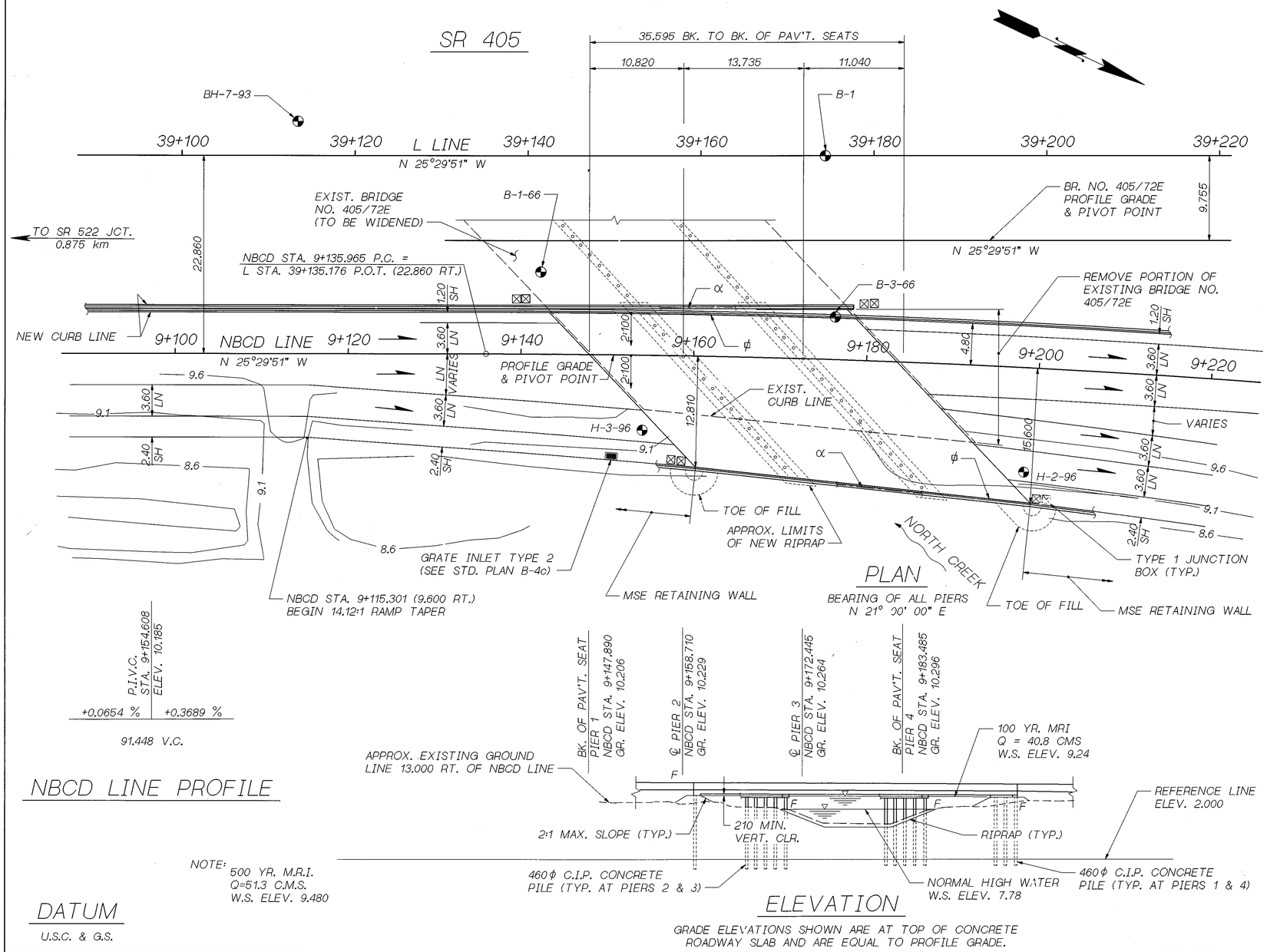
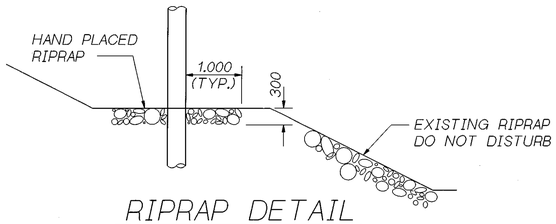
CURVE DATA					
P.I. STATION	Δ	RADIUS	TANGENT	LENGTH	BK. TANGENT BRG.
NBCD 9+334.525	18°30'00" RT.	1219.202	198.560	393.663	N 25°29'51" W

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



PLAN

BEARING OF ALL PIERS
N 21° 00' 00" E



RIPRAP DETAIL

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

METRIC LEGEND

126.175 DENOTES METERS
175 DENOTES MILLIMETERS

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
- ℄ C.I.P. CONC. SINGLE SLOPE BARRIER FOR BRIDGE ONLY
- α 2 ~ 53℄ CONDUIT PIPES IN CONCRETE BARRIER

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

NBCD LINE PROFILE

NOTE: 500 YR. M.R.I. Q=51.3 C.M.S. W.S. ELEV. 9.480

ELEVATION

GRADE ELEVATIONS SHOWN ARE AT TOP OF CONCRETE ROADWAY SLAB AND ARE EQUAL TO PROFILE GRADE.

DATUM

U.S.C. & G.S.

Bridge Design Engr. C. C. RUTH	4/96	NBCDROOT:[000000.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 K. HINKLEY	6/96									
Checked By C. CORNELL	6/96					JOB NUMBER				
Detailed By L. ANDREOTTI, A. CHU	3/96					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 — 20521 — 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 NBCD

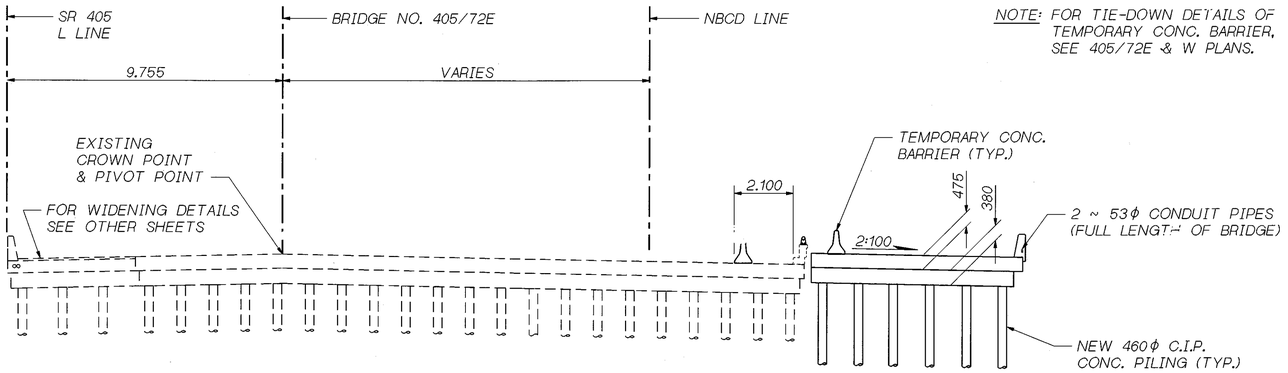
LAYOUT

BRIDGE SHEET NO. 1
SHEET 480 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 ~ NBCD RAMP

24/14

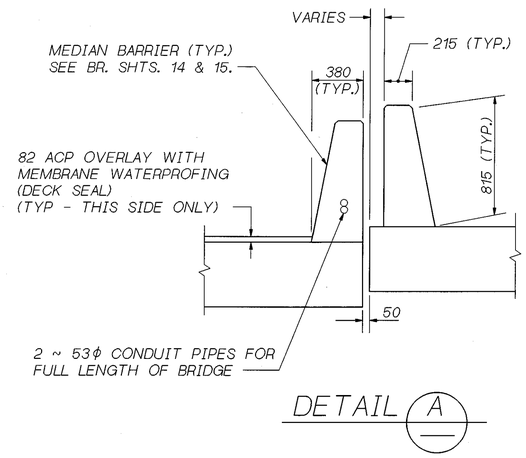


NOTE: FOR TIE-DOWN DETAILS OF TEMPORARY CONC. BARRIER, SEE 405/72E & W PLANS.

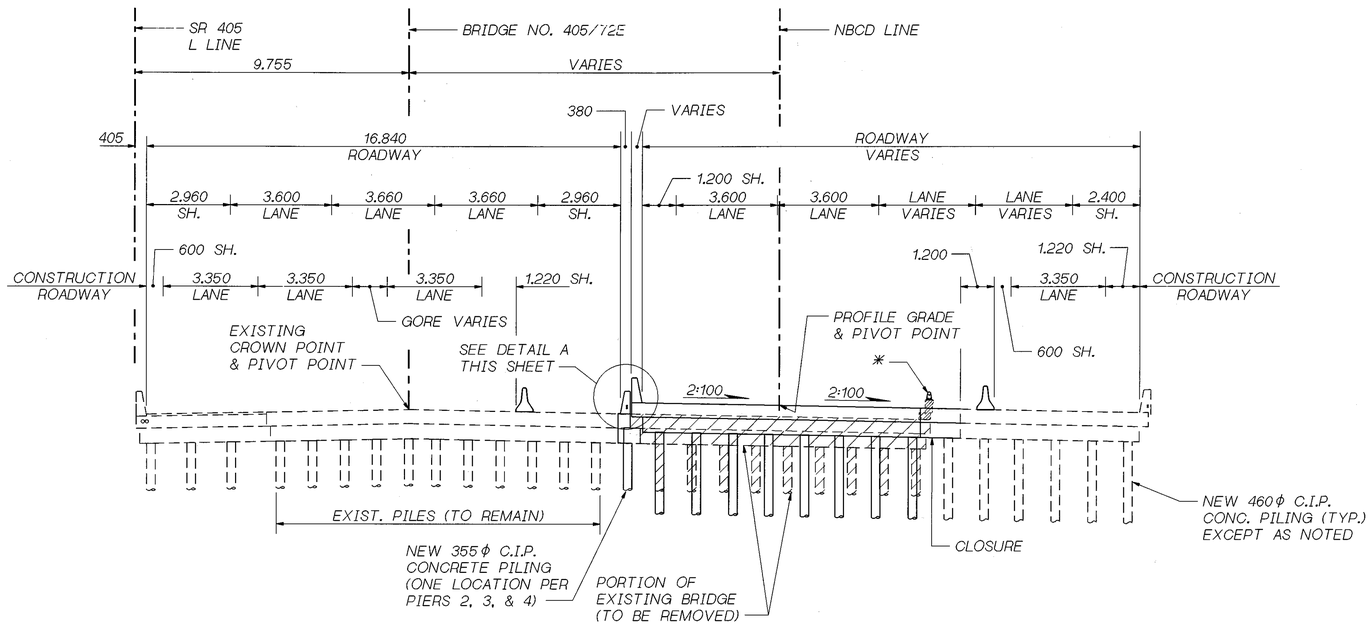
TYPICAL SECTION PHASE 2 - STAGE 1

SHOWN NEAR AN INTERMEDIATE PIER

ALL DIMENSIONS ARE PERPENDICULAR TO ℄ NBCD LINE.



DETAIL A



TYPICAL SECTION PHASE 2 - STAGE 2

SHOWN NEAR AN INTERMEDIATE PIER

ALL DIMENSIONS ARE PERPENDICULAR TO ℄ NBCD LINE.

CONSTRUCTION SEQUENCE

(BEGINS AFTER COMPLETION OF PHASES 1 & 2, L LINE)

PHASE 2 - STAGE 1:

1. SET TEMPORARY BARRIER. CONSTRUCT EAST PORTIONS OF PIERS 1 THRU 4 (NBCD LINE)
2. CONSTRUCT EAST PORTIONS OF DECK SLAB (NBCD LINE)
3. PLACE TRAFFIC BARRIER.

PHASE 2 - STAGE 2:

1. SET TEMPORARY BARRIER. REMOVE PORTIONS OF EXISTING STRUCTURE TO LIMITS AS SHOWN ON BRIDGE SHEET 1 AND AS SHOWN ON TYPICAL SECTION - THIS SHEET.
2. CONSTRUCT WEST PORTIONS OF PIERS 1 THRU 4 EXCEPT AT CLOSURE (NBCD LINE)
3. CONSTRUCT WEST PORTIONS OF DECK SLAB EXCEPT AT CLOSURE (NBCD LINE)
4. ALLOW 30 CALENDAR DAYS PRIOR TO SUBSTRUCTURE AND DECK SLAB CLOSURE (NBCD LINE)
5. PLACE SUBSTRUCTURE AND DECK SLAB CLOSURE (NBCD LINE)
6. PLACE TRAFFIC BARRIERS.

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

SR 405 JOB NO. 7071 SHEET 2

Bridge Design Engr. C. C. RUTH	4/96	NBCDROOT:[000000.FGB]STAGING.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 K. HINKLEY	6/96									
Checked By C. CORNELL	6/96					JOB NUMBER				
Detailed By A. CHU	3/96					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 10/18/98

Washington State Department of Transportation

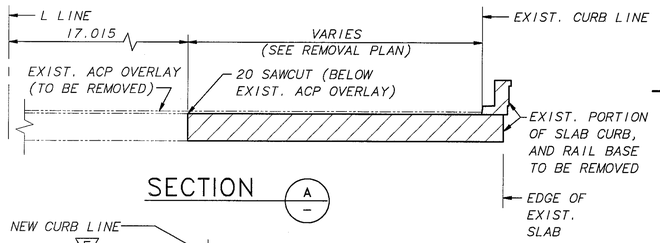
SR 405
BOTHELL TO SWAMP CREEK I/C
HOV LANES - STAGE 1
NORTH CREEK BRIDGE 405/72 NBCD

CONSTRUCTION STAGING

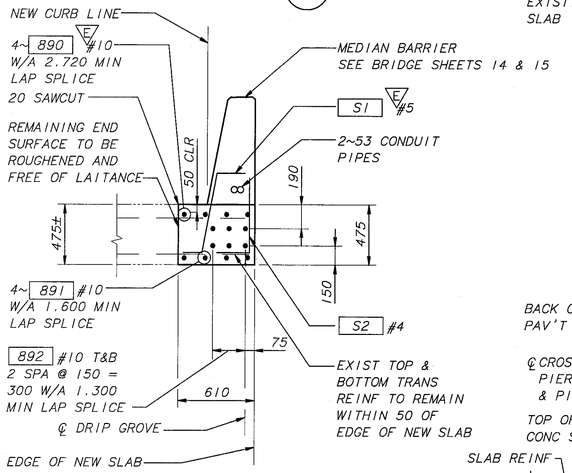
BRIDGE SHEET NO. 2

SHEET 481 OF 663 SHEETS

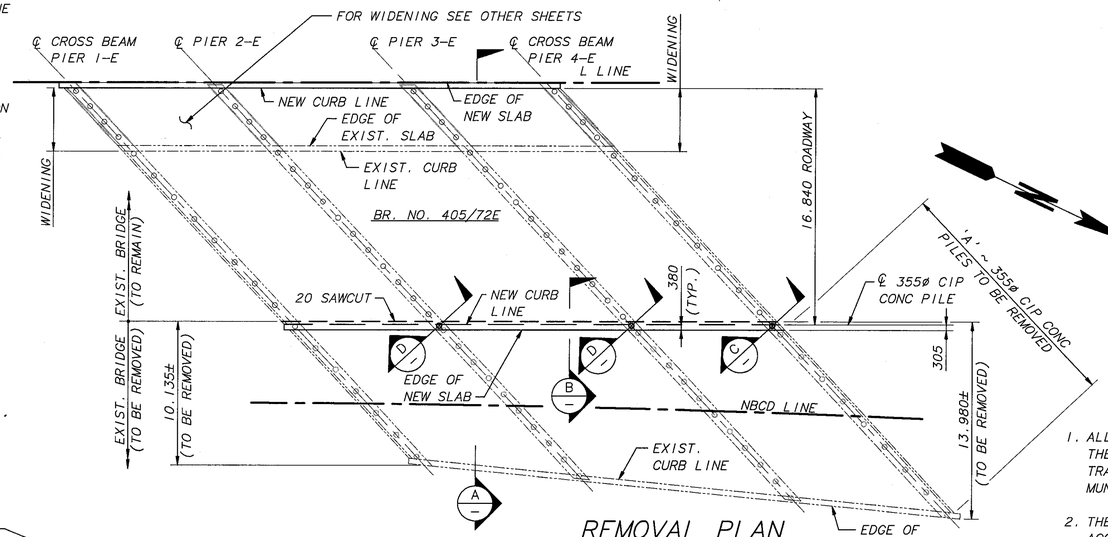
241/145



SECTION (A)



SECTION (B)

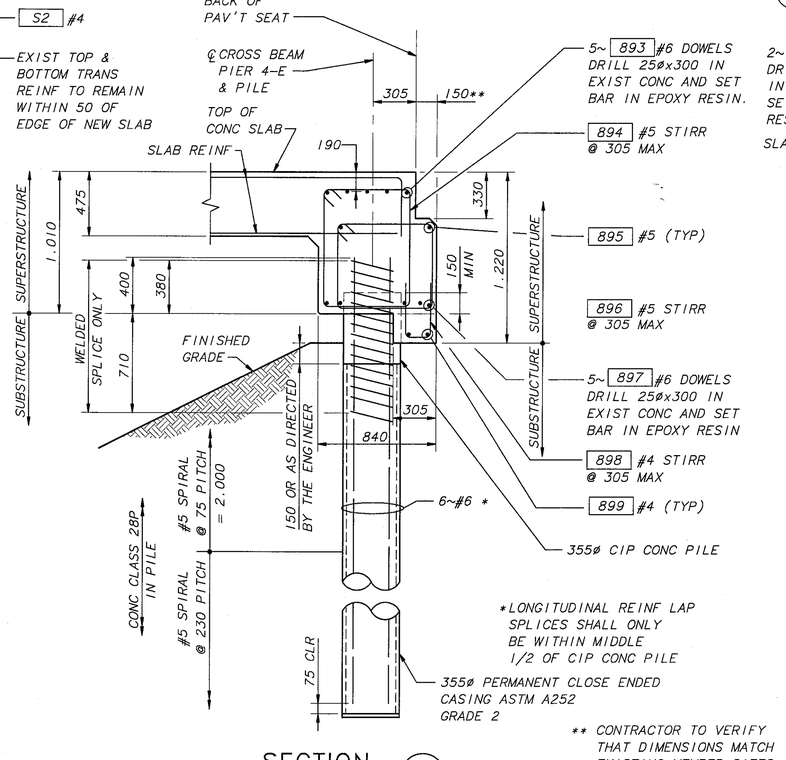


REMOVAL PLAN

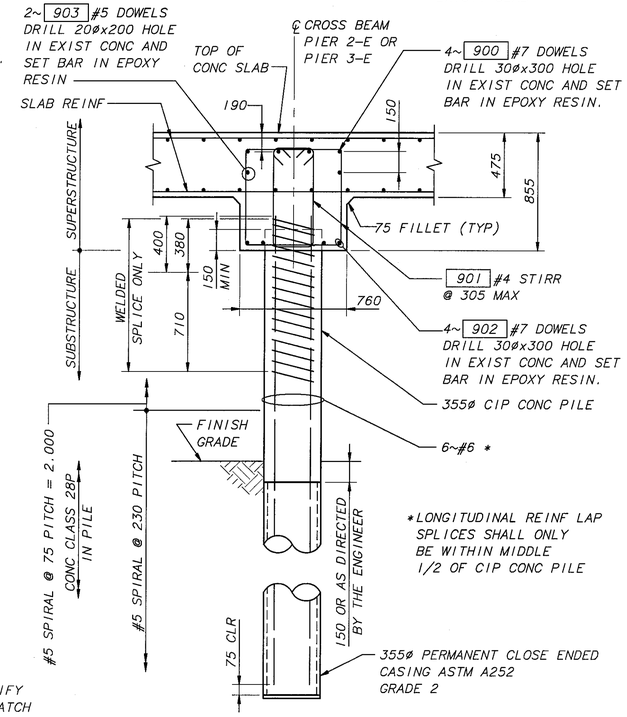
REMOVAL OF PILES				
	PIER 1-E	PIER 2-E	PIER 3-E	PIER 4-E
'A'	6	10	11	9

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 REPLACEMENT AND WIDENED PORTION HAVE BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES FIFTEENTH EDITION-1992 AND INTERIM SPECIFICATIONS THROUGH 1995. ALL STRUCTURAL ELEMENTS HAVE BEEN DESIGNED IN ACCORDANCE WITH LOAD FACTOR DESIGN. SEISMIC DESIGN OF THE REPLACEMENT AND WIDENED PORTION OF THIS STRUCTURE HAS BEEN DONE USING AN ACCELERATION COEFFICIENT OF 0.25 WITH A TYPE III SOIL PROFILE 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, ALL OTHER CONCRETE EXCEPT WHERE SPECIFICALLY SHOWN ON THE PLAN, SHALL BE CLASS 28D.
5. THE ULTIMATE CAPACITY FOR THE PILES FOR PIER 4-E IS 1320 kN AND 1590 kN FOR PIERS 2-E AND 3-E ON BRIDGE NO. 405/72E. THE ULTIMATE CAPACITY FOR THE PILES FOR PIERS 1 AND 4 IS 1420 kN AND THE ULTIMATE CAPACITY FOR PILES FOR PIERS 2 AND 3 IS 1900 kN ON BRIDGE NO. 405/72 NBCD. A DOWNDRAG FORCE OF 230 kN FOR THE 355ø CIP CONCRETE PILES AND 300 kN FOR THE 460ø CIP CONCRETE PILES WAS INCLUDED IN THE ULTIMATE CAPACITY. A FACTOR OF SAFETY OF 2.5 WAS USED IN THE DETERMINATION OF THE ULTIMATE CAPACITY.
6. FALSEWORK SHALL BE CAREFULLY RELEASED TO PREVENT IMPACT OR UNDUE STRESS IN THE STRUCTURE. THE TRAFFIC BARRIER 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 65, 25 FROM THE BOTTOM OF THE ROADWAY SLAB, 75 FROM THE BOTTOM OF THE PILES, 190 FROM BOTTOM OF FOOTINGS WITH PILES, AND 40 FROM ALL OTHER CONCRETE SURFACES.



