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1

KHATOON ABAD
POWER PLANT

2

230KV SUBSTATION
GENERAL LAYOUT & SECTIONS

3

REFERENCE DOCUMENT & DWG

LEGENDS

NOTES

KEY PLAN

D									
C									
B									
A	12105-MMN-SCC-L-4378	NOORI	NOORI	DEHGHAN	DEHGHAN	DEHGHAN	1404.10.06		
0	FIRST ISSUE	NOORI	NOORI	DEHGHAN	DEHGHAN	DEHGHAN	1404.02.14		
Rev.	DESCRIPTION	DRAWN	DESIGNED	CHKD.	HEAD	APPR.	DATE		



Mapna Power Plants Construction & Development Co(MD-1)



NIROO TAYAN GOSTAR MOHAM SHARGH CO.



NATIONAL IRANIAN COPPER INDUSTRIES COMPANY (N.I.C.I)

PROJECT: KHATOON ABAD GAS POWER PLANT
230KV AIS SUBSTATION

TITLE: GENERAL LAYOUT & SECTIONS

OWNER'S DWG. NO. : MD1-RF-00-SS-E-01-NY0-806 REV. NO. : A

SCALE : AS SHOWN FORMAT : A3 FILE NO. : SHEET: 0 OF 12

CONTRACT NO. : 01-00-12191-2014-15 DESIGN TYPE : BASIC DESIGN ☒ DETAIL DESIGN ☐



NATIONAL IRANIAN COPPER INDUSTRIES COMPANY (N.I.C.I)



MAPNA'S DWG. NO. : MD1-RF-00-SS-E-01-NY0-806 REV. NO. : A



NIROO TAYAN GOSTAR MOHAM SHARGH CO.



NATIONAL IRANIAN COPPER INDUSTRIES COMPANY (N.I.C.I)

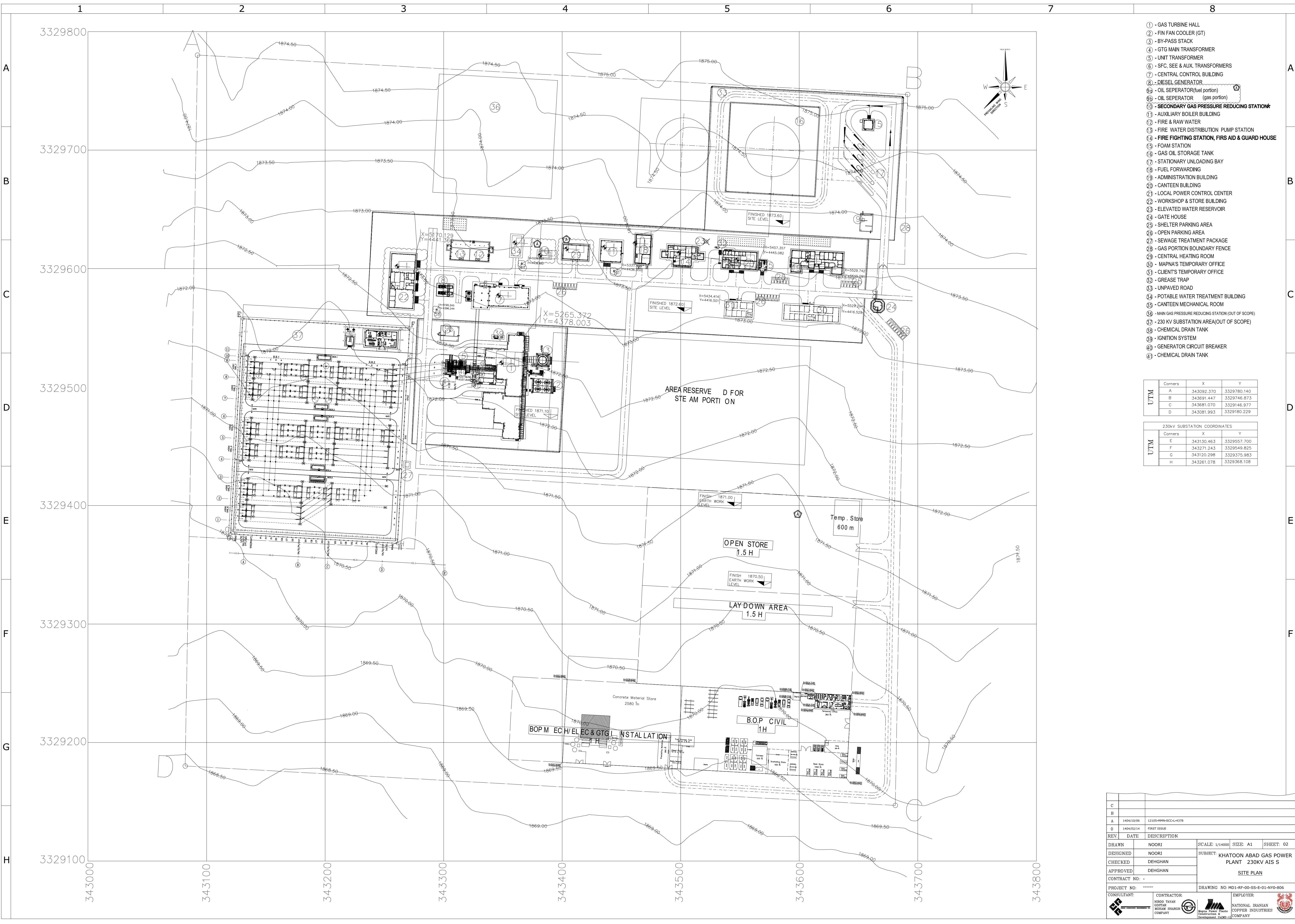
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0	FIRST ISSUE	NOORI	NOORI	DEHGHAN	DEHGHAN	DEHGHAN	1404.02.14		
Rev.	DESCRIPTION	DRAWN	DESIGNED	CHKD.	HEAD	APPR.	DATE		



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Page	Description	Revision				
		0	A	B	C	D
0	COVER SHEET	✓	✓			
1	LIST OF CONTENTS	✓	✓			
2	SITE PLAN	✓	✓			
3	GENERAL LAYOUT	✓	✓			
4	GENERAL LAYOUT-SCOPE OF WORK	✓	✓			
5	SECTION A-A	✓	✓			
6	SECTION B-B	✓	✓			
7	SECTION C-C	✓	✓			
8	SECTION D-D & E-E	✓	✓			
9	SECTION F-F & G-G	✓	✓			
10	SECTION H-H	✓	✓			
11	SECTION I-I & J-J	✓	✓			
12	SECTION K-K	✓	✓			

 NATIONAL IRANIAN COPPER INDUSTRIES COMPANY (N.I.C.I.)	SUB-CONTRACTOR'S LOGO	E							DWG./Doc. No. MD1-RF-00-SS-E-01-NY0-806		 Mapna Power Plants Construction & Development Co(MD-1)	NIROO TAVAN GOSTAR MOHAM SHARGH COMPANY	 NIROO CONSULTING ENGINEERING CO.
		D							DRAWING TITLE:		REV. NO. : A		
	SUB CONTRACTOR DWG. NO.:	C							LIST OF CONTENTS		SHEET:01OF: 12		
		B											
MAPNA'S DWG. No. :	NIYAM'S LOGO	A	12105-MMN-SCC-L-4378	NOORI	NOORI	DEGHAN	DEGHAN	1404.10.06	DESIGN STAGE :	FILE No.	FORMAT : A3	PROJECT : KHATOON ABAD GAS POWER PLANT 230KV AIS S/S	SCALE: -
		0	FIRST ISSUE	NOORI	NOORI	DEGHAN	DEGHAN	1404.02.14					
		REV.	DESCRIPTION	DESN	DWN	CHKD	APPR	DATE					



