

400/132KV AIS S/S BAHADORAN

EARTHING DETAILS

B				
B				
B01			1405.03	ORIGINAL ISSUE
B00			1405.02	ORIGINAL ISSUE
REV.	VERIFIED	DRAWN	DATE	DESCRIPTION
		DATE:	NAME:	SCALE: _____ STANDARD: _____
DRAWN	1405.03	M.HOSEINI	SUBJECT: 400/132/33KV AIS S/S BAHADORAN EARTHING DETAILS	
DESIGNED	1405.03	M.HOSEINI		
CHECKED	1405.03	M.DANESHPOU		
APPROVED	1405.03	M.DANESHPOU		
CONTRACT NO:				DRAWING NO:
CONSULTANT:		CONTRACTOR:		CLIENT :
MAHSAB NIROO ENGINEERING COMPANY (MANICO) 		 (METANCO)		 LEAD AND ZINC INDUSTRY PIONEERS COMPANY
CONSU. REF:		CONT. REF:		EMPLOYER REF:

SHEET NO.	DESCRIPTION	REVISION			
		B00	B01	B02	B03
1	INDEX	✓	✓		
2	CADWELD CONNECTION	✓	✓		
3	CADWELD CONNECTION	✓	✓		
4	JOINT & ACCESORIES	✓	✓		
5	JOINT & ACCESORIES	✓	✓		
6	JOINT & ACCESORIES	✓	✓		
7	JOINT & ACCESORIES	✓	✓		
8	JOINT & ACCESORIES	✓	✓		
9	LIGHTNING ARRESTER-132 KV	✓	✓		
10	CURRENT TRANSFORMER-132 KV	✓	✓		
11	CAPACITIVE VOLTAGE TRANSFORMER-132 KV	✓	✓		
12	CIRCUIT BREAKER-132 KV	✓	✓		
13	DISCONNECTOR SWITCH-132 KV	✓	✓		
14	DISCONNECTOR SWITCH WITH EARTHING SWITCH-132 KV	✓	✓		
15	POST INSULATOR-132 KV	✓	✓		
16	GANTRY-132 KV	✓	✓		
17	LIGHTING POLE	✓	✓		
18	CABLE SUPPORTER SYSTEM	✓	✓		
19	PANELS	✓	✓		
20	EARTH MAT	✓	✓		
21	EARTH PIT	✓	✓		
22	BUILDING STRUCTURE	✓	✓		
23	PIPING	✓	✓		
24	FENCE	—	✓		

4						CLIENT:  Lead&Zinc Industry Planners Company 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION CONTRACTOR: 	CONSULTING ENGINEERS:				NAME	DATE	DWG TITLE: 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION INDEX							
3							DESIGNED	m.hoseini		1405/03										
2							DRAWN	m.hoseini		1405/03										
1	1405/03	ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou		CHECKED	s.alizadeh		1405/03										
0	1405/02	FIRST ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou		APPROVED	m.daneshpou		1405/03										
REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED			PROJECT:												
CUSTOMER DWG NUMBER: 9210-MS-EL-ES-00-0012-D00							Mehdiabad Lead & Zinc Project													
							CONTRACT NO.:		SHT NO.	SHT SIZE	SCALE	AREA CODE	ISSUED	DISCIP	DOC. TYPE	EQ. NO.	SEQ. NO.	REV.		
							JOB NO.:		1	A3	1/10000	9210	MS	EL	ES	00	0012	B01		

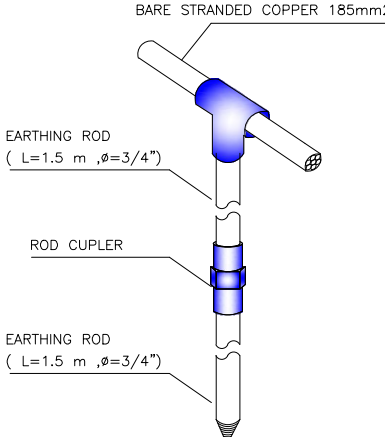
CADWELD CONNECTIONS

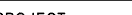
SYMBOL		FIGURE:													
TYPE: CROSS CONNECTION CADWELD CONNECTION OF 120 mm² CONDUCTOR TO 120 mm² CONDUCTOR		TYPE: TEE CONNECTION CADWELD CONNECTION OF 120 mm² CONDUCTOR TO 120 mm² CONDUCTOR													
<table><tr><td>type</td><td>catridge</td><td>handle clamp</td></tr><tr><td>CX-A</td><td>2XC-150</td><td>KM78S</td></tr></table>	type	catridge	handle clamp	CX-A	2XC-150	KM78S		<table><tr><td>type</td><td>catridge</td><td>handle clamp</td></tr><tr><td>CT-A</td><td>C-150</td><td>KM58</td></tr></table>	type	catridge	handle clamp	CT-A	C-150	KM58	
type	catridge	handle clamp													
CX-A	2XC-150	KM78S													
type	catridge	handle clamp													
CT-A	C-150	KM58													

SYMBOL		FIGURE:													
TYPE: TEE CONNECTION CADWELD CONNECTION OF 120 mm² CONDUCTOR TO 185 mm² CONDUCTOR		TYPE: TEE CONNECTION CADWELD CONNECTION OF 120 mm² CONDUCTOR TO 35 mm² CONDUCTOR													
<table><tr><td>type</td><td>catridge</td><td>handle clamp</td></tr><tr><td>CT-A</td><td>C-200</td><td>KM58</td></tr></table>	type	catridge	handle clamp	CT-A	C-200	KM58		<table><tr><td>type</td><td>catridge</td><td>handle clamp</td></tr><tr><td>CT-A</td><td>C-90</td><td>KM58</td></tr></table>	type	catridge	handle clamp	CT-A	C-90	KM58	
type	catridge	handle clamp													
CT-A	C-200	KM58													
type	catridge	handle clamp													
CT-A	C-90	KM58													

4						CLIENT:  Lead-acid Zinc Industry Planners Company 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION	CONSULTING ENGINEERS: (Mohsib Nirou Consulting Engineers Co.) 		NAME	DATE	DWG TITLE: 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION CADWELD CONNECTIONS								
3								DESIGNED	m.hoseini	1405/03									
2								DRAWN	m.hoseini	1405/03									
1	1405/03	ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou			CHECKED	s.alizadeh	1405/03									
0	1405/02	FIRST ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou	CONTRACTOR: 	PROJECT: Mehdiabad Lead & Zinc Project	APPROVED	m.daneshpou	1405/03									
REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED			CONTRACT NO.:	SHT NO.	SHT SIZE	SCALE	AREA CODE	ISSUED	DISCIP	DOC. TYPE	EQ. NO.	SEQ. NO.	REV.	
CUSTOMER DWG NUMBER: 9210-MS-EL-ES-00-0012-D00								JOB NO.:	2	A3	1/10000	9210	MS	EL	ES	00	0012	B01	

CADWELD CONNECTIONS

SYMBOL	<i>E</i>	FIGURE:	SYMBOL	<i>G</i>	FIGURE:						
TYPE: TEE CONNECTION CADWELD CONNECTION OF 185 mm ² CONDUCTOR TO EARTHING ROD (EARTHING ROD: L=3 m , $\phi=3/4''$)			TYPE:								
<table><tr><td>type</td><td>catridge</td><td>handle clamp</td></tr><tr><td>CR-T</td><td>C-200</td><td>KM58</td></tr></table>		type	catridge	handle clamp	CR-T	C-200	KM58				
type	catridge	handle clamp									
CR-T	C-200	KM58									
SYMBOL	<i>F</i>	FIGURE:	SYMBOL	<i>H</i>	FIGURE:						
TYPE:			TEE CONNECTION								

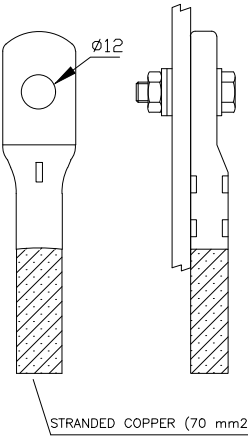
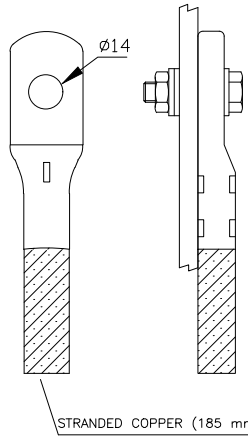
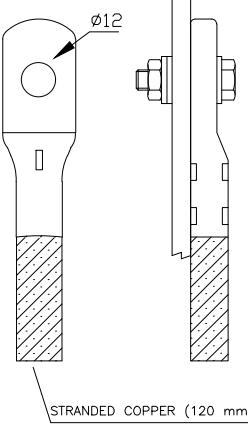
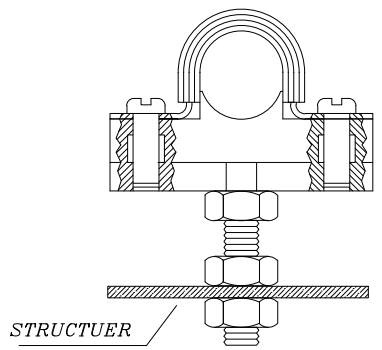
4						CLIENT:  Lead & Zinc Industry Planners Company 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION CONTRACTOR:  132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION	CONSULTING ENGINEERS:	 (Mahsab Niroo Consulting Engineers Co.)		NAME	DATE	DWG TITLE: 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION CADWELD CONNECTIONS							
3							DESIGNED		m.hoseini	1405/03									
2							DRAWN		m.hoseini	1405/03									
1	1405/03	ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou		CHECKED		s.alizadeh	1405/03									
0	1405/02	FIRST ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou		APPROVED	m.daneshpou	1405/03										
REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED		PROJECT:	Mehdiabad Lead & Zinc Project	CONTRACT NO.:	SHT NO.	SHT SIZE	SCALE	AREA CODE	ISSUED	DISCIP	DOC. TYPE	EQ. NO.	SEQ. NO.	REV.
CUSTOMER DWG NUMBER: 9210-MS-EL-ES-00-0012-D00							JOB NO.:	3	A3	1/10000	9210	MS	EL	ES	00	0012	B01		

EARTH JOINTS AND ACCESSORIES

SYMBOL	1	FIGURE:		SYMBOL	2	FIGURE:	
DESCRIPTION:		DESCRIPTION:		DESCRIPTION:		DESCRIPTION:	
CABLE LUG (TWO HOLE)		CABLE LUG (ONE HOLE)		CABLE LUG (ONE HOLE)		CABLE LUG (ONE HOLE)	
SUITABLE FOR 185 mm ² CONDUCTOR		SUITABLE FOR 185 mm ² CONDUCTOR		SUITABLE FOR 185 mm ² CONDUCTOR		SUITABLE FOR 185 mm ² CONDUCTOR	
HOLE DIAMETER : 12mm		HOLE DIAMETER : 12mm		HOLE DIAMETER : 12mm		HOLE DIAMETER : 12mm	
(FOR CONNECTING CONDUCTOR ON STRUCTURE)		(FOR CONNECTING CONDUCTOR ON STRUCTURE & EARTH TERMINAL)		(FOR CONNECTING CONDUCTOR ON STRUCTURE & EARTH TERMINAL)		(FOR CONNECTING CONDUCTOR ON STRUCTURE & EARTH TERMINAL)	
SYMBOL	3	FIGURE:		SYMBOL	4	FIGURE:	
DESCRIPTION:		DESCRIPTION:		DESCRIPTION:		DESCRIPTION:	
CABLE LUG (ONE HOLE)		CABLE LUG (ONE HOLE)		CABLE LUG (ONE HOLE)		CABLE LUG (ONE HOLE)	
SUITABLE FOR 50 mm ² CONDUCTOR		SUITABLE FOR 50 mm ² CONDUCTOR		SUITABLE FOR 35 mm ² CONDUCTOR		SUITABLE FOR 35 mm ² CONDUCTOR	
HOLE DIAMETER : 14mm		HOLE DIAMETER : 12mm		HOLE DIAMETER : 12mm		HOLE DIAMETER : 12mm	
(FOR CONNECTING CONDUCTOR ON STRUCTURE & EARTH TERMINAL)		(FOR CONNECTING CONDUCTOR ON STRUCTURE & EARTH TERMINAL)		(FOR CONNECTING CONDUCTOR ON STRUCTURE & EARTH TERMINAL)		(FOR CONNECTING CONDUCTOR ON STRUCTURE & EARTH TERMINAL)	

