REPUBLIC OF THE PHILIPPINES

NATIONAL POWER CORPORATION

(Pambansang Korporasyon sa Elektrisidad)

BID DOCUMENTS

Name of Project : **SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10MVA MASBATE (MALINTA) SUBSTATION**

Project Location : **Malinta, Masbate**

Specs No. : **LuzP23Z1636Sce**

Contents:

VOLUME IV OF IV

Design and Development Department

DDD

SECTION VII

BILL OF QUANTITIES

SUMMARY OF BILL OF QUANTITIES

Item No.	Description of Work or Materials	Work to be Done	Reference	Unit	Estimated Quantity	Unit Price in Pesos (In Words & Figures)	Total Amount (In Figures)
	TOTAL FOR ARCHITECTURAL WORKS					_____ (P _____)	P _____
	TOTAL FOR CIVIL WORKS					_____ (P _____)	P _____
	TOTAL FOR ELECTRICAL WORKS					_____ (P _____)	P _____
	TOTAL FOR MECHANICAL WORKS					_____ (P _____)	P _____
	TOTAL (ABC)					_____ (P _____)	P _____

Name of Firm

Name and Signature of Authorized Representative

Designation

ARCHITECTURAL WORKS

Item No.	Description of Work or Materials	Work to Be Done	Ref	Unit	Estimated Quantity	Unit Price in Pesos (Words and Figures)	Total Amount (In Figures)
I.	**CONTROL HOUSE**						
1.0	**Wall System and Finishes**						
1.1	150mm thick (6") CHB Wall including mortar, grout with 10mm Ø Rebar @ 0.60m vertical & horizontal spacing	furnish and lay	Refer to NPC TS & Drawing	sq.m.	**380.0**	_____ _____(P_____)	_____(P_____)
3.1	Plain cement plaster finish (For Exterior and Interior Walls)	furnish and apply	Refer to NPC TS & Drawing	sq.m.	**826.0**	_____ _____(P_____)	_____(P_____)
3.2	Vitrified glazed tiles 200mm x 200mm x 6mm thick colored including scrath coat, tile adhesive & grout	furnish and install	Refer to NPC TS & Drawing	sq.m.	**10.0**	_____ _____(P_____)	_____(P_____)
2.0	**Floor Finish**						
2.1	Vinyl tile finish 300mm x 300mm x 3mm thick including levelling, tile adhesive & grout	furnish and install	Refer to NPC TS & Drawing	sq.m.	**116.0**	_____ _____(P_____)	_____(P_____)
2.2	Vitrified unglazed tiles 200mm x 200mm x 6mm thick colored including scrath coat, tile adhesive & grout	furnish and install	Refer to NPC TS & Drawing	sq.m.	**3.5**	_____ _____(P_____)	_____(P_____)
2.3	#10 Peeble washout including levelling mortar	furnish and apply	Refer to NPC TS & Drawing	sq.m.	**8.0**	_____ _____(P_____)	_____(P_____)
3.0	**Ceiling Finish**						
3.1	6mm thick marine plywood on standard metal furring space at 0.40 O.C.B.W. and metal hangers spaced at 0.80 O.C.B	furnish and install	Refer to NPC TS & Drawing	sq.m.	**120.0**	_____ _____(P_____)	_____(P_____)

Note: The total amount shall be inclusive of Mark-Up (OCM and Profit) and VAT

Name of Firm

Name and Signature of Authorized Representative

Designation

ARCHITECTURAL WORKS

Item No.	Description of Work or Materials	Work to Be Done	Ref	Unit	Estimated Quantity	Unit Price in Pesos (Words and Figures)	Total Amount (In Figures)
4.0	**Fenestration**						
4.1	Doors						
	a) D-1 (2000mm x 2100mm) Aluminum and Glass Anodized Silver Aluminum, 6mm thl clear glass double swing door complete accessories and lock	furnish and install	Refer to NPC TS & Drawing	set	1	_____ _____(P_____)	_____(P_____)
	b) D-2 (1800mm x 2100mm) Flush type wooden door marine plywood both sides, 2" x hard wood jamb, including heavy duty loose pin hinges, door knob weather proof and painting	furnish and install	Refer to NPC TS & Drawing	set	2	_____ _____(P_____)	_____(P_____)
	c) D-3 (900mm x 2100mm) Flush type wooden door marine plywood both sides, 2" x hard wood jamb, including heavy duty loose pin hinges, door knob weather proof and painting	furnish and install	Refer to NPC TS & Drawing	set	3	_____ _____(P_____)	_____(P_____)
	d) D-4 (700 x 2100mm) Flush type wooden door marine plywood both sides, 2" x hard wood jamb, including heavy duty loose pin hinges, door knob weather proof and painting	furnish and install	Refer to NPC TS & Drawing	set	1	_____ _____(P_____)	_____(P_____)
4.2	Windows						
	a) W-1 (3600mm x 1200mm) Steel casement window, 7/6 heavy section z-bar solid mullion, 7/32" clear glass	furnish and install	Refer to NPC TS & Drawing	set	1	_____ _____(P_____)	_____(P_____)
	b) W-2 (1800mm x 1200mm) Steel casement window, 7/6 heavy section z-bar solid mullion, 7/32" clear glass	furnish and install	Refer to NPC TS & Drawing	set	2	_____ _____(P_____)	_____(P_____)

Note: The total amount shall be inclusive of Mark-Up (OCM and Profit) and VAT

Name of Firm

Name and Signature of Authorized Representative

Designation

ARCHITECTURAL WORKS

Item No.	Description of Work or Materials	Work to Be Done	Ref	Unit	Estimated Quantity	Unit Price in Pesos (Words and Figures)	Total Amount (In Figures)
	c) W-3 (3000mm x 600mm) Steel casement window, 7/6 heavy section z-bar solid mullion, 7/32" clear glass	furnish and install	Refer to NPC TS & Drawing	set	5	_____ _____(P_____)	_____(P_____)
5.0	**Plumbing System**						
5.1	Water Closet (White Elongated) including fittings and accessories	furnish and install	Refer to NPC TS & Drawing	set	1	_____ _____(P_____)	_____(P_____)
5.2	Lavatory (White) including fitting faucet and accessories	furnish and install	Refer to NPC TS & Drawing	set	1	_____ _____(P_____)	_____(P_____)
5.3	Tissue Paper Holder (White) including accessories	furnish and install	Refer to NPC TS & Drawing	set	1	_____ _____(P_____)	_____(P_____)
5.4	Soap Holder (White) including accessories	furnish and install	Refer to NPC TS & Drawing	set	1	_____ _____(P_____)	_____(P_____)
5.5	Liquid Soap Dispenser	furnish and install	Refer to NPC TS & Drawing	set	1	_____ _____(P_____)	_____(P_____)
5.6	Single tub stainless steel kitchen sink including faucet fittings and accessories	furnish and install	Refer to NPC TS & Drawing	set	1	_____ _____(P_____)	_____(P_____)
5.7	Shower set	furnish and install	Refer to NPC TS & Drawing	set	1	_____ _____(P_____)	_____(P_____)
5.8	Sanitary lines: uPVC pipe series 1000 including joint fittings and solvents	design, furnish and install	Refer to NPC TS & Drawing	lot	1	_____ _____(P_____)	_____(P_____)

Note: The total amount shall be inclusive of Mark-Up (OCM and Profit) and VAT

Name of Firm

Name and Signature of Authorized Representative

Designation

ARCHITECTURAL WORKS

Item No.	Description of Work or Materials	Work to Be Done	Ref	Unit	Estimated Quantity	Unit Price in Pesos (Words and Figures)	Total Amount (In Figures)
5.9	Downspout: 3" (75mm) ø uPVC pipe series 1000 downspout including joint fittings, solvents and brackets	furnish and install	Refer to NPC TS & Drawing	li.m.	**38**	_____ _____(P_____)	_____(P_____)
5.10	Roof Drain: Removable stainless wire basket strainer	furnish and install	Refer to NPC TS & Drawing	pcs.	**10**	_____ _____(P_____)	_____(P_____)
6.0	**Carpentry Works**						
6.1	Utilities counter cabinets, 20mm thick (3/4") marine plywood including edging, framing, hardware, painting and accessories	furnish and install	Refer to NPC TS & Drawing	lot.	**1**	_____ _____(P_____)	_____(P_____)
6.2	Wall-hung cabinets, 20mm thick (3/4") marine plywood including edging, framing, hardware, painting and accessories	furnish and install	Refer to NPC TS & Drawing	lot.	**1**	_____ _____(P_____)	_____(P_____)
7.0	**Painting and Varnishing**						
7.1	For wooden surfaces	furnish and apply	Refer to NPC TS & Drawing	sq.m.	**40.0**	_____ _____(P_____)	_____(P_____)
7.2	For concrete surfaces	furnish and apply	Refer to NPC TS & Drawing	sq.m.	**826.0**	_____ _____(P_____)	_____(P_____)
7.3	For fiberboard surfaces	furnish and apply	Refer to NPC TS & Drawing	sq.m.	**180.0**	_____ _____(P_____)	_____(P_____)

Note: The total amount shall be inclusive of Mark-Up (OCM and Profit) and VAT

Name of Firm

Name and Signature of Authorized Representative

Designation

ARCHITECTURAL WORKS

Item No.	Description of Work or Materials	Work to Be Done	Ref	Unit	Estimated Quantity	Unit Price in Pesos (Words and Figures)	Total Amount (In Figures)
8.0	**Miscellaneous Items**						
8.1	Waterproofing Membrane: 5 layers of bitumen with polyethylene reinforcement sheeting.	furnish, deliver & install	Refer to NPC TS & Drawing	sq.m.	**129**	_____ _____(P_____)	_____(P_____)
8.2	Counter top splash board 300mm x 300mm ceramic tiles for utility area including grout, mortar and tile adhesive on 40mm thick R.C. counter slab	furnish and install	Refer to NPC TS & Drawing	sq.m.	**2.0**	_____ _____(P_____)	_____(P_____)
8.3	Floor drain 100mmx100mm (4"x4") stainless steel with stainless wire strainer	furnish and install	Refer to NPC TS & Drawing	set	**2**	_____ _____(P_____)	_____(P_____)
8.4	Ready made Plastic Medicine Cabinet Asian made, with mirror (100mm x 400mm x 500mm)	furnish and install	Refer to NPC TS & Drawing	set	**1**	_____ _____(P_____)	_____(P_____)
8.5	Vapor barrier, Polyethylene, Grade 6	furnish and install	Refer to NPC TS & Drawing	sq.m.	**120.0**	_____ _____(P_____)	_____(P_____)
8.6	Soil poisoning, authorized anti-termite liquid concentrate	furnish and apply	Refer to NPC TS & Drawing	sq.m.	**294.0**	_____ _____(P_____)	_____(P_____)
8.7	Wood preservative	furnish and apply	Refer to NPC TS & Drawing	sq.m.	**4.0**	_____ _____(P_____)	_____(P_____)

Note: The total amount shall be inclusive of Mark-Up (OCM and Profit) and VAT

Name of Firm

Name and Signature of Authorized Representative

Designation

ARCHITECTURAL WORKS

Item No.	Description of Work or Materials	Work to Be Done	Ref	Unit	Estimated Quantity	Unit Price in Pesos (Words and Figures)	Total Amount (In Figures)
II.	**GUARDHOUSE**						
1.0	**Wall System and Finishes**						
1.1	150mm thick (6") CHB Wall including mortar, grout with 10mm Ø Rebar @ 0.60m vertical & horizontal spacing	furnish & lay	Refer to NPC TS & Drawing	sq.m.	**15.9**	_____ _____(P_____)	_____(P_____)
1.2	Plain cement plaster finish (For Exterior and Interior Walls)	furnish & apply	Refer to NPC	sq.m.	**29.2**	_____	
2.0	**Floor Finishes**						
2.1	Plain cement plaster floor finish.	furnish & apply	Refer to NPC TS & Drawing	sq.m.	**2.9**	_____ _____(P_____)	_____(P_____)
3.0	**Fenestration**						
3.1	D-1: (800mmx2100mm) Flush type wooden door marine plywoo both sides, 2"x4" hard wood jamb, including heavy duty loose pin hinges, door knob/lockset weather proof and painting.	furnish & install	Refer to NPC TS & Drawing	set	1	_____ _____(P_____)	_____(P_____)
3.2	W-1: (1100mmx1200mm) glass and alum. sliding window 2 x 4" heavy gage extruded aluminum frame anodized finish with 6 mm thick clear glass	furnish & install	Refer to NPC TS & Drawing	sets	2	_____ _____(P_____)	_____(P_____)
3.3	W-2: (600mmx1100mm) glass and alum. fix window heavy gage extruded 2 x 4" anodized aluminum frame with 6 mm thick clear glass	furnish & install	Refer to NPC TS & Drawing	set	1	_____ _____(P_____)	_____(P_____)

Note: The total amount shall be inclusive of Mark-Up (OCM and Profit) and VAT

Name of Firm

Name and Signature of Authorized Representative

Designation

ARCHITECTURAL WORKS

Item No.	Description of Work or Materials	Work to Be Done	Ref	Unit	Estimated Quantity	Unit Price in Pesos (Words and Figures)	Total Amount (In Figures)
6.0	**Painting and Varnishing**						
6.1	All concrete surfaces	furnish & apply	Refer to NPC TS & Drawing	sq.m.	**30.8**	_____ _____(P_____)	_____(P_____)
7.0	**Miscellaneous**						
7.1	Soil poisoning, authorized anti-termite liquid concentrate.	furnish & apply	Refer to NPC TS & Drawing	sq.m.	**5.0**	_____ _____(P_____)	_____(P_____)
III.	**PUMPHOUSE**						
1.0	**Wall System and Finishes**						
1.1	150mm thick CHB wall including reinforcements	furnish & lay	Refer to NPC TS & Drawing	sq.m.	**14**	_____ _____(P_____)	_____(P_____)
1.2	Pre-cast Concrete Louvers (300mm x 300mm)	furnish & lay	Refer to NPC TS & Drawing	pcs.	**20.00**	_____ _____(P_____)	_____(P_____)
1.3	Plain cement plaster finish	furnish & apply	Refer to NPC TS & Drawing	sq.m.	**20**	_____ _____(P_____)	_____(P_____)
2.0	**Floor Finishes**						
2.1	Plain concrete floor finish	furnish & apply	Refer to NPC TS & Drawing	sq.m.	**2.7**	_____ _____(P_____)	_____(P_____)

Note: The total amount shall be inclusive of Mark-Up (OCM and Profit) and VAT

Name of Firm

Name and Signature of Authorized Representative

Designation

ARCHITECTURAL WORKS

Item No.	Description of Work or Materials	Work to Be Done	Ref	Unit	Estimated Quantity	Unit Price in Pesos (Words and Figures)	Total Amount (In Figures)
3.0	**Fenestration**						
3.1	Flush Door Type Marine Plywood: (0.90m x 2.10m) with Door Jamb, including lockset, accessories and painting.	furnish & install	Refer to NPC TS & Drawing	set	**1**	_____ _____(P_____)	_____(P_____)
4.0	**Painting and Varnishing**						
4.1	All concrete surfaces	furnish & apply	Refer to NPC TS & Drawing	sq.m.	**9**	_____ _____(P_____)	_____(P_____)
5.0	**Miscellaneous**						
5.1	Soil poisoning; authorized anti-termite liquid concentrate.	furnish & apply	Refer to NPC TS & Drawing	sq.m.	**5.0**	_____ _____(P_____)	_____(P_____)

Note: The total amount shall be inclusive of Mark-Up (OCM and Profit) and VAT

SUB-TOTAL AMOUNT OF BID (ARCHITECTURAL WORKS) _____ _____(P_____) _____(P_____)

Name of Firm

Name and Signature of Authorized Representative

Designation

CIVIL WORKS

Item No.	Description of Work or Materials	Work to Be Done	Ref	Unit	Estimated Quantity	Unit Price in Pesos (Words and Figures)	Total Amount (In Figures)
I.	**SITE DEVELOPMENT**						
1.0	**Earthworks**						
1.1	Clearing and Grubbing (including cutting of trees)	cut, stockpile & dispose	Refer to NPC TS & Drawing	lot.	**1**	_____ _____(P_____)	_____(P_____)
1.2	Grading Excavation	excavate, reuse & dispose	Refer to NPC TS & Drawing	cu.m.	**8733**	_____ _____(P_____)	_____(P_____)
1.3	Grading Fill	spread & compact	Refer to NPC TS & Drawing	cu.m.	**2510**	_____ _____(P_____)	_____(P_____)
2.0	**Parking** (including entrance pavement and concrete walkway)						
2.1	Aggregate Sub-Base 100mm thick for parking	furnish, place, spread & compact	Refer to NPC TS & Drawing	cu.m.	**23.3**	_____ _____(P_____)	_____(P_____)
2.2	Concrete Pavement (20.70 MPa) 125mm thick	furnish & construct	Refer to NPC TS & Drawing	cu.m.	**29**	_____ _____(P_____)	_____(P_____)
2.3	Rebar (Grade 40)	furnish & istall	Refer to NPC TS & Drawing	kg	**867**	_____ _____(P_____)	_____(P_____)
3.0	**Roadways**						
3.1	Aggregate Sub-Base 150mm thick for pavement, curb & gutter, sidewalk (including grading works)	furnish, place, spread & compact	Refer to NPC TS & Drawing	cu.m.	**167**	_____ _____(P_____)	_____(P_____)
3.2	Concrete Pavement (20.70 MPa) (including dowels, joint filters, etc.)	furnish & construct	Refer to NPC TS & Drawing	cu.m.	**128**	_____ _____(P_____)	_____(P_____)

Note: The total amount shall be inclusive of Mark-Up (OCM and Profit) and VAT

Name of Firm

Name and Signature of Authorized Representative

Designation

CIVIL WORKS

Item No.	Description of Work or Materials	Work to Be Done	Ref	Unit	Estimated Quantity	Unit Price in Pesos (Words and Figures)	Total Amount (In Figures)
3.3	Curbs, Gutters and Sidewalks (20.70 MPa) including rebars	furnish & construct	Refer to NPC TS & Drawing	cu.m.	30	_____ _____(P_____)	_____(P_____)
4.0	**Drainage System and Appurtenances**						
4.1	0.10 Ø PVC Pipes for downspouts and Drainage Pipe	furnish & install	Refer to NPC TS & Drawing	li.m.	89	_____ _____(P_____)	_____(P_____)
4.2	0.15 Ø Perforated PVC Pipes	furnish & install	Refer to NPC TS & Drawing	li.m.	268	_____ _____(P_____)	_____(P_____)
4.3	0.15 Ø PVC Pipe from Cable Trench	furnish & install	Refer to NPC TS & Drawing	li.m.	58	_____ _____(P_____)	_____(P_____)
4.4	0.375 Ø Reinforced Concrete Drainage Pipe (RCDP)	furnish & install	Refer to NPC TS & Drawing	li.m.	182	_____ _____(P_____)	_____(P_____)
4.5	Open RC Canal	furnish & construct	Refer to NPC TS & Drawing	li.m.	136	_____ _____(P_____)	_____(P_____)
4.6	Street Inlet Catch Basin	furnish & construct	Refer to NPC TS & Drawing	pc.	11	_____ _____(P_____)	_____(P_____)
4.7	Intersecting PVC Pipes Catch Basin	furnish & construct	Refer to NPC TS & Drawing	pc.	7	_____ _____(P_____)	_____(P_____)
4.8	Catch Basin for Downspouts (@ Control House)	furnish & construct	Refer to NPC TS & Drawing	pc.	10	_____ _____(P_____)	_____(P_____)
4.9	Septic Tank	furnish & construct	Refer to NPC TS & Drawing	pc.	1	_____ _____(P_____)	_____(P_____)

Note: The total amount shall be inclusive of Mark-Up (OCM and Profit) and VAT

_____ Name of Firm

_____ Name and Signature of Authorized Representative

_____ Designation

CIVIL WORKS

Item No.	Description of Work or Materials	Work to Be Done	Ref	Unit	Estimated Quantity	Unit Price in Pesos (Words and Figures)	Total Amount (In Figures)
4.10	Manhole	furnish & construct	Refer to NPC TS & Drawing	pc.	1	_____ _____(P_____)	_____(P_____)
5.0	**Interlink Wire Perimeter Fence**						
5.1	Interlink Wire Perimeter Fence (including main gate, zocalo wall and foundations)	furnish, fabricate & install	Refer to NPC TS & Drawing	li.m.	216	_____ _____(P_____)	_____(P_____)
II.	**SWITCHYARD**						
1.0	**Foundations for Equipment and Gantry Structures**						
1.1	69 KV Gantry Structures	design, furnish, & construct	Refer to NPC TS & Drawing	lot	1	_____ _____(P_____)	_____(P_____)
1.2	13.8 KV Gantry Structures	design, furnish, & construct	Refer to NPC TS & Drawing	lot	1	_____ _____(P_____)	_____(P_____)
1.3	Power Transformer	design, furnish, & construct	Refer to NPC TS & Drawing	lot	1	_____ _____(P_____)	_____(P_____)
1.4	Power Circuit Breakers	design, furnish, & construct	Refer to NPC TS & Drawing	lot	1	_____ _____(P_____)	_____(P_____)
1.5	Disconnect Switches	design, furnish, & construct	Refer to NPC TS & Drawing	lot	1	_____ _____(P_____)	_____(P_____)
1.6	Metal Clad Switchgear	design, furnish, & construct	Refer to NPC TS & Drawing	lot	1	_____ _____(P_____)	_____(P_____)
1.7	Surge Arresters	design, furnish, & construct	Refer to NPC TS & Drawing	lot	1	_____ _____(P_____)	_____(P_____)

Note: The total amount shall be inclusive of Mark-Up (OCM and Profit) and VAT

Name of Firm

Name and Signature of Authorized Representative

Designation

CIVIL WORKS

Item No.	Description of Work or Materials	Work to Be Done	Ref	Unit	Estimated Quantity	Unit Price in Pesos (Words and Figures)	Total Amount (In Figures)
1.8	Current Transformers	design, furnish, & construct	Refer to NPC TS & Drawing	lot	1	_____ _____(P_____)	_____(P_____)
1.9	Voltage Transformers	design, furnish, & construct	Refer to NPC TS & Drawing	lot	1	_____ _____(P_____)	_____(P_____)
1.10	Bus Supports	design, furnish, & construct	Refer to NPC TS & Drawing	lot	1	_____ _____(P_____)	_____(P_____)
1.11	Outdoor Metering	design, furnish, & construct	Refer to NPC TS & Drawing	lot	1	_____ _____(P_____)	_____(P_____)
2.0	**Cable Trench**						
2.1	CT-1	furnish & construct	Refer to NPC TS & Drawing	li.m.	17	_____ _____(P_____)	_____(P_____)
2.2	CT-2	furnish & construct	Refer to NPC TS & Drawing	li.m.	140	_____ _____(P_____)	_____(P_____)
2.4	CT-3	furnish & construct	Refer to NPC TS & Drawing	li.m.	2.7	_____ _____(P_____)	_____(P_____)
3.0	**Seclusion Fence**						
3.1	Seclusion fence (including foundation, zocalo wall and gate)	furnish & construct	Refer to NPC TS & Drawing	li.m.	63	_____ _____(P_____)	_____(P_____)
4.0	**Gravel Surfacing**						
4.1	150mm thick Gravel Surfacing	furnish, place, spread & compact	Refer to NPC TS & Drawing	cu.m.	407	_____ _____(P_____)	_____(P_____)

Note: The total amount shall be inclusive of Mark-Up (OCM and Profit) and VAT

_____ Name of Firm

_____ Name and Signature of Authorized Representative

_____ Designation

CIVIL WORKS

Item No.	Description of Work or Materials	Work to Be Done	Ref	Unit	Estimated Quantity	Unit Price in Pesos (Words and Figures)	Total Amount (In Figures)
III.	**STRUCTURES**						
1.0	**Control House**						
1.1	Structural Excavation	excavate, stockpile & dispose	Refer to NPC TS & Drawing	cu.m.	**47**	_____ _____(P_____)	_____(P_____)
1.2	Structural Backfill	place, spread & compact	Refer to NPC TS & Drawing	cu.m.	**79**	_____ _____(P_____)	_____(P_____)
1.3	Sand and Gravel Bedding	furnish, place, spread & compact	Refer to NPC TS & Drawing	cu.m.	**4**	_____ _____(P_____)	_____(P_____)
1.4	Concrete (20.70 MPa at 28 days)	furnish, place & vibrate	Refer to NPC TS & Drawing	cu.m.	**48**	_____ _____(P_____)	_____(P_____)
1.5	Rebar (Grade 40)	furnish, cut, bend, schedule & install	Refer to NPC TS & Drawing	kg.	**7622**	_____ _____(P_____)	_____(P_____)
2.0	**Guardhouse**						
2.1	Structural Excavation	excavate, stockpile & dispose	Refer to NPC TS & Drawing	cu.m.	**2.6**	_____ _____(P_____)	_____(P_____)
2.2	Structural Backfill	place, spread & compact	Refer to NPC TS & Drawing	cu.m.	**2.7**	_____ _____(P_____)	_____(P_____)
2.3	Sand and Gravel Bedding	furnish, place, spread & compact	Refer to NPC TS & Drawing	cu.m.	**0.3**	_____ _____(P_____)	_____(P_____)

Note: The total amount shall be inclusive of Mark-Up (OCM and Profit) and VAT

_____ Name of Firm

_____ Name and Signature of Authorized Representative

_____ Designation

CIVIL WORKS

Item No.	Description of Work or Materials	Work to Be Done	Ref	Unit	Estimated Quantity	Unit Price in Pesos (Words and Figures)	Total Amount (In Figures)
2.4	Concrete (20.70 MPa at 28 days)	furnish, place & vibrate	Refer to NPC TS & Drawing	cu.m.	**2.8**	_____ _____(P_____)	_____(P_____)
2.5	Rebar (Grade 40)	furnish, cut, bend, schedule & install	Refer to NPC TS & Drawing	kg.	**362.8**	_____ _____(P_____)	_____(P_____)
3.0	**Pumphouse**						
3.1	Structural Excavation	excavate, stockpile & dispose	Refer to NPC TS & Drawing	cu.m.	**3.8**	_____ _____(P_____)	_____(P_____)
3.2	Structural Backfill	place, spread & compact	Refer to NPC TS & Drawing	cu.m.	**2.2**	_____ _____(P_____)	_____(P_____)
3.3	Sand and Gravel Bedding	furnish, place, spread & compact	Refer to NPC TS & Drawing	cu.m.	**0.3**	_____ _____(P_____)	_____(P_____)
3.4	Concrete (20.70 MPa at 28 days)	furnish, place & vibrate	Refer to NPC TS & Drawing	cu.m.	**2.5**	_____ _____(P_____)	_____(P_____)
3.5	Rebar (Grade 40)	furnish, cut, bend, schedule & install	Refer to NPC TS & Drawing	kg.	**354.0**	_____ _____(P_____)	_____(P_____)
4.0	**Elevated Water Storage Tank**						
4.1	Structural Excavation	excavate, stockpile & dispose	Refer to NPC TS & Drawing	cu.m.	**3.2**	_____ _____(P_____)	_____(P_____)
4.2	Structural Backfill	place, spread & compact	Refer to NPC TS & Drawing	cu.m.	**1.6**	_____ _____(P_____)	_____(P_____)

Note: The total amount shall be inclusive of Mark-Up (OCM and Profit) and VAT

Name of Firm

Name and Signature of Authorized Representative

Designation

CIVIL WORKS

Item No.	Description of Work or Materials	Work to Be Done	Ref	Unit	Estimated Quantity	Unit Price in Pesos (Words and Figures)	Total Amount (In Figures)
4.3	Sand and Gravel Bedding	furnish, place, spread & compact	Refer to NPC TS & Drawing	cu.m.	**0.1**	_____ _____(P_____)	_____(P_____)
4.4	Concrete (20.70 MPa at 28 days)	furnish, place & vibrate	Refer to NPC TS & Drawing	cu.m.	**1.3**	_____ _____(P_____)	_____(P_____)
4.5	Rebar (Grade 40)	furnish, cut, bend, schedule & install	Refer to NPC TS & Drawing	kg.	**150**	_____ _____(P_____)	_____(P_____)
4.6	Structural Steel Structure - A36 hot dip galvanized (including stiffener plate, gusset plate, turn buckle, base plate, round bar, nuts, washers and bolts)	furnish, fabricate, assemble and install	Refer to NPC TS & Drawing	kg.	**746**	_____ _____(P_____)	_____(P_____)
4.7	G.I. Pipe Ladder (including ladder guard)	furnish, fabricate assemble and install	Refer to NPC TS & Drawing	kg.	**173**	_____ _____(P_____)	_____(P_____)
5.0	**Flag Pole & Perimeter Lighting Foundation**						
5.1	Flag Pole (foundation and pole)	furnish & construct	Refer to NPC TS & Drawing	lot	**1.0**	_____ _____(P_____)	_____(P_____)
5.2	Perimeter Lighting - 9 pcs (foundation)	furnish & construct	Refer to NPC TS & Drawing	lot	**1.0**	_____ _____(P_____)	_____(P_____)
6.1	**Grouted Riprap** (including sand and gravel filter and weep holes)	furnish & construct	Refer to NPC TS & Drawing	cu.m.	**451**	_____ _____(P_____)	_____(P_____)

Note: The total amount shall be inclusive of Mark-Up (OCM and Profit) and VAT

SUB-TOTAL AMOUNT OF BID (CIVIL WORKS) _____ _____(P_____) _____(P_____)

Name of Firm

Name and Signature of Authorized Representative

Designation

ELECTRICAL WORKS

Item No.	Description of Work or Materials	Work to be Done	Reference	Unit	Estimated Quantity	Unit Price in Pesos (In Words & Figures)	Total Amount (In Figures)
	SUBSTATION EQUIPMENT						
1.0	**Existing 10MVA, 69/13.8/13.8kV, 60Hz, 3-phase, Three winding Power tranformer, YNd1yn0, ONAN**						
1.0a	Conduct Transformer Insulation Resistance Test, Winding Resistance test, Oil Test, Ratio Test, Capacitance & Dissipation (Power) Factor Test prior to dismantling of the transformer.	test	TS, TDS & Dwgs	lot	1	(P)	P
1.0b	Dismantling and Undressing of 10MVA Power Transformer accessories, Detanking and transfer of the existing transformer oil in a clean drum container	dismantle, undress & detank	TS, TDS & Dwgs	set	1	(P)	P
1.0c	Crating of all transformer accessories.	crate	TS, TDS & Dwgs	lot	1	(P)	P
1.0d	Hauling of 10MVA Power Transformer and its accessories from Mobo S/S to proposed location of Masbate (Malinta) S/S.	haul	TS, TDS & Dwgs	lot	1	(P)	P
1.0e	Supply Power Transformer Mineral Insulating Oil "PCB free" in accordance with specifications and technical data sheet.	supply and fill	TS, TDS & Dwgs	kgs	7800	(P)	P
1.0f	Replace gaskets of the secondary housing of the current transformer, radiator valve and oil piping flanges.	supply & install	TS, TDS & Dwgs	set	1	(P)	P
1.0g	Replace rubber bushing for secondary terminal bushing;	supply & install	TS, TDS & Dwgs	set	1	(P)	P

Name of Firm

Name and Signature of Authorized Representative

Designation'

ELECTRICAL WORKS

Item No.	Description of Work or Materials	Work to be Done	Reference	Unit	Estimated Quantity	Unit Price in Pesos (In Words & Figures)	Total Amount (In Figures)
1.0h	Calibration of the mechanical protection of the transformer (winding temperature, oil temperature, oil level indicator, rapid pressure, pressure relay, and buchholz relay)	calibrate	TS, TDS & Dwgs	lot	1	_____ (P _____)	P _____
1.0i	Installation, Testing and Commissioning of 10MVA Power Transformer and its accessories to Masbate S/S.	install, test & commissioning	TS, TDS & Dwgs	set	1	_____ (P _____)	P _____
2.0	69kV Power Circuit Breaker, 600A, 20kA, 3 pole operation, complete with the required accessories, spare parts/tools and supporting structures in accordance with the drawings, Specifications and Technical Data Sheets	supply, install & test	TS, TDS & Dwgs	sets	4	_____ (P _____)	P _____
3.0	69kV Disconnect Switch with Earthing Switch, 600A continuous, 20kA, suitable for 3-Pole operation, complete with the required accessories, spare parts/tools and supporting structures in accordance with the drawings, Specifications and Technical Data Sheets.	supply, install & test	TS, TDS & Dwgs	sets	3	_____ (P _____)	P _____
4.0	69kV Disconnect Switch without Earthing Switch, 600A, continuous, 20kA, suitable for 3-Pole operation, complete with the required accessories, spare parts/tools and supporting structures in accordance with the drawings, Specifications and Technical Data Sheets.	supply, install & test	TS, TDS & Dwgs	sets	9	_____ (P _____)	P _____
5.0	Main Control Switchboard, 69/13.8kV, indoor type, complete with all the necessary devices and accessories, spare parts/tools and test equipment for the proper operation and maintenance of the equipment in accordance with the Drawings, Specifications and Technical Data Sheets.	supply, install & test	TS, TDS & Dwgs	set	1	_____ (P _____)	P _____

_____
Name of Firm

_____
Name and Signature of Authorized Representative

_____
Designation

ELECTRICAL WORKS

Item No.	Description of Work or Materials	Work to be Done	Reference	Unit	Estimated Quantity	Unit Price in Pesos (In Words & Figures)	Total Amount (In Figures)
6.0	15kV Metal-clad Switchgear, outdoor type, connected on the wye side of the transformer, complete with the required equipment and appurtenances (i.e. 230VAC Main Distribution Board, surge arrester, circuit breaker, instrument transformers, relays, meters, instrumentation, termination kits, etc.) and all necessary devices and accessories including test equipment in accordance with the Specifications, drawings and Technical Data Sheets.	supply, install & test	TS, TDS & Dwgs	set	1	_____ (P _____)	P _____
7.0	Station Service Transformer, 75kVA, 3 Phase, 60Hz, 13.8kV/230VAC mounted inside the Metal-clad Switchgear complete with the required accessories and devices including spare parts/tools in accordance with the Drawings, Specifications and Technical Data Sheets.	supply, install & test	TS, TDS & Dwgs	set	1	_____ (P _____)	P _____
8.0	60kV Surge Arrester, outdoor type, complete with the required accessories, spare parts/tools and supporting structures in accordance with the drawings, Specifications and Technical Data Sheets.	supply, install & test	TS, TDS & Dwgs	sets	12	_____ (P _____)	P _____
9.0	12kV Surge Arrester, outdoor type, complete with the required accessories, spare parts/tools and supporting structures in accordance with the drawings, Specifications and Technical Data Sheets.	supply, install & test	TS, TDS & Dwgs	sets	9	_____ (P _____)	P _____

_____ Name of Firm

_____ Name and Signature of Authorized Representative

_____ Designation

ELECTRICAL WORKS

Item No.	Description of Work or Materials	Work to be Done	Reference	Unit	Estimated Quantity	Unit Price in Pesos (In Words & Figures)	Total Amount (In Figures)
10.0	69kV Current Transformer, outdoor type, 600:1A, multi-ratio with 0.3 accuracy class, four core complete with the required accessories, spare parts/tools and supporting structures including anchor bolts and mounting bolts in accordance with the drawings, Specifications and Technical Data Sheets.	supply, install & test	TS, TDS & Dwgs	sets	24	(P)	P
11.0	69kV Voltage Transformer, outdoor type, with 0.3 accuracy class complete with the required accessories spare parts/tools and supporting structures including anchor bolts and mounting bolts in accordance with the drawings, Specifications and Technical Data Sheets.	supply, install & test	TS, TDS & Dwgs	sets	12	(P)	P
12.0	69kV Current Transformer for Revenue Meter, outdoor type, 600:1A, multi-ratio with 0.3 accuracy class, two core complete with the required accessories, spare parts/tools and supporting structures including anchor bolts and mounting bolts in accordance with the drawings, Specifications and Technical Data Sheets.	supply, install & test	TS, TDS & Dwgs	sets	9	(P)	P
13.0	69kV Voltage Transformer for Revenue Meter, outdoor type, with 0.3 accuracy class complete with the required accessories spare parts/tools and supporting structures including anchor bolts and mounting bolts in accordance with the drawings, Specifications and Technical Data Sheets.	supply, install & test	TS, TDS & Dwgs	sets	9	(P)	P
14.0	69kV Outdoor Metering Equipment complete with the required supporting structures, anchor bolts and accessories, composed of the ff.: 1. Billing Meter and its Cabinet	supply, install & test	TS, TDS & Dwgs	sets	3	(P)	P

Name of Firm

Name and Signature of Authorized Representative

Designation

ELECTRICAL WORKS

Item No.	Description of Work or Materials	Work to be Done	Reference	Unit	Estimated Quantity	Unit Price in Pesos (In Words & Figures)	Total Amount (In Figures)
15.0	13.8kV Outdoor Metering Equipment complete with the required supporting structures, anchor bolts and accessories, composed of the ff.: 1. Billing Meter and its Cabinet 2. Current Transformer, 13.8kV (3 units/set) 3. Voltage Transformer, 13.8kV (3 units/set)	supply, install & test	TS, TDS & Dwgs	sets	2	_____ (P)	P _____
16.0	Steel (Gantry) Structures, 69kV & 13.8kV configuration, latice type, hot dipped galvanized, complete with all mounting bolts and accessories in accordance with the Drawings, Specifications and Technical Data Sheets.						
	a. 69kV Post	supply & install	TS, TDS & Dwgs	lot	1	_____ (P)	P _____
	b. 69kV Beam	supply & install	TS, TDS & Dwgs	lot	1	_____ (P)	P _____
	c. 13.8kV Post	supply & install	TS, TDS & Dwgs	lot	1	_____ (P)	P _____
	d. 13.8kV Beam	supply & install	TS, TDS & Dwgs	lot	1	_____ (P)	P _____
17.0	AC and DC Auxiliary Switchboards, complete with the required devices and accessories including spare parts/ tools in accordance with the drawings, Specifications and Technical Data Sheets.	supply, install & test	TS, TDS & Dwgs	lot	1	_____ (P)	P _____

Name of Firm

Name and Signature of Authorized Representative

Designation

ELECTRICAL WORKS

Item No.	Description of Work or Materials	Work to be Done	Reference	Unit	Estimated Quantity	Unit Price in Pesos (In Words & Figures)	Total Amount (In Figures)
18.0	125VDC Battery Charger complete with all the necessary devices and accessories including spare parts/tools in accordance with the Drawings, Specifications and Technical Data Sheets.	supply, install & test	TS, TDS & Dwgs	set	1	(P)	P
19.0	125VDC Battery Bank, complete with the required battery racks including spare parts/tools and accessories in accordance with the Drawings, Specifications and Technical Data Sheets.	supply, install & test	TS, TDS & Dwgs	set	1	(P)	P
20.0	69kV Line Protection System, indoor type, complete with protection module, auxiliary relays, fault locator and accessories, including spare parts/tools in accordance with the Drawings, Specifications and Technical Data Sheets.	supply, install & test	TS, TDS & Dwgs	sets	3	(P)	P
21.0	Transformer Protection System, indoor type, complete with protection module, auxiliary relays and accessories including spare parts/tools in accordance with the Drawings, Specifications and Technical Data Sheets.	supply, install & test	TS, TDS & Dwgs	set	1	(P)	P
22.0	69kV Porcelain Station Post Insulator, outdoor type, with 350kV BIL complete with the required accessories spare parts/tools and supporting structures including anchor bolts and mounting bolts in accordance with the drawings.	supply, install & test	TS, TDS & Dwgs	sets	12	(P)	P
	GENERAL EQUIPMENT AND ACCESSORIES						
23.0	Installation Materials consisting of bus conductors, support insulators, hardwares, fittings, connectors, clamps, phase markers , etc. in accordance with the drawings, Specifications and Technical Data Sheets.	supply, install & test	TS, TDS & Dwgs	lot	1	(P)	P

Name of Firm

Name and Signature of Authorized Representative

Designation'

ELECTRICAL WORKS

Item No.	Description of Work or Materials	Work to be Done	Reference	Unit	Estimated Quantity	Unit Price in Pesos (In Words & Figures)	Total Amount (In Figures)
24.0	Grounding System including grounding mat and rods exothermic connection, riser connection to steel structures, seclusion fence, switchyard eqpt. and interconnection to the control room in accordance with the drawings, Specifications and Technical Data Sheets.						
	a. 100mm² SDCC tin annealed PVC sheated and insulated for down leads substation equipment through grounding mat.	supply, install & test	TS, TDS & Dwgs	lot	1	(P)	P
	b. 100mm² bare, Soft drawn copper conductor (SDCC), tin annealed.	supply, install & test	TS, TDS & Dwgs	lot	1	(P)	P
	c. 60mm² bare, Soft drawn copper conductor (SDCC), tin annealed for perimeter fence, swinging gates and lighting post.	supply, install & test	TS, TDS & Dwgs	lot	1	(P)	P
	d. Braided 60mm² bare, Soft drawn copper conductor, tin annealed for swinging gates.	supply, install & test	TS, TDS & Dwgs	lot	1	(P)	P
	e. Copper clad ground rods, 19mm diameter x 3000mm in length.	supply, install & test	TS, TDS & Dwgs	pcs.	43	(P)	P
	f. Thermoweld powder needed for making the diff. types of thermoweld joints.	supply, install & test	TS, TDS & Dwgs	lot	1	(P)	P
	g. Test pit	supply, install & test	TS, TDS & Dwgs	sets	2	(P)	P

Name of Firm

Name and Signature of Authorized Representative

Designation

ELECTRICAL WORKS

Item No.	Description of Work or Materials	Work to be Done	Reference	Unit	Estimated Quantity	Unit Price in Pesos (In Words & Figures)	Total Amount (In Figures)
25.0	Power, Control and Instrument Cables in accordance with the drawings, Specifications and Technical Data Sheets.						
	1. Power Cables, 15 kV XLPE insulation						
	a.) 1c x 400 mm²	supply & install	TS, TDS & Dwgs	lot	1	(P)	P
	b.) 1c x 70 mm²	supply & install	TS, TDS & Dwgs	lot	1	(P)	P
	2. Power Cables, 600V THHN/THWN-2						
	a.) 1c x 14.0 mm²	supply & install	TS, TDS & Dwgs	lot	1	(P)	P
	b.) 1c x 8.0 mm²	supply & install	TS, TDS & Dwgs	lot	1	(P)	P
	c.) 1c x 5.5 mm²	supply & install	TS, TDS & Dwgs	lot	1	(P)	P
	d.) 1c x 3.5 mm²	supply & install	TS, TDS & Dwgs	lot	1	(P)	P
	TC/PVC						
	a.) 2c x 6.0 mm²	supply & install	TS, TDS & Dwgs	lot	1	(P)	P
	b.) 2c x 4.0 mm²	supply & install	TS, TDS & Dwgs	lot	1	(P)	P

Name of Firm

Name and Signature of Authorized Representative

Designation'

ELECTRICAL WORKS

Item No.	Description of Work or Materials	Work to be Done	Reference	Unit	Estimated Quantity	Unit Price in Pesos (In Words & Figures)	Total Amount (In Figures)
	c.) 3c x 6.0 mm^2	supply & install	TS, TDS & Dwgs	lot	1	(P)	P
	3. Control & Instrument Cables						
	a.) 4c x 2.5 mm^2 (shielded)	supply & install	TS, TDS & Dwgs	lot	1	(P)	P
	b.) 4c x 4.0mm^2 (shielded)	supply & install	TS, TDS & Dwgs	lot	1	(P)	P
	c.) 4c x 5.5 mm^2 (shielded)	supply & install	TS, TDS & Dwgs	lot	1	(P)	P
	d.) 5c x 4.0 mm^2 (shielded)	supply & install	TS, TDS & Dwgs	lot	1	(P)	P
26.0	Lighting and Power System in accordance with the drawing, Technical Specifications and Technical Data Sheets composed of the following:						
	a. Indoor/Outdoor Lighting Fixtures						
	1. Fixture Type A	supply, install & test	TS, TDS & Dwgs	sets	12	(P)	P
	2. Fixture Type B	supply, install & test	TS, TDS & Dwgs	sets	4	(P)	P
	3. Fixture Type C	supply, install & test	TS, TDS & Dwgs	sets	2	(P)	P

Name of Firm

Name and Signature of Authorized Representative

Designation

ELECTRICAL WORKS

Item No.	Description of Work or Materials	Work to be Done	Reference	Unit	Estimated Quantity	Unit Price in Pesos (In Words & Figures)	Total Amount (In Figures)
	4. Fixture Type D	supply, install & test	TS, TDS & Dwgs	sets	5	(P)	P
	5. Fixture Type I	supply, install & test	TS, TDS & Dwgs	sets	7	(P)	P
	6. Fixture Type F	supply, install & test	TS, TDS & Dwgs	sets	6	(P)	P
	7. Fixture Type K	supply, install & test	TS, TDS & Dwgs	sets	9	(P)	P
	8. Fixture Type M	supply, install & test	TS, TDS & Dwgs	sets	2	(P)	P
	9. Fixture Type O	supply, install & test	TS, TDS & Dwgs	sets	2	(P)	P
	b. Outlets and Switches						
	1. Convenience Outlet, Duplex, 250V, 15A Single Phase grounding type	supply, install & test	TS, TDS & Dwgs	sets	13	(P)	P
	2. Convenience Outlet, Duplex, 250V, 15A Weather Proof, 1-Phase grounding type	supply, install & test	TS, TDS & Dwgs	sets	8	(P)	P
	3. Enclosed Safety Breaker, 25 A 1-Phase, grounding type, NEMA 3R	supply, install & test	TS, TDS & Dwgs	sets	2	(P)	P
	4. Enclosed Safety Breaker, 30 A 1-Phase, grounding type, NEMA 3R	supply, install & test	TS, TDS & Dwgs	sets	2	(P)	P

Name of Firm

Name and Signature of Authorized Representative

Designation

ELECTRICAL WORKS

Item No.	Description of Work or Materials	Work to be Done	Reference	Unit	Estimated Quantity	Unit Price in Pesos (In Words & Figures)	Total Amount (In Figures)
	5. Exhaust fan/Emergency Light outlet single receptacle, 250V, 1-Phase, 15A	supply, install & test	TS, TDS & Dwgs	sets	8	(P)	P
	6. Switch, duplex, one gang plate, 10A, 250 VAC	supply, install & test	TS, TDS & Dwgs	sets	4	(P)	P
	7. Switch, single, one gang plate, 10A, 250 VAC	supply, install & test	TS, TDS & Dwgs	sets	8	(P)	P
	c. Enclosed Safety Breaker, 20 A, 230 VAC , 1-Phase	supply, install & test	TS, TDS & Dwgs	sets	1	(P)	P
	d. Enclosed Safety Breaker, 20 A, 230 VAC , 1-Phase, NEMA 3R	supply, install & test	TS, TDS & Dwgs	sets	1	(P)	P
	e. Lighting/Power Panel Board and Circuit Breakers 230 VAC , 3-Phase, 14 + 1 CB Main Breaker: 100AF/60AT, 3P, MCCB Branch Circuit: 2 - 50AF/40AT, 2P, MCB 2 - 50AF/25AT, 2P, MCB 9 - 50AF/20AT, 2P, MCB 2 - 50AF/15AT, 2P, MCB	supply & install	TS, TDS & Dwgs	set	1	(P)	P
27.0	Conduit and Cable Tray System in accordance with the drawings, Technical Specifications and Technical Data Sheets composed of the following:						
	a. Conduit 1. 20 mm dia. uPVC	supply & install	TS, TDS & Dwgs	l.m.	630	(P)	P

Name of Firm

Name and Signature of Authorized Representative

Designation

ELECTRICAL WORKS

Item No.	Description of Work or Materials	Work to be Done	Reference	Unit	Estimated Quantity	Unit Price in Pesos (In Words & Figures)	Total Amount (In Figures)
	2. 25 mm dia. uPVC	supply & install	TS, TDS & Dwgs	l.m.	200	(P)	P
	3. 32 mm dia. uPVC	supply & install	TS, TDS & Dwgs	l.m.	25	(P)	P
	3. 50 mm dia. uPVC	supply & install	TS, TDS & Dwgs	l.m.	150	(P)	P
	5. 110 mm dia. uPVC	supply & install	TS, TDS & Dwgs	l.m.	30	(P)	P
	6. Boxes, Fittings & Accessories	supply & install	TS, TDS & Dwgs	lot	1	(P)	P
b.	Cable Tray System						
	1. Cable Tray ,Straight Type (300 mm x 100 mm)	supply & install	TS, TDS & Dwgs	l.m.	180	(P)	P
	2. Cable Tray , Horizontal Tee Type (300 mm x 100 mm)	supply & install	TS, TDS & Dwgs	pcs.	7	(P)	P
	3. Cable Tray , 90° Horizontal Elbow (300 mm x 100 mm)	supply & install	TS, TDS & Dwgs	pcs.	3	(P)	P
	4. Complet Cable Tray Support	supply & install	TS, TDS & Dwgs	lot	1	(P)	P

Name of Firm

Name and Signature of Authorized Representative

Designation'

ELECTRICAL WORKS

Item No.	Description of Work or Materials	Work to be Done	Reference	Unit	Estimated Quantity	Unit Price in Pesos (In Words & Figures)	Total Amount (In Figures)
	VIDEO SURVEILLANCE SYSTEM (CCTV)						
28.0	Main Distribution Frame (Data Cabinet): Baked Enamel Perforated Door w/lock & keys, 42U(H), 600(W), 1200(D) Accessories: 3-fixed trays, 15-outet 3-prong PDU, exhaust fans, adjustable square-hole rail w/cage nuts & bolts,	supply, install & test	Dwgs	set	1	(P)	P
29.0	8-channel, Network Video Recorder (NVR), 2-1 x 8TB NAS hard drive, VGA, HDMI, USB interface Accessories: Mounting tray, 1U cable management	supply, install & test	Dwgs	unit	1	(P)	P
30.0	5MP dome type IP-camera (POE) Indoor with 4 x 4 WP -box	supply, install & test	Dwgs	sets	3	(P)	P
31.0	5MP bullet type IP-camera (POE) outdoor with 4 x 4 WP -box & pole-mount bracket	supply, install & test	Dwgs	sets	5	(P)	P
32.0	8-port gigabit POE managed switch with 2-1X10GBE tranceiver uplink port	supply, install & test	Dwgs	set	1	(P)	P
33.0	3kVA uninterruptible Power Supply (UPS), online double conversion. Accessories: rack-mount bracket	supply, install & test	Dwgs	unit	1	(P)	P
34.0	Cat6 STP (Shielded Twisted Pair) Cable	supply, install & test	Dwgs	lot	1	(P)	P
35.0	42-inch LED monitor display VGA/HDMI interface Accessories: Wall-mount bracket, 15-meter HDMI cable	supply, install & test	Dwgs	unit	1	(P)	P

Name of Firm

Name and Signature of Authorized Representative

Designation'

ELECTRICAL WORKS

Item No.	Description of Work or Materials	Work to be Done	Reference	Unit	Estimated Quantity	Unit Price in Pesos (In Words & Figures)	Total Amount (In Figures)
	VOICE AND DATA SYSTEM (TELEPHONE AND LAN)						
36.0	3-trunkline x 8-hybrid local lines IP-PABX. Accessories: Mounting tray, AC power supply, 2-1 x 12VDC 200Ah battery with DC cable, 24-THX digital phone, 1-1 x 8-SLT analog telephone, 1U cable management, programming as per NPC dialing plan.	supply, install & test	Dwgs	lot	1	_____ (P _____)	P _____
37.0	24-port gigabit manage switch, 2-SFP uplink port, 220VAC	supply, install & test	Dwgs	unit	1	_____ (P _____)	P _____
38.0	Krone LSA disconnect module with backplate Accessories: Mounting bracket	supply, install & test	Dwgs	unit	1	_____ (P _____)	P _____
39.0	2-port faceplate with shutter for voice and data Input/Output (I/O)	supply, install & test	Dwgs	unit	1	_____ (P _____)	P _____
40.0	RJ-45 voice information outlet (I/O), 110 punch-down	supply, install & test	Dwgs	unit	8	_____ (P _____)	P _____
41.0	RJ-45 data information outlet (I/O), 110 punch-down	supply, install & test	Dwgs	unit	4	_____ (P _____)	P _____
42.0	IP-66 steel floor standing telephone box 300(H) x 250(W) x 150(D)	supply, install & test	Dwgs	unit	1	_____ (P _____)	P _____
43.0	Cat5e STP (shielded twisted pair) cable	supply, install & test	Dwgs	lot	1	_____ (P _____)	P _____
44.0	RJ-45 unshielded jack	supply, install & test	Dwgs	pcs.	40	_____ (P _____)	P _____

_____ Name of Firm

_____ Name and Signature of Authorized Representative

_____ Designation

ELECTRICAL WORKS

Item No.	Description of Work or Materials	Work to be Done	Reference	Unit	Estimated Quantity	Unit Price in Pesos (In Words & Figures)	Total Amount (In Figures)
45.0	Telephone flat cable-black (100m/roll)	supply, install & test	Dwgs	lot	1	(P)	P
46.0	RJ-11 unshielded jack	supply, install & test	Dwgs	pcs.	20	(P)	P
	HUMAN MACHINE INTERFACE, MONITORING AND CONTROL						
47.0	Security gateway (firewall) small-form factor 3-network interface, EIA-232/EIA-485 serial ports, IRIG-B (I/O) time-synch, AC/DC power supply. Accessories: Mounting tray, 1U cable management	supply, install & test	Dwgs	set	1	(P)	P
48.0	Satellite-synchronized clock, large LED display EIA-232 serial port, IRIG-B (I/O), AC/DC power supply	supply, install & test	Dwgs	unit	1	(P)	P
49.0	Real-time automation controller, Linux-base 533Mhz 1024MB RAM 2GB storage, ethernet & serial ports, DNP3 Serial, DNP3 LAN/WAN, Modbus RTU & TCP IEEE C37.118, IEC 61850 supported protocols IRIG-B (I/O), AC/DC power supply. Accessories RTAC software, and 1U cable management	supply, install & test	Dwgs	set	1	(P)	P
50.0	24-port unmanaged ethernet switch, interface: 4-1 x Gbe ethernet copper, 16-1 x 10/100MBps, and 4-1 x SFP ports, redundant AC & DC power supply Accessories: 1U cable management	supply, install & test	Dwgs	units	2	(P)	P
51.0	Network printer, monochrome, 220VAC	supply, install & test	Dwgs	unit	1	(P)	P

Name of Firm

Name and Signature of Authorized Representative

Designation

ELECTRICAL WORKS

Item No.	Description of Work or Materials	Work to be Done	Reference	Unit	Estimated Quantity	Unit Price in Pesos (In Words & Figures)	Total Amount (In Figures)
52.0	Local control center (operator): Accessories; 3-1 x 27-inch LED monitor display, RTAC-software for workstation, and keyboard & mouse.	supply, install & test	Dwgs	set	1	(P)	P
53.0	Cat5e FTP (foil twisted pair) cable	supply, install & test	Dwgs	lot	1	(P)	P
54.0	RJ-45 metal-shielded jack	supply, install & test	Dwgs	pcs.	50	(P)	P
	TWO-WAY RADIO COMMUNICATION						
55.0	Two-way Radio Communication System, antenna mast with concrete foundation, cables, PTT microphone, and power supply, in accordance with the specifications and Technical Data Sheets						
	a Base Station, 136~174Mhz, 45W RF output, analog/digital sensitivity 0.3uV/.0.22uV, AMBE+2TM digital vocoder, OTA programming, dual capacity, IP-54, external speaker, MIL-STD, FCC & ICC Standard c/w/ DC power supply	supply, install & test	Dwgs	set	1	(P)	P
	b Base Antenna, omni-directional fiberglass, 3.8dB gain, 144~174MHz, 200W max. power at 50-ohm c/w RG-8 high-grade coaxial cable, surge protector, and PL-259	supply, install & test	Dwgs	unit	1	(P)	P
	c 60-foot antenna mast, painted as per CAA standard with climbing steps, support accessories, and lightning arrester and ground cable.	supply, install & test	Dwgs	set	1	(P)	P

Name of Firm

Name and Signature of Authorized Representative

Designation

ELECTRICAL WORKS

Item No.	Description of Work or Materials	Work to be Done	Reference	Unit	Estimated Quantity	Unit Price in Pesos (In Words & Figures)	Total Amount (In Figures)
	d Mobile Station, 136~174Mhz, 45W RF output, analog/digital sensitivity 0.3uV/0.22uV, AMBE+2TM digital vocoder, OTA programming, dual capacity, IP-54, MIL-STD, FCC & ICC Standard	supply, install & test	Dwgs	units	2	(P)	P
	e Mobile Antenna, omni-directional 5/8-wave whip with PO/SO-239 magnetic-base mount, 200W max. power at 50-ohm c/w RG-58 high-grade coaxial cable, and PL-259 connectors	supply, install & test	Dwgs	sets	2	(P)	P
	f Portable Station, LKP display, 5W RF output, analog/digital sensitivity 0.16uV/0.14uV, AMBE+2TM digital vocoder, IP67 rating and MIL-STD specs., spare lithium-ION battery pack with battery charger.	supply, install & test	Dwgs	sets	4	(P)	P
2	Programming (As per NPC licensed radio frequency), VSWR test, NTC licensing and assistance fee for the two-way radio communication system	to perform	Dwgs	lot	1	(P)	P
	EXPENSES FOR NPC PERSONNEL IN WITNESSING THE FACTORY ACCEPTANCE TEST OF EQUIPMENT AT MANUFACTURERS PREMISES						
56.0	Factory Acceptance Test of 69kV Power Circuit Breaker to be witnessed by three(3) NPC representative in accordance with the specifications and technical data sheets at manufacturer's premises	test	EW-1.6.3.3, TS & TDS	lot	1	(P)	P
57.0	Factory Acceptance Test of 15kV Metal-Clad Switchgear to be witnessed by three(3) NPC representative in accordance with the specifications and technical data sheets at manufacturer's premises	test	EW-1.6.3.3, TS & TDS	lot	1	(P)	P

Name of Firm

Name and Signature of Authorized Representative

Designation'

ELECTRICAL WORKS

Item No.	Description of Work or Materials	Work to be Done	Reference	Unit	Estimated Quantity	Unit Price in Pesos (In Words & Figures)	Total Amount (In Figures)
58.0	Factory Acceptance Test of 69kV Line Protection System to be witnessed by three(3) NPC representative in accordance with the specifications and technical data sheets at manufacturer's premises	test	EW-1.6.3.3, TS & TDS	lot	1	(P)	P
59.0	Factory Acceptance Test of 69kV Substation Protection System to be witnessed by three(3) NPC representative in accordance with the specifications and technical data sheets at manufacturer's premises	test	EW-1.6.3.3, TS & TDS	lot	1	(P)	P
	TOTAL (ELECTRICAL WORKS)					(P)	P

Name of Firm

Name and Signature of Authorized Representative

Designation'

MECHANICAL WORKS

Item No.	Description of Work or Materials	Work to be Done	Ref. Clause	Unit	Estimated Quantity	Unit Price in Pesos (Words and Figures)	Total Amount
1.0	**DOMESTIC WATER SUPPLY SYSTEM**		MW-4.0				
1.1	**Water Storage and Pumping System**						
1.1.1	Deep Well Drilling, Development and Disinfection, 20 m deep, complete with 50 mm Ø casing and 32 mm Ø suction pipe conforming to ASTM A 53, Gr. A, Sch. 40 hot-dip galvanized including Well Drilling permit and other accessories as described in the technical specifications and as shown on the drawings	Drilling, Well Development & Disinfection and securing permit		Lot	1	_____ (₱ _____)	₱ _____
1.1.2	Convertible Jet Pump, 2.6m³/h (11.5 gpm) minimum capacity at 35 meters head, 230V, 1phase, 60hz with 25mm Ø hot dip galvanized steel suction pipe conforming to ASTM A53 Grade A, Schedule 40, welded or seamless complete with power cable, instruments & controls, control panel, and other accessories as described in the technical specifications.	Supply, Install and Test		Set	1	_____ (₱ _____)	₱ _____
1.1.3	Elevated Water Storage tank, 900 liters (237gal.) capacity, triple layer polyethylene, cylindrical flat bottom, complete with nozzles/ manhole, inlet and outlet nozzles, supports, overflow and drain, nozzles with pipes.	Supply, Install and Test		Set	1	_____ (₱ _____)	₱ _____
1.1.4	Level Switch, Stainless Steel chamber and float two (2) level set points, field adjustable, designed for top mounting	Supply, Install and Test		Set	1	_____ (₱ _____)	₱ _____
1.1.5	Gate Valve, 32mm Ø, cast bronze, rising stem, screwed ends, Class 150	Supply, Install and Test		Set	1	_____ (₱ _____)	₱ _____
1.1.6	Gate Valve, 25mm Ø, cast bronze, rising stem, screwed ends, Class 150	Supply, Install and Test		Set	1	_____ (₱ _____)	₱ _____
1.1.7	Check Valve, 25mmØ, Swing type, cast bronze, screwed ends, Class 150	Supply, Install and Test		Set	1	_____ (₱ _____)	₱ _____

_____ Name of Firm

_____ Name and Signature of Authorized Representative

_____ Designation

MECHANICAL WORKS

Item No.	Description of Work or Materials	Work to be Done	Ref. Clause	Unit	Estimated Quantity	Unit Price in Pesos (Words and Figures)	Total Amount
1.1.8	Water Pipe, 32mm O.D. (25mm N.D.), unplasticized PVC, schedule 80 or class 150, associated fittings, pipe supports and other accessories as described in the technical specifications	Supply, Excavate, Install, Test, & Backfill		lm	12	_____ (₱ _____)	₱ _____
1.1.9	Pressure Gauge, 100mm Ø dial-gauge, bourdon tube type, 0 - 3 kg/cm² scale range, equipped with isolation valve	Supply, Install and Test		Sets	2	_____ (₱ _____)	₱ _____
1.1.10	Screen, 32mm Ø, stainless steel, 5mm slots fitted with (1) set of Brass Foot Valve	Supply and Install		Set	1	_____ (₱ _____)	₱ _____
1.1.11	Spare parts for convertible jet pump for 1 year operation per manufacturer's standard and as specified in the technical specifications.	Supply & Delivery		Lot	1	_____ (₱ _____)	₱ _____
1.2	**Domestic Water Supply Piping System**						
1.2.1	Gate Valve, 25mm Ø, cast bronze, rising stem, screwed ends, Class 150	Supply, Install and Test		Sets	3	_____	
1.2.2	Gate Valve, 20mmØ, cast bronze, rising stem, screwed ends, Class 150	Supply, Install and Test		Sets	1	_____	
1.2.3	Water Pipe, 32mm O.D. (25mm N.D.), unplasticized PVC, schedule 80 or class 150, associated fittings, pipe supports and other accessories as described in the technical specifications	Supply, Excavate, Install, Test, & Backfill		lm	18	_____ (₱ _____)	₱ _____
1.2.4	Water Pipe, 25mm O.D. (20mm N.D.), unplasticized PVC, schedule 80 or class 150, associated fittings, pipe supports and other accessories as described in the technical specifications	Supply, Excavate, Install, Test, & Backfill		lm	18	_____ (₱ _____)	₱ _____
1.2.5	Water Pipe, 20mm O.D. (15mm N.D.), unplasticized PVC, schedule 80 or class 150, associated fittings, pipe supports and other accessories as described in the technical specifications	Supply, Excavate, Install, Test, & Backfill		lm	6	_____ (₱ _____)	₱ _____

_____ Name of Firm

_____ Name and Signature of Authorized Representative

_____ Designation

MECHANICAL WORKS

Item No.	Description of Work or Materials	Work to be Done	Ref. Clause	Unit	Estimated Quantity	Unit Price in Pesos (Words and Figures)	Total Amount
1.2.6	Hose Bibb, 20mm Ø, bronze body, screwed ends, Class 150	Supply & Install		Sets	3		
1.2.7	Disinfection of elevated tank and domestic water piping system	Supply, perform & Test		lot	1		
2.0	**AIR CONDITIONING & VENTILATION SYSTEM**		MW-5.0				
2.1	**Air-conditioning System**						
2.1.1	Air conditioning units for Switchgears Room, 12,000 kJ/hr minimum cooling capacity, inverter split-type, wall mounted, inverter-type, complete with necessary mounting accessories and controls (infrared remote) and other necessary accessories as described in the technical specifications.	Supply, Install and Test		Sets	2		
2.1.2	Air conditioning units for Control Room, 20,000 kJ/hr minimum cooling capacity, inverter split-type, wall mounted, inverter-type, complete with necessary mounting accessories and controls (infrared remote) and other necessary accessories as described in the technical specifications.	Supply, Install and Test		Sets	2		
2.2	**Ventilating System**						
2.2.1	Exhaust fan for Battery Room, 450m³/h, 240V, 1-phase, 60Hz, wall mounted, propeller type, direct driven, explosion proof, complete with automatic shutter, mounting accessories and controls	Supply, Install and Test		Set	1		
2.2.2	Exhaust fans for Restroom, 150m³/h, 240V, 1-phase, 60Hz, wall mounted, propeller type, direct driven,	Supply, Install and Test		Set	1		
3.0	**FIRE FIGHTING SYSTEM**		MW-6.0				
3.1	Portable Fire Extinguishers, HCFC or Halotron I, 7.1 kg (15 lbs), non-expiry, multi shots, wall hung type with bracket and mounting accessories and shall be in certified/ approved by the certifying body specified in Section VI, Part I, MW-6.1	Supply and Install		Sets	4		

Name of Firm

Name and Signature of Authorized Representative

Designation

MECHANICAL WORKS

Item No.	Description of Work or Materials	Work to be Done	Ref. Clause	Unit	Estimated Quantity	Unit Price in Pesos (Words and Figures)	Total Amount
4.0	**LABELS OR TAGGING**						
4.1	Tagging or Labels for Equipment, Valves, Piping, Instruments and its fixing accessories	Supply & Installation		Lot	1	_____ (₱ _____)	₱ _____
5.0	**PAINTING**						
5.1	Painting for tank support, domestic water equipment & piping, its associated valves, fittings, piping supports and other accessories including touch-up for factory painted equipment and accessories as described in the technical specifications	Supply & Apply		Lot	1	_____ (₱ _____)	₱ _____

TOTAL MECHANICAL WORKS _____ (₱ _____) ₱ _____

Name of Firm

Name and Signature of Authorized Representative

Designation

SECTION VIII

BIDDING FORMS

SECTION VIII – BIDDING FORMS

TABLE OF CONTENTS

Standard Form No: NPCSF-INFR-01

Checklist of Technical & Financial Envelope Requirements for Bidders

A. THE 1ST ENVELOPE (TECHNICAL COMPONENT) SHALL CONTAIN THE FOLLOWING:

1. ELIGIBILITY DOCUMENTS

a. (CLASS A)

- PhilGEPs Certificate of Registration and Membership under Platinum Category (all pages) in accordance with Section 8.5.2 of the Revised IRR of RA. 9184;

  Note: The failure by the prospective bidder to update its Certificate with the current and updated Class "A" eligibility documents shall result in the automatic suspension of the validity of its Certificate until such time that all of the expired Class "A" eligibility documents has been updated

- Special PCAB License in case of Joint Ventures; and registration for the type and cost of the contract to be bid

- Statement of all its ongoing government and private contracts if any, whether similar or not similar in nature and complexity to the contract to be bid *(NPCSF-INFR-02)*

- The Statement of the bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid, and whose value, adjusted to current prices using the Philippine Statistics Authority (PSA) consumer price index, must be at least 50% of the ABC *(NPCSF-INFR-03)* complete with the following supporting documents:

  - Owner's Certificate of Final Acceptance issued by the project owner other than the contractor or a final rating of at least Satisfactory in the Constructors Performance Evaluation System (CPES). In case of contracts with the private sector, an equivalent document (Ex. Official Receipt or Sales Invoice) shall be submitted

  (The Single Largest Completed Contract (SLCC) as declared by the bidder shall be verified and validated to ascertain such completed contract. Hence, bidders must ensure access to sites of such projects/equipment to NPC representatives for verification and validation purposes during post-qualification process.

