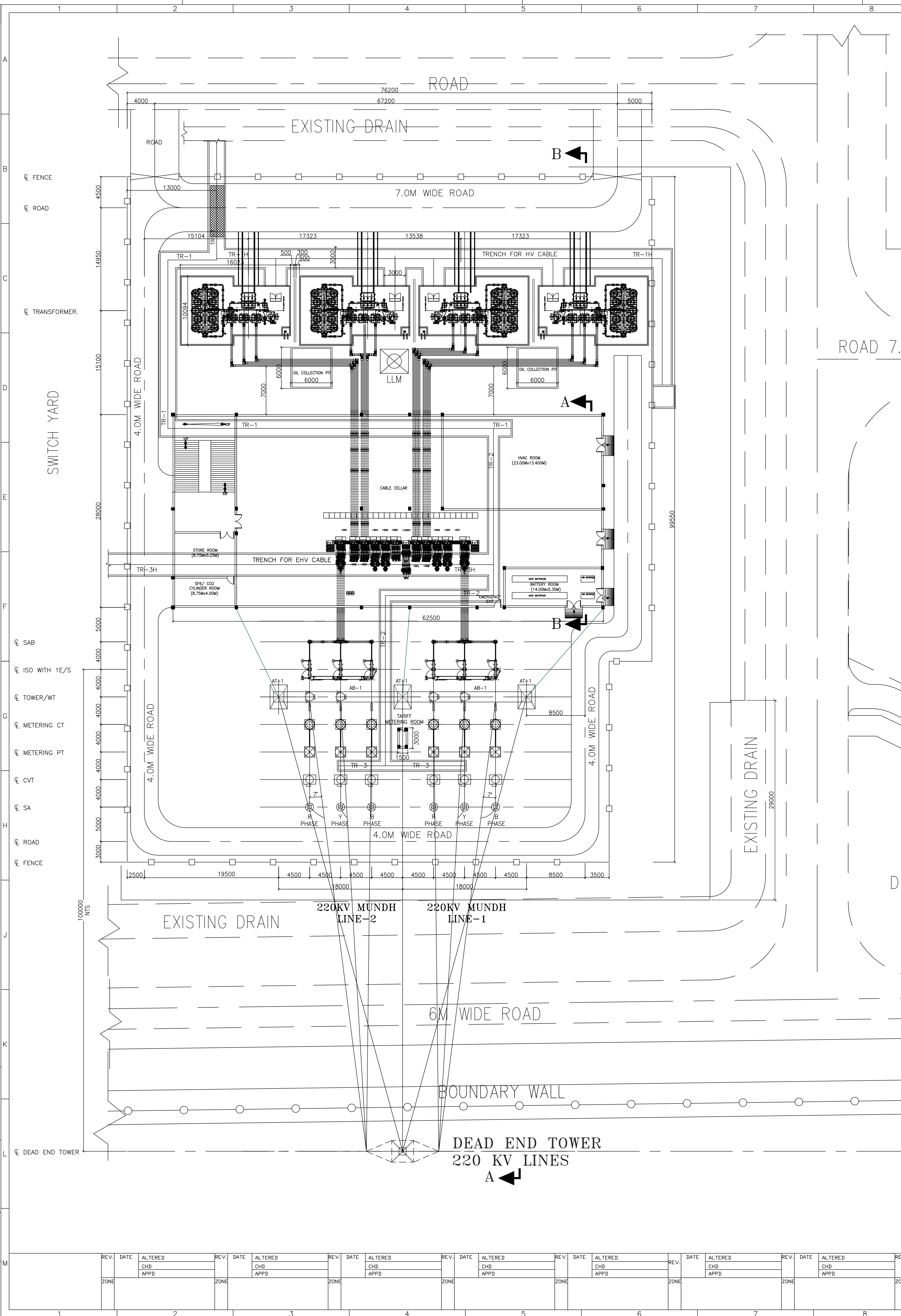


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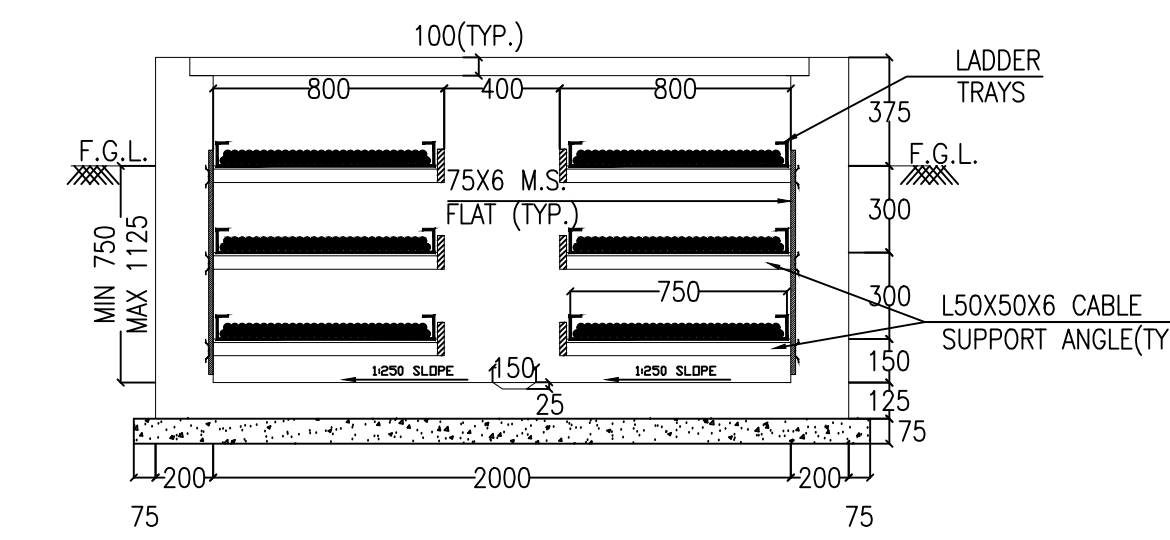
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REF. DESK NO. _____



