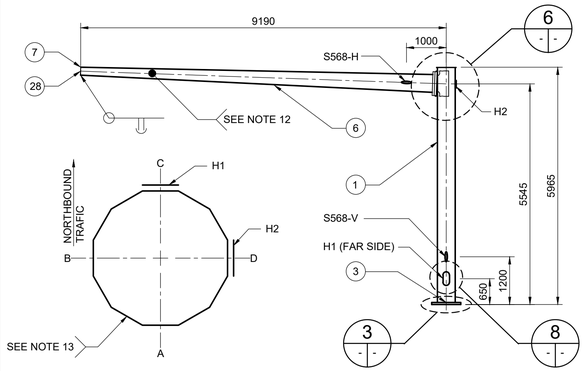
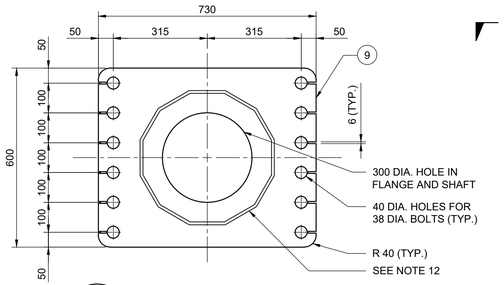
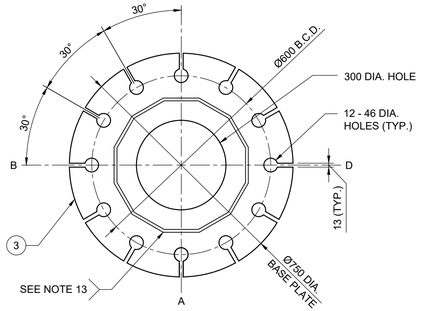


