

ELECTRICAL SPECIFICATIONS

- ALL WORK, MATERIAL AND EQUIPMENT SHALL COMPLY WITH THE LATEST NATIONAL ELECTRICAL CODE BEING USED BY THE LOCAL JURISDICTION AND SHALL COMPLY WITH ALL LOCAL CODES AND ORDINANCES.
- MATERIALS AND EQUIPMENT SHALL BE NEW EXCEPT WHERE INDICATED OTHERWISE. ALL OTHER WIRING DEVICES, CONDUIT, WIRE, ETC. SHALL BE NEW UNLESS NOTED OTHERWISE.
- ALL MATERIALS AND EQUIPMENT SHALL BEAR U.L. LISTING.
- MAINTAIN GROUNDING CONTINUITY TO ALL DEVICES AND EQUIPMENT IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
- WORK NOT SPECIFICALLY SPECIFIED OR INDICATED SHALL CONFORM WITH SPECIFICATIONS.
- ALL CONDUITS SHALL BE RUN CONCEALED IN UNDER FLOOR DUCT.
- ALL WIRE AND CABLE SHALL BE COPPER HAVING 600 VOLTS XHHW-2 OR RHW-2 INSULATIONS. PROVIDE #12 WIRE MINIMUM, UNLESS OTHERWISE NOTED. ALL CABLES SHALL BE LOW SMOKE ZERO HALOGEN CABLE.
- THE CONTRACTOR SHALL VISIT THE SITE AND EXAMINE THE CONDITION OF THE PREMISES AND THE CHARACTER AND EXTENT OF WORK REQUIRED PRIOR TO SUBMISSION OF BIDS.
- OBTAIN ALL PERMITS AND PAY ALL FEES NECESSARY FOR INSPECTIONS, TESTS & OTHER SERVICES REQUIRED FOR THE COMPLETION OF THIS WORK.
- ALL WORK SHALL BE DONE AT SUCH TIMES AND IN SUCH A MANNER THAT WILL LEAST INTERFERE WITH THE MAINTENANCE AND OPERATION OF ALL RELATED OR AFFECTED SYSTEMS. COORDINATE ALL POWER OUTAGES WITH WMATA PROJECT MANAGER.
- IT IS THE INTENT OF THESE DRAWINGS AND OTHER RELATED DOCUMENTS TO PRODUCE A COMPLETE AND FUNCTIONING ELECTRICAL SYSTEM. PROVIDE ALL LABOR, MATERIAL AND OTHER SERVICES NECESSARY TO ACHIEVE THIS PRODUCT. NOTIFY THE ENGINEER OF ANY DISCREPANCIES IN THE PLANS & SPECIFICATIONS THAT WILL AFFECT THE WORK, PRIOR TO SUBMISSION OF THE BID PRICE.
- IF, DURING THE COURSE OF THE WORK, THE CONTRACTOR EXPERIENCES A CONFLICT RELATIVE TO THE PLANS AND SPECIFICATIONS, THE NEC OR OTHER APPLICABLE CODES AND GOVERNING DOCUMENTS, HE SHALL NOTIFY THE ENGINEER FOR DIRECTION PRIOR TO EXECUTION OF THIS WORK. ANY WORK INSTALLED IN VIOLATION OF THE CONTRACT DOCUMENT OR APPLICABLE CODES WHICH COULD HAVE BEEN AVOIDED BY CONTACTING THE ENGINEER SHALL BE RECTIFIED AT NO ADDITIONAL COST.
- ELECTRICAL PLANS ARE DIAGRAMMATIC & INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE CONDITIONS, ETC. MAINTAIN WORKING CLEARANCES.
- CIRCUIT NUMBERS ARE FOR IDENTIFICATION PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR CORRECTLY PHASING THE CIRCUITS IN THE PANEL AND SHALL BALANCE THE LOAD ON THE PHASES UNDER NORMAL OPERATING CONDITIONS. PROVIDE TYPED WRITTEN PANELBOARD DIRECTORIES. BALANCE THE PHASE LOADS TO WITHIN 20 PERCENT OF EACH OTHER.
- INCREASE ALL BRANCH CIRCUIT CONDUCTORS TO THE NEXT LARGER SIZE FROM THE PANEL TO THE FIRST OUTLET WHERE THE LENGTH OF THE HOMERUN EXCEEDS 100FT. ON 120/208V CIRCUITS.
- PROVIDE A PULLWIRE OR FISHTAPE/CORD IN ALL EMPTY CONDUIT RUNS.
- VERIFY WIRE SIZES, CIRCUIT BREAKERS AND FUSES RATINGS FOR ALL EQUIPMENT, AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES AFFECTING THE WORK PRIOR TO PROCEEDING.
- ALL PANELS IMPACTED BY THIS PROJECT SHALL BE PROVIDED WITH NEW, UPDATED TYPED WRITTEN PANEL SCHEDULES (FOR NEW AND EXISTING CIRCUITS) INDICATING THE FINAL ROOM NUMBER AND THE EQUIPMENT OR DEVICES SERVED BY THE CIRCUITS.
- DEMOLITION OF EXISTING WORK SHALL BE PERFORMED AFTER HOURS. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE WMATA PROJECT MANAGER PRIOR TO PERFORMING ALL THE WORK. THE TIME OF DAY OR EVENING SHALL BE DESIGNATED BY THE WMATA PROJECT MANAGER.
- ALL WIRING SHALL BE IN CONDUIT, MINIMUM SIZE 3/4 INCH WITH LARGER SIZES AS INDICATED OR REQUIRED BY NEC. ALL CONDUITS SHALL BE RIGID GALVANIZED STEEL W/SCREW IN COUPLING FOR COMPLETE WATER PROOF INSTALLATION.
- AT JOB COMPLETION, AND BEFORE FINAL ACCEPTANCE BY WMATA, TEST EACH RECEPTACLE AND PANELBOARD FOR PROPER OPERATION. WIRING SHALL BE TESTED FOR CONTINUITY, SHORTS, ETC... ALL WORK AREAS, ETC.. SHALL BE CLEANED AT THE COMPLETION OF THIS PROJECT.
- FOR DEVICE IDENTIFICATION, THE ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELBOARDS, JUNCTION BOXES, ETC.. TO INDICATE THE NAME, VOLTAGE, SERVING EQUIPMENT AND ITEM SERVED ETC... LABELS FOR EMERGENCY CIRCUITS SHALL BE IN RED, NORMAL CIRCUITS SHALL BE IN BLACK. ALL DEVICES SHALL BE IDENTIFIED EITHER ON THE FACE OF THE COVERPLATE OR INSIDE PER WMATA PREFERENCE. ALL JUNCTION BOXES SHALL BE LABELED TO INDICATE THE CIRCUITS CONTAINED BY THE JUNCTION BOX.
- THE CONTRACTOR SHALL UPDATE THE SCHEDULES OF ALL PANELBOARDS AFFECTED BY THIS PROJECT TO REFLECT CHANGES DUE TO THE PROJECT WORK. PANEL SCHEDULE LOAD DESCRIPTIONS ARE TO INCLUDE THE FINAL ROOM OR AREA NUMBERS.
- INCLUDE GPR FOR ANY CORE DRILLS OR DRILLED PENETRATIONS IN ANY WALLS.
- SEAL OFF ALL PENETRATIONS THRU WALLS/FLOORS.
- THE CONTRACTOR SHALL BECOME FAMILIAR WITH WMATA DESIGN CRITERIA SECTION 4 AND SECTION 13; WMATA SPECIFICATION SECTION 16120, 16130, AND 16125. ALL INSTALLATION SHALL BE IN COMPLIANCE WITH THE NEC, WMATA DESIGN CRITERIA, AND SPECIFICATIONS.
- THE CONTRACTOR SHALL IDENTIFY SPARE CIRCUIT WITH "RESERVED FOR AFC".
- EXISTING SWITCHBOARDS, PANELBOARDS AND EQUIPMENT SHOWN IS BASED ON RECORD DRAWINGS AND CASUAL FIELD SURVEY. CONTRACTOR SHALL VERIFY ALL ELECTRICAL EQUIPMENT IN FIELD.
- The conduit utilized for this project shall be 1-1/2" min. or larger as indicated. The liquid tight utilized for the kiosk shall be 1-1/2" from the entry to the 8x8 junction box, then 1" from the junction box to the quads. All boxes used in or on the kiosk shall be NEMA 4x.

ABBREVIATIONS

A, AMP	AMPERES	MAX	MAXIMUM
AC	ALTERNATING CURRENT	MCA	MINIMUM CIRCUIT AMPERE
AEMS	AUTOMATED ENERGY MANAGEMENT SYSTEM	MCB	MAIN CIRCUIT BREAKER
AF	AMPERE FRAME	MEZZ	MEZZANINE
AFC	AUTOMATED FARE COLLECTION SYSTEM	MIN	MINIMUM
AFF	ABOVE FINISHED FLOOR	MLO	MAIN LUGS ONLY
AIC	AMPERE INTERRUPTING CAPACITY	MTD	MOUNTED OR MOUNTING
AT	AMPERE TRIP	NEC	NATIONAL ELECTRIC CODE
ATS	AUTOMATIC TRANSFER SWITCH	NEMA	NATIONAL ELECTRICAL MANUFACTURER ASSOCIATION
BATT	BATTERY	P	POLE
BKR	BREAKER	PH	PHASE
Ⓡ	BASELINE	PNL	PANELBOARD
C	CONDUIT	PRI	PRIMARY
CB	CIRCUIT BREAKER	PROP	PROPOSED
CCT	CIRCUIT	RGS	RIGID GALVANIZED STEEL
Ⓢ	CENTER LINE	SEC	SECONDARY
CLG	CEILING	SHT	SHEET
CONST	CONSTRUCTION	STA	STATION
DC	DIRECT CURRENT	STD	STANDARD
DISC	DISCONNECT	SW	SWITCH
E	ELECTRICAL	SWBD	SWITCHBOARD
FLUOR.	FLUORESCENT	TYP	TYPICAL
GND	GROUND	U/G	UNDER GROUND
GPR	GROUND PENETRATING RADAR	U.L.	UNDERWRITERS LABORATORIES
IG	ISOLATED GROUND	UON	UNLESS OTHERWISE NOTED
JB	JUNCTION BOX	VOLT	VOLTAGE
KAIC	THOUSAND AMPERE INTERRUPTING CAPACITY	W	WATT
KCMIL	THOUSAND CIRCULAR MILL	WMATA	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
KVA	KILOVOLT AMPERE	WP	WEATHERPROOF

DRAWING INDEX

D11-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
D11-E-101	CHEVERLY - KIOSK - POWER
D11-E-102	CHEVERLY - PANEL SCHEDULE
D11-E-301	CHEVERLY - PANELBOARD IMAGE
MM-D-E24	CHEVERLY - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

	QUADRUPEX RECEPTACLE OUTLET- 20A, 125V WALL MOUNTED.
	JUNCTION BOX - SURFACE MOUNTED ON UNISTRUT CHANNEL
	CONDUIT - CONCEALED IN UNDER FLOOR DUCT U.O.N.
	HOMERUN TO PANEL, NUMBER OF ARROWHEADS INDICATES NUMBER OF CIRCUITS. CROSS HATCHING INDICATES NUMBER OF CONDUCTORS, NUMBER INDICATES SIZE OF CONDUCTOR AND SIZE OF CONDUIT
	↓ - INDICATES GROUNDING WIRE TO GROUNDING BUS AT THE PANELBOARD
	EF 1,3 - INDICATES CIRCUIT HOME RUN PANELBOARD AND CIRCUIT NUMBER IDENTIFICATION

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	08-14 DATE	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	08-14 DATE					
CHECKED	B. IDLBI	08-14 DATE					
APPROVED	N/A	DATE					

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

APPROVED

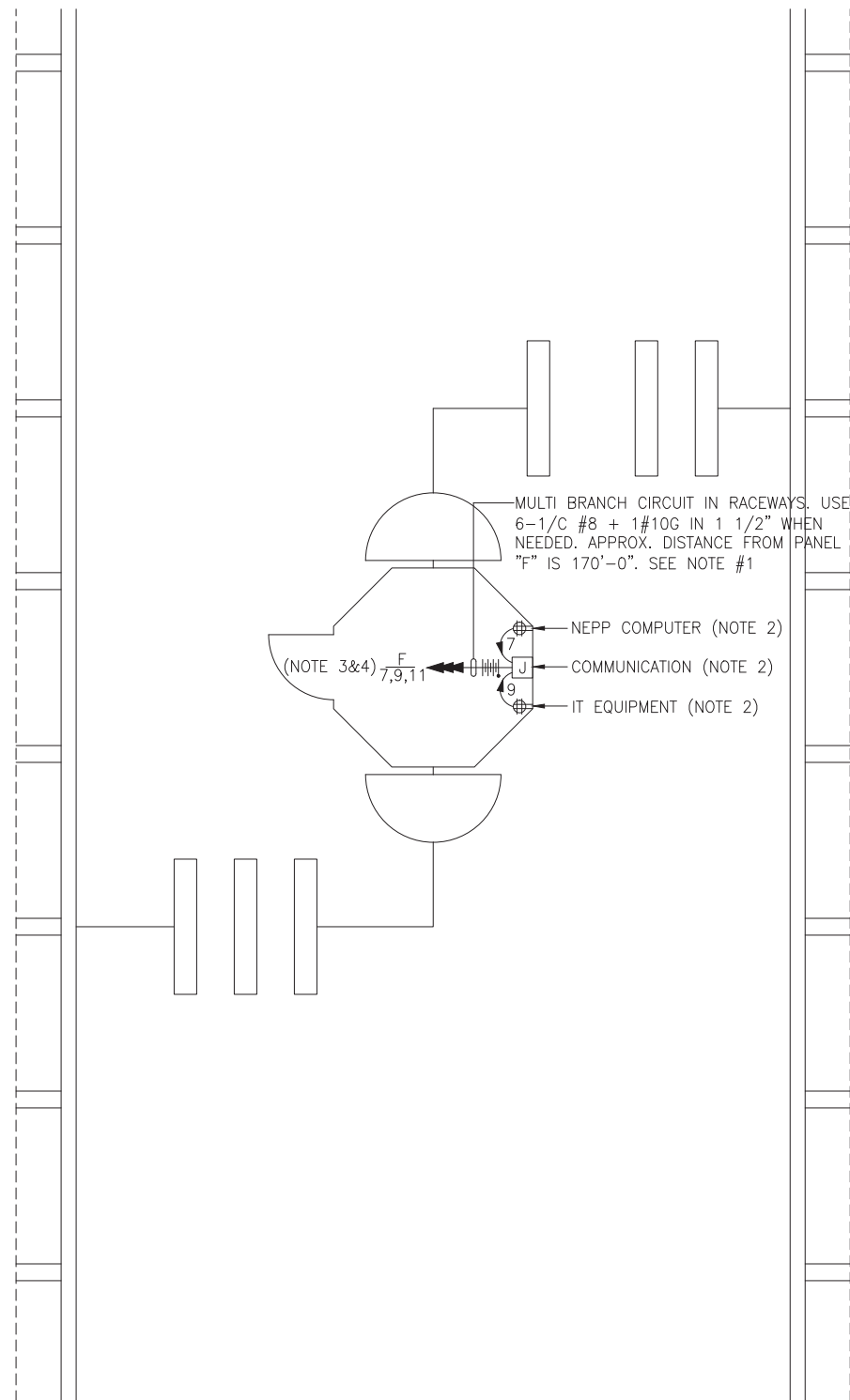
GFP A Gannett Fleming/Parsons JOINT VENTURE

SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
ABBREVIATIONS, DRAWING INDEX,
SPECIFICATIONS & SYMBOL LIST

SCALE
NOT TO SCALE

DRAWING NO.
D11-E-001



KIOSK - POWER
SCALE: 1/4" = 1'- 0"

DRAWING NOTES:

1. CONTRACTOR TO REFER TO SUPPLEMENTAL MEZZANINE INSPECTION REPORT, VOLUME 4 FURNISHED UNDER THIS SOLICITATION PACKAGE TO BE INFORMED THAT THE TOTAL LENGTH OF THE MULTI WIRE BRANCH CIRCUIT DEPICTED IN THE ELECTRICAL PLAN MAY EITHER CONSIST OF EXISTING POWER UNDER FLOOR DUCTS; OR IT COULD BE ALL CONDUIT RUN USING RIGID GALVANIZED STEEL CONDUITS; OR A COMBINATION OF BOTH WHICH IS RIGID GALVANIZED STEEL CONDUITS AND FLOOR DUCTS AND/OR JUST USE OF POWER FLOOR DUCT OR DEEMED REQUIRED IN THE REPORT.
2. COORDINATE WITH WMATA WHERE EXACTLY THE DUPLEX RECEPTACLE OUTLET AND JUNCTION BOX WILL BE INSTALLED IN THE KIOSK.
3. PROVIDE 3-NEW 20A, 1P CIRCUIT BREAKER AT EXISTING PANELBOARD AVAILABLE CIRCUIT BREAKER SPACES. NEW CIRCUIT BREAKERS SHALL MATCH EXISTING PANELBOARD CIRCUIT BREAKER AIC RATING. TERMINATE 2-NEW BRANCH CIRCUITS TO NEWLY INSTALLED CIRCUIT BREAKERS AND CONNECT PERMANENTLY TO QUAD RECEPTACLE OUTLETS LOCATED IN THE KIOSK. KEEP AND COILED REMAINING BRANCH CIRCUIT IN THE PANELBOARD AND INSIDE THE JUNCTION BOX AT THE KIOSK FOR FUTURE USE. UPDATE PANELBOARD DIRECTORY TO MANIFEST PANELBOARD ADDITIONAL LOADS.
4. THE REMAINING BRANCH CIRCUIT FOR FUTURE AFC FARE GATE APPLICATION SHALL BE SECURED, LABELED AND COILED AT THE KIOSK. THE LENGTH OF COILED PIGTAIL SHALL BE THE FARTHEST FARE GATE DISTANCE FROM KIOSK PLUS AN EXTRA 6'-0" CONDUCTOR.

SAFETY PRECAUTION:

1. ALL WORK SHALL COMPLY WITH WMATA SAFETY RULES, AND DE-ENERGIZATION POLICIES.

CONTRACT NO.
14-FQ10060-CENI-24

	DESIGNED		DRAWN		CHECKED		APPROVED	
	NAME	DATE	NAME	DATE	NAME	DATE	NAME	DATE
	C. NGO	08-14	C. NGO	08-14	B. IDILBI	08-14	N/A	

REFERENCE DRAWINGS		REVISIONS		
NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE
AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM



APPROVED *[Signature]*

SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
CHEVERLY
KIOSK - POWER

SCALE
AS SHOWN

DRAWING NO.
D11-E-101

EXISTING PANEL "F"

AMPERES: 225	VOLTS: 120/208	MOUNTING: SURFACE
MAINS: 225A MCB	PHASE: 3	LOCATION: ELEC. EQUIPMENT ROOM C205
RATING: 10K AIC	WIRE: 4	SECTION: 1 OF 1

LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	POLE	AMP	KVA	LOAD DESCRIPTION	
		AMP	POLE	NO.						
EXISTING VENDOR	0.8	20	1	1	A - -	2	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	3	- B -	4	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	5	- - C	6	1	20	0.8	EXISTING VENDOR
NEW KIOSK RECEPT. (IT/NCS)	0.8	20	1	7	A - -	8	1	20	0.0	SPARE
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	9	- B -	10	1	20	0.8	EXISTING VENDOR
FUTURE AFC FARE GATE	0.0	20	1	11	- - C	12	1	20	0.0	SPARE
SPARE	0.0	20	1	13	A - -	14	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	15	- B -	16	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	17	- - C	18	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	19	A - -	20	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	21	- B -	22	1	20	0.0	SPARE
SPACE	0.0	-	-	23	- - C	24	1	20	0.0	SPACE
SPACE	0.0	-	-	25	A - -	26	-	-	0.0	SPACE
SPACE	0.0	-	-	27	- B -	28	-	-	0.0	SPACE
SPARE	0.0	20	1	29	- - C	30	1	20	0.0	SPARE
SPARE	0.0	20	1	31	A - -	32	1	20	0.0	SPARE
SPARE	0.0	20	1	33	- B -	34	1	20	0.0	SPARE
SPACE	0.0	-	-	35	- - C	36	1	20	0.0	SPACE
SPACE	0.0	-	-	37	A - -	38	-	-	0.0	SPACE
SPACE	0.0	-	-	39	- B -	40	-	-	0.0	SPACE
SPACE	0.0	-	-	41	- - C	42	-	-	0.0	SPACE
SPACE	0.0	-	-	43	A - -	44	3	30	2.9	EXIST. LOAD CENTER "KES"
SPACE	0.0	-	-	45	- B -	46	-	-	2.5	-
SPACE	0.0	-	-	47	- - C	48	-	-	2.5	-

LOAD SUMMARY

LIGHTS	0.0 x 125%	0.0 KVA
RECEPTACLES, FIRST 10 KVA	10.0 x 100%	10.0 KVA
RECEPTACLES	1.6 x 50%	0.8 KVA
MISC. APPLIANCES	0.0 x 100%	0.0 KVA
LARGEST MOTOR	0.0 x 125%	0.0 KVA
MOTORS	0.0 x 100%	0.0 KVA
HEAT	0.0 x 125%	0.0 KVA
AC	4.5 x 100%	4.5 KVA
WATER HEATING	3.0 x 125%	3.8 KVA
TOTAL CONNECTED LOAD	19.1 KVA	TOTAL DEMAND KVA 19.1 KVA
		TOTAL DEMAND AMPS 52.9 AMPS
CONNECTED LOAD PHASE SUMMARY		
PHASE A:	6.9 KVA	
PHASE B:	7.3 KVA	
PHASE C:	5.7 KVA	

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14-FQ10060-CENI-24

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DRAWN	C. NGO	08-14 DATE					
CHECKED	B. IDILBI	08-14 DATE					
APPROVED	N/A	DATE					

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE
AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

APPROVED




SUBMITTED

PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
CHEVERLY
PANEL SCHEDULE

SCALE
NOT TO SCALE

DRAWING NO.
D11-E-102

ELECTRICAL SPECIFICATIONS

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- ALL MATERIALS AND EQUIPMENT SHALL BEAR U.L. LISTING.
- MAINTAIN GROUNDING CONTINUITY TO ALL DEVICES AND EQUIPMENT IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
- WORK NOT SPECIFICALLY SPECIFIED OR INDICATED SHALL CONFORM WITH SPECIFICATIONS.
- ALL CONDUITS SHALL BE RUN CONCEALED IN UNDER FLOOR DUCT.
- ALL WIRE AND CABLE SHALL BE COPPER HAVING 600 VOLTS XHHW-2 OR RHW-2 INSULATIONS. PROVIDE #12 WIRE MINIMUM, UNLESS OTHERWISE NOTED. ALL CABLES SHALL BE LOW SMOKE ZERO HALOGEN CABLE.
- THE CONTRACTOR SHALL VISIT THE SITE AND EXAMINE THE CONDITION OF THE PREMISES AND THE CHARACTER AND EXTENT OF WORK REQUIRED PRIOR TO SUBMISSION OF BIDS.
- OBTAIN ALL PERMITS AND PAY ALL FEES NECESSARY FOR INSPECTIONS, TESTS & OTHER SERVICES REQUIRED FOR THE COMPLETION OF THIS WORK.
- ALL WORK SHALL BE DONE AT SUCH TIMES AND IN SUCH A MANNER THAT WILL LEAST INTERFERE WITH THE MAINTENANCE AND OPERATION OF ALL RELATED OR AFFECTED SYSTEMS. COORDINATE ALL POWER OUTAGES WITH WMATA PROJECT MANAGER.
- IT IS THE INTENT OF THESE DRAWINGS AND OTHER RELATED DOCUMENTS TO PRODUCE A COMPLETE AND FUNCTIONING ELECTRICAL SYSTEM. PROVIDE ALL LABOR, MATERIAL AND OTHER SERVICES NECESSARY TO ACHIEVE THIS PRODUCT. NOTIFY THE ENGINEER OF ANY DISCREPANCIES IN THE PLANS & SPECIFICATIONS THAT WILL AFFECT THE WORK, PRIOR TO SUBMISSION OF THE BID PRICE.
- IF, DURING THE COURSE OF THE WORK, THE CONTRACTOR EXPERIENCES A CONFLICT RELATIVE TO THE PLANS AND SPECIFICATIONS, THE NEC OR OTHER APPLICABLE CODES AND GOVERNING DOCUMENTS, HE SHALL NOTIFY THE ENGINEER FOR DIRECTION PRIOR TO EXECUTION OF THIS WORK. ANY WORK INSTALLED IN VIOLATION OF THE CONTRACT DOCUMENT OR APPLICABLE CODES WHICH COULD HAVE BEEN AVOIDED BY CONTACTING THE ENGINEER SHALL BE RECTIFIED AT NO ADDITIONAL COST.
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ABBREVIATIONS

A, AMP	AMPERES	NEC	NATIONAL ELECTRIC CODE
AC	ALTERNATING CURRENT	P	POLE
AF	AMPERE FRAME	PH	PHASE
AFC	AUTOMATED FARE COLLECTION SYSTEM	PNL	PANELBOARD
AFF	ABOVE FINISHED FLOOR	PRI	PRIMARY
AIC	AMPERE INTERRUPTING CAPACITY	PROP	PROPOSED
AT	AMPERE TRIP	RGS	RIGID GALVANIZED STEEL
BKR	BREAKER	SEC	SECONDARY
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DISC	DISCONNECT	UON	UNLESS OTHERWISE NOTED
E	ELECTRICAL	VOLT	VOLTAGE
GND	GROUND	W	WATT
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KAIC	THOUSAND AMPERE INTERRUPTING CAPACITY	WP	WEATHERPROOF
KCMIL	THOUSAND CIRCULAR MILL		
KVA	KILOVOLT AMPERE		
MAX	MAXIMUM		
MCA	MINIMUM CIRCUIT AMPERE		
MCB	MAIN CIRCUIT BREAKER		
MEZZ	MEZZANINE		
MIN	MINIMUM		
MLO	MAIN LUGS ONLY		

DRAWING INDEX

D12-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
D12-E-101	LANDOVER - KIOSK - POWER
D12-E-102	LANDOVER - PANEL SCHEDULE
MM-D-E25	LANDOVER - AC POWER ONE LINE DIAGRAM

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GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ SUBMITTED _____
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS

ABBREVIATIONS DRAWING INDEX
SPECIFICATIONS SYMBOL LIST

SCALE: NOT TO SCALE

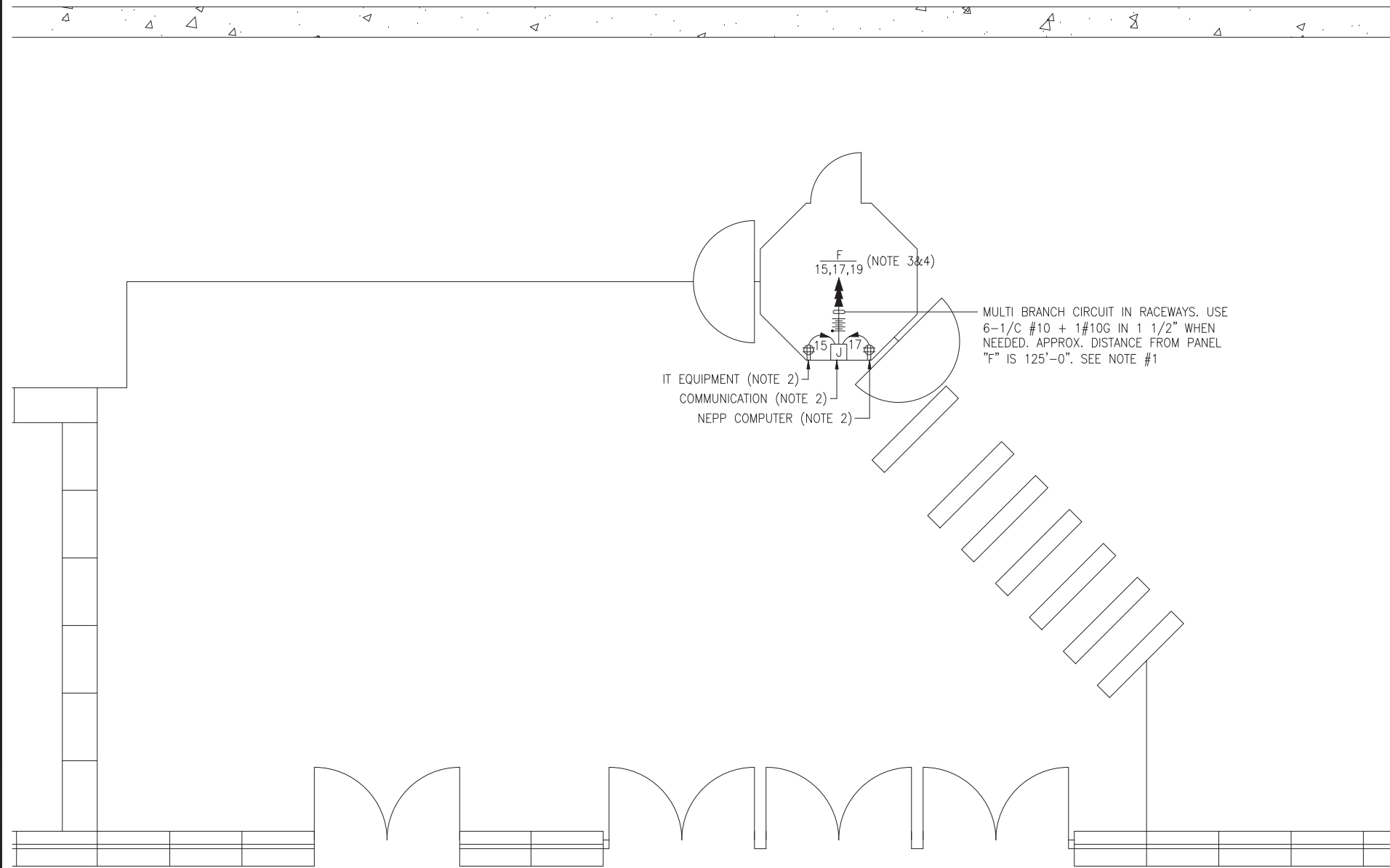
DRAWING NO. D12-E-001

DRAWING NOTES:

1. CONTRACTOR TO REFER TO SUPPLEMENTAL MEZZANINE INSPECTION REPORT, VOLUME 4 FURNISHED UNDER THIS SOLICITATION PACKAGE TO BE INFORMED THAT THE TOTAL LENGTH OF THE MULTI WIRE BRANCH CIRCUIT DEPICTED IN THE ELECTRICAL PLAN MAY EITHER CONSIST OF EXISTING POWER UNDER FLOOR DUCTS; OR IT COULD BE ALL CONDUIT RUN USING RIGID GALVANIZED STEEL CONDUITS; OR A COMBINATION OF BOTH WHICH IS RIGID GALVANIZED STEEL CONDUITS AND FLOOR DUCTS AND/OR JUST USE OF POWER FLOOR DUCT OR DEEMED REQUIRED IN THE REPORT.
2. COORDINATE WITH WMATA WHERE EXACTLY THE DUPLEX RECEPTACLE OUTLET AND JUNCTION BOX WILL BE INSTALLED IN THE KIOSK.
3. PROVIDE 3-NEW 20A, 1P CIRCUIT BREAKER AT EXISTING PANELBOARD AVAILABLE CIRCUIT BREAKER SPACES. NEW CIRCUIT BREAKERS SHALL MATCH EXISTING PANELBOARD CIRCUIT BREAKER AIC RATING. TERMINATE 2-NEW BRANCH CIRCUITS TO NEWLY INSTALLED CIRCUIT BREAKERS AND CONNECT PERMANENTLY TO QUAD RECEPTACLE OUTLETS LOCATED IN THE KIOSK. KEEP AND COILED REMAINING BRANCH CIRCUIT IN THE PANELBOARD AND INSIDE THE JUNCTION BOX AT THE KIOSK FOR FUTURE USE. UPDATE PANELBOARD DIRECTORY TO MANIFEST PANELBOARD ADDITIONAL LOADS.
4. THE REMAINING BRANCH CIRCUIT FOR FUTURE AFC FARE GATE APPLICATION SHALL BE SECURED, LABELED AND COILED AT THE KIOSK. THE LENGTH OF COILED PIGTAIL SHALL BE THE FARTHEST FARE GATE DISTANCE FROM KIOSK PLUS AN EXTRA 6'-0" CONDUCTOR.

SAFETY PRECAUTION:

1. ALL WORK SHALL COMPLY WITH WMATA SAFETY RULES, AND DE-ENERGIZATION POLICIES.



KIOSK - POWER
SCALE: 1/4" = 1'- 0"

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO 08-14
DATE 08-14
DRAWN C. NGO 08-14
DATE 08-14
CHECKED B. IDILBI 08-14
DATE 08-14
APPROVED N/A
DATE

REFERENCE DRAWINGS	
NUMBER	DESCRIPTION

REVISIONS		
DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED *[Signature]* SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
LANDOVER
KIOSK - POWER

SCALE AS SHOWN DRAWING NO. D12-E-101

EXISTING PANEL "F"

AMPERES: 225	VOLTS: 120/208	MOUNTING: SURFACE
MAINS: 225A MLO	PHASE: 3	LOCATION: ELEC. EQUIPMENT ROOM C108
RATING: 10K AIC	WIRE: 4	SECTION: 1 OF 1

LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	POLE	AMP	KVA	LOAD DESCRIPTION	
		AMP	POLE	NO.						
EXISTING VENDOR	0.8	20	1	1	A - -	2	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	3	- B -	4	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	5	- - C	6	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	7	A - -	8	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	9	- B -	10	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	11	- - C	12	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	13	A - -	14	1	20	0.8	EXISTING VENDOR
NEW KIOSK RECEPT. (IT/NCS)	0.8	20	1	15	- B -	16	1	20	0.8	EXISTING VENDOR
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	17	- - C	18	1	20	0.8	EXISTING VENDOR
FUTURE AFC FARE GATE	0.0	20	1	19	A - -	20	1	20	0.0	SPARE
SPACE	0.0	-	-	21	- B -	22	1	20	0.0	SPARE
SPACE	0.0	-	-	23	- - C	24	1	20	0.0	SPARE
SPACE	0.0	20	1	25	A - -	26	1	20	0.0	SPARE
SPACE	0.0	20	1	27	- B -	28	1	20	0.8	EXISTING VENDOR
SPACE	0.0	20	1	29	- - C	30	1	20	0.8	EXISTING VENDOR
SPACE	0.0	20	1	31	A - -	32	1	20	0.8	EXISTING VENDOR
SPACE	0.0	20	1	33	- B -	34	-	-	0.0	SPACE
SPACE	0.0	20	1	35	- - C	36	-	-	0.0	SPACE
SPACE	0.0	20	1	37	A - -	38	-	-	0.0	SPACE
SPACE	0.0	-	-	39	- B -	40	3	30	2.9	EXIST. LOAD CENTER "KES"
SPACE	0.0	-	-	41	- - C	42	-	-	2.5	
SPACE	0.0	-	-	43	A - -	44	-	-	2.5	

LOAD SUMMARY

LIGHTS	0.0 x 125%	0.0 KVA
RECEPTACLES, FIRST 10 KVA	10.0 x 100%	10.0 KVA
RECEPTACLES	5.6 x 50%	2.8 KVA
MISC. APPLIANCES	0.0 x 100%	0.0 KVA
LARGEST MOTOR	0.0 x 125%	0.0 KVA
MOTORS	0.0 x 100%	0.0 KVA
HEAT	0.0 x 125%	0.0 KVA
AC	4.5 x 100%	4.5 KVA
WATER HEATING	3.0 x 125%	3.8 KVA
TOTAL CONNECTED LOAD	23.1 KVA	TOTAL DEMAND KVA 21.1 KVA
		TOTAL DEMAND AMPS 58.5 AMPS
CONNECTED LOAD PHASE SUMMARY		
PHASE A:	8.1 KVA	
PHASE B:	7.7 KVA	
PHASE C:	8.1 KVA	

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	08-14
		DATE
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		DATE
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		DATE
APPROVED	N/A	
		DATE

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REVISIONS		
DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE
AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM



APPROVED *[Signature]*

SUBMITTED _____ PROJECT MANAGER

**NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
LANDOVER
PANEL SCHEDULE**

SCALE
NOT TO SCALE

DRAWING NO.
D12-E-102

ELECTRICAL SPECIFICATIONS

1. ALL WORK, MATERIAL AND EQUIPMENT SHALL COMPLY WITH THE LATEST NATIONAL ELECTRICAL CODE BEING USED BY THE LOCAL JURISDICTION AND SHALL COMPLY WITH ALL LOCAL CODES AND ORDINANCES.
2. MATERIALS AND EQUIPMENT SHALL BE NEW EXCEPT WHERE INDICATED OTHERWISE. ALL OTHER WIRING DEVICES, CONDUIT, WIRE, ETC. SHALL BE NEW UNLESS NOTED OTHERWISE.
3. ALL MATERIALS AND EQUIPMENT SHALL BEAR U.L. LISTING.
4. MAINTAIN GROUNDING CONTINUITY TO ALL DEVICES AND EQUIPMENT IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
5. WORK NOT SPECIFICALLY SPECIFIED OR INDICATED SHALL CONFORM WITH SPECIFICATIONS.
6. ALL CONDUITS SHALL BE RUN CONCEALED IN UNDER FLOOR DUCT.
7. ALL WIRE AND CABLE SHALL BE COPPER HAVING 600 VOLTS XHHW-2 OR RHW-2 INSULATIONS. PROVIDE #12 WIRE MINIMUM, UNLESS OTHERWISE NOTED. ALL CABLES SHALL BE LOW SMOKE ZERO HALOGEN CABLE.
8. THE CONTRACTOR SHALL VISIT THE SITE AND EXAMINE THE CONDITION OF THE PREMISES AND THE CHARACTER AND EXTENT OF WORK REQUIRED PRIOR TO SUBMISSION OF BIDS.
9. OBTAIN ALL PERMITS AND PAY ALL FEES NECESSARY FOR INSPECTIONS, TESTS & OTHER SERVICES REQUIRED FOR THE COMPLETION OF THIS WORK.
10. ALL WORK SHALL BE DONE AT SUCH TIMES AND IN SUCH A MANNER THAT WILL LEAST INTERFERE WITH THE MAINTENANCE AND OPERATION OF ALL RELATED OR AFFECTED SYSTEMS. COORDINATE ALL POWER OUTAGES WITH WMATA PROJECT MANAGER.
11. IT IS THE INTENT OF THESE DRAWINGS AND OTHER RELATED DOCUMENTS TO PRODUCE A COMPLETE AND FUNCTIONING ELECTRICAL SYSTEM. PROVIDE ALL LABOR, MATERIAL AND OTHER SERVICES NECESSARY TO ACHIEVE THIS PRODUCT. NOTIFY THE ENGINEER OF ANY DISCREPANCIES IN THE PLANS & SPECIFICATIONS THAT WILL AFFECT THE WORK, PRIOR TO SUBMISSION OF THE BID PRICE.
12. IF, DURING THE COURSE OF THE WORK, THE CONTRACTOR EXPERIENCES A CONFLICT RELATIVE TO THE PLANS AND SPECIFICATIONS, THE NEC OR OTHER APPLICABLE CODES AND GOVERNING DOCUMENTS, HE SHALL NOTIFY THE ENGINEER FOR DIRECTION PRIOR TO EXECUTION OF THIS WORK. ANY WORK INSTALLED IN VIOLATION OF THE CONTRACT DOCUMENT OR APPLICABLE CODES WHICH COULD HAVE BEEN AVOIDED BY CONTACTING THE ENGINEER SHALL BE RECTIFIED AT NO ADDITIONAL COST.
13. ELECTRICAL PLANS ARE DIAGRAMMATIC & INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE CONDITIONS, ETC. MAINTAIN WORKING CLEARANCES.
14. CIRCUIT NUMBERS ARE FOR IDENTIFICATION PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR CORRECTLY PHASING THE CIRCUITS IN THE PANEL AND SHALL BALANCE THE LOAD ON THE PHASES UNDER NORMAL OPERATING CONDITIONS. PROVIDE TYPEWRITTEN PANELBOARD DIRECTORIES. BALANCE THE PHASE LOADS TO WITHIN 20 PERCENT OF EACH OTHER.

