

INFORMATIONAL NOTES

THESE NOTES MUST BE READ BEFORE USING THESE STANDARDS.

THESE STANDARDS SHALL BE USED FOR OVERHEAD STRUCTURES, SUBJECT TO LIMITATIONS AS SHOWN. THEY SHALL BE USED AS THE BASIS FOR THE PREPARATION OF STRUCTURE LAYOUTS AND CONTRACT PLANS. DETAILS SHOWN ON THESE STANDARDS NEED NOT BE COPIED. FOR REFERENCE TO THESE STANDARDS ON OVERHEAD SIGN STRUCTURE CONTRACT PLANS WILL BE PERMITTED, PROVIDING COORDINATING INFORMATION IS SHOWN ON THE CONTRACT PLANS.

DESIGN COMPUTATIONS ARE NOT REQUIRED FOR ANY PORTION OF A STRUCTURE FOR WHICH THE INFORMATION IS TAKEN DIRECTLY FROM THE DESIGN TABLES CONTAINED IN THESE STANDARDS, PROVIDING THE RESTRICTIONS RELATING TO THESE DESIGN TABLES ARE NOT EXCEEDED.

GENERAL DESIGN INSTRUCTIONS

DESIGN TABLES INCLUDED IN THESE STANDARDS WERE DEVELOPED USING A COMPUTER PROGRAM AND ARE BASED ON THE DESIGN CRITERIA SHOWN ON THIS SHEET.

TOWERS SHALL BE SET AS FAR FROM EDGE OF ROADWAY PAVEMENT AS CROSS SECTION GEOMETRICS AND/OR RIGHT OF WAY WILL PERMIT. WITH THE MAXIMUM DISTANCE TO CENTERLINE OF TOWER EQUAL TO 30 FEET. TOWERS SHALL BE PROTECTED BY GUIDE RAIL, OR OTHER SUITABLE MEANS, DEPENDING UPON SITE CONDITIONS.

TOP OF FOUNDATION PEDESTAL SHALL BE SET A MINIMUM ABOVE SURROUNDING TERRAIN TO MINIMIZE HAZARD EFFECT OF CONCRETE PEDESTAL ABOVE GRADE. TOP OF FOUNDATION FOOTING TO BE SET A MINIMUM OF 2'-6" BELOW TOP OF PEDESTAL WITH A 1'-0" MINIMUM COVER MAINTAINED OVER FOOTING AT ALL POINTS. CARE SHALL BE TAKEN TO ATTEMPT TO KEEP TOP OF FOOTINGS BELOW BOTTOM OF GUIDE RAIL POSTS THAT MIGHT BE IN AREA OF FOOTING OR FREE OF ANY OTHER OBSTRUCTING UNIT SUCH AS A STORM SEWER. IF IT BECOMES NECESSARY TO LOWER A FOOTING TO THE EXTENT THAT THE HEIGHT OF PEDESTAL IS GREATER THAN 7 FEET, THE SCOPE OF THE DESIGN TABLES HAS BEEN EXCEEDED AND IT WILL BE NECESSARY TO DESIGN A FOUNDATION PEDESTAL AND FOOTING FOR THIS SPECIAL CONDITION.

THE TRUSS, SIGNS, LIGHT FIXTURES (AND CATWALK, IF USED) SHALL BE SET TO AN ELEVATION THAT WILL PROVIDE 17'-6" MINIMUM VERTICAL CLEAR ABOVE THE HIGHEST POINT OF THE ENTIRE WIDTH OF THE ROADWAY PAVEMENT AND SHOULDERS PASSING UNDER THE STRUCTURE. GENERALLY THE BOTTOM OF ALL SIGNS ON A STRUCTURE SHALL BE SET TO THE SAME ELEVATION. IN THE CASE OF A STRUCTURE SPANNING DUAL ROADWAYS, WHERE THE DIFFERENCE IN ELEVATION BETWEEN THE HIGHEST POINT ON EACH DUAL ROADWAY IS GREATER THAN 2'-6", THE BOTTOM OF ALL SIGNS OVER EACH DUAL ROADWAY SHALL BE SET TO THE SAME CLEARANCE, WITH THE ELEVATION DIFFERENCE OF BOTTOM OF SIGNS OVER EACH ROADWAY BEING EQUAL TO THE DIFFERENCE IN ELEVATION BETWEEN THE HIGHEST POINT ON EACH DUAL ROADWAY.

THE TRUSS SHALL BE SET TO AN ELEVATION THAT PLACES THE CENTER OF THE TRUSS AT MID-HEIGHT OF THE DEEPEST SIGN OR A MAXIMUM OF 6 FEET ABOVE THE BOTTOM OF THE SIGNS. IN THE INSTANCES WHERE THE ULTIMATE SIGN AREA CRITERIA IS TO BE USED, SET THE TRUSS TO AN ELEVATION THAT PLACES THE CENTER OF THE TRUSS AT 6 FEET ABOVE THE BOTTOM OF THE SIGNS. IN THE INSTANCES WHERE THE STRUCTURE IS SPANNING DUAL ROADWAYS WITH ELEVATIONS DIFFERENCES GREATER THAN 2'-6" AS DESCRIBED PREVIOUSLY, SET THE TRUSS TO AN ELEVATION THAT PLACES THE CENTER OF THE TRUSS AT 6 FEET ABOVE THE BOTTOM OF THE SIGNS OVER THE LOWER ROADWAY.

THE DESIGN SIGN AREA TO BE USED FOR SELECTING MEMBER SIZES FOR EACH STRUCTURE SHALL BE DETERMINED FROM ONE OF THE FOLLOWING TWO CONDITIONS. THE FIRST CONDITION IS THE ACTUAL SIGN AREA TO BE PLACED ON THE STRUCTURE AT THE TIME OF ITS CONSTRUCTION. THE SECOND CONDITION IS FOR AN ULTIMATE SIGN AREA EQUAL TO THE WIDTH OF ROADWAY PAVEMENT UNDER THE STRUCTURE TIMES 12 FEET. THE TRAFFIC ENGINEER SHALL SPECIFY WHEN THE ULTIMATE SIGN AREA IS TO BE USED FOR DESIGN OF STRUCTURE. THE DESIGN SIGN AREA SHALL BE THE SIGN AREA COMPUTED FROM EITHER OF THE PREVIOUSLY DEFINED CONDITIONS, ROUNDED TO THE NEXT HIGHER HUNDRED SQUARE FOOT AREA.

THE LOADING TYPE TO BE USED FOR EACH STRUCTURE SHALL BE DETERMINED BY COMPUTING THE LOCATION OF THE CENTER OF GRAVITY OF THE SIGN AREA, ACTUAL OR ULTIMATE AREA CONDITION. IF THE LOCATION OF THE CENTER OF GRAVITY OF THE SIGN AREA FALLS BETWEEN 0.42 x SPAN LENGTH AND 0.58 x SPAN LENGTH, LOADING TYPE 1 SHALL BE USED FOR THE DESIGN OF THE STRUCTURE. IF THE LOCATION OF THE CENTER OF GRAVITY OF THE SIGN AREA FALLS BETWEEN THE ENDS OF THE SPAN AND THE PREVIOUSLY DEFINED LIMITS, LOADING TYPE 2 SHALL BE USED FOR THE DESIGN OF STRUCTURE.

TOWER MEMBER SIZES, FOUNDATION PEDESTALS AND FOOTINGS SHALL BE SELECTED FROM THE APPROPRIATE DESIGN HEIGHT IN THE DESIGN TABLES. THERE ARE FOUR DESIGN HEIGHTS (THE DIMENSION FROM TOP OF FOUNDATION PEDESTAL TO THE CENTER OF THE TRUSS) VARYING IN 5 FOOT INCREMENTS FROM 18 FEET TO 33 FEET. USE AS THE DESIGN HEIGHT, THE HEIGHT IN THE DESIGN TABLE NEXT LARGER THAN THE ACTUAL DIMENSION FROM THE TOP OF FOUNDATION PEDESTAL TO THE CENTER OF THE TRUSS.

OVERHEAD SIGN STRUCTURES MAY BE CONSTRUCTED WITH OR WITHOUT CATWALK. THE TRAFFIC ENGINEER SHALL SPECIFY WHEN A CATWALK IS TO BE INCLUDED AS PART OF THE STRUCTURE.

DESIGN CRITERIA

DESIGN SPECIFICATIONS - DESIGN REQUIREMENTS OF 1975 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS.

WIND SPEED - 80 MILES PER HOUR.

COEFFICIENT FOR HEIGHT ABOVE GROUND = 1.00

SHAPE COEFFICIENT - TRUSS CHORDS = 1.86
TRUSS WEBS = 2.86
SIGN = 1.19
CATWALK = 2.86
TOWER = 1.86

CONCRETE - $f'_c = 3,000$ P.S.I.

REINFORCEMENT BARS - $f_y = 20,000$ P.S.I.

STRUCTURAL STEEL - PIPES AND TUBES - $F_y = 35,000$ P.S.I.
OTHERS - $F_y = 36,000$ P.S.I.

FATIGUE STRENGTH - AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES CONSIDERING 2,000,000 CYCLES OF MAX. STRESS.

MAXIMUM FOUNDATION BEARING PRESSURE - 1.5 TONS PER SQ.FT.

LOCATION OF RESULTANT CENTER OF PRESSURE UNDER FOOTING - WITHIN MIDDLE ONE-HALF OF FOOTING DIMENSION PERPENDICULAR TO CENTER OF TRUSS AND WITHIN MIDDLE ONE-THIRD OF FOOTING DIMENSION PERPENDICULAR TO CENTER OF TOWER.

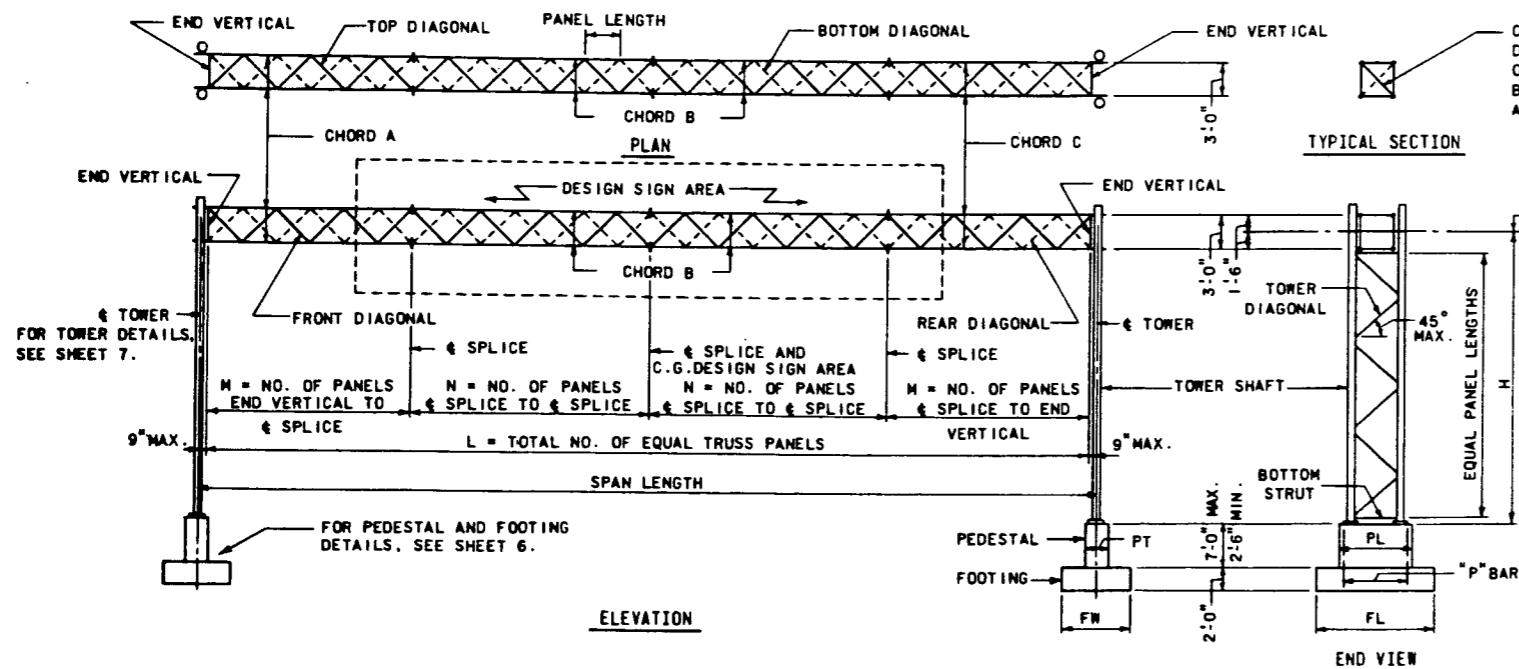
DEAD LOAD AND WIND LOAD RESULTING FROM CATWALK HAVE BEEN INCLUDED IN THE DESIGNS SHOWN IN TABLES ON SHEETS 2, 3, 4 & 5.

