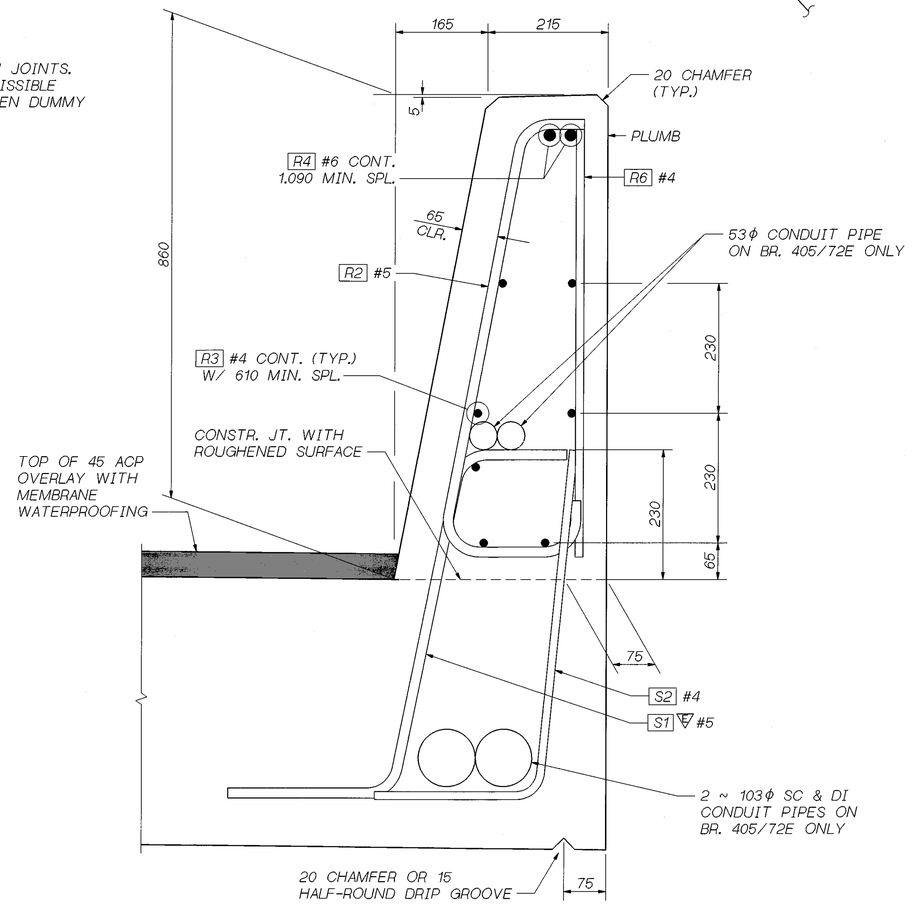
PLAN
TRAFFIC BARRIER

BARRIER CONTINUOUS BETWEEN ROADWAY EXPANSION JOINTS. CONSTRUCTION JOINTS WITH SHEAR KEYS ARE PERMISSIBLE AT DUMMY JOINT LOCATIONS. FORM JOINTS BETWEEN DUMMY JOINTS SHALL NOT BE PERMITTED.



OUTSIDE ELEVATION
END OF MEDIAN BARRIER

SEE "SECTION A" ON BR. SHT. 5 FOR PIER DIMENSIONS.



TYPICAL SECTION - MEDIAN BARRIER

MEDIAN BARRIER FOR BR. 405/72W SHOWN,
MEDIAN BARRIER FOR BR. 405/72E SIMILAR.

Bridge Design Engr.	S405D72ROOT:[000000.FGB]TB_MED_1.FGB;1				REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor					10	WASH.			
Designed By J. CHEN 6/96									
Checked By C. CORNELL 6/96					JOB NUMBER				
Detailed By D.W. PULSE JR. 6/96					96W035				
Bridge Projects Engr.									
Prelim. Plan By									
Architect/Specialist	DATE	REVISION	BY	APP'D	5054				