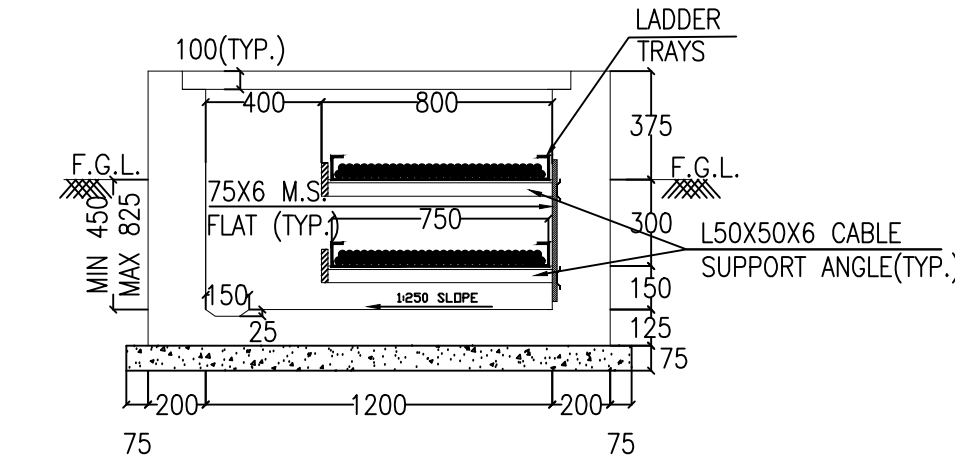
SUBSTATION-28

WT-3

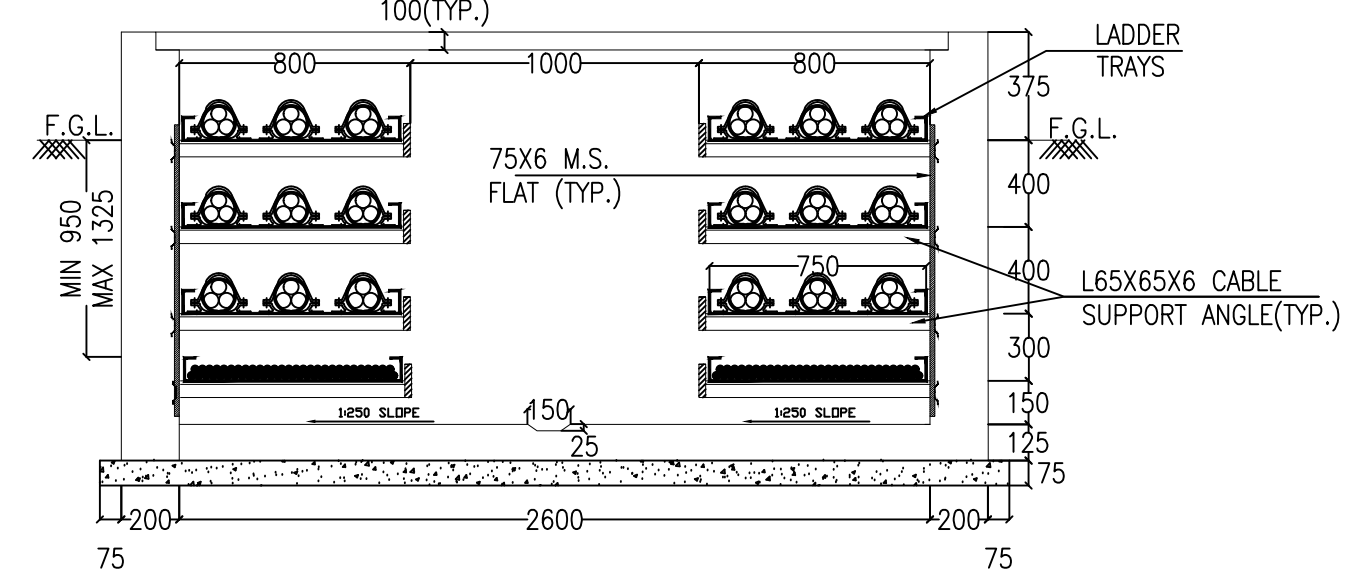
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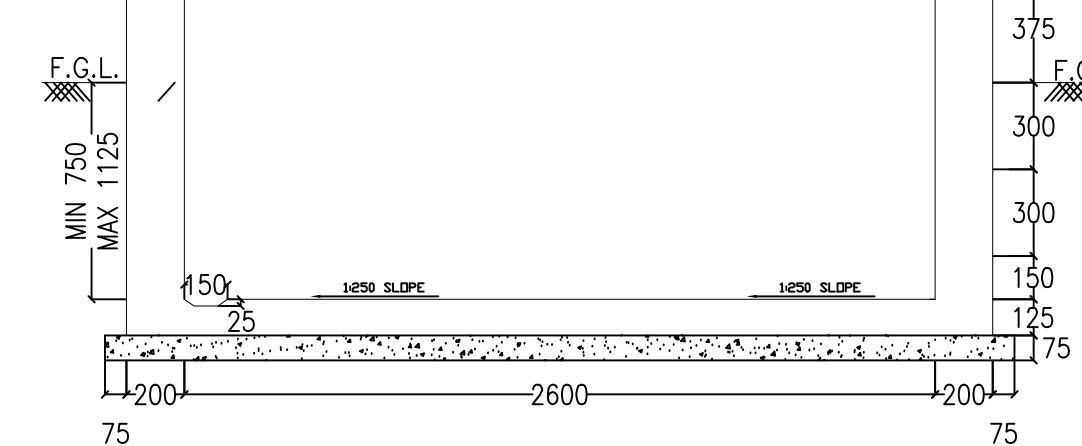
TR-1
(TYPICAL DETAILS)



