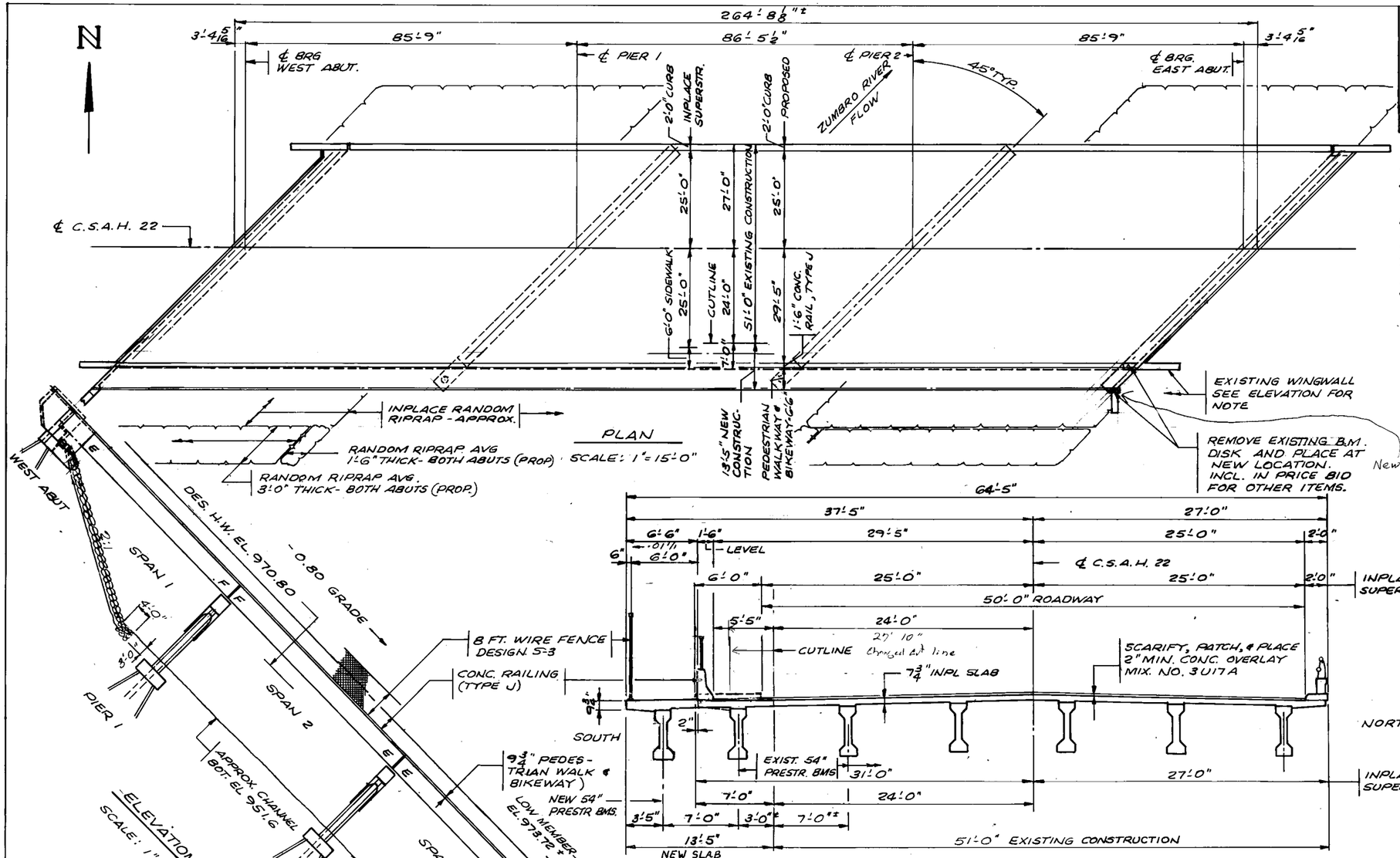


TRANSVERSE SECTION THRU DECK

SCALE: 3/16"=1'-0"

LOOKING WEST

DESIGN DATA FOR NEW CONSTRUCTION

1983 & INTERIM A.A.S.H.T.O. DESIGN SPECIFICATIONS
60 P.S.F. SIDEWALK LIVE LOAD
MAXIMUM ALLOWABLE DESIGN STRESSES:
REINFORCED CONCRETE: f'c = 4000 P.S.I. n=8
fy = 60000 REINF. (GRADE 60)
PRESTRESSED CONCRETE: fc = 6000 P.S.I. n=6
fs = 270,000 PSI. LOW RELAX STRANDS
AREA OF NEW DECK = 3573 SQ.FT. A.D.T. FOR YEAR.

CONSTRUCTION NOTES

THE 1988 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

THE FIRST DIGIT OR THE FIRST TWO DIGITS OF EACH BAR MARK INDICATES THE BAR SIZE.

NO CUTTING WILL BE PERMITTED UNTIL THE CUTTING LIMITS HAVE BEEN OUTLINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. REMOVAL AND RECONSTRUCTION SHALL CONFORM TO SPEC. 2433.

PLAN QUANTITY ITEMS SHALL NOT BE ORDERED UNTIL PLAN DIMENSIONS HAVE BEEN CHECKED & VARIFIED IN THE FIELD BY THE CONTRACTOR.

EXISTING GAS MAIN WILL BE RELOCATED BY OTHERS.

LIST OF SHEETS

NO.	TITLE
1	GENERAL PLAN & ELEVATION
2	ABUTMENT WIDENING DETAILS - S.W. CORNER
3	ABUTMENT WIDENING, REINF. - S.W. CORNER
4	ABUTMENT WIDENING DETAILS - S.E. CORNER
5	ABUTMENT WIDENING REINFORCEMENT
6	PIER WIDENING DETAILS
7&8	SUPERSTRUCTURE WIDENING DETAILS
9	FRAMING PLAN
10	54" PRESTRESSED CONC. DETAILS
11	CONCRETE RAILING, TYPE J & FENCE
12	8 FT WIRE FENCE
13-17	DETAILS

APPROVED:

COUNTY ENGINEER
OLMSTED COUNTY

DATE: _____

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Robert R. Erickson
REG. NO. 4324

DATE: 6-16-89

PLANS PREPARED BY
ERICKSON ENGINEERING
3338 REPUBLIC AVE.
ST. LOUIS PARK, MINN. 55426

C.S.A.H. 22 OLMSTED COUNTY
MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55519

LOCATED 1.25 MILES NORTH OF ROCHESTER ON C.S.A.H. 22 OVER ZUMBRO RIVER

WIDEN DECK BY REMOVING EXISTING SIDEWALK, RAILING, & PORTION OF DECK ON SOUTH SIDE. EXTEND DECK FOR PEDESTRIAN WALK & BIKEWAY AND CONSTRUCT NEW RAILING & WIRE FENCE. ONE NEW BEAM LINE SUPPORTED BY NEW PIER COLUMNS AND WIDENED ABUTMENTS

GENERAL PLAN & ELEVATION

SEC. 23 T107N R14W
CASCADE TWP. OLMSTED COUNTY

APPROVED. 7/7/89
Orrin B. Hegland
for BRIDGE ENGINEER

S.A.P. 55-622-12 | 55519 | W.N.J.
SHEET 1 OF 17 SHEETS | R.R.T.

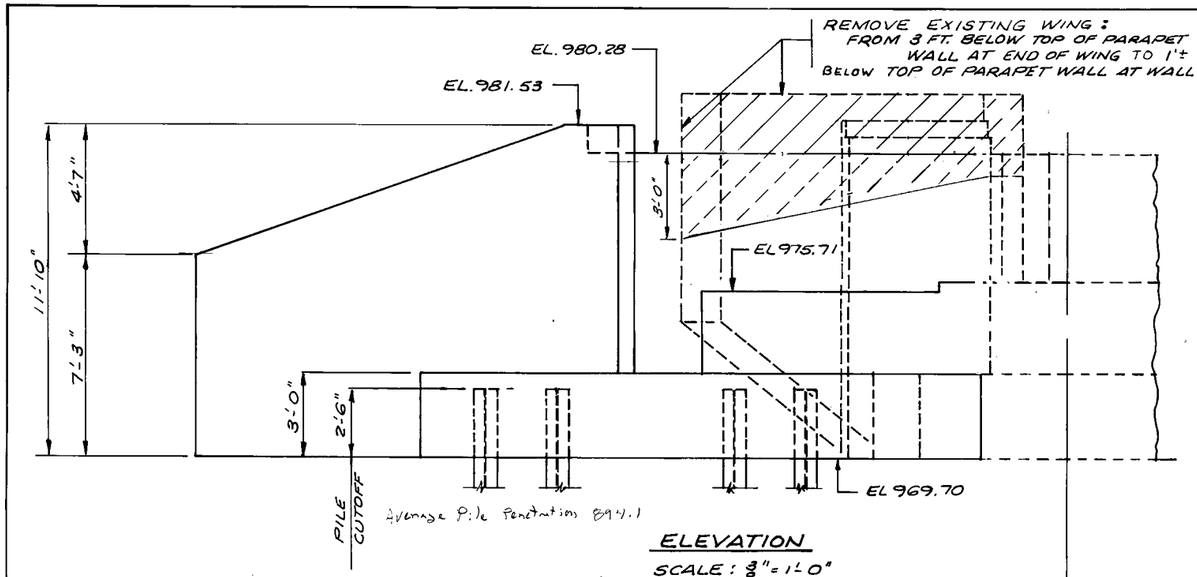
	2401.511
	STRUCTURE CONCRETE (3X33)
	SQ. FT.
	200

ITEM NO.	2357.502	2331.504	2331.508
ITEM	BITUMINOUS MATERIAL FOR TACK COAT	BITUMINOUS MATERIAL FOR MIXTURE	WEARING COURSE MIXTURE
UNIT	GAL.	TON	TON
QUANTITY	24.2	3.2	53.4

0433.601	2433.505	401.601	2402.595	0433.601	2433.505	2452.510	2452.511	2433.516	2433.506
SCARIFY BITUM APPROACHES	REMOVE SLAB TYPE III	STRUCTURE EXCAVATION	BEARING ASSEMBLY	SCARIFY BRIDGE DECK	REMOVE SLAB TYPE I	STEEL H-PILING DRIVEN, 12"	STEEL H-PILING DELIVERED, 12"	ANCHORAGES TYPE I	REMOVE SLAB, SIDEWALK, RAILBASE & METAL RAILING
SQ. FT.	SQ. FT.	LUMP SUM	EACH	SQ. FT.	SQ. FT	LIN. FT.	LIN FT.	EACH	LIN. FT.
5000	200	1	6	12985(P)	500	190	190	106	265 (P)

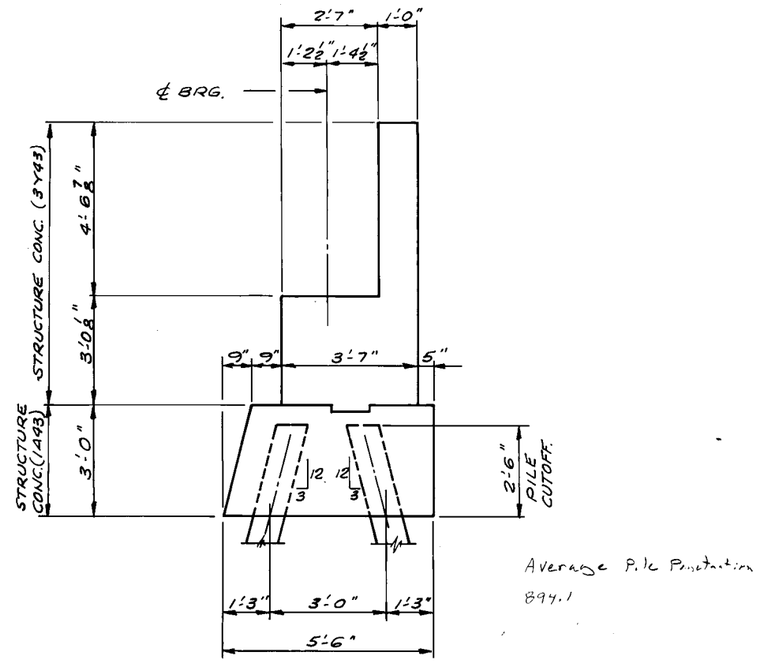
SCHEDULE OF QUANTITIES FOR WIDENING DECK & CONCRETE OVERLAY

ITEM NO.	2401.501	2401.501	0301.603	2401.512	2401.541	2401.541	2402.546	2401.513	2433.501	2405.502	2405.511	2452.510	2452.511	0452.604	0401.601	2511.501	2557.501	2557.501
ITEM	STRUCTURE CONCRETE (1A43)	STRUCTURE CONCRETE (3Y43)	CONCRETE OVERLAY (3U17A)	BRIDGE SLAB CONCRETE (3X33)	REINFORCEMENT BARS EPOXY COATED	REINFORCEMENT BARS	FLOOR DRAIN, TYPE B701	TYPE J RAILING CONCRETE (3X46)	STRUCTURE REMOVALS	PRESTR. CONCRETE BEAMS, 54"	DIAPHRAGMS FOR TYPE 54 PRESTR. BEAMS	STEEL H-PILING DRIVEN, 10"	STEEL H-PILING DELIVERED, 10"	STEEL PILE SHELLS, 20"ϕ	SLOPE PREPARATION	RANDOM RIPRAP, CLASS, III	WIRE FENCE DESIGN-S2	WIRE FENCE DESIGN-S3
UNIT	CU. YD.	CU. YD.	SQ. FT.	SQ. FT.	POUND	POUND	EACH	LIN. FT.	LUMP SUM	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LUMP SUM	CU. YDS.	LIN. FT	LIN. FT.
QUANTITY	15 (P)	35 (P)	14420 (P)	3551 (P)	34570 (P)	730 (P)	3	264 (P)	1	259	63	450	450	60	1	100	264	265



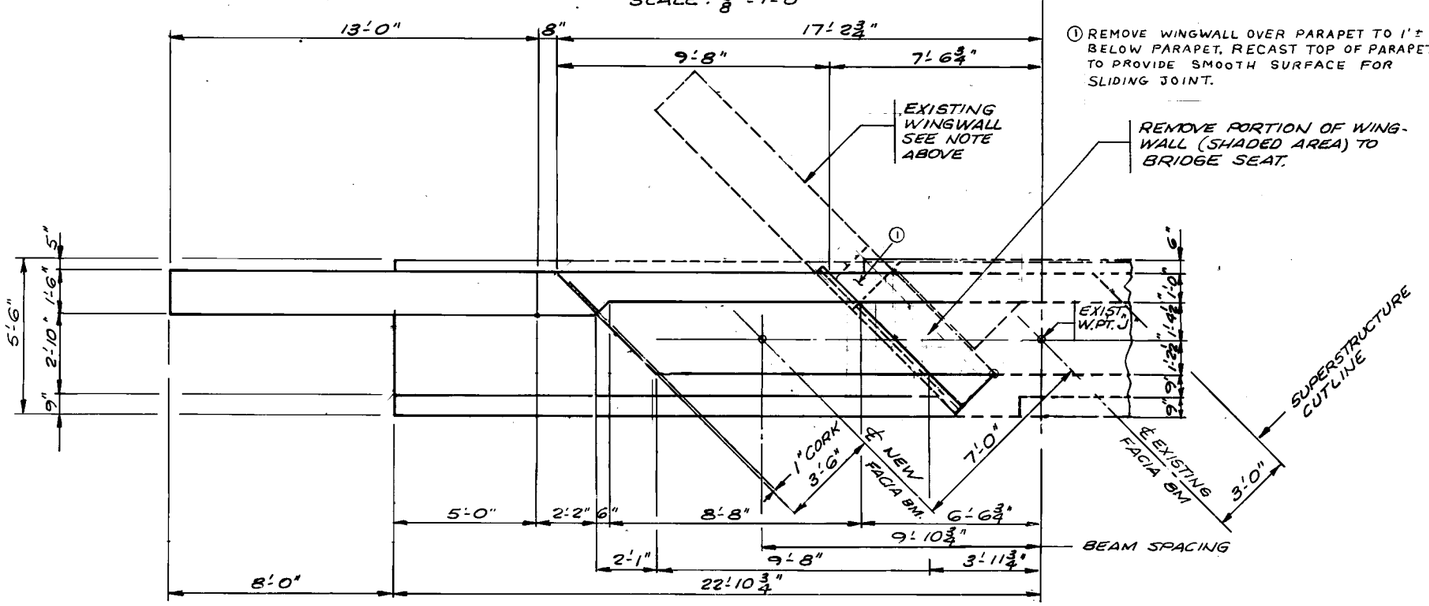
ELEVATION

SCALE : $\frac{3}{8}$"=1'-0"