- ① - GAS TURBINE HALL
- ② - FIN FAN COOLER (GT)
- ③ - BY-PASS STACK
- ④ - GTG MAIN TRANSFORMER
- ⑤ - UNIT TRANSFORMER
- ⑥ - SFC, SEE & AUX. TRANSFORMERS
- ⑦ - CENTRAL CONTROL BUILDING
- ⑧ - DIESEL GENERATOR
- ⑨ - OIL SEPERATOR(fuel portion)
- ⑩ - OIL SEPERATOR (gas portion)
- ⑪ - SECONDARY GAS PRESSURE REDUCING STATION
- ⑫ - AUXILIARY BOILER BUILDING
- ⑬ - FIRE & RAW WATER
- ⑭ - FIRE WATER DISTRIBUTION PUMP STATION
- ⑮ - FIRE FIGHTING STATION, FIRS AID & GUARD HOUSE
- ⑯ - FOAM STATION
- ⑰ - GAS OIL STORAGE TANK
- ⑱ - STATIONARY UNLOADING BAY
- ⑲ - FUEL FORWARDING
- ⑳ - ADMINISTRATION BUILDING
- ㉑ - CANTEN BUILDING
- ㉒ - LOCAL POWER CONTROL CENTER
- ㉓ - WORKSHOP & STORE BUILDING
- ㉔ - ELEVATED WATER RESERVOIR
- ㉕ - GATE HOUSE
- ㉖ - SHELTER PARKING AREA
- ㉗ - OPEN PARKING AREA
- ㉘ - SEWAGE TREATMENT PACKAGE
- ㉙ - GAS PORTION BOUNDARY FENCE
- ㉚ - CENTRAL HEATING ROOM
- ㉛ - MAPNA'S TEMPORARY OFFICE
- ㉜ - CLIENT'S TEMPORARY OFFICE
- ㉝ - GREASE TRAP
- ㉞ - UNPAVED ROAD
- ㉟ - POTABLE WATER TREATMENT BUILDING
- ㊱ - CANTEN MECHANICAL ROOM
- ㊲ - MAIN GAS PRESSURE REDUCING STATION (OUT OF SCOPE)
- ㊳ - 230 KV SUBSTATION AREA(OUT OF SCOPE)
- ㊴ - CHEMICAL DRAIN TANK
- ㊵ - IGNITION SYSTEM
- ㊶ - GENERATOR CIRCUIT BREAKER
- ㊷ - CHEMICAL DRAIN TANK

UTM	Corners		
		X	Y
A		343092.370	3329780.140
B		343691.447	3329746.873
C		343681.070	3329146.977
D		343081.993	3329180.229

UTM	230KV SUBSTATION COORDINATES		
	Corners	X	Y
E		343130.463	3329557.700
F		343271.243	3329549.825
G		343120.298	3329375.983
H		343261.078	3329368.108

C				
B				
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O	1404/02/14	FIRST ISSUE		
REV	DATE	DESCRIPTION	SCALE: 1/14000	SIZE: A1
DRAWN	NOORI			SHEET: 02
DESIGNED	NOORI		SUBJECT: KHATOON ABAD GAS POWER PLANT 230KV AIS S	
CHECKED	DEGHAN			
APPROVED	DEGHAN			
CONTRACT NO:	-			
PROJECT NO:	*****		DRAWING NO: MD1-RF-00-SS-E-01-NYO-806	
CONSULTANT:	CONTRACTOR:	EMPLOYER:		
	VIROD TRAVEL GORTAN MOTAM SHAHIN COMPANY	NATIONAL IRANIAN COPPER INDUSTRIES COMPANY		

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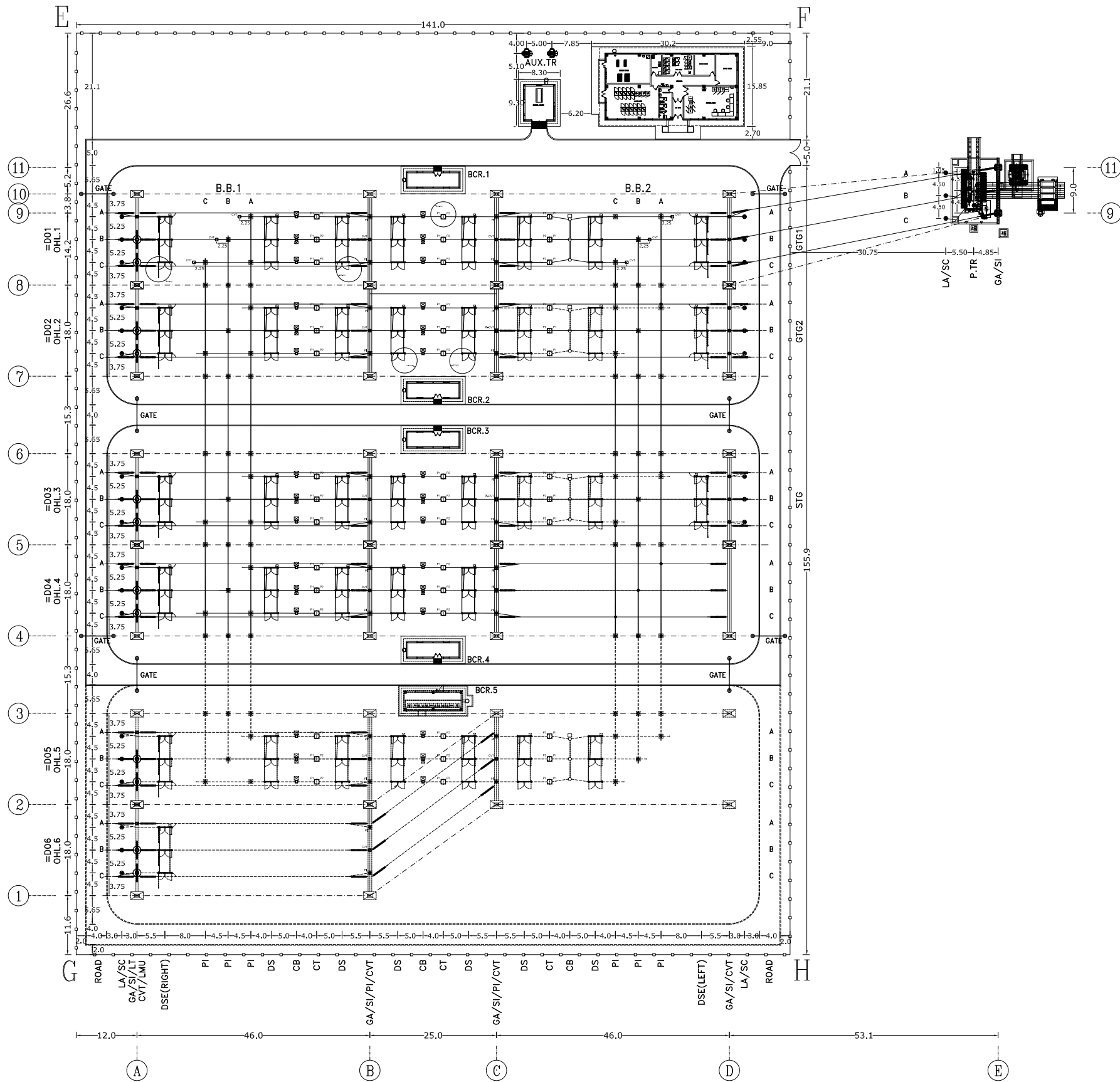


