PART-III
SECTION-IV

DRAWINGS

C O N T E N T S

SECTION- IV OF PART-III

SPECIFICATION / STANDARDS/LIST OF DRAWINGS

Sr. No.	Description	Drawing Number
A	**General Pipeline and Mechanical Drawings**	
1.	City Gas Distribution Network Master plan	MEC/23TS/01/31/D4/ST/LY/0001/R1
2.	Trench Cross Section Details	MEC/TYP/01/31/M/001/010
3.	Barricade	MEC/TYP/01/31/T4/PE/LY/011/R0
4.	Sketch for RCC Route Marker	MEC/TYP/01/31/T4/PE/LY/020/R0
5.	K.M. Post	MEC/TYP/05/25/M/001/014
6.	Pipeline Warning Sign	MEC/TYP/05/25/M/001/015
7.	Directional Markers	MEC/TYP/05/25/M/001/018
8.	Plate Marker	MEC/23QQ/01/31/T4/PE/LY/021/R0
9.	Typical Trench Dimensions For Two Or More Pipelines In Common Trench	MEC/TYP/01/31/S3/01A/03A
10.	Details Of Casing Vent And Drain Off	MEC/TYP/05/21/01A/010
11.	Pipeline Symbols	MEC/TYP/05/21/M/01A/011
12.	Pipeline Road / Highway Cased Crossing	MEC/TYP/05/21/05/001
13.	Typical Details Of Railways Crossings	MEC/TYP/05/21/05/002
14.	Existing Pipeline On Sleeper Crossing	MEC/TYP/05/21/05/005
15.	Low Support Fixed For Bare & Insulated PipeSize 2" Thru 24" Type L3 & L3A	MEC/TYP/05/21/06/002
16.	Jack Screw For Spectacle Blind (150#,300#,600#)	MEC/TYP/05/21/06/033
17.	Butt Weld Details	MEC/TYP/05/21/06/034
18.	Welding Of Pipe With Different Thickness	MEC/TYP/05/21/06/035
19.	Fillet Weld Details	MEC/TYP/05/21/06/036
20.	Gasket Thickness	MEC/TYP/05/21/06/037
21.	Stud Bolts RF 150# Dimensions (ASME B16.5)	MEC/TYP/05/21/06/038
22.	Stud Bolts RF 300# Dimensions (ASME B16.5)	MEC/TYP/05/21/06/039

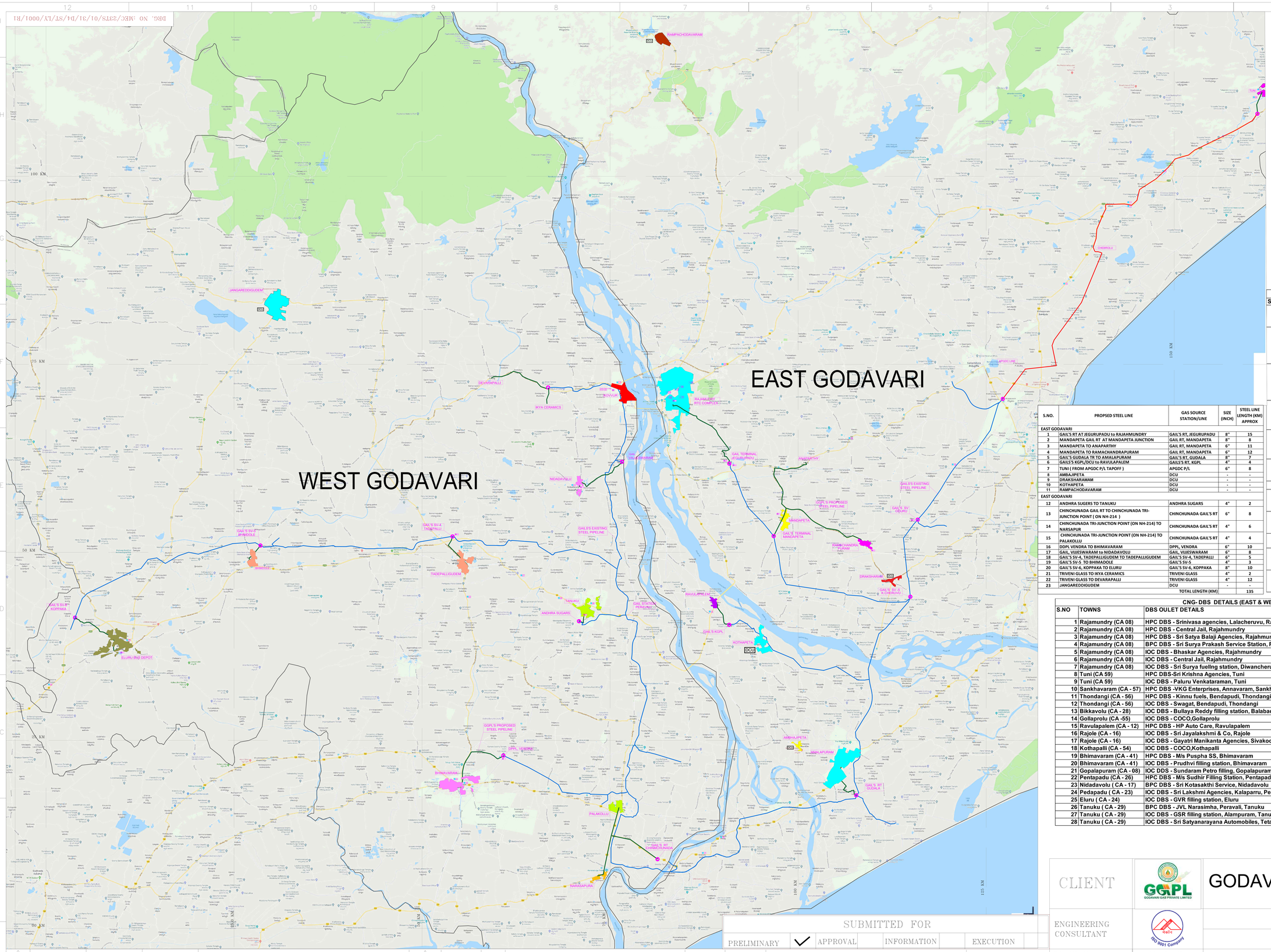
Sr. No.	Description	Drawing Number
23.	Stud Bolts RF 600# Dimensions (ASME B16.5)	MEC/TYP/05/21/06/040
B	**Instrumentation Drawings**	
24.	Installation Drawing For Pressure Gauge	MEC/05/E5/SD/PG/004
25.	Instrumentation Drawing For Temperature Gauge & RTD	MEC/05/E5/SD/TG-RTD/005
26.	Mounting Details For Thermowells (TG)	MEC/05/E5/SD/TG-TW/007
27.	Support Details For Junction Boxes	MEC/05/E5/SD/JB/009
28.	Instrument Support Single Instrument (3 Sheets)	MEC/05/E5/SD/IS/010A
29.	Instrument Support Two Instruments (3 Sheets)	MEC/05/E5/SD/IS/010B
30.	Fabricated Canopy For Instruments	MEC/05/E5/SD/CY/011
31.	Perforated Tray Supports & Cables Clamping Details	MEC/05/E5/SD/CB-LY/012
C	**Cathodic Protection Drawing**	
32.	Pre-packed Zinc Anode	MEC/SD/05/E9/E/CP/1601,R-1
33.	Pre-packed Magnesium Anode	MEC/SD/05/E9/E/CP/1602,R-1
34.	Magnesium Ribbon Anode For Grounding	MEC/SD/05/E9/E/CP/1603,R-1
35.	Test Station For TCP	MEC/SD/05/E9/E/CP/1604,R-1(2 Sh)
36.	Test Station Connection Schemes	MEC/SD/05/E9/E/CP/1605,R-1 (4 Sh)
37.	Galvanic Anode Installation	MEC/SD/05/E9/E/CP/1606,R-1
38.	Zinc Ribbon Anode For Cased Crossings With Coated Casings	MEC/SD/05/E9/E/CP/1607,R-1
39.	Pipeline Grounding Through Polarisation Cells and Galvanic Anode	MEC/SD/05/E9/E/CP/1608,R-1 (2 Sh)
40.	Detail Of Zinc Grounding Cell	MEC/SD/05/E9/E/CP/1609,R-1
41.	Pre-packaged Permanent Reference Electrode (Cu &$CuSO_4$ Type & Installations Details	MEC/SD/05/62/16/10,R-0
42.	Anode Lead Junction Box	MEC/SD/05/E9/E/CP/1612,R-1 (2 Sh)

Sr. No.	Description	Drawing Number
43.	Casing Pipe Details	MEC/SD/05/E9/E/CP/1613,R-1
44.	Details Of Test Station For Polarization Cell	MEC/SD/05/E9/E/CP/1614,R-1 (2 Sheets)
45.	Connection Scheme For Hooking Through CJB / Test Station	MEC/SD/05/E9/E/CP/1616,R-1
46.	Details of Thermit Weld For Cable To Pipe Joint	MEC/SD/05/E9/E/CP/1618,R-1
47.	Electrode For Earthing System	MEC/SD/05/26/23/01,R-0
48.	Earth Electrode In Test Pit	MEC/SD/05/26/23/02,R-0
D	**Civil Drawings**	
49.	Standard details of Restoration Of Major Roads (NHAI etc,.)	MEC/TYP/01/11/D2/ST/LY/0211/R00
50.	Standard details of restoration of roads	MEC/TYP/01/11/D2/PE/LY/013/R00
51.	Typical details of SV-1-Mechanical	MEC/TYP/01/31/D3/PE/LY/0044/R00
52.	Typical details of SV-2-Mechanical	MEC/TYP/01/31/D3/PE/LY/0045/R00
53.	Typical details of SV-1-Civil	MEC/TYP/01/11/D4/PE/LY/0946/R00
54.	Typical details of SV-1-Civil	MEC/TYP/01/11/D4/PE/LY/0947/R00
55.	Typical MRS Layout	MEC/TYP/01/11/D2/ST/LY/0206/R00
56.	Typical SV Layout	MEC/TYP/01/11/D2/ST/LY/0207/R00
57.	Typical Details of Compound Wall	MEC/TYP/01/11/D2/ST/LY/0208/R00
58.	Typical details of Chainlink Fencing	MEC/TYP/01/11/D2/ST/LY/0209/R00
59.	Foundation details of 5000 SCMH (Shuttering & Reinforcement)	MEC/TYP/01/11/D4/PE/DR/0928A/R00
60.	Foundation details of 2500 SCMH (Shuttering & Reinforcement)	MEC/TYP/01/11/D4/PE/DR/0925/R00
61.	Foundation details of 1000 SCMH (Shuttering & Reinforcement)	MEC/TYP/01/11/D4/PE/DR/0926/R00
62.	8" SV with 8" Tap-off drg (Piping fabrication & RCC valve chamber- 1900mmx 1300mm)	MEC/TYP/01/11/D2/ST/TE/0002/R00
E	**Structural Drawings**	
63.	Detail of Fencing Single & Double Leaf Gate	MEC/BGL/05/12/STD/04

MECHANICAL DRAWINGS

Sr. No.	Description	Drawing Number
23.	Stud Bolts RF 600# Dimensions (ASME B16.5)	MEC/TYP/05/21/06/040
B	**Instrumentation Drawings**	
24.	Installation Drawing For Pressure Gauge	MEC/05/E5/SD/PG/004
25.	Instrumentation Drawing For Temperature Gauge & RTD	MEC/05/E5/SD/TG-RTD/005
26.	Mounting Details For Thermowells (TG)	MEC/05/E5/SD/TG-TW/007
27.	Support Details For Junction Boxes	MEC/05/E5/SD/JB/009
28.	Instrument Support Single Instrument (3 Sheets)	MEC/05/E5/SD/IS/010A
29.	Instrument Support Two Instruments (3 Sheets)	MEC/05/E5/SD/IS/010B
30.	Fabricated Canopy For Instruments	MEC/05/E5/SD/CY/011
31.	Perforated Tray Supports & Cables Clamping Details	MEC/05/E5/SD/CB-LY/012
C	**Cathodic Protection Drawing**	
32.	Pre-packed Zinc Anode	MEC/SD/05/E9/E/CP/1601,R-1
33.	Pre-packed Magnesium Anode	MEC/SD/05/E9/E/CP/1602,R-1
34.	Magnesium Ribbon Anode For Grounding	MEC/SD/05/E9/E/CP/1603,R-1
35.	Test Station For TCP	MEC/SD/05/E9/E/CP/1604,R-1(2 Sh)
36.	Test Station Connection Schemes	MEC/SD/05/E9/E/CP/1605,R-1 (4 Sh)
37.	Galvanic Anode Installation	MEC/SD/05/E9/E/CP/1606,R-1
38.	Zinc Ribbon Anode For Cased Crossings With Coated Casings	MEC/SD/05/E9/E/CP/1607,R-1
39.	Pipeline Grounding Through Polarisation Cells and Galvanic Anode	MEC/SD/05/E9/E/CP/1608,R-1 (2 Sh)
40.	Detail Of Zinc Grounding Cell	MEC/SD/05/E9/E/CP/1609,R-1
41.	Pre-packaged Permanent Reference Electrode (Cu &$CuSO_4$ Type & Installations Details	MEC/SD/05/62/16/10,R-0
42.	Anode Lead Junction Box	MEC/SD/05/E9/E/CP/1612,R-1 (2 Sh)

DRG. NO :MEC/23TS/01/31/D4/ST/LY/0001/R1



N

LEGEND:

- GGPL'S PROPOSED STEEL PIPELINE
- APGDC EXISTING STEEL PIPELINE
- GAILS'S EXISTING STEEL PIPELINE
- EAST/WEST GODAVARI BOUNDARY
- PROPOSED CNG - MOTHER STATIONS
- PROPOSED CNG DOUGHTER BOOSTER STATION (DBS)
- GAIL TERMINAL TAP-OFF LOCATIONS
- DCU — DE-COMPRESSION UNIT FACILITY

CGS cum CNG MOTHER STATIONS (MS) AT EAST GODAVARI

S.NO	TYPE	GAIL TAP-OFF	MOTHER STATION	STATUS
1	CGS cum M.S.	Mandapet GAIL RT	Private Land Mandapet Survey no. 917/1 & 917/2, Mandapet area	Planned
2	CGS cum M.S.	Mandapet GAIL RT	Private Land Ramachandrapuram Survey No. 545/4, Ramachandrapuram area	Planned
3	CGS cum M.S.	ODURU, GAIL Terminal	Private Land Chintalapudi village, Sy no.:454/1, Ramachandrapuram area	Planned
4	CGS cum M.S.	GAIL Terminal, Jagurupadu	Private Land Morampudi village, Sy.No.:34, Rajahmundry area	Planned
5	CGS cum M.S.	GAIL Terminal, Jagurupadu	Govt Land Daweleswaram Survey No: 386/1, Rajahmundry area	Planned
6	CGS cum M.S.	GAIL Terminal, Jagurupadu	Govt Land Bommuru Survey No: 42/3, Rajahmundry area	Planned
CNG MOTHER STATION (MS)AT WEAST GODAVARI DISTRICT				
7	CGS cum M.S.	GAIL SV6,Koppaka	Dondapadu Village, Sy.No.:52/2B extent : 2.5 acres, Eluru	Planned
8	CGS cum M.S.	GAIL SV4,Tadepalli	Kondruprolu Village, Sy.No.:323-2B , Tadepalligudem	Planned
9	CGS cum M.S.	Andhra sugars, Tanuku	Tetali village, Sy No.:72/1A, Tanuku	Planned
10	CGS cum M.S.	Vijjeswaram	D, Muppavaram village, sy.no 69-5A,5B, Nidadavolu	Planned
11	CGS cum M.S.	VENDRA	Gunupudi village , Sy.No.: 158/1, Bhimavaram	Planned

S.NO.	PROPSED STEEL LINE	GAS SOURCE STATION/LINE	SIZE (INCH)	STEEL LINE LENGTH (KM) APPROX
EAST GODAVARI				
1	GAIL'S RT AT JEGURUPADU to RAJAHMUNDRY	GAIL'S RT, JEGURUPADU	8"	15
2	MANDAPETA GAIL RT AT MANDAPETA JUNCTION	GAIL RT, MANDAPETA	8"	8
3	MANDAPETA TO ANAPARTHY	GAIL RT, MANDAPETA	6"	11
4	MANDAPETA TO RAMACHANDRAPURAM	GAIL RT, MANDAPETA	6"	12
5	GAIL'S GUDALA TR TO AMALAPURAM	GAIL'S RT, GUDALA	8"	7
6	GAIL'S KGPL/DCU to RAVULAPALEM	GAIL'S RT, KGPL	4"	4
7	TUNI (FROM APGDC P/L TAPOFF)	APGDC P/L	6"	8
8	AMBAJIPETA	DCU	-	-
9	DRAKSHARAMAM	DCU	-	-
10	KOTHAPETA	DCU	-	-
11	RAMPACHODAVARAM	DCU	-	-
EAST GODAVARI				
12	ANDHRA SUGERS TO TANUKU	ANDHRA SUGARS	4"	2
13	CHINCHUNADA GAIL RT TO CHINCHUNADA TRI-JUNCTION POINT (ON NH-214)	CHINCHUNADA GAIL'S RT	6"	8
14	CHINCHUNADA TRI-JUNCTION POINT (ON NH-214) TO NARSAPUR	CHINCHUNADA GAIL'S RT	4"	6
15	CHINCHUNADA TRI-JUNCTION POINT (ON NH-214) TO PALAKOLLU	CHINCHUNADA GAIL'S RT	4"	4
16	DDPL VENDRA TO BHIMAVARAM	DPPL, VENDRA	6"	10
17	GAIL, VIJJESWARAM to NIDADAVOLU	GAIL, VIJJESWARAM	6"	8
18	GAIL'S SV-4, TADEPALLIGUDEM TO TADEPALLIGUDEM	GAIL'S SV-4, TADEPALLI	6"	5
19	GAIL'S SV-5 TO BHIMADOLE	GAIL'S SV-5	4"	3
20	GAIL'S SV-6, KOPPAKA TO ELURU	GAIL'S SV-6, KOPPAKA	8"	10
21	TRIVENI GLASS TO IKYA CERAMICS	TRIVENI GLASS	4"	2
22	TRIVENI GLASS TO DEVARAPALLI	TRIVENI GLASS	4"	12
23	JANGAREDDIGUDEM	DCU	-	-
		TOTAL LENGTH (KM)		135

CNG- DBS DETAILS (EAST & WEST GODAVARI)

S.NO	TOWNS	DBS OULET DETAILS	GAS SOURCING	STATUS
1	Rajamundry (CA 08)	HPC DBS - Srinivasa agencies, Lalacheruvu, Rajahmundry	Bommuru, Rajahmundry	Planned
2	Rajamundry (CA 08)	HPC DBS - Central Jail, Rajahmundry	Bommuru, Rajahmundry	Planned
3	Rajamundry (CA 08)	HPC DBS - Sri Satya Balaji Agencies, Rajahmundry	Bommuru, Rajahmundry	Planned
4	Rajamundry (CA 08)	BPC DBS - Sri Surya Prakash Service Station, Rajahmundry	Bommuru, Rajahmundry	Planned
5	Rajamundry (CA 08)	IOC DBS - Bhaskar Agencies, Rajahmundry	Bommuru, Rajahmundry	Planned
6	Rajamundry (CA 08)	IOC DBS - Central Jail, Rajahmundry	Bommuru, Rajahmundry	Planned
7	Rajamundry (CA 08)	IOC DBS - Sri Surya fuelng station, Diwancheruvu, Rajahmundry	Bommuru, Rajahmundry	Planned
8	Tuni (CA 59)	HPC DBS-Sri Krishna Agencies, Tuni	LCV loading facility, Tuni	Planned
9	Tuni (CA 59)	IOC DBS - Paluru Venkataraman, Tuni	LCV loading facility, Tuni	Planned
10	Sankhavaram (CA - 57)	HPC DBS -VKG Enterprises, Annavaram, Sankhavaram	LCV loading facility, Tuni	Planned
11	Thondangi (CA - 56)	HPC DBS - Kinnu fuels, Bendapudi, Thondangi	LCV loading facility, Tuni	Planned
12	Thondangi (CA - 56)	IOC DBS - Swagat, Bendapudi, Thondangi	LCV loading facility, Tuni	Planned
13	Bikkavolu (CA - 28)	IOC DBS - Bullaya Reddy filling station, Balabadhrapuram, Bikkavolu	Ramachandrapuram	Planned
14	Gollaprolu (CA -55)	IOC DBS - COCO,Gollaprolu	LCV loading facility, Tuni	Planned
15	Ravulapalem (CA - 12)	HPC DBS - HP Auto Care, Ravulapalem	Bommuru, Rajahmundry	Planned
16	Rajole (CA - 16)	IOC DBS - Sri Jayalakshmi & Co, Rajole	Tanuku	Planned
17	Rajole (CA - 16)	IOC DBS - Gayatri Manikanta Agencies, Sivakodu, Rajole	Tanuku	Planned
18	Kothapalli (CA - 54)	IOC DBS - COCO,Kothapalli	LCV loading facility, Tuni	Planned
19	Bhimavaram (CA - 41)	HPC DBS - M/s Puspha SS, Bhimavaram	Tadepalligudem	Planned
20	Bhimavaram (CA - 41)	IOC DBS - Pruthvi filling station, Bhimavaram	Tadepalligudem	Planned
21	Gopalapuram (CA - 08)	IOC DDS - Sundaram Petro filling, Gopalapuram	Kovvur	Planned
22	Pentapadu (CA - 26)	HPC DBS - M/s Sudhir Filling Station, Pentapadu	Tadepalligudem	Planned
23	Nidadavolu (CA - 17)	BPC DBS - Sri Kotasakthi Service, Nidadavolu	Nidadavole	Planned
24	Pedapadu (CA - 23)	IOC DBS - Sri Lakshmi Agencies, Kalaparru, Pedapadu	Eluru	Planned
25	Eluru (CA - 24)	IOC DBS - GVR filling station, Eluru	Eluru	Planned
26	Tanuku (CA - 29)	BPC DBS - JVL Narasimha, Peravali, Tanuku	Tanuku	Planned
27	Tanuku (CA - 29)	IOC DBS - GSR filling station, Alampuram, Tanuku	Tanuku	Planned
28	Tanuku (CA - 29)	IOC DBS - Sri Satyanarayana Automobiles, Tetali, Tanuku	Tanuku	Planned

SUBMITTED FOR

PRELIMINARY	✓	APPROVAL		INFORMATION		EXECUTION	

NOTES:

REV.	DATE	ZONE	DESCRIPTION	BY	VERIFIED
0	10.01.2018		First Issue	TS	AVR

REVISION

REFERENCES

DRG NO

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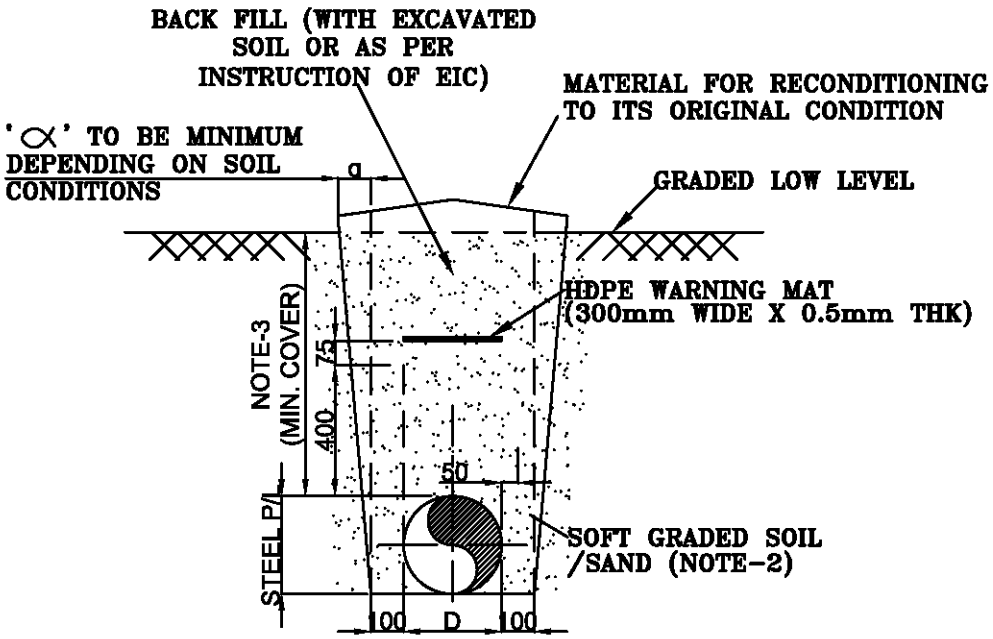
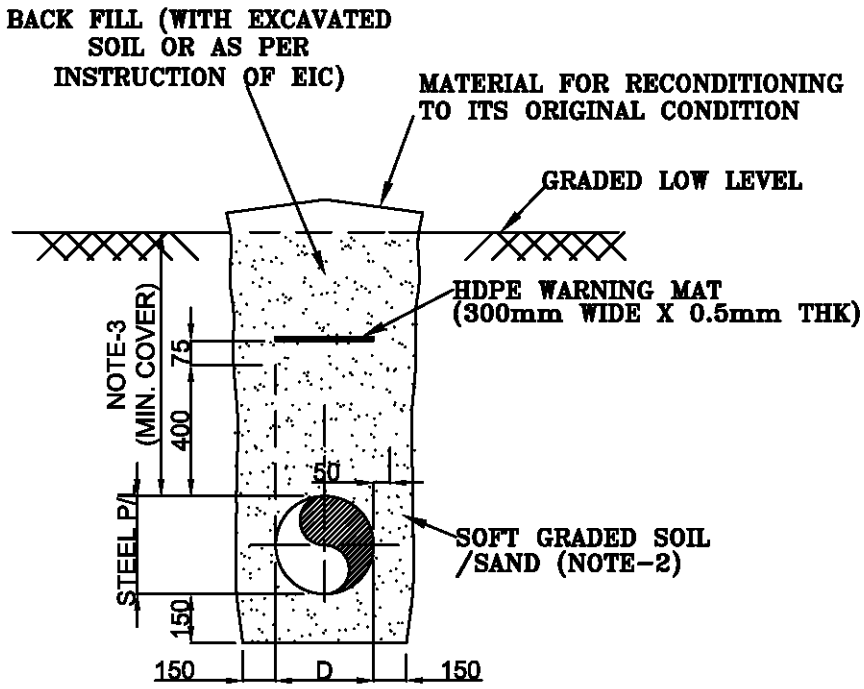
CONCURRED BY.

CLIENT	GODAVARI GAS PRIVATE LTD
ENGINEERING CONSULTANT	मैकॉन लिमिटेड MECON LIMITED
	CITY GAS DISTRIBUTION WORK AT EAST & WEST GODAVARI
DIVISION	M & C
DESIGNED	T SRINIVAS
DRAWN	CSN
CHECKED&VERIFIED	A.V.RAO
	CITY GAS DISTRIBUTION NETWORK MASTER PLAN
APPROVED	B.K.BERA
SCALE :	SHEET 1 OF 1
DATE	07.02.2018
DRG. NO :MEC/23TS/01/31/D4/ST/LY/0001/R1	

TRENCH CROSS-SECTION FOR CITY CONDITION (FOR SOFT SOIL TRENCH BOTTOM)



TRENCH CROSS-SECTION FOR CITY CONDITION (FOR ROCKY/HARD SOIL TRENCH BOTTOM)



FOR TENDER PURPOSE ONLY

NOTE :-
1) ALL DIMENSIONS ARE IN MM.
2) PACKING SHALL BE DONE ONLY AFTER SEGREGATION FROM ANY FOREIGN MATERIAL.
3) PACKING COVERS SHALL BE AS PER CODE AND AS PER LOCAL REQUIREMENT.

CONCURRED BY.

REV.No.	DATE	SIGN	DESCRIPTION	BY	VERIFIED

REVISION

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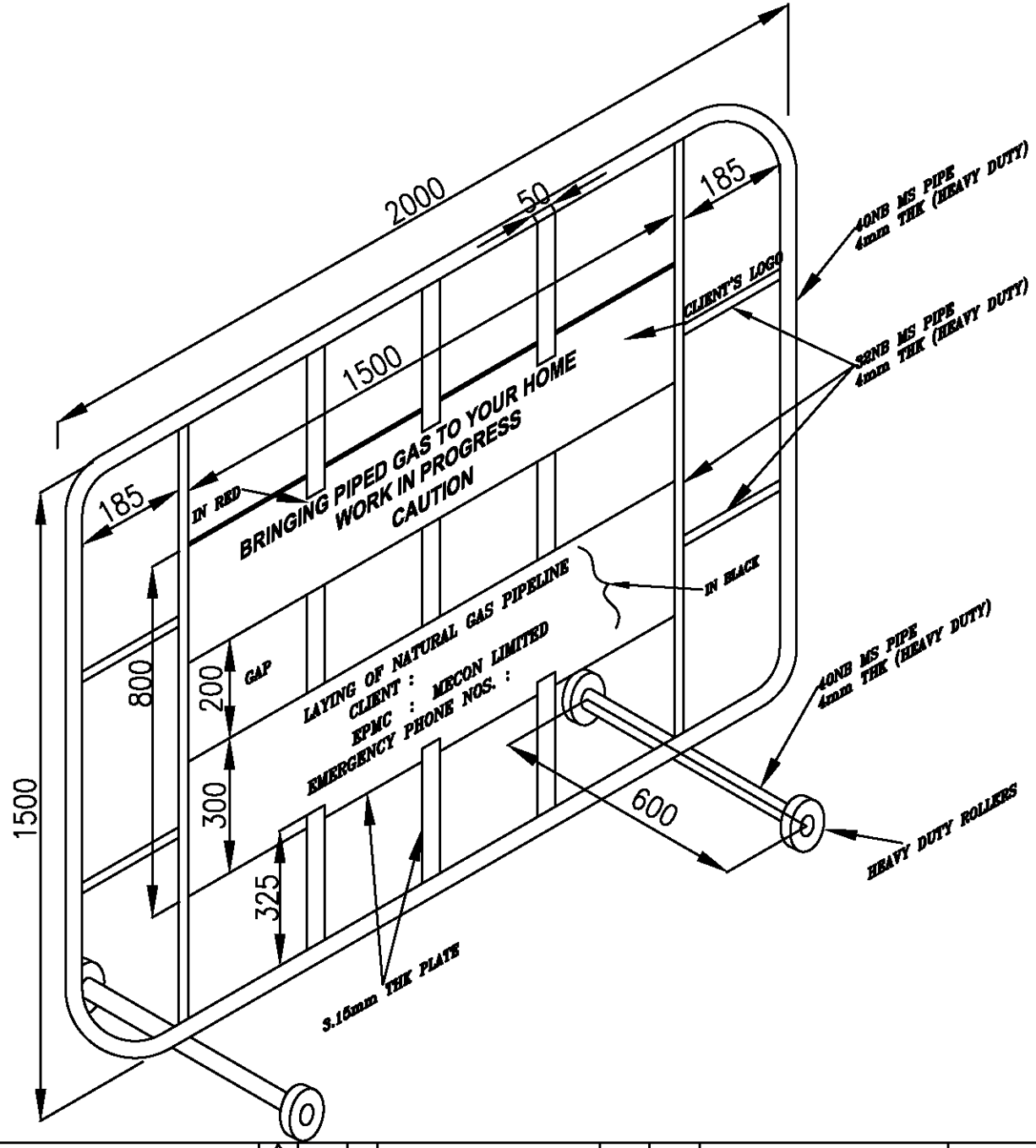
ENGINEERING CONSULTANT		मेकॉन लिमिटेड / MECON LIMITED
DIVISION	M & C	CITY GAS DISTRIBUTION WORK
DESIGNED	LOKESH	TRENCH CROSS SECTION (TYPICAL FOR CITY CONDITION) SINGLE STEEL PIPELINE ALONG WITH HDPE DUCT LAYING
DRAWN	S KARTHIK	
CHECKED & VERIFIED	A.V.RAO	
APPROVED	B.K.BERA	SCALE : NTS / SHEET 1 OF 1
DATE	26/08/2015	DRG. NO :MEC/TYP/01/31/M/001/010



NOTES:-

1. ALL DIMENSIONS ARE IN MM. UNLESS NOTED OTHERWISE.
2. OTHER SIDE OF BARRICADE SHALL BE WRITTEN IN LOCAL LANGUAGE.

FOR TENDER PURPOSE ONLY

ENGINEERING CONSULTANT		मेकॉन लिमिटेड MECON LIMITED
DIVISION	M & C	CITY GAS DISTRIBUTION WORK
DESIGNED	K.P.MANIKANDAN	DETAILS OF HARD BARRICADING
DRAWN	S KARTHIK	
CHECKED & VERIFIED	MANOJKUMAR	
APPROVED	B.K.BERA	SCALE : NTS / SHEET 1 OF 1
DATE	15.12.2016	DRG. NO :MEC/TTP/01/31/D2/PE/LY/011/R0/A3

CONCURRED BY.

REVISION

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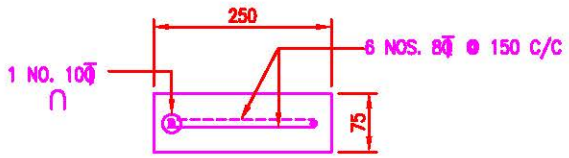
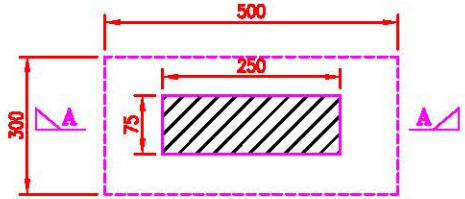
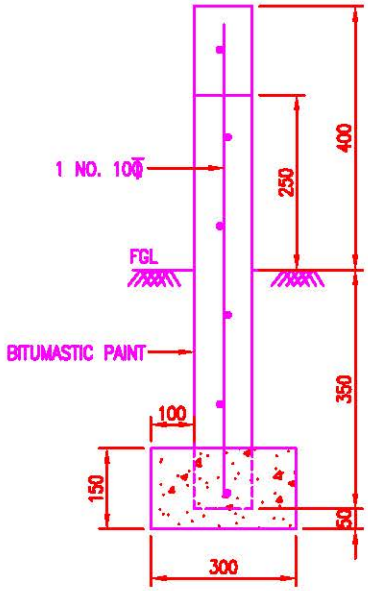


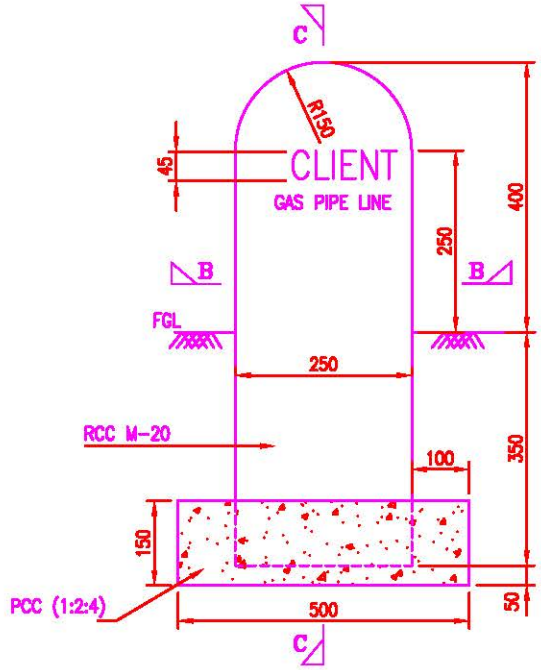
SECTION B–B



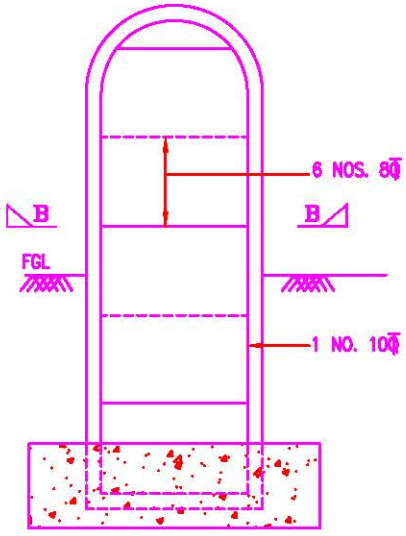
PLAN



SECTION C–C



SECTION A–A
(FOR DIMENSION)

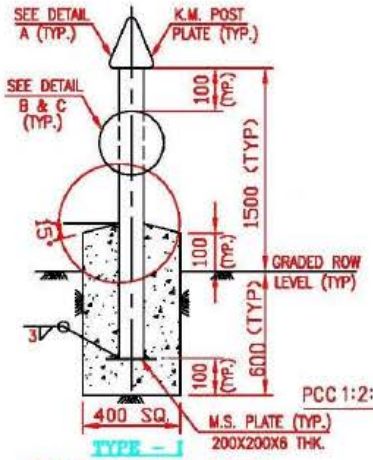


SECTION A–A
(FOR REINFORCEMENT)

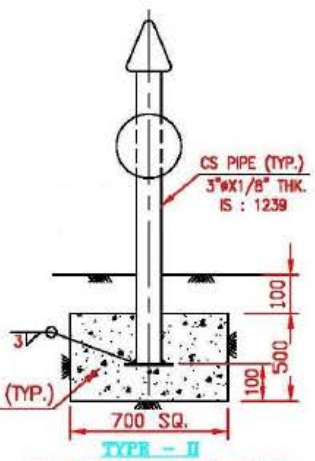
NOTE:–

1) ALL DIMENSIONS ARE IN MM UNLESS NOTED OTHERWISE.
2) MARKER SHALL BE INSTALLED AS PER INSTRUCTION OF ENGINEER–IN–CHARGE.
3) ALL BOUNDARY MARKERS SHALL BE PRECAST AND INSCRIPTIONS SHALL BE ENGRAVED 5mm DEEP IN THE MOULD ON BOTH FACE.
4) CONCRETE FOR BOUNDARY MARKER SHALL BE M20

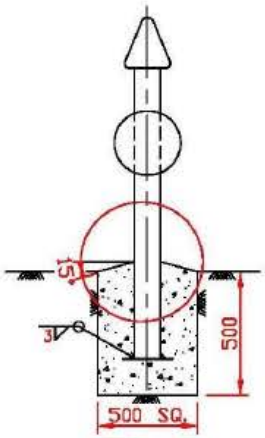
SUBMITTED FOR:							
PRELIM./PLANNING	✓	APPROVAL		INFORMATION		CONSTRUCTION	



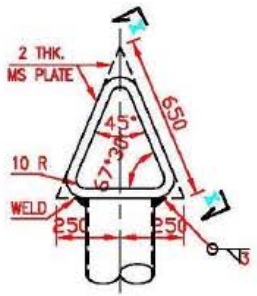
TYPE – I
FOR NORMAL SOIL AREAS



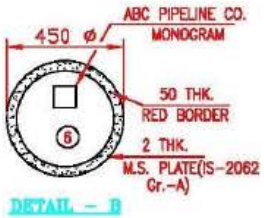
TYPE – II
FOR DRIFTING SAND AREAS



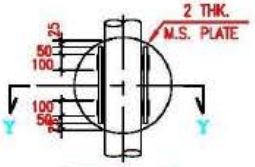
TYPE – III
FOR ROCKY AREAS



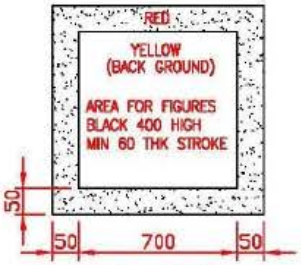
DETAIL – A



DETAIL – B



DETAIL – C



VIEW X–X

SECTION Y–Y

NOTES:–

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.
2. SCHEME OF PAINTING AND COLOURING.
   a) UNDERGROUND STEEL STRUCTURE (EXPECT THAT EMBEDDED IN CONCRETE) COAL TAR EPOXY MIN 300 MICRON THK.
   b) ABOVEGROUND STEEL STRUCTURE – ONE COAT OF PRIMER & TWO COATS OF SPECIFIED COLOUR PAINT. (35 MICRONS/ COAT)
   c) FIGURES SHALL BE STENCILLED ON BOTH SIDES OF THE POST IN BLACK.
   d) COLOUR SCHEME FOR ABC PIPELINE CO MONOGRAM SHALL BE AS DIRECTED BY COMPANY.
   e) POST SHALL BE PAINTED WITH 250 mm WIDE ALTERNATE BANDS OF BLACK AND WHITE PAINT.
   f) ALL OTHER ABOVE GROUND STEEL SHALL BE PAINTED YELLOW.
3. LOCATION
   a) K M POST SHALL BE INSTALLED AT EVERY KILOMETER AS PER REQUIREMENTS OF CONTRACT AND AS DIRECTED BY COMPANY
   b) COMPANY NAME PLATES SHALL FACE THE PIPELINE.
   c) K M POST SHALL BE 1000 mm TO THE LEFT OF THE PIPE CENTER LINE VIEWING TOWARDS THE DIRECTION OF FLOW AND AS DIRECTED BY COMPANY.
4. THE FOUNDATION SHALL BE MADE OF CONCRETE M20.
5. THE HEIGHT OF K M POST MAY BE VARIED TO SUIT FIELD REQUIREMENTS.
6. IN THIS AREA, LETTERS SHALL BE STENCILLED & PAINTED IN BLACK. SIZE OF LETTERS TO BE FINALIZED IN FIELD.

FOR TENDER PURPOSE

Bhagyanagar Gas Limited
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MECON LIMITED

CITY GAS DISTRIBUTION NETWORK PROJECT

K. M. POST

SCALE : NTS | SHEET 1 OF 1 | REV 0

DRG. NO. MEC/TYP/05/25/M/001/014

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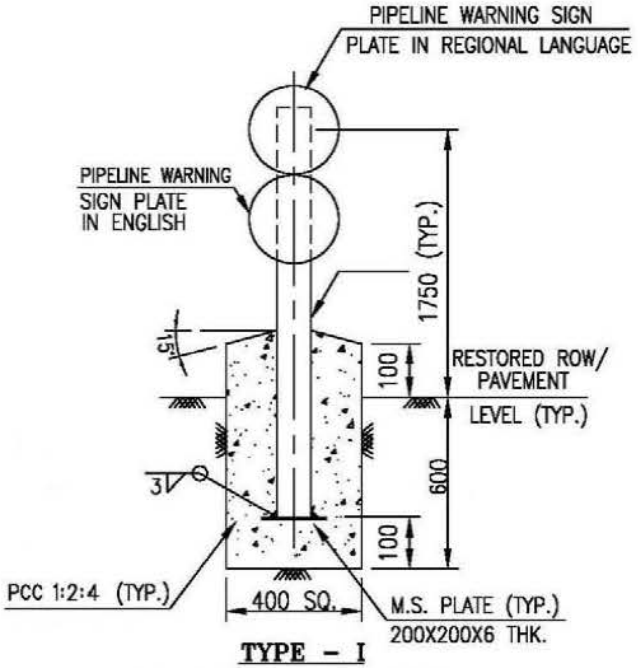
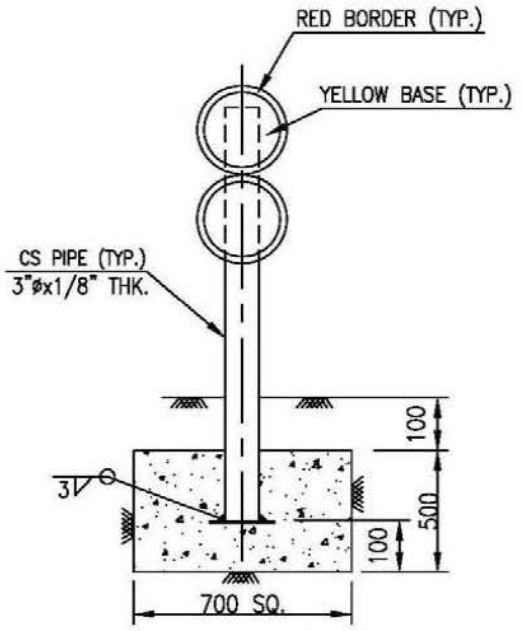


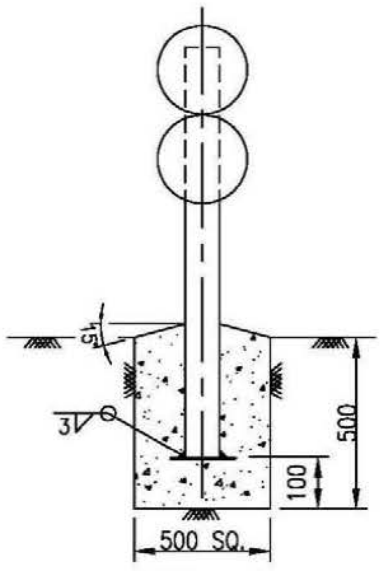
TYPE – I

FOR NORMAL SOIL AREAS



TYPE – II

FOR DRIFTING SAND AREAS

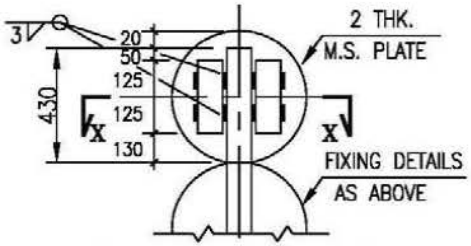


TYPE – III

FOR ROCKY AREAS

NOTES:–

1. SCHEME OF PAINTING AND COLOURING.
   a) UNDERGROUND STEEL STRUCTURE (EXCEPT THAT EMBEDDED IN CONCRETE) COAL TAR EPOXY MIN 300 MICRON THK.
   b) OVERGROUND STEEL STRUCTURE – ONE COAT OF PRIMER & TWO COAT OF SPECIFIED COLOUR PAINT (35 MICRONS/COAT).
   c) EXCEPT ALL LETTERS 'WARNING' SHALL BE PAINTED IN RED.
   d) COLOUR SCHEME FOR ABC PIPELINE CO MONOGRAM SHALL BE AS DIRECTED BY COMPANY.
   e) ALL LETTERS EXCEPT WARNING SHALL BE PAINTED BLACK.
   f) POST SHALL BE PAINTED WITH 250 WIDE ALTERNATE BANDS OF BLACK AND WHITE PAINT.
   g) ALL OTHER ABOVE GROUND STEEL SHALL BE PAINTED YELLOW.
2. LOCATION
   a) THE PIPELINE WARNING SIGN SHALL BE INSTALLED IN ACCORDANCE WITH CONTRACT REQUIREMENTS AND AS DIRECTED BY CLIENT/CONSULTANT. IT SHALL BE INSTALLED TO THE LEFT OF THE PIPE CENTER LINE VIEWING IN THE DIRECTION OF FLOW AT 300 MM FROM PIPELINE OD AND THE WARNING SIGN PLATE SHALL FACE THE UTILITY BEING CROSSED.
   b) THE WARNING SIGN PLATE MAY BE MOUNTED OFF VENT PIPES OR KM POST WHENEVER FEASIBLE.
3. FOR FLUIDS COVERED BY CODE ANSI B 31.4 USE WORD PETROLEUM AS INDICATED FOR FLUIDS COVERED BY CODE ANSI B 31.8 USE WORD GAS IN PLACE OF PETROLEUM FOR ANY OTHER FLUIDS, MENTION THE FLUID IN PLACE OF THE WORD PETROLEUM.
4. IN CASE THE WARNING SIGN TO BE USED WHERE THE PIPELINE CROSSES A HAZAROOUS FACILITY LIKE A HT CABLE OR ANOTHER PETROLEUM PIPELINE. IN PLACE OF WORDS HIGH PRESSURE PETROLEUM PIPELINE WRITE HIGH PRESSURE PETROLEUM CROSSING. HT CABLE OR THE CONCERNED FACILITY ON LETTERS OF SIZE WHICH ARE TO BE DECIDED AT SITE.
5. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE INDICATED.
6. THE FOUNDATION SHALL BE MADE OF CONCRETE M20.
7. SIGN PLATE IN REGIONAL LANGUAGE SHALL BE PREPARED BY CONTRACTOR ON SIMILAR LINES AND APPROVED BY COMPANY.



WARNING SIGN PLATE FIXING DETAILS

SECTION X–X

FOR TENDER PURPOSE

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MECON LIMITED

CITY GAS DISTRIBUTION NETWORK PROJECT

PIPELINE WARNING SIGN (TYP.)