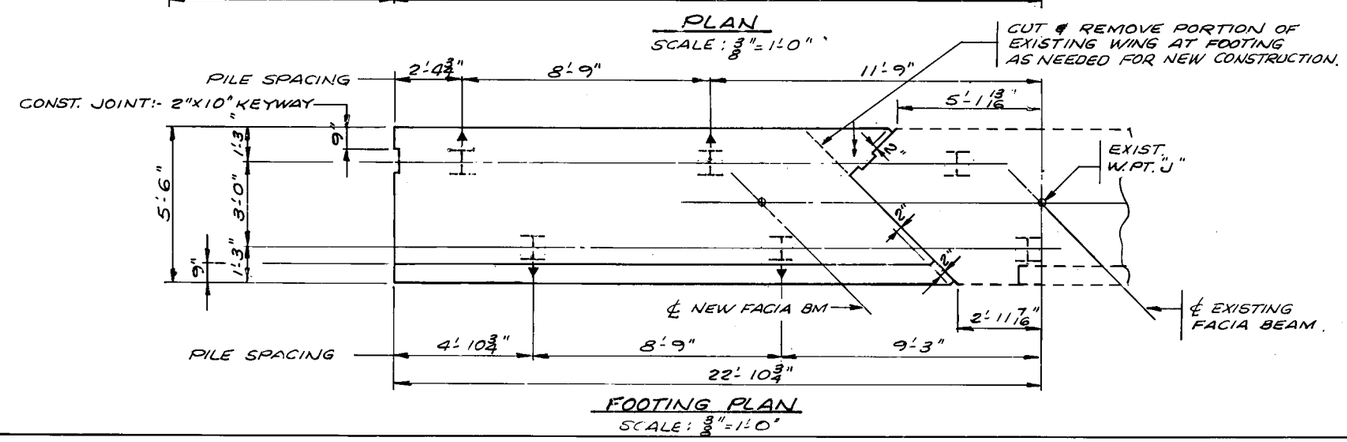
SECTION THRU WIDENED PORTION OF ABUTMENT

SCALE: $\frac{1}{2}$"=1'-0"



PLAN

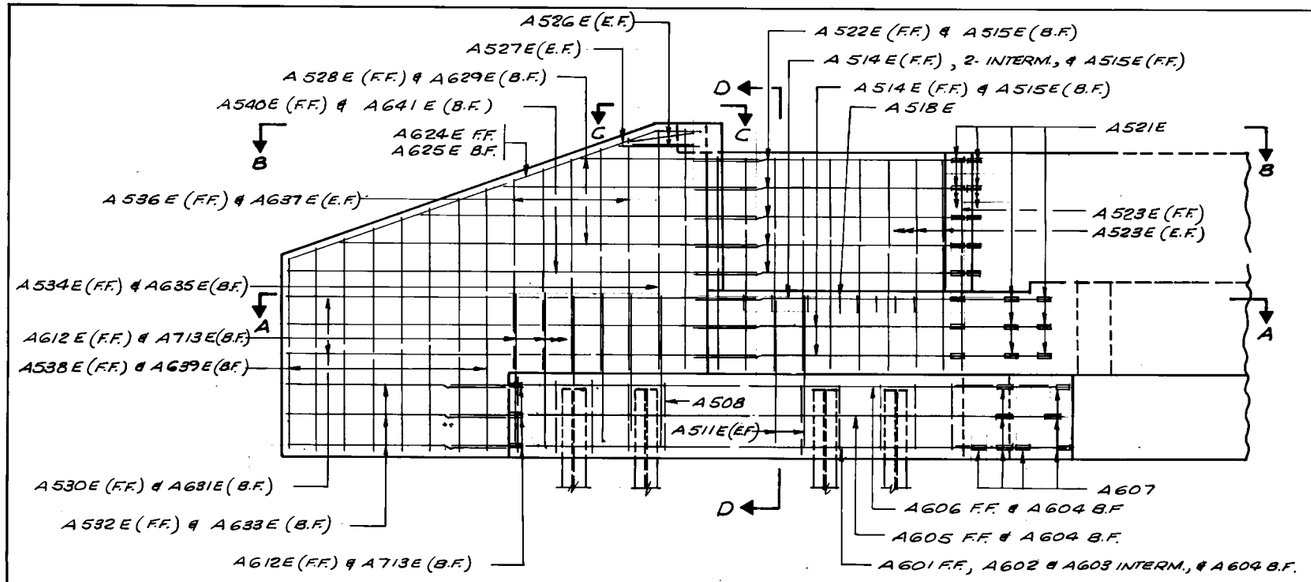
SCALE : $\frac{3}{8}$"=1'-0"



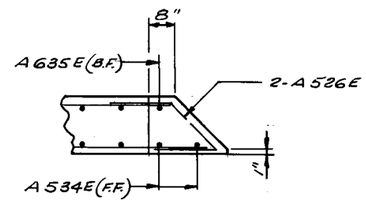
FOOTING PLAN

SCALE : $\frac{3}{8}$"=1'-0"

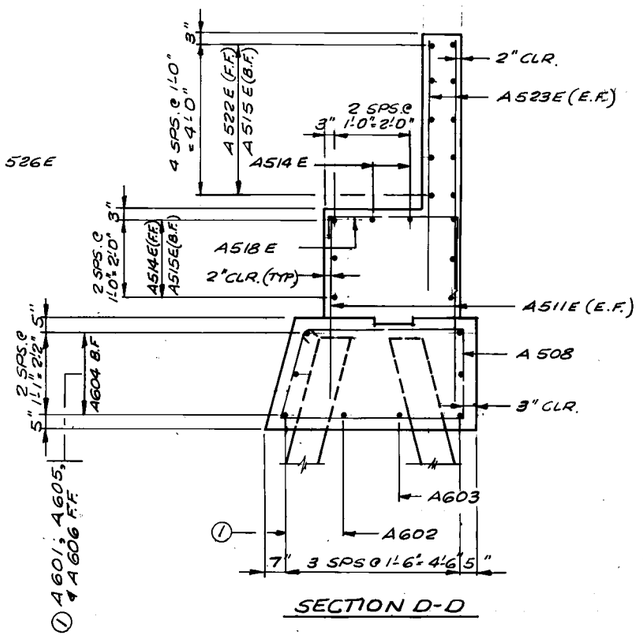
ABUTMENT WIDENING DETAILS- S.W. CORNER S.A.P. 55-622-12	DRAWN W.N.J.	CHECKED R.R.T.	APPROVED 7-7-89	BRIDGE NO 55519
	SHEET 2 OF 17 SHEETS			



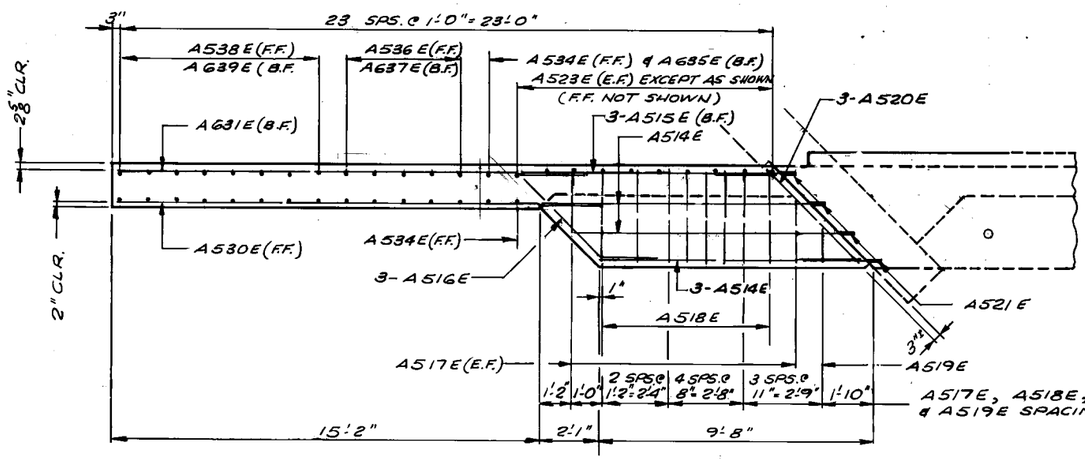
ELEVATION



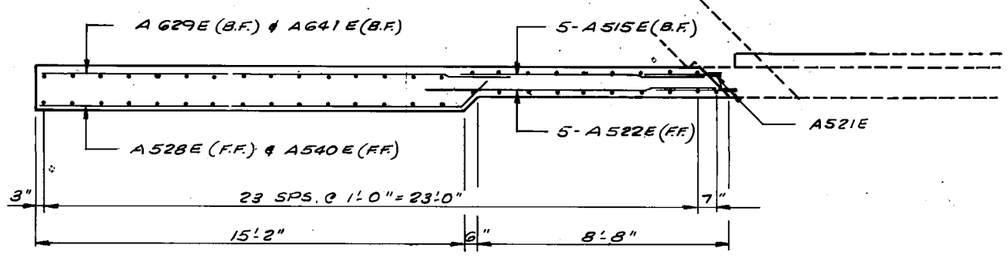
SECTION C-C



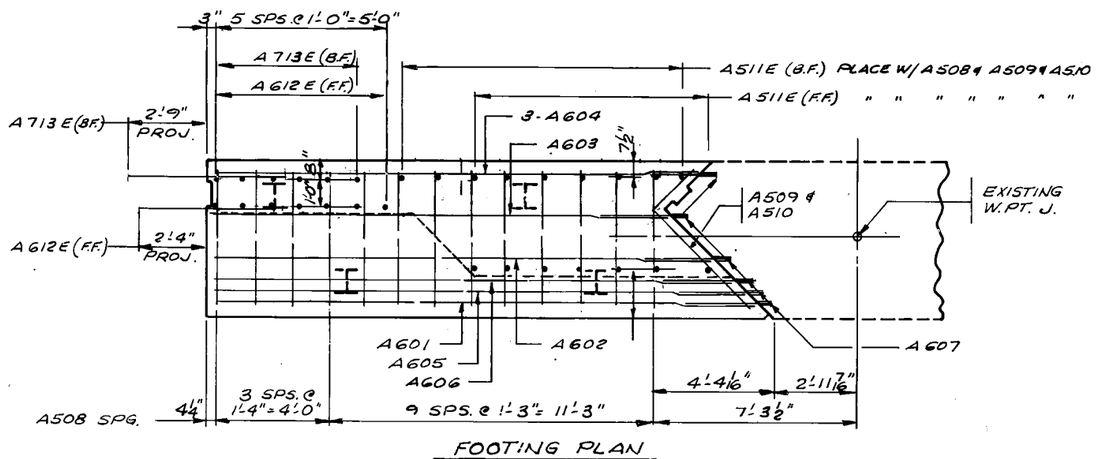
SECTION D-D



SECTION A-A



SECTION B-B



FOOTING PLAN

NOTES:

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

ABUTMENT WIDENING REINF. - S.W. CORNER S.A.P. 55-622-12	DRAWN W.N.J.	CHECKED R.R.T.	APPROVED 7-7-89	BRIDGE NO 55519
	SHEET 3 OF 17 SHEETS			

PORTION OF EXISTING WINGWALL TO BE REMOVED AS DIRECTED BY ENGINEER IN FIELD. SIMILAR TO S.W. CORNER

EL 978.27

EL. 979.52

EL 973.45

2'-6"

9'-4½"

11'-10½"

2'-6"

PILE CUTOFF

EL. 967.64 EXIST. & PROP

Ave. P.le Penetration 895.3

ELEVATION

EXISTING WINGWALL SEE NOTE ABOVE

3'-6"

3'0"

1"CORK

REMOVE PORTION OF WINGWALL (SHADED PORTION) TO BR. SEAT.

B.M. DISK. (REMOVE " " " FROM PRESENT LOCATION & PLACE AS SHOWN.)

New B.M. 979.56

SUPERSTRUCTURE OUTLINE

7'-0"

℄ PROP. FACIA

2'-0¾"

8'-10⅛"

10⅜"

1'-4½"

5"

1'-6"

5"

4"

9"

45°

5'0"

3'-1⅜"

1'-6"

1'-0" WALL

1'-4½"

1'-2½"

4"

℄ BRG.

1'-0" WALL

6" FAVING BRACKET

3'-0"

℄ EXIST. FACIA

SEE SHT 2 FOR ①

EXISTING W. PT. "M"

4'-0 7/16"±

3'-9¾"±

8'-11½"

1'-1⅞"

9'-10¾"

3'-11⅞"

18'-10 11/16"

EXISTING ABUTMENT

PLAN

11'-5 3/16"

9½"

1'-7⅞"

9"

CONST. JOINT 2"X 10" KEYWAY

3'-4"

9'-3"

℄ NEW BEAM

1'-3"

3'-0"

1'-7⅞"

4'-7⅞"

2'-9"

2'-9"

5'-6"

1'-4"

11'-9"

2'-1 11/16"

EXISTING W PT. "M"

5'-6 9/16"±

8'-4⅛"

13'-10 11/16"

FOOTING PLAN

8511E (F.F.) & INTERM

8511E (F.F. & B.F.)

8515E (F.F.) & 8514E (B.F.)

8512E (F.F.) & 8514E (B.F.)

8512E (F.F.), 8513E INTERM, & 8514E (B.F.)

8517E (E.F.)

8517E (F.F.)

8590E (E.F.)

8516E

8510E (E.F.)

8505

8604 E.F

4-8604

8601 F.F. & 8603 B.F.

8601 F.F. & INTERM, 8602 INTERM., & 8603 B.F.

ELEVATION

5 SPS. @ 1'-0" = 5'-0"

3"

8590E (E.F.)

A529 E.F.

8525E (B.F.) 8527E (B.F.)

2"CLR

2"CLR

8524E (F.F.) 8526E (F.F.)

8-8511E (B.F.)

5-8511E (F.F.)

8-8514E (B.F.)

5-8515E (F.F.)

3-8531

3-8511E 8511E

8513E

3-8512E

3 @ 1'-1" = 3'-3"

4 @ 8" = 2'-8"

2 @ 1'-2" = 2'-4"

4"

8516E SPG. EXCEPT AS SHOWN OR NOTED.

2 @ 9"

8517E (E.F.) EXCEPT AS SHOWN.

7 SPS. @ 1'-0" = 7'-0"

1'-6"

1"

PLAN

2 @ 10" = 1'-8"

3 @ 1'-4" = 4'-0"

1'-4"

1'-2½"

1'-5½"

8604

8510E (B.F.)

8510E (F.F.)

3-8603

8602

8601

8508 TOP & BOT.

8609 E. (F.F.) (TYP.)

2'-4" PROJ

8507 TOP

8506 BOT.

3-8601

3 @ 1'-4" = 4'-0"

2 @ 1'-2½" = 2'-5"

3½"

8505 EXCEPT AS SHOWN OR NOTED.

FOOTING PLAN

℄ BEARING

2'-7"

1'-0"

1'-2½"

1'-4½"

8517E

8513E

2"CLR.

3"

1'-2"

8516E

2'-3"

5"

8510E

8505

12

3"CLR.

2'-6"

7"

3 SPS @ 1'-6"

5"

8601

8602

1'-3"

3'-0"

1'-3"

5'-6"

PILE CUTOFF

SECTION THRU WIDENED PORTION OF ABUTMENT

8519E (E.F.)

8520E (F.F.) & 8521E (B.F.)

8522E (F.F.) & 8523E (B.F.)

8524E (F.F.) & 8525E (B.F.)

8618E (E.F.)

A529E (E.F.)

3"

4 SPS @ 1'-0" = 4'-0"

8590E (E.F.)

8517E (E.F.)

8526E (F.F.) & 8527E (B.F.)

8528E (E.F.)

8609 E.F.

NOTE:

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

ABUTMENT WIDENING DETAILS - S.E. CORNER S.A.P. 55-622-12	DRAWN W.N.J.	CHECKED R.R.T.	APPROVED 7-7-89
	SHEET 4 OF 17 SHEETS		BRIDGE NO. 55519

SUMMARY OF QUANTITIES FOR WIDENING 2 ABUTMENTS

	UNIT	EAST ABUT QUANTITY	WEST ABUT. QUANTITY	TOTAL
STRUCTURE CONCRETE 1A43	CU. YD.	5	10	15
STRUCTURE CONCRETE 3Y43	CU. YD.	5 9	13 11	18
REINFORCEMENT BARS	POUND	265	465	730
REINFORCEMENT BARS, EPOXY COATED	POUND	825	1410	2235
(1) STRUCTURE EXCAVATION	LUMP SUM	1/2	1/2	1
STEEL H-PILING DELIVERED, 10"	LIN. FT.	150	300	450
STEEL H-PILING DRIVEN, 10"	LIN. FT.	150	300	450

(1) SEE SPECIAL PROVISIONS

PILE NOTES

4- STEEL H- PILES EST. LENGTH 75 FT. - WEST ABUT.
2- " " " " " " " - EAST "
6- " " " REQ'D FOR WIDENING 2 ABUTMENTS

STEEL H-PILES TO BE HP10X42

PILE SPACING SHOWN IS AT BOTTOM OF CAP.

FOR SPLICE REINFORCEMENT - SEE DETAIL B202.

