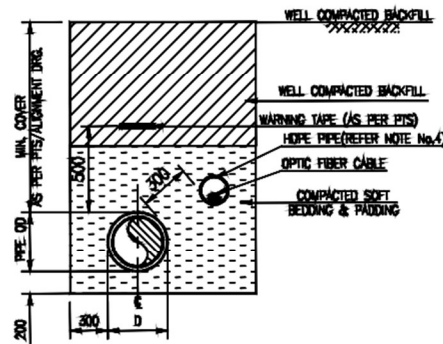
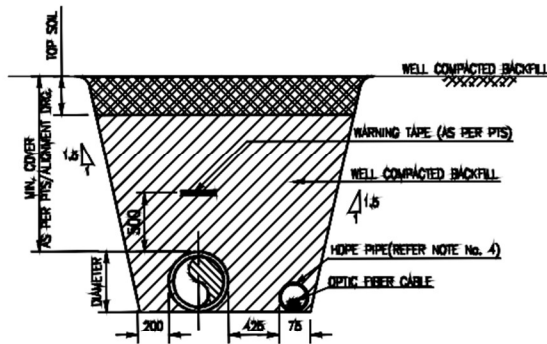


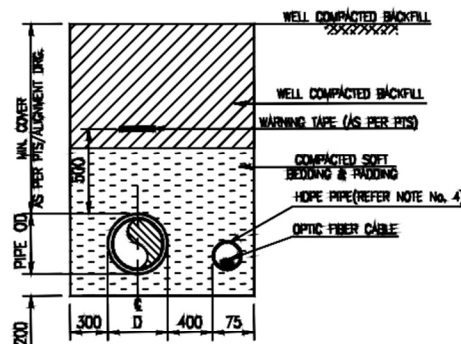
TYPICAL TRENCH DETAILS IN NORMAL SOIL
TYPE-1



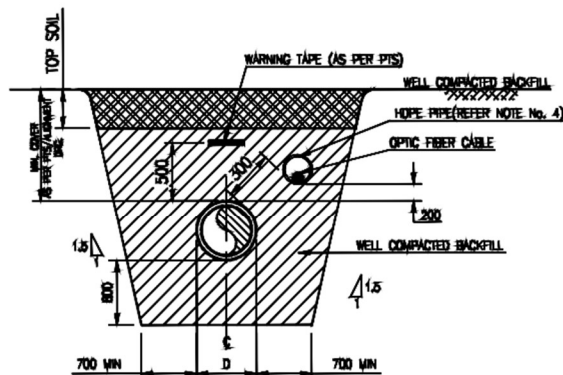
TYPICAL TRENCH DETAILS IN ROCK AREA
TYPE-3



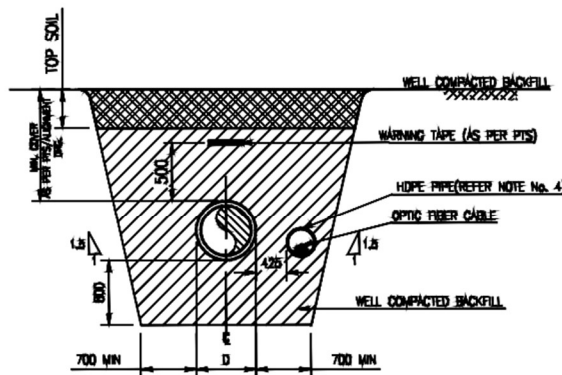
TYPICAL TRENCH DETAILS IN NORMAL SOIL
TYPE-2



TYPICAL TRENCH DETAILS ROCK
TYPE-4



TYPICAL TRENCH DETAILS FOR SEISMIC FAULT (IN NORMAL SOIL) AREAS
TYPE-5



TYPICAL TRENCH DETAILS FOR SEISMIC FAULT (IN ROCK) AREAS
TYPE-6

NOTES:-

1. ALL DIMENSIONS ARE IN MM UNLESS NOTED OTHERWISE.
2. MINIMUM COVER OVER LINEPIPE SHALL BE AS PER PTS AND REQUIREMENT OF CONCERNED AUTHORITY.
3. THIS SKETCH IS INDICATIVE ONLY.
4. IF, AS PER SPECIFICATION, ARMoured OFC IS TO BE PROVIDED, IT WILL BE LAID ALONG WITH LINEPIPE AS PER THE APPROVED PROCEDURE.
5. TYPE OF TRENCHING TO BE USED SHALL BE AS PER PTS AND APPROVED PROCEDURE.
6. ALL TYPICAL CROSS SECTIONS MUST BE VIEWED LOOKING IN THE DIRECTION OF FLOW.

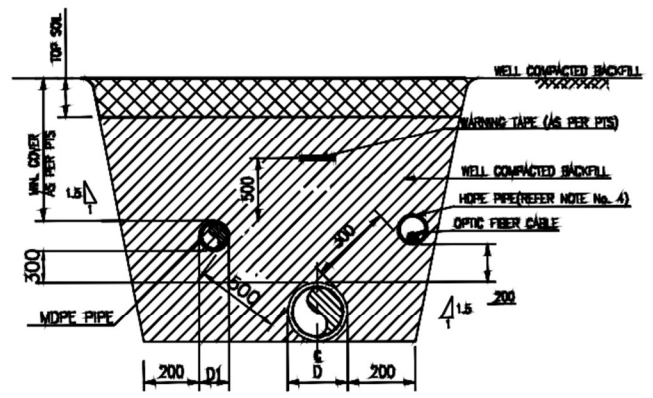
CLIENT: HARIDWAR NATURAL GAS (HNGPL)

TITLE: TYPICAL TRENCH DETAILS

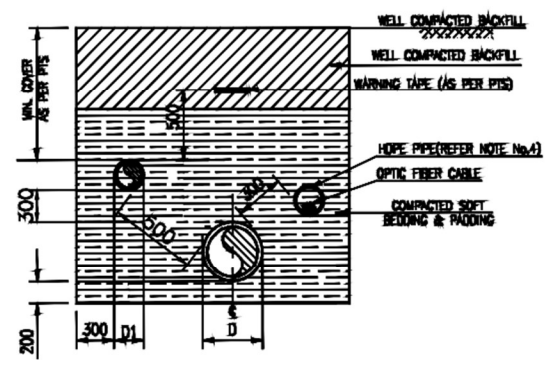
NO.	DATE	REVISION	CAD	AS

NOTES:

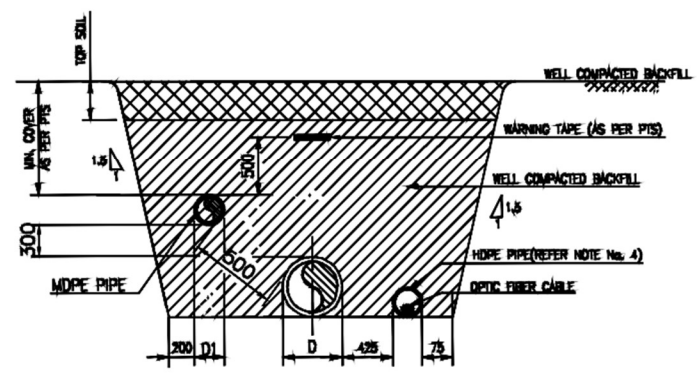
1. ALL DIMENSIONS ARE IN MM UNLESS NOTED OTHERWISE.
2. MINIMUM COVER OVER LINEPIPE SHALL BE AS PER PTS AND REQUIREMENT OF CONCERNED AUTHORITY.
3. THIS SKETCH IS INDICATIVE ONLY.
4. IF, AS PER SPECIFICATION, ARMURED OFC IS TO BE PROVIDED, IT WILL BE LAID ALONGWITH LINEPIPE AS PER THE APPROVED PROCEDURE.
5. TYPE OF TRENCHING TO BE USED SHALL BE AS PER PTS AND APPROVED PROCEDURE.
6. ALL TYPICAL CROSS SECTIONS MUST BE VIEWED LOOKING IN THE DIRECTION OF FLOW.
7. FOR MIN. COVER PLEASE REFER CL.-4.2.1 OF PTS-13823-CD-PL-SP-001.



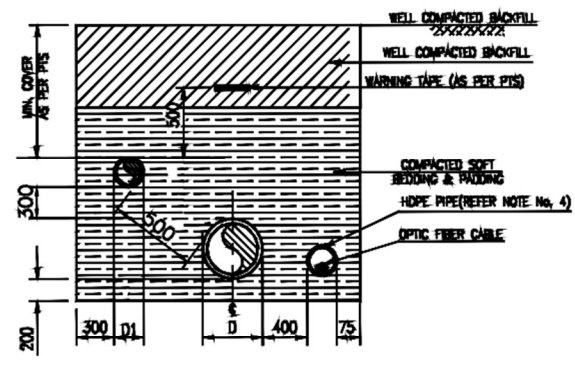
TYPICAL TRENCH DETAILS IN NORMAL SOIL
TYPE-1



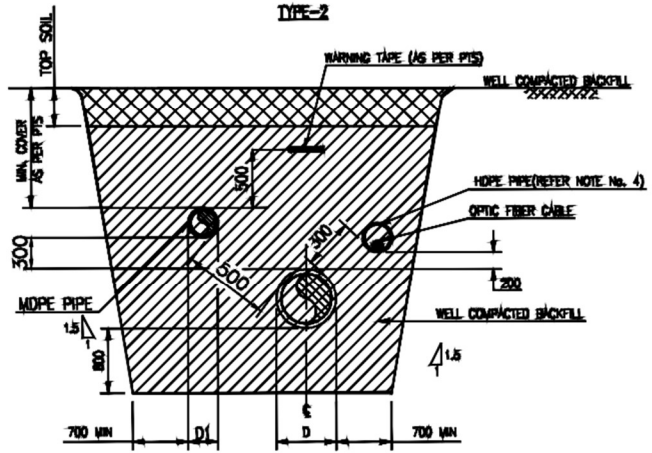
TYPICAL TRENCH DETAILS IN ROCK AREA
TYPE-3



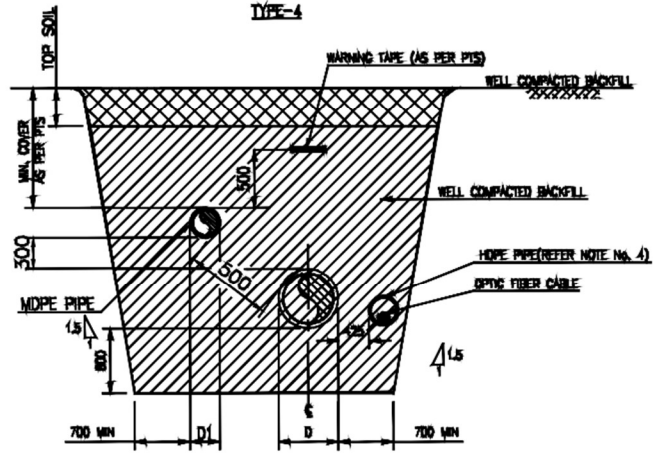
TYPICAL TRENCH DETAILS IN NORMAL SOIL
TYPE-2



TYPICAL TRENCH DETAILS ROCK
TYPE-4



TYPICAL TRENCH DETAILS FOR SEISMIC FAULT (IN NORMAL SOIL) AREAS
TYPE-5

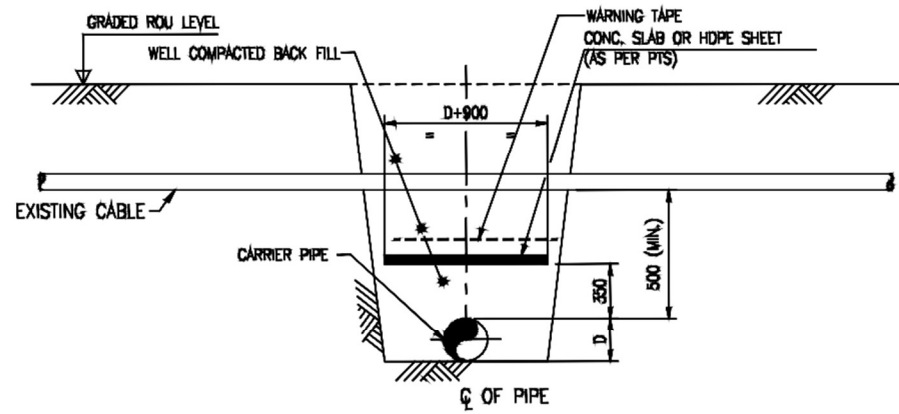
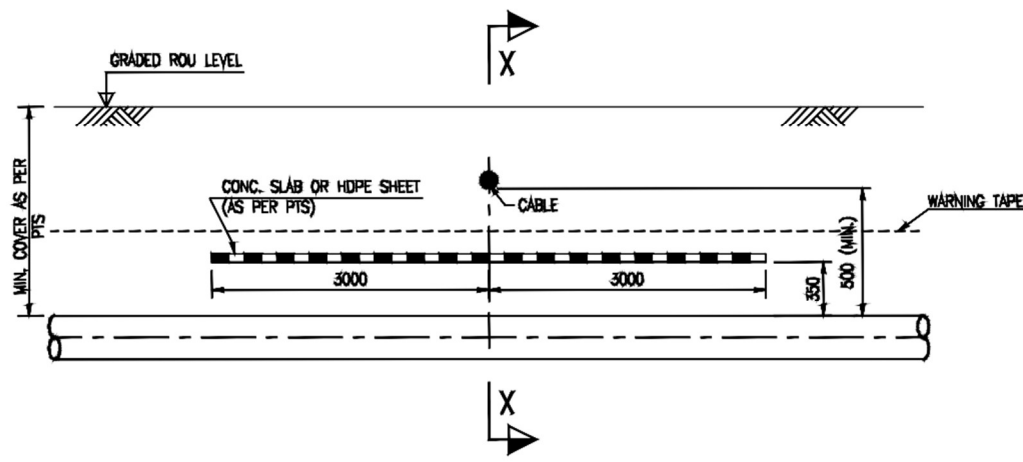


TYPICAL TRENCH DETAILS FOR SEISMIC FAULT (IN ROCK) AREAS
TYPE-6

CLIENT: HARIDWAR NATURAL GAS (HNGPL)

TITLE: TYPICAL TRENCH DETAIL

SIZE	CLIENT JOB NO.	DRAWING NUMBER	SHEET	REV.
A3			1 OF 1	1



SECTION X-X

NOTES:-

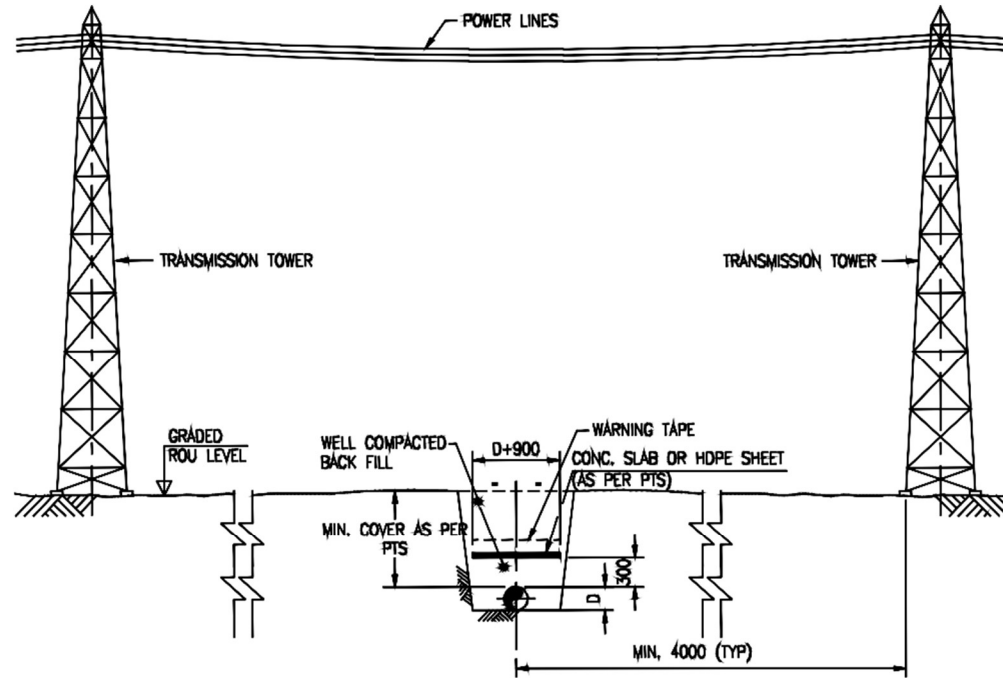
- 1 ALL DIMENSIONS ARE IN MM UNLESS NOTED OTHERWISE.
- 2 A MODIFIED PIPELINE WARNING SIGN SHALL BE INSTALLED CLOSE TO THE CROSSING.
- 3 IN CASE OF ARMOURD OPC CABLE, C.P. BONDING IS TO BE PROVIDED BETWEEN PIPELINE AND CABLE ARMOUR. IN CASE OF UNARMOURD CABLE, ARRANGEMENT FOR SHIELDING (BY PROVIDING CASING ON EITHER SIDE OF THE PIPELINE OR CABLE) SHALL BE CONSIDERED.
- 4 APPROVAL OF THE CROSSING SHALL BE OBTAINED FROM CONCERNED AUTHORITIES.
- 5 FOR CONCRETE SLAB, REFER STD. DRG No. TEOPL-STD-M-19-0007.

