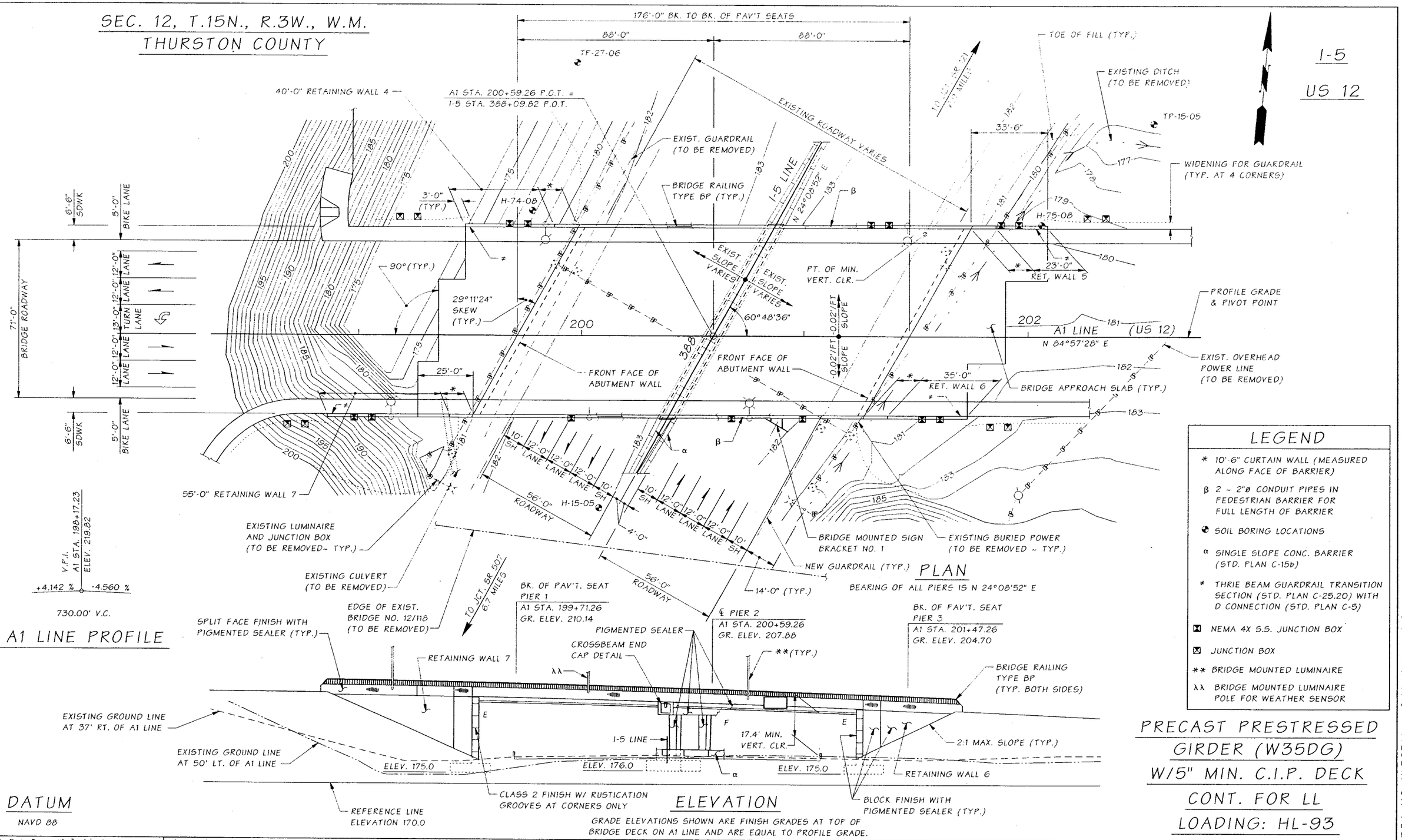
SEC. 12, T.15N., R.3W., W.M.
THURSTON COUNTY



A1 LINE PROFILE

PLAN

BEARING OF ALL PIERS IS N 24°08'52" E

ELEVATION

GRADE ELEVATIONS SHOWN ARE FINISH GRADES AT TOP OF BRIDGE DECK ON A1 LINE AND ARE EQUAL TO PROFILE GRADE.

DATUM

NAVD 88

LEGEND

- * 10'-6" CURTAIN WALL (MEASURED ALONG FACE OF BARRIER)
- β 2 ~ 2"ø CONDUIT PIPES IN PEDESTRIAN BARRIER FOR FULL LENGTH OF BARRIER
- SOIL BORING LOCATIONS
- α SINGLE SLOPE CONC. BARRIER (STD. PLAN C-15b)
- ≠ THRIE BEAM GUARDRAIL TRANSITION SECTION (STD. PLAN C-25.20) WITH D CONNECTION (STD. PLAN C-5)
- NEMA 4X S.S. JUNCTION BOX
- JUNCTION BOX
- ** BRIDGE MOUNTED LUMINAIRE
- λλ BRIDGE MOUNTED LUMINAIRE POLE FOR WEATHER SENSOR

PRECAST PRESTRESSED GIRDER (W35DG) W/5" MIN. C.I.P. DECK CONT. FOR LL LOADING: HL-93

I-5
US 12

C.S. 3403 ~ PROJ. NO. XL3231A ~ OLYMPIC REGION ~ I-5 ~ GRAND MOUND TO MAYTOWN - STAGE TWO ~ US 12 OVER I-5 BR. NO. 12/118 REPL.

SR 12 FILE NO. ____ SHEET BB1

Bridge Design Engr.	Khaleghi, B	
Supervisor	Stoddard, RB	
Designed By	Hsieh, JC	05/09
Checked By	Collins, R	05/10
Detailed By	Avery, D	05/10
Bridge Projects Engr.	Lewis, RA	02/09
Prelim. Plan By	Wei, J	12/08
Architect/Specialist	PDK/BSA/GAW	07/10

M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\Window files\01 LAYOUT 12-118.WND

DATE	REVISION	BY	APP'D

REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10	WASH.			
JOB NUMBER 100502				

Mon Aug 02 09:07:24 2010

BRIDGE AND STRUCTURES OFFICE

JUGESH KAPUR — STATE OF WASHINGTON — 25409 — REGISTERED PROFESSIONAL ENGINEER
8/3/10

Washington State Department of Transportation

I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

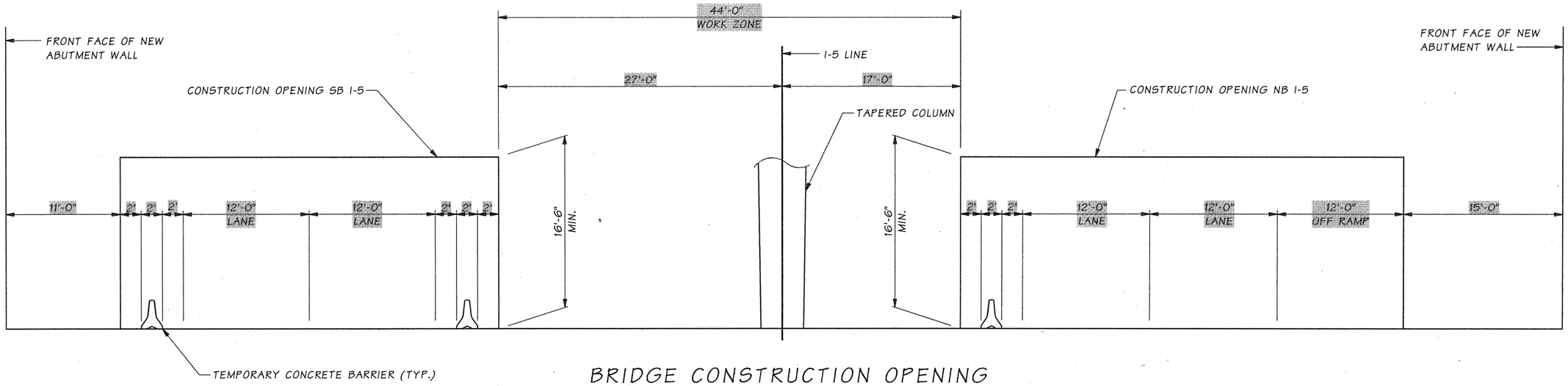
LAYOUT

BRIDGE SHEET NO. BB1

SHEET 344 OF 516 SHEETS

PROPOSED I-5 ELEVATIONS

I-5 STATION	OFFSET	ELEVATION	OFFSET	ELEVATION	OFFSET	ELEVATION
387+10	60.0' LT.	181.89	0.0'	183.03	-	-
387+60	60.0' LT.	182.14	0.0'	183.10	60.0' RT.	181.79
388+00	60.0' LT.	182.21	0.0'	183.16	60.0' RT.	181.98
388+60	60.0' LT.	181.98	0.0'	183.24	60.0' RT.	182.11
389+15	60.0' LT.	182.47	0.0'	183.43	60.0' RT.	182.30



BRIDGE CONSTRUCTION OPENING

GENERAL NOTES

1. ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION DATED 2010, AND AMENDMENTS.

2. THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS 4TH EDITION AND INTERIMS THROUGH 2009. THE SEISMIC DESIGN HAS BEEN COMPLETED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO GUIDE SPECIFICATIONS FOR LRFD SEISMIC BRIDGE DESIGN 1ST EDITION USING SEISMIC DESIGN CATEGORY C, SITE CLASS C, A PEAK GROUND ACCELERATION OF 0.35g, AND 0.2 SECOND AND 1.0 SECOND SPECTRAL ACCELERATION OF 0.77g AND 0.30g, RESPECTIVELY, ON SITE CLASS B. DEAD LOAD INCLUDES ADDITIONAL FUTURE WEARING SURFACE OF 25 POUNDS PER SQUARE FOOT.

3. THE CONCRETE IN THE BRIDGE DECK SHALL BE CLASS 4000D. THE CONCRETE IN APPROACH SLABS SHALL BE 4000A. ALL OTHER CAST-IN-PLACE CONCRETE, THE CONCRETE IN THE PRECAST COLUMN SEGMENTS AND THE PRECAST INTERMEDIATE DIAPHRAGMS SHALL BE CLASS 4000.

4. THE BACKFILL BEHIND THE ABUTMENTS MAY BE PLACED PRIOR TO PLACEMENT OF THE SUPERSTRUCTURE.

5. UNLESS OTHERWISE SHOWN IN THE PLANS, THE CONCRETE COVER MEASURED FROM THE FACE OF THE CONCRETE TO THE FACE OF ANY REINFORCING STEEL SHALL BE 2½" AT THE TOP OF THE BRIDGE DECK, 3" AT THE BOTTOM OF FOOTINGS, 2" AT THE TOP OF FOOTINGS AND 1½" AT ALL OTHER LOCATIONS.

6. FALSEWORK SHALL BE CAREFULLY RELEASED TO PREVENT IMPACT OR UNDUE STRESS IN THE STRUCTURE.

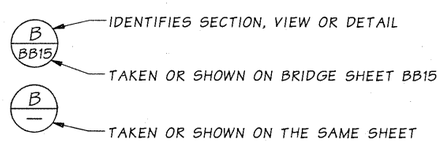
7. CONDUITS, JUNCTION BOXES AND UTILITIES ARE SHOWN FOR REFERENCE ONLY. THE CONTRACTOR SHALL COORDINATE THESE PLANS WITH THE ELECTRICAL, I.T.S. AND OTHER CIVIL PLANS.

8. THE PRECAST COMPONENTS ARE BEING CONSTRUCTED AS PART OF A TEST PROJECT; WSDOT WILL NOT ENTERTAIN PROPOSALS TO CAST THESE COMPONENTS IN PLACE.

9. THE NOMINAL BEARING CAPACITY OF SPREAD FOOTING SHALL BE TAKEN AS, IN KSF:

PIER NO.	SERVICE-I LIMIT STATE	STRENGTH LIMIT STATE	EXTREME EVENT-I LIMIT STATE
1	18.0	72.0	61.0
2	10.5	87.0	87.0
3	18.0	72.0	61.0

LEGEND



SR 12 FILE NO. ____ SHEET BB2

Bridge Design Engr.	Khaleghi, B		M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\window files\02 GEN NTS & CONSTR.WND				REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor	Stoddard, RB						10	WASH.			
Designed By	Hsieh, JC	02/10					JOB NUMBER 10C502				
Checked By	Collins, R	05/10									
Detailed By	Avery, D	05/10									
Bridge Projects Engr.											
Prelim. Plan By			9/1/10	REVISED CONSTRUCTION OPENING	JCH	BK					
Architect/Specialist			DATE	REVISION	BY	APP'D					

Tue Aug 31 15:28:34 2010

JEN-CHI HSIEH — STATE OF WASHINGTON — 28272 — PROFESSIONAL ENGINEER — STRUCTURAL ENGINEER
9/1/10

BRIDGE AND STRUCTURES OFFICE

BIJAN KHALEGHI — STATE OF WASHINGTON — 21995 — PROFESSIONAL ENGINEER — STRUCTURAL ENGINEER

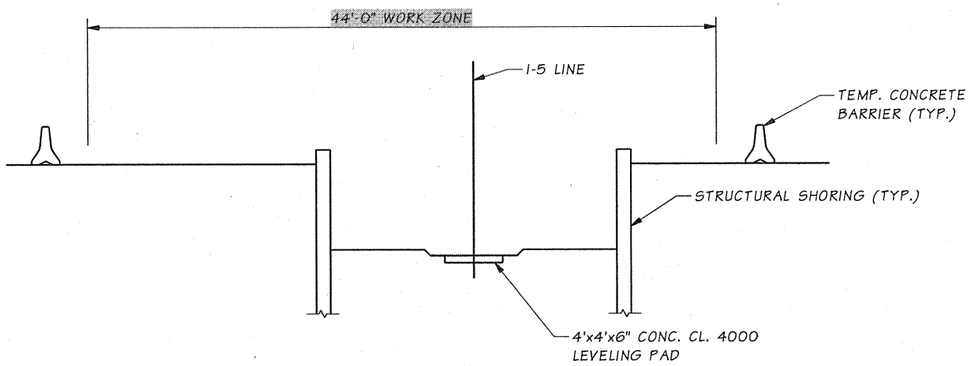
Washington State Department of Transportation

I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

CONSTRUCTION OPENING AND GENERAL NOTES

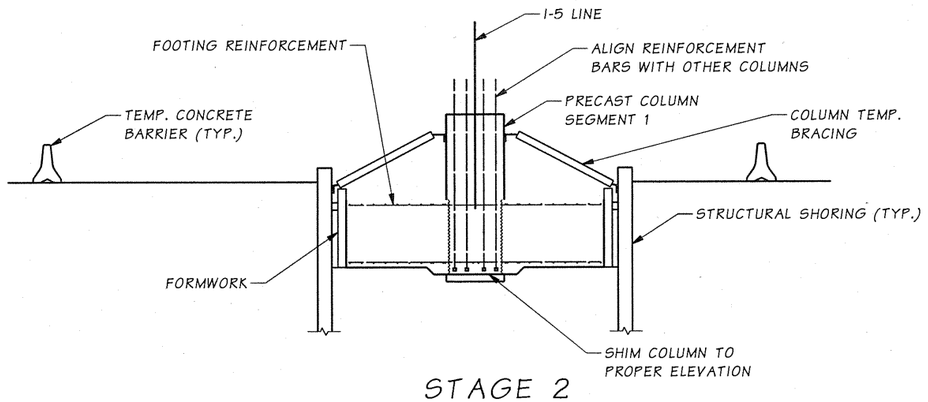
BRIDGE SHEET NO. BB2

SHEET 345 OF 516 SHEETS



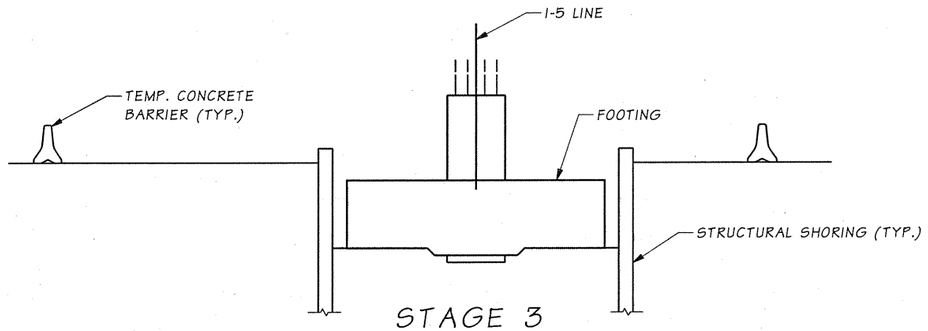
STAGE 1

EXCAVATE FOR PIER 2 FOOTINGS



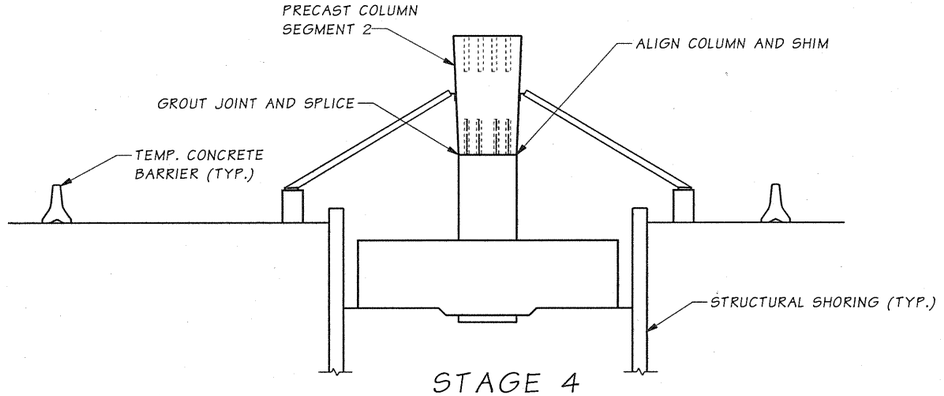
STAGE 2

INSTALL PRECAST COLUMN SEGMENT 1 AND FOOTING REINFORCEMENT



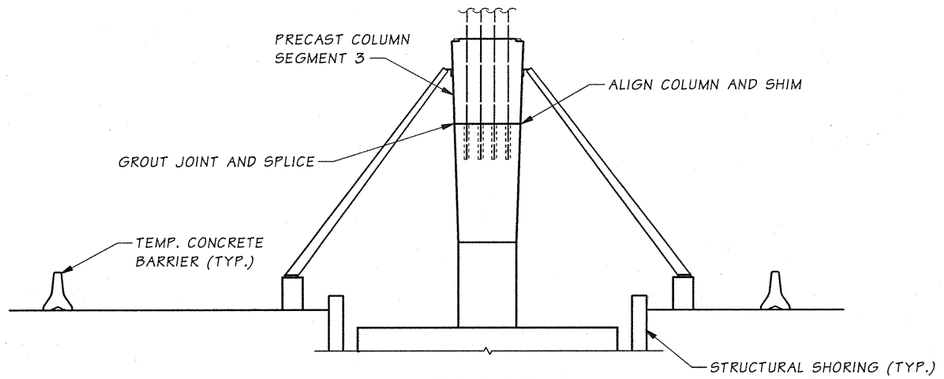
STAGE 3

CAST FOOTING



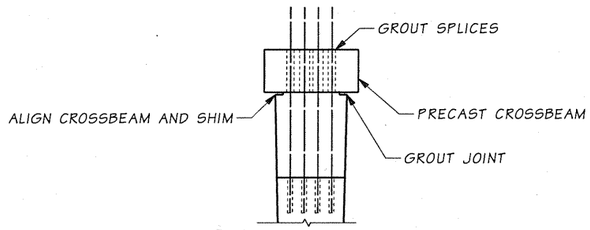
STAGE 4

INSTALL PRECAST COLUMN SEGMENT 2 AND GROUT SPLICES



STAGE 5

INSTALL PRECAST COLUMN SEGMENT 3 AND GROUT SPLICES



STAGE 6

INSTALL PRECAST CROSSBEAM PER PIER 2 CROSSBEAM SUGGESTED CONSTRUCTION SEQUENCE

SR 12 FILE NO. ____ SHEET BB3

Bridge Design Engr.	Khaleghi, B	M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\window files\03 P2 CONSTR SEQ.WND				REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor	Stoddard, RB					10	WASH.			
Designed By	Schultz, E 02/10					JOB NUMBER 10C502				
Checked By	Collins, R 05/10									
Detailed By	Avery, D 05/10									
Bridge Projects Engr.										
Prelim. Plan By		9/1/10	REVISED WORK ZONE DIMENSION	ES	BK					
Architect/Specialist		DATE	REVISION	BY	APP'D					

Tue Aug 31 16:06:42 2010

ERIC HENRY SCHULTZ — STATE OF WASHINGTON — 21611 — REGISTERED PROFESSIONAL ENGINEER
8/31/2010

BRIDGE AND STRUCTURES OFFICE

RICHARD B. STODDARD — STATE OF WASHINGTON — 20826 — REGISTERED PROFESSIONAL ENGINEER
8/31/10

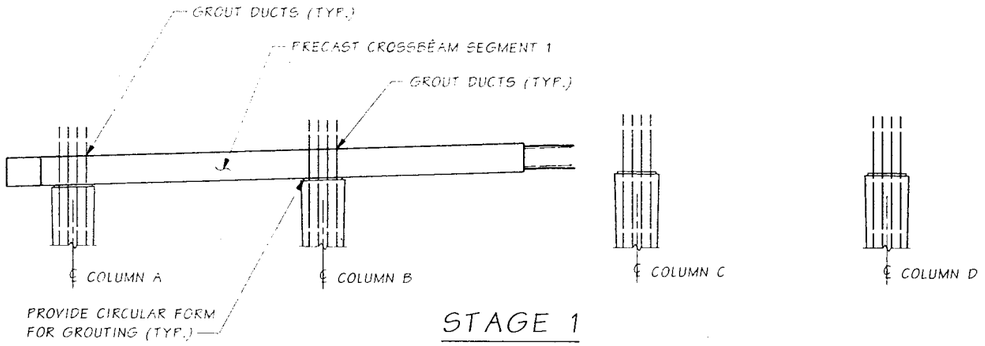
Washington State Department of Transportation

I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

SUGGESTED CONSTRUCTION SEQUENCE
PIER 2 FOOTING AND COLUMN

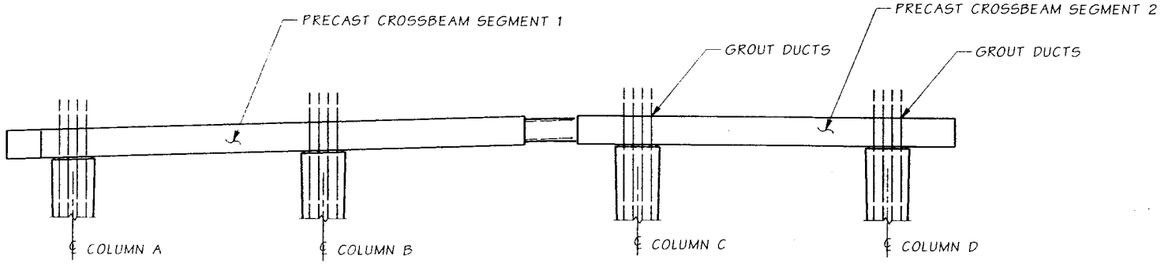
BRIDGE SHEET NO. BB3

SHEET 346 OF 516 SHEETS



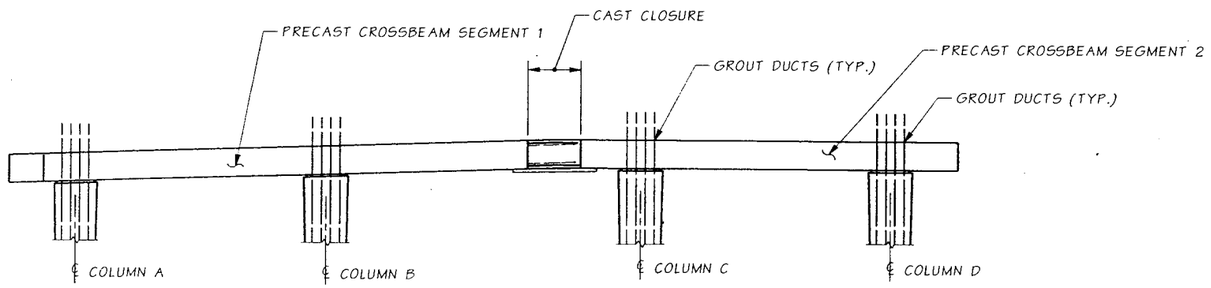
STAGE 1

PLACE PRECAST CROSSBEAM SEGMENT 1 AND GROUT DUCTS. CONSTRUCTION MATERIALS & CONSTRUCTION LIVE LOADS SHALL NOT BE ALLOWED ON CROSSBEAM UNTIL GROUT HAS ATTAINED FULL STRENGTH.



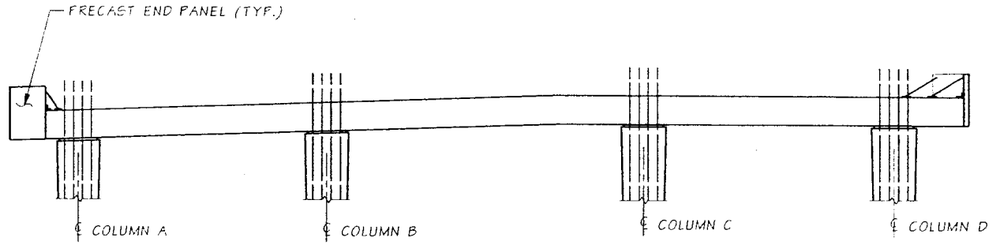
STAGE 2

PLACE PRECAST CROSSBEAM SEGMENT 2 AND GROUT DUCTS. CONSTRUCTION MATERIALS & CONSTRUCTION LIVE LOADS SHALL NOT BE ALLOWED ON CROSSBEAM UNTIL GROUT HAS ATTAINED FULL STRENGTH.



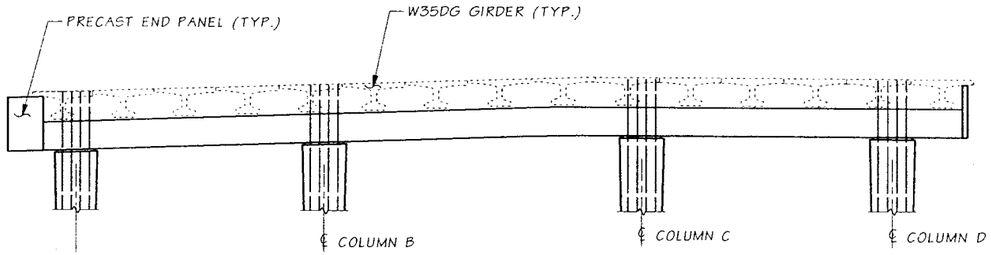
STAGE 3

PLACE REINFORCEMENT IN CLOSURE AND CAST. GIRDER PLACEMENT SHALL NOT BE ALLOWED UNTIL CONCRETE IN CLOSURE HAS ATTAINED 4000 PSI.



STAGE 4

INSTALL PRECAST END PANELS



STAGE 5

INSTALL SUPERSTRUCTURE PER SUPERSTRUCTURE CONSTRUCTION SEQUENCE.

SR 12 FILE NO. ____ SHEET BB4

Bridge Design Engr.	Khaleghi, B	M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\Window files\04 P2 XBM CONST SEQ.WND			REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor	Stoddard, RB				10	WASH.			
Designed By	Schultz, E 04/10				JOB NUMBER				
Checked By	Collins, R 05/10				10C502				
Detailed By	Avery, D 05/10								
Bridge Projects Engr.									
Prelim. Plan By									
Architect/Specialist		DATE	REVISION	BY	APP'D				

Mon Aug 02 09:07:44 2010

ERIC HENRY SCHULTZ — STATE OF WASHINGTON — 21866 — PROFESSIONAL ENGINEER — 8/3/2010

BRIDGE AND STRUCTURES OFFICE

BIJAN KHALEGHI — STATE OF WASHINGTON — 27998 — STRUCTURAL ENGINEER — 8/2/10

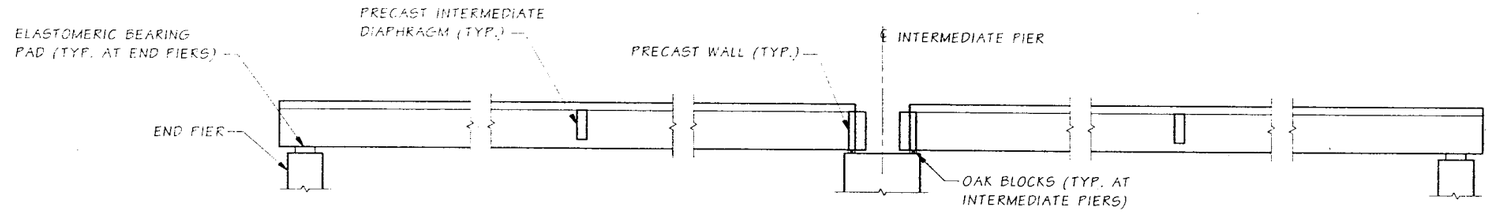
Washington State Department of Transportation

I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

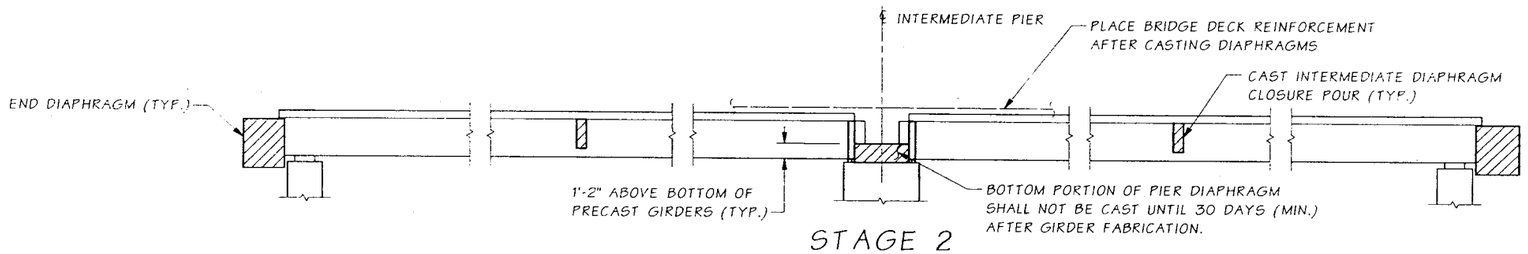
SUGGESTED CONSTRUCTION SEQUENCE
PIER 2 CROSSBEAM

BRIDGE SHEET NO: BB4

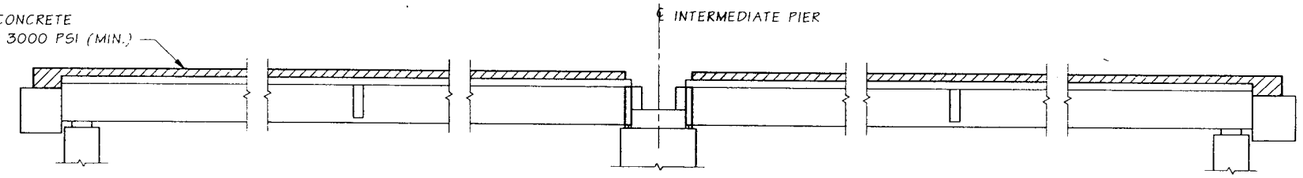
SHEET 347 OF 516 SHEETS



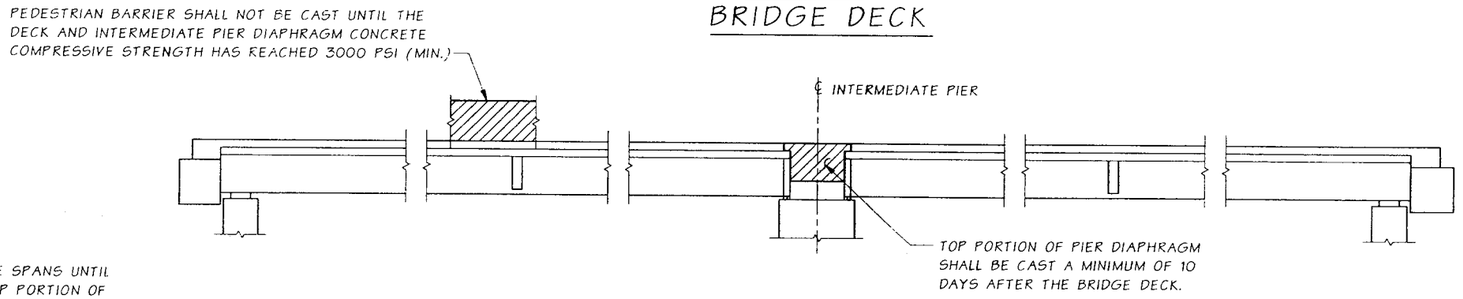
STAGE 1
SET GIRDERS IN PLACE



STAGE 2
CAST DIAPHRAGMS AND PLACE BRIDGE DECK REINFORCEMENT



STAGE 3
BRIDGE DECK



NOTE:

NO LIVE LOAD SHALL BE ALLOWED ON THE SPANS UNTIL THE COMPRESSIVE STRENGTH OF THE TOP PORTION OF THE PIER DIAPHRAGM HAS REACHED 3000 PSI (MIN.).

STAGE 4
COMPLETE DIAPHRAGMS

CONSTRUCTION SEQUENCE ~ SUPERSTRUCTURE

SR 12 FILE NO. ____ SHEET BB5

Bridge Design Engr.	Khaleghi, B	M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\Window files\05 SPRSTR CON SEQ.WND			REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor	Stoddard, RB				10	WASH.			
Designed By	Hsieh, JC 02/10				JOB NUMBER 10C502				
Checked By	Collins, R 05/10								
Detailed By	Avery, D 05/10								
Bridge Projects Engr.									
Prelim. Plan By									
Architect/Specialist		DATE	REVISION	BY	APP'D				

Mon Aug 02 09:07:48 2010

JEN-CHI HSIEH — STATE OF WASHINGTON — 28672 — PROFESSIONAL ENGINEER — STRUCTURAL ENGINEER — 8/2/10

BRIDGE AND STRUCTURES OFFICE

BRIAN KHALEGHI — STATE OF WASHINGTON — 27995 — PROFESSIONAL ENGINEER — STRUCTURAL ENGINEER — 8/2/10

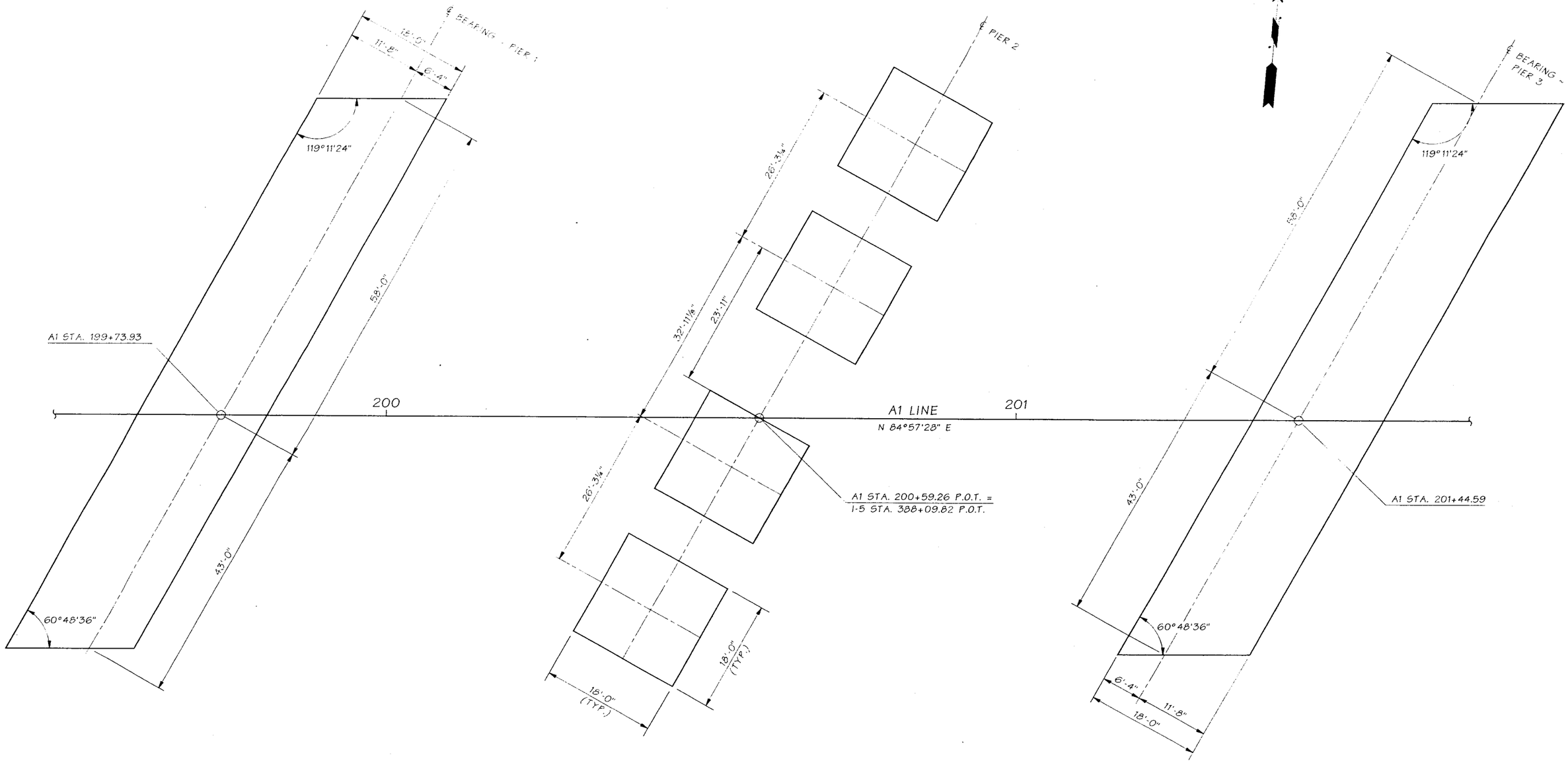
Washington State Department of Transportation

I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

CONSTRUCTION SEQUENCE SUPERSTRUCTURE

BRIDGE SHEET NO. BB5

SHEET 348 OF 516 SHEETS



FOUNDATION LAYOUT

BEARING OF ALL PIERS IS N 24°08'52" E

SR 12 FILE NO. ____ SHEET BB6

Bridge Design Engr.	Khaleghi, B		M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\window files\06 FND PLAN.WND								
Supervisor	Stoddard, RB										
Designed By	Schultz, E	02/10									
Checked By	Collins, R	05/10									
Detailed By	Avery, D	05/10									
Bridge Projects Engr.											
Prelim. Plan By											
Architect/Specialist			DATE	REVISION	BY	APP'D					

REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10	WASH.			
JOB NUMBER 106502				

Mon Aug 02 08:07:53 2010

ERIC HENRY SCHULTZ — STATE OF WASHINGTON — 20644 — REGISTERED PROFESSIONAL ENGINEER — 8/3/2010

BRIDGE AND STRUCTURES OFFICE

BIJAN KHALEGHI — STATE OF WASHINGTON — 27900 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER — 8/2/10

Washington State Department of Transportation

I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

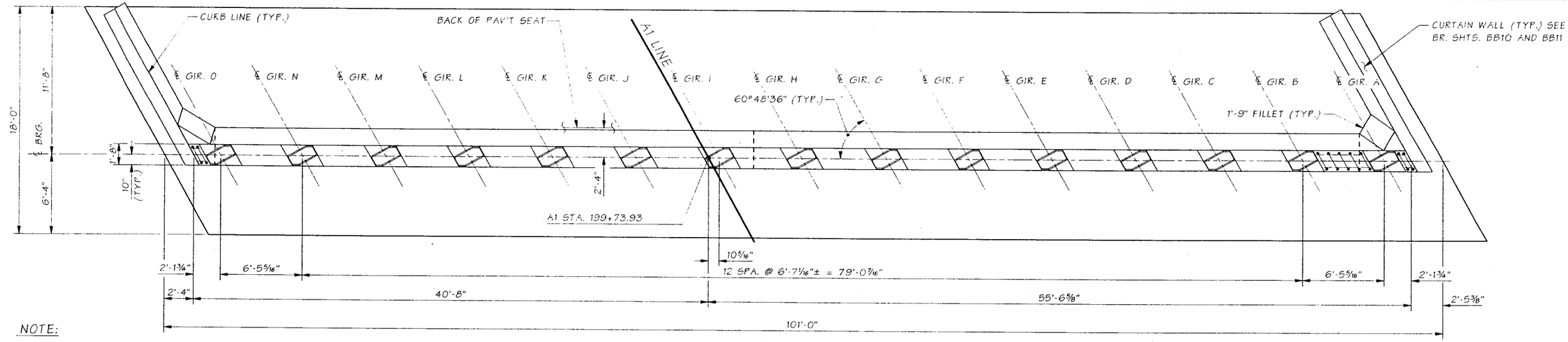
FOUNDATION PLAN

BRIDGE SHEET NO. BB6

SHEET 349 OF 516 SHEETS

TOP OF GROUT PAD ELEVATIONS

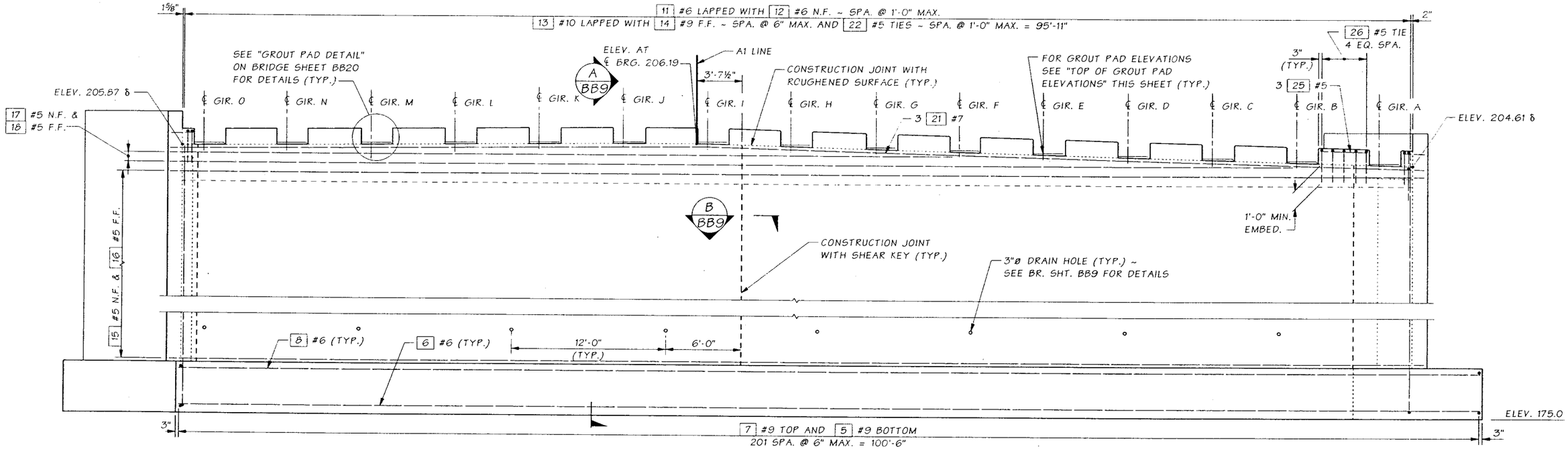
GIRDER	A	B	C	D	E	F	G	H
ELEVATION	204.80	204.99	205.18	205.37	205.55	205.74	205.93	206.11
GIRDER	I	J	K	L	M	N	O	
ELEVATION	206.29	206.27	206.22	206.17	206.12	206.07	206.01	



NOTE:

δ ELEVATION TAKEN AT INSIDE FACE OF CURTAIN WALL ALONG ℄ BEARING.