SCALE : NTS | SHEET 1 OF 1 | REV 0

DRG. NO. MEC/TYP/05/25/N/001/015

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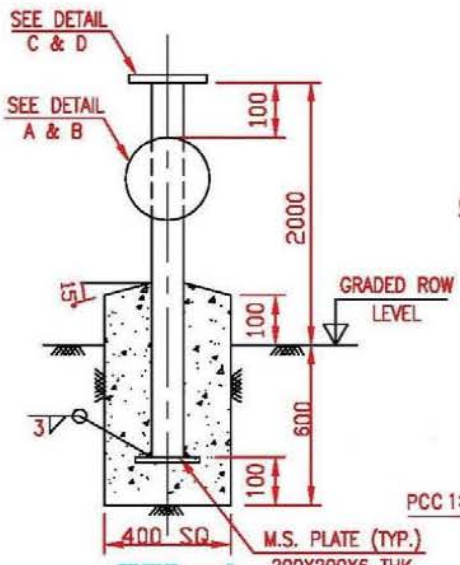
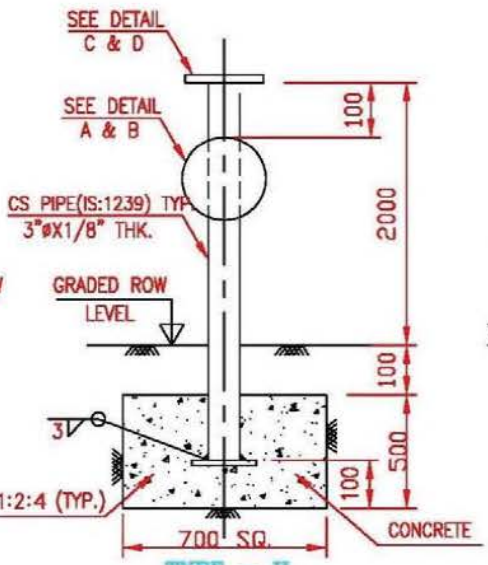


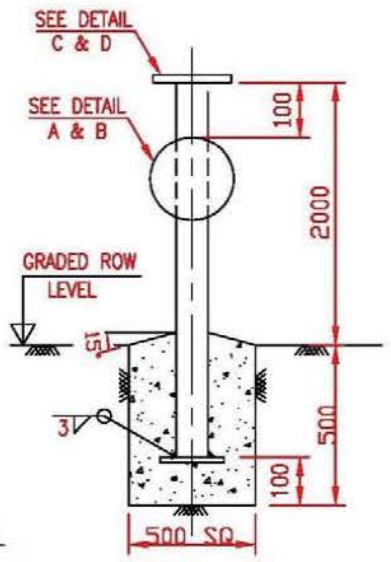
TYPE – I

FOR NORMAL SOIL



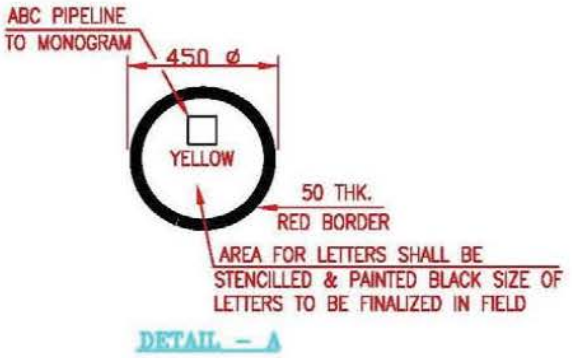
TYPE – II

FOR DRIFTING SAND AREAS

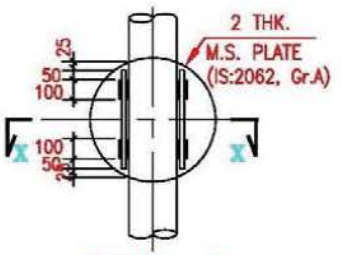


TYPE – III

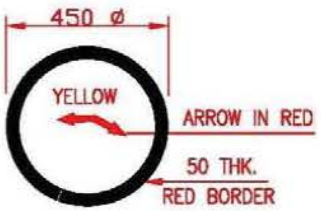
FOR ROCKY SOIL



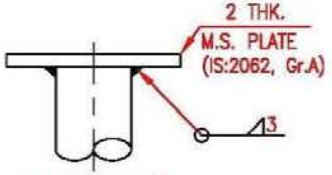
DETAIL – A



DETAIL – B



DETAIL – C



DETAIL – D

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.

c) COLOUR SCHEME FOR ABC PIPELINE CO MONO^
d) POST SHALL BE PAINTED WITH 250 WIDE ALTERNATE BANDS OF BLACK AND WHITE PAINT.
e) ALL OTHER ABOVE GROUND STEEL SHALL BE PAINTED YELLOW.

3. LOCATION

a) DIRECTION MARKERS SHALL BE INSTALLED AT LOCATION AS PER SPECIFICATION, AS INDICATED IN APPROVED DRAWING AND AS DIRECTED BY COMPANY.
b) COMPANY NAME PLATES SHALL FACE THE PIPELINE.
c) DIRECTION MARKER SHALL BE 3000 MM TO THE LEFT OF THE PIPE CENTER LINE VIEWING TOWARDS THE DIRECTION OF FLOW. AND AS DIRECTED BY COMPANY.

4. THE FOUNDATION SHALL BE MADE OF CONCRETE M20.
5. THE HEIGHT OF DIRECTION MARKER MAY BE VARIED TO SUIT FIELD REQUIREMENTS.
6. DIRECTION MARKER SHALL SHOW THE CHANGE IN DIRECTION OF P/L ALIGNMENT.

SECTION X–X

FOR TENDER PURPOSE

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MECON LIMITED

CITY GAS DISTRIBUTION NETWORK PROJECT

DIRECTION MARKER

SCALE : NTS | SHEET 1 OF 1 | REV 0

DRG. NO. MEC/TYP/05/25/M/001/D18

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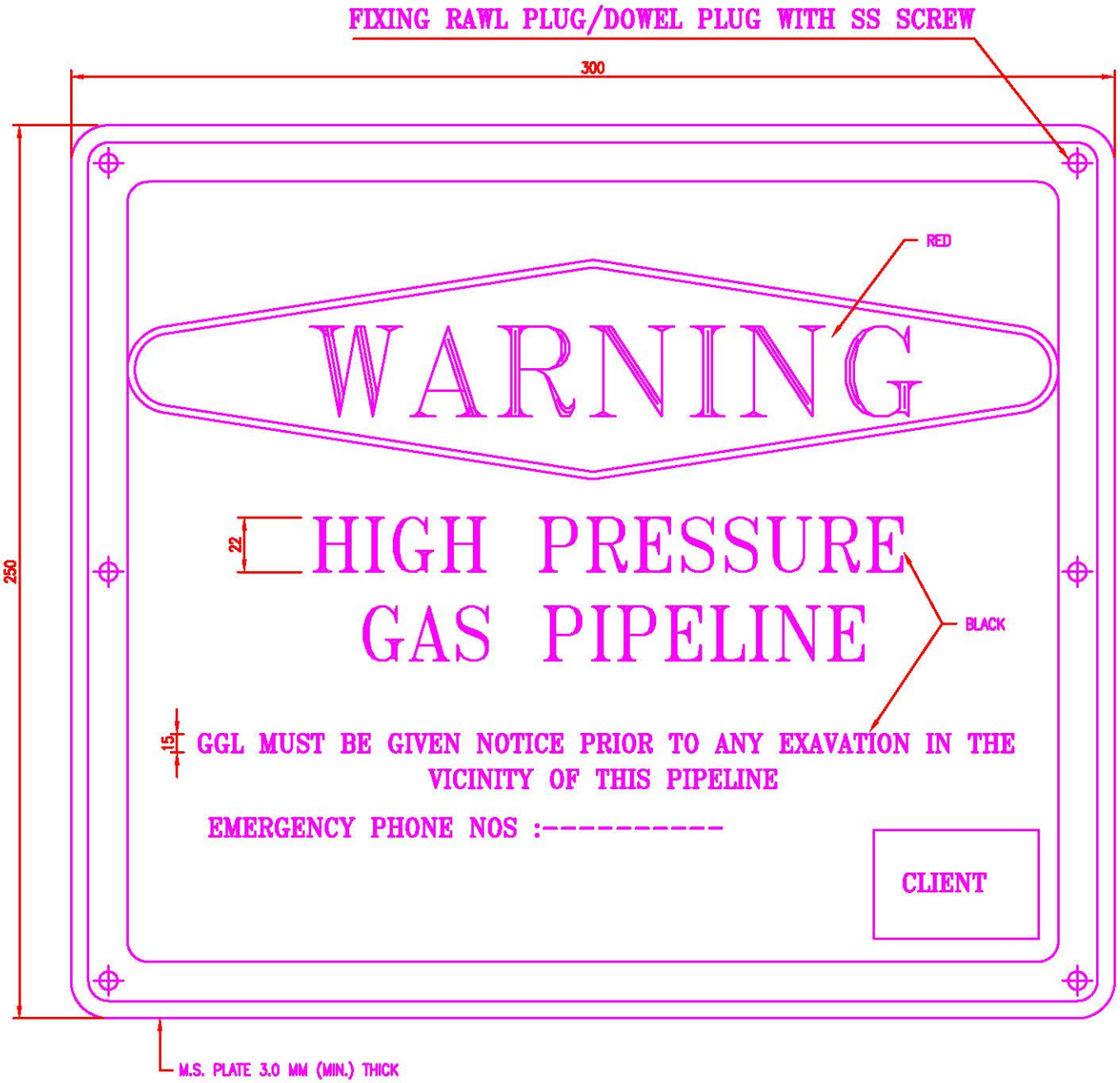

NOTE:-

1) ALL DIMENSIONS ARE IN MM UNLESS NOTED OTHERWISE.
2) FOLLOW WRITTEN DIMENSION ONLY. DO NOT SCALE.

SUBMITTED FOR:							
PRELIM./PLANNING	✓	APPROVAL		INFORMATION		CONSTRUCTION	

CONCURRED BY.

REV.No.	DATE	DESCRIPTION	BY	VERIFIED

REVISION

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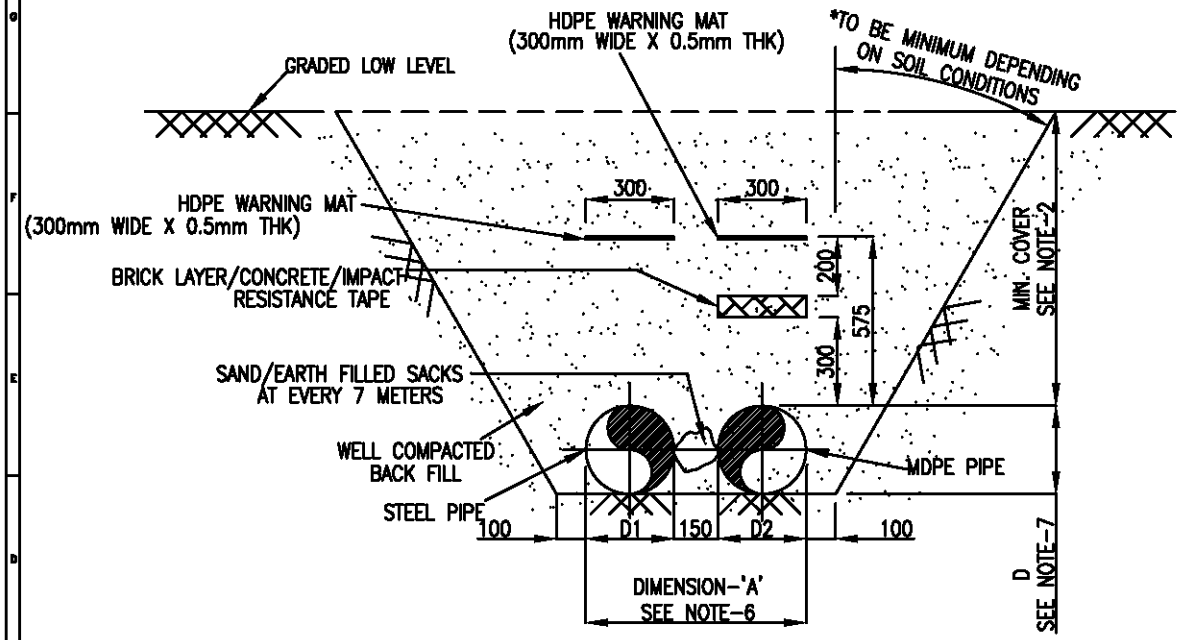
ENGINEERING CONSULTANT	मैकॉन लिमिटेड MECON LIMITED
DIVISION	M & C
DESIGNED	LOKESH
DRAWN	S KARTHIK
CHECKED & VERIFIED	A.V.RAO
APPROVED	B.K.BERA
DATE	06/07/2015

CITY GAS DISTRIBUTION WORK

PLATE MARKER

SCALE : NTS | SHEET 1 OF 1

DRG. NO :MEC/TYP/01/31/T4/PE/LY/021/S0/A5



TRENCH IN NORMAL SOIL/CONSOLIDATED ROCK

NOTE:-

1) ALL DIMENSIONS ARE IN MM. UNLESS SPECIFIED OTHERWISE.
2) FOR ALL PIPELINES TO BE CONSTRUCTED IN THE LAND UNDER JURISDITION OF GOVT. OF INDIA THE MINIMUM COVER ADOPTED SHALL BE 1000MM. IN ACCORDANCE WITH GOVT. OF INDIA PETROLEUM PIPELINES (AQUISITION OF ROV IN LAND) ACT NO. SO,1962 AND AMENDMENT ACT NO. 13,1977. ANY EXTRA REQUIREMENT SHALL BE IN ACCORDANCE WITH SPECIFICATIONS.
3) THE MINIMUM COVER SHALL BE SUBJECTED TO APPROVAL OF CONCERNED AUTHORITIES.
4) THE MINIMUM COVER IS FOR STRAIGHT PIPE RUNS, EXTRA COVER REQUIREMENTS TO BE ESTABLISED AT ALL OVER BENDS, SAG BENDS AND HORIZONTAL BENDS.
5) FOR MINIMUM COVER REQUIREMENT AT PIPELINES CROSSING ROADS, RAILWAY TRACKS, RIVERS, MARSHY AREAS ETC, REFER RELEVEAT STANDARDS.
6) DIMENSION 'A' FOR MORE THAN TWO PIPELINES IN SAME TRENCH SHALL BE DETERMINED USING FORMULA A= (D1+D2+...Dn) + (n-1)x150 WHERE D1 & D2, ...Dn ARE DIAMETER OF PIPELINES AND 'n' IS NUMBER OF PIPELINES IN SAME TRENCH.
7) DIMENSION 'D'SHALL BE LARGEST OF DIMENSIONS D1, D3, ...Dn.
8) CLEAR SPACING BETWEEN PIPELINES SHOWN IS ONLY FOR STRAIGHT LENGTHS. SPACING BETWEEN PEPELINES AT BENDS, RAILWAY CROSSINGS, ROAD CROSSINGS, CHANEL CROSSING, OTHER WATER WAY CROSSING AND MARSHY LAND ETC SHALL BE AS PER APPROVED DRAWINGS/SPECIFICATION.

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REV.No.	DATE	SIGN	DESCRIPTION	BY	VERIFIED
			REVISION		

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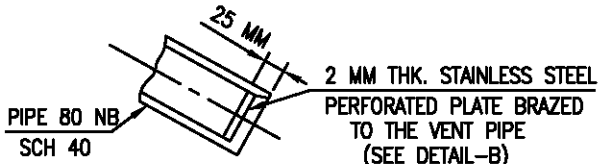
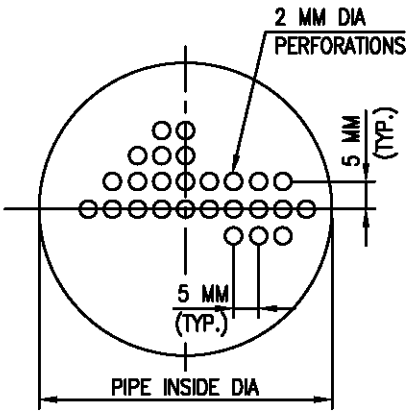
ENGINEERING CONSULTANT		मैकॉन लिमिटेड	
		MECON LIMITED	
DIVISION	M & C	CITY GAS DISTRIBUTION WORK AT BANGALORE	
DESIGNED	LOKESH	TYPICAL TRENCH DIMENSIONS FOR TWO OR MORE PIPELINES IN COMMON TRENCH (CITY GAS DISTRIBUTION)	
DRAWN	S KARTHIK		
CHECKED & VERIFIED	A.V.RAO		
APPROVED	B.K.BERA	SCALE : NTS	SHEET 1 OF 1
DATE	26/08/2015	DRG. NO :MEC/TYP/01/31/01A/003A	

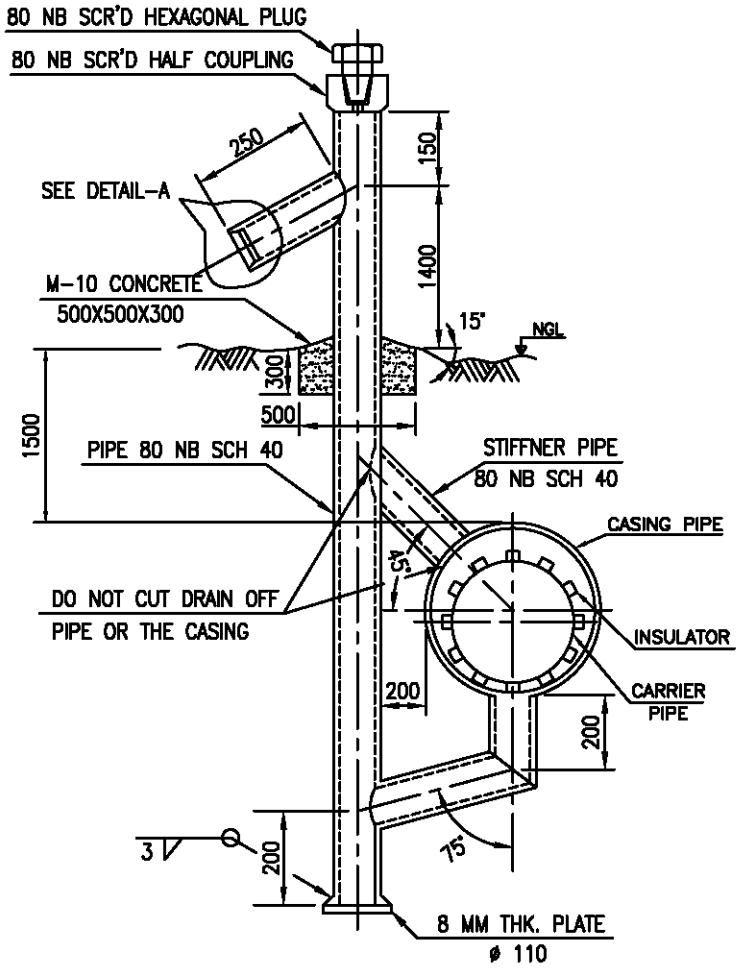


DETAIL-A

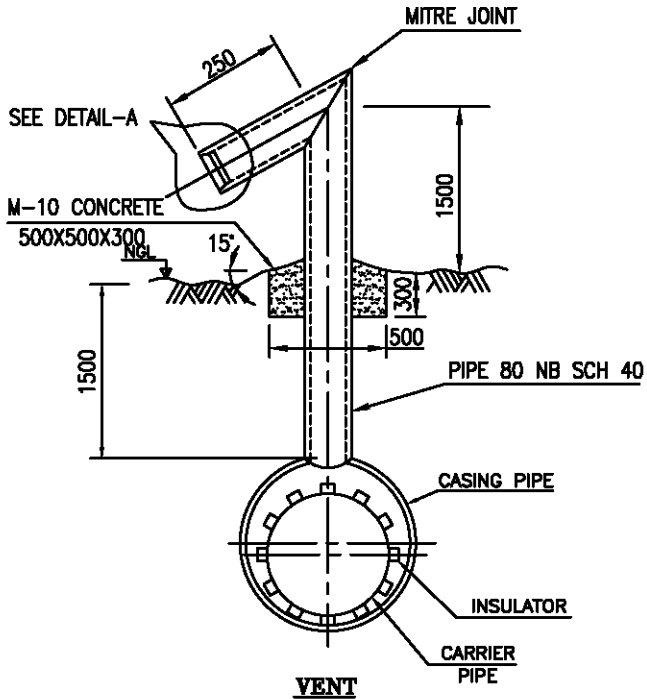


2 MM THK. STAINLESS STEEL PLATE
PERFORATED COMPLETED AS SHOWN

DETAIL-B



DRAIN OFF



VENT

NOTES:-

1. ALL DIMENSIONS ARE IN MM. UNLESS SPECIFIED OTHERWISE.
2. VENT AND DRAIN OFF TO FACE LEFT WHEN LOOKING IN DIRECTION OF FLOW AND SHALL BE PARALLEL TO CROSSING.
3. VENT AND DRAIN OFF PIPE SHALL BE API 5L Gr.B OR IS 1239.
4. PORTION OF VENT AND DRAIN OFF PIPES WHICH ARE UNDER GROUND OR WHICH MAY BE UNDER WATER TO BE COATED WITH COAL TAR EPOXY MIN. 300 MICRON THK. PAINTING FOR PORTION ABOVE GROUND/ WATER LEVEL SHALL BE AS PER STANDARD SPECIFICATION FOR SHOP AND FIELD PAINTING.
5. VENT PIPES MAY BE USED FOR MOUNTING WARNING SIGN.

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD	REFERENCES	DRG. NO.
			REVISIONS				

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SECTION:	OIL & GAS (LDP)			
	NAME	DATE	CHKD	DATE
DSGN	SS		SK	
DRWN	SUNIL			
APPROVED		(A.K. JOHRI)		

DETAIL OF CASING VENT AND DRAIN OFF

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MECON LIMITED

SCALE : NTS (SHEET 1 OF 1) REV

DRG. NO. MEC/TYP/05/21/01A/010 0

PROPOSED PIPELINE

EXISTING PIPELINE

INTERSECTION POINT/
TURNING POINT

UNCASED CROSSING

CASED CROSSING

CONTINUOUS CONCRETE
WEIGHT COATING

GRAVEL FILLED GEO TEXTILE BAGS

OPTICAL FIBER CABLE
INSIDE HDPE CONDUIT

OPTICAL FIBER CABLE INSIDE HDPE
CONDUIT SUBDUCTED IN CS PIPE

INTERMEDIATE PIGGING
STATION

SECTIONALISING VALVE (SV)/
BLOCK VALVE

SUSPENSION CROSSING

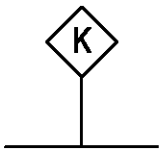
EXISTING UNDERGROUND
CABLE/PIPELINE/
STRUCTURE CROSSING

PUMP/COMPRESSOR STATION

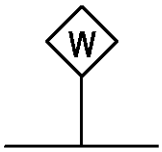
HOT INDUCTION BEND

UNDER PINNED OR
SPANNED CROSSING

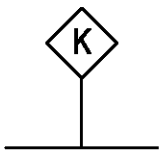
INSULATING JOINT



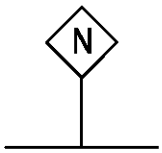
KM POST



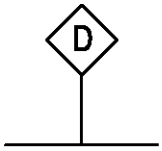
PIPELINE WARNING SIGN.



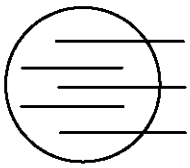
AERIAL MARKER



NAVIGABLE WATERWAY
PIPELINE WARNING SIGN.



DIRECTION MARKER



TEST STATION

CHAINAGE C.P.

TYPE INSTALLATION

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD		
			REVISIONS			REFERENCES	DRG. NO.

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SECTION: OIL & GAS (LDP)

	NAME	DATE	CHKD	DATE
DSGN	SS		SK	
DRWN	SUNIL			
APPROVED		(A.K. JOHRI)		

PIPELINE SYMBOLS

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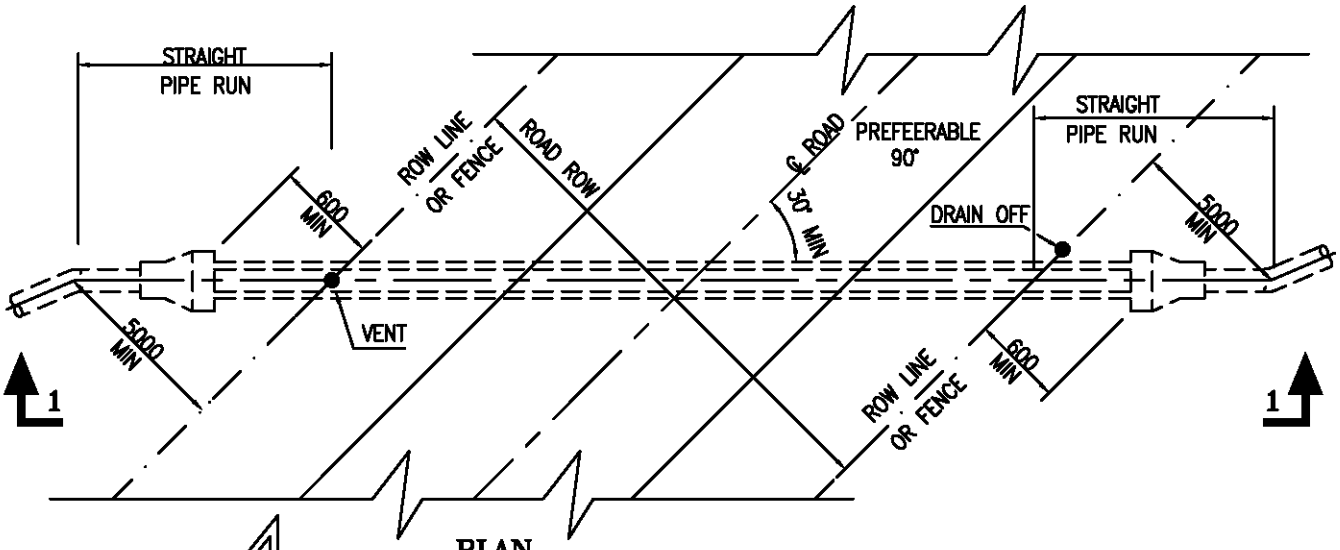
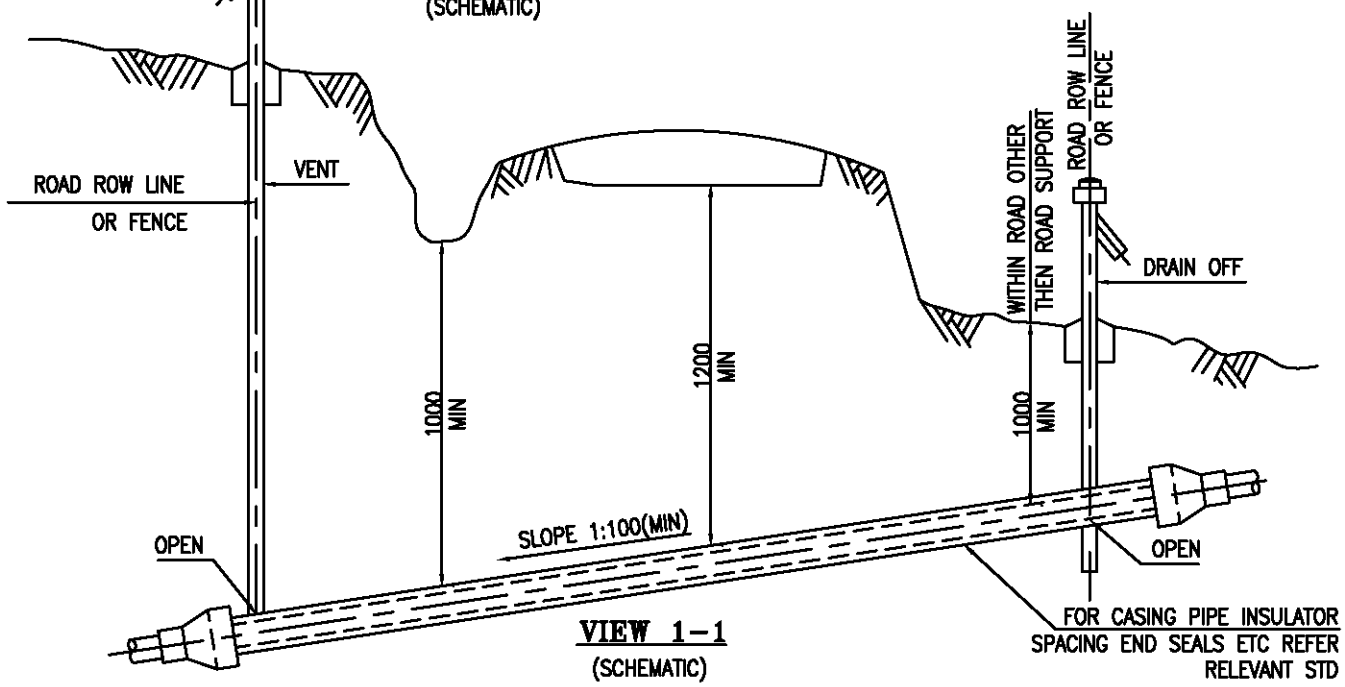
SCALE : NTS (SHEET 1 OF 1) REV

DRG. NO. MEC/TYP/05/21/M/01A/011 0



PLAN
(SCHEMATIC)



VIEW 1-1
(SCHEMATIC)

NOTES:-

1. ALL DIMENSIONS ARE IN MM. UNLESS SPECIFIED OTHERWISE.
2. REFER API RP 1102 (LATEST EDITION) FOR OTHER DESIGN AND INSTALLATION REQUIREMENTS.
3. CASING PIPE DIAMETER SHALL BE MINIMUM THREE NOMINAL PIPE SIZES LARGER THAN CARRIER PIPE DIAMETER OR AS PER APPROVED DRG OF COMPETENT (RAILWAY) AUTHORITY.
4. AT EACH CROSSING PIPELINE CROSSING WARNING SIGN SHALL BE INSTALLED ON EITHER SIDE OF CROSSING MAY BE USED FOR MOUNTING OF WARNING PLATE.
5. CONTRACTOR SHALL VERIFY THE ACTUAL DIMENSIONS WITH RESPECT TO SURVEY DETAILS OF EACH CROSSING AND PREPARE DETAILED DRAWINGS FOR INDIVIDUAL CROSSING FOR EXECUTION AND SUBMIT TO CLIENT/CONSULTANT FOR APPROVAL BEFORE COMMENCEMENT OF CONSTRUCTION.
6. ALL PIPELINE JOINTS SHALL BE RADIOGRAPHED.
7. ELECTRICAL INSULATION BETWEEN CASING AND CARRIER PIPE SHALL BE CHECKED WITH A SUITABLE MEGGER.
8. AFTER INSTALLATION OF CASING AND CARRIER PIPES THE ROAD SHALL BE RESTORED TO THE SATISFACTION OF ROAD AUTHORITIES/ COMPANY.
9. PIPELINE SECTION SHALL BE PRETESTED HYDROSTATICALLY SEPARATELY FROM THE MAIN LINE TESTING AS REQUIRED BY ENGINEER INCHARGE OR AS PER THE DIRECTIONS OF THE CLIENT.
10. ANGLE OF INTERSECTION BETWEEN PIPELINE AND THE ROAD/ HIGHWAY SHALL BE AS CLOSED TO 90° AS BUT IN NO CASE LESS THAN 30°.

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD	REFERENCES	DRG. NO.
			REVISIONS				

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SECTION: OIL & GAS (LDP)

	NAME	DATE	CHKD	DATE
DSGN	SS		SK	
DRWN	SUNIL			

APPROVED (A.K. JOHRI)

PIPELINE ROAD/ HIGHWAY CASED CROSSING

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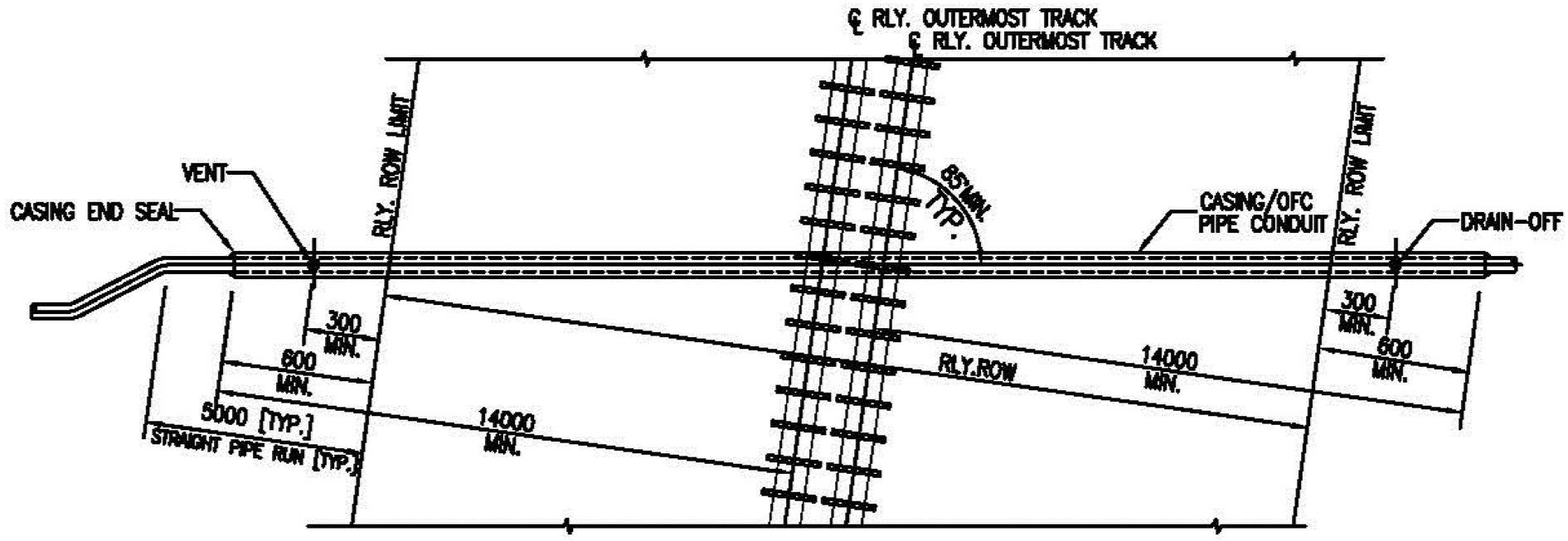
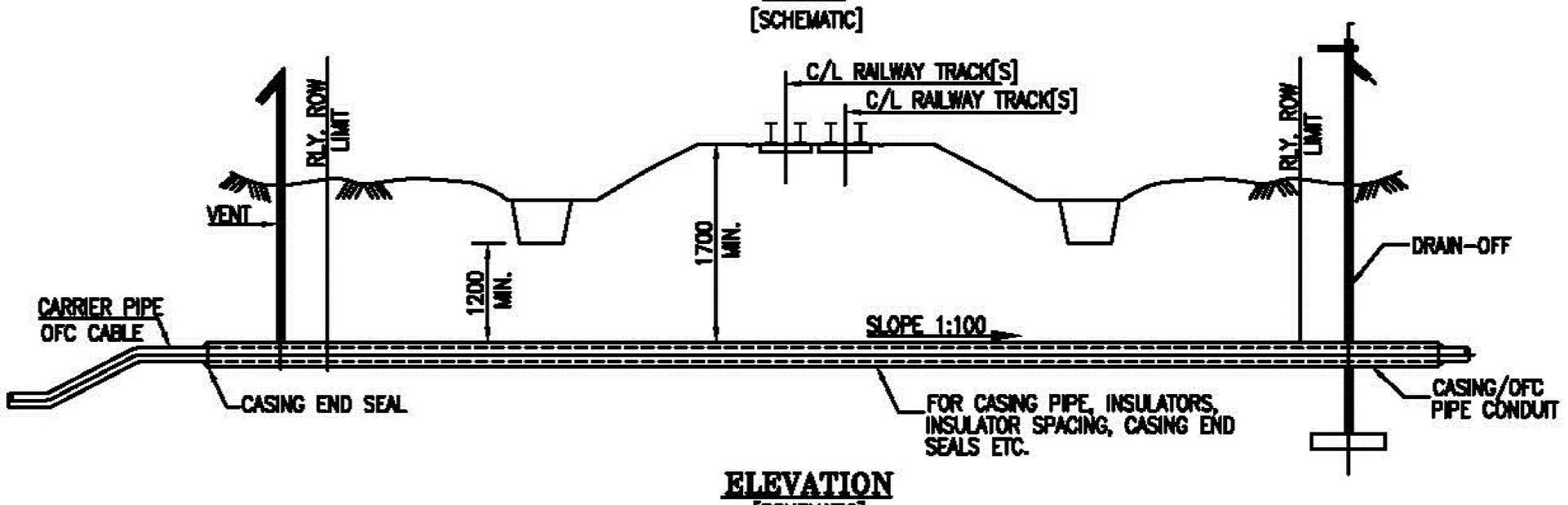
SCALE : NTS (SHEET 1 OF 1) REV

DRG. NO. MEC/TYP/05/21/05/001 0



PLAN
[SCHEMATIC]



ELEVATION
[SCHEMATIC]

CARRIER PIPE O.D. IN mm [INCH.]	CASING PIPE O.D. IN mm [INCH.]	CASING PIPE WT IN mm	CASING PIPE MATERIAL
8"	14"	6.4	API-5L Gr.B (PSL 1) OR IS 3589/EW
6"	12"		
4"	10"		

NOTES:-

1. ALL DIMENSIONS ARE IN MM. UNLESS SPECIFIED OTHERWISE.
2. REFER API RP 1102 (LATEST EDITION) FOR OTHER DESIGN AND INSTALLATION REQUIREMENTS.
3. CASING PIPE DIAMETER SHALL BE MINIMUM THREE NOMINAL PIPE SIZES LARGER THAN CARRIER PIPE DIAMETER. OR AS PER APPROVED DRG OF COMPETENT (RAILWAY) AUTHORITY.
4. CONTRACTOR SHALL VERIFY THE ACTUAL DIMENSIONS WITH RESPECT TO SURVEY DETAILS OF EACH CROSSING AND PREPARE DETAILED DRAWINGS FOR INDIVIDUAL CROSSING. COTRACTOR SHALL TAKE PRIOR APPROVAL FROM ENGINEER INCHARGE/OWNER BEFORE COMMERNCEMENT OF CONSTRUCTION.
5. ALL CARRIER PIPELINE JOINTS SHALL BE RADIOGRAPHED.
6. CARRIER PIPELINE SECTION SHALL BE PRETESTED HYDROSTATICALLY SEPARATELY FROM THE MAIN LINE TESTING AS REQUIRED BY ENGINEER INCHARGE OR AS PER THE DIRECTIONS OF THE OWNER.
7. ANGLE OF INTERSECTION BETWEEN PIPELINE AND THE RAIL ROAD SHALL BE AS CLOSED TO 90°.
8. CASING PIPE IS NOT BE COATED NORMALLY BUT IN HIGHLY CORROSIVE AREAS THE CASING SHALL BE COATED, WRAPPED AND CATHODIC PROTECTION PROVIDED WITH SACRIFICIAL ANODES. FOR CATHODIC PROTECTION DETAIL REFER RELEVANT STANDARD/ SPECIFICATION.
9. AT BOTH ENDS OF CASING PIPE A DOUBLE SET OF INSULATORS SHALL BE INSTALLED.
10. THE MAXIMUM SPACING OF THE INSULATORS SHALL BE AS PER MANUFACTURERS RECOMMENDATIONS BUT IN NO CASE MORE THAN 2500 MM.
11. ELECTRICAL INSULATION BETWEEN THE CASING AND CARRIER PIPE SHALL BE CHECKED WITH A SUITABLE MEGGER.
12. CASING INSULATORS AND END SEALS SHALL AS PER THE MECON SPECIFICATION ISSUED FOR THE SAME.
13. END SEALS SHOWN HERE ARE ONLY INDICATIVE, POSSIBILITY OF PROVIDING OTHER TYPES OF FLEXIBLE END SEALS MAY BE CONSIDERED.
14. IN CASE OF BORED/JACKED CROSSING, IN ORDER TO PREVENT DAMAGE TO COATING AND WRAPPING, A PROTECTIVE COATING OF CONCERETE OR SUITABLE MATERIAL MAY BE PROVIDED ON CASING PIPE.
15. VENT AND DRAIN OFF TO FACE LEFT WHEN LOOKING IN DIRECTION OF CONSTRUCTION AND SHALL BE PARALLEL TO CROSSING.
16. VENT AND DRAIN OFF PIPE SHALL BE API 5L Gr.B OR EQUIVALENT.
17. PORTION OF VENT AND DRAIN OFF PIPES WHICH ARE UNDER GROUND OR WHICH MAY BE UNDER WATER TO BE COATED WITH COLD APPLIED POLYETHYLENE TAPE OF APPROVED QUALITY; PORTION ABOVE GROUND WATER LEVEL SHALL BE GIVEN ONE COAT OF PRIMER AND TWO COATS OF ALUMINIUM PAINTS OR AS APPROVED BY EIC/OWNER.
18. AT EACH CROSSING PIPELINE CROSSING WARNING SIGN SHALL BE INSTALLED ON EITHER SIDE OF CROSSING. VENT & DRAIN PIPE MAY BE USED FOR MOUNTING OF WARNING PLATE.
19. MINIMUM COVER BETWEEN CASING PIPE TOP & BOTTOM OF RAIL SHALL BE 1.7 M. OR AS STIPULATED BY RAILWAY AUTHORITIES, WHICHEVER IS HIGHER.

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD	REFERENCES	DRG. NO.

REVISIONS

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SECTION: OIL & GAS (LDP)

	NAME	DATE	CHKD	DATE
DSGN	SS		SK	
DRWN	SUNIL			

APPROVED (A.K. JOHRI)

TYPICAL DETAIL OF RAILWAY CROSSING

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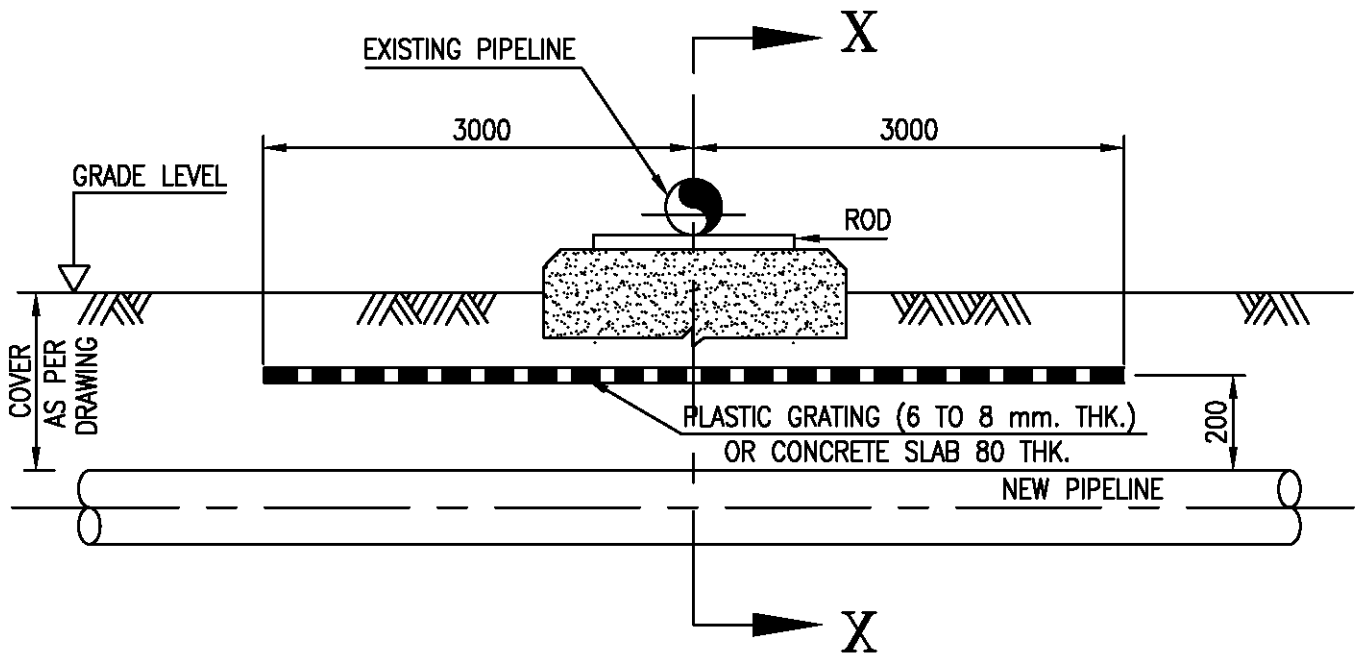
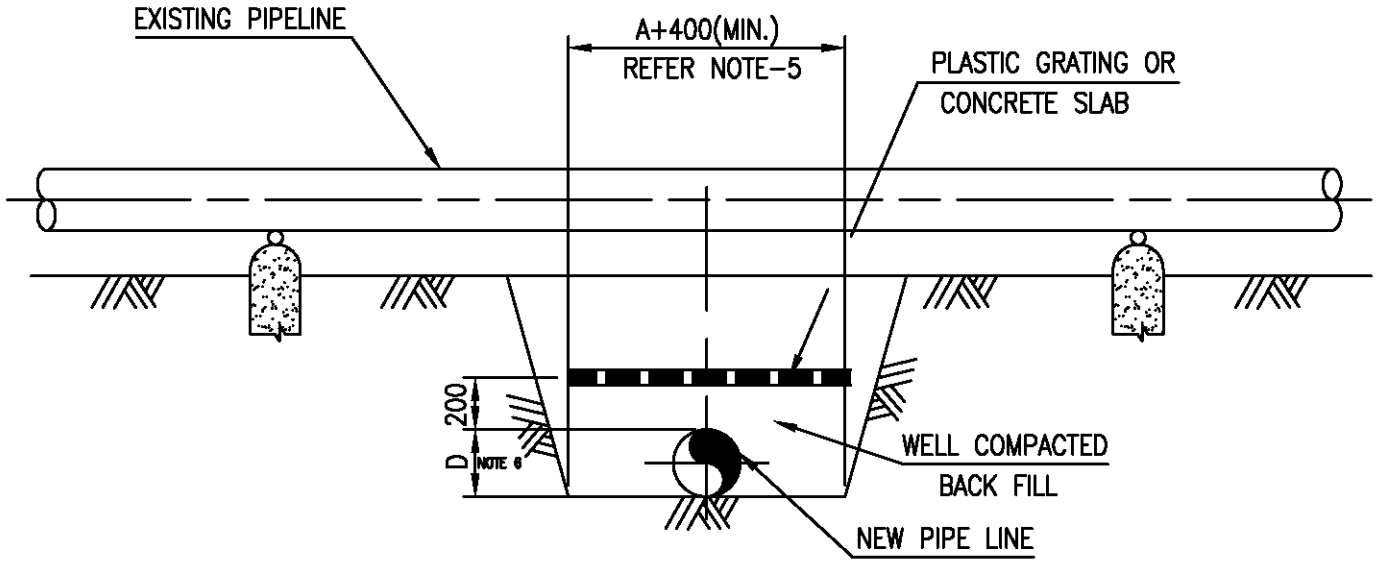
SCALE : NTS (SHEET 1 OF 1) REV

DRG. NO. MEC/TYP/05/21/05/002 0





SECTION X-X

NOTES:-

1. ALL DIMENSIONS ARE IN MM. UNLESS SPECIFIED OTHERWISE.
2. A MODIFIED PIPELINE WARNING SIGN SHALL BE INSTALLED WHERE THE PIPELINE CROSSES AN EXISTING PIPELINE CARRYING HAZARDOUS FLUID.
3. PLASTIC GRATING OR CONCRETE SLAB NEED NOT BE PROVIDED BETWEEN AN EXISTING PIPELINE AND A NEW CASED PIPELINE.
4. APPROVAL OF THE CROSSING MAY HAVE TO BE OBTAINED FROM CONCERNED AUTHORITIES.
5. DIMENSION 'A' SHALL BE CALCULATED USING FORMULA A=(D1+D2+....Dn)+(n-1)X300. WHERE D1,D2.....Dn IS THE DIAMETER OFPIPES LAID IN SAME TRENCH AND 'n' IS NUMBER OF PIPES IN SAME TRENCH.
6. DIMENSION 'D' SHALL BE LARGEST DIAMETER OF THE PIPELINES LAID IN SAME TRENCH.
7. CONCRETE SLAB SHALL BE PCC M-15 AS PER IS:456 / PLASTIC GRATING SHALL BE 6 MM. THK.

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD		
REVISIONS						REFERENCES	DRG. NO.

