



ELECTRICAL AND DATA CABLE INSTALLATION

for

Washington Metropolitan Area Transit Authority

Contract Number FQ17021

VOLUME 3

**Drawings Part 1a
Electrical
Orange and Blue Lines**

November 13, 2016

Final Submission

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

VOLUME 3

PAGE NO.

DRAWINGS PART 1A ELECTRICAL ORANGE & BLUE LINES

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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
B	BASELINE	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

C01-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
C01-E-101	METRO CENTER - NORTH & SOUTH - MEZZANINE KIOSK - POWER
C01-E-102	METRO CENTER - NORTH & SOUTH - PANEL SCHEDULES
C01-E-301	METRO CENTER - NORTH - PANELBOARD IMAGE
C01-E-302	METRO CENTER - SOUTH - PANELBOARD IMAGE
MM-C-E05	METRO CENTER - 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	C. NGO	07-14	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	07-14					
CHECKED	B. IDLBI	07-14					
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
ABBREVIATIONS, DRAWING INDEX
SPECIFICATIONS & SYMBOL LIST

SCALE: NOT TO SCALE

DRAWING NO. C01-E-001

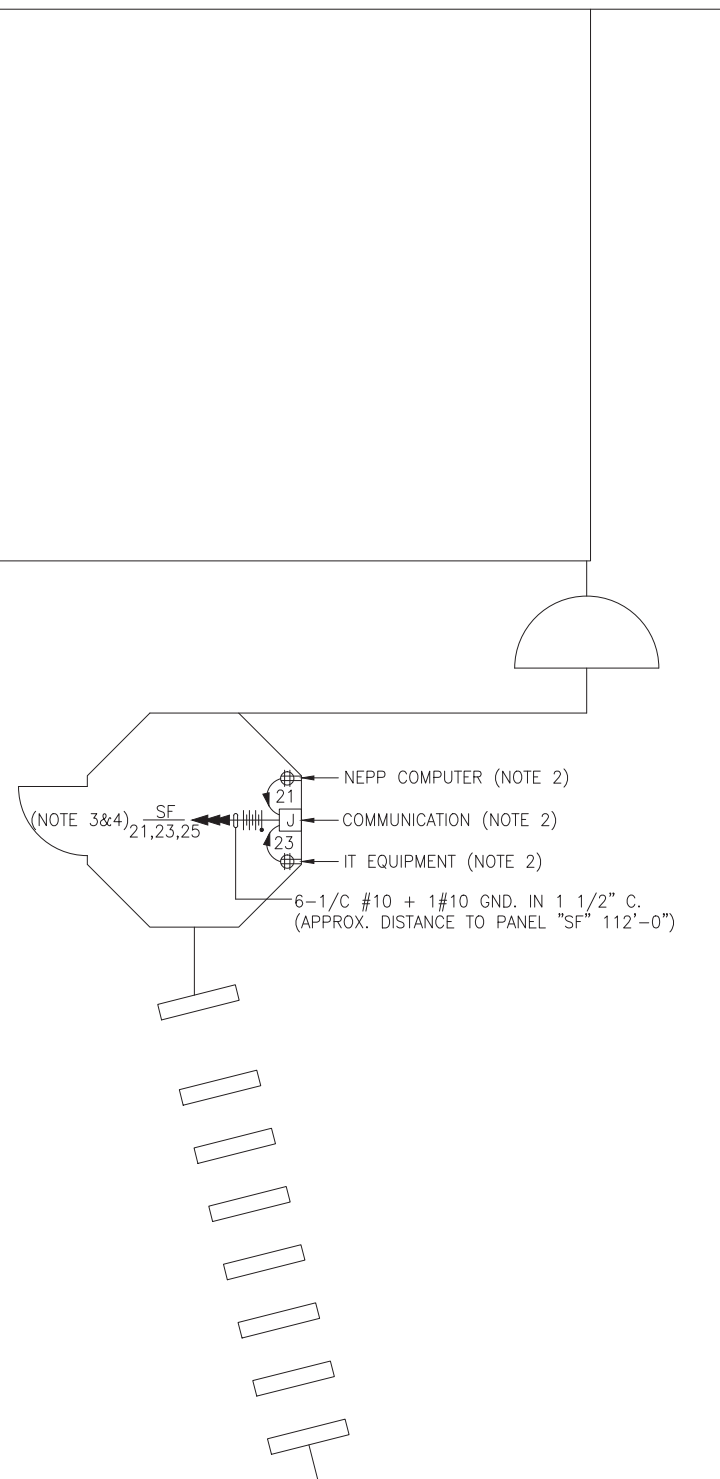
3

DRAWING NOTES:

