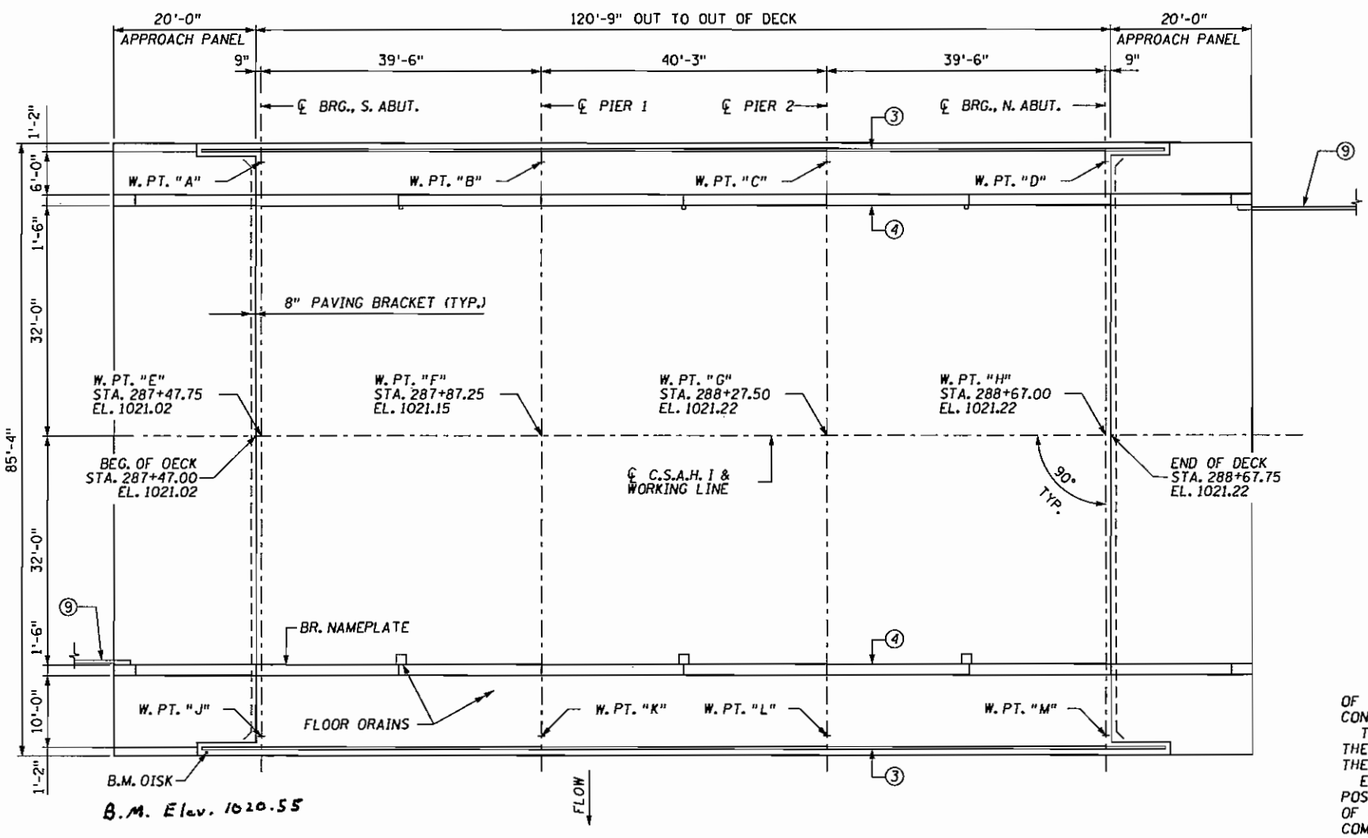
BENCHMARK: ELEV. 1020.81 (M.S.L. 1929 Adj.)
LOCATION: BRASS DISK IN S.E. WINGWALL OF INPLACE BR. 7092

DESIGN DATA

2002 A.A.S.H.T.O. DESIGN SPECS.
LOAD FACTOR DESIGN METHOD ~ HS25 LOADING
INCLUDES 17 PSF DEAD LOAD ALLOWANCE FOR FUTURE WEARING COURSE MODIFICATIONS.

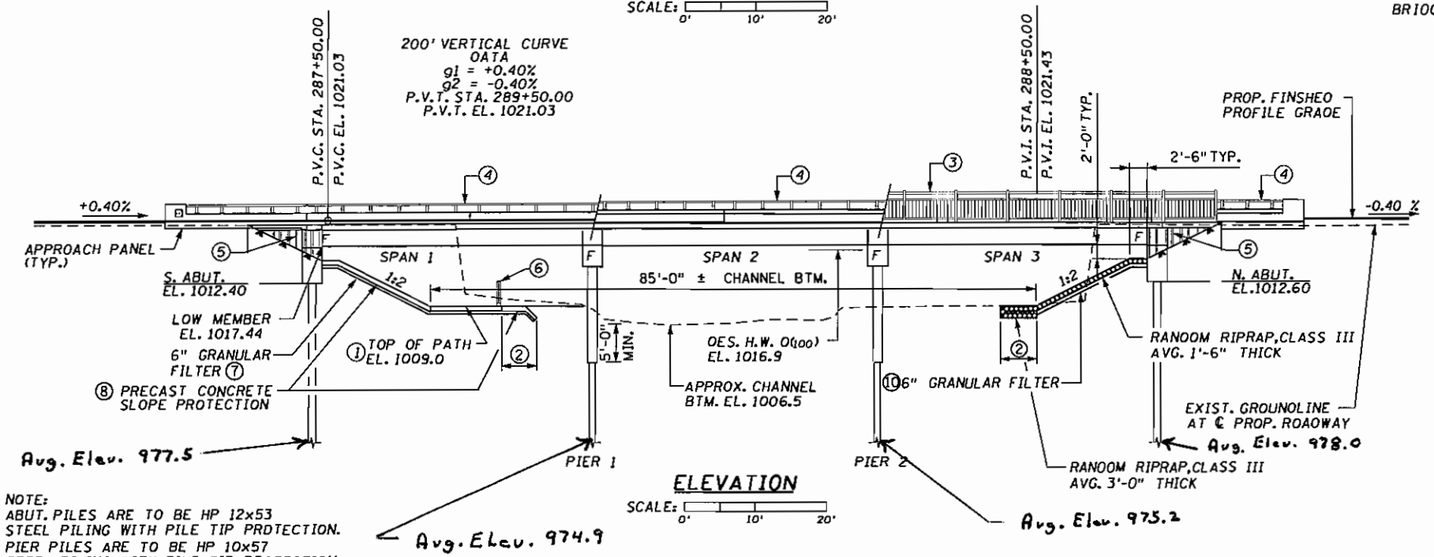
MAXIMUM ALLOWABLE DESIGN STRESSES:
REINFORCED CONCRETE:
f'c = 4000 PSI n = 8
fy = 60000 PSI REINFORCEMENT
PRESTRESSED CONCRETE:
f'c = 7500 PSI n = 1
f's = 270000 PSI STRANDS
STRUCTURAL STEEL:
fy = 36000 PSI SPEC. 3306

DECK AREA = 10318 S.F.
OPERATING RATING = HS54 A.D.T. = 7,919 (2003)
DESIGN SPEED = 45 MPH PROJ. A.D.T. = 12,670 (2023)



PLAN

SCALE: 0' 10' 20'



ELEVATION

SCALE: 0' 10' 20'

NOTE:
ABUT. PILES ARE TO BE HP 12x53
STEEL PILING WITH PILE TIP PROTECTION.
PIER PILES ARE TO BE HP 10x57
STEEL PILING WITH PILE TIP PROTECTION.

CONSTRUCTION NOTES

THE 2000 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

THE FIRST TWO DIGITS OF EACH BAR MARK INDICATE THE BAR SIZE IN MILLIMETERS. BARS MARKED WITH THE SUFFIX " E" SHALL BE EPOXY COATED.

ENGINEER IN THE FIELD SHALL VERIFY PROPER POSITIONING OF THE BRIDGE PRIOR TO COMMENCEMENT OF CONSTRUCTION. IF THE BRIDGE POSITIONING IS NOT COMPATIBLE WITH THE STREAM WHEN STAKING IS COMPLETED. THE SEALING ENGINEER SHALL BE NOTIFIED.

IF STATIONING IS CHANGED. THE REVISED PLANS SHALL BE SUBMITTED TO THE OWNER AND STATE AID BRIDGE OFFICE.

AS-BUILT

MAR 08 2005

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(1) 10'-0" CLEAR WIDE, 7" THICK CONCRETE PATHWAY. SEE SHEET B25.
(2) 5'-0"
(3) ORNAMENTAL METAL RAILING, TYPE 1.
(4) TYPE MOD. P-2 CONC. RAILING WITH STRUCTURAL TUBE RAILING, DESIGN T-1.
(5) REVERSE BATTEN TREATMENT TYPICAL ON WINGWALLS. SEE SHEET B11 FOR DETAILS.
(6) ORNAMENTAL METAL RAILING, TYPE S.
(7) INCLUDED IN PRICE BID FOR PRECAST CONCRETE SLOPE PROTECTION. SEE NOTE (4) SHEET B3 FOR SLOPE PROTECTION DETAILS.
(8) SEE NOTE (4) SHEET B3 FOR SLOPE PROTECTION DETAILS.
(9) GUARDRAIL NW & SE CORNERS, SEE SHEET B27, B29 & B30.
(10) INCLUDED IN PRICE BID FOR "RANDOM RIPRAP, CLASS III".

LIST OF SHEETS

NO.	TITLE
B2	GENERAL PLAN & ELEVATION
B3	TRANSVERSE SECTION & BID ITEMS
B4	BRIDGE LAYOUT
B5	NORTH ABUTMENT DETAILS
B6	SOUTH ABUTMENT DETAILS
B7-B8	ABUTMENT DETAILS
B9-B10	PIER DETAILS
B11-B14	SUPERSTRUCTURE DETAILS
B15	ABUTMENT CONTINUITY DIAPHRAGM
B16	PIER CONTINUITY DIAPHRAGM
B17	RECTANGULAR PRESTRESSED BEAM
B18	TYPE MOD. P-2 CONCRETE RAILING & (DESIGN T-1)
B19	ORNAMENTAL RAILING, TYPE 1
B20	ORNAMENTAL RAILING, TYPE S
B21	CONDUIT SYSTEM
B22-B24	DETAILS
B25	SIDEWALK UNDER BRIDGE
B26	BRIDGE APPROACH PANEL
B27	BRIDGE SURVEY
B28	BRIDGE SURVEY ~ PLAN & PROFILE
B29-B30	GUARDRAIL DETAILS

APPROVED: Michael D. Kludan
COUNTY ENGINEER
OLMSTED COUNTY
DATE: 4/23/03

I HEREBY CERTIFY THAT THIS PLAN (SHEETS LISTED ABOVE) WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Ronald Benson RONALD BENSON

LIC. NO. 22737 4/22/2003

PLANS PREPARED BY:
ERICKSON ENGINEERING
9330 JAMES AVE. S.
BLOOMINGTON, MN 55431

C.S.A.H. 1 OLMSTED COUNTY
MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55576

LOCATED 1.12 MI. NORTH OF JCT. U.S. HWY. 52 ON C.S.A.H. 1 OVER WILLOW CREEK.

3-40' ~ RECT. PRESTR. CONC. BEAM SPANS
64 FT. ROADWAY, 0° SKEW
SPAN IDENTIFICATION NO. 501

GENERAL PLAN & ELEVATION

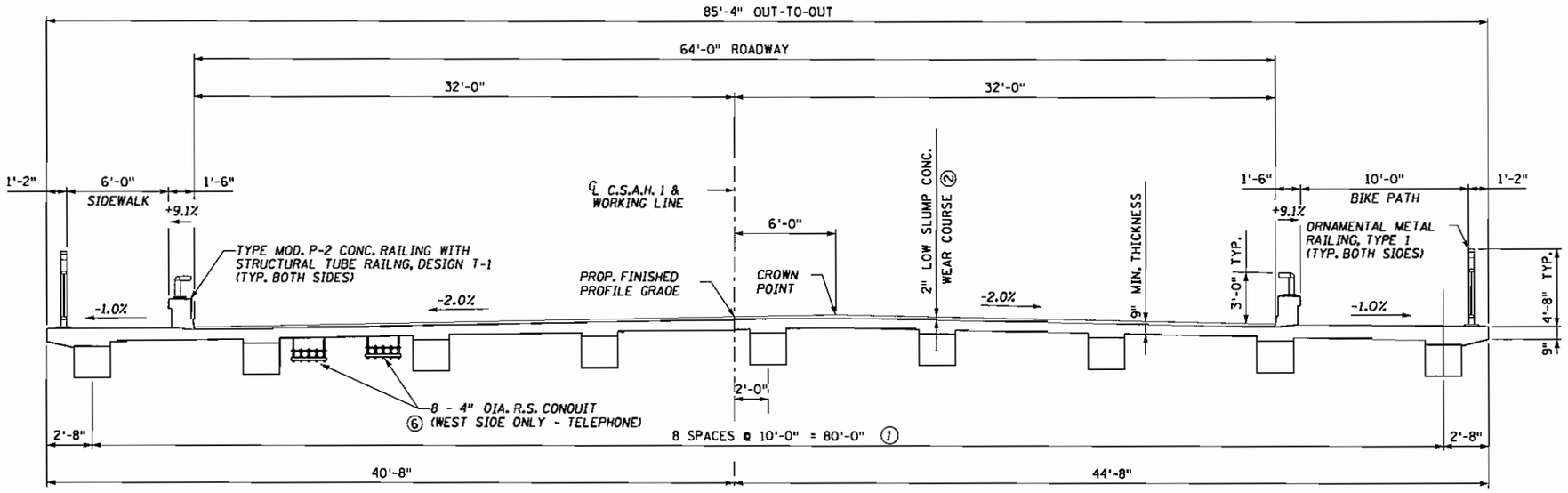
SEC. 13 TWP. 106 N R 14 W

CITY: ROCHESTER
COUNTY: OLMSTED

APPROVED: Howard Thompson 9/15/03
STATE BRIDGE ENGINEER

S.A.P. 55-601-14
SHEET B2 OF B30 SHEETS

DES.:	RAB	DRN.:	GRF	55576
CHK.:	CGD	CHK.:	CGD	



WEST

TRANSVERSE SECTION THRU DECK

SCALE: 0' 5' 10'

EAST

(1) 9-22"x26" WIDE RECTANGULAR PRESTRESSED CONC. BEAMS

(2) LOW SLUMP CONCRETE (CONC. WEARING COURSE 3U17A)

(3) STA. 288+14 ~ NON-PARTICIPATING

(4) PRECAST CONCRETE SLOPE PROTECTION SHALL BE ARMORFLEX BLOCK 45S CLOSED CELL OR AN APPROVED EQUAL, INSTALLED WITH ANCHORS AND PER MANUFACTURER'S SPECIFICATIONS.

(5) PATHWAY UNDERNEATH BRIDGE SPAN 1, SEE SHEET B25 FOR SIDEWALK DETAILS.

(6) SEE SHEET B21 FOR DETAILS.

(7) SEE SHEET B11 FOR DETAILS.

(8) SEE SHEET B7 FOR OETAILS.

(9) SEE SHEET B28 FOR DETAILS.

(10) INCLUDES SLAB ON WINGWALL TO OPTIONAL CONSTRUCTION JOINT, 4'-4" FROM FRONT FACE OF ABUTMENT.

SCHEDULE OF QUANTITIES FOR THE ENTIRE BRIDGE

ITEM NO.	2021.501	2503.511	2501.515	2301.551	2401.501	2401.512	2401.513	2401.541	2401.601	2401.601	2401.618	2402.546	2402.546	2402.583	2402.583
ITEM	MOBILIZATION	33" RC PIPE SEWER (9)	33" RC PIPE APRON (9)	BRIDGE APPROACH PANEL	STRUCTURAL CONCRETE (3Y43)	BRIDGE SLAB CONCRETE (3Y36A) (10)	TYPE MOD. P-2 RAILING CONCRETE (3Y46A)	REIN-FORCEMENT BARS (EPOXY COATED)	STRUCTURE EXCAVATION (8)	SLOPE PREPARATION	REVERSE BATTEN SURFACE TREATMENT (7)	FLOOR DRAIN TYPE B702 MODIFIED	FLOOR DRAIN TYPE B705 MODIFIED	ORNAMENTAL METAL RAILING TYPE S (5)	ORNAMENTAL METAL RAILING TYPE I
QUANTITY	1	8	1	2	181 (P)	10318 (P)	322 (P)	113480 (P)	1	1	116	3	3	95	272 (P)
UNIT	LUMP SUM	LIN. FT.	EACH	EACH	CU. YD.	SQ. FT.	LIN. FT.	POUND	LUMP SUM	LUMP SUM	SQ. FT.	EACH	EACH	LIN. FT.	LIN. FT.

ITEM NO.	2402.583	2402.590	2404.501	2405.502	2442.501	2452.510	2452.510	2452.511	2452.511	2452.520	2452.520	2452.602	2452.602	2452.603	2511.501
ITEM	STRUCTURAL TUBE RAILING DESIGN T-1	ELASTOMERIC BEARING PAD TYPE 1	CONCRETE WEARING COURSE (3U17A) (2)	RECTANGULAR PRESTR. CONCRETE BEAMS, 22"	REMOVE OLD BRIDGE (3)	STEEL H-PILING DRIVEN 12 x 53	STEEL H-PILING ORIVEN 10 x 57	STEEL H-PILING DELIVERED 12 x 53	STEEL H-PILING DELIVERED 10 x 57	STEEL H-TEST PILE 60 FT. LONG 12 x 53	STEEL H-TEST PILE 60 FT. LONG 10 x 57	PILE TIP PROTECTION 10"	PILE TIP PROTECTION 12"	16" STEEL PILE SHELLS	RANDOM RIPRAP, CLASS III (9)
QUANTITY	310 (P)	54 (P)	10288 (P)	1080 (P)	1	~~700~~ 561	~~900~~ 776	~~700~~ 492	~~900~~ 750	4	4	22	18	330	~~141~~ 156
UNIT	LIN. FT.	EACH	SQ. FT.	LIN. FT.	LUMP SUM	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	EACH	EACH	LIN. FT.	CU. YD.

ITEM NO.	2514.604	2521.501	2545.509	2554.501	2554.501	2554.523									
ITEM	SLOPE PAVING SPECIAL (4)	7" CONCRETE WALK REINFORCED (5)	CONDUIT SYSTEM (TELEPHONE) (6)	TRAFFIC BARRIER OESIGN SPECIAL	TRAFFIC BARRIER OESIGN B8307	END TREATMENT SPECIAL									
QUANTITY	~~564~~ 626	~~1022~~ 1021	1	50	~~50~~ 25	2									
UNIT	SQ. YD.	SQ. FT.	LUMP SUM	LIN. FT.	LIN. FT.	EACH									

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MAR 0 8 2005

ENGINEERING

CERTIFIED BY Ronald Benson
PROFESSIONAL ENGINEER/RONALD BENSON

LIC. NO. 22737 4/22/2003

MINNESOTA OEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55576

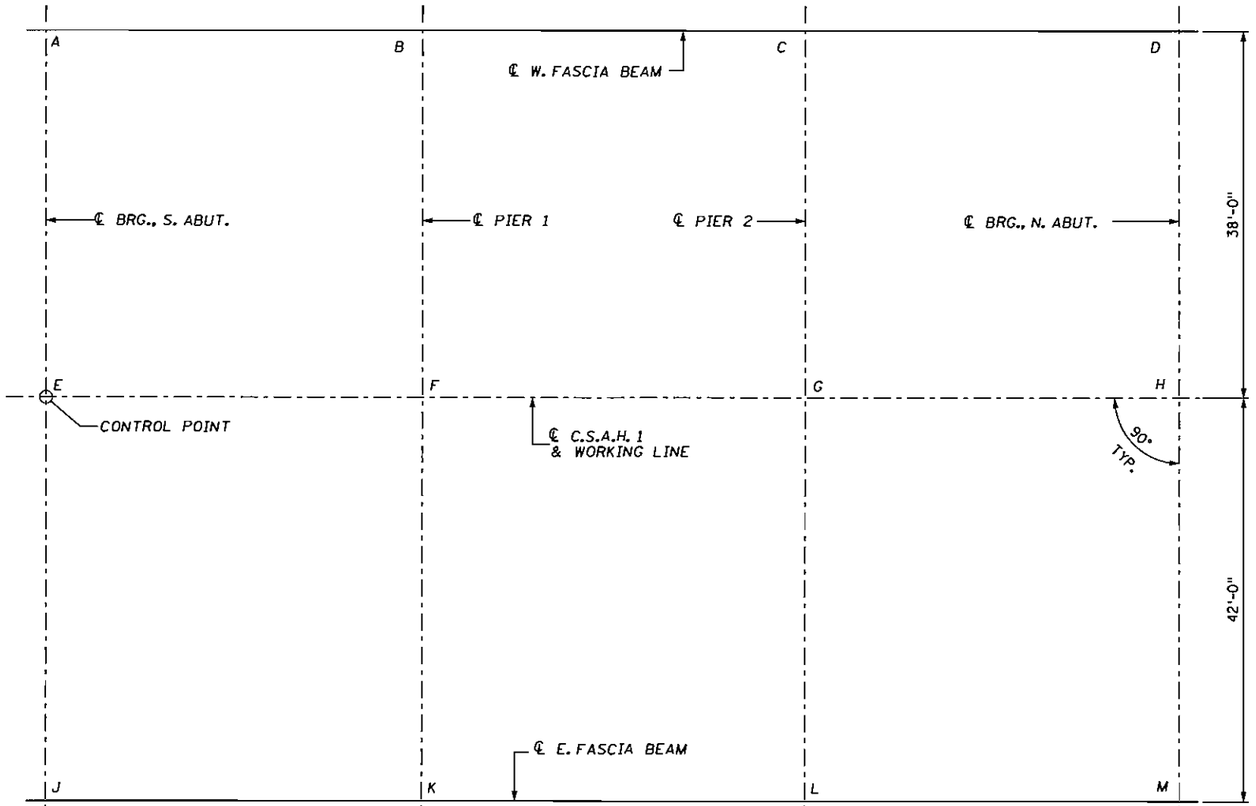
TRANSVERSE SECTION & BID ITEMS

APPROVED:

S.A.P. 55-601-14

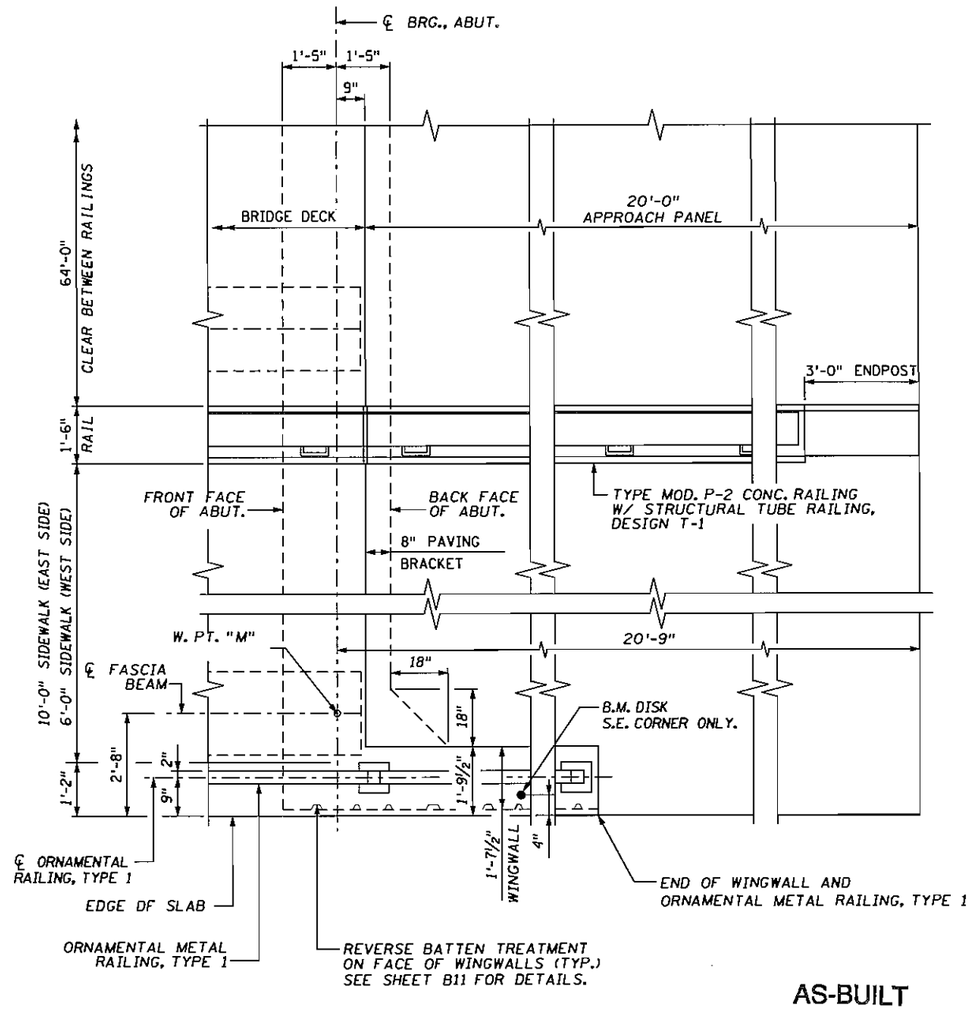
SHEET B3 OF B30 SHEETS

DES.:	RAB	DRN.:	GRF	55576
CHK.:	CGD	CHK.:	CGD	



LAYOUT SHOWING WORKING POINTS

SCALE: 0' 5' 10'



TYPICAL CORNER DETAIL

SCALE: 0" 1' 2'

(NORTHEAST CORNER SHOWN, OTHER CORNERS SIMILAR)

AS-BUILT

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	TOP OF SLAB TO BRIDGE SEAT		
	ABUTMENTS AND PIERS		
	W. EXT. BEAM	INT. BEAMS	E. EXT. BEAM
SLAB THICKNESS	9½"	9"	10"
STOOL HEIGHT	2¾"	2¾"	2¾"
BEAM	22"	22"	22"
BEARING HEIGHT	½"	½"	½"
TOTAL	2'-10¾"	2'-10¼"	2'-11¼"

DIMENSIONS BETWEEN WORKING POINTS

POINT	STATION	A	B	C	D	E	F	G	H	J	K	L	M
A	287+47.75		39.50			38.00	54.81				89.22	112.96	
B	287+87.25			40.25			38.00	55.35		89.22		89.55	112.96
C	288+27.50				39.50			38.00	54.81	112.96	89.55		89.22
D	288+67.00								38.00		112.96	89.22	
E	287+47.75						39.50			42.00	57.66		
F	287+87.25							40.25			42.00	58.17	
G	288+27.50								39.50			42.00	57.66
H	288+67.00												42.00
J	287+47.75										39.50		
K	287+87.25											40.25	
L	288+27.50												39.50
M	288+67.00												

ELEVATIONS

TOP OF SLAB	SLAB TO BRIDGE SEAT	BRIDGE SEAT	POINT
1020.30	2.90	1017.40	A
1020.43	2.90	1017.53	B
1020.50	2.90	1017.60	C
1020.50	2.90	1017.60	D
1021.02			E
1021.15			F
1021.22			G
1021.22			H
1020.50	2.94	1017.56	J
1020.63	2.94	1017.69	K
1020.70	2.94	1017.76	L
1020.70	2.94	1017.76	M

CERTIFIED BY Ronald Benson
PROFESSIONAL ENGINEER/RONALD BENSON
LIC. NO. 22737 4/23/2003

MINNESOTA DEPARTMENT
OF TRANSPORTATION

BRIDGE NO. 55576

BRIDGE LAYOUT

APPROVED:

S.A.P. 55-601-14

SHEET B4 OF B30 SHEETS

DES.:	RAB	DRN.:	GRF	55576
CHK.:	CGD	CHK.:	CGD	

COMPUTED PILE LOADS TONS PER PILE FOR NORTH ABUTMENT	
OEAO LOAD *	47.9
LIVE LOAD	17.1
TOTAL	65.0

* INCLUDES 10 TON NEGATIVE SOIL LOAD.

PILE NOTES

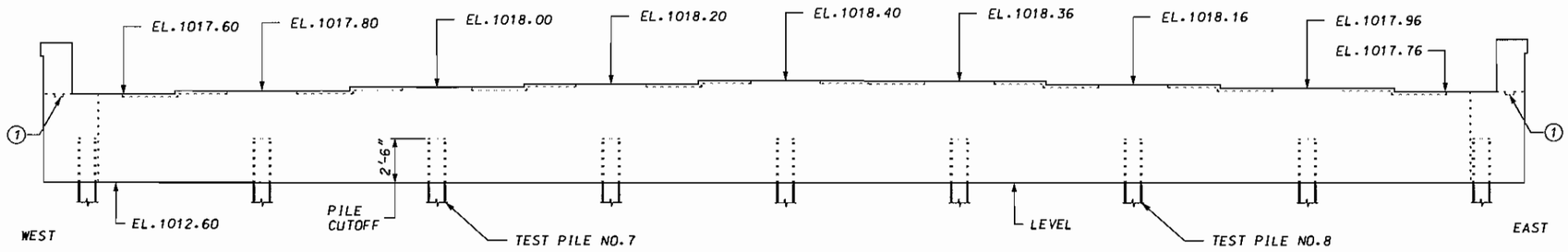
7 - STEEL H-PILES, EST. LENGTH 50'.
2 - STEEL H-TEST PILE, 60' LONG
9 - STEEL H-PILES REQ'D FOR NORTH ABUT.