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SECTION:	OIL & GAS (LDP)			
	NAME	DATE	CHKD	DATE
DSGN	SS		SK	
DRWN	SUNIL			
APPROVED		(A.K. JOHRI)		

EXISTING PIPELINE ON SLEEPER CROSSING

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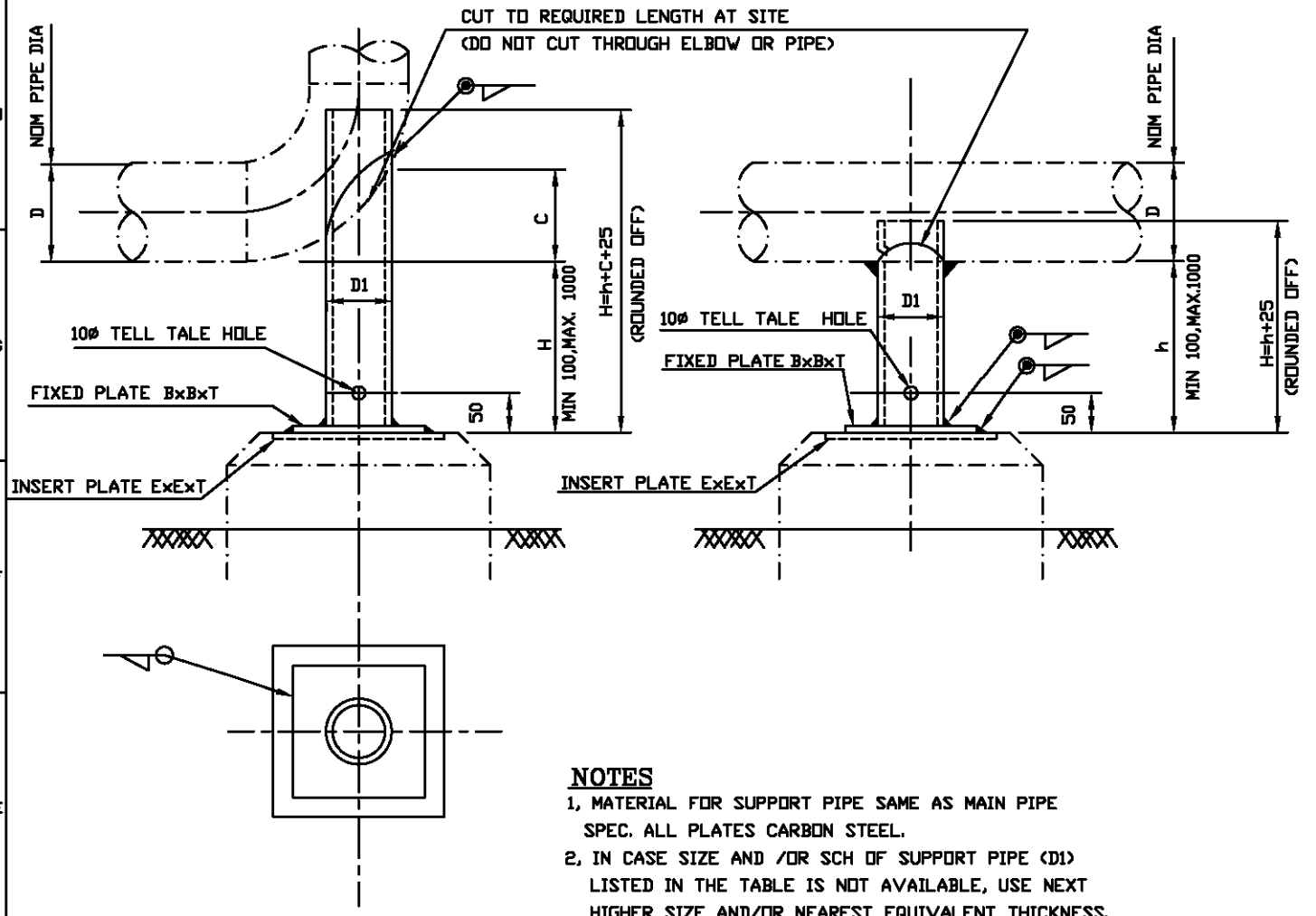
SCALE : NTS (SHEET 1 OF 1) REV

DRG. NO. MEC/TYP/05/21/05/005 0



NOTES

1, MATERIAL FOR SUPPORT PIPE SAME AS MAIN PIPE SPEC. ALL PLATES CARBON STEEL.

2, IN CASE SIZE AND /OR SCH OF SUPPORT PIPE (D1) LISTED IN THE TABLE IS NOT AVAILABLE, USE NEXT HIGHER SIZE AND/OR NEAREST EQUIVALENT THICKNESS.

L3 - 1 - H

TYPE
SIZE NO.
HEIGHT

L3A - 3 - H

TYPE
SIZE NO.
HEIGHT

SYMBOL

SIZE NO	D	D1 (NOTE 2)	B	T	C	E
1	2"	2" SCH. 40	150	10	70	200
	3"				115	
2	4"	3" SCH. 40	200	10	137	250
	6"				174	
3	8"	4" SCH. 40	200	12	205	250
	10"				262	
	12"				287	
4	14"	6" SCH. 40	250	12	388	300
	16"				418	
5	18"	8" SCH. 40	300	12	454	350
6	20"	10" SCH. 40	350	12	554	400
	24"				615	

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD
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SECTION: OIL & GAS (LDP)

	NAME	DATE	CHKD	DATE
DSGN	BINITA		SK	
DRWN	SUNIL			

APPROVED (A.K. JOHRI)

LOW SUPPORT FIXED FOR BARE & INSULATED PIPE SIZE 2" THRU 24" TYPE L3&L3A

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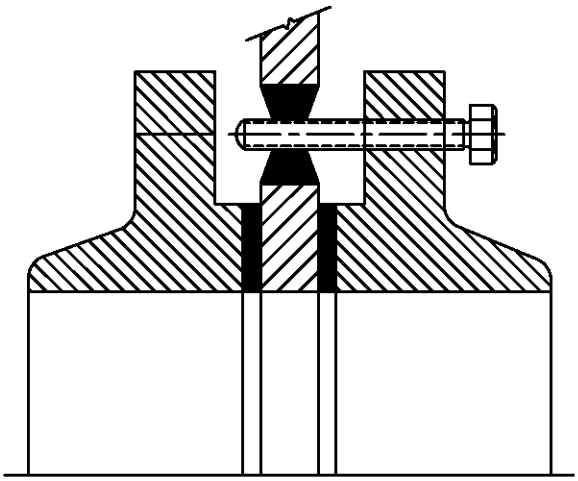
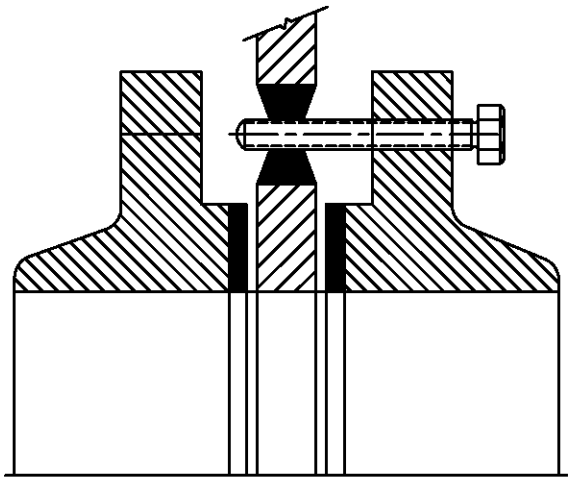
SCALE : N.T.S. (SHEET 1 OF 1) REV 0

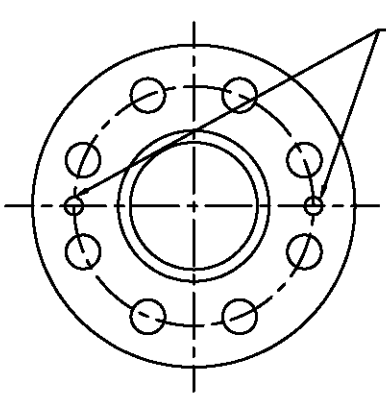
DRG. NO. MEC/TYP/05/21/06/002

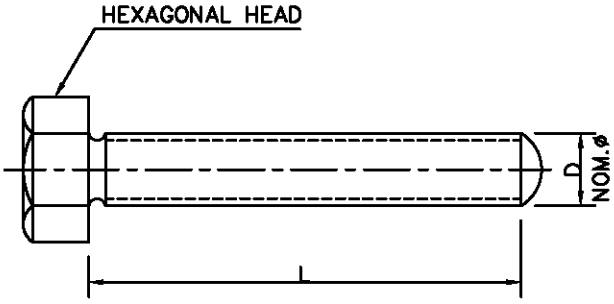
IN OPERATING POSITION



IN JACKING POSITION







NOM. ø	150 # RF		300 # RF		600 # RF	
	L	D	L	D	L	D
3"					100	20
4"					110	20
6"	80	20	100	20	120	20
8"	90	20	110	20	140	20
10"	90	20	120	20	150	20
12"	100	20	130	20	160	20
14"	110	20	140	20	170	20
16"	110	20	150	20	190	20
18"	120	20	160	20	200	20
20"	120	20	170	20	210	20
24"	140	20	180	20	240	20
26"	140	20	180	20	250	20
28"	140	20	190	20	250	20
30"	140	20	200	20	270	20

NOTES :–

1. DRILLED & TAPPED AT FIELD FOR TWO JACK SCREWS AT 180ø APART SUCH THAT SPECTACLE BLIND CAN BE HANDLED WITHOUT INTERFERANCE WITH OTHER LINES OR EQUIPMENT.
2. THESE JACK SCREW DIMENSIONS ARE FOR RF FLANGES TO ANSI B 16.9 FOR SIZES UP TO 24" AND FOR SIZES ABOVE 24".
3. JACK SCREW MATERIAL SHALL BE ALLOY STEEL.

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD
REVISIONS				REFERENCES	DRG. NO.

SECTION: OIL & GAS (LDP)				
	NAME	DATE	CHKD	DATE
DSGN	BINITA		SK	
DRWN	SUNIL			
APPROVED (A.K. JOHRI)				

JACK SCREW FOR SPECTACLE BLIND (150 #, 300 #, 600 #)

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SCALE : N.T.S. (SHEET 1 OF 1) REV 0

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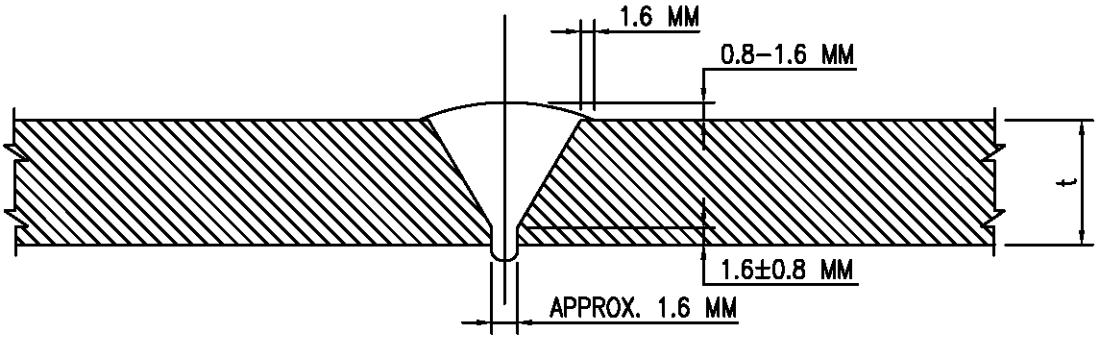
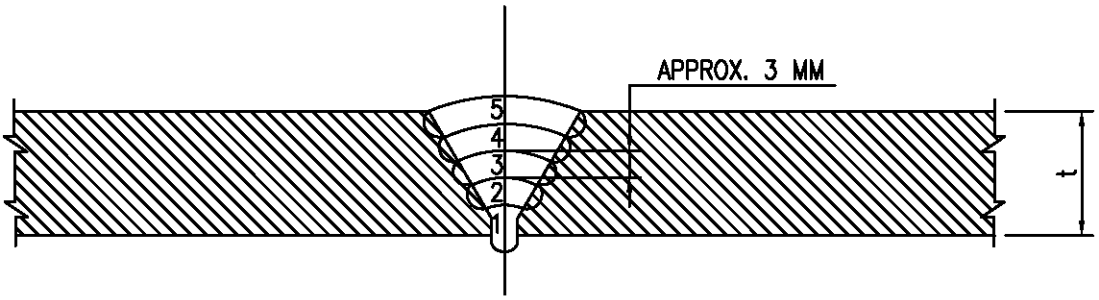


STANDARD 'V' BEVEL BUTT JOINT



SEQUENCE OF WELDS

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SECTION: OIL & GAS (LDP)

	NAME	DATE	CHKD	DATE
DSGN	BINITA		SK	
DRWN	SUNIL			
APPROVED		(A.K. JOHRI)		

BUTT WELD DETAILS

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SCALE : NTS (SHEET 1 OF 1) REV

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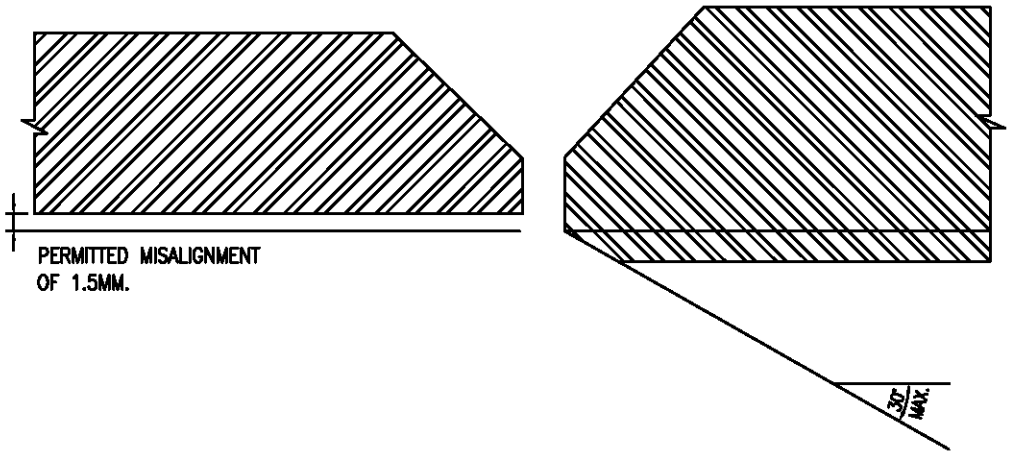

THICKER PIPE TAPER BORED TO ALIGN

(AS PER ASME B31.3)

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SECTION: OIL & GAS (LDP)

	NAME	DATE	CHKD	DATE
DSGN	BINITA		SK	
DRWN	SUNIL			

APPROVED (A.K. JOHRI)

WELDING OF PIPE WITH DIFFERENT THICKNESS

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SCALE : NTS (SHEET 1 OF 1) REV

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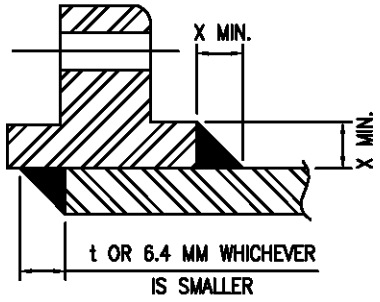
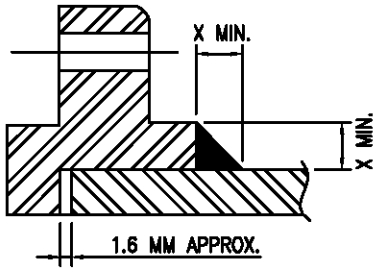


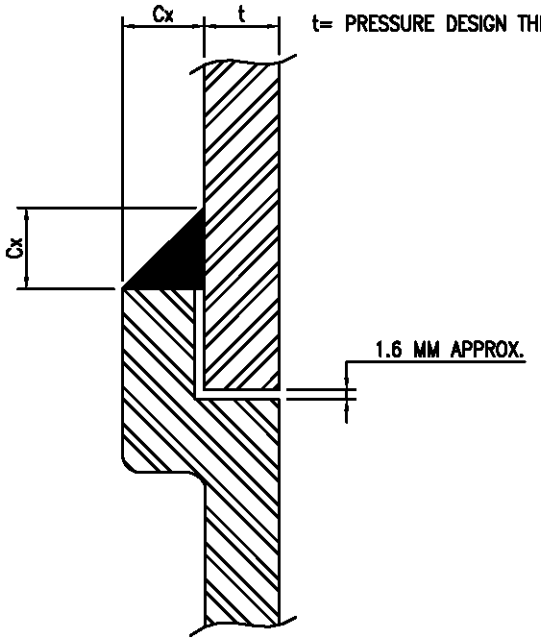
SLIP ON FLANGE



SOCKET WELDED FLANGE

X MIN. = 1.4t OR THE THICKNESS OF HUB, WHICHEVER IS SMALLER

t = PRESSURE DESIGN THICKNESS (NOT CONSIDERING CORROSION ALLOWANCE AND MANUFACTURING TOLERANCE.)



SOCKET WELDING FITTING

Cx (MIN.) = 1.25t BUT NOT LESS THAN 3.2MM.

FILLET WELD DETAILS
(AS PER ASME B31.3)

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD		
			REVISIONS			REFERENCES	DRG. NO.

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SECTION:	OIL & GAS (LDP)			
	NAME	DATE	CHKD	DATE
DSGN	BINITA		SK	
DRWN	SUNIL			
APPROVED		(A.K. JOHRI)		

FILLET WELD DETAILS

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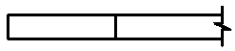
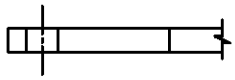
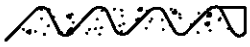
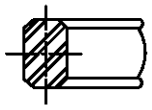
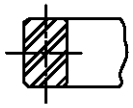
MECON LIMITED

SCALE : NTS (SHEET 1 OF 1) REV

DRG. NO. MEC/TYP/05/21/06/036 0

TYPICAL CROSS SECTION	DESCRIPTION		THICKNESS OF GASKET	COMPRESSED THICKNESS (NOTE–1)
	FLAT RING FOR RAISED FACE FLANGES	COMPRESSED ASBESTOS OR SYNTHETIC RUBBER.	2.0	2.0
	FULL FACE FOR FLAT FACE FLANGES			
	SPIRAL WOUND METAL FLAT RING GASKET, NON METALLIC FILLER , AND A STEEL SOLID RING TYPE CENTERING DEVICE– FOR RAISED FACE FLANGES		4.4	3.0
	FLAT METAL JACKETED GASKET , NON METALLIC FILLER COMPLETELY ENCLOSED WITHIN A FULLY ANNEALED DOUBLE METAL JACKET– FOR RAISED FACE FLANGES		3.0	2.0
	CORRUGATED METAL JACKETED GASKET, NON METALLIC FILLER, COMPLETELY ENCLOSED WITHIN A FULLY ANNEALED DOUBLE METAL CORRUGATED JACKET– FOR RAISED FACE FLANGES		3.2	1.0
	CORRUGATED METAL JACKET – FULLY ANNEALED CORRUGATED METAL WITH FILLER MATERIAL CEMENTED TO THE CORRUGATIONS ON BOTH FACES–FOR RAISED FACE FLANGES		3.2	1.0
	SOLID METAL FLAT RING FOR SMALL TONGUE AND GROOVE FLANGES		AS SPECIFIED	
	SOLID METAL FLAT RING FOR LARGE TONGUE AND GROOVE FLANGES		AS SPECIFIED	
	SOLID METAL OCTAGONAL RING FOR R.T.J. FLANGES		DIMENSIONS SHALL BE AS PER ASME B 16.20 (NOTE–2)	
	SOLID METAL OVAL RING FOR R.T.J. FLANGES		DIMENSIONS SHALL BE AS PER ASME B 16.20 (NOTE–2)	
	FULLY ANNEALED CORRUGATED METAL FOR RAISED FACE FLANGES		3.2	1.0

NOTES:

1. COMPRESSED GASKET THICKNESS SHALL BE USED AS GAP BETWEEN FLANGES FOR CALCULATING DIMENSIONS

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD	REFERENCES	DRG. NO.
			REVISIONS				

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SECTION: OIL & GAS (LDP)

	NAME	DATE	CHKD	DATE
DSGN	BINITA		SK	
DRWN	SUNIL			
APPROVED		(A.K. JOHRI)		

GASKET THICKNESS

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MECON LIMITED

SCALE : NTS (SHEET 1 OF 1) REV

DRG. NO. MEC/TYP/05/21/06/037 0

NOM PIPE SIZE INCHES	BOLT		BOLT LENGTHS LISTED ELBOW ARE VALID FOR A COMPRESSED GASKET THK. OF UPTO 3.2mm.					
	DIA	NO.	FLANGE TO FLANGE (R.F.)	WITH TEMP.STRAINER /REST ORIFICE	WITH FIG. 8 FLANGE	WITH DRIP RING 1" TAPPING	WITH DRIP RING 3/4" TAPPING	INLET OF S.V.
1/2	1/2	4	2 1/4	2 1/2	2 1/2	–	–	–
3/4	1/2	4	2 1/2	2 3/4	2 3/4	4 1/2	4	–
1	1/2	4	2 1/2	2 3/4	2 3/4	4 3/4	4 1/4	3 1/4
1 1/4	1/2	4	2 3/4	3	3 1/4	4 3/4	4 1/4	–
1 1/2	1/2	4	2 3/4	3	3 1/4	5	4 1/2	4 1/4
2	5/8	4	3 1/4	3 1/2	3 3/4	5	4 1/2	4 1/2
2 1/2	5/8	4	3 1/2	3 3/4	4	5 1/2	5	5
3	5/8	4	3 1/2	3 3/4	4	5 3/4	5 1/4	5
3 1/2	5/8	8	3 1/2	3 3/4	4	5 3/4	5 1/4	5
4	5/8	8	3 1/2	3 3/4	4	5 3/4	5 1/4	5
5	3/4	8	3 3/4	4	4 1/4	5 3/4	5 1/4	5 3/4
6	3/4	8	4	4 1/4	4 3/4	6	5 1/2	5 3/4
8	3/4	8	4 1/4	4 1/2	5	6 1/4	5 3/4	6
10	7/8	12	4 1/2	4 3/4	5 1/4	6 1/2	6	6 1/4
12	7/8	12	4 3/4	5	5 3/4	6 3/4	6 1/4	7
14	1	12	6 1/4	6 1/2	7 1/4	8 1/2	8	8 1/2
16	1	16	6 1/4	6 1/2	7 1/4	8 1/2	8	8 1/2
18	1 1/8	16	6 7/8	7 1/8	8 1/8	9 1/8	8 5/8	9 1/8
20	1 1/8	20	7 3/8	7 5/8	8 5/8	9 5/8	9 1/8	9 5/8
22	–	–	–	–	–	–	–	–
24	1 1/4	20	8	8 1/4	9 1/2	10 1/4	9 3/4	10 1/4

APPROVED (A.K. JOHRI)

	NAME	DATE	CHKD	DATE
DSGN	BINITA		SK	
DRWN	SUNIL			

SECTION: OIL & GAS (LDP)

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REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD
			REVISIONS		

REFERENCES

DRG. NO.

STUD BOLTS RF 150# DIMENSIONS (ASME B16.5)

ISO 9001 COMPANY

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MECON LIMITED

SCALE : NTS (SHEET 1 OF 1)

DRG. NO. MEC/TYP/05/21/06/038

NOM PIPE SIZE INCHES	BOLT		BOLT LENGTHS LISTED ELBOW ARE VALID FOR A COMPRESSED GASKET THK. OF UPTO 3.2mm.					
	DIA	NO.	FLANGE TO FLANGE (R.F.)	WITH TEMP.STRAINER /REST ORIFICE	WITH FIG. 8 FLANGE	WITH DRIP RING 1" TAPPING	WITH DRIP RING 3/4" TAPPING	INLET OF S.V.
1/2	1/2	4	2 1/2	2 3/4	3	–	–	–
3/4	5/8	4	3	3 1/4	3 1/2	4 3/4	4 1/4	–
1	5/8	4	3	3 1/4	3 1/2	5 1/4	4 3/4	4 1/4
1 1/4	5/8	4	3 1/4	3 1/2	3 3/4	5 1/4	4 3/4	–
1 1/2	3/4	4	3 1/2	3 3/4	4	5 1/2	5	4 3/4
2	5/8	8	3 1/2	3 3/4	4	5 3/4	5 1/4	4 3/4
2 1/2	3/4	8	4	4 1/4	4 1/2	5 3/4	5 1/4	5 1/2
3	3/4	8	4 1/4	4 1/2	4 3/4	6 1/4	5 3/4	5 1/2
3 1/2	3/4	8	4 1/4	4 1/2	5	6 1/2	6	5 3/4
4	3/4	8	4 1/2	4 3/4	5 1/4	6 1/2	6	5 3/4
5	3/4	8	4 3/4	5	5 1/2	6 3/4	6 1/4	6
6	3/4	12	4 3/4	5	5 1/2	7	6 1/2	6
8	7/8	12	5 1/2	5 3/4	6 1/2	7 3/4	7 1/4	6 3/4
10	1	16	7 1/4	7 1/2	8 1/2	9 1/2	9	8 1/4
12	1 1/8	16	7 7/8	8 1/8	9 1/8	10 1/8	9 5/8	10 1/8
14	1 1/8	20	8 1/8	8 3/8	9 5/8	10 3/8	9 7/8	10 3/8
16	1 1/4	20	8 3/4	9	10 1/2	11	10 1/2	11
18	1 1/4	24	9	9 1/4	10 3/4	11 1/4	10 3/4	11 1/4
20	1 1/4	24	9 1/4	9 1/2	11 1/4	11 1/2	11	11 1/2
22	–	–	–	–	–	–	–	–
24	1 1/2	24	10 1/2	10 3/4	12 3/4	12 3/4	12 1/4	12 3/4

SECTION: OIL & GAS (LDP)

	NAME	DATE	CHKD	DATE
DSGN	BINITA		SK	
DRWN	SUNIL			

APPROVED (A.K. JOHRI)

REVISIONS

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD

REFERENCES

DRG. NO.

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STUD BOLTS RF 300# DIMENSIONS (ASME B16.5)

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MECON LIMITED

SCALE : NTS (SHEET 1 OF 1)

DRG. NO. MEC/TYP/05/21/06/039

REV 0

NOM PIPE SIZE INCHES	BOLT		BOLT LENGTHS LISTED ELBOW ARE VALID FOR A COMPRESSED GASKET THK. OF UPTO 3.2mm.					
	DIA	NO.	FLANGE TO FLANGE (R.F.)	WITH TEMP.STRAINER /REST ORIFICE	WITH FIG. 8 FLANGE	WITH DRIP RING 1" TAPPING	WITH DRIP RING 3/4" TAPPING	INLET OF S.V.
1/2	1/2	4	3	3 1/4	3 1/2	–	–	–
3/4	5/8	4	3 1/2	3 3/4	4	5 3/4	5 1/4	–
1	5/8	4	3 1/2	3 3/4	4	5 3/4	5 1/4	–
1 1/4	5/8	4	3 3/4	4	4 1/4	6	5 1/2	–
1 1/2	3/4	4	4 1/4	4 1/2	4 3/4	6 1/2	6	5 1/2
2	5/8	8	4 1/4	4 1/2	4 3/4	6 1/2	6	5 1/2
2 1/2	3/4	8	4 3/4	5	5 1/2	7	6 1/2	6
3	3/4	8	5	5 1/4	5 3/4	7 1/4	6 3/4	6 1/4
3 1/2	7/8	8	5 1/2	5 3/4	6 1/4	7 3/4	7 1/4	7 1/4
4	7/8	8	5 3/4	6	6 1/2	8	7 1/2	7 1/4
5	1	8	7 1/2	7 3/4	8 1/2	9 3/4	9 1/4	9 1/4
6	1	12	7 3/4	8	8 3/4	10	9 1/2	9 1/4
8	1 1/8	12	8 5/8	8 7/8	9 7/8	10 7/8	10 3/8	10 7/8
10	1 1/4	16	9 3/4	10	11 1/4	12	11 1/2	12
12	1 1/4	20	10	10 1/4	11 3/4	12 1/4	11 3/4	12 1/4
14	1 3/8	20	10 5/8	10 7/8	12 5/8	12 7/8	12 3/8	12 7/8
16	1 1/2	20	11 1/2	11 3/4	13 3/4	13 3/4	13 1/4	13 3/4
18	1 5/8	20	12 3/8	12 5/8	14 5/8	14 5/8	14 1/8	14 5/8
20	1 5/8	24	12 7/8	13 1/8	15 5/8	15 3/8	14 7/8	15 3/8
22	–	–	–	–	–	–	–	–
24	1 7/8	24	14 7/8	15 1/8	17 7/8	17 1/8	16 5/8	17 1/8

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REVISIONS

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD

REFERENCES

DRG. NO.

	NAME	DATE	CHKD	DATE
DRWN	SUNIL			
DSGN	BINITA		SK	

APPROVED (A.K. JOHRI)

SECTION: OIL & GAS (LDP)

STUD BOLTS RF 600# DIMENSIONS (ASME B16.5)

MECON LIMITED

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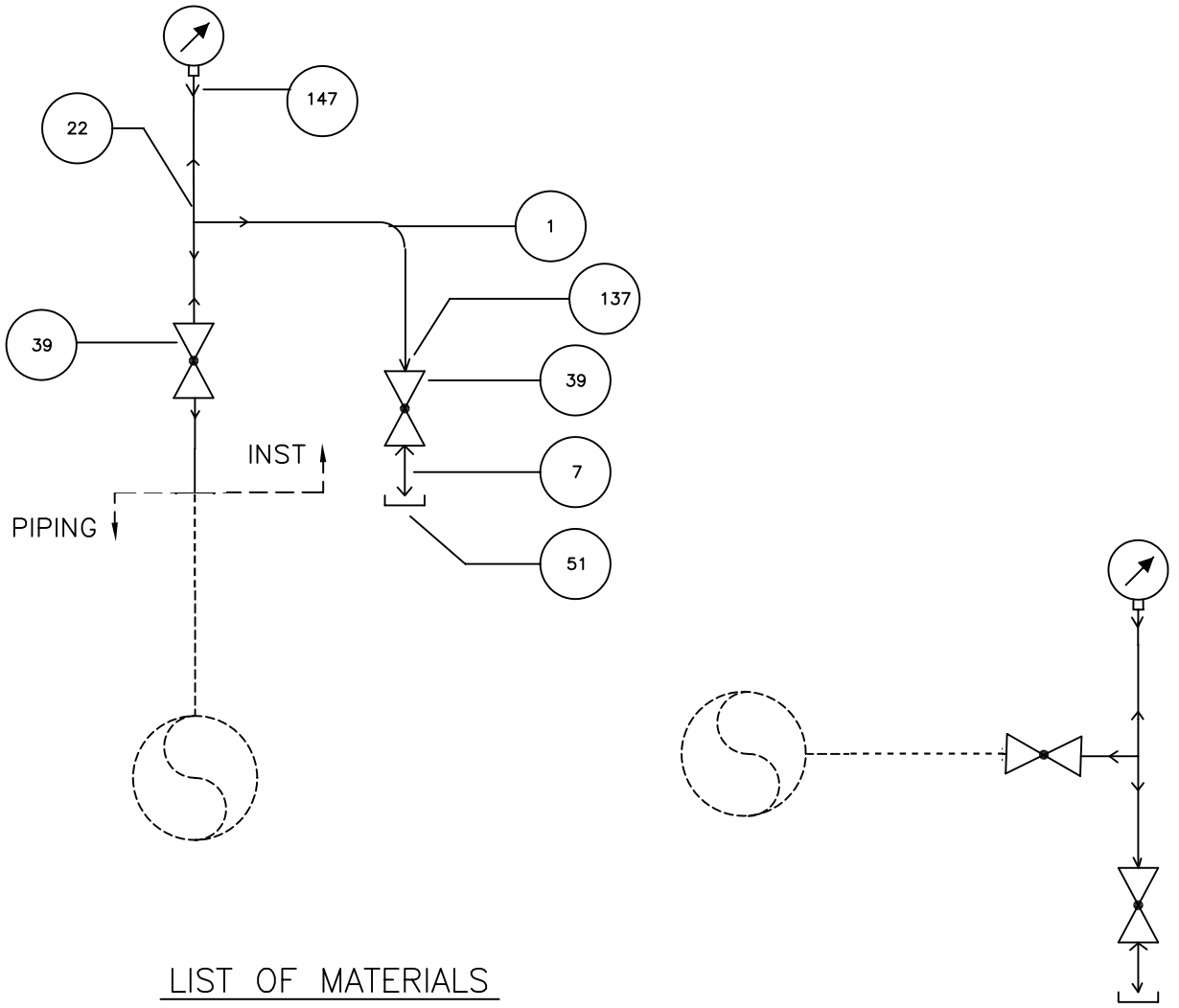
SCALE : NTS (SHEET 1 OF 1)

DRG. NO. MEC/TYP/05/21/06/040

REV 0

INSTRUMENTATION DRAWINGS



LIST OF MATERIALS

QUANTITY (NOS.)	ITEM NO.	DESCRIPTION	SIZE	MATERIAL
A/R	1	TUBE	1/2"	CS
2	7	NIPPLE PL X TH	1/2"	CS
3	147	FEMALE CONNECTOR	1/2"THx1/2"OD	CS
1	22	EQUAL TEE	1/2"	CS
2	39	BALL VALVE SCRD	1/2"	CS
1	51	PLUG	1/2"	CS
2	137	MALE CONNECTOR	1/2"THx1/2" OD	CS

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD

REVISIONS REFERENCES DRG. NO.

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SECTION :ELECTRICAL/INSTN.

	NAME	DATE	CHKD	DATE
DSGN	R.K.S		P.S	
DRWN	IRFAN			
APPROVED		D.G.M		

INSTALLATION DIAGRAM FOR PRESSURE GUAGE

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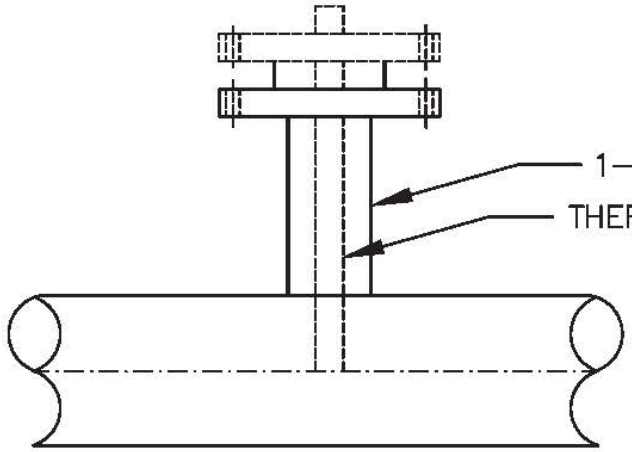
MECON LIMITED

SCALE : NTS

DRG.NO. MEC/05/E5/SD/PG/004

REV 0



---------- – INSTRUMENTATION SCOPE

———— – PIPING SCOPE

NOTES:

1) PIPING SCOPE INCLUDES SUPPLY & INSTALLATION OF 1–1/2" SOCK–O–LET 1–1/2" NOZZLE, 1–1/2" FLANGE ALONG WITH GASKET, STUD & NUTS.
2) INSTRUMENTATION SCOPE INCLUDES SUPPLY OF FLANGED THERMOWELL ALONG WITH THE INSTRUMENT.

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD

REVISIONS | REFERENCES | DRG. NO.

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SECTION : ELECTRICAL/INSTN.

	NAME	DATE	CHKD	DATE
DSGN	R.K.S		P.S	
DRWN	IRFAN			

APPROVED D.G.M

INSTALLATION DIAGRAM FOR TEMPERATURE GUAGE & RTD

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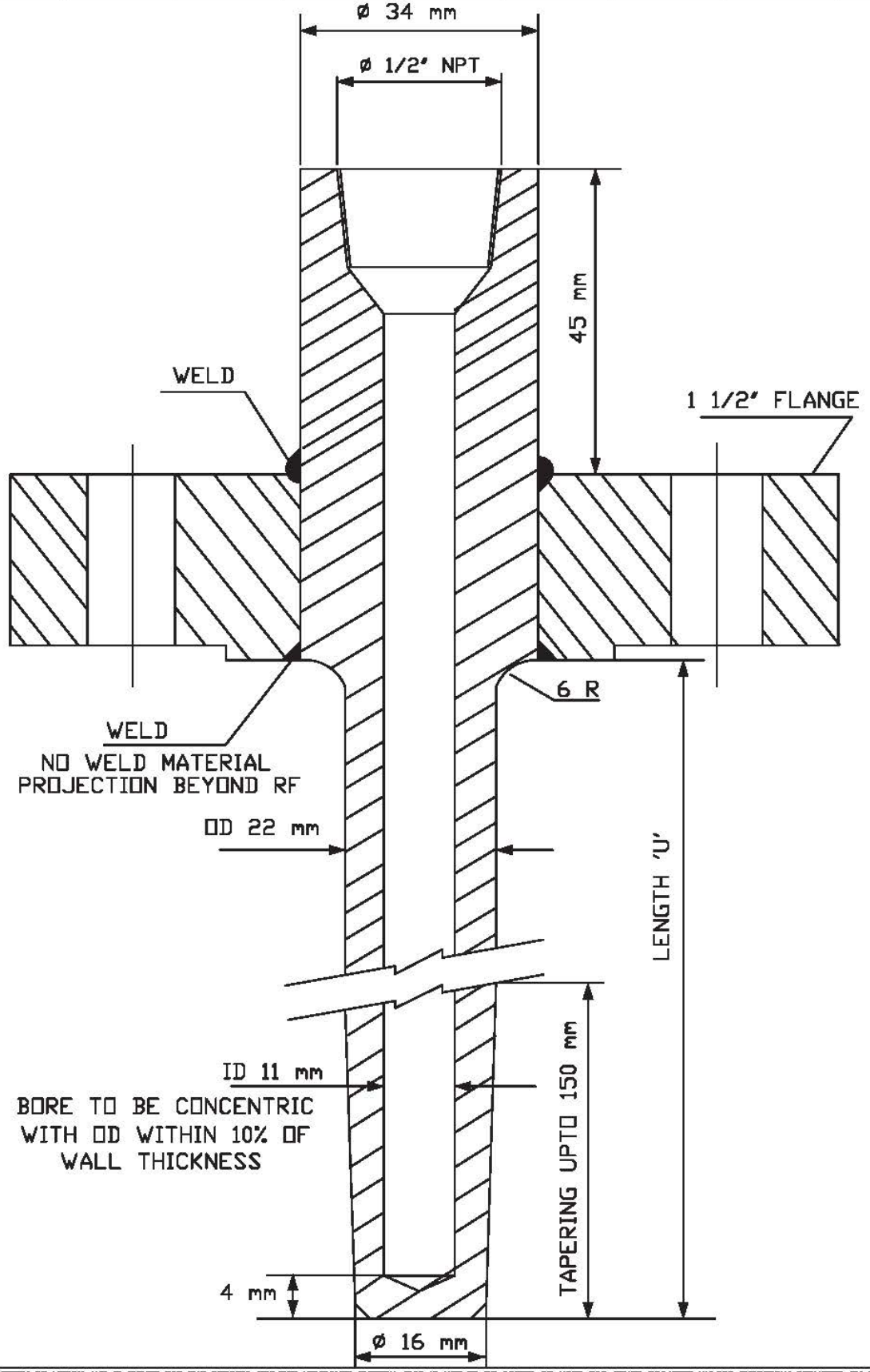
MECON LIMITED

SCALE :

DRG.NO. MEC/05/E5/SD/TG–RTD/005

REV 0



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SECTION	INSTRUMENTATION		
	NAME	SIG.	DATE
DSGN.	RKS.		
DRWN	IRFAN.		
CHKD. & VERIFIED	PS		
APPROVED	D.G.M		

INSTALLATION DIAGRAM

MOUNTING DETAILS FOR THERMOWELLS (TG)

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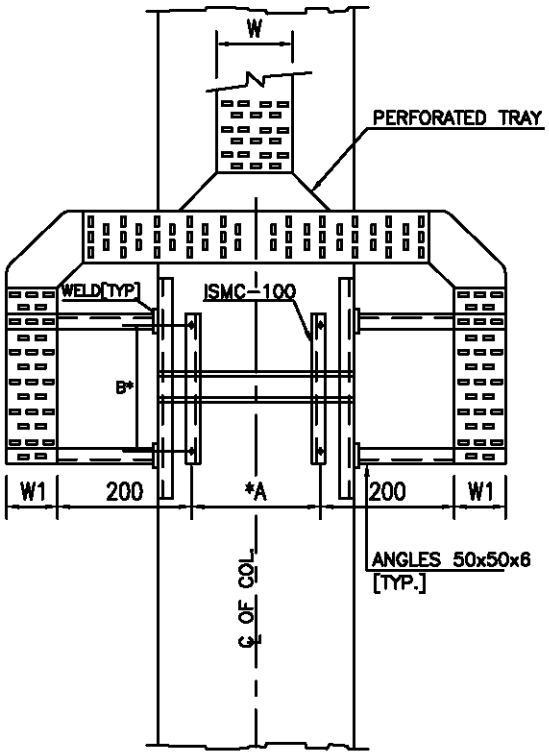
MECON LIMITED

SCALE : 1:50

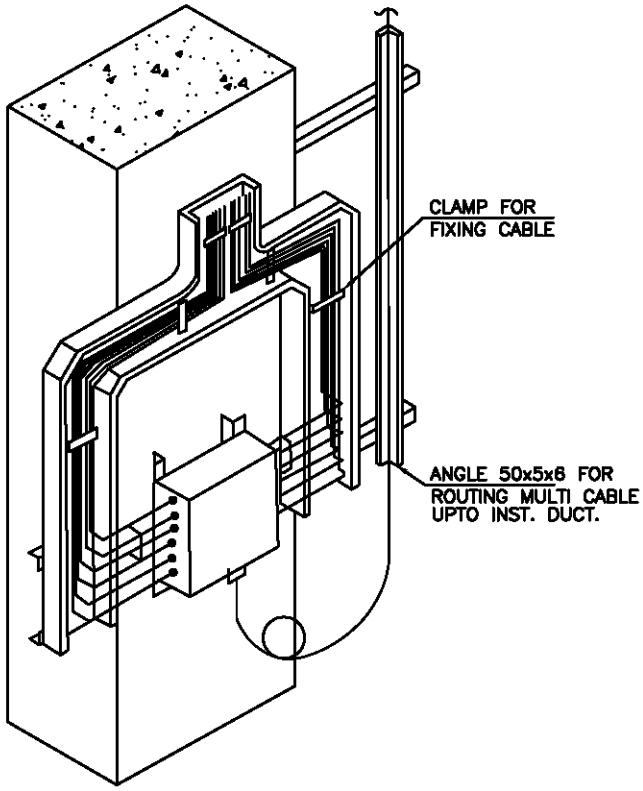
DRG.NO.: MEC/05/E5/SD/TG-TW/007

REV 0

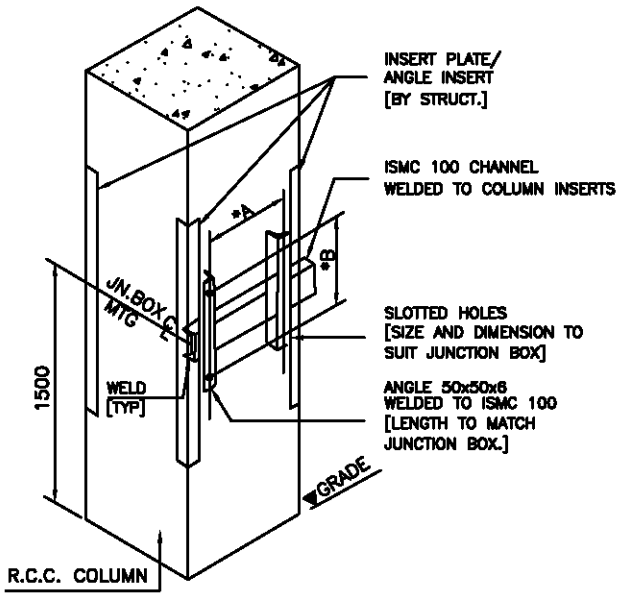
TRAY ARRANGEMENT FOR JUNCTION BOXES



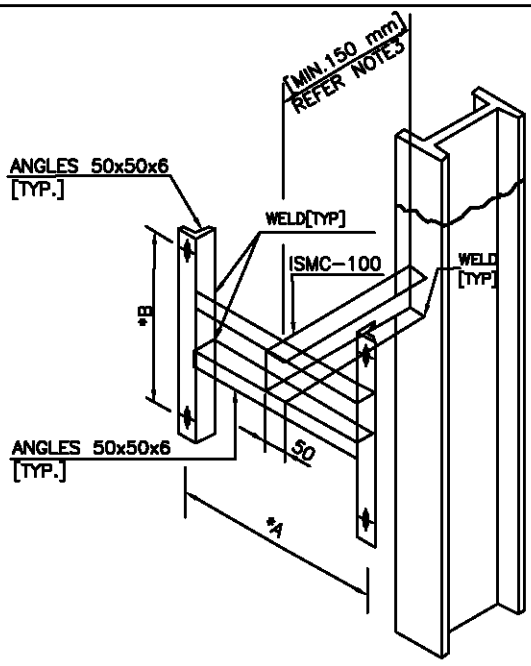
CABLE ROUTING FOR JUNCTION BOXES



JN. BOX MOUNTING FRAME [R.C.C. COLUMN]



JN. BOX MOUNTING FRAME [STEEL COLUMN]



* DIMENSIONS 'A AND B' TO SUIT JUNCTION BOX.

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. CLAMP MULTICABLE ON ANGLE WITH 25mm WIDE PVC COVERED ALLUMINIUM STRIP.
3. ADD 50mm WHERE-EVER FIRE INSULATION IS PROVIDED.

TRAY WIDTH

JN. BOX	W	W1
12 PAIR	300	150
8 TRIAD	300	150
8 PAIR	150	100
6 TRIAD	150	100

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD
REVISIONS				REFERENCES	DRG. NO.

SECTION: INSTRUMENTATION				
	NAME	DATE	CHKD	DATE
DSGN	R.K.S		P.S	
DRWN	SUNIL			
APPROVED			D.G.M	

SUPPORT DETAILS FOR JUNCTION BOXES

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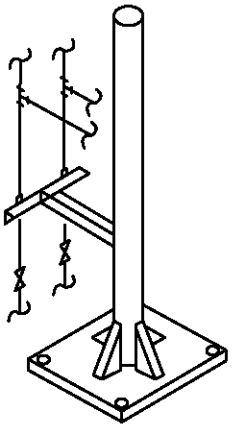
MECON LIMITED

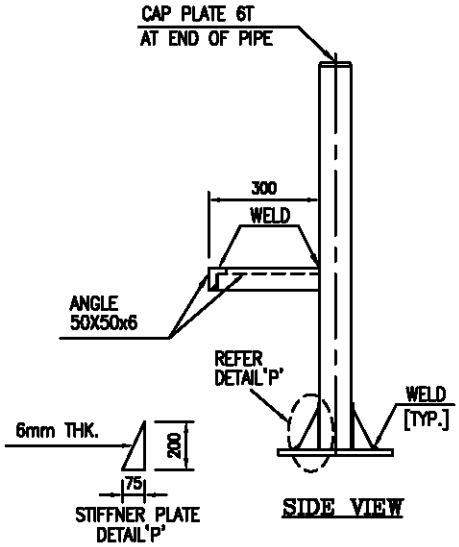
SCALE : N.T.S. (SH. 1 OF 1) REV

DRG.NO MEC/05/E5/SD/JB/009 0

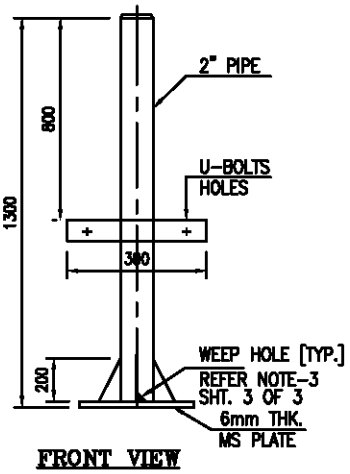
TYTE 11

SINGLE INSTRUMENT SUPPORT – GENERAL ARRANGEMENT



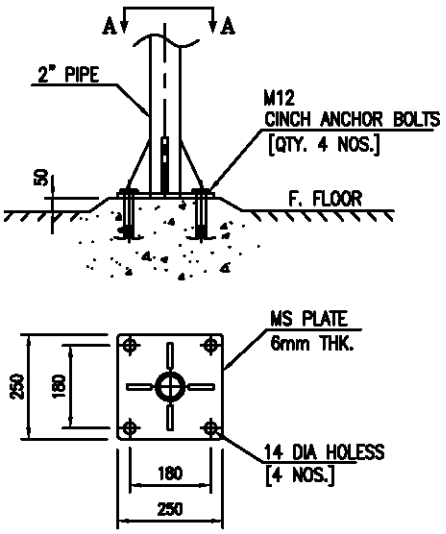


SIDE VIEW



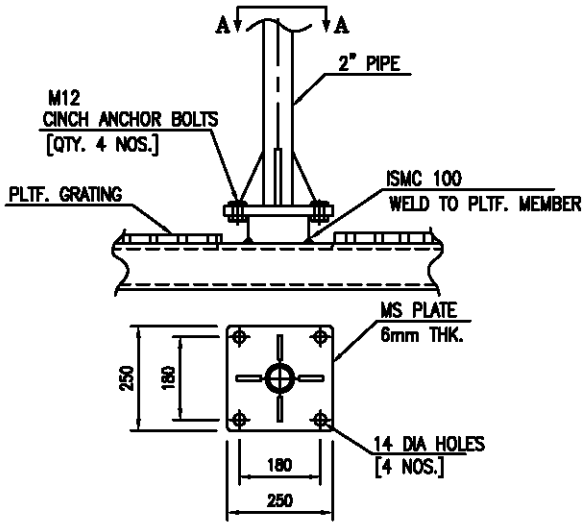
FRONT VIEW

TYTE 11-1



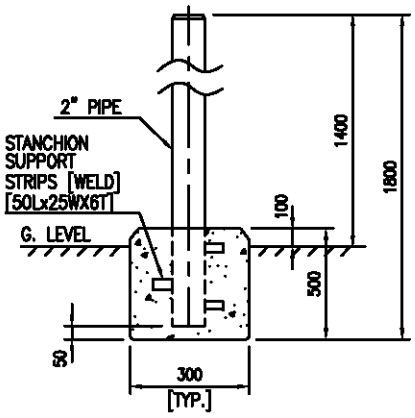
VIEW A–A
PAVED AREA MOUNTING

TYTE 11-2



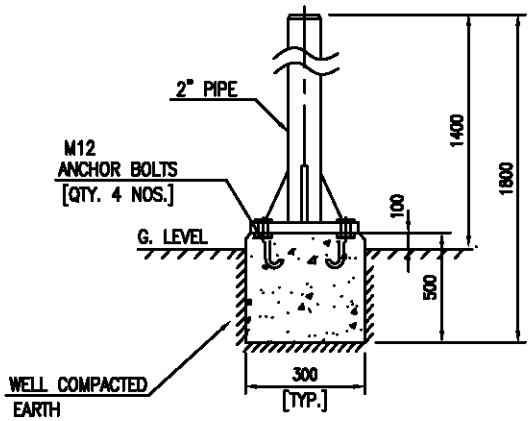
VIEW A–A
PLATFORM MOUNTING

TYTE 11-3



UNPAVED AREA MOUNTING
(WITH SEPERATE CONC. BLOCK)

TYTE 11-4



UNPAVED AREA MOUNTING
(WITH SEPERATE CONC. BLOCK)

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD		
REVISIONS						REFERENCES	DRG. NO.

