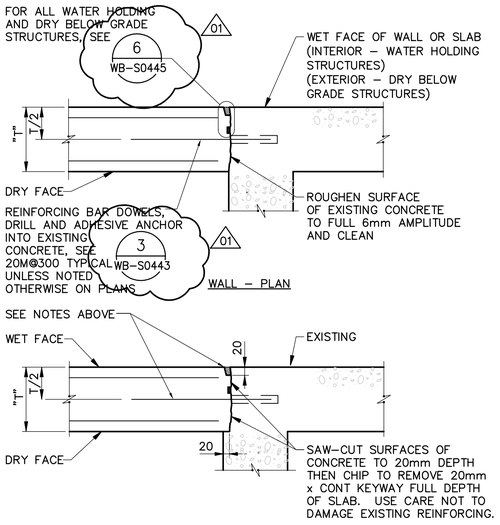
SHEET: COW-A1 (05/2005)



SLAB – SECTION

1 – CONNECTION OF NEW CONCRETE TO EXISTING
N.T.S.

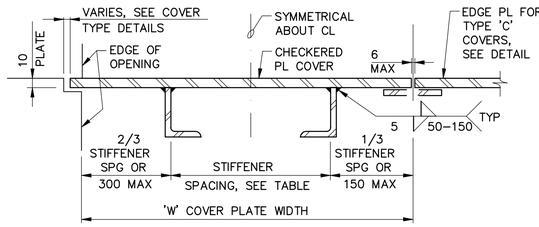
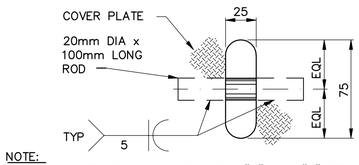


TABLE			
OPENING SPAN LENGTH 'L'	STIFFENER SIZE	MAX STIFFENER SPACING	MAX PLATE WIDTH 'W'
L<750	NONE	–	1500
750<L<1050	L51x38x6.4	450	1200
1050<L<1200	L64x38x6.4	450	1200
1200<L<1350	L64x38x6.4	375	1200
1350<L<1500	L76x51x6.4	450	1200
1500<L<1650	L76x51x6.4	375	900
1650<L<1800	L89x64x6.4	450	900
1800<L<1950	L89x64x6.4	375	750
1950<L<2100	L102x76x6.4	375	750
2100<L<2250	L102x76x6.4	300	600

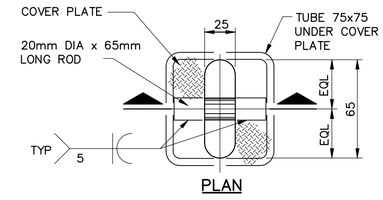
NOTES:
1. STIFFENERS TO BE PLACED LONG LEG VERTICAL.
2. SPAN DIRECTION OF PLATE TO BE PARALLEL TO STIFFENERS, AND SHALL BE SHORT DIMENSION OF OPENING UNLESS NOTED OTHERWISE ON PLANS.
3. MAXIMUM ALLOWABLE UNIFORM DESIGN LOAD = 15 kPa.
4. MAXIMUM WEIGHT OF COVER PLATE TO BE 55 kg.
5. COVER PLATES AND STIFFENERS ARE ALUMINUM PLATES AND ANGLES.
6. ALL COVER PLATES TO HAVE A MINIMUM OF TWO EYES AS SHOWN IN LIFTING EYE DETAILS.

COVER STIFFENERS

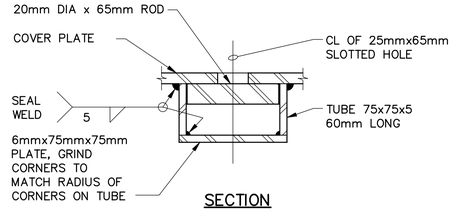


NOTE:
THIS DETAIL IS APPLICABLE TO TYPES "A" AND "B" COVERS AND OTHER COVERS NOT INTENDED TO BE AIRTIGHT.

LIFTING EYE TYPE "A"



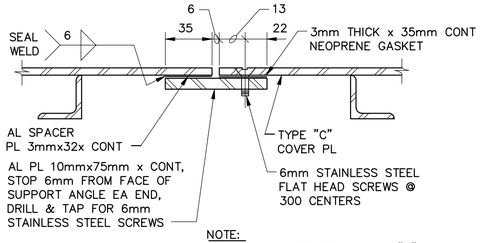
PLAN



SECTION

NOTE:
THE DETAIL IS APPLICABLE TO TYPE "C" COVERS AND OTHER AIR TIGHT COVERS.