SECTION (C)



SECTION (D)

NOTE: SEE BRIDGE SHEET 14 FOR PLACEMENT OF 2-53 DIAMETER CONDUITS AT END PIER.

BRIDGE DESIGN ENGR						REGION NO	STATE	FED AID PROJ NO	SHEET NO	TOTAL SHEETS
SUPERVISOR						1	WASH			
DESIGNED BY	K. HINKLEY	6/96								
CHECKED BY	C. CORNELL	6/96				JOB NUMBER				
DETAILED BY	T. BRENNAN	6/96				96W035				
BRIDGE PROJECTS ENGR						CONTRACT NO.				
PRELIM PLAN BY						5054				
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 98003-6395
(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 NBCD

REMOVAL PLAN & DETAILS

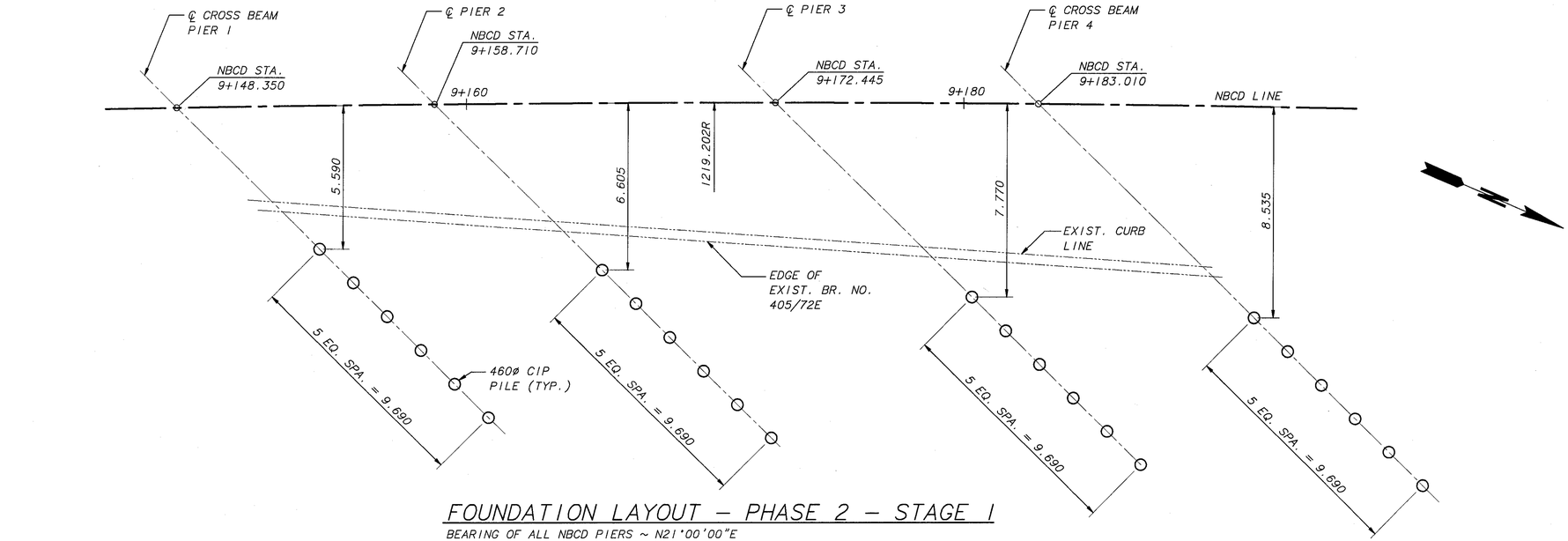
BRIDGE SHEET NO. 3

SHEET 482 OF 663 SHEETS

241 144

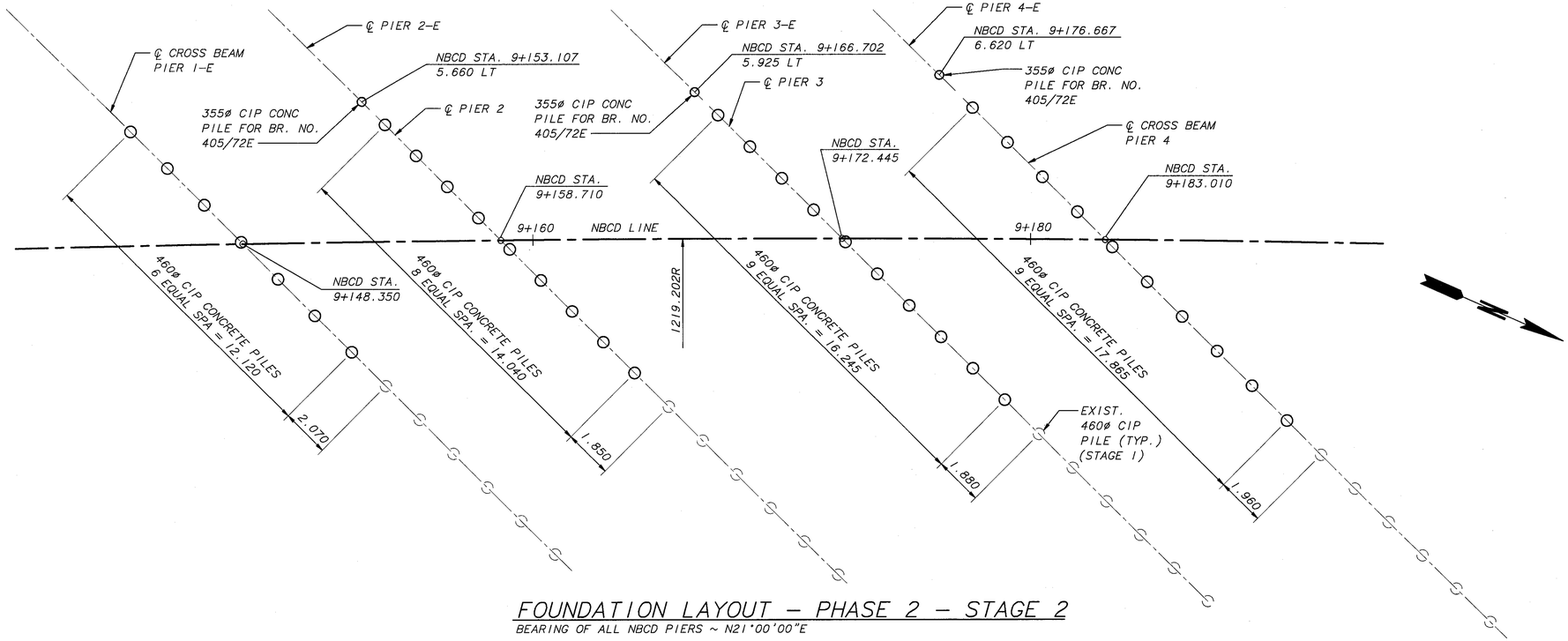
PLOTTED: Tue Nov 12 1996 11:36am FILENAME: X:\A96077\BR72\NBCD\3.DWG SCALE: 100

SR 405 JOB NO. 7071 SHEET 3 OF 19



FOUNDATION LAYOUT – PHASE 2 – STAGE 1

BEARING OF ALL NBCD PIERS ~ N21°00'00"E



FOUNDATION LAYOUT – PHASE 2 – STAGE 2

BEARING OF ALL NBCD PIERS ~ N21°00'00"E

BRIDGE DESIGN ENGR						REGION NO	STATE	FED AID PROJ NO	SHEET NO	TOTAL SHEETS	
SUPERVISOR						1	WASH				
DESIGNED BY	K. HINKLEY	6/96									
CHECKED BY	C. CORNELL	6/96				JOB NUMBER 96W035					
DETAILED BY	T. BRENNAN	6/96									
BRIDGE PROJECTS ENGR						CONTRACT NO. 5054					
PRELIM PLAN BY											
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 98003-6395
(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 NBCD

FOUNDATION LAYOUT

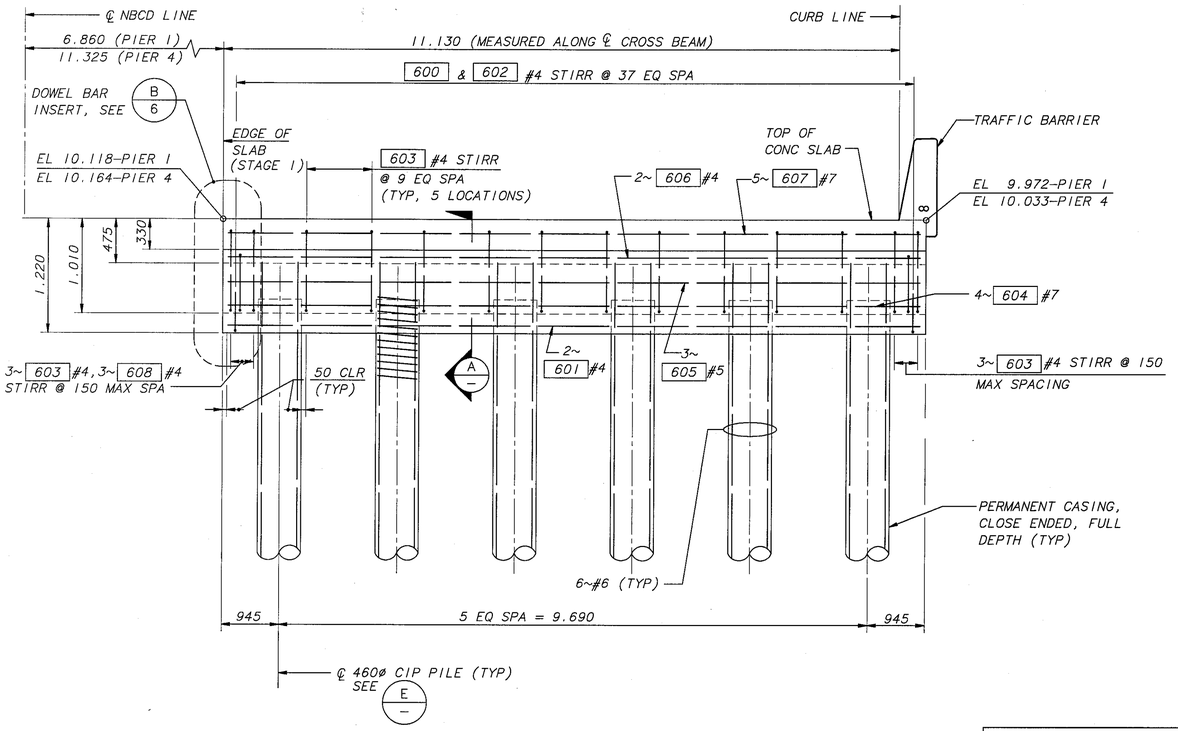
BRIDGE SHEET NO. 4

SHEET 483 OF 663 SHEETS

PLOTTED: Tue Nov 12 1996 11:37am FILENAME: X:\A96077\BR72\NBCD14.DWG SCALE: 100

SR 405 JOB NO. 7071 SHEET 4 OF 19

3+1)143

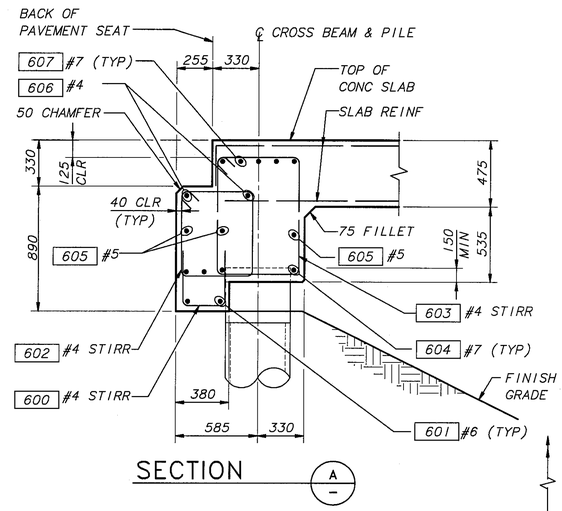


ELEVATION – PIER 1 & 4 (PHASE 2 – STAGE 1)

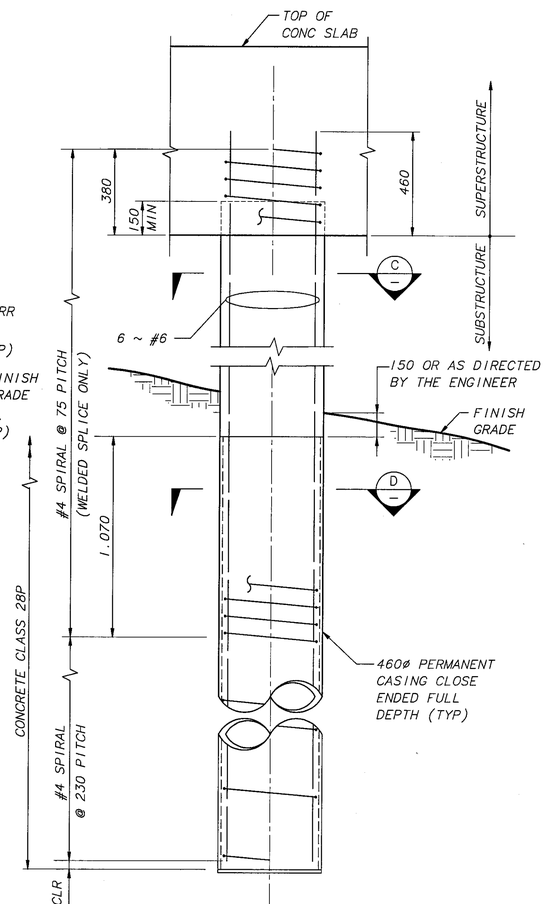
(LOOKING AHEAD ON STATION – PIER 1)
(LOOKING BACK ON STATION – PIER 4 ~ SIMILAR)

NOTES: 1. ALL SUBSTRUCTURE DIMENSIONS ARE MEASURED ALONG SKEW AT ℄ CROSSBEAM UNLESS NOTED OTHERWISE. ALL ELEVATIONS ARE AT ℄ CROSSBEAM

2. SEE BRIDGE SHEET 16 FOR PLACEMENT OF 2–53 DIAMETER CONDUITS AT END PIER.



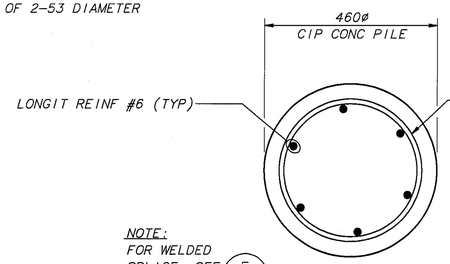
SECTION A/–



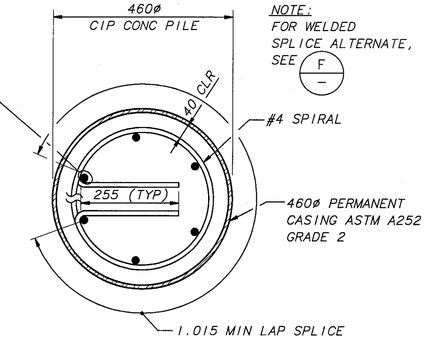
DETAIL – CIP PILE

E/–,6,7&8

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



NOTE: FOR WELDED SPLICE, SEE F/–

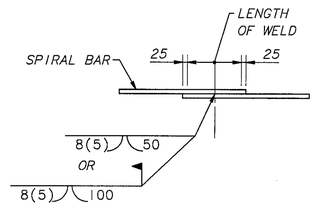


NOTE: LONGITUDINAL REINF LAP SPLICES PERMITTED ONLY WITHIN MIDDLE 1/2 OF PERMANENT CASING

HOOKS SHALL BE PLACED TO AVOID VERTICAL REINFORCEMENT

SECTION C/–

SECTION D/–



DETAIL F/–

FOR SPIRAL SPLICE TERMINUS OR BREAK, WELD BACK ONTO SELF

BRIDGE DESIGN ENGR					
SUPERVISOR					
DESIGNED BY	K. HINKLEY	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 NBCD

