MINNESOTA DEPARTMENT OF TRANSPORTATION

THE COUNTY OF OLMSTED

CONSTRUCTION PLAN FOR GRADING, AGGREGATE BASE AND BRIDGE 55544

LOCATED ON CR 139 **BETWEEN** C.R. 116 **AND** C.S.A.H. 19 **(GEOGRAPHIC DESCRIPTION)**

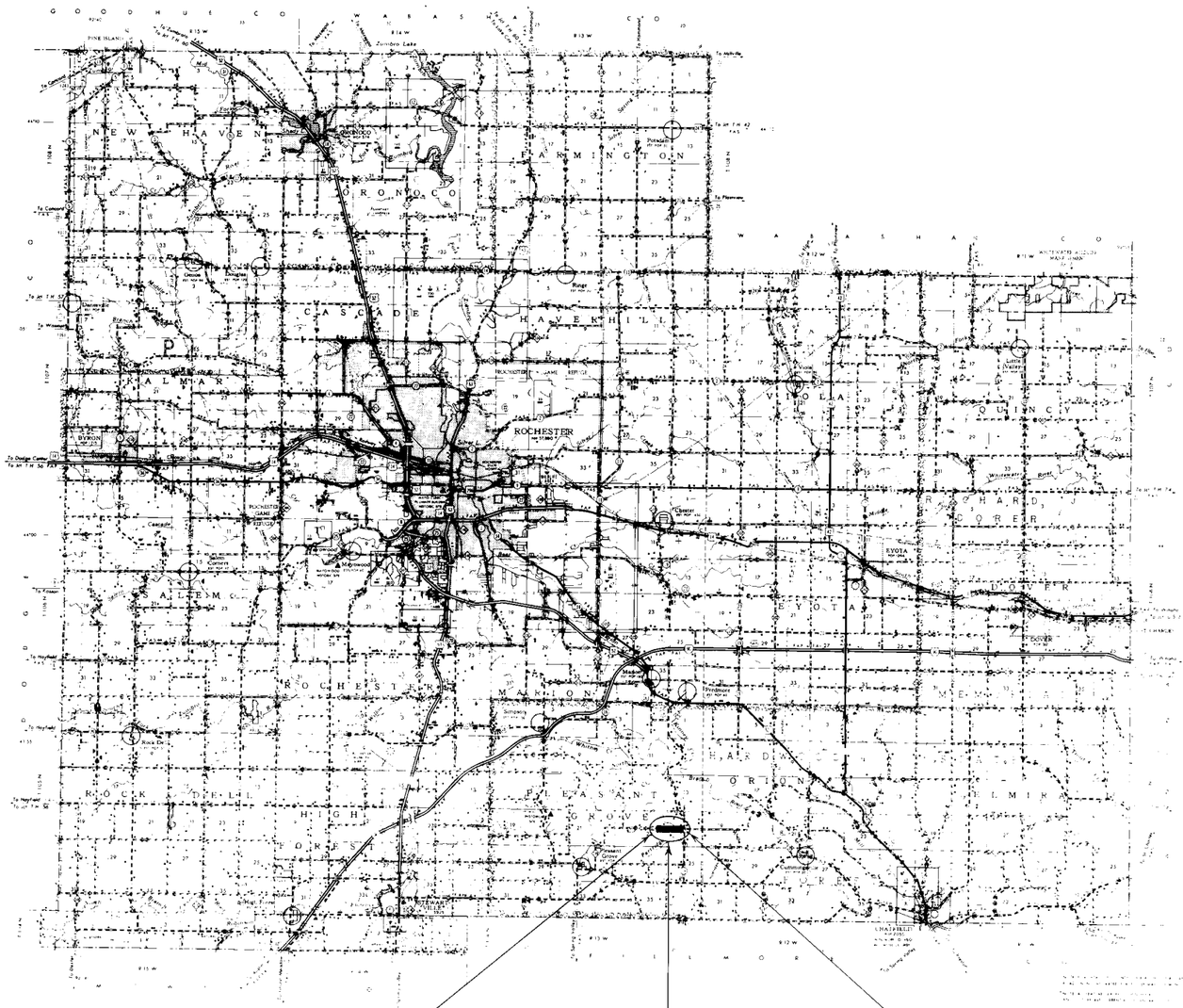
FROM APPROX. 1/4 CORNER 23-24 T105N-R13W **TO** CENTER SEC. 24 T105N-R13W **(LEGAL DESCRIPTION)**

STATE PROJ. NO. 55-598-25

GROSS LENGTH	2634.00 FEET	0.499	MILES ✓
BRIDGES-LENGTH	157.42 FEET	0.030	MILES
EXCEPTIONS-LENGTH	0 FEET	0	MILES
NET LENGTH	2634.00 FEET	0.499	MILES

STATE PROJ. NO.

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



MINN. PROJ. NO. BR OS 9055 (12)

THE 1983 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN

INDEX

SHEET NO. 1		TITLE SHEET + LAYOUT MAP
" " 2		ESTIMATE OF QUANTITIES & TYPICAL SECTIONS
" " 3		PLAN & PROFILE SHEET
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" " 1-17		BRIDGE SHEETS

DESIGN DESIGNATION

R ~~~~ EN18(20) ~~~~

ADT (Current Year)	=	87 (1986)	Design Speed 30 MPH
ADT (Future Year)	=		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)	=	%	STA. TO STA. MPH
SOIL FACTOR 130%			STA. TO STA. MPH
			STA. TO STA. MPH

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 5/9/86 REG. NO. 19391 ENGR. Michael Schultz

COUNTY Olmsted

Recommended for Approval _____ 19__
DISTRICT STATE AID ENGINEER

Recommended for Approval Julie Stallman 11-14 1986
STATE AID PLANS AND SPECS ENGINEER

Approved 11/14 19 86 _____
(STATE AID 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 (NAME)
DRY RUN
DRAINAGE DITCH (SIZE)
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 C.B.
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 (G)
SAND PIT (S)
BORROW PIT (B)
ROCK QUARRY (Q)
SLOPE EASEMENT SE

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 G G
WATER MAIN W W
CONDUIT
TELEPHONE CABLE IN CONDUIT T
ELECTRIC CABLE IN CONDUIT P
TELEPHONE MANHOLE T
ELECTRIC MANHOLE P
BURIED TELEPHONE CABLE T-BUR
BURIED ELECTRIC CABLE P-BUR
AERIAL TELEPHONE CABLE T-AE
SEWER, (SANITARY OR STORM)
SEWER MANHOLE

SCALES

PLAN 0' 100'
PROFILE 0 100' HOR. 0 10' VERT.
INDEX MAP 0 2 MILES
X-SECTION 0 10'

ALBINSON MPLS 55405

~~STATE AID PROJ. NO.~~

STATE PROJ. NO. 55-598-25 C.R. 139 OLMSTED COUNTY **SHEET NO.** 1 **OF** 9 **SHEETS**

ESTIMATED QUANTITIES

	SPECIFICATION NO.	ITEM	UNIT	PARTICIPATING	NON-PARTICIPATING	TOTAL ESTIMATED QUANTITIES
	2101.501	CLEARING	ACRE		0.6	0.6
	2101.502	CLEARING	TREE		32	32
	2101.506	GRUBBING	ACRE		0.6	0.6
	2101.507	GRUBBING	TREE		23	23
	2104.501	REMOVE PIPE CULVERTS	LIN. FT		70	70
	2105.515	UNCLASSIFIED EXCAVATION	CU. YD.		44107(P)	44107 (P)
	2105.535	SALVAGED TOPSOIL	CU. YD.		2 091(P)	2 091 (P)
(1)	2211.501	AGGREGATE BASE CLASS 2	TON		2 854	2 954
	2442.501	REMOVE OLD BRIDGE	LUMP SUM		1	1
	2501.511	18" C.S. PIPE CULVERT	LIN. FT.		244	244
	2501.511	30" R.C. PIPE CULVERT CLASS III	LIN. FT.		78	78
	2501.515	18" G.S. PIPE APRONS	EACH		16	16
	2501.515	30" R.C. PIPE APRONS	EACH		2	2
	2575.501	ROADSIDE SEEDING	ACRE		7(P)	7 (P)
	2575.502	SEED MIXTURE 2	POUND		700	700
	2575.502	SEED MIXTURE 5	POUND		350	350
	2575.511	MULCH MATERIAL TYPE 1	TON		14	14
	2575.519	DISC ANCHORING	ACRE		6.4(P)	6.4(P)
(2)	2575.531	COMMERCIAL FERTILIZER ANALYSIS 12-12-12	TON		0.7	0.7
	0105.601	ONE LANE BYPASS (12' LANE)	LUMP SUM		1	1

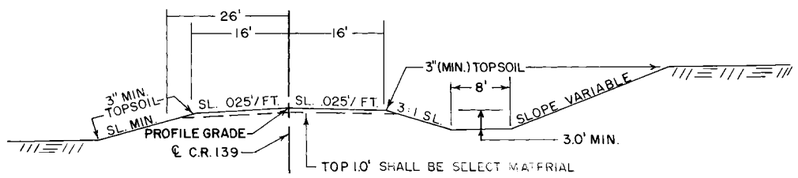
(1) ITEM 2211.501 AGGREGATE BASE CLASS 2 INCLUDES 210 TONS FOR 7 APPROACHES.
(2) SPREAD AT THE RATE OF 200 POUNDS PER ACRE

STANDARD PLATES

THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT.

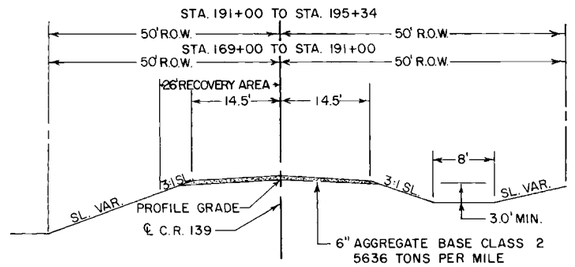
PLATE NO		DESCRIPTION
0004	A	SPECIFICATION REFERENCE TO STANDARD PLATES
3000	K	REINFORCED CONCRETE PIPE
3040	F	CORRUGATED METAL PIPE CULVERT
3100	G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3123	I	METAL APRON FOR C.S. PIPE
3124	B	METAL APRON CONNECTION
3145	E	CONCRETE PIPE JOINT TIES
3221	C	CORRUGATED STEEL PIPE COUPLING BAND
8000	I	STANDARD BARRICADES
9000	B	APPROACHES AND ENTRANCES
8003	B	BREAKAWAY SIGN SUPPORT (PLASTIC)

TYPICAL GRADING SECTION
NOT TO SCALE



STA. 169+00 TO STA. 179+95
STA. 181+52.42 TO STA. 195+34

TYPICAL AGGREGATE BASE SECTION
NOT TO SCALE



STA. 169+00 TO STA. 179+95
STA. 181+52.42 TO STA. 195+34

NOTE: PLACE REINFORCED CONCRETE PIPE ON CL. "B" BEDDING AS DIRECTED BY THE ENGINEER. ALL BEDDING WILL BE CONSIDERED TO BE INCIDENTAL AND NO DIRECT COMPENSATION WILL BE MADE THEREFOR.

NOTE: ALL DIMENSIONS AND SLOPES SHOWN ON TYPICAL SECTIONS ARE APPROXIMATE.

NOTE: SALVAGED TOPSOIL SHALL BE PLACED ON SLOPES AS SHOWN ON PLANS AND AS DIRECTED BY THE ENGINEER.

ALBINSON, INC. MINNEAPOLIS, MINN.

Fed. Proj. No.

N

F.E. LT. 173+57
NO CULV. INPL.
18"x 28' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

F.E. LT. 179+43
NO CULV. INPL.
MOVE F.E. TO STA. 177+00
18"x 28' C.S. PIPE CULV.
2-G.S. PIPE APRONS

F.E. LT. 188+89
NO CULV.
18"x 28' C.S. PIPE CULV.
2-18" G.S. PIPE CULV.

23-24 1/4

24

P.I. 169+00
P.K. NAIL
1/4 COR. 23-24
ASSUMED

P.O.T. 173+49.06
RE ROD

P.O.T. 185+32.17
RE ROD

P.O.T. 188+39.51
RE ROD

P.O.T. 195+34.00 RE ROD
CENTER SEC. 24

BR. NO. 55544

WOODS

PARTRIDGE CREEK

C.R. 139

C.S.A.H. 19

CONST. RADIUS LT.+RT.

F.E. RT. 173+55
NO CULV. INPL.
MOVE TO STA. 3+00 OFF OF FARM ENT
18"x 28' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

FARM ENT. RT. 173+80
NO CULV. INPL.
18"x 32' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

BRIDGE NO. L-6176 STA. 180+55 TO STA. 180+83 I BEAM SPAN AND 2 CONCRETE & MASONRY ABUTMENTS
REMOVE

F.E. RT. 181+77
NO CULV. INPL.
MOVE F.E. TO STA. 183+00
18"x 28' C.S. PIPE CULV.
2-G.S. PIPE APRONS

F.E. RT. 188+87
NO CULV. INPL.
18"x 28' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS

℄ CULV. 192+54
18"x 34' C.M.P.
REMOVE CULV.
30"x 78' R.C. PIPE CULV. CL. III
2-30" R.C. PIPE APRONS
PLACE CULV. ON "B" BEDDING
F & I CONC. PIPE JOINT TIES

℄ CULV. 194+97
18"x 36' C.M.P. W/APRONS
REMOVE CULV.
18"x 44' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS
MOVE TO STA. 194+70

B.M. EL. 1183.90
SPK. IN PP RT. 35'
STA. 174+00

B.M. ELEV. 1229.21
ON S.E. HDWL. BR. 6176
STA. 180+83

B.M. ELEV. 1292.50
SPK. IN PP RT. 34'
STA. 188+00

B.M. ELEV. 1292.10
SPK. IN PP RT. 36'
STA. 194+84

CL. 1 TR. – GR. 1 TR.

CL. 28 TR. – GR. 19 TR.

CL. 0.6 ACRES – GR. 0.6 ACRES

CL. 3 – GR. 3 TREES

SUBGRADE ℄ FINISHED GRADE ELEV.

75' LT.
75' RT.

75' RIGHT

75' LEFT

P.I. +00
ELEV. 90.0
800' V.C.
M = 14.0
C = 0.875

+6.5%

P.V.C. +00
ELEV. 64.0

SUBGRADE TREATMENT
EXCAVATE 1.0' BELOW PROFILE GRADE
FROM STA. 168+50 TO 177+75
FROM STA. 183+70 TO 191.+30
FROM STA. 194+00 TO 195+15

(30 MPH)
P.I. +00
ELEV. 1237.50
550' V.C.
M = 10.3125
C = 1.364

P.V.C. +25
ELEV. 58.13

P.V.T. +00
ELEV. 60.0

-7.5%

PROPSED ℄ GRADE

BRIDGE 55544
STA. 179+95 TO STA. 181+52.42
EL. 1248.32 EL. 1251.48

EXISTING GRADE

LOW MEMBER ELEV. 1244.86

P.V.T. +75 ELEV. 58.13
P.V.C. +81.94 ELEV. 58.64

+7.5%

P.I. +81.94444
ELEV. 88.65
800' V.C.
M = 7.2

P.V.T. +81.94
ELEV. 89.35

+0.3%

INLET ELEV. 87.9
OUTLET ELEV. 87.4

INLET ELEV. 81.6
OUTLET ELEV. 77.6

SCALE 10' 0 100'

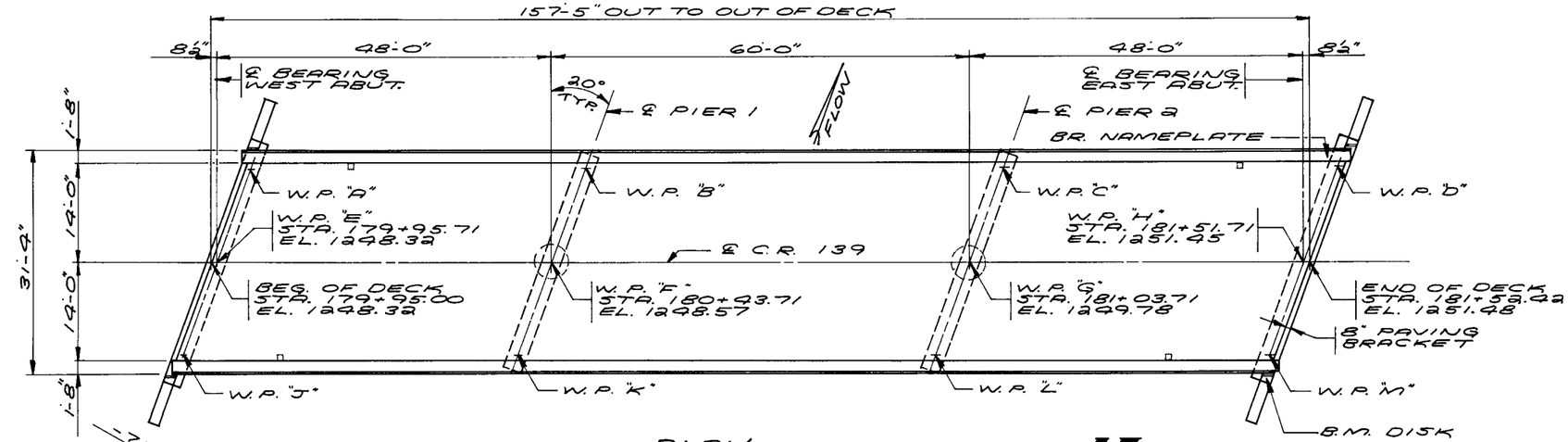
SALVAGED TOPSOIL	126 CU. YDS.	SALVAGED TOPSOIL	798 CU. YDS.
UNCLASSIFIED EXC.	1209 CU. YDS.	UNCLASSIFIED EXC.	21198 CU. YDS.
EMB.	893 CU. YDS.	EMB.	11501 CU. YDS.
SALVAGED TOPSOIL	773 CU. YDS.	SALVAGED TOPSOIL	394 CU. YDS.
UNCLASSIFIED EXC.	15707 CU. YDS.	UNCLASSIFIED EXC.	5993 CU. YDS.
EMB.	11675 CU. YDS.	EMB.	4295 CU. YDS.

FLOWLINE 1213.5

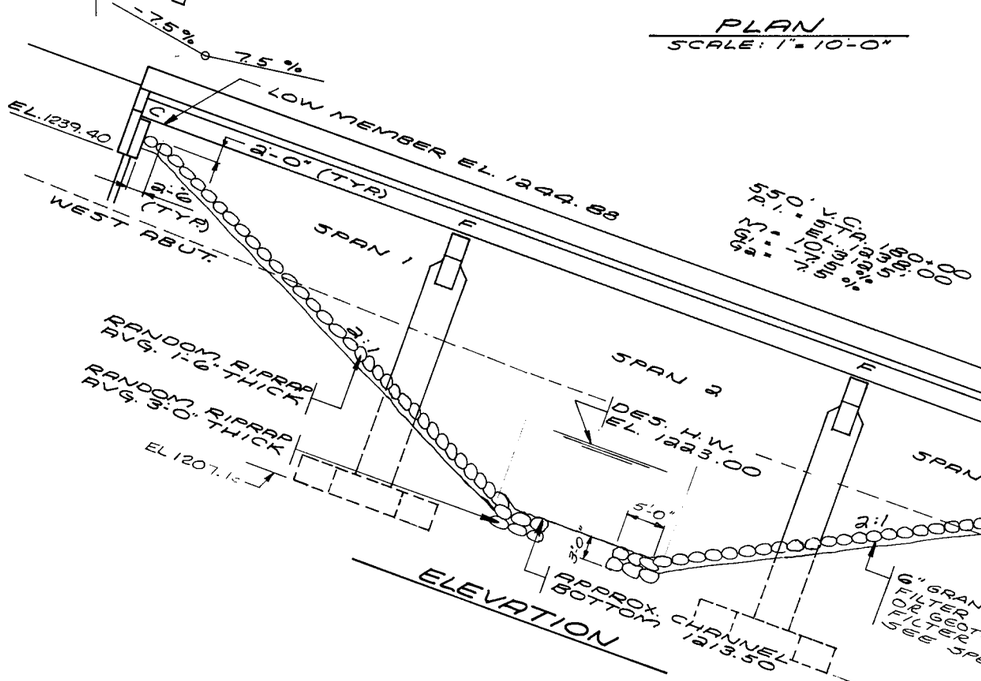
℄ C.S.A.H. 19

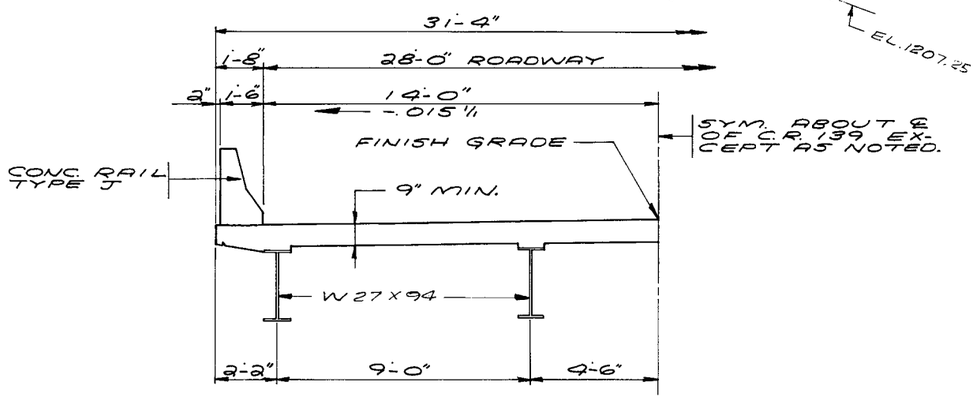
State Proj. No. 55-598-25 C.R. 139 OLMSTED COUNTY **Sheet No.** 3 **of** 9 **Sheets**

Copy Equipment Form #2



PLAN
SCALE: 1" = 10'-0"





HALF TRANSVERSE SECTION THRU DECK

DESIGN DATA

1983 4th INTERIM A.A.S.H.T.O. DESIGN SPECS. LOAD FACTOR DESIGN METHOD
HS-20 LOADING INCLUDES 17 P.S.F. DEAD LOAD ALLOWANCE FOR FUTURE WEARING COURSE.
REINFORCED CONCRETE:
f'y = 60000 P.S.I. REINFORCEMENT
f'c = 4000 P.S.I. n = 8
STRUCTURAL STEEL:
Fy = 36000 P.S.I. SPEC. 3306
Fy = 50000 P.S.I. SPEC. 3309
DECK AREA = 4938 SQ. FT.
CURRENT A.D.T. FOR 1986 = 88

CONSTRUCTION NOTES

THE 1983 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

BRIDGE SEAT REINFORCEMENT SHALL BE CAREFULLY PLACED TO AVOID INTERFERENCE WITH DRILLING HOLES FOR ANCHOR RODS. THE SUPERSTRUCTURE BEARINGS SHALL BE ERECTED IN FINAL POSITION PRIOR TO DRILLING HOLES FOR AND PLACING ANCHOR RODS.