PLAN



ELEVATION

LOOKING BACK ON STATIONING

Bridge Design Engr.	Khaleghi, B	M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\Window files\07 P1 PLAN ELEV.WND	
Supervisor	Stoddard, RB		
Designed By	Collins, R	02/10	
Checked By	Schultz, E	06/10	
Detailed By	Avery, D	05/10	
Bridge Projects Engr.			
Prelim. Plan By			
Architect/Specialist			

DATE	REVISION	BY	APP'D

REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10	WASH.			
JOB NUMBER 100502				

ERIC HENRY SCHULTZ — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER — 8/3/2010

BRIDGE AND STRUCTURES OFFICE

BRIAN KHALEGHI — STATE OF WASHINGTON — PROFESSIONAL ENGINEER — 8/2/10

Washington State Department of Transportation

I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

PIER 1
PLAN AND ELEVATION

BRIDGE SHEET NO. BB7

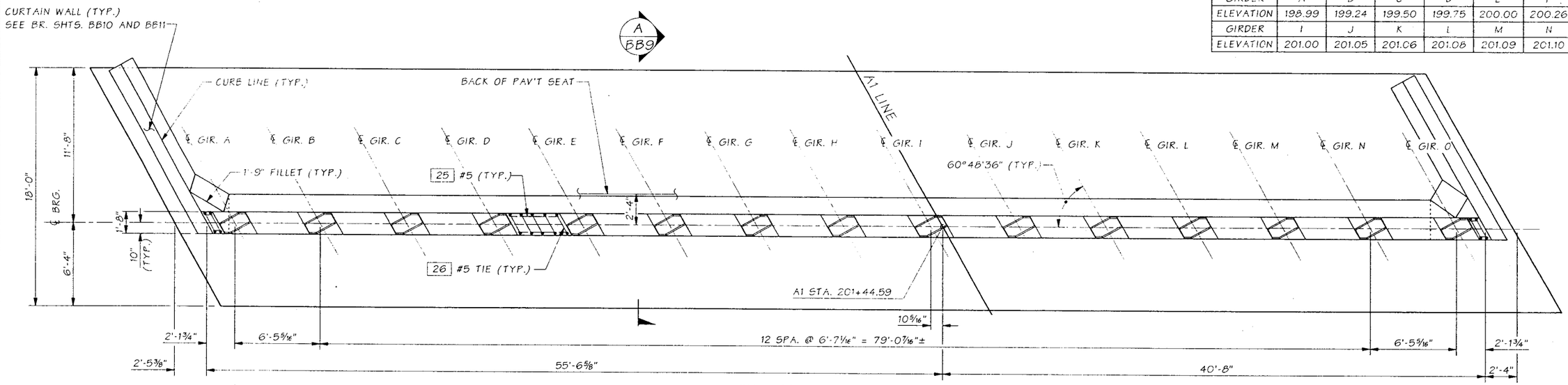
SHEET 350 OF 516 SHEETS

SR 12 FILE NO. ____ SHEET 887

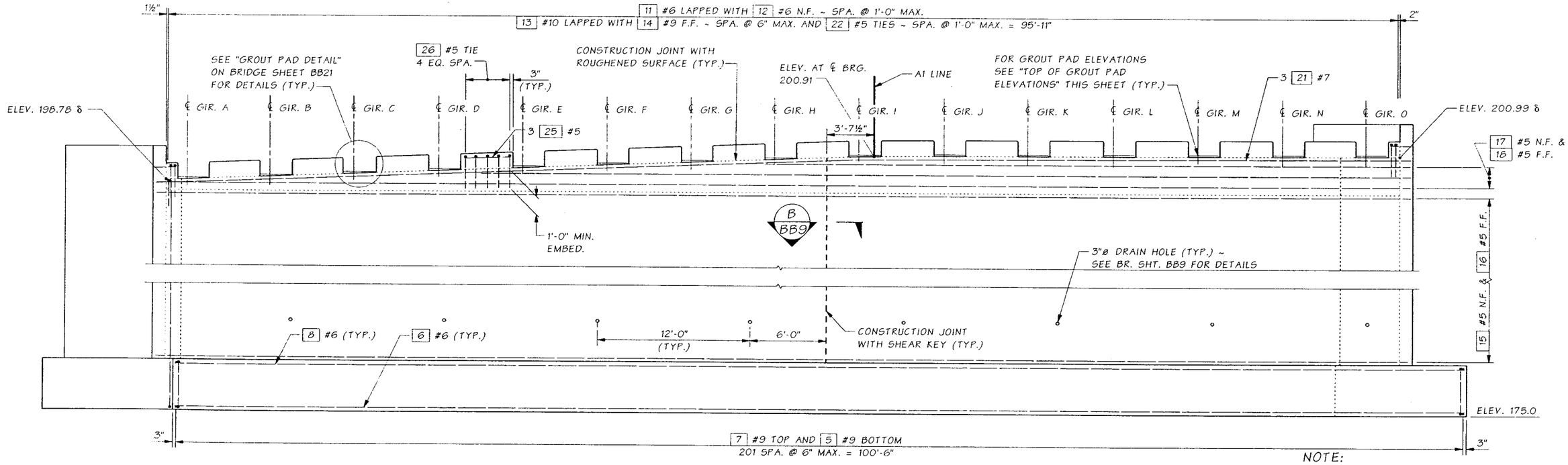
Mon Aug 02 08:07:58 2010

TOP OF GROUT PAD ELEVATIONS

GIRDER	A	B	C	D	E	F	G	H
ELEVATION	198.99	199.24	199.50	199.75	200.00	200.26	200.51	200.75
GIRDER	I	J	K	L	M	N	O	
ELEVATION	201.00	201.05	201.06	201.08	201.09	201.10	201.11	



PLAN



ELEVATION

NOTE:

δ ELEVATION TAKEN AT INSIDE FACE OF WINGWALL ALONG ℄ BEARING.

SR 12 FILE NO. ____ SHEET BB8

Bridge Design Engr.	Khaleghi, B	M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\Window files\08 P3 PLAN ELEV.WND	
Supervisor	Stoddard, RB		
Designed By	Collins, R 02/10		
Checked By	Schultz, E 06/10		
Detailed By	Avery, D 05/10		
Bridge Projects Engr.			
Prelim. Plan By			
Architect/Specialist		DATE REVISION BY APP'D	

Mon Aug 02 09:08:05 2010

REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10	WASH.			
JOB NUMBER 100502				

ERIC HENRY SCHULTZ — STATE OF WASHINGTON — 21868 — REGISTERED PROFESSIONAL ENGINEER — 8/3/10

BRIDGE AND STRUCTURES OFFICE

BRIAN KHALEGHI — STATE OF WASHINGTON — 37595 — STRUCTURAL ENGINEER — 8/2/10

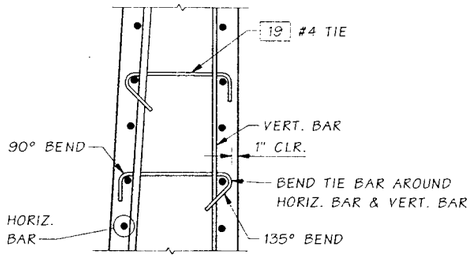
Washington State Department of Transportation

I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

PIER 3
PLAN AND ELEVATION

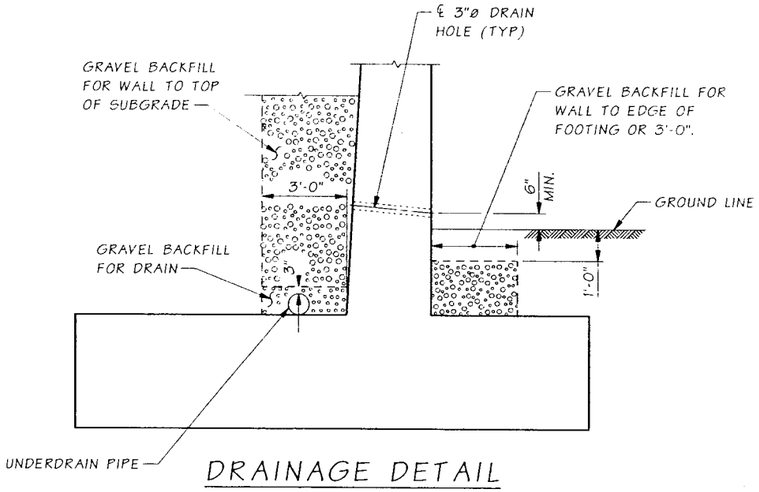
BRIDGE SHEET NO. BB8

SHEET 351 OF 516 SHEETS

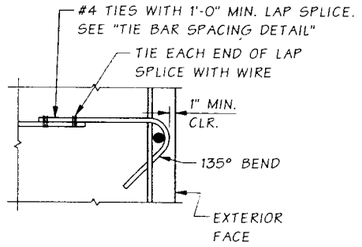


TIE BAR DETAIL

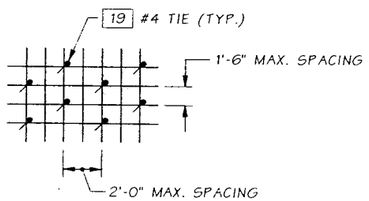
ALTERNATE 135° HOOK EVERY OTHER TIE BAR



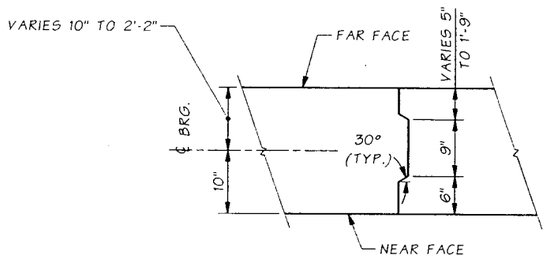
DRAINAGE DETAIL



ALTERNATE TIE BAR DETAIL

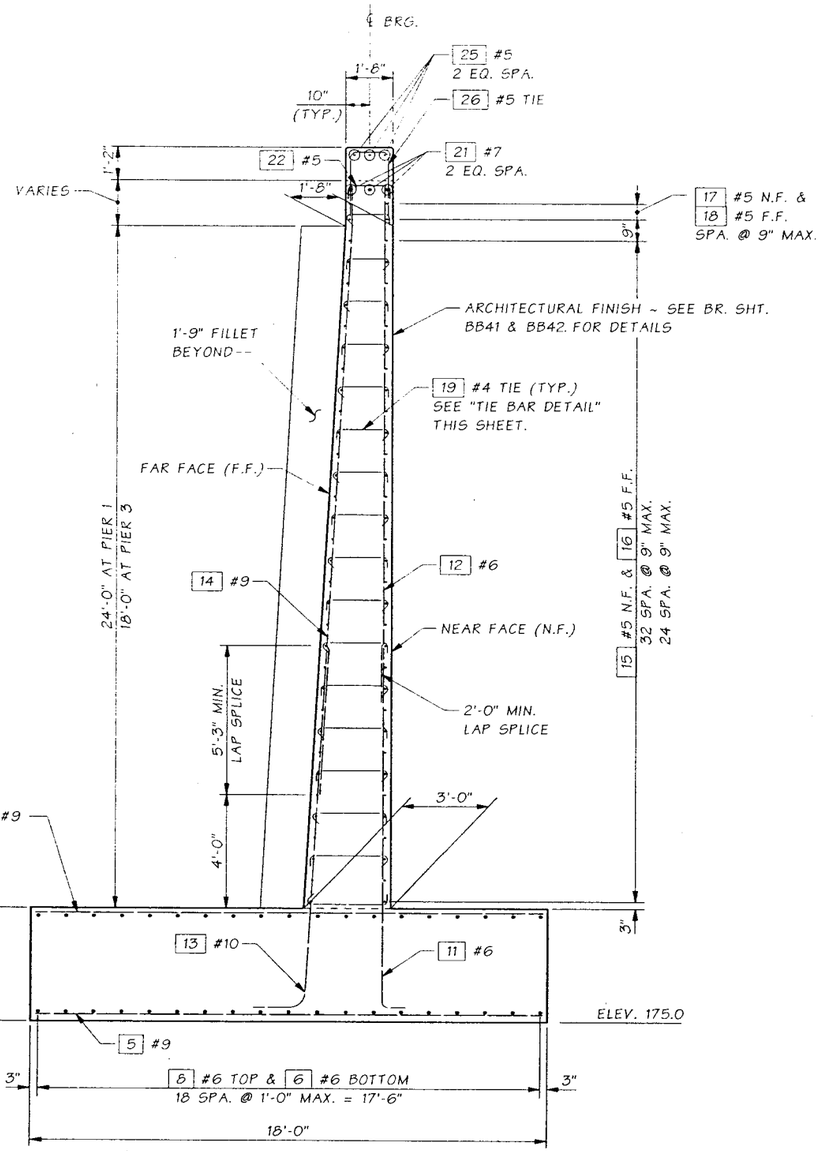


TIE BAR SPACING DETAIL



SECTION B

BB7 & BB8



SECTION A

BB7 & BB8

Bridge Design Engr.	Khaleghi, B	M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\Window files\09 PIER DETS.WND				REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor	Stoddard, RB					10	WASH.			
Designed By	Collins, R 02/10					JOB NUMBER 100502				
Checked By	Schultz, E 06/10									
Detailed By	Avery, D 05/10									
Bridge Projects Engr.										
Prelim. Plan By										
Architect/Specialist		DATE	REVISION	BY	APP'D					

Mon Aug 02 09:08:12 2010

ERIC HENRY SCHULTZ — STATE OF WASHINGTON — PROFESSIONAL ENGINEER — 8/3/2010

BRIDGE AND STRUCTURES OFFICE

BRIAN KHALEGHI — STATE OF WASHINGTON — 27696 — PROFESSIONAL ENGINEER — 8/4/10

Washington State Department of Transportation

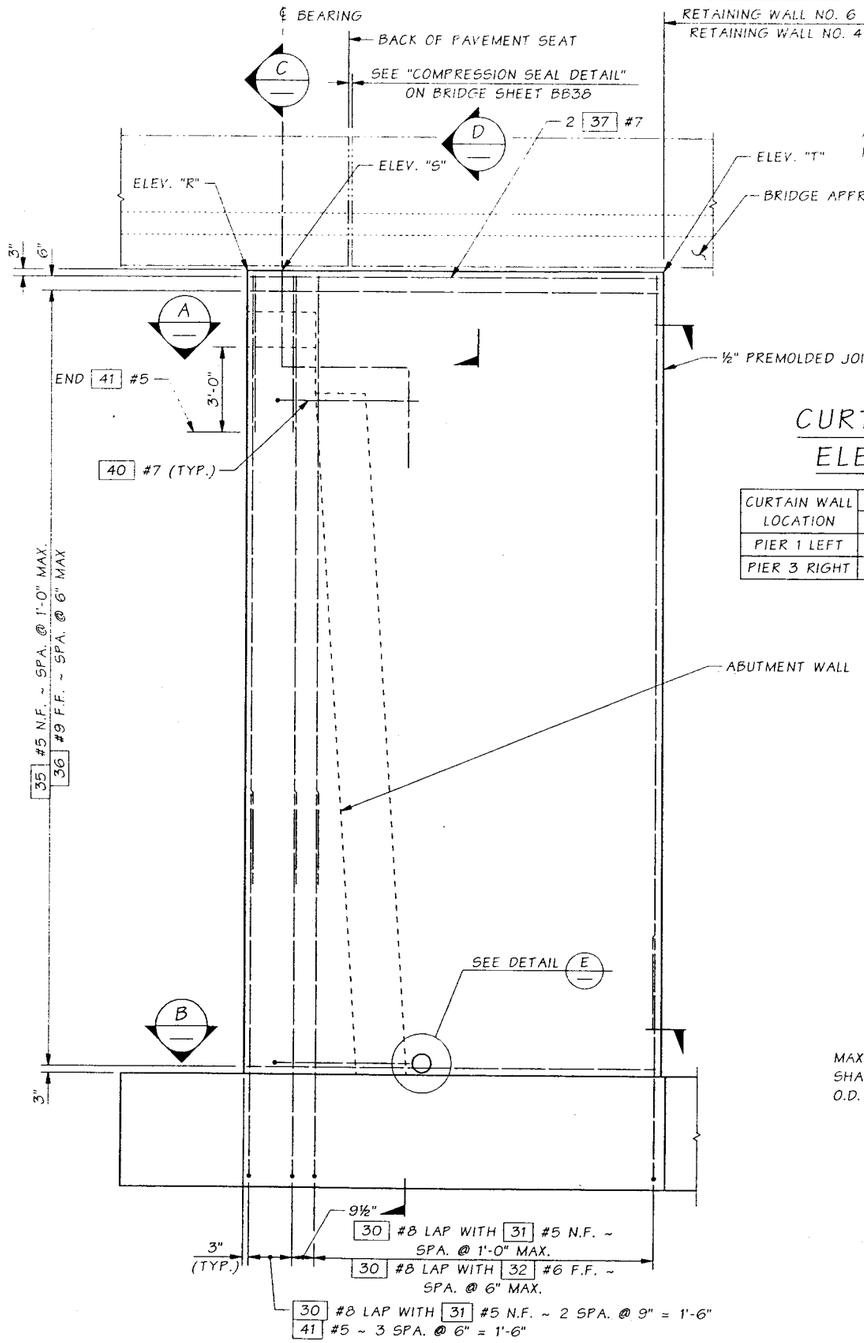
I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

PIER DETAILS

BRIDGE SHEET NO. BB9

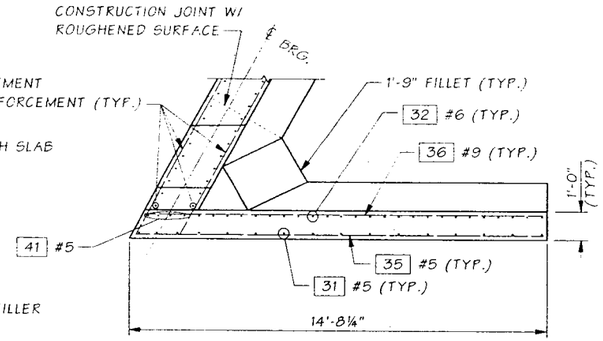
SHEET 352 OF 516 SHEETS

SR 12 FILE NO. ___ SHEET BB9



OUTSIDE ELEVATION

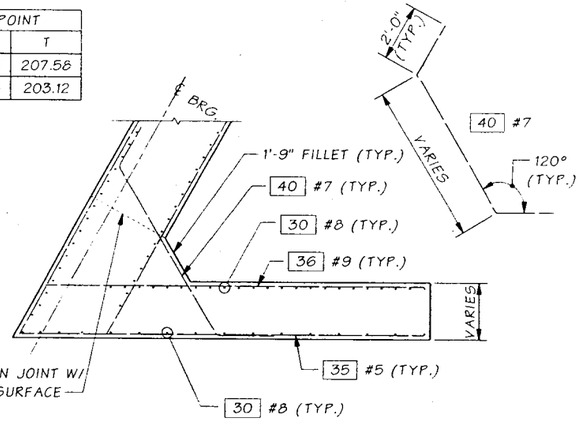
PIER 1 LEFT SHOWN, PIER 3 RIGHT SIMILAR



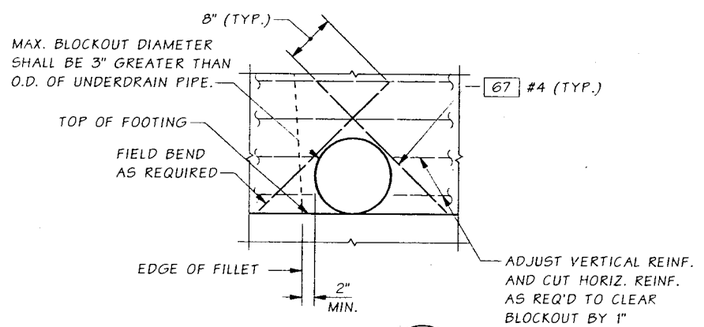
SECTION A

CURTAIN WALL ELEVATIONS

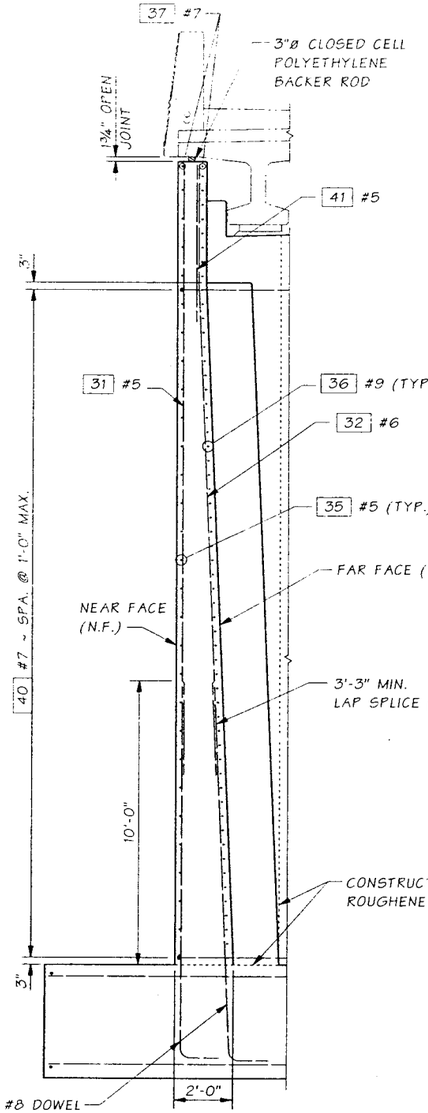
CURTAIN WALL LOCATION	ELEVATION POINT		
	R	S	T
PIER 1 LEFT	207.23	207.26	207.58
PIER 3 RIGHT	203.68	203.64	203.12



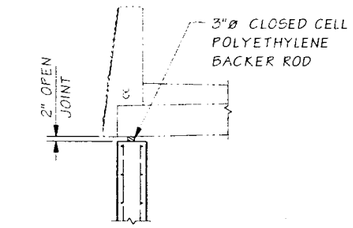
SECTION B



DETAIL E



SECTION C



SECTION D

Bridge Design Engr.	Khaleghi, B	M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\window files\10 CURTAIN WALL 1.WND				REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor	Stoddard, RB					10	WASH.			
Designed By	Collins, R 02/10					JOB NUMBER 106502				
Checked By	Schultz, E 06/10									
Detailed By	Avery, D 05/10									
Bridge Projects Engr.										
Prelim. Plan By										
Architect/Specialist		DATE	REVISION	BY	APP'D					

Tue Aug 03 11:34:18 2010

ERIC HENRY SCHULTZ — STATE OF WASHINGTON — 19611 — REGISTERED PROFESSIONAL ENGINEER — 8/3/2010

BRIDGE AND STRUCTURES OFFICE

JULIAN KHALEGHI — STATE OF WASHINGTON — 27160 — PROFESSIONAL ENGINEER — 8/3/10

Washington State Department of Transportation

I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

CURTAIN WALL DETAILS
PIER 1 LEFT & PIER 3 RIGHT

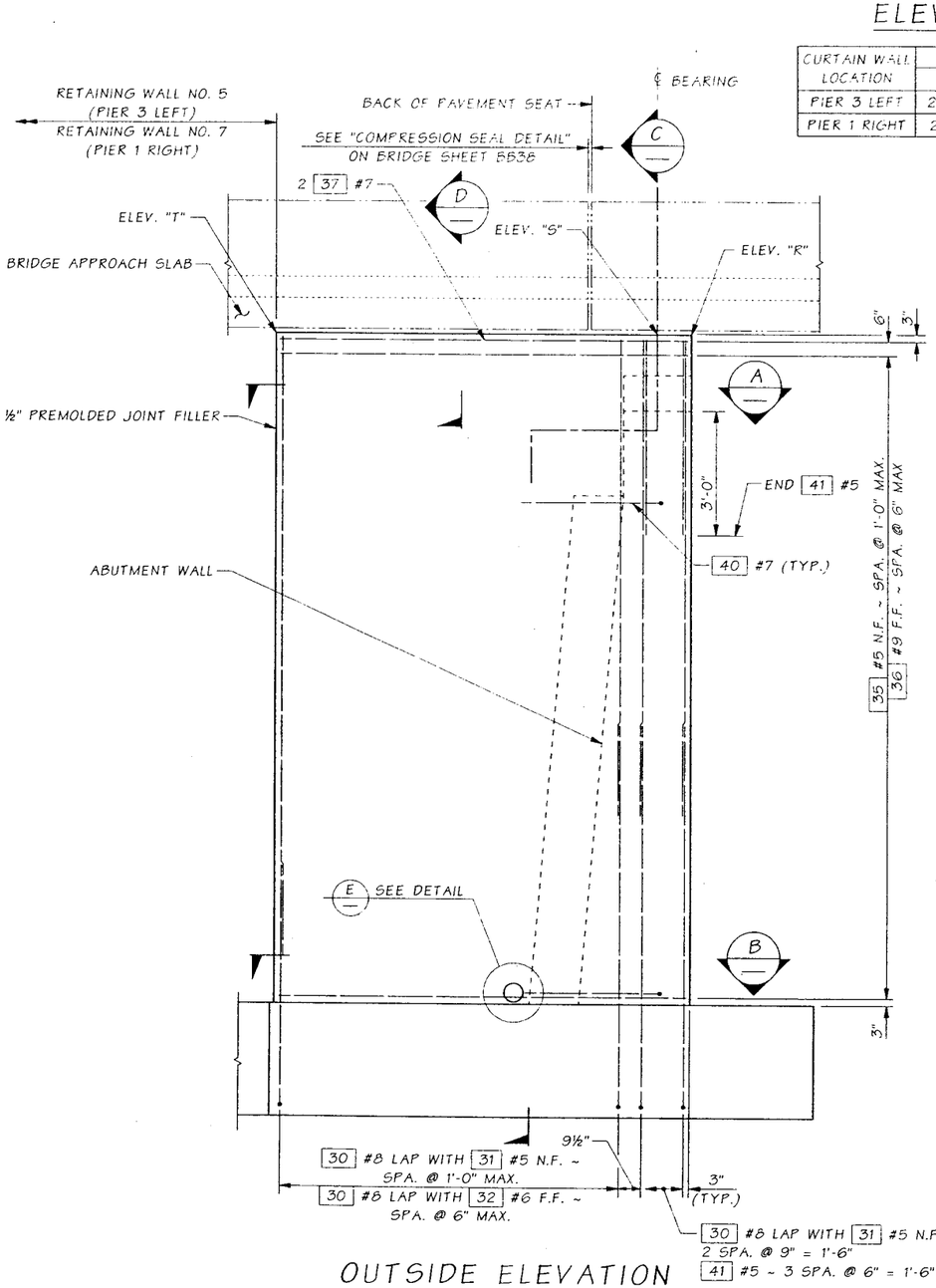
BRIDGE SHEET NO. BB10

SHEET 353 OF 516 SHEETS

SR 12 FILE NO. ____ SHEET BB10

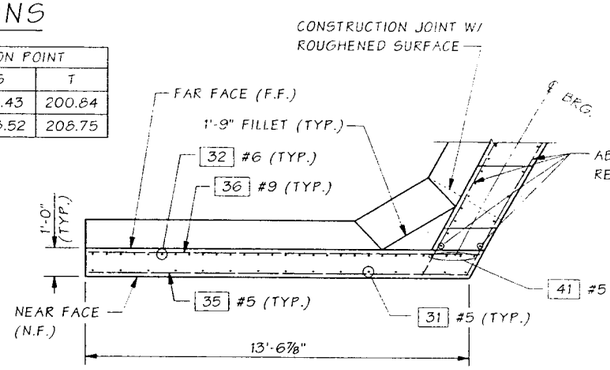
CURTAIN WALL ELEVATIONS

CURTAIN WALL LOCATION	ELEVATION POINT		
	R	S	T
PIER 3 LEFT	201.47	201.43	200.84
PIER 1 RIGHT	208.5	208.52	208.75

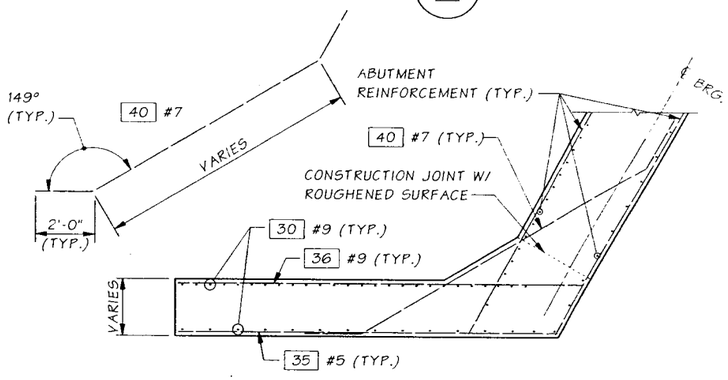


OUTSIDE ELEVATION

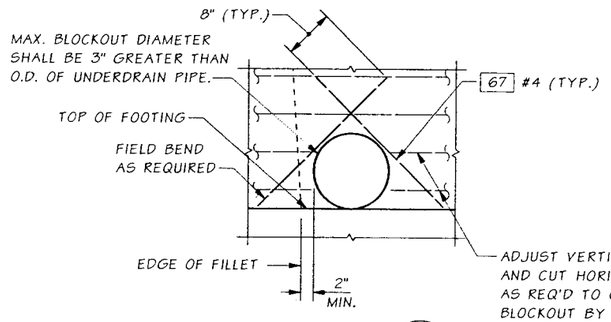
PIER 1 RIGHT SHOWN, PIER 3 LEFT SIMILAR



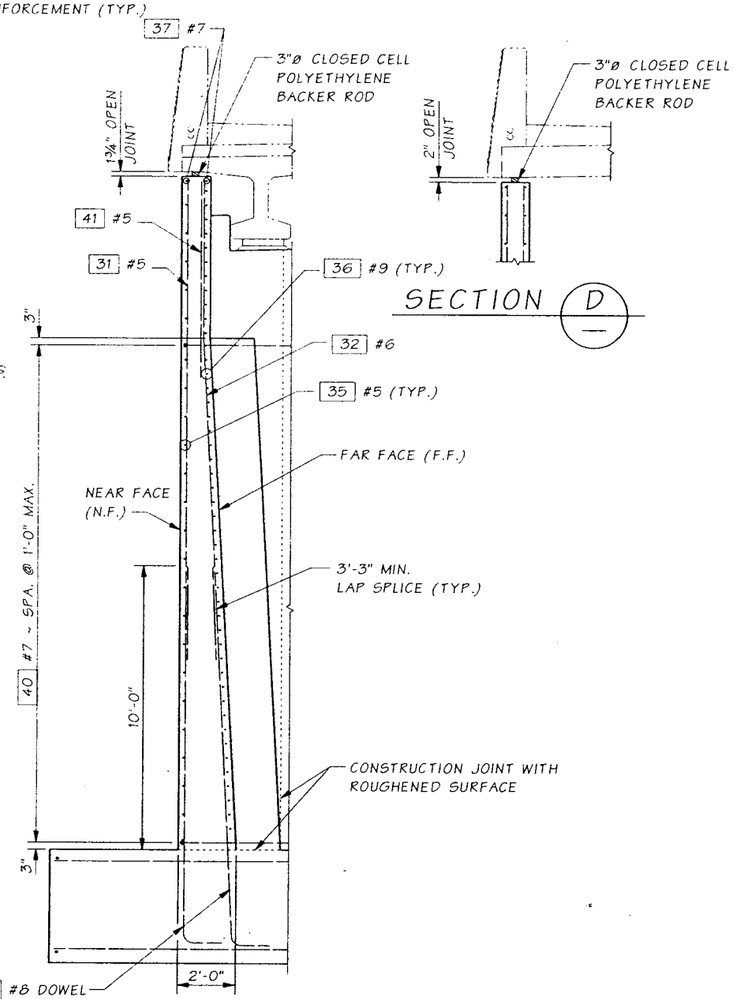
SECTION A



SECTION B



DETAIL E



SECTION C

SECTION D

Bridge Design Engr.	Khaleghi, B	
Supervisor	Stoddard, RB	
Designed By	Collins, R	02/10
Checked By	Schultz, E	06/10
Detailed By	Avery, D	05/10
Bridge Projects Engr.		
Prelim. Plan By		
Architect/Specialist		

M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\window files\11 CURTAIN WALL 2.WND

DATE	REVISION	BY	APP'D

REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10	WASH.			
JOB NUMBER 100502				

ERIC HENRY SCHULTZ — STATE OF WASHINGTON — 24900 — REGISTERED PROFESSIONAL ENGINEER — 8/3/2010

BRIDGE AND STRUCTURES OFFICE

BIJAN KHALEGHI — STATE OF WASHINGTON — 27695 — STRUCTURAL ENGINEER — 8/3/10

Washington State Department of Transportation

I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

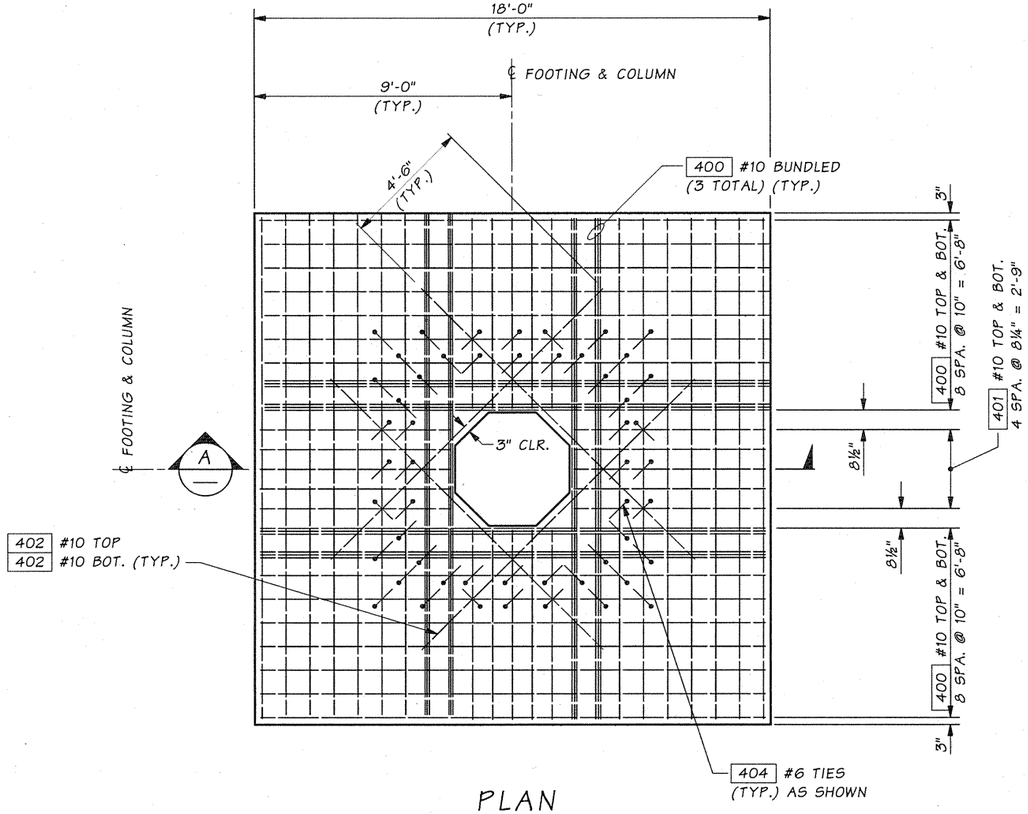
CURTAIN WALL DETAILS
PIER 1 RIGHT & PIER 3 LEFT

BRIDGE SHEET NO. BB11

SHEET 354 OF 516 SHEETS

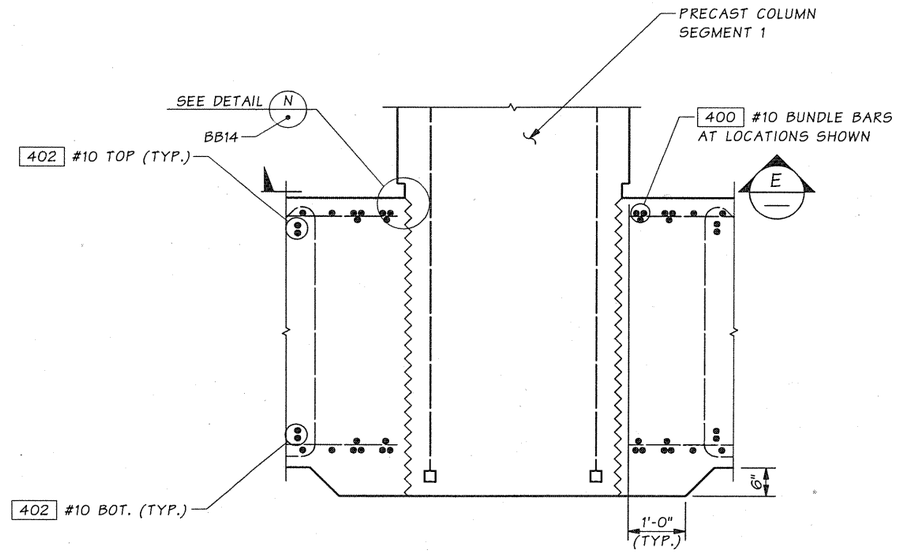
SR 12 FILE NO. ____ SHEET BB11

Tue Aug 03 11:35:07 2010



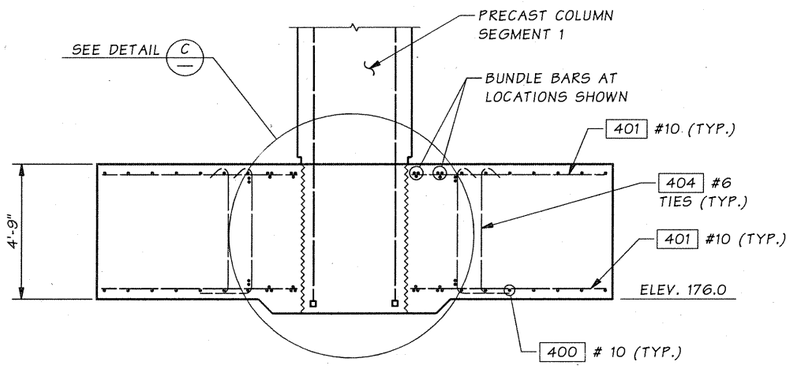
PLAN

REINFORCING SIMILAR
IN BOTH DIRECTIONS

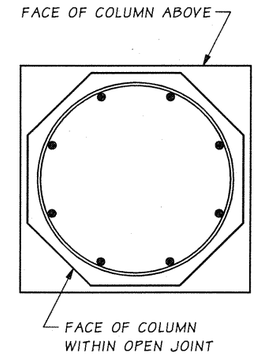


DETAIL C

PLACE PRECAST COLUMN SEGMENT
PRIOR TO PLACING FOOTING CONCRETE



SECTION A



SECTION E

SR 12 FILE NO. ____ SHEET BB12

Bridge Design Engr.	Khaleghi, B	M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\window files\12 P2 FTG.WND				REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor	Stoddard, RB					10	WASH.			
Designed By	Schultz, E 02/10									
Checked By	Collins, R 05/10					JOB NUMBER				
Detailed By	Avery, D 05/10					10C502				
Bridge Projects Engr.		9/15/10	REVISED STIRRUP QUANTITY	EHS	RBS					
Prelim. Plan By										
Architect/Specialist		DATE	REVISION	BY	APP'D					