TABLE OF MIN. CLEARANCES (mm)
(REF. IEC 61936 & TAVANIR CODE 486)

BASIC DATA	RATED SYSTEM VOLTAGE (UN)		230 KV
	RATED LIGHTING IMPULSE WITHSTAND VOLTAGE (LWL)		1050KV
	RATED SWITCHING IMPULSE WITHSTAND VOLTAGE (SWL)		—
	RATED POWER FREQUENCY WITHSTAND VOLTAGE (PFWL)		460KV
A	MINIMUM PHASE TO EARTH CLEARANCE		2100
B	MINIMUM PHASE TO PHASE CLEARANCE		2100
C	BETWEEN GROUND & INSULATOR BASE (SAFETY ZONE)		2500
D	BETWEEN GROUND & LOWEST LIVE PART (SAFETY DISTANCE)		4600
E	TO NEAREST LIVE PART (VERTICAL WORKING ZONE)		3780
F	TO NEAREST LIVE PART (HORIZONTAL WORKING ZONE)		4280
G	SHIELD WIRE CLEARANCE OVER BUS CONDUCTOR		5000
H	HEIGHT OF ENERGIZED PARTS ABOVE MAIN ROADS		10000

LEGEND

REF. No.	DESCRIPTION
PI	POST INSULATOR
DS	DISCONNECTOR SWITCH
DS/E	DISCONNECTOR WITH EARTHING SWITCH
LA	LIGHTNING ARRESTER
CVT	CAPACITIVE VOLTAGE TRANSFORMER
CT	CURRENT TRANSFORMER
CB	CIRCUIT BREAKER
LT	LINE TRAP
AUX. TR.	AUXILIARY TRANSFORMER
GTG	230KV GAS UNIT MAIN TRANSFORMER

UTM

Point No	X	Y
E	343130.463	3329557.700
F	343271.243	3329549.825
G	343120.298	3329375.983
H	343261.078	3329368.108

NOTE: 1- ALL DIMENSIONS ARE IN m.

2- SUBSTATION FENCE —●—●—●—

3- FUTURE - - - - -



SUB-CONTRACTOR'S LOGO
SUB CONTRACTOR DWG. NO.:

MAPNA'S DWG. No. :

NIYAM'S LOGO

E					
D					
C					
B					
A	12105-MMN-SCC-L-4378	NOORI	NOORI	DEGHAN	DEGHAN 1404.10.06
O	FIRST ISSUE	NOORI	NOORI	DEGHAN	1404.02.14
REV.	DESCRIPTION	DESN	DWN	CHKD	APPR DATE

DWG./Doc. No. MD1-RF-00-SS-E-01-NYO-806

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GENERAL LAYOUT

DESIGN STAGE :

FILE No.

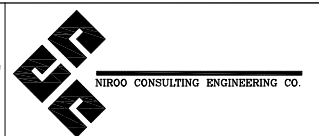
REV. NO. : A

SHEET: 03 OF 12

FORMAT : A2



NIROO TAVAN
GOSTAR
MOHAM SHARGH
COMPANY



PROJECT :
KHATOON ABAD GAS POWER PLANT 230KV AIS S/S

SCALE: 1/650

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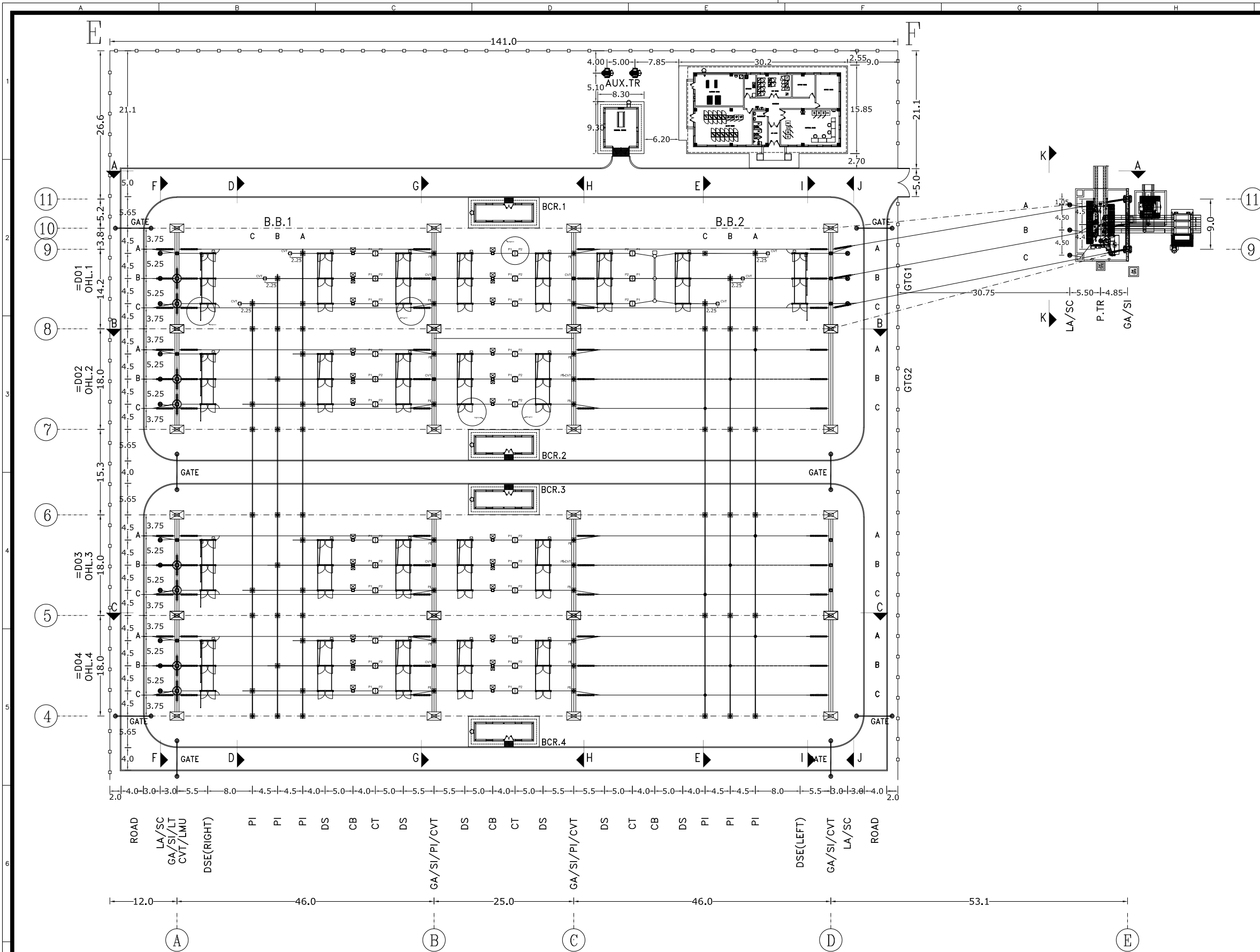


TABLE OF MIN. CLEARANCES (mm)
(REF. IEC 61936 & TAVANIR CODE 486)

