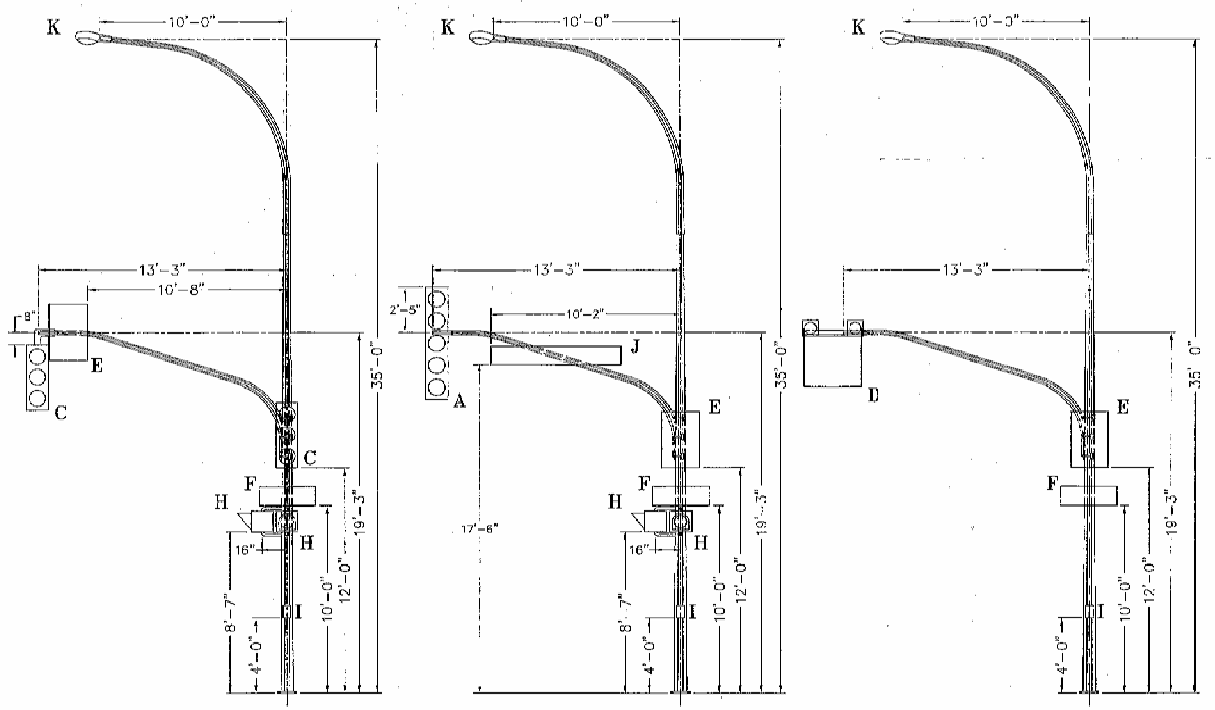


LOAD CONFIGURATION 1
8 FT OR 12 FT CLAMP ON ARM

LOAD CONFIGURATION 2
8 FT OR 12 FT CLAMP ON ARM

LOAD CONFIGURATION 3
8 FT OR 12 FT CLAMP ON ARM

NOTE: LOAD CONFIGURATION 1, 2 & 3 ARE MAXIMUM LOADING USING 4–1½" DIA. ANCHOR RODS ON 1½" BCD.

35 FOOT SIGNALS STREET LIGHTING JOINT USE POLE

DESIGN AS PER THE 2001 4th EDITION OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS. THE 35 FOOT SIGNALS STREET LIGHTING JOINT USE POLE IS DESIGNED TO SUPPORT LOADS AS SHOWN ON THIS DRAWING AND DESCRIBED IN THE TECHNICAL SPECIFICATION, FOR AASHTO GROUP LOAD COMBINATION 1, II, III AND TRAFFIC SIGNAL FATIGUE CATEGORY III OF LOAD COMBINATION IV. ALL RESULTS ARE LISTED IN DESIGN RESULT REPORT. THE DESIGN WIND PRESSURE $P_z = 0.00256 K_z G V^2 I_r C_d$ psf WHERE $(0.00256\ GV^2) = 25.6$ psf, K_z AS PER AASHTO TABLE 3–5 EXCEPT NOT LESS THAN 1.0, $I_r = 1.0$ FOR 50 YEAR DESIGN LIFE AND C_d AS PER AASHTO TABLE 3–6.