PILES MARKED THUS ⟜ TO BE BATTERED 3" PER FT. IN DIRECTION SHOWN.

COMPUTED PILE LOADS - TONS PER PILE.	
DEAD LOAD + EARTH PRESSURE	42.0
LIVE LOAD	7.9
TOTAL	49.9

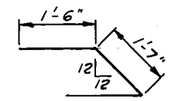
BILL OF REINFORCEMENT FOR WIDENING S.E. END - EAST ABUT.

BAR	NO	LENGTH	SHAPE	LOCATION
B601	4	8'-1"	STR.	FOOTING - LONG. - F.F.
B602	1	8'-4"	"	" - " - INTERM.
B603	3	9'-4"	"	" - " - B.F.
(1) B604	8	3'-0"	"	" - DOWEL ANCHORS
B505	6	14'-10"	BENT	" - STIRRUPS
B506	1	9'-4"	"	" - TIES @ END - BOT.
B507	1	8'-9"	"	" - " " " - TOP
B508	2	9'-10"	"	" - " - TOP & BOT.
B609E	6	4'-6"	STR.	" - DOWELS @ WING -
B510E	14	4'-9"	"	" - VERT. E.F.
(1) B511E	17	2'-8"	"	BR. ST. & PARAPET WALL - ANCHOR DOWELS
B512E	3	9'-4"	"	BRIDGE SEAT - LONG. F.F.
B513E	1	8'-7"	"	" " - " - INTERM.
B514E	8	10'-2"	"	BR. ST. & PARAPET WALL - LONG. B.F.
B515E	5	8'-10"	"	PARAPET WALL - LONG - F.F.
B516E	9	4'-3"	BENT.	BRIDGE SEAT - TIES
B517E	19	6'-11"	STR	BR SEAT & PARAPET WALL - VERT. E.F.
B618E	2	5'-10"	BENT	WINGWALL - LONG - TOP. E.F.
B519E	2	1'-9"	STR.	" - " - E.F.
B520E	1	5'-7"	BENT	" - " - F.F.
B521E	1	6'-9"	"	" - " - B.F.
B522E	1	7'-7"	"	" - " - F.F.
B523E	1	8'-9"	"	" - " - B.F.
B524E	3	7'-11"	"	" - " - F.F.
B525E	3	9'-10"	"	" - " - B.F.
B526E	3	8'-9"	STR.	" - " - F.F.
B527E	3	7'-0"	"	" - " - B.F.
B528E	6	4'-10"	"	" - VERT. - E.F.
B529E	2 SERIES OF 5 BARS	FROM 9'-2" TO 11'-2"	"	" - " - E.F.
B530E	2	8'-8"	"	" - " - E.F.
B531E	3	4'-5"	BENT	BRIDGE SEAT - TIES - END.

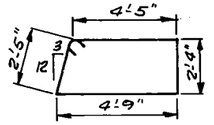
BILL OF REINFORCEMENT FOR WIDENING S.W. END - WEST ABUT.

BAR	NO	LENGTH	SHAPE	LOCATION
AG01	1	19'-1"	STR.	FOOTING - LONG. F.F.
AG02	1	17'-7"	"	" - " - INTERM.
AG03	1	16'-7"	"	" - " - "
AG04	3	17'-0"	"	" - " - B.F.
AG05	1	18'-8"	"	" - " - F.F.
AG06	1	18'-4"	"	" - " - F.F.
(1) AG07	8	3'-0"	"	" - DOWEL ANCHORS
A508	13	14'-10"	BENT	" - STIRRUPS
A509	1	7'-11"	"	" - TIES
A510	1	5'-9"	"	" - "
A511E	16	5'-0"	STR.	FOOTING & BR. SEAT - VERT.
AG12E	10	4'-8"	"	" - DOWELS - VERT & LONG.
A713E	9	5'-6"	"	" - " - " " "
A514E	5	9'-5"	"	BRIDGE SEAT - LONG. - F.F. & INTERM
A515E	8	9'-0"	"	" " & PARAPET - LONG. B.F.
A516E	3	6'-2"	BENT	" " - TIES
A517E	2	3'-3"	"	" " - "
A518E	8	4'-3"	"	" " - "
A519E	1	2'-3"	"	" " - "
A520E	3	4'-7"	STR.	" " - "
(1) A521E	19	2'-9"	"	BR. SEAT & PARAPET WALL - ANCHORS
A522E	5	10'-6"	"	PARAPET WALL - LONG.
A523E	20	6'-8"	"	" " - VERT.
AG24E	1	15'-3"	BENT	WINGWALL - LONG - F.F.
AG25E	1	14'-3"	"	" - " - B.F.
A526E	2	4'-7"	"	" - TIES
A527E	2	2'-8"	STR.	" - LONG - E.F.
A528E	1-SERIES OF 4-BARS	FROM 7'-3" TO 15'-11"	BENT	" - " - F.F.
AG29E	1-SERIES OF 4-BARS	FROM 7'-7" TO 16'-1"	STR.	" - " - B.F.
A530E	3	17'-1"	"	" - " - F.F.
AG31E	3	16'-8"	"	" - " - B.F.
A532E	3	7'-8"	"	" - " - F.F.
AG33E	3	7'-8"	"	" - " - B.F.
A534E	2	8'-1"	"	" - VERT. - F.F.
AG35E	1	8'-1"	"	" - " - B.F.
A536E	1-SERIES OF 5-BARS	FROM 6'-11" TO 8'-5"	"	" - " - F.F.
AG37E	"	"	"	" - " - B.F.
A538E	1-SERIES OF 8 BARS	FROM 7'-0" TO 9'-5"	"	" - " - F.F.
AG39E	"	"	"	" - " - B.F.
A540E	1	16'-4"	BENT	" - LONG - F.F.
AG41E	1	16'-8"	STR.	" - " - B.F.

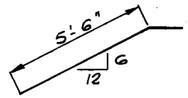
(1) DRILL 4" ϕ GROUT. INCLUDED IN PRICE BID FOR ANCHORAGES TYPE I



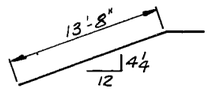
A526E



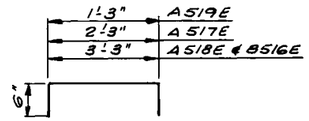
A508E ϕ B505



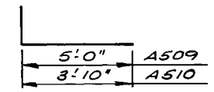
B618E



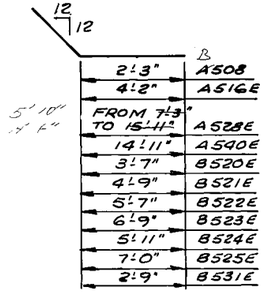
6 6
A524E ϕ A525E



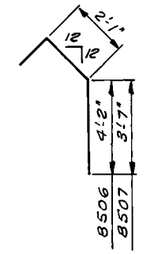
A517E, A518E,
A519E, ϕ B516E



A509 ϕ A510

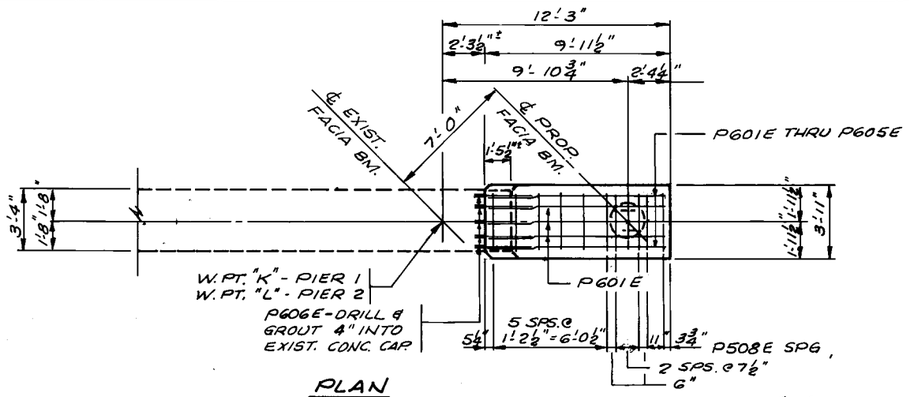


B A508, A516E, A528E,
A540E, B520E THRU
B525E ϕ B531E



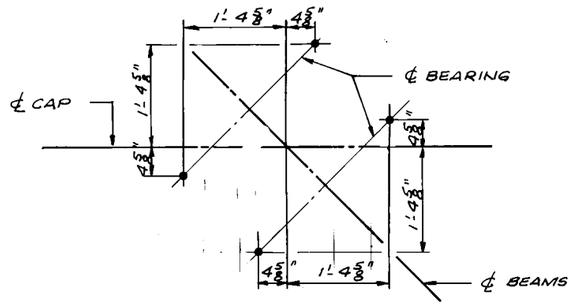
B506 ϕ B507

ABUTMENT WIDENING REINFORCEMENT S.A.P. 55-622-12	DRAWN W.N.J.	CHECKED R.R.T.	APPROVED 7-7-89	BRIDGE NO. 55519
	SHEET 5 OF 17 SHEETS			



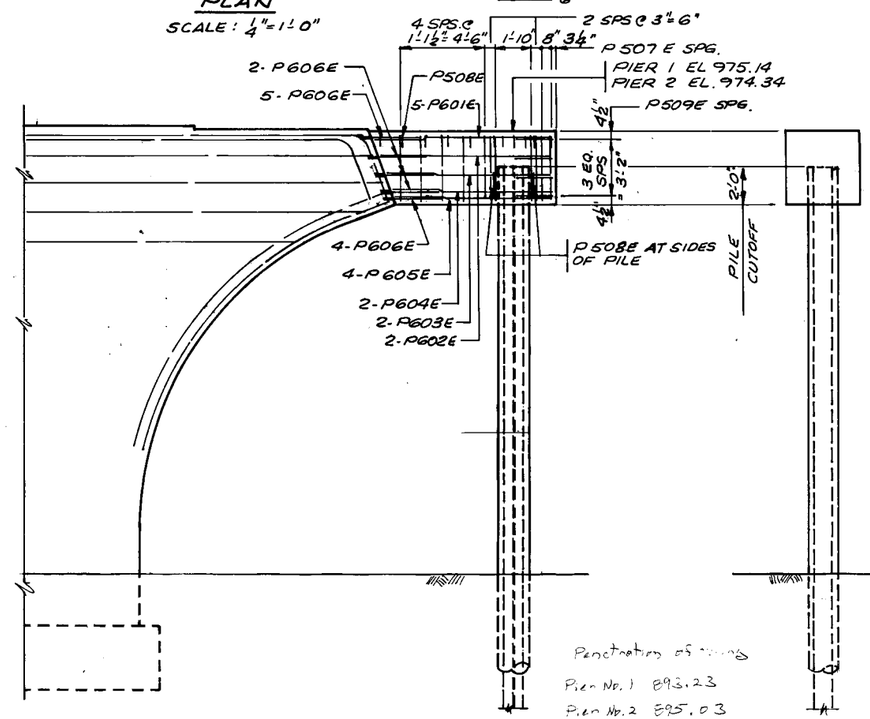
PLAN

SCALE: $\frac{1}{4}$" = 1'-0"



ANCHOR ROD LAYOUT

(PIER 1 ONLY)

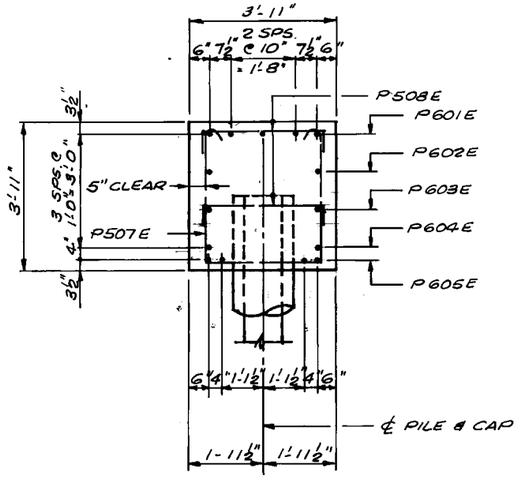


ELEVATION

SCALE: $\frac{1}{4}$" = 1'-0"

END ELEVATION

SCALE: $\frac{1}{4}$" = 1'-0"

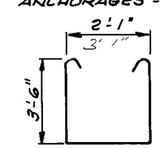


SECTION THRU CAP

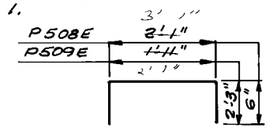
SCALE: $\frac{1}{2}$" = 1'-0"

BILL OF REINFORCEMENT FOR WIDENING 2 PIERS				
BAR	NO.	LENGTH	SHAPE	LOCATION
P601E	10	9'-7"	STR.	CAP - LONG.
P602E	4	9'-3"	"	" - "
P603E	4	8'-11"	"	" - "
P604E	4	8'-6"	"	" - "
P605E	8	8'-5"	"	" - "
① P606E	30	3'-0"	"	" - ANCHORS-LONG.
P507E	22	10'-0"	BENT	" - STIRRUPS
P508E	26	3'-1"	"	" - TIES
P509E	8	6'-5"	"	" - " AT END.

① DRILL 4" ℄ GROUT. INCLUDED IN PRICE BID FOR ANCHORAGES - TYPE 1.

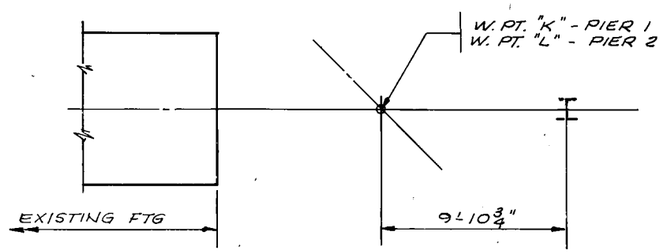


P507E



P508E & P509E

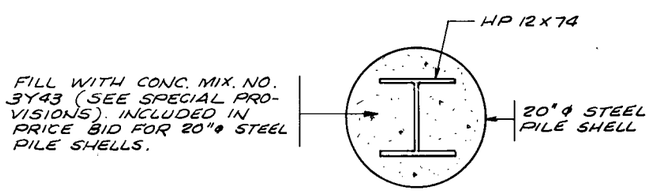
SUMMARY OF QUANTITIES FOR WIDENING 2 PIERS		
STRUCTURE CONCRETE (3Y43)	11	CU.YD.
REINFORCEMENT BARS, EPOXY COATED	1335 910	POUND
STEEL PILE SHELLS, 20"ϕ	60	LIN. FT.
STEEL H-PILING DELIVERED-12"	190	LIN. FT.
STEEL H-PILING DRIVEN-12"	190	LIN. FT.



PILE DRIVING PLAN

PILE NOTES

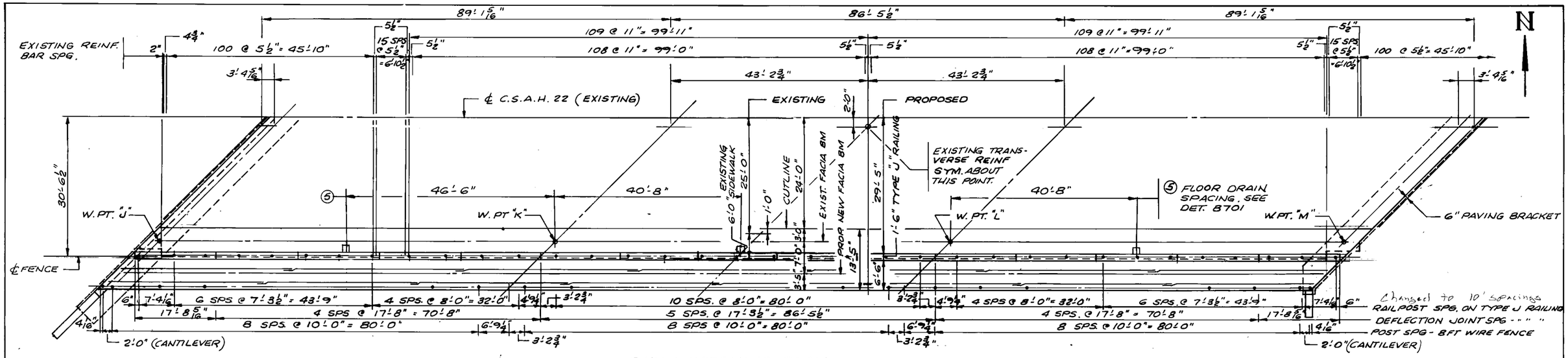
2 - STEEL H - PILES EST. LENGTH 95 FT.
2 - " " PILES REQ'D FOR WIDENING 2 PIERS
2 - STEEL PILE SHELLS 20" ϕ X 30 LONG.
BOTH HP 12X74 STEEL H-PILES TO BE ENCASED IN STEEL PILE SHELLS 20"ϕ AS SHOWN.
FOR SPLICE REINFORCEMENT - SEE DETAIL 8202
PILE SPACING SHOWN IS AT BOTTOM OF CAP.



