



PERMANENT CATHODIC PROTECTION
STANDARD INSTALLATION DETAILS
ABOVEGROUND TANKS

NOTE

REFERENCE DRAWINGS

DWG. NO.	TITLE

04	16.FEB.2025	APPROVED FOR CONSTRUCTION	Y.J	S.S	A.H	A.A.H
03	20.NOV.2021	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
02	04.JUL.2020	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
01	15.FEB.2020	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
00	04.FEB.2020	ISSUE FOR APPROVAL	E.N	F.S	A.H	A.A.H

REV.	DATE	DESCRIPTION	PREP. BY	CHKD. BY	APPD. BY	AUTH. BY
	SOUTHERN ADISH GAS CONDENSATE REFINERY PROJECT					

CONTRACT NO.:SCALE: N/S

DRAWING TITLE:

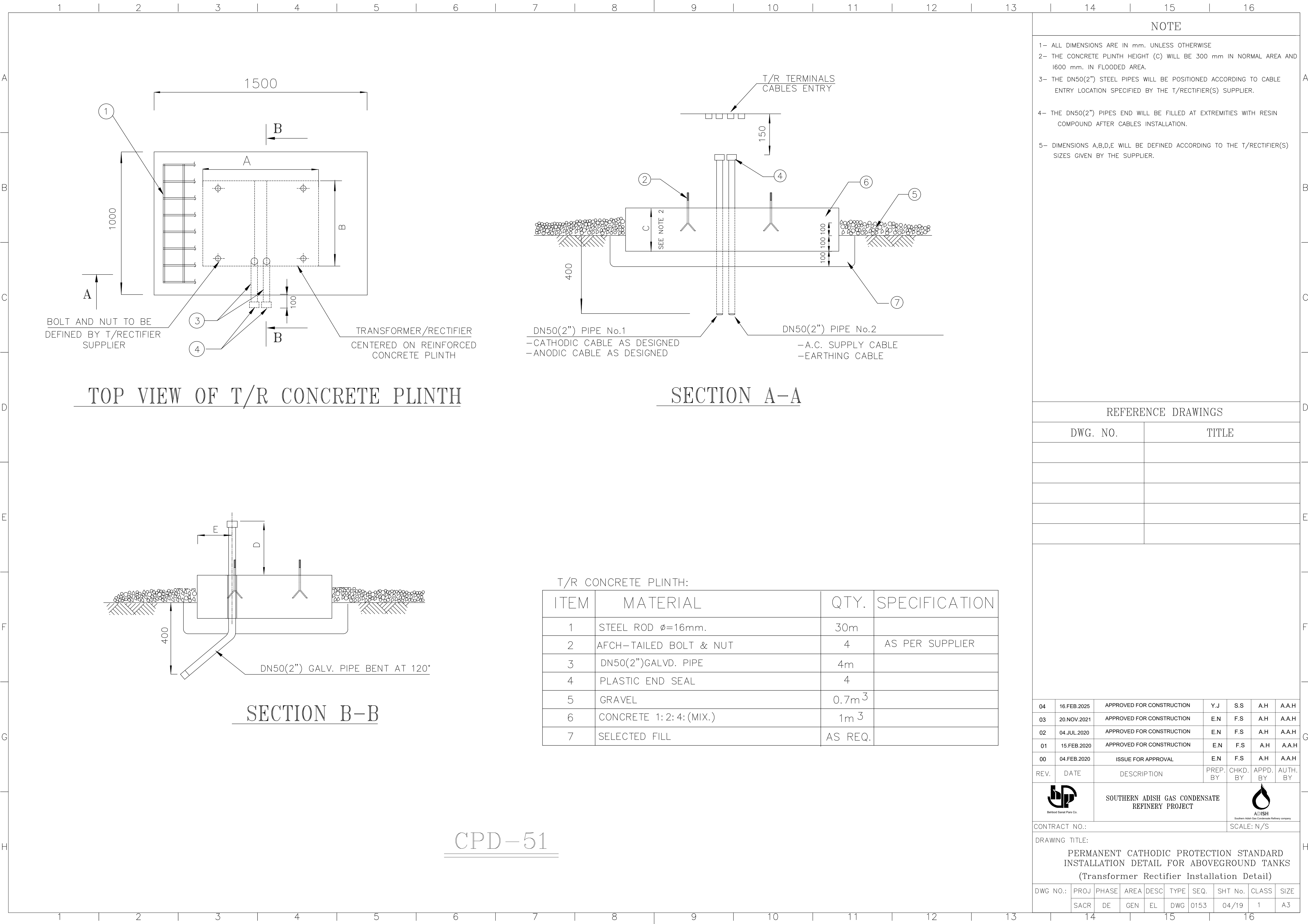
PERMANENT CATHODIC PROTECTION STANDARD
INSTALLATION DETAIL FOR ABOVEGROUND TANKS
(Title)

DWG NO.:	PROJ	PHASE	AREA	DESC	TYPE	SEQ.	SHT No.	CLASS	SIZE
	SACR	DE	GEN	EL	DWG	0153	01/19	1	A3

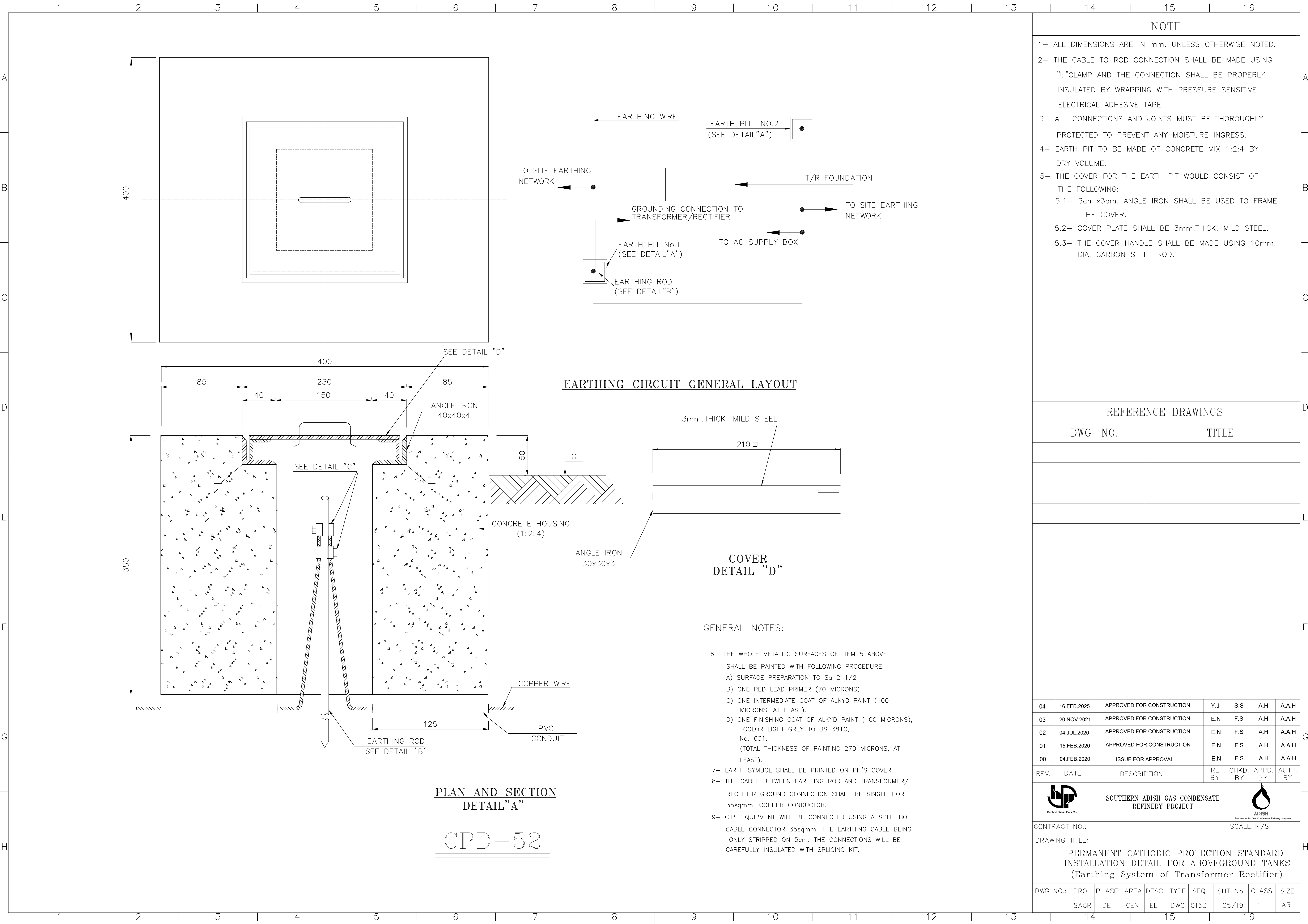
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	REVISION INDEX													NOTE		
A																
B																
C																
D																
E																
F																
G																
H																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

REV. PAGE	00	01	02	03	04	05	06	07	08	REV. PAGE	00	01	02	03	04	05	06	07	08	REV. PAGE
1	X	X	X																	
2	X	X	X	X																
3	X	X	X	X																
4	X	X	X																	
5	X	X	X																	
6	X	X	X																	
7	X	X	X																	
8	X	X	X																	
9	X	X	X																	
10	X	X	X																	
11	X	X	X																	
12	X	X	X																	
13	X	X	X																	
14	X	X	X																	
15	X	X	X	X																
16	X	X	X																	
17	X	X	X																	
18	X	X	X	X																
19	X	X	X																	
20	X	X	X																	
21	X	X	X	X																
22	X	X	X	X																
23	X	X	X																	
24	X	X	X																	
25	X	X	X	X																
26	X	X	X																	
27	X	X	X																	
28	X	X	X																	
29	X	X	X																	
30	X	X	X																	
31	X	X	X																	
32	X	X	X																	
33	X	X	X																	
34	X	X	X																	
35	X	X	X																	
36	X	X	X																	
37	X	X	X																	
38	X	X	X																	
39	X	X	X	X																
40			X	NEW																

REFERENCE DRAWINGS						
DWG. NO.		TITLE				



NOTE						
1- ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE						
2- THE CONCRETE PLINTH HEIGHT (C) WILL BE 300 mm IN NORMAL AREA AND 1600 mm. IN FLOODED AREA.						
3- THE DN50(2") STEEL PIPES WILL BE POSITIONED ACCORDING TO CABLE ENTRY LOCATION SPECIFIED BY THE T/RECTIFIER(S) SUPPLIER.						
4- THE DN50(2") PIPES END WILL BE FILLED AT EXTREMITIES WITH RESIN COMPOUND AFTER CABLES INSTALLATION.						
5- DIMENSIONS A,B,D,E WILL BE DEFINED ACCORDING TO THE T/RECTIFIER(S) SIZES GIVEN BY THE SUPPLIER.						



NOTE

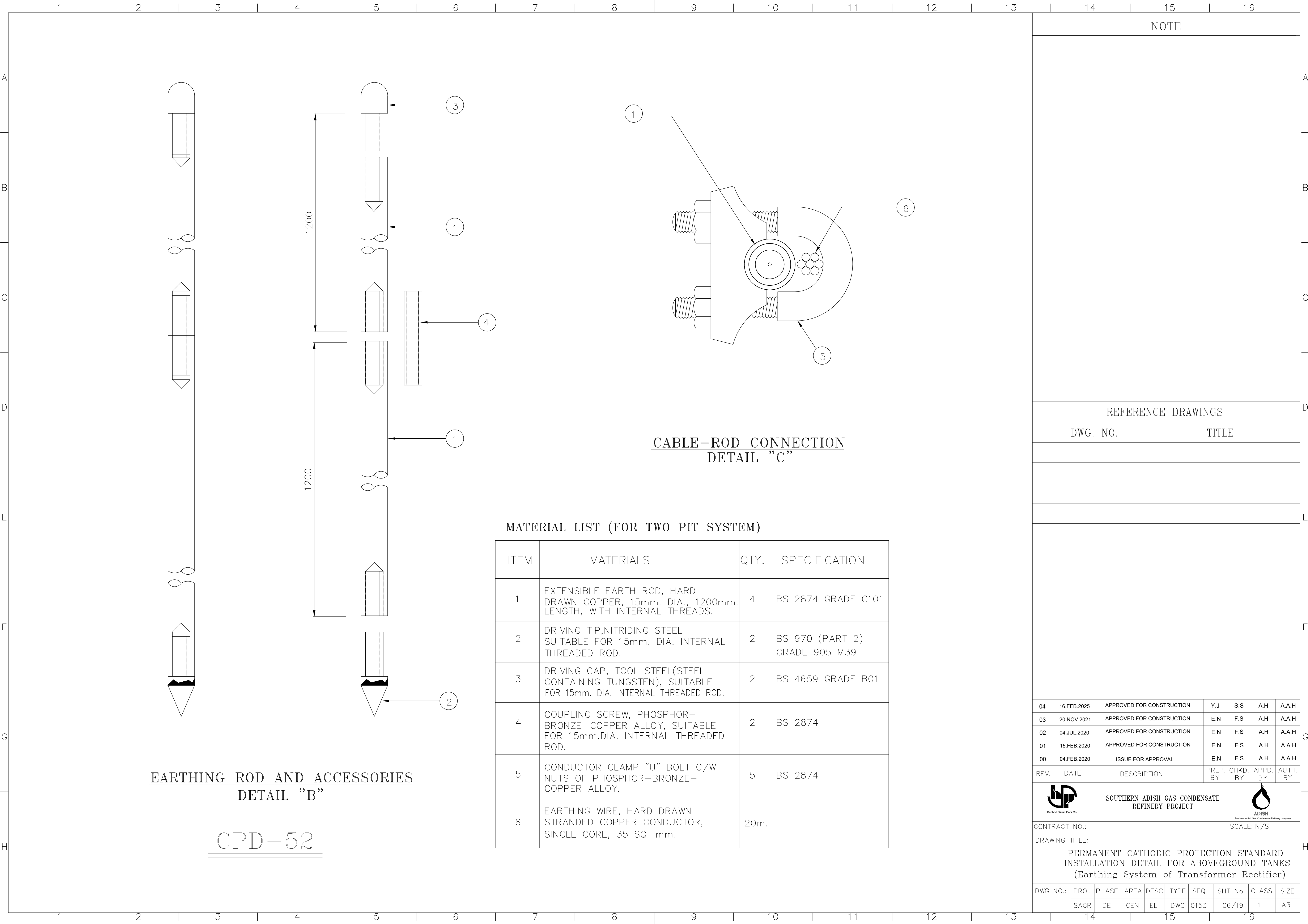
- 1- ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE NOTED.
- 2- THE CABLE TO ROD CONNECTION SHALL BE MADE USING "U"CLAMP AND THE CONNECTION SHALL BE PROPERLY INSULATED BY WRAPPING WITH PRESSURE SENSITIVE ELECTRICAL ADHESIVE TAPE
- 3- ALL CONNECTIONS AND JOINTS MUST BE THOROUGHLY PROTECTED TO PREVENT ANY MOISTURE INGRESS.
- 4- EARTH PIT TO BE MADE OF CONCRETE MIX 1:2:4 BY DRY VOLUME.
- 5- THE COVER FOR THE EARTH PIT WOULD CONSIST OF THE FOLLOWING:
- 5.1- 3cm.x3cm. ANGLE IRON SHALL BE USED TO FRAME THE COVER.
- 5.2- COVER PLATE SHALL BE 3mm.THICK. MILD STEEL.
- 5.3- THE COVER HANDLE SHALL BE MADE USING 10mm. DIA. CARBON STEEL ROD.