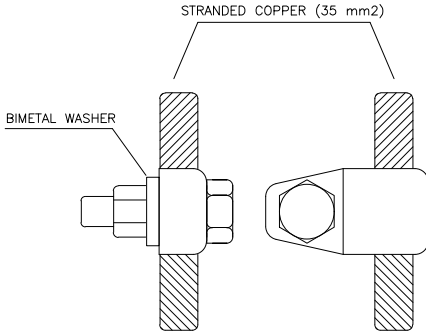
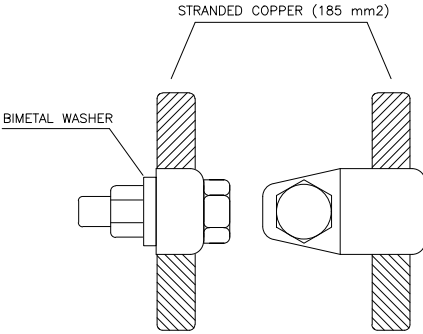
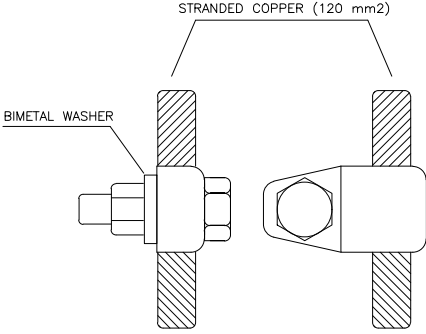
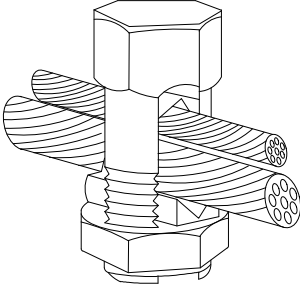
4						CLIENT:  Mehdiabad Lead-Zinc Industry Planners Company 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION CONTRACTOR:  MEHDIABAD	CONSULTING ENGINEERS:		 (Mohsob Niroo Consulting Engineers Co.)		NAME	DATE	DWG TITLE: 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION JOINT & ACCESORIES							
3							DESIGNED	m.hoseini		1405/03										
2							DRAWN	m.hoseini		1405/03										
1	1405/03	ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpour		CHECKED	s.alizadeh		1405/03										
0	1405/02	FIRST ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpour		APPROVED	m.daneshpour		1405/03										
REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED		PROJECT:		Mehdiabad Lead & Zinc Project											
							CONTRACT NO.:			SHT NO.	SHT SIZE	SCALE	AREA CODE	ISSUED	DISCIP	DOC. TYPE	EQ. NO.	SEQ. NO.	REV.	
CUSTOMER DWG NUMBER: 9210-MS-EL-ES-00-0012-D00							JOB NO.:			4	A3	1/10000	9210	MS	EL	ES	00	0012	B01	

EARTH JOINTS AND ACCESSORIES

SYMBOL	5	FIGURE: 	SYMBOL	6	FIGURE: 
DESCRIPTION: CABLE LUG (ONE HOLE) SUITABLE FOR 70 mm ² CONDUCTOR HOLE DIAMETER : 12mm (FOR CONNECTING CONDUCTOR ON STRUCTURE & EARTH TERMINAL)		STRANDED COPPER (70 mm ²)	DESCRIPTION: CABLE LUG (ONE HOLE) SUITABLE FOR 185 mm ² CONDUCTOR HOLE DIAMETER : 14mm (FOR CONNECTING CONDUCTOR ON EARTH TERMINAL)		STRANDED COPPER (185 mm ²)
SYMBOL	7	FIGURE: 	SYMBOL	8	FIGURE: 
DESCRIPTION: CABLE LUG (ONE HOLE) SUITABLE FOR 120 mm ² CONDUCTOR HOLE DIAMETER : 12mm (FOR CONNECTING CONDUCTOR ON STRUCTURE & EARTH TERMINAL)		STRANDED COPPER (120 mm ²)	DESCRIPTION: 1 WAY EARTHING CLAMP SUITABLE FOR 50 mm ² CABLE (FOR FIXING CABLE ON STRUCTURE)		STRUCTUER
			CLAMP MATERIAL: BRASS CLAMP BOLT: M10*60 (HOT DIP GALVANIZED)		

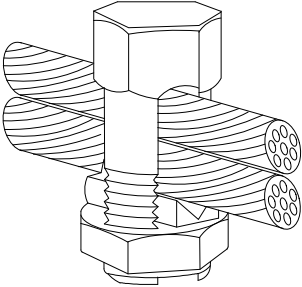
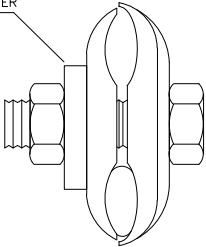
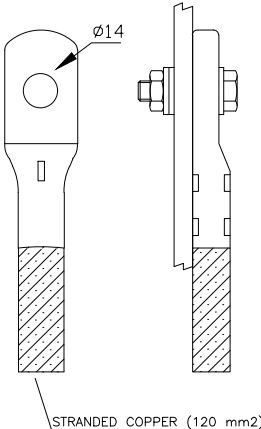
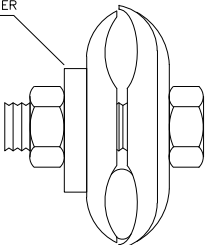
4						CLIENT:  Lead & Zinc Industry Planners Company 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION CONTRACTOR: 	CONSULTING ENGINEERS: (Mahsab Niroo Consulting Engineers Co.) 		NAME	DATE	DWG TITLE: 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION JOINT & ACCESORIES								
3								DESIGNED	m.hoseini	1405/03									
2								DRAWN	m.hoseini	1405/03									
1	1405/03	ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou		CONTRACT NO.:	PROJECT: Mehdiabad Lead & Zinc Project	CHECKED	s.alizadeh	1405/03								
0	1405/02	FIRST ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou				APPROVED	m.daneshpou	1405/03								
REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED			CONTRACT NO.:	SHT NO.	SHT SIZE	SCALE	AREA CODE	ISSUED	DISCIP	DOC. TYPE	EQ. NO.	SEQ. NO.	REV.	
CUSTOMER DWG NUMBER: 9210-MS-EL-ES-00-0012-D00							JOB NO.:			5	A3	1/10000	9210	MS	EL	ES	00	0012	B01

EARTH JOINTS AND ACCESSORIES

SYMBOL	9	FIGURE:		SYMBOL	10	FIGURE:	
DESCRIPTION:		CABLE SUPPORT SUITABLE FOR 35 mm² CONDUCTOR (FOR FIXING CONDUCTOR ON STRUCTURE) CLAMP MATERIAL: BRASS CLAMP BOLT: M10*40 (HOT DIP GALVANIZED)		DESCRIPTION:		CABLE SUPPORT SUITABLE FOR 185 mm² CONDUCTOR (FOR FIXING CONDUCTOR ON STRUCTURE) CLAMP MATERIAL: BRASS CLAMP BOLT: M10*60 (HOT DIP GALVANIZED)	
SYMBOL	11	FIGURE:		SYMBOL	12	FIGURE:	
DESCRIPTION:		CABLE SUPPORT SUITABLE FOR 120 mm² CONDUCTOR (FOR FIXING CONDUCTOR ON STRUCTURE) CLAMP MATERIAL: BRASS CLAMP BOLT: M10*60 (HOT DIP GALVANIZED)		DESCRIPTION:		CONNECTOR CLAMP (SUITABLE FOR CONNECTING OF 35mm² CONDUCTOR TO 120mm² CONDUCTOR)	

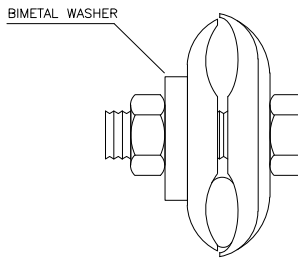
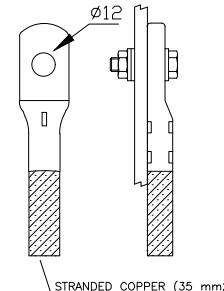
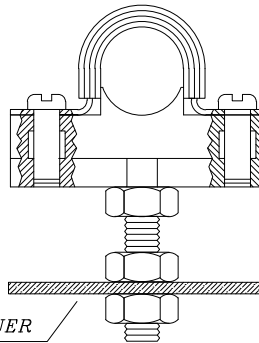
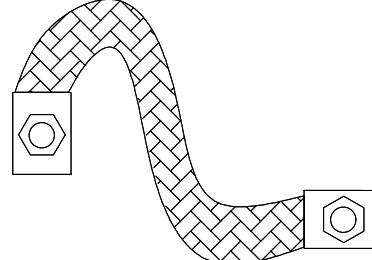
4						CLIENT:  Lead & Zinc Industry Planning Company 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION CONTRACTOR: 	CONSULTING ENGINEERS:  (Mohsib Nirou Consulting Engineers Co.) PROJECT: Mehdiabad Lead & Zinc Project CONTRACT NO.:		NAME	DATE	DWG TITLE: 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION JOINT & ACCESORIES							
3								DESIGNED	m.hoseini	1405/03								
2								DRAWN	m.hoseini	1405/03								
1	1405/03	ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou			CHECKED	s.alizadeh	1405/03								
0	1405/02	FIRST ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou			APPROVED	m.daneshpou	1405/03								
REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED			SHT NO.	SHT SIZE	SCALE	AREA CODE	ISSUED	DISCIP	DOC. TYPE	EQ. NO.	SEQ. NO.	REV.	
CUSTOMER DWG NUMBER: 9210-MS-EL-ES-00-0012-D00							JOB NO.:	6	A3	1/10000	9210	MS	EL	ES	00	0012	B01	

EARTH JOINTS AND ACCESSORIES

SYMBOL	13	FIGURE:		SYMBOL	14	FIGURE:	
DESCRIPTION:				DESCRIPTION:			
CONNECTOR CLAMP (SUITABLE FOR CONNECTING OF 120mm² CONDUCTOR TO 120mm² CONDUCTOR)				GROUNDING WIRE CLAMP CONNECTION OF 185 mm² CONDUCTOR TO 185 mm² CONDUCTOR (FOR CONNECTING EARTHING CONDUCTOR ON STRUCTURE)			
				CLAMP MATERIAL: BRASS CLAMP BOLT: M10*60 (HOT DIP GALVANIZED)			
SYMBOL	15	FIGURE:		SYMBOL	16	FIGURE:	
DESCRIPTION:				DESCRIPTION:			
CABLE LUG (ONE HOLE) SUITABLE FOR 120 mm² CONDUCTOR HOLE DIAMETER : 14mm (FOR CONNECTING CONDUCTOR ON STRUCTURE & EARTH TERMINAL)				GROUNDING WIRE CLAMP CONNECTION OF 120 mm² CONDUCTOR TO 35 mm² CONDUCTOR (FOR CONNECTING EARTHING CONDUCTOR ON STRUCTURE)			
				CLAMP MATERIAL: BRASS CLAMP BOLT: M10*60 (HOT DIP GALVANIZED)			

4						CLIENT: Mehdiabad Lead & Zinc Industry Planners Company 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION	CONSULTING ENGINEERS: (Mehsob Niroo Consulting Engineers Co.) 		NAME	DATE	DWG TITLE: 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION JOINT & ACCESORIES						
3								DESIGNED	m.hoseini	1405/03							
2								DRAWN	m.hoseini	1405/03							
1	1405/03	ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou			CHECKED	s.alizadeh	1405/03							
0	1405/02	FIRST ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou	CONTRACTOR: 	PROJECT:	Mehdiabad Lead & Zinc Project		APPROVED	m.daneshpou	1405/03					
REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED		CONTRACT NO.:	SHT NO.	SHT SIZE	SCALE	AREA CODE	ISSUED	DISCIP	DOC. TYPE	EQ. NO.	SEQ. NO.	REV.
CUSTOMER DWG NUMBER: 9210-MS-EL-ES-OO-0012-D00							JOB NO.:	7	A3	1/10000	9210	MS	EL	ES	00	0012	B01

EARTH JOINTS AND ACCESSORIES

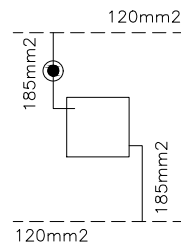
SYMBOL	17	FIGURE:		SYMBOL	19	FIGURE:	
DESCRIPTION:			GROUNDING WIRE CLAMP CONNECTION OF 185 mm² CONDUCTOR TO 35 mm² CONDUCTOR (FOR CONNECTING EARTHING CONDUCTOR ON STRUCTURE) CLAMP MATERIAL: BRASS CLAMP BOLT: M10*60 (HOT DIP GALVANIZED)	DESCRIPTION:			CABLE LUG (ONE HOLE) SUITABLE FOR 35 mm² CONDUCTOR HOLE DIAMETER : 14mm (FOR CONNECTING CONDUCTOR ON STRUCTURE & EARTH TERMINAL)
SYMBOL	18	FIGURE:		SYMBOL	20	FIGURE:	
DESCRIPTION:			1 WAY EARTHING CLAMP SUITABLE FOR 35 mm² CABLE (FOR FIXING CABLE ON STRUCTURE) CLAMP MATERIAL: BRASS CLAMP BOLT: M10*60 (HOT DIP GALVANIZED)	DESCRIPTION:			FLEXIBLE COPPER EARTH BOND (MATERIAL: PURE COPPER WIRE BRAID) (SIZE: 400mm * 25mm * 3mm)

4						CLIENT:  Mehdiabad Lead-acid Zinc Industry Planners Company 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION	CONSULTING ENGINEERS: (Mohsib Nirou Consulting Engineers Co.) 		NAME	DATE	DWG TITLE: 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION JOINT & ACCESORIES							
3									DESIGNED	m.hoseini								1405/03
2									DRAWN	m.hoseini								1405/03
1	1405/03	ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou	CONTRACTOR: 	PROJECT:	CHECKED	s.alizadeh	1405/03								
0	1405/02	FIRST ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou		Mehdiabad Lead & Zinc Project	APPROVED	m.daneshpou	1405/03								
REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED		CONTRACT NO.:	SHT NO.	SHT SIZE	SCALE	AREA CODE	ISSUED	DISCIP	DOC. TYPE	EQ. NO.	SEQ. NO.	REV.	
CUSTOMER DWG NUMBER: 9210-MS-EL-ES-00-0012-D00							JOB NO.:	8	A3	1/10000	9210	MS	EL	ES	00	0012	B01	