Commonwealth of Pennsylvania DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY SERVICES			
OVERHEAD SIGN STRUCTURES STEEL SPANS GENERAL INFORMATION DESIGN INSTRUCTIONS AND CRITERIA			
Recommended <i>B. J. Kitchell</i> Chief Bridge Engineer	Recommended <i>Q. T. D. [Signature]</i> Chief Traffic Engineer and Operations Division	Recommended <i>[Signature]</i> Chief Highway Engineer	Sht. 1 of 10 TC-7717

BY: RES

FT. SPAN	TRUSS MEMBERS								TOWER MEMBERS								FOUNDATION PEDESTAL				FOOTING TYPE											
	CHORDS (PIPE O.D. x WALL THICKNESS)			DIAGONALS		END VERTICALS (ST)	CROSS BRACING (ST)	H = 18 FT.		H = 23 FT.		H = 28 FT.		H = 33 FT.		BOTTOM STRUT (ST)	H = 18 FT.		H = 23 FT.		H = 28 FT.		H = 33 FT.									
	A	B	C	FRONT AND REAR (ST)	TOP AND BOTTOM (ST)			SHAFT (O.D. x WALL)	DIAGONAL (ST)	SHAFT (O.D. x WALL)	DIAGONAL (ST)	SHAFT (O.D. x WALL)	DIAGONAL (ST)	SHAFT (O.D. x WALL)	DIAGONAL (ST)		PLxPT (FT.)	NO. "P" BARS & SIZE	PLxPT (FT.)	NO. "P" BARS & SIZE	PLxPT (FT.)	NO. "P" BARS & SIZE	PLxPT (FT.)	NO. "P" BARS & SIZE	H = 18 FT.	H = 23 FT.	H = 28 FT.	H = 33 FT.				
	100	200	300	400	500	600	100	200	300	400	500	600	100	200	300	400	500	600	100	200	300	400	500	600	700	800	900					
50	3.500x0.300	3.500x0.300	3.500x0.300	2.0x3.850	2.0x4.750	2.5x7.375	2.0x3.850	8.625x0.322	2.0x 3.850	10.750x0.365	2.0x 3.850	10.750x0.365	2.0x 3.850	12.750x0.375	2.0x 3.850	14.000x0.375	2.0x 3.850	7x2.0	18#4	7x2.0	18#4	7x2.0	18#4	7x2.5	18#4	611	711	713	813	100		
60	4.000x0.318	4.000x0.318	4.000x0.318	2.0x3.850	2.0x4.750	2.5x7.375	2.0x3.850	10.750x0.365	2.0x 3.850	12.750x0.375	2.0x 3.850	12.750x0.375	2.0x 3.850	14.000x0.375	2.0x 4.750	16.000x0.375	2.5x 7.375	7x2.0	18#4	7x2.5	18#4	7x2.5	18#4	7x2.5	20#4	8x2.5	20#4	713	814	815	916	200
70	4.500x0.337	4.500x0.337	4.500x0.337	2.0x3.850	2.0x4.750	2.5x7.375	2.0x3.850	12.750x0.375	2.0x 4.750	14.000x0.375	2.5x 7.375	14.000x0.375	2.5x 7.375	16.000x0.375	2.5x 7.375	18.000x0.375	2.5x 7.375	7x2.0	18#4	7x2.5	18#4	7x2.5	20#4	8x2.5	20#4	8x3.0	24#4	814	915	916	1017	300
80	5.000x0.355	5.000x0.355	5.000x0.355	2.0x3.850	2.0x4.750	2.5x7.375	2.0x3.850	14.000x0.375	2.5x 7.375	16.000x0.375	2.5x 7.375	16.000x0.375	2.5x 7.375	18.000x0.375	2.5x 7.375	20.000x0.375	3.0x 8.625	7x2.5	20#4	8x2.5	24#4	8x3.0	22#4	8x3.0	24#4	8x3.0	28#4	815	916	1016	1018	400
90	5.563x0.375	5.563x0.375	5.563x0.375	2.0x3.850	2.0x4.750	2.5x7.375	2.0x3.850	16.000x0.375	3.0x 8.625	18.000x0.375	3.0x 8.625	18.000x0.375	3.0x 8.625	20.000x0.375	3.0x 8.625	24.000x0.375	3.5x10.000	7x2.5	20#4	8x2.5	24#4	8x3.0	22#4	8x3.0	24#4	8x3.0	28#4	815	916	1016	1018	500
100	6.225x0.432	6.225x0.432	6.225x0.432	2.0x3.850	2.0x4.750	2.5x7.375	2.0x3.850	18.000x0.375	3.5x10.000	20.000x0.375	3.5x10.000	20.000x0.375	3.5x10.000	24.000x0.375	3.5x10.000	28.000x0.375	4.0x11.500	7x2.5	20#4	8x2.5	24#4	8x3.0	22#4	8x3.0	24#4	8x3.0	28#4	815	916	1017	1018	600
110	7.000x0.500	7.000x0.500	7.000x0.500	2.0x3.850	2.0x4.750	2.5x7.375	2.0x3.850	20.000x0.375	4.0x11.500	24.000x0.375	4.0x11.500	24.000x0.375	4.0x11.500	28.000x0.375	4.0x11.500	32.000x0.375	4.0x11.500	7x2.5	20#4	8x2.5	24#4	8x3.0	22#4	8x3.0	24#4	8x3.0	28#4	815	916	1017	1018	700
120	7.875x0.562	7.875x0.562	7.875x0.562	2.0x3.850	2.0x4.750	2.5x7.375	2.0x3.850	22.000x0.375	4.0x11.500	28.000x0.375	4.0x11.500	28.000x0.375	4.0x11.500	32.000x0.375	4.0x11.500	36.000x0.375	4.0x11.500	7x2.5	20#4	8x2.5	24#4	8x3.0	22#4	8x3.0	24#4	8x3.0	28#4	815	916	1017	1018	800
130	8.875x0.625	8.875x0.625	8.875x0.625	2.0x3.850	2.0x4.750	2.5x7.375	2.0x3.850	24.000x0.375	4.0x11.500	32.000x0.375	4.0x11.500	32.000x0.375	4.0x11.500	36.000x0.375	4.0x11.500	40.000x0.375	4.0x11.500	7x2.5	20#4	8x2.5	24#4	8x3.0	22#4	8x3.0	24#4	8x3.0	28#4	815	916	1017	1018	900

NOTES:
 FOR GENERAL DESIGN INSTRUCTIONS, SEE SHEET 1.
 FOR GENERAL NOTES, SEE SHEET 6.
 ONE OR MORE SPLICES IN THE TRUSS MAY BE ADDED OR ELIMINATED AT THE OPTION OF THE FABRICATOR. IN CASE OF THE ADDITION OR ELIMINATION OF SPLICES, THE HEAVIER CHORD MATERIAL MUST BE EXTENDED TOWARD THE LIGHTER CHORD MATERIAL TO THE DESIRED SPLICE LOCATION.
 FOOTING TYPE DENOTES SIZE OF FOOTING. FOR EXAMPLE, TYPE 916 IS A FOOTING 9'(FW)x16'(FL).



ACTUAL SPAN (FT.)	DESIGN SPAN (FT.)	NUMBER OF SPLICES	NO. OF PANELS		
			L	M	N
40 - 50	50	1	16	8	0
50 - 60	60	1	18	9	0
60 - 70	70	2	20	7	6
70 - 80	80	2	22	7	8
80 - 90	90	2	24	8	8
90 - 100	100	3	26	6	7
100 - 110	110	3	28	7	7
110 - 120	120	3	30	7	8

Commonwealth of Pennsylvania
 DEPARTMENT OF TRANSPORTATION
 BUREAU OF HIGHWAY SERVICES

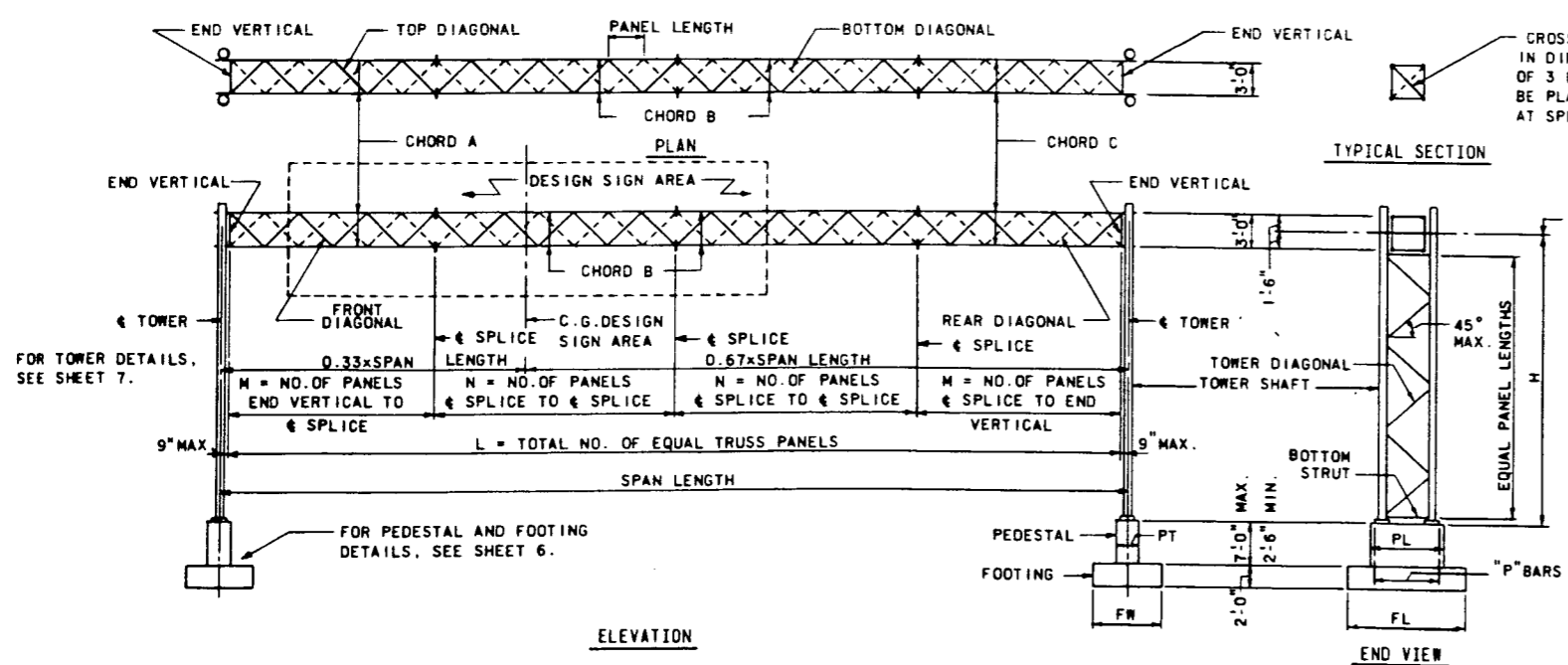
OVERHEAD SIGN STRUCTURES
STEEL SPANS
 DESIGN TABLES
 LOADING TYPE I
 50', 60', 70' AND 80' SPANS

Recommended by <i>[Signature]</i> Chief Bridge Engineer	Recommended by <i>[Signature]</i> Chief, Traffic Engineering and Operations Division	Recommended by <i>[Signature]</i> Chief Highway Engineer
---	--	--

