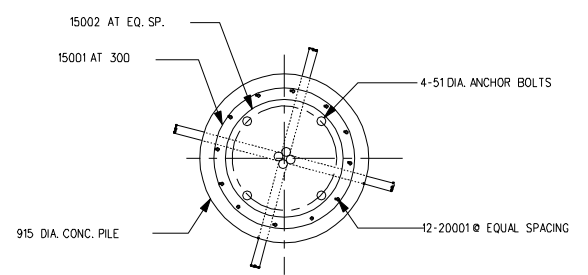
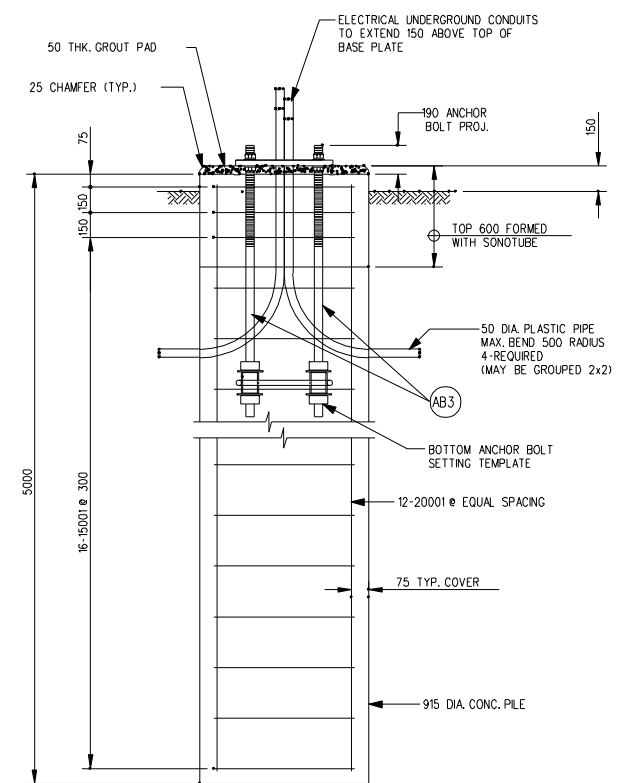


ANCHOR BOLTS LAYOUT



PLAN / CONCRETE SECTION



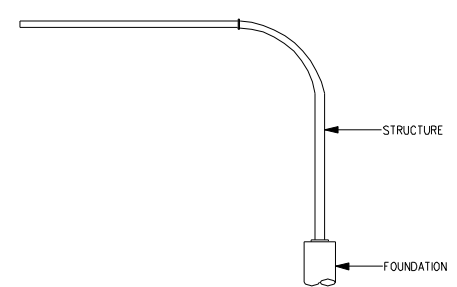
ELEVATION

FOUNDATION DETAIL  
N.T.S.

GENERAL NOTES:

CONCRETE FOUNDATION PILES

- PRIOR TO DRILLING PILES, CONTRACTOR SHALL ENSURE THERE ARE NO CONFLICTING SURFACE OR SUBSURFACE UTILITIES.
- DRILL PILES TO INDICATED DEPTHS ENSURING THAT SHAFTS ARE DRY AND FREE OF DEBRIS UNTIL CONCRETE IS PLACED.
- CONCRETE  
PROPORTIONING OF FINE AGGREGATE, COARSE AGGREGATE, CEMENT, WATER, AND AIR ENTRAINING AGENT SHALL BE SUCH AS TO YIELD CONC. HAVING THE REQUIRED STRENGTH AND WORKABILITY AS FOLLOWS:  
 i) MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS - 35 MPa  
 ii) MAXIMUM WATER/CEMENT RATIO - 0.45  
 iii) MINIMUM CEMENT CONTENT - 340 kg/m<sup>3</sup>  
 iv) SLUMP - 80 ± 20 mm  
 v) AGGREGATE - 40 mm NOMINAL  
 vi) AIR CONTENT - 4.0 TO 7.0 PERCENT  
 vii) CEMENT - TYPE 50 SULPHATE RESISTANT CEMENT  
 SHOULD COMPATIBLE SUPERPLASTIZING ADMIXTURES BE APPROVED BY THE ENGINEER, THE SLUMP AFTER ADDITION OF THE SUPERPLASTICIZER SHALL BE 170 ± 40 mm.
- NOTIFY THE OWNER AND TESTING FIRM A MINIMUM OF TWENTY FOUR HOURS PRIOR TO COMMENCEMENT OF CONCRETE OPERATIONS.
- CAST FOUR CONCRETE TEST CYLINDERS FOR EVERY 50 CUBIC METRES OR LESS. ONE CYLINDER TO BE CURED ON JOB SITE UNDER SAME CONDITIONS AS CONCRETE IT REPRESENTS.
- REINFORCING STEEL TO BE GRADE 400W, DEFORMED BILLET STEEL BARS FOR CONCRETE REINFORCEMENT CONFORMING TO CSA G30.18.
- ANCHOR BOLTS, NUTS AND WASHERS WILL BE SUPPLIED BY THE DEPARTMENT AND SET BY CONTRACTOR.
- THE ANCHOR BOLTS SHALL BE ALIGNED WITH A TOP AND BOTTOM SETTING TEMPLATE MATCHING THE BOLT HOLE LAYOUT. THE SETTING TEMPLATES SHALL BE HELD IN PLACE BY THE NUTS SUPPLIED WITH THE ANCHOR BOLTS. PLACEMENT OF ANCHOR BOLTS WITHOUT THE SETTING TEMPLATES WILL NOT BE PERMITTED.  
 TOP SETTING TEMPLATE  
 • TEMPORARY STEEL TEMPLATE LOANED TO THE CONTRACTOR BY THE DEPARTMENT.  
 • AFTER COMPLETION OF CONCRETE PILE FOUNDATION WORKS, THE CONTRACTOR SHALL CLEAN THE TEMPLATE BY SANDBLASTING AND RETURN IT TO THE DEPARTMENT.  
 • IF THE TEMPLATE IS DAMAGED DURING CONSTRUCTION DUE TO NEGLIGENCE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING A NEW 10 mm THICK STEEL TEMPLATE TO THE DEPARTMENT AT HIS OWN EXPENSE.  
 BOTTOM SETTING TEMPLATE  
 • PERMANENT HOT DIP GALVANIZED STEEL ASSEMBLY FABRICATED FROM CSA G40.21 GRADE 300W AND ASTM A53 GR. B, SCH. 40 PIPE MATERIAL.  
 • SEE DETAIL ON THIS SHEET.
- SOILS INFORMATION AT SITE IS AVAILABLE FROM THE OWNER.