SECTION A-A

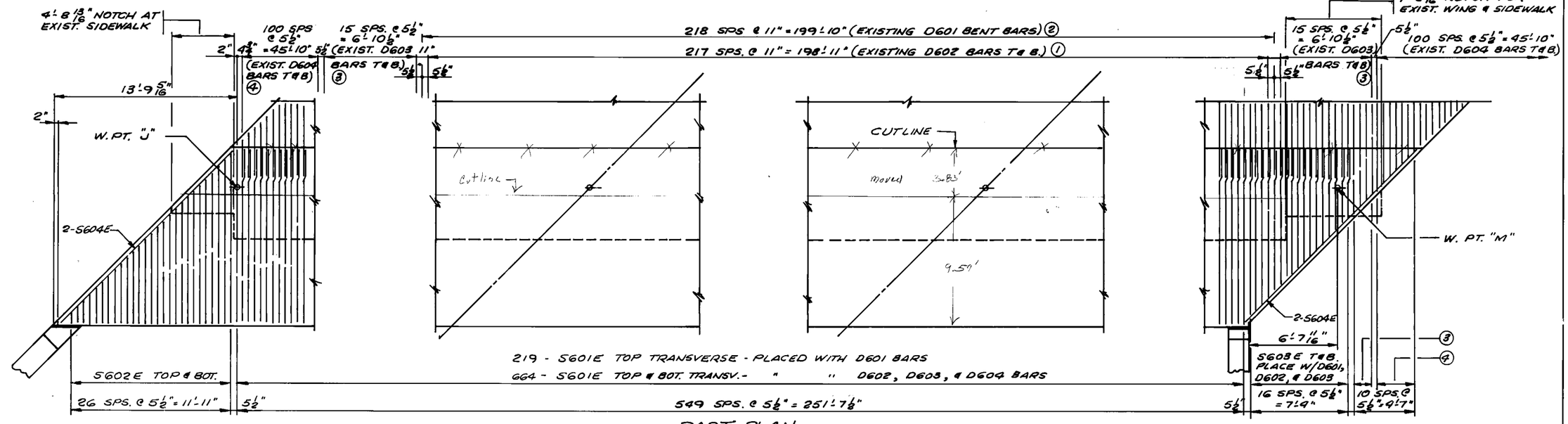
COMPUTED PILE LOADS - TONS PER PILE.	
DEAD LOAD	85.0
LIVE LOAD	15.0
TOTAL	100.0

PIER WIDENING DETAILS S.A.P. 55-622-12	DRAWN W.N.J.	CHECKED R.R.T.	APPROVED 7-7-89	BRIDGE NO. 55519
	SHEET 6 OF 17 SHEETS			



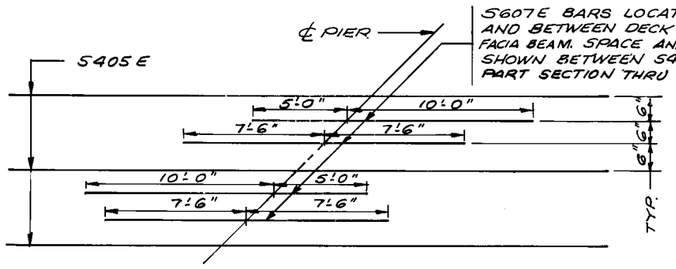
DECK WIDENING PLAN

SCALE: 3/32" = 1'-0"



PART PLAN

(SHOWING TRANSV. REINF. AT WIDENED PART OF DECK)



S607E PLACEMENT DIAGRAM AT PIERS

NO SCALE

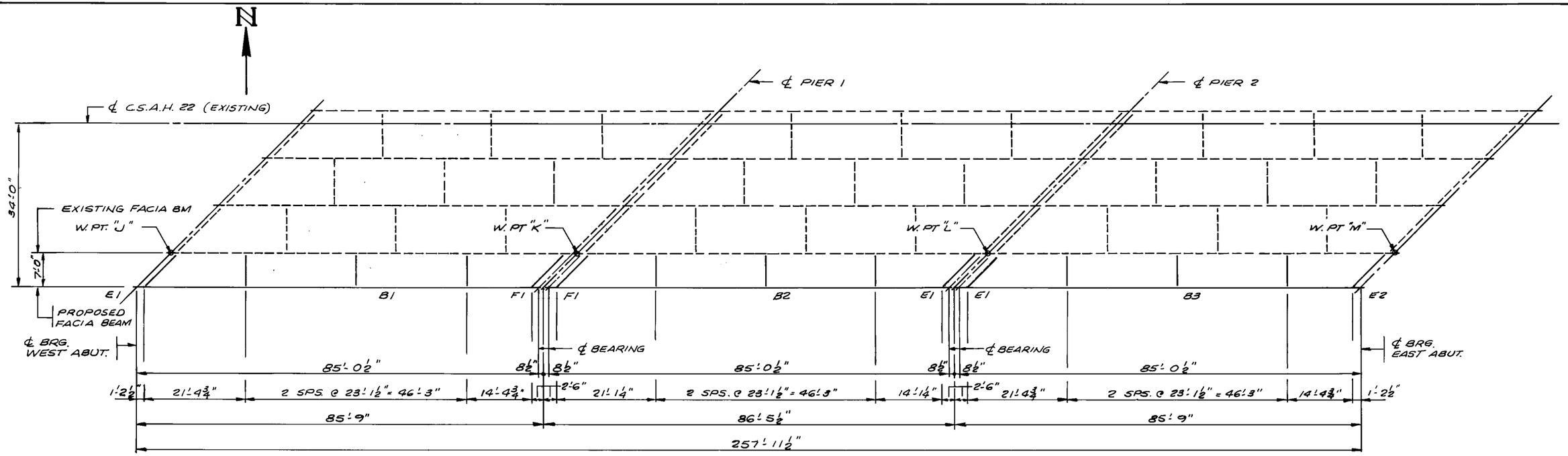
① STRAIGHTEN AND RETAIN EXISTING D602 TOP & BOTTOM TRANSVERSE BARS FOR A DISTANCE OF 36d BEYOND DECK CUTLINE

② STRAIGHTEN EXISTING D601 BENT BAR AND RETAIN UPPER PORTION FOR A DISTANCE OF 36d.

③ STRAIGHTEN AND RETAIN EXISTING D603 FOR A DISTANCE OF 36d BEYOND CUTLINE AT S.W CORNER & WHERE SHOWN @ S.E CORNER. CUT REMAINING D603 TO PROPER LGTH @ S.E CORNER.

④ STRAIGHTEN AND RETAIN EXISTING D604 BARS FOR REQ'D DISTANCE AT S.E CORNER. & FOR A DISTANCE OF 36d BEYOND CUTLINE AT S.W. CORNER.

SUPERSTRUCTURE WIDENING DETAILS S.A.P. 55-622-12	DRAWN W.N.J.	CHECKED R.R.T.	APPROVED 7-7-89	BRIDGE NO 55519
	SHEET 7 OF 16 SHEETS			



FRAMING PLAN FOR WIDENING DECK

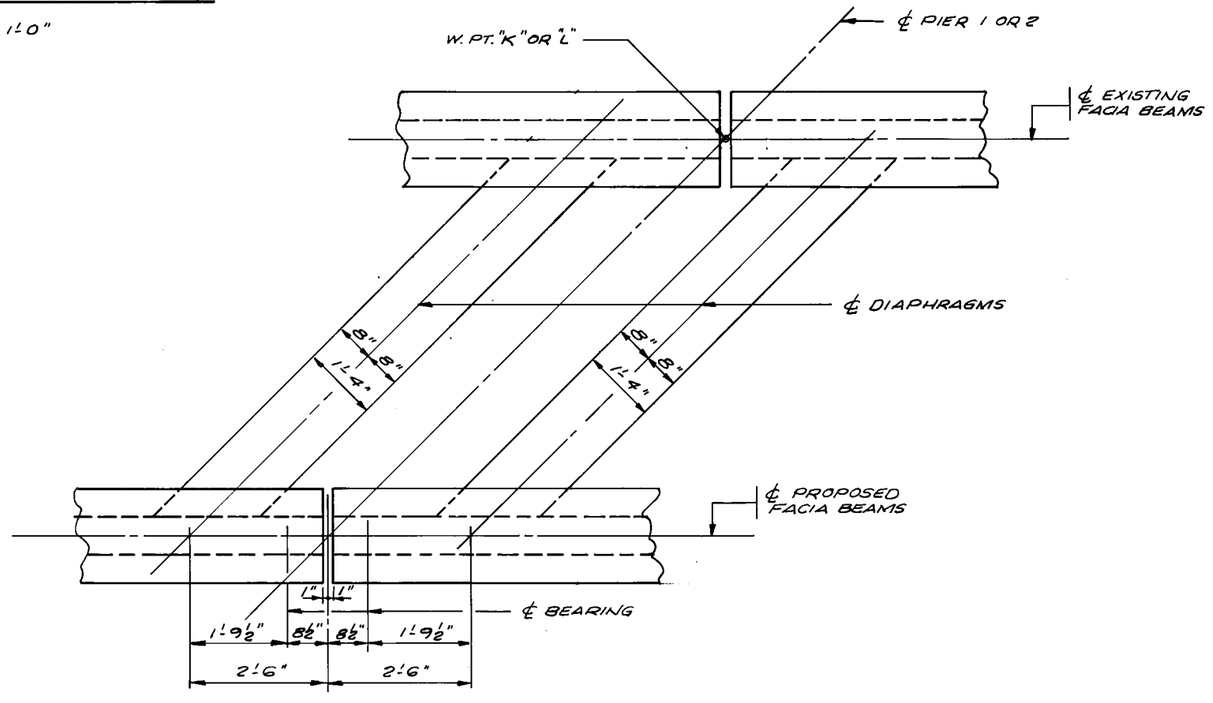
SCALE : $\frac{3}{32}$" = 1'-0"

NOTES:

E1 = CURVED PLATE EXPANSION BEARING ASSEMBLY, TYPE 1
E2 = " " " " " , TYPE 2
F1 = " " FIXED " " , TYPE 1

FOR END DIAPHRAGM INFORMATION SEE DETAIL 8803, SHT. 13.

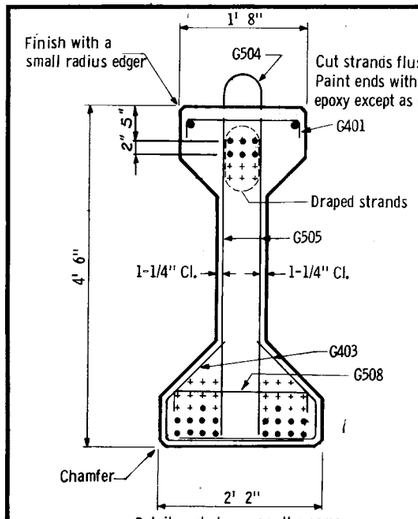
FOR INTERMEDIATE DIAPH. " " " 8802, SHT. 14 OR 8403, SHT. 17.



END DIAPHRAGM DETAILS AT PIERS

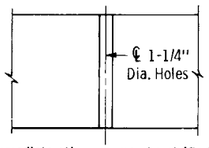
NOTE: FOR REINFORCEMENT SPG. & BAR DETAILS SEE SHT. 13.

FRAMING PLAN	DRAWN W.N.J.	CHECKED R.R.T.	APPROVED 7-7-89	BRIDGE NO. 5551 9
S.A.P. 55-G22-12	SHEET 9 OF 17 SHEETS			



Details not shown are the same as the SECTION AT ℄ BEAM

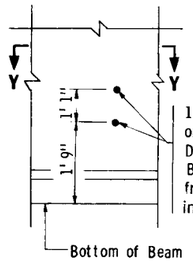
END VIEW



Intermediate stirrups may be shifted the minimum distance required to clear holes or inserts for intermediate diaphragms.

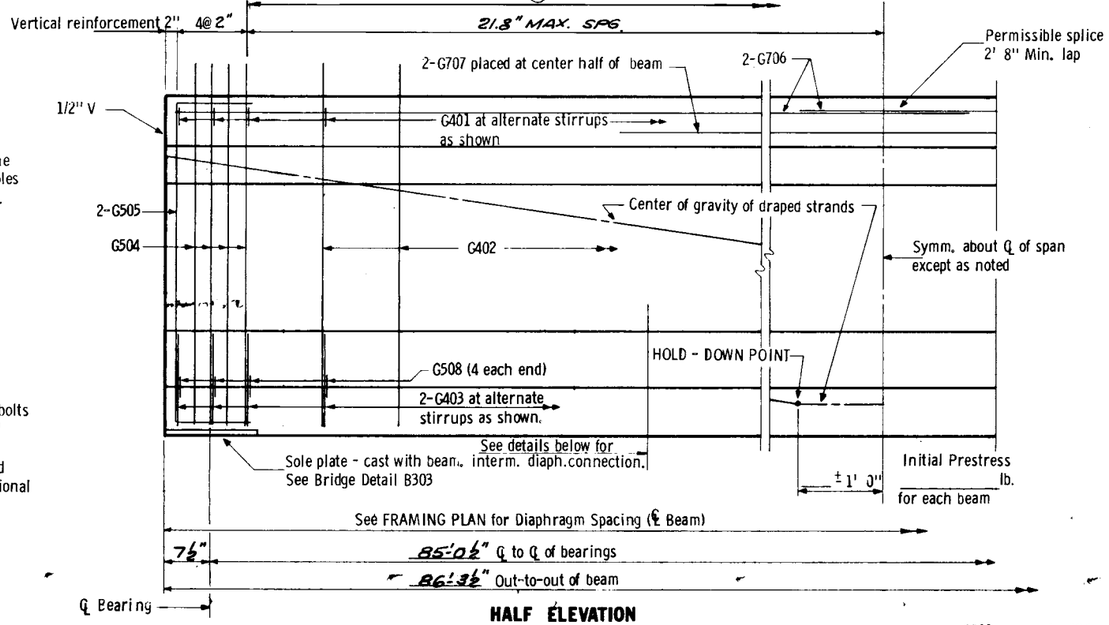
SECTION Y-Y

USE AT INTERIOR BEAM WITH STEEL DIAPHRAGM



1 1/4" ϕ hole for 7/8" bolts or Anchorage for 7/8" Diameter Bolts. See Bridge Detail B403 and framing plan for additional information.

FOR USE WITH STEEL INTERMEDIATE DIAPHRAGM



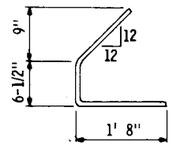
HALF ELEVATION

Bar	Wt.
G401	1.22 lb.
G402	6.62 lb.
G403	2.17 lb.
G504	10.34 lb.
G505	6.34 lb.
G706	
G707	
G508	2.43 lb.

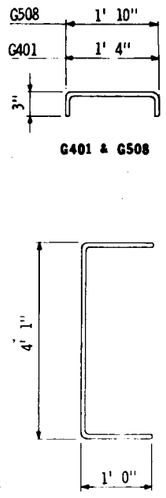
Girder Section Data
Wt./Ft. = 822 lbs.
Cross sec. area at ℄ of span = 789 $in.^2$
C. G. (from bottom) = 24.73 in.
I = 260,730 $in.^4$
S_b = 10,543 $in.^3$
1/2" ϕ 270k strand wt./ft. = .525 lb.
1/2" ϕ 270k strand area = .1531 sq. in.

LOW RELAXATION STRANDS

④ ADDITIONAL G402 BARS ARE REQUIRED WHEN VERTICAL REINFORCEMENT SPACING IS GREATER THAN 2'-0". SPACE ADDITIONAL G402 BARS MIDWAY BETWEEN G401 & G403 BARS.



G403



G401 & G508

G402 & G504

G505

First digit of bar mark indicates bar size. All bar dimensions are out-to-out.

GENERAL NOTES:

Tops of beams shall be rough floated and broomed transversely for bond.

Provide handling hooks or devices as required by Contractor. Hooks or devices provided will be subject to approval of Engineer and shall be installed within 4' 0" of the end of beam.

A modified strand pattern or a bundled strand pattern which does not change center of gravity of strands may be submitted to the Engineer for approval.

A post-tensioned beam may be used as an alternate for the pretensioned design shown. Mn/DOT will provide plans for the post-tensioned alternate on request.

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 an 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 prestressed concrete beams. See Spec. 2405.

See framing plan for beam ends marked "X".

Approximate weight of beam 36.5 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.

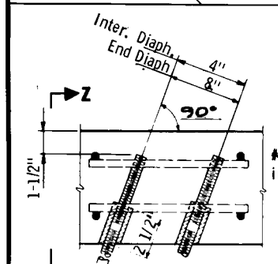
MINIMUM CONCRETE STRENGTH - P.S.I.		
	① f'ci	② f'c
Required min. Concrete Strength	2700	4100

① Minimum concrete strength at time of prestress transfer.

② Minimum concrete strength when curing can be discontinued and beam transported and installed.

