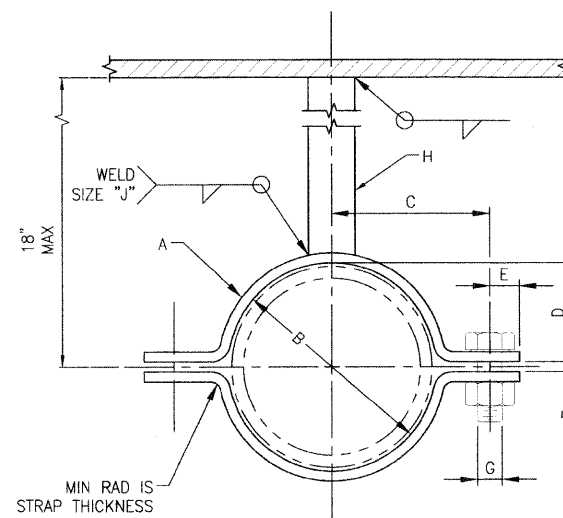


PIPE SIZE	A PIPE O.D.	B I.D. *	C O.D. *	D CUTOUT DIA	E WELD SIZE	L SLEEVE LENGTH	T THICKNESS
1/4"	0.540"	0.581"	0.831"	1.000"	5/32"	4"	0.125"
3/8"	0.675"	0.700"	0.950"	1.125"	5/32"	4"	0.125"
1/2"	0.840"	0.865"	1.177"	1.375"	5/32"	4"	0.156"
3/4"	1.050"	1.075"	1.387"	1.500"	5/32"	4"	0.156"
1"	1.315"	1.340"	1.652"	1.750"	5/32"	4"	0.156"
1 1/4"	1.660"	1.685"	1.997"	2.125"	5/32"	4"	0.156"
1 1/2"	1.900"	1.930"	2.242"	2.375"	5/32"	4"	0.156"
2"	2.375"	2.420"	2.870"	3.000"	3/16"	4"	0.225"
2 1/2"	2.875"	2.920"	3.420"	3.625"	3/16"	4"	0.250"
3"	3.5"	3.545"	4.045"	4.250"	3/16"	4"	0.250"

* NOTE:

SLEEVE MATERIAL SHALL BE ASTM A 106, GRADE B AND SHALL BE ORDERED FROM THIS STANDARD DRAWING BY SPECIFYING I.D. SIZE (COL "B"), O.D. SIZE (COL "C"), AND THICKNESS (COL "T"). INSIDE DIAMETER ACCURACY SHALL HAVE PRECEDENCE OVER O.D. AND THICKNESS DIMENSIONS.

1 TYPICAL CONTINUOUS PIPING RUN PENETRATION DETAIL
SCALE: NONE



PIPE SIZE	A FLAT BAR SIZE MIN	B I.D. OF STRAP	C Ø BOLT TO Ø PIPE	D HEIGHT OF STRAP	E Ø OF BOLT TO END OF STRAP	F CLEARANCE AT BOLTS	G BOLT DIAMETER MIN	H FLAT BAR SIZE MIN	J WELD SIZE
1/4"	1/8"x3/4"	1 3/16"	1 5/16"	1 3/64"	5/16"	1/8"	1/4"	3/16"x3/4"	1/8"
3/8"	1/8"x3/4"	1 5/16"	1"	9/32"	5/16"	1/8"	1/4"	3/16"x3/4"	1/8"
1/2"	1/8"x3/4"	1 1/8"	1 1/8"	2 3/64"	5/16"	1/8"	1/4"	3/16"x3/4"	1/8"
3/4"	1/8"x1"	1 9/16"	1 1/4"	1 5/32"	3/8"	1/8"	5/16"	1/4"x1"	1/8"
1"	1/8"x1"	1 9/16"	1 3/8"	1 9/32"	3/8"	1/8"	5/16"	1/4"x1"	1/8"
1 1/4"	1/8"x1"	1 15/16"	1 9/16"	4 9/64"	3/8"	1/8"	5/16"	1/4"x1"	1/8"
1 1/2"	1/8"x1"	2 9/16"	1 11/16"	5 7/64"	3/8"	1/8"	5/16"	1/4"x1"	1/8"
2"	1/8"x1"	2 5/8"	2"	1 1/8"	3/8"	1/8"	5/16"	1/4"x1"	1/8"
2 1/2"	1/4"x1"	3 1/8"	2 3/8"	1 3/4"	7/16"	1/4"	3/8"	1/4"x1"	5/32"
3"	1/4"x1"	3 3/4"	2 1 1/16"	1 5/8"	7/16"	1/4"	3/8"	1/4"x1"	5/32"