  It shall be a ground for disqualification, if verification and validation cannot be conducted due to inaccessibility of the site for whatever reason or fault of the bidder.)

- Special PCAB License in case of Joint Ventures

- Duly signed computation of its Net Financial Contracting Capacity (NFCC) at least equal to the ABC *(NPCSF-INFR-04)*;

b. (CLASS B)

- Valid Joint Venture Agreement, if applicable *(NPCSF-INFR-05)*

2. Technical Documents

- Bid Security, any one of the following:

  - Bid Securing Declaration (*NPCSF-INFR-06c*)

    OR

  - Cash or Cashier's/Manager's check issued by a Universal or Commercial Bank – 2% of ABC;

    OR

- Bank draft/guarantee or irrevocable letter of credit issued by a Universal or Commercial Bank: *(NPCSF-INFR-06a) - 2% of ABC;*

  OR

- Surety Bond callable upon demand issued by a reputable surety or insurance company *(NPCSF-INFR-06b) - 5% of ABC, with*

  - Certification from the Insurance Commission as authorized company to issue surety

➢ Duly signed, completely filled-out and notarized Omnibus Sworn statement (Revised) (NPCSF-INFR-07), complete with the following attachments:

- For Sole Proprietorship:
  - Special Power of Attorney
- For Partnership/Corporation/Cooperative/Joint Venture:
  - Document showing proof of authorization (e.g., duly notarized Secretary's Certificate, Board/Partnership Resolution, or Special Power of Attorney, whichever is applicable)

➢ Organization Chart for the project *(NPCSF-INFR-08)*

➢ Duly Signed and completely filled-out List of Contractor's Key Personnel (based on the minimum key personnel) *(NPCSF-INFR-09)*

➢ Duly Signed List of Contractor's Equipment (owned, leased or under purchase agreement *(NPCSF-INFR-12)*

➢ Documents to be submitted with the Bid Proposal as specified in Annex A of Section VI – Part II, Technical Data Sheet (Electrical Works)

➢ Complete eligibility documents of proposed sub-contractor, if applicable

B. THE 2ND ENVELOPE (FINANCIAL COMPONENT) SHALL CONTAIN THE FOLLOWING:

➢ Duly signed Bid Letter indicating the total bid amount in accordance with the prescribed form (*NPCSF-INFR-13)*

➢ Duly signed and completely filled-out Bill of Quantities *(Section VII)* indicating the unit and total prices per item and the total amount in the prescribed Bill of Quantities form.

➢ Duly Signed Detailed Estimates for each items of work showing the computations in arriving at each item's unit prices used in coming up with the bid (*NPCSF-INFR-14)*

➢ Summary sheets indicating the direct unit prices of construction materials, labor rates and equipment rental rates used in coming up with the bid (*NPCSF-INFR-15)*

CONDITIONS:

1. *Each Bidder shall submit Two (2) copies of the first and second components of its Bid, marked Original and photocopy. Only the original copy will be read and considered for the bid. Any misplaced document outside of the Original copy will not be considered. The photocopy is ONLY FOR REFERENCE. NPC may request additional hard copies and/or electronic copies of the Bid. However, failure of the Bidders to comply with the said request shall not be a ground for disqualification.*

2. *A Bidder not submitting bid for reason that his cost estimate is higher than the ABC, is required to submit his letter of non-participation/regret supported by corresponding detailed estimates. Failure to submit the two (2) documents shall be understood as acts that tend to defeat the purpose of public bidding without valid reason as stated under Section 69.1.(i) of the revised IRR of R.A. 9184.*

Standard Form Number: NPCSF-INFR-02

List of All Ongoing Government and Private Contracts Including Contract Awarded But Not Yet Started

Business Name : _____

Business Address : _____

Name of Contract/Location/ Project Cost	a. Owner's Name b. Address c. Telephone Nos.	Nature of Work	Contractor's Role		a. Date Awarded b. Date Started c. Date of Completion or Estimated Completion Time	Value of Outstanding Works
			Description	%		
Government						
Private						
					Total Cost	

The bidder shall declare in this form all his on-going government and private contracts including contracts where the bidder (either as individual or as a Joint Venture) is a partner in a Joint Venture agreement other than his current joint venture where he is a partner. Non declaration will be a ground for disqualification of bid.

Note : This statement shall be supported with the following documents for all the contract(s) stated above which shall be submitted during Post-qualification:

1. Contract/Purchase Order and/or Notice of Award
2. Certification coming from the project owner/client that the performance is satisfactory as of the bidding date/signed Status Report as of the bidding date from Bureau of Construction containing relevant details of slippage, if any, for the declared on-going contracts with Department of Public Works and Highways (DPWH)

Submitted by : _____
(Printed Name & Signature)

Designation : _____

Date : _____

Standard Form Number: NPCSF-INFR-03

The Statement of the bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid

Business Name : _____

Business Address : _____

Name of Contract	a. Owner's Name b. Address c. Telephone Nos.	Nature of Work	Contractor's Role		a. Amount at Award b. Amount at Completion c. Duration	a. Date Awarded b. Contract Effectivity c. Date Completed
			Description	%		

Notes:
1. The bidder must state only one (1) Single Largest Completed Contract (SLCC) similar to the contract to be bid.
2. Supporting documents such as any of the following: Owner's Certificate of Final Acceptance issued by the project owner other than the contractor; *or* A final rating of at least Satisfactory in the Constructors Performance Evaluation System (CPES); *or* Official Receipt (O.R); *or* Sales Invoice for the contract stated above shall be submitted during Bid Opening.

Submitted by _____
(Printed Name & Signature)

Designation : _____

Date : _____

Standard Form Number: NPCSF-INFR-04

NET FINANCIAL CONTRACTING CAPACITY (NFCC)

A. Summary of the Bidder's/Contractor's assets and liabilities on the basis of the income tax return and audited financial statement for the immediately preceding calendar year are:

		Year 20__
1.	Total Assets	
2.	Current Assets	
3.	Total Liabilities	
4.	Current Liabilities	
5.	Net Worth (1-3)	
6.	Net Working Capital (2-4)	

B. The Net Financial Contracting Capacity (NFCC) based on the above data is computed as follows:

NFCC = [(Current assets minus current liabilities) x 15] minus the value of all outstanding or uncompleted portions of the projects under ongoing contracts, including awarded contracts yet to be started coinciding with the contract for this Project.

NFCC = P _____

Herewith attached is certified true copy of the audited financial statement, stamped "RECEIVED" by the BIR or BIR authorized collecting agent for the immediately preceding calendar year.

Submitted by:

_____
Name of Bidder/Contractor

_____
Signature of Authorized Representative

Date : _____

Standard Form Number: NPCSF-INFR-05

JOINT VENTURE AGREEMENT

KNOW ALL MEN BY THESE PRESENTS:

That this JOINT VENTURE AGREEMENT is entered into by and between: _____, of legal age, *(civil status)*_____, authorized representative of _____ and a resident of _____.

- and –

_____, of legal age, *(civil status)*_____, authorized representative of _____ a resident of _____.

That both parties agree to join together their capital, manpower, equipment, and other resources and efforts to enable the Joint Venture to participate in the Bidding and Undertaking of the hereunder stated Contract of the **National Power Corporation.**

NAME OF PROJECT	**CONTRACT AMOUNT**
_____	_____

That the capital contribution of each member firm:

NAME OF FIRM	CAPITAL CONTRIBUTION
1.	₱
2.	₱

That both parties agree to be jointly and severally liable for their participation in the Bidding and Undertaking of the said contract.

That both parties agree that _____ and/or _____ shall be the Official Representative/s of the Joint Venture, and are granted full power and authority to do, execute and perform any and all acts necessary and/or to represent the Joint Venture in the Bidding and Undertaking of the said contract, as fully and effectively and the Joint Venture may do and if personally present with full power of substitution and revocation.

That this Joint Venture Agreement shall remain in effect only for the above stated Contract until terminated by both parties.

_____	_____
Name & Signature of Authorized Representative	*Name & Signature of Authorized Representative*
_____	_____
Official Designation	*Official Designation*
_____	_____
Name of Firm	*Name of Firm*

Witnesses

1. _____ 2. _____

[Jurat]

[Format shall be based on the latest Rules on Notarial Practice]

If the bidder is a joint venture, one of the requirements is the submission of a valid joint venture agreement.

Standard Form Number: NPCSF-INFR-06a

FORM OF BID SECURITY (BANK GUARANTEE)

WHEREAS, *(Name of Bidder)* _____ (hereinafter called "the Bidder") has submitted his bid dated *(Date)* _____ for the *[name of project]* (hereinafter called "the Bid").

KNOW ALL MEN by these presents that We *(Name of Bank)* _____ of *(Name of Country)* _____ having our registered office at _____ (hereinafter called "the Bank" are bound unto National Power Corporation (hereinafter called "the Entity") in the sum of *[amount in words & figures as prescribed in the bidding documents]* for which payment well and truly to be made to the said Entity the Bank binds himself, his successors and assigns by these presents.

SEALED with the Common Seal of the said Bank this _____ day of _____ 20___.

THE CONDITIONS of this obligation are that:

1) if the Bidder withdraws his Bid during the period of bid validity specified in the Bidding Documents; or

2) if the Bidder does not accept the correction of arithmetical errors of his bid price in accordance with the Instructions to Bidder; or

3) if the Bidder, having determined as the LCB, fails or refuses to submit the required tax clearance, latest income and business tax returns and PhilGEPs registration certificate within the prescribed period; or

4) if the Bidder having been notified of the acceptance of his bid and award of contract to him by the Entity during the period of bid validity:

   a) fails or refuses to execute the Contract; or

   b) fails or refuses to submit the required valid JVA, if applicable; or

   c) fails or refuses to furnish the Performance Security in accordance with the Instructions to Bidders;

we undertake to pay to the Entity up to the above amount upon receipt of his first written demand, without the Entity having to substantiate its demand, provided that in his demand the Entity will note that the amount claimed by it is due to the occurrence of any one or combination of the four (4) conditions stated above.

The Guarantee will remain in force up to 120 days after the opening of bids or as it may be extended by the Entity, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this Guarantee should reach the Bank not later than the above date.

DATE _____ SIGNATURE OF THE BANK _____

WITNESS _____ SEAL _____

_____

(Signature, Name and Address)

Standard Form Number: NPCSF-INFR-06b

FORM OF BID SECURITY (SURETY BOND)

BOND NO.: _____ DATE BOND EXECUTED: _____

By this bond, We (*Name of Bidder*) _____ (hereinafter called "the Principal") and *(Name of Surety)* _____ of (*Name of Country of Surety)* _____, authorized to transact business in the Philippines (hereinafter called "the Surety") are held and firmly bound unto National Power Corporation (hereinafter called "the Employer") as Obligee, in the sum of *(amount in words & figures as prescribed in the bidding documents)*, callable on demand, for the payment of which sum, well and truly to be made, we, the said Principal and Surety bind ourselves, our successors and assigns, jointly and severally, firmly by these presents.

SEALED with our seals and dated this _____ day of _____ 20 _____

WHEREAS, the Principal has submitted a written Bid to the Employer dated the _____ day of _____ 20 _____, for the _____ (hereinafter called "the Bid").

NOW, THEREFORE, the conditions of this obligation are:

1) if the Bidder withdraws his Bid during the period of bid validity specified in the Bidding Documents; or

2) if the Bidder does not accept the correction of arithmetical errors of his bid price in accordance with the Instructions to Bidder; or

3) if the Bidder, having determined as the LCB, fails or refuses to submit the required tax clearance, latest income and business tax returns and PhilGEPs registration certificate within the prescribed period; or

4) if the Bidder having been notified of the acceptance of his bid and award of contract to him by the Entity during the period of bid validity:

   d) fails or refuses to execute the Contract; or

   e) fails or refuses to submit the required valid JVA, if applicable; or

   f) fails or refuses to furnish the Performance Security in accordance with the Instructions to Bidders;

then this obligation shall remain in full force and effect, otherwise it shall be null and void.

PROVIDED HOWEVER, that the Surety shall not be:

a) liable for a greater sum than the specified penalty of this bond, nor

b) liable for a greater sum that the difference between the amount of the said Principal's Bid and the amount of the Bid that is accepted by the Employer.

Standard Form Number: NPCSF-INFR-06b
Page 2 of 2

This Surety executing this instrument hereby agrees that its obligation shall be valid for 120 calendar days after the deadline for submission of Bids as such deadline is stated in the Instructions to Bidders or as it may be extended by the Employer, notice of which extension(s) to the Surety is hereby waived.

PRINCIPAL _____	SURETY _____
SIGNATURE(S) _____	SIGNATURES(S) _____
NAME(S) AND TITLE(S) _____	NAME(S) _____
SEAL _____	SEAL _____

Standard Form No: NPCSF-INFR-06c

REPUBLIC OF THE PHILIPPINES)
CITY OF _____) S.S.

BID-SECURING DECLARATION

SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10MVA MASBATE (MALINTA) SUBSTATION

LuzP23Z1636Sce

To: **National Power Corporation**
Gabriel Y. Itchon Building
Sen. Miriam P. Defensor-Santiago Avenue
(formerly BIR Road) cor. Quezon Avenue,
Diliman, Quezon City Philippines 1100

I/We[1], the undersigned, declare that:

1. *I/We* understand that, according to your conditions, bids must be supported by a Bid Security, which may be in the form of a Bid-Securing Declaration.
2. *I/We* accept that: (a) *I/we* will be automatically disqualified from bidding for any contract with any procuring entity for a period of two (2) years upon receipt of your Blacklisting Order; and, (b) *I/we* will pay the applicable fine provided under Section 6 of the Guidelines on the Use of Bid Securing Declaration, within fifteen (15) days from receipt of the written demand by the Procuring Entity for the commission of acts resulting to the enforcement of the Bid Securing Declaration under Sections 23.1 (b), 34.2, 40.1 and 69.1, except 69.1 (f) of the IRR of R.A. 9184; without prejudice to other legal action the government may undertake.
3. *I/We* understand that this Bid-Securing Declaration shall cease to be valid on the following circumstances:
   (a) Upon expiration of the bid validity period, or any extension thereof pursuant to your request;
   (b) *I am/we are* declared ineligible or post-disqualified upon receipt of your notice to such effect, and (i) *I/we* failed to timely file a request for reconsideration or (ii) *I/we* filed a waiver to avail of said right;
   (c) *I am/we are* declared as the bidder with the Lowest Calculated and Responsive Bid, and *I/we* have furnished the performance security and signed the Contract.

IN WITNESS WHEREOF, *I/we* have hereunto set my hand this _____ day of _____ 20____ at _____, Philippines.

_____
[Name and Signature of Bidder's Representative/ Authorized Signatory]/ [Signatory's legal capacity]
Affiant

[Jurat]

[Format shall be based on the latest Rules on Notarial Practice]

---

[1] *Select one and delete the other. Adopt same instruction for similar terms throughout the document.*

Standard Form No: NPCSF-INFR-07b

Omnibus Sworn Statement (Revised)

REPUBLIC OF THE PHILIPPINES)
CITY/MUNICIPALITY OF _____) S.S.

AFFIDAVIT

I, [Name of Affiant], of legal age, [Civil Status], [Nationality], and residing at [Address of Affiant], after having been duly sworn in accordance with law, do hereby depose and state that:

1. *[Select one, delete the other:]*

   [If a sole proprietorship:] I am the sole proprietor or authorized representative of [Name of Bidder] with office address at [address of Bidder];

   [If a partnership, corporation, cooperative, or joint venture:] I am the duly authorized and designated representative of [Name of Bidder] with office address at [address of Bidder];

2. *[Select one, delete the other:]*

   [If a sole proprietorship:] As the owner and sole proprietor, or authorized representative of [Name of Bidder], I have full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for [Name of the Project] of the [Name of the Procuring Entity], as shown in the attached duly notarized Special Power of Attorney;

   [If a partnership, corporation, cooperative, or joint venture:] I am granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for [Name of the Project] of the [Name of the Procuring Entity], as shown in the attached [state title of attached document showing proof of authorization (e.g., duly notarized Secretary's Certificate, Board/Partnership Resolution, or Special Power of Attorney, whichever is applicable;)];

3. [Name of Bidder] is not "blacklisted" or barred from bidding by the Government of the Philippines or any of its agencies, offices, corporations, or Local Government Units, foreign government/foreign or international financing institution whose blacklisting rules have been recognized by the Government Procurement Policy Board, by itself or by relation, membership, association, affiliation, or controlling interest with another blacklisted person or entity as defined and provided for in the Uniform Guidelines on Blacklisting;

4. Each of the documents submitted in satisfaction of the bidding requirements is an authentic copy of the original, complete, and all statements and information provided therein are true and correct;

5. [Name of Bidder] is authorizing the Head of the Procuring Entity or its duly authorized representative(s) to verify all the documents submitted;

6. *[Select one, delete the rest:]*

   [If a sole proprietorship:] The owner or sole proprietor is not related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

[If a partnership or cooperative:] None of the officers and members of *[Name of Bidder]* is related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

[If a corporation or joint venture:] None of the officers, directors, and controlling stockholders of *[Name of Bidder]* is related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

7. *[Name of Bidder]* complies with existing labor laws and standards; and

8. *[Name of Bidder]* is aware of and has undertaken the responsibilities as a Bidder in compliance with the Philippine Bidding Documents, which includes:

   a. Carefully examining all of the Bidding Documents;

   b. Acknowledging all conditions, local or otherwise, affecting the implementation of the Contract;

   c. Making an estimate of the facilities available and needed for the contract to be bid, if any; and

   d. Inquiring or securing Supplemental/Bid Bulletin(s) issued for the *[Name of the Project]*.

9. *[Name of Bidder]* did not give or pay directly or indirectly, any commission, amount, fee, or any form of consideration, pecuniary or otherwise, to any person or official, personnel or representative of the government in relation to any procurement project or activity.

10. In case advance payment was made or given, failure to perform or deliver any of the obligations and undertakings in the contract shall be sufficient grounds to constitute criminal liability for Swindling (Estafa) or the commission of fraud with unfaithfulness or abuse of confidence through misappropriating or converting any payment received by a person or entity under an obligation involving the duty to deliver certain goods or services, to the prejudice of the public and the government of the Philippines pursuant to Article 315 of Act No. 3815 s. 1930, as amended, or the Revised Penal Code.

IN WITNESS WHEREOF, I have hereunto set my hand this __ day of ___, 20__ at _____, Philippines.

[Insert NAME OF BIDDER OR ITS AUTHORIZED REPRESENTATIVE]
[Insert signatory's legal capacity]
Affiant

[Jurat]
[Format shall be based on the latest Rules on Notarial Practice]

Standard Form Number: NPCSF-INFR-08

CONTRACTOR'S ORGANIZATIONAL CHART FOR THE CONTRACT

Submit Copy of the Organizational Chart that the Contractor intends to use to execute the Contract if awarded to him. Indicate in the chart the names of the Project Manager, Project Engineer, Foreman and other Key Engineering Personnel.

Attach the required Proposed Organizational Chart for the Contract as stated above

NOTES:

1. *This organization chart should represent the "Contractor's Organization" required for the Project, and not the organizational chart of the entire firm.*
2. *Each such nominated engineer/key personnel shall comply with and submit duly accomplished forms NPCSF-INFR-10a, NPCSF-INFR-10b and NPCSF-INFR-11, which shall be submitted during post-qualification.*
3. *All these are required to be in the Technical Envelope of the Bidder.*

Standard Form Number: NPCSF-INFR-09

LIST OF KEY PERSONNEL PROPOSED TO BE ASSIGNED TO THE CONTRACT

(Based on the Minimum Key Personnel Required in the Bidding Documents)

Business Name: _____

Business: _____

_____

Particulars	Project Manager (if applicable)	Project Engineer	Materials Engineer (if applicable)	Safety Officer	
1 Name					
2 Address					
3 Date of Birth					
4 Education					
5 License/Qualification Details:					
a. Profession/Specialization					
b. Registration Number					
c. Registration Date					
d. Valid Until					
6 Experience Data:					
a. Years employed by the Bidder					
b. General Experience (yrs.)					
c. Professional Experience on similar project (yrs.)					

Submitted by: _____

(Printed Name & Signature)

Designation: _____

Date: _____

One of the requirements from the bidder to be included in its Technical Envelope is a list of contractor's key personnel (based on the minimum key personnel required in the bidding documents) to be assigned to the contract to be bid, with their complete qualification and experience data.

Standard Form Number: NPCSF-INFR-10a

NOTE: THIS FORM SHALL BE SUBMITTED DURING POST-QUALIFICATION

KEY PERSONNEL'S CERTIFICATE OF EMPLOYMENT
(PROFESSIONAL PERSONNEL)

_____
Issuance Date

THE PRESIDENT
National Power Corporation
Gabriel Y. Itchon Building
Sen. Miriam P. Defensor-Santiago Avenue
(formerly BIR Road) cor. Quezon Avenue,
Diliman, Quezon City Philippines 1100

Dear Sir:

I am *(Name of Nominee)* _____ a Licensed _____ Engineer with Professional License No. _____ issued on *(date of issuance)* _____ at *(place of issuance)* _____.

I hereby certify that *(Name of Bidder)* _____ has engaged my services as *(Designation)* _____ for the *(Name of Project)* _____, if awarded to it.

As *(Designation)* _____, I supervised the following completed projects similar to the contract under bidding:

NAME OF PROJECT	OWNER	COST	DATE COMPLETED

At present, I am supervising the following projects:

NAME OF PROJECT	OWNER	COST	DATE COMPLETED

In case of my separation for any reason whatsoever from the above-mentioned Contractor, I shall notify the National Power Corporation at least twenty one (21) days before the effective date of my separation.

As *(Designation)* _____, I know I will have to stay in the job site all the time to supervise and manage the Contract works to the best of my ability, and aware that I am authorized to handle only one (1) contract at a time.

I do not allow the use of my name for the purpose of enabling the above-mentioned Contractor to qualify for the Contract without any firm commitment on my part to assume the post of *(Designation)* _____ therefor, if the contract is awarded to him since I understand that to do so will be a sufficient ground for my disqualification as *(Designation)* _____ in any future National Power Corporation bidding or employment with any Contractor doing business with the National Power Corporation.

_____
(Name and Signature)
AFFIANT

[Jurat]
[Format shall be based on the latest Rules on Notarial Practice]

One of the requirements from the bidder is a list of contractor's key personnel (viz. Project Manager, Project Engineer, Construction Safety Officer, Foremen, etc), to be assigned to the contract to be bid, with their complete qualification and experience data (including the key personnel's signed written commitment to work for the project once awarded the contract).

Standard Form Number: NPCSF-INFR-10b

NOTE: THIS FORM SHALL BE SUBMITTED DURING POST-QUALIFICATION

KEY PERSONNEL'S CERTIFICATE OF EMPLOYMENT
(CONSTRUCTION SAFETY AND HEALTH OFFICER)

_____
Issuance Date

THE PRESIDENT
National Power Corporation
Gabriel Y. Itchon Building
Sen. Miriam P. Defensor-Santiago Avenue
(formerly BIR Road) cor. Quezon Avenue,
Diliman, Quezon City Philippines 1100

Dear Sir:

I am *(Name of Nominee)* _____ an Construction Safety & Health Officer with Certificate No. _____ issued on *(date of issuance)* _____ at *(place of issuance)* _____.

I hereby certify that *(Name of Bidder)* _____ has engaged my services as Construction Safety & Health Officer for the *(Name of Project)* _____, if awarded to it.

I am the Construction Safety & Health Officer of the following completed projects similar to the contract under bidding:

NAME OF PROJECT	OWNER	COST	DATE COMPLETED

At present, I am the Construction Safety & Health Officer of the following projects:

NAME OF PROJECT	OWNER	COST	DATE COMPLETED

In case of my separation for any reason whatsoever from the above-mentioned Contractor, I shall notify the National Power Corporation at least twenty one (21) days before the effective date of my separation.

As Construction Safety & Health Officer, I know I will have to stay in the job site all the time and aware that I am authorized to handle only one (1) contract at a time.

I do not allow the use of my name for the purpose of enabling the above-mentioned Contractor to qualify for the Contract without any firm commitment on my part to assume the post of Construction Safety & Health Officer, if the contract is awarded to him since I understand that to do so will be a sufficient ground for my disqualification as Construction Safety & Health Officer in any future National Power Corporation bidding or employment with any Contractor doing business with the National Power Corporation.

_____
(Name and Signature)
AFFIANT

[Jurat]
[Format shall be based on the latest Rules on Notarial Practice]

One of the requirements from the bidder is a list of contractor's key personnel (viz. Project Manager, Project Engineer, Construction Safety Officer, Foremen, etc), to be assigned to the contract to be bid, with their complete qualification and experience data (including the key personnel's signed written commitment to work for the project once awarded the contract).

Standard Form Number: NPCSF-INFR-11

NOTE: THIS FORM SHALL BE SUBMITTED DURING POST-QUALIFICATION

KEY PERSONNEL
(FORMAT OF BIO-DATA)

Give the detailed information of the following personnel who are scheduled to be assigned as full-time field staff for the project. Fill up a form for each person.

1. Name : _____
2. Date of Birth : _____
3. Nationality : _____
4. Education and Degrees : _____
5. Specialty : _____
6. Registration : _____
7. Length of Service with the Firm : _____ Year from _____ (months) _____ (year)
   To _____ (months) _____ (year)
8. Years of Experience : _____
9. If Item 7 is less than ten (10) years, give name and length of service with previous employers for a ten (10)-year period (attached additional sheet/s), if necessary:

Name and Address of Employer	Length of Service
_____	_____ year(s) from _____ to _____
_____	_____ year(s) from _____ to _____
_____	_____ year(s) from _____ to _____

10. Experience:

    This should cover the past ten (10) years of experience. (Attached as many pages as necessary to show involvement of personnel in projects using the format below).

One of the requirements from the bidder is a list of contractor's key personnel (viz. Project Manager, Project Engineer, Construction Safety Officer, Foremen, etc), to be assigned to the contract to be bid, with their complete qualification and experience data (including the key personnel's signed written commitment to work for the project once awarded the contract).

Standard Form Number: NPCSF-INFR-11
Page 2 of 2

1. Name : _____

2. Name and Address of Owner : _____

3. Name and Address of the Owner's Engineer (Consultant) : _____

4. Indicate the Features of Project (particulars of the project components and any other particular interest connected with the project): _____

5. Contract Amount Expressed in Philippine Currency : _____

6. Position : _____

7. Structures for which the employee was responsible : _____

8. Assignment Period : from _____ (months) _____ (years)
: to _____ (months) _____ (years)

_____
Name and Signature of Employee

It is hereby certified that the above personnel can be assigned to this project, if the contract is awarded to our company.

_____ _____
(Place and Date) (The Authorized Representative)

One of the requirements from the bidder is a list of contractor's key personnel (viz. Project Manager, Project Engineer, Construction Safety Officer, Foremen, etc), to be assigned to the contract to be bid, with their complete qualification and experience data (including the key personnel's signed written commitment to work for the project once awarded the contract).

Standard Form Number: NPCSF-INFR-12

LIST OF EQUIPMENT, OWNED OR LEASED AND/OR UNDER PURCHASE AGREEMENTS

(Based on the Minimum Equipment Required in the Bidding Documents)

Business Name: _____

Business: _____

_____

Description	Model/Year	Capacity / Performance / Size	Plate No.	Motor No. / Body No.	Location	Condition	Proof of Ownership / Lessor or Vendor
A. Owned							
i.							
ii.							
iii.							
iv.							
v.							
B. Leased							
i.							
ii.							
iii.							
iv.							
v.							
C. Under Purchase Agreements							
i.							
ii.							
iii.							
iv.							
v.							

Submitted by: _____

(Printed Name & Signature)

Designation: _____

Date: _____

One of the requirements from the bidder to be included in its Technical Envelope is the list of its equipment units pledged for the contract to be bid, based on minimum equipment required in the bidding documents, which are owned, leased, and/or under purchase agreements.
This shall be supported by proof of ownership and/or certification of availability of equipment from the equipment lessor for the duration of the project, to be submitted during post-qualification.

Standard Form No. : NPCSF-INFR-13

BID LETTER

Date: _____

To: **THE PRESIDENT**
National Power Corporation
Gabriel Y. Itchon Building
Sen. Miriam P. Defensor-Santiago Avenue
(formerly BIR Road) cor. Quezon Avenue,
Diliman, Quezon City Philippines 1100

We, the undersigned, declare that:

(a) We have examined and have no reservation to the Bidding Documents, including Addenda, for the Contract **SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10MVA MASBATE (MALINTA) SUBSTATION (LuzP23Z1636Sce).**

(b) We offer to execute the Works for this Contract in accordance with the Bid Documents, Technical Specifications, General and Special Conditions of Contract accompanying this Bid;

The total price of our Bid, excluding any discounts offered below is: *[insert information]* _____;

The discounts offered and the methodology for their application are: *[insert information]* _____;

(c) Our Bid shall be valid for a period of *[insert number]* _____ days from the date fixed for the Bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

(d) If our Bid is accepted, we commit to obtain a Performance Security in the amount of *[insert percentage amount]* _____ percent of the Contract Price for the due performance of the Contract;

(e) Our firm, including any subcontractors or suppliers for any part of the Contract, have nationalities from the following eligible countries: *[insert information]* _____;

(f) We are not participating, as Bidders, in more than one Bid in this bidding process, other than alternative offers in accordance with the Bidding Documents;

(g) Our firm, its affiliates or subsidiaries, including any subcontractors or suppliers for any part of the Contract, has not been declared ineligible by the Funding Source;

(h) We understand that this Bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal Contract is prepared and executed; and

(i) We understand that you are not bound to accept the Lowest Calculated Bid or any other Bid that you may receive.

(j) We likewise certify/confirm that the undersigned, is the duly authorized representative of the bidder, and granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for the **SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10MVA MASBATE (MALINTA) SUBSTATION (LuzP23Z1636Sce)** of the National Power Corporation.

(k) We acknowledge that failure to sign each and every page of this Bid Letter, including the Bill of Quantities, shall be a ground for the rejection of our bid.

Name: _____

In the capacity of: _____

Signed: _____

Duly authorized to sign the Bid for and on behalf of: _____

Date: _____

Standard Form No. : NPCSF-INFR-14

DETAILED COST ESTIMATE FORM

Name of Bidder : _____

Item No.	Item Description	Qty.	Unit of Measure	Direct Cost (DC)				Mark-Up (MU)		VAT	Unit Cost	Total Price
				Materials	Labor	Equipment	Transport	OCM	Profit			
		(A)		(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
								[(B)+(C)+ (D)+(E)] x % OCM	[(B)+(C)+ (D)+(E)] x % PROFIT	[(B)+(C)+ (D)+(E) + (F) + (G)] x % VAT	[(B)+(C)+ (D)+(E) + (F) + (G) + (H)] / (A)	(A) x (I)
											TOTAL	

NOTES:

1. The Bidder must provide all the information required above.
2. All pay items in the Bill of Quantities must be included the detailed cost estimate.
3. Unit Price and Total price in this form must be the same with the Bill of Quantities and Bid Letter.

_____ Name, Signature of Authorized Representative

_____ Designation

Standard Form No. : NPCSF-INFR-15

SUMMARY SHEETS OF MATERIALS PRICES, LABOR RATES AND EQUIPMENT RENTAL RATES

Name of Bidder : _____

I. Unit Prices of Materials

Materials Description	Unit	Unit Price
1.		
2.		
3.		
4.		
5.		
6.		
7.		

II. Manpower Hourly Rates

Designation	Rate/Hr.
1.	
2.	
3.	
4.	
5.	
6.	
7.	

III. Equipment Hourly Rental Rates

Equipment Description	Rental Rate/Hr.
1.	
2.	
3.	
4.	
5.	
6.	
7.	

Name, Signature of Authorized Representative

Designation

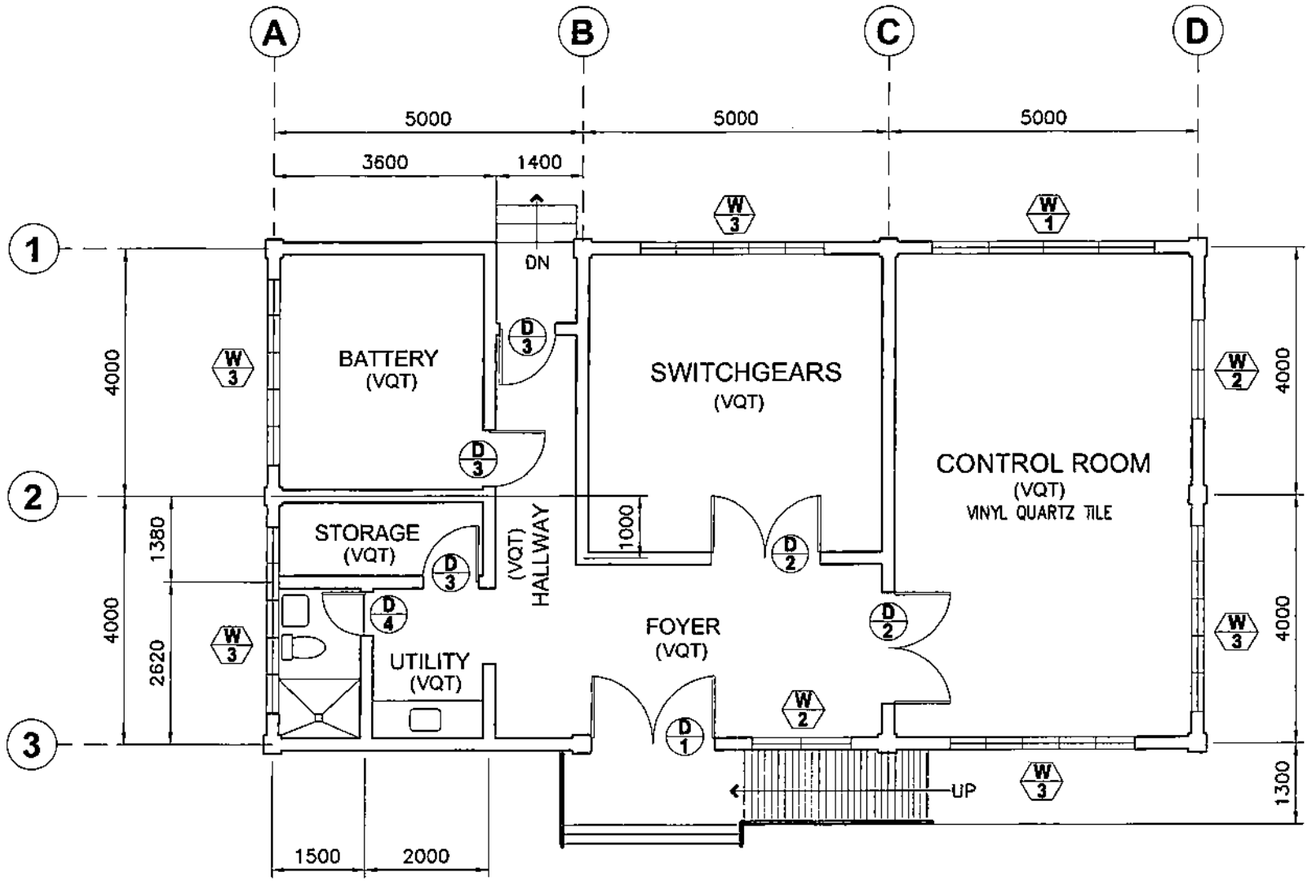
SECTION IX

BID DRAWINGS

SECTION IX - BID DRAWINGS

AW - ARCHITECTURAL WORKS

DRAWING NO.	TITLE
MSS-BDA-22.001	CONTROL HOUSE (Floor Plan)
MSS-BDA-22.002	CONTROL HOUSE (Roof Plan)
MSS-BDA-22.003	CONTROL HOUSE (Reflected Ceiling Plan)
MSS-BDA-22.004	CONTROL HOUSE (Elevations)
MSS-BDA-22.005	CONTROL HOUSE (Sections)
MSS-BDA-22.006	CONTROL HOUSE (Schedule of Doors & Windows)
MSS-BDA-22.007	PUMPHOUSE (Plan & Elevation)
MSS-BDA-22.008	GUARDHOUSE (Plan, Elev. & Sched. of Doors & Windows)
MSS-BDA-22.009	UTILITIES COUNTER AND WALL CABINETS (Elevations)



FLOOR PLAN

SCALE 1:100

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

TITLE: **CONTROL HOUSE (FLOOR PLAN)**

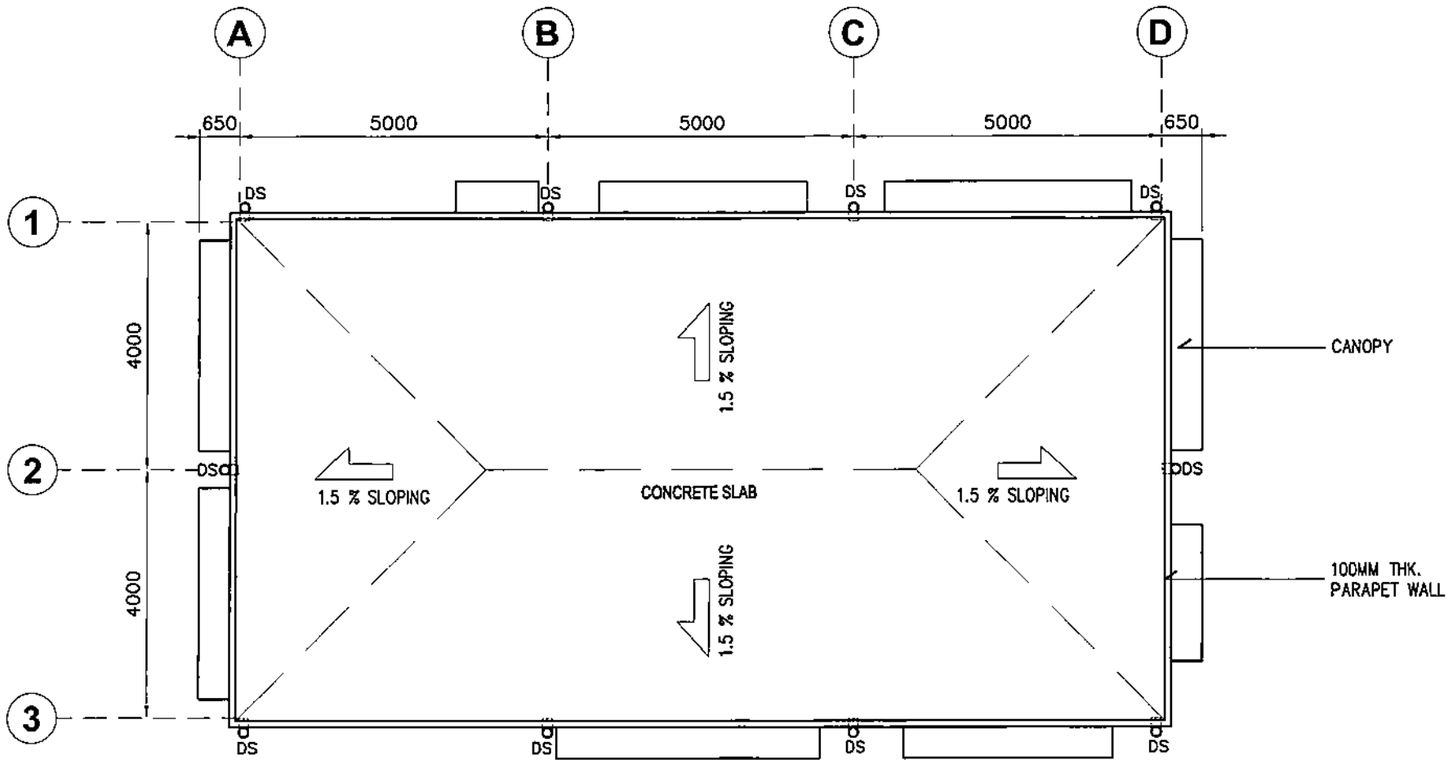
	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

SUBMITTED: R. R. R. VILLANUEVA, Principal Architect A, CEAD
RECOMMENDED: A. C. ESPIRITU, Manager, CEAD
APPROVED: G. B. MAGPOC JR., Manager, DDO

DWG. NO. MSS-BDA-22.001 SPECS. NO. LuzP23Z1636Sce

SCALE: 1:100 **BID DRAWING** REV. 0

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.



OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

TITLE: **CONTROLHOUSE**
(ROOF PLAN)

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

SUBMITTED: R. R. R. VILLANUEVA
Principal Architect A, CEAD

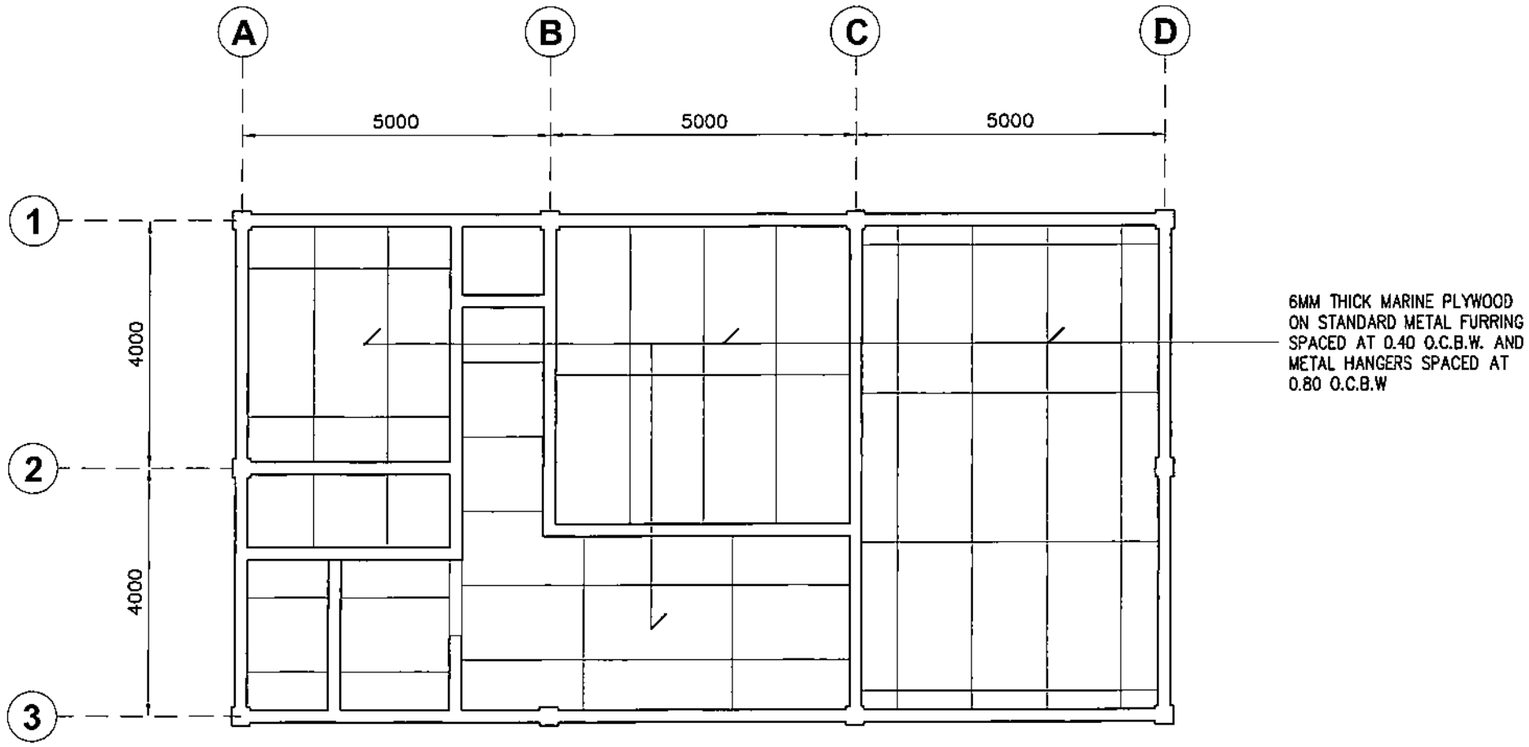
RECOMMENDED: A. C. ESPIRITU
Manager, CEAD

APPROVED: G. B. MAGPOC JR.
Manager, DDD

DWG. NO. MSS-BDA-22.002 | SPECS. NO. LuzP23Z1636Sce

SCALE: 1:100 | **BID DRAWING** | REV. 0

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.