BASIC DATA	RATED SYSTEM VOLTAGE (UN)		230 KV
	RATED LIGHTNING IMPULSE WITHSTAND VOLTAGE (LIWL)		1050KV
	RATED SWITCHING IMPULSE WITHSTAND VOLTAGE (SIWL)		—
	RATED POWER FREQUENCY WITHSTAND VOLTAGE (PFWL)		460KV
A	MINIMUM PHASE TO EARTH CLEARANCE		2100
B	MINIMUM PHASE TO PHASE CLEARANCE		2100
C	BETWEEN GROUND & INSULATOR BASE (SAFETY ZONE)		2500
D	BETWEEN GROUND & LOWEST LIVE PART (SAFETY DISTANCE)		4600
E	TO NEAREST LIVE PART (VERTICAL WORKING ZONE)		3780
F	TO NEAREST LIVE PART (HORIZONTAL WORKING ZONE)		4280
G	SHIELD WIRE CLEARANCE OVER BUS CONDUCTOR		5000
H	HEIGHT OF ENERGIZED PARTS ABOVE MAIN ROADS		10000

LEGEND

REF. No.	DESCRIPTION
PI	POST INSULATOR
DS	DISCONNECTOR SWITCH
DS/E	DISCONNECTOR WITH EARTHING SWITCH
LA	LIGHTNING ARRESTER
CVT	CAPACITIVE VOLTAGE TRANSFORMER
CT	CURRENT TRANSFORMER
CB	CIRCUIT BREAKER
LT	LINE TRAP
AUX. TR.	AUXILIARY TRANSFORMER
GTG	230KV GAS UNIT MAIN TRANSFORMER

UTM

Point No	X	Y
E	343130.463	3329557.700
F	343271.243	3329549.825
G	343120.298	3329375.983
H	343261.078	3329368.108

NOTE: 1- ALL DIMENSIONS ARE IN m.

2- SUBSTATION FENCE



SUB-CONTRACTOR'S LOGO

SUB CONTRACTOR DWG. NO.:

NIYAM'S LOGO

E									
D									
C									
B									
A	12105-MMN-SCC-L-4378	NOORI	NOORI	DEGHAN	DEGHAN	1404.10.06			
O	FIRST ISSUE	NOORI	NOORI	DEGHAN	DEGHAN	1404.02.14			
REV.	DESCRIPTION	DESN	DWN	CHKD	APPR	DATE			

DWG./Doc. No. MD1-RF-00-SS-E-01-NYO-806

DRAWING TITLE:
GENERAL LAYOUT-SCOPE OF WORK

DESIGN STAGE : FILE No.

REV. NO. : A

SHEET:04OF:12

FORMAT : A3



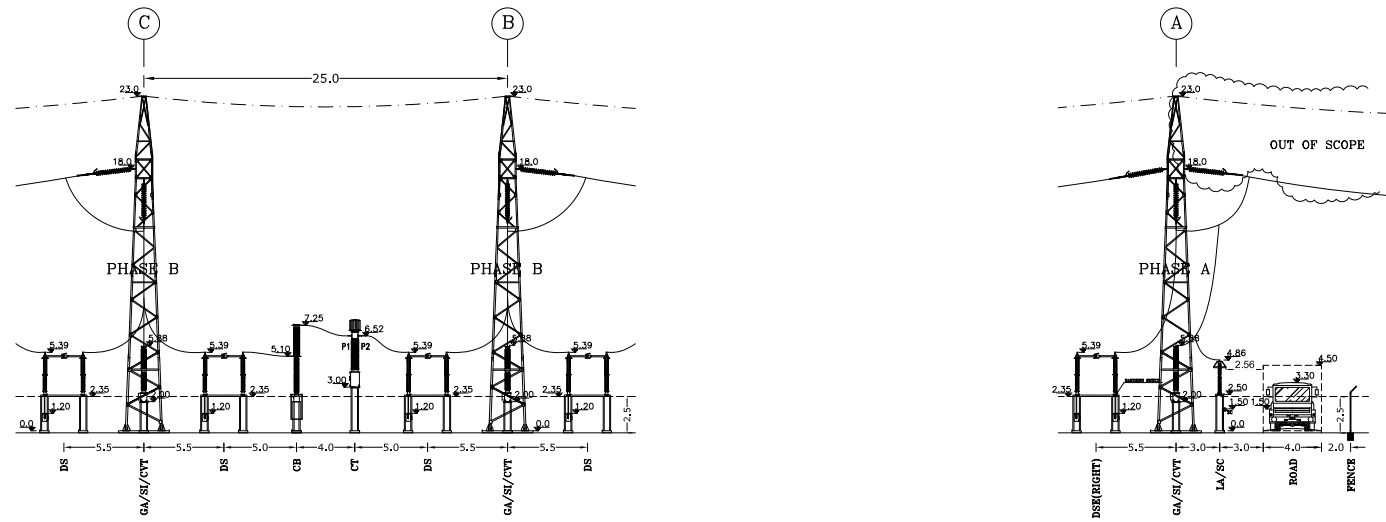
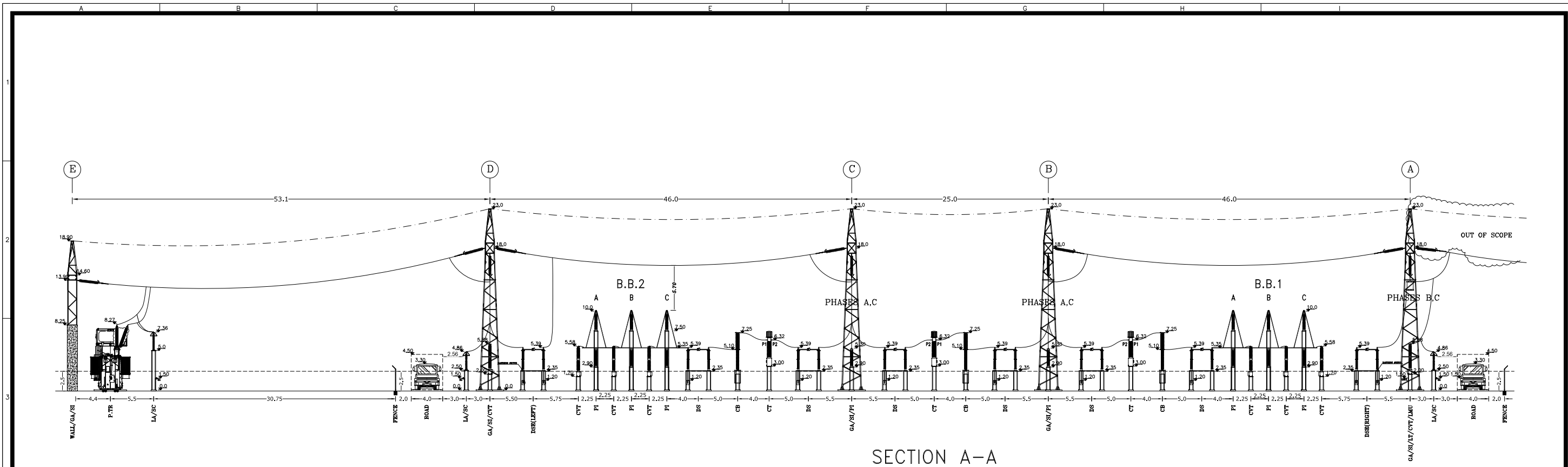
PROJECT :
KHATOON ABAD GAS POWER PLANT 230KV AIS S/S

NIROO TAVAN
GOSTAR
MOHAM SHARGH
COMPANY



SCALE: 1/700

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SUB-CONTRACTOR'S LOGO

SUB CONTRACTOR DWG. NO.:

MAPNA'S DWG. No. :

NIYAM'S LOGO

E							
D							
C							
B							
A	12105-MMN-SCC-L-4378	NOORI	NOORI	DEHGHAN	DEHGHAN	1404.10.06	
O	FIRST ISSUE	NOORI	NOORI	DEHGHAN	DEHGHAN	1404.02.14	
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DWG./Doc. No. MD1-RF-00-SS-E-01-NY0-806

DRAWING TITLE:

SECTION A-A

DESIGN STAGE :

FILE No.