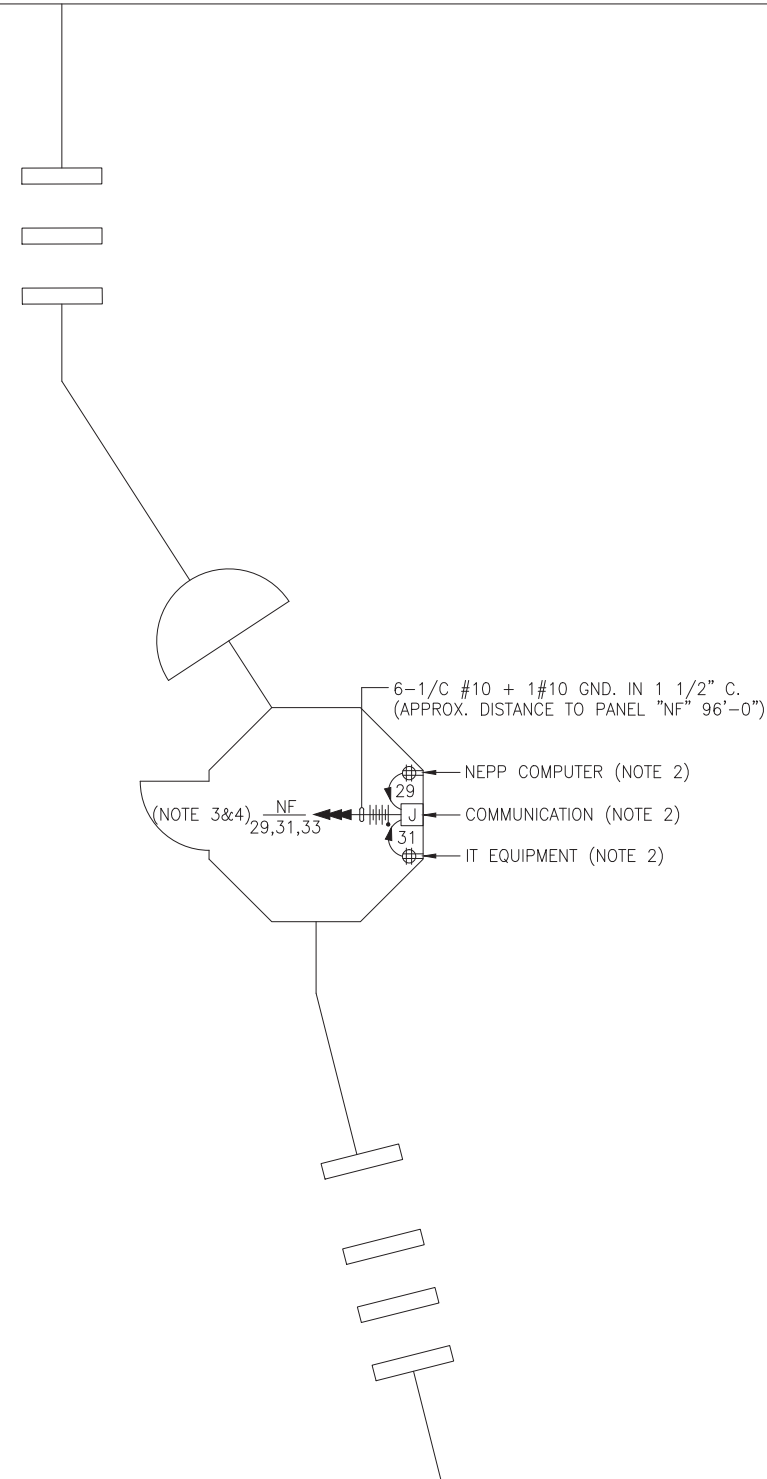
1. CONTRACTOR TO REFER TO SUPPLEMENTAL MEZZANINE INSPECTION REPORT, VOLUME 4 FURNISHED UNDER THIS SOLICITATION PACKAGE TO BE INFORMED THAT THE TOTAL LENGTH OF THE MULTI WIRE BRANCH CIRCUIT DEPICTED IN THE ELECTRICAL PLAN MAY EITHER CONSIST OF EXISTING POWER UNDER FLOOR DUCTS; OR IT COULD BE ALL CONDUIT 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.



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



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

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	09-14	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	09-14			9-22-15	RBM	REV. 1
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 *[Signature]* SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
METRO CENTER - NORTH & SOUTH MEZZANINE KIOSK - POWER

SCALE AS SHOWN DRAWING NO. C01-E-101 4

EXISTING PANEL "NF"										
AMPERES: 225		VOLTS: 120/208		MOUNTING: SURFACE						
MAINS: 225A MLO		PHASE: 3		LOCATION: MECH. EQUIPMENT ROOM N206						
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. KIOSK LOAD CENTER	2.9	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	0.8	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
SPARE	0.0	20	1	21	- B -	22	1	20	0.8	EXISTING VENDOR
SPACE	0.0	20	1	23	- - C	24	-	-	0.0	SPACE
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	SPACE
NEW KIOSK RECEPT. (IT & NCS)	0.8	20	1	29	- - C	30	1	20	0.8	EXISTING VENDOR
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	31	A - -	32	1	20	0.8	EXISTING VENDOR
FUTURE AFC FARE GATE	0.8	20	1	33	- B -	34	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	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