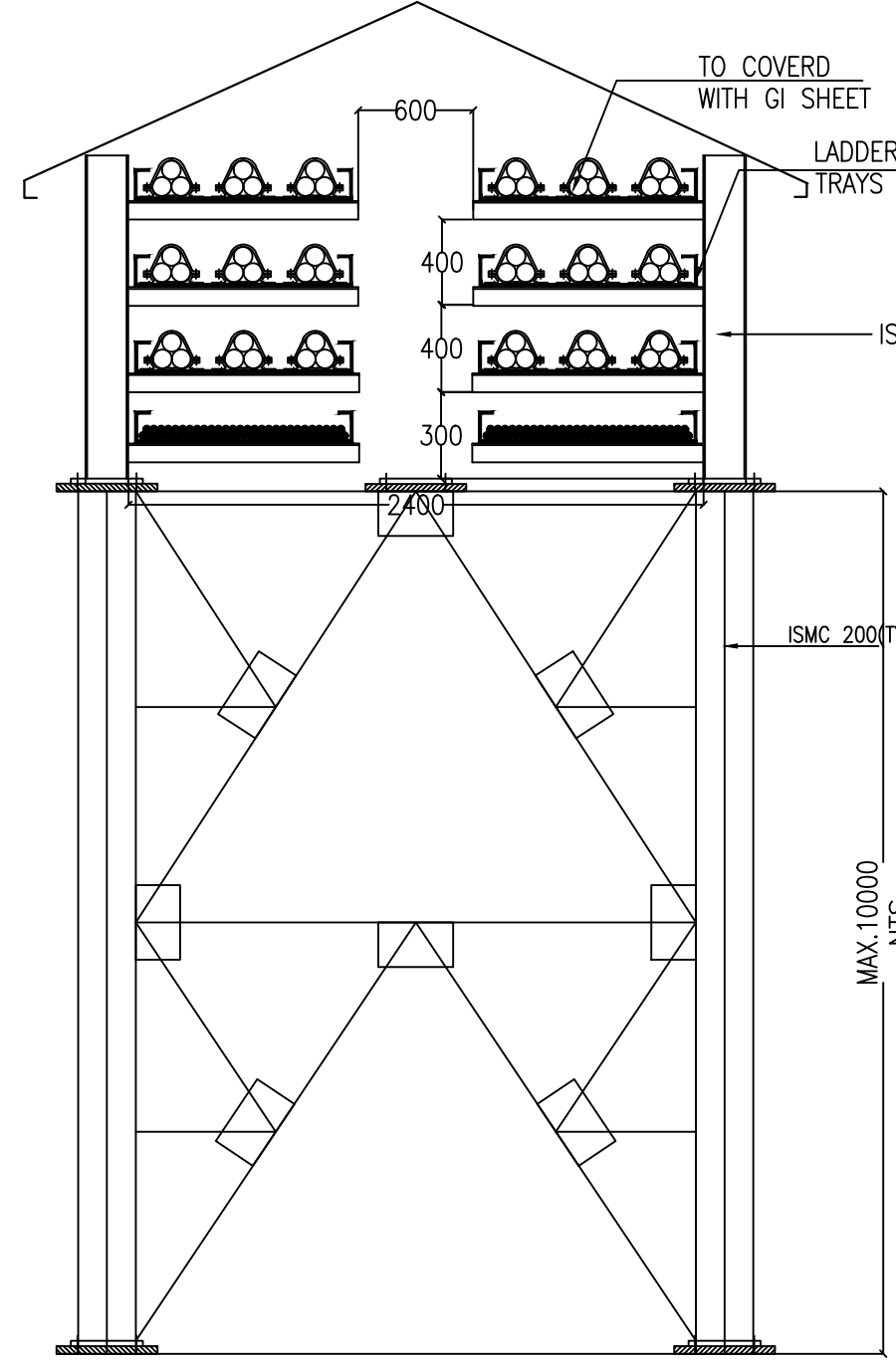
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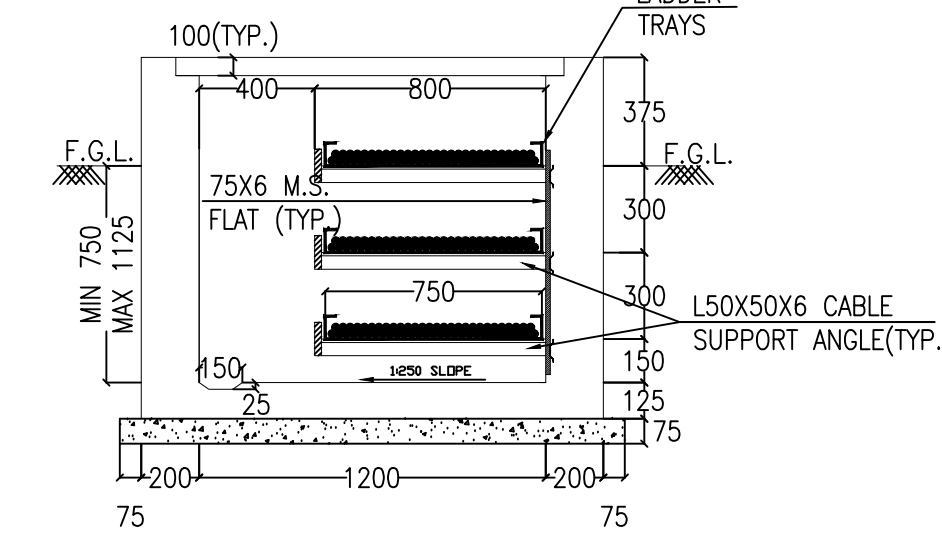
TR-1H
(TYPICAL DETAILS)



