ELECTRICAL SCOPE OF WORKS

for

RESEARCH AND DEVELOPMENT COMPLEX; SOIL, PLANT and WATER LABORATORY

BENGUET STATE UNIVERSITY - LA TRINIDAD CAMPUS



Prepared by:

AR. HAZELINE N. TIBANGAY
University Architect – Physical Plant
License No. PTR No.

Checked and Reviewed by:

ENGR CESAR C. TAMESIS

Professional Electrical Engineer

Consultant

License No.

PTR No.

JUDITH G. LAWILLAND 1 | Page

"ELECTRICAL ENHANCEMENT OF LABORATORY ROOMS" @ THE RESEARCH & DEVELOPMENT COMPLEX BUILDING

BENGUET STATE UNIVERSITY





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A. BRIEF INTRODUCTION

The Research and Development Complex is a facility with chain of laboratories established to cater the research needs of the Cordillera in terms of soil, plant and water. During the initial planning and construction of the building structure, the said laboratories were not taken into consideration whereas, the equipment procured for laboratory use were not included in the original electrical load design. Instantaneous with the establishment of the laboratories, the university decided to reinforce and enhance the electrical load design of the building in consideration with the procured equipment and future equipment for laboratory use. This so, the Electrical Scope of Works herein mentioned was established to be commissioned to be fully operational.

B. SPECIAL PREAMBLE

In the prosecution of the project only Electrical Contractors with qualified experience shall only be allowed to participate in the bidding process.

The Electrical Contractor Bidder shall practice due diligence in pricing this Bid Form indicating the Bill of Quantities (BOQ) moreover, the Bidder shall guarantee his quantities and it is his responsibility to check the description provided for in this BOQ against the issued Tender Plans and Specifications and in the Pre - Tender Meetings and Bulletins.

The Electrical Contractor shall supply, deliver and install new materials of approved quality by the owner through its technical representative.

The Electrical Contractor shall provide all manpower, tools and equipment required and necessary for the smooth prosecution of the specified Electrical Scope of Works.

C. ELECTRICAL SCOPE OF WORKS

- i. Service Line
- ii. Grounding System
- iii. Main Distribution System
- iv. Crop Protection Laboratory PP1
- v. Soil, Plant and Water Laboratory A PP2
- vi. Soil, Plant and Water Laboratory B PP3
- vii. Biotech Lab PP4
- viii. Fire Pump PP5

D. TESTING AND COMMISSIONING

The Electrical Contractor Bidder shall conduct testing and commissioning for all of the Scope of Works indicated above with the presence of the Professional Electrical Consultant (PEE). The Electrical Contractor shall submit report for all the tests conducted prior to the issuance of the Certificate of Completion, Certificate of Turnover and Acceptance for the processing of its final billing.

E. CONTRACT DURATION

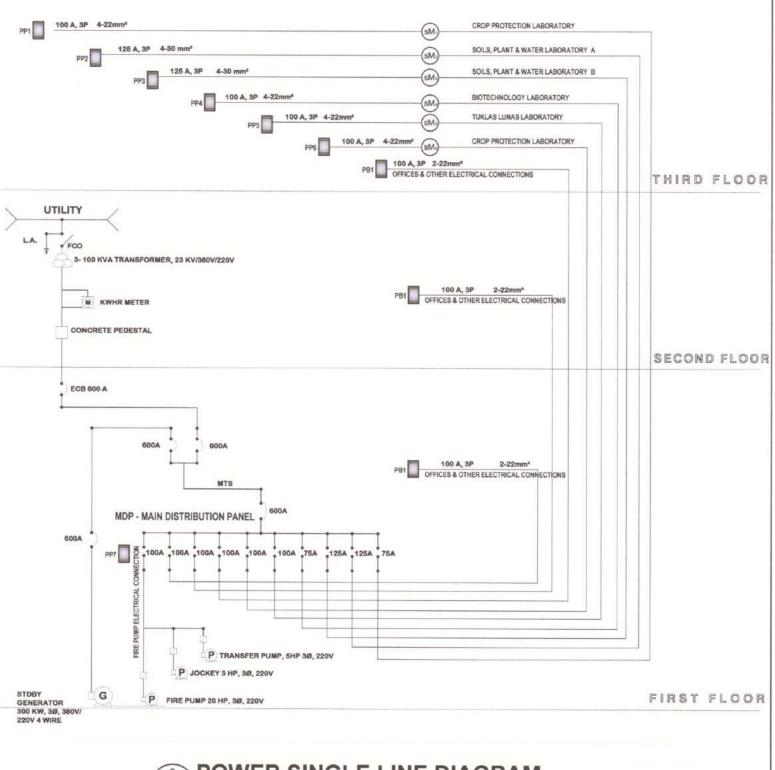
The Scope of Works shall be implemented within sixty (60) calendar days.