REFLECTED CEILING PLAN

SCALE 1:100

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

TITLE: **CONTROLHOUSE**
(REFLECTED CEILING PLAN)

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

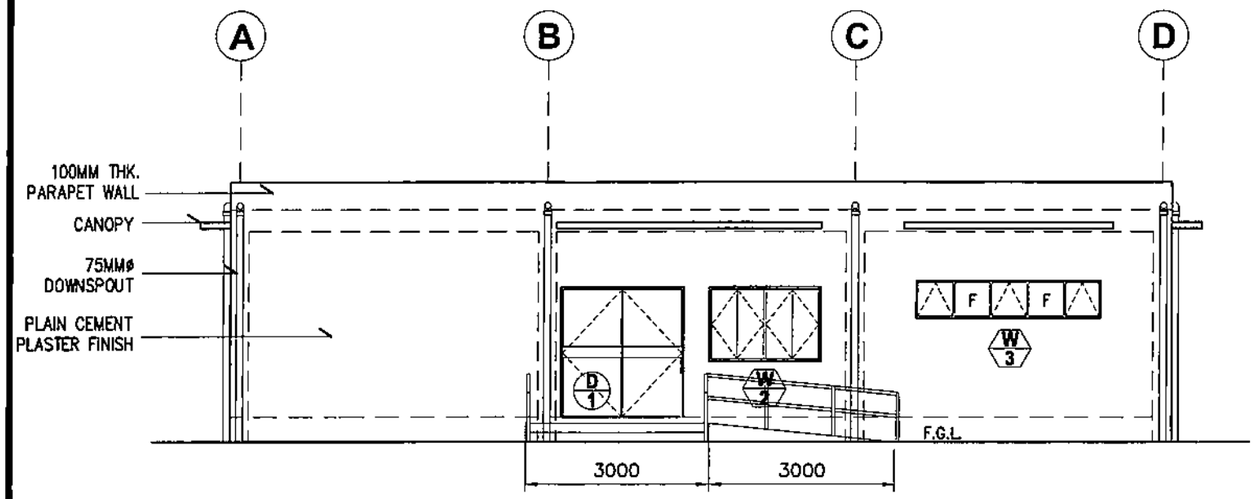
SUBMITTED: R. R. R. VILLANUEVA
Principal Architect A, CEAD

RECOMMENDED: A. C. ESPIRITU
Manager, CEAD

APPROVED: G. B. MAGPOC JR.
Manager, OOD

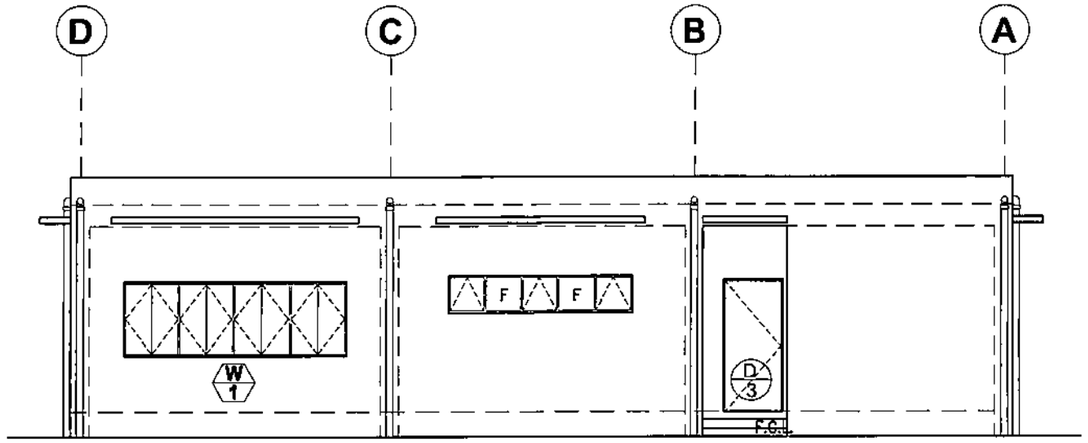
DWG. NO. MSS-BDA-22.003 | SPECS. NO. LuzP23Z1636Sce

SCALE: 1:100 | BID DRAWING | REV. 0



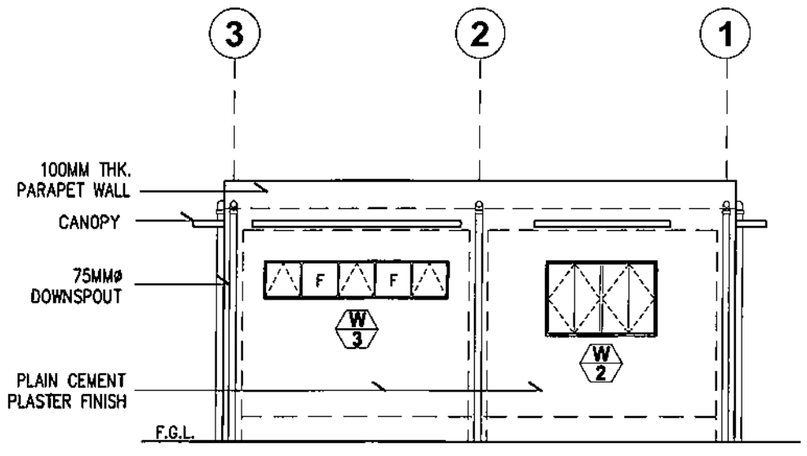
FRONT ELEVATION

SCALE 1:100



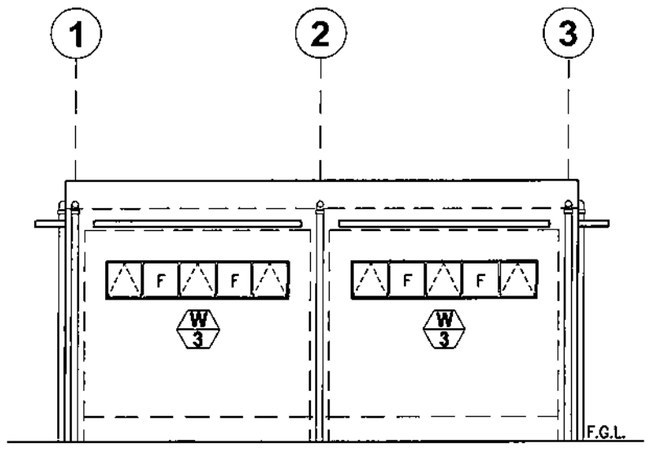
REAR ELEVATION

SCALE 1:100



RIGHT SIDE ELEVATION

SCALE 1:100



LEFT SIDE ELEVATION

SCALE 1:100

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

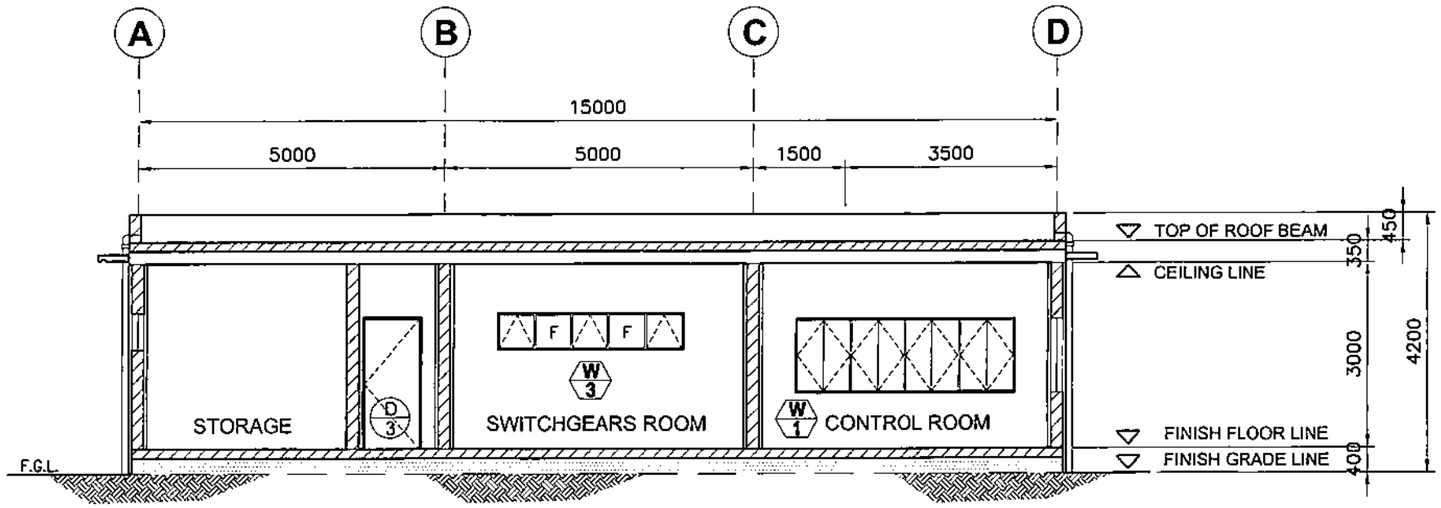
TITLE: **CONTROLHOUSE (ELEVATIONS)**

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

SUBMITTED: R. R. VILLANUEVA, Principal Architect A, CEAD
RECOMMENDED: A. C. ESPIRITU, Manager, CEAD
APPROVED: G. B. MAGPOC JR., Manager, DDD

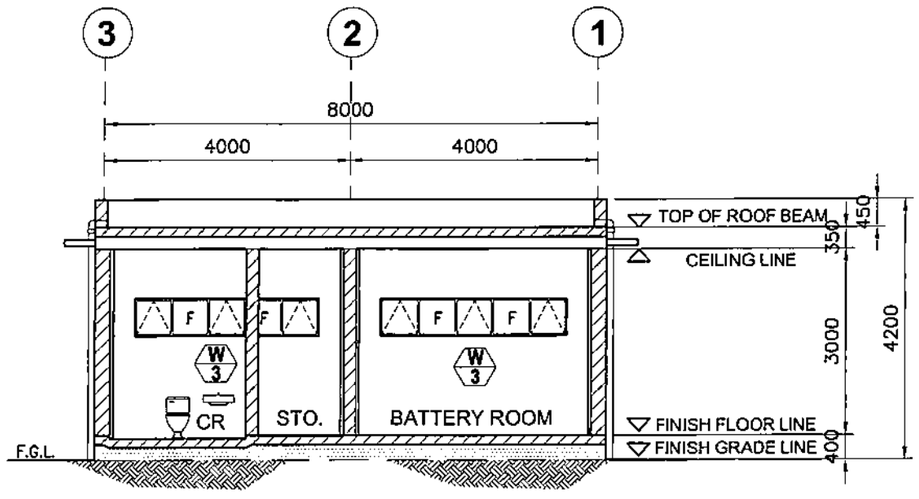
DWG. NO. MSS-BDA-22.004 | SPECS. NO. LuzP23Z1636Sce

SCALE: 1:100 | **BID DRAWING** | REV. 0



LONGITUDINAL SECTION

SCALE 1:100



CROSS SECTION

SCALE 1:100

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

TITLE: **CONTROLHOUSE**
(SECTIONS)

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

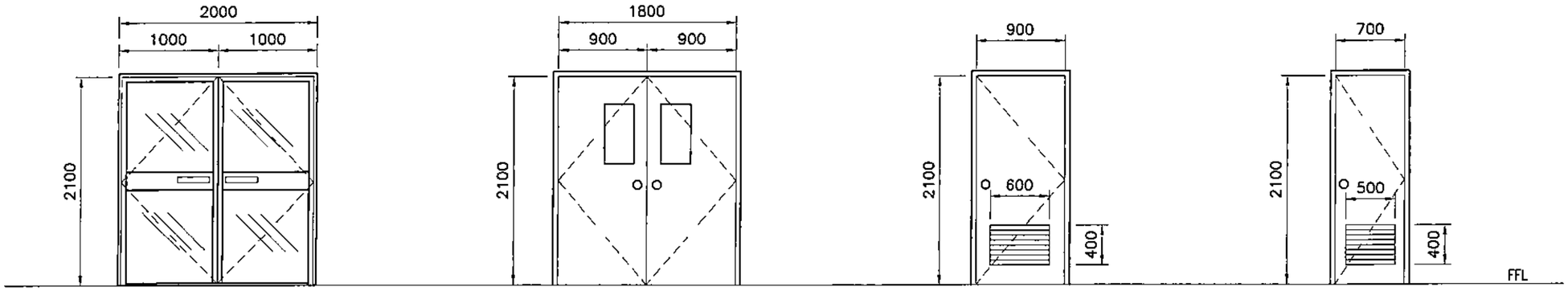
SUBMITTED: R. R. R. VILLANUEVA
Principal Architect A, CEAD

RECOMMENDED: A. C. ESPIRITU
Manager, CEAD

APPROVED: G. B. MAGPOC JR.
Manager, DDD

DWG. NO. MSS-BDA-22.005 SPECS. NO. LuzP23Z1636Sce

SCALE: 1:100 BID DRAWING REV. 0



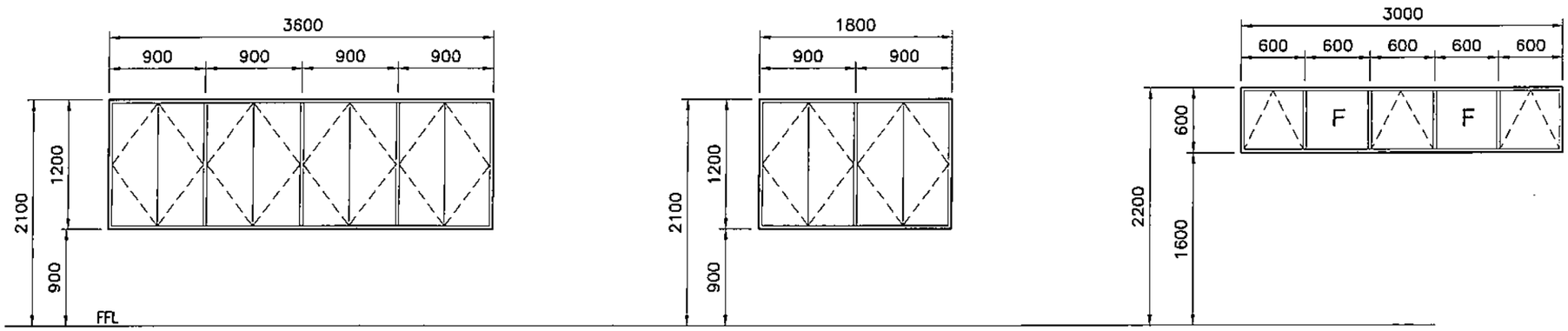
(D/1) ALUMINUM AND GLASS
- : ANODIZED SILVER ALUMINUM
- : 6 MM THK CLEAR GLASS
- : DOUBLE SWING DOOR
- : COMPLETE ACCESSORIES AND LOCKS

(D/2) WOODEN FLUSH TYPE
- : DOUBLE SWING
- : 2x5" HARD WD DOOR JAMB
- : MARINE PLYWD BOTH FACES
- : 5 MM THK CLEAR GLASS
- : COMPLETE WITH HARDWARES INCLUDING HEAVY DUTY DOOR CLOSER – ONE SET

(D/3) WOODEN FLUSH TYPE
- : 2x5" HARD WD DOOR JAMB
- : MARINE PLYWD BOTH FACES
- : 5 MM THK CLEAR GLASS
- : COMPLETE WITH HARDWARES INCLUDING HEAVY DUTY DOOR CLOSER – ONE SET

(D/4) WOODEN FLUSH TYPE
- : 2x5" HARD WD DOOR JAMB
- : MARINE PLYWD BOTH FACES
- : 5 MM THK CLEAR GLASS
- : COMPLETE WITH HARDWARES

SCHEDULE OF DOORS
SCALE 1:50



(W/1) STEEL CASEMENT WINDOW
- : 7/8 HEAVY SECTION Z–BAR
- : SOLID T–BAR MULLION
- : 7/32" CLEAR GLASS

(W/2) STEEL CASEMENT WINDOW
- : 7/8 HEAVY SECTION Z–BAR
- : SOLID T–BAR MULLION
- : 7/32" CLEAR GLASS

(W/3) STEEL CASEMENT WINDOW
- : 7/8 HEAVY SECTION Z–BAR
- : SOLID T–BAR MULLION
- : 7/32" CLEAR GLASS

SCHEDULE OF WINDOWS
SCALE 1:50

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

TITLE: **CONTROLHOUSE**
(SCHEDULE OF DOORS & WINDOWS)

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

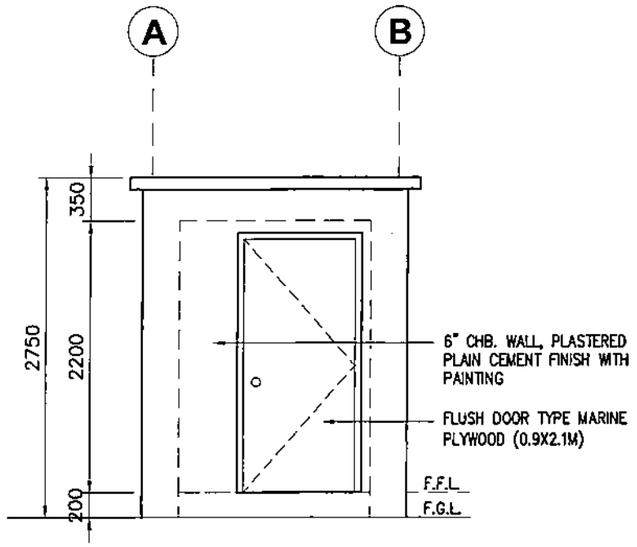
SUBMITTED: R. R. R. VILLANUEVA, Principal Architect A, CEAD
RECOMMENDED: A. C. ESPIRITU, Manager, CEAD
APPROVED: G. B. MAGPOC JR., Manager, DDD

DWG. NO. MSS-BDA-22.006 | SPECS. NO. LuzP23Z1636Sce

SCALE: AS SHOWN | **BID DRAWING** | REV. 0

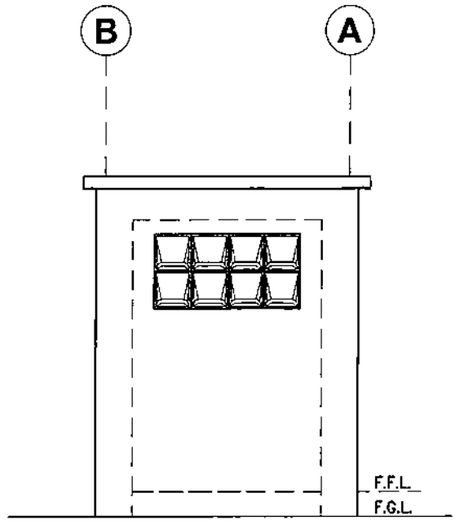
NOTES:

1. WORK THIS DRAWING WITH MECHANICAL DRAWINGS.



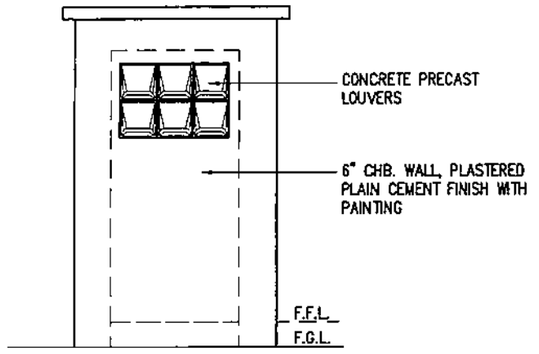
FRONT ELEVATION

SCALE 1:50



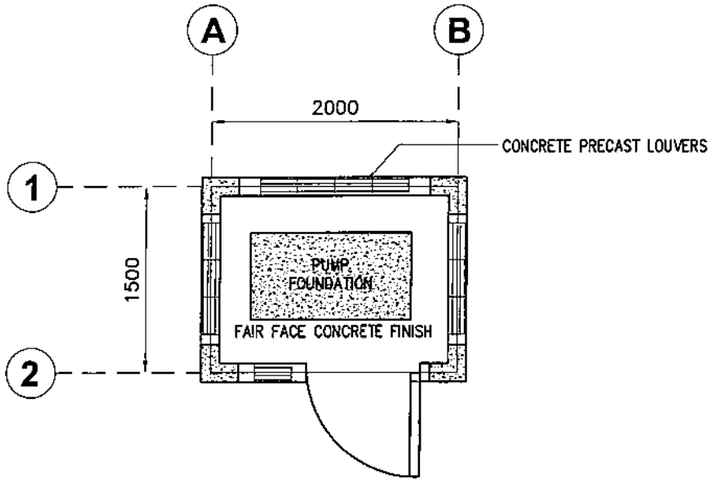
REAR ELEVATION

SCALE 1:50



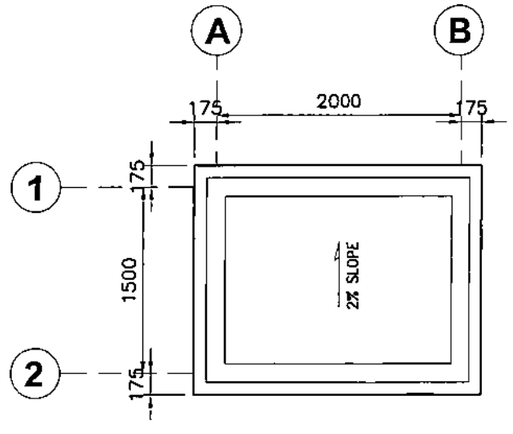
SIDE ELEVATION

SCALE 1:50



FLOOR PLAN

SCALE 1:50



ROOF PLAN

SCALE 1:50

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: NATIONAL POWER CORPORATION
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

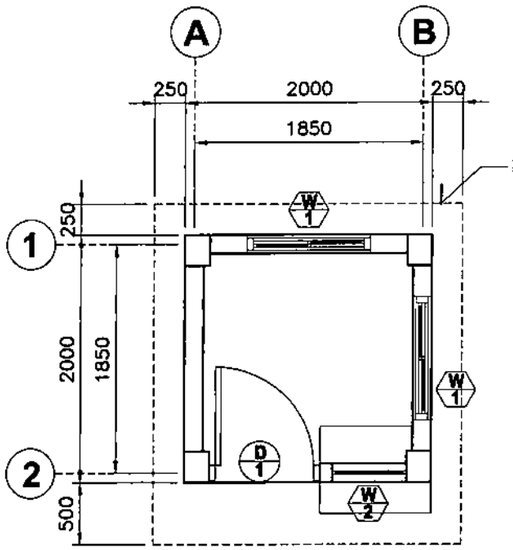
TITLE: **PUMP HOUSE (PLAN & ELEVATION)**

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

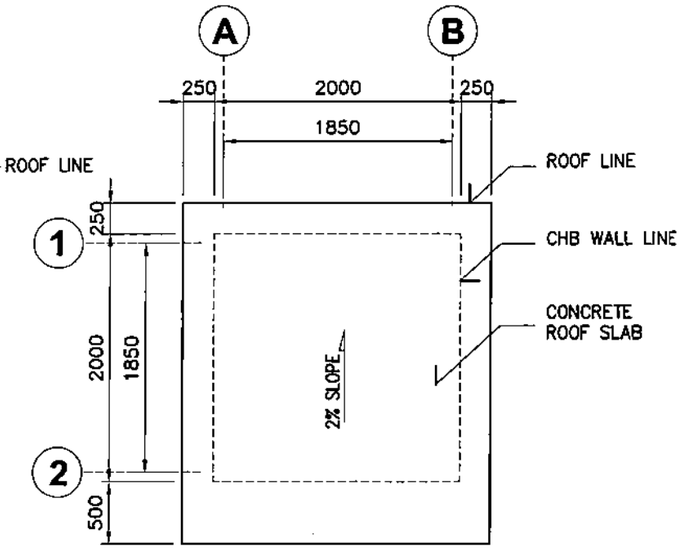
SUBMITTED: R. R. R. VILLANUEVA, Principal Architect A, CEAD
RECOMMENDED: A. C. ESPIRITU, Manager, CEAD
APPROVED: G. B. MAGPOC JR., Manager, DDD

DWG. NO. MSS-BDA-22.007 SPECS. NO. LuzP23Z1636Sce

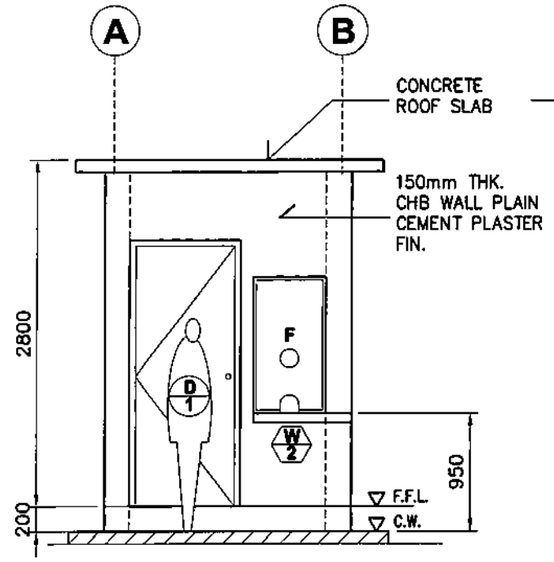
SCALE: 1:50 **BID DRAWING** REV. 0



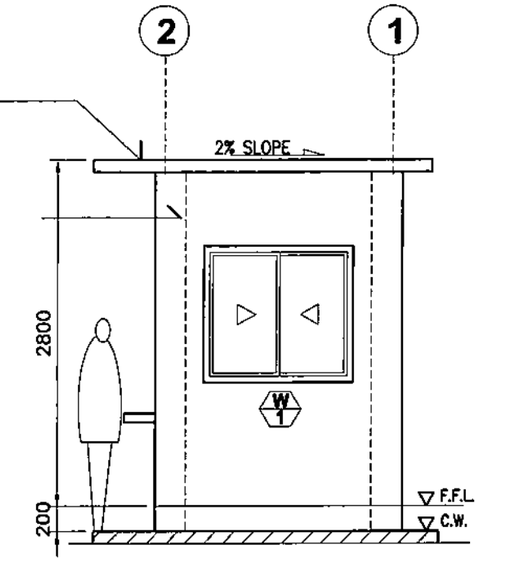
FLOOR PLAN
SCALE 1:50



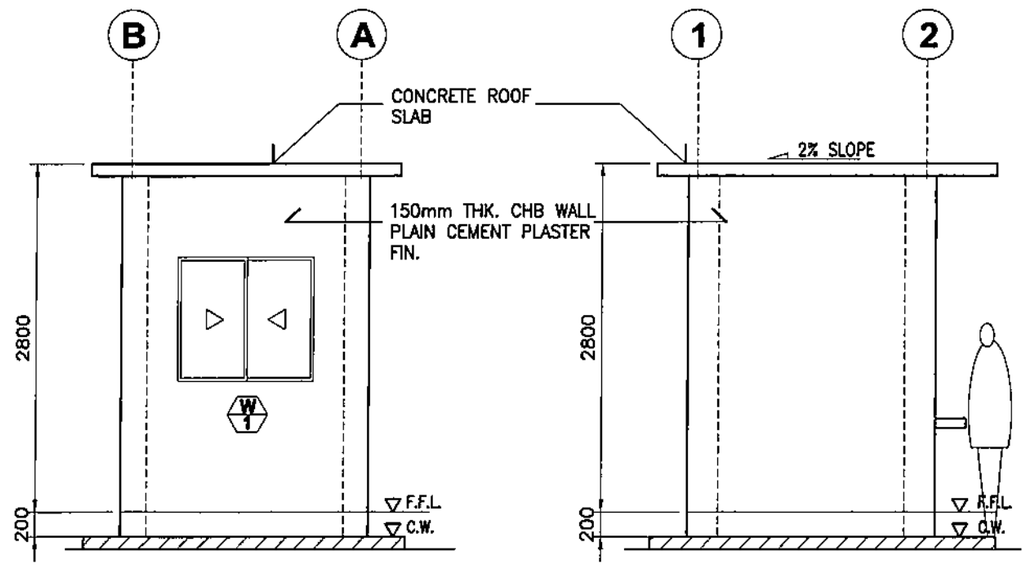
ROOF PLAN
SCALE 1:50



FRONT ELEVATION
SCALE 1:50

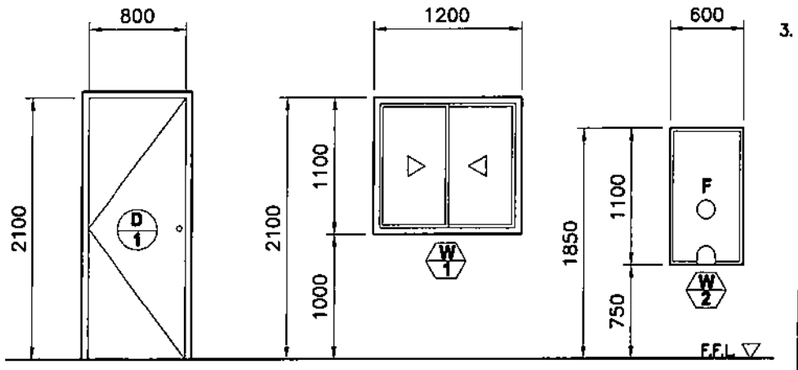


RIGHT SIDE ELEVATION
SCALE 1:50



REAR ELEVATION
SCALE 1:50

LEFT SIDE ELEVATION
SCALE 1:50



- FLUSH TYPE WOODEN DOOR
- BOOTH SIDE MARINE PLYWOOD
- K.D. FIRST GROUP LUMBER JAMB
- 1 SET

- GLASS SLIDING WINDOW
- 6MM THK.CLEAR GLASS
- ALUMINUM FRAME
- 2 SET

- GLASS FIXED WINDOW
- 6MM THK.CLEAR GLASS
- ALUMINUM FRAME
- 1 SET

SCHEDULE OF DOOR AND WINDOWS
SCALE 1:50

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE INDICATED.
2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION. THE NPC SHALL BE NOTIFIED OF ANY DISCREPANCIES OR INCONSISTENCIES.
3. DIMENSION SHALL TAKE PRECEDENCE OVER SCALED DRAWINGS.

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

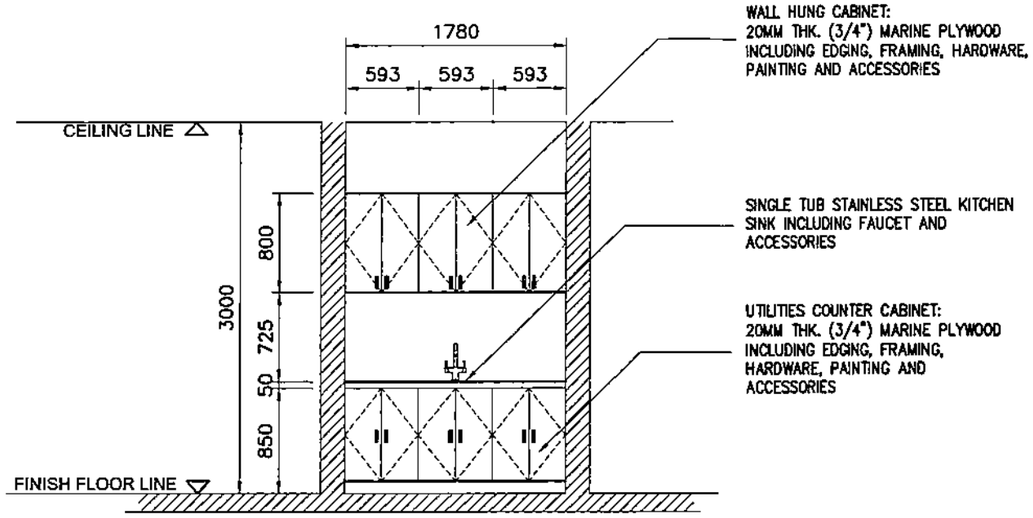
TITLE:
GUARDHOUSE
(PLAN, ELEVATIONS AND SCHEDULE OF DOORS & WINDOWS)

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

SUBMITTED: R. R. R. VILLANUEVA, Principal Architect A, CEAD
RECOMMENDED: A. C. ESPIRITU, Manager, CEAD
APPROVED: G. B. MAGPOC JR., Manager, DDO

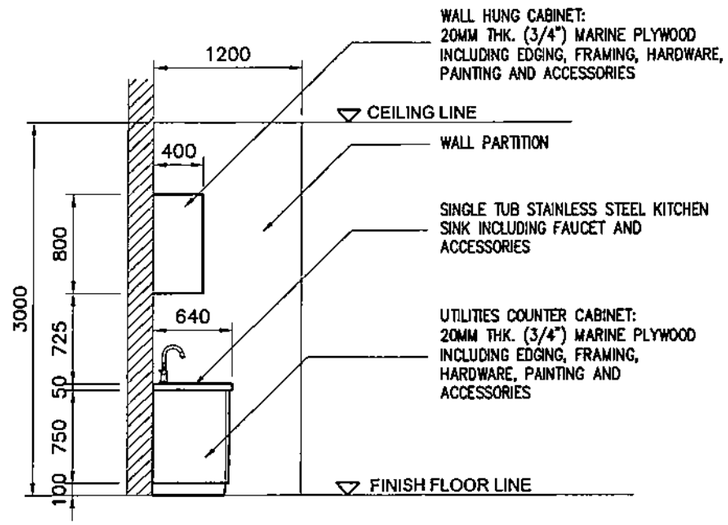
DWG. NO. MSS-BDA-22.008 | SPECS. NO. LuzP23Z1636Sce

SCALE: 1:50 | BID DRAWING | REV. 0



FRONT ELEVATION

SCALE 1:50



SIDE ELEVATION

SCALE 1:50

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE INDICATED.
2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION. THE NPC SHALL BE NOTIFIED OF ANY DISCREPANCIES OR INCONSISTENCIES.
3. DIMENSION SHALL TAKE PRECEDENCE OVER SCALED DRAWINGS.

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

TITLE:
UTILITIES COUNTER AND WALL HUNG CABINETS
(ELEVATIONS)

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

SUBMITTED: R. R. R. VILLANUEVA, Principal Architect A, CEAD
RECOMMENDED: A. C. ESPIRITU, Manager, CEAD
APPROVED: G. B. MAGPOC JR., Manager, DDD

DWG. NO. MSS-BDA-22.009 | SPECS. NO. LuzP23Z1636Sce

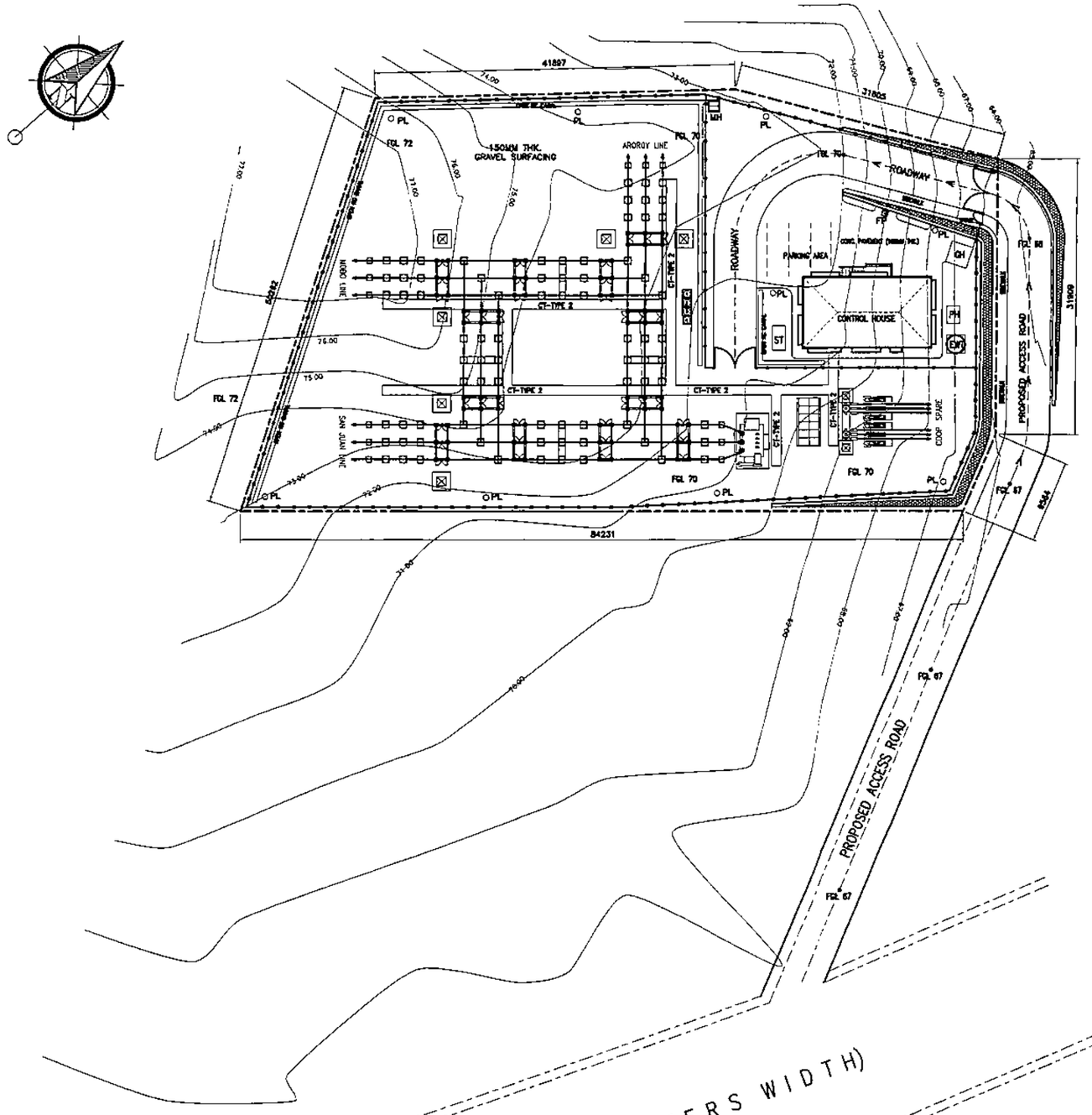
SCALE: 1:50 | **BID DRAWING** | REV. 0

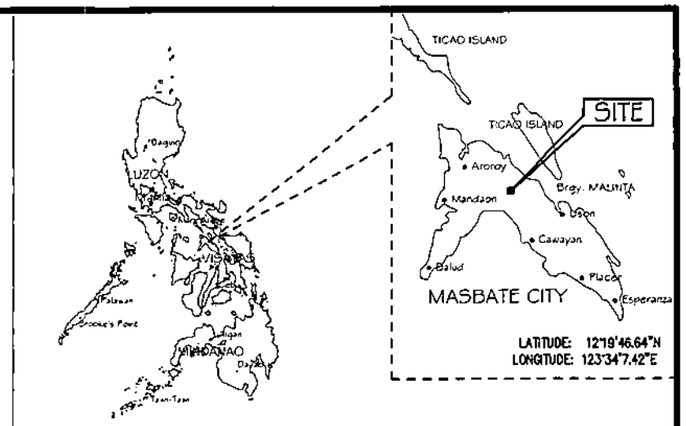
SECTION IX - BID DRAWINGS

CW - CIVIL WORKS

DRAWING NO.	TITLE
MSS-BDC-22.001	SITE DEVELOPMENT PLAN
MSS-BDC-22.002	EQUIPMENT AND GANTRY STRUCTURE (Foundation Layout)
MSS-BDC-22.003	CONTROL HOUSE (Foundation and Roof Framing Plan)
MSS-BDC-22.004	CONTROL HOUSE (Beam and Slab Details)
MSS-BDC-22.005	CONTROL HOUSE (Footing-Column, Wall Footing Details)
MSS-BDC-22.006	PUMPHOUSE (Foundation Plan, Section, Elev. & Details)
MSS-BDC-22.007	PUMPHOUSE (Roof Slab, Beam Section & Details)
MSS-BDC-22.008	GUARDHOUSE (Fdn. Plan, Slab, Column & Wall Footing)
MSS-BDC-22.009	CABLE TRENCHES (Plan, Section and Details)
MSS-BDC-22.010	TYPICAL ROADWAY (Road Plan & Section)
MSS-BDC-22.011	ROADWAY (Typical Details)
MSS-BDC-22.012	TYPICAL SECLUSION FENCE & PEDESTRIAL GATE (Elev., Section & Det.)
MSS-BDC-22.013	MAIN GATE (Elevation, Section & Details)

MSS-BDC-22.014	PERIMETER FENCE (Elevation, Section & Details)
MSS-BDC-22.015	FLAGPOLE & PERIMETER LIGHTING POLE FOUNDATION (Plan, Section & Det.)
MSS-BDC-22.016	ELEVATED WATER STORAGE TANK (Plan, Section, Elevation & Details)
MSS-BDC-22.017	FOUNDATION FOR EQUIPMENT & GANTRY STRUCTURES (Plan, Sec. & Det.)
MSS-BDC-22.018	TYPICAL TRANSFORMER FOUNDATION (Plan & Sections)
MSS-BDC-22.019	TYPICAL SWITCHGEAR FOUNDATION (Plan & Sections)
MSS-BDC-22.020	DRAINGE PLAN
MSS-BDC-22.021	DRAINAGE APPURTENANCES (CB-DS, Trenching, Catch Basin for PPVC Pipes)
MSS-BDC-22.022	DRAINAGE APPURTENANCES (Manhole, Perf. PVC Pipes, Open Concrete Canal)
MSS-BDC-22.023	DRAINAGE APPURTENANCES (Street Inlet-Catch Basin)
MSS-BDC-22.024	TYPICAL GROUTED RIPRAP (Elevation, Section & Details)
MSS-BDC-22.025	TYPICAL SEPTIC TANK (Plan, Section & Details)





LOCATION MAP
NOT TO SCALE

NOTES:

1. DIMENSIONS AND ELEVATIONS ARE IN METERS UNLESS OTHERWISE NOTED.
2. THIS DRAWINGS IS FOR BIDDING PURPOSED ONLY. THE CONTRACTOR SHALL DEVELOP THE SITE BASED ON THE ACTUAL FIELD CONDITION.

LEGEND:

- PERIMETER FENCE
- SECLUSION FENCE
- GROUTED RIPRAP

FP – FLAG POLE
EWT – ELEVATED WATER TANK
ST – SEPTIC TANK
PH – PUMPHOUSE
GH – GUARDHOUSE
PL – PERIMETER LIGHTING
MH – MANHOLE

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

TITLE:

SITE DEVELOPMENT PLAN

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

SUBMITTED: H. L. MENDOZA
Principal Engineer A, CEAD

RECOMMENDED: A. C. ESPIRITU
Manager, CEAD

APPROVED: G. B. MAGPOC JR.
Manager, DDO

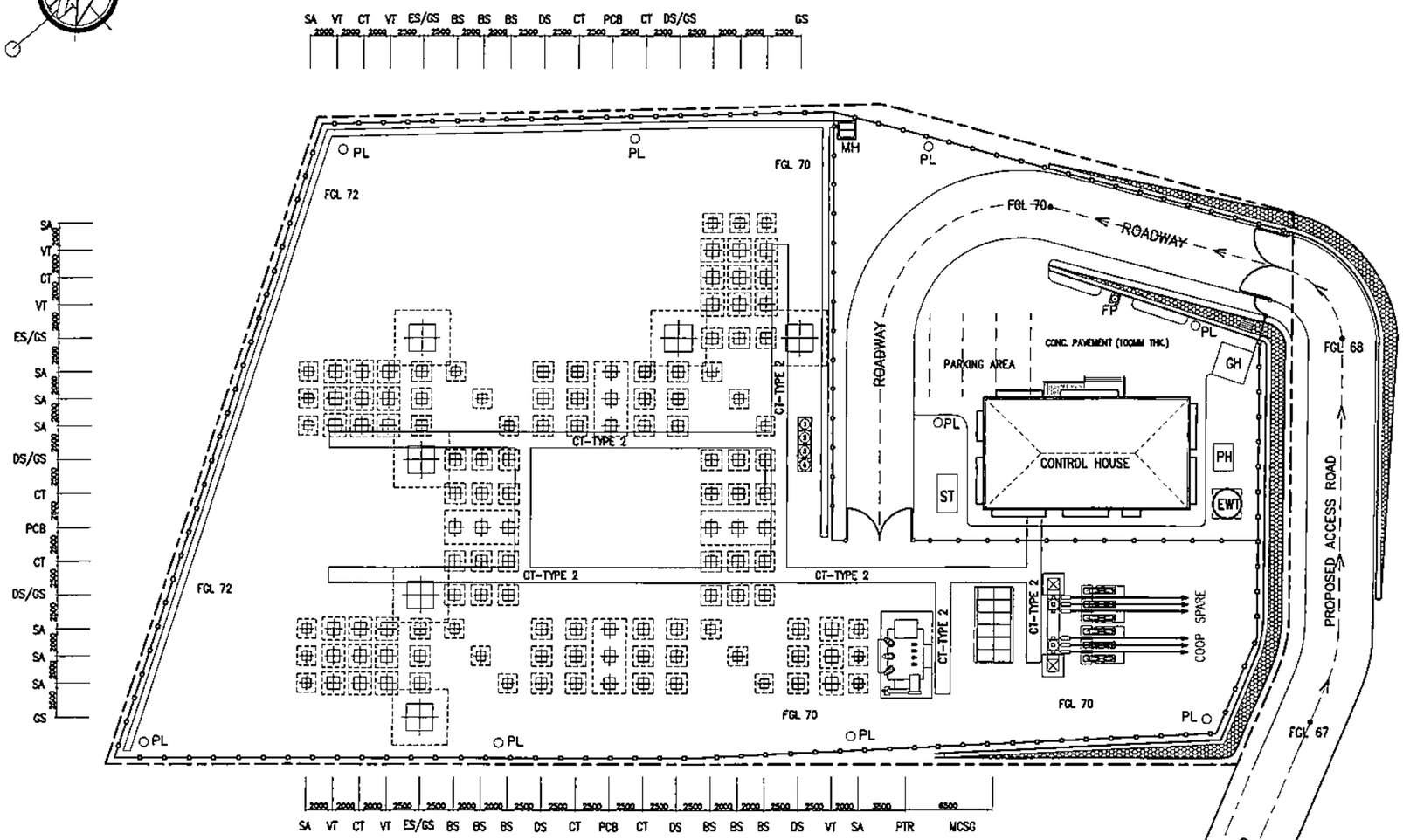
DWG. NO. MSS-BDC-22.001 | SPECS. NO. LuzP23Z1636Sce

SCALE: 1:600 | **BID DRAWING** | REV. 0

NOTES:

1. IF THERE IS A DISCREPANCY BETWEEN FOUNDATION AND EQUIPMENT LAYOUT, THE EQUIPMENT LAYOUT SHALL GOVERN.
2. WORK THIS DRAWING WITH CIVIL AND ELECTRICAL DRAWINGS.

LIST OF GANTRY & EQUIPMENT STRUCTURES
69 kV GANTRY STRUCTURES (GS)
BUS SUPPORT (BS)
DISCONNECT SWITCH (DS)
SURGE ARRESTER (SA)
VOLTAGE TRANSFORMER (VT)
CURRENT TRANSFORMER (CT)
METALCLAD SWITCHGEAR (MCSG)
POST INSULATOR (PI)
EARTH SWITCH (ES)
POWER CIRCUIT BREAKER (PCB)



FOUNDATION LAYOUT

SCALE 1:400

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: NATIONAL POWER CORPORATION
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

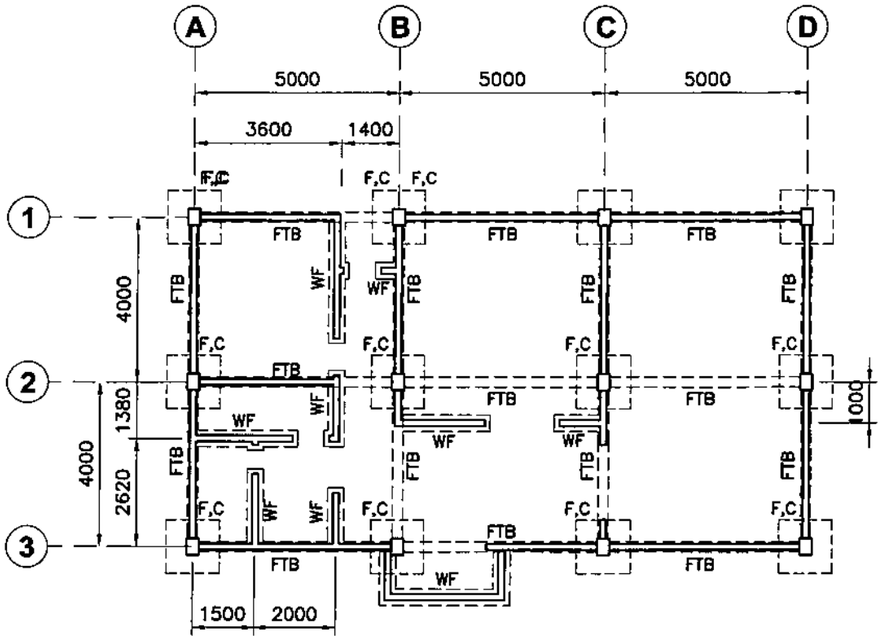
TITLE:
EQUIPMENT AND GANTRY STRUCTURE
(FOUNDATION LAYOUT)

	BY	CHKD.	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

SUBMITTED: H. L. MENDOZA, Principal Engineer A, CEAD
RECOMMENDED: A. C. ESPIRITU, Manager, CEAD
APPROVED: G. B. MAGPOC JR., Manager, DDO

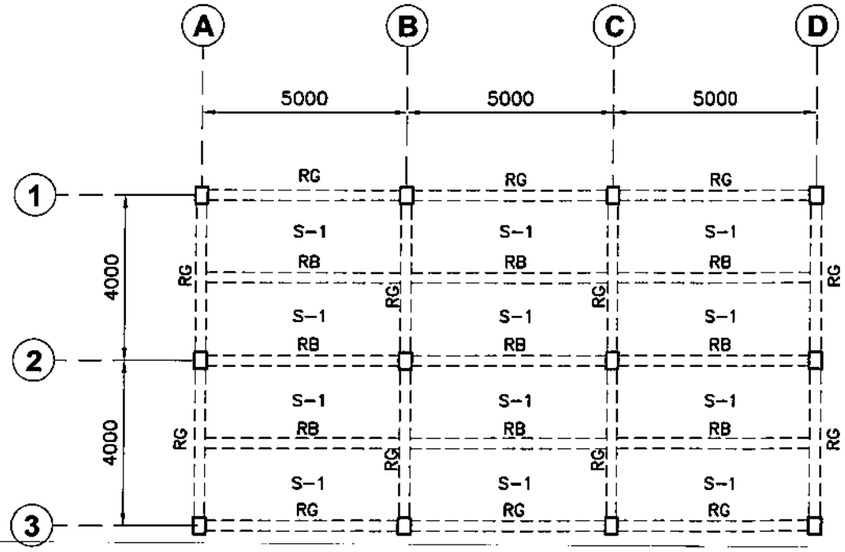
DWG. NO. MSS-BDC-22.002 SPECS. NO. LuzP23Z1636Sce

SCALE: 1:400 **BID DRAWING** REV. 0



FOUNDATION PLAN

SCALE 1:100



ROOF FRAMING PLAN

SCALE 1:100

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

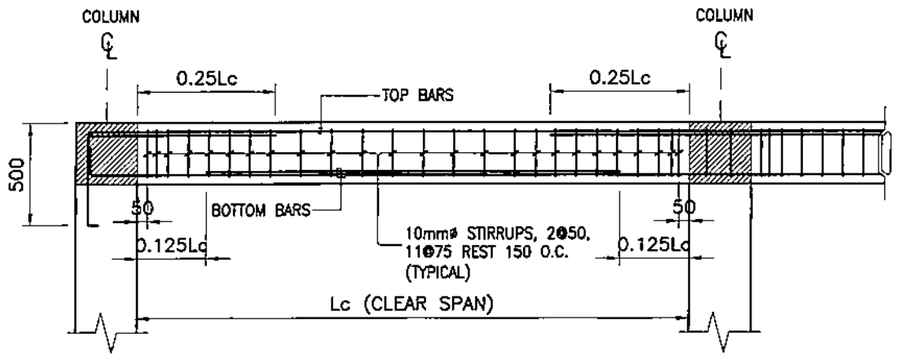
TITLE: **CONTROL HOUSE**
(FOUNDATION AND ROOF FRAMING PLAN)

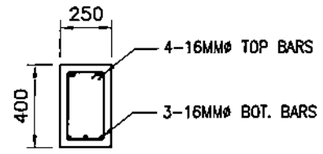
	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

SUBMITTED: H. L. MENDOZA, Principal Engineer A, CEAD
RECOMMENDED: A. C. ESPIRITU, Manager, CEAD
APPROVED: G. B. MAGPOC JR., Manager, DDD

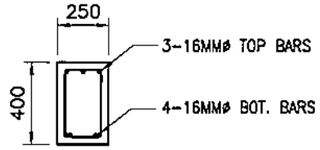
DWG. NO. MSS-BDC-22.003 SPECS. NO. LuzP23Z1636Sce

SCALE: 1:100 **BID DRAWING** REV. 0





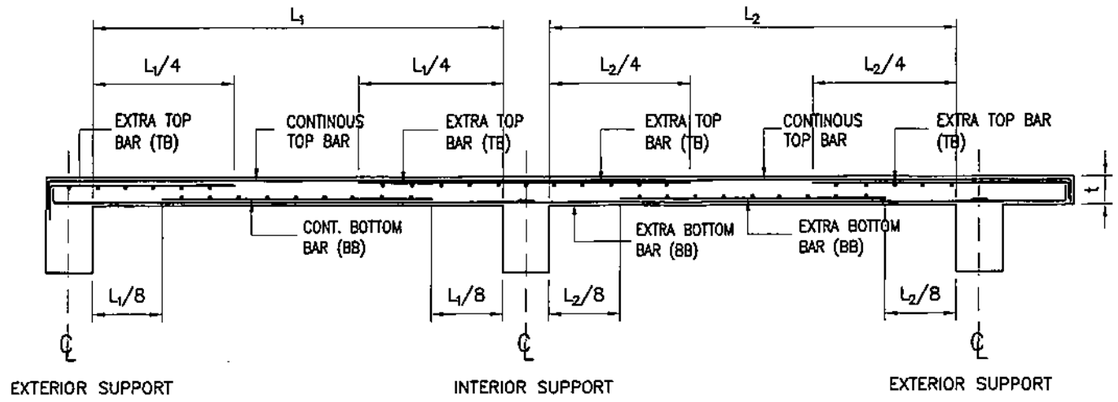
SECTION AT SUPPORT



SECTION AT MIDSPAN

BEAM DETAILS

SCALE 1:30

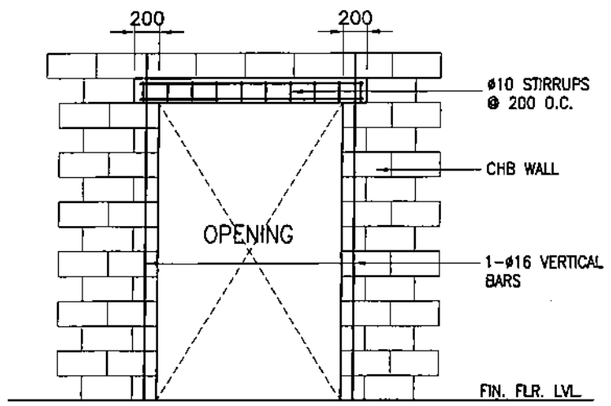


SLAB DETAILS

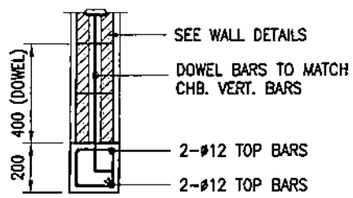
SCALE 1:30

SCHEDULE OF SLABS											
SLAB MARK	THICKNESS	LOCATION	CONTINUOUS BAR BOTHWAYS	EXTRA BARS PARALLEL TO SHORT SPAN			EXTRA BARS PARALLEL TO LONG SPAN			REMARKS
				LEFT	MIDSPAN	RIGHT	LEFT	MIDSPAN	RIGHT	
S-1	125	TB	ø10 @ 300	ø10 @ 300	–	ø10 @ 300	ø10 @ 300	–	ø10 @ 300	ONE-WAY
		BB	ø10 @ 300	–	ø10 @ 300	–	–	ø10 @ 300	–	

SCHEDULE OF REINFORCED CONCRETE BEAM									
MARK	BEAM DIMENSION BXD (MM)	REBAR (mmø)	LEFT		MIDSPAN		RIGHT		STIRRUPS SPACING
			TOP	BOTTOM	TOP	BOTTOM	TOP	BOTTOM	
RB & RG	250 X 400	16mmø	4	3	3	4	4	3	2@50MM, 11@75MM, REST @ 150MM O.C.



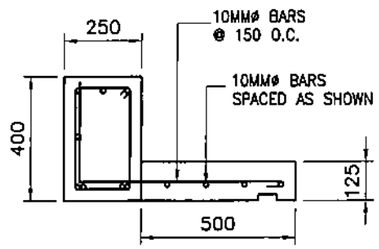
ELEVATION
SCALE 1:50



SECTION
SCALE 1:25

LINTEL BEAM AT CHB WALL OPENING

SCALE AS SHOWN



WINDOW CANOPY

SCALE 1:20

OWNER: NATIONAL POWER CORPORATION
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

TITLE: **CONTROL HOUSE** (BEAM AND SLAB DETAILS)

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

SUBMITTED: H. L. MENDOZA, Principal Engineer A, CEAD
RECOMMENDED: A. C. ESPIRITU, Manager, CEAD
APPROVED: G. B. MAGPOC JR., Manager, DDO

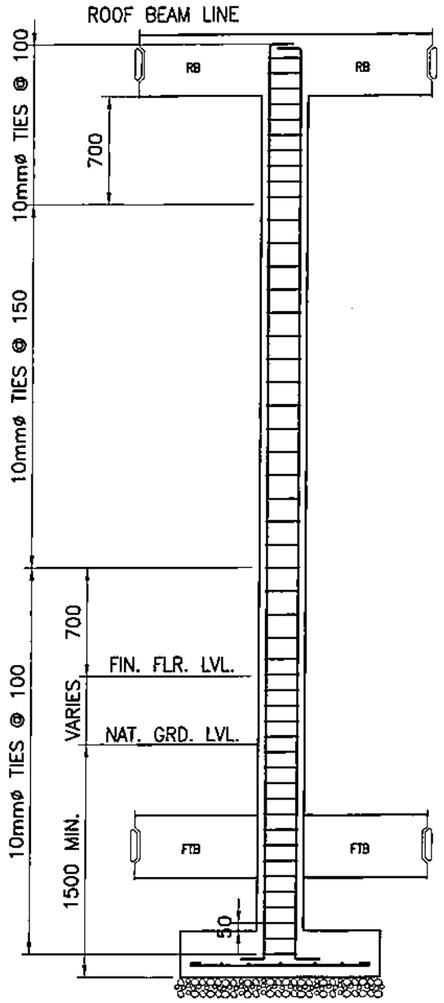
DWG. NO. MSS-BDC-22.004 SPECS. NO. LuzP23Z1636Sce

SCALE: AS SHOWN BID DRAWING REV. 0

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

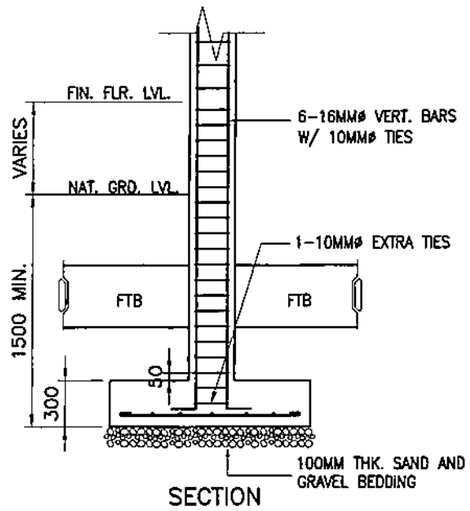
NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE INDICATED.
2. THE MINIMUM 28 DAY CYLINDER COMPRESSIVE STRENGTH OF CONCRETE SHALL BE 20.7MPa.
3. THE MINIMUM YIELD STRENGTH OF REINFORCEMENT TO BE USED SHALL BE GRADE 40 (276MPa).
4. ALL REINFORCING STEEL SHALL BE DETAILED AND PLACED IN CONFORMANCE WITH ACI-318.
5. WORK THIS DRAWING WITH RELATED ARCHITECTURAL AND ELECTRICAL DRAWINGS.

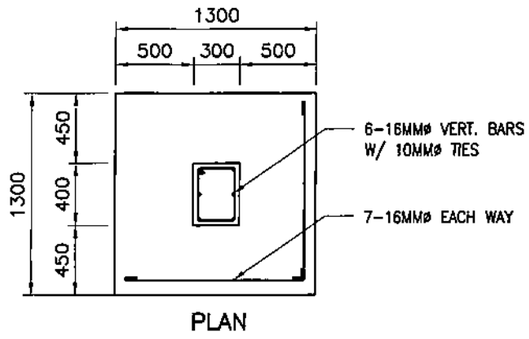


COLUMN ELEVATION

SCALE 1:40



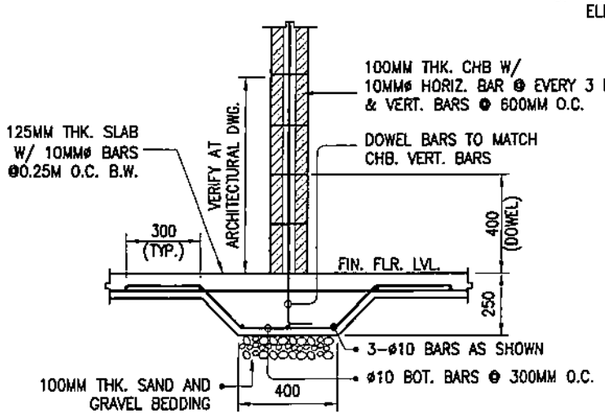
SECTION



PLAN

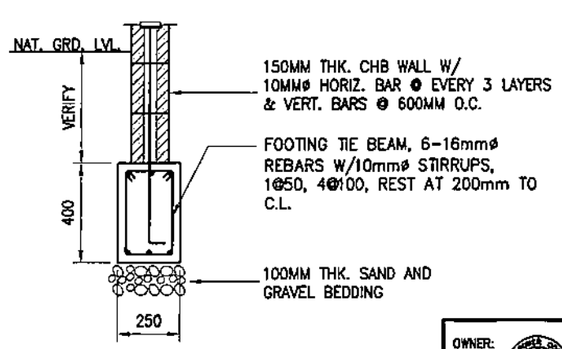
DETAIL OF FOOTING-COLUMN (F,C)

SCALE 1:40



WALL FOOTING

SCALE 1:25



FTB DETAIL

SCALE 1:25

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

TITLE: **CONTROL HOUSE**
(FOOTING-COLUMN, WALL FOOTING DETAILS)

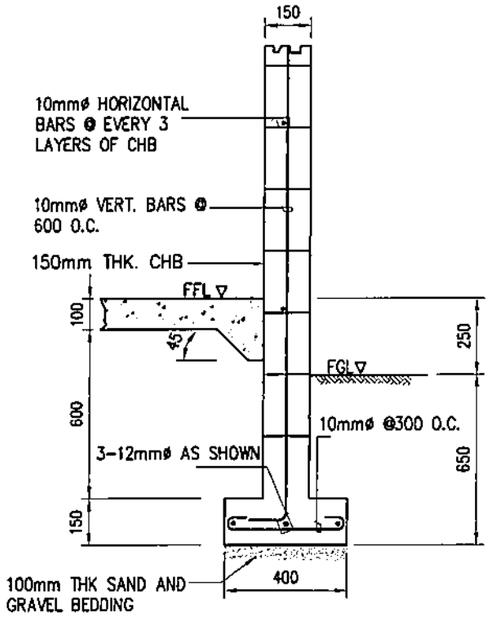
	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

SUBMITTED: H. J. MENDOZA, Principal Engineer A, CEAD
RECOMMENDED: A. C. ESPIRITU, Manager, CEAD
APPROVED: G. B. MAGPOC, JR., Manager, DDO

DWG. NO. MSS-BDC-22.005 SPECS. NO. LuzP23Z1636Sce

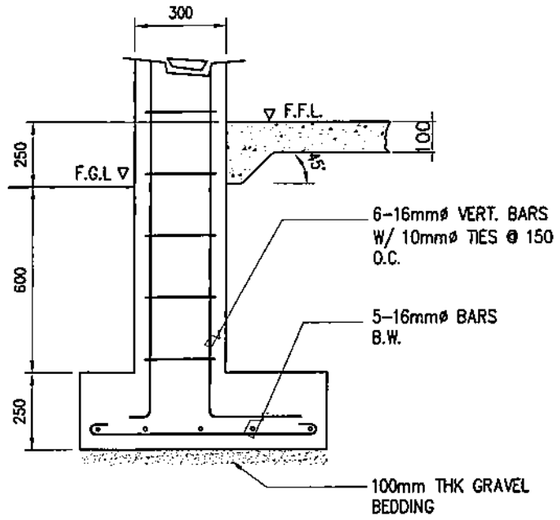
SCALE: AS SHOWN **BID DRAWING** REV. 0

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECO.	APPD.



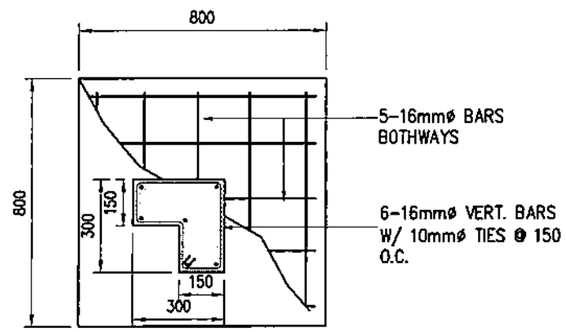
WALL FOOTING (WF)

SCALE 1:20



ELEVATION

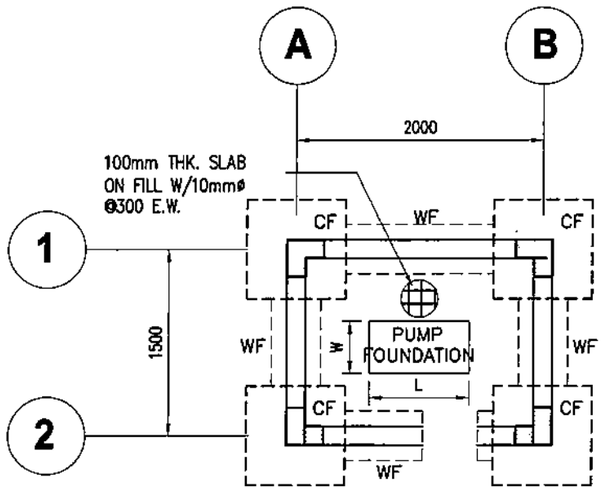
SCALE 1:20



PLAN

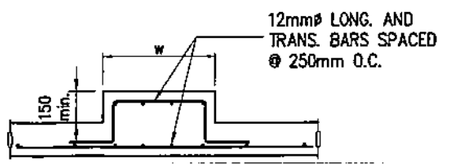
COLUMN-FOOTING DETAIL (CF)

SCALE 1:20



PUMPHOUSE FOUNDATION PLAN

SCALE 1:50



SECTION

PUMP FOUNDATION

SCALE NTS

NOTES:

1. MINIMUM COMPRESSIVE STRENGTH OF CONCRETE SHALL BE f'c = 20.70 MPa AT 28 DAYS PERIOD.
2. ALL REINFORCING BARS SHALL CONFORM TO THE LATEST REQUIREMENTS OF PHILIPPINE NATIONAL STANDARD FOR DSB GRADE 275.
3. ALL ASPECTS OF CONSTRUCTION AND DETAILING OF REINFORCEMENTS SHALL BE IN ACCORDANCE WITH THE LATEST PROVISIONS OF ACI CODE.
4. DIMENSION OF PUMP FOUNDATION WILL VARIES IN THE PUMP TO BE SUPPLIED.