12-NOV-96

WARREN E. WILSON STATE OF WASHINGTON 20527 REGISTERED PROFESSIONAL ENGINEER
EXPIRES 10/8/98

Washington State Department of Transportation

SR 405
BOTHELL TO SWAMP CREEK I/C
HOV LANES - STAGE 1
NORTH CREEK BRIDGE 405/72 E-W

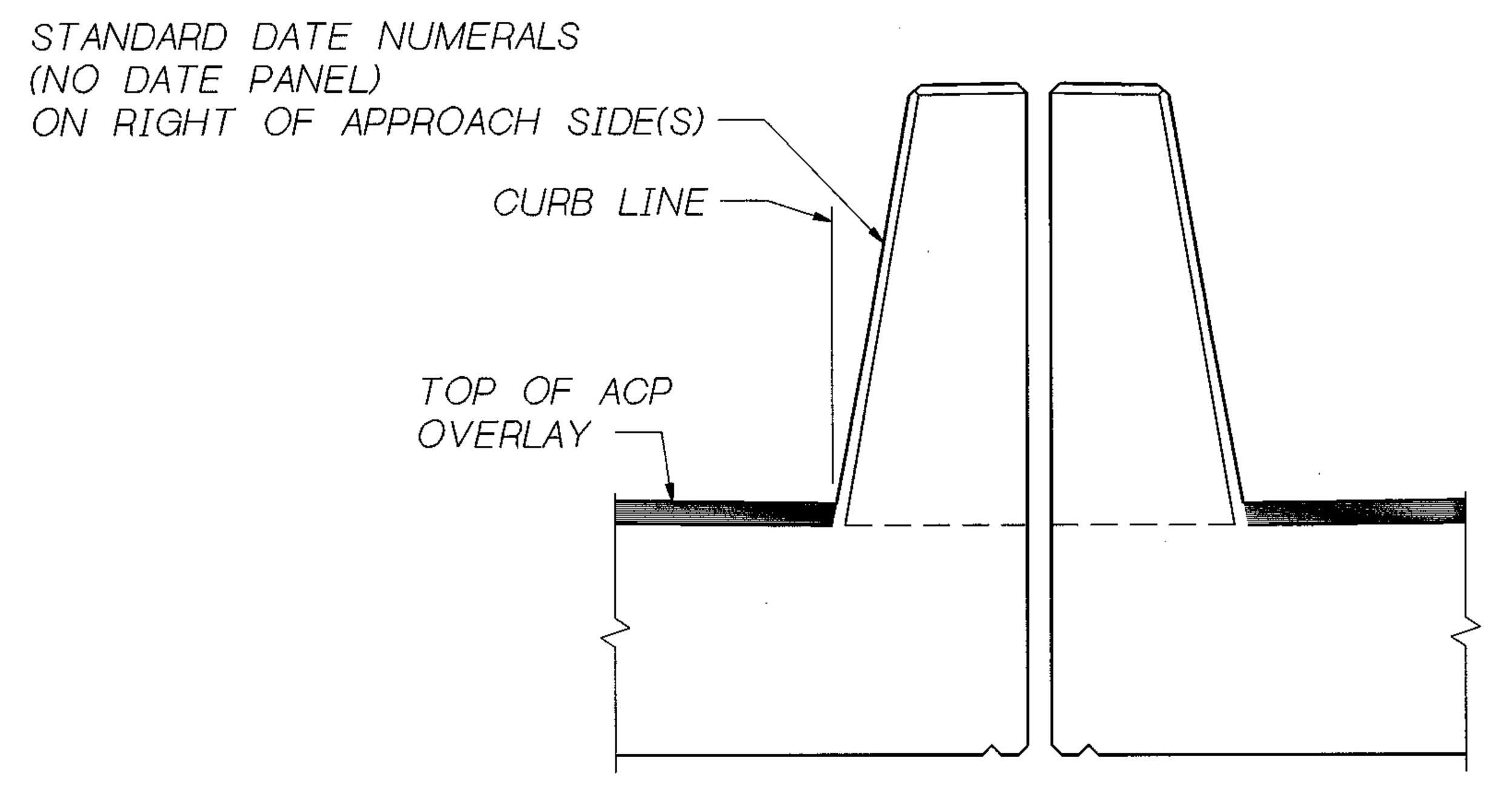
MEDIAN BARRIER 1 OF 2

BRIDGE SHEET NO. 14

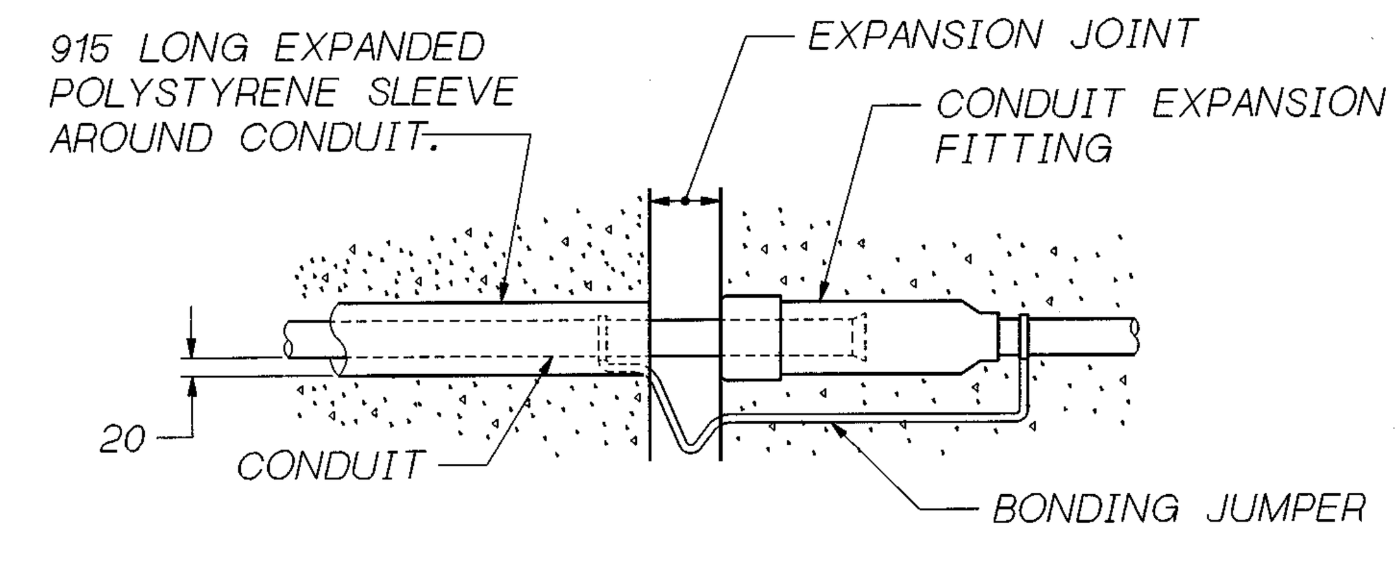
SHEET 474 OF 663 SHEETS

SR 405 JOB NO. 7071 SHEET 14