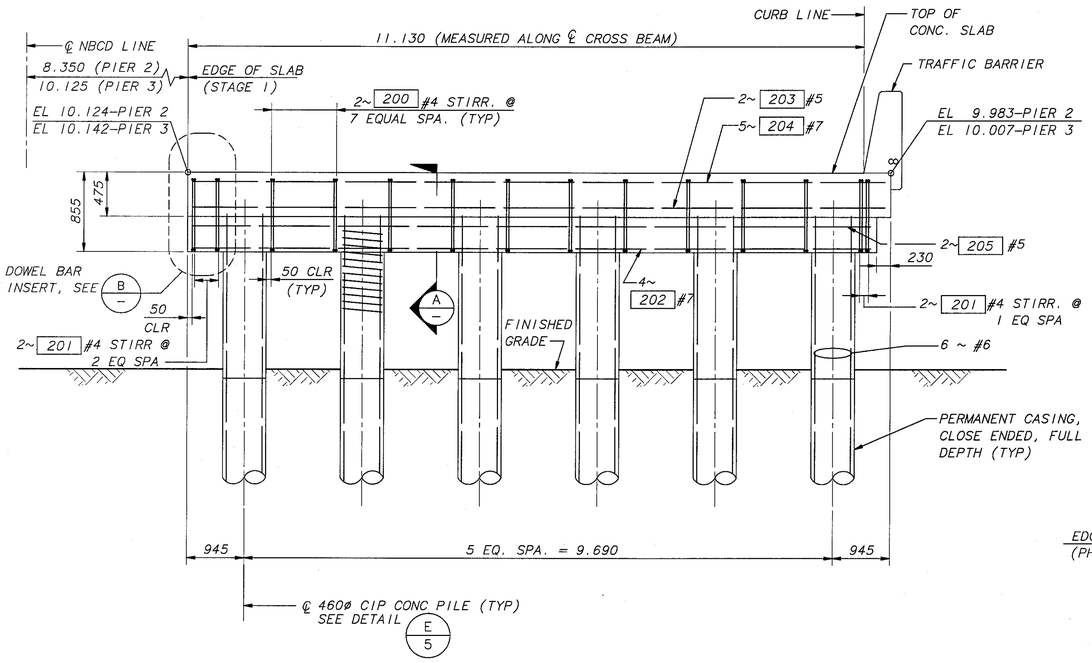
PIER 1 & 4 STAGE 1

BRIDGE SHEET NO. 5
SHEET 484 OF 663 SHEETS

241/182

PLOTTED: Tue Nov 12 1996 11:38am FILENAME: X:\A96077\BR72\NBCD\S.DWG SCALE: 30

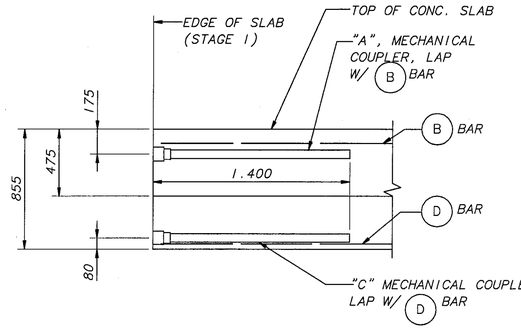
SR 405 JOB NO. 7071 SHEET 5 OF 19



ELEVATION – PIER 2 & 3 (PHASE 2 – STAGE 1)

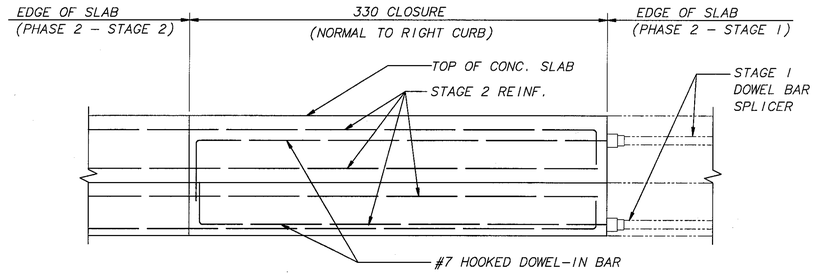
(LOOKING AHEAD ON STATION)

NOTE: ALL SUBSTRUCTURE DIMENSIONS ARE MEASURED ALONG ℄ CROSS BEAM UNLESS NOTED OTHERWISE. ALL ELEVATIONS ARE AT ℄ CROSS BEAM.

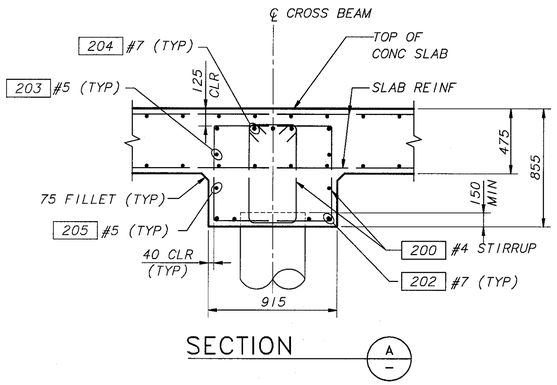


DETAIL – DOWEL BAR INSERT (B –,5)

DOWEL BAR INSERT TABLE (STAGE 1)				
STAGE 1 ~ PIERS	"A"	(B) BAR	"C"	(D) BAR
1 & 4	5~#7	607 #7	5~#7	604 #7
2 & 3	5~#7	204 #7	4~#7	202 #7



DETAIL – CLOSURE (C 7,8)



SECTION (A –)

BRIDGE DESIGN ENGR						REGION NO	STATE	FED AID PROJ NO	SHEET NO	TOTAL SHEETS
SUPERVISOR						1	WASH			
DESIGNED BY	K. HINKLEY	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										
ARCHITECT/SPECIALIST			DATE	REVISION	BY	APPR				

WARREN E. WILSON, STATE OF WASHINGTON, 20521, 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 NBCD

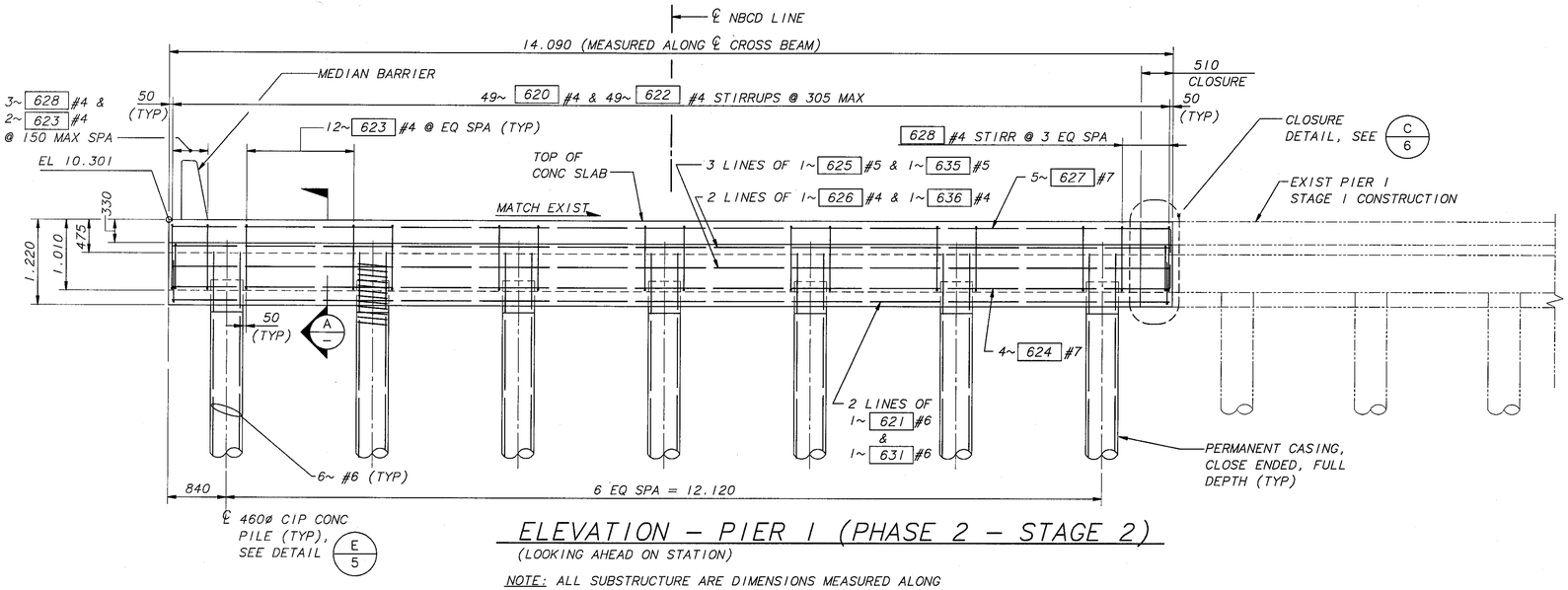
PIER 2 & 3 – STAGE 1

BRIDGE SHEET NO. 6

SHEET 485 OF 663 SHEETS

PLOTTED: Tue Nov 12 1996 11:43am FILENAME: K:\A96077\BR72\NBCD\6.DWG SCALE: 30

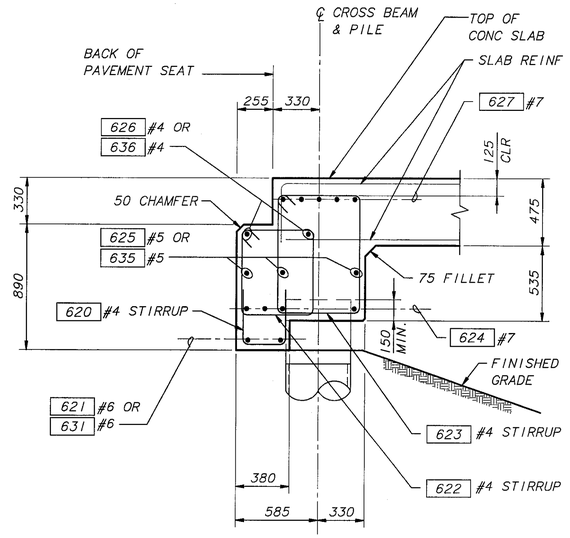
SR 405 JOB NO. 7071 SHEET 6 OF 19



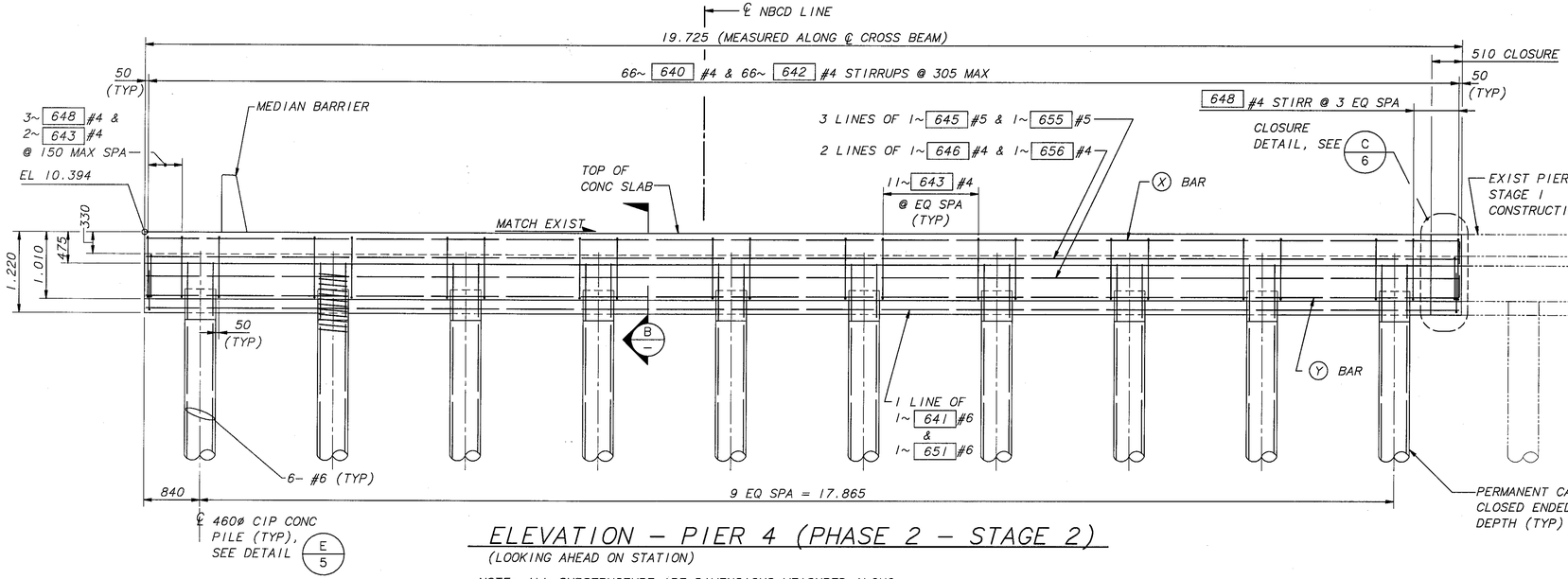
ELEVATION – PIER 1 (PHASE 2 – STAGE 2)

(LOOKING AHEAD ON STATION)

NOTE: ALL SUBSTRUCTURE ARE DIMENSIONS MEASURED ALONG ℄ CROSS BEAM UNLESS NOTED OTHERWISE. ALL ELEVATIONS ARE AT ℄ CROSS BEAM. STAGGER ALL LAP SPLICES, #4 LAP = 610, #5 LAP = 710 & #7 LAP = 1.005



SECTION A –



ELEVATION – PIER 4 (PHASE 2 – STAGE 2)

(LOOKING AHEAD ON STATION)

NOTE: ALL SUBSTRUCTURE ARE DIMENSIONS MEASURED ALONG ℄ CROSS BEAM UNLESS NOTED OTHERWISE. ALL ELEVATIONS ARE AT ℄ CROSS BEAM. STAGGER ALL LAP SPLICES, #4 LAP = 610, #5 LAP = 710 & #7 LAP = 1.005

X BAR MARK DENOTES 647, 657, 667 OR 677

Y BAR MARK DENOTES 644, 654, 664 OR 674

SECTION B –

BRIDGE DESIGN ENGR						REGION NO	STATE	FED AID PROJ NO	SHEET NO	TOTAL SHEETS
SUPERVISOR						1	WASH			
DESIGNED BY	K. HINKLEY	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										
ARCHITECT/SPECIALIST		DATE	REVISION	BY	APPR					

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

BERGER/ABAM ENGINEERS INC. 33201 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 NBCD

PIER 1 & 4 – STAGE 2

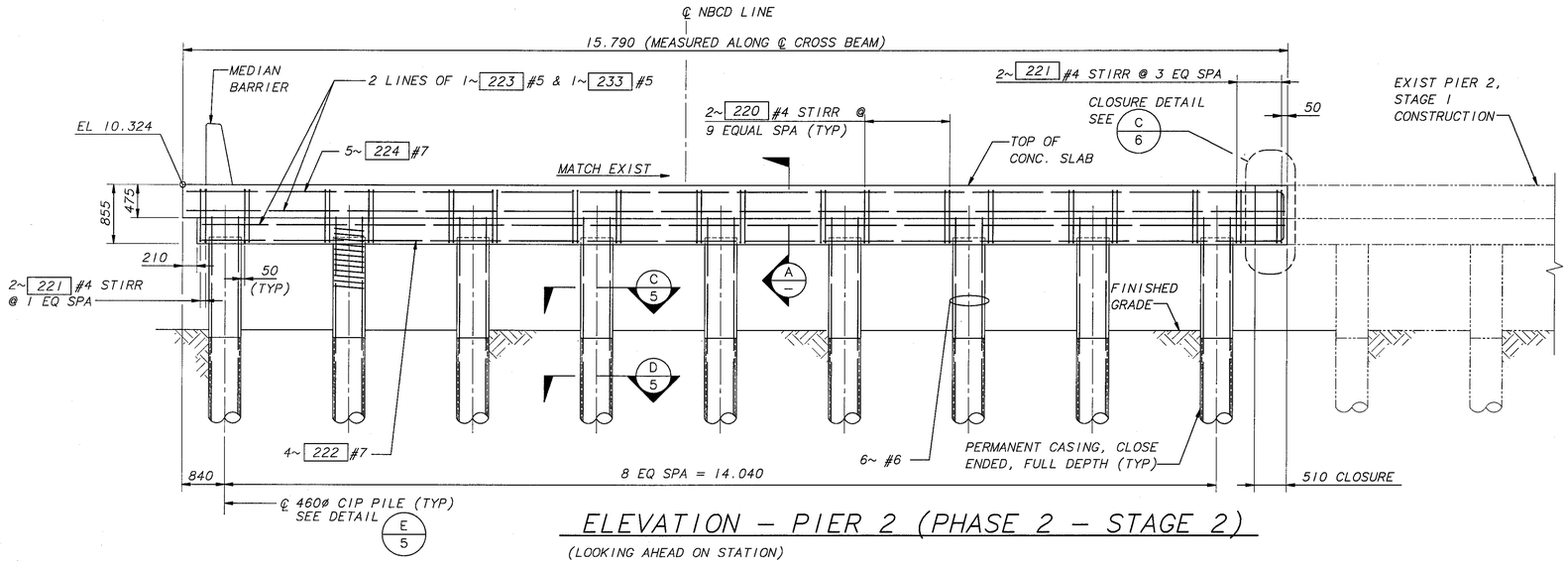
BRIDGE SHEET NO. 7

SHEET 486 OF 663 SHEETS

3411140

PLOTTED: Tue Nov 12 1996 11:44am FILENAME: X:\A96077\BR72\WBCD\7.DWG SCALE: 40

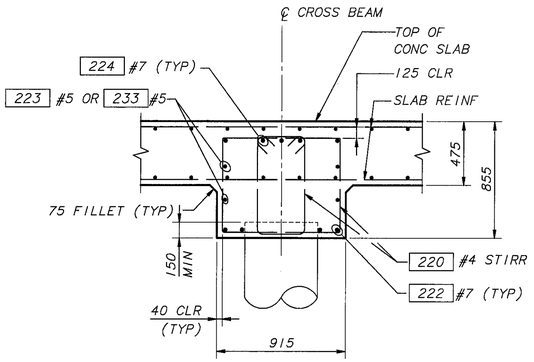
SR 405 JOB NO. 7071 SHEET 7 OF 19



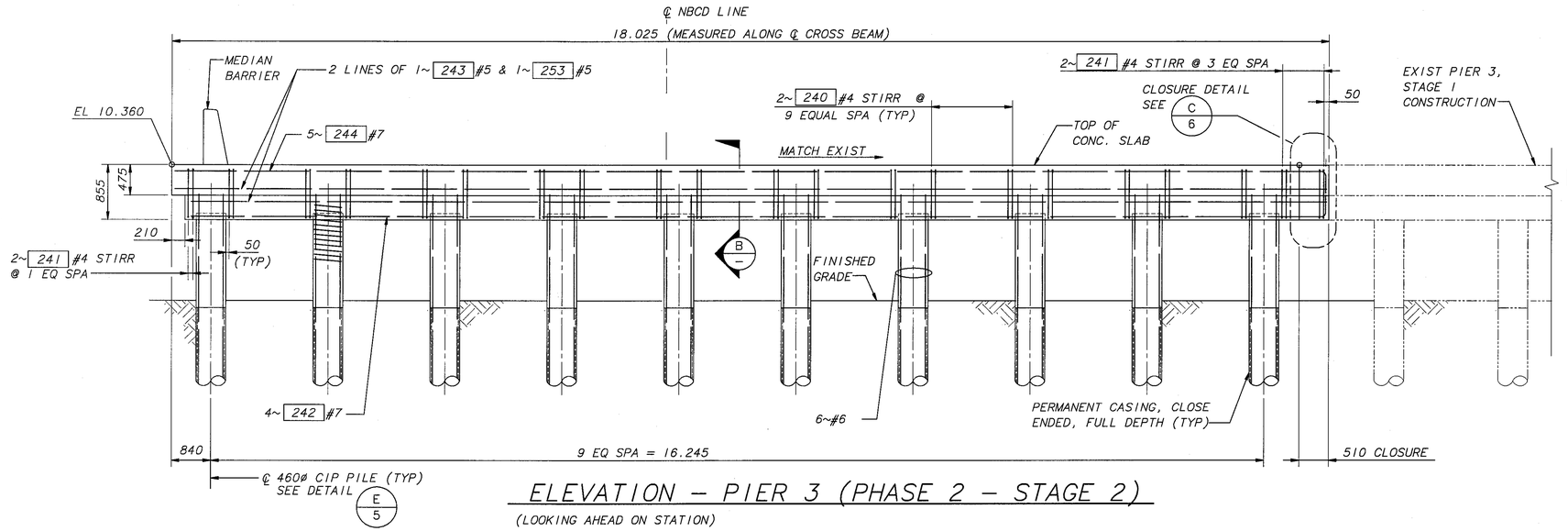
ELEVATION – PIER 2 (PHASE 2 – STAGE 2)

