



**Index of Sheets**

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Sheet No. —	Computer Earthwork Data
Sheet No. 8-8.4	Cross Sections

TOTAL SHEETS = 27



**Design Designation**

A.D.T.	1977	= 150
A.D.T.	1997	= 245
D.H.V.		= 38
D.		= 50-50
T.		= 8%
V.		= 50 M.P.H.

**Conventional Signs**

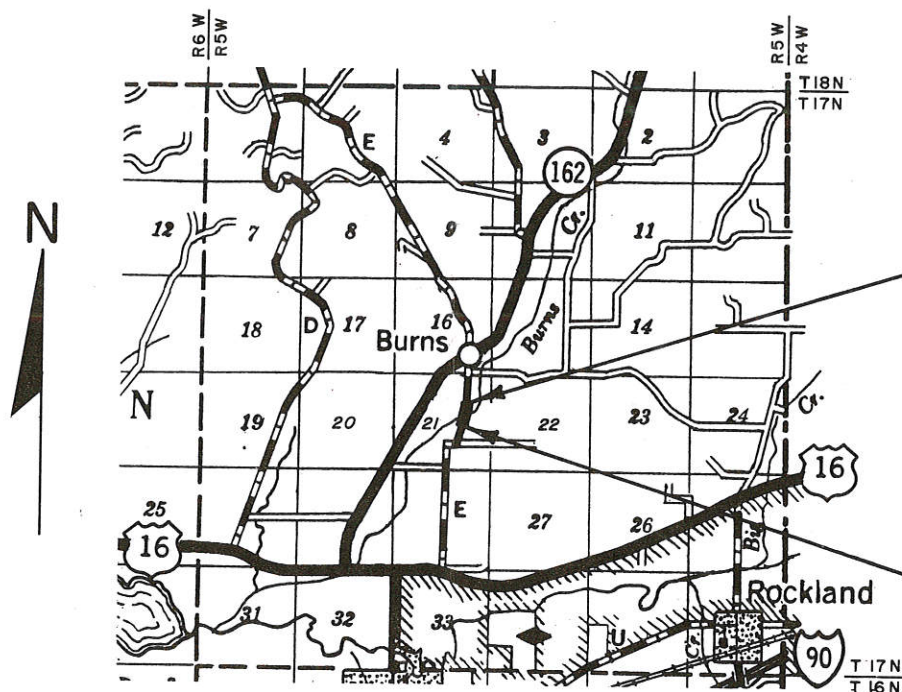
County Line	-----	Culverts in Place	-----
Township or Range Line	-----	Culverts Required	-----
Section Line	-----	Drop Inlet	-----
New Right of Way Line	-----	Power Pole	-----
Present Right of Way Line	-----	Telephone or Telegraph Pole	-----
Wire Fence	-----	Right of Way Markers	-----
Corporate or City Limits	-----	Reference Stake for Hubs Only	-----
Property Line	-----	Marsh	-----
Traveled Way or P.E.	-----	Hedge	-----
Railroads	-----	Trees	-----
Base or Survey Line	-----	Ground Elevation	Datum Line
Caution Symbol (combustible fluids under pressure)	-----	Grade Elevation	Datum Line

STATE OF WISCONSIN  
**DEPARTMENT OF TRANSPORTATION**  
**DIVISION OF HIGHWAYS**

PLAN AND PROFILE OF PROPOSED  
**U. S. H. 16 — BURNS**  
 BURNS CREEK BRIDGE & APPROACHES  
 C.T.H. "E"  
 LA CROSSE COUNTY

STATE PROJECT NUMBER  
**7057-1-71**

Plan 1 in = 50 ft  
 Profile Hor. 1 in = 50 ft Vert. 1 in = 5 ft  
 Cross Sections Hor. 1 in = 10' Vert. 1 in = 10'



**END PROJECT I.D. 7057-1-71**  
**STA. 37+00**

N. 708,410 ± 200'  
 E. 1,743,281 ± 200'  
 LOCATED 730' NORTH & 1,350' WEST OF THE  
 EAST 1/4 CORNER OF SECTION 21, T 17N, R 5W

**BEGIN PROJECT I.D. 7057-1-71**  
**STA. 23+75**

N. 707,135 ± 200'  
 E. 1,743,021 ± 200'  
 LOCATED 548' SOUTH & 1,612' WEST OF THE  
 EAST 1/4 CORNER OF SECTION 21, T 17N, R 5W

Layout  
 Scale 0 1 MILE

Total Net Length of Centerline = 0.251 Mi. RURAL

COORDINATES SHOWN ON THIS PLAN ARE  
 REFERENCED TO THE WISCONSIN COORDINATE  
 SYSTEM, SOUTH ZONE, AND ARE SCALED FROM U.S.G.S.  
 TOPOGRAPHIC MAP SPARTA WISCONSIN QUADRANGLE  
 FOR IDENTIFICATION ONLY.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
7057-1-71	SOS 3299 (1)	1

APPROVED  
 FOR  
 LA CROSSE COUNTY

DATE \_\_\_\_\_ COUNTY HIGHWAY COMMISSIONER

ORIGINAL PLANS PREPARED  
 BY  
 OWEN AYRES & ASSOCIATES  
 CONSULTING ENGINEERS  
 EAU CLAIRE WISCONSIN



DATE 10 October, 1977

STATE OF WISCONSIN  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS

Surveyor \_\_\_\_\_ District Checker \_\_\_\_\_  
 Designer \_\_\_\_\_ C.O. Checker J.R.T.  
 District Supervisor \_\_\_\_\_ C.O. Monitor 2/1/78

Approved \_\_\_\_\_  
 Date 1-15-77 \_\_\_\_\_  
 District Engineer

Approved \_\_\_\_\_  
 Date 2-15-78 \_\_\_\_\_  
 Chief of Facilities Development

Approved \_\_\_\_\_  
 Date 2-21-78 \_\_\_\_\_  
 State Highway Engineer

U.S. DEPARTMENT OF TRANSPORTATION  
 FEDERAL HIGHWAY ADMINISTRATION  
 REGION 5 WISCONSIN DIVISION

Approved \_\_\_\_\_  
 Date \_\_\_\_\_  
 District Engineer

TYPICAL SECTIONS

GENERAL NOTES

CURVE DATA IS BASED ON THE ARC DEFINITION.  
NO TREES ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.  
SALVAGED TOPSOIL SHALL BE PLACED ON THE SLOPES TO THE POINT ON INTERCEPT WITH THE ORIGINAL GROUND, SHOWN ON THE CROSS SECTIONS, TO A DEPTH OF 4 INCHES AT THE TIME OF PLACEMENT.  
DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCLUSIVE OF THE ROADBED, ARE TO BE FERTILIZED AND SEEDED AS DIRECTED BY THE ENGINEER.  
EXACT LOCATION OF PRIVATE AND FIELD ENTRANCES IS TO BE DETERMINED BY THE ENGINEER.

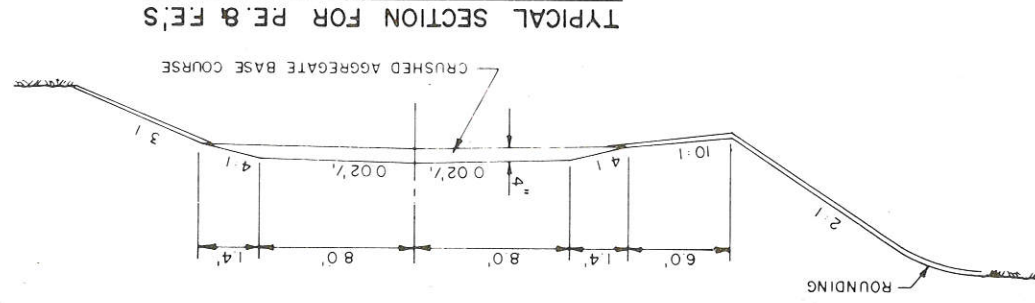
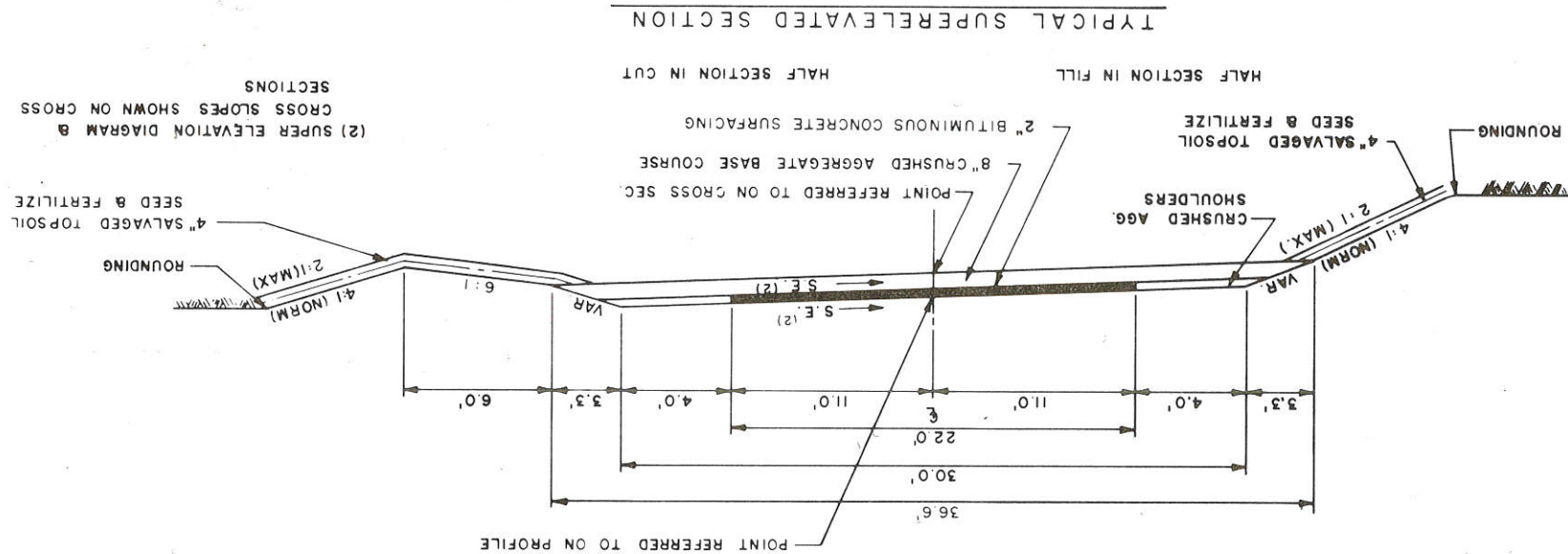
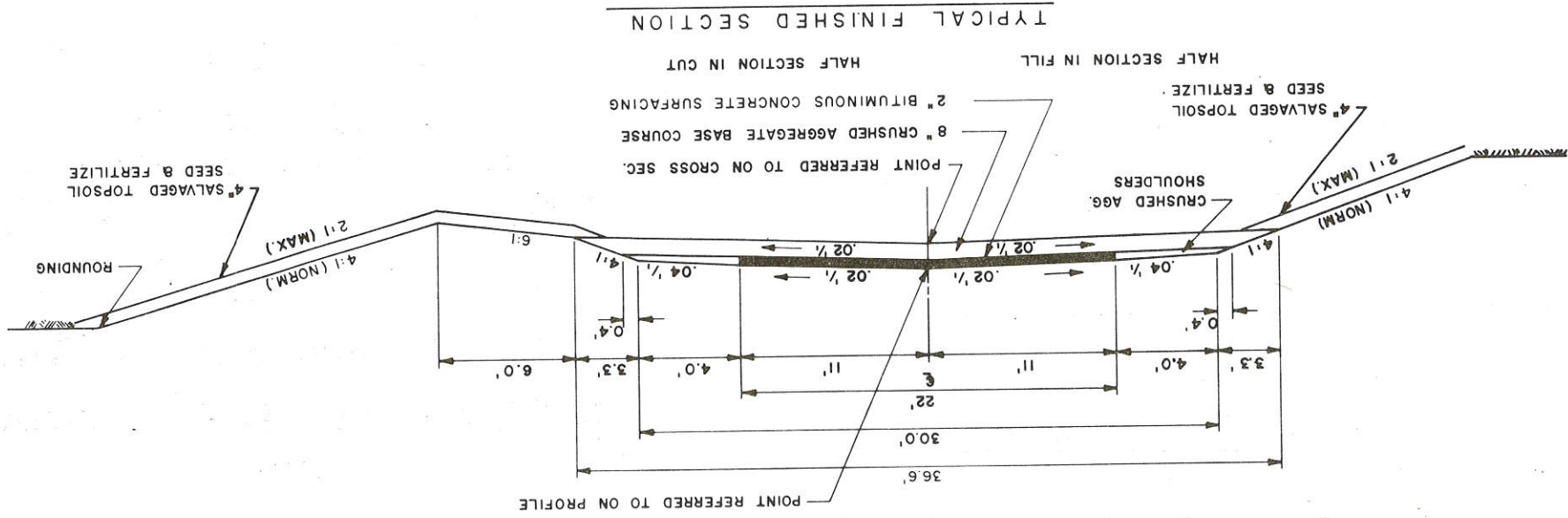
WHEN THE QUANTITY OF THE ITEM OR BASE COURSE IS MEASURED FOR PAYMENT BY THE TON OR CUBIC YARD, THE DEPTH OR THICKNESS OF THE COURSE SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.  
LOCATION OF UNDERGROUND TELEPHONE CABLES AS SHOWN ON THE PLAN IS APPROXIMATE.

STANDARD DETAIL DRAWINGS

- 8E3-1 TYPICAL INSTALLATIONS OF EROSION BALES.
- 8E1-7 APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH.
- 8E3-3 DETAIL FOR PIPE CATTLE PASS, CONCRETE ENDWALLS AND STEPS.
- 12A3-2 NAME PLATE (STRUCTURES).
- 14B2-4a3b CLASS "A" STEEL PLATE BRAM GUARD AND STEEL PLATE BEAM MEDIAN GUARD (2 SHEETS).
- 15C1-5 CONSTRUCTION BARRICADES & STANDARD SIGNS.

ILLUSTRATIONS

GENERAL TELEPHONE CO.  
43 NORTH 1ST ST.  
BLACK RIVER FALLS, WI 54615  
BOB TELPLIS 715-784-4361  
PANOR MUNICIPAL UTILITY  
BOX 88  
PANOR, WI 54614  
DONALD BRADLEY, M.P. 608-486-2151



ESTIMATE OF QUANTITIES

CONTRACT NO. 1  
GRADING, BASE, BITUMINOUS  
SURFACE, & STRUCTURE B-32-78

ESTIMATE OF QUANTITIES

CONTRACT NO.	STATION TO STATION	NET LENGTH OF CENTER LINE	CLEARING	GRUBBING	EXCAVATION		FINISHING ROADWAY	REMOVING OLD CULVERT, STA. 27+65	CRUSHED AGGREGATE BASE COURSE	CONCRETE MASONRY, ENDWALLS	CULVERT PIPE, CLASS III		APRON ENDWALLS FOR CULVERT PIPE		PIPE CATTLE PASS	CORRUGATED METAL PIPE ARCH, 28 X 20-INCH	METAL APRON ENDWALLS FOR PIPE ARCH, 28 X 20-INCH
					UNCL.	BORROW					18-INCH	24-INCH	18-INCH	24-INCH			
					20503	20801					52003	52005	52061	52063			
ITEM NO UNIT	LIN. FT.	20102 IN. DIA.	20105 IN. DIA.	20503 CU. YD.	20801 CU. YD.	21301 L.S.	20301 L.S.	30403 CU. YD.	50409 CU. YD.	52003 LIN. FT.	52005 LIN. FT.	52061 EACH	52063 EACH	52075 LIN. FT.	52138 LIN. FT.	52164 EACH	
I	STA. 23+75 - STA. 37+00	1324.67	64	64	1,698	4,299	I	I	1,576	II	104	26	8	2	64	56	2
TOTALS		1324.67	64	64	1,698	4,299	I	I	1,576	II	104	26	8	2	64	56	2

BRIDGES (STRUCTURES OVER 20 FT SPAN)

CULVERTS (STRUCTURES 20 FT & UNDER)

STRUCTURE NO.	REMOVING OLD BRIDGE, STA. 34+20	EXCAVATION FOR STRUCTURES, B-32-78	CONCRETE MASONRY, BRIDGES	PRESTRESSED GIRDER, I TYPE, 36-INCH	HIGH STRENGTH BAR STEEL REINFORCEMENT, BRIDGES	STRUCTURAL CARBON STEEL	BEARING PADS, ELASTOMERIC	TUBULAR RAILING, TYPE F, STRUCTURE B-32-78	HEAVY RIPRAP	CULVERTS (STRUCTURES 20 FT & UNDER)								
										20351	20610	50201	50303	50504	50601	50625	51340	60602
										L.S.	L.S.	CU. YD.	LIN. FT.	POUND	POUND	SQ. FT.	L.S.	CU. YD.
I	B-32-78	I	I	148	330	20,890	340	10	I	290								
		I	I	148	330	20,890	340	10	I	290								

RIPRAP	ANCHORAGES FOR STEEL PLATE BEAM GUARD	STEEL PLATE BEAM GUARD, CLASS A	MOBILIZATION	SALVAGED TOPSOIL	MULCHING	EROSION BALES	FERTILIZER	SEEDING	SODDING	FIELD OFFICE, TYPE A	BITUMINOUS CONCRETE SURFACING												
												60601	61406	61408	61910	62505	62702	62810	62901	63002	63101	64201	90001
												CU. YD.	EACH	LIN. FT.	L.S.	SQ. YD.	SQ. YD.	EACH	CWT	POUND	SQ. YD.	L.S.	TON
I	4	4	516	I	5,466	4,907	50	5.5	120	580	I	391											
	4	4	516	I	5,466	4,907	50	5.5	120	580	I	391											

STATE PROJECT NUMBER		7057-1-71
SHEET NO.		34
SUMMARY OF MISCELLANEOUS QUANTITIES		

## DETAILED SUMMARY OF MISCELLANEOUS QUANTITIES

### CLEARING AND GRUBBING

LOCATION	CLEAR	GRUB
24+97, 22' LT.	12	12
25+86, 23' LT.	4	4
36+41, 30' LT.	48	48

### CROSS DRAINS

STATION	LOCATION	DIA.	LENGTH	TYPE	THICKNESS (INCHES)	BACKFILL CLASS "B"	RIPRAP	SOD	APRON	END TREATMENT
24+00	3	28x20	56	CMPA	0.064	---	---	---	2	UNDISTRIBUTED
27+65	5	72	64	CATTLE	0.138	---	---	---	11 C.Y.	CONC. MASONRY

### MINOR SIDE ROAD, PRIVATE ENTRANCE, AND SLOPE TRAIN PIPES

STATION	LOCATION	DIA.	LENGTH	TYPE	RCCP	THICKNESS (INCHES)	STEEL ALUMINUM BIT FIBER	BACKFILL CLASS "B"	RIPRAP	SOD	APRON	END TREATMENT
25+48	F.E.-RT.	18	26	CP	111	0.064	0.060	---	---	---	2	UNDISTRIBUTED
26+70	F.E.-LT.	24	26	CP	111	0.064	0.075	---	---	---	2	UNDISTRIBUTED
28+27	F.E.-RT.	18	26	CP	111	0.064	0.060	---	---	---	2	BORROW PIT (1/2 RATE)
31+00	P.E.-RT.	18	26	CP	111	0.064	0.060	---	---	---	2	UNDISTRIBUTED
36+23	P.E.-LT.	18	26	CP	111	0.064	0.060	---	---	---	2	UNDISTRIBUTED

### FERTILIZER

LOCATION	CMT.
MAINLINE 23+75 - 37+00	3.5
BORROW PIT	1.8
UNDISTRIBUTED	0.2

### SEEDING

LOCATION	LBS.
MAINLINE 23+75 - 37+00	88
BORROW PIT (1/2 RATE)	25
UNDISTRIBUTED	7

### CRUSHED AGGREGATE BASE COURSE

LOCATION	CU. YD.
MAINLINE 23+75 TO 37+00	1399
SHOULDERS	95
24+32, P.E., RT.	8
25+48, F.E., RT.	13
26+70, F.E., LT.	18
28+27, F.E., RT.	15
30+07, P.E., RT.	10
31+00, P.E., RT.	10
36+23, P.E., LT.	8

### BLINDMOUND CONCRETE SURFACING

LOCATION	CU. YD.
MAINLINE 23+75 TO 37+00	391

### STEEL PLATE BEAM GUARD, CL. "A"

LOCATION	LIN. FT.	EACH
33+42 - 34+71 LT.	129	1
33+54 - 34+93 PT.	129	1
34+34 - 35+63 LT.	129	1
34+46 - 35+75 RT.	129	1

### CONCRETE MASONRY ENDWALLS

LOCATION	CU. YD.
27+65 LT. & RT. (FOR CATTLE PASS)	11

### SODDING

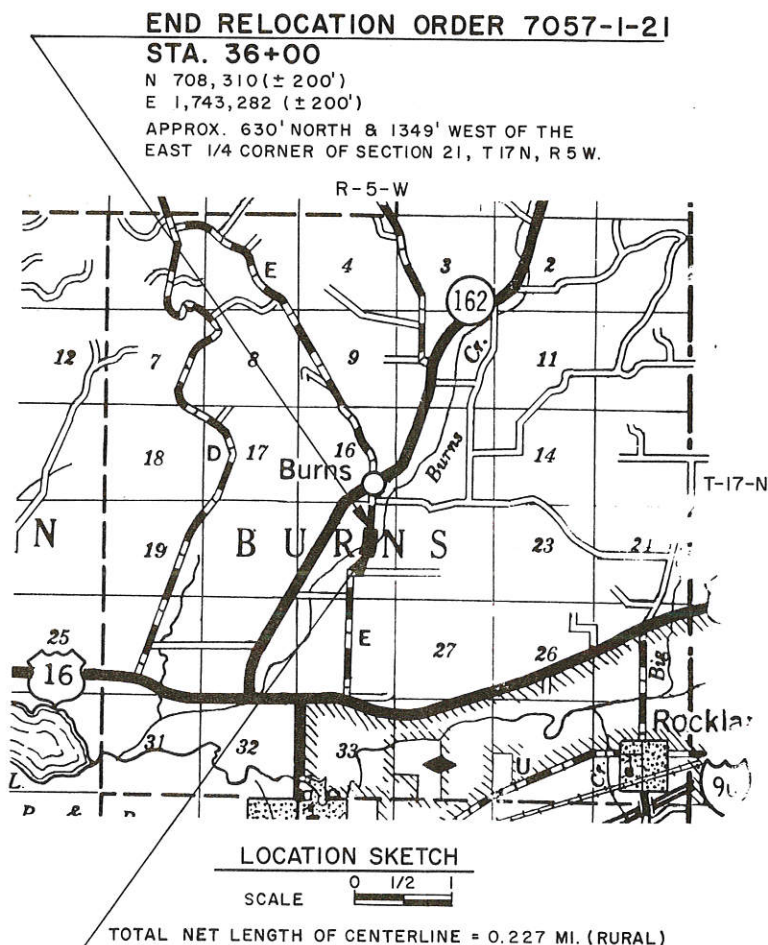
LOCATION	DESCRIPTION	SIZE	SQ. YD.
24+00 - 27+65 LT.	DITCH	365'x8'	324
24+50 - 26+50 RT.	DITCH	200'x8'	178
28+27 RT.	CULV. DISCH.	8'x10'	9
31+00 RT.	CULV. DISCH.	8'x10'	9
36+23 LT.	CULV. DISCH.	8'x10'	9
UNDISTRIBUTED			51

STANDARD ABBREVIATIONS

ABANDON	ABND.	MAXIMUM	MAX.
ABSTRACT	ABS.	MEASURED	(M)
ACCESS POINT	A.P.	MILE	MI.
ACRES	AC.	MINIMUM	MIN
ADDITION	ADD.	MONUMENTS	MON.
AHEAD	AH.	MUNICIPAL	MCPL.
AND OTHERS	ET. AL.	NORTHEAST	NE
AND WIFE	ET. UX.	NORTHWEST	NW
APARTMENT	APT.	NUMBER	NO.
ASSUMED	(A)	OUTLOT	O.L.
AVENUE	AVE.	PAGE	P
BACK	BK.	PARALLEL	PLL.
BARN	B	PAVEMENT	PAV'T
BASE LINE	BL	PERMANENT	PERM.
BEARING LONG CHORD	B.L.C.	POINT OF CURVATURE	P.C.
BITUMINOUS	BIT.	POINT OF INTERSECTION	P.I.
BLOCK	BLK.	POINT OF TANGENCY	P.T.
BOULEVARD	BLVD.	POINT OF COMPOUND CURVE	P.C.C.
BRICK	BRK.	POINT OF REVERSE CURVE	P.R.C.
BUILDINGS	BLDGS.	POINT ON CURVE	P.O.C.
CATCH BASIN	C.B.	POINT ON LINE	P.O.L.
CEMETERY	CEM.	POINT ON SEMI-TANGENT	P.O.S.T.
CENTERLINE	CL	PROJECT	PROJ.
CENTRAL ANGLE	CA	PROPERTY LINE	P.L.
CHANNEL	CH.	QUIT CLAIM DEED	Q.C.D.
CHANNEL CHANGE	CH. CH.	RADIUS	R
COMMERCIAL	COMM.	RAILROAD	R.R.
COMPANY	COM	REFERENCE LINE	REQ'D.
COMPUTED	(C)	REQUIRED	R
CONCRETE	CONC.	RESIDENTIAL	RES.
CONSTRUCTION	CONST.	RESTAURANT	REST.
CORNER	COR.	RIGHT	RT.
CORPORATION	CORP.	RIGHT OF WAY	R/W
COUNTY	CO.	ROAD	RD.
COUNTY TRUNK HIGHWAY	C.T.H.	ROADWAY	RDWY.
CREEK	CR.	SANITARY	SAN.
CULVERT	CULV.	SCALED	(S)
DEED	(D)	SCHOOL	SCH.
DEGREE OF CURVE	D.	SECTION	SEC.
DISPOSAL	DISP.	SERVICE STATION	S.S.
DISTRICT	DIST.	SEPTIC TANK	SEP.
DRIVE	DR.	SIDEWALK	SWK.
DRIVEWAY	DWY.	SHED	S
ESTATE	EST.	SOUTHEAST	SE
EXISTING	EX.	SOUTHWEST	SW
EXTERNAL DISTANCE	E	SQUARE	SQ.
FACTORY	FACT.	STANDARD	STD.
FEDERAL AID PROJECT	F.A.P.	STATE TRUNK HIGHWAY	S.T.H.
FIELD ENTRANCE	F.E.	STATION	STA.
FIRE HYDRANT	F.H.	STREET	ST.
FOOT (FEET)	FT.	SUBDIVISION	SUBD.
FOUNDATION	FDN.	SURVEY	(S)
GARAGE	G	TANGENT	TAN.
GOVERNMENT	GOV'T.	TANGENT LENGTH OF CURVE	T
HIGHWAY	HWY.	TAPER	TAP.
HOUSE	H	TAVERN	TAV
INCHES	IN.	TEMPORARY	TEMP
INCORPORATED	INC.	TRANSIT LINE	TL
INTERSECTION ANGLE	I	TRANSMISSION TOWER	T.T.
INTERSTATE HIGHWAY	I.H.	UNITED STATES COAST & GEODETIC SURVEY	U.S.C.&G.S.
IRON PIN	I.P.	UNITED STATES GEOLOGICAL SURVEY	U.S.G.S.
ISLAND	IS.	UNITED STATES HIGHWAY	U.S.H.
LEFT	LT.	VENDEE	VDE.
LENGTH OF CURVE	L	VENDOR	VDR.
LESSEE	LSE	VITRIFIED	VIT.
LESSOR	LSR	VOLUME	V
LIMITED HIGHWAY EASEMENT	L.H.E.	WAREHOUSE	W.H.
MAGNETIC	MAG.	WATER TOWER	W.T.
MAILING ADDRESS	* 0000	WATER	W
MANHOLE	M.H.	WINDMILL	W.M.
MANUFACTURING	MFG.	WOOD	WD.

STATE OF WISCONSIN  
**LA CROSSE COUNTY HIGHWAY DEPARTMENT**  
 PLAT OF RIGHT OF WAY REQUIRED FOR  
**C.T.H. "E"**  
**U.S.H. 16 - BURNS**

REVISION DATE	R/W PROJECT NUMBER <b>7057-1-21</b>	SHEET NUMBER <b>4.0</b>
	FEDERAL PROJECT NUMBER	
PLAT OF RIGHT OF WAY REQUIRED FOR <b>C.T.H. "E"</b>		
LA CROSSE COUNTY SCALE _____ Ft. DATE _____		
CONSTRUCTION PROJECT NUMBER <b>7057-1-71</b>		<b>4</b>



**END RELOCATION ORDER 7057-1-21**  
**STA. 36+00**  
 N 708,310 (±200')  
 E 1,743,282 (±200')  
 APPROX. 630' NORTH & 1349' WEST OF THE  
 EAST 1/4 CORNER OF SECTION 21, T 17 N, R 5 W.

**BEGIN RELOCATION ORDER 7057-1-21**  
**STA. 24+00**  
 N 707,159 (±200')  
 E 1,743,029 (±200')  
 APPROX. 524' SOUTH AND 1604' WEST OF THE  
 EAST 1/4 CORNER OF SECTION 21, T 17 N, R 5 W.

PARCEL NO.	SHEET NO.	OWNER
1	4.1	EUGENE & HILDRETH STREETON
2	4.1	NINA H. VANDERZEE
3	4.1	ARNOLD & HELEN NIEDFELDT, (VENDOR) DOUGLAS H. REINHART, (VENDEE) L.C.

STATE LINE	-----	TRAVELED WAY (SHOWN ONLY IN AREA OF FRONTAGE ROADS, INTERCHANGES OR DUAL LANES)	=====
COUNTY LINE	-----		
TOWNSHIP AND RANGE LINE	-----		
SECTION LINE	-----	CEMETERY	[CEM]
QUARTER LINE	-----	FOUNDATION	[FDN]
SIXTEENTH LINE	-----	GAS PUMP ISLAND	[GAS PUMP]
NEW CENTER LINE	-----	BUILDING	[TYPE]
NEW R/W LINE	-----	IRON PIN	I.P.
OLD R/W LINE	-----	POWER POLE	■
PROPERTY LINE	-----	TELEPHONE POLE	⚡
CORPORATE LIMITS	-----	RAIL LINE	-----
SLOPE INTERCEPTS	-----	TRANSMISSION TOWER AND LINE	⚡ X
LOT, TIE AND OTHER MINOR DASHED LINES	-----	UNDERGROUND CABLE MARKER	-----
UNDERGROUND FACILITY (POWER, TELEPHONE, TELEGRAPH, GAS, ETC.)	-----	WELL	⊞
NO ACCESS	-----	STONE MONUMENT	⊞
LIMITED HIGHWAY EASEMENT	-----	SEPTIC TANK	⊙
HIGHWAY SEPARATION	-----	WINDMILL	⊗
HIGHWAY OVERPASS	-----	CATTLE PASS	-----
RAIL LINE OVERPASS	-----	RELOCATED STREAM OR RIVER	~~~~~
ALL OTHER BRIDGES	-----	TELEPHONE PEDESTAL OR RISER	⊞
STREAM OR RIVER	-----		
LAKE	-----		

COORDINATES SHOWN ON THIS PLAT ARE REFERENCED TO THE WISCONSIN COORDINATE SYSTEM, SOUTH ZONE, AND ARE SCALED FROM U.S.G.S. TOPOGRAPHIC MAP, SPARTA, WISCONSIN QUADRANGLE FOR IDENTIFICATION ONLY.