CLIENT: HARIDWAR NATURAL GAS (HNGPL)

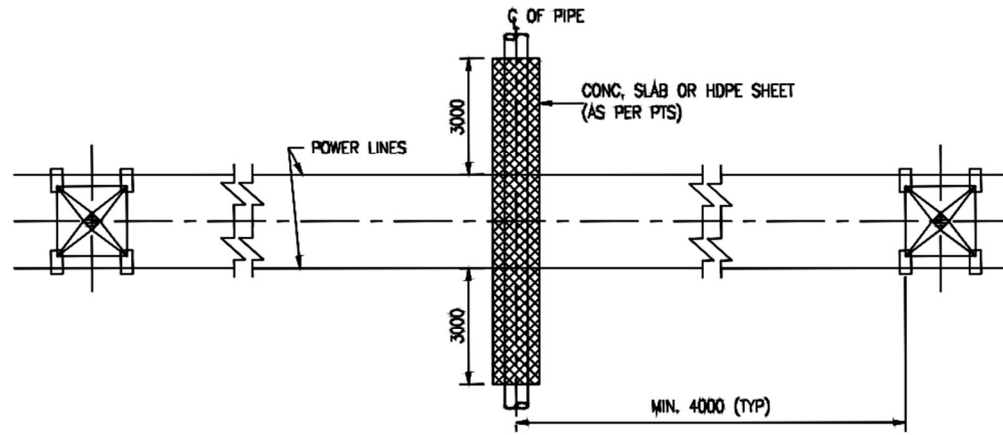
TITLE: TYPICAL UNDERGROUND CABLE CROSSING DETAILS

NO.	DATE	REVISION	BY	CHECKED	SCALE	STATUS

CAD A3



SECTION



PLAN

NOTES:-

- 1 ALL DIMENSIONS ARE IN MM UNLESS NOTED OTHERWISE.
- 2 SUITABLE MEASURES SHALL BE TAKEN FOR THE PROTECTION OF THE LINE AND SECURITY OF PERSONNEL WHEREVER FOUND NECESSARY.
- 3 APPROVAL OF THE CROSSING SHALL BE OBTAINED FROM CONCERNED AUTHORITIES.
- 4 FOR CONCRETE SLAB REFER STD DWG
- 5 THIS CONCRETE SLAB/HDPE SHEET PROTECTION SHALL BE PROVIDE FOR VOLTAGE OF 11KV AND ABOVE.

CLIENT: HARIDWAR NATURAL GAS (HNGPL)

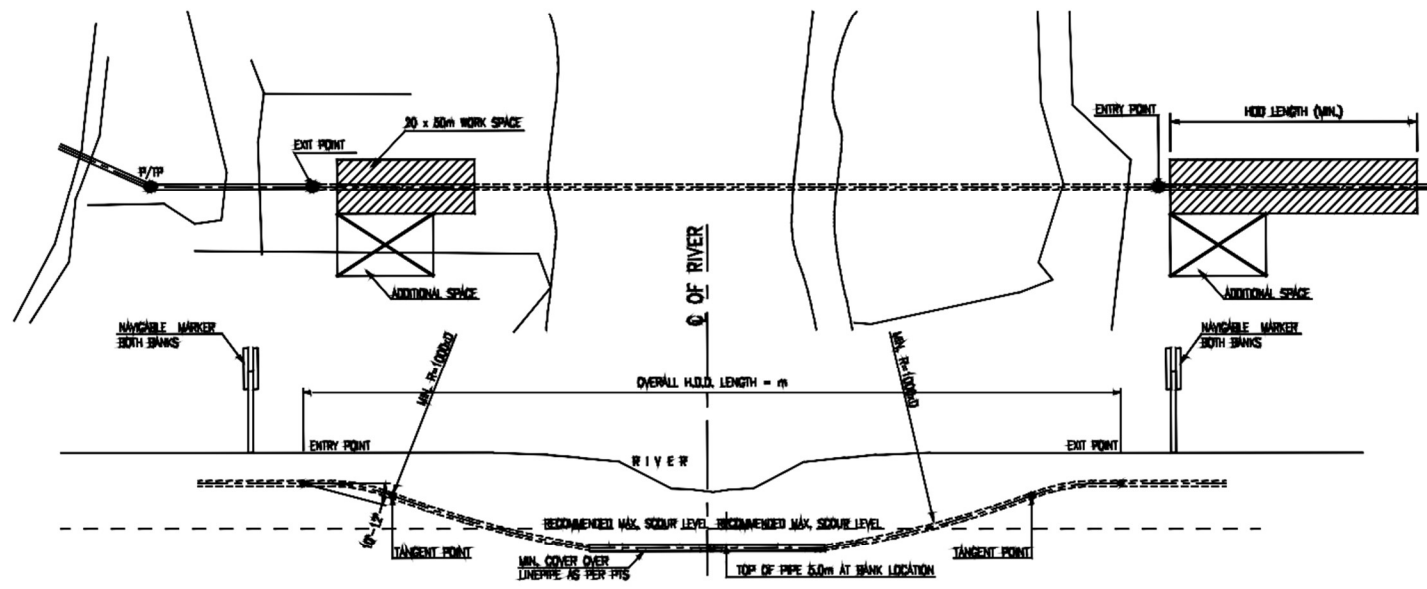
TITLE: TYPICAL OVERHEAD POWER LINE CROSSING DETAILS

NO.	DATE	REVISION	BY	CHECKED	DATE	SCALE	APP.

CAD **A3**

NOTES:-

- 1 ALL DIMENSIONS ARE IN MM UNLESS NOTED OTHERWISE.
- 2 THE MINIMUM TEMPORARY WORKING SPACE ALLOCATED TO CONTRACTOR BY THE OWNER SHALL BE 75Mx75M AT THE DRILLING SITE & 50Mx50M AT THE OPPOSITE SIDE.
- 3 IF THE DRILLING POINTS (ENTRY/EXIT) ARE LOCATED BELOW THE HIGHEST WATER LEVEL THE CONTRACTOR SHALL PROTECT THE DRILLING POINTS BY CREATING A DYKE 50M MINIMUM ABOVE THE HIGHEST RECORDED WATER LEVEL. FOR PIPE LINE WITH NB >500mm THE CONTRACTOR SHALL SPECIFY THE BALLASTING METHOD HE INTENDS TO USE TO LIMIT THE FRICTION DRILLING PULL BACK.
- 4 PRIOR TO HDD THE PROFILE/DESIGN SHALL BE SENT TO OWNER /OWNER'S REPRESENTATIVE FOR THEIR APPROVAL.
- 5 ADDITIONAL ROW, IF REQUIRED, FOR WORKING AND EXCAVATION OF CROSSING TO AVOID CAVING OF SOIL SHALL BE PROCURED BY CONTRACTOR WITHOUT ANY COST IMPLICATION.



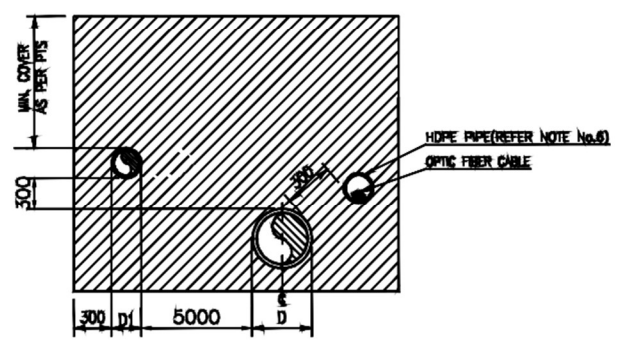
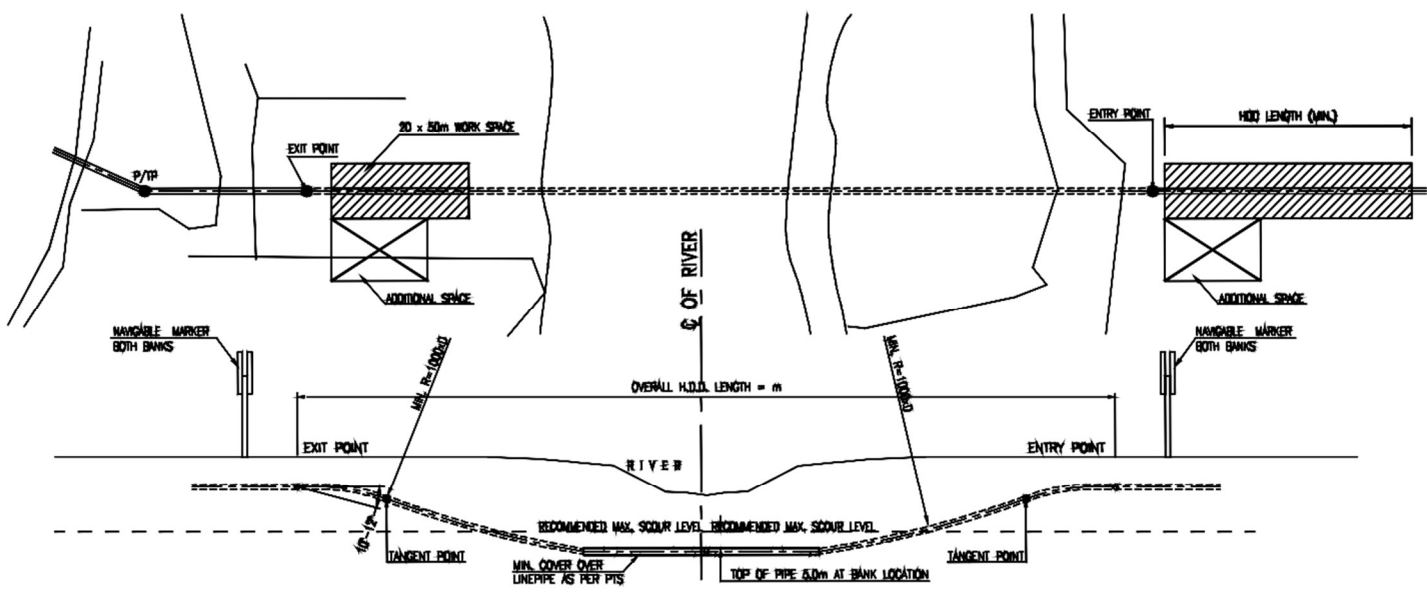
CLIENT: HARIDWAR NATURAL GAS (HNGPL)

TITLE: TYPICAL HDD RIVER CROSSING SHOWING MAX. SCOUR LEVEL & MIN. COVER FOR PIPE

NO.	DATE	BY	CHECKED	SCALE	STATUS

NOTES:-

- 1 ALL DIMENSIONS ARE IN MM UNLESS NOTED OTHERWISE.
- 2 THE MINIMUM TEMPORARY WORKING SPACE ALLOCATED TO CONTRACTOR BY THE OWNER SHALL BE 75mX75m AT THE DRILLING SITE & 50mX50m AT THE OPPOSITE SIDE.
- 3 IF THE DRILLING POINTS (ENTRY/EXIT) ARE LOCATED BELOW THE HIGHEST WATER LEVEL THE CONTRACTOR SHALL PROTECT THE DRILLING POINTS BY CREATING A DYKE 50m MINIMUM ABOVE THE HIGHEST RECORDED WATER LEVEL. FOR PIPE LINE WITH NB >300mm THE CONTRACTOR SHALL SPECIFY THE BALLASTING METHOD HE INTENDS TO USE TO LIMIT THE FRICTION DRILLING PULL BACK.
- 4 PRIOR TO HDD THE PROFILE/DESIGN SHALL BE SENT TO OWNER /OWNER'S REPRESENTATIVE FOR THEIR APPROVAL.
- 5 ADDITIONAL ROLL, IF REQUIRED, FOR WORKING AND EXCAVATION OF CROSSING TO AVOID CAVING OF SOIL SHALL BE PROVIDED BY CONTRACTOR WITHOUT ANY COST IMPLICATION.
6. IF, AS PER SPECIFICATION, ARMOURED OFC IS TO BE PROVIDED, IT WILL BE LAID ALONG WITH LINE PIPE AS PER APPROVED PROCEDURE.

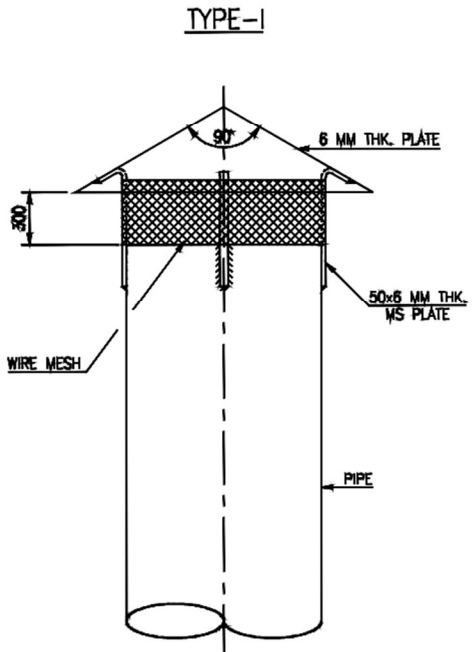


**TYPICAL TRENCH DETAILS IN ROCK AREA
TYPE-3**

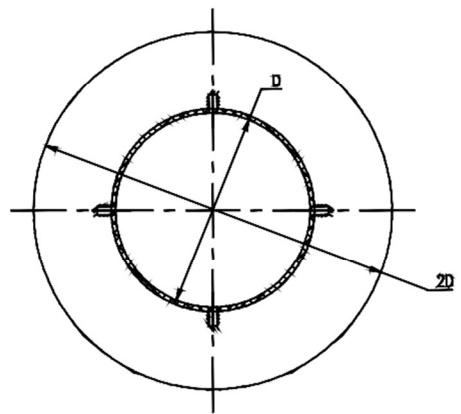
CLIENT: HARIDWAR NATURAL GAS (HNGPL)				
TITLE: TYPICAL HDD RIVER CROSSING SHOWING MAX. SCOUR LEVEL & MIN. COVER FOR PIPE				
SIZE	CLIENT JOB NO.	DRAWING NUMBER	SHEET	REV.
A3			1 OF 1	0

NOTES:-

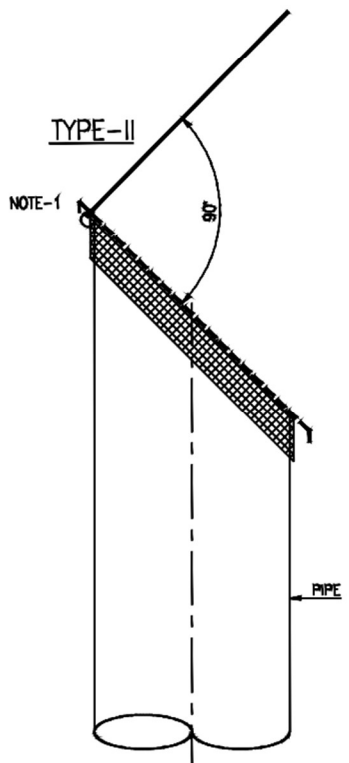
- 1 ALL DIMENSIONS ARE IN MM UNLESS NOTED OTHERWISE.
- 2 HINGE DETAILS TO BE DECIDED BY VENDOR.
- 3 MATERIAL OF CONSTRUCTION OF FLAP SHALL BE ALUMINUM.
- 4 1/2" CIRCULAR RING SHALL BE PROVIDED AROUND THE FLAP.
- 5 STOPPER TO BE PROVIDED SO THAT THE FLAPPER GOES BACK TO ITS ORIGINAL POSITION AFTER COMPLETION OF VENTING.