(LOOKING AHEAD ON STATION)

NOTE: ALL SUBSTRUCTURE DIMENSIONS ARE MEASURED ALONG ℄ CROSS BEAM UNLESS NOTED OTHERWISE. ALL ELEVATIONS ARE AT ℄ CROSS BEAM. STAGGER ALL LAP SPLICES, #4 LAP = 610, #5 LAP = 710 & #7 LAP = 1.005



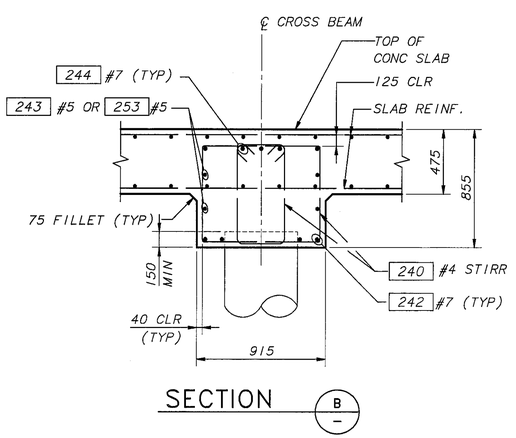
SECTION A –



ELEVATION – PIER 3 (PHASE 2 – STAGE 2)

(LOOKING AHEAD ON STATION)

NOTE: ALL SUBSTRUCTURE DIMENSIONS ARE MEASURED ALONG ℄ CROSS BEAM UNLESS NOTED OTHERWISE. ALL ELEVATIONS ARE AT ℄ CROSS BEAM. STAGGER ALL LAP SPLICES, #4 LAP = 610, #5 LAP = 710 & #7 LAP = 1.005



SECTION B –

BRIDGE DESIGN ENGR						REGION NO.	STATE	FED AID PROJ NO	SHEET NO.	TOTAL SHEETS
SUPERVISOR						1	WASH			
DESIGNED BY	K. HINKLEY	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										
ARCHITECT/SPECIALIST			DATE	REVISION	BY	APPR				

WARREN E. WU STATE OF WA. 20527 REGISTERED PROFESSIONAL ENGR. EXPIRES 10/8/98

BERGER/ABAM ENGINEERS INC. 33251 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 NBCD

PIER 2 & 3 – STAGE 2

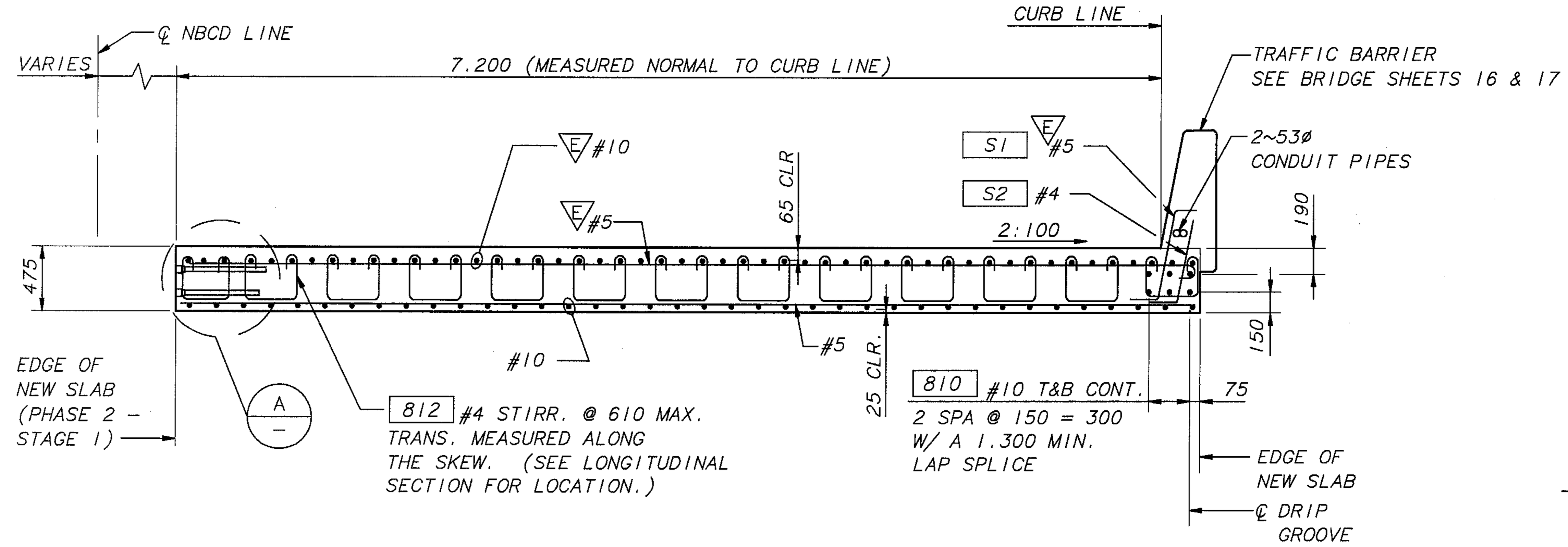
BRIDGE SHEET NO. 8

SHEET 487 OF 663 SHEETS

241/139

PLOTTED: Tue Nov 12 1996 11:44am FILENAME: X:\A96077\BR72\NBCD\8.DWG SCALE: 40

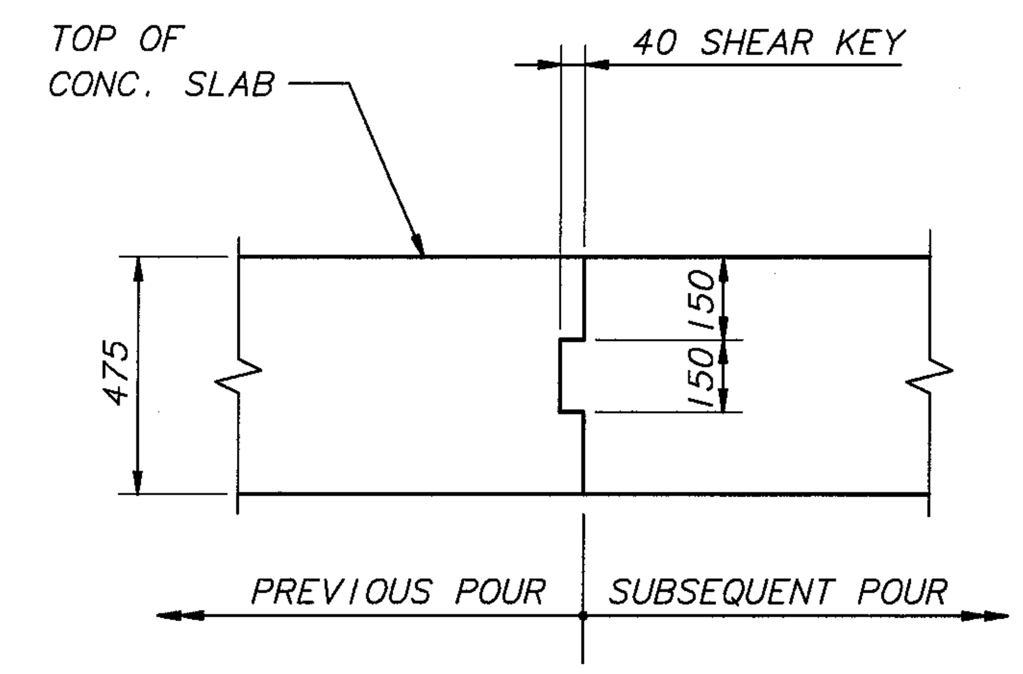
SR 405 JOB NO. 7071 SHEET 8 OF 19



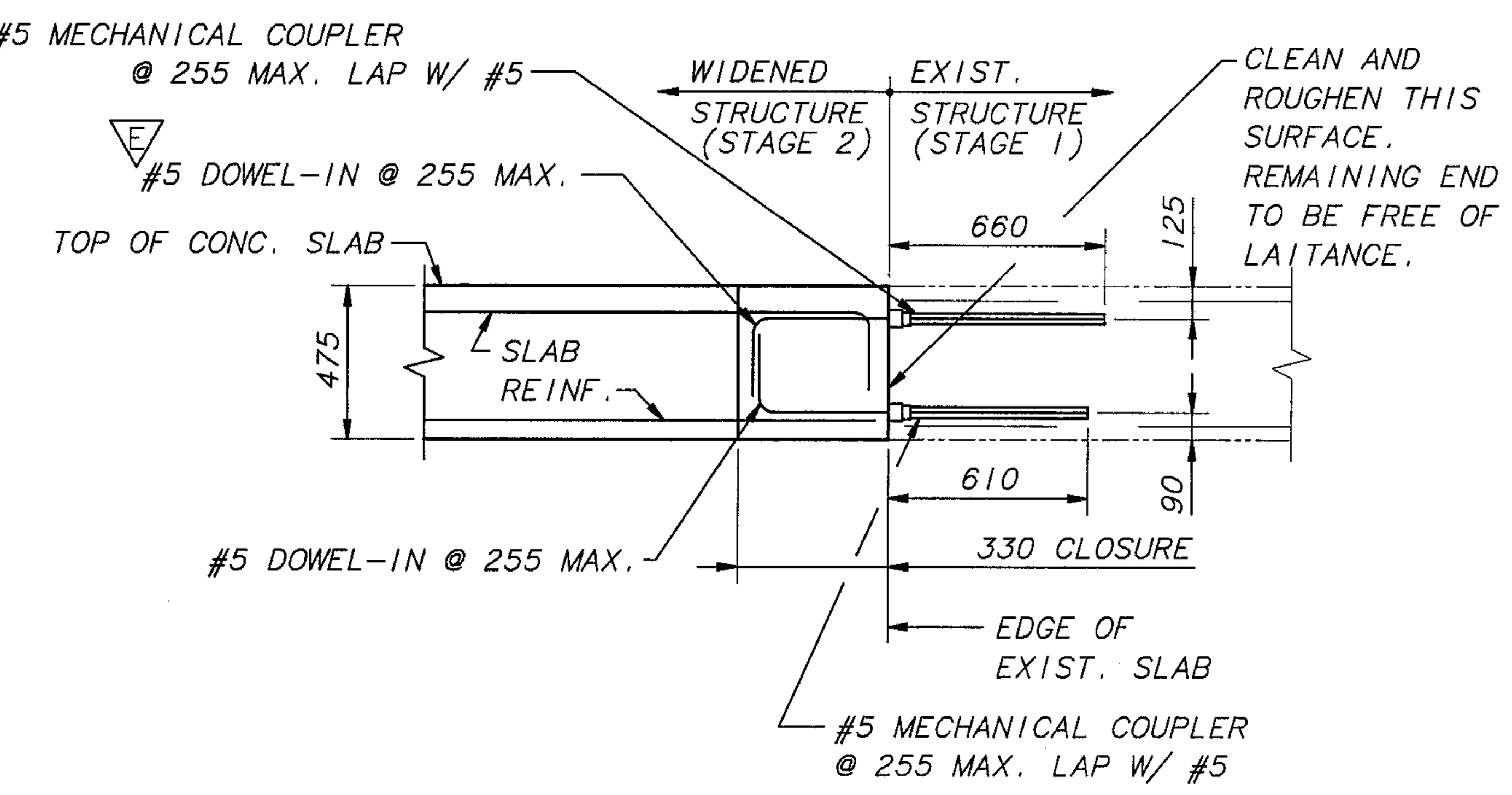
TYPICAL SECTION – PHASE 2 – STAGE 1

(LOOKING AHEAD ON STATION)

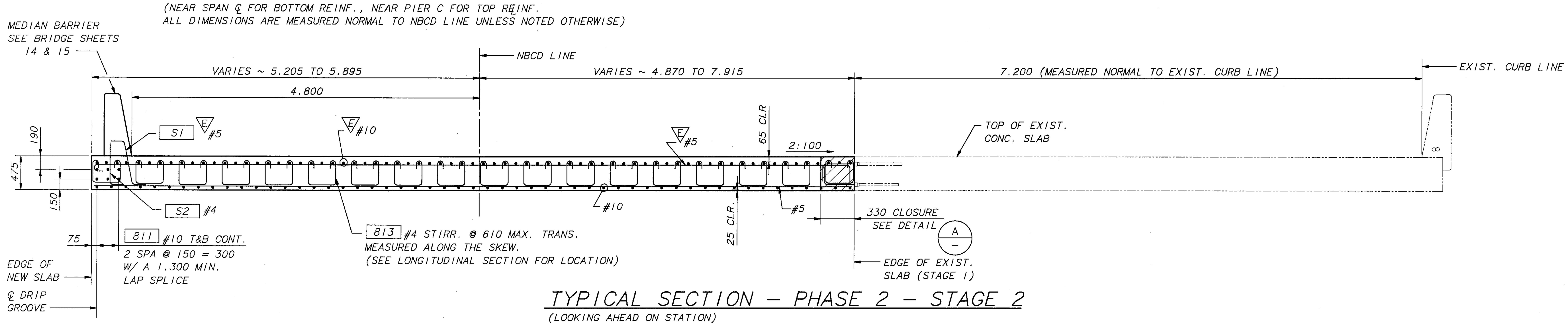
(NEAR SPAN ℄ FOR BOTTOM REINF., NEAR PIER C FOR TOP REINF.
ALL DIMENSIONS ARE MEASURED NORMAL TO NBCD LINE UNLESS NOTED OTHERWISE)



DETAIL – CONSTRUCTION JOINT



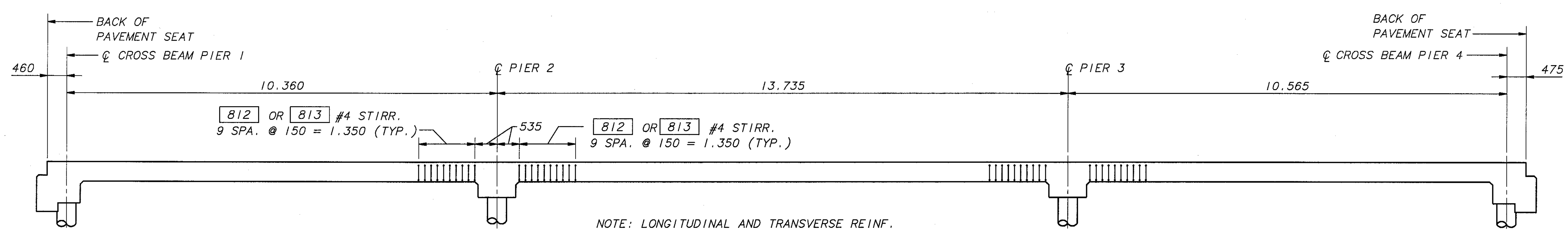
DETAIL – CLOSURE (A)



TYPICAL SECTION – PHASE 2 – STAGE 2

(LOOKING AHEAD ON STATION)

(NEAR SPAN ℄ FOR BOTTOM REINF., NEAR PIER ℄ FOR TOP REINF.
ALL DIMENSIONS ARE MEASURED NORMAL TO NBCD LINE UNLESS NOTED OTHERWISE)



NOTE: LONGITUDINAL AND TRANSVERSE REINF.
NOT SHOWN FOR CLARITY.

LONGITUDINAL SECTION

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

PLOTTED: Tue Nov 12 1996 11:45am FILENAME: X:\A96077\BR72\NBCD\9.DWG SCALE: 30

SR 405 JOB NO. 7071 SHEET 9 OF 19

BRIDGE DESIGN ENGR			
SUPERVISOR			
DESIGNED BY	K. HINKLEY	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

EXPIRES 10/8/98

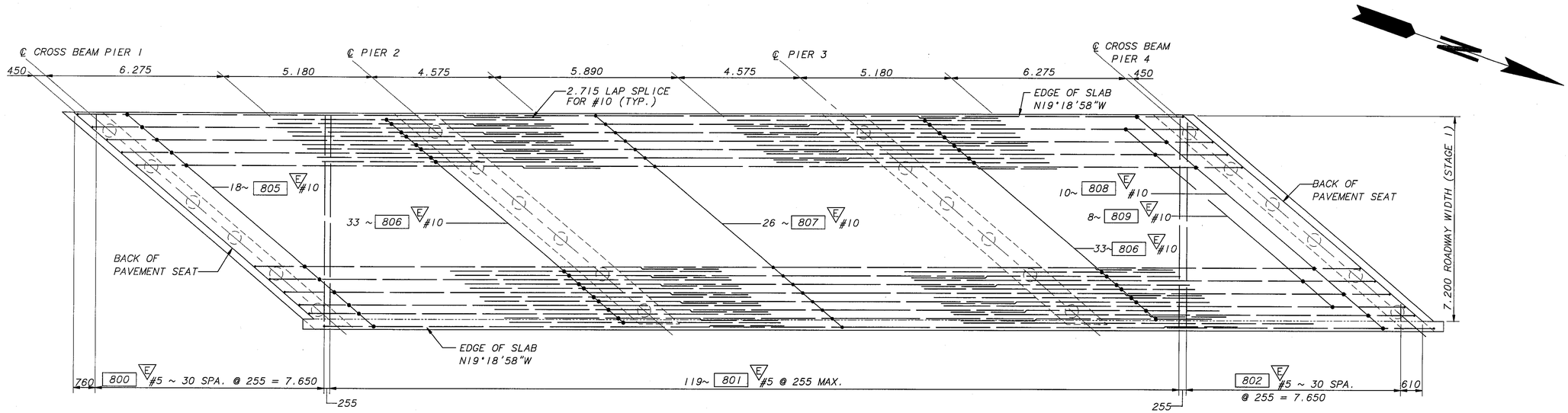
BERGER/ABAM ENGINEERS INC.
33301 9TH AVENUE SOUTH
FEDERAL WAY, WASHINGTON 98003-6395
(206)431-2300 FAX:(206)431-2250

Washington State Department of Transportation

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

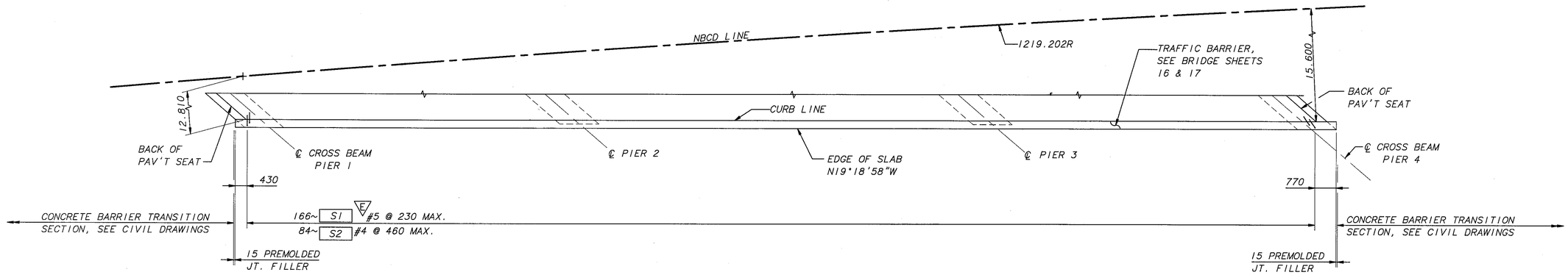
TYPICAL SECTION (STAGES 1 & 2)