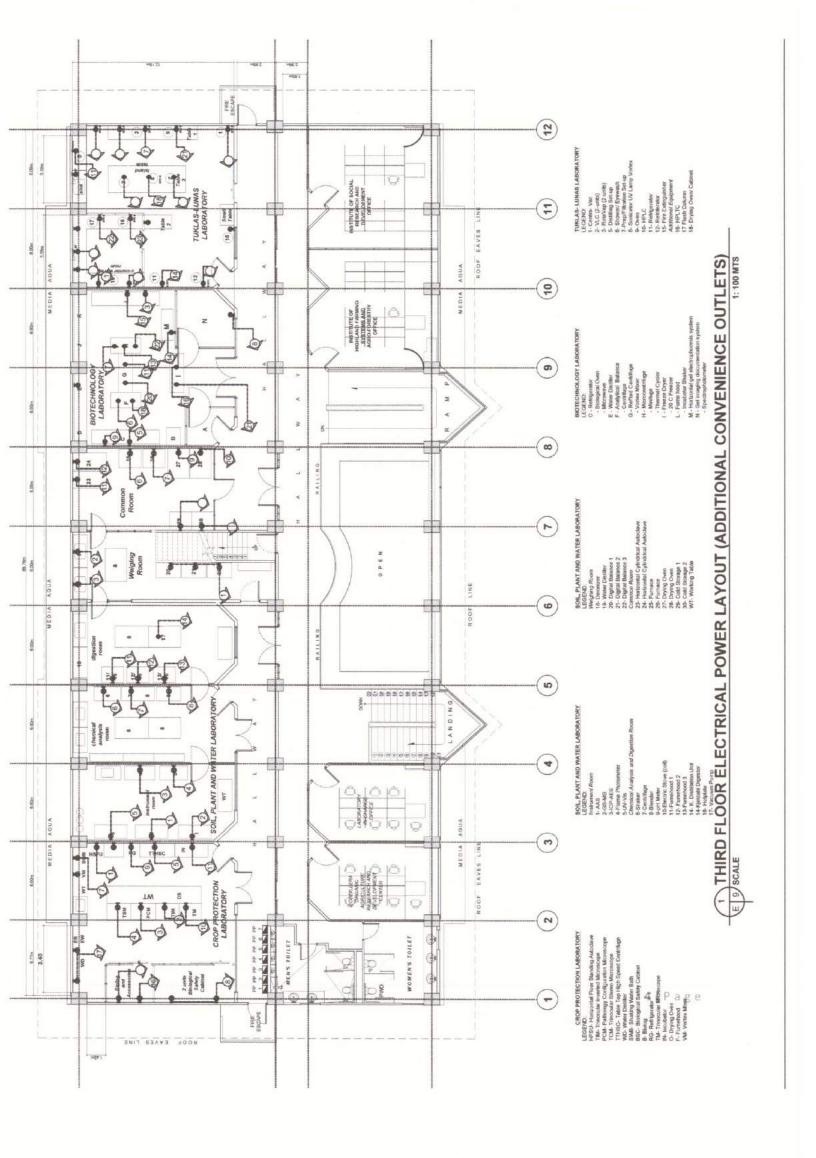
F. APPROVED BUDGET FOR THE CONTRACT

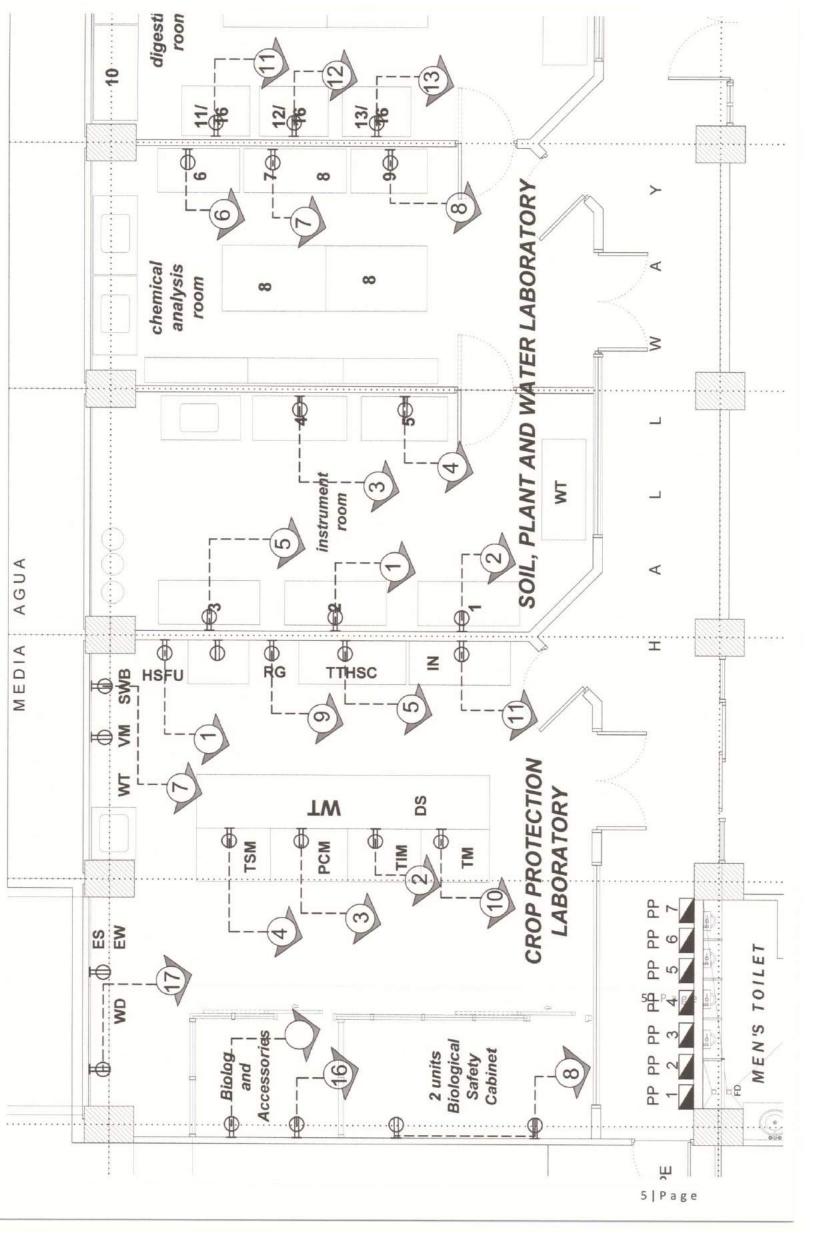
One Million, Four Hundred Ninety Seven, Forty Five Pesos and Seventy Six Centavos (Php 1,497,045.76)