REFERENCE DRAWINGS

DWG. NO.	TITLE

04	16.FEB.2025	APPROVED FOR CONSTRUCTION	Y.J	S.S	A.H	A.A.H
03	20.NOV.2021	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
02	04.JUL.2020	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
01	15.FEB.2020	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
00	04.FEB.2020	ISSUE FOR APPROVAL	E.N	F.S	A.H	A.A.H
REV.	DATE	DESCRIPTION	PREP. BY	CHKD. BY	APPD. BY	AUTH. BY
		SOUTHERN ADISH GAS CONDENSATE REFINERY PROJECT				

CONTRACT NO.:							SCALE: N/S		
DRAWING TITLE:									
PERMANENT CATHODIC PROTECTION STANDARD INSTALLATION DETAIL FOR ABOVEGROUND TANKS (Earthing System of Transformer Rectifier)									
DWG NO.:	PROJ	PHASE	AREA	DESC	TYPE	SEQ.	SHT No.	CLASS	SIZE
	SACR	DE	GEN	EL	DWG	0153	05/19	1	A3



NOTE

REFERENCE DRAWINGS

DWG. NO.

TITLE



SOUTHERN ADISH GAS CONDENSATE
REFINERY PROJECT



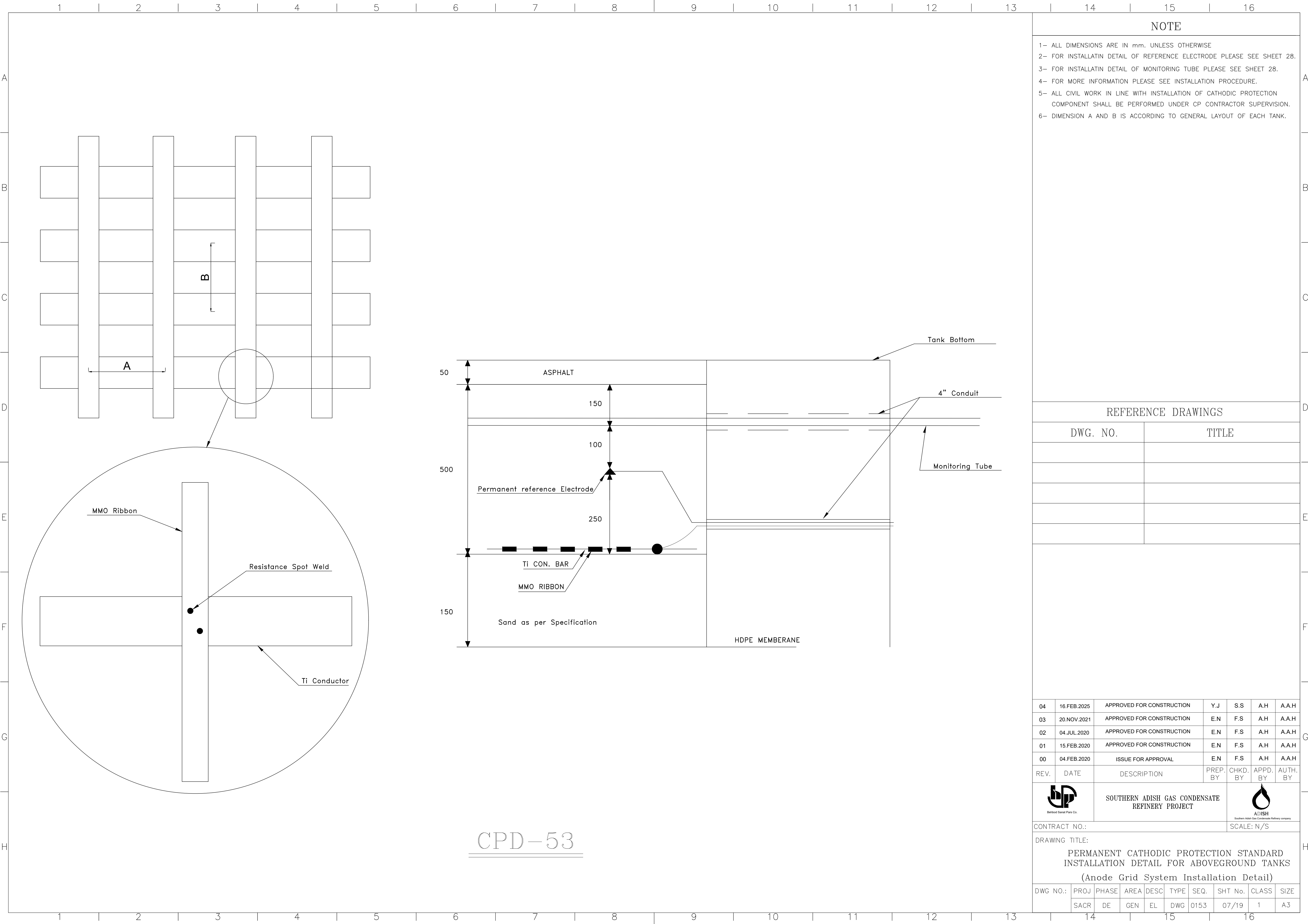
CONTRACT NO.:

SCALE: N/S

DRAWING TITLE:

PERMANENT CATHODIC PROTECTION STANDARD
INSTALLATION DETAIL FOR ABOVEGROUND TANKS
(Earthing System of Transformer Rectifier)

DWG NO.:	PROJ	PHASE	AREA	DESC	TYPE	SEQ.	SHT No.	CLASS	SIZE
	SACR	DE	GEN	EL	DWG	0153	06/19	1	A3



NOTE

- 1- ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE
- 2- FOR INSTALLATION DETAIL OF REFERENCE ELECTRODE PLEASE SEE SHEET 28.
- 3- FOR INSTALLATION DETAIL OF MONITORING TUBE PLEASE SEE SHEET 28.
- 4- FOR MORE INFORMATION PLEASE SEE INSTALLATION PROCEDURE.
- 5- ALL CIVIL WORK IN LINE WITH INSTALLATION OF CATHODIC PROTECTION COMPONENT SHALL BE PERFORMED UNDER CP CONTRACTOR SUPERVISION.
- 6- DIMENSION A AND B IS ACCORDING TO GENERAL LAYOUT OF EACH TANK.

REFERENCE DRAWINGS

DWG. NO.	TITLE

04	16.FEB.2025	APPROVED FOR CONSTRUCTION	Y.J	S.S	A.H	A.A.H
03	20.NOV.2021	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
02	04.JUL.2020	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
01	15.FEB.2020	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
00	04.FEB.2020	ISSUE FOR APPROVAL	E.N	F.S	A.H	A.A.H

REV.	DATE	DESCRIPTION	PREP. BY	CHKD. BY	APPD. BY	AUTH. BY

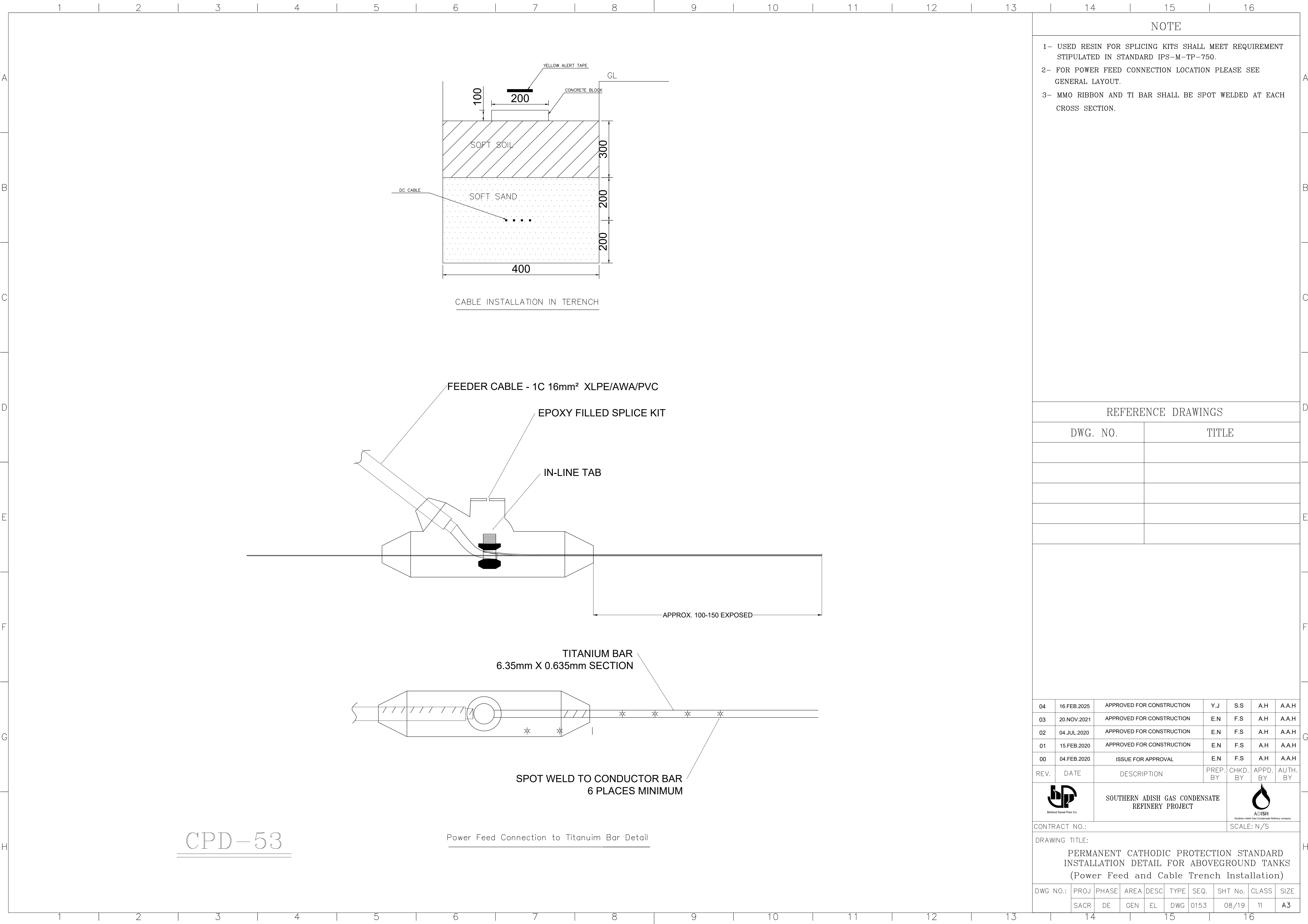


Beirood Sarraf Pars Co.



Southern Adish Gas Condensate Refinery company

CONTRACT NO.:							SCALE: N/S		
DRAWING TITLE:									
PERMANENT CATHODIC PROTECTION STANDARD INSTALLATION DETAIL FOR ABOVEGROUND TANKS (Anode Grid System Installation Detail)									
DWG NO.:	PROJ	PHASE	AREA	DESC	TYPE	SEQ.	SHT No.	CLASS	SIZE
	SACR	DE	GEN	EL	DWG	0153	07/19	1	A3



CPD-53

NOTE

- 1- USED RESIN FOR SPLICING KITS SHALL MEET REQUIREMENT STIPULATED IN STANDARD IPS-M-TP-750.
- 2- FOR POWER FEED CONNECTION LOCATION PLEASE SEE GENERAL LAYOUT.
- 3- MMO RIBBON AND TI BAR SHALL BE SPOT WELDED AT EACH CROSS SECTION.

REFERENCE DRAWINGS

DWG. NO.	TITLE

04	16.FEB.2025	APPROVED FOR CONSTRUCTION	Y.J	S.S	A.H	A.A.H
03	20.NOV.2021	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
02	04.JUL.2020	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
01	15.FEB.2020	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
00	04.FEB.2020	ISSUE FOR APPROVAL	E.N	F.S	A.H	A.A.H
REV.	DATE	DESCRIPTION	PREP. BY	CHKD. BY	APPD. BY	AUTH. BY



Bechtel Saudi Petco Co.