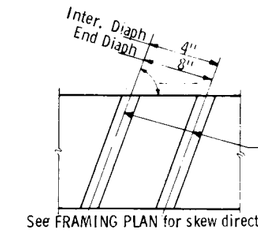
Fig. 5-397.505

Approved: 2-22-80



SECTION X-X

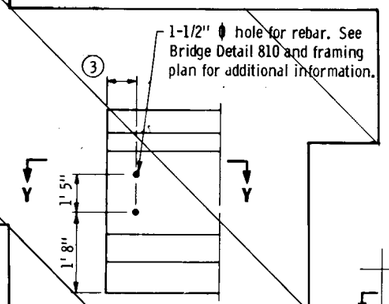
USE AT FASCIA BEAM AND INTERIOR BEAM WITH STAGGERED DIAPHRAGMS



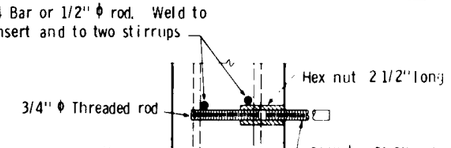
See FRAMING PLAN for skew direction. Intermediate stirrups may be shifted the minimum distance required to clear holes or inserts for intermediate diaphragms.

SECTION X-X

USE AT INTERIOR BEAM WITH CONTINUOUS CONCRETE DIAPHRAGM

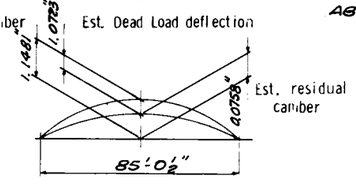


CONCRETE END DIAPHRAGMS PILE BENT ABUTMENT



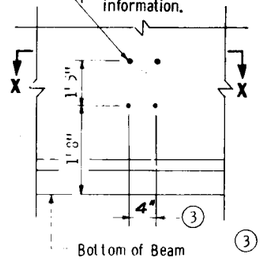
Nuts and rods per Spec. 3306. No paint

SECTION Z-Z

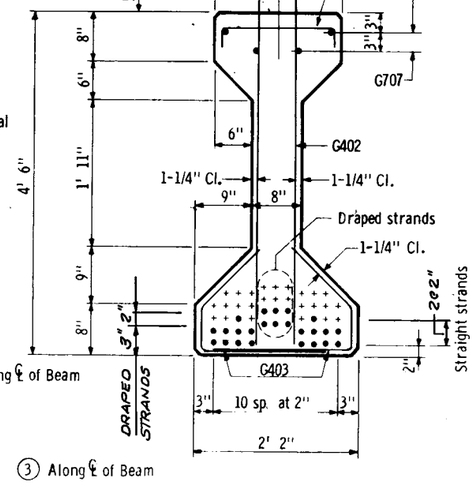


Deflections shown are for weight of slab, wearing course, railing, sidewalk, median and diaphragms only. Engineer will take elevations at top of beams after erection and will allow for deflections shown to enable contractor to build forms to correct grade and specified slab thickness.

CAMBER DIAGRAM

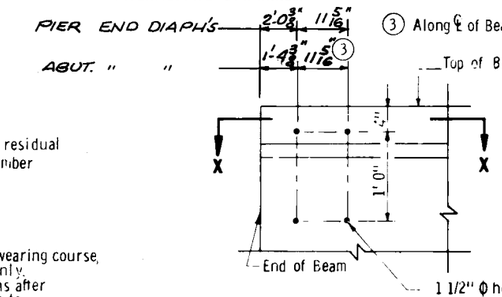


FOR USE WITH CONCRETE INTERMEDIATE DIAPHRAGM



③ Along ℄ of Beam

SECTION AT ℄ BEAM



1 1/2" ϕ holes for rebars or Anchorage for 3/4" Diameter Threaded Rods. See Bridge Detail B802 for additional information.

CONCRETE END DIAPHRAGMS PARAPET ABUTMENT & AT PIERS

Y DISTANCES (IN INCHES)			
	NO.	℄ SPAN	END
Straight strands	18	3.33	
Draped strands	6	4.00	48.0 [a]
Total strands	24	3.50	

Y = distance of Center of Gravity of strands from bottom of beam. All strands spaced 2" c-c, horizontally and vertically except as noted.

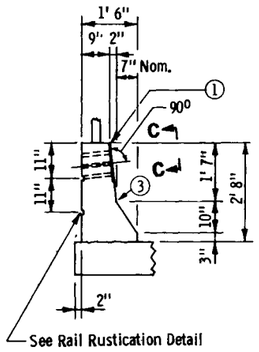
All strands 1/2" ϕ 270 kip, ultimate strength.

[a] A tolerance of ± 2" will be permitted in this dimension.

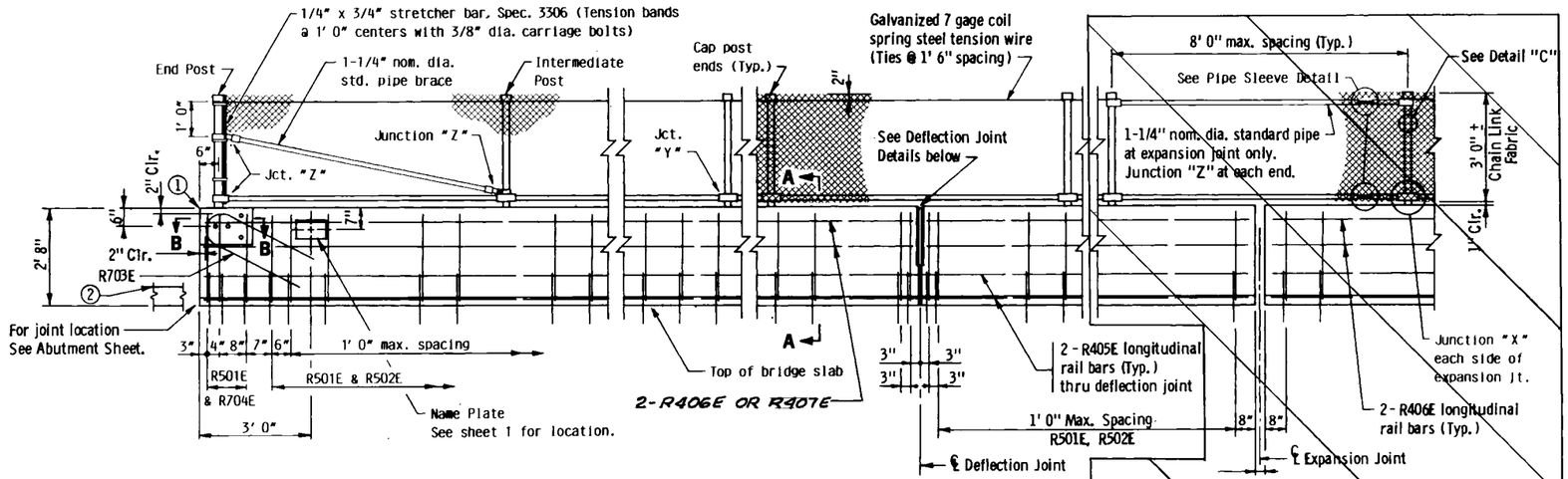
S.A.P. 55-622-12

BEAMS 81, 82, & 83

TITLE: 54" PRESTRESSED CONCRETE BEAM (PRETENSIONED) TYPE 54-87	DES:	DR:	APPROVED: 7-7-89	Bridge No. 55519
	CHK:	CHK:	Sheet No. 10 of 17 Sheets	



END VIEW



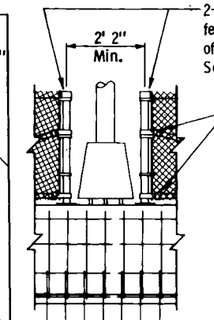
DEFLECTION JOINT

① See guardrail connection detail
② Top of approach curb
③ 6" Minimum, 10" Maximum Radius

INSIDE ELEVATION OF RAILING
INTEGRAL END POST

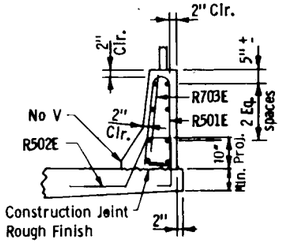
EXPANSION JOINT
(EXPANSION DEVICE NOT SHOWN)

An expansion joint is required only if an expansion device is used. Provide pipe sleeve in span between the vertical posts at expansion joint. See Superstructure Sheets for location.



LIGHT STANDARD

See Standard Bridge Detail Sheets for light anchorage and conduit system details.

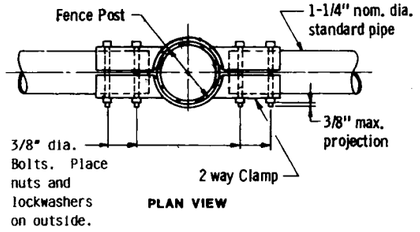


SECTION A-A

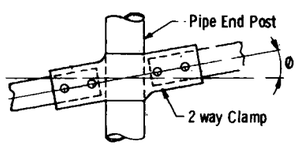
BILL OF REINFORCEMENT FOR RAILING

BAR	NO.	LENGTH	SHAPE	LOCATION
R501E	302	6' 1"	Bent	Rail Vertical
R502E	296	5' 6"	Bent	Rail Vertical
R703E	2	6' 6"	Bent	Integral End Post
R704E	6	5' 6"	Bent	Integral End Post
R405E	32	34'-4"	Straight	Rail Longitudinal
R406E	40	17'-4"	Straight	Rail Longitudinal
R407E	20	16'-11"	"	" "

Conc. Railing = 0.100 Cu. Yds. per ft. and 405 lbs. per ft.

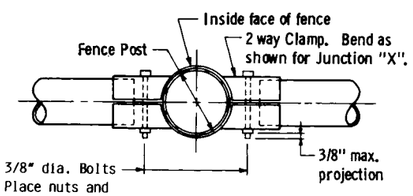


PLAN VIEW

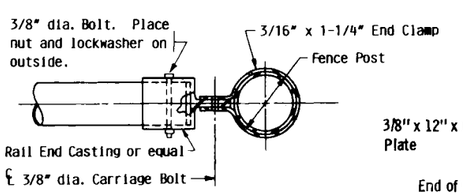


ELEVATION

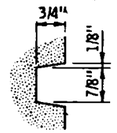
JUNCTION "X"



JUNCTION "Y"



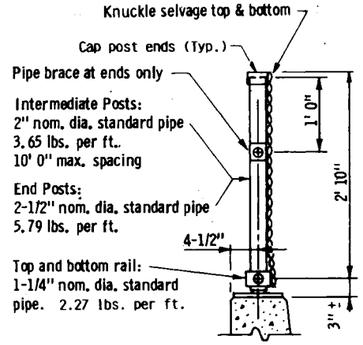
JUNCTION "Z"



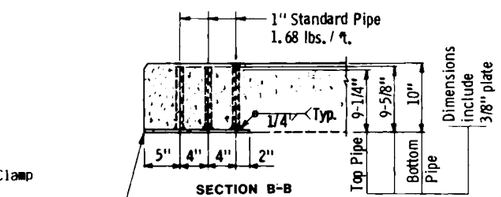
RAIL RUSTICATION

2-WAY CLAMP BENDING TABLE

Grade of Fence	θ
0° to 2°	0°
2° to 6°	4°
6° to 10°	8°



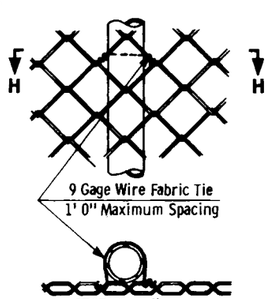
TYPICAL SECTION THRU FENCE
(Intermediate Post Shown)



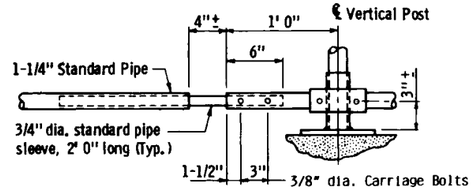
SECTION B-B
(Reinforcement not shown)

VIEW C-C

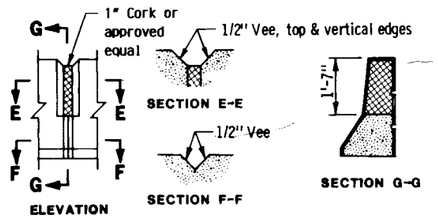
GUARDRAIL CONNECTION DETAIL
Estimated Weight = 24 lbs.



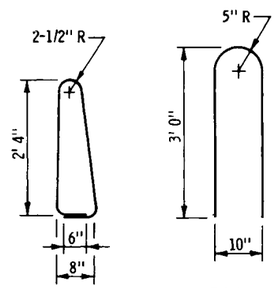
DETAIL "C"

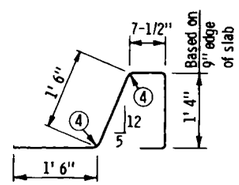


PIPE SLEEVE DETAIL
For 4" maximum bridge expansion



DEFLECTION JOINT DETAILS





④ R502E = 3-3/4" R704E = 5-1/4" inside dia.

GENERAL NOTES

Bars marked with the suffix "E" shall be epoxy coated in accordance with Spec. 3301

Finish all edges of rail with 1/2" vee except where otherwise noted.

Fence post anchorages shall be Type B.
See Standard Detail B905 "Fence Post Anchorage"

All posts shall have a means to securely hold the top tension wire in position and allow for the removal and replacement of a post without damaging the top wire.

Wire ties may be 9 gage galvanized steel or 0.179" minimum aluminum alloy conforming to ASTM B211, Alloy 1100-H18. Use 12-1/2 gage galvanized hog rings for tension wire ties.

End Post bracing is not to exceed 500 ft. maximum interval.

Concrete in the rail base shall be Mix No. 3X46

All material in the concrete base is included in the superstructure quantities.

For spacing of fence posts, joints and electrical grounds, see superstructure sheets.

Fence posts & anchorages shall be set vertical, unless otherwise noted.

See special provisions for requirements not included on this sheet and for basis of payment.

Guardrail connection shall be Structural Steel Spec. 3306 and galvanized after fabrication per Spec. 3394

The guard rail connection is included in the price bid for other items.

Maximum spacing of deflection joints shall be 20' 0".

The length of railing concrete is to be measured for payment between the outside faces of railing.

℄ of fence post anchorage shall be a minimum of 6" from joints.

Fence is design S-2

S.A.P. 55-622-12

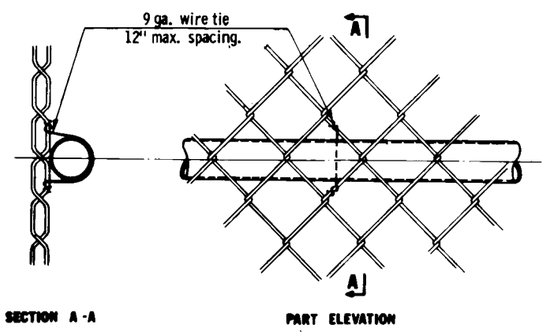
REVISED:	APPROVED: Nov. 26, 1985	FIG. 5-397.156

TITLE: **BIKEWAY RAILING CONCRETE (TYPE J) & FENCE 52**
Integral End Post - No Sidewalk - w/o Wearing Course

DES:	DR:	APPROVED: 7-7-89
CHK:	CHK:	