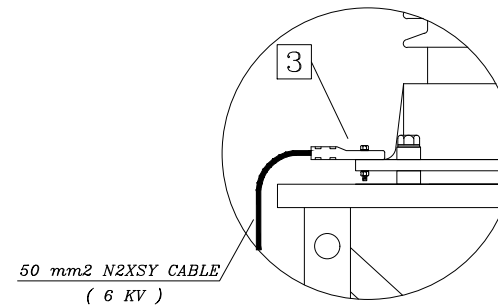
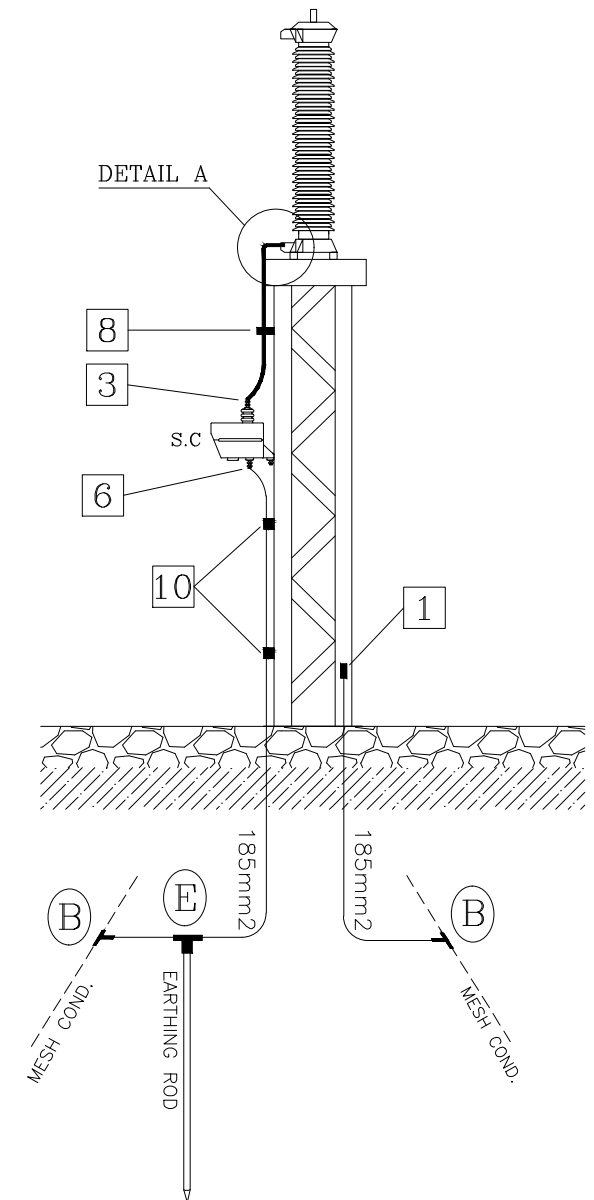
EARTHING DETAIL FOR:
L.A-132 KV

CONDUCTOR	CROSS-SECTION
MESH CONDUCTOR	120 mm ²
RISER CONDUCTOR	
A)EARTHING TERMINAL	185/50 mm ²
B)STEEL STRUCTURE	185 mm ²

TYPE	CONNECTION	Q'TY
B	TEE CADWELD CONNECTION(120mm2 TO 185mm2 CON.)	2
E	TEE CADWELD CONNECTION(185mm2 CON. TO EARTH ROD)	1
1	CABLE LUG (TWO HOLE) FOR 185mm2 CONDUCTOR ($\phi=12$)	1
3	CABLE LUG (ONE HOLE) FOR 50mm2 CONDUCTOR ($\phi=14$)	2
6	CABLE LUG (ONE HOLE) FOR 185mm2 CONDUCTOR ($\phi=14$)	1
8	ONE WAY EARTHING CLAMP FOR 50mm2 CABLE	1
10	CABLE SUPPORT CLAMP FOR 185mm2 CONDUCTOR	2



TOP VIEW

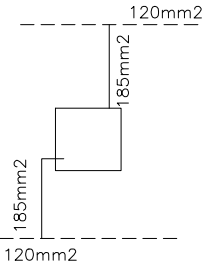
DETAIL A

4						CLIENT: Mehdiabad Lead & Zinc Industry Planners Company 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION	CONSULTING ENGINEERS: (Mehsob Niroo Consulting Engineers Co.) 		NAME	DATE	DWG TITLE: 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION LIGHTNING ARRESTER 132 KV							
3									DESIGNED	m.hoseini								1405/03
2									DRAWN	m.hoseini								1405/03
1	1405/03	ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou	CONTRACTOR: 	PROJECT: Mehdiabad Lead & Zinc Project	CHECKED	s.alizadeh	1405/03								
0	1405/02	FIRST ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou			APPROVED	m.daneshpou	1405/03								
REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED			CONTRACT NO.:	SHT NO.	SHT SIZE	SCALE	AREA CODE	ISSUED	DISCIP	DOC. TYPE	EQ. NO.	SEQ. NO.	REV.
CUSTOMER DWG NUMBER: 9210-MS-EL-ES-00-0012-D00							JOB NO.:	9	A3	1/10000	9210	MS	EL	ES	00	0012	B01	

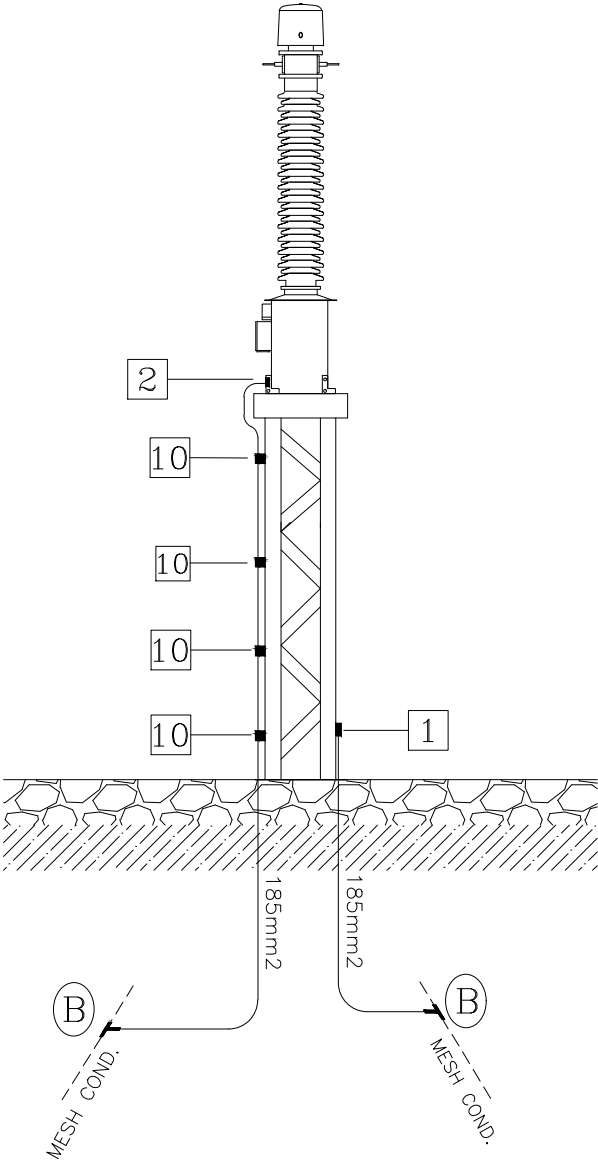
EARTHING DETAIL FOR:
C.T-132 KV

CONDUCTOR	CROSS-SECTION
MESH CONDUCTOR	120 mm2
RISER CONDUCTOR	
A)EARTHING TERMINAL	185 mm2
B)STEEL STRUCTURE	185 mm2

TYPE	CONNECTION	Q'TY
B	TEE CADWELD CONNECTION(120mm2 TO 185mm2 CON.)	2
1	CABLE LUG (TWO HOLE) FOR 185mm2 CONDUCTOR (ø=12)	1
2	CABLE LUG (ONE HOLE) FOR 185mm2 CONDUCTOR (ø=12)	1
10	CABLE SUPPORT CLAMP FOR 185mm2 CONDUCTOR	4



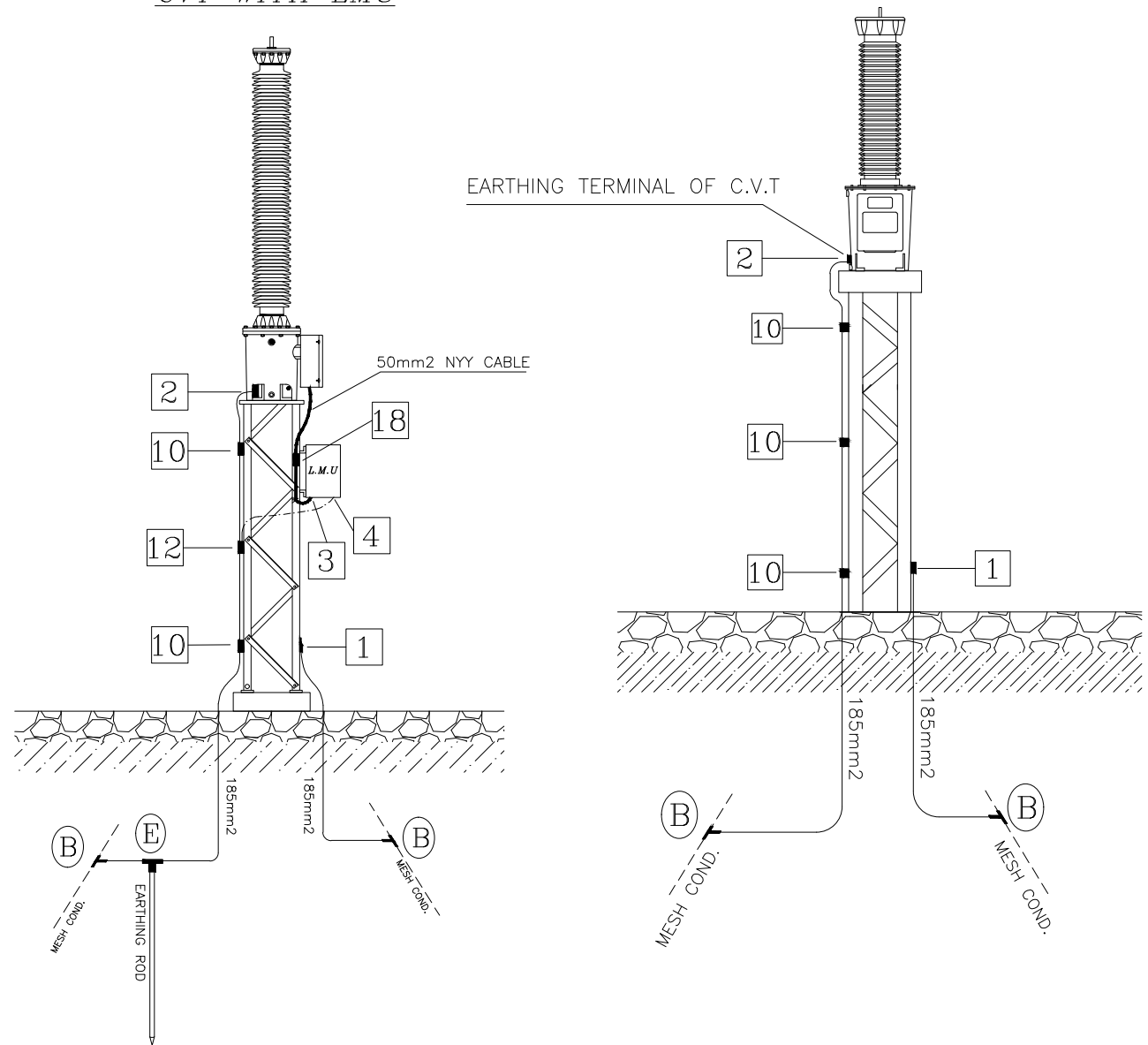
TOP VIEW



4						CLIENT: Mehdiabad Lead&Zinc Industry Planners Company 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION CONTRACTOR: 	CONSULTING ENGINEERS:	 (Mahab Niroo Consulting Engineers Co.)		NAME	DATE	DWG TITLE: 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION <i>CURRENT TRANSFORMER 132 KV</i>							
3								DESIGNED	m.hoseini	1405/03									
2								DRAWN	m.hoseini	1405/03									
1	1405/03	ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou			CHECKED	s.alizadeh	1405/03									
0	1405/02	FIRST ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou			APPROVED	m.daneshpou	1405/03									
REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED		PROJECT:	Mehdiabad Lead & Zinc Project											
							CONTRACT NO.:		SHT NO.	SHT SIZE	SCALE	AREA CODE	ISSUED	DISCIP	DOC. TYPE	EQ. NO.	SEQ. NO.	REV.	
CUSTOMER DWG NUMBER: 9210-MS-EL-ES-00-0012-D00							JOB NO.:		10	A3	1/10000	9210	MS	EL	ES	00	0012	B01	