SOUTHERN ADISH GAS CONDENSATE REFINERY PROJECT



ADISH
Southern Adish Gas Condensate Refinery company

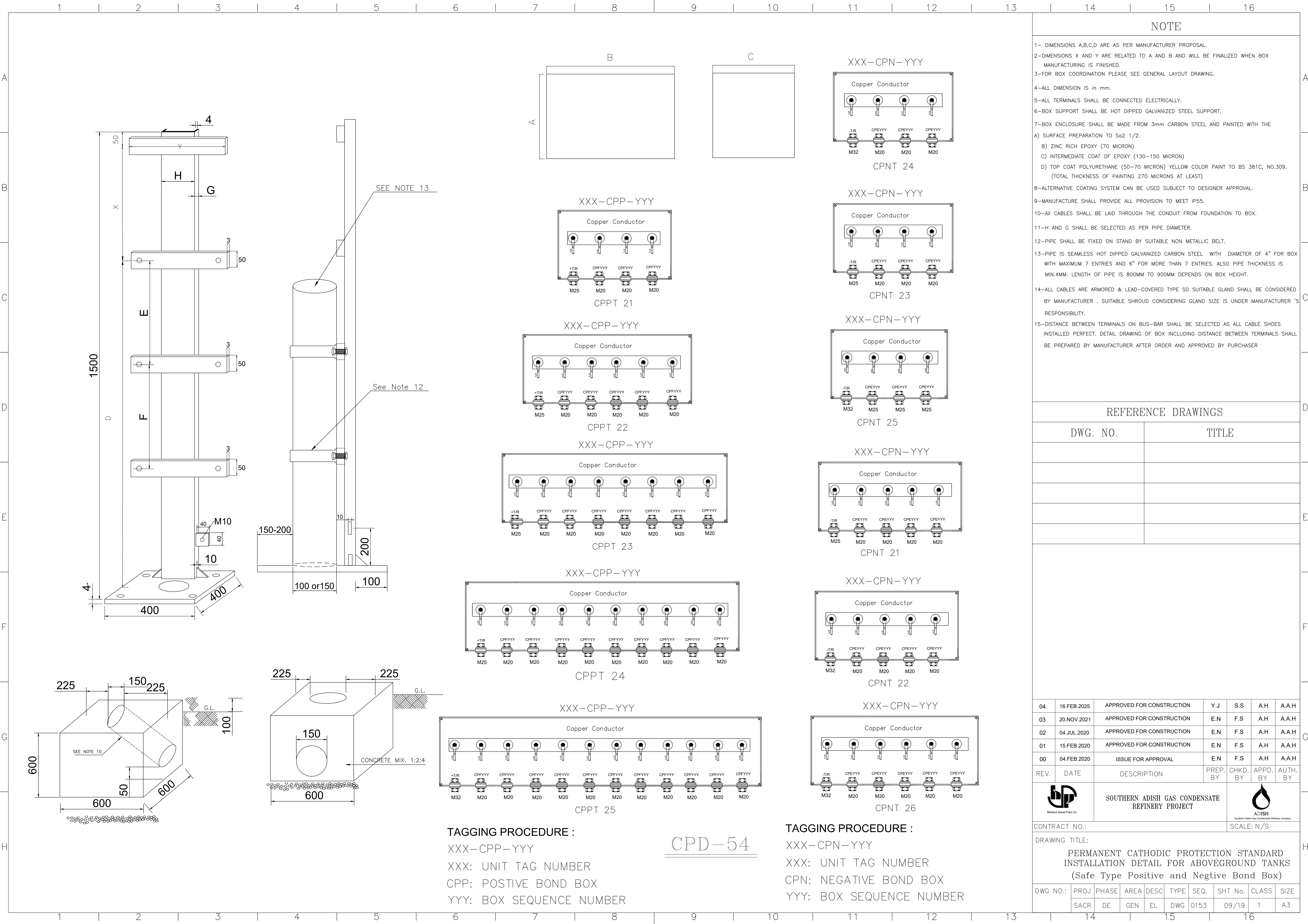
CONTRACT NO.:

SCALE: N/S

DRAWING TITLE:

PERMANENT CATHODIC PROTECTION STANDARD
INSTALLATION DETAIL FOR ABOVEGROUND TANKS
(Power Feed and Cable Trench Installation)

DWG NO.:	PROJ	PHASE	AREA	DESC	TYPE	SEQ.	SHT No.	CLASS	SIZE
	SACR	DE	GEN	EL	DWG	0153	08/19	11	A3



NOTE

- 1- DIMENSIONS A,B,C,D ARE AS PER MANUFACTURER PROPOSAL.
- 2-DIMENSIONS X AND Y ARE RELATED TO A AND B AND WILL BE FINALIZED WHEN BOX MANUFACTURING IS FINISHED.
- 3-FOR BOX COORDINATION PLEASE SEE GENERAL LAYOUT DRAWING.
- 4-ALL DIMENSION IS in mm.
- 5-ALL TERMINALS SHALL BE CONNECTED ELECTRICALLY.
- 6-BOX SUPPORT SHALL BE HOT DIPPED GALVANIZED STEEL SUPPORT.
- 7-BOX ENCLOSURE SHALL BE MADE FROM 3mm CARBON STEEL AND PAINTED WITH THE
 - A) SURFACE PREPARATION TO Sa2 1/2.
 - B) ZINC RICH EPOXY (70 MICRON)
 - C) INTERMEDIATE COAT OF EPOXY (130-150 MICRON)
 - D) TOP COAT POLYURETHANE (50-70 MICRON) YELLOW COLOR PAINT TO BS 381C, NO.309. (TOTAL THICKNESS OF PAINTING 270 MICRONS AT LEAST)
- 8-ALTERNATIVE COATING SYSTEM CAN BE USED SUBJECT TO DESIGNER APPROVAL.
- 9-MANUFACTURE SHALL PROVIDE ALL PROVISION TO MEET IP55.
- 10-All CABLES SHALL BE LAID THROUGH THE CONDUIT FROM FOUNDATION TO BOX.
- 11-H AND G SHALL BE SELECTED AS PER PIPE DIAMETER.
- 12-PIPE SHALL BE FIXED ON STAND BY SUITABLE NON METALLIC BELT.
- 13-PIPE IS SEAMLESS HOT DIPPED GALVANIZED CARBON STEEL WITH DIAMETER OF 4" FOR BOX WITH MAXIMUM 7 ENTRIES AND 6" FOR MORE THAN 7 ENTRIES. ALSO PIPE THICKNESS IS MIN.4MM. LENGTH OF PIPE IS 800MM TO 900MM DEPENDS ON BOX HEIGHT.
- 14-ALL CABLES ARE ARMORED & LEAD-COVERED TYPE SO SUITABLE GLAND SHALL BE CONSIDERED BY MANUFACTURER . SUITABLE SHROUD CONSIDERING GLAND SIZE IS UNDER MANUFACTURER 'S RESPONSIBILITY.
- 15-DISTANCE BETWEEN TERMINALS ON BUS-BAR SHALL BE SELECTED AS ALL CABLE SHOES INSTALLED PERFECT. DETAIL DRAWING OF BOX INCLUDING DISTANCE BETWEEN TERMINALS SHALL BE PREPARED BY MANUFACTURER AFTER ORDER AND APPROVED BY PURCHASER

REFERENCE DRAWINGS

DWG. NO.	TITLE

04	16.FEB.2025	APPROVED FOR CONSTRUCTION	Y.J	S.S	A.H	A.A.H
03	20.NOV.2021	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
02	04.JUL.2020	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
01	15.FEB.2020	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
00	04.FEB.2020	ISSUE FOR APPROVAL	E.N	F.S	A.H	A.A.H

REV.	DATE	DESCRIPTION	PREP. BY	CHKD. BY	APPD. BY	AUTH. BY
------	------	-------------	----------	----------	----------	----------



SOUTHERN ADISH GAS CONDENSATE REFINERY PROJECT



ADISH
Southern Adish Gas Condensate Refinery company

CONTRACT NO.: SCALE: N/S

DRAWING TITLE:
PERMANENT CATHODIC PROTECTION STANDARD
INSTALLATION DETAIL FOR ABOVEGROUND TANKS
(Safe Type Positive and Negtive Bond Box)