241/152

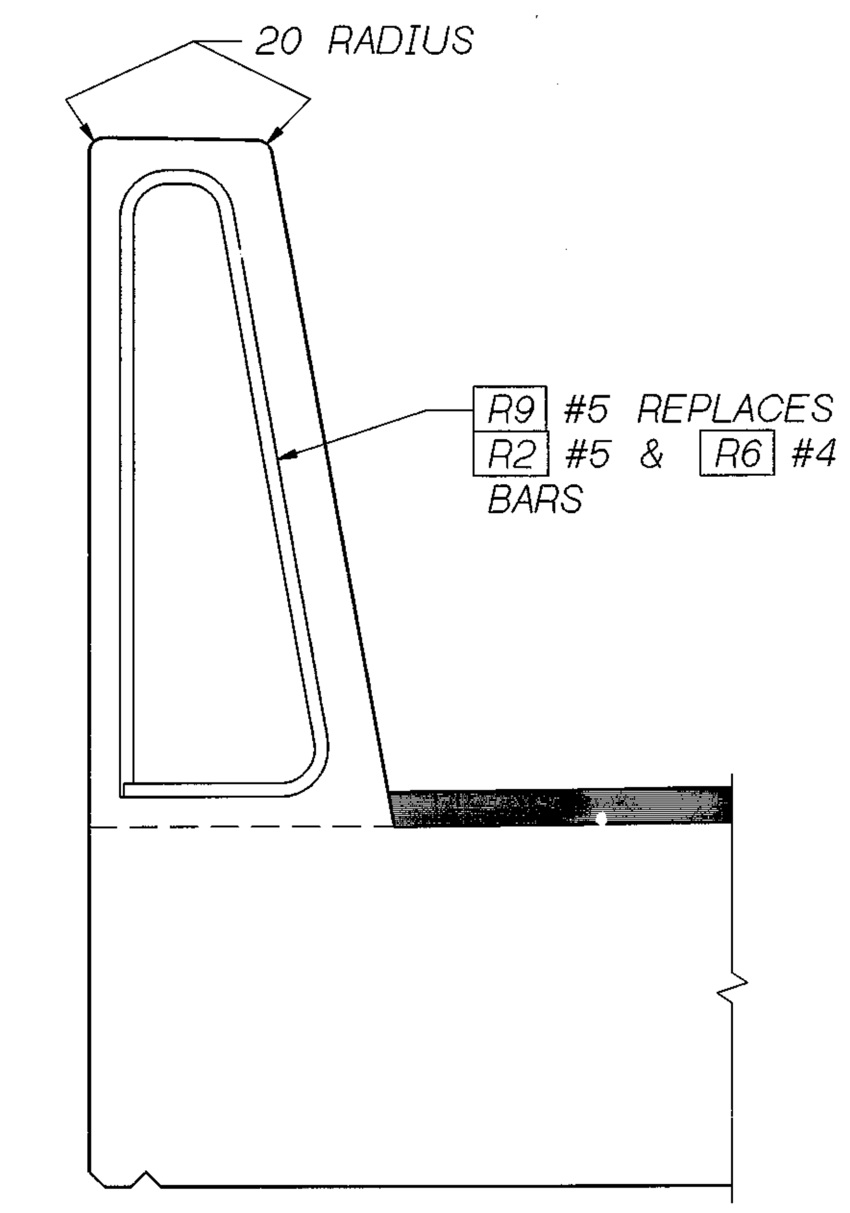


END VIEW



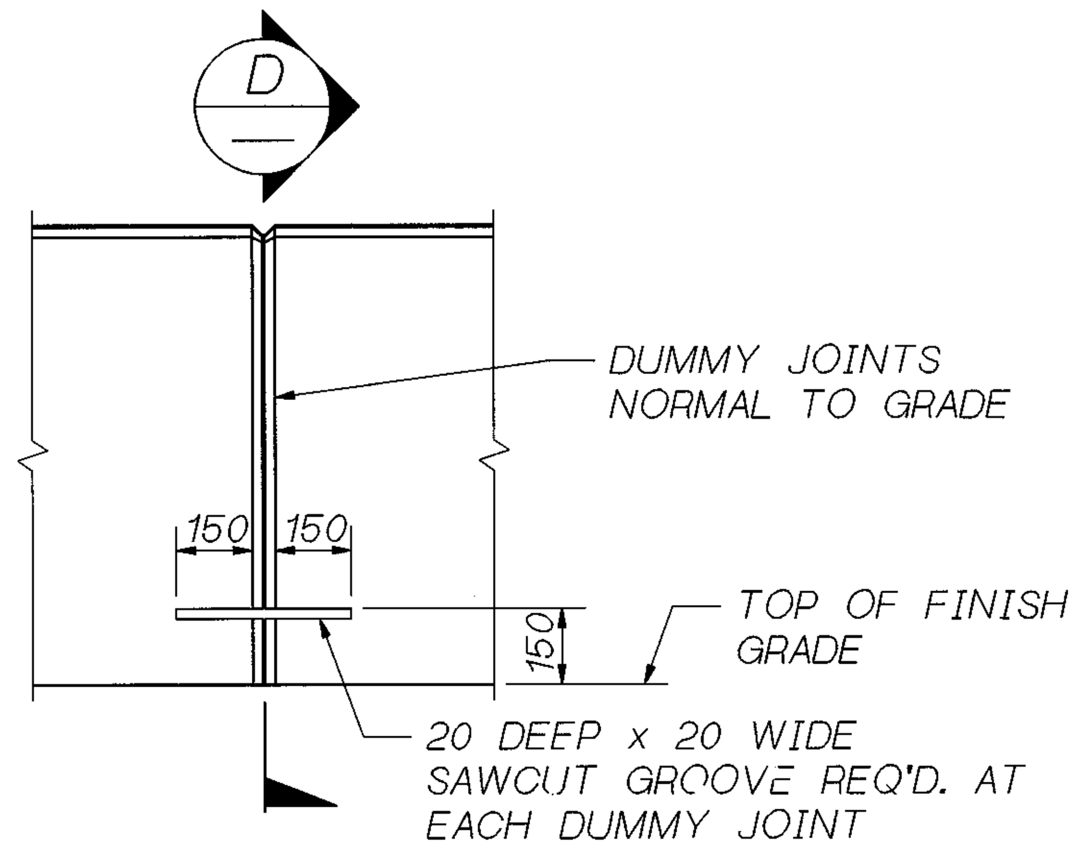
CONDUIT EXPANSION FITTING

TYPE AX CONDUIT FITTING FOR MOVEMENT OF ± 50 MAX.
FOR BRIDGE EXPANSION JOINTS AT PIERS 1-E, 4-E, 1-W & 4-W

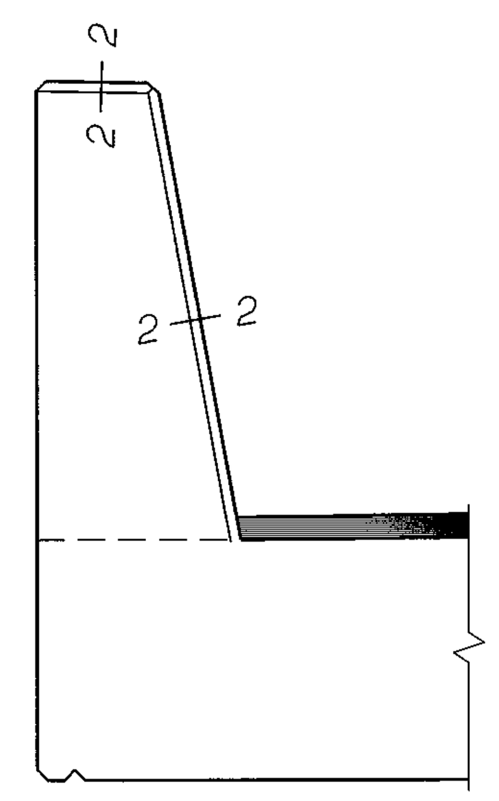


SLIPFORM ALTERNATE

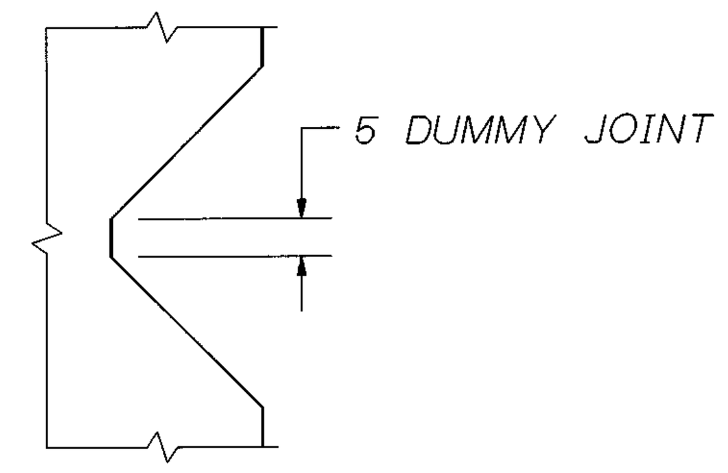
SEE TYPICAL SECTION - TRAFFIC BARRIER FOR ADDITIONAL DETAILS.