CVT WITH LMU

TYPE	CONNECTION	WITH LMU	WITHOUT LMU
B	TEE CADWELD CONNECTION (120mm2 TO 185mm2 CON.)	2	2
E	TEE CADWELD CONNECTION(185mm2 CON. TO EARTHING ROD)	1	0
1	CABLE LUG (TWO HOLE) FOR 185mm2 CONDUCTOR (ø=12)	1	1
2	CABLE LUG (ONE HOLE) FOR 185mm2 CONDUCTOR (ø=12)	1	1
3	CABLE LUG (ONE HOLE) FOR 50mm2 CONDUCTOR (ø=14)	X 2	0
4	CABLE LUG (ONE HOLE) FOR 35mm2 CONDUCTOR (ø=12)	1	0
8	ONE WAY EARTHING CLAMP FOR 50mm2 CABLE	1	0
10	CABLE SUPPORT CLAMP FOR 185mm2 CONDUCTOR	2	3
17	GROUNDING WIRE CLAMP (185mm2 TO 35mm2 CON.)	1	0

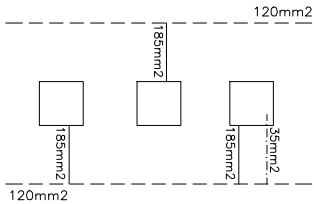


4						CLIENT: Mehdiabad Lead-Zinc Industry Planners Company 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION	CONSULTING ENGINEERS: (Mehsob Niroo Consulting Engineers Co.) 		NAME	DATE	DWG TITLE: 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION CAPACITIVE VOLTAGE TRANSFORMER 132 KV						
3								DESIGNED	m.hoseini	1405/03							
2								DRAWN	m.hoseini	1405/03							
1	1405/03	ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou	CHECKED	s.alizadeh	1405/03									
0	1405/02	FIRST ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou	CONTRACTOR: 	PROJECT: Mehdiabad Lead & Zinc Project	APPROVED	m.daneshpou	1405/03							
REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED			CONTRACT NO.:	SHT NO.	SHT SIZE	SCALE	AREA CODE	ISSUED	DISCIP	DOC. TYPE	EQ. NO.	SEQ. NO.
CUSTOMER DWG NUMBER: 9210-MS-EL-ES-00-0012-D00							JOB NO.:	11	A3	1/10000	9210	MS	EL	ES	00	0012	B01

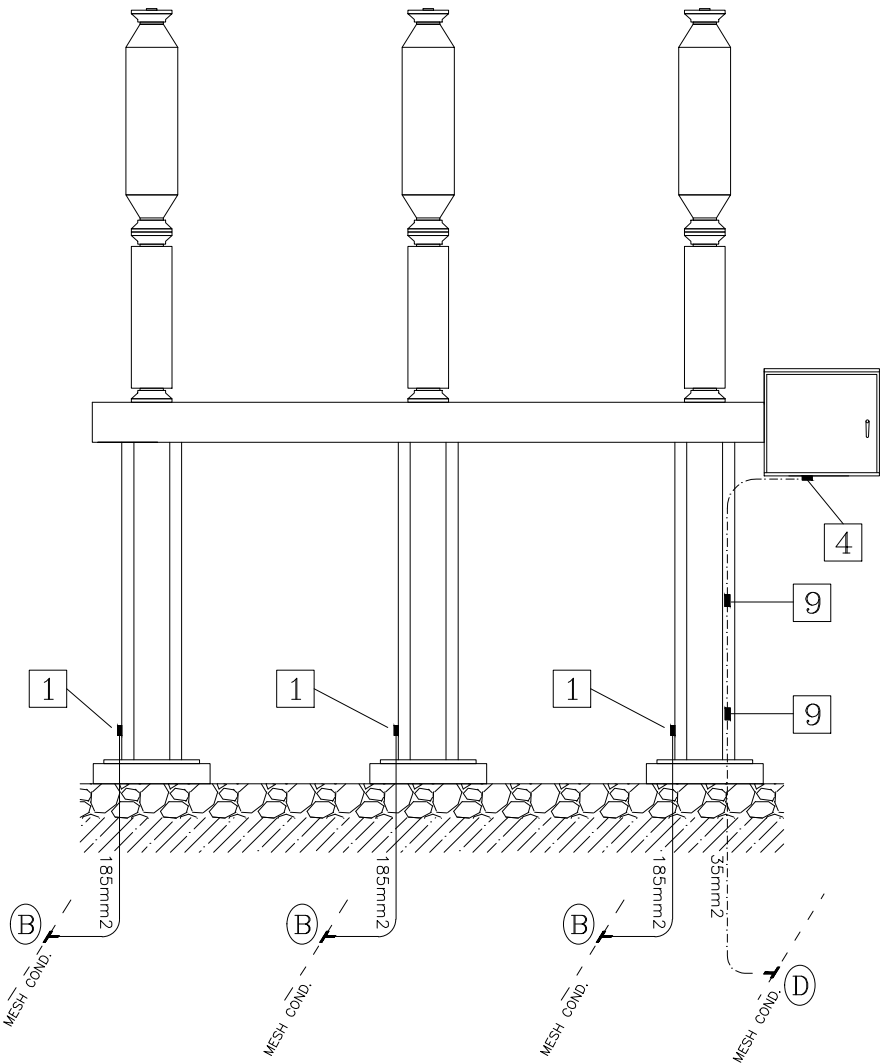
EARTHING DETAIL FOR:
C.B-132 KV

CONDUCTOR	CROSS-SECTION
MESH CONDUCTOR	120 mm2
RISER CONDUCTOR	
A)EARTHING TERMINAL	120 mm2
B)STEEL STRUCTURE	185 mm2

TYPE	CONNECTION	Q'TY
B	TEE CADWELD CONNECTION(120mm2 TO 185mm2 CON.)	3
D	TEE CADWELD CONNECTION(120mm2 TO 35mm2 CON.)	1
1	CABLE LUG (TWO HOLE) FOR 185mm2 CONDUCTOR (ø=12)	3
4	CABLE LUG (ONE HOLE) FOR 35mm2 CONDUCTOR (ø=12)	1
9	CABLE SUPPORT CLAMP FOR 35mm2 CONDUCTOR	2



TOP VIEW

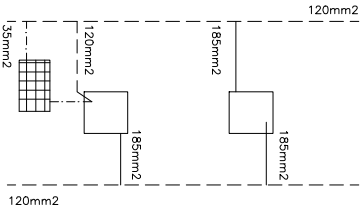


4						CLIENT: Mehdiabad Lead&Zinc Industry Planners Company 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION CONTRACTOR: 	CONSULTING ENGINEERS:			NAME	DATE	DWG TITLE: 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION <i>CIRCUIT BREAKER 132 KV</i>							
3									DESIGNED	m.hoseini	1405/03								
2									DRAWN	m.hoseini	1405/03								
1	1405/03	ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou				CHECKED	s.alizadeh	1405/03								
0	1405/02	FIRST ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou						APPROVED	m.daneshpou	1405/03						
REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED			PROJECT:	Mehdiabad Lead & Zinc Project										
							CONTRACT NO.:		SHT NO.	SHT SIZE	SCALE	AREA CODE	ISSUED	DISCIP	DOC. TYPE	EQ. NO.	SEQ. NO.	REV.	
CUSTOMER DWG NUMBER: 9210-MS-EL-ES-00-0012-D00							JOB NO.:		12	A3	1/10000	9210	MS	EL	ES	00	0012	B01	

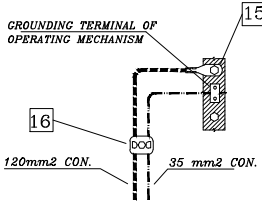
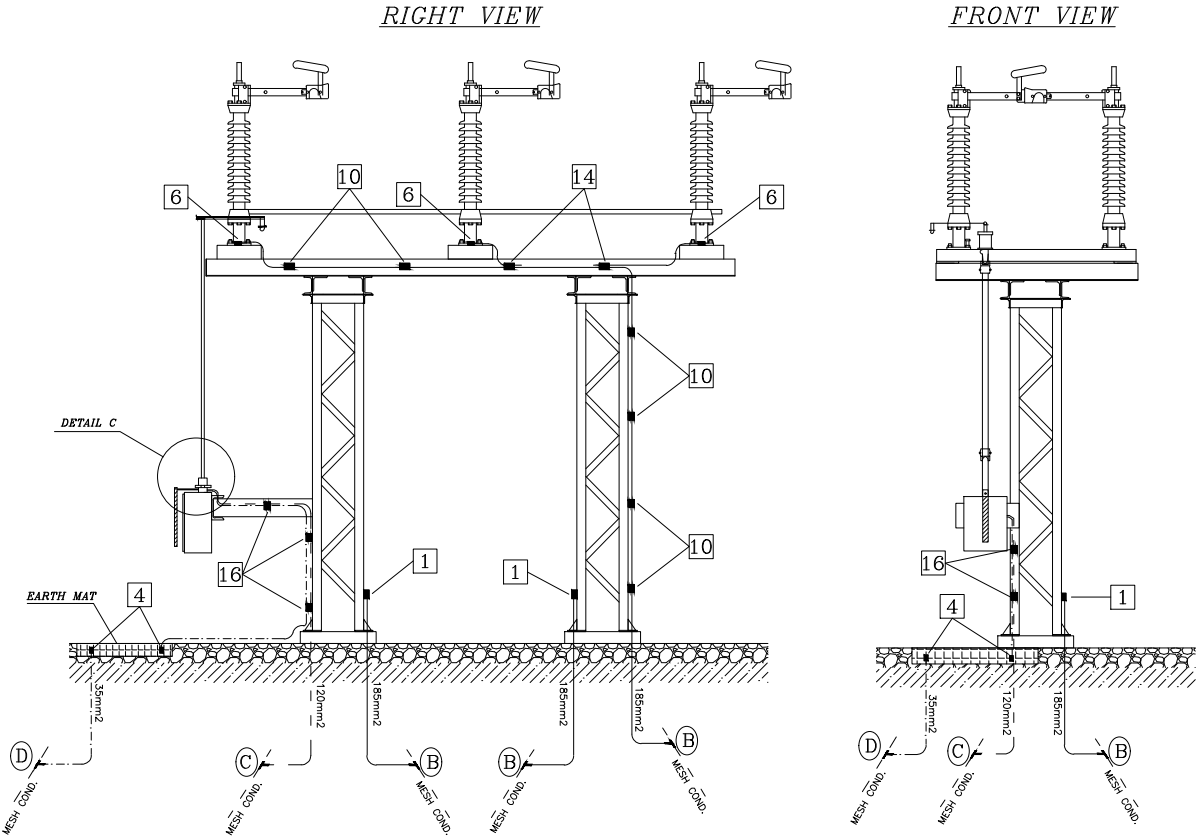
EARTHING DETAIL FOR:
DS-132 KV

CONDUCTOR	CROSS-SECTION
MESH CONDUCTOR	120 mm2
RISER CONDUCTOR	
A)EARTHING TERMINAL	185/120/35 mm2
B)STEEL STRUCTURE	185 mm2

TYPE	CONNECTION	Q'TY
B	TEE CADWELD CONNECTION(120mm2 TO 185mm2 CON.)	3
C	TEE CADWELD CONNECTION(120mm2 TO 120mm2 CON.)	1
D	TEE CADWELD CONNECTION(120mm2 TO 35mm2 CON.)	1
1	CABLE LUG (TWO HOLE) FOR 185mm2 CONDUCTOR (ø=12)	2
4	CABLE LUG (ONE HOLE) FOR 35mm2 CONDUCTOR (ø=12)	2
6	CABLE LUG (ONE HOLE) FOR 185mm2 CONDUCTOR (ø=14)	3
10	CABLE SUPPORT CLAMP FOR 185mm2 CONDUCTOR	6
14	GROUNDING WIRE CLAMP FOR 185mm2 TO 185mm2 CON.	2
15	CABLE LUG (ONE HOLE) FOR 120mm2 CONDUCTOR (ø=14)	1
16	GROUNDING WIRE CLAMP FOR 120mm2 TO 35mm2 CON.	3
-	EARTH MAT	1



TOP VIEW



DETAIL C

REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED
4					
3					
2					
1	1405/03	ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou
0	1405/02	FIRST ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou

CLIENT:
Mehdiabad
Lead & Zinc Industry Planners Company
132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION

CONTRACTOR:



CONSULTING ENGINEERS:

(Mahsab Niroo Consulting Engineers Co.)