LOAD SUMMARY			
LIGHTS	0.0 x 125%		0.0 KVA
RECEPTACLES, FIRST 10 KVA	10.0 x 100%		10.0 KVA
RECEPTACLES	10.4 x 50%		5.2 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	27.9 KVA	TOTAL DEMAND KVA	23.5 KVA
		TOTAL DEMAND AMPS	65.1 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	11.7 KVA		
PHASE B:	9.7 KVA		
PHASE C:	8.1 KVA		

EXISTING PANEL "SF"										
AMPERES: 225		VOLTS: 120/208		MOUNTING: SURFACE						
MAINS: 225A MLO		PHASE: 3		LOCATION: MECH. EQUIPMENT ROOM S211						
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. KIOSK LOAD CENTER	2.9	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	0.8	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
NEW KIOSK RECEPT. (IT & NCS)	0.8	20	1	21	B	22	1	20	0.8	EXISTING VENDOR
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	23	C	24	-	-	0.0	SPACE
FUTURE AFC FARE GATE	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
EXISTING VENDOR	0.8	20	1	29	C	30	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	31	A	32	2	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	33	B	34	-	-	0.8	
EXISTING VENDOR	0.8	20	1	35	C	36	2	20	0.0	SPACE
EXISTING VENDOR	0.8	20	1	37	A	38	-	-	0.0	
EXISTING VENDOR	0.8	20	1	39	B	40	2	20	0.0	SPACE
EXISTING VENDOR	0.8	20	1	41	C	42	-	-	0.0	
SPACE	0.0	20	1	43	A	44	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	16.8 x 50%		8.4 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	34.3 KVA	TOTAL DEMAND KVA	26.7 KVA
		TOTAL DEMAND AMPS	74.0 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	13.3 KVA		
PHASE B:	11.3 KVA		
PHASE C:	10.5 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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED *[Signature]* SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRO RAIL STATIONS
 METRO CENTER - NORTH & SOUTH
 PANEL SCHEDULES

SCALE: NOT TO SCALE DRAWING NO. C01-E-102 5

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

C02-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
C02-E-101	McPHERSON SQUARE - EAST & WEST - MEZZANINE KIOSK - POWER
C02-E-102	McPHERSON SQUARE - EAST & WEST - PANEL SCHEDULES
MM-C-E07	McPHERSON 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	10-14	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	10-14					
CHECKED	B. IDILBI	10-14					
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

