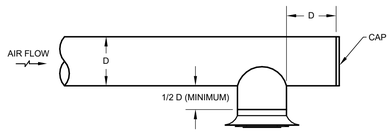
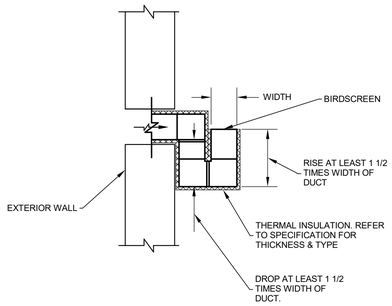


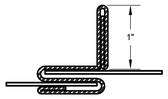
CUSHION HEAD DETAIL

SCALE: N.T.S.

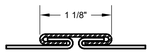


COLD TRAP DETAIL

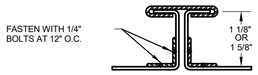
SCALE: N.T.S.



REINFORCED 'S' STRIP (BAR SLIP)



DRIVE SLIP JOINT



- 1 1/2" x 1 1/2" x 1/8 ANGLE ONE SIDE ON 61" TO 90"
- 1 1/2" x 1 1/2" x 1/8 ANGLE BOTH SIDES ON 91" AND WIDER

'T' JOINT

LOW PRESSURE DUCT

MAX. SIDE "	GAUGE	MAX. LENGTH	TRANSVERSE JOINT	BRACING ANGLE
UP TO 12"	26	94"	REINF. 'S' & DRIVE SLIP	NONE
13" TO 24"	24	94"	REINF. 'S' & DRIVE SLIP	NONE
25" TO 30"	24	45"	1 1/8" 'T'	NONE
31" TO 40"	22	45"	1 1/8" 'T'	NONE
41" TO 60"	22	44"	1 5/8" 'T'	NONE
61" TO 90"	20	44"	1 5/8" 'T'	1 1/2" x 1 1/2" x 1/8"
91" & WIDER	18	44"	1 5/8" 'T'	1 1/2" x 1 1/2" x 1/8"

- BRACING ANGLE IRON BETWEEN JOINTS

LOW PRESSURE DUCT GAUGE SCHEDULE

SCALE: N.T.S.

ENGINEERS GEOSCIENTISTS MANITOBA

Certificate of Authorization

Epp Siepman Engineering Inc.

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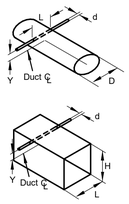


FIG. A IS APPLICABLE FOR UP TO 20% AREA OBSTRUCTION WITH ROUND SHAPED MEMBER AND 10% WITH FLAT PROFILE. Y IS DISTANCE FROM DUCT CENTRE.

FIG. A

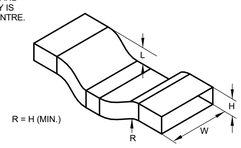


FIG. B

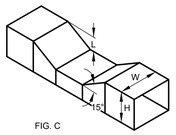
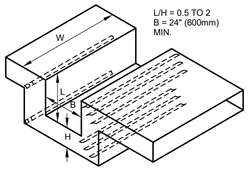


FIG. C

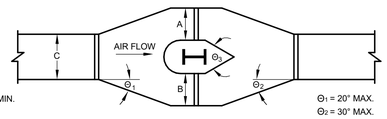
20% MAXIMUM AREA REDUCTION



L/H = 0.5 TO 2
B = 24" (600mm) MIN.

FIG. D

VANES MUST DIRECT FLOW PARALLEL TO DUCT WALL
CAUTION: HIGH LOSS COEFFICIENTS



A + B = 1.25C (MIN. AT CONSTANT DEPTH.

Θ_1 = 20° MAX.
Θ_2 = 30° MAX.
Θ_3 = 60° MAX.

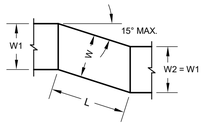
FIG. E

(USED WHEN OBSTRUCTIONS EXCEEDS 20% OF SECTION AREA AND OFFSETS AROUND ARE NOT POSSIBLE).