PROJECT:

Mehdiabad Lead & Zinc Project

CONTRACT NO.:

JOB NO.:

	NAME	DATE
DESIGNED	m.hoseini	1405/03
DRAWN	m.hoseini	1405/03
CHECKED	s.alizadeh	1405/03
APPROVED	m.daneshpou	1405/03

SHT NO.	SHT SIZE	SCALE
13	A3	1/10000

DWG TITLE:

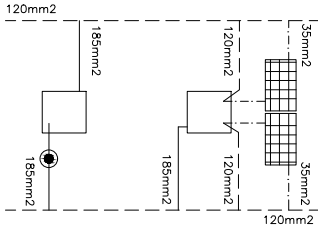
132 KV SECTION OF
BAHADORAN 400/132 KV SUBSTATION
DISCONNECTOR SWITCH 132 KV

AREA CODE	ISSUED	DISCIP	DOC. TYPE	EQ. NO.	SEQ. NO.	REV.
9210	MS	EL	ES	00	0012	B01

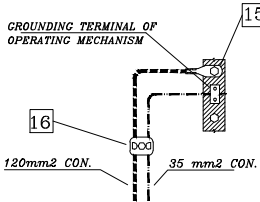
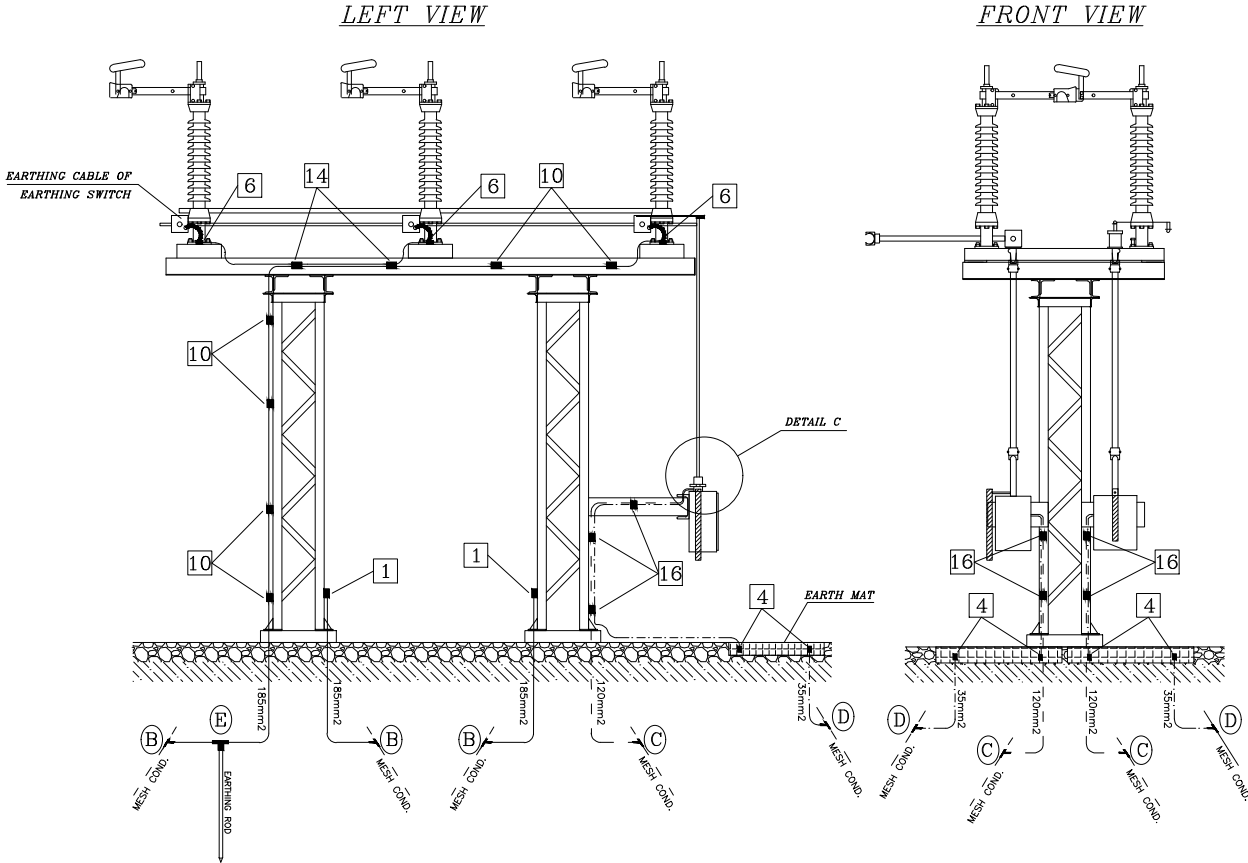
EARTHING DETAIL FOR:
DS/ES-132 KV

CONDUCTOR	CROSS-SECTION
MESH CONDUCTOR	120 mm2
RISER CONDUCTOR	
A)EARTHING TERMINAL	185/120/35 mm2
B)STEEL STRUCTURE	185 mm2

TYPE	CONNECTION	Q'TY
B	TEE CADWELD CONNECTION(120mm2 TO 185mm2 CON.)	3
C	TEE CADWELD CONNECTION(120mm2 TO 120mm2 CON.)	2
D	TEE CADWELD CONNECTION(120mm2 TO 35mm2 CON.)	2
E	TEE CADWELD CONNECTION(185mm2 CON. TO EARTH ROD)	1
1	CABLE LUG (TWO HOLE) FOR 185mm2 CONDUCTOR (ø=12)	2
4	CABLE LUG (ONE HOLE) FOR 35mm2 CONDUCTOR (ø=12)	4
6	CABLE LUG (ONE HOLE) FOR 185mm2 CONDUCTOR (ø=14)	3
10	CABLE SUPPORT CLAMP FOR 185mm2 CONDUCTOR	6
14	GROUNDING WIRE CLAMP FOR 185mm2 TO 185mm2 CON.	2
15	CABLE LUG (ONE HOLE) FOR 120mm2 CONDUCTOR (ø=14)	2
16	GROUNDING WIRE CLAMP FOR 120mm2 TO 35mm2 CON.	6
20	FLEXIBLE COPPER EARTH BOND	3
-	EARTH MAT	2



TOP VIEW



DETAIL C

REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED
4					
3					
2					
1	1405/03	ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou
0	1405/02	FIRST ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou

CLIENT:
Mehdiabad
Lead & Zinc Industry Planners Company
132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION

CONTRACTOR:



CONSULTING ENGINEERS:

(Mahsab Niroo Consulting Engineers Co.)



PROJECT:

Mehdiabad Lead & Zinc Project

CONTRACT NO.:

JOB NO.:

	NAME	DATE
DESIGNED	m.hoseini	1405/03
DRAWN	m.hoseini	1405/03
CHECKED	s.alizadeh	1405/03
APPROVED	m.daneshpou	1405/03

SHT NO.	SHT SIZE	SCALE
14	A3	1/10000

DWG TITLE:

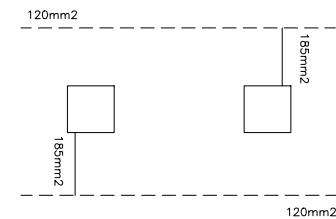
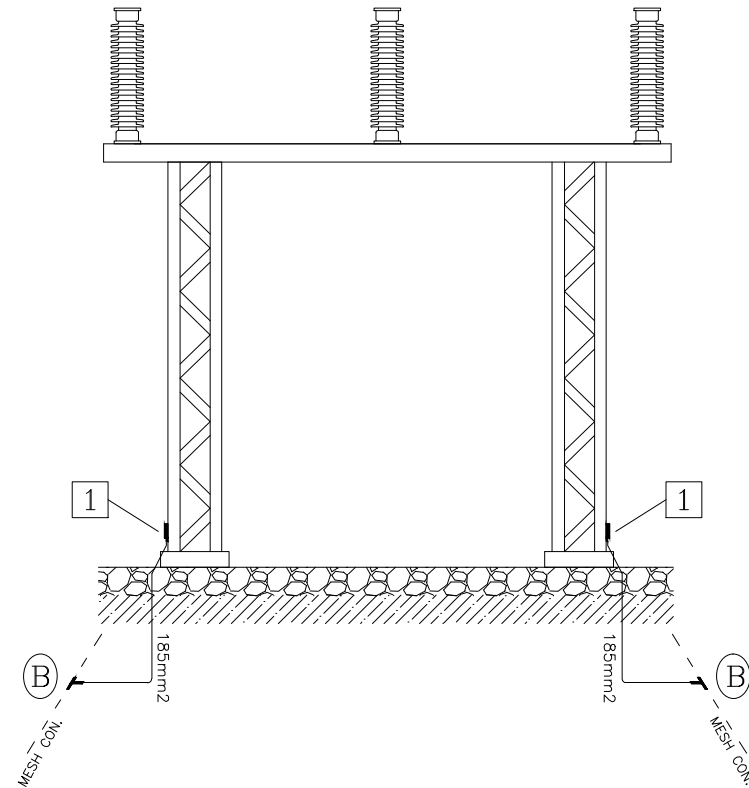
132 KV SECTION OF
BAHADORAN 400/132 KV SUBSTATION
DISCONNECTOR SWITCH
(WITH EARTHING SWITCH) 132 KV

AREA CODE	ISSUED	DISCIP	DOC. TYPE	EQ. NO.	SEQ. NO.	REV.
9210	MS	EL	ES	00	0012	B01

EARTHING DETAIL FOR:
PI-132 KV

CONDUCTOR	CROSS-SECTION
MESH CONDUCTOR	120 mm2
RISER CONDUCTOR	
B)STEEL STRUCTURE	185 mm2

TYPE	CONNECTION	Q'TY
B	TEE CADWELD CONNECTION(120mm2 TO 185mm2 CON.)	2
1	CABLE LUG (TWO HOLE) FOR 185mm2 CONDUCTOR (ø=12)	2



TOP VIEW

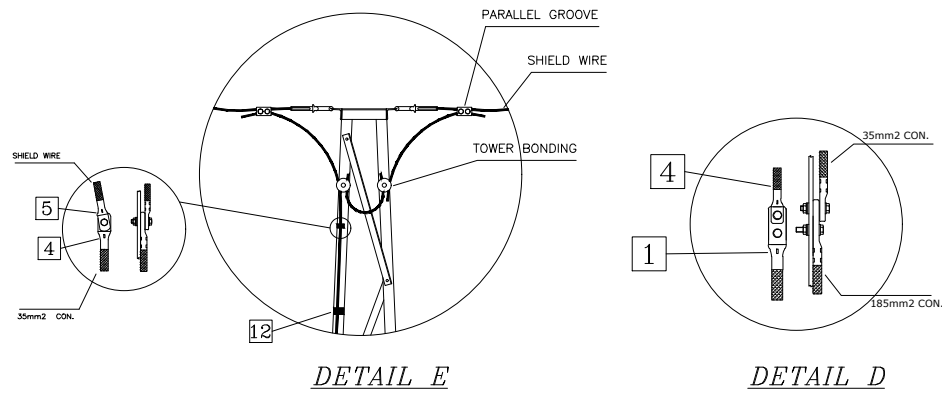
4						CLIENT:  Lead & Zinc Industry Planners Company 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION CONTRACTOR: 	CONSULTING ENGINEERS: (Mahsab Niroo Consulting Engineers Co.) 		NAME	DATE	DWG TITLE: 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION POST INSULATOR 132 KV								
3								DESIGNED	m.hoseini	1405/03									
2								DRAWN	m.hoseini	1405/03									
1	1405/03	ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou			CHECKED	s.alizadeh	1405/03									
0	1405/02	FIRST ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou			APPROVED	m.daneshpou	1405/03									
REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED		PROJECT: Mehdiabad Lead & Zinc Project												
							CONTRACT NO.:	SHT NO.	SHT SIZE	SCALE	AREA CODE	ISSUED	DISCIP	DOC. TYPE	EQ. NO.	SEQ. NO.	REV.		
CUSTOMER DWG NUMBER: 9210-MS-EL-ES-00-0012-D00							JOB NO.:	15	A3	1/10000	9210	MS	EL	ES	00	0012	B01		

EARTHING DETAIL FOR:
GANTRY-132 KV

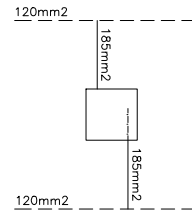
CONDUCTOR	CROSS-SECTION
MESH CONDUCTOR	120 mm ²
RISER CONDUCTOR	
B)STEEL STRUCTURE	185/35 mm ²

TYPE	CONNECTION	Q'TY
B	TEE CADWELD CONNECTION(120mm ² TO 185mm ² CON.)	2
4	CABLE LUG (ONE HOLE) FOR 35mm ² CONDUCTOR (ø=12)	2
5	CABLE LUG (ONE HOLE) FOR 70mm ² CONDUCTOR (ø=12)	1
9	CABLE SUPPORT CLAMP FOR 35mm ² CONDUCTOR	15
1	CABLE LUG (TWO HOLE) FOR 185mm ² CONDUCTOR (ø=12)	2

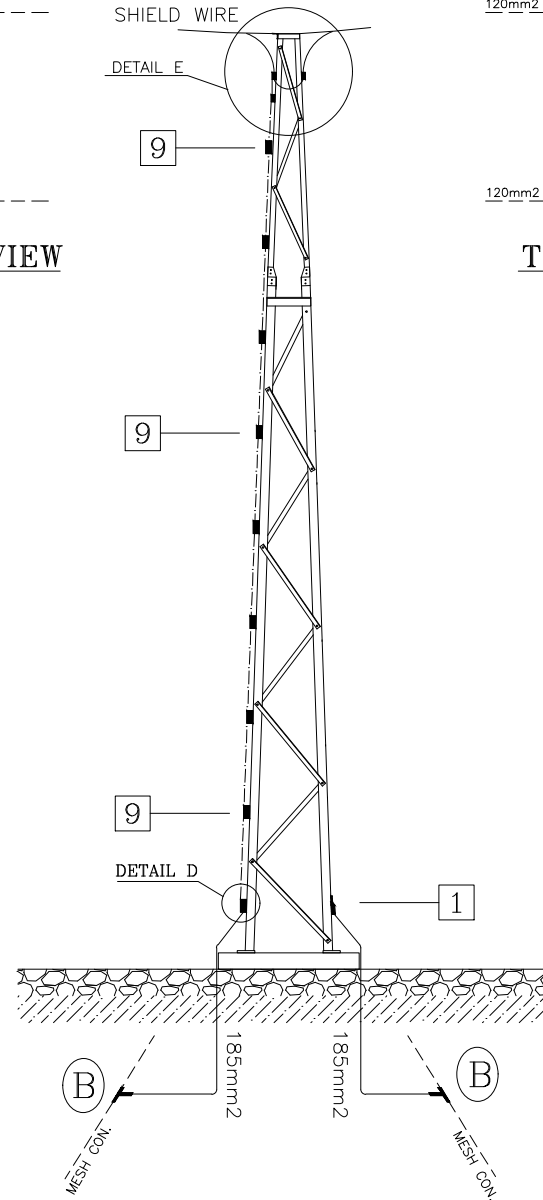
NOTE: QUANTITIES ARE FOR INCOMING GANTRY.