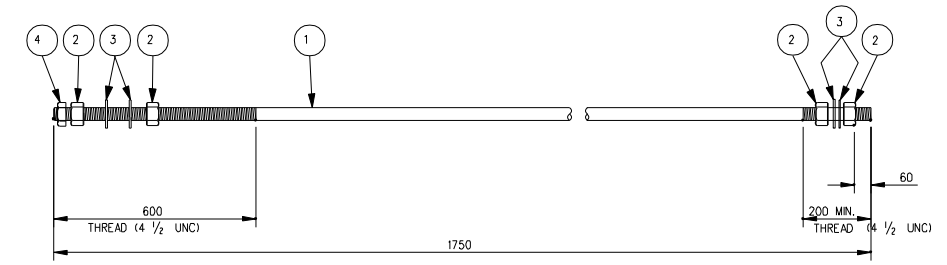


TYPE 9-HEAVY SERIES DAVIT STANDARD

STRUCTURES FOR FOUNDATION TYPE F4

BILL OF MISCELLANEOUS METAL

MK. NO.	QTY. REQ'D.	DESCRIPTION	SIZE	MATERIAL	REMARKS	LINE NO.
1	4	ANCHOR BOLT THREADED BOTH ENDS	51 (2") DIA. x 1750	ANSI/SAE 4140 GALV. FULL LENGTH	SEE DETAIL BELOW	1
2	16	HEAVY HEX NUT	51 (2") DIA.	ASTM A194 GRADE 2H		2
3	16	HEAVY WASHER	51 (2") DIA.	G40.21-M-300W		3
4	4	LOCK HEX NUT	51 (2") DIA.	ASTM A194 GRADE 2H		4
						5
						6

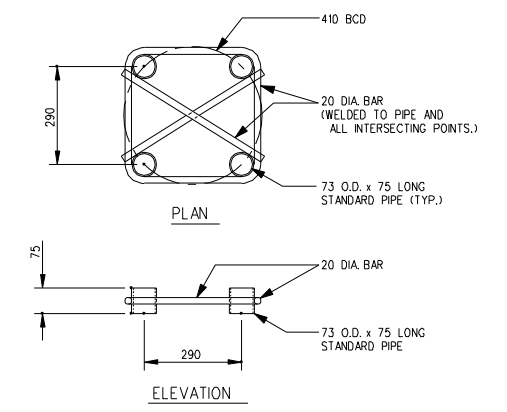
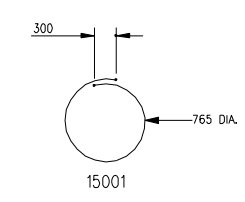


NOTES:

- ANCHOR BOLTS SHALL BE SOLID ROUNDS ANSI/SAE 4140 STEEL IN THE ANNEALED CONDITION.
- ALL PARTS OF ANCHOR BOLT ASSEMBLY SHALL BE HOT DIP GALVANIZED (FULL LENGTH) IN ACCORDANCE WITH C.S.A. STANDARD G164 WITH NET RETENTION OF 600 g/m.
- ALL NUTS SHALL BE TAPPED OVERSIZE.
- ALL NUTS AND WASHERS SHALL BE ASSEMBLED BY THE SUPPLIER PRIOR TO DELIVERY.

BILL OF REINFORCING STEEL

MK. NO.	SIZE	QTY. REQ'D.	LENGTH (mm)	MASS (kg)	LINE NO.
20001	20M	12	4850	137.06	1
15001	15M	18	2705	76.44	2
					3
TOTAL MASS OF REINFORCING STEEL				213.5 kg	4
TOTAL VOLUME OF C.I.P. CONC. PILES				3.32 m <sup>3</sup>	5
					6

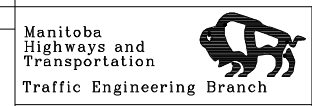


BOTTOM ANCHOR BOLT SETTING TEMPLATE

DATE	BY	DESCRIPTION

TRAFFIC SIGNAL AND PEDESTRIAN CORRIDOR STRUCTURES

FOUNDATION TYPE F4  
ANCHOR BOLTS, CONC. PILE, & PILE REINFORCEMENT



PROJECT ENGINEER	ACCEPTED BY:
DESIGN BY: S.S.R.	TRAFFIC OPERATIONS ENGINEER
CHECKED: S.S.R.	DATE
BY: N.B.G.	APPROVED BY:
TRACED: N.B.G.	DIRECTOR OF TRAFFIC ENGINEERING
CHECKED: S.S.R.	DATE
SCALE: AS SHOWN	COMPONENT NO. F4
	SHEET No. F4