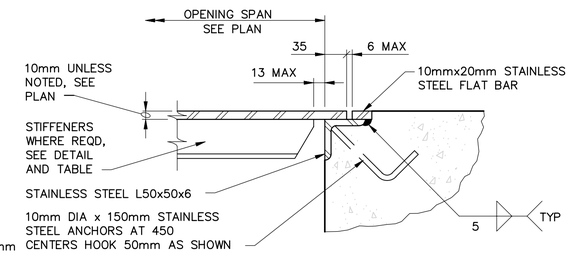
LIFTING EYE TYPE "B"



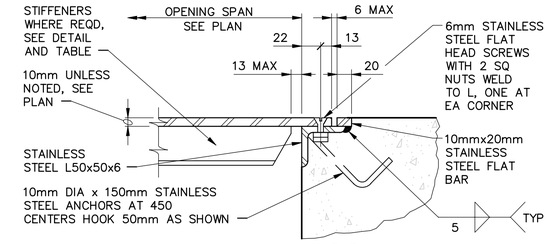
NOTE:
THIS DETAIL APPLIES AT TYPE "C" COVERS AND OTHER AIRTIGHT COVERS.

EDGE PLATE DETAIL

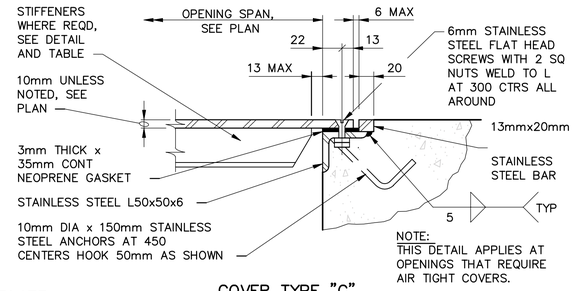
2 – CHECKERED ALUMINUM FLOOR PLATE
N.T.S.



COVER TYPE "A"



COVER TYPE "B"

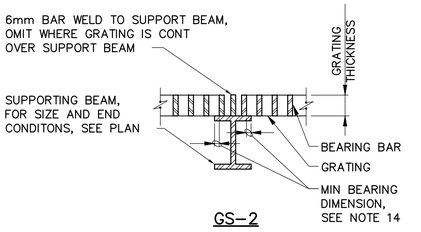


NOTE:
THIS DETAIL APPLIES AT OPENINGS THAT REQUIRE AIR TIGHT COVERS.

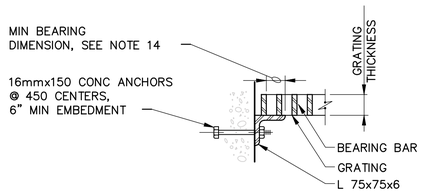
COVER TYPE "C"

GENERAL NOTES:

1. EXTEND GRATING CONTINUOUSLY OVER GATE GUIDES AND GATES.
2. NOTCH GRATING SUPPORTS AT GATES AS REQUIRED.
3. GRATING SPAN ⟷ SEE PLAN.
4. WIDTH OF GRATING SECTIONS SHALL NOT EXCEED 900mm.
5. SHOP DRAWINGS BASED ON FIELD DIMENSIONS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FABRICATION.
6. MATERIAL FOR SUPPORTS OF STEEL AND ALUMINUM GRATING TO BE SAME AS GRATING, EXCEPT METAL SUPPORTS THAT ARE TO BE EMBEDDED IN CONCRETE SHALL BE TYPE 316 STAINLESS STEEL.
7. UNLESS NOTED OTHERWISE ON PLANS, GRATING THICKNESS SHALL BE AS TABULATED IN "GRATING THICKNESS TABLE" FOR APPLICABLE TRAFFIC.
8. BEARING BAR THICKNESS FOR GRATING TO BE 5mm MINIMUM.
9. BAND ALL EDGES WITH 5mm x DEPTH OF BEARING BAR.
10. PROVIDE MISCELLANEOUS GRATING FASTENERS AS REQUIRED.
11. TYPE OF MATERIAL USED SHALL BE AS SHOWN ON PLANS OR AS SPECIFIED. THIS STANDARD DETAIL INCLUDES 2 TYPES, ALTHOUGH BOTH MAY NOT BE INCLUDED IN PROJECT.
12. THE HORIZONTAL CLEARANCE BETWEEN THE GRATING AND GRATING SUPPORTS SHALL NOT BE LESS THAN 6mm NOR GREATER THAN 13mm AND AS SPECIFIED.
13. ALL GRATING SECTIONS, WHEN IN PLACE, SHALL ALWAYS BE FIRMLY ANCHORED TO THEIR SUPPORTS AS SPECIFIED.
14. MIN BEARING HORIZONTAL DIMENSION = 25mm FOR GRATING DEPTH 57mm OR LESS, MIN BEARING HORIZONTAL = 50mm FOR GRATING DEPTH GREATER THAN 57mm