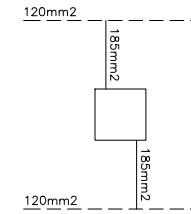
INCOMING GANTRY



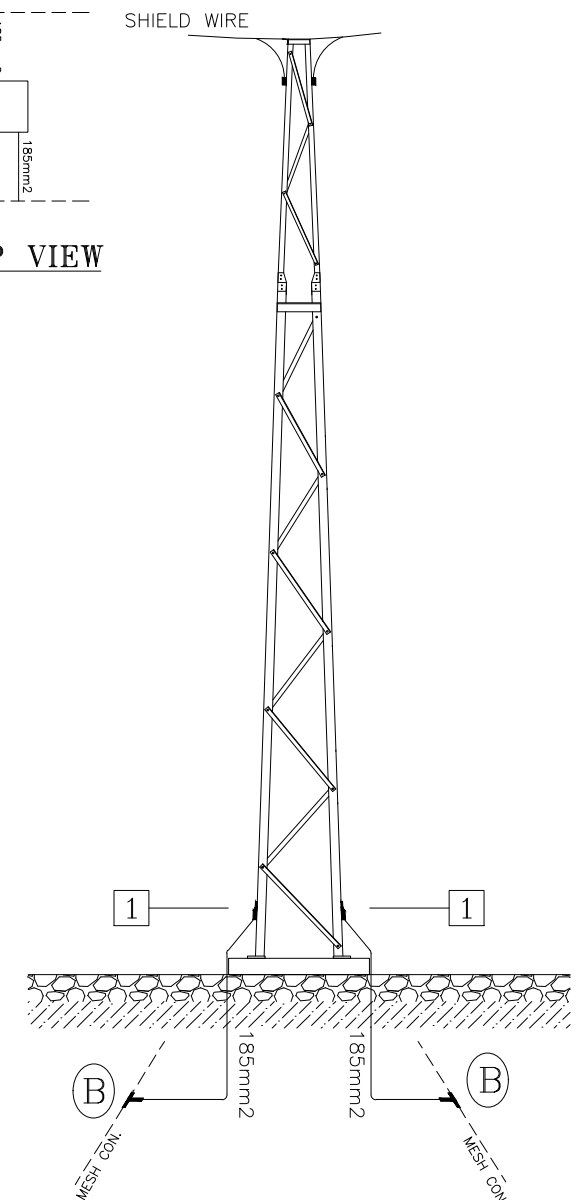
TOP VIEW



SITE GANTRY



TOP VIEW

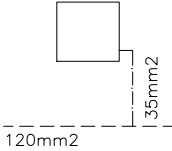


4						CLIENT:  Mehdiabad Lead&Zinc Industry Planners Company 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION CONSULTING ENGINEERS: (Mahsab Niroo Consulting Engineers Co.)  NAME DATE <td colspan="7" rowspan="5"> DWG TITLE: 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION CANTRY 132 KV </td>	DWG TITLE: 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION CANTRY 132 KV													
3														DESIGNED	m.hoseini	1405/03				
2														DRAWN	m.hoseini	1405/03				
1	1405/03	ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou									CHECKED	s.alizadeh	1405/03				
0	1405/02	FIRST ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou									APPROVED	m.daneshpou	1405/03				
REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED		PROJECT:	Mehdiabad Lead & Zinc Project		CONTRACT NO.:	SHT NO.	SHT SIZE	SCALE	AREA CODE	ISSUED	DISCIP	DOC. TYPE	EQ. NO.	SEQ. NO.	REV.
CUSTOMER DWG NUMBER: 9210-MS-EL-ES-00-0012-D00							JOB NO.:	16	A3	1/10000	9210	MS	EL	ES	00	0012	B01			

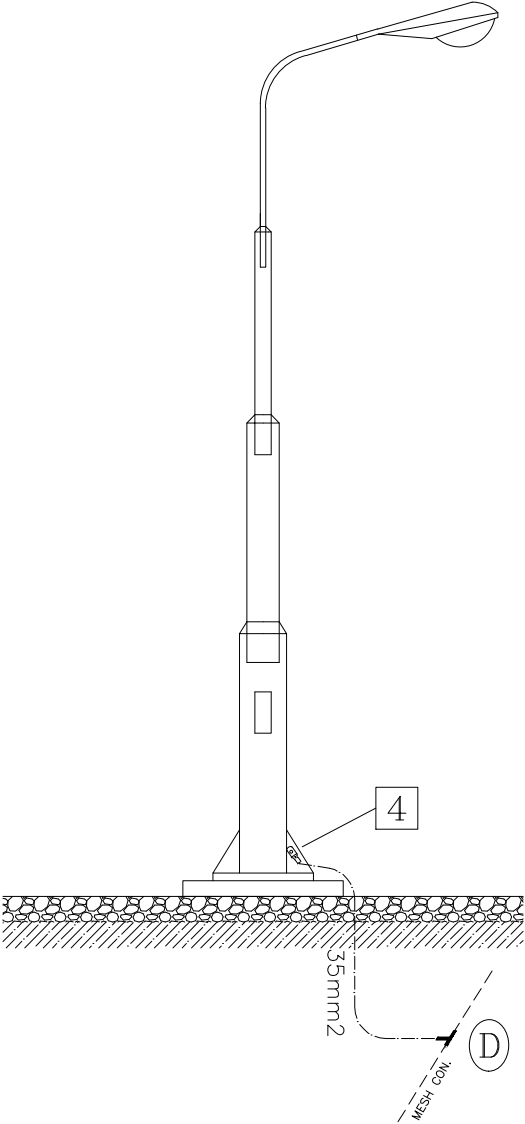
EARTHING DETAIL FOR:
L.P

CONDUCTOR	CROSS-SECTION
MESH CONDUCTOR	120 mm2
RISER CONDUCTOR	
A)EARTHING TERMINAL	35 mm2

TYPE	CONNECTION	Q'TY
D	TEE CADWELD CONNECTION(120mm2 TO 35mm2 CON.)	1
4	CABLE LUG (ONE HOLE) FOR 35mm2 CONDUCTOR (ø=12)	1



TOP VIEW

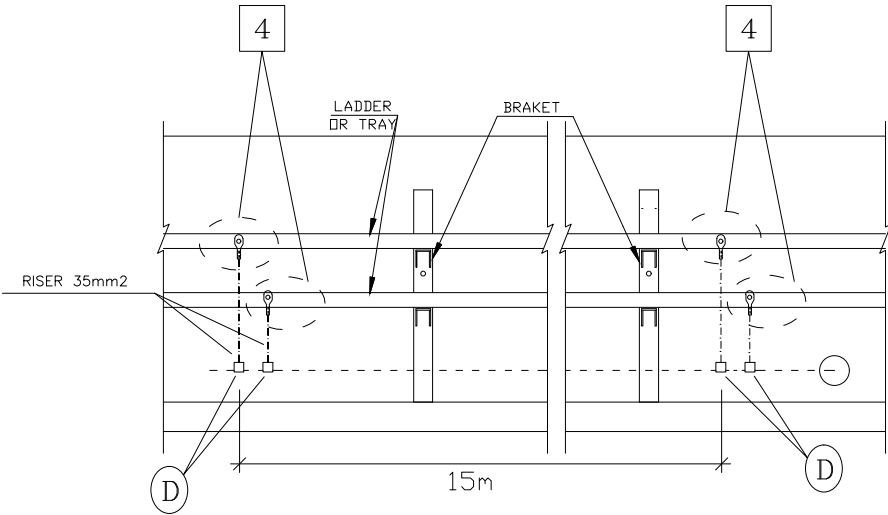
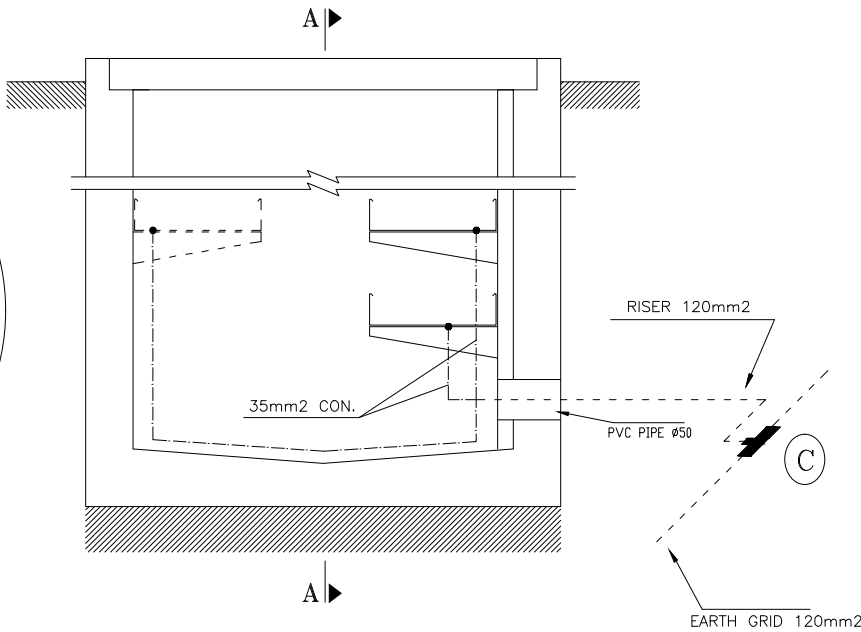
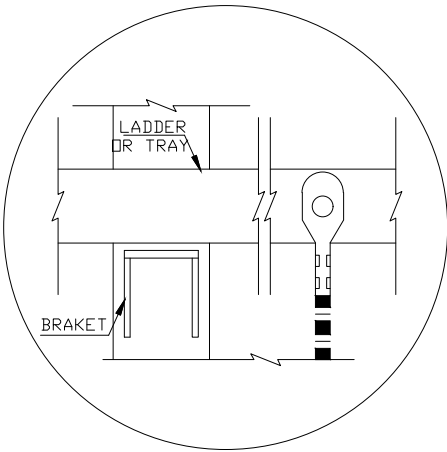


4						CLIENT: Mehdiabad Lead&Zinc Industry Planners Company 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION CONTRACTOR: 	CONSULTING ENGINEERS:		 (Mahab Niroo Consulting Engineers Co.)		NAME	DATE	DWG TITLE: 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION <i>LIGHTING POLE</i>							
3							DESIGNED	m.hoseini		1405/03										
2							DRAWN	m.hoseini		1405/03										
1	1405/03	ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou		CHECKED	s.alizadeh		1405/03										
0	1405/02	FIRST ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou		APPROVED	m.daneshpou		1405/03										
REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED		PROJECT:													
							Mehdiabad Lead & Zinc Project													
							CONTRACT NO.:			SHT NO.	SHT SIZE	SCALE	AREA CODE	ISSUED	DISCIP	DOC. TYPE	EQ. NO.	SEQ. NO.	REV.	
CUSTOMER DWG NUMBER: 9210-MS-EL-ES-00-0012-D00							JOB NO.:			18	A3	1/10000	9210	MS	EL	ES	00	0012	B01	

EARTHING DETAIL FOR:
CABLE SUPPORTER SYSTEM

CONDUCTOR	CROSS-SECTION
MESH CONDUCTOR	120 mm2
RISER CONDUCTOR	
A)EARTHING TERMINAL	35 mm2

TYPE	CONNECTION	Q'TY
C	TEE CADWELD CONNECTION(120mm2 TO 120mm2 CON.)	-
D	TEE CADWELD CONNECTION(120mm2 TO 35mm2 CON.)	-
4	CABLE LUG (ONE HOLE) FOR 35mm2 CONDUCTOR (ø=12)	-



SECTION A-A

4					
3					
2					
1	1405/03	ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou
0	1405/02	FIRST ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou
REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED

CLIENT:
Mehdiabad
Lead & Zinc Industry Planners Company
132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION

CONTRACTOR:



CONSULTING ENGINEERS:

(Mahsab Niroo Consulting Engineers Co.)