ALL PILES ARE TO HP12X53, STEEL H-PILES.

SEE DETAIL B202 FOR SPLICES.

ALL PILES TO HAVE PILE TIP PROTECTION.
SEE SPECIAL PROVISIONS.

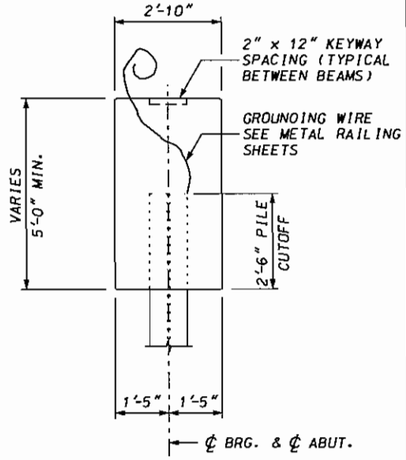
SEE SURVEY SHEET FOR TEST PILE LOCATIONS.



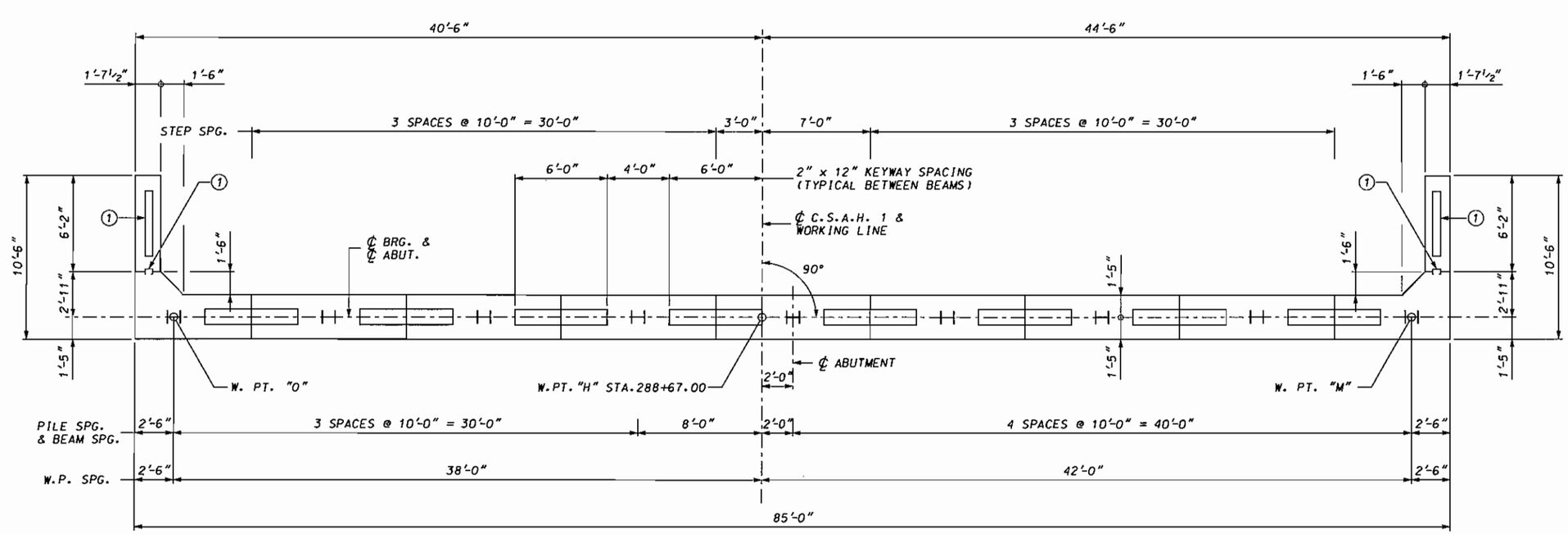
ELEVATION
SCALE: 0' 3'

Avg. Elev. Bttm piling 978.0

① SEE NOTES ① ② AND ③ ON SHEET B8 FOR PERMISSIBLE CONSTRUCTION JOINT ALTERNATES.



SECTION THRU ABUTMENT
SCALE: 0' 2'



PLAN
SCALE: 0' 3'

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PROFESSIONAL ENGINEER/RONALD BENSON
LIC. NO. 22737 4/22/2003

MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55576
NORTH ABUTMENT DETAILS

APPROVED:

S.A.P. 55-601-14				
SHEET B5 OF B30 SHEETS				
DES.	RAB	DRN.	BDM	55576
CHK.	CGD	CHK.	CGD	

COMPUTED PILE LOADS TONS PER PILE FOR SOUTH ABUTMENT	
DEAD LOAD *	47.9
LIVE LOAD	17.1
TOTAL	65.0

* INCLUDES 10 TON NEGATIVE SOIL LOAD.

PILE NOTES

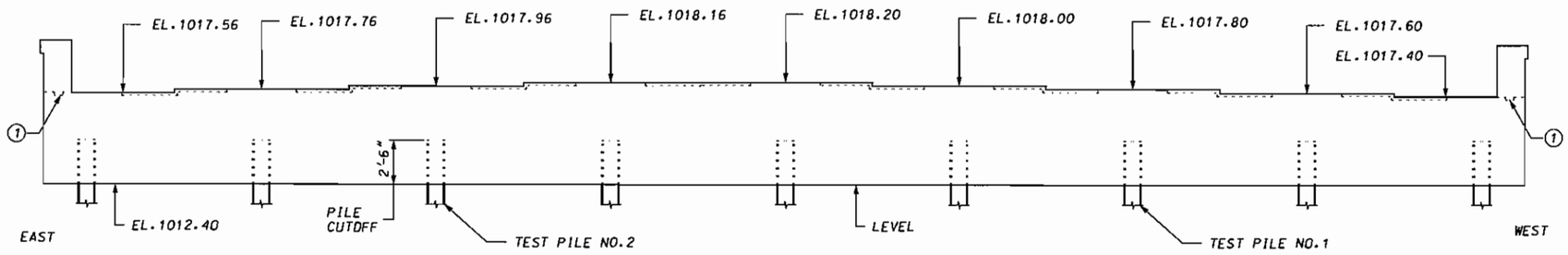
7 - STEEL H-PILES, EST. LENGTH 50'.
2 - STEEL H-TEST PILE, 60' LONG
9 - STEEL H-PILES REQ'D FOR SOUTH ABUT.

ALL PILES ARE TO HP12X53, STEEL H-PILES.

SEE DETAIL B202 FOR SPLICES.

ALL PILES TO HAVE PILE TIP PROTECTION.
SEE SPECIAL PROVISIONS.

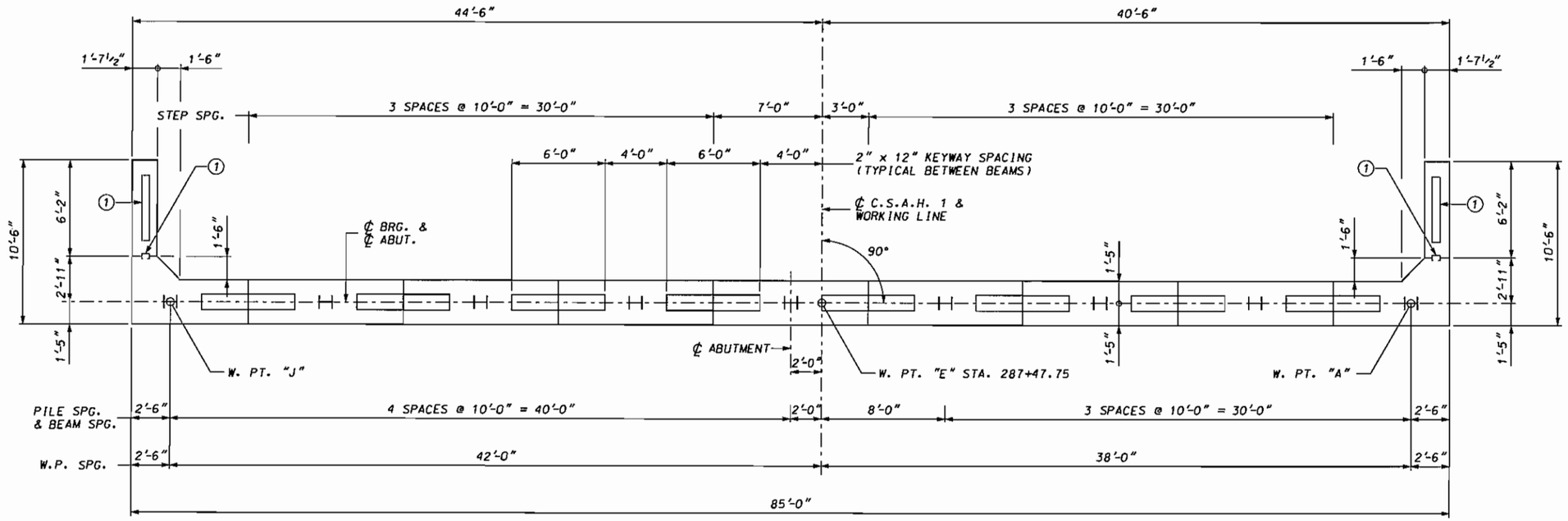
SEE SURVEY SHEET FOR TEST PILE LOCATIONS.



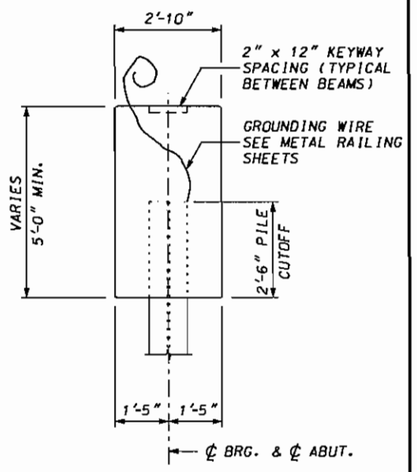
ELEVATION
SCALE: 0' 3'

Avg. Elev. Bttm. Piling 977.5

① SEE NOTES ① ② AND ③ ON SHEET B8 FOR PERMISSIBLE CONSTRUCTION JOINT ALTERNATES.



PLAN
SCALE: 0' 3'



SECTION THRU ABUTMENT
SCALE: 0' 2'

AS-BUILT
MAR 0 8 2005
ENGINEERING

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PROFESSIONAL ENGINEER/RONALD BENSON
LIC. NO. 22737 4/22/2003

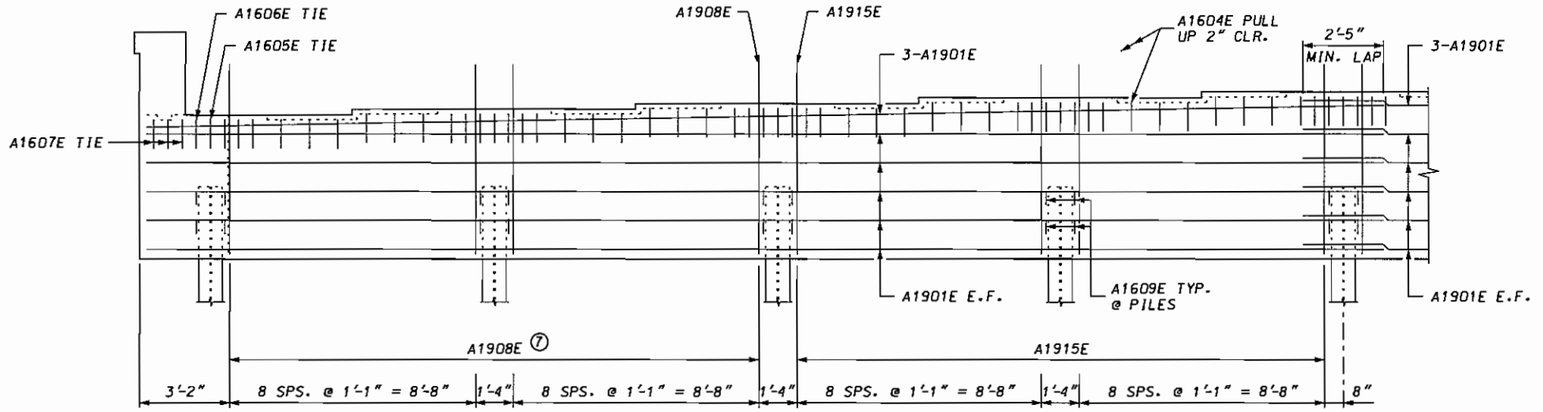
MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55576
SOUTH ABUTMENT DETAILS

APPROVED:

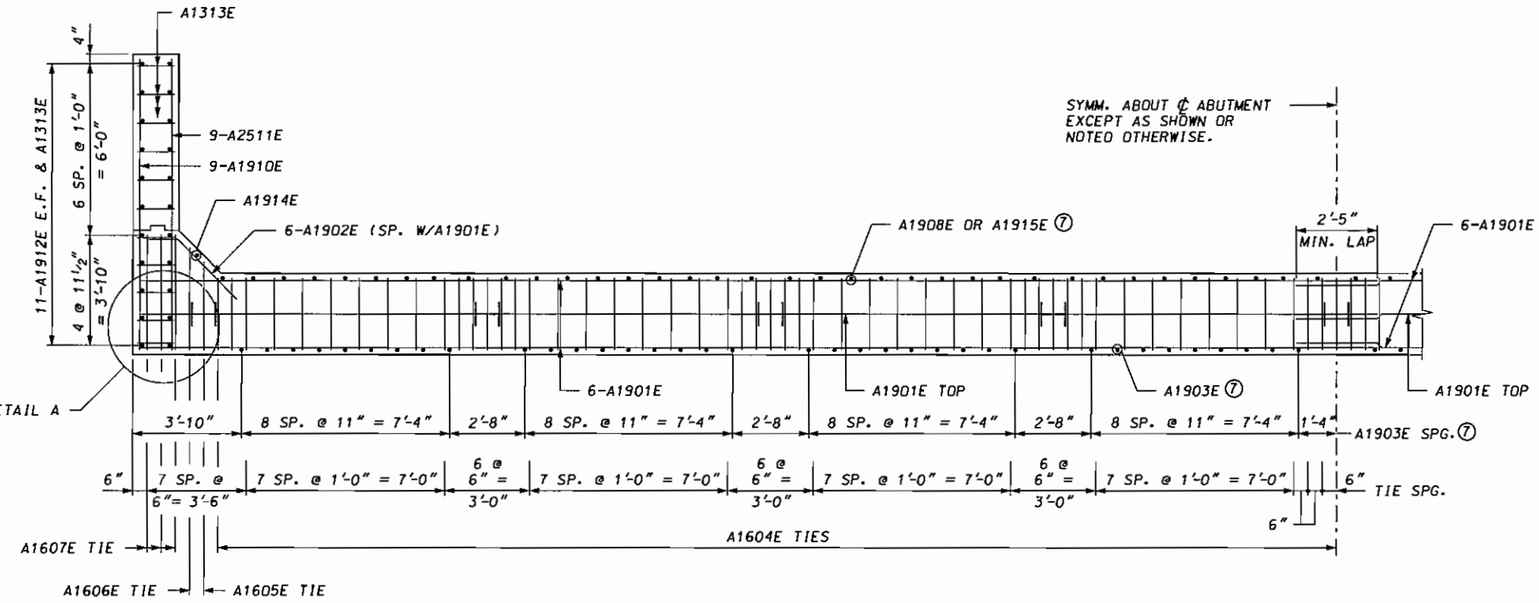
S.A.P. 55-601-14
SHEET B6 OF B30 SHEETS

DES.	RAB	DRN.	BDM	55576
CHK.	CGD	CHK.	CGD	



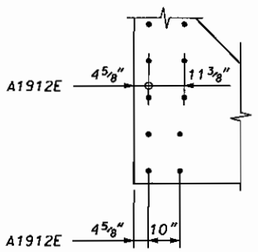
HALF - ELEVATION

SCALE: 0' 2'



HALF - PLAN

SCALE: 0' 2'



DETAIL A

SCALE: 0' 2'

SUMMARY OF QUANTITIES - 2 ABUTMENTS		
⑥	STRUCTURAL CONCRETE (3Y43)	108 CU. YD.
	REINFORCEMENT BARS (EPOXY COATED)	12150 POUND
②④	STRUCTURE EXCAVATION	1 LUMP SUM
③	B.M. DISK	1 EACH
①	STEEL H-PILING DELIVERED, 12x53	700 LIN. FT.
①	STEEL H-PILING DRIVEN, 12x53	700 LIN. FT.
	STEEL H-TEST PILES, 60' LONG, 12x53	4 EACH
	PILE TIP PROTECTION, 12"	18 EACH
⑤	REVERSE BATTEN SURFACE TREATMENT	116 SQ. FT.

① DOES NOT INCLUDE TEST PILES

② SEE SPECIAL PROVISIONS

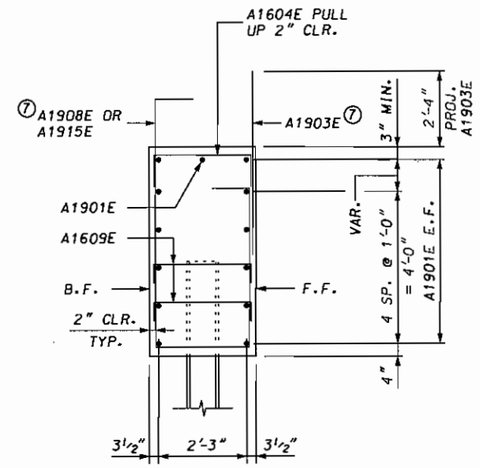
③ COUNTY WILL FURNISH DISK. PAYMENT FOR PLACING IS TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS. BEND PRONGS OUTWARD TO ANCHOR DISK IN CONCRETE. BOTTOM OF DISK TOP TO BE PLACED FLUSH WITH CONCRETE.

④ BACKFILL BEHIND ABUTMENTS SHALL BE SELECT GRANULAR BORROW PER SPEC. 3149. INCLUDED IN PRICE BID FOR STRUCTURE EXCAVATION. COMPACTION SHALL BE ATTAINED BY THE QUALITY COMPACTION METHOD IN ACCORDANCE WITH THE REQUIREMENTS OF 2105.3F2. SEE BRIDGE SURVEY SHEET FOR PLACEMENT LIMITS. ESTIMATED QUANTITY FOR BOTH ABUTMENTS IS 805 CU.YDS.(C.V.).

⑤ INCLUDES 37 SQ. FT. ON THE ENDS OF THE ABUTMENT DIAPHRAGMS. SEE SHEET B11 FOR DETAILS.

⑥ SEE NOTE ⑥ ON SHEET B8 FOR QUANTITY DETAILS.

⑦ SEE SHEET B15 DETAILS NEAR CONDUIT.



SECTION THRU ABUTMENT

SCALE: 0' 2'

AS-BUILT

MAR 08 2005

ENGINEERING

NOTE:
F.F. = FRONT FACE
B.F. = BACK FACE
E.F. = EACH FACE

CERTIFIED BY Ronald Benson
PROFESSIONAL ENGINEER/RONALD BENSON
LIC. NO. 22737 4/22/2003

MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55576

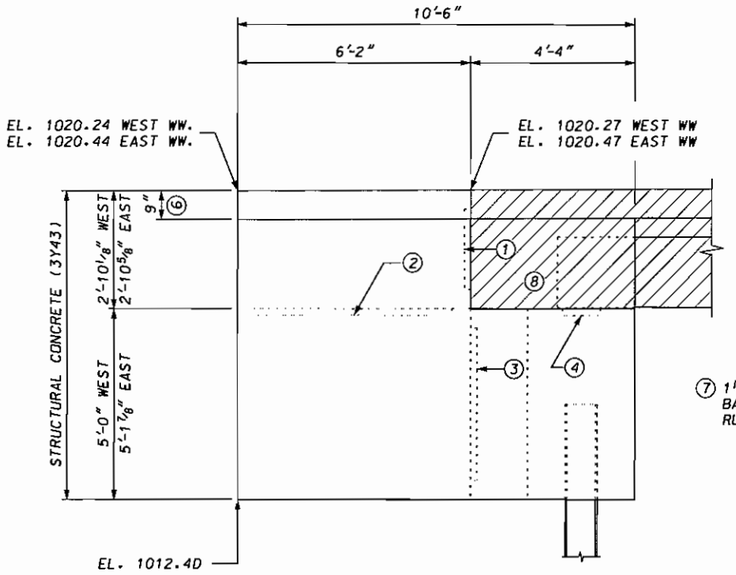
ABUTMENT DETAILS

APPROVED:

S.A.P. 55-601-14

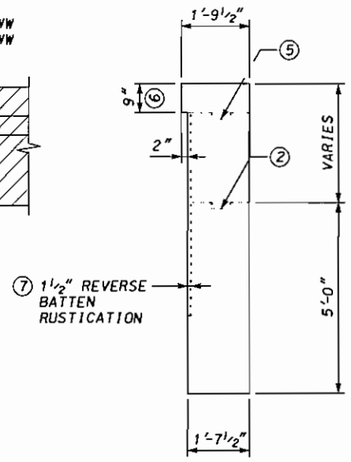
SHEET B7 OF B30 SHEETS

DES.	RAB	DRN.	BDM	55576
CHK.	CGD	CHK.	CGD	



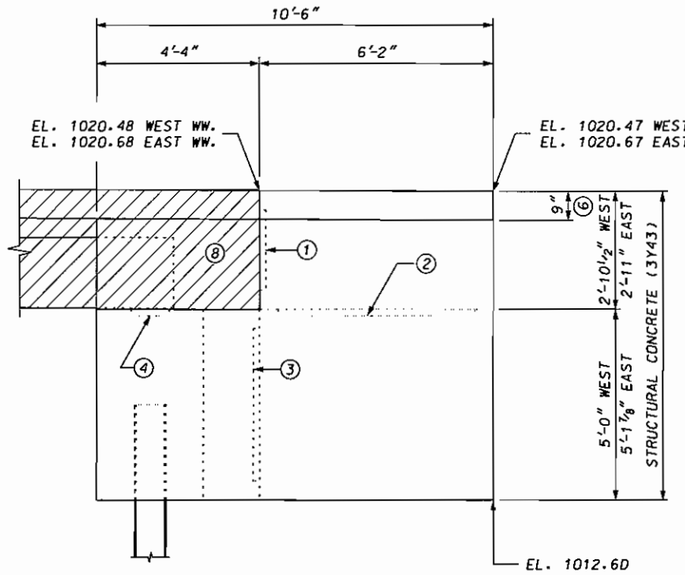
SOUTH ABUTMENT WINGWALL ELEVATION

SCALE: 0' 2'



SECTION THRU WINGWALL

SCALE: 0' 2'



NORTH ABUTMENT WINGWALL ELEVATION

SCALE: 0' 2'

BILL OF REINFORCEMENT - 2 ABUTMENTS				
BAR	NO.	LENGTH	SHAPE	LOCATION
A1901E	52	43'-8"	STRT.	ABUT - HORIZONTAL
A1902E	24	4'-9"	BENT	CORNER TIE
A1903E	136	6'-9"	STRT.	ABUTMENT DOWEL
A1604E	206	4'-6"	BENT	ABUTMENT - TIE
A1605E	4	5'-0"	BENT	ABUTMENT - TIE
A1606E	4	5'-6"	BENT	ABUTMENT - TIE
A1607E	12	6'-0"	BENT	ABUTMENT - TIE
A1908E	68	14'-11"	BENT	ABUTMENT - STIRRUP
A1609E	72	4'-2"	BENT	ABUT - TIE @ PILES
A1910E	36	10'-2"	STRT.	WINGWALL - HORIZONTAL
A2511E	36	10'-2"	STRT.	WINGWALL - HORIZONTAL
A1912E	88	7'-5"	STRT.	WINGWALL - VERTICAL
A1313E	44	2'-0"	BENT	WINGWALL - TIE
A1914E	4	6'-2"	STRT.	ABUTMENT - VERTICAL
A1915E	72	15'-4"	BENT	ABUTMENT - STIRRUP

CONSTRUCTION JOINT NOTES

ANY PORTION OF THE WINGWALL MAY BE PLACED WITH THE SLAB AND END DIAPHRAGM CONCRETE. USE OF THE PERMISSIBLE CONSTRUCTION JOINTS IS AT THE CONTRACTOR'S DISCRETION WITH THE APPROVAL OF THE ENGINEER IN THE FIELD. A MINIMUM OF 1 CONSTRUCTION JOINT PER WING SHALL BE USED.

ALL PERMISSIBLE CONSTRUCTION JOINTS FOR THE ABUTMENT WINGWALLS AND END DIAPHRAGM SHALL HAVE A 2" X 6" KEYWAY AND 3-PLY JOINT WATER-PROOFING ON BACKFACE.

(1) PERMISSIBLE CONSTRUCTION JOINT 1 (ABOVE BRIDGE SEAT).

(2) PERMISSIBLE CONSTRUCTION JOINT 2 (AT TOP OF BRIDGE SEAT ELEVATION).

(3) PERMISSIBLE CONSTRUCTION JOINT 3 (BELOW BRIDGE SEAT).

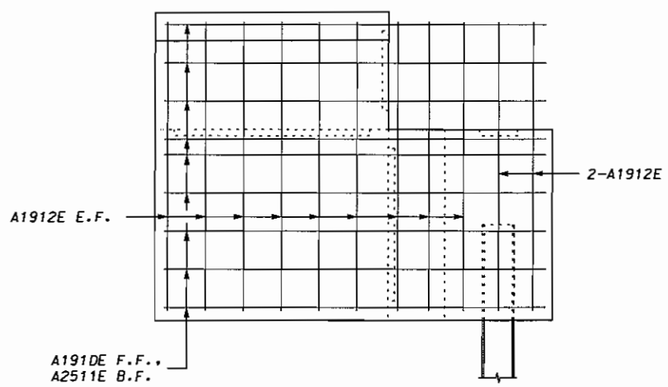
(4) 2" X 1'-0" KEYWAY SPACING BETWEEN BEAMS - MANDATORY CONSTRUCTION JOINT AT ABUTMENT SEAT.

(5) CONSTRUCTION JOINT & 2" X 6" KEYWAY.

(6) MAY ALSO BE TYPE 3Y36A CONCRETE. ASSUMED TYPE 3Y43 FOR PLAN QUANTITIES.

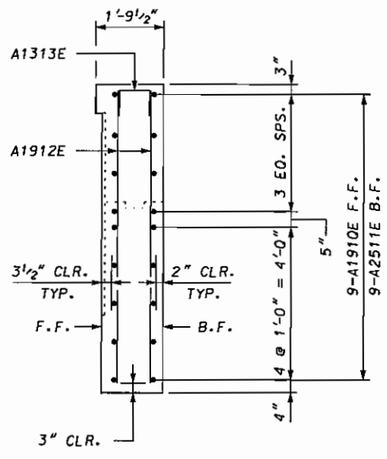
(7) SEE SHEET B11 FOR RUSTICATION DETAILS.

(8) 3Y36A CONCRETE IN HATCHED AREA.