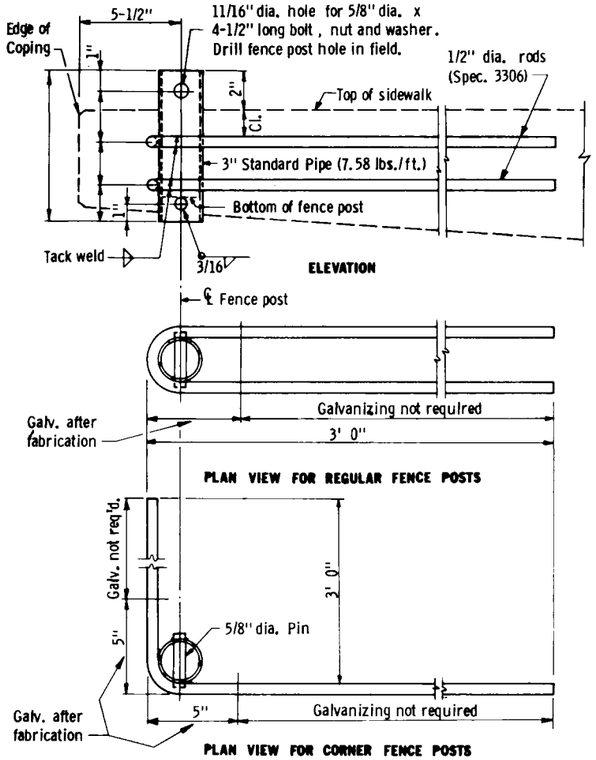
Sheet No. 11 of 17 Sheets

Bridge No. 55519

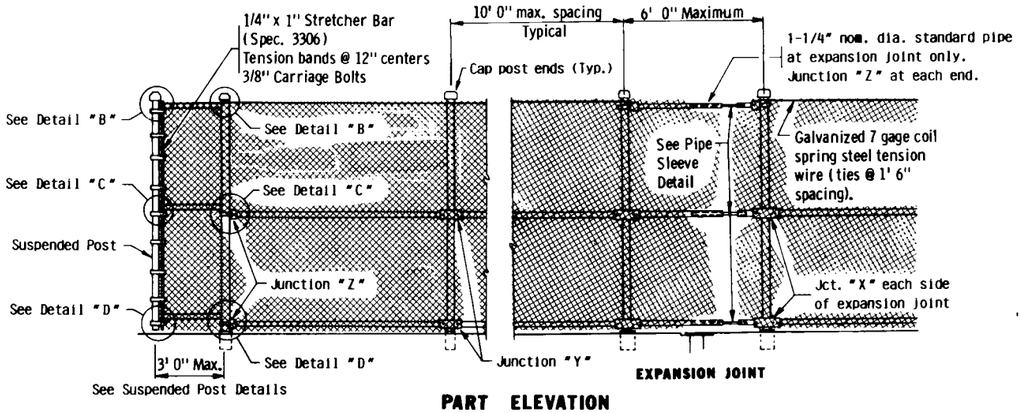


SECTION A-A PART ELEVATION

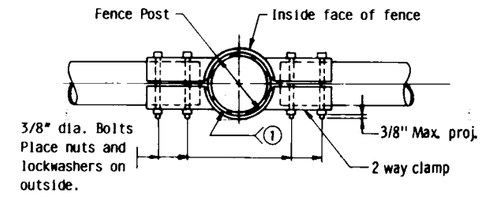
FABRIC TIE



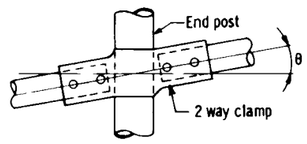
PIPE ANCHORAGE FOR FENCE POSTS
TYPE 1



PART ELEVATION



PLAN VIEW

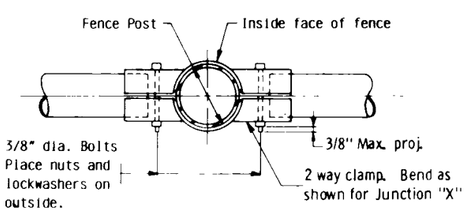


ELEVATION

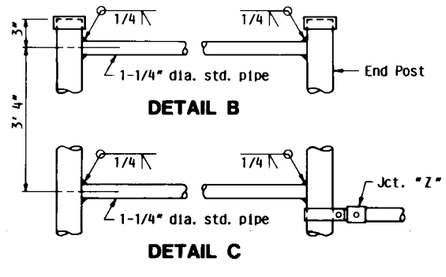
JUNCTION "X"

2-WAY CLAMP BENDING TABLE

GRADE OF FENCE	θ
0° to 2°	0°
2° to 6°	4°
6° to 10°	8°

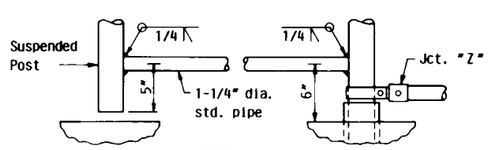


JUNCTION "Y"

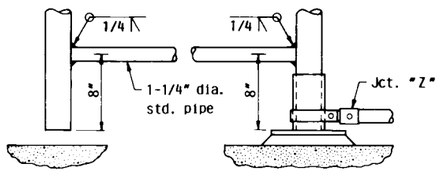


DETAIL B

DETAIL C

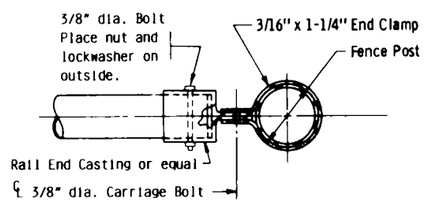


DETAIL D
USE WITH TYPE 1 ANCHORAGE

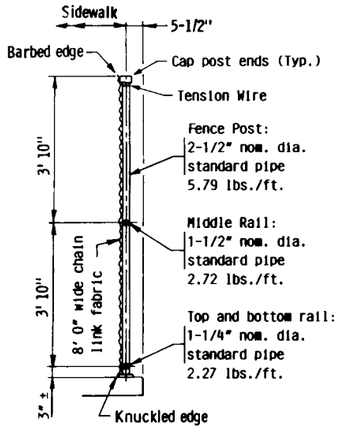


DETAIL D
USE WITH ALTERNATE ANCHORAGE

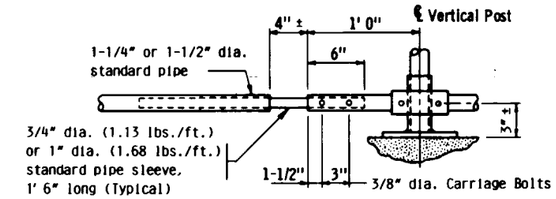
SUSPENDED POST DETAILS



JUNCTION "Z"



TYPICAL SECTION THRU FENCE



PIPE SLEEVE DETAIL
For 4" maximum bridge expansion

GENERAL NOTES:

For alternate to Type 1 anchorages, see Detail No. B905, Type A End Posts.

For post spacing, location, type of anchorages & other details, see sheet no. 7

Maximum spacing for 2-1/2" standard pipe posts = 10' 0". Post spacings of 10' 0" are desired for efficient use of standard pipe lengths.

Fence posts and anchorages shall be set vertical, unless otherwise noted.

See special provisions for requirements not included on this sheet and for basis of payment.

All posts shall have a means to securely hold the top tension wire in position and allow for the removal and replacement of a post without damaging the top wire.

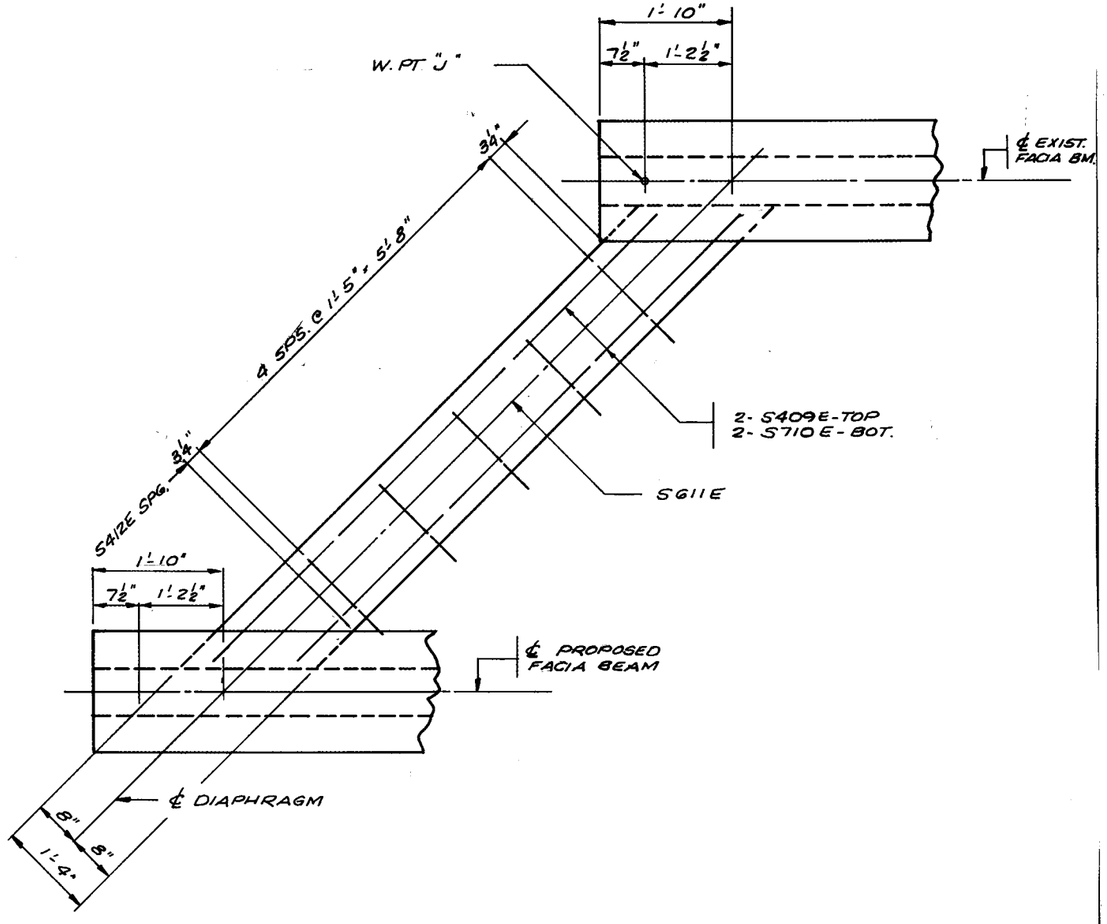
Wire ties may be 9 gage galvanized steel or 0.179" minimum aluminum alloy conforming to ASTM B211, Alloy 1100-H18. Use 12-1/2 gage galvanized hog rings for tension wire ties.

℄ of fence post anchorage to be a minimum of 6" from joints.

S.A.P. 55-622-12

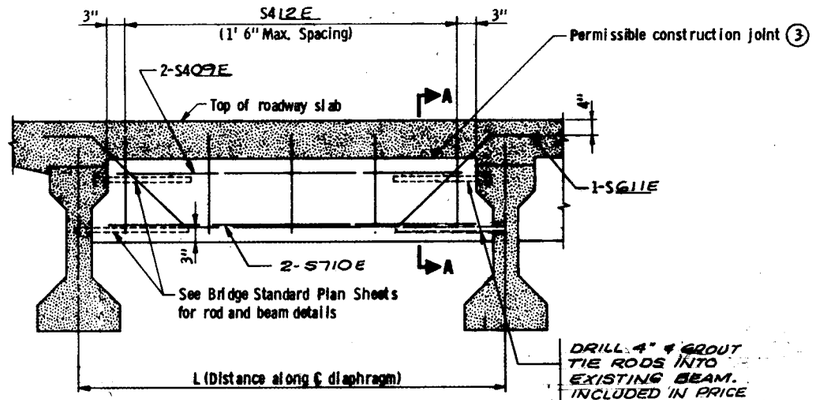
REVISED:	APPROVED: Nov. 26, 1985	FIG. 5-397.205

TITLE: 8 FT. WIRE FENCE - S3 FOR PEDESTRIAN WALKS (USE WITH TYPE J RAILING)	DES:	DR:	APPROVED: 7-7-89	Bridge No. 55519
	CHK:	CHK:	Sheet No. 12 of 17 Sheets	



END DIAPHRAGM DETAILS

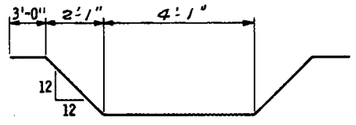
(WEST ABUT. SHOWN)



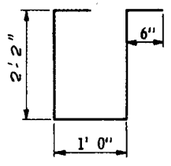
PART TRANSVERSE SECTION AT END DIAPHRAGM

LONGITUDINAL REINFORCEMENT IN BOTTOM OF DIAPHRAGM

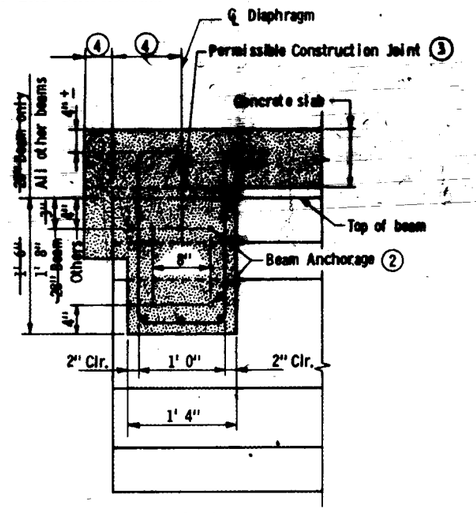
BEAM SPACING ¢ TO ¢ (1)	BARS REQUIRED			
	STRAIGHT		BENT	
	NO.	SIZE	NO.	SIZE
Up to 8'	2	6	1	5
Over 8' to 11'	2	7	1	6
Over 11' to 13'	2	8	1	8
Over 13' to 15'	2	9	1	10
Over 15' to 18'	2	11	1	11



S611E



S412E



SECTION A-A

NOTE:

(1) Distance measured along ¢ of diaphragm.

(2) BEAM ANCHORAGES
Fascia beams only: four 3/4" dia. threaded rods.
Interior beams: Two 3/4" dia. threaded rods on top two No. 7 bars on bottom.

(3) When construction joint is used at this location, diaphragm falsework shall remain in place until completion of slab curing period.

(4) See plans for dimensions.

(5) All diaphragm bars shown are listed with the superstructure reinforcement. Diaphragm concrete and reinforcement quantities are included in superstructure quantites (except threaded rods are included in payment for prestressed beams).

APPROVED: March 3, 1977

Developed by: ENGINEERING STANDARDS, AND BRIDGES AND STRUCTURES

Issued by: ENGINEERING STANDARDS

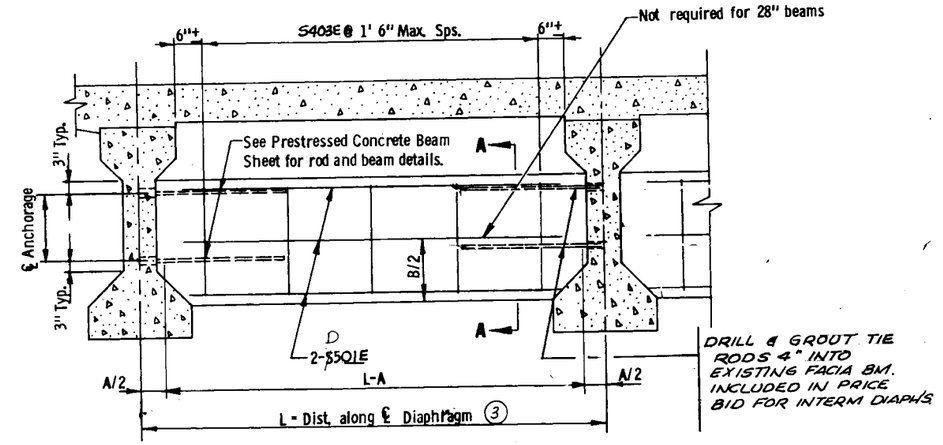
STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

END DIAPHRAGM
(28"-54" PRESTRESSED CONCRETE BEAM SPAN WITH PARAPET ABUTS.)

REVISION AUG. 23, 1978

DETAIL NO. **B803**

DETAILS	DRAWN	CHECKED	APPROVED	BRIDGE NO.
S.A.P. 55-622-12	W.N.J	R.R.T.	7-7-89	55519
	SHEET 13 OF 17 SHEETS			



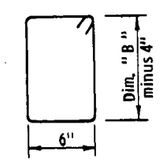
PART TRANSVERSE SECTION

Bm. Ht.	Dim. "A" For comp volume	Diaph. Dim. "B"	S403 Length
28"	7-1/2"	1'-4"	3'-9"
36"	7-3/4"	1'-9"	4'-7"
40"	8-3/4"	1'-11"	4'-11"
45"	9"	2'-2 1/2"	5'-6"
54"	10-1/2"	2'-8"	6'-5"

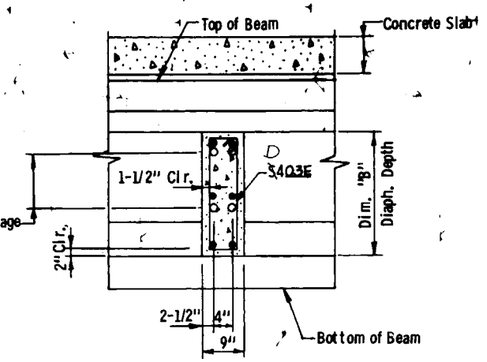
Concrete volume per diaphragm

$$\frac{(L-A)\times B\times .75}{27} = \text{(Cu. yd.)}$$

BAR	NO	LENGTH	SHAPE	LOCATION
D501E	6	4'-8"	STR.	DIAPH. HORIZ.
D502E	—	—	STR.	DIAPH. HORIZ
D403E	4	~~5'-11"~~ 6'-5"	BENT	DIAPH. VERT.



S403



SECTION A-A

GENERAL NOTES

1. For Diaphragms 20⁰ and over, use threaded rods as shown on standard prestressed concrete beam sheet.
2. All diaphragm concrete and reinforcement bars shown on this detail to be included in payment for diaphragms for prestressed beams. Threaded rods are included in payment for prestressed concrete beams.
3. PAYMENT LENGTH FOR DIAPHRAGMS.