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FORMAT : A3



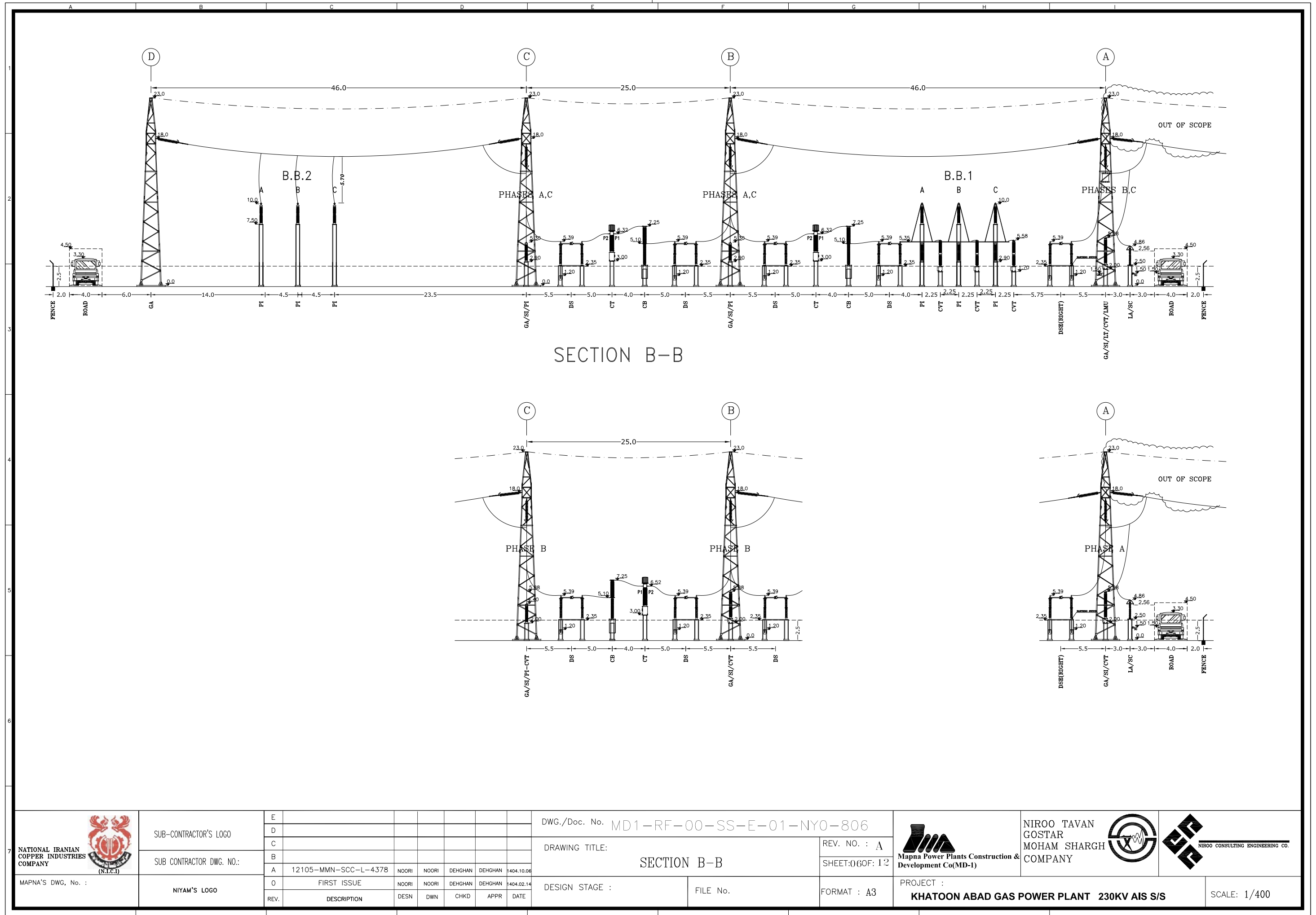
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GOSTAR
MOHAM SHARGH
COMPANY



PROJECT :
KHATOON ABAD GAS POWER PLANT 230KV AIS S/S

SCALE: 1/500

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COPPER INDUSTRIES
COMPANY



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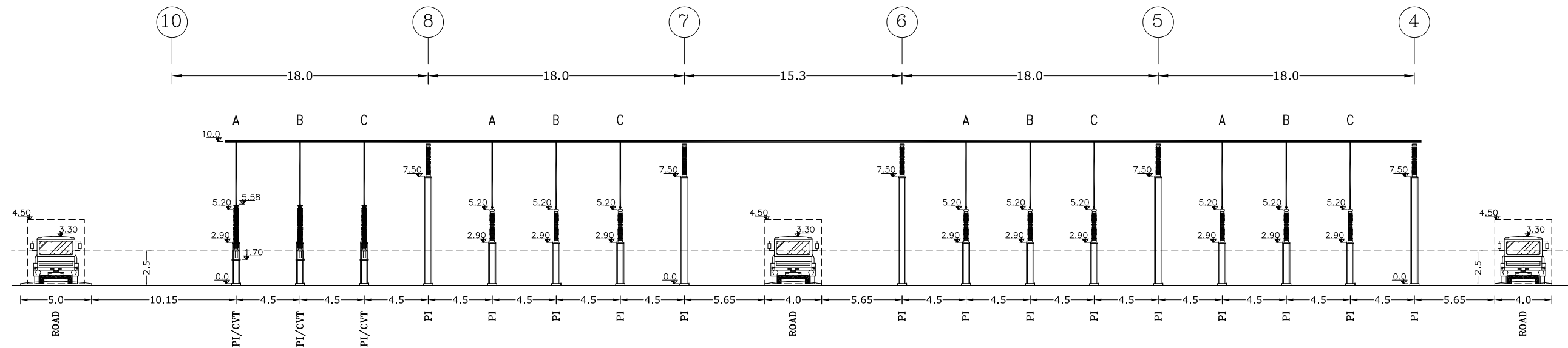
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COPPER INDUSTRIES
COMPANY