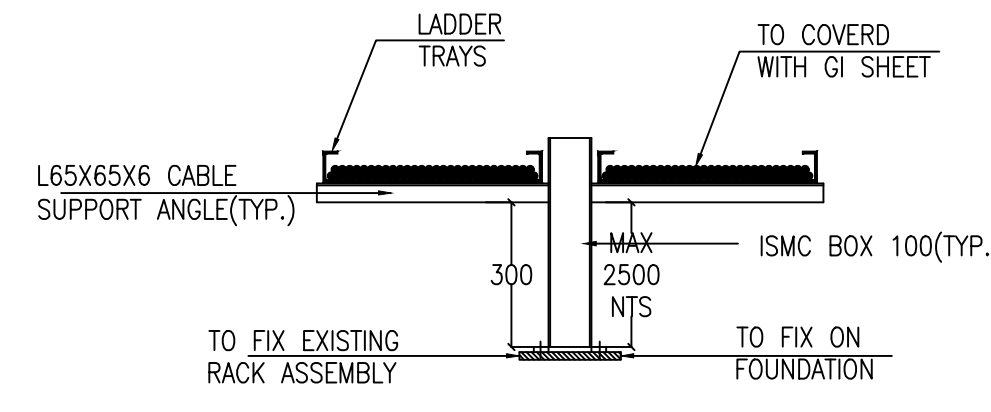
TR-3H
(TYPICAL DETAILS)



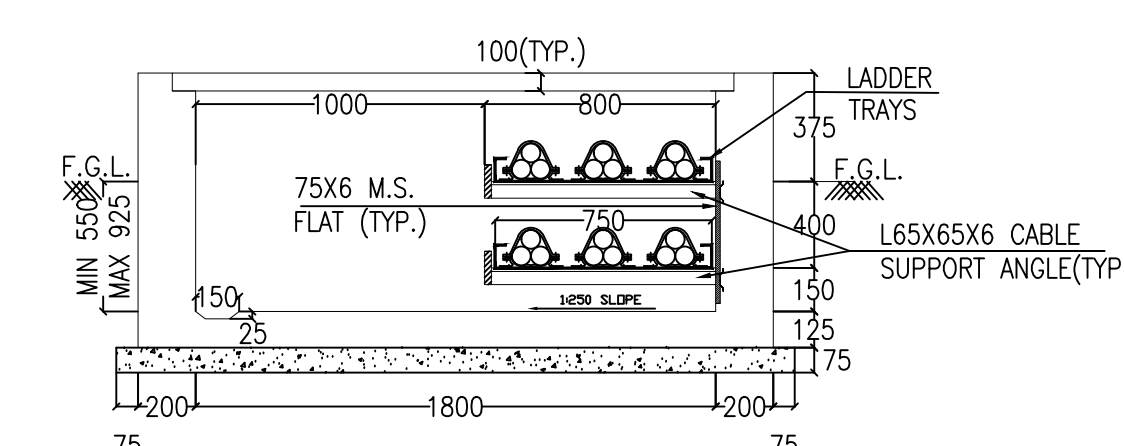
RA-2H WITH TRESSLE
(TYPICAL DETAILS)



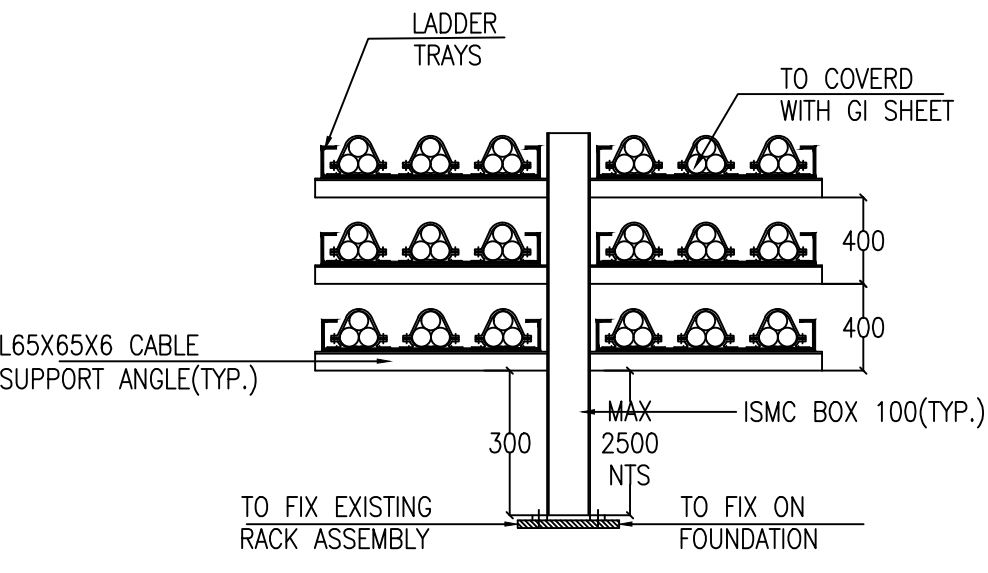
TR-2
(TYPICAL DETAILS)