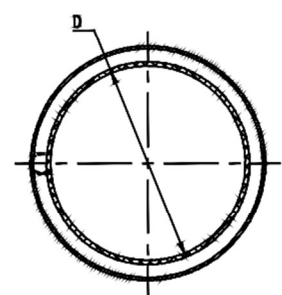
ELEVATION



PLAN



ELEVATION



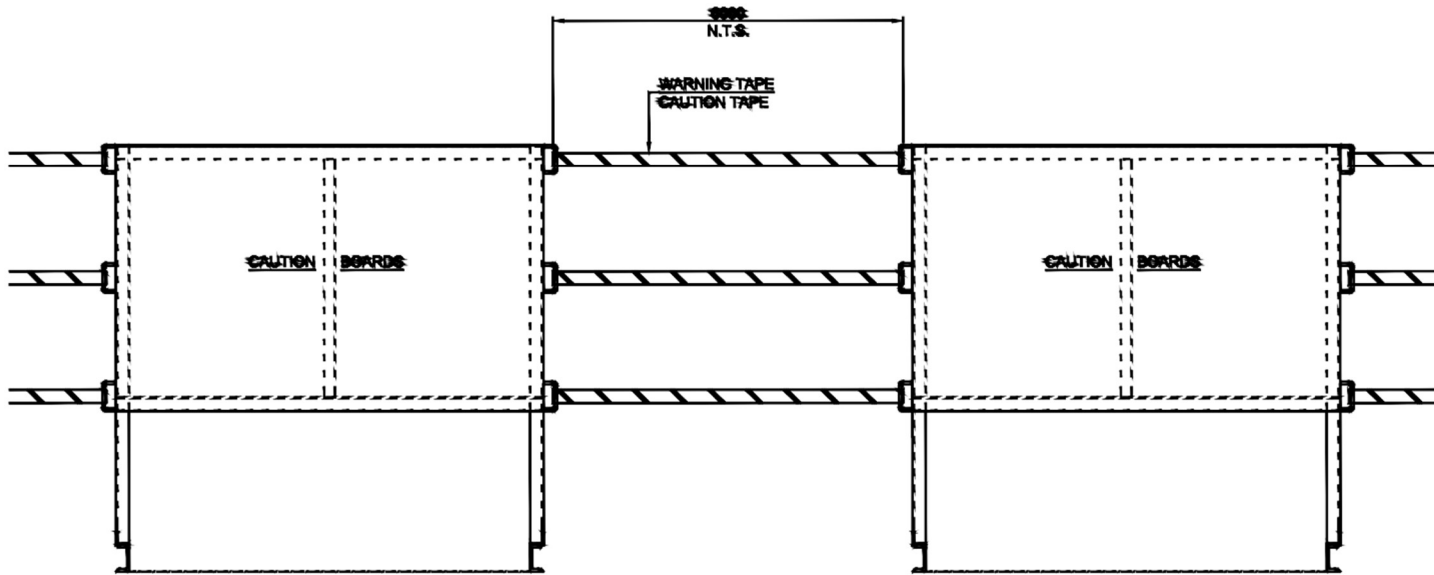
PLAN

CLIENT: HARIDWAR NATURAL GAS (HNGPL)

TITLE: TYPICAL RAIN CAP FOR VENT PIPES

NO.	DATE	BY	CHECKED	SCALE	TYPE	DATE	NO.

CAD A3



SCHEMATIC LAYOUT OF CAUTION BOARDS AND BARRICADING

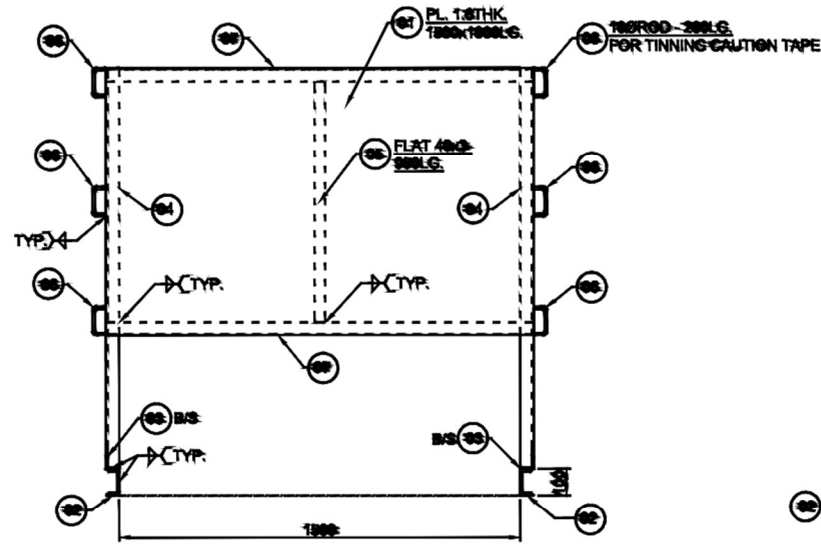
NOTES:-

1. ALL DIMENSIONS ARE IN MM UNLESS NOTED OTHERWISE.
2. FOLLOW WRITTEN DIMENSIONS ONLY. DO NOT SCALE THE DRAWINGS.
3. FOR DETAILS OF CAUTION BOARDS, REFER DRAWING NO. 13000-30-00-12 REV-0.

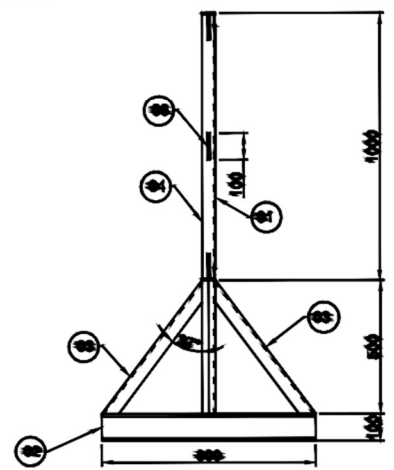
CLIENT: HARIDWAR NATURAL GAS (HNGPL)

TITLE: **BARRICADING**

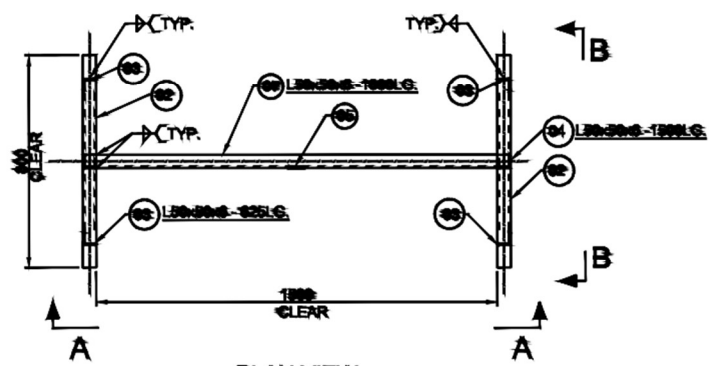
SCALE	DATE	SCALE	DATE	CAD	A3



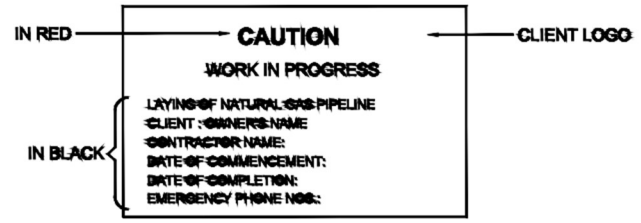
ELEVATION A-A



ELEVATION B-B



PLAN VIEW



TO BE PRINTED ON ITEM NO. 01

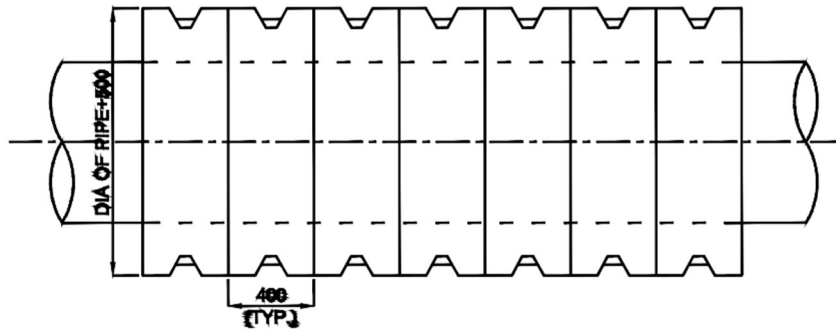
- NOTES:-
1. ALL DIMENSIONS ARE IN MM UNLESS NOTED OTHERWISE.
 2. FOLLOW WRITTEN DIMENSIONS ONLY. DO NOT SCALE THE DRAWINGS.

BILL OF MATERIAL						
Item Mtrl.	Section	Width	Length	Item Qty.	Weight	Total Weight
				301 Marked	Kgs./MTR	In Kgs.
1.	PL. 1.0 THK	1000	1000	1	12.36	12.36
2.	ISMC 100	-	200	2	7.20	14.40
3.	L 20x20x4	-	100	4	2.80	11.20
4.	L 20x20x4	-	1000	2	6.60	13.20
5.	Flat 3THK	300	40	1	0.04	0.04
6.	100 Rod	-	200	1	0.02	0.02
7.	L 20x20x4	-	1000	2	6.60	13.20
Grand Total (Kgs)						74.74

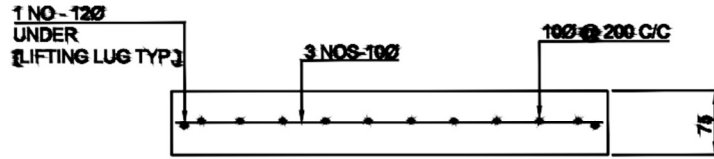
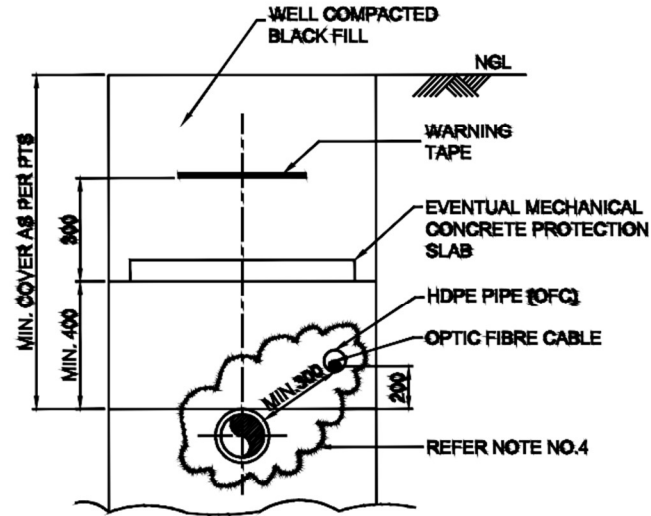
CLIENT: HARIDWAR NATURAL GAS (HNGPL)

TITLE: CAUTION BOARD

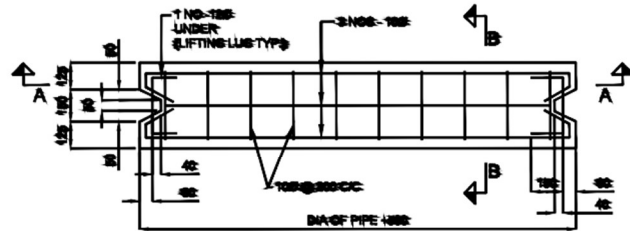
SCALE	DATE	SCALE	DATE	CAD	A3
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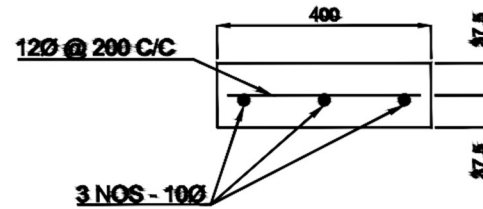
PROTECTIVE CONCRETE SLAB PLAN



SECTION A-A



REINF. DETAIL OF PROTECTIVE CONCRETE SLAB



SECTION B-B
SCALE 1:10

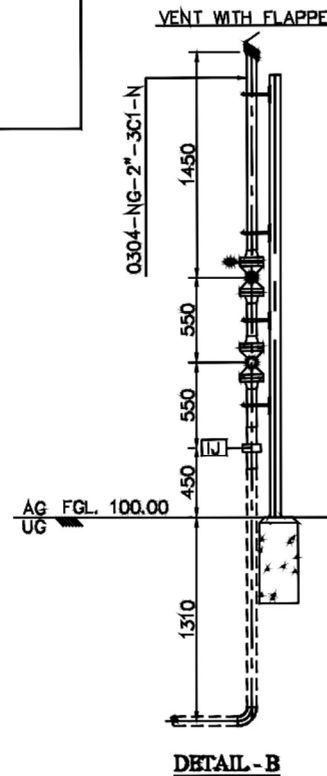
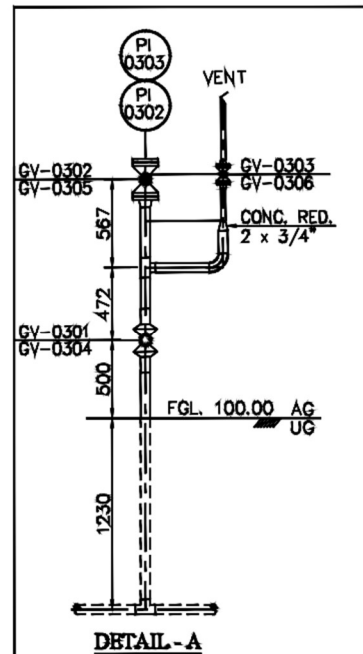
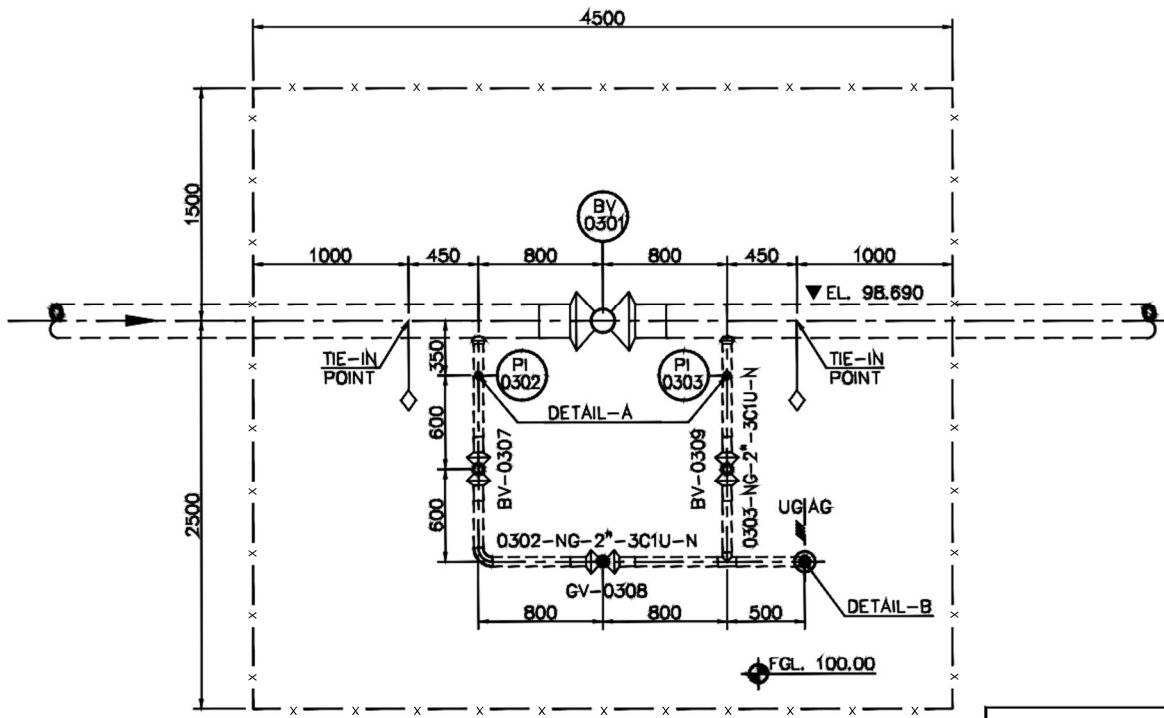
NOTES:-

1. ALL DIMENSIONS ARE IN MM UNLESS NOTED OTHERWISE.
2. FOLLOW WRITTEN DIMENSIONS ONLY. DO NOT SCALE THE DRAWING.
3. MINIMUM COVER OVER THE PIPELINE SHALL BE AS PER DIRECTION OF ENGINEER-IN-CHARGE.
4. TYPE OF TRENCHING SHALL BE AS PER PTS AND APPROVED PROCEDURE.
5. THIS SKETCH IS INDICATIVE ONLY.
6. CONCRETE MIX M-30 SHALL BE USED.