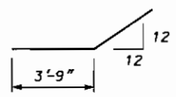
WINGWALL ELEVATION

SCALE: 0' 2'

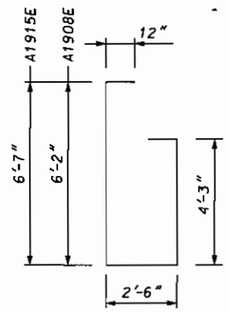


SECTION THRU WINGWALL

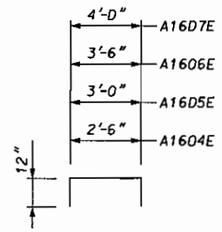
SCALE: 0' 2'



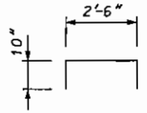
A1902E



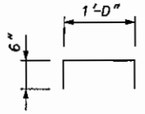
A1908E & A1915E



A1604E THRU A1607E



A1609E



A1313E

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PROFESSIONAL ENGINEER/RONALD BENSON
LIC. NO. 22737 4/22/2003

MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55576

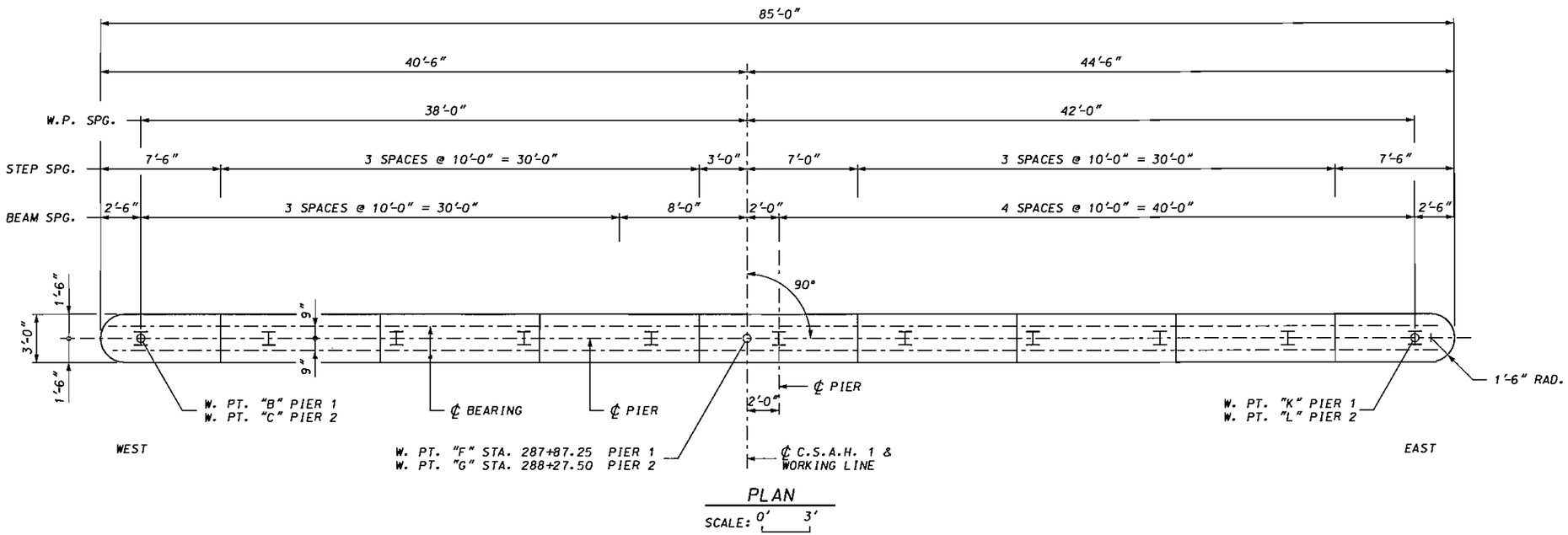
ABUTMENT DETAILS

APPROVED:

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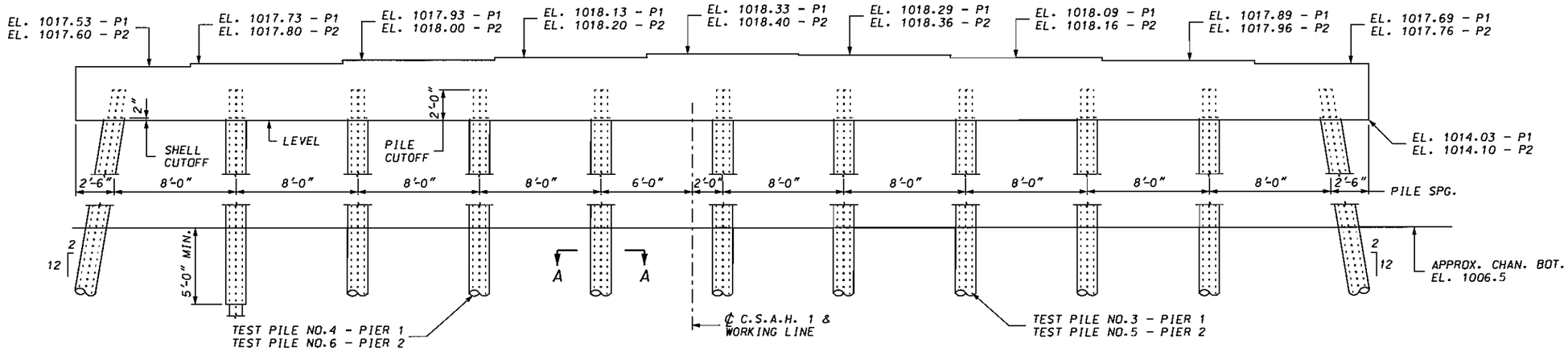
SHEET B8 OF B30 SHEETS

DES.	RAB	DRN.	BDM	55576
CHK.	CGD	CHK.	CGD	



PLAN

SCALE: 0' 3'

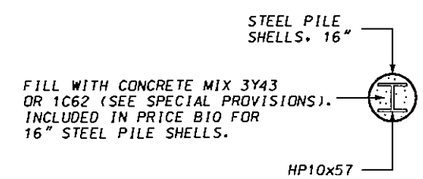


ELEVATION

SCALE: 0' 3'

Pier 1 Avg. Elev. Bttm Piling 974.9

Pier 2 Avg. Elev. Bttm Piling 975.2



SECTION A-A

COMPUTED PILE LOADS TONS PER PILE FOR PIERS	
DEAD LOAD	42.9
LIVE LOAD	14.0
TOTAL	56.9

PILE NOTES

18 - STEEL H-PILES, 50' EST. LENGTH
4 - STEEL H-TEST PILES, 60' LONG
22 - STEEL H-PILES REQ.D FOR 2 PIERS

22 - STEEL PILE SHELLS (16" DIA.) 15' LONG.

ALL PIER PILES ARE TO BE HP10x57, STEEL H-PILES, WITH PILE TIP PROTECTION. SEE SPECIAL PROVISIONS.

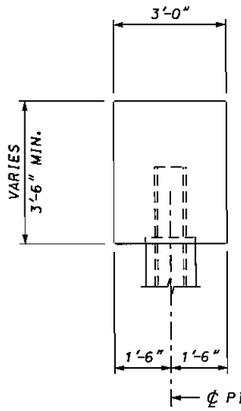
PILE SPACING SHOWN IS AT BOTTOM OF CAP.

END PILES ARE TO BE BATTERED 2" PER FOOT IN DIRECTION SHOWN

SEE DETAIL B202 FOR SPLICES.

SEE SURVEY SHEET FOR TEST PILE LOCATIONS.

ALL PIER PILES SHALL BE DRIVEN TO ELEVATION 972.3 OR BELOW, OR TO A MINIMUM PENETRATION OF 5 FEET INTO BEDROCK. (SEE SPECIAL PROVISIONS).



SECTION THRU CAP

SCALE: 0' 2'

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BRIDGE NO. 55576

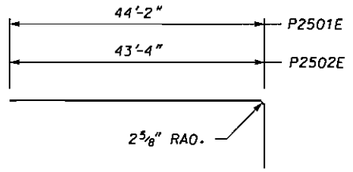
PIER DETAILS

APPROVED:

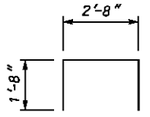
S.A.P. 55-601-14

SHEET B9 OF B30 SHEETS

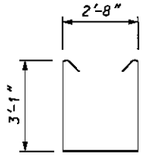
DES.	RAB	DRN.	BDM	55576
CHK.	CGD	CHK.	CGD	



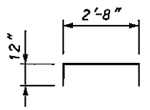
P2501E & P2502E



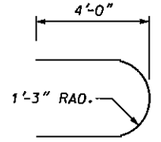
P1608E



P1607E



P1613E



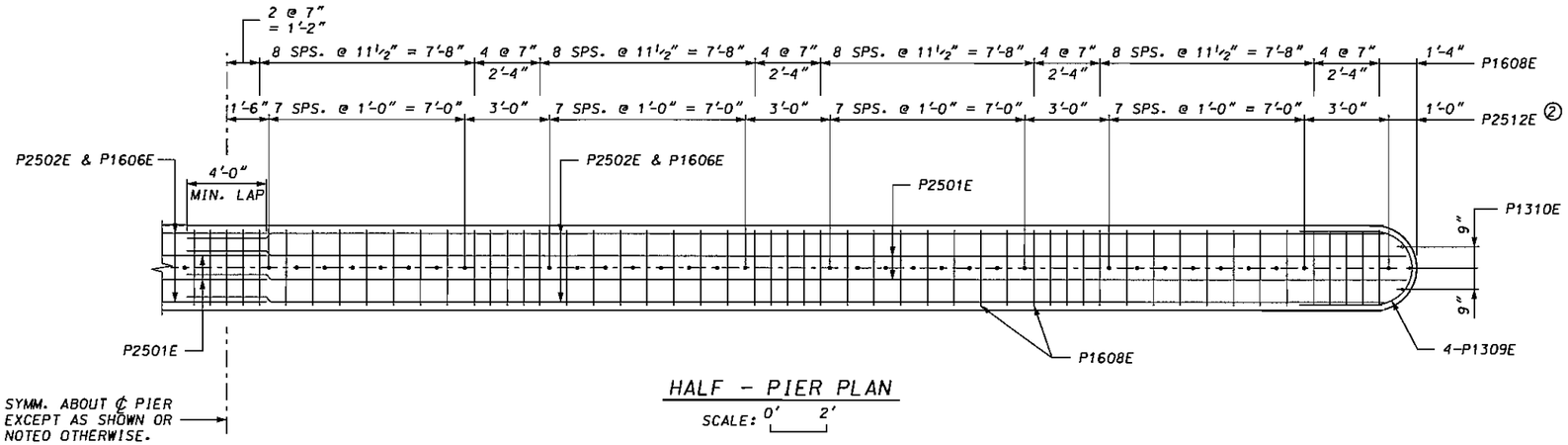
P1309E

BILL OF REINFORCEMENT - 2 PIERS				
BAR	NO.	LENGTH	SHAPE	LOCATION
P2501E	8	45'-4"	BENT	CAP - LONGITUDINAL
P2502E	8	44'-6"	BENT	CAP - LONGITUDINAL
P2503E	24	43'-4"	STRT.	CAP - LONGITUDINAL
P1904E	16	43'-4"	STRT.	CAP - LONGITUDINAL
P2205E	8	44'-0"	STRT.	CAP - LONGITUDINAL
P1606E	16	11'-4"	STRT.	CAP - LONGITUDINAL
P1607E	124	9'-9"	BENT	CAP - STIRRUP
P1608E	202	6'-0"	BENT	CAP - TIE
P1309E	16	9'-6"	BENT	CAP - TIE AT ENDS
P1310E	12	3'-2"	STRT.	CAP - VERT. @ ENDS
P1611E	4	29'-8"	STRT.	CAP - LONGITUDINAL
② P2512E	124	3'-0"	STRT.	CAP - DOWEL
P1613E	94	4'-8"	BENT	CAP - TIE

SUMMARY OF QUANTITIES - 2 PIERS	
STRUCTURAL CONCRETE (3Y43)	73 CU. YD.
REINFORCEMENT BARS, EPOXY COATED	10870 POUND
① STEEL H-PILING DELIVERED, 10x57	900 LIN. FT.
① STEEL H-PILING DRIVEN, 10x57	900 LIN. FT.
STEEL H-TEST PILES, 60' LONG, 10x57	4 EACH
PILE TIP PROTECTION, 10"	22 EACH
16" STEEL PILE SHELLS	330 LIN. FT.

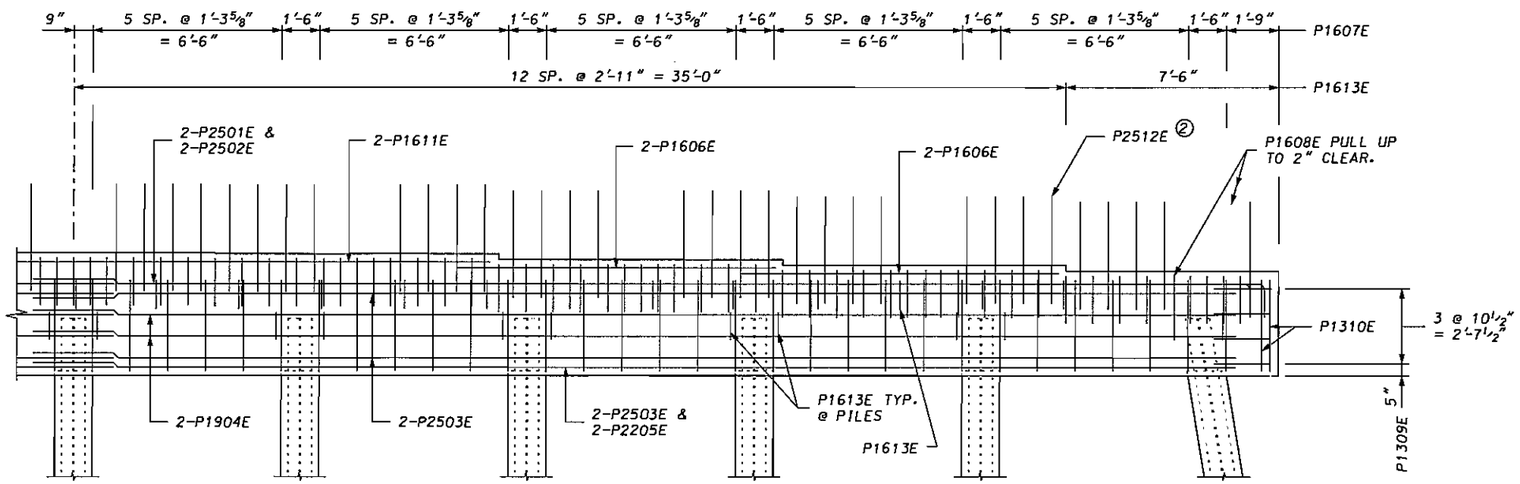
① DOES NOT INCLUDE TEST PILES

② SEE SHEET B16 FOR DETAILS NEAR CONDUIT.



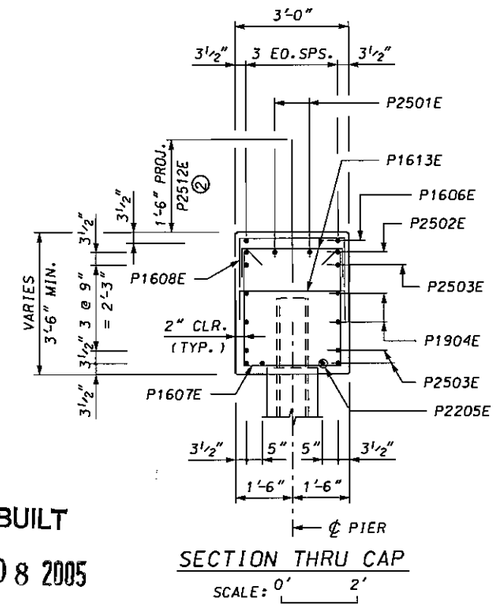
HALF - PIER PLAN

SCALE: 0' 2'



HALF - ELEVATION

SCALE: 0' 2'



SECTION THRU CAP

SCALE: 0' 2'

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PROFESSIONAL ENGINEER/RONALD BENSON

LIC. NO. 22737 4/22/2003

MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55576

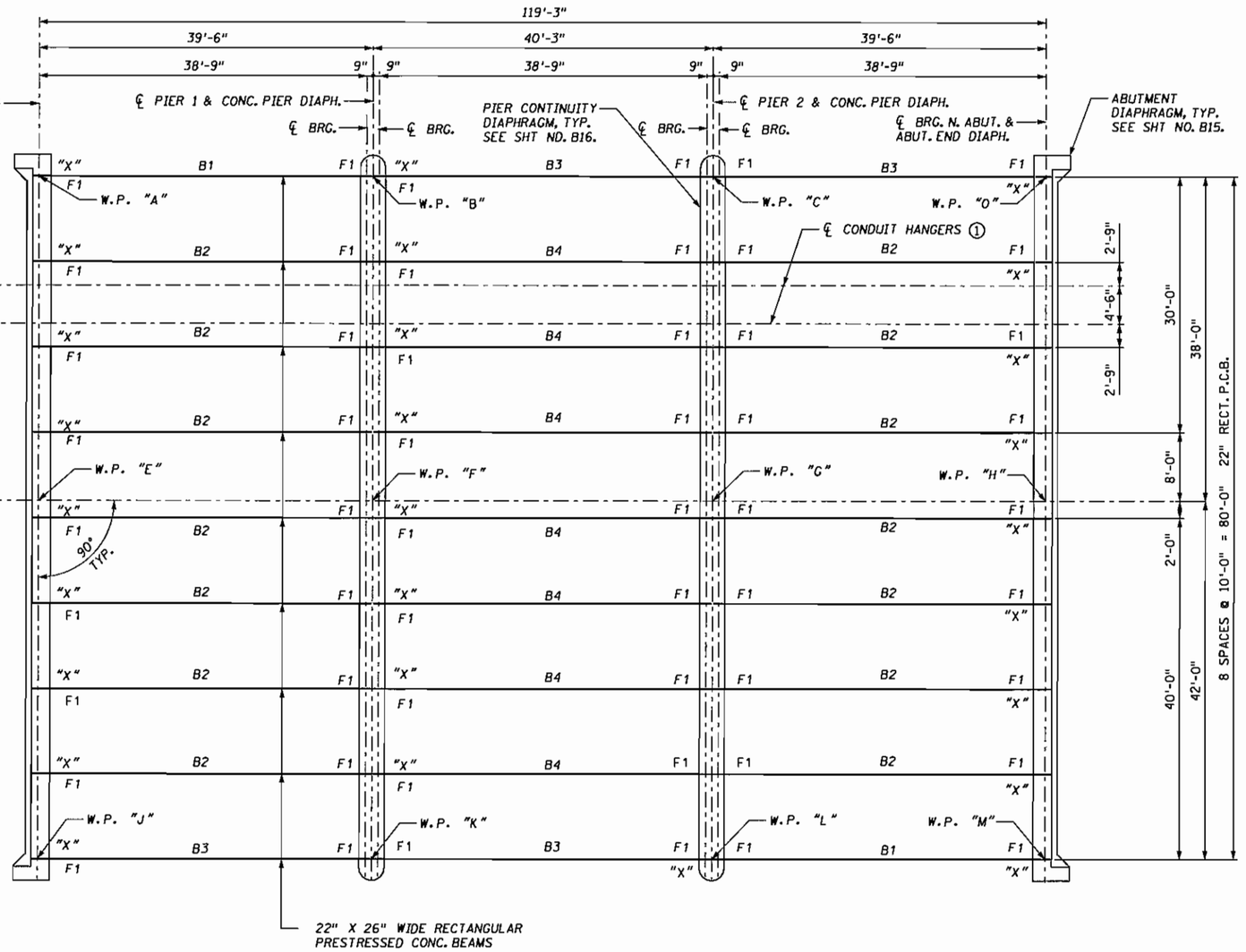
PIER DETAILS

APPROVED:

S.A.P. 55-601-14

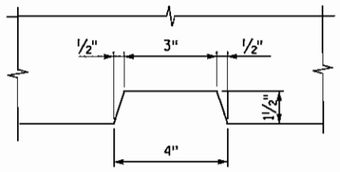
SHEET B10 OF B30 SHEETS

DES.	RAB	DRN.	BDM	55576
CHK.	CGD	CHK.	CGD	

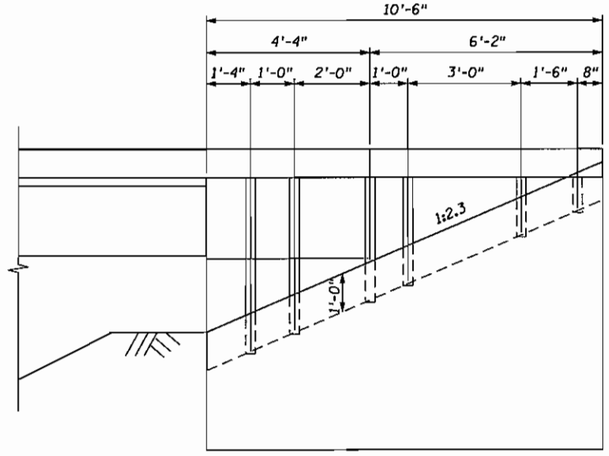


FRAMING PLAN

SCALE 0 2 4 8 12



REVERSE BATTEN RUSTICATION DETAIL



WINGWALL RUSTICATION

SEE REVERSE BATTEN RUSTICATION DETAIL

(1) SEE SHEET B21 FOR CONDUIT DETAILS.

NOTE:

F1 = FIXED BEARING ELASTOMERIC PAD, TYPE 1 SEE DETAIL B310.

"X" DENOTES END OF BEAM.

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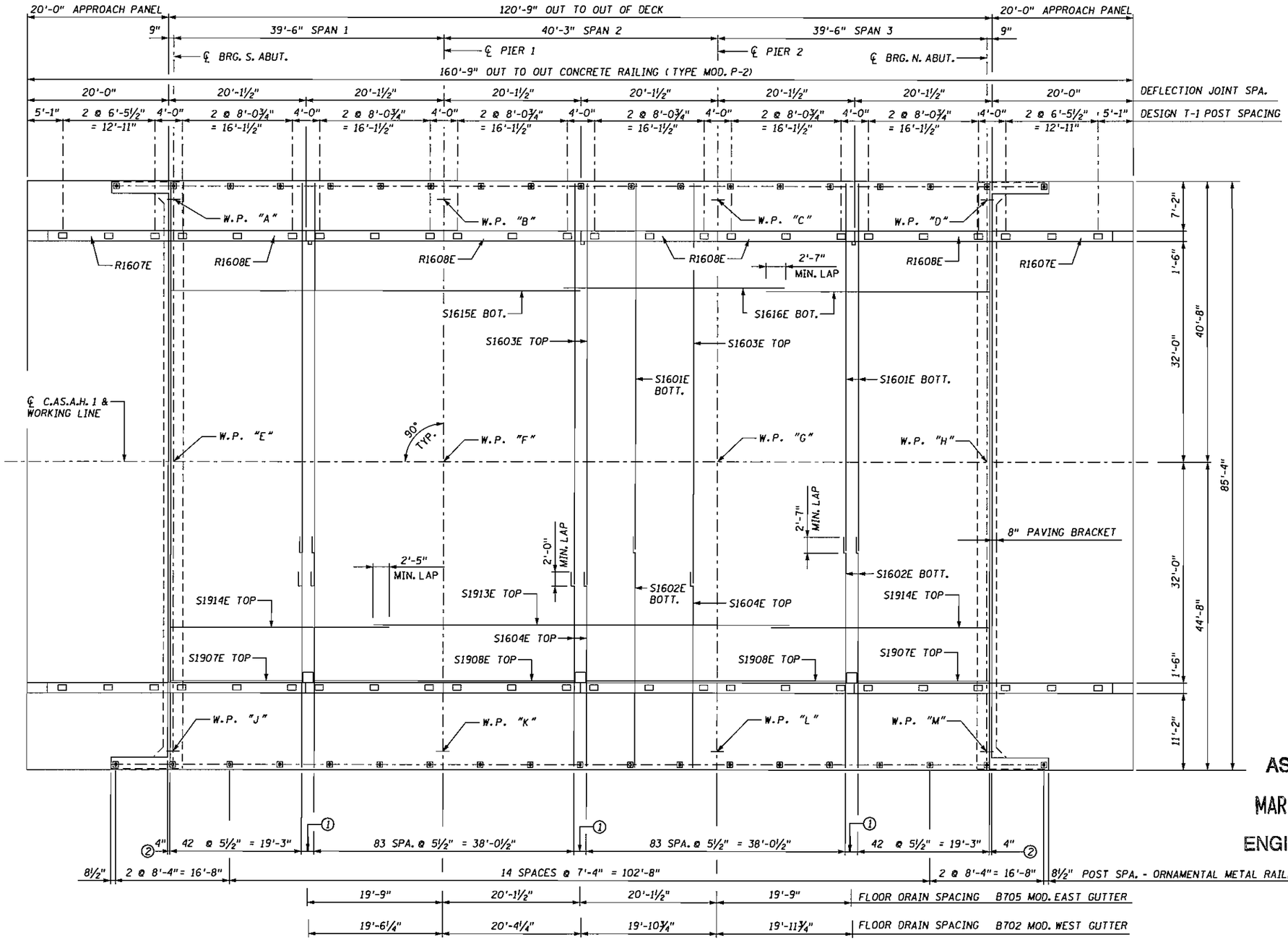
BRIDGE NO. 55576
SUPERSTRUCTURE DETAILS

APPROVED:

S.A.P. 55-601-14

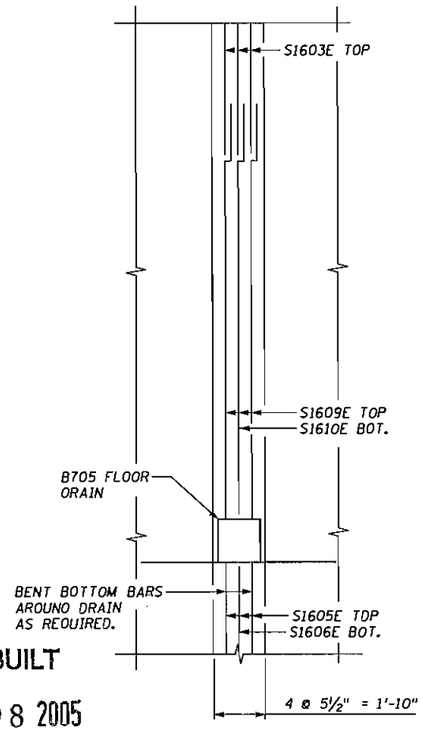
SHEET B11 OF B30 SHEETS

DES.: RAB	DRN.: GRF	55576
CHK.: CGD	CHK.: CGD	



DECK PLAN

SCALE 0 2 4 8 12



DRAIN DETAIL

NO SCALE

① 4 SPACES @ 5½" = 1'-10". SEE "DRAIN DETAIL" THIS SHEET.

② TRANSVERSE REBAR SPACING S1601E, S1602E BOTT. S1603E, S1604E TOP EXCEPT AS NOTED.

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LIC. NO. 22737 4/22/2003

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BRIDGE NO. 55576

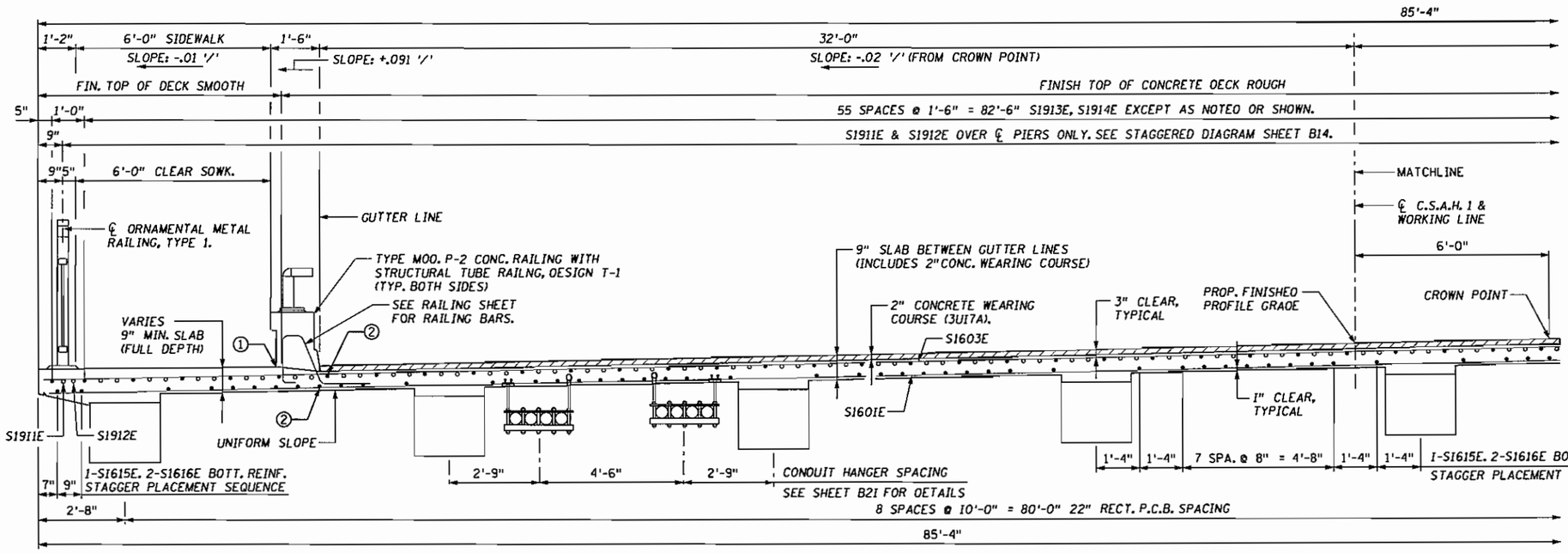
SUPERSTRUCTURE DETAILS

APPROVED:

S.A.P. 55-601-14

SHEET B12 OF B30 SHEETS

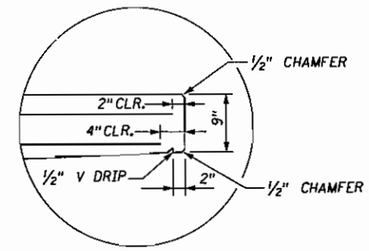
DES.: RAB	DRN.: GRF	55576
CHK.: CGD	CHK.: CGD	



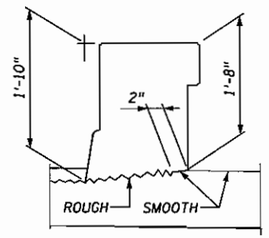
WEST

PART TRANSVERSE SECTION THRU DECK

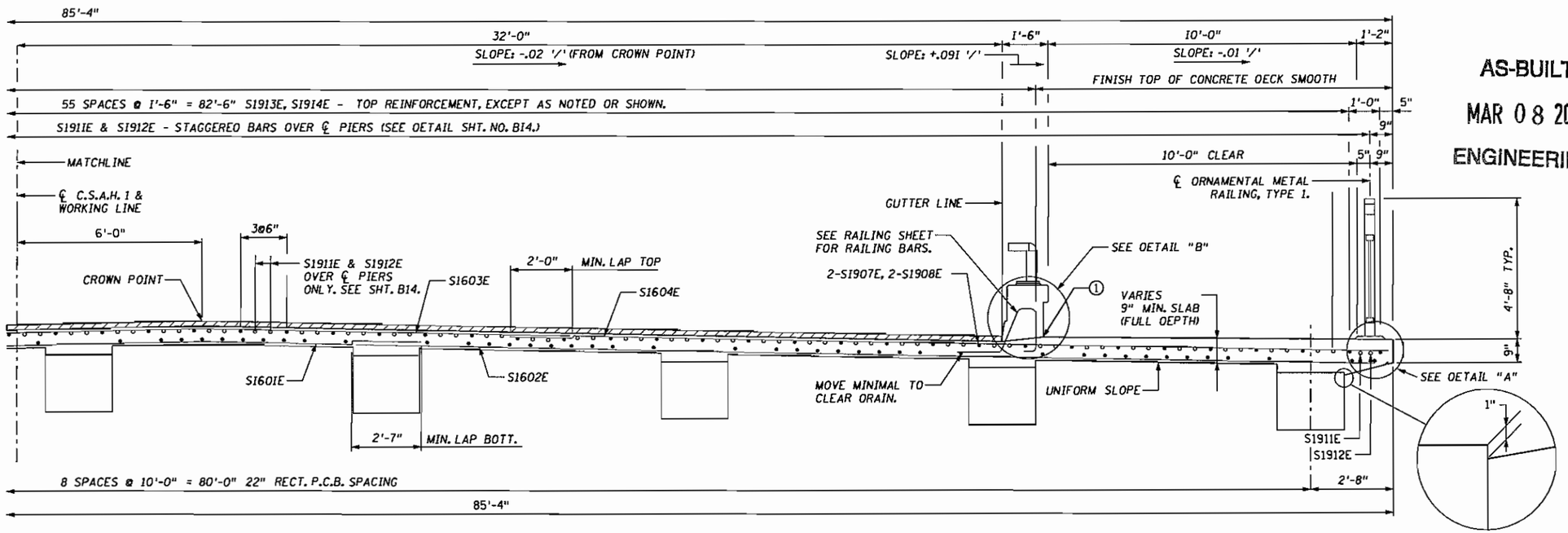
SCALE: 0 1 2



DETAIL "A"



DETAIL "B"



PART TRANSVERSE SECTION THRU DECK

SCALE: 0 1 2

EAST

① TOP OF SLAB ELEVATION AT SIOEWALK FACE OF TRAFFIC RAIL IS OETERMINEO BY EXTENOING -2% ROAO CROSS SLOPE TO THAT POINT.