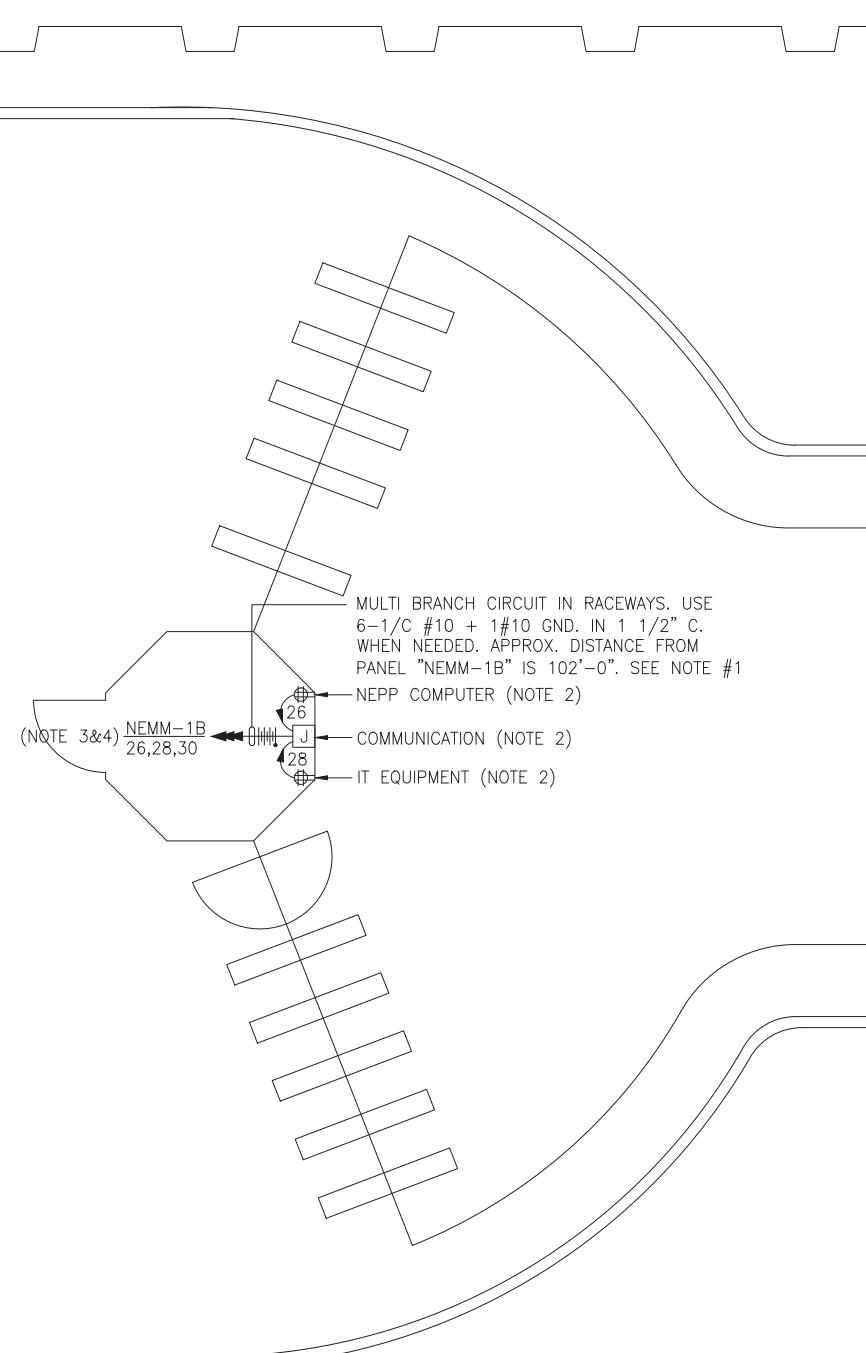
DRAWING NO.
C02-E-001

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.

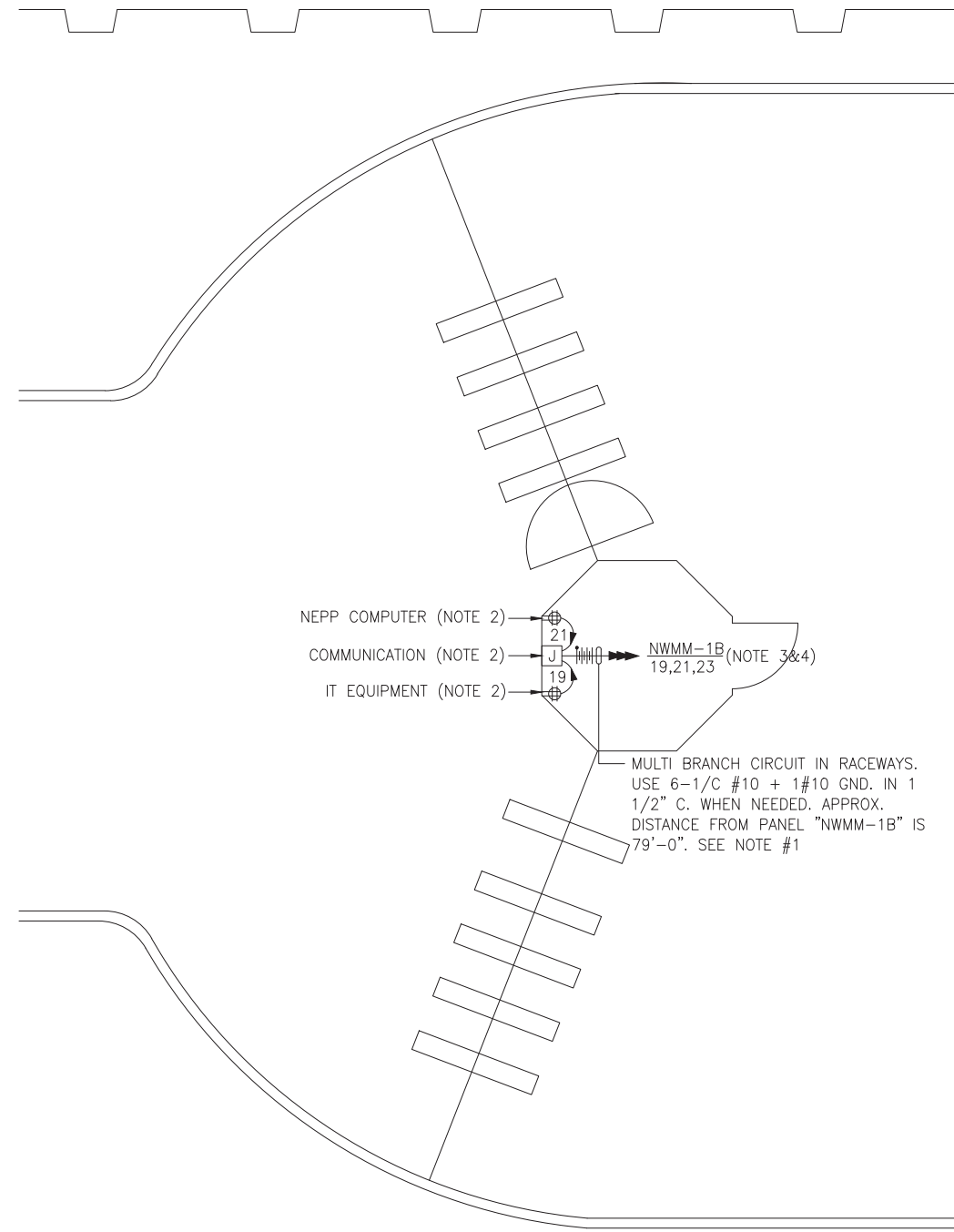
SAFETY PRECAUTION:

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



EAST MEZZANINE KIOSK - POWER

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



WEST MEZZANINE KIOSK - POWER

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

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	10-14 DATE	REFERENCE DRAWINGS		REVISIONS			
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION	
DRAWN	C. NGO	10-14 DATE						
CHECKED	B. IDILBI	10-14 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**
McPHERSON SQUARE - EAST & WEST
MEZZANINE KIOSK - POWER

SCALE
AS SHOWN

DRAWING NO.
C02-E-101

EXISTING PANEL "NEMM-1B"										
AMPERES: 225		VOLTS: 120/208		MOUNTING: SURFACE						
MAINS: 225 MLO		PHASE: 3		LOCATION: MECH. EQUIP. WATER SERVICE RM 211						
RATING: 10K AIC		WIRE: 4		SECTION: 1 OF 1						
LOAD DESCRIPTION	KVA	CKT BKRS			NO.	POLE	AMP	KVA	LOAD DESCRIPTION	
		NO.	NO.	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	0.0	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	EXISTING VENDOR
SPARE	0.0	20	1	21	- B -	22	1	20	0.0	SPARE
SPACE	0.0	-	-	23	- - C	24	1	20	0.8	EXISTING VENDOR
SPACE	0.0	-	-	25	A - -	26	1	20	0.8	NEW KIOSK RECEPT. (IT/NCS)
SPACE	0.0	-	-	27	- B -	28	1	20	0.8	NEW KIOSK RECEPT. (NEPP/SOC)
EXISTING VENDOR	0.8	20	1	29	- - C	30	1	20	0.0	FUTURE AFC FARE GATE
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
SPARE	0.0	20	1	37	A - -	38	1	20	0.0	SPARE
EXIST. KIOSK LOAD CENTER	2.9	30	3	39	- B -	40	1	20	0.0	SPARE
	2.5	-	-	41	- - C	42	1	20	0.0	SPARE
	2.5	-	-	43	A - -	44	1	20	0.0	SPARE
SPACE	0.0	-	-	45	- B -	46	1	20	0.0	SPARE
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	8.0 x 50%		4.0 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	25.5 KVA	TOTAL DEMAND KVA	22.3 KVA
		TOTAL DEMAND AMPS	61.8 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	9.7 KVA		
PHASE B:	8.5 KVA		
PHASE C:	8.1 KVA		

EXISTING PANEL "NWMM-1B"										
AMPERES: 225		VOLTS: 120/208		MOUNTING: SURFACE						
MAINS: 225 MLO		PHASE: 3		LOCATION: MECHANICAL EQUIP. ROOM 212						
RATING: 10K AIC		WIRE: 4		SECTION: 1 OF 1						
LOAD DESCRIPTION	KVA	CKT BKRS			NO.	POLE	AMP	KVA	LOAD DESCRIPTION	
		NO.	NO.	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
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	0.8	EXISTING VENDOR
NEW KIOSK RECEPT. (IT/NCS)	0.8	20	1	19	A - -	20	1	20	0.8	EXISTING VENDOR
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	- - C	24	-	-	0.0	SPACE
SPARE	0.0	20	1	25	A - -	26	1	20	0.0	SPARE
SPACE	0.0	-	-	27	- B -	28	-	-	0.0	SPACE
EXISTING VENDOR	0.8	20	1	29	- - C	30	-	-	0.0	SPACE
SPARE	0.0	20	1	31	A - -	32	-	-	0.0	SPACE
SPARE	0.0	20	1	33	- B -	34	-	-	0.0	SPACE
SPARE	0.0	20	1	35	- - C	36	1	20	0.0	SPARE
SPARE	0.0	20	1	37	A - -	38	1	20	0.8	EXISTING VENDOR
EXIST. KIOSK LOAD CENTER	2.5	30	3	39	- B -	40	1	20	0.0	SPARE
	2.5	-	-	41	- - C	42	1	20	0.8	EXISTING VENDOR
	2.5	-	-	43	A - -	44	1	20	0.0	SPARE
SPACE	0.0	-	-	45	- B -	46	1	20	0.0	SPARE
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	9.2 x 50%		4.6 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	26.7 KVA	TOTAL DEMAND KVA	22.9 KVA
		TOTAL DEMAND AMPS	63.5 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	9.7 KVA		
PHASE B:	8.9 KVA		
PHASE C:	8.1 KVA		

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO 10-14
DATE
DRAWN C. NGO 10-14
DATE
CHECKED B. IDILBI 10-14
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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED [Signature] SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
McPHERSON SQUARE - EAST & WEST
PANEL SCHEDULES

SCALE NOT TO SCALE DRAWING NO. C02-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.