APPROVED FOR LA CROSSE COUNTY

DATE \_\_\_\_\_ COUNTY HIGHWAY COMMISSIONER

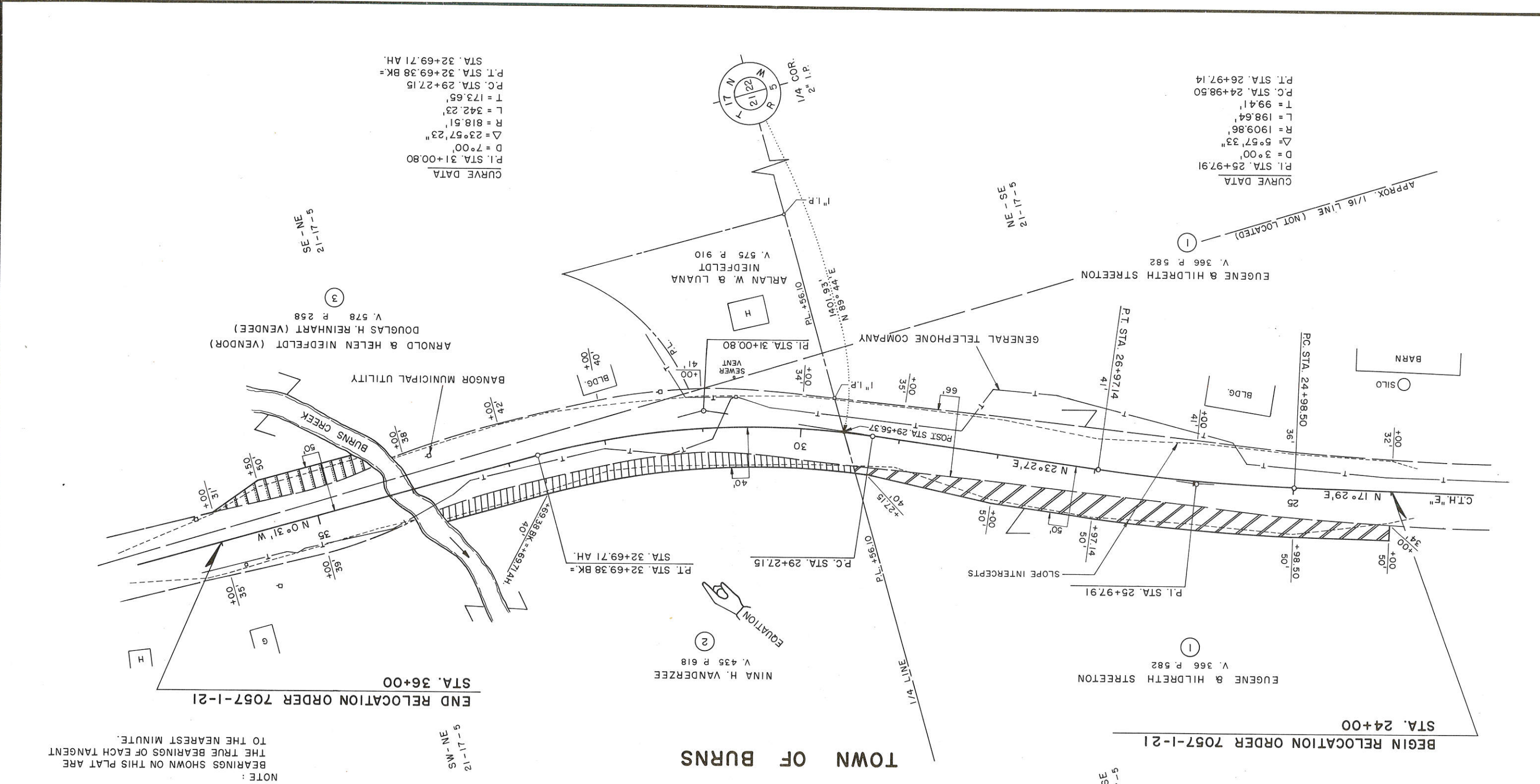
*Richard Mauch*

ORIGINAL PLAT PREPARED BY  
**OWEN AYRES & ASSOCIATES**  
 CONSULTING ENGINEERS  
 EAU CLAIRE, WISCONSIN  
 DATE *6 Oct, 1977*

PARCEL SHEET NO.	OWNER	INTEREST REQUIRED	L.H.E. ACRES	NEW R/W REQUIRED	EXISTING R/W REQUIRED	TOTAL R/W REQUIRED	ACRES REQUIRED	OPERATIONS NO.	SCHEDULE OF LANDS AND INTERESTS REQUIRED		
									FEE	FEE	FEE
1	EUGENE & HILDRETH STREETON	—	0.25	0.84	1.09	78.91	7057-1-21	4.1	—	—	—
2	NINA H. VANDERZEE	—	0.13	0.77	0.90	78.85	7057-1-21	4.1	—	—	—
3	ARNOLD & HELEN NIEDFELDT (VENDOR), DOUGLAS H. REINHART, (VENDEE) L.C.	—	0.07	0.20	0.27	39.08	7057-1-21	4.1	—	—	—

SHEET NUMBER	4.1	REVISION	DATE
		R/W PROJECT NUMBER	7057-1-21
PLAT OF RIGHT OF WAY REQUIRED FOR		FEDERAL PROJECT NUMBER	
C.T.H. "E"		LA CROSSE COUNTY	
SCALE 1"=50'		CONSTRUCTION PROJECT NUMBER	
DATE		7057-1-21	
4.1		4.1	

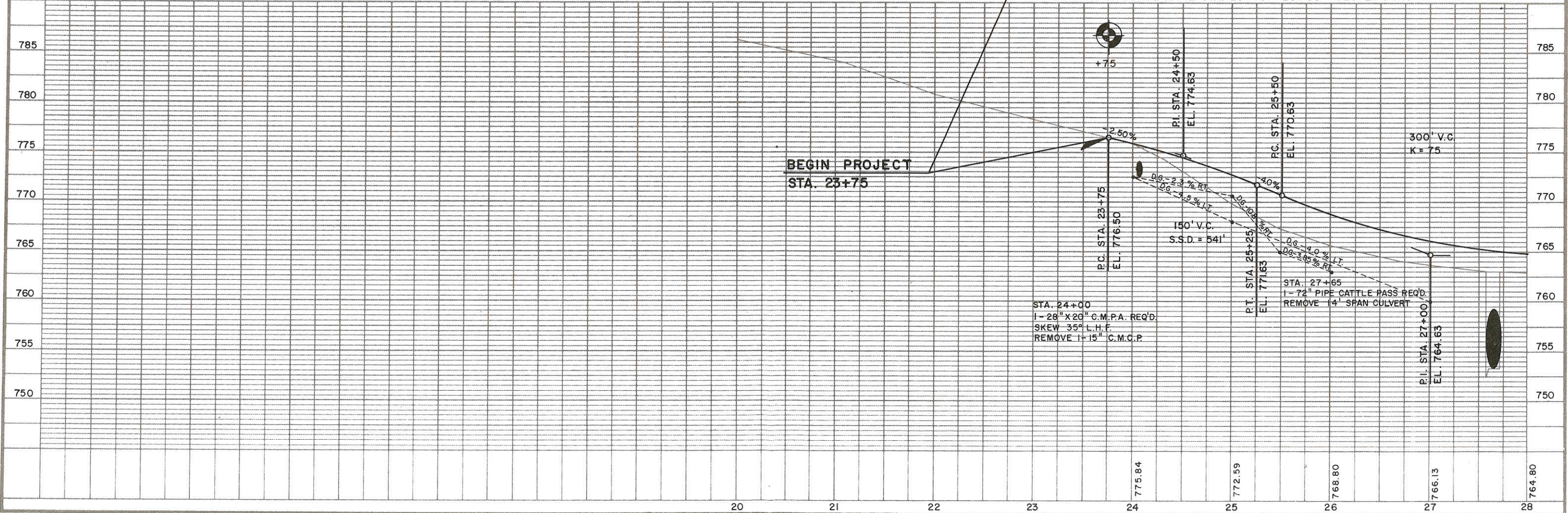
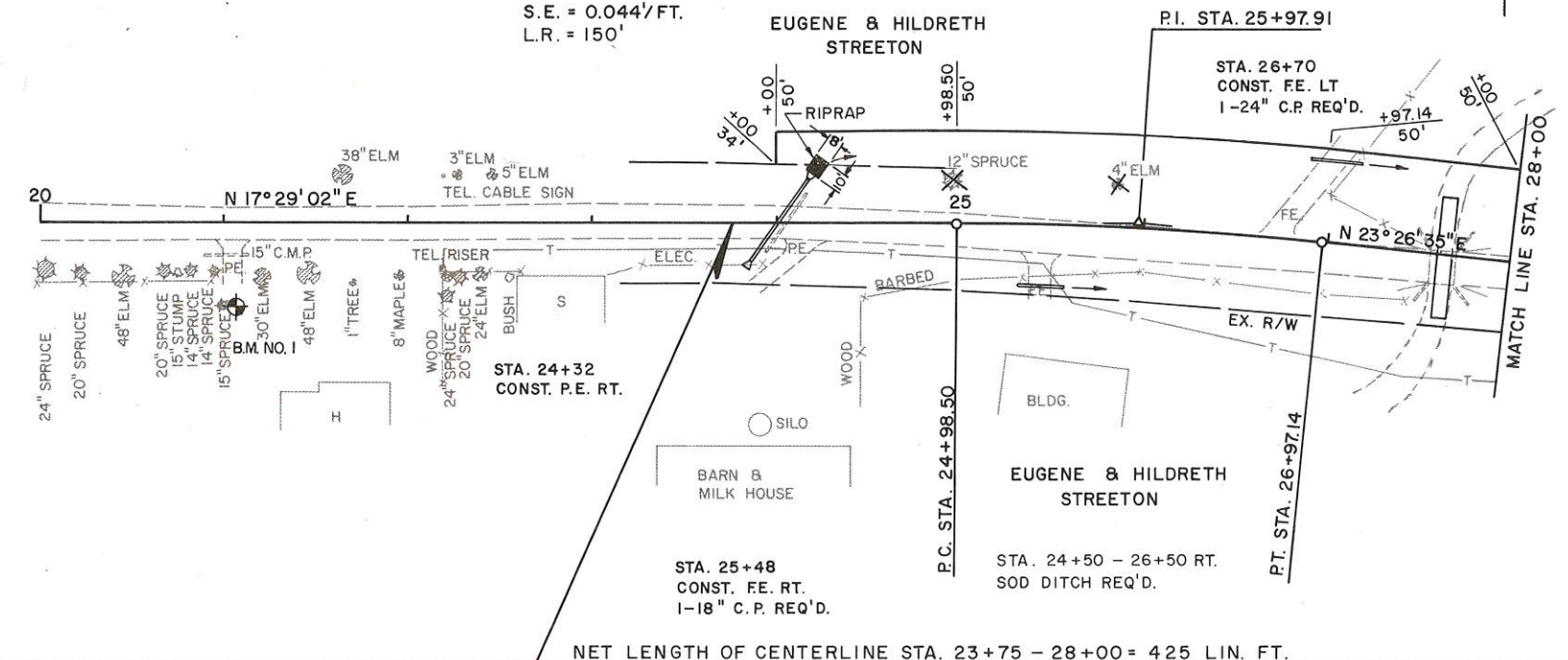
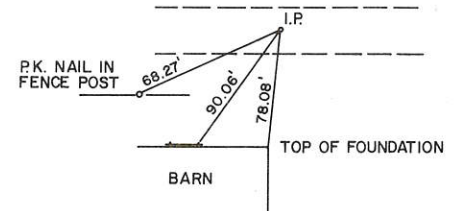
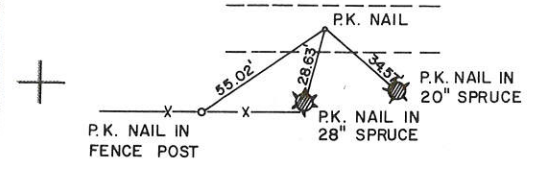
NOTE: BEARINGS SHOWN ON THIS PLAT ARE THE TRUE BEARINGS OF EACH TANGENT TO THE NEAREST MINUTE.



**CURVE DATA**

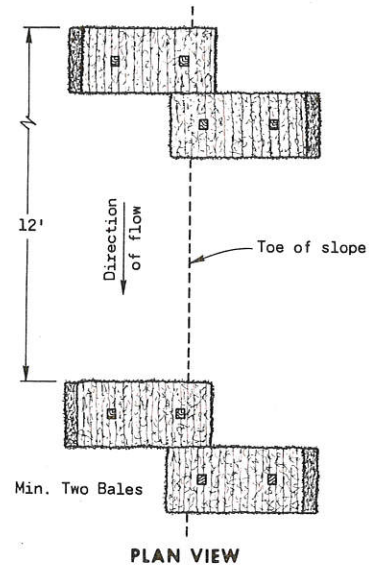
P.I. STA. 25+97.91  
 D = 3° 00'  
 Δ = 5° 57' 33"  
 R = 1909.86'  
 L = 198.64'  
 T = 99.41'  
 P.C. STA. 24+98.50  
 P.T. STA. 26+97.14  
 S.E. = 0.044'/FT.  
 L.R. = 150'

STA. 24+00 - 27+65 LT.  
 SOD DITCH REQ'D.

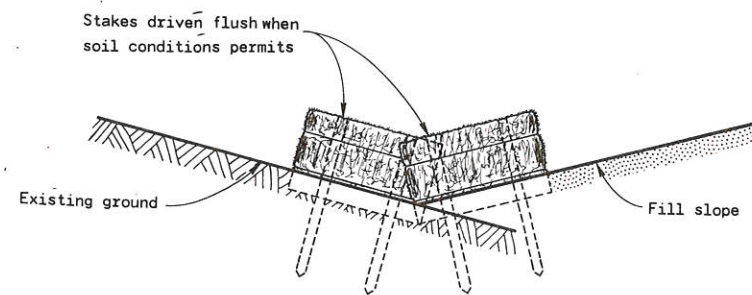




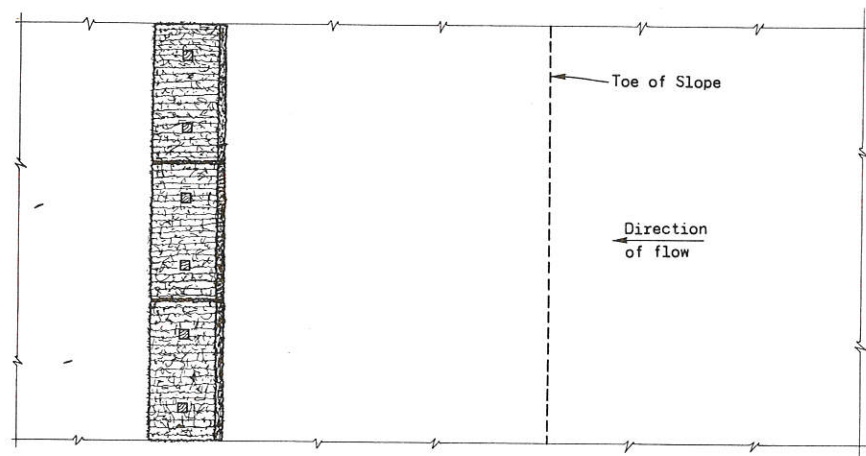




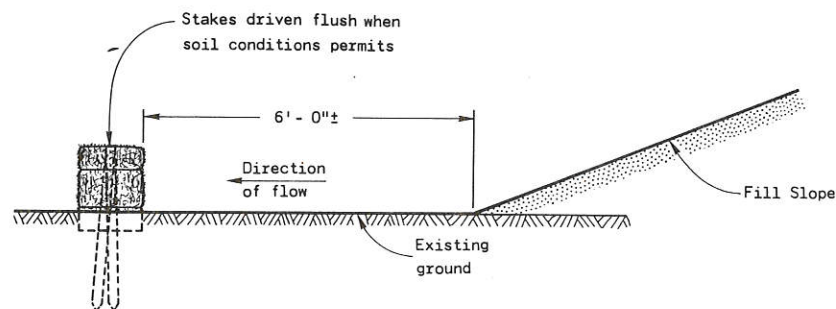
PLAN VIEW



FRONT ELEVATION  
WHEN EXISTING GROUND  
SLOPES TOWARD FILL SLOPE

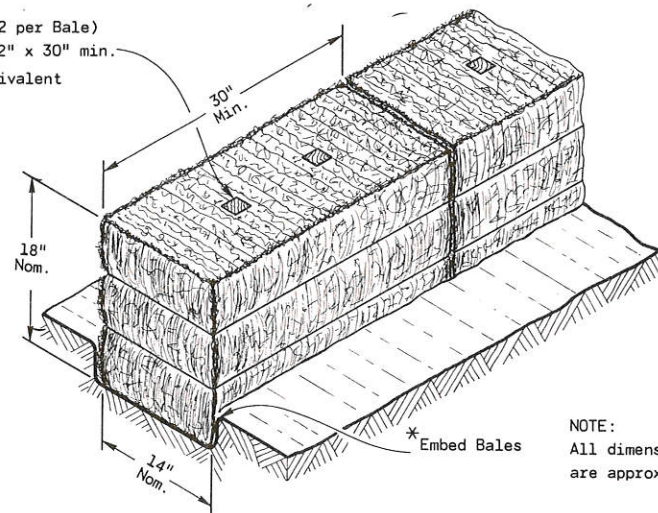


PLAN VIEW

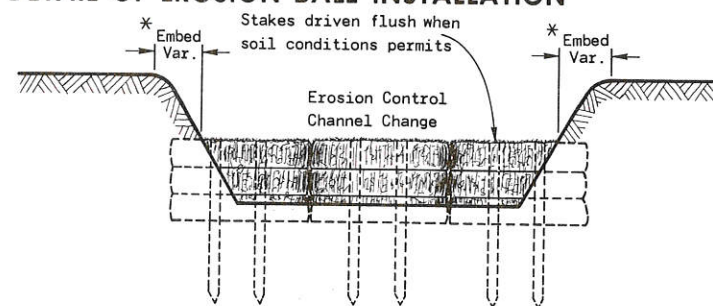


FRONT ELEVATION  
EROSION BALES AT TOE OF SLOPE  
WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

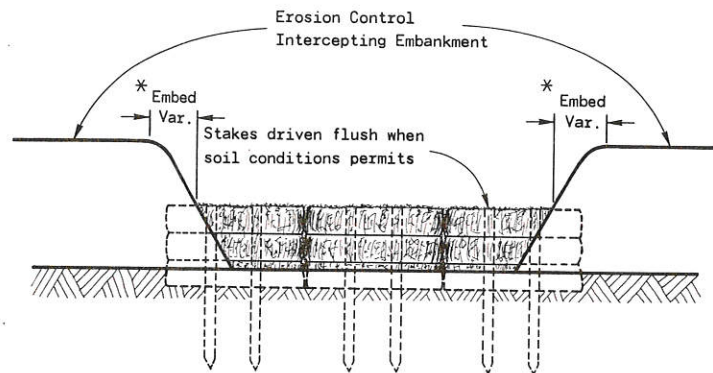
Wood Stakes (2 per Bale)  
Nominal 2" x 2" x 30" min.  
length or equivalent



DETAIL OF EROSION BALE INSTALLATION



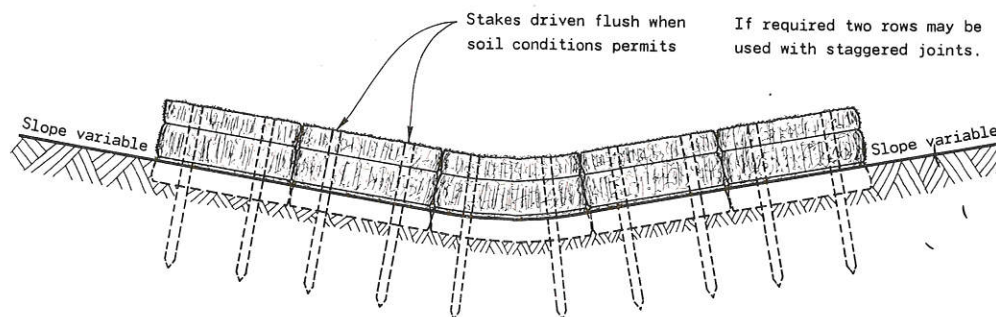
EROSION CONTROL CHANNEL CHANGE



EROSION CONTROL INTERCEPTING EMBANKMENT



PLAN VIEW



FRONT ELEVATION  
EROSION BALES ACROSS DITCH BOTTOM

**GENERAL NOTES**

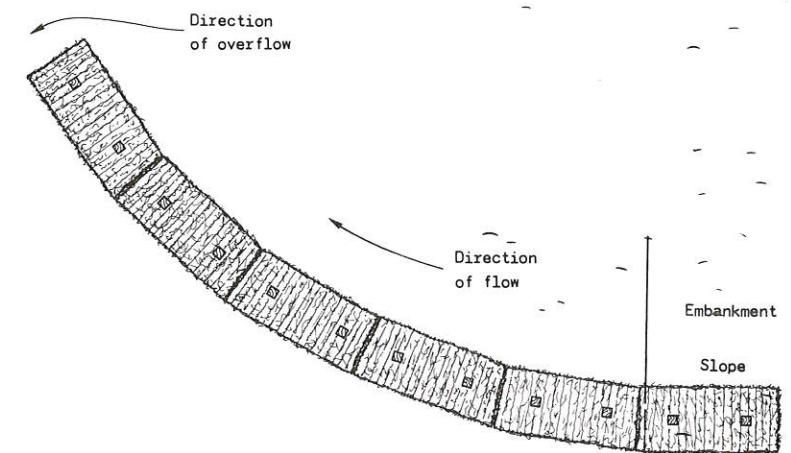
Details of construction, materials and workmanship not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.

Bales shall be placed end to end or overlapping at right angles to the direction of flow and far enough up the sides of the ditch to prevent eroding around ends.

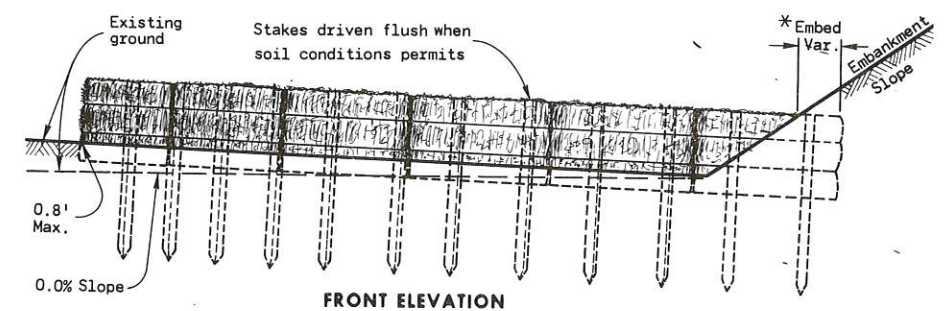
Bales shall be placed with twine or tie wires parallel to the ground.

Stakes to be battered in opposite directions.

\* As determined by the Engineer.



PLAN VIEW



FRONT ELEVATION

EROSION BALES AT TOE OF SLOPE

**TYPICAL INSTALLATIONS  
OF EROSION BALES**

State of Wisconsin  
Department of Transportation  
Division of Highways

RECOMMENDED FOR APPROVAL:

10/14/75  
DATE

*J. C. Zeman*  
CHIEF OF FACILITIES DEVELOPMENT

APPROVED

10/16/75  
DATE

*W. J. Fisher*  
STATE HIGHWAY ENGINEER

**APRON ENDWALLS FOR  
CULVERT PIPE AND  
PIPE ARCH**

State of Wisconsin  
Department of Transportation

CHIEF OF FACILITIES DEVELOPMENT

APPROVED 3-9-77

DATE 3-9-77

APPROVED 3-9-77

DATE 3-9-77

STATE HIGHWAY ENGINEER

**GENERAL NOTES**

Details of construction, materials, and workmanship not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.

Variations of the dimensions and designs shown hereon will be permitted providing equivalent capacity and structural integrity are attained, and prior approval of the Engineer is obtained.

Concrete culvert endwalls may not be used with galvanized steel or aluminum culvert pipe or vice versa.

Galvanized steel or aluminum endwalls shall normally be installed on culvert pipe of the same metal. The use of galvanized steel endwalls on aluminum pipes is permitted, provided the two metals at the joint interface are kept separated by a suitable insulating material approximately  $\frac{1}{8}$ " thick or greater. Such material would be an asphalt impregnated fabric, a sheet plastic, a rubber gasket or other nondegradable material of substantial strength.

When two or more pipe arches with apron endwalls are to be laid adjacent to each other, they shall be separated by the following amount.

Pipes: Total width of apron endwall less the diameter of pipe plus 6 inches.

Pipe Arches: Total width of apron endwall less the span dimension of the pipe arch plus 6 inches.

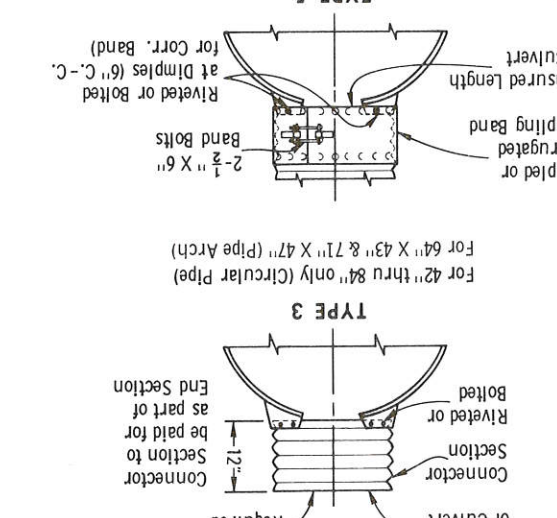
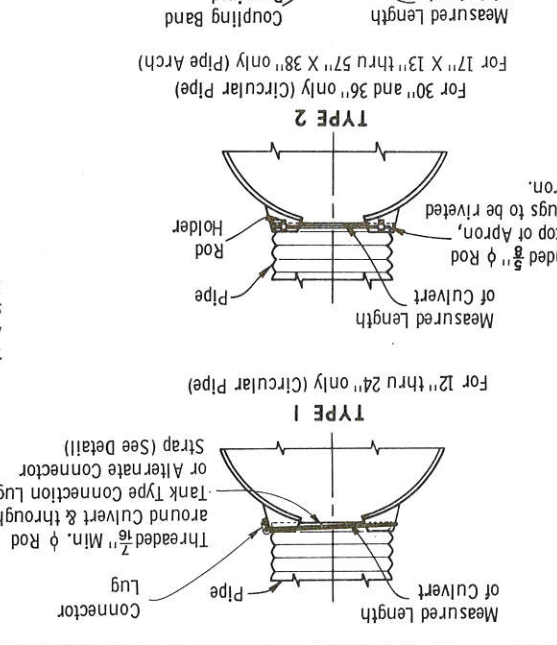
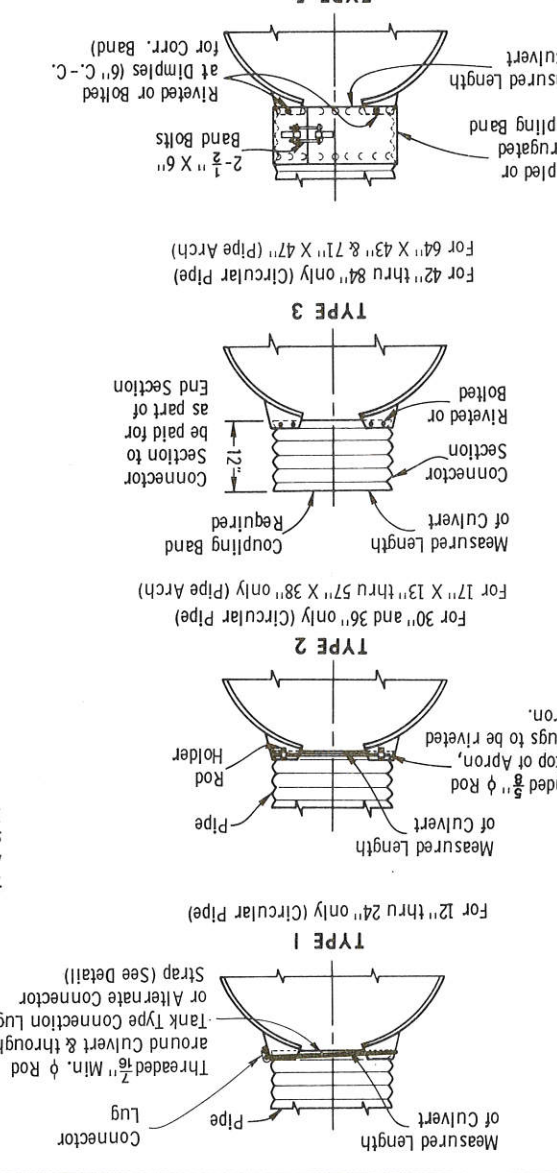
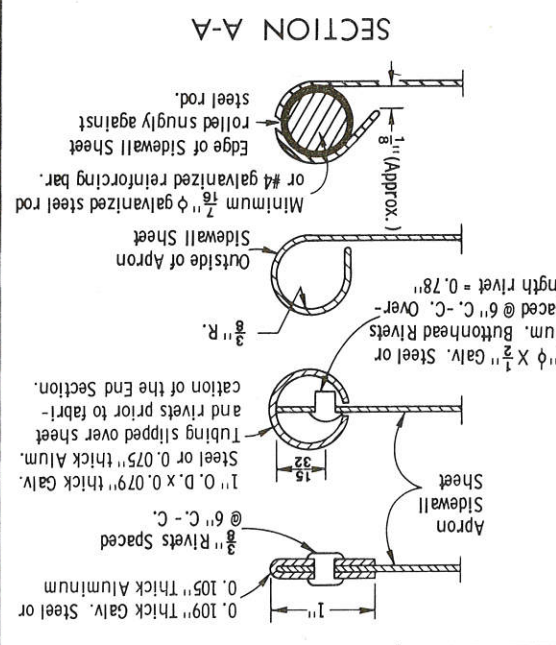
**CONNECTION DETAILS**

**CIRCULAR PIPE**

For Circumferentially Corrugated Pipe use Endwall Connection Details 1, 2 or 5.

For Helically Corrugated Pipes with two Circumferential Corrugations at each end use Endwall Connection Details 1, 2, or 3

Use Endwall Connection Details 2, 3, or 5 as applicable.



**METAL APRON ENDWALLS FOR PIPE ARCHES**

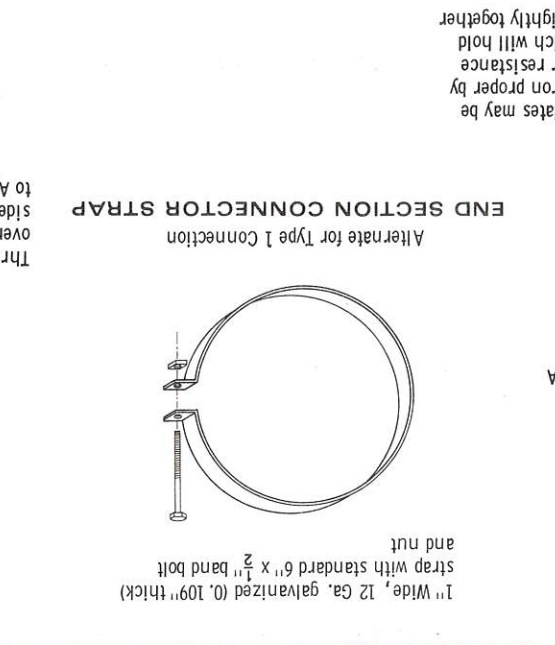
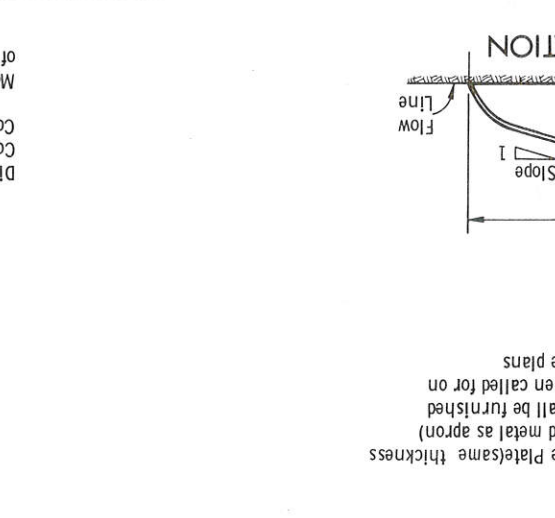
NOTE: All splices to be lap riveted or bolted

APPROX. SLOPE	DIA. MIN.	THICKNESS	MIN. RISE	SPAN	APPROX. SLOPE
2 1/2 to 1	12"	0.064	0.060	13"	2 1/2 to 1
2 1/2 to 1	15"	0.079	0.075	15"	2 1/2 to 1
2 1/2 to 1	18"	0.064	0.060	18"	2 1/2 to 1
2 1/2 to 1	21"	0.079	0.075	21"	2 1/2 to 1
2 1/2 to 1	24"	0.064	0.060	24"	2 1/2 to 1
2 1/2 to 1	27"	0.079	0.075	27"	2 1/2 to 1
2 1/2 to 1	30"	0.064	0.060	30"	2 1/2 to 1
2 1/2 to 1	33"	0.079	0.075	33"	2 1/2 to 1
2 1/2 to 1	36"	0.064	0.060	36"	2 1/2 to 1
2 1/2 to 1	39"	0.079	0.075	39"	2 1/2 to 1
2 1/2 to 1	42"	0.064	0.060	42"	2 1/2 to 1
2 1/2 to 1	45"	0.079	0.075	45"	2 1/2 to 1
2 1/2 to 1	48"	0.064	0.060	48"	2 1/2 to 1
2 1/2 to 1	51"	0.079	0.075	51"	2 1/2 to 1
2 1/2 to 1	54"	0.064	0.060	54"	2 1/2 to 1
2 1/2 to 1	57"	0.079	0.075	57"	2 1/2 to 1
2 1/2 to 1	60"	0.064	0.060	60"	2 1/2 to 1
2 1/2 to 1	63"	0.079	0.075	63"	2 1/2 to 1
2 1/2 to 1	66"	0.064	0.060	66"	2 1/2 to 1
2 1/2 to 1	69"	0.079	0.075	69"	2 1/2 to 1
2 1/2 to 1	72"	0.064	0.060	72"	2 1/2 to 1
2 1/2 to 1	75"	0.079	0.075	75"	2 1/2 to 1
2 1/2 to 1	78"	0.064	0.060	78"	2 1/2 to 1
2 1/2 to 1	81"	0.079	0.075	81"	2 1/2 to 1
2 1/2 to 1	84"	0.064	0.060	84"	2 1/2 to 1

**METAL OR ALUMINUM APRON ENDWALLS FOR CIRCULAR PIPES**

NOTE: All splices to be lap riveted or bolted

APPROX. SLOPE	DIA. MIN.	THICKNESS	MIN. RISE	SPAN	APPROX. SLOPE
2 1/2 to 1	12"	0.064	0.060	12"	2 1/2 to 1
2 1/2 to 1	15"	0.079	0.075	15"	2 1/2 to 1
2 1/2 to 1	18"	0.064	0.060	18"	2 1/2 to 1
2 1/2 to 1	21"	0.079	0.075	21"	2 1/2 to 1
2 1/2 to 1	24"	0.064	0.060	24"	2 1/2 to 1
2 1/2 to 1	27"	0.079	0.075	27"	2 1/2 to 1
2 1/2 to 1	30"	0.064	0.060	30"	2 1/2 to 1
2 1/2 to 1	33"	0.079	0.075	33"	2 1/2 to 1
2 1/2 to 1	36"	0.064	0.060	36"	2 1/2 to 1
2 1/2 to 1	39"	0.079	0.075	39"	2 1/2 to 1
2 1/2 to 1	42"	0.064	0.060	42"	2 1/2 to 1
2 1/2 to 1	45"	0.079	0.075	45"	2 1/2 to 1
2 1/2 to 1	48"	0.064	0.060	48"	2 1/2 to 1
2 1/2 to 1	51"	0.079	0.075	51"	2 1/2 to 1
2 1/2 to 1	54"	0.064	0.060	54"	2 1/2 to 1
2 1/2 to 1	57"	0.079	0.075	57"	2 1/2 to 1
2 1/2 to 1	60"	0.064	0.060	60"	2 1/2 to 1
2 1/2 to 1	63"	0.079	0.075	63"	2 1/2 to 1
2 1/2 to 1	66"	0.064	0.060	66"	2 1/2 to 1
2 1/2 to 1	69"	0.079	0.075	69"	2 1/2 to 1
2 1/2 to 1	72"	0.064	0.060	72"	2 1/2 to 1
2 1/2 to 1	75"	0.079	0.075	75"	2 1/2 to 1
2 1/2 to 1	78"	0.064	0.060	78"	2 1/2 to 1
2 1/2 to 1	81"	0.079	0.075	81"	2 1/2 to 1
2 1/2 to 1	84"	0.064	0.060	84"	2 1/2 to 1