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

NOTE:
CONSTRUCTION AT EACH ABUTMENT SHALL NOT BE STARTED UNTIL THE APPROACH FILL HAS BEEN CONSTRUCTED TO TOP OF SUBGRADE UNDER GRADING PORTION OF CONTRACT.

B.M. EL. 1229.21 (M.S.L. 1929 ADJ.) ☐ ON S.E. CORNER OF BR. NO. L-6176

LIST OF SHEETS

NO.	TITLE
1	GENERAL PLAN & ELEVATION
2	BRIDGE LAYOUT
3	ABUTMENT DETAILS
4	ABUTMENT REINFORCEMENT
5	PIER DETAILS
6	PIER REINFORCEMENT
7	SUPERSTRUCTURE DETAILS
8	FRAMING PLAN & SUPERSTR. DETAILS
9	STRUCTURAL STEEL DETAILS
10	CONCRETE RAILING - TYPE J
11	END DIAPHRAGM DETAILS
12-15	DETAILS
16	BRIDGE SURVEY
17	BRIDGE SURVEY - PLAN & PROFILE

SCHEDULE OF QUANTITIES FOR ENTIRE BRIDGE

ITEM. NO.	ITEM	QUANTITY	UNIT
2401.512	BRIDGE SLAB CONCRETE (3X33)	4936 (P)	SQ. FT.
2401.501	STRUCTURE CONCRETE (3Y43)	141 (P)	CU. YD.
2401.513	TYPE J RAILING CONCRETE (3X46A)	318 (P)	LIN. FT.
2401.541	REINFORCEMENT BARS	66215(P)	POUND
2402.521	STRUCTURAL STEEL, (3306)	400 (P)	POUND
2402.521	STRUCTURAL STEEL, (3309)	77,580(P)	POUND
2402.546	FLOOR DRAINS, TYPE B701	5	EACH
0402.606	FIXED CURVED PLATE BRG. ASSEMBLY, TYPE 1	8	EACH
0402.607	EXP. CURVED PLATE BRG. ASSEMBLY, TYPE 1	8	EACH
2401.543	SPIRAL REINFORCEMENT	2227	POUND
0401.601	STRUCTURE EXCAVATION	1	LUMP SUM
2401.521	STRUCTURE EXCAVATION, CLASS W.R.	10	CU. YD.
0401.601	FOUNDATION PREPARATION (PIER 1)	1	LUMP SUM
0401.601	FOUNDATION PREPARATION (PIER 2)	1	LUMP SUM
2511.501	RANDOM RIPRAP, CLASS III	570	CU. YD.
2021.501	MOBILIZATION	1	LUMP SUM
2401.501	STRUCTURE CONCRETE (1A43)	67 (P)	CU. YD.
2452.510	STEEL H-PILING DRIVEN, 10"	210	LIN. FT.
2452.511	STEEL H-PILING DELIVERED, 10"	210	LIN. FT.
2452.520	STEEL H-TEST PILES, 45 FT. LONG, 10"	2	EACH

APPROVED:
COUNTY ENGINEER
OLMSTED COUNTY
DATE: 9-16-85

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 LAWS OF THE STATE OF MINNESOTA
REG. NO. 6924
DATE:

PLANS PREPARED BY:
ERICKSON ENGINEERING
3338 REPUBLIC AVE.
ST. LOUIS PK., MN. 55426

MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55544

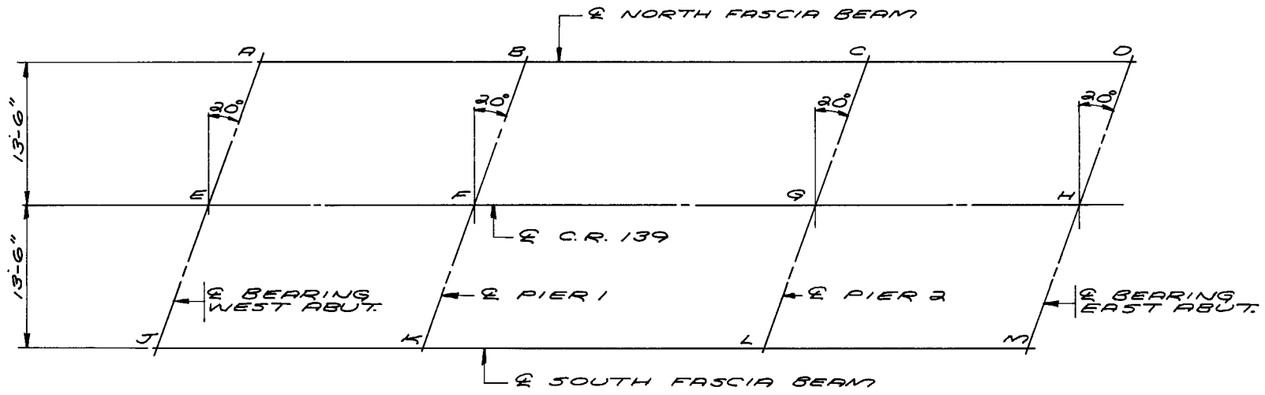
7.5 MI. N.W. OF CHATFIELD ON C.R. 139 OVER PARTRIDGE CREEK.
28'-6" C.B. CONT. STEEL BEAM SPANS - 28'-0" ROWY. 20° SKEW - SPAN IDENT. NO. 401.

GENERAL PLAN AND ELEVATION

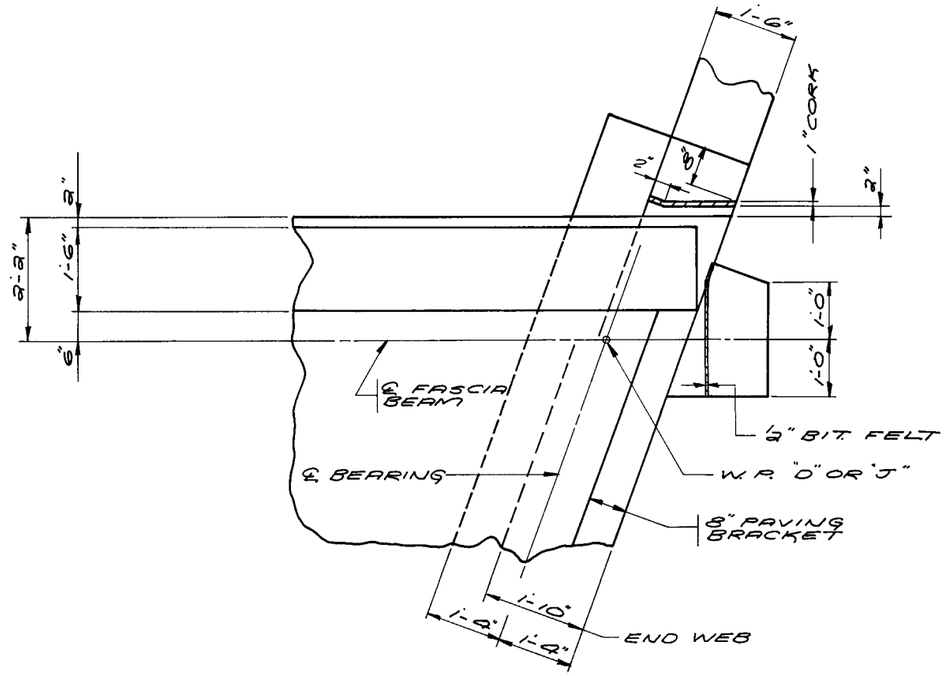
SEC. 24 TWP. 105N R. 13W
PLEASANT GROVE TOWNSHIP
OLMSTED COUNTY

APPROVED: [signature] 6-16-86
BRIDGE ENGINEER

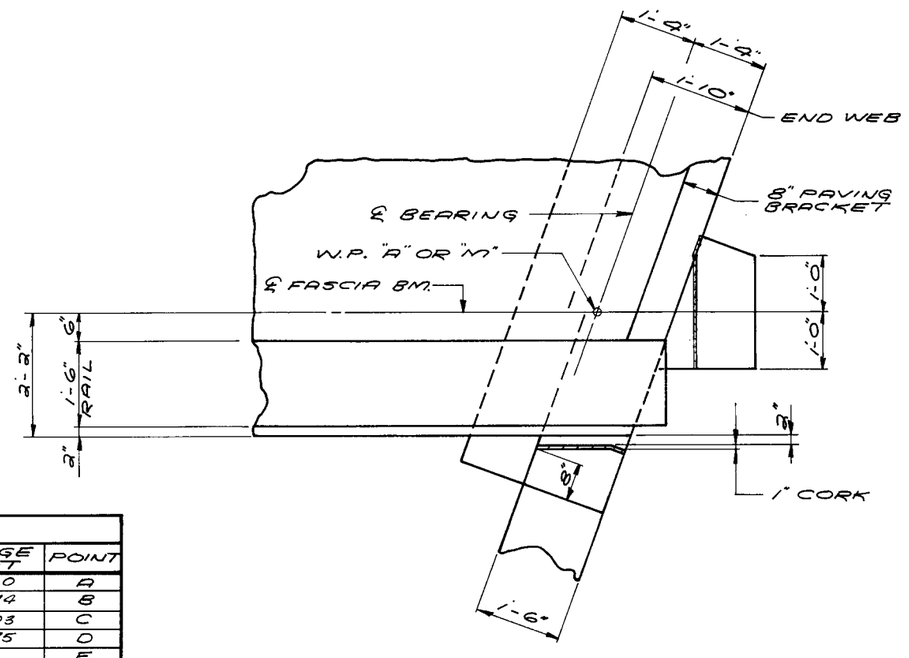
S.P. 55-598-25 | SHEET 1 OF 17 SHEETS



LAYOUT SHOWING WORKING POINTS



N.E. & S.W. CORNERS



S.E. & N.W. CORNERS

TOP OF ROADWAY TO BR. SEAT		
	ABUTMENTS	PIERS
SLAB THICKNESS	9"	9"
STOOL HEIGHT	3"	3"
BM. HEIGHT ℄ C. R.	2'-2⅞"	2'-3⅛"
BEARING HEIGHT	5⅝"	4¾"
TOTAL	3'-8½"	3'-8¼"

DIMENSIONS BETWEEN WORKING POINTS

POINT	STATION	A	B	C	D	E	F	G	H	J	K	L	M
A	180+00.62		48.00			14.37	45.15	103.97			46.76	101.82	
B	180+98.62			60.00		54.61	14.37	56.72		63.82		56.97	101.82
C	181+08.62				48.00	113.72	66.30	14.37	45.15	120.88	74.87		
D	181+56.62							54.61	14.37			63.82	
E	179+95.71						48.00			14.37	45.15		
F	180+43.71							60.00			14.37	56.72	
G	181+03.71								48.00		66.30	14.37	45.15
H	181+51.71											14.37	
J	179+90.80										48.00		
K	180+38.80											60.00	
L	180+98.80												48.00
M	181+46.80												

ELEVATIONS

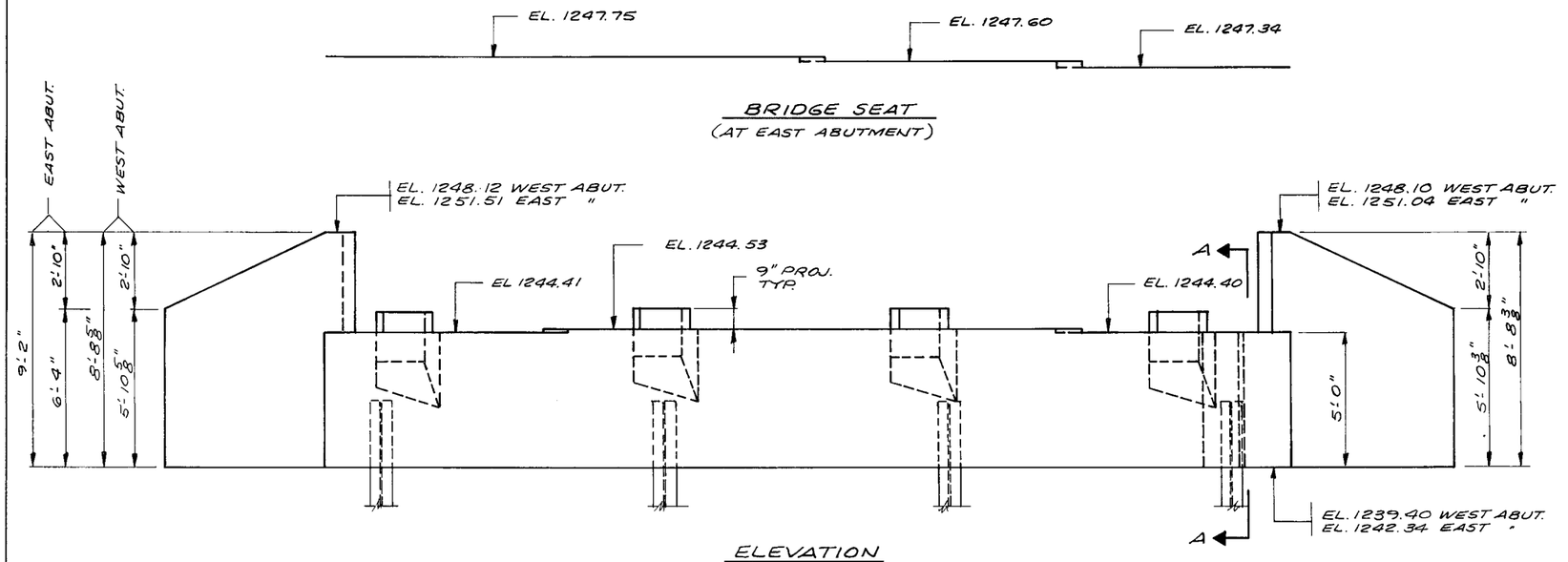
TOP OF SLAB	SLAB TO BR. SEAT	BRIDGE SEAT	POINT
1248.11	3.71	1244.40	A
1248.43	3.69	1244.74	B
1249.72	3.69	1246.03	C
1251.46	3.71	1247.75	D
1248.32			E
1248.57			F
1249.78			G
1251.45			H
1248.12	3.71	1244.41	J
1248.32	3.69	1244.63	K
1249.44	3.69	1245.75	L
1251.05	3.71	1247.34	M

BRIDGE LAYOUT
S.P. 55-598-25

APPROVED:	CHECKED:	DRAWN:
6-16-86	R.R.T.	D.J.V.

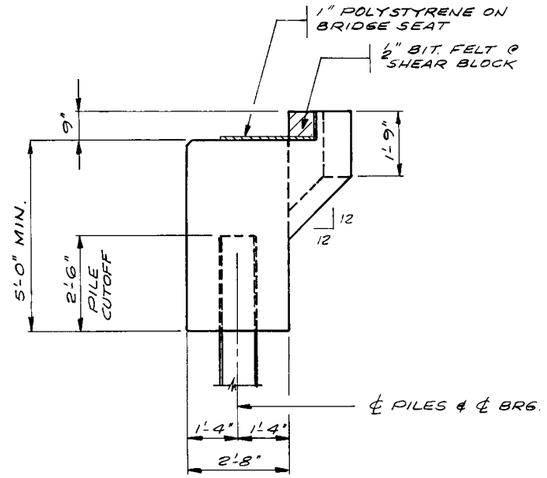
SHEET 2 OF 17 SHEETS

BRIDGE NUMBER 55544

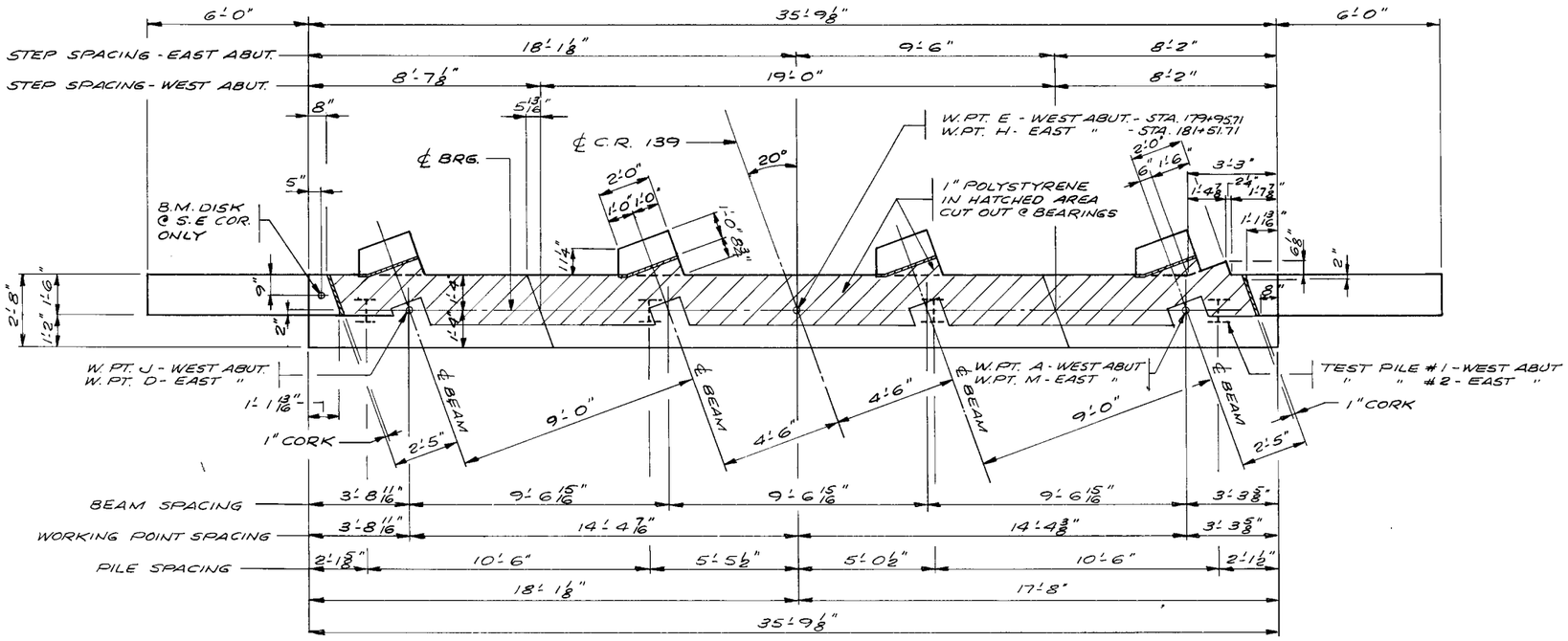


BRIDGE SEAT
(AT EAST ABUTMENT)

ELEVATION
(WEST ABUT. BR. SEAT SHOWN)
SCALE : $\frac{3}{8}$" = 1'-0"



SECTION A-A
SCALE : $\frac{3}{4}$" = 1'-0"



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

SUMMARY OF QUANTITIES FOR 2 ABUTMENTS			
	STRUCTURE CONCRETE (3Y43)	53	CU. YD.
	REINFORCEMENT BARS	3840	POUND
(3)	STRUCTURE EXCAVATION	1	LUMP SUM
(2)	B.M. DISK (SEE STD. № NO. 9300)	ONE	
	STEEL-H- TEST PILES 45 FT. LG.	2	EACH
(1)	STEEL-H- PILING DRIVEN	210	LIN. FT.
(1)	STEEL-H- PILING DELIVERED	210	LIN. FT.