BRIDGE SHEET NO. 9
SHEET 488 OF 663 SHEETS



REINFORCEMENT PLAN – TOP MAT (PHASE 2 – STAGE 1)

(ALL DIMENSIONS ARE MEASURED ALONG OUTSIDE EDGE OF SLAB UNLESS NOTED OTHERWISE)



PLAN – TRAFFIC BARRIER (PHASE 2 – STAGE 1)

(ALL DIMENSIONS ARE MEASURED ALONG OUTSIDE EDGE OF SLAB UNLESS NOTED OTHERWISE)

BRIDGE DESIGN ENGR						REGION NO	STATE	FED AID PROJ NO	SHEET NO	TOTAL SHEETS	
SUPERVISOR						1	WASH				
DESIGNED BY	K. HINKLEY	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											
ARCHITECT/SPECIALIST			DATE	REVISION	BY	APPR					

WARREN E. WILSON — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER — EXPIRES 11-10-98

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 NBCD

REINF. PLAN – TOP MAT (STAGE 1)

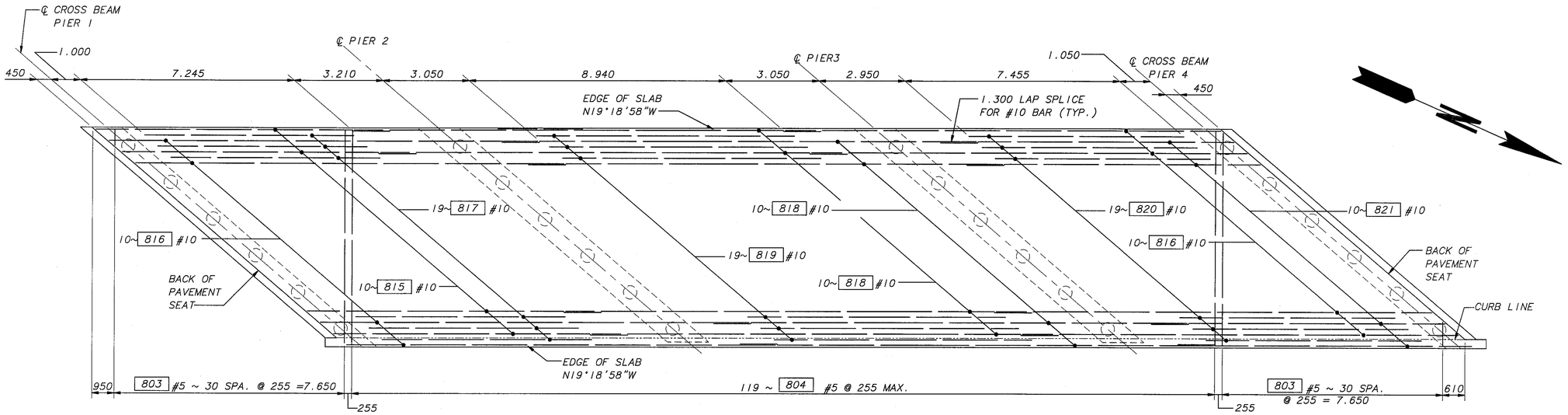
BRIDGE SHEET NO. 10

SHEET 489 OF 663 SHEETS

24/137

PLOTTED: Tue Nov 12 1996 11:46am FILENAME: X:\A96071\BR72\NBCD\10.DWG SCALE: 75

SR 405 JOB NO. 7071 SHEET 10 OF 19



REINFORCEMENT PLAN – BOTTOM MAT (PHASE 2 – STAGE 1)

(ALL DIMENSIONS ARE MEASURED ALONG OUTSIDE RIGHT EDGE OF SLAB UNLESS OTHERWISE NOTED.)

PLOTTED: Tue Nov 12 1996 11:47am FILENAME: X:\A96077\BR72\NBCD\11.DWG SCALE: 75

SR 405 JOB NO. 7071 SHEET 11 OF 19

BRIDGE DESIGN ENGR						REGION NO.	STATE	FED AID PROJ NO	SHEET NO.	TOTAL SHEETS	
SUPERVISOR						1	WASH				
DESIGNED BY	K. HINKLEY	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											
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 98003-6395
(206)431-2300 FAX:(206)431-2250

Washington State Department of Transportation

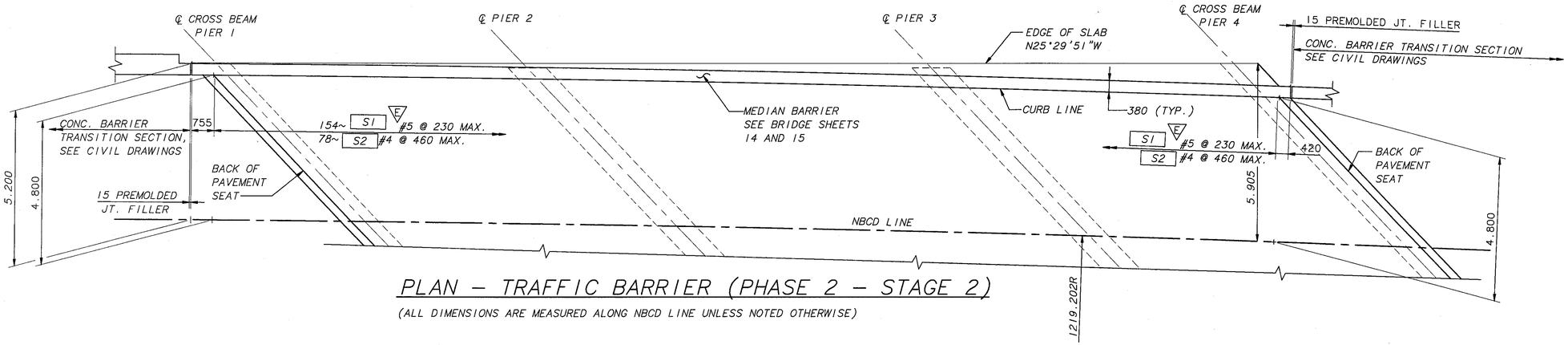
SR 405
BOTHELL TO SWAMP CREEK I/C
HOV LANES – STAGE 1
NORTH CREEK BRIDGE 405/72 NBCD

REINF. PLAN – BOTTOM MAT (STAGE 1)

BRIDGE SHEET NO. 11

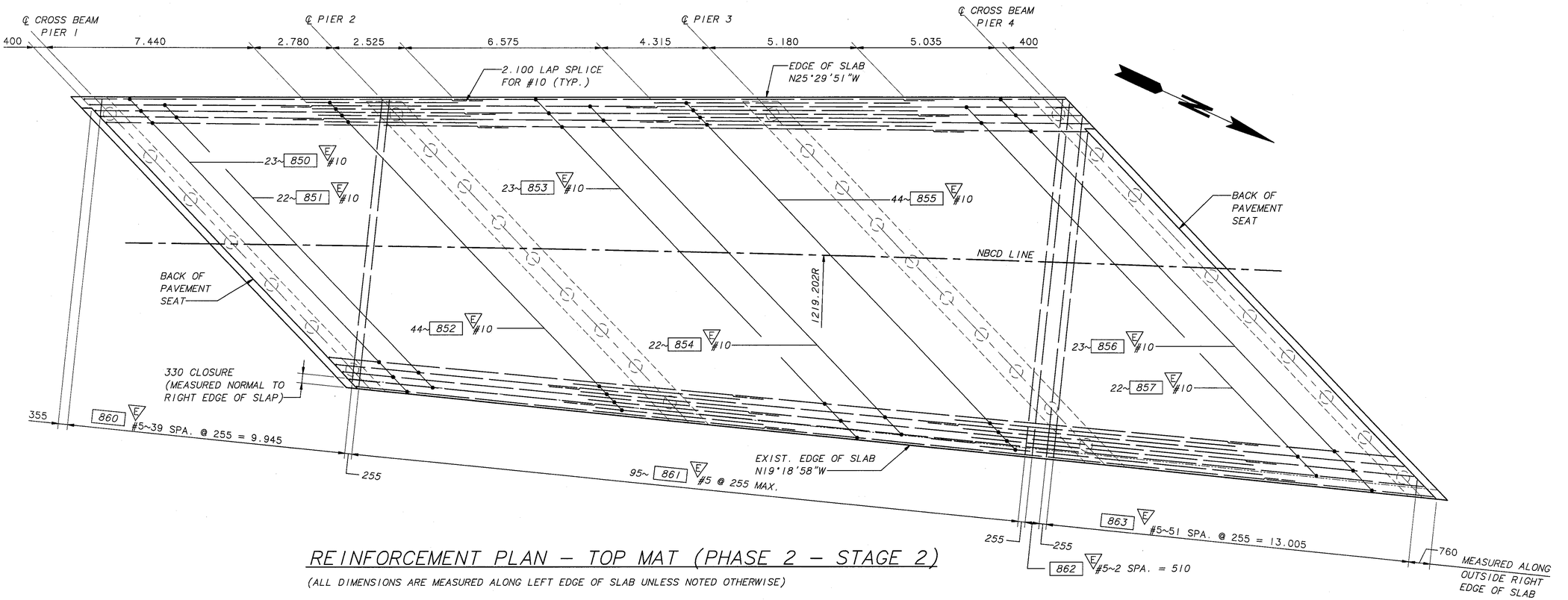
SHEET 490 OF 663 SHEETS

d41|36



PLAN – TRAFFIC BARRIER (PHASE 2 – STAGE 2)

(ALL DIMENSIONS ARE MEASURED ALONG NBCD LINE UNLESS NOTED OTHERWISE)



REINFORCEMENT PLAN – TOP MAT (PHASE 2 – STAGE 2)

(ALL DIMENSIONS ARE MEASURED ALONG LEFT EDGE OF SLAB UNLESS NOTED OTHERWISE)

BRIDGE DESIGN ENGR						REGION NO	STATE	FED AID PROJ NO	SHEET NO	TOTAL SHEETS	
SUPERVISOR						1	WASH				
DESIGNED BY	K. HINKLEY	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											
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 98003-6395
(206)431-2300 FAX:(206)431-2250

Washington State Department of Transportation

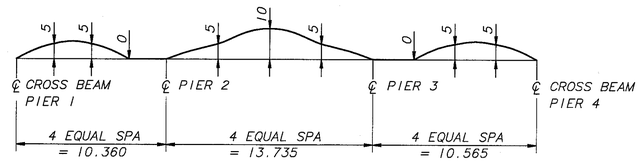
SR 405
BOTHELL TO SWAMP CREEK I/C
HOV LANES – STAGE 1
NORTH CREEK BRIDGE 405/72 NBCD
REINF. PLAN – TOP MAT (STAGE 2)

BRIDGE SHEET NO. 12
SHEET 491 OF 663 SHEETS

241/138

PLOTTED: Tue Nov 12 1996 11:48am FILENAME: X:\A96077\BR72\NBGD\12.DWG SCALE: 75

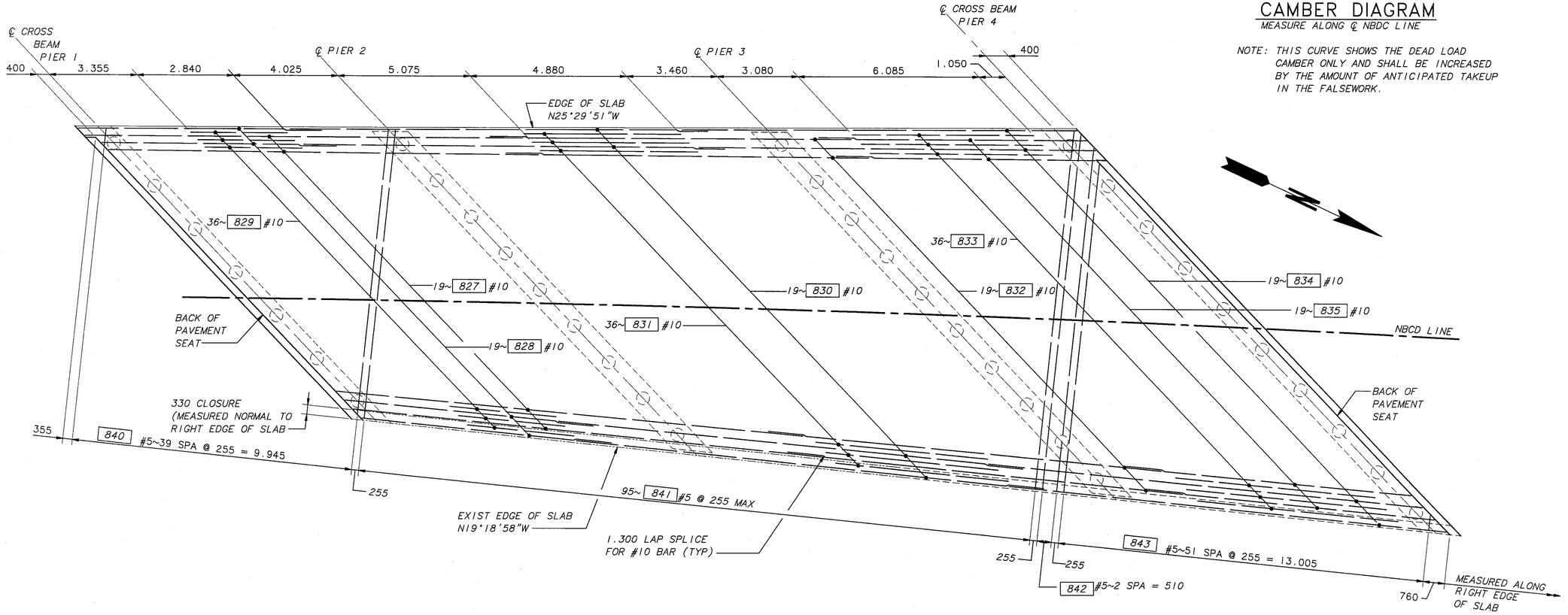
SR 405 JOB NO. 7071 SHEET 12 OF 19



CAMBER DIAGRAM

MEASURE ALONG ℄ NBDC LINE

NOTE: THIS CURVE SHOWS THE DEAD LOAD CAMBER ONLY AND SHALL BE INCREASED BY THE AMOUNT OF ANTICIPATED TAKEUP IN THE FALSEWORK.



REINFORCEMENT PLAN – BOTTOM MAT (PHASE 2 – STAGE 2)

(ALL DIMENSIONS ARE MEASURED ALONG LEFT EDGE OF SLAB UNLESS NOTED OTHERWISE)

BRIDGE DESIGN ENGR					
SUPERVISOR					
DESIGNED BY	K. HINKLEY	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. WILLS STATE OF WASHINGTON 20527 REGISTERED PROFESSIONAL ENGINEER

EXPIRES 12/8/98

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 NBCD

REINF. PLAN – BOTTOM MAT (STAGE 2)

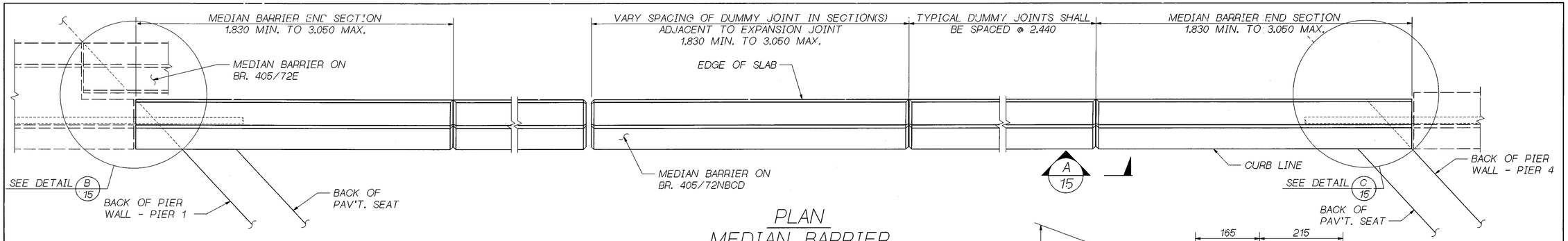
BRIDGE SHEET NO. 13

SHEET 492 OF 663 SHEETS

11/13/96

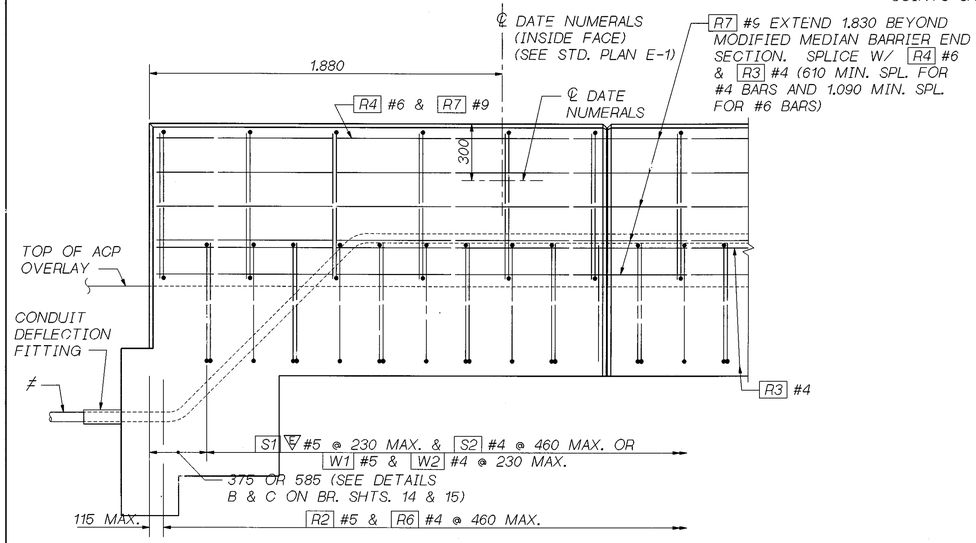
PLOTTED: Tue Nov 12 1996 11:48am FILENAME: X:\A96077\BR72\WBCD\13.DWG SCALE: 75

SR 405 JOB NO. 7071 SHEET 13 OF 19

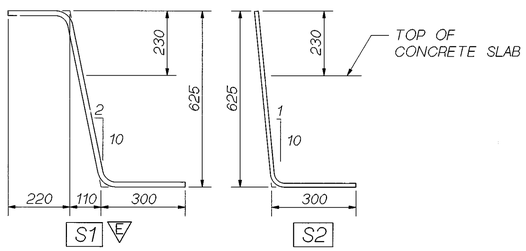


PLAN
MEDIAN BARRIER

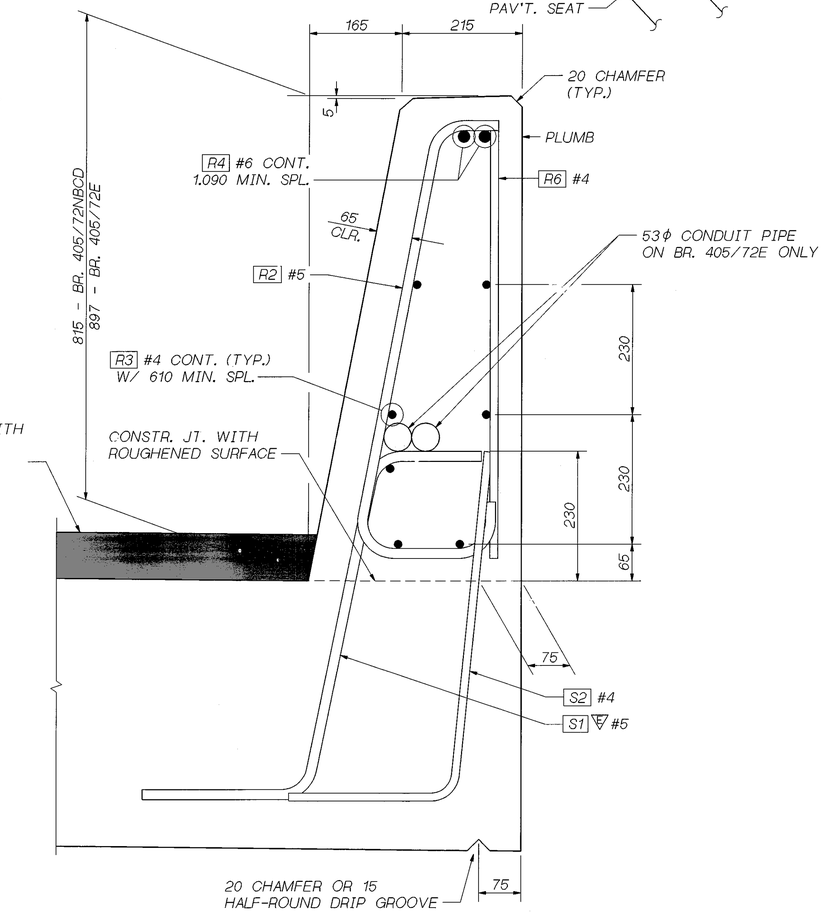
BARRIER CONTINUOUS BETWEEN ROADWAY EXPANSION JOINTS. CONSTRUCTION JOINTS WITH SHEAR KEYS ARE PERMISSIBLE AT DUMMY JOINT LOCATIONS. FORM JOINTS BETWEEN DUMMY JOINTS SHALL NOT BE PERMITTED.