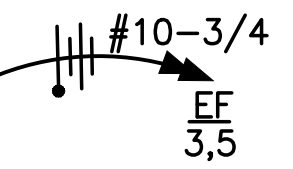

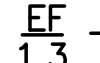
ABBREVIATIONS

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

- C03-E-001 ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
- C03-E-101 FARRAGUT WEST - MEZZANINE KIOSK - POWER
- C03-E-102 FARRAGUT WEST - PANEL SCHEDULES
- MM-C-E08 FARRAGUT WEST - 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
-  - INDICATES CIRCUIT HOME RUN PANELBOARD AND CIRCUIT NUMBER IDENTIFICATION

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	11-14 DATE	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	11-14 DATE					
CHECKED	B. IDILBI	11-14 DATE					
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

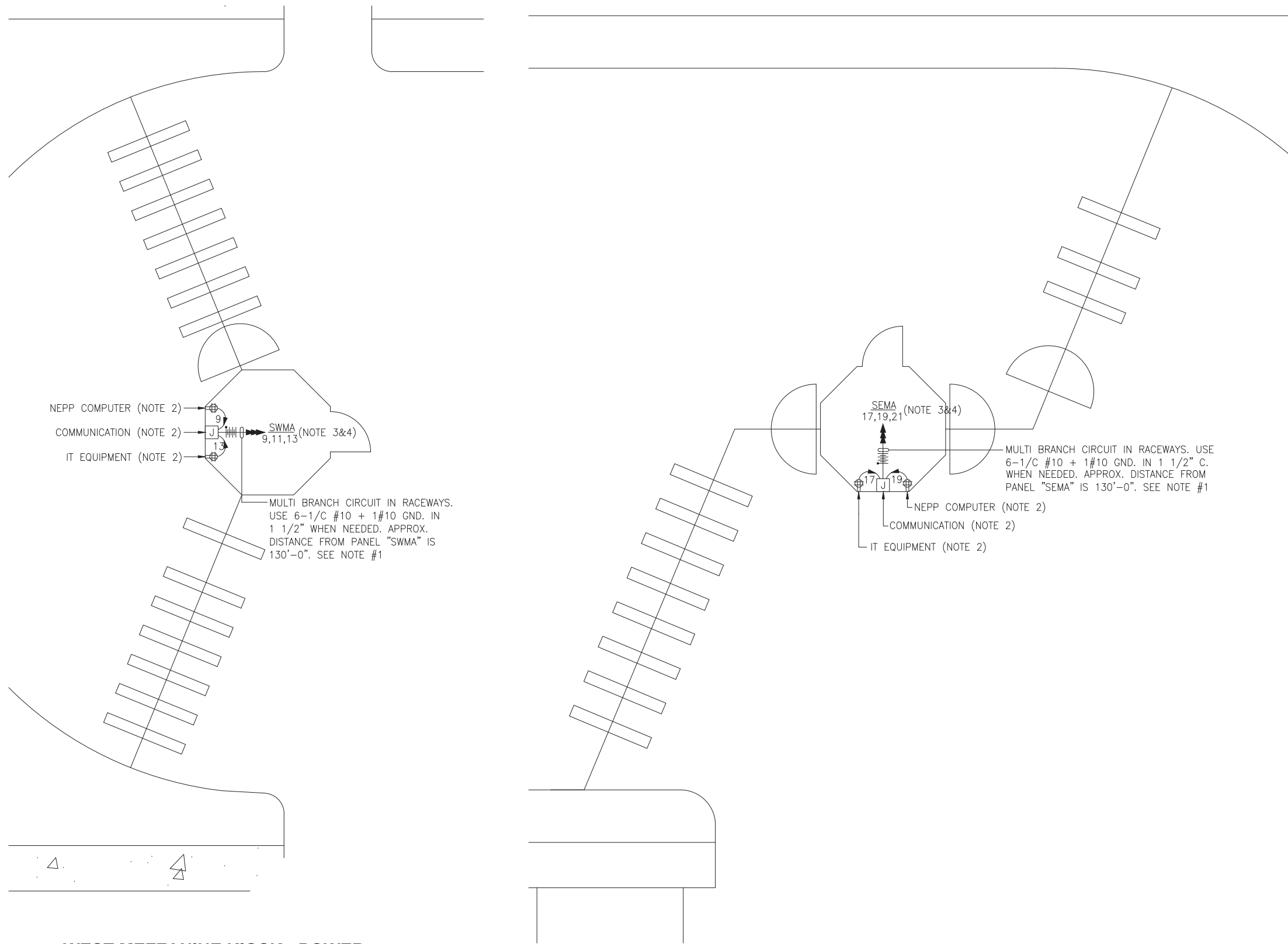
APPROVED _____ SUBMITTED _____
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS

ABBREVIATIONS DRAWING INDEX
SPECIFICATIONS SYMBOL LIST

SCALE: NOT TO SCALE

DRAWING NO. C03-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.