PROPERTIES OF SIGNALS AND SIGNS

FACE, END AND BOTTOM AREAS LISTED BELOW DO NOT INCLUDE DRAG COEFFICIENT

A 5 SECTION 12" SIGNAL HEAD PLUMBIZER ATTACHMENT
FACE AREA 7.0 sq. ft. (14" x 72")
END AREA 1.34 sq. ft.
WEIGHT 80 lb.

C 3 SECTION 12" SIGNAL HEAD HANGER ATTACHMENT
FACE AREA 4.08 sq. ft. (14" x 42")
END AREA 1.34 sq. ft.
WEIGHT 50 lb.

D PEDESTRIAN CORRIDOR UNIT WITH FOUR FLASHING LIGHTS
TOTAL FACE AREA 9.83 sq. ft. (36½"W x 32½"H, EACH LIGHT 10" SQ.)
BOTTOM AREA 4.56 sq. ft. (36½"W x 18"D)
TOTAL WEIGHT 100 lb.

E TRAFFIC SIGN
FACE AREA 8.0 sq. ft. (24" W x 36" H)
WEIGHT 14 lb.

F TRAFFIC SIGN
FACE AREA 3.0 sq. ft. (36" W x 12" H)
WEIGHT 10 lb.

H TWO PEDESTRIAN HEADS AT 90°
TOTAL EFFECTIVE PROJECTED AREA 0.3 sq. ft. (EACH 13½" W x 13½" H)
TOTAL WEIGHT 50 lb.

I TRAFFIC SIGN
FACE AREA 0.28 sq. ft. (5" W x 8" H)
WEIGHT 5 lb.

J STREET NAME SIGN
FACE AREA 7.0 sq. ft. (84" W x 12" H)
WEIGHT 17 lb.

K 250 WATT STREET LIGHT LUMINAIRE
EFFECTIVE PROJECTED AREA 2.15 sq. ft.
TOTAL WEIGHT 60 lb.