2 ORIENTATION
1 : 10

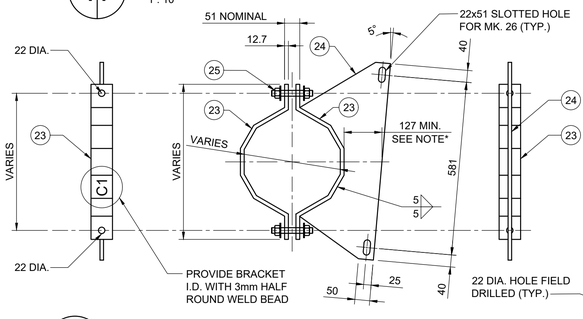
1 ELEVATION
1 : 75



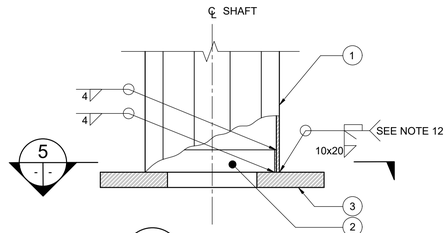
4 FLANGE PLATE DETAIL
1 : 10



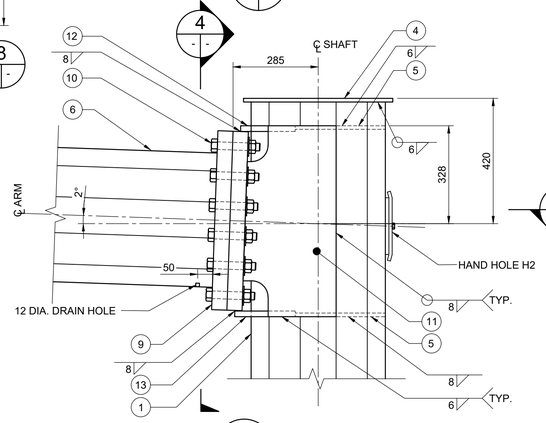
5 BASE PLATE DETAIL
1 : 10



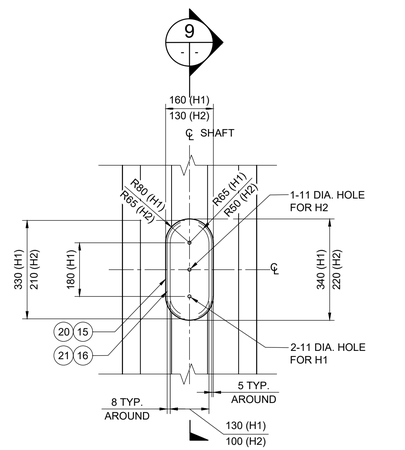
17 SIGN MOUNTING BRACKET DETAIL
1 : 10
NOTE*: ENSURE SIGN PANEL IS ORIENTATED PERPENDICULAR TO TRAFFIC LANES. FABRICATION OF MOUNTING BRACKETS SHALL RESULT IN A PLANAR SIGN PANEL, WITH NO TWISTING OR WARPING OF PANEL



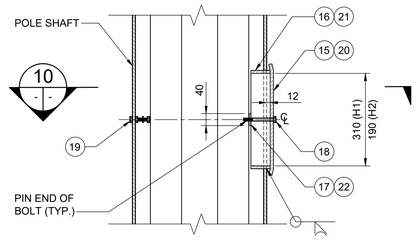
3 DETAIL
1 : 10



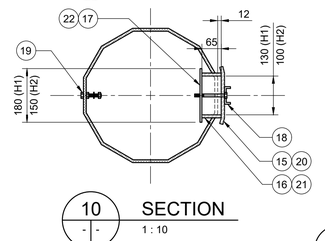
6 DETAIL
1 : 10



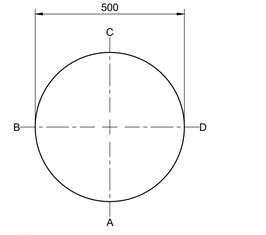
8 HANDHOLE MK. H1 & H2 DETAIL
1 : 10
NOTE: REFER TO ORIENTATION DETAIL FOR LOCATION OF HANDHOLES. WELDED JOINTS TO COMPLETE REINFORCING RING SHALL BE 100% PENETRATION.



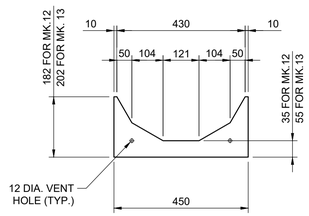
9 SECTION
1 : 10



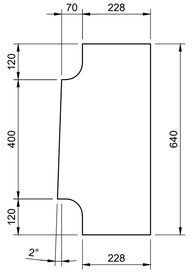
10 SECTION
1 : 10



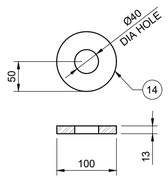
11 TOP PLATE - MK. 4
1 : 10



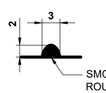
12 GUSSET PLATE - MK.12 & 13
1 : 10



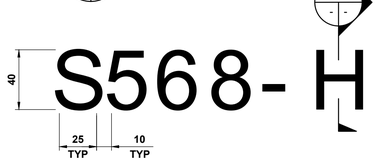
13 GUSSET PLATE - MK.11
1 : 10



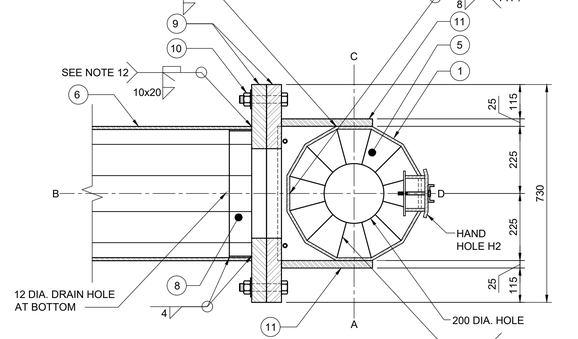
14 PLATE WASHER DETAIL
1 : 5



16 SECTION D-D
2 : 1



15 STRUCTURE IDENTIFICATION NUMBER SIZE
1 : 2



7 SECTION
1 : 10

NOTE:
A TESTING AGENCY CERTIFIED BY THE CANADIAN WELDING BUREAU SHALL CARRY OUT SHOP FABRICATION INSPECTION AND TESTING BEFORE THE SUPPORT STRUCTURES AND ELEMENTS ARE APPROVED READY FOR GALVANIZING. AGENCY WILL SUBMIT REPORT ABOUT INSPECTION.