15. INCREASE ALL BRANCH CIRCUIT CONDUCTORS TO THE NEXT LARGER SIZE FROM THE PANEL TO THE FIRST OUTLET WHERE THE LENGTH OF THE HOMERUN EXCEEDS 100FT. ON 120/208V CIRCUITS.
16. PROVIDE A PULLWIRE OR FISHTAPE/CORD IN ALL EMPTY CONDUIT RUNS.
17. VERIFY WIRE SIZES, CIRCUIT BREAKERS AND FUSES RATINGS FOR ALL EQUIPMENT, AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES AFFECTING THE WORK PRIOR TO PROCEEDING.
18. ALL PANELS IMPACTED BY THIS PROJECT SHALL BE PROVIDED WITH NEW, UPDATED TYPEWRITTEN PANEL SCHEDULES (FOR NEW AND EXISTING CIRCUITS) INDICATING THE FINAL ROOM NUMBER AND THE EQUIPMENT OR DEVICES SERVED BY THE CIRCUITS.
19. DEMOLITION OF EXISTING WORK SHALL BE PERFORMED AFTER HOURS. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE WMATA PROJECT MANAGER PRIOR TO PERFORMING ALL THE WORK. THE TIME OF DAY OR EVENING SHALL BE DESIGNATED BY THE WMATA PROJECT MANAGER.
20. ALL WIRING SHALL BE IN CONDUIT, MINIMUM SIZE 3/4 INCH WITH LARGER SIZES AS INDICATED OR REQUIRED BY NEC. ALL CONDUITS SHALL BE RIGID GALVANIZED STEEL THREADED COUPLING FOR COMPLETE WATER PROOF INSTALLATION.
21. AT JOB COMPLETION, AND BEFORE FINAL ACCEPTANCE BY WMATA, TEST EACH RECEPTACLE AND PANELBOARD FOR PROPER OPERATION. WIRING SHALL BE TESTED FOR CONTINUITY, SHORTS, ETC... ALL WORK AREAS, ETC.. SHALL BE CLEANED AT THE COMPLETION OF THIS PROJECT.
22. FOR DEVICE IDENTIFICATION, THE ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELBOARDS, JUNCTION BOXES, ETC..TO INDICATE THE NAME, VOLTAGE, SERVING EQUIPMENT AND ITEM SERVED ETC... LABELS FOR EMERGENCY CIRCUITS SHALL BE IN RED, NORMAL CIRCUITS SHALL BE IN BLACK. ALL DEVICES SHALL BE IDENTIFIED EITHER ON THE FACE OF THE COVERPLATE OR INSIDE PER WMATA PREFERENCE. ALL JUNCTION BOXES SHALL BE LABELED TO INDICATE THE CIRCUITS CONTAINED BY THE JUNCTION BOX.
23. THE CONTRACTOR SHALL UPDATE THE SCHEDULES OF ALL PANELBOARDS AFFECTED BY THIS PROJECT TO REFLECT CHANGES DUE TO THE PROJECT WORK. PANEL SCHEDULE LOAD DESCRIPTIONS ARE TO INCLUDE THE FINAL ROOM OR AREA NUMBERS.
24. INCLUDE GPR FOR ANY CORE DRILLS OR DRILLED PENETRATIONS IN ANY WALLS.
25. SEAL OFF ALL PENETRATIONS THRU WALLS/FLOORS.
26. THE CONTRACTOR SHALL BECOME FAMILIAR WITH WMATA DESIGN CRITERIA SECTION 4 AND SECTION 13; WMATA SPECIFICATION SECTION 16120, 16130, AND 16125. ALL INSTALLATION SHALL BE IN COMPLIANCE WITH THE NEC, WMATA DESIGN CRITERIA, AND SPECIFICATIONS.
27. THE CONTRACTOR SHALL IDENTIFY SPARE CIRCUIT WITH "RESERVED FOR AFC".
28. EXISTING SWITCHBOARDS, PANELBOARDS AND EQUIPMENT SHOWN IS BASED ON RECORD DRAWINGS AND CASUAL FIELD SURVEY. CONTRACTOR SHALL VERIFY ALL ELECTRICAL EQUIPMENT IN FIELD.

ABBREVIATIONS

A, AMP	AMPERES	NEC	NATIONAL ELECTRIC CODE
AC	ALTERNATING CURRENT	P	POLE
AF	AMPERE FRAME	PH	PHASE
AFC	AUTOMATED FARE COLLECTION SYSTEM	PNL	PANELBOARD
AFF	ABOVE FINISHED FLOOR	PRI	PRIMARY
AIC	AMPERE INTERRUPTING CAPACITY	PROP	PROPOSED
AT	AMPERE TRIP	RGS	RIGID GALVANIZED STEEL
BKR	BREAKER	SEC	SECONDARY
C	CONDUIT	SHT	SHEET
CB	CIRCUIT BREAKER	SW	SWITCH
CCT	CIRCUIT	SWBD	SWITCHBOARD
CL	CENTER LINE	TYP	TYPICAL
CLG	CEILING	U/G	UNDER GROUND
CONST	CONSTRUCTION	U.L.	UNDERWRITERS LABORATORIES
DISC	DISCONNECT	UON	UNLESS OTHERWISE NOTED
E	ELECTRICAL	VOLT	VOLTAGE
GND	GROUND	W	WATT
JB	JUNCTION BOX	WMATA	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
KAIC	THOUSAND AMPERE INTERRUPTING CAPACITY	WP	WEATHERPROOF
KCMIL	THOUSAND CIRCULAR MILL		
KVA	KILOVOLT AMPERE		
MAX	MAXIMUM		
MCA	MINIMUM CIRCUIT AMPERE		
MCB	MAIN CIRCUIT BREAKER		
MEZZ	MEZZANINE		
MIN	MINIMUM		
MLO	MAIN LUGS ONLY		

DRAWING INDEX

D13-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
D13-E-101	NEW CARROLLTON - KIOSK - POWER
D13-E-102	NEW CARROLLTON - PANEL SCHEDULE
MM-D-E27	NEW CARROLLTON - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

	QUADRUPEX RECEPTACLE OUTLET- 20A, 125V WALL MOUNTED.
	JUNCTION BOX - SURFACE MOUNTED ON UNISTRUT CHANNEL
	CONDUIT - CONCEALED IN UNDER FLOOR DUCT U.O.N.
	HOMERUN TO PANEL, NUMBER OF ARROWHEADS INDICATES NUMBER OF CIRCUITS. CROSS HATCHING INDICATES NUMBER OF CONDUCTORS, NUMBER INDICATES SIZE OF CONDUCTOR AND SIZE OF CONDUIT
	↓ - INDICATES GROUNDING WIRE TO GROUNDING BUS AT THE PANELBOARD
	EF 1,3 - INDICATES CIRCUIT HOME RUN PANELBOARD AND CIRCUIT NUMBER IDENTIFICATION

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	08-14	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	08-14					
CHECKED	B. IDILBI	08-14					
APPROVED	N/A						

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE
AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM



APPROVED _____

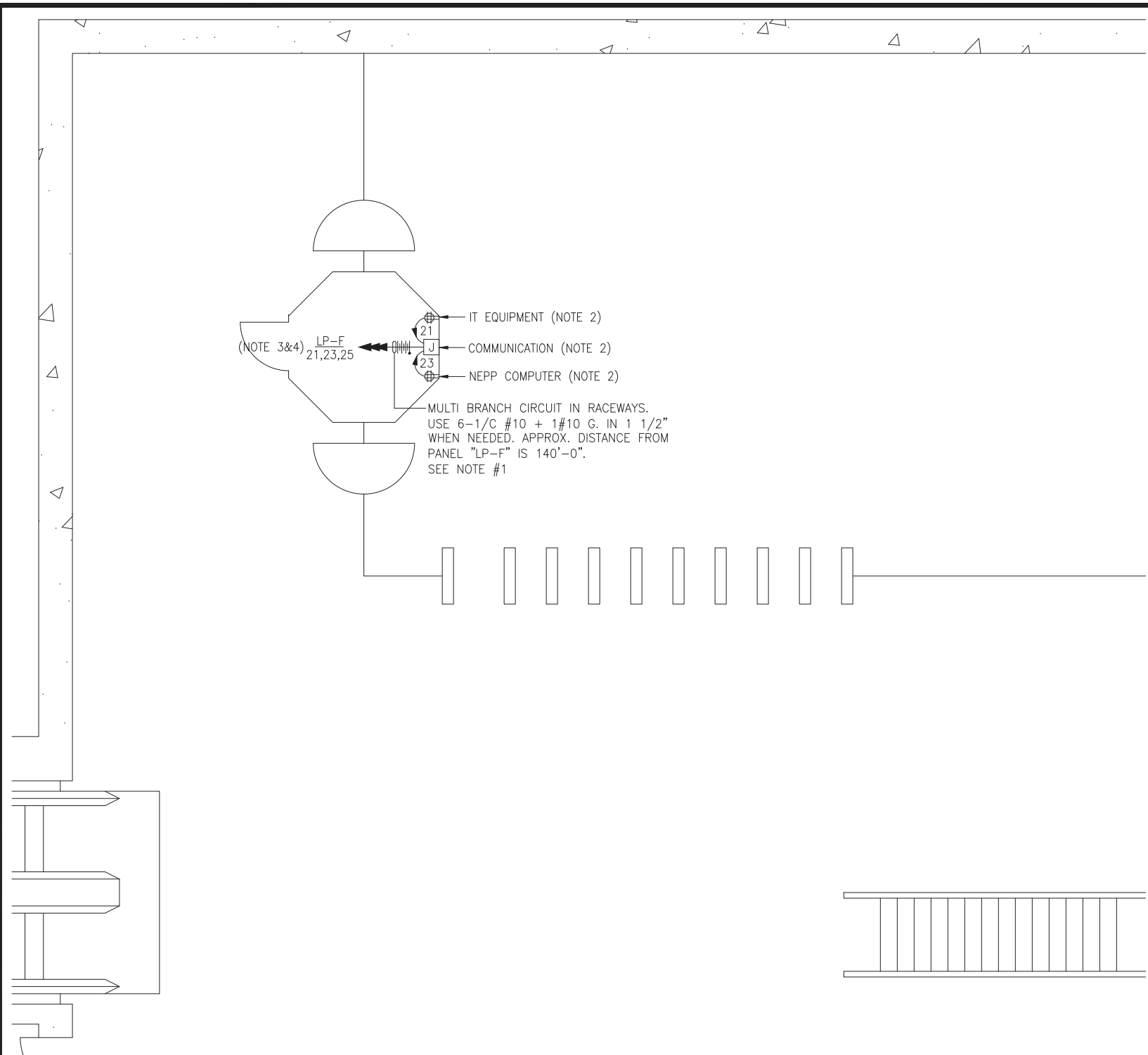
SUBMITTED _____
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS

ABBREVIATIONS □ DRAWING INDEX □
SPECIFICATIONS □ SYMBOL LIST

SCALE
NOT TO SCALE

DRAWING NO.
D13-E-001



KIOSK - POWER
SCALE: 1/4" = 1'-0"

DRAWING NOTES:

1. CONTRACTOR TO REFER TO SUPPLEMENTAL MEZZANINE INSPECTION REPORT, VOLUME 4 FURNISHED UNDER THIS SOLICITATION PACKAGE TO BE INFORMED THAT THE TOTAL LENGTH OF THE MULTI WIRE BRANCH CIRCUIT DEPICTED IN THE ELECTRICAL PLAN MAY EITHER CONSIST OF EXISTING POWER UNDER FLOOR DUCTS; OR IT COULD BE ALL CONDUIT RUN USING RIGID GALVANIZED STEEL CONDUITS; OR A COMBINATION OF BOTH WHICH IS RIGID GALVANIZED STEEL CONDUITS AND FLOOR DUCTS AND/OR JUST USE OF POWER FLOOR DUCT OR DEEMED REQUIRED IN THE REPORT.
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SAFETY PRECAUTION:

1. ALL WORK SHALL COMPLY WITH WMATA SAFETY RULES, AND DE-ENERGIZATION POLICIES.

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO 08-14
DATE 08-14
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WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
APPROVED *[Signature]*

GFP A Gannett Fleming/Parsons JOINT VENTURE
SUBMITTED _____
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
NEW CARROLLTON
KIOSK - POWER

SCALE AS SHOWN
DRAWING NO. D13-E-101

EXISTING PANEL "LP-F"										
AMPERES: 225			VOLTS: 120/208			MOUNTING: SURFACE				
MAINS: 225A MCB			PHASE: 3			LOCATION: ELEC EQUIPMENT ROOM C106				
RATING: 10K AIC			WIRE: 4			SECTION: 1 OF 1				
LOAD DESCRIPTION	KVA	AMP	POLE	NO.	NO.	POLE	AMP	KVA	LOAD DESCRIPTION	
EXISTING VENDOR	0.8	20	1	1	A - -	2	30	2.9	EXIST. LOAD CENTER "KES"	
EXISTING VENDOR	0.8	20	1	3	- B -	4	-	2.5		
EXISTING VENDOR	0.8	20	1	5	- - C	6	-	2.5		
EXISTING VENDOR	0.8	20	1	7	A - -	8	1	20	EXISTING VENDOR	
SPARE	0.0	20	1	9	- B -	10	1	20	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	11	- - C	12	1	20	EXISTING VENDOR	
SPARE	0.0	20	1	13	A - -	14	1	20	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	15	- B -	16	1	20	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	17	- - C	18	1	20	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	19	A - -	20	1	20	EXISTING VENDOR	
NEW KIOSK RECEPT. (IT/NCS)	0.8	20	1	21	- B -	22	1	20	EXISTING VENDOR	
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	23	- - C	24	1	20	EXISTING VENDOR	
FUTURE AFC FARE GATE	0.0	20	1	25	A - -	26	1	20	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	27	- B -	28	1	20	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	29	- - C	30	1	20	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	31	A - -	32	1	20	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	33	- B -	34	1	20	EXISTING VENDOR	
SPARE	0.0	20	1	35	- - C	36	1	20	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	37	A - -	38	1	20	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	39	- B -	40	1	20	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	41	- - C	42	1	20	EXISTING VENDOR	
LOAD SUMMARY										
LIGHTS	0.0 x 125%								0.0 KVA	
RECEPTACLES, FIRST 10 KVA	10.0 x 100%								10.0 KVA	
RECEPTACLES	17.6 x 50%								8.8 KVA	
MISC. APPLIANCES	0.0 x 100%								0.0 KVA	
LARGEST MOTOR	0.0 x 125%								0.0 KVA	
MOTORS	0.0 x 100%								0.0 KVA	
HEAT	3.0 x 125%								3.8 KVA	
AC	4.5 x 100%								4.5 KVA	
WATER HEATING	0.0 x 125%								0.0 KVA	
TOTAL CONNECTED LOAD	35.1 KVA		TOTAL DEMAND KVA				27.1 KVA			
			TOTAL DEMAND AMPS				75.1 AMPS			
CONNECTED LOAD PHASE SUMMARY										
PHASE A:	11.7 KVA									
PHASE B:	12.1 KVA									
PHASE C:	12.1 KVA									

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	08-14 DATE	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	08-14 DATE					
CHECKED	B. IDILBI	08-14 DATE					
APPROVED	N/A	DATE					

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

APPROVED 

GFP A Gannett Fleming/Parsons JOINT VENTURE

SUBMITTED _____
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
NEW CARROLLTON
PANEL SCHEDULE

SCALE: NOT TO SCALE

DRAWING NO. D13-E-102

60

ELECTRICAL SPECIFICATIONS

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- IF, DURING THE COURSE OF THE WORK, THE CONTRACTOR EXPERIENCES A CONFLICT RELATIVE TO THE PLANS AND SPECIFICATIONS, THE NEC OR OTHER APPLICABLE CODES AND GOVERNING DOCUMENTS, HE SHALL NOTIFY THE ENGINEER FOR DIRECTION PRIOR TO EXECUTION OF THIS WORK. ANY WORK INSTALLED IN VIOLATION OF THE CONTRACT DOCUMENT OR APPLICABLE CODES WHICH COULD HAVE BEEN AVOIDED BY CONTACTING THE ENGINEER SHALL BE RECTIFIED AT NO ADDITIONAL COST.
- ELECTRICAL PLANS ARE DIAGRAMMATIC & INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE CONDITIONS, ETC. MAINTAIN WORKING CLEARANCES.
- CIRCUIT NUMBERS ARE FOR IDENTIFICATION PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR CORRECTLY PHASING THE CIRCUITS IN THE PANEL AND SHALL BALANCE THE LOAD ON THE PHASES UNDER NORMAL OPERATING CONDITIONS. PROVIDE TYPED WRITTEN PANELBOARD DIRECTORIES. BALANCE THE PHASE LOADS TO WITHIN 20 PERCENT OF EACH OTHER.
- INCREASE ALL BRANCH CIRCUIT CONDUCTORS TO THE NEXT LARGER SIZE FROM THE PANEL TO THE FIRST OUTLET WHERE THE LENGTH OF THE HOMERUN EXCEEDS 100FT. ON 120/208V CIRCUITS.
- PROVIDE A PULLWIRE OR FISHTAPE/CORD IN ALL EMPTY CONDUIT RUNS.
- VERIFY WIRE SIZES, CIRCUIT BREAKERS AND FUSES RATINGS FOR ALL EQUIPMENT, AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES AFFECTING THE WORK PRIOR TO PROCEEDING.
- ALL PANELS IMPACTED BY THIS PROJECT SHALL BE PROVIDED WITH NEW, UPDATED TYPED WRITTEN PANEL SCHEDULES (FOR NEW AND EXISTING CIRCUITS) INDICATING THE FINAL ROOM NUMBER AND THE EQUIPMENT OR DEVICES SERVED BY THE CIRCUITS.
- DEMOLITION OF EXISTING WORK SHALL BE PERFORMED AFTER HOURS. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE WMATA PROJECT MANAGER PRIOR TO PERFORMING ALL THE WORK. THE TIME OF DAY OR EVENING SHALL BE DESIGNATED BY THE WMATA PROJECT MANAGER.
- ALL WIRING SHALL BE IN CONDUIT, MINIMUM SIZE 3/4 INCH WITH LARGER SIZES AS INDICATED OR REQUIRED BY NEC. ALL CONDUITS SHALL BE RIGID GALVANIZED STEEL W/SCREW IN COUPLING FOR COMPLETE WATER PROOF INSTALLATION.
- AT JOB COMPLETION, AND BEFORE FINAL ACCEPTANCE BY WMATA, TEST EACH RECEPTACLE AND PANELBOARD FOR PROPER OPERATION. WIRING SHALL BE TESTED FOR CONTINUITY, SHORTS, ETC... ALL WORK AREAS, ETC.. SHALL BE CLEANED AT THE COMPLETION OF THIS PROJECT.
- FOR DEVICE IDENTIFICATION, THE ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELBOARDS, JUNCTION BOXES, ETC.. TO INDICATE THE NAME, VOLTAGE, SERVING EQUIPMENT AND ITEM SERVED ETC... LABELS FOR EMERGENCY CIRCUITS SHALL BE IN RED, NORMAL CIRCUITS SHALL BE IN BLACK. ALL DEVICES SHALL BE IDENTIFIED EITHER ON THE FACE OF THE COVERPLATE OR INSIDE PER WMATA PREFERENCE. ALL JUNCTION BOXES SHALL BE LABELED TO INDICATE THE CIRCUITS CONTAINED BY THE JUNCTION BOX.
- THE CONTRACTOR SHALL UPDATE THE SCHEDULES OF ALL PANELBOARDS AFFECTED BY THIS PROJECT TO REFLECT CHANGES DUE TO THE PROJECT WORK. PANEL SCHEDULE LOAD DESCRIPTIONS ARE TO INCLUDE THE FINAL ROOM OR AREA NUMBERS.
- INCLUDE GPR FOR ANY CORE DRILLS OR DRILLED PENETRATIONS IN ANY WALLS.
- SEAL OFF ALL PENETRATIONS THRU WALLS/FLOORS.
- THE CONTRACTOR SHALL BECOME FAMILIAR WITH WMATA DESIGN CRITERIA SECTION 4 AND SECTION 13; WMATA SPECIFICATION SECTION 16120, 16130, AND 16125. ALL INSTALLATION SHALL BE IN COMPLIANCE WITH THE NEC, WMATA DESIGN CRITERIA, AND SPECIFICATIONS.
- THE CONTRACTOR SHALL IDENTIFY SPARE CIRCUIT WITH "RESERVED FOR AFC".
- EXISTING SWITCHBOARDS, PANELBOARDS AND EQUIPMENT SHOWN IS BASED ON RECORD DRAWINGS AND CASUAL FIELD SURVEY. CONTRACTOR SHALL VERIFY ALL ELECTRICAL EQUIPMENT IN FIELD.
- The conduit utilized for this project shall be 1-1/2" min. or larger as indicated. The liquid tight utilized for the kiosk shall be 1-1/2" from the entry to the 8x8 junction box, then 1" from the junction box to the quads. All boxes used in or on the kiosk shall be NEMA 4x.

ABBREVIATIONS

A, AMP	AMPERES	MAX	MAXIMUM
AC	ALTERNATING CURRENT	MCA	MINIMUM CIRCUIT AMPERE
AEMS	AUTOMATED ENERGY MANAGEMENT SYSTEM	MCB	MAIN CIRCUIT BREAKER
AF	AMPERE FRAME	MEZZ	MEZZANINE
AFC	AUTOMATED FARE COLLECTION SYSTEM	MIN	MINIMUM
AFF	ABOVE FINISHED FLOOR	MLO	MAIN LUGS ONLY
AIC	AMPERE INTERRUPTING CAPACITY	MTD	MOUNTED OR MOUNTING
AT	AMPERE TRIP	NEC	NATIONAL ELECTRIC CODE
ATS	AUTOMATIC TRANSFER SWITCH	NEMA	NATIONAL ELECTRICAL MANUFACTURER ASSOCIATION
BATT	BATTERY	P	POLE
BKR	BREAKER	PH	PHASE
℄	BASELINE	PNL	PANELBOARD
C	CONDUIT	PRI	PRIMARY
CB	CIRCUIT BREAKER	PROP	PROPOSED
CCT	CIRCUIT	RGS	RIGID GALVANIZED STEEL
℄	CENTER LINE	SEC	SECONDARY
CLG	CEILING	SHT	SHEET
CONST	CONSTRUCTION	STA	STATION
DC	DIRECT CURRENT	STD	STANDARD
DISC	DISCONNECT	SW	SWITCH
E	ELECTRICAL	SWBD	SWITCHBOARD
FLUOR.	FLUORESCENT	TYP	TYPICAL
GND	GROUND	U/G	UNDER GROUND
GPR	GROUND PENETRATING RADAR	U.L.	UNDERWRITERS LABORATORIES
IG	ISOLATED GROUND	UON	UNLESS OTHERWISE NOTED
JB	JUNCTION BOX	VOLT	VOLTAGE
KAIC	THOUSAND AMPERE INTERRUPTING CAPACITY	W	WATT
KCMIL	THOUSAND CIRCULAR MILL	WMATA	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
KVA	KILOVOLT AMPERE	WP	WEATHERPROOF

DRAWING INDEX

G01-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
G01-E-101	BENNING ROAD - MEZZANINE KIOSK - POWER
G01-E-102	BENNING ROAD - PANEL SCHEDULE
G01-E-301	BENNING ROAD - PANELBOARD IMAGE
MM-G-E06	BENNING ROAD - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

	QUADRUPEX RECEPTACLE OUTLET- 20A, 125V WALL MOUNTED.
	JUNCTION BOX - SURFACE MOUNTED ON UNISTRUT CHANNEL
	CONDUIT - CONCEALED IN UNDER FLOOR DUCT U.O.N.
	HOMERUN TO PANEL, NUMBER OF ARROWHEADS INDICATES NUMBER OF CIRCUITS. CROSS HATCHING INDICATES NUMBER OF CONDUCTORS, NUMBER INDICATES SIZE OF CONDUCTOR AND SIZE OF CONDUIT
	↓ - INDICATES GROUNDING WIRE TO GROUNDING BUS AT THE PANELBOARD
	EE 1,3 - INDICATES CIRCUIT HOME RUN PANELBOARD AND CIRCUIT NUMBER IDENTIFICATION

CONTRACT NO.
14-FQ10060-CENI-24

	DESIGNED	DATE	REFERENCE DRAWINGS		REVISIONS	
			NUMBER	DESCRIPTION	DATE	DESCRIPTION
DESIGNED	C. NGO	09-14				
		DATE				
DRAWN	C. NGO	09-14				
		DATE				
CHECKED	B. IDILBI	09-14				
		DATE				
APPROVED	N/A					
		DATE				

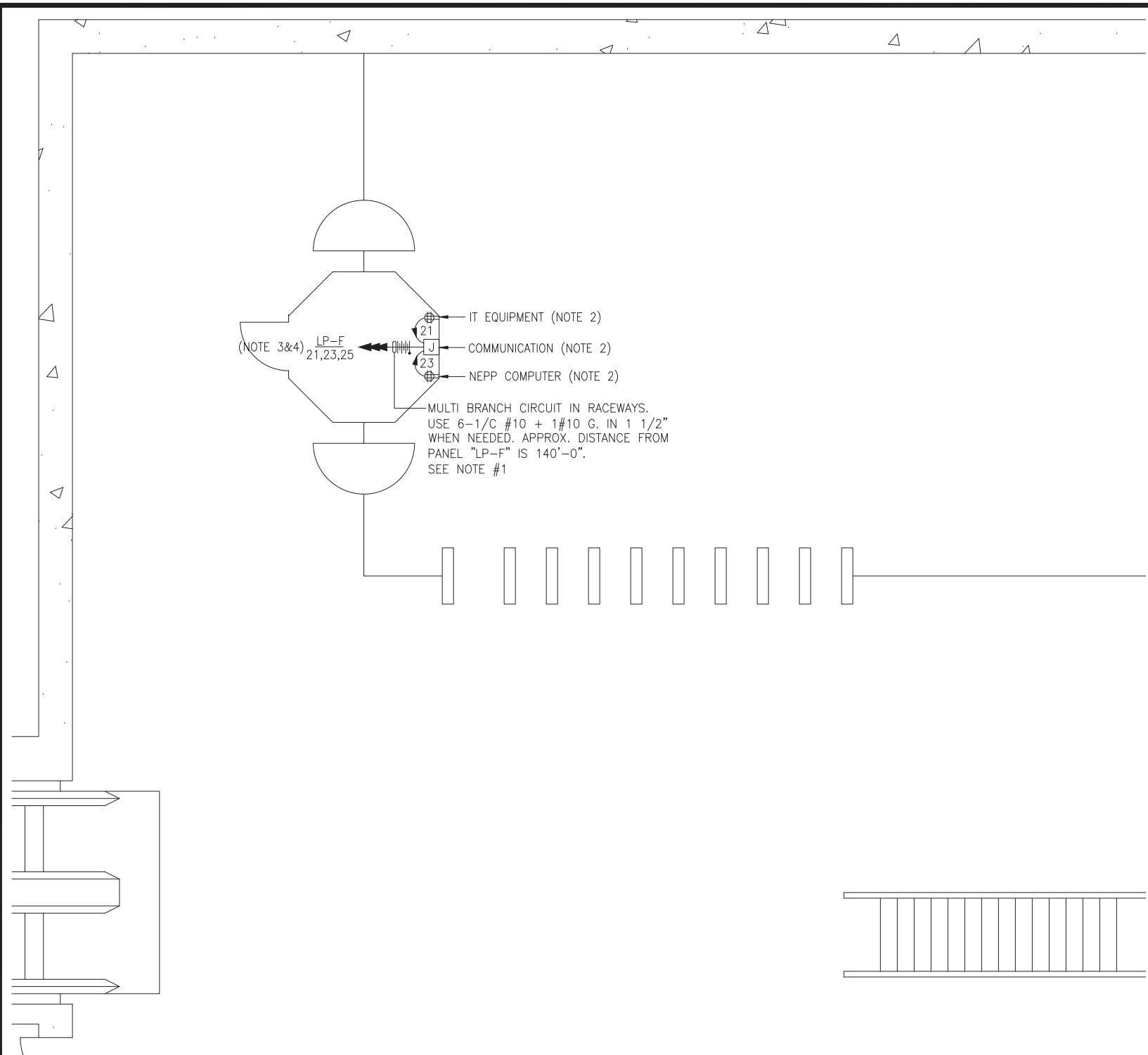
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED: SUBMITTED: _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
ABBREVIATIONS, DRAWING INDEX,
SPECIFICATIONS & SYMBOL LIST

SCALE: NOT TO SCALE DRAWING NO.: G01-E-001



KIOSK - POWER
SCALE: 1/4" = 1'- 0"

DRAWING NOTES:

1. CONTRACTOR TO REFER TO SUPPLEMENTAL MEZZANINE INSPECTION REPORT, VOLUME 4 FURNISHED UNDER THIS SOLICITATION PACKAGE TO BE INFORMED THAT THE TOTAL LENGTH OF THE MULTI WIRE BRANCH CIRCUIT DEPICTED IN THE ELECTRICAL PLAN MAY EITHER CONSIST OF EXISTING POWER UNDER FLOOR DUCTS; OR IT COULD BE ALL CONDUIT RUN USING RIGID GALVANIZED STEEL CONDUITS; OR A COMBINATION OF BOTH WHICH IS RIGID GALVANIZED STEEL CONDUITS AND FLOOR DUCTS AND/OR JUST USE OF POWER FLOOR DUCT OR DEEMED REQUIRED IN THE REPORT.
2. COORDINATE WITH WMATA WHERE EXACTLY THE DUPLEX RECEPTACLE OUTLET AND JUNCTION BOX WILL BE INSTALLED IN THE KIOSK.
3. PROVIDE 3-NEW 20A, 1P CIRCUIT BREAKER AT EXISTING PANELBOARD AVAILABLE CIRCUIT BREAKER SPACES. NEW CIRCUIT BREAKERS SHALL MATCH EXISTING PANELBOARD CIRCUIT BREAKER AIC RATING. TERMINATE 2-NEW BRANCH CIRCUITS TO NEWLY INSTALLED CIRCUIT BREAKERS AND CONNECT PERMANENTLY TO QUAD RECEPTACLE OUTLETS LOCATED IN THE KIOSK. KEEP AND COILED REMAINING BRANCH CIRCUIT IN THE PANELBOARD AND INSIDE THE JUNCTION BOX AT THE KIOSK FOR FUTURE USE. UPDATE PANELBOARD DIRECTORY TO MANIFEST PANELBOARD ADDITIONAL LOADS.
4. THE REMAINING BRANCH CIRCUIT FOR FUTURE AFC FARE GATE APPLICATION SHALL BE SECURED, LABELED AND COILED AT THE KIOSK. THE LENGTH OF COILED PIGTAIL SHALL BE THE FARTHEST FARE GATE DISTANCE FROM KIOSK PLUS AN EXTRA 6'-0" CONDUCTOR.

SAFETY PRECAUTION:

1. ALL WORK SHALL COMPLY WITH WMATA SAFETY RULES, AND DE-ENERGIZATION POLICIES.

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO 08-14
DATE 08-14
DRAWN C. NGO 08-14
DATE 08-14
CHECKED B. IDILBI 08-14
DATE 08-14
APPROVED N/A
DATE

REFERENCE DRAWINGS	
NUMBER	DESCRIPTION

REVISIONS		
DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
APPROVED *[Signature]*



SUBMITTED _____
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
NEW CARROLLTON
KIOSK - POWER
SCALE AS SHOWN
DRAWING NO. D13-E-101

EXISTING PANEL "LP-F"										
AMPERES: 225			VOLTS: 120/208			MOUNTING: SURFACE				
MAINS: 225A MCB			PHASE: 3			LOCATION: ELEC EQUIPMENT ROOM C106				
RATING: 10K AIC			WIRE: 4			SECTION: 1 OF 1				
LOAD DESCRIPTION	KVA	AMP	POLE	NO.	NO.	POLE	AMP	KVA	LOAD DESCRIPTION	
EXISTING VENDOR	0.8	20	1	1	A - -	2	30	2.9	EXIST. LOAD CENTER "KES"	
EXISTING VENDOR	0.8	20	1	3	- B -	4	-	2.5		
EXISTING VENDOR	0.8	20	1	5	- - C	6	-	2.5		
EXISTING VENDOR	0.8	20	1	7	A - -	8	1	20	EXISTING VENDOR	
SPARE	0.0	20	1	9	- B -	10	1	20	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	11	- - C	12	1	20	EXISTING VENDOR	
SPARE	0.0	20	1	13	A - -	14	1	20	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	15	- B -	16	1	20	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	17	- - C	18	1	20	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	19	A - -	20	1	20	EXISTING VENDOR	
NEW KIOSK RECEPT. (IT/NCS)	0.8	20	1	21	- B -	22	1	20	EXISTING VENDOR	
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	23	- - C	24	1	20	EXISTING VENDOR	
FUTURE AFC FARE GATE	0.0	20	1	25	A - -	26	1	20	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	27	- B -	28	1	20	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	29	- - C	30	1	20	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	31	A - -	32	1	20	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	33	- B -	34	1	20	EXISTING VENDOR	
SPARE	0.0	20	1	35	- - C	36	1	20	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	37	A - -	38	1	20	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	39	- B -	40	1	20	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	41	- - C	42	1	20	EXISTING VENDOR	
LOAD SUMMARY										
LIGHTS	0.0 x 125%		0.0 KVA							
RECEPTACLES, FIRST 10 KVA	10.0 x 100%		10.0 KVA							
RECEPTACLES	17.6 x 50%		8.8 KVA							
MISC. APPLIANCES	0.0 x 100%		0.0 KVA							
LARGEST MOTOR	0.0 x 125%		0.0 KVA							
MOTORS	0.0 x 100%		0.0 KVA							
HEAT	3.0 x 125%		3.8 KVA							
AC	4.5 x 100%		4.5 KVA							
WATER HEATING	0.0 x 125%		0.0 KVA							
TOTAL CONNECTED LOAD	35.1 KVA		TOTAL DEMAND KVA	27.1 KVA						
			TOTAL DEMAND AMPS	75.1 AMPS						
CONNECTED LOAD PHASE SUMMARY										
PHASE A:	11.7 KVA									
PHASE B:	12.1 KVA									
PHASE C:	12.1 KVA									

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	08-14	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	08-14					
CHECKED	B. IDILBI	08-14					
APPROVED	N/A						

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED  SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
NEW CARROLLTON
PANEL SCHEDULE

SCALE: NOT TO SCALE

DRAWING NO. D13-E-102

ELECTRICAL SPECIFICATIONS

- ALL WORK, MATERIAL AND EQUIPMENT SHALL COMPLY WITH THE LATEST NATIONAL ELECTRICAL CODE BEING USED BY THE LOCAL JURISDICTION AND SHALL COMPLY WITH ALL LOCAL CODES AND ORDINANCES.
- MATERIALS AND EQUIPMENT SHALL BE NEW EXCEPT WHERE INDICATED OTHERWISE. ALL OTHER WIRING DEVICES, CONDUIT, WIRE, ETC. SHALL BE NEW UNLESS NOTED OTHERWISE.
- ALL MATERIALS AND EQUIPMENT SHALL BEAR U.L. LISTING.
- MAINTAIN GROUNDING CONTINUITY TO ALL DEVICES AND EQUIPMENT IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
- WORK NOT SPECIFICALLY SPECIFIED OR INDICATED SHALL CONFORM WITH SPECIFICATIONS.
- ALL CONDUITS SHALL BE RUN CONCEALED IN UNDER FLOOR DUCT.
- ALL WIRE AND CABLE SHALL BE COPPER HAVING 600 VOLTS XHHW-2 OR RHW-2 INSULATIONS. PROVIDE #12 WIRE MINIMUM, UNLESS OTHERWISE NOTED. ALL CABLES SHALL BE LOW SMOKE ZERO HALOGEN CABLE.
- THE CONTRACTOR SHALL VISIT THE SITE AND EXAMINE THE CONDITION OF THE PREMISES AND THE CHARACTER AND EXTENT OF WORK REQUIRED PRIOR TO SUBMISSION OF BIDS.
- OBTAIN ALL PERMITS AND PAY ALL FEES NECESSARY FOR INSPECTIONS, TESTS & OTHER SERVICES REQUIRED FOR THE COMPLETION OF THIS WORK.
- ALL WORK SHALL BE DONE AT SUCH TIMES AND IN SUCH A MANNER THAT WILL LEAST INTERFERE WITH THE MAINTENANCE AND OPERATION OF ALL RELATED OR AFFECTED SYSTEMS. COORDINATE ALL POWER OUTAGES WITH WMATA PROJECT MANAGER.
- IT IS THE INTENT OF THESE DRAWINGS AND OTHER RELATED DOCUMENTS TO PRODUCE A COMPLETE AND FUNCTIONING ELECTRICAL SYSTEM. PROVIDE ALL LABOR, MATERIAL AND OTHER SERVICES NECESSARY TO ACHIEVE THIS PRODUCT. NOTIFY THE ENGINEER OF ANY DISCREPANCIES IN THE PLANS & SPECIFICATIONS THAT WILL AFFECT THE WORK, PRIOR TO SUBMISSION OF THE BID PRICE.
- IF, DURING THE COURSE OF THE WORK, THE CONTRACTOR EXPERIENCES A CONFLICT RELATIVE TO THE PLANS AND SPECIFICATIONS, THE NEC OR OTHER APPLICABLE CODES AND GOVERNING DOCUMENTS, HE SHALL NOTIFY THE ENGINEER FOR DIRECTION PRIOR TO EXECUTION OF THIS WORK. ANY WORK INSTALLED IN VIOLATION OF THE CONTRACT DOCUMENT OR APPLICABLE CODES WHICH COULD HAVE BEEN AVOIDED BY CONTACTING THE ENGINEER SHALL BE RECTIFIED AT NO ADDITIONAL COST.
- ELECTRICAL PLANS ARE DIAGRAMMATIC & INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE CONDITIONS, ETC. MAINTAIN WORKING CLEARANCES.
- CIRCUIT NUMBERS ARE FOR IDENTIFICATION PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR CORRECTLY PHASING THE CIRCUITS IN THE PANEL AND SHALL BALANCE THE LOAD ON THE PHASES UNDER NORMAL OPERATING CONDITIONS. PROVIDE TYPED WRITTEN PANELBOARD DIRECTORIES. BALANCE THE PHASE LOADS TO WITHIN 20 PERCENT OF EACH OTHER.
- INCREASE ALL BRANCH CIRCUIT CONDUCTORS TO THE NEXT LARGER SIZE FROM THE PANEL TO THE FIRST OUTLET WHERE THE LENGTH OF THE HOMERUN EXCEEDS 100FT. ON 120/208V CIRCUITS.
- PROVIDE A PULLWIRE OR FISHTAPE/CORD IN ALL EMPTY CONDUIT RUNS.
- VERIFY WIRE SIZES, CIRCUIT BREAKERS AND FUSES RATINGS FOR ALL EQUIPMENT, AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES AFFECTING THE WORK PRIOR TO PROCEEDING.
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- AT JOB COMPLETION, AND BEFORE FINAL ACCEPTANCE BY WMATA, TEST EACH RECEPTACLE AND PANELBOARD FOR PROPER OPERATION. WIRING SHALL BE TESTED FOR CONTINUITY, SHORTS, ETC... ALL WORK AREAS, ETC.. SHALL BE CLEANED AT THE COMPLETION OF THIS PROJECT.
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- THE CONTRACTOR SHALL UPDATE THE SCHEDULES OF ALL PANELBOARDS AFFECTED BY THIS PROJECT TO REFLECT CHANGES DUE TO THE PROJECT WORK. PANEL SCHEDULE LOAD DESCRIPTIONS ARE TO INCLUDE THE FINAL ROOM OR AREA NUMBERS.
- INCLUDE GPR FOR ANY CORE DRILLS OR DRILLED PENETRATIONS IN ANY WALLS.
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ABBREVIATIONS

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AEMS	AUTOMATED ENERGY MANAGEMENT SYSTEM	MCB	MAIN CIRCUIT BREAKER
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DRAWING INDEX

G02-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
G02-E-101	CAPITOL HEIGHTS - MEZZANINE KIOSK - POWER
G02-E-102	CAPITOL HEIGHTS - PANEL SCHEDULE
G02-E-301	CAPITOL HEIGHTS - PANELBOARD IMAGE
MM-G-E09	CAPITOL HEIGHTS - AC POWER ONE LINE DIAGRAMS

ELECTRICAL SYMBOL LIST

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CONTRACT NO.
14-FQ10060-CENI-24

	DESIGNED	DATE	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DESIGNED	C. NGO	09-14					
		DATE					
DRAWN	C. NGO	09-14					
		DATE					
CHECKED	B. IDLBI	09-14					
		DATE					
APPROVED	N/A						
		DATE					

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

APPROVED

GFP A Gannett Fleming/Parsons JOINT VENTURE

SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS

ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST

SCALE: NOT TO SCALE

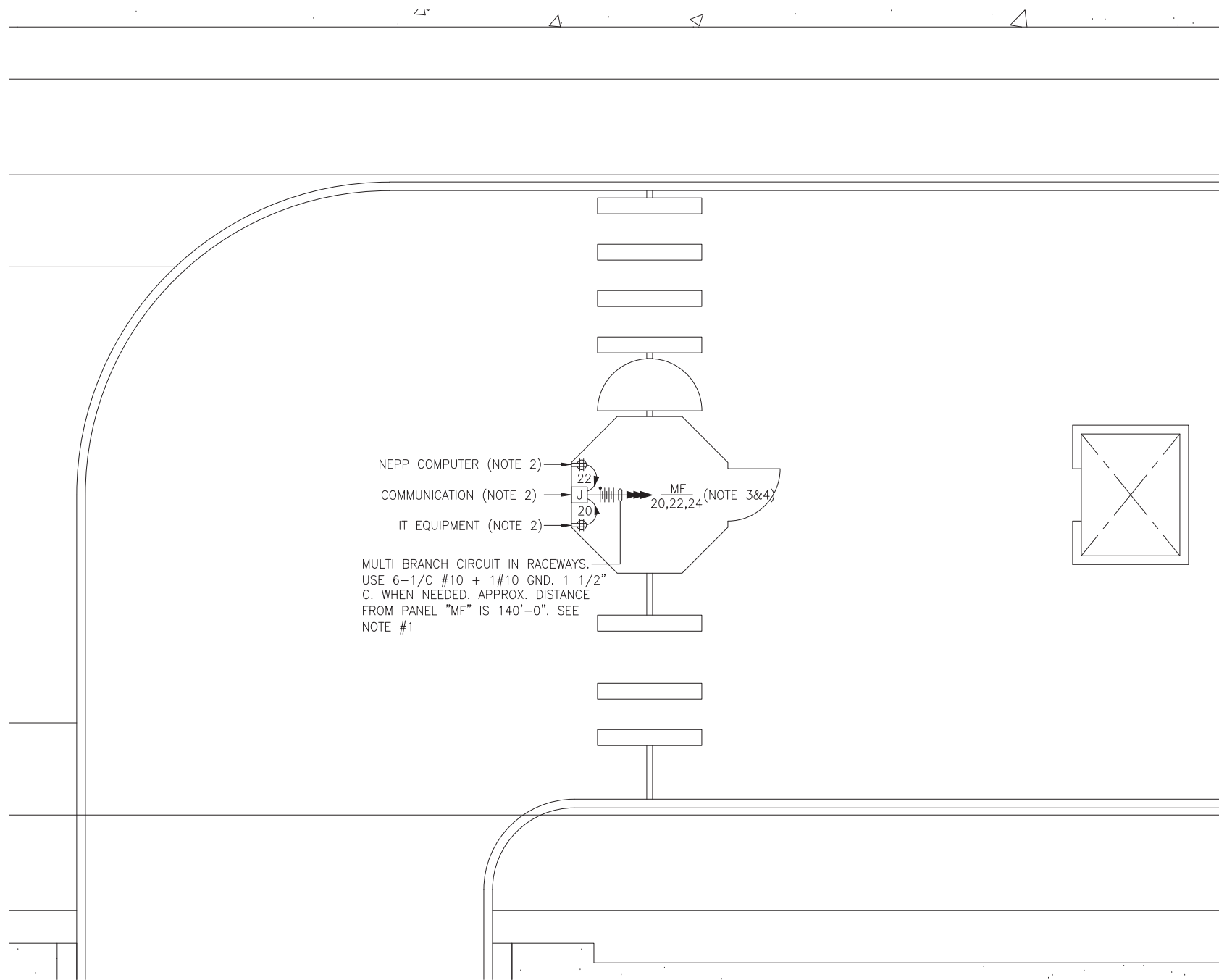
DRAWING NO. G02-E-001

DRAWING NOTES:

1. CONTRACTOR TO REFER TO SUPPLEMENTAL MEZZANINE INSPECTION REPORT, VOLUME 4 FURNISHED UNDER THIS SOLICITATION PACKAGE TO BE INFORMED THAT THE TOTAL LENGTH OF THE MULTI WIRE BRANCH CIRCUIT DEPICTED IN THE ELECTRICAL PLAN MAY EITHER CONSIST OF EXISTING POWER UNDER FLOOR DUCTS; OR IT COULD BE ALL CONDUIT RUN USING RIGID GALVANIZED STEEL CONDUITS; OR A COMBINATION OF BOTH WHICH IS RIGID GALVANIZED STEEL CONDUITS AND FLOOR DUCTS AND/OR JUST USE OF POWER FLOOR DUCT OR DEEMED REQUIRED IN THE REPORT.
2. COORDINATE WITH WMATA WHERE EXACTLY THE DUPLEX RECEPTACLE OUTLET AND JUNCTION BOX WILL BE INSTALLED IN THE KIOSK.
3. PROVIDE 3-NEW 20A, 1P CIRCUIT BREAKER AT EXISTING PANELBOARD AVAILABLE CIRCUIT BREAKER SPACES. NEW CIRCUIT BREAKERS SHALL MATCH EXISTING PANELBOARD CIRCUIT BREAKER AIC RATING. TERMINATE 2-NEW BRANCH CIRCUITS TO NEWLY INSTALLED CIRCUIT BREAKERS AND CONNECT PERMANENTLY TO QUAD RECEPTACLE OUTLETS LOCATED IN THE KIOSK. KEEP AND COILED REMAINING BRANCH CIRCUIT IN THE PANELBOARD AND INSIDE THE JUNCTION BOX AT THE KIOSK FOR FUTURE USE. UPDATE PANELBOARD DIRECTORY TO MANIFEST PANELBOARD ADDITIONAL LOADS.
4. THE REMAINING BRANCH CIRCUIT FOR FUTURE AFC FARE GATE APPLICATION SHALL BE SECURED, LABELED AND COILED AT THE KIOSK. THE LENGTH OF COILED PIGTAIL SHALL BE THE FARTHEST FARE GATE DISTANCE FROM KIOSK PLUS AN EXTRA 6'-0" CONDUCTOR.