**REINFORCED CONCRETE APRON ENDWALLS**

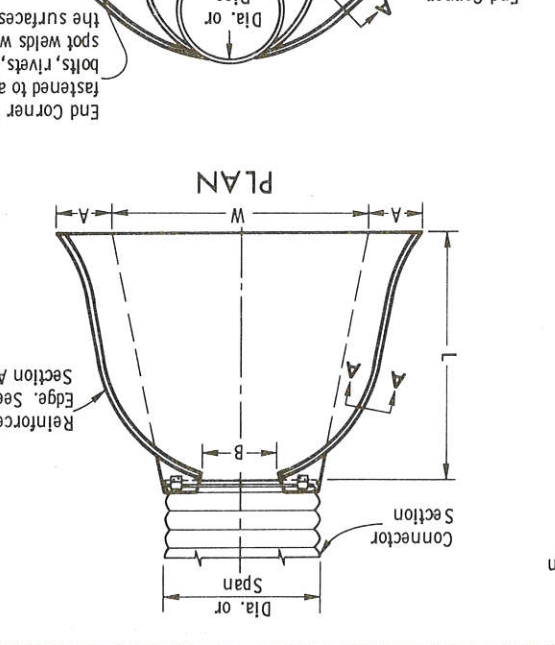
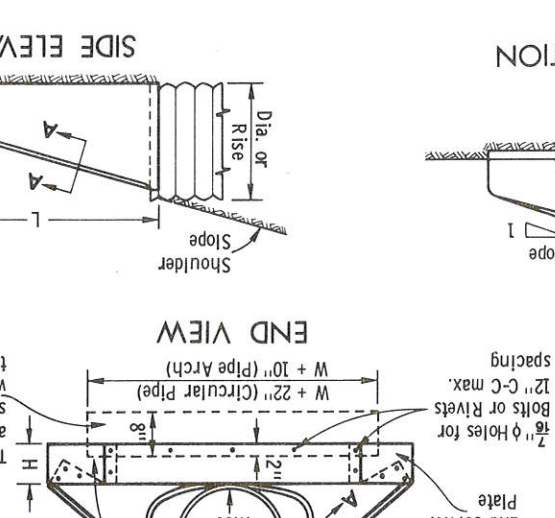
NOTE: All splices to be lap riveted or bolted

APPROX. SLOPE	DIA. MIN.	THICKNESS	MIN. RISE	SPAN	APPROX. SLOPE
2 1/2 to 1	12"	0.064	0.060	12"	2 1/2 to 1
2 1/2 to 1	15"	0.079	0.075	15"	2 1/2 to 1
2 1/2 to 1	18"	0.064	0.060	18"	2 1/2 to 1
2 1/2 to 1	21"	0.079	0.075	21"	2 1/2 to 1
2 1/2 to 1	24"	0.064	0.060	24"	2 1/2 to 1
2 1/2 to 1	27"	0.079	0.075	27"	2 1/2 to 1
2 1/2 to 1	30"	0.064	0.060	30"	2 1/2 to 1
2 1/2 to 1	33"	0.079	0.075	33"	2 1/2 to 1
2 1/2 to 1	36"	0.064	0.060	36"	2 1/2 to 1
2 1/2 to 1	39"	0.079	0.075	39"	2 1/2 to 1
2 1/2 to 1	42"	0.064	0.060	42"	2 1/2 to 1
2 1/2 to 1	45"	0.079	0.075	45"	2 1/2 to 1
2 1/2 to 1	48"	0.064	0.060	48"	2 1/2 to 1
2 1/2 to 1	51"	0.079	0.075	51"	2 1/2 to 1
2 1/2 to 1	54"	0.064	0.060	54"	2 1/2 to 1
2 1/2 to 1	57"	0.079	0.075	57"	2 1/2 to 1
2 1/2 to 1	60"	0.064	0.060	60"	2 1/2 to 1
2 1/2 to 1	63"	0.079	0.075	63"	2 1/2 to 1
2 1/2 to 1	66"	0.064	0.060	66"	2 1/2 to 1
2 1/2 to 1	69"	0.079	0.075	69"	2 1/2 to 1
2 1/2 to 1	72"	0.064	0.060	72"	2 1/2 to 1
2 1/2 to 1	75"	0.079	0.075	75"	2 1/2 to 1
2 1/2 to 1	78"	0.064	0.060	78"	2 1/2 to 1
2 1/2 to 1	81"	0.079	0.075	81"	2 1/2 to 1
2 1/2 to 1	84"	0.064	0.060	84"	2 1/2 to 1

**METAL OR ALUMINUM APRON ENDWALLS FOR CIRCULAR PIPES**

NOTE: All splices to be lap riveted or bolted

APPROX. SLOPE	DIA. MIN.	THICKNESS	MIN. RISE	SPAN	APPROX. SLOPE
2 1/2 to 1	12"	0.064	0.060	12"	2 1/2 to 1
2 1/2 to 1	15"	0.079	0.075	15"	2 1/2 to 1
2 1/2 to 1	18"	0.064	0.060	18"	2 1/2 to 1
2 1/2 to 1	21"	0.079	0.075	21"	2 1/2 to 1
2 1/2 to 1	24"	0.064	0.060	24"	2 1/2 to 1
2 1/2 to 1	27"	0.079	0.075	27"	2 1/2 to 1
2 1/2 to 1	30"	0.064	0.060	30"	2 1/2 to 1
2 1/2 to 1	33"	0.079	0.075	33"	2 1/2 to 1
2 1/2 to 1	36"	0.064	0.060	36"	2 1/2 to 1
2 1/2 to 1	39"	0.079	0.075	39"	2 1/2 to 1
2 1/2 to 1	42"	0.064	0.060	42"	2 1/2 to 1
2 1/2 to 1	45"	0.079	0.075	45"	2 1/2 to 1
2 1/2 to 1	48"	0.064	0.060	48"	2 1/2 to 1
2 1/2 to 1	51"	0.079	0.075	51"	2 1/2 to 1
2 1/2 to 1	54"	0.064	0.060	54"	2 1/2 to 1
2 1/2 to 1	57"	0.079	0.075	57"	2 1/2 to 1
2 1/2 to 1	60"	0.064	0.060	60"	2 1/2 to 1
2 1/2 to 1	63"	0.079	0.075	63"	2 1/2 to 1
2 1/2 to 1	66"	0.064	0.060	66"	2 1/2 to 1
2 1/2 to 1	69"	0.079	0.075	69"	2 1/2 to 1
2 1/2 to 1	72"	0.064	0.060	72"	2 1/2 to 1
2 1/2 to 1	75"	0.079	0.075	75"	2 1/2 to 1
2 1/2 to 1	78"	0.064	0.060	78"	2 1/2 to 1
2 1/2 to 1	81"	0.079	0.075	81"	2 1/2 to 1
2 1/2 to 1	84"	0.064	0.060	84"	2 1/2 to 1



**REINFORCED CONCRETE APRON ENDWALLS**

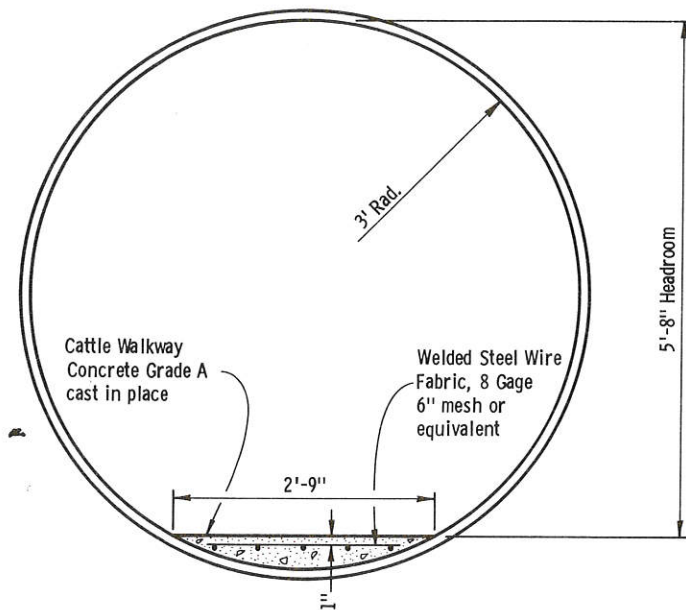
NOTE: All splices to be lap riveted or bolted

APPROX. SLOPE	DIA. MIN.	THICKNESS	MIN. RISE	SPAN	APPROX. SLOPE
2 1/2 to 1	12"	0.064	0.060	12"	2 1/2 to 1
2 1/2 to 1	15"	0.079	0.075	15"	2 1/2 to 1
2 1/2 to 1	18"	0.064	0.060	18"	2 1/2 to 1
2 1/2 to 1	21"	0.079	0.075	21"	2 1/2 to 1
2 1/2 to 1	24"	0.064	0.060	24"	2 1/2 to 1
2 1/2 to 1	27"	0.079	0.075	27"	2 1/2 to 1
2 1/2 to 1	30"	0.064	0.060	30"	2 1/2 to 1
2 1/2 to 1	33"	0.079	0.075	33"	2 1/2 to 1
2 1/2 to 1	36"	0.064	0.060	36"	2 1/2 to 1
2 1/2 to 1	39"	0.079	0.075	39"	2 1/2 to 1
2 1/2 to 1	42"	0.064	0.060	42"	2 1/2 to 1
2 1/2 to 1	45"	0.079	0.075	45"	2 1/2 to 1
2 1/2 to 1	48"	0.064	0.060	48"	2 1/2 to 1
2 1/2 to 1	51"	0.079	0.075	51"	2 1/2 to 1
2 1/2 to 1	54"	0.064	0.060	54"	2 1/2 to 1
2 1/2 to 1	57"	0.079	0.075	57"	2 1/2 to 1
2 1/2 to 1	60"	0.064	0.060	60"	2 1/2 to 1
2 1/2 to 1	63"	0.079	0.075	63"	2 1/2 to 1
2 1/2 to 1	66"	0.064	0.060	66"	2 1/2 to 1
2 1/2 to 1	69"	0.079	0.075	69"	2 1/2 to 1
2 1/2 to 1	72"	0.064	0.060	72"	2 1/2 to 1
2 1/2 to 1	75"	0.079	0.075	75"	2 1/2 to 1
2 1/2 to 1	78"	0.064	0.060	78"	2 1/2 to 1
2 1/2 to 1	81"	0.079	0.075	81"	2 1/2 to 1
2 1/2 to 1	84"	0.064	0.060	84"	2 1/2 to 1

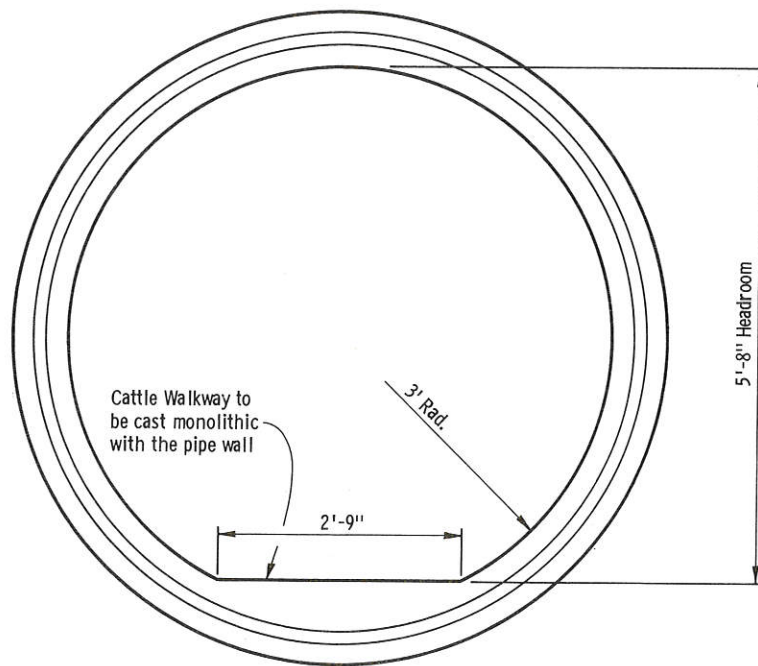
**METAL OR ALUMINUM APRON ENDWALLS FOR CIRCULAR PIPES**

NOTE: All splices to be lap riveted or bolted

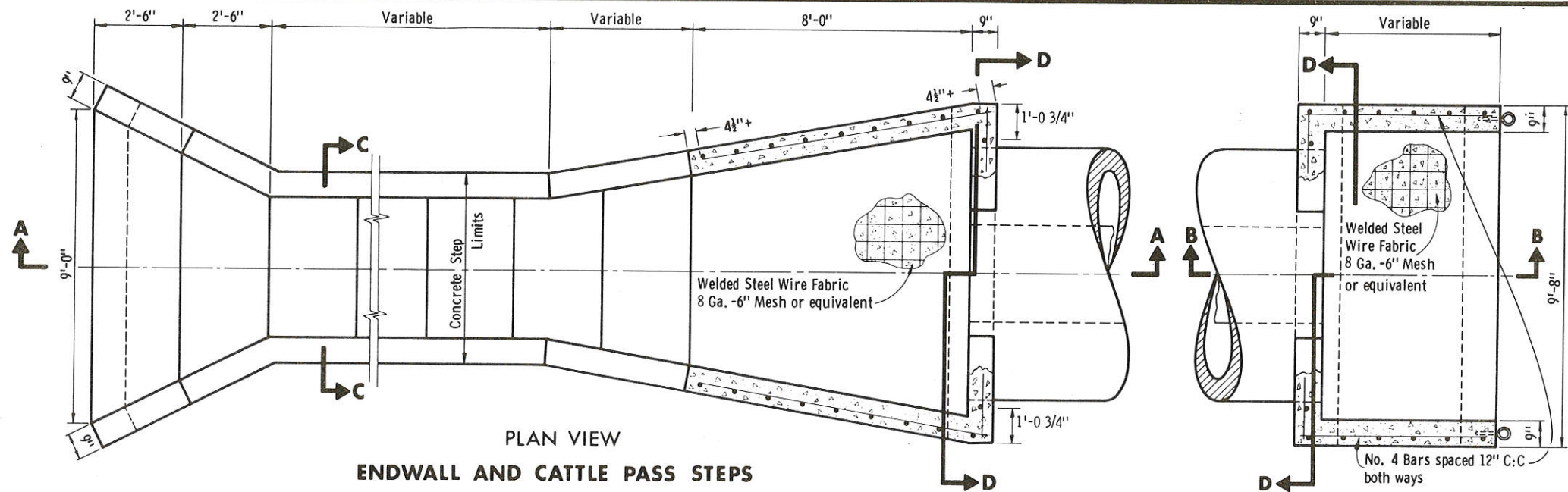
APPROX. SLOPE	DIA. MIN.	THICKNESS	MIN. RISE	SPAN	APPROX. SLOPE
2 1/2 to 1	12"	0.064	0.060	12"	2 1/2 to



CROSS SECTION  
CORRUGATED METAL PIPE CATTLE PASS

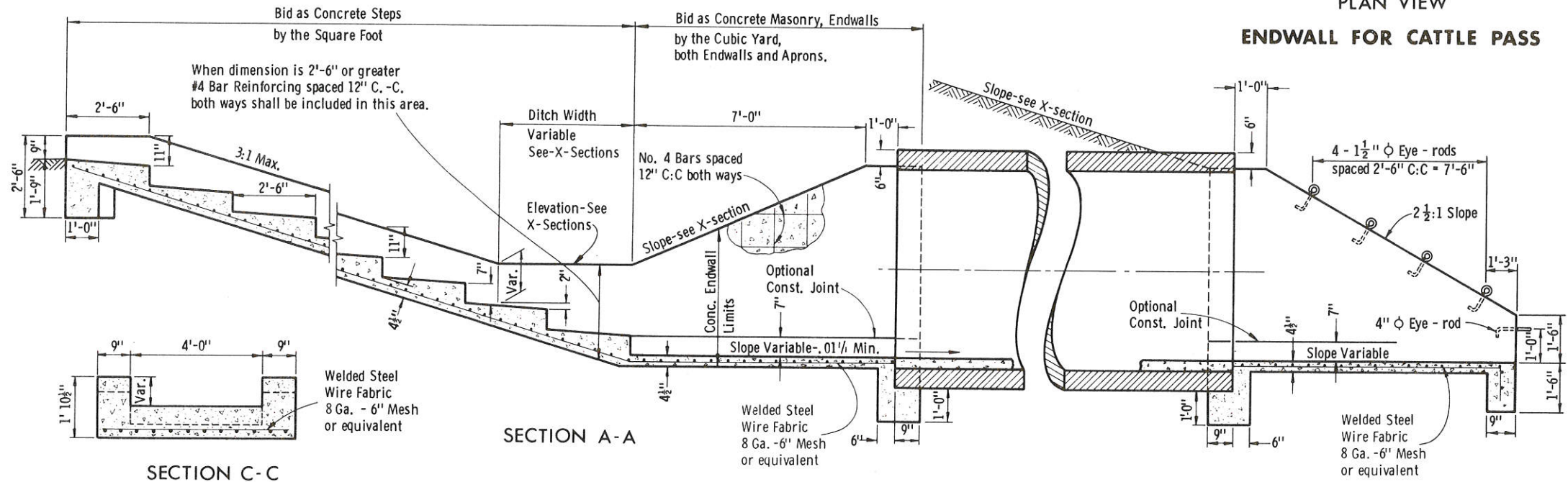


END VIEW  
REINFORCED CONCRETE PIPE CATTLE PASS



PLAN VIEW  
ENDWALL AND CATTLE PASS STEPS

PLAN VIEW  
ENDWALL FOR CATTLE PASS



SECTION A-A

SECTION B-B

**GENERAL NOTES**

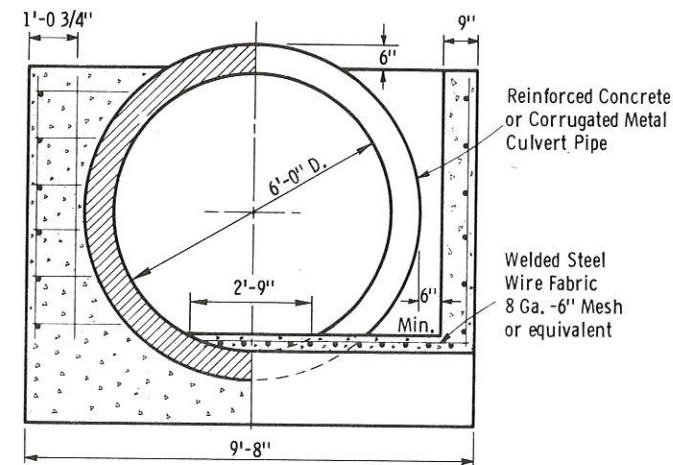
Details of construction, materials and workmanship not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.

All steel reinforcement in Endwalls and Cattle Pass Steps shall be embedded 2 inches clear unless otherwise noted.

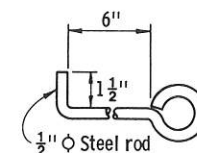
All steel reinforcement or fabric used as shown above shall be incidental to the bid item of which it is an integral part.

Eye-rods for fence connections shall be provided by the contractor as an incidental to the bid item of CONCRETE MASONRY, ENDWALLS and shall be galvanized.

Concrete used for the Cattle Walkway within the pipe shall be incidental to the bid item of PIPE CATTLE PASS.



SECTION D-D



EYE - ROD ANCHOR

**DETAILS FOR PIPE CATTLE PASS,  
CONCRETE ENDWALLS AND STEPS**

State of Wisconsin  
Department of Transportation  
Division of Highways

RECOMMENDED FOR APPROVAL:

6-6-75

DATE

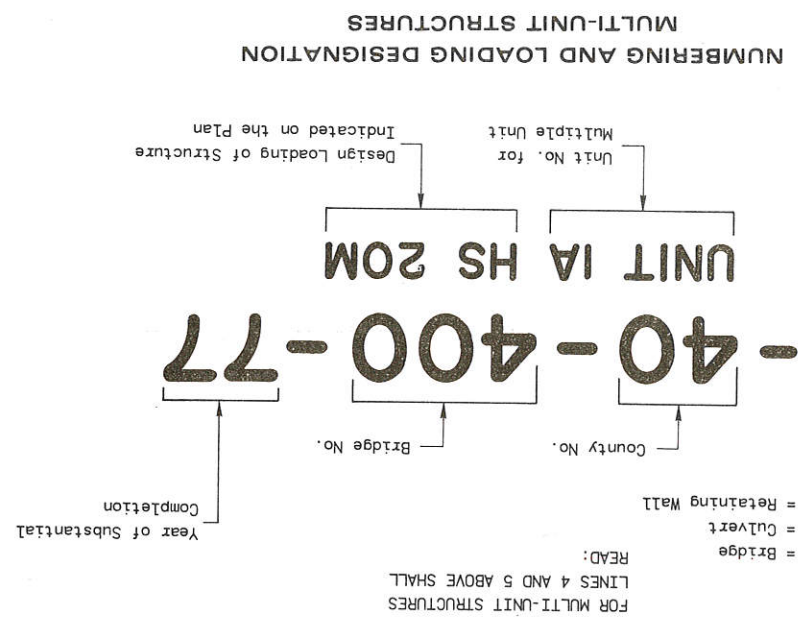
*J.C. Hennel*  
CHIEF OF FACILITIES DEVELOPMENT

APPROVED

6-6-75

DATE

*W.J. Sidler*  
STATE HIGHWAY ENGINEER

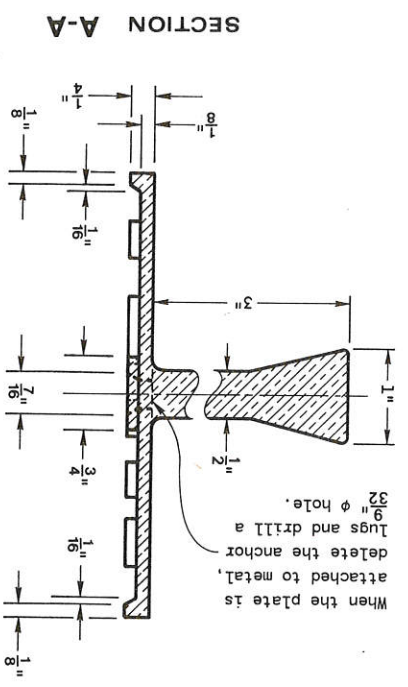


**GENERAL NOTES**

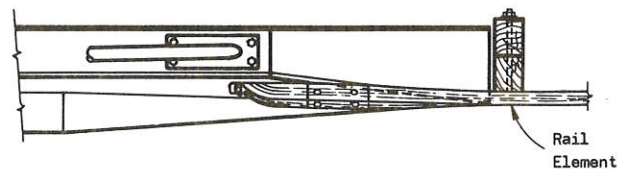
Name Plates to be installed on Bridges, Culverts, and Retaining Walls shall conform to the requirements of Section 506.2.4 of the Standard Specifications.

The Bridge Number and Design Loading shown on this drawing are examples only. See Construction Plans for individual numbering and design loading.

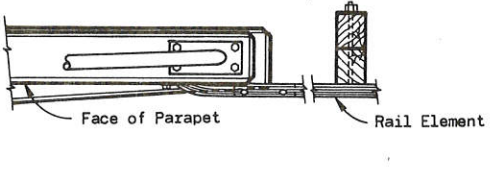
**TYPICAL NAME PLATE**  
(BRIDGES, CULVERTS, AND RETAINING WALLS)



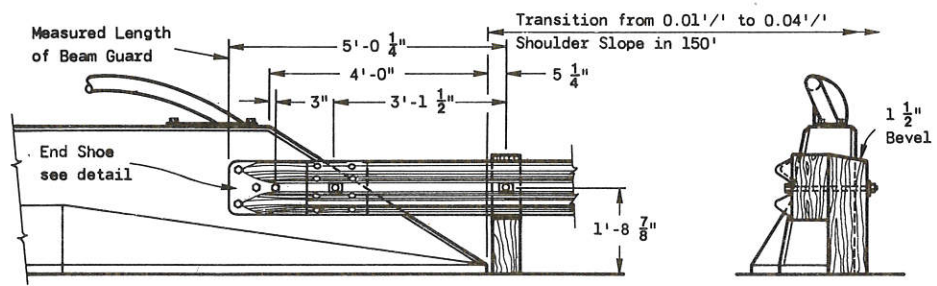
<b>NAME PLATE (STRUCTURES)</b>	<b>State of Wisconsin</b> <b>Department of Transportation</b> <b>Division of Highways</b>
APPROVED DATE 8-5-77	APPROVED DATE 8-8-77
CHIEF OF FACILITIES DEVELOPMENT	SUPERVISING DEVELOPMENT ENGINEER
S.D.D. 12 A 3-2	FHWA



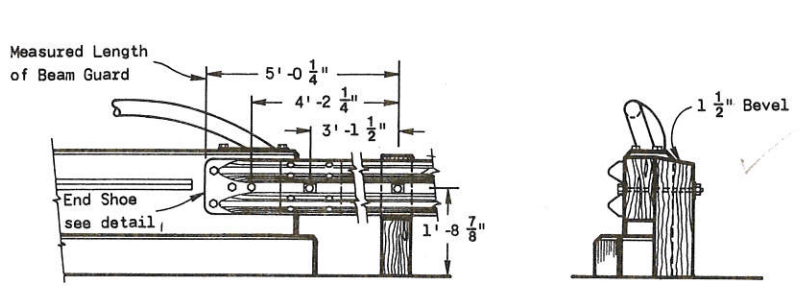
PLAN VIEW



PLAN VIEW



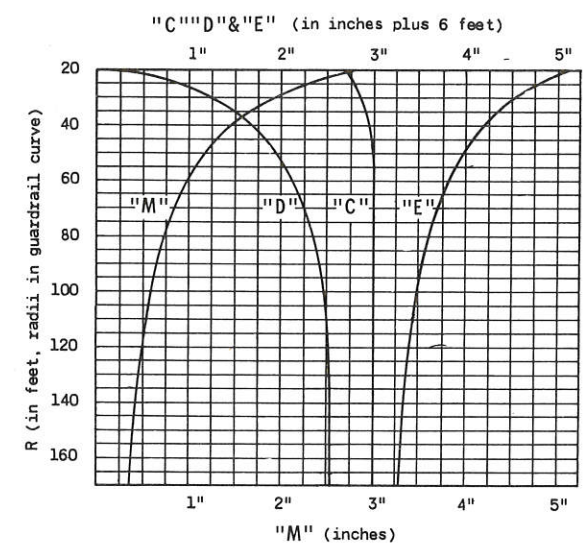
FRONT ELEVATION END ELEVATION



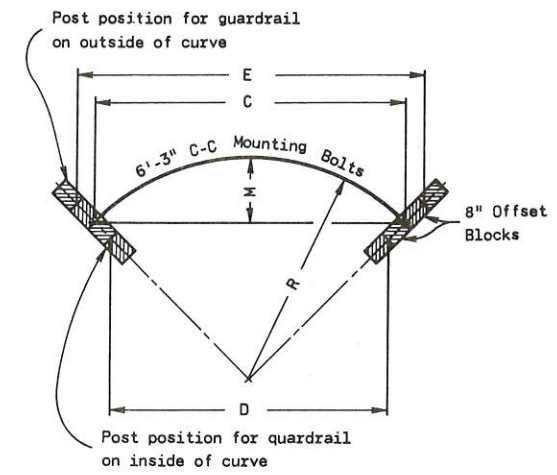
FRONT ELEVATION END ELEVATION

STRUCTURE MOUNTING DETAIL  
SLOPING TYPE PARAPET WALL

STRUCTURE MOUNTING DETAIL  
VERTICAL TYPE PARAPET WALL



CURVE DATA FOR POST SPACING AND BEAM CURVING



CHORD LENGTHS FOR POST SPACING AND MIDDLE ORDINATES FOR BEAM CURVING

**GENERAL NOTES**

Details of construction, materials and workmanship not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.

The exact location of the beginning and end of each Guardrail installation shall be as shown on the plans or as directed by the Engineer.

Square anchor alternates will be permitted. Square anchors shall be a minimum of 24 inches x 24 inches.

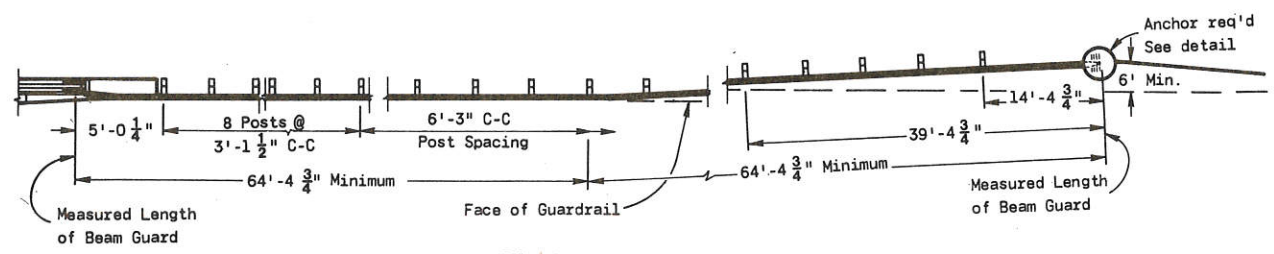
The shoulder widening to accommodate the anchored end of the guardrail shall be accomplished at the rate of widening not to exceed 15 to 1.

Upon approval of the Engineer, the 6 foot anchor offset may be reduced to nothing for replacement installations where existing conditions will not permit the desirable offset. However, when no offset greater than or equal to 3 feet can be provided, the minimum length of guardrail in advance of an obstacle (obstacle to anchor) shall be 150 feet.

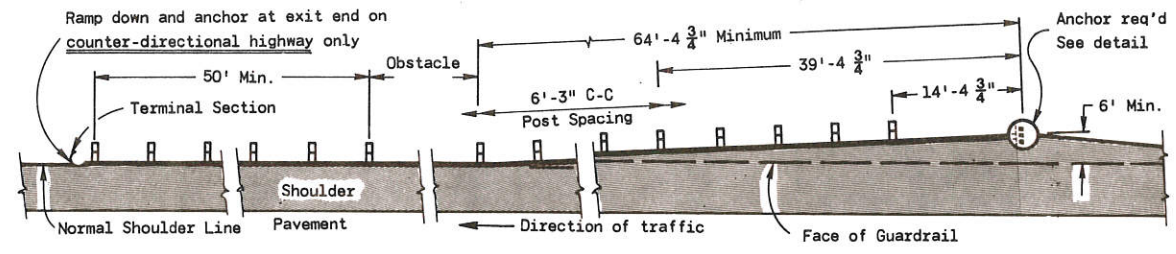
The minimum clearance from the front face of guardrail to obstacle shall be 3 feet unless otherwise shown on contract plans. When clearance is less than 3 feet post spacing shall be reduced to 3 feet - 1 1/2 inches C.C.

The "Post Footing Details At Piers" shall be used when guardrail posts are over structure footings and less than 3 feet - 6 inches of earth is provided over the top of the footing.

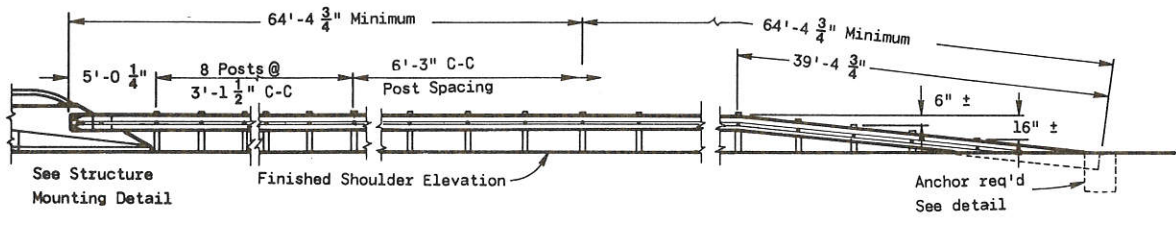
NOTE:  
THIS STANDARD DETAIL DRAWING CONSISTS OF TWO PLATES, AND BOTH PLATES ARE REQUIRED WHEN THIS STANDARD IS CALLED FOR IN THE PLANS.