② MOVE BAR MINIMUM OISTANCE TO CLEAR ORAIN B702.

AS-BUILT

MAR 0 8 2005

ENGINEERING

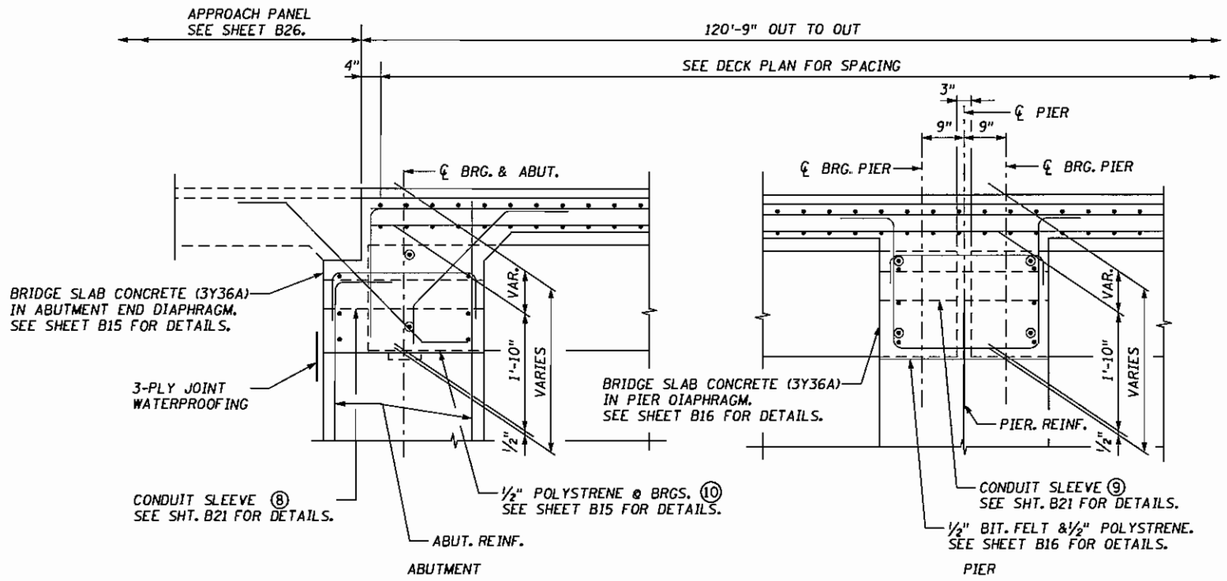
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LIC. NO. 22737 4/22/2003

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BRIDGE NO. 55576
SUPERSTRUCTURE DETAILS

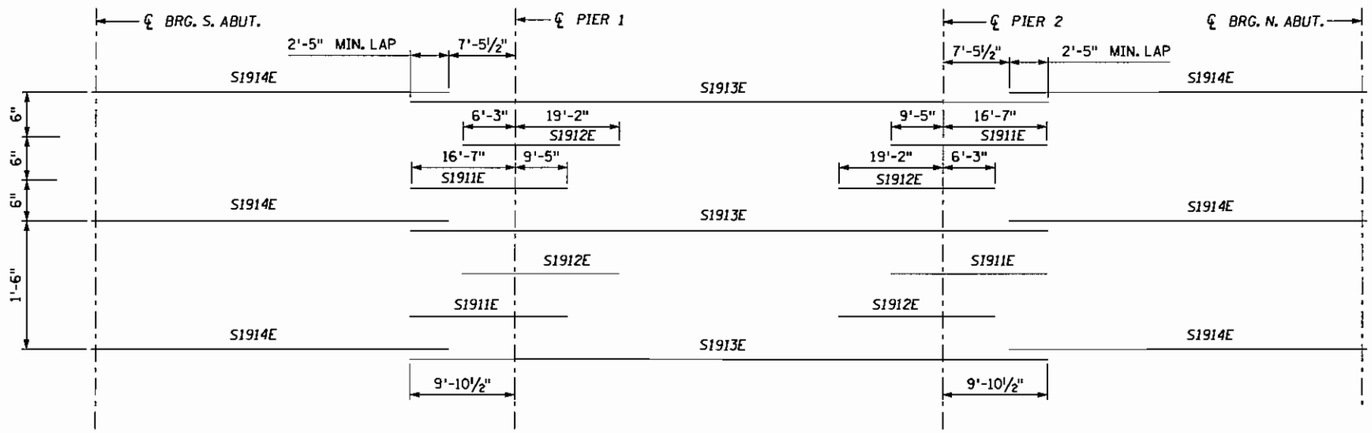
APPROVED:

S.A.P. 55-601-14			
SHEET B13 OF B30 SHEETS			
DES.: RAB	DRN.: GRF	55576	
CHK.: CGD	CHK.: CGD		



PART LONGITUDINAL SECTION THRU DECK

SCALE 0 1 2



TOP LONGITUDINAL REINFORCEMENT

NO SCALE

BILL OF REINFORCEMENT - SUPERSTRUCTURE

BAR	NO.	LENGTH	SHAPE	LOCATION
S1601E	263	53'-9"	STRT.	SLAB - TRANSV. - BOTT.
S1602E	260	33'-9"	STRT.	SLAB - TRANSV. - BOTT.
S1603E	263	58'-6"	STRT.	SLAB - TRANSV. - TOP
S1604E	254	28'-6"	STRT.	SLAB - TRANSV. - TOP
S1605E	9	12'-2"	STRT.	SLAB - TRANSV. - TOP @ DRAIN
S1606E	3	12'-0"	STRT.	SLAB - TRANSV. - BOTT. @ DRAIN
S1907E	2	19'-2"	STRT.	SLAB LONGIT. - TOP @ DRAIN
S1908E	2	38'-0"	STRT.	SLAB LONGIT. - TOP @ DRAIN
S1609E	9	14'-4"	STRT.	SLAB - TRANSV. - TOP @ DRAIN
S1610E	3	19'-7"	STRT.	SLAB - TRANSV. - BOTT. @ DRAIN
S1911E	114	26'-0"	STRT.	SLAB LONGIT. - OVER ℄ PIERS
S1912E	114	25'-5"	STRT.	SLAB LONGIT. - OVER ℄ PIERS
S1913E	57	60'-0"	STRT.	SLAB LONGIT. - TOP
S1914E	114	32'-8"	STRT.	SLAB LONGIT. - TOP
S1615E	84	60'-0"	STRT.	SLAB LONGIT. - BOTT.
S1616E	168	32'-10"	STRT.	SLAB LONGIT. - BOTT.

① SUMMARY OF QUANTITIES - SUPERSTRUCTURE

②	BRIDGE SLAB CONCRETE (3Y36A)	10318 SQ. FT.
⑫	CONCRETE WEARING COURSE (3U17A)	10288 SQ. FT.
③	TYPE MOD. P-2 RAILING CONCRETE (3Y46A)	322 LIN. FT.
	ORNAMENTAL METAL RAILING, TYPE 1	272 LIN. FT.
	STRUCTURAL TUBE RAILING, DESIGN T-1	310 LIN. FT.
	REINFORCEMENT BARS (EPOXY COATED)	90460 POUND
④	RECT. PRESTRESSED CONCRETE BEAMS 22-40	27 EACH
	RECT. PRESTRESSED CONCRETE BEAMS 22"	1080 LIN. FT.
	ELASTOMERIC BEARING PAD, TYPE 1	54 EACH
⑥	BRIDGE NAMEPLATE (DETAIL B101)	1 EACH
⑥	3-PLY JOINT WATERPROOFING	170 LIN. FT.
⑤⑥	PREFORMED JOINT FILLER (SEE LIST)	
	FLOOR DRAIN TYPE B7D2 (MODIFIED)	3 EACH
	FLOOR DRAIN TYPE B705 (MODIFIED)	3 EACH
⑦	CONDUIT SYSTEM (TELEPHONE)	1 LUMP SUM

① INCLUDES RAILING, DIAPHRAGM, AND DECK QUANTITIES.

② BRIDGE SLAB CONCRETE (3Y36A) VOLUME IS APPROXIMATELY 307 CU. YD. (INCLUDES 54 CU.YD. FOR PIER CONT. DIAPH. & ABUTMENT DIAPHRAGM) USING AN AVERAGE STOOL HEIGHT OF 2¾" INCHES.

③ TYPE MOD. P-2 RAILING CONCRETE (3Y46A) VOLUME IS APPROXIMATELY 28 CU. YDS.

④ PAYMENT FOR BEAMS INCLUDED IN ITEM "RECT. PRESTRESSED CONCRETE BEAMS 22" PER LIN. FT.

⑤ SEE SPECIAL PROVISIONS

⑥ INCLUDED IN PRICE BID FOR OTHER ITEMS.

⑦ SEE SHEET B21 FOR SUMMARY OF QUANTITIES FOR "CONDUIT SYSTEM (TELEPHONE)".

⑧ CONDUIT SLEEVES AT ABUTMENTS SHALL BE COMPLETELY FILLED WITH GROUT AFTER CONDUIT HAS BEEN INSTALLED.

⑨ NO GROUT AT PIER DIAPHRAGM SLEEVES.

⑫ INCLUDES APPROACH PANEL.

AS-BUILT

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ENGINEERING

⑩ PLACE POLYSTYRENE AROUND ABUTMENT BEARING PAD AND UNDER BEAM AS FOLLOWS:

½" X 1" X 1'-0" - SIDES OF BEARING PADS.
½" X 2" X 2'-2" - BEHIND BARING PADS.
½" X 11" X 2'-2" - FRONT OF BEARING PAD TO FRONT FACE OF ABUTMENT.

LIST OF PREFORMED JOINT FILLERS

	TYPE	LENGTH	SIZE	LOCATION
	CORK	17'	1"X14"	RAIL DEFLECTION JOINT
	BIT. FELT.	270'	½"X12"	PIER
⑪	POLYSTYRENE	170	½"X12"	PIER
	POLYSTYRENE	36'	½"X 1"	ABUTMENT AT BRG.
	POLYSTYRENE	39'	½"X 2"	ABUTMENT AT BRG.
	POLYSTYRENE	17'	½"X 11"	ABUTMENT AT BRG.

⑪ CUT IN 3 STRIPS TO FIT, AS NEEDED. (SEE DETAILS, SHT B16).

CERTIFIED BY Ronald Benson
PROFESSIONAL ENGINEER - RONALD BENSON
LIC. NO. 22737 4/22/2003

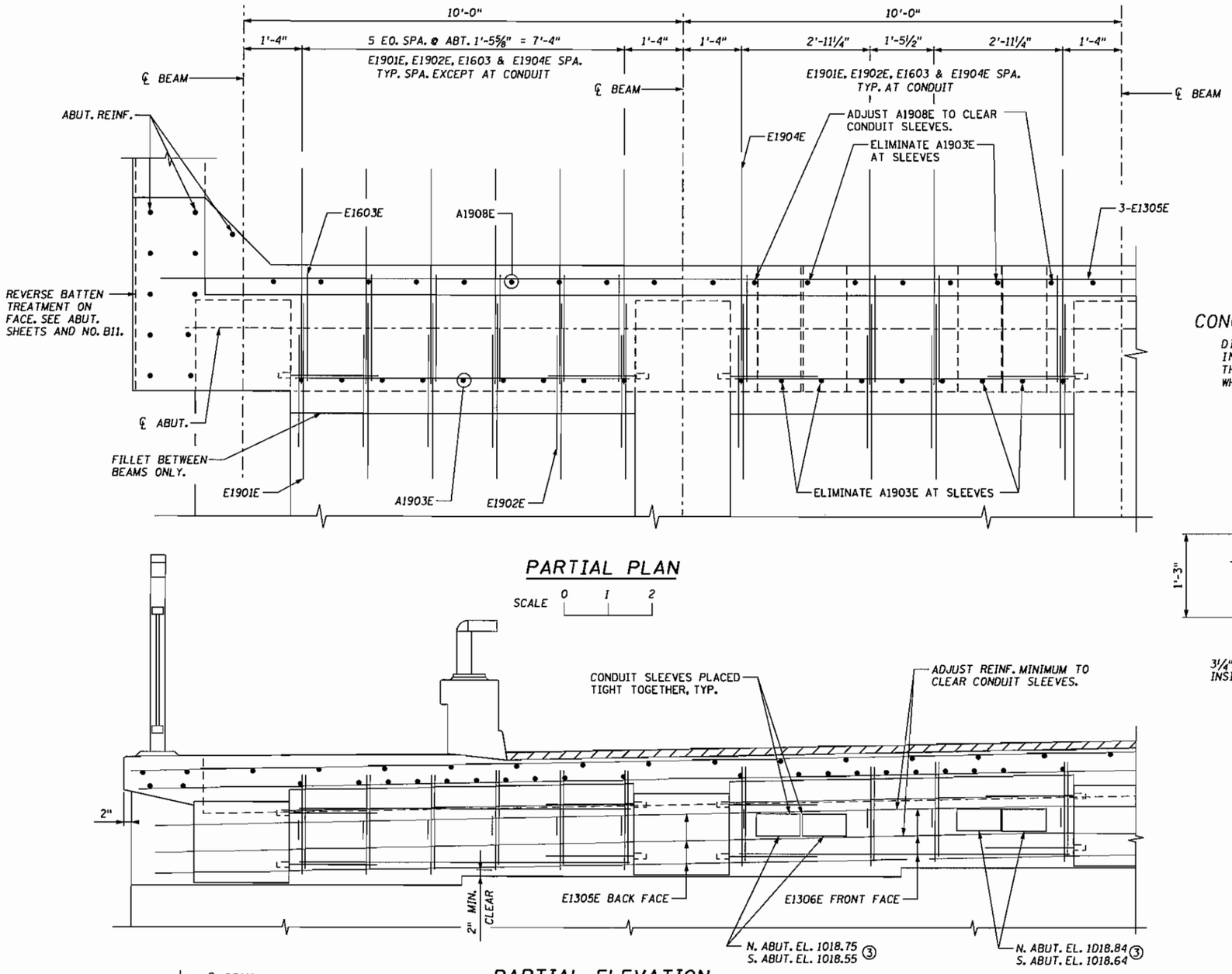
MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55576
SUPERSTRUCTURE DETAILS

APPROVED:

S.A.P. 55-601-14
SHEET B14 OF B30 SHEETS

DES.: RAB	DRN.: GRF	55576	
CHK.: CGD	CHK.: CGD		

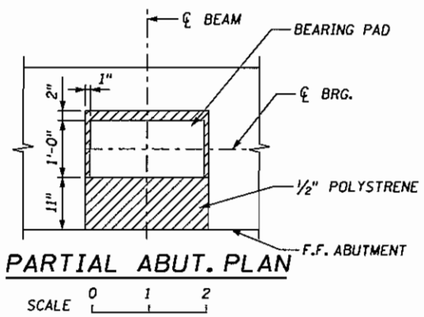


PARTIAL PLAN

SCALE 0 1 2

PARTIAL ELEVATION

SCALE 0 1 2



PARTIAL ABUT. PLAN

SCALE 0 1 2

BILL OF REINFORCEMENT FOR 2 ABUTMENT DIAPHRAGMS

	BAR	NO.	LENGTH	SHAPE	LOCATION
①	E1901E	92	4'-3"	BENT	END VERTICAL
	E1902E	92	3'-10"	BENT	FILLET
	E1603E	92	4'-6"	BENT	TIE
	E19D4E	92	4'-11"	BENT	APPROACH ANCHORAGE
②	E1305E	18	29'-3"	STRT.	HORIZ.
	E1306E	48	7'-6"	STRT.	HORIZ.

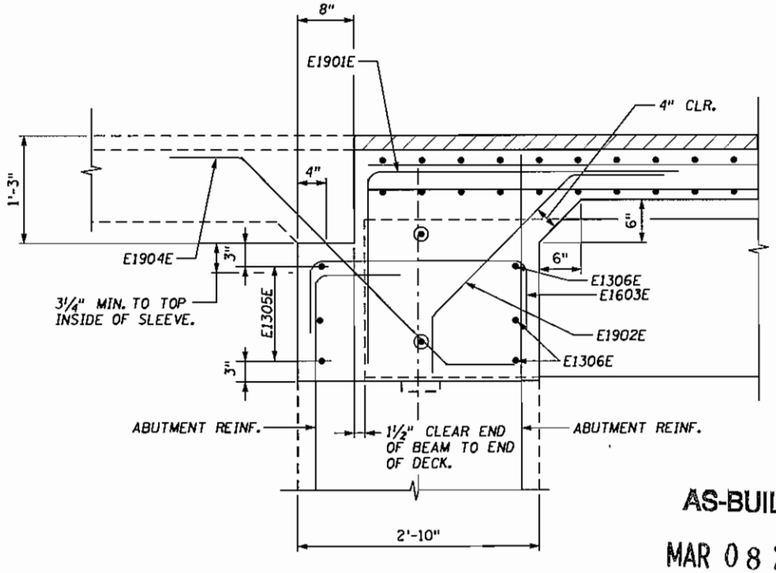
① ABUTMENT DIAPHRAGM E1901E, SHALL BE PULLED UP TIGHT TO TOP TRANSVERSE DECK REINFORCEMENT.

② 3 BARS PER LINE- 1'-7" MIN. LAP.

③ ELEVATION SHOWN IS THE TOP, INSIDE OF BOTTOM WALL OF TUBE.

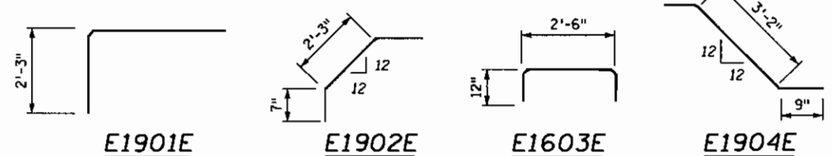
CONCRETE PLACEMENT:

DIAPHRAGM AT THE ABUTMENT SHALL BE PLACED INTEGRALLY WITH DECK.
THE CONTRACTOR SHALL PLACE CONCRETE FOR THE DECK WHILE THE DIAPHRAGM CONCRETE IS STILL PLASTIC.



TYPICAL SECTION

SCALE 0 1 2



AS-BUILT
MAR 0 8 2005
ENGINEERING

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LIC. NO. 22737 4/22/ 2003

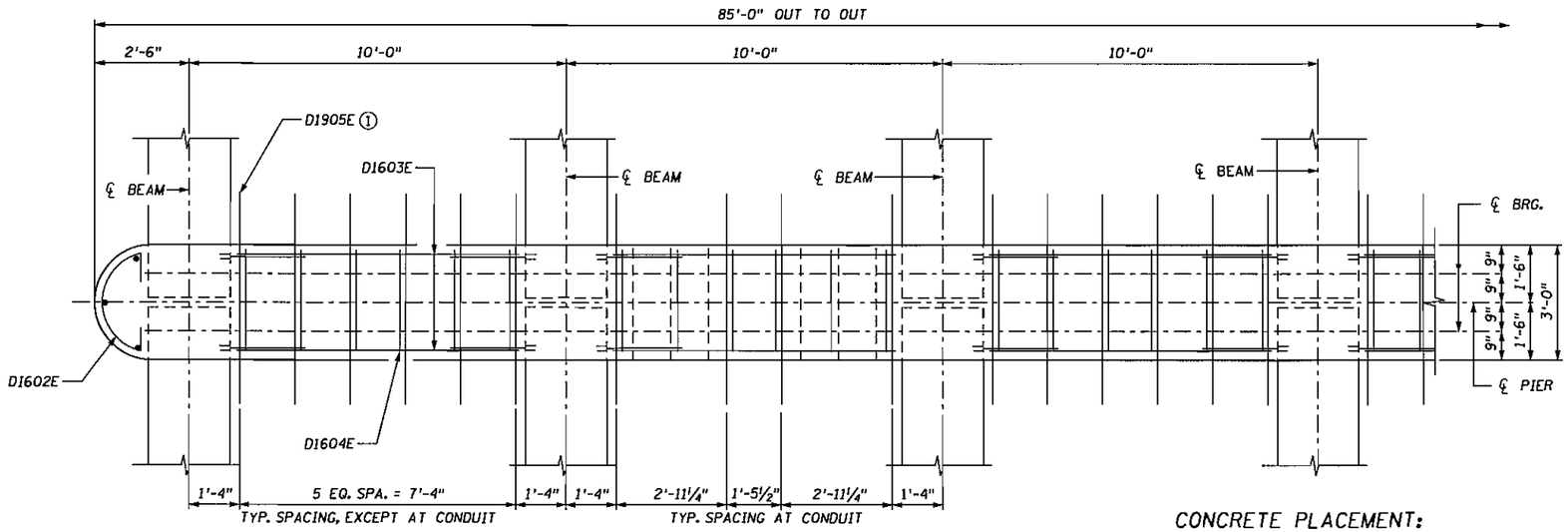
MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55576
ABUTMENT DIAPHRAGM

APPROVED:

S.A.P. 55-601-14
SHEET B15 OF B30 SHEETS

DES.: RAB	DRN.: GRF		55576
CHK.: CGD	CHK.: CGD		



PARTIAL PLAN

SCALE 0 1 2 3

BILL OF REINFORCEMENT FOR 2 PIER CONTINUITY DIAPHRAGMS

	BAR	NO.	LENGTH	SHAPE	LOCATION
	D1601E	12	3'-1"	BENT	END VERTICAL
	D1602E	12	4'-1"	BENT	END HORIZ.
	D1603E	96	7'-6"	STRT.	HORIZONTAL
	D1604E	100	4'-4"	BENT	TIE
①	D1905E	92	9'-2"	BENT	STIRRUP

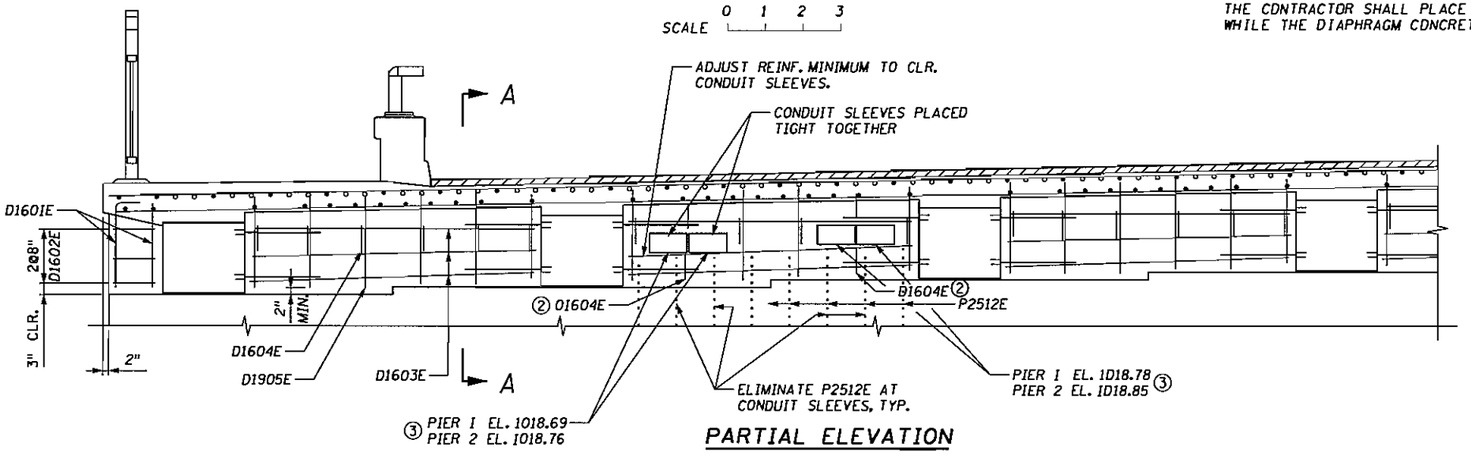
① CONTINUITY DIAPHRAGM STIRRUP, D1905E, SHALL BE PULLED UP TIGHT TO TOP TRANSVERSE DECK REINFORCEMENT, AND 2" MINIMUM CLEARANCE SHALL BE MAINTAINED AT THE BOTTOM AND SIDES OF THE DIAPHRAGM.

② D1604E PLACE INVERTED.

③ ELEVATION SHOWN IS THE TOP, INSIDE OF BOTTOM WALL OF TUBE.

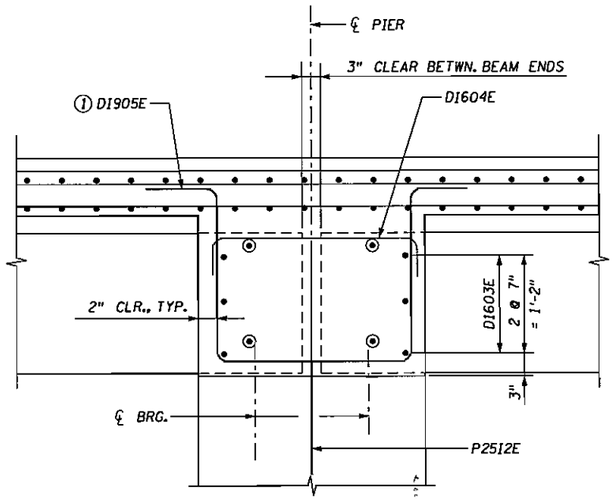
CONCRETE PLACEMENT:

DIAPHRAGM AT THE PIER SHALL BE PLACED INTEGRALLY WITH DECK.
THE CONTRACTOR SHALL PLACE CONCRETE FOR THE DECK WHILE THE DIAPHRAGM CONCRETE IS STILL PLASTIC.



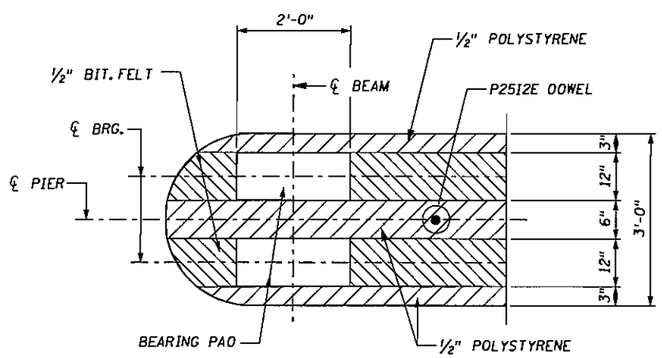
PARTIAL ELEVATION

SCALE 0 1 2 3



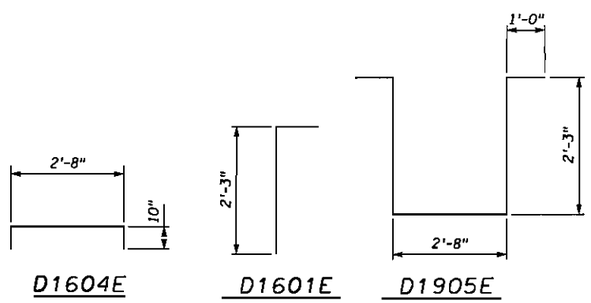
SECTION A-A

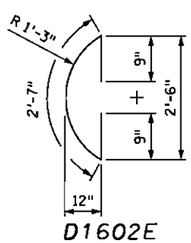
SCALE 0 1 2



PARTIAL PIER CAP PLAN

SCALE 0 1 2





AS-BUILT

MAR 0 8 2005

ENGINEERING

CERTIFIED BY Ronald Benson
PROFESSIONAL ENGINEER - RONALD BENSON
LIC. NO. 22737 4/23/2003

MINNESOTA DEPARTMENT OF TRANSPORTATION

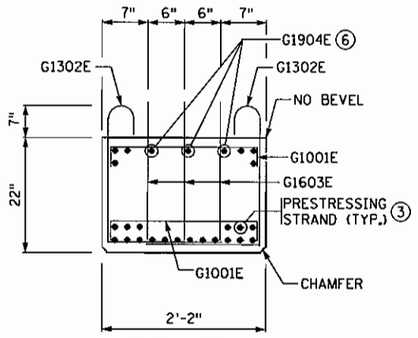
BRIDGE NO. 55576
PIER CONTINUITY DIAPHRAGM

APPROVED:

S.A.P. 55-601-14

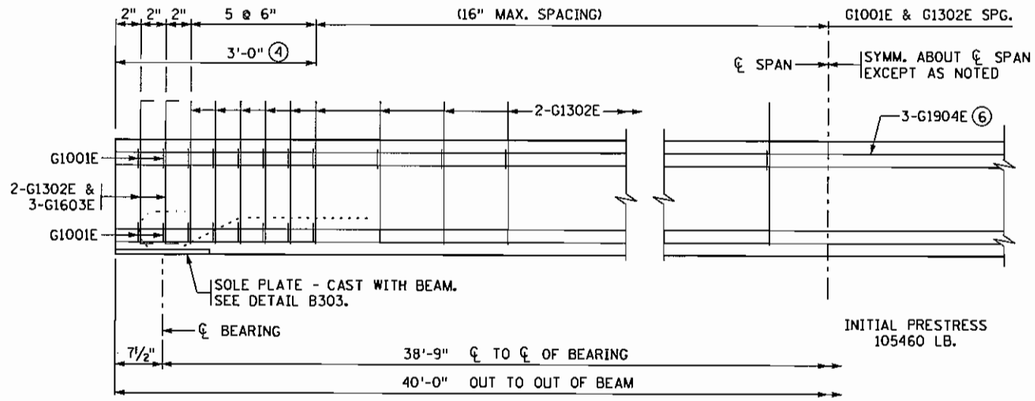
SHEET B16 OF B30 SHEETS

DES.: RAB	DRN.: GRF	55576
CHK.: CGD	CHK.: CGD	

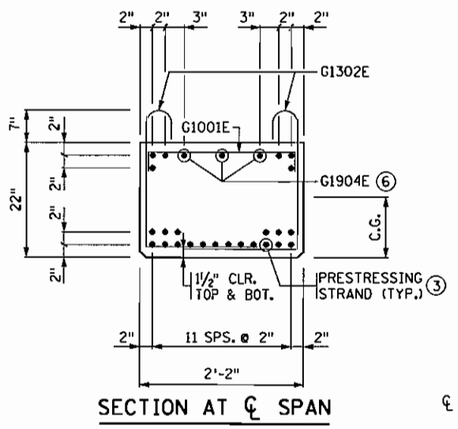


END VIEW

CUT STRANDS FLUSH WITH CONCRETE. PAINT ENDS WITH AN APPROVED GRAY EPOXY EXCEPT AS NOTED.