VIEW A/14

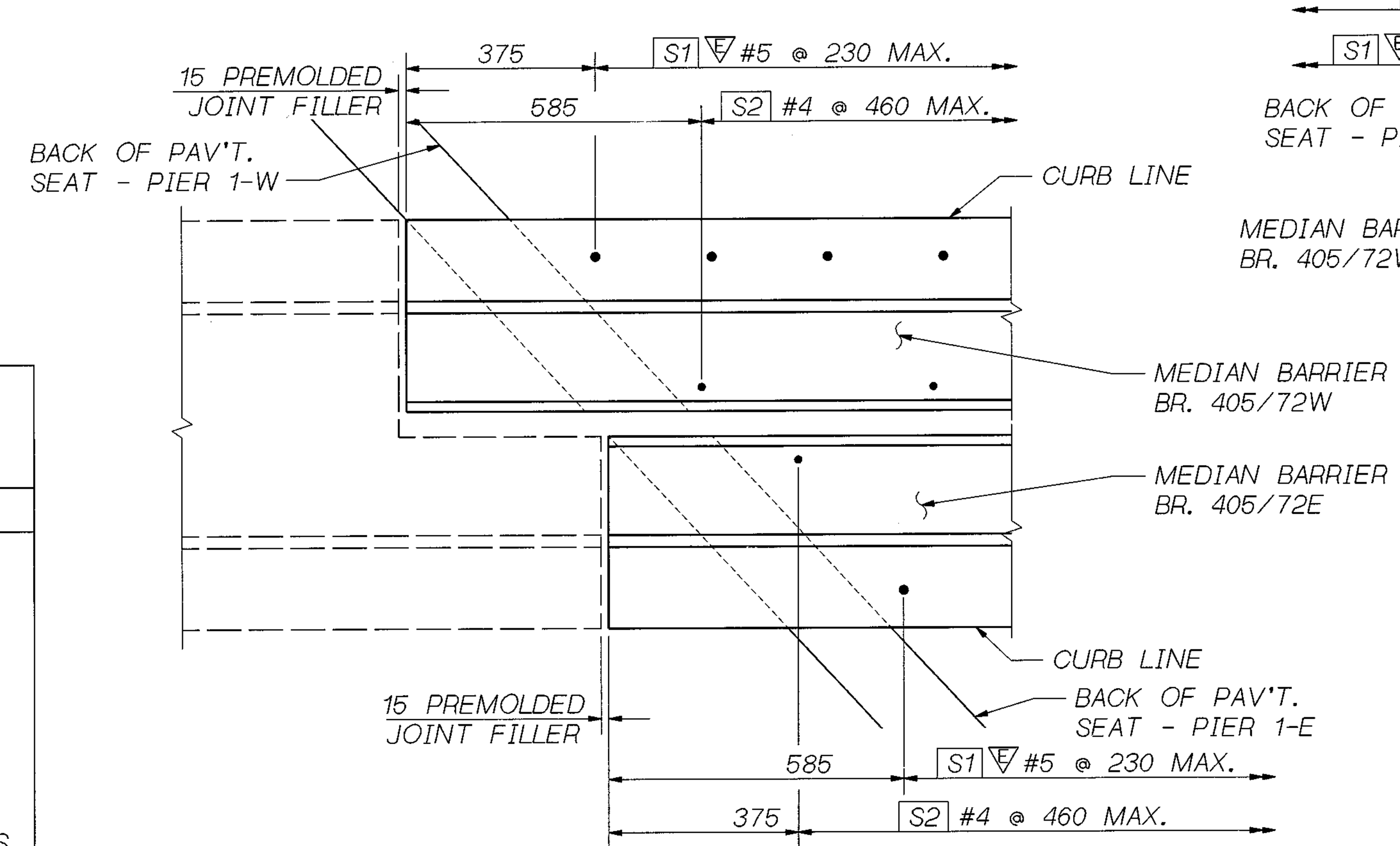


SECTION D

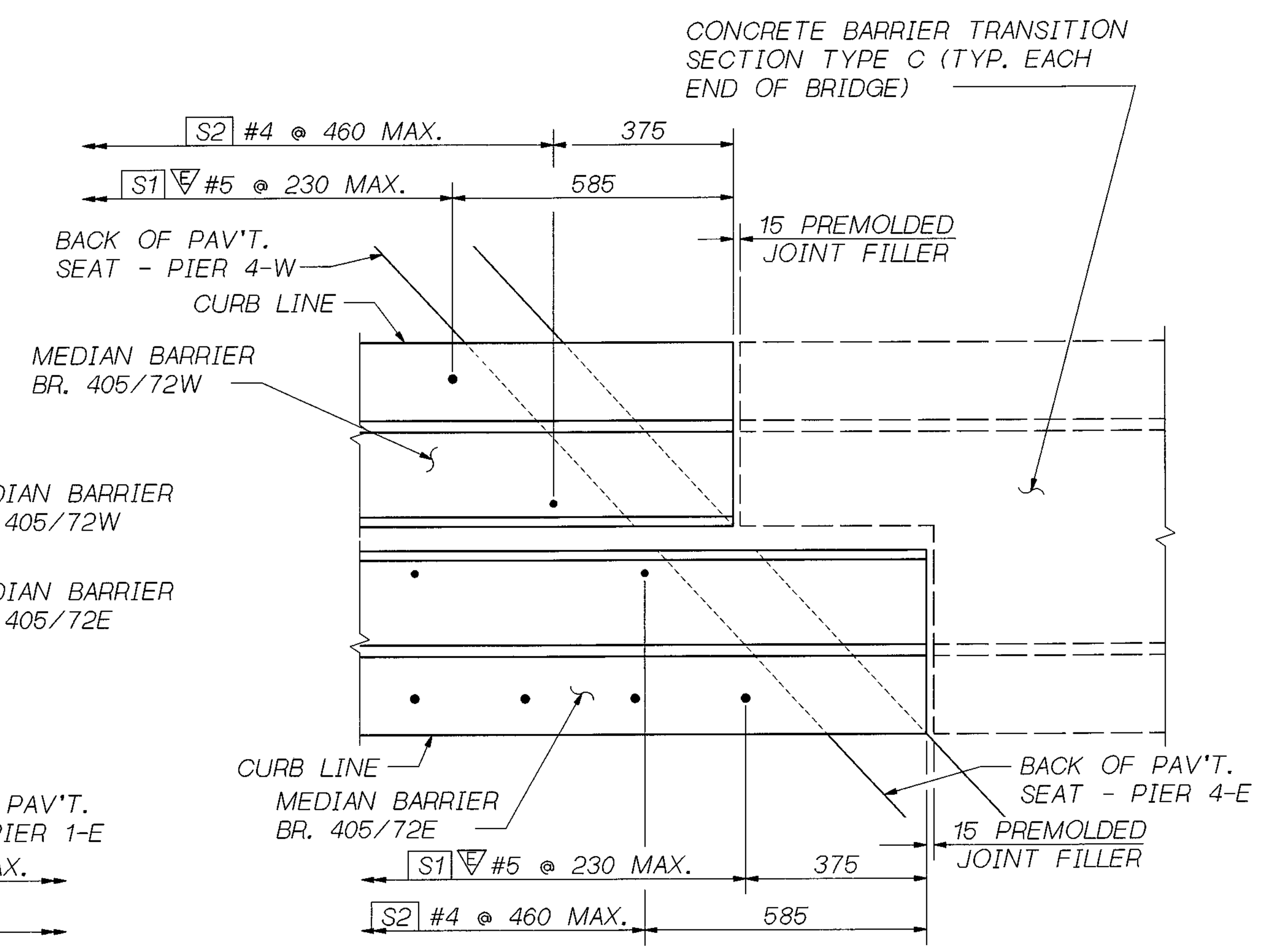


SECTION 2-2

NOTE: CONCRETE SURFACE CONSTRUCTION TOLERANCE OF 5 mm IN 3.000 (MAX.) IS REQ'D. FOR TRAFFIC SIDE OF BARRIER.



DETAIL B/14



DETAIL C/14

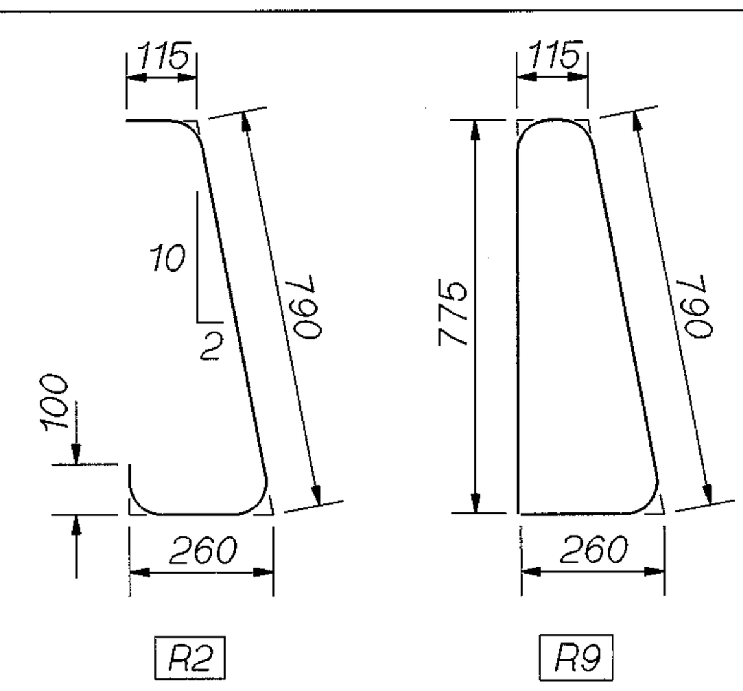
∀ : EPOXY COATED ≠ DIMENSIONS TO POINTS OF INTERSECTION.

TRAFFIC BARRIER BAR LIST

ALL REINFORCING SHALL BE AASHTO M31, GR. 60.

MARK	SIZE	LENGTH	
R2	5	1.265	
R3	4	(A)	STR.
R4	6	(A)	STR.
R6	4	775	STR.
R7	9	4.265	STR.
R9	5	1.940	

BENDING DIAGRAM (ALL DIMENSIONS ARE OUT TO OUT)



(A) DETERMINE FROM PLANS

FOR S1 ∀ & S2 BARS SEE BARLIST.

Bridge Design Engr.	S405D72ROOT:[000000.FGB]TB_MED_2.FGB;1	REGION NO. 10	STATE WASH.	FED. AID PROJ. NO.
Supervisor				
Designed By J. CHEN				
Checked By C. CORNELL		JOB NUMBER 96W035		
Detailed By				
Bridge Projects Engr.				
Prelim. Plan By				
Architect/Specialist	DATE	REVISION	BY	APP'D

5054

12-NOV-96

SR ___ JOB NO. ___ SHEET 15

WARREN E. WILSON, STATE OF WASHINGTON, 20527, REGISTERED PROFESSIONAL ENGINEER, EXPIRES 10/6/98

Washington State Department of Transportation

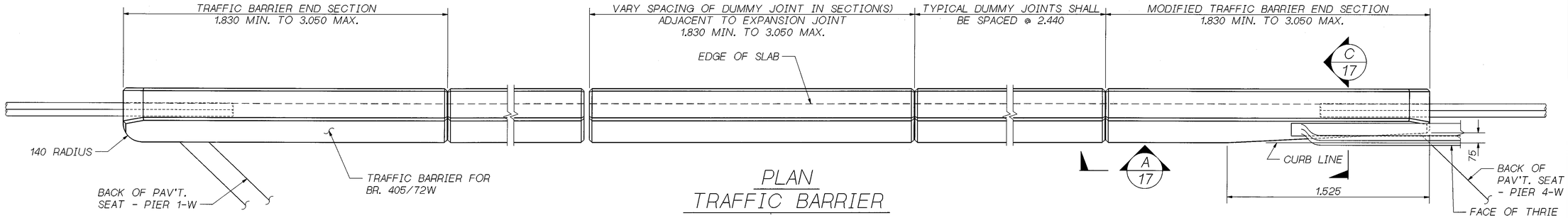
SR 405
BOTHELL TO SWAMP CREEK I/C
HOV LANES - STAGE 1
NORTH CREEK BRIDGE 405/72 E-W