(1) DOES NOT INCLUDE TEST PILES

(2) COUNTY TO FURNISH DISK. PAYMENT FOR PLACING TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS. SEE STD. PLATE NO. 9301 FOR PLACING.

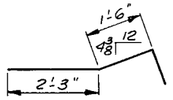
(3) SEE SPECIAL PROVISIONS

PILE NOTES

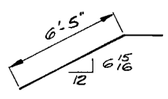
2 - STEEL H- TEST PILES 45 FT. LONG
6 - " " PILES EST. LENGTH 35 FT.
8 - " " " REQ'D FOR 2 ABUTMENTS
ALL PILES TO BE HP 10X42
SEE DETAIL 8202 FOR SPLICES

COMPUTED PILE LOADS - TONS PER PILE.	
DEAD LOAD	28.0
LIVE LOAD	17.0
TOTAL	45.0

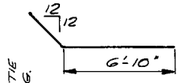
ABUTMENT DETAILS	DRAWN W.N.J.	CHECKED R.R.T.	APPROVED 6-16-86	BRIDGE NO. 55544
S.P. 55-598-25	SHEET 3 OF 17 SHEETS			



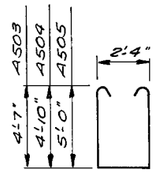
A629



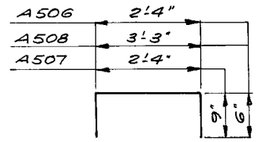
A612



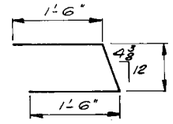
A619



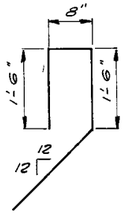
A503, A504, & A505



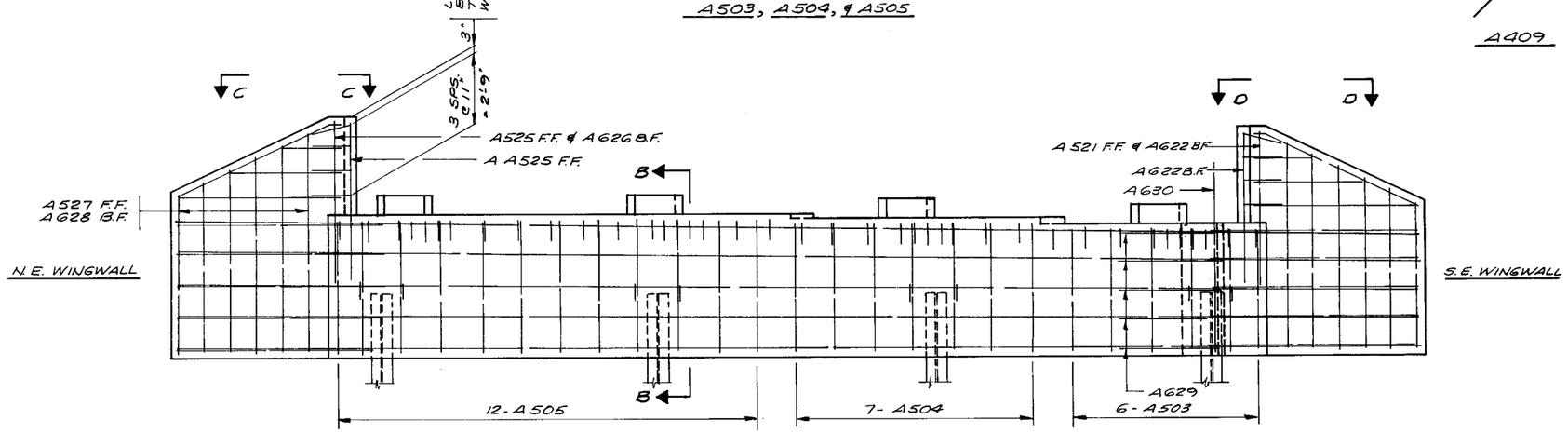
A506, A507, & A508



A420

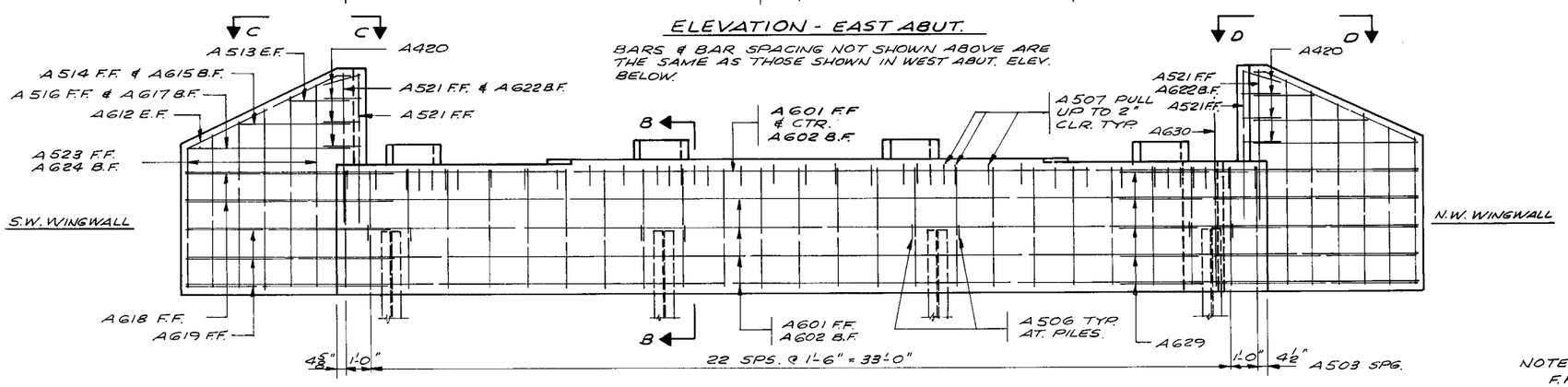


A409

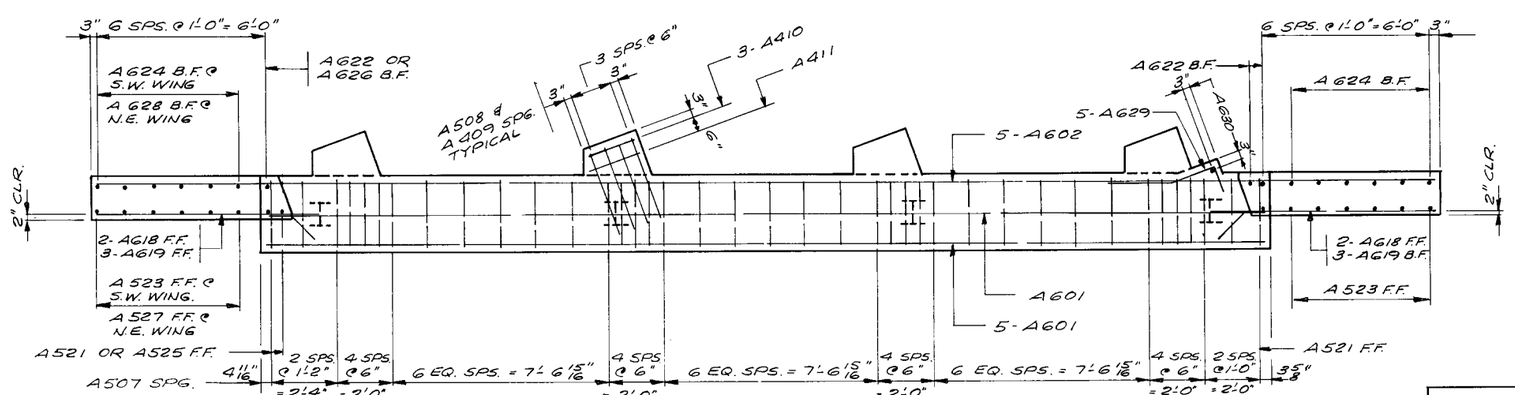


ELEVATION - EAST ABUT.

BARS & BAR SPACING NOT SHOWN ABOVE ARE THE SAME AS THOSE SHOWN IN WEST ABUT. ELEV. BELOW.



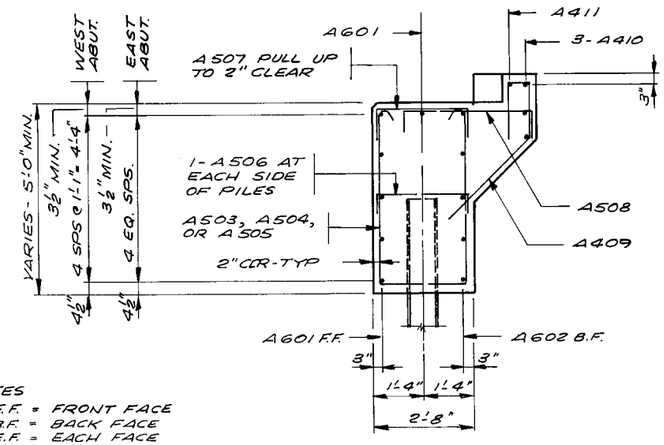
ELEVATION - WEST ABUT.



PLAN

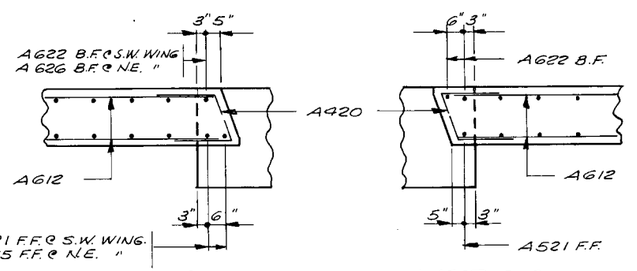
BILL OF REINFORCEMENT FOR 2- ABUTMENTS				
BAR	NO.	LENGTH	SHAPE	LOCATION
A601	12	35'-5"	STR.	WALL - LONG. - F.F. & TOP CTR.
A602	10	47'-5"	"	" - " - B.F.
A503	31	12'-5"	BENT	" - STIRRUPS - EAST & WEST
A504	7	12'-11"	"	" - " - EAST. ABUT.
A505	12	13'-3"	"	" - " - " "
A506	16	3'-4"	"	" - TIES @ PILES
A507	78	3'-10"	"	" - " @ BRIDGE SEAT
A508	32	4'-3"	"	" - " @ " ST. & SHEAR BLK.
A409	32	6'-6"	"	SHEAR BLOCK. - TIES
A410	24	1'-8"	STR.	" " - LONG.
A411	8	1'-10"	"	" " - "
A612	8	6'-10"	BENT	WINGWALLS - TOP
A513	8	2'-5"	STR.	" - LONG - E.F.
A514	4	4'-5"	"	" - " - F.F.
A615	4	4'-5"	"	" - " - B.F.
A516	4	6'-3"	"	" - " - F.F.
A617	4	6'-3"	"	" - " - B.F.
A618	8	8'-1"	"	" - " - F.F.
A619	12	8'-1"	BENT	" - " - F.F.
A420	16	4'-3"	"	" - TIES
A521	4	8'-4"	STR.	" - VERT. - F.F.
A622	5	8'-4"	"	" - " - B.F.
A523	9	13'-7"	"	N.W. S.W., & S.E. WINGWALLS - VERT.
A624	9	13'-7"	"	" " " " - "
A525	2	8'-9"	"	N.E. WINGWALL - VERT. - F.F.
A626	1	8'-9"	"	" " - " - B.F.
A527	3	14'-6"	"	" " - " - F.F.
A628	3	14'-6"	"	" " - " B.F.
A629	10	4'-9"	BENT	WALL - TIES @ N.W. & S.E COR.
A630	2	7'-0"	STR	" - VERT " " " "

(1) CUT 2 FROM 1



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

SECTION B-B

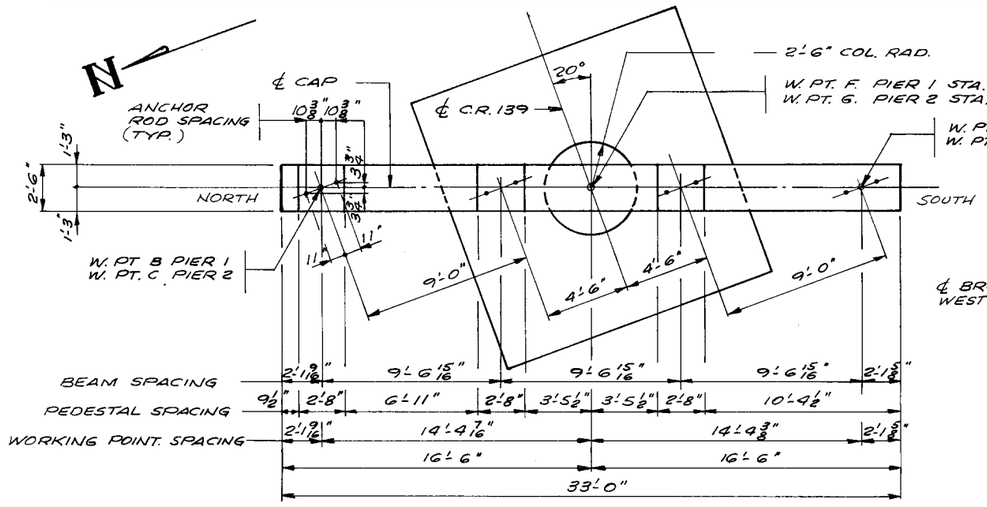


VIEW C - C

WEST D-D

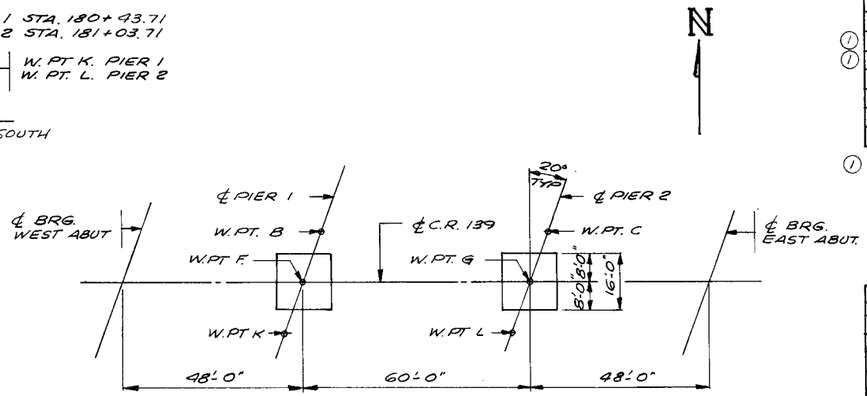
ABUTMENT REINFORCEMENT S.P. 55-598-25	DRAWN W.N.J.	CHECKED R.R.T.	APPROVED 6-16-86
	SHEET 4 OF 17 SHEETS		

BRIDGE NO. 55544



PLAN

SCALE: 1/4" = 1'-0"



PIER FOOTING LAYOUT

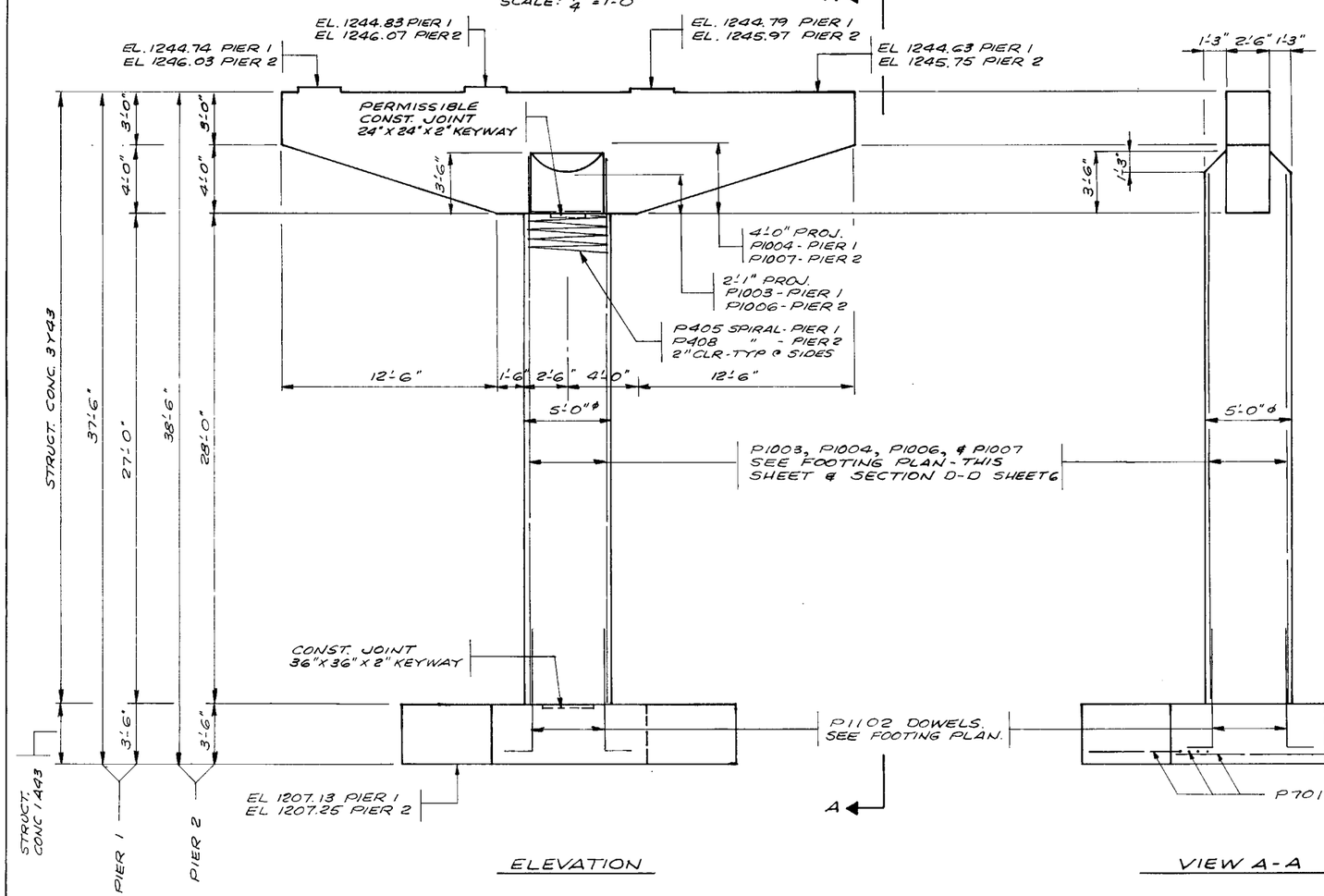
SUMMARY OF QUANTITIES FOR 2 PIERS		
STRUCTURE CONCRETE (1A43)	67	CU.YD.
STRUCTURE CONCRETE (3Y43)	76	CU.YD.
REINFORCEMENT BARS	20510	POUND
SPIRAL REINFORCEMENT	2227	POUND
(1) FOUNDATION PREPARATION (PIER 1)	1	EACH
(1) FOUNDATION PREPARATION (PIER 2)	1	EACH
STRUCTURE EXCAVATION, CLASS W.R.	10	CU.YD.