Thu Sep 16 14:44:50 2010

ERIC HENRY SCHULTZ — STATE OF WASHINGTON — 20010 — REGISTERED PROFESSIONAL ENGINEER — 9/16/2010

BRIDGE AND STRUCTURES OFFICE

BIJAN KHALEGHI — STATE OF WASHINGTON — 27696 — PROFESSIONAL ENGINEER — 9/16/10

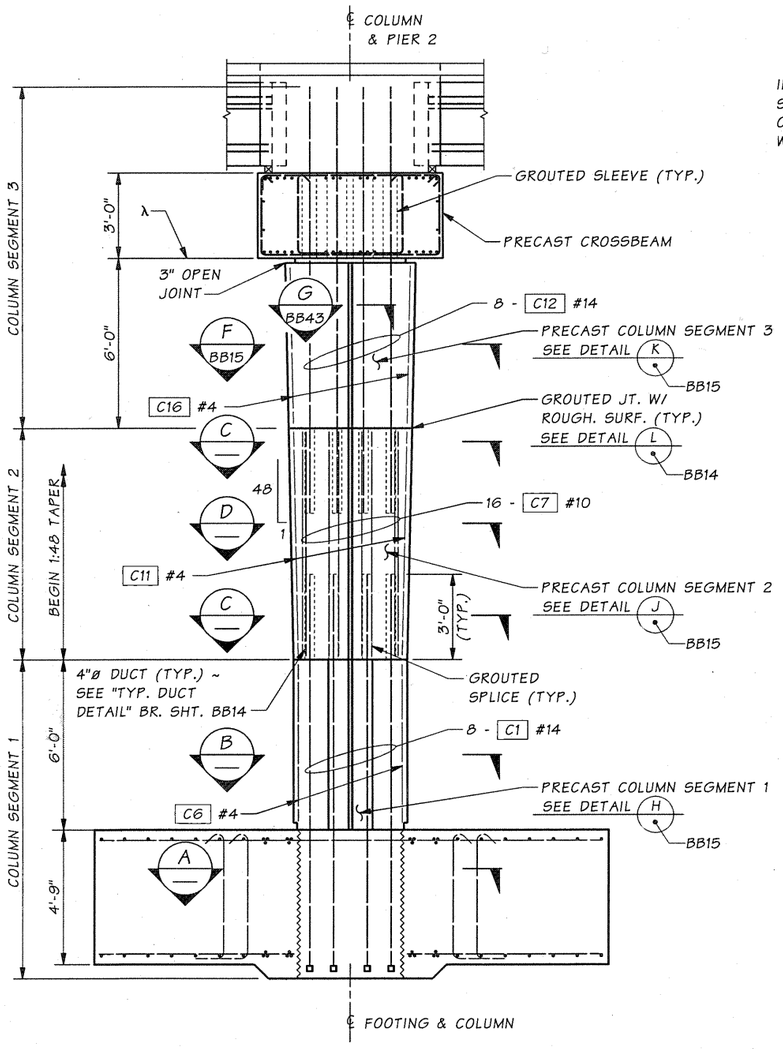
Washington State Department of Transportation

I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

PIER 2
FOOTING DETAILS

BRIDGE SHEET NO. BB12

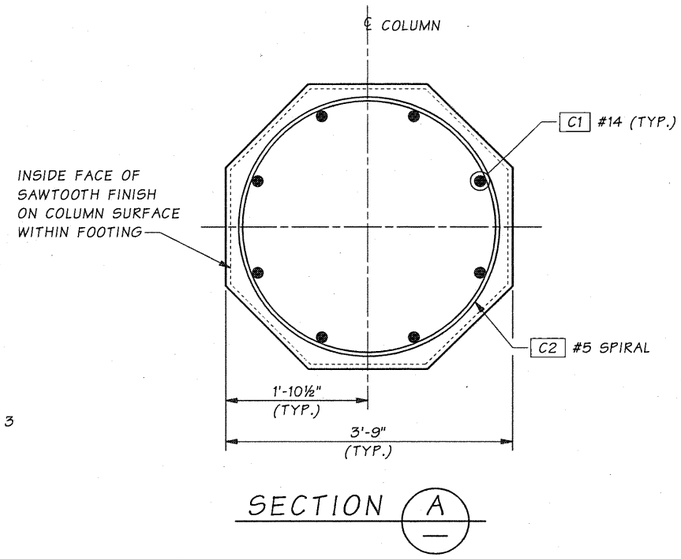
SHEET 355 OF 516 SHEETS



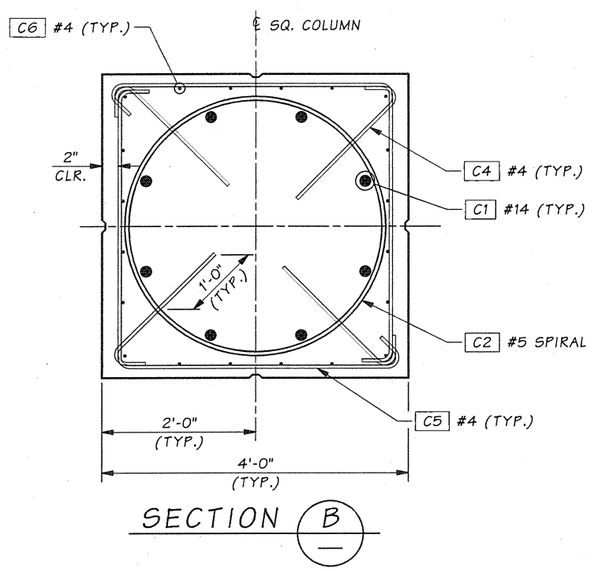
ELEVATION

COLUMN TRANSVERSE REINFORCING NOT SHOWN

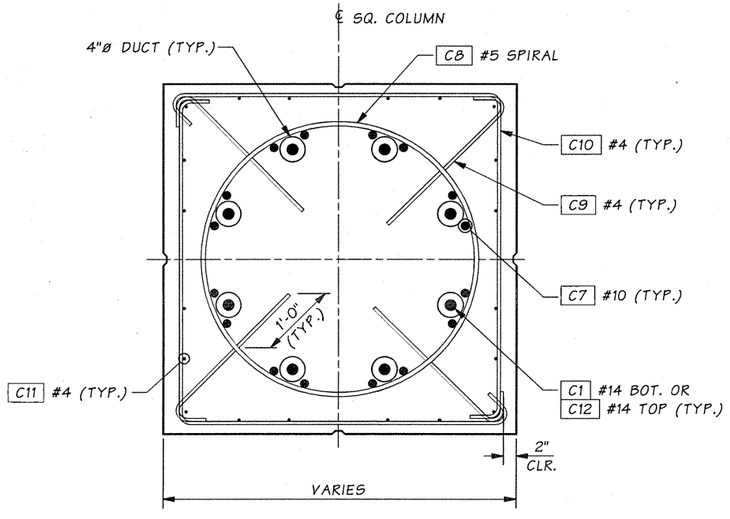
λ SEE CROSSBEAM PLAN AND ELEVATION SHEET FOR TOP OF COLUMN ELEVATIONS.



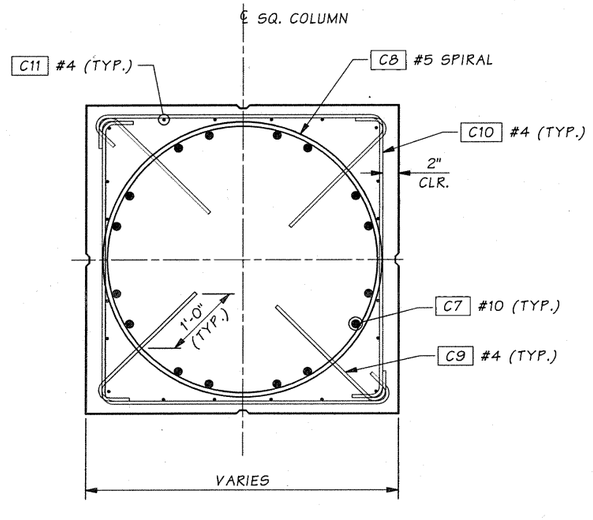
SECTION A



SECTION B



SECTION C



SECTION D

BB15

SR 12 FILE NO. ____ SHEET BB13

Bridge Design Engr.	Khaleghi, B	M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\Window files\13 P2 COLUMN.WND				REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor	Stoddard, RB					10	WASH.			
Designed By	Schultz, E 02/10									
Checked By	Collins, R 05/10					JOB NUMBER 10C502				
Detailed By	Avery, D 05/10									
Bridge Projects Engr.		9/15/10	REVISED STIRRUP QUANTITY	EHS	RBS					
Prelim. Plan By										
Architect/Specialist		DATE	REVISION	BY	APP'D					

Thu Sep 16 14:44:57 2010

ERIC HENRY SCHULTZ — STATE OF WASHINGTON — 20011 — REGISTERED PROFESSIONAL ENGINEER — 9/16/2010

BRIDGE AND STRUCTURES OFFICE

BRIAN KHALEGHI — STATE OF WASHINGTON — 27695 — PROFESSIONAL ENGINEER — 9/16/10

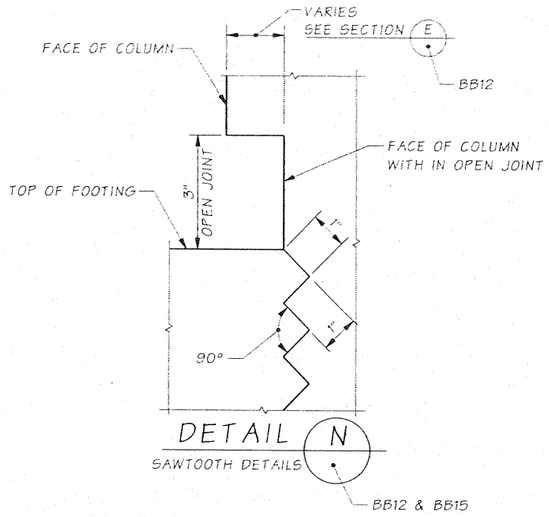
Washington State Department of Transportation

I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

PIER 2
COLUMN ELEVATION AND SECTIONS

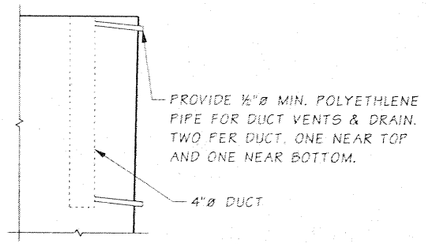
BRIDGE SHEET NO. BB13

SHEET 356 OF 516 SHEETS

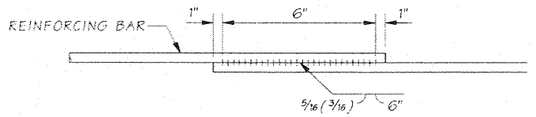


NOTE:

SAWTEETH ARE APPLIED AROUND THE CIRCUMFERENCE OF THE COLUMN EMBEDED IN THE FOOTING.

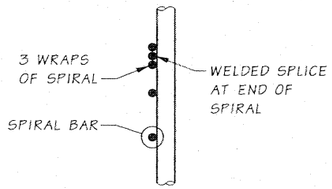


TYP. DUCT DETAIL

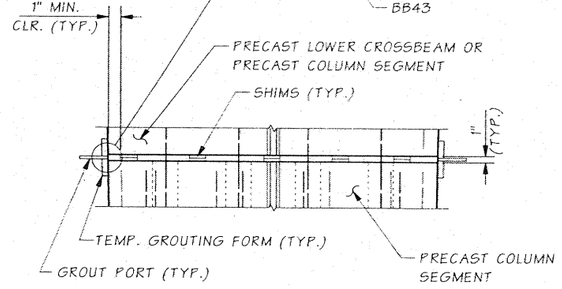


WELDED LAP SPLICE DETAIL

WELDING SHALL MEET THE REQUIREMENTS OF STD. SPEC. 6-02.3(24)E.



SPIRAL TERMINATION DETAIL



DETAIL L
BB13

SR 12 FILE NO. ____ SHEET BB14

Bridge Design Engr.	Khaleghi, B	
Supervisor	Stoddard, RB	
Designed By	Schultz, E	02/10
Checked By	Collins, R	05/10
Detailed By	Avery, D	05/10
Bridge Projects Engr.		
Prelim. Plan By		
Architect/Specialist		

M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\Window files\14 P2 COL DETS.WND

DATE	REVISION	BY	APP'D

REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10	WASH.			
JOB NUMBER 100502				

Mon Aug 02 08:08:41 2010

ERIC HENRY SCHULTZ — STATE OF WASHINGTON — 38896 — REGISTERED PROFESSIONAL ENGINEER — 8/3/2010

BRIDGE AND STRUCTURES OFFICE

BILAL KHALEGHI — STATE OF WASHINGTON — 37905 — PROFESSIONAL ENGINEER — 8/4/10

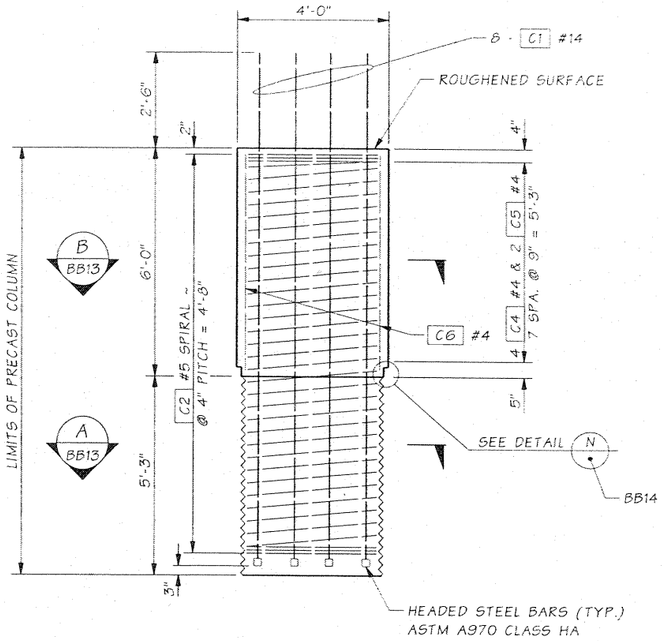
Washington State Department of Transportation

I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

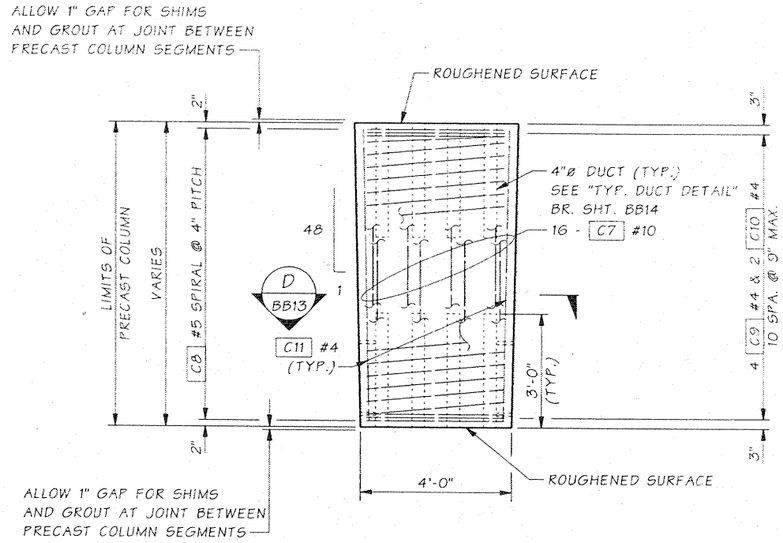
PIER 2 COLUMN DETAILS

BRIDGE SHEET NO. BB14

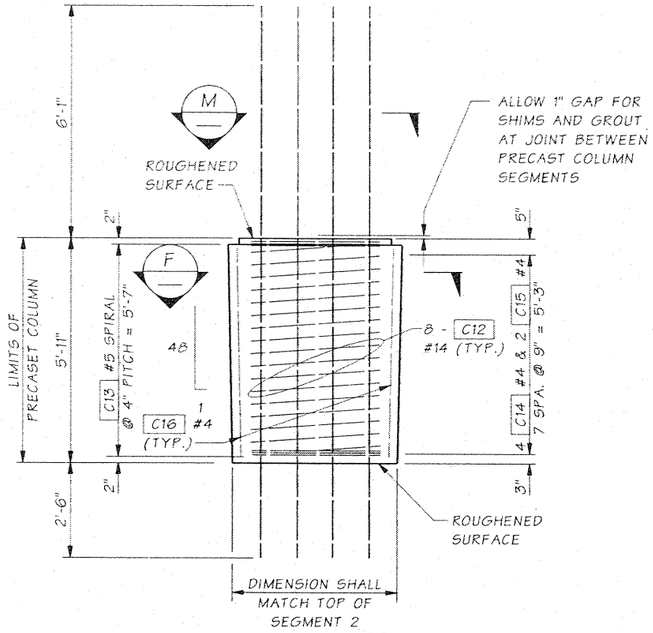
SHEET 357 OF 516 SHEETS



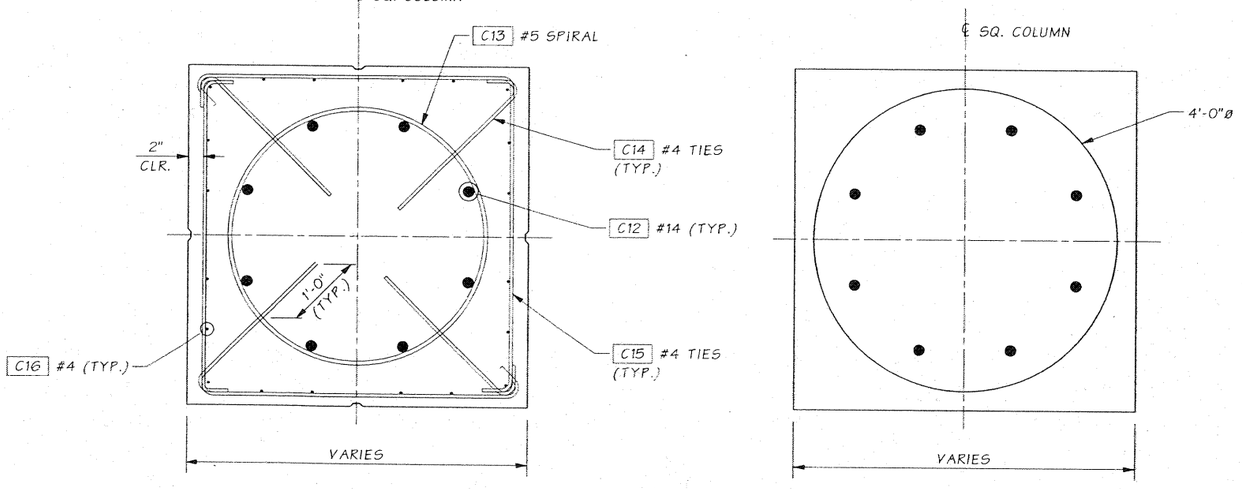
DETAIL H
PRECAST COLUMN SEGMENT 1 (BB13)



DETAIL J
PRECAST COLUMN SEGMENT 2 (BB13)



DETAIL K
PRECAST COLUMN SEGMENT 3 (BB13)



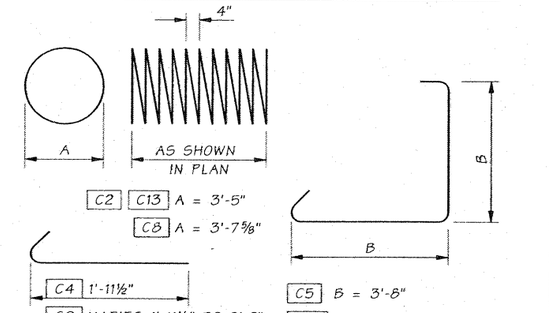
SECTION F
BB13

VIEW M

MARK	LOCATION	SIZE	TYPE
C1	SEGMENT 1 MAIN LONGIT.	14	STRAIGHT
C2	SEGMENT 1 SPIRAL	5	SPIRAL δ
C4	SEGMENT 1 CORNER TIE	4	TIE
C5	SEGMENT 1 FACE TIE	4	TIE
C6	SEGMENT 1 FACE LONGIT.	4	STRAIGHT
C7	SEGMENT 2 MAIN LONGIT.	10	STRAIGHT
C8	SEGMENT 2 SPIRAL	5	SPIRAL δ
C9	SEGMENT 2 CORNER TIE	4	TIE
C10	SEGMENT 2 FACE TIE	4	TIE
C11	SEGMENT 2 FACE LONGIT.	4	STRAIGHT
C12	SEGMENT 3 MAIN LONGIT.	14	STRAIGHT
C13	SEGMENT 3 SPIRAL	5	SPIRAL δ
C14	SEGMENT 3 CORNER TIE	4	TIE
C15	SEGMENT 3 FACE TIE	4	TIE
C16	SEGMENT 3 FACE LONGIT.	4	STRAIGHT

δ SEE "WELDED LAP SPLICE DETAIL" & "SPIRAL TERMINATION DETAIL" ON BR. SHT. BB14

COLUMN BENDING DIAGRAM (ALL DIMENSIONS ARE OUT TO OUT)



Bridge Design Engr.	Khaleghi, B	M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\window files\15 PC SEGMENTS.WND	
Supervisor	Stoddard, RB		
Designed By	Schultz, E 03/10		
Checked By	Collins, R 05/10		
Detailed By	Avery, D 05/10		
Bridge Projects Engr.			
Prelim. Plan By			
Architect/Specialist			

DATE	REVISION	BY	APP'D

Tue Aug 03 09:09:43 2010

REGION NO	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10	WASH.			
JOB NUMBER 100502				

ERIC HENRY SCHULTZ — STATE OF WASHINGTON — 21581 — REGISTERED PROFESSIONAL ENGINEER — 8/3/2010

BRIDGE AND STRUCTURES OFFICE

BIJAN KHALEGHI — STATE OF WASHINGTON — 27605 — STRUCTURAL ENGINEER — 8/3/10

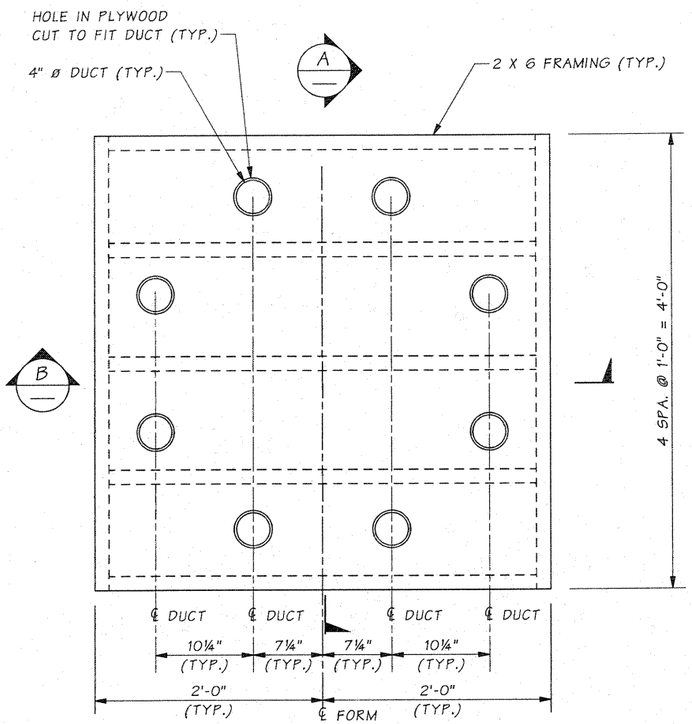
Washington State Department of Transportation

I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

PRECAST COLUMN SEGMENT DETAILS

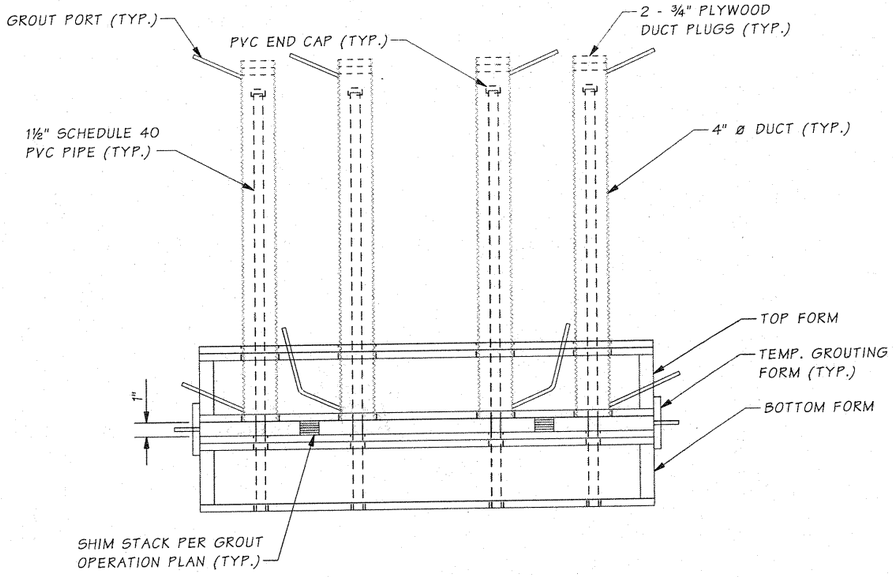
BRIDGE SHEET NO. BB15
SHEET 358 OF 516 SHEETS

SR 12 FILE NO. ____ SHEET BB15



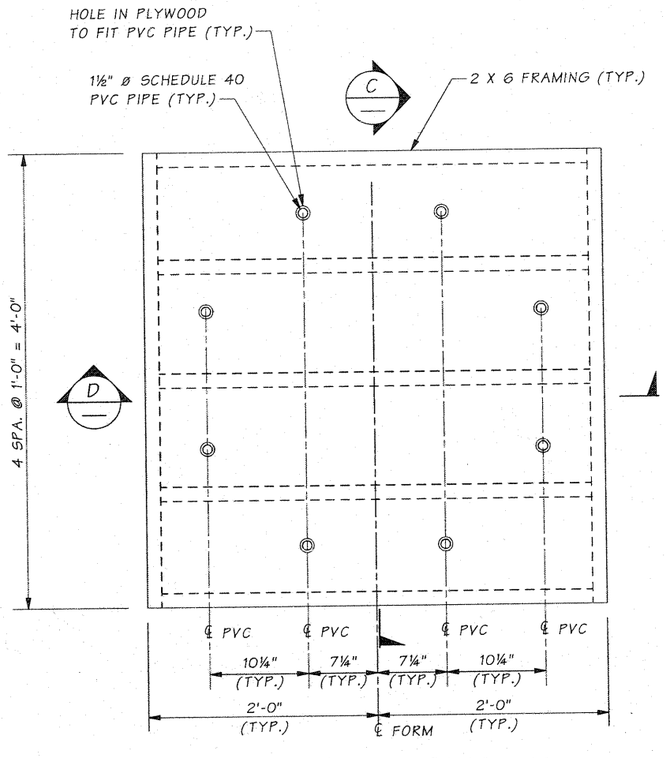
TOP FORM

UPPER COLUMN AND DUCT PORTION OF TEST JOINT



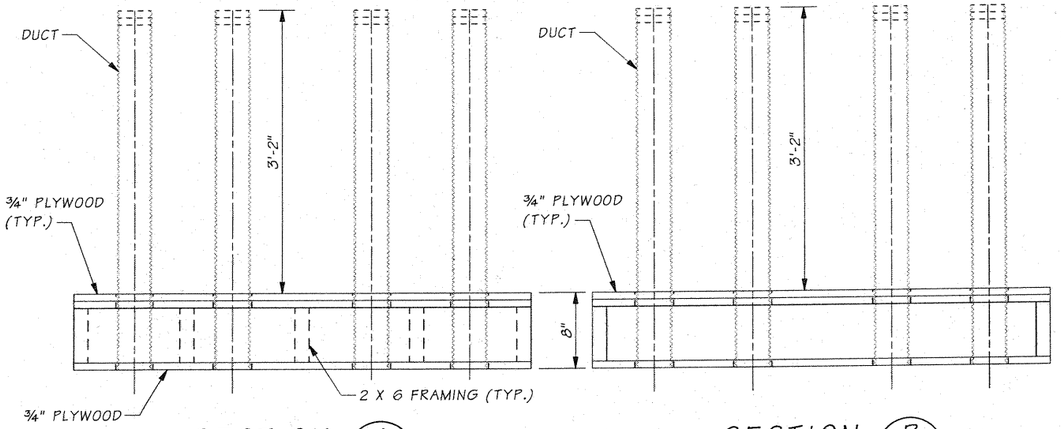
GROUT TEST JOINT

SHOWN ASSEMBLED PRIOR TO GROUTING
GROUT PORTS AND TEMPORARY GROUTING FORMS NOT SHOWN



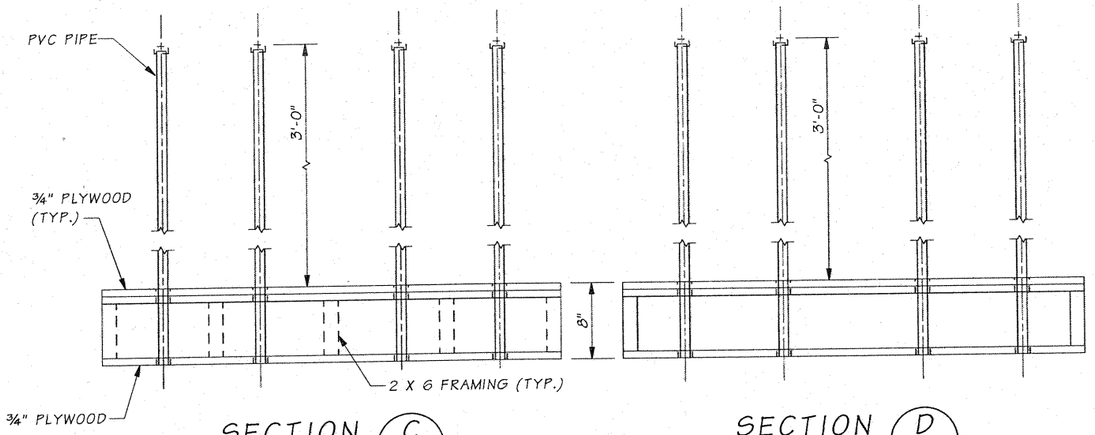
BOTTOM FORM

LOWER COLUMN AND REBAR PORTION OF TEST JOINT



SECTION A

SECTION B



SECTION C

SECTION D

SR 12 FILE NO. _____ SHEET 15

Bridge Design Engr.	Khaleghi, B	M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\window files\15A GROUT TEST JOINT.WND								
Supervisor	Stoddard, RB									
Designed By	Schultz, E 09/10									
Checked By	Collins, R 09/10									
Detailed By	Schultz, E 09/10									
Bridge Projects Engr.										
Prelim. Plan By		9/29/10	ADDED SHEET	EHS	BK					
Architect/Specialist		DATE	REVISION	BY	APP'D					

REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10	WASH.			
JOB NUMBER 10C502				

Tue Sep 28 15:58:30 2010

ERIC HENRY SCHULTZ — STATE OF WASHINGTON — 19908 — REGISTERED PROFESSIONAL ENGINEER
9/29/10

BRIDGE AND STRUCTURES OFFICE

BIJAN KHALEGHI — STATE OF WASHINGTON — 27605 — PROFESSIONAL ENGINEER
9/28/10

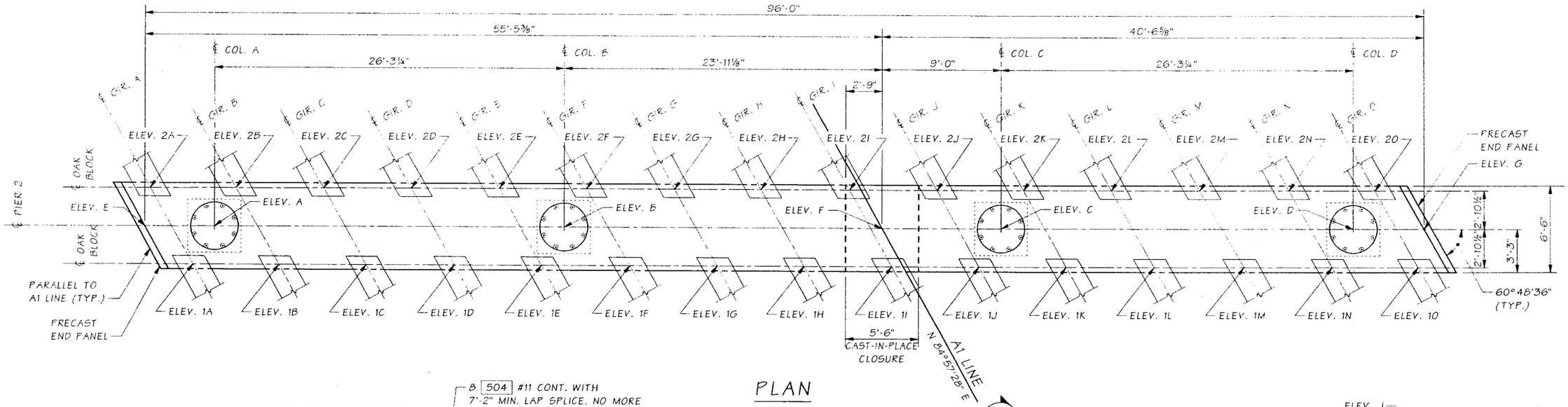
Washington State Department of Transportation

I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

GROUT TEST JOINT

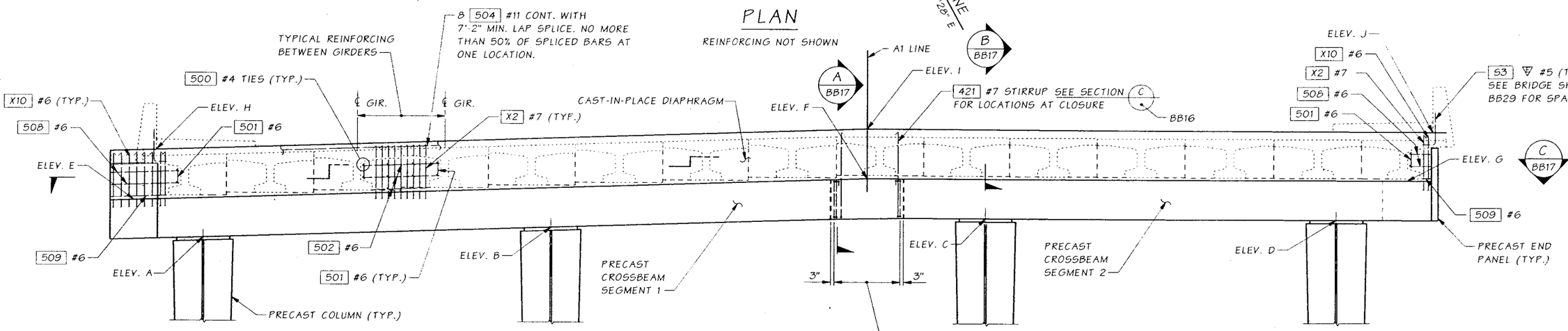
BRIDGE SHEET NO. 15A

SHEET 358A OF 516 SHEETS



PLAN

REINFORCING NOT SHOWN



ELEVATION

PRECAST END PANEL NOT SHOWN ON LEFT SIDE OF CROSSBEAM.
DECK REINFORCEMENT NOT SHOWN

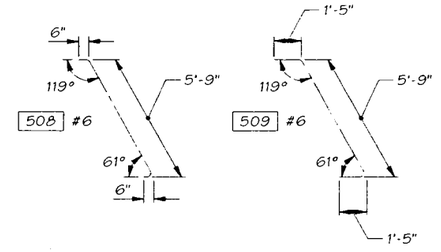
TABLE OF ELEVATIONS	
LOCATION	ELEVATION
A	199.44
B	200.32
C	201.09
D	201.01
E	202.26
F	204.11
G	203.99
H	206.03
I	207.88
J	207.69

TABLE OF ELEVATIONS @ TOP OF OAK BLOCK															
LOCATION	2A	2B	2C	2D	2E	2F	2G	2H	2I	2J	2K	2L	2M	2N	2O
SPAN 2 GIRDERS	202.42	202.64	202.86	203.08	203.31	203.53	203.74	203.96	204.18	204.19	204.18	204.16	204.14	204.12	204.10

TABLE OF ELEVATIONS @ TOP OF OAK BLOCK															
LOCATION	1A	1B	1C	1D	1E	1F	1G	1H	1I	1J	1K	1L	1M	1N	1O
SPAN 1 GIRDERS	202.64	202.86	203.08	203.30	203.52	203.74	203.95	204.17	204.38	204.40	204.38	204.36	204.34	204.31	204.29

NOTE:

SEE FRAMING PLAN FOR GIRDER SPACING
SEE BRIDGE SHT. BB20 FOR PRECAST END PANEL



SR 12 FILE NO. ____ SHEET BB16

Bridge Design Engr.	Khaleghi, B	M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\Window files\16 P2 PLAN & EL.WND	
Supervisor	Stoddard, RB		
Designed By	Schultz, E 02/10		
Checked By	Collins, R 05/10		
Detailed By	Avery, D 05/10		
Bridge Projects Engr.			
Prelim. Plan By			
Architect/Specialist		DATE REVISION BY APP'D	

Mon Aug 02 09:08:56 2010

REGION NO	STATE	FED. AID PROJ. NO.	SHEET NO	TOTAL SHEETS
10	WASH.			
JOB NUMBER 100502				

ERIC HENRY SCHULTZ — STATE OF WASHINGTON — 27995 — REGISTERED PROFESSIONAL ENGINEER
8/3/2010

BRIDGE AND STRUCTURES OFFICE

BIJAN KHALEGHI — STATE OF WASHINGTON — 21866 — REGISTERED PROFESSIONAL ENGINEER
8/2/10

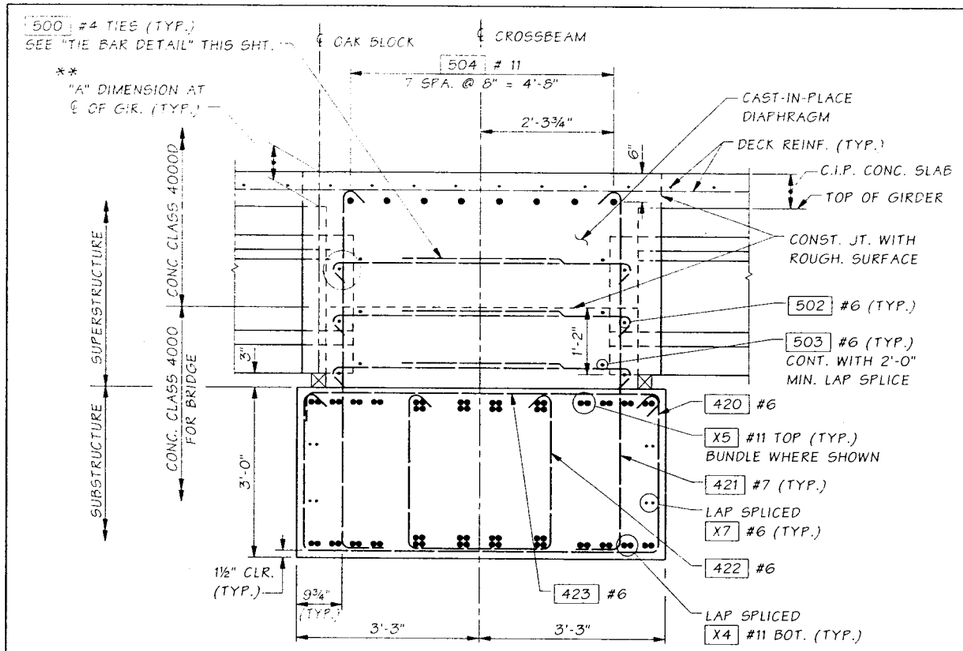
Washington State Department of Transportation