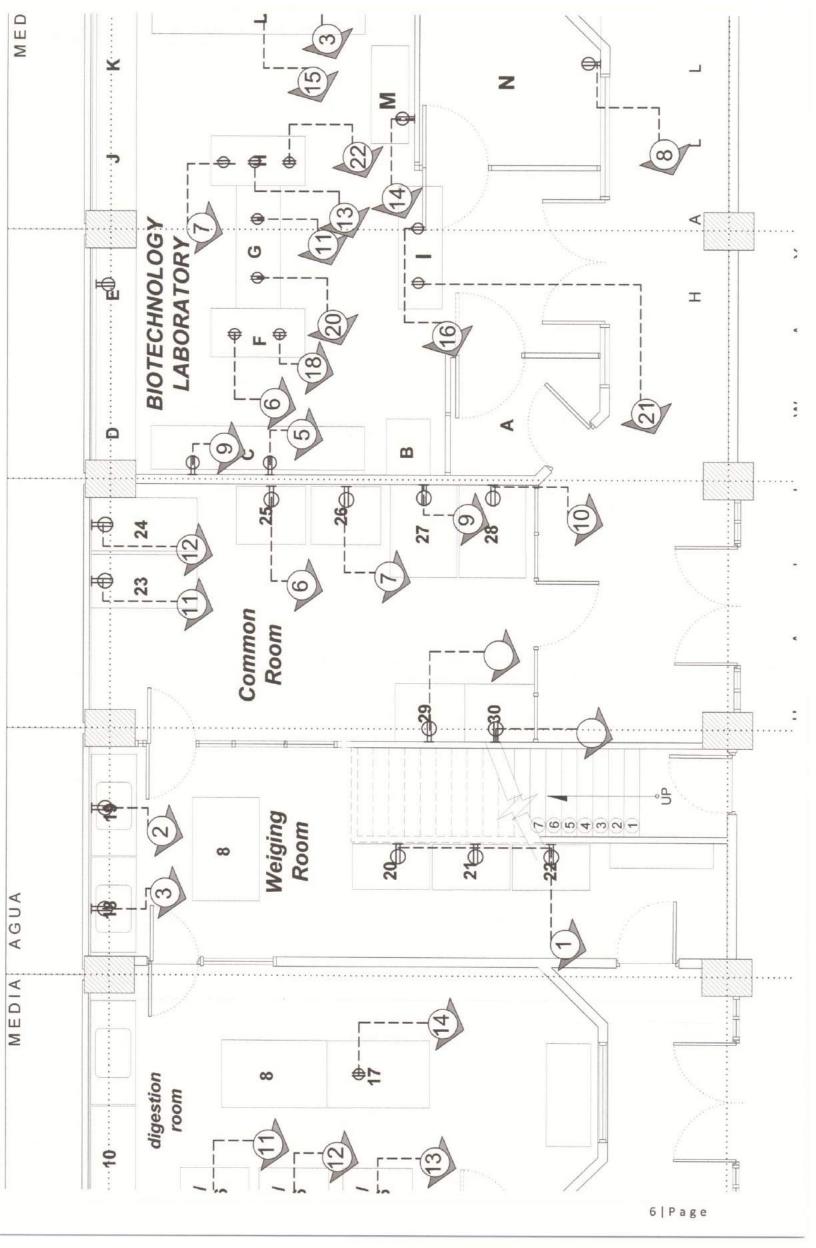
G. TECHNICAL PERSONNEL REQUIRED

- i. Registered Electrical Engineer (REE)/ Registered Master Electrician (RME)
- ii. Safety Officer









BILL OF QUANTITIES

Project Title: ELECTRICAL ENHANCEMENT OF LABORATORY ROOMS

Location: BENGUET STATE UNIVERSITY

RESEARCH and DEVELOPMENT BUILDING

Km.6, Betag, La Trinidad, Benguet End-user: Dr. RUTH BATANI VP - Research and Extension