SECTION: INSTRUMENTATION				
	NAME	DATE	CHKD	DATE
DSGN	R.K.S		P.S	
DRWN	SUNIL			
APPROVED		D.G.M		

INSTRUMENT SUPPORT
SINGLE INSTRUMENT

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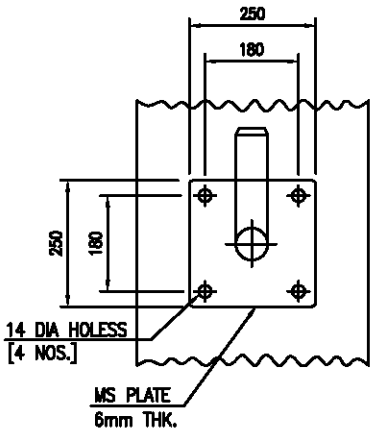
MECON LIMITED

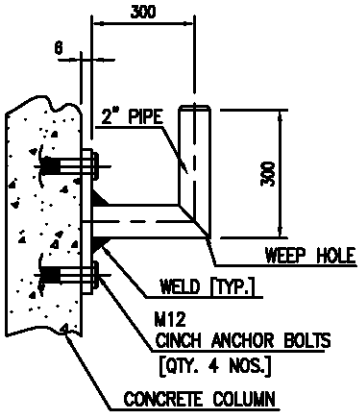
SCALE : N.T.S. (SH. 1 OF 3) REV

DRG.NO MEC/05/E5/SD/IS/010 A 0

TYTE 12 CONCRETE COLOUMN MOUNTING

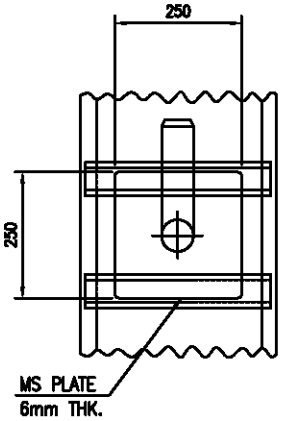


FRONT VIEW

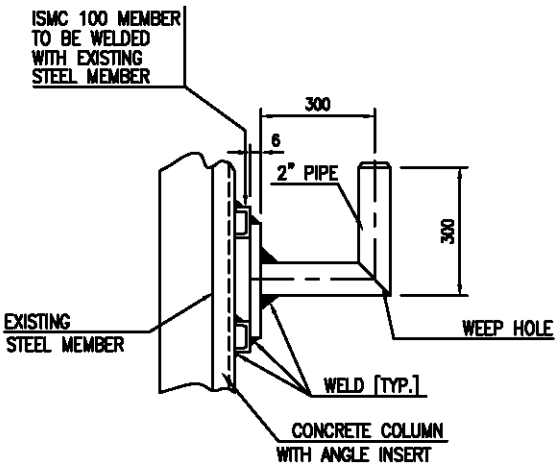


SIDE VIEW

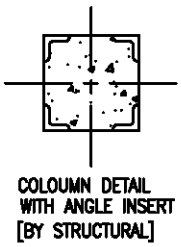
TYTE 13 CONCRETE COLUMN [WITH ANGLE NSERT] MOUNTING



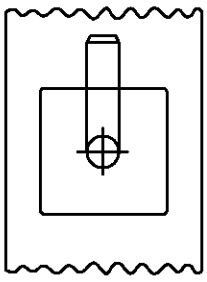
FRONT VIEW



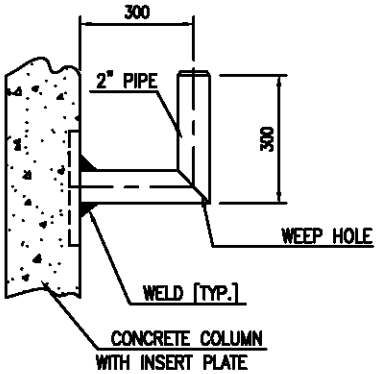
SIDE VIEW



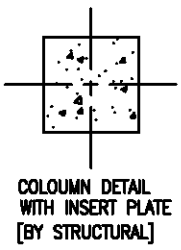
TYTE 14 CONCRETE COLUMN [WITH INSERT PLATE] MOUNTING



FRONT VIEW



SIDE VIEW



REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD		
REVISIONS						REFERENCES	DRG. NO.

SECTION: INSTRUMENTATION				
	NAME	DATE	CHKD	DATE
DSGN	R.K.S		P.S	
DRWN	SUNIL			
APPROVED		D.G.M		

CONCRETE COLOUMN MOUNTING

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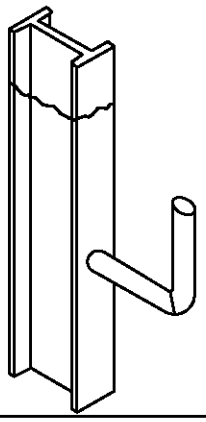
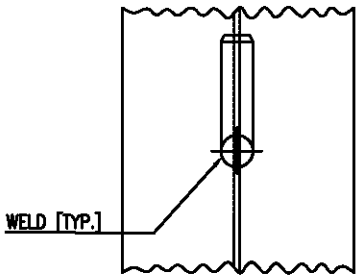
MECON LIMITED

SCALE : N.T.S. (SH. 2 OF 3) REV

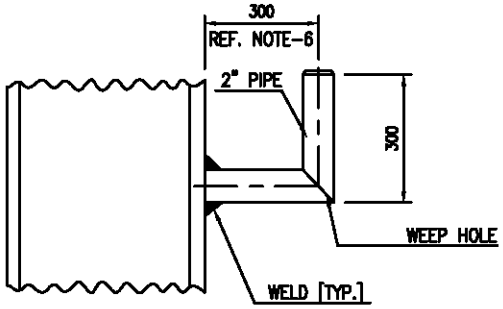
DRG.NO MEC/05/E5/SD/IS/010 A 0

TYTE 15 STEEL COLOUMN MOUNTING [FLANGE FACE]



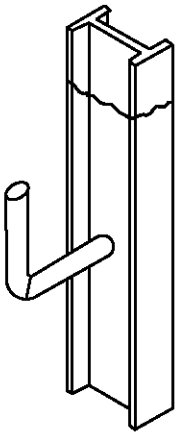


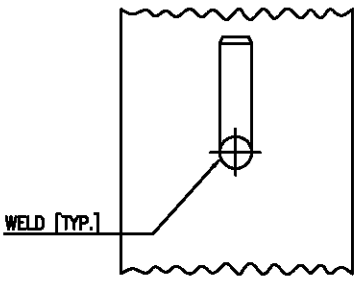
SIDE VIEW



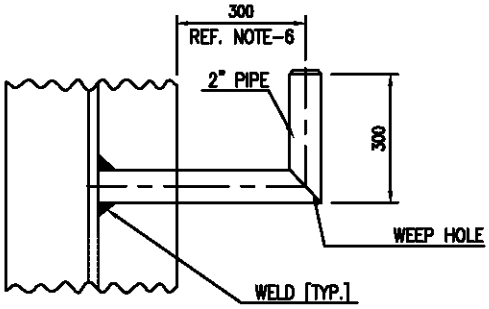
FRONT VIEW

TYTE 16 STEEL COLOUMN MOUNTING [WEB FACE]





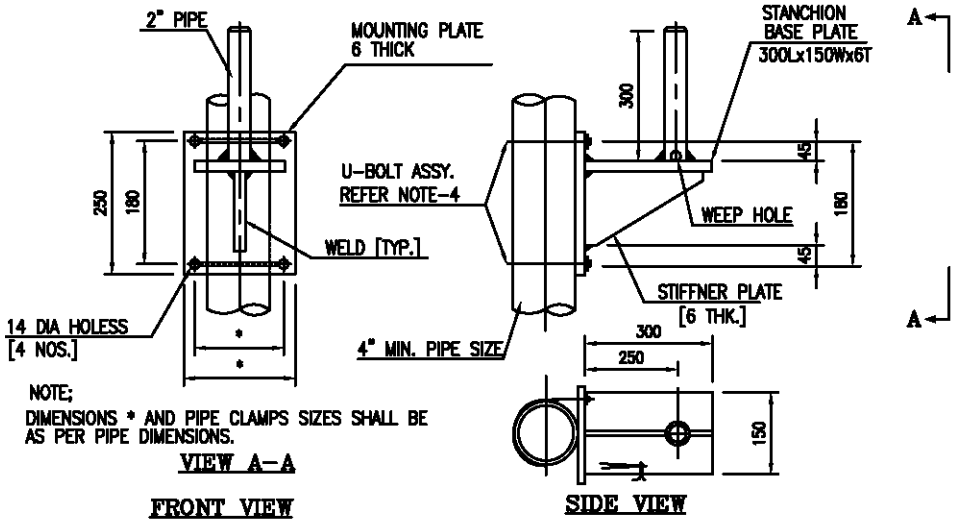
SIDE VIEW



FRONT VIEW

TYTE 17 PIPE BRACKET MOUNTING

TYTE 17-1 [VERTICAL PIPE]

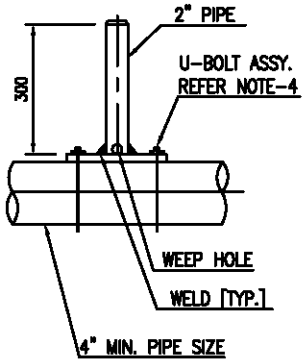


VIEW A-A

FRONT VIEW

SIDE VIEW

TYTE 17-2 [HORIZONTAL PIPE]



[HORIZONTAL PIPE]

NOTES:-
1. ALL DIMENSIONS ARE IN MM. UNLESS OTHERWISE SPECIFIED.
2. PIPE MATERIAL SHALL BE IS:239 HEAVY GRADE AS A MINIMUM.
3. 6mm DIA WEEP HOLE SHALL BE PROVIDED AT LOW POINT.
4. U-BOLT ASSEMBLY SHALL BE OF MIN. M12 SIZE WITH NUT AND SPRING WASHERS.
5. ALL WELD SHALL BE 3mm FILLET WELD FULL STRENGTH.
6. ADD 50mm WHERE-EVER ARE INSULATION IS PROVIDED.
7. BOLT SHALL BE TURNED FROM MS ROUNDS CONFIRMING TO IS : 432 GRADE 1.
8. NUTS AND WASHERS SHALL CONFIRM TO IS : 1363 AND IS : 3138.

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD
REVISIONS				REFERENCES	DRG. NO.

SECTION: INSTRUMENTATION				
	NAME	DATE	CHKD	DATE
DSGN	R.K.S		P.S	
DRWN	SUNIL			
APPROVED	D.G.M			

STEEL COLOUMN MOUNTING

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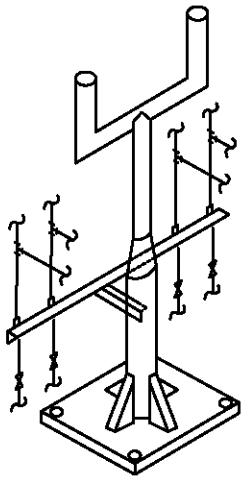
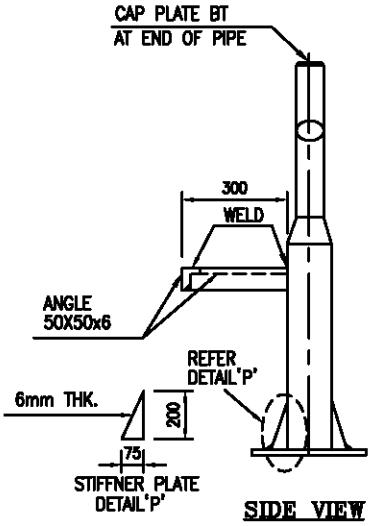
MECON LIMITED

SCALE : N.T.S. (SH. 3 OF 3) REV

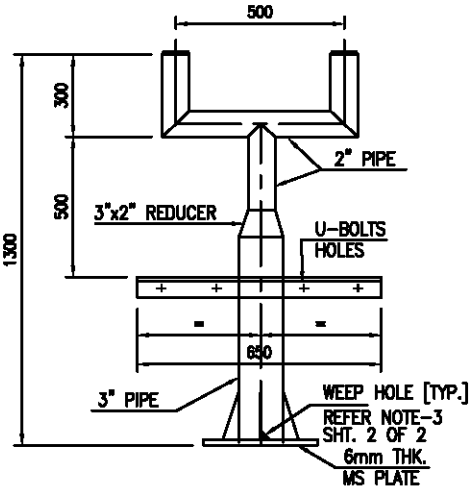
DRG.NO MEC/05/E5/SD/IS/010 A 0

TYTE 21 — TWO INSTRUMENT SUPPORT – GENERAL ARRANGEMENT



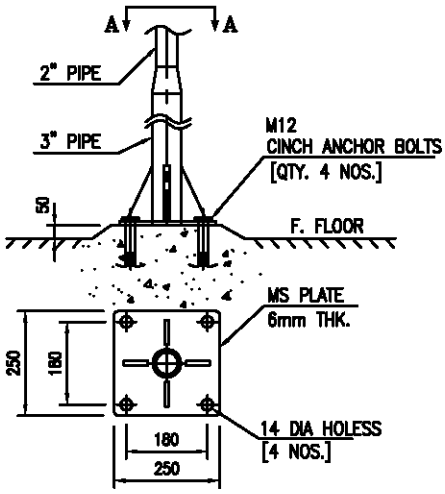


SIDE VIEW



FRONT VIEW

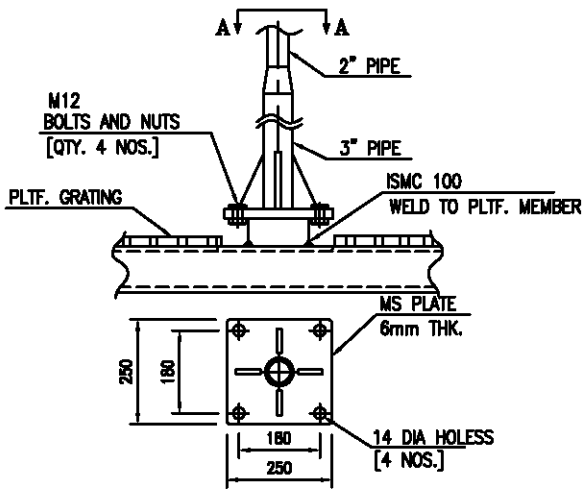
TYTE 21–1



VIEW A–A

PAVED AREA MOUNTING

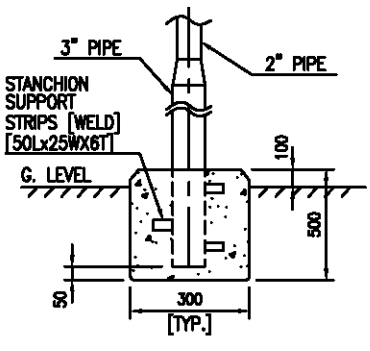
TYTE 21–2



VIEW A–A

PLATFORM MOUNTING

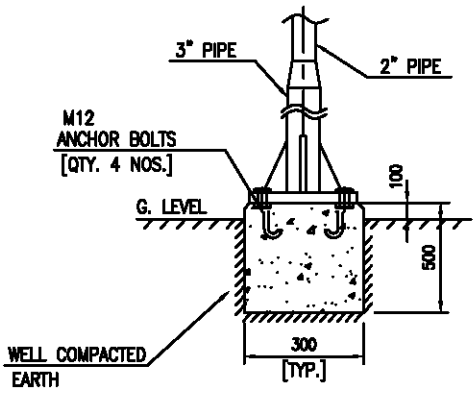
TYTE 21–3



UNPAVED AREA MOUNTING

(WITH INTEGRAL CONC. BLOCK)

TYTE 21–4



UNPAVED AREA MOUNTING

(WITH SEPERATE CONC. BLOCK)

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD
REVISIONS				REFERENCES	DRG. NO.

SECTION: INSTRUMENTATION				
	NAME	DATE	CHKD	DATE
DSGN	R.K.S		P.S.	
DRWN	SUNIL			
APPROVED	D.G.M.			

INSTRUMENT SUPPORT

TWO INSTRUMENT

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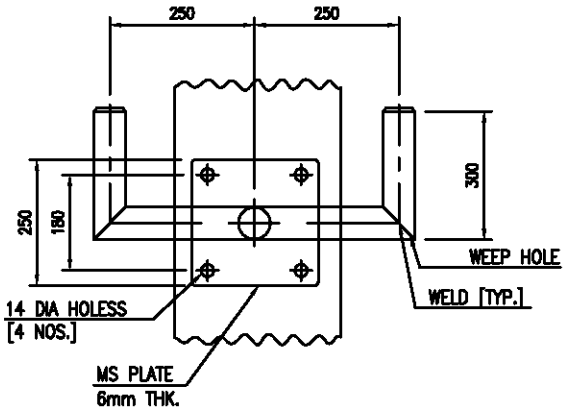
MECON LIMITED

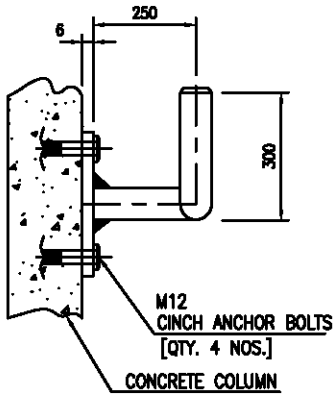
SCALE : N.T.S. (SH. 1 OF 3) REV

DRG.NO : MEC/05/E5/SD/IS/010 B 0

TYTE 22 CONCRETE COLOUMN MOUNTING

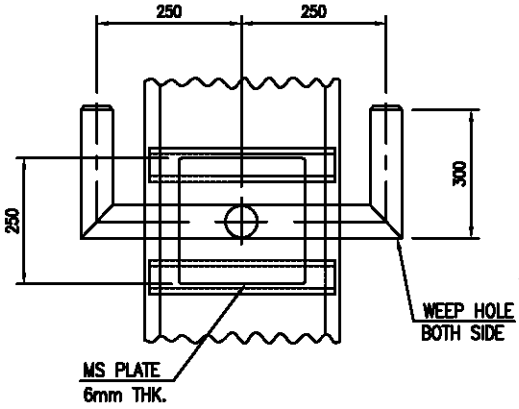


FRONT VIEW

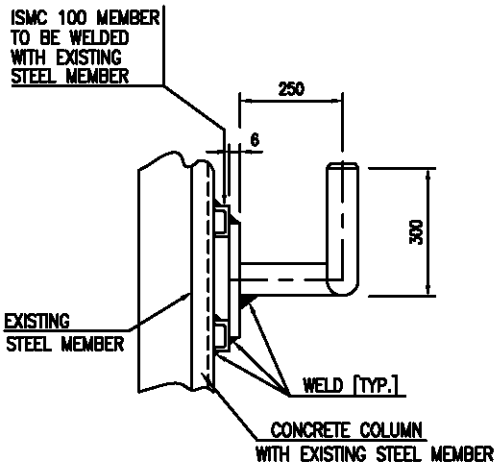


SIDE VIEW

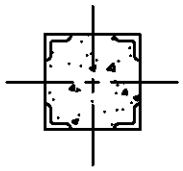
TYTE 23 CONCRETE COLOUMN [WITH ANGLE INSERT] MOUNTING



FRONT VIEW

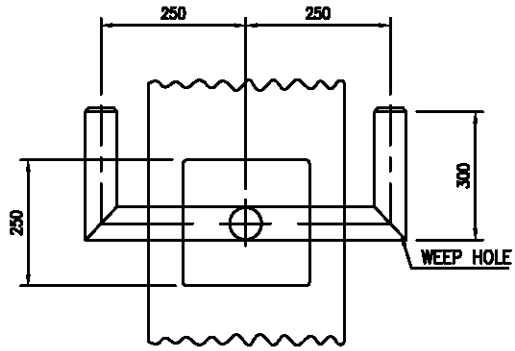


SIDE VIEW

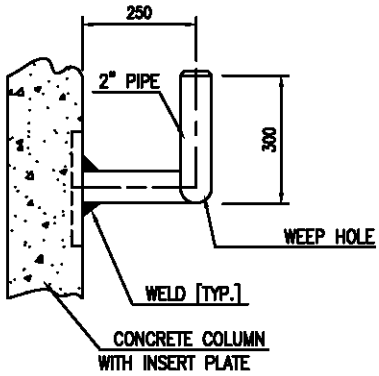


COLOUMN DETAIL
WITH EXISTING
STEEL MEMBER
[BY STRUCTURAL]

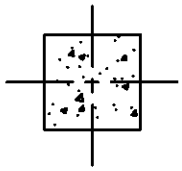
TYTE 24 CONCRETE [WITH INSERT PLATE] MOUNTING



FRONT VIEW



SIDE VIEW



COLOUMN DETAIL
WITH INSERT PLATE
[BY STRUCTURAL]

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD		
REVISIONS						REFERENCES	DRG. NO.

SECTION: INSTRUMENTATION				
	NAME	DATE	CHKD	DATE
DSGN	R.K.S		P.S.	
DRWN	SUNIL			
APPROVED	D.G.M.			

CONCRETE COLOUMN MOUNTING

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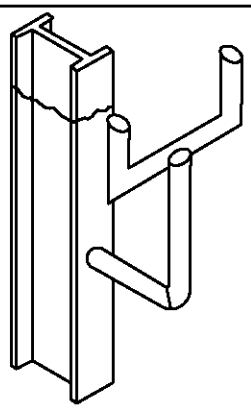
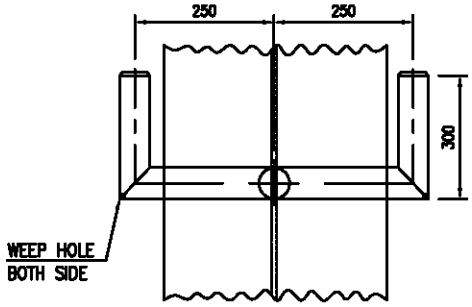
MECON LIMITED

SCALE : N.T.S. (SH. 2 OF 3) REV

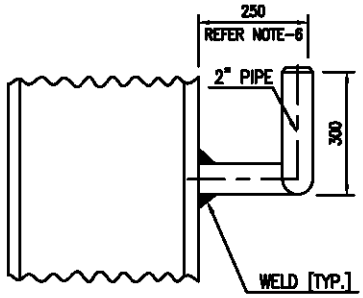
DRG.NO: MEC/05/E5/SD/IS/010 B 0

TYTE 25 STEEL COLOUMN MOUNTING [FLANFE FACE]



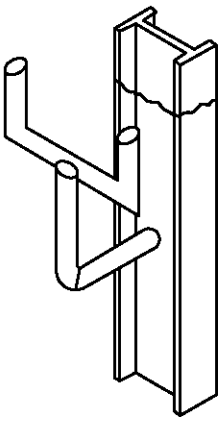


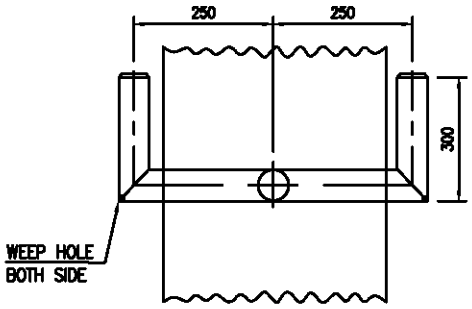
FRONT VIEW



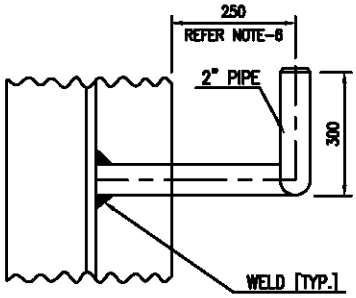
SIDE VIEW

TYTE 26 STEEL COLOUMN MOUNTING [WEB FACE]





FRONT VIEW



SIDE VIEW

NOTES:-
1. ALL DIMENSIONS ARE IN MM. UNLESS OTHERWISE SPECIFIED.
2. PIPE MATERIAL SHALL BE IS:1239 HEAVY GRADE AS A MINIMUM.
3. 6mm DIA WEEP HOLE SHALL BE PROVIDED AT LOW POINT.
4. U-BOLT ASSEMBLY SHALL BE OF MIN. M12 SIZE WITH NUT AND SPRING WASHERS.
5. ALL WELD SHALL BE 3mm FILLET WELD FULL STRENGTH.
6. ADD 50mm WHERE-EVER ARE INSULATION IS PROVIDED.
7. BOLT SHALL BE TURNED FROM MS ROUNDS CONFIRMING TO IS : 432 GRADE 1.
8. NUTS AND WASHERS SHALL CONFIRM TO IS : 1363 AND IS : 3138.

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD	REFERENCES	DRG. NO.
			REVISIONS				

SECTION: INSTRUMENTATION				
	NAME	DATE	CHKD	DATE
DSGN	R.K.S		P.S.	
DRWN	SUNIL			
APPROVED			D.G.M.	

STEEL COLOUMN MOUNTING

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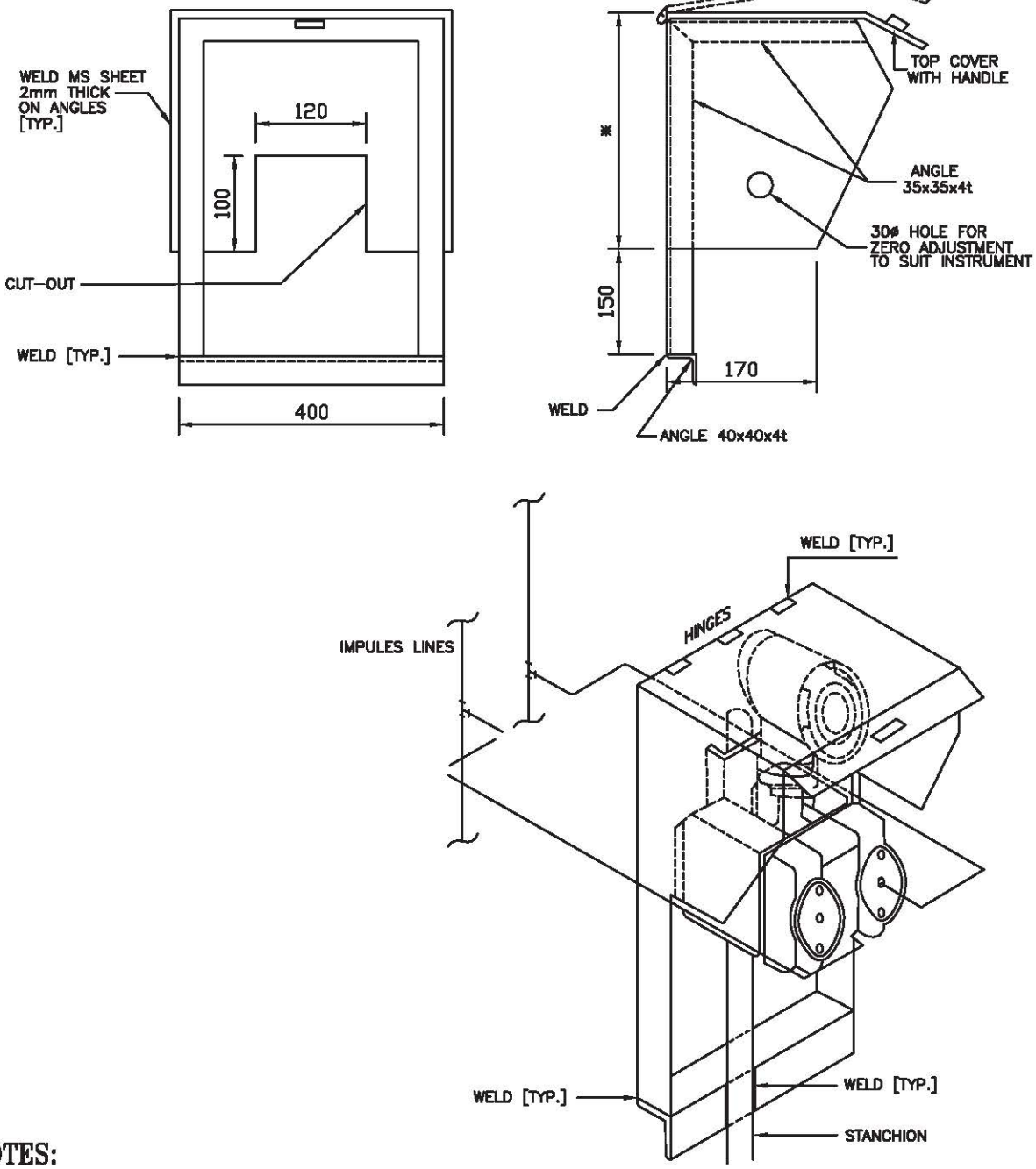
MECON LIMITED

SCALE : N.T.S. (SH. 3 OF 3) REV

DRG.NO: MEC/05/E5/SD/IS/010 B 0



NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. *–TO SUIT INSTRUMENT DIMENSIONS.
3. HINGES SHALL BE OF STAINLESS STEEL.
4. A MINIMUM OF TWO COATS PAINTING SHALL BE CARRIED OUT AFTER A MINIMUM OF ONE COAT OF RED OXIDE ZINC CHROMATE PRIMER. THE COLOUR OF THE PAINT SHALL BE AS PER IS–5.

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD
REVISIONS					

REFERENCES

DRG. NO.

SECTION: INSTRUMENTATION

	NAME	DATE	CHKD	DATE
DSGN	R.K.S		P.S.	
DRWN	SUNIL			
APPROVED			D.G.M.	

FABRICATED CANOPY FOR INSTRUMENTS

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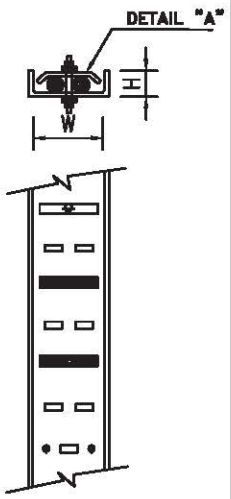
MECON LIMITED

SCALE : N.T.S. (SH. 1 OF 1) REV

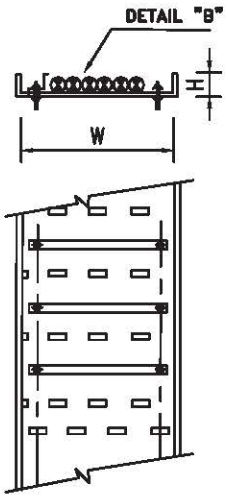
DRG.NO MEC/05/E5/SD/CY/011 0

CABLE CLAMPING ON PERFORATED TRAYS

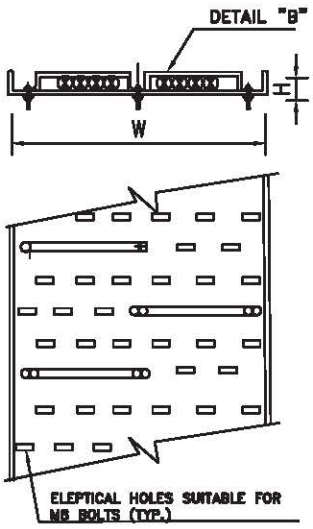
SINGLE CLAMPING FOR TWO CABLES



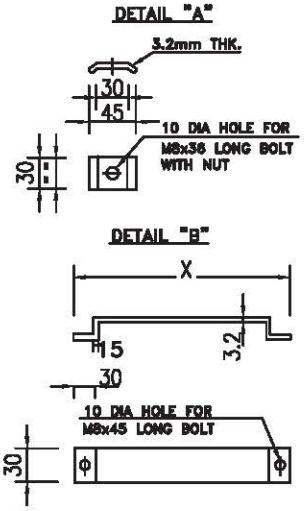
SINGLE CLAMPING FOR MULTIPLE CABLES



DUAL CLAMPING FOR MULTIPLE CABLES



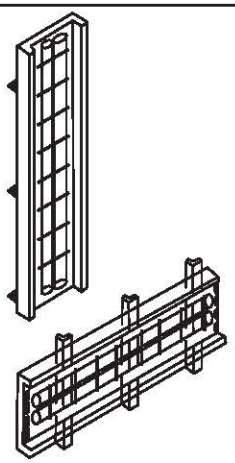
CABLE CLAMPS DEATIL



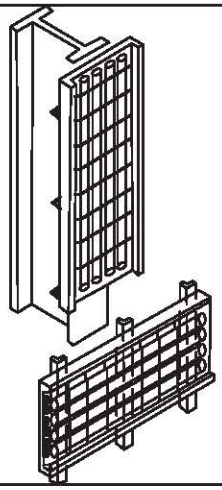
"WHERE "W" DENOTES THE INSIDE WIDTH OF TRAY
"WHERE "X"– W–10 FOR SINGLE CLAMPING
– $\frac{W}{2}$ + 10 FOR DUAL CLAMPING

PERFORATED TRAY–SUPPORTING DETAILS

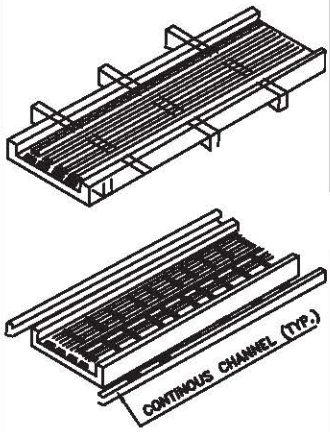
TRAY ROUTING EDGEWISE HOR./ VER RUNS



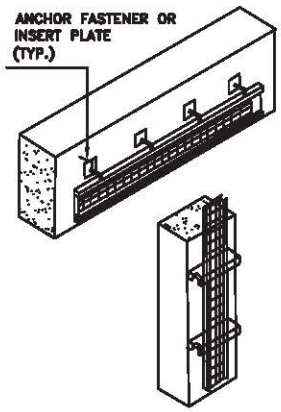
TRAY ROUTING EDGEWISE IN HOR./ VER RUNS



TRAY ROUTING WIDTHWISE IN HORIZONTAL RUNS



TRAY ROUTING CONCRETE BEAM/COLUMN IN HOR./VER. PLANE



NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. PERFORATED TRAY SHALL BE SUPPORTED AT EVERY 1000mm (TYP.) INTERVAL FOR HORIZONTAL A WELL AS VERTICAL RUNS USING MINIMUM ANGLE SIZE AS 40x40x5 OR CONTINOUS CHANNEL SUPPORT MC50.
3. CLAMPING OF CABLES ON PERFORATED TRAYS SHALL BE AT EVERY 500 mm ON VERTICAL RUNS AND EVERY 1000mm ON HORIZONTAL RUNS.
4. PERFORATED TRAYS SHALL BE SUPPLIED WITH CLAMPS, BOLTS/NUTS AND WASHER OF GALVANISED MILD STEEL.
5. GALVANISING SHALL BE AS PER 4759(66um/460g/m2)
6. THE PERFORATED TRAY THICKNESS SHALL BE 2mm.

CAPACITY OF PERFORATED TRAYS

TRAY WIDTH (W)	FLANGE HEIGHT (H)	NO. OF CABLES		
		1 PAIR/ 1 TRIAD	6 PAIR/ 6 TRIAD	12 PAIR/ 8 TRIAD
60	20	2	1	1
100	30	4	2	1
150	30	6	4	3
200	30	10	6	4
300	30	15	8	6

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD
REVISIONS				REFERENCES	DRG. NO.

SECTION: INSTRUMENTATION				
	NAME	DATE	CHKD	DATE
DSGN	R.K.S		P.S	
DRWN	SUNIL			
APPROVED	D.G.M			

PERFORATED TRAY SUPPORTS & CABLES CLAMPING DETAILS

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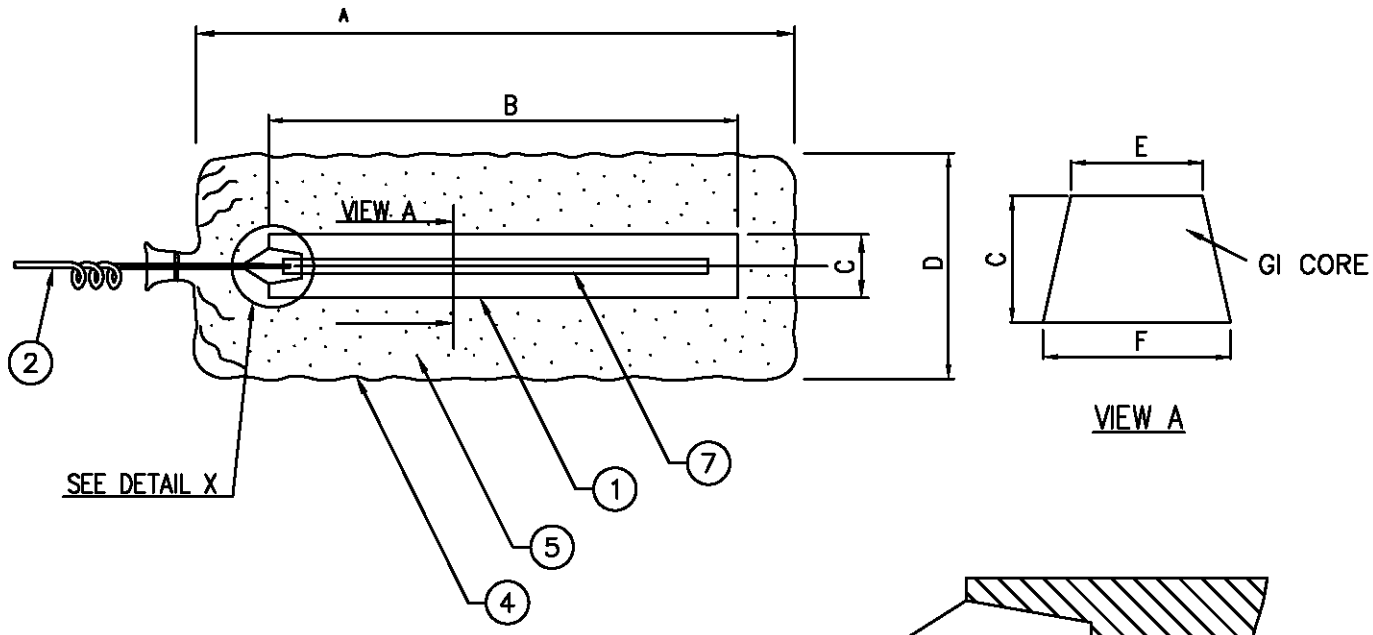
MECON LIMITED

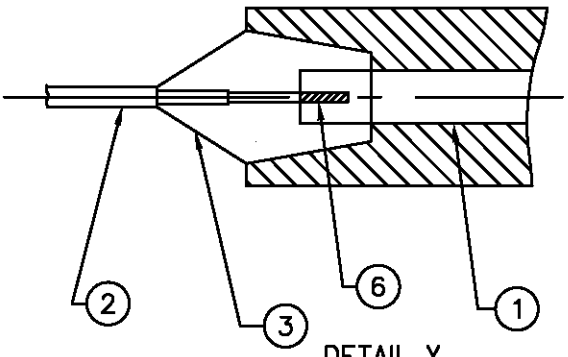
SCALE : N.T.S. (SH. 1 OF 1) REV

DRG.NO MEC/05/E5/SD/CB–LY/012 0

CATHODIC PROTECTION DRAWINGS



PRE-PACKAGED ZINC ANODE



DETAIL X

CHEMICAL COMPOSITION OF ANODE (% WEIGHT)

ELEMENT	TYPE- I	TYPE - II
Al	0.1% - 0.5 %	0.005 %MAX
Cd	0.025% - 0.07%	0.003%MAX
Cu	0.005% MAX	0.002% MAX
Fe	0.005% MAX	0.0014% MAX
Pb	0.006% MAX	0.003% MAX
OTHERS	0.1%MAX	-
Zn	REMAINDER	REMAINDER

NOTES:-

1. ANODE COMPOSITION, NET WEIGHT, GROSS WEIGHT DIMENSIONS SHALL BE FURNISHED BY CONTRACTOR.
2. ANODE TAIL CABLE SHALL BE HIGH CONDUCTIVITY, STRANDED, COPPER CONDUCTOR, 600/1100 V GRADE, XLPE INSULATED, PVC SHEATHED & UNARMOURED.
3. THICKNESS OF BACKFILL SHALL BE ADEQUATE TO SAFEGURAD THE ANODES AGAINST THE EFFECT OF CARBONATES, BICARBONATES, NITRATES, etc. IN SOIL ANODES SHALL BE PROVIDED WITH MIN.50MM THICK BACKFILL ON ALL SIDES OF ANODE OR MIN. 20 KG NET WHICHEVER IS HIGHER. TYPE-I & TYPE-II ANODE SHALL BE USED AS PER THEIR APPLICATION DESCRIBED IN ASTM B418-09.

Anode Open Circuit Potential : (-) 1.1 Volts (min.) w.r.t CSE

Anode Consumption Rate : 11.2 kg/ (A year) Max.

BACKFILL COMPOSITION

Gypsum	75%
Bentonite	20%
Sodium sulphate	5%

ITEM	DESCRIPTION	QTY.
7	2.5 THICK x 15 WIDE GI CORE STRIP (PART OF ZINC ANODE)	1
6	SILVER SOLDER	AS REQD.
5	BACKFILL MATERIAL	AS REQD.
4	COTTON BAG	1
3	M-SEAL COMPOUND	AS REQD.
2	ANODE TAIL CABLE, PE INSULATED, PVC SHEATHED, UNARMOURED, SINGLE CORE COPPER, 600/1100 V.	AS REQD.
1	ZINC ANODE	1

BILL OF MATERIALS

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD
01	07.09	05/E9	REVISED & ISSUED	AM	DG

REVISIONS | REFERENCES | DRG. NO.

SECTION: ELECTRICAL				
	NAME	DATE	CHKD	DATE
DSGN	AM	02.09	SS	05.09
DRWN	SJ	02.09		

APPROVED

PREPACKAGED ZINC ANODE

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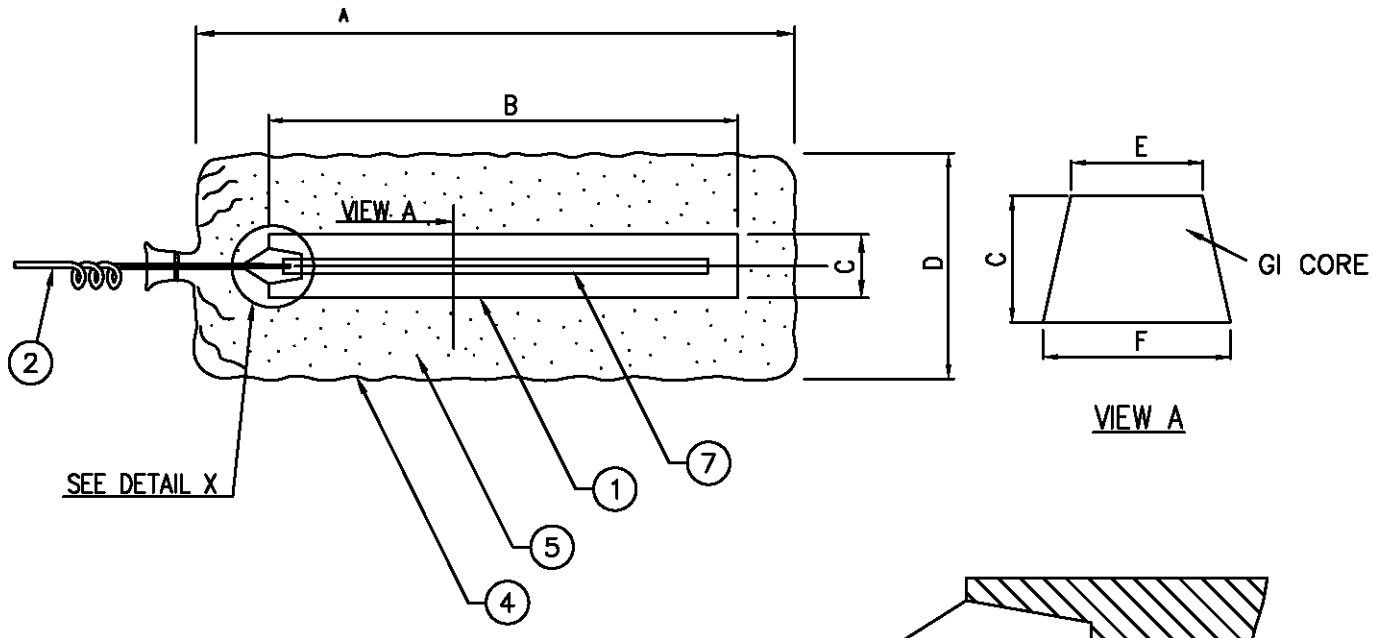
MECON LIMITED

SCALE : N.T.S.

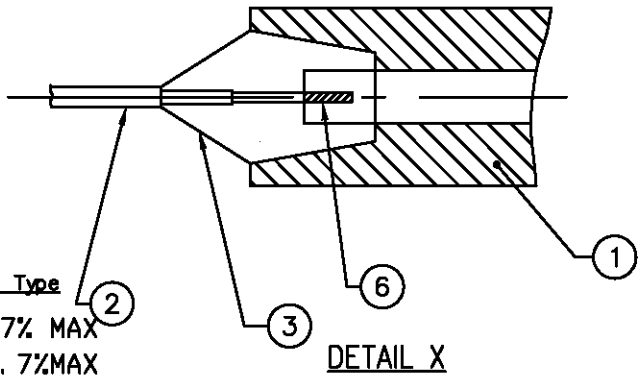
DRG.NO:-MEC/SD/05/E9/E/CP/1601

REV 1



PRE-PACKAGED Mg ANODE

VIEW A



DETAIL X

CHEMICAL COMPOSITION OF ANODE

ELEMENT	High Potential Type	ELEMENT	Low Potential Type
Al	: 0.010% MAX	Al	: 5.3-6.7% MAX
Mn	: 0.50-1.3%MAX	Mn	: 0.15-0.7%MAX
Cu	: 0.02%MAX	Cu	: 0.02%MAX
Fe	: 0.03%MAX	Fe	: 0.003%MAX
Ni	: 0.001%MAX	Ni	: 0.002%MAX
Zn	: -	Zn	: 2.5-3.5%MAX
Si	: 0.05%MAX	Si	: 0.1%MAX
OTHERS	: 0.3%MAX	OTHERS	: 0.3%MAX
Mg	: REMAINDER	Mg	: REMAINDER

Anode Open Circuit Potential : (-) 1.5 Volts (min.) w.r.t CSE

Anode Consumption Rate : 7.9 kg/ (A year) Max.