PROVINCE OF MANITOBA — D. Selme — P.Eng. — SELME — Feb 15, 2005 — REGISTERED PROFESSIONAL ENGINEER

REV. No.	DATE	REVISIONS	APPROVED
1	FEB. 2 2005	REDRAWN AND ADDED SHEET 2 & 3	D. Selme

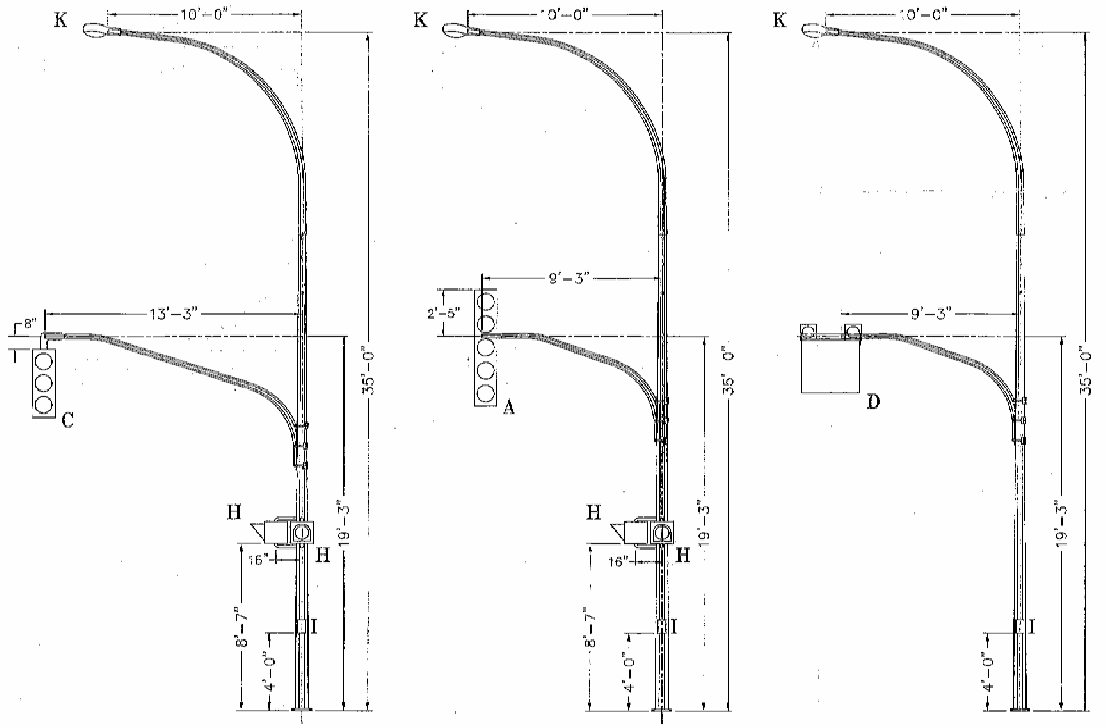
Winnipeg

THE CITY OF WINNIPEG
PUBLIC WORKS DEPARTMENT
TRANSPORTATION DIVISION

GES ENGINEERING INC.
CALGARY, AB. PHONE (403) 240-2921 FAX (403) 242-3713

35 FT. SIGNALS STREET LIGHTING JOINT USE POLE

DESIGNED AND APPROVED	DRAWN	DWG No.	ST-158
D. Selme GES Engineering Inc.	G.S.	SCALE	SHEET
DATE Jan 12, 2005	DATE DEC 8, 2004	NTS	2 OF 3
		REV. No.	1



LOAD CONFIGURATION 1A
8 FT OR 12 FT CLAMP ON ARM

LOAD CONFIGURATION 2A
8 FT CLAMP ON ARM

LOAD CONFIGURATION 3A
8 FT CLAMP ON ARM

NOTE: LOAD CONFIGURATION 1A, 2A & 3A ARE MAXIMUM LOADING USING 4–1" DIA. ANCHOR RODS ON 11½" BCD.

35 FOOT SIGNALS STREET LIGHTING JOINT USE POLE

DESIGN AS PER THE 2001 4th EDITION OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS. THE 35 FOOT SIGNALS STREET LIGHTING JOINT USE POLE IS DESIGNED TO SUPPORT LOADS AS SHOWN ON THIS DRAWING FOR AASHTO GROUP LOAD COMBINATION II. RESULTS FOR ANCHOR RODS ARE LISTED IN DESIGN RESULT REPORT. THE DESIGN WIND PRESSURE $Pz=0.00256 \times z G V^2 Ir Cd$ psf WHERE $(0.00256\ GV^2)=25.6$ psf, Kz AS PER AASHTO TABLE 3–5 EXCEPT NOT LESS THAN 1.0, Ir=1.0 FOR 50 YEAR DESIGN LIFE AND Cd AS PER AASHTO TABLE 3–6.

PROPERTIES OF SIGNALS AND SIGNS

FACE, END AND BOTTOM AREAS LISTED BELOW DO NOT INCLUDE DRAG COEFFICIENT

A 5 SECTION 12" SIGNAL HEAD PLUMBIZER ATTACHMENT
FACE AREA 7.0 sq. ft. (14" x 72")
END AREA 1.34 sq. ft.
WEIGHT 80 lb.

C 3 SECTION 12" SIGNAL HEAD HANGER ATTACHMENT
FACE AREA 4.08 sq. ft. (14" x 42")
END AREA 1.34 sq. ft.
WEIGHT 50 lb.

D PEDESTRIAN CORRIDOR UNIT WITH FOUR FLASHING LIGHTS
TOTAL FACE AREA 9.63 sq. ft. (36½"W x 32½"H, EACH LIGHT 10" SQ.)
BOTTOM AREA 4.56 sq. ft. (36½"W x 18"D)
TOTAL WEIGHT 100 lb.

H TWO PEDESTRIAN HEADS AT 90°
TOTAL EFFECTIVE PROJECTED AREA 3.3 sq. ft. (EACH 13½" W x 13½" H)
TOTAL WEIGHT 50 lb.

I TRAFFIC SIGN
FACE AREA 0.28 sq. ft. (5" W x 8" H)
WEIGHT 5 lb.

K 250 WATT STREET LIGHT LUMINAIRE
EFFECTIVE PROJECTED AREA 2.15 sq. ft.
TOTAL WEIGHT 60 lb.