MEDIAN BARRIER 2 OF 2

BRIDGE SHEET NO. 15

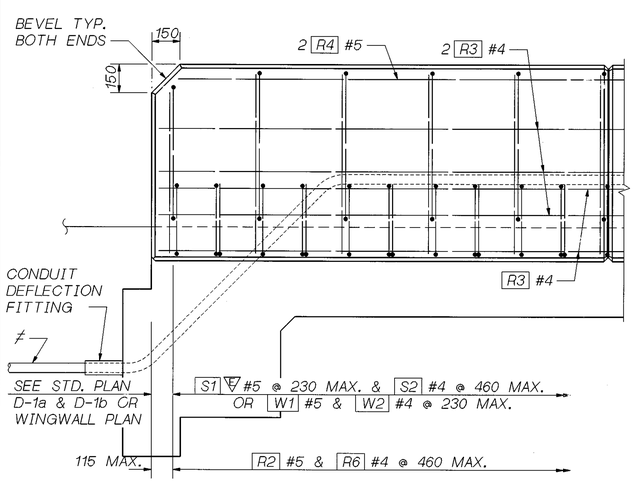
SHEET 475 OF 663 SHEETS

241/151



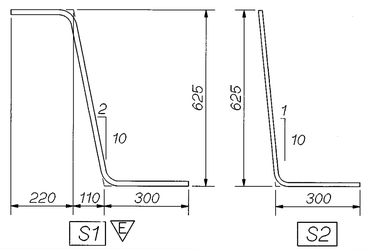
PLAN
TRAFFIC BARRIER

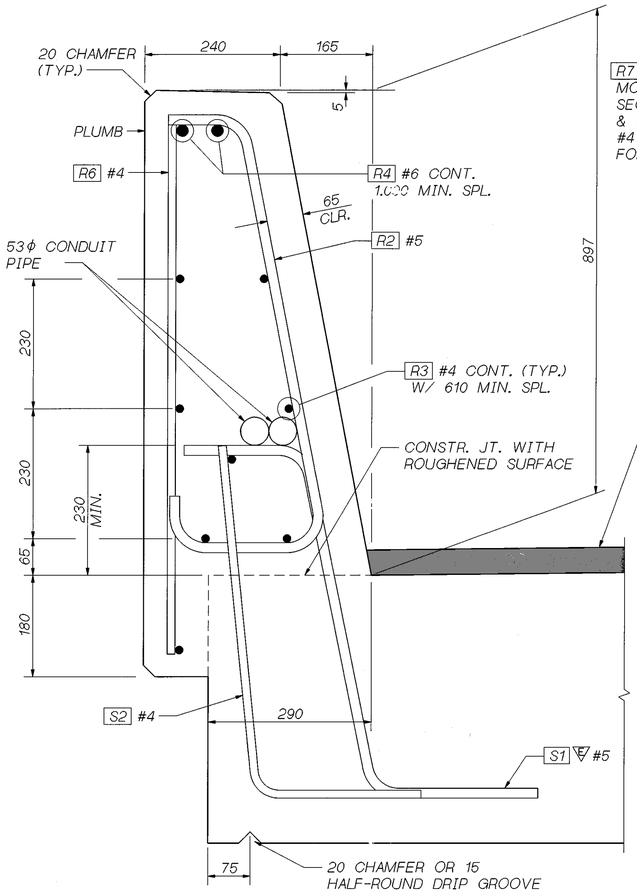
BARRIER CONTINUOUS BETWEEN ROADWAY EXPANSION JOINTS. CONSTRUCTION JOINTS WITH SHEAR KEYS ARE PERMISSIBLE AT DUMMY JOINT LOCATIONS. FORM JOINTS BETWEEN DUMMY JOINTS SHALL NOT BE PERMITTED.



OUTSIDE ELEVATION
TRAFFIC BARRIER

AT SW CORNER OF BR. 405/72W

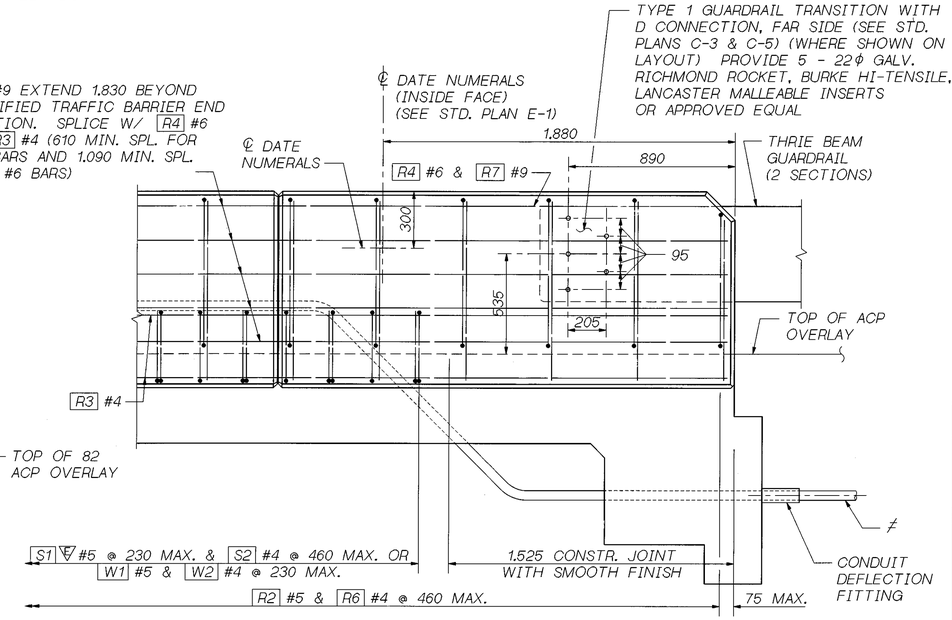




TYPICAL SECTION - TRAFFIC BARRIER

R7 #9 EXTEND 1.830 BEYOND MODIFIED TRAFFIC BARRIER END SECTION. SPLICE W/ R4 #6 & R3 #4 (610 MIN. SPL. FOR #4 BARS AND 1.090 MIN. SPL. FOR #6 BARS)

TYPE 1 GUARDRAIL TRANSITION WITH D CONNECTION, FAR SIDE (SEE STD. PLANS C-3 & C-5) (WHERE SHOWN ON LAYOUT) PROVIDE 5 - 22φ GALV. RICHMOND ROCKET, BURKE HI-TENSILE, LANCASTER MALLEABLE INSERTS OR APPROVED EQUAL



OUTSIDE ELEVATION
END OF MODIFIED TRAFFIC BARRIER

AT NW CORNER OF BR. 405/72W

≠ TERMINATE EACH CONDUIT PIPE AT SEPARATE TYPE 1 JUNCTION BOX OFF END OF BRIDGE.

SR 405 JOB NO. 7071 SHEET 16

Bridge Design Engr.	S405D72ROOT:[000000.FGB]MSS_1.FGB;1			REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
Supervisor				10	WASH.				
Designed By J. CHEN 6/96				JOB NUMBER					
Checked By C. CORNELL 6/96				96W035					
Detailed By D.W. PULSE JR. 6/96				5054					
Bridge Projects Engr.									
Prelim. Plan By									
Architect/Specialist	DATE	REVISION	BY	APP'D					

12-NOV-96

WARREN E. WILSON — STATE OF WASHINGTON — 20527 — REGISTERED PROFESSIONAL ENGINEER
EXPIRES: 10/8/98

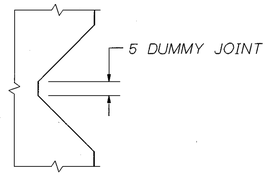
Washington State Department of Transportation

SR 405
BOTHELL TO SWAMP CREEK I/C
HOV LANES - STAGE 1
NORTH CREEK BRIDGE 405/72 E-W

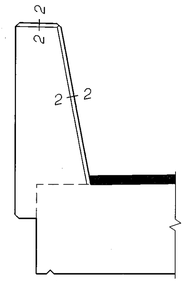
TRAFFIC BARRIER 1 OF 2

BRIDGE SHEET NO. 16
SHEET 476 OF 663 SHEETS

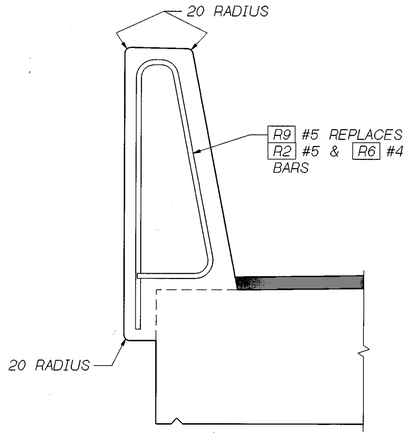
24"/150



SECTION 2-2

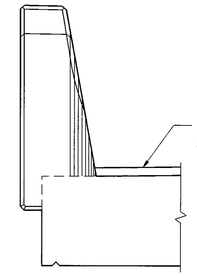


SECTION D

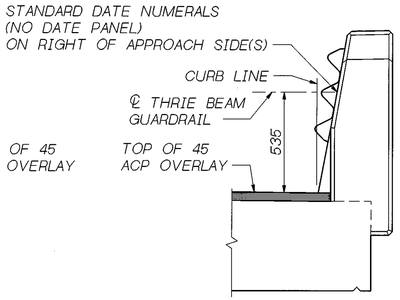


SLIPFORM ALTERNATE

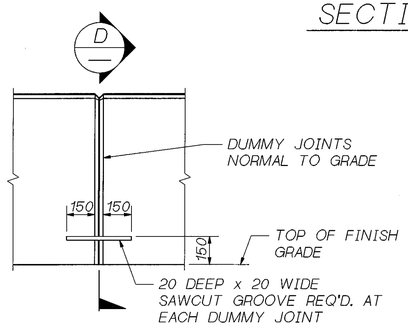
SEE TYPICAL SECTION - TRAFFIC BARRIER FOR ADDITIONAL DETAILS.