ENGINEERS GEOSCIENTISTS MANITOBA
Certificate of Authorization
Tetra Tech Canada Inc.
No. 6499

BILL OF MATERIALS

MK.	QTY.	DESCRIPTION
1	1	DODECAGONAL SHAFT 450 A/F x 9.25 THICK PLATE
2	1	BACK-UP STRIP 75 x 4.763
3	1	BASE PLATE 750 DIA. x 51 THICK
4	1	TOP PLATE 500 DIA. x 12 THICK
5	2	DODECAGONAL GUSSET PLATE 12 THICK
6	1	DODECAGONAL ARM 450 A/F TO 200 A/F x 9.525 THICK
7	1	DODECAGONAL END PLATE 200 A/F x 4.763 THICK
8	1	BACK-UP STRIP 75 x 4.763
9	2	FLANGE PLATE 51 THICK
10	12	38 DIA. ANCHOR BOLTS C/W 4 NUTS & 2 WASHERS (ASTM A325, TYPE 1, GALV.)
11	2	SIDE GUSSET PLATE 25 THICK
12	1	GUSSET PLATE 19 THICK
13	1	GUSSET PLATE 19 THICK
14	24	PLATE WASHER 13 THICK
		HANDHOLE MARK H1
15	1	COVER PLATE 11 GA. x 160 x 340 (ASTM A569)
16	1	REINFORCING RING 8 x 65 x 830
17*	2	CLAMP BAR 6 x 40 x 180
18*	2	10 DIA. x 140 BOLT S/S (TYPE 316)
19*	1	GROUND STUD ASSEMBLY 10 DIA. x 40
		HANDHOLE MARK H2
20	1	COVER PLATE 11 GA. x 130 x 220 (ASTM A569)
21	1	REINFORCING RING 8 x 65 x 555
22*	1	CLAMP BAR 6 x 40 x 150
18*	1	10 DIA. x 140 BOLT S/S (TYPE 316)
19*	1	GROUND STUD ASSEMBLY 10 DIA. x 40
		SIGN MOUNTING BRACKET (4 REQUIRED)
23	2	CLAMP BAR 12 x 76 (LENGTH TO SUIT)
24	1	BRACKET PLATE 12 THICK
25	2	19 DIA. ASTM F 1554 GRADE 55 THREADED ROD C/W 2 A563 GRADE A NUTS & F436 WASHER AND LOCK WASHER (ALL GALVANIZED)
26	2	19 DIA. S/S BOLT C/W NUT, 2 WASHERS & 1 LOCK WASHER (ASTM A193 GRADE B8)
27	1	ALUMINUM T-BAR 6061-T6 ASTM B221 102 x 76 x 8 LENGTH TO SUIT SIGN PANEL HEIGHT
28	1	HALF COUPLING (1 ½" NOMINAL) ASTM A105 3000 lb

*NOTES:
1. MARK NO. 17 & 22 C/W 8 DIA. PUNCHED 10 N.C. TAPPED AT THE CENTER OF PLATE
2. MARK NO. 18 C/W CUP WASHER
3. MARK NO. 19 C/W 2-10 DIA. HEX NUT, 2 TERMINAL WASHER & 1-LOCKWASHER

GENERAL NOTES:

1. DESIGN DATA
   - AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORT FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 1ST EDITION 2015 AND INTERIM REVISIONS 2017 & 2018 (FOR OVERHEAD SIGN STRUCTURES)
   - CAN/CSA S6-19: CANADIAN HIGHWAY BRIDGE DESIGN CODE (CHBDC)
   - ASCE/SEI 7-10 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
   - DESIGN WIND LOADS (Pz) PER CHBDC : 2.25 kPa, 0.88 kPa SERVICE; q = 450 Pa (50 YEAR RETURN PERIOD)
   - DESIGN ICE THICKNESS FOR ICE ACCRETION PER ASCE/SEI 7-10 ; 34mm (HEAVY)
   - IMPORTANCE FATIGUE FACTORS - CATEGORY I: NATURAL WIND GUSTS AND TRUCK-INDUCED GUSTS, CATEGORY II: GALLOPING WIND EFFECTS.
   - PILE FOUNDATION IS DESIGNED IN ACCORDANCE WITH CAN/CSA S6-19 CHBDC.
2. DESIGN LIFE OF OVERHEAD STRUCTURES IS 75 YEARS.
3. OVERHEAD SIGN STRUCTURES OVER ROADWAYS SHALL HAVE 5.3m MINIMUM VERTICAL CLEARANCE
4. STRUCTURAL STEEL FOR ALL COMPONENTS OF THE OVERHEAD SIGN SUPPORT STRUCTURES SHALL CONFORM TO THE EQUIREMENTS OF THE LATEST EDITION OF CAN/CSA G40.21, GRADE 350W UNO.
5. ALL PLATE MATERIALS SHALL CONFORM TO CAN/CSA G40.21M GRADE 300W UNLESS NOTED OTHERWISE
6. MISCELLANEOUS METAL TO BE HOT-DIP GALVANIZING AND SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF CAN/CSA G164 AND ASTM A123, TO A RETENTION OF 610 g/m^2.
7. ALL AREAS OF DAMAGED GALVANIZING SHALL BE REPAIRED WITH SPRAY-ON COATING CALLED ZINGA OR APPROVED EQUIVALENT HAVING A MINIMUM 96% ZINC CONTENT IN THE DRY FILM.
8. ALUMINUM T-BARS & SIGNS
   - CONTRACTOR SHALL SUPPLY ALUMINUM T-BARS AND INSTALL SIGN PLATES ON SUPPLIED T-BARS.
   - 1 SIGN PANEL, MAXIMUM SIZE 4280x1524 AS SHOWN ON SHEET 2401 SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR ON THE SIGN SUPPORT STRUCTURE IMMEDIATELY FOLLOWING THE ERECTION OF THE SUPPORT STRUCTURE (SAME DAY).
9. INSTALL HOLES IN THE GUSSET PLATES FOR DRAINAGE DURING GALVANIZED AS DETAILED.
10. PROVIDE "RAISED" IDENTIFICATION NO. WITH WELDING ELECTRODE FOR THE SIGN STRUCTURE.
11. GRIND ALL SHARP POINTS AND EDGES.
12. EXTERIOR WELD JOINING SHAFT TO TRANSVERSE PLATE SHALL BE AN UNEQUAL LEG COMPLETE PENETRATION WELD WITH THE LONG LEG OF THE WELD ALONG THE SHAFT TERMINATING AT 30° FROM THE SHAFT SURFACE.
13. SEAM WELDS SHALL BE 100% PENETRATION WITHIN 200mm OF BOTH ENDS OF THE VERTICAL AND ARM SHAFTS.
14. FLANGE BOLTS, NUTS, AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF ASTM A325, TYPE 1 AND HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM F2329.ALL STAINLESS STEEL BOLTS AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF ASTM F593 AND F594, TYPE 316.

NO.	REVISIONS	DATE	BY
	B.M. ELEV.		
0	ISSUED FOR TENDER	25.08.07	ZM

TETRA TECH

DESIGNED BY ZM | REVIEWED BY SA
DRAWN BY AM | APPROVED BY KA
SCALE: AS NOTED | ACCEPTED BY CAM WARD, P.ENG. DATE 25.08.07
DATE 25.08.07

PROVINCE OF MANITOBA 2025-08-07 Z. MILUTINOVIC Member 42859 REGISTERED PROFESSIONAL ENGINEER

CONSULTANT DRAWING NO. 704-INF.MBI03007.01-DWG-S2402

Winnipeg

THE CITY OF WINNIPEG
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

LAGIMODIERE TWIN OVERPASSES
OVER CPKC KEEWATIN
REHABILITATION AND RELATED WORKS

CITY DRAWING NUMBER S568-25-2402
SHEET 2 OF 2

OVERHEAD SIGN STRUCTURE S568
FABRICATION DETAILS

2402