DWG NO.:	PROJ	PHASE	AREA	DESC	TYPE	SEQ.	SHT No.	CLASS	SIZE
	SACR	DE	GEN	EL	DWG	0153	09/19	1	A3

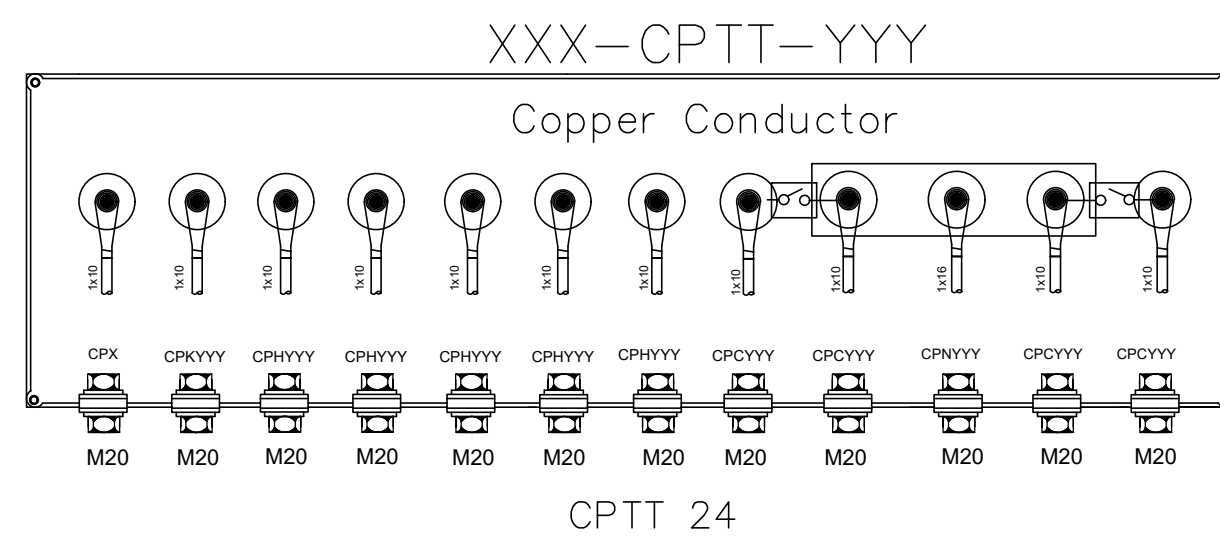
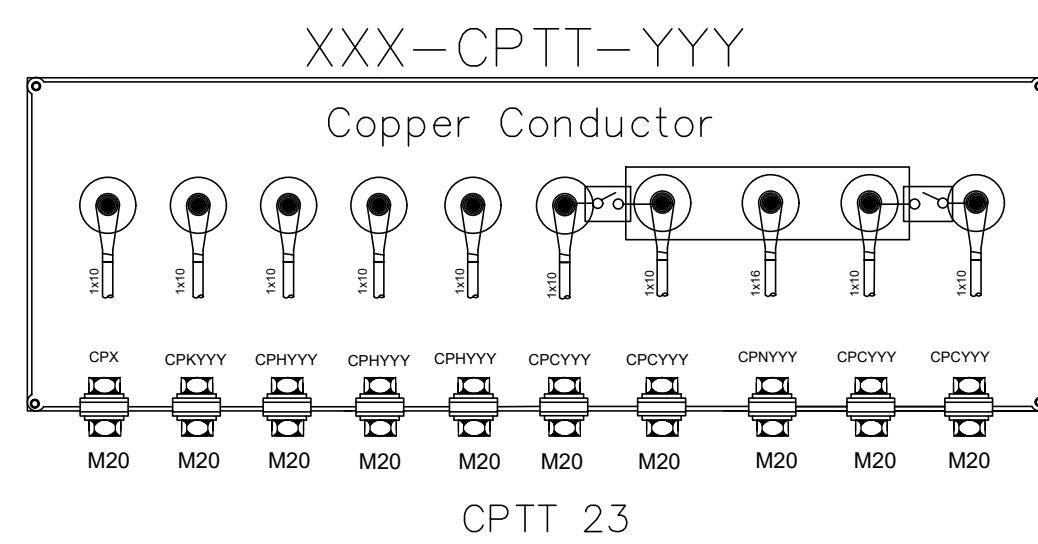
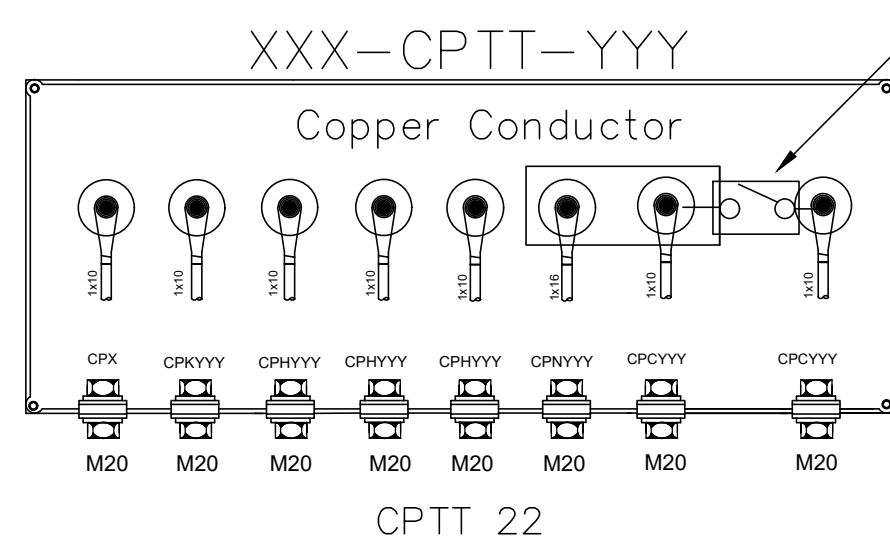
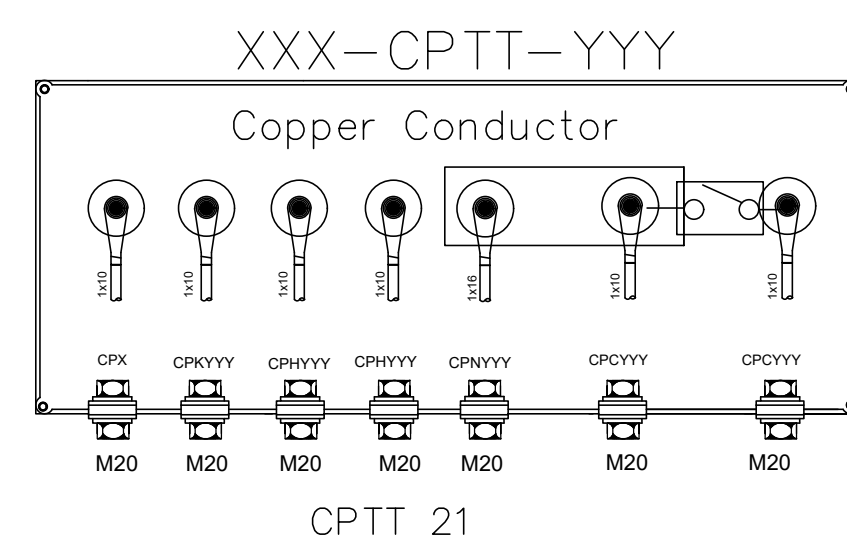
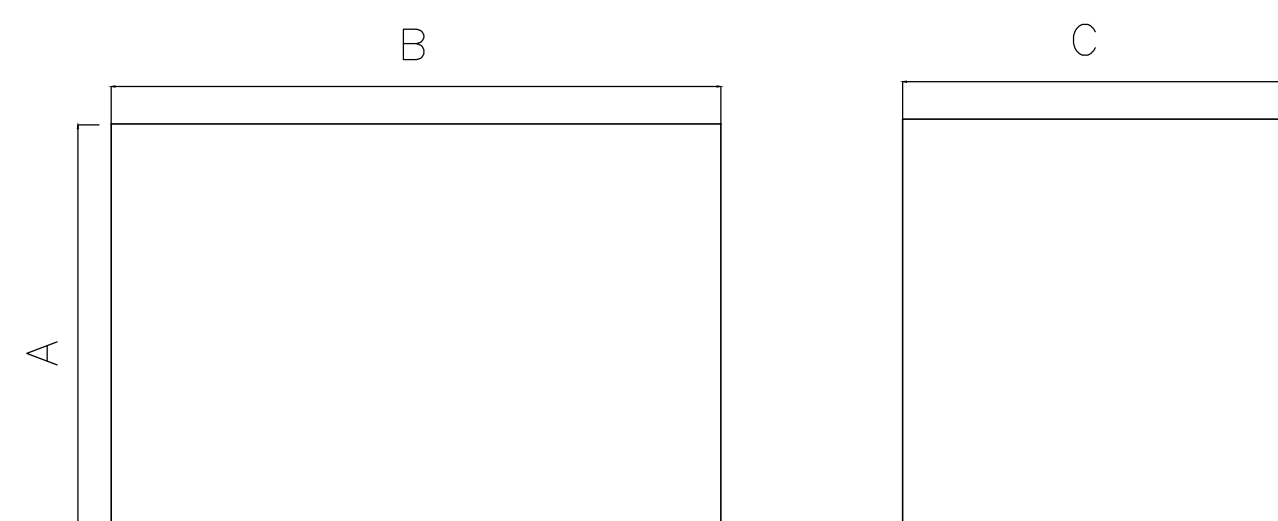
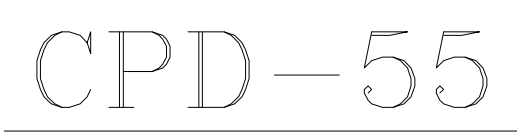
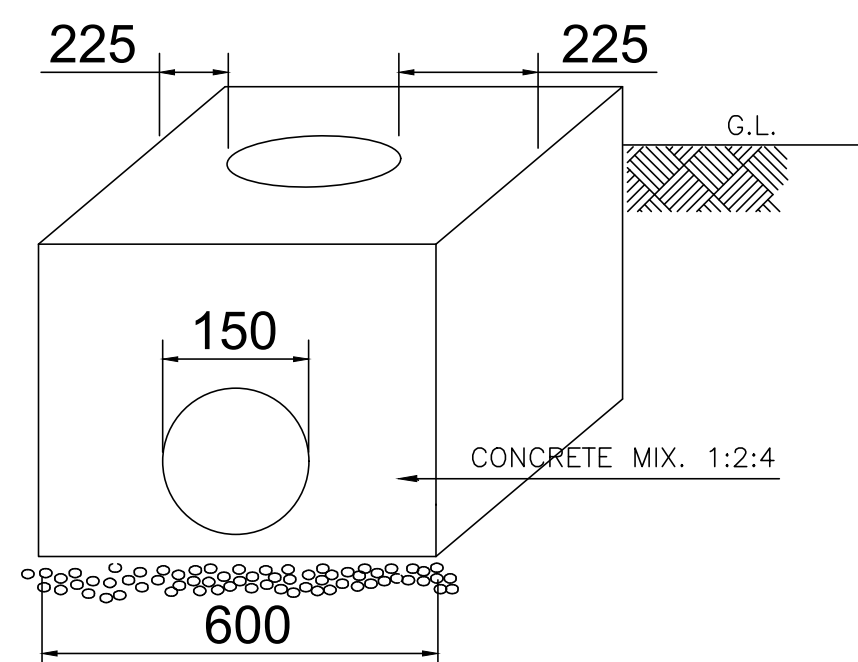
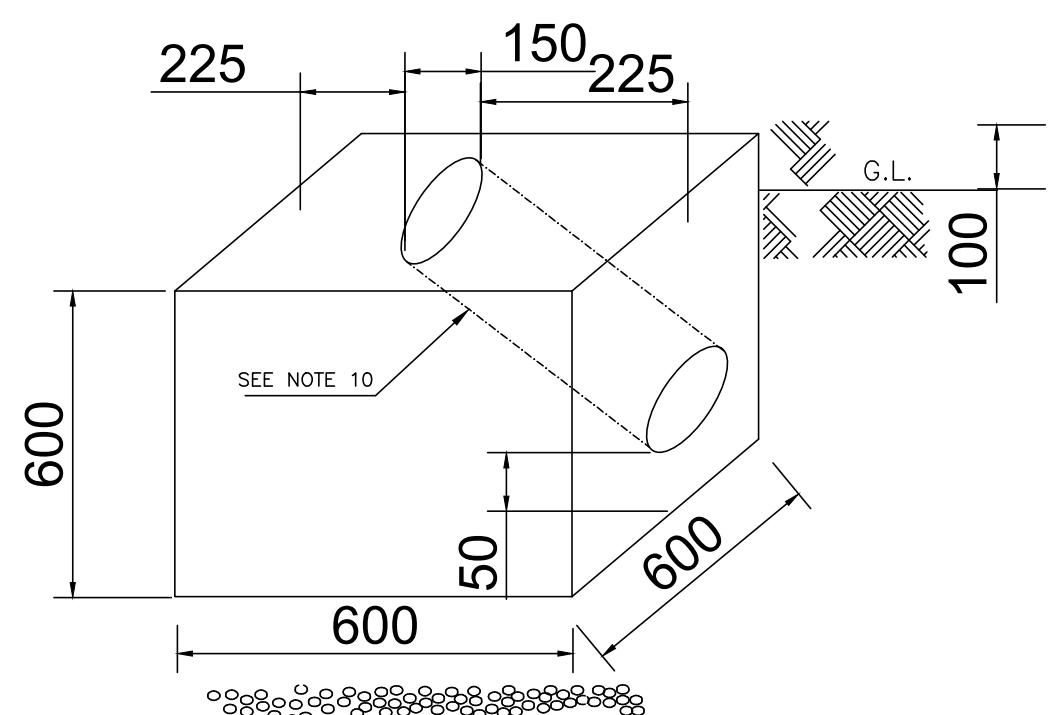
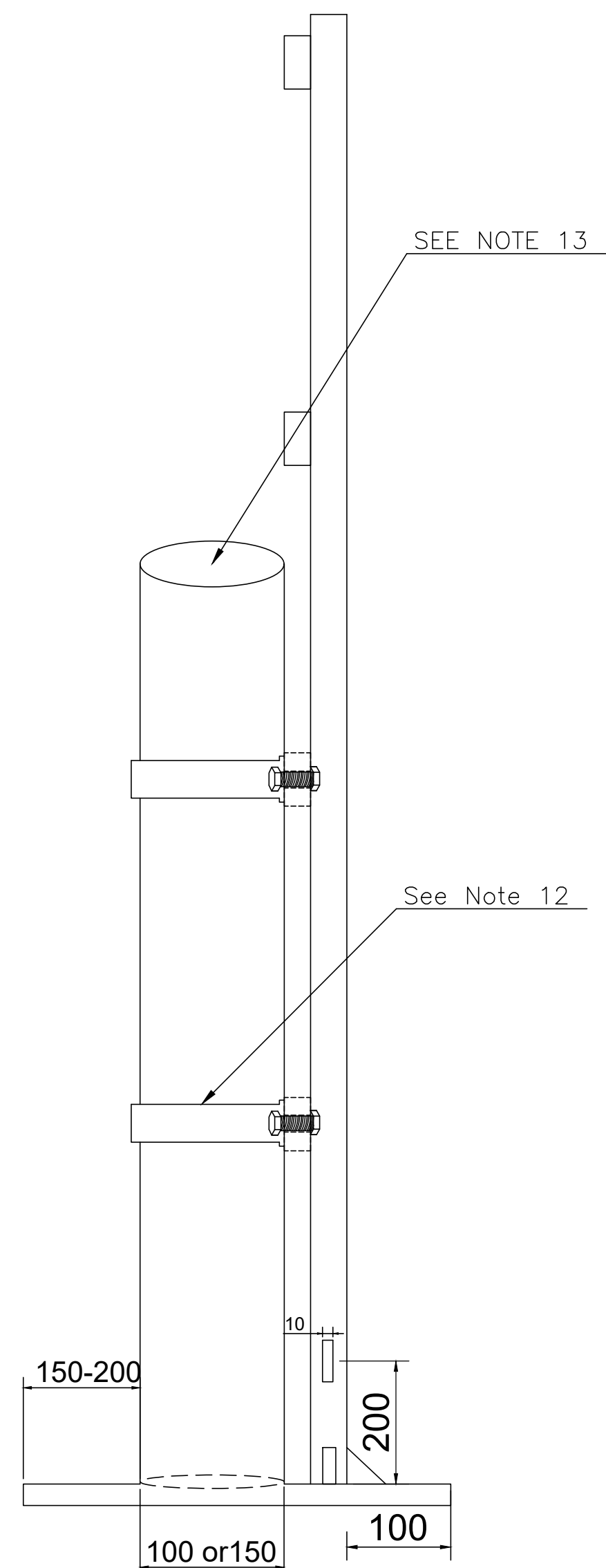
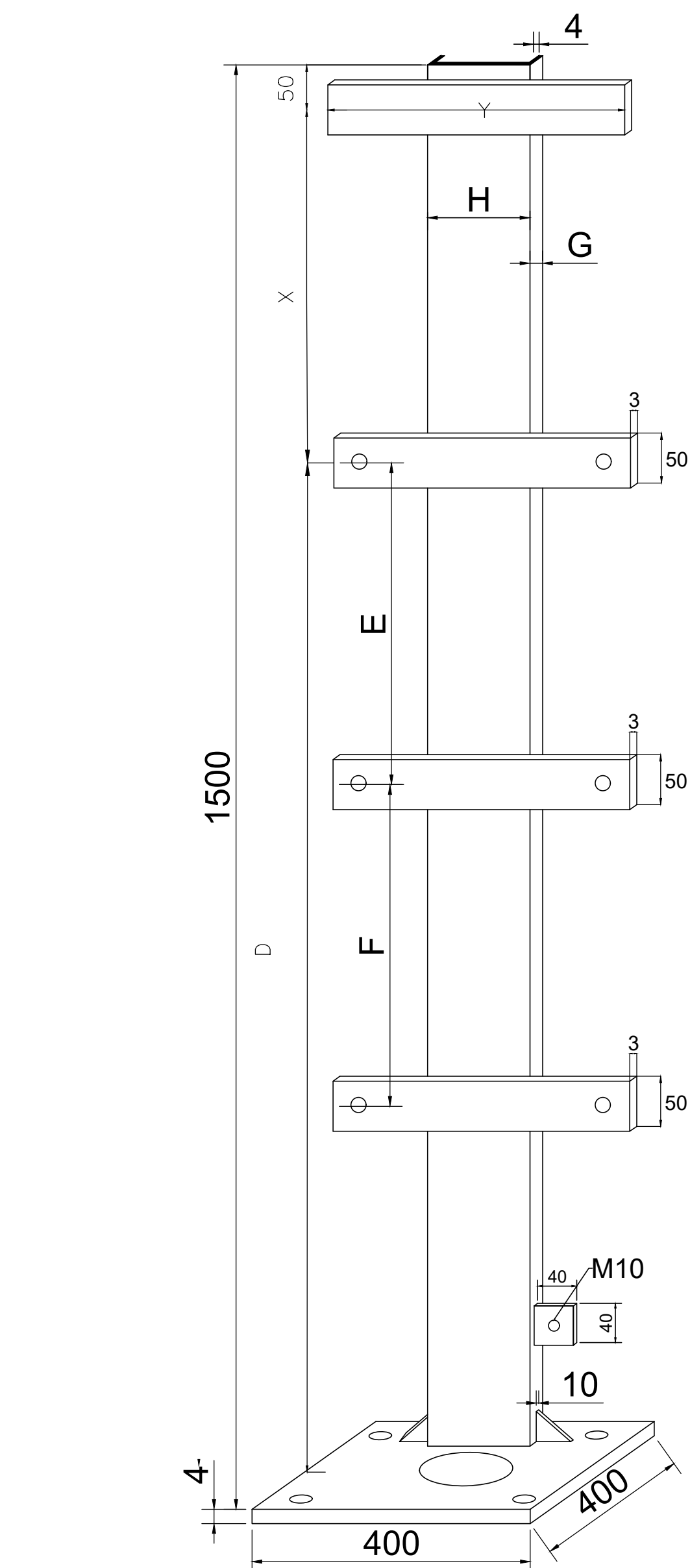
TAGGING PROCEDURE :

XXX-CPP-YYY
XXX: UNIT TAG NUMBER
CPP: POSTIVE BOND BOX
YYY: BOX SEQUENCE NUMBER

CPD-54

TAGGING PROCEDURE :

XXX-CPN-YYY
XXX: UNIT TAG NUMBER
CPN: NEGATIVE BOND BOX
YYY: BOX SEQUENCE NUMBER



TAGGING PROCEDURE :

XXX-CPTT-YYY

XXX: UNIT TAG NUMBER

CPT: TEST BOX

YYY: BOX SEQUENCE NUMBER

NOTE

1- DIMENSIONS A,B,C,D ARE AS PER MANUFACTURER PROPOSAL.

2-DIMENSIONS X AND Y ARE RELATED TO A AND B AND WILL BE FINALIZED WHEN BOX
MANUFACTURING IS FINISHED.

3-FOR BOX COORDINATION PLEASE SEE GENERAL LAYOUT DRAWING

4-ALL DIMENSION IS in mm.

5-ALL TERMINALS SHALL BE CONNECTED ELECTRICALLY.

6-BOX SUPPORT SHALL BE HOT DIPPED GALVANIZED STEEL SUPPORT.

7-BOX ENCLOSURE SHALL BE MADE FROM 3mm CARBON STEEL AND PAINTED WITH THE

A) SURFACE PREPARATION TO $\text{Sd}2 \ 1/2$.

B) ZINC RICH EPOXY (70 MICRON)

C) INTERMEDIATE COAT OF EPOXY (130-150 MICRON)

D) TOP COAT POLYURETHANE (50-70 MICRON) YELLOW COLOR PAINT TO BS 381C, NO.309.
(TOTAL THICKNESS OF PAINTING 270 MICRONS AT LEAST)

8-ALTERNATIVE COATING SYSTEM CAN BE USED SUBJECT TO DESIGNER APPROVAL.

9-MANUFACTURE SHALL PROVIDE ALL PROVISION TO MEET IP55.

10-ALL CABLES SHALL BE LAID THROUGH THE CONDUIT FROM FOUNDATION TO BOX.

11-H AND G SHALL BE SELECTED AS PER PIPE DIAMETER.

12-PIPE SHALL BE FIXED ON STAND BY SUITABLE NON METALLIC BELT.