PROJECT:
Mehdiabad Lead & Zinc Project

CONTRACT NO.:

JOB NO.:

	NAME	DATE
DESIGNED	m.hoseini	1405/03
DRAWN	m.hoseini	1405/03
CHECKED	s.alizadeh	1405/03
APPROVED	m.daneshpou	1405/03
SHT NO.	SHT SIZE	SCALE
18	A3	1/10000

DWG TITLE:

132 KV SECTION OF
BAHADORAN 400/132 KV SUBSTATION
CABLE SUPPORTER SYSTEM

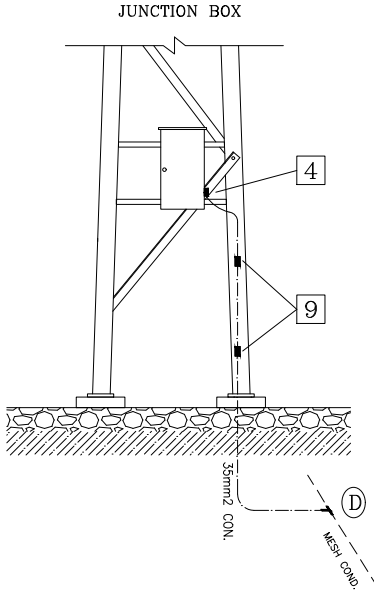
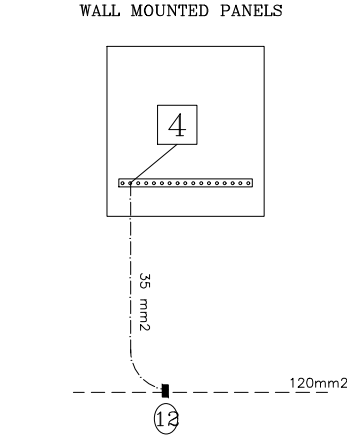
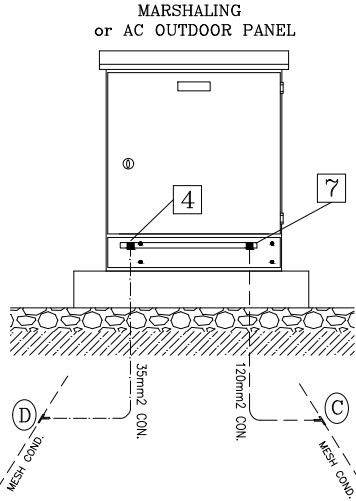
CUSTOMER DWG NUMBER: 9210-MS-EL-ES-00-0012-D00

AREA CODE	ISSUED	DISCIP	DOC. TYPE	EQ. NO.	SEQ. NO.	REV.
9210	MS	EL	ES	00	0012	B01

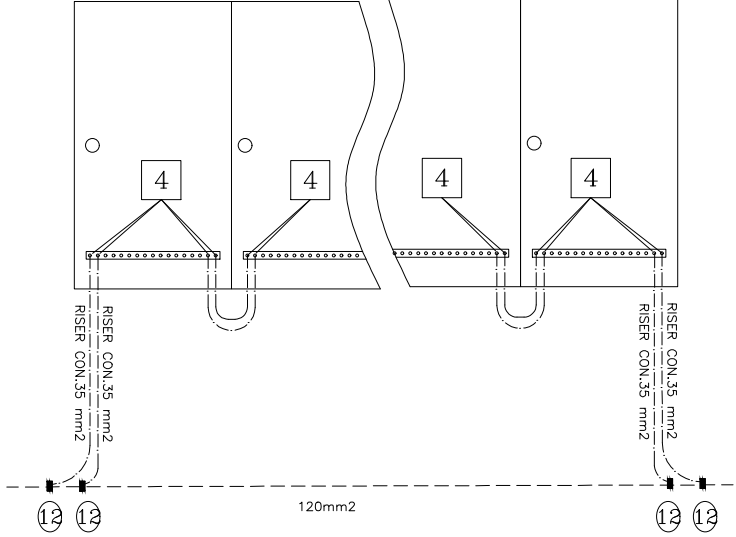
EARTHING DETAIL FOR:
PANELS

CONDUCTOR	CROSS-SECTION
MESH CONDUCTOR	120 mm2
RISER CONDUCTOR	
A)EARTHING TERMINAL	120/35 mm2
B)STEEL STRUCTURE	35 mm2

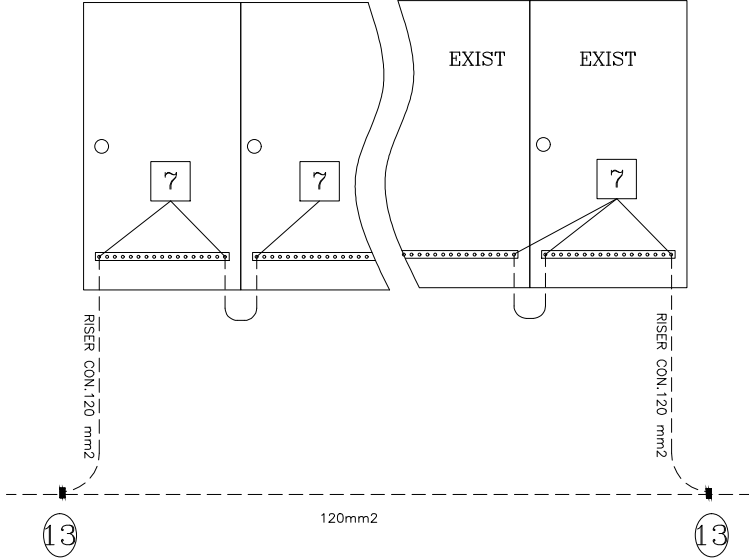
TYPE	CONNECTION	Q'TY
C	TEE CADWELD CONNECTION(120mm2 TO 120mm2 CON.)	-
D	TEE CADWELD CONNECTION(120mm2 TO 35mm2 CON.)	-
4	CABLE LUG (ONE HOLE) FOR 35mm2 CONDUCTOR (ø=12)	-
7	CABLE LUG (ONE HOLE) FOR 120mm2 CONDUCTOR (ø=12)	-
9	CABLE SUPPORT CLAMP FOR 35mm2 CONDUCTOR	-
12	CONNECTOR CLAMP (120mm2 TO 35mm2 CON.)	-
13	CONNECTOR CLAMP (120mm2 TO 120mm2 CON.)	-



LV PANELS (CONTROL , PROTECTION , ...)



AC/DC PANELS



4					
3					
2					
1	1405/03	ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou
0	1405/02	FIRST ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou
REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED

CLIENT:
Mehdiabad
Lead & Zinc Industry Planners Company
132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION

CONTRACTOR:

CONSULTING ENGINEERS:

(Mahsab Niroo Consulting Engineers Co.)

PROJECT:
Mehdiabad Lead & Zinc Project
CONTRACT NO.:
JOB NO.:

	NAME	DATE
DESIGNED	m.hoseini	1405/03
DRAWN	m.hoseini	1405/03
CHECKED	s.alizadeh	1405/03
APPROVED	m.daneshpou	1405/03
SHT NO.	SHT SIZE	SCALE
19	A3	1/10000

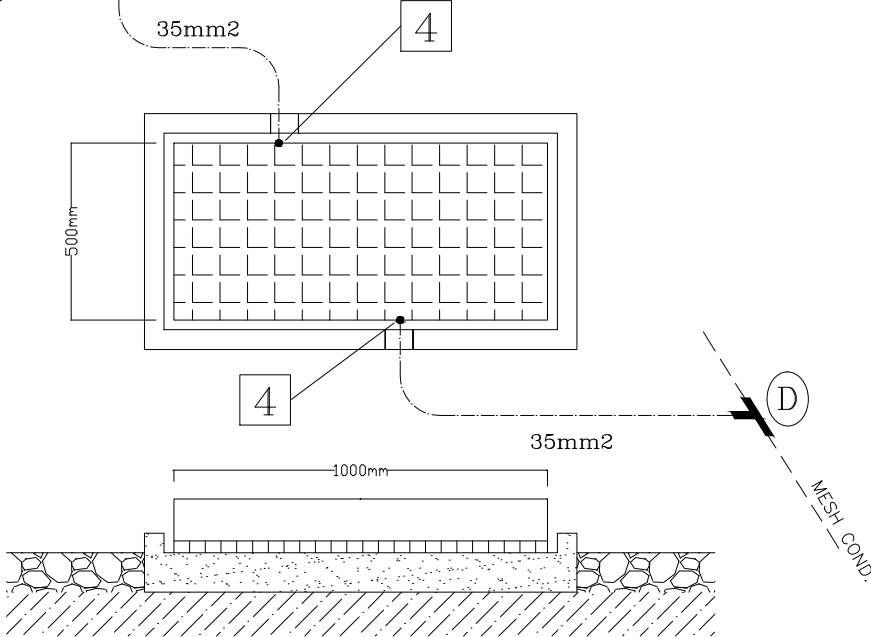
DWG TITLE:		132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION PANELS								
AREA CODE	ISSUED	DISCIP	DOC. TYPE	EQ. NO.	SEQ. NO.	REV.				
9210	MS	EL	ES	00	0012	B01				

EARTHING DETAIL FOR:
EARTH MAT

CONDUCTOR	CROSS-SECTION
MESH CONDUCTOR	120 mm2
RISER CONDUCTOR B)STEEL STRUCTURE	35 mm2

TO EARTHING TERMINAL OF OPERATING
MECHANISM OF D.S

TYPE	CONNECTION	Q'TY
D	TEE CADWELD CONNECTION(120mm2 TO 35mm2 CON.)	1
4	CABLE LUG (ONE HOLE) FOR 35mm2 CONDUCTOR (ø=12)	2

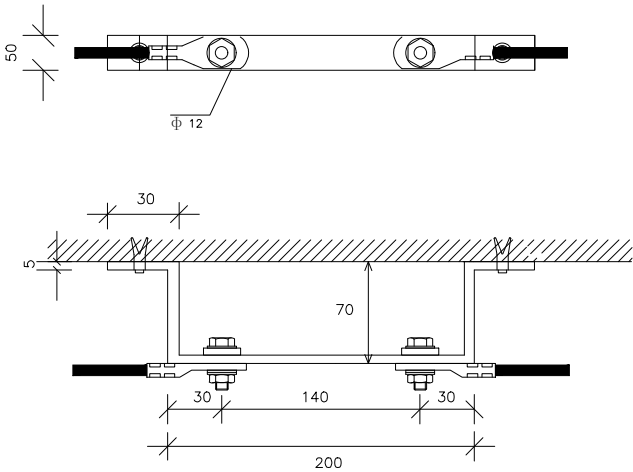
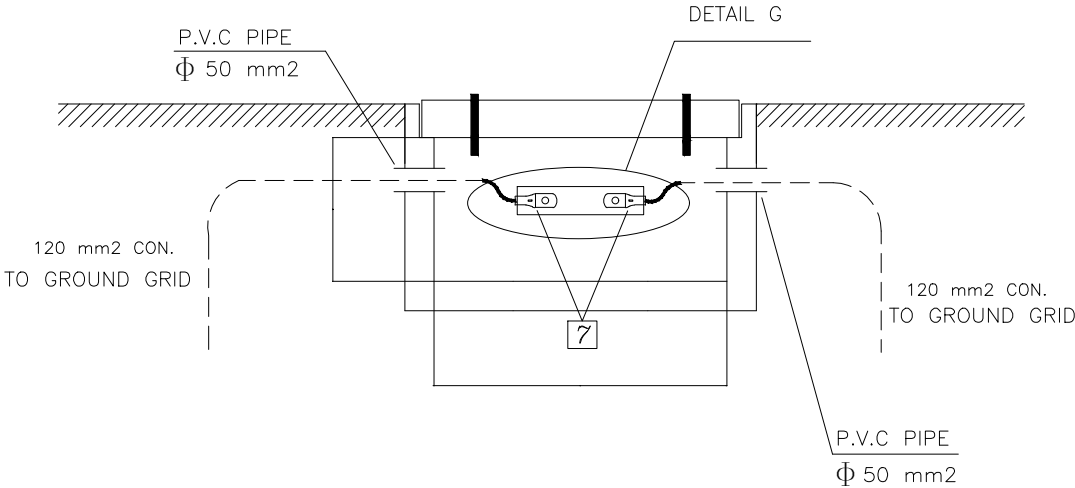


4						CLIENT: Mehdiabad Lead&Zinc Industry Planners Company 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION CONTRACTOR: MAHAB NIROO CONSULTING ENGINEERS CO.	CONSULTING ENGINEERS: (Mahab Niroo Consulting Engineers Co.) MAHAB NIROO		NAME	DATE	DWG TITLE: 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION EARTH MAT								
3								DESIGNED	m.hoseini	1405/03									
2								DRAWN	m.hoseini	1405/03									
1	1405/03	ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou			CHECKED	s.alizadeh	1405/03									
0	1405/02	FIRST ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou			APPROVED	m.daneshpou	1405/03									
REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED														
CUSTOMER DWG NUMBER: 9210-MS-EL-ES-00-0012-D00																			