PLAN VIEW

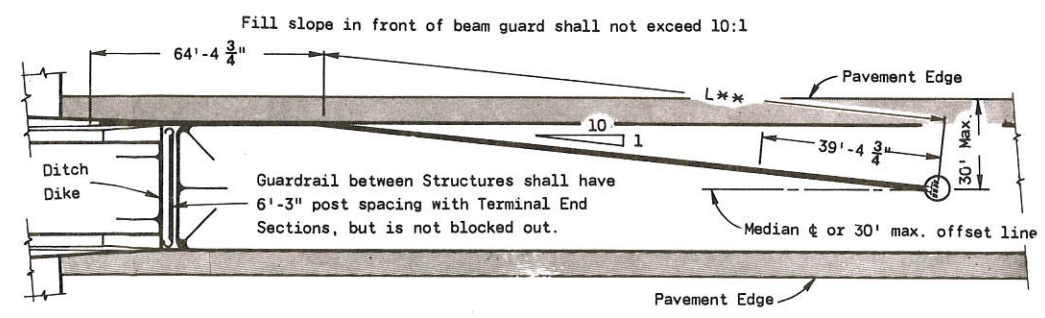


PLAN VIEW  
TYPICAL INSTALLATION AT  
LOCATIONS OTHER THAN STRUCTURES



FRONT ELEVATION

TYPICAL INSTALLATION AT STRUCTURES



PLAN VIEW

MEDIAN PROTECTION

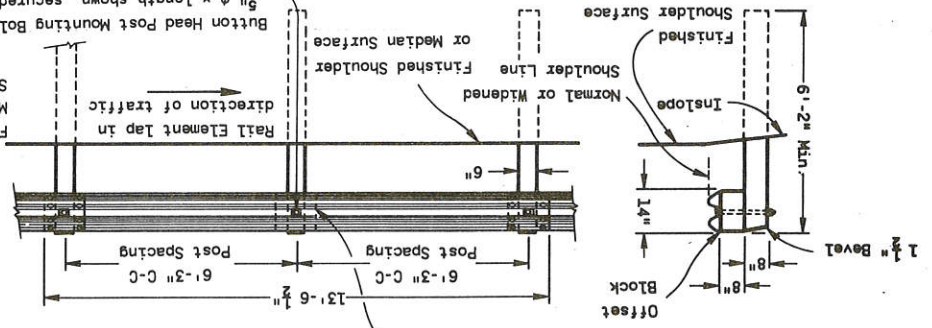
**CLASS "A"**  
**STEEL PLATE BEAM GUARD & STEEL PLATE BEAM MEDIAN GUARD**

State of Wisconsin  
Department of Transportation  
Division of Highways

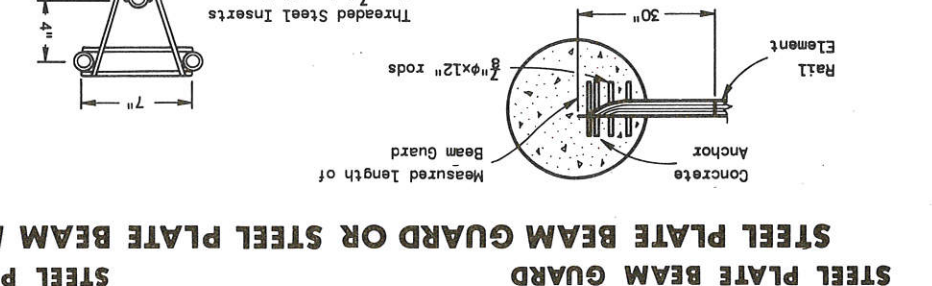
One foot long section of rail element, with a 3/8" slotted hole for mounting, shall be placed behind the continuous rail element at the intermediate posts.

Sawed and treated timber posts and offset blocks shall be furnished and placed in accordance with Standard Specifications. Posts shall be 6" x 8" x 6'-6" and have 6" x 8" x 14" offset blocks.

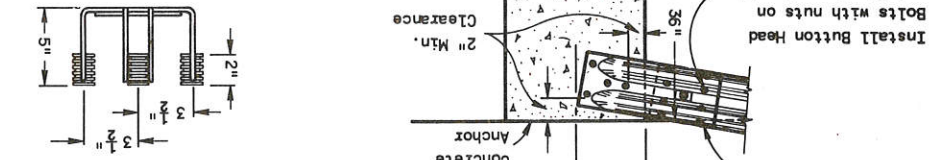
NOTE: (DIVIDED HIGHWAYS) Reflector spacing shall be 50' C-C on installations less than 200' long, with a minimum of 3 reflectors on any installation. For installations 200' or longer, spacing shall be 100' C-C. (COUNTER-DIRECTIONAL HIGHWAYS) Reflector spacing shall be 25' C-C on installations less than 200' long, with a minimum of 6 reflectors on any installation, and every other reflectorized surface shall be reversed. For installations 200' or longer, spacing shall be 50' C-C.



END ELEVATION



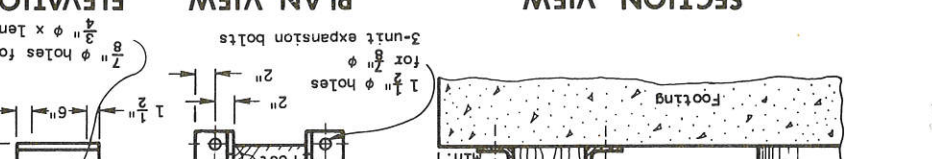
FRONT ELEVATION



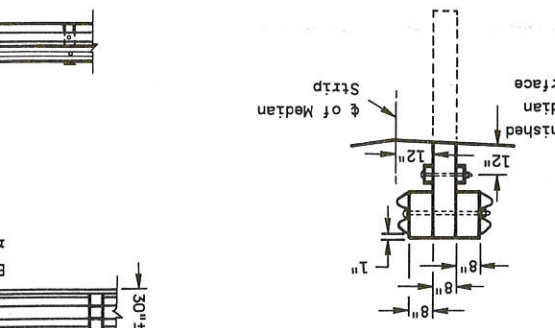
END ELEVATION



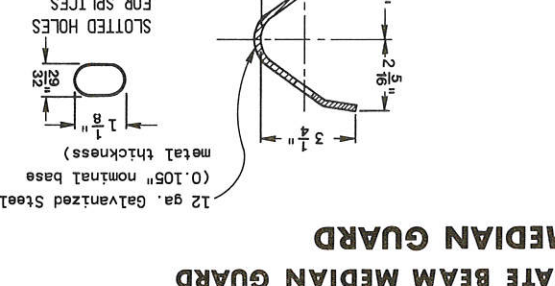
SECTION VIEW



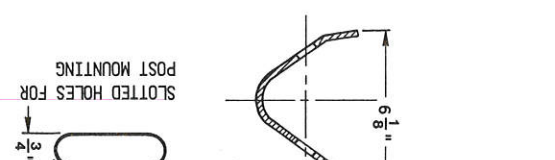
PLAN VIEW



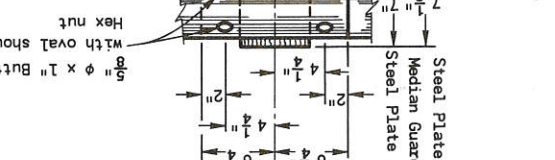
END ELEVATION



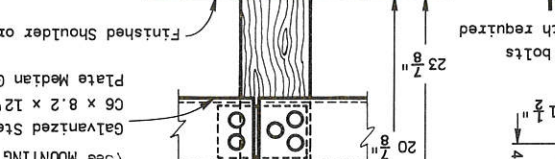
FRONT ELEVATION



END ELEVATION

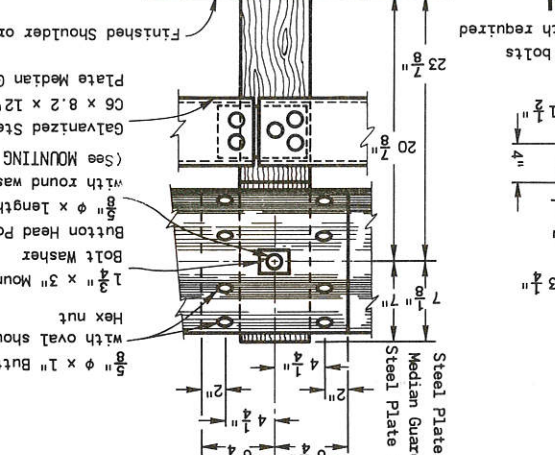


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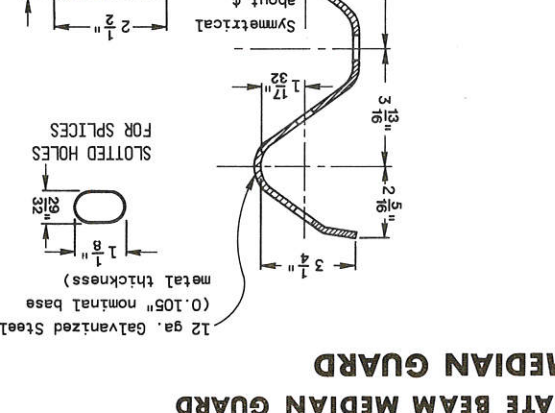


PLAN VIEW

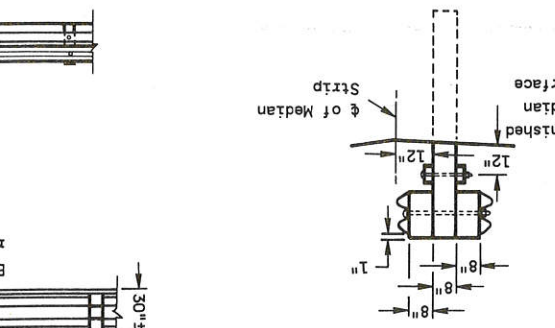
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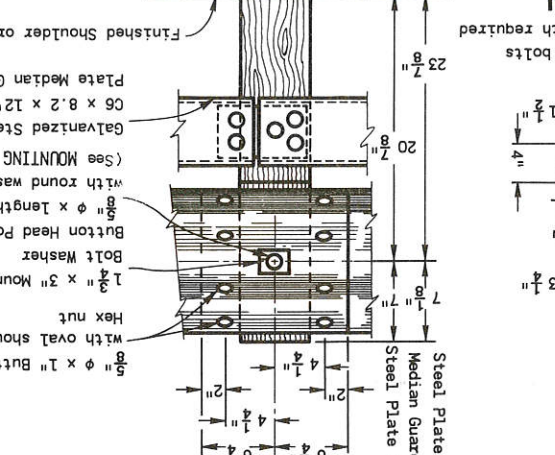


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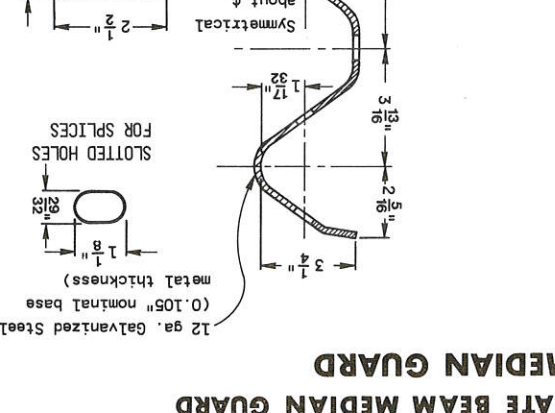


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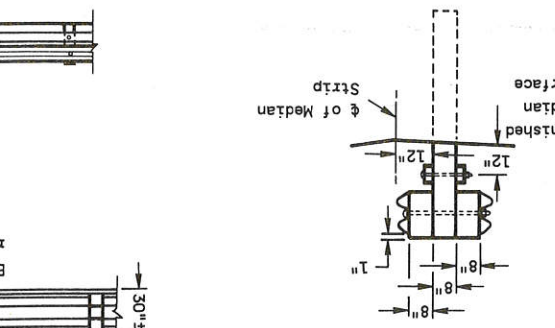
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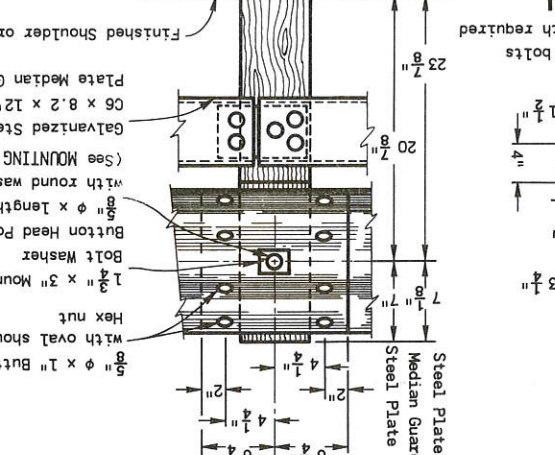


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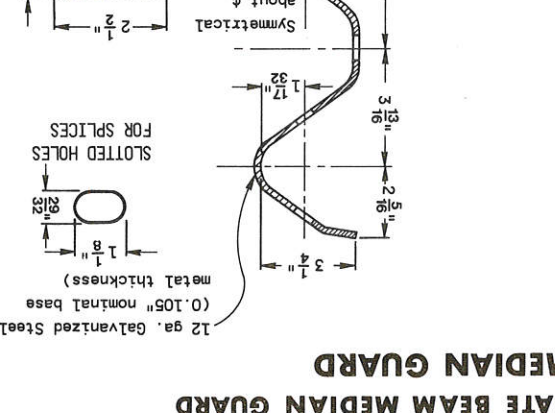


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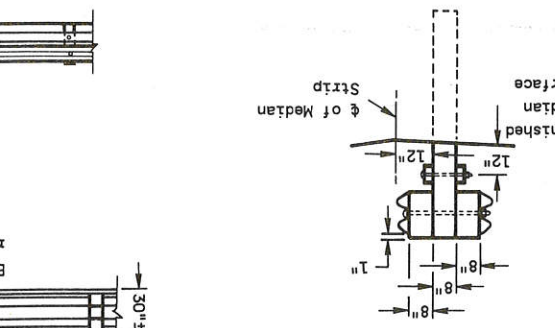
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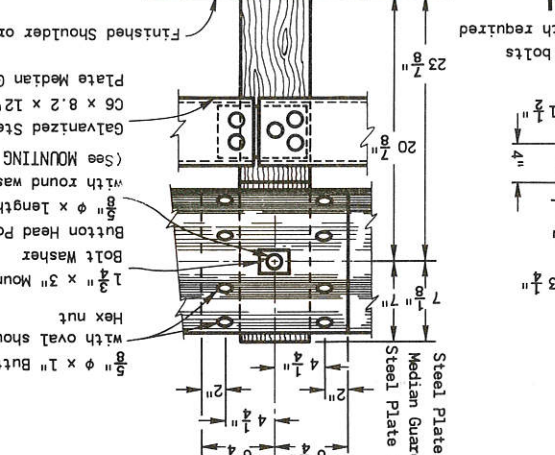


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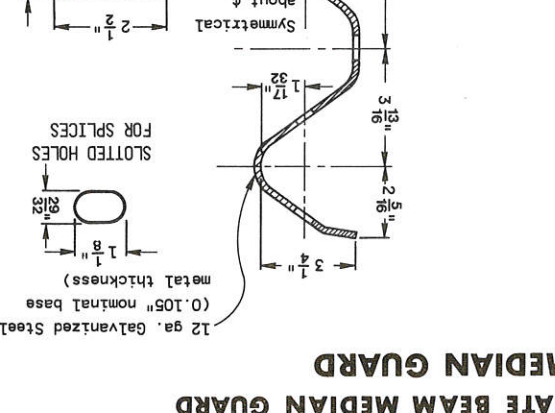


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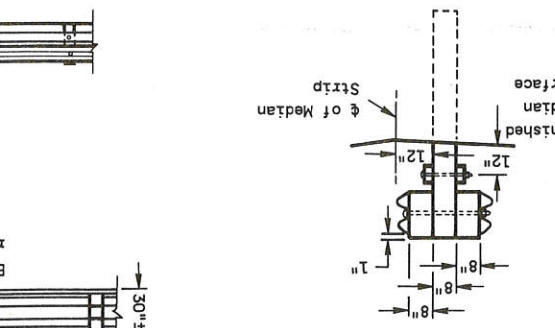
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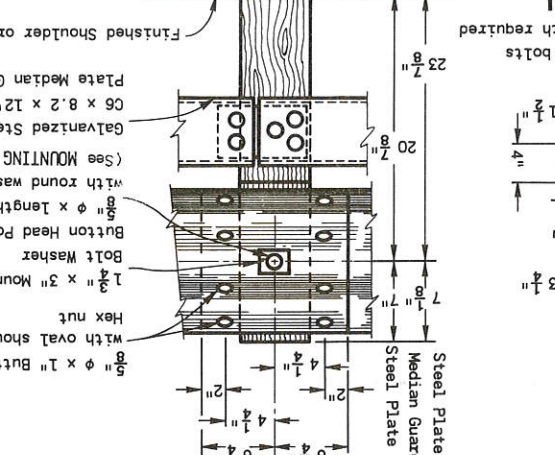


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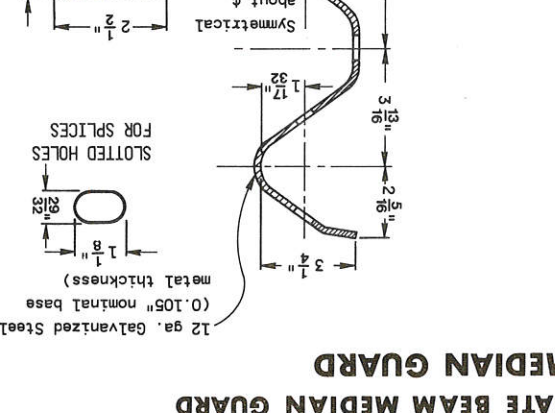


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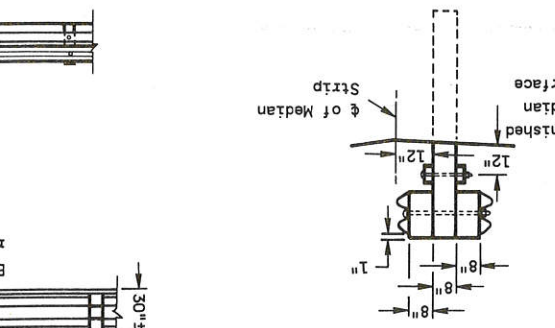
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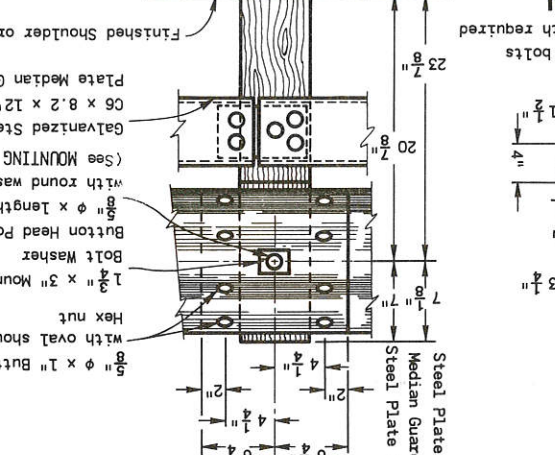


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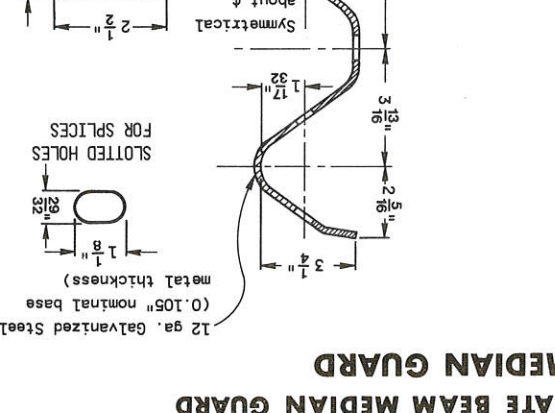


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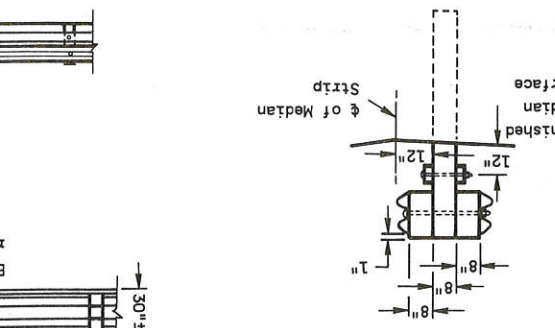
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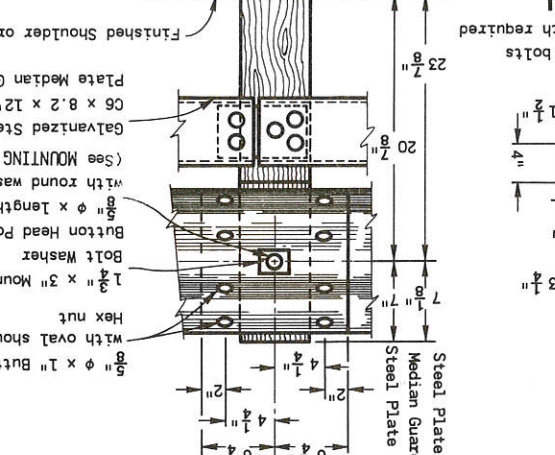


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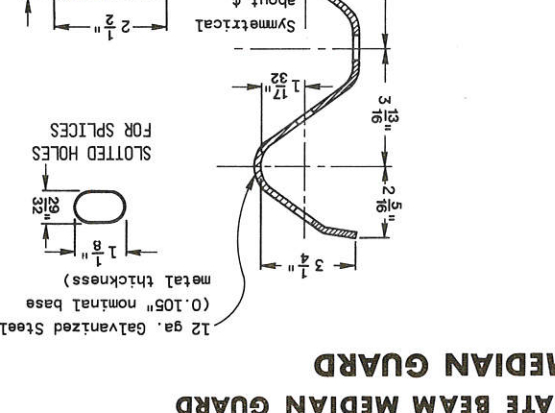


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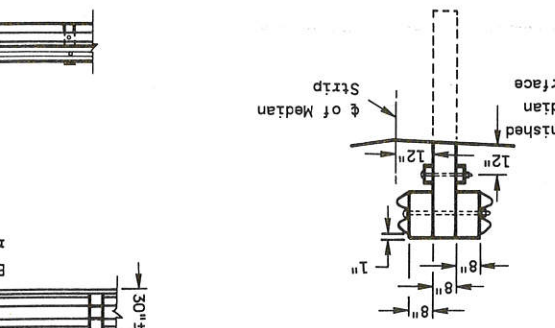
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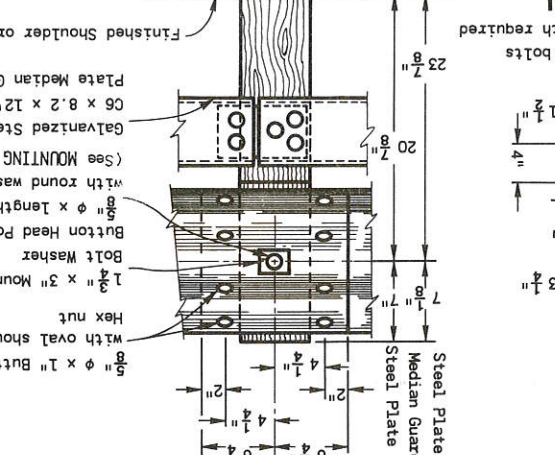


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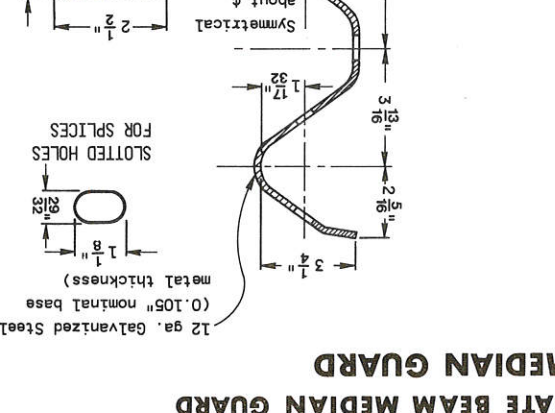


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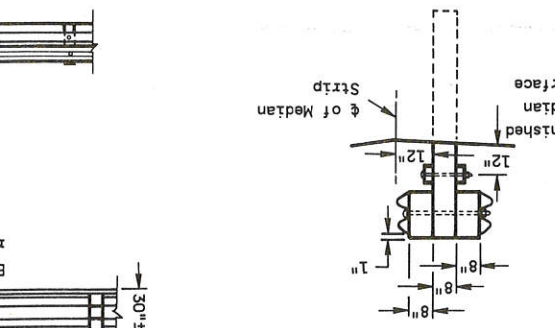
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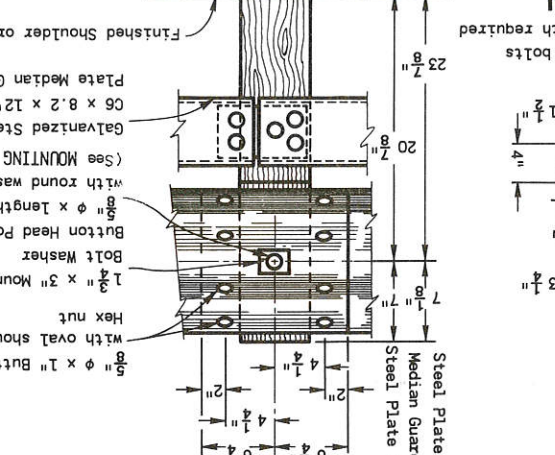


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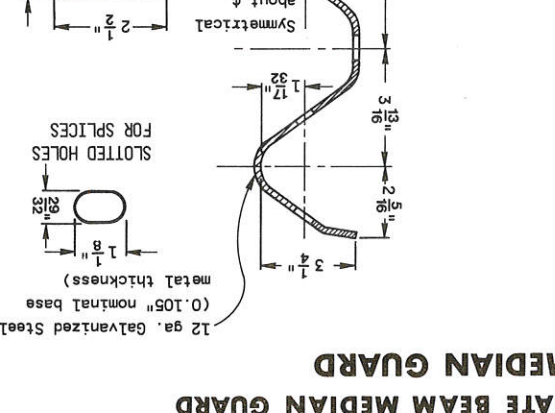


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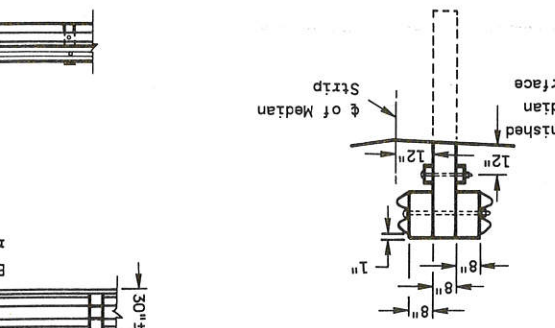
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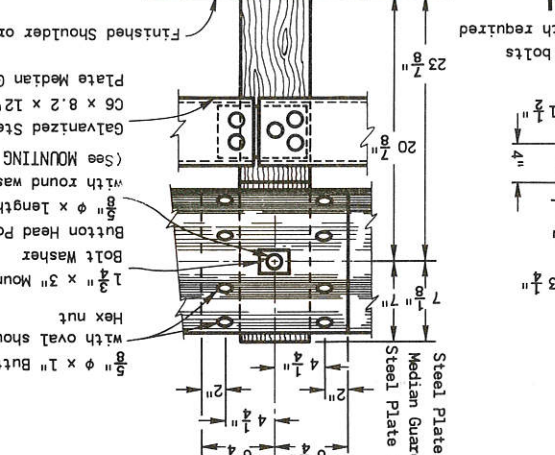


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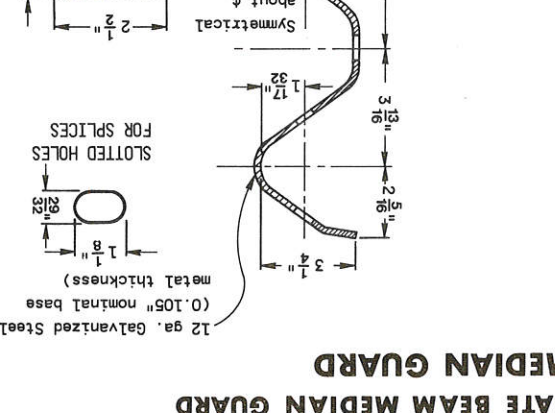


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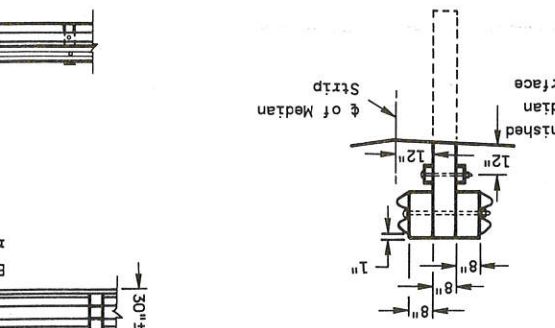
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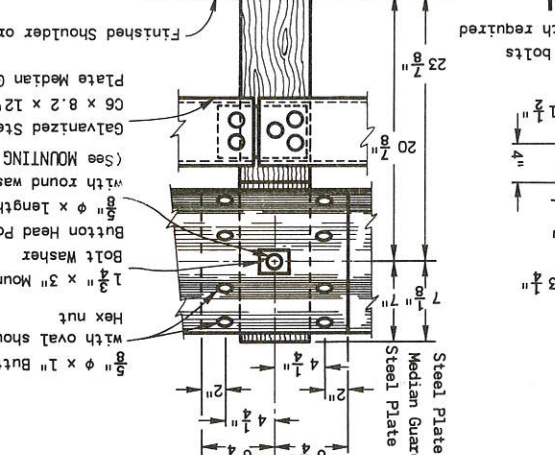


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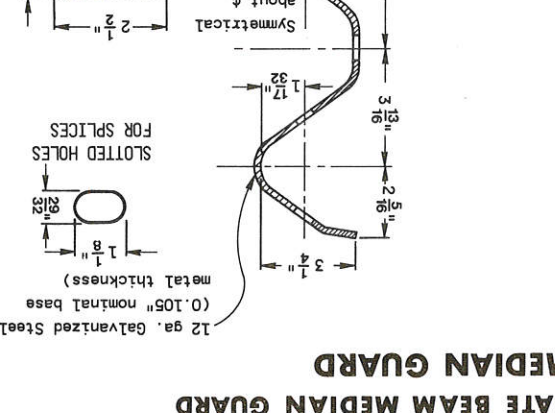


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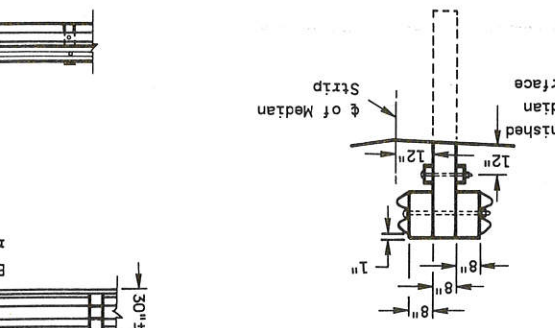
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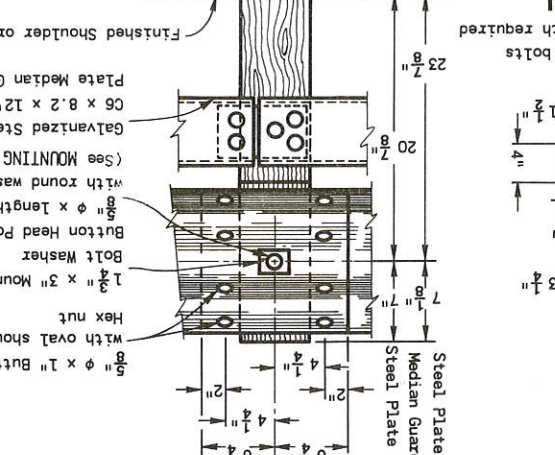


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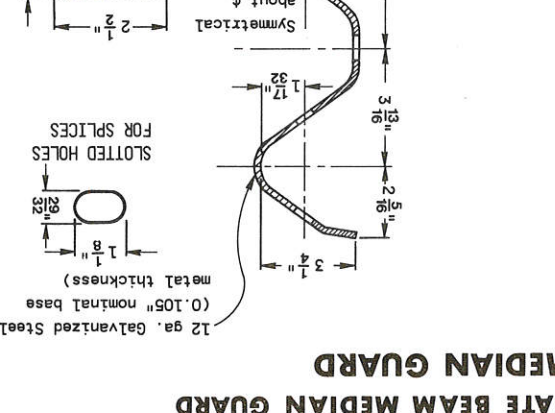


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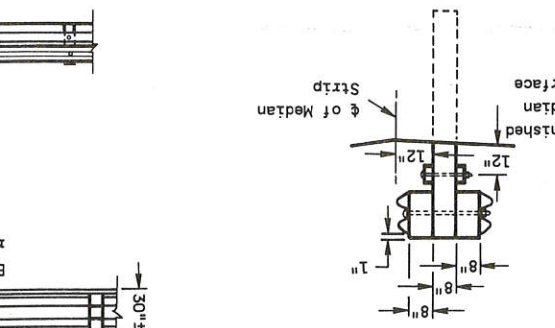
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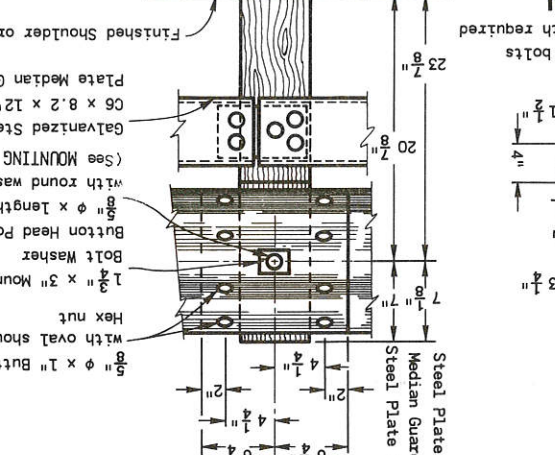


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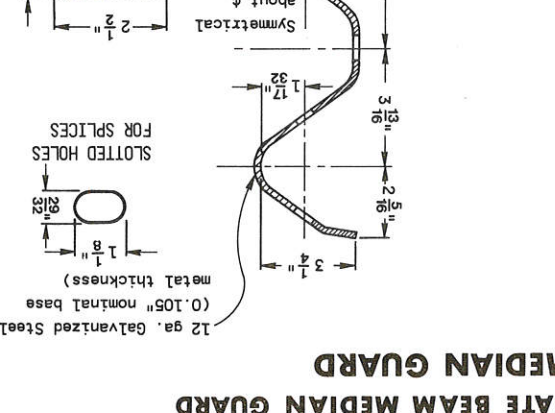