I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

PIER 2
CROSSBEAM PLAN AND ELEVATION

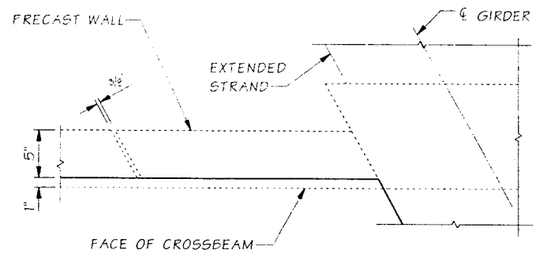
BRIDGE SHEET NO. BB16

SHEET 359 OF 516 SHEETS

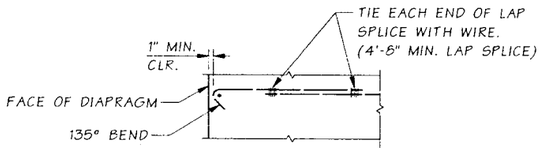


SECTION A BB16

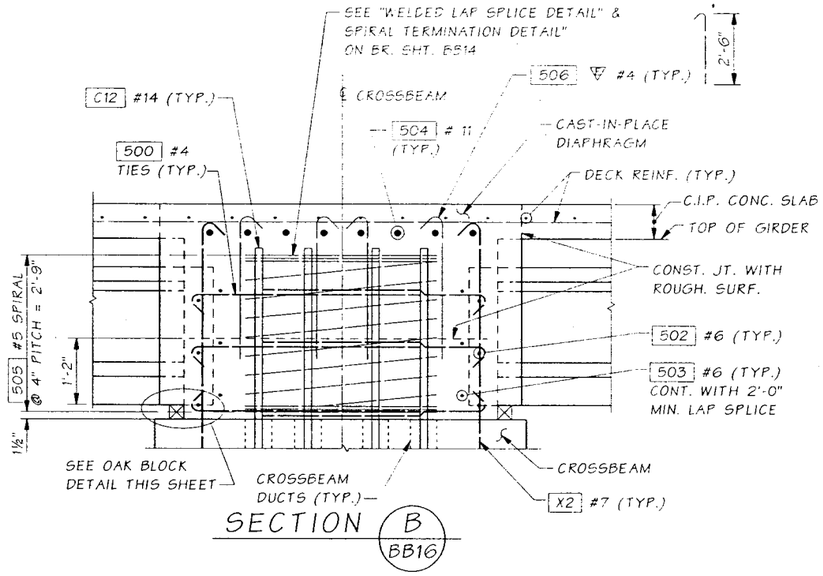
** SEE GIRDER SCHEDULE FOR "A" DIMENSION



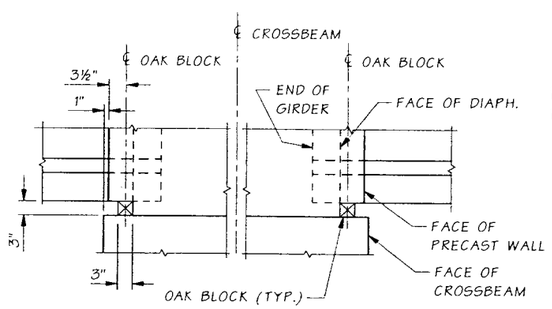
PRECAST WALL JOINT



TIE BAR DETAIL

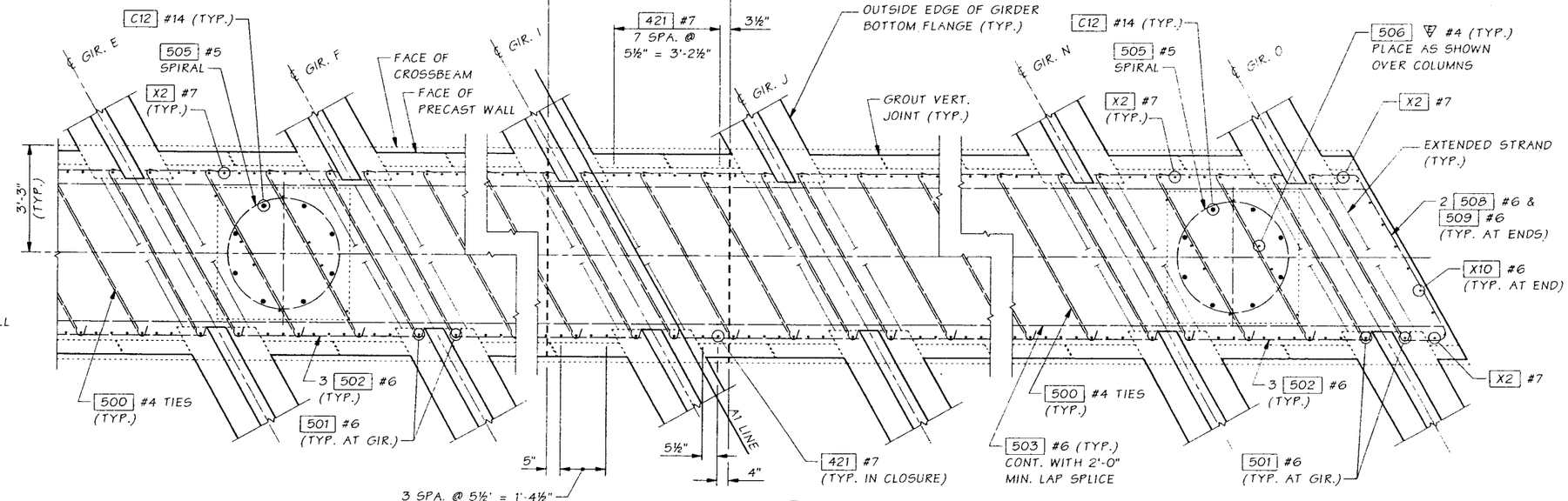


SECTION B BB16



OAK BLOCK DETAIL

HORIZONTAL DIMENSIONS ARE NORMAL TO ℄ OF CROSSBEAM



SECTION C BB16

NOTE:

SEE BRIDGE SHEET BB29 FOR SPACING OF 53 ▽#5 ACROSS CROSSBEAM

Bridge Design Engr.	Khaleghi, B		M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\Window files\17 XBM DETS.WND				REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor	Stoddard, RB						1D	WASH.			
Designed By	Schultz, E	02/10					JOB NUMBER 10C502				
Checked By	Collins, R	05/10									
Detailed By	Avery, D	05/10									
Bridge Projects Engr.											
Prelim. Plan By											
Architect/Specialist			DATE	REVISION	BY	APP'D					

ERIC HENRY SCHULTZ — STATE OF WASHINGTON — 30081 — REGISTERED PROFESSIONAL ENGINEER — 8/3/2010

BRIDGE AND STRUCTURES OFFICE

BIJAN KHALEGHI — STATE OF WASHINGTON — 22080 — REGISTERED PROFESSIONAL ENGINEER — 8/2/10

Washington State Department of Transportation

I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

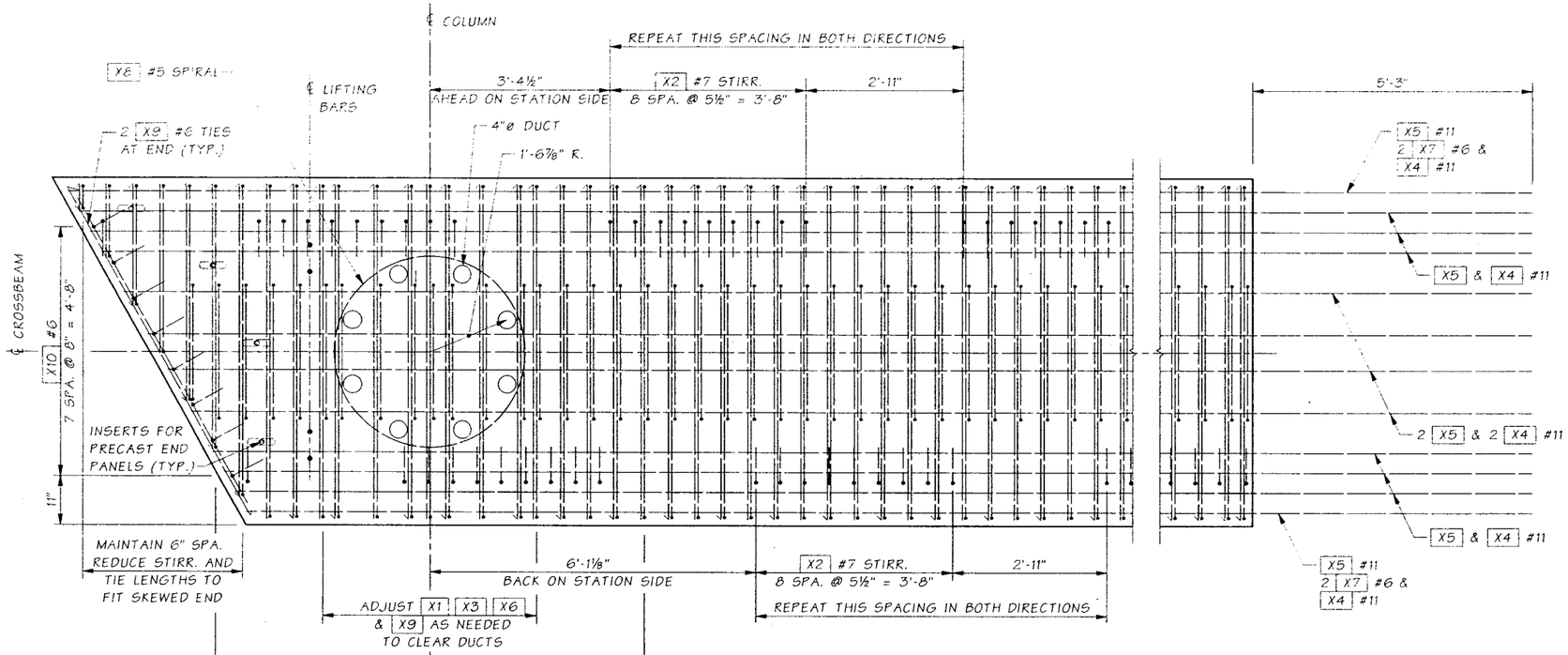
PIER 2 CROSSBEAM DETAILS

BRIDGE SHEET NO. BB17

SHEET 360 OF 516 SHEETS

SR 12 FILE NO. ____ SHEET BB17

Mon Aug 02 08:06:04 2010



FREE END

2 X9 #6 TIES 8 SPA. @ 6" = 4'-0" (TYP. AT COL.)

2 X9 #6 TIES 8 SPA. @ 6" = 4'-0" (TYP. AT COL.)

X1 #6 STIRR. X3 #6 STIRR. AND X6 #6 TIE SPA. @ 6" MAX.

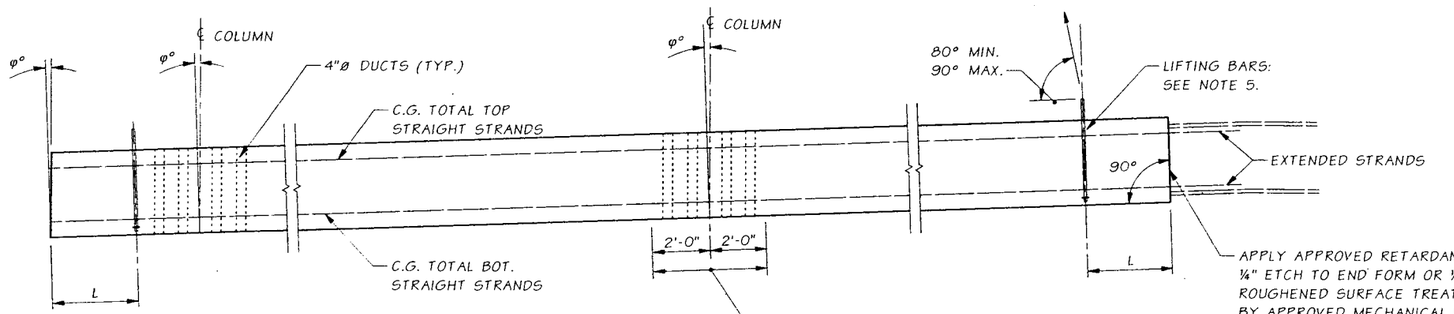
X1 #6 STIRR. X3 #6 STIRR. AND X6 #6 TIE SPA. @ 6" MAX.

CLOSURE END

STRANDS NOT SHOWN

TYPICAL END PLAN

MEASUREMENTS ARE ALONG ℄ OF CROSSBEAM ON TOP SURFACE OF CROSSBEAM



FREE END

CROSSBEAM ELEVATION

SEGMENT 1 SHOWN, SEGMENT 2 SIMILAR BUT OPPOSITE HAND.

CLOSURE END

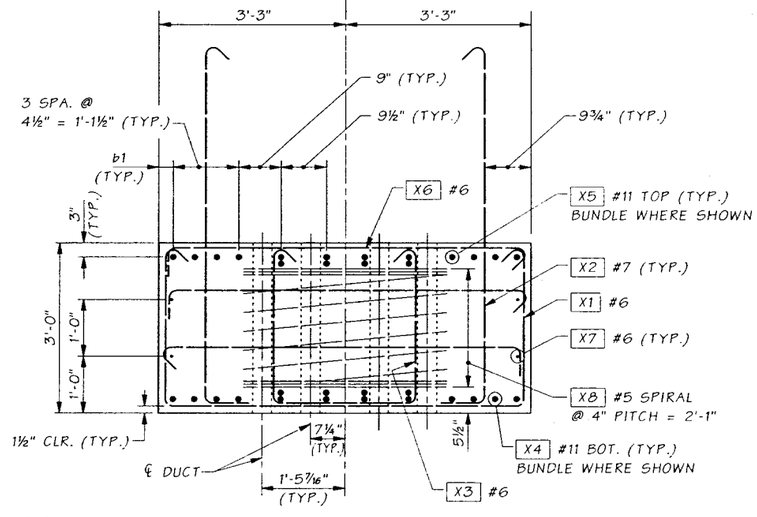
CROSSBEAM NOTES

1. PLAN LENGTH SHALL BE INCREASED AS NECESSARY TO COMPENSATE FOR SHORTENING DUE TO PRESTRESS AND SHRINKAGE.
2. ALL PRETENSIONED STRANDS SHALL BE 0.6"ø LOW RELAXATION STRANDS (AASHTO M203 GRADE 270.)
3. FOR "CLOSURE END" CUT ALL STRANDS FLUSH WITH THE END OF CROSSBEAM AND PAINT WITH AN APPROVED EPOXY RESIN, EXCEPT FOR EXTENDED STRANDS AS SHOWN. FOR "FREE END" CUT ALL STRANDS 1" BELOW CONCRETE SURFACE AND GROUT WITH AN APPROVED EPOXY GROUT.
4. THE TOP SURFACE OF THE CROSSBEAM SHALL BE ROUGHENED IN ACCORDANCE WITH SECTION 6-02.3(25)H OF THE STANDARD SPECIFICATIONS.
5. LIFTING EMBEDMENTS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 6-02.3(25)L OF THE STANDARD SPECIFICATIONS.
6. CAUTION SHALL BE EXERCISED IN HANDLING AND PLACING CROSSBEAMS. ALL CROSSBEAMS SHALL BE CHECKED BY THE CONTRACTOR TO ENSURE THAT THEY ARE BRACED ADEQUATELY TO PREVENT TIPPING DURING SHIPPING. ONCE ERECTED, ALL CROSSBEAMS SHALL BE BRACED TO PREVENT MOVEMENT UNTIL THE CROSSBEAM/COLUMN JOINTS AND DUCTS HAVE BEEN GROUTED AND CURED.
7. DUCTS SHALL BE HELD IN PLACE BY A TEMPLATE CAPABLE OF WITHSTANDING FORCES FROM CONCRETE PLACEMENT. FINAL DUCT LOCATION SHALL BE WITHIN ¼" HORIZONTAL FROM THAT SHOWN IN THE PLANS. ALIGNMENT SHALL BE WITHIN 1° OF THE ANGLE SHOWN IN THE PLANS.
8. SELF CONSOLIDATING CONCRETE SHALL NOT BE USED.
9. DUCTS SHALL BE ROUND, CORRUGTED GALVANIZED STEEL WITH A 31 GAGE MINIMUM THICKNESS.

TYPICAL CROSSBEAM REINFORCING

STRANDS NOT SHOWN

b1 = 3" FOR SEGMENT 1 AND b1 = 5" FOR SEGMENT 2



Bridge Design Engr.	Khaleghi, B	M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\Window files\18 PC XBM 1.WND				REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor	Stoddard, RB					10	WASH.			
Designed By	Schultz, E 02/10					JOB NUMBER 10C502				
Checked By	Collins, R 05/10									
Detailed By	Avery, D 05/10									
Bridge Projects Engr.										
Prelim. Plan By										
Architect/Specialist		DATE	REVISION	BY	APP'D					

Mon Aug 02 09:09:11 2010

ERIC HENRY SCHULTZ — STATE OF WASHINGTON — 20140 — REGISTERED PROFESSIONAL ENGINEER — 8/3/2010

BRIDGE AND STRUCTURES OFFICE

BIJAN KHALEGHI — STATE OF WASHINGTON — 27900 — PROFESSIONAL ENGINEER — 8/4/10

Washington State Department of Transportation

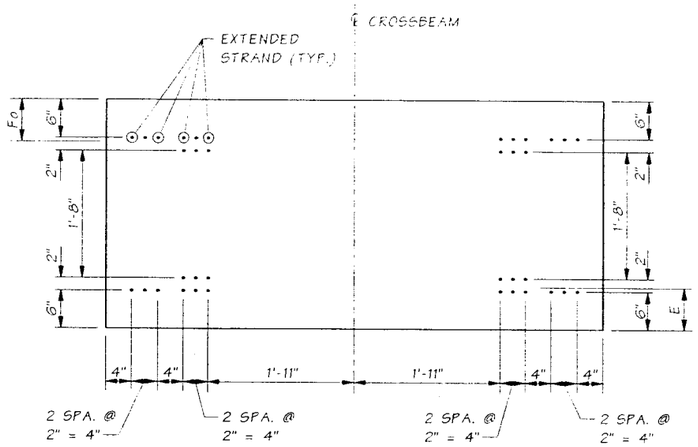
I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

PRECAST LOWER CROSSBEAM DETAILS 1 OF 2

BRIDGE SHEET NO. BB18

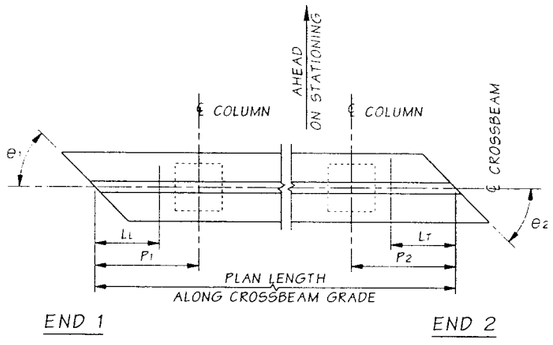
SHEET 361 OF 516 SHEETS

SR 12 FILE NO. ____ SHEET BB18



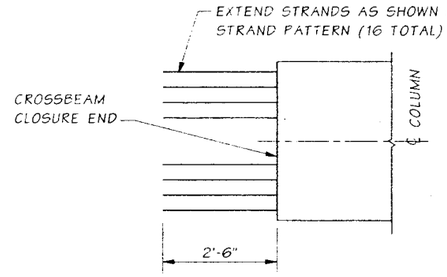
STRAND PATTERN

ALL STRANDS ARE STRAIGHT

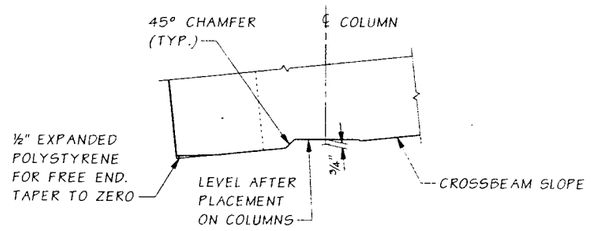


NOTE:

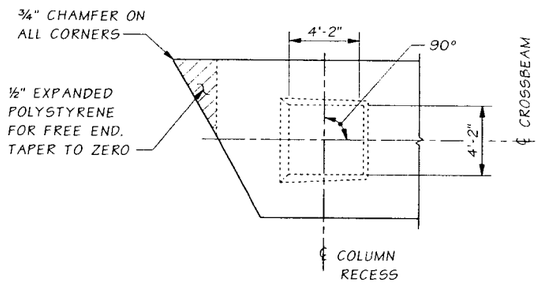
1. L1 AND LT ARE SHIPPING SUPPORT LOCATIONS AT LEADING AND TRAILING ENDS, RESPECTIVELY.



STRAND EXTENSION DETAIL



ELEVATION



PLAN

COLUMN RECESS AND BOTTOM SURFACE SPALL PROTECTION DETAIL

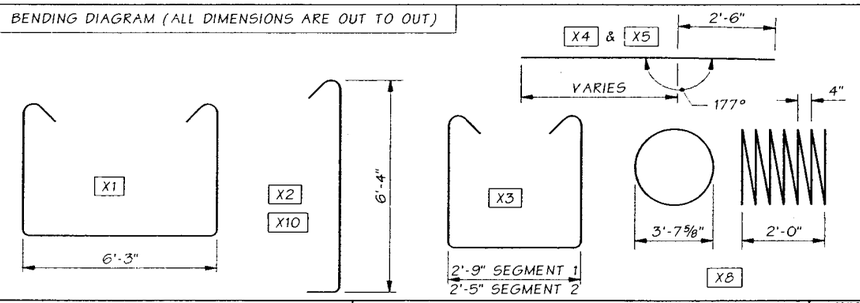
CROSSBEAM SCHEDULE

SEGMENT	END 1 TYPE	END 2 TYPE	φ (DEG.)	L	L1	LT	θ1 (DEG.)	θ2 (DEG.)	P1	P2	PLAN LENGTH (ALONG CROSS-BEAM GRADE)	MIN. CONC. COMP. STRENGTH @ FINAL F'C (KSI)	MIN. CONC. COMP. STRENGTH @ RELEASE F'CI (KSI)	STRAIGHT NO. OF STRANDS	STRAIGHT JACKING FORCE (KIPS)	LOCATION OF C.G. STRANDS E	LOCATION OF C.G. STRANDS Fo
1	A	D	+2°	3'-0"	1'-0"	1'-0"	60.8	90	5'-3"	21'-2⅛"	52'-8⅜"	4.0	3.5	36	1582	6⅝"	6⅝"
2	D	A	-2°	3'-0"	1'-0"	1'-0"	90	60.8	6'-3"	5'-3⅜"	37'-9⅝"	4.0	3.5	36	1582	6⅝"	6⅝"

MARK	LOCATION	SIZE	TYPE
α X1	OUTER STIRR.	6	STIRRUP
X2	EXTENDED STIRR.	7	STIRRUP
α X3	INNER STIRR.	6	STIRRUP
X4	BOTTOM LONGITUDINAL	11	STRAIGHT
X5	TOP LONGITUDINAL	11	STRAIGHT
α X6	TOP TIE	6	TIE
X7	SIDE LONGITUDINAL	6	STRAIGHT
X8	DUCT SPIRAL	5	SPIRAL
X9	END TIE	6	TIE
X10	END STIRR.	6	STIRRUP

α - VARIES FOR SKEWED ENDS.

BENDING DIAGRAM (ALL DIMENSIONS ARE OUT TO OUT)



Bridge Design Engr.	Khaleghi, B	M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\window files\19 PCXBM 2.WND	
Supervisor	Stoddard, RB		
Designed By	Schultz, E 03/10		
Checked By	Collins, R 05/10		
Detailed By	Avery, D 05/10		
Bridge Projects Engr.			
Prelim. Plan By			
Architect/Specialist			

DATE	REVISION	BY	APP'D

REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10	WASH.			
JOB NUMBER 100502				

ERIC HENRY SCHULTZ — STATE OF WASHINGTON — 21600 — PROFESSIONAL ENGINEER — 8/3/2010

BRIDGE AND STRUCTURES OFFICE

BILIAN KHALEGHI — STATE OF WASHINGTON — 27695 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER — 8/2/10

Washington State Department of Transportation

I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

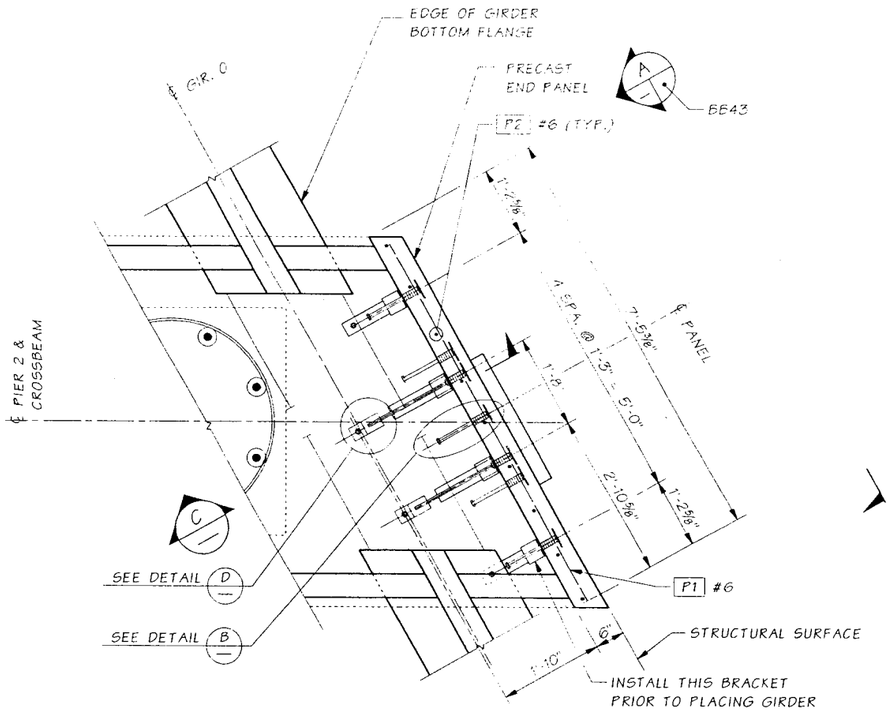
PRECAST LOWER CROSSBEAM DETAILS 2 OF 2

BRIDGE SHEET NO. BB19

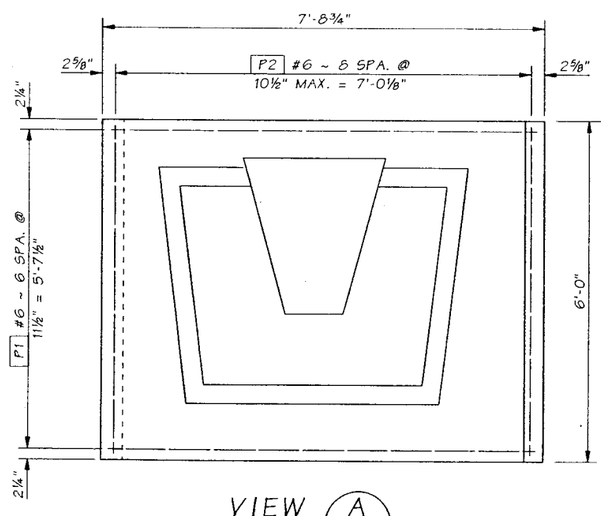
SHEET 362 OF 516 SHEETS

SR 12 FILE NO. ____ SHEET BB19

Mon Aug 02 09:09:17 2010

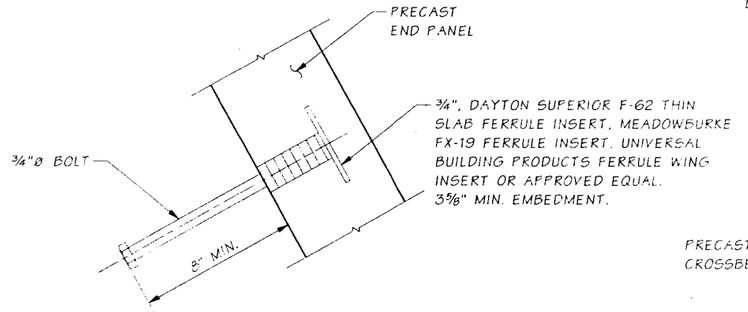


PLAN - CROSSBEAM

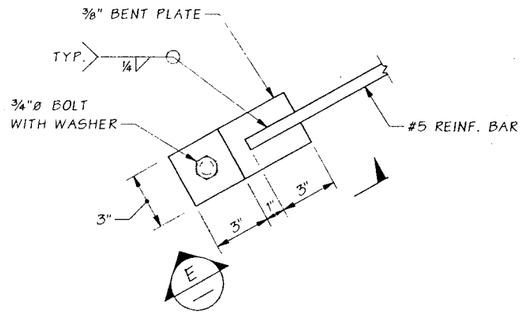


VIEW A

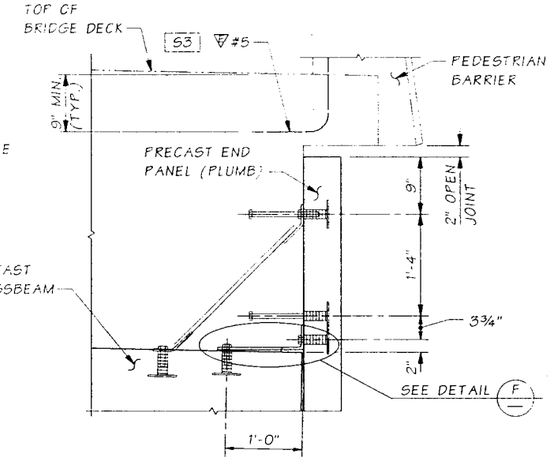
SEE BRIDGE SHEET BB43 FOR ARCHITECTURAL DETAILS



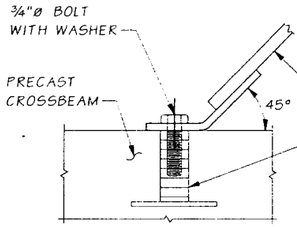
DETAIL B (10 PER PANEL)



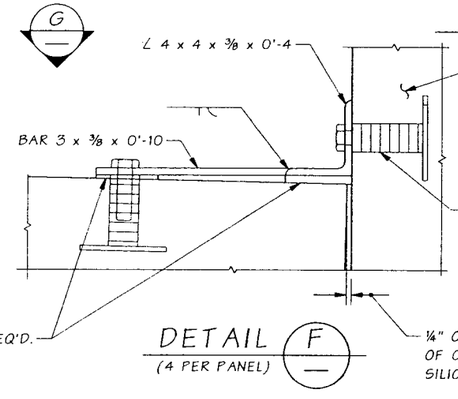
DETAIL D (4 PER PANEL)



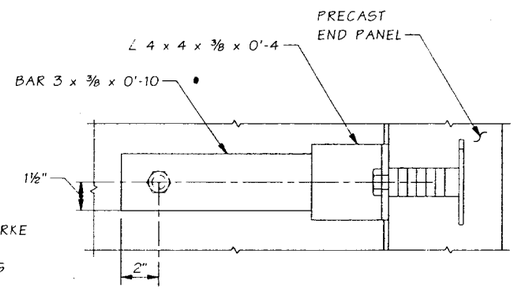
SECTION C



VIEW E



DETAIL F (4 PER PANEL)



VIEW G

SR 12 FILE NO. ____ SHEET BB20

Bridge Design Engr.	Khaleghi, B	M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\Window files\20 PC XBM END PANEL.WND				REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervsor	Stoddard, RB					10	WASH.			
Designed By	Schultz, E 06/10					JOB NUMBER 10C502				
Checked By	Collins, R 05/10									
Detailed By	Avery, D 05/10									
Bridge Projects Engr.										
Prelim. Plan By										
Architect/Specialist		DATE	REVISION	BY	APP'D					

Mon Aug 02 08:09:26 2010

ERIC HENRY SCHULTZ — STATE OF WASHINGTON — 39978 — REGISTERED PROFESSIONAL ENGINEER — 9/3/2010

BRIDGE AND STRUCTURES OFFICE

BIJAN KHALEGHI — STATE OF WASHINGTON — 27600 — STRUCTURAL ENGINEER — 9/4/10

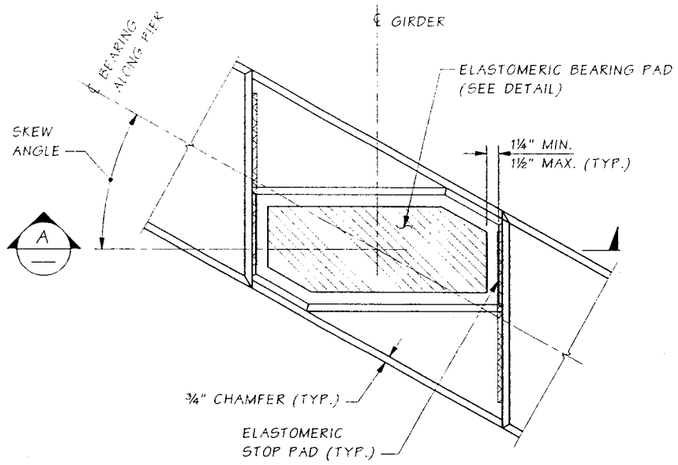
Washington State Department of Transportation

I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

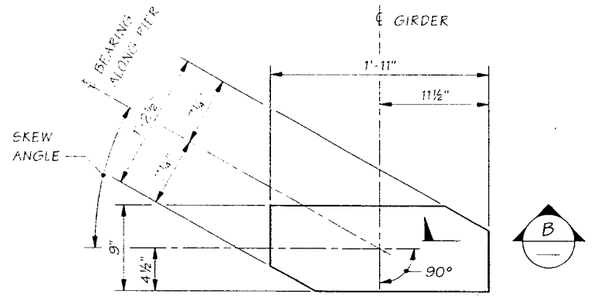
PRECAST END PANEL STRUCTURAL DETAILS

BRIDGE SHEET NO. BB20

SHEET 363 OF 516 SHEETS

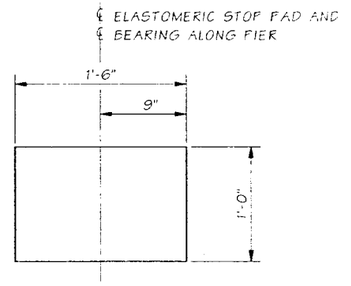


GROUT PAD DETAIL



ELASTOMERIC BEARING PAD

LAMINATED ELASTOMERIC BEARING PAD
(5 SHIMS).

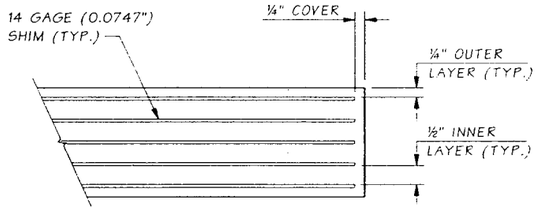


ELASTOMERIC STOP PAD

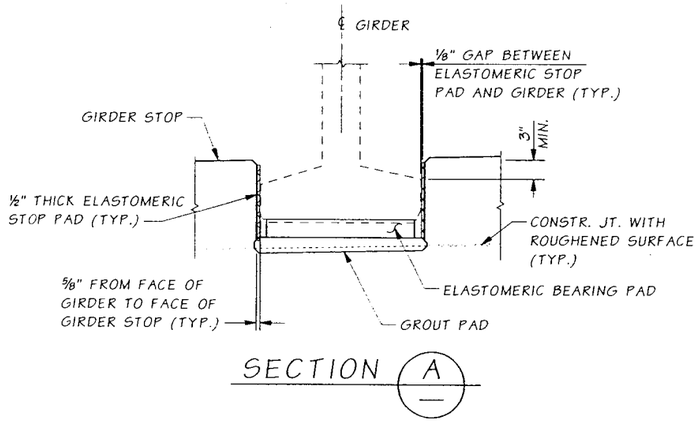
SHEAR MODULUS = 165 PSI

NOTES:

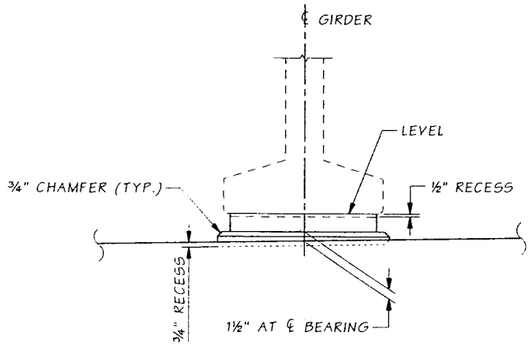
1. GIRDER STOPS SHALL BE CONSTRUCTED AFTER GIRDER PLACEMENT.
2. THE ELASTOMERIC STOP PADS SHALL BE CEMENTED TO GIRDER STOPS WITH APPROVED ADHESIVE.