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

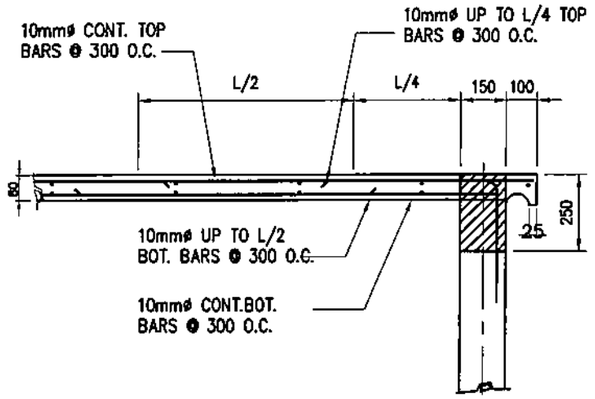
TITLE: **PUMPHOUSE**
(FOUNDATION PLAN, SECTION, ELEVATION & DETAILS)

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

SUBMITTED: H. L. MENDOZA, Principal Engineer A, CEAD
RECOMMENDED: A. C. ESPIRITU, Manager, CEAD
APPROVED: G. B. MAGPOC JR., Manager, DDO

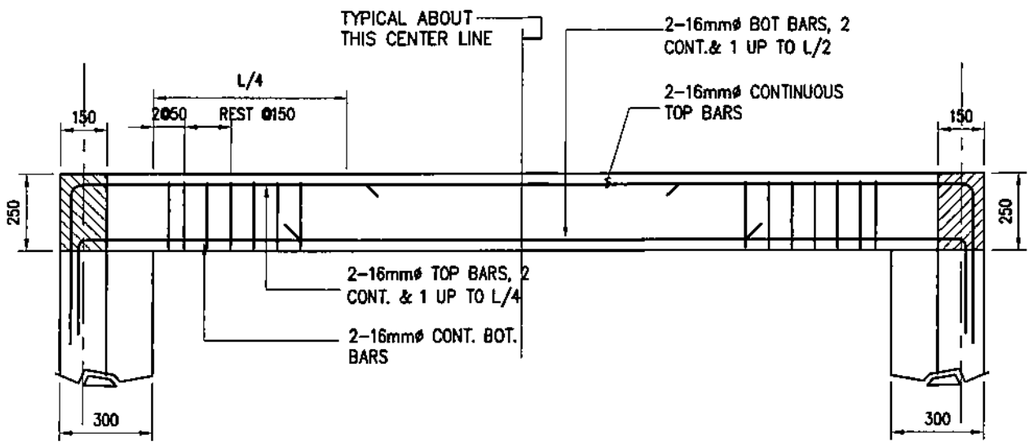
DWG. NO. MSS-BDC-22.006 | SPECS. NO. LuzP23Z1636Sce

SCALE: AS SHOWN | **BID DRAWING** | REV. 0



ROOF SLAB REINFORCEMENT

SCALE 1:20

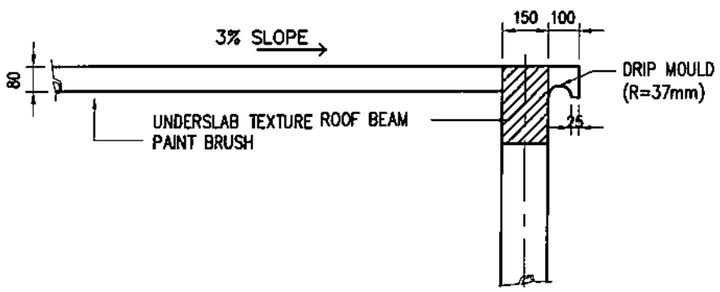


BEAM DETAIL

SCALE 1:20

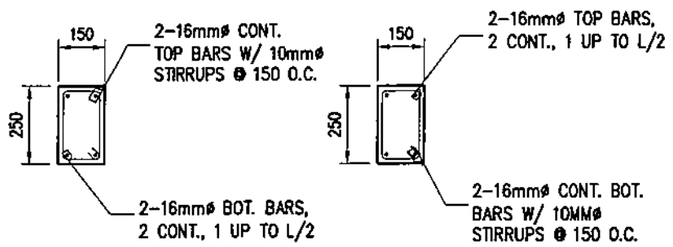
NOTES:

1. ALL DIMENSION ARE IN MILLIMETERS UNLESS OTHERWISE INDICATED.
2. MINIMUM COMPRESSIVE STRENGTH OF CONCRETE SHALL BE f'c = 20.70 MPa AT 28-DAYS PERIOD.
3. REINFORCING STEEL BARS SHALL CONFORM TO THE LATEST REQUIREMENTS OF PNS FOR DEFORMED STEEL BARS GRADE 275
4. ALL ASPECTS OF CONSTRUCTION AND DETAILING OF REINFORCEMENTS SHALL BE IN ACCORDANCE WITH THE LATEST PROVISIONS OF ACI CODE.



ROOF SLAB DETAIL

SCALE 1:20



BEAM SECTION

SCALE 1:20

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

TITLE:

PUMPHOUSE
(ROOF SLAB, BEAM SECTION & DETAILS)

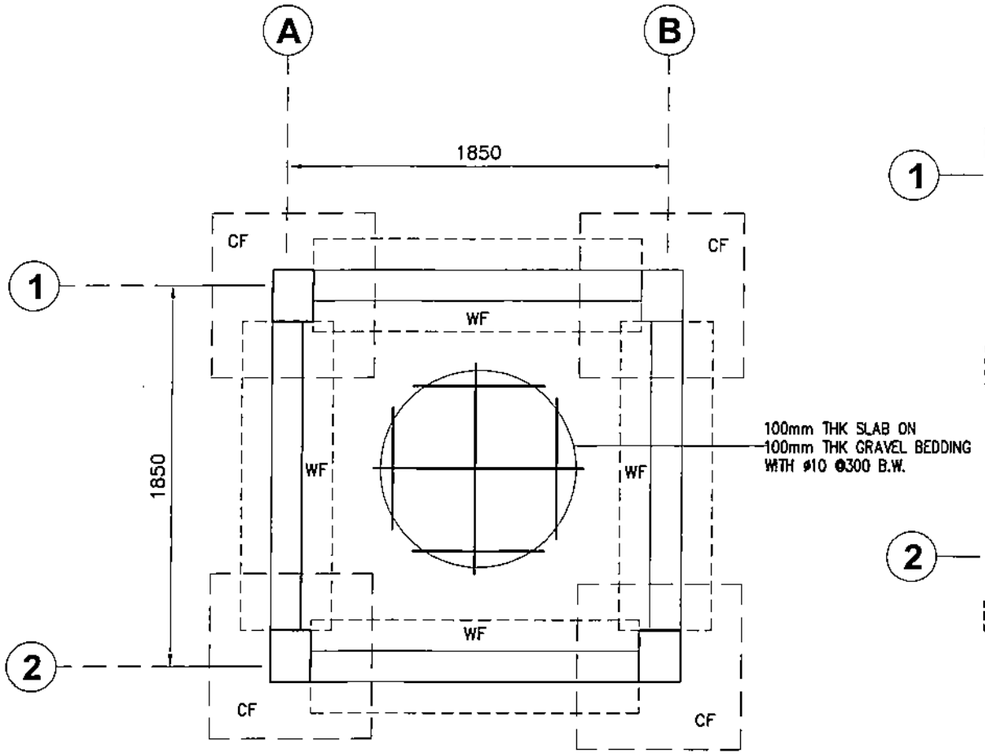
	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

SUBMITTED: H. L. MENDOZA, Principal Engineer A, CEAD
RECOMMENDED: A. C. ESPIRITU, Manager, CEAD
APPROVED: G. B. MAGPOC JR., Manager, DDO

DWG. NO. MSS-BDC-22.007 | SPECS. NO. LuzP23Z1636Sce

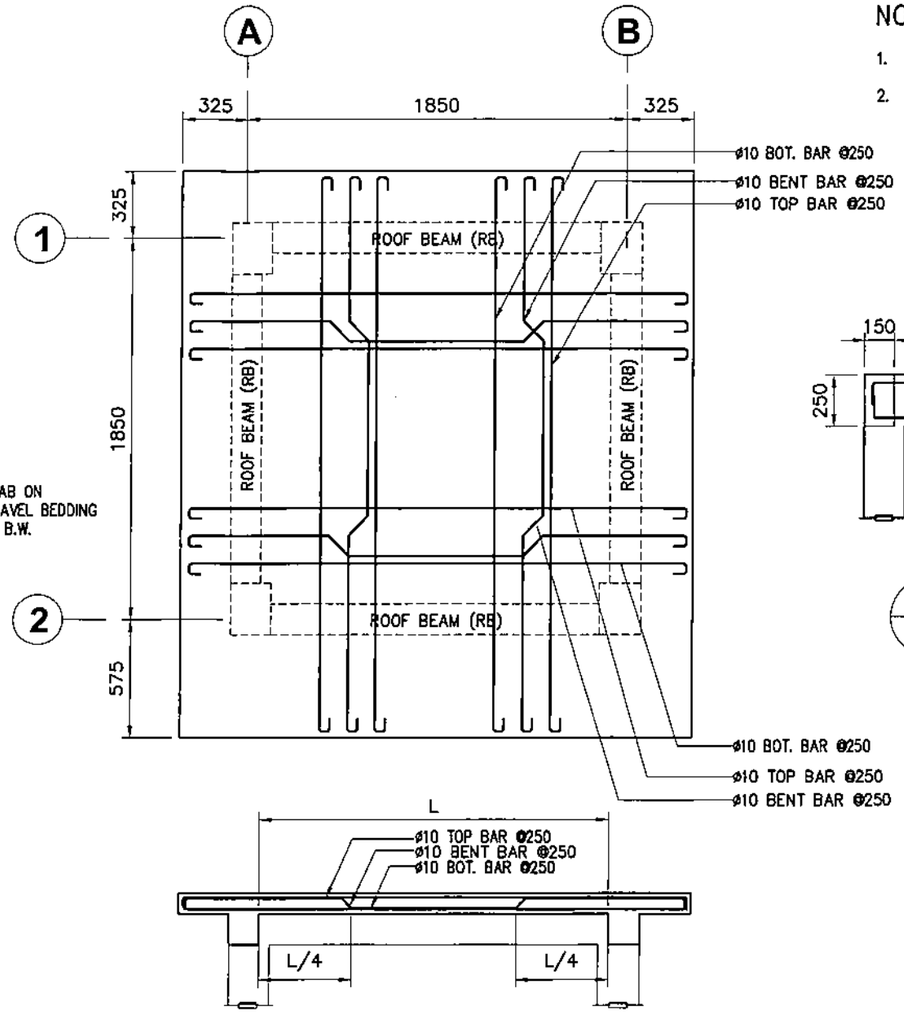
SCALE: 1:20 | **BID DRAWING** | REV. 0

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.



FOUNDATION PLAN

SCALE 1:30

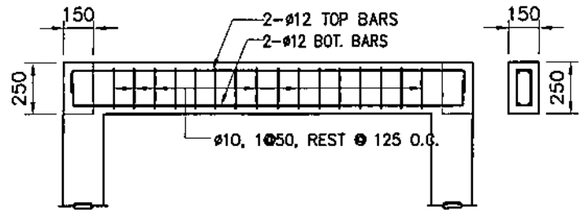


ROOF SLAB DETAIL

SCALE 1:30

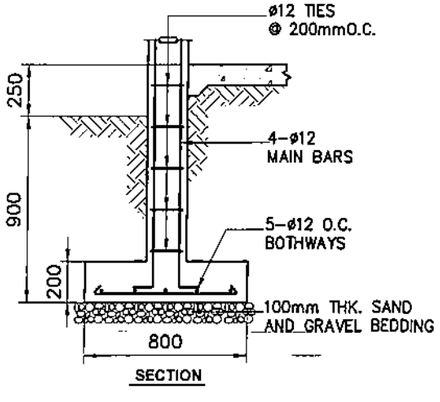
NOTES:

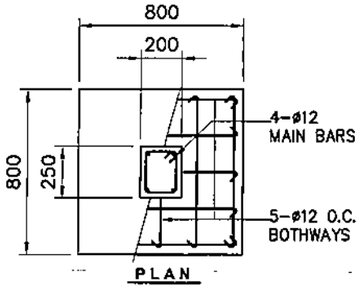
1. THE MINIMUM 28-DAY CYLINDER COMPRESSIVE STRENGTH OF CONCRETE SHALL BE 20.70MPa.
2. THE MINIMUM YIELD STRENGTH OF REINFORCEMENT SHALL BE GRADE 40 (275MPa).



BEAM DETAIL

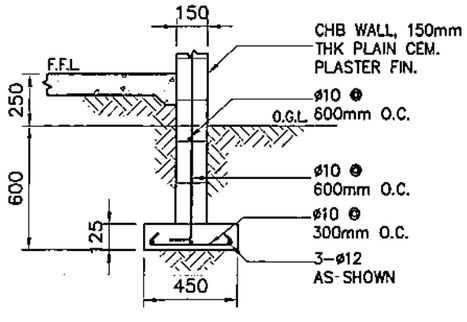
SCALE 1:30





COLUMN FOOTING (CF)

SCALE 1:30



WALL FOOTING (WF)

SCALE 1:30

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: NATIONAL POWER CORPORATION
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

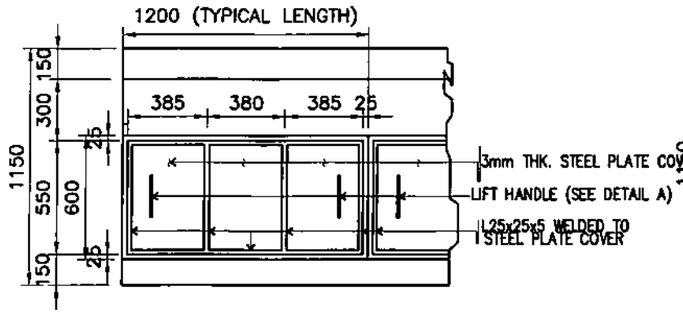
TITLE:
GUARDHOUSE
(FOUNDATION PLAN, SLAB, COLUMN AND WALL FOOTING)

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

SUBMITTED: R. L. MENDOZA, Principal Engineer A, CEAD
RECOMMENDED: A. C. ESPIRITU, Manager, CEAD
APPROVED: G. B. MAGPOC JR., Manager, DDO

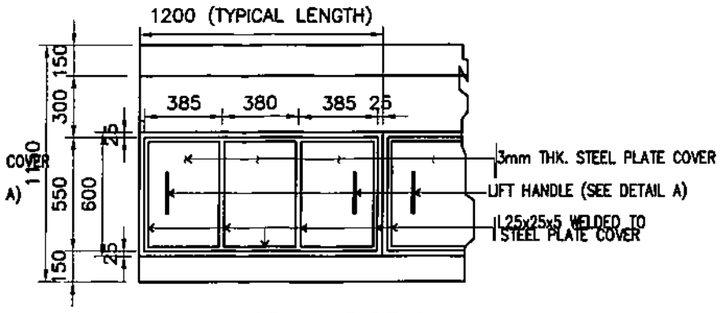
DWG. NO. MSS-BDC-22.008 SPECS. NO. LuzP23Z1636Sce

SCALE: AS SHOWN **BID DRAWING** REV. 0



PLAN FOR CT–TYPE 1

SCALE 1:30

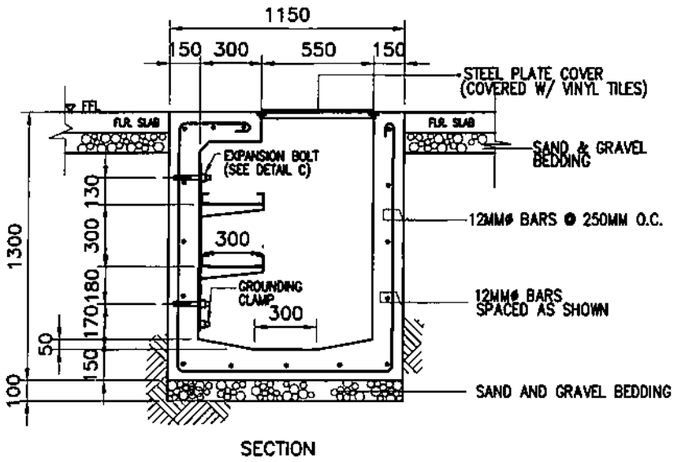


PLAN FOR CT–TYPE 2

SCALE 1:30

NOTES:

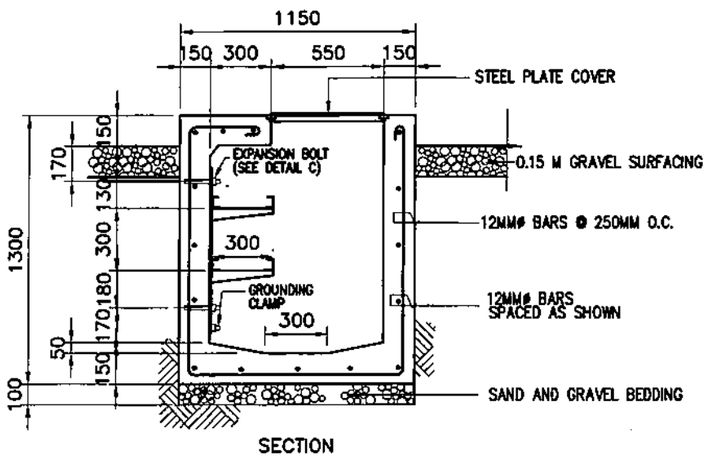
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE INDICATED.
2. MINIMUM COMPRESSIVE STRENGTH OF CONCRETE SHALL BE f'c = 20.70 MPa AT 28–DAYS PERIOD.
3. ALL REINFORCING BARS SHALL CONFORM TO THE LATEST REQUIREMENTS OF PHILIPPINE NATIONAL STANDARD FOR DSB GRADE 275.
4. PLEASE REFER TO ELECTRICAL DRAWINGS FOR DETAILS OF CABLE TRAYS & CABLE TRENCH LAYOUT.
5. PROVIDE OPENING/BLOCKOUTS FOR CABLE TRENCH GOING TO PANEL BOARD.



SECTION

CT TYPE - 1

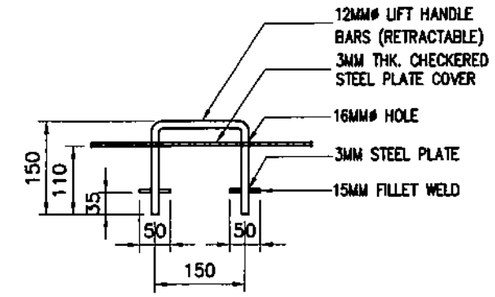
SCALE 1:30



SECTION

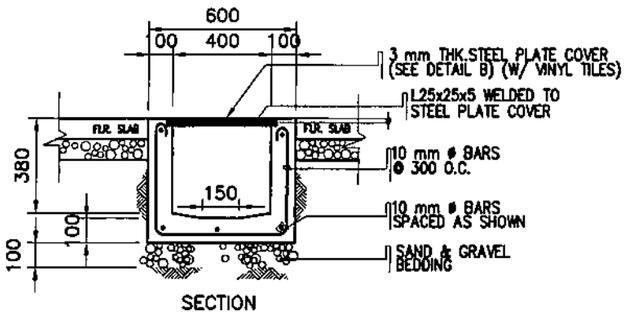
CT TYPE - 2

SCALE 1:30



HANDLE BAR DETAIL

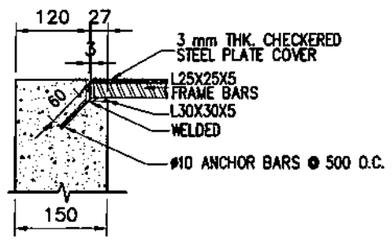
SCALE NTS



SECTION

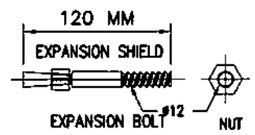
CT TYPE - 3

SCALE 1:25



DETAIL B (TYPICAL)

SCALE 1:10



DETAIL C

SCALE 1:5

CABLE TRENCH DETAILS

SCALE NTS

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

TITLE: **CABLE TRENCHES (PLAN, SECTION AND DETAILS)**

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

SUBMITTED: ENGR. L. MENDOZA, Principal Engineer A, CEAD

RECOMMENDED: A. C. ESPIRITU, Manager, CEAD

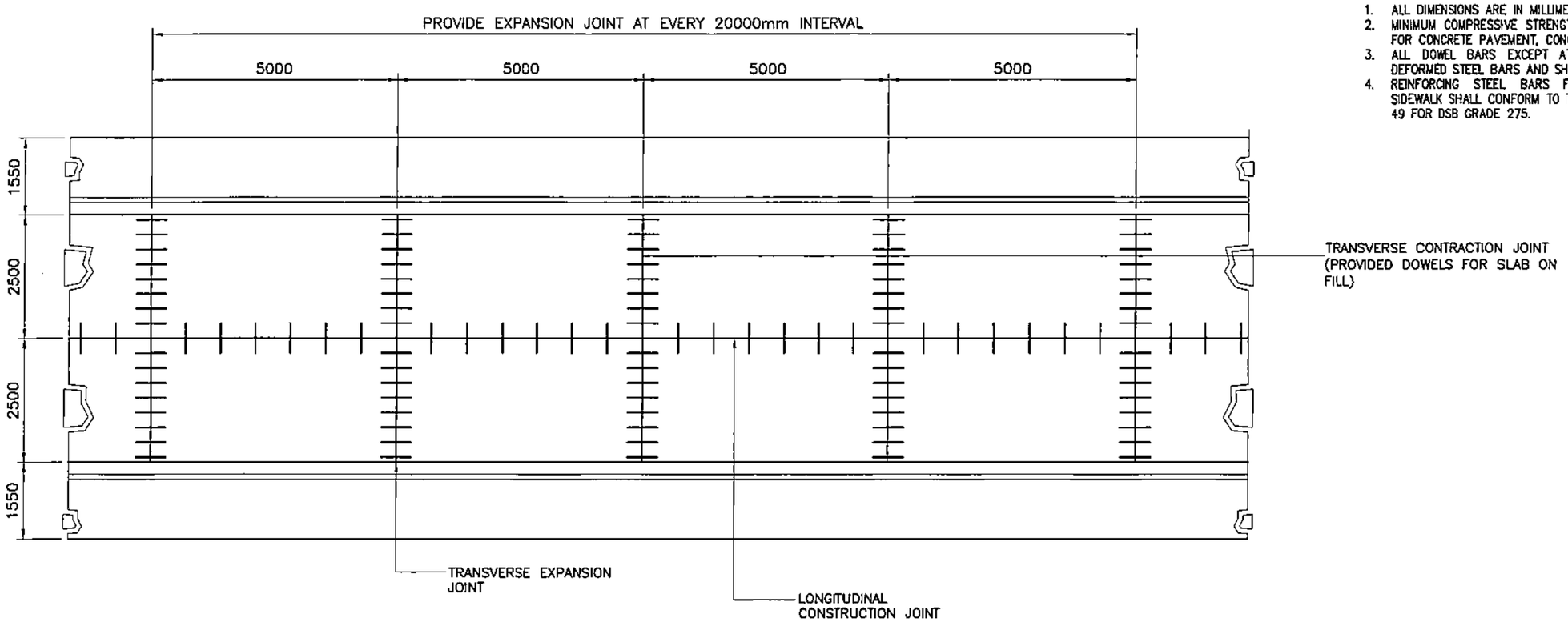
APPROVED: G. B. MAGPOC JR., Manager, DDD

DWG. NO. MSS-BDC-22.009 | SPECS. NO. LuzP23Z1636Sce

SCALE: AS SHOWN | **BID DRAWING** | REV. 0

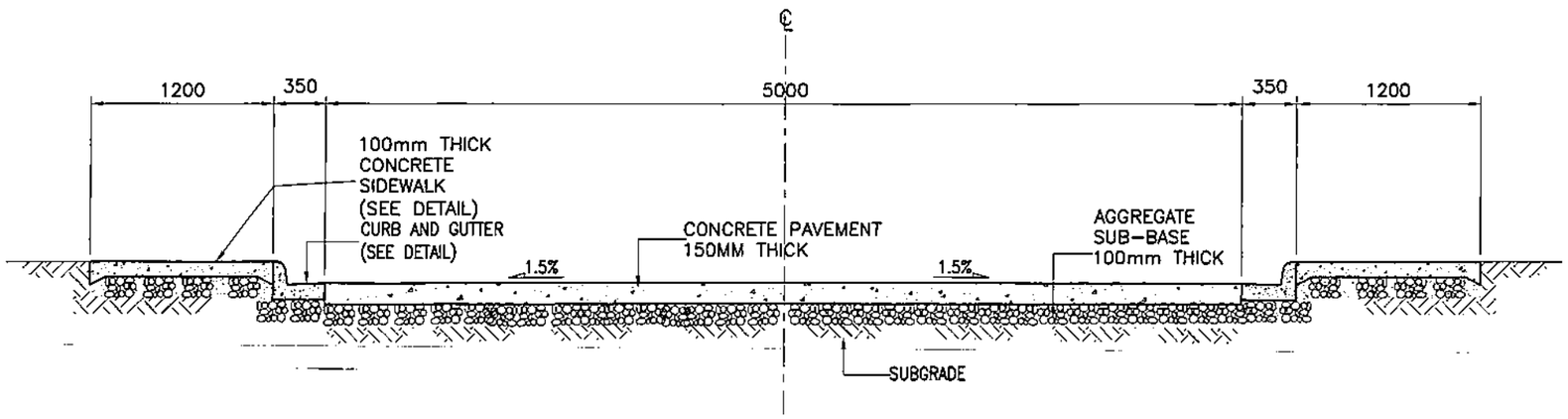
NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE INDICATED.
2. MINIMUM COMPRESSIVE STRENGTH OF CONCRETE SHALL BE 20.7 MPa FOR CONCRETE PAVEMENT, CONCRETE CURB, GUTTER AND SIDEWALK.
3. ALL DOWEL BARS EXCEPT AT THE EXPANSION JOINTS SHALL BE DEFORMED STEEL BARS AND SHALL CONFORM TO THE LATEST PNS 49.
4. REINFORCING STEEL BARS FOR CONCRETE CURB, GUTTER AND SIDEWALK SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST PNS 49 FOR DSB GRADE 275.



ROADWAY PLAN

SCALE 1:100



TYPICAL ROAD SECTION

SCALE 1:100

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

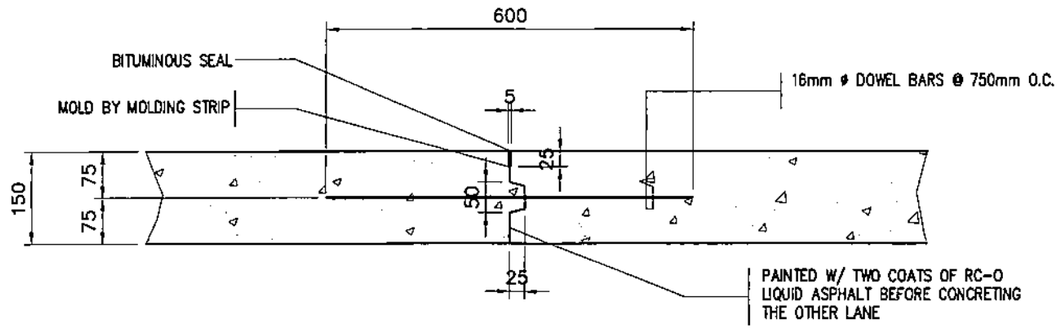
TITLE: **TYPICAL ROADWAY (ROAD PLAN & SECTION)**

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

SUBMITTED: M. L. MENDOZA, Principal Engineer A, CEAD
RECOMMENDED: A. C. ESPIRITU, Manager, CEAD
APPROVED: G. B. MAGPOC JR., Manager, DDO

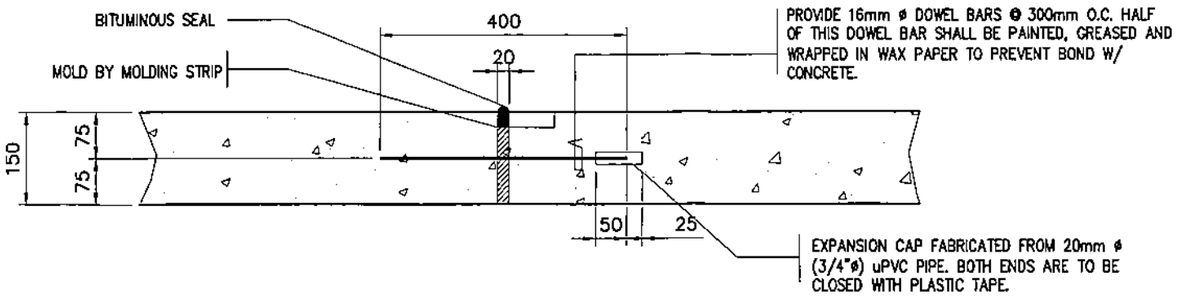
DWG. NO. MSS-BDC-22.010 SPECS. NO. LuzP23Z1636Sce

SCALE: AS SHOWN **BID DRAWING** REV. 0



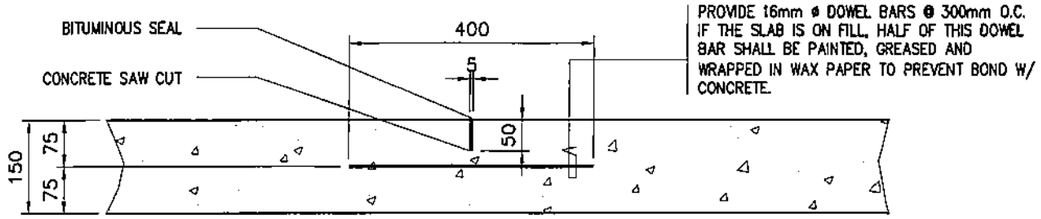
LONGITUDINAL CONSTRUCTION JOINT

SCALE NTS



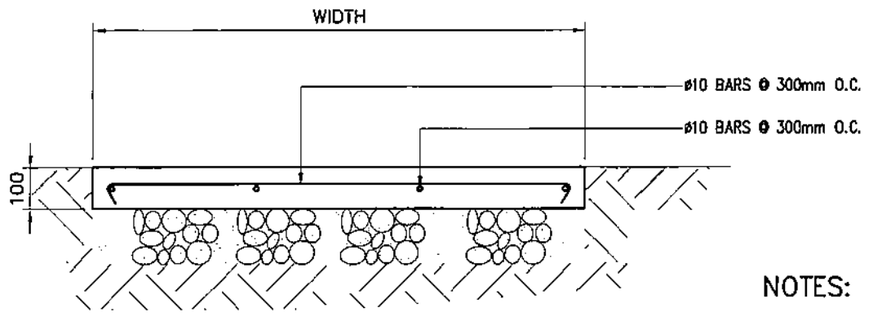
TRANSVERSE EXPANSION JOINT

SCALE NTS



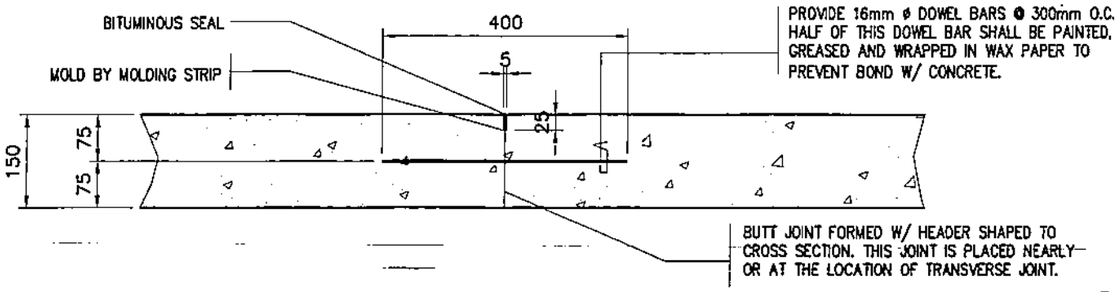
TRANSVERSE CONTRACTION JOINT

SCALE NTS



NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE INDICATED.
2. MINIMUM COMPRESSIVE STRENGTH OF CONCRETE FOR PAVEMENT, SIDEWALK, CURB & GUTTER SHALL BE 20.7 MPa AT 28 DAY PERIOD.
3. THE MINIMUM YIELD STRENGTH OF REINFORCEMENT SHALL BE GRADE 40 (275MPa).
4. ALLOWABLE BEARING CAPACITY OF SOIL SHALL NOT BE LESS THAN 140 KPa AND SHALL BE VERIFIED IN THE FIELD.

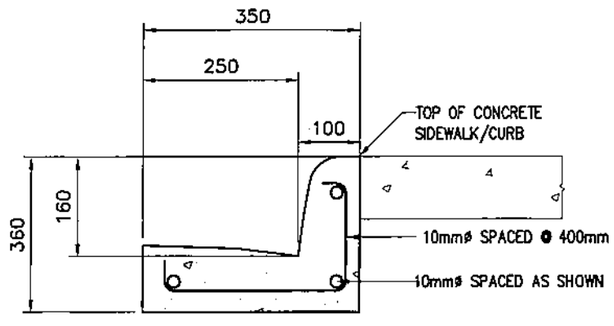


TRANSVERSE CONSTRUCTION JOINT

SCALE 1:150

DETAIL OF CONCRETE SIDEWALK

SCALE NTS



DETAIL OF CURB AND GUTTER

SCALE 1:150

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

TITLE: **ROADWAY**
(TYPICAL DETAILS)

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

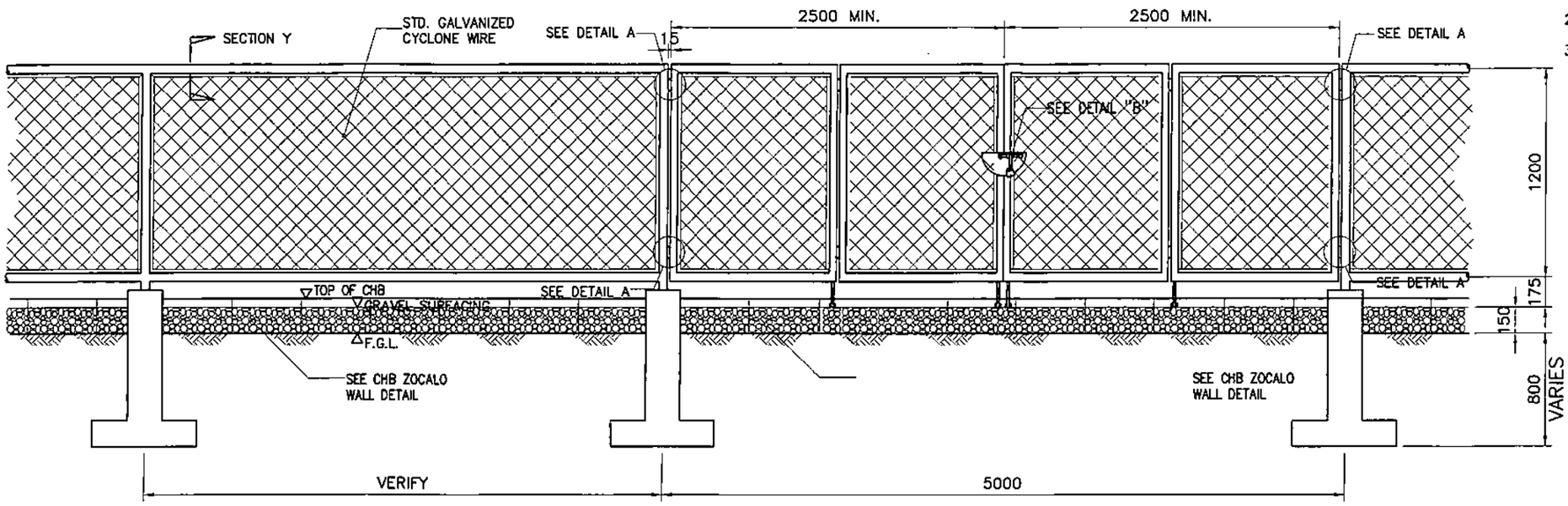
SUBMITTED: ENGR. L. MENDOZA, Principal Engineer A, CEAD
RECOMMENDED: A. C. ESPIRITU, Manager, CEAD
APPROVED: G. B. MAGPOC JR., Manager, ODD

DWG. NO. MSS-BDC-22.011 SPECS. NO. LuzP23Z1636Sce

SCALE: AS SHOWN **BID DRAWING** REV. 0

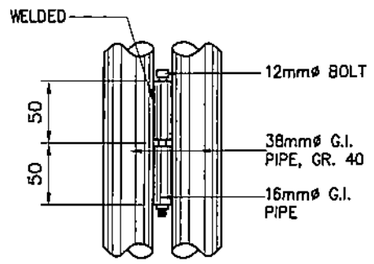
NOTES:

1. ALL DIMENSION ARE IN MILLIMETERS UNLESS OTHERWISE INDICATED.
2. PLAN/LAYOUT OF SECLUSION FENCE TO BE CONSTRUCTED ARE INDICATED IN ELECTRICAL DRAWING.
3. WORK THIS WITH ELECTRICAL DRAWINGS.

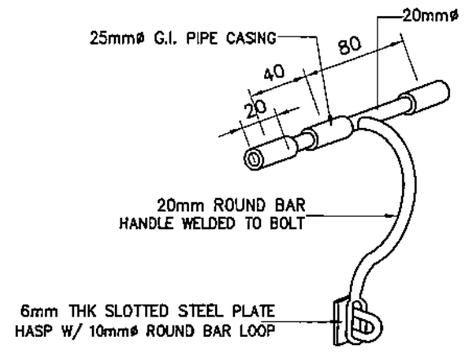


SECLUSION FENCE ELEVATION

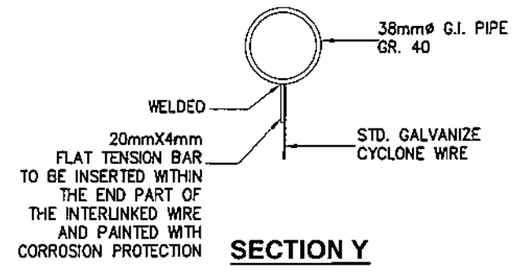
SCALE 1:30



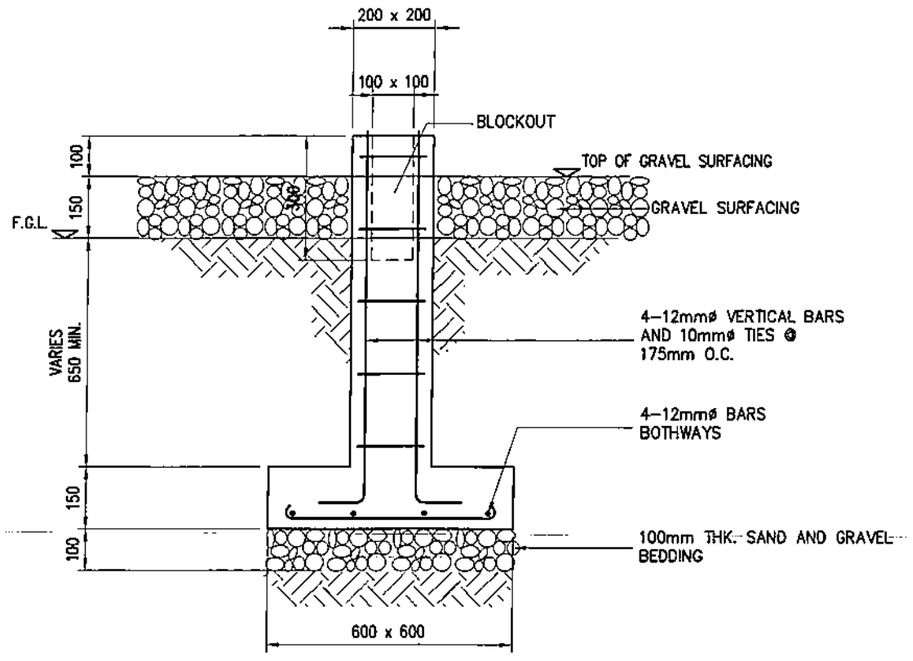
DETAIL 'A'



DETAIL 'B'

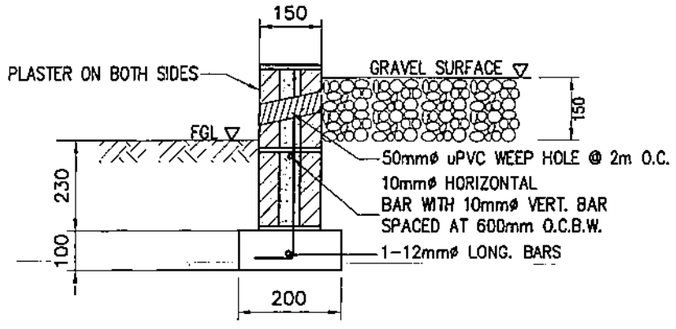


SECTION Y



PEDESTAL FOOTING

SCALE 1:30



ZOCALO WALL

SCALE 1:30

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

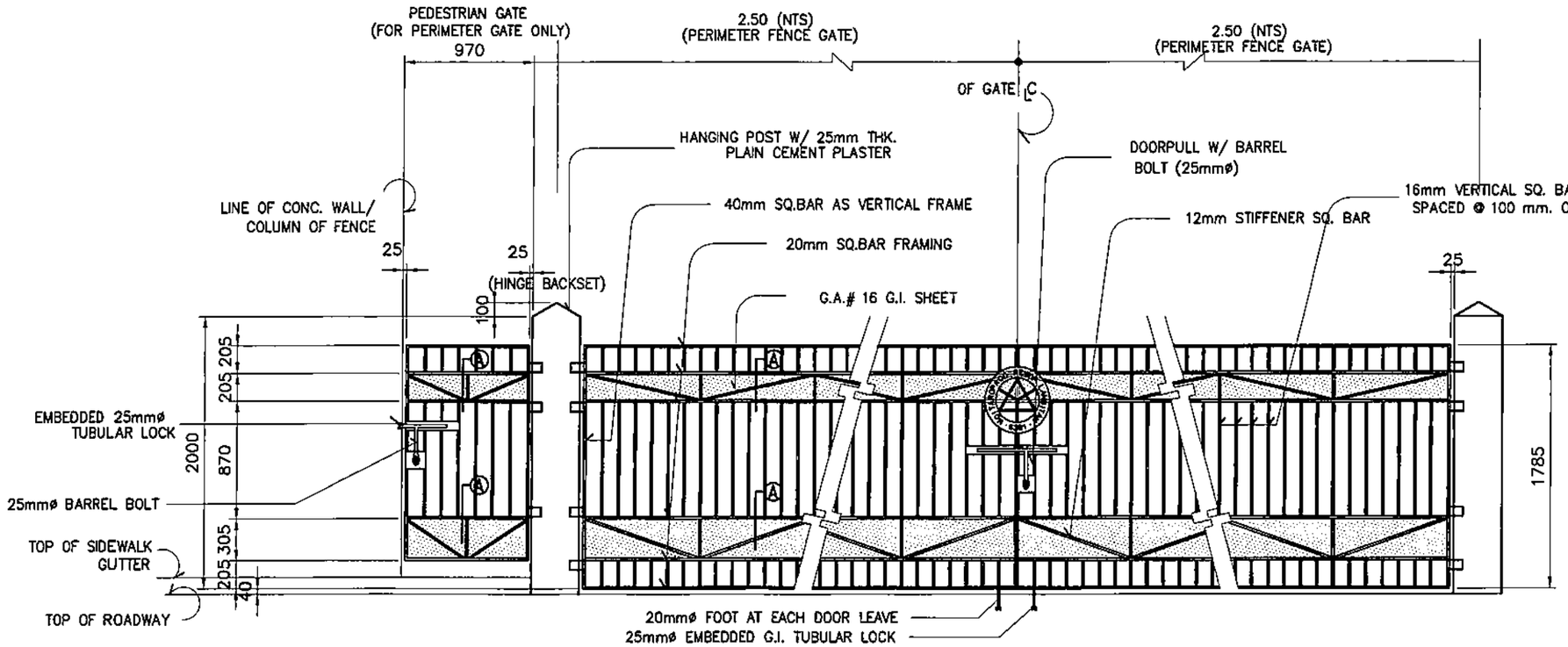
TITLE:
TYPICAL SECLUSION FENCE & PEDESTRIAN GATE (ELEVATION, SECTION & DETAILS)

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

SUBMITTED: H. L. MENDOZA, Principal Engineer A, CEAD
RECOMMENDED: A. C. ESPIRITU, Manager, CEAD
APPROVED: G. B. MAGPOC JR., Manager, DDO

DWG. NO. MSS-BDC-22.012 | SPECS. NO. LuzP23Z1636Sce

SCALE: AS SHOWN | **BID DRAWING** | REV. 0

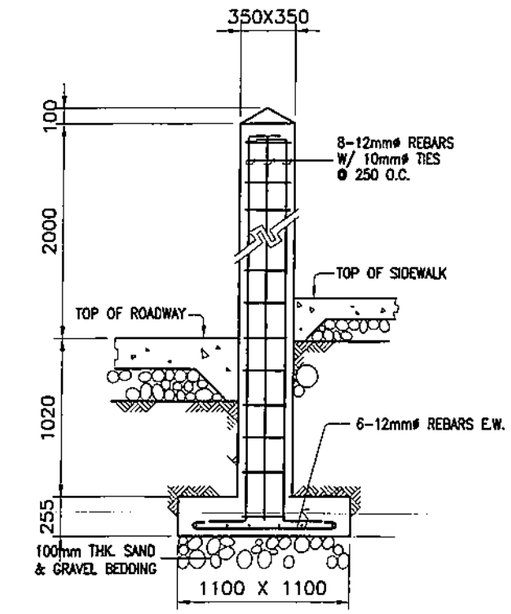


TYPICAL GATE ELEVATION

SCALE 1:40

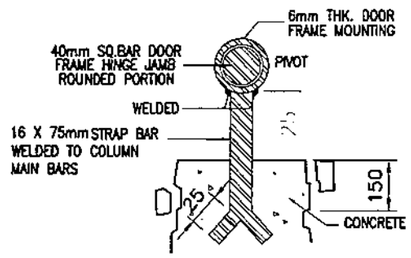
NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE INDICATED.
2. MINIMUM COMPRESSIVE STRENGTH OF CONCRETE AT 28-DAYS PERIOD SHALL BE f'c = 20.7 MPa.
3. ALL REINFORCING BARS SHALL CONFORM TO THE LATEST REQUIREMENTS OF PHILIPPINE NATIONAL STANDARD FOR DEFORMED STEEL BARS GRADE 275.
4. ALL STEEL SHALL CONFORM TO ASTM A36 STEEL AND TO BE FABRICATED AND ERECTED IN ACCORDANCE WITH NPC SPECIFICATIONS.
5. ALL WELDING WORKS SHALL CONFORM TO AWS D1.1.



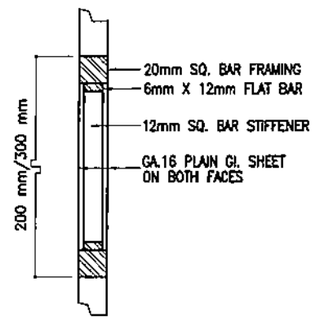
GATE POST DETAIL

SCALE 1:40



GATE HINGES

SCALE 1:40



SECTION "A"

SCALE 1:40

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: NATIONAL POWER CORPORATION
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

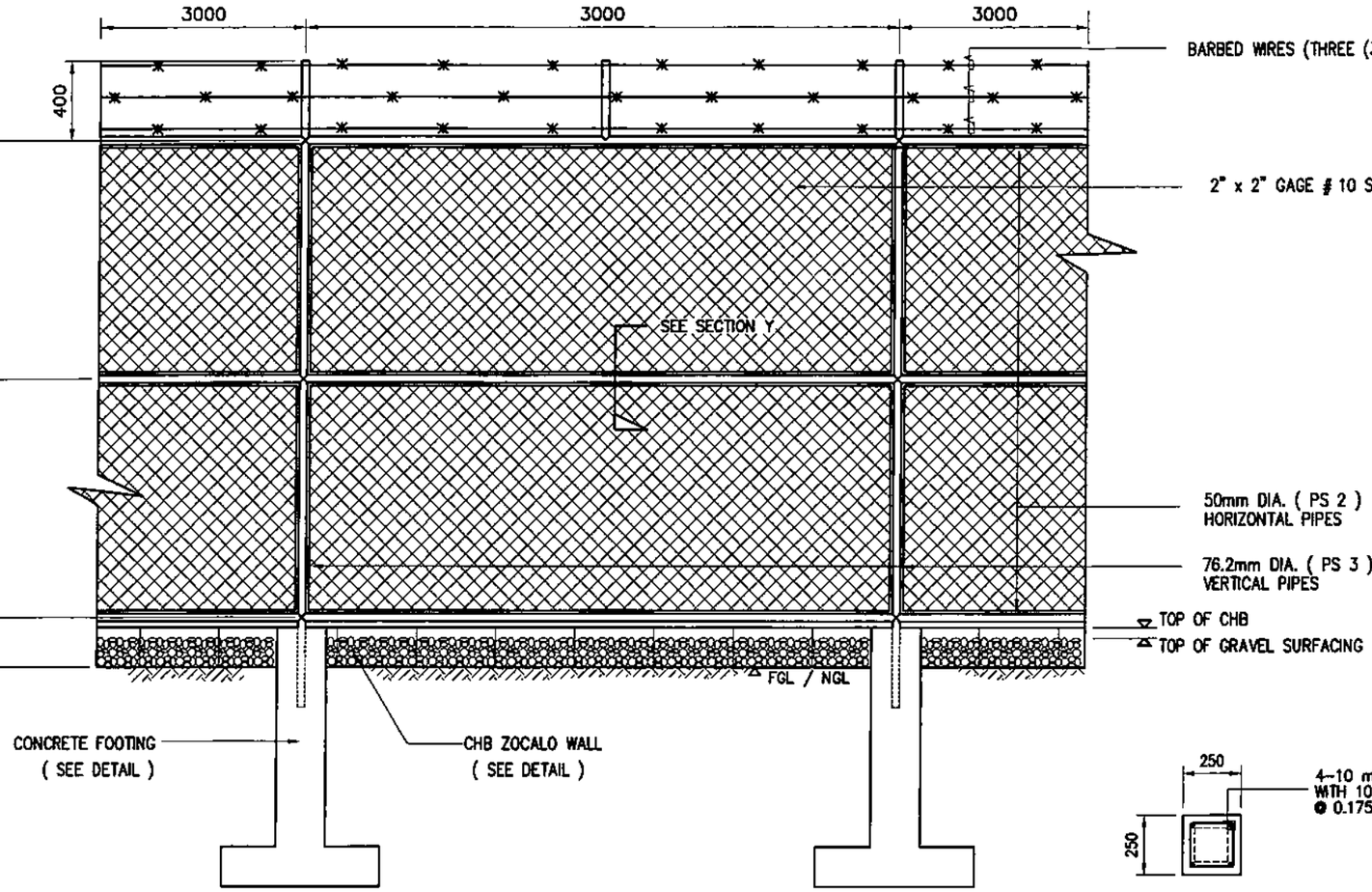
TITLE: **MAIN GATE**
(ELEVATION, SECTION, DETAILS)

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

SUBMITTED: H. L. MENDOZA, Principal Engineer A, CEAD
RECOMMENDED: A. C. ESPIRITU, Manager, CEAD
APPROVED: G. B. MAGPOC JR., Manager, DDO

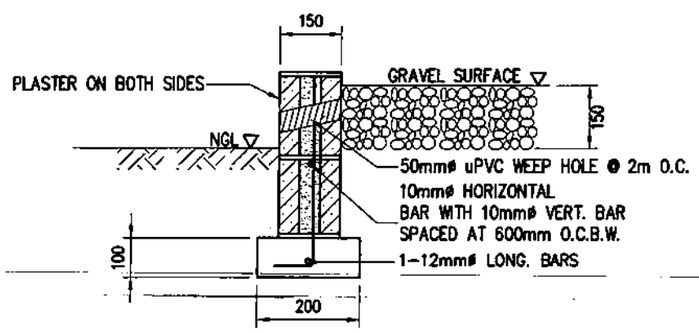
DWG. NO. MSS-BDC-22.013 SPECS. NO. LuzP23Z1636Sce

SCALE: AS SHOWN | BID DRAWING | REV. 0



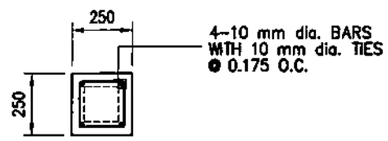
PERIMETER FENCE

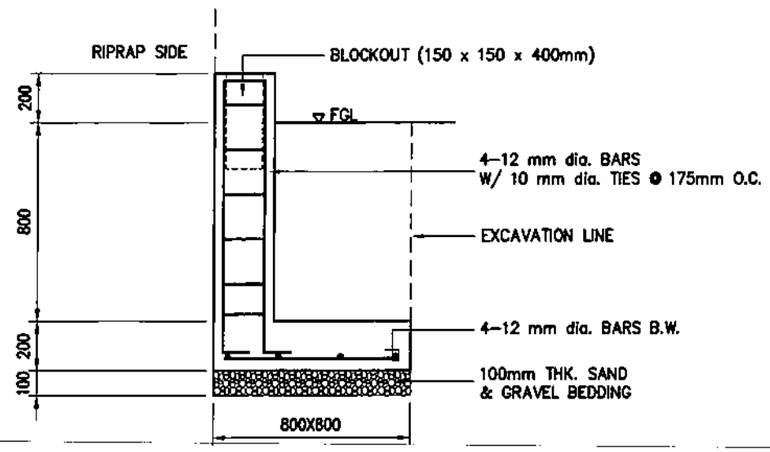
SCALE 1:30



CHB ZOCALO WALL

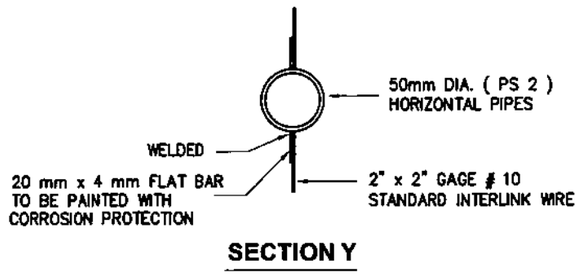
SCALE NTS





CONCRETE FOOTING DETAILS

SCALE 1:25



SECTION Y

NOTES:

1. MINIMUM COMPRESSIVE STRENGTH OF CONCRETE SHALL BE f'c = 20.70 MPa AT 28 DAYS PERIOD.
2. ALL REINFORCING BARS SHALL CONFORM TO THE LATEST REQUIREMENTS OF PHILIPPINE NATIONAL STANDARD FOR DSB GRADE 275.
3. ALL ASPECTS OF CONSTRUCTION AND DETAILING OF REINFORCEMENTS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE ACI CODE.
4. WORK THIS DRAWING WITH THE SITE DEVELOPMENT PLAN.
5. ALL PIPE JOINTS SHALL BE WELDED ALL AROUND WITH 9.52mm WELD AND WELDING PROCESS SHALL BE IN ACCORDANCE WITH AWS SPECIFICATION.
6. FOR PERIMETER FENCE ON SLOPING AREA, A STEPPED SCHEME SHOULD BE ADOPTED TO FOLLOW THE NATURAL GRADE.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

TITLE: **PERIMETER FENCE (ELEVATION, SECTIONS AND DETAILS)**

	BY	CHKD.	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

SUBMITTED: H. L. MENDOZA, Principal Engineer A, CEAD
RECOMMENDED: A. C. ESPIRITU, Manager, CEAD
APPROVED: G. B. MAGPOC JR., Manager, DDD

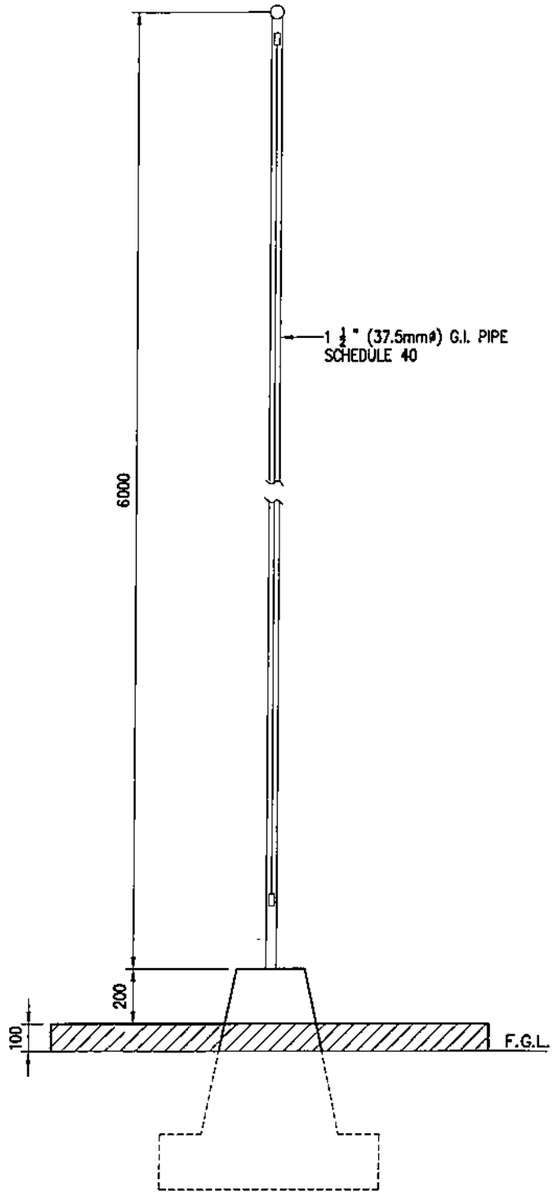
DWG. NO. MSS-BDC-22.014 SPECS. NO. LuzP23Z1636Sce

SCALE: AS SHOWN **BID DRAWING** REV. 0

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

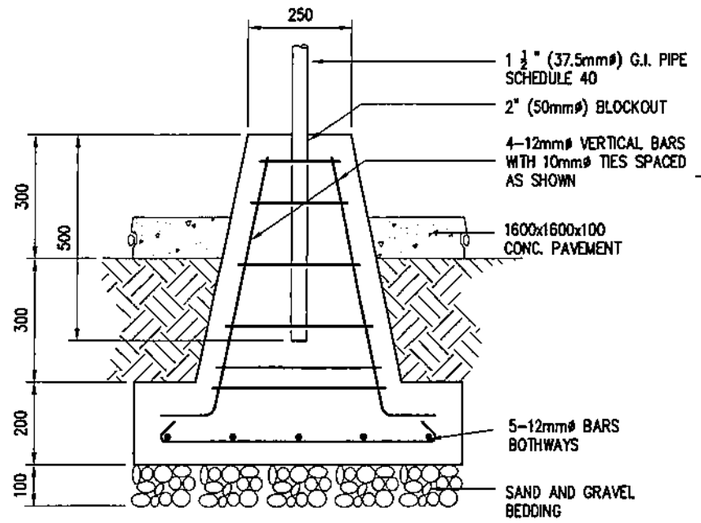
NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE INDICATED IN THE DRAWING.
2. REINFORCING STEEL BARS SHALL CONFORM TO THE REQUIREMENTS OF THE PNS FOR DEFORMED STEEL BARS GRADE 275.