(1) SEE SPECIAL PROVISIONS

SPIRAL DATA	PIER 1	PIER 2
OUTSIDE DIAMETER	4'-8"	4'-8"
SPIRAL ROD SIZE	1/2" PLAIN ROUND	1/2" PLAIN ROUND
PITCH	3"	3"
HEIGHT	27'-2"	28'-2"
EST. WEIGHT EACH	1094 POUNDS	1133 POUNDS

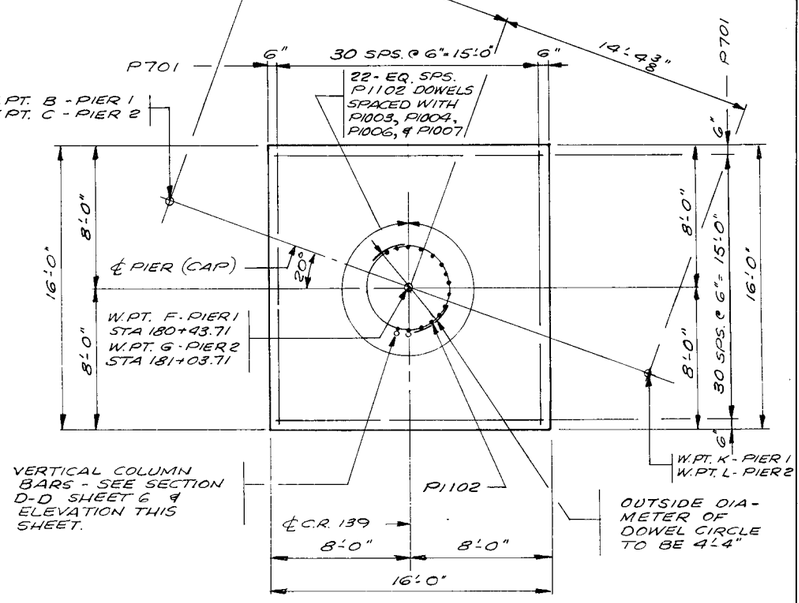
COMPUTED SOIL PRESSURE - KIPS PER SQ. FT.	
DEAD LOAD	3.0
LIVE LOAD	.7
OVERTURNING	3.4
TOTAL	7.1 / 1.4 = 5.1

REDUCTION PER A.A.S.H.T.O 3.22.1A
GROUP VI LOADING



ELEVATION

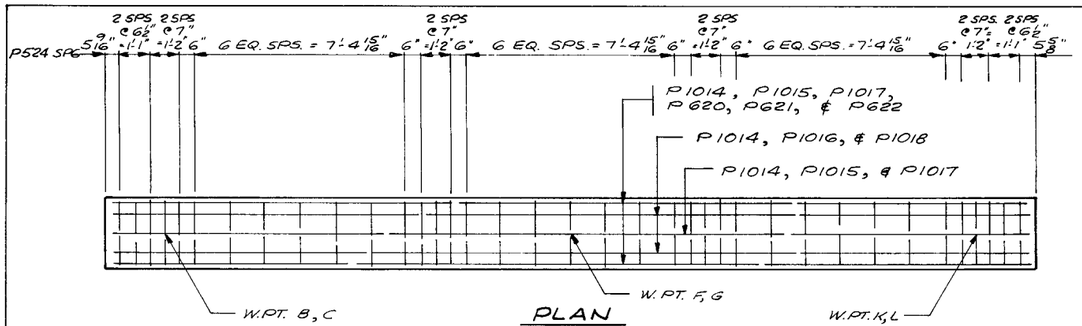
VIEW A-A



FOOTING PLAN

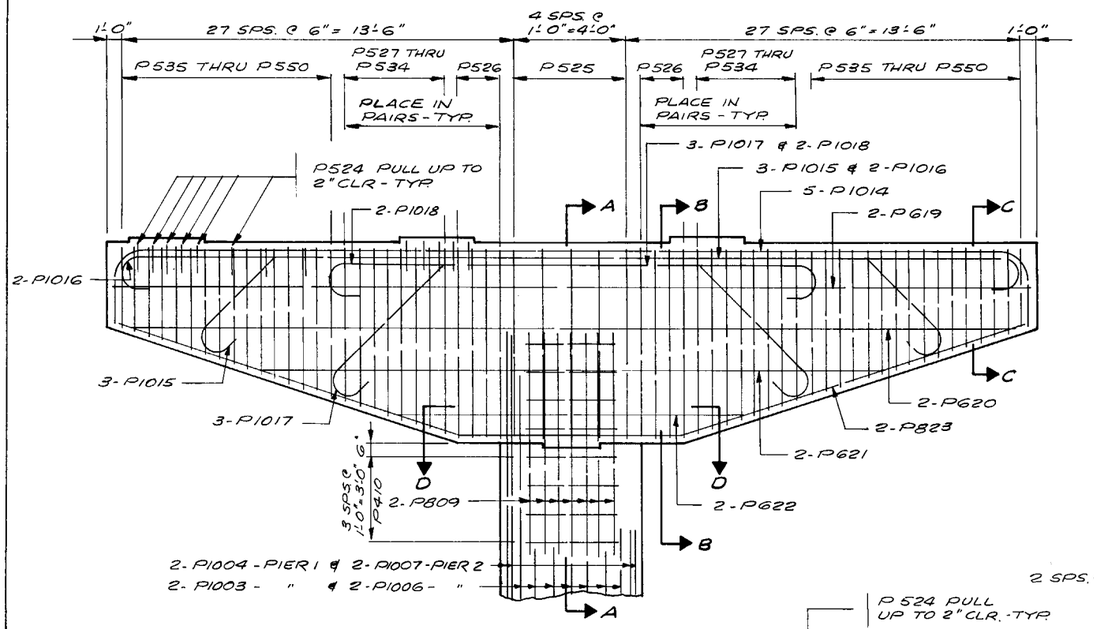
SCALE: 1/4" = 1'-0"

PIER DETAILS	DRAWN	CHECKED	APPROVED	BRIDGE NO
S.P. 55-598-25	W.N.J.	R.R.T.	6-16-96	55544
	SHEET 5 OF 17 SHEETS			



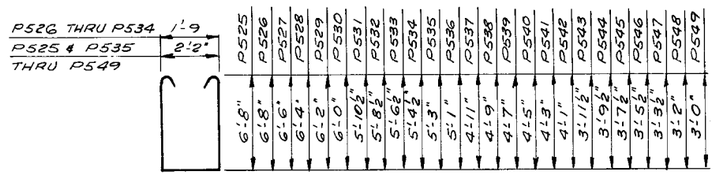
PLAN

SCALE: 3/8" = 1'-0"

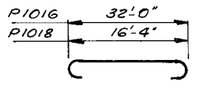


ELEVATION

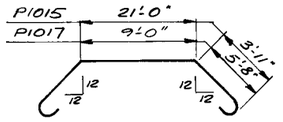
SCALE: 3/8" = 1'-0"



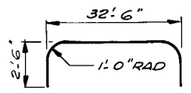
P525 THRU P550



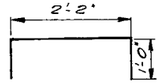
P1016 & P1018



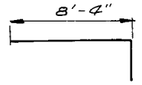
P1015 & P1017



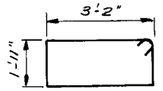
P1014



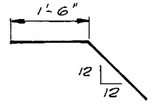
P524



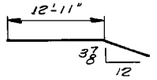
P1102



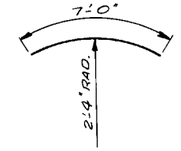
P410



P411



P823

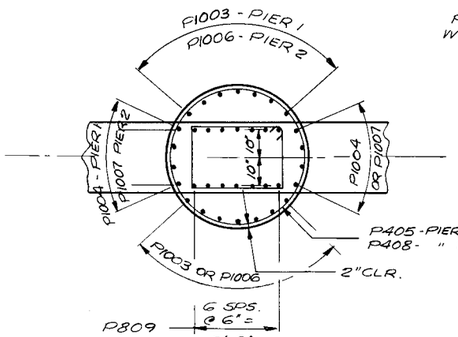


P413

BILL OF REINFORCEMENT FOR 2 PIERS

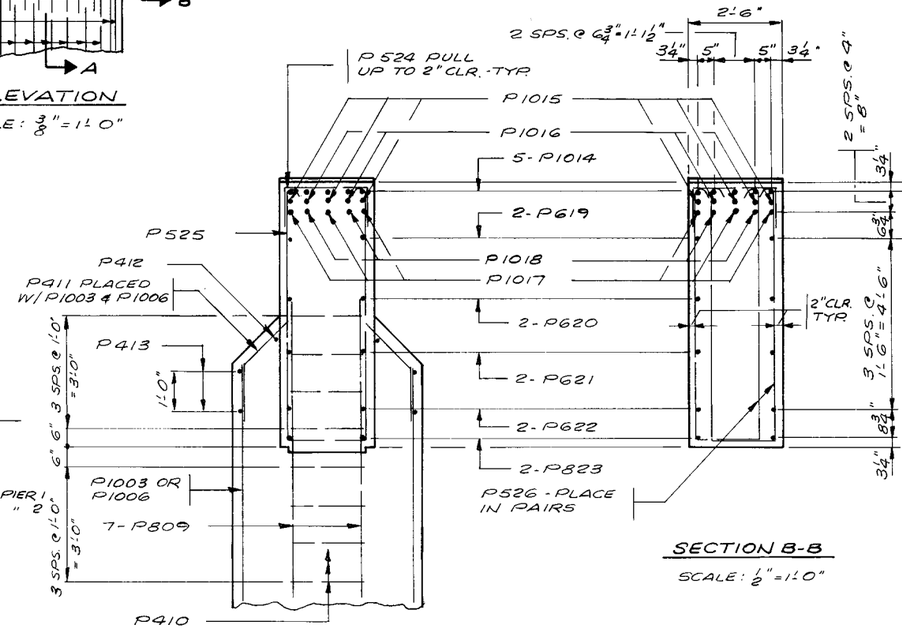
	BAR	NO	LENGTH	SHAPE	LOCATION
(1)	P701	124	15'-6"	STR.	PIER 1&2 - FTG. LONG & TRANS.
	P1102	44	10'-9"	BENT	" " - " - DOWELS
(1)	P1003	14	29'-1"	STR.	PIER 1 - COLUMN - VERT.
(1)	P1004	8	31'-0"	"	" 1 - " - "
(1)	P405	1	——	SPIRAL	" 1 - " - SPIRAL
(1)	P1006	14	30'-1"	STR.	PIER 2 - COLUMN - VERT.
(1)	P1007	8	32'-0"	"	" 2 - " - "
(1)	P408	1	——	SPIRAL	" 2 - " - SPIRAL
	P809	28	8'-0"	STR.	PIER 1&2 - COL & CAP - DOWELS
	P410	16	10'-11"	BENT	" " - " " " - TIES
	P411	28	3'-0"	"	" " - COLUMN - TIES
	P412	4	2'-0"	STR.	" " - " - "
	P413	8	7'-0"	BENT	" " - COL. & CAP - TIES
	P1014	10	36'-8"	"	" " - CAP - LONG
	P1015	6	31'-8"	"	" " - " - "
	P1016	4	39'-10"	"	" " - " - "
	P1017	6	23'-2"	"	" " - " - "
	P1018	4	19'-2"	"	" " - " - "
	P619	4	32'-6"	STR.	" " - " - "
	P620	4	31'-4"	"	" " - " - "
	P621	4	22'-0"	"	" " - " - "
	P622	4	12'-8"	"	" " - " - "
	P823	8	18'-7"	BENT	" " - " - LONG - BOT
	P524	74	4'-2"	"	" " - " - TIES
	P525	10	16'-5"	"	" " - " - STIRRUPS
	P526	32	16'-0"	"	" " - " - "
	P527	8	15'-8"	"	" " - " - "
	P528	8	15'-4"	"	" " - " - "
	P529	8	15'-0"	"	" " - " - "
	P530	8	14'-8"	"	" " - " - "
	P531	8	14'-5"	"	" " - " - "
	P532	8	14'-1"	"	" " - " - "
	P533	8	13'-9"	"	" " - " - "
	P534	8	13'-5"	"	" " - " - "
	P535	4	13'-7"	"	" " - " - "
	P536	4	13'-3"	"	" " - " - "
	P587	4	12'-11"	"	" " - " - "
	P538	4	12'-7"	"	" " - " - "
	P539	4	12'-3"	"	" " - " - "
	P540	4	11'-11"	"	" " - " - "
	P541	4	11'-7"	"	" " - " - "
	P542	4	11'-3"	"	" " - " - "
	P543	4	11'-0"	"	" " - " - "
	P544	4	10'-8"	"	" " - " - "
	P545	4	10'-4"	"	" " - " - "
	P546	4	10'-0"	"	" " - " - "
	P547	4	9'-8"	"	" " - " - "
	P548	4	9'-5"	"	" " - " - "
	P549	4	9'-1"	"	" " - " - "

(1) DO NOT ORDER REINFORCEMENT UNTIL FOOTING ELEVATIONS HAVE BEEN DETERMINED BY THE ENGINEER



SECTION D-D

SCALE: 3/8" = 1'-0"

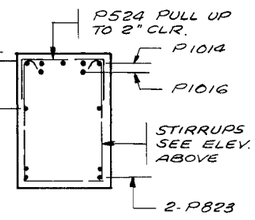


SECTION A-A

SCALE: 1/2" = 1'-0"

SECTION B-B

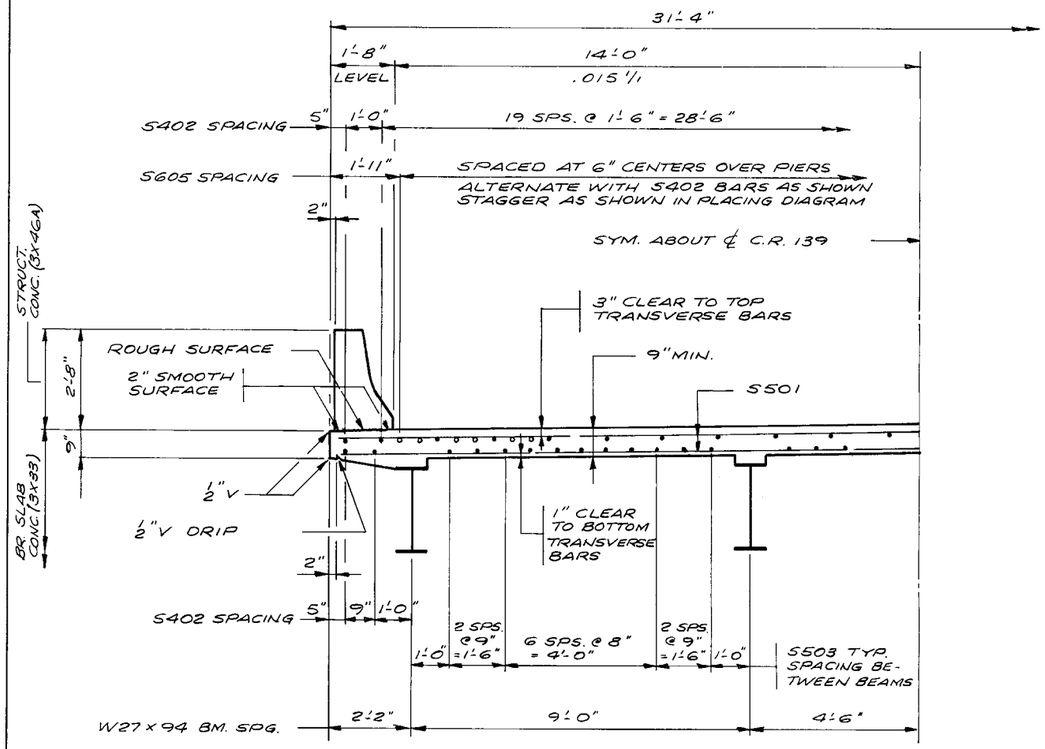
SCALE: 1/2" = 1'-0"



SECTION C-C

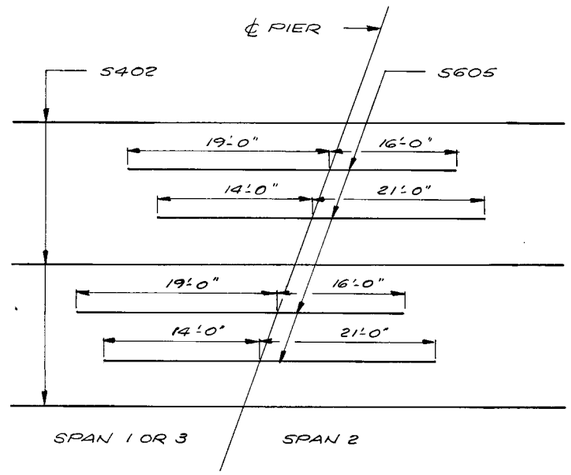
SCALE: 1/2" = 1'-0"

PIER REINFORCEMENT S.P. 55-598-25	DRAWN W.N.J.	CHECKED R.R.T.	APPROVED 6-16-86	BRIDGE NO. 55544
	SHEET 6 OF 17 SHEETS			



HALF TRANSVERSE SECTION THRU DECK

SCALE: 1/2" = 1'-0"



PLACING DIAGRAM FOR S605 BARS OVER PIERS

	SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE		
(2)	BRIDGE SLAB CONCRETE (3X33)	4936	SQ. FT.
(6)	STRUCTURE CONCRETE (3Y43)	12	CU. YD
(9)	STRUCTURE CONCRETE (3X46A)	318	LIN. FT
	REINFORCEMENT BARS	41,865	POUND
	STRUCTURAL STEEL, 3309	77,580	POUND
	STRUCTURAL STEEL, 3306	400	POUND
	FLOOR DRAINS, TYPE 1	5	EACH
(4)	NAME PLATE (SEE DETAIL 8103)	ONE	
(5)	EXPANSION CURVED PLATE BEARING ASSEMBLY TYPE 1	8	EACH
(5)	FIXED CURVED PLATE BEARING ASSEMBLY, TYPE 1	8	EACH
(5) (4)	3-PLY JOINT WATERPROOFING	94	LIN. FT.
(3)	PROTECTION ANGLE (SEE DETAIL 8551)		
(4) (5)	JOINT FILLER - SEE LISTS BELOW		

(1) INCLUDES RAILING QUANTITIES

(2) APPROX. DECK SLAB CONC. 3X33 QUANTITY EQUALS 147 CU. YDS.

(3) INCLUDED IN WEIGHT OF STRUCTURAL STEEL 3306.

(4) INCLUDED IN PRICE BID FOR OTHER ITEMS

(5) SEE SPECIAL PROVISIONS

(6) END DIAPHRAGMS

(9) APPROX. RAILING CONC. 3X46 QUANTITY EQUALS 32 CU YDS.

BILL OF REINFORCEMENT FOR SUPERSTRUCTURE

	BAR	NO.	LENGTH	SHAPE	LOCATION
	S501	686	30'-10"	STR.	SLAB - TRANSV.
(7)	S402	130	32'-9"	"	" - LONG.
(8)	S503	132	40'-10"	"	" - "
	S504	4	32'-10"	"	" - ENDS
	S605	76	35'-0"	"	" - OVER PIERS
	S506	4	5'-0"	BENT	" - END CORNERS
(10)	S407	8	6'-0"	"	END DIAPHRAGM - TIES
(10)	S408	8	8'-1"	"	" " - "
(10)	S409	36	8'-5"	"	" " - "
(10)	S410	36	5'-8"	"	" " - "
(10)	S411	8	4'-9"	"	" " - " N.W. & S.E. COR.
	S412	14	33'-5"	STR.	" " - LONG B.F. & CTR
	S413	18	9'-0"	"	" " - " F.F.
	S414	6	7'-5"	"	" " - " F.F.
	S415	12	2'-0"	"	" " - " F.F.
	S416	4	1'-3"	"	" " - " F.F.