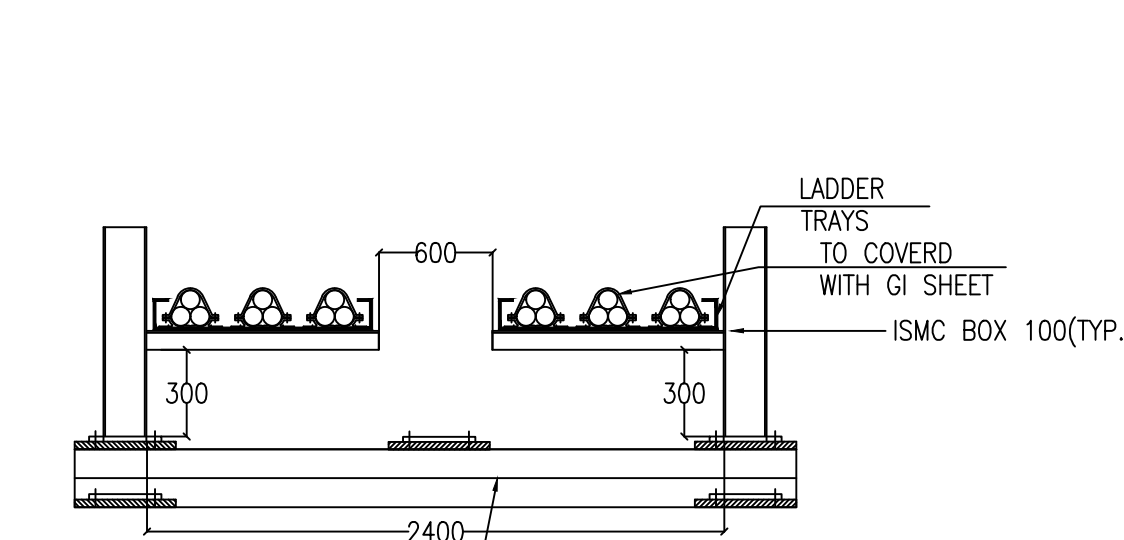
RA-1
(TYPICAL DETAILS)



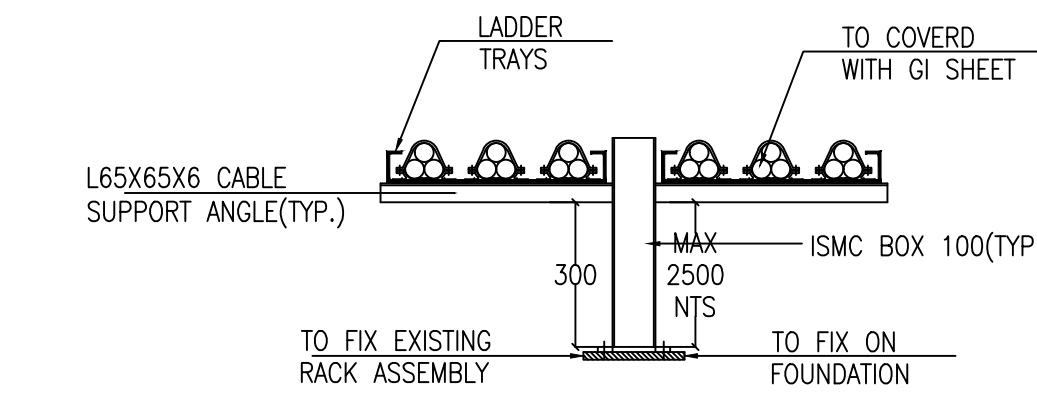
TR-2H
(TYPICAL DETAILS)