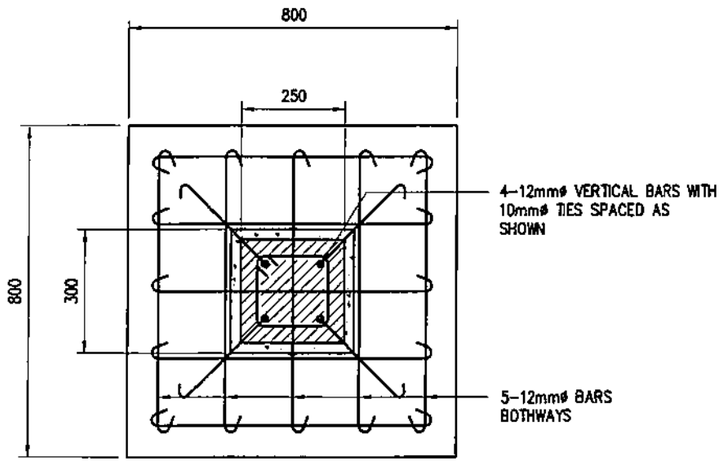


FLAG POLE ELEVATION

SCALE 1:15



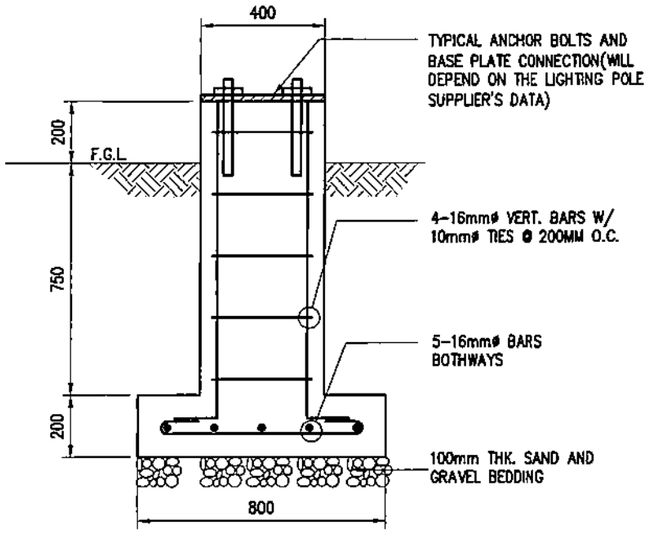
SECTION



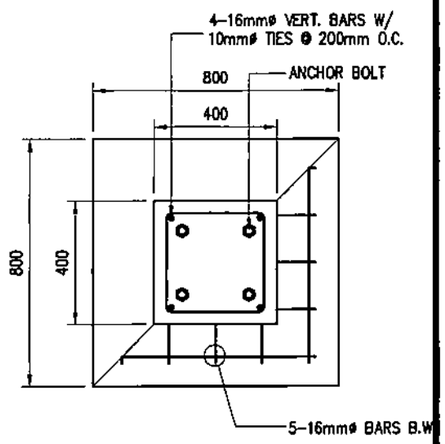
PLAN

FLAG POLE FOUNDATION

SCALE 1:15



SECTION



PLAN

PERIMETER LIGHTING POLE FOUNDATION

SCALE 1:20

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: NATIONAL POWER CORPORATION
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

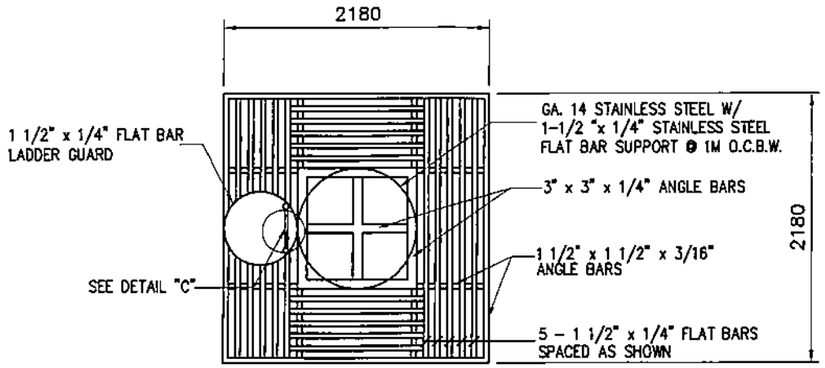
TITLE: FLAGPOLE & PERIMETER LIGHTING POLE FOUNDATION (PLAN, SECTION & DETAILS)

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

SUBMITTED: H. L. MENDOZA, Principal Engineer A, CEAD
RECOMMENDED: A. O. ESPIRITU, Manager, CEAD
APPROVED: G. B. MAGPOC JR., Manager, DDD

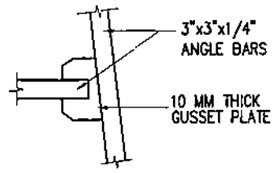
DWG. NO. MSS-BDC-22.015 SPECS. NO. LuzP23Z1636Sce

SCALE: AS SHOWN BID DRAWING REV. 0



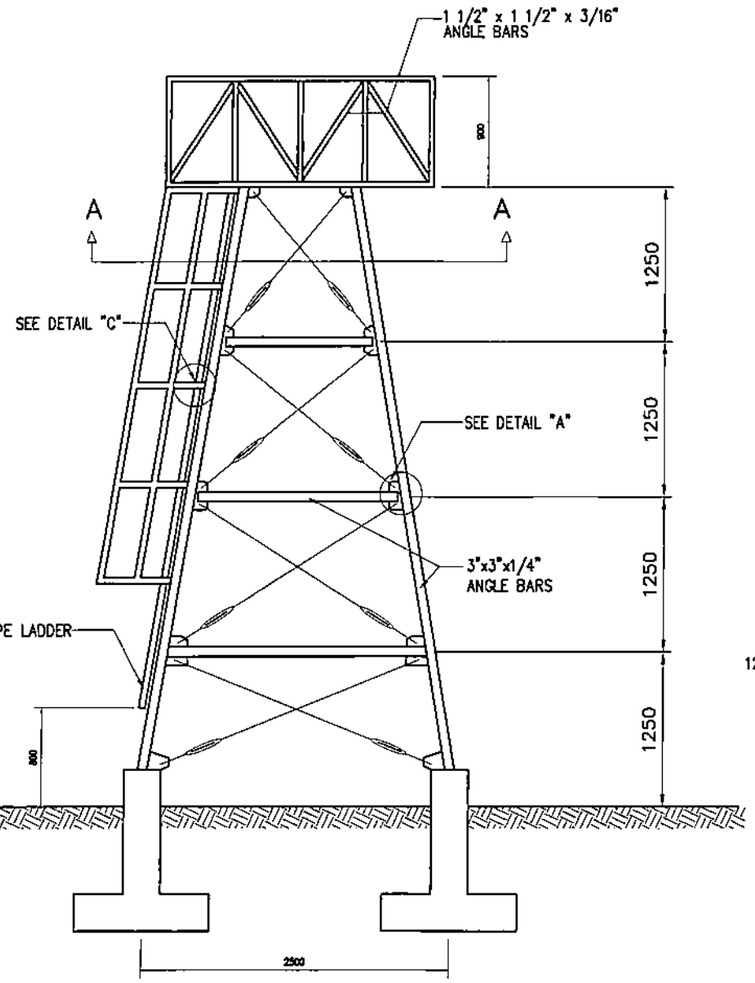
SECTION A–A

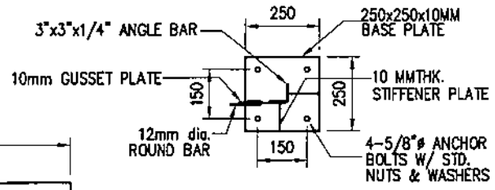
SCALE 1:50



DETAIL A

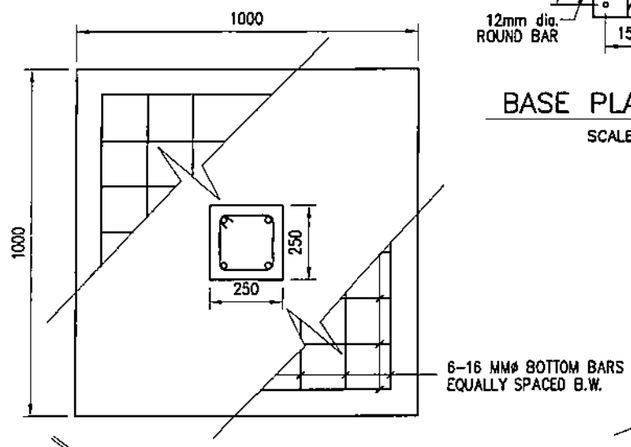
SCALE 1:25





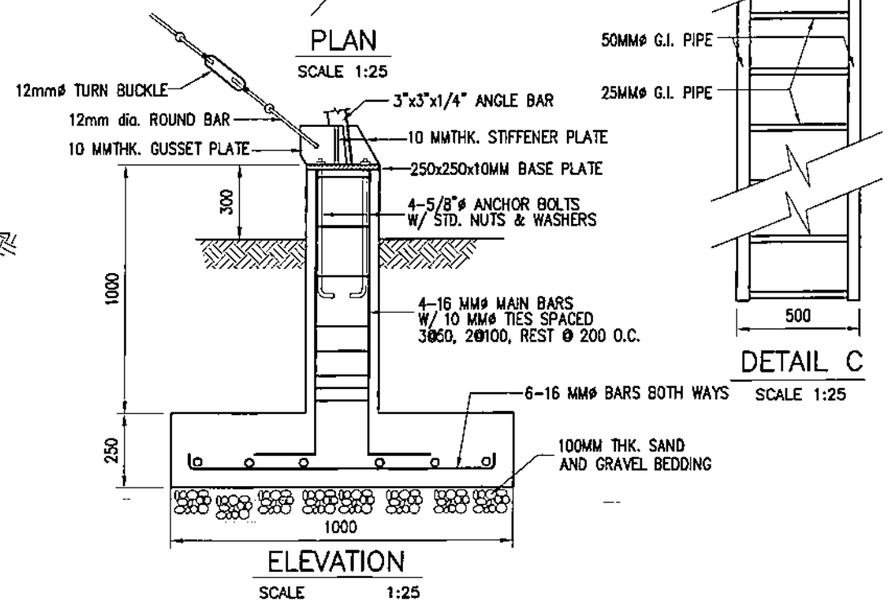
BASE PLATE DETAIL

SCALE 1:25



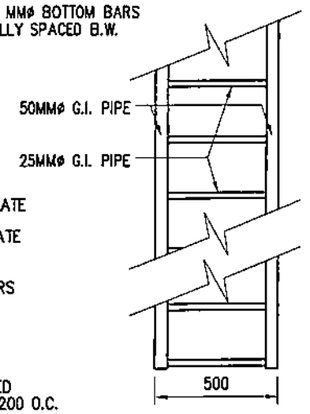
PLAN

SCALE 1:25



ELEVATION

SCALE 1:25



DETAIL C

SCALE 1:25

FOOTING DETAILS

ELEVATED WATER TANK

SCALE 1:50

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE INDICATED.
2. MINIMUM COMPRESSIVE STRENGTH OF CONCRETE SHALL BE f'c=20.70 MPa AT 28 DAY PERIOD.
3. ALL REINFORCING STEEL BARS SHALL CONFORM TO THE REQUIREMENTS OF PNS: 49/2001 FOR DEFORMED STEEL BARS, GRADE 275.
4. DETAILS OF REINFORCING BARS (SPLICES, BENDS, HOOKS, ETC.) SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF ACI CODE.
5. ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A36 AND SHALL HAVE A MINIMUM YIELD STRESS, FY=248.20 MPa.
6. ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST AISC SPECIFICATIONS AND CODE OF STANDARD PRACTICE.
7. BOLTS SHALL CONFORM TO ASTM A-307 UNLESS OTHERWISE INDICATED.
8. WELDS ON ALL GUSSET PLATES AND CONNECTIONS SHALL BE FILLET WELD ALL AROUND.
9. WELDING SHALL CONFORM TO E60 SERIES OF THE SPECIFICATIONS FOR MILD STEEL ARC WELDING ELECTRODES ASTM A233.
10. ALL GUSSET PLATES SHALL BE 10 MM THICK.
11. ALL ASPECTS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PROVISION OF NPC SPECIFICATIONS AND ACI CODE.
12. DEGREE OF COMPACTION OF BACKFILL OF SHALL BE 90% OF RELATIVE DENSITY.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

TITLE:
ELEVATED WATER STORAGE TANK
(PLAN, SECTION, ELEVATION & DETAIL)

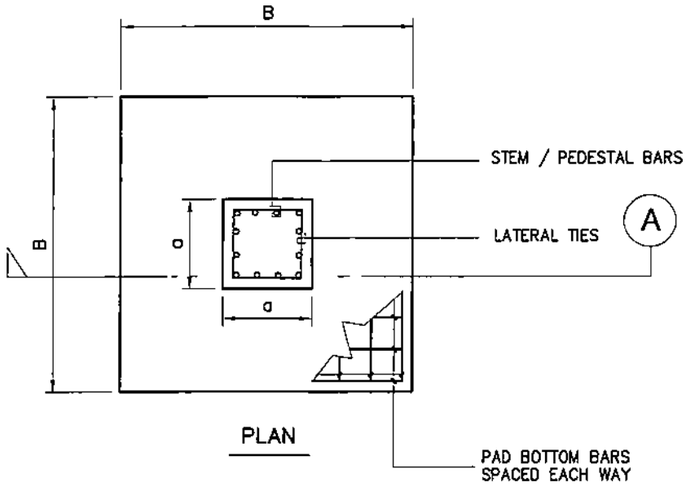
	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

SUBMITTED: H. L. MENDOZA, Principal Engineer A, CEAD
RECOMMENDED: A. C. ESPIRITU, Manager, CEAD
APPROVED: G. B. MAGPOC JR., Manager, DDO

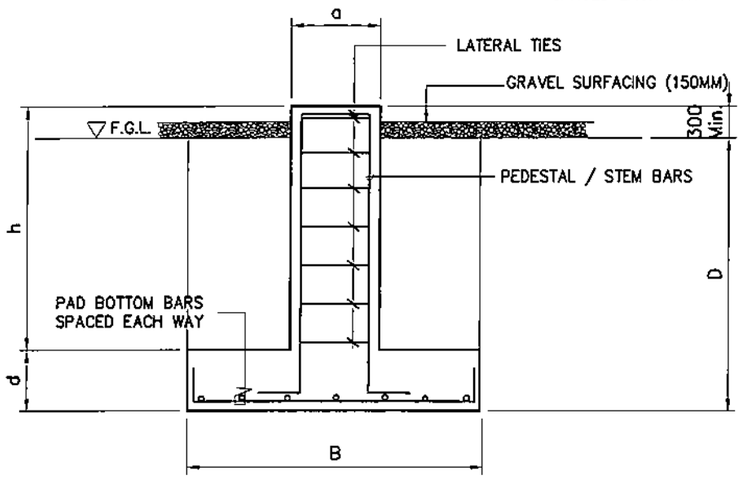
DWG. NO. MSS-BDC-22.016 | SPECS. NO. LuzP23Z1636Sce

SCALE: AS SHOWN | **BID DRAWING** | REV. 0

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.



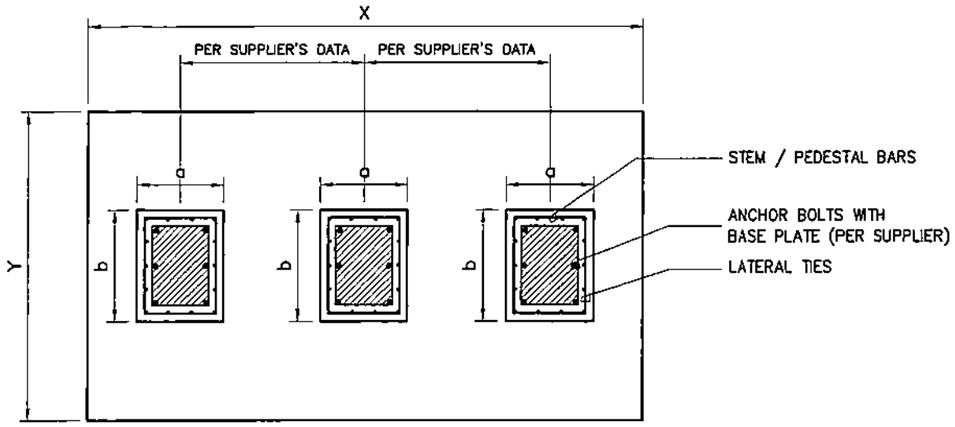
PLAN



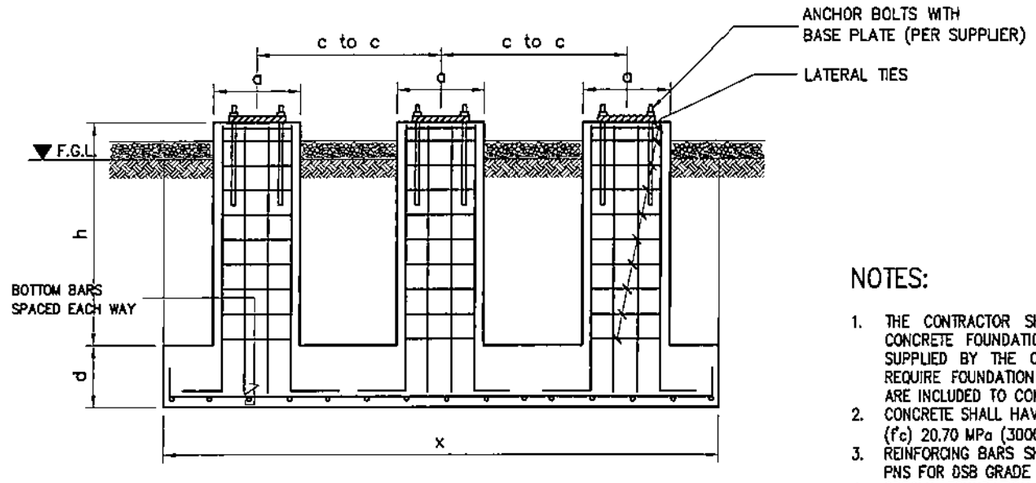
SECTION A

TYPICAL GANTRY AND EQUIPMENT FOUNDATION

SCALE NTS



PLAN



TYPICAL POWER CIRCUIT BREAKER FOUNDATION

SCALE NTS

LIST OF GANTRY & EQUIPMENT STRUCTURES
69 kV GANTRY STRUCTURES (GS)
13.8 kV GANTRY STRUCTURES (GS)
BUS SUPPORT (BS)
DISCONNECT SWITCH (DS)
SURGE ARRESTER (SA)
VOLTAGE TRANSFORMER (VT)
CURRENT TRANSFORMER (CT)
METALCLAD SWITCHGEAR (MCSG)
POWER TRANSFORMER (PTR)
EARTH SWITCH (ES)
POWER CIRCUIT BREAKER (PCB)

NOTES:

1. THE CONTRACTOR SHALL DESIGN AND CONSTRUCT ALL REINFORCED CONCRETE FOUNDATIONS FOR THE GANTRY AND EQUIPMENT TO BE SUPPLIED BY THE CONTRACTOR INCLUDING ALL OTHER ITEMS THAT REQUIRE FOUNDATION WORKS ALTHOUGH NOT MENTIONED HEREIN BUT ARE INCLUDED TO COMPLETE THE PROJECT.
2. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF (f'c) 20.70 MPa (3000 psi).
3. REINFORCING BARS SHALL CONFORM TO THE LATEST REQUIREMENTS OF PNS FOR DSB GRADE 275.
4. SPECIAL FOUNDATION FILL MAY BE INTRODUCED TO ACHIEVE A MINIMUM BEARING CAPACITY OF 14,670 KG/SQ.M/, IF NEEDED.
5. ALL ASPECTS OF CONSTRUCTION AND DETAILING OF REINFORCEMENTS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE ACI CODE.
6. WORK THIS DRAWING WITH SITE DEVELOPMENT PLAN, FOUNDATION LAYOUT AND ELECTRICAL DRAWINGS.

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

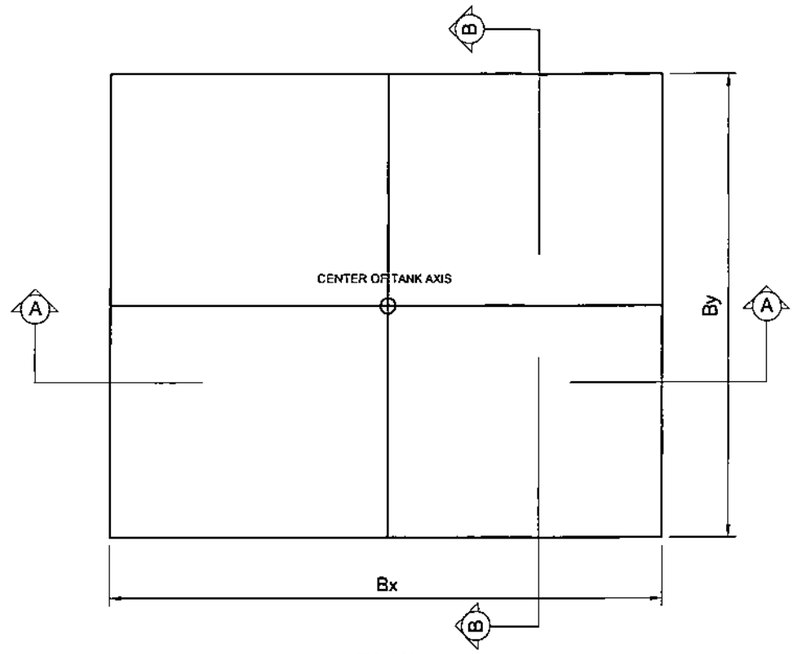
TITLE:
FOUNDATION FOR EQUIPMENT & GANTRY STRUCTURES (PLAN, SECTION AND DETAILS)

	BY	CHKD.	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

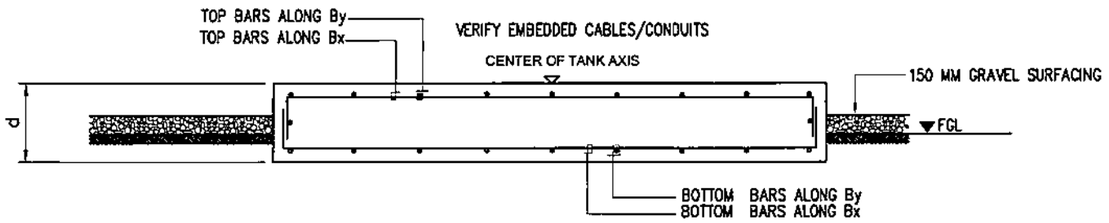
SUBMITTED: H. L. MENDOZA, Principal Engineer A, CEAD
RECOMMENDED: A.O. ESPIRITU, Manager, CEAD
APPROVED: G. B. MAGPOC, JR., Manager, DDD

OWG. NO. MSS-BDC-22.017 SPECS. NO. LuzP23Z1636Sce

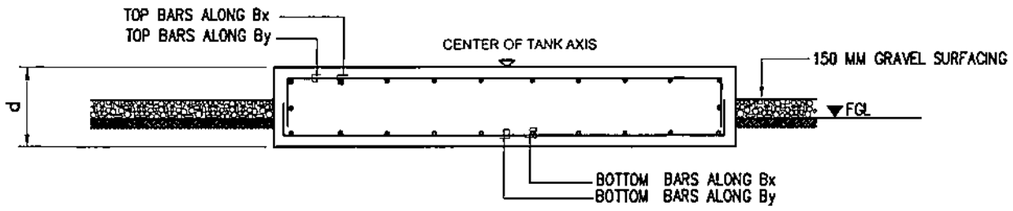
SCALE: NTS **BID DRAWING** REV. 0



PLAN



SECTION A - A



SECTION B - B

NOTES:

1. THE CONTRACTOR SHALL DESIGN AND CONSTRUCT ALL REINFORCED CONCRETE FOUNDATIONS FOR THE GANTRY AND EQUIPMENT TO BE SUPPLIED BY THE CONTRACTOR INCLUDING ALL OTHER ITEMS THAT REQUIRE FOUNDATION WORKS ALTHOUGH NOT MENTIONED HEREIN BUT ARE INCLUDED TO COMPLETE THE PROJECT.
2. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF (f'c) 20.70 MPa (3000 psi).
3. REINFORCING BARS SHALL CONFORM TO THE LATEST REQUIREMENTS OF PNS FOR OSB GRADE 275.
4. SPECIAL FOUNDATION FILL MAY BE INTRODUCED TO ACHIEVE A MINIMUM BEARING CAPACITY OF 14,670 KG/SQ.M/, IF NEEDED.
5. ALL ASPECTS OF CONSTRUCTION AND DETAILING OF REINFORCEMENTS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE ACI CODE.
6. WORK THIS DRAWING WITH SITE DEVELOPMENT PLAN, FOUNDATION LAYOUT AND ELECTRICAL DRAWINGS.

TYPICAL TRANSFORMER FOUNDATION

SCALE NTS

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

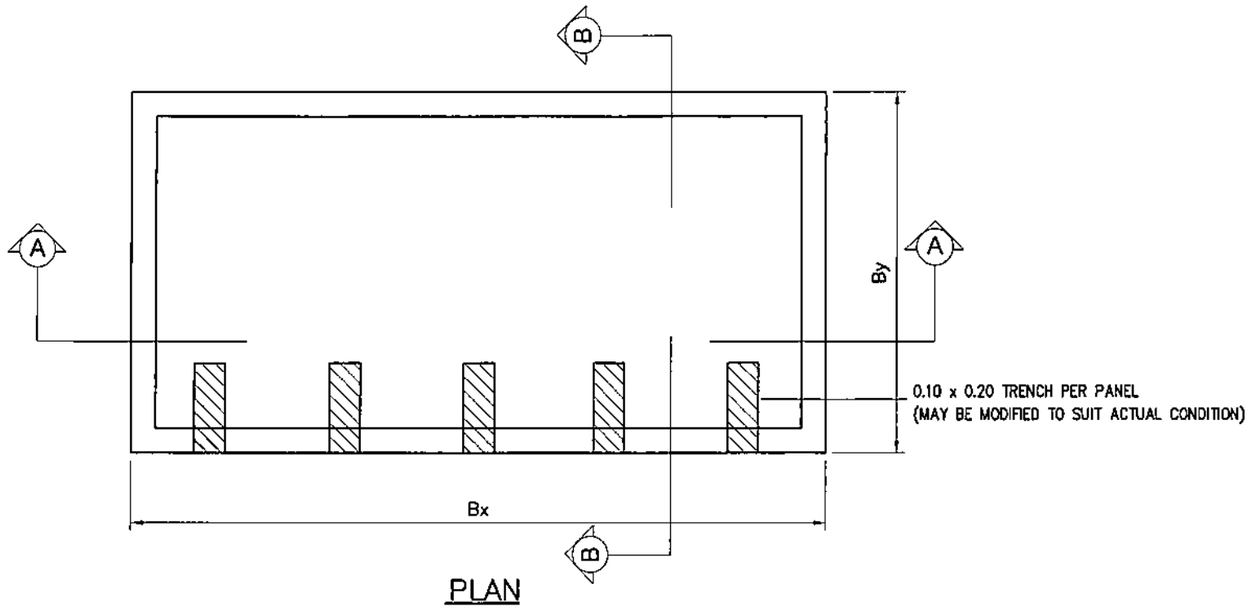
TITLE: **TYPICAL TRANSFORMER FOUNDATION (PLAN AND SECTIONS)**

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

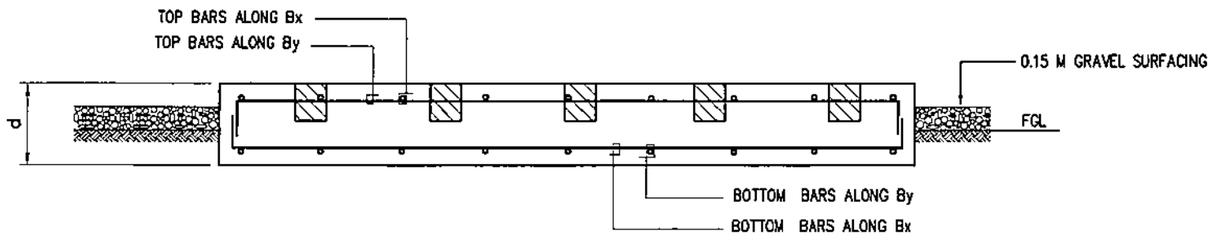
SUBMITTED: H. L. MENDOZA, Principal Engineer A, CEAD
RECOMMENDED: A. C. ESPIRITU, Manager, CEAD
APPROVED: G. B. MAGPOC, JR., Manager, DDD

DWG. NO. MSS-BDC-22.018 SPECS. NO. LuzP23Z1636Sce

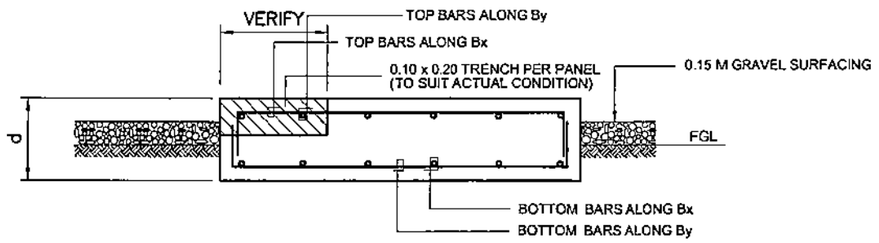
SCALE: NTS **BID DRAWING** REV. 0



PLAN



SECTION A – A



SECTION B – B

TYPICAL SWITCHGEAR FOUNDATION

SCALE NTS

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
2. THE CONTRACTOR SHALL DESIGN AND CONSTRUCT ALL REINFORCED CONCRETE FOUNDATIONS FOR THE GANTRY AND EQUIPMENT TO BE SUPPLIED BY THE CONTRACTOR INCLUDING ALL OTHER ITEMS THAT REQUIRE FOUNDATION WORKS ALTHOUGH NOT MENTIONED HEREIN BUT ARE INCLUDED TO COMPLETE THE PROJECT.
3. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 20.7 MPa (3000 PSI).
4. REINFORCING BARS SHALL CONFORM TO THE LATEST REQUIREMENTS OF PNS FOR DSB GRADE 275.
5. SPECIAL FOUNDATION FILL MAY BE INTRODUCED TO ACHIEVE A MINIMUM BEARING CAPACITY OF 144 KPa, IF NEEDED.
6. USE HORIZONTAL PEAK GROUND ACCELERATION OF 0.35G IN DESIGN.
7. USE 260KPH WIND VELOCITY IN DESIGN.
8. ALL ASPECTS OF DESIGN, DETAILING AND CONSTRUCTION OF REINFORCEMENTS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE ACI CODE.
9. WORK THIS DRAWING WITH SITE DEVELOPMENT PLAN, FOUNDATION LAYOUT AND ELECTRICAL DRAWINGS.

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

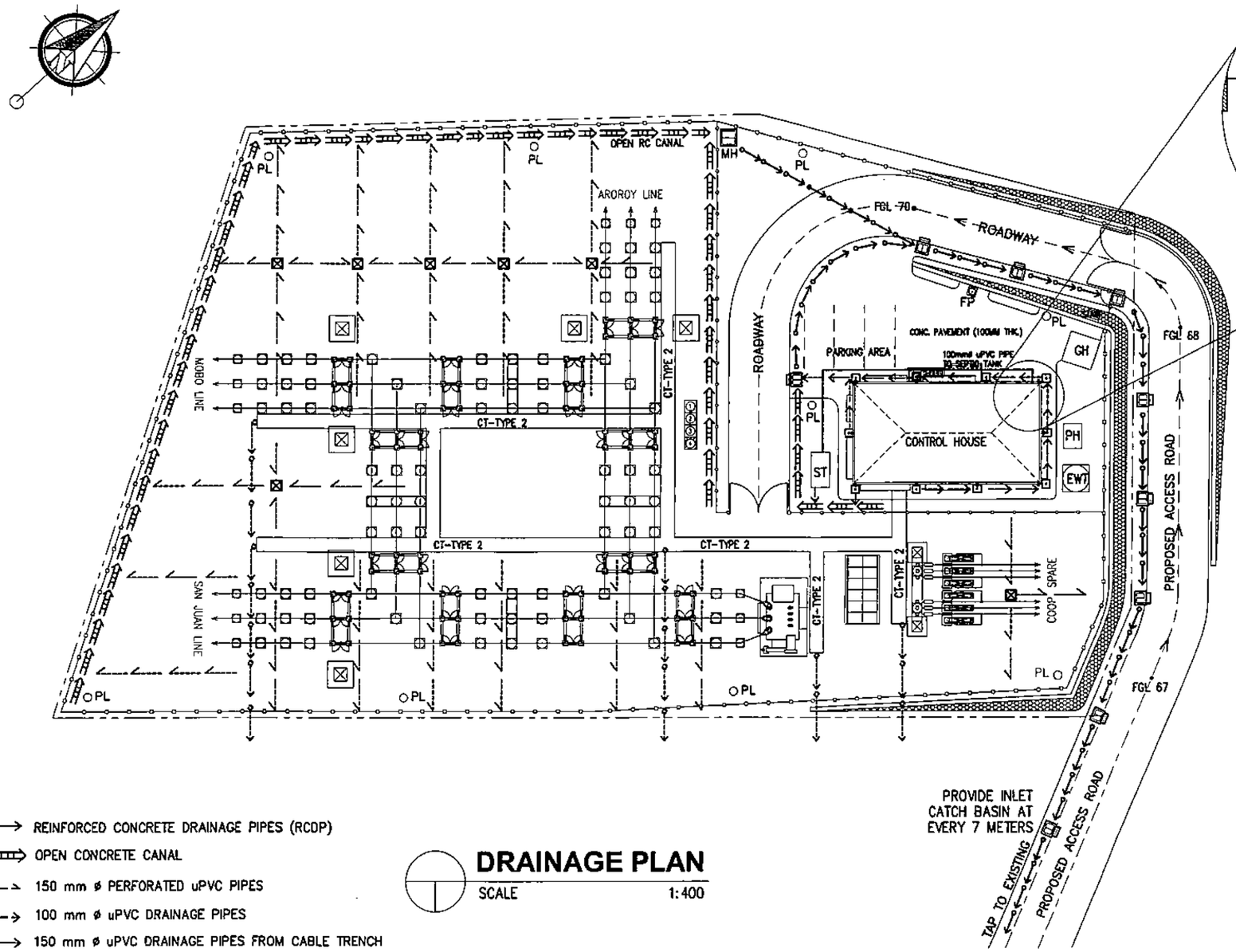
TITLE: **TYPICAL SWITCHGEAR FOUNDATION (PLAN AND SECTIONS)**

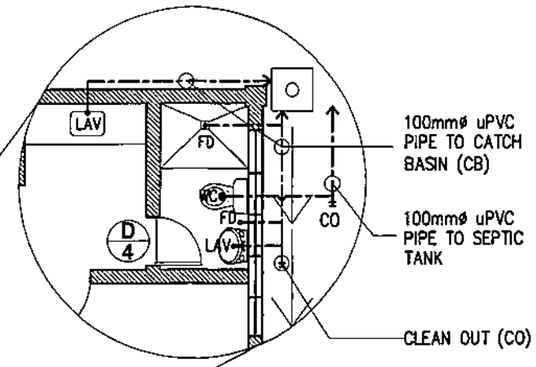
	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

SUBMITTED: H. L. MENDOZA, Principal Engineer A, CEAD
RECOMMENDED: A. C. ESPIRITU, Manager, CEAD
APPROVED: G. B. MAGPOC JR., Manager, DDD

DWG. NO. MSS-BDC-22.019 SPECS. NO. LuzP23Z1636Sce

SCALE: NTS **BID DRAWING** REV. 0





NOTES:

1. ALL DIMENSIONS AND ELEVATIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
2. ARROW HEADS INDICATED DIRECTION OF FLOW.
3. LOCATION OF DRAINAGE APPURTENANCES AND LENGTHS OF PIPES MAY BE CHANGED TO SUIT ACTUAL FIELD CONDITIONS.
4. MINIMUM COMPRESSIVE STRENGTH OF CONCRETE SHALL BE f'c = 20.70 MPa FOR DRAINAGE APPURTENANT STRUCTURES.
5. FINISHED GRADE SHALL BE SLIGHTLY SLOPED TOWARDS DRAINAGE SYSTEM.
6. PRIOR TO CONSTRUCTION OF DRAINAGE SYSTEM, ELEVATION AND EXTENETS AT TAPPING POINT MUST FIRST BE VERIFIED TO ENSURE CONTINOUS FLOW.
7. THIS DRAWINGS IS FOR BIDDING PURPOSED ONLY. THE CONTRACTOR SHALL DEVELOP THE DRAINAGE SYSTEM BASED ON THE ACTUAL FIELD CONDITION.
8. WORK THIS DRAWING WITH SITE DEVELOPMENT PLAN.

LEGEND:

- REINFORCED CONCRETE DRAINAGE PIPES (RCDP)
- OPEN CONCRETE CANAL
- 150 mm ø PERFORATED uPVC PIPES
- 100 mm ø uPVC DRAINAGE PIPES
- 150 mm ø uPVC DRAINAGE PIPES FROM CABLE TRENCH
- MANHOLE
- STREET INLET–CATCH BASIN
- CATCH–BASIN FOR INTERSECTING–PPVC PIPES
- CATCH–BASIN FOR DOWNSPOUTS

FD – FLOOR DRAIN
WC – WATER CLOSET
LAV – LAVATORY
CO – CLEAN OUT

DRAINAGE PLAN

SCALE 1:400

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

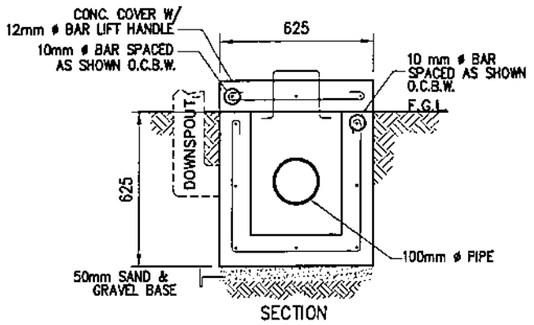
TITLE: **DRAINAGE PLAN**

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

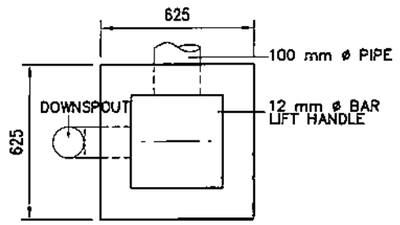
SUBMITTED: TH. L. MENDOZA, Principal Engineer A, CEAD
RECOMMENDED: A. C. ESPIRITU, Manager, CEAD
APPROVED: G. B. MAGPOC JR., Manager, DDD

DWG. NO. MSS-BDC-22.020 SPECS. NO. LuzP23Z1636Sce

SCALE: 1:400 **BID DRAWING** REV. 0



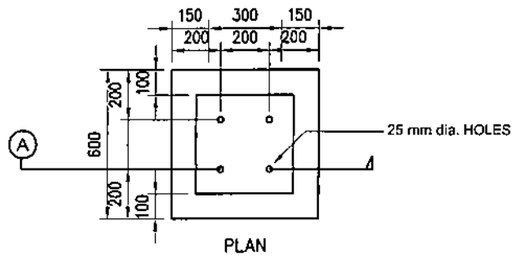
SECTION



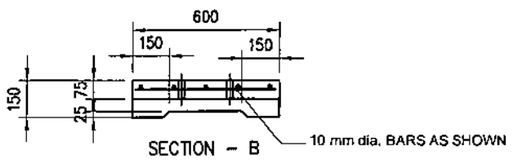
PLAN

CATCH BASIN FOR DOWNSPOUT

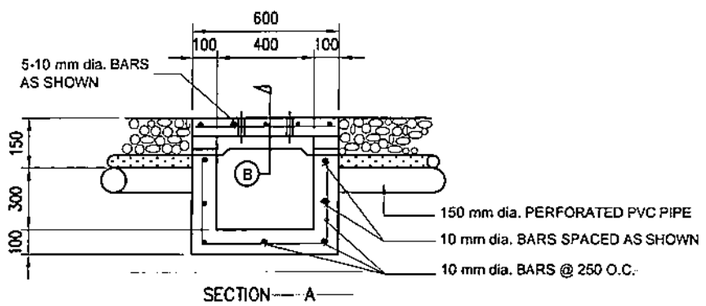
SCALE 1:20



PLAN



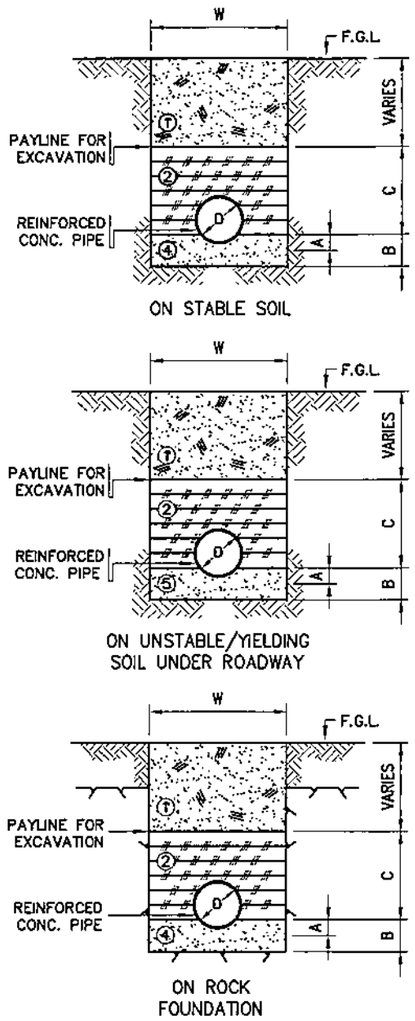
SECTION – B



SECTION – A

TYPICAL CATCH BASIN FOR INTERSECTING PVC PIPES

SCALE 1:25

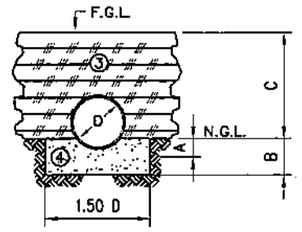


ON STABLE SOIL

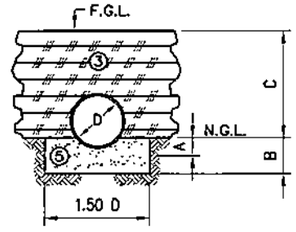
ON UNSTABLE/YIELDING
SOIL UNDER ROADWAY

ON ROCK
FOUNDATION

A. DITCH CONDITION



ON STABLE and
ROCK FOUNDATION



ON UNSTABLE
YIELDING SOIL

B. PROJECTING CONDITION

DETAILS OF TRENCHING, BEDDING & BACKFILLING

NOMENCLATURE:

CB–DS – CATCH BASIN FOR DOWNSPOUT

PROPERTIES OF TRENCHING, BEDDING & BACKFILLING

PIPE SIZE, D	A	B	C	W
100 mm (4")	50	100	400	600
150 mm (6")	50	100	450	650
200 mm (8")	50	100	500	700
300 mm (12")	100	150	550	800
450 mm (18")	100	200	800	1050
600 mm (24")	150	300	900	1200

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE INDICATED.
2. MINIMUM COMPRESSIVE STRENGTH OF CONCRETE SHALL BE 20.70 MPa FOR DRAINAGE APPURTENANT STRUCTURES.
3. ALL REINFORCING STEEL BARS SHALL CONFORM TO THE LATEST REQUIREMENTS OF PHILIPPINE NATIONAL STANDARD FOR DSB GRADE 275.
4. WORK THIS DRAWING WITH SITE DEVELOPMENT AND DRAINAGE SYSTEM.

LEGEND:

① ORDINARY BACKFILL MATERIAL HAND OR MACHINE TAMPED IN EVERY 150 mm LAYER.

② SELECTED BACKFILL MATERIAL WITH NO BOULDERS, VEGETABLE MATTERS & ETC., AND TAMPED IN EVERY 100 mm LAYER.

③ SELECTED FILL OR ANY SUITABLE MATERIAL WITH NO BOULDERS, VEGETABLE MATTERS & ETC., AND TAMPED IN EVERY 150 mm LAYER.

④ SAND OR NATURAL SANDY SOIL (BEDDING MATERIALS) ACCURATELY SHAPED TO FIT PIPE & HAND TAMPED IN EVERY 100 mm LAYER.

⑤ 13.7 MPa (2000 PSI) CONCRETE CRADLE.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

TITLE: **DRAINAGE APPURTENANCES**
(CB–DS, TRENCHING, CATCH BASIN FOR PVC PIPES)

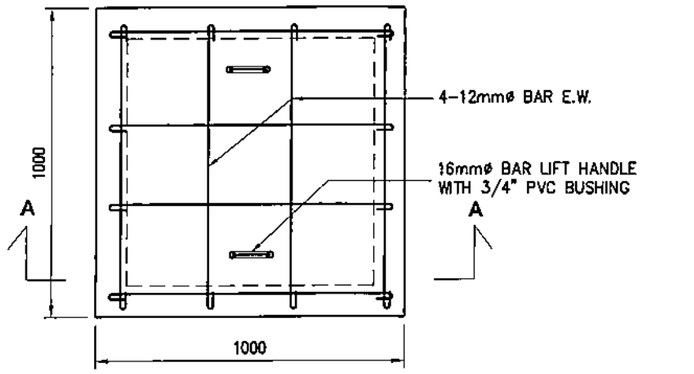
	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

SUBMITTED: H. L. MENDOZA, Principal Engineer A, CEAD
RECOMMENDED: A. C. ESPIRITU, Manager, CEAD
APPROVED: G. B. MAGPOC, JR., Manager, DDD

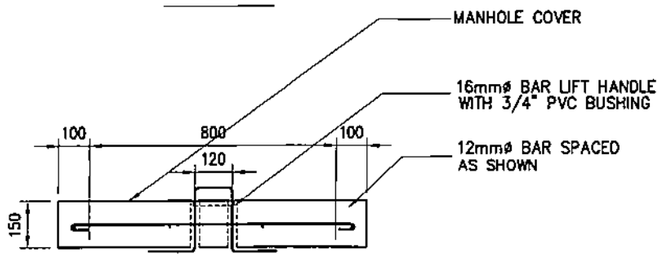
DWG. NO. MSS-BDC-22.021 SPECS. NO. LuzP23Z1636Sce

SCALE: AS SHOWN **BID DRAWING** REV. 0

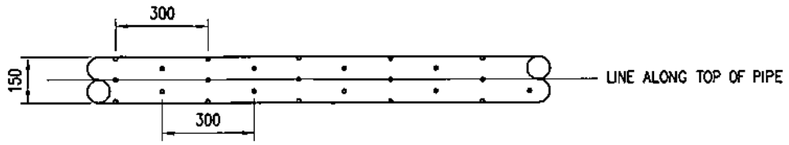
REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.



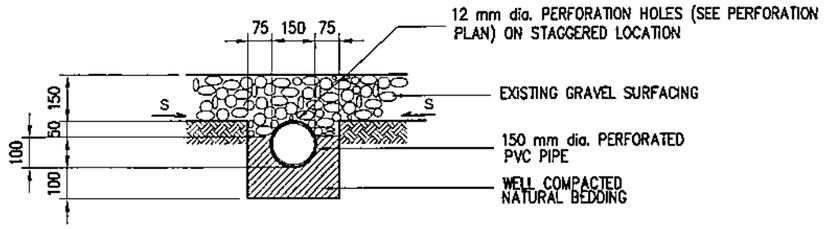
PLAN



SECTION A-A



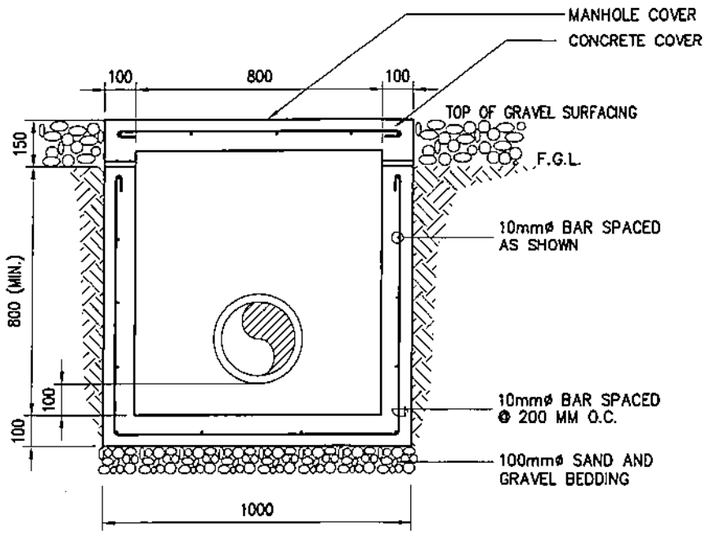
PERFORATION PLAN



DETAILS

PERFORATED PVC PIPES

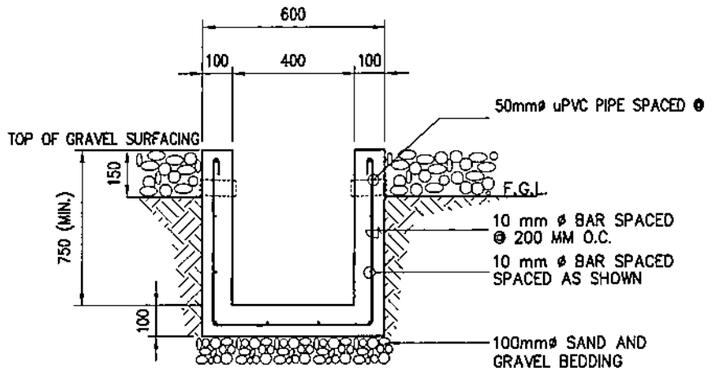
SCALE 1:20



ELEVATION

MANHOLE

SCALE 1:20



ELEVATION

OPEN CONCRETE CANAL

SCALE 1:20

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE INDICATED.
2. MINIMUM COMPRESSIVE STRENGTH OF CONCRETE SHALL BE 20.70 MPa FOR DRAINAGE APPURTENANT STRUCTURES.
3. ALL REINFORCING STEEL BARS SHALL CONFORM TO THE LATEST REQUIREMENTS OF PHILIPPINE NATIONAL STANDARD FOR DSB GRADE 275.
4. WORK THIS DRAWING WITH SITE DEVELOPMENT AND DRAINAGE SYSTEM.

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECO.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

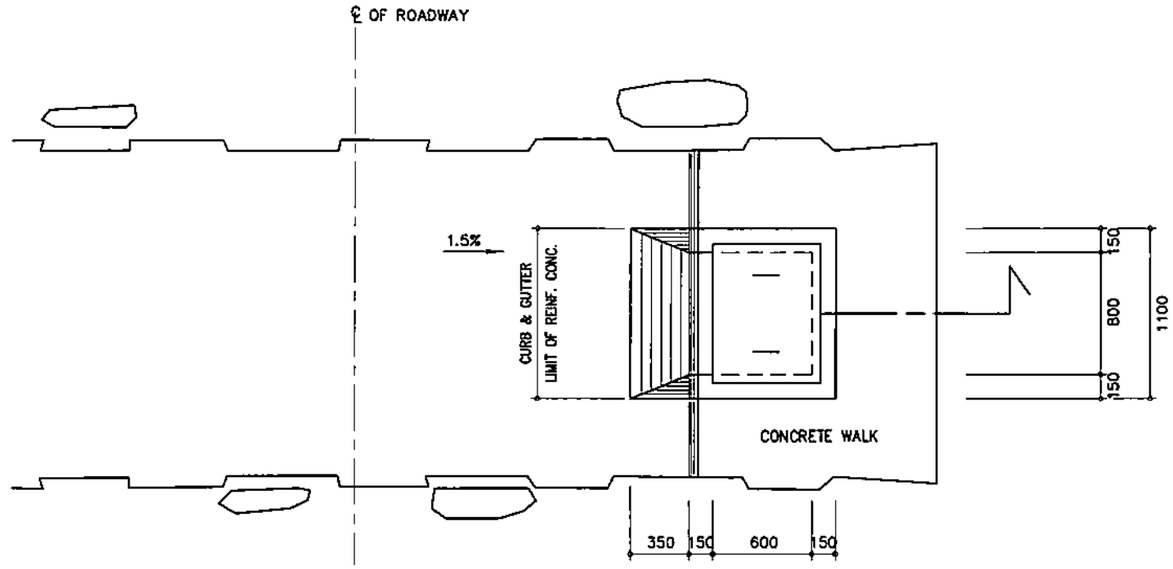
TITLE:
DRAINAGE APPURTENANCES
(MANHOLE, PERF. PVC PIPES, OPEN CONCRETE CANAL)

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

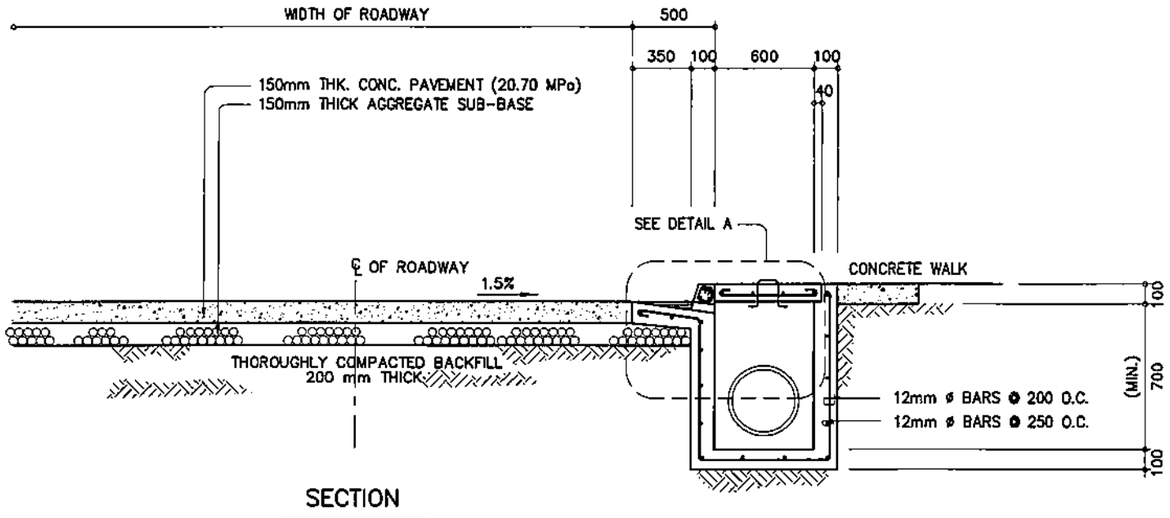
SUBMITTED: H. L. MENDOZA, Principal Engineer A, CEAD
RECOMMENDED: A. C. ESPIRITU, Manager, CEAD
APPROVED: G. B. MAGPOC, JR., Manager, DDD

DWG. NO. MSS-BDC-22.022 SPECS. NO. LuzP23Z1636Sce

SCALE: AS SHOWN | **BID DRAWING** | REV. 0



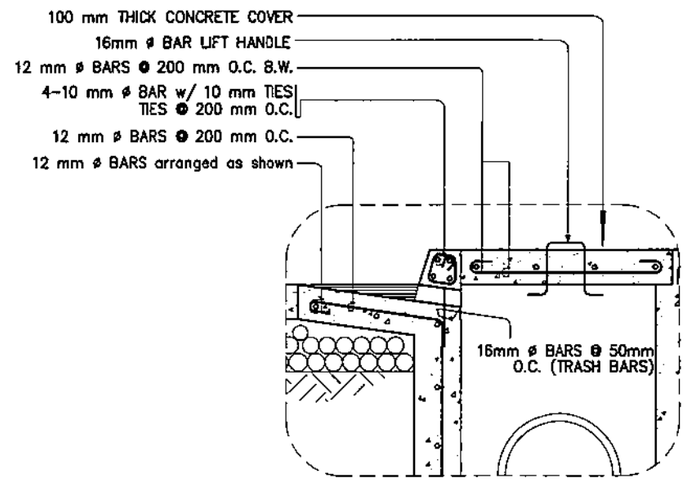
PLAN



SECTION

STREET INLET – CATCH BASIN

SCALE NTS



DETAIL A

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE INDICATED.
2. MINIMUM COMPRESSIVE STRENGTH OF CONCRETE SHALL BE 20.70 MPa FOR DRAINAGE APPURTENANT STRUCTURES.
3. ALL REINFORCING STEEL BARS SHALL CONFORM TO THE LATEST REQUIREMENTS OF PHILIPPINE NATIONAL STANDARD FOR DSB GRADE 275.
4. THE CONTRACTOR SHALL VERIFY THE ACTUAL INVERT ELEVATIONS OF PIPES TO PREVENT BACKFLOW.
5. WORK THIS DRAWING WITH SITE DEVELOPMENT AND DRAINAGE SYSTEM.