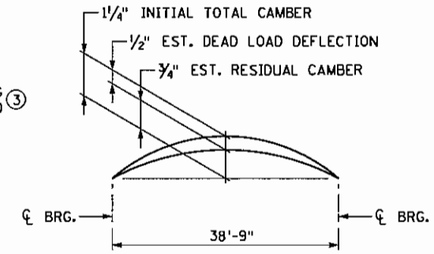
BEAM ELEVATION



SECTION AT ℄ SPAN

STRAND ARRANGEMENT (IN INCHES)	
NO.	C.G.
24	6.83

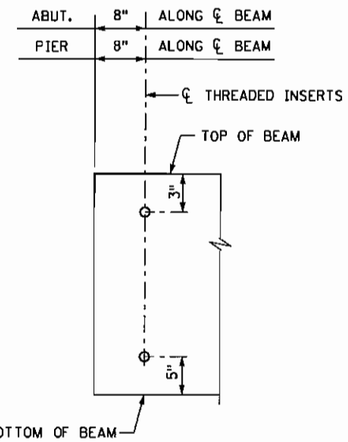
NOTE: C.G. = DISTANCE TO CENTER OF GRAVITY OF STRANDS FROM BOTTOM OF BEAM. ALL STRANDS SPACED 2" CENTER TO CENTER HORIZONTALLY AND VERTICALLY EXCEPT AS NOTED.



CAMBER DIAGRAM

DEAD LOAD DEFLECTION SHOWN IS FOR WEIGHT OF SLAB, WEARING COURSE, RAILING, SIDEWALK AND MEDIAN WHERE APPLICABLE.

ENGINEER WILL TAKE ELEVATIONS AT TOP OF BEAMS AFTER ERECTION AND WILL ALLOW FOR DEFLECTION SHOWN TO ENABLE CONTRACTOR TO BUILD FORMS TO CORRECT GRADE AND SPECIFIED SLAB THICKNESS.



CONCRETE END DIAPHRAGM

PILE BENT ABUTMENT AND PIER

CONTRACTOR SHALL PROVIDE TEMPORARY BRACING AS REQUIRED

AS-BUILT

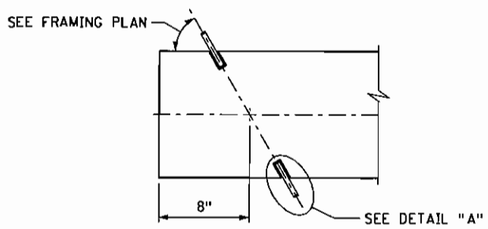
MAR 0 8 2005

ENGINEERING

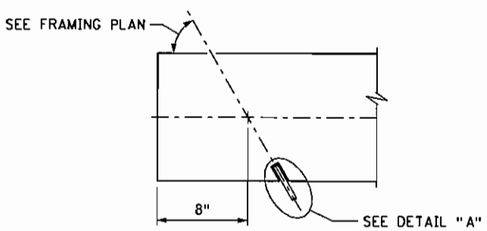
SECTION HEIGHT "h"		
14" ☐	18" ☐	22" ☒

MINIMUM CONCRETE STRENGTH - P.S.I.		
	① f'c	② f'c
REQUIRED MIN. CONCRETE STRENGTH	6500	7500

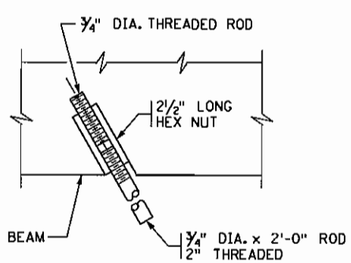
PRESTRESSING STRAND DIAMETER
0.50" ☐
③ 0.60" ☒



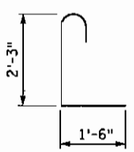
PLAN AT INTERIOR BEAMS



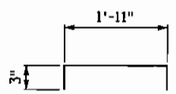
PLAN AT FASCIA BEAMS



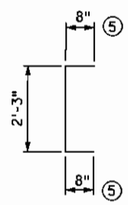
DETAIL "A"



G1302E



G1001E



G1603E

GENERAL NOTES

TOPS OF BEAMS SHALL BE ROUGH FLOATED AND BROOMED TRANSVERSELY FOR BOND.

PROVIDE HANDLING HOOKS OR DEVICES AS REQUIRED BY CONTRACTOR.

EACH BEAM SHALL BE MARKED, SHOWING BRIDGE NUMBER, CASTING DATE, AND INDIVIDUAL IDENTIFICATION LETTERS AND NUMBERS. MARKINGS SHALL BE MADE ON THE FACE OF THE BEAM, NEAR THE END, SO LOCATED THAT THEY WILL BE EXPOSED AFTER THE END DIAPHRAGMS HAVE BEEN CAST. FASCIA BEAMS SHALL BE MARKED ON THE INSIDE FACE. ALL MARKINGS SHALL BE STENCILLED AND BE CLEARLY LEGIBLE. FOR LOCATION OF BEAMS SEE FRAMING PLAN.

ALL MATERIAL AND WORK SHOWN OR NOTED ON THIS SHEET SHALL BE INCLUDED IN UNIT PRICE BID FOR PRESTRESSEO CONCRETE BEAMS. SEE Mn/DOT SPEC. 2405.

SEE FRAMING PLAN FOR BEAM END MARKED "X".

APPROXIMATE WEIGHT OF BEAM IS 12.3 TONS.

AS AN ALTERNATE TO THE DIAPHRAGM ANCHORAGES SHOWN, THE CONTRACTOR MAY SUBMIT DETAILS OF A CAST-IN-PLACE ANCHORAGE TO THE ENGINEER FOR APPROVAL. ANCHORAGE MUST PROVIDE AN ULTIMATE PULL OUT STRENGTH OF 15 KIPS PER ANCHORAGE.

① MINIMUM CONCRETE STRENGTH AT TIME OF PRESTRESS TRANSFER.

② MINIMUM CONCRETE STRENGTH WHEN BEAM CAN BE TRANSPORTED AND INSTALLED.

③ PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION STRAND, CONFORMING TO ASTM A416, GRADE 270.

④ G1001E IN LOWER PART OF BEAM REQUIRED IN THIS LENGTH ONLY.

⑤ IF SPACING IS LESS THAN THE DIMENSION SHOWN, STAGGER BARS TO AVOID INTERFERENCE.

⑥ G1904E STOPS 2" FROM END OF BEAM. 3'-6" PERMISSIBLE LAP AT CENTER OF BEAM.

REVISION: 08-21-02

STATE BRIDGE ENGINEER

S.A.P. 55-601-14 BEAMS B1, B2, B3, B4 FIG. 5-397.550

CERTIFIED BY Ronald Benson PROFESSIONAL ENGINEER - RONALD BENSON

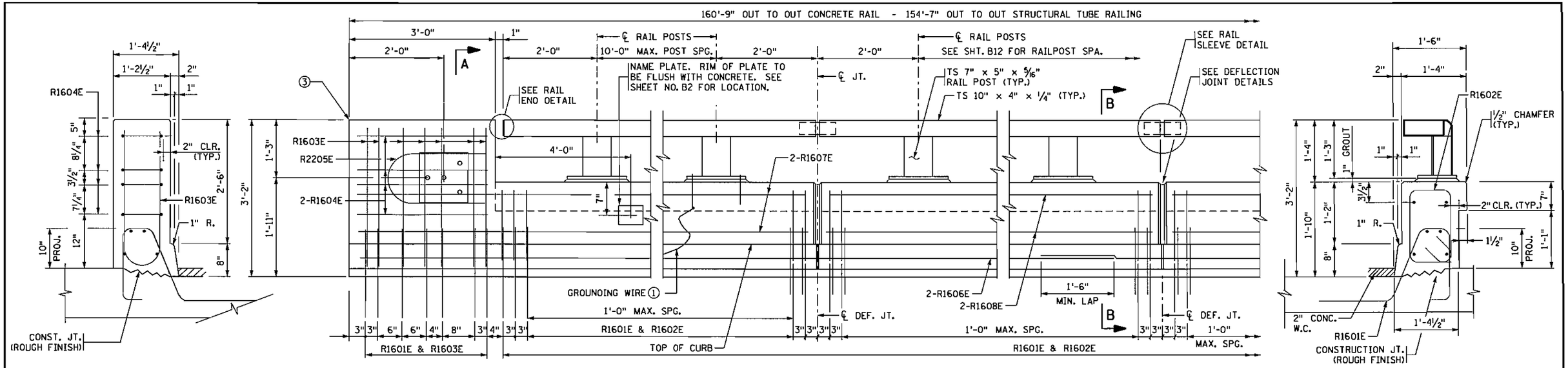
LIC. NO. 22737 4/22/2003

TITLE: RECTANGULAR PRESTRESSED CONCRETE BEAM (PRETENSIONED) TYPE 22-40

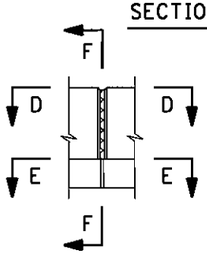
DES: RAB	DR: GRF	APPROVED:
CHK: CGD	CHK: CGD	

SHEET NO. B17 OF B30 SHEETS

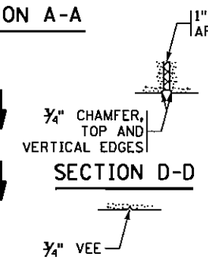
BRIDGE NO. 55576



SECTION A-A

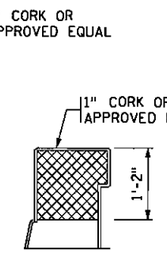


ELEVATION



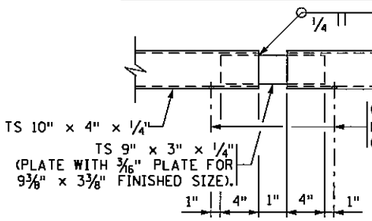
SECTION D-D

SECTION E-E

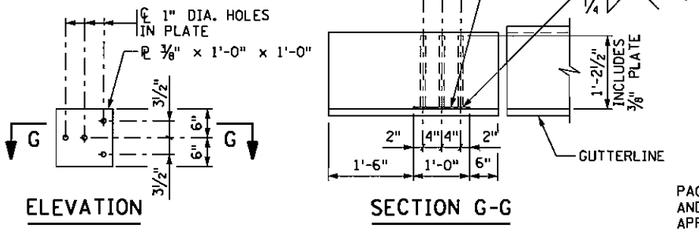


SECTION F-F

DEFLECTION JOINT DETAILS



RAIL SLEEVE DETAIL

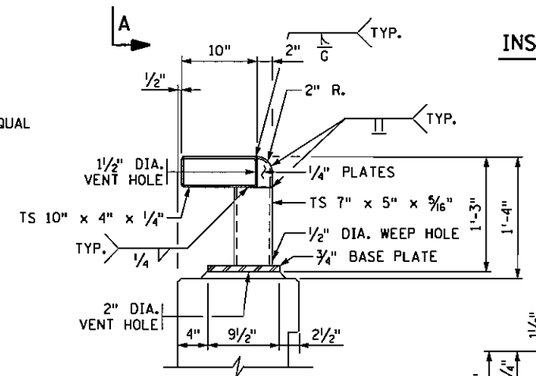


ELEVATION

SECTION G-G

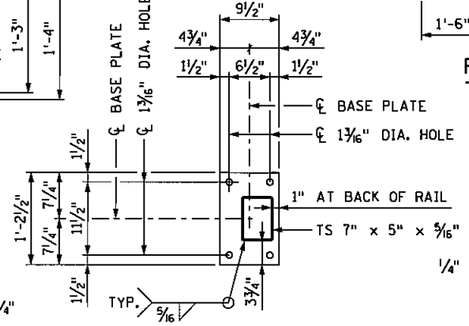
GUARDRAIL CONNECTION DETAIL

GALVANIZE PER SPEC. 3394 AFTER FABRICATION
ESTIMATED WEIGHT = 23 LBS.

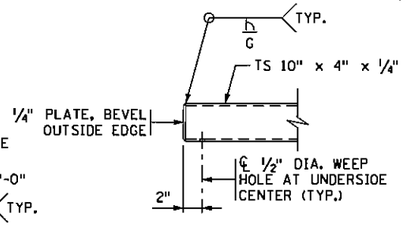


STRUCTURAL TUBE RAIL DETAIL

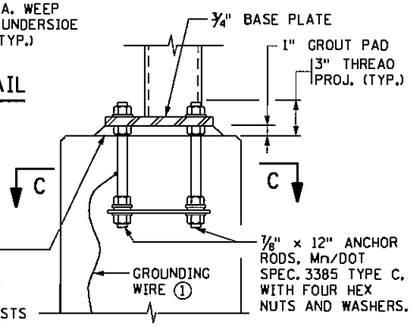
INSIDE ELEVATION OF RAILING



BASE PLATE

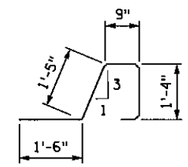


RAIL END DETAIL

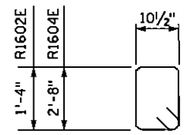


PACK SPACE BETWEEN BASE PLATE AND TOP OF CONCRETE RAIL WITH APPROVED EPOXY OR LATEX MODIFIED MORTAR AFTER ANCHORAGE NUTS HAVE BEEN ADJUSTED TO SET RAILPOSTS NORMAL TO GRADE, ALIGN RAILING, AND ARE TIGHTENED IN FINAL POSTION.

ANCHOR DETAIL

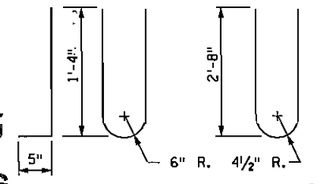


R1601E



R1602E, R1604E

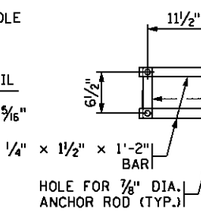
DEFLECTION JOINT



R2205E

R1603E ③

SECTION B-B



SECTION C-C

BILL OF REINFORCEMENT FOR PARAPET

BAR	NO.	LENGTH	SHAPE	LOCATION
R1601E	384	5'-6"	BENT	PARAPET DOWEL
R1602E	356	5'-4"	BENT	PARAPET VERTICAL
R1603E	28	5'-7"	BENT	END POST VERTICAL
R1604E	16	8'-0"	BENT	END POST - TIE
R2205E	4	4'-1"	BENT	PARAPET END POST
② R1606E	20	33'-4"	STRT.	PARAPET LONGITUDINAL
R1607E	16	19'-7"	STRT.	PARAPET LONGITUDINAL
R1608E	48	19'-8"	STRT.	PARAPET LONGITUDINAL

② 5 BARS PER LINE WITH 1'-6" MIN. LAP.

③ DETAIL MODIFIED

GENERAL NOTES

LENGTH OF "TYPE MOD. P-2 RAILING CONCRETE (3Y46A)" FOR PAYMENT SHALL BE MEASURED BETWEEN THE OUTSIDE FACES OF THE CONCRETE PARAPET.

LENGTH OF "STRUCTURAL TUBE RAILING, DESIGN T-1" FOR PAYMENT SHALL BE MEASURED FROM END TO END OF TUBING WITH NO DEDUCTION FOR JOINTS.

CONCRETE PARAPET = 349 LBS./FT. (0.084 CU. YDS./FT.)

FINISH ALL EDGES OF RAIL WITH 1/2" VEE, EXCEPT WHERE OTHERWISE NOTED.

SEE SUPERSTRUCTURE SHEET FOR JOINT SPACING.

ANCHORAGES SHALL BE ACCURATELY PLACED AND SUPPORTED TO PROVIDE CORRECT ALIGNMENT OF RAILING NORMAL TO GRADE.

FABRICATOR OF METAL RAIL SHALL VERIFY INPLACE ANCHOR BOLT LOCATIONS PRIOR TO FABRICATION OF RAIL.

STRUCTURAL STEEL PER Mn/DOT SPEC. 3309. STRUCTURAL TUBES ARE A.S.T.M. A500, GRADE B PER Mn/DOT SPEC. 3361.

GALVANIZE BOLTS, NUTS, AND WASHERS PER Mn/DOT SPEC. 3392.

GALVANIZE ALL OTHER STRUCTURAL STEEL PER Mn/DOT SPEC. 3394 AFTER FABRICATION.

GUARDRAIL CONNECTION TO BE STRUCTURAL STEEL, Mn/DOT SPEC. 3306.

GUARDRAIL CONNECTION TO BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS.

PRICE BID FOR "STRUCTURAL TUBE RAILING, DESIGN T-1" INCLUDES ANCHORAGES AND ALL MATERIAL ABOVE TOP OF CONCRETE PARAPET.

ALL MATERIAL IN THE CONCRETE PARAPET IS INCLUDED IN SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE.

SEE SPECIAL PROVISIONS FOR PAINT REQUIREMENTS.

① ATTACH RAIL ANCHORAGES TO PILE WITH A SOLID NO. 6 GAGE COPPER WIRE WITH AN APPROVED TYPE CLAMP OR BRAZING. (ONE ANCHORAGE PER END OF RAIL).

AS-BUILT
MAR 08 2005
ENGINEERING

REVISION: 11-08-00

APPROVED:

STATE BRIDGE ENGINEER

CERTIFIED BY Ronald Benson
PROFESSIONAL ENGINEER / RONALD BENSON
LIC. NO. 22737 4/22/2003

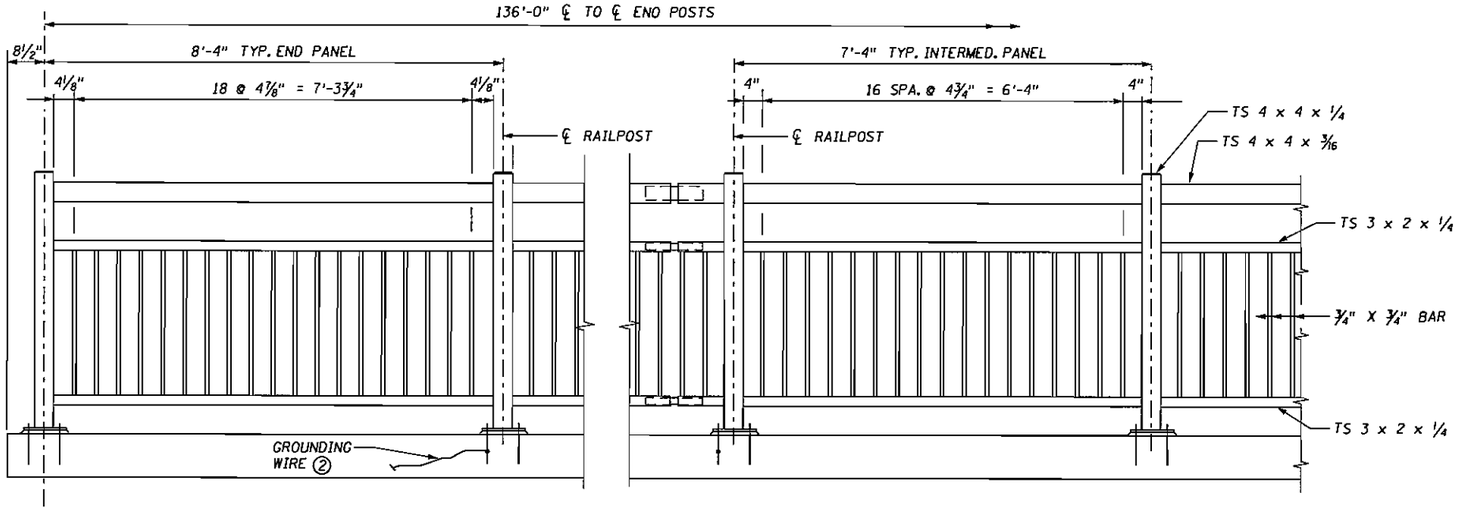
TITLE: STRUCTURAL TUBE RAILING (DESIGN T-1) AND CONCRETE PARAPET (TYPE P-2) (WITH SEPARATE END POST)

S.A.P. 55-601-14

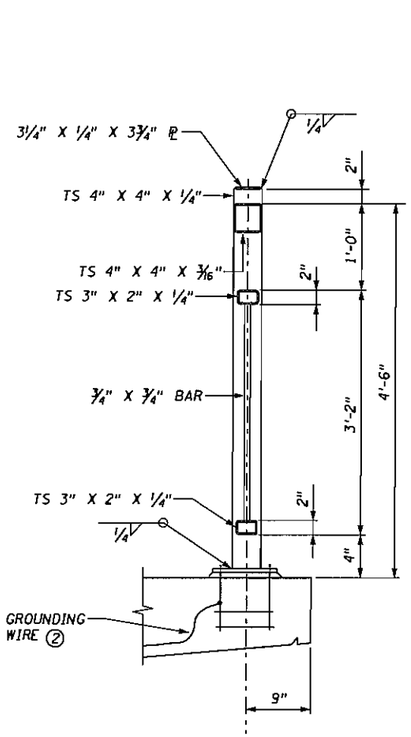
MODIFIED FIG. 5-397.157

DES: RAB	DR: GRF	APPROVED: MODIFIED	BRIDGE NO. 55576
CHK: CGO	CHK: CGD		

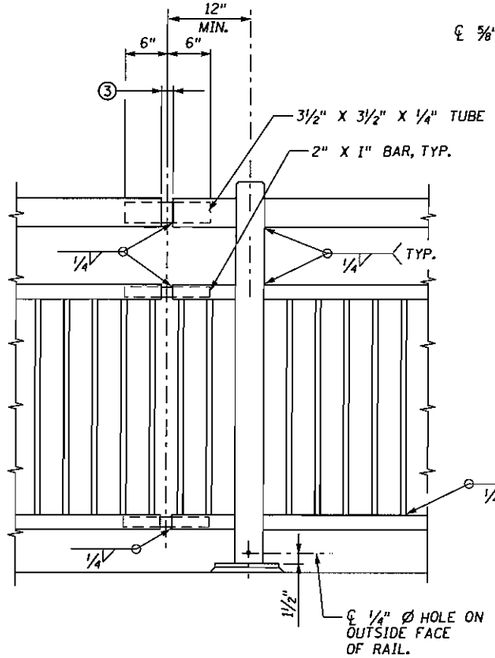
SHEET NO. B18 OF B30 SHEETS



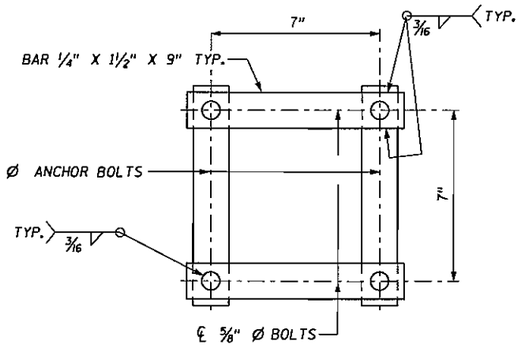
ELEVATION TYPE 1 RAILING



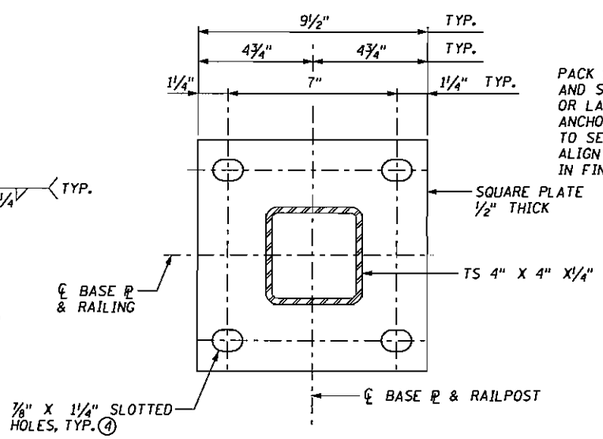
SECTION TYPE 1 RAILING



RAILING DEFLECTION JOINT DETAIL



SECTION A-A



BASE PLATE

NOTE:

ALL STRUCTURAL STEEL TUBING IN RAIL SHALL BE MN/DOT 3361.

ANCHOR BOLTS, NUTS AND WASHERS SHALL CONFORM TO SPEC. 3385, TYPE A. ALL OTHER STRUCTURAL STEEL PER SPEC. 3306. GALVANIZE BOLTS, NUTS AND WASHERS PER SPEC. 3392. GALVANIZE ALL OTHER STRUCTURAL STEEL PER SPEC. 3394 AFTER FABRICATION.

① ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT FOR THE RAILING, SET NORMAL TO GRADE. DRILLED IN CONCRETE ANCHORAGES MAY BE USED. IF DRILLED ANCHORAGES ARE USED, REINFORCING SHALL BE CAREFULLY PLACED TO AVOID INTERFERENCE WITH DRILLING HOLES FOR ANCHORS. SEE SPECIAL PROVISIONS.

FABRICATOR OF METAL RAIL SHALL VERIFY INPLACE ANCHOR BOLT LOCATIONS PRIOR TO FABRICATION OF RAIL IF CAST IN PLACE ANCHORAGES ARE USED.

HORIZONTAL RAILS SHALL BE PARALLEL TO THE EDGE OF SIDEWALK PROFILE.

RAIL DEFLECTION JOINTS SHALL BE PLACED IN THE RAILING PANEL AT INTERVALS NOT TO EXCEED 20 FEET ON THE BRIDGE SUPERSTRUCTURE.

THE RAILING, BASE PLATES, PROTRUDING PORTIONS OF BOLTS, NUTS AND WASHERS SHALL BE PAINTED IN ACCORDANCE WITH THE SPECIAL PROVISIONS.

THE LENGTH OF METAL RAILING FOR PAYMENT SHALL BE MEASURED BETWEEN THE CENTER OF THE RAIL END POSTS, AND SHALL INCLUDE ALL ITEMS SHOWN ON THIS SHEET.

GRIND ALL WELDS SMOOTH.

SEE BRIDGE DECK PLAN FOR POST SPACINGS.

② ATTACH RAIL ANCHORAGES TO PILE WITH A SOLID NO. 6 GAGE COPPER WIRE WITH AN APPROVED TYPE CLAMP OR BRAZING. (ONE ANCHORAGE PER END OF RAIL).

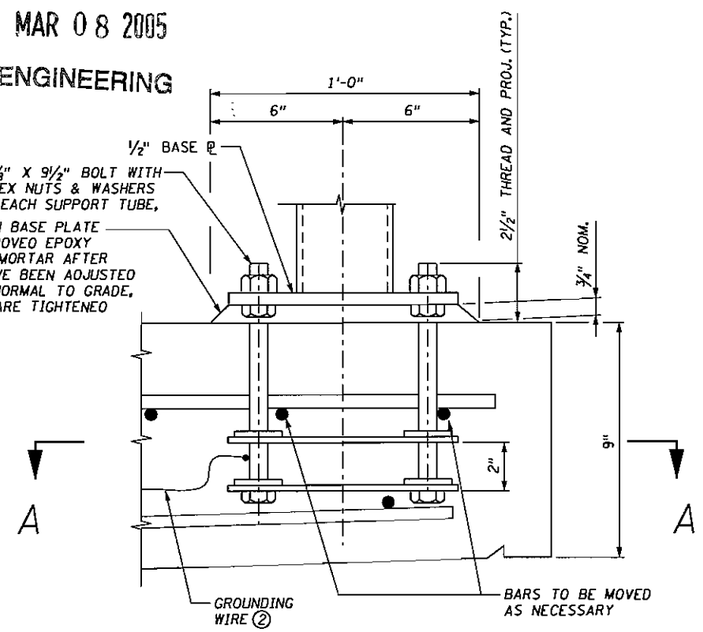
③ 1" AT DEFLECTION JOINTS.