				BID FOR				
item	description/ particulars	qty.	unit	1	unit price (i			
nom			unit	material	2 labor	tools (rental)	4 total (1+2+3)	amount
I.	SERVICE LINE							
Supply,	delivery, installation/ mounting of Service Line; including	all of the	e nece	essary installation and mo	unting accessories	as per plan and s	pecifications.	
	150mm² THHN		lm					
	spool insulator	0.000	pcs.					11 11 11 11 11 11 11 11 11 11 11 11 11
	3-spool insulator secondary rack		unit					
	16mm machine bolts w/ lock nuts & plain washers							
1000	Total Direct Cost (1+2+3)	0	sets					
	OCM (OVERHEAD, CONTINGENCIES & MISCELLANEOUS EXPENSE	ES)	-		% of Item 4			
	Contractor's Profit				% of item 4			
	Tax				7 % of item 4 + 5 + 6	-		
*** Allow	Total Item Cost (4 + 5 + 6 +7)	1.1		PI				•
100	for other items that are not shown in this Bill of Quantities		ге пес	essary to carry out/ prose	cute & complete th	e specified scope	of works. Bidders s	shall provide details.
II.	GROUNDING SYSTEM (to include lightning protect							
Supply,	elivery, installation/ mounting of Grounding System; incli	uding al	ll of th	e necessary installation a	nd mounting acces	sories as per plan	and specifications	
	50mm² Bare Copper Wire	185	m					
	20mm@ Copper Clad Ground Rod	8	pcs.					
	Isothermic Connection (powder & cadwelding)	12	sets					
	Lighting Protection (Pulsar 30); assembly	100	set					
	Consumables (5% of the materials cost)		lot					
	Total Direct Cost (1 + 2 + 3)	1	IOL					
	OCM (OVERHEAD, CONTINGENCIES & MISCELLANEOUS EXPENSE	S)			% of item 4			
	Contractor's Profit				% of item 4			
	Tax				7 % of item 4+5+6			
	T-4-14 04 /4 - F - 0 - 7				*) - - - - - - - - -	71		
***Allow	Total Item Cost (4 + 5 + 6 +7) for other items that are not shown in this Bill of Quantities MAIN DISTRIBUTION SYSTEM	, but an	re nec	Ph	p		of works. Bidders s	- hall provide details.
III. Supply, o	MAIN DISTRIBUTION SYSTEM elivery, installation/ mounting of Main Distribution System			Ph essary to carry out/ prose	p cute & complete the	specified scope of		
III. Supply, o	for other items that are not shown in this Bill of Quantities MAIN DISTRIBUTION SYSTEM	n; includ		Ph essary to carry out/ prose	p cute & complete the	specified scope of		
III. Supply, o	MAIN DISTRIBUTION SYSTEM elivery, installation/ mounting of Main Distribution System (Main Distribution Panel) 600A, NEMA1 - complete w/	n; includ	ding a	Ph essary to carry out/ prose	p cute & complete the	specified scope of		
III. Supply, o	MAIN DISTRIBUTION SYSTEM elivery, installation/ mounting of Main Distribution System (Main Distribution Panel) 600A, NEMA1 - complete w/ circuit breakers	n; includ	ding a unit unit	Ph essary to carry out/ prose	p cute & complete the	specified scope of		
III. Supply, o	MAIN DISTRIBUTION SYSTEM elivery, installation/ mounting of Main Distribution System (Main Distribution Panel) 600A, NEMA1 - complete w/ circuit breakers Circuit Breaker(main) - 600A, bolt-on	n; includ	ding a unit unit m	Ph essary to carry out/ prose	p cute & complete the	specified scope of		
III. Supply, o	MAIN DISTRIBUTION SYSTEM elivery, installation/ mounting of Main Distribution System (Main Distribution Panel) 600A, NEMA1 - complete w/ circuit breakers Circuit Breaker(main) - 600A, bolt-on 25mmØ EMT	1 1 100 30	unit unit m m	Ph essary to carry out/ prose	p cute & complete the	specified scope of		
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III. Supply, o	MAIN DISTRIBUTION SYSTEM elivery, installation/ mounting of Main Distribution System (Main Distribution Panel) 600A, NEMA1 - complete w/ circuit breakers Circuit Breaker(main) - 600A, bolt-on 25mmØ EMT 25mmØ PVC pricated meter center, G.I. with 5 units digital electronic 60amp. submeter Consumables (5% of the materials cost)	1 1 100 30 1	unit unit unit m m	essary to cerry out/ prose	bly, installation and % of item 4 % of item 4	e specified scope of mounting access		
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3-prong, universal duplex convenience outlet w/ ground, (2P Ground Fault Circuit Interrupter), 60A	15	pcs.					
surface type utility box w/ cover	20	pcs.					
surface type junction box w/ cover							
	177	pcs.					
square box Consumables (5% of the materials cost)		pcs.					
Total Direct Cost (1 + 2 + 3)		lot			-		