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: NATIONAL POWER CORPORATION
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

TITLE:

DRAINAGE APPURTENANCES
(STREET INLET–CATCH BASIN)

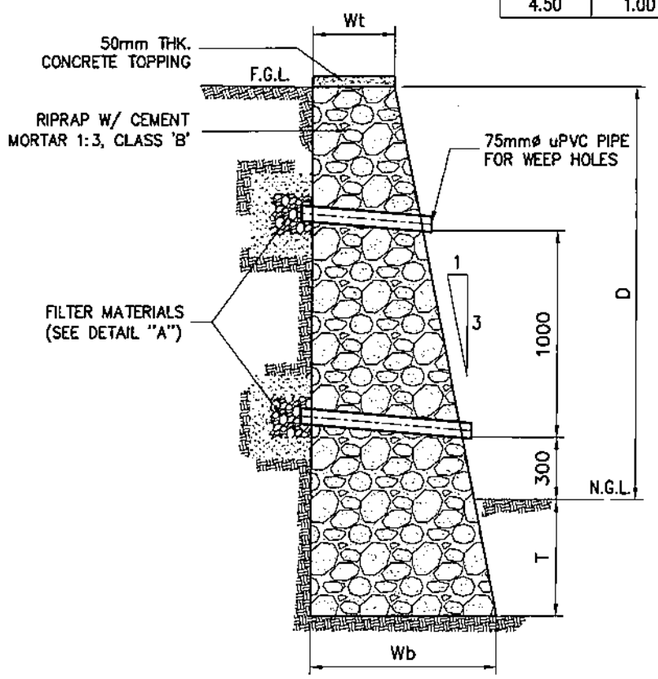
	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

SUBMITTED: H. L. MENDOZA, Principal Engineer A, CEAD
RECOMMENDED: A. C. ESPIRITU, Manager, CEAD
APPROVED: G. B. MAGPOC, JR., Manager, DDD

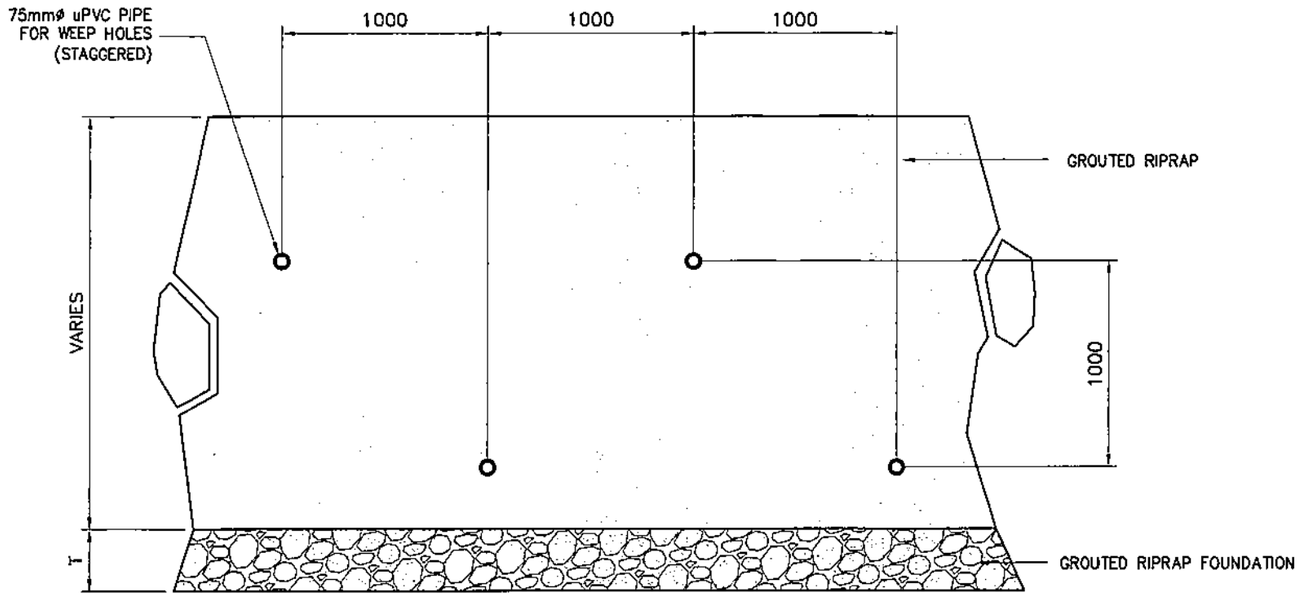
DWG. NO. MSS-BDC-22.023 SPECS. NO. LuzP23Z1636Sce

SCALE: AS SHOWN BID DRAWING REV. 0

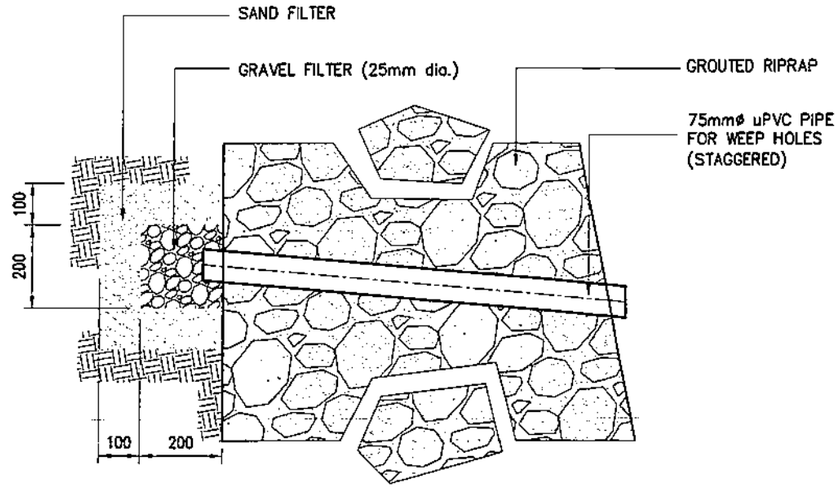
PROPERTIES OF SECTION			
D	T	Wt	Wb
1.00	0.30	0.30	0.73
1.50	0.30	0.30	0.90
2.00	0.50	0.30	1.13
2.50	0.60	0.35	1.38
3.00	0.80	0.35	1.62
3.50	0.90	0.45	1.92
4.00	0.95	0.55	2.20
4.50	1.00	0.65	2.48



SECTION
SCALE 1:30



ELEVATION
SCALE 1:30



DETAIL "A"
SCALE 1:30

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE INDICATED.
2. PROVIDE 75MM ø PVC WEEPHOLES AT ONE METER VERTICAL AND TWO METERS HORIZONTAL.
3. SAND AND GRAVEL FILTER SURROUNDING uPVC PIPE MUST BE WELL GRADED (DIFFERENT SIZES).
4. GROUTED RIPRAP CONSTRUCTION SHALL BE VERIFIED IN THE ACTUAL SITE CONDITION.

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

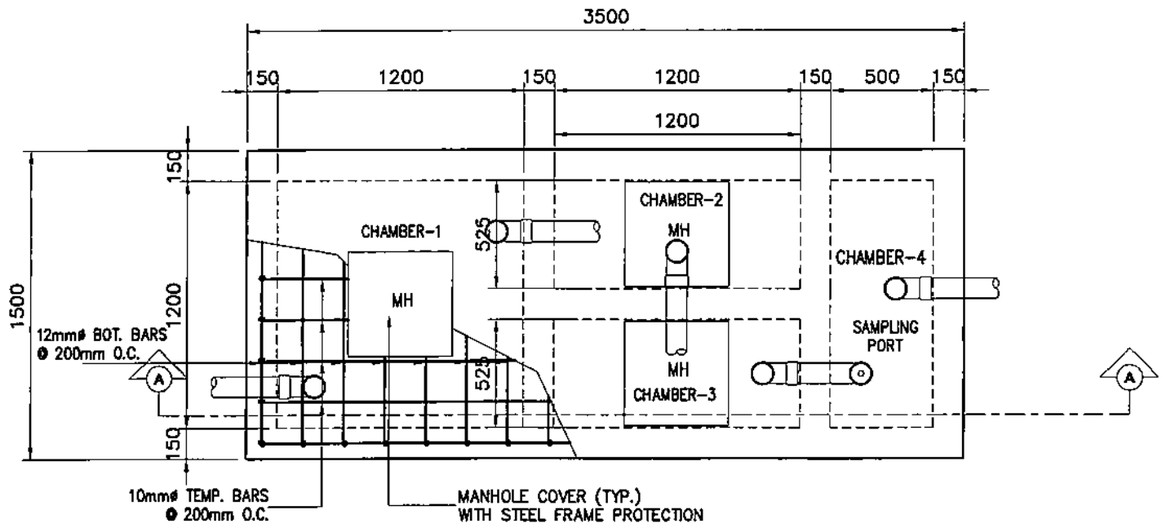
TITLE: **TYPICAL GROUTED RIPRAP**
(ELEVATION, SECTION & DETAILS)

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

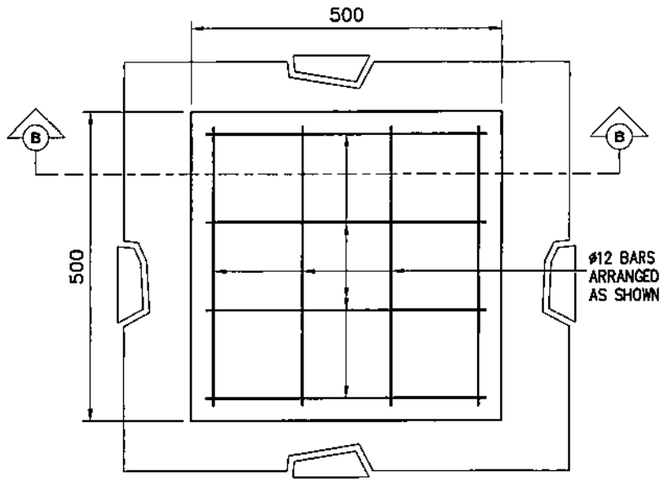
SUBMITTED: JOHN L. MENDOZA, Principal Engineer A, CEAD
RECOMMENDED: A. C. ESPIRITU, Manager, CEAD
APPROVED: G. B. MAGPOC, JR., Manager, DDO

DWG. NO. MSS-BDC-22.024 SPECS. NO. LuzP23Z1636Sce

SCALE: AS SHOWN **BID DRAWING** REV. 0



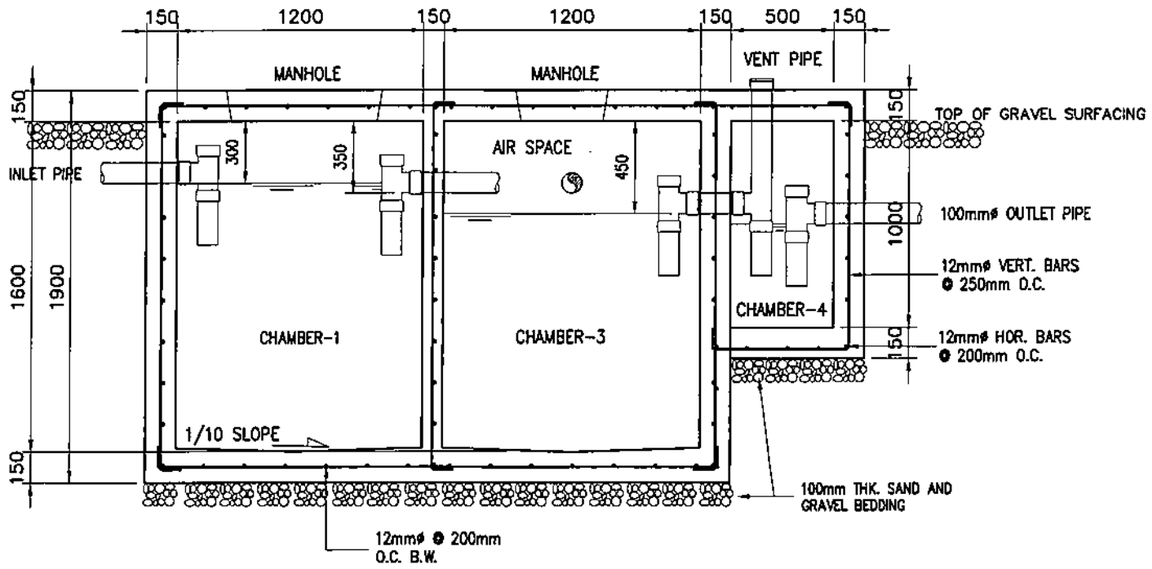
PLAN



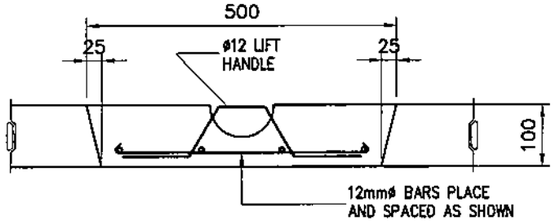
TYP. MANHOLE COVER

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE INDICATED.
2. MINIMUM COMPRESSIVE STRENGTH OF CONCRETE SHALL BE 20.70 MPa FOR DRAINAGE APPURTENANT STRUCTURES.
3. ALL REINFORCING STEEL BARS SHALL CONFORM TO THE LATEST REQUIREMENTS OF PHILIPPINE NATIONAL STANDARD FOR DSB GRADE 275.
4. WORK THIS DRAWING WITH SITE DEVELOPMENT AND DRAINAGE SYSTEM.



SECTION 'A'



SECTION 'B'

SEPTIC TANK

SCALE 1:30

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECO.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

TITLE: **TYPICAL SEPTIC TANK**
(PLAN, SECTION & DETAILS)

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

SUBMITTED: H. L. MENDOZA, Principal Engineer A, CEAD
RECOMMENDED: A. C. ESPIRITU, Manager, CEAD
APPROVED: G. B. MAGPOC, JR., Manager, DDD

DWG. NO. MSS-BDC-22.025 SPECS. NO. LuzP23Z1636Sce

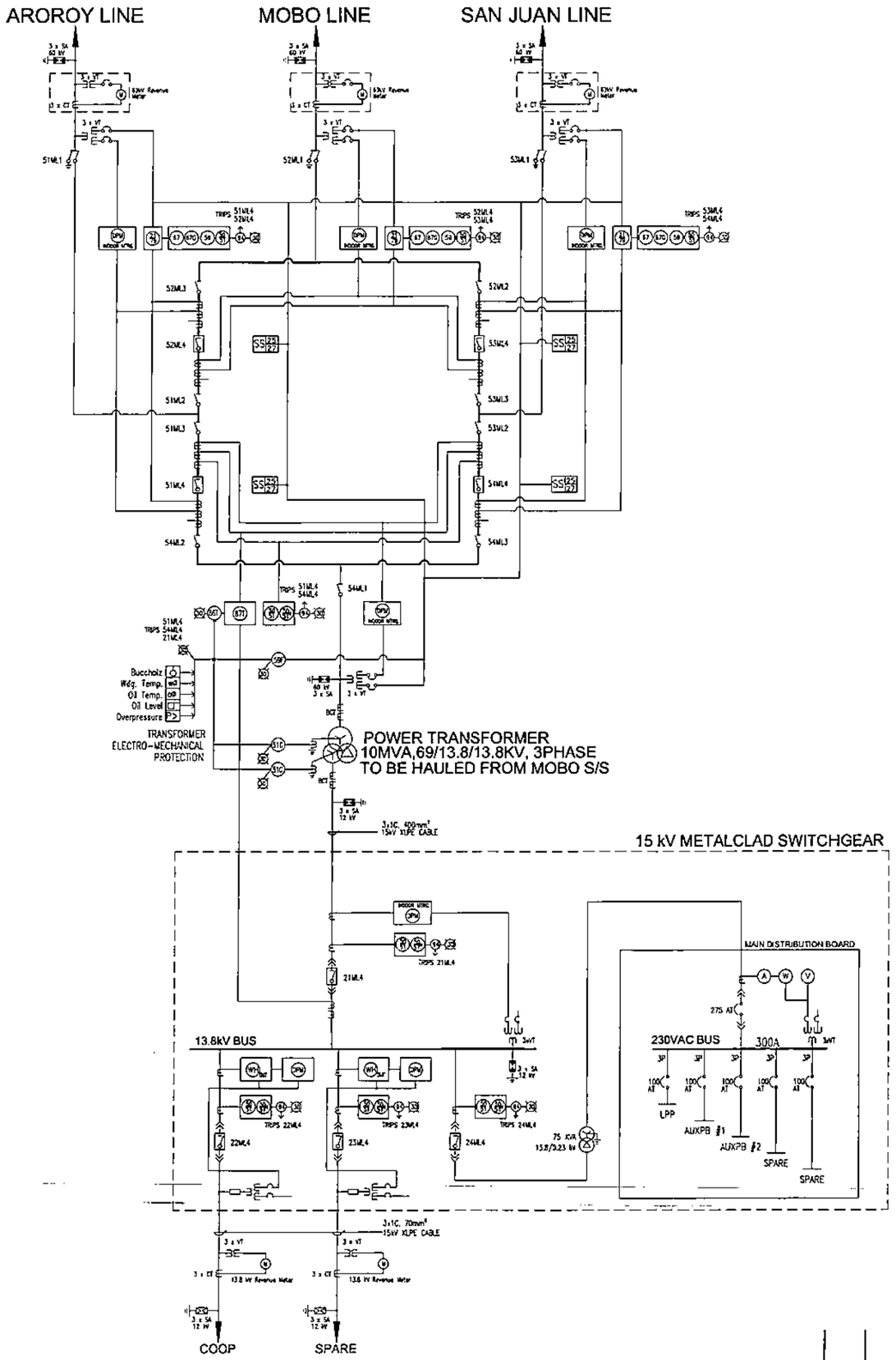
SCALE: AS SHOWN | **BID DRAWING** | REV. 0

SECTION IX - BID DRAWINGS

EW - ELECTRICAL DRAWINGS

DRAWING NO.	TITLE
MSS-BDE-22.001	SINGLE LINE DIAGRAM
MSS-BDE-22.002	230VAC LOW VOLTAGE PANEL (MAIN DISTRIBUTION BOARD)
MSS-BDE-22.003	230VAC LOW VOLTAGE PANEL (SUB-DISTRIBUTION BOARD)
MSS-BDE-22.004	125VDC SYSTEM REQUIREMENTS
MSS-BDE-22.005	EQUIPMENT LAYOUT
MSS-BDE-22.006	SECTIONAL VIEW
MSS-BDE-22.007	CONTROL HOUSE PANEL LAYOUT
MSS-BDE-22.008	CONTROL HOUSE TRENCH/TRAY/CONDUIT LAYOUT
MSS-BDE-22.009	CABLE TRENCH & TRAY LAYOUT
MSS-BDE-22.010	SWITCHYARD CONDUIT LAYOUT
MSS-BDE-22.011	GROUNDING SYSTEM LAYOUT
MSS-BDE-22.012	CONTROL HOUSE LIGHTING LAYOUT
MSS-BDE-22.013	CONTROL HOUSE POWER LAYOUT
MSS-BDE-22.014	PERIMETER LIGHTING LAYOUT
MSS-BDE-22.015	GUARDHOUSE ENTRANCE GATE AND PUMPHOUSE LIGHTING & POWER LAYOUT
MSS-BDE-22.016	SCHEDULE OF LOADS AND RISER DIAGRAM OF LPP
MSS-BDE-22.017	LIGHTING FIXTURE DETAILS
MSS-BDE-22.018	PERIMETER LIGHTING CONTROLLER
MSS-BDE-22.019	TELEPHONE SYSTEM LAYOUT
MSS-BDE-22.020	VOICE AND DATA SYSTEM RISER DIAGRAM
MSS-BDE-22.021	CCTV SURVEILLANCE SYSTEM

MSS-BDE-22.022	VIDEO SURVEILLANCE SYSTEM RISER DIAGRAM
MSS-BDE-22.023	MASBATE SUBSTATION NETWORK ARCHITECTURE



NOTES:

1. MASBATE SUBSTATION SYSTEM REQUIREMENTS DRAWING ARE INDICATIVE AND FOR BIDDING PURPOSES ONLY. ACTUAL SYSTEM ARCHITECTURE SHALL BE DETERMINED BY THE CONTRACTOR BASED ON THE ACTUAL REQUIREMENTS. DESIGN CALCULATIONS SHALL BE SUBMITTED FOR NPC'S REVIEW AND APPROVAL.
2. ALL EQUIPMENT/COMPONENT, ETC. NOT INDICATED IN THE DRAWING BUT ARE REQUIRED FOR THE EFFICIENT AND PROPER OPERATION OF THE SYSTEM SHALL BE INCLUDED IN THE CONTRACTOR SCOPE OF WORK AT NO ADDITIONAL COST TO NPC.
3. THE CONTRACTOR IS REQUIRED TO CONDUCT SITE INSPECTION AND ASSESS THE EXTENT OF THE WORKS NEEDED TO IMPLEMENT THE PROJECT COMPLETELY AND EFFICIENTLY.
4. THE DETAILED DESIGN AND CALCULATION FOR THE REQUIRED NUMBER OF EQUIPMENT FOR INDOOR AND OUTDOOR INSTALLATION SHALL BE SUBMITTED FOR NPC'S REVIEW AND APPROVAL.

LEGENDS:

21	–	DISTANCE RELAY
68	–	POWER SWING BLOCKING RELAY
67	–	DIRECTIONAL OVERCURRENT RELAY
67G	–	GROUND DIRECTIONAL OVERCURRENT RELAY
25	–	SYNCHRO CHECK RELAY
27	–	UNDERVOLTAGE RELAY
87B	–	BUS DIFFERENTIAL RELAY
86B	–	BUS LOCK-OUT RELAY
50/51	–	PHASE OVERCURRENT RELAY
50N/51N	–	RESIDUAL OVERCURRENT RELAY
94	–	AUXLIARY TRIPPING RELAY
30	–	ANNUNCIATOR RELAY
Wh	–	WATT-HOUR METER (OUTDOOR INSTALLATION)
DPM	–	DIGITAL POWER METER (INDOOR INSTALLATION)
LA	–	LIGHTNING ARRESTER
VT	–	VOLTAGE TRANSFORMER
VS	–	VOLTAGE SELECTOR SWITCH
V	–	VOLT METER
F	–	FREQUENCY METER
SS	–	SYNCHRONIZING DEVICE

POWER TRANSFORMER DETAILS:

TYPE	–	TNOR3D 10000/69 PT
PHASE	–	3-PHASE
FREQUENCY	–	60HZ
CONNECTION SYMBOL	–	YNd1yn0
HV WINDING	–	10000KVA, 69000V
MV WINDING	–	10000KVA, 13800V
LV WINDING	–	10000KVA, 13800V
TEMP RISE	–	65degC
COOLING	–	ONAN
TOTAL WEIGHT	–	34500kg
OIL WEIGHT	–	7750kg

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

TITLE: **SINGLE LINE DIAGRAM**

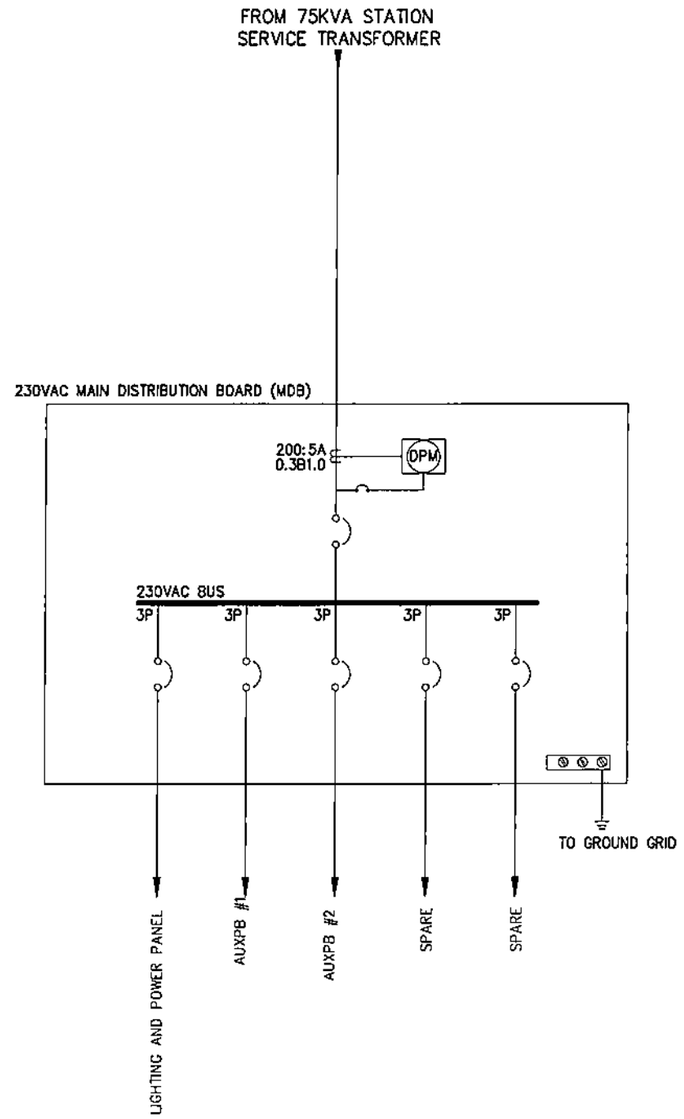
	BY	CHKD	DATE
DESIGNED			
DRAWN	MDCE	MJRP	
REVIEWED	PRINCIPAL ENGR. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

SUBMITTED: R. P. VERAR, Principal Engineer, Projects
RECOMMENDED: C. Z. C. LUGOD, JR., Manager, EEICD
APPROVED: G. B. MAGPOC, JR., Manager, DOD

DWG. NO. MSS-BDE-22.001 | SPECS. NO. LuzP23Z1636Sce

SCALE: N.T.S. | **BID DRAWING** | REV. 0

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.



NOTES:

1. THE NUMBERS OF BUS, FEEDERS AND CIRCUIT BREAKERS RATINGS ARE TENTATIVE AND FOR BIDDING PURPOSES ONLY. THE ACTUAL NUMBER OF FEEDERS AND CIRCUIT BREAKER SHALL BE DETERMINED BY THE CONTRACTOR. DETAILED DESIGN CALCULATION SHALL BE SUBMITTED FOR NPC'S REVIEW AND APPROVAL.
2. THE CONTRACTOR SHALL SECURED ALL THE NECESSARY DOCUMENTS FOR THE CONNECTION OF POWER SUPPLY FROM THE AVAILABLE LOCAL COOPERATIVE FOR SWITCHING STATION USED.

LEGENDS:

DPM – DIGITAL POWER METER (INDOOR INSTALLATION)
LA – LIGHTNING ARRESTER

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: NATIONAL POWER CORPORATION
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

TITLE: **230 VAC LOW VOLTAGE PANEL (MAIN DISTRIBUTION BOARD)**

	BY	CHKD	DATE
DESIGNED			
DRAWN	BDP	MDCE	
REVIEWED	PRINCIPAL ENGR. / ARCHT.		
CIVIL/ARCHT			
ELEC.			
MECH.			

SUBMITTED: E. P. VERAR, Principal Engineer A/EEICD
RECOMMENDED: C. Z. C. LUGOD, JR., Manager, EEICD
APPROVED: G. B. MAGPOC, JR., Manager, DDD

DWG. NO. MSS-BDE-22.002 SPECS. NO. LuzP23Z1636Sce

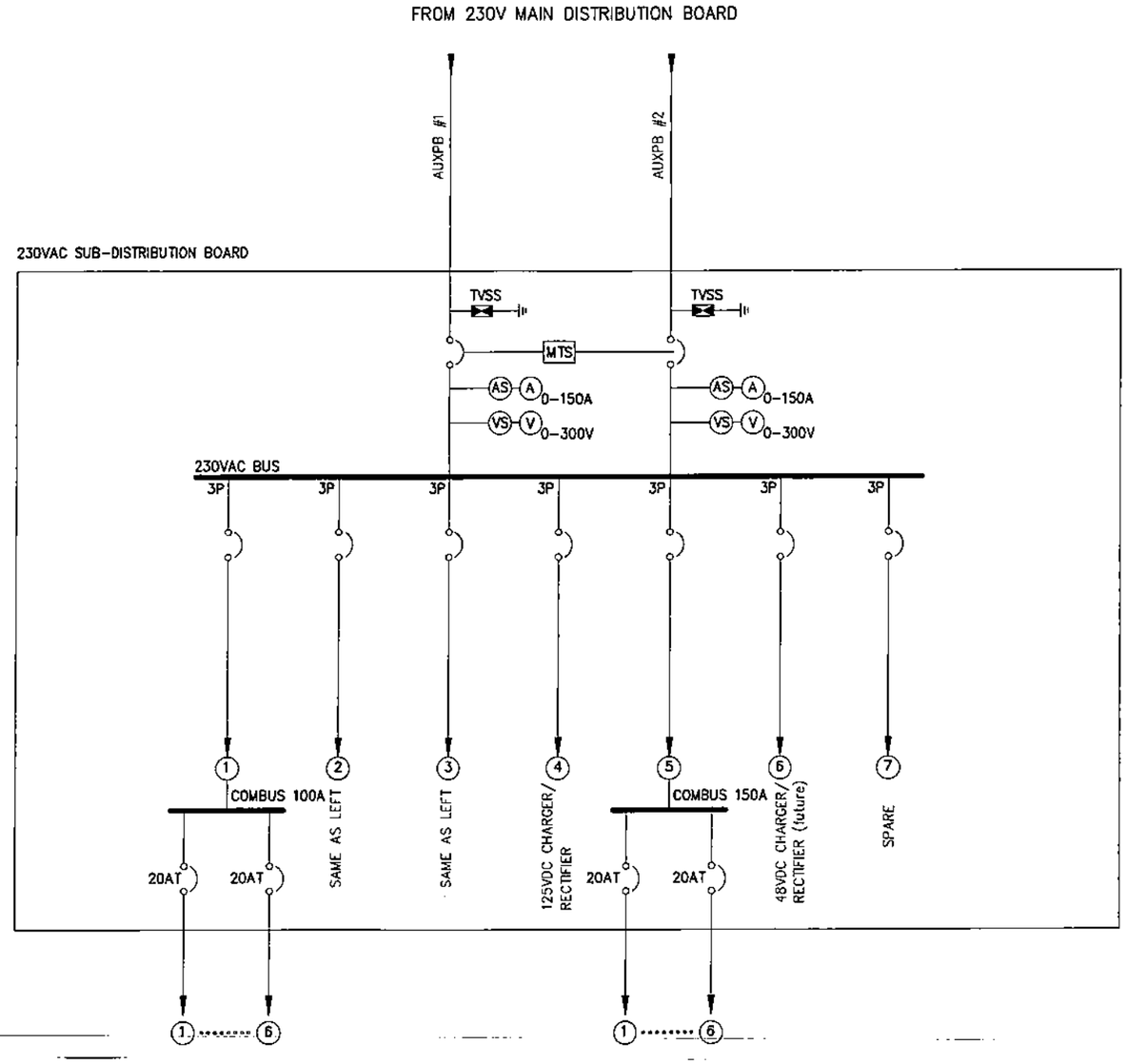
SCALE: N.T.S. BID DRAWING REV. 0

NOTES:

1. THE NUMBERS OF BUS, FEEDERS AND CIRCUIT BREAKERS RATINGS ARE TENTATIVE AND FOR BIDDING PURPOSES ONLY. THE ACTUAL NUMBER OF FEEDERS AND CIRCUIT BREAKER SHALL BE DETERMINED BY THE CONTRACTOR. DETAILED DESIGN CALCULATION SHALL BE SUBMITTED FOR NPC'S REVIEW AND APPROVAL
2. ALL DEVICES SUCH AS METERS, INSTRUMENT TRANSFORMERS AND OTHER APPURTENANCES ALTHOUGH NOT INDICATED IN THE DRAWING SHALL BE SUPPLIED BY THE CONTRACTOR. TO FULFILL THE REQUIREMENT FOR MANUAL TRANSFER SWITCH AND INTERLOCKING FUNCTION. ALL INTERLOCK DEVICES SHALL ALSO BE PROVIDED

LEGENDS:

MTS – MANUAL TRANSFER SWITCH
TVSS – TRANSIENT VOLTAGE SURGE SUPPRESSOR
(A) – AMMETER
(V) – VOLTMETER
As – AMMETER SWITCH
Vs – VOLTMETER SWITCH



REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: NATIONAL POWER CORPORATION
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

TITLE: **230 VAC LOW VOLTAGE PANEL (SUB-DISTRIBUTION BOARD)**

	BY	CHKD	DATE
DESIGNED			
DRAWN	MJRP	MDCE	
REVIEWED	PRINCIPAL ENGR. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

SUBMITTED: R. P. VERAR, Principal Engineer, EEICD
RECOMMENDED: E. Z. E. LUGOD, JR., Manager, EEICD
APPROVED: G. B. MAGPOC, JR., Manager, DDD

DWG. NO. MSS-BDE-22.003 | SPECS. NO. LuzP23Z1636Sce

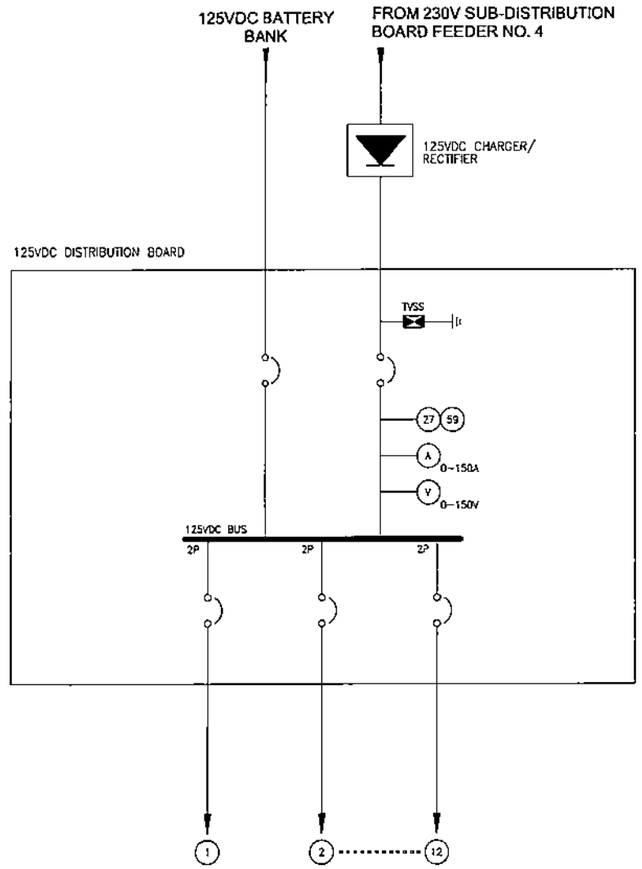
SCALE: N.T.S. | **BID DRAWING** | REV. 0

NOTES:

1. THE NUMBERS OF BUS, FEEDERS AND CIRCUIT BREAKERS RATINGS ARE TENTATIVE AND FOR BIDDING PURPOSES ONLY. THE ACTUAL NUMBER OF FEEDERS AND CIRCUIT BREAKER SHALL BE DETERMINED BY THE CONTRACTOR. DETAILED DESIGN CALCULATION SHALL BE SUBMITTED FOR NPC'S REVIEW AND APPROVAL

LEGENDS:

TVSS – TRANSIENT VOLTAGE SURGE SUPPRESSOR
(A) – AMMETER
(V) – VOLTMETER
(27) – UNDERVOLTAGE RELAY
(59) – OVERVOLTAGE RELAY



OWNER: NATIONAL POWER CORPORATION
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

TITLE: **125VDC SYSTEM REQUIREMENTS**

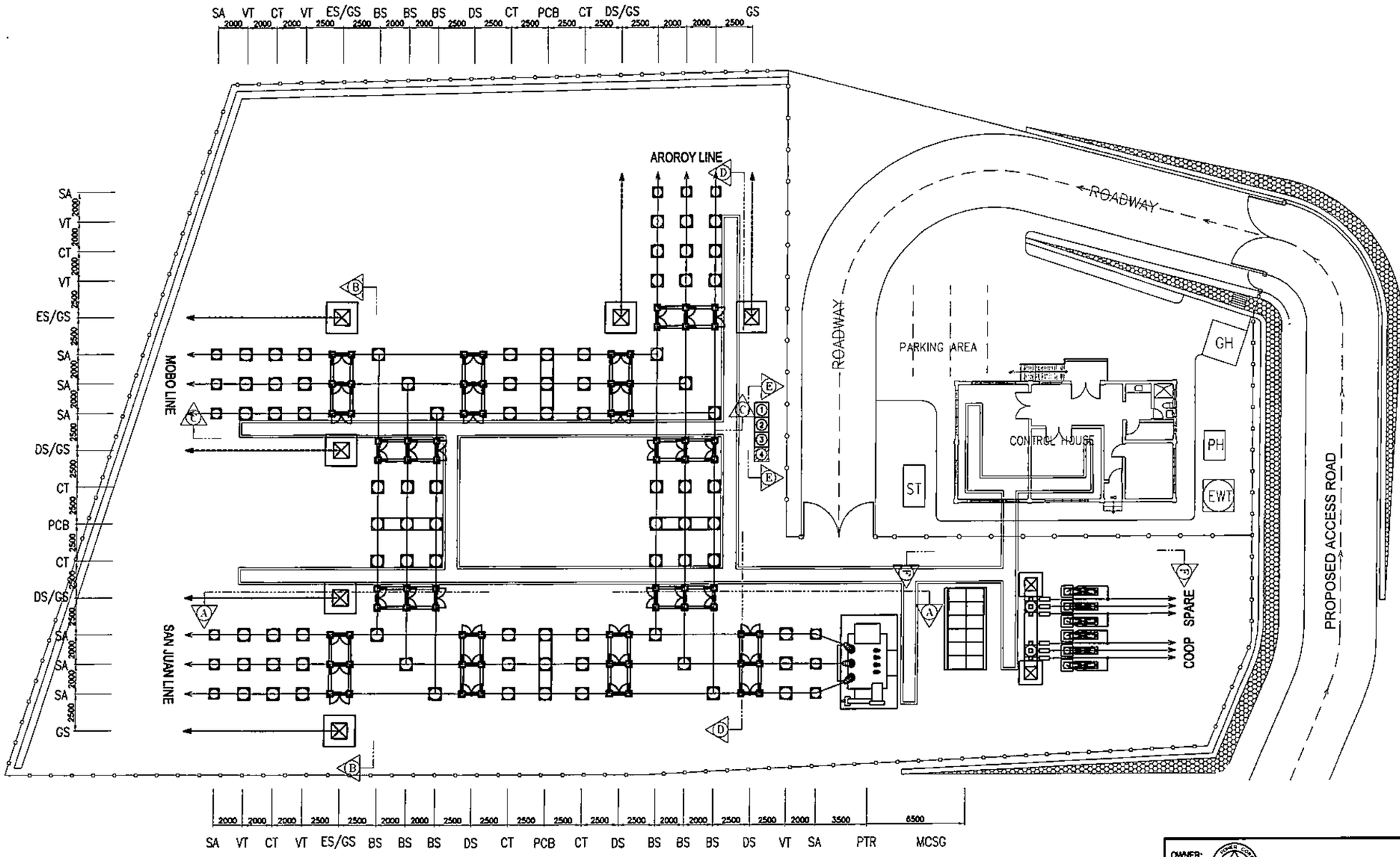
	BY	CHKD	DATE
DESIGNED			
DRAWN	[illegible]	MDCE	
REVIEWED	PRINCIPAL ENGR. / ARCHT.		
CIVIL/ARCHT			
ELEC.			
MECH.			

SUBMITTED: R. P. VERAR, Principal Engineer A, EEICD
RECOMMENDED: C. Z. C. LUGOD, JR., Manager, EEICD
APPROVED: G. B. MAGPOC, JR., Manager, DDD

DWG. NO. MSS-BDE-22.004 | SPECS. NO. LuzP23Z1636Sce

SCALE: N.T.S. | BID DRAWING | REV. 0

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.



NOTES:

1. ALL DIMENSION ARE IN METERS UNLESS OTHERWISE SPECIFIED.
2. ALL EQUIPMENT/MATERIALS DRAWN IN SHADED AREA ARE FOR FUTURE INSTALLATION; ALL OTHERS ARE INCLUDED IN THE CONTRACT.

LEGENDS:

(1) – BILLING METER PANEL FOR AROROY
(2) – BILLING METER PANEL FOR MOBO
(3) – BILLING METER PANEL FOR SAN JUAN
(4) – BILLING METER PANEL (FOR FUTURE INSTALLATION)
SA – SURGE ARRESTER
VT – VOLTAGE TRANSFORMER
CT – CURRENT TRANSFORMER
ES – EARTHING SWITCH
GS – GANTRY STRUCTURE
BS – BUS SUPPORT
DS – DISCONNECT SWITCH
PCB – POWER CIRCUIT BREAKER
PTR – POWER TRANSFORMER
MGSG– METALCLAD SWITCHGEAR

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

TITLE: **EQUIPMENT LAYOUT**

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENGR. / ARCHT.		
CIVIL/ARCHT			
ELEC.			
MECH.			

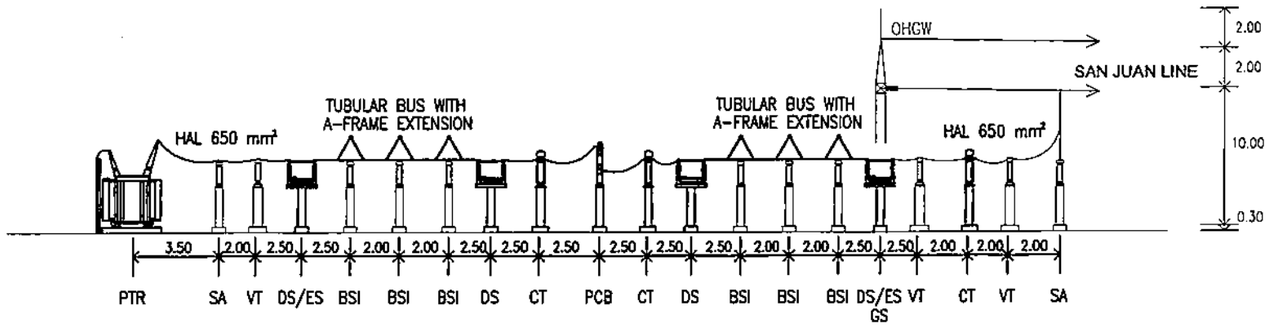
SUBMITTED: R. P. VERAR, Principal Engineer A, EEICD
RECOMMENDED: E. Z. C. LUGOD, JR., Manager, EEICD
APPROVED: G. B. MAGPOC, JR., Manager, DDD

DWG. NO. MSS-BDE-22.005 | SPECS. NO. LuzP23Z1636Sce

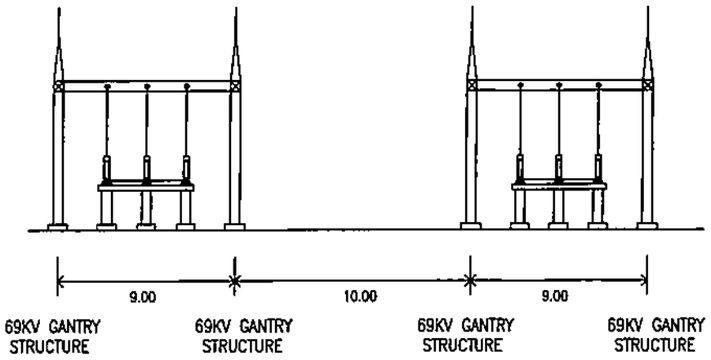
SCALE: 1:300 | **BID DRAWING** | REV. 0

NOTES:

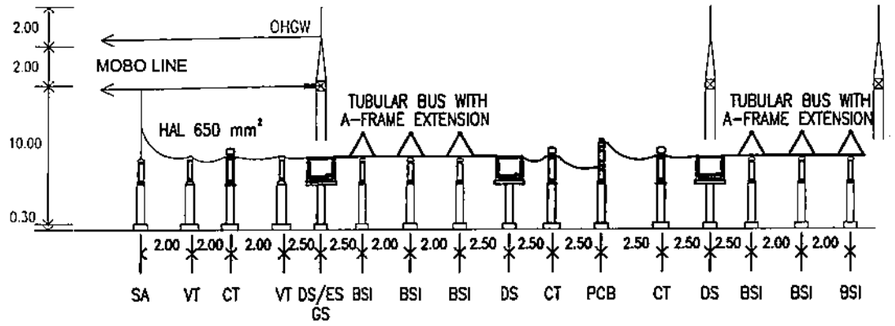
1. ALL DIMENSION ARE IN METERS UNLESS OTHERWISE SPECIFIED.



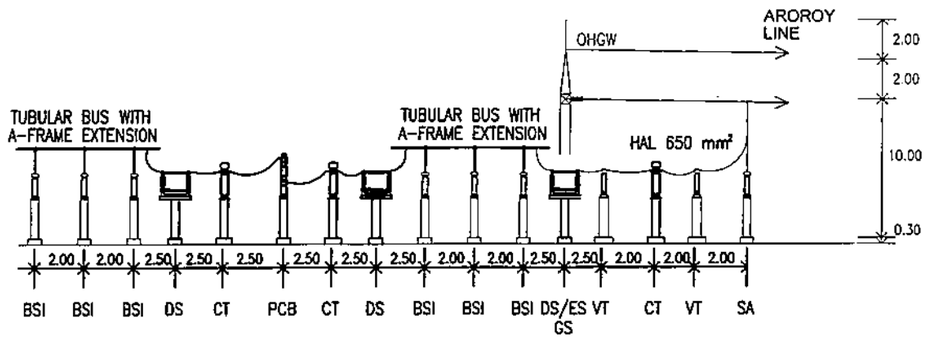
SECTION A-A



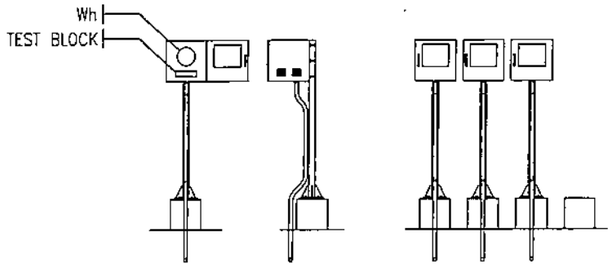
SECTION B-B



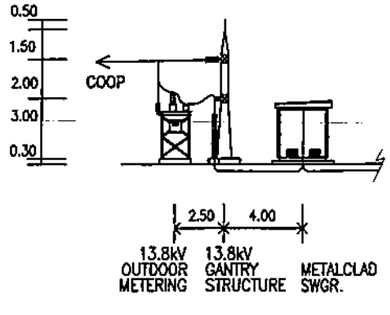
SECTION C-C



SECTION D-D



SECTION E-E



SECTION F-F

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: NATIONAL POWER CORPORATION
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

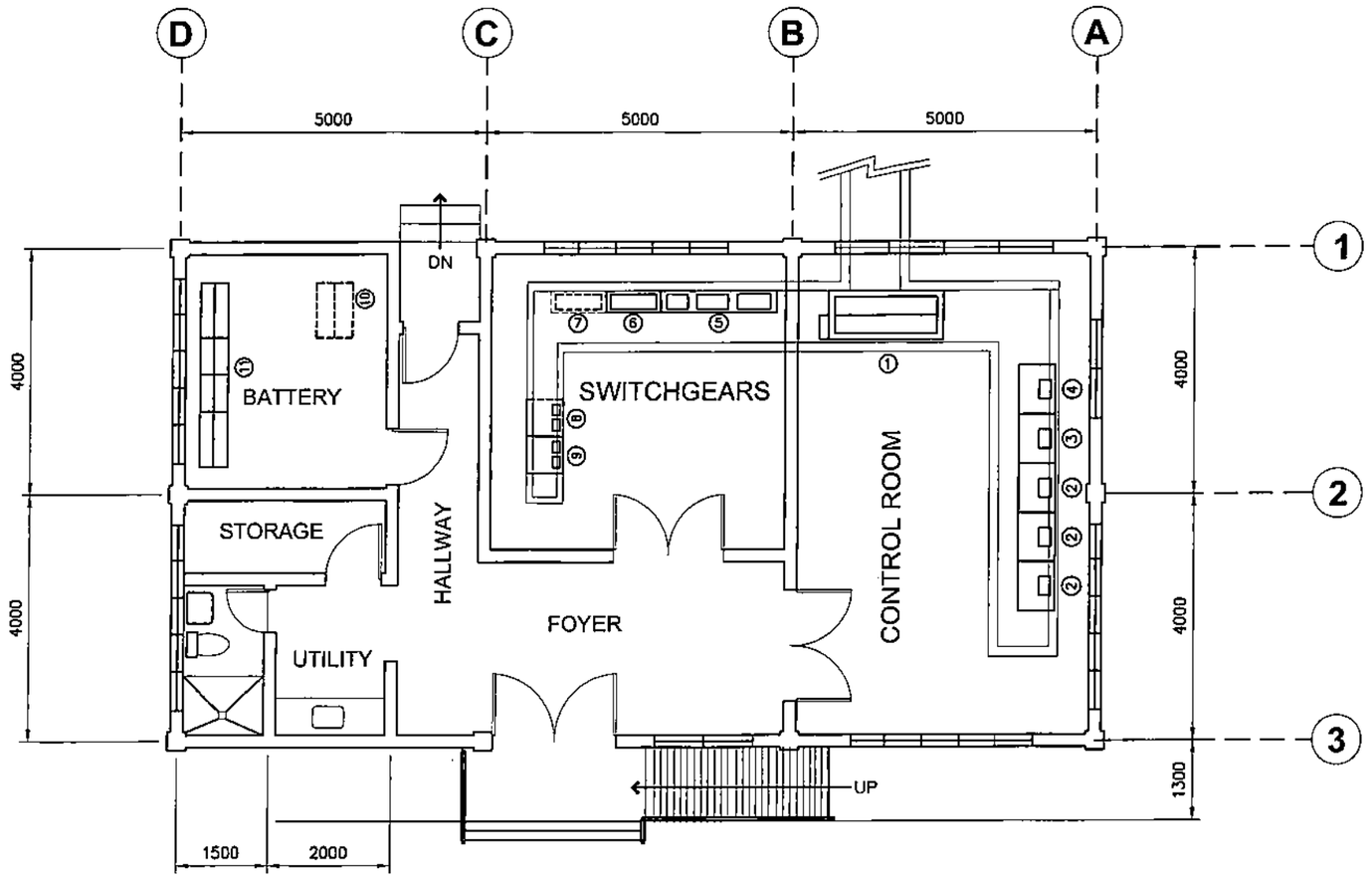
TITLE: SECTIONAL VIEW

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENGR. / ARCHT.		
CIVIL/ARCHT			
ELEC.			
MECH.			

SUBMITTED: R. P. VERAR, Principal Engineer A (EEICD)
RECOMMENDED: C. Z. C. LUGOD, JR., Manager, EEICD
APPROVED: G. B. MAGPOC, JR., Manager, DDD

DWG. NO. MSS-BDE-22.006 | SPECS. NO. LuzP23Z1636Sce

SCALE: N. T. S. | BID DRAWING | REV. 0



NOTES:

1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
2. SIZES AND LOCATION OF PANELS ARE INDICATIVE ONLY, ACTUAL LOCATION SHALL BE DETERMINED BY THE CONTRACTOR FOR NPC APPROVAL.

LEGENDS:

① – MAIN CONTROL SWITCHBOARD (69kV)
② – LINE PROT'N. PANEL
③ – TRANSFORMER PROT'N. PANEL
④ – TRANSFORMER OLTC PANEL
⑤ – 230 Vac LOW VOLTAGE(MAIN DISTRIBUTION BOARD AND SUB–DISTRIBUTION BOARD)
⑥ – 125 Vdc AUXILIARY PANEL
⑦ – 48 Vdc AUXILIARY PANEL (FUTURE)
⑧ – 48 Vdc RECTIFIER/CHARGER (FUTURE)
⑨ – 125 Vdc RECTIFIER/CHARGER
⑩ – 48 Vdc STORAGE BATTERIES (FUTURE)
⑪ – 125 Vdc STORAGE BATTERIES

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: NATIONAL POWER CORPORATION
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

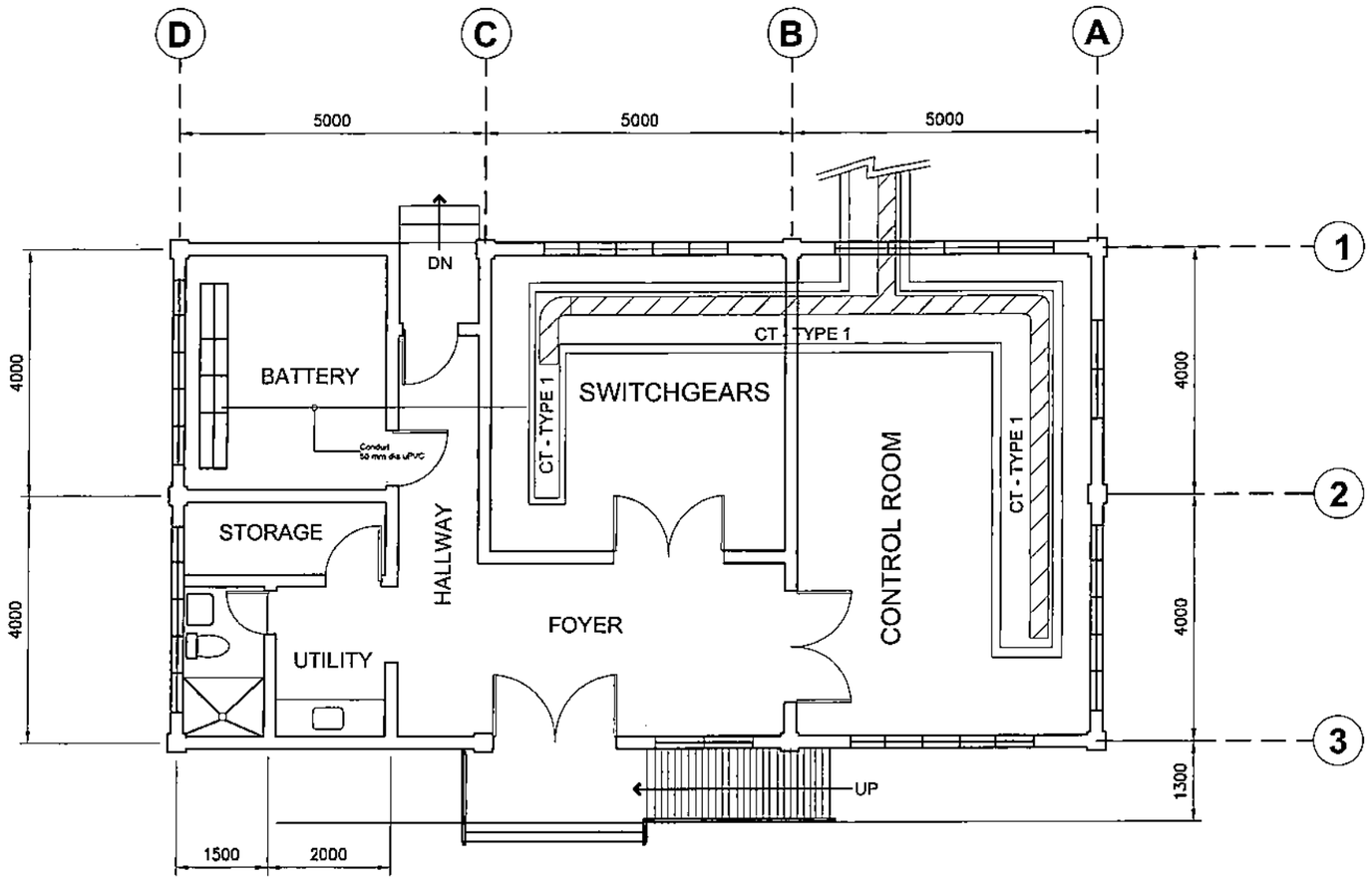
TITLE: CONTROL HOUSE PANEL LAYOUT

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENGR. / ARCHT.		
CIVIL/ARCHT			
ELEC.			
MECH.			

SUBMITTED: E. P. VERAR, Principal Engineer / EEICD
RECOMMENDED: C. Z. C. LUGOD, JR., Manager, EEICD
APPROVED: G. B. MAGPOC, JR., Manager, DDD

DWG. NO. MSS-BDE-22.007 SPECS. NO. LuzP23Z1636Sce

SCALE: 1:100 BID DRAWING REV. 0



NOTES:

1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
2. CABLE TRAY SHALL BE ST-300, ST-450 OR AS INDICATED.
3. CABLE TRAY SUPPORT SHALL BE SPACED 1.50 METERS APART.
4. THE CONDUIT SHALL BE uPVC CONDUIT, THICK WALL, SCH. 40 AND RED ORANGE IN COLOR.
5. CONDUITS ARE SCHEMATIC, ACTUAL RUNS SHALL BE DETERMINED DURING INSTALLATIONS.
6. THE CONTRACTOR SHALL SUBMIT DETAILED CONDUIT INSTALLATION PROCEDURE TO BE APPROVED BY NPC.

LEGENDS:

- CABLE TRAY (STRAIGHT TYPE)
- CABLE TRAY (HORIZONTAL TEE TYPE)
- CABLE TRAY (90° HORIZONTAL ELBOW)
- CABLE TRAY (30° HORIZONTAL ELBOW)
- CONDUIT

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: NATIONAL POWER CORPORATION
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

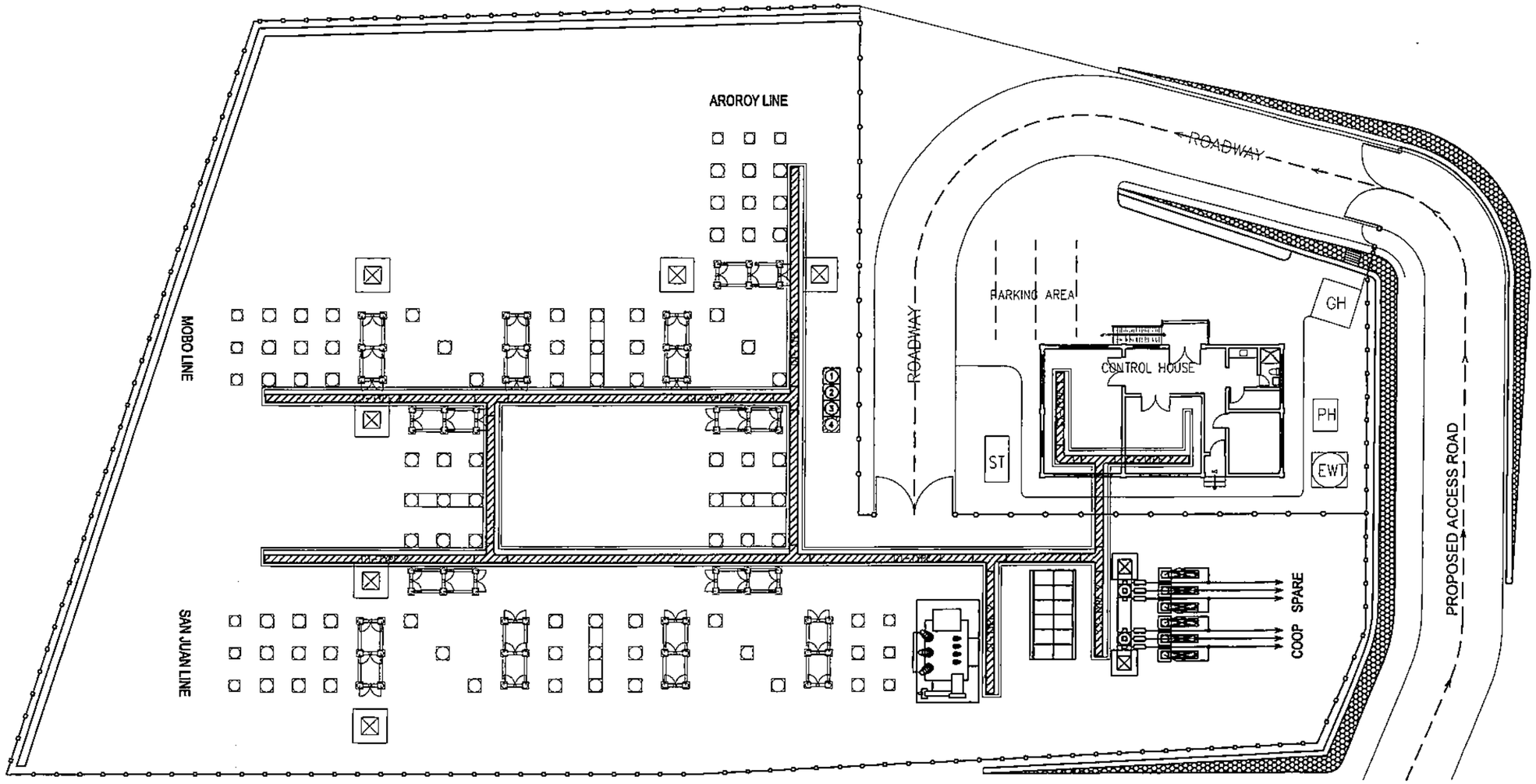
TITLE: CONTROL HOUSE TRENCH/ TRAY/CONDUIT LAYOUT

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENGR. / ARCHT.		
CIVIL/ARCHT			
ELEC.			
MECH.			

SUBMITTED: R. P. VERAR, Principal Engineer A, EEICD
RECOMMENDED: C. Z. C. LUGOD, JR., Manager, EEICD
APPROVED: G. B. MAGPOC, JR., Manager, DDD

DWG. NO. MSS-BDE-22.008 | SPECS. NO. LuzP23Z1636Sce

SCALE: 1:100 | BID DRAWING | REV. 0



NOTES:

1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
2. ALL WORKS SHALL BE DONE IN ACCORDANCE WITH THE PROVISION OF THE LATEST EDITION OF THE PHILIPPINE ELECTRICAL CODE, THE EXISTING LOCAL ORDINANCE AND RULES AND REGULATIONS OF LOCAL AUTHORITY.
3. THE CABLE TRAY SHALL BE ST-300, ST-450 OR AS INDICATED.
4. CABLE TRAY SUPPORT SHALL BE SPACED 1.50 METERS APART.