APPROVED: MARCH 27, 1979

Developed by: OFFICE OF ENGINEERING STANDARDS AND BRIDGE DESIGN

Issued by: OFFICE OF ENGINEERING STANDARDS

MINNESOTA DEPARTMENT OF TRANSPORTATION

CONCRETE INTERMEDIATE DIAPHRAGM

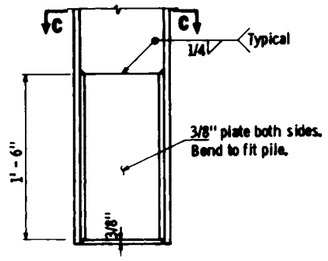
(FOR 28"-54" PRESTRESSED CONCRETE BEAM SPANS)

DETAIL NO. **B802**

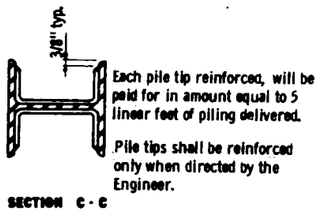
DETAILS
S.A.P. 55-622-12

DRAWN	CHECKED	APPROVED 7-7-89
SHEET 14 OF 17 SHEETS		

BRIDGE NO. 55519

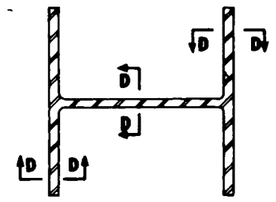


ELEVATION

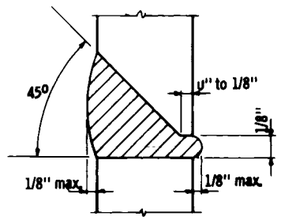


SECTION C - C

DETAIL OF PILE TIP REINFORCEMENT



SECTION AT JOINT



SECTION D - D

100% BUTT WELDED PILE SPLICE

NOTES:

A. W. S. Type E7016 or E7018 (low-hydrogen) electrodes shall be used for 100% butt welded splices.

A. W. S. Type E6010, E6011 electrodes, or E7016 or E7018 (low-hydrogen) electrodes, shall be used for the alternate plate type pile splice.

Low-hydrogen electrodes shall be supplied in hermetically (air-tight) sealed containers.

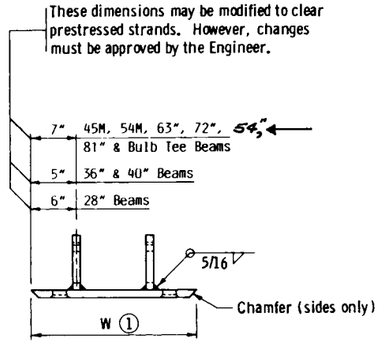
Low-hydrogen electrodes shall be stored in holding ovens at a temperature of not less than 250° F.

Low-hydrogen electrodes shall be placed in a holding oven for at least 8 hours, after having been exposed to the atmosphere for more than 2 hours.

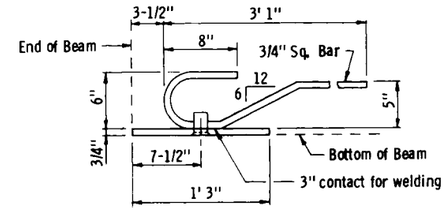
Any type electrode which has become wet, soiled, or damaged shall not be used.

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.

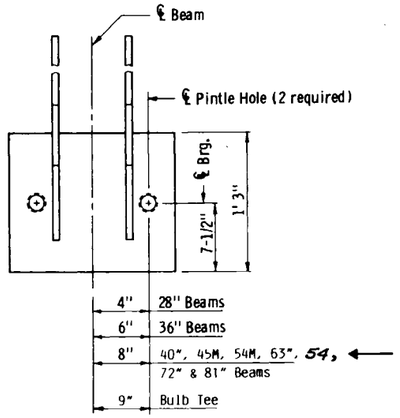
APPROVED: November 5, 1979 Developed by: BRIDGE STANDARDS & BRIDGE AND STRUCTURES SECTION Issued by: ENGINEERING STANDARDS SECTION	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION **PILE SPLICE and TIP REINFORCEMENT** **STEEL H BEARING PILES 10" TO 14"**		DETAIL NO. **B202**



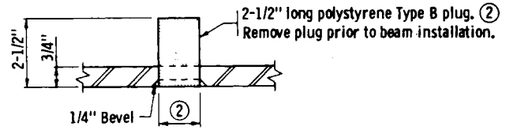
FRONT VIEW



SIDE VIEW



TOP VIEW



PINTLE HOLE DETAIL

NOTES:

Material to be structural steel per Spec. 3306

Sole plate for Bearing Assembly to be hot dipped galvanized per Spec. 3394 after fabrication.
Pintle holes shall be free of zinc build up from galvanizing.

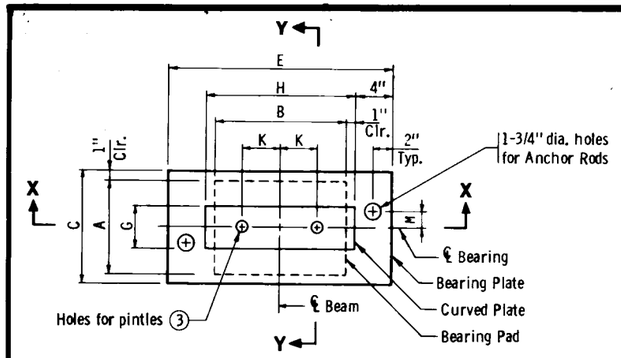
Payment for sole plates to be included in price bid for Prestressed Concrete Beams.

(1) Dimension "W" to be the width at the bottom flange of the beam minus 1/4".

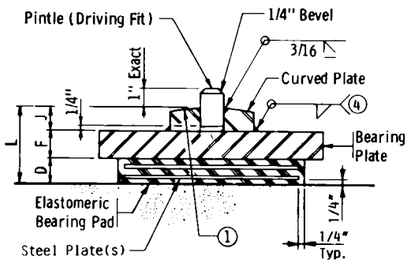
(2) 1-1/2" dia. for 1-1/4" dia. pintles.
1-3/4" dia. for 1-1/2" dia. pintles.
Check bearing assemblies for pintle size used.

APPROVED: March 12, 1987 Developed by: ENGINEERING STANDARDS and BRIDGES & STRUCTURES Issued by: ENGINEERING STANDARDS	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION **SOLE PLATE** **PRESTRESSED CONCRETE BEAMS** **(FOR BEARINGS WITH PINTLES)**	REVISION	DETAIL NO. **B303**

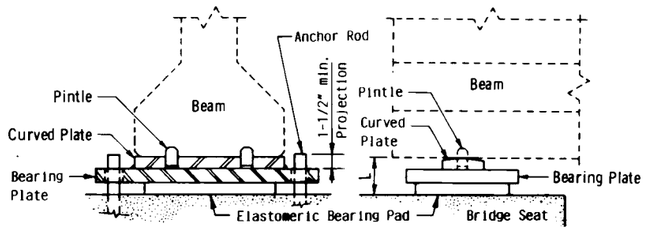
DETAILS S.A.P. 55-622-12	DRAWN	CHECKED	APPROVED 7-7-89
	SHEET 15 OF 17 SHEETS		BRIDGE NO. 55519



PLAN

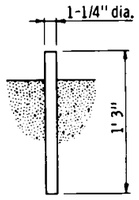


SECTION Y-Y
(ENLARGED BEARING ASSEMBLY)



SECTION X-X

END ELEVATION
(Anchor Rods Not Shown)



ANCHOR ROD DETAIL

PINTLE SPACING TABLE

BEAM SIZE	K
28"	4"
36"	6"
40", 54", 54M, 63", 72" & 81"	8"
Bulb Tee	9"

TABLE (2)

Beam Size	Bearing Pad Size			Steel Plates		Laminates		Shape Factor	Bearing Plate Size			Curved Plate Size			Pintle Dia.	Pintle Spacing	Anchor Rod Offset	Assy. Height	Assembly Type
	A	B	D	No.	Thick.	No.	Thick.		C	E	F	G	H	J		K	M	L	
54"	10"	24"	1¼"	2	½"	1	½"		12"	34"	1"	4½"	26"	1	1½"	8	0"	34"	1

← PIER 1

NOTES:

For elastomeric materials & pad construction, see Spec. 3741 and special provisions, except as noted.

All steel plates & anchor rods shall comply with Spec. 3306, except as noted.

All plates shall be flat after fabrication and galvanizing. Welding distortion of bearing plates shall be straightened to within 1/16" of flatness by mechanical means without damage to the zinc coating.

Pintles shall comply with Spec. 3314, Type II

Galvanize anchor rods and structural steel bearing assembly after fabrication per Spec. 3394, except as noted.

Payment for bearing assembly shall include all material on this detail.

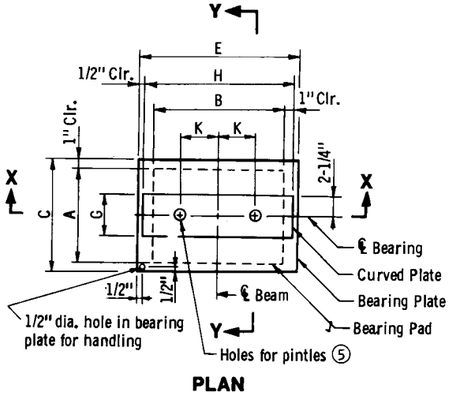
(1) The radius of the curved plate shall be 1' 0" min. & 1' 6" max. Finish to 250 Micro. The finished thickness of the plate may be 1/16" less than shown.

(2) See Bridge Design Manual for design requirements.

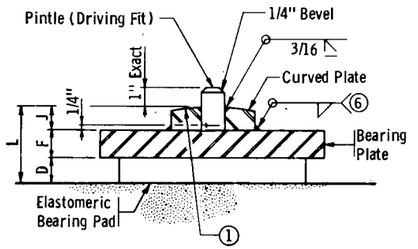
(3) 1-1/4" dia. pintle for total loads to 200 Kips. 1-1/2" dia. pintle for total loads over 200 Kips.

(4) For bearing plate thicknesses up to 1-1/2" use 5/16" fillet welds; for thicknesses over 1-1/2" to 2-1/4" use 5/8" fillet welds; for thicknesses over 2-1/4" use 1/2" fillet welds with minimum preheat of 300°.

APPROVED: Aug 4, 1987	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION CURVED PLATE BEARING ASSEMBLY PRESTRESSED CONCRETE BEAMS (FIXED)	REVISION	DETAIL NO.
Developed by: ENGINEERING STANDARDS and BRIDGES & STRUCTURES Issued by: ENGINEERING STANDARDS			B310



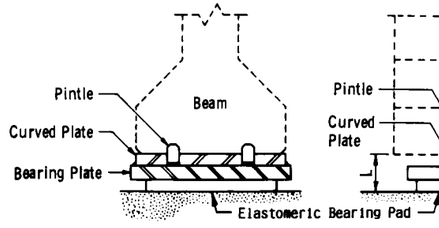
PLAN



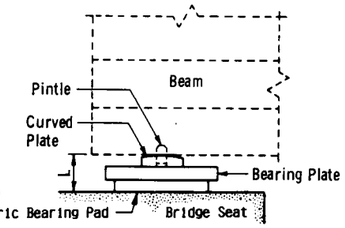
SECTION Y-Y
(ENLARGED BEARING ASSEMBLY)

PINTLE SPACING TABLE

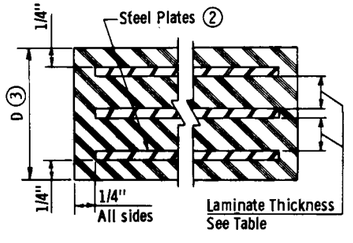
BEAM SIZE	K
28"	4"
36"	6"
40", 45M, 54", 63", 72", 81"	8"
Bulb Tee	9"



SECTION X-X



END ELEVATION



SECTION THRU BEARING PAD

TABLE (4)

Beam Size	Bearing Pad Size			Steel Plates		Laminates		Shape Factor	Bearing Plate Size			Curved Plate Size			Pintle Dia.	Pintle Spacing	Assy. Height	Assembly Type	
	A	B	D	No.	Thick.	No.	Thick.		C	E	F	G	H	J		K	L		
54	10"	24"	2½"	4	½"	3	½"		12"	27"	1"	4½"	26"	1"	1½"	8"	46"	1	← WEST ABUT & PIER 2
54	10"	24"	5"	8	½"	7	½"		12"	27"	1"	4½"	26"	1"	1½"	8"	7	2	← EAST ABUT.

NOTES:

For elastomeric materials & pad construction, see Spec. 3741 and special provisions, except as noted.

All steel plates shall comply with Spec. 3306, except as noted.

All plates shall be flat after fabrication and galvanizing. Welding distortion of bearing plates shall be straightened to within 1/16" of flatness by mechanical means without damage to the zinc coating.

Pintles shall comply with Spec. 3314, Type II

Galvanize structural steel bearing assembly after fabrication per Spec. 3394, except as noted.

Payment for bearing assembly shall include all material on this detail.

(1) The radius of the curved plate shall be 1' 0" min. & 1' 6" max. Finish to 250 Micro. The finished thickness of the plate may be 1/16" less than shown.

(2) Do not galvanize these plates.

(3) The total thickness shown includes the steel plates.

(4) See Bridge Design Manual for design requirements.

(5) 1-1/4" dia. pintle for total loads to 200 Kips. 1-1/2" dia. pintle for total loads over 200 Kips.

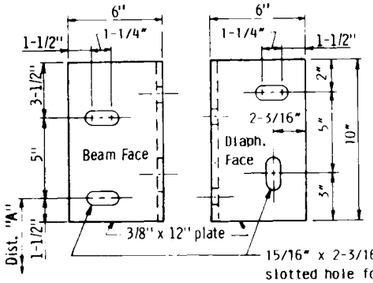
(6) For sole plate or bearing plate thicknesses up to 1-1/2", use 5/16" fillet welds; for thicknesses over 1-1/2" to 2-1/4", use 3/8" fillet welds; for thicknesses over 2-1/4", use 1/2" fillet welds with minimum preheat of 300°.

APPROVED: Aug 4, 1987	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION CURVED PLATE BEARING ASSEMBLY PRESTRESSED CONCRETE BEAMS (EXPANSION)	REVISION	DETAIL NO.
Developed by: ENGINEERING STANDARDS & BRIDGES AND STRUCTURES OFFICES Issued by: OFFICE OF ENGINEERING STANDARDS			B311

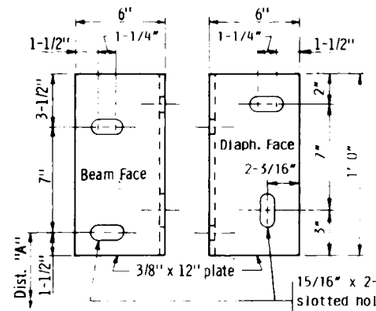
DETAILS S.A.P. 55-622-12	DRAWN	CHECKED	APPROVED 7-7-89	BRIDGE NO. 55519
	SHEET 16 OF 17 SHEETS			

TABLE

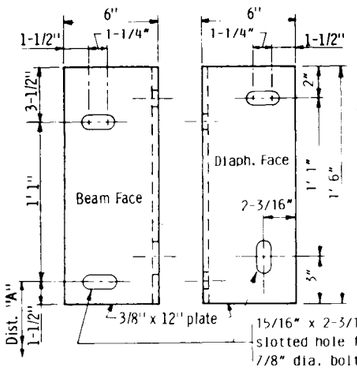
Bulb Tee	Beam Ht.	Distance "A"
	28"	1' 0"
	30"	1' 2"
	36"	1' 3"
	40"	1' 5½"
	45M	1' 3-3/4"
	54	1' 9"



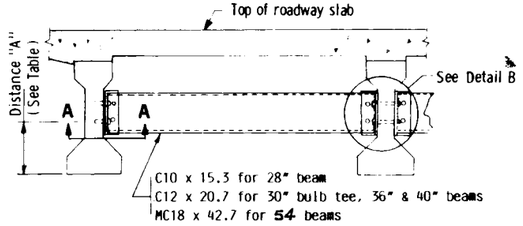
DIAPHRAGM SUPPORT FOR 28" BEAMS



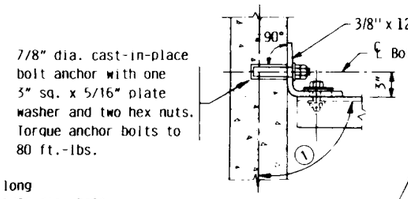
DIAPHRAGM SUPPORT FOR 36" & 40" BEAMS AND 30" BULB TEES



DIAPHRAGM SUPPORT FOR 54" BEAMS

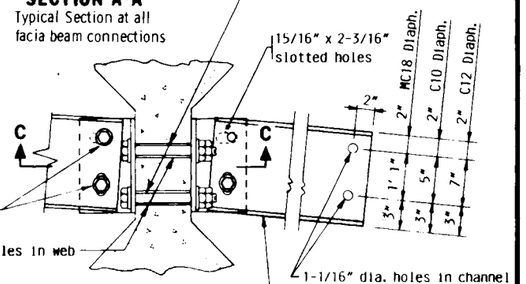


PART TRANSVERSE SECTION AT DIAPHRAGM



SECTION A-A

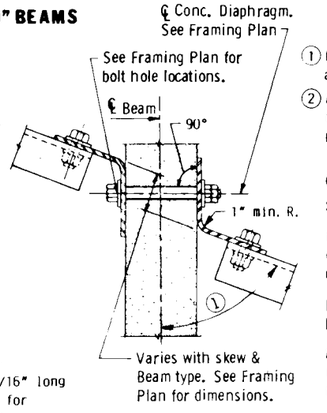
Typical Section at all facia beam connections



DETAIL B

Interior Beam With Continuous Line Of Diaphragms

C10 x 15.3 for 28" beam
C12 x 20.7 for 30" bulb tee, 36" & 40" beams
MC18 x 42.7 for 54" beams



SECTION C-C

Typical Section at interior diaphragms

(1) For skew angles under 20°, use 90° less the skew angle. For skew angles over 20°, use 90°.