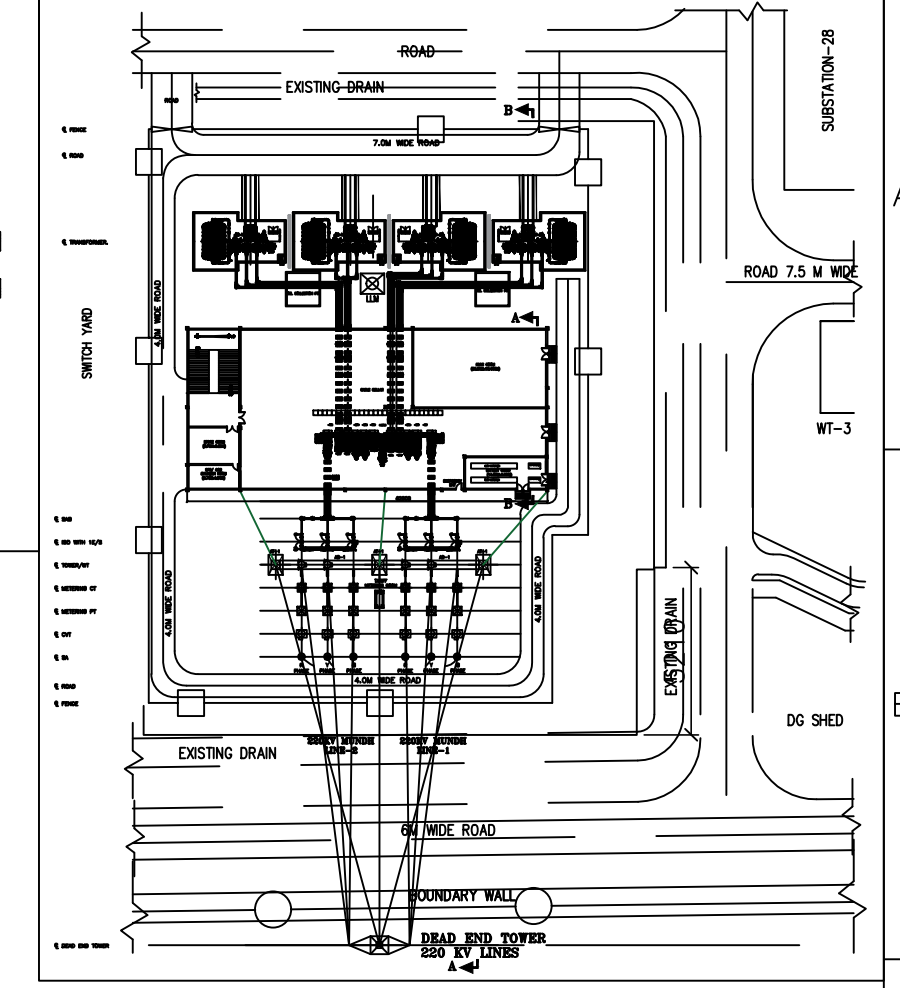
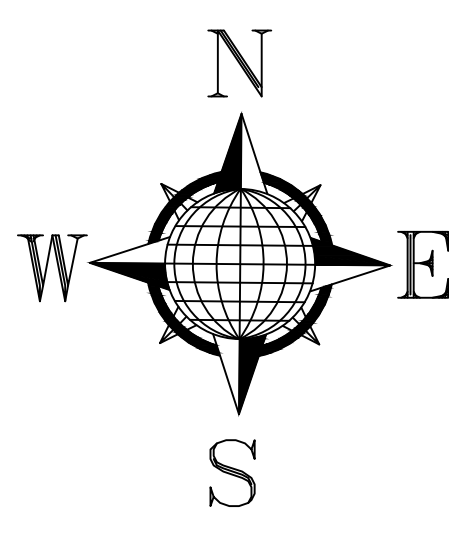
RA-1H
(TYPICAL DETAILS)



RA-2H WITH BRIDGE
(TYPICAL DETAILS)



RA-3H
(TYPICAL DETAILS)



KEY PLAN

- NOTES:-
1. ALL DIMENSIONS ARE IN mm.
 2. THE LOCATION OF TRENCHES/ TRESSLE/ RACK ASSEMBLY MARKED IN THIS DRAWING MAY BE MODIFIED TO SUIT SITE CONDITIONS.
 3. OPENINGS FOR TAKING OUT PIPES TO EQUIPMENT/ PANEL SHALL BE PROVIDED IN CABLE TRENCHES OPENING OF SIZE SUITABLE TO DIA. 50/110 PIPE SHALL BE PROVIDED BELOW TOP CABLE SUPPORT.
 4. INSERTS MUST BE EMBEDDED FOR FIXING CABLE SUPPORT RACK ASSEMBLY.
 5. POWER CABLES SHALL BE LAID IN TOP TIERS AND CONTROL CABLES IN BOTTOM TIERS, AS PER TECHNICAL SPECIFICATION.
 6. EARTH CONDUCTOR 50x5 IS FLAT SHALL BE RUN ALONG THE TOP TIER AND TO BE WELDED ON THE CABLE SUPPORT BEFORE INSTALLATION OF CABLES.
 7. CROSSING AT ROAD SHALL BE IN BOX CULVERT.
 8. FOR POWER & CONTROL, SEPARATE PIPES SHALL BE USED CONSIDERING 60% VOID FOR EACH PIPE I.E. 40% FILLING CRITERIA. ACCORDINGLY, ADDITIONAL PIPES (IF REQUIRED) WILL BE PROVIDED AS PER SITE CONDITION.
 9. ALL OTHER DETAILS PERTAINING TO CIVIL WORKS SHALL REFLECT IN RESPECTIVE CIVIL DRAWINGS.
 10. CONTROL CABLES & POWER CABLES MUST BE LAID IN SEPARATE PVC PIPES.
 - TO BE USED AS CIVIL INPUT
 - FOR INSTALLATION OF CABLE RACK ASSEMBLY AT SITE.
 11. FOR CABLE LAYING AND ROUTING AT SITE.
 12. CABLE RACK AND SUPPORTS SHALL BE PAINTED AFTER INSTALLATION WITH 2 COATS OF METAL PRIMER (COMPRISING OF RED OXIDE & ZINC CHROMATE IN A SYNTHETIC MEDIUM) FOLLOWED BY TWO FINISHING COAT OF ALUMINUM PAINT. SUITABLE PULL OUT BOX SHALL BE PROVIDED IF REQUIRED.
 - 13.