LEGENDS:

- – CABLE TRAY (STRAIGHT TYPE)
- – CABLE TRAY (HORIZONTAL TEE TYPE)
- – CABLE TRAY (90° HORIZONTAL ELBOW)
- – CABLE TRAY (30° HORIZONTAL ELBOW)

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10 MVA MASBATE SUBSTATION PROJECT

LOCATION: MALINTA, MASBATE

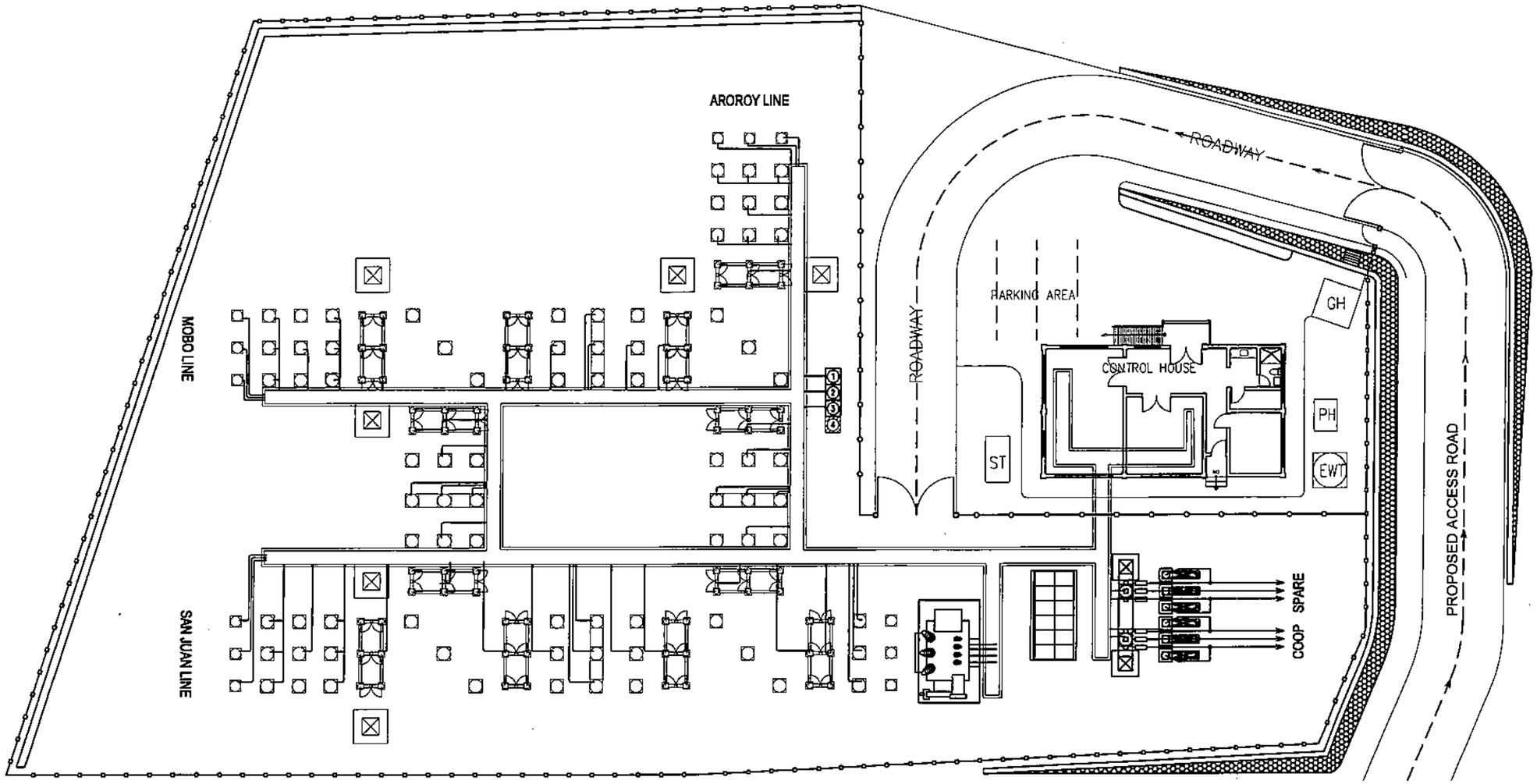
TITLE: **CABLE TRENCH & TRAY LAYOUT**

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENG'R. / ARCHT.		
CIVIL/ARCHT			
ELEC.			
MECH.			

SUBMITTED: R. P. VERAR, Principal Engineer A, EEICD
RECOMMENDED: C. Z. C. LUGOD, JR., Manager, EEICD
APPROVED: G. B. MAGPOC, JR., Manager, DDO

DWG. NO. MSS-BDE-22.009 | SPECS. NO. LuzP23Z1636Sce

SCALE: 1:300 | **BID DRAWING** | REV. 0



NOTES:

1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
2. ALL WORKS SHALL BE DONE IN ACCORDANCE WITH THE PROVISION OF THE LATEST EDITION OF THE PHILIPPINE ELECTRICAL CODE, THE EXISTING LOCAL ORDINANCE AND RULES AND REGULATIONS OF LOCAL AUTHORITY.
3. THE CONDUITS SHALL BE uPVC CONDUIT, THICK WALL, SCH 40 AND RED ORANGE IN COLOR.
4. CONDUITS ARE SCHEMATIC, ACTUAL RUNS SHALL BE DETERMINED DURING INSTALLATIONS.
5. THE CONTRACTOR SHALL SUBMIT DETAILED CONDUIT INSTALLATION PROCEDURE TO BE APPROVED BY NPC.

CONDUIT SCHEDULE:

FOR PCB:	1x90mm. ø uPVC 2x50mm. ø uPVC
FOR SA:	3x20mm. ø uPVC
FOR DS:	2x50mm. ø uPVC
FOR CT:	2x50mm. ø uPVC
FOR VT:	2x50mm. ø uPVC
FOR BMP:	2x50mm. ø uPVC
FOR CSE:	2x120mm. ø uPVC
FOR TR:	2x25mm. ø uPVC

LEGENDS:

——— – CONDUIT

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

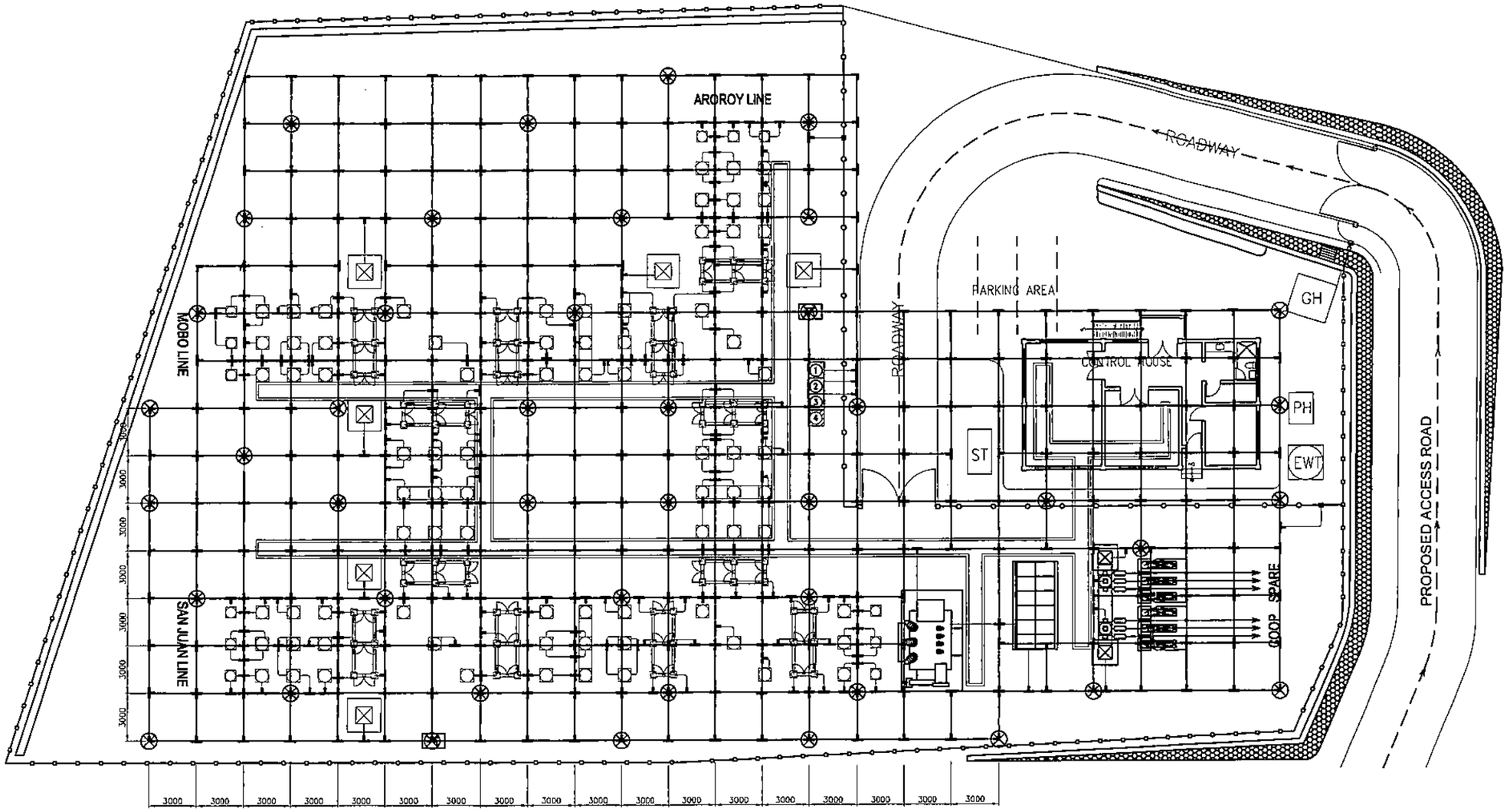
TITLE: **SWITCHYARD CONDUIT LAYOUT**

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENGR. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

SUBMITTED: R. P. VERAR, Principal Engineer, EEICD
RECOMMENDED: C. Z. C. LUGOD, JR., Manager, EEICD
APPROVED: G. B. MAGPOC, JR., Manager, DDD

DWG. NO. MSS-BDE-22.010 | SPECS. NO. LuzP23Z1636Sce

SCALE: 1:300 | **BID DRAWING**



NOTES:

1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
2. GROUNDING MAT SHALL BE BURIED TO 0.6M DEPTH.
3. ALL MAJOR ELECTRICAL EQUIPMENT SHALL BE CONNECTED TO THE GROUNDING MAT BY 2X100 SQ.MM. PVC INSULATED COPPER CONDUCTOR.
4. SECLUSION FENCE INCLUDING THE PERIMETER LIGHTING POLES SHALL BE CONNECTED TO THE GROUNDING MAT.
5. EQUIPMENT INSIDE THE CONTROL HOUSE SHALL BE PROPERLY CONNECTED TO THE GROUNDING MAT.
6. ALL EQUIPMENT NOT SHOWN BUT REQUIRED TO BE GROUNDED AS PER NPC SPECIFICATIONS SHALL BE CONNECTED TO THE GROUNDING MAT.
7. THE CONTRACTOR SHALL CARRY OUT THE EARTH RESISTIVITY MEASUREMENT AND THE RESULT SHALL BE USED IN THE GROUNDING GRID DESIGN AND CALCULATION TO BE SUBMITTED FOR NPC APPROVAL.

LEGENDS:

- —— – 100 MM. SQ. BARE STRANDED COPPER
- ⊗ – GROUND ROD CONNECTION
- + – CROSS-WELD CONNECTION
- T – T-WELD CONNECTION
- ⊣ – WELD CONNECTION OF EQPT. TO GROUNDING MAT.
- —— – SECLUSION FENCE
- JT – TEST PIT

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

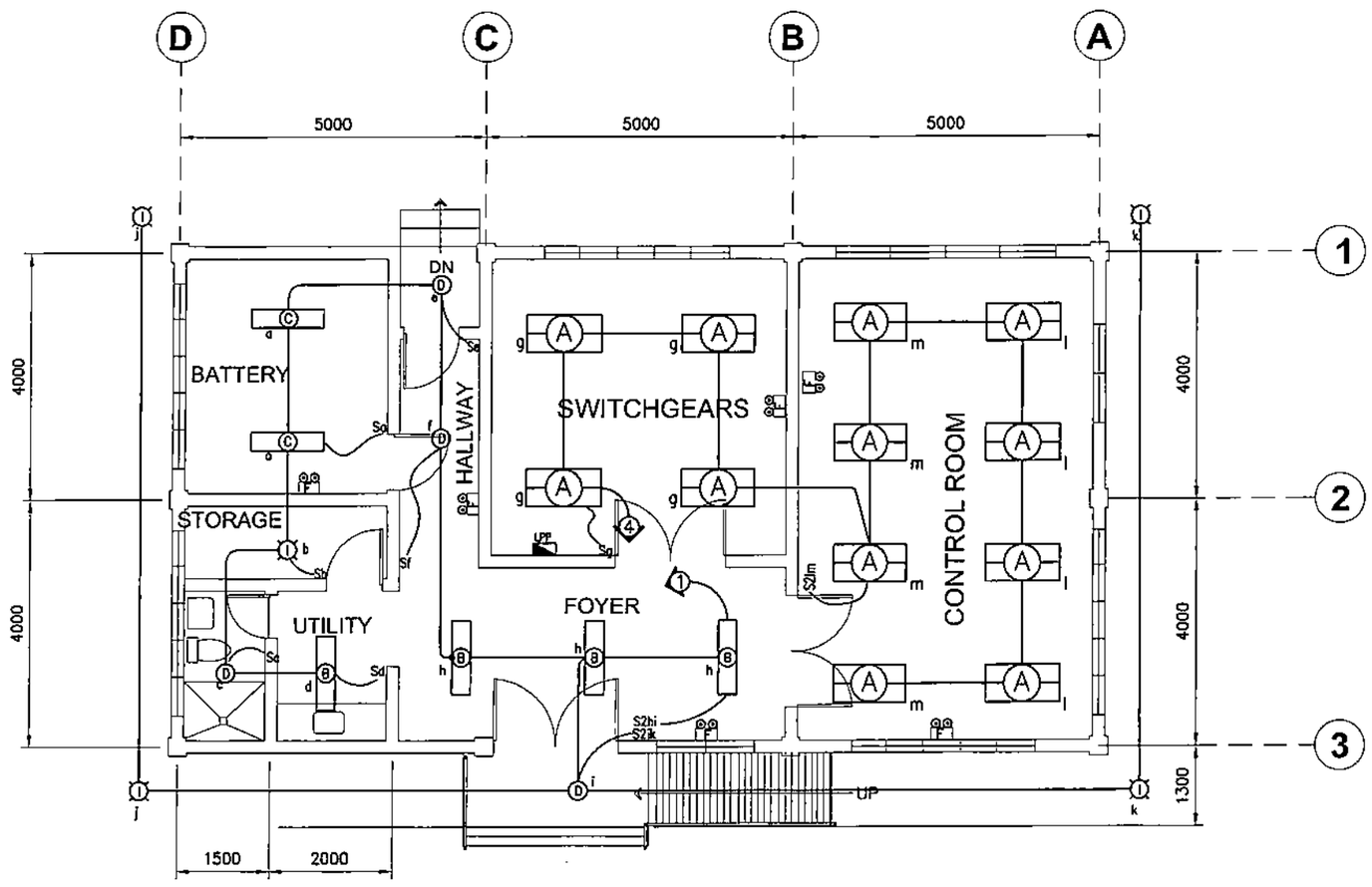
TITLE: **GROUNDING LAYOUT**

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENGR. / ARCHT.		
CIVIL/ARCHT			
ELEC.			
MECH.			

SUBMITTED: R. P. VERAR, Principal Engineer A, EEICD
RECOMMENDED: G. Z. C. LUGOD, JR., Manager, EEICD
APPROVED: G. B. MAGPOC, JR., Manager, ODD

DWG. NO. MSS-BDE-22.011 | SPECS. NO. LuzP23Z1636Sce

SCALE: 1:300 | **BID DRAWING** | REV. 0



NOTES:

1. FIXTURES AND CONDUIT RUNS ARE INDICATIVE ONLY. ACTUAL LOCATION OF RUNS SHALL BE DETERMINED IN THE FIELD.
2. ALL LIGHTING SWITCHES SHALL BE MOUNTED 1.37 m ABOVE FINISHED FLOOR.
3. JUNCTION BOXES SHALL BE PROVIDED WHENEVER DEEMED NECESSARY.
4. ALL WIRES SHALL BE TYPE THHN/THWN-2 600 V INSULATION, STRANDED COPPER CONDUCTOR.
5. CONDUIT SHALL BE uPVC CLASS A, UNLESS OTHERWISE INDICATED.
6. EMERGENCY LIGHTING SHALL BE CONNECTED TO 230Vac EMERGENCY LIGHTING OUTLET.
7. SAMPLES OF MATERIALS AND LATEST CATALOGUE OF FIXTURES, ACCESSORIES AND EQUIPMENT SPECIFIED HEREIN SHALL BE SUBMITTED TO EEICD FOR VERIFICATION AND APPROVAL BEFORE PURCHASE AND INSTALLATION.
8. ALL WORKS SHALL CONFORM WITH THE LATEST PROVISIONS OF THE PHILIPPINE ELECTRICAL CODE.

LEGEND:

- (A) – FIXTURE TYPE A
- (B) – FIXTURE TYPE B
- (C) – FIXTURE TYPE C
- (D) – FIXTURE TYPE D
- (I) – FIXTURE TYPE I
- F – FIXTURE TYPE F
- Sa – 1-GANG SWITCH
- Sbc – 2-GANG SWITCH
- LPP-A/PP-8 – LIGHTING/POWER PANEL BOARD
- – CIRCUIT HOME RUN

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

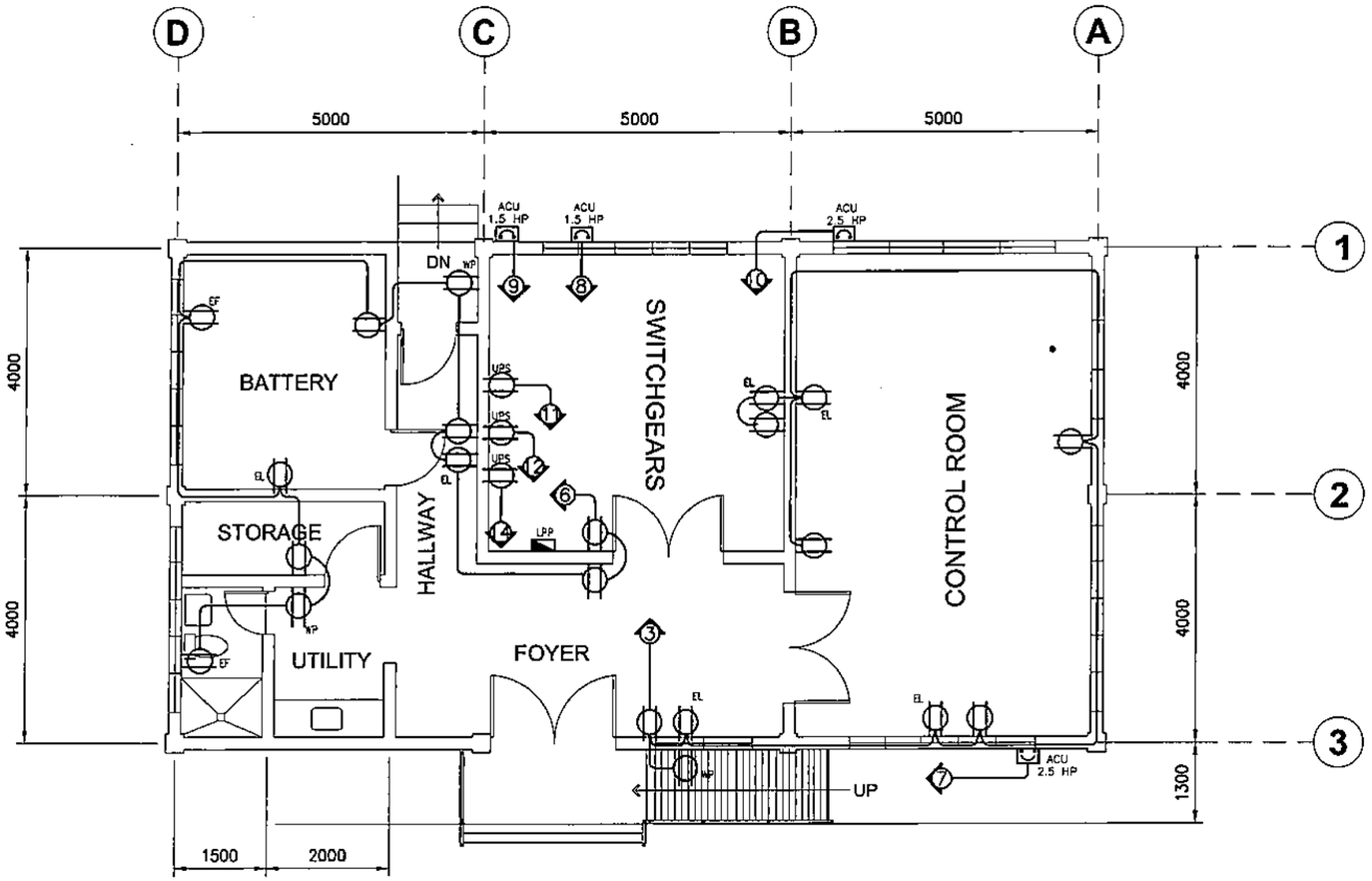
TITLE: **CONTROL HOUSE LIGHTING LAYOUT**

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENGR. / ARCHT.		
CIVIL/ARCHT			
ELEC.			
MECH.			

SUBMITTED: R. P. VERAR, Principal Engineer, EEICD
RECOMMENDED: C. Z. C. LUGOD, JR., Manager, EEICD
APPROVED: G. B. MAGPOC, JR., Manager, DDD

DWG. NO. MSS-BDE-22.012 | SPECS. NO. LuzP23Z1636Sce

SCALE: 1:100 | **BID DRAWING** | REV. 0



NOTES:

1. CONVENIENCE OUTLETS AND CONDUIT RUNS ARE INDICATIVE ONLY. ACTUAL LOCATIONS AND RUNS SHALL BE DETERMINED IN THE FIELD.
2. CONVENIENCE OUTLETS SHALL BE MOUNTED 0.3 m ABOVE FINISHED FLOOR EXCEPT FOR EXHAUST FAN OUTLET (EF) AND EMERGENCY LIGHT OUTLET (EL) WHICH SHALL BE DETERMINED IN THE FIELD.
3. ALL WIRES SHALL BE TYPE THHN/THWN-2 600 V INSULATION, STRANDED COPPER CONDUCTOR.
4. CONDUIT SHALL BE uPVC, CLASS A.
5. ALL WORKS SHALL CONFORM WITH THE LATEST PROVISION OF THE PHILIPPINE ELECTRICAL CODE.

LEGENDS:

- EF – EXHAUST FAN OUTLET (SINGLE OUTLET)
- EL – EMERGENCY LIGHTING OUTLET (SINGLE OUTLET)
- UPS – UPS OUTLET (SINGLE OUTLET)
- – CONVENIENCE OUTLET, DUPLEX, 2 POLES, 230 V, 15 A FLUSH MOUNTED
- WP – CONVENIENCE OUTLET, DUPLEX, 2 POLES, 230 V, 15 A, WEATHER PROOF TYPE
- LPP – LIGHTING & POWER PANEL BOARD
- – ENCLOSED CIRCUIT BREAKER IN NEMA-3R ENCLOSURE

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

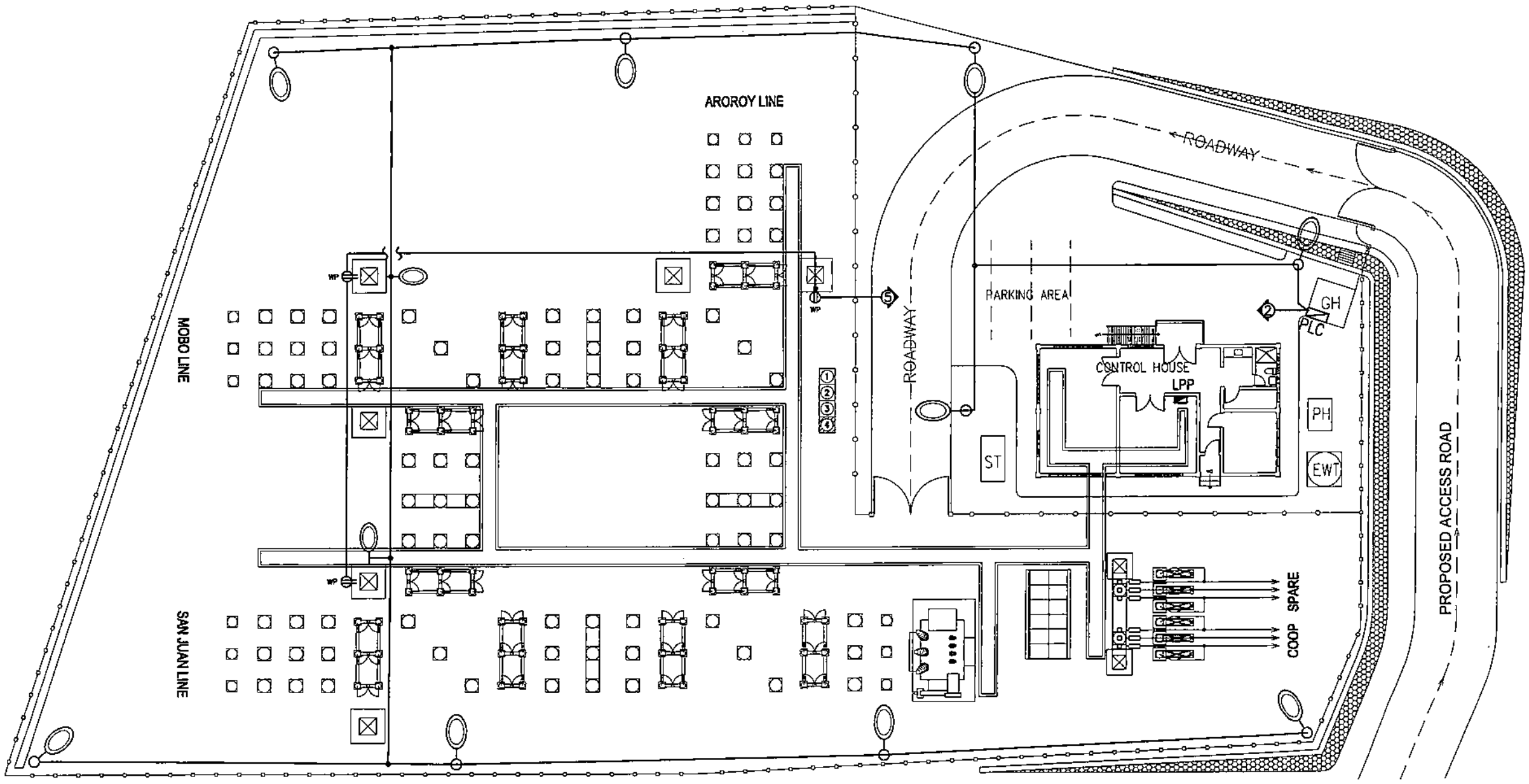
TITLE: **CONTROL HOUSE POWER LAYOUT**

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENGR. / ARCHT.		
CIVIL/ARCHT			
ELEC.			
MECH.			

SUBMITTED: R. P. VERAR, Principal Engineer A, EEIGD
RECOMMENDED: C. Z. C. LUGOD, JR., Manager, EEIGD
APPROVED: G. B. MAGPOC, JR., Manager, DDO

DWG. NO. MSS-BDE-22.013 | SPECS. NO. LuzP23Z1636Sce

SCALE: 1:100 | **BID DRAWING** | REV. 0



NOTES:

1. FIXTURES AND CONDUIT RUNS ARE INDICATIVE ONLY. ACTUAL LOCATION OF RUNS SHALL BE DETERMINED IN THE FIELD.
2. JUNCTION BOXES SHALL BE PROVIDED WHENEVER DEEMED NECESSARY.
3. ALL WIRES SHALL BE TYPE THHN/THWN-2 600V INSULATION, STRANDED COPPER CONDUCTOR.
4. CONDUIT SHALL BE uPVC CLASS A, UNLESS OTHERWISE INDICATED.
5. SAMPLES OF MATERIALS AND LATEST CATALOGUE OF FIXTURES, ACCESSORIES AND EQUIPMENT SPECIFIED HEREIN SHALL BE SUBMITTED TO EEICD FOR VERIFICATION AND APPROVAL BEFORE PURCHASE AND INSTALLATION.
6. ALL WORKS SHALL CONFORM WITH THE LATEST PROVISIONS OF THE PHILIPPINE ELECTRICAL CODE.

LEGENDS:

- FIXTURE TYPE K
- FIXTURE TYPE M
- WP – DUPLEX CONVENIENCE OUTLET, WEATHER PROOF
- LIGHTING AND POWER PANELBOARD
- CIRCUIT RUNNING UNDERGROUND
- ③ – CONTROL CIRCUIT
- PLC – PERIMETER LIGHTING CONTROLLER

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

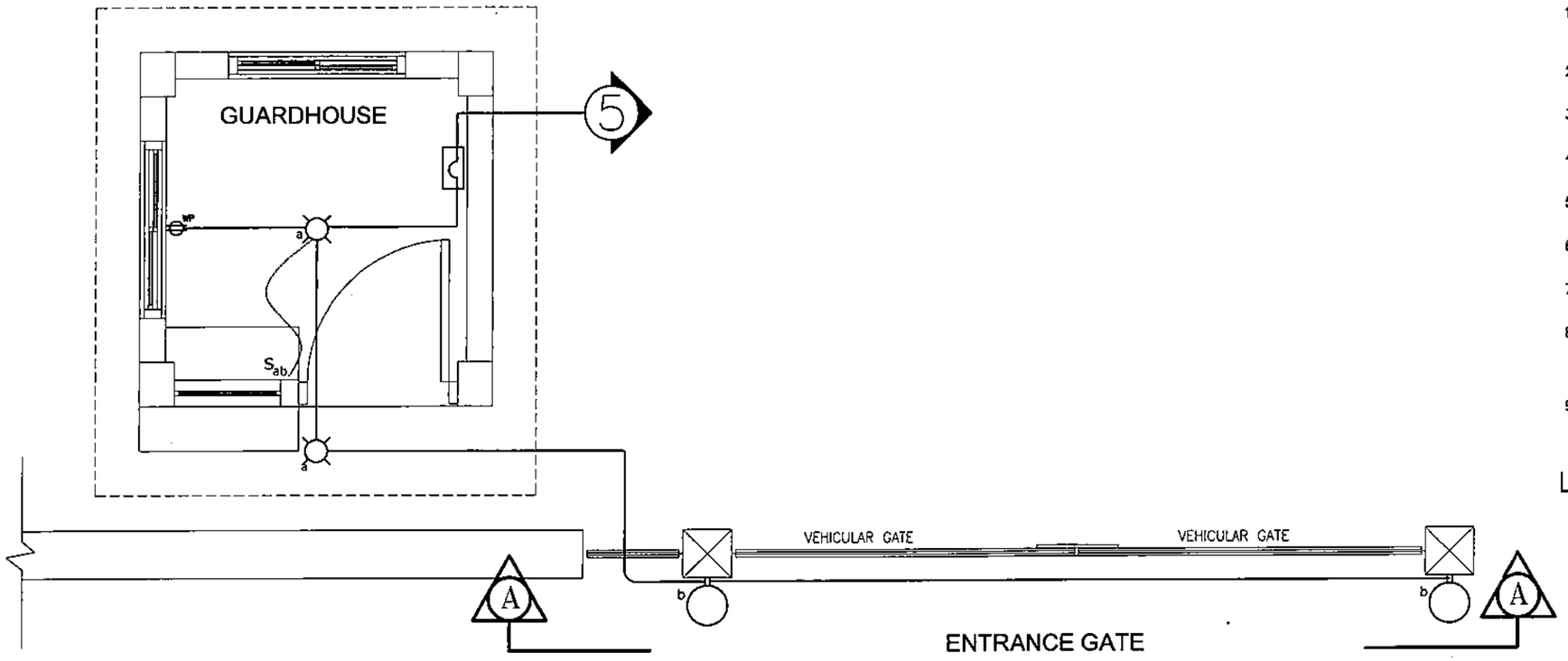
TITLE: **PERIMETER LIGHTING LAYOUT**

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENGR. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.			

SUBMITTED: R. P. VERAR, Principal Engineer A, EEICD
RECOMMENDED: C. Z. C. LUGOD, JR., Manager, EEICD
APPROVED: G. B. MAGPOC, JR., Manager, DOD

DWG. NO. MSS-BDE-22.014 | SPECS. NO. LuzP23Z1636Sce

SCALE: 1:300 | **BID DRAWING** | REV. 0

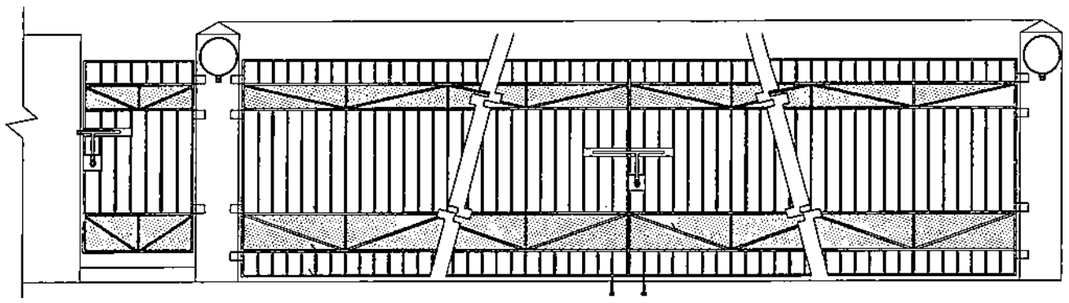


NOTES:

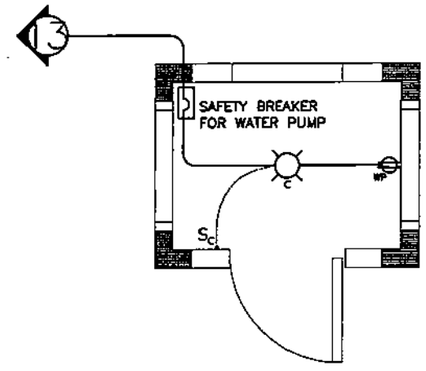
1. FIXTURES, CONVENIENCE OUTLET AND CONDUIT RUNS ARE INDICATIVE ONLY. ACTUAL LOCATION OF RUNS SHALL BE DETERMINED IN THE FIELD.
2. ALL LIGHTING SWITCHES SHALL BE MOUNTED 1.37 m ABOVE FINISHED FLOOR.
3. JUNCTION BOXES SHALL BE PROVIDED WHENEVER DEEMED NECESSARY.
4. WEATHER PROOF CONVENIENCE OUTLETS SHALL BE MOUNTED 0.3M ABOVE FINISHED GROUND LINE.
5. ALL WIRES SHALL BE TYPE THHN/THWN-2 600V INSULATION, STRANDED COPPER CONDUCTOR.
6. CONDUIT SHALL BE uPVC CLASS A, UNLESS OTHERWISE INDICATED.
7. EMERGENCY LIGHTING SHALL BE CONNECTED TO 230Vac EMERGENCY LIGHTING OUTLET.
8. SAMPLES OF MATERIALS AND LATEST CATALOGUE OF FIXTURES, ACCESSORIES AND EQUIPMENT SPECIFIED HEREIN SHALL BE SUBMITTED TO EEICD FOR VERIFICATION AND APPROVAL BEFORE PURCHASE AND INSTALLATION.
9. ALL WORKS SHALL CONFORM WITH THE LATEST PROVISIONS OF THE PHILIPPINE ELECTRICAL CODE.

LEGENDS:

- – FIXTURE TYPE O
- – FIXTURE TYPE I
- Sab – 2-GANG SWITCH
- Φ_{WP} – WEATHER PROOF CONVENIENCE OUTLET
- (8) – CIRCUIT RUN
- – SAFETY BREAKER, 20A, 2P, 230VAC.



SECTION A-A



PUMPHOUSE

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

TITLE: **GUARDHOUSE ENTRANCE GATE AND PUMPHOUSE LIGHTING & POWER LAYOUT**

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENGR. / ARCHT.		
CIVIL/ARCHT			
ELEC.			
MECH.			

SUBMITTED: R. P. VERAR, Principal Engineer A, EEICD
RECOMMENDED: E. Z. C. LUGOD, JR., Manager, EEICD
APPROVED: G. B. MAGPOC, JR., Manager, DDD

DWG. NO. MSS-BDE-22.015 | SPECS. NO. LuzP23Z1636Sce

SCALE: NTS | **BID DRAWING** | REV. 0

SCHEDULE OF LOADS

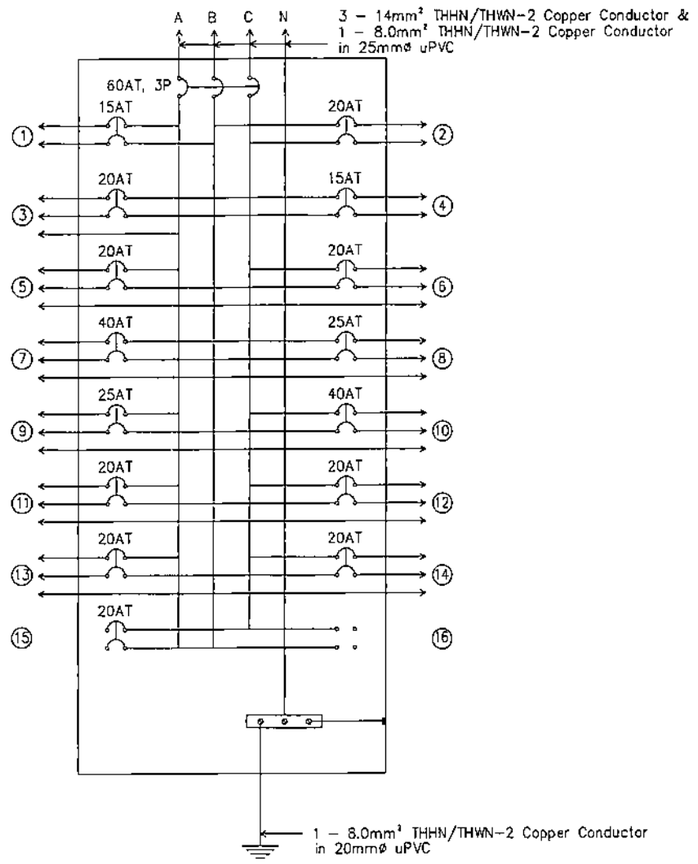
CKT NO.	DESCRIPTION	LOCATION	VA	V	CURRENT (AMPERES)			SIZES		
					AB	BC	CA	BREAKER	WIRE	CONDUIT
1	2 – 1 x 16W FIXTURE TYPE C	BATTERY ROOM	322	230	1.40			50AF / 15AT	2 – 3.5mm² THHN/THWN–2	20mmØ uPVC
	1 – 1 x 25W FIXTURE TYPE I	STORAGE ROOM								
	1 – 1 x 9W FIXTURE TYPE D	TOILET								
	1 – 1 x 9W FIXTURE TYPE D	TOILET								
	2 – 1 x 9W FIXTURE TYPE D	CORRIDOR								
	4 – 1 x 16W FIXTURE TYPE B	FOYER / UTILITY								
	1 – 1 x 9W FIXTURE TYPE D	PORCH								
	4 – 1 x 25W FIXTURE TYPE I	CANOPY								
2	2 – 1 x 30W FIXTURE TYPE M	PERIMETER & SWITCHYARD	330.00	230		1.43		50AF / 20AT	2 – 3.5mm² THHN/THWN–2	20mmØ uPVC
	9 – 1 x 30W FIXTURE TYPE K									
3	5 – 200 VA DUPLEX CONVENIENCE OUTLET	SWITCHGEAR, CONTROL ROOM & FOYER	1220	230	5.30			50AF / 20AT	2 – 3.5mm² THHN/THWN–2 1 – 3.5mm² THHN/THWN–2	20mmØ uPVC
	1 – 200 VA WEATHERPROOF CONVENIENCE OUTLET									
	4 – 2 X 2W EMERGENCY LIGHT OUTLET									
4	4 – 2 x 16W FIXTURE TYPE A	SWITCHGEAR & AUX. ROOM	480	230	2.09			50AF / 15AT	2 – 3.5mm² THHN/THWN–2	20mmØ uPVC
	8 – 2 x 16W FIXTURE TYPE A	CONTROL ROOM								
5	5 – 200 VA WEATHERPROOF OUTLET	SWITCHYARD, GUARDHOUSE & PUMPHOUSE	1025	230	4.46			50AF / 20AT	2 – 3.5mm² THHN/THWN–2 1 – 3.5mm² THHN/THWN–2	20mmØ uPVC
	2 – 1 x 25W FIXTURE TYPE I									
	2 – 1 x 25W FIXTURE TYPE O	GATE								
6	5 – 200 VA DUPLEX CONVENIENCE OUTLET	FOYER, BATTERY ROOM & STORAGE	1710	230		7.43		50AF / 20AT	2 – 3.5mm² THHN/THWN–2 1 – 3.5mm² THHN/THWN–2	20mmØ uPVC
	2 – 200 VA WEATHERPROOF CONVENIENCE OUTLET									
	2 – 2 X 2W EMERGENCY LIGHT OUTLET									
	2 – 100VA EXHAUST FAN OUTLET									
7	1 – 2.5 HP AIR CONDITIONING UNIT	CONTROL/RELAY ROOM	3335	230			14.50	50AF / 40AT	2 – 5.5mm² THHN/THWN–2 1 – 5.5mm² THHN/THWN–2	20mmØ uPVC
8	1 – 1.5 HP AIR CONDITIONING UNIT	SWGR/AUX ROOM	2300	230			10.00	50AF / 25AT	2 – 5.5mm² THHN/THWN–2 1 – 5.5mm² THHN/THWN–2	20mmØ uPVC
9	1 – 1.5 HP AIR CONDITIONING UNIT	SWGR/AUX ROOM	2300	230	10.00			50AF / 25AT	2 – 5.5mm² THHN/THWN–2 1 – 5.5mm² THHN/THWN–2	20mmØ uPVC
10	1 – 2.5 HP AIR CONDITIONING UNIT	CONTROL/RELAY ROOM	3335	230		14.50		50AF / 40AT	2 – 5.5mm² THHN/THWN–2 1 – 5.5mm² THHN/THWN–2	20mmØ uPVC
11	500 VA UPS OUTLET FOR TELEPHONE EQUIPMENT	CONTROL ROOM	500	230	2.17			50AF / 20AT	2 – 3.5mm² THHN/THWN–2 1 – 3.5mm² THHN/THWN–2	20mmØ uPVC
12	650 VA UPS OUTLET FOR CCTV SYSTEM	SWGR/AUX ROOM	650	230		2.83		50AF / 20AT	2 – 3.5mm² THHN/THWN–2 1 – 3.5mm² THHN/THWN–2	20mmØ uPVC
13	PUMPHOUSE LOADS	PUMPHOUSE	1598.25	230	6.95			50AF / 20AT	2 – 3.5mm² THHN/THWN–2 1 – 3.5mm² THHN/THWN–2	20mmØ uPVC
14	1000 VA UPS OUTLET FOR VSAT	CONTROL ROOM	1000	230		4.35		50AF / 20AT	2 – 3.5mm² THHN/THWN–2 1 – 3.5mm² THHN/THWN–2	20mmØ uPVC
15	SPARE		1500	230			6.52	50AF / 20AT		
16	SPACE									
	TOTAL		20105.25	230	32.37	30.54	31.02			

PROVIDE: 100AF / 60AT, 3P MCCB
WITH BRANCH CIRCUITS OF:
2 – 50AF/40AT, 2P, MCB
2 – 50AF/25AT, 2P, MCB
9 – 50AF/20AT, 2P, MCB
2 – 50AF/15AT, 2P, MCB

PROVIDE: 3 – 14mm² THHN/THWN–2 Copper Conductor &
1 – 8.0mm² THHN/THWN–2 Copper Conductor
in 25mmø uPVC Conduit

RISER DIAGRAM
LIGHTING & POWER PANEL

(TO 230VAC, LOW VOLTAGE PANEL FEEDER NO. 1)



REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: NATIONAL POWER CORPORATION
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

TITLE: **LOAD SCHEDULE & RISER DIAGRAM OF LPP**

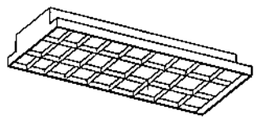
	BY	CHKD	DATE
DESIGNED			
DRAWN	MJRP		
REVIEWED	PRINCIPAL ENGR. / ARCHT.		
CIVIL/ARCHT			
ELEC.			
MECH.			

SUBMITTED: R. P. VERAR, Principal Engineer A (EECD)
RECOMMENDED: E. Z. C. LUGOD, JR., Manager, EEICD
APPROVED: G. B. MAGPOC, JR., Manager, ODD

DWG. NO. MSS-BDE-22.016 | SPECS. NO. LuzP23Z1636Sce

SCALE: N.T.S. | **BID DRAWING** | REV. 0

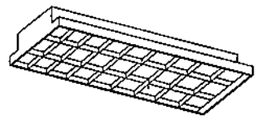
A INDOOR



IP20 FLUSH MOUNTED TYPE LIGHTING FIXTURE, WITH MIRROR FINISH ALUMINUM REFLECTOR, 2 x 16WATTS COOL WHITE HIGH OUTPUT LED LAMP TUBE LUMINAIRES.

APPLICABLE AREA: CONTROL AND STATION AUXILIARY ROOMS, OFFICE AND FOYER

B



IP20 FLUSH MOUNTED TYPE LIGHTING FIXTURE, WITH MIRROR FINISH ALUMINUM REFLECTOR, 1 x 16WATTS COOL WHITE HIGH OUTPUT LED LAMP TUBE LUMINAIRES.

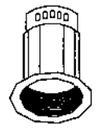
APPLICABLE AREA: CONTROL AND STATION AUXILIARY ROOMS, OFFICE AND FOYER

C

CEILING MOUNTED TYPE LIGHTING FIXTURE, WITH ALUMINUM REFLECTOR GEAR, 1 x 16WATTS COOL WHITE HIGH OUTPUT LED LAMP TUBE LUMINAIRES.

APPLICABLE AREA: BATTERY ROOM

D



PIN LIGHT LIGHTING FIXTURE, RECESSED TYPE STAINLESS STEEL BODY COMPLETE WITH SELF-CONTAINED LED LIGHTS, 9W.

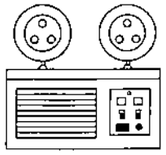
APPLICABLE AREA: CANOPY

E

INCANDESCENT LIGHTING FIXTURE (9WATTS LAMP) WITH PORCELAIN RECEPTACLE

APPLICABLE AREA: COMFORT ROOM, GUARDHOUSE

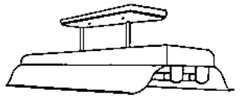
F



PORTABLE EMERGENCY LIGHTING FIXTURE, 2 x 2WATTS LED WARM WHITE WITH BUILT-IN SEALED LEAD ACID BATTERY. CHARGING TIME <20HRS; USAGE TIME <=4 HRS.

APPLICABLE AREA: CONTROL ROOM, LOBBY, OFFICE AREA

G



LED LIGHTING FIXTURE, INDUSTRIAL TYPE WITH STEM, RAPID START, HPF (>95%) BALLAST WITH 2 x 40WATTS LAMP.

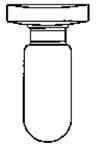
APPLICABLE AREA: WORKSHOP

H

EXIT SIGN LIGHTING, INDOOR, 12SVDC WITH 10WATTS, LED TUBE.

APPLICABLE AREA: EXIT/ENTRANCE

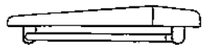
I



COMPACT LED LAMP LIGHTING FIXTURE, 25WATTS, WITH PORCELAIN RECEPTACLE.

APPLICABLE AREAS: GUARDHOUSE, PUMPHOUSE

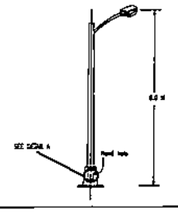
J



LED LIGHTING FIXTURE, SURFACE TYPE WITH 1 X 20W LAMP

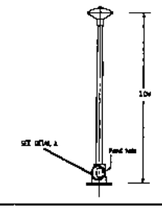
APPLICABLE AREA: GUARD HOUSE, PUMPHOUSE

K OUTDOOR



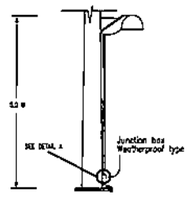
PERIMETER LIGHTING FIXTURE MADE OF CAST LUMINUM HOUSING WITH BRIGHT MIRAL FINISHED ALUMINUM REFLECTOR AND CLEAR ACRYLIC REFRACTOR SUITABLE FOR USE WITH 30W, 230V, LED LAMP, COMPLETE WITH CONTROL GEAR, HOT-DIP GALVANIZED TAPERED POST AND FOUNDATION.

L



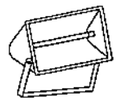
STREET LIGHTING FIXTURE MADE OF CAST LUMINUM HOUSING WITH BRIGHT MIRAL FINISHED ALUMINUM REFLECTOR AND CLEAR ACRYLIC REFRACTOR SUITABLE FOR USE WITH 30W, 230V, LED LAMP, COMPLETE WITH CONTROL GEAR, HOT-DIP GALVANIZED TAPERED POST AND FOUNDATION.

M



COMPACT LOW BAY DICHARGE LUMINAIRES, IP23 WEATHERPROOF REFLECTOR SUITABLE FOR USE IN 30W, 230V, LED LAMP WITH ALUMINUM BODY, CONTROL GEAR HOUSING OFFSET FROM REFLECTOR GIVING RADIAL BATWING DISTRIBUTION FROM HORIZONTAL LAMP.

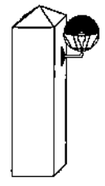
N



LED FLOOD LIGHT, WEATHER PROOF, HIGH PRESSURE DIE-CAST ALUMINUM HOUSING WITH BRACKET, HIGH GRADE ALUMINUM REFLECTOR, 30WATTS.

APPLICABLE AREA: SWITCHYARD

O



GATE COLUMN LIGHTING FIXTURE, SUITABLE FOR 25W 230V, LED LAMP COMPLETE WITH CONTROL GEAR AND ACRYLIC DIFFUSER ATTACHED TO A CAST ALUMINUM COMPARTMENT, DEGREE OF PROTECTION SHALL BE IP54.

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

TITLE: **LIGHTING FIXTURE DETAILS**

	BY	CHKD	DATE
DESIGNED			
DRAWN	MJR		
REVIEWED	PRINCIPAL ENGR. / ARCHT.		
CIVIL/ARCHT			
ELEC.			
MECH.			

SUBMITTED: R. P. VERAR, Principal Engineer A, EEICD

RECOMMENDED: C. Z. C. LUGOD, JR., Manager, EEICD

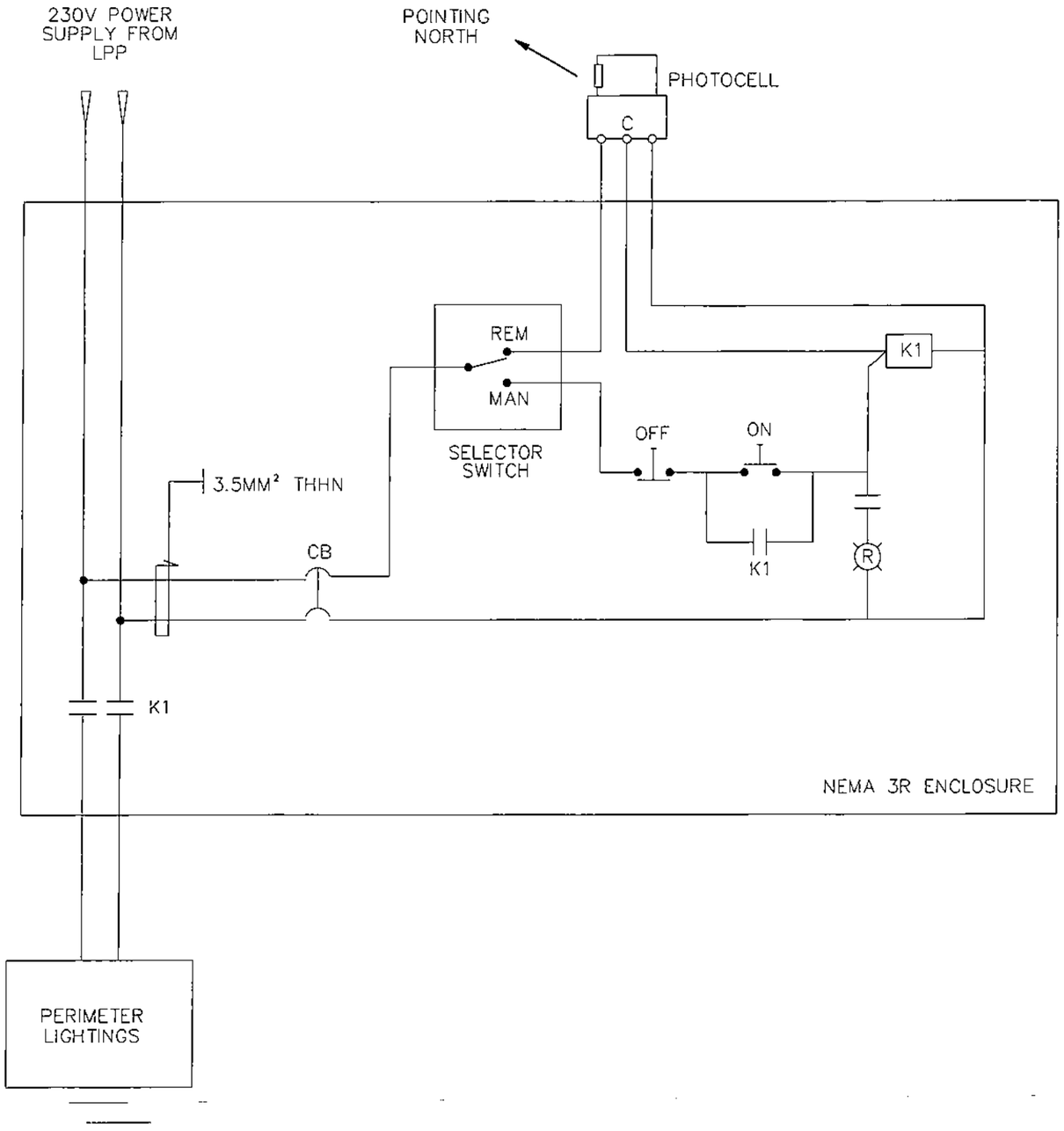
APPROVED: G. B. MAGPOC, JR., Manager, DDD

DWG. NO. MSS-BDE-22.017 | SPECS. NO. LuzP23Z1636Sce

SCALE: N.T.S. | **BID DRAWING** | REV. 0

NOTES:

1. PERIMETER LIGHTING CONTROLLER AS SHOWN SHALL BE INSTALLED INSIDE THE GUARD HOUSE. ALTERNATIVE CONTROLLER MAY BE SUGGESTED/RECOMMENDED BY THE SUPPLIER PROVIDE THAT MANUAL AND AUTOMATIC CONTROL STILL INCLUDED AND SUBJECT TO NPC REVIEW AND APPROVAL



PERIMETER LIGHTING CONTROLLER

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: NATIONAL POWER CORPORATION
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

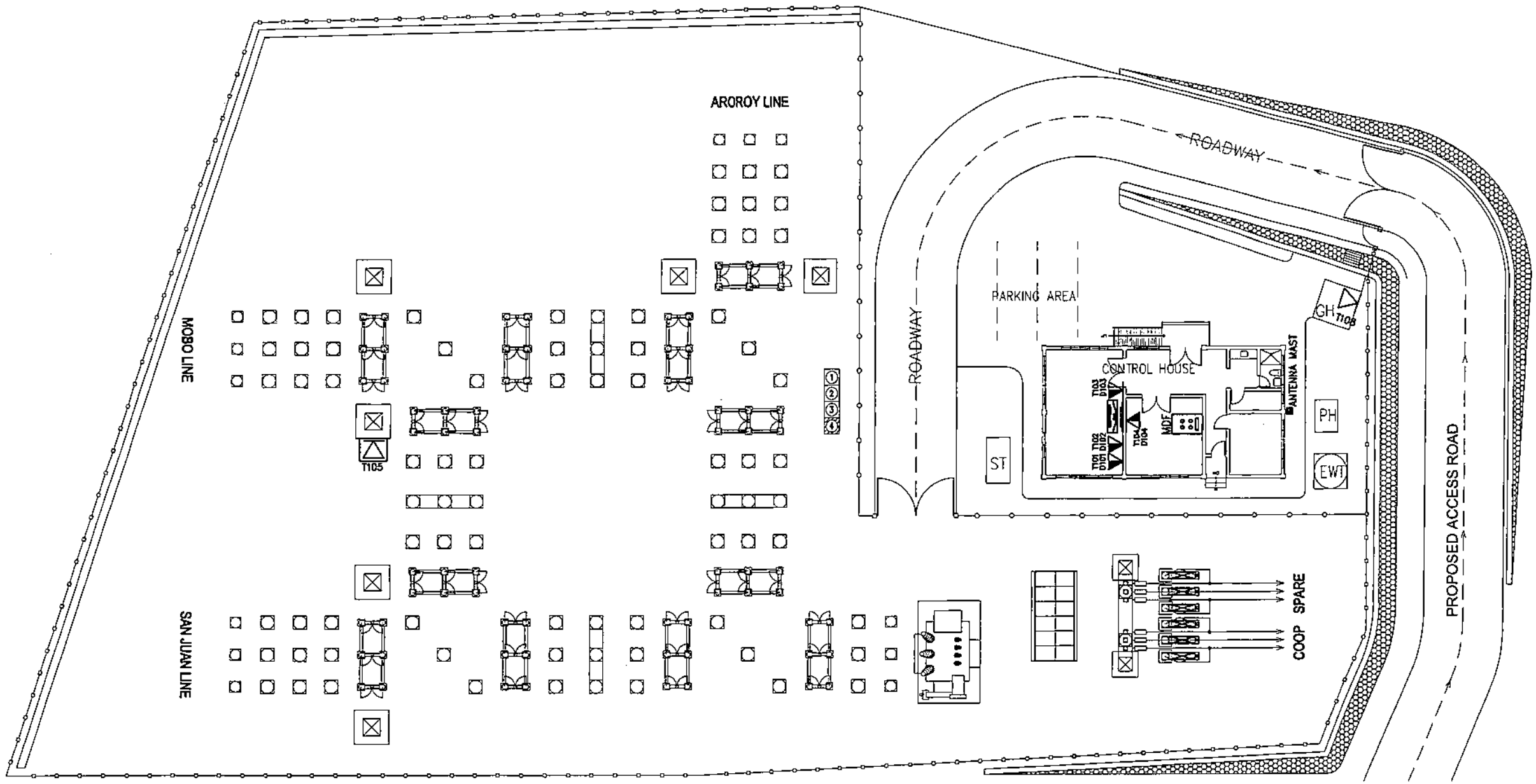
TITLE: PERIMETER LIGHTING CONTROLLER

	BY	CHKD	DATE
DESIGNED			
DRAWN	MJRP		
REVIEWED	PRINCIPAL ENGR. / ARCHT.		
CIVIL/ARCHT			
ELEC.			
MECH.			

SUBMITTED: R. P. VERAR, Principal Engineer A, EERSD
RECOMMENDED: C. Z. C. LOGOD, JR., Manager, EEICD
APPROVED: G. B. MAGPOC, JR., Manager, DDD

DWG. NO. MSS-BDE-22.018 | SPECS. NO. LuzP23Z1636Sce

SCALE: N.T.S. | BID DRAWING | REV. 0

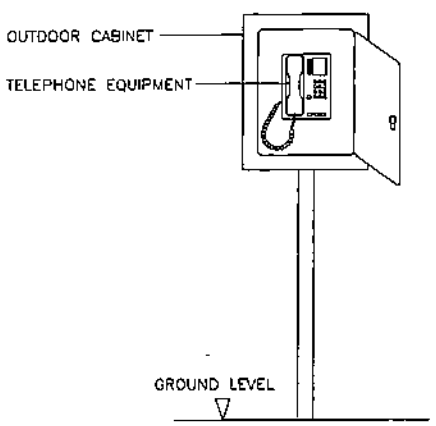


NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
2. ALL CABLE RUNS SHALL BE CONTINUOUS AND NO SPLICES ALLOWED IN CONDUITS.
3. CONDUITS SHALL BE PERMANENTLY AND EFFECTIVELY GROUNDED.
4. THIS DRAWING IS FOR BIDDING PURPOSES ONLY. THE CONTRACTOR SHALL IDENTIFY THE ACTUAL LOCATION THAT IS SUITABLE FOR THE INSTALLATION OF TELEPHONE EQUIPMENT.