SAFETY PRECAUTION:

1. ALL WORK SHALL COMPLY WITH WMATA SAFETY RULES, AND DE-ENERGIZATION POLICIES.



MEZZANINE KIOSK - POWER

SCALE: 1/4" = 1'- 0"

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO 09-14
DATE 09-14
DRAWN C. NGO 09-14
DATE 09-14
CHECKED B. IDILBI 09-14
DATE 09-14
APPROVED N/A
DATE

REFERENCE DRAWINGS	
NUMBER	DESCRIPTION

REVISIONS		
DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DEPARTMENT OF TRANSIT INFRASTRUCTURE
AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
APPROVED *[Signature]*

GFP A Gannett Fleming/Parsons
JOINT VENTURE
SUBMITTED _____
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
CAPITOL HEIGHTS
MEZZANINE KIOSK - POWER

SCALE AS SHOWN
DRAWING NO. G02-E-101
65

EXISTING PANEL "MF"

AMPERES: 250	VOLTS: 120/208	MOUNTING: SURFACE
MAINS: 250A MCB	PHASE: 3	LOCATION: MECHANICAL EQUIP. ROOM C206
RATING: 10K AIC	WIRE: 4	SECTION: 1 OF 1

LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	POLE	CKT. NO.	CKT BKRS			LOAD DESCRIPTION
		AMP	POLE	NO.				POLE	AMP	KVA	
EXIST. LOAD CENTER "KES"	2.9	20	1	1	A - -	2	1	20	0.8	EXISTING VENDOR	
	2.5	20	1	3	- B -	4	1	20	0.8	EXISTING VENDOR	
	2.5	20	1	5	- - C	6	1	20	0.0	SPARE	
EXISTING VENDOR	0.8	20	1	7	A - -	8	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	9	- B -	10	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	11	- - C	12	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	13	A - -	14	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	15	- B -	16	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	17	- - C	18	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	19	A - -	20	1	20	0.8	NEW KIOSK RECEPT. (IT/NCS)	
EXISTING VENDOR	0.8	20	1	21	- B -	22	1	20	0.8	NEW KIOSK RECEPT. (NEPP/SOC)	
EXISTING VENDOR	0.8	20	1	23	- - C	24	1	20	0.0	FUTURE AFC FARE GATE	
SPARE	0.0	20	1	25	A - -	26	1	20	0.0	SPARE	
SPARE	0.0	20	1	27	- B -	28	1	20	0.8	EXISTING VENDOR	
SPARE	0.0	20	1	29	- - C	30	1	20	0.0	SPARE	
SPARE	0.0	20	1	31	A - -	32	1	20	0.0	SPARE	
SPARE	0.0	20	1	33	- B -	34	1	20	0.0	SPARE	
SPARE	0.0	20	1	35	- - C	36	1	20	0.0	SPARE	

LOAD SUMMARY

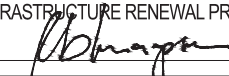
LIGHTS	0.0 x 125%	0.0 KVA
RECEPTACLES, FIRST 10 KVA	10.0 x 100%	10.0 KVA
RECEPTACLES	5.6 x 50%	2.8 KVA
MISC. APPLIANCES	0.0 x 100%	0.0 KVA
LARGEST MOTOR	0.0 x 125%	0.0 KVA
MOTORS	0.0 x 100%	0.0 KVA
HEAT	3.0 x 125%	3.8 KVA
AC	4.5 x 100%	4.5 KVA
WATER HEATING	0.0 x 125%	0.0 KVA
TOTAL CONNECTED LOAD	23.1 KVA	TOTAL DEMAND KVA 21.1 KVA
		TOTAL DEMAND AMPS 58.5 AMPS
CONNECTED LOAD PHASE SUMMARY		
PHASE A:	8.5 KVA	
PHASE B:	8.9 KVA	
PHASE C:	6.5 KVA	

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	09-14	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	09-14					
CHECKED	B. IDILBI	09-14					
APPROVED	N/A						

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE
AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

APPROVED 

SUBMITTED _____
PROJECT MANAGER



**NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
CAPITOL HEIGHTS
PANEL SCHEDULE**

SCALE: NOT TO SCALE

DRAWING NO. G02-E-102

ELECTRICAL SPECIFICATIONS

- ALL WORK, MATERIAL AND EQUIPMENT SHALL COMPLY WITH THE LATEST NATIONAL ELECTRICAL CODE BEING USED BY THE LOCAL JURISDICTION AND SHALL COMPLY WITH ALL LOCAL CODES AND ORDINANCES.
- MATERIALS AND EQUIPMENT SHALL BE NEW EXCEPT WHERE INDICATED OTHERWISE. ALL OTHER WIRING DEVICES, CONDUIT, WIRE, ETC. SHALL BE NEW UNLESS NOTED OTHERWISE.
- ALL MATERIALS AND EQUIPMENT SHALL BEAR U.L. LISTING.
- MAINTAIN GROUNDING CONTINUITY TO ALL DEVICES AND EQUIPMENT IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
- WORK NOT SPECIFICALLY SPECIFIED OR INDICATED SHALL CONFORM WITH SPECIFICATIONS.
- ALL CONDUITS SHALL BE RUN CONCEALED IN UNDER FLOOR DUCT.
- ALL WIRE AND CABLE SHALL BE COPPER HAVING 600 VOLTS XHHW-2 OR RHW-2 INSULATIONS. PROVIDE #12 WIRE MINIMUM, UNLESS OTHERWISE NOTED. ALL CABLES SHALL BE LOW SMOKE ZERO HALOGEN CABLE.
- THE CONTRACTOR SHALL VISIT THE SITE AND EXAMINE THE CONDITION OF THE PREMISES AND THE CHARACTER AND EXTENT OF WORK REQUIRED PRIOR TO SUBMISSION OF BIDS.
- OBTAIN ALL PERMITS AND PAY ALL FEES NECESSARY FOR INSPECTIONS, TESTS & OTHER SERVICES REQUIRED FOR THE COMPLETION OF THIS WORK.
- ALL WORK SHALL BE DONE AT SUCH TIMES AND IN SUCH A MANNER THAT WILL LEAST INTERFERE WITH THE MAINTENANCE AND OPERATION OF ALL RELATED OR AFFECTED SYSTEMS. COORDINATE ALL POWER OUTAGES WITH WMATA PROJECT MANAGER.
- IT IS THE INTENT OF THESE DRAWINGS AND OTHER RELATED DOCUMENTS TO PRODUCE A COMPLETE AND FUNCTIONING ELECTRICAL SYSTEM. PROVIDE ALL LABOR, MATERIAL AND OTHER SERVICES NECESSARY TO ACHIEVE THIS PRODUCT. NOTIFY THE ENGINEER OF ANY DISCREPANCIES IN THE PLANS & SPECIFICATIONS THAT WILL AFFECT THE WORK, PRIOR TO SUBMISSION OF THE BID PRICE.
- IF, DURING THE COURSE OF THE WORK, THE CONTRACTOR EXPERIENCES A CONFLICT RELATIVE TO THE PLANS AND SPECIFICATIONS, THE NEC OR OTHER APPLICABLE CODES AND GOVERNING DOCUMENTS, HE SHALL NOTIFY THE ENGINEER FOR DIRECTION PRIOR TO EXECUTION OF THIS WORK. ANY WORK INSTALLED IN VIOLATION OF THE CONTRACT DOCUMENT OR APPLICABLE CODES WHICH COULD HAVE BEEN AVOIDED BY CONTACTING THE ENGINEER SHALL BE RECTIFIED AT NO ADDITIONAL COST.
- ELECTRICAL PLANS ARE DIAGRAMMATIC & INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE CONDITIONS, ETC. MAINTAIN WORKING CLEARANCES.
- CIRCUIT NUMBERS ARE FOR IDENTIFICATION PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR CORRECTLY PHASING THE CIRCUITS IN THE PANEL AND SHALL BALANCE THE LOAD ON THE PHASES UNDER NORMAL OPERATING CONDITIONS. PROVIDE TYPED WRITTEN PANELBOARD DIRECTORIES. BALANCE THE PHASE LOADS TO WITHIN 20 PERCENT OF EACH OTHER.
- INCREASE ALL BRANCH CIRCUIT CONDUCTORS TO THE NEXT LARGER SIZE FROM THE PANEL TO THE FIRST OUTLET WHERE THE LENGTH OF THE HOMERUN EXCEEDS 100FT. ON 120/208V CIRCUITS.
- PROVIDE A PULLWIRE OR FISHTAPE/CORD IN ALL EMPTY CONDUIT RUNS.
- VERIFY WIRE SIZES, CIRCUIT BREAKERS AND FUSES RATINGS FOR ALL EQUIPMENT, AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES AFFECTING THE WORK PRIOR TO PROCEEDING.
- ALL PANELS IMPACTED BY THIS PROJECT SHALL BE PROVIDED WITH NEW, UPDATED TYPED WRITTEN PANEL SCHEDULES (FOR NEW AND EXISTING CIRCUITS) INDICATING THE FINAL ROOM NUMBER AND THE EQUIPMENT OR DEVICES SERVED BY THE CIRCUITS.
- DEMOLITION OF EXISTING WORK SHALL BE PERFORMED AFTER HOURS. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE WMATA PROJECT MANAGER PRIOR TO PERFORMING ALL THE WORK. THE TIME OF DAY OR EVENING SHALL BE DESIGNATED BY THE WMATA PROJECT MANAGER.
- ALL WIRING SHALL BE IN CONDUIT, MINIMUM SIZE 3/4 INCH WITH LARGER SIZES AS INDICATED OR REQUIRED BY NEC. ALL CONDUITS SHALL BE RIGID GALVANIZED STEEL W/SCREW IN COUPLING FOR COMPLETE WATER PROOF INSTALLATION.
- AT JOB COMPLETION, AND BEFORE FINAL ACCEPTANCE BY WMATA, TEST EACH RECEPTACLE AND PANELBOARD FOR PROPER OPERATION. WIRING SHALL BE TESTED FOR CONTINUITY, SHORTS, ETC... ALL WORK AREAS, ETC.. SHALL BE CLEANED AT THE COMPLETION OF THIS PROJECT.
- FOR DEVICE IDENTIFICATION, THE ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELBOARDS, JUNCTION BOXES, ETC.. TO INDICATE THE NAME, VOLTAGE, SERVING EQUIPMENT AND ITEM SERVED ETC... LABELS FOR EMERGENCY CIRCUITS SHALL BE IN RED, NORMAL CIRCUITS SHALL BE IN BLACK. ALL DEVICES SHALL BE IDENTIFIED EITHER ON THE FACE OF THE COVERPLATE OR INSIDE PER WMATA PREFERENCE. ALL JUNCTION BOXES SHALL BE LABELED TO INDICATE THE CIRCUITS CONTAINED BY THE JUNCTION BOX.
- THE CONTRACTOR SHALL UPDATE THE SCHEDULES OF ALL PANELBOARDS AFFECTED BY THIS PROJECT TO REFLECT CHANGES DUE TO THE PROJECT WORK. PANEL SCHEDULE LOAD DESCRIPTIONS ARE TO INCLUDE THE FINAL ROOM OR AREA NUMBERS.
- INCLUDE GPR FOR ANY CORE DRILLS OR DRILLED PENETRATIONS IN ANY WALLS.
- SEAL OFF ALL PENETRATIONS THRU WALLS/FLOORS.
- THE CONTRACTOR SHALL BECOME FAMILIAR WITH WMATA DESIGN CRITERIA SECTION 4 AND SECTION 13; WMATA SPECIFICATION SECTION 16120, 16130, AND 16125. ALL INSTALLATION SHALL BE IN COMPLIANCE WITH THE NEC, WMATA DESIGN CRITERIA, AND SPECIFICATIONS.
- THE CONTRACTOR SHALL IDENTIFY SPARE CIRCUIT WITH "RESERVED FOR AFC".
- EXISTING SWITCHBOARDS, PANELBOARDS AND EQUIPMENT SHOWN IS BASED ON RECORD DRAWINGS AND CASUAL FIELD SURVEY. CONTRACTOR SHALL VERIFY ALL ELECTRICAL EQUIPMENT IN FIELD.
- The conduit utilized for this project shall be 1-1/2" min. or larger as indicated. The liquid tight utilized for the kiosk shall be 1-1/2" from the entry to the 8x8 junction box, then 1" from the junction box to the quads. All boxes used in or on the kiosk shall be NEMA 4x.

ABBREVIATIONS

A, AMP	AMPERES	MAX	MAXIMUM
AC	ALTERNATING CURRENT	MCA	MINIMUM CIRCUIT AMPERE
AEMS	AUTOMATED ENERGY MANAGEMENT SYSTEM	MCB	MAIN CIRCUIT BREAKER
AF	AMPERE FRAME	MEZZ	MEZZANINE
AFC	AUTOMATED FARE COLLECTION SYSTEM	MIN	MINIMUM
AFF	ABOVE FINISHED FLOOR	MLO	MAIN LUGS ONLY
AIC	AMPERE INTERRUPTING CAPACITY	MTD	MOUNTED OR MOUNTING
AT	AMPERE TRIP	NEC	NATIONAL ELECTRIC CODE
ATS	AUTOMATIC TRANSFER SWITCH	NEMA	NATIONAL ELECTRICAL MANUFACTURER ASSOCIATION
BATT	BATTERY	P	POLE
BKR	BREAKER	PH	PHASE
BL	BASLINE	PNL	PANELBOARD
C	CONDUIT	PRI	PRIMARY
CB	CIRCUIT BREAKER	PROP	PROPOSED
CCT	CIRCUIT	RGS	RIGID GALVANIZED STEEL
CL	CENTER LINE	SEC	SECONDARY
CLG	CEILING	SHT	SHEET
CONST	CONSTRUCTION	STA	STATION
DC	DIRECT CURRENT	STD	STANDARD
DISC	DISCONNECT	SW	SWITCH
E	ELECTRICAL	SWBD	SWITCHBOARD
FLUOR.	FLUORESCENT	TYP	TYPICAL
GND	GROUND	U/G	UNDER GROUND
GPR	GROUND PENETRATING RADAR	U.L.	UNDERWRITERS LABORATORIES
IG	ISOLATED GROUND	UON	UNLESS OTHERWISE NOTED
JB	JUNCTION BOX	VOLT	VOLTAGE
KAIC	THOUSAND AMPERE INTERRUPTING CAPACITY	W	WATT
KCMIL	THOUSAND CIRCULAR MILL	WMATA	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
KVA	KILOVOLT AMPERE	WP	WEATHERPROOF

DRAWING INDEX

G03-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
G03-E-101	ADDISON ROAD - KIOSK - POWER
G03-E-102	ADDISON ROAD - PANEL SCHEDULE
G03-E-301	ADDISON ROAD - PANELBOARD IMAGE
MM-G-E11	ADDISON ROAD - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

	QUADRUPEX RECEPTACLE OUTLET- 20A, 125V WALL MOUNTED.
	JUNCTION BOX - SURFACE MOUNTED ON UNISTRUT CHANNEL
	CONDUIT - CONCEALED IN UNDER FLOOR DUCT U.O.N.
	HOMERUN TO PANEL, NUMBER OF ARROWHEADS INDICATES NUMBER OF CIRCUITS. CROSS HATCHING INDICATES NUMBER OF CONDUCTORS, NUMBER INDICATES SIZE OF CONDUCTOR AND SIZE OF CONDUIT
	INDICATES GROUNDING WIRE TO GROUNDING BUS AT THE PANELBOARD
	INDICATES CIRCUIT HOME RUN PANELBOARD AND CIRCUIT NUMBER IDENTIFICATION

CONTRACT NO.
14-FQ10060-CENI-24

	DESIGNED	DATE	REFERENCE DRAWINGS		REVISIONS	
			NUMBER	DESCRIPTION	DATE	DESCRIPTION
DESIGNED	C. NGO	09-14				
		DATE				
DRAWN	C. NGO	09-14				
		DATE				
CHECKED	B. IDILBI	09-14				
		DATE				
APPROVED	N/A					
		DATE				

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

APPROVED

GFP A Gannett Fleming/Parsons JOINT VENTURE

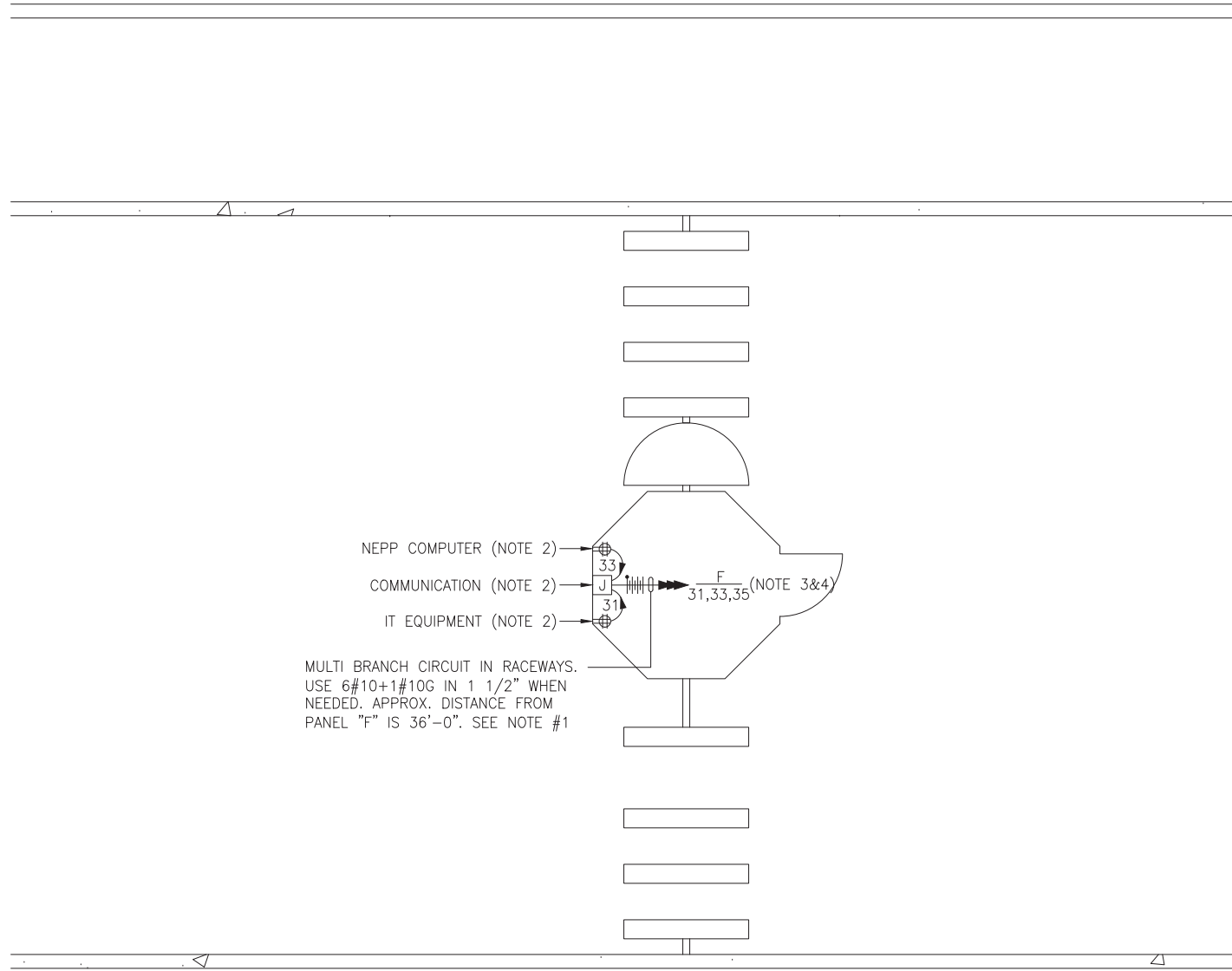
SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS

ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST

SCALE: NOT TO SCALE

DRAWING NO. G03-E-001



NEPP COMPUTER (NOTE 2)

COMMUNICATION (NOTE 2)

IT EQUIPMENT (NOTE 2)

MULTI BRANCH CIRCUIT IN RACEWAYS.
USE 6#10+1#10G IN 1 1/2" WHEN
NEEDED. APPROX. DISTANCE FROM
PANEL "F" IS 36'-0". SEE NOTE #1

KIOSK - POWER
SCALE: 1/4" = 1'- 0"

DRAWING NOTES:

1. CONTRACTOR TO REFER TO SUPPLEMENTAL MEZZANINE INSPECTION REPORT, VOLUME 4 FURNISHED UNDER THIS SOLICITATION PACKAGE TO BE INFORMED THAT THE TOTAL LENGTH OF THE MULTI WIRE BRANCH CIRCUIT DEPICTED IN THE ELECTRICAL PLAN MAY EITHER CONSIST OF EXISTING POWER UNDER FLOOR DUCTS; OR IT COULD BE ALL CONDUIT RUN USING RIGID GALVANIZED STEEL CONDUITS; OR A COMBINATION OF BOTH WHICH IS RIGID GALVANIZED STEEL CONDUITS AND FLOOR DUCTS AND/OR JUST USE OF POWER FLOOR DUCT OR DEEMED REQUIRED IN THE REPORT.
2. COORDINATE WITH WMATA WHERE EXACTLY THE DUPLEX RECEPTACLE OUTLET AND JUNCTION BOX WILL BE INSTALLED IN THE KIOSK.
3. PROVIDE 3-NEW 20A, 1P CIRCUIT BREAKER AT EXISTING PANELBOARD AVAILABLE CIRCUIT BREAKER SPACES. NEW CIRCUIT BREAKERS SHALL MATCH EXISTING PANELBOARD CIRCUIT BREAKER AIC RATING. TERMINATE 2-NEW BRANCH CIRCUITS TO NEWLY INSTALLED CIRCUIT BREAKERS AND CONNECT PERMANENTLY TO QUAD RECEPTACLE OUTLETS LOCATED IN THE KIOSK. KEEP AND COILED REMAINING BRANCH CIRCUIT IN THE PANELBOARD AND INSIDE THE JUNCTION BOX AT THE KIOSK FOR FUTURE USE. UPDATE PANELBOARD DIRECTORY TO MANIFEST PANELBOARD ADDITIONAL LOADS.
4. THE REMAINING BRANCH CIRCUIT FOR FUTURE AFC FARE GATE APPLICATION SHALL BE SECURED, LABELED AND COILED AT THE KIOSK. THE LENGTH OF COILED PIGTAIL SHALL BE THE FARTHEST FARE GATE DISTANCE FROM KIOSK PLUS AN EXTRA 6'-0" CONDUCTOR.

SAFETY PRECAUTION:

1. ALL WORK SHALL COMPLY WITH WMATA SAFETY RULES, AND DE-ENERGIZATION POLICIES.

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO 09-14
DATE
DRAWN C. NGO 09-14
DATE
CHECKED B. IDILBI 09-14
DATE
APPROVED N/A
DATE

REFERENCE DRAWINGS	
NUMBER	DESCRIPTION

REVISIONS		
DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE
AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM



APPROVED *[Signature]*

SUBMITTED _____
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
ADDISON ROAD
KIOSK - POWER

SCALE
AS SHOWN

DRAWING NO.
G03-E-101

EXISTING PANEL "F"

AMPERES: 225	VOLTS: 120/208	MOUNTING: SURFACE
MAINS: 225A MLO	PHASE: 3	LOCATION: ROOM #207
RATING: 10K AIC	WIRE: 4	SECTION: 1 OF 1

LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	POLE	AMP	KVA	LOAD DESCRIPTION	
		AMP	POLE	NO.						
EXIST. LOAD CENTER "KES"	2.7	30	3	1	A - -	2	1	20	0.8	EXISTING VENDOR
	2.5	-	-	3	- B -	4	1	20	0.8	EXISTING VENDOR
	2.5	-	-	5	- - C	6	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	7	A - -	8	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	9	- B -	10	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	11	- - C	12	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	13	A - -	14	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	15	- B -	16	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	17	- - C	18	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	19	A - -	20	1	20	0.8	EXISTING VENDOR
SPACE	0.0	-	-	21	- B -	22	-	-	0.0	SPACE
SPACE	0.0	-	-	23	- - C	24	-	-	0.0	SPACE
SPACE	0.0	-	-	25	A - -	26	-	-	0.0	SPACE
EXISTING VENDOR	0.8	20	1	27	- B -	28	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	29	- - C	30	1	20	0.8	EXISTING VENDOR
NEW KIOSK RECEPT. (IT/NCS)	0.8	20	1	31	A - -	32	1	20	0.0	SPARE
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	33	- B -	34	1	20	0.0	SPARE
FUTURE AFC FARE GATE	0.0	20	1	35	- - C	36	1	20	0.0	SPARE
SPARE	0.0	20	1	37	A - -	38	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	39	- B -	40	1	20	0.0	SPARE
SPACE	0.0	-	-	41	- - C	42	-	-	0.0	SPACE
SPACE	0.0	-	-	43	A - -	44	-	-	0.0	SPACE
SPACE	0.0	-	-	45	- B -	46	-	-	0.0	SPACE
SPACE	0.0	-	-	47	- - C	48	-	-	0.0	SPACE

LOAD SUMMARY

LIGHTS	0.0 x 125%	0.0 KVA
RECEPTACLES, FIRST 10 KVA	10.0 x 100%	10.0 KVA
RECEPTACLES	7.8 x 50%	3.9 KVA
MISC. APPLIANCES	0.0 x 100%	0.0 KVA
LARGEST MOTOR	0.0 x 125%	0.0 KVA
MOTORS	0.0 x 100%	0.0 KVA
HEAT	3.0 x 125%	3.8 KVA
AC	4.5 x 100%	4.5 KVA
WATER HEATING	0.0 x 125%	0.0 KVA
TOTAL CONNECTED LOAD	25.3 KVA	TOTAL DEMAND KVA 22.2 KVA
		TOTAL DEMAND AMPS 61.5 AMPS
CONNECTED LOAD PHASE SUMMARY		
PHASE A:	8.3 KVA	
PHASE B:	9.7 KVA	
PHASE C:	8.1 KVA	

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	09-14 DATE	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	09-14 DATE					
CHECKED	B. IDILBI	09-14 DATE					
APPROVED	N/A	DATE					

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE
AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM



APPROVED *[Signature]*

SUBMITTED _____
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
ADDISON ROAD
PANEL SCHEDULE

SCALE
NOT TO SCALE

DRAWING NO.
G03-E-102

ELECTRICAL SPECIFICATIONS

1. ALL WORK, MATERIAL AND EQUIPMENT SHALL COMPLY WITH THE LATEST NATIONAL ELECTRICAL CODE BEING USED BY THE LOCAL JURISDICTION AND SHALL COMPLY WITH ALL LOCAL CODES AND ORDINANCES.
2. MATERIALS AND EQUIPMENT SHALL BE NEW EXCEPT WHERE INDICATED OTHERWISE. ALL OTHER WIRING DEVICES, CONDUIT, WIRE, ETC. SHALL BE NEW UNLESS NOTED OTHERWISE.
3. ALL MATERIALS AND EQUIPMENT SHALL BEAR U.L. LISTING.
4. MAINTAIN GROUNDING CONTINUITY TO ALL DEVICES AND EQUIPMENT IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
5. WORK NOT SPECIFICALLY SPECIFIED OR INDICATED SHALL CONFORM WITH SPECIFICATIONS.
6. ALL CONDUITS SHALL BE RUN CONCEALED IN UNDER FLOOR DUCT.
7. ALL WIRE AND CABLE SHALL BE COPPER HAVING 600 VOLTS XHHW-2 OR RHW-2 INSULATIONS. PROVIDE #12 WIRE MINIMUM, UNLESS OTHERWISE NOTED. ALL CABLES SHALL BE LOW SMOKE ZERO HALOGEN CABLE.
8. THE CONTRACTOR SHALL VISIT THE SITE AND EXAMINE THE CONDITION OF THE PREMISES AND THE CHARACTER AND EXTENT OF WORK REQUIRED PRIOR TO SUBMISSION OF BIDS.
9. OBTAIN ALL PERMITS AND PAY ALL FEES NECESSARY FOR INSPECTIONS, TESTS & OTHER SERVICES REQUIRED FOR THE COMPLETION OF THIS WORK.
10. ALL WORK SHALL BE DONE AT SUCH TIMES AND IN SUCH A MANNER THAT WILL LEAST INTERFERE WITH THE MAINTENANCE AND OPERATION OF ALL RELATED OR AFFECTED SYSTEMS. COORDINATE ALL POWER OUTAGES WITH WMATA PROJECT MANAGER.
11. IT IS THE INTENT OF THESE DRAWINGS AND OTHER RELATED DOCUMENTS TO PRODUCE A COMPLETE AND FUNCTIONING ELECTRICAL SYSTEM. PROVIDE ALL LABOR, MATERIAL AND OTHER SERVICES NECESSARY TO ACHIEVE THIS PRODUCT. NOTIFY THE ENGINEER OF ANY DISCREPANCIES IN THE PLANS & SPECIFICATIONS THAT WILL AFFECT THE WORK, PRIOR TO SUBMISSION OF THE BID PRICE.
12. IF, DURING THE COURSE OF THE WORK, THE CONTRACTOR EXPERIENCES A CONFLICT RELATIVE TO THE PLANS AND SPECIFICATIONS, THE NEC OR OTHER APPLICABLE CODES AND GOVERNING DOCUMENTS, HE SHALL NOTIFY THE ENGINEER FOR DIRECTION PRIOR TO EXECUTION OF THIS WORK. ANY WORK INSTALLED IN VIOLATION OF THE CONTRACT DOCUMENT OR APPLICABLE CODES WHICH COULD HAVE BEEN AVOIDED BY CONTACTING THE ENGINEER SHALL BE RECTIFIED AT NO ADDITIONAL COST.
13. ELECTRICAL PLANS ARE DIAGRAMMATIC & INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE CONDITIONS, ETC. MAINTAIN WORKING CLEARANCES.
14. CIRCUIT NUMBERS ARE FOR IDENTIFICATION PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR CORRECTLY PHASING THE CIRCUITS IN THE PANEL AND SHALL BALANCE THE LOAD ON THE PHASES UNDER NORMAL OPERATING CONDITIONS. PROVIDE TYPEWRITTEN PANELBOARD DIRECTORIES. BALANCE THE PHASE LOADS TO WITHIN 20 PERCENT OF EACH OTHER.

15. INCREASE ALL BRANCH CIRCUIT CONDUCTORS TO THE NEXT LARGER SIZE FROM THE PANEL TO THE FIRST OUTLET WHERE THE LENGTH OF THE HOMERUN EXCEEDS 100FT. ON 120/208V CIRCUITS.
16. PROVIDE A PULLWIRE OR FISHTAPE/CORD IN ALL EMPTY CONDUIT RUNS.
17. VERIFY WIRE SIZES, CIRCUIT BREAKERS AND FUSES RATINGS FOR ALL EQUIPMENT, AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES AFFECTING THE WORK PRIOR TO PROCEEDING.
18. ALL PANELS IMPACTED BY THIS PROJECT SHALL BE PROVIDED WITH NEW, UPDATED TYPEWRITTEN PANEL SCHEDULES (FOR NEW AND EXISTING CIRCUITS) INDICATING THE FINAL ROOM NUMBER AND THE EQUIPMENT OR DEVICES SERVED BY THE CIRCUITS.
19. DEMOLITION OF EXISTING WORK SHALL BE PERFORMED AFTER HOURS. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE WMATA PROJECT MANAGER PRIOR TO PERFORMING ALL THE WORK. THE TIME OF DAY OR EVENING SHALL BE DESIGNATED BY THE WMATA PROJECT MANAGER.
20. ALL WIRING SHALL BE IN CONDUIT, MINIMUM SIZE 3/4 INCH WITH LARGER SIZES AS INDICATED OR REQUIRED BY NEC. ALL CONDUITS SHALL BE RIGID GALVANIZED STEEL THREADED COUPLING FOR COMPLETE WATER PROOF INSTALLATION.
21. AT JOB COMPLETION, AND BEFORE FINAL ACCEPTANCE BY WMATA, TEST EACH RECEPTACLE AND PANELBOARD FOR PROPER OPERATION. WIRING SHALL BE TESTED FOR CONTINUITY, SHORTS, ETC... ALL WORK AREAS, ETC.. SHALL BE CLEANED AT THE COMPLETION OF THIS PROJECT.
22. FOR DEVICE IDENTIFICATION, THE ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELBOARDS, JUNCTION BOXES, ETC..TO INDICATE THE NAME, VOLTAGE, SERVING EQUIPMENT AND ITEM SERVED ETC... LABELS FOR EMERGENCY CIRCUITS SHALL BE IN RED, NORMAL CIRCUITS SHALL BE IN BLACK. ALL DEVICES SHALL BE IDENTIFIED EITHER ON THE FACE OF THE COVERPLATE OR INSIDE PER WMATA PREFERENCE. ALL JUNCTION BOXES SHALL BE LABELED TO INDICATE THE CIRCUITS CONTAINED BY THE JUNCTION BOX.
23. THE CONTRACTOR SHALL UPDATE THE SCHEDULES OF ALL PANELBOARDS AFFECTED BY THIS PROJECT TO REFLECT CHANGES DUE TO THE PROJECT WORK. PANEL SCHEDULE LOAD DESCRIPTIONS ARE TO INCLUDE THE FINAL ROOM OR AREA NUMBERS.
24. INCLUDE GPR FOR ANY CORE DRILLS OR DRILLED PENETRATIONS IN ANY WALLS.
25. SEAL OFF ALL PENETRATIONS THRU WALLS/FLOORS.
26. THE CONTRACTOR SHALL BECOME FAMILIAR WITH WMATA DESIGN CRITERIA SECTION 4 AND SECTION 13; WMATA SPECIFICATION SECTION 16120, 16130, AND 16125. ALL INSTALLATION SHALL BE IN COMPLIANCE WITH THE NEC, WMATA DESIGN CRITERIA, AND SPECIFICATIONS.
27. THE CONTRACTOR SHALL IDENTIFY SPARE CIRCUIT WITH "RESERVED FOR AFC".
28. EXISTING SWITCHBOARDS, PANELBOARDS AND EQUIPMENT SHOWN IS BASED ON RECORD DRAWINGS AND CASUAL FIELD SURVEY. CONTRACTOR SHALL VERIFY ALL ELECTRICAL EQUIPMENT IN FIELD.