OUTSIDE ELEVATION
END OF MEDIAN BARRIER



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



TYPICAL SECTION - MEDIAN BARRIER

MEDIAN BARRIER FOR BR. 405/72E SHOWN.
MEDIAN BARRIER FOR BR. 405/72NBCD SIMILAR.

Bridge Design Engr.	NBCDROOT:[000000.FGB]TB_MED_1.FGB;1				REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor					10	WASH.			
Designed By K. HINKLEY 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. [illegible] STATE OF WASHINGTON 20527 REGISTERED PROFESSIONAL ENGINEER
EXPIRES 12/6/98

Washington State Department of Transportation

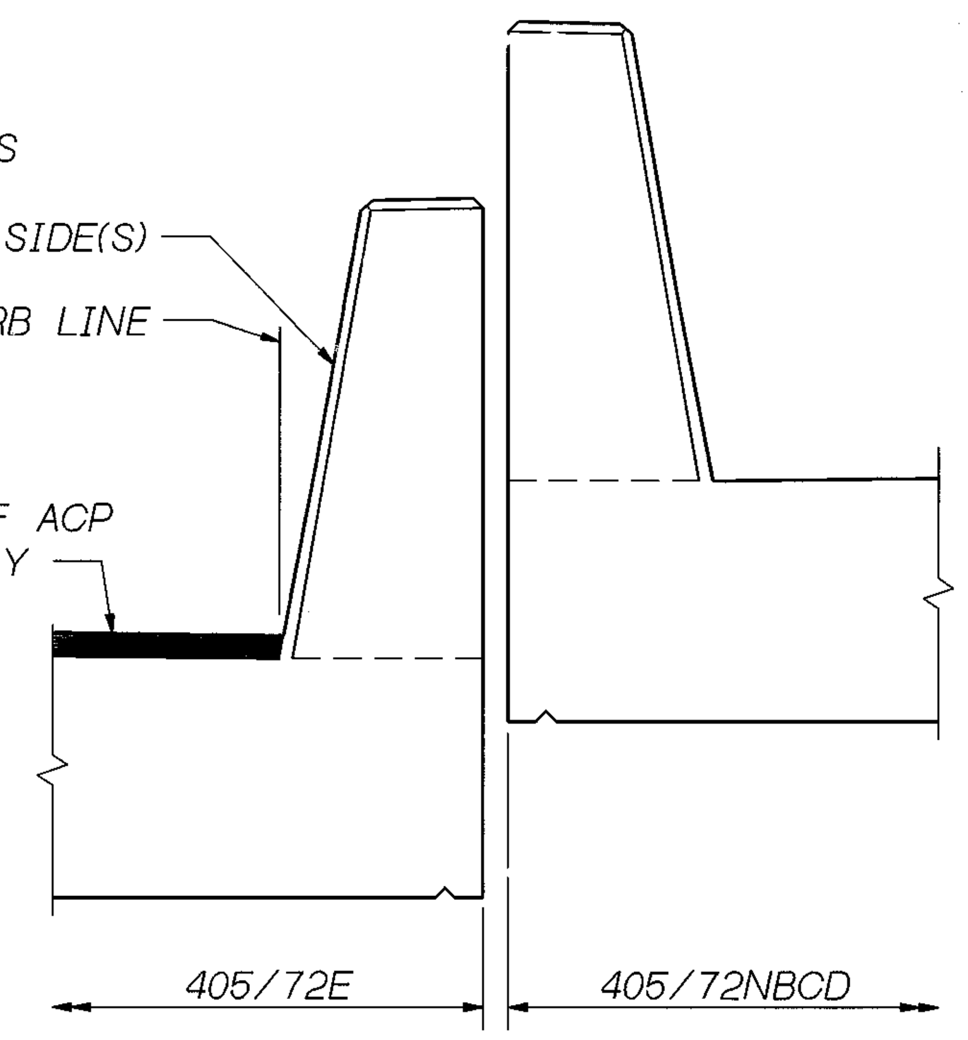
SR 405
BOTHELL TO SWAMP CREEK I/C
HOV LANES - STAGE 1
NORTH CREEK BRIDGE 405/72 NBCD

MEDIAN BARRIER 1 OF 2

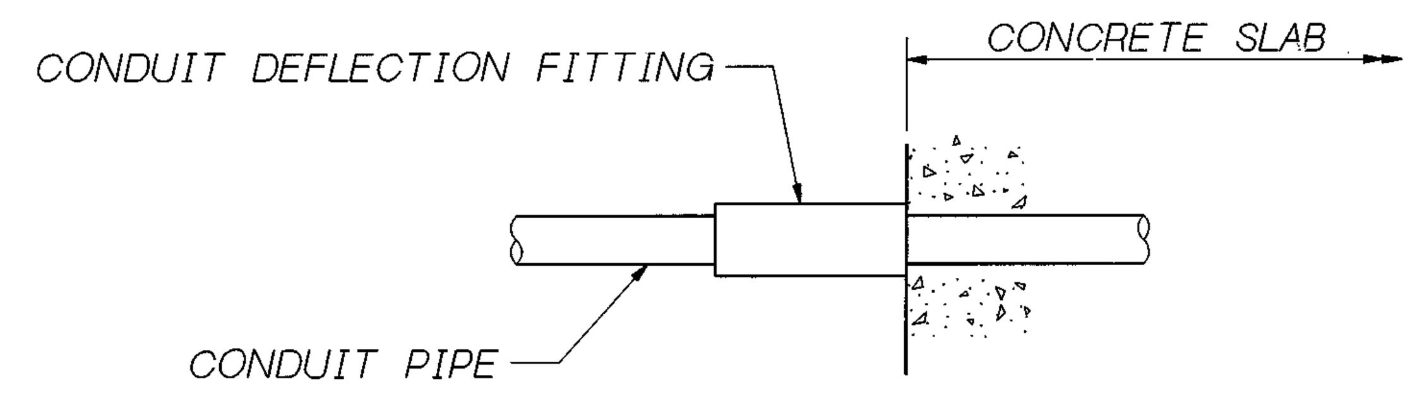
BRIDGE SHEET NO. 14
SHEET 493 OF 663 SHEETS

SR 405 JOB NO. 7071 SHEET 14

241/133

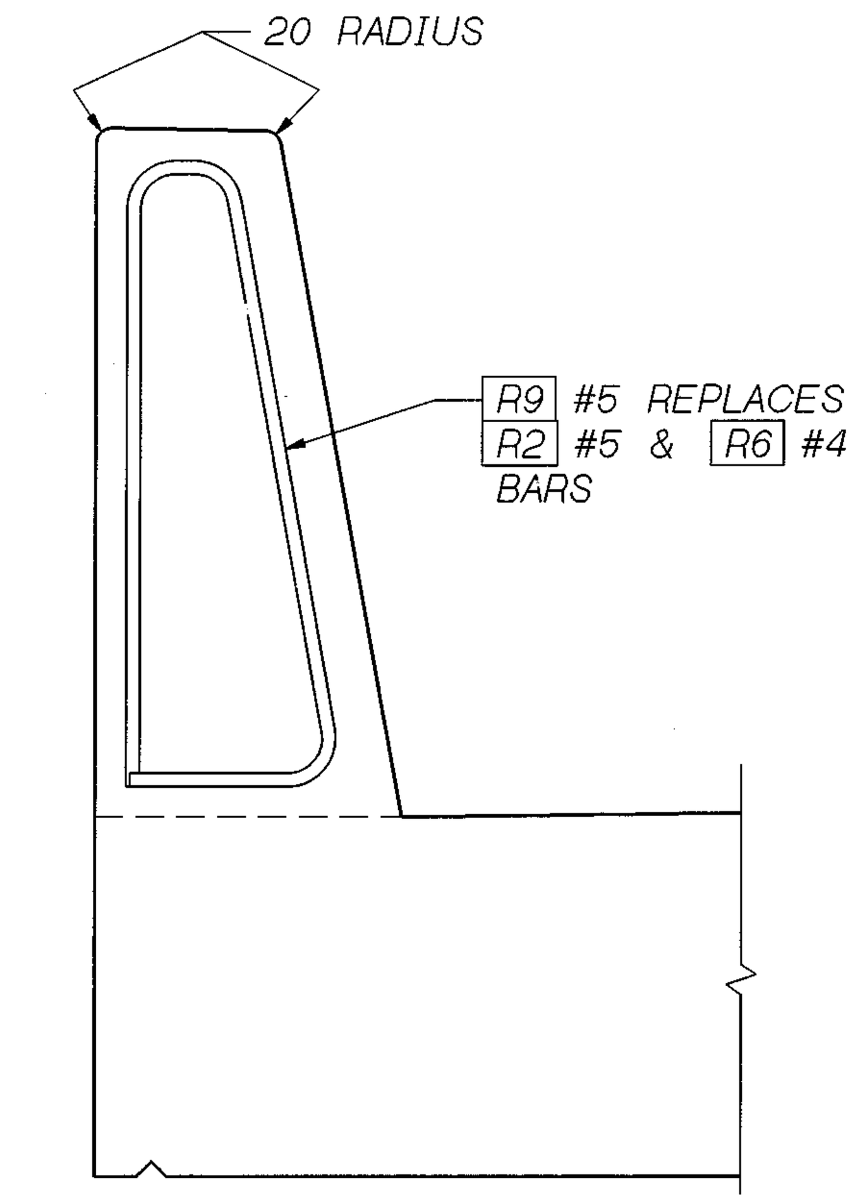


END VIEW



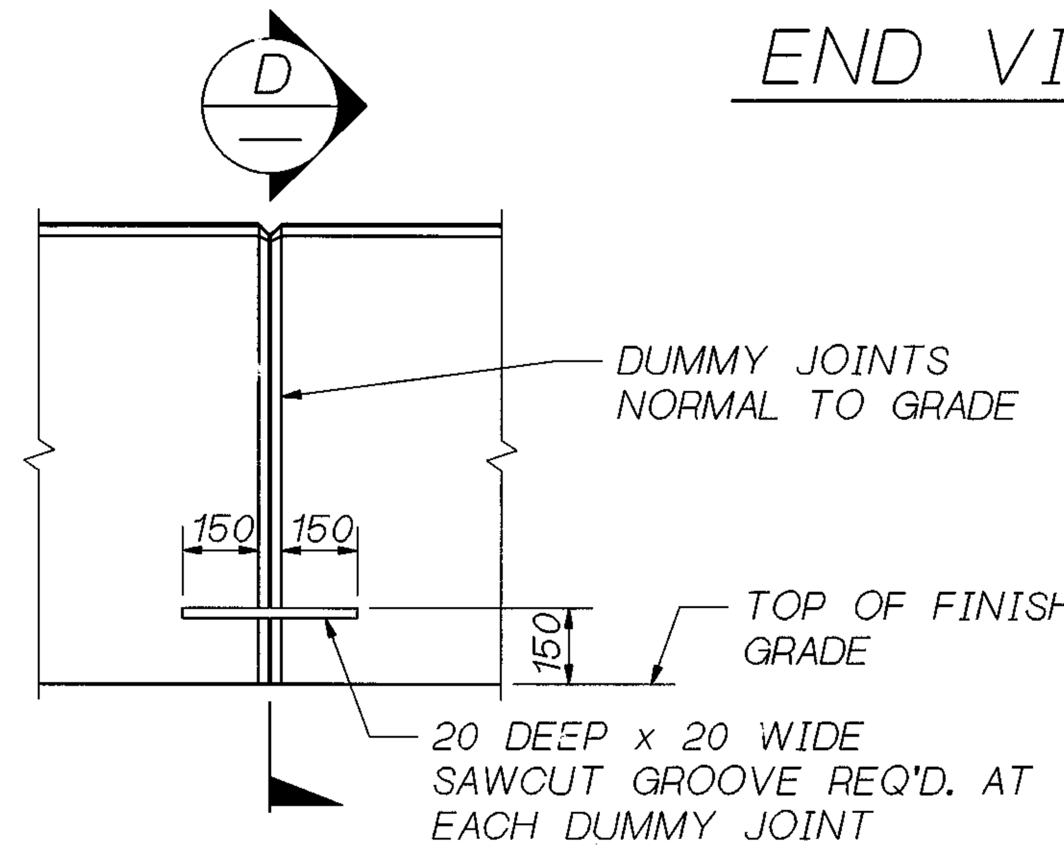
CONDUIT DEFLECTION FITTING

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



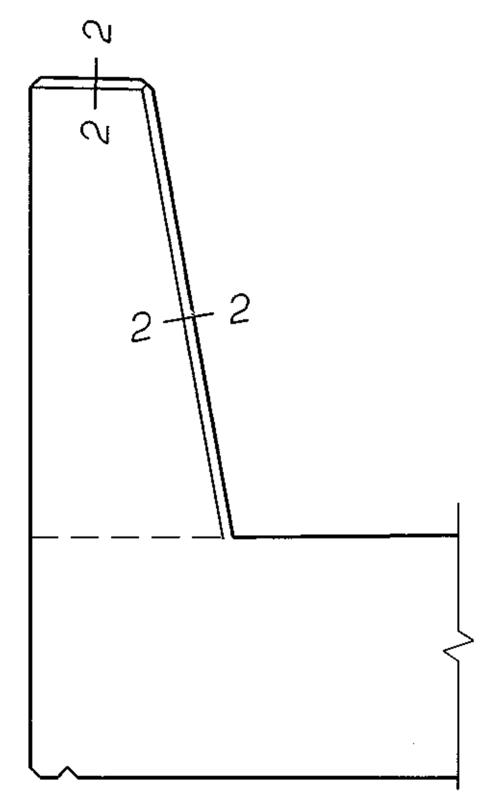
SLIPFORM ALTERNATE

SEE TYPICAL SECTION - MEDIAN BARRIER FOR ADDITIONAL DETAILS.

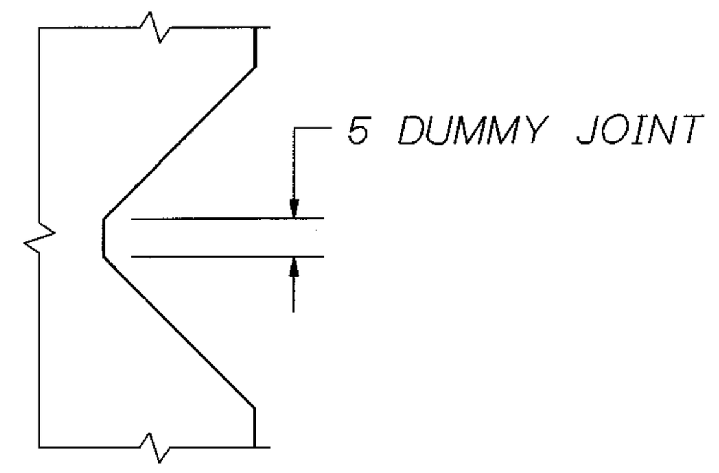


VIEW A/14

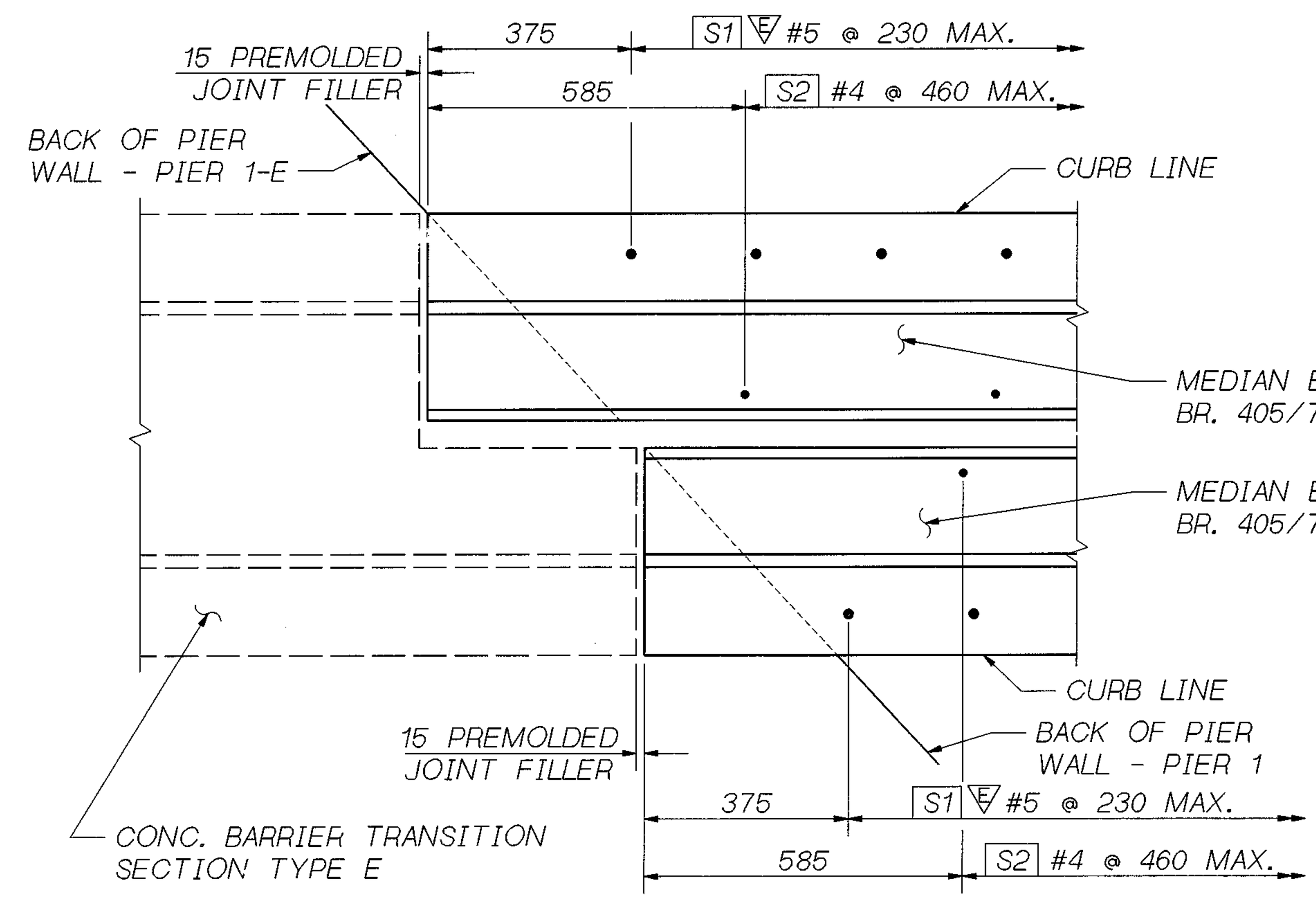
NOTE: CONCRETE SURFACE CONSTRUCTION TOLERANCE OF 5 mm IN 3.000 (MAX.) IS REQ'D. FOR TRAFFIC SIDE OF BARRIER.