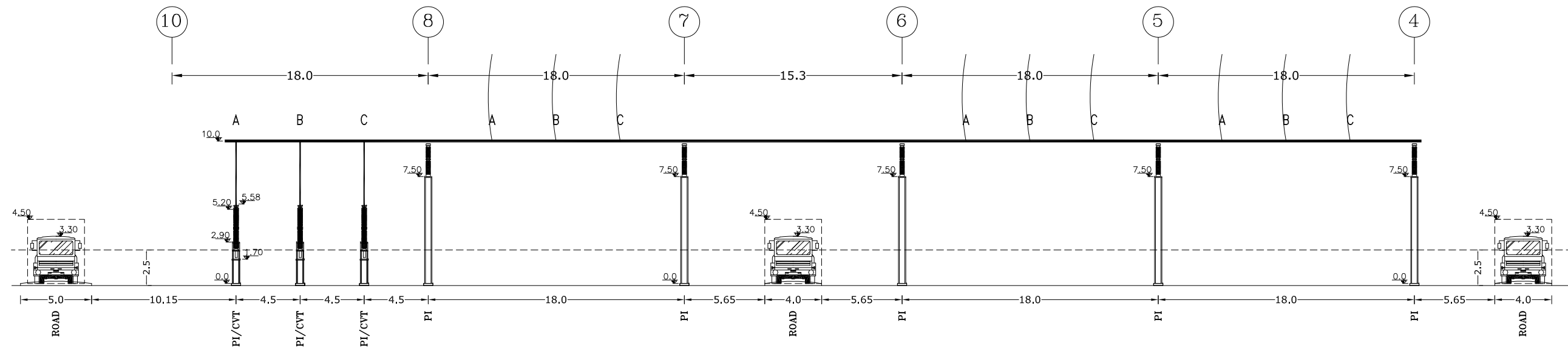
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SECTION D-D(B.B.1)



SECTION E-E(B.B.2)



SUB-CONTRACTOR'S LOGO

SUB CONTRACTOR DWG. NO.:

NIYAM'S LOGO

E								
D								
C								
B								
A	12105-MMN-SCC-L-4378	NOORI	NOORI	DEHGHAN	DEHGHAN	1404.10.06		
O	FIRST ISSUE	NOORI	NOORI	DEHGHAN	DEHGHAN	1404.02.14		
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DWG./Doc. No. MD1-RF-00-SS-E-01-NY0-806

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SECTION D-D & E-E

DESIGN STAGE :

FILE No.

REV. NO. : A

SHEET:08OF:12

FORMAT : A3



Mapna Power Plants Construction & Development Co(MD-1)

NIROO TAVAN
GOSTAR
MOHAM SHARGH
COMPANY



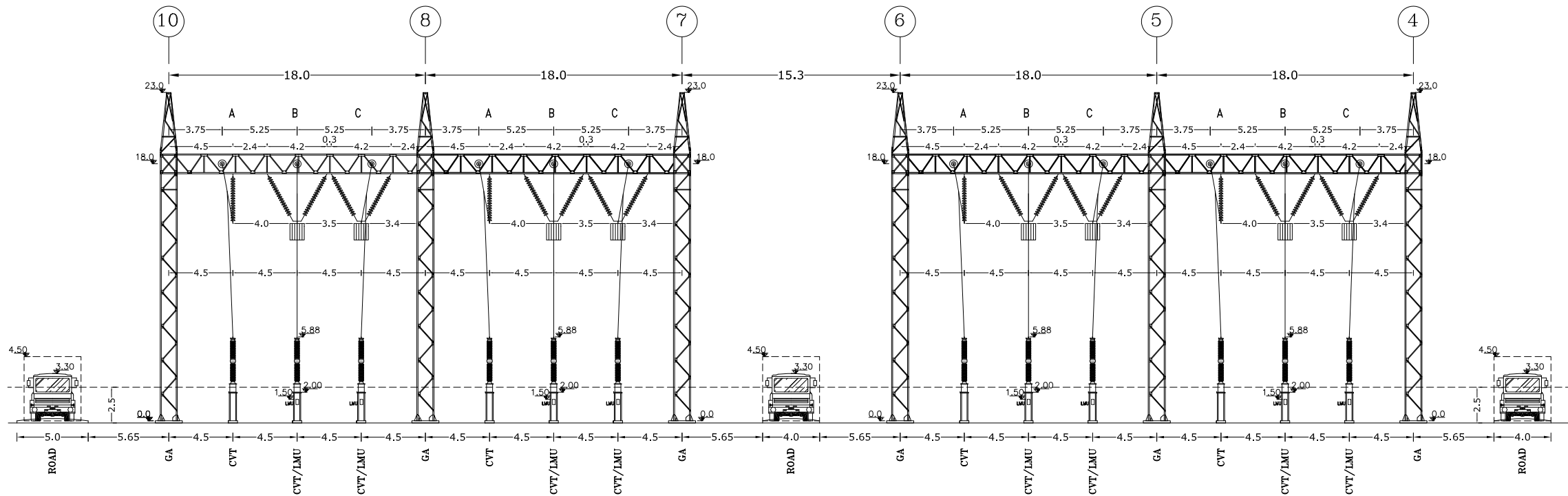
NIROO CONSULTING ENGINEERING CO.

PROJECT :

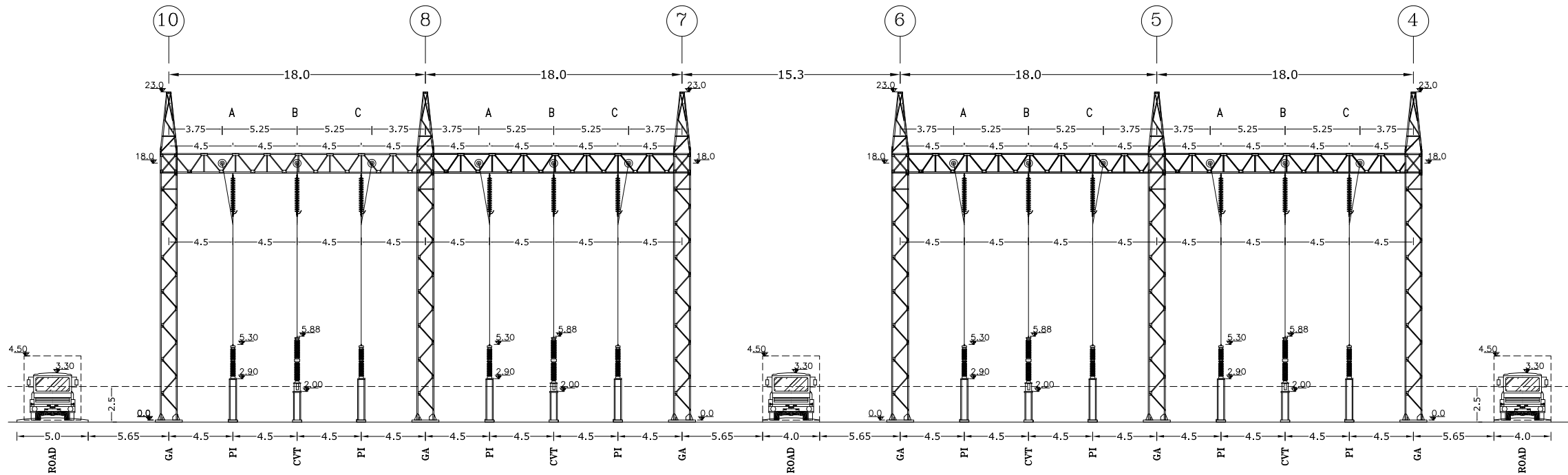
KHATOON ABAD GAS POWER PLANT 230KV AIS S/S

SCALE: 1/300

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SECTION F-F



SECTION G-G



SUB-CONTRACTOR'S LOGO

SUB CONTRACTOR DWG. NO.:

MAPNA'S DWG. No. :

NIYAM'S LOGO

E					
D					
C					
B					
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O	FIRST ISSUE	NOORI	NOORI	DEHGHAN	DEHGHAN
REV.	DESCRIPTION	DESN	DWN	CHKD	APPR

DWG./Doc. No. MD1-RF-00-SS-E-01-NYO-806

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SECTION F-F & G-G

DESIGN STAGE : FILE No.