Sh. 2 of 10
TC-7717

BY: RES

DESIGN SIGN AREA FT. SQ. FT.	TRUSS MEMBERS								TOWER MEMBERS								FOUNDATION PEDESTAL				FOOTING TYPE								
	CHORDS (PIPE O.D. x WALL THICKNESS)			DIAGONALS		END VERTICALS (ST)	CROSS BRACING (ST)	H = 18 FT.		H = 23 FT.		H = 28 FT.		H = 33 FT.		BOTTOM STRUT (ST)	H = 18 FT.		H = 23 FT.		H = 28 FT.		H = 33 FT.						
	A	B	C	FRONT AND REAR (ST)	TOP AND BOTTOM (ST)			SHAFT (O.D. x WALL)	DIAGONAL (ST)	SHAFT (O.D. x WALL)	DIAGONAL (ST)	SHAFT (O.D. x WALL)	DIAGONAL (ST)	SHAFT (O.D. x WALL)	DIAGONAL (ST)		PLXPT (FT.)	NO. "P" BARS & SIZE	PLXPT (FT.)	NO. "P" BARS & SIZE	PLXPT (FT.)	NO. "P" BARS & SIZE	PLXPT (FT.)	NO. "P" BARS & SIZE	H = 18 FT.	H = 23 FT.	H = 28 FT.	H = 33 FT.	
50	100	3.500x0.300	---	3.500x0.216	2.0x3.850	2.0x4.750	2.0x4.750	2.0x3.850	8.625x0.322	2.0x3.850	10.750x0.365	2.0x3.850	10.750x0.365	2.0x3.850	2.0x3.850	2.0x3.850	7x2.0	18#4	7x2.0	18#4	7x2.0	18#4	7x2.5	18#4	611	613	713	714	100
	200	4.000x0.318	---	4.000x0.226	2.0x3.850	2.0x4.750	2.0x4.750	2.0x3.850	10.750x0.365	2.0x4.750	12.750x0.375	2.0x4.750	12.750x0.375	2.0x4.750	2.0x3.850	2.0x3.850	7x2.0	18#4	7x2.5	18#4	7x2.5	18#4	7x2.5	20#4	713	715	815	817	200
	300	4.000x0.318	---	4.000x0.226	2.0x3.850	2.5x7.375	2.5x7.375	2.0x3.850	12.750x0.375	2.5x7.375	12.750x0.375	2.5x7.375	14.000x0.375	2.5x7.375	2.0x3.850	2.0x3.850	7x2.0	18#4	7x2.5	20#4	7x2.5	24#4	8x2.5	24#4	715	815	817	917	300
	400	4.500x0.337	---	4.500x0.337	2.0x3.850	2.5x7.375	2.5x7.375	2.0x3.850	12.750x0.375	2.5x7.375	14.000x0.375	2.5x7.375	16.000x0.375	2.5x7.375	2.0x3.850	2.0x3.850	7x2.5	20#4	7x2.5	24#4	8x2.5	24#4	8x3.0	28#4	816	817	918	919	400
60	100	4.000x0.226	---	4.000x0.226	2.0x3.850	2.0x4.750	2.0x4.750	2.0x3.850	8.625x0.322	2.0x3.850	10.750x0.365	2.0x3.850	10.750x0.365	2.0x3.850	2.0x3.850	2.0x3.850	7x2.0	18#4	7x2.0	18#4	7x2.0	18#4	7x2.5	18#4	612	712	713	715	100
	200	4.000x0.318	---	4.000x0.226	2.0x3.850	2.0x4.750	2.0x4.750	2.0x3.850	10.750x0.365	2.0x4.750	12.750x0.375	2.0x4.750	12.750x0.375	2.0x4.750	2.0x3.850	2.0x3.850	7x2.0	18#4	7x2.5	18#4	7x2.5	18#4	7x2.5	20#4	713	714	815	816	200
	300	4.500x0.337	---	4.500x0.237	2.0x3.850	2.5x7.375	2.5x7.375	2.0x3.850	12.750x0.375	2.5x7.375	14.000x0.375	2.5x7.375	16.000x0.375	2.5x7.375	2.0x3.850	2.0x3.850	7x2.0	18#4	7x2.5	20#4	8x2.5	20#4	8x3.0	24#4	715	816	818	918	300
	400	4.500x0.337	---	4.500x0.337	2.0x3.850	2.5x7.375	2.5x7.375	2.0x3.850	12.750x0.375	2.5x7.375	14.000x0.375	2.5x7.375	16.000x0.375	2.5x7.375	2.0x3.850	2.0x3.850	7x2.5	20#4	7x2.5	24#4	8x2.5	24#4	8x3.0	28#4	815	817	918	919	400
70	100	4.000x0.318	4.000x0.226	4.000x0.226	2.0x3.850	2.0x4.750	2.0x4.750	2.0x3.850	10.750x0.365	2.0x3.850	10.750x0.365	2.0x3.850	12.750x0.375	2.0x3.850	2.0x3.850	2.0x3.850	7x2.0	18#4	7x2.0	18#4	7x2.5	18#4	7x2.5	20#4	714	715	816	816	100
	200	4.500x0.337	4.500x0.337	4.500x0.237	2.0x3.850	2.5x7.375	2.5x7.375	2.0x3.850	10.750x0.365	2.0x4.750	12.750x0.375	2.0x4.750	14.000x0.375	2.0x4.750	2.0x3.850	2.0x3.850	7x2.0	18#4	7x2.5	20#4	8x2.5	20#4	8x3.0	24#4	715	816	817	918	200
	300	4.500x0.337	4.500x0.337	4.500x0.237	2.0x3.850	2.5x7.375	2.5x7.375	2.0x3.850	12.750x0.375	2.5x7.375	14.000x0.375	2.5x7.375	16.000x0.375	2.5x7.375	2.0x3.850	2.0x3.850	7x2.5	20#4	7x2.5	24#4	8x2.5	24#4	8x3.0	28#4	715	816	817	918	300
	400	5.563x0.375	5.563x0.375	5.563x0.258	2.0x3.850	2.5x7.375	2.5x7.375	2.0x3.850	12.750x0.375	2.5x7.375	16.000x0.375	2.5x7.375	18.000x0.375	2.5x7.375	2.0x3.850	2.0x3.850	7x2.5	20#4	8x2.5	24#4	8x3.0	24#4	9x3.0	28#4	816	818	918	1019	400
80	100	4.000x0.318	4.000x0.226	4.000x0.226	2.0x3.850	2.0x4.750	2.0x4.750	2.0x3.850	10.750x0.365	2.0x3.850	10.750x0.365	2.0x3.850	12.750x0.375	2.0x3.850	2.0x3.850	2.0x3.850	7x2.0	18#4	7x2.0	18#4	7x2.5	18#4	7x2.5	20#4	714	715	816	816	100
	200	4.500x0.337	4.500x0.337	4.500x0.237	2.0x3.850	2.5x7.375	2.5x7.375	2.0x3.850	10.750x0.365	2.0x4.750	12.750x0.375	2.0x4.750	14.000x0.375	2.0x4.750	2.0x3.850	2.0x3.850	7x2.0	18#4	7x2.5	20#4	8x2.5	20#4	8x3.0	24#4	715	816	817	918	200
	300	5.563x0.375	5.563x0.375	5.563x0.258	2.0x3.850	2.5x7.375	2.5x7.375	2.0x3.850	12.750x0.375	2.5x7.375	14.000x0.375	2.5x7.375	16.000x0.375	2.5x7.375	2.0x3.850	2.0x3.850	7x2.5	20#4	7x2.5	24#4	8x2.5	24#4	8x3.0	28#4	816	917	919	1020	300
	400	5.563x0.375	5.563x0.375	5.563x0.258	2.0x3.850	2.5x7.375	2.5x7.375	2.0x3.850	14.000x0.375	2.5x7.375	16.000x0.375	2.5x7.375	18.000x0.375	2.5x7.375	2.0x3.850	2.0x3.850	7x2.5	20#4	8x2.5	24#4	8x3.0	28#4	9x3.0	28#4	816	917	919	1020	400
90	100	4.000x0.318	4.000x0.318	4.000x0.318	2.0x3.850	2.5x7.375	2.5x7.375	2.0x3.850	10.750x0.365	2.0x3.850	10.750x0.365	2.0x3.850	12.750x0.375	2.0x3.850	2.0x3.850	2.0x3.850	7x2.0	18#4	7x2.0	18#4	7x2.5	18#4	7x2.5	20#4	714	715	816	816	100
	200	4.500x0.337	4.500x0.337	4.500x0.237	2.0x3.850	2.5x7.375	2.5x7.375	2.0x3.850	10.750x0.365	2.0x4.750	12.750x0.375	2.0x4.750	14.000x0.375	2.0x4.750	2.0x3.850	2.0x3.850	7x2.0	18#4	7x2.5	20#4	8x2.5	20#4	8x3.0	24#4	715	816	817	918	200
	300	5.563x0.375	5.563x0.375	5.563x0.258	2.0x3.850	2.5x7.375	2.5x7.375	2.0x3.850	12.750x0.375	2.5x7.375	14.000x0.375	2.5x7.375	16.000x0.375	2.5x7.375	2.0x3.850	2.0x3.850	7x2.5	20#4	7x2.5	24#4	8x2.5	24#4	8x3.0	28#4	816	917	919	1020	300
	400	5.563x0.375	5.563x0.375	5.563x0.258	2.0x3.850	2.5x7.375	2.5x7.375	2.0x3.850	14.000x0.375	2.5x7.375	16.000x0.375	2.5x7.375	18.000x0.375	2.5x7.375	2.0x3.850	2.0x3.850	7x2.5	20#4	8x2.5	24#4	8x3.0	28#4	9x3.0	28#4	816	917	919	1020	400



CROSS BRACING-ALTERNATING IN DIRECTION @ MAXIMUM SPACING OF 3 PANEL LENGTHS. SHALL NOT BE PLACED AT END VERTICALS NOR AT SPICE POINTS.

FOR TRUSS DETAILS, SEE SHEET 8.

ACTUAL SPAN (FT.)	DESIGN SPAN (FT.)	NUMBER OF SPLICES	NO. OF PANELS		
			L	M	N
40 - 50	50	1	16	8	0
50 - 60	60	1	18	9	0
60 - 70	70	2	20	7	6
70 - 80	80	2	22	7	8
80 - 90	90	2	24	8	8
90 - 100	100	3	26	6	7
100 - 110	110	3	28	7	7
110 - 120	120	3	30	7	8

NOTES:
 FOR GENERAL DESIGN INSTRUCTIONS, SEE SHEET 1.
 FOR GENERAL NOTES, SEE SHEET 6.
 ONE OR MORE SPLICES IN THE TRUSS MAY BE ADDED OR ELIMINATED AT THE OPTION OF THE FABRICATOR. IN CASE OF THE ADDITION OR ELIMINATION OF SPLICES, THE HEAVIER CHORD MATERIAL MUST BE EXTENDED TOWARD THE LIGHTER CHORD MATERIAL TO THE DESIRED SPICE LOCATION.
 FOOTING TYPE DENOTES SIZE OF FOOTING. FOR EXAMPLE, TYPE 916 IS A FOOTING 9'(FR)X16'(FL).

Commonwealth of Pennsylvania
 DEPARTMENT OF TRANSPORTATION
 BUREAU OF HIGHWAY SERVICES

OVERHEAD SIGN STRUCTURES
 STEEL SPANS

DESIGN TABLES
 LOADING TYPE 2
 50', 60', 70', 80' AND 90' SPANS

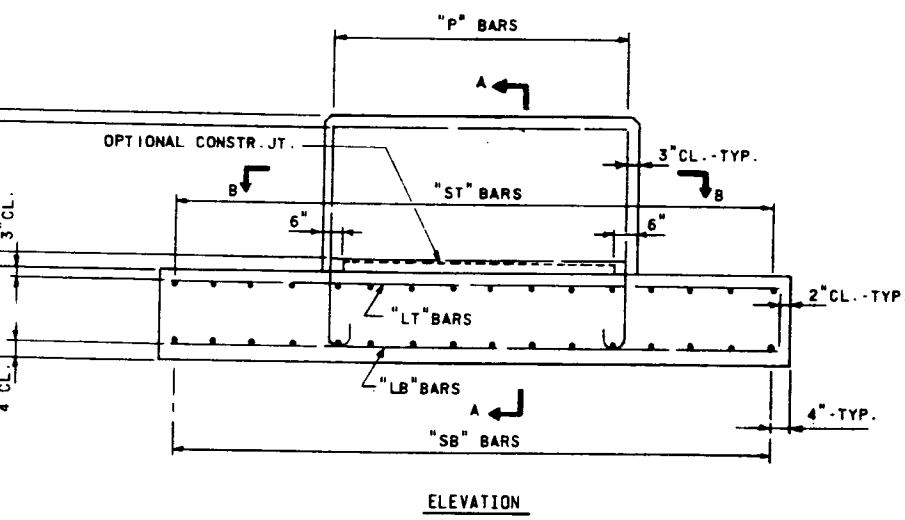
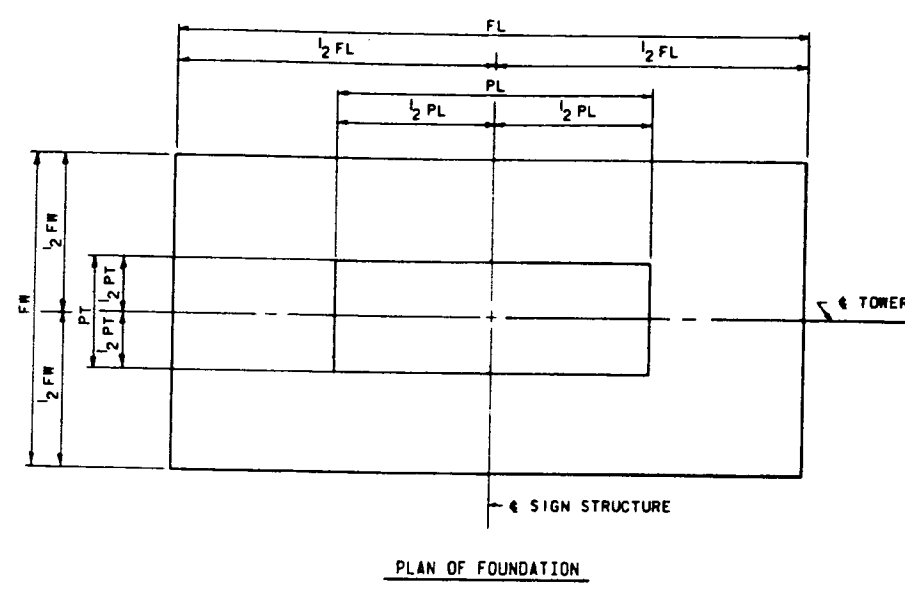
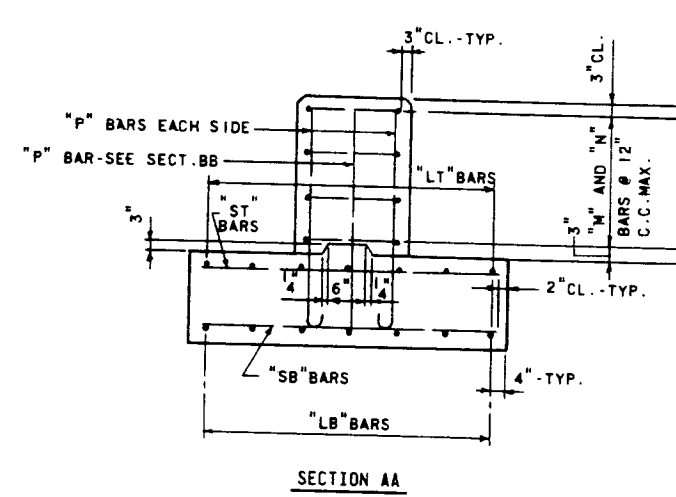
Recommended by <i>[Signature]</i> Chief Bridge Engineer	Recommended by <i>[Signature]</i> Chief, Traffic Engineering and Operations Division	Recommended by <i>[Signature]</i> Chief Highway Engineer
---	--	--