ABBREVIATIONS

A, AMP	AMPERES	NEC	NATIONAL ELECTRIC CODE
AC	ALTERNATING CURRENT	P	POLE
AF	AMPERE FRAME	PH	PHASE
AFC	AUTOMATED FARE COLLECTION SYSTEM	PNL	PANELBOARD
AFF	ABOVE FINISHED FLOOR	PRI	PRIMARY
AIC	AMPERE INTERRUPTING CAPACITY	PROP	PROPOSED
AT	AMPERE TRIP	RGS	RIGID GALVANIZED STEEL
BKR	BREAKER	SEC	SECONDARY
C	CONDUIT	SHT	SHEET
CB	CIRCUIT BREAKER	SW	SWITCH
CCT	CIRCUIT	SWBD	SWITCHBOARD
CL	CENTER LINE	TYP	TYPICAL
CLG	CEILING	U/G	UNDER GROUND
CONST	CONSTRUCTION	U.L.	UNDERWRITERS LABORATORIES
DISC	DISCONNECT	UON	UNLESS OTHERWISE NOTED
E	ELECTRICAL	VOLT	VOLTAGE
GND	GROUND	W	WATT
JB	JUNCTION BOX	WMATA	WASHINGTON METROPOLITIAN AREA TRANSIT AUTHORITY
KAIC	THOUSAND AMPERE INTERRUPTING CAPACITY	WP	WEATHERPROOF
KCMIL	THOUSAND CIRCULAR MILL		
KVA	KILOVOLT AMPERE		
MAX	MAXIMUM		
MCA	MINIMUM CIRCUIT AMPERE		
MCB	MAIN CIRCUIT BREAKER		
MEZZ	MEZZANINE		
MIN	MINIMUM		
MLO	MAIN LUGS ONLY		

DRAWING INDEX

G04-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
G04-E-101	MORGAN BOULEVARD - KIOSK - POWER
G04-E-102	MORGAN BOULEVARD - PANEL SCHEDULE
MM-G-E15	MORGAN BOULEVARD - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

	QUADRUPEX RECEPTACLE OUTLET- 20A, 125V WALL MOUNTED.
	JUNCTION BOX - SURFACE MOUNTED ON UNISTRUT CHANNEL
	CONDUIT - CONCEALED IN UNDER FLOOR DUCT U.O.N.
	HOMERUN TO PANEL, NUMBER OF ARROWHEADS INDICATES NUMBER OF CIRCUITS. CROSS HATCHING INDICATES NUMBER OF CONDUCTORS, NUMBER INDICATES SIZE OF CONDUCTOR AND SIZE OF CONDUIT
	↓ - INDICATES GROUNDING WIRE TO GROUNDING BUS AT THE PANELBOARD
	EF 1,3 - INDICATES CIRCUIT HOME RUN PANELBOARD AND CIRCUIT NUMBER IDENTIFICATION

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	09-14	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	09-14					
CHECKED	B. IDILBI	09-14					
APPROVED	N/A						

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM



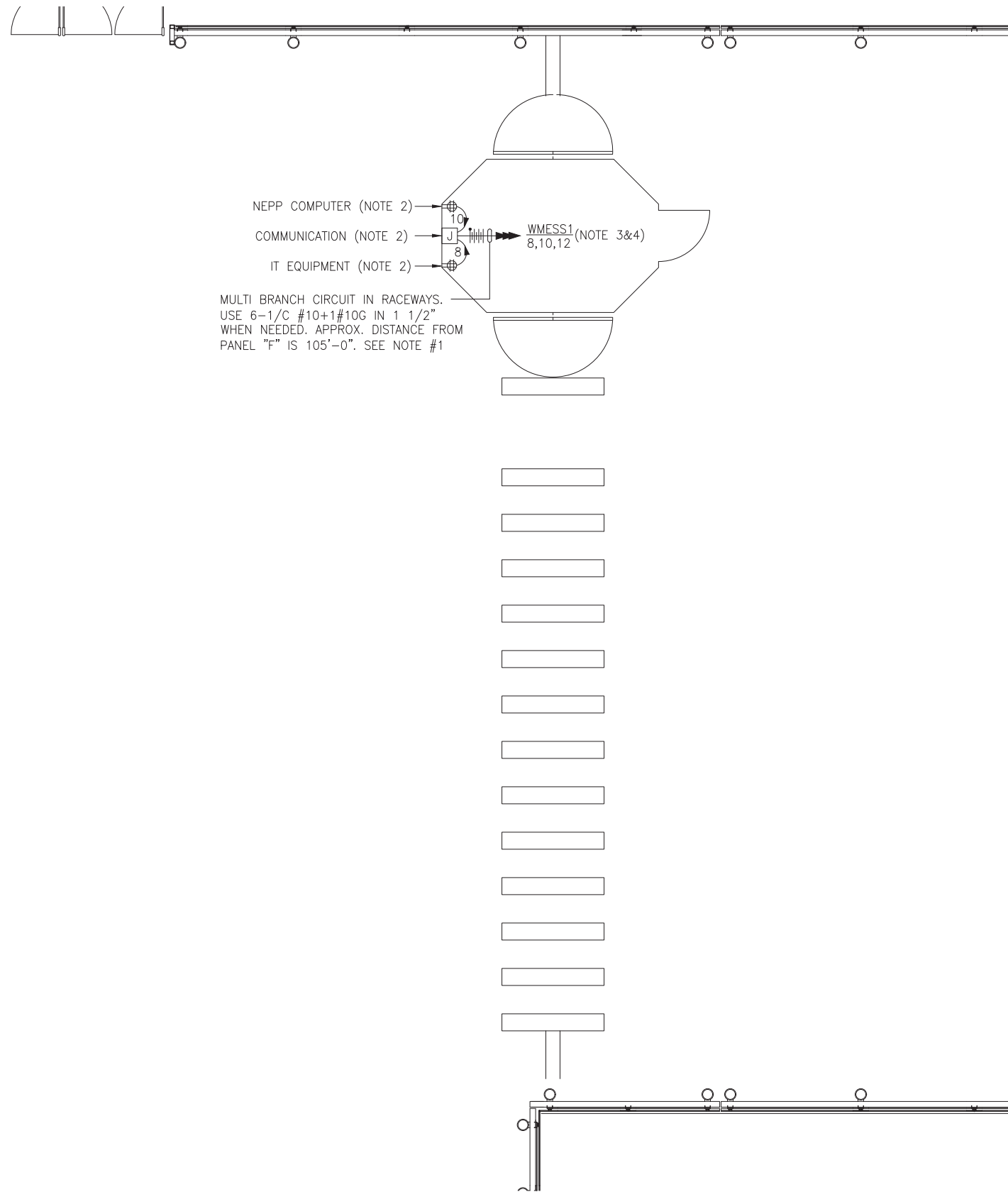
APPROVED _____

SUBMITTED _____
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
ABBREVIATIONS □ DRAWING INDEX □
SPECIFICATIONS □ SYMBOL LIST

SCALE
NOT TO SCALE

DRAWING NO.
G04-E-001



NEPP COMPUTER (NOTE 2) → 10
 COMMUNICATION (NOTE 2) → 8
 IT EQUIPMENT (NOTE 2) → 8

WMESS1 (NOTE 3&4)
 8, 10, 12

MULTI BRANCH CIRCUIT IN RACEWAYS.
 USE 6-1/C #10+1#10G IN 1 1/2"
 WHEN NEEDED. APPROX. DISTANCE FROM
 PANEL "F" IS 105'-0". SEE NOTE #1

KIOSK - POWER
 SCALE: 1/4" = 1'- 0"

DRAWING NOTES:

1. CONTRACTOR TO REFER TO SUPPLEMENTAL MEZZANINE INSPECTION REPORT, VOLUME 4 FURNISHED UNDER THIS SOLICITATION PACKAGE TO BE INFORMED THAT THE TOTAL LENGTH OF THE MULTI WIRE BRANCH CIRCUIT DEPICTED IN THE ELECTRICAL PLAN MAY EITHER CONSIST OF EXISTING POWER UNDER FLOOR DUCTS; OR IT COULD BE ALL CONDUIT RUN USING RIGID GALVANIZED STEEL CONDUITS; OR A COMBINATION OF BOTH WHICH IS RIGID GALVANIZED STEEL CONDUITS AND FLOOR DUCTS AND/OR JUST USE OF POWER FLOOR DUCT OR DEEMED REQUIRED IN THE REPORT.
2. COORDINATE WITH WMATA WHERE EXACTLY THE DUPLEX RECEPTACLE OUTLET AND JUNCTION BOX WILL BE INSTALLED IN THE KIOSK.
3. PROVIDE 3-NEW 20A, 1P CIRCUIT BREAKER AT EXISTING PANELBOARD AVAILABLE CIRCUIT BREAKER SPACES. NEW CIRCUIT BREAKERS SHALL MATCH EXISTING PANELBOARD CIRCUIT BREAKER AIC RATING. TERMINATE 2-NEW BRANCH CIRCUITS TO NEWLY INSTALLED CIRCUIT BREAKERS AND CONNECT PERMANENTLY TO QUAD RECEPTACLE OUTLETS LOCATED IN THE KIOSK. KEEP AND COILED REMAINING BRANCH CIRCUIT IN THE PANELBOARD AND INSIDE THE JUNCTION BOX AT THE KIOSK FOR FUTURE USE. UPDATE PANELBOARD DIRECTORY TO MANIFEST PANELBOARD ADDITIONAL LOADS.
4. THE REMAINING BRANCH CIRCUIT FOR FUTURE AFC FARE GATE APPLICATION SHALL BE SECURED, LABELED AND COILED AT THE KIOSK. THE LENGTH OF COILED PIGTAIL SHALL BE THE FARTHEST FARE GATE DISTANCE FROM KIOSK PLUS AN EXTRA 6'-0" CONDUCTOR.

SAFETY PRECAUTION:

1. ALL WORK SHALL COMPLY WITH WMATA SAFETY RULES, AND DE-ENERGIZATION POLICIES.

CONTRACT NO.
 14-FQ10060-CENI-24

DESIGNED C. NGO 09-14
 DATE
 DRAWN C. NGO 09-14
 DATE
 CHECKED B. IDILBI 09-14
 DATE
 APPROVED N/A
 DATE

REFERENCE DRAWINGS	
NUMBER	DESCRIPTION

REVISIONS		
DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
 DEPARTMENT OF TRANSIT INFRASTRUCTURE
 AND ENGINEERING SERVICES
 OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

APPROVED *[Signature]*

SUBMITTED _____
 PROJECT MANAGER



NEW ELECTRONIC PAY PROGRAM (NEPP)
 IN METRORAIL STATIONS
 MORGAN BOULEVARD
 KIOSK - POWER

SCALE
 AS SHOWN

DRAWING NO.
 G04-E-101

EXISTING PANEL "WMESS1"

AMPERES: 250		VOLTS: 120/208		MOUNTING: SURFACE						
MAINS: 250A MCB		PHASE: 3		LOCATION: ELECTRICAL ROOM 205						
RATING: 10K AIC		WIRE: 4		SECTION: 1 OF 1						
LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	CKT BKRS			LOAD DESCRIPTION	
		AMP	POLE	NO.		POLE	AMP	KVA		
SPARE	0.0	20	1	1	A - -	2	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	3	- B -	4	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	5	- - C	6	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	7	A - -	8	1	20	0.8	NEW KIOSK RECEPT. (IT/NCS)
EXISTING VENDOR	0.8	20	1	9	- B -	10	1	20	0.8	NEW KIOSK RECEPT. (NEPP/SOC)
EXISTING VENDOR	0.8	20	1	11	- - C	12	1	20	0.0	FUTURE AFC FARE GATE
EXISTING VENDOR	0.8	20	1	13	A - -	14	1	20	0.0	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	15	- B -	16	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	17	- - C	18	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	19	A - -	20	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	21	- B -	22	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	23	- - C	24	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	25	A - -	26	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	27	- B -	28	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	29	- - C	30	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	31	A - -	32	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	33	- B -	34	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	35	- - C	36	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	37	A - -	38	3	40	3.3	EXIST. KIOSK LOAD CENTER "KES"
EXISTING VENDOR	0.8	20	1	39	- B -	40	-	-	2.5	
EXISTING VENDOR	0.8	20	1	41	- - C	42	-	-	2.5	

LOAD SUMMARY

LIGHTS	0.0 x 125%	0.0 KVA
RECEPTACLES, FIRST 10 KVA	10.0 x 100%	10.0 KVA
RECEPTACLES	17.2 x 50%	8.6 KVA
MISC. APPLIANCES	0.0 x 100%	0.0 KVA
LARGEST MOTOR	0.0 x 125%	0.0 KVA
MOTORS	0.0 x 100%	0.0 KVA
HEAT	3.0 x 125%	3.8 KVA
AC	4.5 x 100%	4.5 KVA
WATER HEATING	0.0 x 125%	0.0 KVA
TOTAL CONNECTED LOAD	34.7 KVA	TOTAL DEMAND KVA 26.9 KVA
		TOTAL DEMAND AMPS 74.6 AMPS
CONNECTED LOAD PHASE SUMMARY		
PHASE A:	12.1 KVA	
PHASE B:	12.1 KVA	
PHASE C:	11.3 KVA	

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED <u>C. NGO</u>	09-14	REFERENCE DRAWINGS		REVISIONS	
	DATE	NUMBER	DESCRIPTION	DATE	BY
DRAWN <u>C. NGO</u>	09-14				
	DATE				
CHECKED <u>B. IDILBI</u>	09-14				
	DATE				
APPROVED <u>N/A</u>					
	DATE				

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE
AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

APPROVED

A Gannett Fleming/Parsons
JOINT VENTURE

SUBMITTED _____
PROJECT MANAGER

**NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS**

MORGAN BOULEVARD
PANEL SCHEDULE

SCALE
NOT TO SCALE

DRAWING NO.
G04-E-102

ELECTRICAL SPECIFICATIONS

1. ALL WORK, MATERIAL AND EQUIPMENT SHALL COMPLY WITH THE LATEST NATIONAL ELECTRICAL CODE BEING USED BY THE LOCAL JURISDICTION AND SHALL COMPLY WITH ALL LOCAL CODES AND ORDINANCES.
2. MATERIALS AND EQUIPMENT SHALL BE NEW EXCEPT WHERE INDICATED OTHERWISE. ALL OTHER WIRING DEVICES, CONDUIT, WIRE, ETC. SHALL BE NEW UNLESS NOTED OTHERWISE.
3. ALL MATERIALS AND EQUIPMENT SHALL BEAR U.L. LISTING.
4. MAINTAIN GROUNDING CONTINUITY TO ALL DEVICES AND EQUIPMENT IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
5. WORK NOT SPECIFICALLY SPECIFIED OR INDICATED SHALL CONFORM WITH SPECIFICATIONS.
6. ALL CONDUITS SHALL BE RUN CONCEALED IN UNDER FLOOR DUCT.
7. ALL WIRE AND CABLE SHALL BE COPPER HAVING 600 VOLTS XHHW-2 OR RHW-2 INSULATIONS. PROVIDE #12 WIRE MINIMUM, UNLESS OTHERWISE NOTED. ALL CABLES SHALL BE LOW SMOKE ZERO HALOGEN CABLE.
8. THE CONTRACTOR SHALL VISIT THE SITE AND EXAMINE THE CONDITION OF THE PREMISES AND THE CHARACTER AND EXTENT OF WORK REQUIRED PRIOR TO SUBMISSION OF BIDS.
9. OBTAIN ALL PERMITS AND PAY ALL FEES NECESSARY FOR INSPECTIONS, TESTS & OTHER SERVICES REQUIRED FOR THE COMPLETION OF THIS WORK.
10. ALL WORK SHALL BE DONE AT SUCH TIMES AND IN SUCH A MANNER THAT WILL LEAST INTERFERE WITH THE MAINTENANCE AND OPERATION OF ALL RELATED OR AFFECTED SYSTEMS. COORDINATE ALL POWER OUTAGES WITH WMATA PROJECT MANAGER.
11. IT IS THE INTENT OF THESE DRAWINGS AND OTHER RELATED DOCUMENTS TO PRODUCE A COMPLETE AND FUNCTIONING ELECTRICAL SYSTEM. PROVIDE ALL LABOR, MATERIAL AND OTHER SERVICES NECESSARY TO ACHIEVE THIS PRODUCT. NOTIFY THE ENGINEER OF ANY DISCREPANCIES IN THE PLANS & SPECIFICATIONS THAT WILL AFFECT THE WORK, PRIOR TO SUBMISSION OF THE BID PRICE.
12. IF, DURING THE COURSE OF THE WORK, THE CONTRACTOR EXPERIENCES A CONFLICT RELATIVE TO THE PLANS AND SPECIFICATIONS, THE NEC OR OTHER APPLICABLE CODES AND GOVERNING DOCUMENTS, HE SHALL NOTIFY THE ENGINEER FOR DIRECTION PRIOR TO EXECUTION OF THIS WORK. ANY WORK INSTALLED IN VIOLATION OF THE CONTRACT DOCUMENT OR APPLICABLE CODES WHICH COULD HAVE BEEN AVOIDED BY CONTACTING THE ENGINEER SHALL BE RECTIFIED AT NO ADDITIONAL COST.
13. ELECTRICAL PLANS ARE DIAGRAMMATIC & INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE CONDITIONS, ETC. MAINTAIN WORKING CLEARANCES.
14. CIRCUIT NUMBERS ARE FOR IDENTIFICATION PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR CORRECTLY PHASING THE CIRCUITS IN THE PANEL AND SHALL BALANCE THE LOAD ON THE PHASES UNDER NORMAL OPERATING CONDITIONS. PROVIDE TYPEWRITTEN PANELBOARD DIRECTORIES. BALANCE THE PHASE LOADS TO WITHIN 20 PERCENT OF EACH OTHER.

15. INCREASE ALL BRANCH CIRCUIT CONDUCTORS TO THE NEXT LARGER SIZE FROM THE PANEL TO THE FIRST OUTLET WHERE THE LENGTH OF THE HOMERUN EXCEEDS 100FT. ON 120/208V CIRCUITS.
16. PROVIDE A PULLWIRE OR FISHTAPE/CORD IN ALL EMPTY CONDUIT RUNS.
17. VERIFY WIRE SIZES, CIRCUIT BREAKERS AND FUSES RATINGS FOR ALL EQUIPMENT, AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES AFFECTING THE WORK PRIOR TO PROCEEDING.
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21. AT JOB COMPLETION, AND BEFORE FINAL ACCEPTANCE BY WMATA, TEST EACH RECEPTACLE AND PANELBOARD FOR PROPER OPERATION. WIRING SHALL BE TESTED FOR CONTINUITY, SHORTS, ETC... ALL WORK AREAS, ETC.. SHALL BE CLEANED AT THE COMPLETION OF THIS PROJECT.
22. FOR DEVICE IDENTIFICATION, THE ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELBOARDS, JUNCTION BOXES, ETC..TO INDICATE THE NAME, VOLTAGE, SERVING EQUIPMENT AND ITEM SERVED ETC... LABELS FOR EMERGENCY CIRCUITS SHALL BE IN RED, NORMAL CIRCUITS SHALL BE IN BLACK. ALL DEVICES SHALL BE IDENTIFIED EITHER ON THE FACE OF THE COVERPLATE OR INSIDE PER WMATA PREFERENCE. ALL JUNCTION BOXES SHALL BE LABELED TO INDICATE THE CIRCUITS CONTAINED BY THE JUNCTION BOX.
23. THE CONTRACTOR SHALL UPDATE THE SCHEDULES OF ALL PANELBOARDS AFFECTED BY THIS PROJECT TO REFLECT CHANGES DUE TO THE PROJECT WORK. PANEL SCHEDULE LOAD DESCRIPTIONS ARE TO INCLUDE THE FINAL ROOM OR AREA NUMBERS.
24. INCLUDE GPR FOR ANY CORE DRILLS OR DRILLED PENETRATIONS IN ANY WALLS.
25. SEAL OFF ALL PENETRATIONS THRU WALLS/FLOORS.
26. THE CONTRACTOR SHALL BECOME FAMILIAR WITH WMATA DESIGN CRITERIA SECTION 4 AND SECTION 13; WMATA SPECIFICATION SECTION 16120, 16130, AND 16125. ALL INSTALLATION SHALL BE IN COMPLIANCE WITH THE NEC, WMATA DESIGN CRITERIA, AND SPECIFICATIONS.
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ABBREVIATIONS

A, AMP	AMPERES	NEC	NATIONAL ELECTRIC CODE
AC	ALTERNATING CURRENT	P	POLE
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DRAWING INDEX

G05-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
G05-E-101	LARGO TOWN CENTER - KIOSK - POWER
G05-E-102	LARGO TOWN CENTER - PANEL SCHEDULE
MM-G-E21	LARGO TOWN CENTER - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

	QUADRUPEX RECEPTACLE OUTLET- 20A, 125V WALL MOUNTED.
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	CONDUIT - CONCEALED IN UNDER FLOOR DUCT U.O.N.
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14-FQ10060-CENI-24

DESIGNED	C. NGO	09-14	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	09-14					
CHECKED	B. IDILBI	09-14					
APPROVED	N/A						

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM



APPROVED _____

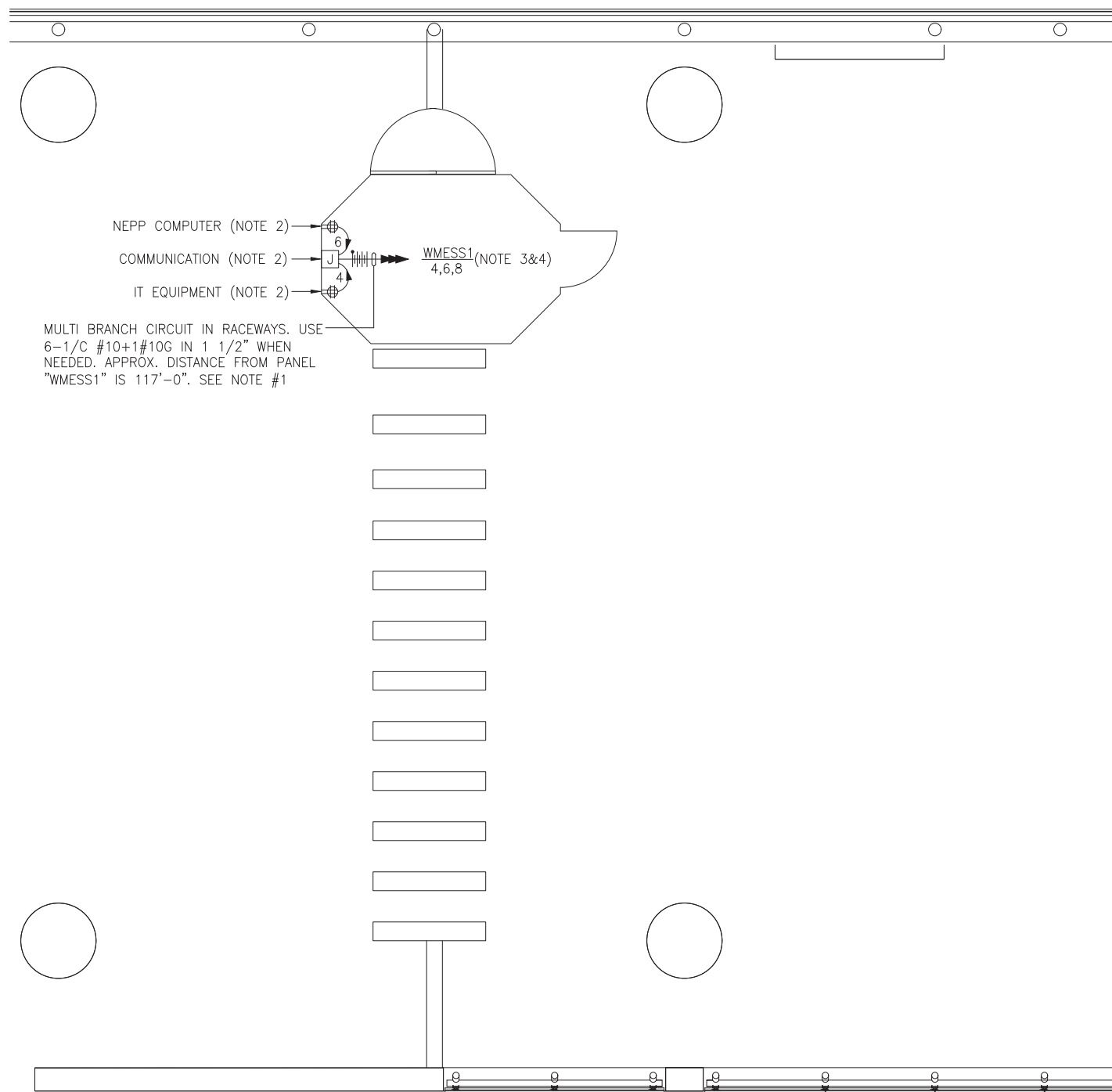
SUBMITTED _____
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS

ABBREVIATIONS □ DRAWING INDEX □
SPECIFICATIONS □ SYMBOL LIST

SCALE
NOT TO SCALE

DRAWING NO.
G05-E-001



MULTI BRANCH CIRCUIT IN RACEWAYS. USE 6-1/C #10+1#10G IN 1 1/2" WHEN NEEDED. APPROX. DISTANCE FROM PANEL "WMESS1" IS 117'-0". SEE NOTE #1

KIOSK - POWER

SCALE: 1/4" = 1'- 0"

DRAWING NOTES:

1. CONTRACTOR TO REFER TO SUPPLEMENTAL MEZZANINE INSPECTION REPORT, VOLUME 4 FURNISHED UNDER THIS SOLICITATION PACKAGE TO BE INFORMED THAT THE TOTAL LENGTH OF THE MULTI WIRE BRANCH CIRCUIT DEPICTED IN THE ELECTRICAL PLAN MAY EITHER CONSIST OF EXISTING POWER UNDER FLOOR DUCTS; OR IT COULD BE ALL CONDUIT RUN USING RIGID GALVANIZED STEEL CONDUITS; OR A COMBINATION OF BOTH WHICH IS RIGID GALVANIZED STEEL CONDUITS AND FLOOR DUCTS AND/OR JUST USE OF POWER FLOOR DUCT OR DEEMED REQUIRED IN THE REPORT.
2. COORDINATE WITH WMATA WHERE EXACTLY THE DUPLEX RECEPTACLE OUTLET AND JUNCTION BOX WILL BE INSTALLED IN THE KIOSK.
3. PROVIDE 3-NEW 20A, 1P CIRCUIT BREAKER AT EXISTING PANELBOARD AVAILABLE CIRCUIT BREAKER SPACES. NEW CIRCUIT BREAKERS SHALL MATCH EXISTING PANELBOARD CIRCUIT BREAKER AIC RATING. TERMINATE 2-NEW BRANCH CIRCUITS TO NEWLY INSTALLED CIRCUIT BREAKERS AND CONNECT PERMANENTLY TO QUAD RECEPTACLE OUTLETS LOCATED IN THE KIOSK. KEEP AND COILED REMAINING BRANCH CIRCUIT IN THE PANELBOARD AND INSIDE THE JUNCTION BOX AT THE KIOSK FOR FUTURE USE. UPDATE PANELBOARD DIRECTORY TO MANIFEST PANELBOARD ADDITIONAL LOADS.
4. THE REMAINING BRANCH CIRCUIT FOR FUTURE AFC FARE GATE APPLICATION SHALL BE SECURED, LABELED AND COILED AT THE KIOSK. THE LENGTH OF COILED PIGTAIL SHALL BE THE FARTHEST FARE GATE DISTANCE FROM KIOSK PLUS AN EXTRA 6'-0" CONDUCTOR.

SAFETY PRECAUTION:

1. ALL WORK SHALL COMPLY WITH WMATA SAFETY RULES, AND DE-ENERGIZATION POLICIES.

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO 09-14
DATE 09-14
DRAWN C. NGO 09-14
DATE 09-14
CHECKED B. IDILBI 09-14
DATE 09-14
APPROVED N/A
DATE

REFERENCE DRAWINGS	
NUMBER	DESCRIPTION

REVISIONS		
DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE
AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

APPROVED *[Signature]*



SUBMITTED _____
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
LARGO TOWN CENTER
KIOSK - POWER

SCALE AS SHOWN

DRAWING NO. G05-E-101

EXISTING PANEL "WMESS1"

AMPERES: 250	VOLTS: 120/208	MOUNTING: SURFACE
MAINS: 250A MCB	PHASE: 3	LOCATION: FIRE EQUIP. CABINET & SERVICE RM 101
RATING: 10K AIC	WIRE: 4	SECTION: 1 OF 1

LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	POLE	CKT. NO.	CKT BKRS			KVA	LOAD DESCRIPTION
		AMP	POLE	NO.				POLE	AMP	NO.		
EXISTING VENDOR	0.8	20	1	1	A - -	2	1	20	0.8	EXISTING VENDOR		
SPARE	0.0	20	1	3	- B -	4	1	20	0.8	NEW KIOSK RECEPT. (IT/NCS)		
EXISTING VENDOR	0.8	20	1	5	- - C	6	1	20	0.8	NEW KIOSK RECEPT. (NEPP/SOC)		
SPARE	0.0	20	1	7	A - -	8	1	20	0.0	FUTURE AFC FARE GATE		
SPARE	0.0	20	1	9	- B -	10	1	20	0.0	SPARE		
SPARE	0.0	20	1	11	- - C	12	1	20	0.0	SPARE		
SPARE	0.0	20	1	13	A - -	14	1	20	0.8	EXISTING VENDOR		
EXISTING VENDOR	0.8	20	1	15	- B -	16	1	20	0.8	EXISTING VENDOR		
EXISTING VENDOR	0.8	20	1	17	- - C	18	1	20	0.8	EXISTING VENDOR		
EXISTING VENDOR	0.8	20	1	19	A - -	20	1	20	0.8	EXISTING VENDOR		
EXISTING VENDOR	0.8	20	1	21	- B -	22	1	20	0.8	EXISTING VENDOR		
EXISTING VENDOR	0.8	20	1	23	- - C	24	1	20	0.8	EXISTING VENDOR		
EXISTING VENDOR	0.8	20	1	25	A - -	26	1	20	0.8	EXISTING VENDOR		
EXISTING VENDOR	0.8	20	1	27	- B -	28	1	20	0.8	EXISTING VENDOR		
SPARE	0.0	20	1	29	- - C	30	1	20	0.8	EXISTING VENDOR		
EXISTING VENDOR	0.8	20	1	31	A - -	32	1	20	0.8	EXISTING VENDOR		
EXISTING VENDOR	0.8	20	1	33	- B -	34	1	20	0.8	EXISTING VENDOR		
EXISTING VENDOR	0.8	20	1	35	- - C	36	1	20	0.8	EXISTING VENDOR		
EXISTING VENDOR	0.8	20	1	37	A - -	38	3	40	2.9	EXIST. LOAD CENTER "KES"		
EXISTING VENDOR	0.8	20	1	39	- B -	40	-	-	2.5			
SPARE	0.0	20	1	41	- - C	42	-	-	2.5			

LOAD SUMMARY

LIGHTS	0.0 x 125%	0.0 KVA
RECEPTACLES, FIRST 10 KVA	10.0 x 100%	10.0 KVA
RECEPTACLES	12.8 x 50%	6.4 KVA
MISC. APPLIANCES	0.0 x 100%	0.0 KVA
LARGEST MOTOR	0.0 x 125%	0.0 KVA
MOTORS	0.0 x 100%	0.0 KVA
HEAT	0.0 x 125%	0.0 KVA
AC	4.5 x 100%	4.5 KVA
WATER HEATING	3.0 x 125%	3.8 KVA
TOTAL CONNECTED LOAD	30.3 KVA	TOTAL DEMAND KVA 24.7 KVA
		TOTAL DEMAND AMPS 68.5 AMPS

CONNECTED LOAD PHASE SUMMARY

PHASE A:	10.9 KVA
PHASE B:	10.5 KVA
PHASE C:	9.7 KVA

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	09-14 DATE	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	09-14 DATE					
CHECKED	B. IDILBI	09-14 DATE					
APPROVED	N/A	DATE					

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE
AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

APPROVED




SUBMITTED

PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
LARGO TOWN CENTER
PANEL SCHEDULE

SCALE
NOT TO SCALE

DRAWING NO.
G05-E-102

75

ELECTRICAL SPECIFICATIONS

- ALL WORK, MATERIAL AND EQUIPMENT SHALL COMPLY WITH THE LATEST NATIONAL ELECTRICAL CODE BEING USED BY THE LOCAL JURISDICTION AND SHALL COMPLY WITH ALL LOCAL CODES AND ORDINANCES.
- MATERIALS AND EQUIPMENT SHALL BE NEW EXCEPT WHERE INDICATED OTHERWISE. ALL OTHER WIRING DEVICES, CONDUIT, WIRE, ETC. SHALL BE NEW UNLESS NOTED OTHERWISE.
- ALL MATERIALS AND EQUIPMENT SHALL BEAR U.L. LISTING.
- MAINTAIN GROUNDING CONTINUITY TO ALL DEVICES AND EQUIPMENT IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
- WORK NOT SPECIFICALLY SPECIFIED OR INDICATED SHALL CONFORM WITH SPECIFICATIONS.
- ALL CONDUITS SHALL BE RUN CONCEALED IN UNDER FLOOR DUCT.
- ALL WIRE AND CABLE SHALL BE COPPER HAVING 600 VOLTS XHHW-2 OR RHW-2 INSULATIONS. PROVIDE #12 WIRE MINIMUM, UNLESS OTHERWISE NOTED. ALL CABLES SHALL BE LOW SMOKE ZERO HALOGEN CABLE.
- THE CONTRACTOR SHALL VISIT THE SITE AND EXAMINE THE CONDITION OF THE PREMISES AND THE CHARACTER AND EXTENT OF WORK REQUIRED PRIOR TO SUBMISSION OF BIDS.
- OBTAIN ALL PERMITS AND PAY ALL FEES NECESSARY FOR INSPECTIONS, TESTS & OTHER SERVICES REQUIRED FOR THE COMPLETION OF THIS WORK.
- ALL WORK SHALL BE DONE AT SUCH TIMES AND IN SUCH A MANNER THAT WILL LEAST INTERFERE WITH THE MAINTENANCE AND OPERATION OF ALL RELATED OR AFFECTED SYSTEMS. COORDINATE ALL POWER OUTAGES WITH WMATA PROJECT MANAGER.
- IT IS THE INTENT OF THESE DRAWINGS AND OTHER RELATED DOCUMENTS TO PRODUCE A COMPLETE AND FUNCTIONING ELECTRICAL SYSTEM. PROVIDE ALL LABOR, MATERIAL AND OTHER SERVICES NECESSARY TO ACHIEVE THIS PRODUCT. NOTIFY THE ENGINEER OF ANY DISCREPANCIES IN THE PLANS & SPECIFICATIONS THAT WILL AFFECT THE WORK, PRIOR TO SUBMISSION OF THE BID PRICE.
- IF, DURING THE COURSE OF THE WORK, THE CONTRACTOR EXPERIENCES A CONFLICT RELATIVE TO THE PLANS AND SPECIFICATIONS, THE NEC OR OTHER APPLICABLE CODES AND GOVERNING DOCUMENTS, HE SHALL NOTIFY THE ENGINEER FOR DIRECTION PRIOR TO EXECUTION OF THIS WORK. ANY WORK INSTALLED IN VIOLATION OF THE CONTRACT DOCUMENT OR APPLICABLE CODES WHICH COULD HAVE BEEN AVOIDED BY CONTACTING THE ENGINEER SHALL BE RECTIFIED AT NO ADDITIONAL COST.
- ELECTRICAL PLANS ARE DIAGRAMMATIC & INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE CONDITIONS, ETC. MAINTAIN WORKING CLEARANCES.
- CIRCUIT NUMBERS ARE FOR IDENTIFICATION PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR CORRECTLY PHASING THE CIRCUITS IN THE PANEL AND SHALL BALANCE THE LOAD ON THE PHASES UNDER NORMAL OPERATING CONDITIONS. PROVIDE TYPEWRITTEN PANELBOARD DIRECTORIES. BALANCE THE PHASE LOADS TO WITHIN 20 PERCENT OF EACH OTHER.

- INCREASE ALL BRANCH CIRCUIT CONDUCTORS TO THE NEXT LARGER SIZE FROM THE PANEL TO THE FIRST OUTLET WHERE THE LENGTH OF THE HOMERUN EXCEEDS 100FT. ON 120/208V CIRCUITS.
- PROVIDE A PULLWIRE OR FISHTAPE/CORD IN ALL EMPTY CONDUIT RUNS.
- VERIFY WIRE SIZES, CIRCUIT BREAKERS AND FUSES RATINGS FOR ALL EQUIPMENT, AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES AFFECTING THE WORK PRIOR TO PROCEEDING.
- ALL PANELS IMPACTED BY THIS PROJECT SHALL BE PROVIDED WITH NEW, UPDATED TYPEWRITTEN PANEL SCHEDULES (FOR NEW AND EXISTING CIRCUITS) INDICATING THE FINAL ROOM NUMBER AND THE EQUIPMENT OR DEVICES SERVED BY THE CIRCUITS.
- DEMOLITION OF EXISTING WORK SHALL BE PERFORMED AFTER HOURS. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE WMATA PROJECT MANAGER PRIOR TO PERFORMING ALL THE WORK. THE TIME OF DAY OR EVENING SHALL BE DESIGNATED BY THE WMATA PROJECT MANAGER.
- ALL WIRING SHALL BE IN CONDUIT, MINIMUM SIZE 3/4 INCH WITH LARGER SIZES AS INDICATED OR REQUIRED BY NEC. ALL CONDUITS SHALL BE RIGID GALVANIZED STEEL THREADED COUPLING FOR COMPLETE WATER PROOF INSTALLATION.
- AT JOB COMPLETION, AND BEFORE FINAL ACCEPTANCE BY WMATA, TEST EACH RECEPTACLE AND PANELBOARD FOR PROPER OPERATION. WIRING SHALL BE TESTED FOR CONTINUITY, SHORTS, ETC... ALL WORK AREAS, ETC.. SHALL BE CLEANED AT THE COMPLETION OF THIS PROJECT.
- FOR DEVICE IDENTIFICATION, THE ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELBOARDS, JUNCTION BOXES, ETC..TO INDICATE THE NAME, VOLTAGE, SERVING EQUIPMENT AND ITEM SERVED ETC... LABELS FOR EMERGENCY CIRCUITS SHALL BE IN RED, NORMAL CIRCUITS SHALL BE IN BLACK. ALL DEVICES SHALL BE IDENTIFIED EITHER ON THE FACE OF THE COVERPLATE OR INSIDE PER WMATA PREFERENCE. ALL JUNCTION BOXES SHALL BE LABELED TO INDICATE THE CIRCUITS CONTAINED BY THE JUNCTION BOX.
- THE CONTRACTOR SHALL UPDATE THE SCHEDULES OF ALL PANELBOARDS AFFECTED BY THIS PROJECT TO REFLECT CHANGES DUE TO THE PROJECT WORK. PANEL SCHEDULE LOAD DESCRIPTIONS ARE TO INCLUDE THE FINAL ROOM OR AREA NUMBERS.
- INCLUDE GPR FOR ANY CORE DRILLS OR DRILLED PENETRATIONS IN ANY WALLS.
- SEAL OFF ALL PENETRATIONS THRU WALLS/FLOORS.
- THE CONTRACTOR SHALL BECOME FAMILIAR WITH WMATA DESIGN CRITERIA SECTION 4 AND SECTION 13; WMATA SPECIFICATION SECTION 16120, 16130, AND 16125. ALL INSTALLATION SHALL BE IN COMPLIANCE WITH THE NEC, WMATA DESIGN CRITERIA, AND SPECIFICATIONS.
- THE CONTRACTOR SHALL IDENTIFY SPARE CIRCUIT WITH "RESERVED FOR AFC".
- EXISTING SWITCHBOARDS, PANELBOARDS AND EQUIPMENT SHOWN IS BASED ON RECORD DRAWINGS AND CASUAL FIELD SURVEY. CONTRACTOR SHALL VERIFY ALL ELECTRICAL EQUIPMENT IN FIELD.