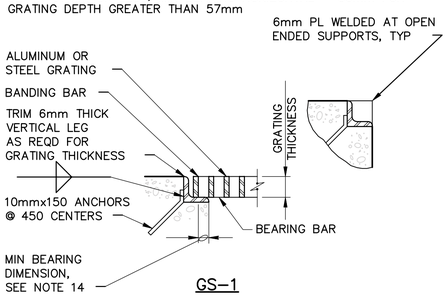


GS-2

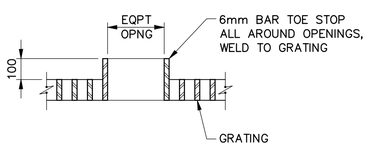


NOTE:
USE GS-3 ONLY FOR FOOT TRAFFIC GRATING.

GS-3



GS-1



EQUIPMENT OPENINGS

3 – STANDARD ALUMINUM GRATING
N.T.S.

HEAVY VEHICULAR TRAFFIC (HS 20-44)		
MAXIMUM SPAN	STEEL	ALUMINUM
300	51x4.8	DO NOT USE ALUMINUM GRATING
500	64x6.4	
600	64x9.5 OR 76x6.4	
750	76x9.5 OR 102x6.4	
1000	89x9.5	
1200	102x9.5	
1500	114x9.5	

LIGHT VEHICULAR TRAFFIC (WHEEL LOAD = 2000 POUNDS OR LESS)		
MAXIMUM SPAN	STEEL	ALUMINUM
300	44x4.8	44x4.8
450	44x4.8	44x4.8
600	51x4.8	51x4.8
750	57x4.8	57x4.8
900	64x4.8	64x4.8
1200	64x6.4	DO NOT USE ALUMINUM GRATING
1500	64x9.5	
1800	64x9.5	
2100	76x9.5	

VEHICULAR TRAFFIC NOTE:

STEEL GRATING BEARING BARS FOR VEHICULAR TRAFFIC SHALL BE SPACED AT 48mm OC; ALUMINUM GRATING BEARING BARS FOR VEHICULAR TRAFFIC SHALL BE SPACED AT 30mm OC.

SERRATED BEARING BARS:

INCREASE GRATING THICKNESSES SHOWN IN TABLES BY 6mm FOR GRATING WITH SERRATED SLIP RESISTANT SURFACES.

FOOT TRAFFIC		
GRATING THICKNESS TABLE		
MAXIMUM SPAN	ALUMINUM	STEEL
1050	32	25
1200	38	25
1350	44	25
1500	44	32
1650	51	32
1800	57	38
1950	57	38
2100	64	44

APEGM
Certificate of Authorization
CH2M Hill Canada Limited (ON)
No. 1441 Expiry: April 30, 2006

NO.	REVISIONS	DATE	BY
01	650-2005 ADDENDUM 2	05/11/16	EL
00	ISSUED FOR TENDER	05/10/28	DK

B.M. ELEV.

CH2MHILL
Fredericksen Cooper ARCHITECTS
EarthTech A Tyco International Ltd. Company

DESIGNED BY	DK	CHECKED BY	AP
DRAWN BY	EK	APPROVED BY	
SCALE:	NTS	RELEASED FOR CONSTRUCTION BY:	
DATE	2005/10/24	DATE	

ENGINEER'S SEAL

CONSULTANT DRAWING NO.
WB-S0447

Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

WATER TREATMENT PLANT
FOUNDATIONS AND CONCRETE STRUCTURES 1
STRUCTURAL
STANDARD DETAILS

CITY FILE NUMBER
SHEET OF
CITY DRAWING NUMBER
1-060B-D-S0447-001-01D

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