SH. 1 OF 10
TC 7717

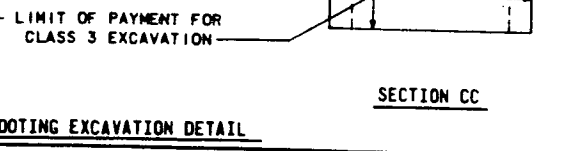
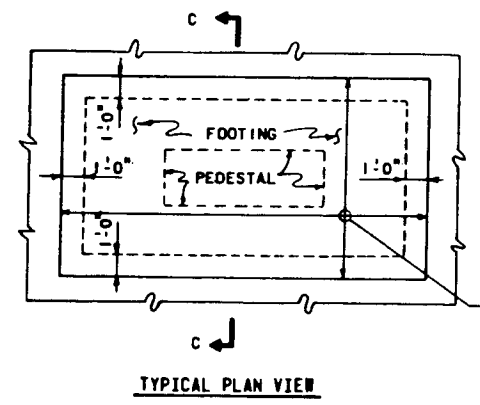
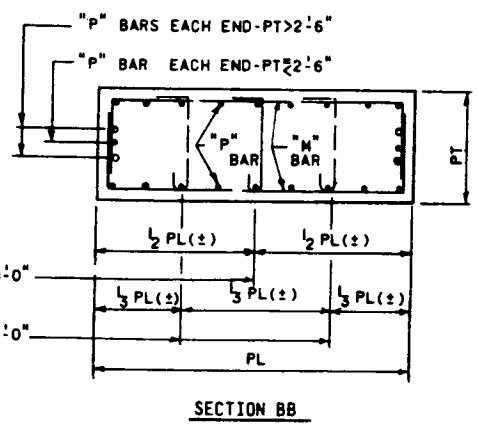
FOOTING TYPE	DIMENSION		VOL. CU. YD.	NO. AND SIZE OF BARS				WEIGHT LBS.
	FW	FL		"LB"	"LT"	"SB"	"ST"	
611	8'-0"	11'-0"	4.9	6#4	6#4	11#4	11#4	169
612	8'-0"	12'-0"	5.3	6#4	6#4	12#4	12#4	184
613	8'-0"	13'-0"	5.8	6#4	6#4	13#4	13#4	200
711	7'-0"	11'-0"	5.7	7#4	7#4	11#4	11#4	198
712	7'-0"	12'-0"	6.2	7#4	7#4	12#4	12#4	216
713	7'-0"	13'-0"	6.7	7#4	7#4	13#4	13#4	234
714	7'-0"	14'-0"	7.3	7#4	7#4	14#4	14#4	253
715	7'-0"	15'-0"	7.8	7#4	7#4	15#4	15#4	271
813	8'-0"	13'-0"	7.7	8#4	8#4	13#4	13#4	269
814	8'-0"	14'-0"	8.3	8#4	8#4	14#4	14#4	290
815	8'-0"	15'-0"	8.9	8#4	8#4	15#4	15#4	320
816	8'-0"	16'-0"	9.5	11#4	9#4	16#4	16#4	373
817	8'-0"	17'-0"	10.1	8#5	11#4	17#4	17#4	436
818	8'-0"	18'-0"	10.7	10#5	11#4	18#4	18#4	499
915	9'-0"	15'-0"	10.0	10#4	9#4	15#4	15#4	360
916	9'-0"	16'-0"	10.7	12#4	9#4	16#4	16#4	405
917	9'-0"	17'-0"	11.3	10#5	11#4	17#4	17#4	493
918	9'-0"	18'-0"	12.0	12#5	9#5	18#4	18#4	496
919	9'-0"	19'-0"	12.7	9#6	10#5	19#4	19#4	667
920	9'-0"	20'-0"	13.3	10#6	12#5	20#4	20#4	773
1016	10'-0"	18'-0"	11.9	14#4	11#4	16#4	16#4	468
1017	10'-0"	17'-0"	12.6	10#5	13#4	17#4	17#4	538
1018	10'-0"	18'-0"	13.3	12#5	10#5	18#4	18#4	638
1019	10'-0"	19'-0"	14.1	11#6	10#5	19#4	19#4	749
1020	10'-0"	20'-0"	14.8	12#6	12#5	20#4	20#4	859
1021	10'-0"	21'-0"	15.6	12#6	10#6	21#4	21#4	954
1022	10'-0"	22'-0"	16.3	10#7	12#6	22#4	22#4	1118
1118	11'-0"	18'-0"	14.7	14#5	12#5	18#4	18#4	736
1119	11'-0"	19'-0"	15.5	11#6	12#5	19#4	19#4	813
1120	11'-0"	20'-0"	16.3	12#6	14#5	20#4	20#4	927
1121	11'-0"	21'-0"	17.1	13#6	14#5	21#4	21#4	1005
1122	11'-0"	22'-0"	17.9	11#7	12#6	22#4	22#4	1191
1123	11'-0"	23'-0"	18.7	13#7	14#6	23#4	23#4	1407
1124	11'-0"	24'-0"	19.6	11#8	12#7	24#4	25#4	1625
1220	12'-0"	20'-0"	17.8	14#6	12#6	20#4	25#4	1119
1221	12'-0"	21'-0"	18.7	12#7	12#6	21#4	26#4	1246
1222	12'-0"	22'-0"	19.6	14#7	14#6	23#4	28#4	1473
1224	12'-0"	24'-0"	21.3	14#8	14#7	25#4	32#4	2007
1322	13'-0"	22'-0"	21.2	15#7	16#6	26#4	23#5	1709
1323	13'-0"	23'-0"	22.1	14#8	14#7	29#4	25#5	2071

PL x PT (FT.)	VOL. (CU. YD.)	HORIZONTAL REINFORCEMENT						WEIGHT PER SET A (LBS.)
		#4 BARS TYPE "M"			#4 BARS TYPE "N"			
		LENGTH	A	B	LENGTH	C	NO.	
7x2.0	0.52K	9'-4"	6'-6"	1'-5"	2'-8"	1'-6"	1	14
7x2.5	0.65K	9'-10"	6'-6"	1'-8"	3'-2"	2'-0"	1	15
8x2.5	0.74K	10'-10"	7'-6"	1'-8"	3'-2"	2'-0"	1	17
8x3.0	0.89K	11'-4"	7'-6"	1'-11"	3'-8"	2'-6"	1	18
9x3.0	1.00K	12'-4"	8'-6"	1'-11"	3'-8"	2'-6"	2	21
9x3.5	1.17K	12'-10"	8'-6"	2'-2"	4'-2"	3'-0"	2	23
10x3.5	1.30K	13'-10"	9'-6"	2'-2"	4'-2"	3'-0"	2	24

BAR SIZE	WEIGHT LB./FT.	TABLE OF "P" BARS	
		A	LENGTH
4	0.668	6"	K + 2'-0"
5	1.043	7"	K + 2'-1"
6	1.502	8"	K + 2'-2"
7	2.044	10"	K + 2'-4"



NOTE:
 TOTAL NUMBER AND SIZE OF "P" BARS REQUIRED ARE GIVEN IN DESIGN TABLES ON SHEETS 2, 3, 4 AND 5. ONE BAR SHALL BE PLACED AT EACH END OF THE PEDESTAL IF "PT" IS EQUAL TO OR LESS THAN 2'-6". TWO BARS SHALL BE AT EACH END OF THE PEDESTAL IF "PT" IS GREATER THAN 2'-6". ONE HALF OF THE REMAINING BARS SHALL BE PLACED ON EACH FACE OF THE PEDESTAL.



GENERAL NOTES:
 FOR GENERAL DESIGN INSTRUCTIONS SEE SHEET 1.
 MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH SPECIFICATION PUB. 408.
 MATERIALS SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS:
 • PIPES OR TUBULAR SECTIONS A53, TYPE E OR S, GRADE B A501 A252, GRADE 2
 • STRUCTURAL BARS, PLATES, * A36 SHAPES AND ANCHOR BOLTS
 • NUTS FOR ANCHOR BOLTS * * A307
 • H.S. BOLTS AND WASHERS * * A325 NUTS FOR H.S. BOLTS * * A325
 U-BOLTS, OTHER BOLTS AND WASHERS A276, TYPE 304 NUTS A276, TYPE 303 REINFORCEMENT BARS A615, GRADE 40
 NUTS FOR ALL BOLTS EXCEPT ANCHOR BOLTS SHALL BE HIGH STRENGTH.
 * TO BE GALVANIZED AFTER FABRICATION IS COMPLETE.
 ** TO BE MECHANICALLY GALVANIZED.

CLASS A CEMENT CONCRETE SHALL BE USED IN FOOTINGS AND IN FOUNDATION PEDESTALS.
 EXPOSED CONCRETE EDGES SHALL BE CHAMFERED 1"x1" EXCEPT AS NOTED.
 MAXIMUM DESIGN FOUNDATION BEARING PRESSURE EQUALS 1.5 TONS PER SQUARE FOOT. THE FOOTING MAY BE ORDERED BY THE ENGINEER TO BE AT ANY ELEVATION OR OF ANY DIMENSIONS NECESSARY TO PROVIDE A PROPER FOUNDATION.
 REINFORCEMENT BARS SHALL CONFORM TO THE DIMENSIONS SHOWN ON THE DRAWINGS AND WITHIN FABRICATING TOLERANCES AS SHOWN IN THE CURRENT "MANUAL OF STANDARD PRACTICE FOR REINFORCED CONCRETE CONSTRUCTION" AS PUBLISHED BY THE CONCRETE REINFORCING STEEL INSTITUTE.
 BARS SHALL NOT BE SPLICED EXCEPT AS PROVIDED ON THESE DRAWINGS OR AUTHORIZED BY THE ENGINEER. WHEN SPLICING IS APPROVED, THE REINFORCEMENT BARS SHALL BE LAPPED FOR A LENGTH OF AT LEAST 30 DIAMETERS AND SHALL BE SECURELY WIRED TOGETHER.
 FOR PEDESTAL DIMENSIONS AND REINFORCEMENT, AND FOOTING TYPE, SEE DESIGN TABLES ON SHEETS 2, 3, 4 AND 5.
 U-BOLTS CONNECTING TRUSS TO TOWER SHALL NOT BE FINALLY TIGHTENED UNTIL ALL LOADS HAVE BEEN PLACED ON THE TRUSS.
 FOOTING SIZES SHOWN ARE MINIMUM REQUIRED FOR STABILITY.