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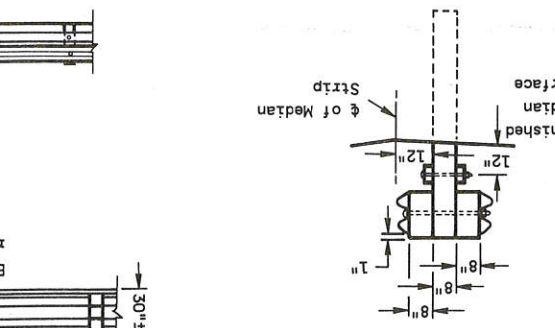
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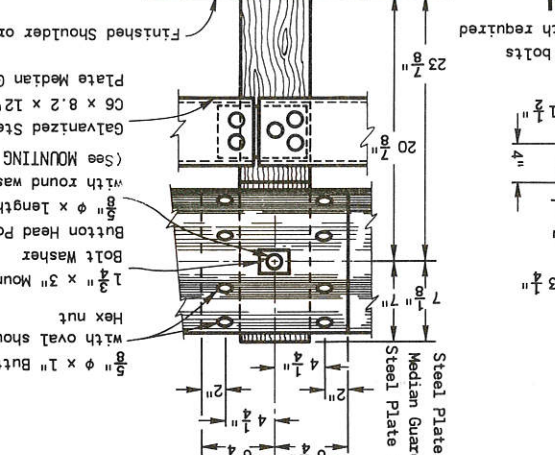


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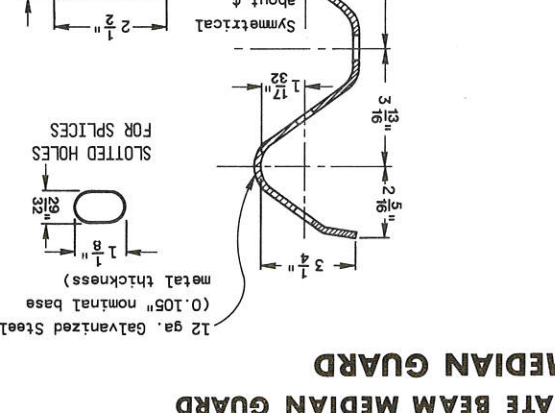


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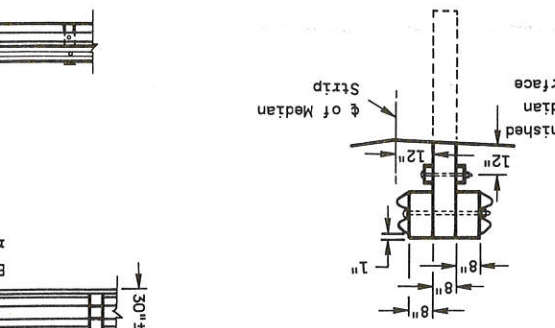
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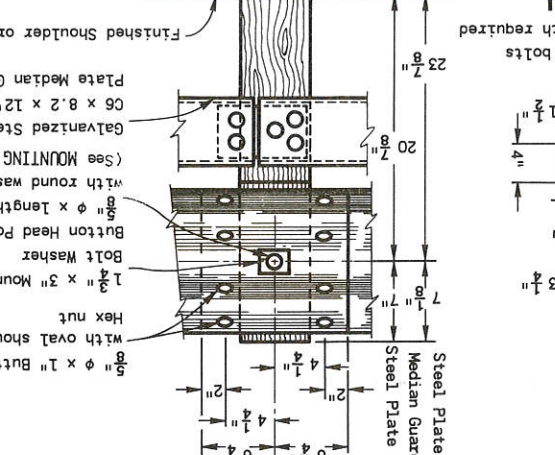


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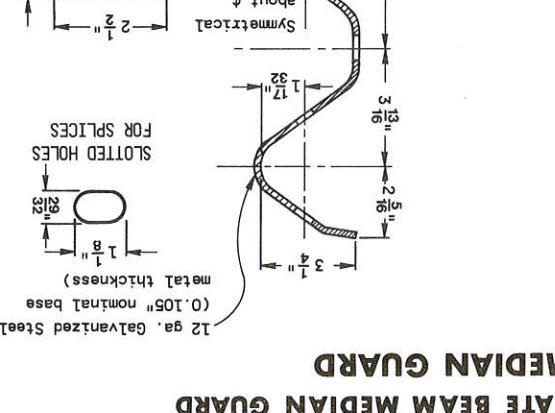


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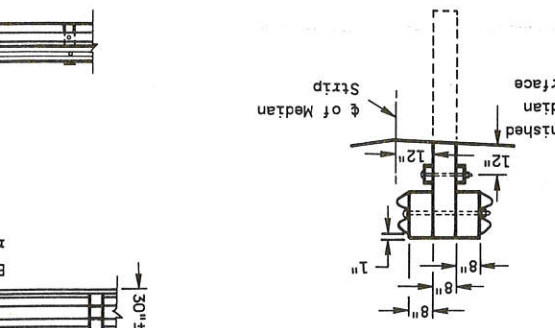
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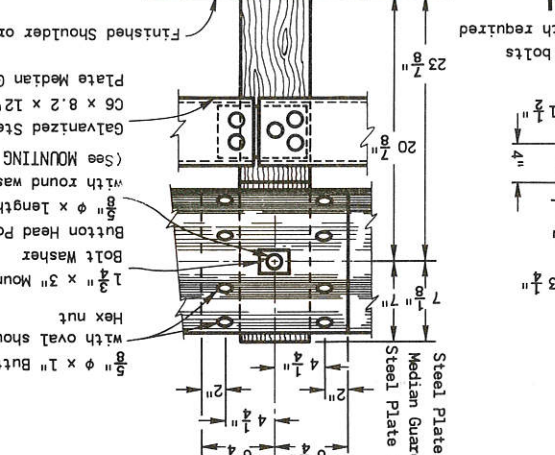


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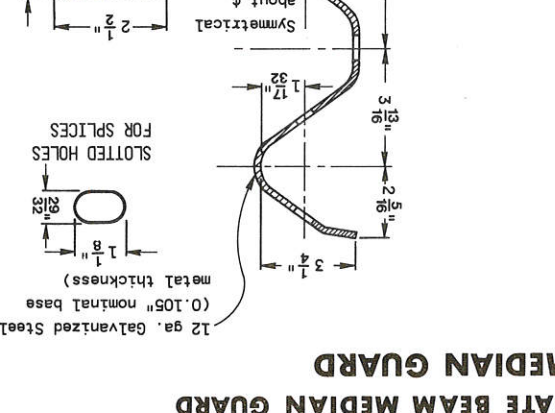


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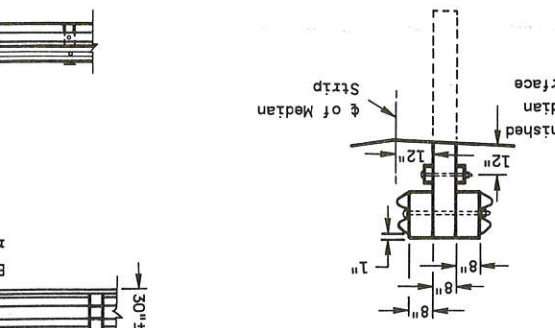
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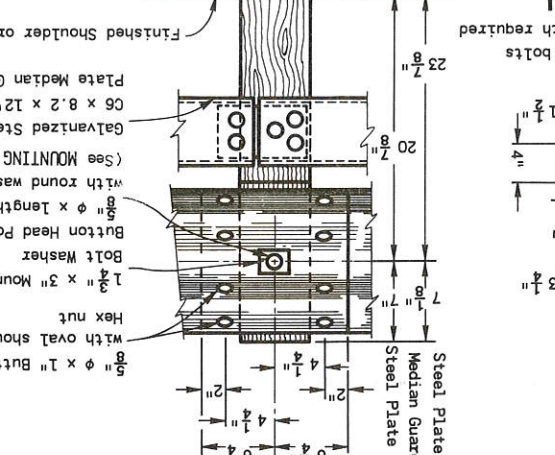


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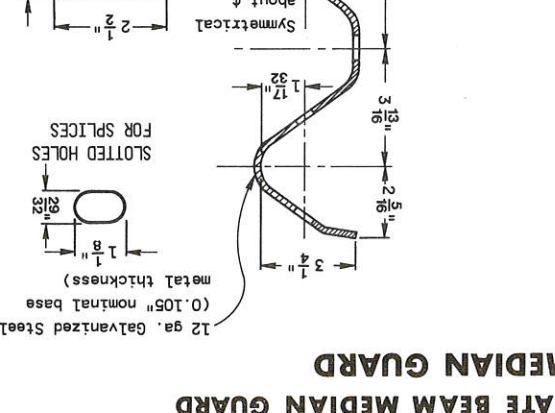


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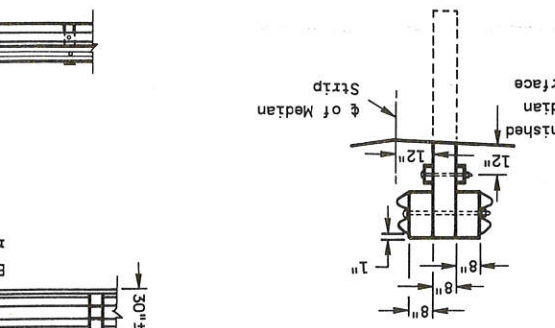
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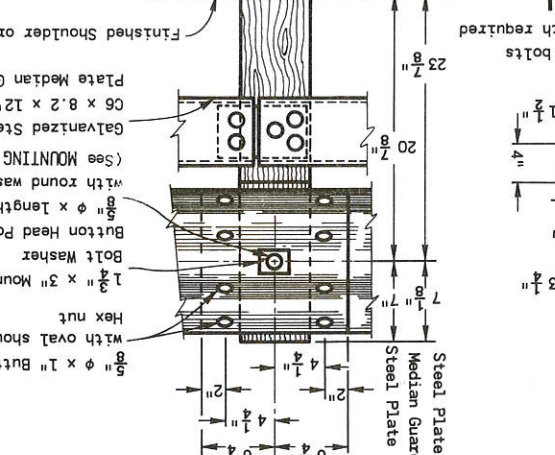


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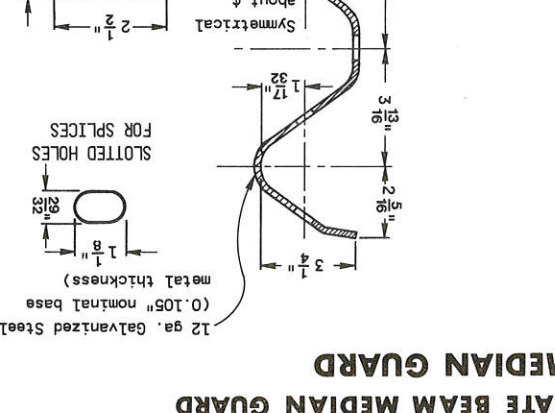


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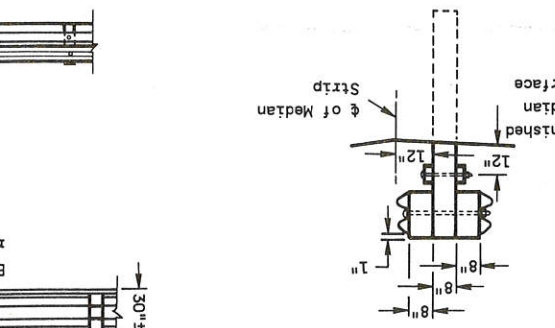
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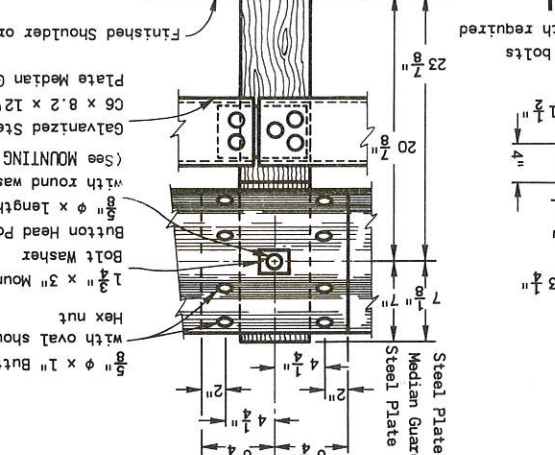


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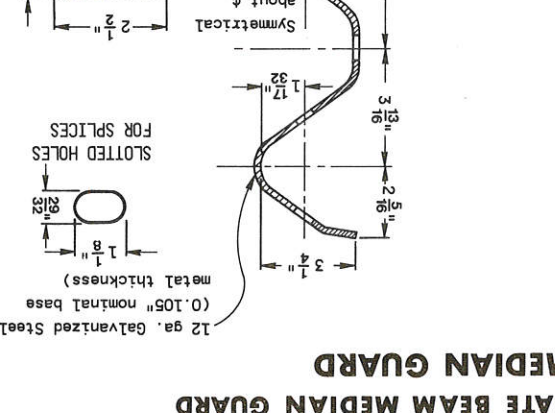


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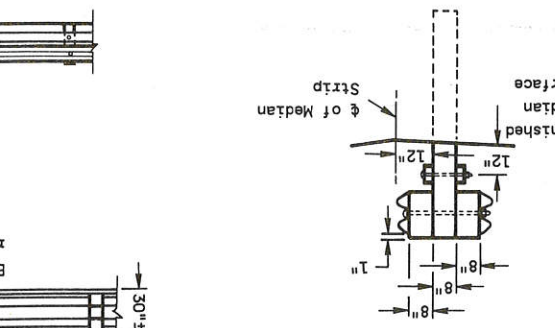
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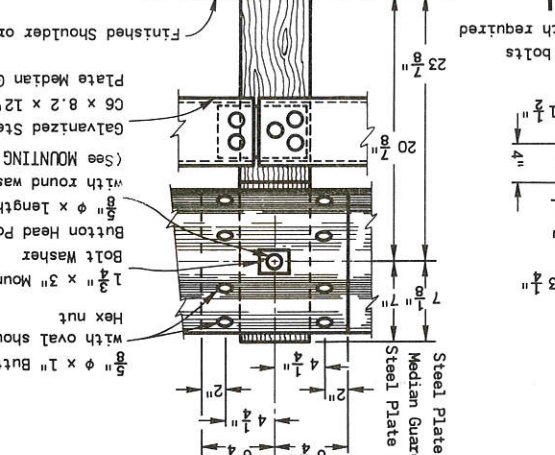


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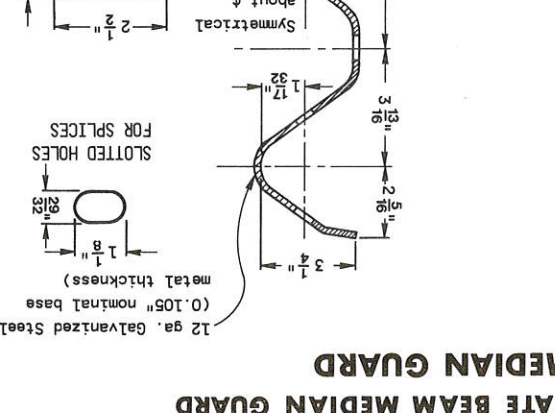


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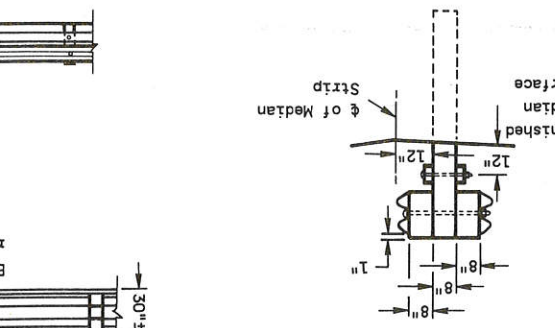
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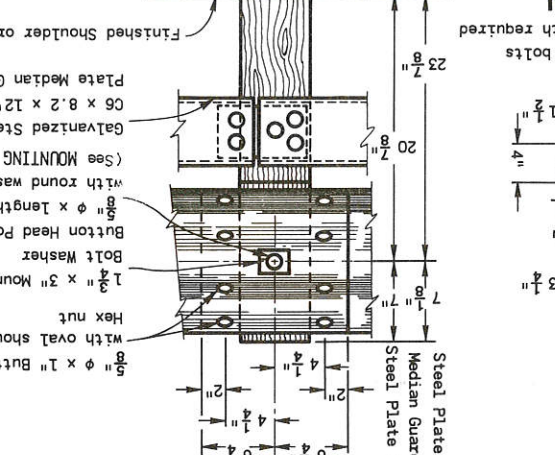


FRONT ELEVATION

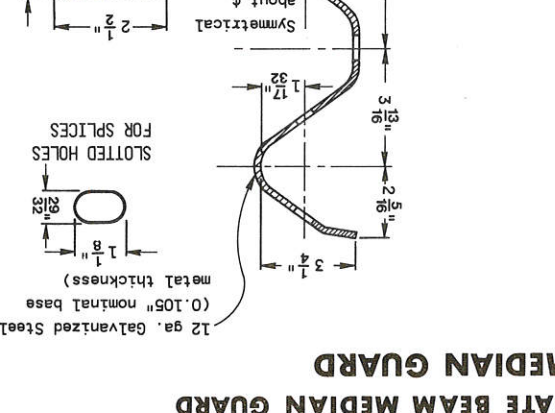


END ELEVATION

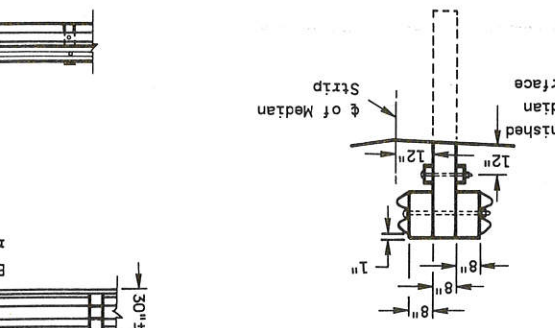
NOTE: Installation of 4 Bolt 4 Bolt Insert Assembly. Screws inserted to be part of Bridge Contract.



SECTION VIEW

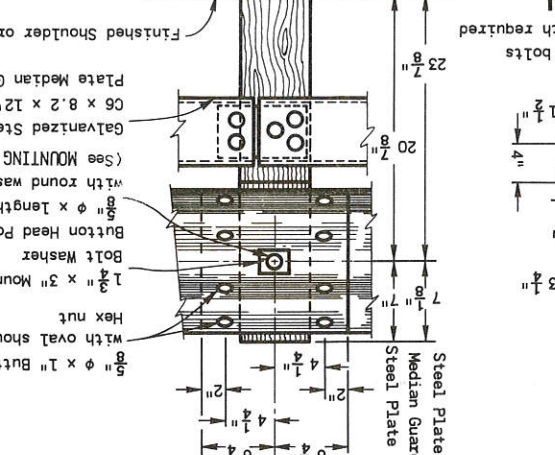


FRONT ELEVATION

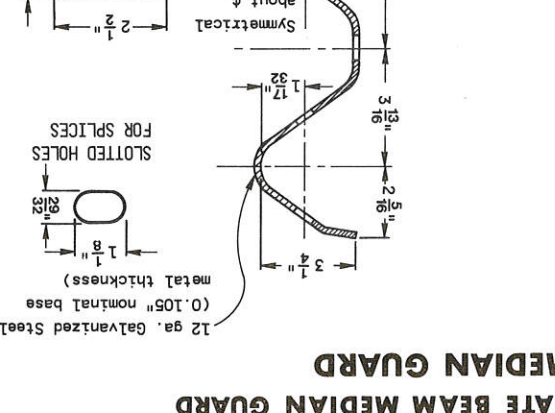


END ELEVATION

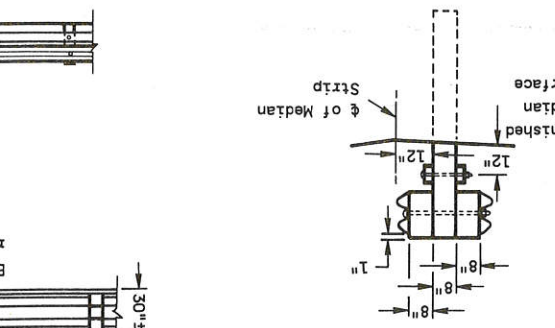
NOTE: Installation of 4 Bolt 4 Bolt Insert Assembly. Screws inserted to be part of Bridge Contract.



SECTION VIEW

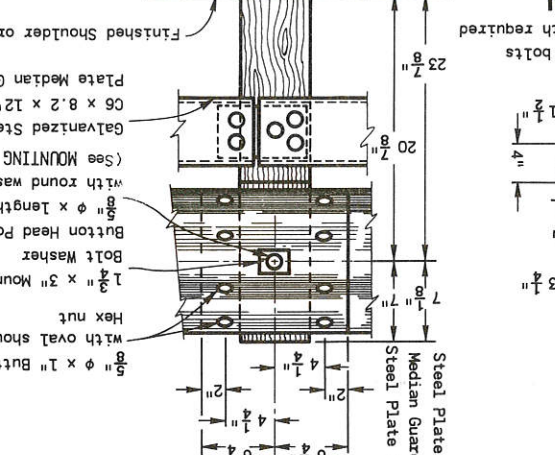


FRONT ELEVATION

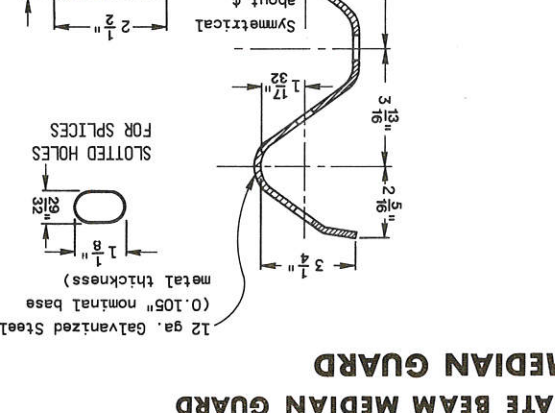


END ELEVATION

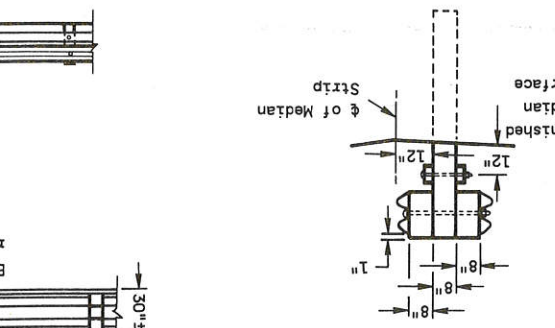
NOTE: Installation of 4 Bolt 4 Bolt Insert Assembly. Screws inserted to be part of Bridge Contract.



SECTION VIEW

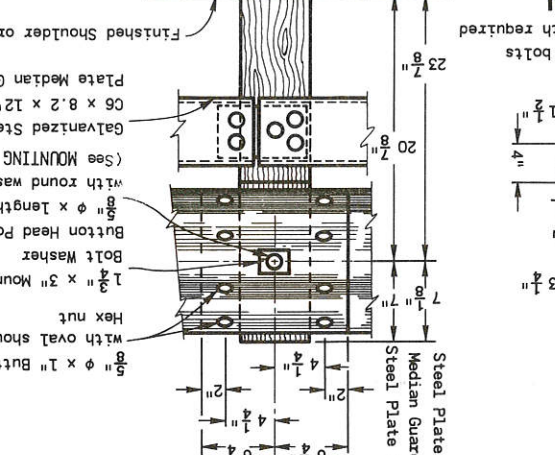


FRONT ELEVATION

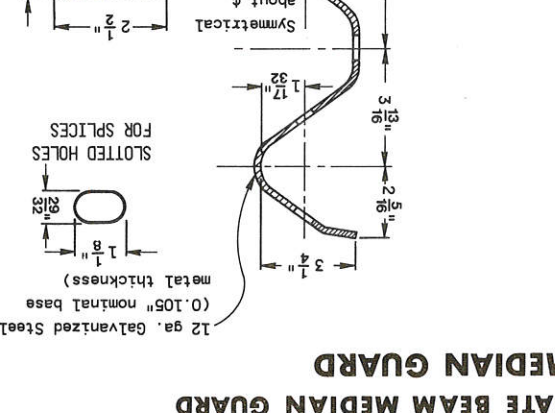


END ELEVATION

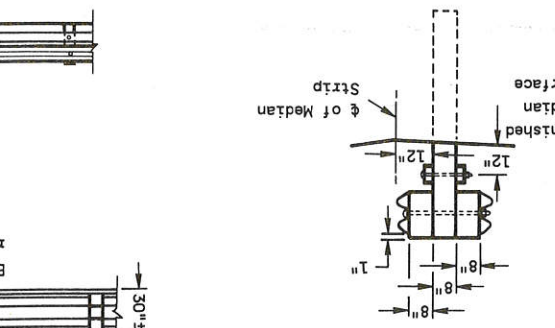
NOTE: Installation of 4 Bolt 4 Bolt Insert Assembly. Screws inserted to be part of Bridge Contract.



SECTION VIEW

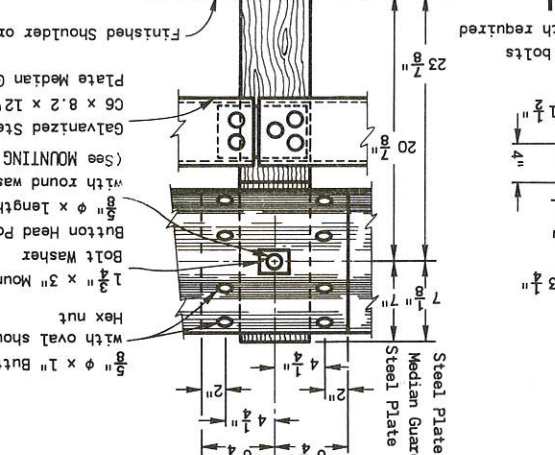


FRONT ELEVATION

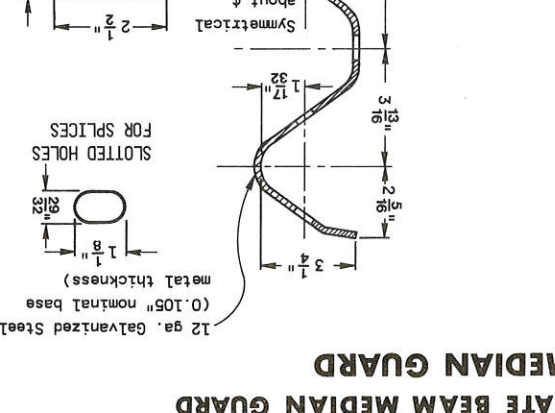


END ELEVATION

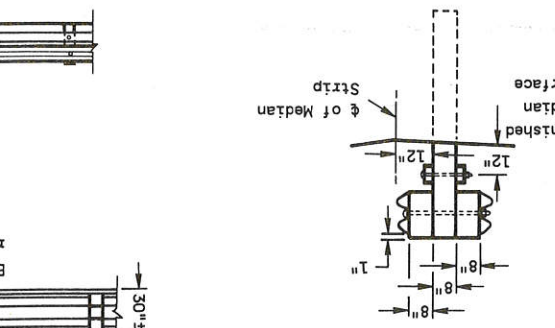
NOTE: Installation of 4 Bolt 4 Bolt Insert Assembly. Screws inserted to be part of Bridge Contract.



SECTION VIEW

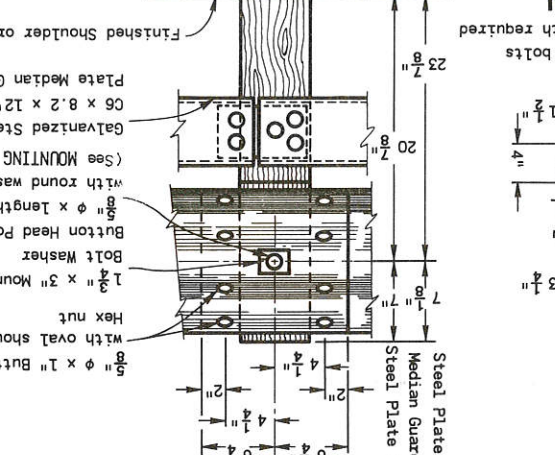


FRONT ELEVATION

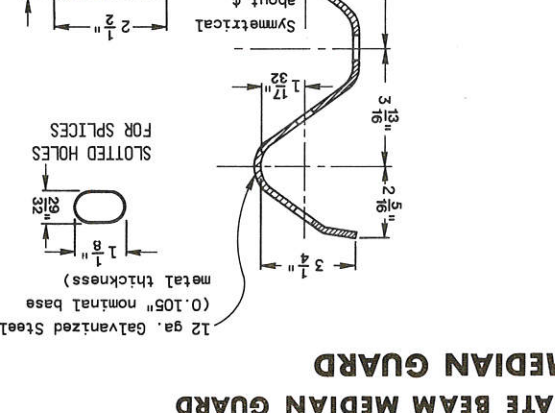


END ELEVATION

NOTE: Installation of 4 Bolt 4 Bolt Insert Assembly. Screws inserted to be part of Bridge Contract.



SECTION VIEW

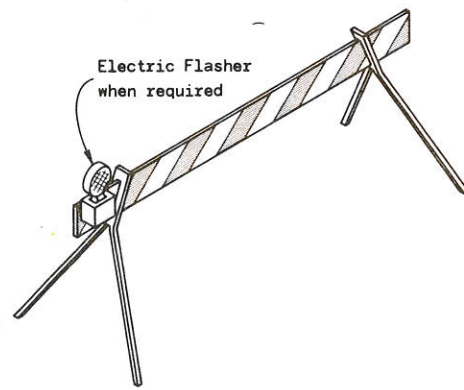


FRONT ELEVATION

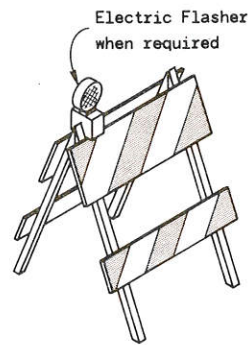
TABLE OF BARRICADE CHARACTERISTICS

BARRICADE TYPE	I	II	III
Height	3' Minimum		5' Minimum
*Rail Width	8" Minimum to 12" Maximum		
Rail Length	2' Minimum to variable Maximum		
** Stripe Width	6" at 45° Angle		
Stripe Colors	Reflectorized Orange & White		

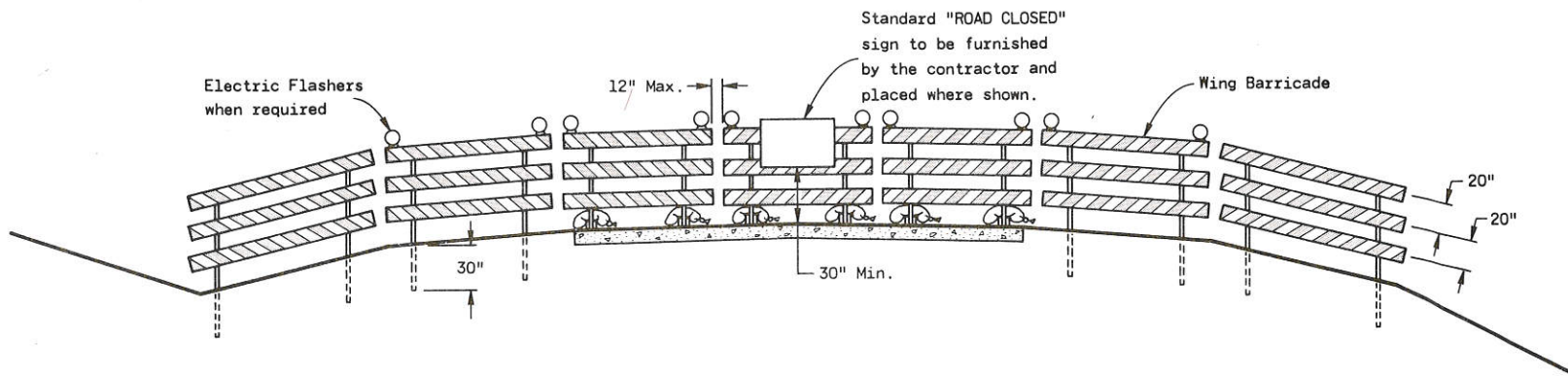
\* Nominal dimensions when barricade is constructed of lumber.  
 \*\* May be 4" for rail lengths less than 3'.



TYPICAL TYPE I BARRICADE

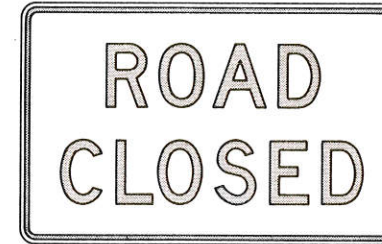


TYPICAL TYPE II BARRICADE



TYPICAL INSTALLATION SHOWING TYPE III BARRICADE

CONSTRUCTION BARRICADES



R11-2  
48" x 30"

Black Lettering on Reflective  
White Background  
Letter Series "D"  
Letter height 8"



W20-3  
48" x 48"

Black Lettering on Reflective  
Orange Background  
Letter Series "D"  
Letter height 7"

STANDARD SIGNS-TYPE II

GENERAL NOTES

The contractor shall furnish, erect and maintain Barricades and Signs. Details regarding location, spacing, dimensions, fabrication, material, sign lettering, lighting devices and color of Barricades and Signs shall conform to this drawing, the Wisconsin Manual on Uniform Traffic Control Devices, the Standard Specifications, Special Provisions and/or plans.

Type III Barricades and Signs shall be erected at the termini of projects and at other road or street locations where it is necessary to control or eliminate public access to the construction area.

Type I and II Barricades shall be used on projects when traffic is to be maintained through the construction area.

The actual field location of barricade installations and advance signs shall be as directed by the Engineer.