13-PIPE IS SEAMLESS HOT DIPPED GALVANIZED CARBON STEEL WITH DIAMETER OF 4" FOR BOX WITH MAXIMUM 7 ENTRIES AND 6" FOR MORE THAN 7 ENTRIES. ALSO PIPE THICKNESS IS MIN.4MM. LENGTH OF PIPE IS 800MM TO 900MM DEPENDS ON BOX HEIGHT.

14-ALL CABLES ARE ARMORED & LEAD-COVERED TYPE SO SUITABLE GLAND SHALL BE CONSIDERED BY MANUFACTURER . SUITABLE SHROUD CONSIDERING GLAND SIZE IS UNDER MANUFACTURER 'S RESPONSIBILITY.

15-DISTANCE BETWEEN TERMINALS ON BUS-BAR SHALL BE SELECTED AS ALL CABLE SHOES
INSTALLED PERFECT. DETAIL DRAWING OF BOX INCLUDING DISTANCE BETWEEN TERMINALS SHALL
BE PREPARED BY MANUFACTURER AFTER ORDER AND APPROVED BY PURCHASER.

16-SUITABLE ELECTRICAL SWITCH SHALL BE CONSIDERED BETWEEN SHOWN TERMINALS.

REFERENCE DRAWINGS

DWG. NO.	TITLE

04	16.FEB.2025	APPROVED FOR CONSTRUCTION	Y.J	S.S	A.H	A.A.H
03	20.NOV.2021	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
02	04.JUL.2020	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
01	15.FEB.2020	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
00	04.FEB.2020	ISSUE FOR APPROVAL	E.N	F.S	A.H	A.A.H
REV.	DATE	DESCRIPTION	PREP. BY	CHKD. BY	APPD. BY	AUTH. BY

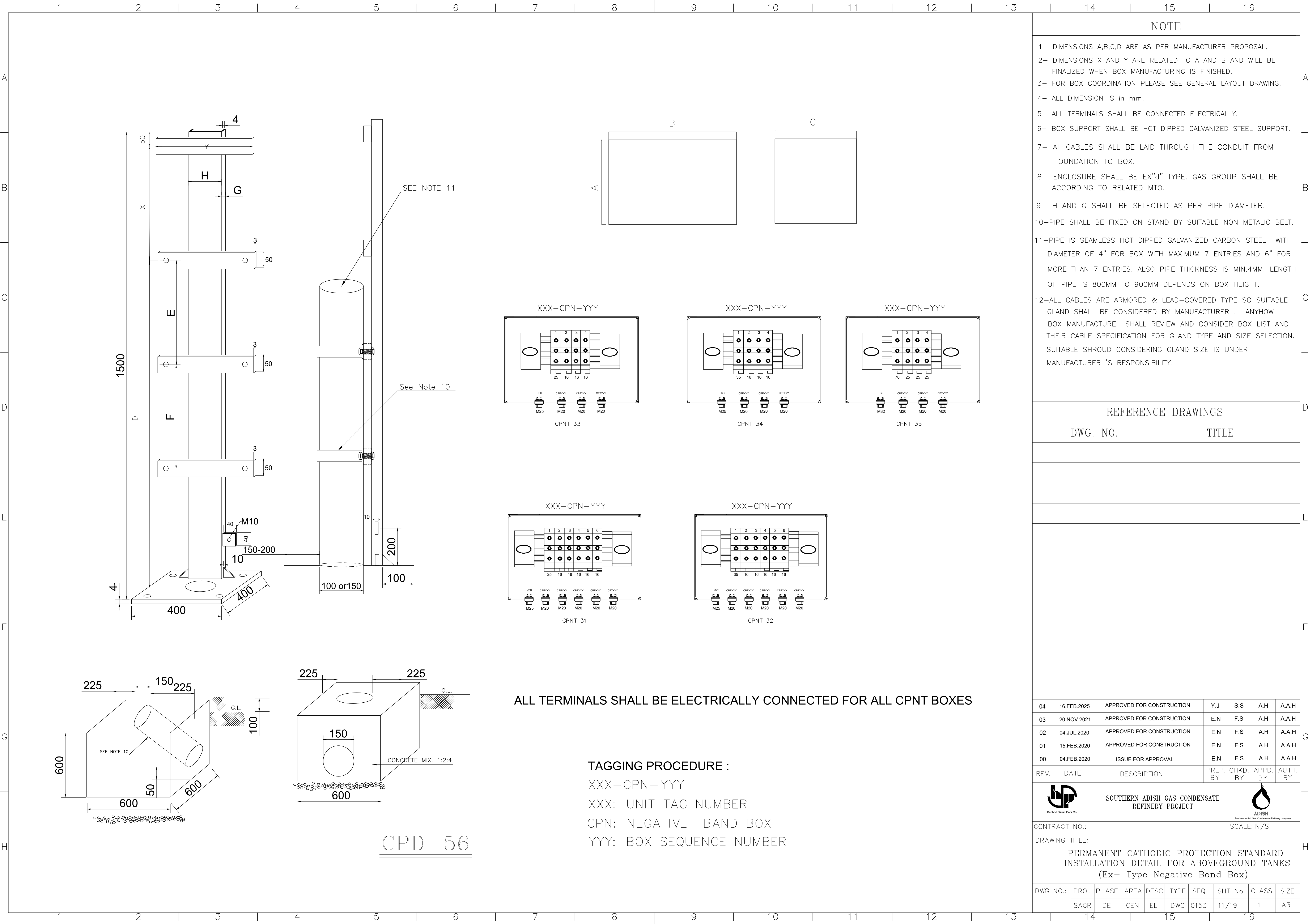
 Jethood Sanat Pars Co.	SOUTHERN ADISH GAS CONDENSATE REFINERY PROJECT			 ADISH Southern Adish Gas Condensate Refinery company	
---	---	--	--	---	--

CONTRACT NO.:	SCALE: N/S
---------------	------------

DRAWING TITLE:

PERMANENT CATHODIC PROTECTION STANDARD
INSTALLATION DETAIL FOR ABOVEGROUND TANKS
(Safe Type Test Box)

DWG NO.:	PROJ	PHASE	AREA	DESC	TYPE	SEQ.	SHT No.	CLASS	SIZE
	SACR	DE	GEN	EL	DWG	0153	10/19	1	A3



NOTE

1- DIMENSIONS A,B,C,D ARE AS PER MANUFACTURER PROPOSAL.

2- DIMENSIONS X AND Y ARE RELATED TO A AND B AND WILL BE FINALIZED WHEN BOX MANUFACTURING IS FINISHED.

3- FOR BOX COORDINATION PLEASE SEE GENERAL LAYOUT DRAWING.

4- ALL DIMENSION IS in mm.

5- ALL TERMINALS SHALL BE CONNECTED ELECTRICALLY.

6- BOX SUPPORT SHALL BE HOT DIPPED GALVANIZED STEEL SUPPORT.

7- All CABLES SHALL BE LAID THROUGH THE CONDUIT FROM FOUNDATION TO BOX.

8- ENCLOSURE SHALL BE EX"d" TYPE. GAS GROUP SHALL BE ACCORDING TO RELATED MTO.

9- H AND G SHALL BE SELECTED AS PER PIPE DIAMETER.

10-PIPE SHALL BE FIXED ON STAND BY SUITABLE NON METALIC BELT.

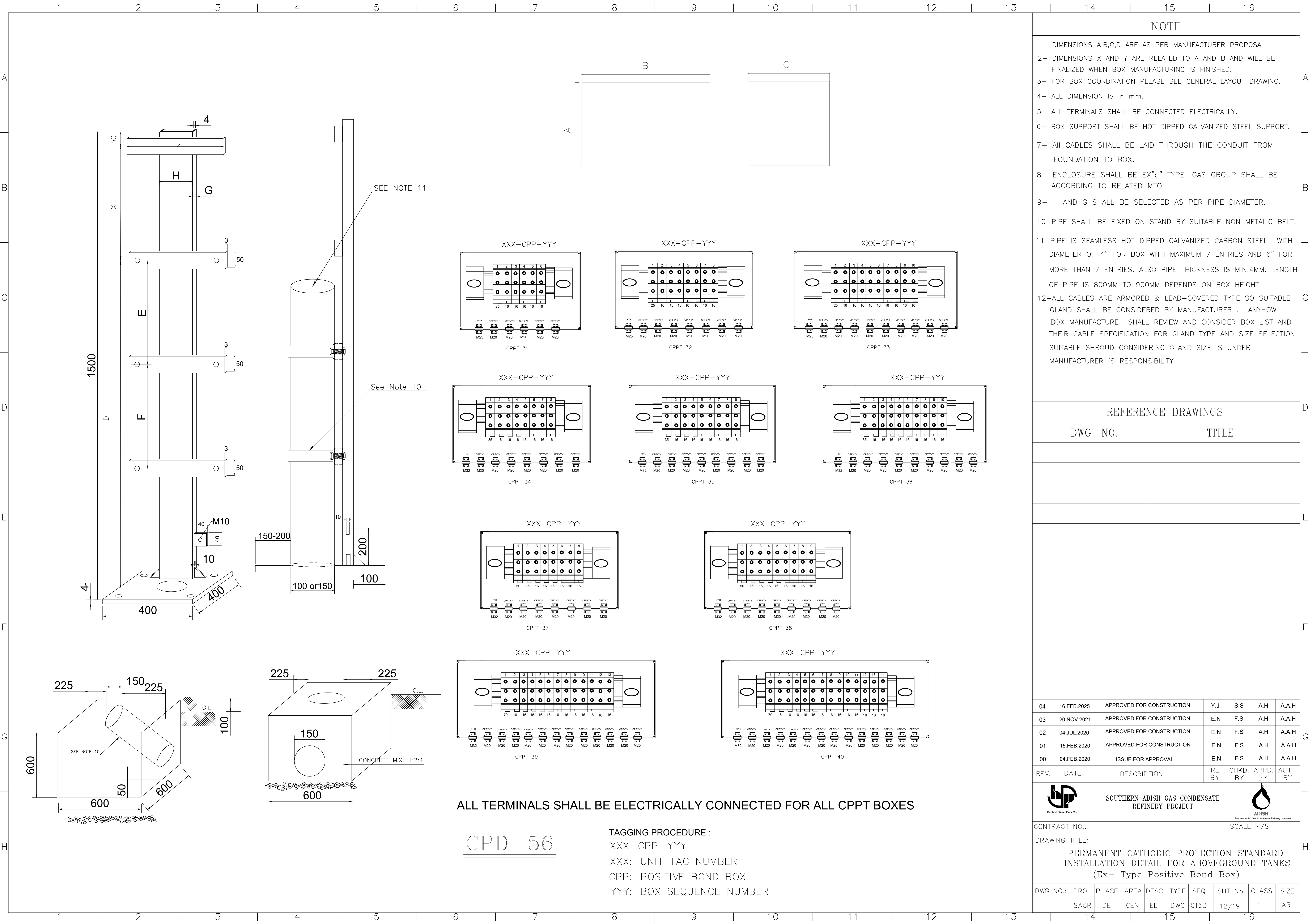
11-PIPE IS SEAMLESS HOT DIPPED GALVANIZED CARBON STEEL WITH DIAMETER OF 4" FOR BOX WITH MAXIMUM 7 ENTRIES AND 6" FOR MORE THAN 7 ENTRIES. ALSO PIPE THICKNESS IS MIN.4MM. LENGTH OF PIPE IS 800MM TO 900MM DEPENDS ON BOX HEIGHT.

12-ALL CABLES ARE ARMORED & LEAD-COVERED TYPE SO SUITABLE GLAND SHALL BE CONSIDERED BY MANUFACTURER . ANYHOW BOX MANUFACTURE SHALL REVIEW AND CONSIDER BOX LIST AND THEIR CABLE SPECIFICATION FOR GLAND TYPE AND SIZE SELECTION. SUITABLE SHROUD CONSIDERING GLAND SIZE IS UNDER MANUFACTURER 'S RESPONSIBILITY.

REFERENCE DRAWINGS	
DWG. NO.	TITLE

04	16.FEB.2025	APPROVED FOR CONSTRUCTION	Y.J	S.S	A.H	A.A.H
03	20.NOV.2021	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
02	04.JUL.2020	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
01	15.FEB.2020	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
00	04.FEB.2020	ISSUE FOR APPROVAL	E.N	F.S	A.H	A.A.H
REV.	DATE	DESCRIPTION	PREP. BY	CHKD. BY	APPD. BY	AUTH. BY
 Bechtel Saudi Perm Co.		SOUTHERN ADISH GAS CONDENSATE REFINERY PROJECT			 Southern Adish Gas Condensate Refinery company	

DRAWING TITLE:								
PERMANENT CATHODIC PROTECTION STANDARD INSTALLATION DETAIL FOR ABOVEGROUND TANKS (Ex- Type Negative Bond Box)								
DWG NO.:	PROJ	PHASE	AREA	DESC	TYPE	SEQ.	SHT No.	CLASS
	SACR	DE	GEN	EL	DWG	0153	11/19	1
								A3



NOTE

- 1- DIMENSIONS A,B,C,D ARE AS PER MANUFACTURER PROPOSAL.
- 2- DIMENSIONS X AND Y ARE RELATED TO A AND B AND WILL BE FINALIZED WHEN BOX MANUFACTURING IS FINISHED.
- 3- FOR BOX COORDINATION PLEASE SEE GENERAL LAYOUT DRAWING.
- 4- ALL DIMENSION IS in mm.
- 5- ALL TERMINALS SHALL BE CONNECTED ELECTRICALLY.
- 6- BOX SUPPORT SHALL BE HOT DIPPED GALVANIZED STEEL SUPPORT.
- 7- All CABLES SHALL BE LAID THROUGH THE CONDUIT FROM FOUNDATION TO BOX.
- 8- ENCLOSURE SHALL BE EX"d" TYPE. GAS GROUP SHALL BE ACCORDING TO RELATED MTO.
- 9- H AND G SHALL BE SELECTED AS PER PIPE DIAMETER.
- 10-PIPE SHALL BE FIXED ON STAND BY SUITABLE NON METALIC BELT.
- 11-PIPE IS SEAMLESS HOT DIPPED GALVANIZED CARBON STEEL WITH DIAMETER OF 4" FOR BOX WITH MAXIMUM 7 ENTRIES AND 6" FOR MORE THAN 7 ENTRIES. ALSO PIPE THICKNESS IS MIN.4MM. LENGTH OF PIPE IS 800MM TO 900MM DEPENDS ON BOX HEIGHT.
- 12-ALL CABLES ARE ARMORED & LEAD-COVERED TYPE SO SUITABLE GLAND SHALL BE CONSIDERED BY MANUFACTURER . ANYHOW BOX MANUFACTURE SHALL REVIEW AND CONSIDER BOX LIST AND THEIR CABLE SPECIFICATION FOR GLAND TYPE AND SIZE SELECTION. SUITABLE SHROUD CONSIDERING GLAND SIZE IS UNDER MANUFACTURER 'S RESPONSIBILITY.