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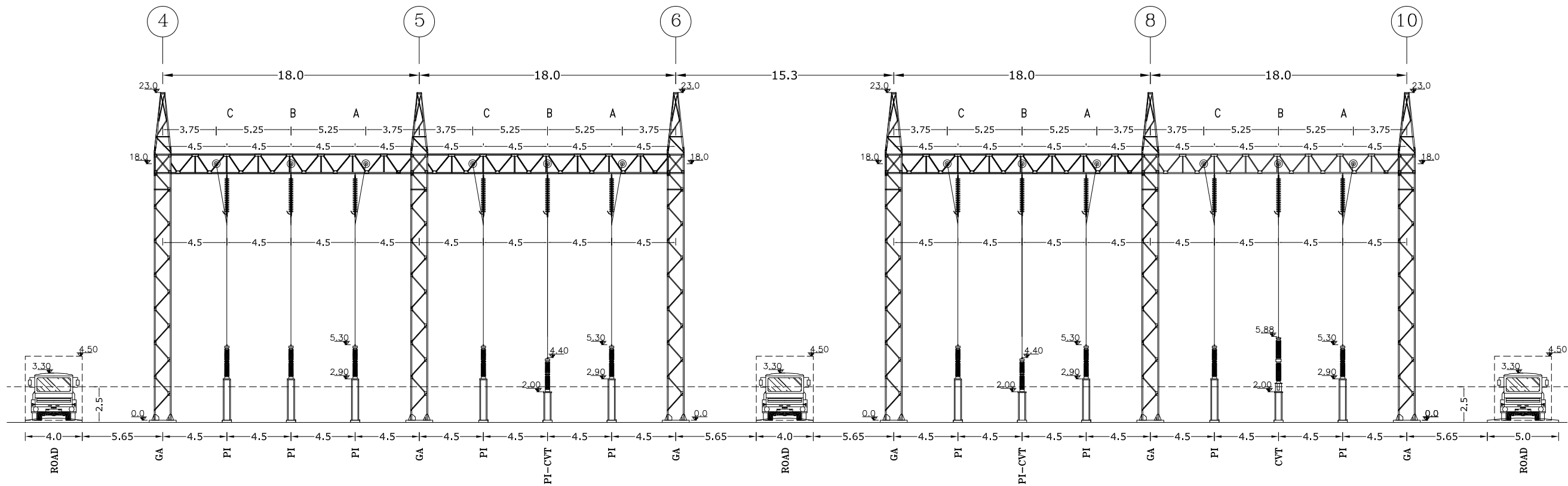
NIROO TAVAN
GOSTAR
MOHAM SHARGH
COMPANY



PROJECT :
KHATOON ABAD GAS POWER PLANT 230KV AIS S/S

SCALE: 1/350

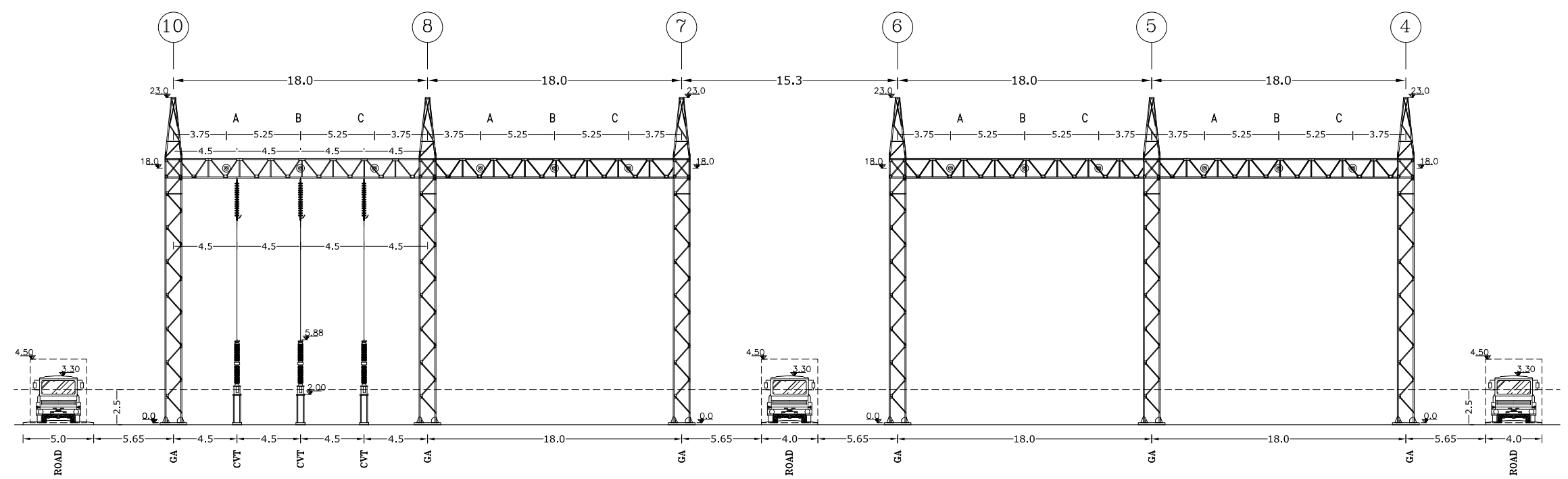
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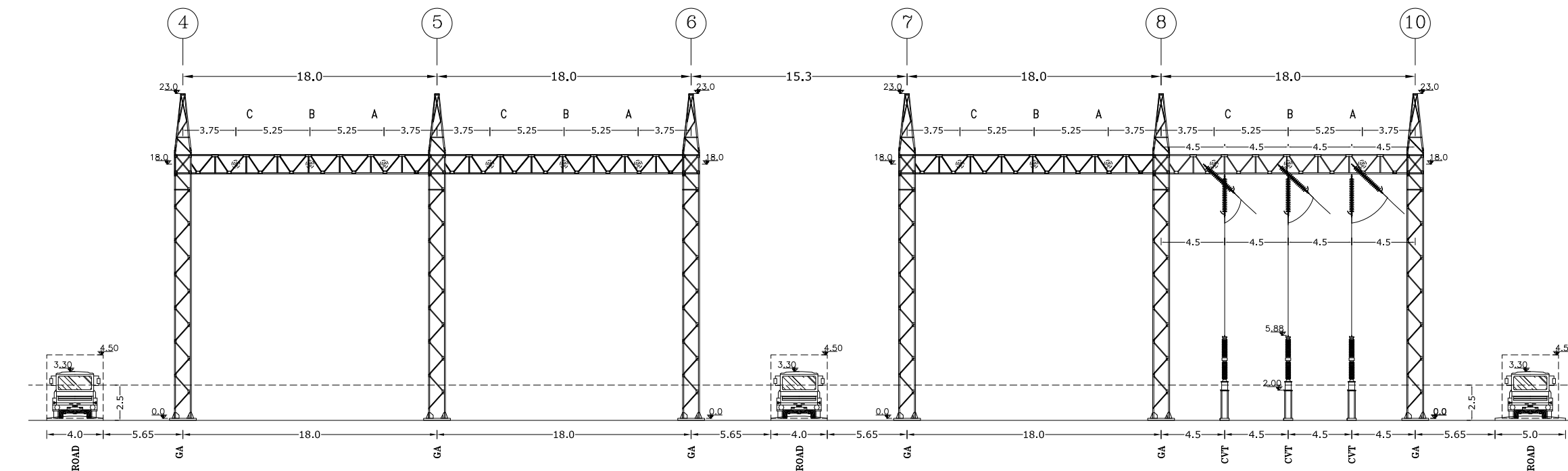
SECTION H-H