ABBREVIATIONS

A, AMP	AMPERES	NEC	NATIONAL ELECTRIC CODE
AC	ALTERNATING CURRENT	P	POLE
AF	AMPERE FRAME	PH	PHASE
AFC	AUTOMATED FARE COLLECTION SYSTEM	PNL	PANELBOARD
AFF	ABOVE FINISHED FLOOR	PRI	PRIMARY
AIC	AMPERE INTERRUPTING CAPACITY	PROP	PROPOSED
AT	AMPERE TRIP	RGS	RIGID GALVANIZED STEEL
BKR	BREAKER	SEC	SECONDARY
C	CONDUIT	SHT	SHEET
CB	CIRCUIT BREAKER	SW	SWITCH
CCT	CIRCUIT	SWBD	SWITCHBOARD
CL	CENTER LINE	TYP	TYPICAL
CLG	CEILING	U/G	UNDER GROUND
CONST	CONSTRUCTION	U.L.	UNDERWRITERS LABORATORIES
DISC	DISCONNECT	UON	UNLESS OTHERWISE NOTED
E	ELECTRICAL	VOLT	VOLTAGE
GND	GROUND	W	WATT
JB	JUNCTION BOX	WMATA	WASHINGTON METROPOLITIAN AREA TRANSIT AUTHORITY
KAIC	THOUSAND AMPERE INTERRUPTING CAPACITY	WP	WEATHERPROOF
KCMIL	THOUSAND CIRCULAR MILL		
KVA	KILOVOLT AMPERE		
MAX	MAXIMUM		
MCA	MINIMUM CIRCUIT AMPERE		
MCB	MAIN CIRCUIT BREAKER		
MEZZ	MEZZANINE		
MIN	MINIMUM		
MLO	MAIN LUGS ONLY		

DRAWING INDEX

J02-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
J02-E-101	VAN DORN STREET - KIOSK - POWER
J02-E-102	VAN DORN STREET - PANEL SCHEDULE
MM-J&H-E06	VAN DORN STREET - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

	QUADRUPEX RECEPTACLE OUTLET- 20A, 125V WALL MOUNTED.
	JUNCTION BOX - SURFACE MOUNTED ON UNISTRUT CHANNEL
	CONDUIT - CONCEALED IN UNDER FLOOR DUCT U.O.N.
	HOMERUN TO PANEL, NUMBER OF ARROWHEADS INDICATES NUMBER OF CIRCUITS. CROSS HATCHING INDICATES NUMBER OF CONDUCTORS, NUMBER INDICATES SIZE OF CONDUCTOR AND SIZE OF CONDUIT
	↓ - INDICATES GROUNDING WIRE TO GROUNDING BUS AT THE PANELBOARD
	EF 1,3 - INDICATES CIRCUIT HOME RUN PANELBOARD AND CIRCUIT NUMBER IDENTIFICATION

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	09-14
		DATE
DRAWN	C. NGO	09-14
		DATE
CHECKED	B. IDILBI	09-14
		DATE
APPROVED	N/A	
		DATE

REFERENCE DRAWINGS		REVISIONS		
NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ SUBMITTED _____
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS

ABBREVIATIONS DRAWING INDEX
SPECIFICATIONS SYMBOL LIST

SCALE: NOT TO SCALE

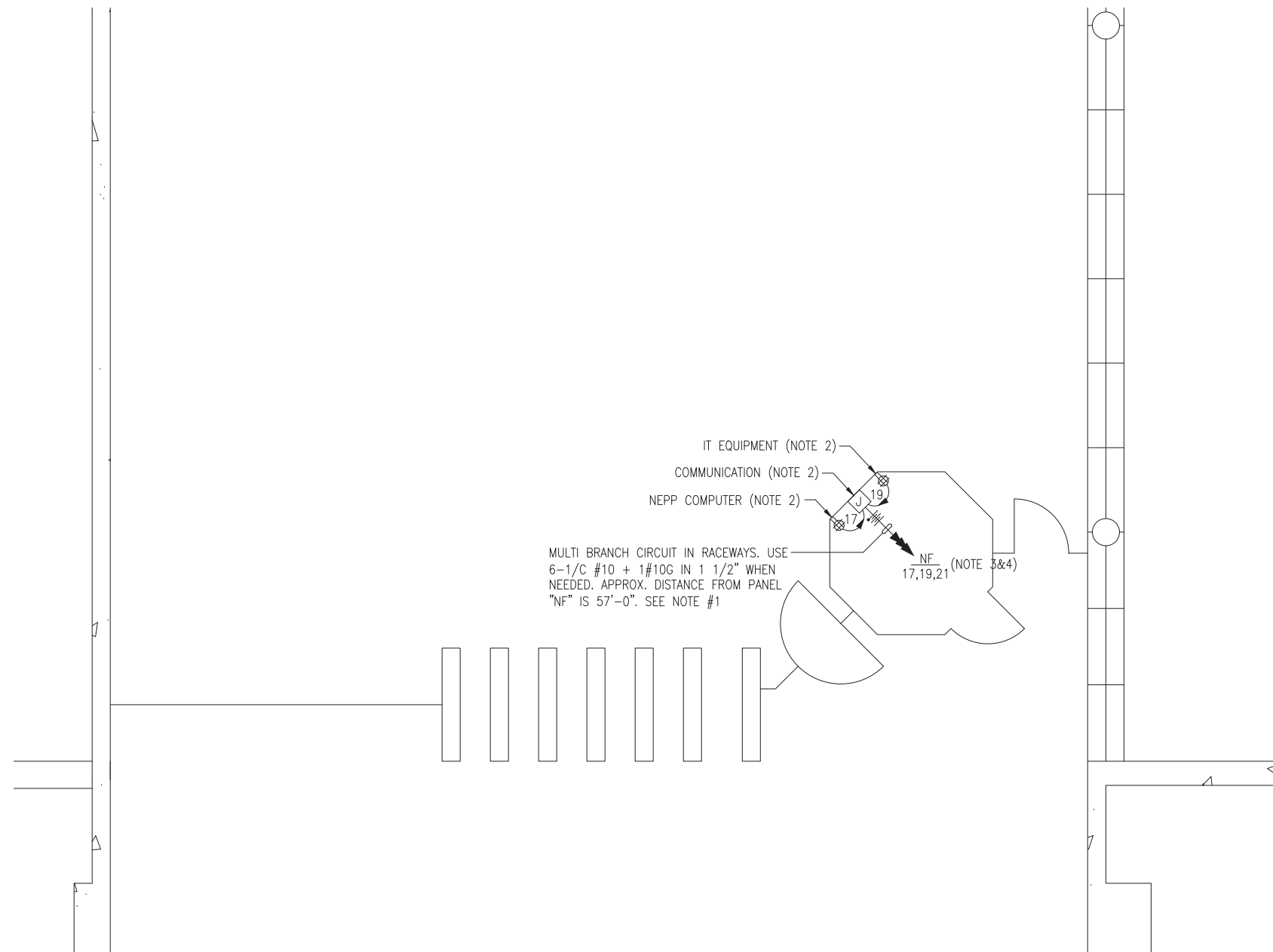
DRAWING NO. J02-E-001

DRAWING NOTES:

1. CONTRACTOR TO REFER TO SUPPLEMENTAL MEZZANINE INSPECTION REPORT, VOLUME 4 FURNISHED UNDER THIS SOLICITATION PACKAGE TO BE INFORMED THAT THE TOTAL LENGTH OF THE MULTI WIRE BRANCH CIRCUIT DEPICTED IN THE ELECTRICAL PLAN MAY EITHER CONSIST OF EXISTING POWER UNDER FLOOR DUCTS; OR IT COULD BE ALL CONDUIT RUN USING RIGID GALVANIZED STEEL CONDUITS; OR A COMBINATION OF BOTH WHICH IS RIGID GALVANIZED STEEL CONDUITS AND FLOOR DUCTS AND/OR JUST USE OF POWER FLOOR DUCT OR DEEMED REQUIRED IN THE REPORT.
2. COORDINATE WITH WMATA WHERE EXACTLY THE DUPLEX RECEPTACLE OUTLET AND JUNCTION BOX WILL BE INSTALLED IN THE KIOSK.
3. PROVIDE 3-NEW 20A, 1P CIRCUIT BREAKER AT EXISTING PANELBOARD AVAILABLE CIRCUIT BREAKER SPACES. NEW CIRCUIT BREAKERS SHALL MATCH EXISTING PANELBOARD CIRCUIT BREAKER AIC RATING. TERMINATE 2-NEW BRANCH CIRCUITS TO NEWLY INSTALLED CIRCUIT BREAKERS AND CONNECT PERMANENTLY TO QUAD RECEPTACLE OUTLETS LOCATED IN THE KIOSK. KEEP AND COILED REMAINING BRANCH CIRCUIT IN THE PANELBOARD AND INSIDE THE JUNCTION BOX AT THE KIOSK FOR FUTURE USE. UPDATE PANELBOARD DIRECTORY TO MANIFEST PANELBOARD ADDITIONAL LOADS.
4. THE REMAINING BRANCH CIRCUIT FOR FUTURE AFC FARE GATE APPLICATION SHALL BE SECURED, LABELED AND COILED AT THE KIOSK. THE LENGTH OF COILED PIGTAIL SHALL BE THE FARTHEST FARE GATE DISTANCE FROM KIOSK PLUS AN EXTRA 6'-0" CONDUCTOR.

SAFETY PRECAUTION:

1. ALL WORK SHALL COMPLY WITH WMATA SAFETY RULES, AND DE-ENERGIZATION POLICIES.



IT EQUIPMENT (NOTE 2)
 COMMUNICATION (NOTE 2)
 NEPP COMPUTER (NOTE 2)

MULTI BRANCH CIRCUIT IN RACEWAYS. USE
 6-1/C #10 + 1-#10G IN 1 1/2" WHEN
 NEEDED. APPROX. DISTANCE FROM PANEL
 "NF" IS 57'-0". SEE NOTE #1

NF (NOTE 3&4)
 17,19,21

KIOSK - POWER
 SCALE: 1/4" = 1'-0"

CONTRACT NO.
 14-FQ10060-CENI-24

	DESIGNED	C. NGO	09-14	REFERENCE DRAWINGS		REVISIONS		
				DATE	NUMBER	DESCRIPTION	DATE	BY
DRAWN	C. NGO		09-14					
CHECKED	B. IDILBI		09-14					
APPROVED	N/A							

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE
 AND ENGINEERING SERVICES
 OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

APPROVED

GFP A Gannett Fleming/Parsons
 JOINT VENTURE

SUBMITTED

PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
 IN METRORAIL STATIONS
 VAN DORN STREET
 KIOSK - POWER

SCALE
 AS SHOWN

DRAWING NO.
 J02-E-101

EXISTING PANEL "NF"										
AMPERES: 225			VOLTS: 120/208			MOUNTING: SURFACE				
MAINS: 200A MCB			PHASE: 3			LOCATION: AC SWBD ROOM 110				
RATING: 10K AIC			WIRE: 4			SECTION: 1 OF 1				
LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	POLE	CKT. BKRS			LOAD DESCRIPTION
		AMP	POLE	NO.			NO.	POLE	AMP	
SPARE	0.0	20	1	1	A - -	2	3	30	2.9	EXIST. LOAD CENTER "KES"
EXISTING VENDOR	0.8	20	1	3	- B -	4	-	-	2.5	
EXISTING VENDOR	0.8	20	1	5	- - C	6	-	-	2.5	
EXISTING VENDOR	0.8	20	1	7	A - -	8	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	9	- B -	10	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	11	- - C	12	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	13	A - -	14	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	15	- B -	16	1	20	0.8	EXISTING VENDOR
NEW KIOSK RECEPT. (IT/NCS)	0.8	20	1	17	- - C	18	1	20	0.8	EXISTING VENDOR
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	19	A - -	20	1	20	0.8	EXISTING VENDOR
FUTURE AFC FARE GATE	0.0	20	1	21	- B -	22	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	23	- - C	24	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	25	A - -	26	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	27	- B -	28	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	29	- - C	30	1	20	0.0	SPARE
SPARE	0.0	20	1	31	A - -	32	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	33	- B -	34	1	20	0.0	SPARE
SPARE	0.0	20	1	35	- - C	36	1	20	0.0	SPARE
SPARE	0.0	20	1	37	A - -	38	1	20	0.0	SPARE
SPARE	0.0	20	1	39	- B -	40	1	20	0.0	SPARE
SPARE	0.0	20	1	41	- - C	42	1	20	0.0	SPARE

LOAD SUMMARY			
LIGHTS	0.0 x 125%		0.0 KVA
RECEPTACLES, FIRST 10 KVA	10.0 x 100%		10.0 KVA
RECEPTACLES	6.4 x 50%		3.2 KVA
MISC. APPLIANCES	0.0 x 100%		0.0 KVA
LARGEST MOTOR	0.0 x 125%		0.0 KVA
MOTORS	0.0 x 100%		0.0 KVA
HEAT	3.0 x 125%		3.8 KVA
AC	4.5 x 100%		4.5 KVA
WATER HEATING	0.0 x 125%		0.0 KVA
TOTAL CONNECTED LOAD	23.9 KVA	TOTAL DEMAND KVA	21.5 KVA
		TOTAL DEMAND AMPS	59.6 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	7.7 KVA		
PHASE B:	8.9 KVA		
PHASE C:	8.1 KVA		

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	09-14	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	09-14					
CHECKED	B. IDILBI	09-14					
APPROVED	N/A						

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

APPROVED 

GFP A Gannett Fleming/Parsons JOINT VENTURE

SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS

VAN DORN STREET PANEL SCHEDULE

SCALE: NOT TO SCALE

DRAWING NO. J02-E-102

ELECTRICAL SPECIFICATIONS

- ALL WORK, MATERIAL AND EQUIPMENT SHALL COMPLY WITH THE LATEST NATIONAL ELECTRICAL CODE BEING USED BY THE LOCAL JURISDICTION AND SHALL COMPLY WITH ALL LOCAL CODES AND ORDINANCES.
- MATERIALS AND EQUIPMENT SHALL BE NEW EXCEPT WHERE INDICATED OTHERWISE. ALL OTHER WIRING DEVICES, CONDUIT, WIRE, ETC. SHALL BE NEW UNLESS NOTED OTHERWISE.
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- ALL CONDUITS SHALL BE RUN CONCEALED IN UNDER FLOOR DUCT.
- ALL WIRE AND CABLE SHALL BE COPPER HAVING 600 VOLTS XHHW-2 OR RHW-2 INSULATIONS. PROVIDE #12 WIRE MINIMUM, UNLESS OTHERWISE NOTED. ALL CABLES SHALL BE LOW SMOKE ZERO HALOGEN CABLE.
- THE CONTRACTOR SHALL VISIT THE SITE AND EXAMINE THE CONDITION OF THE PREMISES AND THE CHARACTER AND EXTENT OF WORK REQUIRED PRIOR TO SUBMISSION OF BIDS.
- OBTAIN ALL PERMITS AND PAY ALL FEES NECESSARY FOR INSPECTIONS, TESTS & OTHER SERVICES REQUIRED FOR THE COMPLETION OF THIS WORK.
- ALL WORK SHALL BE DONE AT SUCH TIMES AND IN SUCH A MANNER THAT WILL LEAST INTERFERE WITH THE MAINTENANCE AND OPERATION OF ALL RELATED OR AFFECTED SYSTEMS. COORDINATE ALL POWER OUTAGES WITH WMATA PROJECT MANAGER.
- IT IS THE INTENT OF THESE DRAWINGS AND OTHER RELATED DOCUMENTS TO PRODUCE A COMPLETE AND FUNCTIONING ELECTRICAL SYSTEM. PROVIDE ALL LABOR, MATERIAL AND OTHER SERVICES NECESSARY TO ACHIEVE THIS PRODUCT. NOTIFY THE ENGINEER OF ANY DISCREPANCIES IN THE PLANS & SPECIFICATIONS THAT WILL AFFECT THE WORK, PRIOR TO SUBMISSION OF THE BID PRICE.
- IF, DURING THE COURSE OF THE WORK, THE CONTRACTOR EXPERIENCES A CONFLICT RELATIVE TO THE PLANS AND SPECIFICATIONS, THE NEC OR OTHER APPLICABLE CODES AND GOVERNING DOCUMENTS, HE SHALL NOTIFY THE ENGINEER FOR DIRECTION PRIOR TO EXECUTION OF THIS WORK. ANY WORK INSTALLED IN VIOLATION OF THE CONTRACT DOCUMENT OR APPLICABLE CODES WHICH COULD HAVE BEEN AVOIDED BY CONTACTING THE ENGINEER SHALL BE RECTIFIED AT NO ADDITIONAL COST.
- ELECTRICAL PLANS ARE DIAGRAMMATIC & INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE CONDITIONS, ETC. MAINTAIN WORKING CLEARANCES.
- CIRCUIT NUMBERS ARE FOR IDENTIFICATION PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR CORRECTLY PHASING THE CIRCUITS IN THE PANEL AND SHALL BALANCE THE LOAD ON THE PHASES UNDER NORMAL OPERATING CONDITIONS. PROVIDE TYPEWRITTEN PANELBOARD DIRECTORIES. BALANCE THE PHASE LOADS TO WITHIN 20 PERCENT OF EACH OTHER.

- INCREASE ALL BRANCH CIRCUIT CONDUCTORS TO THE NEXT LARGER SIZE FROM THE PANEL TO THE FIRST OUTLET WHERE THE LENGTH OF THE HOMERUN EXCEEDS 100FT. ON 120/208V CIRCUITS.
- PROVIDE A PULLWIRE OR FISHTAPE/CORD IN ALL EMPTY CONDUIT RUNS.
- VERIFY WIRE SIZES, CIRCUIT BREAKERS AND FUSES RATINGS FOR ALL EQUIPMENT, AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES AFFECTING THE WORK PRIOR TO PROCEEDING.
- ALL PANELS IMPACTED BY THIS PROJECT SHALL BE PROVIDED WITH NEW, UPDATED TYPEWRITTEN PANEL SCHEDULES (FOR NEW AND EXISTING CIRCUITS) INDICATING THE FINAL ROOM NUMBER AND THE EQUIPMENT OR DEVICES SERVED BY THE CIRCUITS.
- DEMOLITION OF EXISTING WORK SHALL BE PERFORMED AFTER HOURS. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE WMATA PROJECT MANAGER PRIOR TO PERFORMING ALL THE WORK. THE TIME OF DAY OR EVENING SHALL BE DESIGNATED BY THE WMATA PROJECT MANAGER.
- ALL WIRING SHALL BE IN CONDUIT, MINIMUM SIZE 3/4 INCH WITH LARGER SIZES AS INDICATED OR REQUIRED BY NEC. ALL CONDUITS SHALL BE RIGID GALVANIZED STEEL THREADED COUPLING FOR COMPLETE WATER PROOF INSTALLATION.
- AT JOB COMPLETION, AND BEFORE FINAL ACCEPTANCE BY WMATA, TEST EACH RECEPTACLE AND PANELBOARD FOR PROPER OPERATION. WIRING SHALL BE TESTED FOR CONTINUITY, SHORTS, ETC... ALL WORK AREAS, ETC.. SHALL BE CLEANED AT THE COMPLETION OF THIS PROJECT.
- FOR DEVICE IDENTIFICATION, THE ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELBOARDS, JUNCTION BOXES, ETC..TO INDICATE THE NAME, VOLTAGE, SERVING EQUIPMENT AND ITEM SERVED ETC... LABELS FOR EMERGENCY CIRCUITS SHALL BE IN RED, NORMAL CIRCUITS SHALL BE IN BLACK. ALL DEVICES SHALL BE IDENTIFIED EITHER ON THE FACE OF THE COVERPLATE OR INSIDE PER WMATA PREFERENCE. ALL JUNCTION BOXES SHALL BE LABELED TO INDICATE THE CIRCUITS CONTAINED BY THE JUNCTION BOX.
- THE CONTRACTOR SHALL UPDATE THE SCHEDULES OF ALL PANELBOARDS AFFECTED BY THIS PROJECT TO REFLECT CHANGES DUE TO THE PROJECT WORK. PANEL SCHEDULE LOAD DESCRIPTIONS ARE TO INCLUDE THE FINAL ROOM OR AREA NUMBERS.
- INCLUDE GPR FOR ANY CORE DRILLS OR DRILLED PENETRATIONS IN ANY WALLS.
- SEAL OFF ALL PENETRATIONS THRU WALLS/FLOORS.
- THE CONTRACTOR SHALL BECOME FAMILIAR WITH WMATA DESIGN CRITERIA SECTION 4 AND SECTION 13; WMATA SPECIFICATION SECTION 16120, 16130, AND 16125. ALL INSTALLATION SHALL BE IN COMPLIANCE WITH THE NEC, WMATA DESIGN CRITERIA, AND SPECIFICATIONS.
- THE CONTRACTOR SHALL IDENTIFY SPARE CIRCUIT WITH "RESERVED FOR AFC".
- EXISTING SWITCHBOARDS, PANELBOARDS AND EQUIPMENT SHOWN IS BASED ON RECORD DRAWINGS AND CASUAL FIELD SURVEY. CONTRACTOR SHALL VERIFY ALL ELECTRICAL EQUIPMENT IN FIELD.

ABBREVIATIONS

A, AMP	AMPERES	NEC	NATIONAL ELECTRIC CODE
AC	ALTERNATING CURRENT	P	POLE
AF	AMPERE FRAME	PH	PHASE
AFC	AUTOMATED FARE COLLECTION SYSTEM	PNL	PANELBOARD
AFF	ABOVE FINISHED FLOOR	PRI	PRIMARY
AIC	AMPERE INTERRUPTING CAPACITY	PROP	PROPOSED
AT	AMPERE TRIP	RGS	RIGID GALVANIZED STEEL
BKR	BREAKER	SEC	SECONDARY
C	CONDUIT	SHT	SHEET
CB	CIRCUIT BREAKER	SW	SWITCH
CCT	CIRCUIT	SWBD	SWITCHBOARD
CL	CENTER LINE	TYP	TYPICAL
CLG	CEILING	U/G	UNDER GROUND
CONST	CONSTRUCTION	U.L.	UNDERWRITERS LABORATORIES
DISC	DISCONNECT	UON	UNLESS OTHERWISE NOTED
E	ELECTRICAL	VOLT	VOLTAGE
GND	GROUND	W	WATT
JB	JUNCTION BOX	WMATA	WASHINGTON METROPOLITIAN AREA TRANSIT AUTHORITY
KAIC	THOUSAND AMPERE INTERRUPTING CAPACITY	WP	WEATHERPROOF
KCMIL	THOUSAND CIRCULAR MILL		
KVA	KILOVOLT AMPERE		
MAX	MAXIMUM		
MCA	MINIMUM CIRCUIT AMPERE		
MCB	MAIN CIRCUIT BREAKER		
MEZZ	MEZZANINE		
MIN	MINIMUM		
MLO	MAIN LUGS ONLY		

DRAWING INDEX

J03-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
J03-E-101	FRANCONIA - SPRINGFIELD - KIOSK - POWER
J03-E-102	FRANCONIA - SPRINGFIELD - PANEL SCHEDULE
MM-J&H-E09	FRANCONIA - SPRINGFIELD - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

	QUADRUPEX RECEPTACLE OUTLET- 20A, 125V WALL MOUNTED.
	JUNCTION BOX - SURFACE MOUNTED ON UNISTRUT CHANNEL
	CONDUIT - CONCEALED IN UNDER FLOOR DUCT U.O.N.
	HOMERUN TO PANEL, NUMBER OF ARROWHEADS INDICATES NUMBER OF CIRCUITS. CROSS HATCHING INDICATES NUMBER OF CONDUCTORS, NUMBER INDICATES SIZE OF CONDUCTOR AND SIZE OF CONDUIT
	↓ - INDICATES GROUNDING WIRE TO GROUNDING BUS AT THE PANELBOARD
	EF 1,3 - INDICATES CIRCUIT HOME RUN PANELBOARD AND CIRCUIT NUMBER IDENTIFICATION

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	09-14
		DATE
DRAWN	C. NGO	09-14
		DATE
CHECKED	B. IDILBI	09-14
		DATE
APPROVED	N/A	
		DATE

REFERENCE DRAWINGS		REVISIONS		
NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

APPROVED _____

GFP A Gannett Fleming/Parsons JOINT VENTURE

SUBMITTED _____
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS

ABBREVIATIONS DRAWING INDEX
SPECIFICATIONS SYMBOL LIST

SCALE
NOT TO SCALE

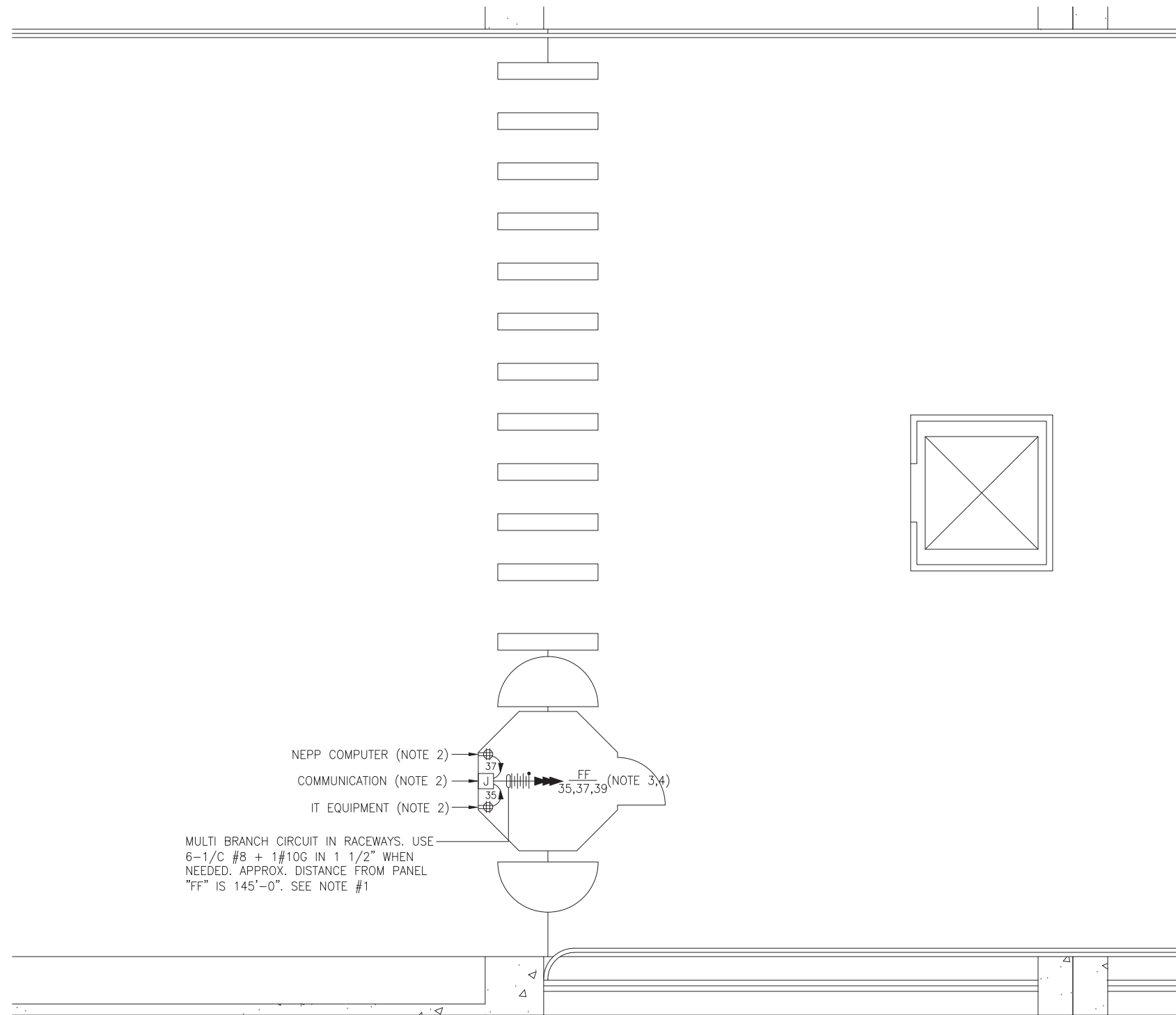
DRAWING NO.
J03-E-001

DRAWING NOTES:

1. CONTRACTOR TO REFER TO SUPPLEMENTAL MEZZANINE INSPECTION REPORT, VOLUME 4 FURNISHED UNDER THIS SOLICITATION PACKAGE TO BE INFORMED THAT THE TOTAL LENGTH OF THE MULTI WIRE BRANCH CIRCUIT DEPICTED IN THE ELECTRICAL PLAN MAY EITHER CONSIST OF EXISTING POWER UNDER FLOOR DUCTS; OR IT COULD BE ALL CONDUIT RUN USING RIGID GALVANIZED STEEL CONDUITS; OR A COMBINATION OF BOTH WHICH IS RIGID GALVANIZED STEEL CONDUITS AND FLOOR DUCTS AND/OR JUST USE OF POWER FLOOR DUCT OR DEEMED REQUIRED IN THE REPORT.
2. COORDINATE WITH WMATA WHERE EXACTLY THE DUPLEX RECEPTACLE OUTLET AND JUNCTION BOX WILL BE INSTALLED IN THE KIOSK.
3. PROVIDE 3-NEW 20A, 1P CIRCUIT BREAKER AT EXISTING PANELBOARD AVAILABLE CIRCUIT BREAKER SPACES. NEW CIRCUIT BREAKERS SHALL MATCH EXISTING PANELBOARD CIRCUIT BREAKER AIC RATING. TERMINATE 2-NEW BRANCH CIRCUITS TO NEWLY INSTALLED CIRCUIT BREAKERS AND CONNECT PERMANENTLY TO QUAD RECEPTACLE OUTLETS LOCATED IN THE KIOSK. KEEP AND COILED REMAINING BRANCH CIRCUIT IN THE PANELBOARD AND INSIDE THE JUNCTION BOX AT THE KIOSK FOR FUTURE USE. UPDATE PANELBOARD DIRECTORY TO MANIFEST PANELBOARD ADDITIONAL LOADS.
4. THE REMAINING BRANCH CIRCUIT FOR FUTURE AFC FARE GATE APPLICATION SHALL BE SECURED, LABELED AND COILED AT THE KIOSK. THE LENGTH OF COILED PIGTAIL SHALL BE THE FARTHEST FARE GATE DISTANCE FROM KIOSK PLUS AN EXTRA 6'-0" CONDUCTOR.

SAFETY PRECAUTION:

1. ALL WORK SHALL COMPLY WITH WMATA SAFETY RULES, AND DE-ENERGIZATION POLICIES.



KIOSK - POWER

SCALE: 1/4" = 1'- 0"

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	09-14
		DATE
DRAWN	C. NGO	09-14
		DATE
CHECKED	B. IDILBI	09-14
		DATE
APPROVED	N/A	
		DATE

REFERENCE DRAWINGS	
NUMBER	DESCRIPTION

REVISIONS		
DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

APPROVED *[Signature]*

GFP A Gannett Fleming/Parsons JOINT VENTURE

SUBMITTED _____
PROJECT MANAGER

**NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
FRANCONIA SPRINGFIELD
KIOSK - POWER**

SCALE AS SHOWN

DRAWING NO. J03-E-101

80

EXISTING PANEL "FF"

AMPERES: 225	VOLTS: 120/208	MOUNTING: SURFACE
MAINS: 200A MCB	PHASE: 3	LOCATION: AC SWBD ROOM 216
RATING: 10K AIC	WIRE: 4	SECTION: 1 OF 1

LOAD DESCRIPTION	KVA	CKT BKRS			NO.	NO.	CKT .			KVA	LOAD DESCRIPTION
		AMP	POLE	NO.			NO.	POLE	AMP		
EXISTING VENDOR	0.8	20	1	1	A - -	2	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	3	- B -	4	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	5	- - C	6	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	7	A - -	8	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	9	- B -	10	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	11	- - C	12	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	13	A - -	14	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	15	- B -	16	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	17	- - C	18	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	19	A - -	20	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	21	- B -	22	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	23	- - C	24	1	20	0.8	EXISTING VENDOR	
SPARE	0.0	20	1	25	A - -	26	1	20	0.0	SPARE	
EXISTING VENDOR	0.8	20	1	27	- B -	28	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	29	- - C	30	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	31	A - -	32	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	33	- B -	34	1	20	0.0	SPARE	
NEW KIOSK RECEPT. (IT/NCS)	0.8	20	1	35	- - C	36	1	20	0.0	SPARE	
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	37	A - -	38	3	30	2.9	EXIST. LOAD CENTER "KES"	
FUTURE AFC FARE GATE	0.0	20	1	39	- B -	40	-	-	2.5		
SPARE	0.0	20	1	41	- - C	42	-	-	2.5		

LOAD SUMMARY

LIGHTS	0.0 x 125%	0.0 KVA
RECEPT ACLES, FIRST 10 KVA	10.0 x 100%	10.0 KVA
RECEPT ACLES	16.0 x 50%	8.0 KVA
MISC. APPLIANCES	0.0 x 100%	0.0 KVA
LARGEST MOTOR	0.0 x 125%	0.0 KVA
MOTORS	0.0 x 100%	0.0 KVA
HEAT	3.0 x 125%	3.8 KVA
AC	4.5 x 100%	4.5 KVA
WATER HEATING	0.0 x 125%	0.0 KVA
TOTAL CONNECTED LOAD	33.5 KVA	TOTAL DEMAND KVA 26.3 KVA
		TOTAL DEMAND AMPS 72.9 AMPS
CONNECTED LOAD PHASE SUMMARY		
PHASE A:	11.7 KVA	
PHASE B:	11.3 KVA	
PHASE C:	11.3 KVA	

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	09-14	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	09-14					
CHECKED	B. IDILBI	09-14					
APPROVED	N/A						

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED  SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
FRANCONIA SPRINGFIELD
PANEL SCHEDULE

SCALE: NOT TO SCALE

DRAWING NO. J03-E-102

ELECTRICAL SPECIFICATIONS

- ALL WORK, MATERIAL AND EQUIPMENT SHALL COMPLY WITH THE LATEST NATIONAL ELECTRICAL CODE BEING USED BY THE LOCAL JURISDICTION AND SHALL COMPLY WITH ALL LOCAL CODES AND ORDINANCES.
- MATERIALS AND EQUIPMENT SHALL BE NEW EXCEPT WHERE INDICATED OTHERWISE. ALL OTHER WIRING DEVICES, CONDUIT, WIRE, ETC. SHALL BE NEW UNLESS NOTED OTHERWISE.
- ALL MATERIALS AND EQUIPMENT SHALL BEAR U.L. LISTING.
- MAINTAIN GROUNDING CONTINUITY TO ALL DEVICES AND EQUIPMENT IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
- WORK NOT SPECIFICALLY SPECIFIED OR INDICATED SHALL CONFORM WITH SPECIFICATIONS.
- ALL CONDUITS SHALL BE RUN CONCEALED IN UNDER FLOOR DUCT.
- ALL WIRE AND CABLE SHALL BE COPPER HAVING 600 VOLTS XHHW-2 OR RHW-2 INSULATIONS. PROVIDE #12 WIRE MINIMUM, UNLESS OTHERWISE NOTED. ALL CABLES SHALL BE LOW SMOKE ZERO HALOGEN CABLE.
- THE CONTRACTOR SHALL VISIT THE SITE AND EXAMINE THE CONDITION OF THE PREMISES AND THE CHARACTER AND EXTENT OF WORK REQUIRED PRIOR TO SUBMISSION OF BIDS.
- OBTAIN ALL PERMITS AND PAY ALL FEES NECESSARY FOR INSPECTIONS, TESTS & OTHER SERVICES REQUIRED FOR THE COMPLETION OF THIS WORK.
- ALL WORK SHALL BE DONE AT SUCH TIMES AND IN SUCH A MANNER THAT WILL LEAST INTERFERE WITH THE MAINTENANCE AND OPERATION OF ALL RELATED OR AFFECTED SYSTEMS. COORDINATE ALL POWER OUTAGES WITH WMATA PROJECT MANAGER.
- IT IS THE INTENT OF THESE DRAWINGS AND OTHER RELATED DOCUMENTS TO PRODUCE A COMPLETE AND FUNCTIONING ELECTRICAL SYSTEM. PROVIDE ALL LABOR, MATERIAL AND OTHER SERVICES NECESSARY TO ACHIEVE THIS PRODUCT. NOTIFY THE ENGINEER OF ANY DISCREPANCIES IN THE PLANS & SPECIFICATIONS THAT WILL AFFECT THE WORK, PRIOR TO SUBMISSION OF THE BID PRICE.
- IF, DURING THE COURSE OF THE WORK, THE CONTRACTOR EXPERIENCES A CONFLICT RELATIVE TO THE PLANS AND SPECIFICATIONS, THE NEC OR OTHER APPLICABLE CODES AND GOVERNING DOCUMENTS, HE SHALL NOTIFY THE ENGINEER FOR DIRECTION PRIOR TO EXECUTION OF THIS WORK. ANY WORK INSTALLED IN VIOLATION OF THE CONTRACT DOCUMENT OR APPLICABLE CODES WHICH COULD HAVE BEEN AVOIDED BY CONTACTING THE ENGINEER SHALL BE RECTIFIED AT NO ADDITIONAL COST.
- ELECTRICAL PLANS ARE DIAGRAMMATIC & INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE CONDITIONS, ETC. MAINTAIN WORKING CLEARANCES.
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- AT JOB COMPLETION, AND BEFORE FINAL ACCEPTANCE BY WMATA, TEST EACH RECEPTACLE AND PANELBOARD FOR PROPER OPERATION. WIRING SHALL BE TESTED FOR CONTINUITY, SHORTS, ETC... ALL WORK AREAS, ETC.. SHALL BE CLEANED AT THE COMPLETION OF THIS PROJECT.
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ABBREVIATIONS

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DRAWING INDEX

K01-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
K01-E-101	COURT HOUSE - KIOSK - POWER
K01-E-102	COURT HOUSE - PANEL SCHEDULE
MM-K-E06	COURT HOUSE - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

	QUADRUPEX RECEPTACLE OUTLET- 20A, 125V WALL MOUNTED.
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CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	12-14	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	12-14					
CHECKED	B. IDILBI	12-14					
APPROVED	N/A						

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM



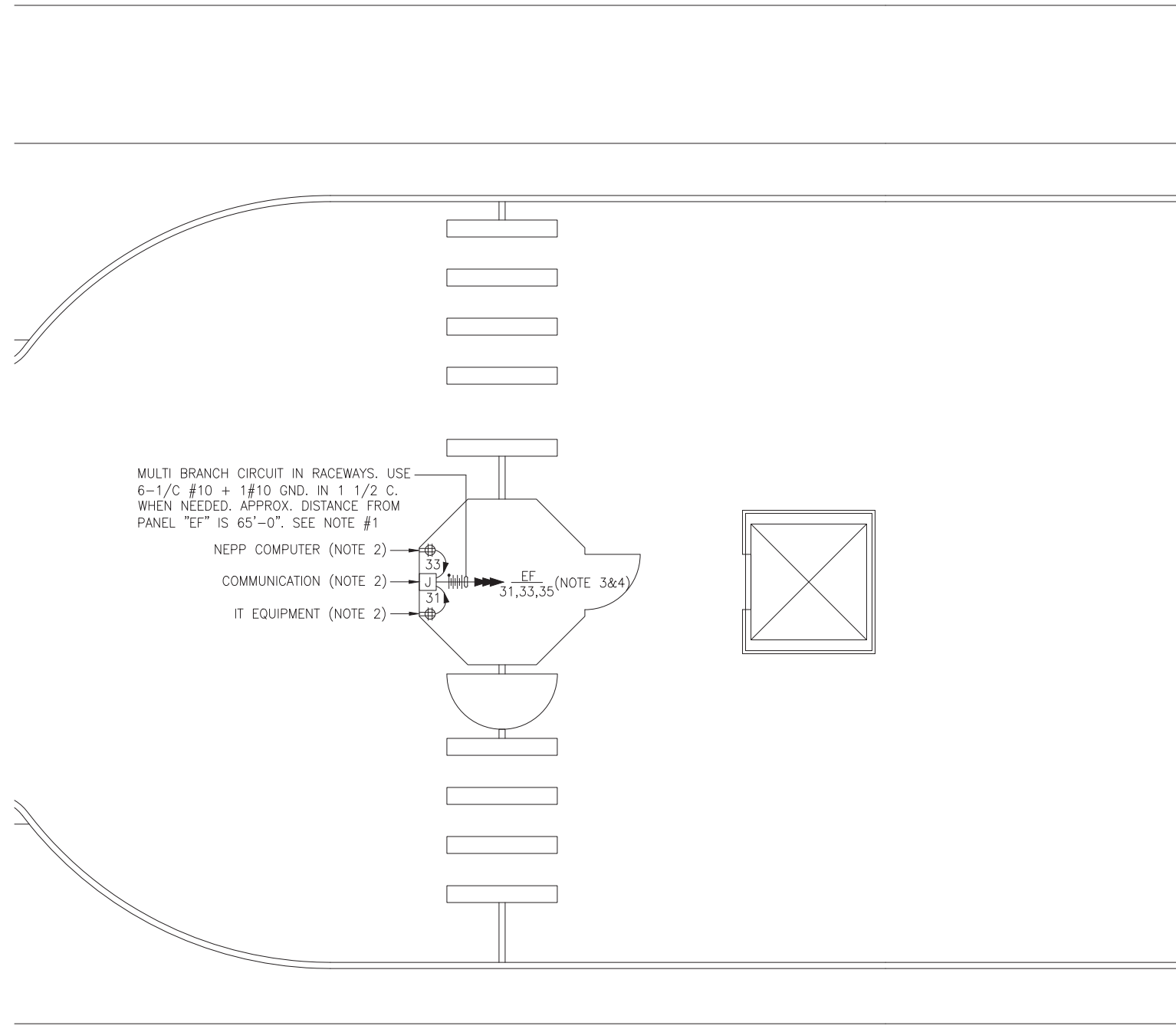
APPROVED _____

SUBMITTED _____
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
ABBREVIATIONS □ DRAWING INDEX □
SPECIFICATIONS □ SYMBOL LIST

SCALE
NOT TO SCALE

DRAWING NO.
K01-E-001



DRAWING NOTES:

1. CONTRACTOR TO REFER TO SUPPLEMENTAL MEZZANINE INSPECTION REPORT, VOLUME 4 FURNISHED UNDER THIS SOLICITATION PACKAGE TO BE INFORMED THAT THE TOTAL LENGTH OF THE MULTI WIRE BRANCH CIRCUIT DEPICTED IN THE ELECTRICAL PLAN MAY EITHER CONSIST OF EXISTING POWER UNDER FLOOR DUCTS; OR IT COULD BE ALL CONDUIT RUN USING RIGID GALVANIZED STEEL CONDUITS; OR A COMBINATION OF BOTH WHICH IS RIGID GALVANIZED STEEL CONDUITS AND FLOOR DUCTS AND/OR JUST USE OF POWER FLOOR DUCT OR DEEMED REQUIRED IN THE REPORT.
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SAFETY PRECAUTION:

1. ALL WORK SHALL COMPLY WITH WMATA SAFETY RULES, AND DE-ENERGIZATION POLICIES.

MEZZANINE KIOSK - POWER

SCALE: 1/4" = 1'- 0"