REFERENCE DRAWINGS

DWG. NO.	TITLE

04	16.FEB.2025	APPROVED FOR CONSTRUCTION	Y.J	S.S	A.H	A.A.H
03	20.NOV.2021	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
02	04.JUL.2020	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
01	15.FEB.2020	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
00	04.FEB.2020	ISSUE FOR APPROVAL	E.N	F.S	A.H	A.A.H

REV.	DATE	DESCRIPTION	PREP. BY	CHKD. BY	APPD. BY	AUTH. BY
------	------	-------------	----------	----------	----------	----------



Barood Special Park Co.

SOUTHERN ADISH GAS CONDENSATE REFINERY PROJECT

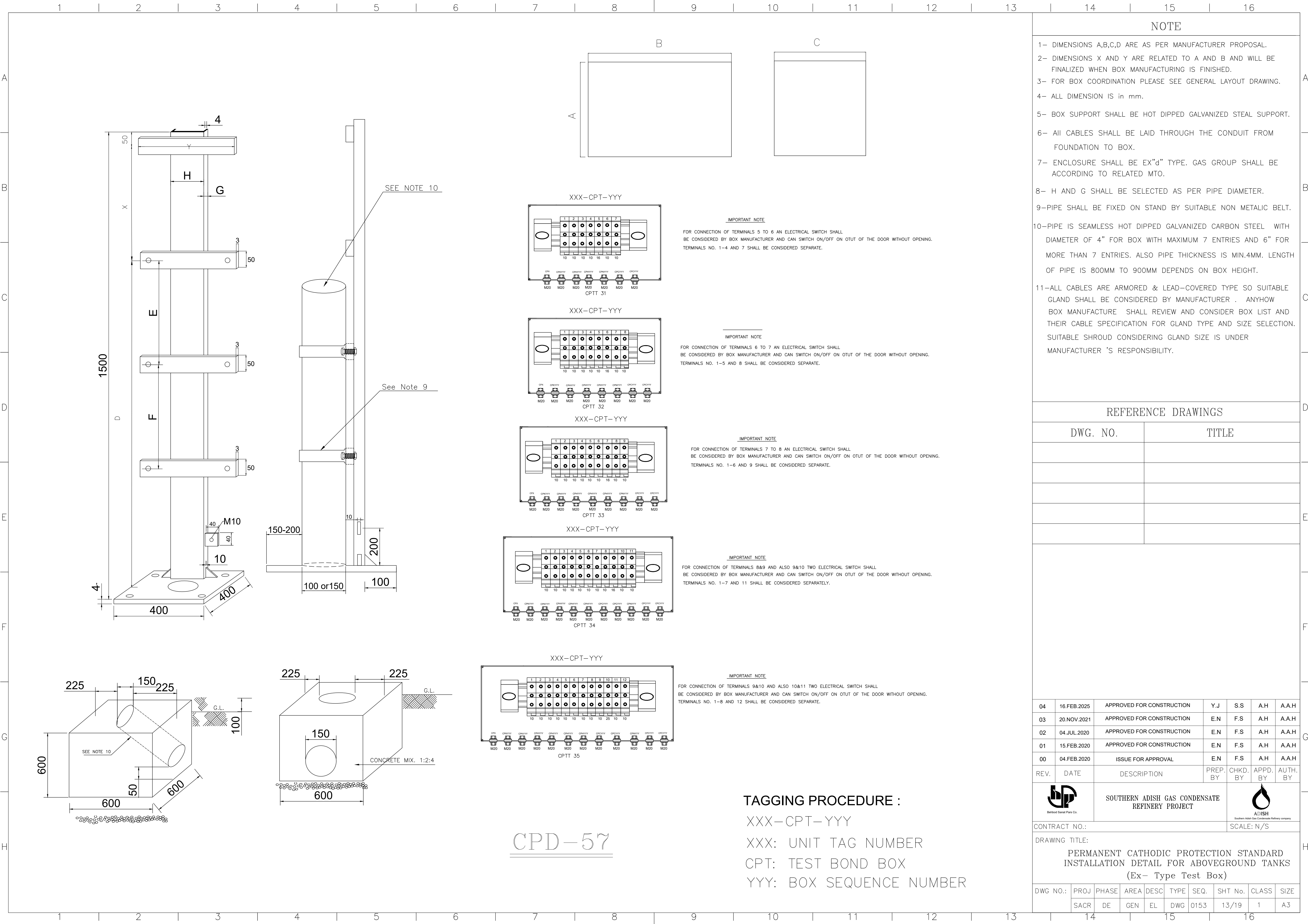


ADISH
Southern Adish Gas Condensate Refinery Company

CONTRACT NO.: SCALE: N/S

DRAWING TITLE:
PERMANENT CATHODIC PROTECTION STANDARD
INSTALLATION DETAIL FOR ABOVEGROUND TANKS
(Ex- Type Positive Bond Box)

DWG NO.:	PROJ	PHASE	AREA	DESC	TYPE	SEQ.	SHT No.	CLASS	SIZE
	SACR	DE	GEN	EL	DWG	0153	12/19	1	A3



NOTE

- 1- DIMENSIONS A,B,C,D ARE AS PER MANUFACTURER PROPOSAL.
- 2- DIMENSIONS X AND Y ARE RELATED TO A AND B AND WILL BE FINALIZED WHEN BOX MANUFACTURING IS FINISHED.
- 3- FOR BOX COORDINATION PLEASE SEE GENERAL LAYOUT DRAWING.
- 4- ALL DIMENSION IS in mm.
- 5- BOX SUPPORT SHALL BE HOT DIPPED GALVANIZED STEAL SUPPORT.
- 6- All CABLES SHALL BE LAID THROUGH THE CONDUIT FROM FOUNDATION TO BOX.
- 7- ENCLOSURE SHALL BE EX"d" TYPE. GAS GROUP SHALL BE ACCORDING TO RELATED MTO.
- 8- H AND G SHALL BE SELECTED AS PER PIPE DIAMETER.
- 9-PIPE SHALL BE FIXED ON STAND BY SUITABLE NON METALIC BELT.
- 10-PIPE IS SEAMLESS HOT DIPPED GALVANIZED CARBON STEEL WITH DIAMETER OF 4" FOR BOX WITH MAXIMUM 7 ENTRIES AND 6" FOR MORE THAN 7 ENTRIES. ALSO PIPE THICKNESS IS MIN.4MM. LENGTH OF PIPE IS 800MM TO 900MM DEPENDS ON BOX HEIGHT.
- 11-ALL CABLES ARE ARMORED & LEAD-COVERED TYPE SO SUITABLE GLAND SHALL BE CONSIDERED BY MANUFACTURER . ANYHOW BOX MANUFACTURE SHALL REVIEW AND CONSIDER BOX LIST AND THEIR CABLE SPECIFICATION FOR GLAND TYPE AND SIZE SELECTION. SUITABLE SHROUD CONSIDERING GLAND SIZE IS UNDER MANUFACTURER 'S RESPONSIBILITY.

REFERENCE DRAWINGS

DWG. NO.	TITLE

04	16.FEB.2025	APPROVED FOR CONSTRUCTION	Y.J	S.S	A.H	A.A.H
03	20.NOV.2021	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
02	04.JUL.2020	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
01	15.FEB.2020	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
00	04.FEB.2020	ISSUE FOR APPROVAL	E.N	F.S	A.H	A.A.H
REV.	DATE	DESCRIPTION	PREP. BY	CHKD. BY	APPD. BY	AUTH. BY
		SOUTHERN ADISH GAS CONDENSATE REFINERY PROJECT				
CONTRACT NO.:					SCALE: N/S	

DRAWING TITLE:

PERMANENT CATHODIC PROTECTION STANDARD
INSTALLATION DETAIL FOR ABOVEGROUND TANKS
(Ex- Type Test Box)

DWG NO.:	PROJ	PHASE	AREA	DESC	TYPE	SEQ.	SHT No.	CLASS	SIZE
	SACR	DE	GEN	EL	DWG	0153	13/19	1	A3

TAGGING PROCEDURE :

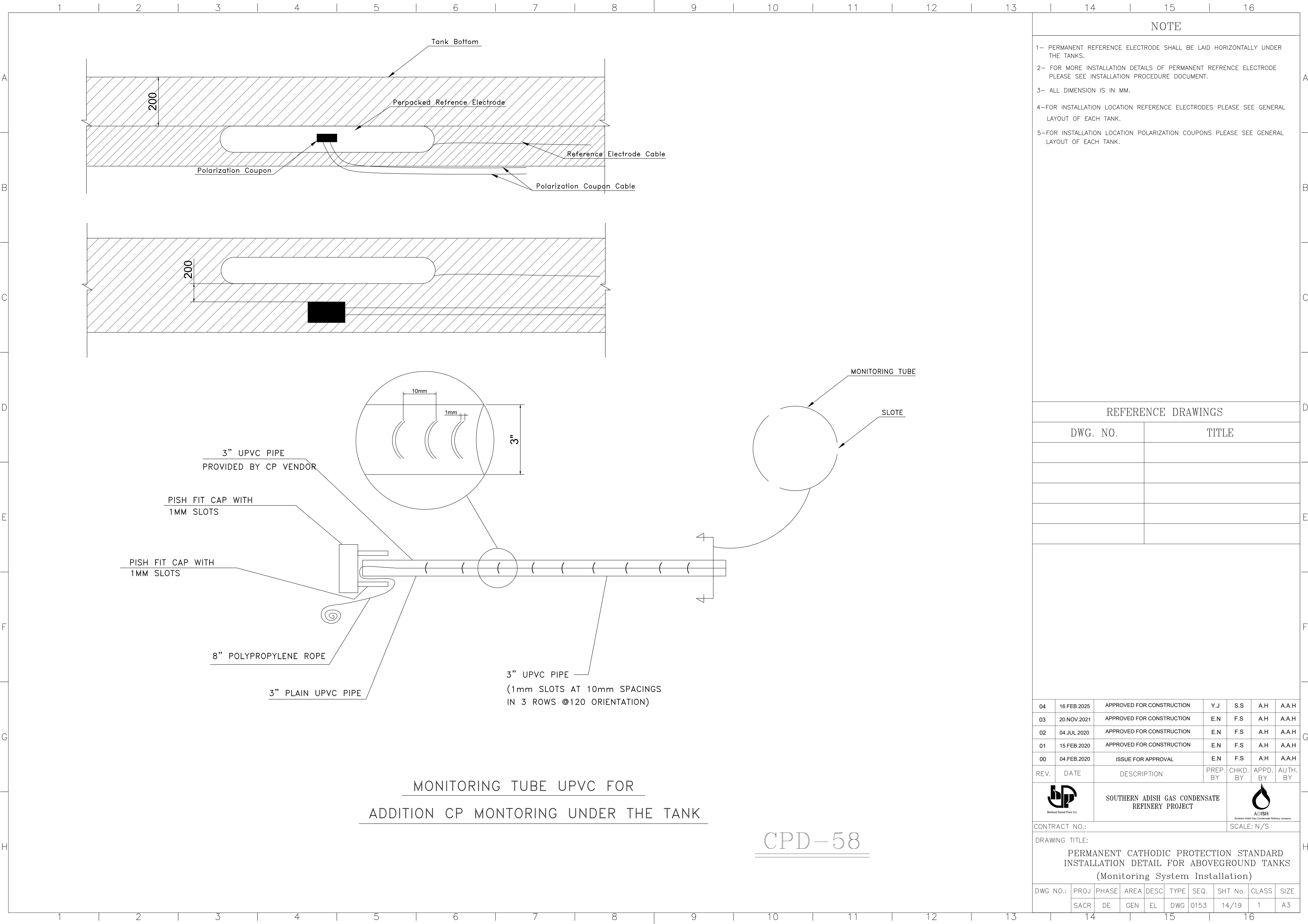
XXX-CPT-YYY

XXX: UNIT TAG NUMBER

CPT: TEST BOND BOX

YYY: BOX SEQUENCE NUMBER

CPD-57



NOTE

- 1- PERMANENT REFERENCE ELECTRODE SHALL BE LAID HORIZONTALLY UNDER THE TANKS.
- 2- FOR MORE INSTALLATION DETAILS OF PERMANENT REFERENCE ELECTRODE PLEASE SEE INSTALLATION PROCEDURE DOCUMENT.
- 3- ALL DIMENSION IS IN MM.
- 4-FOR INSTALLATION LOCATION REFERENCE ELECTRODES PLEASE SEE GENERAL LAYOUT OF EACH TANK.
- 5-FOR INSTALLATION LOCATION POLARIZATION COUPONS PLEASE SEE GENERAL LAYOUT OF EACH TANK.