END VIEW

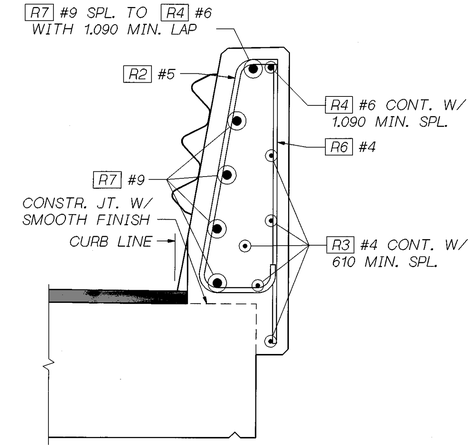


END VIEW
WITH D CONNECTION



VIEW A 16

NOTE: CONCRETE SURFACE CONSTRUCTION TOLERANCE OF 5 IN 3.000 (MAX.) IS REQ'D. FOR TRAFFIC SIDE OF BARRIER.



SECTION C BRIDGE 16

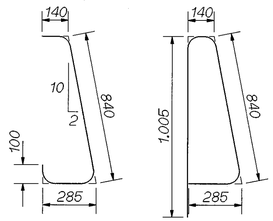
DETAIL FOR BRIDGE
FOR DETAILS NOT SHOWN SEE "OUTSIDE ELEVATION" AND "TYPICAL SECTION"

▽ : EPOXY COATED ≠ DIMENSIONS TO POINTS OF INTERSECTION.

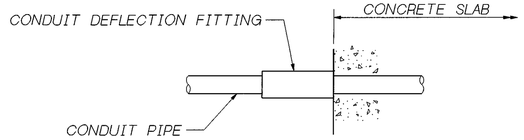
TRAFFIC BARRIER BAR LIST

ALL REINFORCING SHALL BE AASHTO M31, GR. 60.

MARK	SIZE	LENGTH	BENDING DIAGRAM (ALL DIMENSIONS ARE OUT TO OUT)
R2	5	1.365	
R3	4	(A)	STR.
R4	6	(A)	STR.
R6	4	1.005	STR.
R7	9	4.265	STR.
R9	5	2.270	



(A) DETERMINE FROM PLANS FOR W1 & W2 BARS SEE WINGWALL OR RETAINING WALL PLANS. FOR S1 ▽ & S2 BARS SEE BARLIST.



CONDUIT DEFLECTION FITTING

TYPE DX CONDUIT FITTING
FOR DEFLECTION OF 30° AND 20 MOVEMENT
PLACE AT CONDUIT PIPE EXIT FROM STRUCTURE.

SR 405 JOB NO. 7071 SHEET 17

Bridge Design Engr.	S405D72R00T:1000000.FGB1MSS_2.FGB;1				REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor					10	WASH.			
Designed By J. CHEN 6/96					JOB NUMBER 96W035				
Checked By C. CORNELL 6/96									
Detailed By D.W. PULSE JR. 6/96					5054				
Bridge Projects Engr.									
Prelim. Plan By									
Architect/Specialist	DATE	REVISION	BY	AFP'D					

12-NOV-96

STATE OF WASHINGTON 20527 REGISTERED PROFESSIONAL ENGINEER — EXPIRES: 10/8/98

Washington State Department of Transportation

SR 405
BOTHELL TO SWAMP CREEK I/C
HOV LANES - STAGE 1
NORTH CREEK BRIDGE 405/72 E-W

TRAFFIC BARRIER 2 OF 2

BRIDGE SHEET NO. 17

SHEET 477 OF 663 SHEETS

241/149

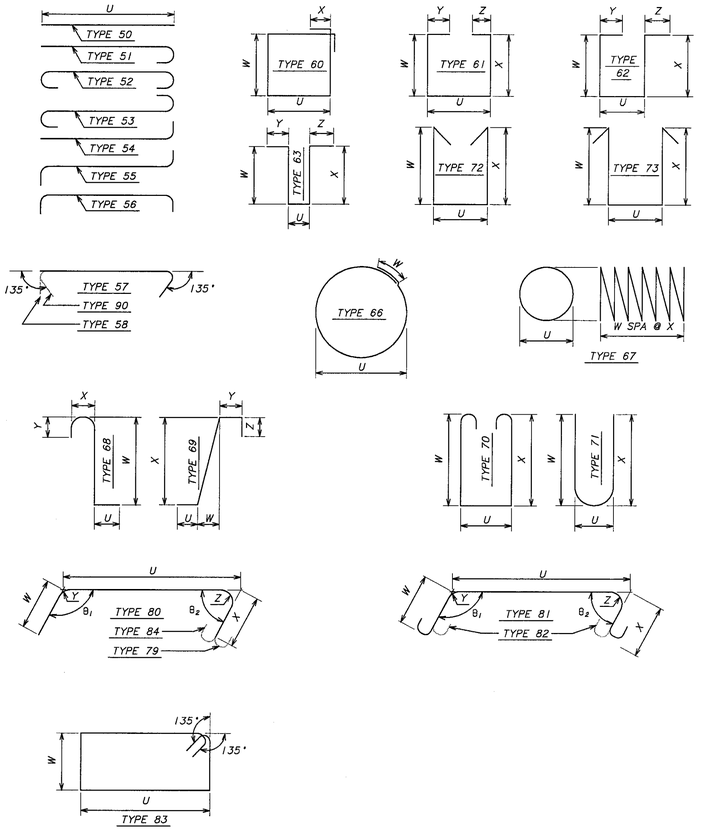
S=BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
LUMP SUM QUANTITY
T OR S=TIE OR STIRRUP RADIUS
E=EARTHQUAKE TAIL W/ TIE OR STIRRUP RADIUS
E=BAR IS EPOXY COATED
V=BAR DIMENSIONS VARY BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE