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO 12-14
DATE 12-14
DRAWN C. NGO 12-14
DATE 12-14
CHECKED B. IDILBI 12-14
DATE 12-14
APPROVED N/A
DATE

REFERENCE DRAWINGS	
NUMBER	DESCRIPTION

REVISIONS		
DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
APPROVED *[Signature]*
SUBMITTED _____ PROJECT MANAGER



NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
COURT HOUSE
MEZZANINE KIOSK - POWER

SCALE AS SHOWN

DRAWING NO. K01-E-101

EXISTING PANEL "EF"

AMPERES: 250	VOLTS: 120/208	MOUNTING: SURFACE
MAINS: 250A MCB	PHASE: 3	LOCATION: ELEC. EQUIPMENT RM. 205
RATING: 10K AIC	WIRE: 4	SECTION: 1 OF 1

LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	POLE	CKT. NO.	CKT BKRS			LOAD DESCRIPTION
		AMP	POLE	NO.				AMP	POLE	KVA	
EXIST. LOAD CENTER "KES"	2.9	40	3	1	A - -	2	1	20	0.8	EXISTING VENDOR	
	2.5	-	-	3	- B -	4	1	20	0.8	EXISTING VENDOR	
	2.5	-	-	5	- - C	6	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	7	A - -	8	1	20	0.0	SPARE	
EXISTING VENDOR	0.8	20	1	9	- B -	10	1	20	0.0	SPARE	
EXISTING VENDOR	0.8	20	1	11	- - C	12	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	13	A - -	14	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	15	- B -	16	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	17	- - C	18	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	19	A - -	20	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	21	- B -	22	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	23	- - C	24	1	20	0.0	SPARE	
EXISTING VENDOR	0.8	20	1	25	A - -	26	1	20	0.0	SPARE	
EXISTING VENDOR	0.8	20	1	27	- B -	28	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	29	- - C	30	1	20	0.0	SPARE	
NEW KIOSK RECEPT. (IT/NCS)	0.8	20	1	31	A - -	32	1	20	0.0	SPARE	
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	33	- B -	34	1	20	0.0	SPARE	
FUTURE AFC FARE GATE	0.0	20	1	35	- - C	36	1	20	0.0	SPARE	
SPARE	0.0	20	1	37	A - -	38	1	20	0.0	SPARE	
SPARE	0.0	20	1	39	- B -	40	1	20	0.0	SPARE	
SPACE	0.0	-	-	41	- - C	42	-	-	0.0	SPACE	
SPACE	0.0	-	-	43	A - -	44	-	-	0.0	SPACE	

LOAD SUMMARY

LIGHTS	0.0 x 125%	0.0 KVA
RECEPT ACLES, FIRST 10 KVA	10.0 x 100%	10.0 KVA
RECEPT ACLES	8.8 x 50%	4.4 KVA
MISC. APPLIANCES	0.0 x 100%	0.0 KVA
LARGEST MOTOR	0.0 x 125%	0.0 KVA
MOTORS	0.0 x 100%	0.0 KVA
HEAT	3.0 x 125%	3.8 KVA
AC	4.5 x 100%	4.5 KVA
WATER HEATING	0.0 x 125%	0.0 KVA
TOTAL CONNECTED LOAD	26.3 KVA	TOTAL DEMAND KVA
		22.7 KVA
		TOTAL DEMAND AMPS
		62.9 AMPS
CONNECTED LOAD PHASE SUMMARY		
PHASE A:	9.3 KVA	
PHASE B:	9.7 KVA	
PHASE C:	8.1 KVA	

CONTRACT NO.
14-FQ10060-CENI-24

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NUMBER	DESCRIPTION

REVISIONS		
DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE
AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

APPROVED



GFP A Gannett Fleming/Parsons
JOINT VENTURE

SUBMITTED

PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
COURT HOUSE
PANEL SCHEDULE

SCALE
NOT TO SCALE

DRAWING NO.
K01-E-102

ELECTRICAL SPECIFICATIONS

- ALL WORK, MATERIAL AND EQUIPMENT SHALL COMPLY WITH THE LATEST NATIONAL ELECTRICAL CODE BEING USED BY THE LOCAL JURISDICTION AND SHALL COMPLY WITH ALL LOCAL CODES AND ORDINANCES.
- MATERIALS AND EQUIPMENT SHALL BE NEW EXCEPT WHERE INDICATED OTHERWISE. ALL OTHER WIRING DEVICES, CONDUIT, WIRE, ETC. SHALL BE NEW UNLESS NOTED OTHERWISE.
- ALL MATERIALS AND EQUIPMENT SHALL BEAR U.L. LISTING.
- MAINTAIN GROUNDING CONTINUITY TO ALL DEVICES AND EQUIPMENT IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
- WORK NOT SPECIFICALLY SPECIFIED OR INDICATED SHALL CONFORM WITH SPECIFICATIONS.
- ALL CONDUITS SHALL BE RUN CONCEALED IN UNDER FLOOR DUCT.
- ALL WIRE AND CABLE SHALL BE COPPER HAVING 600 VOLTS XHHW-2 OR RHW-2 INSULATIONS. PROVIDE #12 WIRE MINIMUM, UNLESS OTHERWISE NOTED. ALL CABLES SHALL BE LOW SMOKE ZERO HALOGEN CABLE.
- THE CONTRACTOR SHALL VISIT THE SITE AND EXAMINE THE CONDITION OF THE PREMISES AND THE CHARACTER AND EXTENT OF WORK REQUIRED PRIOR TO SUBMISSION OF BIDS.
- OBTAIN ALL PERMITS AND PAY ALL FEES NECESSARY FOR INSPECTIONS, TESTS & OTHER SERVICES REQUIRED FOR THE COMPLETION OF THIS WORK.
- ALL WORK SHALL BE DONE AT SUCH TIMES AND IN SUCH A MANNER THAT WILL LEAST INTERFERE WITH THE MAINTENANCE AND OPERATION OF ALL RELATED OR AFFECTED SYSTEMS. COORDINATE ALL POWER OUTAGES WITH WMATA PROJECT MANAGER.
- IT IS THE INTENT OF THESE DRAWINGS AND OTHER RELATED DOCUMENTS TO PRODUCE A COMPLETE AND FUNCTIONING ELECTRICAL SYSTEM. PROVIDE ALL LABOR, MATERIAL AND OTHER SERVICES NECESSARY TO ACHIEVE THIS PRODUCT. NOTIFY THE ENGINEER OF ANY DISCREPANCIES IN THE PLANS & SPECIFICATIONS THAT WILL AFFECT THE WORK, PRIOR TO SUBMISSION OF THE BID PRICE.
- IF, DURING THE COURSE OF THE WORK, THE CONTRACTOR EXPERIENCES A CONFLICT RELATIVE TO THE PLANS AND SPECIFICATIONS, THE NEC OR OTHER APPLICABLE CODES AND GOVERNING DOCUMENTS, HE SHALL NOTIFY THE ENGINEER FOR DIRECTION PRIOR TO EXECUTION OF THIS WORK. ANY WORK INSTALLED IN VIOLATION OF THE CONTRACT DOCUMENT OR APPLICABLE CODES WHICH COULD HAVE BEEN AVOIDED BY CONTACTING THE ENGINEER SHALL BE RECTIFIED AT NO ADDITIONAL COST.
- ELECTRICAL PLANS ARE DIAGRAMMATIC & INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE CONDITIONS, ETC. MAINTAIN WORKING CLEARANCES.
- CIRCUIT NUMBERS ARE FOR IDENTIFICATION PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR CORRECTLY PHASING THE CIRCUITS IN THE PANEL AND SHALL BALANCE THE LOAD ON THE PHASES UNDER NORMAL OPERATING CONDITIONS. PROVIDE TYPED WRITTEN PANELBOARD DIRECTORIES. BALANCE THE PHASE LOADS TO WITHIN 20 PERCENT OF EACH OTHER.
- INCREASE ALL BRANCH CIRCUIT CONDUCTORS TO THE NEXT LARGER SIZE FROM THE PANEL TO THE FIRST OUTLET WHERE THE LENGTH OF THE HOMERUN EXCEEDS 100FT. ON 120/208V CIRCUITS.
- PROVIDE A PULLWIRE OR FISHTAPE/CORD IN ALL EMPTY CONDUIT RUNS.
- VERIFY WIRE SIZES, CIRCUIT BREAKERS AND FUSES RATINGS FOR ALL EQUIPMENT, AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES AFFECTING THE WORK PRIOR TO PROCEEDING.
- ALL PANELS IMPACTED BY THIS PROJECT SHALL BE PROVIDED WITH NEW, UPDATED TYPED WRITTEN PANEL SCHEDULES (FOR NEW AND EXISTING CIRCUITS) INDICATING THE FINAL ROOM NUMBER AND THE EQUIPMENT OR DEVICES SERVED BY THE CIRCUITS.
- DEMOLITION OF EXISTING WORK SHALL BE PERFORMED AFTER HOURS. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE WMATA PROJECT MANAGER PRIOR TO PERFORMING ALL THE WORK. THE TIME OF DAY OR EVENING SHALL BE DESIGNATED BY THE WMATA PROJECT MANAGER.
- ALL WIRING SHALL BE IN CONDUIT, MINIMUM SIZE 3/4 INCH WITH LARGER SIZES AS INDICATED OR REQUIRED BY NEC. ALL CONDUITS SHALL BE RIGID GALVANIZED STEEL W/SCREW IN COUPLING FOR COMPLETE WATER PROOF INSTALLATION.
- AT JOB COMPLETION, AND BEFORE FINAL ACCEPTANCE BY WMATA, TEST EACH RECEPTACLE AND PANELBOARD FOR PROPER OPERATION. WIRING SHALL BE TESTED FOR CONTINUITY, SHORTS, ETC... ALL WORK AREAS, ETC.. SHALL BE CLEANED AT THE COMPLETION OF THIS PROJECT.
- FOR DEVICE IDENTIFICATION, THE ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELBOARDS, JUNCTION BOXES, ETC..TO INDICATE THE NAME, VOLTAGE, SERVING EQUIPMENT AND ITEM SERVED ETC... LABELS FOR EMERGENCY CIRCUITS SHALL BE IN RED, NORMAL CIRCUITS SHALL BE IN BLACK. ALL DEVICES SHALL BE IDENTIFIED EITHER ON THE FACE OF THE COVERPLATE OR INSIDE PER WMATA PREFERENCE. ALL JUNCTION BOXES SHALL BE LABELED TO INDICATE THE CIRCUITS CONTAINED BY THE JUNCTION BOX.
- THE CONTRACTOR SHALL UPDATE THE SCHEDULES OF ALL PANELBOARDS AFFECTED BY THIS PROJECT TO REFLECT CHANGES DUE TO THE PROJECT WORK. PANEL SCHEDULE LOAD DESCRIPTIONS ARE TO INCLUDE THE FINAL ROOM OR AREA NUMBERS.
- INCLUDE GPR FOR ANY CORE DRILLS OR DRILLED PENETRATIONS IN ANY WALLS.
- SEAL OFF ALL PENETRATIONS THRU WALLS/FLOORS.
- THE CONTRACTOR SHALL BECOME FAMILIAR WITH WMATA DESIGN CRITERIA SECTION 4 AND SECTION 13; WMATA SPECIFICATION SECTION 16120, 16130, AND 16125. ALL INSTALLATION SHALL BE IN COMPLIANCE WITH THE NEC, WMATA DESIGN CRITERIA, AND SPECIFICATIONS.
- THE CONTRACTOR SHALL IDENTIFY SPARE CIRCUIT WITH "RESERVED FOR AFC".
- EXISTING SWITCHBOARDS, PANELBOARDS AND EQUIPMENT SHOWN IS BASED ON RECORD DRAWINGS AND CASUAL FIELD SURVEY. CONTRACTOR SHALL VERIFY ALL ELECTRICAL EQUIPMENT IN FIELD.
- The conduit utilized for this project shall be 1-1/2" min. or larger as indicated. The liquid tight utilized for the kiosk shall be 1-1/2" from the entry to the 8x8 junction box, then 1" from the junction box to the quads. All boxes used in or on the kiosk shall be NEMA 4x.

ABBREVIATIONS

A, AMP	AMPERES	MAX	MAXIMUM
AC	ALTERNATING CURRENT	MCA	MINIMUM CIRCUIT AMPERE
AEMS	AUTOMATED ENERGY MANAGEMENT SYSTEM	MCB	MAIN CIRCUIT BREAKER
AF	AMPERE FRAME	MEZZ	MEZZANINE
AFC	AUTOMATED FARE COLLECTION SYSTEM	MIN	MINIMUM
AFF	ABOVE FINISHED FLOOR	MLO	MAIN LUGS ONLY
AIC	AMPERE INTERRUPTING CAPACITY	MTD	MOUNTED OR MOUNTING
AT	AMPERE TRIP	NEC	NATIONAL ELECTRIC CODE
ATS	AUTOMATIC TRANSFER SWITCH	NEMA	NATIONAL ELECTRICAL MANUFACTURER ASSOCIATION
BATT	BATTERY	P	POLE
BKR	BREAKER	PH	PHASE
Ⓡ	BASELINE	PNL	PANELBOARD
C	CONDUIT	PRI	PRIMARY
CB	CIRCUIT BREAKER	PROP	PROPOSED
CCT	CIRCUIT	RGS	RIGID GALVANIZED STEEL
Ⓢ	CENTER LINE	SEC	SECONDARY
CLG	CEILING	SHT	SHEET
CONST	CONSTRUCTION	STA	STATION
DC	DIRECT CURRENT	STD	STANDARD
DISC	DISCONNECT	SW	SWITCH
E	ELECTRICAL	SWBD	SWITCHBOARD
FLUOR.	FLUORESCENT	TYP	TYPICAL
GND	GROUND	U/G	UNDER GROUND
GPR	GROUND PENETRATING RADAR	U.L.	UNDERWRITERS LABORATORIES
IG	ISOLATED GROUND	UON	UNLESS OTHERWISE NOTED
JB	JUNCTION BOX	VOLT	VOLTAGE
KAIC	THOUSAND AMPERE INTERRUPTING CAPACITY	W	WATT
KCMIL	THOUSAND CIRCULAR MILL	WMATA	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
KVA	KILOVOLT AMPERE	WP	WEATHERPROOF

DRAWING INDEX

K02-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
K02-E-101	CLARENDON - MEZZANINE KIOSK - POWER
K02-E-102	CLARENDON - PANEL SCHEDULE
K02-E-301	CLARENDON - PANELBOARD IMAGE
MM-K-E07	CLARENDON - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

	QUADRUPEX RECEPTACLE OUTLET- 20A, 125V WALL MOUNTED.
	JUNCTION BOX - SURFACE MOUNTED ON UNISTRUT CHANNEL
	CONDUIT - CONCEALED IN UNDER FLOOR DUCT U.O.N.
	HOMERUN TO PANEL, NUMBER OF ARROWHEADS INDICATES NUMBER OF CIRCUITS. CROSS HATCHING INDICATES NUMBER OF CONDUCTORS, NUMBER INDICATES SIZE OF CONDUCTOR AND SIZE OF CONDUIT
	↓ - INDICATES GROUNDING WIRE TO GROUNDING BUS AT THE PANELBOARD
	EF 1,3 - INDICATES CIRCUIT HOME RUN PANELBOARD AND CIRCUIT NUMBER IDENTIFICATION

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	12-14
		DATE
DRAWN	C. NGO	12-14
		DATE
CHECKED	B. IDLBI	12-14
		DATE
APPROVED	N/A	
		DATE

REFERENCE DRAWINGS		REVISIONS		
NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE
AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENOVATION PROGRAM

APPROVED

GFP A Gannett Fleming/Parsons JOINT VENTURE

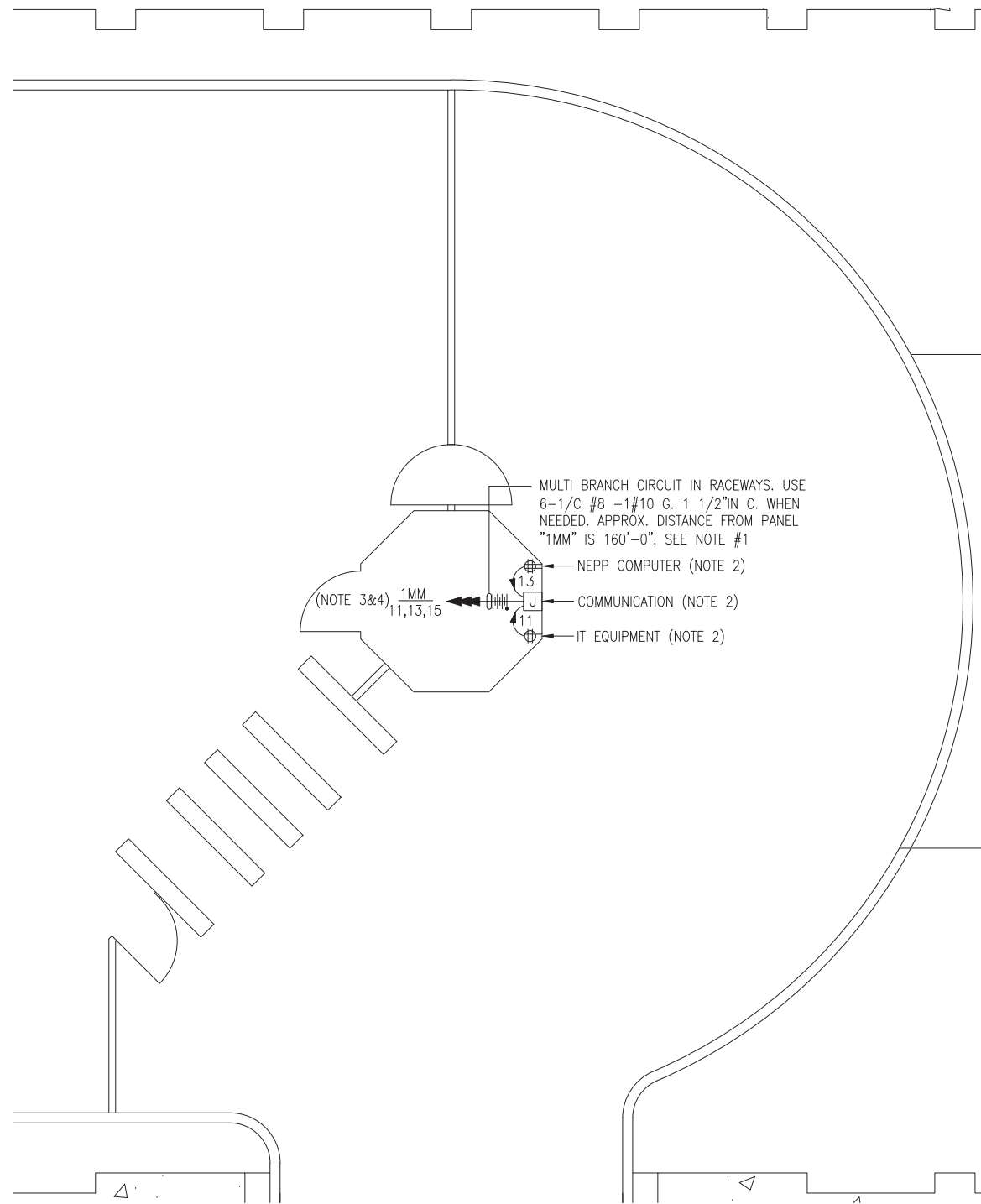
SUBMITTED _____
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
ABBREVIATIONS, DRAWING INDEX,
SPECIFICATIONS & SYMBOL LIST

SCALE
NOT TO SCALE

DRAWING NO.
K02-E-001

85



MEZZANINE KIOSK - POWER

SCALE: 1/4" = 1'-0"

DRAWING NOTES:

1. CONTRACTOR TO REFER TO SUPPLEMENTAL MEZZANINE INSPECTION REPORT, VOLUME 4 FURNISHED UNDER THIS SOLICITATION PACKAGE TO BE INFORMED THAT THE TOTAL LENGTH OF THE MULTI WIRE BRANCH CIRCUIT DEPICTED IN THE ELECTRICAL PLAN MAY EITHER CONSIST OF EXISTING POWER UNDER FLOOR DUCTS; OR IT COULD BE ALL CONDUIT RUN USING RIGID GALVANIZED STEEL CONDUITS; OR A COMBINATION OF BOTH WHICH IS RIGID GALVANIZED STEEL CONDUITS AND FLOOR DUCTS AND/OR JUST USE OF POWER FLOOR DUCT OR DEEMED REQUIRED IN THE REPORT.
2. COORDINATE WITH WMATA WHERE EXACTLY THE DUPLEX RECEPTACLE OUTLET AND JUNCTION BOX WILL BE INSTALLED IN THE KIOSK.
3. PROVIDE 3-NEW 20A, 1P CIRCUIT BREAKER AT EXISTING PANELBOARD AVAILABLE CIRCUIT BREAKER SPACES. NEW CIRCUIT BREAKERS SHALL MATCH EXISTING PANELBOARD CIRCUIT BREAKER AIC RATING. TERMINATE 2-NEW BRANCH CIRCUITS TO NEWLY INSTALLED CIRCUIT BREAKERS AND CONNECT PERMANENTLY TO QUAD RECEPTACLE OUTLETS LOCATED IN THE KIOSK. KEEP AND COILED REMAINING BRANCH CIRCUIT IN THE PANELBOARD AND INSIDE THE JUNCTION BOX AT THE KIOSK FOR FUTURE USE. UPDATE PANELBOARD DIRECTORY TO MANIFEST PANELBOARD ADDITIONAL LOADS.
4. THE REMAINING BRANCH CIRCUIT FOR FUTURE AFC FARE GATE APPLICATION SHALL BE SECURED, LABELED AND COILED AT THE KIOSK. THE LENGTH OF COILED PIGTAIL SHALL BE THE FARTHEST FARE GATE DISTANCE FROM KIOSK PLUS AN EXTRA 6'-0" CONDUCTOR.

SAFETY PRECAUTION:

1. ALL WORK SHALL COMPLY WITH WMATA SAFETY RULES, AND DE-ENERGIZATION POLICIES.

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	12-14 DATE	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	12-14 DATE					
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WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE
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OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

APPROVED *[Signature]*

GFP A Gannett Fleming/Parsons
JOINT VENTURE

SUBMITTED _____
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
CLARENDON
MEZZANINE KIOSK - POWER

SCALE
AS SHOWN

DRAWING NO.
K02-E-101

EXISTING PANEL "1MM"										
AMPERES: 225		VOLTS: 120/208		MOUNTING: SURFACE						
MAINS: 200A MCB		PHASE: 3		LOCATION: MECH. EQUIPMENT RM. C203						
RATING: 10K AIC		WIRE: 4		SECTION: 1 OF 1						
LOAD DESCRIPTION	KVA	AMP	POLE	CKT. NO.	CKT. NO.	CKT. POLE	CKT. AMP	KVA	LOAD DESCRIPTION	
EXIST. LOAD CENTER "KES"	2.9	30	3	1	A - -	2	3	20	0.0	SPARE
	2.5	-	-	3	- B -	4	-	-	0.0	
	2.5	-	-	5	- - C	6	-	-	0.0	
EXISTING VENDOR	0.8	20	1	7	A - -	8	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	9	- B -	10	1	20	0.8	EXISTING VENDOR
NEW KIOSK RECEPT. (IT/NC)	0.8	20	1	11	- - C	12	1	20	0.8	EXISTING VENDOR
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	13	A - -	14	1	20	0.8	EXISTING VENDOR
FUTURE AFC FARE GATE	0.8	20	1	15	- B -	16	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	17	- - C	18	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	19	A - -	20	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	21	- B -	22	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	23	- - C	24	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	25	A - -	26	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	27	- B -	28	1	20	0.0	SPARE
SPARE	0.0	20	1	29	- - C	30	1	20	0.0	SPARE
SPACE	0.0	-	-	31	A - -	32	-	-	0.0	SPACE
SPACE	0.0	-	-	33	- B -	34	-	-	0.0	SPACE
SPACE	0.0	-	-	35	- - C	36	-	-	0.0	SPACE
SPACE	0.0	-	-	37	A - -	38	-	-	0.0	SPACE
SPACE	0.0	-	-	39	- B -	40	-	-	0.0	SPACE
SPACE	0.0	-	-	41	- - C	42	-	-	0.0	SPACE

LOAD SUMMARY			
LIGHTS	0.0 x 125%		0.0 KVA
RECEPTACLES, FIRST 10 KVA	10.0 x 100%		10.0 KVA
RECEPTACLES	4.8 x 50%		2.4 KVA
MISC. APPLIANCES	0.0 x 100%		0.0 KVA
LARGEST MOTOR	0.0 x 125%		0.0 KVA
MOTORS	0.0 x 100%		0.0 KVA
HEAT	3.0 x 125%		3.8 KVA
AC	6.0 x 100%		6.0 KVA
WATER HEATING	1.0 x 125%		1.3 KVA
TOTAL CONNECTED LOAD	24.8 KVA	TOTAL DEMAND KVA	23.4 KVA
		TOTAL DEMAND AMPS	65.0 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	11.8 KVA		
PHASE B:	6.5 KVA		
PHASE C:	7.3 KVA		

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	12-14 DATE	REFERENCE DRAWINGS		REVISIONS		
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DRAWN	C. NGO	12-14 DATE					
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APPROVED	N/A	DATE					

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE
AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM



APPROVED *[Signature]*

SUBMITTED _____
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
CLARENDON
PANEL SCHEDULE

SCALE
NOT TO SCALE

DRAWING NO.
K02-E-102

ELECTRICAL SPECIFICATIONS

1. ALL WORK, MATERIAL AND EQUIPMENT SHALL COMPLY WITH THE LATEST NATIONAL ELECTRICAL CODE BEING USED BY THE LOCAL JURISDICTION AND SHALL COMPLY WITH ALL LOCAL CODES AND ORDINANCES.
2. MATERIALS AND EQUIPMENT SHALL BE NEW EXCEPT WHERE INDICATED OTHERWISE. ALL OTHER WIRING DEVICES, CONDUIT, WIRE, ETC. SHALL BE NEW UNLESS NOTED OTHERWISE.
3. ALL MATERIALS AND EQUIPMENT SHALL BEAR U.L. LISTING.
4. MAINTAIN GROUNDING CONTINUITY TO ALL DEVICES AND EQUIPMENT IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
5. WORK NOT SPECIFICALLY SPECIFIED OR INDICATED SHALL CONFORM WITH SPECIFICATIONS.
6. ALL CONDUITS SHALL BE RUN CONCEALED IN UNDER FLOOR DUCT.
7. ALL WIRE AND CABLE SHALL BE COPPER HAVING 600 VOLTS XHHW-2 OR RHW-2 INSULATIONS. PROVIDE #12 WIRE MINIMUM, UNLESS OTHERWISE NOTED. ALL CABLES SHALL BE LOW SMOKE ZERO HALOGEN CABLE.
8. THE CONTRACTOR SHALL VISIT THE SITE AND EXAMINE THE CONDITION OF THE PREMISES AND THE CHARACTER AND EXTENT OF WORK REQUIRED PRIOR TO SUBMISSION OF BIDS.
9. OBTAIN ALL PERMITS AND PAY ALL FEES NECESSARY FOR INSPECTIONS, TESTS & OTHER SERVICES REQUIRED FOR THE COMPLETION OF THIS WORK.
10. ALL WORK SHALL BE DONE AT SUCH TIMES AND IN SUCH A MANNER THAT WILL LEAST INTERFERE WITH THE MAINTENANCE AND OPERATION OF ALL RELATED OR AFFECTED SYSTEMS. COORDINATE ALL POWER OUTAGES WITH WMATA PROJECT MANAGER.
11. IT IS THE INTENT OF THESE DRAWINGS AND OTHER RELATED DOCUMENTS TO PRODUCE A COMPLETE AND FUNCTIONING ELECTRICAL SYSTEM. PROVIDE ALL LABOR, MATERIAL AND OTHER SERVICES NECESSARY TO ACHIEVE THIS PRODUCT. NOTIFY THE ENGINEER OF ANY DISCREPANCIES IN THE PLANS & SPECIFICATIONS THAT WILL AFFECT THE WORK, PRIOR TO SUBMISSION OF THE BID PRICE.
12. IF, DURING THE COURSE OF THE WORK, THE CONTRACTOR EXPERIENCES A CONFLICT RELATIVE TO THE PLANS AND SPECIFICATIONS, THE NEC OR OTHER APPLICABLE CODES AND GOVERNING DOCUMENTS, HE SHALL NOTIFY THE ENGINEER FOR DIRECTION PRIOR TO EXECUTION OF THIS WORK. ANY WORK INSTALLED IN VIOLATION OF THE CONTRACT DOCUMENT OR APPLICABLE CODES WHICH COULD HAVE BEEN AVOIDED BY CONTACTING THE ENGINEER SHALL BE RECTIFIED AT NO ADDITIONAL COST.
13. ELECTRICAL PLANS ARE DIAGRAMMATIC & INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE CONDITIONS, ETC. MAINTAIN WORKING CLEARANCES.
14. CIRCUIT NUMBERS ARE FOR IDENTIFICATION PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR CORRECTLY PHASING THE CIRCUITS IN THE PANEL AND SHALL BALANCE THE LOAD ON THE PHASES UNDER NORMAL OPERATING CONDITIONS. PROVIDE TYPEWRITTEN PANELBOARD DIRECTORIES. BALANCE THE PHASE LOADS TO WITHIN 20 PERCENT OF EACH OTHER.

15. INCREASE ALL BRANCH CIRCUIT CONDUCTORS TO THE NEXT LARGER SIZE FROM THE PANEL TO THE FIRST OUTLET WHERE THE LENGTH OF THE HOMERUN EXCEEDS 100FT. ON 120/208V CIRCUITS.
16. PROVIDE A PULLWIRE OR FISHTAPE/CORD IN ALL EMPTY CONDUIT RUNS.
17. VERIFY WIRE SIZES, CIRCUIT BREAKERS AND FUSES RATINGS FOR ALL EQUIPMENT, AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES AFFECTING THE WORK PRIOR TO PROCEEDING.
18. ALL PANELS IMPACTED BY THIS PROJECT SHALL BE PROVIDED WITH NEW, UPDATED TYPEWRITTEN PANEL SCHEDULES (FOR NEW AND EXISTING CIRCUITS) INDICATING THE FINAL ROOM NUMBER AND THE EQUIPMENT OR DEVICES SERVED BY THE CIRCUITS.
19. DEMOLITION OF EXISTING WORK SHALL BE PERFORMED AFTER HOURS. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE WMATA PROJECT MANAGER PRIOR TO PERFORMING ALL THE WORK. THE TIME OF DAY OR EVENING SHALL BE DESIGNATED BY THE WMATA PROJECT MANAGER.
20. ALL WIRING SHALL BE IN CONDUIT, MINIMUM SIZE 3/4 INCH WITH LARGER SIZES AS INDICATED OR REQUIRED BY NEC. ALL CONDUITS SHALL BE RIGID GALVANIZED STEEL THREADED COUPLING FOR COMPLETE WATER PROOF INSTALLATION.
21. AT JOB COMPLETION, AND BEFORE FINAL ACCEPTANCE BY WMATA, TEST EACH RECEPTACLE AND PANELBOARD FOR PROPER OPERATION. WIRING SHALL BE TESTED FOR CONTINUITY, SHORTS, ETC... ALL WORK AREAS, ETC.. SHALL BE CLEANED AT THE COMPLETION OF THIS PROJECT.
22. FOR DEVICE IDENTIFICATION, THE ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELBOARDS, JUNCTION BOXES, ETC..TO INDICATE THE NAME, VOLTAGE, SERVING EQUIPMENT AND ITEM SERVED ETC... LABELS FOR EMERGENCY CIRCUITS SHALL BE IN RED, NORMAL CIRCUITS SHALL BE IN BLACK. ALL DEVICES SHALL BE IDENTIFIED EITHER ON THE FACE OF THE COVERPLATE OR INSIDE PER WMATA PREFERENCE. ALL JUNCTION BOXES SHALL BE LABELED TO INDICATE THE CIRCUITS CONTAINED BY THE JUNCTION BOX.
23. THE CONTRACTOR SHALL UPDATE THE SCHEDULES OF ALL PANELBOARDS AFFECTED BY THIS PROJECT TO REFLECT CHANGES DUE TO THE PROJECT WORK. PANEL SCHEDULE LOAD DESCRIPTIONS ARE TO INCLUDE THE FINAL ROOM OR AREA NUMBERS.
24. INCLUDE GPR FOR ANY CORE DRILLS OR DRILLED PENETRATIONS IN ANY WALLS.
25. SEAL OFF ALL PENETRATIONS THRU WALLS/FLOORS.
26. THE CONTRACTOR SHALL BECOME FAMILIAR WITH WMATA DESIGN CRITERIA SECTION 4 AND SECTION 13; WMATA SPECIFICATION SECTION 16120, 16130, AND 16125. ALL INSTALLATION SHALL BE IN COMPLIANCE WITH THE NEC, WMATA DESIGN CRITERIA, AND SPECIFICATIONS.
27. THE CONTRACTOR SHALL IDENTIFY SPARE CIRCUIT WITH "RESERVED FOR AFC".
28. EXISTING SWITCHBOARDS, PANELBOARDS AND EQUIPMENT SHOWN IS BASED ON RECORD DRAWINGS AND CASUAL FIELD SURVEY. CONTRACTOR SHALL VERIFY ALL ELECTRICAL EQUIPMENT IN FIELD.

ABBREVIATIONS

A, AMP	AMPERES	NEC	NATIONAL ELECTRIC CODE
AC	ALTERNATING CURRENT	P	POLE
AF	AMPERE FRAME	PH	PHASE
AFC	AUTOMATED FARE COLLECTION SYSTEM	PNL	PANELBOARD
AFF	ABOVE FINISHED FLOOR	PRI	PRIMARY
AIC	AMPERE INTERRUPTING CAPACITY	PROP	PROPOSED
AT	AMPERE TRIP	RGS	RIGID GALVANIZED STEEL
BKR	BREAKER	SEC	SECONDARY
C	CONDUIT	SHT	SHEET
CB	CIRCUIT BREAKER	SW	SWITCH
CCT	CIRCUIT	SWBD	SWITCHBOARD
CL	CENTER LINE	TYP	TYPICAL
CLG	CEILING	U/G	UNDER GROUND
CONST	CONSTRUCTION	U.L.	UNDERWRITERS LABORATORIES
DISC	DISCONNECT	UON	UNLESS OTHERWISE NOTED
E	ELECTRICAL	VOLT	VOLTAGE
GND	GROUND	W	WATT
JB	JUNCTION BOX	WMATA	WASHINGTON METROPOLITIAN AREA TRANSIT AUTHORITY
KAIC	THOUSAND AMPERE INTERRUPTING CAPACITY	WP	WEATHERPROOF
KCMIL	THOUSAND CIRCULAR MILL		
KVA	KILOVOLT AMPERE		
MAX	MAXIMUM		
MCA	MINIMUM CIRCUIT AMPERE		
MCB	MAIN CIRCUIT BREAKER		
MEZZ	MEZZANINE		
MIN	MINIMUM		
MLO	MAIN LUGS ONLY		

DRAWING INDEX

K03-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
K03-E-101	VIRGINIA SQUARE - MEZZANINE KIOSK - POWER
K03-E-102	VIRGINIA SQUARE - PANEL SCHEDULE
MM-K-E09	VIRGINIA SQUARE - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

	QUADRUPEX RECEPTACLE OUTLET- 20A, 125V WALL MOUNTED.
	JUNCTION BOX - SURFACE MOUNTED ON UNISTRUT CHANNEL
	CONDUIT - CONCEALED IN UNDER FLOOR DUCT U.O.N.
	HOMERUN TO PANEL, NUMBER OF ARROWHEADS INDICATES NUMBER OF CIRCUITS. CROSS HATCHING INDICATES NUMBER OF CONDUCTORS, NUMBER INDICATES SIZE OF CONDUCTOR AND SIZE OF CONDUIT
	↓ - INDICATES GROUNDING WIRE TO GROUNDING BUS AT THE PANELBOARD
	EF 1,3 - INDICATES CIRCUIT HOME RUN PANELBOARD AND CIRCUIT NUMBER IDENTIFICATION

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	12-14	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	12-14					
CHECKED	B. IDILBI	12-14					
APPROVED	N/A						

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM



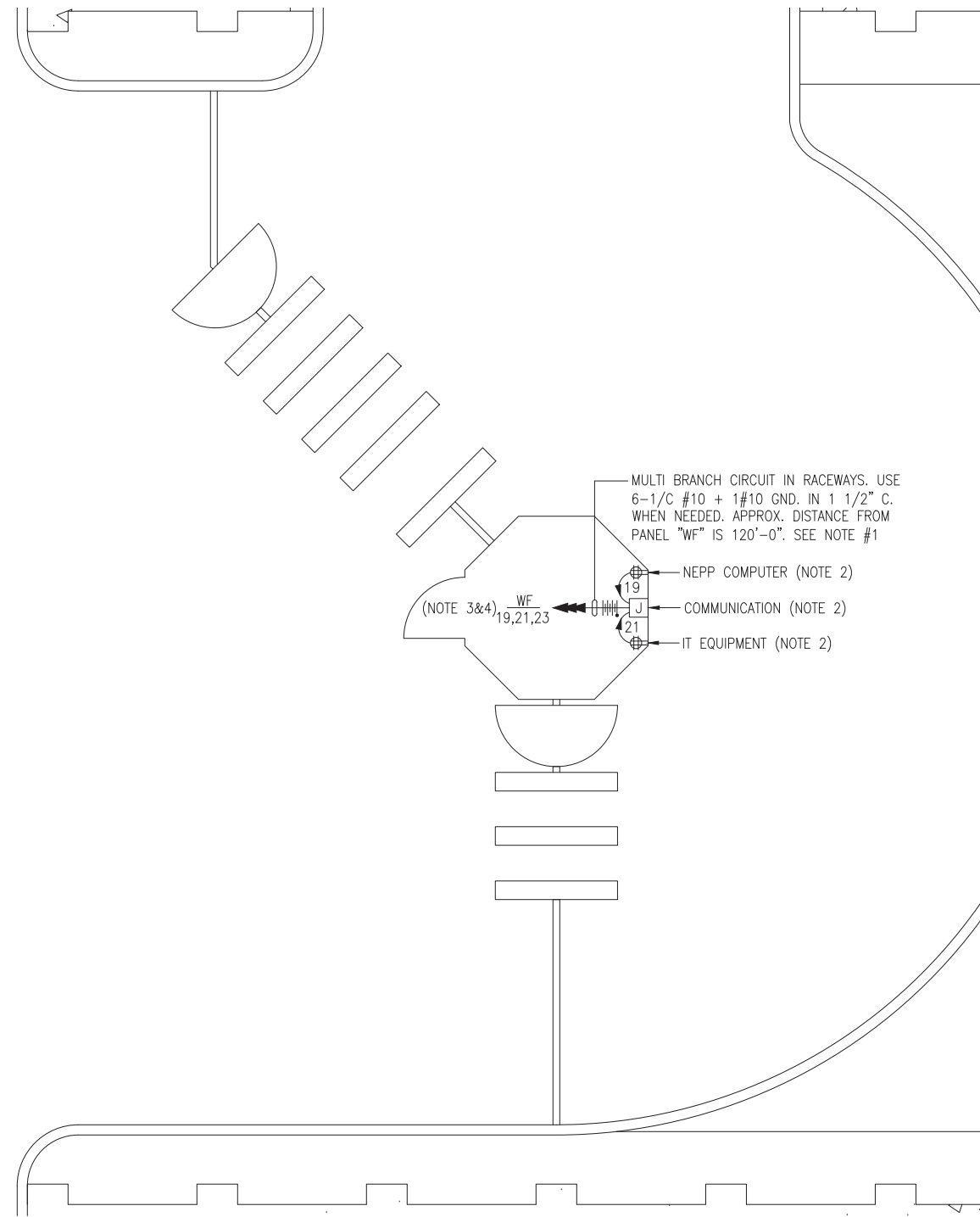
APPROVED _____

SUBMITTED _____
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
ABBREVIATIONS □ DRAWING INDEX □
SPECIFICATIONS □ SYMBOL LIST

SCALE
NOT TO SCALE

DRAWING NO.
K03-E-E001



MEZZANINE KIOSK - POWER

SCALE: 1/4" = 1'- 0"

DRAWING NOTES:

1. CONTRACTOR TO REFER TO SUPPLEMENTAL MEZZANINE INSPECTION REPORT, VOLUME 4 FURNISHED UNDER THIS SOLICITATION PACKAGE TO BE INFORMED THAT THE TOTAL LENGTH OF THE MULTI WIRE BRANCH CIRCUIT DEPICTED IN THE ELECTRICAL PLAN MAY EITHER CONSIST OF EXISTING POWER UNDER FLOOR DUCTS; OR IT COULD BE ALL CONDUIT RUN USING RIGID GALVANIZED STEEL CONDUITS; OR A COMBINATION OF BOTH WHICH IS RIGID GALVANIZED STEEL CONDUITS AND FLOOR DUCTS AND/OR JUST USE OF POWER FLOOR DUCT OR DEEMED REQUIRED IN THE REPORT.
2. COORDINATE WITH WMATA WHERE EXACTLY THE DUPLEX RECEPTACLE OUTLET AND JUNCTION BOX WILL BE INSTALLED IN THE KIOSK.
3. PROVIDE 3-NEW 20A, 1P CIRCUIT BREAKER AT EXISTING PANELBOARD AVAILABLE CIRCUIT BREAKER SPACES. NEW CIRCUIT BREAKERS SHALL MATCH EXISTING PANELBOARD CIRCUIT BREAKER AIC RATING. TERMINATE 2-NEW BRANCH CIRCUITS TO NEWLY INSTALLED CIRCUIT BREAKERS AND CONNECT PERMANENTLY TO QUAD RECEPTACLE OUTLETS LOCATED IN THE KIOSK. KEEP AND COILED REMAINING BRANCH CIRCUIT IN THE PANELBOARD AND INSIDE THE JUNCTION BOX AT THE KIOSK FOR FUTURE USE. UPDATE PANELBOARD DIRECTORY TO MANIFEST PANELBOARD ADDITIONAL LOADS.
4. THE REMAINING BRANCH CIRCUIT FOR FUTURE AFC FARE GATE APPLICATION SHALL BE SECURED, LABELED AND COILED AT THE KIOSK. THE LENGTH OF COILED PIGTAIL SHALL BE THE FARTHEST FARE GATE DISTANCE FROM KIOSK PLUS AN EXTRA 6'-0" CONDUCTOR.