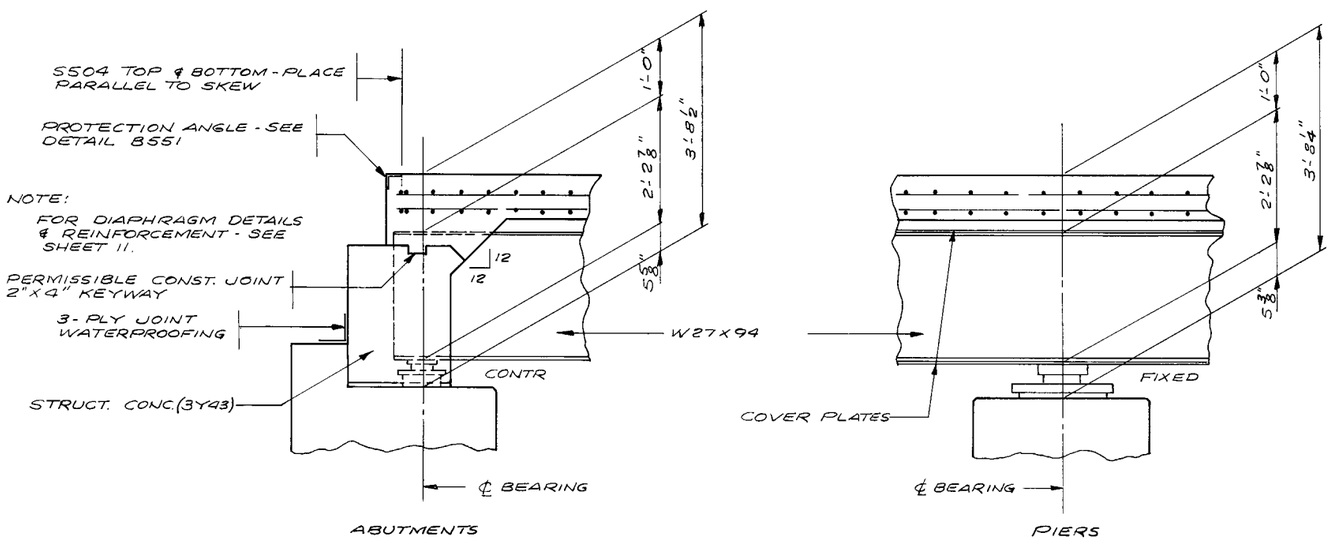
(7) 5 LINES, 1'-6" MIN. LAP (10) BAR DETAILS SHOWN ON SHT. 11

(8) 4 LINES, 1'-11" " "

LIST OF PREFORMED CORK JOINT FILLER
4 - PCS. 20" x 1" x 1'-8" ABUTMENT RECESS
16 - PCS. 11" x 1" x 1'-7" RAILING DEFLECTION JOINTS

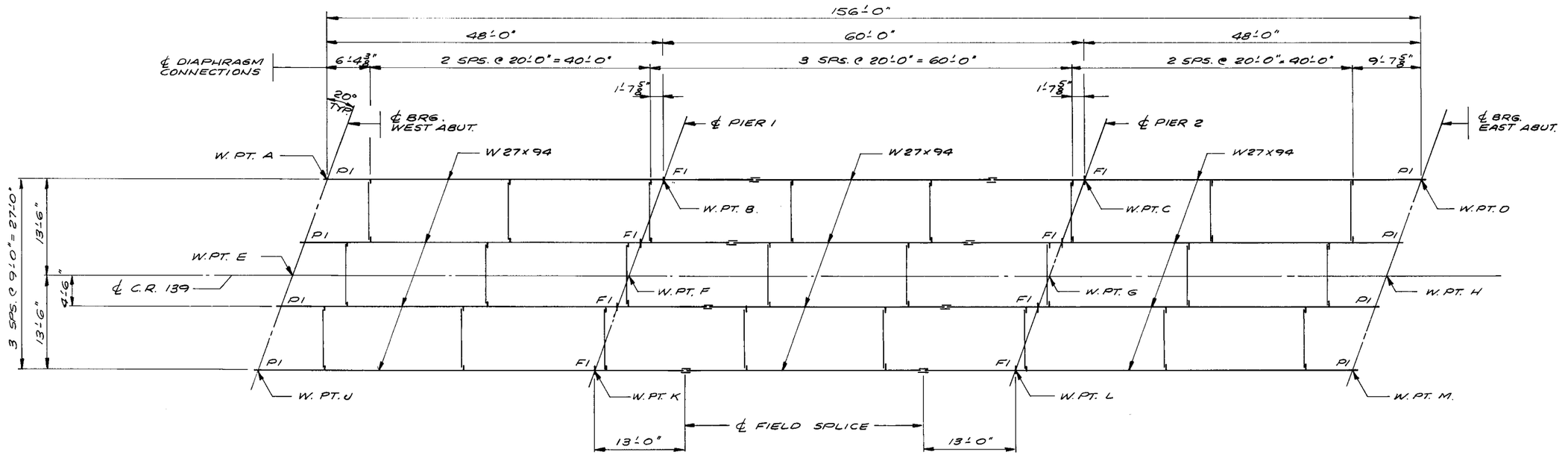
LIST OF PREFORMED BITUM JOINT FILLER
8 - PCS. 9" x 1/2" x 2'-5" SHEAR BLOCKS

LIST OF POLYSTYRENE - TYPE "A"	
2 - PCS.	22" x 1" x 34'-0" ABUTMENT BRIDGE SEAT
8 - "	9" x 1" x 2'-0" " " "
8 - "	6" x 2" x 1'-6" BEHIND BRG. ASS'Y - ABUTS
8 - "	2" x 1" x 1'-4" " " " - "
8 - "	4" x 1" x 0'-9" SIDES OF BEAM FLG.
8 - "	4" x 1" x 1'-3" " " " "
8 - "	7" x 1" x 0'-9" " " BRG. ASS'Y
8 - "	7" x 1" x 1'-3" " " " "



PART LONGITUDINAL SECTION AT BEAM

SUPERSTRUCTURE DETAILS S.P. 55-598-25	DRAWN W.N.J.	CHECKED R.R.T.	APPROVED 6-16-86	BRIDGE NO 55544
	SHEET 7 OF 17 SHEETS			

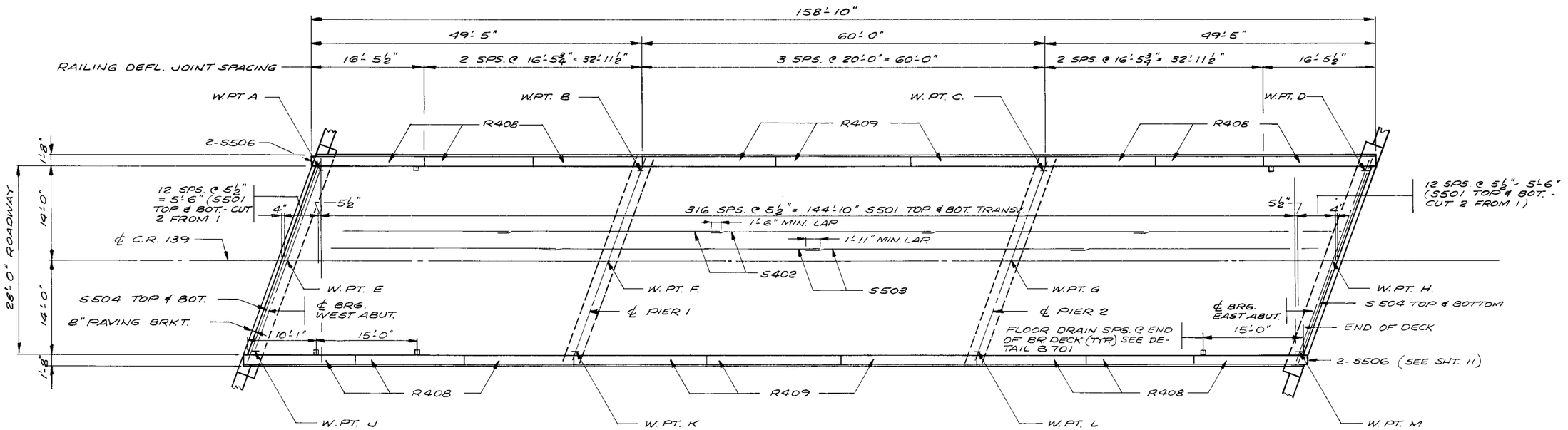


NOTE:

P1 = EXPANSION CURVED PLATE BEARING ASSEMBLY, TYPE 1
F1 = FIXED CURVED PLATE BEARING ASSEMBLY, TYPE 1

FRAMING PLAN

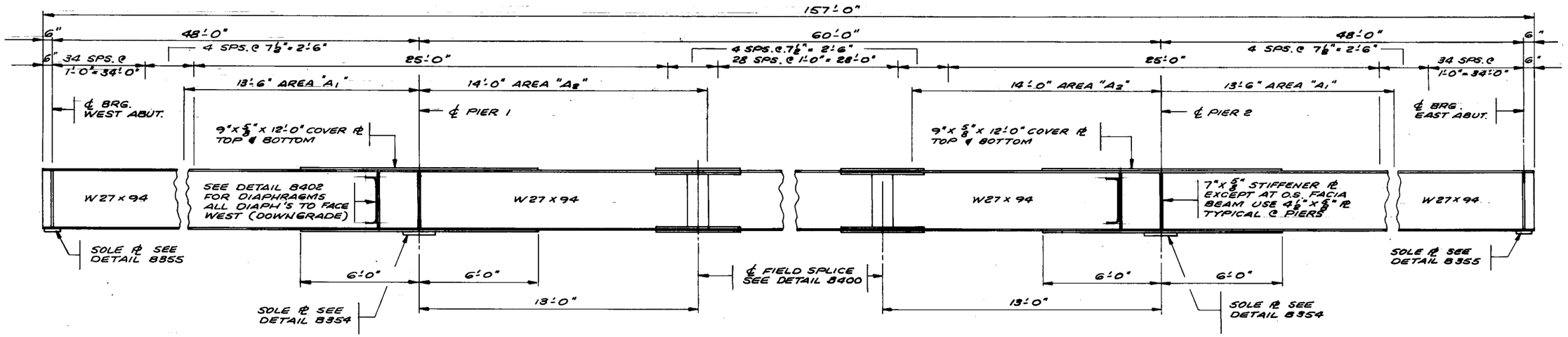
SCALE: 1/8" = 1'-0"



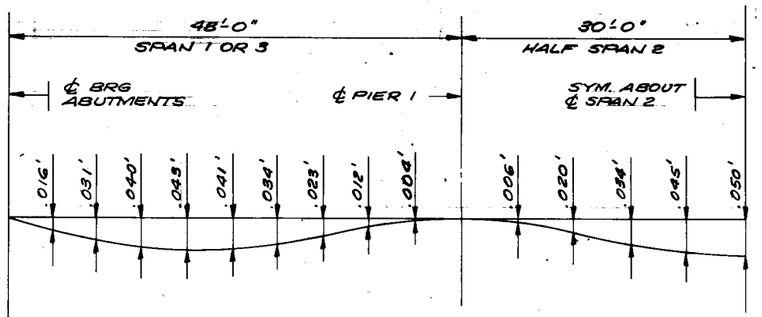
PLAN OF DECK

SCALE: 1/8" = 1'-0"

FRAMING PLAN & SUPERSTRUCTURE DETAILS S.P. 55-598-25	DRAWN W.N.J.	CHECKED R.R.T	APPROVED 6-16-86	BRIDGE NO. 55544
	SHEET 8 OF 17 SHEETS			

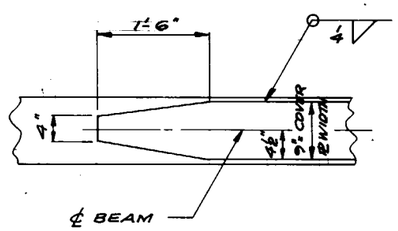


BEAM ELEVATION

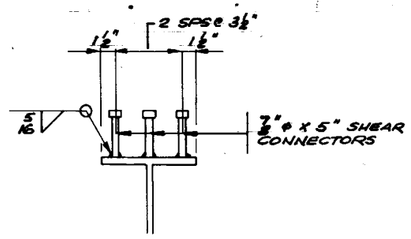


DEFLECTION DIAGRAM

DEFLECTIONS SHOWN ARE FOR WEIGHT OF SLAB, FUTURE WEARING COURSE, STOOL, & RAILING

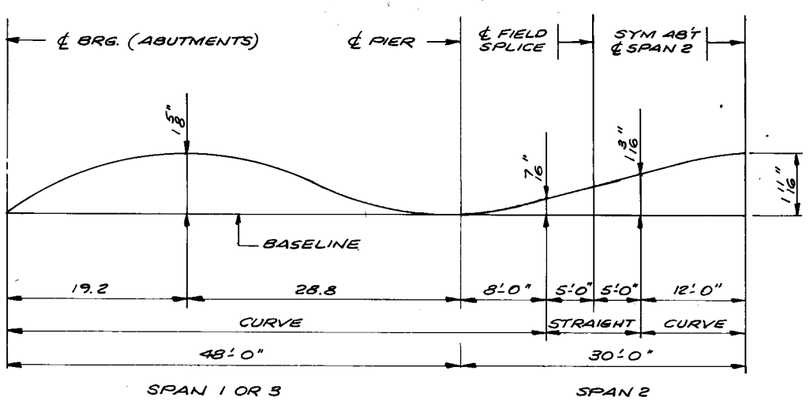


COVER PLATE DETAIL



SHEAR CONNECTOR DETAIL

BASE LINE IS A STRAIGHT LINE FROM ℄ BRG. TO ℄ BRG. AT TOP OF BEAM.



CAMBER DIAGRAM

CONSTRUCTION NOTES FOR STEEL SPANS

ALL STRUCTURAL STEEL SHALL CONFORM TO SPEC. 3309 UNLESS OTHERWISE NOTED.

FIELD CONNECTIONS SHALL BE MADE WITH ⅞" HIGH STRENGTH BOLTS OR ⅞" PIN BOLTS, EXCEPT AS NOTED.

SHEAR CONNECTORS TO BE INCLUDED IN WEIGHT OF STRUCTURAL STEEL SPEC. 3309.

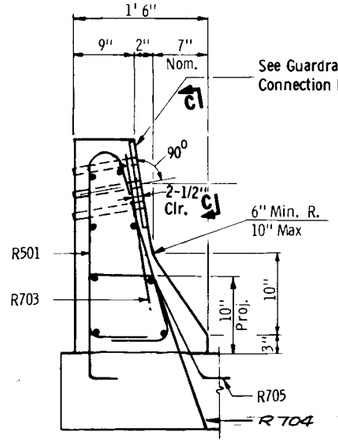
SPECIAL REAMING AS PER SPEC. 2471.3E(1) WILL BE REQUIRED FOR THE BEAM SPLICES.

BEARING STIFFENERS SHALL BE PERPENDICULAR TO FLANGES.

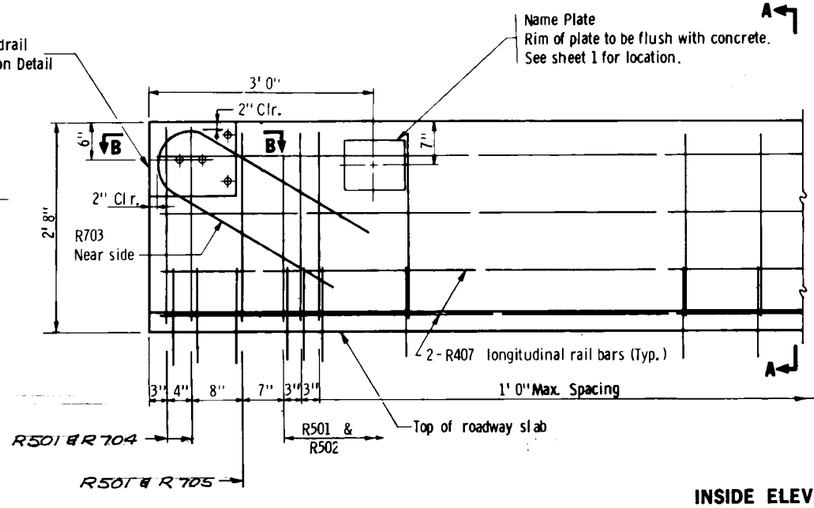
ENDS OF BEAMS SHALL BE VERTICAL.

CAMBER DIAGRAM SHOWN IS FOR BEAMS IN UNLOADED POSITION AND PROVIDES FOR ALL DEAD LOAD DEFLECTIONS AND RESIDUAL CAMBER.

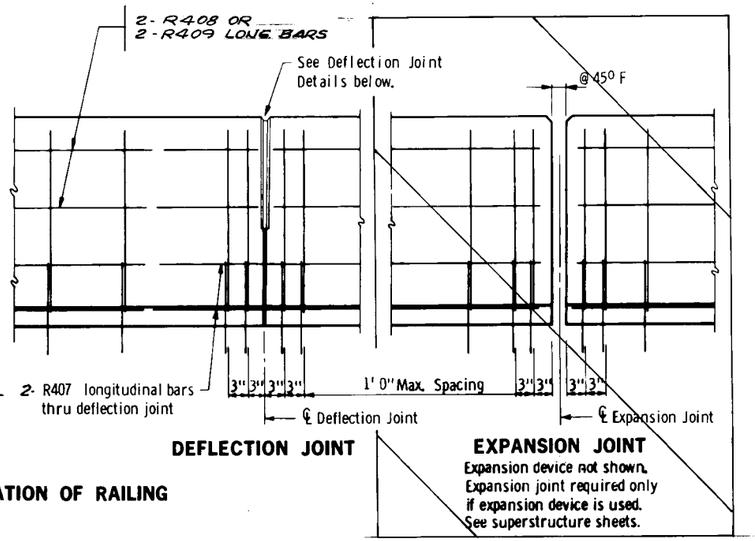
STRUCTURAL STEEL DETAILS S.P. 55-598-25	DRAWN W.N.J.	CHECKED R.R.T.	APPROVED 6-16-86	BRIDGE NO 55544
	SHEET 9 OF 17 SHEETS			



END VIEW



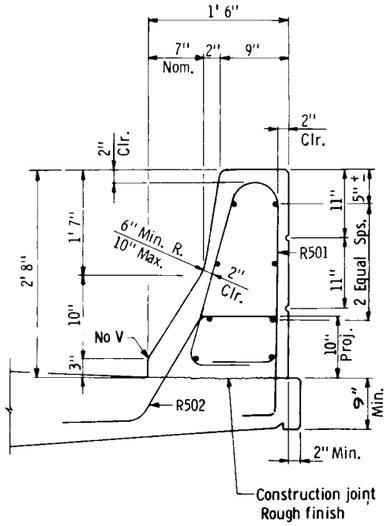
INSIDE ELEVATION OF RAILING



DEFLECTION JOINT

EXPANSION JOINT

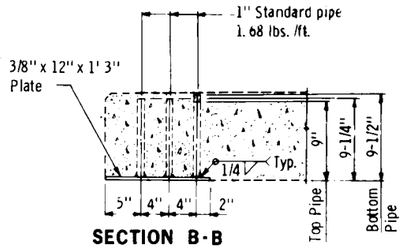
Expansion device not shown.
Expansion joint required only
if expansion device is used.
See superstructure sheets.



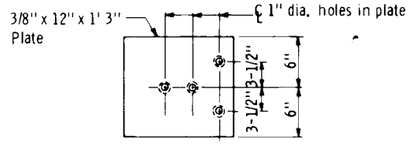
SECTION A-A

BILL OF REINFORCEMENT FOR RAILING				
BAR	NO.	LENGTH	SHAPE	LOCATION
R501	368	6' 1"	Bent	Rail Vertical
R502	356	5' 6"	Bent	Rail Vertical
R703	4	6' 6"	Bent	End Post
R704	8	5' 6"	"	" "
R705	4	5' 6"	Bent	End Post
① R407	40	38' 0"	Str't.	Rail Long.
R408	48	16' 0"	Str't.	Rail Long.
R409	24	19' 7"	"	" "

① 5 LINES, MIN. LAP 1' 6"

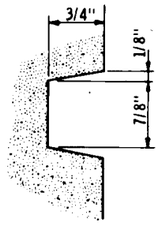


SECTION B-B
(Reinforcement not shown)

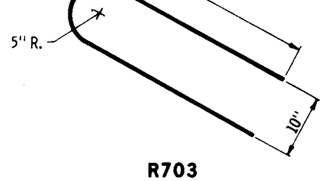


VIEW C-C

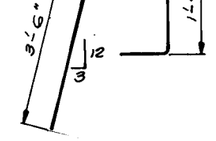
GUARDRAIL CONNECTION DETAIL
Galvanize after fabrication per Spec. 3394
Estimated Weight = 23 lbs.



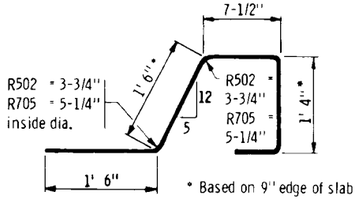
RAIL RUSTICATION



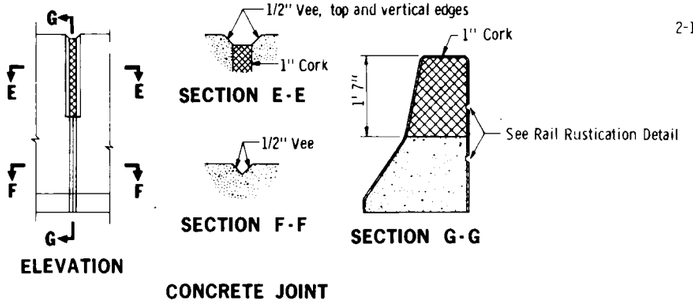
R703



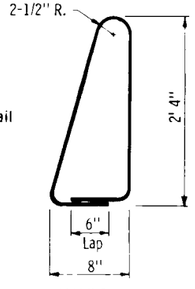
R704



R502 & R705



CONCRETE JOINT
DEFLECTION JOINT DETAILS



R501

GENERAL NOTES:

Concrete Railing = 405 lbs. /ft.
Concrete Railing = .100 cu. yds. /ft.

Rail to be Concrete Mix No. 3X46A

Guardrail connection to be Structural Steel, Spec. 3306

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

See superstructure sheet for joint spacing.

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

Guardrail connection to be included in price bid for other items.

Rail quantities are included in summary of quantities for superstructure.