WEST MEZZANINE KIOSK - POWER

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

EAST MEZZANINE KIOSK - POWER

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

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO	11-14	REFERENCE DRAWINGS		REVISIONS	
DRAWN C. NGO	11-14	NUMBER	DESCRIPTION	DATE	BY
CHECKED B. IDILBI	11-14				
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
FARRAGUT WEST - EAST & WEST
MEZZANINE KIOSK - POWER**

SCALE
AS SHOWN

DRAWING NO.
C03-E-101

10

EXISTING PANEL "SWMA"										
AMPERES: 225		VOLTS: 120/208		MOUNTING: SURFACE						
MAINS: 225 MLO		PHASE: 3		LOCATION: WATER SERVICE CLEANER RM MECH. EQUIPMENT 214						
RATING: 10K AIC		WIRE: 4		SECTION: 1 OF 1						
LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	CKT. NO.	CKT BKRS			LOAD DESCRIPTION
		AMP	POLE	NO.			POLE	AMP	KVA	
EXISTING VENDOR	0.8	20	1	1	A - -	2	3	30	2.5	EXIST. KIOSK LOAD CENTER
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
NEW KIOSK RECEPT. (IT/NCS)	0.8	20	1	9	- B -	10	1	20	0.8	EXISTING VENDOR
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	11	- - C	12	1	20	0.8	EXISTING VENDOR
FUTURE AFC FARE GATE	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
SPACE	0.0	-	-	23	- - C	24	3	30	0.0	SPARE
SPACE	0.0	-	-	25	A - -	26	-	-	0.0	
SPACE	0.0	-	-	27	- B -	28	-	-	0.0	
EXISTING VENDOR	0.8	20	1	29	- - C	30	1	20	0.8	EXISTING VENDOR
SPACE	0.0	-	-	31	A - -	32	1	20	0.8	EXISTING VENDOR
SPACE	0.0	-	-	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	1	20	0.8	EXISTING VENDOR
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
EXISTING VENDOR	0.8	20	1	43	A - -	44	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	45	- B -	46	-	-	0.0	SPACE
SPARE	0.0	20	1	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	15.6 x 50%		7.8 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	33.1 KVA	TOTAL DEMAND KVA	26.1 KVA
		TOTAL DEMAND AMPS	72.4 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	11.3 KVA		
PHASE B:	11.3 KVA		
PHASE C:	11.3 KVA		

EXISTING PANEL "SEMA"										
AMPERES: 225		VOLTS: 120/208		MOUNTING: SURFACE						
MAINS: 225 MLO		PHASE: 3		LOCATION: CLEANERS ROOM WATER SERVICE 201						
RATING: 10K AIC		WIRE: 4		SECTION: 1 OF 1						
LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	CKT. 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
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	3	30	2.5	EXIST. KIOSK LOAD CENTER
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	19	A - -	20	-	-	2.5	
FUTURE AFC FARE GATE	0.0	20	1	21	- B -	22	-	-	2.5	
SPACE	0.0	-	-	23	- - C	24	-	-	0.0	SPACE
SPACE	0.0	-	-	25	A - -	26	-	-	0.0	SPACE
SPACE	0.0	-	-	27	- B -	28	-	-	0.0	SPACE
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	0.0	SPARE
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
SPARE	0.0	20	1	37	A - -	38	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	39	- B -	40	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	41	- - C	42	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	43	A - -	44	1	20	0.0	SPARE
SPARE	0.0	20	1	45	- B -	46	1	20	0.0	SPARE
EXISTING VENDOR	0.8	-	-	47	- - C	48	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	12.4 x 50%		6.2 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	29.9 KVA	TOTAL DEMAND KVA	24.5 KVA
		TOTAL DEMAND AMPS	67.9 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	9.7 KVA		
PHASE B:	9.7 KVA		
PHASE C:	11.3 KVA		

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	11-14 DATE	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	11-14 DATE					
CHECKED	B. IDILBI	11-14 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
FARRAGUT WEST - EAST & WEST
PANEL SCHEDULES

SCALE
NOT TO SCALE

DRAWING NO.
C03-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
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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

C04-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
C04-E-101	FOGGY BOTTOM - MEZZANINE KIOSK - POWER
C04-E-102	FOGGY BOTTOM - PANEL SCHEDULE
MM-C-E09	FOGGY BOTTOM - 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

DESIGNED	C. NGO	11-14 DATE	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	11-14 DATE					
CHECKED	B. IDILBI	11-14 DATE					
APPROVED	N/A						

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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