REFERENCE DRAWINGS

DWG. NO.	TITLE

04	16.FEB.2025	APPROVED FOR CONSTRUCTION	Y.J	S.S	A.H	A.A.H
03	20.NOV.2021	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
02	04.JUL.2020	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
01	15.FEB.2020	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
00	04.FEB.2020	ISSUE FOR APPROVAL	E.N	F.S	A.H	A.A.H

REV.	DATE	DESCRIPTION	PREP. BY	CHKD. BY	APPD. BY	AUTH. BY
------	------	-------------	----------	----------	----------	----------



SOUTHERN ADISH GAS CONDENSATE REFINERY PROJECT

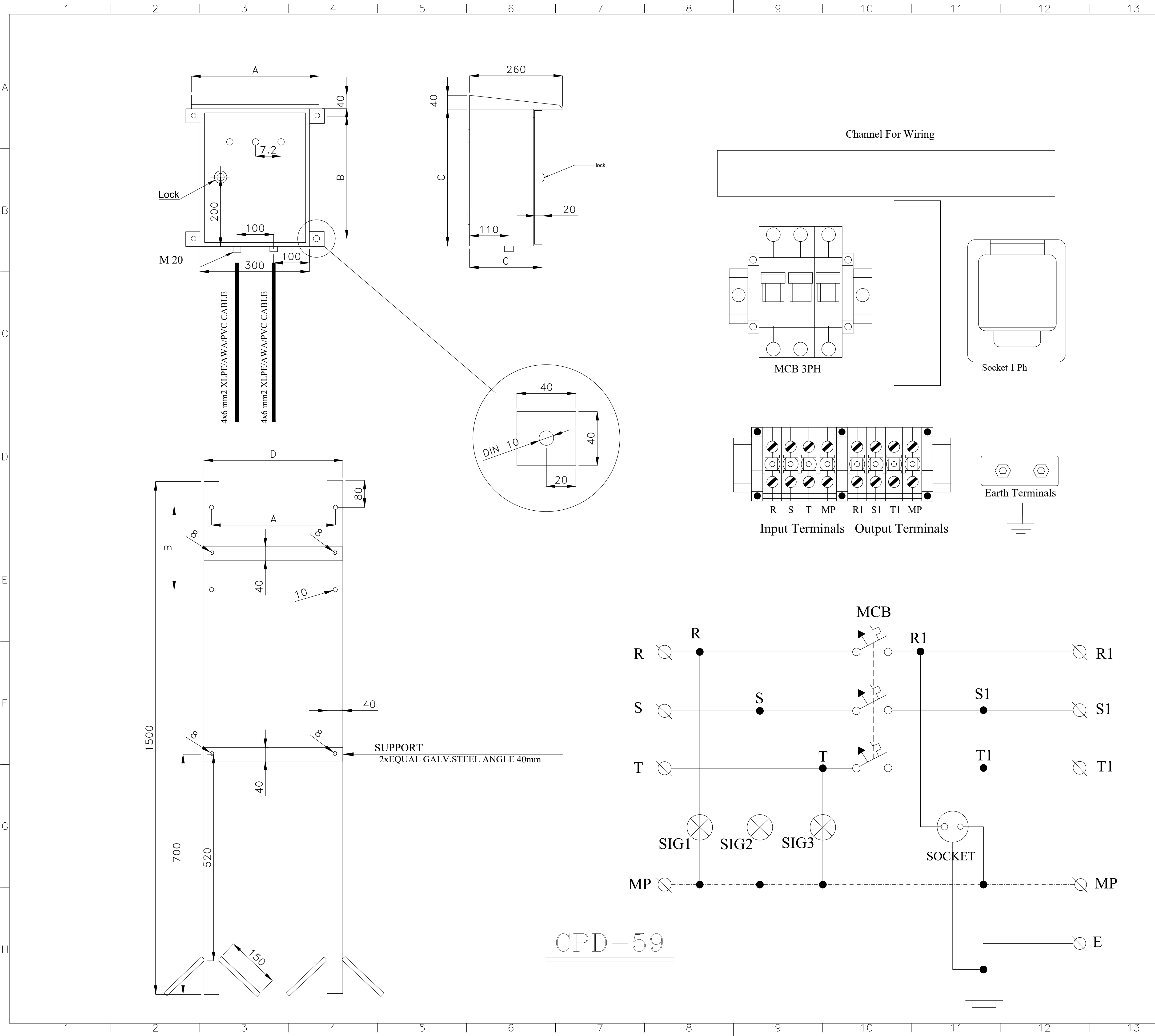


CONTRACT NO.: SCALE: N/S

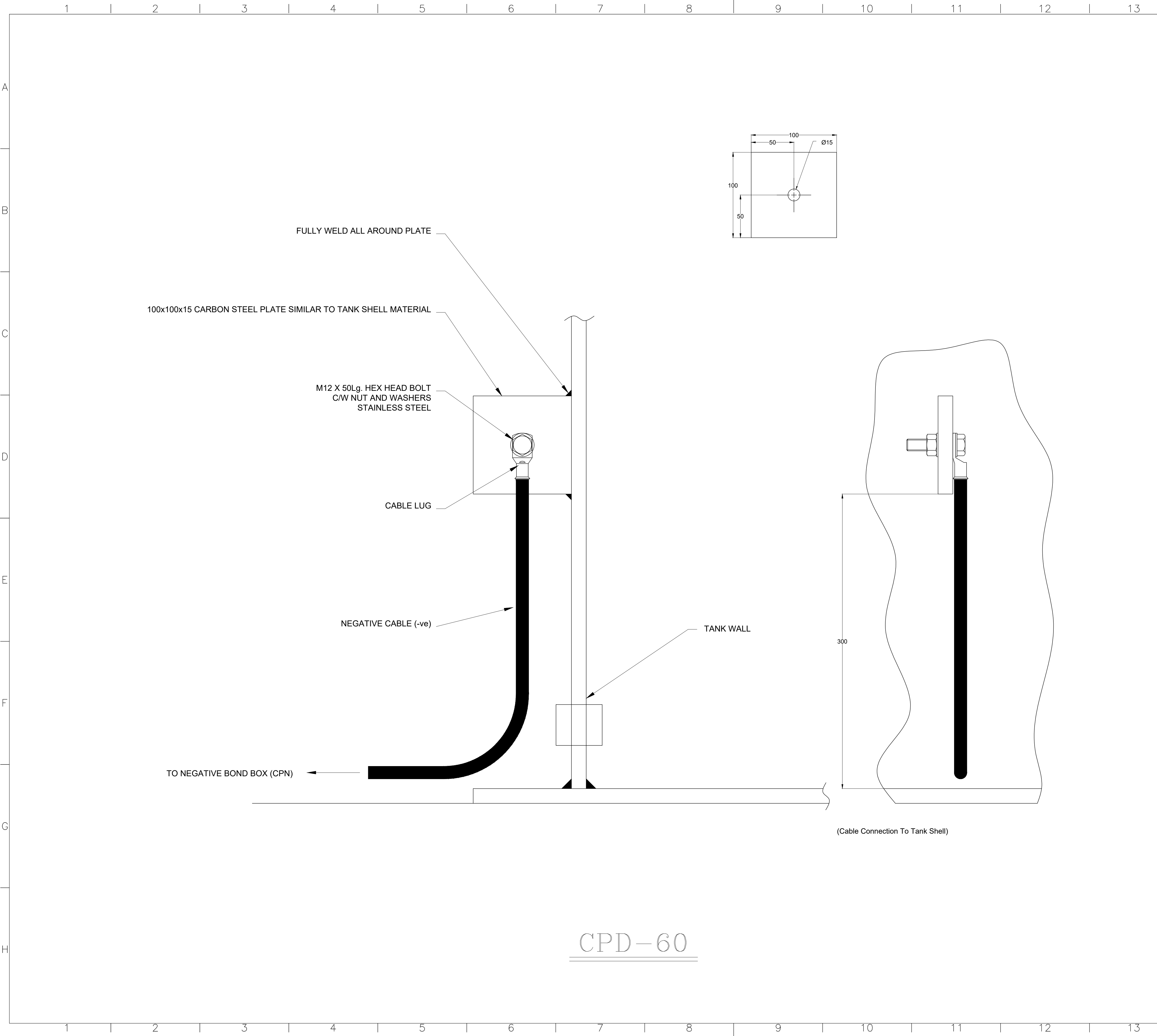
DRAWING TITLE:
PERMANENT CATHODIC PROTECTION STANDARD
INSTALLATION DETAIL FOR ABOVEGROUND TANKS
(Monitoring System Installation)

DWG NO.:	PROJ	PHASE	AREA	DESC	TYPE	SEQ.	SHT No.	CLASS	SIZE
	SACR	DE	GEN	EL	DWG	0153	14/19	1	A3

CPD-58



NOTE									
1—THIS DRAWING IS TYPICAL INSTALLATION DETAIL AND SHALL BE ENDORSED BY TRANSFORMER RECTIFIER MANUFACTURER.									
2—DIMENSIONS A,B,C,D SHALL BE SPECIFIED BY MANUFACTURER.									
3—AC BOX SUPPORT SHALL BE HOT DIPPED GALVANIZED STEEL.									
4—AC BOX DRAWING FOR MULTI—CHANNEL TRANSFORMER RECTIFIERS SHALL BE DEVELOPED BY TRANSFORMER RECTIFIER MANUFACTURER AND APPROVED BY PURCHASER.									
5—AC BOX COATING SYSTEM AND RAL ARE SIMILAR TO TRANSFORMER RECTIFIER.									
REFERENCE DRAWINGS									
DWG. NO.					TITLE				
04	16.FEB.2025	APPROVED FOR CONSTRUCTION				Y.J	S.S	A.H	A.A.H
03	20.NOV.2021	APPROVED FOR CONSTRUCTION				E.N	F.S	A.H	A.A.H
02	04.JUL.2020	APPROVED FOR CONSTRUCTION				E.N	F.S	A.H	A.A.H
01	15.FEB.2020	APPROVED FOR CONSTRUCTION				E.N	F.S	A.H	A.A.H
00	04.FEB.2020	ISSUE FOR APPROVAL				E.N	F.S	A.H	A.A.H
REV.	DATE	DESCRIPTION				PREP. BY	CHKD. BY	APPD. BY	AUTH. BY
		SOUTHERN ADISH GAS CONDENSATE REFINERY PROJECT							
CONTRACT NO.:							SCALE: N/S		
DRAWING TITLE:									
PERMANENT CATHODIC PROTECTION STANDARD INSTALLATION DETAIL FOR ABOVEGROUND TANKS (AC Box Installation Detail)									
DWG NO.:	PROJ	PHASE	AREA	DESC	TYPE	SEQ.	SHT No.	CLASS	SIZE
	SACR	DE	GEN	EL	DWG	0153	15/19	1	A3



NOTE

- 1—THIS DRAWING IS TYPICAL INSTALLATION DETAIL AND SHALL BE ENDORSED BY TRANSFORMER RECTIFIER MANUFACTURER.
- 2—DIMENSIONS A,B,C,D SHALL BE SPECIFIED BY MANUFACTURER.
- 3—AC BOX SUPPORT SHALL BE HOT DIPPED GALVANIZED STEEL.

REFERENCE DRAWINGS

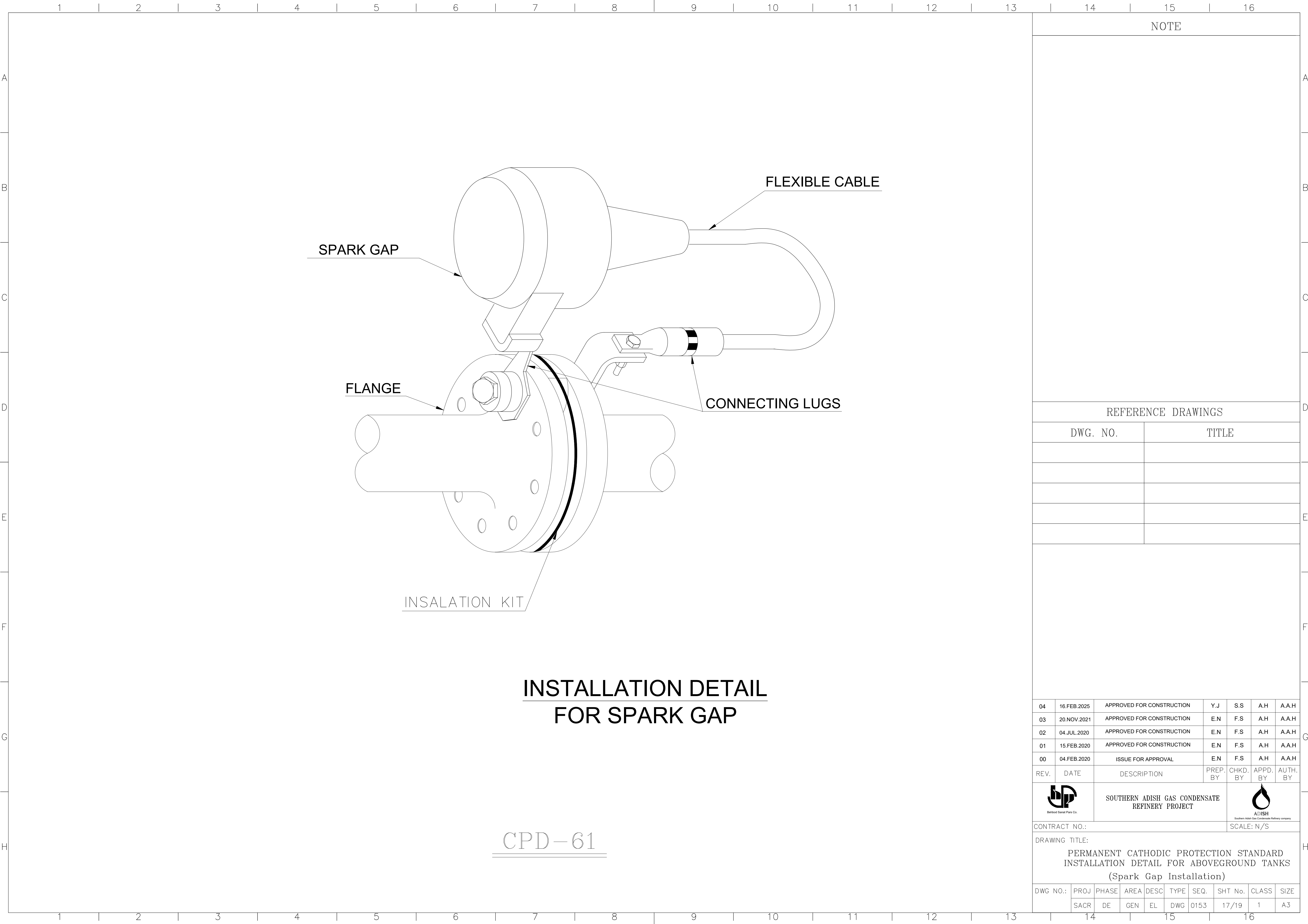
DWG. NO.	TITLE

04	16.FEB.2025	APPROVED FOR CONSTRUCTION	Y.J	S.S	A.H	A.A.H
03	20.NOV.2021	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
02	04.JUL.2020	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
01	15.FEB.2020	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
00	04.FEB.2020	ISSUE FOR APPROVAL	E.N	F.S	A.H	A.A.H
REV.	DATE	DESCRIPTION	PREP. BY	CHKD. BY	APPD. BY	AUTH. BY
		SOUTHERN ADISH GAS CONDENSATE REFINERY PROJECT				

CONTRACT NO.: SCALE: N/S

DRAWING TITLE:
PERMANENT CATHODIC PROTECTION STANDARD
INSTALLATION DETAIL FOR ABOVEGROUND TANKS
(Negative connection to tank shell)