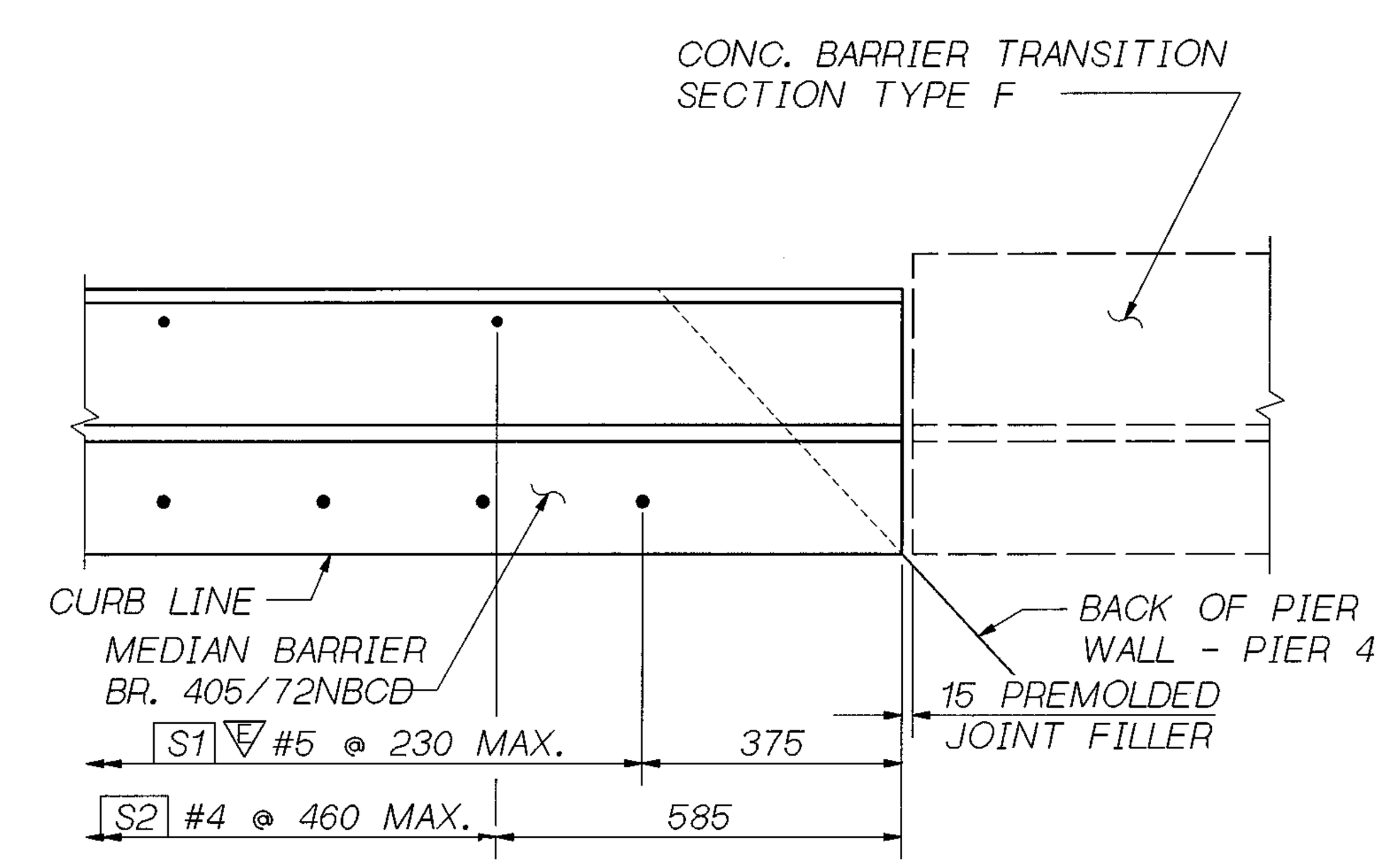
SECTION D



SECTION 2-2



DETAIL B/14



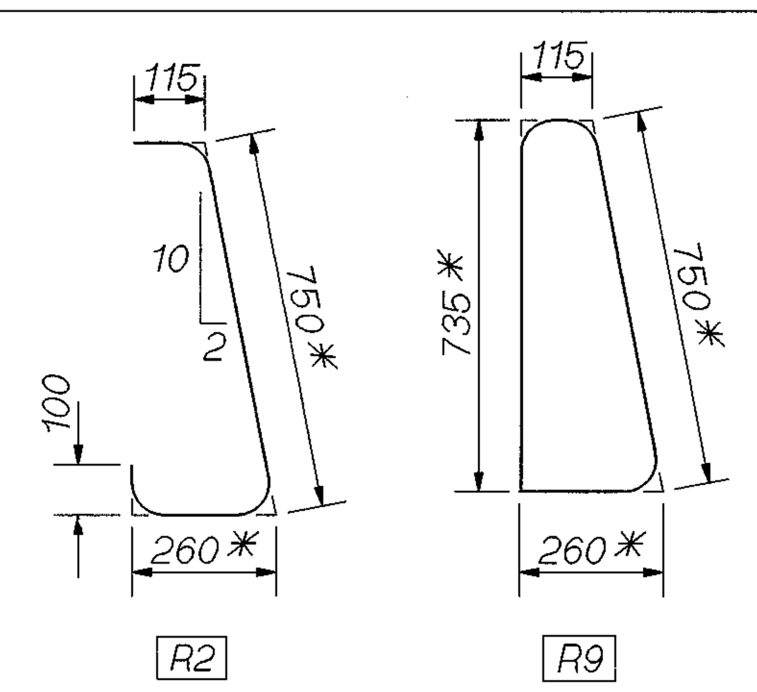
DETAIL C/14

∇ : EPOXY COATED ≠ DIMENSIONS TO POINTS OF INTERSECTION.

MEDIAN BARRIER BAR LIST

ALL REINFORCING SHALL BE AASHTO M31, GR. 60.

MARK	SIZE	LENGTH		BENDING DIAGRAM (ALL DIMENSIONS ARE OUT TO OUT)
R2	5	1.225 *		
R3	4	(A)	STR.	
R4	6	(A)	STR.	
R6	4	735 *	STR.	
R7	9	4.265	STR.	
R9	5	1.860 *		



* DIMENSIONS SHOWN ARE FOR BR. 405/72E, TO BE INCREASED FOR BR. 405/72NBCD.

(A) DETERMINE FROM PLANS

FOR S1 ∇ & S2 BARS SEE BARLIST.

SR 405 JOB NO. 7071 SHEET 15

Bridge Design Engr.		
Supervisor		
Designed By K. HINKLEY	6/96	
Checked By C. CORNELL	6/96	
Detailed By D.W. PULSE JR.	6/96	
Bridge Projects Engr.		
Prelim. Plan By		
Architect/Specialist		

NBCDROOT:[000000.FGB]TB_MED_2.FGB;1

DATE | REVISION | BY | APP'D

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

JOB NUMBER 96W035

5054

12-NOV-96

Washington State Department of Transportation

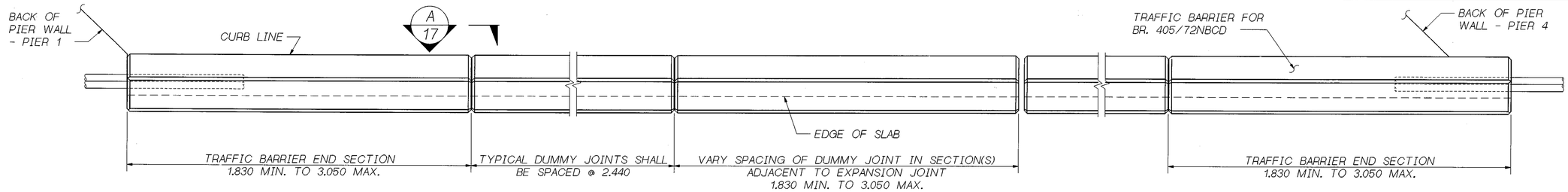
SR 405
BOTHELL TO SWAMP CREEK I/C
HOV LANES - STAGE 1
NORTH CREEK BRIDGE 405/72 NBCD

MEDIAN BARRIER 2 OF 2

BRIDGE SHEET NO. 15

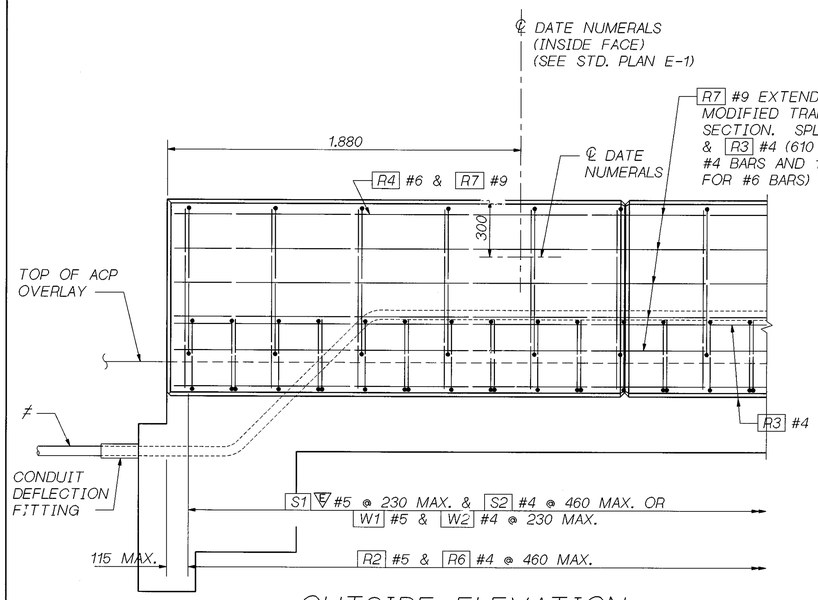
SHEET 494 OF 663 SHEETS

241/332



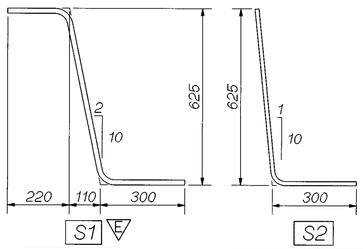
PLAN
TRAFFIC BARRIER

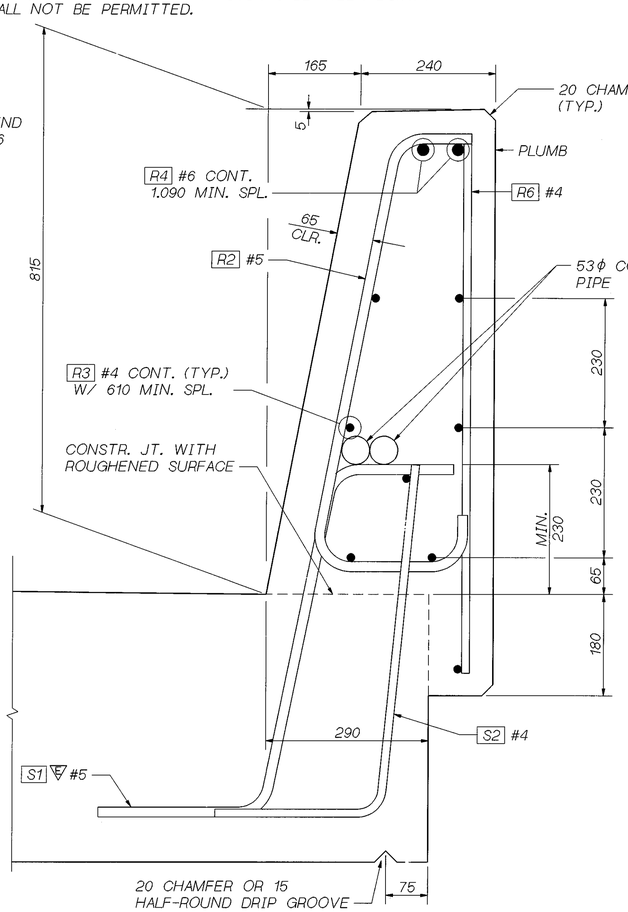
BARRIER CONTINUOUS BETWEEN ROADWAY EXPANSION JOINTS. CONSTRUCTION JOINTS WITH SHEAR KEYS ARE PERMISSIBLE AT DUMMY JOINT LOCATIONS. FORM JOINTS BETWEEN DUMMY JOINTS SHALL NOT BE PERMITTED.



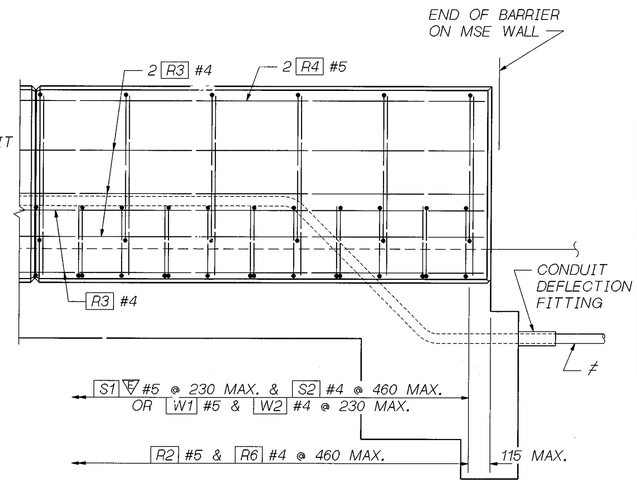
OUTSIDE ELEVATION
END OF MODIFIED TRAFFIC BARRIER

AT SE CORNER OF BR. 405/72NBCD





TYPICAL SECTION - TRAFFIC BARRIER



OUTSIDE ELEVATION
TRAFFIC BARRIER

AT NE CORNER OF BR. 405/72NBCD

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

Bridge Design Engr.	NBCDROOT:\000000.FGB\MSS_1.FGB:1			REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor				10	WASH.			
Designed By K. HINKLEY 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				5054				
Architect/Specialist	DATE	REVISION	BY APP'D					

12-NOV-96

STATE OF WASHINGTON — DARRELL W. PULSE JR. — 20527 — REGISTERED PROFESSIONAL ENGINEER — EXPIRES 10/8/98

Washington State Department of Transportation

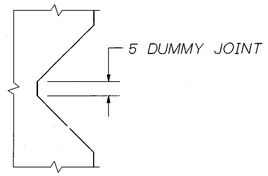
SR 405
BOTHELL TO SWAMP CREEK I/C
HOV LANES - STAGE 1
NORTH CREEK BRIDGE 405/72 NBCD

TRAFFIC BARRIER 1 OF 2

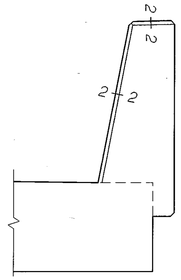
BRIDGE SHEET NO. 16
SHEET 495 OF 663 SHEETS

SR 405 JOB NO. 7071 SHEET 16

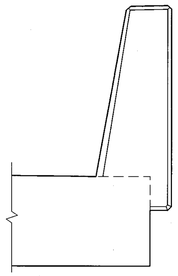
24/131



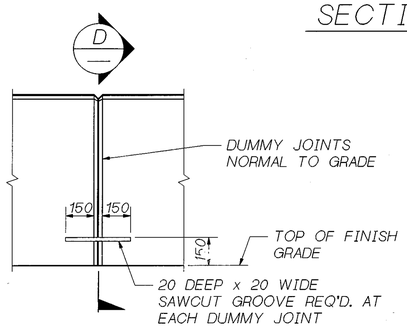
SECTION 2-2



SECTION D

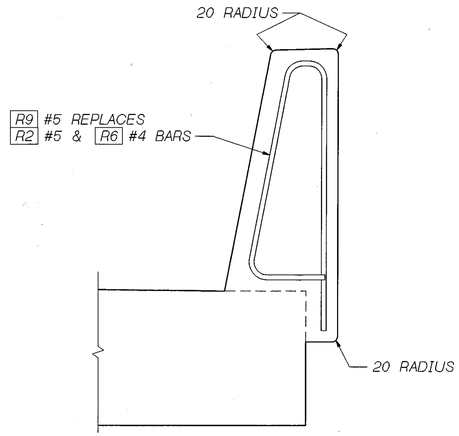


END VIEW



VIEW A / 16

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



SLIPFORM ALTERNATE

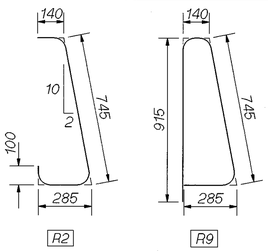
SEE TYPICAL SECTION - TRAFFIC BARRIER FOR ADDITIONAL DETAILS.

▽ : EPOXY COATED ≠ DIMENSIONS TO POINTS OF INTERSECTION.

TRAFFIC BARRIER BAR LIST

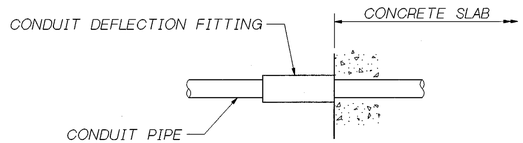
ALL REINFORCING SHALL BE AASHTO M31, GR. 60.

MARK	SIZE	LENGTH	BENDING DIAGRAM (ALL DIMENSIONS ARE OUT TO OUT)
R2	5	1.270	
R3	4	(A)	STR.
R4	6	(A)	STR.
R6	4	915	STR.
R7	9	4.265	STR.
R9	5	2.085	



(A) DETERMINE FROM 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.