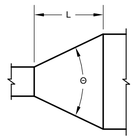
DUCT OBSTRUCTION DETAILS

SCALE: N.T.S.

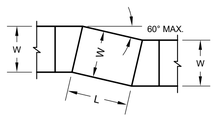
OFFSETS 2 AND 3 AND TRANSITIONS MAY HAVE EQUAL ON UNEQUAL INLET AND OUTLET AREAS. TRANSITIONS MAY CONVERT DUCT PROFILES TO ANY COMBINATION FOR RECTANGULAR, ROUND OR FLAT OVAL SHAPES.



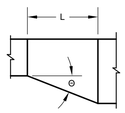
OFFSET TYPE 1 (ANGLED)



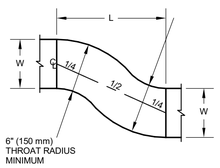
CONCENTRIC TRANSITION
Θ MAX. 45° DIVERGING, 60° CONVERGING



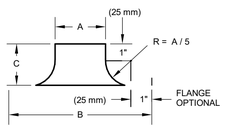
OFFSET TYPE 2 (MITERED)



ECCENTRIC TRANSITION
Θ MAX. 30°
(EXCEPT 45° IS PERMITTED AT ROUND TO FLAT OVAL)



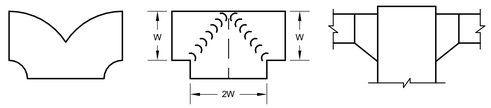
OFFSET TYPE 3 (RADIUSSED OR OGEE)

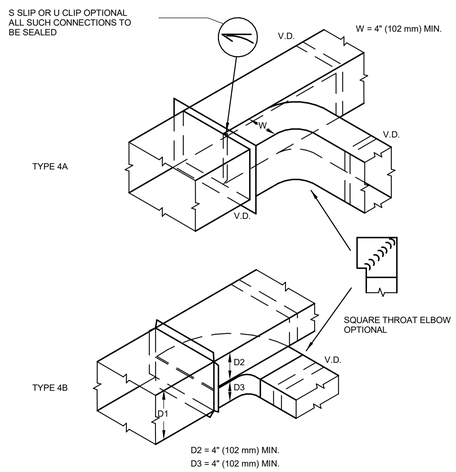


STANDARD BELLMOUTH ON SHORT PATTERN BELL
C = 3" (76 mm)
B = A + 4" (102 mm))

DUCT OFFSETS AND TRANSITIONS DETAILS

SCALE: N.T.S.





D2 = 4" (102 mm) MIN.
D3 = 4" (102 mm) MIN.

VOLUME CONTROL SHOULD BE BY BRANCH DAMPERS.
IF A SPLITTER IS SHOWN IN THE DESIGN ITS LENGTH SHOULD BE 1.5 W OR 1.5 D3

DIVIDED FLOW BRANCHES

SCALE: N.T.S.

LM esp
LM Architectural Group | Environmental Space Planning
500-136 Market Avenue Winnipeg, Manitoba Canada R3B 0P4
t: 204.942.0681 lm-esp.ca

No.	REVISION/DESCRIPTION	BY	DATE
0	ISSUED FOR CONSTRUCTION	JS/MP	24-04-01

SEAL

EB	JS	JS	JS
DRAWN	CHECKED	DESIGNED	APPROVED
DATE 2024-04-01	USER APPROVAL		

Winnipeg

THE CITY OF WINNIPEG
ASSETS & PROJECT MANAGEMENT DEPARTMENT
MUNICIPAL ACCOMMODATIONS DIVISION
3-65 GARRY STREET, R3C 4K4

PROJECT

PEMBINA TRAILS COLLEGIATE
VOCATIONAL WING
TENDER NO. 954-2023B

50 FRONTIER TRAIL, WINNIPEG, MANITOBA, R3Y 2H1

SHEET TITLE

Details - HVAC 2

SCALE	PROJECT No:	SHEET No:
1 : 1	2020-127	MH4.2

DRAWING SHEET SIZE: A1 (594x841) PLOT 1:1
ESE 24049