MARK NO.	LOCATION	SIZE	NO. REQ'D	BEND TYPE	BEND RADIUS	LUMP SUM	SUBSTRUCT	EPOXY COATED	VARIES	NO. EACH	DIMENSIONS U	W	X	Y	Z	θ1 DEG	θ2 DEG	LENGTH (EACH) M	TOTAL WEIGHT KG
	ABUT. - MEDIAN WIDENING																		
400	CAP BEAM - TOP	6	16	54							6.040							6.294	225
401	CAP BEAM - BOTTOM	6	16	54							6.040							6.294	225
402	CAP BEAM - INTERMEDIATE	5	8	50							6.040							6.040	75
403	CAP BEAM - INTERMEDIATE	4	8	50							6.040							6.040	48
406	CAP BEAM - STIRRUP	4	112	60	S						0.825	0.610						3.200	356
407	CAP BEAM - STIRRUP	4	112	60	S						0.600	0.685						2.900	323
410	CAP BEAM - BOTTOM	6	8	50							6.040							6.040	108
411	CAP BEAM - STIRRUP	4	112	71	T						0.225	0.305	0.305					0.760	85
	INTER. PIERS - MED. WIDENING																		
420	CAP BEAM - TOP	7	16	54							6.040							6.345	309
421	CAP BEAM - BOTTOM	7	16	54							6.040							6.345	309
422	CAP BEAM - INTER.	5	16	50							6.040							6.040	150
423	CAP BEAM - STIRRUP	4	104	60	S						0.670	0.630						2.930	927
	OUT. WIDENING (PIER 1-W)																		
450	CAP BEAM - TOP	6	4	54							8.145							8.399	75
451	CAP BEAM - BOT.	6	4	54							8.145							8.399	75
452	CAP BEAM - INTER.	5	2	50							8.145							8.145	25
453	CAP BEAM - INTER.	6	4	50							8.145							8.145	73
456	CAP BEAM - STIRRUP	4	18	60	S						0.825	0.610						3.200	57
457	CAP BEAM - STIRRUP	4	18	60	S						0.600	0.685						2.900	52
458	CAP BEAM - STIRRUP	4	18	71	T						0.225	0.305	0.305					0.760	14
	OUT. WIDENING (PIER 2-W)																		
460	CAP BEAM - TOP	7	4	54							7.880							8.185	100
461	CAP BEAM - BOTTOM	7	4	54							7.880							8.185	100
462	CAP BEAM - INTER.	5	4	50							7.880							7.880	49
463	CAP BEAM - STIRRUP	4	26	60	S						0.670	0.630						2.930	232
	OUT. WIDENING (PIER 3-W)																		
470	CAP BEAM - TOP	7	4	54							7.520							7.825	95
471	CAP BEAM - BOTTOM	7	4	54							7.520							7.825	95
472	CAP BEAM - INTER.	5	4	50							7.520							7.520	47
473	CAP BEAM - STIRRUP	4	26	60	S						0.670	0.630						2.930	232
	OUT. WIDENING (PIER 4-W)																		
480	CAP BEAM - TOP	6	4	54							7.235							7.489	67
481	CAP BEAM - BOT.	6	4	54							7.235							7.489	67
482	CAP BEAM - INTER.	5	2	50							7.235							7.235	22
483	CAP BEAM - INTER.	6	4	50							7.235							7.235	65
486	CAP BEAM - STIRRUP	4	15	60	S						0.825	0.610						3.200	48
487	CAP BEAM - STIRRUP	4	15	60	S						0.600	0.685						2.900	43
488	CAP BEAM - STIRRUP	4	15	71	T						0.225	0.305	0.305					0.760	11
	DOWELS - CLOSURE POURS																		
490	CAP BEAM - DOWELS	6	48	51							0.255							0.458	34
491	CAP BEAM - DOWELS	5	48	51							0.230							0.408	30
492	CAP BEAM - DOWELS	7	48	51							0.305							0.559	82

S=BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
LUMP SUM QUANTITY
T OR S=TIE OR STIRRUP RADIUS
E=EARTHQUAKE TAIL W/ TIE OR STIRRUP RADIUS
E=BAR IS EPOXY COATED
V=BAR DIMENSIONS VARY BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE

MARK NO.	LOCATION	SIZE	NO. REQ'D	BEND TYPE	BEND RADIUS	LUMP SUM	SUBSTRUCT	EPOXY COATED	VARIES	NO. EACH	DIMENSIONS U	W	X	Y	Z	θ1 DEG	θ2 DEG	LENGTH (EACH) M	TOTAL WEIGHT KG
	TOP SLAB - MEDIAN WIDENING																		
800	TOP TRANSVERSE	5	30	51				E	V	2	0.555 4.385							0.733 4.563	123
801	TOP TRANSVERSE	5	30	54				E	V	2	0.555 4.385							0.771 4.601	125
802	TOP TRANSVERSE	5	240	84				E			4.395	0.255	0.000			90	0	4.789	1784
810	TOP LONGITUDINAL	10	9	54				E			19.145							19.615	1131
811	TOP LONGITUDINAL	10	9	54				E			18.250							18.720	1079
812	TOP LONGITUDINAL	10	9	54				E			15.250							15.720	906
813	TOP LONGINTUDINAL	10	9	54				E			16.145							16.615	958
814	TOP LONGITUDINAL	10	36	50				E			8.540							8.540	1969
815	TOP LONGITUDINAL	10	32	50				E			6.100							6.100	1250
816	TOP LONGITUDINAL	10	18	50				E			8.720							8.720	1005
817	TOP LONGITUDINAL	10	9	54				E			15.575							16.045	925
818	TOP LONGITUDINAL	10	9	54				E			15.845							16.315	940
819	TOP LONGITUDINAL	10	9	54				E			18.575							19.045	1098
820	TOP LONGITUDINAL	10	9	54				E			18.845							19.315	1113
	BOT. SLAB - MEDIAN WIDENING																		
830	BOT. TRANSVERSE	5	30	50					V	2	0.555 4.385							0.555 4.385	115
831	BOT. TRANSVERSE	5	30	54					V	2	0.555 4.385							0.771 4.601	125
832	BOT. TRANSVERSE	5	240	54							4.395							4.611	1718
835	BOT. LONGITUDINAL	10	12	50							15.080							15.080	1159
836	BOT. LONGITUDINAL	10	10	50							10.360							10.360	663
837	BOT. LONGITUDINAL	10	12	50							11.880							11.880	913
838	BOT. LONGITUDINAL	10	20	50							7.015							7.015	898
839	BOT. LONGITUDINAL	10	6	50							9.900							9.900	380
840	BOT. LONGITUDINAL	10	6	50							13.900							13.900	534
841	BOT. LONGITUDINAL	10	6	50							9.265							9.265	356
842	BOT. LONGITUDINAL	10	6	50							13.005							13.005	500
843	BOT. LONGITUDINAL	10	6	50							9.005							9.005	346
844	BOT. LONGITUDINAL	10	6	50							8.815							8.815	339
845	BOT. LONGITUDINAL	10	12	50							15.265							15.265	1173
846	BOT. LONGITUDINAL	10	6	50							13.235							13.235	509
847	BOT. LONGITUDINAL	10	6	50							9.235							9.235	355
848	BOT. LONGITUDINAL	10	6	50							8.930							8.930	343
849	BOT. LONGITUDINAL	10	6	50							13.505							13.505	519
850	BOT. LONGITUDINAL	10	6	50							9.505							9.505	365
851	BOT. LONGITUDINAL	10	6	50							9.065							9.065	348

BENDING DIAGRAMS



NOTES:
1. ALL REINFORCING BARS ON THIS SHEET SHALL BE AASHTO M31 GRADE 60 UNLESS SHOWN OTHERWISE.
2. REINFORCING FOR MEDIAN & TRAFFIC BARRIER IS NOT SHOWN IN THIS BAR LIST EXCEPT FOR BARS S1 & S2. SEE MEDIAN & TRAFFIC BARRIER, BRIDGE SHEETS 14-17.

PLOTTED: Tue Nov 12 1996 11:34am FILENAME: X:\A9607\BR72\EW\18.DWG SCALE: 1
SR 405 JOB NO. 7071 SHEET 18 OF 19

BRIDGE DESIGN ENGR			
SUPERVISOR			
DESIGNED BY	J. CHEN	6/96	
CHECKED BY	C. CORNELL	6/96	
DETAILED BY	T. BRENNAN	6/96	
BRIDGE PROJECTS ENGR			
PRELIM PLAN BY			
ARCHITECT/SPECIALIST			