SAFETY PRECAUTION:

1. ALL WORK SHALL COMPLY WITH WMATA SAFETY RULES, AND DE-ENERGIZATION POLICIES.

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	12-14 DATE	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	12-14 DATE					
CHECKED	B. IDILBI	12-14 DATE					
APPROVED	N/A	DATE					

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE
AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

APPROVED

GFP A Gannett Fleming/Parsons
JOINT VENTURE

SUBMITTED

PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
VIRGINIA SQUARE
MEZZANINE KIOSK - POWER

SCALE
AS SHOWN

DRAWING NO.
K03-E-101

EXISTING PANEL "WF"

AMPERES: 225	VOLTS: 120/208	MOUNTING: SURFACE
MAINS: 200A MCB	PHASE: 3	LOCATION: ELEV. MACH./MECH. EQUIPMENT RM C206
RATING: 10K AIC	WIRE: 4	SECTION: 1 OF 1

LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	PHASE	CKT. NO.	CKT BKRS			LOAD DESCRIPTION
		AMP	POLE					POLE	AMP	KVA	
EXISTING VENDOR	0.8	20	1	1	A	-	2	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	3	B	-	4	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	5	-	-	6	1	20	0.0	SPARE
SPARE	0.0	20	1	7	A	-	8	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	9	B	-	10	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	11	-	-	12	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	13	A	-	14	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	15	B	-	16	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	17	-	-	18	1	20	0.8	EXISTING VENDOR
NEW KIOSK RECEPT. (IT/NCS)	0.8	20	1	19	A	-	20	1	20	0.0	SPARE
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	21	B	-	22	1	20	0.8	EXISTING VENDOR
FUTURE AFC FARE GATE	0.0	20	1	23	-	-	24	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	25	A	-	26	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	27	B	-	28	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	29	-	-	30	1	20	0.8	EXISTING VENDOR
SPACE	0.0	-	-	31	A	-	32	3	30	2.9	EXISTING LOAD CENTER "KES"
SPACE	0.0	-	-	33	B	-	34	-	-	2.5	
SPACE	0.0	-	-	35	-	-	36	-	-	2.5	
SPACE	0.0	-	-	37	A	-	38	1	20	0.0	SPARE
SPACE	0.0	-	-	39	B	-	40	1	20	0.8	EXISTING VENDOR
SPACE	0.0	-	-	41	-	-	42	-	-	0.0	SPACE

LOAD SUMMARY


LIGHTS	0.0 x 125%	0.0 KVA
RECEPTACLES, FIRST 10 KVA	10.0 x 100%	10.0 KVA
RECEPTACLES	6.4 x 50%	3.2 KVA
MISC. APPLIANCES	0.0 x 100%	0.0 KVA
LARGEST MOTOR	0.0 x 125%	0.0 KVA
MOTORS	0.0 x 100%	0.0 KVA
HEAT	3.0 x 125%	3.8 KVA
AC	4.5 x 100%	4.5 KVA
WATER HEATING	0.0 x 125%	0.0 KVA
TOTAL CONNECTED LOAD	23.9 KVA	TOTAL DEMAND KVA 21.5 KVA
		TOTAL DEMAND AMPS 59.6 AMPS
CONNECTED LOAD PHASE SUMMARY		
PHASE A:	8.5 KVA	
PHASE B:	9.7 KVA	
PHASE C:	6.5 KVA	


CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	12-14 DATE	REFERENCE DRAWINGS		REVISIONS		
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DRAWN	C. NGO	12-14 DATE					
CHECKED	B. IDILBI	12-14 DATE					
APPROVED	N/A	DATE					

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE
AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM



APPROVED  SUBMITTED _____
PROJECT MANAGER

**NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS**

VIRGINIA SQUARE
PANEL SCHEDULE

SCALE: NOT TO SCALE

DRAWING NO. **K03-E-102**

90

ELECTRICAL SPECIFICATIONS

1. ALL WORK, MATERIAL AND EQUIPMENT SHALL COMPLY WITH THE LATEST NATIONAL ELECTRICAL CODE BEING USED BY THE LOCAL JURISDICTION AND SHALL COMPLY WITH ALL LOCAL CODES AND ORDINANCES.
2. MATERIALS AND EQUIPMENT SHALL BE NEW EXCEPT WHERE INDICATED OTHERWISE. ALL OTHER WIRING DEVICES, CONDUIT, WIRE, ETC. SHALL BE NEW UNLESS NOTED OTHERWISE.
3. ALL MATERIALS AND EQUIPMENT SHALL BEAR U.L. LISTING.
4. MAINTAIN GROUNDING CONTINUITY TO ALL DEVICES AND EQUIPMENT IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
5. WORK NOT SPECIFICALLY SPECIFIED OR INDICATED SHALL CONFORM WITH SPECIFICATIONS.
6. ALL CONDUITS SHALL BE RUN CONCEALED IN UNDER FLOOR DUCT.
7. ALL WIRE AND CABLE SHALL BE COPPER HAVING 600 VOLTS XHHW-2 OR RHW-2 INSULATIONS. PROVIDE #12 WIRE MINIMUM, UNLESS OTHERWISE NOTED. ALL CABLES SHALL BE LOW SMOKE ZERO HALOGEN CABLE.
8. THE CONTRACTOR SHALL VISIT THE SITE AND EXAMINE THE CONDITION OF THE PREMISES AND THE CHARACTER AND EXTENT OF WORK REQUIRED PRIOR TO SUBMISSION OF BIDS.
9. OBTAIN ALL PERMITS AND PAY ALL FEES NECESSARY FOR INSPECTIONS, TESTS & OTHER SERVICES REQUIRED FOR THE COMPLETION OF THIS WORK.
10. ALL WORK SHALL BE DONE AT SUCH TIMES AND IN SUCH A MANNER THAT WILL LEAST INTERFERE WITH THE MAINTENANCE AND OPERATION OF ALL RELATED OR AFFECTED SYSTEMS. COORDINATE ALL POWER OUTAGES WITH WMATA PROJECT MANAGER.
11. IT IS THE INTENT OF THESE DRAWINGS AND OTHER RELATED DOCUMENTS TO PRODUCE A COMPLETE AND FUNCTIONING ELECTRICAL SYSTEM. PROVIDE ALL LABOR, MATERIAL AND OTHER SERVICES NECESSARY TO ACHIEVE THIS PRODUCT. NOTIFY THE ENGINEER OF ANY DISCREPANCIES IN THE PLANS & SPECIFICATIONS THAT WILL AFFECT THE WORK, PRIOR TO SUBMISSION OF THE BID PRICE.
12. IF, DURING THE COURSE OF THE WORK, THE CONTRACTOR EXPERIENCES A CONFLICT RELATIVE TO THE PLANS AND SPECIFICATIONS, THE NEC OR OTHER APPLICABLE CODES AND GOVERNING DOCUMENTS, HE SHALL NOTIFY THE ENGINEER FOR DIRECTION PRIOR TO EXECUTION OF THIS WORK. ANY WORK INSTALLED IN VIOLATION OF THE CONTRACT DOCUMENT OR APPLICABLE CODES WHICH COULD HAVE BEEN AVOIDED BY CONTACTING THE ENGINEER SHALL BE RECTIFIED AT NO ADDITIONAL COST.
13. ELECTRICAL PLANS ARE DIAGRAMMATIC & INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE CONDITIONS, ETC. MAINTAIN WORKING CLEARANCES.
14. CIRCUIT NUMBERS ARE FOR IDENTIFICATION PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR CORRECTLY PHASING THE CIRCUITS IN THE PANEL AND SHALL BALANCE THE LOAD ON THE PHASES UNDER NORMAL OPERATING CONDITIONS. PROVIDE TYPEWRITTEN PANELBOARD DIRECTORIES. BALANCE THE PHASE LOADS TO WITHIN 20 PERCENT OF EACH OTHER.

15. INCREASE ALL BRANCH CIRCUIT CONDUCTORS TO THE NEXT LARGER SIZE FROM THE PANEL TO THE FIRST OUTLET WHERE THE LENGTH OF THE HOMERUN EXCEEDS 100FT. ON 120/208V CIRCUITS.
16. PROVIDE A PULLWIRE OR FISHTAPE/CORD IN ALL EMPTY CONDUIT RUNS.
17. VERIFY WIRE SIZES, CIRCUIT BREAKERS AND FUSES RATINGS FOR ALL EQUIPMENT, AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES AFFECTING THE WORK PRIOR TO PROCEEDING.
18. ALL PANELS IMPACTED BY THIS PROJECT SHALL BE PROVIDED WITH NEW, UPDATED TYPEWRITTEN PANEL SCHEDULES (FOR NEW AND EXISTING CIRCUITS) INDICATING THE FINAL ROOM NUMBER AND THE EQUIPMENT OR DEVICES SERVED BY THE CIRCUITS.
19. DEMOLITION OF EXISTING WORK SHALL BE PERFORMED AFTER HOURS. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE WMATA PROJECT MANAGER PRIOR TO PERFORMING ALL THE WORK. THE TIME OF DAY OR EVENING SHALL BE DESIGNATED BY THE WMATA PROJECT MANAGER.
20. ALL WIRING SHALL BE IN CONDUIT, MINIMUM SIZE 3/4 INCH WITH LARGER SIZES AS INDICATED OR REQUIRED BY NEC. ALL CONDUITS SHALL BE RIGID GALVANIZED STEEL THREADED COUPLING FOR COMPLETE WATER PROOF INSTALLATION.
21. AT JOB COMPLETION, AND BEFORE FINAL ACCEPTANCE BY WMATA, TEST EACH RECEPTACLE AND PANELBOARD FOR PROPER OPERATION. WIRING SHALL BE TESTED FOR CONTINUITY, SHORTS, ETC... ALL WORK AREAS, ETC.. SHALL BE CLEANED AT THE COMPLETION OF THIS PROJECT.
22. FOR DEVICE IDENTIFICATION, THE ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELBOARDS, JUNCTION BOXES, ETC..TO INDICATE THE NAME, VOLTAGE, SERVING EQUIPMENT AND ITEM SERVED ETC... LABELS FOR EMERGENCY CIRCUITS SHALL BE IN RED, NORMAL CIRCUITS SHALL BE IN BLACK. ALL DEVICES SHALL BE IDENTIFIED EITHER ON THE FACE OF THE COVERPLATE OR INSIDE PER WMATA PREFERENCE. ALL JUNCTION BOXES SHALL BE LABELED TO INDICATE THE CIRCUITS CONTAINED BY THE JUNCTION BOX.
23. THE CONTRACTOR SHALL UPDATE THE SCHEDULES OF ALL PANELBOARDS AFFECTED BY THIS PROJECT TO REFLECT CHANGES DUE TO THE PROJECT WORK. PANEL SCHEDULE LOAD DESCRIPTIONS ARE TO INCLUDE THE FINAL ROOM OR AREA NUMBERS.
24. INCLUDE GPR FOR ANY CORE DRILLS OR DRILLED PENETRATIONS IN ANY WALLS.
25. SEAL OFF ALL PENETRATIONS THRU WALLS/FLOORS.
26. THE CONTRACTOR SHALL BECOME FAMILIAR WITH WMATA DESIGN CRITERIA SECTION 4 AND SECTION 13; WMATA SPECIFICATION SECTION 16120, 16130, AND 16125. ALL INSTALLATION SHALL BE IN COMPLIANCE WITH THE NEC, WMATA DESIGN CRITERIA, AND SPECIFICATIONS.
27. THE CONTRACTOR SHALL IDENTIFY SPARE CIRCUIT WITH "RESERVED FOR AFC".
28. EXISTING SWITCHBOARDS, PANELBOARDS AND EQUIPMENT SHOWN IS BASED ON RECORD DRAWINGS AND CASUAL FIELD SURVEY. CONTRACTOR SHALL VERIFY ALL ELECTRICAL EQUIPMENT IN FIELD.

ABBREVIATIONS

A, AMP	AMPERES	NEC	NATIONAL ELECTRIC CODE
AC	ALTERNATING CURRENT	P	POLE
AF	AMPERE FRAME	PH	PHASE
AFC	AUTOMATED FARE COLLECTION SYSTEM	PNL	PANELBOARD
AFF	ABOVE FINISHED FLOOR	PRI	PRIMARY
AIC	AMPERE INTERRUPTING CAPACITY	PROP	PROPOSED
AT	AMPERE TRIP	RGS	RIGID GALVANIZED STEEL
BKR	BREAKER	SEC	SECONDARY
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CCT	CIRCUIT	SWBD	SWITCHBOARD
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CLG	CEILING	U/G	UNDER GROUND
CONST	CONSTRUCTION	U.L.	UNDERWRITERS LABORATORIES
DISC	DISCONNECT	UON	UNLESS OTHERWISE NOTED
E	ELECTRICAL	VOLT	VOLTAGE
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JB	JUNCTION BOX	WMATA	WASHINGTON METROPOLITIAN AREA TRANSIT AUTHORITY
KAIC	THOUSAND AMPERE INTERRUPTING CAPACITY	WP	WEATHERPROOF
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KVA	KILOVOLT AMPERE		
MAX	MAXIMUM		
MCA	MINIMUM CIRCUIT AMPERE		
MCB	MAIN CIRCUIT BREAKER		
MEZZ	MEZZANINE		
MIN	MINIMUM		
MLO	MAIN LUGS ONLY		

DRAWING INDEX

K05-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
K05-E-101	EAST FALLS CHURCH - KIOSK - POWER
K05-E-102	EAST FALLS CHURCH - PANEL SCHEDULE
MM-K-E14	EAST FALLS CHURCH - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

	QUADRUPEX RECEPTACLE OUTLET- 20A, 125V WALL MOUNTED.
	JUNCTION BOX - SURFACE MOUNTED ON UNISTRUT CHANNEL
	CONDUIT - CONCEALED IN UNDER FLOOR DUCT U.O.N.
	HOMERUN TO PANEL, NUMBER OF ARROWHEADS INDICATES NUMBER OF CIRCUITS. CROSS HATCHING INDICATES NUMBER OF CONDUCTORS, NUMBER INDICATES SIZE OF CONDUCTOR AND SIZE OF CONDUIT
	↓ - INDICATES GROUNDING WIRE TO GROUNDING BUS AT THE PANELBOARD
	EF 1,3 - INDICATES CIRCUIT HOME RUN PANELBOARD AND CIRCUIT NUMBER IDENTIFICATION

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	12-14	REFERENCE DRAWINGS		REVISIONS		
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DRAWN	C. NGO	12-14					
CHECKED	B. IDILBI	12-14					
APPROVED	N/A						

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM



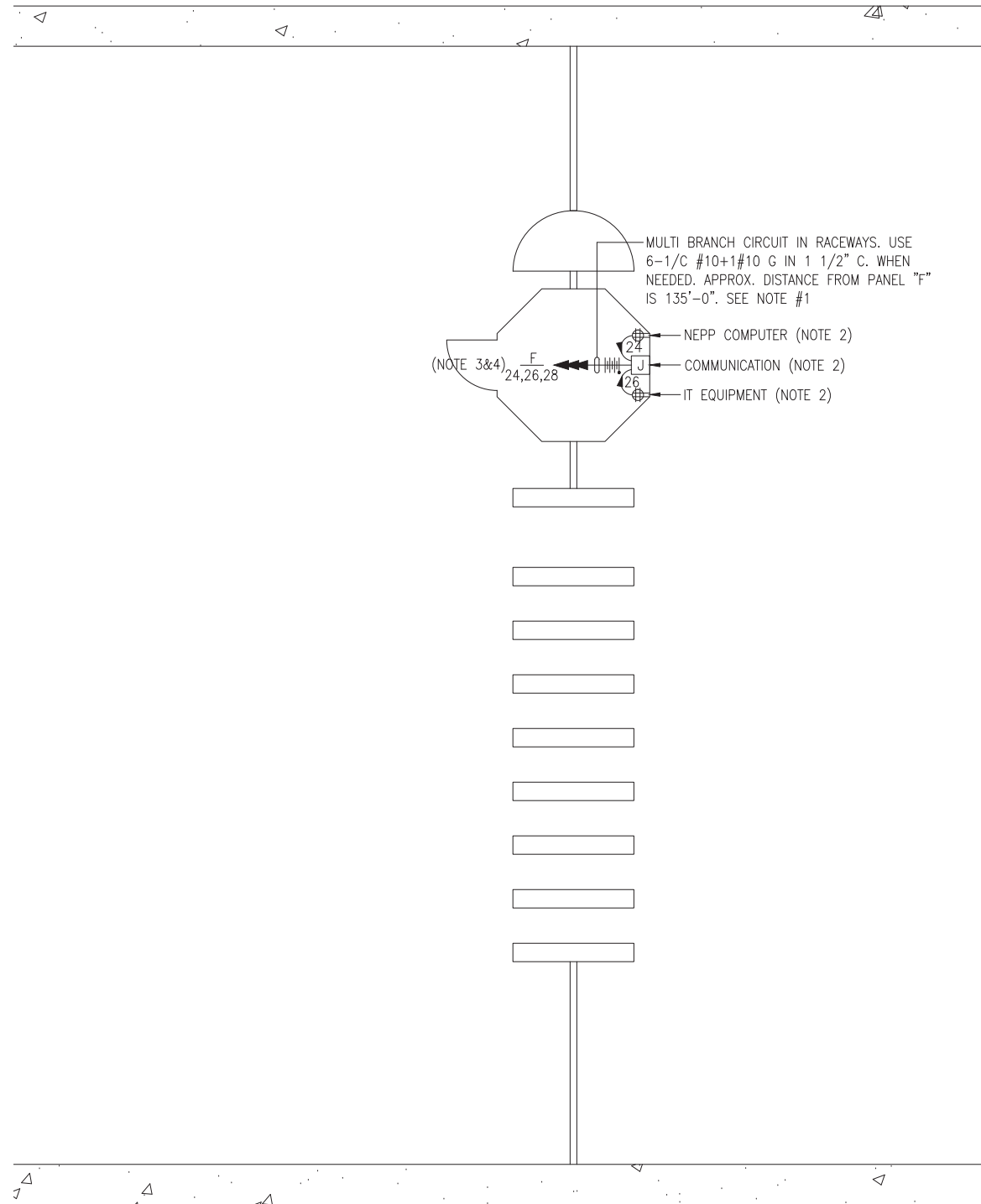
APPROVED _____

SUBMITTED _____
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
ABBREVIATIONS □ DRAWING INDEX □
SPECIFICATIONS □ SYMBOL LIST

SCALE
NOT TO SCALE

DRAWING NO.
K05-E-001



MULTI BRANCH CIRCUIT IN RACEWAYS. USE 6-1/C #10+1#10 G IN 1 1/2" C. WHEN NEEDED. APPROX. DISTANCE FROM PANEL "F" IS 135'-0". SEE NOTE #1

NEPP COMPUTER (NOTE 2)

COMMUNICATION (NOTE 2)

IT EQUIPMENT (NOTE 2)

(NOTE 3&4) F 24,26,28

DRAWING NOTES:

1. CONTRACTOR TO REFER TO SUPPLEMENTAL MEZZANINE INSPECTION REPORT, VOLUME 4 FURNISHED UNDER THIS SOLICITATION PACKAGE TO BE INFORMED THAT THE TOTAL LENGTH OF THE MULTI WIRE BRANCH CIRCUIT DEPICTED IN THE ELECTRICAL PLAN MAY EITHER CONSIST OF EXISTING POWER UNDER FLOOR DUCTS; OR IT COULD BE ALL CONDUIT RUN USING RIGID GALVANIZED STEEL CONDUITS; OR A COMBINATION OF BOTH WHICH IS RIGID GALVANIZED STEEL CONDUITS AND FLOOR DUCTS AND/OR JUST USE OF POWER FLOOR DUCT OR DEEMED REQUIRED IN THE REPORT.
2. COORDINATE WITH WMATA WHERE EXACTLY THE DUPLEX RECEPTACLE OUTLET AND JUNCTION BOX WILL BE INSTALLED IN THE KIOSK.
3. PROVIDE 3-NEW 20A, 1P CIRCUIT BREAKER AT EXISTING PANELBOARD AVAILABLE CIRCUIT BREAKER SPACES. NEW CIRCUIT BREAKERS SHALL MATCH EXISTING PANELBOARD CIRCUIT BREAKER AIC RATING. TERMINATE 2-NEW BRANCH CIRCUITS TO NEWLY INSTALLED CIRCUIT BREAKERS AND CONNECT PERMANENTLY TO QUAD RECEPTACLE OUTLETS LOCATED IN THE KIOSK. KEEP AND COILED REMAINING BRANCH CIRCUIT IN THE PANELBOARD AND INSIDE THE JUNCTION BOX AT THE KIOSK FOR FUTURE USE. UPDATE PANELBOARD DIRECTORY TO MANIFEST PANELBOARD ADDITIONAL LOADS.
4. THE REMAINING BRANCH CIRCUIT FOR FUTURE AFC FARE GATE APPLICATION SHALL BE SECURED, LABELED AND COILED AT THE KIOSK. THE LENGTH OF COILED PIGTAIL SHALL BE THE FARTHEST FARE GATE DISTANCE FROM KIOSK PLUS AN EXTRA 6'-0" CONDUCTOR.

SAFETY PRECAUTION:

1. ALL WORK SHALL COMPLY WITH WMATA SAFETY RULES, AND DE-ENERGIZATION POLICIES.

KIOSK - POWER

SCALE: 1/4" = 1'- 0"

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	12-14 DATE	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	12-14 DATE					
CHECKED	B. IDILBI	12-14 DATE					
APPROVED	N/A	DATE					

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE
AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM



APPROVED *[Signature]*

SUBMITTED _____
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
EAST FALLS CHURCH
KIOSK - POWER

SCALE
AS SHOWN

DRAWING NO.
K05-E-101

EXISTING PANEL "F"

AMPERES: 400	VOLTS: 120/208	MOUNTING: SURFACE
MAINS: 400A MCB	PHASE: 3	LOCATION: ELEC. EQUIPMENT ROOM 115
RATING: 10K AIC	WIRE: 4	SECTION: 1 OF 1

LOAD DESCRIPTION	KVA	CKT BKRS			NO.	NO.	CKT BKRS			LOAD DESCRIPTION
		AMP	POLE	NO.			POLE	AMP	KVA	
EXISTING VENDOR	0.8	20	1	1	A - -	2	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	3	- B -	4	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	5	- - C	6	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	7	A - -	8	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	9	- B -	10	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	11	- - C	12	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	13	A - -	14	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	15	- B -	16	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	17	- - C	18	1	20	0.0	SPARE
SPARE	0.0	20	1	19	A - -	20	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	21	- B -	22	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	23	- - C	24	1	20	0.8	NEW KIOSK RECEPT. (IT/NCS)
SPARE	0.0	20	1	25	A - -	26	1	20	0.8	NEW KIOSK RECEPT. (NEPP/SOC)
SPARE	0.0	20	1	27	- B -	28	1	20	0.0	FUTURE AFC FARE GATE
SPARE	0.0	20	1	29	- - C	30	1	20	0.0	SPARE
SPARE	0.0	-	-	31	A - -	32	1	20	0.0	SPARE
SPARE	0.0	-	-	33	- B -	34	1	20	0.0	SPARE
EXISTING LOAD CENTER "KES"	2.9	40	3	35	- - C	36	1	20	0.0	SPARE
	2.5	-	-	37	A - -	38	1	20	0.0	SPARE
	2.5	-	-	39	- B -	40	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	41	- - C	42	-	-	0.0	SPACE

LOAD SUMMARY

LIGHTS	0.0 x 125%	0.0 KVA
RECEPTACLES, FIRST 10 KVA	10.0 x 100%	10.0 KVA
RECEPTACLES	7.2 x 50%	3.6 KVA
MISC. APPLIANCES	0.0 x 100%	0.0 KVA
LARGEST MOTOR	0.0 x 125%	0.0 KVA
MOTORS	0.0 x 100%	0.0 KVA
HEAT	3.0 x 125%	3.8 KVA
AC	4.5 x 100%	4.5 KVA
WATER HEATING	0.0 x 125%	0.0 KVA
TOTAL CONNECTED LOAD	24.7 KVA	TOTAL DEMAND KVA 21.9 KVA
		TOTAL DEMAND AMPS 60.7 AMPS
CONNECTED LOAD PHASE SUMMARY		
PHASE A:	8.9 KVA	
PHASE B:	8.1 KVA	
PHASE C:	8.5 KVA	

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	12-14 DATE	REFERENCE DRAWINGS		REVISIONS			
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION	
DRAWN	C. NGO	12-14 DATE						
CHECKED	B. IDILBI	12-14 DATE						
APPROVED	N/A	DATE						

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE
AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM



APPROVED *[Signature]*

SUBMITTED _____
PROJECT MANAGER

**NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
EAST FALLS CHURCH
PANEL SCHEDULE**

SCALE
NOT TO SCALE

DRAWING NO.
K05-E-102

ELECTRICAL SPECIFICATIONS

1. ALL WORK, MATERIAL AND EQUIPMENT SHALL COMPLY WITH THE LATEST NATIONAL ELECTRICAL CODE BEING USED BY THE LOCAL JURISDICTION AND SHALL COMPLY WITH ALL LOCAL CODES AND ORDINANCES.
2. MATERIALS AND EQUIPMENT SHALL BE NEW EXCEPT WHERE INDICATED OTHERWISE. ALL OTHER WIRING DEVICES, CONDUIT, WIRE, ETC. SHALL BE NEW UNLESS NOTED OTHERWISE.
3. ALL MATERIALS AND EQUIPMENT SHALL BEAR U.L. LISTING.
4. MAINTAIN GROUNDING CONTINUITY TO ALL DEVICES AND EQUIPMENT IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
5. WORK NOT SPECIFICALLY SPECIFIED OR INDICATED SHALL CONFORM WITH SPECIFICATIONS.
6. ALL CONDUITS SHALL BE RUN CONCEALED IN UNDER FLOOR DUCT.
7. ALL WIRE AND CABLE SHALL BE COPPER HAVING 600 VOLTS XHHW-2 OR RHW-2 INSULATIONS. PROVIDE #12 WIRE MINIMUM, UNLESS OTHERWISE NOTED. ALL CABLES SHALL BE LOW SMOKE ZERO HALOGEN CABLE.
8. THE CONTRACTOR SHALL VISIT THE SITE AND EXAMINE THE CONDITION OF THE PREMISES AND THE CHARACTER AND EXTENT OF WORK REQUIRED PRIOR TO SUBMISSION OF BIDS.
9. OBTAIN ALL PERMITS AND PAY ALL FEES NECESSARY FOR INSPECTIONS, TESTS & OTHER SERVICES REQUIRED FOR THE COMPLETION OF THIS WORK.
10. ALL WORK SHALL BE DONE AT SUCH TIMES AND IN SUCH A MANNER THAT WILL LEAST INTERFERE WITH THE MAINTENANCE AND OPERATION OF ALL RELATED OR AFFECTED SYSTEMS. COORDINATE ALL POWER OUTAGES WITH WMATA PROJECT MANAGER.
11. IT IS THE INTENT OF THESE DRAWINGS AND OTHER RELATED DOCUMENTS TO PRODUCE A COMPLETE AND FUNCTIONING ELECTRICAL SYSTEM. PROVIDE ALL LABOR, MATERIAL AND OTHER SERVICES NECESSARY TO ACHIEVE THIS PRODUCT. NOTIFY THE ENGINEER OF ANY DISCREPANCIES IN THE PLANS & SPECIFICATIONS THAT WILL AFFECT THE WORK, PRIOR TO SUBMISSION OF THE BID PRICE.
12. IF, DURING THE COURSE OF THE WORK, THE CONTRACTOR EXPERIENCES A CONFLICT RELATIVE TO THE PLANS AND SPECIFICATIONS, THE NEC OR OTHER APPLICABLE CODES AND GOVERNING DOCUMENTS, HE SHALL NOTIFY THE ENGINEER FOR DIRECTION PRIOR TO EXECUTION OF THIS WORK. ANY WORK INSTALLED IN VIOLATION OF THE CONTRACT DOCUMENT OR APPLICABLE CODES WHICH COULD HAVE BEEN AVOIDED BY CONTACTING THE ENGINEER SHALL BE RECTIFIED AT NO ADDITIONAL COST.
13. ELECTRICAL PLANS ARE DIAGRAMMATIC & INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE CONDITIONS, ETC. MAINTAIN WORKING CLEARANCES.
14. CIRCUIT NUMBERS ARE FOR IDENTIFICATION PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR CORRECTLY PHASING THE CIRCUITS IN THE PANEL AND SHALL BALANCE THE LOAD ON THE PHASES UNDER NORMAL OPERATING CONDITIONS. PROVIDE TYPEWRITTEN PANELBOARD DIRECTORIES. BALANCE THE PHASE LOADS TO WITHIN 20 PERCENT OF EACH OTHER.

15. INCREASE ALL BRANCH CIRCUIT CONDUCTORS TO THE NEXT LARGER SIZE FROM THE PANEL TO THE FIRST OUTLET WHERE THE LENGTH OF THE HOMERUN EXCEEDS 100FT. ON 120/208V CIRCUITS.
16. PROVIDE A PULLWIRE OR FISHTAPE/CORD IN ALL EMPTY CONDUIT RUNS.
17. VERIFY WIRE SIZES, CIRCUIT BREAKERS AND FUSES RATINGS FOR ALL EQUIPMENT, AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES AFFECTING THE WORK PRIOR TO PROCEEDING.
18. ALL PANELS IMPACTED BY THIS PROJECT SHALL BE PROVIDED WITH NEW, UPDATED TYPEWRITTEN PANEL SCHEDULES (FOR NEW AND EXISTING CIRCUITS) INDICATING THE FINAL ROOM NUMBER AND THE EQUIPMENT OR DEVICES SERVED BY THE CIRCUITS.
19. DEMOLITION OF EXISTING WORK SHALL BE PERFORMED AFTER HOURS. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE WMATA PROJECT MANAGER PRIOR TO PERFORMING ALL THE WORK. THE TIME OF DAY OR EVENING SHALL BE DESIGNATED BY THE WMATA PROJECT MANAGER.
20. ALL WIRING SHALL BE IN CONDUIT, MINIMUM SIZE 3/4 INCH WITH LARGER SIZES AS INDICATED OR REQUIRED BY NEC. ALL CONDUITS SHALL BE RIGID GALVANIZED STEEL THREADED COUPLING FOR COMPLETE WATER PROOF INSTALLATION.
21. AT JOB COMPLETION, AND BEFORE FINAL ACCEPTANCE BY WMATA, TEST EACH RECEPTACLE AND PANELBOARD FOR PROPER OPERATION. WIRING SHALL BE TESTED FOR CONTINUITY, SHORTS, ETC... ALL WORK AREAS, ETC.. SHALL BE CLEANED AT THE COMPLETION OF THIS PROJECT.
22. FOR DEVICE IDENTIFICATION, THE ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELBOARDS, JUNCTION BOXES, ETC..TO INDICATE THE NAME, VOLTAGE, SERVING EQUIPMENT AND ITEM SERVED ETC... LABELS FOR EMERGENCY CIRCUITS SHALL BE IN RED, NORMAL CIRCUITS SHALL BE IN BLACK. ALL DEVICES SHALL BE IDENTIFIED EITHER ON THE FACE OF THE COVERPLATE OR INSIDE PER WMATA PREFERENCE. ALL JUNCTION BOXES SHALL BE LABELED TO INDICATE THE CIRCUITS CONTAINED BY THE JUNCTION BOX.
23. THE CONTRACTOR SHALL UPDATE THE SCHEDULES OF ALL PANELBOARDS AFFECTED BY THIS PROJECT TO REFLECT CHANGES DUE TO THE PROJECT WORK. PANEL SCHEDULE LOAD DESCRIPTIONS ARE TO INCLUDE THE FINAL ROOM OR AREA NUMBERS.
24. INCLUDE GPR FOR ANY CORE DRILLS OR DRILLED PENETRATIONS IN ANY WALLS.
25. SEAL OFF ALL PENETRATIONS THRU WALLS/FLOORS.
26. THE CONTRACTOR SHALL BECOME FAMILIAR WITH WMATA DESIGN CRITERIA SECTION 4 AND SECTION 13; WMATA SPECIFICATION SECTION 16120, 16130, AND 16125. ALL INSTALLATION SHALL BE IN COMPLIANCE WITH THE NEC, WMATA DESIGN CRITERIA, AND SPECIFICATIONS.
27. THE CONTRACTOR SHALL IDENTIFY SPARE CIRCUIT WITH "RESERVED FOR AFC".
28. EXISTING SWITCHBOARDS, PANELBOARDS AND EQUIPMENT SHOWN IS BASED ON RECORD DRAWINGS AND CASUAL FIELD SURVEY. CONTRACTOR SHALL VERIFY ALL ELECTRICAL EQUIPMENT IN FIELD.

ABBREVIATIONS

A, AMP	AMPERES	NEC	NATIONAL ELECTRIC CODE
AC	ALTERNATING CURRENT	P	POLE
AF	AMPERE FRAME	PH	PHASE
AFC	AUTOMATED FARE COLLECTION SYSTEM	PNL	PANELBOARD
AFF	ABOVE FINISHED FLOOR	PRI	PRIMARY
AIC	AMPERE INTERRUPTING CAPACITY	PROP	PROPOSED
AT	AMPERE TRIP	RGS	RIGID GALVANIZED STEEL
BKR	BREAKER	SEC	SECONDARY
C	CONDUIT	SHT	SHEET
CB	CIRCUIT BREAKER	SW	SWITCH
CCT	CIRCUIT	SWBD	SWITCHBOARD
CL	CENTER LINE	TYP	TYPICAL
CLG	CEILING	U/G	UNDER GROUND
CONST	CONSTRUCTION	U.L.	UNDERWRITERS LABORATORIES
DISC	DISCONNECT	UON	UNLESS OTHERWISE NOTED
E	ELECTRICAL	VOLT	VOLTAGE
GND	GROUND	W	WATT
JB	JUNCTION BOX	WMATA	WASHINGTON METROPOLITIAN AREA TRANSIT AUTHORITY
KAIC	THOUSAND AMPERE INTERRUPTING CAPACITY	WP	WEATHERPROOF
KCMIL	THOUSAND CIRCULAR MILL		
KVA	KILOVOLT AMPERE		
MAX	MAXIMUM		
MCA	MINIMUM CIRCUIT AMPERE		
MCB	MAIN CIRCUIT BREAKER		
MEZZ	MEZZANINE		
MIN	MINIMUM		
MLO	MAIN LUGS ONLY		

DRAWING INDEX

K06-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
K06-E-101	WEST FALLS CHURCH - KIOSK - POWER
K06-E-102	WEST FALLS CHURCH - PANEL SCHEDULE
MM-K-E16	WEST FALLS CHURCH - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

	QUADRUPEX RECEPTACLE OUTLET- 20A, 125V WALL MOUNTED.
	JUNCTION BOX - SURFACE MOUNTED ON UNISTRUT CHANNEL
	CONDUIT - CONCEALED IN UNDER FLOOR DUCT U.O.N.
	HOMERUN TO PANEL, NUMBER OF ARROWHEADS INDICATES NUMBER OF CIRCUITS. CROSS HATCHING INDICATES NUMBER OF CONDUCTORS, NUMBER INDICATES SIZE OF CONDUCTOR AND SIZE OF CONDUIT
	↓ - INDICATES GROUNDING WIRE TO GROUNDING BUS AT THE PANELBOARD
	EF 1,3 - INDICATES CIRCUIT HOME RUN PANELBOARD AND CIRCUIT NUMBER IDENTIFICATION

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	12-14	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	12-14					
CHECKED	B. IDILBI	12-14					
APPROVED	N/A						

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM



APPROVED _____

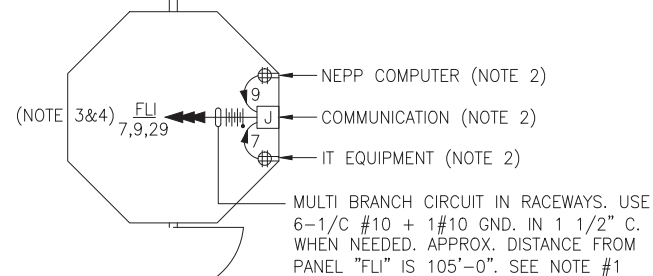
SUBMITTED _____
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS

ABBREVIATIONS □ DRAWING INDEX □
SPECIFICATIONS □ SYMBOL LIST

SCALE
NOT TO SCALE

DRAWING NO.
K06-E-001



DRAWING NOTES:

1. CONTRACTOR TO REFER TO SUPPLEMENTAL MEZZANINE INSPECTION REPORT, VOLUME 4 FURNISHED UNDER THIS SOLICITATION PACKAGE TO BE INFORMED THAT THE TOTAL LENGTH OF THE MULTI WIRE BRANCH CIRCUIT DEPICTED IN THE ELECTRICAL PLAN MAY EITHER CONSIST OF EXISTING POWER UNDER FLOOR DUCTS; OR IT COULD BE ALL CONDUIT RUN USING RIGID GALVANIZED STEEL CONDUITS; OR A COMBINATION OF BOTH WHICH IS RIGID GALVANIZED STEEL CONDUITS AND FLOOR DUCTS AND/OR JUST USE OF POWER FLOOR DUCT OR DEEMED REQUIRED IN THE REPORT.
2. COORDINATE WITH WMATA WHERE EXACTLY THE DUPLEX RECEPTACLE OUTLET AND JUNCTION BOX WILL BE INSTALLED IN THE KIOSK.
3. PROVIDE 3-NEW 20A, 1P CIRCUIT BREAKER AT EXISTING PANELBOARD AVAILABLE CIRCUIT BREAKER SPACES. NEW CIRCUIT BREAKERS SHALL MATCH EXISTING PANELBOARD CIRCUIT BREAKER AIC RATING. TERMINATE 2-NEW BRANCH CIRCUITS TO NEWLY INSTALLED CIRCUIT BREAKERS AND CONNECT PERMANENTLY TO QUAD RECEPTACLE OUTLETS LOCATED IN THE KIOSK. KEEP AND COILED REMAINING BRANCH CIRCUIT IN THE PANELBOARD AND INSIDE THE JUNCTION BOX AT THE KIOSK FOR FUTURE USE. UPDATE PANELBOARD DIRECTORY TO MANIFEST PANELBOARD ADDITIONAL LOADS.
4. THE REMAINING BRANCH CIRCUIT FOR FUTURE AFC FARE GATE APPLICATION SHALL BE SECURED, LABELED AND COILED AT THE KIOSK. THE LENGTH OF COILED PIGTAIL SHALL BE THE FARTHEST FARE GATE DISTANCE FROM KIOSK PLUS AN EXTRA 6'-0" CONDUCTOR.