Each barricade shall have the name and telephone number of a person responsible for 24 hour emergency service printed in letters at least 3/4 inch in height.

CONSTRUCTION BARRICADES  
& STANDARD SIGNS

State of Wisconsin  
Department of Transportation  
Division of Highways

APPROVED  
10-1-76  
DATE

*D. J. Stank*  
CHIEF OF FACILITIES DEVELOPMENT

APPROVED  
10-1-76  
DATE

*W. J. Fisher*  
STATE HIGHWAY ENGINEER



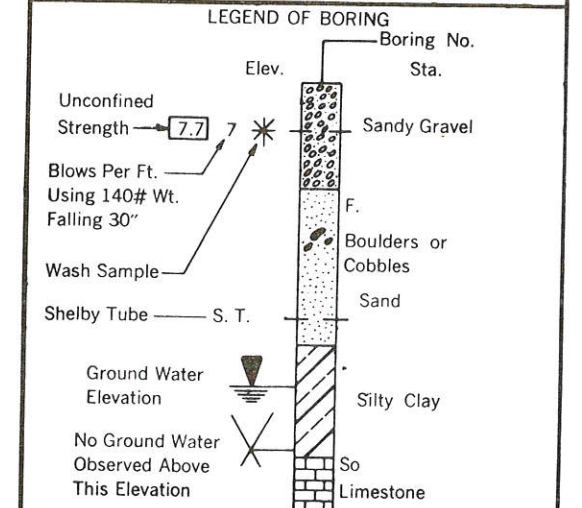
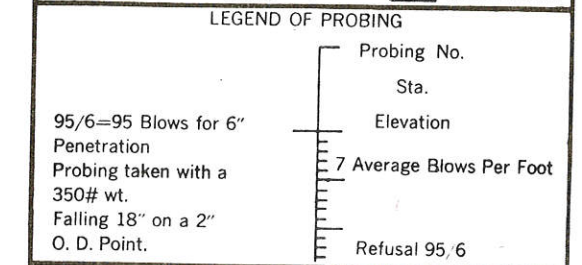


ABBREVIATIONS

F — Fine	M — Medium	C — Coarse
Ws — Weathered	So — Sound	

MATERIAL SYMBOLS

Topsoil	Silt	Sandstone
Sand	Peat	Limestone
Gravel	Clay	Igneous Rock

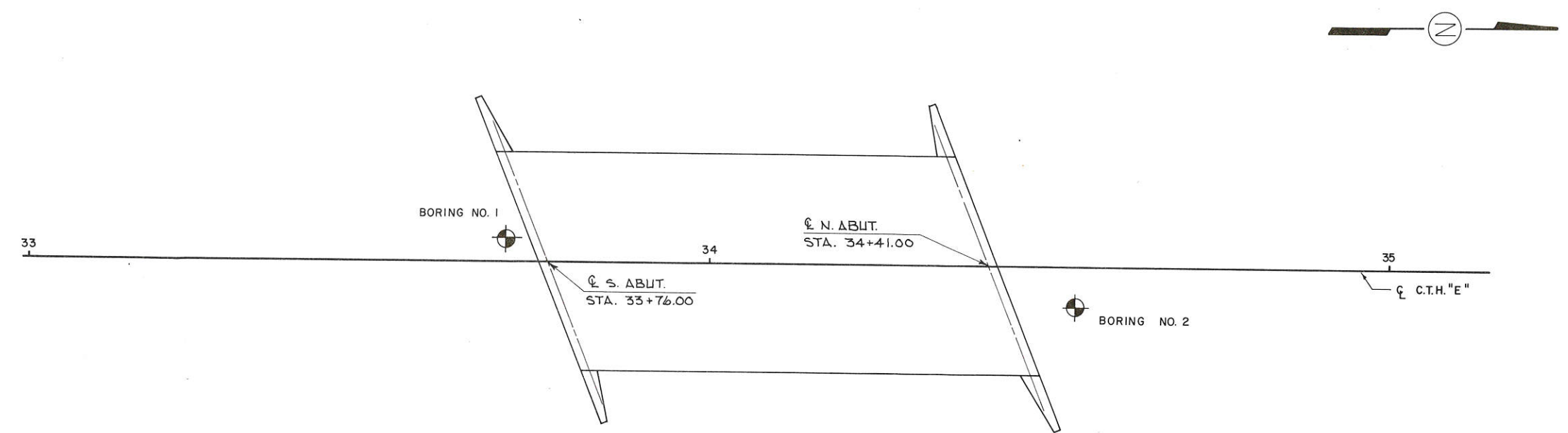


Unless otherwise specified, the blows per foot at the locations indicated are based on driving a 2" O. D. x 1.4" I. D. split spoon sampler with a 140# hammer having a free fall of 30". The blow count is taken in undisturbed soil immediately below a cased or open hole eliminating side friction on the drive pipe.

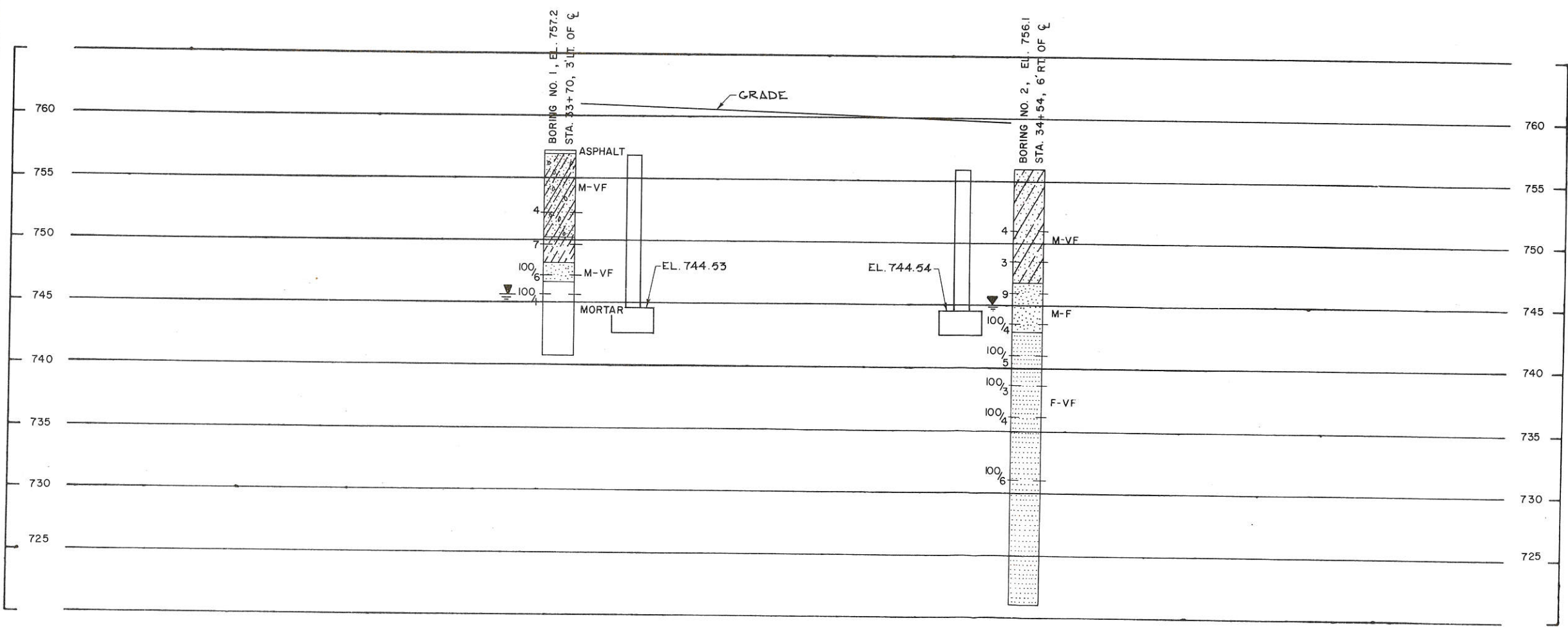
**SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION**

To obtain relative data concerning the character of material in and upon which the foundation might be built, borings and/or soundings were made at points approximately as indicated on this drawing. The data presented herein represents the findings of the subsurface explorations made. However, because the depths investigated are limited and the area of the borings and/or soundings is very small in relation to the entire area, the Division of Highways does not warrant conditions below the depths investigated or that the classification of material encountered in these investigations is necessarily typical of the entire site.

No.	Date.	Revision	By
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS			
<b>STRUCTURE B-32-78</b>			
Const. Spec.	1975	Drawn By	R. L.
Plans Checked		R.C.M.	
<b>SUBSURFACE EXPLORATION</b>			SHEET 2 OF 7
<b>X59385</b>			

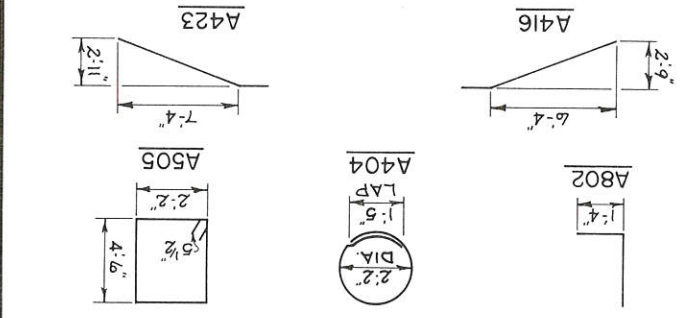


BORINGS TAKEN BY:  
OWEN AYRES & ASSOCIATES  
GEOTECHNICAL DIVISION

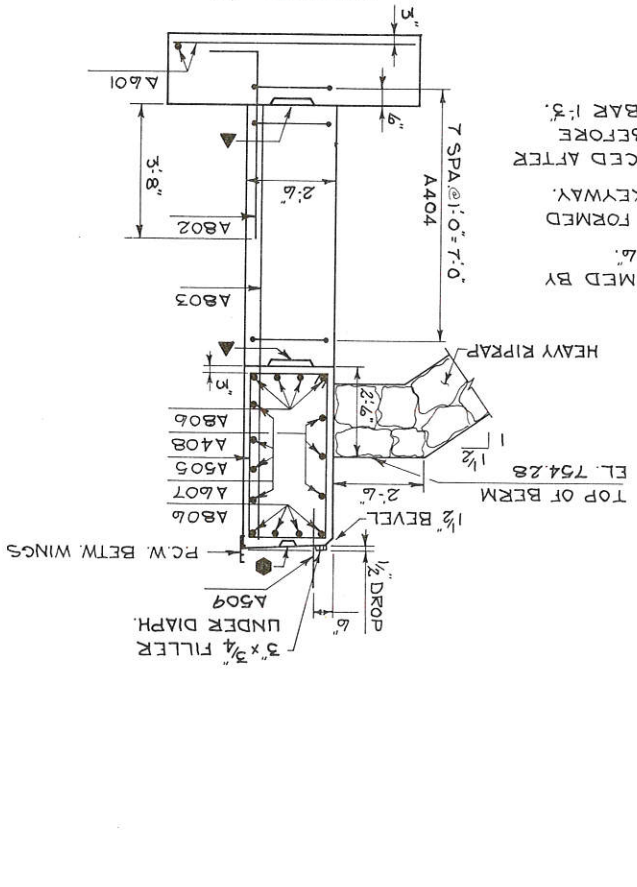
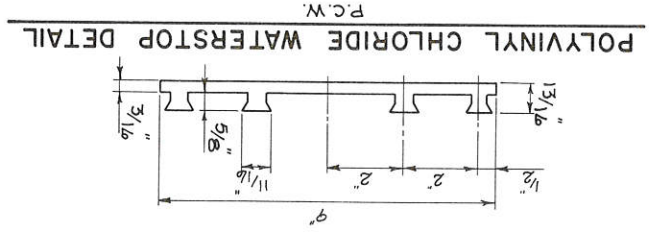


BAR NO.	NO. REQ'D.	LENGTH	BENT CUT DIAG.	LOCATION
A601	60	6'-8"	X	FOOTING
A802	27	6'-6"	X	DOWELS
A803	27	11'-7"	X	COLUMN VERT.
A404	24	8'-2"	X	FOOTING STR.
A505	26	14'-0"	X	BODY STR.
A806	8	34'-2"		HORIZ. TOP & BOT.
A607	4	34'-2"		B.F.
A408	3	34'-2"		F.F.
A509	16	2'-6"		DOWEL
A410	6	13'-9"	X	WING 1 VERT. F.F. & B.F. SET 1
A511	5	9'-0"		" HORIZ "
A612	5	10'-1"		B.F.
A613	2	11'-7"		F.F. & B.F.
A414	2	7'-2"		" "
A415	2	4'-7"		" "
A416	2	7'-9"	X	" DIAG "
A417	7	13'-11"	X	2 VERT. F.F. & B.F. SET 2
A518	5	11'-0"		" HORIZ "
A619	5	10'-1"		B.F.
A620	2	12'-9"		F.F. & B.F.
A421	2	8'-2"		" "
A422	2	4'-11"		" "
A423	2	8'-9"	X	" DIAG "

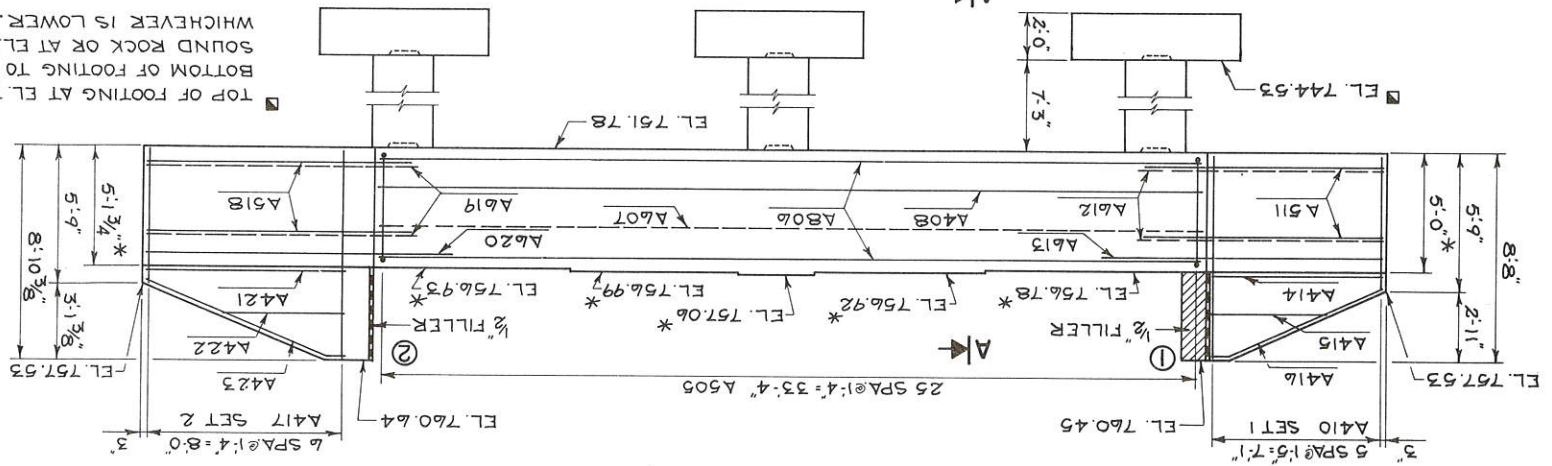
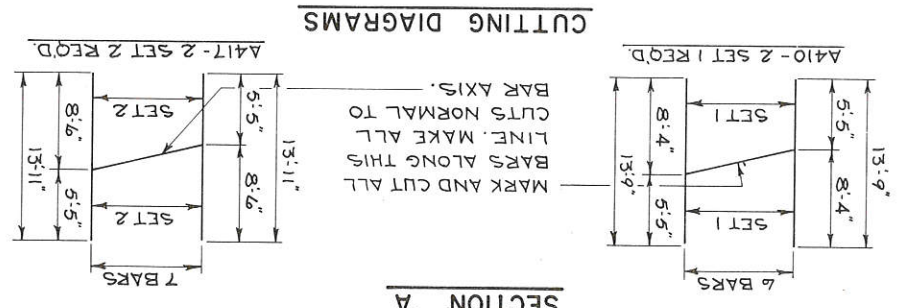
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.  
 F.F. DENOTES FRONT FACE  
 B.F. DENOTES BACK FACE



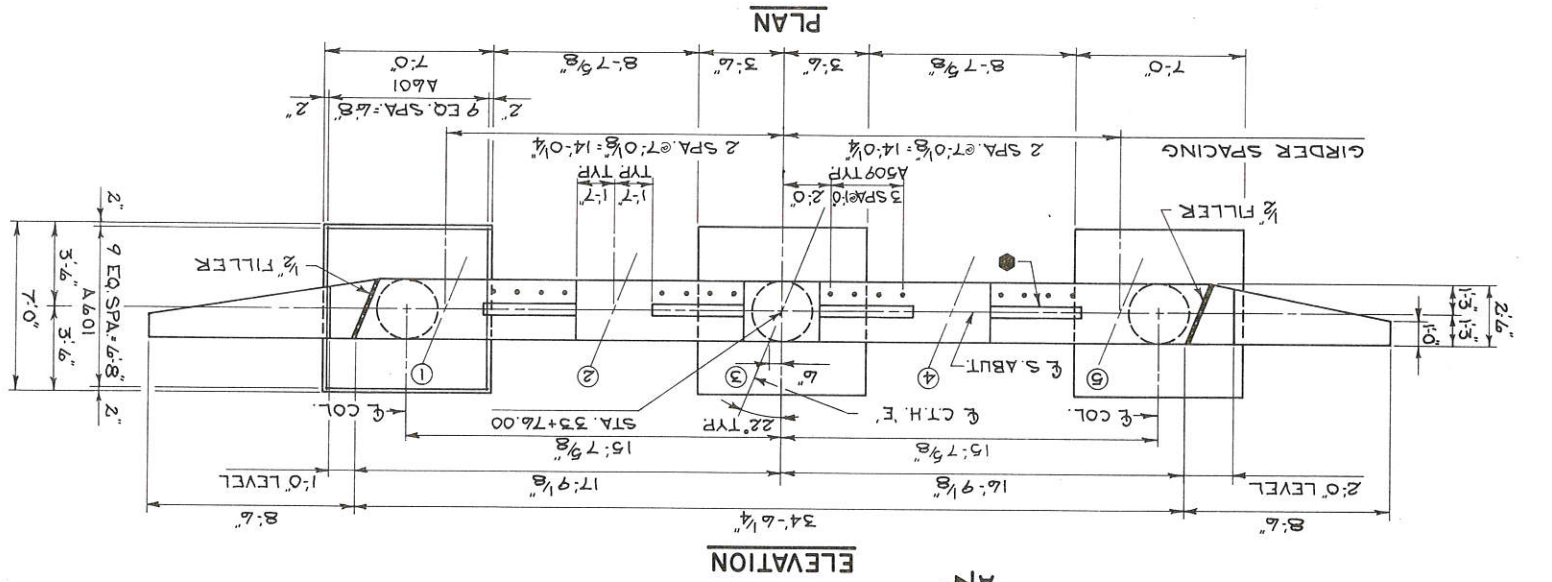
OWEN AYRES & ASSOCIATES  
 ARCHITECTS ENGINEERS  
 100 CLAIRIE WISCONSIN  
 STATE OF WISCONSIN  
 DIVISION OF HIGHWAYS  
**STRUCTURE B-32-78**  
 1975  
 SOUTH ABUTMENT  
 X59386  
 SHEET 3 OF 7



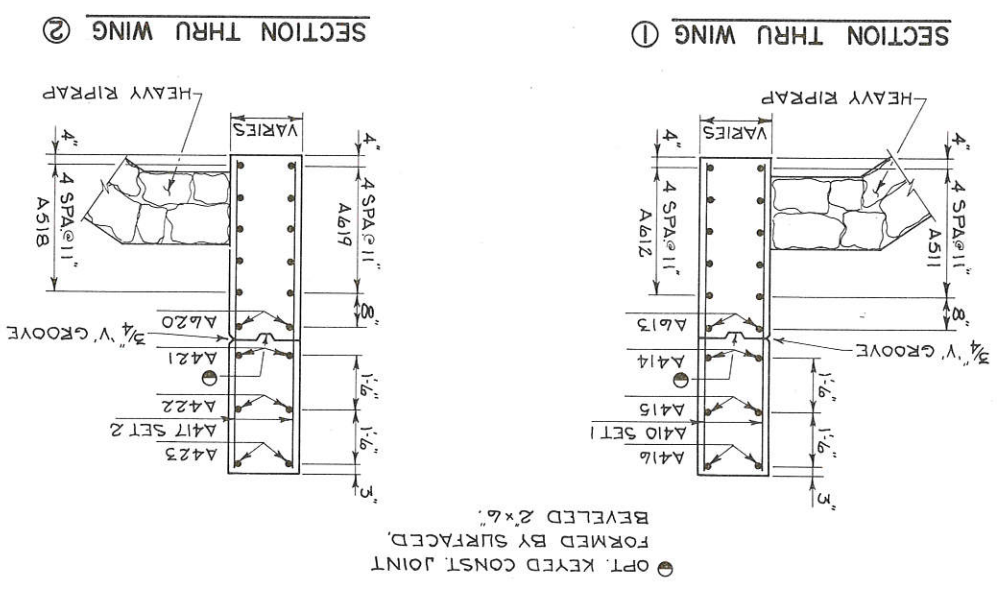
KEYED CONST. JOINT FORMED BY SURFACED BEVELED 2"x6".  
 1-3" x 1-3" x 2" CONST. JOINT FORMED BY SURFACED, BEVELED KEYWAY.  
 A509 BARS MAY BE PLACED AFTER ABUT. IS POURED BUT BEFORE CONC. HAS SET. IMBED BAR 1-3".



TOP OF FOOTING AT EL. 744.53  
 BOTTOM OF FOOTING TO BE IN SOUND ROCK OR AT EL. 742.53  
 WHICHEVER IS LOWER.



\*ELEVATIONS AND DIMENSIONS TAKEN AT F OF ABUTMENT.



OPT. KEYED CONST. JOINT FORMED BY SURFACED, BEVELED 2"x6".

NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.)

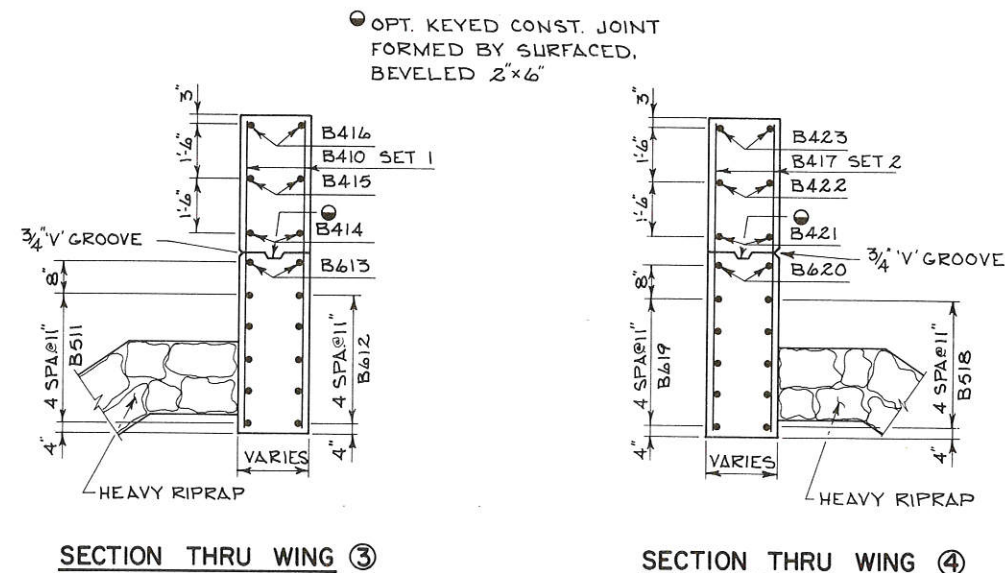
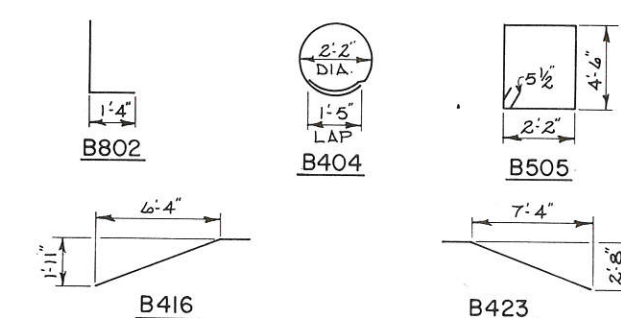
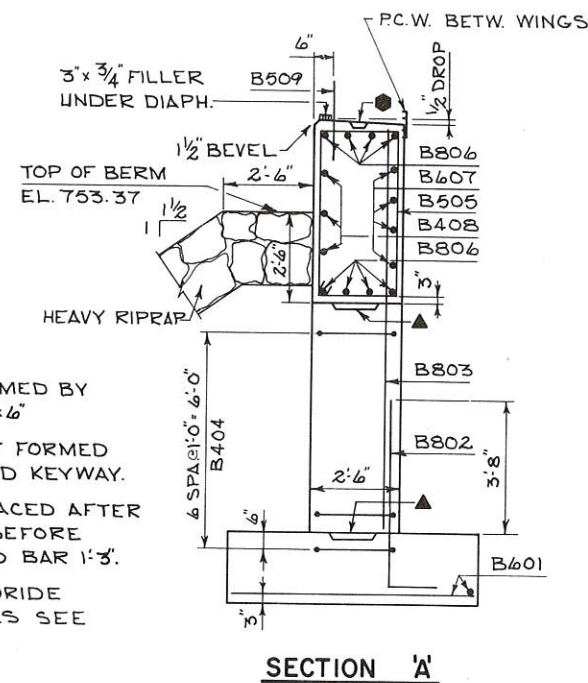
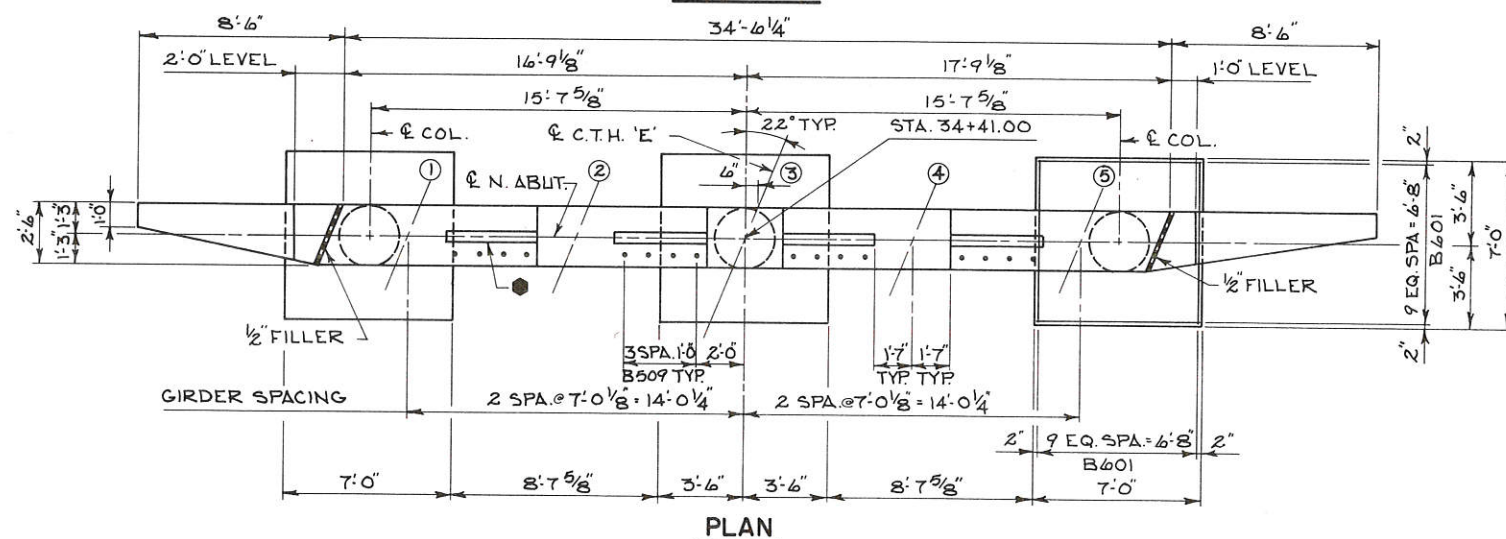
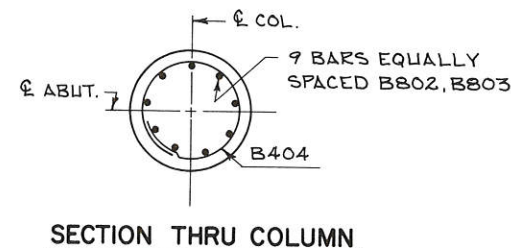
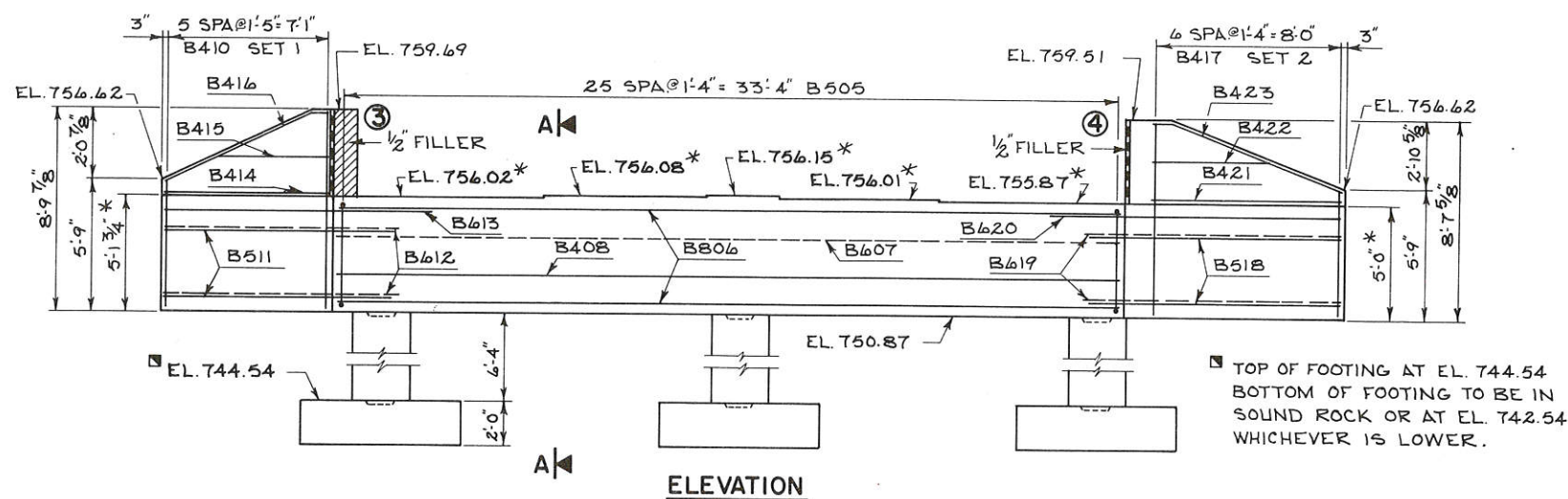
\*ELEVATIONS AND DIMENSIONS TAKEN AT C. OF ABUTMENT.

STATE PROJECT NUMBER

7057-1-71

SHEET NO.

7.3

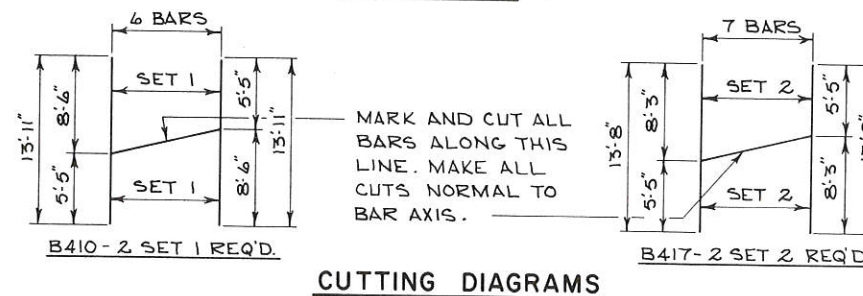


● KEYED CONST. JOINT FORMED BY SURFACED BEVELED 2"x6"

▲ 1'-3" x 1'-3" x 2" CONST. JOINT FORMED BY SURFACED, BEVELED KEYWAY.

B509 BARS MAY BE PLACED AFTER ABUT. IS POURED BUT BEFORE CONC. HAS SET. IMBED BAR 1'-3".

P.C.W. - POLYVINYL CHLORIDE WATERSTOP FOR DETAILS SEE SHEET 3.