CLIENT: HARIDWAR NATURAL GAS (HNGPL)

TITLE: **TYPICAL MECHANICAL PROTECTION CONCRETE SLAB DETAILS**

DATE	DWG	SCALE	1:10	CAD	A3
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REFERENCE DRAWINGS / DOCUMENTS

SL. NO.	TITLE	NO.
1.	PIPING INSTRUMENTATION DIAGRAM	TIME SUBJECT

NOTES:-

1. ALL DIMENSIONS ARE IN MM. ALL LEVELS ARE IN METERS.
2. QUANTITIES ARE INDICATIVE & SUBJECT TO CHANGE DURING DETAIL ENDS.
3. LAYING OF PIPELINE AND STATION PIPING VENDOR SHALL MAINTAIN SPECIFIED COVER OF PIPE TO KEEP THE STEM EXTENSION HEIGHT 100mm FROM FGL.

LEGEND:-

- ABOVE GROUND
- - - UNDER GROUND
- ⊗ BUTT WELD BALL VALVE (BV)
- ⊗ BUTT WELD GLOBE VALVE (GV)
- ⊗ FLANGED GLOBE VALVE
- ⊗ FLANGED BALL VALVE
- ▽ BOTTOM OF PIPE
- ◊ CENTER OF PIPE
- ⊕ TOP OF PIPE
- x — CHAIN LINK FENCING
- ⊕ FINISHED GROUND LEVEL (FGL)

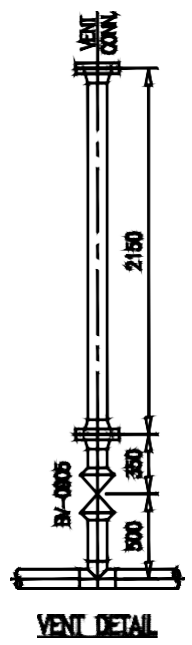
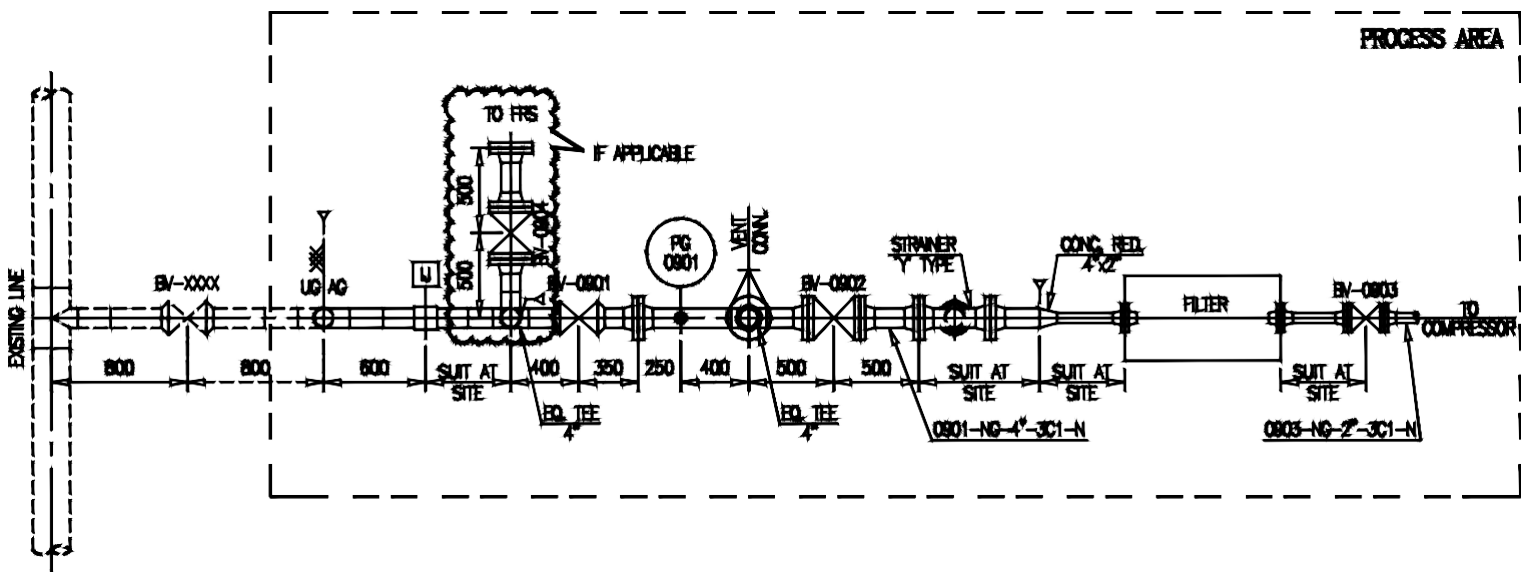
CLIENT: HARIDWAR NATURAL GAS (HNGPL)

PIPING GENERAL ARRANGEMENT DRAWING
FOR SV STATION [TYPICAL FOR 8" LINE]

SIZE	CLIENT JOB NO.	DRAWING NUMBER	SHEET	REV.
A3	-	-	1 OF 1	0

NOTES

- 1. DRAWING IS NOT TO SCALE.
- 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.



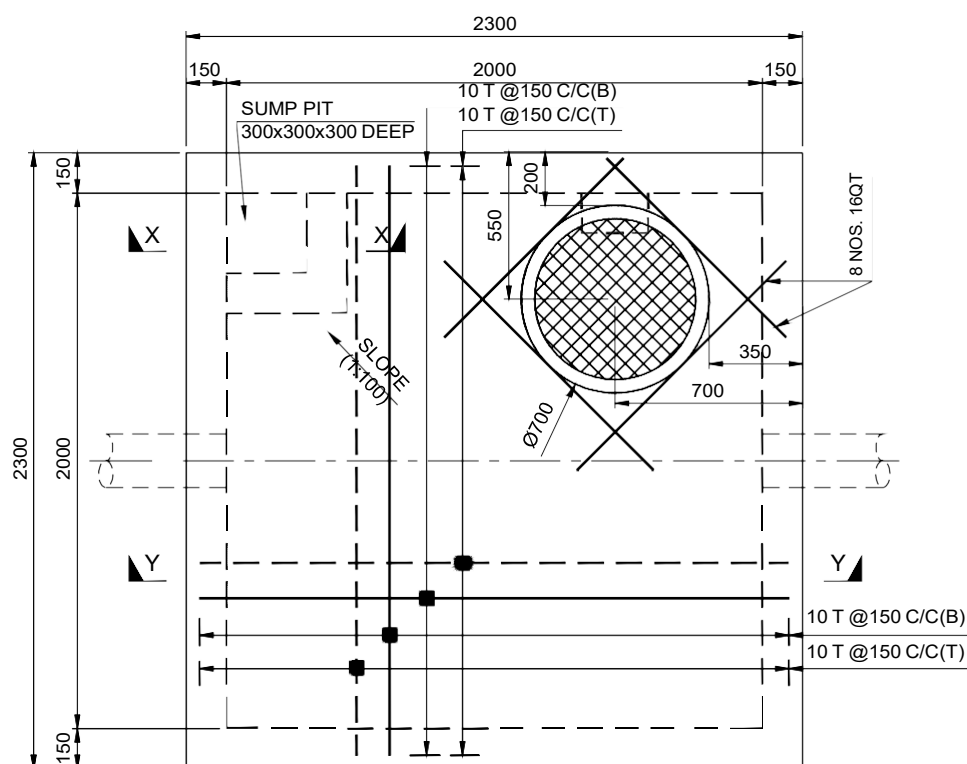
CLIENT: HARIDWAR NATURAL GAS (HNGPL)

TITLE: PIPING GENERAL ARRANGEMENT DRAWING FOR CONNECTIVITY TO RO/CNG STATION

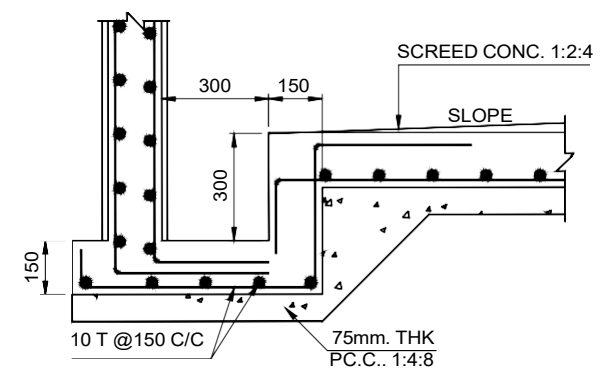
SIZE	CLIENT JOB NO.	DRAWING NUMBER	SHEET	REV.
A3			1 OF 1	0

S. NO.	TITLE	NO.

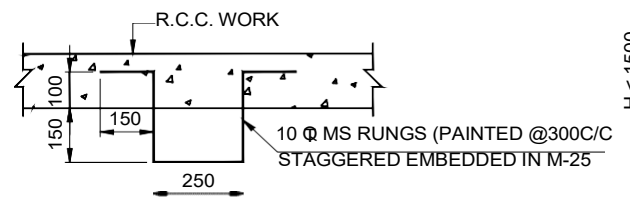
- NOTES:-**
1. ALL DIMENSIONS ARE IN MM.
 2. APPROVED SEALANT TO BE PROVIDED IN VALVE PIT ENTRY & EXIT OF PIPELINE TO INGRESS OF WATER INTO PIT.
 3. GRADE OF CONC MIX SHALL BE M25 CONFORMING TO IS 456:2000.
 4. REINFORCEMENT SHALL BE HYSD BARS OF GRADE Fe 500 CONFORMING TO IS 1786.
 5. CLEAR COVER TO MAIN REINFORCEMENT SHALL BE AS FOLLOWS:-
1) SLAB = 20mm



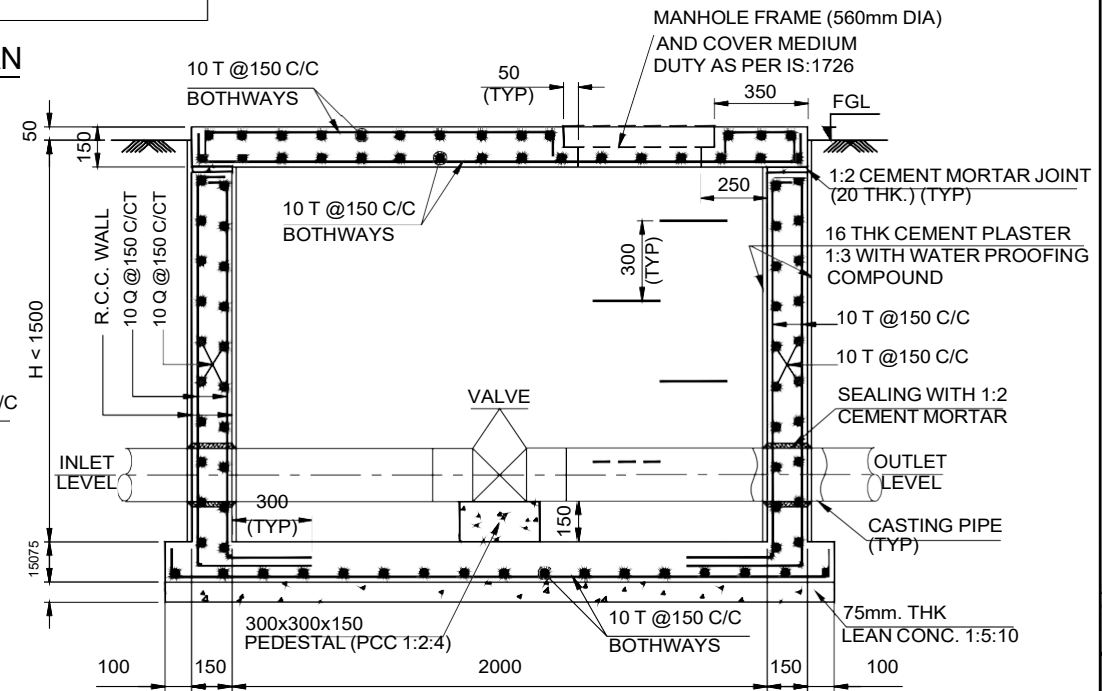
VALVE PIT PLAN
(SCALE 1:20)



SECTION X-X
(SCALE 1:15)



TYP. DET. OF MS RUNGS
(SCALE 1:15)



SECTION Y-Y
(SCALE 1:20)

- LEGEND:-**
- TYP. = TYPICAL
 - THK. = THICK
 - TOP BAR
 - BOTTOM BAR

CLIENT: **HARIDWAR NATURAL GAS (HNGPL)**

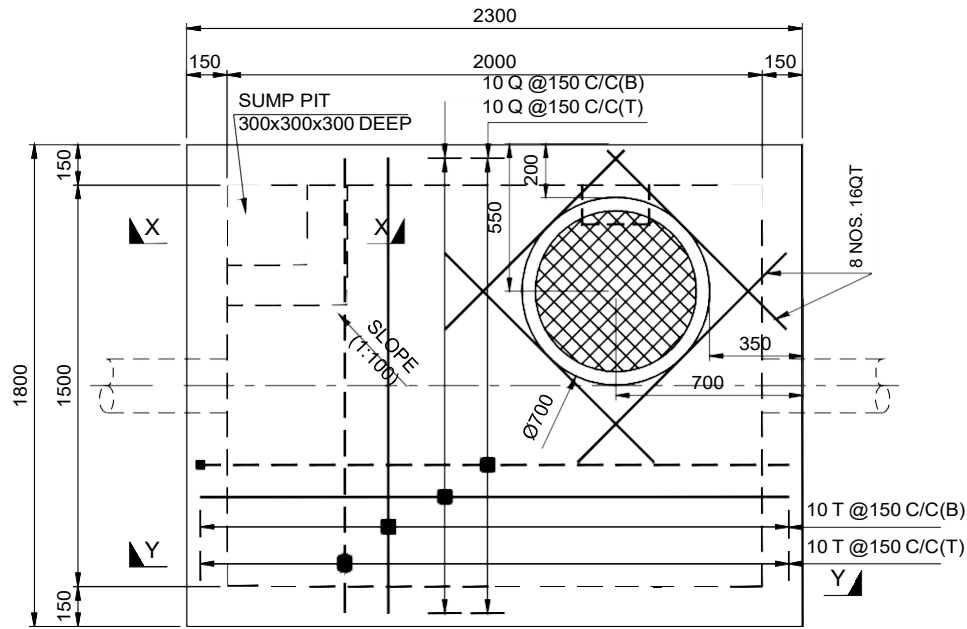
TITLE: **STANDARD DETAIL OF RCC VALVE CHAMBER 2x2m. (TYPE-1)**

SIZE	JOB NO.	DRAWING NUMBER	SHEET	REV.
A3			1 OF 1	

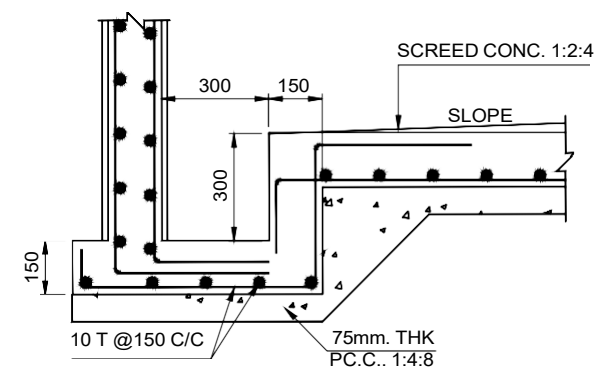
S. NO.	TITLE	NO.