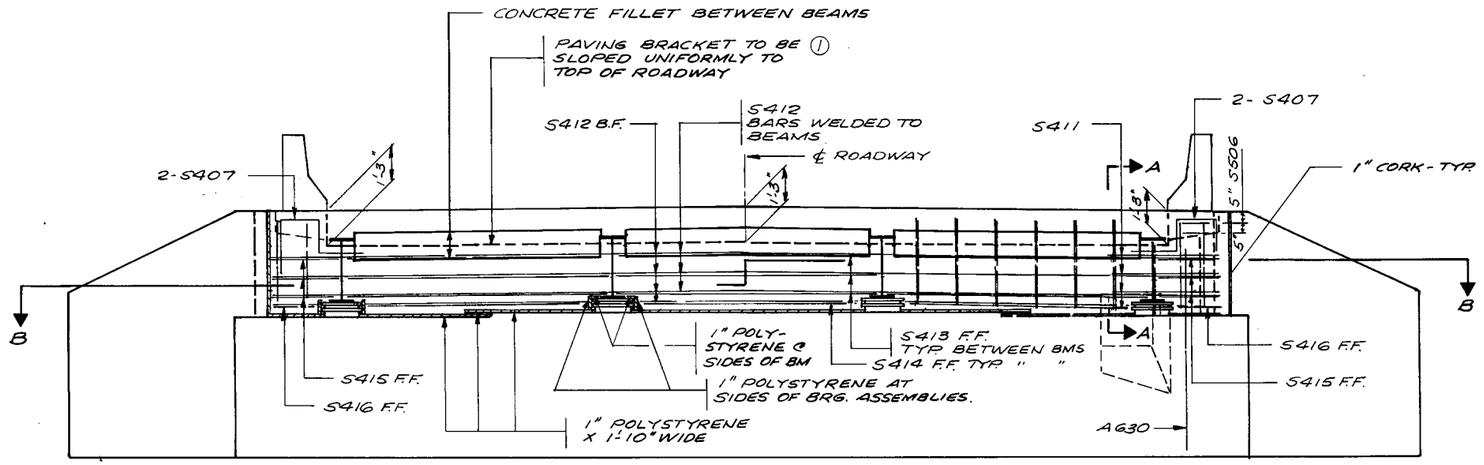
Length of railing concrete to be measured for payment between outside faces of end posts.

Fig. 5-397.115

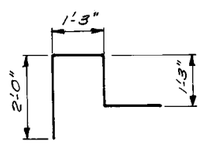
S.P. 55-598-25

Approved: April 23, 1980

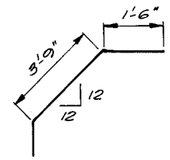
TITLE: CONCRETE RAILING (TYPE J) WITH INTEGRAL END POST (Without Wearing Course)	DES:	DR:	APPROVED: 6-16-86	Bridge No. 55544
	CHK:	CHK:	Sheet No. 10 of 17 Sheets	



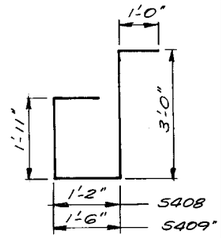
WEST ABUTMENT END DIAPHRAGM ELEV.



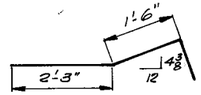
S407



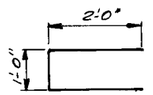
S410



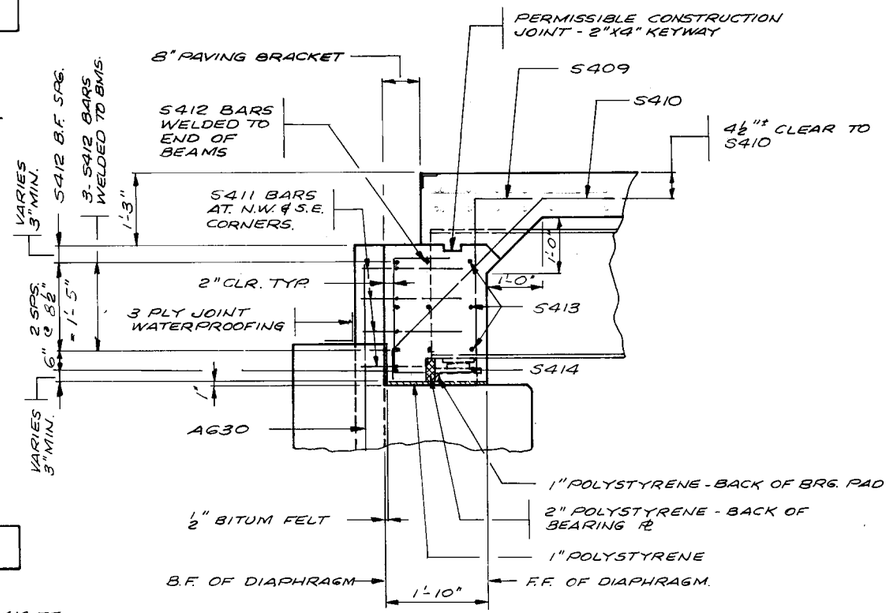
S408 & S409



S411

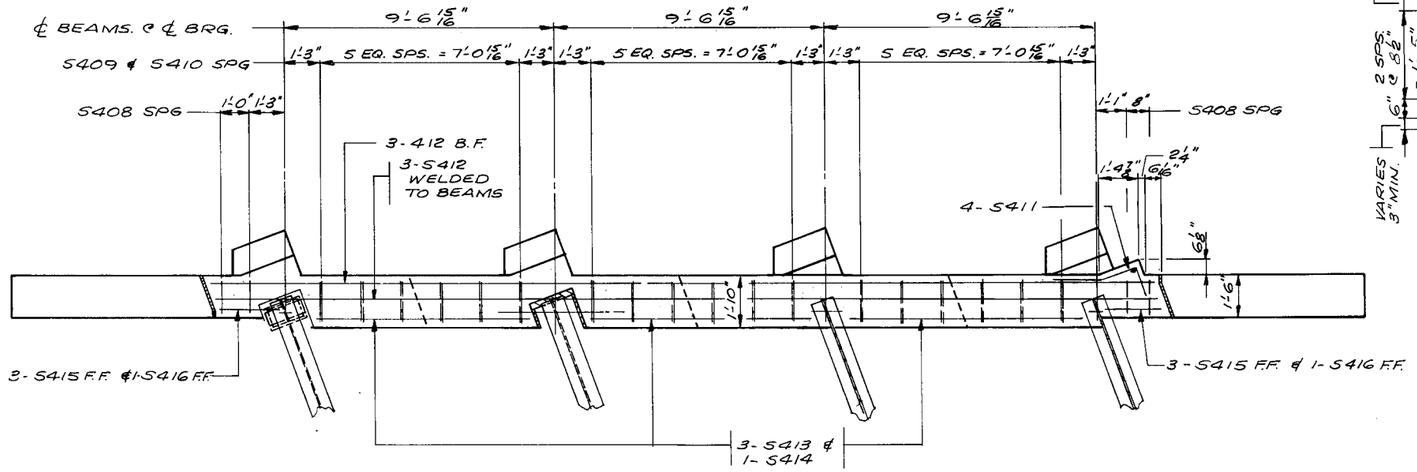


S506

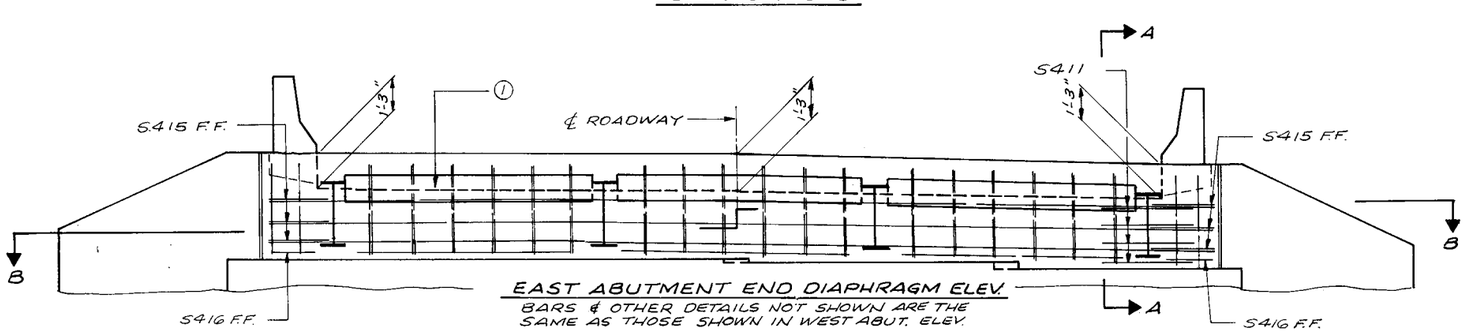


SECTION A-A

SCALE: ¾" = 1'-0"

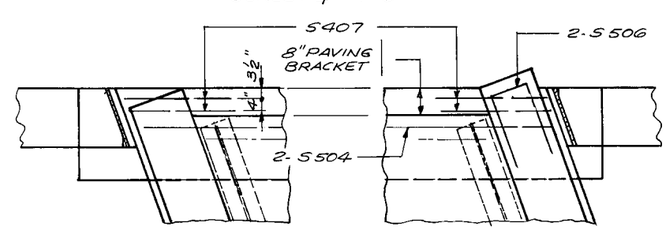


SECTION B-B



EAST ABUTMENT END DIAPHRAGM ELEV.

BARS & OTHER DETAILS NOT SHOWN ARE THE SAME AS THOSE SHOWN IN WEST ABUT. ELEV.

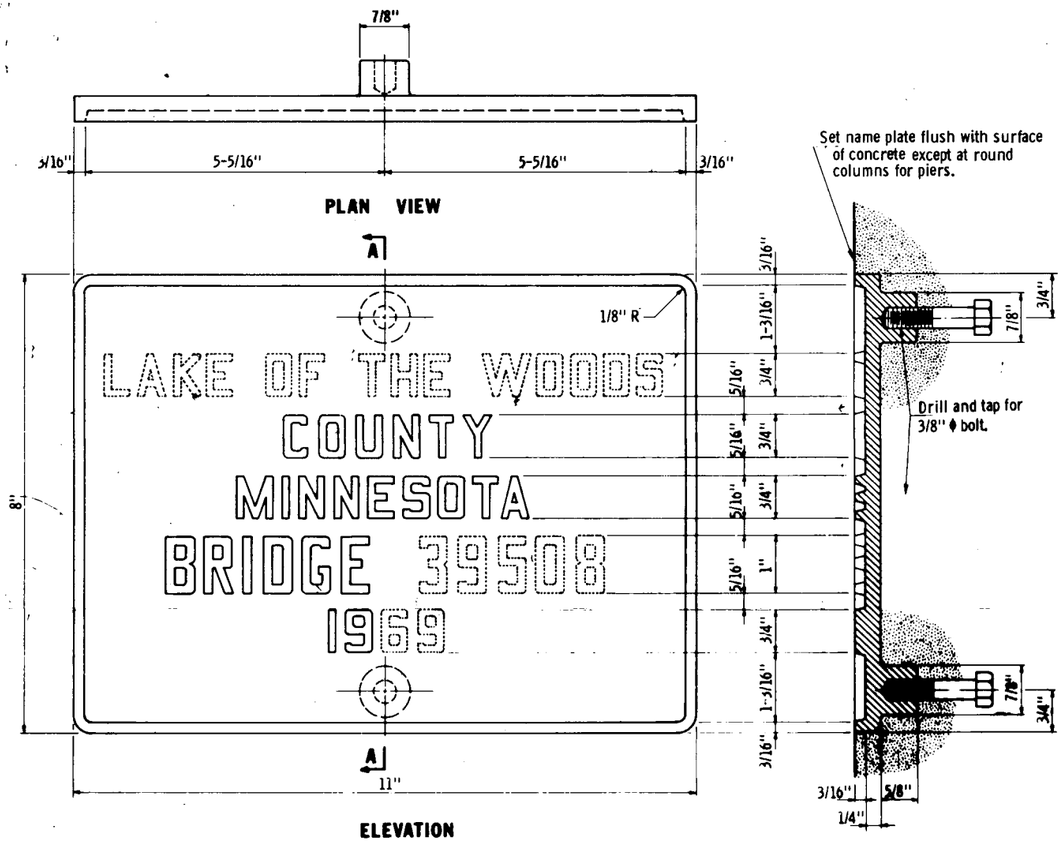


S.W. & N.E CORNERS

N.W. & S.E. CORNERS

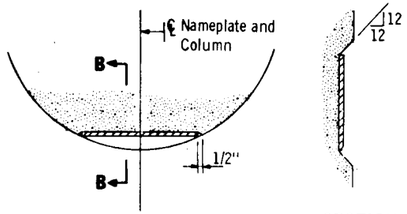
SCALE: ½" = 1'-0"

END DIAPHRAGM DETAILS S.P. 55-598-25	DRAWN W.N.J.	CHECKED R.R.T.	APPROVED 6-16-86	BRIDGE NO 55544
	SHEET 11 OF 17 SHEETS			



The numbers shown above are for illustration.
Data to be shown on name plate is as follows:

BRIDGE 55544
YEAR 1986
COUNTY - OLMSTED



NAMEPLATE PLACEMENT

(Round Concrete Pier Columns)

NOTES:

No shop drawing required.
Material shall comply with SPEC. 3327.
Numbers and letters shall conform to those shown.
Draft on letters shall not be more than 3" in 12"
Horizontal spacing of letters shall produce a balanced layout in proportion to spacing shown.
Top surface of letters and frames shall be burnished.
Furnish 2 steel bolts 3/8" ϕ 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.

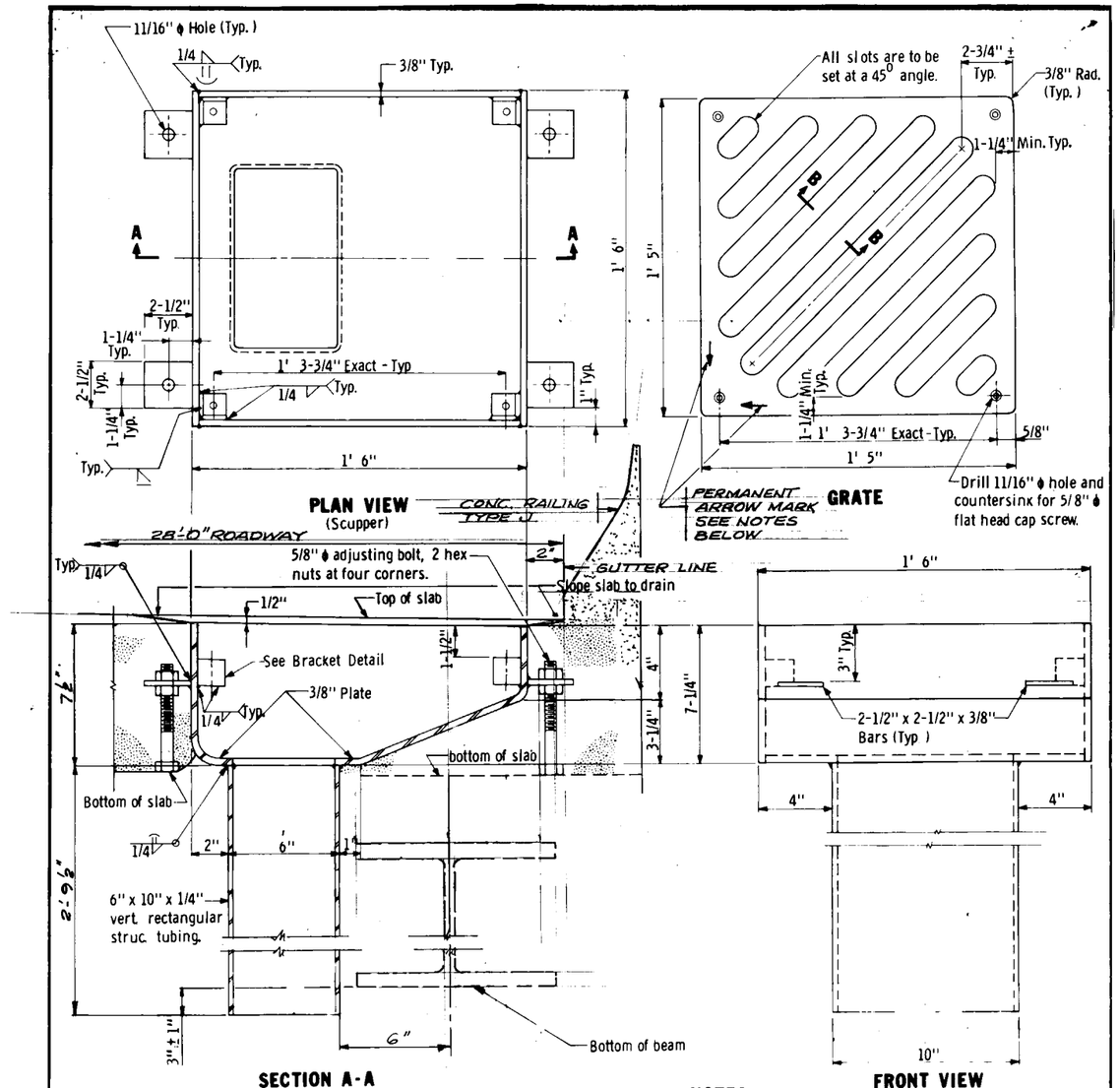
ABCDEFGHIJKLMN OPQRSTUVWXYZ

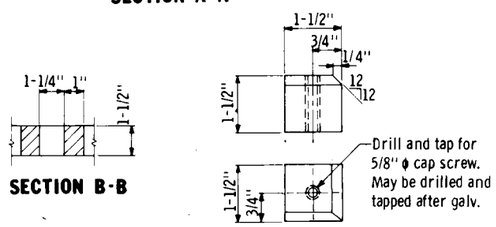
1234567890

Specification reference: 2471.3H, A.S.T.M. Designation: B145 - Alloy 836.

LETTERS & NUMBERS FOR NAMEPLATES

APPROVED: March 15, 1976 Developed by: OFFICE OF ENGINEERING STANDARDS AND BRIDGE DESIGN Issued by: OFFICE OF ENGINEERING STANDARDS	MINNESOTA DEPARTMENT OF TRANSPORTATION **BRIDGE NAMEPLATE** COUNTY BRIDGES	DETAIL NO. **B103**



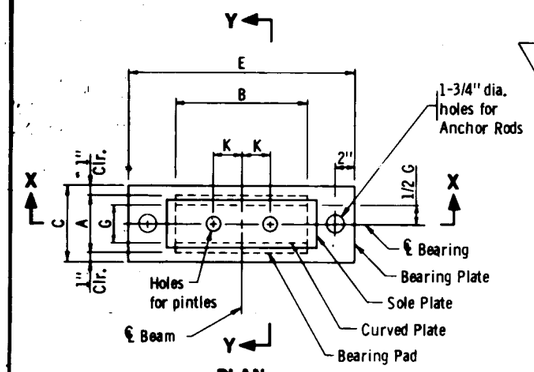


NOTES

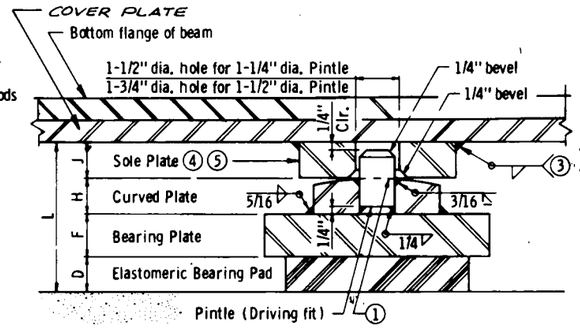
All steel plates per Spec. 3306. Fabricate grate using automatically controlled cutting torch.
Malleable iron grate alternate per Spec. 3324 Grade 35018.
Workmanship and fabrication per Spec. 2471.
Blast clean scupper and grate after fabrication.
Galvanize scupper and grate per Spec. 3394.
Galvanize hardware per Spec. 3392.
Install grate with arrow on curb side and in direction of flow.
Payment for Floor Drain, Type 1 shall include all material shown on this detail.
Grate opening area 110 sq. in.