SECTION B



SECTION A



GROUT PAD ELEVATION

BEARING DESIGN TABLE AASHTO METHOD B DESIGN	
SERVICE - I LIMIT STATE	
DEAD LOAD (DL) REACTION	100 KIPS
LIVE LOAD REACTION (W/O IMPACT)	84 KIPS
UNLOADED HEIGHT	2⅞ IN.
LOADED HEIGHT (DL)	2 13/16 IN.
SHEAR MODULUS @ 73°F	165 PSI

SR 12 FILE NO. ____ SHEET BB21

Bridge Design Engr.	Khaleghi, B	M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\Window files\21 BEARING.WND				REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO	TOTAL SHEETS
Supervisor	Stoddard, RB					10	WASH.			
Designed By	Hsieh, JC 02/10					JOB NUMBER 100502				
Checked By	Collins, R 05/10									
Detailed By	Avery, D 05/10									
Bridge Projects Engr.										
Prelim. Plan By										
Architect/Specialist		DATE	REVISION	BY	APP'D					

Mon Aug 02 09:09:32 2010

JEN-CHI HSIEH — STATE OF WASHINGTON — 28573 — PROFESSIONAL ENGINEER — 8/2/10

BRIDGE AND STRUCTURES OFFICE

FUBIAN KHALEGHI — STATE OF WASHINGTON — 27690 — PROFESSIONAL ENGINEER — 8/2/10

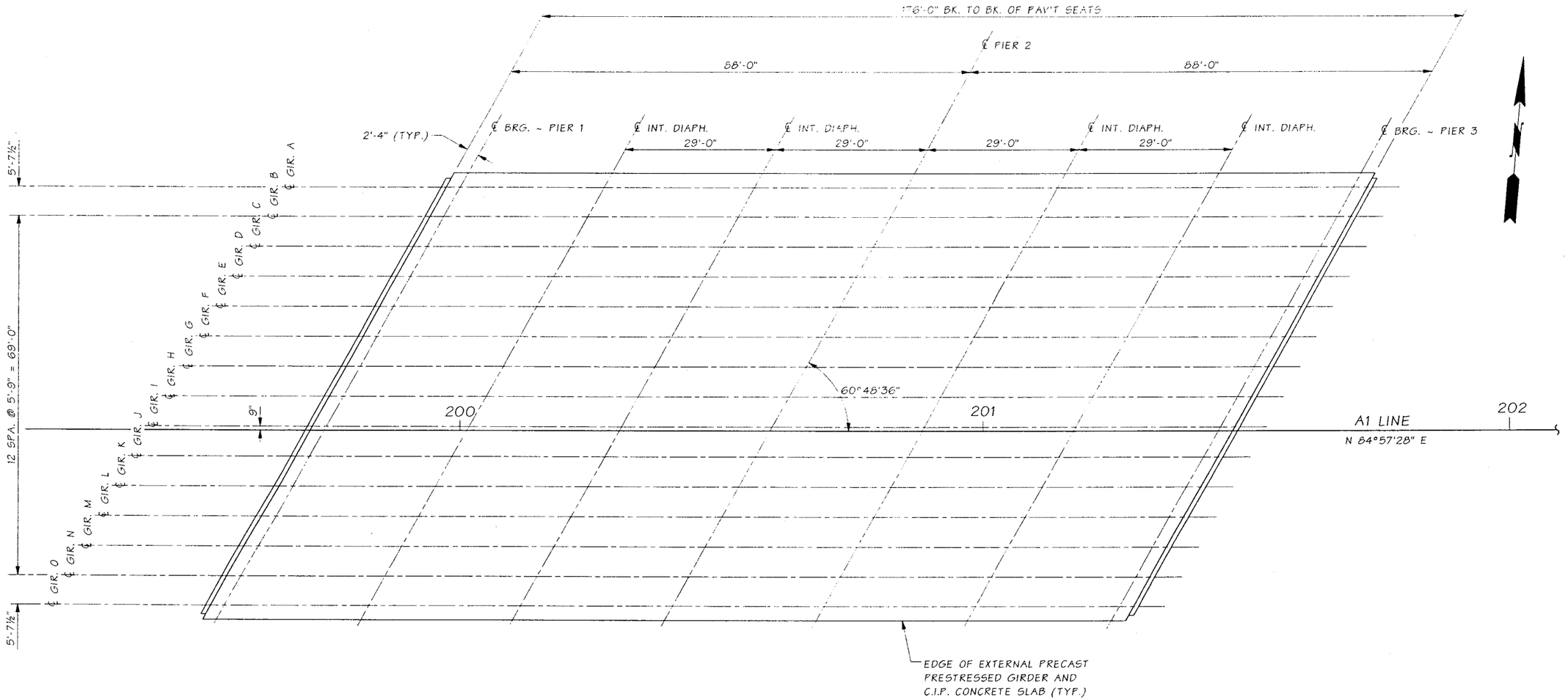
Washington State Department of Transportation

I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

BEARING DETAILS

BRIDGE SHEET NO. BB21

SHEET 364 OF 516 SHEETS



FRAMING PLAN

THE BEARING OF ALL PIERS AND DIAPHRAGMS IS: N 24°08'52" E

SR 12 FILE NO. ____ SHEET BB22

Bridge Design Engr.	Khaleghi, B		M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\Window files\22 FRAMING.WND							
Supervisor	Stoddard, RB									
Designed By	Hsieh, JC	02/10								
Checked By	Collins, R	05/10								
Detailed By	Avery, D	05/10								
Bridge Projects Engr.										
Prelim. Plan By										
Architect/Specialist			DATE	REVISION	BY	APP'D				

REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO	TOTAL SHEETS
10	WASH.			
JOB NUMBER 105502				

Mon Aug 02 08:08:37 2010

JEN-CHI HSIEH — STATE OF WASHINGTON — 28272 — PROFESSIONAL ENGINEER — 8/4/10

BRIDGE AND STRUCTURES OFFICE

BIJAN KHALEGHI — STATE OF WASHINGTON — 27690 — PROFESSIONAL ENGINEER — 8/2/10

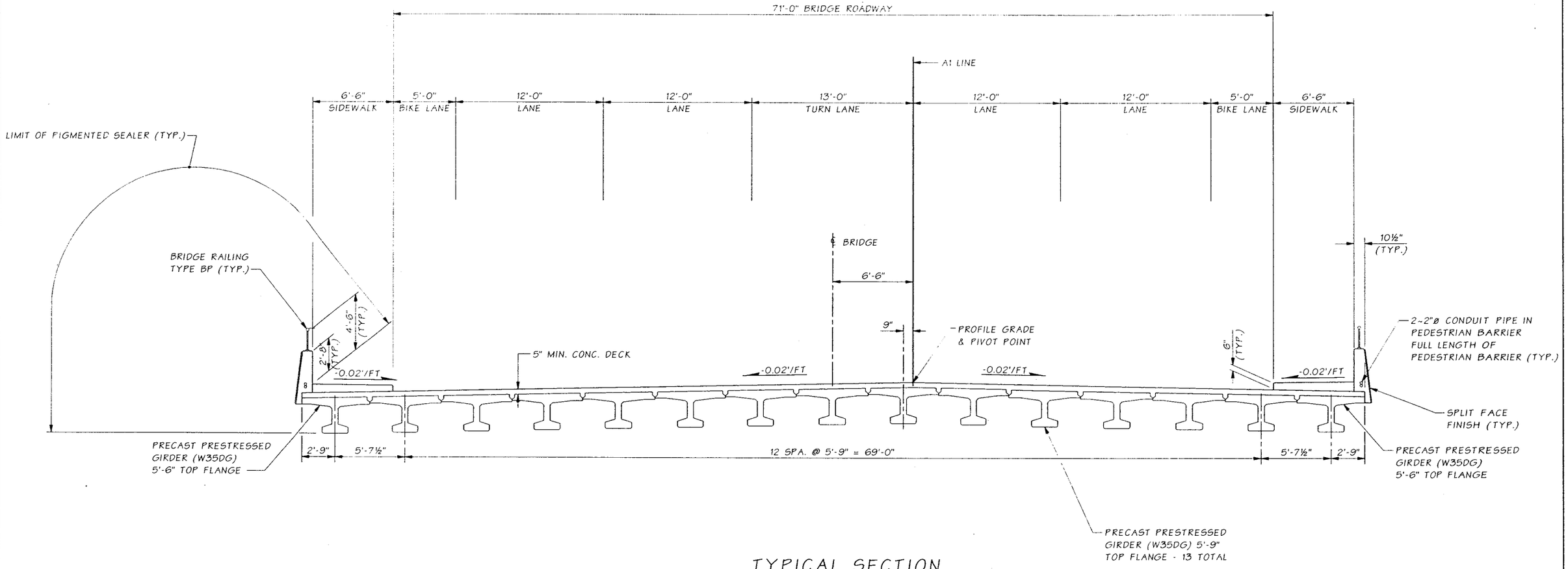
Washington State Department of Transportation

I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

FRAMING PLAN

BRIDGE SHEET NO. BB22

SHEET 365 OF 516 SHEETS



TYPICAL SECTION

SR 12 FILE NO. ____ SHEET BB23

Bridge Design Engr.	Khaleghi, B		M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\Window files\23 TYP SECT.WND			REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor	Stoddard, RB					10	WASH.			
Designed By	Hsieh, JC	02/10				JOB NUMBER 10C502				
Checked By	Collins, R	05/10								
Detailed By	Avery, D	05/10								
Bridge Projects Engr.										
Prelim. Plan By										
Architect/Specialist			DATE	REVISION	BY	APP'D				

Mon Aug 02 08:09:42 2010

JEN-CHI HSIEH — STATE OF WASHINGTON — 28272 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER — 8/2/10

BRIDGE AND STRUCTURES OFFICE

JILIAN KHALEGHI — STATE OF WASHINGTON — 27695 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER — 8/2/10

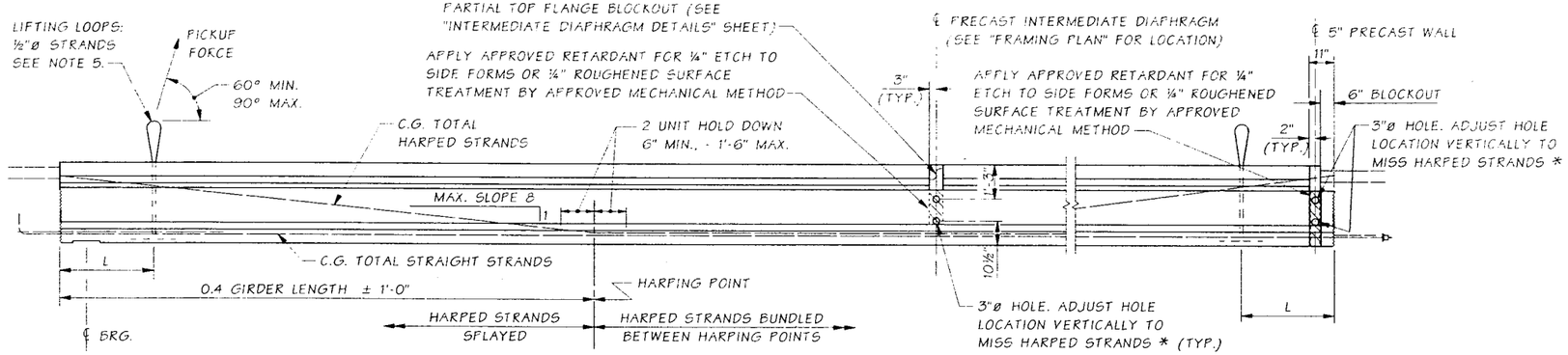
Washington State Department of Transportation

I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

TYPICAL SECTION

BRIDGE SHEET NO. BB23

SHEET 366 OF 516 SHEETS



END TYPE A

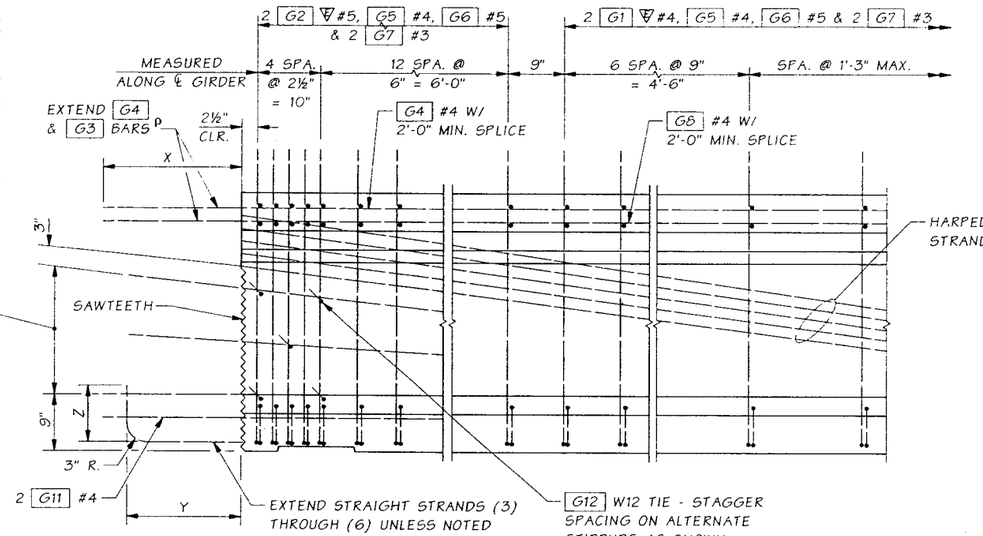
GIRDER ELEVATION

END TYPE D

* OMIT HOLES AND PLACE INSERTS ON THE INTERIOR FACE OF EXTERIOR GIRDERS. PLACE HOLES AND INSERTS PARALLEL TO SKEW. INSERTS SHALL BE 1"ø BURKE HI-TENSILE, LANCASTER MALLEABLE, DAYTON-SUPERIOR F-62 FLARED THIN SLAB (1" x 4⅝") FERRULE OR APPROVED EQUAL. (TYP.)

GIRDER NOTES

1. PLAN LENGTH SHALL BE INCREASED AS NECESSARY TO COMPENSATE FOR SHORTENING DUE TO PRESTRESS AND SHRINKAGE.
2. ALL PRETENSIONED STRANDS SHALL BE 0.6"ø LOW RELAXATION STRANDS (AASHTO M203 GRADE 270.)
3. FOR END TYPES A AND D CUT ALL STRANDS FLUSH WITH THE GIRDER ENDS AND PAINT WITH AN APPROVED EPOXY RESIN, EXCEPT FOR EXTENDED STRANDS AS SHOWN.
4. THE TOP SURFACE OF THE GIRDER FLANGE SHALL BE ROUGHENED IN ACCORDANCE WITH SECTION 6-02.3(25)H OF THE STANDARD SPECIFICATIONS.
5. LIFTING EMBEDMENTS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 6-02.3(25)L OF THE STANDARD SPECIFICATIONS.
6. CAUTION SHALL BE EXERCISED IN HANDLING AND PLACING GIRDERS. ALL GIRDERS SHALL BE CHECKED BY THE CONTRACTOR TO ENSURE THAT THEY ARE BRACED ADEQUATELY TO PREVENT TIPPING AND TO CONTROL LATERAL BENDING DURING SHIPPING. ONCE ERECTED, ALL GIRDERS SHALL BE BRACED LATERALLY TO PREVENT TIPPING UNTIL THE DIAPHRAGMS ARE CAST AND CURED.
7. FORMS FOR BEARING PAD RECESSES SHALL BE CONSTRUCTED AND FASTENED IN SUCH A MANNER AS TO NOT CAUSE DAMAGE TO THE GIRDER DURING THE STRAND RELEASE OPERATION.
8. SELF CONSOLIDATING CONCRETE SHALL NOT BE USED.

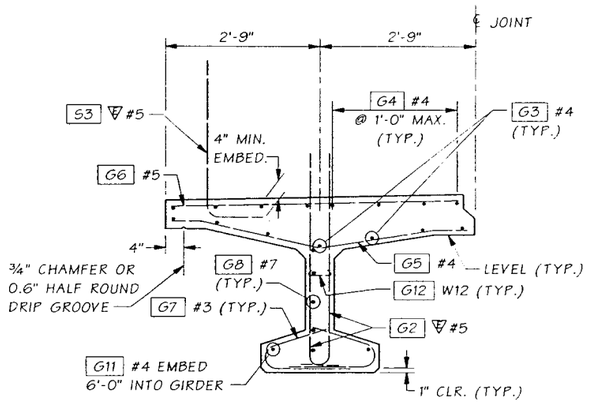


TYPICAL END ELEVATION

END TYPE C SHOWN, OTHER END TYPES SIMILAR

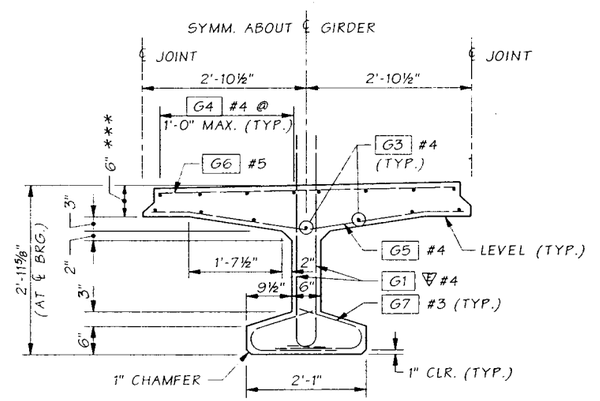
ρ FIELD BENDING REQUIRED TO OBTAIN 1½" CONCRETE COVER AT PAVEMENT SEAT.

END TYPE	BEARING RECESS	X	Y	Z	SAWTEETH
A	YES	1'-10"	1'-6"	9"	YES
C	NO	1'-10"	1'-6"	9"	YES
D	NO	1'-10"	ALT. 1 OR ALT. 2 STRAND EXTEN.		YES



EXTERIOR GIRDER REINFORCING NEAR GIRDER END

FOR DETAILS NOT SHOWN, SEE INTERIOR GIRDER

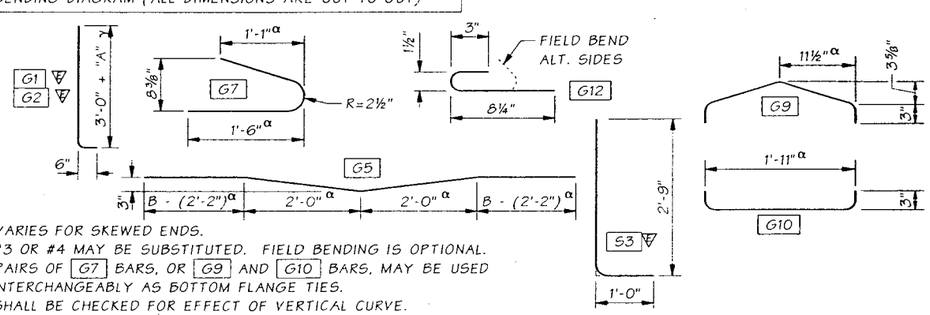


INTERIOR GIRDER REINFORCING NEAR MIDSPAN

*** THICKEN FLANGE TO COMPENSATE FOR SUPERELEVATION

MARK	LOCATION	SIZE	
G1	GIRDER STIRRUPS	4	
G2	GIRDER END STIRRUPS	5	
G3	BOT. OF TOP FLANGE - LONGIT.	4	STR.
G4	TOP OF TOP FLANGE - LONGIT.	4	STR.
G5	BOT. OF TOP FLANGE - TRANSV.	4	
G6	TOP TRANSVERSE	5	STR.
G7	BOTTOM FLANGE TIES	3	
G8	GIRDER END LONGIT.	7	STR.
G9β	GIRDER BOT. FLANGE TIES	3	
G10β	GIRDER BOT. FLANGE TIES	3	
G11	GIRDER END LONGIT.	4	STR.
G12	GIRDER END TIES	W12δ	
S3	PEDESTRIAN BARRIER	5	

BENDING DIAGRAM (ALL DIMENSIONS ARE OUT TO OUT)



α - VARIES FOR SKEWED ENDS.
δ - #3 OR #4 MAY BE SUBSTITUTED. FIELD BENDING IS OPTIONAL.
β - PAIRS OF G7 BARS, OR G9 AND G10 BARS, MAY BE USED INTERCHANGEABLY AS BOTTOM FLANGE TIES.
γ - SHALL BE CHECKED FOR EFFECT OF VERTICAL CURVE.

▽ DENOTES EPOXY COATED

Bridge Design Engr.	Khaleghi, B	M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\Window files\24 W35G 1.WND				REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor	Stoddard, RB					10	WASH.			
Designed By	Hsieh, JC 02/10					JOB NUMBER 100502				
Checked By	Collins, R 05/10									
Detailed By	Avery, D 05/10									
Bridge Projects Engr.										
Prelim. Plan By										
Architect/Specialist		DATE	REVISION	BY	APP'D					

Mon Aug 02 08:09:46 2010

JEN-CHI HSIEH — STATE OF WASHINGTON — 25572 — PROFESSIONAL ENGINEER — 8/2/10

BRIDGE AND STRUCTURES OFFICE

FABIAN KHALEGHI — STATE OF WASHINGTON — 27895 — PROFESSIONAL ENGINEER — 8/2/10

Washington State Department of Transportation

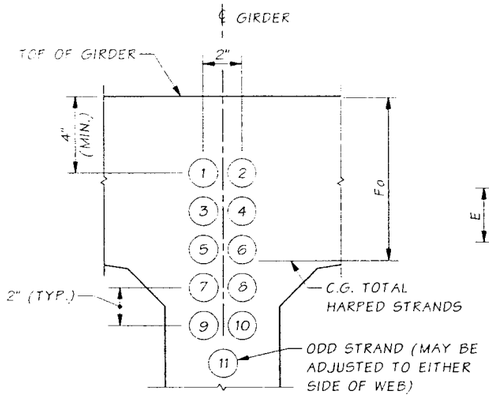
I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

W35DG GIRDER
DETAILS 1 OF 3

BRIDGE SHEET NO. BB24

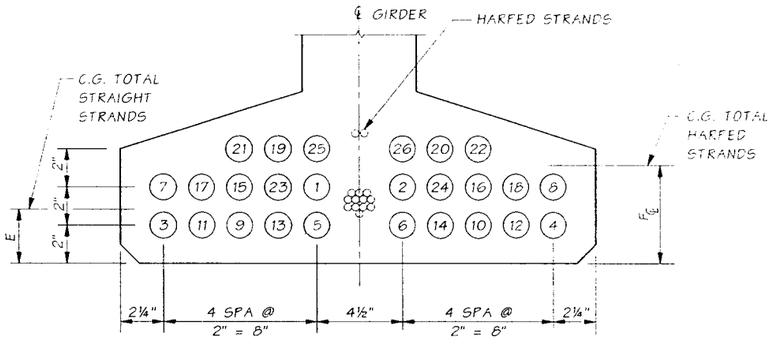
SHEET 367 OF 516 SHEETS

SR 12 FILE NO. ____ SHEET BB24



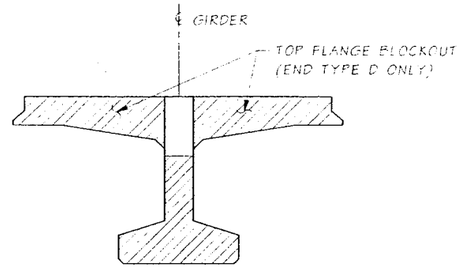
STRAND PATTERN AT GIRDER END

HARPED STRAND LOCATION SEQUENCE SHALL BE AS SHOWN (1), (2) ETC.



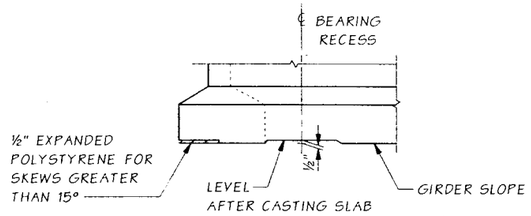
STRAND PATTERN AT ℄ SPAN

STRAIGHT STRAND LOCATION SEQUENCE SHALL BE AS SHOWN (1), (2) ETC.

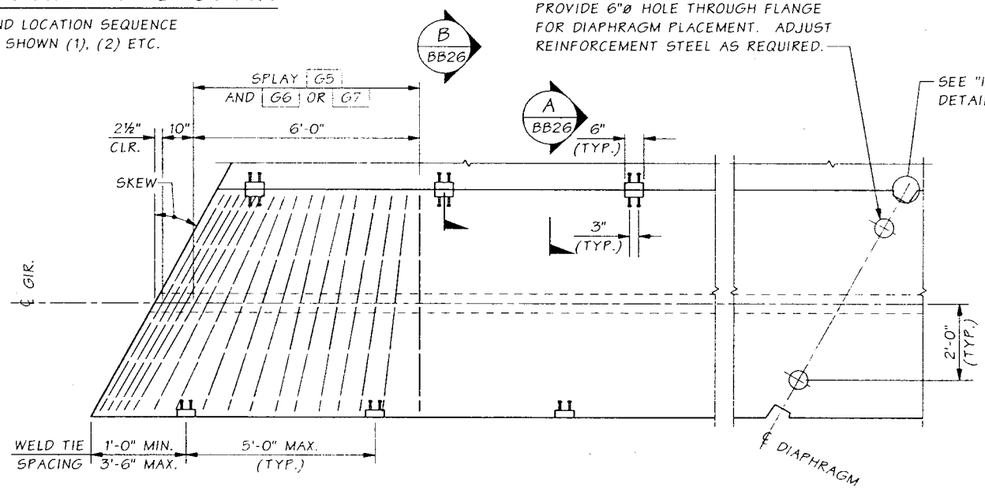


GIRDER END

SAWTEETH SHOWN BY HATCHED AREA

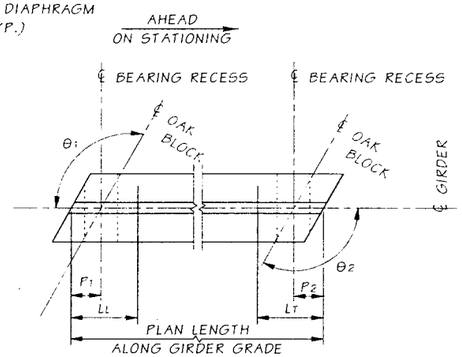


ELEVATION

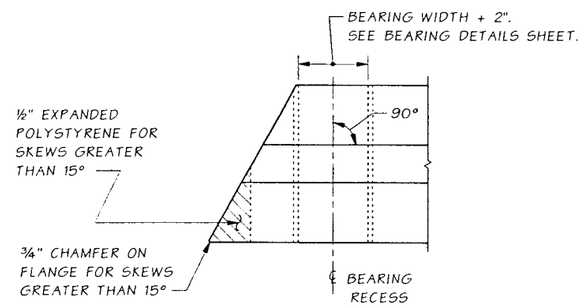


TRANSVERSE REINFORCING SKEWED ENDS

OMIT WELD TIES ON EXTERIOR EDGE OF EXTERIOR GIRDER.
ONLY TRANSVERSE REINFORCING SHOWN.



END 1 END 2



PLAN

BEARING RECESS AND BOTTOM FLANGE SPALL PROTECTION DETAIL

NOTES:

1. L1 AND LT ARE SHIPPING SUPPORT LOCATIONS AT LEADING AND TRAILING ENDS, RESPECTIVELY.
2. OMIT BEARING RECESS FOR END TYPE "D".
3. OMIT OAK BLOCK FOR END TYPE "A".

GIRDER SCHEDULE

DIMENSION "A" AT ℄ BEARINGS = 7¼"

BASED ON GIRDER DEFLECTION = "D" AT TIME OF SLAB PLACEMENT (120 DAYS)

SPAN	GIRDER	END 1 TYPE	END 2 TYPE	L	L1	LT	θ1 (DEG.)	θ2 (DEG.)	P1	P2	PLAN LENGTH (ALONG GIRDER GRADE)	MIN. CONC. COMP. STRENGTH @ FINAL F'C (KSI)	MIN. CONC. COMP. STRENGTH @ RELEASE F'CI (KSI)	HARPED NO. OF STRANDS	HARPED JACKING FORCE (KIPS)	STRAIGHT NO. OF STRANDS	STRAIGHT JACKING FORCE (KIPS)	LOCATION OF C.G. STRANDS E	LOCATION OF C.G. STRANDS F℄	LOCATION OF C.G. STRANDS Fo	C	D @ 40 DAYS	D @ 120 DAYS
1	ALL	A	D	3'-0"	5'-0"	5'-0"	119.2	119.2	1'-5⅛"	0'-8⅝"	84'-2½"	8.9	7.9	11	483	20	879	3¼"	4"	8½"	1⅛"	3¾"	4⅛"
2	ALL	D	A	3'-0"	5'-0"	5'-0"	119.2	119.2	0'-8⅝"	1'-5⅛"	84'-2⅞"	8.9	7.9	11	483	20	879	3¼"	4"	8½"	1⅛"	3¾"	4⅛"

Bridge Design Engr.	Khaleghi, B																							
Supervisor	Stoddard, RB																							
Designed By	Hsieh, JC	02/10																						
Checked By	Collins, R	05/10																						
Detailed By	Avery, D	05/10																						
Bridge Projects Engr.																								
Prelim. Plan By																								
Architect/Specialist																								

M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\window files\25 W35DG 2.WND

DATE | REVISION | BY | APP'D

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

JOB NUMBER 100502

JEN-CHI HSIEH — STATE OF WASHINGTON — 21975 — REGISTERED PROFESSIONAL ENGINEER — STRUCTURAL ENGINEER — 8/2/15

BRIDGE AND STRUCTURES OFFICE

BILIAN KHALEGHI — STATE OF WASHINGTON — 21975 — REGISTERED PROFESSIONAL ENGINEER — STRUCTURAL ENGINEER — 8/2/15

Washington State Department of Transportation

I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

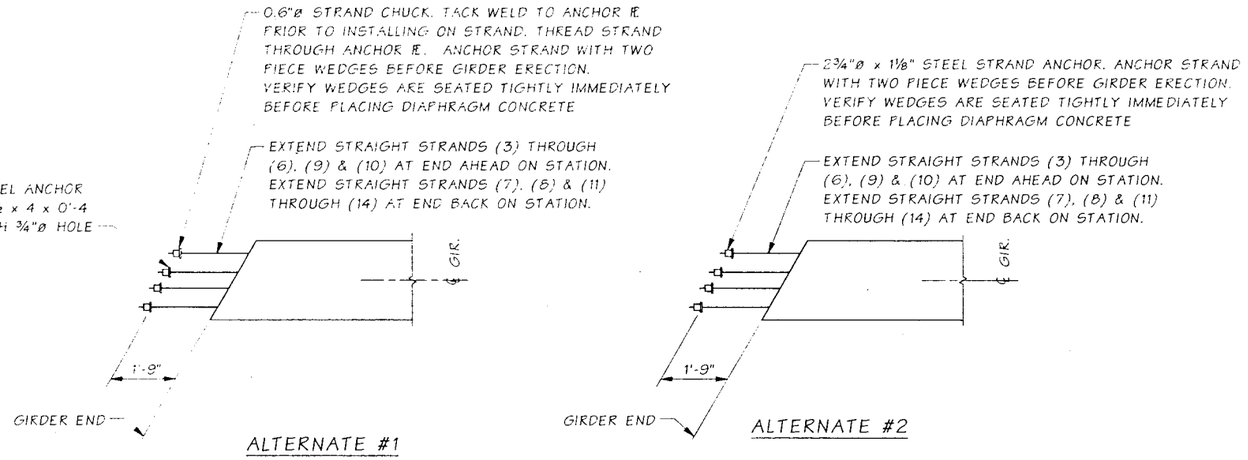
W35DG GIRDER DETAILS 2 OF 3

BRIDGE SHEET NO. BB25

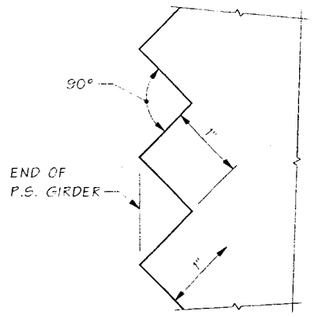
SHEET 368 OF 516 SHEETS

SR 12 FILE NO. ____ SHEET BB25

Mon Aug 02 09:09:56 2010

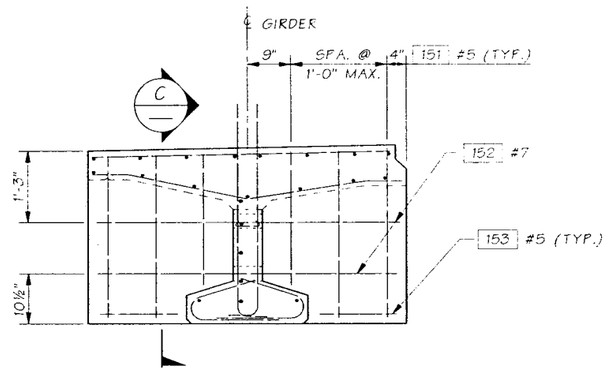


STRAND EXTENSION DETAIL



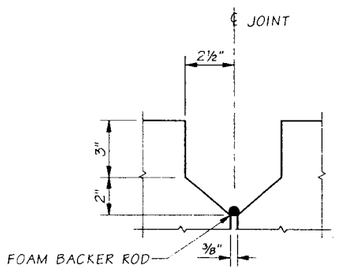
SAWTOOTH DETAILS

SAWTEETH ARE FULL WIDTH

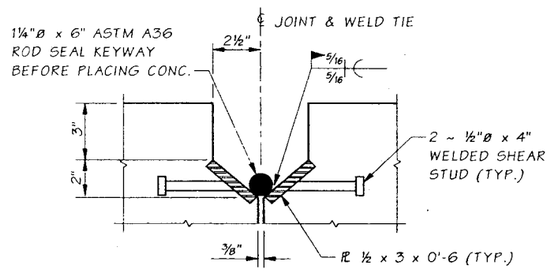


SECTION AT 5" PRECAST WALL

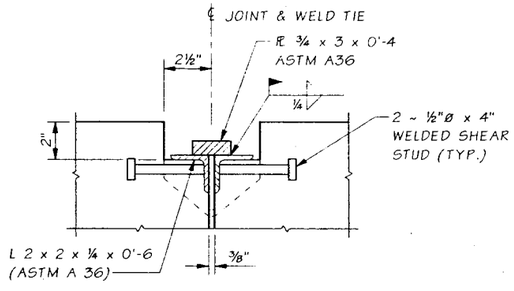
DIMENSIONS ARE ALONG THE SKEW.
SEE "EXTERIOR GIRDER REINFORCING NEAR GIRDER END" ON GIRDER DETAILS 1 OF 3 FOR DETAILS NOT SHOWN.
EXT. GIRDER SHOWN, INT. GIRDER SIMILAR



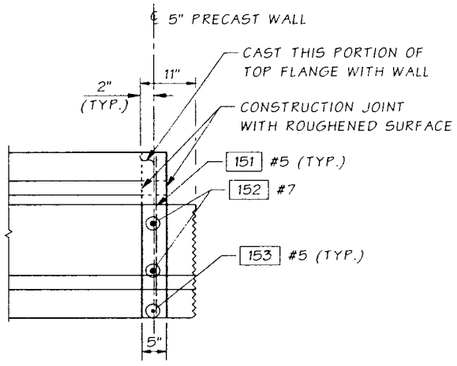
SECTION A (BB25)



SECTION B (BB25) WELD TIE ALTERNATE #1



SECTION B (BB25) WELD TIE ALTERNATE #2



SECTION C (—)

SR 12 FILE NO. ____ SHEET BB26

Bridge Design Engr.	Khaleghi, B	M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\Window files\26 W35DG 3.WND							
Supervisor	Stoddard, RB				REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By	Hsieh, JC 02/10				10	WASH.			
Checked By	Collins, R 05/10				JOB NUMBER 106502				
Detailed By	Avery, D 05/10								
Bridge Projects Engr.									
Prelim. Plan By									
Architect/Specialist		DATE	REVISION	BY	APP'D				

Mon Aug 02 08:10:05 2010

JEN-CHI HSIEH — STATE OF WASHINGTON — 28272 — PROFESSIONAL ENGINEER — 8/2/10

BRIDGE AND STRUCTURES OFFICE

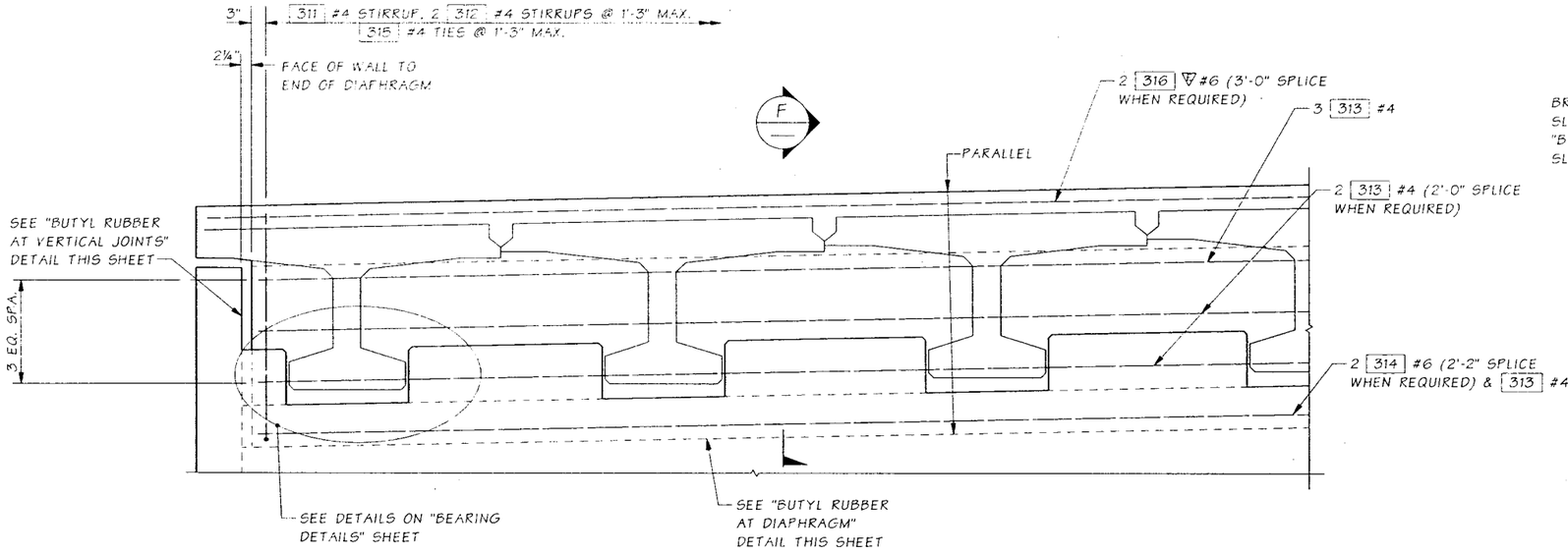
BILIAN KHALEGHI — STATE OF WASHINGTON — 27695 — PROFESSIONAL ENGINEER — 8/2/10

Washington State Department of Transportation

I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

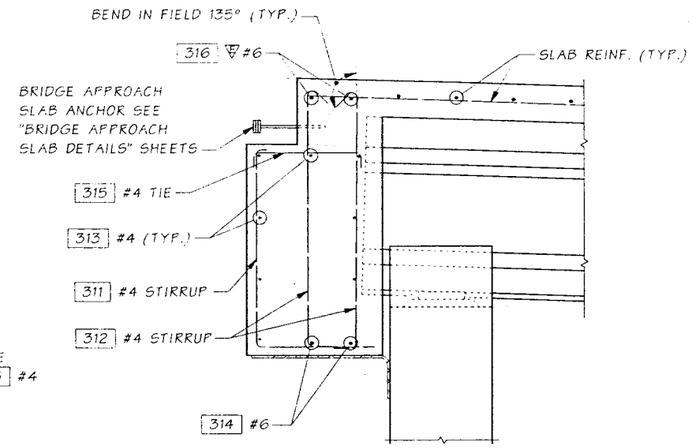
W35DG GIRDER DETAILS 3 OF 3

BRIDGE SHEET NO. BB26
SHEET 369 OF 516 SHEETS

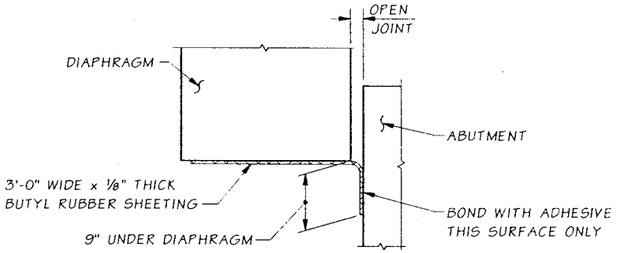


ELEVATION
END DIAPHRAGM

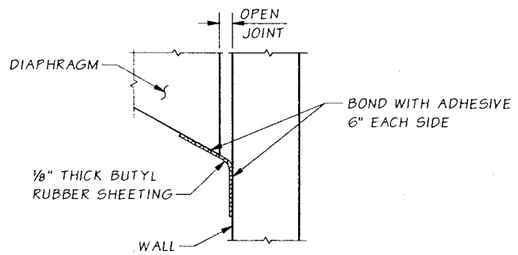
DIMENSIONS ARE ALONG DIAPHRAGM



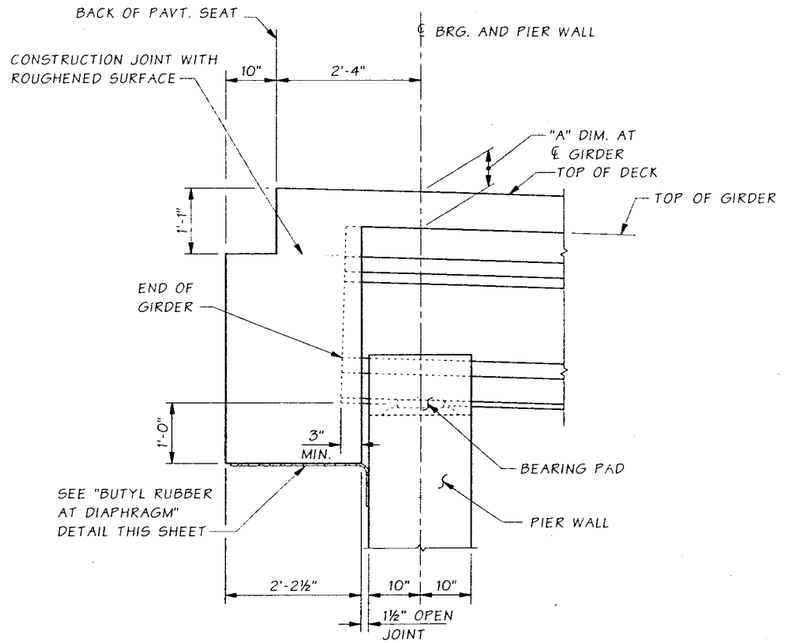
SECTION F



ELEVATION
BUTYL RUBBER
AT DIAPHRAGM



PLAN
BUTYL RUBBER
AT VERTICAL JOINTS



END DIAPHRAGM GEOMETRY

SEE "GIRDER DETAILS" SHEET FOR DIMENSION "A".
ALL LONGITUDINAL DIMENSIONS ARE NORMAL TO SKEW.

NOTE:

GIRDERS SHALL BE HELD RIGIDLY IN PLACE WHEN DIAPHRAGMS ARE PLACED.