NOTES:-

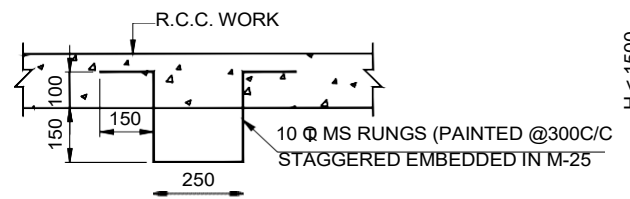
1. ALL DIMENSIONS ARE IN MM.
2. APPROVED SEALANT TO BE PROVIDED IN VALVE PIT ENTRY & EXIT OF PIPELINE TO INGRESS OF WATER INTO PIT.
3. GRADE OF CONC MIX SHALL BE M25 CONFORMING TO IS 456:2000.
4. REINFORCEMENT SHALL BE HYSD BARS OF GRADE Fe 500 CONFORMING TO IS 1786.
5. CLEAR COVER TO MAIN REINFORCEMENT SHALL BE AS FOLLOWS:-
1) SLAB = 20mm



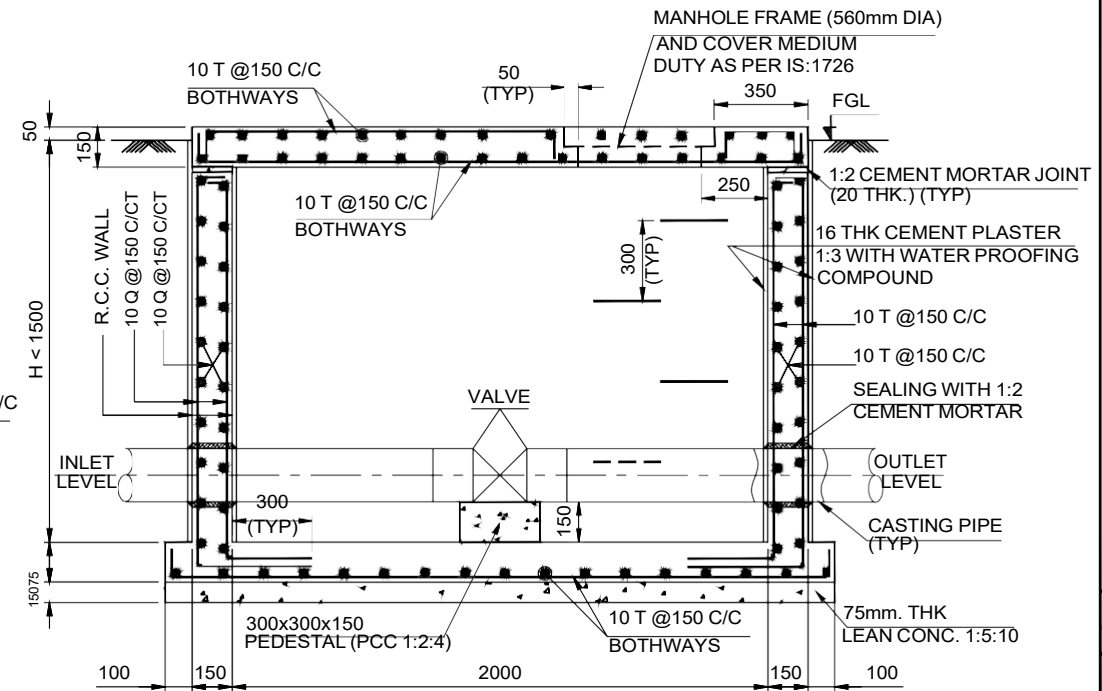
VALVE PIT PLAN
(SCALE 1:20)



SECTION X-X
(SCALE 1:15)



TYP. DET. OF MS RUNGS
(SCALE 1:15)



SECTION Y-Y
(SCALE 1:20)

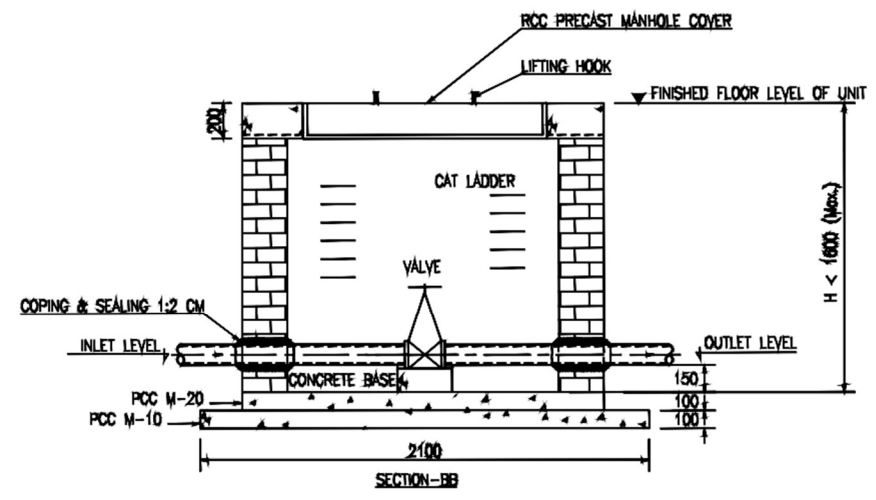
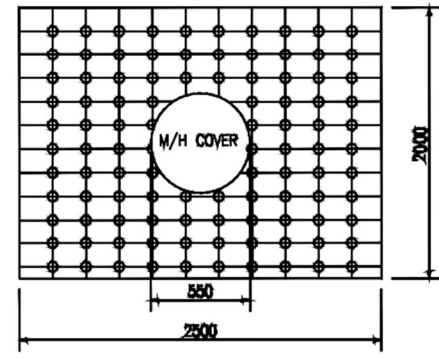
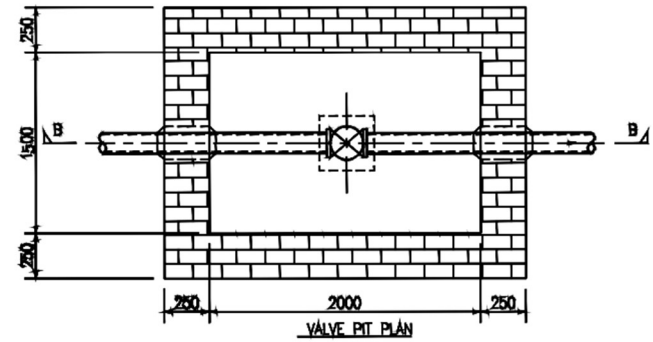
LEGEND:-

- TYP. = TYPICAL
- THK. = THICK
- TOP BAR
- - - - BOTTOM BAR

CLIENT: HARIDWAR NATURAL GAS (HNGPL)				
TITLE: RCC VALVE CHAMBER (2mx1.5m.)				
SIZE: A3	JOB NO.	DRAWING NUMBER	SHEET: 1 OF 1	REV.

NOTES

- 1 ALL DIMENSIONS ARE IN MM UNLESS NOTED OTHERWISE.
- 2 FOLLOW WRITTEN DIMENSION ONLY, DO NOT SCALE.
- 3 BRICK SHALL BE OF 75 CLASS & PCC OF M-10
- 4 DRAWING SHOWN IS SUGGESTIVE ONLY. DETAIL CONSTRUCTION DRAWING PREPARATION SHALL BE IN THE SCOPE OF CONTRACTOR.
- 5 MAIN HOLE LOCATION SHALL SUIT VALVE OPERATION.



CLIENT: HARIDWAR NATURAL GAS (HNGPL)

TITLE: BRICK VALVE CHAMBER (2m X 1.5m)

NO.	DATE	REVISION	BY	CHKD.	APPD.	CAD	A3
1							

A
B
C
D
E

HNGPL
GAS PIPELINE

BEFORE ECUTION
PLEASE CONTACT
PH:.....

RED
COLOR

GOLDEN YELLOW
POINT

ISOMETRIC VIEW

SECTION A

SECTION B

PLAN VIEW

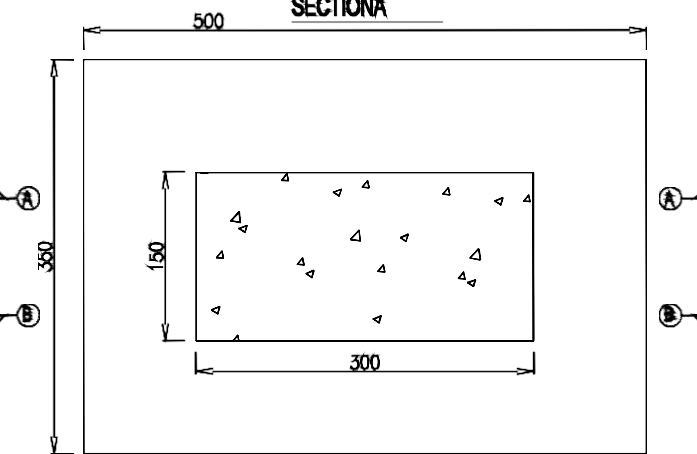
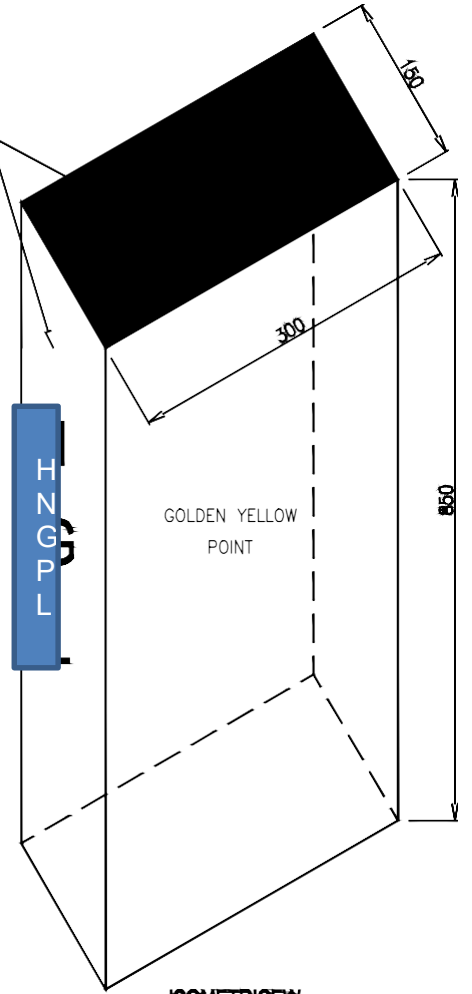
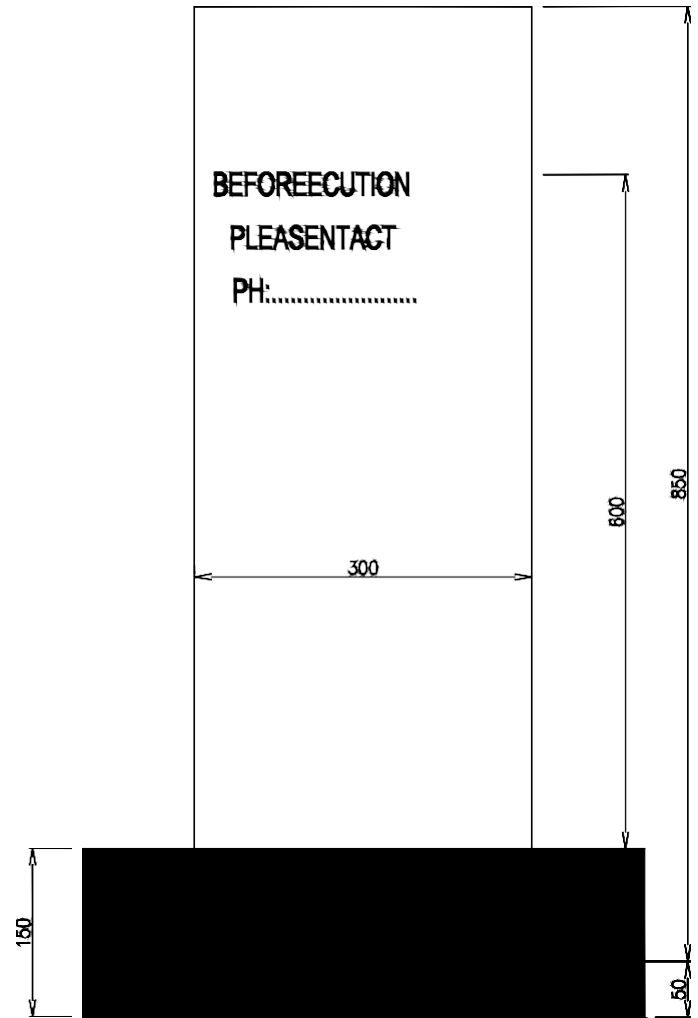
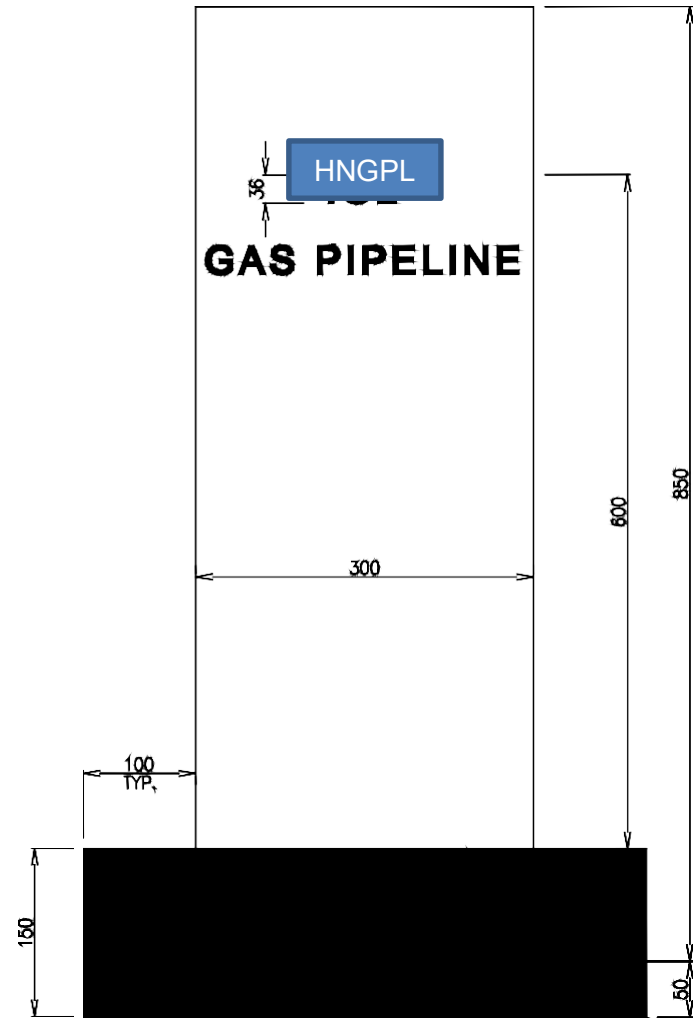
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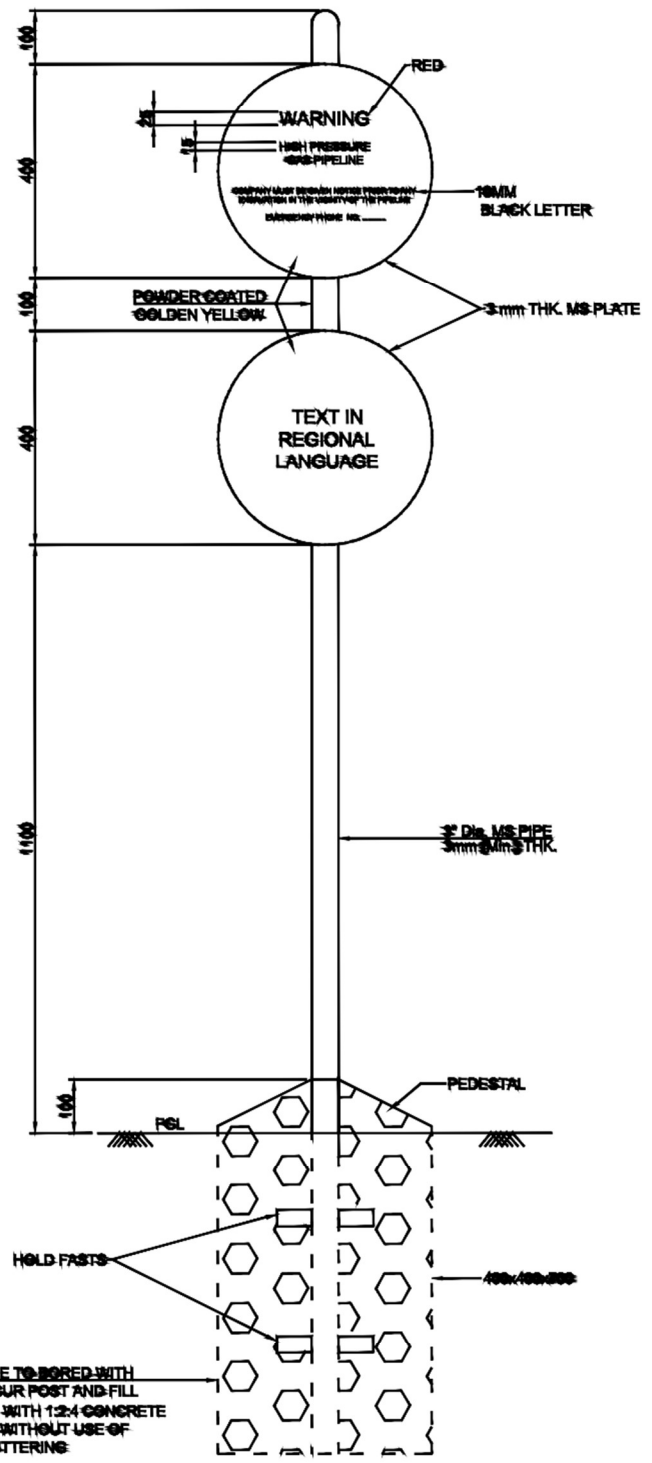
1. ALL DIMENSIONS ARE IN MM. UNLESS OTHERWISE SPECIFIED.
2. FOLLOW WRITTEN DIMENSIONS ONLY. DO NOT SCALE.
3. ALL TEXT SHOULD BE WRITTEN IN BLACK COLOR.
4. GRADE OF CONCRETE SHALL BE M20.