SAFETY PRECAUTION:

1. ALL WORK SHALL COMPLY WITH WMATA SAFETY RULES, AND DE-ENERGIZATION POLICIES.

KIOSK - POWER

SCALE: 1/4" = 1'- 0"

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	12-14 DATE	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	12-14 DATE					
CHECKED	B. IDILBI	12-14 DATE					
APPROVED	N/A	DATE					

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE
AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM



APPROVED *[Signature]*

SUBMITTED _____
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS

WEST FALLS CHURCH
KIOSK - POWER

SCALE
AS SHOWN

DRAWING NO.
K06-E-101

95

EXISTING PANEL "FLI"											
AMPERES: 225			VOLTS: 120/208			MOUNTING: SURFACE					
MAINS: 225A MCB			PHASE: 3			LOCATION: ELEC. EQUIPMENT ROOM 212					
RATING: 10K AIC			WIRE: 4			SECTION: 1 OF 1					
LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	POLE	CKT. NO.	CKT BKRS		KVA	LOAD DESCRIPTION
		AMP	POLE	NO.				AMP	NO.		
EXIST. KIOSK LOAD CENTER (KES)	2.9	40	3	1	A - -	2	1	20	0.8	EXISTING VENDOR	
	2.5	-	-	3	- B -	4	1	20	0.8	EXISTING VENDOR	
	2.5	-	-	5	- - C	6	1	20	0.8	EXISTING VENDOR	
NEW KIOSK RECEPT. (IT & NCS)	0.8	20	1	7	A - -	8	1	20	0.8	EXISTING VENDOR	
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	9	- B -	10	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	11	- - C	12	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	13	A - -	14	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	15	- B -	16	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	17	- - C	18	1	20	0.0	SPARE	
EXISTING VENDOR	0.8	20	1	19	A - -	20	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	21	- B -	22	1	20	0.0	SPARE	
EXISTING VENDOR	0.8	20	1	23	- - C	24	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	25	A - -	26	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	27	- B -	28	1	20	0.8	EXISTING VENDOR	
FUTURE AFC FARE GATE	0.0	20	1	29	- - C	30	1	20	0.0	SPARE	
SPARE	0.0	20	1	31	A - -	32	-	-	0.0	SPACE	
SPARE	0.0	20	1	33	- B -	34	-	-	0.0	SPACE	
EXISTING VENDOR	0.8	20	1	35	- - C	36	-	-	0.0	SPACE	
SPARE	0.0	20	1	37	A - -	38	1	20	0.8	EXISTING VENDOR	
SPACE	0.0	-	-	39	- B -	40	1	20	0.0	SPARE	
SPACE	0.0	-	-	41	- - C	42	1	20	0.0	SPARE	

LOAD SUMMARY			
LIGHTS	0.0 x 125%		0.0 KVA
RECEPTACLES, FIRST 10 KVA	10.0 x 100%		10.0 KVA
RECEPTACLES	9.6 x 50%		4.8 KVA
MISC. APPLIANCES	0.0 x 100%		0.0 KVA
LARGEST MOTOR	0.0 x 125%		0.0 KVA
MOTORS	0.0 x 100%		0.0 KVA
HEAT	3.0 x 125%		3.8 KVA
AC	4.5 x 100%		4.5 KVA
WATER HEATING	0.0 x 125%		0.0 KVA
TOTAL CONNECTED LOAD	27.1 KVA	TOTAL DEMAND KVA	23.1 KVA
		TOTAL DEMAND AMPS	64.0 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	10.9 KVA		
PHASE B:	8.9 KVA		
PHASE C:	8.1 KVA		

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	12-14 DATE	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	12-14 DATE					
CHECKED	B. IDILBI	12-14 DATE					
APPROVED	N/A	DATE					

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE
AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

APPROVED



GFP A Gannett Fleming/Parsons
JOINT VENTURE

SUBMITTED

PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
WEST FALLS CHURCH
PANEL SCHEDULE

SCALE
NOT TO SCALE

DRAWING NO.
K06-E-102

ELECTRICAL SPECIFICATIONS

1. ALL WORK, MATERIAL AND EQUIPMENT SHALL COMPLY WITH THE LATEST NATIONAL ELECTRICAL CODE BEING USED BY THE LOCAL JURISDICTION AND SHALL COMPLY WITH ALL LOCAL CODES AND ORDINANCES.
2. MATERIALS AND EQUIPMENT SHALL BE NEW EXCEPT WHERE INDICATED OTHERWISE. ALL OTHER WIRING DEVICES, CONDUIT, WIRE, ETC. SHALL BE NEW UNLESS NOTED OTHERWISE.
3. ALL MATERIALS AND EQUIPMENT SHALL BEAR U.L. LISTING.
4. MAINTAIN GROUNDING CONTINUITY TO ALL DEVICES AND EQUIPMENT IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
5. WORK NOT SPECIFICALLY SPECIFIED OR INDICATED SHALL CONFORM WITH SPECIFICATIONS.
6. ALL CONDUITS SHALL BE RUN CONCEALED IN UNDER FLOOR DUCT.
7. ALL WIRE AND CABLE SHALL BE COPPER HAVING 600 VOLTS XHHW-2 OR RHW-2 INSULATIONS. PROVIDE #12 WIRE MINIMUM, UNLESS OTHERWISE NOTED. ALL CABLES SHALL BE LOW SMOKE ZERO HALOGEN CABLE.
8. THE CONTRACTOR SHALL VISIT THE SITE AND EXAMINE THE CONDITION OF THE PREMISES AND THE CHARACTER AND EXTENT OF WORK REQUIRED PRIOR TO SUBMISSION OF BIDS.
9. OBTAIN ALL PERMITS AND PAY ALL FEES NECESSARY FOR INSPECTIONS, TESTS & OTHER SERVICES REQUIRED FOR THE COMPLETION OF THIS WORK.
10. ALL WORK SHALL BE DONE AT SUCH TIMES AND IN SUCH A MANNER THAT WILL LEAST INTERFERE WITH THE MAINTENANCE AND OPERATION OF ALL RELATED OR AFFECTED SYSTEMS. COORDINATE ALL POWER OUTAGES WITH WMATA PROJECT MANAGER.
11. IT IS THE INTENT OF THESE DRAWINGS AND OTHER RELATED DOCUMENTS TO PRODUCE A COMPLETE AND FUNCTIONING ELECTRICAL SYSTEM. PROVIDE ALL LABOR, MATERIAL AND OTHER SERVICES NECESSARY TO ACHIEVE THIS PRODUCT. NOTIFY THE ENGINEER OF ANY DISCREPANCIES IN THE PLANS & SPECIFICATIONS THAT WILL AFFECT THE WORK, PRIOR TO SUBMISSION OF THE BID PRICE.
12. IF, DURING THE COURSE OF THE WORK, THE CONTRACTOR EXPERIENCES A CONFLICT RELATIVE TO THE PLANS AND SPECIFICATIONS, THE NEC OR OTHER APPLICABLE CODES AND GOVERNING DOCUMENTS, HE SHALL NOTIFY THE ENGINEER FOR DIRECTION PRIOR TO EXECUTION OF THIS WORK. ANY WORK INSTALLED IN VIOLATION OF THE CONTRACT DOCUMENT OR APPLICABLE CODES WHICH COULD HAVE BEEN AVOIDED BY CONTACTING THE ENGINEER SHALL BE RECTIFIED AT NO ADDITIONAL COST.
13. ELECTRICAL PLANS ARE DIAGRAMMATIC & INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE CONDITIONS, ETC. MAINTAIN WORKING CLEARANCES.
14. CIRCUIT NUMBERS ARE FOR IDENTIFICATION PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR CORRECTLY PHASING THE CIRCUITS IN THE PANEL AND SHALL BALANCE THE LOAD ON THE PHASES UNDER NORMAL OPERATING CONDITIONS. PROVIDE TYPEWRITTEN PANELBOARD DIRECTORIES. BALANCE THE PHASE LOADS TO WITHIN 20 PERCENT OF EACH OTHER.

15. INCREASE ALL BRANCH CIRCUIT CONDUCTORS TO THE NEXT LARGER SIZE FROM THE PANEL TO THE FIRST OUTLET WHERE THE LENGTH OF THE HOMERUN EXCEEDS 100FT. ON 120/208V CIRCUITS.
16. PROVIDE A PULLWIRE OR FISHTAPE/CORD IN ALL EMPTY CONDUIT RUNS.
17. VERIFY WIRE SIZES, CIRCUIT BREAKERS AND FUSES RATINGS FOR ALL EQUIPMENT, AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES AFFECTING THE WORK PRIOR TO PROCEEDING.
18. ALL PANELS IMPACTED BY THIS PROJECT SHALL BE PROVIDED WITH NEW, UPDATED TYPEWRITTEN PANEL SCHEDULES (FOR NEW AND EXISTING CIRCUITS) INDICATING THE FINAL ROOM NUMBER AND THE EQUIPMENT OR DEVICES SERVED BY THE CIRCUITS.
19. DEMOLITION OF EXISTING WORK SHALL BE PERFORMED AFTER HOURS. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE WMATA PROJECT MANAGER PRIOR TO PERFORMING ALL THE WORK. THE TIME OF DAY OR EVENING SHALL BE DESIGNATED BY THE WMATA PROJECT MANAGER.
20. ALL WIRING SHALL BE IN CONDUIT, MINIMUM SIZE 3/4 INCH WITH LARGER SIZES AS INDICATED OR REQUIRED BY NEC. ALL CONDUITS SHALL BE RIGID GALVANIZED STEEL THREADED COUPLING FOR COMPLETE WATER PROOF INSTALLATION.
21. AT JOB COMPLETION, AND BEFORE FINAL ACCEPTANCE BY WMATA, TEST EACH RECEPTACLE AND PANELBOARD FOR PROPER OPERATION. WIRING SHALL BE TESTED FOR CONTINUITY, SHORTS, ETC... ALL WORK AREAS, ETC.. SHALL BE CLEANED AT THE COMPLETION OF THIS PROJECT.
22. FOR DEVICE IDENTIFICATION, THE ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELBOARDS, JUNCTION BOXES, ETC.. TO INDICATE THE NAME, VOLTAGE, SERVING EQUIPMENT AND ITEM SERVED ETC... LABELS FOR EMERGENCY CIRCUITS SHALL BE IN RED, NORMAL CIRCUITS SHALL BE IN BLACK. ALL DEVICES SHALL BE IDENTIFIED EITHER ON THE FACE OF THE COVERPLATE OR INSIDE PER WMATA PREFERENCE. ALL JUNCTION BOXES SHALL BE LABELED TO INDICATE THE CIRCUITS CONTAINED BY THE JUNCTION BOX.
23. THE CONTRACTOR SHALL UPDATE THE SCHEDULES OF ALL PANELBOARDS AFFECTED BY THIS PROJECT TO REFLECT CHANGES DUE TO THE PROJECT WORK. PANEL SCHEDULE LOAD DESCRIPTIONS ARE TO INCLUDE THE FINAL ROOM OR AREA NUMBERS.
24. INCLUDE GPR FOR ANY CORE DRILLS OR DRILLED PENETRATIONS IN ANY WALLS.
25. SEAL OFF ALL PENETRATIONS THRU WALLS/FLOORS.
26. THE CONTRACTOR SHALL BECOME FAMILIAR WITH WMATA DESIGN CRITERIA SECTION 4 AND SECTION 13; WMATA SPECIFICATION SECTION 16120, 16130, AND 16125. ALL INSTALLATION SHALL BE IN COMPLIANCE WITH THE NEC, WMATA DESIGN CRITERIA, AND SPECIFICATIONS.
27. THE CONTRACTOR SHALL IDENTIFY SPARE CIRCUIT WITH "RESERVED FOR AFC".
28. EXISTING SWITCHBOARDS, PANELBOARDS AND EQUIPMENT SHOWN IS BASED ON RECORD DRAWINGS AND CASUAL FIELD SURVEY. CONTRACTOR SHALL VERIFY ALL ELECTRICAL EQUIPMENT IN FIELD.
29. The conduit utilized for this project shall be 1-1/2" min. or larger as indicated. The liquid tight utilized for the kiosk shall be 1-1/2" from the entry to the 8x8 junction box, then 1" from the junction box to the quads. All boxes used in or on the kiosk shall be NEMA 4x.

ABBREVIATIONS

A, AMP	AMPERES	NEC	NATIONAL ELECTRIC CODE
AC	ALTERNATING CURRENT	P	POLE
AF	AMPERE FRAME	PH	PHASE
AFC	AUTOMATED FARE COLLECTION SYSTEM	PNL	PANELBOARD
AFF	ABOVE FINISHED FLOOR	PRI	PRIMARY
AIC	AMPERE INTERRUPTING CAPACITY	PROP	PROPOSED
AT	AMPERE TRIP	RGS	RIGID GALVANIZED STEEL
BKR	BREAKER	SEC	SECONDARY
C	CONDUIT	SHT	SHEET
CB	CIRCUIT BREAKER	SW	SWITCH
CCT	CIRCUIT	SWBD	SWITCHBOARD
CL	CENTER LINE	TYP	TYPICAL
CLG	CEILING	U/G	UNDER GROUND
CONST	CONSTRUCTION	U.L.	UNDERWRITERS LABORATORIES
DISC	DISCONNECT	UON	UNLESS OTHERWISE NOTED
E	ELECTRICAL	VOLT	VOLTAGE
GND	GROUND	W	WATT
JB	JUNCTION BOX	WMATA	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
KAIC	THOUSAND AMPERE INTERRUPTING CAPACITY	WP	WEATHERPROOF
KCMIL	THOUSAND CIRCULAR MILL		
KVA	KILOVOLT AMPERE		
MAX	MAXIMUM		
MCA	MINIMUM CIRCUIT AMPERE		
MCB	MAIN CIRCUIT BREAKER		
MEZZ	MEZZANINE		
MIN	MINIMUM		
MLO	MAIN LUGS ONLY		

DRAWING INDEX

K07-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
K07-E-101	DUNN LORING - KIOSK - POWER
K07-E-102	DUNN LORING - PANEL SCHEDULE
MM-K-E23	DUNN LORING - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

	QUADRUPEX RECEPTACLE OUTLET- 20A, 125V WALL MOUNTED.
	JUNCTION BOX - SURFACE MOUNTED ON UNISTRUT CHANNEL
	CONDUIT - CONCEALED IN UNDER FLOOR DUCT U.O.N.
	HOMERUN TO PANEL, NUMBER OF ARROWHEADS INDICATES NUMBER OF CIRCUITS. CROSS HATCHING INDICATES NUMBER OF CONDUCTORS, NUMBER INDICATES SIZE OF CONDUCTOR AND SIZE OF CONDUIT
	↓ - INDICATES GROUNDING WIRE TO GROUNDING BUS AT THE PANELBOARD
	EF 1,3 - INDICATES CIRCUIT HOME RUN PANELBOARD AND CIRCUIT NUMBER IDENTIFICATION

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED		12-14		REFERENCE DRAWINGS		REVISIONS	
DATE	DESCRIPTION	NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION	
C. NGO	12-14						
C. NGO	12-14						
B. IDILBI	12-14						
N/A							

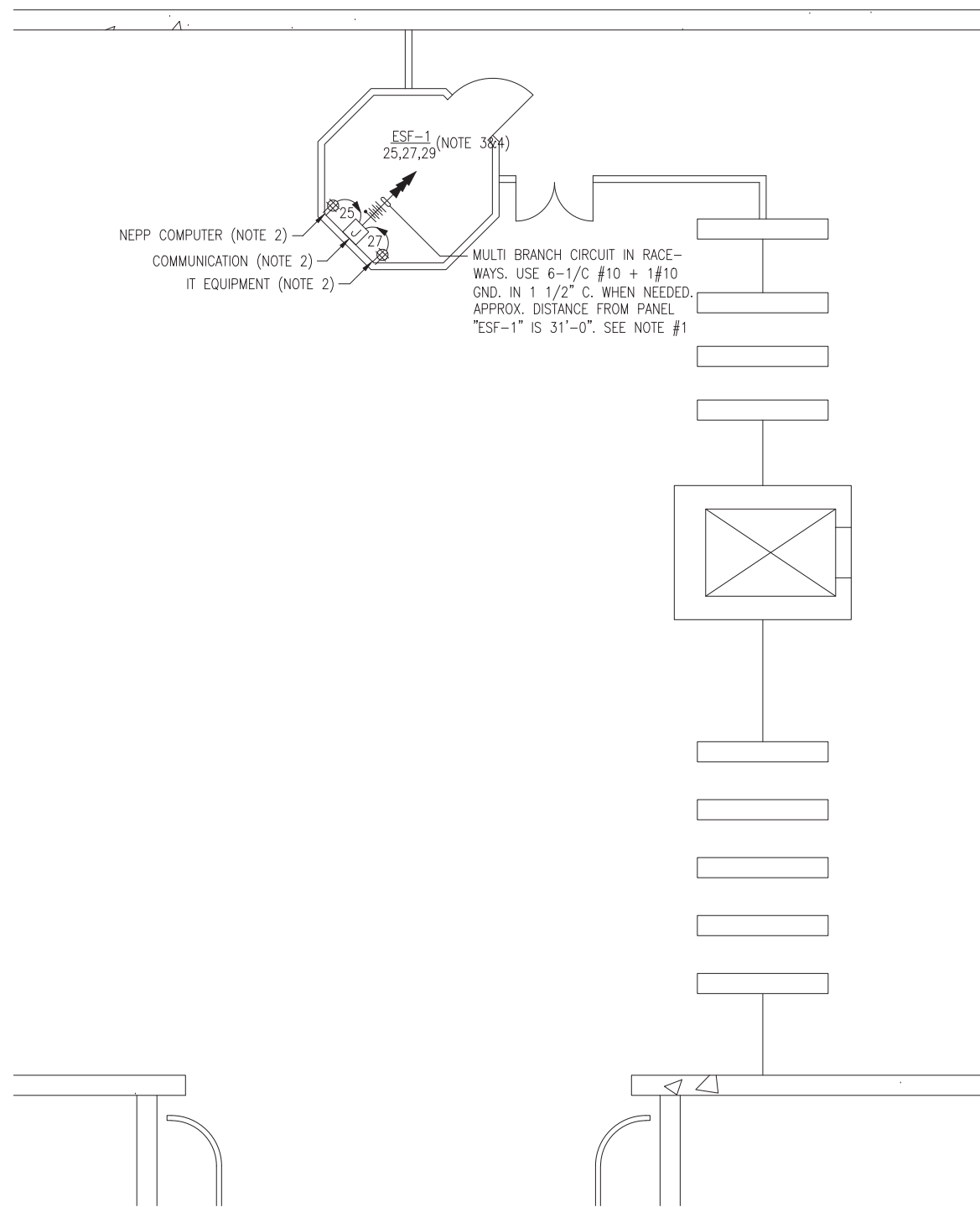
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
ABBREVIATIONS DRAWING INDEX
SPECIFICATIONS SYMBOL LIST

SCALE NOT TO SCALE DRAWING NO. K07-E-001



KIOSK - POWER
SCALE: 1/4" = 1'-0"

DRAWING NOTES:

1. CONTRACTOR TO REFER TO SUPPLEMENTAL MEZZANINE INSPECTION REPORT, VOLUME 4 FURNISHED UNDER THIS SOLICITATION PACKAGE TO BE INFORMED THAT THE TOTAL LENGTH OF THE MULTI WIRE BRANCH CIRCUIT DEPICTED IN THE ELECTRICAL PLAN MAY EITHER CONSIST OF EXISTING POWER UNDER FLOOR DUCTS; OR IT COULD BE ALL CONDUIT RUN USING RIGID GALVANIZED STEEL CONDUITS; OR A COMBINATION OF BOTH WHICH IS RIGID GALVANIZED STEEL CONDUITS AND FLOOR DUCTS AND/OR JUST USE OF POWER FLOOR DUCT OR DEEMED REQUIRED IN THE REPORT.
2. COORDINATE WITH WMATA WHERE EXACTLY THE DUPLEX RECEPTACLE OUTLET AND JUNCTION BOX WILL BE INSTALLED IN THE KIOSK.
3. PROVIDE 3-NEW 20A, 1P CIRCUIT BREAKER AT EXISTING PANELBOARD AVAILABLE CIRCUIT BREAKER SPACES. NEW CIRCUIT BREAKERS SHALL MATCH EXISTING PANELBOARD CIRCUIT BREAKER AIC RATING. TERMINATE 2-NEW BRANCH CIRCUITS TO NEWLY INSTALLED CIRCUIT BREAKERS AND CONNECT PERMANENTLY TO QUAD RECEPTACLE OUTLETS LOCATED IN THE KIOSK. KEEP AND COILED REMAINING BRANCH CIRCUIT IN THE PANELBOARD AND INSIDE THE JUNCTION BOX AT THE KIOSK FOR FUTURE USE. UPDATE PANELBOARD DIRECTORY TO MANIFEST PANELBOARD ADDITIONAL LOADS.
4. THE REMAINING BRANCH CIRCUIT FOR FUTURE AFC FARE GATE APPLICATION SHALL BE SECURED, LABELED AND COILED AT THE KIOSK. THE LENGTH OF COILED PIGTAIL SHALL BE THE FARTHEST FARE GATE DISTANCE FROM KIOSK PLUS AN EXTRA 6'-0" CONDUCTOR.

SAFETY PRECAUTION:

1. ALL WORK SHALL COMPLY WITH WMATA SAFETY RULES, AND DE-ENERGIZATION POLICIES.

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	12-14	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	12-14					
CHECKED	B. IDILBI	12-14					
APPROVED	N/A	DATE					

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE
AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

APPROVED

GFP A Gannett Fleming/Parsons
JOINT VENTURE

SUBMITTED

PROJECT MANAGER

**NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS**
DUNN LORING
KIOSK - POWER

SCALE
AS SHOWN

DRAWING NO.
K07-E-101

EXISTING PANEL "ESF-1"

AMPERES: 175	VOLTS: 120/208	MOUNTING: SURFACE
MAINS: 175A MCB	PHASE: 3	LOCATION: FIRE EQUIPMENT CABINET ROOM 301
RATING: 10K AIC	WIRE: 4	SECTION: 1 OF 1

LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	POLE	AMP	KVA	LOAD DESCRIPTION	
		AMP	POLE	NO.						
EXISTING LOAD CENTER "KES"	2.9	40	3	1	A - -	2	1	20	0.8	EXISTING VENDOR
	2.5	-	-	3	- B -	4	1	20	0.8	EXISTING VENDOR
	2.5	-	-	5	- - C	6	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	7	A - -	8	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	9	- B -	10	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	11	- - C	12	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	13	A - -	14	1	20	0.8	SPACE
EXISTING VENDOR	0.8	20	1	15	- B -	16	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	17	- - C	18	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	19	A - -	20	1	20	0.0	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	21	- B -	22	1	20	0.0	EXISTING VENDOR
SPACE	0.0	-	-	23	- - C	24	1	20	0.0	EXISTING VENDOR
NEW KIOSK RECEPT. (IT & NEPP)	0.8	20	1	25	A - -	26	1	20	0.0	EXISTING VENDOR
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	27	- B -	28	1	20	0.0	EXISTING VENDOR
FUTURE AFC FARE GATE	0.0	20	1	29	- - C	30	1	20	0.0	EXISTING VENDOR
SPARE	0.0	20	1	31	A - -	32	1	20	0.0	SPARE
SPACE	0.0	-	-	33	- B -	34	1	20	0.0	SPARE
SPACE	0.0	-	-	35	- - C	36	-	-	0.0	SPACE
SPACE	0.0	-	-	37	A - -	38	-	-	0.0	SPACE
SPACE	0.0	-	-	39	- B -	40	-	-	0.0	SPACE
SPACE	0.0	-	-	41	- - C	42	-	-	0.0	SPACE

LOAD SUMMARY

LIGHTS	0.0 x 125%	0.0 KVA
RECEPTACLES, FIRST 10 KVA	10.0 x 100%	10.0 KVA
RECEPTACLES	4.0 x 50%	2.0 KVA
MISC. APPLIANCES	0.0 x 100%	0.0 KVA
LARGEST MOTOR	0.0 x 125%	0.0 KVA
MOTORS	0.0 x 100%	0.0 KVA
HEAT	3.0 x 125%	3.8 KVA
AC	4.5 x 100%	4.5 KVA
WATER HEATING	0.0 x 125%	0.0 KVA
TOTAL CONNECTED LOAD	21.5 KVA	TOTAL DEMAND KVA 20.3 KVA
		TOTAL DEMAND AMPS 56.3 AMPS
CONNECTED LOAD PHASE SUMMARY		
PHASE A:	7.7 KVA	
PHASE B:	8.1 KVA	
PHASE C:	6.5 KVA	

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	12-14	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	12-14					
CHECKED	B. IDILBI	12-14					
APPROVED	N/A						

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE
AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

APPROVED 

SUBMITTED _____
PROJECT MANAGER



**NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS**

DUNN LORING
PANEL SCHEDULE

SCALE: NOT TO SCALE

DRAWING NO. K07-E-102

ELECTRICAL SPECIFICATIONS

- ALL WORK, MATERIAL AND EQUIPMENT SHALL COMPLY WITH THE LATEST NATIONAL ELECTRICAL CODE BEING USED BY THE LOCAL JURISDICTION AND SHALL COMPLY WITH ALL LOCAL CODES AND ORDINANCES.
- MATERIALS AND EQUIPMENT SHALL BE NEW EXCEPT WHERE INDICATED OTHERWISE. ALL OTHER WIRING DEVICES, CONDUIT, WIRE, ETC. SHALL BE NEW UNLESS NOTED OTHERWISE.
- ALL MATERIALS AND EQUIPMENT SHALL BEAR U.L. LISTING.
- MAINTAIN GROUNDING CONTINUITY TO ALL DEVICES AND EQUIPMENT IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
- WORK NOT SPECIFICALLY SPECIFIED OR INDICATED SHALL CONFORM WITH SPECIFICATIONS.
- ALL CONDUITS SHALL BE RUN CONCEALED IN UNDER FLOOR DUCT.
- ALL WIRE AND CABLE SHALL BE COPPER HAVING 600 VOLTS XHHW-2 OR RHW-2 INSULATIONS. PROVIDE #12 WIRE MINIMUM, UNLESS OTHERWISE NOTED. ALL CABLES SHALL BE LOW SMOKE ZERO HALOGEN CABLE.
- THE CONTRACTOR SHALL VISIT THE SITE AND EXAMINE THE CONDITION OF THE PREMISES AND THE CHARACTER AND EXTENT OF WORK REQUIRED PRIOR TO SUBMISSION OF BIDS.
- OBTAIN ALL PERMITS AND PAY ALL FEES NECESSARY FOR INSPECTIONS, TESTS & OTHER SERVICES REQUIRED FOR THE COMPLETION OF THIS WORK.
- ALL WORK SHALL BE DONE AT SUCH TIMES AND IN SUCH A MANNER THAT WILL LEAST INTERFERE WITH THE MAINTENANCE AND OPERATION OF ALL RELATED OR AFFECTED SYSTEMS. COORDINATE ALL POWER OUTAGES WITH WMATA PROJECT MANAGER.
- IT IS THE INTENT OF THESE DRAWINGS AND OTHER RELATED DOCUMENTS TO PRODUCE A COMPLETE AND FUNCTIONING ELECTRICAL SYSTEM. PROVIDE ALL LABOR, MATERIAL AND OTHER SERVICES NECESSARY TO ACHIEVE THIS PRODUCT. NOTIFY THE ENGINEER OF ANY DISCREPANCIES IN THE PLANS & SPECIFICATIONS THAT WILL AFFECT THE WORK, PRIOR TO SUBMISSION OF THE BID PRICE.
- IF, DURING THE COURSE OF THE WORK, THE CONTRACTOR EXPERIENCES A CONFLICT RELATIVE TO THE PLANS AND SPECIFICATIONS, THE NEC OR OTHER APPLICABLE CODES AND GOVERNING DOCUMENTS, HE SHALL NOTIFY THE ENGINEER FOR DIRECTION PRIOR TO EXECUTION OF THIS WORK. ANY WORK INSTALLED IN VIOLATION OF THE CONTRACT DOCUMENT OR APPLICABLE CODES WHICH COULD HAVE BEEN AVOIDED BY CONTACTING THE ENGINEER SHALL BE RECTIFIED AT NO ADDITIONAL COST.
- ELECTRICAL PLANS ARE DIAGRAMMATIC & INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE CONDITIONS, ETC. MAINTAIN WORKING CLEARANCES.
- CIRCUIT NUMBERS ARE FOR IDENTIFICATION PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR CORRECTLY PHASING THE CIRCUITS IN THE PANEL AND SHALL BALANCE THE LOAD ON THE PHASES UNDER NORMAL OPERATING CONDITIONS. PROVIDE TYPEWRITTEN PANELBOARD DIRECTORIES. BALANCE THE PHASE LOADS TO WITHIN 20 PERCENT OF EACH OTHER.

- INCREASE ALL BRANCH CIRCUIT CONDUCTORS TO THE NEXT LARGER SIZE FROM THE PANEL TO THE FIRST OUTLET WHERE THE LENGTH OF THE HOMERUN EXCEEDS 100FT. ON 120/208V CIRCUITS.
- PROVIDE A PULLWIRE OR FISHTAPE/CORD IN ALL EMPTY CONDUIT RUNS.
- VERIFY WIRE SIZES, CIRCUIT BREAKERS AND FUSES RATINGS FOR ALL EQUIPMENT, AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES AFFECTING THE WORK PRIOR TO PROCEEDING.
- ALL PANELS IMPACTED BY THIS PROJECT SHALL BE PROVIDED WITH NEW, UPDATED TYPEWRITTEN PANEL SCHEDULES (FOR NEW AND EXISTING CIRCUITS) INDICATING THE FINAL ROOM NUMBER AND THE EQUIPMENT OR DEVICES SERVED BY THE CIRCUITS.
- DEMOLITION OF EXISTING WORK SHALL BE PERFORMED AFTER HOURS. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE WMATA PROJECT MANAGER PRIOR TO PERFORMING ALL THE WORK. THE TIME OF DAY OR EVENING SHALL BE DESIGNATED BY THE WMATA PROJECT MANAGER.
- ALL WIRING SHALL BE IN CONDUIT, MINIMUM SIZE 3/4 INCH WITH LARGER SIZES AS INDICATED OR REQUIRED BY NEC. ALL CONDUITS SHALL BE RIGID GALVANIZED STEEL THREADED COUPLING FOR COMPLETE WATER PROOF INSTALLATION.
- AT JOB COMPLETION, AND BEFORE FINAL ACCEPTANCE BY WMATA, TEST EACH RECEPTACLE AND PANELBOARD FOR PROPER OPERATION. WIRING SHALL BE TESTED FOR CONTINUITY, SHORTS, ETC... ALL WORK AREAS, ETC.. SHALL BE CLEANED AT THE COMPLETION OF THIS PROJECT.
- FOR DEVICE IDENTIFICATION, THE ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELBOARDS, JUNCTION BOXES, ETC..TO INDICATE THE NAME, VOLTAGE, SERVING EQUIPMENT AND ITEM SERVED ETC... LABELS FOR EMERGENCY CIRCUITS SHALL BE IN RED, NORMAL CIRCUITS SHALL BE IN BLACK. ALL DEVICES SHALL BE IDENTIFIED EITHER ON THE FACE OF THE COVERPLATE OR INSIDE PER WMATA PREFERENCE. ALL JUNCTION BOXES SHALL BE LABELED TO INDICATE THE CIRCUITS CONTAINED BY THE JUNCTION BOX.
- THE CONTRACTOR SHALL UPDATE THE SCHEDULES OF ALL PANELBOARDS AFFECTED BY THIS PROJECT TO REFLECT CHANGES DUE TO THE PROJECT WORK. PANEL SCHEDULE LOAD DESCRIPTIONS ARE TO INCLUDE THE FINAL ROOM OR AREA NUMBERS.
- INCLUDE GPR FOR ANY CORE DRILLS OR DRILLED PENETRATIONS IN ANY WALLS.
- SEAL OFF ALL PENETRATIONS THRU WALLS/FLOORS.
- THE CONTRACTOR SHALL BECOME FAMILIAR WITH WMATA DESIGN CRITERIA SECTION 4 AND SECTION 13; WMATA SPECIFICATION SECTION 16120, 16130, AND 16125. ALL INSTALLATION SHALL BE IN COMPLIANCE WITH THE NEC, WMATA DESIGN CRITERIA, AND SPECIFICATIONS.
- THE CONTRACTOR SHALL IDENTIFY SPARE CIRCUIT WITH "RESERVED FOR AFC".
- EXISTING SWITCHBOARDS, PANELBOARDS AND EQUIPMENT SHOWN IS BASED ON RECORD DRAWINGS AND CASUAL FIELD SURVEY. CONTRACTOR SHALL VERIFY ALL ELECTRICAL EQUIPMENT IN FIELD.
- The conduit utilized for this project shall be 1-1/2" min. or larger as indicated. The liquid tight utilized for the kiosk shall be 1-1/2" from the entry to the 8x8 junction box, then 1" from the junction box to the quads. All boxes used in or on the kiosk shall be NEMA 4x.

ABBREVIATIONS

A, AMP	AMPERES	NEC	NATIONAL ELECTRIC CODE
AC	ALTERNATING CURRENT	P	POLE
AF	AMPERE FRAME	PH	PHASE
AFC	AUTOMATED FARE COLLECTION SYSTEM	PNL	PANELBOARD
AFF	ABOVE FINISHED FLOOR	PRI	PRIMARY
AIC	AMPERE INTERRUPTING CAPACITY	PROP	PROPOSED
AT	AMPERE TRIP	RGS	RIGID GALVANIZED STEEL
BKR	BREAKER	SEC	SECONDARY
C	CONDUIT	SHT	SHEET
CB	CIRCUIT BREAKER	SW	SWITCH
CCT	CIRCUIT	SWBD	SWITCHBOARD
CL	CENTER LINE	TYP	TYPICAL
CLG	CEILING	U/G	UNDER GROUND
CONST	CONSTRUCTION	U.L.	UNDERWRITERS LABORATORIES
DISC	DISCONNECT	UON	UNLESS OTHERWISE NOTED
E	ELECTRICAL	VOLT	VOLTAGE
GND	GROUND	W	WATT
JB	JUNCTION BOX	WMATA	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
KAIC	THOUSAND AMPERE INTERRUPTING CAPACITY	WP	WEATHERPROOF
KCMIL	THOUSAND CIRCULAR MILL		
KVA	KILOVOLT AMPERE		
MAX	MAXIMUM		
MCA	MINIMUM CIRCUIT AMPERE		
MCB	MAIN CIRCUIT BREAKER		
MEZZ	MEZZANINE		
MIN	MINIMUM		
MLO	MAIN LUGS ONLY		

DRAWING INDEX

K08-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
K08-E-101	VIENNA - KIOSK - POWER
K08-E-102	VIENNA - PANEL SCHEDULE
K08-E-301	VIENNA - PANELBOARD IMAGE
MM-K-E26	VIENNA - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

	QUADRUPLEX RECEPTACLE OUTLET- 20A, 125V WALL MOUNTED.
	JUNCTION BOX - SURFACE MOUNTED ON UNISTRUT CHANNEL
	CONDUIT - CONCEALED IN UNDER FLOOR DUCT U.O.N.
	HOMERUN TO PANEL, NUMBER OF ARROWHEADS INDICATES NUMBER OF CIRCUITS. CROSS HATCHING INDICATES NUMBER OF CONDUCTORS, NUMBER INDICATES SIZE OF CONDUCTOR AND SIZE OF CONDUIT
	↓ - INDICATES GROUNDING WIRE TO GROUNDING BUS AT THE PANELBOARD
	EF 1,3 - INDICATES CIRCUIT HOME RUN PANELBOARD AND CIRCUIT NUMBER IDENTIFICATION

CONTRACT NO.
14-FQ10060-CENI-24

	REFERENCE DRAWINGS		REVISIONS	
	NUMBER	DESCRIPTION	DATE	BY
DESIGNED	C. NGO	12-14		
		DATE		
DRAWN	C. NGO	12-14		
		DATE		
CHECKED	B. IDILBI	12-14		
		DATE		
APPROVED	N/A			
		DATE		

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

APPROVED

GFP A Gannett Fleming/Parsons JOINT VENTURE

SUBMITTED _____
PROJECT MANAGER

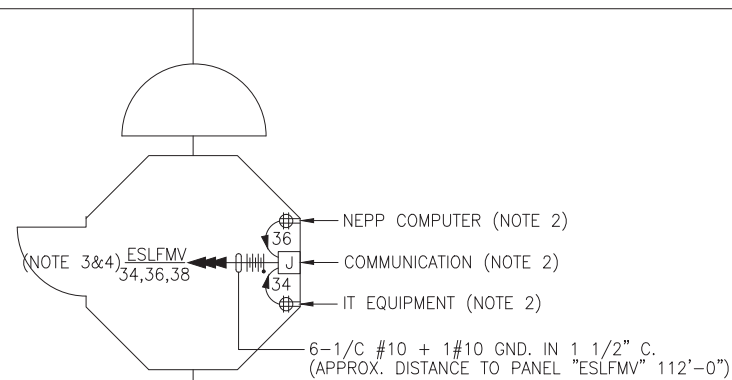
NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS

ABBREVIATIONS □ DRAWING INDEX □
SPECIFICATIONS □ SYMBOL LIST

SCALE: NOT TO SCALE

DRAWING NO. K08-E-001

100



DRAWING NOTES:

1. CONTRACTOR TO REFER TO SUPPLEMENTAL MEZZANINE INSPECTION REPORT, VOLUME 4 FURNISHED UNDER THIS SOLICITATION PACKAGE TO BE INFORMED THAT THE TOTAL LENGTH OF THE MULTI WIRE BRANCH CIRCUIT DEPICTED IN THE ELECTRICAL PLAN MAY EITHER CONSIST OF EXISTING POWER UNDER FLOOR DUCTS; OR IT COULD BE ALL CONDUIT RUN USING RIGID GALVANIZED STEEL CONDUITS; OR A COMBINATION OF BOTH WHICH IS RIGID GALVANIZED STEEL CONDUITS AND FLOOR DUCTS AND/OR JUST USE OF POWER FLOOR DUCT OR AS REQUIRED IN THE REPORT.
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SAFETY PRECAUTION:

1. ALL WORK SHALL COMPLY WITH WMATA SAFETY RULES, AND DE-ENERGIZATION POLICIES.

KIOSK - POWER
SCALE: 1/4" = 1'- 0"

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED <u>C. NGO</u> DATE <u>12-14</u>	REFERENCE DRAWINGS		REVISIONS		
DRAWN <u>C. NGO</u> DATE <u>12-14</u>	NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
CHECKED <u>B. IDILBI</u> DATE <u>12-14</u>					
APPROVED <u>N/A</u> DATE					

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE
AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM



APPROVED *[Signature]*

SUBMITTED _____
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS

VIENNA
KIOSK - POWER

SCALE
AS SHOWN

DRAWING NO.
K08-E-101

EXISTING PANEL "ESLFMV"										
AMPERES: 400		VOLTS: 120/208		MOUNTING: SURFACE						
MAINS: 300A MCB		PHASE: 3		LOCATION: CLEANER ROOM 406						
RATING: 10K AIC		WIRE: 4		SECTION: 1 OF 1						
LOAD DESCRIPTION	KVA	CKT BKRS		CKT. NO.	POLE	CKT. NO.	CKT BKRS		LOAD DESCRIPTION	
		AMP	POLE				AMP	KVA		
EXIST. KIOSK LOAD CENTER (KES)	2.9	50	3	1	A - -	2	1	20	0.8	EXISTING VENDOR
	2.5	-	-	3	- B -	4	1	20	0.8	EXISTING VENDOR
	2.5	-	-	5	- - C	6	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	7	A - -	8	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	9	- B -	10	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	11	- - C	12	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	13	A - -	14	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	15	- B -	16	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	17	- - C	18	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	19	A - -	20	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	21	- B -	22	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	23	- - C	24	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	25	A - -	26	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	27	- B -	28	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	29	- - C	30	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	31	A - -	32	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	33	- B -	34	1	20	0.8	NEW KIOSK RECEPT. (IT & NEPP)
EXISTING VENDOR	0.8	20	1	35	- - C	36	1	20	0.8	NEW KIOSK RECEPT. (NEPP/SOC)
EXISTING VENDOR	0.8	20	1	37	A - -	38	1	20	0.0	FUTURE AFC FARE GATE
EXISTING VENDOR	0.8	20	1	39	- B -	40	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	41	- - C	42	1	20	0.8	EXISTING VENDOR

LOAD SUMMARY			
LIGHTS	0.0 x 125%		0.0 KVA
RECEPTACLES, FIRST 10 KVA	10.0 x 100%		10.0 KVA
RECEPTACLES	26.4 x 50%		13.2 KVA
MISC. APPLIANCES	0.0 x 100%		0.0 KVA
LARGEST MOTOR	0.0 x 125%		0.0 KVA
MOTORS	0.0 x 100%		0.0 KVA
HEAT	3.0 x 125%		3.8 KVA
AC	4.5 x 100%		4.5 KVA
WATER HEATING	0.0 x 125%		0.0 KVA
TOTAL CONNECTED LOAD	43.9 KVA	TOTAL DEMAND KVA	31.5 KVA
		TOTAL DEMAND AMPS	87.4 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	12.5 KVA		
PHASE B:	12.1 KVA		
PHASE C:	12.9 KVA		

CONTRACT NO.
14-FQ10060-GENI-24

DESIGNED	C. NGO	12-14	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	12-14					
CHECKED	B. IDILBI	12-14					
APPROVED	N/A						

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE
AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM



APPROVED *[Signature]*

SUBMITTED _____
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS

VIENNA
PANEL SCHEDULE

SCALE
NOT TO SCALE

DRAWING NO.
K08-E-102