DATE	REVISION	BY	APPR

REGION NO	STATE	FED AID PROJ NO	SHEET NO	TOTAL SHEETS
1	WASH			
JOB NUMBER 96W035				
CONTRACT NO. 5054				

WARREN E. WILSON STATE OF WASHINGTON 20527 REGISTERED PROFESSIONAL ENGINEER
EXPIRES 10/8/98

BERGER/ABAM ENGINEERS INC.
33301 9TH AVENUE SOUTH
FEDERAL WAY, WASHINGTON 98003-6395
(206)431-2300 FAX:(206)431-2250

Washington State Department of Transportation

SR 405
BOTHELL TO SWAMP CREEK I/C
HOV LANES - STAGE 1
NORTH CREEK BRIDGE 405/72 E-W

BAR LIST

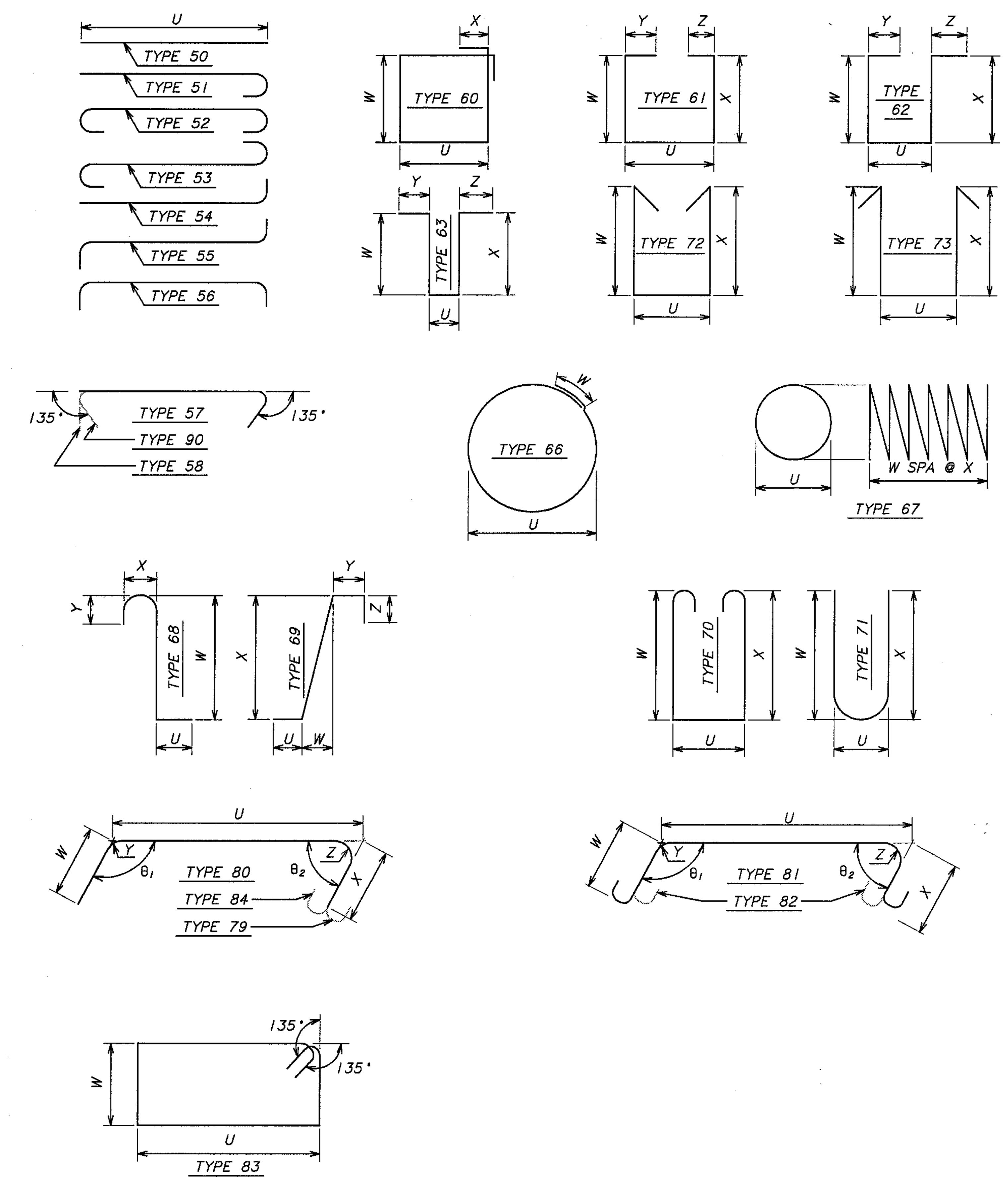
BRIDGE SHEET NO. 18
SHEET 478 OF 663 SHEETS

241/148

S=BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
LUMP SUM QUANTITY
T OR S=TIE OR STIRRUP RADIUS
E=EARTHQUAKE TAIL W/ TIE OR STIRRUP RADIUS
E=BAR IS EPOXY COATED
V=BAR DIMENSIONS VARY BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE

MARK NO.	LOCATION	SIZE	NO. REQ'D	BEND TYPE	BEND RADIUS	LUMP SUM	SUBSTRUCT	EPOXY COATED	VARIES	NO. EACH	U	W	X	Y	Z	θ1	θ2	LENGTH (EACH)	TOTAL WEIGHT
											M	M	M	M	M	DEG	DEG	M	KG
	TOP SLAB ~ OUTBOARD WIDENING																		
860	TOP TRANSVERSE	5	19	51				E	V	1	0.800							0.978	
											5.810							5.988	103
861	TOP TRANSVERSE	5	17	54				E	V	1	0.580							0.796	
											5.115							5.331	81
862	TOP TRANSVERSE	5	113	84				E	V	1	5.455	0.255	0.000			90	0	5.849	
											6.050	0.255	0.000			90	0	6.444	1078
865	TOP LONGITUDINAL	10	12	54				E	V	1	16.640							17.110	
											16.885							17.355	1324
866	TOP LONGITUDINAL	10	12	54				E	V	1	17.495							17.965	
											17.755							18.225	1391
867	TOP LONGITUDINAL	10	12	50				E	V	1	15.275							15.275	
											15.955							15.955	1200
868	TOP LONGITUDINAL	10	12	54				E	V	1	5.675							6.145	
											5.775							6.245	476
869	TOP LONGITUDINAL	10	12	50				E	V	1	15.735							15.735	
											15.965							15.965	1218
870	TOP LONGITUDINAL	10	12	54				E	V	1	6.545							7.015	
											6.660							7.130	543
871	TOP LONGITUDINAL	10	24	50				E	V	2	8.245							8.245	
											8.390							8.390	1278
872	TOP LONGITUDINAL	10	22	50				E	V	2	5.895							5.895	
											5.990							5.990	837
	BOT. SLAB ~ OUT. WIDENING																		
880	BOT. TRANSVERSE	5	19	50					V	1	0.800							0.800	
											5.810							5.810	97
881	BOT. TRANSVERSE	5	17	54					V	1	0.580							0.796	
											5.115							5.331	81
882	BOT. TRANSVERSE	5	113	54					V	1	5.455							5.671	
											6.050							6.266	1047
885	BOT. LONGITUDINAL	10	9	50					V	1	8.455							8.455	
											8.610							8.610	492
886	BOT. LONGITUDINAL	10	8	50					V	1	12.905							12.905	
											13.095							13.095	666
887	BOT. LONGITUDINAL	10	9	50					V	1	14.445							14.445	
											14.680							14.680	839
888	BOT. LONGITUDINAL	10	8	50					V	1	14.885							14.885	
											15.105							15.105	768
889	BOT. LONGITUDINAL	10	9	50					V	1	14.050							14.050	
											14.470							14.470	822
890	BOT. LONGITUDINAL	10	8	50					V	1	8.895							8.895	
											9.040							9.040	459
891	BOT. LONGITUDINAL	10	15	50					V	1	10.010							10.010	
											10.175							10.175	969
892	BOT. LONGITUDINAL	10	30	50					V	2	7.510							7.510	
											7.635							7.635	1455
	MISCELLANEOUS BARS																		
900	LONGITUDINAL EDGE BEAMS	10	54	50							12.500							12.500	4323
901	SLAB STIRRUP	4	1116	70	S						0.305	0.305	0.305					1.220	922
902	TOP SLAB DOWELS	5	400	54				E			0.460							0.676	420
903	BOT. SLAB DOWELS	5	400	54							0.430							0.646	401
	TRAFFIC BARRIER																		
S1	BARRIER	5	452	90				E			0.625	0.300	0.220			11		1.077	756
S2	BARRIER	4	230	91							0.625	0.300				6		0.888	203

BENDING DIAGRAMS



NOTES:
1. ALL REINFORCING BARS ON THIS SHEET SHALL BE AASHTO M31 GRADE 60 UNLESS SHOWN OTHERWISE.
2. REINFORCING FOR MEDIAN & TRAFFIC BARRIER IS NOT SHOWN IN THIS BAR LIST EXCEPT FOR BARS S1 & S2. SEE MEDIAN & TRAFFIC BARRIER, BRIDGE SHEETS 14-17.
3. FOR BEND TYPE 90 & 91 SEE BRIDGE SHEET 14.

PLOTTED: Tue Nov 12 1996 11:35am FILENAME: X:\A96077\BR72\EW\19.DWG SCALE: 1
SR 405 JOB NO. 7071 SHEET 19 OF 19

BRIDGE DESIGN ENGR			
SUPERVISOR			
DESIGNED BY	J. CHEN	6/96	
CHECKED BY	C. CORNELL	6/96	
DETAILED BY	T. BRENNAN	6/96	
BRIDGE PROJECTS ENGR			
PRELIM PLAN BY			
ARCHITECT/SPECIALIST			

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BAR LIST

BRIDGE SHEET NO. 19
SHEET 479 OF 663 SHEETS

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