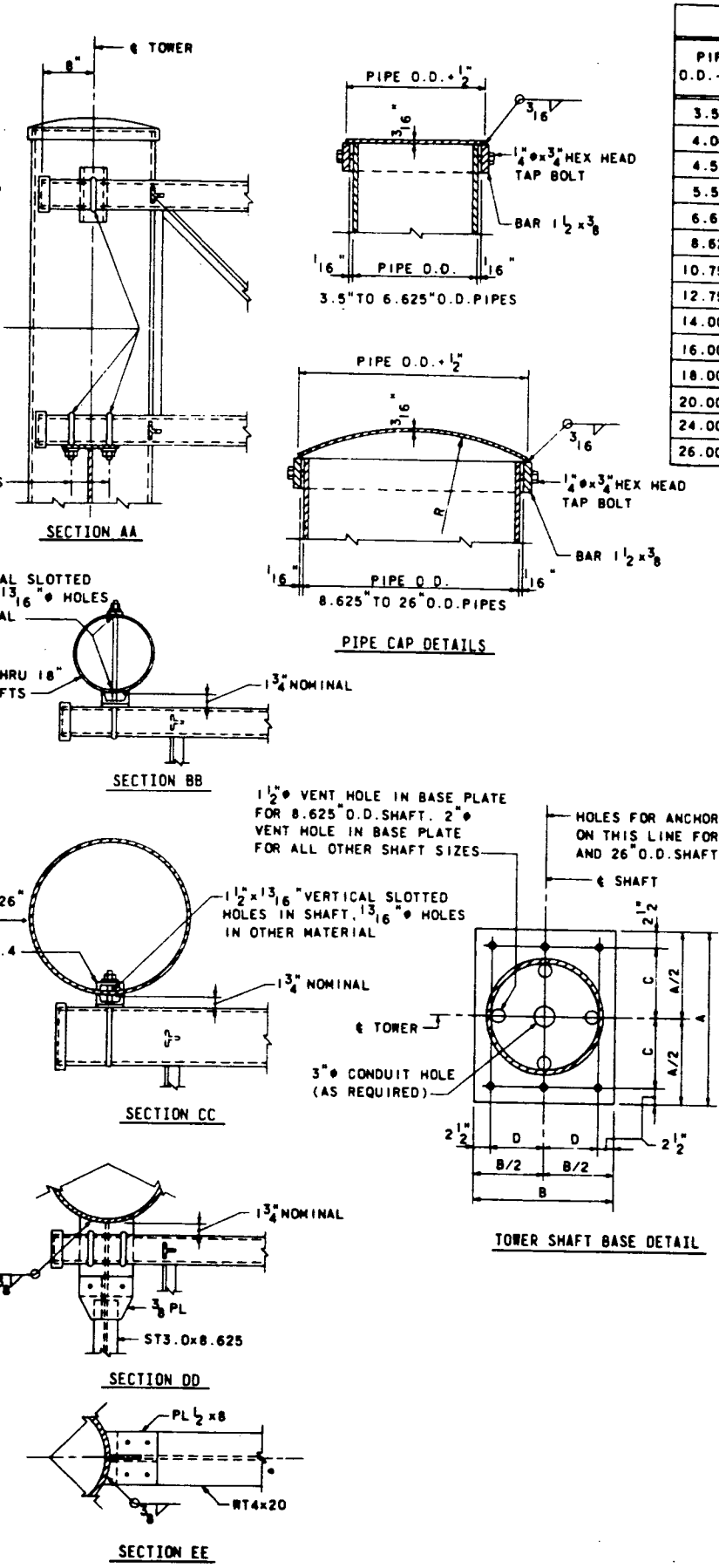
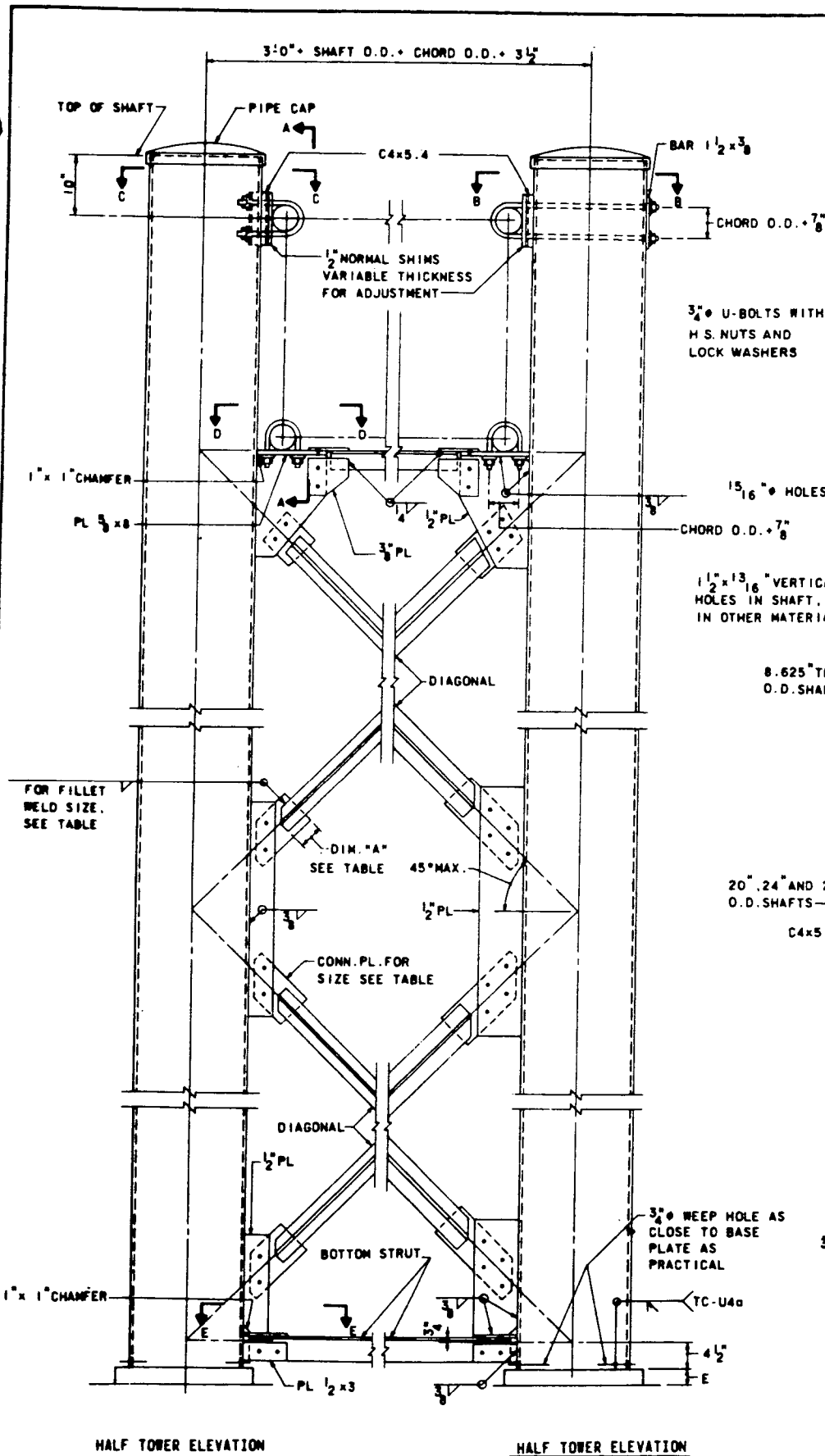
Commonwealth of Pennsylvania
 DEPARTMENT OF TRANSPORTATION
 BUREAU OF HIGHWAY SERVICES

OVERHEAD SIGN STRUCTURES
 STEEL SPANS

FOUNDATION DESIGN AND DETAILS

Recommended by Chief Bridge Engineer	Recommended by Chief, Traffic Engineering and Operations Division	Recommended by Chief Highway Engineer	SM. 6 of 10 TC 7717
---	--	--	------------------------

BY: RES

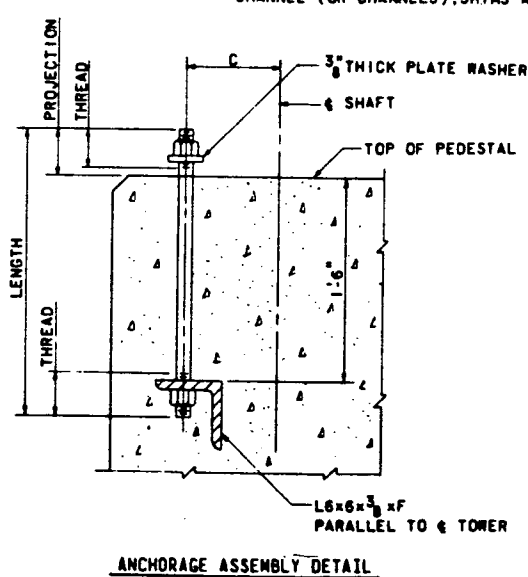


PIPE CAPS		
PIPE O.D. - IN.	R	WT. LBS.
3.500	-	2.8
4.000	-	3.2
4.500	-	3.6
5.563	-	4.7
6.625	-	5.8
8.625	1'-0"	8.4
10.750	1'-0"	12
12.750	1'-3"	15
14.000	1'-6"	17
16.000	2'-0"	20
18.000	2'-6"	24
20.000	3'-0"	29
24.000	3'-6"	38
26.000	3'-6"	44

TOWER SHAFT BASES										ANCHORAGES			
SHAFT O.D. - IN.	A	B	C	D	E	F	HOLE DIA.	WEIGHT OF BASE LBS.	BOLT NO. - DIA. x LENGTH	PROJ.	THREAD	WASHER O.D.	WEIGHT OF ANCHORAGE ASSEMBLY LBS.
8.625	1'-6"	1'-6"	6 1/2"	6 1/2"	1 1/2"	2'-0"	1 3/8"	128	4-1" x 1-1 1/2"	3 1/2"	3"	2 1/2"	169
10.750	1'-8"	1'-8"	7 1/2"	7 1/2"	1 3/4"	2'-0"	1 3/8"	186	4-1" x 1-1 1/2"	3 1/2"	3"	2 1/2"	169
12.750	1'-10"	1'-8"	8 1/2"	7 1/2"	2"	2'-0"	1 3/8"	233	4-1 1/4" x 2'-0 1/2"	4 1/4"	3 1/2"	3"	201
14.000	2'-0"	1'-8"	9 1/2"	7 1/2"	2 1/4"	2'-0"	1 3/8"	288	4-1 1/4" x 2'-0 1/2"	4 1/4"	3 1/2"	3"	201
16.000	2'-2"	1'-8"	10 1/2"	7 1/2"	2 3/4"	2'-0"	1 3/8"	347	4-1 1/2" x 2'-2"	5"	4"	3 1/2"	246
18.000	2'-4"	1'-10"	11 1/2"	8 1/2"	2 3/4"	2'-0"	1 3/8"	456	4-1 1/2" x 2'-2"	5"	4"	3 1/2"	246
20.000	2'-6"	2'-0"	12 1/2"	9 1/2"	3"	2'-6"	1 3/8"	585	4-1 1/2" x 2'-2"	5 1/2"	4"	3 1/2"	276
24.000	2'-10"	2'-4"	13 1/2"	11 1/2"	3 1/4"	2'-6"	1 3/8"	843	6-1 1/2" x 2'-2"	5 1/2"	4"	3 1/2"	339
26.000	3'-0"	2'-6"	13 1/2"	11 1/2"	3 1/4"	2'-6"	1 3/8"	961	6-1 1/2" x 2'-2"	5 1/2"	4"	3 1/2"	339

UPPER CHORD CONNECTIONS								
SHAFT O.D. - IN.	WEIGHT IN POUNDS FOR CHORD O.D. - IN.							
	3.500	4.000	4.500	5.563	6.625	8.625	10.750	12.750
8.625	13	13	-	-	-	-	-	-
10.750	13	14	15	16	-	-	-	-
12.750	14	15	15	17	18	-	-	-
14.000	14	15	16	17	19	22	-	-
16.000	-	15	16	18	19	22	25	-
18.000	-	16	17	18	20	23	26	29
20.000	-	-	15	17	19	22	26	30
24.000	-	-	-	17	19	22	26	30
26.000	-	-	-	-	22	26	30	-

3/4" U-BOLTS AT BOTTOM CHORD	
CHORD O.D. - IN.	WT. LBS.
3.500	2.1
4.000	2.2
4.500	2.4
5.563	2.7
6.625	3.1
8.625	3.7
10.750	4.4
12.750	5.1



DIAGONAL CONNECTION DETAILS				
DIAGONAL SIZE	CONN. PL. MIN. SIZE	DIM. "A" MIN.	WELD SIZE	NO. 7/8" H.S. BOLTS EA. END
ST2.0x3.85	3/8 x 6	3 1/2"	3/16	2
ST2x4.75	3/8 x 6	3 1/2"	3/16	2
ST2.5x7.375	3/8 x 6	3 1/2"	1/4	2
ST3x8.625	3/8 x 6	4"	1/4	2
ST3.5x10	1/2 x 6	4"	5/16	4
ST4x11.5	1/2 x 6	4"	5/16	4
ST5x17.5	5/8 x 6	4 1/2"	3/8	4

NOTES:
 FOR GENERAL NOTES, SEE SHEET 6.
 FOR REQUIRED MEMBER SIZES, EXCEPT BOTTOM STRUT, SEE SHEETS 2, 3, 4 AND 5. BOTTOM STRUT SHALL BE RT4x20 FOR ALL TOWERS.
 CONTACT SURFACES AT BOLTED FRICTION-TYPE JOINTS AND SPLICES COATED WITH GALVANIZING SHALL BE SCORED BY WIRE BRUSHING OR BLASTING AFTER GALVANIZING AND PRIOR TO FINAL ASSEMBLY.

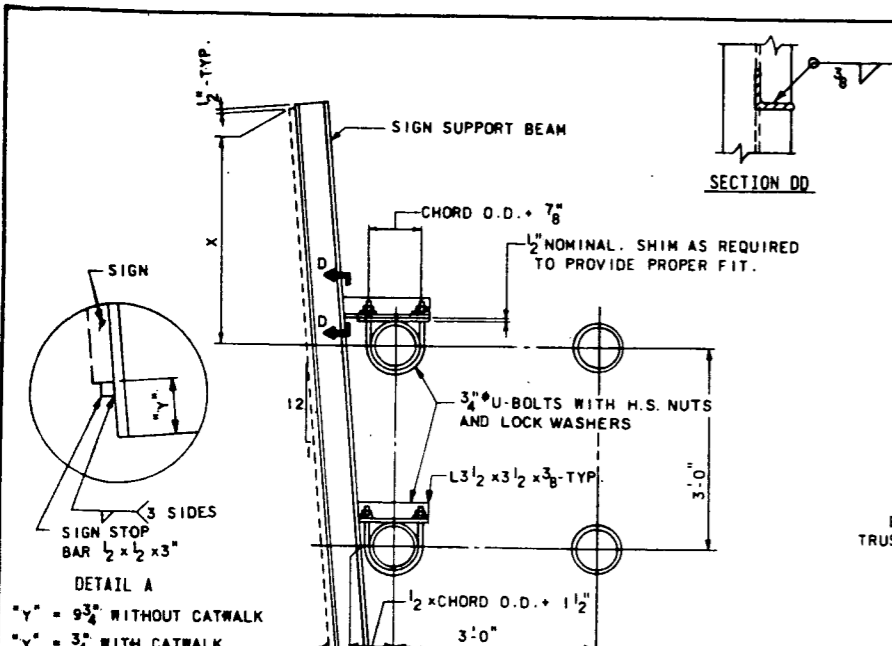
Commonwealth of Pennsylvania
DEPARTMENT OF TRANSPORTATION
 BUREAU OF HIGHWAY SERVICES

OVERHEAD SIGN STRUCTURES
STEEL SPANS

BOLTED END TOWER DETAILS

Recommended by <i>B. J. Kistler</i> Chief Bridge Engineer	Recommended by <i>G. D. [Signature]</i> Chief, Traffic Engineering and Operations Division	Recommended by <i>W. H. [Signature]</i> Chief Highway Engineer	Sh. 7 of 10 TC 7717
---	--	--	------------------------