④ IF DRILLED ANCHORS ARE USED, USE 15/16" ROUND HOLES.

AS-BUILT

MAR 08 2005

ENGINEERING



ANCHOR DETAIL ①

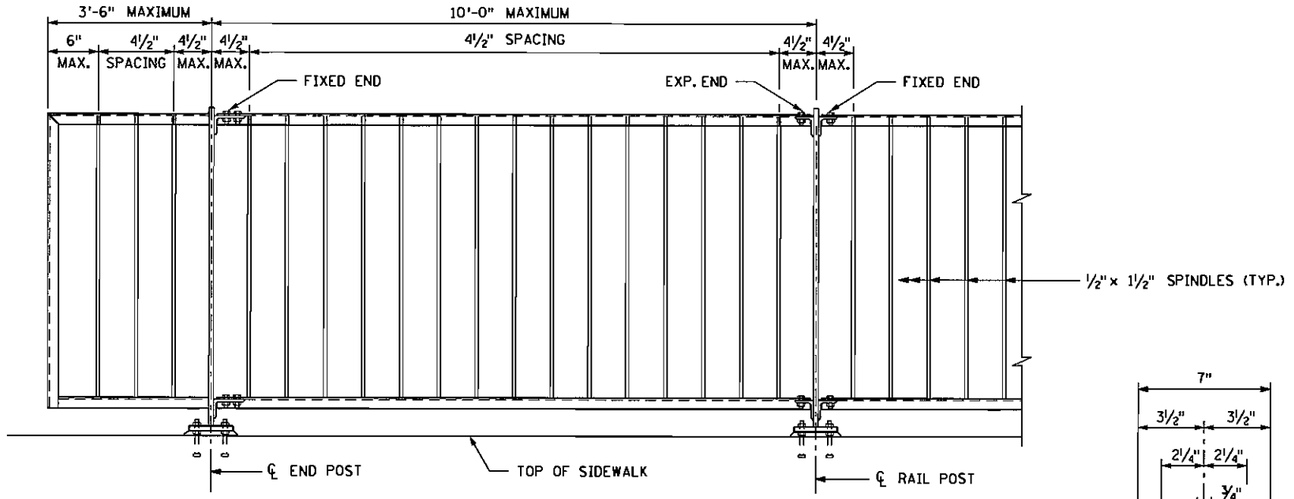
CERTIFIED BY Ronald Benson
PROFESSIONAL ENGINEER - RONALD BENSON
LIC. NO. 22737 4/22/2003

TITLE: ORNAMENTAL RAILING TYPE 1

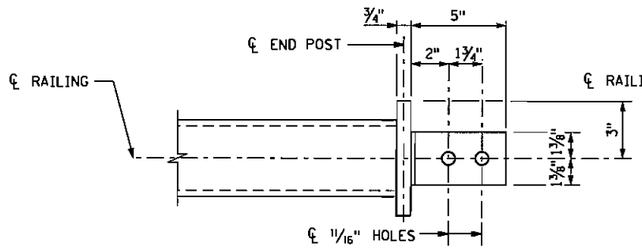
DES. RAB	DRN. GRF	APPROVED:
CHK. CGD	CHK. CGD	

S.A.P. 55-601-14
SHEET B19 OF B30 SHEETS

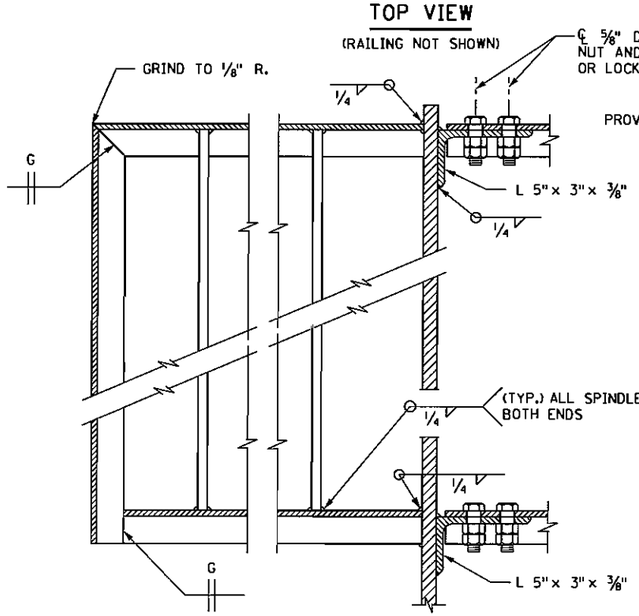
BRIDGE NO. 55576



GENERAL RAILING ELEVATION

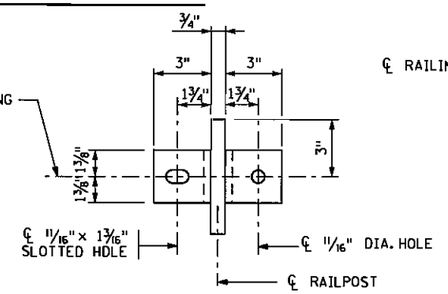


TOP VIEW
(RAILING NOT SHOWN)

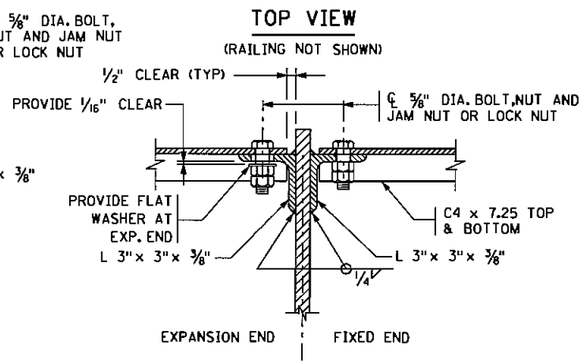


PART ELEVATION

END POST DETAIL



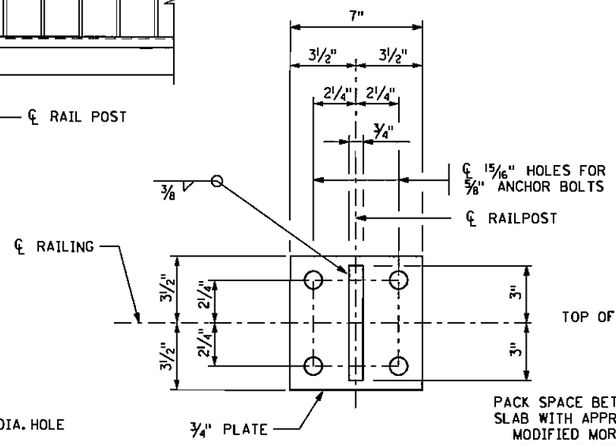
TOP VIEW
(RAILING NOT SHOWN)



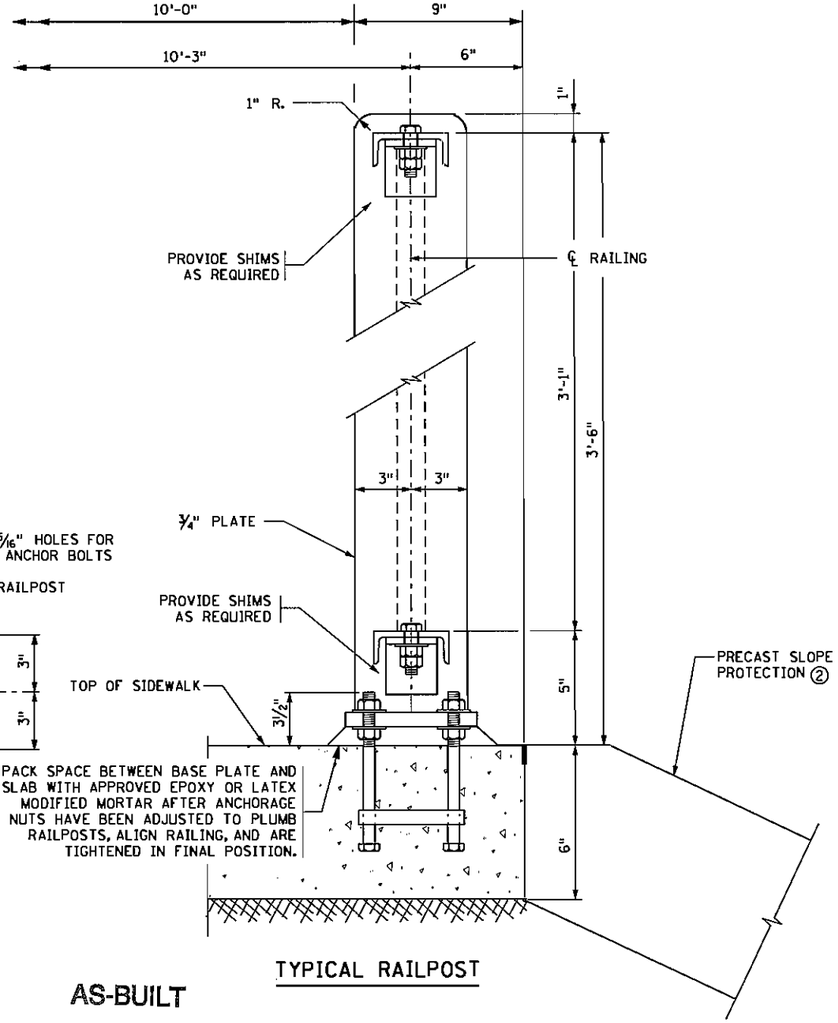
PART ELEVATION

INTERMEDIATE POST DETAIL

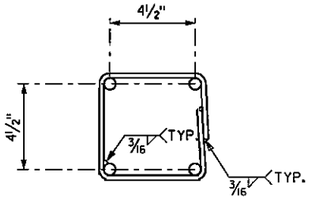
NOTE:
UPPER AND LOWER RAIL CONNECTIONS SIMILAR.



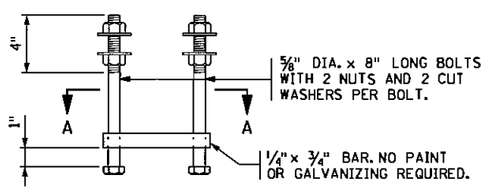
RAILPOST BASE PLATE



TYPICAL RAILPOST



SECTION A-A



ELEVATION

RAILPOST ANCHORAGE ①

AS-BUILT

MAR 08 2005

ENGINEERING

GENERAL NOTES

ALL RAILPOSTS NORMAL TO GRADE.

① ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT FOR THE RAILING, SET NORMAL TO GRADE. DRILLED IN CONCRETE ANCHORAGES MAY BE USED. IF DRILLED ANCHORAGES ARE USED, REINFORCING SHALL BE CAREFULLY PLACED TO AVOID INTERFERENCE WITH DRILLING HOLES FOR ANCHORS. SEE SPECIAL PROVISIONS.

FABRICATOR OF METAL RAIL SHALL VERIFY INPLACE ANCHOR BOLT LOCATIONS PRIOR TO FABRICATION OF RAIL IF CAST IN PLACE ANCHORAGES ARE USED.

ALL MATERIAL SHALL COMPLY WITH SPEC. 3306.

GALVANIZE BOLTS, NUTS, AND WASHERS PER SPEC. 3392.

GALVANIZE ALL OTHER STRUCTURAL STEEL PER SPEC.3394 AFTER FABRICATION.

PRICE BID FOR ORNAMENTAL RAILING -TYPE S INCLUDES ALL MATERIAL SHOWN ON THIS SHEET. LENGTH OF "ORNAMENTAL METAL RAILING" FOR PAYMENT WILL BE MEASURED FROM END TO END OF CHANNEL WITH NO DEDUCTION FOR OPEN JOINT.

SEE SPECIAL PROVISIONS FOR PAINT REQUIREMENT.

② *DETAIL MODIFIED*

REVISION: 04-28-98

APPROVED: MARCH 7, 1975
KEITH V. BENTHIN
STATE BRIDGE ENGINEER

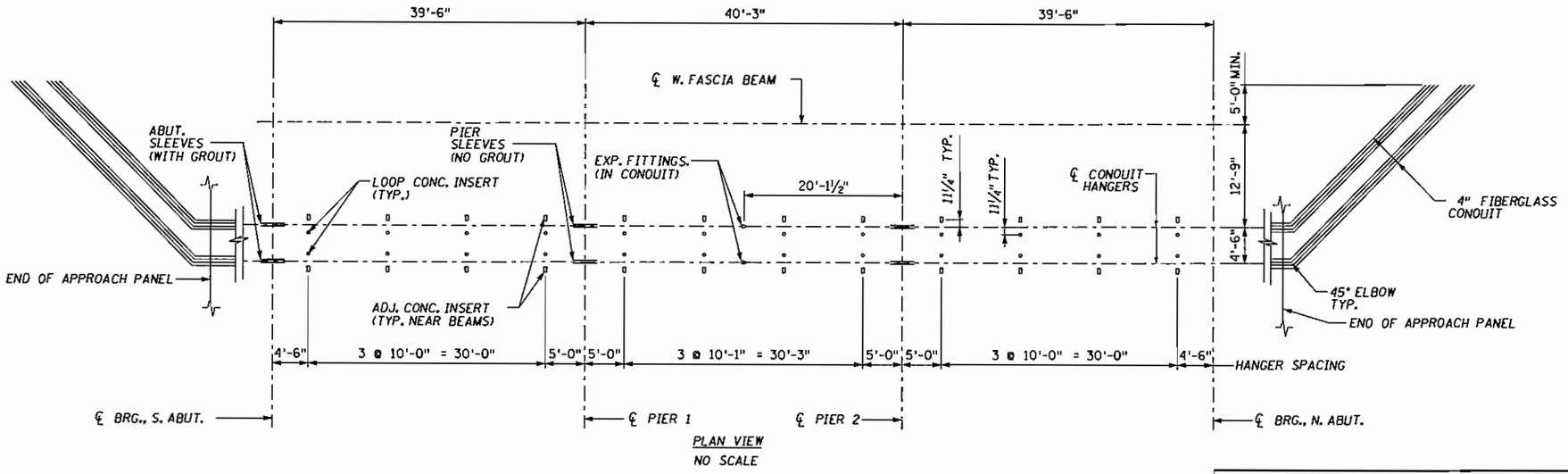
S.A.P. 55-601-14

MODIFIED
FIG. 5-397.108

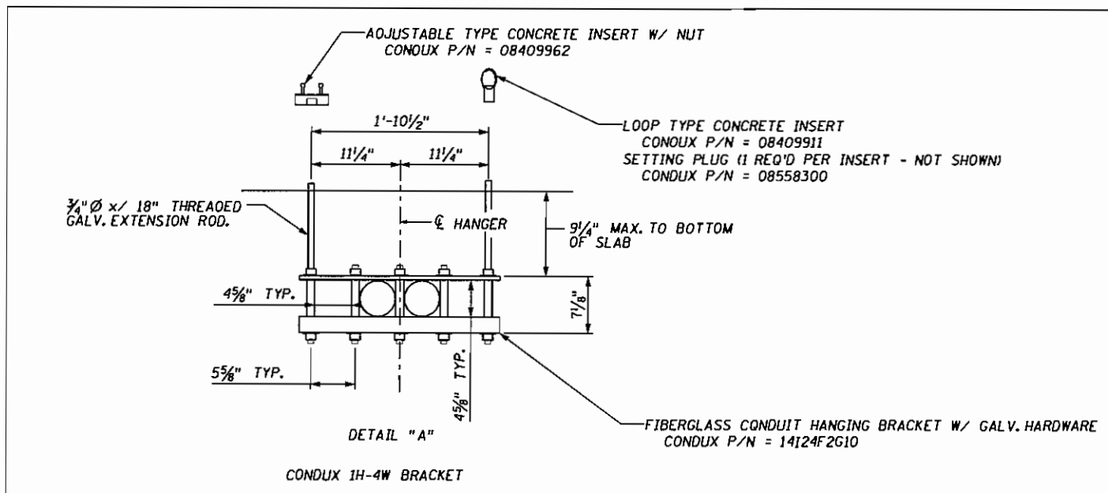
CERTIFIED BY Ronald Benson
PROFESSIONAL ENGINEER/RONALD BENSON
LIC. NO. 22737 4/22/2003

TITLE: ORNAMENTAL METAL RAILING (TYPE S)

DES: RAB	DR: GRF	APPROVED:	BRIDGE NO. 55576
CHK: CGD	CHK: CGD		
SHEET NO. B20 OF B30 SHEETS			

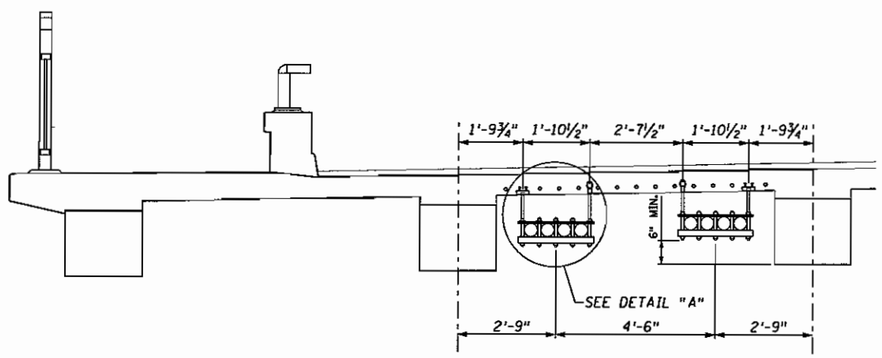


PLAN VIEW
NO SCALE



DETAIL "A"

CONDUX 1H-4W BRACKET



WEST SIDE OF BRIDGE

①②③④	SUMMARY OF QUANTITIES CONDUIT SYSTEM (TELEPHONE)			
	ITEM DESCRIPTION	CONDUX PART NO.	TOTAL	UNIT
(5)	HANGER ASSEMBLY	14124F2G10	24	EACH
(6)	3/4" CONCRETE LOOP INSERT	08409911	24	EACH
(6)	SETTING PLUG FOR LOOP INSERT	08558300	24	EACH
(6)	3/4" ADJUSTABLE CONCRETE INSERT W/ NUT	08409962	24	EACH
(7)	4" FIBERGLASS CONDUIT	08460044	1775	LIN. FT.
(8)	EXPANSION FITTING	08460444	8	EACH
(9)	45° R.S.C. CONDUIT ELBOWS	08463244	16	EACH
(12)(10)	GROUT			
(11)	PIER SLEEVES (TS 12 x 6 x 1/4, 3'-0" LONG)		8	EACH
(11)	ABUTMENT SLEEVES (TS 12 x 6 x 1/4, 2'-10" LONG)		8	EACH
	END CAPS		16	EACH

(1) THE SUMMARY OF QUANTITIES FOR CONDUIT SYSTEM IS SHOWN FOR THE CONTRACTOR'S CONVENIENCE. ANY COUPLINGS, ADAPTERS, OR ADDITIONAL MINOR ITEMS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR WITH NO ADDITIONAL COMPENSATION.

(2) PAYMENT FOR ALL ITEMS WILL BE INCLUDED IN PRICE BID FOR "CONDUIT SYSTEM (TELEPHONE)", PER LUMP SUM.

(3) SEE SHEET B11 FOR LAYOUT.

(4) ALL PARTS SHALL BE MANUFACTURED BY CONDUX INTERNATIONAL OR APPROVED EQUAL.

(5) CONDUX HANGER 1H-4W. 10'-1" MAX SPACING.

(6) USE 1 PER HANGER ASSEMBLY. CAST INTO BRIDGE DECK.

(7) STANDARD WALL IPS CONDUIT.

(8) SEE PLAN VIEW. VERIFY EXPANSION FITTING SPACING WITH MANUFACTURER. EXPANSION FITTING SHALL BE WATERTIGHT.

(9) EACH CONDUIT ELBOW REQUIRES 1 OR MORE COUPLINGS TO FIBERGLASS CONDUIT.

(10) SEE NOTE (8) SHEET B14.

(11) STRUCTURAL STEEL TUBING PER SPEC. 3306. GALVANIZE PER SPEC. 3394. USE 1 SLEEVE PER 2 CONDUITS.

(12) AFTER INSTALLATION OF CONDUIT, SLEEVES AT ABUTMENT ARE TO BE FILLED WITH AN APPROVED GROUT MIXTURE.

CERTIFIED BY Ronald Benson
PROFESSIONAL ENGINEER - RONALD BENSON
LIC. NO. 22737 4/22/2003

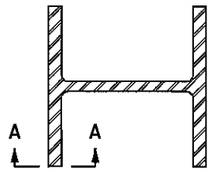
AS-BUILT
MAR 08 2005
ENGINEERING

MINNESOTA DEPARTMENT OF TRANSPORTATION

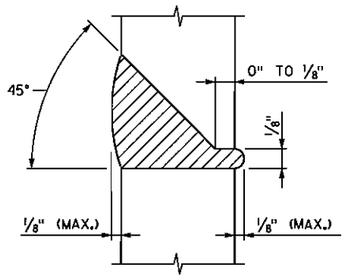
BRIDGE NO. 55576
CONDUIT SYSTEM

APPROVED:

S.A.P. 55-601-14			
SHEET B21 OF B30 SHEETS			
DES.: RAB	DRN.: GRF		55576
CHK.: CGD	CHK.: CGD		



SECTION AT JOINT



SECTION A-A

100% BUTT WELDED PILE SPLICE

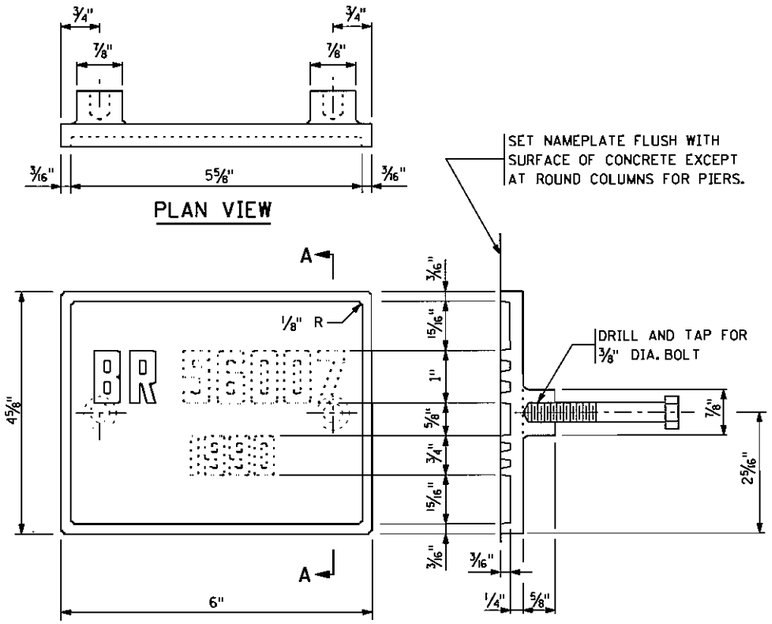
NOTES:

CELLULOSIC TYPE ELECTRODES E-6010 OR E-6011 SHALL BE USED FOR 100% BUTT WELDED SPLICES.

ELECTRODES WHICH HAVE BECOME WET, SOILED OR DAMAGED SHALL NOT BE USED.

WELDING SHALL NOT BE DONE WHEN THE AMBIENT TEMPERATURE IS LOWER THAN 0° F. OR WHEN THE PILE IS WET OR EXPOSED TO FALLING RAIN OR SNOW. WHEN THE PILE METAL TEMPERATURE IS BELOW 32° F., THE PILE METAL IN THE AREA OF THE WELD SHALL BE HEATED TO A MINIMUM TEMPERATURE OF 70° F. AND MAINTAINED AT THIS TEMPERATURE DURING WELDING.

APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
Daniel L Hougan STATE BRIDGE ENGINEER	PILE SPLICE (STEEL H BEARING PILES 10" TO 14")		B202



THE DASHED NUMBERS SHOWN ABOVE ARE FOR ILLUSTRATION. DATA TO BE SHOWN ON NAMEPLATE IS AS FOLLOWS:

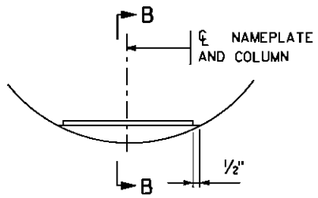
BRIDGE 55576

YEAR 2003

AS-BUILT

MAR 08 2005

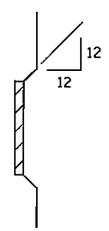
ENGINEERING



NAMEPLATE PLACEMENT

(ROUND CONCRETE PIER COLUMNS)

NUMBERS FOR NAMEPLATE



SECTION B-B

NOTES:

NO SHOP DRAWING REQUIRED.

MATERIAL SHALL COMPLY WITH Mn/DOT SPEC. 3327.

LETTERS AND NUMBERS SHALL CONFORM TO THOSE SHOWN.

DRAFT ON LETTERS AND NUMBERS SHALL NOT BE MORE THAN 3" IN 12".

HORIZONTAL SPACING OF LETTERS AND NUMBERS SHALL PRODUCE A BALANCED LAYOUT IN PROPORTIDN TO SPACING SHOWN.

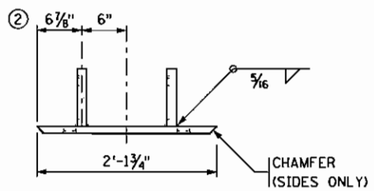
TOP SURFACE OF LETTERS, NUMBERS AND FRAMES SHALL BE BURNISHED.

FURNISH 2 STEEL BOLTS 3/8" DIA. x 3" LONG WITH EACH PLATE.

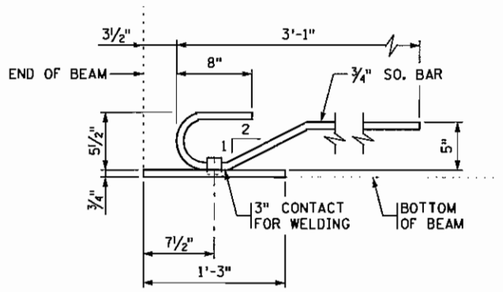
ALL DIMENSIONS FOR 3/4" HIGH LETTERS AND NUMBERS SHALL BE IN DIRECT PROPORTION TO THOSE SHOWN FOR THE 1" HIGH LETTERS AND NUMBERS.

APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
Daniel L Hougan STATE BRIDGE ENGINEER	BRIDGE NAMEPLATE (FOR NEW BRIDGES)		B101

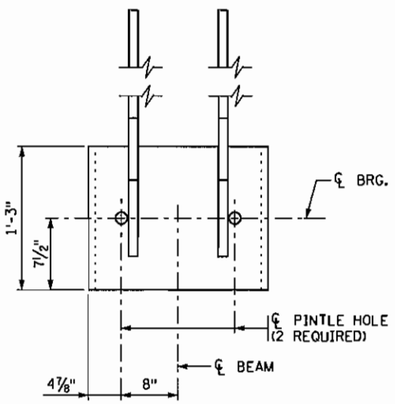
CERTIFIED BY Ronald Benson PROFESSIONAL ENGINEER – RONALD BENSON LIC. NO. 22737 4/22/2003	TITLE: STANDARD DETAILS	DES. RAB / DRN. GRF / APPROVED:	BRIDGE NO. 55576
		CHK. CGD / CHK. CGD	
		S.A.P. 55-601-14	
		SHEET B22 OF B30 SHEETS	



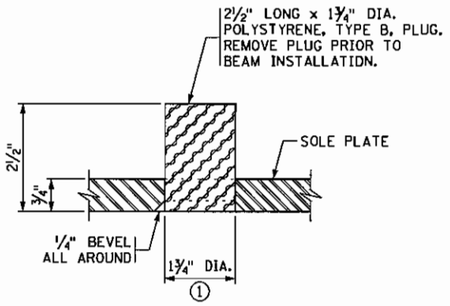
FRONT VIEW



SIDE VIEW



TOP VIEW



PINTLE HOLE DETAIL

NOTES:

MATERIAL TD BE STRUCTURAL STEEL PER Mn/DDT SPEC. 3306.

SOLE PLATE FOR BEARING ASSEMBLY TO BE GALVANIZED PER Mn/DOT SPEC. 3394 AFTER FABRICATION.

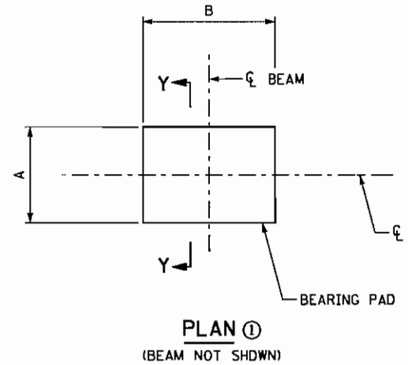
PINTLE HDLES SHALL BE FREE OF ZINC BUILD UP FROM GALVANIZING.

PAYMENT FOR SOLE PLATES TO BE INCLUDED IN PRICE BID FOR PRESTRESSED CONCRETE BEAMS.

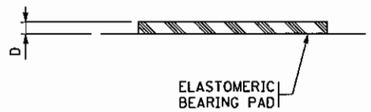
① FOR 1½" PINTLES. NDT REQUIRED FOR BRIDGE NO, 55576.

② THESE DIMENSIONS MAY BE MODIFIED TO CLEAR PRESTRESSED STRANDS. HOWEVER, CHANGES MUST BE APPROVED BY THE ENGINEER.

