



CITY OF WINNIPEG
PUBLIC WORKS DEPARTMENT

STANDARD DRAWINGS FOR TRAFFIC SIGNAL STRUCTURES



| DRAWING LIST | | |
|--------------|--|---------------------|
| SHEET NO. | DESCRIPTION | STRUCTURE TYPE CODE |
| 1 | COVER SHEET | - |
| 2 | BASE LOAD TABLES AND ATTACHMENT DATA | - |
| 3 | ATTACHMENT CONFIGURATIONS FOR STRAIGHT POLES - 10', 15' & 18' | - |
| 4 | ATTACHMENT CONFIGURATIONS FOR LIGHT DUTY STRUCTURES - 8', 12' & 16' ARMS | - |
| 5 | ATTACHMENT CONFIGURATIONS FOR MEDIUM DUTY STRUCTURES - 8', 12' & 16' ARMS | - |
| 6 | ATTACHMENT CONFIGURATIONS FOR MEDIUM DUTY STRUCTURES - 8', 12' & 16' ARMS WITH EXTENSION | - |
| 7 | ATTACHMENT CONFIGURATIONS FOR MEDIUM DUTY STRUCTURES - 21' & 26' ARMS | - |
| 8 | 2.438 m (8') SIGNAL ARM | 8 |
| 8 | 3.658 m (12') SIGNAL ARM | 12 |
| 8 | 4.887 m (16') SIGNAL ARM | 16 |
| 9 | 6.401 m (21') SIGNAL ARM | 21 |
| 9 | 7.925 m (26') SIGNAL ARM | 26 |
| 10 | LIGHT DUTY SHAFT | L |
| 11 | MEDIUM DUTY SHAFT | M |
| 12 | DOUBLE MEDIUM DUTY SHAFT | DM |
| 13 | VERTICAL EXTENSION TO 10.7 m (35') | E |
| 14 | 3.048 m (10') STRAIGHT POLE | S10 |
| 15 | 4.572 m (15') STRAIGHT POLE | S15 |
| 16 | 5.486 m (18') STRAIGHT POLE | S18 |
| 17 | ACCESS PANEL DETAILS | - |

DESIGN NOTES:

- AASHTO STANDARD SPECIFICATION FOR STRUCTURAL SUPPORTS, 2009 (5TH EDITION) PLUS INTERIMS.
- FATIGUE STRESS RANGE CALCULATED AT CRITICAL SECTIONS FOR TRAFFIC SIGNAL FATIGUE CATEGORY III PER AASHTO TABLE 11-1, CONSIDERING NATURAL WIND GUSTS, GALLOPING, AND TRUCK INDUCED GUSTS.
- DESIGN WIND PRESSURE CALCULATED AS $P_z = 0.613 K_z G V^2 I_R C_d$
WHERE:
 K_z AS PER AASHTO TABLE 3-5 EXCEPT NOT LESS THAN 1.0
 $G = 1.14$
 $V = 40 \text{ m/s}$
 I_R AS PER AASHTO TABLE 3-2 FOR 50 YEAR DESIGN LIFE
 C_d AS PER AASHTO TABLE 3-6
- FIELD ASSEMBLY:

- ALL ARM FLANGE BOLTS SHALL BE TIGHTENED TO A SNUG-TIGHT CONDITION, EACH FOLLOWED BY AN ADDITIONAL 1/2 TURN.
- ALL VERTICAL EXTENSION FLANGE BOLTS SHALL BE TIGHTENED TO A SNUG-TIGHT CONDITION, EACH FOLLOWED BY AN ADDITIONAL 1/3 TURN.
- JAM NUTS SHALL BE TIGHTENED TO A SNUG-TIGHT CONDITION.
- ALL BOLTS SECURING CAP PLATES SHALL BE TIGHTENED TO A SNUG-TIGHT CONDITION.
- SNUG-TIGHT IS DEFINED AS THE FULL EFFORT OF AN IRONWORKER USING AN ORDINARY SPUD WRENCH, OR AFTER A FEW IMPACTS OF AN IMPACT WRENCH.
- INSTALLATION OF STRUCTURE ON BREAKAWAY BASE ASSEMBLY SHALL BE PERFORMED AS PER BREAKAWAY BASE MANUFACTURER'S INSTRUCTIONS.



REDUCED DRAWING
N.T.S.



CONSULTANT PROJECT NO.12-5954
DRAWING NO.1
COVER SHEET

| NO. | REVISIONS | DATE | BY |
|-----|------------------------------|---------|-----|
| 3 | REVISED BY DILLON CONSULTING | 1/10/14 | CDW |
| 2 | REVISED BY DILLON CONSULTING | 7/25/13 | CDW |
| 1 | ISSUED BY DILLON CONSULTING | 1/14/13 | CDW |