BY RES

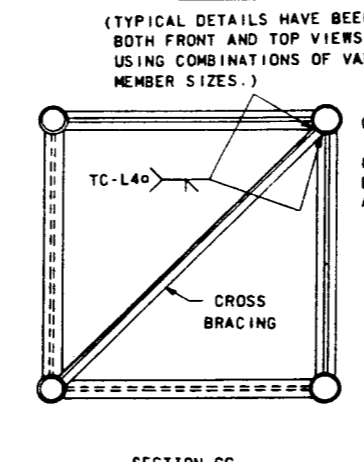
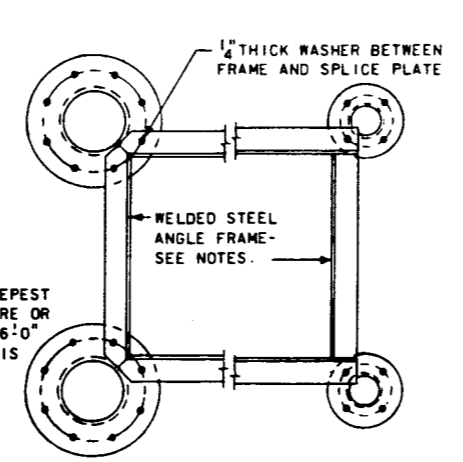
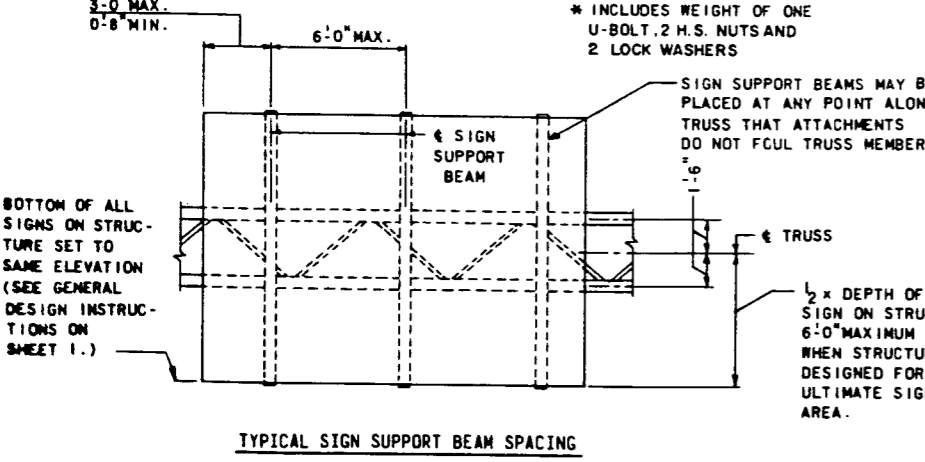
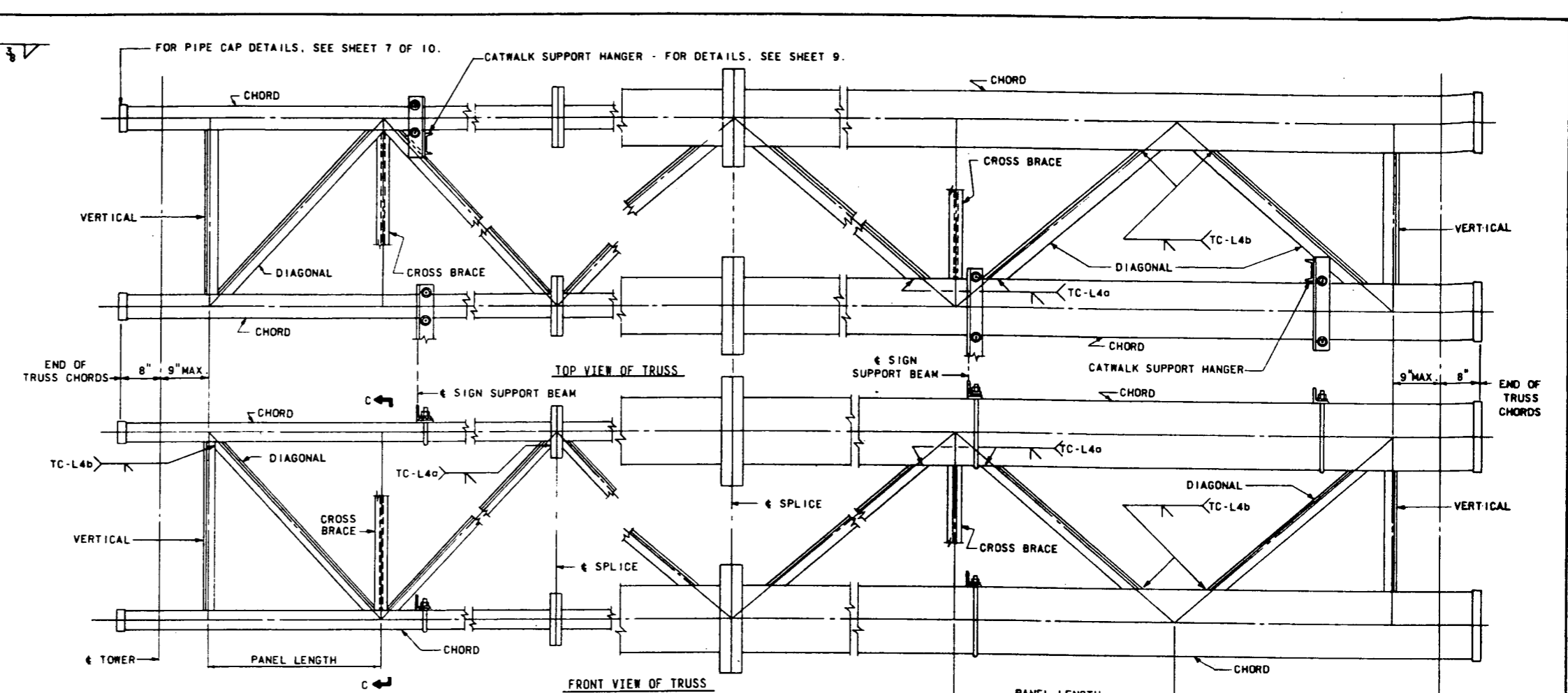


DETAIL A
 "Y" = 9 3/4" WITHOUT CATWALK
 "Y" = 3 3/4" WITH CATWALK

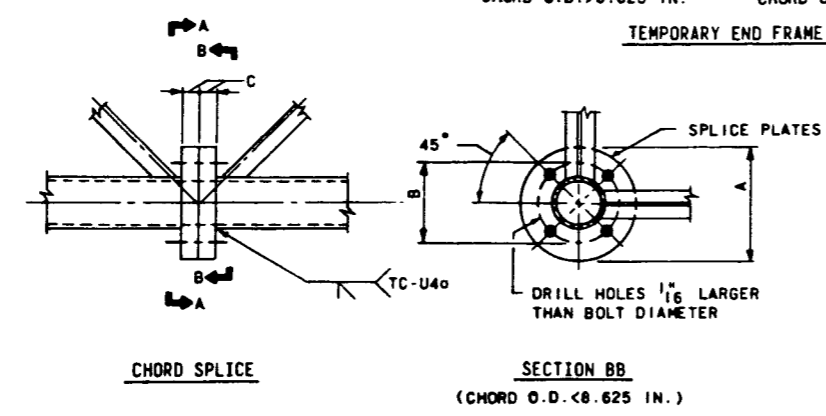
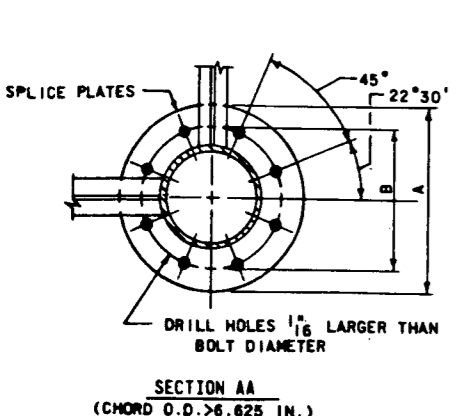
X	SIZE
0 TO 5'-6"	W6x15.5
5'-6" TO 6'-6"	W6x20.0
6'-6" TO 7'-6"	W6x25.0
7'-6" TO 8'-6"	W8x28.0
8'-6" TO 9'-6"	W8x31.0

CHORD O.D.	LBS*
3.500	2.1
4.000	2.2
4.500	2.4
5.563	2.7
6.625	3.1
8.625	3.7
10.750	4.4
12.750	5.1

* INCLUDES WEIGHT OF ONE U-BOLT, 2 H.S. NUTS AND 2 LOCK WASHERS

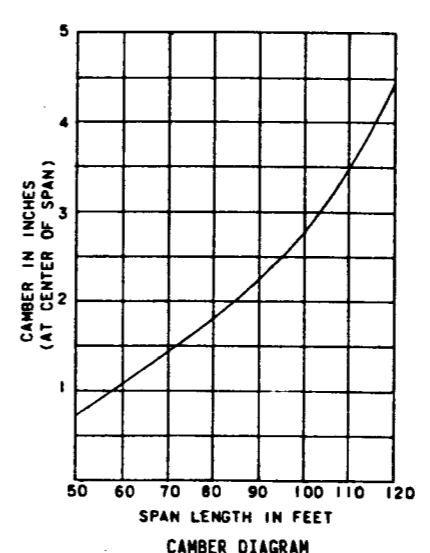


CROSS BRACING - ALTERNATING IN DIRECTION @ MAXIMUM SPACING OF 3 PANEL LENGTHS. SHALL NOT BE PLACED AT END VERTICALS NOR AT SPLICE POINTS.



CHORD O.D. IN.	A (IN.)	B (IN.)	C (IN.)	H.S. BOLTS NO. - SIZE	WEIGHT ALBS.
3.500	10.0	7.0	1 3/8	4-7/8"	59
4.000	10.0	7.0	1 3/8	4-7/8"	57
4.500	10.0	7.0	1 3/8	4-7/8"	55
5.563	13.0	9.0	1 3/4	4-7/8"	118
6.625	13.0	9.0	1 3/4	4-1"	112
8.625	16.5	12.5	2 1/4	8-7/8"	224
10.750	18.0	14.0	2 1/4	8-1"	244
12.750	19.5	15.5	2 1/2	8-1 1/8"	294

A INCLUDES WEIGHT OF SPLICE PLATES, H.S. BOLTS, NUTS AND LOCK WASHERS.



NOTES:
 FOR GENERAL NOTES, SEE SHEET 6.
 FOR MEMBER SIZES, SEE DESIGN TABLES ON SHEETS 2, 3, 4 AND 5.
 TEMPORARY END FRAME TO BE USED TO PROVIDE ADDITIONAL SUPPORT TO ENDS OF TRUSS CHORDS DURING FABRICATION AND GALVANIZING PROCESSES. REMOVE AND REPAIR GALVANIZING AT POINTS OF CONTACT PRIOR TO TRUSS ASSEMBLY AND ERECTION. TEMPORARY FRAME IS NOT PART OF THE STRUCTURE AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR.
 TRUSSES SHALL BE FABRICATED WITH CAMBER AT THE CENTER OF THE SPAN EQUAL TO THE VALUE GIVEN BY THE CAMBER DIAGRAM ON THIS DRAWING. ALL TRUSSES SHALL BE ASSEMBLED IN THE SHOP IN A NO LOAD CONDITION TO ENSURE FIT AT SPLICES AND TO CHECK CAMBER.

Commonwealth of Pennsylvania
 DEPARTMENT OF TRANSPORTATION
 BUREAU OF HIGHWAY SERVICES

**OVERHEAD SIGN STRUCTURES
 STEEL SPANS**

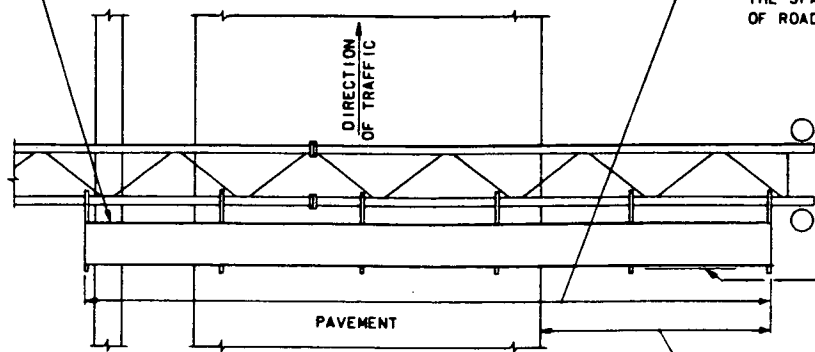
TRUSS DETAILS
 SIGN SUPPORT DETAILS

Recommended by <i>B. K. Kelle</i> Chief Bridge Engineer	Recommended by <i>W. J. ...</i> Chief, Traffic Engineering and Operations Division	Recommended by <i>...</i> Chief Highway Engineer	Sht. 8 of 10 TC 7717
---	--	--	-------------------------

BY: RES

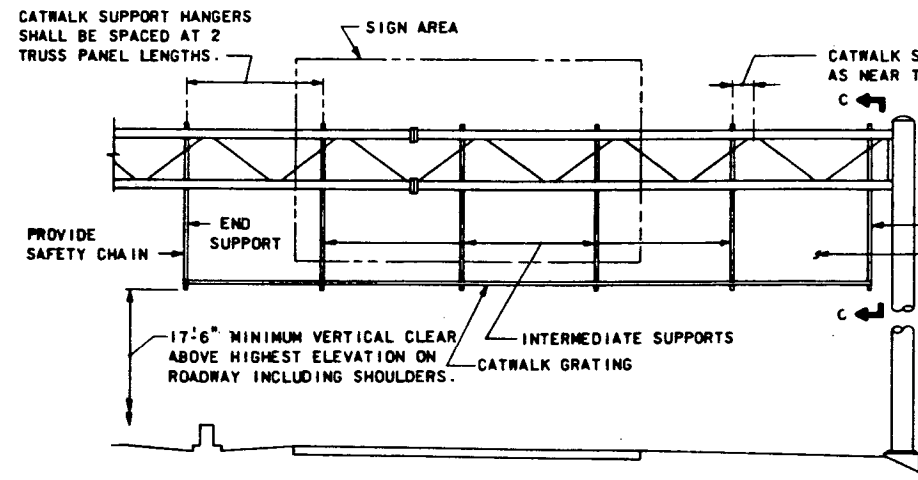
CATWALK MAY BE REQUIRED ON ONE OR BOTH SIDES OF THE TRUSS DEPENDING UPON WHETHER THERE IS ONE OR TWO WAY TRAFFIC ON THE ROADWAY THAT THE SIGN STRUCTURE SPANS.