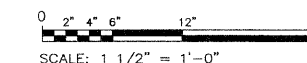
2 TYPICAL PIPE HANGER DETAIL
SCALE: NONE

GENERAL NOTES

- RULES AND REGULATIONS: ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH FEDERAL, STATE AND LOCAL RULES AND REGULATIONS, FIRE MARSHAL REGULATIONS, CODE OF FEDERAL REGULATIONS TITLE 46 - SHIPPING, STANDARDS OF THE NATIONAL FIRE PROTECTION ASSOCIATIONS, AND ALL OTHER APPLICABLE LAWS, CODES OR REGULATIONS. NOTHING IN THE DRAWINGS OR SPECIFICATIONS SHALL BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.
- MISCELLANEOUS MATERIALS AND HARDWARE SUCH AS NUTS, BOLTS, SCREWS, PLASTIC SEALANT, AND OTHER SUCH ANCILLARY ITEMS MAY NOT BE INCLUDED IN THE BILL OF MATERIALS. HOWEVER, ALL ITEMS NECESSARY TO COMPRISE A COMPLETE, FINISHED AND OPERATIONAL INSTALLATION CONFORMING TO USCG REQUIREMENTS AND GOOD SHIPBUILDING PRACTICE SHALL BE PROVIDED BY THE INSTALLER.
- STEEL PIPE SIZES SHOWN ON THE DRAWING ARE NPS.
- PIPING SHALL BE ADEQUATELY SUPPORTED TO CARRY WEIGHT, INCLUDING DYNAMIC LOADING AND TO PREVENT DAMAGE FROM VIBRATION AND IMPACT. PIPING SHALL BE SUPPORTED BY HANGERS WITH RESILIENT LINERS FABRICATED AND INSTALLED IN ACCORDANCE WITH ASTM F708 AND THIS DRAWING.
- ALL WELDS SHALL BE NEATLY FINISHED WITH ALL SLAG AND SPLATTER REMOVED.
- WELDED PIPING JOINTS SHALL BE IN ACCORDANCE WITH ASTM F-722.
- WATERTIGHT INTEGRITY SHALL BE MAINTAINED. ALL PIPING PENETRATING WATERTIGHT BULKHEADS AND DECKS SHALL BE INSTALLED WITH USCG APPROVED PIPE SLEEVES OR AS SHOWN ON THIS DRAWING.
- INSPECTION: DO NOT ALLOW ANY WORK TO BE COVERED UP OR ENCLOSED UNTIL INSPECTED, TESTED AND APPROVED BY THE ENGINEER, OWNER'S REPRESENTATIVE OR OTHER AUTHORITIES HAVING JURISDICTION OVER THE WORK.
- SHOULD ANY WORK BE ENCLOSED OR COVERED UP BEFORE SUCH INSPECTION AND TEST, CONTRACTOR SHALL, AT HIS OWN EXPENSE, UNCOVER WORK AND, AFTER IT HAS BEEN INSPECTED, TESTED AND APPROVED, MAKE ALL REPAIRS AS NECESSARY TO RESTORE ALL DISTURBED WORK TO ITS ORIGINAL CONDITION.

MECHANICAL SYMBOLS LIST

SYMBOL	DESCRIPTION
	FLOW DIRECTION
	BALL VALVE
	REDUCER
	FLEXIBLE HOSE
	DIFFERENTIAL PRESSURE GAGE



ART ANDERSON
A S S O C I A T E S
700 PACIFIC AVE. OREGON, WA 98537
(360) 479-5500

DRAWING NO. CEIDT001PB-500-101

FILE NAME =	USER NAME =	DESIGNED - M. McKay	REVISED -
		DRAWN - J. WALKER	REVISED -
		CHECKED - P. MARTIN	REVISED -
		DATE - 7/19/2011	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IDOT BRUSSELS FERRY
MECHANICAL GENERAL NOTES - PUSHBOAT

SCALE: AS SHOWN SHEET NO. OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	21-3	JERSEY	47	32
CONTRACT NO. 76D29			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	