LEGENDS:

- – 2–PORT FACEPLATE WITH SHUTTER FOR VOICE AND INFORMATION OUTLET (I/O)
- – RJ45 VOICE INFORMATION OUTLET (I/O)
- – RJ45 DATA INFORMATION OUTLET (I/O)
- – RJ45 VOICE INFORMATION OUTLET (I/O) WITH IP–66 RATING STEEL FLOOR STANDING BOX 300(H) X 250(W) X 150(D)
- – 60–FOOT ANTENNA MAST



DETAILS OF OUTDOOR TELEPHONE EQUIPMENT

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

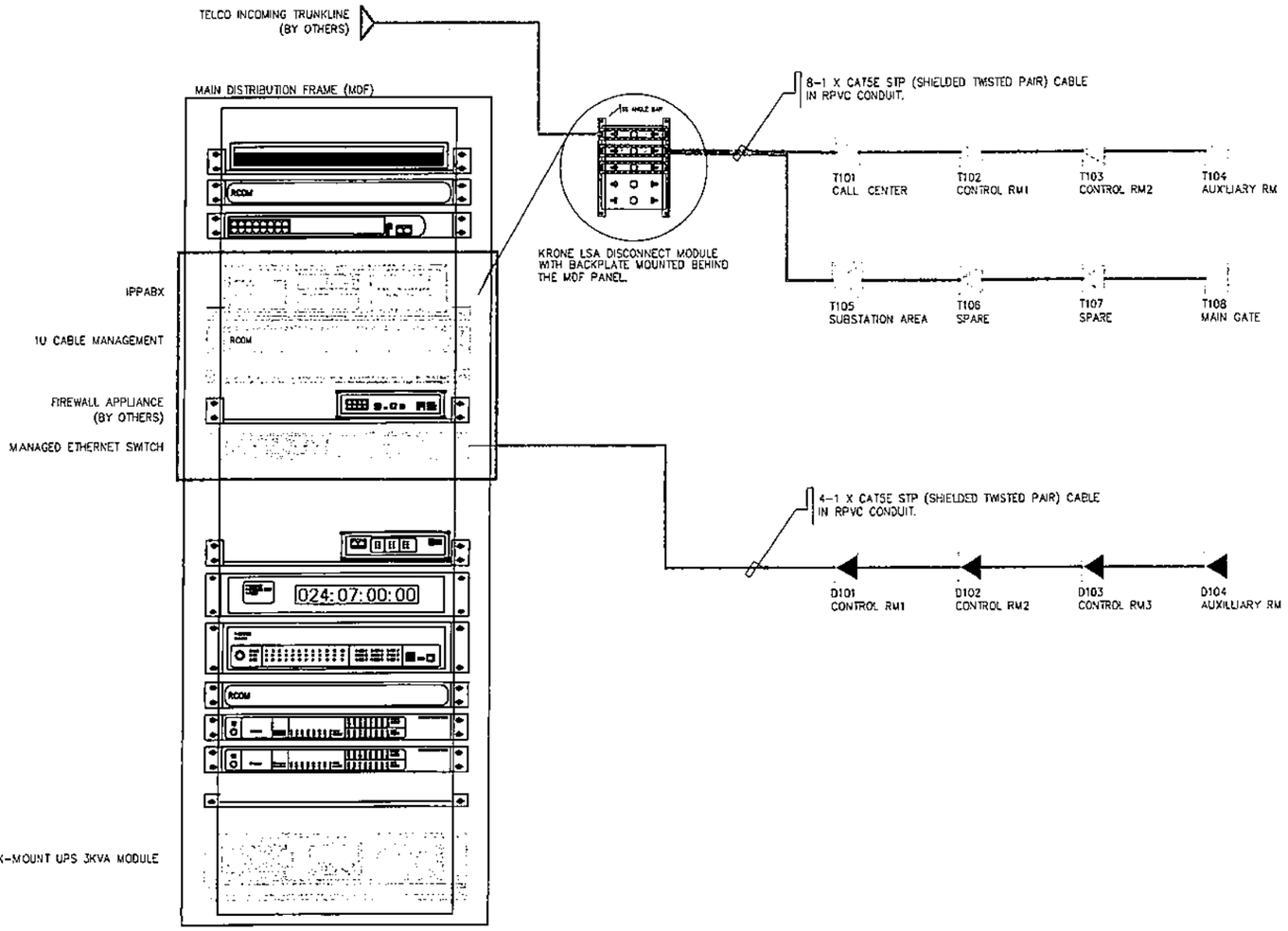
TITLE: **TELEPHONE SYSTEM LAYOUT**

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENGR. / ARCHT.		
CIVIL/ARCHT			
ELEC.			
MECH.			

SUBMITTED: R. P. VERAR, Physical Engineer A, EEICO
RECOMMENDED: G. Z. C. LUGOD, JR., Manager, EEICO
APPROVED: G. B. MAGPOC, JR., Manager, DDO

DWG. NO. MSS-BDE-22.019 | SPECS. NO. LuzP23Z1636Sce

SCALE: 1:300 | **BID DRAWING** | REV. 0



LEGENDS:

- 3-TRUNKLINE X 8-LOCAL IPPABX
- 1U CABLE DUCT
- 24-PORT GIGABIT MANAGEABLE SWITCH
- 2-PORT FACEPLATE WITH SHUTTER FOR VOICE AND INFORMATION OUTLET (I/O)
- RJ45 VOICE INFORMATION OUTLET (I/O)
- RJ45 DATA INFORMATION OUTLET (I/O)
- RJ45 VOICE INFORMATION OUTLET (I/O) WITH IP-66 RATING STEEL FLOOR STANDING BOX 300(H) X 250(W) X 150(D)
- KRONE LSA DISCONNECT MODULE WITH BACKPLATE
- RACK-MOUNT UPS 3KVA MODULE

NOTES:

1. ALL CABLE RUNS SHALL BE CONTINUOUS AND NO SPLICES ARE ALLOWED IN CONDUITS AND CABLE TRAYS.
2. VOICE CABLE RUNS SHALL BE TERMINATED DIRECTLY TO THE KRONE LSA TERMINAL.
3. DATA CABLE RUNS SHALL BE TERMINATED DIRECTLY TO THE ETHERNET SWITCH.

VOICE AND DATA SYSTEM RISER DIAGRAM

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

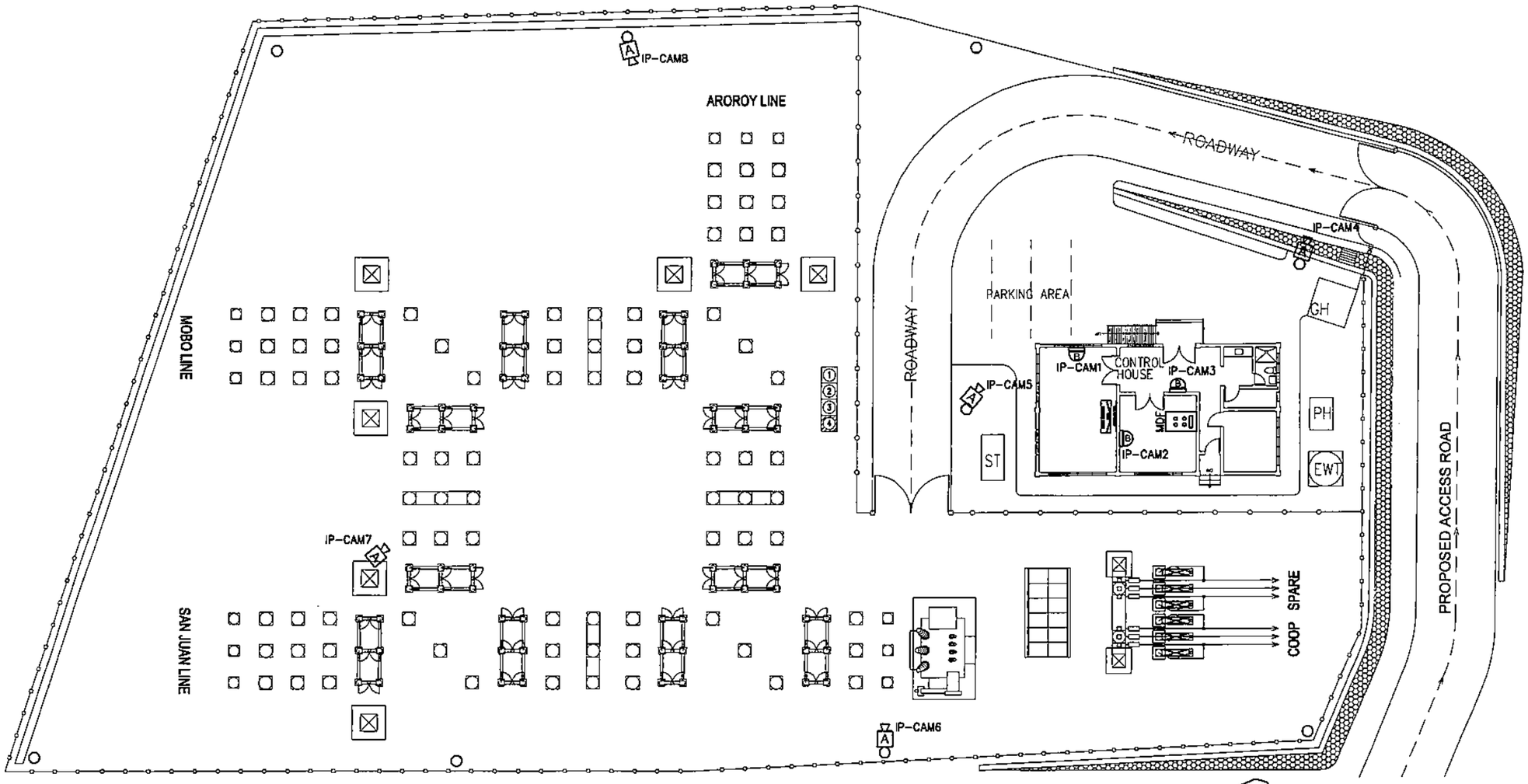
TITLE: **VOICE AND DATA SYSTEM RISER DIAGRAM**

	BY	CHKD	DATE
DESIGNED			
DRAWN	MJRP		
REVIEWED	PRINCIPAL ENGR. / ARCHT.		
CIVIL/ARCHT			
ELEC.			
MECH.			

SUBMITTED: R. P. VERAR, Principal Engineer A, EEICD
RECOMMENDED: C. Z. C. LUGOD, JR., Manager, EEICD
APPROVED: G. B. MAGPOC, JR., Manager, ODO

DWG. NO. MSS-BDE-22.020 | SPECS. NO. LuzP23Z1636Sce

SCALE: N. T. S. | **BID DRAWING** | REV. 0

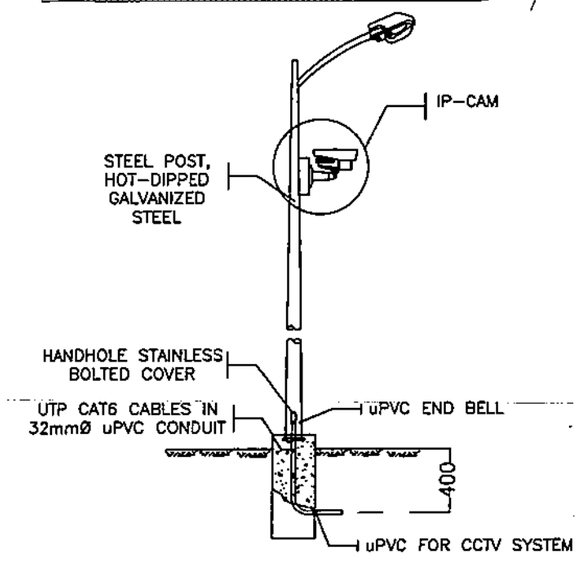


NOTES:

1. THE CONTRACTOR SHALL IDENTIFY THE ACTUAL LOCATION OF THE CCTV CAMERAS IN ACCORDANCE WITH THE SITE CONDITIONS.
2. CCTV CAMERAS SHALL BE MOUNTED TO THE NEAREST PERIMETER LIGHTING POLE.
3. ALL CABLE RUNS SHALL BE CONTINUOUS AND NO SPLICES ALLOWED IN CONDUITS AND CABLE TRAY SYSTEM.
4. THE CONTRACTOR FURNISH-AND-LAY-SEPARATE CONDUITS FOR CCTV SURVEILLANCE.
5. DETAILED SITE DEVELOPMENT PLAN SHALL BE WORKED WITH CIVIL WORKS BID DRAWINGS.

LEGENDS:

- 5MP DOME TYPE IP-CAMERA (POE) WITH 4 X 4 WP SPLICING PVC BOX
- 5MP BULLET TYPE IP-CAMERA (POE) WITH 4 X 4 WP SPLICING PVC BOX



DETAIL C

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

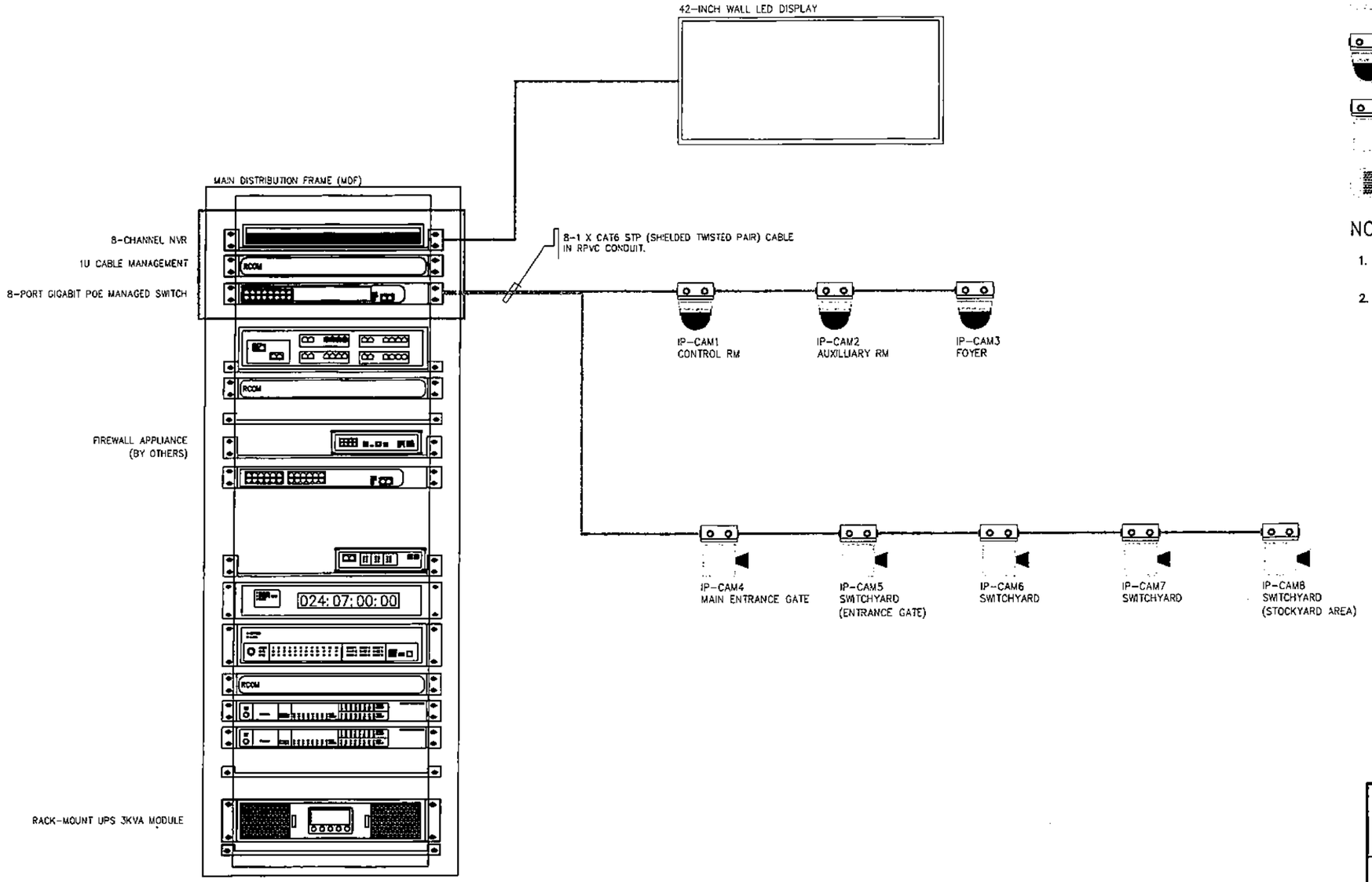
TITLE: **CCTV SURVEILLANCE SYSTEM**

	BY	CHKD	DATE
DESIGNED			
DRAWN			
REVIEWED	PRINCIPAL ENGR. / ARCHT.		
CIVIL/ARCHT			
ELEC.			
MECH.			

SUBMITTED: REP. VERAR, Project Engineer, EEICD
RECOMMENDED: C. Z. C. LUGOD, JR., Manager, EEICD
APPROVED: G. B. MAGPOC, JR., Manager, DDO

DWG. NO. MSS-BDE-22.021 | SPECS. NO. LuzP23Z1636Sce

SCALE: 1:300 | **BID DRAWING** | REV. 0



LEGENDS:

- 8-CHANNEL NETWORK VIDEO RECORDER (NVR) 2 - 1 X 8TB NAS DRIVE
- 1U CABLE DUCT
- 8-PORT GIGABIT POE MANAGED SWITCH
- 5MP DOME TYPE IP-CAMERA (POE) WITH 4 X 4 WP SPLICING PVC BOX
- 5MP BULLET TYPE IP-CAMERA (POE) WITH 4 X 4 WP SPLICING PVC BOX
- RACK-MOUNT UPS 3KVA MODULE

NOTES:

1. ALL CABLE RUNS SHALL BE CONTINUOUS AND NO SPLICES ARE ALLOWED IN CONDUITS AND CABLE TRAYS.
2. VIDEO SURVEILLANCE CABLE RUNS SHALL BE TERMINATED DIRECTLY TO THE POE ETHERNET SWITCH.

VIDEO SURVEILLANCE SYSTEM RISER DIAGRAM

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

TITLE: VIDEO SURVEILLANCE SYSTEM RISER DIAGRAM

	BY	CHKD	DATE
DESIGNED			
DRAWN	MJRP		
REVIEWED	PRINCIPAL ENGR. / ARCHT.		
CIVIL/ARCHT			
ELEC.			
MECH.			

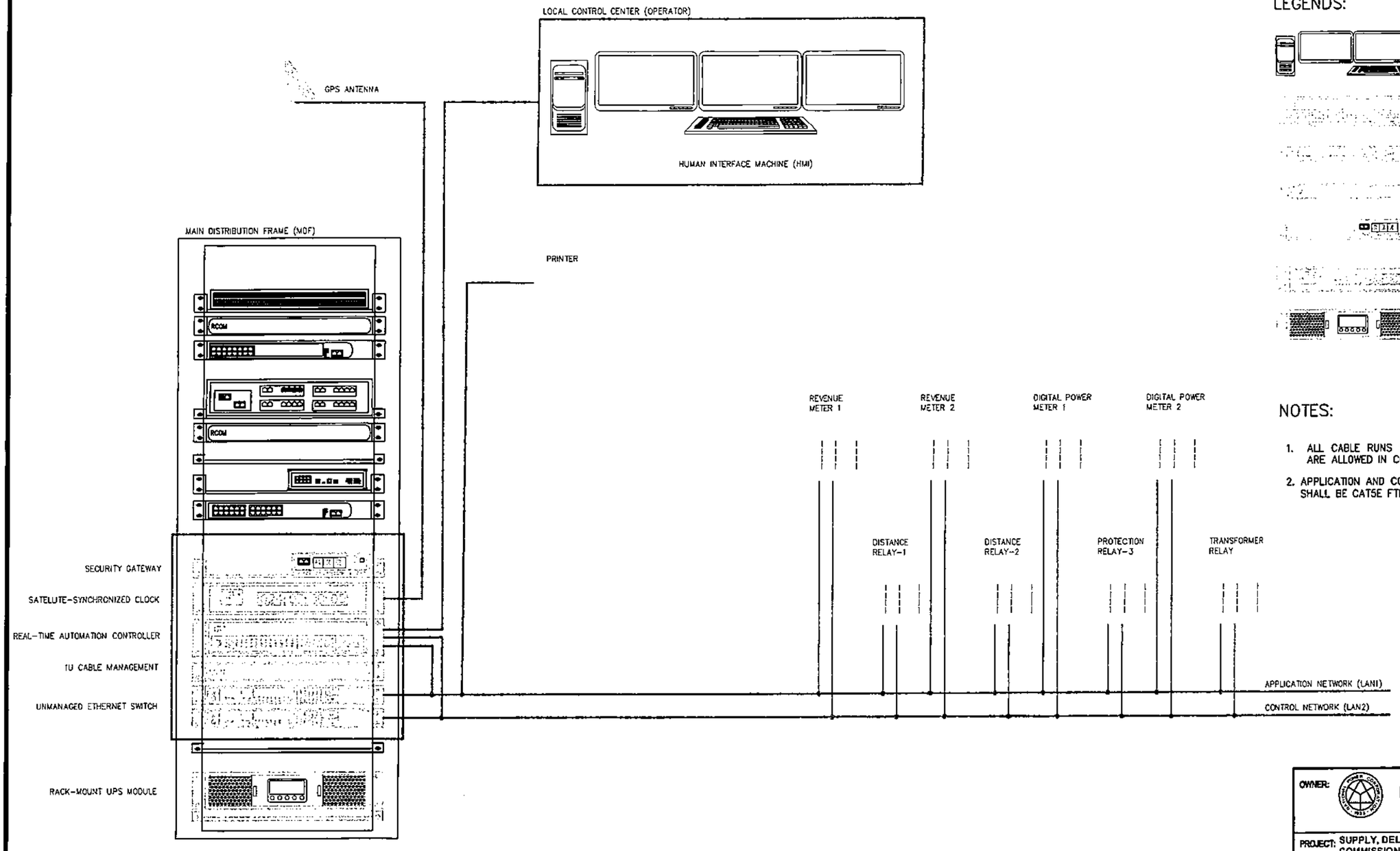
SUBMITTED: R. P. VERAR, Principal Engineer A, EEICD

RECOMMENDED: C. Z. C. LUGOD, JR., Manager, EEICD

APPROVED: G. B. MAGPOC, JR., Manager, DDD

DWG. NO. MSS-BDE-22.022 | SPECS. NO. LuzP23Z1636Sce

SCALE: N.T.S. | **BID DRAWING** | REV. 0



LEGENDS:

- LOCAL CONTROL CENTER (OPERATOR)
- REAL-TIME AUTOMATION CONTROLLER
- UNMANAGED ETHERNET SWITCH
- 1U CABLE MANAGEMENT
- SECURITY GATEWAY (FIREWALL)
- SATELLITE-SYNCHRONIZED CLOCK
- RACK-MOUNT UPS 3KVA MODULE

NOTES:

1. ALL CABLE RUNS SHALL BE CONTINUOUS AND NO SPLICES ARE ALLOWED IN CONDUITS AND CABLE TRAYS.
2. APPLICATION AND CONTROL NETWORK (LAN1 & LAN2) CABLES SHALL BE CAT5E FTP (FOIL TWISTED PAIR) CABLE.

NETWORK ARCHITECTURE

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

TITLE: **MASBATE SUBSTATION NETWORK ARCHITECTURE**

	BY	CHKD	DATE
DESIGNED			
DRAWN	MJRP		
REVIEWED	PRINCIPAL ENGR. / ARCHT.		
CIVIL/ARCHT			
ELEC.			
MECH.			

SUBMITTED: R. P. VERAR, Principal Engineer A, EEICD
RECOMMENDED: C. Z. C. LUGOD, JR., Manager, EEICD
APPROVED: G. B. MAGPOC, JR., Manager, ODD

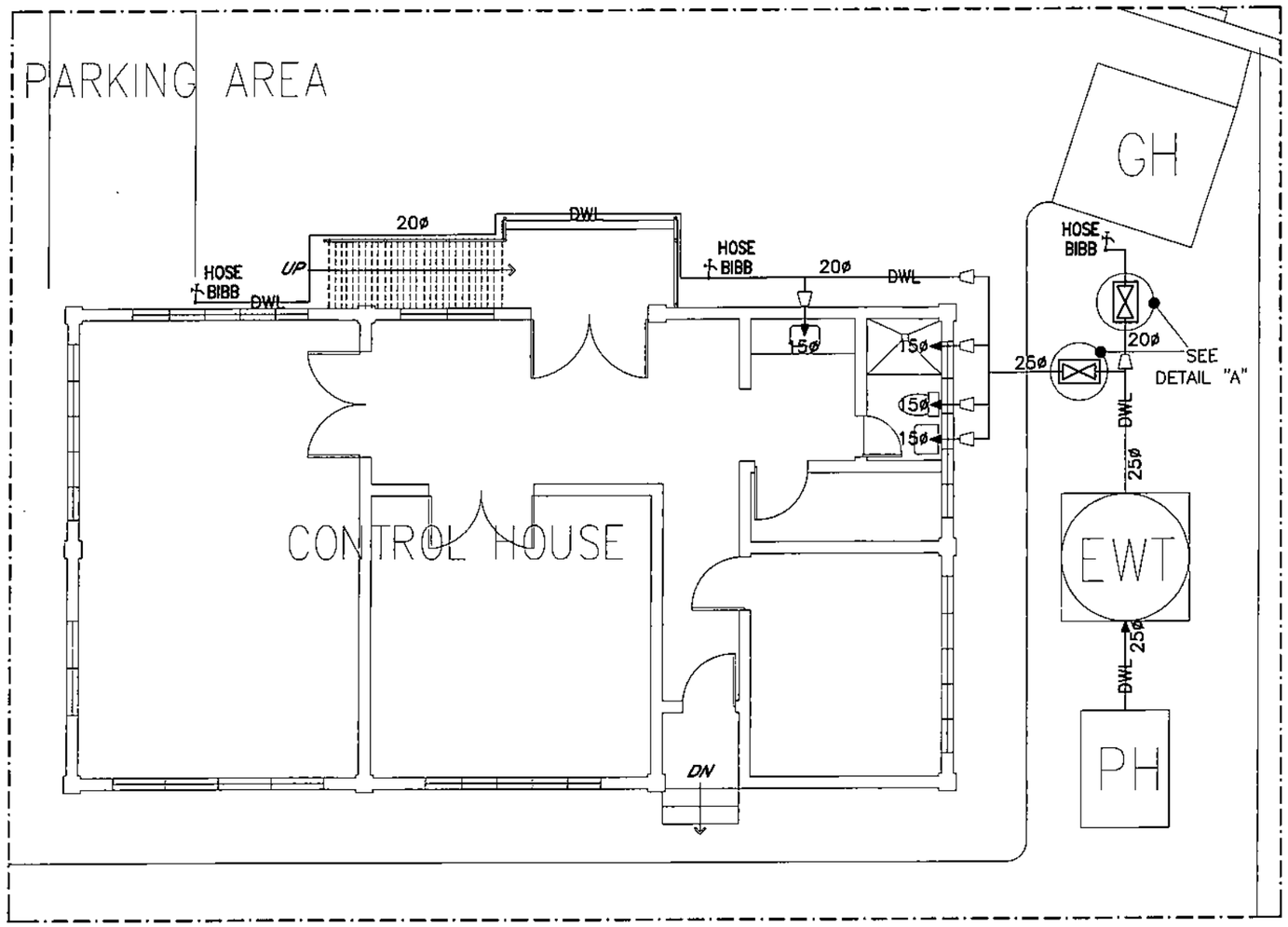
DWG. NO. MSS-BDE-22.023 | SPECS. NO. LuzP23Z1636Sce

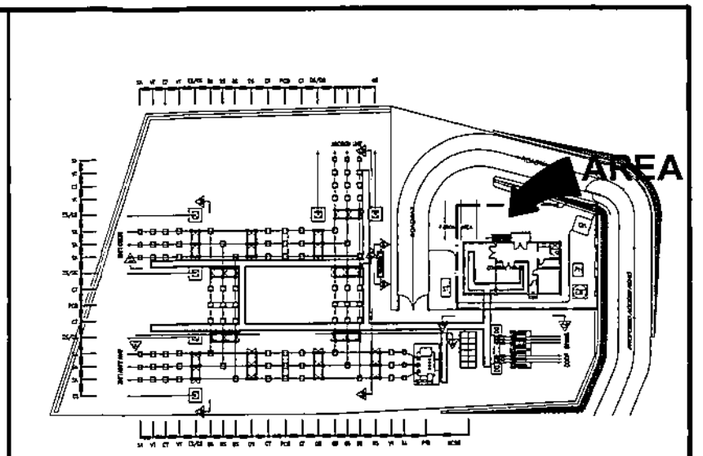
SCALE: N.T.S. | **BID DRAWING** | REV. 0

SECTION IX - BID DRAWINGS

MW - MECHANICAL DRAWINGS

DRAWING NO.	TITLE
MSS-BDM-22.001	DOMESTIC WATER PIPING LAYOUT (MASBATE SUBSTATION)
MSS-BDM-22.002	AIRCONDITIONING, VENTILATION AND FIRE FIGHTING SYSTEM
MSS-BDM-22.003	DOMESTIC WATER SYSTEM (P & I DIAGRAM)
MSS-BDM-22.004	DEEP WELL DETAILS
MSS-BDM-22.005	ELEVATED WATER STORAGE TANK



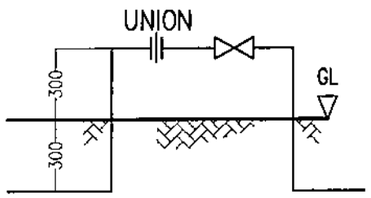


NOTES:

1. THIS DRAWING IS FOR BIDDING PURPOSES ONLY.
2. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
3. EQUIPMENT TO BE FURNISHED SHALL BE DESIGNED & CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE SPECIFICATIONS & SHALL FIT INTO THE SPACE AVAILABLE WITH PROPER REGARD TO ACCESSIBILITY, PASSAGEWAY, HANDLING AND STRUCTURE LIMITATIONS.
4. ALL WORKS SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE TECHNICAL SPECIFICATIONS.
5. PIPING SHALL BE EMBEDDED NOT LESS THAN 300MM FROM THE GROUND SURFACE TO THE BOTTOM OF PIPE.
6. FOR PIPES THAT CROSSES ROADWAYS, PIPE SLEEVE OF STEEL MATERIAL SHALL BE PROVIDED.
7. ALL PIPES, VALVES, VALVE BOXES, FITTINGS, AND PIPE SUPPORTS SHALL BE INSTALLED FOR THE EFFICIENT AND PROPER OPERATION OF THE SYSTEM.
8. ALL PIPES AND VALVES' BROCHURES/CATALOGUES SHALL BE SUBMITTED BY THE CONTRACTOR, FOR NPC'S REVIEW AND APPROVAL, PRIOR TO PROCUREMENT/INSTALLATION.
9. FINAL DETAILS AND ADJUSTMENT SHALL BE DONE IN THE FIELD BY THE CONTRACTOR DURING INSTALLATION TO SUIT ACTUAL SITE CONDITIONS. ALL WORKS SHALL BE EXECUTED IN CLOSE COORDINATION WITH ALL TRADES.
10. ALL uPVC/PE PIPE DIMENSIONS SHOWN ARE IN NOMINAL DIAMETER (MM) WITH THE FOLLOWING EQUIVALENTS:
    - 32MM (1 1/4") = 40MM OUTSIDE DIAMETER (O.D.)
    - 25MM (1") = 32MM O.D.
    - 20MM (3/4") = 25MM O.D.
    - 15MM (1/2") = 20MM O.D.

LEGEND:

- HOSE BIBB
- REDUCER
- DWL – DOMESTIC WATER SUPPLY LINE
- PH – PUMP HOUSE
- GATE VALVE
- EWT – ELEVATED WATER TANK
- GH – GUARD HOUSE



"ISOLATION VALVE"
DETAIL "A"

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

TITLE: **DOMESTIC WATER PIPING LAYOUT (MASBATE SUBSTATION)**

	BY	CHKD	DATE
DESIGNED	JAB		
DRAWN	JAB		
REVIEWED	PRINCIPAL ENGR. / ARCHT.		
CIVIL/ARCHT			
ELEC.		JBBM	
MECH.			

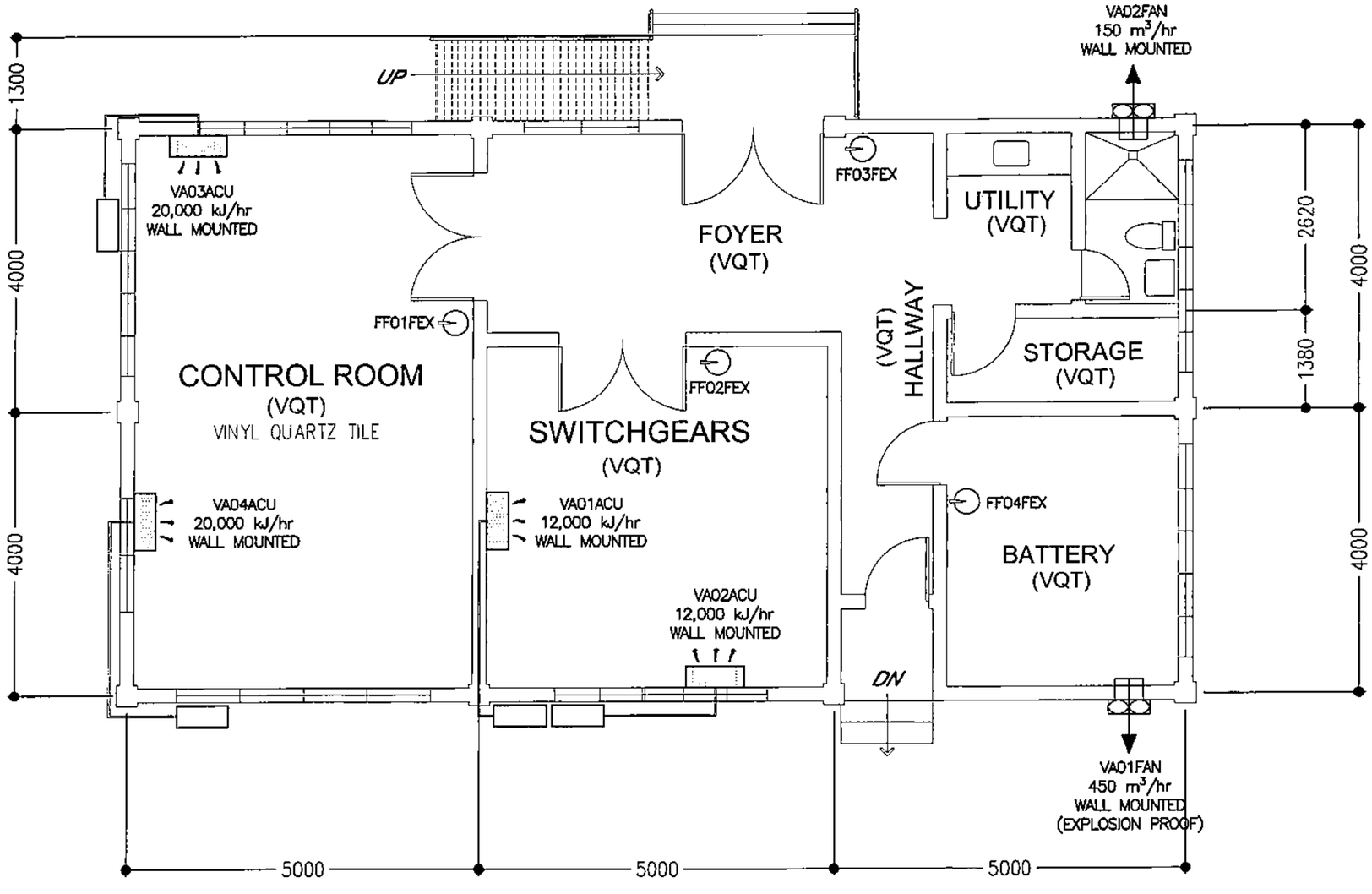
SUBMITTED: N. G. ESPAYOS, Principal Engineer A

RECOMMENDED: J. A. TAPET, JR., Manager, MED

APPROVED: G. B. MAGPOC, JR, Manager, DOO

DWG. NO. MSS-BDM-22.001 | SPECS. NO. LuzP23Z1636Sce

SCALE: NTS | **BID DRAWING** | REV. 0



NOTES:

1. THIS DRAWING IS FOR BIDDING PURPOSES ONLY.
2. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
3. EQUIPMENT TO BE FURNISHED SHALL BE DESIGNED & CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE SPECIFICATIONS & SHALL FIT INTO THE SPACE AVAILABLE WITH PROPER REGARD TO ACCESSIBILITY, PASSAGEWAY, HANDLING AND STRUCTURE LIMITATIONS.
4. ALL WORKS SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE TECHNICAL SPECIFICATIONS.
5. ALL EXHAUST FAN AND AIRCONDITIONING EQUIPMENT BROCHURES/CATALOGUES SHALL BE SUBMITTED BY THE CONTRACTOR, FOR NPC'S REVIEW AND APPROVAL, PRIOR TO PROCUREMENT/INSTALLATION.
6. ALL PIPES, CABLES, FITTINGS, AND ANGLE SUPPORTS SHALL BE INSTALLED FOR THE EFFICIENT AND PROPER OPERATION OF THE AIRCONDITIONING SYSTEM.
7. FINAL DETAILS AND ADJUSTMENT SHALL BE DONE IN THE FIELD BY THE CONTRACTOR DURING INSTALLATION TO SUIT ACTUAL SITE CONDITIONS. ALL WORKS SHALL BE EXECUTED IN CLOSE COORDINATION WITH ALL TRADES.

LEGEND:

- – SPLIT INVERTER TYPE AIR CONDITIONING UNIT
- – EXHAUST FAN (WALL MOUNTED)
- – PORTABLE FIRE EXTINGUISHER WALL-HUNG TYPE (HCFC OR HALOTRON)

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

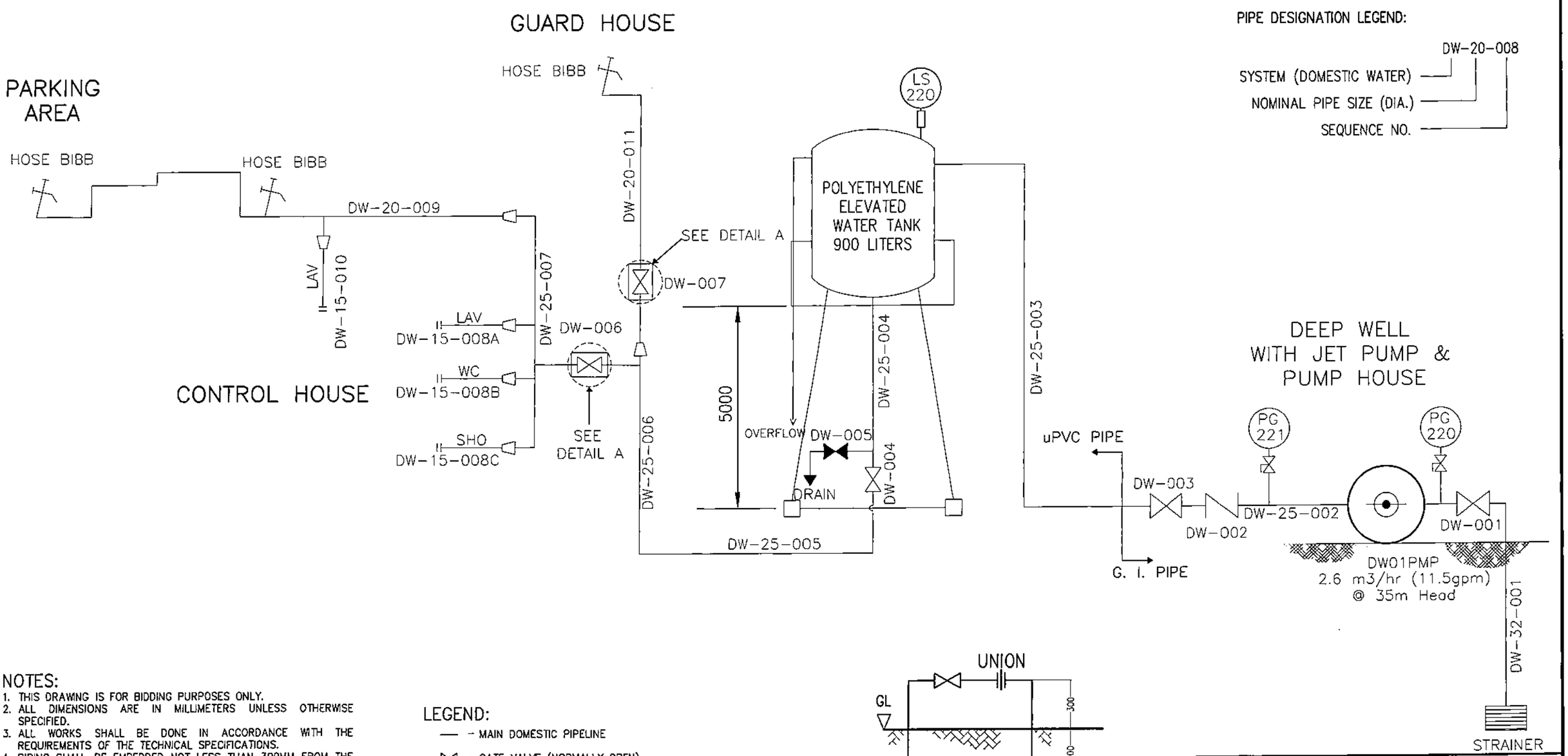
TITLE: **AIR CONDITIONING, VENTILATION AND FIRE FIGHTING SYSTEM (MASBATE SUBSTATION)**

	BY	CHKD	DATE
DESIGNED	JAB		
DRAWN	JAB		
REVIEWED	PRINCIPAL ENGR. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.		JBBM	

SUBMITTED: N. G. ESPAYOS, Principal Engineer A
RECOMMENDED: J. A. TAPEL, JR., Manager, MSD
APPROVED: G. B. MAGPOC, JR, Manager, DDO

DWG. NO. MSS-BDM-22.002 | SPECS. NO. LuzP23Z1636Sce

SCALE: 1:100 | **BID DRAWING** | REV. 0

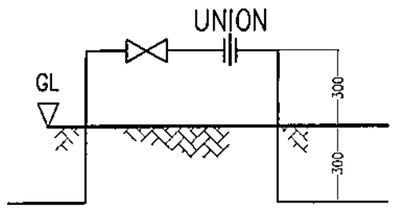


NOTES:

1. THIS DRAWING IS FOR BIDDING PURPOSES ONLY.
2. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
3. ALL WORKS SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE TECHNICAL SPECIFICATIONS.
4. PIPING SHALL BE EMBEDDED NOT LESS THAN 300MM FROM THE GROUND SURFACE TO THE BOTTOM OF PIPE.
5. FOR PIPES THAT CROSSES ROADWAYS, PIPE SLEEVE OF STEEL MATERIAL SHALL BE PROVIDED.
6. ALL PIPES, VALVES, VALVE BOXES, FITTINGS, AND PIPE SUPPORTS SHALL BE INSTALLED FOR THE EFFICIENT AND PROPER OPERATION OF THE SYSTEM.
7. ALL PUMP, TANK, PIPES AND VALVES' BROCHURES/CATALOGUES SHALL BE SUBMITTED BY THE CONTRACTOR, FOR NPC'S REVIEW AND APPROVAL, PRIOR TO PROCUREMENT/INSTALLATION.
8. THE JET PUMP SHALL BE OPERATED EITHER AUTOMATICALLY THROUGH A LEVEL SWITCH INSTALLED IN THE WATER STORAGE TANK OR MANUALLY THROUGH LOCAL CONTROL PUSH BUTTONS PROVIDED AT THE PUMP HOUSE.
9. FINAL DETAILS AND ADJUSTMENT SHALL BE DONE IN THE FIELD BY THE CONTRACTOR DURING INSTALLATION TO SUIT ACTUAL SITE CONDITIONS. ALL WORKS SHALL BE EXECUTED IN CLOSE COORDINATION WITH ALL TRADES.
10. ALL uPVC/PE PIPE DIMENSIONS SHOWN ARE IN NOMINAL DIAMETER (MM) WITH THE FOLLOWING EQUIVALENTS:
    - 32MM (1 1/4") = 40MM OUTSIDE DIAMETER (O.D.)
    - 25MM (1") = 32MM O.D.
    - 20MM (3/4") = 25MM O.D.
    - 15MM (1/2") = 20MM O.D.

LEGEND:

- — – MAIN DOMESTIC PIPELINE
- ⋈ – GATE VALVE (NORMALLY OPEN)
- ⋈ – GATE VALVE (NORMALLY CLOSE)
- ⟋ – CHECK VALVE
- ▷ – REDUCER
- ⊤ – HOSE BIBB
- ⊣⊢ – BLIND FLANGE
- (PG) – PRESSURE GAUGE
- (LS) – LEVEL SWITCH
- GL – GRADE LINE



"ISOLATION VALVE"
DETAIL "A"

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECO.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

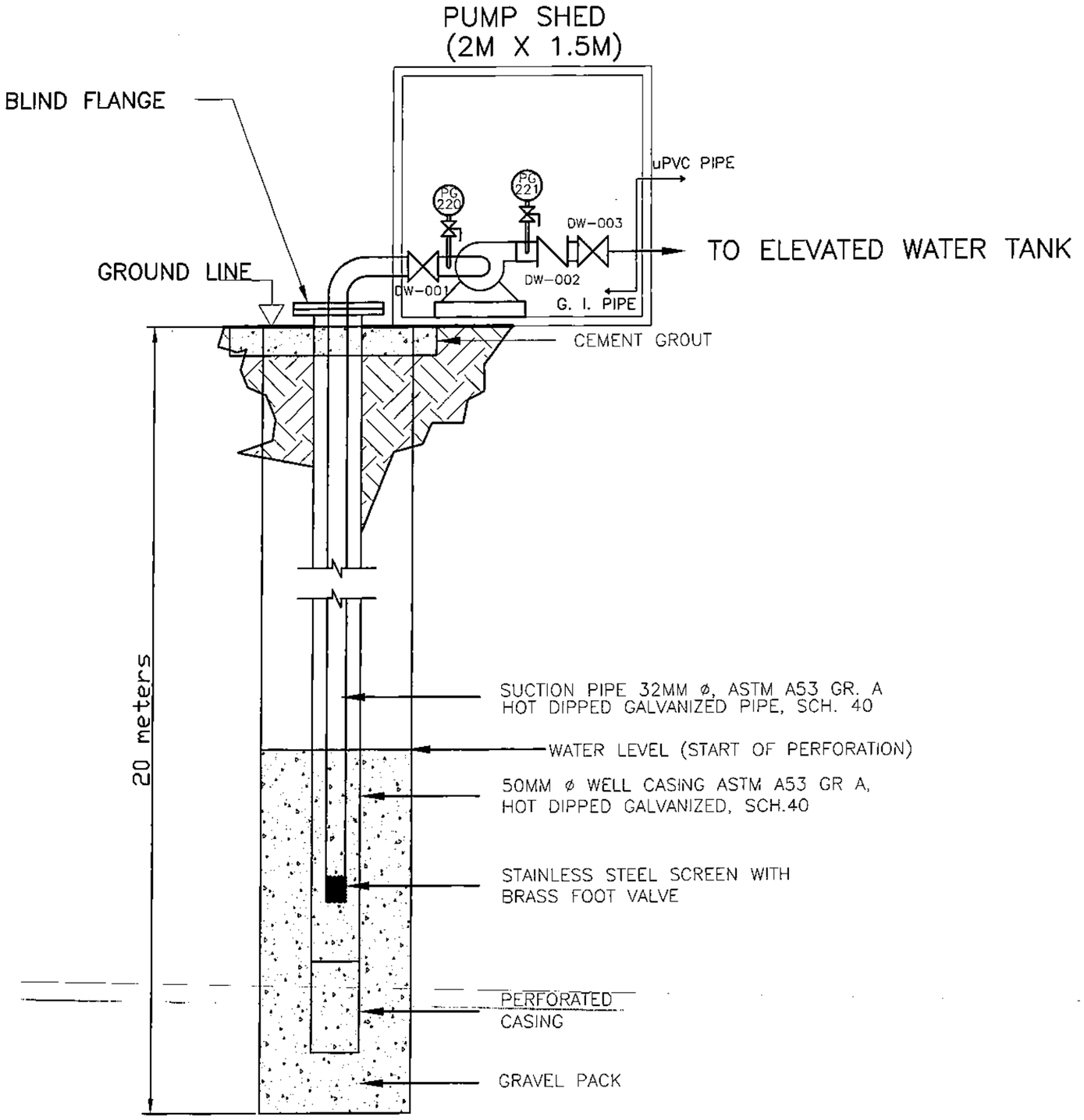
TITLE: **DOMESTIC WATER SYSTEM (P & I DIAGRAM)**

	BY	CHKD	DATE
DESIGNED	JAB		
DRAWN	JAB		
REVIEWED	PRINCIPAL ENGR. / ARCHT.		
CIVIL/ARCHT			
ELEC.			
MECH.			

SUBMITTED: N. G. ESPAYOS, Principal Engineer A
RECOMMENDED: J. A. TAPEL, JR., Manager, MSB
APPROVED: G. B. MAGPOC, JR, Manager, DDD

DWG. NO. MSS-BDM-22.003 | SPECS. NO. LuzP23Z1636Sce

SCALE: NTS | **BID DRAWING** | REV. 0



NOTES:

1. THIS DRAWING IS FOR BIDDING PURPOSES ONLY.
2. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
3. EQUIPMENT TO BE FURNISHED SHALL BE DESIGNED & CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE SPECIFICATIONS & SHALL FIT INTO THE SPACE AVAILABLE WITH PROPER REGARD TO ACCESSIBILITY, PASSAGEWAY, HANDLING AND STRUCTURE LIMITATIONS.
4. ALL WORKS SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE TECHNICAL SPECIFICATIONS.
5. THE JET PUMP SHALL BE OPERATED EITHER AUTOMATICALLY THROUGH A LEVEL SWITCH INSTALLED IN THE WATER STORAGE TANK OR MANUALLY THROUGH LOCAL CONTROL PUSH BUTTONS PROVIDED AT THE PUMP HOUSE.
6. PIPING, VALVES, FITTINGS AND OTHER ACCESSORIES SHALL BE PROVIDED TO CONFORM WITH THE REQUIREMENTS OF THE TECHNICAL SPECIFICATIONS.
7. THIS DRAWING SHOWS A TYPICAL INSTALLATION OF A WELL. THE CONTRACTOR SHALL PROVIDE FINAL DESIGN AND DETAILS FOR NPC REVIEW AND APPROVAL.

LEGEND:

- ⋈ – GATE VALVE
- ⋈ – CHECK VALVE
- (PG) – PRESSURE GAUGE

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECO.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

TITLE: **DEEP WELL DETAILS**

	BY	CHKD	DATE
DESIGNED	JAB		
DRAWN	JAB		
REVIEWED	PRINCIPAL ENGR. / ARCH'T.		
CIVIL/ARCH'T			
ELEC.			
MECH.		JBBM	

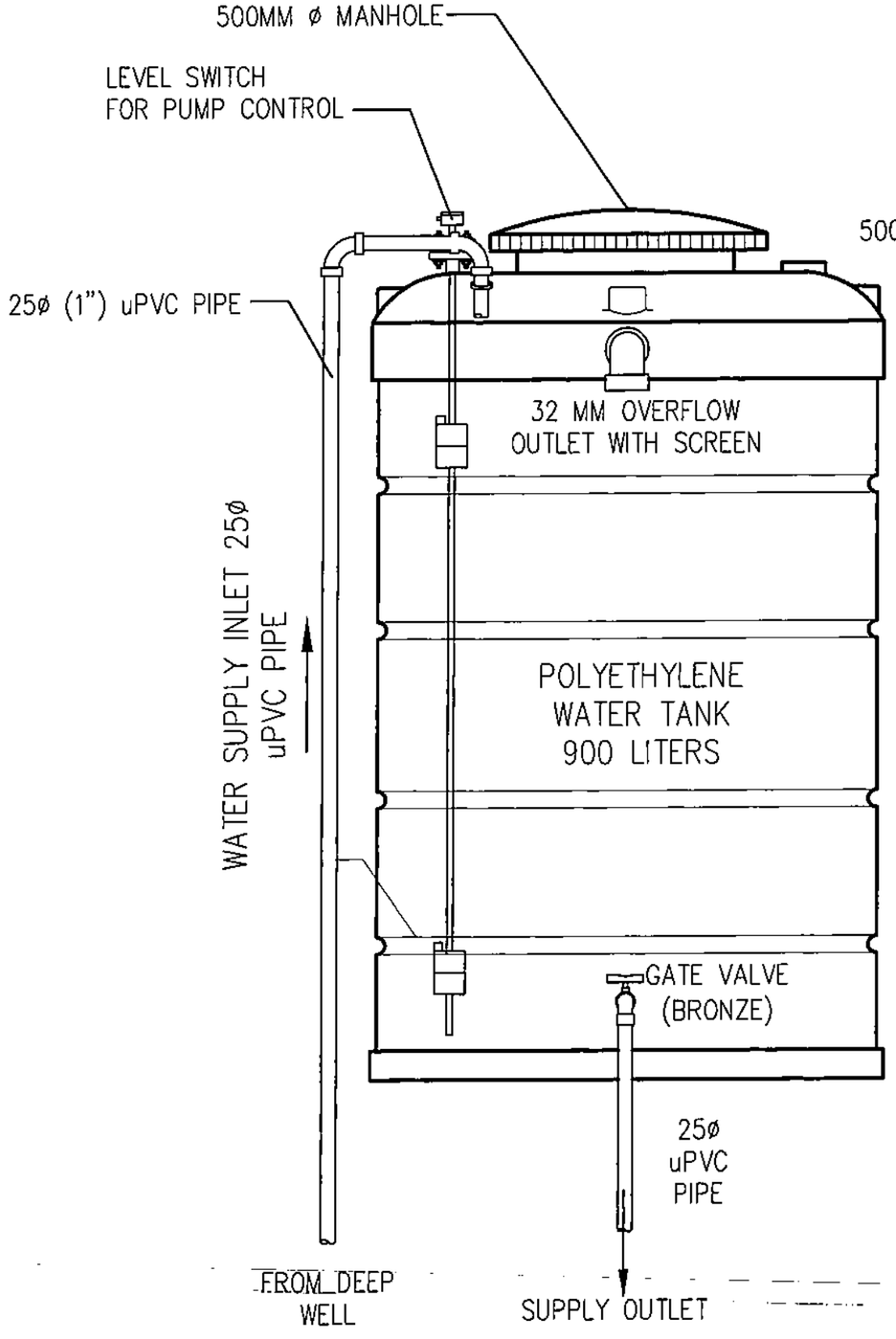
SUBMITTED: N. G. ESPAYOS, Principal Engineer A
RECOMMENDED: J. A. TAPEL, JR., Manager, MED
APPROVED: G. B. MAGPOC, JR., Manager, DOD

DWG. NO. MSS-BDM-22.004 | SPECS. NO. LuzP23Z1636Sce

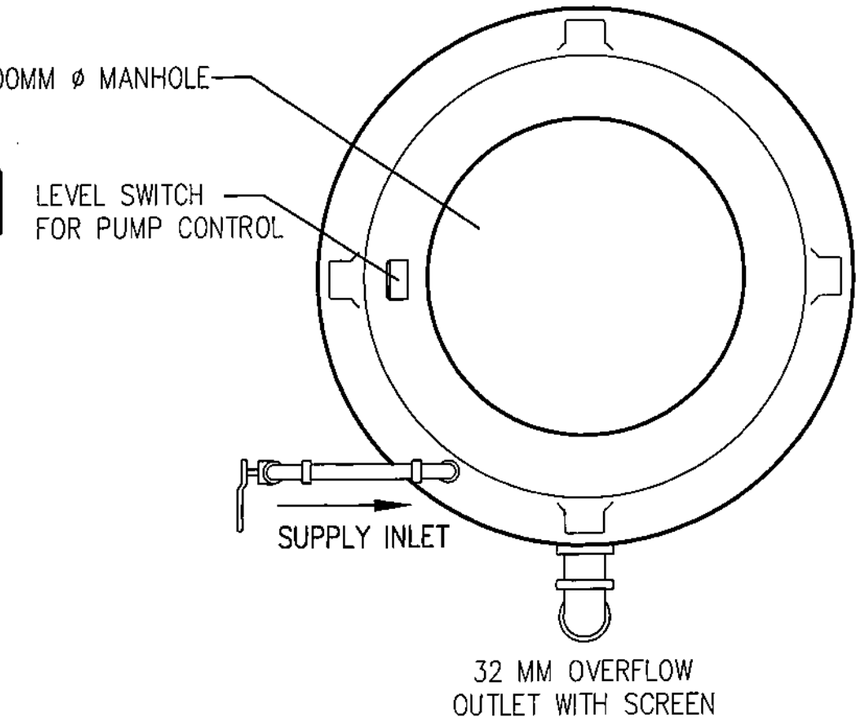
SCALE: NTS | BID DRAWING | REV. 0

NOTES:

1. FINAL ARRANGEMENT AND DIMENSIONS SHALL BE DETERMINED AT SITE BY THE CONTRACTOR SUBJECT TO NPC'S APPROVAL.
2. EQUIPMENT TO BE FURNISHED SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE SPECIFICATIONS.
3. ALL uPVC/PE PIPE DIMENSIONS SHOWN IN ENGLISH UNITS ARE IN NOMINAL DIAMETER (MM) WITH THE FOLLOWING EQUIVALENTS:
   - 32MM (1 1/4") = 40MM OUTSIDE DIAMETER (O.D.)
   - 25MM (1") = 32MM O.D.
   - 20MM (3/4") = 25MM O.D.
   - 15MM (1/2") = 20MM O.D.



SIDE VIEW



TOP VIEW

WATER STORAGE TANK

REV.	DATE	NATURE OF REVISION	BY	CHKD.	RECD.	APPD.

OWNER: **NATIONAL POWER CORPORATION**
GABRIEL Y. ITCHON BLDG., SEN. MIRIAM P. DEFENSOR-SANTIAGO AVENUE (FORMERLY BIR ROAD) CORNER QUEZON AVENUE, DILIMAN 1100 QUEZON CITY, PHILIPPINES

PROJECT: SUPPLY, DELIVERY, CONSTRUCTION, INSTALLATION, TESTING AND COMMISSIONING OF 10MVA MASBATE (MALINTA) SUBSTATION

LOCATION: MALINTA, MASBATE

TITLE: **ELEVATED WATER STORAGE TANK**

	BY	CHKD	DATE
DESIGNED	JAB		
DRAWN	JAB		
REVIEWED	PRINCIPAL ENGR. / ARCHT.		
CIVIL/ARCHT			
ELEC.			
MECH.			

SUBMITTED: N. G. ESPAYOS, Principal Engineer A
RECOMMENDED: J. A. TAPEL, JR., Manager, MED
APPROVED: G. B. MAGPOC, JR, Manager, DDO

DWG. NO. MSS-BDM-22.005 | SPECS. NO. LuzP23Z1636Sce

SCALE: NTS | BID DRAWING | REV. 0