**BILL OF BARS**

BAR NO	NO. REQ'D	LENGTH	BENT CUT DIAG	3,870 #	LOCATION
B601	60	6'-8"			FOOTING
B802	27	6'-5"	X		" DOWELS
B803	27	10'-8"			COLUMN VERT.
B404	21	8'-2"	X		" # FOOTING STIR.
B505	26	14'-0"	X		BODY STIR.
B806	8	34'-2"			" HORIZ. TOP & BOT.
B607	4	34'-2"			" " B.F.
B408	3	34'-2"			" " F.F.
B509	16	2'-6"			" DOWEL
B410	6	13'-11"	X		WING 3 VERT. F.F. & B.F. SET 1
B511	5	9'-0"			" " HORIZ. "
B612	5	10'-1"			" " " B.F.
B613	2	11'-7"			" " " F.F. & B.F.
B414	2	7'-2"			" " " " " "
B415	2	4'-7"			" " " " " "
B416	2	7'-5"	X		" " DIAG. " " "
B417	7	13'-8"	X		" " 4 VERT. F.F. & B.F. SET 2
B518	5	10'-0"			" " HORIZ. "
B619	5	10'-1"			" " " B.F.
B620	2	12'-9"			" " " F.F. & B.F.
B421	2	8'-2"			" " " " " "
B422	2	4'-11"			" " " " " "
B423	2	8'-7"	X		" " DIAG. " " "

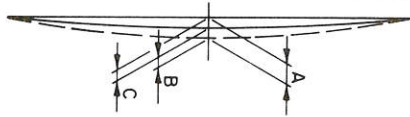
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.  
 F.F. DENOTES FRONT FACE  
 B.F. DENOTES BACK FACE

No.	Date	Revision	By
PLANS PREPARED BY <b>OWEN AYRES &amp; ASSOCIATES</b> ARCHITECTS ENGINEERS EAU CLAIRE, WISCONSIN			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS			
<b>STRUCTURE B-32-78</b>			
Const. Spec. 1975	Drawn By D.V.H.	Plans Checked R.C.M.	
<b>NORTH ABUTMENT</b>			SHEET 4 OF 7 <b>X59387</b>

CAMBER		SPAN	SPAN
* A = PRESTRESS CAMBER	1 1/8"		
* B = DEAD LOAD DEFLECTION	1 3/8"		
* C = RESIDUAL CAMBER	1"		
* A = PRESTRESS CAMBER	1 1/8"		
* B = DEAD LOAD DEFLECTION	1 3/8"		
* C = RESIDUAL CAMBER	1"		

DEFLECTION DATA

\* PRESTRESS CAMBER AND DEAD LOAD DEFLECTION DATA SHOWN ARE THEORETICAL AND MAY VARY WITH CONCRETE STRENGTH, VARIABLE PRESTRESSING CONDITIONS AND PRESTRESS LOSSES



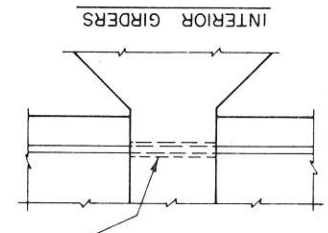
MINIMUM CYLINDER STRENGTH OF CONCRETE AT TIME OF TRANSFER OF PRESTRESS FORCE f<sub>ci</sub> (psi.)

GIRDER TYPE	SPAN	SPAN	SPAN
DRAPED PATTERN	5039	4800	
SPREAD PATTERN			

GENERAL NOTES

TOP OF GIRDERS TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY FOR BONDING TO SLAB. THE GIRDER MANUFACTURER SHALL PROVIDE A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS. ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN. PRESTRESSING STRANDS SHALL HAVE AN ULTIMATE STRENGTH OF 270,000 p.s.i. ALL NON PRESTRESSED BAR STEEL REINFORCEMENT SHALL BE GRADE 60.

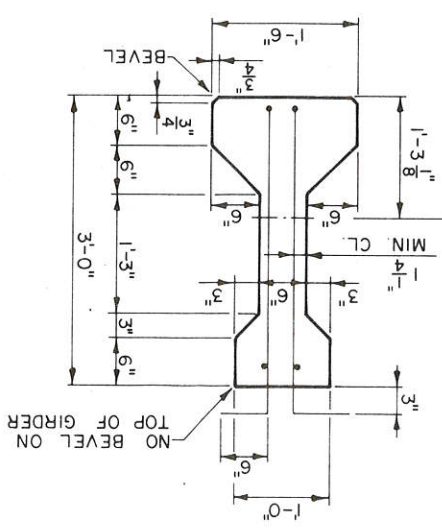
2" ID SLEEVE INSERTS AT 4" CENTERS PLACED SYMMETRICAL ABOUT  $\bar{C}$  OF DIAPHRAGMS IN SPANS.



NO. 4 TIE BARS (2-6" LG.) FASTEN TO STIRRUPS

3/8"  $\phi$  THREADED ROD

SECTION THRU GIRDER

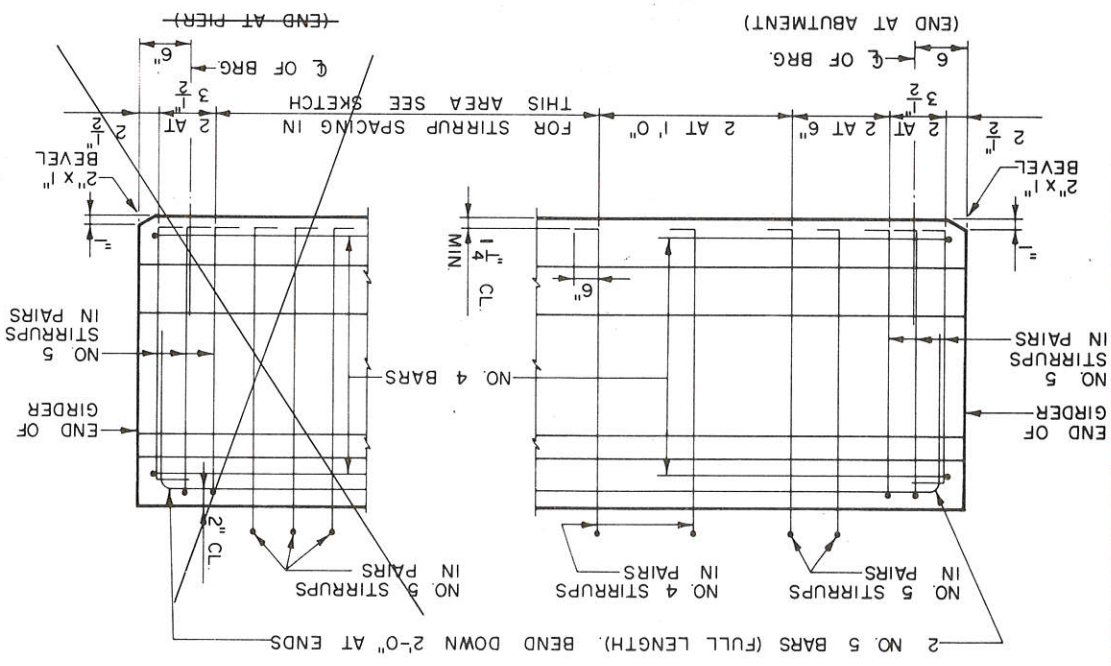
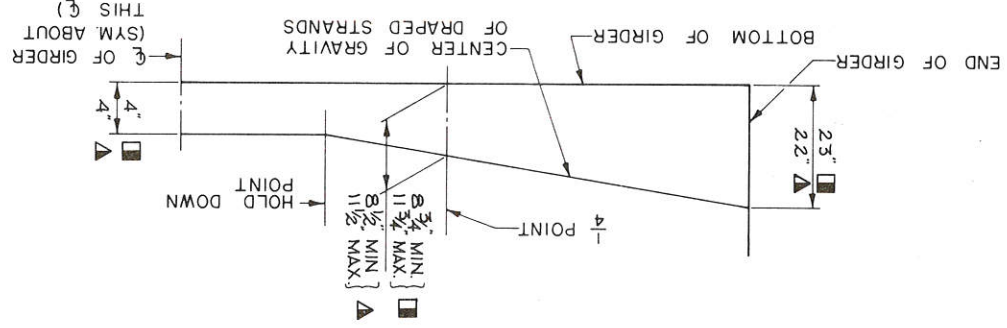


INSERT DETAILS

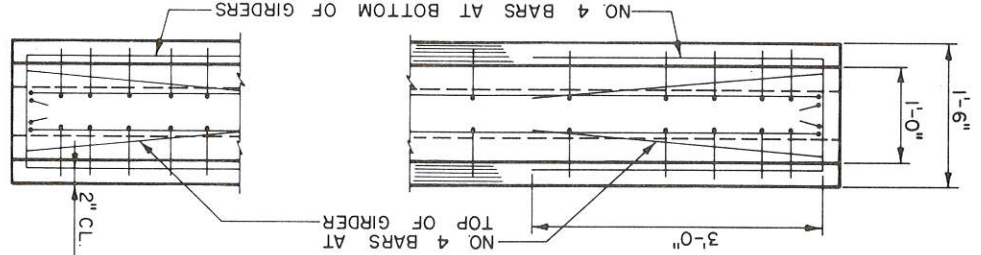
APPROVED EQUAL INSERT WELD TO THE BARS. 2 INSERTS AT 4" CENTERS PLACED SYMMETRICAL ABOUT  $\bar{C}$  OF DIAPHRAGMS IN SPANS.

EXTERIOR GIRDERS

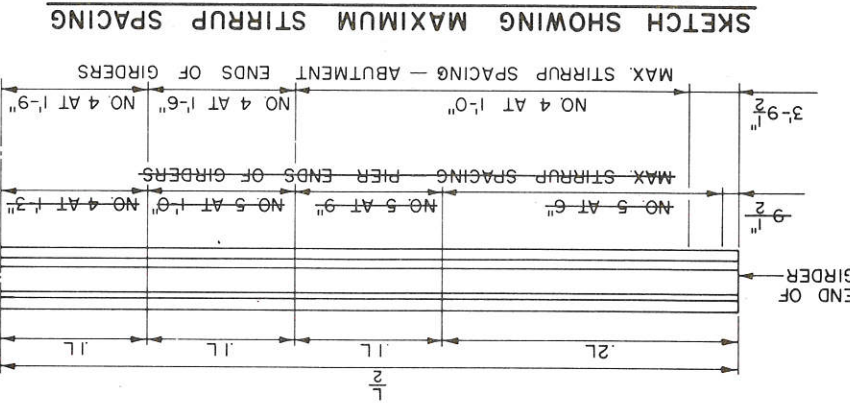
DRAPED STRAND PROFILE



SIDE VIEW OF GIRDER



TOP VIEW OF GIRDER

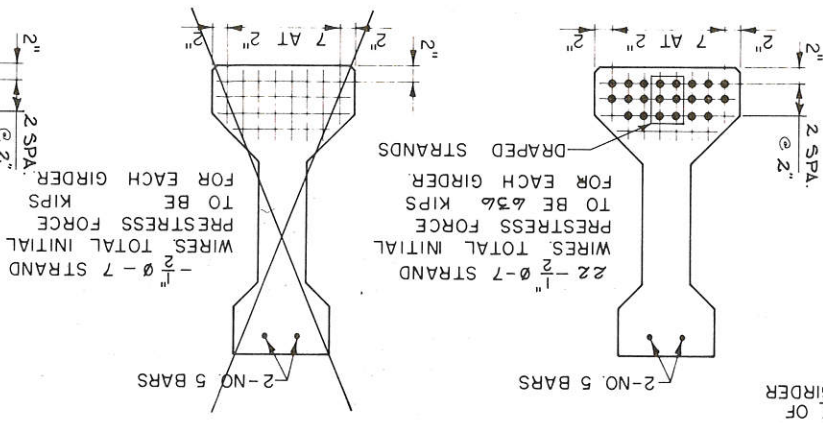


SKETCH SHOWING MAXIMUM STIRRUP SPACING

ALL STIRRUPS TO BE IN PAIRS AS SHOWN ABOVE. THE LOCATION OF STIRRUPS SHALL BE SUBMITTED FOR APPROVAL ON THE SHOP DRAWINGS.

THE OVERALL LENGTH OF GIRDERS "L" IS 67'-0"

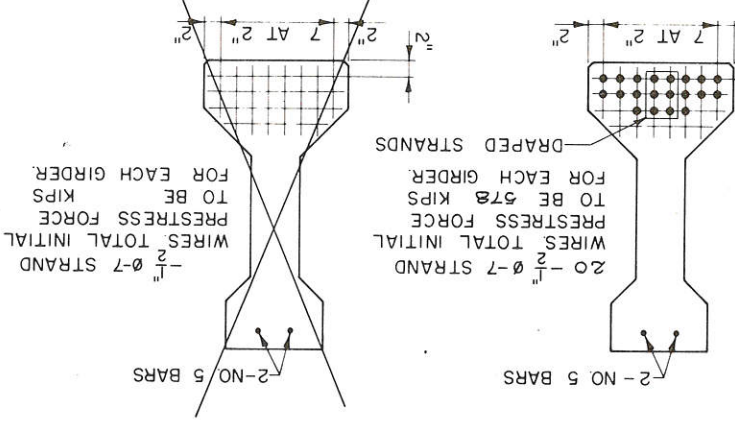
SECTION THRU GIRDER TAKEN AT  $\bar{C}$  OF SPAN (STRESS RELIEVED STRAND PATTERN)



22 - 2"  $\phi$  - 7 STRAND WIRES TOTAL INITIAL PRESTRESS FORCE TO BE 636 KIPS FOR EACH GIRDER. DRAPED STRANDS

20 - 2"  $\phi$  - 7 STRAND WIRES TOTAL INITIAL PRESTRESS FORCE TO BE 578 KIPS FOR EACH GIRDER. DRAPED STRANDS

SECTION THRU GIRDER TAKEN AT  $\bar{C}$  OF SPAN (LOW RELAXATION STRAND PATTERN)



20 - 2"  $\phi$  - 7 STRAND WIRES TOTAL INITIAL PRESTRESS FORCE TO BE 578 KIPS FOR EACH GIRDER. DRAPED STRANDS

18 - 2"  $\phi$  - 7 STRAND WIRES TOTAL INITIAL PRESTRESS FORCE TO BE 510 KIPS FOR EACH GIRDER. DRAPED STRANDS

OWEN AYRES & ASSOCIATES ARCHITECTS ENGINEERS EAU CLAIRE, WISCONSIN

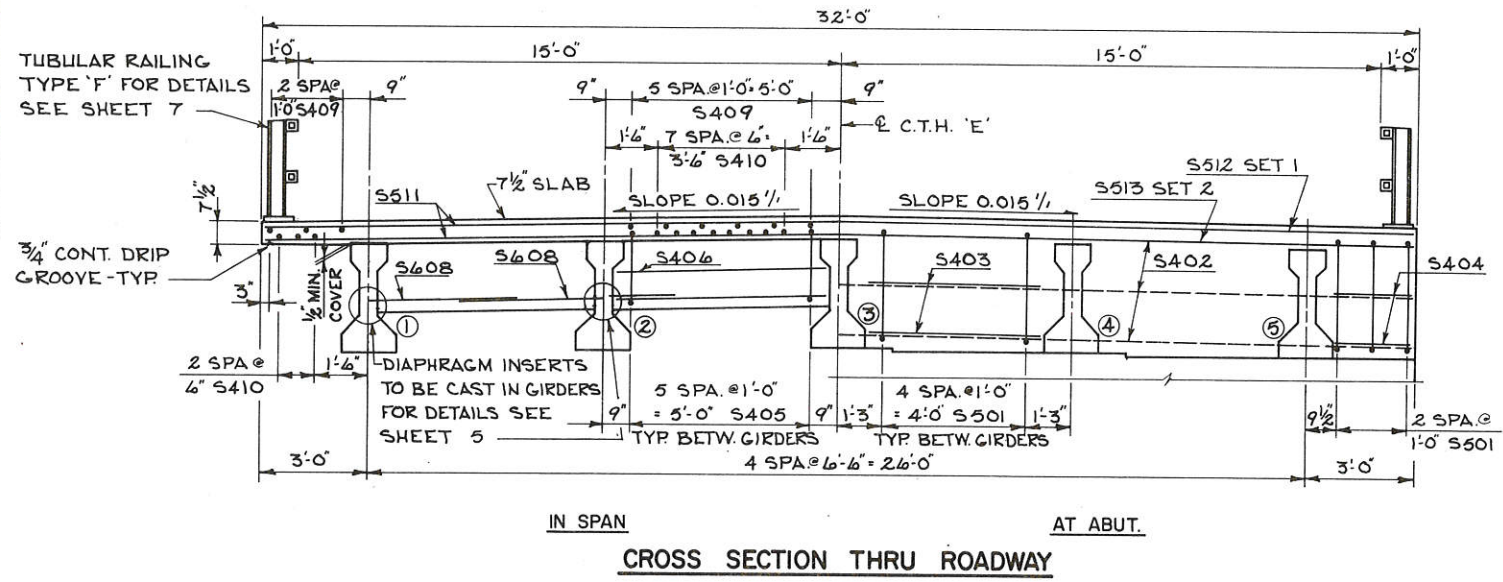
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

STRUCTURE B-32-78

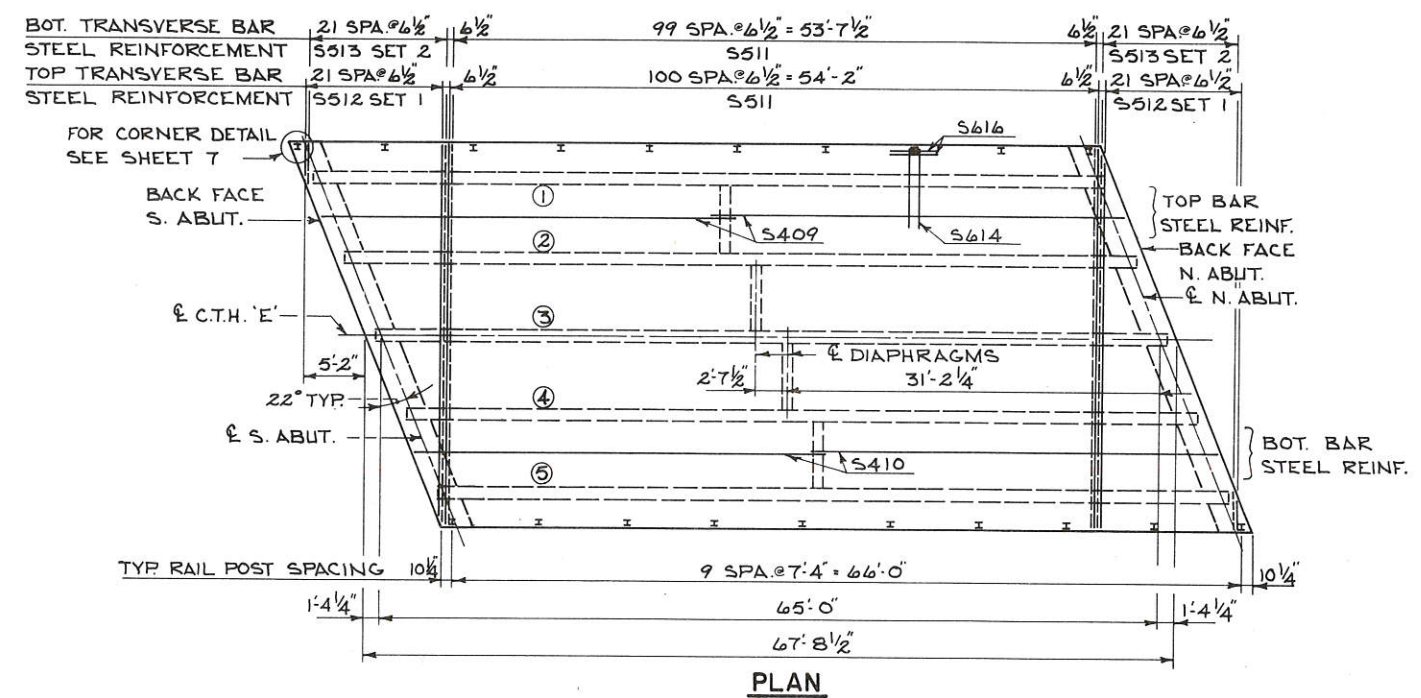
CONST. 1975  
DRAWN D.V.H.  
CHECKED R.C.M.

36" PRESTRESSED GIRDER DETAILS X59388

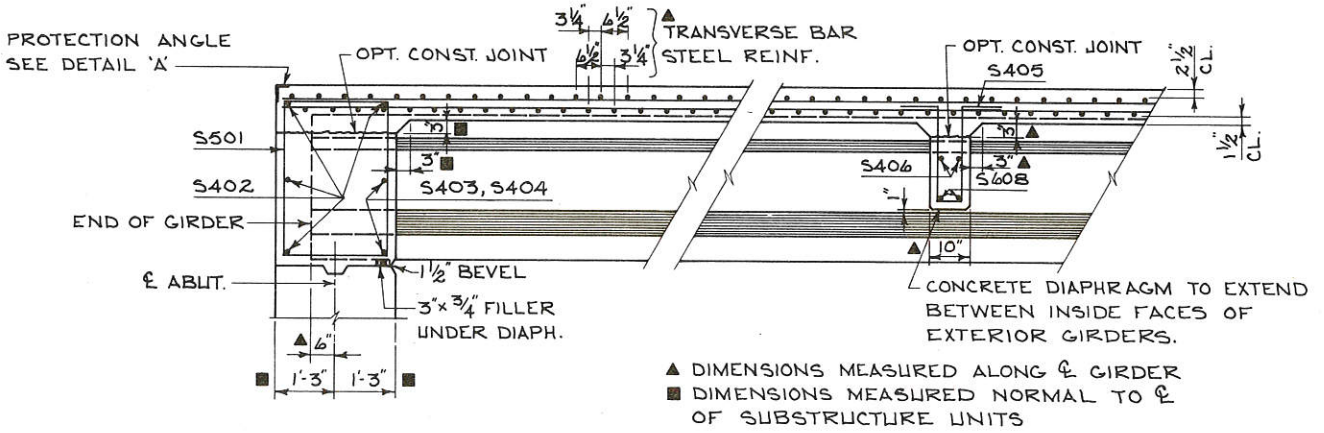
SHEET 5 OF 7



CROSS SECTION THRU ROADWAY



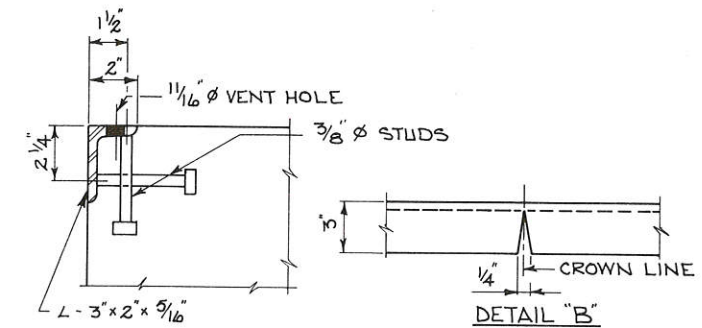
PLAN



PART LONGITUDINAL SECTION

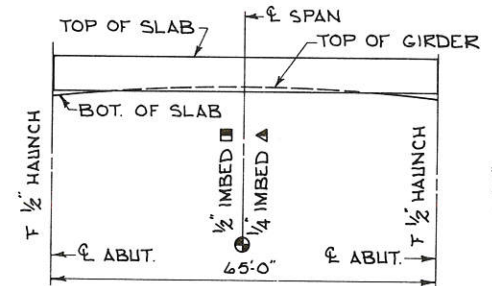
BOTTOM TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS ON OR ADJACENT TO EACH GIRDER AND BY INDIVIDUAL BAR CHAIRS AT 3'-0" CENTERS APPROXIMATELY MIDWAY BETWEEN GIRDERS.

TOP LONGITUDINAL BAR STEEL SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

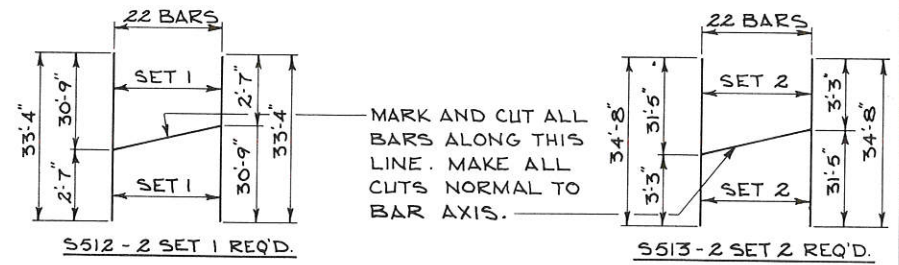


AT ENDS OF SLAB, PROVIDE L-3"x2"x5/16" PROVIDE 1 1/16" Ø VENT HOLES IN 2" LEG AT 3'-0" CENTERS. ATTACH ANGLE TO CONCRETE WITH 3/8" Ø STUDS X 4" LONG AT 6" ALTERNATE CENTERS. FIELD CUT 3" LEG OF ANGLE AS REQ'D. SEE DETAIL "B". ANGLE AND STUDS TO BE PAID FOR AT THE UNIT PRICE BID FOR "STRUCTURAL CARBON STEEL". ANGLE SHALL NOT BE PAINTED

DETAIL "A"

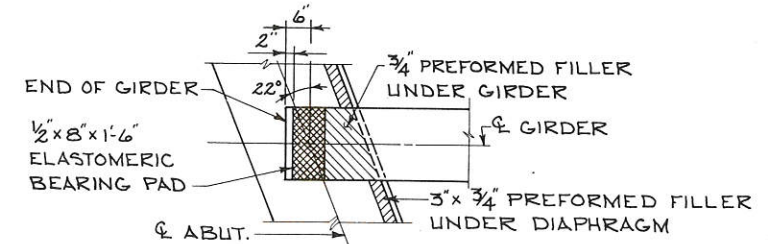


SLAB FORMING DIAGRAM



CUTTING DIAGRAMS

- TO COMPENSATE FOR VARIATIONS IN PRESTRESS CAMBER AND OTHER MINOR CONSTRUCTION DISCREPANCIES THE IMBEDMENT OF THE GIRDER INTO SLAB MAY BE VARIED WITH A MAXIMUM OF 1 1/2" ALLOWABLE IMBEDMENT AND THE SLAB HELD TO PLAN THICKNESS.
- IF VARIATIONS IN PRESTRESS CAMBER AND OTHER CONSTRUCTION DISCREPANCIES ARE OF SUCH A MAGNITUDE THAT THE MAXIMUM ALLOWABLE IMBEDMENT AS NOTED ABOVE WILL BE EXCEEDED THESE DIMENSIONS SHALL BE REVISED. THE 1 1/2" IMBEDMENT AND THE PLAN SLAB THICKNESS SHALL BE HELD WHILE THE GRADE LINE WILL BE REVISED.



BEARING PLAN

BILL OF BARS

BAR NO.	NO. REQ'D.	LENGTH	BENT	CUT DIAG.	13,060 #	LOCATION
S501	52	11'-4"	X			DIAPH. @ ABUT. - STIR.
S402	8	34'-2"				" " " " " " " "
S403	16	4'-8"				" " " " " " " " BETW. GIRDERS
S404	8	2'-1"				" " " " " " " " EXT. " "
S405	24	5'-10"	X			" " " " " " " " IN SPAN. STIR.
S406	8	5'-8"				" " " " " " " " " " " "
* S608	16	4'-7"				" " " " " " " " " " " "
S409	60	34'-3"				SLAB LONG. TOP
S410	76	34'-3"				" " " " " " " " BOT.
S511	201	31'-8"				" " " " " " " " TRANS. TOP & BOT.
S512	22	33'-4"	X			" " " " " " " " SET 1
S513	22	34'-8"	X			" " " " " " " " BOT. SET 2
S614	16	14'-0"	X			" " @ RAIL POST
S615	8	6'-8"	X			" " " " " " " " " " " "
S616	40	4'-0"				" " " " " " " " " " " "

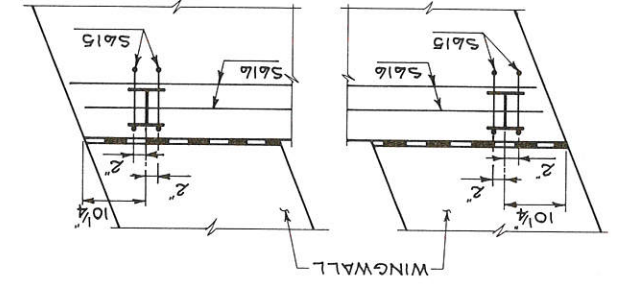
BENDING DIMENSIONS ARE OUT TO OUT OF BARS. \* PLAIN BAR THREAD ONE END 3"

No.	Date	Revision	By
PLANS PREPARED BY <b>OWEN AYRES &amp; ASSOCIATES</b> ARCHITECTS ENGINEERS EAU CLAIRE, WISCONSIN			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS			
<b>STRUCTURE B-32-78</b>			
Drawn By	1975	D.V.H.	Plans Checked R.C.M.
SUPERSTRUCTURE			SHEET 6 OF 7 <b>X59389</b>

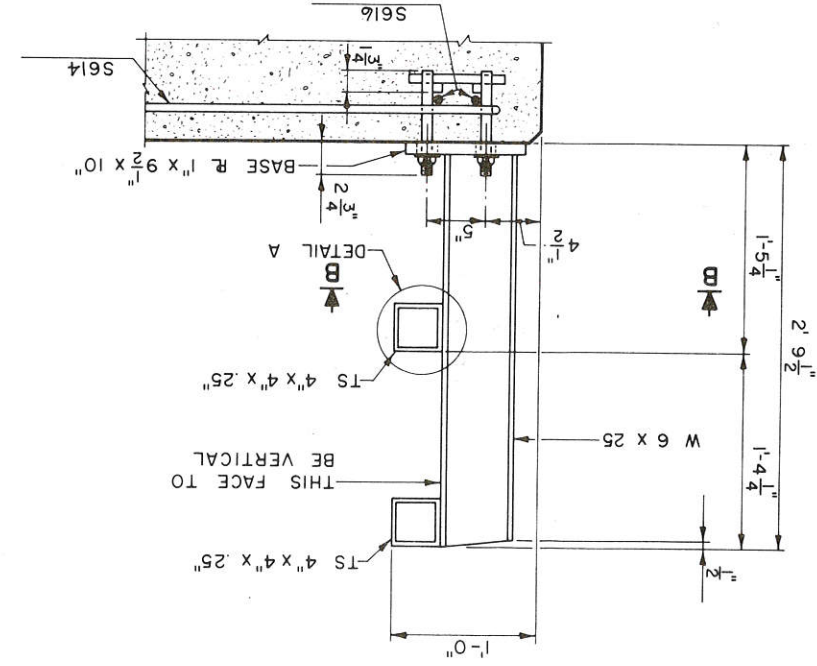
**GENERAL NOTES**

1. BID ITEM SHALL BE "TUBULAR RAILING, TYPE F"
2. POST BASE PLATE SHALL BE FLAT WITH ALL SURFACES SMOOTH & FREE FROM WARP & ALL EDGES SMOOTH, STRAIGHT & VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.
3. RAILING SHALL BE 4" x 4" x .25" STRUCTURAL TUBING CONFORMING TO A.S.T.M. DESIGNATION A36.
4. ANCHOR BOLTS SHALL BE 7/8" NOMINAL CONFORMING TO A.S.T.M. A449 WITH 3" THREAD & WITH HIGH STRENGTH NUTS & WASHERS.
5. CAULK EXPOSED OPENINGS BETWEEN SHIMS.
6. POST, BASE PLATES & SHIMS SHALL BE MADE FROM MATERIAL CONFORMING TO A.S.T.M. DESIGNATION A36. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY.
7. PLACE ANCHOR BOLTS NORMAL TO BASE PLATE.
8. ALL MEMBERS, INCLUDING UPPER 4" OF ANCHOR BOLTS, SHALL BE GALVANIZED AFTER FABRICATION.
9. BEAM GUARD ATTACHMENT MAY BE WELDED TO RAILS AND RAILS MAY BE WELDED TO POSTS.
10. FILL POST ANCHOR BOLT HOLES WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.
11. STEEL SHIMS SHALL BE USED UNDER POSTS WHERE REQUIRED FOR ALIGNMENT.
12. RAILING SHALL BE FABRICATED IN 2 AND 3 PANEL LENGTHS.