APPROVED: Aug. 12, 1975 Developed by: OFFICE OF ENGINEERING STANDARDS AND BRIDGE DESIGN Issued by: OFFICE OF ENGINEERING STANDARDS	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION **BRIDGE FLOOR DRAIN** **WELDED BOX**	REVISION Feb. 13, 1979	DETAIL NO. **B701**

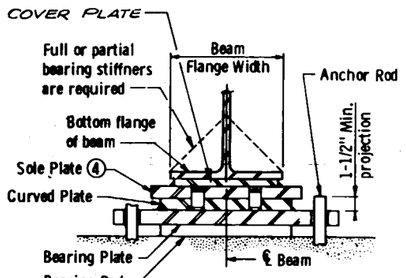
APP'D. 6-16-86



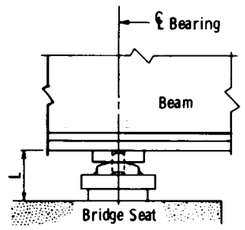
PLAN



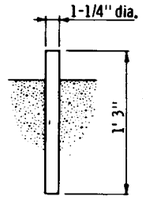
SECTION Y-Y
(ENLARGED BEARING ASSEMBLY)



SECTION X-X



END ELEVATION
(Anchor Rods Not Shown)



ANCHOR ROD DETAIL

TABLE ②

Beam Flange Size	Bearing Pad Size			Shape Factor	Bearing Plate Size			Curved Plate Size			Sole Plate Size			Pintle Dia.	Pintle Spacing	Assy. Height	Assembly Type
	A	B	D		C	E	F	G	B	H	Width	Length	J ⑤		K	L	
9" to 10-1/2"	12"	16"	0½"	6.9	14"	26"	1¼"	4½"	16"	1¼"	6"	18"	1¾"	1¼"	2-3/14"	4¾"	1
↓																	
11-1/2" to 12"																	
↓																	
15" to 16"																	
↓																	

NOTES:

For elastomeric materials and 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.

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, except the Sole Plate.

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

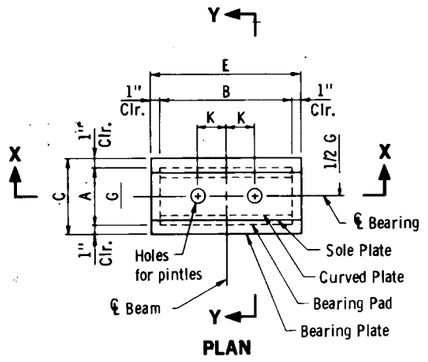
② See Bridge Design Manual for design requirements.

③ 5/16" min. fillet weld for 3/4" up to & including 1-1/2" thick sole plates. 3/8" min. fillet weld for over 1-1/2" to 2-1/4" thick sole plates, except as noted in the plans.

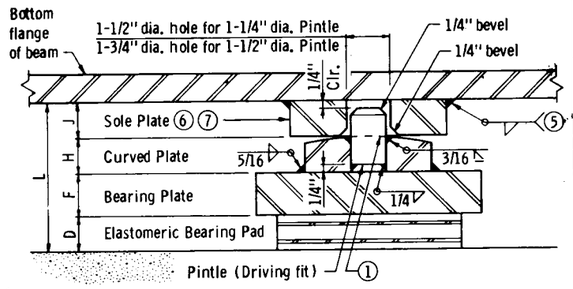
④ Sole plate may be tapered. See superstructure details.

⑤ When the sole plate is tapered, dimension "J" is the minimum thickness of the plate.

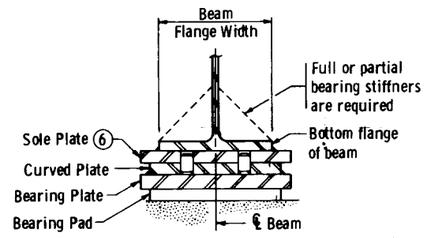
APPROVED: May 25, 1982	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION CURVED PLATE BEARING ASSEMBLY STEEL BEAMS (FIXED)	REVISION	DETAIL NO. B354 w/covers
Developed by: ENGINEERING STANDARDS & BRIDGES AND STRUCTURES OFFICES Issued by: OFFICE OF ENGINEERING STANDARDS			



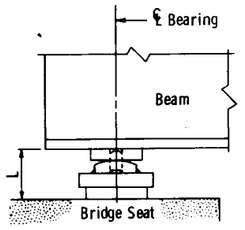
PLAN



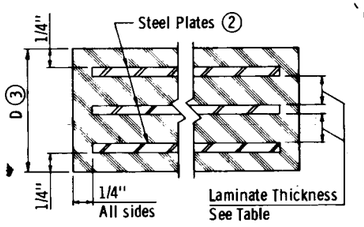
SECTION Y-Y
(ENLARGED BEARING ASSEMBLY)



SECTION X-X



END ELEVATION



SECTION THRU BEARING PAD

TABLE ④

Beam Flange Size	Bearing Pad Size			Steel Plates		Laminates		Shape Factor	Bearing Plate Size			Curved Plate Size			Sole Plate Size			Pintle Dia.	Pintle Spacing	Assy. Height	Assembly Type
	A	B	D	No.	Thick.	No.	Thick.		C	E	F	G	B	H	Width	Length	J ⑦		K	L	
9" to 10-1/2"	8"	14"	2⅝"	5	⅛"	4	⅜"	6.8	10"	16"	1"	4½"	14"	1"	6"	16"	1"	1¼"	2-3/14"	5⅝"	1
↓																					
11-1/2" to 12"																					
↓																					
15" to 16"																					
↓																					

NOTES:

For elastomeric materials and 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.

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, except the Sole Plate.

① The radius of the curved plate shall be 1' 0" min. and 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.

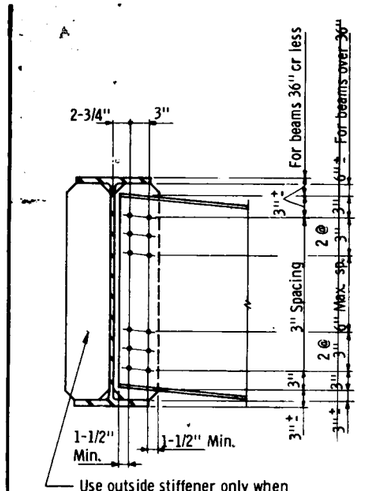
⑤ 5/16" min. fillet weld for 3/4" up to & including 1-1/2" thick sole plates. 3/8" min. fillet weld for over 1-1/2" to 2-1/4" thick sole plates, except as noted in the plans.

⑥ Sole plate may be tapered. See superstructure details.

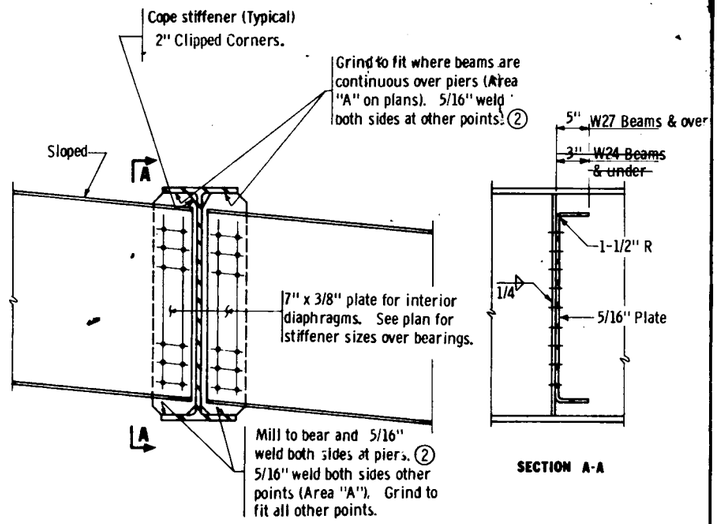
⑦ When sole plate is tapered, dimension "J" is min. thickness of plate.

APPROVED: May 25, 1982	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION CURVED PLATE BEARING ASSEMBLY STEEL BEAMS (EXPANSION)	REVISION	DETAIL NO. B355
Developed by: ENGINEERING STANDARDS & BRIDGES AND STRUCTURES OFFICES Issued by: OFFICE OF ENGINEERING STANDARDS			

APP'D. 6-16-86



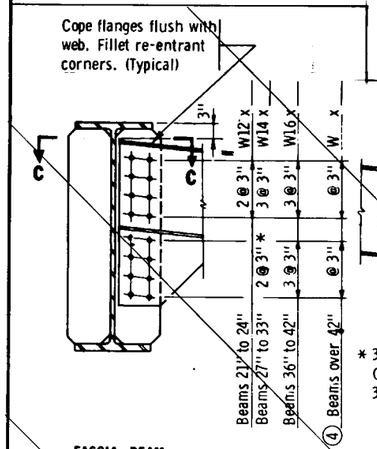
FASCIA BEAM



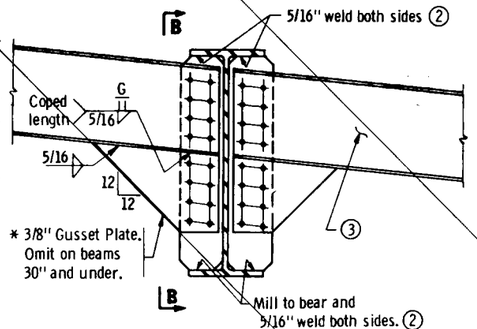
INTERMEDIATE BEAMS

SECTION A-A

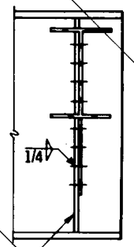
INTERMEDIATE AND PIER DIAPHRAGMS



FASCIA BEAM

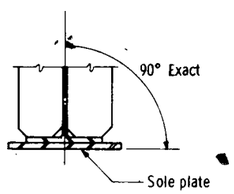


INTERMEDIATE BEAMS

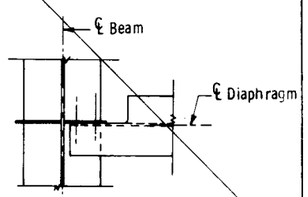


SECTION B-B

ABUTMENT DIAPHRAGMS



TYPICAL DETAIL AT BEARINGS

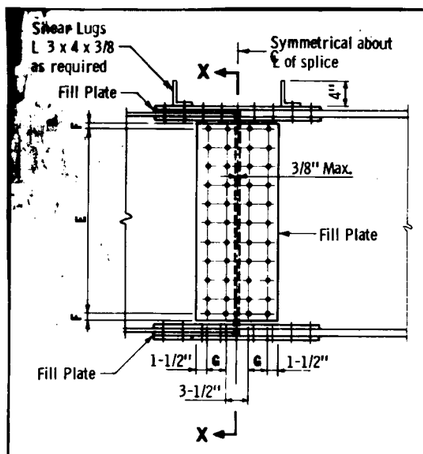


SECTION C-C

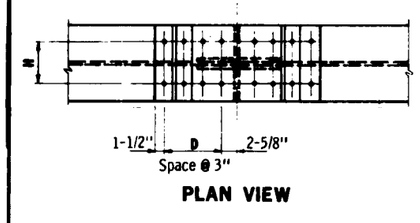
NOTES

1. Use 7/8" high strength bolts or 7/8" pin bolts
2. For flange material over 1-1/2" thick, use 3/8" weld.
3. Where expansion device is bolted to end diaphragm, use W12 x 53 (for 21" to 24" beams), W14 x 61 (for 27" to 33" beams) and W16 x 71 (for 36" to 42" beams). For beam heights over 42", see framing plan for size of diaphragm.
4. For beam heights over 42", diaphragm to be at least 1/3 the beam height.

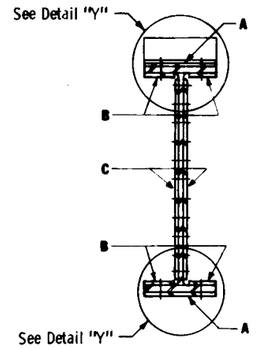
APPROVED:	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
Developed by: ENGINEERING STANDARDS AND BRIDGES AND STRUCTURES Issued by: ENGINEERING STANDARDS	**BOLTED DIAPHRAGMS FOR STEEL BEAMS**	Nov. 2, 1977	**B402**



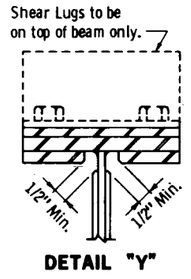
ELEVATION



PLAN VIEW



SECTION X-X
(Fill Plate not shown)



DETAIL "Y"

DESIGN DATA:

Load Factor Design Method
F_y = 50 k.s.i.
12.6^K allowable "shear" per bolt at DL + $\frac{5}{3}$(L + I)
Splice develops ult. moment M_u simultaneously with ult. shear V_u.
$M_u = F_y S_x$ noncompact sec., $M_u = F_y Z_x$ compact sec.
$V_u = .55 F_y dT_w$
Area of holes in excess of 15% of gross area are deducted

NOTES:

Splice design is for structural steel Spec. 3309.

When F = 1-1/4", top and bottom edge of plate C must be rolled or gas cut and finished as per Spec. 2471.3C4

When beams are of unequal weight, use design for lighter beam.

Use 7/8" high strength bolts, or 7/8" pin bolts.

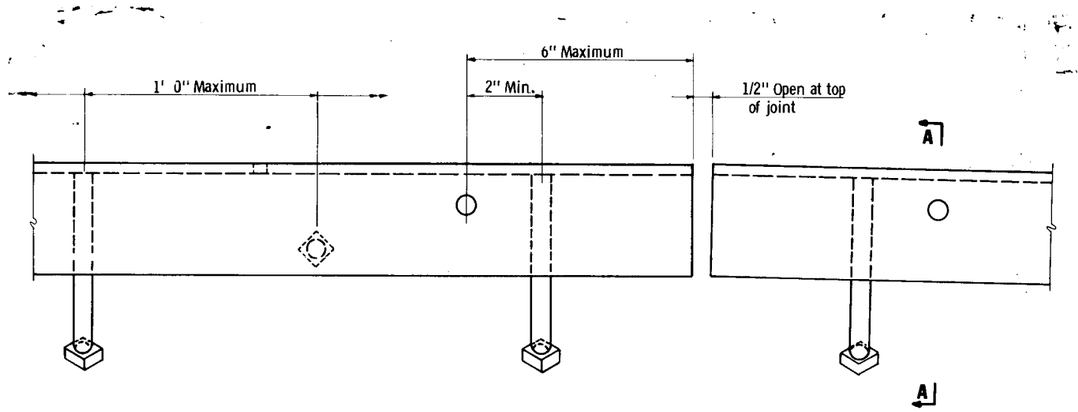
Fills shall be structural steel, minimum thickness 1/16". Where the difference in web thickness is 1/8" or more, place fills of same thickness on both sides of thinner web. Where difference in web thickness is less than 1/16" omit fills.

BEAM SIZE	A (In.)	B (In.)	C (In.)	D	E	F	G	H	FLANGE FILL PLATE	WEB FILL PLATE
W21 x 44	7/16 x 6-1/2 x 26-1/4	7/16 x 2-1/2 x 26-1/4	5/16 x 17-1/2 x 12-1/2	3	5 Sps. @ 3"	1-1/4"	3"	4"		
W21 x 50	7/16 x 6-1/2 x 26-1/4	7/16 x 2-1/2 x 26-1/4	5/16 x 17-1/2 x 12-1/2	3	5 Sps. @ 3"	1-1/4"	3"	4"		
W21 x 57	1/2 x 6-1/2 x 26-1/4	5/8 x 2-1/2 x 26-1/4	5/16 x 17-1/2 x 12-1/2	3	5 Sps. @ 3"	1-1/4"	3"	4"		
W21 x 62	7/16 x 8-1/4 x 32-1/4	1/2 x 3-1/4 x 32-1/4	5/16 x 17-1/2 x 12-1/2	4	5 Sps. @ 3"	1-1/4"	3"	5-1/2"		
W21 x 68	7/16 x 8-1/4 x 32-1/4	11/16 x 3-1/4 x 32-1/4	5/16 x 17-1/2 x 12-1/2	4	5 Sps. @ 3"	1-1/4"	3"	5-1/2"		
W21 x 73	1/2 x 8-1/4 x 38-1/4	3/4 x 3-1/4 x 38-1/4	5/16 x 16-7/8 x 12-1/2	5	5 Sps. @ 2-7/8"	1-1/4"	3"	5-1/2"		
W21 x 83	9/16 x 8-1/2 x 44-1/4	7/8 x 3-1/4 x 44-1/4	5/16 x 16-7/8 x 12-1/2	6	5 Sps. @ 2-7/8"	1-1/4"	3"	5-1/2"		
W21 x 93	11/16 x 8-1/2 x 50-1/4	15/16 x 3-1/4 x 50-1/4	5/16 x 16-1/4 x 12-1/2	7	5 Sps. @ 2-3/4"	1-1/4"	3"	5-1/2"		
W24 x 55	7/16 x 7 x 26-1/4	7/16 x 2-1/2 x 26-1/4	5/16 x 20-1/2 x 12-1/2	3	6 Sps. @ 3"	1-1/4"	3"	4-1/2"		
W24 x 62	1/2 x 7 x 32-1/4	1/2 x 2-1/2 x 32-1/4	5/16 x 20-1/2 x 12-1/2	4	6 Sps. @ 3"	1-1/4"	3"	4-1/2"		
* W24 x 68	7/16 x 9 x 32-1/4	1/2 x 3-1/2 x 32-1/4	5/16 x 20-1/2 x 12-1/2	4	6 Sps. @ 3"	1-1/4"	3"	5-1/2"		
W24 x 76	7/16 x 9 x 38-1/4	5/8 x 3-1/2 x 38-1/4	5/16 x 20-1/2 x 12-1/2	5	6 Sps. @ 3"	1-1/4"	3"	5-1/2"		
W24 x 84	1/2 x 9 x 44-1/4	3/4 x 3-1/2 x 44-1/4	5/16 x 19-3/4 x 12-1/2	6	6 Sps. @ 2-7/8"	1-1/4"	3"	5-1/2"		
W24 x 94	9/16 x 9 x 50-1/4	15/16 x 3-1/2 x 50-1/4	5/16 x 19-3/4 x 12-1/2	7	6 Sps. @ 2-7/8"	1-1/4"	3"	5-1/2"		
** W24 x 104	7/16 x 12 - 3/4 x 50-1/4	9/16 x 5-1/4 x 50-1/4	5/16 x 19-3/4 x 12-1/2	7	6 Sps. @ 2-7/8"	1-1/4"	3"	6-1/2"		
W24 x 117	9/16 x 12 - 3/4 x 68-1/4	3/4 x 5-1/4 x 68-1/4	5/16 x 19-3/4 x 12-1/2	10	6 Sps. @ 2-7/8"	1-1/4"	3"	6-1/2"		
* W27 x 84	7/16 x 10 x 38-1/4	1/2 x 4 x 38-1/4	5/16 x 23-1/2 x 12-1/2	5	7 Sps. @ 3"	1-1/4"	3"	5-1/2"		
W27 x 94	1/2 x 10 x 50-1/4	13/16 x 4 x 50-1/4	5/16 x 22-5/8 x 12-1/2	7	7 Sps. @ 2-7/8"	1-1/4"	3"	5-1/2"		
W27 x 102	9/16 x 10 x 50-1/4	7/8 x 4 x 50-1/4	5/16 x 22-5/8 x 12-1/2	7	7 Sps. @ 2-7/8"	1-1/4"	3"	5-1/2"		
W27 x 114	5/8 x 10 x 56-1/4	15/16 x 4 x 56-1/4	5/16 x 21-3/4 x 18-1/2	8	5 Sps. @ 3-3/4"	1-1/2"	2 Sps @ 3"	5-1/2"		
* W30 x 99	7/16 x 10 x 38-1/4	9/16 x 4-1/4 x 38-1/4	5/16 x 26 x 12-1/2	5	8 Sps. @ 2-7/8"	1-1/2"	3"	5-1/2"		
W30 x 108	9/16 x 10 x 50-1/4	3/4 x 4-1/4 x 50-1/4	5/16 x 25-1/2 x 12-1/2	7	8 Sps. @ 2-7/8"	1-1/4"	3"	5-1/2"		
W30 x 116	9/16 x 10 x 62-1/4	7/8 x 4-1/4 x 62-1/4	5/16 x 24 x 18-1/2	9	6 Sps. @ 3-1/2"	1-1/2"	2 Sps @ 3"	5-1/2"		
W30 x 124	5/8 x 10 x 62-1/4	15/16 x 4-1/4 x 62-1/4	5/16 x 24 x 18-1/2	9	6 Sps. @ 3-1/2"	1-1/2"	2 Sps @ 3"	5-1/2"		
W30 x 132	11/16 x 10 x 68-1/4	1 x 4-1/4 x 68-1/4	5/16 x 24 x 18-1/2	10	6 Sps. @ 3-1/2"	1-1/2"	2 Sps @ 3"	5-1/2"		
* W33 x 118	7/16 x 11 x 50-1/4	5/8 x 4-1/2 x 50-1/4	5/16 x 27-3/4 x 18-1/2	7	6 Sps. @ 4-1/8"	1-1/2"	2 Sps @ 3"	6-1/2"		
W33 x 130	5/8 x 11 x 68-1/4	13/16 x 4-1/2 x 68-1/4	5/16 x 27 x 18-1/2	10	6 Sps. @ 4"	1-1/2"	2 Sps @ 3"	6-1/2"		
W33 x 141	11/16 x 11 x 68-1/4	1 x 4-1/2 x 68-1/4	5/16 x 27 x 18-1/2	10	6 Sps. @ 4"	1-1/2"	2 Sps @ 3"	6-1/2"		
W33 x 152	3/4 x 11 x 74-1/4	15/16 x 4-3/4 x 74-1/4	3/8 x 27-1/2 x 18-1/2	11	7 Sps. @ 3-1/2"	1-1/2"	2 Sps @ 3"	6-1/2"		
W36 x 135	9/16 x 12 x 62-1/4	3/4 x 4-3/4 x 62-1/4	3/8 x 31 x 18-1/2	9	8 Sps. @ 3-1/2"	1-1/2"	2 Sps @ 3"	6-1/2"		
W36 x 150	5/8 x 12 x 68-1/4	7/8 x 4-3/4 x 68-1/4	3/8 x 31 x 18-1/2	10	8 Sps. @ 3-1/2"	1-1/2"	2 Sps @ 3"	6-1/2"		
W36 x 160	3/4 x 12 x 80-1/4	1 x 4-3/4 x 80-1/4	3/8 x 30-1/2 x 18-1/2	12	8 Sps. @ 3-1/2"	1-1/4"	2 Sps @ 3"	6-1/2"		
W36 x 170	3/4 x 12 x 86-1/4	1 x 4-3/4 x 86-1/4	3/8 x 30 x 18-1/2	13	8 Sps. @ 3-3/8"	1-1/2"	2 Sps @ 3"	6-1/2"		
W36 x 182	13/16 x 12 x 92-1/4	1-1/8 x 4-3/4 x 92-1/4	3/8 x 29 x 18-1/2	14	8 Sps. @ 3-1/4"	1-1/2"	2 Sps @ 3"	6-1/2"		
W36 x 194	13/16 x 12 x 98-1/4	1-5/16 x 4-3/4 x 98-1/4	3/8 x 30 x 18-1/2	15	9 Sps. @ 3"	1-1/2"	2 Sps @ 3"	6-1/2"		