LENGTH OF CABLE TRENCH/
CABLE TRESSLE/ RACK ASSEMBLY

S.NO.	SECTION	APPROX. LENGTH (IN METERS)
1.	TR-1	110
2.	TR-2	70
3.	TR-3	30
4.	RA-1	180
5.	TR-1H	100
6.	TR-2H	250
7.	TR-3H	60
8.	RA-1H	40
9.	RA-2H WITH TRESSLE	60
10.	TR-2H WITH BRIDGE	30
11.	TR-3H	4500

REFERENCE DRAWING (S)/ DOCUMENT(S) -

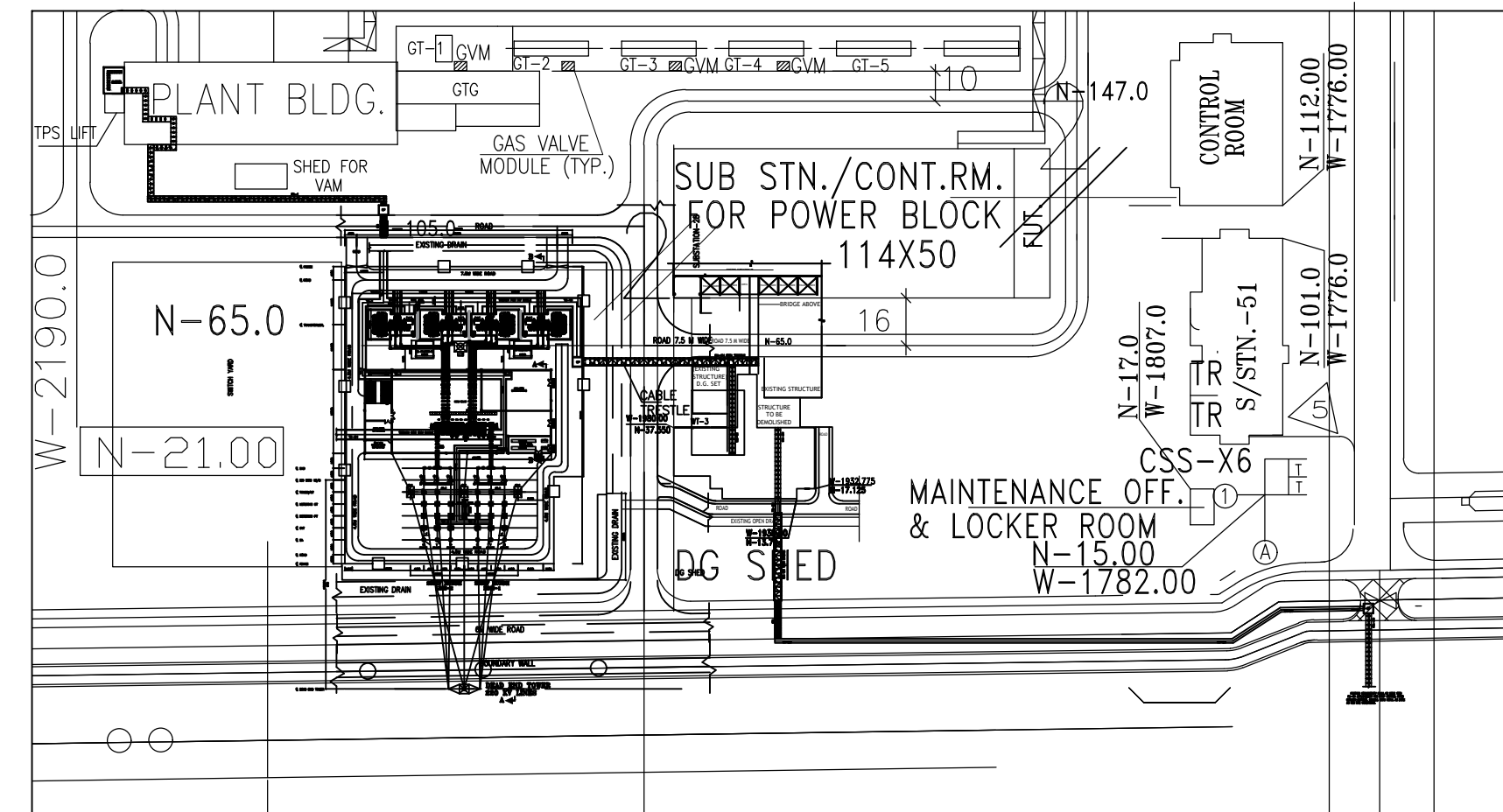
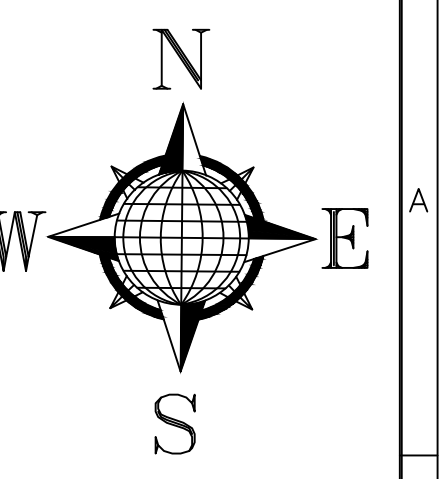
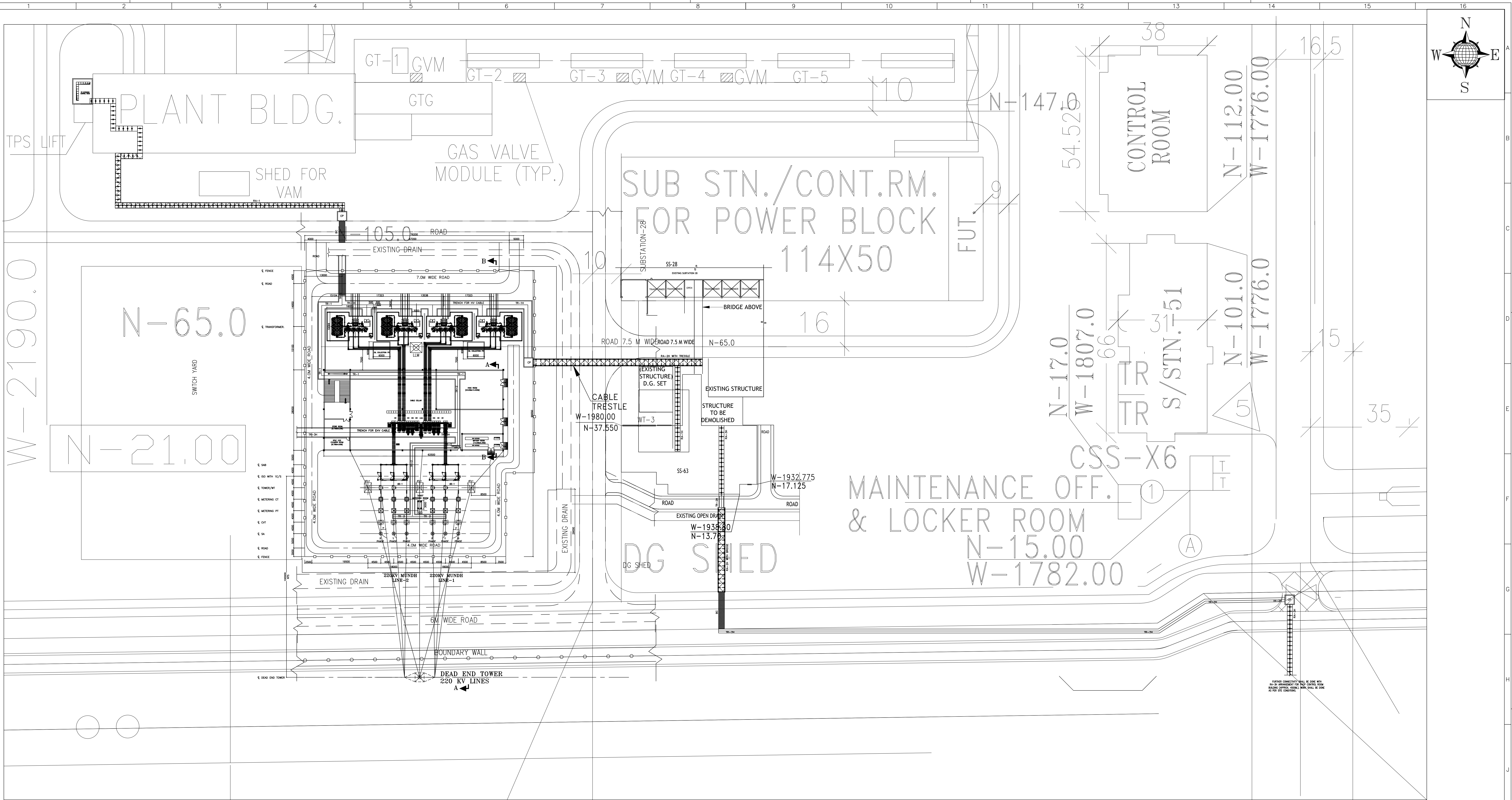
SL. NO.	DRAWING/ DOCUMENT NO.	DRAWING TITLE
2.	TB-411-316-011	220/33kV SWITCHYARD- LAYOUT PLAN & SECTION
1.	TB-411-510-001	220/33kV SWITCHYARD- SINGLE LINE DIAGRAM