SR 12 FILE NO. ____ SHEET BB27

Bridge Design Engr.	Khaleghi, B	
Supervisor	Stoddard, RB	
Designed By	Hsieh, JC	02/10
Checked By	Collins, R	05/10
Detailed By	Avery, D	05/10
Bridge Projects Engr.		
Prelim. Plan By		
Architect/Specialist		

M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\Window files\27 END DIAPH.WND

DATE	REVISION	BY	APP'D

REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO	TOTAL SHEETS
10	WASH.			
JOB NUMBER 10C502				

JEN-CHI HSIEH — STATE OF WASHINGTON — STRUCTURAL ENGINEER — 8/12/10

BRIDGE AND STRUCTURES OFFICE

BIJAN KHALEGHI — STATE OF WASHINGTON — STRUCTURAL ENGINEER — 8/12/10

Washington State Department of Transportation

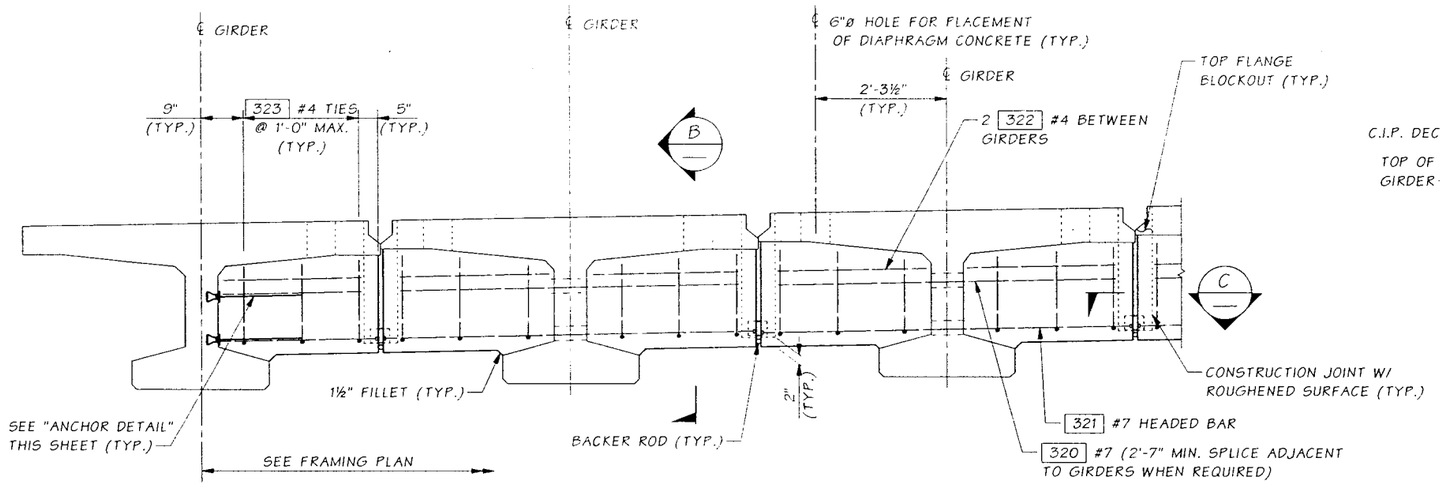
I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

END DIAPHRAGM DETAILS

BRIDGE SHEET NO. BB27

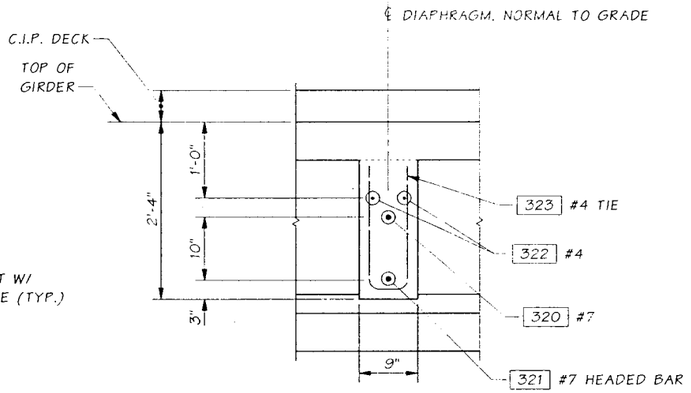
SHEET 370 OF 516 SHEETS

Mon Aug 02 09:10:11 2010

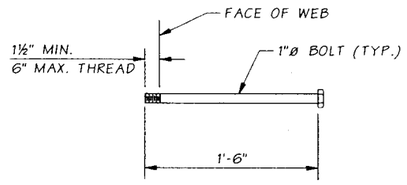


ELEVATION
PRECAST INTERMEDIATE DIAPHRAGM

DIMENSIONS ARE ALONG DIAPHRAGM

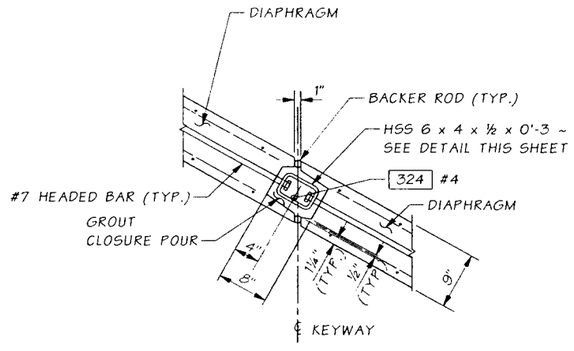


SECTION B

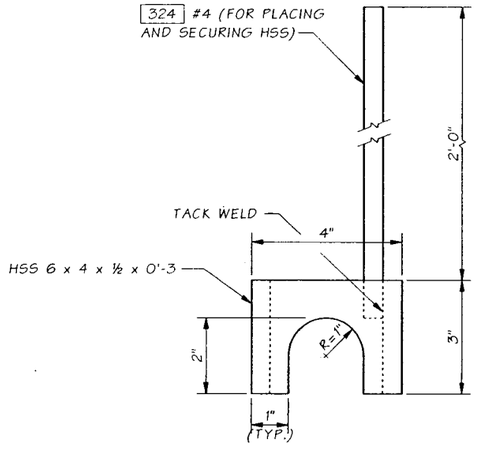


ANCHOR DETAIL

ASTM A-307



SECTION C



HSS DETAIL

NOTES:

1. GIRDERS SHALL BE HELD RIGIDLY IN PLACE WHEN GROUTING THE DIAPHRAGM CLOSURE POUR.
2. THE PRECAST INTERMEDIATE DIPHRAGMS ARE TO MATCH-CAST IN THE PLANT TO ASSURE PROPER ALIGNMENT IN THE FIELD. THE GIRDERS ARE SET SIDE-BY-SIDE IN THE YARD AS THEY WILL SIT IN THE STRUCTURE, AND THE DIAPHRAGM IS CAST UP AGAINST THE MATCHING ONE THAT WAS PREVIOUSLY POURED.
3. REMOVE BACKER ROD AFTER DIAPHRAGM CLOSURE IS POURED.

SR 12 FILE NO. ____ SHEET BB28

Bridge Design Engr.	Khaleghi, B	M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\Window files\28 INT DIAPH.WND			REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor	Stoddard, RB				10	WASH.			
Designed By	Hsieh, JC 02/10				JOB NUMBER 100502				
Checked By	Collins, R 05/10								
Detailed By	Avery, D 05/10								
Bridge Projects Engr.									
Prelim. Plan By									
Architect/Specialist		DATE	REVISION	BY	APP'D				

Mon Aug 02 09:10:16 2010

JEN-CHI HSIEH — STATE OF WASHINGTON — 28272 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER — 8/2/10

BRIDGE AND STRUCTURES OFFICE

BILLAN KHALEGHI — STATE OF WASHINGTON — 27690 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER — 8/2/10

Washington State Department of Transportation

I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

INTERMEDIATE DIAPHRAGM DETAILS

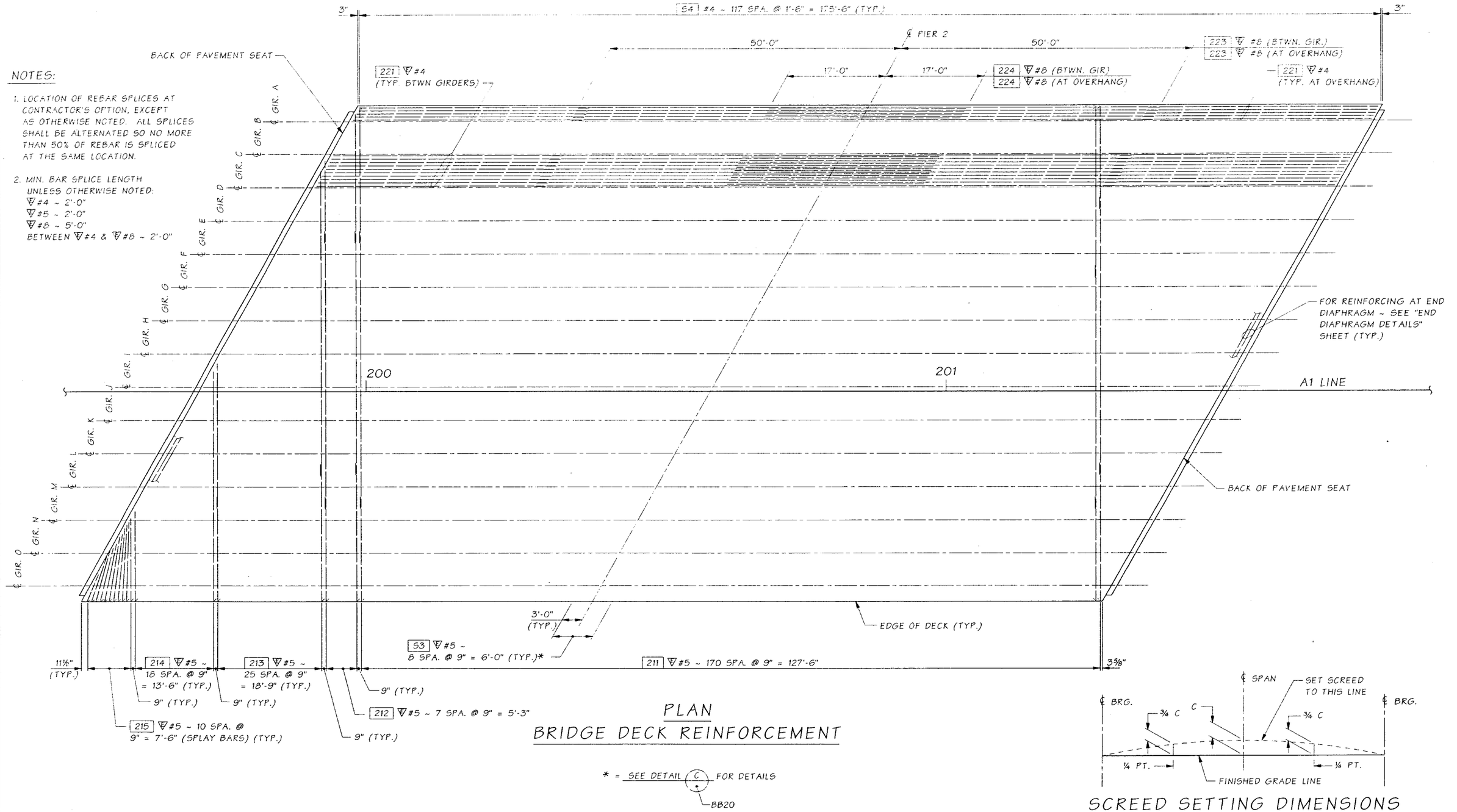
BRIDGE SHEET NO. BB28

SHEET 371 OF 516 SHEETS

NOTES:

1. LOCATION OF REBAR SPLICES AT CONTRACTOR'S OPTION, EXCEPT AS OTHERWISE NOTED. ALL SPLICES SHALL BE ALTERNATED SO NO MORE THAN 50% OF REBAR IS SPLICED AT THE SAME LOCATION.

2. MIN. BAR SPLICE LENGTH UNLESS OTHERWISE NOTED:
   #4 ~ 2'-0"
   #5 ~ 2'-0"
   #8 ~ 5'-0"
   BETWEEN #4 & #8 ~ 2'-0"



PLAN
BRIDGE DECK REINFORCEMENT

* = SEE DETAIL C FOR DETAILS
BB20

SCREED SETTING DIMENSIONS

FOR DIMENSION "C" SEE GIRDER SCHEDULE

Bridge Design Engr.	Khaleghi, B		M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\Window files\29 DECK PLAN.WND				REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor	Stoddard, RB						10	WASH.			
Designed By	Hsieh, JC	02/10					JOB NUMBER 10C502				
Checked By	Collins, R	05/10									
Detailed By	Avery, D	05/10									
Bridge Projects Engr.											
Prelim. Plan By											
Architect/Specialist			DATE	REVISION	BY	APP'D					

JEN-CHI HSIEH — STATE OF WASHINGTON — 28272 — PROFESSIONAL ENGINEER — 8/7/10
BRIDGE AND STRUCTURES OFFICE
BIJAN KHALEGHI — STATE OF WASHINGTON — 27065 — PROFESSIONAL ENGINEER — 8/2/10

Washington State Department of Transportation

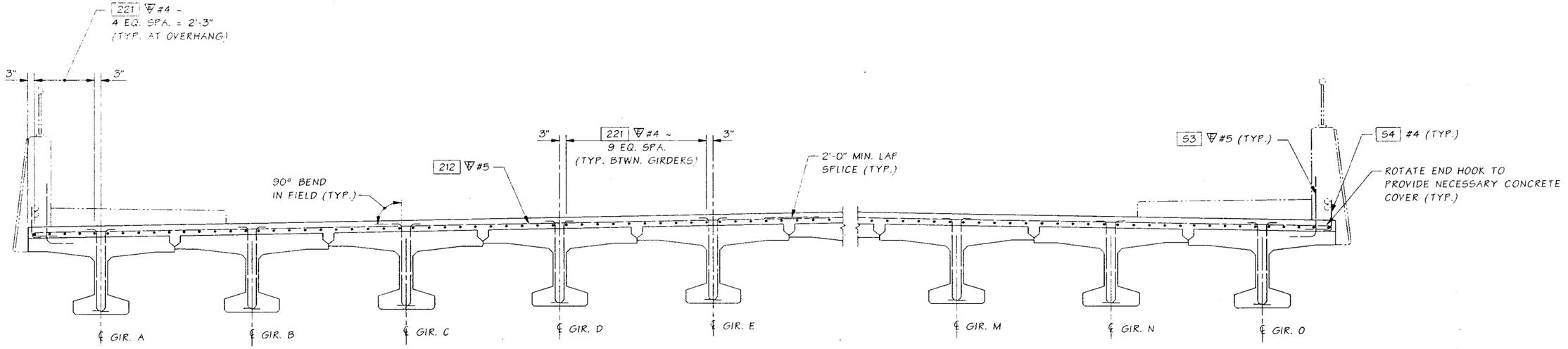
I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

BRIDGE DECK REINFORCING PLAN

BRIDGE SHEET NO. BB29
SHEET 372 OF 516 SHEETS

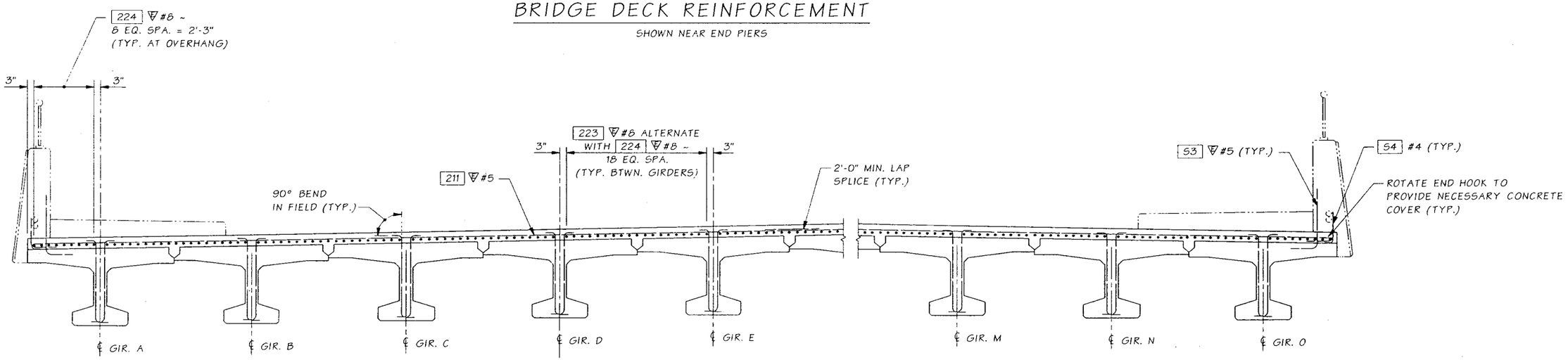
SR 12 FILE NO. ____ SHEET BB29

Mon Aug 02 08:10:22 2010



SECTION
BRIDGE DECK REINFORCEMENT

SHOWN NEAR END PIERS



SECTION
BRIDGE DECK REINFORCEMENT

SHOWN NEAR ℄ PIER 2

SR 12 FILE NO. ____ SHEET BB30

Bridge Design Engr.	Khaleghi, B	
Supervisor	Stoddard, RB	
Designed By	Hsieh, JC	02/10
Checked By	Collins, R	05/10
Detailed By	Avery, D	05/10
Bridge Projects Engr.		
Prelim. Plan By		
Architect/Specialist		

M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\window files\30 DECK SECT.WND

DATE	REVISION	BY	APP'D

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

JOB NUMBER 100502

JEN-CHI HSIEH — STATE OF WASHINGTON — 28272 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER — 8/2/10

BRIDGE AND STRUCTURES OFFICE

BRIAN KHALEGHI — STATE OF WASHINGTON — 27895 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER — 8/2/10

Washington State Department of Transportation

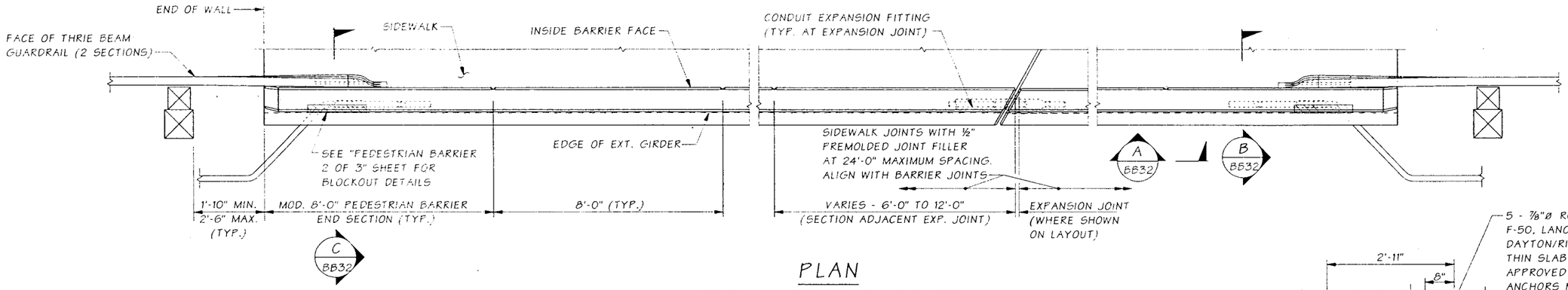
I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

BRIDGE DECK REINFORCING SECTION

BRIDGE SHEET NO BB30

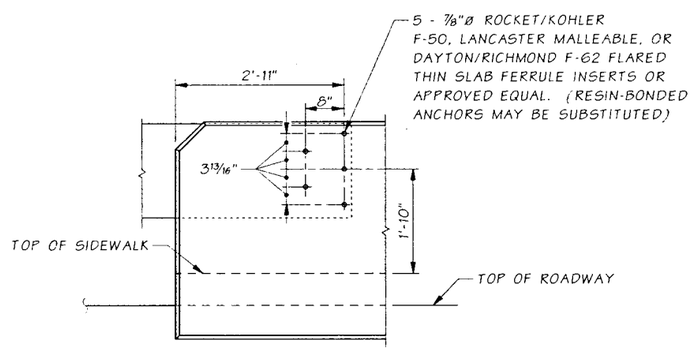
SHEET 373 OF 516 SHEETS

Mon Aug 02 09:10:28 2010

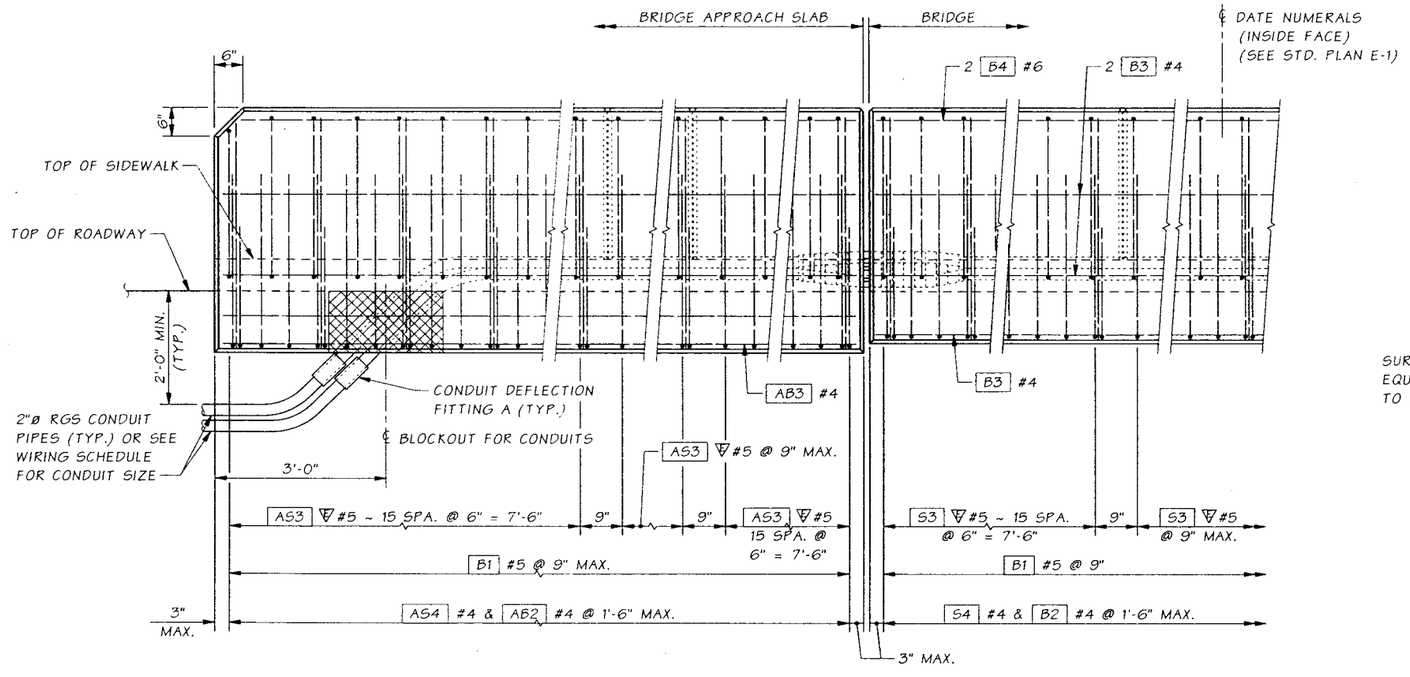


PLAN
PEDESTRIAN BARRIER

RIGHT BARRIER SHOWN. LEFT BARRIER SIMILAR.
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.



THRIE BEAM END SECTION DESIGN "F"
(SEE STD. PLAN C-7a)

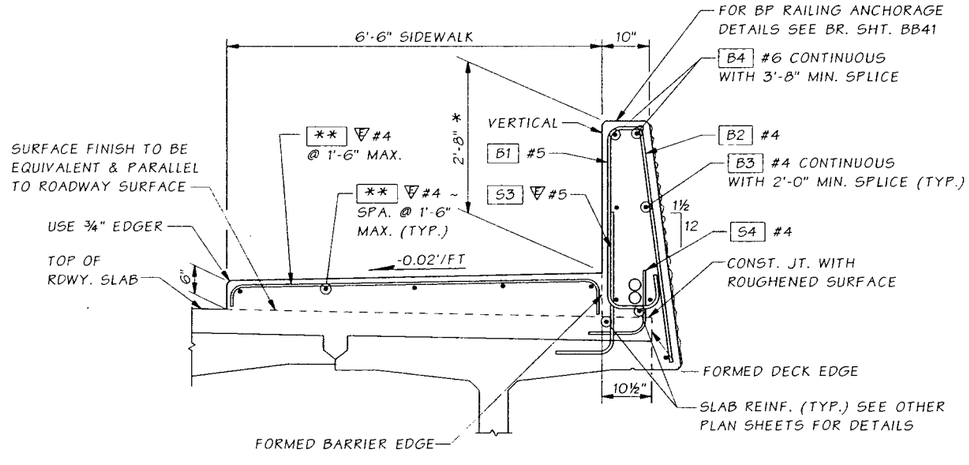


OUTSIDE ELEVATION
END OF PEDESTRIAN BARRIER

SHOWN WITH APPROACH SLAB, OTHER BARRIER ENDS SIMILAR

OUTSIDE ELEVATION PEDESTRIAN BARRIER
GUARDRAIL CONNECTION

(WHERE SHOWN ON LAYOUT)



TYPICAL SECTION
PEDESTRIAN BARRIER

* MIN. HEIGHT. PEDESTRIAN BARRIER HEIGHT MAY VARY IF REQUIRED TO PROVIDE A SMOOTH PROFILE.

Bridge Design Engr.	Khaleghi, B		M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\Window files\31 PED BAR 1.WND			REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO	TOTAL SHEETS
Supervisor	Stoddard, RB					10	WASH.			
Designed By	Hsieh, JC	02/10				JOB NUMBER 10C502				
Checked By	Collins, R	05/10								
Detailed By	Avery, D	05/10								
Bridge Projects Engr.										
Prelim. Plan By										
Architect/Specialist			DATE	REVISION	BY	APP'D				

JEN-CHI HSIEH — STATE OF WASHINGTON — 28672 — PROFESSIONAL ENGINEER — 8/2/10
BRIDGE AND STRUCTURES OFFICE
BIJAN KHALEGHI — STATE OF WASHINGTON — 27706 — PROFESSIONAL ENGINEER — 8/2/10

Washington State Department of Transportation

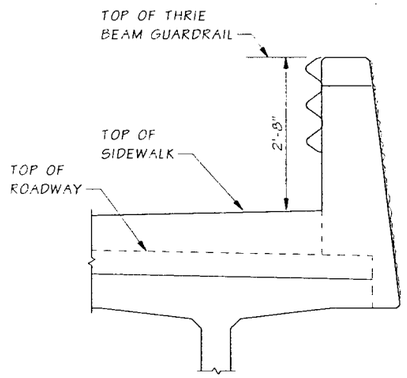
I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

PEDESTRIAN BARRIER DETAILS 1 OF 3

BRIDGE SHEET NO. BB31
SHEET 374 OF 516 SHEETS

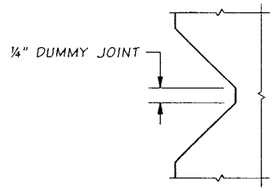
SR 12 FILE NO. ____ SHEET BB31

Mon Aug 02 08:10:33 2010

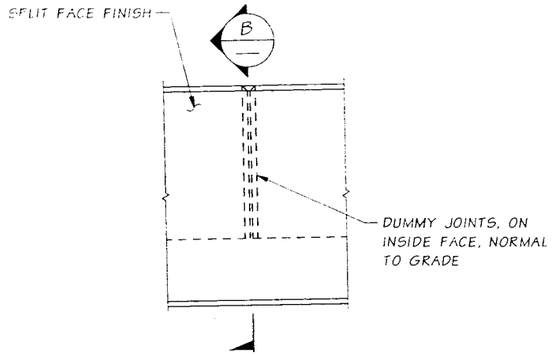


END VIEW

THRIE BEAM SHOWN WITH "D" CONNECTION

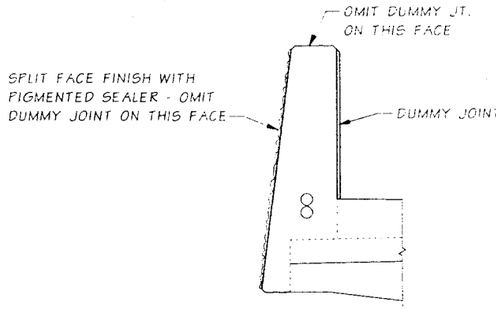


DUMMY JOINT DETAIL

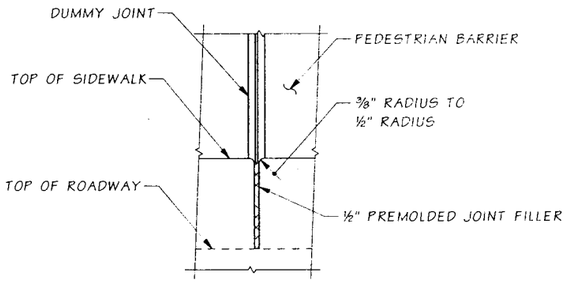


VIEW A (BB31)

ALL CHAMFERS ¾"

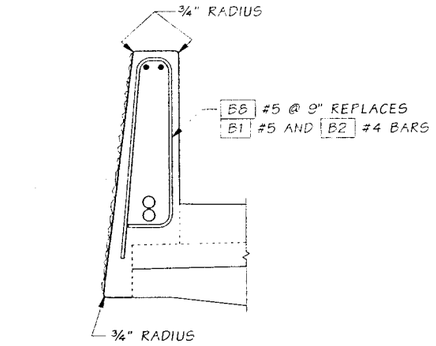


SECTION B



SIDEWALK JOINT DETAIL

SIDEWALK REINFORCING STEEL NOT SHOWN FOR CLARITY.

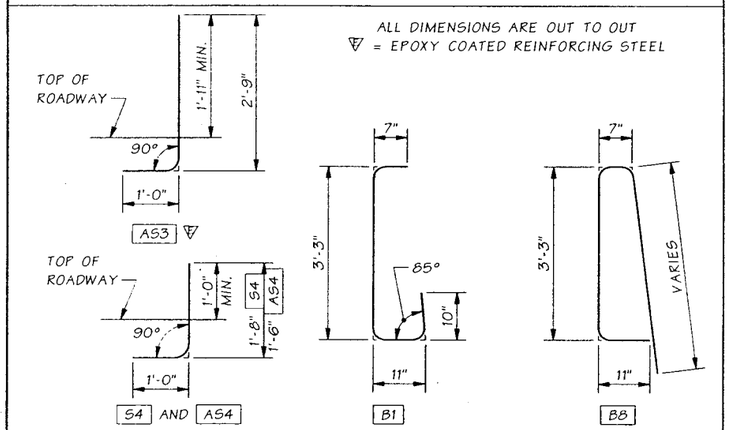


SLIPFORM ALTERNATE

SEE TYPICAL SECTION - PEDESTRIAN BARRIER FOR ADDITIONAL DETAILS

BENDING DIAGRAM

ALL DIMENSIONS ARE OUT TO OUT
∀ = EPOXY COATED REINFORCING STEEL



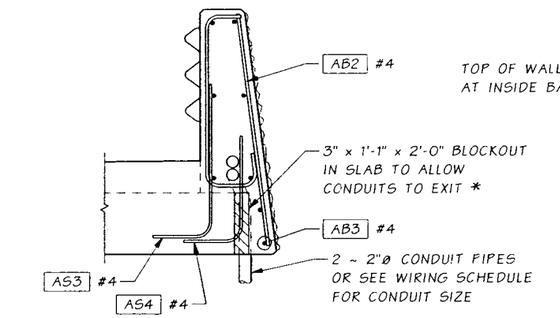
FOR W1 & W2 BARS SEE WINGWALL OR RETAINING WALL PLANS.

JUNCTION BOX LOCATIONS STATED BELOW ARE APPROXIMATE. CENTER JUNCTION BOX INSTALLATION BETWEEN BARRIER DUMMY JOINTS

JUNCTION BOX LOCATIONS

A1 STATION	OFFSET	LABEL
199+67.85	LEFT	TS
199+75.85	LEFT	LT
201+30.35	LEFT	TS
201+38.35	LEFT	LT
201+87.85	LEFT	TS
201+95.85	LEFT	LT
199+95.43	RIGHT	TS
200+67.43	RIGHT	LT
200+99.43	RIGHT	TS
201+52.93	RIGHT	TS
201+60.93	RIGHT	LT

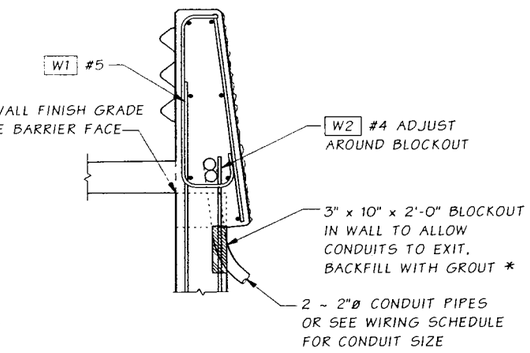
TS = TRAFFIC SYSTEM
LT = LIGHTING SYSTEM
INSTALL ALL CONDUIT RUNS TO DRAIN TO A BRIDGE END OR PROVIDE DRAIN AT ALL LOW POINTS IN CONDUIT RUN ON BRIDGE.



SECTION B APPROACH SLAB (BB31)

FOR DETAILS NOT SHOWN SEE "OUTSIDE ELEVATION" AND "TYPICAL SECTION ~ PEDESTRIAN BARRIER"

* BLOCKOUT WIDTH MAY BE INCREASED TO 6" TO ALLOW CONDUITS OF A LARGER DIAMETER THAN 2" TO EXIT BARRIER OR WALL WITHOUT REBAR STEEL CONFLICT



SECTION C WALL (BB31)

DETAIL FOR RETAINING WALL OR WINGWALL REINFORCING NOT SHOWN SEE STD. PLAN D-15 OR RETAINING PLAN.
FOR DETAILS NOT SHOWN SEE "OUTSIDE ELEVATION" AND "TYPICAL SECTION ~ PEDESTRIAN BARRIER"

SR 12 FILE NO. ____ SHEET BB32

Bridge Design Engr.	Khaleghi, B	
Supervisor	Stoddard, RB	
Designed By	Hsieh, JC	02/10
Checked By	Collins, R	05/10
Detailed By	Avery, D	05/10
Bridge Projects Engr.		
Prelim. Plan By		
Architect/Specialist		

M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\Window files\32 PED BAR 2.WND

DATE	REVISION	BY	APP'D

REGION NO	STATE	FED. AID PROJ. NO.	SHEET NO	TOTAL SHEETS
10	WASH.			
JOB NUMBER 100502				

JEN-CHI HSIEH — STATE OF WASHINGTON — 28272 — PROFESSIONAL ENGINEER — 8/7/10

BRIDGE AND STRUCTURES OFFICE

BIJAN KHALEGHI — STATE OF WASHINGTON — PROFESSIONAL ENGINEER — 8/4/10

Washington State Department of Transportation

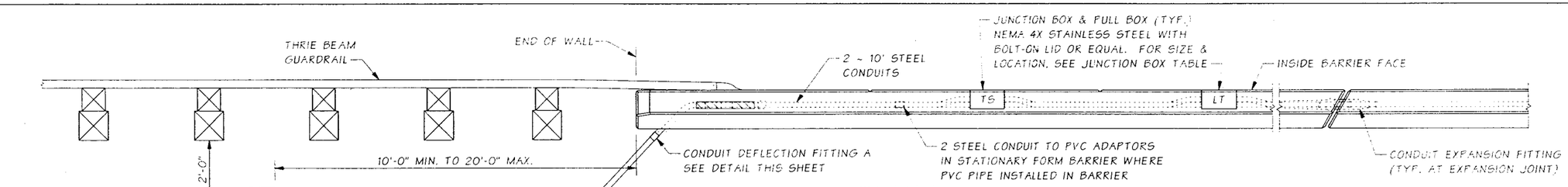
I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

PEDESTRIAN BARRIER DETAILS 2 OF 3

BRIDGE SHEET NO. BB32

SHEET 375 OF 516 SHEETS

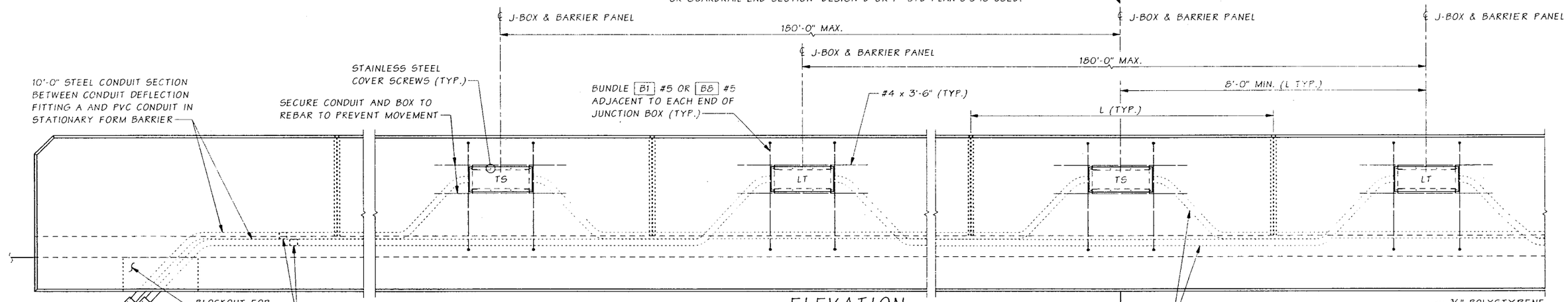
Mon Aug 02 08:10:40 2010



PLAN

PEDESTRIAN BARRIER

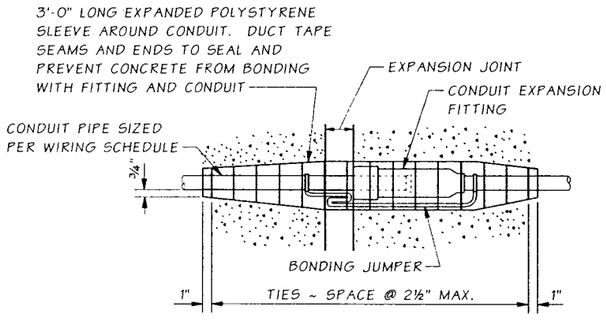
TYPICAL AT END OF MODIFIED PEDESTRIAN BARRIER END SECTION WHERE THRIE BEAM END SECTION "DESIGN F" STD. PLAN C-7a OR GUARDRAIL END SECTION "DESIGN D OR F" STD PLAN C-5 IS USED.



ELEVATION

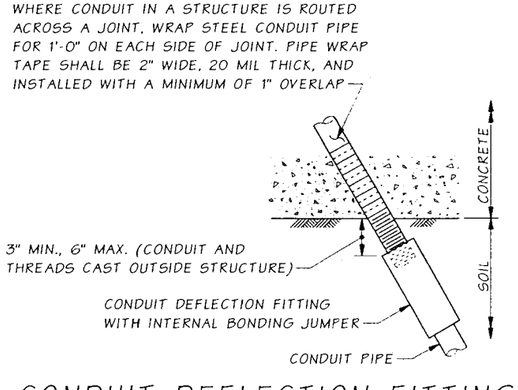
CONDUITS & J-BOX IN PEDESTRIAN BARRIER

LABEL JUNCTION BOX COVER IN ACCORDANCE WITH STANDARD PLAN J-16a AND SPECIAL PROVISIONS. ADJACENT JUNCTION BOXES ARE SHOWN CENTERED BETWEEN ADJACENT DUMMY JOINTS. IF THE DISTANCE BETWEEN ADJACENT DUMMY JOINTS IS 16'-0" OR GREATER, PLACE ADJACENT JUNCTION BOXES SYMMETRICALLY ON EITHER SIDE OF THE CENTER OF ONE DUMMY PANEL WHILE MAINTAINING 8'-0" MINIMUM BETWEEN CENTER LINES OF THE JUNCTION BOXES.



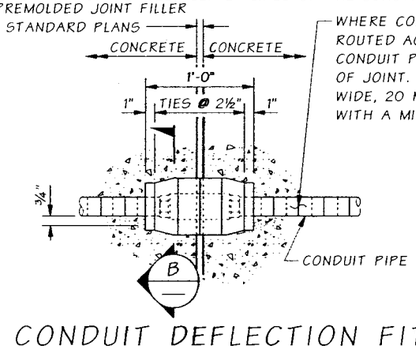
CONDUIT EXPANSION FITTING

CONDUIT FITTING - (TYPE AX FOR MOVEMENT OF ± 2") AT BRIDGE EXPANSION JOINTS



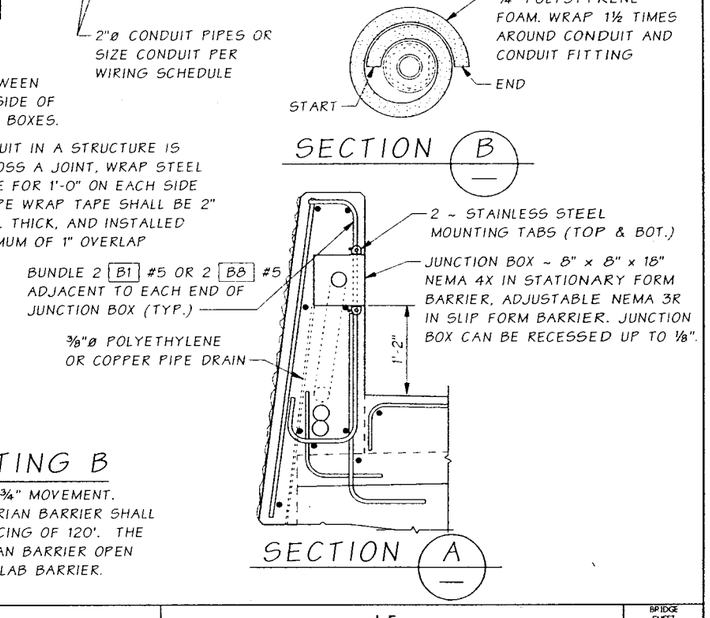
CONDUIT DEFLECTION FITTING A

CONDUIT FITTING - TYPE DX FOR DEFLECTION OF 30° AND ¾" MOVEMENT. PLACE AT CONDUIT PIPE EXIT FROM STRUCTURE



CONDUIT DEFLECTION FITTING B

CONDUIT FITTING - TYPE DX FOR DEFLECTION OF 30° AND ¾" MOVEMENT. CONDUIT PIPES PLACED THROUGH RETAINING WALL PEDESTRIAN BARRIER SHALL BE FITTED WITH DEFLECTION FITTINGS AT A MAXIMUM SPACING OF 120'. THE DEFLECTION FITTINGS SHALL BE PLACED AT THE PEDESTRIAN BARRIER OPEN JOINT BETWEEN RETAINING WALL AND BRIDGE APPROACH SLAB BARRIER.