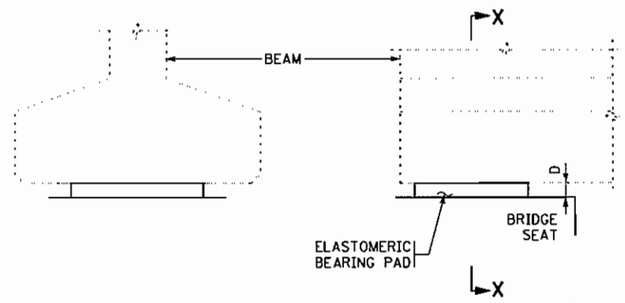
APPROVED: NOVEMBER 22, 20D2 Daniel D Wogen STATE BRIDGE ENGINEER	STATE OF MINNESOTA DEPARTMENT OF TRANSPDRTATIDN SOLE PLATE (PRESTRESSED CONCRETE BEAMS) (FOR BEARINGS WITH PINTLES)	REVISION	DETAIL NO. B303



PLAN ①
(BEAM NOT SHDWN)



SECTION Y-Y ①
(ENLARGED)



SECTION X-X ①

END ELEVATION ①

TABLE

PAD TYPE	LOCATION	BEAM SIZE	BEARING PAD SIZE A	B	D	SHAPE FACTOR	BEARING PLATE SIZE C	E	F	CURVED PLATE SIZE G	H	J	PINTLE DIA.	PINTLE DISTANCE K ④	ANCHOR ROD OFFSET M ②	ASST. HEIGHT L
F1	ALL	22x26	12	24	½	8.0										

NOTES:

ELASTOMERIC MATERIALS AND PAD CONSTRUCTION SHALL COMPLY WITH Mn/DOT SPEC. 3741.

PAYMENT FOR ELASTDMERIC BEARING PADS SHALL INCLUDE ALL MATERIAL ON THIS DETAIL.

SEE DETAIL B303 FOR SOLE PLATE.

AS-BUILT

MAR 0 8 2005

ENGINEERING

① DETAIL MODIFIED

STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION ELASTOMERIC BEARING PAD (PRESTRESSED CONCRETE BEAMS) (FIXED)	REVISION	DETAIL NO. MODIFIED B310

CERTIFIED BY Ronald Benson
PROFESSIONAL ENGINEER - RONALD BENSON
LIC. NO. 22737 4/22/2003

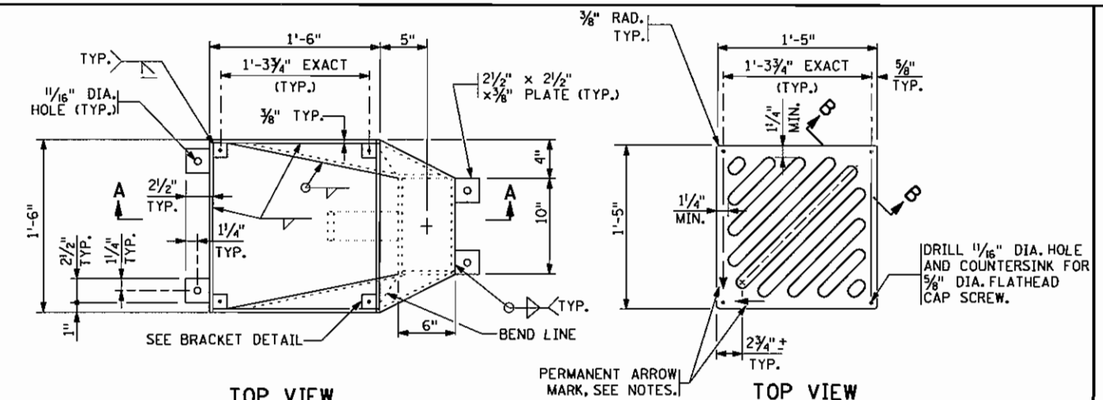
TITLE: STANDARD DETAILS

DES. RAB	DRN. GRF	APPROVED:
CHK. CGD	CHK. CGD	

S.A.P. 55-601-14

SHEET B23 OF B30 SHEETS

BRIDGE NO. 55576



NOTES:

ALL STEEL PLATES PER Mn/DOT SPEC. 3306. FABRICATE GRATE USING AUTOMATICALLY CONTROLLED CUTTING TORCH.

CAST IRON GRATE PER Mn/DOT SPEC. 3321, CLASS 35B, MAY BE USED AS AN ALTERNATE.

WORKMANSHIP AND FABRICATION PER Mn/DOT SPEC. 2471.

BLAST CLEAN SCUPPER AND GRATE AFTER FABRICATION. GALVANIZE, EXCEPT CAST IRON, PER Mn/DOT SPEC. 3394.

GALVANIZE HARDWARE PER Mn/DOT SPEC. 3392.

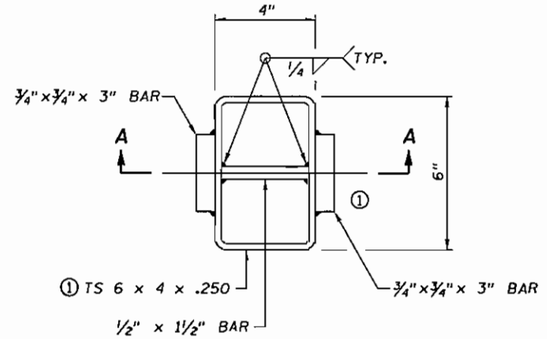
INSTALL GRATE WITH ARROW ON CURB SIDE AND IN DIRECTION OF FLOW.

PAYMENT FOR FLOOR DRAIN, TYPE B705 MOD. SHALL INCLUDE ALL MATERIAL ON THIS DETAIL.

GRATE OPENING AREA IS 106 SQ. IN.

① DETAIL MODIFIED

APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
Daniel L Hagyan STATE BRIDGE ENGINEER	BRIDGE OFFSET FLOOR DRAIN (WELDED BOX)		MODIFIED B705



AS-BUILT

MAR 08 2005

ENGINEERING

NOTES:

MATERIAL TO BE STRUCTURAL STEEL PER Mn/DOT SPEC. 3306.

GALVANIZE BOLTS AND WASHER PER Mn/DOT SPEC. 3392.

GALVANIZE OTHER MATERIALS PER Mn/DOT SPEC. 3394 AFTER FABRICATION.

PAYMENT FOR FLOOR DRAIN TYPE B702 MOD. SHALL INCLUDE ALL MATERIAL SHOWN ON THIS DETAIL.

① DETAIL MODIFIED

APPROVED: JULY 30, 1999	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISIONS	DETAIL NO.
Donald J Flemming STATE BRIDGE ENGINEER	BRIDGE FLOOR DRAIN (STRUCTURAL DRAIN)		B702 MODIFIED

CERTIFIED BY Ronald Benson
PROFESSIONAL ENGINEER - RONALD BENSON
LIC. NO. 22737 4/22/2003

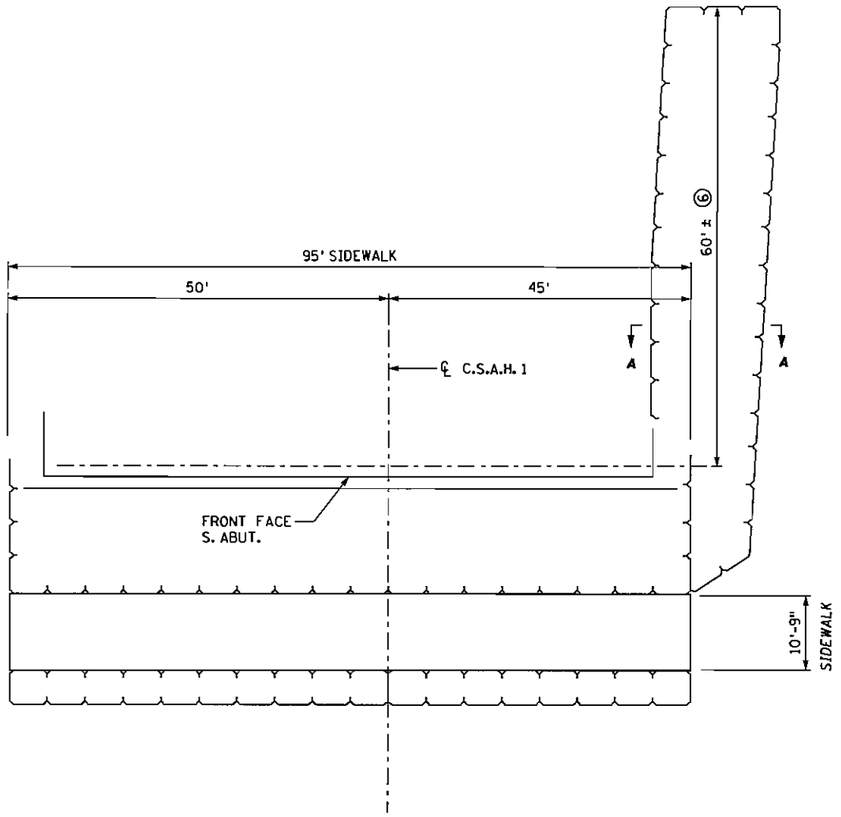
TITLE: STANDARD DETAILS

DES. RAB	DRN. GRF	APPROVED:
CHK. CGD	CHK. CGD	

S.A.P. 55-601-14

SHEET B24 OF B30 SHEETS

BRIDGE NO. 55576



SIDEWALK NOTES:

SIDEWALK LIMITS MATCH LIMITS OF SLOPE PAVING.
ESTIMATED LENGTH IS 95'.

½" TRANSVERSE EXP. JOINT AT APPROXIMATELY THE MID-POINT OF THE SIDEWALK.

SIDEWALK CONCRETE TO BE (3Y46A).

ALL REINFORCEMENT IS EPOXY COATED.

SIDEWALK CONCRETE AND REINFORCEMENT ARE INCLUDED IN PRICE BID FOR "7" CONCRETE WALK - REINFORCED" PER SQ. FT.

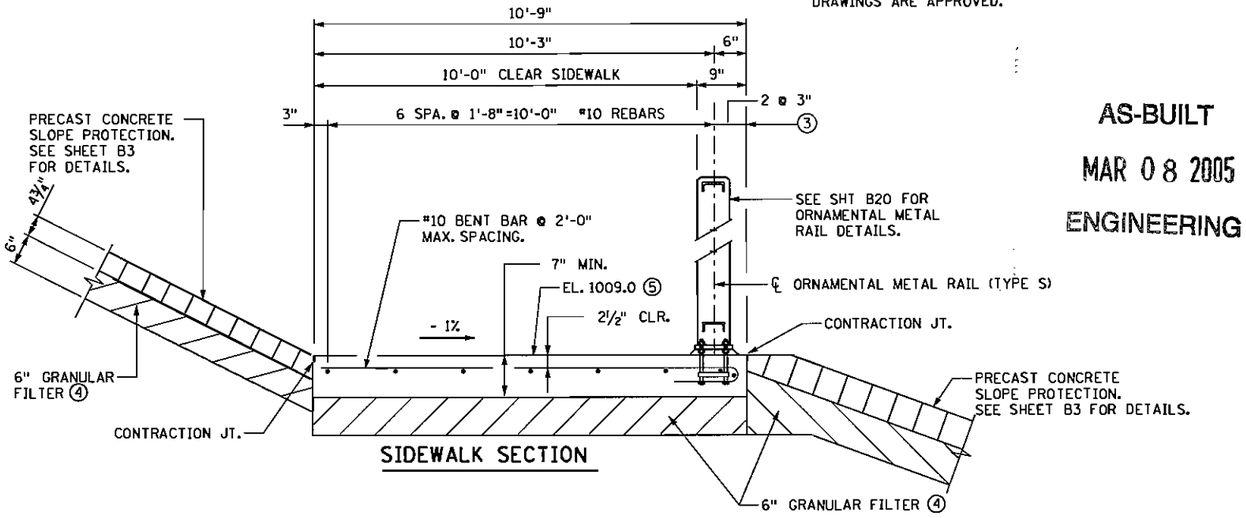
ESTIMATED QUANTITIES:
CONCRETE = 22 CU. YDS.
REINFORCEMENT = 5792 LBS.

③ MIN. SPLICE FOR #10 LONGITUDINAL SIDEWALK BARS IS 1'-0".

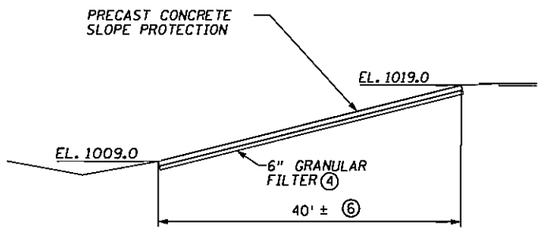
④ INCIDENTIAL TO SLOPE PROTECTION. PRECAST CONCRETE SLOPE PROTECTION SHALL BE ANCHORED TO THE SOIL AND INSTALLED PER THE MANUFACTURER'S SPECIFICATIONS.

⑤ CENTERLINE OF SIDEWALK SHALL BE EL. 1009.0 IN ORDER TO MAINTAIN MINIMUM VERTICAL CLEARANCE AND PROVIDE 1% CROSS SLOPE.

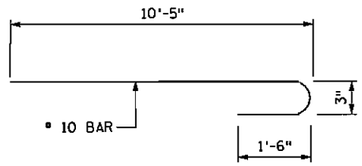
⑥ DIMENSION TO BE FINALIZED WHEN SHOP DRAWINGS ARE APPROVED.



SIDEWALK SECTION



SECTION A-A



AS-BUILT

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ENGINEERING

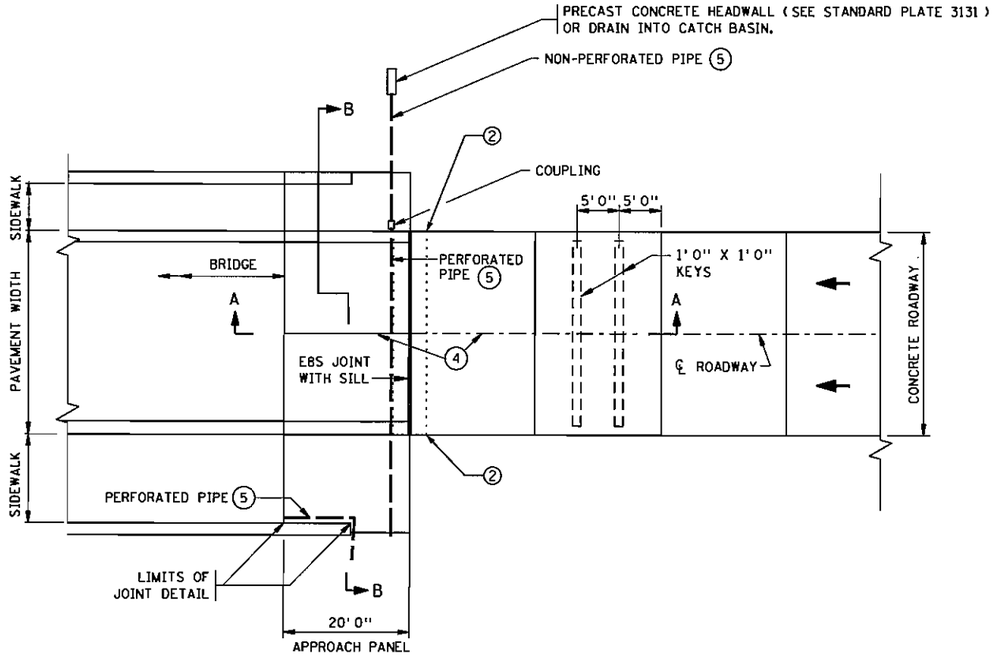
CERTIFIED BY Ronald Benson
PROFESSIONAL ENGINEER - RONALD BENSON
LIC. NO. 22737 4/22/2003

MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55576
SIDEWALK UNDER BRIDGE

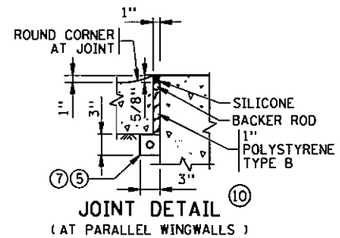
APPROVED:

S.A.P. 55-601-14			
SHEET B25 OF B30 SHEETS			
DES.: RAB	DRN.: GRF		55576
CHK.: CGD	CHK.: CGD		



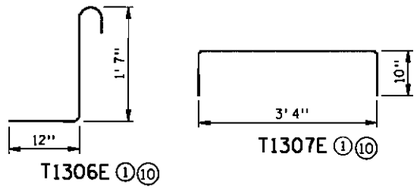
DIVIDED-URBAN ROADWAY PLAN (10)

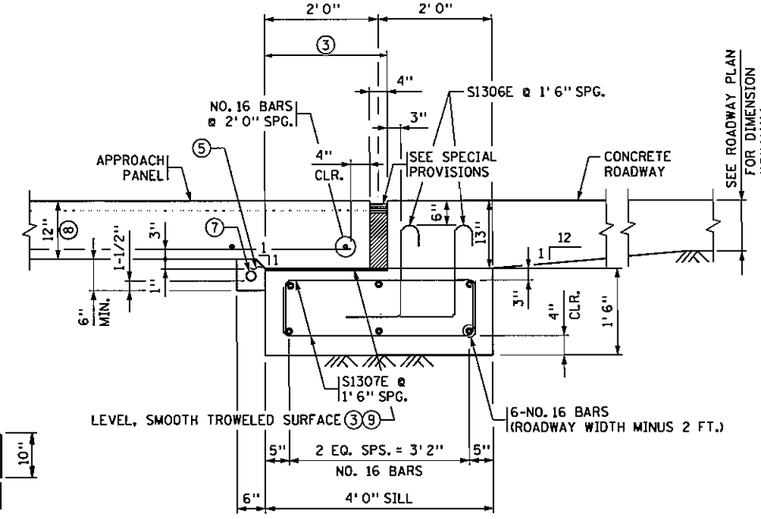
PARALLEL & NONPARALLEL WINGWALLS
CONCRETE ROADWAY JOINTLESS ABUTMENT



JOINT DETAIL (10)

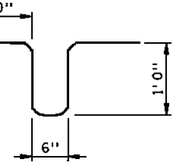
(AT PARALLEL WINGWALLS)



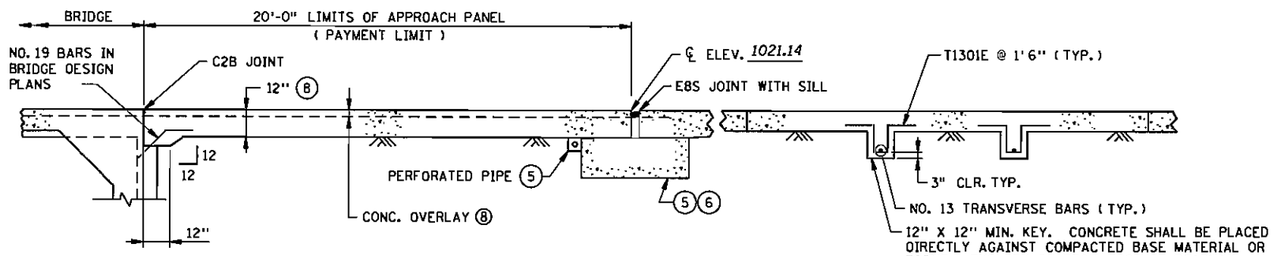


E8S JOINT DETAIL (1)(10)

USE AT JOINTLESS ABUTMENTS

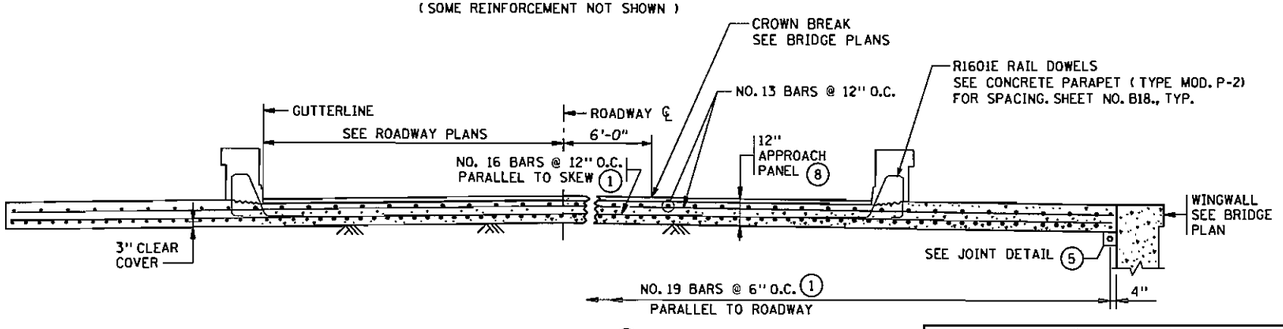


T1301E (1)



SECTION A-A

(SOME REINFORCEMENT NOT SHOWN)



SECTION B-B (10)

(SEE ROADWAY PLAN VIEW)

NOTES:

(1) ALL REINFORCEMENT IN APPROACH PANEL, SILL AND CURB SHALL BE GRADE 60 AND EPOXY COATED AS PER SPEC. 3301.

(2) SEE SHEET B29 FOR REQUIRED MISCELLANCES DETAILS NOT SHOWN.

(3) PLACE PLASTIC SHEETING SPEC. 3756 AS APPROVED BY THE ENGINEER TO BREAK BOND. COVER AREA SHOWN IN DETAIL.

(4) L2KT OR L1T LONGITUOINAL JOINT IS REQUIRED. SEE STANDARD PAVEMENT JOINT SHEET FOR DETAILS.

(5) BACKFILL WITH FINE AGGREGATE, SPEC. 3149, MODIFIED TO 0-3% PASSING A NO. 200 SIEVE.

(6) 18" x 4'0" CONCRETE SILL UNDER TRAFFIC LANES ONLY WHEN MAINLINE ROADWAY PAVEMENT IS CONCRETE. CONCRETE SILL AND CURBING IF REQUIRED IS INCLUDED IN APPROACH PANEL PAY ITEM.

(7) 2 INCH OR 4 INCH NOMINAL DIA. THERMOPLASTIC PIPE, AS PER ASTM D1785M, SCHEDULE 40. SLOPE PIPE TO DITCH. FURNISHING AND INSTALLING DRAIN SYSTEM SHALL BE INCIDENTAL, WITH NO DIRECT PAYMENT. WRAP PERFORATED PIPE WITH GEOTEXTILE AS PER SPEC. 3733. 1/8 INCH PER 12 INCH MINIMUM SLOPE.

(8) APPROACH SLAB THICKNESS SHOWN INCLUDES CONCRETE OVERLAY. CHECK BRIDGE PLANS FOR OVERLAY. CONCRETE OVERLAYS TO BE INCLUDED IN BRIDGE QUANTITIES AND DONE AT THE SAME TIME BY BRIDGE CONTRACTOR.

(9) REQUIRED CONSTRUCTION JOINT.

(10) DETAIL MODIFIED.

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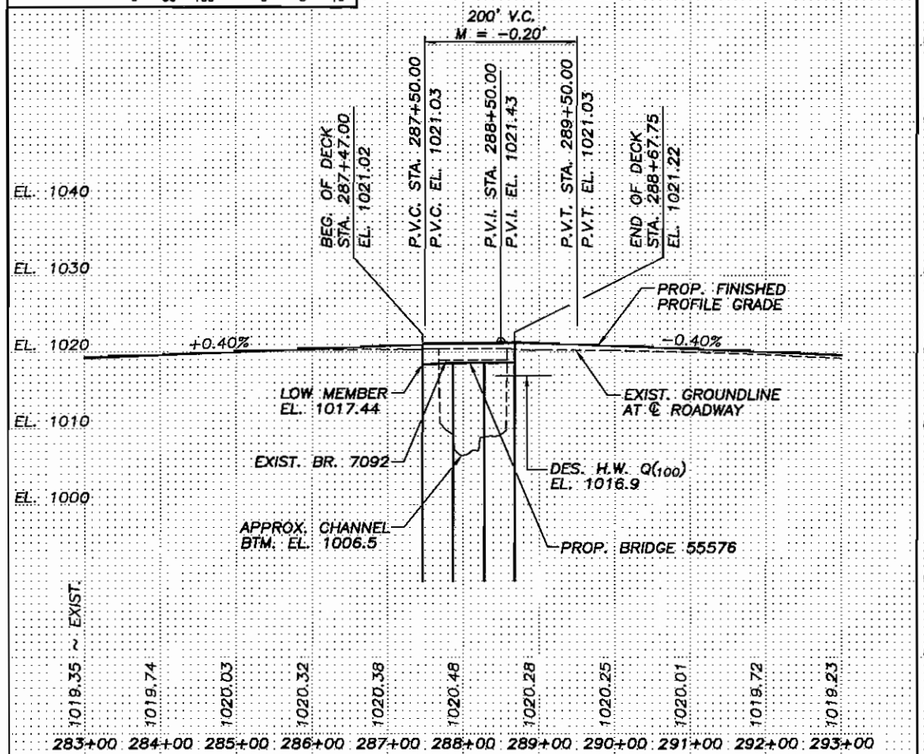
ENGINEERING

CERTIFIED BY *Ronald Benson*
PROFESSIONAL ENGINEER - RONALD BENSON
LIC. NO. 22737 4/22/2003

STANDARD SHEET NO. MODIFIED 5-297.227	TITLE: BRIDGE APPROACH PANEL CONCRETE MAINLINE - JOINTLESS ABUTMENT SQUARE TO 10° SKEWS	BRIDGE NO. 55576	
STANDARD APPROVED: MAY 2, 2002		DES.: RAB	DRN.: GRF
		CHK.: CGD	CHK.: CGD
STATE AID PROJECT 55-601-14	SHEET NO. B26	OF B30	SHEETS

CONTRACTED PROFILE

SCALE: HOR. 0' 50' 100' VER. 0' 5' 10'



PLAT

SCALE: 0' 50' 100'

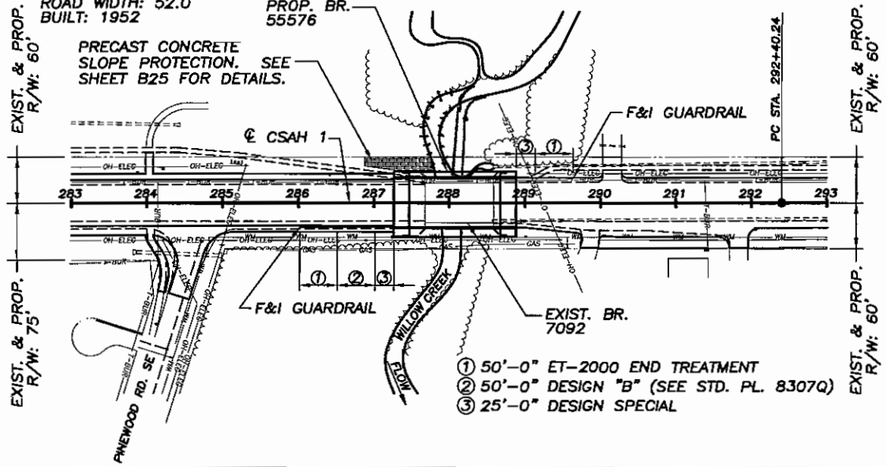
UTILITY INFORMATION

WARNING:
DIAL GOPHER STATE ONE CALL AT 1-800-252-1166
48 HOURS IN ADVANCE OF CONSTRUCTION OPERATIONS
TO OBTAIN COMPLETE UTILITY PROPERTY OWNERSHIP
AND LOCATION INFORMATION.

UTILITY INFO AVAILABLE FOR PLAN PREPARATION:
PEOPLE'S CO-OP POWER - OVERHEAD ELECTRIC - 507-288-4004
ROCHESTER PUBLIC UTILITIES - BURIED WATER & OVERHEAD ELECTRIC - 507-280-1584
AQUILA GAS - BURIED 12" GAS MAIN - 507-634-4998
CHARTER COMMUNICATIONS - OVERHEAD - 507-285-6112
QWEST - 612-861-8179

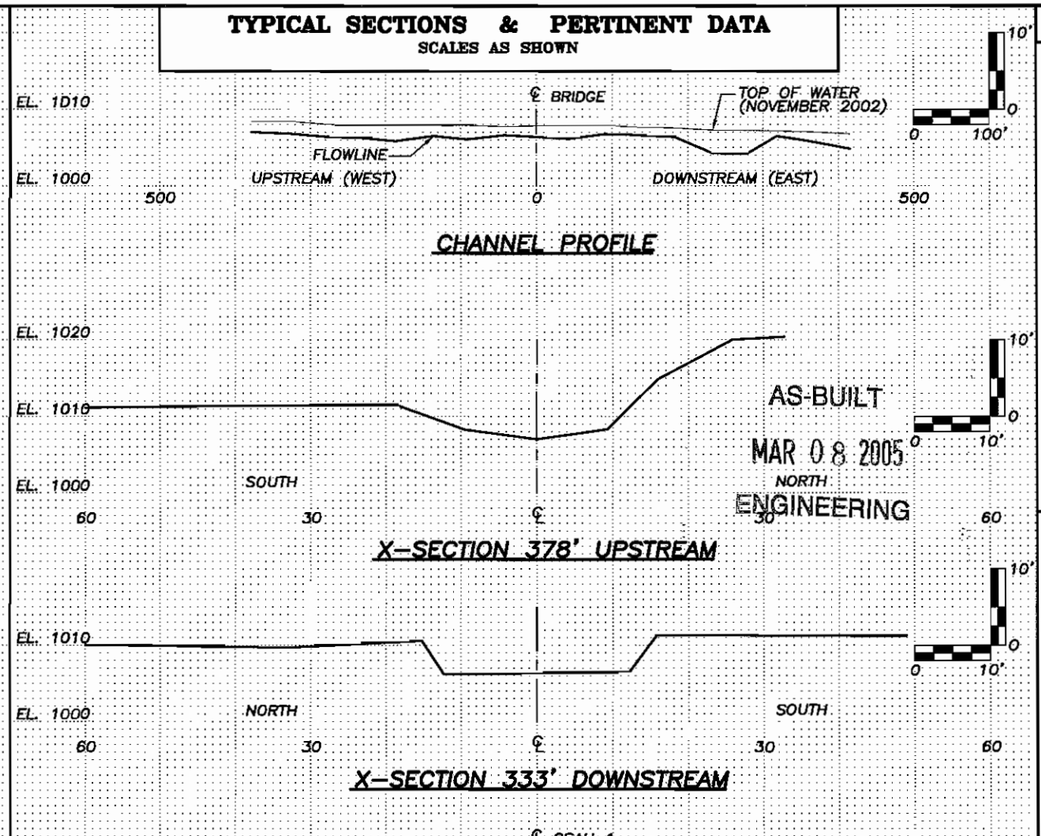
NOTE:
FIELD VERIFY ALL UTILITIES.