DWG NO.:	PROJ	PHASE	AREA	DESC	TYPE	SEQ.	SHT No.	CLASS	SIZE
	SACR	DE	GEN	EL	DWG	0153	16/19	1	A3

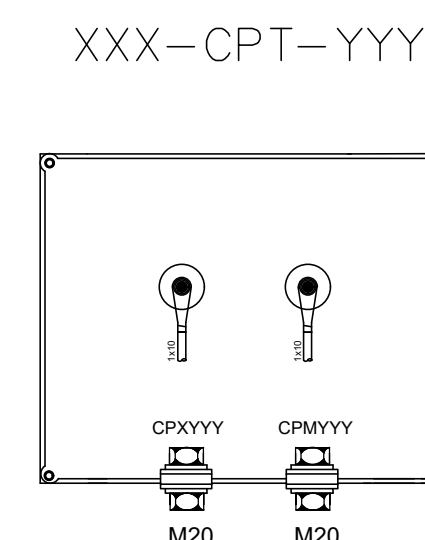
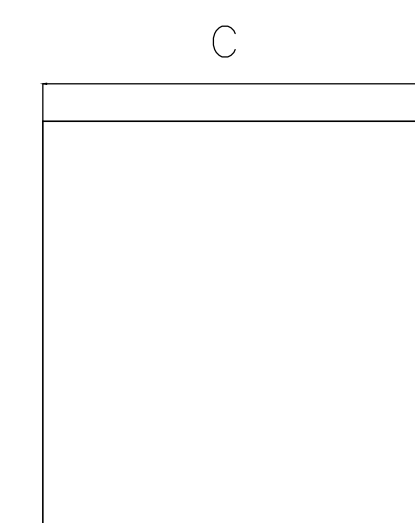
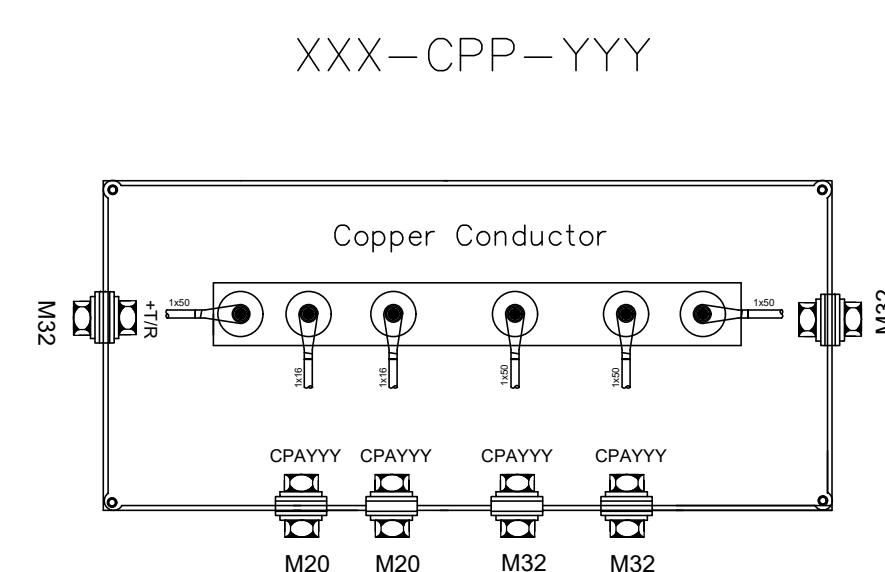
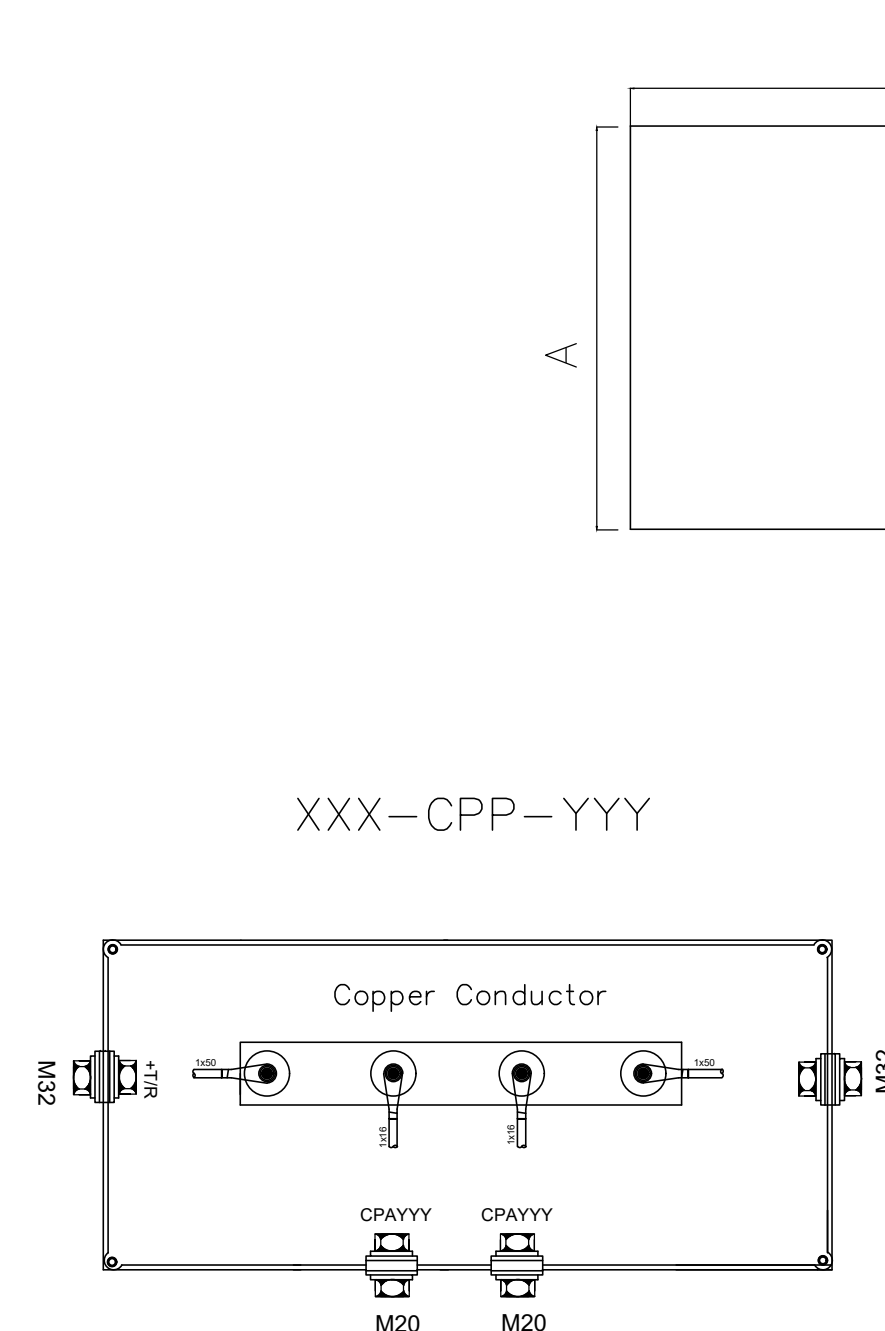
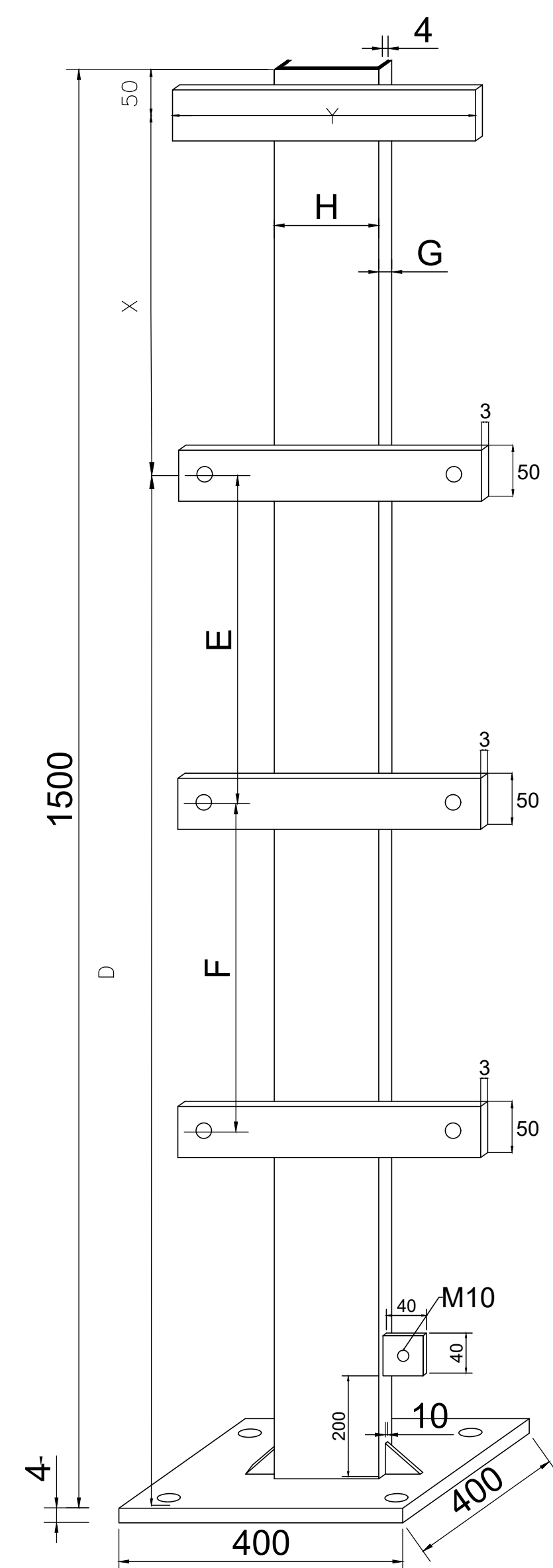


NOTE

REFERENCE DRAWINGS	
DWG. NO.	TITLE

04	16.FEB.2025	APPROVED FOR CONSTRUCTION	Y.J	S.S	A.H	A.A.H
03	20.NOV.2021	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
02	04.JUL.2020	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
01	15.FEB.2020	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
00	04.FEB.2020	ISSUE FOR APPROVAL	E.N	F.S	A.H	A.A.H
REV.	DATE	DESCRIPTION	PREP. BY	CHKD. BY	APPD. BY	AUTH. BY
		SOUTHERN ADISH GAS CONDENSATE REFINERY PROJECT				

CONTRACT NO.:							SCALE: N/S		
DRAWING TITLE:									
PERMANENT CATHODIC PROTECTION STANDARD INSTALLATION DETAIL FOR ABOVEGROUND TANKS (Spark Gap Installation)									
DWG NO.:	PROJ	PHASE	AREA	DESC	TYPE	SEQ.	SHT No.	CLASS	SIZE
	SACR	DE	GEN	EL	DWG	0153	17/19	1	A3



TAGGING PROCEDURE :

XXX-CPP-YYY

XXX: UNIT TAG NUMBER

CPP: POSTIVE BOND BOX

YYY: BOX SEQUENCE NUMBER

CPD-62

TAGGING PROCEDURE :

XXX-CPT-YYY

XXX: UNIT TAG NUMBER

CPT: **TEST BOX**

YYY: BOX SEQUENCE NUMBER

NOTE

1- DIMENSIONS A,B,C,D ARE AS PER MANUFACTURER PROPOSAL.

2- DIMENSIONS X AND Y ARE RELATED TO A AND B AND WILL BE FINALIZED WHEN BOX MANUFACTURING IS FINISHED.

3- FOR BOX COORDINATION PLEASE SEE GENERAL LAYOUT DRAWING FOR EACH UNIT.

4- ALL DIMENSION IS in mm.

5- BOX SUPPORT SHALL BE HOT DIPPED GALVANIZED STEEL SUPPORT.

6- BOX ENCLOSURE SHALL BE MADE FROM 3mm CARBON STEEL
AND PAINTED WITH THE FOLLOWING PROCEDURE:

A) SURFACE PREPARATION TO $\text{Sa}2 \ 1/2$.

B) ZINC RICH EPOXY (70 MICRON)

C) INTERMEDIATE COAT OF EPOXY (130-150 MICRON)

D) TOP COAT POLYURETHANE (50-70 MICRON) YELLOW

COLOR PAINT (100 MICRONS) TO BS 381C, NO.309.

(TOTAL THICKNESS OF PAINTING 270 MICRONS AT LEAST)

7- ALTERNATIVE COATING SYSTEM CAN BE USED SUBJECT TO DESIGNER APPROVAL.

8- MANUFACTURE SHALL PROVIDE ALL PROVISION TO MEET IP55.

9- All CABLES SHALL BE LAID THROUGH THE CONDUIT FROM FOUNDATION TO BOX.

10- H AND G SHALL BE SELECTED AS PER PIPE DIAMETER.

11-ALL CABLES ARE ARMORED & LEAD-COVERED TYPE SO SUITABLE
GLAND SHALL BE CONSIDERED BY MANUFACTURER . ANYHOW
BOX MANUFACTURE SHALL REVIEW AND CONSIDER BOX LIST AND
THEIR CABLE SPECIFICATION FOR GLAND TYPE AND SIZE SELECTION.
SUITABLE SHROUD CONSIDERING GLAND SIZE IS UNDER
MANUFACTURER 'S RESPONSIBILITY.

12-DISTANCE BETWEEN TERMINALS ON BUS-BAR SHALL BE SELECTED
AS ALL CABLE SHOES INSTALLED PERFECT. DETAIL DRAWING OF
BOX INCLUDING DISTANCE BETWEEN TERMINALS SHALL BE PREPARED
BY MANUFACTURER AFTER ORDER AND APPROVED BY PURCHASER.

REFERENCE DRAWINGS

TITLE

DWG. NO.

04	16.FEB.2025	APPROVED FOR CONSTRUCTION	Y.J	S.S	A.H	A.A.H
03	20.NOV.2021	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
02	31.AUG.2021	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
01	15.FEB.2020	APPROVED FOR CONSTRUCTION	E.N	F.S	A.H	A.A.H
00	04.FEB.2020	ISSUE FOR APPROVAL	E.N	F.S	A.H	A.A.H

REV.	DATE	DESCRIPTION	PREP. BY	CHKD. BY	APPD. BY	AUTH. BY
------	------	-------------	-------------	-------------	-------------	-------------

 Behlwood Sarani Pans Co.	SOUTHERN ADISH GAS CONDENSATE REFINERY PROJECT				 ADISH Southern Adish Gas Refinery Company

CONTRACT NO.:	SCALE: N/S
---------------	------------

DRAWING TITLE:

PERMANENT CATHODIC PROTECTION STANDARD
INSTALLATION DETAIL FOR ABOVEGROUND TANKS
(Safe Type Positive and Test Box for Internal)

DWG NO.:	PROJ	PHASE	AREA	DESC	TYPE	SEQ.	SHT No.	CLASS	SIZE
	SACR	DE	GEN	EL	DWG	0153	18/19	1	A3