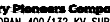
EARTHING DETAIL FOR:
EARTH PIT

CONDUCTOR	CROSS-SECTION
MESH CONDUCTOR	120 mm2
RISER CONDUCTOR	
A)EARTHING TERMINAL	120 mm2

TYPE	CONNECTION	Q'TY
7	CABLE LUG (ONE HOLE) FOR 120mm2 CONDUCTOR (φ=12)	2



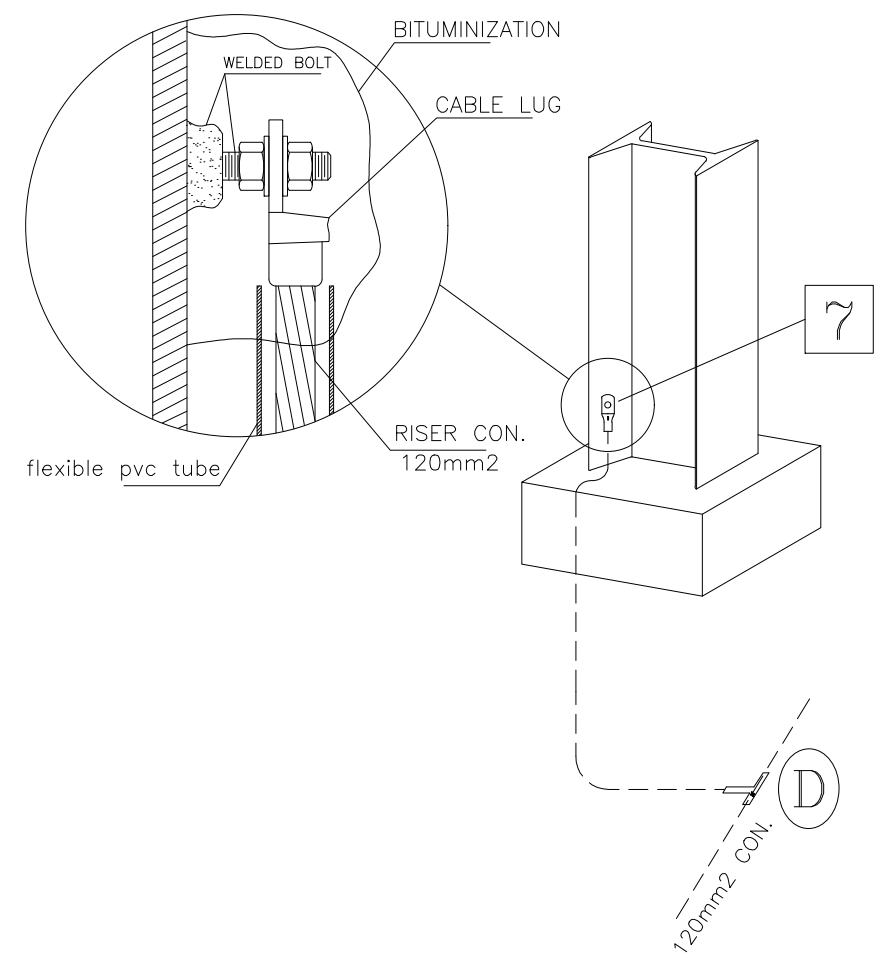
DETAIL G

4						CLIENT: Mehdiabad Lead & Zinc Industry Planners Company 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION CONTRACTOR: 	CONSULTING ENGINEERS:	 (Mahsab Niroo Consulting Engineers Co.)		NAME	DATE	DWG TITLE: 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION EARTH PIT							
3								DESIGNED	m.hoseini	1405/03									
2								DRAWN	m.hoseini	1405/03									
1	1405/03	ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou			CHECKED	s.alizadeh	1405/03									
0	1405/02	FIRST ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou			APPROVED	m.daneshpou	1405/03									
REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED		CONTRACT NO.:	SHT NO.	SHT SIZE	SCALE	AREA CODE	ISSUED	DISCIP	DOC. TYPE	EQ. NO.	SEQ. NO.	REV.		
CUSTOMER DWG NUMBER: 9210-MS-EL-ES-00-0012-D00							JOB NO.:	21	A3	1/10000	9210	MS	EL	ES	00	0012	B01		

17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	CONDUCTOR	CROSS-SECTION
	MESH CONDUCTOR	120 mm ²
	RISER CONDUCTOR	
	A)EARTHING TERMINAL	120 mm ²
	B)STEEL STRUCTURE	120 mm ²

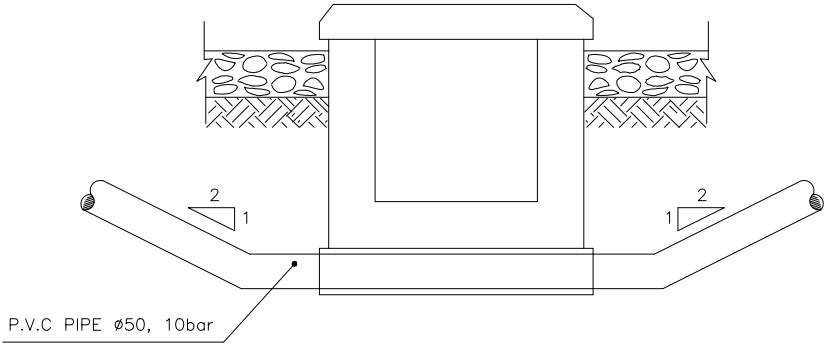
TYPE	CONNECTION	Q'TY
C	TEE CADWELD CONNECTION(120mm2 TO 120mm2 CON.)	1
7	CABLE LUG (ONE HOLE) FOR 120mm2 CONDUCTOR (ø=12)	1



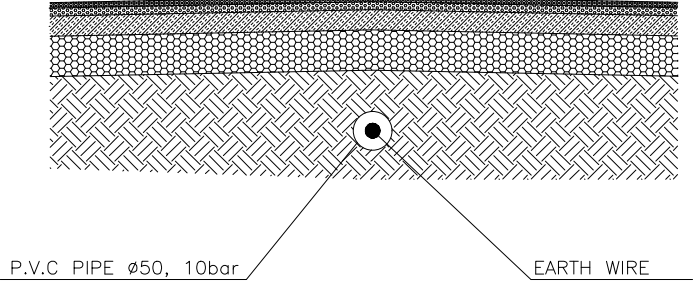
4						CLIENT:  Lead-Zinc Industry Planners Company 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION	CONSULTING ENGINEERS: (Mehsod Niroo Consulting Engineers Co.) 		NAME	DATE	DWG TITLE: 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION BUILDING STRUCTURE							
3									DESIGNED	m.hoseini								1405/03
2									DRAWN	m.hoseini								1405/03
1	1405/03	ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou	CONTRACTOR: 	PROJECT: Mehdiabad Lead & Zinc Project	CHECKED	s.alizadeh	1405/03								
0	1405/02	FIRST ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou			APPROVED	m.daneshpou	1405/03								
REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED			CONTRACT NO.:	SHT NO.	SHT SIZE	SCALE	AREA CODE	ISSUED	DISCIP	DOC. TYPE	EQ. NO.	SEQ. NO.	REV.
CUSTOMER DWG NUMBER: 9210-MS-EL-ES-00-0012-D00							JOB NO.:	22	A3	1/10000	9210	MS	EL	ES	00	0012	B01	

EARTHING DETAIL FOR:
PIPING

COPPER CONDUCTOR INSTALLATION UNDER TRENCH



COPPER CONDUCTOR INSTALLATION UNDER ROAD



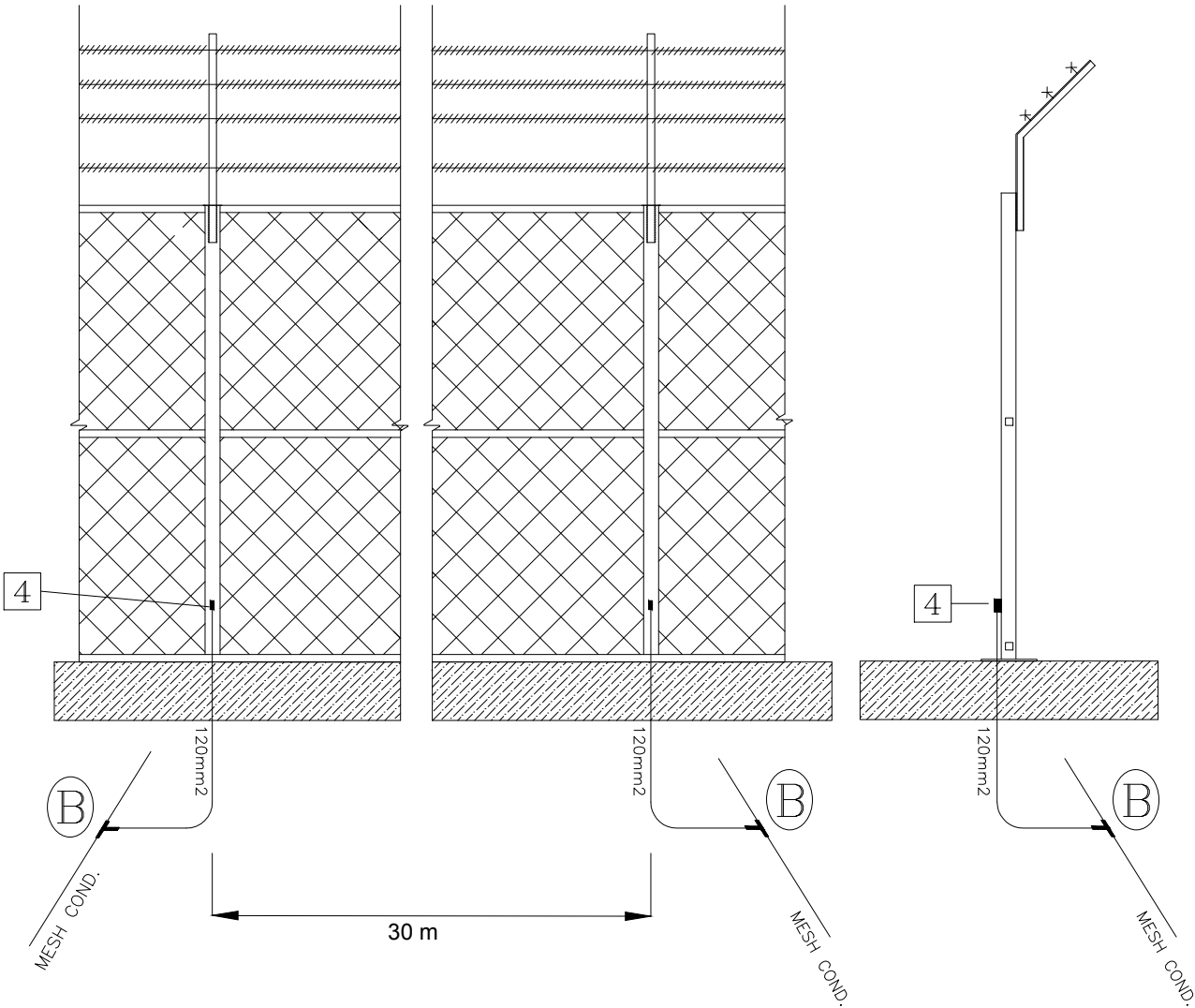
4						CLIENT: Mehdiabad Lead & Zinc Industry Planners Company 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION CONTRACTOR: 	CONSULTING ENGINEERS:			NAME	DATE	DWG TITLE: 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION <i>PIPING</i>							
3									DESIGNED	m.hoseini	1405/03								
2									DRAWN	m.hoseini	1405/03								
1	1405/03	ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou				CHECKED	s.alizadeh	1405/03								
0	1405/02	FIRST ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou				APPROVED	m.daneshpou	1405/03								
REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED		PROJECT:	Mehdiabad Lead & Zinc Project		SHT NO.	SHT SIZE	SCALE	AREA CODE	ISSUED	DISCIP	DOC. TYPE	EQ. NO.	SEQ. NO.	REV.
CUSTOMER DWG NUMBER: 9210-MS-EL-ES-00-0012-D00							CONTRACT NO.:												
							JOB NO.:			23	A3	1/10000	9210	MS	EL	ES	00	0012	B01

EARTHING DETAIL FOR:
FENCE

CONDUCTOR	CROSS-SECTION
MESH CONDUCTOR	120mm2
RISER CONDUCTOR	
A)EARTHING TERMINAL	35 mm2

TYPE	CONNECTION	Q'TY
D	TEE CADWELD CONNECTION(150mm2 TO 150mm2 CON.)	1
4	CABLE LUG (ONE HOLE) FOR 120mm2 CONDUCTOR (ø=12)	1

NOTE1 : QUANTITIES ARE FOR PER 30m.



4						CLIENT:  Mehdiabad Lead&Zinc Industry Planners Company 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION CONTRACTOR: 	CONSULTING ENGINEERS:		 (Mahab Niroo Consulting Engineers Co.)		NAME	DATE	DWG TITLE: 132 KV SECTION OF BAHADORAN 400/132 KV SUBSTATION FENCE							
3							DESIGNED	m.hoseini		1405/03										
2							DRAWN	m.hoseini		1405/03										
1	1405/03	ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou		CHECKED	s.alizadeh		1405/03										
0	1405/02	FIRST ISSUE FOR APPROVAL	m.hoseini	s.alizadeh	m.daneshpou		APPROVED	m.daneshpou		1405/03										
REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED															
CUSTOMER DWG NUMBER: 9210-MS-EL-ES-00-0012-D00							CONTRACT NO.:		SHT NO.	SHT SIZE	SCALE	AREA CODE	ISSUED	DISCIP	DOC. TYPE	EQ. NO.	SEQ. NO.	REV.		
							JOB NO.:		24	A3	1/10000	9210	MS	EL	ES	00	0012	B01		