WHEN CATWALK IS ON ONE SIDE OF THE TRUSS ONLY, THE OVERALL LENGTH SHALL BE SUCH THAT THE END NEAREST THE LEFT EDGE OF ROADWAY (LOOKING IN DIRECTION OF TRAFFIC) EXTENDS A MINIMUM OF 4 FEET BEYOND THIS EDGE OF ROADWAY. WHEN CATWALK IS ON BOTH SIDES OF TRUSS, THE OVERALL LENGTH SHALL BE SUCH THAT BOTH ENDS NEAREST THE CENTER OF THE SPAN EXTEND A MINIMUM OF 4 FEET BEYOND THE LEFT EDGES OF ROADWAY (LOOKING IN THE RESPECTIVE DIRECTIONS OF TRAFFIC).

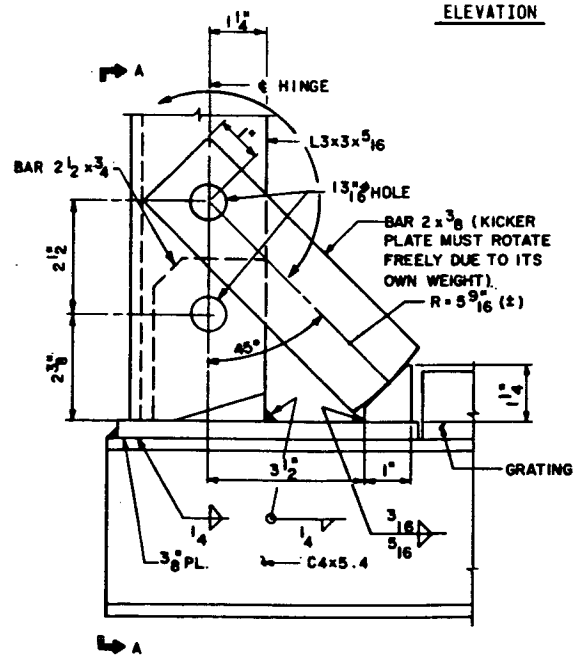


PLAN

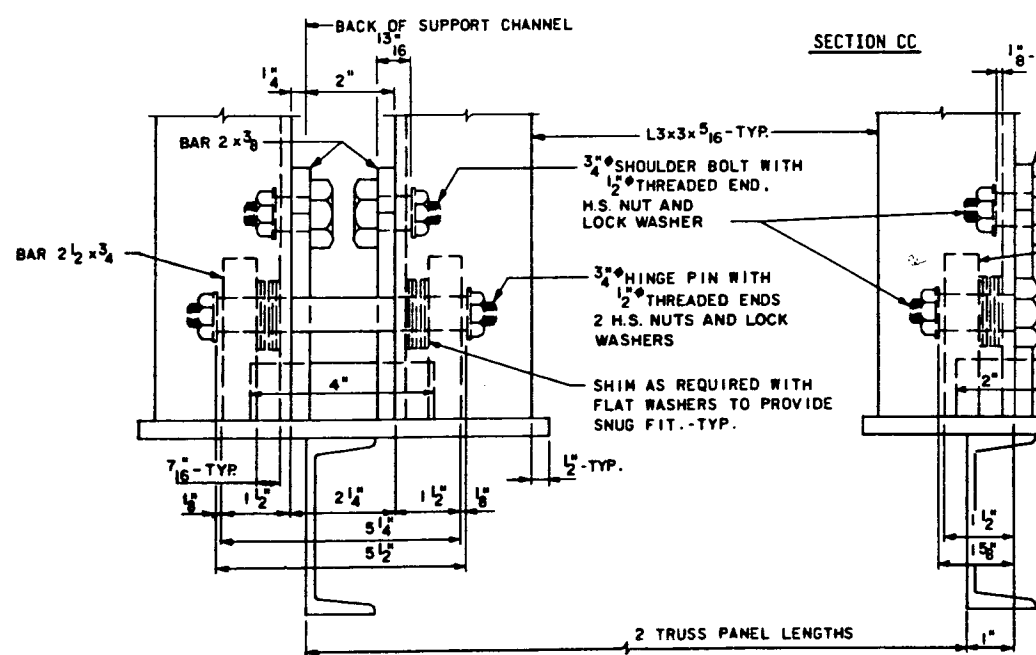
CATWALK SUPPORT HANGERS SHALL BE SPACED AT 2 TRUSS PANEL LENGTHS.



ELEVATION

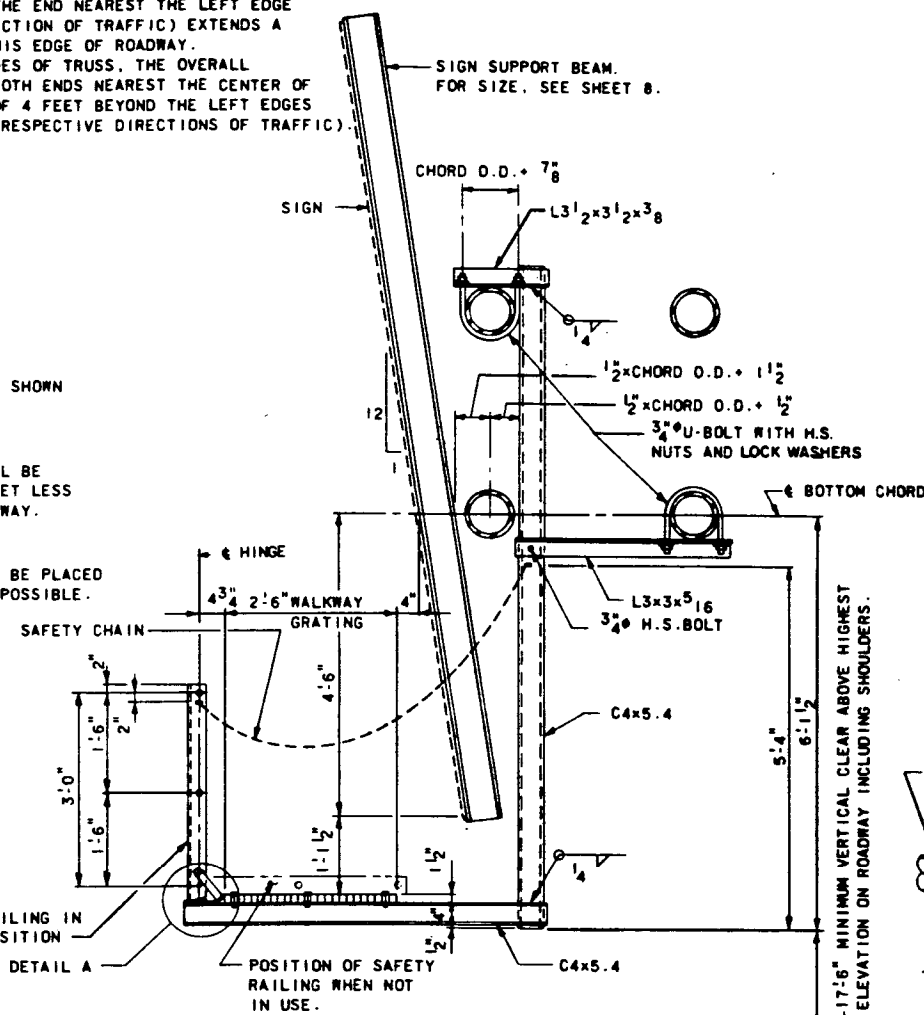


DETAIL A

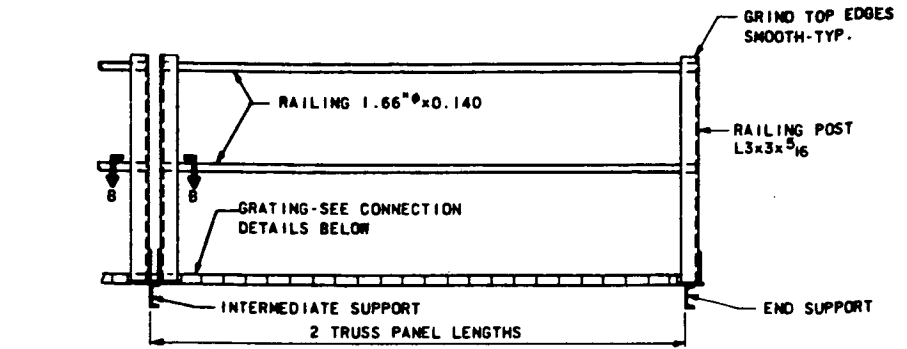


VIEW AA AT INTERMEDIATE SUPPORT

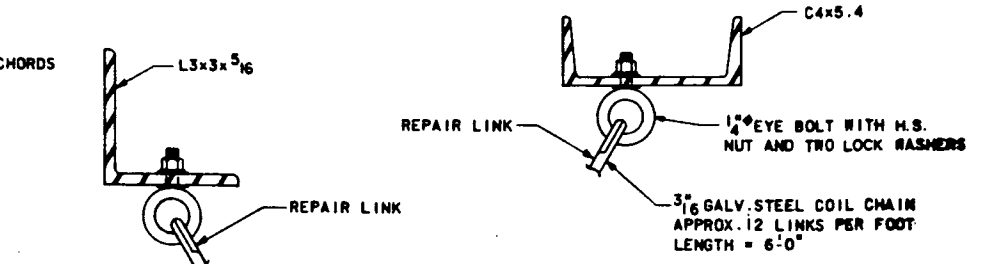
VIEW AA AT END SUPPORT



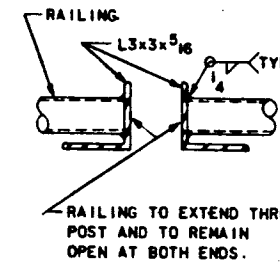
SECTION CC



TYPICAL SAFETY RAILING UNIT

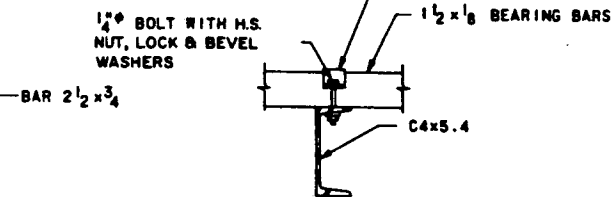


SAFETY CHAIN CONNECTION DETAILS

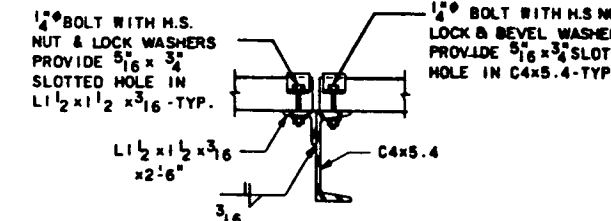


SECTION BB

STEEL SADDLE CLIP SUPPLIED WITH GRATING-TYP. SPACE CLIPS @ 1'-2" (±) C.C.