PROVINCE OF MANITOBA
G. E. SELME
Feb 9, 2005
REGISTERED PROFESSIONAL ENGINEER

REV. No.	DATE	REVISIONS	APPROVED
1	FEB. 2 2005	REDRAWN AND ADDED SHEET 2 & 3.	D. Selme

THE CITY OF WINNIPEG
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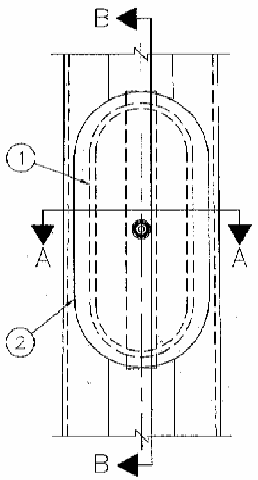
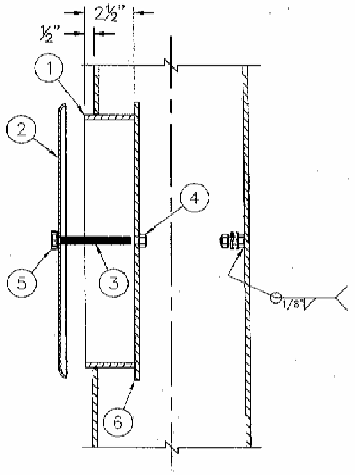
PUBLIC WORKS DEPARTMENT
TRANSPORTATION DIVISION

GES ENGINEERING INC.
CALGARY, AB. PHONE (403) 240-2921 FAX (403) 240-3713

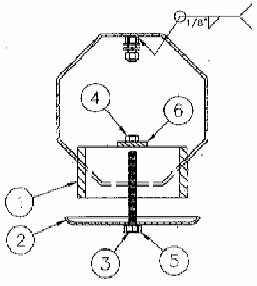
35 FT. SIGNALS STREET LIGHTING JOINT USE POLE

DESIGNED AND APPROVED	DRAWN	DWG No.	
D. Selme GES Engineering Inc	G.G.		ST-158
DATE Jan 12, 2005	DATE DEC 6, 2004	SCALE NTS	SHEET 3 OF 3 REV. No. 1





SECTION B–B



SECTION A–A

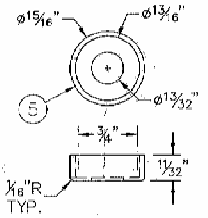
ITEM No.	No. REQ'D	DESCRIPTION	MATERIAL	DWG No.
1	1	HANDHOLE RING 2 1/2" WIDE	3/8 PL. G40.21 50W	
2	1	HANDHOLE COVER 8 1/2" x 13 3/4"	11 GA. A570 GR.40	
3	1	BOLT 3/8"–UNC x 4" LONG	STAINLESS STEEL TYPE 316 FULLY THREADED	
4	1	NUT 3/8"–UNC	STAINLESS STEEL TYPE 316	
5	1	CUP WASHER SUITABLE FOR 3/8" BOLT	16 GA. ALUMINUM	
6	1	CLAMP BAR 1 3/4" x 14" LONG	1/4" PL. G40.21 44W	

FINISH:

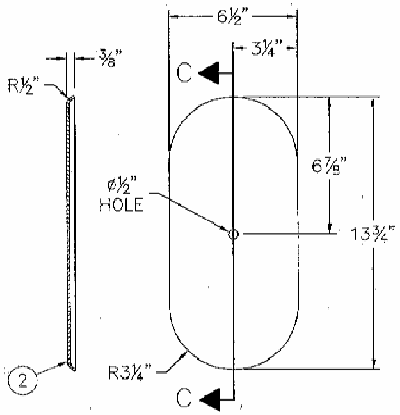
HOT DIP GALVANIZE COVER AND CLAMP BAR TO CSA STANDARD G164–M92 TO NET MINIMUM RETENTION OF 600 g/m². ALL AREAS OF DAMAGED GALVANIZING SHALL BE REPAIRED WITH SELF FLUXING LOW TEMPERATURE ZINC BASED ALLOY ROD. USE OF SPRAY ON COATINGS IS NOT ACCEPTABLE.

NOTES:

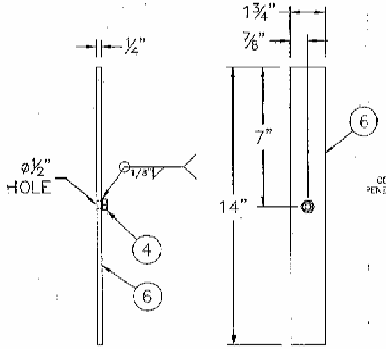
1. ALL EDGES OF STEEL COVER AND HANDHOLE RING TO BE GROUND SMOOTH.
2. ALL WELDING SHALL CONFORM TO CSA STANDARD W59. FABRICATOR SHALL BE FULLY APPROVED BY THE CANADIAN WELDING BUREAU AS PER CSA STANDARD W47.1.
3. RING MAY BE FORMED AS SHOWN OR FORMED IN TWO SYMMETRICAL HALVES AND WELDED AT TOP AND BOTTOM WITH COMPLETE PENETRATION WELDS.
4. TOLERANCES SHALL BE ±1/16" UNLESS OTHERWISE NOTED.