NOTES: -

1. ANODE COMPOSITION, NET WEIGHT, GROSS WEIGHT DIMENSIONS SHALL BE FURNISHED BY CONTRACTOR.
2. ANODE TAIL CABLE SHALL BE HIGH CONDUCTIVITY, STRANDED, COPPER CONDUCTOR, 650V GRADE, PVC INSULATED, PVC SHEATHED & ARMOURED. TYPE-I & TYPE-II ANODE SHALL BE USED AS PER THEIR APPLICATION DESCRIBED IN ASTM B843-07.

BACKFILL COMPOSITION

Gypsum	: 75%
Bentonite	: 20%
Sodium sulphate	: 5%

ASTM B418-09.

ITEM	DESCRIPTION	QTY.
7	2.5 THICK x 15 WIDE GI CORE STRIP (PART OF MAGNESIUM ANODE)	1
6	SILVER SOLDER	AS REQD.
5	BACKFILL MATERIAL	AS REQD.
4	COTTON BAG	1
3	M-SEAL COMPOUND	AS REQD.
2	ANODE TAIL CABLE, PE INSULATED, PVC SHEADHED, ARMOURED, SINGLE CORE COPPER, 600/1100 V.	AS REQD.
1	MAGNESIUM ANODE	1

BILL OF MATERIALS

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD
01	07.09	05/E9	REVISED & ISSUED	AM	DG

REVISIONS | REFERENCES | DRG. NO.

SECTION: ELECTRICAL

	NAME	DATE	CHKD	DATE
DSGN	AM	02.09	SS	05.09
DRWN	SJ	03.09		

APPROVED

PREPACKAGED MAGNESIUM ANODE

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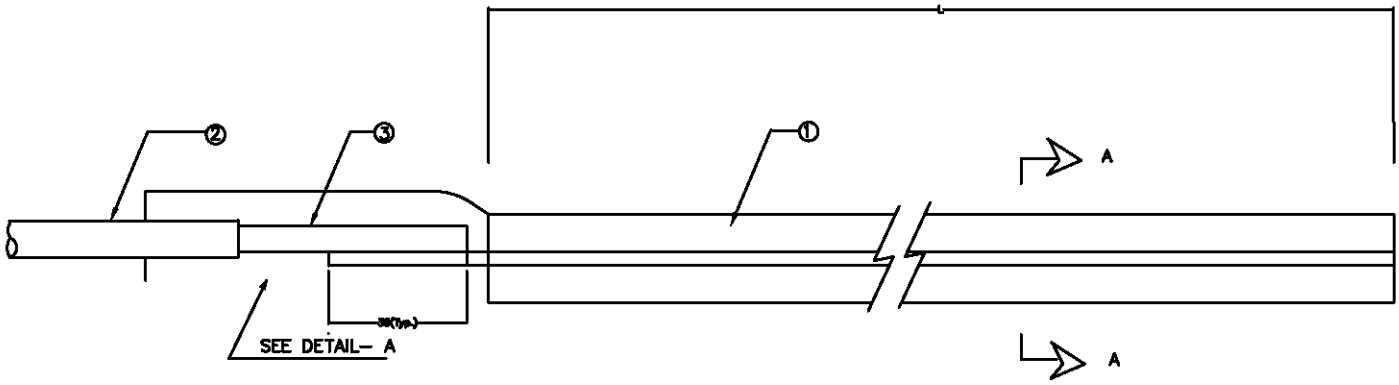
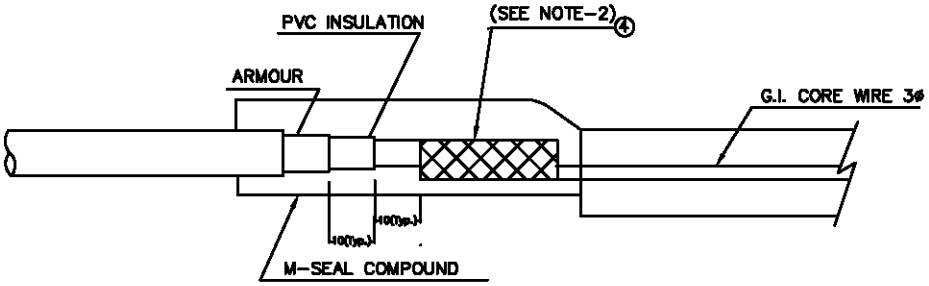
MECON LIMITED

SCALE : N.T.S.

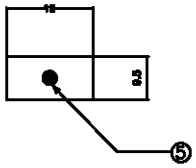
DRG.NO: -MEC/SD/05/E9/E/CP/1602

REV 1





DETAIL – A



SECTION A–A

NOTE :

1. ALL DIMENSIONS ARE IN mm.
2. CABLE CONNECTION WITH G.I. CORE WIRE WILL BE SILVER SOLDERED AT SITE.

CHEMICAL COMPOSITION OF ANODE

Al	: 0.010% MAX.
Si	: 0.05% MAX.
Mn	: 0.5 – 1.3%MAX
Cu	: 0.02%MAX.
Fe	: 0.03%MAX.
Ni	: 0.001%MAX
OTHER METALLIC ELEMENTS:	
EACH	: 0.05% MAX.
TOTAL	: 0.3%MAX.
Mg	: REMAINDER

ITEM NO.	DESCRIPTION	QTY.
5	SHEATHED, GI ARMOURED 3ø GI CORE WIRE (PART OF MAGNESIUM ANODE)	1
4	SILVER SOLDER	AS REQD.
3	M–SEAL COMPOUND	AS REQD.
2	ANODE LEAD CABLE 25 mm2 COPPER, XLPE INSULATED, PVC SHEATHED, GI ARMOURED, COMPLETE WITH LUG	10 m
1	MAGNESIUM ANODE	1

BILL OF MATERIALS

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD
01	07.09	05/E9	REVISED & ISSUED	AM	DG

REVISIONS | REFERENCES | DRG. NO.

SECTION: ELECTRICAL

	NAME	DATE	CHKD	DATE
DSGN	AM	01.09	SS	05.09
DRWN	SJ	01.09		

APPROVED

MAGNESIUM RIBBON ANODE FOR GROUNDING

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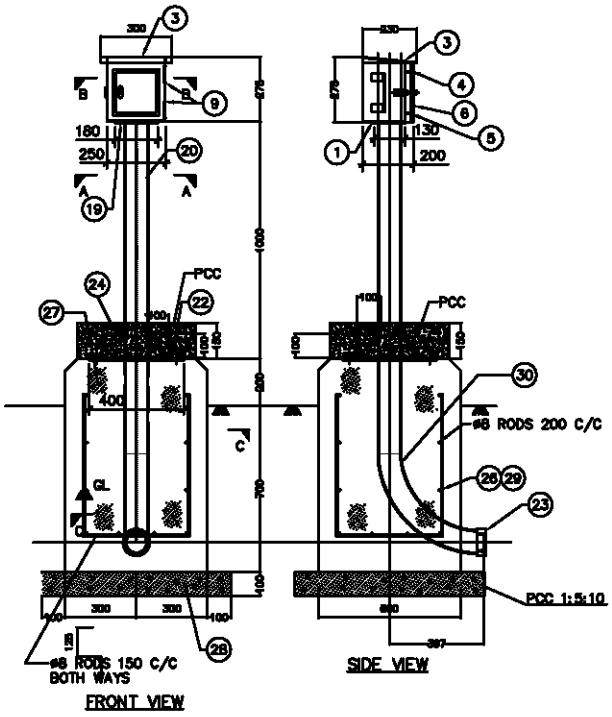
MECON LIMITED

SCALE : N.T.S.

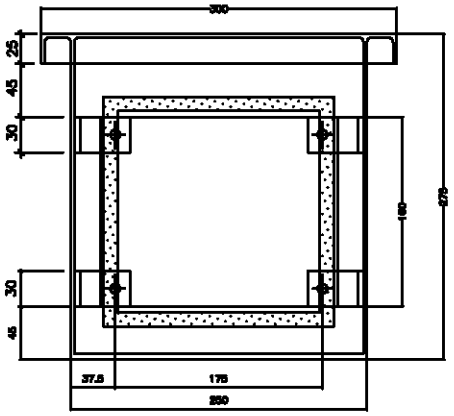
DRG.NO: –MEC/SD/05/E9/E/CP/1603

REV 1

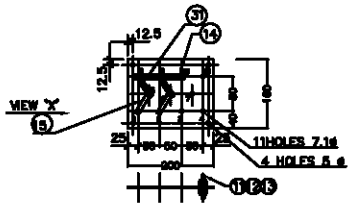


FRONT VIEW

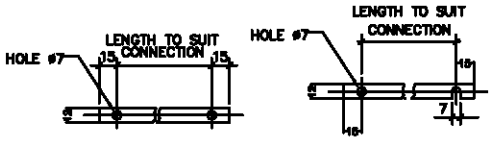
SIDE VIEW



FORNT VIEW DOOR REMOVED

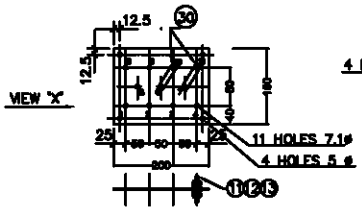


TERMINAL PLATE
(ITEM-10)
(FOR TEST STATIONS- TYPE 'A' & 'B')

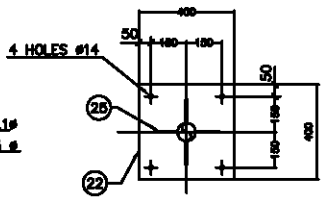


COPPER LINK
(ITEM-30)

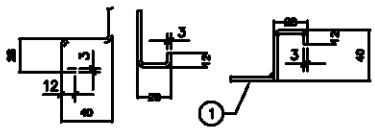
BRASS LINK
(ITEM-14)



TERMINAL PLATE
(ITEM-10)
(FOR TEST STATIONS- TYPE 'E')

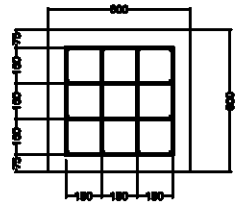


SECTION A-A
(CONCRETE NOT SHOWN)

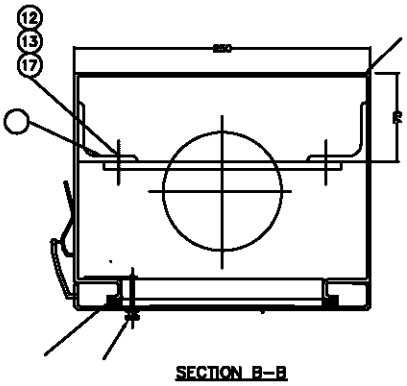


ITEM-2 ITEM-4 ITEM-5

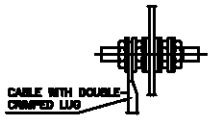
BENDING DETAILS



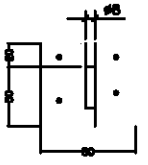
SECTION C-C
(ONLY ARRANGEMENT OF REBARS)



SECTION B-B



VIEW 'X'
(BLOWN UP)
(TYP.)



DETAIL OF HINGE

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD
01	07.09	05/E9	REVISED & ISSUED	AM	DG

REVISIONS | REFERENCES | DRG. NO.

SECTION: ELECTRICAL

	NAME	DATE	CHKD	DATE
DSGN	AM	02.09	SS	06.09
DRWN	SJ	02.09		

APPROVED

DETAILS OF TEST STATION
FOR
TEMPORARY CATHODIC PROTECTION SYSTEM

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MECON LIMITED

SCALE : N.T.S.

DRG.NO: -MEC/SD/05/E9/E/CP/1604

SHEET 1 OF 2

REV 1

NOTES:-

1. TEST STATION SHALL HAVE WEATHERPROOF ENCLOSURE HAVING DEGREE OF PROTECTION IP-55, AS DEFINED IN IEC-529(1989)/ IS:2147 (1962) THE SHUTTER SHALL BE HINGED TYPE WITH CONCEALED LOCK AND SHALL HAVE DOOR GASKET.
2. THE HINGES SHALL BE WELDED TO THE SHUTTER AND THE BOX SUITABLY.
3. THE MS ANGLES SHALL BE WELDED TO THE SIDES. THE ANGLES SHALL HAVE TAPPED HOLES FOR FIXING TERMINAL PLATE.
4. THE INNER SURFACE OF THE TEST STATION SHALL BE PAINTED WITH LEAD OXIDE PRIMER GRADE.
5. THE OUTSIDE OF THE TEST STATION SHALL BE PAINTED WITH TWO COATS OF ZINC RED EPOXY PRIMER AND THREE COATS OF GREY COLOURED EPOXY PAINT COMPLETE WITH CABLE PIPE & FDN. PLATE.
6. THE NAME PLATE SHALL BE OF ANODISED ALUMINIUM WITH BLACK BACKGROUND AND WHITE LETTERS (SIZE 3mm). THE NAME PLATE SHALL BE FIXED TO INNER SIDE OF SHUTTER BY ARALDITE OR EQUIVALENT.
7. THE NAME PLATE OF EACH TEST STATION SHALL CARRY THE FOLLOWING INFORMATION.
   - A) TEST STATION CONNECTION SCHEME TYPE
   - B) RELEVANT TEST STATION CONNECTION SCHEME DIAGRAM
   - C) TEST STATION NO.
   - D) CHAINAGE IN KM
   - E) DISTANCE FROM PIPE IN m
   - F) DIRECTION OF GAS FLOW
8. WHEN ERECTED, THE TEST STATION SHALL BE IN UPRIGHT POSITION.
9. TEST STATION SHALL BE SO ERECTED AS TO SERVE ALSO AS PIPELINE MARKER. AND ANODE GROUNDBED MARKER. THEIR SHUTTERS SHALL BE PARALLEL TO THE LINE OF AXIS OF PIPELINE AND FACING IT.
10. THE NUMBER OF ALL TEST STATIONS SHALL BE WRITTEN WITH BLACK PAINT USING 40 mm STENCIL BLOCK ON THE OUTER SIDE OF THE SHUTTER IN A UNIFORM MANNER. AN ARROW SHOWING DIRECTION OF FLOW OF GAS SHALL BE MARKED TO UNDERLINE THE TEST STATION NUMBER ON SHUTTER.
11. HEIGHT OF THE TEST STATION ABOVE GROUND LEVEL SHOWN IN THE DRAWING IS TYPICAL.
12. ALL CABLES COMING TO TEST STATION SHALL BE LABELLED ON BOTH ENDS WITH IDENTIFICATION NUMBERS
13. TOTAL NUMBER OF TEST STATIONS AND THEIR TYPES ARE MENTIONED IN CONSOLIDATED B.O.M.
14. TEST BETWEEN BRASS TERMINALS AND BODY AT 2kV FOR ONE MINUTE.
15. ALL DIMENSIONS ARE APPROXIMATE AND CAN VARY SLIGHTLY.
16. ALL DIMENSIONS ARE IN mm.

ITEM	DESCRIPTION	QTY.
31	VARIABLE RESISTANCE 0-0.1 Ohm.	01
30	100 MM ø M.S. SCH.40 90° ELBOW, R=5D	01
29	BINDING WIRE, MS	AS REQD.
28	PCC MIX, 1:5:10	0.064 m^3
27	RCC MIX, M20	0.324 m^3
26	ROD, 8ø MS	28 m
25	STIFFENER PLATE, 8THK.	04
24	FOUNDATION BOLT M12	04
23	RUBBER BUSH MATCHING WITH PIPE	01
22	FOUNDATION PLATE, 6THKx400x400 MS PLATE	02
21	NEOPRENE RUBBER GASKET, 6THK.	01 SET
20	MS PIPE, 100 ø, IS: 1239 P.T.1(1990)-HEAVY GRADE	01
19	COUPLING PLATE, 5THK.x160x130 MS PLATE, 100ø HOLE AT CENTRE	01
18	LATCH FOR SHUTTER	01
17	BRASS SCREW, M6x16	04
16	ANGLE, 5THK. x 50 x 50 x 30	04
15	SHUNT, 0.1 OHM, 0.5 A, 50 mV	01
14	COPPER LINK, 2.5 THK.x 12 x ~~LENGTH AS REQD.~~	01
13	BRASS WASHER (8 mm dia (M8) Cd Coated)	AS REQD.
12	BRASS NUT, ~~M6~~ (Brass Nut Bolt washer)	AS REQD.
11	BRASS STUD, ~~M6 x 50~~	AS REQD.
10	TERMINAL PLATE, 6THK.x160 x 200 PHENOLIC LAM. SHT	01
9	HINGE FOR SHUTTER	02
8	CASTLE LOCK WITH ONE KEY PER TEST STATION	01
7	NAME PLATE, 0.9THK.x120x180 ANODISED ALUMINIUM	01
6	SHUTTER, 3 THK.x250x296 MS SHT	01
5	FRONT BOTTOM, 3 THK.x170x74 MS SHT	01
4	FRONT TOP, 3 THK.x170x79 MS SHT	01
3	TOP, 3 THK.x232x300/344 MS SHT	01
2	REAR & SIDES, 3 THK.x275/250x718 MS SHT	01
1	BOTTOM PLATE, 5 THK.x160x244 MS PLATE, 100ø HOLE AT CENTRE	01

BILL OF MATERIALS

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD
01	07.09	05/E9	REVISED & ISSUED	AM	DG

REVISIONS | REFERENCES | DRG. NO.

SECTION: ELECTRICAL

	NAME	DATE	CHKD	DATE
DSGN	AM	02.09	SS	05.09
DRWN	SJ	02.09		

APPROVED

DETAILS OF TEST STATION
FOR
CATHODIC PROTECTION SYSTEM

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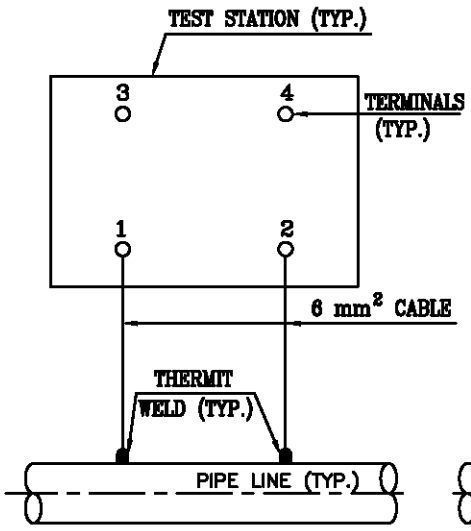
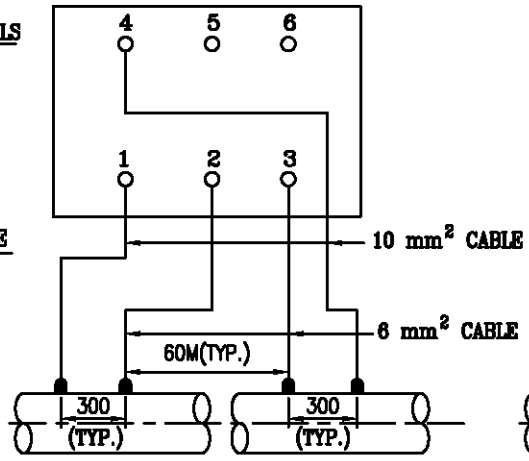
MECON LIMITED

SCALE : N.T.S. | SHEET 2 OF 2 | REV 1

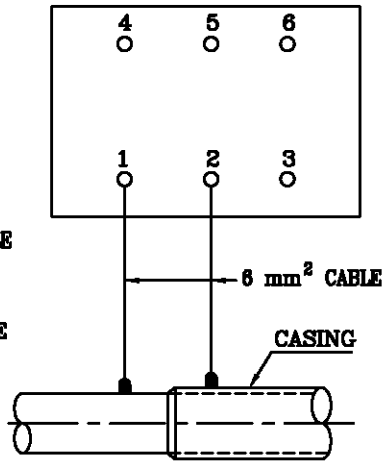
DRG.NO: -MEC/SD/05/E9/E/CP/1604



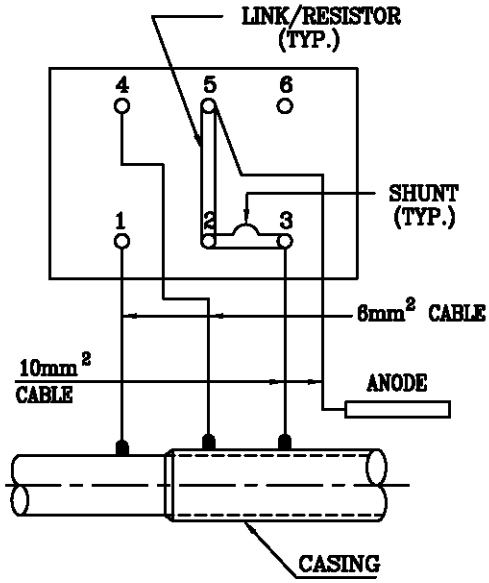
POTENTIAL MEASUREMENT
(CONNECTION SCHEME–A)



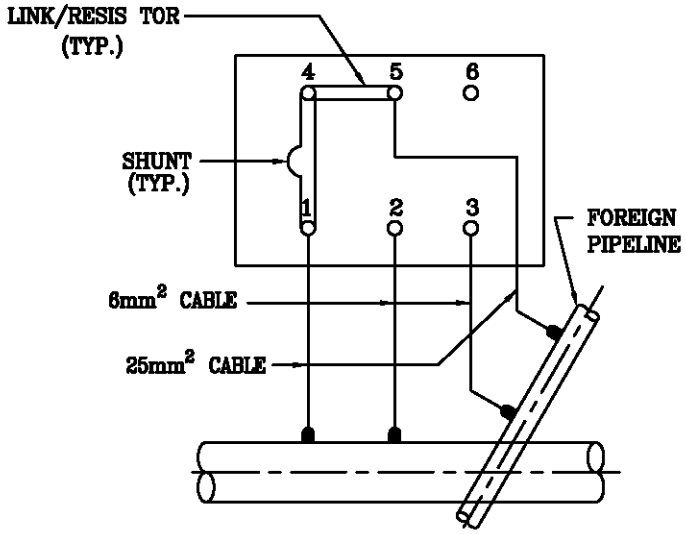
CURRENT MEASUREMENT
(CONNECTION SCHEME–B)



CASED CROSSING WITH
UNCOATED CASING
(CONNECTION SCHEME–C)



CASED CROSSING WITH
COATED CASING
(CONNECTION SCHEME–D)



FOREIGN PIPELINE CROSSING
(CONNECTION SCHEME–E)

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD
01	07.09	05/E9	REVISED & ISSUED	AM	DG

REVISIONS | REFERENCES | DRG. NO.

SECTION: ELECTRICAL

	NAME	DATE	CHKD	DATE
DSGN	AM	01.09	SS	05.09
DRWN	SJ	01.09		

APPROVED

TEST STATION CONNECTION SCHEME

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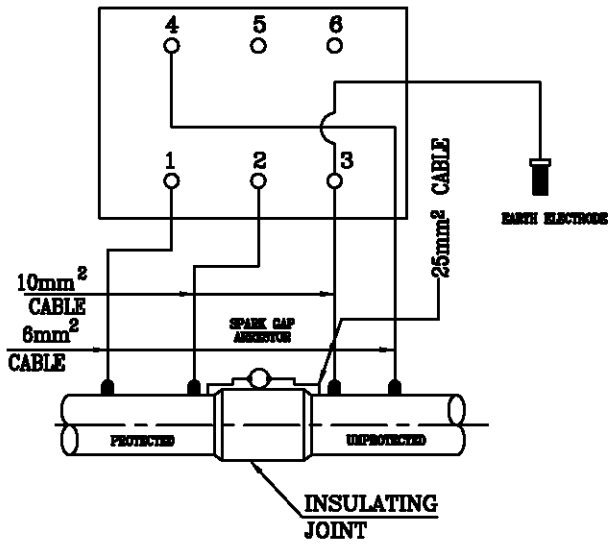
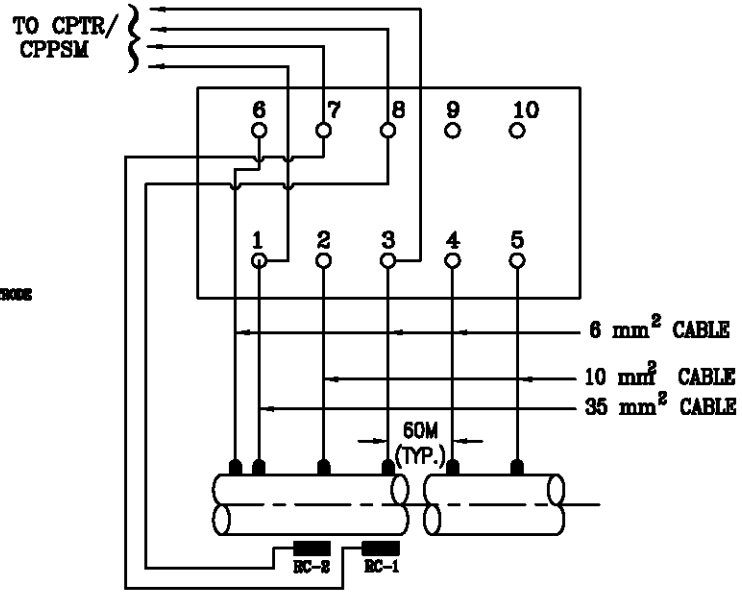
MECON LIMITED

SCALE : N.T.S. | SHEET | REV

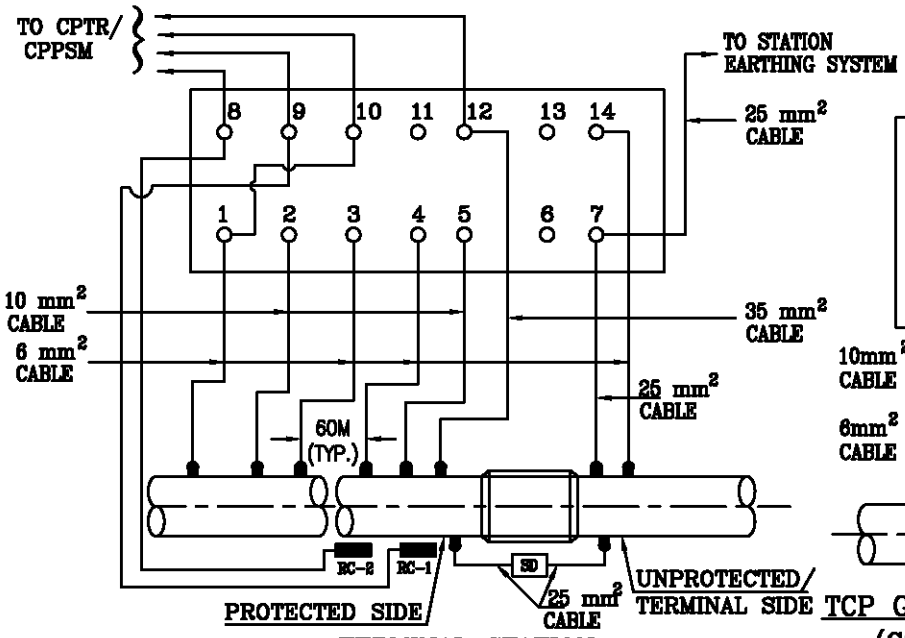
DRG.NO: –MEC/SD/05/E9/E/CP/1605 | 1 OF 4 | 1



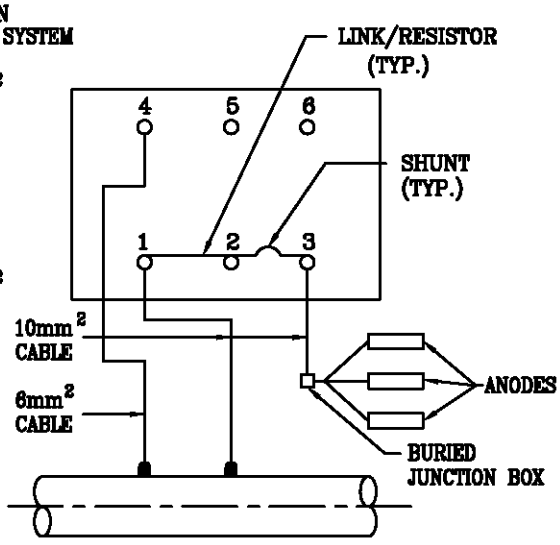
INSULATING JOINT
(CONNECTION SCHEME–F)



INTERMIDEIATE STATION
INPRESSED CURRENT DRAINAGE POINT
(CONNECTION SCHEME–G)



TERMINAL STATION
CURRENT DRAINAGE POINT FOR PCP
(CONNECTION SCHEME–H)



TCP GALVANIC ANODE INSTALLATION
(CONNECTION SCHEME–I)

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD
01	07.09	05/E9	REVISED & ISSUED	AM	DG

REVISIONS | REFERENCES | DRG. NO.

SECTION: ELECTRICAL

	NAME	DATE	CHKD	DATE
DSGN	AM	05.09	SS	07.09
DRWN	SJ	02.09		

APPROVED

TEST STATION CONNECTION SCHEMES

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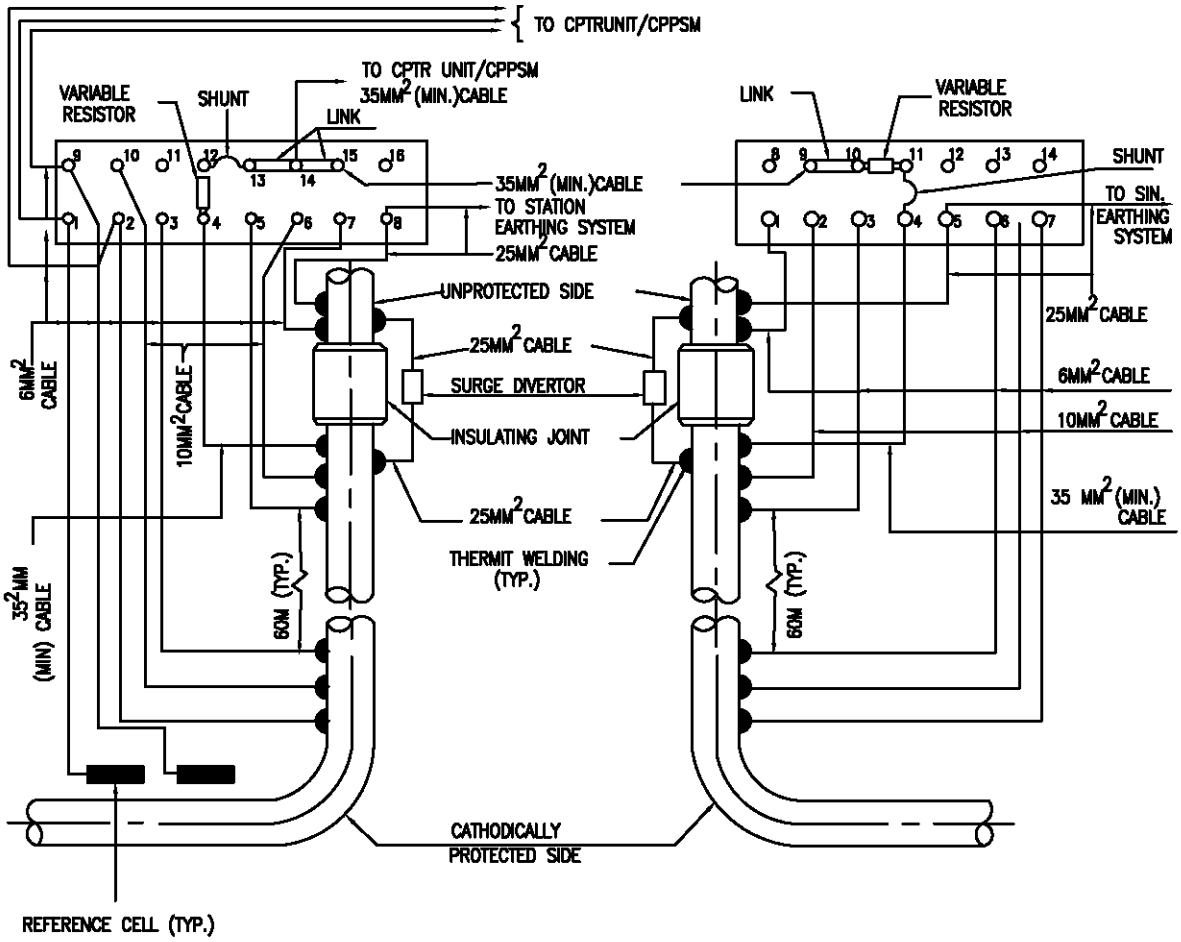
MECON LIMITED

SCALE : N.T.S. | SHEET 2 OF 4 | REV 1

DRG.NO: –MEC/SD/05/E9/E/CP/1605

TEST STATION J-1

TEST STATION J-2



INTERMEDIATE PIGGING STATION IMPRESSED CURRENT DRAINAGE POINT

CONNECTION SCHEME-J

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD
01	07.09	05/E9	REVISED & ISSUED	AM	DG

REVISIONS | REFERENCES | DRG. NO.

SECTION: ELECTRICAL

	NAME	DATE	CHKD	DATE
DSGN	AM	02.09	SS	05.09
DRWN	SJ	02.09		

APPROVED

TEST STATION CONNECTION SCHEMES

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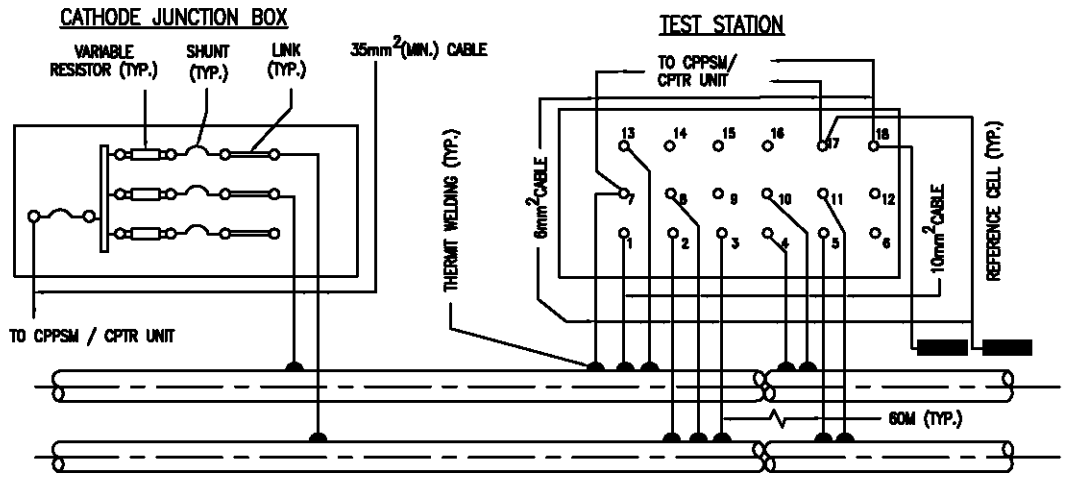
MECON LIMITED

SCALE : N.T.S.

SHEET 3 OF 4

REV 1

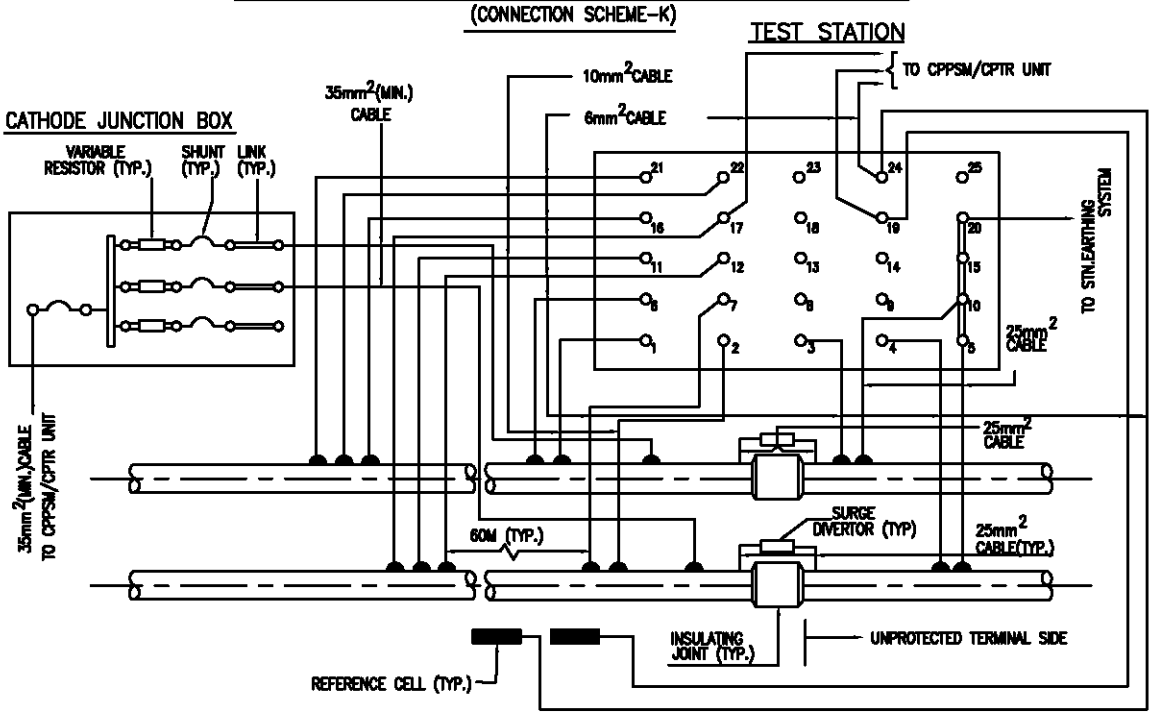
DRG.NO: -MEC/SD/05/E9/E/CP/1605



INTERMEDIATE CP STATION MULTIPLE PIPELINE (TYP. FOR TWO PIPE LINES)

IMPRESSED CURRENT DRAINAGE POINT(WITHOUT IJs ON LINE PIPS AT THE STATION)

(CONNECTION SCHEME-K)



TERMINAL STATION MULTIPLE PIPELINES (TYP. FOR TWO PIPELINES)

IMPRESSED CURRENT DRAINAGE POINT.(CONNECTION SCHEME-L)

NOTES:-

1. NUMBER OF TERMINALS FOR TEST STATION OF DIFFERENT CONNECTION SCHEME SHALL BE AS SHOWN ON THE RESPECTIVE SCHEME DRAWING. TEST STATION FOR ANY OTHER SCHEME SHALL PREFERABLY BE SIMILAR TO ANY OF THE ABOVE TYPE.
2. ELECTRIAL CONNECTIONS SHALL BE CLEAN TO BRIGHT SURFACE & TIGHTEND WITH NONOXIDE GREASE APPLIED ON MECHANICALLY MATED SURFACE.
3. FOR SACRIFICIAL ANODE GROUND BED WHICH IS INTENDED FOR PERMANENT CP SYSTEM AND/OR TO BE INTEGRATED WITH PERMANENT CP SYSTEM, THE LEADS OF ALL ANODES SHALL BE BROUGHT UP TO THE TEST STATION AND SHALL BE TERMINATED INDIVIDUALLY. ACCORDINGLY, THE NUMBER OF TERMINALS FOR TEST STATION SHALL BE DECIDED BASED ON NO OF ANODES.
4. WHWRE INSULATING JOINT (IJ) ON THE PIPELINE IS BURIED, THE SURGE DIVERTOR MOUNTED ACCROSS THE IJ SHALL BE HOUSED SUITABLY SO THAT OPERATION OF THE SAME IS NOT AFFECTED.
5. THE DISTANCE BETWEEN TWO SUCCESSIVE THERMIT WELDING POINTS SHALL BE MIN. 300 mm.

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD
01	07.09	05/E9	REVISED & ISSUED	AM	DG

REVISIONS | REFERENCES | DRG. NO.

SECTION: ELECTRICAL

	NAME	DATE	CHKD	DATE
DSGN	AM	03.09	SS	06.09
DRWN	SJ	03.09		

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TEST STATION CONNECTION SCHEMES

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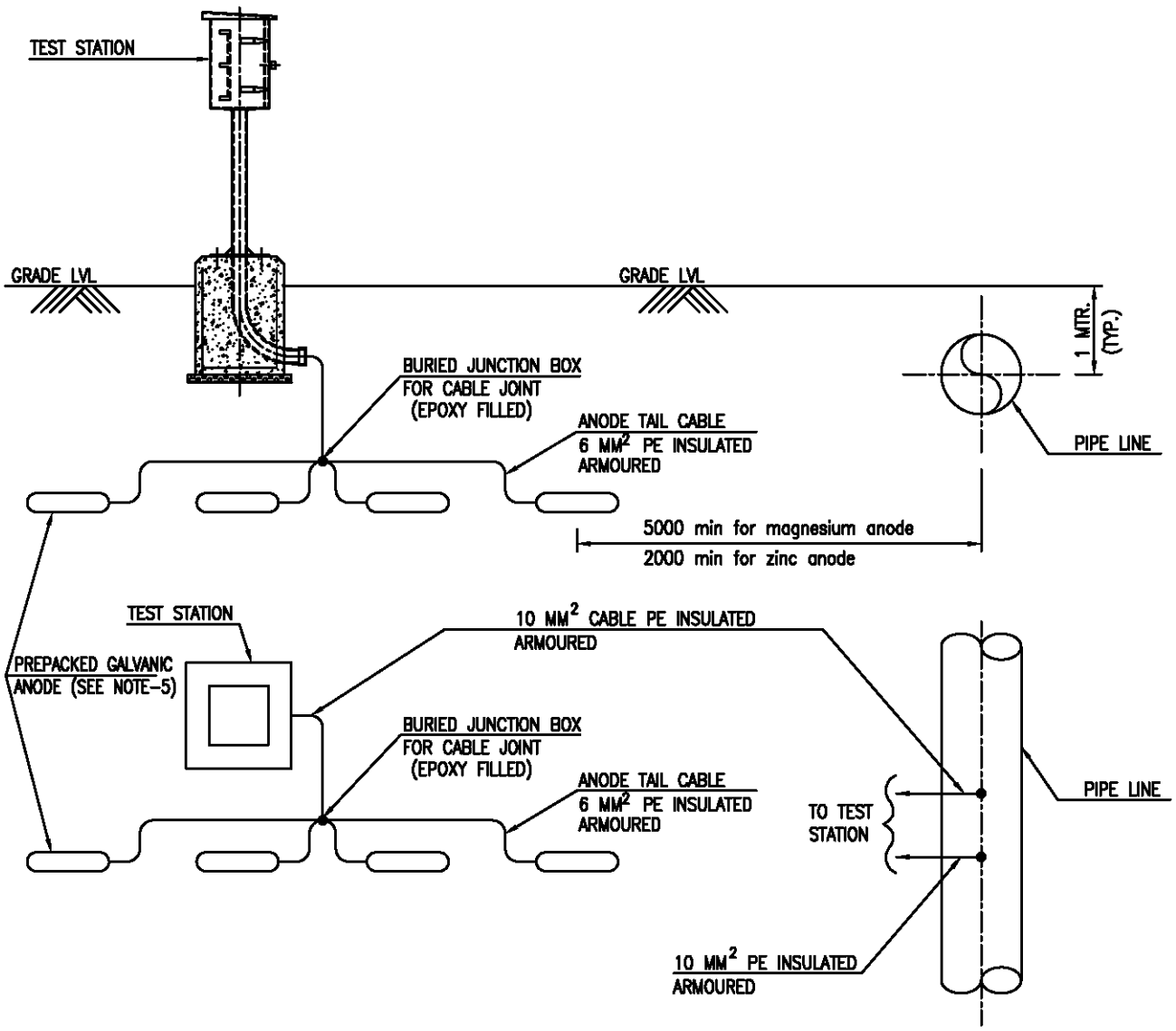
MECON LIMITED

SCALE : N.T.S. | SHEET 4 OF 4 | REV 1

DRG.NO: -MEC/SD/05/E9/E/CP/1605



NOTES:–

1. THE PREPACKED GALVANIC ANODE SHALL BE INSTALLED AT MINIMUM DEPTH, EQUAL TO BOTTOM LEVEL OF THE PIPELINE.
2. ALL NATIVE BACKFILL SHALL BE FREE OF ROCKS, GARBAGE, PAPERS, ETC.
3. CABLE SHALL BE LAID WITH ENOUGH SLACKNESS TO AVOID DAMAGE TO CABLES DURING BACKFILLING ECT.
4. THE GALVANIC ANODES FOR PERMANENT CATHODIC PROTECTION SYSTEM SHALL BE INSTALLED IN A SIMILAR MANNER AS SHOWN. BUT ANODE TAIL CABLES OF EACH ANODE SHALL BE BROUGHT UPTO TEST STATION AND TERMINATED. NO BURIED JUNCTION BOX SHALL BE USED.
5. THE ANODES ARE SHOWN HORIZONTALLY LAID. ALTERNATIVELY THE ANODES MAY BE LAID VERTICALLY.
6. ANODE TAIL CABLE & CABLE FROM BURIED JUNCTION BOX TO TEST STATION OR TEMPERATURE C.P. ANODE MAY BE PVC INSULATED TYPE.

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD
01	07.09	05/E9	REVISED & ISSUED	AM	DG

REVISIONS | REFERENCES | DRG. NO.

SECTION: ELECTRICAL

	NAME	DATE	CHKD	DATE
DSGN	AM	01.09	SS	05.09
DRWN	SJ	01.09		

APPROVED

GALVANIC ANODE INSTALLATION

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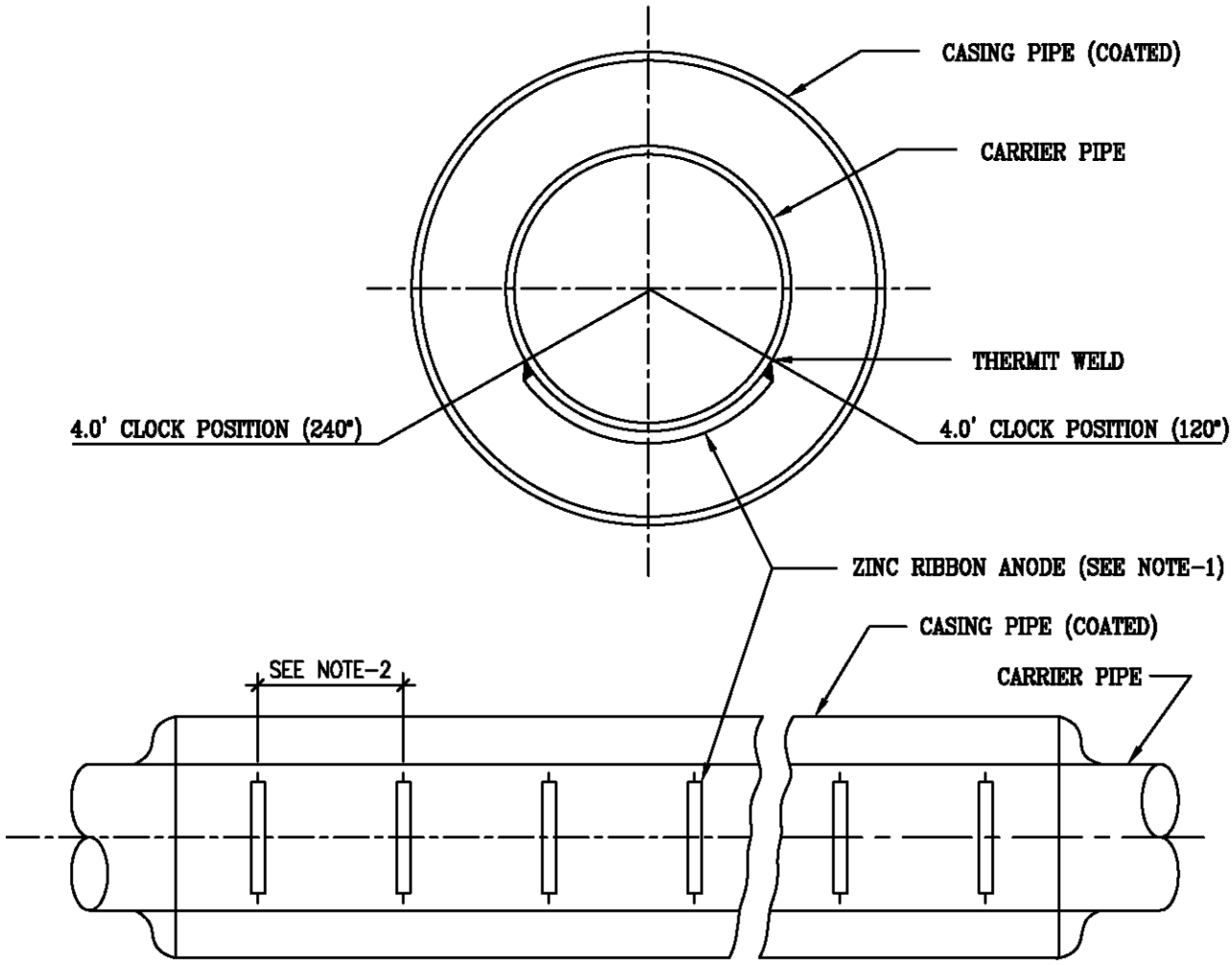
MECON LIMITED

SCALE : N.T.S.