 NATIONAL IRANIAN COPPER INDUSTRIES COMPANY (N.I.C.I.)	SUB-CONTRACTOR'S LOGO	E							DWG./Doc. No. MD1-RF-00-SS-E-01-NYO-806	 Mapna Power Plants Construction & Development Co(MD-1)	NIROO TAVAN GOSTAR MOHAM SHARGH COMPANY  NIROO CONSULTING ENGINEERING CO.	 NIROO CONSULTING ENGINEERING CO.	
		D											
		C											
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O		FIRST ISSUE	NOORI	NOORI	DEHGHAN	DEHGHAN	1404.02.14						
MAPNA'S DWG. No. :	NIYAM'S LOGO	REV.	DESCRIPTION	DESN	DWN	CHKD	APPR	DATE	DESIGN STAGE :	FILE No.	FORMAT : A3	PROJECT : KHATOON ABAD GAS POWER PLANT 230KV AIS S/S	SCALE: 1/300

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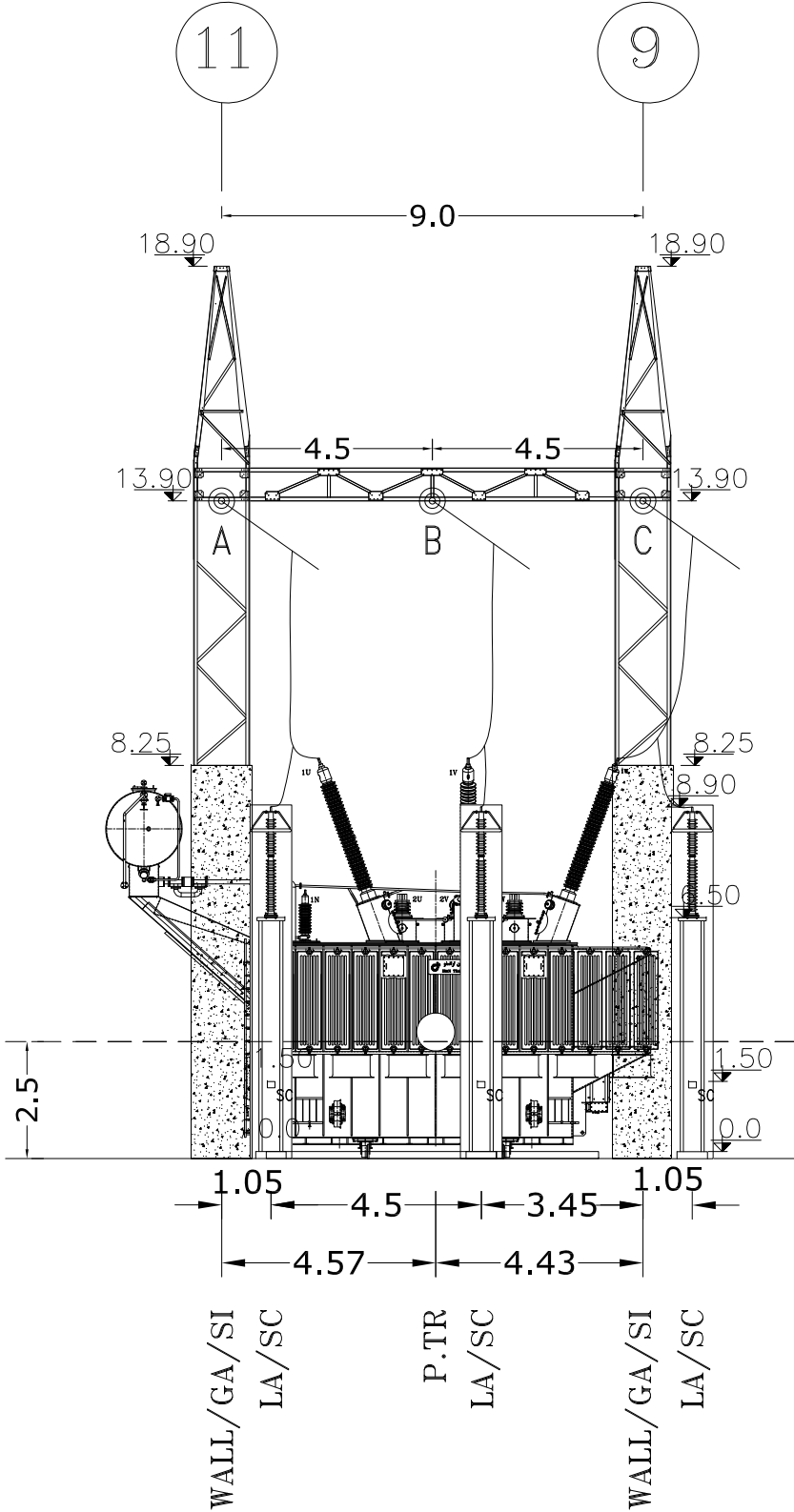
SECTION I-I



SECTION J-J

 NATIONAL IRANIAN COPPER INDUSTRIES COMPANY (N.I.C.I.)	SUB-CONTRACTOR'S LOGO	E							DWG./Doc. No. MD1-RF-00-SS-E-01-NYO-806			 Mapna Power Plants Construction & Development Co(MD-1)	NIROO TAVAN GOSTAR MOHAM SHARGH COMPANY  NIROO CONSULTING ENGINEERING CO.	 NIROO CONSULTING ENGINEERING CO.					
		D								DRAWING TITLE:					REV. NO. : A				
		C								SECTION I-I & J-J					SHEET:11 OF: 12				
	SUB CONTRACTOR DWG. NO.:		B							DESIGN STAGE :					FILE No.	FORMAT : A3	PROJECT :	KHATOON ABAD GAS POWER PLANT 230KV AIS S/S	SCALE: 1/350
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		O	FIRST ISSUE	NOORI	NOORI	DEGHAN	DEGHAN	1404.02.14											
		REV.	DESCRIPTION	DESN	DWN	CHKD	APPR	DATE											

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SECTION K-K



SUB-CONTRACTOR'S LOGO
SUB CONTRACTOR DWG. NO.:

MAPNA'S DWG. No. :

NIYAM'S LOGO

E								
D								
C								
B								
A	12105-MMN-SCC-L-4378	NOORI	NOORI	DEHGHAN	DEHGHAN	1404.10.06		
O	FIRST ISSUE	NOORI	NOORI	DEHGHAN	DEHGHAN	1404.02.14		
REV.	DESCRIPTION	DESN	DWN	CHKD	APPR	DATE		

DWG./Doc. No. MD1-RF-00-SS-E-01-NYO-806		REV. NO. : A	
DRAWING TITLE:		SHEET:120F:12	
SECTION K-K			
DESIGN STAGE :		FILE No.	
		FORMAT : A3	



NIROO TAVAN
GOSTAR
MOHAM SHARGH
COMPANY



NIROO CONSULTING ENGINEERING CO.

PROJECT :
KHATOON ABAD GAS POWER PLANT 230KV AIS S/S

SCALE: 1/150