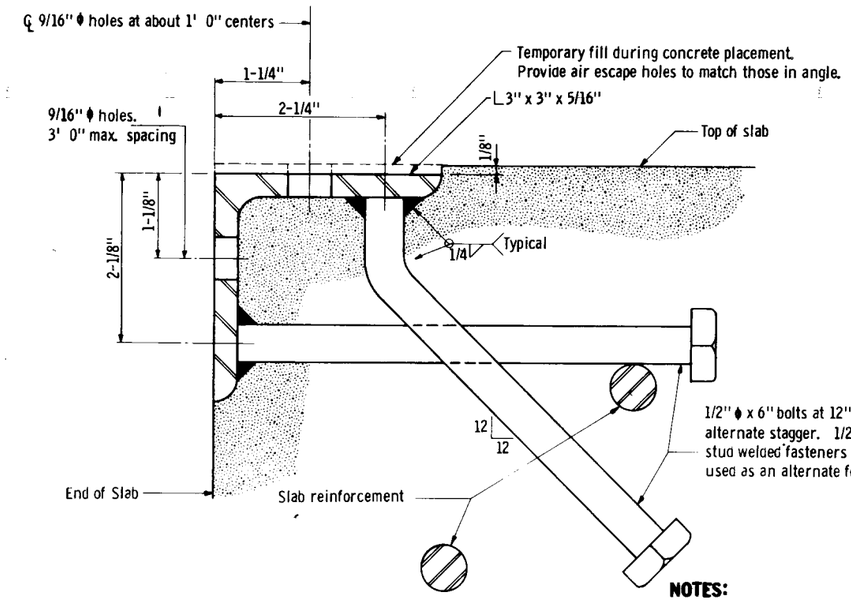
*Non-Compact Section

APPROVED: April 24, 1979	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
Developed by: ENGINEERING STANDARDS AND BRIDGES AND STRUCTURES Issued by: ENGINEERING STANDARDS	**BEAM SPLICES FOR W BEAMS** (3309 STEEL)	June 29, 1979	**B400**

App'd. 6-16-86



ELEVATION
(Concrete not shown)



SECTION A - A

NOTES:

Angles shall extend full width of roadway between curbs with a 1/2" open joint at each break in crown profile. Maximum length 22 feet.

Angles shall be straightened to a tolerance of 1/16" in 10 feet after galvanizing

Material: Structural steel per SPEC. 3306. Galvanize after fabrication per SPEC. 3394.

Set angle to proper grade and crown.

All material will be paid for as structural steel SPEC. 3306

APPROVED May 26, 1972
Douglas Duffert
Engineering Standards Engineer
RESEARCH AND STANDARDS DIVISION

MINNESOTA
DEPARTMENT OF TRANSPORTATION

PROTECTION ANGLE FOR END OF SLAB

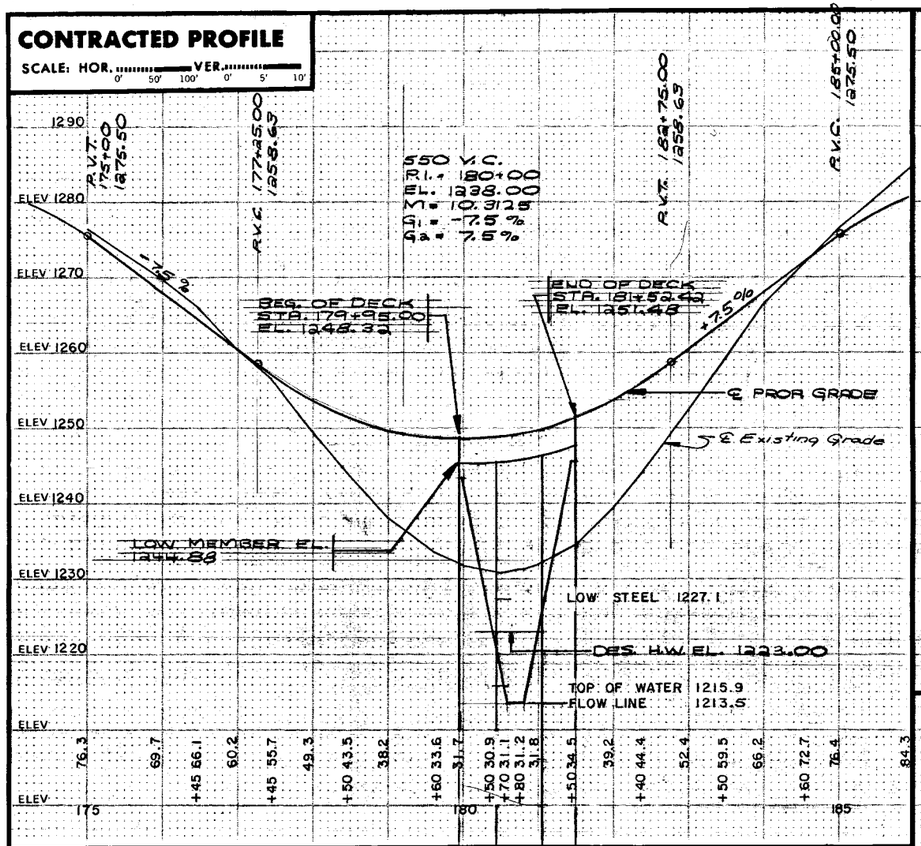
DETAIL NO. **B551**

APP'D: 6-16-86

S.P. 55-598-25	SHEET 15 OF 17 SHEETS	DETAILS	55544

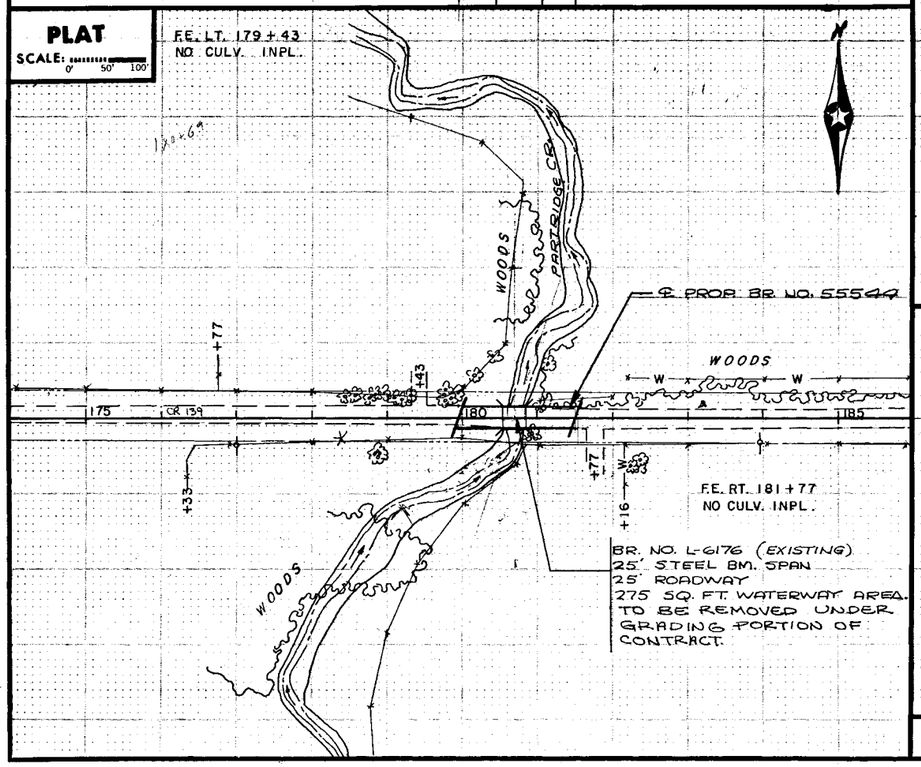
CONTRACTED PROFILE

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



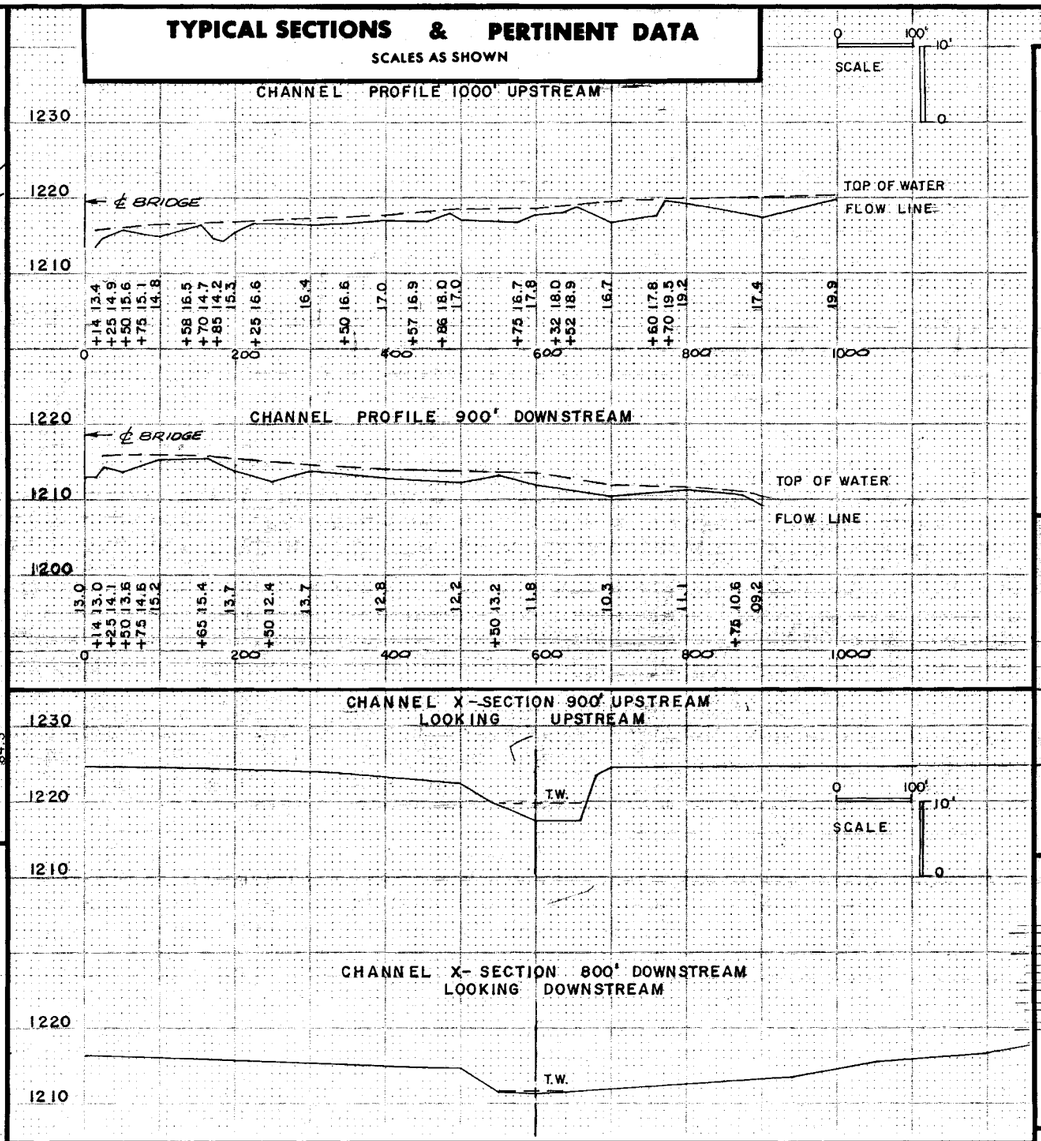
PLAT

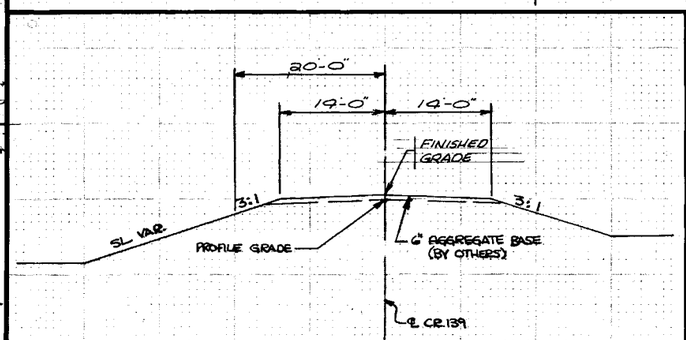
SCALE: 0' 50' 100'



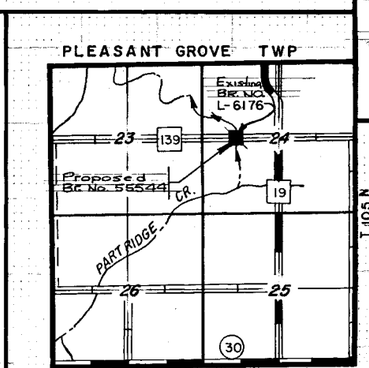
TYPICAL SECTIONS & PERTINENT DATA

SCALES AS SHOWN





TYPICAL ROADWAY SECTION



Fed. Proj. No.

LOCATION ENGINEER'S OBSERVATIONS AT BRIDGE SITE

1. Special Features: Waterfalls, dams, floods, ice, debris, sliding banks, recreational boating.

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 ENGINEERS RECOMMENDATION

DATE 5-15-82

Stream or ditch designation PARTRIDGE CREEK

Drainage area 5.2 SQ MILES

Max. flood on record UNKN. Design flood (50 yr. freq.) 1700 C.F.S.

Max. observed highwater elevation UNKN. Design highwater elevation 1223.00

Design mean velocity through structure 5.7 F.P.S.

Low superstructure at or above elevation 1226.00

Flowline elevation 1213.50 Skew angle 20°

Waterway area req'd. below elevation 1223.0 300 Sq. Ft. at Rt. angles to channel

In the interest of flood plain zoning the regional flood (500 yr. freq.) is 3600 C.F.S. at stage 1226.6 and mean velocity of 7.7 F.P.S. with 0.9 Ft. swellhead. The above recommendation will provide a structure of adequate waterway to pass the regional flood within criteria established by the Dept. of Natural Resources.

FOUNDATION ENGINEERS RECOMMENDATION

DATE .....

48'-60'-48' CONT. STEEL BEAM SPANS
28'-0" ROADWAY
20° SKEW

Bridge survey sheets made from: SURVEY BY OLMSTEAD COUNTY

Bench mark elevation 1229.21 (M.S.L. 1929 Adj.)

Location: TON SE COR BR NO. L-6176

MINNESOTA
DEPARTMENT OF TRANSPORTATION

BRIDGE SURVEY

AT MILE POINT 3.4 ON C.R. 139 (T.H., C.S.A.H., C.R. etc.)

PROPOSED BRIDGE LOCATED .75 MILES N.W. OF CHATFIELD

SEC. 24 TWP 105 N R 13 W

TOWNSHIP PLEASANT GROVE COUNTY OLMSTED

BRIDGE NO. 55544

APP'D. 6-16-82

Area No. **Job No.** BR. NO. L-6176 CR 139 OLMSTED COUNTY. **State Proj. No.** 55-598-25 **Sheet No.** 16 of 17 Sheets

Fed. Proj. No.

SCALE 0 10'

N

90° TYP.

TEST PILE # 1

57-1

℄ WEST ABUT. STA. 179+95.71

℄ PIER 1 STA. 180+43.71

FLOW

2:1 SLOPE

℄ EAST ABUT. STA. 181+51.71

180+00 | 181+00 | 182+00

℄ PIER 2 STA. 181+03.71

℄ C.R. 139

57-2

LIMITS OF RANDOM RIPRAP AVG. 1-6" THICK - BOTH ABUTS.

TEST PILE # 2

LIMITS OF RANDOM RIPRAP AVG. 3'-0" THICK.

LIMITS OF RANDOM RIPRAP AS SHOWN ARE APPROX. ONLY. EXACT LIMITS ARE TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

P.I. = 180+00 EL. 1238.00

-7.5% +7.5%

APPROACH GRADING INCLUDED IN GRADING PORTION OF CONTRACT

SCALE 0 10' 10' 0

PROFILE
CENTER
20' LT.
20' RT.

48'-0" | 60'-0" | 48'-0"

℄ BEARING WEST ABUT. | ℄ PIER 1 | ℄ PIER 2 | ℄ BEARING EAST ABUT.

550' V.C.
P.I. = 180+00
EL. 1238.00
M. = 10.3125'
G1 = -7.5%
G2 = 7.5%

END OF DECK STA. 179+95.00 EL. 1248.32

LOW MEMBER EL. 1244.88 ℄ STA. 180+00

END OF DECK STA. 181+52.92 EL. 1251.48

℄ PROPOSED GRADE

2'-0"

1260 | 1250 | 1240 | 1230 | 1220 | 1210

C F F C

2:1 | 2:1

DES. H.W. EL. 1223.00

6" GRANULAR FILTER OR GEOTEXTILE FILTER.

3'-0"

APPROX. CHANNEL BOTTOM EL. 1213.50

2'-6"

Si S with crushed limestone

CL Si, brn., moist, rather soft.

Si CL with limestone debris, yel-brn., moist very stiff

Si CL, blk., moist, rather stiff

Si S with limestone debris, gray, water bearing, dense.

refusal on bedrock

5 | 17 | 10 | 31

57-1

Si S, crushed limestone brn., moist

6 | 4 | Si CL, trace G; trace 9 | limestone, brn. moist.

4 | CL Si, blk., moist, rather soft.

28 | Si S with limestone, dense, gr., wet

100/inch refusal on bedrock

57-2

+50 34.5

APPROX. QUANTITY OF GRANULAR FILTER: 170 CU. YD.

45 FT. STEEL H-TEST PILES HP 10X42 (ABUTMENTS ONLY)

+60 33.6 | 31.7 | +50 30.9 | +70 31.1 | 39.2

180 | 181 | 182

BRIDGE CONTRACTOR SHALL EXCAVATE & FILL TO THESE LINES (BELOW EXIST. GROUND) FOR APPROX. 30 FT. LT. & RT OF ℄ ROADWAY BETWEEN ABUTMENTS. THEN TAPER AT A 2:1 SLOPE TO NATURAL CHANNEL SLOPES. INCLUDED IN PRICE BID FOR RANDOM RIPRAP. DRESS SLOPES AND PLACE RIPRAP.

BORINGS SHOWN [ ] TAKEN WITH:
STD 140 Lb. HAMMER
30 INCH DROP
2 INCH O.D. SAMPLER

BRIDGE SURVEY PLAN AND PROFILE	DES:	DR:	APPROVED: 6-16-76	Bridge No. 55544
	CRD:	CHK:		
State Proj. No. 55-598-25	Sheet No. 17 of 17 Sheets			