CLIENT: HARIDWAR NATURAL GAS (HNGPL)

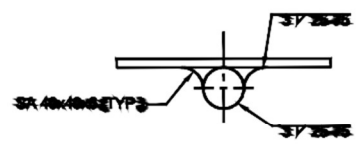
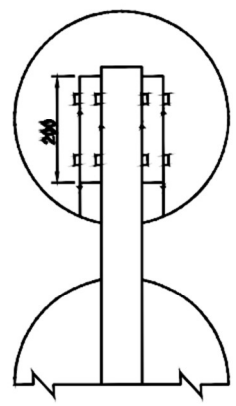
TITLE: TYPICAL DETAILS OF RED STONE MARKER

SIZE	CLIENT JOB NO.	DRAWING NUMBER	SHEET	REV.
A3	-		1 OF 1	0





FIXING DETAILS

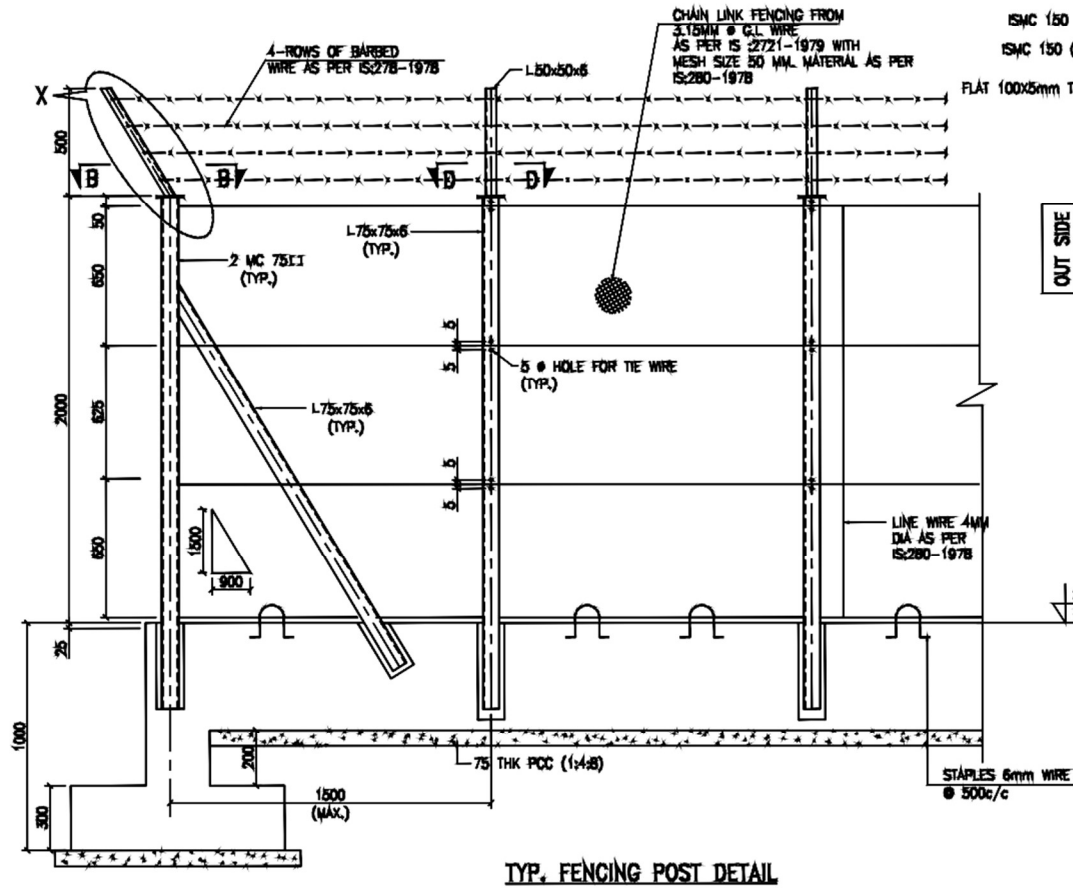


- NOTES:-**
1. ALL DIMENSIONS ARE IN MM UNLESS NOTED OTHERWISE.
 2. WARNING TEXT AND MARKER SIZES ARE INDICATIVE AND ARE SUBJECT TO THE APPROVAL BY OWNER / OWNER'S REPRESENTATIVE BEFORE FABRICATION.
 3. SCHEME FOR POWDER COATING AND COLORING : ONE COAT OF PRIMER & TWO COATS OF SPECIFIED PAINTS. ALL LETTERS EXCEPT 'WARNING' TO BE PAINTED BLACK.
 4. APPROVAL OF WARNING MARKER DESIGN SHALL BE OBTAINED BEFORE THE COMMENCEMENT OF WORK.

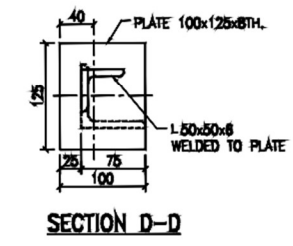
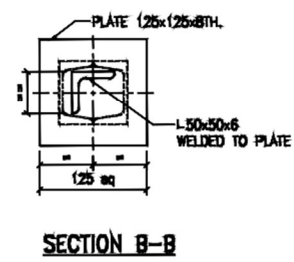
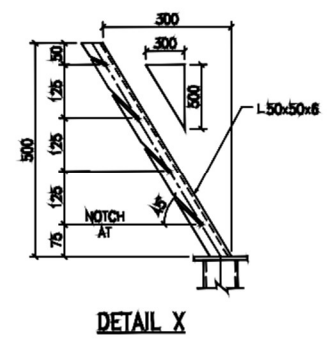
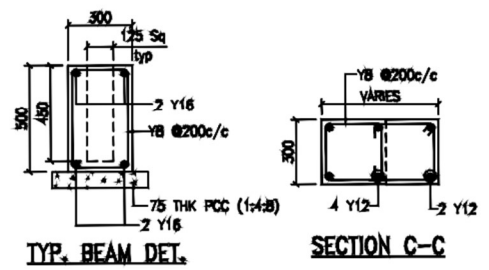
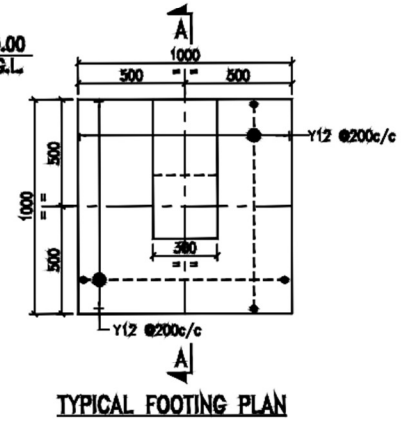
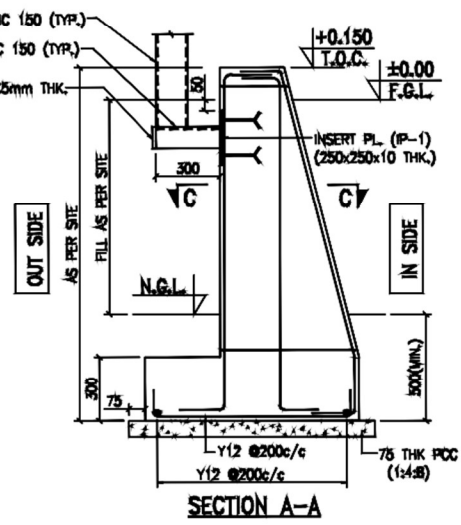
CLIENT: HARIDWAR NATURAL GAS (HNGPL)

TITLE: POLE MARKER WITH FOUNDATION

SCALE	DWG	SAMPLE	CAD	A3
1:10		100%		

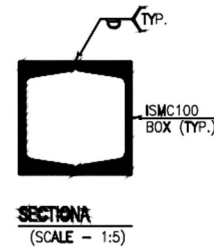
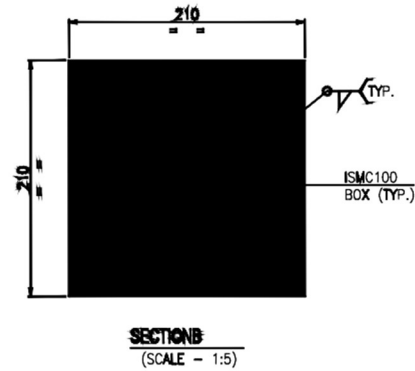
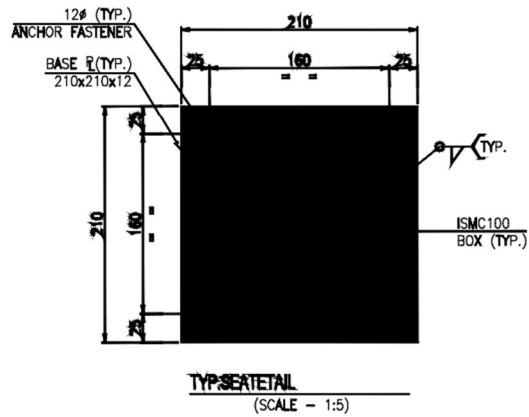
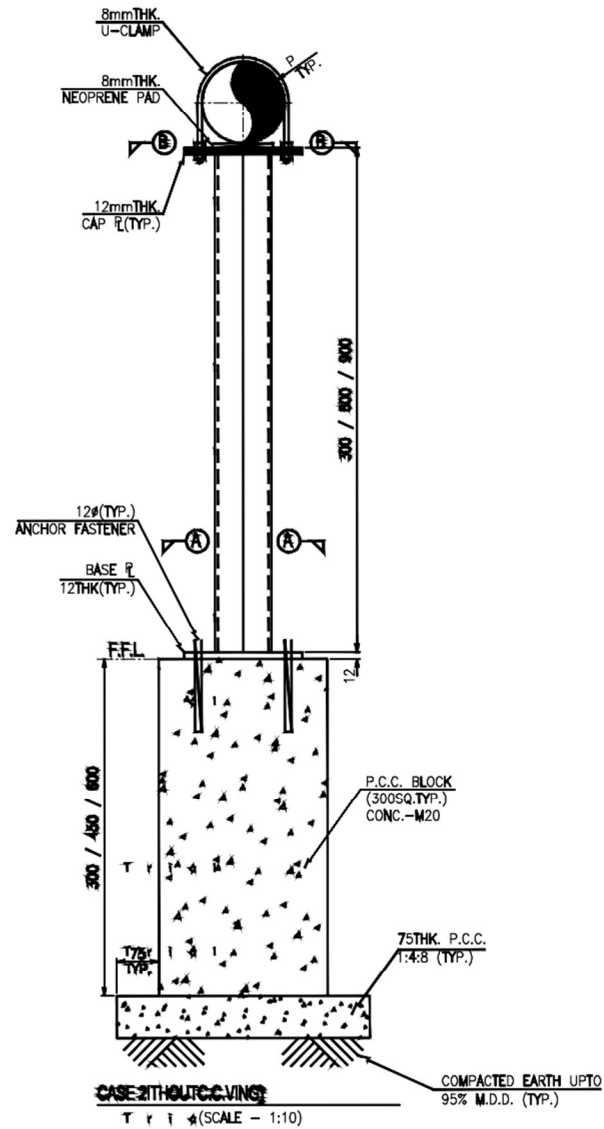
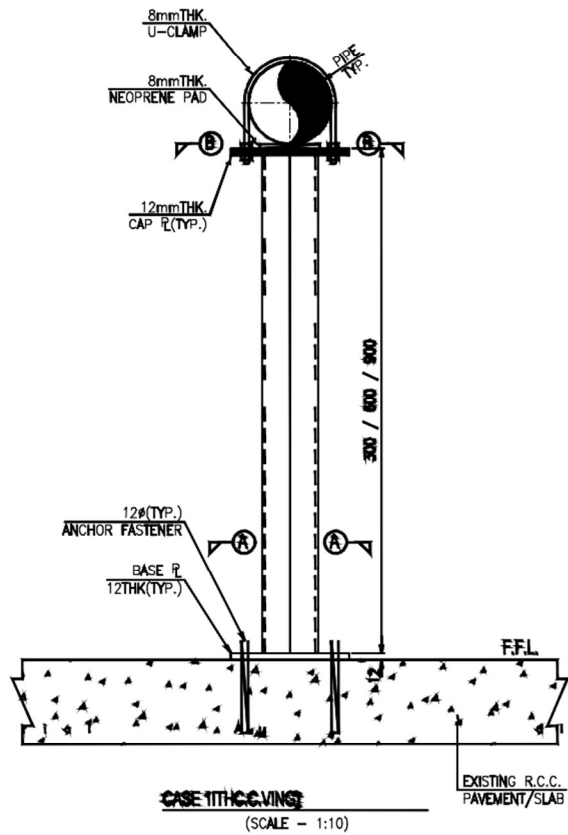


TYP. FENCING POST DETAIL



CLIENT: HARIDWAR NATURAL GAS (HNGPL)
 TITLE: TYPICAL DETAILS OF FENCING

NO.	DATE	REVISION	BY	CHECKED	SCALE	CAD	AS
1							



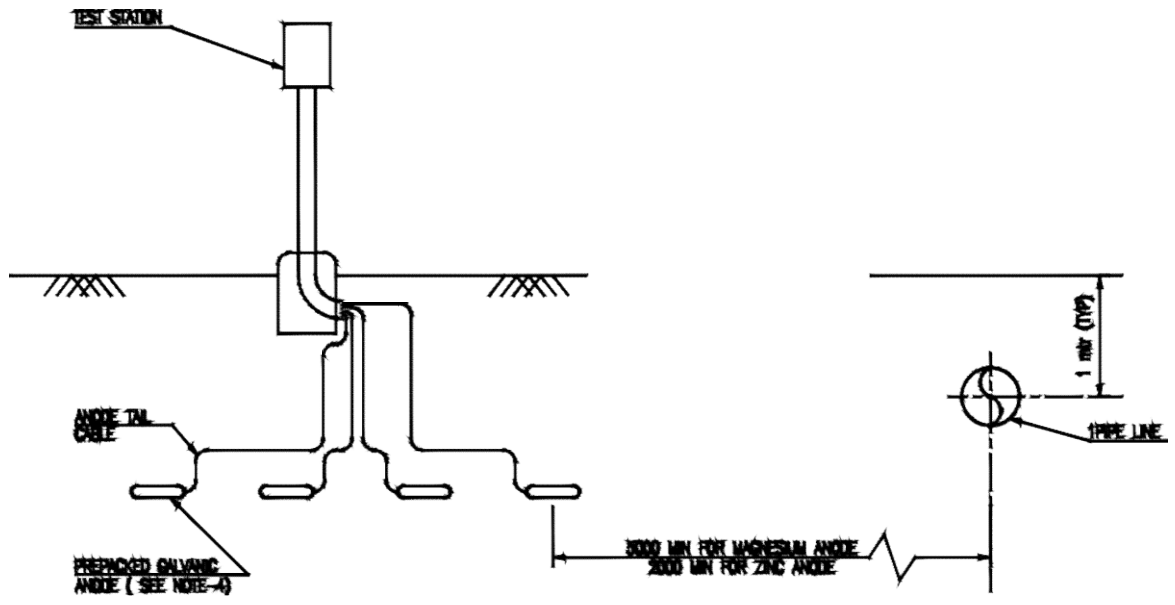
NOTES:

1. ALL DIMENSIONS ARE IN MM. UNLESS OTHERWISE SPECIFIED.
2. FOLLOW WRITTEN DIMENSIONS ONLY. DO NOT SCALE.
3. THE PIPE SUPPORTS (CASE-1 & CASE-2) IS APPLICABLE UP TO 8" PIPE ONLY.