(2) As an alternative to the 7/8" bolt connection, the contractor may submit details of a cast-in-place anchorage to the engineer for approval.

GENERAL NOTES:

See Spec. 2405.3M for installation.

The leg of the 12" plate shall be shop bent to conform to the diaphragm. A 3/8" x 6" x6" angle may be used for diaphragms perpendicular to beams

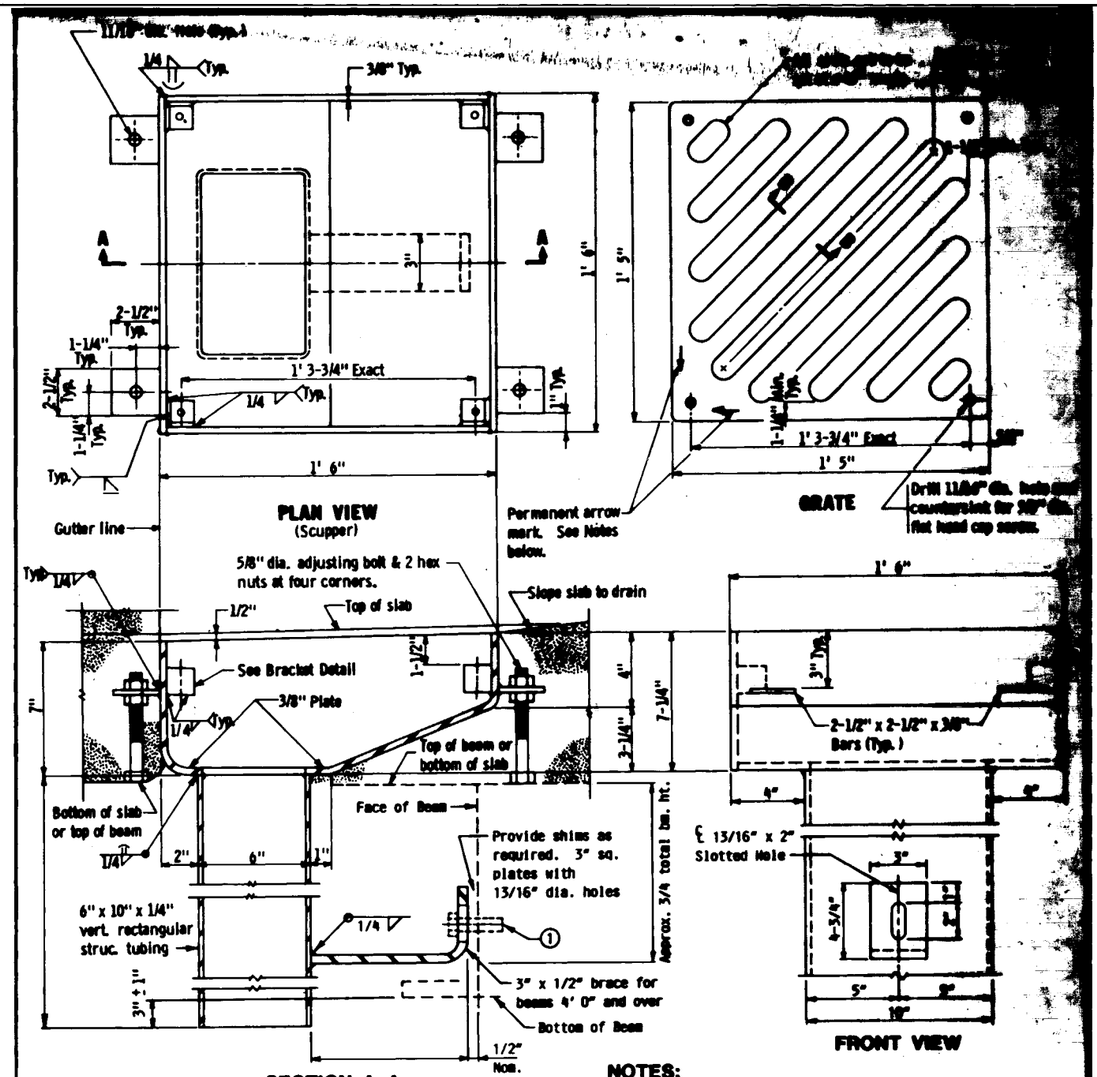
For bolt lengths greater than 9", use high strength bolts per Spec. SAE Grade 5 or better.

All structural steel shown on this detail, including bolts and washers, shall be included in the payment for diaphragms for prestressed beams.

Diaphragms over the piers are considered to be intermediate if the slab is continuous.

FASTEN DIAPHRAGMS TO INPLACE BEAMS WITH ANCHORAGES.

APPROVED September 24, 1987 Developed by ENGINEERING STANDARDS & BRIDGES AND STRUCTURES OFFICES Issued by OFFICE OF ENGINEERING STANDARDS	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION **STEEL INTERMEDIATE DIAPHRAGM** **(FOR 28"- 54" PRESTRESSED CONC. BEAM SPANS AND 30" BULB TEE BEAMS)**	REVISION	DETAIL NO. **B403**



NOTES:

- All steel plates per Spec. 3306. Cast iron may be used as an alternate. Fabricate grate using automatically controlled cutting torch.
- Cast iron grate as per Spec. 3321, Class 35B.
- Workmanship and fabrication per Spec. 2471.
- Blast clean scupper and grate after fabrication. Galvanize, except cast iron, per Spec. 3394
- Galvanize hardware per Spec. 3392
- Install grate with arrow on curb side & in direction of flow.
- Payment for Floor Drain, Type B701 shall include all material on this detail.
- Grate opening area is 110 sq. in.

(1) Attach to beam with 3/4" dia. bolt, lockwasher and nut as required. See Special Provisions for approved anchorage required for conc. beams. Anchorage to miss draped strands.

APPROVED: September 6, 1988 Developed by: ENGINEERING STANDARDS and BRIDGES & STRUCTURES Issued by: ENGINEERING STANDARDS	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION **BRIDGE FLOOR DRAIN** **WELDED BOX**	REVISION	DETAIL NO. **B701**

DETAILS S.A.P. 55-622-12	DRAWN	CHECKED	APPROVED 7-7-89	BRIDGE NO. 55519
	SHEET 17 OF 17 SHEETS			

MINNESOTA DEPARTMENT OF TRANSPORTATION

THE COUNTY OF OLMSTED

CONSTRUCTION PLAN FOR WIDENING DECK & CONCRETE OVERLAY BRIDGE NO. 55519

LOCATED ON CSAH 22 **BETWEEN** WEST RIVER PARKWAY **AND** TH 63 IN ROCHESTER **(GEOGRAPHIC DESCRIPTION)**

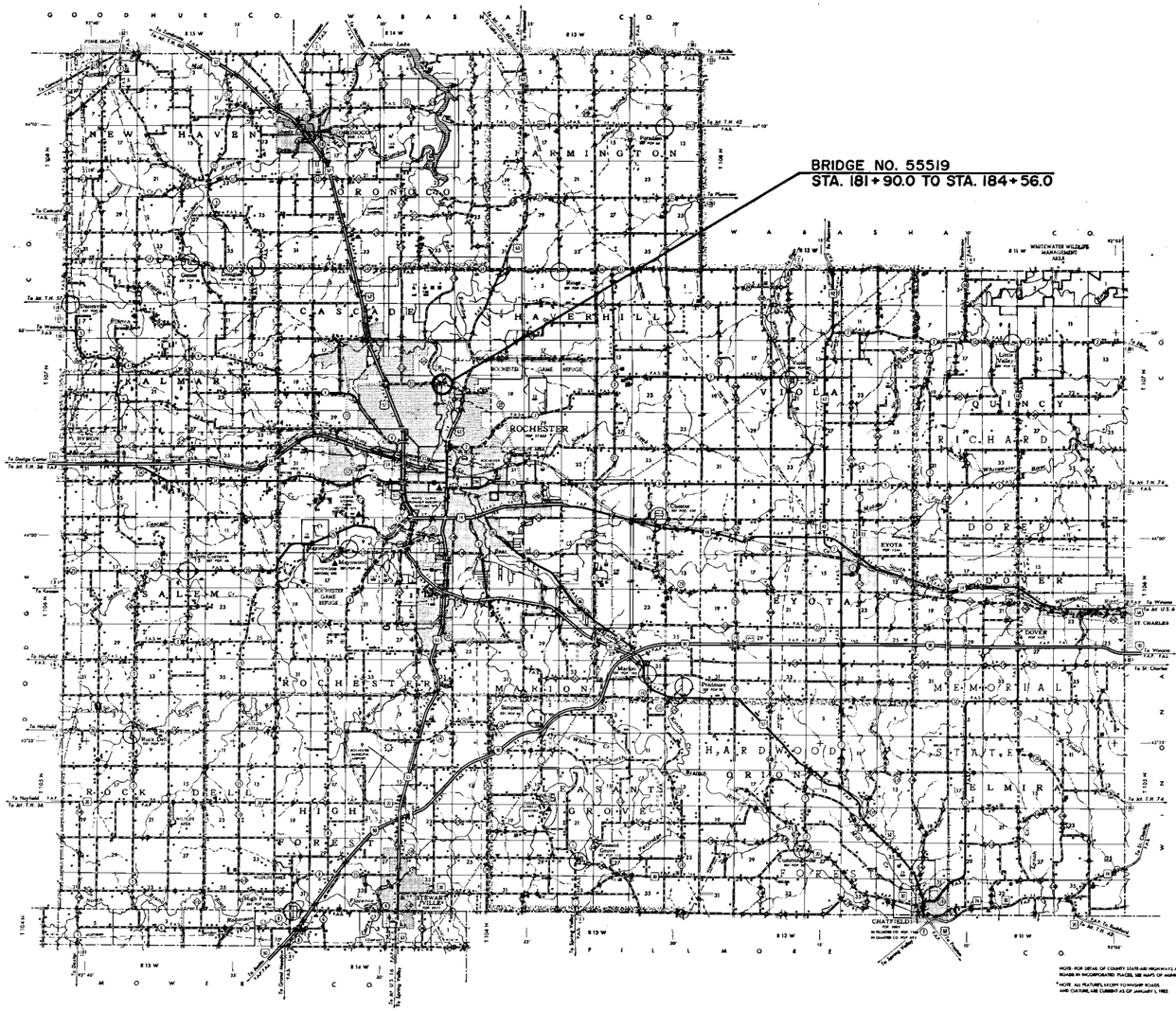
FROM 1386.60' N & 538.17' E OF CENTER SEC. 23 T107N - R14W **TO** 1386.60'N & 804.17'E OF CENTER SEC. 23 T107N - R14W **(LEGAL DESCRIPTION)**

STATE PROJ. NO. _____

GROSS LENGTH	FEET		MILES
BRIDGES-LENGTH	FEET		MILES
EXCEPTIONS-LENGTH	FEET		MILES
NET LENGTH	FEET		MILES

~~**STATE PROJ. NO.**~~ SAP 55-622-12

GROSS LENGTH	266.00	FEET 0.050	MILES
BRIDGES-LENGTH		FEET	MILES
EXCEPTIONS-LENGTH		FEET	MILES
NET LENGTH	266.00	FEET 0.050	MILES



MINN. PROJ. NO. _____

GOVERNING SPECIFICATIONS

THE 1989 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

INDEX

SHEET NO. 1 TITLE SHEET
SHEET NO. 1A GENERAL PLAN & ELEVATION
SHEET NO. 2 ABUTMENT WIDENING DETAILS - S.W. CORNER
SHEET NO. 3 ABUTMENT WIDENING REINF. - S.W. CORNER
SHEET NO. 4 ABUTMENT WIDENING DETAILS - S.E. CORNER
SHEET NO. 5 ABUTMENT WIDENING REINFORCEMENT
SHEET NO. 6 PIER WIDENING DETAIL
SHEET NO. 7&8 SUPERSTRUCTURE WIDENING DETAILS
SHEET NO. 9 FRAMING PLAN
SHEET NO. 10 54" PRESTRESSED CONC. DETAILS
SHEET NO. 11 CONCRETE RAILING, TYPE J & FENCE
SHEET NO. 12 8 FT. WIRE FENCE
SHEET NO. 13-17 DETAILS

DESIGN DESIGNATION

R _____ ΣN18[20] _____

ADT (Current Year) = 15407 (1989) Design Speed 55 MPH

ADT (Future Year) = 27733 (2009) Based on STOPPING Sight Distance

DHV (Design Hr. Vol.) = _____ Height of eye 3.5 Height of object 0.5

D (Directional Distr.) = _____ % Design Speed not achieved at: _____

T (Heavy Commercial) = 4.2 % STA. _____ TO STA. _____ MPH

SOIL FACTOR _____ STA. _____ TO STA. _____ MPH

NO. TRAFFIC LANES 4 STA. _____ TO STA. _____ MPH

NO. PARKING LANES 0 SHOULDER WIDTH LEFT 1.0'

PROJ. HCADT 1164 (2009) SHOULDER WIDTH RIGHT 5.42'

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DATE 6/16/89 REG. NO. 10397 ENGR. Michael Skallman

COUNTY Olmsted

Recommended for Approval _____ 6-21 1989
DISTRICT STATE AID ENGINEER

Recommended for Approval _____ 7/7 1989
STATE AID PLANS AND SPECS ENGINEER

Approved 7/7 1989 _____
STATE AID ENGINEER

Approved 7/7/89 _____
for BRIDGE ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

_____ _____
DIVISION ADMINISTRATOR DATE

PLANS SYMBOLS

STATE LINE
COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
RIGHT-OF-WAY LINE
PRESENT RIGHT-OF-WAY LINE
CONTROL OF ACCESS LINE
PROPERTY LINE (Except Land Lines)
VACATED PLATTED PROPERTY
CORPORATE OR CITY LIMITS
TRUNK HIGHWAY CENTER LINE
RETAINING WALL
RAILROAD
RAILROAD RIGHT-OF-WAY LINE
RIVER OR CREEK
DRY RUN
DRAINAGE DITCH
DRAIN TILE
CULVERT
DROP INLET
GUARD RAIL
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE
RAILROAD SNOW FENCE
STONE WALL OR FENCE
HEDGE
RAILROAD CROSSING SIGN
RAILROAD CROSSING BELL
ELECTRIC WARNING SIGN
CROSSING GATE
MEANDER CORNER
SPRINGS
MARSH
TIMBER
ORCHARD
BRUSH
NURSERY
CATCH BASIN
FIRE HYDRANT
CATTLE GUARD
OVERPASS (Highway Over)
UNDERPASS (Highway Under)
BRIDGE
BUILDING (One Story Frame)
F - FRAME C - CONCRETE
S - STONE T - TILE
B - BRICK ST - STUCCO
IRON PIPE OR ROD
MONUMENT (STONE, CONCRETE, OR METAL)
WOODEN HUB
GRAVEL PIT
SAND PIT
BORROW PIT
ROCK QUARRY
SLOPE EASEMENT

UTILITIES SYMBOLS

POWER POLE LINE
TELEPHONE OR TELEGRAPH POLE LINE
JOINT TELEPHONE AND POWER ON POWER POLES
ON TELEPHONE POLES
ANCHOR
STEEL TOWER
STREET LIGHT
PEDESTAL(TELEPHONE CABLE TERMINAL)
GAS MAIN
WATER MAIN
CONDUIT
TELEPHONE CABLE IN CONDUIT
ELECTRICAL CABLE IN CONDUIT
TELEPHONE MANHOLE
ELECTRIC MANHOLE
BURIED TELEPHONE CABLE
BURIED ELECTRICAL CABLE
AERIAL TELEPHONE CABLE
SEWER, (SANITARY OR STORM)
SEWER MANHOLE

SCALES

PLAN _____
PROFILE _____
INDEX MAP 0 10560'
CROSS SECTIONS _____

ALBINSON MPLS 55406

72065

STATE AID PROJ. NO. 55-622-12

~~**STATE PROJ. NO.**~~ _____

SHEET NO. 2 **OF** 17 **SHEETS**