Bridge Design Engr.	Khaleghi, B		M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\Window files\33 PED BAR 3.WND				REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO	TOTAL SHEETS
Supervisor	Stoddard, RB						10	WASH.			
Designed By	Hsieh, JC	02/10					JOB NUMBER 10C502				
Checked By	Collins, R	05/10									
Detailed By	Avery, D	05/10									
Bridge Projects Engr.											
Prelim. Plan By											
Architect/Specialist			DATE	REVISION	BY	APPD					

SR 12 FILE NO. ____ SHEET BB33

Mon Aug 02 08:10:47 2010

JEN-CHI HSIEH STATE OF WASHINGTON STRUCTURAL ENGINEER PROFESSIONAL ENGINEERS 8/2/10

BRIDGE AND STRUCTURES OFFICE

BRIAN KHALEGHI STATE OF WASHINGTON STRUCTURAL ENGINEER PROFESSIONAL ENGINEERS 8/2/10

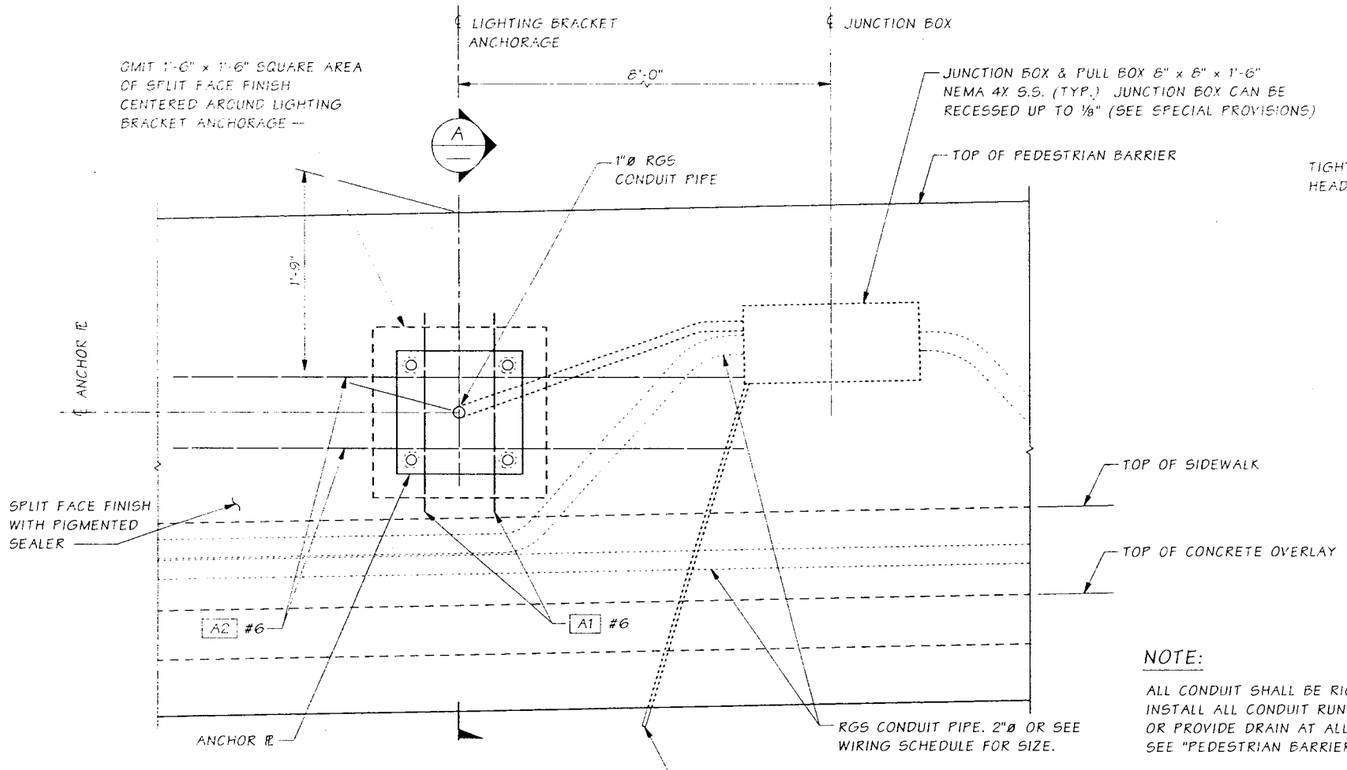
Washington State Department of Transportation

I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

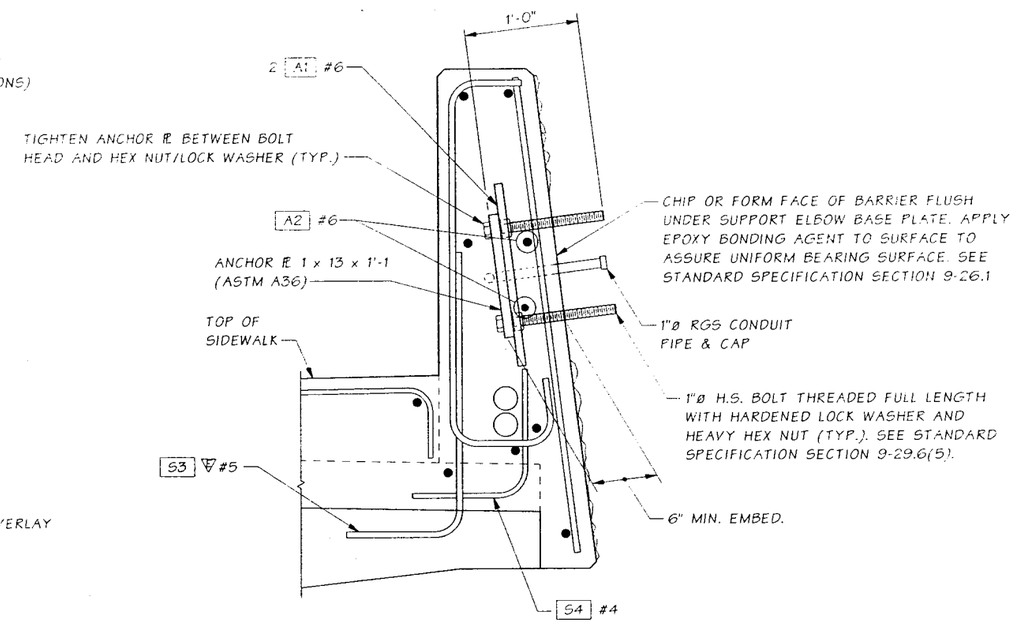
PEDESTRIAN BARRIER DETAILS 3 OF 3

BRIDGE SHEET NO. BB33

SHEET 376 OF 516 SHEETS

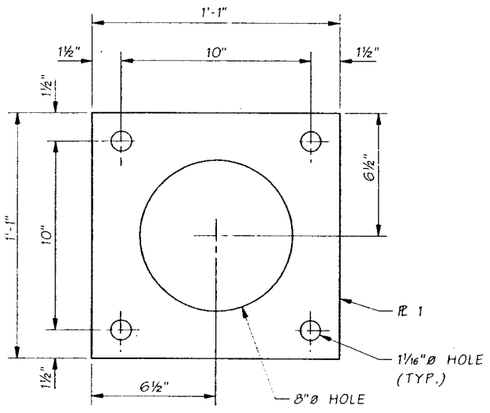


ELEVATION



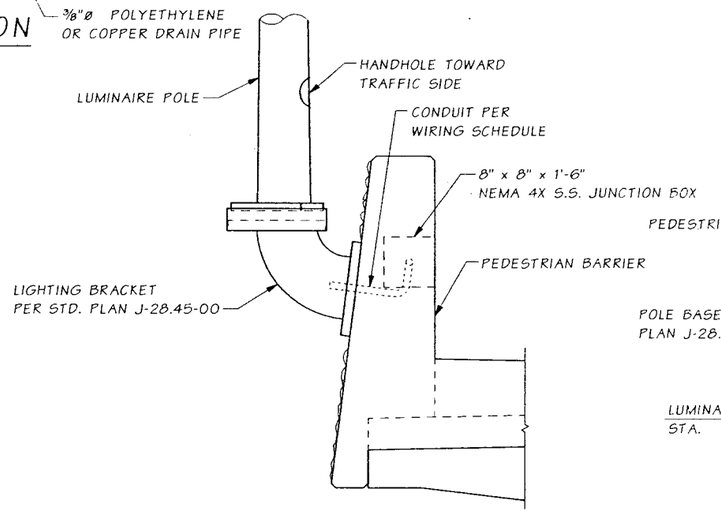
NOTE:

ALL CONDUIT SHALL BE RIGID GALVANIZED STEEL (RGS). INSTALL ALL CONDUIT RUNS TO DRAIN TO A BRIDGE END OR PROVIDE DRAIN AT ALL LOW POINTS WITHIN CONDUIT RUN. SEE "PEDESTRIAN BARRIER" SHEETS FOR BARRIER DIMENSIONS.



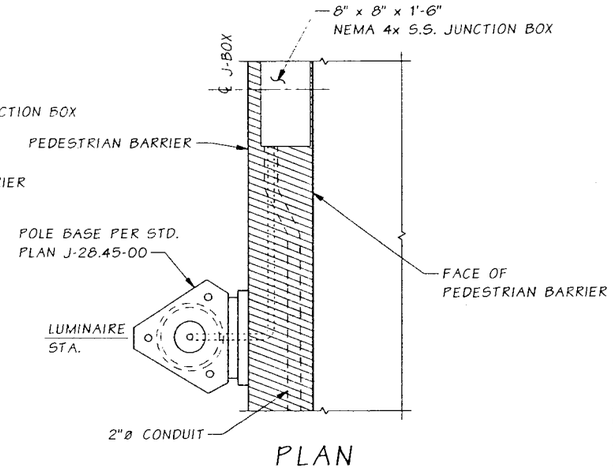
ANCHOR PLATE

GALVANIZE PER AASHTO M 111



ELEVATION PROFILE
LUMINAIRE SUPPORT

SHOWN FOR BRIDGE, WALLS ARE SIMILAR



PLAN

LUMINAIRE POLE LOCATIONS ON BRIDGE	
A1 STATION	OFFSET
199+83.85	LEFT
201+46.35	LEFT
200+03.43	RIGHT
200+75.43	RIGHT

ANCHORAGE BARLIST			
MARK #	SIZE	LENGTH	BEND TYPE
A1	6	1'-9"	STRAIGHT
A2	6	5'-0"	STRAIGHT

Bridge Design Engr.	Khaleghi, B		M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\Window files\34 LUMINAIRE.WND				REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor	Stoddard, RB						10	WASH.			
Designed By	Hsieh, JC	02/10					JOB NUMBER 100502				
Checked By	Collins, R	05/10									
Detailed By	Avery, D	05/10									
Bridge Projects Engr.											
Prelim. Plan By											
Architect/Specialist			DATE	REVISION	BY	APP'D					

Mon Aug 02 09:10:53 2010

BRIDGE AND STRUCTURES OFFICE

Washington State Department of Transportation

I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

BRIDGE MOUNTED ELBOW LUMINAIRE

BRIDGE SHEET NO. BB34
SHEET 377 OF 516 SHEETS

SR 12 FILE NO. ____ SHEET BB34

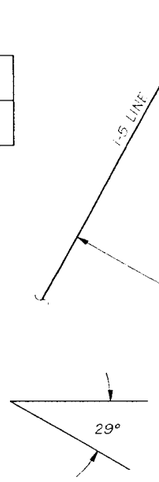
TABLE OF DIMENSIONS

SIGN BRACKET	LOCATION	SIGN SKEW	SIGN LENGTH	SIGN HEIGHT
1	SEE PLAN	29°	12'-0"	5'-0"

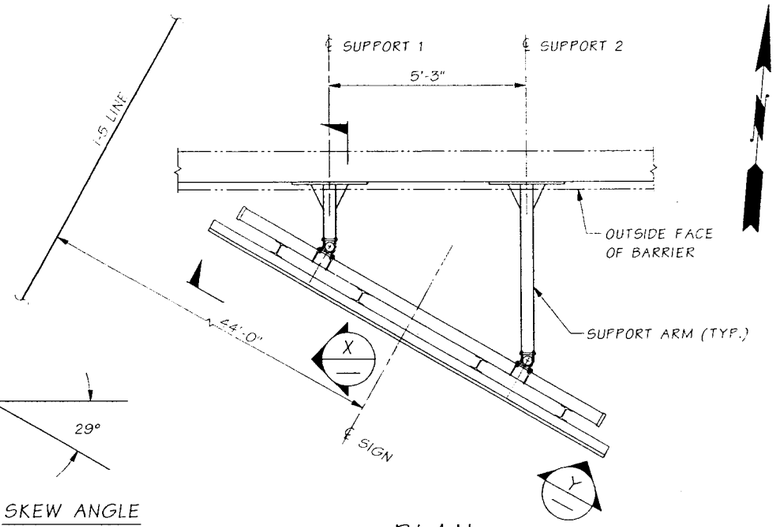
PIPE SIZE	TOP ARM LENGTHS		BOT. ARM LENGTHS	
	A1	A2	B1	B2
4"Ø	1'-6"	4'-4⅞"	3'-4⅞"	6'-1⅝"

CANTILEVER LENGTHS		C	D	G
E	F			
9"	9"	3'-6"	5'-5⅝"	2'-10¾"

D AND G DIMENSIONS ARE BASED ON PLANS AND SHALL BE FIELD MEASURED PRIOR TO FABRICATION OF BRACKET ARMS AND BRACE (ADJUST E AND F DIMS TO PLACE SIGN HORIZONTALLY.)



SKEW ANGLE



PLAN

BRIDGE MOUNTED SIGN BRACKET NO. 1
I-5 STA. 387+93 (44' RT.)

GENERAL NOTES

1. ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION, DATED 2010 AND AMENDMENTS.

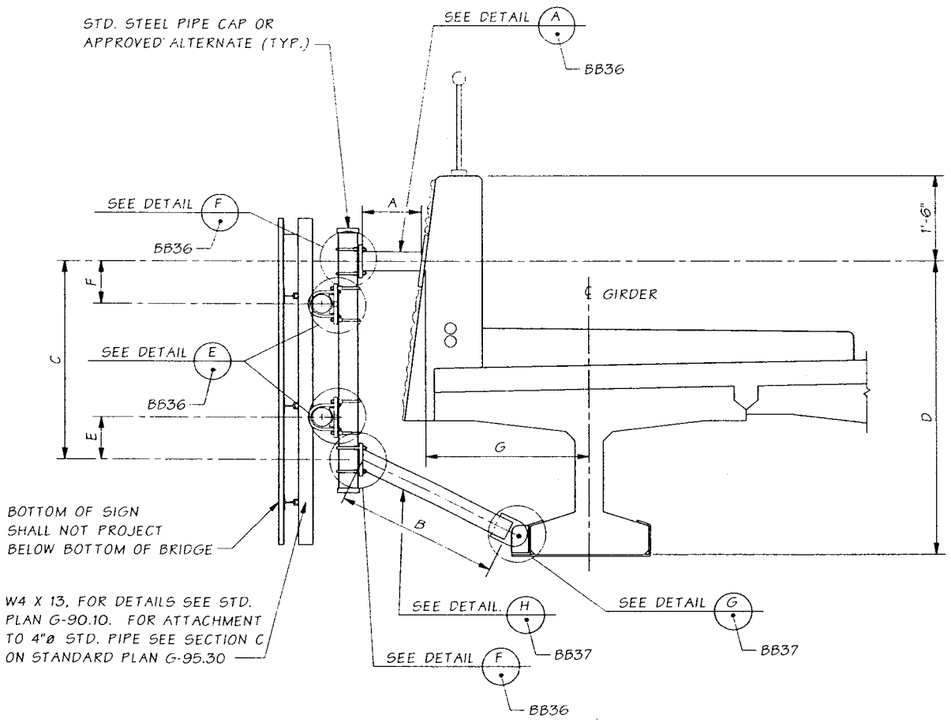
2. SIGN SUPPORT COMPONENTS HAVE BEEN DESIGNED TO MEET THE REQUIREMENTS OF AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, DATED 2009.

3. MATERIAL SPECIFICATIONS:

PLATES AND BARS	ASTM A36
PIPES	ASTM A 53, GRADE B, OR ASTM A 500, GRADE B
BOLTS, NUTS & WASHERS (UNLESS OTHERWISE NOTED)	SECTION 9-06.5(1)
U-BOLTS, LOCK-NUTS & WASHERS (UNLESS OTHERWISE NOTED)	STAINLESS STEEL CONFORMING TO SECTION 9-28.11
RESIN BONDED ANCHORS (ALL THREAD)	ALL THREADED ROD: ASTM F 593, TYPE 304 NUT: ASTM F 594, TYPE 304 WASHERS: ASTM A 240, TYPE 304
EPOXY BONDING AGENT	SEC. 9-26.1

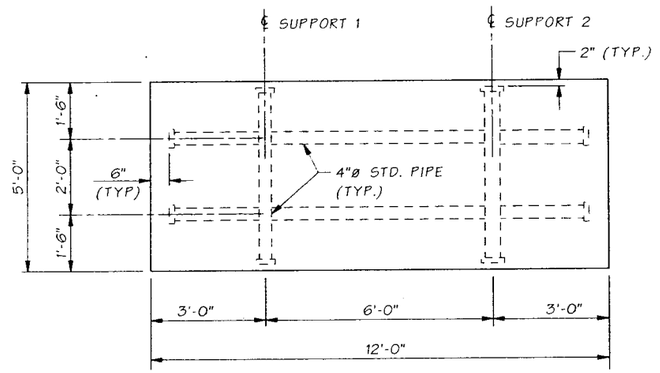
4. ALL NON-STAINLESS STEEL PARTS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111 AFTER FABRICATION. BOLTS AND HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M232.

5. SIZE OF FILLET WELDS SHALL BE ¼" MINIMUM EXCEPT WHERE NOTED OTHERWISE.



SECTION X
—

SHOWN AT SUPPORT 1
DETAILS ARE SIMILAR @ SUPPORT 2.



VIEW Y
—

Bridge Design Engr.	Khaleghi, B		M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\Window files\35 SB DET 1.WND			REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor	Zeldenrust, RP					10	WASH.			
Designed By	Rosa, M	02/10				JOB NUMBER 1CC502				
Checked By	Leland, A	04/10								
Detailed By	Avery, D	05/10								
Bridge Projects Engr.										
Prelim. Plan By										
Architect/Specialist			DATE	REVISION	BY	APP'D				

SR 12 FILE NO. ____ SHEET BB35

Mon Aug 02 08:19:58 20°C

MICHAEL A. KNOX — STATE OF WASHINGTON — 43701 — REGISTERED PROFESSIONAL ENGINEER — 8/2/10

BRIDGE AND STRUCTURES OFFICE

RICHARD P. ZELDENRUST — STATE OF WASHINGTON — 29470 — PROFESSIONAL ENGINEER — 8/2/10

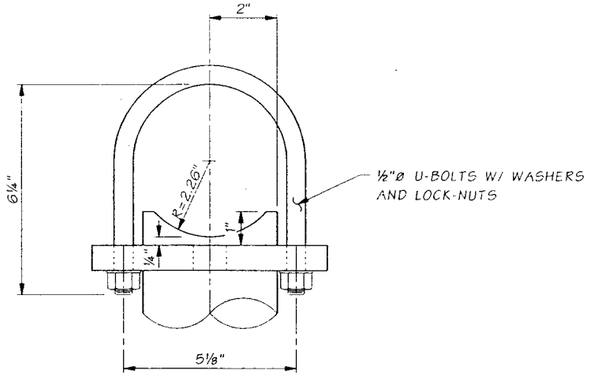
Washington State Department of Transportation

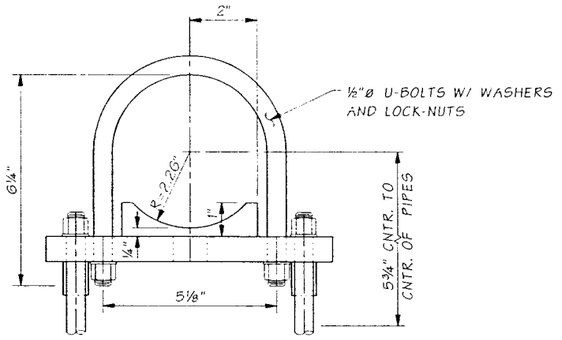
I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

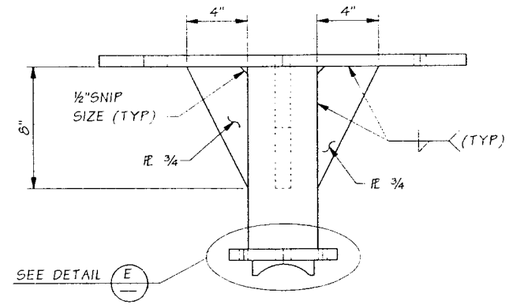
BRIDGE MOUNTED SIGN BRACKET DETAILS 1 OF 3

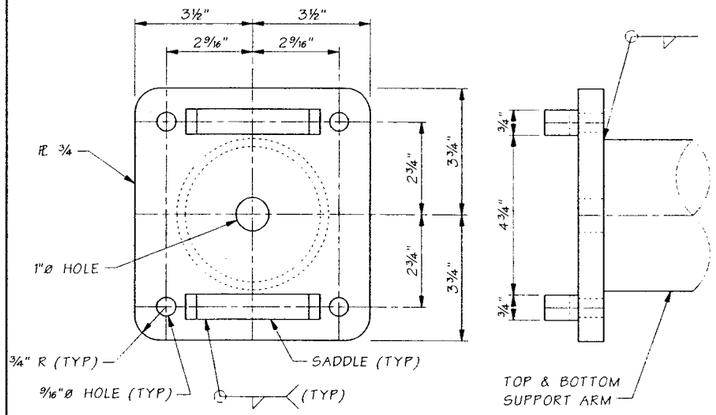
BRIDGE SHEET NO. BB35

SHEET 378 OF 516 SHEETS

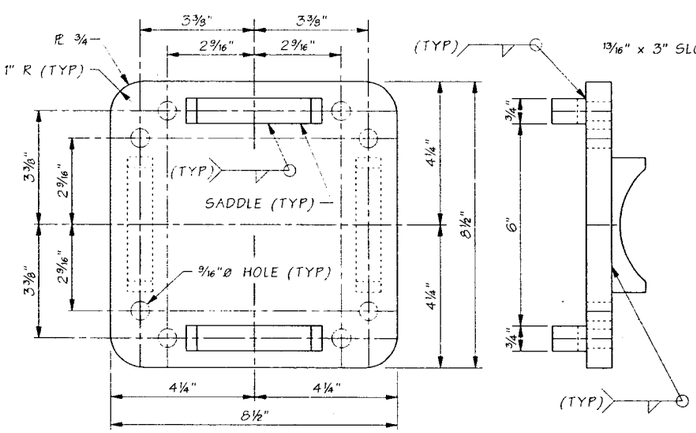




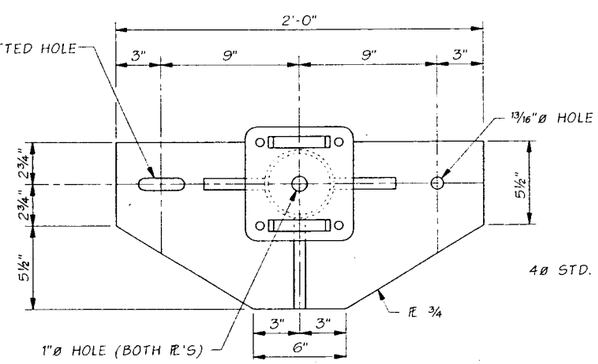


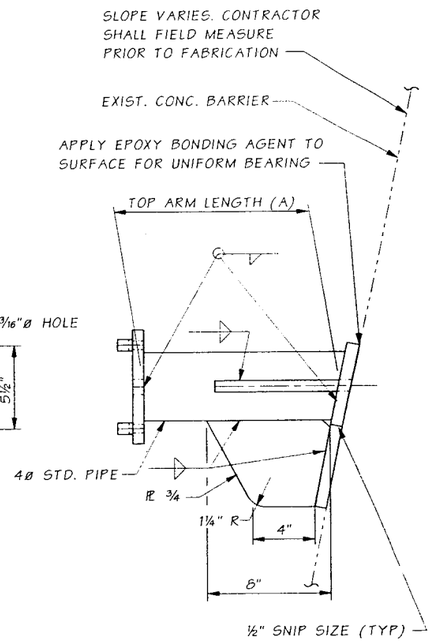


DETAIL E BB35



DETAIL F BB35





DETAIL A BB35

SR 12 FILE NO. ____ SHEET BB36

Bridge Design Engr.	Khaleghi, B	M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\Window files\36 SB DET 2.WND				REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO	TOTAL SHEETS
Supervisor	Zeldenrust, RP					10	WASH.			
Designed By	Rosa, M 02/10					JOB NUMBER 10C502				
Checked By	Leland, A 04/10									
Detailed By	Avery, D 05/10									
Bridge Projects Engr.										
Prelim. Plan By										
Architect/Specialist		DATE	REVISION	BY	APP'D					

Mon Aug 02 08:20:05 2010

MICHAEL A. ROSA STATE OF WASHINGTON 43707 REGISTERED PROFESSIONAL ENGINEER 8/2/10

BRIDGE AND STRUCTURES OFFICE

RICHARD P. ZELDENRUST STATE OF WASHINGTON 29479 PROFESSIONAL ENGINEER 8/2/10

Washington State Department of Transportation

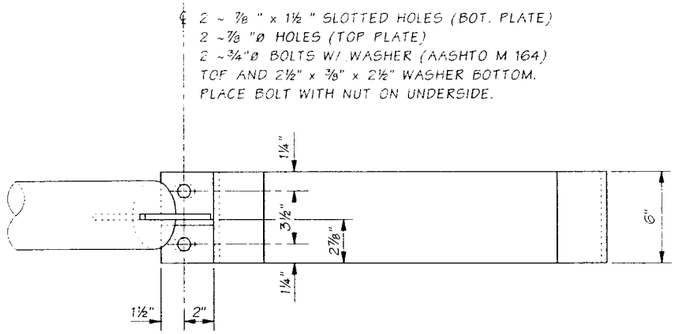
I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

BRIDGE MOUNTED SIGN BRACKET DETAILS 2 OF 3

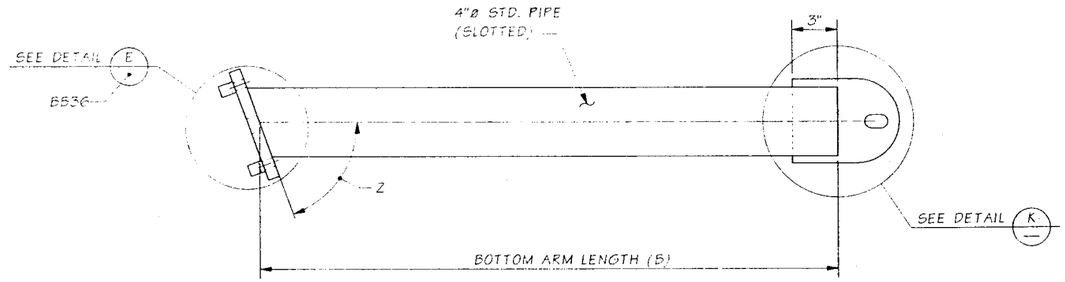
BRIDGE SHEET NO. BB36

SHEET 379 OF 516 SHEETS

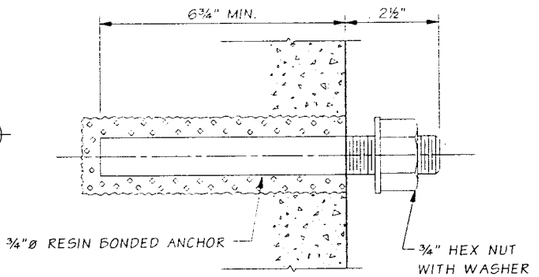
SIGN BRACKET NO.	Z° (CONTRACTOR TO VERIFY)	
	SUPPORT #1	SUPPORT #2
1	63°	75°



VIEW L

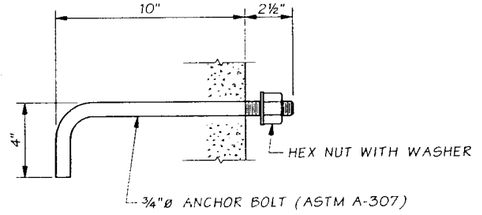


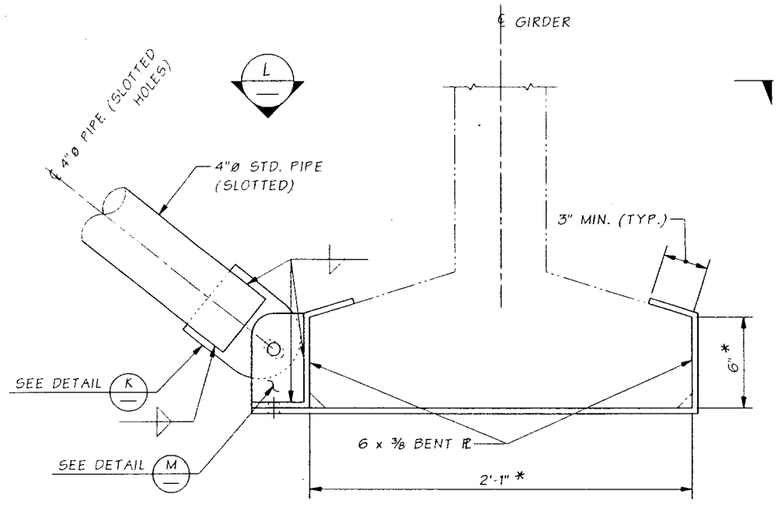
DETAIL H BB35



ANCHOR BOLT DETAIL

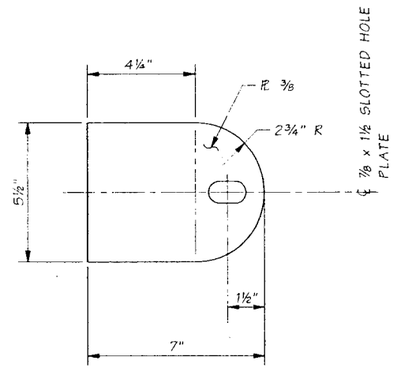
INSTALL RESIN BONDED ANCHOR NORMAL TO CONCRETE SURFACE



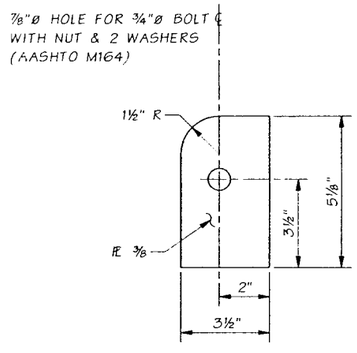


DETAIL G BB35

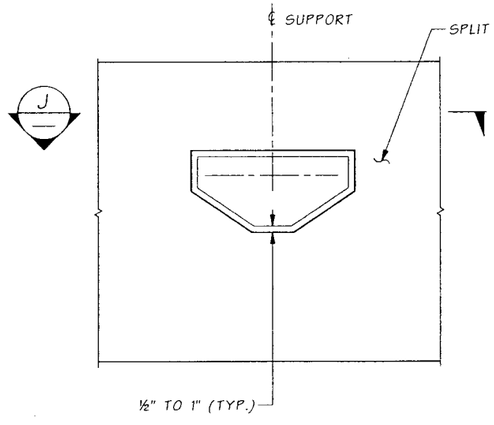
* CONTRACTOR TO FIELD VERIFY PRIOR TO FABRICATION



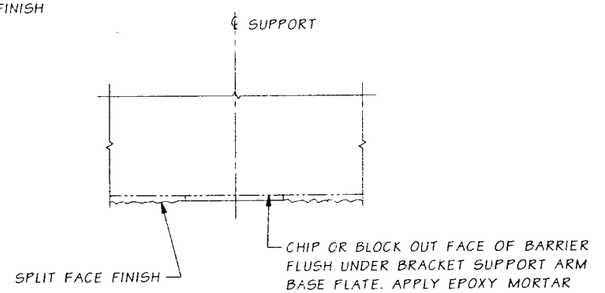
DETAIL K



DETAIL M



ALTERNATE ANCHOR DETAIL



SECTION J

ANCHORAGE IN SPLIT FACE FINISH AREA

Bridge Design Engr.	Khaleghi, B		M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\window files\37 SB DET 3.WND							
Supervisor	Zeldenrust, RP									
Designed By	Rosa, M	02/10								
Checked By	Leland, A	04/10								
Detailed By	Avery, D	05/10								
Bridge Projects Engr.										
Prelim. Plan By										
Architect/Specialist			DATE	REVISION	BY	APP'D				

REGION NO	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10	WASH.			
JOB NUMBER 10C502				

MICHAEL A. ROSA — STATE OF WASHINGTON — 25470 — REGISTERED PROFESSIONAL ENGINEER — 8/2/10

BRIDGE AND STRUCTURES OFFICE

RICHARD P. ZELDENRUST — STATE OF WASHINGTON — 20470 — PROFESSIONAL ENGINEER — 8/2/10

Washington State Department of Transportation

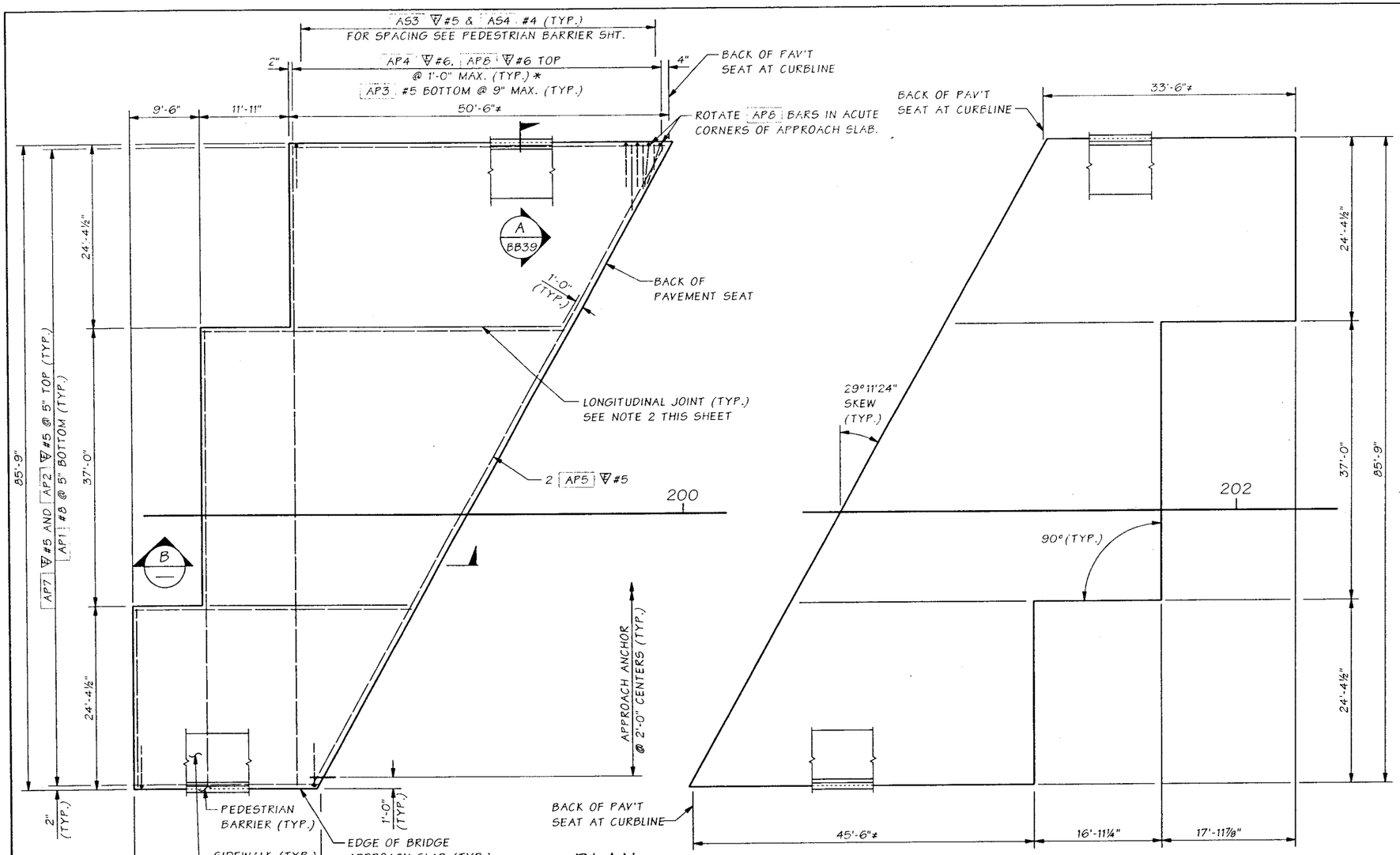
I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

BRIDGE MOUNTED SIGN BRACKET DETAILS 3 OF 3

BRIDGE SHEET NO. BB37
SHEET 380 OF 516 SHEETS

SR 12 FILE NO. ____ SHEET BB37

Mon Aug 02 08:20:11 2010



PLAN

≠ MEASURED ALONG CURB LINE

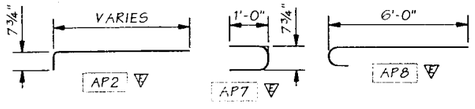
* PLACE AP8 ∀#6 BETWEEN AP4 ∀#6

β ALL LAP SPLICES SHALL BE STAGGERED SO THAT NO MORE THAN 50% OF REBAR IS SPLICED AT THE SAME LOCATION, AND SHALL BE LOCATED WITHIN THE MIDDLE HALF OF THE APPROACH SLAB WIDTH.

BENDING DIAGRAM

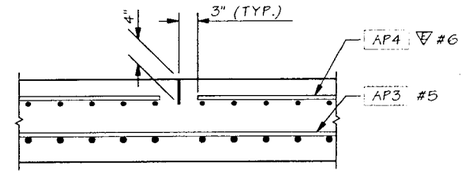
(ALL DIMENSIONS ARE OUT TO OUT)

∀ = EPOXY COATED REINFORCING STEEL

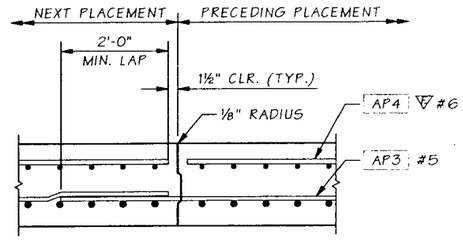


NOTES:

1. ALL EDGES OF BRIDGE APPROACH SLAB SHALL HAVE ½" RADIUS.
2. LONGITUDINAL JOINTS SHALL BE PLACED ON LANE LINES AND SHALL BE CONSTRUCTED AND SEALED IN ACCORDANCE WITH STD. SPEC. SECTION 5-05.3(8). JOINTS MAY BE EITHER A SAWCUT CRACK CONTROL JOINT OR A CONSTRUCTION JOINT. SAWCUT JOINTS SHALL TERMINATE 1'-0" BEFORE REACHING EDGE OF SLAB AND MUST BE SAW CUT AS SOON AS POSSIBLE AFTER PLACEMENT OF CONCRETE.

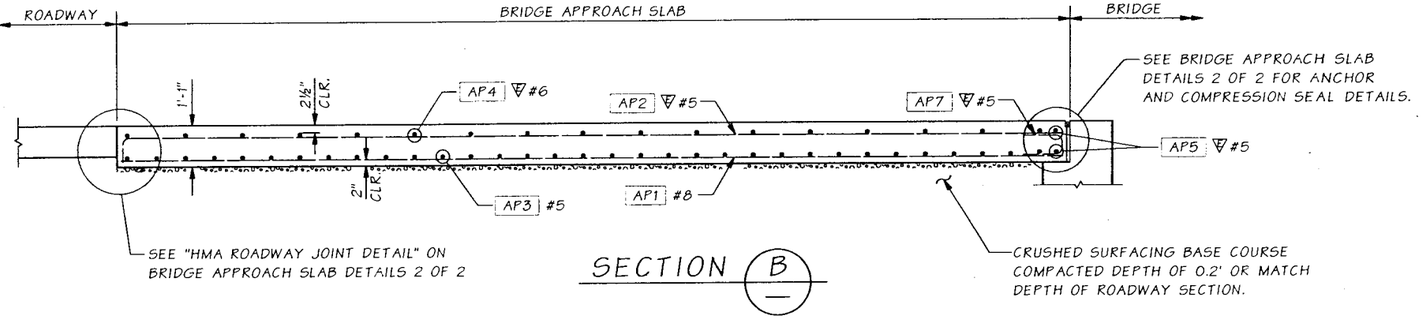


LONGITUDINAL JOINT DETAIL



ALTERNATE LONGITUDINAL JOINT DETAIL

EDGE PRECEDING PLACEMENT ONLY WITH ⅛" RADIUS.