REV 1

DRG.NO: –MEC/SD/05/E9/E/CP/1606



CHEMICAL COMPOSITION OF ANODE :-

TYPE-I		TYPE-II	
Al :	0.1-0.5%	Al :	0.005%
Cd :	0.025-0.07%	Cd :	0.003%
Cu :	0.005% MAX.	Cu :	0.002% MAX.
Fe :	0.005% MAX.	Fe :	0.0014% MAX.
Pb :	0.006% MAX.	Pb :	0.003% MAX.
Others:	0.1% MAX.	Others :	-
Zn :	Remainder	Zn :	Remainder

NOTE :-

1. STEEL CORE TO BE THERMIT WELD DIRECTLY TO CARRIER PIPE WITHIN CASING AT 4 & 8 '0' CLOCK POSITION. FOR CARRRIER PIPE OF LESS THAN 4 INCH DIA., ANODES MAY BE PROVIDED ALONG THE CARRIER PIPE LENGTH AT BOTTOM
2. SIZE OF ANODE & SPACING BETWEEN ANODE SHALL BE DECIDED BASED ON DESIGN CRITERIA.
3. PIPE SPACER / CENTRALISERS NOT SHOWN.
4. DIMENSION & WEIGHT OF THE ANODE PER UNIT LENGTH SHALL BE FURNISHED BY THE CONTRACTOR.
5. CASING PIPE SHALL BE PROTECTED BY GALVANIC ANODES INSTALLED AT BOTH THE ENDS IF THE CASING PIPE IS COATED AGAINST CORROSION OF EXTERNAL SURFACE.

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD
01	07.09	05/E9	REVISED & ISSUED	AM	DG

REVISIONS | REFERENCES | DRG. NO.

SECTION: ELECTRICAL

	NAME	DATE	CHKD	DATE
DSGN	AM	03.09	SS	04.09
DRWN	SJ	03.09		

APPROVED

ZINC RIBBON ANODE FOR CASED CROSSING WITH COATED CASING

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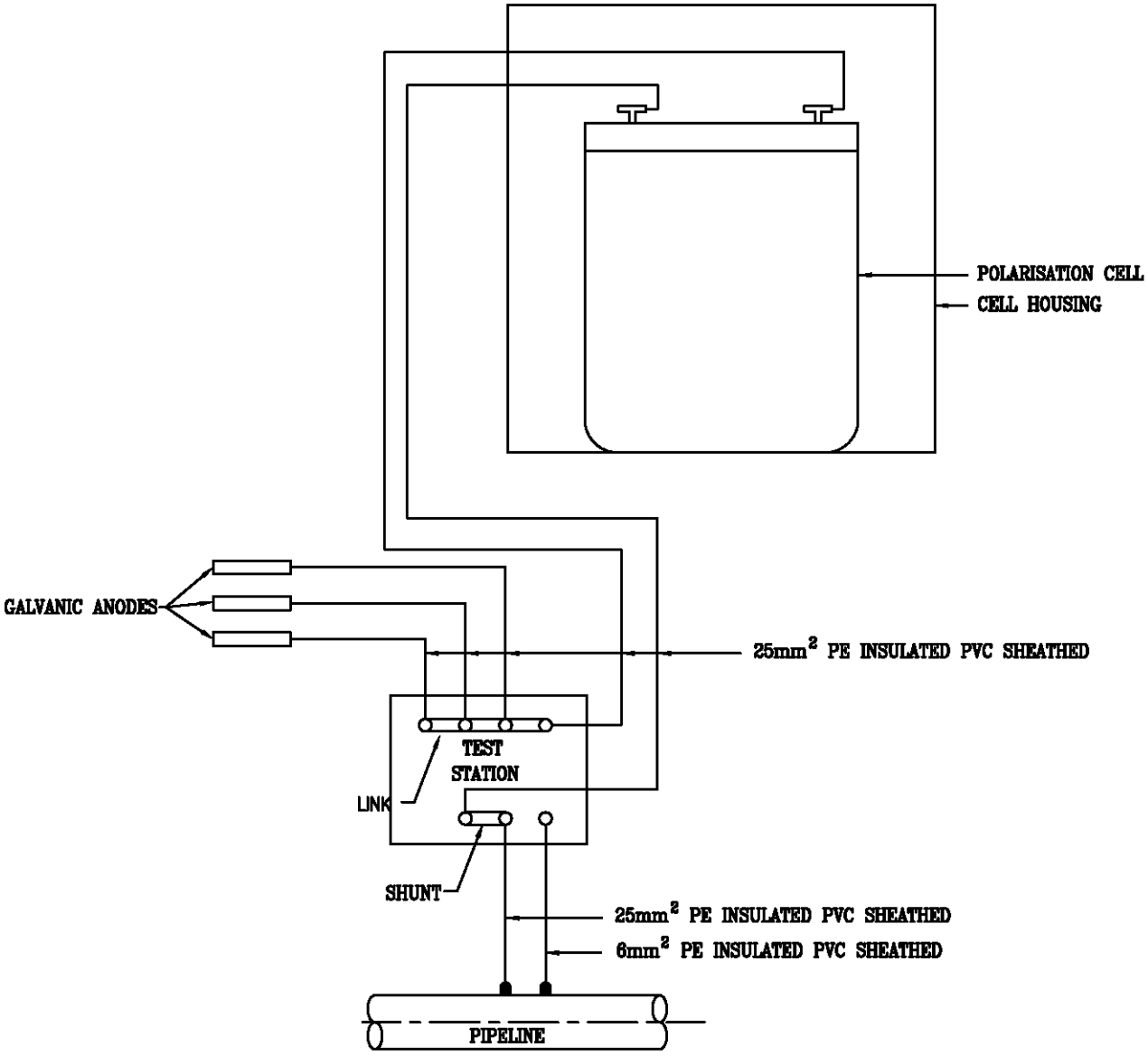
MECON LIMITED

SCALE : N.T.S. | REV 1

DRG.NO: -MEC/SD/05/E9/E/CP/1607



(CONNECTION SCHEME–H)

NOTES:–

1. THE POLARISATION CELL, ANODES, CABLE, CABLE JOINT ETC. SHALL MINIMUN BE RATED FOR THE EXPECTED FAULT CURRENT AT THE LOCATION OF THE INSTALLATION & SIZED FOR PERMANENT C.P. LIFE.
2. THE POLARISATION CELL SHALL BE HOUSED IN A VENDALLISM PROOF HOUSING.
3. CELL SHALL HAVE GOOD VENTILATION TO ATMOSPHERE & SHALL BE PROTECTED AGAINEST DIRECT SUN LIGHT & RAIN/ WATER.
4. ANODE TAIL CABLES OF EACH ANODE SHALL BE TERMINATED INDIVIDUALLY IN TEST STATION.
5. CONTRACTOR SHALL FURNISHED DRAWING WITH ACTUAL DIMENSIONS & RATING.
6. EASY ACCESS TO CELL SHALL BE PROVIDED FOR PERIODIC INSPECTION.
4. 20% EXTRA TERMINALS SHALL BE PROVIDED.

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD
01	07.09	05/E9	REVISED & ISSUED	AM	DG

REVISIONS | REFERENCES | DRG. NO.

SECTION: ELECTRICAL

	NAME	DATE	CHKD	DATE
DSGN	AM	02.09	SS	05.09
DRWN	SJ	02.09		

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PIPELINE GROUNDING THROUGH POLARISATION CELL & GALVANIC ANODE

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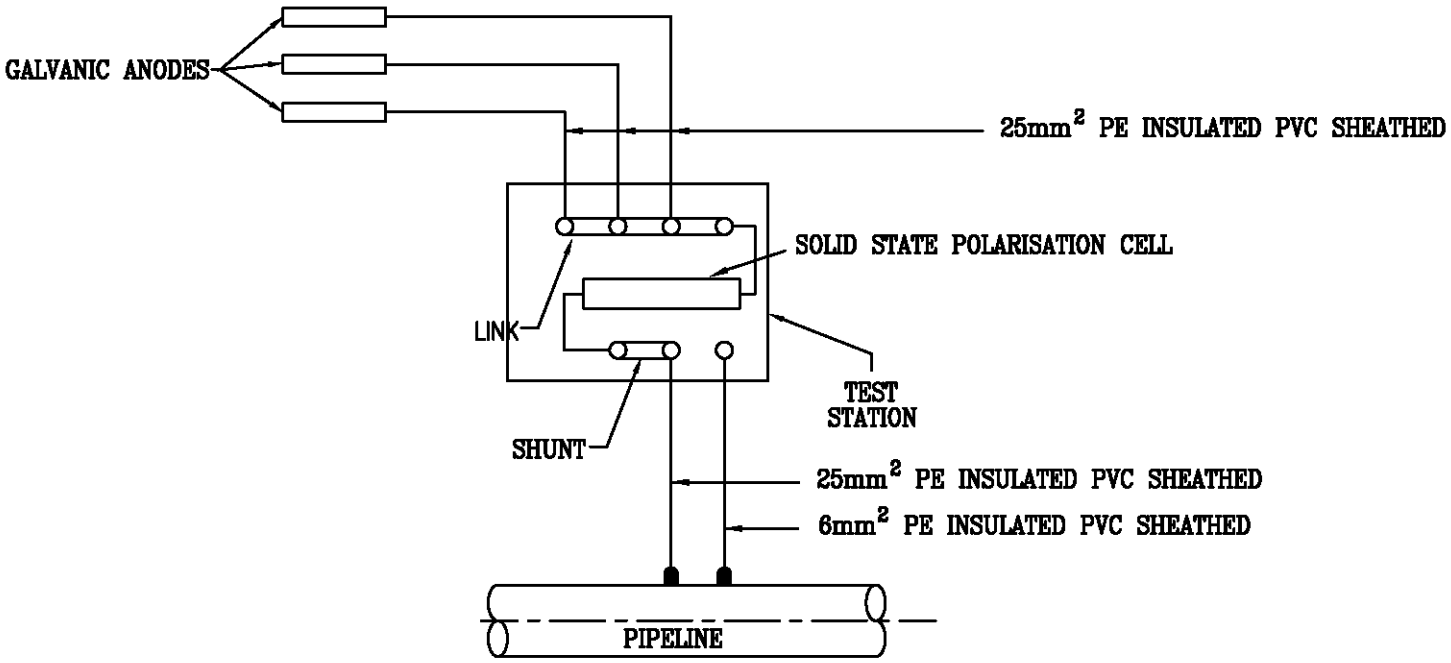
MECON LIMITED

SCALE : N.T.S. | SHEET 1 OF 2 | REV 1

DRG.NO: –MEC/SD/05/E9/E/CP/1608



(CONNECTION SCHEME-H)

NOTES:-

1. THE POLARISATION CELL, ANODES, CABLE, CABLE JOINT ETC. SHALL MINIMUN BE RATED FOR THE EXPECTED FAULT CURRENT AT THE LOCATION OF THE INSTALLATION & SIZED FOR PERMANENT C.P. LIFE.
2. ANODE TAIL CABLES OF EACH ANODE SHALL BE TERMINATED INDIVIDUALLY IN TEST STATION.
3. CONTRACTOR SHALL FURNISHED DRAWING WITH ACTUAL DIMENSIONS & RATING.
4. EASY ACCESS TO CELL SHALL BE PROVIDED FOR PERIODIC INSPECTION.
4. EASY ACCESS TO CELL SHALL BE PROVIDED FOR PERIODIC INSPECTION.
5. 20% EXTRA TERMINALS SHALL BE PROVIDED.

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD
01	07.09	05/E9	REVISED & ISSUED	AM	DG

REVISIONS | REFERENCES | DRG. NO.

SECTION: ELECTRICAL

	NAME	DATE	CHKD	DATE
DSGN	AM	02.09	SS	05.09
DRWN	SJ	02.09		

APPROVED

PIPELINE GROUNDING THROUGH POLARISATION CELL & GALVANIC ANODE

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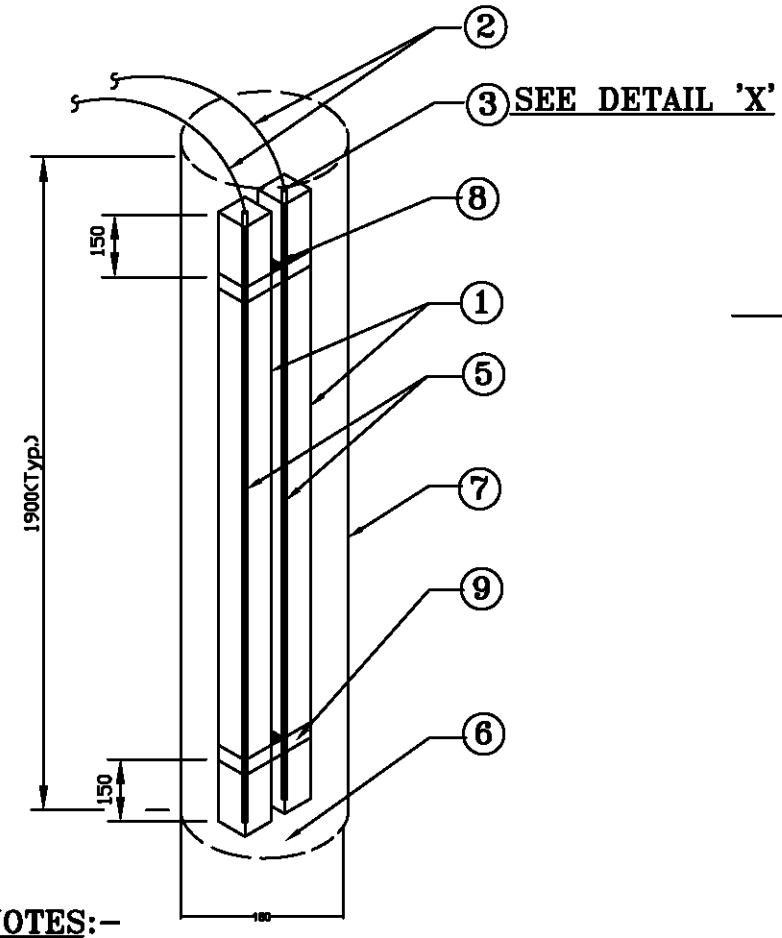
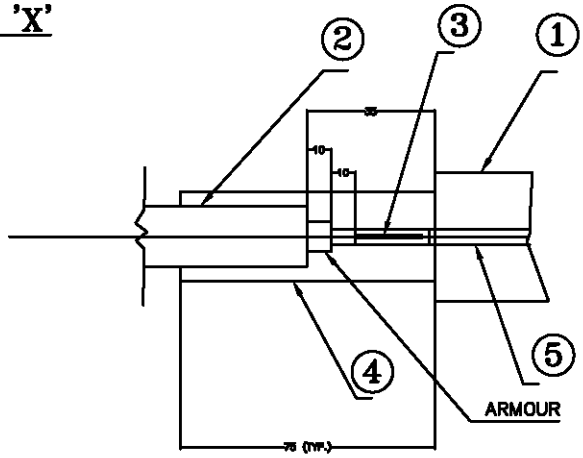
MECON LIMITED

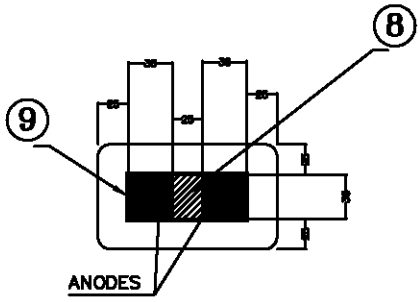
SCALE : N.T.S. | SHEET 2 OF 2 | REV 1

DRG.NO: -MEC/SD/05/E9/E/CP/1608





DETAIL 'X'



NOTES:–

1. ALL DIMENSIONS ARE TYPICAL IN mm.
2. ZINC GROUNDING CELLS SHALL BE INSTALLED VERTICALLY SUCH THAT THE TOP OF THE CELL IS APPROX. AT THE SAME ELEV. AS PIPE BOTTOM.
3. ALL CABLE LEADS FOR ZINC GROUNDING CELL SHALL BE KEPT AS SHORT AND DIRECT AS POSSIBLE.
4. GROUNDING CELL CABLE ARMOUR SHALL NOT HAVE ELECT. CONNECTION TO ANODE.

ZINC ANODE COMPOSITION (%WEIGHT)

ELEMENT	TYPE–I	TYPE–II
Al	0.1–0.5 %MAX	0.005 %MAX
Cd	0.025–0.07%MAX	0.003 %MAX
Cu	0.005% MAX	0.002 %MAX
Fe	0.005% MAX	0.0014%MAX
Pb	0.006% MAX	0.003 %MAX
OTHERS	0.1% MAX	–
Zn	REMAINDER	REMAINDER

ZINC ALLOY CONFORMING TO ASTM–B–418–67

BACKFILL COMPOSITION

GYPSUM	75%
BENTONITE	20%
SODIUM SULPHATE	5%

ITEM NO.	DESCRIPTION	QTY.
9	TAPE STRAP	AS REQD.
8	BAKELITE INSULATING SPACER 25X36X50	2 NOS.
7	COTTON BAG 180ø.	1 NO.
6	BACK FILL MAT.	AS REQD.
5	6mmø GALVANISED STEEL CORE	AS REQD.
4	HEAT SHRINK SLEEVE.	2 NOS.
3	SILVER BRAZED CONNECTION	2 NOS.
2	ANODE TAIL CABLE 25mm Sq. 1C Cu XLPE/ PVC SHEATHED ARMOURED 600/1000V.	30 mt.
1	ZINC ANODE	2 NOS.

BILL OF MATERIALS

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD
01	07.09	05/E9	REVISED & ISSUED	AM	DG

REVISIONS | REFERENCES | DRG. NO.

SECTION: ELECTRICAL				
	NAME	DATE	CHKD	DATE
DSGN	AM	03.09	SS	05.09
DRWN	SJ	03.09		

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DETAILS OF
ZINC GROUNDING CELL

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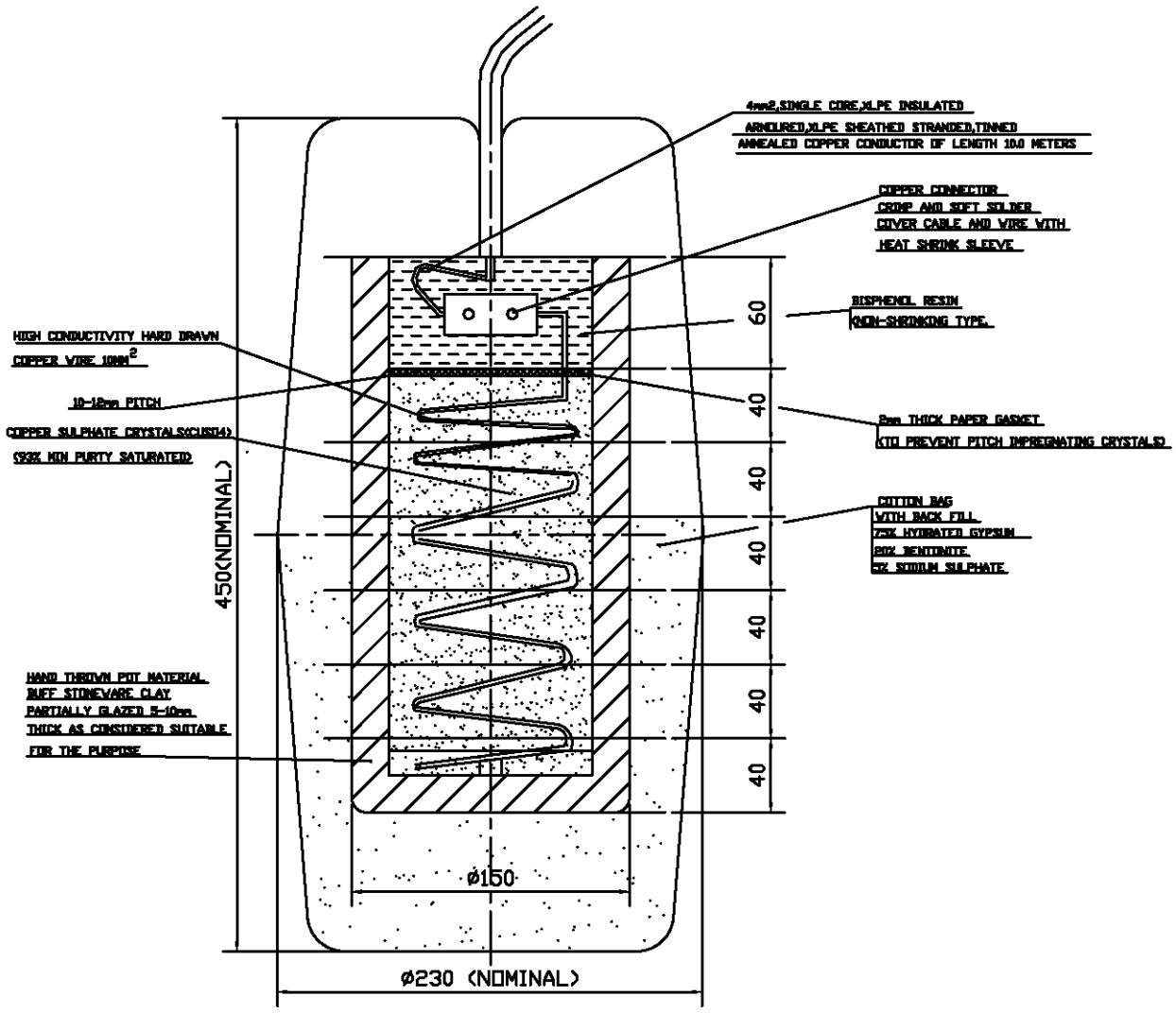
MECON LIMITED

SCALE : N.T.S.

REV 1

DRG.NO: –MEC/SD/05/E9/E/CP/1609



REF. CELL WEIGHT ~ 9.0 kg (APPROX)
GROSS WEIGHT ~ 25.0 kg (APPROX)

NOTES

(1) THE OVERALL DIMENSIONS ARE FOR GUIDANCE ONLY

(2) ALL DIMENSIONS ARE IN MM.

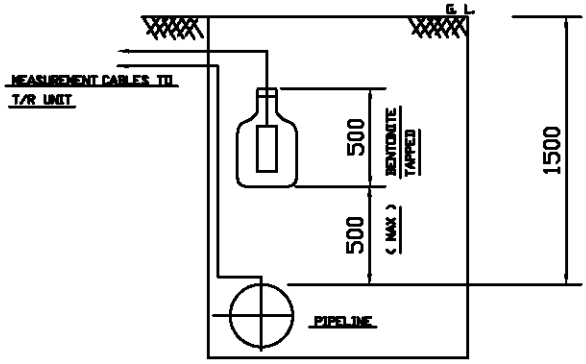
(3) REFERENCE CELL SHALL BE BACK FILLED WITH BACK FILL MATERIAL SPECIFIED.

(4) REFERENCE CELL SHALL BE INSTALLED APPROXIMATELY AT 500 mm (MAX.) ABOVE THE TOP LEVEL OF THE PIPE LINE ALONG WITH COTTON BAG FILLED WITH BACK FILL MATERIAL.

(5) BACK FILL REFERENCE ELECTRODE SHALL BE SOAKED IN 20 LITERS OF CLEAN FRESH WATER FOR 24 HRS PRIOR TO INSTALLATION.

(6) REFERENCE CELL CABLE SHALL BE ROUTED ALONG THE TOP OF THE CARRIER PIPE LINE BY SECURELY STRAPPING IT WITH ADHESIVE TAPE AT APPROXIMATELY 3 Mt INTERVALS.

(7) CALLIBRATION OF REFERENCE CELL w.r.t. STANDARD Cu/CuSO4 CELL TO BE MADE PRIOR TO INSTALLATION.



REFERENCE : ELECTRODE INSTALLATION.

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD
REVISIONS				REFERENCES	DRG. NO.

SECTION: P&PD

	NAME	DATE	CHKD	DATE
DSGN				
DRWN				

APPROVED

PREPACKAGED PERMANENT REF. ELECTRODE (Cu/CuSO4 TYPE) & INSTALLATION DETAILS

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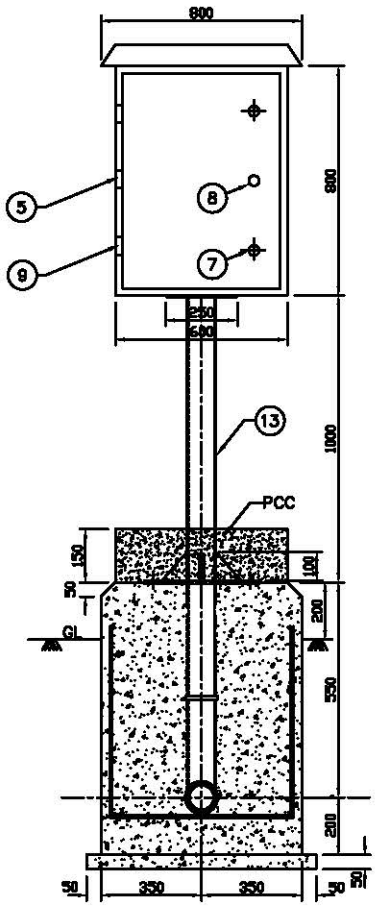
MECON LIMITED

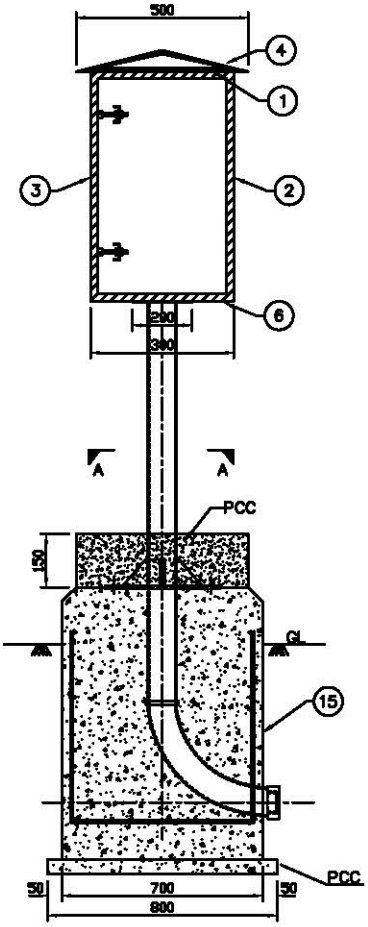
SCALE : N.T.S.

DRG.NO MEC/SD/05/62/16/10

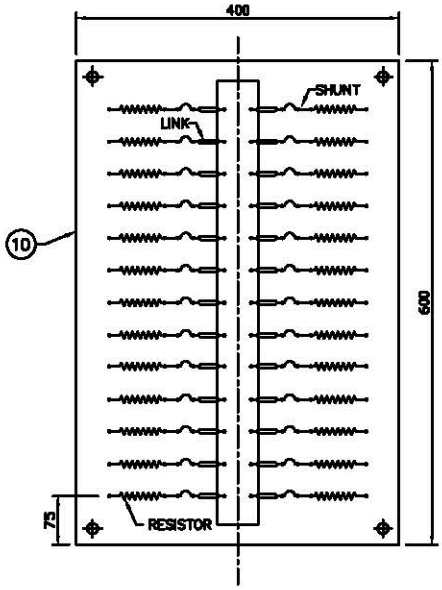
REV 0

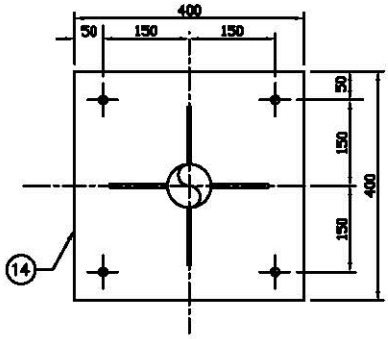


FRONT VIEW

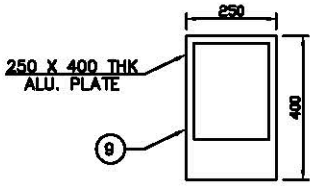


SIDE VIEW

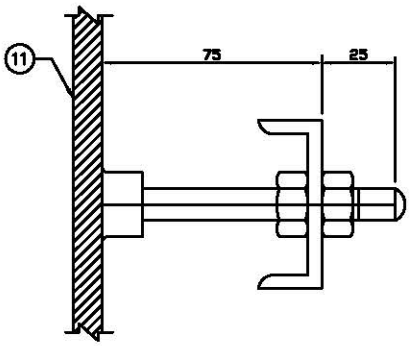




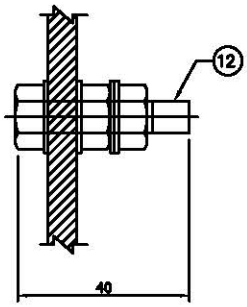
SECTION A–A



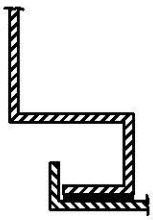
NAME PLATE



DETAIL–H



DETAILS OF TERMINALS



DETAILS

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD
01	07.09	05/E9	REVISED & ISSUED	AM	DG

REVISIONS | REFERENCES | DRG. NO.

SECTION: ELECTRICAL

	NAME	DATE	CHKD	DATE
DSGN	AM	03.09	SS	04.09
DRWN	SJ	03.09		

APPROVED

ANODE LEAD JUNCTION BOX

मेकॉन लिमिटेड

MECON LIMITED

SCALE : N.T.S.

SHEET 1 OF 2

REV 1

DRG.NO: –MEC/SD/05/E9/E/CP/1612

NOTES:-

1. ANODE LEAD JUNCTION BOX SHALL HAVE WEATHERPROOF ENCLOSURE HAVING DEGREE OF PROTECTION IP-55, AS DEFINED IN IEC-529 (1989)/IS:2147 (1962)THE SHUTTER SHALL BE HINGED TYPE WITH CONCEALED LOCK AND SHALL HAVE DOOR GASKET.
2. THE HINGES SHALL BE WELDED TO THE SHUTTER AND THE BOX SUITABLY.
3. THE MS ANGLES SHALL BE WELDED TO THE SIDES. THE ANGLES SHALL HAVE TAPPED HOLES FOR FIXING TERMINAL PLATE.
4. THE INNER SURFACE OF THE AJB SHALL BE PAINTED WITH LEAD OXIDE PRIMER GRADE.
5. THE OUTSIDE OF THE AJB SHALL BE PAINTED WITH TWO COATS OF ZINC RED EPOXY PRIMER AND THREE COATS OF GREY COLOURED EPOXY PAINT COMPLETE WITH CABLE PIPE & FDN. PLATE.
6. THE NAME PLATE SHALL BE OF ANODISED ALUMINIUM WITH BLACK BACKGROUND AND WHITE LETTERS (SIZE 3mm). THE NAME PLATE SHALL BE FIXED TO INNER SIDE OF SHUTTER BY ARALDITE OR EQUIVALENT.
7. WHEN ERECTED,THE AJB SHALL BE IN UPRIGHT POSITION.
8. HEIGHT OF THE AJB ABOVE GROUND LEVEL SHOWN IN THE DRAWING IS TYPICAL.
9. ALL CABLES COMING TO AJB SHALL BE LABELLED ON BOTH ENDS WITH IDENTIFICATION NUMBERS
10. TEST BETWEEN BRASS TERMINALS AND BODY AT 2kV FOR ONE MINUTE.
11. ALL DIMENSIONS ARE APPROXIMATE AND CAN VARY SLIGHTLY.
12. ALL DIMENSIONS ARE IN mm.
13. PIPE ENTRY SHALL BE SEALED WITH BITUMEN COMPOUND AFTER LAYING OF CABLE TO PREVENT WATER ENTRY.

ITEM	DESCRIPTION	QTY.
	BILL OF MATERIALS	
16	NEOPRENE RUBBER GASKET FOR SHUTTER	AS REQD.
15	CONCRETE FOUNDATION (PCC 1:5:10, RCC M20)	01
14	BASE PLATE (400 X 400 X5 THICK)	2
13	4' DIA MS PIPE(4MM WALL THICK) ALONG WITH BEND)	1 SET
12	BRASS TERMINAL M5 DIA 60MM LONG FOR ONE TERM.	01
11	NUT BOLT FOR FIXING TERMINAL PLATE	04
10	BACKELITE TERMINAL PLATE,350 X600 X 6 MM THICK MS	01
9	HINGE FOR SHUTTER	03
8	CASTLE LOCK WITH ONE KEY PER TEST STATION	01
7	NORMAL PANEL LOCK WITH MASTER KEY	02
6	BOTTOM PLATE 225 X 500 X 3 MM THICK MS	01
5	SIDE PLATE 225 X800 X 3 MM THICK MS	01
4	CANOPY (TRIANGLE AS PER DRG.) 3 MM THK MS	01
3	SIDE PLATE 225 X800 X 3 MM THICK MS	01
2	REAR PLATE 500 X 800 X 3 MM THICK MS	01
1	TOP PLATE, 550 X 275 X 3 MM THICK M.S.	01

] 8 mm dia (M8) Cd Coated Brass Nut Bolt

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD
01	07.09	05/E9	REVISED & ISSUED	AM	DG

REVISIONS | REFERENCES | DRG. NO.

SECTION: ELECTRICAL

	NAME	DATE	CHKD	DATE
DSGN	AM	03.09	SS	04.09
DRWN	SJ	03.09		

APPROVED

DETAILS OF ANODE LEAD JUNCTION BOX

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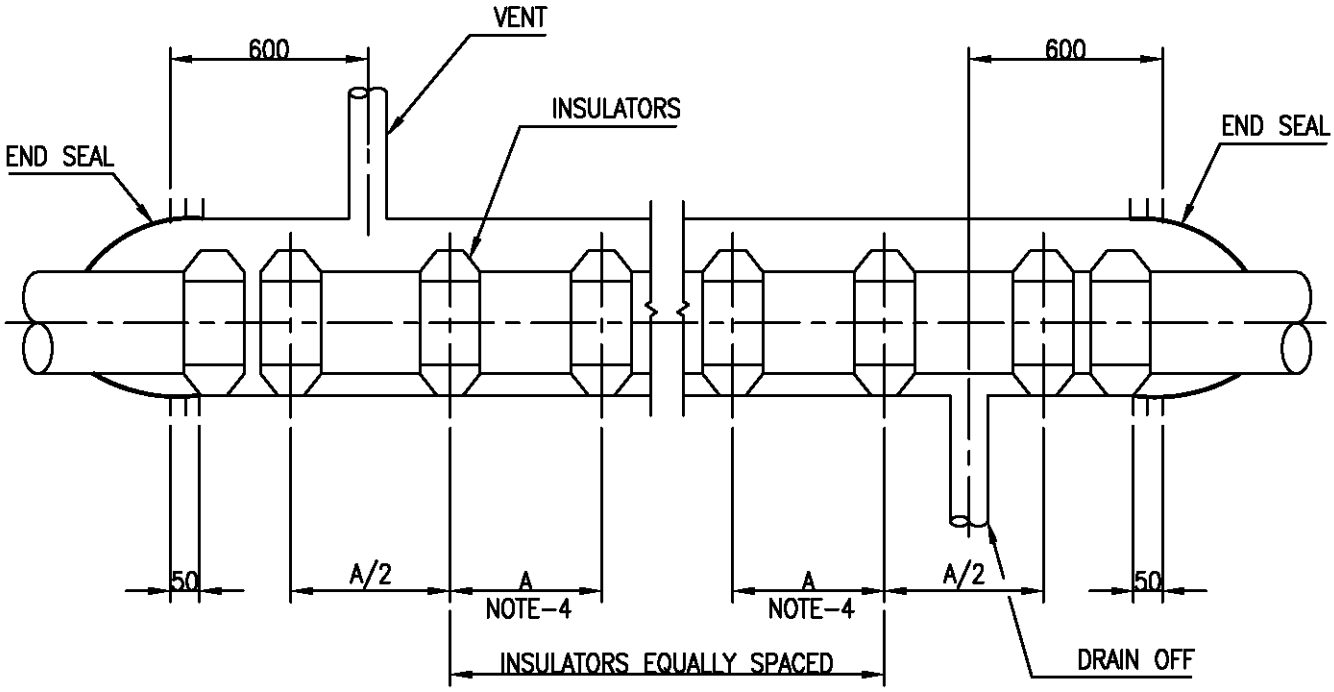
MECON LIMITED

SCALE : N.T.S. | SHEET 2 OF 2 | REV 1

DRG.NO: -MEC/SD/05/E9/E/CP/1612



NOTES:-

1. THE CASING PIPE SHALL BE DESIGNED IN ACCORDANCE WITH API RP 1102.
2. CASING PIPE IS NOT BE COATED NORMALLY BUT IN HIGHLY CORROSIVE AREAS THE CASING SHALL BE COATED, WRAPPED AND CATHODIC PROTECTION PROVIDED WITH SACRIFICIAL ANODES.
3. AT BOTH ENDS OF CASING PIPE A DOUBLE SET OF INSULATORS SHALL BE INSTALLED.
4. THE MAXIMUM SPACING OF THE INSULATORS SHALL BE AS PER MANUFACTURERS RECOMMENDATIONS BUT IN NO CASE MORE THAN 2500 MM.
5. ELECTRICAL INSULATION BETWEEN THE CASING AND CARRIER PIPE SHALL BE CHECKED WITH A SUITABLE MEGGER.
6. CASING INSULATORS AND END SEALS SHALL AS PER THE SPECIFICATION ISSUED FOR THE SAME.
7. END SEALS SHOWN HERE ARE ONLY INDICATIVE, POSSIBILITY OF PROVIDING OTHER TYPES OF FLEXIBLE END SEALS MAY BE CONSIDERED.
8. IN CASE OF BORED/JACKED CROSSING IN ORDER TO PREVENT DAMAGE TO COATING AND WRAPPING. (IF APPROX.) A PROTECTIVE COATING OF CONCERETE OR SUITABLE MATERIAL SHALL BE PROVIDED ON CASING PIPE.

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD
01	07.09	05/E9	REVISED & ISSUED	AM	BG

REVISIONS | REFERENCES | DRG. NO.

SECTION: ELECTRICAL

	NAME	DATE	CHKD	DATE
DSGN	AM	05.09	SS	07.09
DRWN	SJ	05.09		

APPROVED

CASING PIPE DETAILS

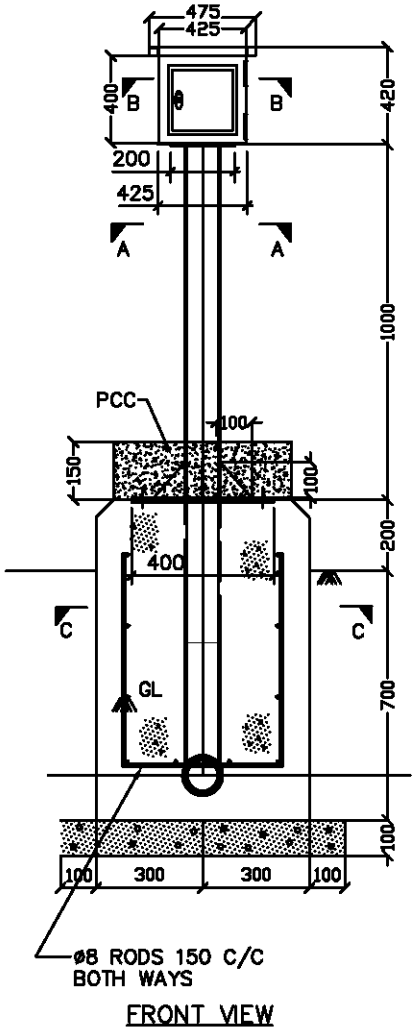
मेकॉन लिमिटेड

MECON LIMITED

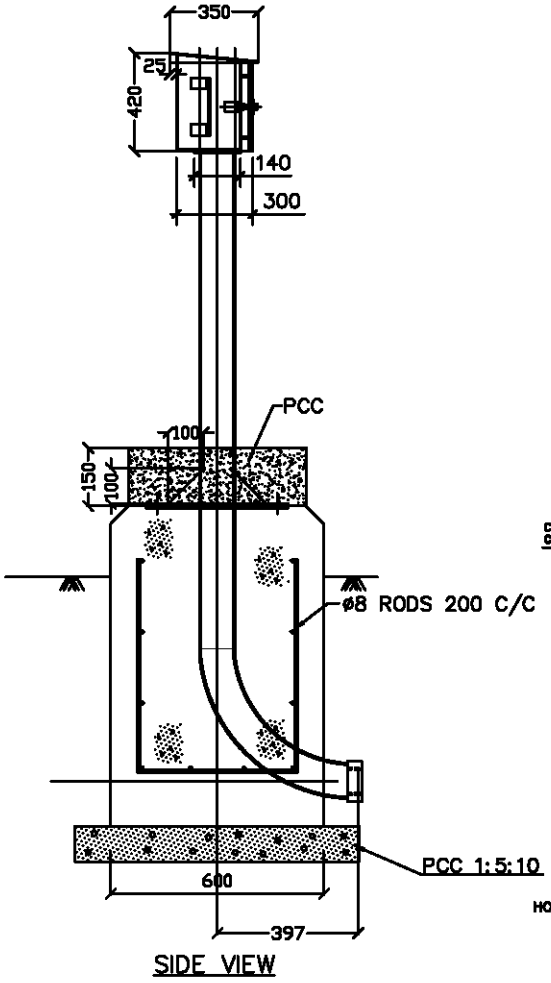
SCALE : N.T.S.

REV 1

DRG.NO:-MEC/SD/05/E9/E/CP/1613



FRONT VIEW



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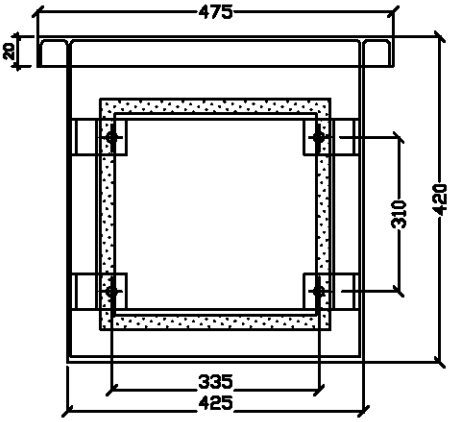

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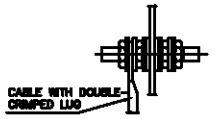

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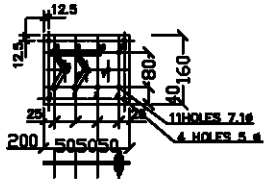
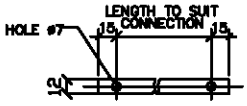
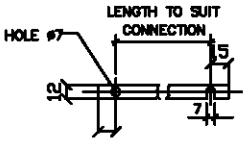


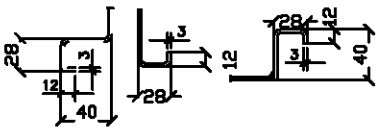
TERMINAL PLATE



COPPER LINK
(ITEM-30)

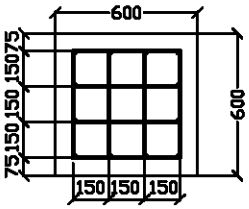


15 BRASS LINK
(ITEM-14)

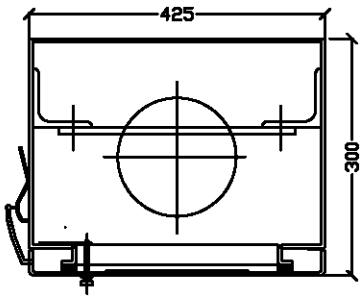


ITEM-2 ITEM-4 ITEM-5

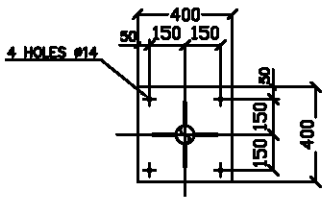
BENDING DETAILS



SECTION C-C
(ONLY ARRANGEMENT OF REBARS)



SECTION B-B



SECTION A-A
(CONCRETE NOT SHOWN)

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD
01	07.09	05/E9	REVISED & ISSUED	AM	DG

REVISIONS | REFERENCES | DRG. NO.

SECTION: ELECTRICAL

	NAME	DATE	CHKD	DATE
DSGN	AM	05.09	SS	05.09
DRWN	SJ	05.09		

APPROVED

DETAILS OF TEST STATION FOR POLARIZATION CELL

मेकॉन लिमिटेड

MECON LIMITED

SCALE : N.T.S.

SHEET 1 OF 2

REV 1

DRG.NO: -MEC/SD/05/E9/E/CP/1614

NOTES:-

1. TEST STATION SHALL HAVE WEATHERPROOF ENCLOSURE HAVING DEGREE OF PROTECTION IP-55, AS DEFINED IN IEC-529(1989)/ IS: 2147 (1962) THE SHUTTER SHALL BE HINGED TYPE WITH CONCEALED LOCK AND SHALL HAVE DOOR GASKET.
2. THE HINGES SHALL BE WELDED TO THE SHUTTER AND THE BOX SUITABLY.
3. THE MS ANGLES SHALL BE WELDED TO THE SIDES. THE ANGLES SHALL HAVE TAPPED HOLES FOR FIXING TERMINAL PLATE.
4. THE INNER SURFACE OF THE TEST STATION SHALL BE PAINTED WITH LEAD OXIDE PRIMER GRADE.
5. THE OUTSIDE OF THE TEST STATION SHALL BE PAINTED WITH TWO COATS OF ZINC RED EPOXY PRIMER AND THREE COATS OF GREY COLOURED EPOXY PAINT COMPLETE WITH CABLE PIPE & FDN. PLATE.
6. THE NAME PLATE SHALL BE OF ANODISED ALUMINIUM WITH BLACK BACKGROUND AND WHITE LETTERS (SIZE 3mm). THE NAME PLATE SHALL BE FIXED TO INNER SIDE OF SHUTTER BY ARALDITE OR EQUIVALENT.
7. THE NAME PLATE OF EACH TEST STATION SHALL CARRY THE FOLLOWING INFORMATION.
   - A) TEST STATION CONNECTION SCHEME TYPE
   - B) RELEVANT TEST STATION CONNECTION SCHEME DIAGRAM
   - C) TEST STATION NO.
   - D) CHAINAGE IN KM
   - E) DISTANCE FROM PIPE IN m
   - F) DIRECTION OF GAS FLOW
8. WHEN ERECTED, THE TEST STATION SHALL BE IN UPRIGHT POSITION.
9. TEST STATION SHALL BE SO ERECTED AS TO SERVE ALSO AS PIPELINE MARKER. AND ANODE GROUNDBED MARKER. THEIR SHUTTERS SHALL BE PARALLEL TO THE LINE OF AXIS OF PIPELINE AND FACING IT.
10. THE NUMBER OF ALL TEST STATIONS SHALL BE WRITTEN WITH BLACK PAINT USING 40 mm STENCIL BLOCK ON THE OUTER SIDE OF THE SHUTTER IN A UNIFORM MANNER. AN ARROW SHOWING DIRECTION OF FLOW OF GAS SHALL BE MARKED TO UNDERLINE THE TEST STATION NUMBER ON SHUTTER.
11. HEIGHT OF THE TEST STATION ABOVE GROUND LEVEL SHOWN IN THE DRAWING IS TYPICAL.
12. ALL CABLES COMING TO TEST STATION SHALL BE LABELLED ON BOTH ENDS WITH IDENTIFICATION NUMBERS
13. TOTAL NUMBER OF TEST STATIONS AND THEIR TYPES ARE MENTIONED IN CONSOLIDATED B.O.M.
14. TEST BETWEEN BRASS TERMINALS AND BODY AT 2kV FOR ONE MINUTE.
15. ALL DIMENSIONS ARE APPROXIMATE AND CAN VARY SLIGHTLY.
16. ALL DIMENSIONS ARE IN mm.
17. THE ENTRY SHALL BE SEALED WITH BITUIMEN COMPOUND AFTER CABLE LAYING TO PREVENT WATER ENTRY.