EXIST. BR. 7092
STEEL BEAM SPAN
LENGTH: 91.0'
ROAD WIDTH: 52.0'
BUILT: 1952



TYPICAL SECTIONS & PERTINENT DATA

SCALES AS SHOWN

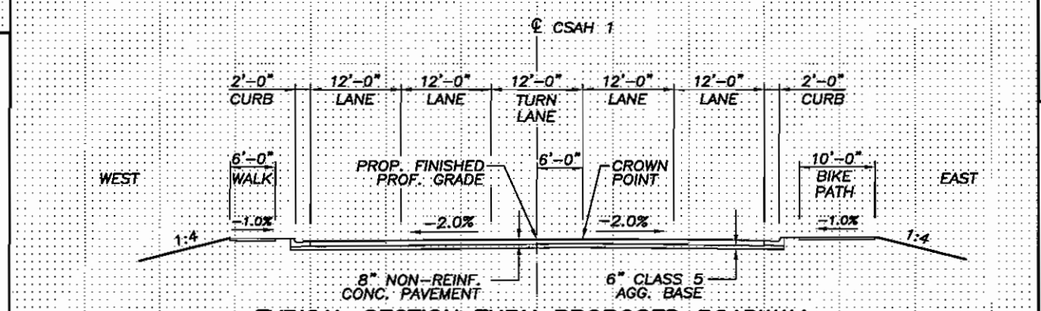


CHANNEL PROFILE

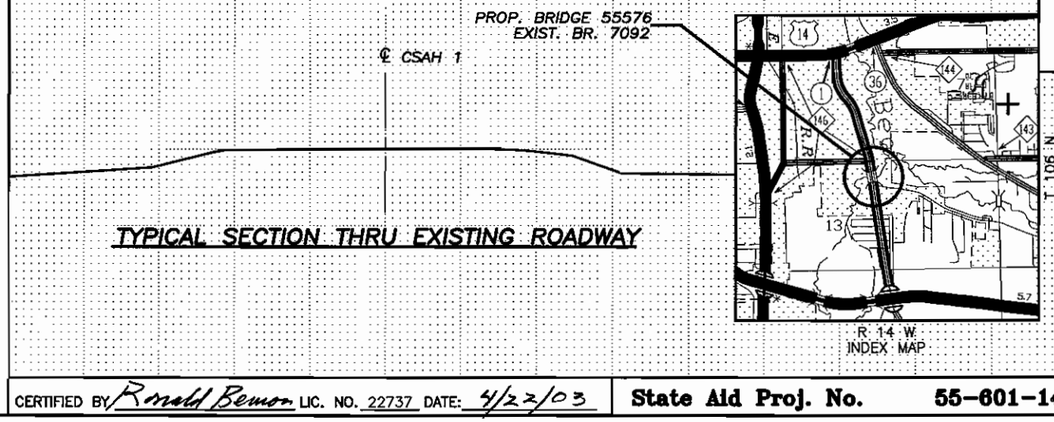
AS-BUILT
MAR 08 2005
ENGINEERING

X-SECTION 378' UPSTREAM

X-SECTION 333' DOWNSTREAM



TYPICAL SECTION THRU PROPOSED ROADWAY



TYPICAL SECTION THRU EXISTING ROADWAY

Fed. Proj. No.

LOCATION ENGINEER'S OBSERVATION AT BRIDGE SITE

DATE .....

1 Special Features: Waterfalls, dams, floods, ice, debris, sliding banks, rec. boats.

2. Other bridges or culverts over the same stream (particularly structures which carry high water without overflow of roadway) Given location, type, length, height above high water, cross-sectional area, etc.

3. Apparent highwater elevation ..... Obtained from .....

4. Other data: Approx. velocity of water at time of survey .....

HYDRAULIC ENGINEER'S RECOMMENDATION

DATE 2-14-2003

Stream or ditch designation WILLOW CREEK
Drainage area 26 SQ. MI.
Max. flood on record UNKN Design flood (100 yr. freq.) 5000 C.F.S.
Max. observed highwater elev. UNKN Design highwater elev. 1016.9
Design mean velocity through structure 5.9 F.P.S.
Low superstructure at or above elevation 1017.3
Flowline elevation 1006.5 Skew angle 0°
Waterway area req'd. below elev. 1016.9 = 845 Sq. Ft. ⊙ Rt. angles to channel

In the interest of flood plain zoning the regional flood (100 yr freq.) is 5000 C.F.S. at stage 1016.9 and mean velocity of 5.9 F.P.S. with 1.1 Ft. freeboard. The above recommendation will provide a structure of adequate waterway to pass the regional flood within criteria established by the Dept. of Natural Resources.

SCOUR CODE: L
ESTIMATED PIER SCOUR ELEVATION: 982.3

ENGINEER'S RECOMMENDATION

DATE 2-25-2003

3-40' RECT. PRESTR. CONCRETE BEAM SPANS
0° SKEW, 64' ROADWAY WIDTH

Bridge survey sheets made from: SURVEY NOTES FROM OLMSTED COUNTY (DATED NOVEMBER 2002)

Benchmark elevation 1020.81 (M.S.L. 1929 Adj.)
Location: BRASS DISK IN S.E. WINGWALL OF INPLACE BRIDGE 7092

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

BRIDGE SURVEY

AT MILE POINT ..... ON C.S.A.H. 1
PROPOSED BRIDGE LOCATED 1.12 MILES NORTH OF JCT. U.S. HWY. 52 OVER WILLOW CREEK

SEC. 13 TWP. 106 N R. 14 W
CITY ROCHESTER COUNTY OLMSTED
EXIST BRIDGE NO. 7092
PROP. BRIDGE NO. 55576

CERTIFIED BY Ronald Benson LIC. NO. 22737 DATE: 4/22/03

State Aid Proj. No. 55-601-14

Sheet No. B27 of B30 Sheets

60'-0" EXISTING & PROPOSED R/W

60'-0" EXISTING & PROPOSED R/W

LIMITS OF EXTENDED PRECAST CONCRETE SLOPE PROTECTION. SEE SHEET B25 FOR DETAILS.

60' ±

T-BUR

TEST PILE # 1

45'-0"

18'-0"

℄ BRG. S. ABUT. STA. 287+47.75

287+00

287+50

℄ C.S.A.H. 1 & WORKING LINE

22'-0"

90° TYP.

③ LIMITS OF PRECAST CONCRETE SLOPE PROTECTION

10'-9" CONC. PATH

5'-0"

1:2 MAX.

LEVEL

TEST PILE # 2

1'-5"(TYP.)

ABUTMENT FRONT FACE

B-1

50'-0"

④

WM

OH-ELEC

FLOW

TEST PILE # 6

TEST PILE # 4

14'-0"

℄ PIER 1 STA. 287+87.25

288+00

℄ PIER 2 STA. 288+27.50

18'-0"

TEST PILE # 3

TEST PILE # 5

⑧ STORM SEWER OUTLET

ABUTMENT FRONT FACE

1'-5"(TYP.)

2'-6"(TYP.)

1:2 MAX.

TEST PILE # 7

LIMITS OF RANDOM RIPRAP, CLASS III

18'-0"

288+50

289+00

289+50

℄ BRG., N. ABUT. STA. 288+67.00

22'-0"

⑦

TEST PILE #8

STORM SEWER OUTLET (ABANDONED)

B-2

APPROACH GRADING UNDER SAME CONTRACT.

WATERMAIN ACCESS HOLE (TYP.)

POWER POLE (TYP.)

① 10'-0" CLEAR WIDE CONCRETE PATH.

② 6" GRANULAR FILTER IS INCLUDED IN PRICE BID FOR PRECAST CONCRETE SLOPE PROTECTION. APPROX. QUANTITY = 113 CU. YD.

6" GRANULAR FILTER IS INCLUDED IN PRICE BID FOR RANDOM RIPRIP, CLASS III. APPROX. QUANTITY = 30 CU. YD.

③ PRECAST CONCRETE SLOPE PROTECTION SHALL BE ANCHORED TO THE SOIL AND INSTALLED PER THE MANUFACTURER'S SPECIFICATIONS.

④ BRIDGE CONTRACTOR SHALL EXCAVATE AND FILL TO THESE LINES FOR APPROX. 45' LT. & 50' RT. OF ℄ RDWY. THEN TAPER AT A 1:2 SLOPE TO NATURAL CHANNEL SLOPES. INCLUDED IN PRICE BID FOR SLOPE PREPERATION.

⑤ SELECT GRANULAR BORROW BACKFILL PLACED BETWEEN WINGWALLS. SEE ABUTMENT SHEET B7 FOR REQUIREMENTS.

⑥ A SHORTENED VERSION OF THE BORING LOG DESCRIPTION IS GIVEN IN THE PLANS. THE COMPLETE GEOTECHNICAL EXPLORATION REPORT AND BORING LOGS ARE AVAILABLE FOR INSPECTION IN THE COUNTY ENGINEER'S OFFICE.

LIMITS OF SLOPE PROTECTION AS SHOWN ARE APPROXIMATE ONLY. EXACT LIMITS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

⑧ REMOVE 33" RCP APRON AND INSTALL 8' OF 33" RCP SEWER & 33"RCP APRON. SLOPE ON 8' EXTENSION SHALL MATCH EXISTING. ANY EXCAVATION AND REMOVALS REQUIRED ARE INCLUDED IN PRICE BID FOR "REMOVE OLD BRIDGE".

⑦ REMOVE STORM SEWER AS REQUIRED FOR CONSTRUCTION OF NEW ABUTMENT. PLUG END OF REMAINING PIPE WITH CONCRETE. INCLUDED IN PRICE BID "REMOVE OLD BRIDGE".

GAS

VERTICAL CURVE DATA
200' V.C.
G_1 = +0.40%
G_2 = -0.40%
m = -0.20'

P.V.C. STA. 287+50.00
P.V.C. EL. 1021.03

200' VERTICAL CURVE
P.V.I. STA. 288+50.00
P.V.I. EL. 1021.43

P.V.T. STA. 289+50.00
P.V.T. EL. 1021.03

℄ BRG., S. ABUT. STA. 287+47.75 EL. 1021.02

BEG. OF DECK STA. 287+47.00 EL. 1021.02

℄ PIER 1 STA. 287+87.25 EL. 1021.15

℄ PIER 2 STA. 288+27.50 EL. 1021.22

2'-6" TYP.

2'-0" TYP.

℄ BRG., N. ABUT. STA. 288+67.00 EL. 1021.22

END OF DECK STA. 288+67.00 EL. 1021.22

PROP. FINISHED PROFILE GRADE

+0.40%

-0.40%

1030

1020

1010

1000

990

980

⑥ 20'-0" APPROACH PANEL (TYP.)

B-1

B-2

FILL, Crushed limestone gravel base

FILL-Clayey Sand, with slabs and cobbles, dark brown

Lean Clay with roots, black, soft to firm (CL)

Sand with gravel, fine to medium grained, yellowish brown, medium dense, waterbearing (SP)

Sandy Lean Clay with gravel, gray, medium to soft, lenses of Sand, (CL)

Carbonate Bedrock, tan very dense

end of boring el. 976.1

FILL, mostly Silty Sand with crushed limestone gravel base, brown mix

Fill, Sandy Lean Clay with gravel, brown and black mix, lenses and layers of Sand

Organic Lean Clay with roots, black, very soft (OL)

Sandy Lean Clay with roots, black, very soft (OL)

Organic Lean Clay with roots, black, very soft (OL)

Clayey Sand, dark brown, medium dense, waterbearing (SC)

Sandy Lean Clay with gravel, brownish gray to gray, soft to firm (CL)

Lean Clay, brownish gray, firm (CL)

Sand with Silt, fine grained, gray, medium dense, waterbearing (SP-SM)

Carbonate Bedrock, tan, very dense

end of boring el. 978.0

LOW MEMBER EL. 1017.44

8'-0" TYP.

1:2

5'-0"

85' ± CHANNEL BTM.

TOP OF PATH EL. 1009.0

5'-0" MIN.

DES. H.W. Q(100) EL. 1016.9

APPROX. CHANNEL BTM. EL. 1006.5

16" DIA. STEEL PILE SHEELS

PRECAST CONCRETE SLOPE PROTECTION ②③

RANDOM RIPRAP, CLASS III AVG. 1'-6" THICK

RANDOM RIPRAP, CLASS III AVG. 3'-0" THICK

10 X 57 STEEL-H TEST PILES, 60'LONG @ PIER

12 x 53 STEEL-H TEST PILES, 60'LONG @ ABUTMENTS

Avg. Elev. 977.5

Avg. Elev. 974.9

Avg. Elev. 975.2

Avg. Elev. 978.0

TOP OF GROUNDLINE

MECHANICAL ANCHOR

2'-0" MIN.

NOTE: TYPICAL ALL EDGES

EXIST. GROUNDLINE AT ℄ PROF. ROADWAY

287+00

287+50

288+00

288+50

289+00

BORINGS SHOWN B-1, B-2 TAKEN WITH
STD 140 LB HAMMER
30 INCH DROP
2 INCH O.D. SAMPLER

AS-BUILT

MAR 08 2005

ENGINEERING

CERTIFIED BY Ronald Benson
PROFESSIONAL ENGINEER / RONALD BENSON
LIC. NO. 22737 4/22/2003

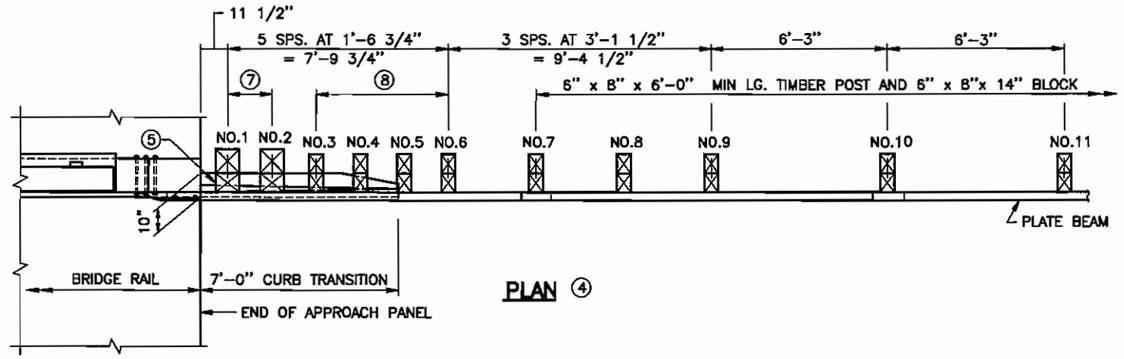
BRIDGE SURVEY PLAN & PROFILE

DES: RAB | DR: GRF | APPROVED:
CHK: CGD | CHK: CGD

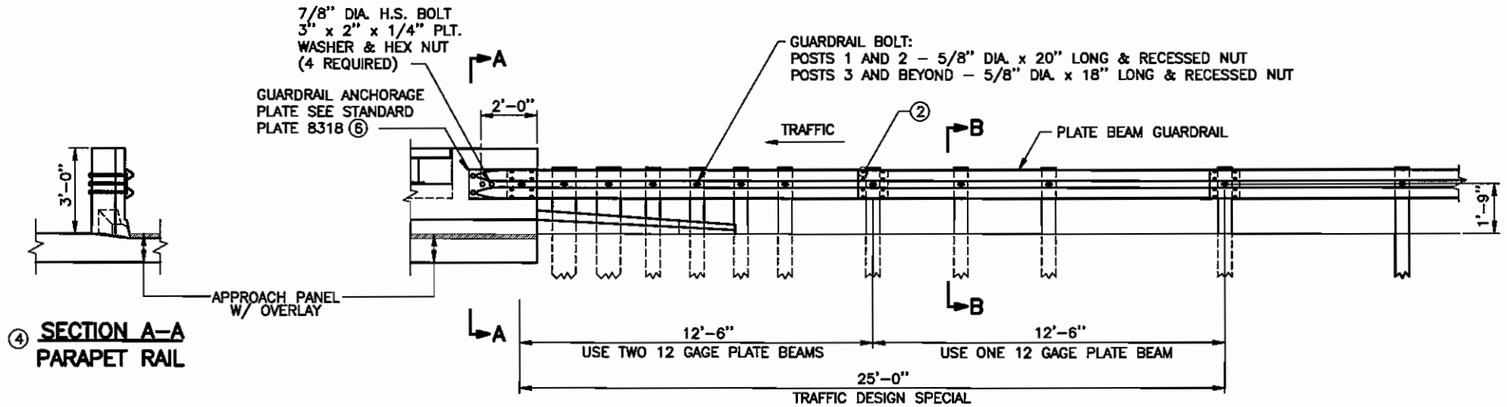
State Aid Proj. No. 55-601-14

Sheet No. B28 of B30 Sheets

Bridge No. 55576

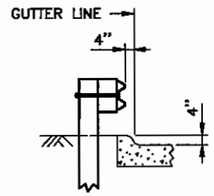


PLAN ④



④ SECTION A–A
PARAPET RAIL

ELEVATION ④



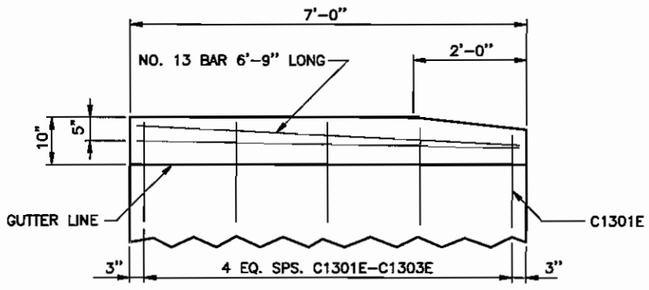
SECTION B–B

THE TRANSITION SECTION HAS BEEN TESTED AND APPROVED WITH THE CURB PLACED AS SHOWN

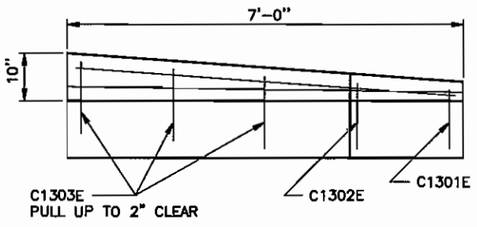
AS-BUILT

MAR 0 8 2005

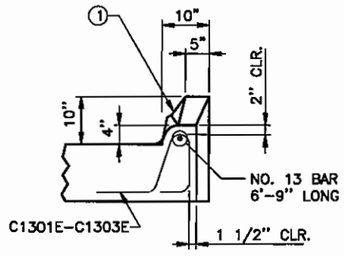
ENGINEERING



PLAN VIEW

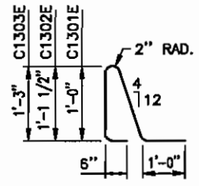


INSIDE ELEVATION



END VIEW

CURB TRANSITION DETAILS ④



C1301E – C1303E ③

NOTES:

ALL REBARS ARE IN METRIC DESIGNATIONS

① END OF TRANSITION TO MATCH BRIDGE RAIL SURFACE.
② 5/8" DIA. x 1–1/4" LONG GUARDRAIL BOLTS AND NUTS TYPICAL AT SPLICES.
③ REINFORCEMENT TO BE EPOXY COATED AS PER SPEC. 3301.
④ MODIFIED. PARAPET RAILING SHOWN.
⑤ ADDITIONAL BLOCKING MAY BE REQUIRED TO CLEAR BRIDGE STRUCTURE. VERIFY IN FIELD.
⑥ SANDWICH ANCHOR PLATE BETWEEN RAIL BEAMS.
⑦ POSTS 1 AND 2 TO BE 10" x 10" x 8'–0" MINIMUM LONG TIMBER POST AND 10" x 8" x 14" BLOCK.
⑧ POSTS 3, 4, 5, AND 6 TO BE 6" x 8" x 7'–0" MINIMUM LONG TIMBER POST AND 6" x 8" x 14" BLOCK.
⑨ CURB TRANSITION INSTALLATION, INCLUDING CONCRETE AND REINFORCEMENT, SHALL BE INCIDENTAL TO PAY ITEM "TRAFFIC BARRIER DESIGN SPECIAL". CURB TRANSITION IS REQUIRED WITH OR WITHOUT APPROACH CURB.

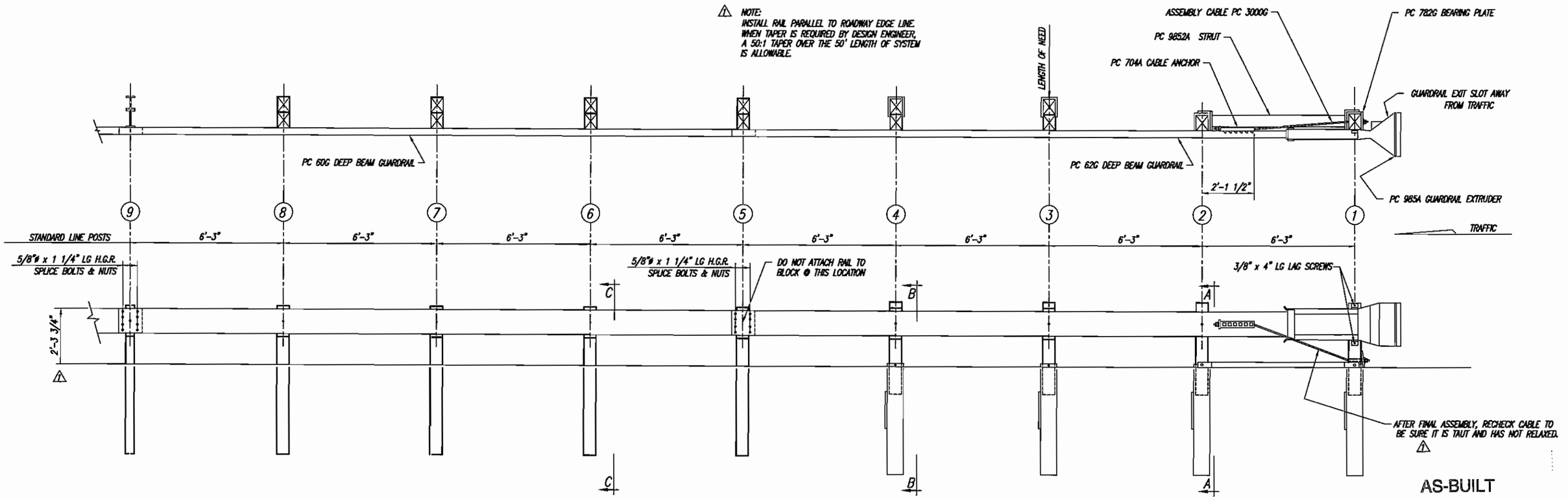
TRAFFIC BARRIER DESIGN SPECIAL

CERTIFIED BY: Ronald Benson
PROFESSIONAL ENGINEER/RONALD BENSON
LIC. NO. 22737 4/22/2003

STANDARD SHEET NO. 5-297.605 MOD.
STANDARD APPROVED: APRIL 19, 2001
REVISION DATE 10-05-01

TITLE: NEW W–BEAM TRANSITION TO CONCRETE MOD. P–2 SAFETY RAIL WITH APPROACH CURB (WOOD POST)

STATE AID PROJECT NO. 55–601–14 | SHEET NO. B29 OF B30 SHEETS | 55576

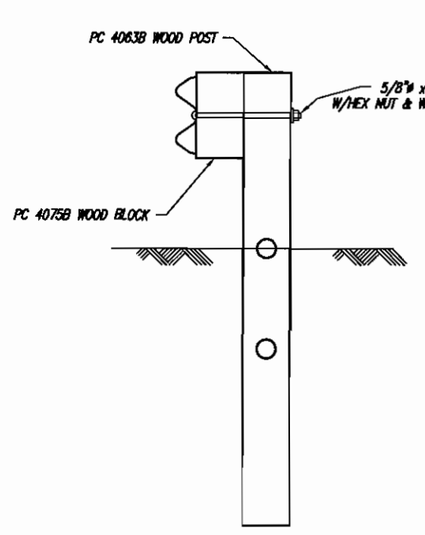


AS-BUILT

MAR 0 8 2005

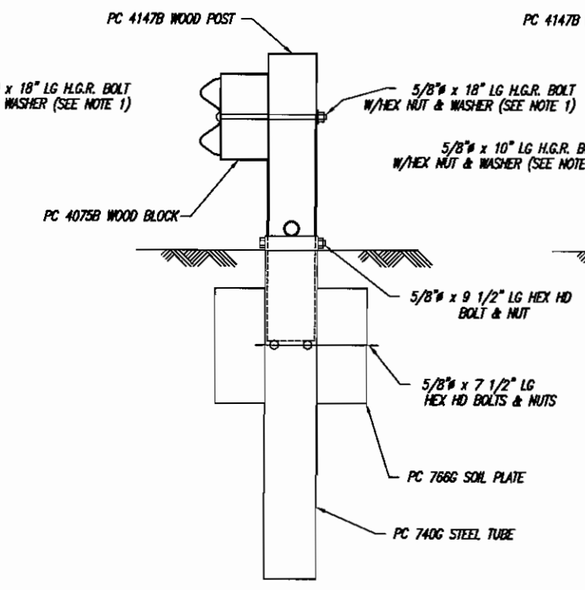
ENGINEERING

NOTES:
1.) THE 5/8" FLAT WASHER IS USED UNDER THE NUT, BEHIND THE POST ONLY. NO WASHER IS USED AT THE RAIL.
2.) MANUFACTURER SUGGESTS CUSTOMER TO PROVIDE REFLECTORIZATION OF TERMINAL.
3.) SYRO ET-2000 OR APPROVED EQUAL TO BE INSTALLED WHERE SHOWN ON SHEET B27. FURNISHED AND INSTALLED AS SHOWN ON THIS SHEET INCLUDED IN BID ITEM "END TREATMENT SPECIAL".

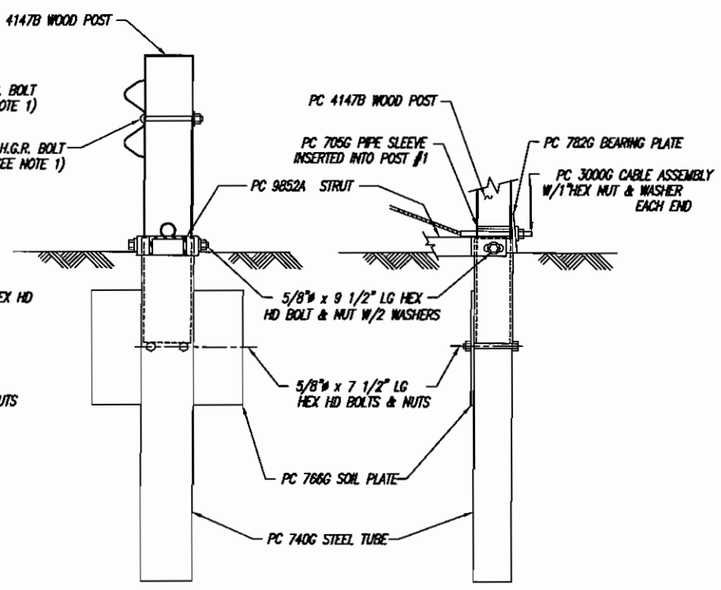


NOTE:
SECTION "C-C" IS SIMILAR @ POST #5 EXCEPT RAIL IS NOT ATTACHED.

SECTION "C-C"
(TYP @ POSTS #6, 7 & 8)



SECTION "B-B"
(TYP @ POSTS #3 & 4)



SECTION "A-A"
(@ POST #2)

PARTIAL VIEW @ POST #1

CERTIFIED BY: Ronald Benson
PROFESSIONAL ENGINEER/RONALD BENSON

LIC. NO. 22737 4/22/2003

REV.	CHK'D	BY	DATE	REMARKS
1		BT	5-27-98	ADDED TAPER & CABLE NOTE, CHG DIM

SYRO ET-2000

ET-2000 (1997)
PLAN, ELEVATION & SECTIONS

DRAWN	B.T.
CHECKED	
APPROVED	
DATE	4-26-97
ENG. FILE #	SS265
SHT.No.	E1 OF 1

TRINITY INDUSTRIES, INC. SYRO
DALLAS, TX CENTERVILLE, UT GIRARD, OH LIMA, OH FORT WORTH, TX ELIZABETHTOWN, KY

S.A.P. 55-601-14

DRAWING No. SS 265 REV. 1

SHEET B30 OF B30 SHEETS

55576