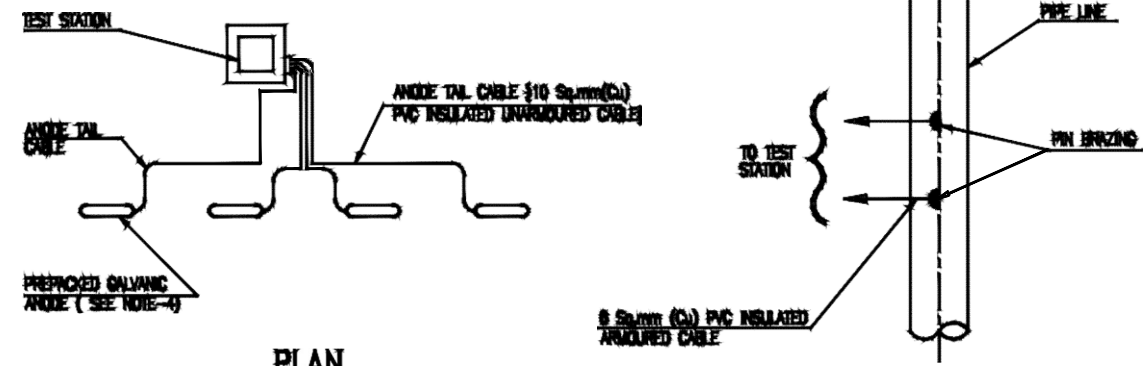
CLIENT: HARDWAR NATURAL GAS (HNGPL)

TITLE: TYPICAL PIPE SUPPORT DETAIL

SIZE	CLIENT JOB NO.	DRAWING NUMBER	SHEET	REV.
A3	-	-	1 OF 1	0



ELEVATION



PLAN

NOTES

- 1 ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.
- 2 FOLLOW WRITTEN DIMENSIONS ONLY, DO NOT SCALE.
- 3 THE PREPACKED GALVANIC ANODE SHALL BE INSTALLED AT A MINIMUM DEPTH EQUAL TO BOTTOM LEVEL OF THE PIPE LINE.
- 4 ALL NATIVE BE LAID BACKFILL SHALL BE FREE OF ROCKS, GARBAGE, PAPERS ETC.
- 5 CABLE SHALL BE LAID WITH ENOUGH SLACKNESS TO AVOID DAMAGE TO CABLES DURING BACKFILLING ETC.
- 6 THE ANODES ARE SHOWN HORIZONTALLY LAID, ALTERNATIVELY THE ANODES MAY BE LAID VERTICALLY.
- 7 ANODE TAIL CABLE TO TEST STATION FOR TEMP C/P, ANODE PVC INSULATED TYPE.

CLIENT: HARIDWAR NATURAL GAS (HNGPL)

TITLE
GALVANIC ANODE INSTALLATION

SIZE	CLIENT JOB NO.	DRAWING NUMBER	SHEET	REV.
A3	-		1 OF 1	0

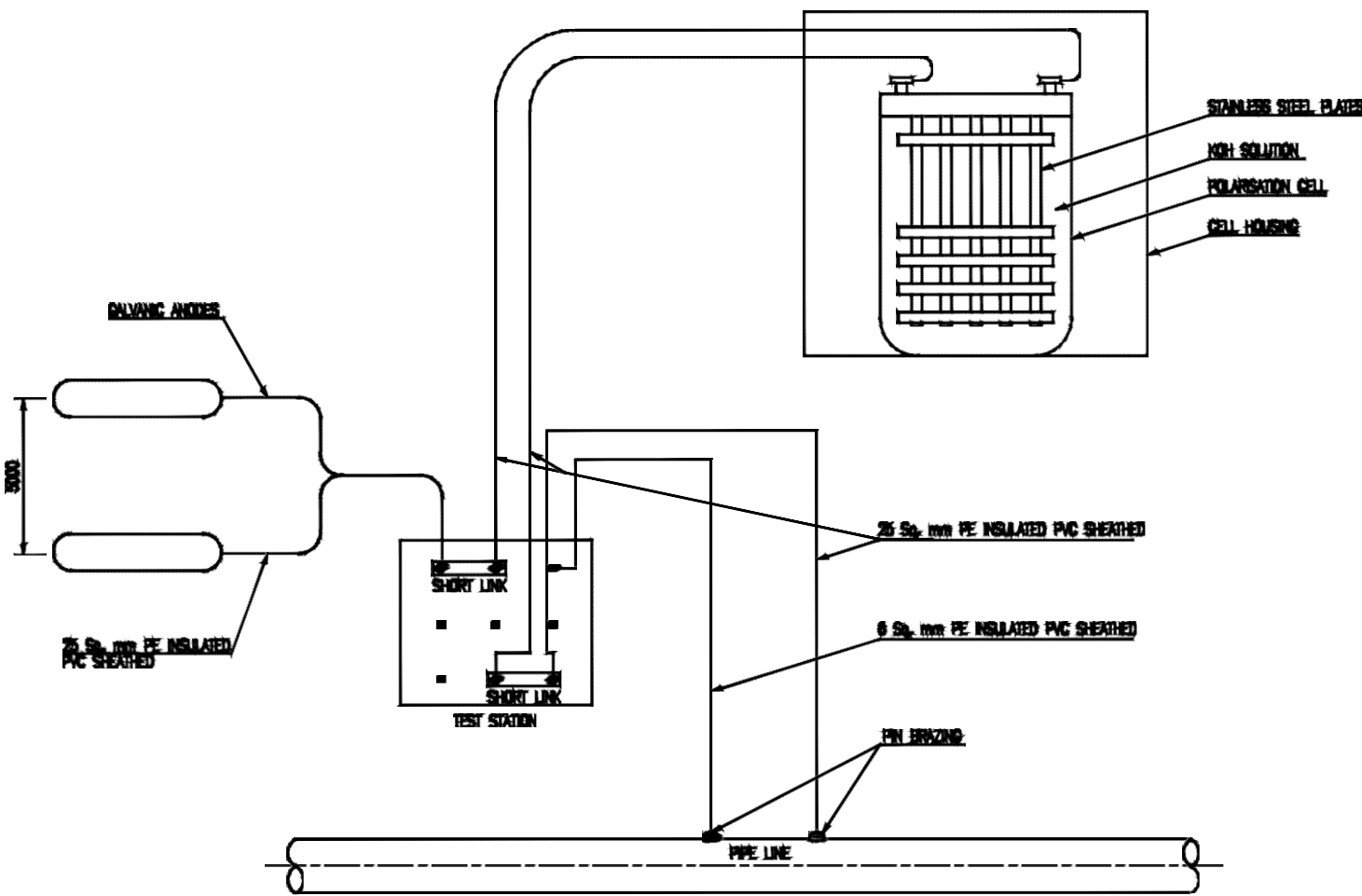
A

B

C

D

E



CONNECTION SCHEME
 TYPE H : HIGH TENSION LINE CROSSING

NOTES

- 1 ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.
- 2 FOLLOW WRITTEN DIMENSIONS ONLY. DO NOT SCALE.
- 3 THE POLARISATION CELL, ANODES, CABLE, CABLE JOINT ETC SHALL MINIMUM BE RATED FOR THE EXPECTED FAULT CURRENT AT THE LOCATION OF THE INSTALLATION & SIZED FOR PERMANENT C.P. LIFE.
- 4 THE POLARISATION CELL SHALL BE HOUSED IN A VANDALISM PROOF HOUSING.
- 5 CELL SHALL HAVE GOOD VENTILATION TO ATMOSPHERE & SHALL BE PROTECTED AGAINST DIRECT SUN LIGHT & RAIN WATER.
- 6 ANODE TAIL CABLES OF EACH ANODE SHALL BE TERMINATED INDIVIDUALLY IN TEST STATION.
- 7 CONTRACTOR SHALL FURNISH DRAWING WITH ACTUAL DIMENSIONS AND RATINGS.
- 8 EASY ACCESS TO CELL SHALL BE PROVIDED FOR PERIODIC INSPECTION.

CLIENT: HARIDWAR NATURAL GAS (HNGPL)

TITLE: PIPELINE GROUNDING THROUGH
 POLARIZATION CELL & GALVANIC ANODE

SIZE	CLIENT JOB NO.	DRAWING NUMBER	SHEET	REV.
A3	-		1 OF 1	0

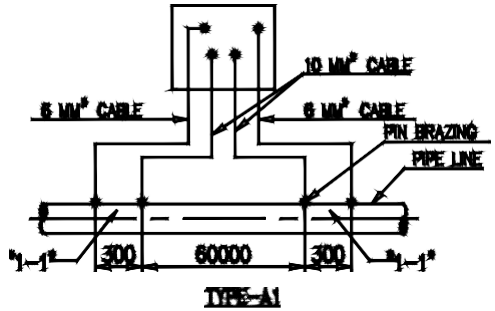
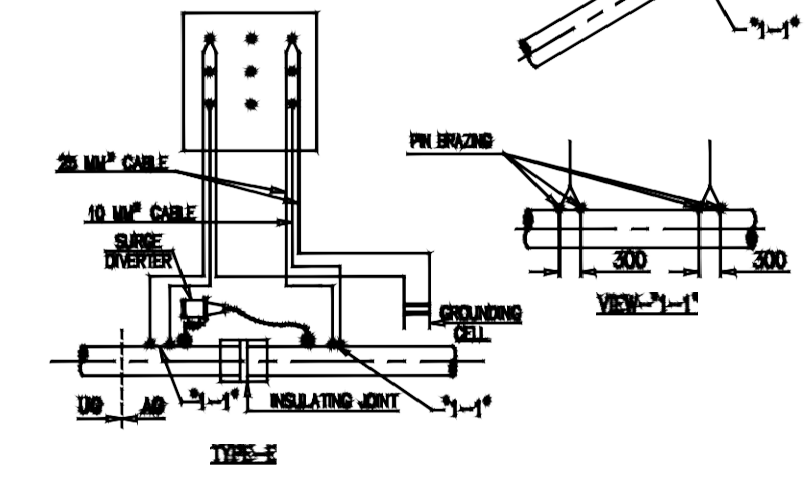
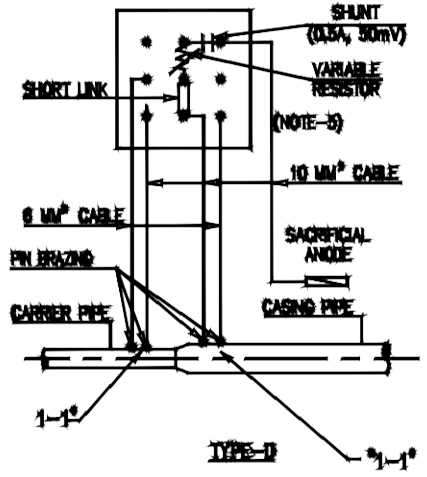
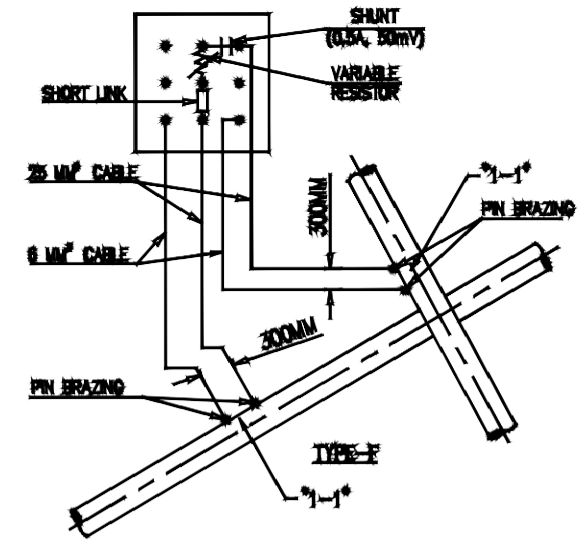
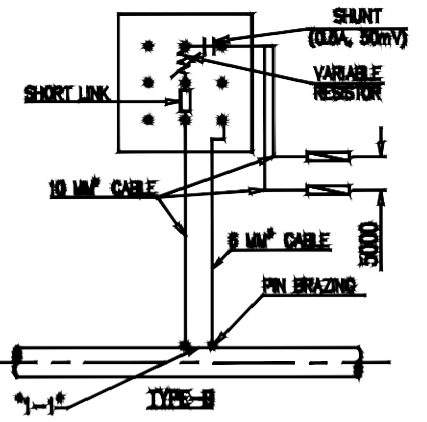
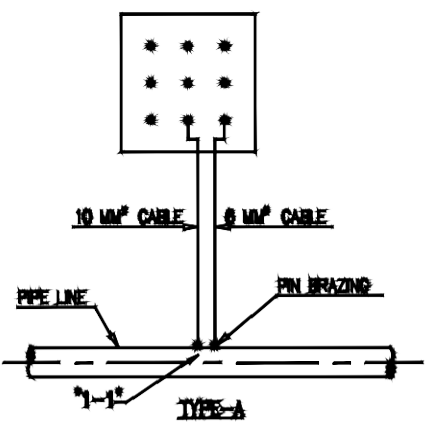
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D

E



DETAILS OF CONNECTION SCHEME

- TYPE A : PSP MONITORING ONLY,
- TYPE A1 : LINE CURRENT MEASUREMENT,
- TYPE B : ANODE TO PIPE CONNECTION,
- TYPE D : CASING CROSSING,
- TYPE E : INSULATION JOINT,
- TYPE F : FOREIGN PIPE LINE CROSSING,

NOTES

- 1 ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.
- 2 FOLLOW WRITTEN DIMENSIONS ONLY, DO NOT SCALE.
- 3 THE CONNECTION SCHEMES ARE TYPICAL.
- 4 REQUIRED CONNECTION SCHEME SHALL BE PROVIDED ON THE TERMINAL PLATE OF TEST LEAD POINT.
- 5 CASING PROTECTION IS APPLICABLE ONLY WHEN CASING PIPE IS COATED/PANTEL.