Bridge Design Engr.	NBCDROOT:[000000.FGB1MSS_2.FGB;1				REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	
Supervisor					10	WASH.				
Designed By K. HINKLEY 6/96					JOB NUMBER 96W035					
Checked By C. CORNELL 6/96										
Detailed By D.W. PULSE JR. 6/96										
Bridge Projects Engr.										
Prelim. Plan By										
Architect/Specialist	DATE	REVISION	BY	APP'D	5054					

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 NBCD

TRAFFIC BARRIER 2 OF 2

BRIDGE SHEET NO. 17

SHEET 496 OF 663 SHEETS

SR 405 JOB NO. 7071 SHEET 17

12-NOV-96

241/130

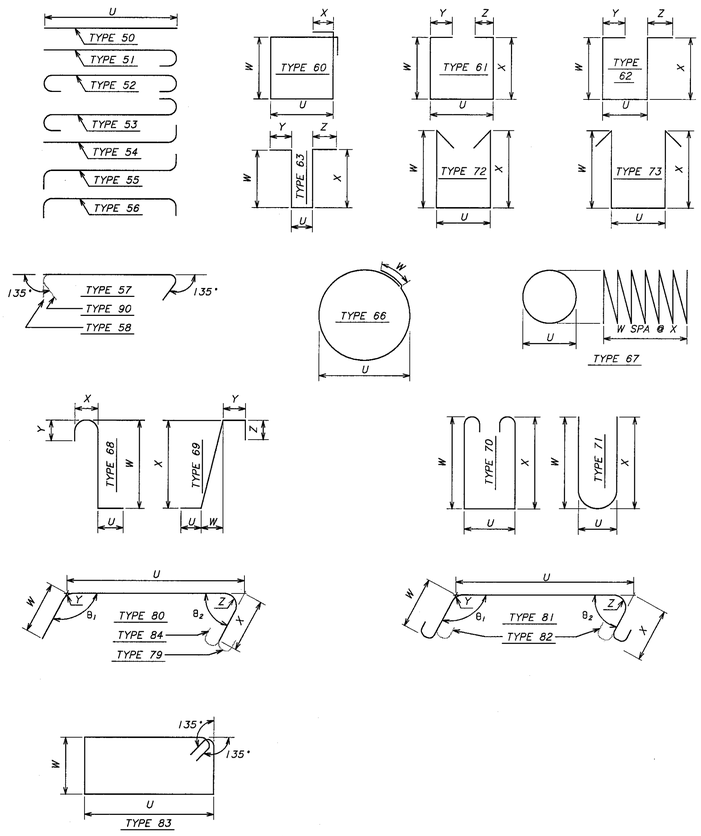
S=BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
LUMP SUM QUANTITY
T OR S=TIE OR STIRRUP RADIUS
E=EARTHQUAKE TAIL W/ TIE OR STIRRUP RADIUS
E=BAR IS EPOXY COATED
V=BAR DIMENSIONS VARY BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE

MARK NO.	LOCATION	SIZE	NO. REQ'D	BEND TYPE	BEND RADIUS	LUMP SUM	SUBSTRUCT	EPOXY COATED	VARIES	NO. EACH	DIMENSIONS U M	W M	X M	Y M	Z M	θ1 DEG	θ2 DEG	LENGTH (EACH) M	TOTAL WEIGHT KG
	INTERMED. PILE CAPS																		
200	PIER CAP 2 & 3 - STAGE 1	4	40	83	T					4	0.625	0.690						3.142	500
201	PIER CAP 2 & 3 - STAGE 1	4	5	83	T					4	0.965	0.690						3.822	76
202	PIER CAP 2 & 3 - STAGE 1	7	4	50						2	11.270							11.270	275
203	PIER CAP 2 & 3 - STAGE 1	5	2	50						2	11.500							11.500	72
204	PIER CAP 2 & 3 - STAGE 1	7	5	50						2	11.500							11.500	350
205	PIER CAP 2 & 3 - STAGE 1	5	2	50						2	11.270							11.270	70
220	PIER CAP 2 - STAGE 2	4	80	83	T					2	0.625	0.690						3.142	500
221	PIER CAP 2 - STAGE 2	4	5	83	T					2	0.965	0.690						3.822	38
222	PIER CAP 2 - STAGE 2	7	4	54						1	15.480							15.785	192
223	PIER CAP 2 - STAGE 2	5	4	50						1	11.820							11.820	73
224	PIER CAP 2 - STAGE 2	7	5	54						1	15.690							15.995	244
233	PIER CAP 2 - STAGE 2	5	4	50						1	4.580							4.580	28
240	PIER CAP 3 - STAGE 2	4	90	83	T					2	0.625	0.690						3.142	563
241	PIER CAP 3 - STAGE 2	4	5	83	T					2	0.965	0.690						3.822	38
242	PIER CAP 3 - STAGE 2	7	7	54						1	17.740							18.045	385
243	PIER CAP 3 - STAGE 2	5	4	50						1	11.965							11.965	74
244	PIER CAP 3 - STAGE 2	7	5	54						1	17.950							18.255	278
253	PIER CAP 3 - STAGE 2	5	4	50						1	6.695							6.695	42
	ABUTMENTS																		
600	PIER CAP 1 & 4 - STAGE 1	4	38	63	T					2	0.300	0.400						1.049	79
601	PIER CAP 1 & 4 - STAGE 1	6	2	50						2	11.500							11.500	104
602	PIER CAP 1 & 4 - STAGE 1	4	38	83	T					2	0.500	0.810						3.132	237
603	PIER CAP 1 & 4 - STAGE 1	4	56	83	T					2	0.580	0.845						3.362	375
604	PIER CAP 1 & 4 - STAGE 1	7	4	50						2	11.500							11.500	280
605	PIER CAP 1 & 4 - STAGE 1	5	3	50						2	11.500							11.500	107
606	PIER CAP 1 & 4 - STAGE 1	4	2	50						2	11.500							11.500	46
607	PIER CAP 1 & 4 - STAGE 1	7	5	50						2	11.500							11.500	350
608	PIER CAP 1 & 4 - STAGE 1	4	6	83	T					2	1.285	0.600						4.282	51
620	PIER CAP 1 - STAGE 2	4	49	63	T					1	0.300	0.400						1.049	51
621	PIER CAP 1 - STAGE 2	6	2	50						1	11.755							11.755	55
622	PIER CAP 1 - STAGE 2	4	49	83	T					1	0.500	0.810						3.132	153
623	PIER CAP 1 - STAGE 2	4	74	83	T					1	0.580	0.845						3.362	248
624	PIER CAP 1 - STAGE 2	7	4	54						1	14.015							14.320	174
625	PIER CAP 1 - STAGE 2	5	3	50						1	11.755							11.755	55
626	PIER CAP 1 - STAGE 2	4	2	50						1	11.755							11.755	23
627	PIER CAP 1 - STAGE 2	7	5	54						1	14.015							14.320	218
628	PIER CAP 1 - STAGE 2	4	7	83	T					1	1.285	0.845						4.772	33
631	PIER CAP 1 - STAGE 2	6	2	50						1	2.770							2.770	12
635	PIER CAP 1 - STAGE 2	5	3	50						1	2.970							2.970	14
636	PIER CAP 1 - STAGE 2	4	2	50						1	2.870							2.870	6
640	PIER CAP 4 - STAGE 2	4	66	63	T					1	0.300	0.400						1.049	69
641	PIER CAP 4 - STAGE 2	6	2	50						1	12.055							12.055	55
642	PIER CAP 4 - STAGE 2	4	66	83	T					1	0.500	0.810						3.132	206
643	PIER CAP 4 - STAGE 2	4	101	83	T					1	0.580	0.845						3.362	338
644	PIER CAP 4 - STAGE 2	7	2	50						1	10.770							10.770	66
645	PIER CAP 4 - STAGE 2	5	3	50						1	12.055							12.055	56
646	PIER CAP 4 - STAGE 2	4	2	50						1	12.055							12.055	24
647	PIER CAP 4 - STAGE 2	7	2	50						1	11.765							11.765	72
648	PIER CAP 4 - STAGE 2	4	4	83	T					1	1.285	0.845						4.772	19
651	PIER CAP 4 - STAGE 2	6	2	50						1	8.205							8.205	37
654	PIER CAP 4 - STAGE 2	7	2	50						1	8.775							8.775	53
655	PIER CAP 4 - STAGE 2	5	3	50						1	8.305							8.305	39
656	PIER CAP 4 - STAGE 2	4	2	50						1	8.205							8.205	16
657	PIER CAP 4 - STAGE 2	7	3	50						1	9.775							9.775	89
664	PIER CAP 4 - STAGE 2	7	2	54						1	9.885							10.190	62
667	PIER CAP 4 - STAGE 2	7	2	54						1	8.890							9.195	56
674	PIER CAP 4 - STAGE 2	7	2	54						1	11.880							12.185	74
677	PIER CAP 4 - STAGE 2	7	3	54						1	10.880							11.185	102

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 M	W M	X M	Y M	Z M	θ1 DEG	θ2 DEG	LENGTH (EACH) M	TOTAL WEIGHT KG
	DECK REINFORCING																		
800	SLAB - TOP TRANS. (STAGE 1)	5	31	50				E	V	1	0.715 7.205							0.715 7.205	191
801	SLAB - TOP TRANS. (STAGE 1)	5	119	51				E			7.410							7.590	1402
802	SLAB - TOP TRANS. (STAGE 1)	5	31	51				E	V	1	0.715 7.205							0.893 7.383	191
803	SLAB - BOT. TRANS. (STAGE 1)	5	62	50					V	2	0.715 7.205							0.715 7.205	381
804	SLAB - BOT. TRANS. (STAGE 1)	5	119	50							7.410							7.410	1369
805	SLAB - TOP LONG. (STAGE 1)	10	26	54				E			16.480							16.950	2822
806	SLAB - TOP LONG. (STAGE 1)	10	66	50				E			9.755							9.755	4123
807	SLAB - TOP LONG. (STAGE 1)	10	26	50				E			18.360							18.360	3057
808	SLAB - TOP LONG. (STAGE 1)	10	10	54				E			9.440							9.910	635
810	SLAB - EDGE BEAM (STAGE 1)	10	6	50							13.735							13.735	528
811	SLAB - EDGE BEAM (STAGE 2)	10	6	50							13.735							13.735	528
812	SLAB - STIRRUP (STAGE 1)	4	760	70							0.305	0.305						1.220	922
813	SLAB - STIRRUP (STAGE 2)	4	1160	70							0.305	0.305						1.220	1407
815	SLAB - BOT. LONG. (STAGE 1)	10	10	50							9.995							9.995	640
816	SLAB - BOT. LONG. (STAGE 1)	10	20	50							14.995							14.995	1921
817	SLAB - BOT. LONG. (STAGE 1)	10	19	50							7.245							7.245	882
818	SLAB - BOT. LONG. (STAGE 1)	10	20	50							16.500							16.500	2113
819	SLAB - BOT. LONG. (STAGE 1)	10	19	50							9.940							9.940	1209
820	SLAB - BOT. LONG. (STAGE 1)	10	19	50							7.455							7.455	907
821	SLAB - BOT. LONG. (STAGE 1)	10	10	50							10.255							10.255	657
827	SLAB - BOT. LONG. (STAGE 2)	10	19	50					V	1	15.695 17.590							15.695 17.590	2025
828	SLAB - BOT. LONG. (STAGE 2)	10	19	50					V	1	7.895 8.690							7.895 8.690	1009
829	SLAB - BOT. LONG. (STAGE 2)	10	36	50					V	1	2.840 3.185							2.840 3.185	695
830	SLAB - BOT. LONG. (STAGE 2)	10	19	50					V	1	15.280 16.970							15.280 16.970	1962
831	SLAB - BOT. LONG. (STAGE 2)	10	36	50					V	1	4.880 5.470							4.880 5.470	1193
832	SLAB - BOT. LONG. (STAGE 2)	10	19	50					V	1	12.720 14.100							12.720 14.100	1632
833	SLAB - BOT. LONG. (STAGE 2)	10	36	50					V	1	6.085 6.820							6.085 6.820	1488
834	SLAB - BOT. LONG. (STAGE 2)	10	17	50					V	1	14.075 15.775							14.075 15.775	1625
835	SLAB - BOT. LONG. (STAGE 2)	10	18	50					V	1	8.835 9.745							8.835 9.745	1071
840	SLAB - BOT. TRANS. (STAGE 2)	5	40	50					V	1	0.655 10.170							0.655 10.170	336
841	SLAB - BOT. TRANS. (STAGE 2)	5	95	54					V	1	10.175 12.765							10.391 12.981	1723

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 11:50am FILENAME: X:\A96077\BR72\NBCD\18.DWG SCALE: 1
SR 405 JOB NO. 7071 SHEET 18 OF 19

BRIDGE DESIGN ENGR						
SUPERVISOR						
DESIGNED BY	K. HINKLEY	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 — 20521 — REGISTERED PROFESSIONAL ENGINEER
EXPIRES 10/12/98

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 NBCD

BAR LIST

BRIDGE SHEET NO. 18
SHEET 497 OF 663 SHEETS

241/129

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

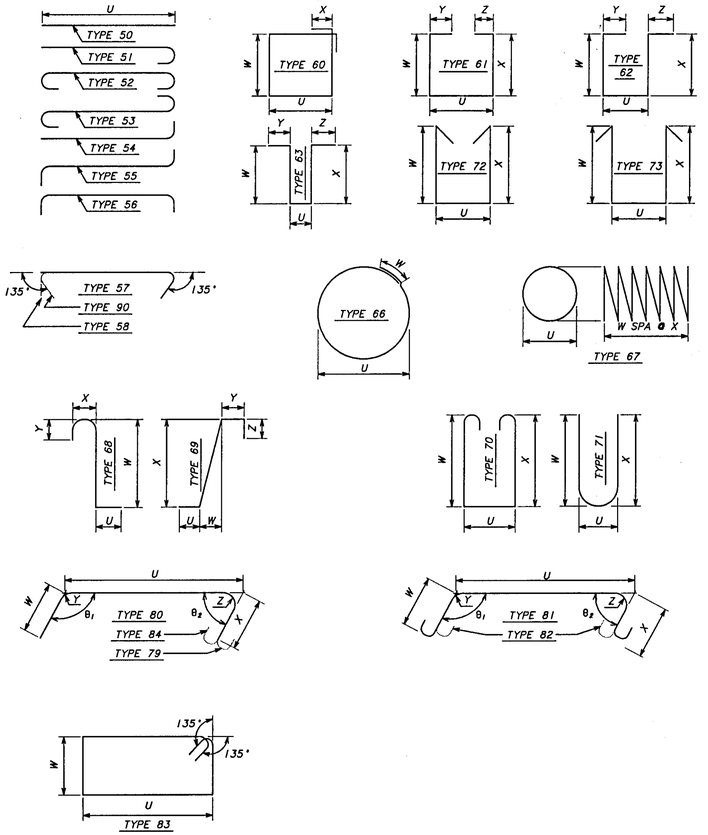
MARK NO.	LOCATION	SIZE	NO. REQ'D	BEND TYPE	BEND RADIUS	LUMP SUM	SUBSTRUCT	EPOXY COATED	VARIES	NO. EACH	DIMENSIONS U (M)	W (M)	X (M)	Y (M)	Z (M)	θ1 (DEG)	θ2 (DEG)	LENGTH (EACH) (M)	TOTAL WEIGHT (KG)
842	SLAB - BOT. TRANS. (STAGE 2)	5	3	54					V	1	12.140 12.570							12.356 12.786	59
843	SLAB - BOT. TRANS. (STAGE 2)	5	52	54					V	1	0.550 11.590							0.766 11.806	507
850	SLAB - TOP LONG. (STAGE 2)	10	23	54				E	V	1	15.245 16.835							15.715 17.305	2432
851	SLAB - TOP LONG. (STAGE 2)	10	22	54				E	V	1	7.840 8.790							8.310 9.260	1238
852	SLAB - TOP LONG. (STAGE 2)	10	44	50				E	V	1	5.305 5.950							5.305 5.950	1586
853	SLAB - TOP LONG. (STAGE 2)	10	23	50				E	V	1	18.170 20.115							18.170 20.115	2820
854	SLAB - TOP LONG. (STAGE 2)	10	22	50				E	V	1	11.880 13.320							11.880 13.320	1775
855	SLAB - TOP LONG. (STAGE 2)	10	44	50				E	V	1	9.495 10.645							9.495 10.645	2837
856	SLAB - TOP LONG. (STAGE 2)	10	23	54				E	V	1	5.435 6.095							5.905 6.565	918
857	SLAB - TOP LONG. (STAGE 2)	10	22	54				E	V	1	17.030 18.840							17.500 19.310	2593
860	SLAB - TOP TRANS. (STAGE 2)	5	40	50				E	V	1	0.655 10.170							0.655 10.170	336
861	SLAB - TOP TRANS. (STAGE 2)	5	95	54				E	V	1	10.175 12.765							10.391 12.981	1723
862	SLAB - TOP TRANS. (STAGE 2)	5	3	54				E	V	1	12.140 12.570							12.356 12.786	59
863	SLAB - TOP TRANS. (STAGE 2)	5	52	54				E	V	1	0.550 11.590							0.766 11.806	507
	BRIDGE NO. 405/72E																		
890	TOP SLAB - BR. 72E	10	4	50				E			13.390							13.390	343
891	BOT. SLAB - BR. 72E	10	4	50							12.645							12.645	324
892	EDGE BEAM - BR. 72E	10	6	50							12.450							12.450	478
893	CAP PIER 4 - BR. 72E	6	3	54							~~0.870~~ 1.093							1.124	13
894	CAP PIER 4 - BR. 72E	4	3	83	S						0.805	0.610						3.262	10
895	CAP PIER 4 - BR. 72E	5	2	50							0.530							0.530	2
896	CAP PIER 4 - BR. 72E	5	3	83	S						0.600	0.760						3.152	15
897	CAP PIER 4 - BR. 72E	5	6	54							~~0.870~~ 1.093							1.086	10
898	CAP PIER 4 - BR. 72E	4	2	50							0.530							0.530	1
899	CAP PIER 4 - BR. 72E	4	3	56							0.225							0.555	2
900	CAP PIER 2 & 3 - BR. 72E	7	8	54							~~0.870~~ 1.093							1.175	29
901	CAP PIER 2 & 3 - BR. 72E	4	12	83							0.640	0.510						2.732	51
902	CAP PIER 2 & 3 - BR. 72E	7	8	54							~~0.870~~ 1.093							1.175	29
903	CAP PIER 2 & 3 - BR. 72E	5	4	50							~~0.770~~ 0.993							0.770	5
	TRAFFIC BARRIER																		
S1	TRAFFIC BARRIER	5	4	90							0.625	0.300	0.220			11.310		0.890	215
S2	TRAFFIER BARRIER	4	4	91							0.625	0.300				5.711		1.081	809

RF1 133

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 (M)	W (M)	X (M)	Y (M)	Z (M)	θ1 (DEG)	θ2 (DEG)	LENGTH (EACH) (M)	TOTAL WEIGHT (KG)

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, SHEETS 14-17
3. FOR BEND TYPE 90 & 91, SEE BRIDGE SHEET 14.

FOR "AS CONSTRUCTED PLANS" ONLY

BRIDGE DESIGN ENGR					
SUPERVISOR					
DESIGNED BY	K. HINKLEY	6/96			
CHECKED BY	C. CORNELL	6/96			
DETAILED BY	T. BRENNAN	6/96			
BRIDGE PROJECTS ENGR					
PRELIM PLAN BY			7/16/96	RF1-#133	ALM
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. WILLIAMS, STATE OF WASHINGTON, 20521, 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 NBCD

BAR LIST

BRIDGE SHEET NO. 19
SHEET 498 OF 663 SHEETS

PLOTTED: Tue Nov 12 1996 11:51am FILENAME: X:\496077\BR72\NBCD\19.DWG SCALE: 1
SR 405 JOB NO. 7071 SHEET 19 OF 19