OCM (OVERHEAD, CONTINGENCIES & MISCELLANEOUS EXPENS	ES)			% of item 4	-		
Contractor's Profit				% of item 4			
Tax Total Item Cost (4 + 5 + 6 +7)			Php	% of item 4 + 5 + 5			
***Allow for other items that are not shown in this Bill of Quantitie	s, but ar	re nece		te & complete the	specified scope of	of works. Bidders shall provide	
V. SOIL, PLANT & WATER LABORATORY - A - PP2							
			fu				
Supply, delivery, installation/ mounting of Electrical Wiring Syste	m; includ	ding all	of the necessary assembly	, installation and r	mounting accesso	ries as per plan and specificati	ons.
Circuit Breaker (main) - 125A, bolt-on	1	unit					
Circuit Breaker - 60A, bolt-on	18	units					
25mmØ PVC conduit (from MDP to PB)	25	m					
20mm@ PVC conduit (from PB to CO)	204	m					
conduit fittings, elbow	1	lot					
30mm² THHN (from MDP to PB)	84	m					
3.5mm² THHN (from PB to CO)	408	m					
3-prong, universal duplex convenience outlet w/ ground, (2P	17	pcs.					
Ground Fault Circuit Interrupter), 60A	il se						
surface type utility box w/ cover		pcs.					
surface type junction box w/ cover		pcs.					
square box		pcs.					
Consumables (5% of the materials cost)	1	lot					
Total Direct Cost (1 + 2 + 3) OCM (OVERHEAD, CONTINGENCIES & MISCELLANEOUS EXPENS	ES)			% of item 4			
Contractor's Profit				% of item 4			
Tax				% of item 4 + 5 + 6			
***Allow for other items that are not shown in this Bill of Quantitie	s hut a	70 7000	Php		10.1	funda Bidden shall smuide	
The first street include that also had enjourned that also day of againstate	of were or			ite & complete the	specified scope of	I WOLKS PRODERS SHAIL DEDVIDE	details
VI SOIL PLANT & WATER LABORATORY . R . DRS		0 11000	assary to carry our prosect	ite & complete the	specified scope of	works. Bidders shall provide	details.
VI. SOIL, PLANT & WATER LABORATORY - B - PP3		IL					
	m; includ	IL					
		IL					
Supply, delivery, installation/ mounting of Electrical Wiring Syste	1	ding all					
Supply, delivery, installation/ mounting of Electrical Wiring Syste Circuit Breaker (main) - 125A, bolt-on	18	ding all					
Supply, delivery, installation/ mounting of Electrical Wiring Syste Circuit Breaker (main) - 125A, bolt-on Circuit Breaker - 60A, bolt-on	1 18 37	ding all unit units					
Supply, delivery, installation/ mounting of Electrical Wiring Syste Circuit Breaker (main) - 125A, bolt-on Circuit Breaker - 60A, bolt-on 25mmØ PVC conduit (from MDP to PB)	1 18 37 61	unit units units					
Supply, delivery, installation/ mounting of Electrical Wiring Syste Circuit Breaker (main) - 125A, bolt-on Circuit Breaker - 60A, bolt-on 25mmØ PVC conduit (from MDP to PB) 20mmØ PVC conduit (from PB to CO)	1 18 37 61	unit units m m lot					
Supply, delivery, installation/ mounting of Electrical Wiring Syste Circuit Breaker (main) - 125A, bolt-on Circuit Breaker - 60A, bolt-on 25mmØ PVC conduit (from MDP to PB) 20mmØ PVC conduit (from PB to CO) conduit fittings, elbow	1 18 37 61	unit units m m lot					
Supply, delivery, installation/ mounting of Electrical Wiring Syste Circuit Breaker (main) - 125A, bolt-on Circuit Breaker - 60A, bolt-on 25mmØ PVC conduit (from MDP to PB) 20mmØ PVC conduit (from PB to CO) conduit fittings, elbow 30mm² THHN (from MDP to PB) 3.5mm² THHN (from PB to CO) 3-prong, universal duplex convenience outlet w/ ground, (2P	1 18 37 61 1 100 672	unit units m m lot m					
Supply, delivery, installation/ mounting of Electrical Wiring Syste Circuit Breaker (main) - 125A, bolt-on Circuit Breaker - 60A, bolt-on 25mmØ PVC conduit (from MDP to PB) 20mmØ PVC conduit (from PB to CO) conduit fittings, elbow 30mm² THHN (from MDP to PB) 3.5mm² THHN (from PB to CO) 3-prong, universal duplex convenience outlet w/ ground, (2P Ground Fault Circuit Interrupter), 60A	1 18 37 61 1 100 672	unit units m m lot					
Supply, delivery, installation/ mounting of Electrical Wiring Syste Circuit Breaker (main) - 125A, bolt-on Circuit Breaker - 60A, bolt-on 25mmØ PVC conduit (from MDP to PB) 20mmØ PVC conduit (from PB to CO) conduit fittings, elbow 30mm² THHN (from MDP to PB) 3.5mm² THHN (from PB to CO) 3-prong, universal duplex convenience outlet w/ ground, (2P Ground Fault Circuit Interrupter), 60A surface type utility box w/ cover	1 18 37 61 1 100 672	unit units m m lot m					
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