CLIENT: HARIDWAR NATURAL GAS (HNGPL)

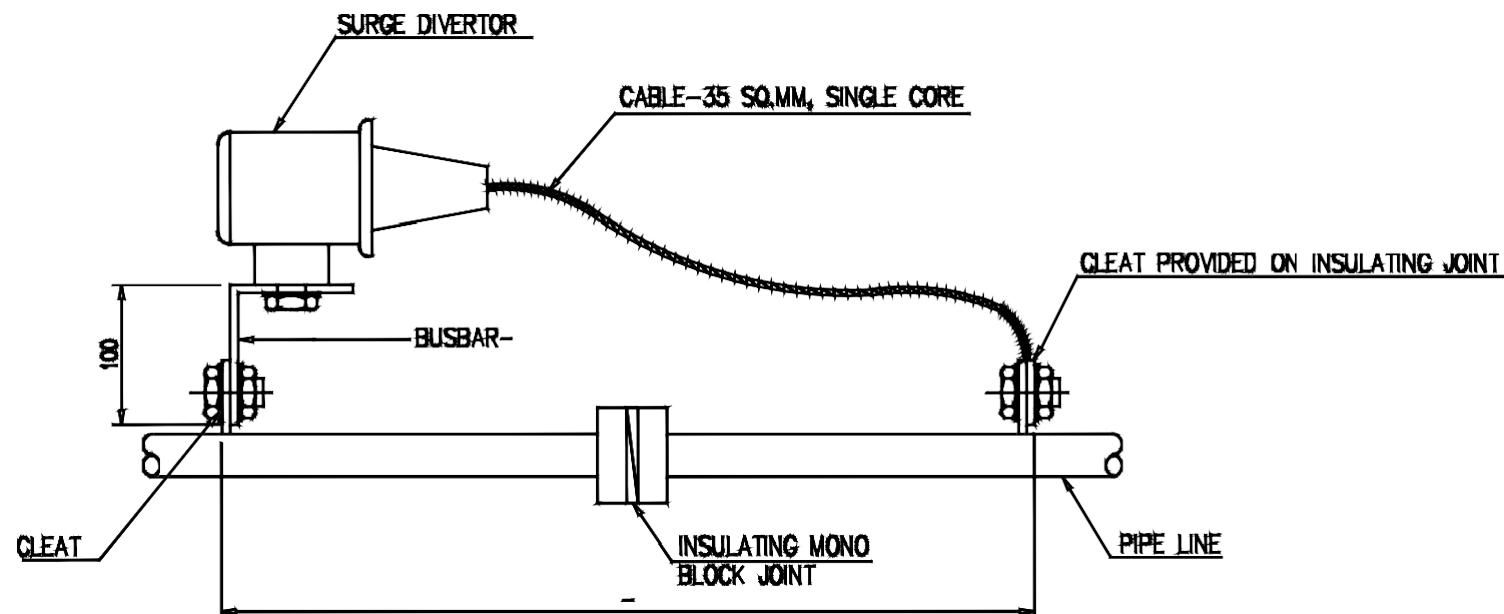
TITLE TEST STATION CONNECTION SCHEME (TYPICAL) DETAIL

SIZE	CLIENT JOB NO.	DRAWING NUMBER	SHEET	REV.
A3	JOB-NO		1 OF 1	0

NOTES

1 ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.

2 FOLLOW WRITTEN DIMENSIONS ONLY. DO NOT SCALE.



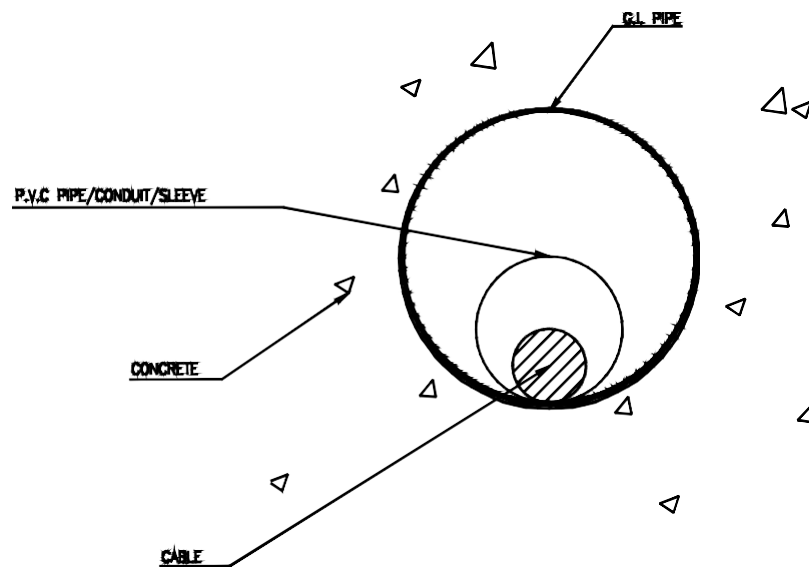
S.NO.	DESCRIPTION	QTY.
1	TINNED COPPER BUS BAR 25mm X 3mm THK 550mm LONG 90°SMOOTH BEND AT 100mm AT ONE END BOTH END WILL HAVE M12 HOLES	1
2	TINNED COPPER BUS BAR 25mm X 3mm THK 1" SHAPE BEND AT CENTER FOR TOTAL LENGTH 200mm TO BE DIVIDED IN TWO PART BOTH END WILL HAVE M12 HOLES	1
3	2 NOS M 10 SIZE BRASS NUT BOLTS, WASHERS 2 NOS NUT BOLTS ARE PROVIDED WITH EACH SPARK GAP ARRESTOR.	2

CLIENT: HARIDWAR NATURAL GAS (HNGPL)

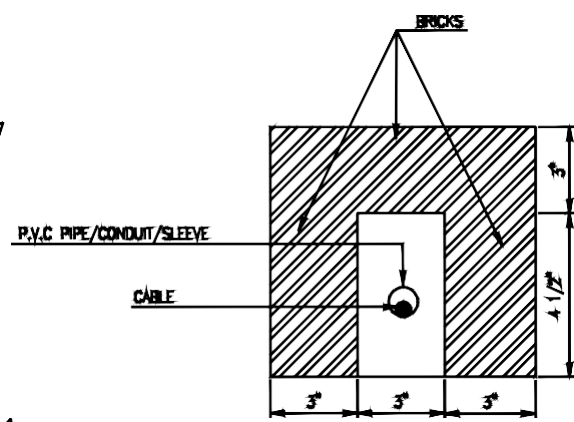
TITLE

SURGE DIVERTOR INSTALLATION

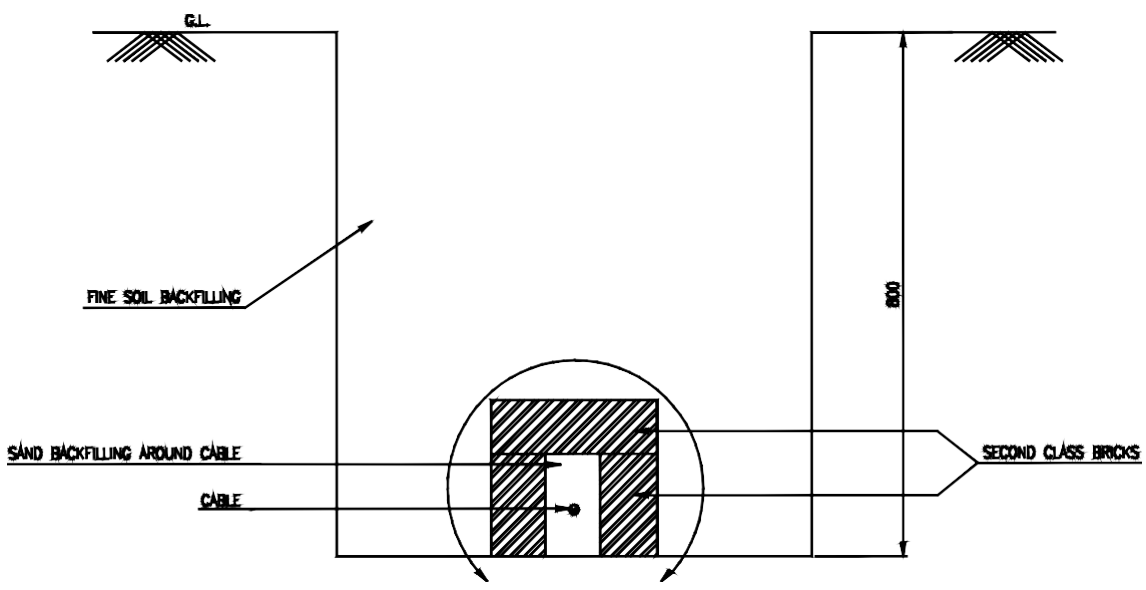
SIZE	CLIENT JOB NO.	DRAWING NUMBER	SHEET	REV.
A3	-		1 OF 1	0



SECTION VIEW OF CABLE LAYOUT IN CONCRETE



ENLARGED DETAIL-X FOR NORMAL LAYING IN EARTH



TYPICAL CROSS-SECTION OF CABLE LAYING IN EARTH

NOTES

- 1 ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.
- 2 FOLLOW WRITTEN DIMENSIONS ONLY. DO NOT SCALE.
- 3 ALL UNDERGROUND CABLE SHALL BE LAID IN BRICK COVERING WITH SAND BACKFILL.
- 4 FOR MORE THAN ONE CABLE IN THE SAME CABLE TRENCH, CABLE SHALL BE LAID SIDE BY SIDE IN SEPARATE BRICK COVERING.
- 5 AT BOTH ENDS OF CABLE TERMINATION, A LOOP OF ONE METER (MINIMUM) SHALL BE KEPT AS SPARE.
- 6 WHEREVER TERMINATION IS REQUIRED, T-JOINTS OR ELBOWS SHALL BE PROVIDED.
- 7 AT ROAD/NALA CROSSINGS, G.L. PIPE CONDUIT SHALL BE USED.

CLIENT: HARIDWAR NATURAL GAS (HNGPL)

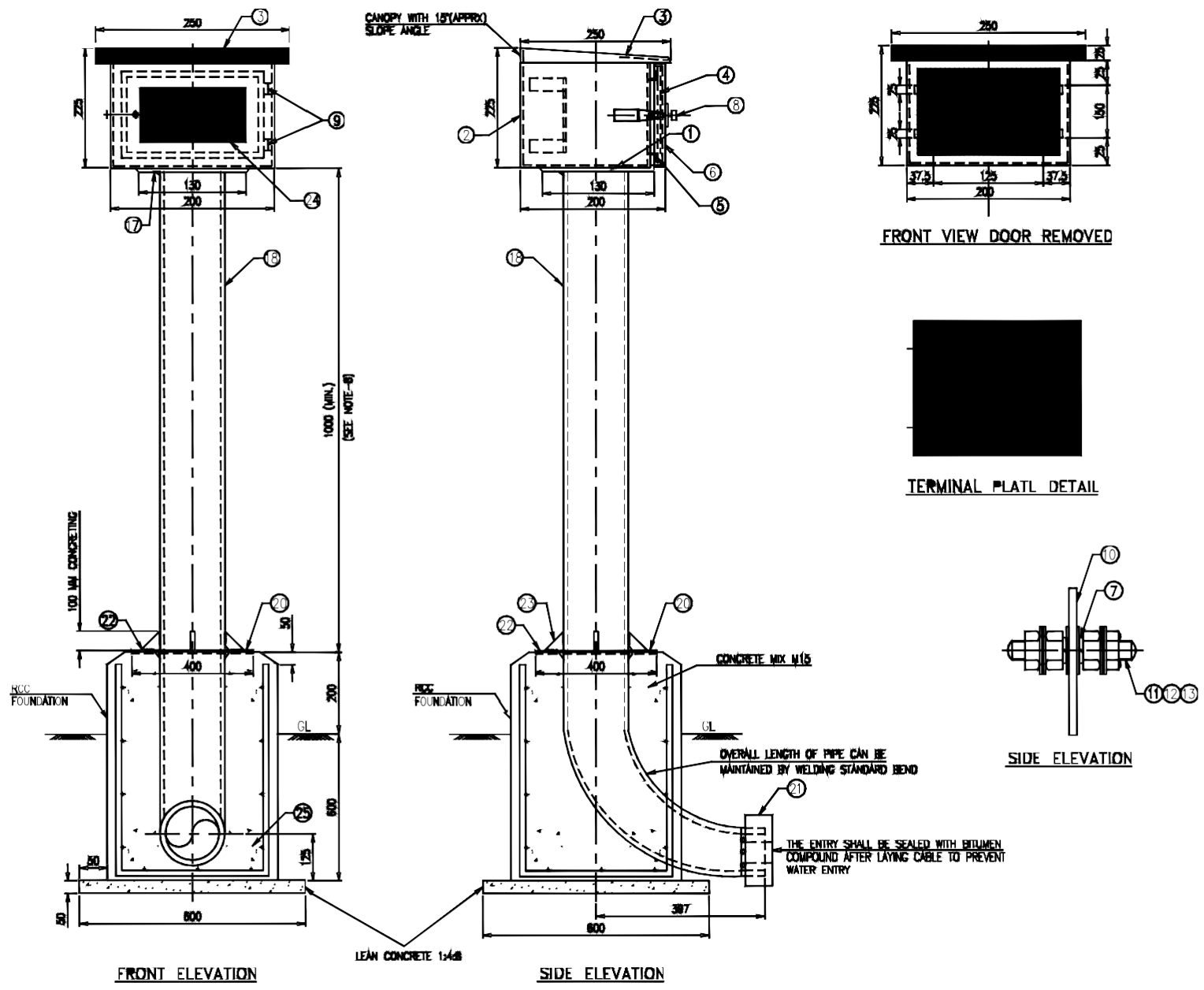
TITLE: **FABRICATION & INSTALLATION DETAIL OF CABLE LAYING FOR CATHODIC PROTECTION**

SIZE	CLIENT JOB NO.	DRAWING NUMBER	SHEET	REV.
A3			1 OF 1	A

- 1 ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.
- 2 FOLLOW WRITTEN DIMENSIONS ONLY. DO NOT SCALE.
- 3 THE SHUTTER SHALL BE HINGED TYPE WITH CONCEALED LOCK & SHALL HAVE DOOR GASKET TO MAKE THE TEST STATION WEATHER PROOF(P-56)
- 4 THE INNER & OUTER SURFACE OF THE TEST STATION SHALL BE EPOXY PAINTED.
- 5 THE NAME PLATE SHALL BE OF ANODISED ALUMINIUM WITH BLACK BACKGROUND & WHITE LETTERS & SHALL BE FIXED TO THE INNER SIDE OF SHUTTER.
- 6 TEST STATION SHALL BE ERRECTED WITH THEIR SHUTTERS PARALLEL TO THE LINE OF AXIS AND FACING THE PIPE LINE. THE DIMENSIONS OF THE TEST STATION WILL VARY DEPENDING ON THE TYPE OF THE TEST STATION.
- 7 THE CHANGAGE OF TEST STATION SHALL BE WRITTEN WITH BLACK PAINT ON THE OUTER SIDE OF THE FRONT SHUTTER.
- 8 HEIGHT OF THE TEST STATION SHOWN ABOVE GROUND LEVEL IS MINIMUM ONLY. THE ACTUAL HEIGHT SHALL BE DECIDED BASED ON LOCAL FLOOD LEVELS TO BE ASCERTAINED.
- 9 AFTER INSTALLATION OF FOUNDATION BOLT, 4" (100MM) CONCRETING TO BE DONE ABOVE THE PLATES AS AN EXTENSION OF RCC(M-15) FOUNDATION. TOTAL DEPTH OF THE FOUNDATION SHALL BE 900 MM AND 300 MM ABOVE THE GRADED LEVEL.

BILL OF MATERIAL

SL. NO.	DESCRIPTION	QTY.
1.	BOTTOM PLATE, 5THKx184 MS PLATE	1No
2.	REAR & SIDE, 2.87x217x704 MS	1No
3.	TOP, 2.87x250x300 MS	1No
4.	FRONT TOP, 2.87 x190x61 MS	1No
5.	FRONT BOTTOM, 2.87x190x61 MS	1No
6.	SHUTTER 2.87x234x234 MS	1No
7.	SPRING WASHER SC. B.B	8Nos
8.	CASTLE LOCK WITH MASTER KEY (INDOS. KEY)	1No
9.	HINGE FOR SHUTTER	2Nos
10.	TERMINAL PLATE, 8x150x150 PHENOLIC LAM. SHT.	1No
11.	BRASS STUD M6x50LONG (FOR TERMINALS)	1No
12.	BRASS NUT M6	44Nos
13.	BRASS WASHER	44Nos
14.	MS. ANGLE 5THKx50x50x30	4Nos
15.	STEEL SCREW, M6x16	4Nos
16.	LATCH FOR SHUTTER	1No
17.	MS COUPLING PLATE, 5THKx130x130 MS PLATE	1No
18.	MS PIPE, 100 NB x 5.4 THKx 1275MM	1No
19.	NEOPRENE RUBBER GASKET 8 THK.	1SET
20.	FOUNDATION PLATE 8THKx400x400	2Nos
21.	RUBBER BUSH	1No
22.	FOUNDATION BOLT M14x125 LONG WITH SPRING WASHER AND NUT	1No
23.	STIFFENER PLATE 6THKx100x100	1No
24.	NAME PLATE ANODISED AL. 0.3x120x160	1No



CLIENT: HARIDWAR NATURAL GAS (HNGPL)

TITLE: TEST LEAD POINTS & JUNCTION BOX WITH FOUNDATION DETAIL

SIZE	CLIENT JOB NO.	DRAWING NUMBE	R
A3	-		

AR Filling Station Haridwar