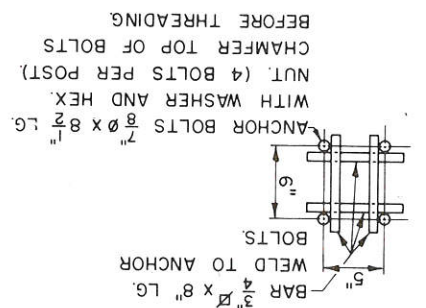
**CORNER DETAIL**



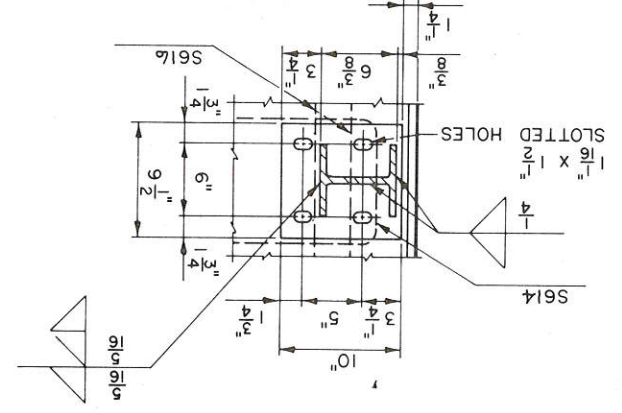
**SECTION THRU RAILING**



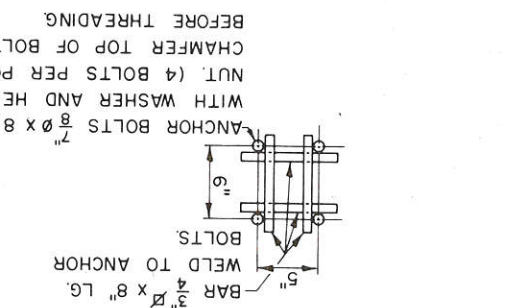
**ANCHOR BOLT DETAIL**



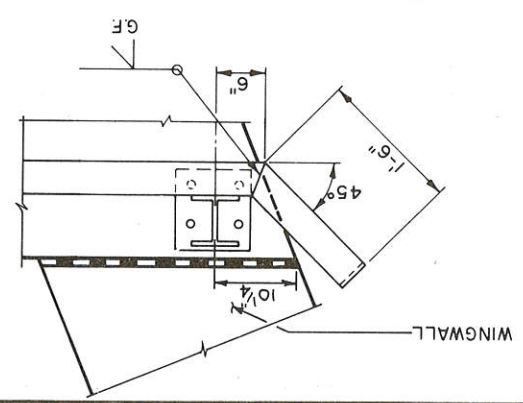
**SECTION B**



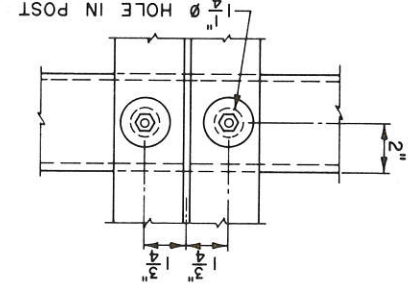
**POST SHIM DETAIL**



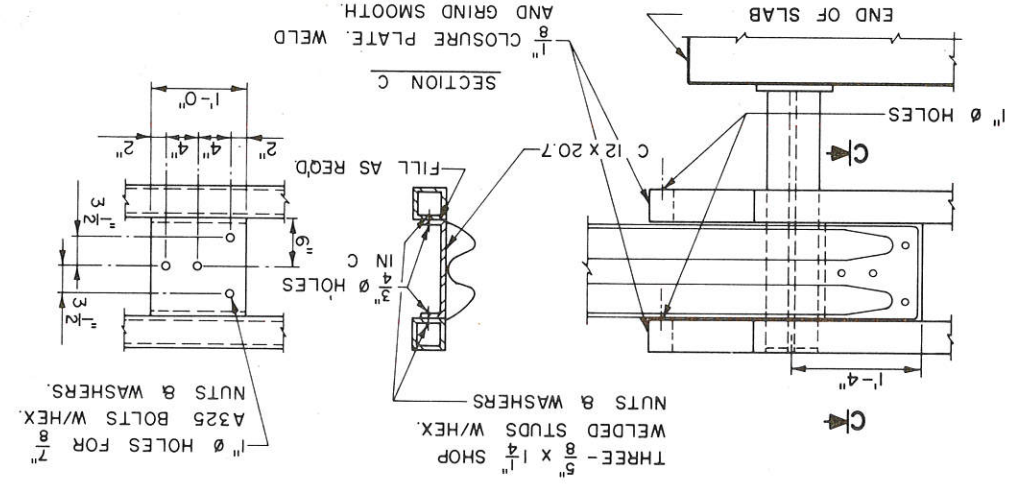
**END DETAIL FOR WINGS**



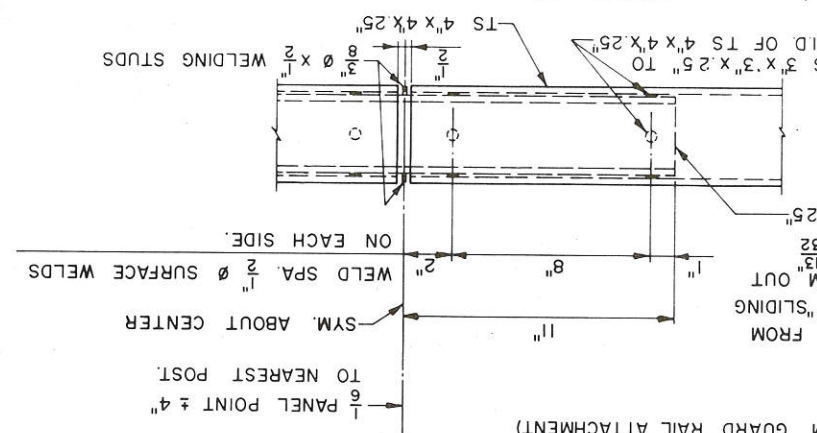
**DETAIL A**



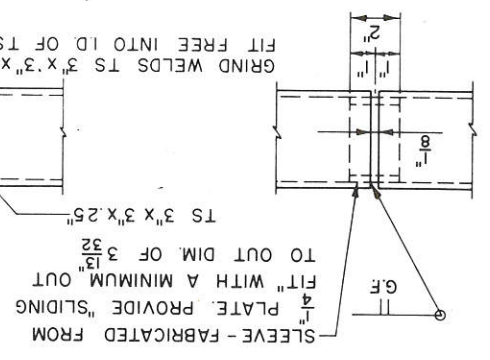
**DETAIL AT END POST**



**FIELD ERECTION**



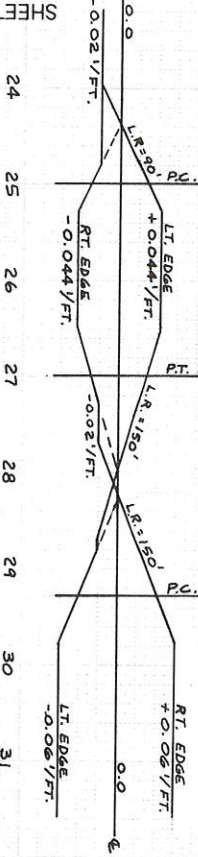
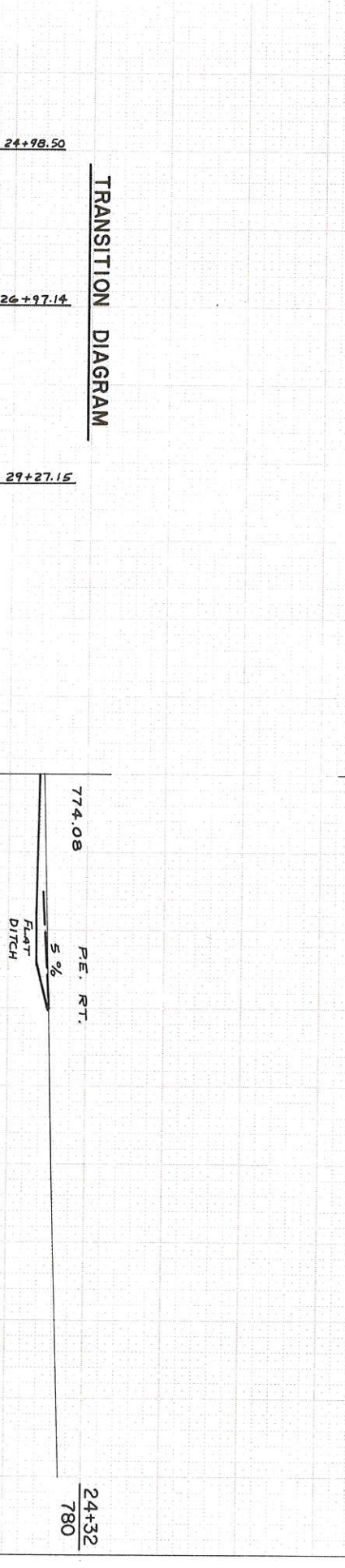
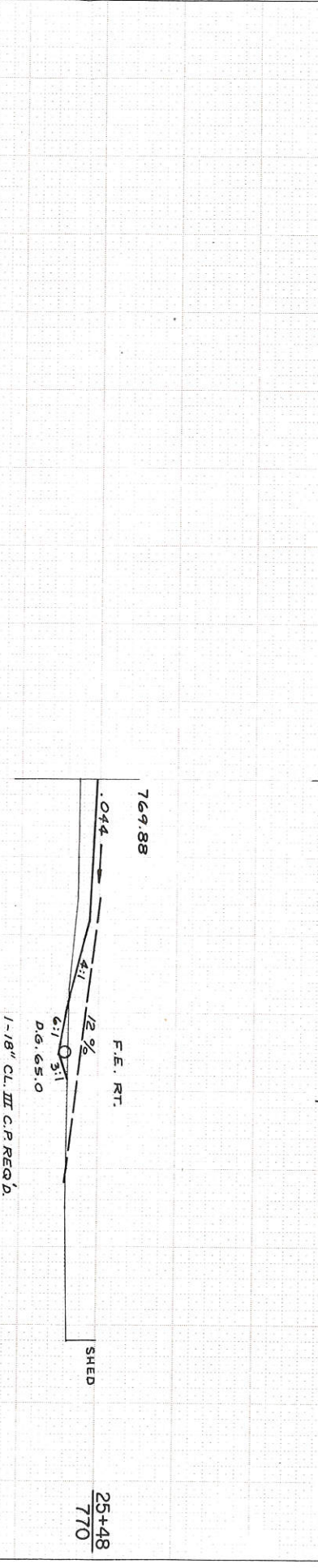
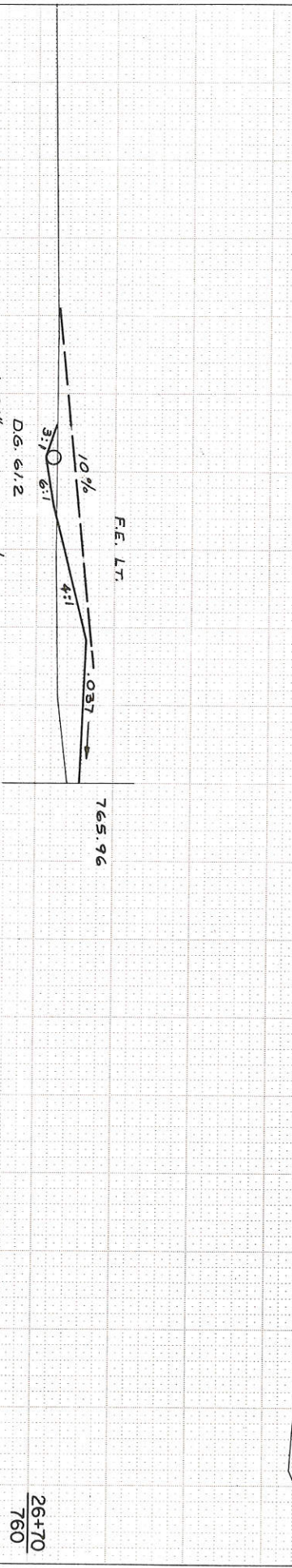
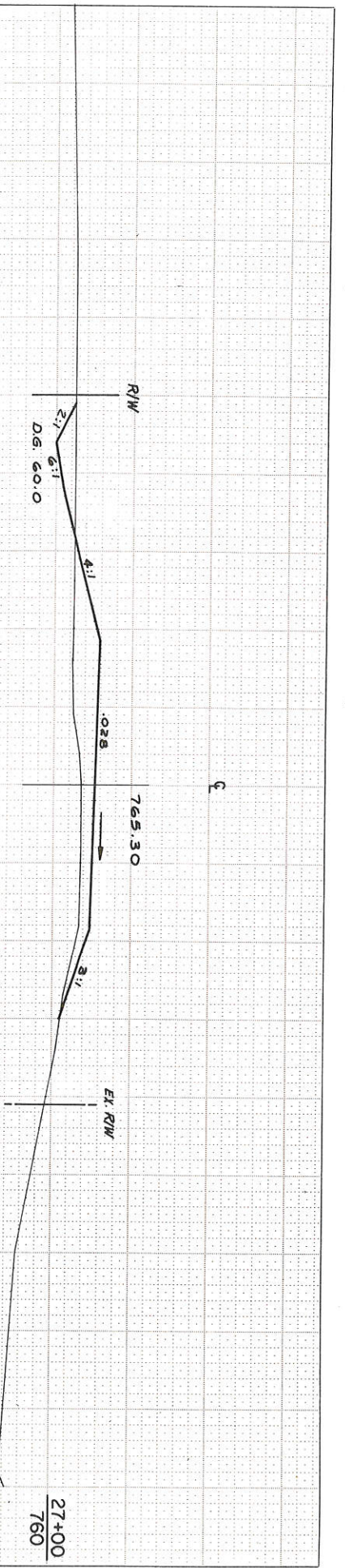
**SHOP RAIL SPlice DETAIL**



(LOCATION MUST BE SHOWN ON THE SHOP DRAWINGS)

TUBULAR RAILING TYPE "F"		X59390	
SHEET 7 OF 7			
Const. 1975	By D.V.H.	Checked R.C.M.	
STRUCTURE B-32-78			
DIVISION OF HIGHWAYS			
STATE OF WISCONSIN			
DEPARTMENT OF TRANSPORTATION			
OWEN AYRES & ASSOCIATES			
ARCHITECTS - ENGINEERS			
EAU CLAIRE, WISCONSIN			
PLANS PREPARED BY			
No.	Date	Revision	By



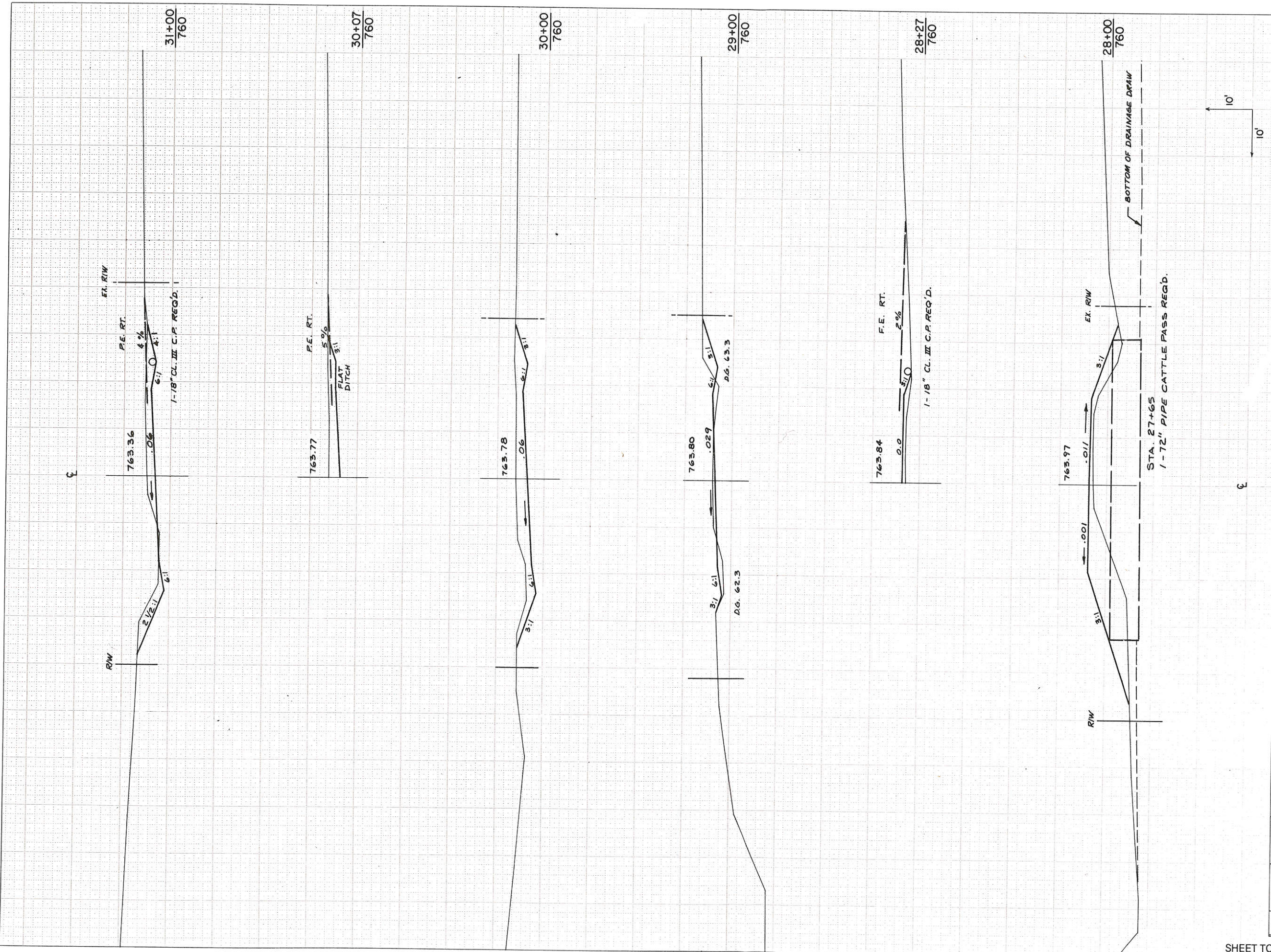


STATION	DISTANCE					STATION
	0+27	0+00	0+26	0+00	0+25	
500	100	93	144	100	263	24+32
1015						780

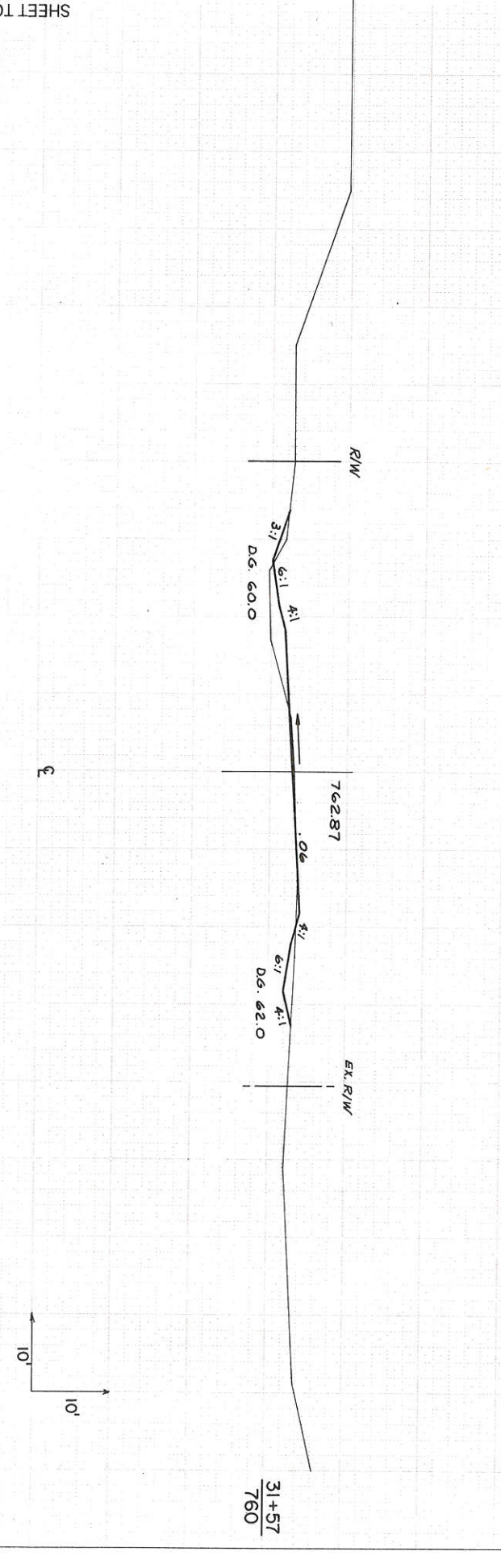
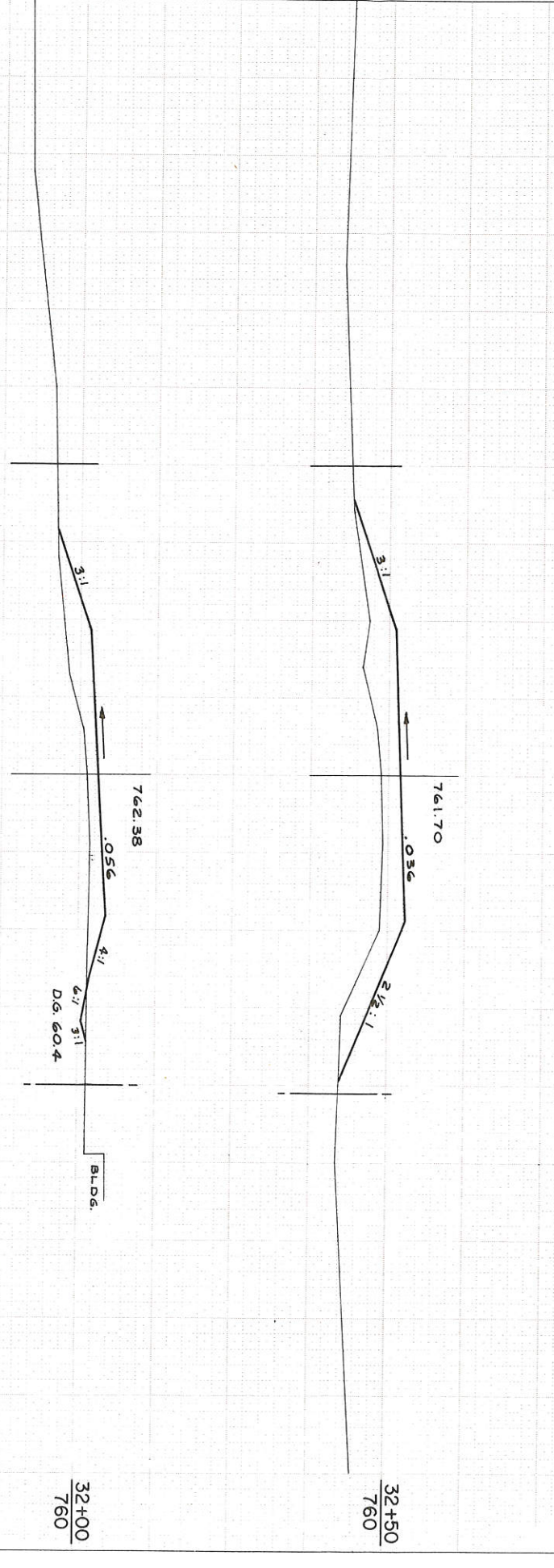
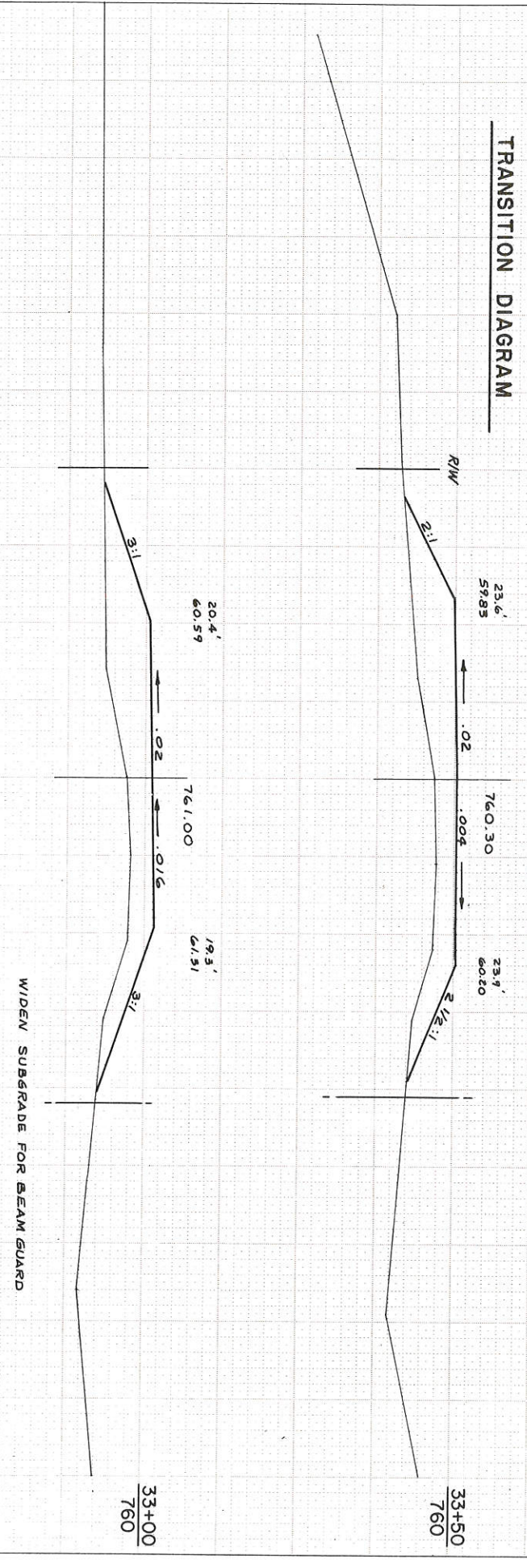
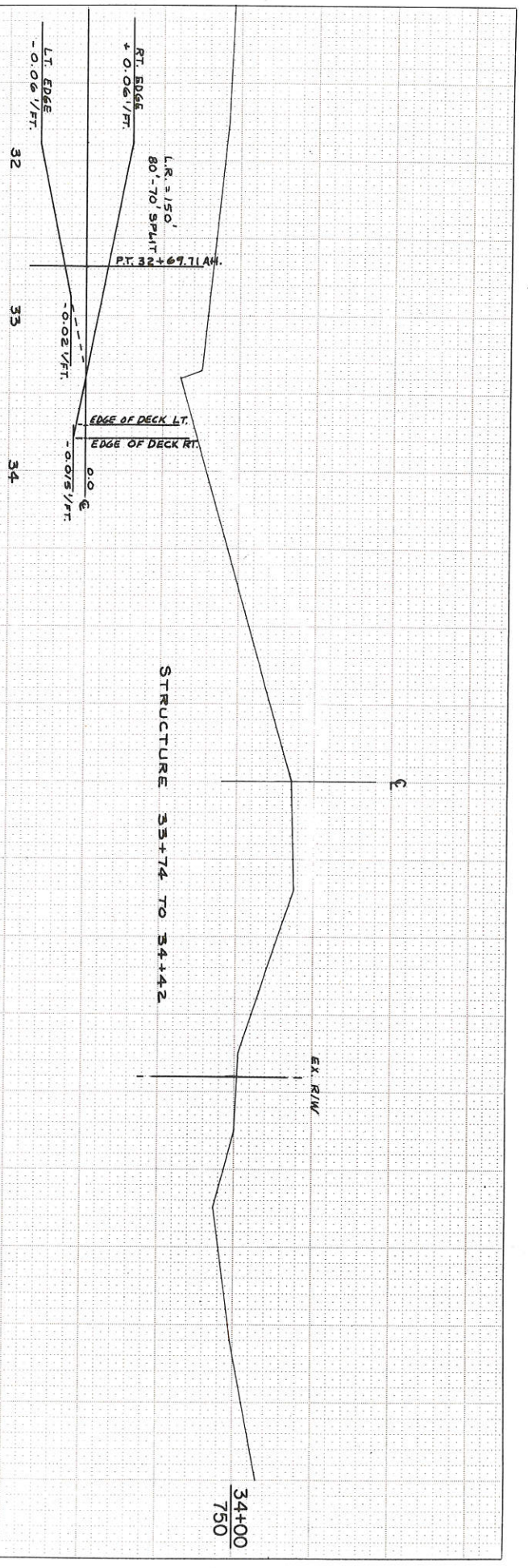
STATE PROJECT NUMBER	DISTANCE					STATE PROJECT NUMBER
	0+27	0+00	0+26	0+00	0+25	
7057-1-71	100	93	144	100	263	24+32
8.1						780

YARDAGE  
EXCAVATION  
FILL





STATION	DISTANCE	YARDAGE		
		EXCAVATION		FILL
		UNCL.		
27 + 00	100	56		587
28 + 00	100	78		417
29 + 00	100	343		37
30 + 00	100	450		4
31 + 00				
SHEET TOTAL		927		1045



SHEET TOTAL

STATION	31	00	31	32	00	32	33	00	33	34	33	74
DISTANCE			57	127		57	19		43	32	00	24
UNCL.							4					
EXCAVATION												
YARDAGE												225
FILL												472
STATE PROJECT NUMBER	7057-1-71											
SHEET NUMBER	83											

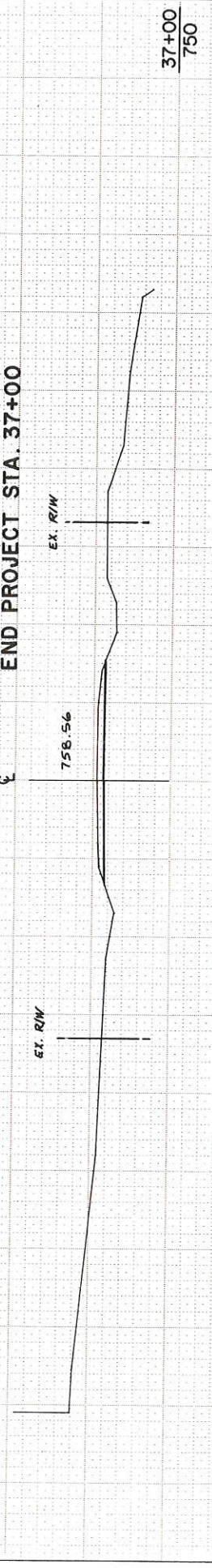
150

1522

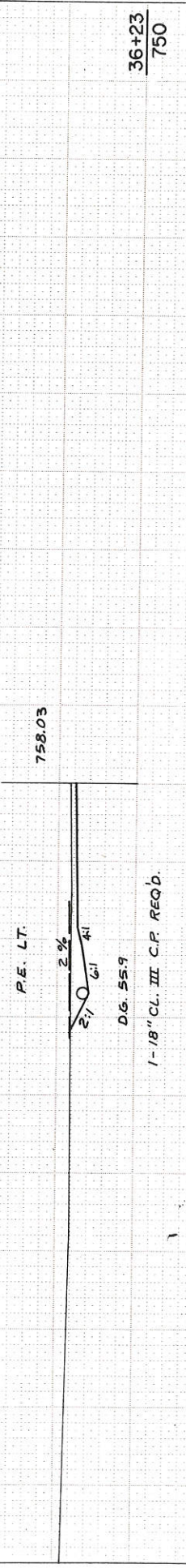
10'

10'

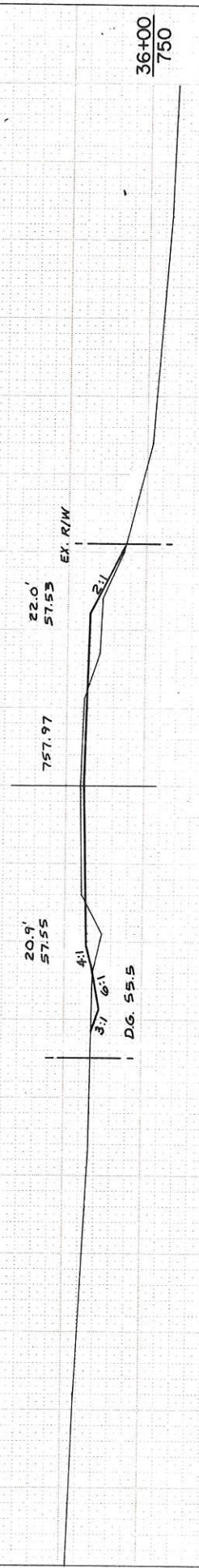
END PROJECT STA. 37+00



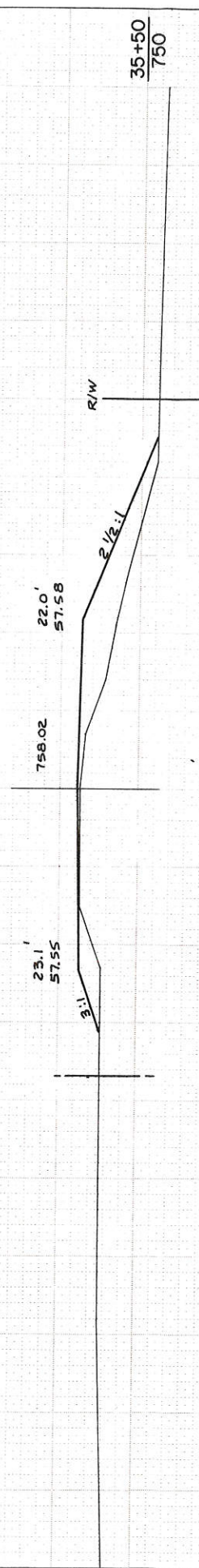
37+00  
750



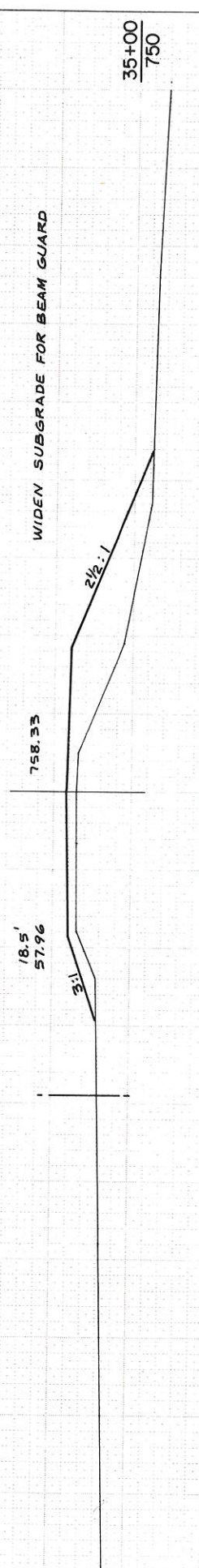
36+23  
750



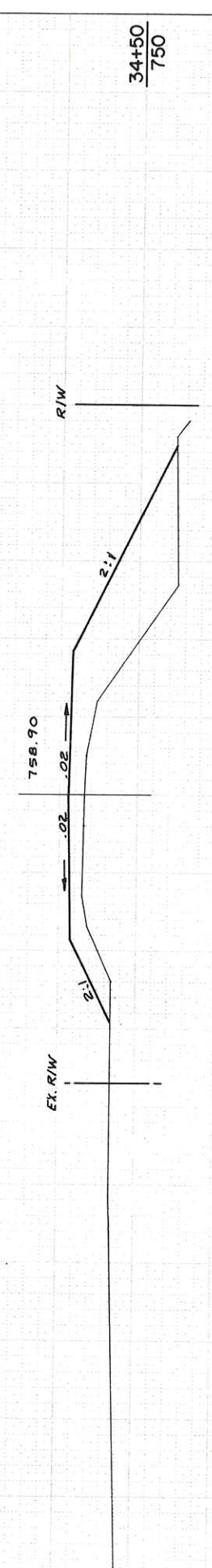
36+00  
750



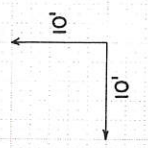
35+50  
750



35+00  
750



34+50  
750



STATE PROJECT NUMBER		SHEET NUMBER		
7057-1-71		8.4		
STATION	DISTANCE	YARDAGE		
		EXCAVATION		FILL
		UNCL.		
34 + 42	8			81
34 + 50	50			434
35 + 00	50			306
35 + 50	50	16		154
36 + 00	100	59		56
37 + 00				
SHEET TOTAL		75		1031

PLAN 245