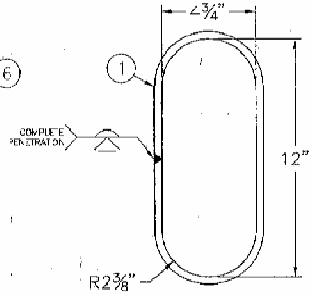
CUPWASHER DETAIL



SECTION C–C COVER DETAIL



CLAMP BAR ASSEMBLY DETAIL



RING DETAIL
SEE NOTE 3

REV. No.	DATE	REVISIONS	APPROVED
1	FEB. 2 2005	REDRAWN	R Selve

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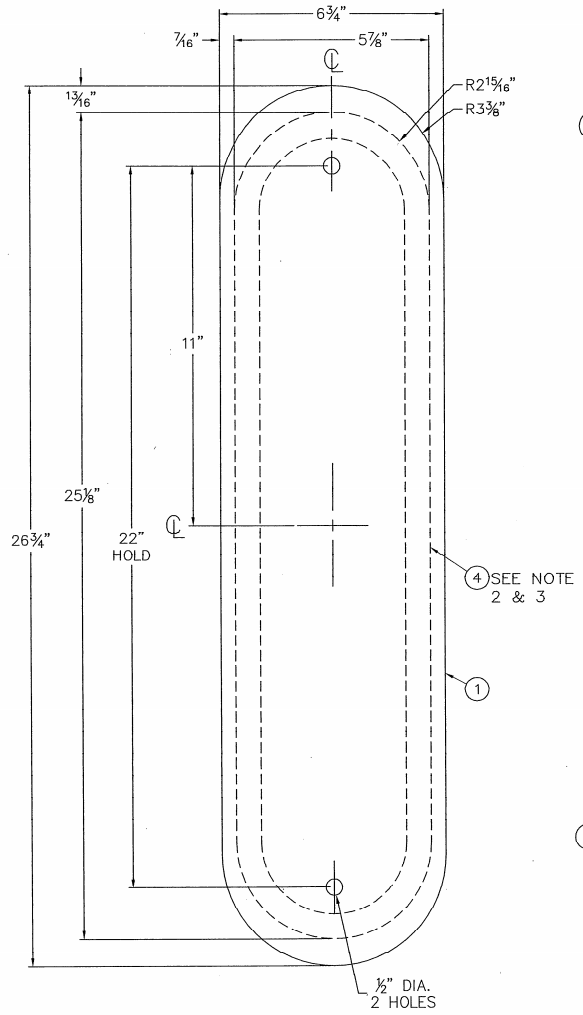
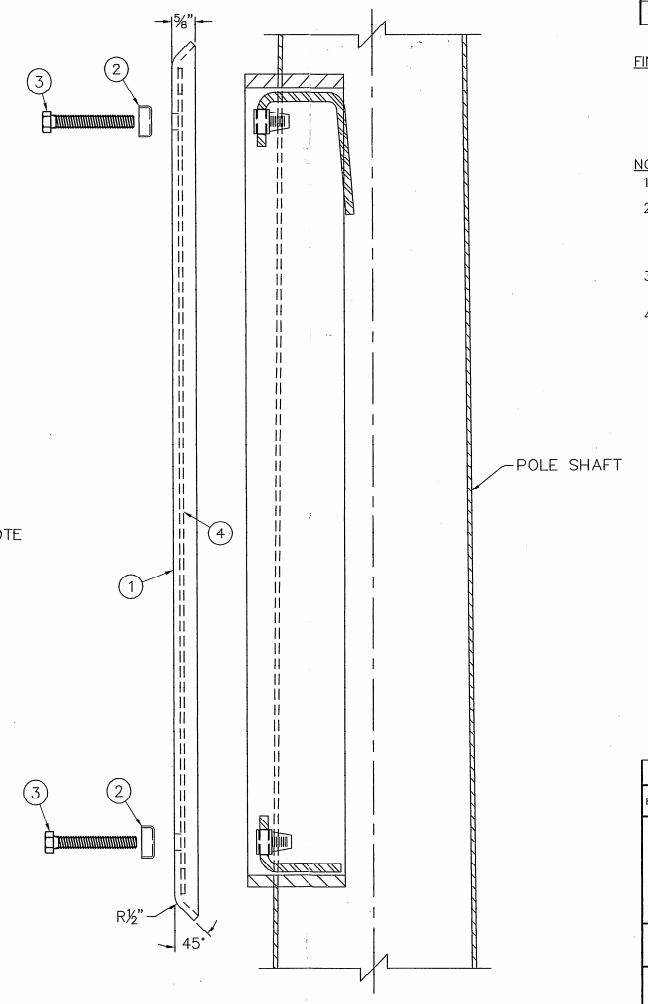
GES ENGINEERING INC.
CALGARY, AB. PHONE (403) 240-2021 FAX (403) 240-3713