ITEM	DESCRIPTION	QTY.
	BILL OF MATERIALS	
30	VARIABLE RESISTANCE 0-0.1 Ohm.	01
29	100 MM ø M.S. SCH.40 90° ELBOW, R=5D	01
28	BINDING WIRE, MS	AS REQD.
27	PCC MIX, 1:5:10	0.064 m^3
26	RCC MIX, M20	0.324 m^3
25	ROD, 8ø MS	28 m
24	STIFFENER PLATE, 8THK.	04
23	FOUNDATION BOLT M12	04
22	RUBBER BUSH MATCHING WITH PIPE	01
21	FOUNDATION PLATE, 6THKx400x400 MS PLATE	02
20	NEOPRENE RUBBER GASKET, 6THK.	01 SET
19	MS PIPE, 100 ø, IS: 1239 PT.1(1990)-HEAVY GRADE	01
18	COUPLING PLATE, 5THK.x180x130 MS PLATE, 100ø HOLE AT CENTRE	01
17	LATCH FOR SHUTTER	01
16	BRASS SCREW, M6x16	04
15	ANGLE, 5THK. x 50 x 50 x 30	04
14	SHUNT, 0.1 OHM, 0.5 A, 50 mV	01
13	COPPER LINK, 2.5 THK.x ~~12 x LENGTH AS REQD.~~	01
12	BRASS WASHER (8 mm dia (M8) Cd Coated)	AS REQD.
11	BRASS NUT, ~~M6~~ (Brass Nut Bolt washer)	AS REQD.
10	BRASS STUD, ~~M6 x 50~~	AS REQD.
9	TERMINAL PLATE, 6THK.x160 x 200 PHENOLIC LAM. SHT	01
8	HINGE FOR SHUTTER	02
7	CASTLE LOCK WITH ONE KEY PER TEST STATION	01
6	NAME PLATE, 0.9THK.x120x160 ANODISED ALUMINIUM	01
5	SHUTTER, 3mm THK MS SHT	01
4	TOP, 475x350x3mmTHK. MS SHT	01
3	SIDE PLATE 300x420x300x400x3mmTHK MS SHT	01
2	REAR PLATE 425x420x3mmTHK. MS SHT	01
1	BOTTOM PLATE, 250x175x3mmTHK MS PLATE, 100ø HOLE AT CENTRE	01

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD
01	07.09	05/E9	REVISED & ISSUED	AM	DG

REVISIONS | REFERENCES | DRG. NO.

SECTION: ELECTRICAL

	NAME	DATE	CHKD	DATE
DSGN	AM	05.09	SS	06.09
DRWN	SJ	05.09		

APPROVED

DETAILS OF TEST STATION FOR POLARISATION CELL

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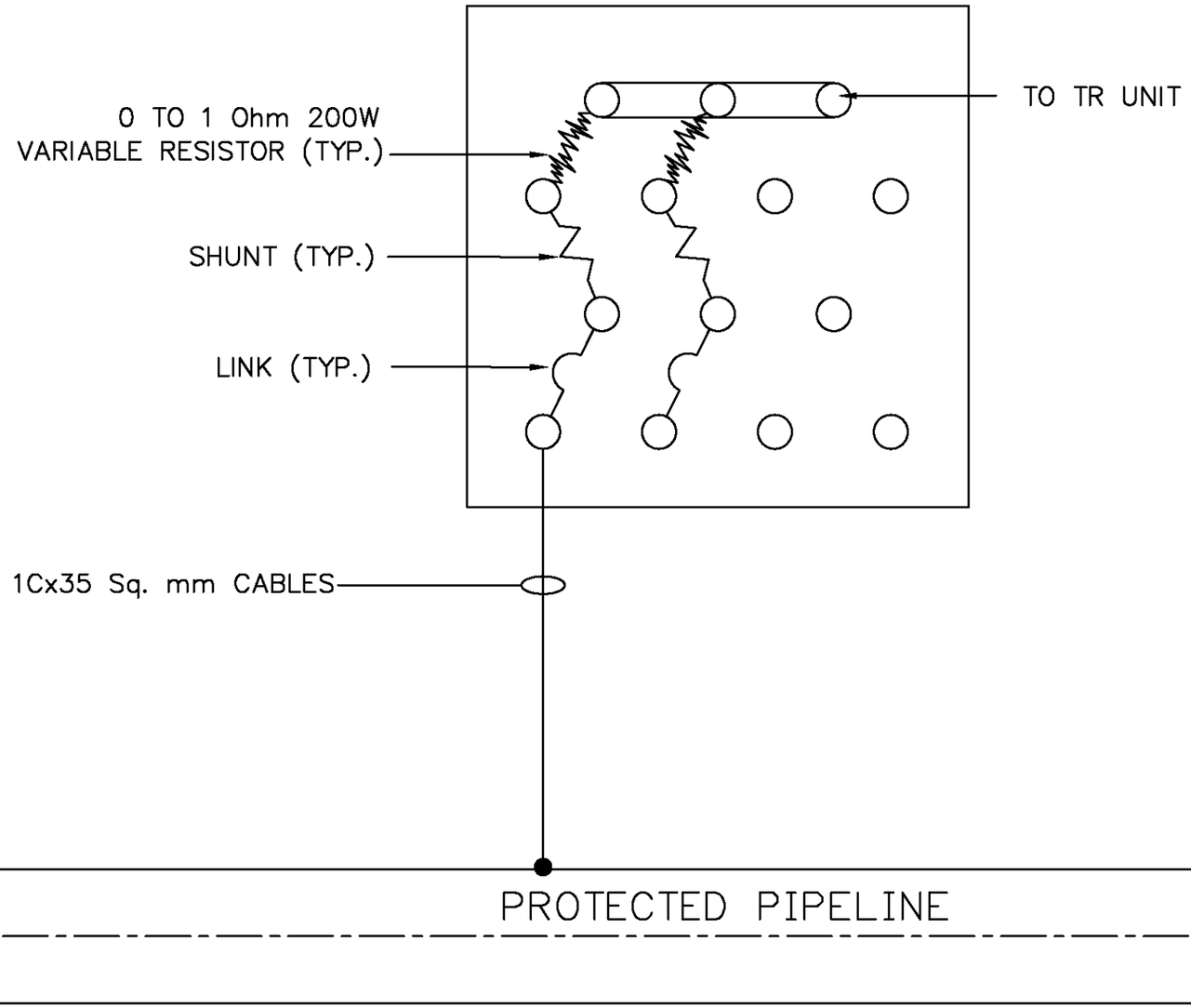
MECON LIMITED

SCALE : N.T.S. | SHEET 2 OF 2 | REV 1

DRG.NO: -MEC/SD/05/E9/E/CP/1614

DRG. NO. MEC/SD/05/E9/E/CP/1616

CATHODE JUNCTION BOX



FOR TENDER PURPOSE

SIGNATURE : DATE :

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MECON LIMITED

NOTES:-

REV/SEC	CONCURRED BY

REV.NO	DATE	ZONE	DESCRIPTION / REVISION	BY	VERIFIED

REFERENCES	DRG.NO.

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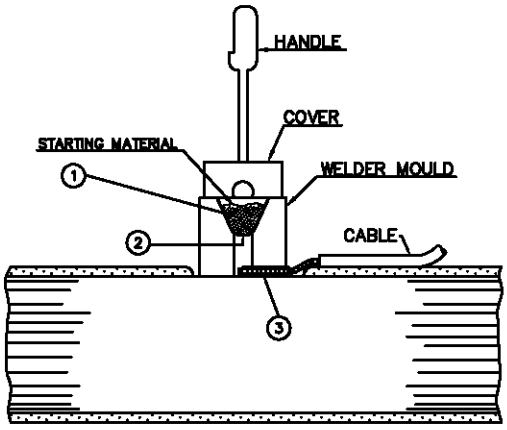
SECTION	CIVIL
LOCATION	DELHI
DESIGNED	AASHISH MOYAL
DRAWN	SUNNY
CHECKED AND VERIFIED	S.S
APPROVED	SIG ------ DATE ------

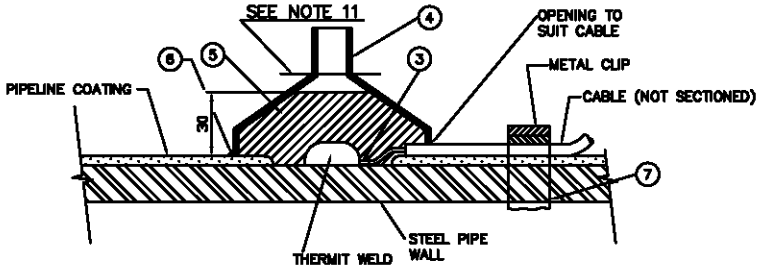
CONNECTION SCHEME FOR HOOKING THROUGH CJB/TEST STATION

SCALE :– NTS | REV 1

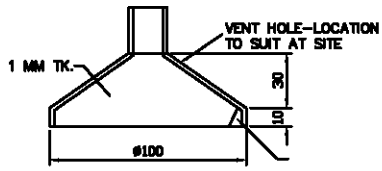
DRG. NO. MEC/SD/05/E9/E/CP/1616



DETAIL – 1
WELDER–CABLE ASSEMBLY



DETAIL – 2
CROSS–SECTION OF FINISHED THERMIT WELD



PVC MOULD CAP
(ITEM 4)

ITEM NO.	DESCRIPTION	QTY.
7	PLASTIC STRAPPING BAND, 12 WIDE WITH METALLIC CLIP	AS REQD.
6	12 WIDE PROTECTIVE ADHESIVE TAPE OR M–SEAL COMPOUND	AS REQD.
5	EPOXY COATING COMPOUND WITH HARDENER	AS REQD.
4	PVC MOULD CAP	1
3	COPPER SLEEVE, ID 5 x OD 6	1
2	METAL DISC	1
1	THERMIT WELD CHARGE	1

BILL OF MATERIALS

NOTES:–

1. REMOVE PIPELINE COATING 45mm X 65mm OR ANY SUITABLE SIZE AS REQUIRED WITH A CUTTING TOOL HAVING CUTTING SURFACE CONTOUR MATCHING THAT OF THE PIPE. EXPOSED AREA OF PIPELINE SHALL BE CLEANED WITH FILE TO BRIGHT STEEL, FREE OF RUST, PAINT, DIRT, GREASE AND MOISTURE.
2. REMOVE APPROXIMATELY 40mm OF INSULATION FROM END OF CABLE. INSTALL COPPER SLEEVE TO SUIT THE CABLE.
3. HOLD MOULD IN A VERTICAL POSITION AND INSERT METAL DISC IN THE BOTTOM OF THE MOULD CAVITY.
4. DUMP THERMIT WELD CHARGE WEIGHING 15g MAX. OR AS SPECIFIED BY MANUFACTURER INTO MOULD, BEING CAREFUL NOT TO UPSET THE METAL DISC. TAP THE MOULD TO LOOSEN STARTING MATERIAL.
5. POSITION WELDER OVER EXPOSED AREA OF PIPELINE AND INSERT CABLE UNDER MOULD. PACK CABLE AND MOULD WITH PACKING MATERIAL, IF NECESSARY.
6. PLACE IGNITOR AT OPENING OF MOULD AND APPLY SPARK WHICH WILL IGNITE WELD CHARGE. WITHDRAW IGNITOR QUICKLY TO PREVENT FOULING.
7. AFTER WELDER HAS BEEN IGNITED, HOLD WELDER IN PLACE FOR 15 SECONDS. THEN REMOVE WELDER.
8. LIGHTLY TAP THERMIT WELD WITH HAMMER TO REMOVE SLAG AND TEST WELD FOR GOOD BOND. CLEAN THE WELD.
9. REMAKE THE THERMIT WELD, IF FOUND DEFECTIVE.
10. PLACE PVC MOULD CAP OVER THE THERMIT WELD. SEAL CAP WITH ADHESIVE TAPE AROUND PVC MOULD. FILL THE MOULD WITH EPOXY COATING COMPOUND.
11. CUT OFF THE STEM OF PVC MOULD CAP.
12. ANY OTHER SUITABLE COATING MATERIAL TO COVER THERMIT WELD AND ALL EXPOSED COPPER WITHOUT ANY VOID MAY BE USED IN PLACE OF ITEMS 4, 5 & 6 OF BILL OF MATERIALS. THE COATING PATCH MUST OVERLAP EXISTING PIPELINE COATING AND INSULATION ON WIRE.
13. ALL DIMENSIONS ARE APPROXIMATE AND CAN VARY SLIGHTLY.
14. ALL DIMENSIONS ARE IN mm.

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD
01	07.09	05/E9	REVISED & ISSUED	AM	DG

REVISIONS | REFERENCES | DRG. NO.

SECTION: ELECTRICAL

	NAME	DATE	CHKD	DATE
DSGN	AM	05.09	SS	06.09
DRWN	SJ	05.09		

APPROVED

DETAILS OF THERMIT WELD FOR CABLE TO PIPE JOINT

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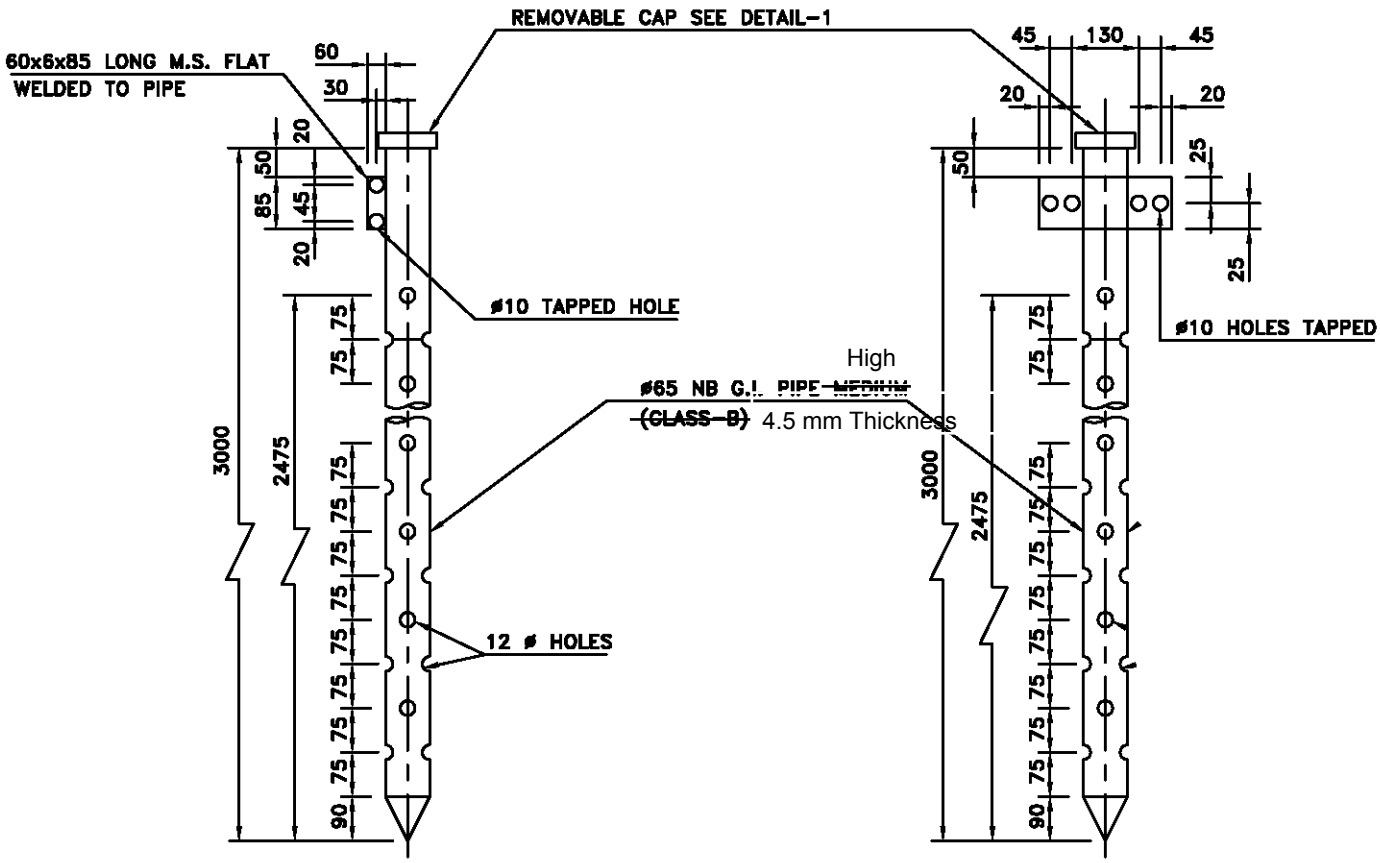
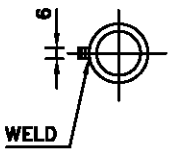
MECON LIMITED

SCALE : N.T.S.

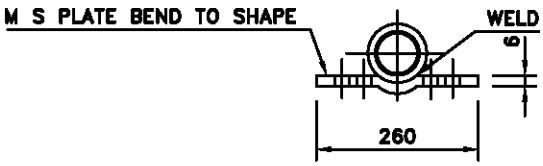
REV 1

DRG.NO: –MEC/SD/05/E9/E/CP/1618

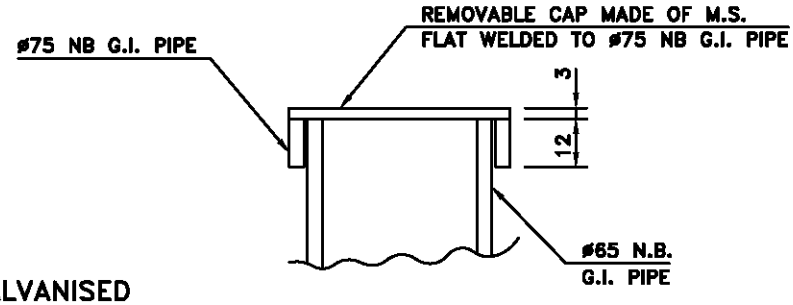




TYPE-1



TYPE-2



DETAIL-1

NOTES:-

1. THE PIPE SHALL BE HOT DIP GALVANISED AFTER FABRICATION
2. UNLESS STATED OTHERWISE ON PLAN DRAWINGS, ONLY TYPE 2 SHALL BE USED.

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD	REFERENCES	DRG. NO.
			REVISIONS				

SECTION: ELECTRICAL				
	NAME	DATE	CHKD	DATE
DSGN				
DRWN				
APPROVED				

ELECTRODE FOR EARTHING SYSTEM

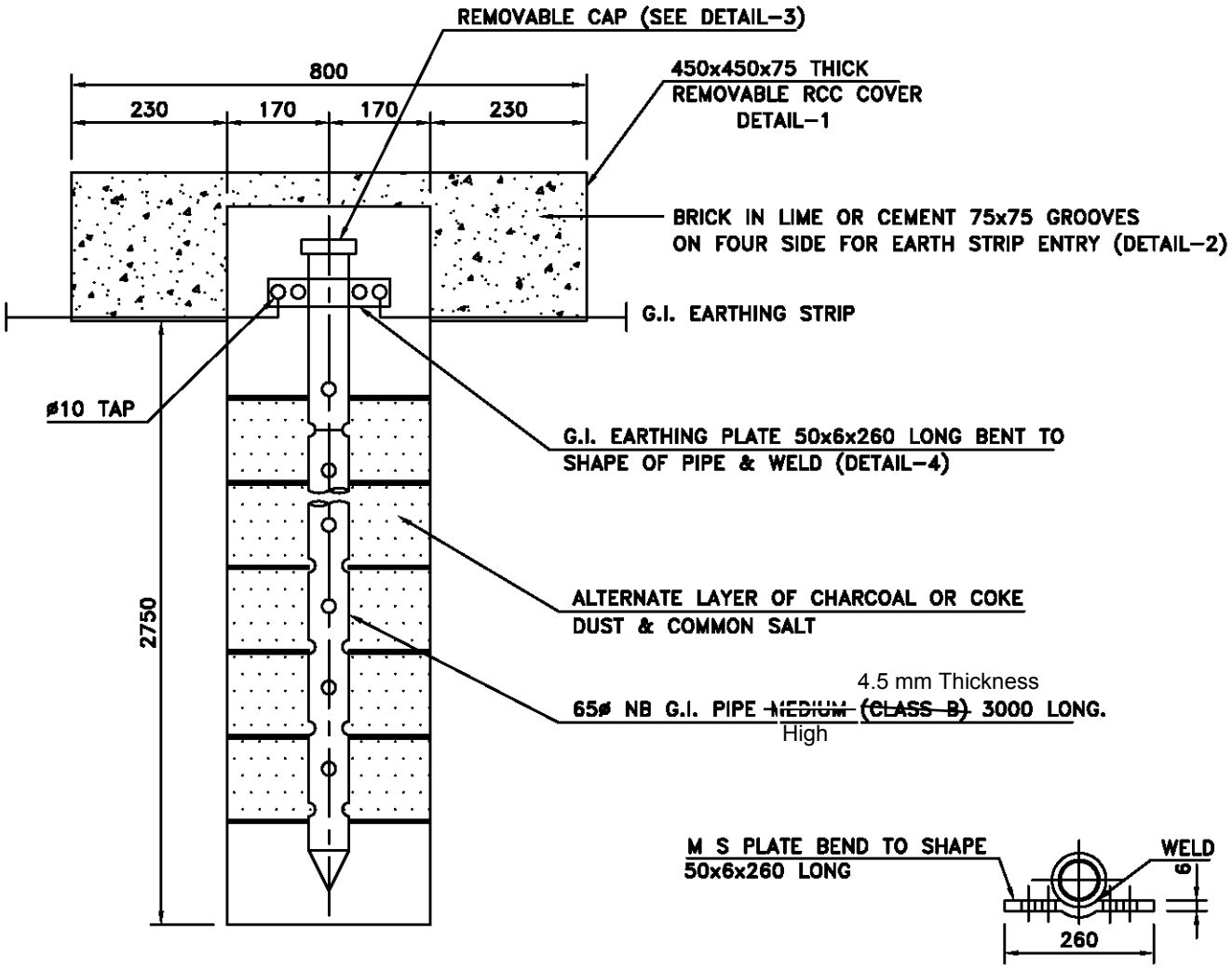
मेकॉन लिमिटेड

MECON LIMITED

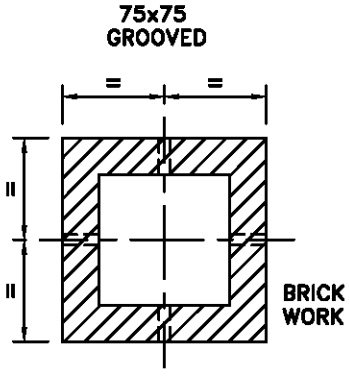
SCALE : N.T.S.

DRG.NO MEC/SD/05/26/23/01

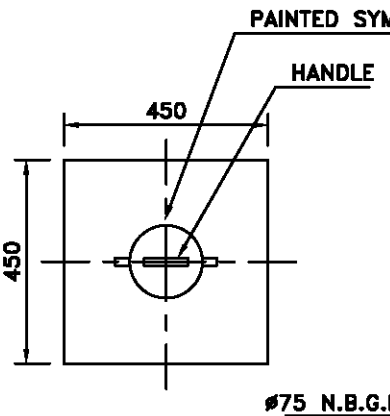
REV 0



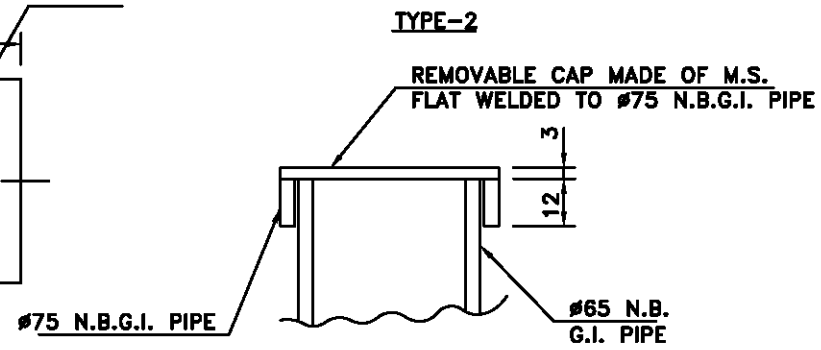
DETAIL 4



DETAIL–2



DETAIL–1



DETAIL–3

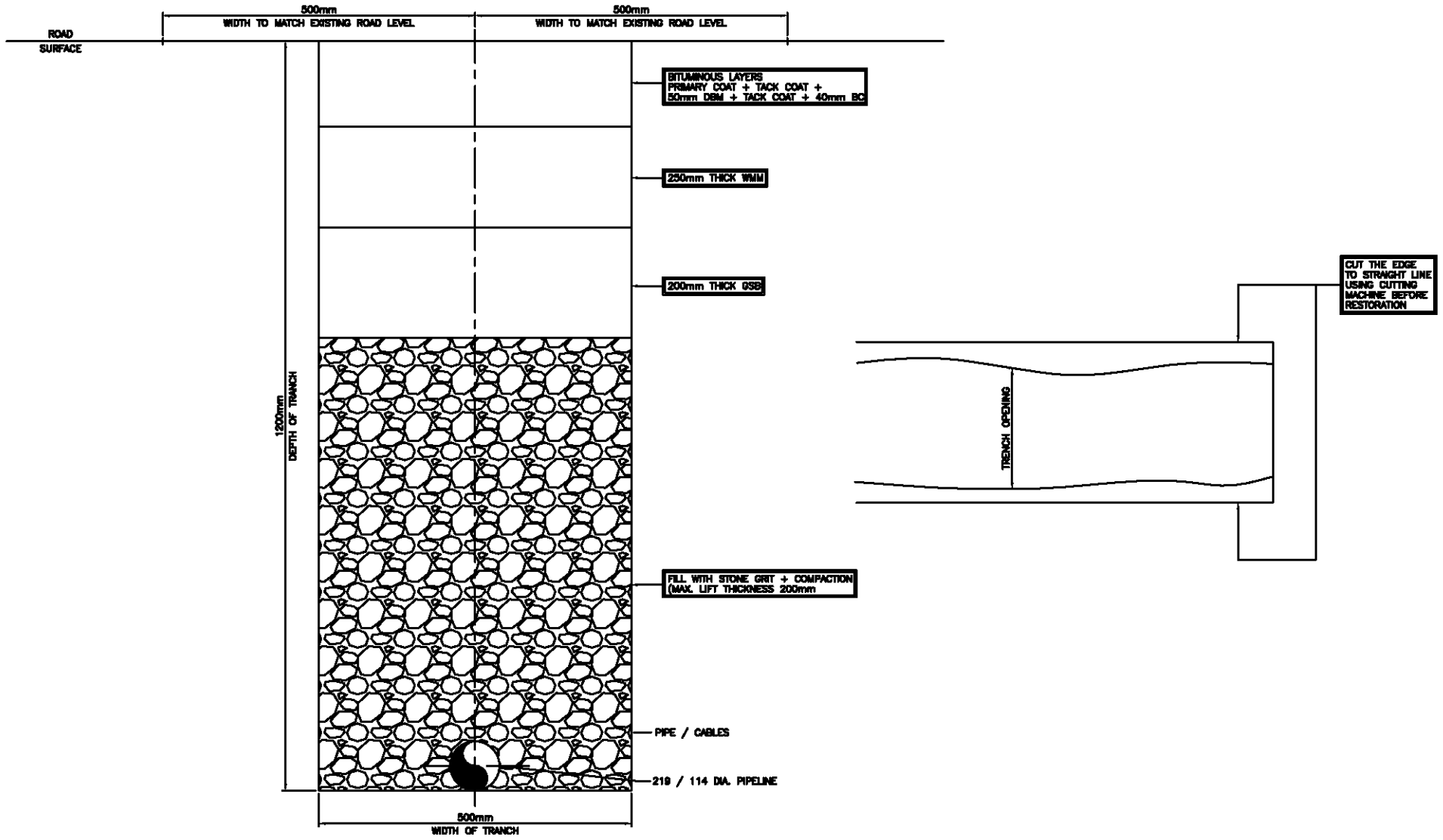
NOTES:–

1. PIPE ASSEMBLY SHALL BE HOT DIP GALVANISED AFTER FABRICATION.

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD	REFERENCES	DRG. NO.
			REVISIONS				

SECTION: ELECTRICAL					EARTH ELECTRODE IN TEST PIT	मेकॉन लिमिटेड MECON LIMITED
	NAME	DATE	CHKD	DATE		
DSGN						
DRWN						
APPROVED						SCALE : N.T.S.
						DRG.NO MEC/SD/05/26/23/02
						REV 0

CIVIL DRAWINGS



NOTES:

1) ALL DIMENSIONS ARE IN MM & LEVELS ARE IN METERS.
2) ROAD SURFACE DIMENSIONS ARE TO BE VERIFIED.
3) WATER AND SEWERAGE SCHEME SHALL ALWAYS HAVE TO INTERACT AS PER APPLICABLE GOVERNING AUTHORITIES REQUIREMENTS IN RESPECTIVE AREA.
4) THE LEVEL SHOWN ABOVE ARE THE EXISTING ROAD TOP WHERE EVER APPLICABLE.

CONCURRED BY.

REV.No.	DATE	MADE	DESCRIPTION	BY	VERIFIED

REVISION

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ENGINEERING CONSULTANT	
DIVISION	M & C
DESIGNED	VIJAY
DRAWN	MOHAMMED
CHECKED & VERIFIED	VIJAY
APPROVED	B.K. BEHRA
DATE	06/01/2017

मेकॉन लिमिटेड
MECON LIMITED
CITY GAS DISTRIBUTION NETWORK IN TUMKUR & GOKAK

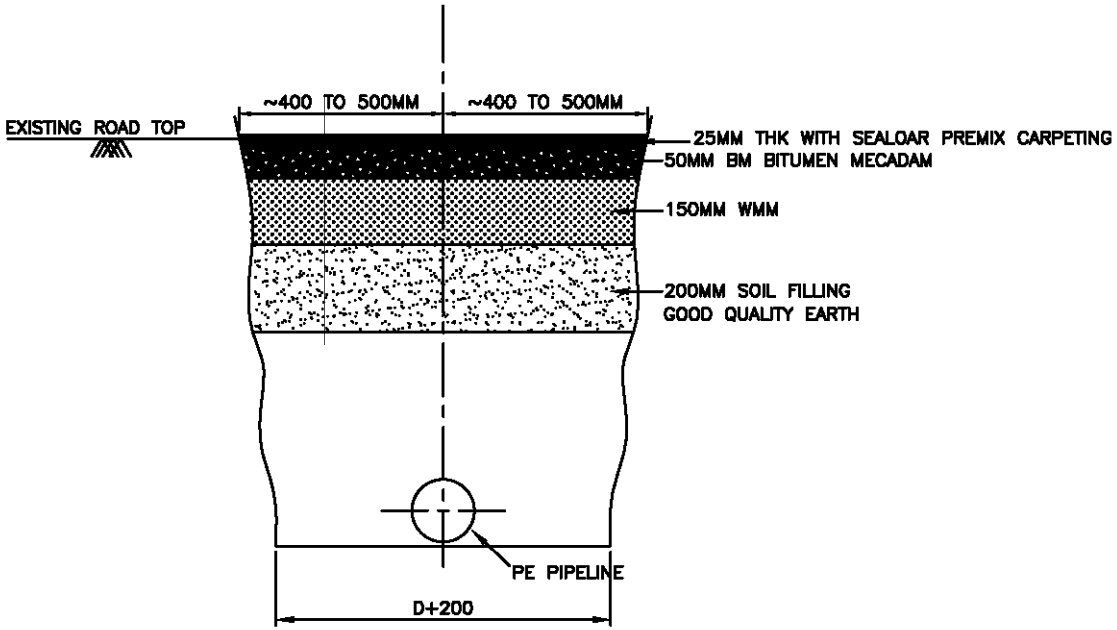
STANDARD DETAILS OF RESTORATION OF MAJOR ROADS (NHAI etc.)

SCALE : | SHEET 1 OF 1

DRG. NO.: MEC/TTF/01/11/DS/ST/LY/0211/R00

NOTES:–

1. ALL DIMENSIONS ARE IN mm & LEVELS ARE IN METRE.
2. ONLY FIGURED DIMENSIONS ARE TO BE FOLLOWED.
3. THESE ARE INDICATIVE SCHEME ONLY. ACTUAL WORK TO FOLLOW AS PER CPWD/PWD CONCERNED AUTHORITIES REQUIREMENTS IN RESPECTIVE AREA.
4. TOP LEVEL SHOULD MATCH WITH THE EXISTING ROAD TOP WITH OVERLAP.



ASPHALT ROAD

FOR TENDER PURPOSE ONLY

CONCURRED BY.

REV.No.	DATE	MADE	DESCRIPTION	BY	VERIFIED

REVISION

DRG NO

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ENGINEERING CONSULTANT	
DIVISION	M & C
DESIGNED	K.P.NARAYANAN
DRAWN	S KARTHIK
CHECKED & VERIFIED	MANOJ KUMAR
APPROVED	B.K.SHAA
DATE	15.12.2016

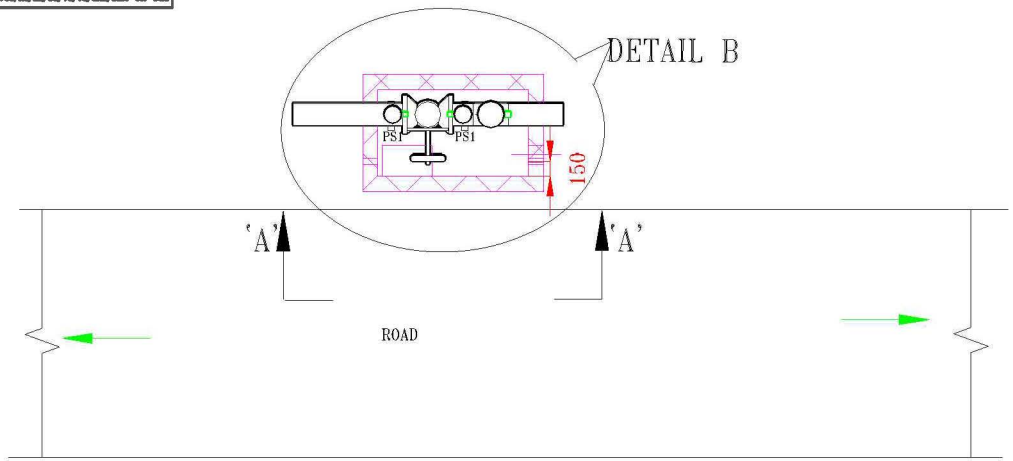
मेकॉन लिमिटेड
MECON LIMITED

CITY GAS DISTRIBUTION WORK

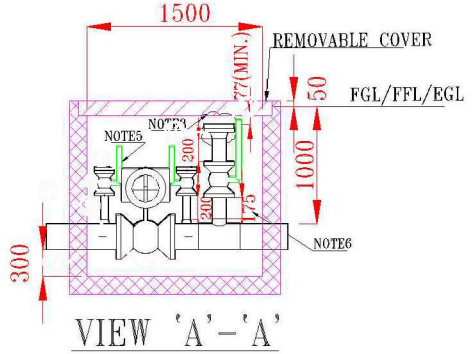
STD. DETAILS OF RESTORATION OF ROADS

SCALE : NTS | SHEET 1 OF 1

DRG. NO :MEC/TTF/01/31/DS/PE/LY/013/R0/A3



PLAN



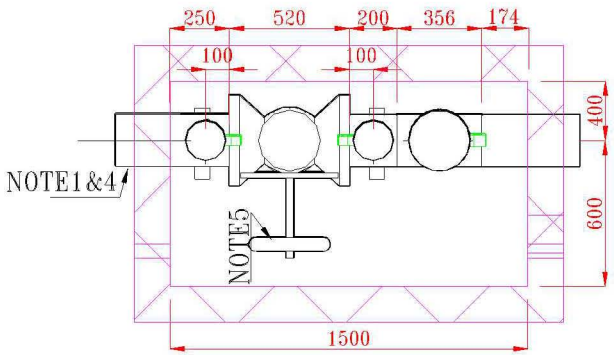
VIEW 'A'–'A'

NOTES:1). THE TAPOFF/BRANCH CONNECTION SHALL BE INSTALLED AFTER HYDRO-TESTING, DE-WATERING & DRYING OF THE PIPELINE.
NOTES:2). THE VALVE PIT SHALL BE CONSTRUCTED SUIT TO SITE DEPENDING UPON THE PLACE AVAILABLE FOR CONSTRUCTION OF VALVE PIT.
NOTES:3). PIPELINE OF 50MM TO BE CUT ALONG WITH WELDNECK FLANGE &BLIND FLANGES TO BE REMOVED DURING HOOK UP OF THE FUTURE TAPPING ALONG WITH PIPELINE FOR DRS/CNG CONNECTION.

4) ALL THE FITTINGS,PIPES& VALVES INSIDE VALVE PIT SHALL BE PAINTED WITH ZINC SILICATE PRIMER & 3 COATS OF HIGH BUILD COAL TAR EPOXY COATING (TOTAL 500 MICRON MIN. DFT.) INLINE WITH TS.

5) THE VALVE HANDLE & HAND WHEEL POSITION WHILE OPERATING THE VALVE DURING OPENING & CLOSING OF THE VALVE SHALL BE AS SPECIFIED IN VIEW-A & PLAN.

6) 200mm PIPE PIECE SUPPLIED ALONG WITH VALVE. THE PIPE PIECE LENGTH TO BE CUT TO 175mm WITH GRINDING MACHINE.



DETAIL-B

*VALVES ARE SUPPLIED ALONG WITH 200mm PIPE PIECES.

MATERIAL LIST			
PART NO.	QUANTITY	SIZE	DESCRIPTION
1	~	6"	PIPE, API 5L GR.X42/X65
2	0.2m	4"	PIPE, API 5L GR.X42/X65
3	*	2"	PIPE, A106 Gr.B
4	1	6"*	BALL VALVE, BW,#300
5	1	4"*	DBBV BALL VALVE, BW,#300, (SAP MATERIALCODE 4350010011)
6	2	2"*	BALL VALVE, ONE SIDE FLANGED OTHER SIDE BW,#300
7	1	6"x4"	TEE, B16.9, SCH 40 X 6.4mm
8	2	6"x2"	WELDOLET
10	1	4"	WNRF FLANGE,#300
11	1	4"	BLIND FLANGE,#300
12	2	2"	BLIND FLANGE,#300
13	1	4"	GASKET, 300LB, 1/8" THK, SPIRAL WOUND METALLIC,DIME. STD:B16.20
14	2	2"	GASKET, 300LB, 1/8" THK, SPIRAL WOUND METALLIC,DIME. STD:B16.20

SUBMITTED FOR:
PRELIM./PLANNING ✓ APPROVAL | INFORMATION | CONSTRUCTION

CONCURRED BY.

REVISION

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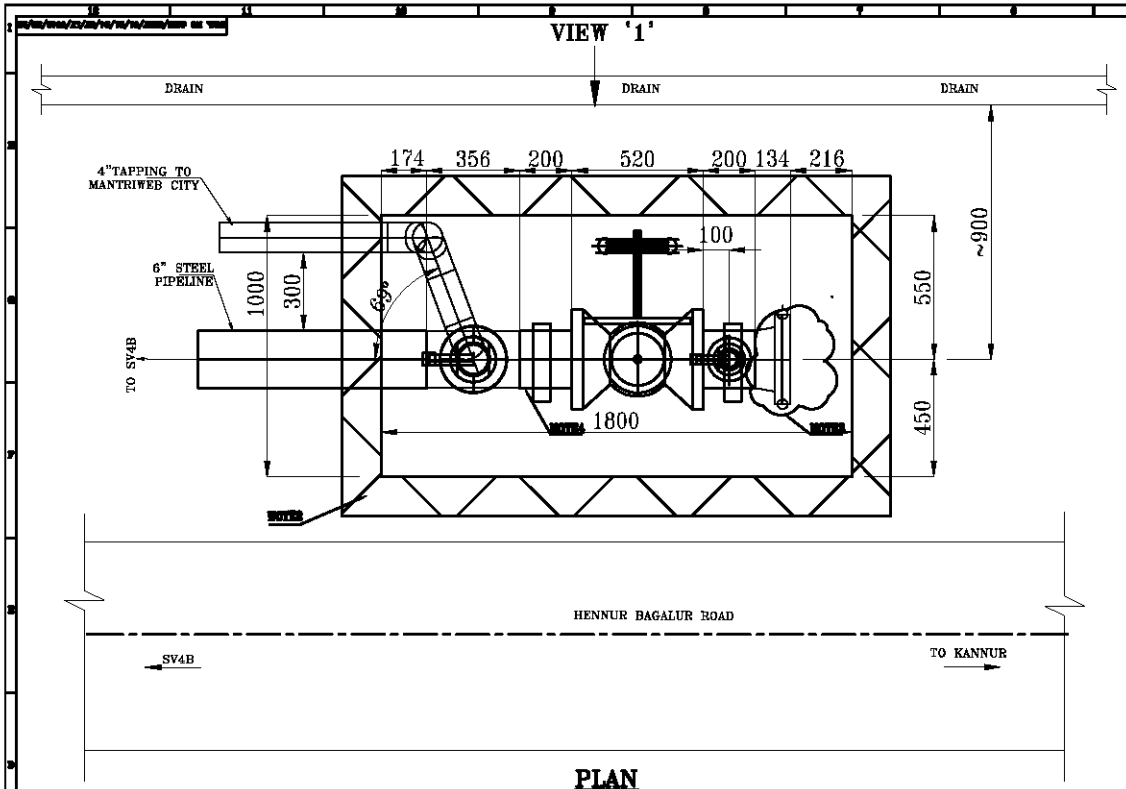
ENGINEERING CONSULTANT	मेकॉन लिमिटेड MECON LIMITED
DIVISION	M & C
DESIGNED	VANI
DRAWN	S KARTHIK
CHECKED & VERIFIED	MANOJ KUMAR
APPROVED	B.K.BEHRA
DATE	12/05/2017

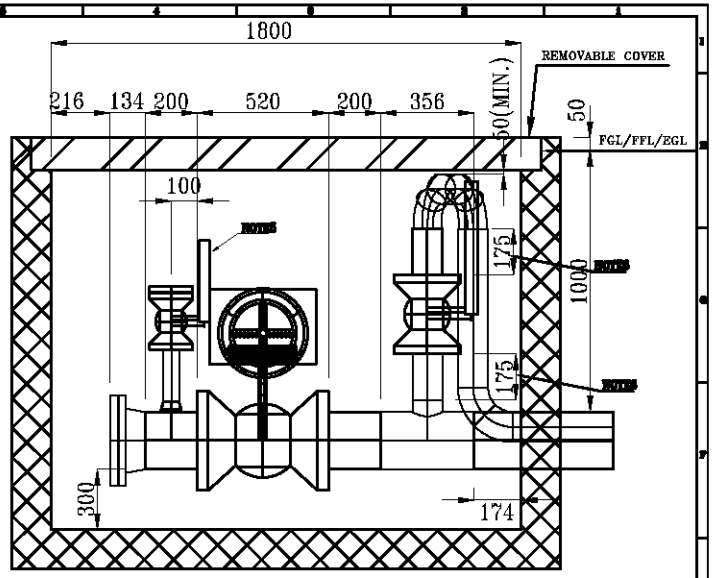
CITY GAS DISTRIBUTION WORK

DETAILS OF SV1

SCALE : NTS | SHEET 1 OF 1

DRG. NO :MEC/TTP/01/31/D9/ST/LY/0044/R1/A3





VIEW '1'

*VALVES ARE SUPPLIED ALONG WITH 200mm PIPE PIECES.

MATERIAL LIST			
PART NO.	QUANTITY	SIZE	DESCRIPTION
1	~	6"	PIPE, API 5L GR.X42/X65
2	0.2m	4"	PIPE, API 5L GR.X42/X65
3	~	2"	PIPE, A106 Gr.B
4	1	6"*	BALL VALVE, RW,#300
5	1	4"*	BUTT BALL VALVE, RW,#300, (BAP MATERIALCODE 4000218041)
6	1	2"*	BALL VALVE, ONE SIDE FLANGED OTHER SIDE BW,#300
7	1	6"x4"	TEE, B16.9, SCH 40 X 6.4mm
8	1	6"x2"	WELDOLET
10	1	4"	WNRF FLANGE,#300
11	1	4"	BLIND FLANGE,#300
12	1	2"	BLIND FLANGE,#300
13	1	4"	GASKET, 300LB, 1/8" THK, SPIRAL WOUND METALLIC,SS316,GR
14	1	2"	GASKET, 300LB, 1/8" THK, SPIRAL WOUND METALLIC,SS316,GR

NOTES:1). THE TAPOFF/BRANCH CONNECTION SHALL BE INSTALLED AFTER HYDRO-TESTING, DE-WATERING & DRYING OF THE PIPELINE.
NOTES:2). THE VALVE PIT SHALL BE CONSTRUCTED SUIT TO SITE DEPENDING UPON THE PLACE AVAILABLE FOR CONSTRUCTION OF VALVE PIT.
NOTES:3). PIPELINE OF 50MM TO BE CUT ALONG WITH WELDNECK FLANGE & BLIND FLANGES TO BE REMOVED DURING HOOK UP OF THE FUTURE PIPELINE.

4) ALL THE FITTINGS,PIPES& VALVES INSIDE VALVE PIT SHALL BE PAINTED WITH ZINC SILICATE PRIMER & 3 COATS OF HIGH BUILD COAL TAR EPOXY COATING (TOTAL 500 MICRON MIN. DFT.) INLINE WITH TS.

5) THE VALVE HANDLE & HAND WHEEL POSITION WHILE OPERATING THE VALVE DURING OPENING & CLOSING OF THE VALVE SHALL BE AS SPECIFIED IN VIEW-A & PLAN.

6) 200mm PIPE PIECE SUPPLIED ALONG WITH VALVE. THE PIPE PIECE LENGTH TO BE CUT TO 175mm WITH GRINDING MACHINE.

SUBMITTED FOR:

CONCURRED BY.

REVISION

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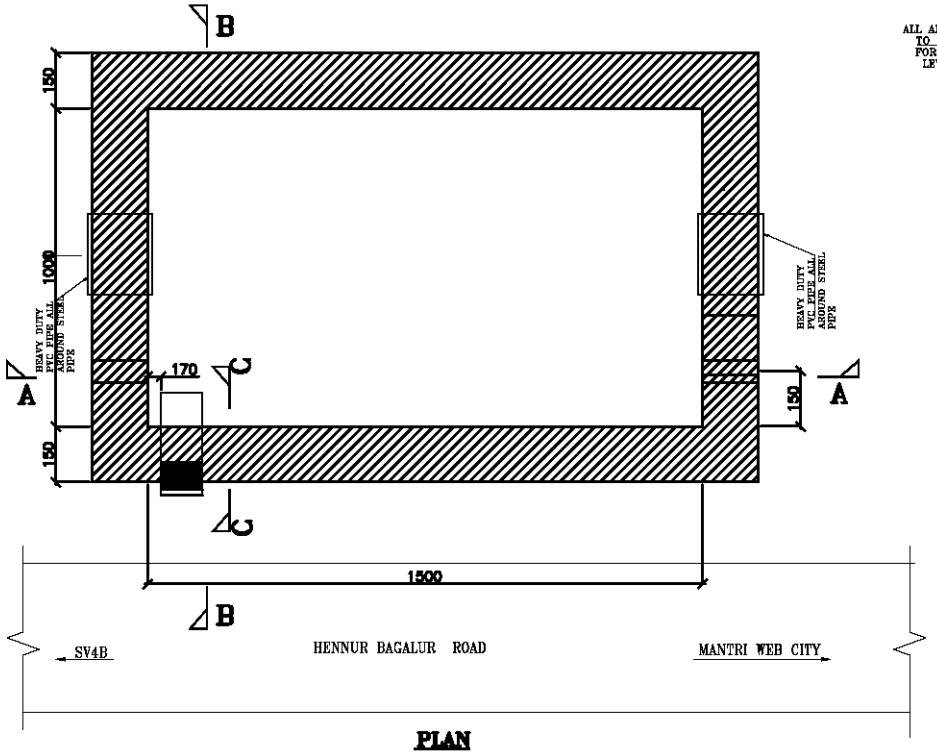
ENGINEERING CONSULTANT	
DIVISION	M & C
DESIGNED	VANI
DRAWN	VANI
CHECKED & VERIFIED	MANOJ
APPROVED	B.K. BERA
DATE	12/06/2017

मेकॉन लिमिटेड
MECON LIMITED
CITY GAS DISTRIBUTION WORK AT BANGALORE
DETAILS OF SV2
SCALE : NTS
SHEET 1 OF 1
DRG. NO :MEC/TTP/01/31/24/ST/LY/0046/RE/A3

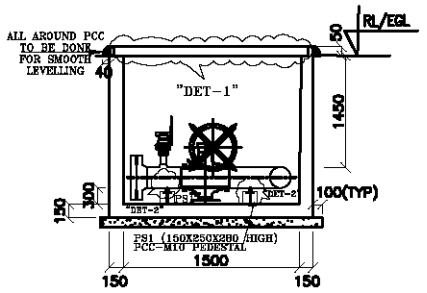
DRG.NO:MEC/TYP/01/11/D4/PE/DR/0846/A3

GRADE OF CONCRETE M-25
GRADE OF STEEL Fe-500

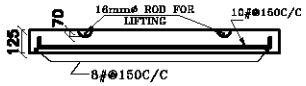
CONCRETE QTY. M^3	
RCC	2.0
PCC	0.5



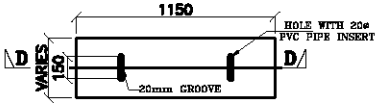
PLAN



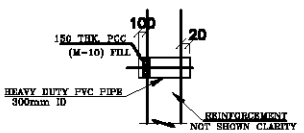
VIEW A-A
(SHUTTERING)



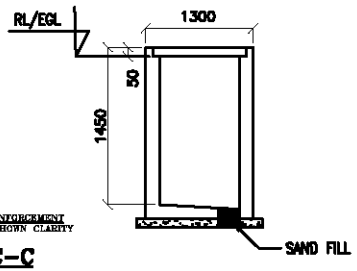
SECTION D-D



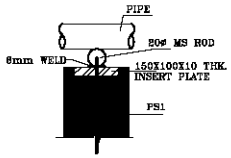
PLAN OF PRECAST COVER SLAB



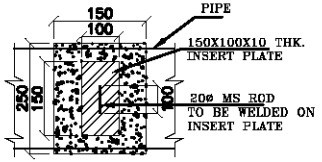
SECTION C-C



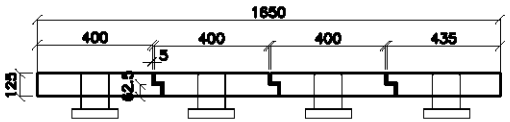
VIEW B-B
(SHUTTERING)



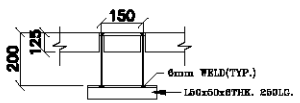
DETAIL-2



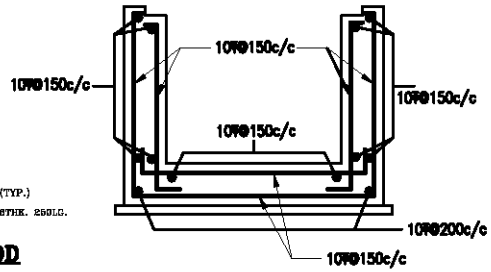
PS1



DETAIL-1



ø16mm LIFTING ROD
(TYP.)