AT INTERMEDIATE SUPPORT (GRATING CONTINUOUS) AND END SUPPORT



AT INTERMEDIATE SUPPORT (GRATING BROKEN) GRATING CONNECTION DETAILS

NOTES:

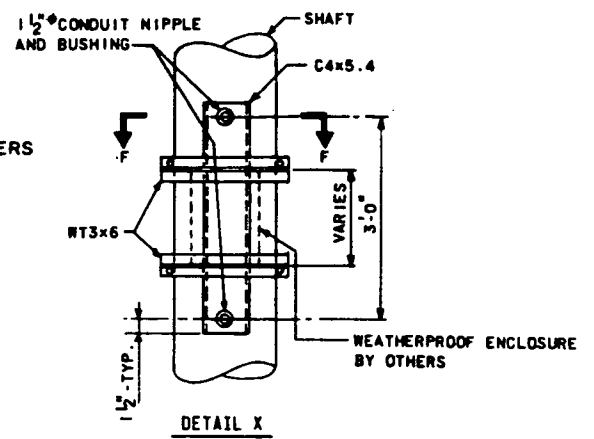
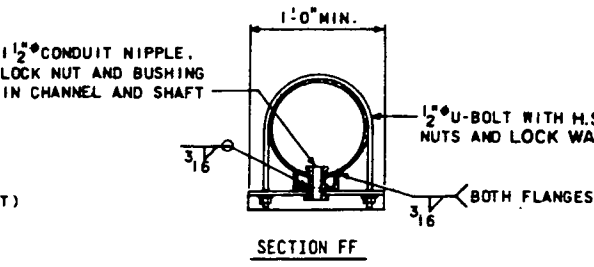
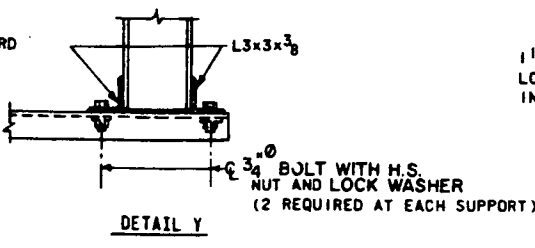
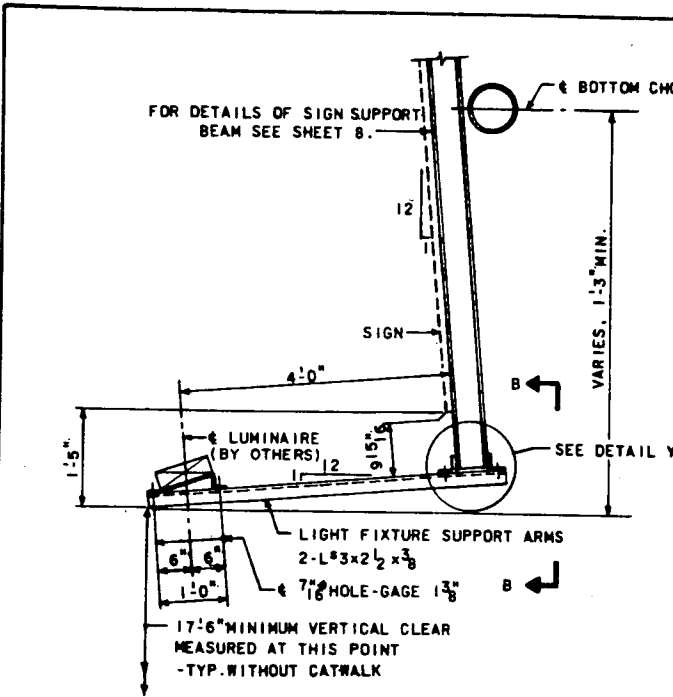
- FOR GENERAL NOTES SEE SHEET 6.
- FOR USE OF CATWALK SEE GENERAL DESIGN INSTRUCTIONS ON SHEET 1.
- SPECIAL CARE SHALL BE TAKEN TO INSURE THAT THE COMPLETED POST HINGE AND KICKER PLATE ASSEMBLY WILL HOLD THE SAFETY RAILING IN A STEADY MANNER, FREE OF WOBBLE WHILE IN THE RAISED POSITION. MAXIMUM ALLOWABLE DISPLACEMENT FROM VERTICAL AT TOP OF RAILING WHEN KICKER PLATES ARE IN JAM POSITION SHALL BE 1".
- CATWALK GRATING TO BE CONTINUOUS (NO SPLICES) OVER AS MANY SUPPORTS AS PRACTICABLE CONSISTENT WITH FABRICATION, EASE OF HANDLING AND ASSEMBLY.
- WELDED-TYPE GRATING SHALL HAVE 1/2 x 1/8 BEARING BARS @ 1 3/8 CENTERS AND 1/2 x 3/16 CROSS BARS @ 4" CENTERS. WEARING SURFACES OF ALL BARS SHALL BE SERRATED.
- PROVIDE 3 CLIPS EVENLY SPACED AT EACH GRATING SUPPORT.

Commonwealth of Pennsylvania
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY SERVICES

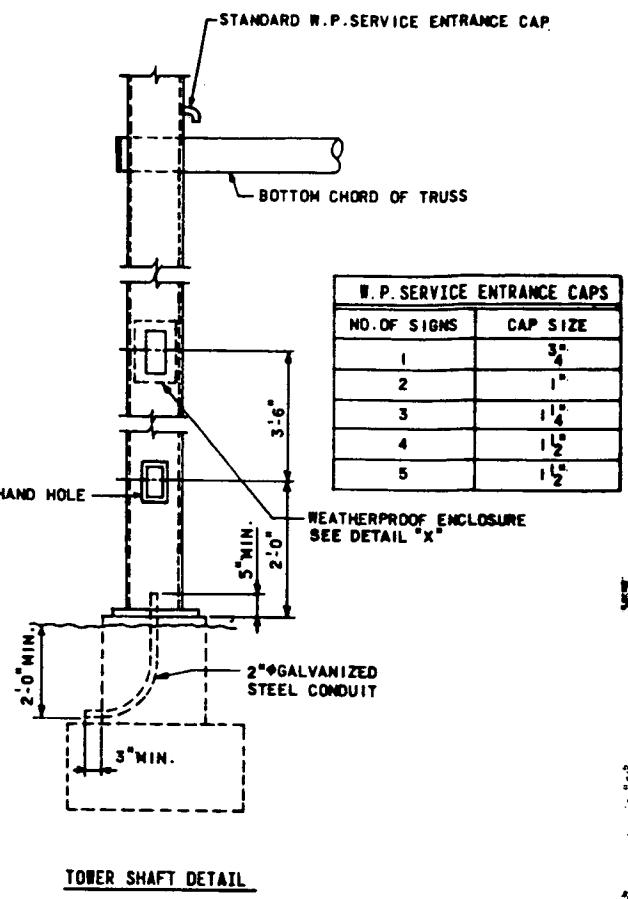
OVERHEAD SIGN STRUCTURES
STEEL SPANS
CATWALK DETAILS

Recommended by <i>B. J. [Signature]</i> Chief Bridge Engineer	Recommended by <i>[Signature]</i> Chief, Traffic Engineering and Operations Division	Recommended by <i>[Signature]</i> Chief Highway Engineer	Sh. 2 of 10 TC 7717
---	--	--	------------------------

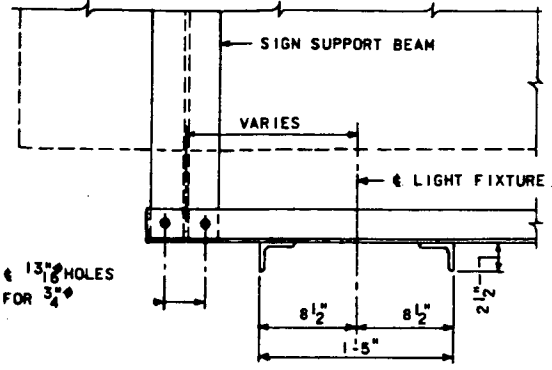
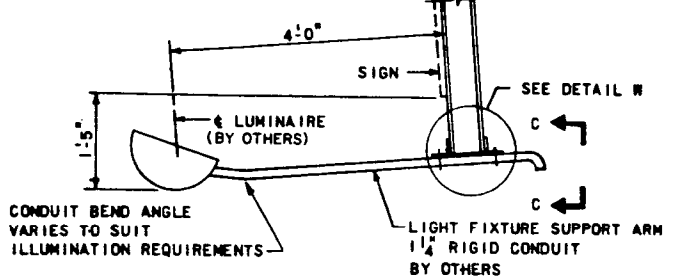
BY: RES



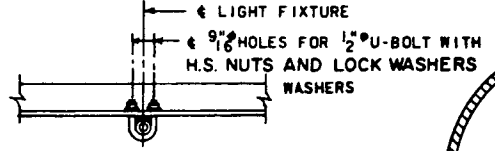
NO. OF SIGNS	CAP SIZE
1	3/4"
2	1"
3	1 1/4"
4	1 1/2"
5	1 3/4"



SHAFT SIZE	WT. -LBS.
8.625"	34
10.750"	36
12.750"	39
14.000"	40
16.000"	43
18.000"	46
20.000"	48
24.000"	53
26.000"	56

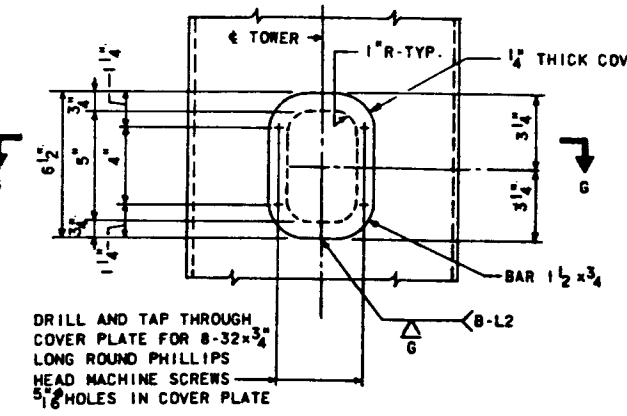
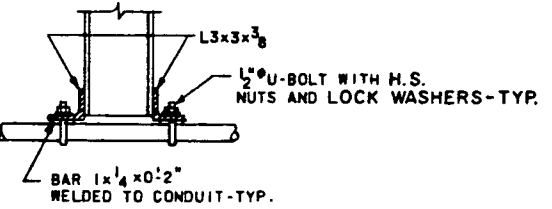
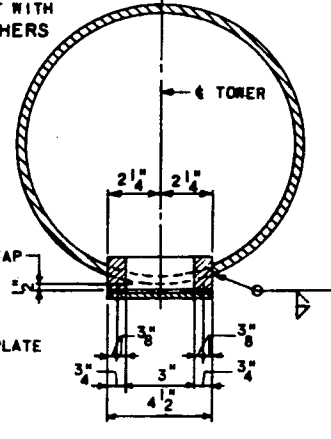


NOTE: DETAILS NOT SHOWN SAME AS SECTION BB.



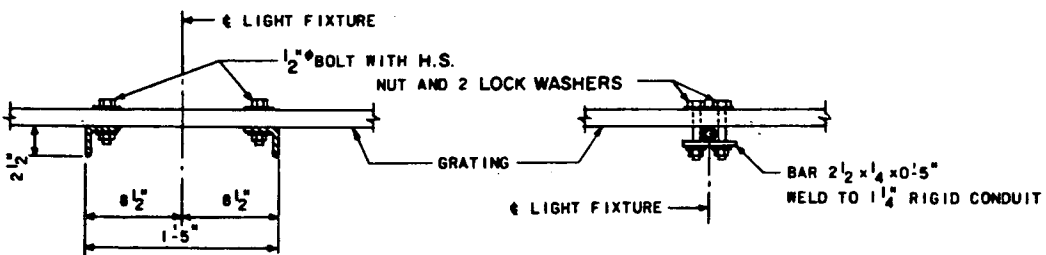
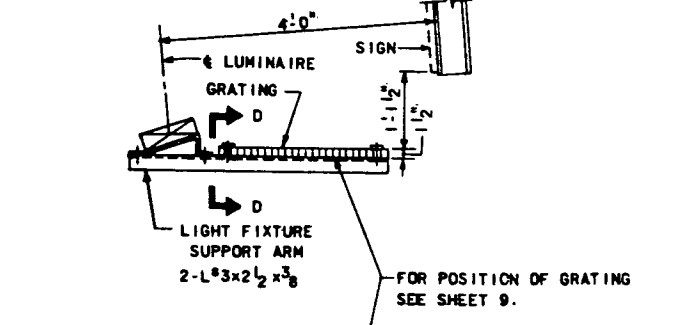
(WEIGHT OF STEEL DETAILS FOR LIGHT FIXTURE SUPPORT EXCLUDING CONDUIT = 1.3 LBS.)

(WEIGHT OF STEEL DETAILS FOR LIGHT FIXTURE SUPPORT INCLUDING ARMS = 76.2 LBS.)



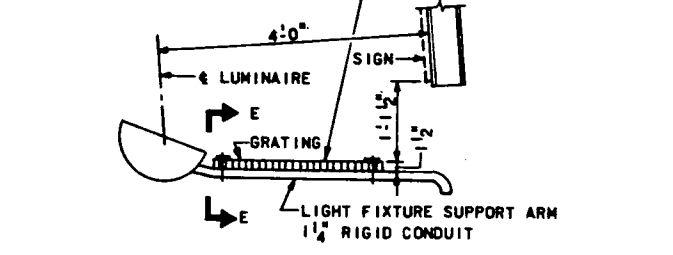
(WEIGHT OF STEEL DETAILS = 7.3 LBS.)

NOTES:
 * FOR GENERAL NOTES SEE SHEET 6.
 * FOR LIGHTING DETAILS SEE TC 7715.



(WEIGHT OF STEEL DETAILS FOR LIGHT FIXTURE SUPPORT INCLUDING ARMS = 54 LBS.)

(WEIGHT OF STEEL DETAILS FOR LIGHT FIXTURE SUPPORT EXCLUDING CONDUIT = 2.9 LBS.)



Commonwealth of Pennsylvania
 DEPARTMENT OF TRANSPORTATION
 BUREAU OF HIGHWAY SERVICES

OVERHEAD SIGN STRUCTURES
 STEEL SPANS

LIGHT FIXTURE SUPPORT DETAILS
 ELECTRICAL ENCLOSURE SUPPORT DETAILS
 HAND HOLE DETAILS

Recommended by Chief Bridge Engineer	Recommended by Chief, Traffic Engineering and Operations Division	Recommended by Chief Highway Engineer	Sht. 12 of 12 TC 7717
---	--	--	--------------------------

BY RES.