SECTION B

Bridge Design Engr.	Khaleghi, B	M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\window files\38 APPROACH 1.WND				REGION NO	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor	Stoddard, RB					10	WASH.			
Designed By	Hsieh, JC 02/10					JOB NUMBER 106502				
Checked By	Collins, R 05/10									
Detailed By	Avery, D 05/10									
Bridge Projects Engr.										
Prelim. Plan By										
Architect/Specialist		DATE	REVISION	BY	APP'D					

JEN-CHI HSIEH — STATE OF WASHINGTON — 28878 — PROFESSIONAL ENGINEER — 8/2/10

BRIDGE AND STRUCTURES OFFICE

BIJAN KHALEGHI — STATE OF WASHINGTON — 27005 — PROFESSIONAL ENGINEER — 8/4/10

Washington State Department of Transportation

I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

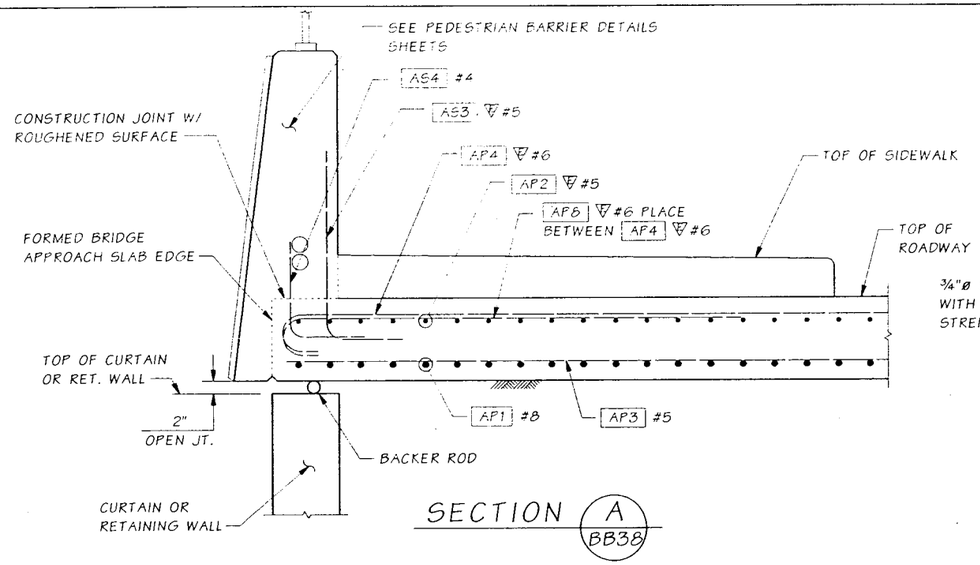
BRIDGE APPROACH SLAB DETAILS 1 OF 2

BRIDGE SHEET NO. BB38

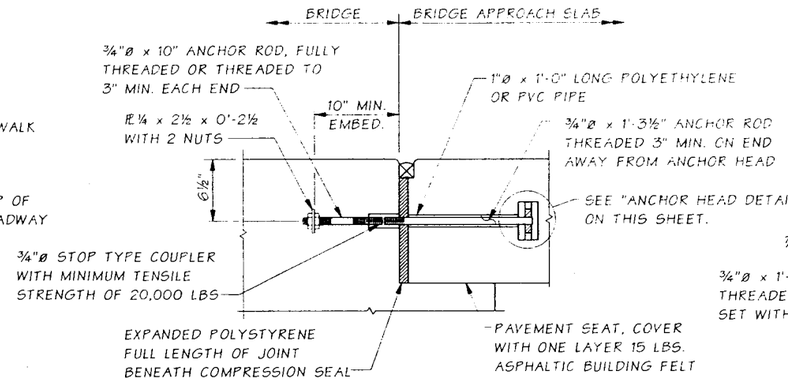
SHEET 381 OF 516 SHEETS

SR 12 FILE NO. ____ SHEET BB38

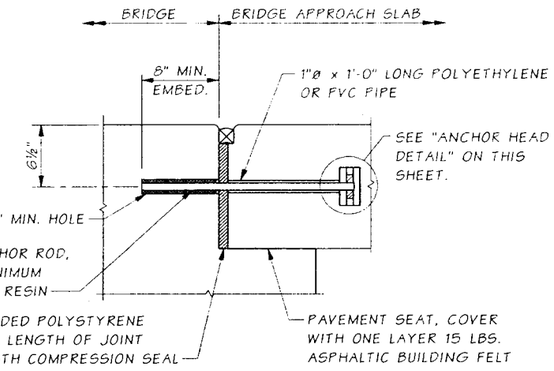
Mon Aug 02 10:04:07 2010



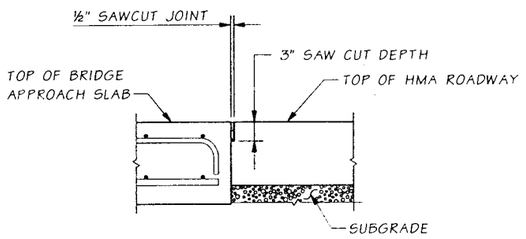
SECTION A / BB38



APPROACH ANCHOR - METHOD A

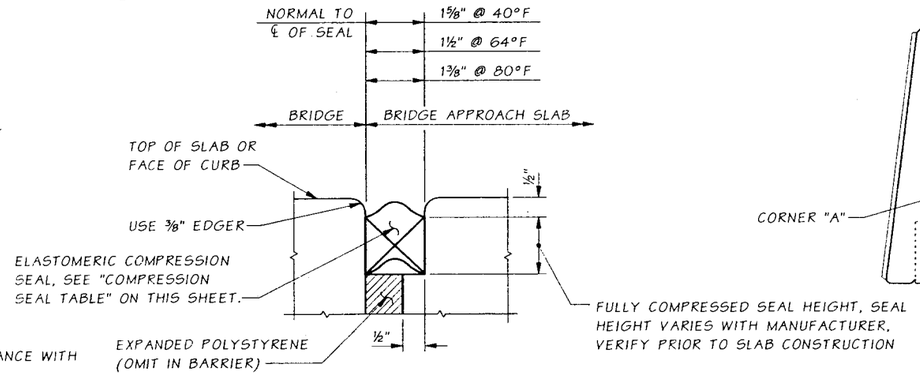


APPROACH ANCHOR - METHOD B



HMA ROADWAY JOINT DETAIL

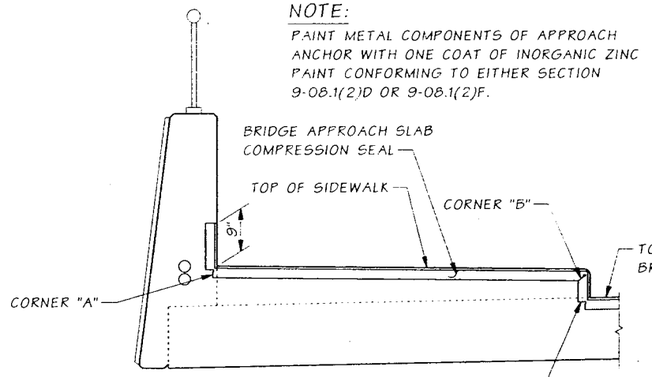
SAWCUT SHALL BE FILLED WITH HOT-POURED COMPONENT IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 9-04.2(1) AND SEALED IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 5-05.3(8)B.



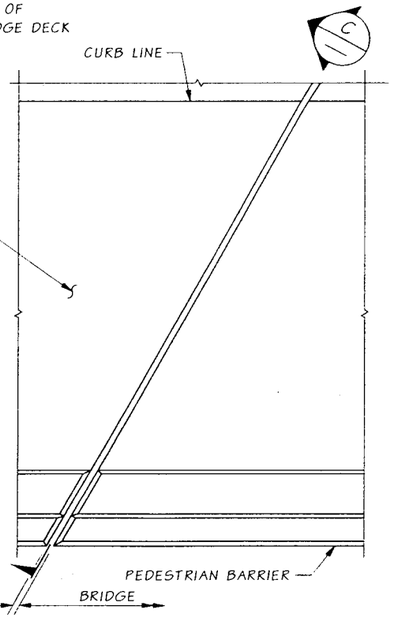
COMPRESSION SEAL DETAIL

EXPANSION JOINT AT BACK OF PAV'T SEAT

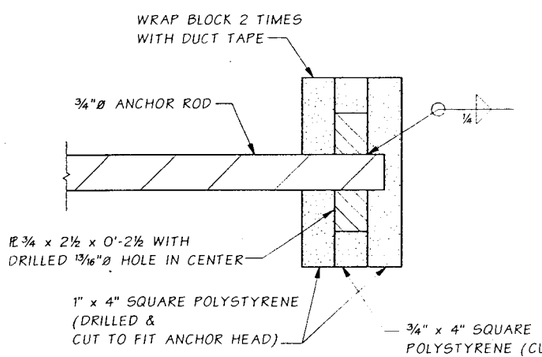
NOTE:
PAINT METAL COMPONENTS OF APPROACH ANCHOR WITH ONE COAT OF INORGANIC ZINC PAINT CONFORMING TO EITHER SECTION 9-08.1(2)D OR 9-08.1(2)F.



SECTION C / —



PLAN ~ EXPANSION JOINT

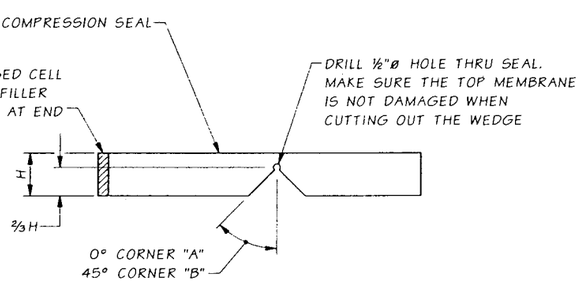


ANCHOR HEAD DETAIL

COMPRESSION SEAL TABLE

D.S. BROWN		WATSON BOWMAN ACME	
SEAL	W (IN.)	SEAL	W (IN.)
CV-2502	2½	WA-250	2½

TESTING SHALL BE PER AASHTO M-220 PRIOR TO USE.



SEAL CUTTING DETAIL

SR 12 FILE NO. ____ SHEET BB39

Bridge Design Engr.	Khaleghi, B		
Supervisor	Stoddard, RB		
Designed By	Hsieh, JC	02/10	
Checked By	Collins, R	05/10	
Detailed By	Avery, D	05/10	
Bridge Projects Engr.			
Prelim. Plan By			
Architect/Specialist			

M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\Window files\39 APPROACH 2.WND

DATE	REVISION	BY	APP'D

REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10	WASH.			
JOB NUMBER 106502				

JEN-CHI HSIEH — STATE OF WASHINGTON — 22672 — PROFESSIONAL ENGINEER — 9/2/10

BRIDGE AND STRUCTURES OFFICE

KAILAN KHALEGHI — STATE OF WASHINGTON — 17996 — PROFESSIONAL ENGINEER — 9/2/10

Washington State Department of Transportation

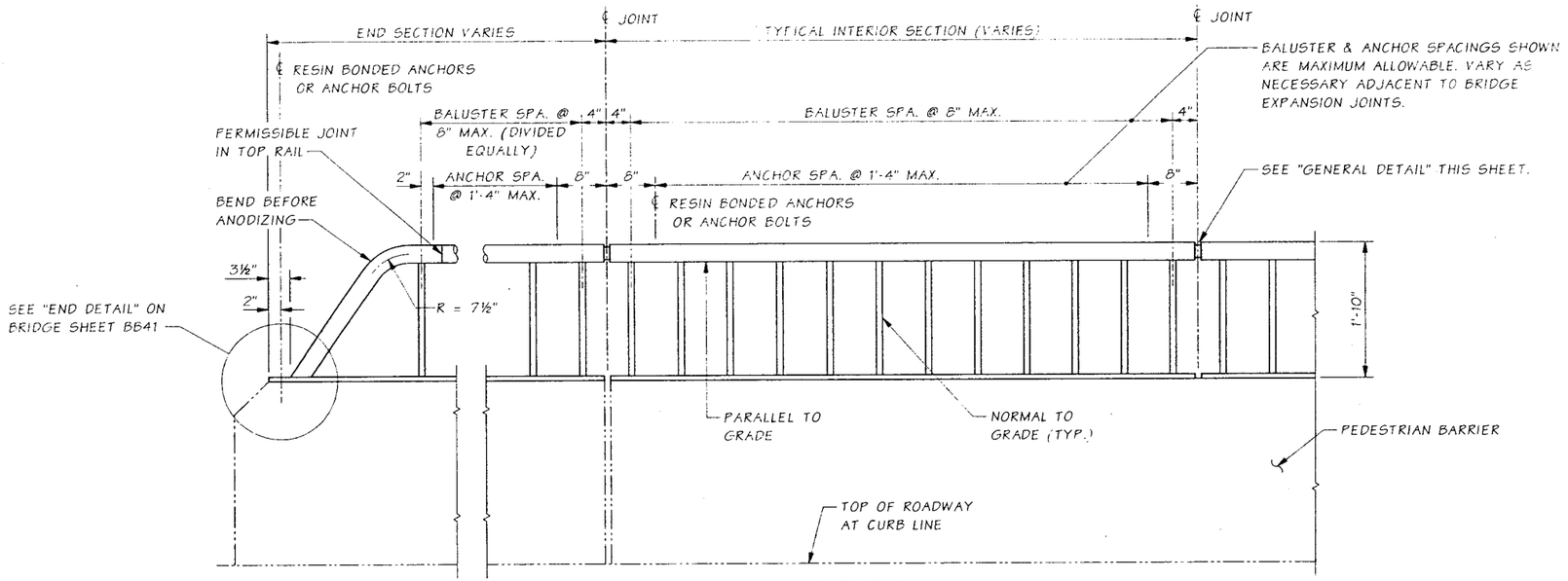
I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

BRIDGE APPROACH SLAB DETAILS 2 OF 2

BRIDGE SHEET NO. BB39

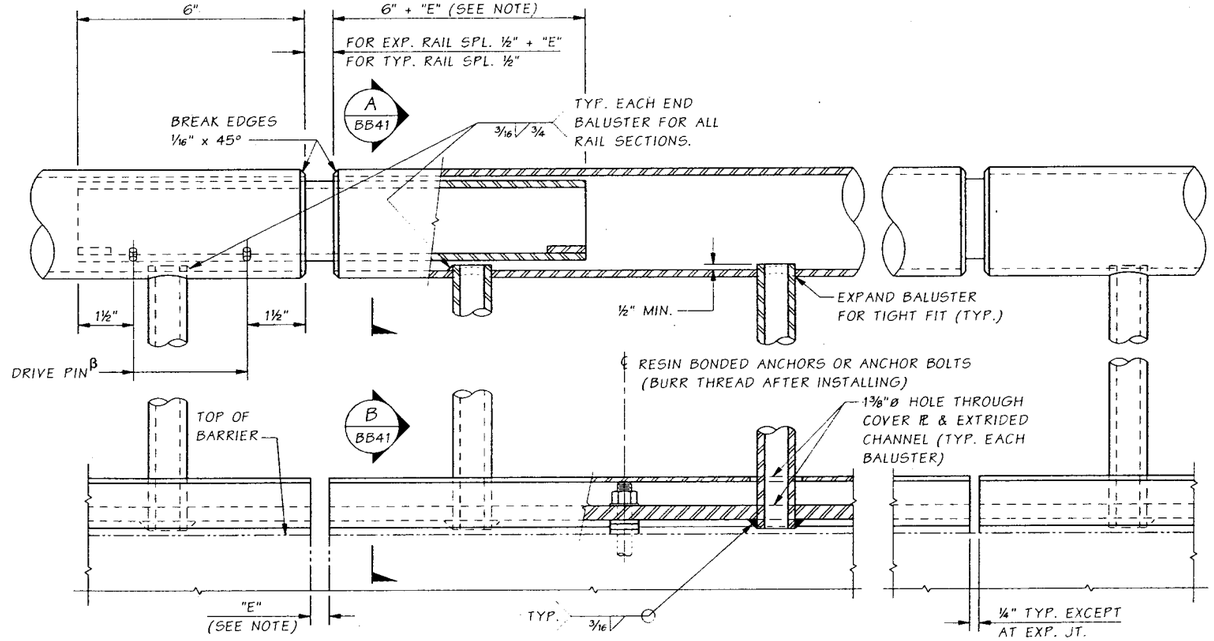
SHEET 382 OF 516 SHEETS

Mon Aug 02 09:11:06 2010



ELEVATION

BALUSTER AND GUARDRAIL SECTION ATTACHMENT DETAILS NOT SHOWN.



GENERAL DETAIL

NOTES:

1. PIPE RAILING, PIPE RAILING SPLICES, COVER PLATES AND BOTTOM EXTRUDED CHANNELS SHALL BE BENT TO THE HORIZONTAL CURVE WHERE THE RADIUS OF CURVATURE IS LESS THAN 200'. THESE ITEMS MAY BE HEATED TO NOT MORE THAN 400°F FOR A FERIOD NOT TO EXCEED 30 MINUTES TO FACILITATE FORMING OR BENDING TO HORIZONTAL CURVATURE.
2. SHOP DRAWINGS OF RAILING SHALL BE SUBMITTED FOR APPROVAL SHOWING COMPLETE DIMENSIONS AND DETAILS OF FABRICATION AND INCLUDING AN ERECTION DIAGRAM. MATERIAL BEING USED SHALL BE SPECIFIED IN THE SHOP DRAWINGS.
3. CUTTING SHALL BE DONE BY SAWING OR MILLING AND ALL CUTS SHALL BE TRUE AND SMOOTH. FLAME CUTTING WILL NOT BE PERMITTED.
4. WELDING OF ALUMINUM SHALL CONFORM TO STD. SPEC. SECTION 9-28.14(3).
5. ALL ALUMINUM PARTS SHALL BE GIVEN A CLEAR ANODIC COATING OF AT LEAST 0.0006" THICK AND SEALED TO MEET THE REQUIREMENTS OF ASTM B 580 WITH A UNIFORM FINISH.
6. PIPE RAILING, PIPE BALUSTERS AND PIPE RAILING SPLICES SHALL BE ADEQUATELY WRAPPED TO INSURE SURFACE PROTECTION DURING HANDLING AND TRANSPORTATION TO THE JOB SITE.

NOTES:

"E" DIMENSION TO MATCH OPENING OF ROADWAY EXPANSION JOINTS.

β LOCATE ON OPPOSITE SIDE OF TRAFFIC. DRIVE PINS SHALL BE DRIVEN FLUSH WITH THE OUTSIDE FACE OF THE RAILING.

SR 12 FILE NO. ____ SHEET BB40

Bridge Design Engr.	Khaleghi, B		M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\Window files\40 BP1.WND							
Supervisor	Stoddard, RB									
Designed By	Hsieh, JC	02/10								
Checked By	Collins, R	05/10								
Detailed By	Avery, D	05/10								
Bridge Projects Engr.										
Prelim. Plan By										
Architect/Specialist			DATE	REVISION	BY	APP'D				

REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10	WASH.			
JOB NUMBER 100502				

JEN-CHI HSIEH — STATE OF WASHINGTON — 29272 — PROFESSIONAL ENGINEER — 8/2/10

BRIDGE AND STRUCTURES OFFICE

BIJAN KHALEGHI — STATE OF WASHINGTON — 27985 — PROFESSIONAL ENGINEER — 8/2/10

Washington State Department of Transportation

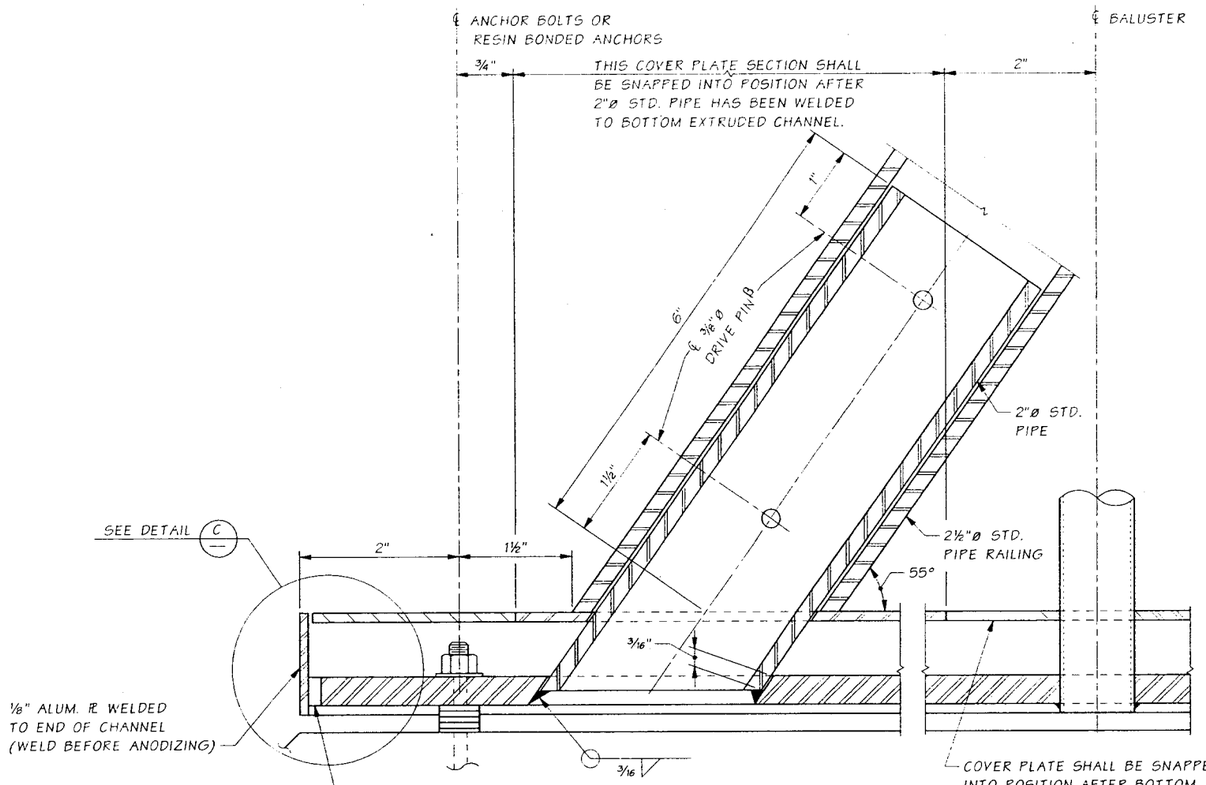
I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

BRIDGE RAILING TYPE BP
DETAILS 1 OF 2

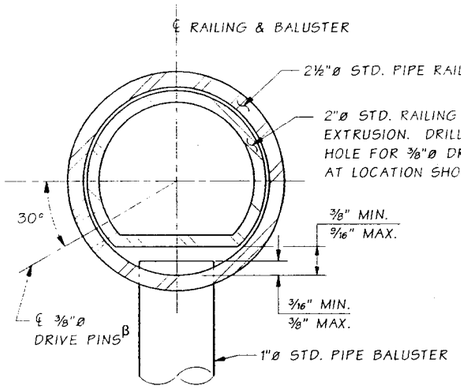
BRIDGE SHEET NO. BB40

SHEET 383 OF 516 SHEETS

Mar 4, 2010 08:11:12

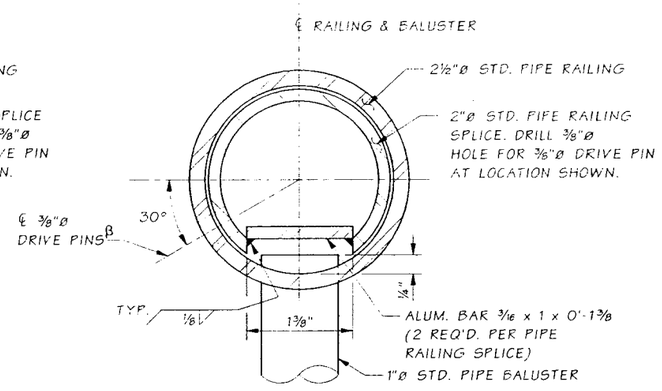


END DETAIL



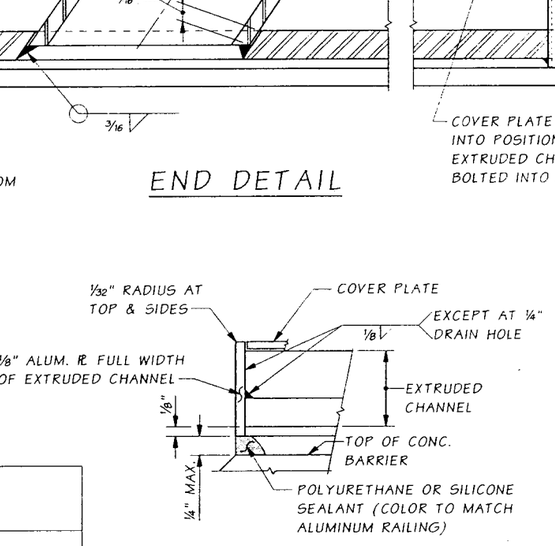
SECTION A
OPTION #1
BB40

β LOCATE ON OPPOSITE SIDE OF TRAFFIC. DRIVE PINS SHALL BE DRIVEN FLUSH WITH THE OUTSIDE FACE OF THE RAILING.

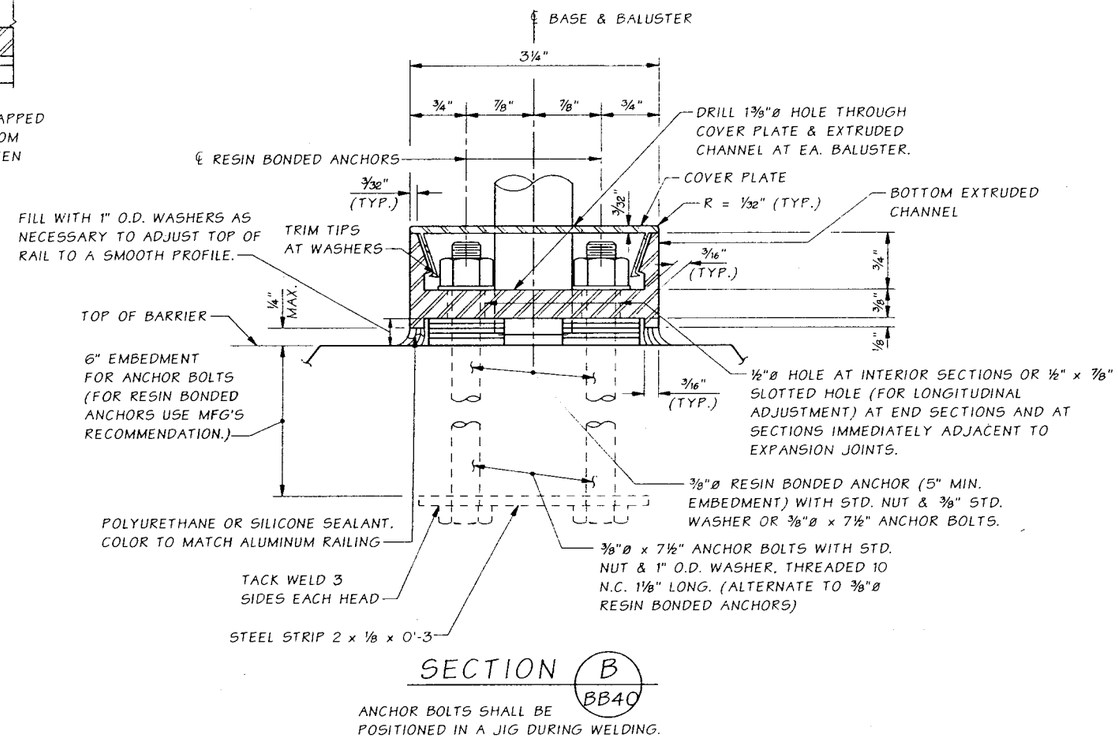


SECTION A
OPTION #2
BB40

β LOCATE ON OPPOSITE SIDE OF TRAFFIC. DRIVE PINS SHALL BE DRIVEN FLUSH WITH THE OUTSIDE FACE OF THE RAILING.



DETAIL C
DRAIN HOLES NOT SHOWN



SECTION B
BB40

ANCHOR BOLTS SHALL BE POSITIONED IN A JIG DURING WELDING.

	PART	MATERIAL SPECIFICATION
ALUMINUM MAT'L	PIPES	ASTM B 221- 6005-T5 ASTM B 241 OR B 429 6061-T6
ALUMINUM MAT'L	EXTRUDED CHANNELS, COVER PLATES & BAR	ASTM B 221- 6005-T5
STEEL	ANCHOR BOLTS, NUTS & WASHERS	STANDARD SPECIFICATION SECTION 9-06.5(4) (GALVANIZE IN ACCORDANCE WITH AASHTO SPECIFICATION M 232)
STEEL	STRIP	ASTM A 36
STEEL	DRIVE PINS	ASTM A 276 TYPE 302 STAINLESS STEEL

SR 12 FILE NO. ____ SHEET 8841

Bridge Design Engr.	Khaleghi, B	
Supervisor	Stoddard, RB	
Designed By	Hsieh, JC	02/10
Checked By	Collins, R	05/10
Detailed By	Avery, D	05/10
Bridge Projects Engr.		
Prelim. Plan By		
Architect/Specialist		

M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\Window files\41 BP2.WND

DATE	REVISION	BY	APP'D

REGION NO	STATE	FED. AID PROJ. NO.	SHEET NO	TOTAL SHEETS
10	WASH.			
JOB NUMBER 100502				

JEN-CHI HSIEH — STATE OF WASHINGTON — 28272 — PROFESSIONAL ENGINEER — 8/2/10

BRIDGE AND STRUCTURES OFFICE

FEIJIAN KHALEGHI — STATE OF WASHINGTON — 37388 — PROFESSIONAL ENGINEER — 8/2/10

Washington State Department of Transportation

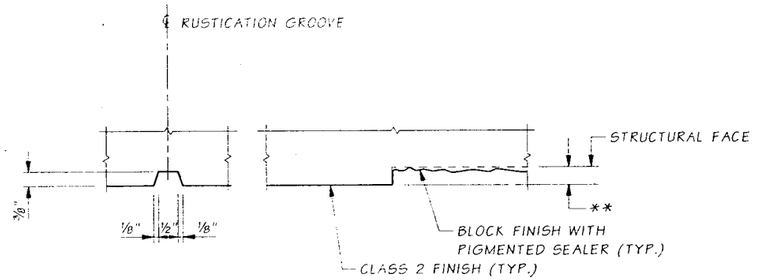
I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

BRIDGE RAILING TYPE BP
DETAILS 2 OF 2

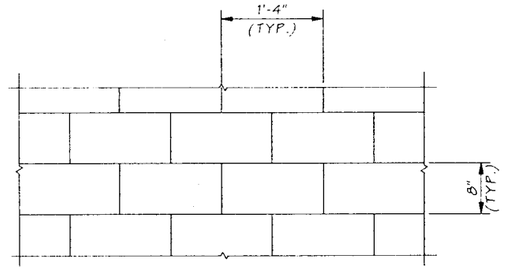
BRIDGE SHEET NO BB41

SHEET 384 OF 516 SHEETS

Mon Aug 02 09:11:17 2010



SECTION A



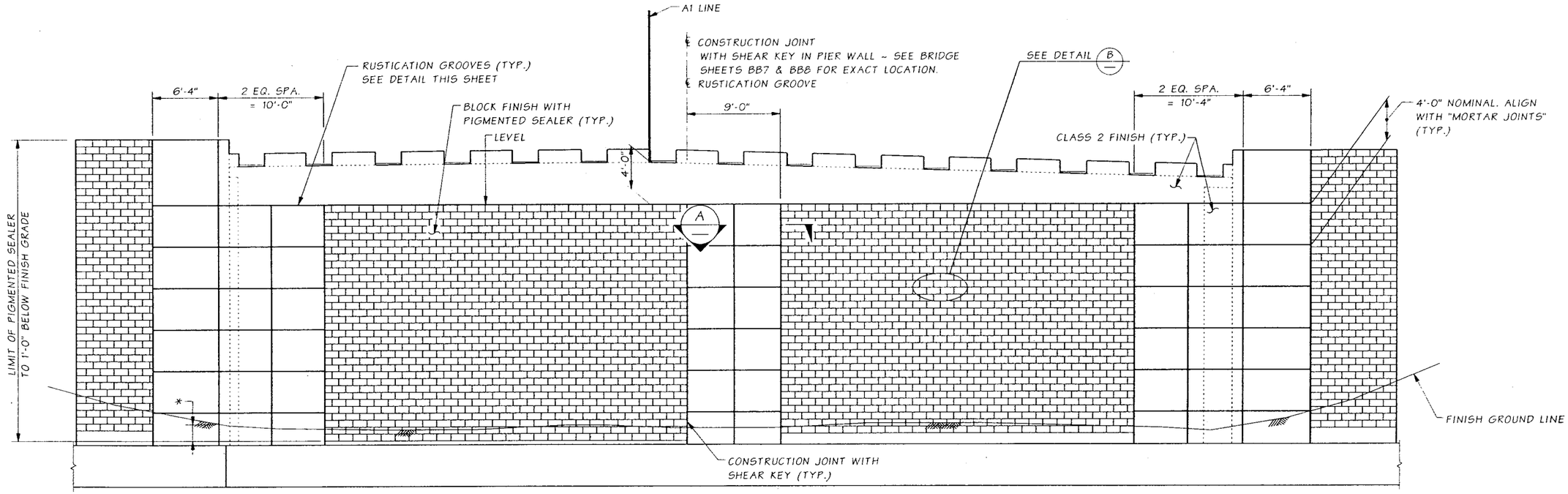
DETAIL B

NOTES:

1. RUSTICATION GROOVES AND BLOCK FINISH SHALL BE HORIZONTAL AND VERTICAL.
2. CLEAR COVER IS MEASURED FROM STRUCTURAL FACE.

* SET BOTTOM OF BLOCK FINISH AT 1'-0" MIN. BELOW BOTTOM OF FINISH GROUND LINE.

** DEPTH VARIES DEPENDANT UPON THE MANUFACTURER'S FORMLINER THICKNESS. THE DEPTH WITH FORMLINER BACKER MAY BE GREATER THAN THE DEPTH WITHOUT THE FORMLINER BACKER.



DEVELOPED ELEVATION

PIER 1 SHOWN, LOOKING BACK ON STATIONING.
PIER 2 SIMILAR

SR 12 FILE NO. ____ SHEET BB42

Bridge Design Engr.	Khaleghi, B		M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\Window files\42 ARCH DET 1.WND							
Supervisor	Stoddard, RB									
Designed By	Kinderman, PD	02/10								
Checked By	Collins, R	03/10								
Detailed By	Avery, D	05/10								
Bridge Projects Engr.										
Prelim. Plan By										
Architect/Specialist			DATE	REVISION	BY	APP'D				

REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10	WASH.			
JOB NUMBER 10C502				

8802 REGISTERED ARCHITECT PAUL D KINDERMAN STATE OF WASHINGTON
8-2-2010

BRIDGE AND STRUCTURES OFFICE

Washington State Department of Transportation

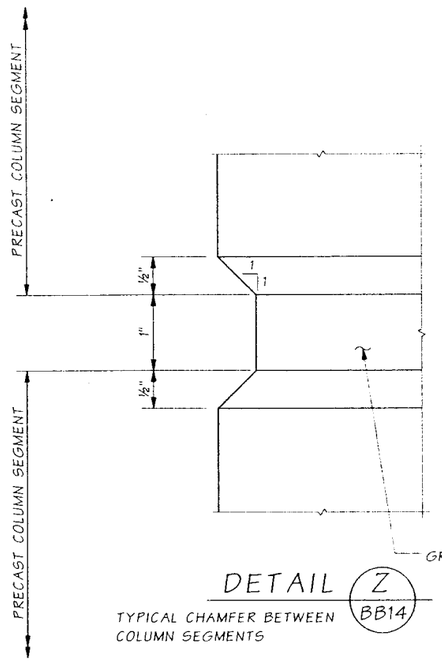
I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

ARCHITECTURAL DETAILS
SHEET 1 OF 2

BRIDGE SHEET NO. BB42

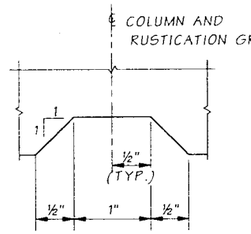
SHEET 385 OF 516 SHEETS

Mon Aug 02 09:11:24 2010

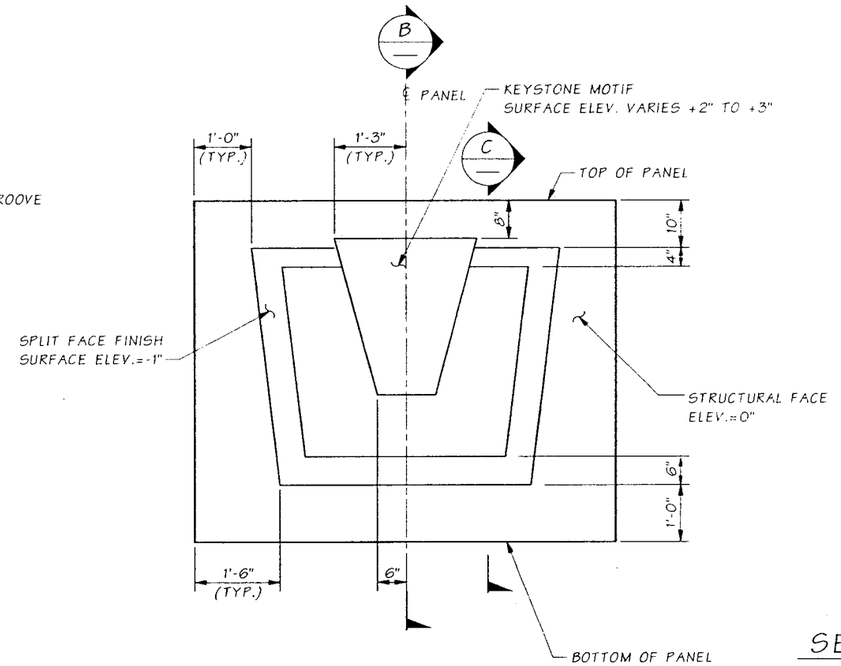


DETAIL Z / BB14

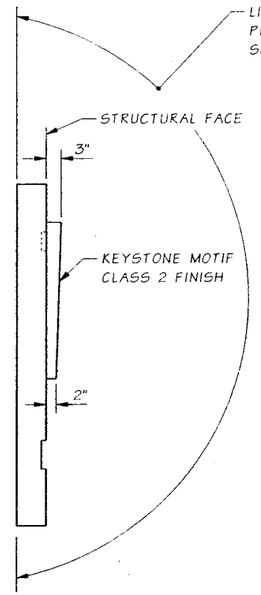
TYPICAL CHAMFER BETWEEN COLUMN SEGMENTS



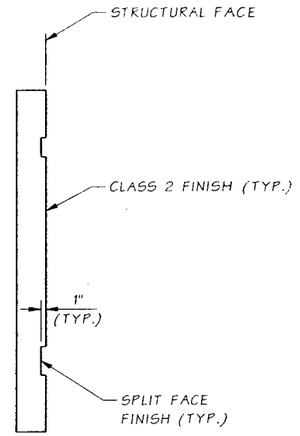
SECTION G / BB13



SECTION A / BB20



SECTION B / —



SECTION C / —

SR 12 FILE NO. ____ SHEET BB43

Bridge Design Engr.	Khaleghi, B		M:\X-Team\GRAND MOUND TO MAYTOWN\BR 12-118 REPL\Window files\43 ARCH DET 2.WND				REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor	Stoddard, RB						10	WASH.			
Designed By	Kinderman, PD	03/10					JOB NUMBER 100502				
Checked By	Collins, R	03/10									
Detailed By	Avery, D	05/10									
Bridge Projects Engr.											
Prelim. Plan By											
Architect/Specialist			DATE	REVISION	BY	APP'D					

Mon Aug 02 09:11:29 2010

8802 REGISTERED ARCHITECT PAUL D KINDERMAN STATE OF WASHINGTON
PAUL D. KINDERMAN
8-2-2010

BRIDGE AND STRUCTURES OFFICE

Washington State Department of Transportation

I-5
GRAND MOUND TO MAYTOWN
STAGE TWO - REPLACE INTERCHANGE
US 12 OVER I-5 BR. NO. 12/118 REPLACEMENT

ARCHITECTURAL DETAILS
SHEET 2 OF 2

BRIDGE SHEET NO. BB43

SHEET 386 OF 516 SHEETS