PROJECT: LSTK JOB FOR ISBL WORK OF 220kV GRID POWER IMPORT AT PANIPAT REFINERY
LOA NO. RPRC182491/26286965 DTD.24.01.2020



OWNER: 		INDIAN OIL CORPORATION LIMITED					
DESIGNER: 		TATA CONSULTING ENGINEERS LIMITED					
DEPT. 180M CODE 411	UNTO. C/M/J		SCALE N.T.S.	WEIGHT (KG) N.A.	REF. TO ASSY. DRG. N.A.	ITEM NO. N.A.	NO. OF ITEMS N.A.
TITLE 220/33KV SWITCHYARD- OUTDOOR CABLE TRENCH/ TRESSLE/ RACK ASSEMBLY LAYOUT					DRAWING/ DOCUMENT NO. TB-411-316-018		
					SHT. No 01 No. OF SHT. 02		

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INVENTORY NO. SIGN AND DATE REF. DES. NO. COMPUTER FILE NAME



KEY PLAN

REFERENCE DRAWING (S) / DOCUMENT(S) -				DRAWING TITLE											
SL. NO.		DRAWING/ DOCUMENT NO.		DRAWING TITLE											
2.		TB-411-316-011		220/33kV SWITCHYARD- LAYOUT PLAN & SECTION											
1.		TB-411-510-001		220/33kV SWITCHYARD- SINGLE LINE DIAGRAM											
PROJECT: LSTK JOB FOR ISBL WORK OF 220KV GRID POWER IMPORT AT PANIPAT REFINERY LOA NO. RPRC182491/26286965 DTD.24.01.2020															
<div><div><p>INDIAN OIL CORPORATION LIMITED</p></div><div><p>TATA CONSULTING ENGINEERS LIMITED</p></div></div>															
DEPT. TBEM CODE 411		UNTL. DMS. OR C/M/J		SCALE N.T.S.		WEIGHT (KG) N.A.		REF. TO ASSY. DRG. N.A.		ITEM NO. OF ITEMS N.A.		NO. OF SHEETS 02			
TITLE: 220/33kV SWITCHYARD- OUTDOOR CABLE TRENCH/ TRESSLE/ RACK ASSEMBLY LAYOUT												DRAWING/ DOCUMENT NO. TB-411-516-010		REV. NO. 02	
SHT. NO. 02												NO. OF SHT. 02			