REV.	DATE	DESCRIPTION	PURPOSE OF ISSUE	PREPARE	CHECK	APPROVE
02	02.2015	ISSUED FOR CONSTRUCTION	IFC	H.JAFARI	M.MAKOOEI	S.ARAMJAZ
01	SEP.2015	ISSUED FOR APPROVAL	IFA	H.JAFARI	M.MAKOOEI	S.ARAMJAZ

Project:
KOWSAR GISD MEGA MODULE PROJECT

Client:
Contractor
GISD.CO. MINES & METALS TECHNOLOGICAL ENGINEERING CO. MATE

Client's Project	Project Code	Main Contractor	Area Code	Plant Group	Equipment Code	Document Type	Eng. Discipline	Serial No.
GISD	7-2	119	1003	7	AA	04	S	123

designation: AREA 350 / PIPE RACK AREA
HORIZONTAL BRACING DETAIL
1 OF 2

	SIGNATURE	DATE
DESIGNED	A.ARAMJAZ	SEP.2015
PREPARED	H.JAFARI	SEP.2015
CHECKED	M.MAKOOEI	SEP.2015
APPROVED	S.ARAMJAZ	SEP.2015

drawing-No. KGMM SF 13 C3 123

SCALE:	REV.:
AS SHOWN	02
SIZE: A1	SHEET: -/-

repl. for: repl. by:
CONT. & PROJ. NO.: -----

Confidentiality& document disclosure proprietary information
It may not be reproduced nor disclosed any person, nor used for any purpose, except with the written permission of MATE Co

TABLE OF PARAMETERS

Horizontal Brace Profile	Bolts					Gusset Plate		
	n	Bolt Size	S	e	t	W	B	
Name in Drawings	–	mm	mm	mm	mm	mm	mm	
L60×6	3	M16	50	35	8	6	150	
L80×8	5	M16	50	35	8	8	200	
L100×10	5	M20	60	40	10	10	225	
L120×12	5	M24	75	50	12	11	250	
L150×15	7	M24	75	50	15	12	300	

* See Note 3.

SIDE VIEW
Sc: N.T.S.

SUPPORTING BEAM
HORIZONTAL BRACE
80

TOP VIEW
Sc: N.T.S.

1in BOLTS (A490-PT)
1in HOLES (STD)
PL THK.= t
UNDER EDGE OF GUSSET PL
UNDER BEAM FLANGE (TYP.)
W
Min. 10
(n-1)*S
50

GUSSET PL ASSEMLY
Sc: N.T.S.

GUSSET PLATE
THK.= t
Min. 70
t

SECTION
Sc:1/10 A

T.O.B(BEAM)
PL THK.= t
THROUGH THE BEAM WEB (TYP.)
F.F.(TYP.)
W
60

KEY VIEW

NOTES:
1- BEFORE PROCEEDING WITH FABRICATION SEE GENERAL NOTES FOR CONNECTIONS ON THE FIRST PAGES OF THIS DOCUMENT.
2- FOR THE BRACING PROFILES WHICH ARE NOT LISTED HEREIN REFER TO OTHER RELEVANT SHEETS.
3- ALL BOLTS IN THIS CONNECTION MUST BE PRETENSIONED.

HORIZONTAL BRACE TO BEAM
SINGLE ANGLE CONNECTION

TABLE OF PARAMETERS

Horizontal Brace Profile	Bolts					Gusset Plate		
	n	Bolt Size	S	e	t	W	B	
Name in Drawings	–	mm	mm	mm	mm	mm	mm	
L60×6	3	M16	50	35	8	6	150	
L80×8	5	M16	50	35	8	8	200	
L100×10	5	M20	60	40	10	10	225	
L120×12	5	M24	75	50	12	11	250	
L150×15	7	M24	75	50	15	12	300	

SIDE VIEW
Sc: N.T.S.

SUPPORTING BEAM
HORIZONTAL BRACE
80

TOP VIEW
Sc: N.T.S.

1in BOLTS (A490-PT)
1in HOLES (STD)
PL THK.= t
UNDER EDGE OF GUSSET PL
UNDER BEAM FLANGE (TYP.)
W
Min. 10
(n-1)*S
50
45°≤θ≤90°

GUSSET PL ASSEMLY
Sc: N.T.S.

GUSSET PLATE
THK.= t
Min. 70
t
Min. B
5

SECTION
Sc:1/10 A

T.O.B(BEAM)
PL THK.= t
HOR. BRACE
TYP.
W
60

KEY VIEW

NOTES:
1- BEFORE PROCEEDING WITH FABRICATION SEE GENERAL NOTES FOR CONNECTIONS ON THE FIRST PAGES OF THIS DOCUMENT.
2- ALL BOLTS SHOULD BE PRETENSION OTHERWISE NOTED IN DRAWINGS.

HORIZONTAL BRACE TO BEAM
SINGLE ANGLE CONNECTION

TABLE OF PARAMETERS

Horizontal Brace Profile	Bolts					Gusset Plate		
	n	Bolt Size	S	e	t	W	B	
Name in Drawings	–	mm	mm	mm	mm	mm	mm	
L60×6	3	M16	50	35	8	6	150	
L80×8	5	M16	50	35	8	8	200	
L100×10	5	M20	60	40	10	10	225	
L120×12	5	M24	75	50	12	11	250	
L150×15	7	M24	75	50	15	12	300	

SIDE VIEW
Sc: N.T.S.

SUPPORTING BEAM
HORIZONTAL BRACE
T.O.B(BEAM)
80
10mm TH. PL.
STIFFENER
4 M 20 BOLTS(A490-PT)
4 Φ 22 HOLES
2 PL. 280×280×20
50
180
280

TOP VIEW
Sc: N.T.S.

UNDER BEAM FLANGE (TYP.)
GUSSET PLATE
THK.=t
SEE SHEET 126
STIFFENER
THK.=t
50
80
150
75
BOX 120×5
BOX 120×4
BOX 100×4
BOX 80×4
4 T.Y.P
6 T.Y.P
10mm TH. PL.

SECTION
Sc:1/10 A

GUSSET PL ASSEMLY
Sc: N.T.S.

GUSSET PLATE
THK.= t
Min. 70
Min. B

KEY VIEW

NOTES:
1- BEFORE PROCEEDING WITH FABRICATION SEE GENERAL NOTES FOR CONNECTIONS ON THE FIRST PAGES OF THIS DOCUMENT.
2- FOR THE BRACING PROFILES WHICH ARE NOT LISTED HEREIN REFER TO OTHER RELEVANT SHEETS.
3- ALL BOLTS IN THIS CONNECTION MUST BE PRETENSIONED.

HORIZONTAL BRACE TO BEAM
SINGLE ANGLE CONNECTION