VIEW A-A
(REINFORCEMENT)

SUBMITTED FOR:

MODEL/DRAWING	APPROVAL	INFORMATION		CONSTRUCTION ✓

NOTES:
1. ALL DIMENSIONS ARE IN MM. UNLESS OTHERWISE SPECIFIED.
2. CLEAR COVER TO MAIN REINFORCEMENT SHALL BE
a) FOR SLAB=20MM.

CONSULTED BY:

REVISION

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ENGINEERING CONSULTANT	
SECTION	CIVIL
LOCATION	BANGALORE
DESIGNED	HMV
DRAWN	S.SARANRAJ
CHECKED & VERIFIED	P.S
APPROVED	K.N. RAJU
DATE	DGM(I/C)

MECON LIMITED

CITY GAS DISTRIBUTION WORK AT BANGALORE

RCC VALVE PIT NEAR SV1

DETAILS OF SV1

(SHUTTERING & RCC DETAILS)

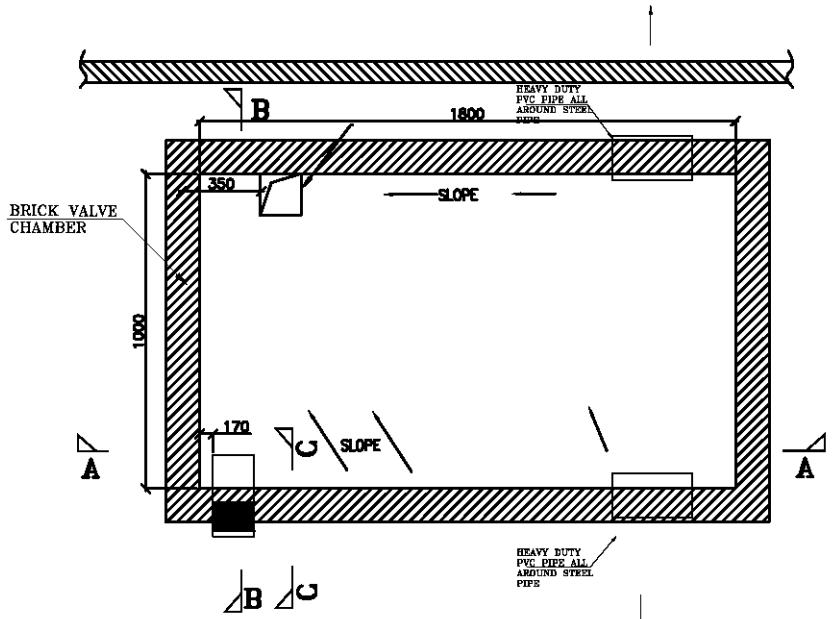
SCALE-1:50 | SHEET 1 OF 1

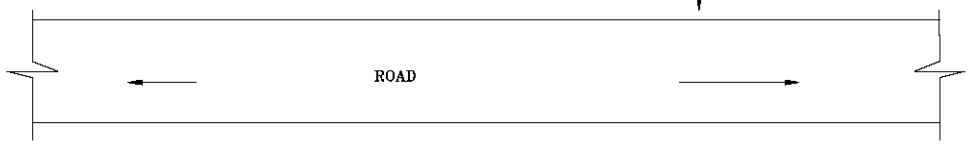
DRG.NO:MEC/TYP/01/11/D4/PE/DR/0846/A3 | R0

DRG.NO:MEC/TYP/01/11/04/PE/DR/0847/A3

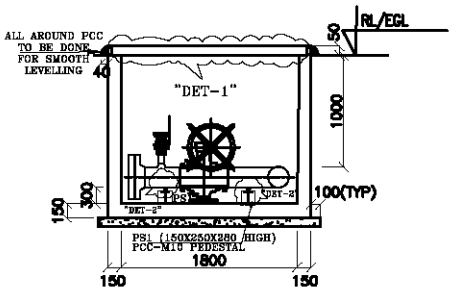
GRADE OF CONCRETE M-25
GRADE OF STEEL Fe-500

CONCRETE QTY. M^3	
RCC	2.0
PCC	0.5

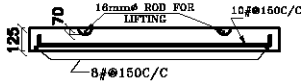




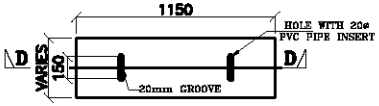
PLAN OF SV-2



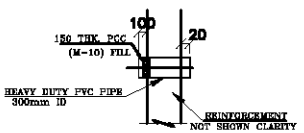
VIEW A-A
(SHUTTERING)



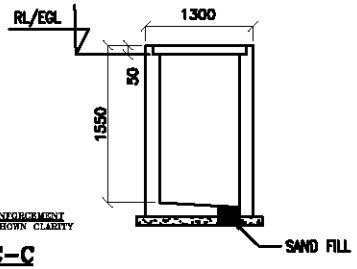
SECTION D-D



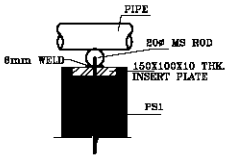
PLAN OF PRECAST COVER SLAB



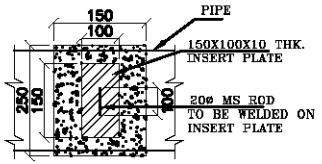
SECTION C-C



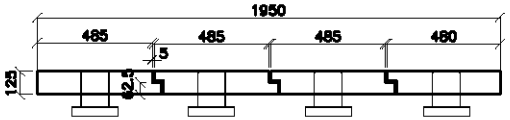
VIEW B-B
(SHUTTERING)



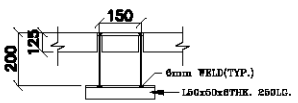
DETAIL-2



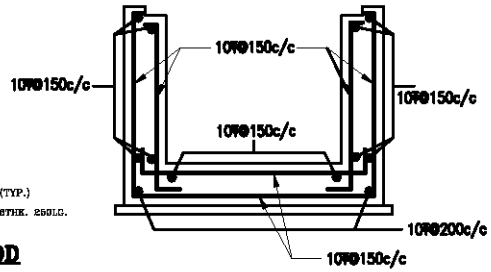
PS1



DETAIL-1



ø16mm LIFTING ROD
(TYP.)



VIEW A-A
(REINFORCEMENT)

SUBMITTED FOR:

SECTION	CIVIL
LOCATION	BANGALORE
DESIGNED	HMV
DRAWN	S.SARANRAJ
CHECKED & VERIFIED	P.S
APPROVED	K.N RAJU
DATE	DGM(I/C)

MECON LIMITED

CITY GAS DISTRIBUTION WORK AT BANGALORE

RCC VALVE PIT NEAR TPS

DETAILS OF SV2

(SHUTTERING & RCC DETAILS)

SCALE-1:50 | SHEET 1 OF 1

DRG.NO:MEC/TYP/01/11/04/PE/DR/0847/A3 | R0

NOTES:
1. ALL DIMENSIONS ARE IN MM. UNLESS OTHERWISE SPECIFIED.
2. CLEAR COVER TO MAIN REINFORCEMENT SHALL BE
a) FOR SLAB-40MM.

CONSIDERED BY:

REVISION

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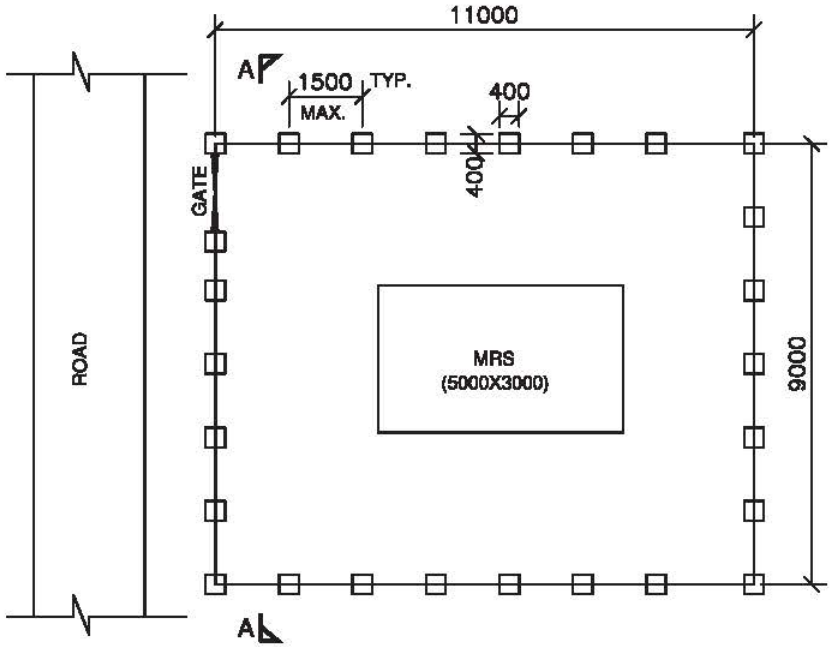
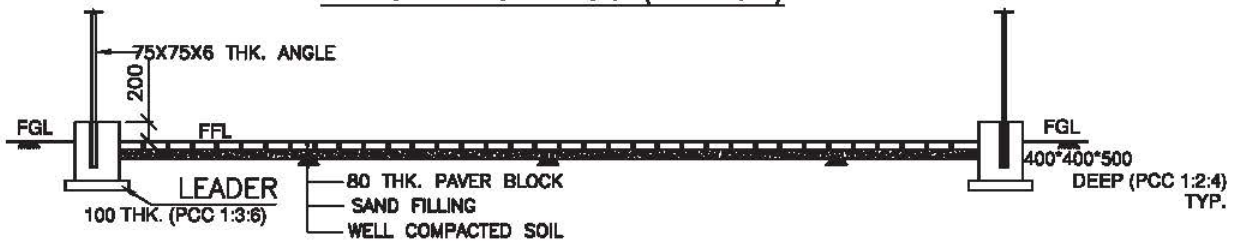
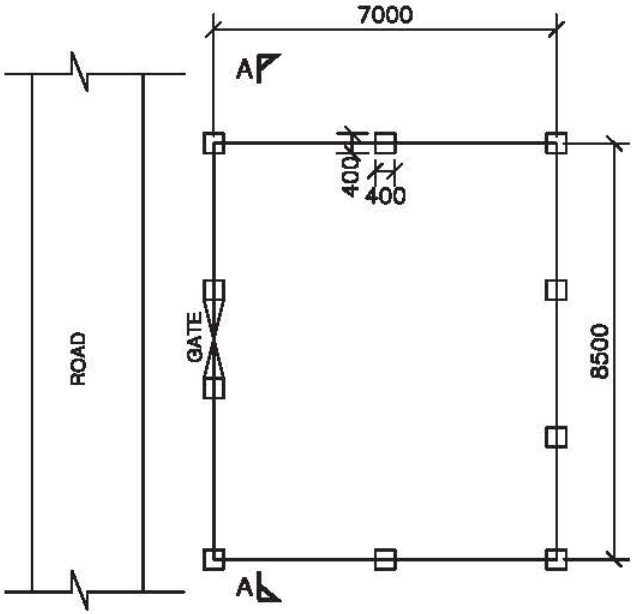


TYPICAL MRS LAY OUT(11M X9M)

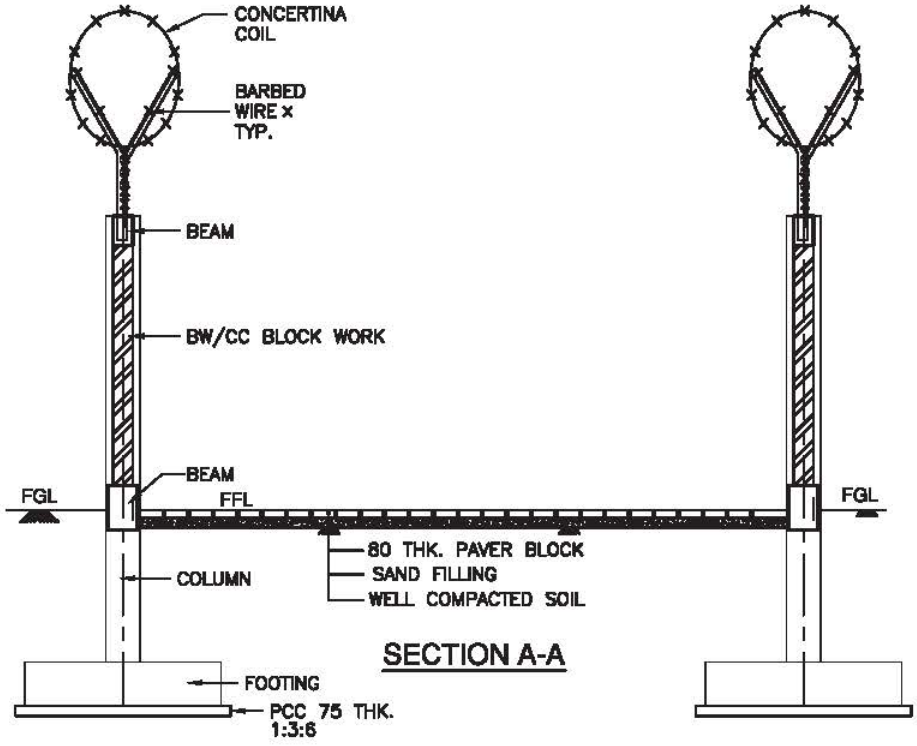


SECTION A-A

FOR TENDER PURPOSE ONLY

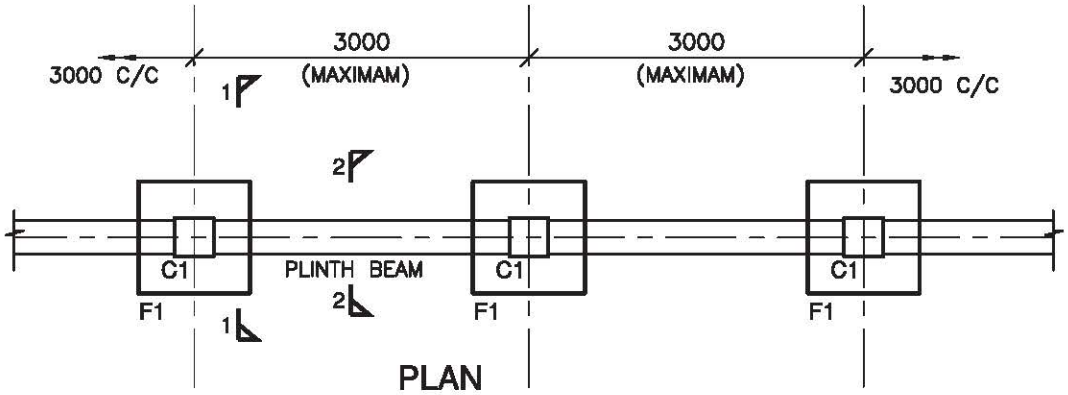


TYPICAL SV STATION LAY OUT(8.5M X 7M)

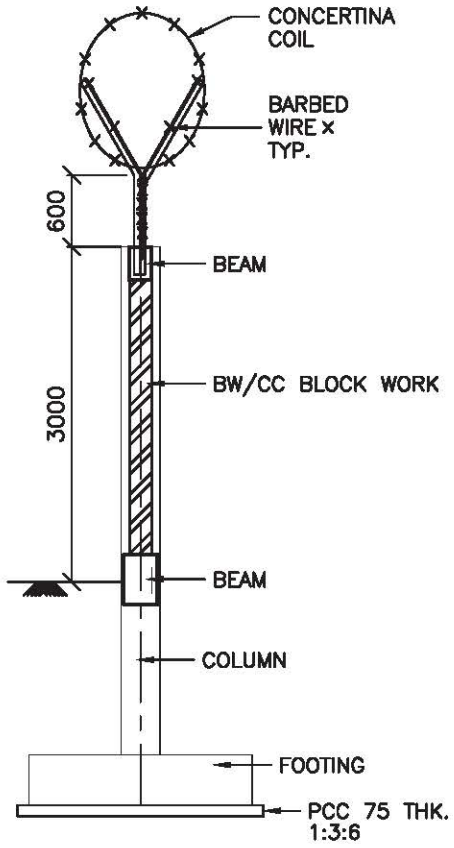


SECTION A-A

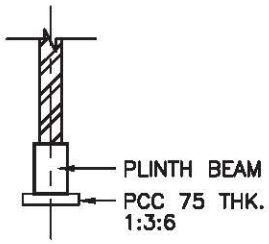
FOR TENDER PURPOSE ONLY



PLAN



SECTION 1-1



SECTION 2-2

TENDER PURPOSE ONLY

NOTES.

1. ALL DIMENSIONS ARE IN MM. UNLESS OTHERWISE SPECIFIED.
2. GRADE OF RCC M25.

I&PC	M&C								
CONCURRED BY.			REV.No.	ZONE	DATE	DESCRIPTION OF REVISIONS		BY	APPRD.

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	NAME	LOCATION:BANGALORE
DESIGNED	P.S	SECTION : CIVIL
DRAWN	H.S	SCALE : NTS
CHECKED & VERIFIED	SIG. P.S	SHEET NO. 1 of 1
APPROVED	SIG. & DATE	
	NAME: K.N RAJU(DGM)	

BANGALORE

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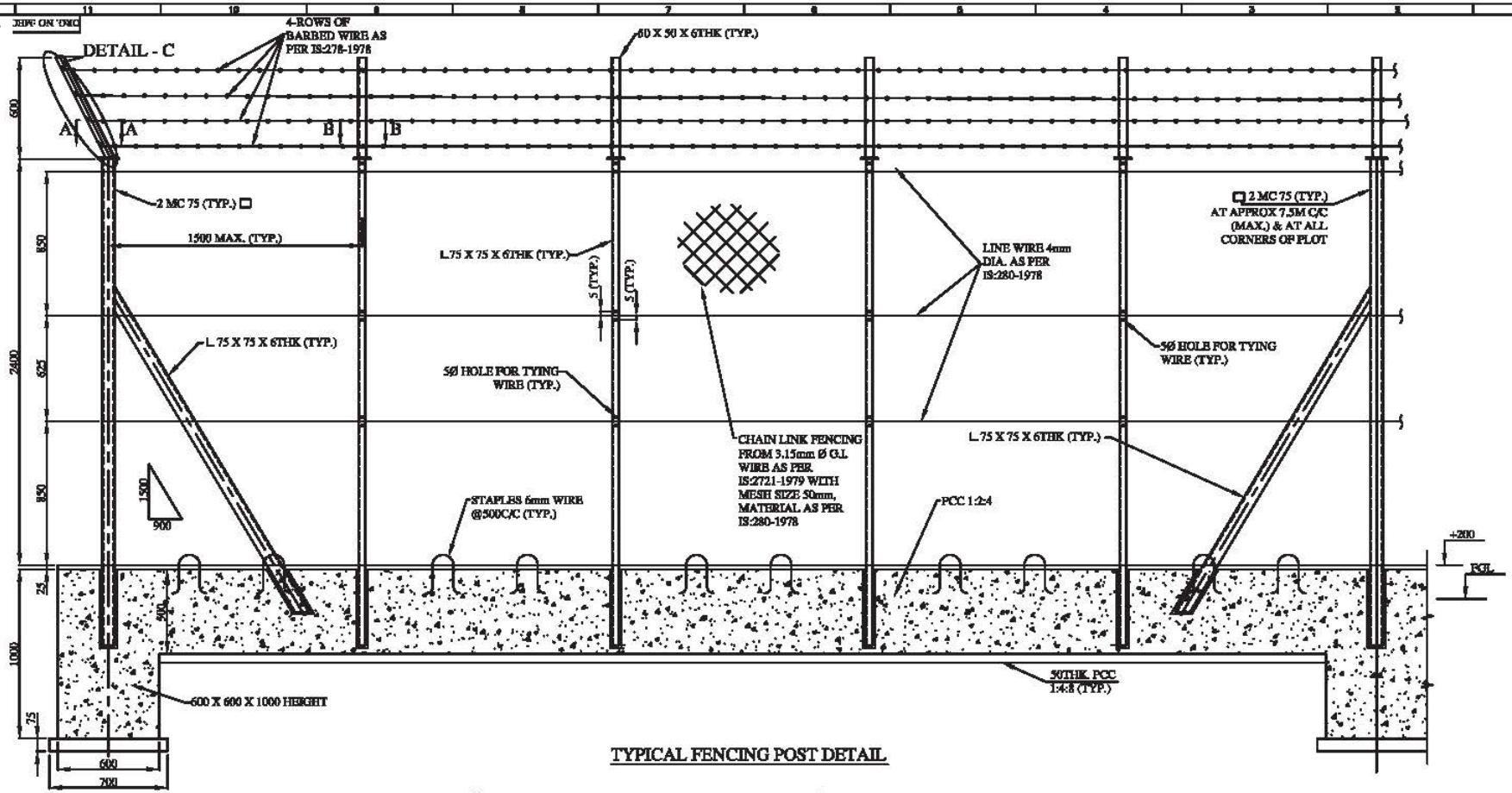
MECON LIMITED

GAIL GAS LIMITED

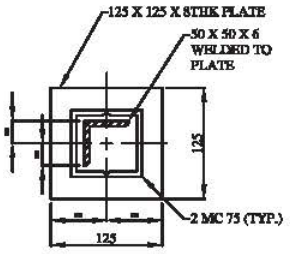
CITY GAS DISTRIBUTION WORK

TYPICAL DETAIL OF COMPOUND WALL

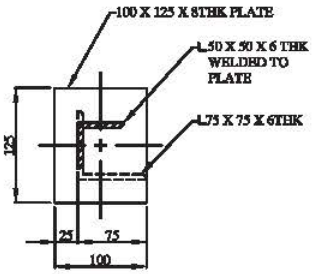
DRG.NO:MEC/TYP /01/11/D2/ST/LY/0208 REV – 0



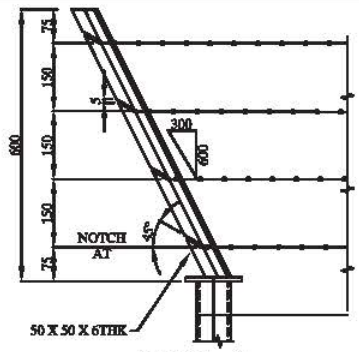
TYPICAL FENCING POST DETAIL



SECTION A-A



SECTION B-B



DETAIL - C

SUBMITTED FOR:							
FIELD/PLANNED	✓	APPROVAL		INFORMATION		CONSTRUCTION	

NOTE:
1) ALL DIMENSIONS ARE IN MM.

CONCURRED BY.

REV./MOD.	DATE	SIGN.	DESCRIPTION	BY	VERIFIED

REVISION

REFERENCES — DRG NO

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ENGINEERING CONSULTANT	
DIVISION	CIVIL
DESIGNED	PS
DRAWN	HS
CHECKED & VERIFIED	PS
APPROVED	K.N RAJU
DATE	26/08/2015

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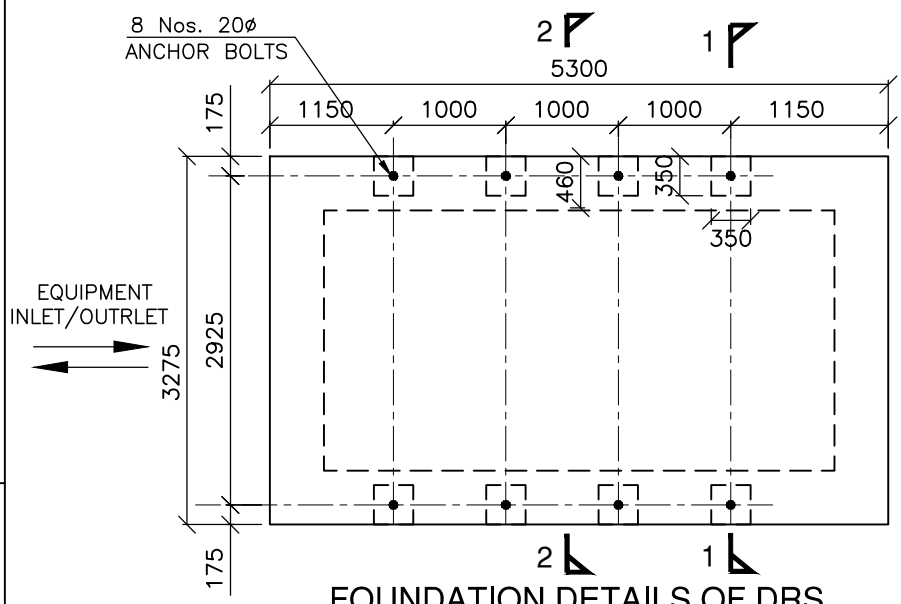
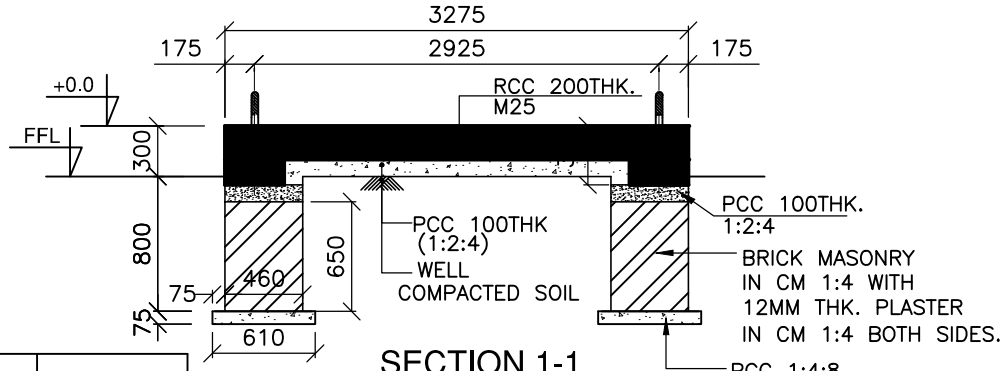
MECON LIMITED
CITY GAS DISTRIBUTION WORK
TYPICAL DETAILS OF CHAINLINK FENCING
SCALE : NTS
SHEET 1 OF 1
DRG. NO :MEC/ TYP 01/11/D2/ST/LY/0209/R00

CAPACITY= 5000 SCMH
OPERATING WEIGHT=10.2T
WITH 20ø BOLTS

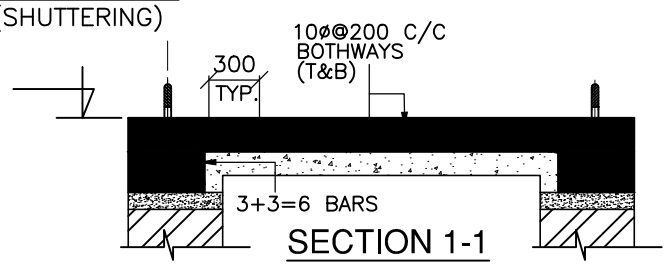


FOUNDATION DETAILS OF DRS

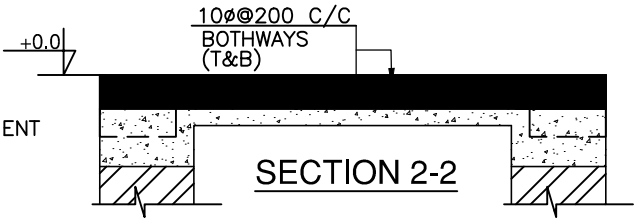


SECTION 1-1
(SHUTTERING)

ITEM	GRADE	QTY.
PCC	1:2:4	1.6 Cum.
PCC	1:4:8	0.52 Cum.
RCC	M25	3.6 Cum.
REBAR	Fe-500	210 Kgs.
BW	CM 1:4	4.6 Cum.
GRADE OF BRICK – M7.5		



SECTION 1-1
(REINFORCEMENT)



SECTION 2-2

NOTES.

1. CLEAR COVER SHALL BE 40MM.
2. REINFORCEMENT STEEL SHALL CONFORM TO IS:1789.
3. FOR BOLT DETAILS REFER EMERSON PROCESS MANAGEMENT DRG.NO.4392-DWG-03-0301.

I&PC	M&C								
CONCURRED BY.				REV.No.	ZONE	DATE	DESCRIPTION OF REVISIONS	BY	APPRD.

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	NAME		LOCATION:BANGALORE
DESIGNED	NH		SECTION : CIVIL
DRAWN	NH		SCALE : NTS
CHECKED & VERIFIED	SIG.	PS	SHEET NO. 1 of 1
APPROVED	SIG. & DATE		
	NAME: K.N RAJU(DGM)		

BANGALORE

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MECON LIMITED

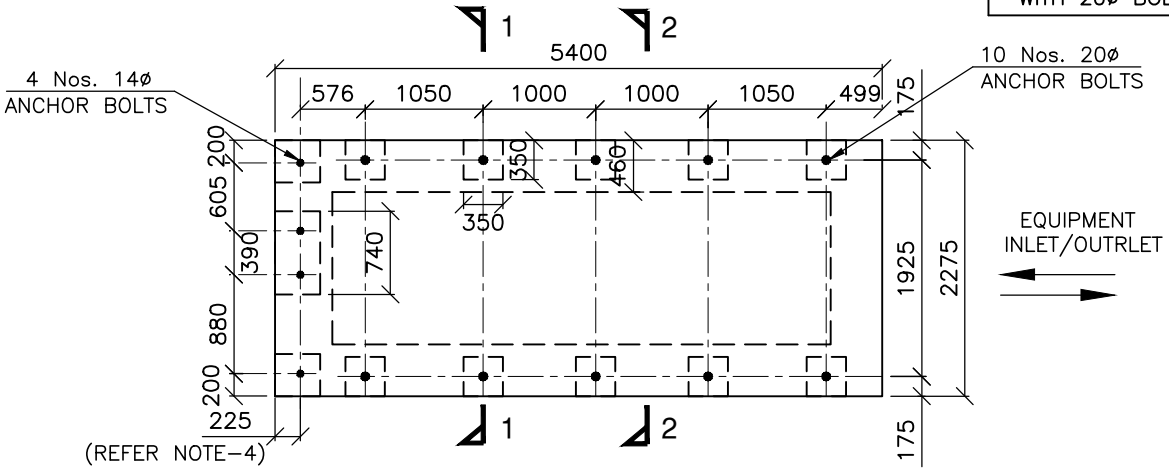
CITY GAS DISTRIBUTION WORK

FOUNDATION DETAILS OF DRS 5000 SCMH(EMERSON)

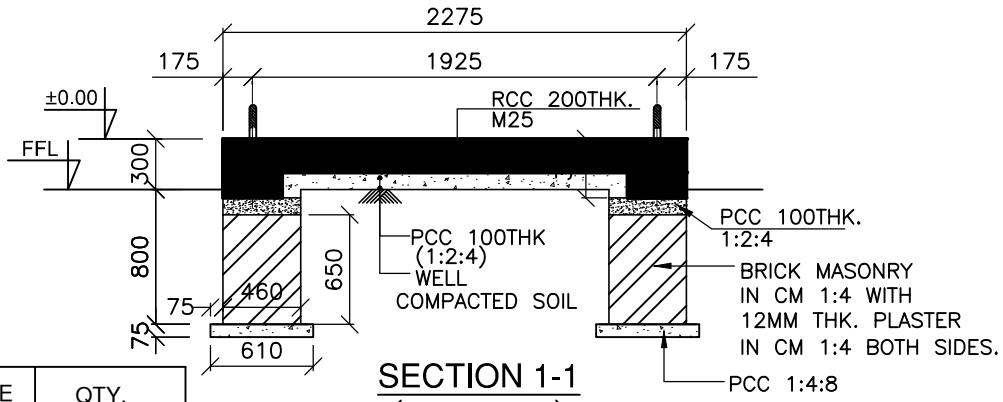
(SHUTTERING & REINFORCEMENT)

DRG.No.MEC/TYP/01/11/D4/PE/DR/0928A R0

CAPACITY= 2500 SCMH
OPERATING WEIGHT=9.0T
WITH 20ø BOLTS

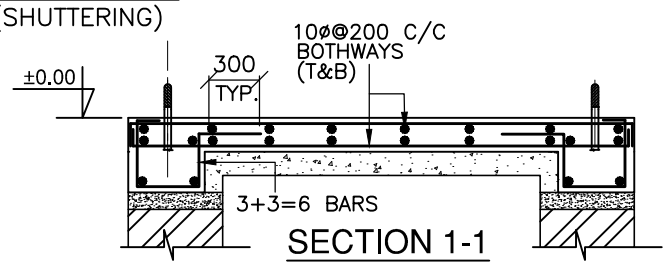


FOUNDATION DETAILS OF DRS

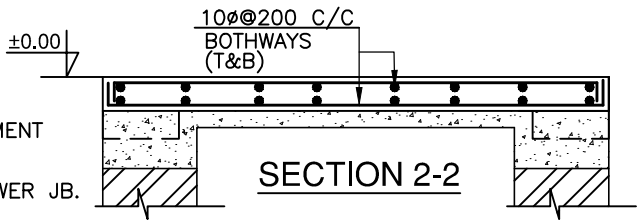


SECTION 1-1
(SHUTTERING)

ITEM	GRADE	QTY.
PCC	1:2:4	1.85 Cum.
PCC	1:4:8	0.61 Cum.
RCC	M25	2.72 Cum.
REBAR	Fe-500	161 Kgs.
BW	CM 1:4	4.00 Cum.
GRADE OF BRICK - M7.5		



SECTION 1-1
(REINFORCEMENT)



SECTION 2-2

NOTES.

1. CLEAR COVER SHALL BE 40MM.
2. REINFORCEMENT STEEL SHALL CONFORM TO IS:1789.
3. FOR BOLT DETAILS REFER EMERSON PROCESS MANAGEMENT DRG.NO.4392-DWG-03-0201.
4. SPACE FOR INSTALLATION OF FC POWER JB & LEL POWER JB.

I&PC	M&C								
CONCURRED BY.				REV.No.	ZONE	DATE	DESCRIPTION OF REVISIONS	BY	APPRD.

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	NAME		LOCATION:BANGALORE
DESIGNED	NH		SECTION : CIVIL
DRAWN	NH		SCALE : NTS
CHECKED & VERIFIED	SIG.	PS	SHEET NO. 1 of 1
APPROVED	SIG. & DATE		
	NAME: K.N RAJU(DGM)		

BANGALORE

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MECON LIMITED

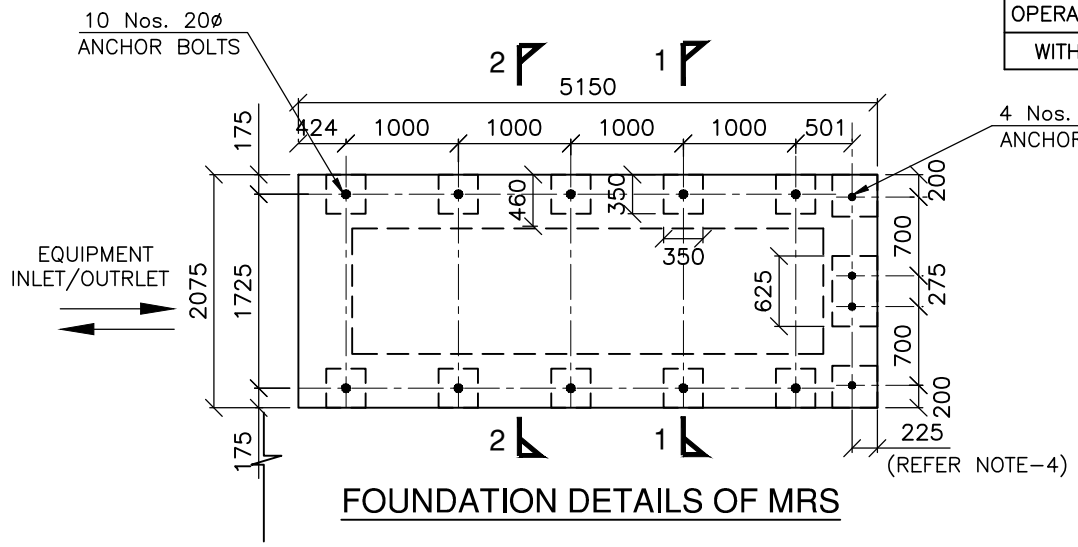
CITY GAS DISTRIBUTION WORK

FOUNDATION DETAILS OF DRS 2500 SCMH(EMERSON)

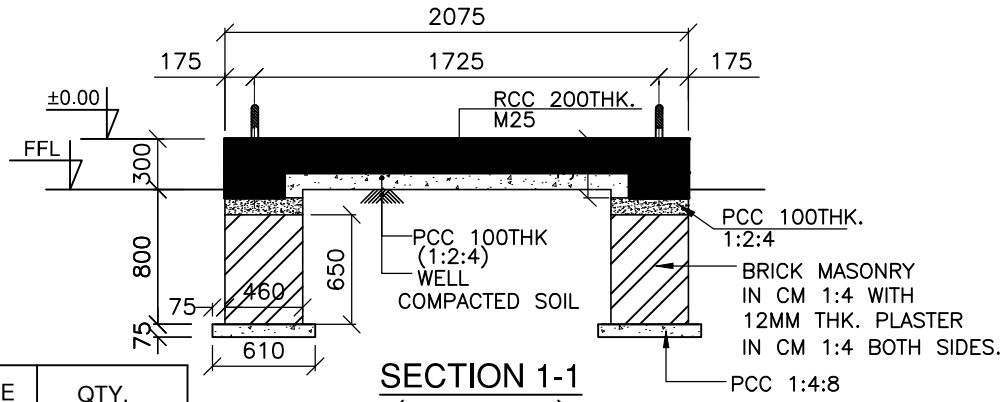
(SHUTTERING & REINFORCEMENT)

DRG.No.MEC/TYP/01/11/D4/PE/DR/0925 REV -0

CAPACITY= 1000 SCMH
OPERATING WEIGHT=8.4T
WITH 20ø BOLTS

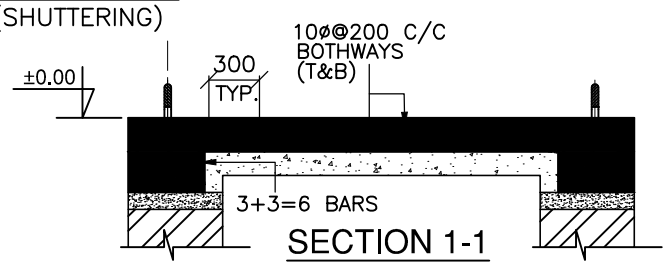


FOUNDATION DETAILS OF MRS

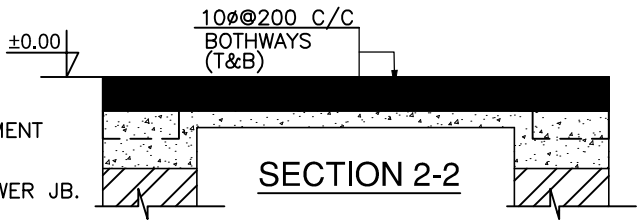


SECTION 1-1
(SHUTTERING)

ITEM	GRADE	QTY.
PCC	1:2:4	1.64 Cum.
PCC	1:4:8	0.57 Cum.
RCC	M25	2.40 Cum.
REBAR	Fe-500	142 Kgs.
BW	CM 1:4	3.78 Cum.
GRADE OF BRICK - M7.5		



SECTION 1-1
(REINFORCEMENT)



SECTION 2-2

NOTES.

1. CLEAR COVER SHALL BE 40MM.
2. REINFORCEMENT STEEL SHALL CONFORM TO IS:1789.
3. FOR BOLT DETAILS REFER EMERSON PROCESS MANAGEMENT DRG.NO.4392-DWG-03-0401.
4. SPACE FOR INSTALLATION OF FC POWER JB & LEL POWER JB.

I&PC	M&C								
CONCURRED BY.				REV.No.	ZONE	DATE	DESCRIPTION OF REVISIONS	BY	APPRD.

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	NAME		LOCATION:BANGALORE
DESIGNED	NH		SECTION : CIVIL
DRAWN	NH		SCALE : NTS
CHECKED & VERIFIED	SIG.	PS	SHEET NO. 1 of 1
APPROVED	SIG. & DATE		
	NAME: K.N RAJU(DGM)		

BANGALORE

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MECON LIMITED

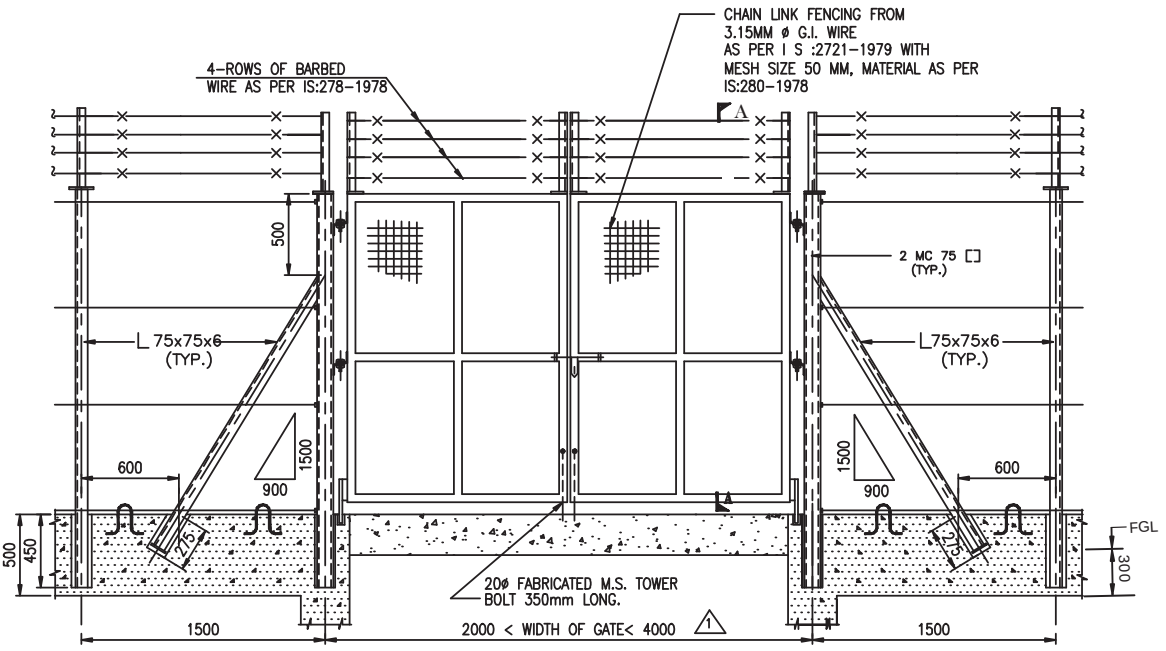
CITY GAS DISTRIBUTION WORK

FOUNDATION DETAILS OF MRS 1000 SCMH(EMERSON)

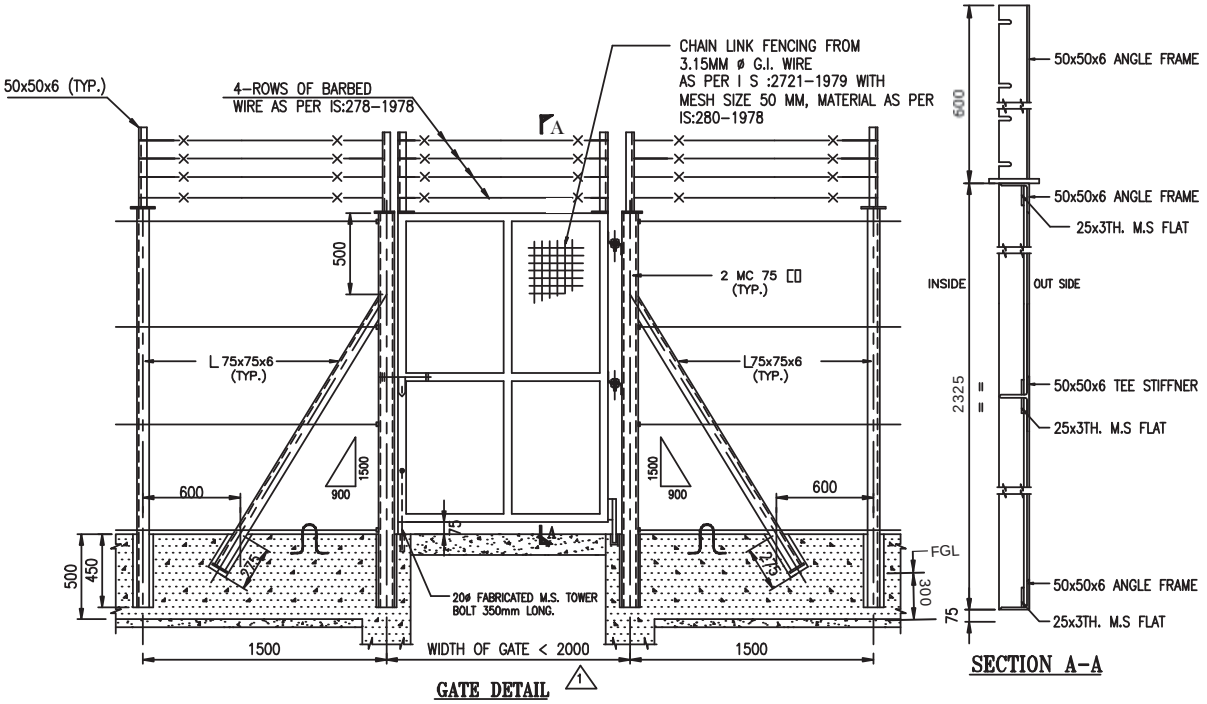
(SHUTTERING & REINFORCEMENT)

DRG.No.MEC/TYP/01/11/D4/PE/DR/0926 REV -0

STRUCTURAL DRAWINGS



GATE DETAIL



GATE DETAIL

SECTION A-A

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.

REV NO	DATE	ZONE	DESCRIPTIONS	BY	APPRD		
REVISIONS						REFERENCES	DRG. NO.

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SECTION	STRUCTURAL (NEW DELHI)		
	NAME	SIG.	DATE
DSGN.	D. ARYA		07.03.2012
DRWN	TUSHAR		07.03.2012
CHKD. & VERIFIED	D. ARYA		07.03.2012
APPROVED	H.CHANDNANI		07.03.2012

DETAILS OF FENCING
SINGLE & DOUBLE LEAF GATE

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MECON LIMITED

SCALE :

DRG.NO. MEC/ TYP ./05/12/STD./04

REV 0