4 3/4" x 12" (120mm x 305mm)
LOWER HANDHOLE AND COVER FOR TRAFFIC SIGNAL POLE

DESIGNED AND APPROVED	DRAWN	DWG No.	ST–163
R. Selve GES Engineering	G.G.	SCALE NTS	SHEET 1 OF 1
DATE Jan 12, 2005	DATE DEC. 12, 2004		REV. No. 1



FACE VIEW



SIDE VIEW

TERMINAL STRIP BRACKET NOT SHOWN

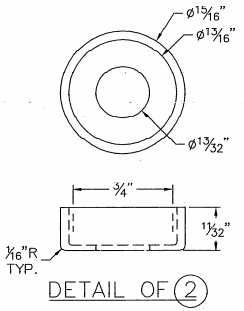
ITEM No.	No. REQ'D	DESCRIPTION	MATERIAL	DWG No.
1	1	ACCESS PANEL COVER 6 3/4" WIDE x 26 3/4" LONG	7 GA. A570 GR.50	
2	2	CUPWASHER SUITABLE FOR 3/8" DIA. BOLTS	16 GA. ALUMINUM	
3	2	HEX BOLT 3/8"-16 UNC FULL THREAD x 2 1/2" LONG	STAINLESS STEEL TYPE 316	
4	1	NEOPRENE CLOSED CELL GASKET 1/4" THICK x 3/4" WIDE	LENGTH TO SUIT	

FINISH:

HOT DIP GALVANIZE TO CSA STANDARD G164-M92 TO NET MINIMUM RETENTION OF 600 g/m²
ALL AREAS OF DAMAGED GALVANIZING SHALL BE REPAIRED WITH SELF FLUXING LOW TEMPERATURE ZINC BASED ALLOY ROD. USE OF SPRAY ON COATINGS IS NOT ACCEPTABLE.

NOTE:

1. ALL EDGES OF STEEL COVER TO BE GROUND SMOOTH.
2. GASKET MATERIAL TO BE APPLIED AFTER GALVANIZING, ALL THE WAY AROUND ON THE FLAT INSIDE PORTION OF THE COVER. GASKET TO BE FASTENED WITH SILICON SEALANT OR SELF ADHESIVE GASKET STRIP MAY BE USED.
3. PRIOR TO INSTALLING COVER ON POLE, APPLY PETROLEUM JELLY IN EQUAL AMOUNTS AROUND THE ENTIRE SURFACE OF GASKET.
4. 4¾" x 24" ACCESS PANEL SHOWN ON DRAWING ST-111.



DETAIL OF (2)

PROVINCE OF MANITOBA
SELME
26/04
REGISTERED PROFESSIONAL ENGINEER

REV. No.	DATE	REVISIONS	APPROVED
1	APRIL 26, 2004	REDRAWN	

THE CITY OF WINNIPEG
PUBLIC WORKS DEPARTMENT
TRANSPORTATION DIVISION

GES ENGINEERING INC.
CALGARY, AB. PHONE (403) 240-2921 FAX (403) 240-3713

COVER FOR THE 38 CIRCUIT WIRING ACCESS PANEL

DESIGNED AND APPROVED	DRAWN	DWG No.	
DATE July 23, 2004	G.G.	ST-164	
GES Engineering Inc.	DATE MARCH 18, 2004	SCALE NTS	SHEET 1 OF 1 / REV. No. 1