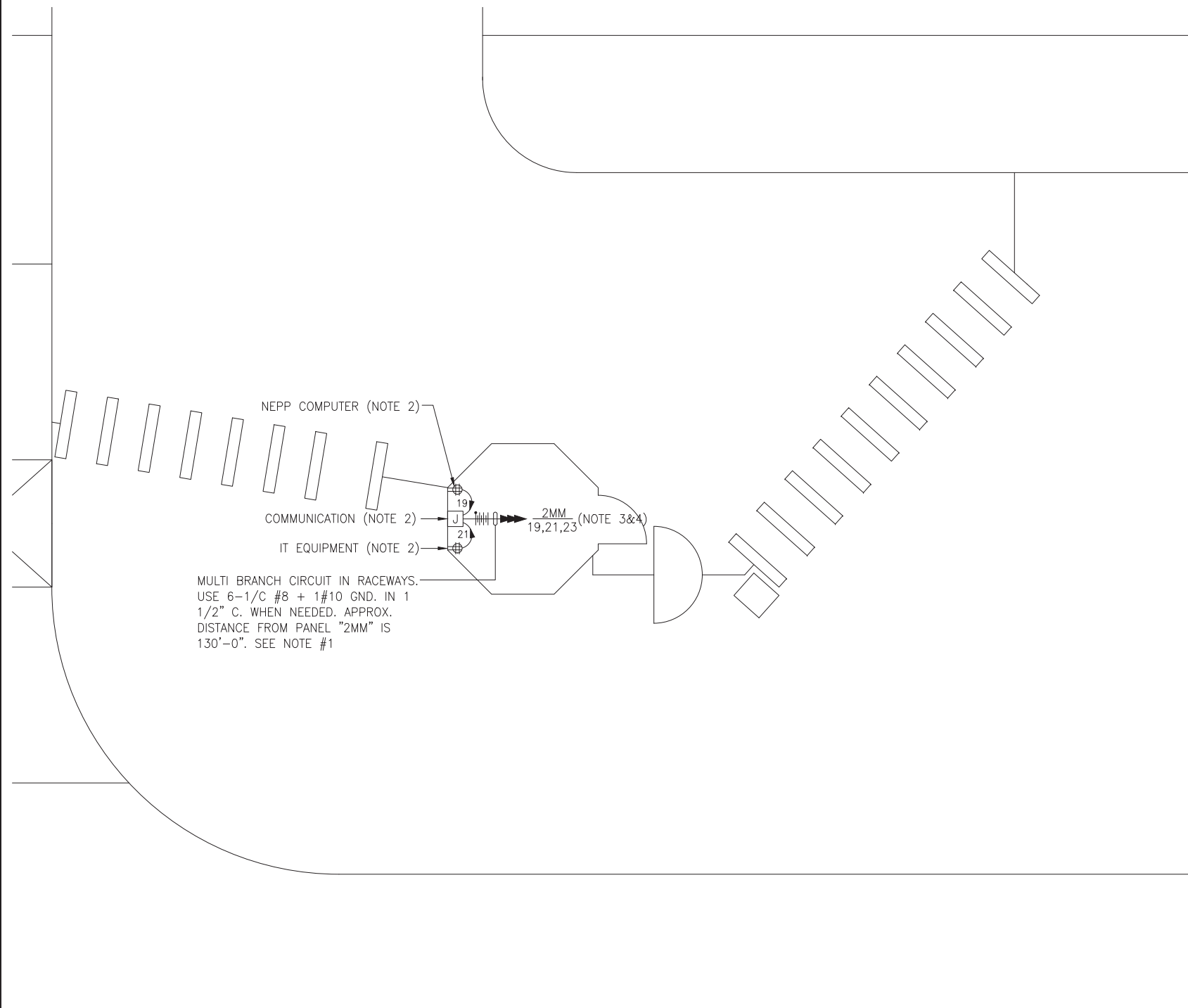
APPROVED _____

SUBMITTED _____
PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
C04-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	11-14
		DATE
DRAWN	C. NGO	11-14
		DATE
CHECKED	B. IDILBI	11-14
		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
FOGGY BOTTOM
MEZZANINE KIOSK - POWER
SCALE AS SHOWN
DRAWING NO. C04-E-101

EXISTING PANEL "2MM"

AMPERES: 225		VOLTS: 120/208		MOUNTING: SURFACE							
MAINS: 200A MCB		PHASE: 3		LOCATION: ROOM C204							
RATING: 10K AIC		WRE: 4		SECTION: 1 OF 1							
LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	CKT. NO.	CKT BKRS			KVA	LOAD DESCRIPTION
		AMP	POLE	NO.			POLE	AMP			
SPACE	0.0	-	-	1	A - -	2	3	200	0.0	EXISTING MAIN	
SPACE	0.0	-	-	3	- B -	4	-	-	0.0		
SPACE	0.0	-	-	5	- - C	6	-	-	0.0		
EXISTING LIGHTS PASSAGEWAY	0.8	20	1	7	A - -	8	1	20	0.8	EXIST. LIGHTS UNDER MEZZANINE	
EXISTING LIGHTS PASSAGEWAY	0.8	20	1	9	- B -	10	1	20	0.8	EXIST. LIGHTS UNDER MEZZANINE	
EXISTING LIGHTS PASSAGEWAY	0.8	20	1	11	- - C	12	1	20	0.8	EXIST. LIGHTS UNDER MEZZANINE	
EXISTING LIGHTS PASSAGEWAY	0.8	20	1	13	A - -	14	1	20	0.8	ELEVATOR #1 SIGNAL LIGHTS	
EXISTING LIGHTS PASSAGEWAY	0.8	20	1	15	- B -	16	1	20	0.8	EXIST. LIGHTS PASSAGEWAY (MAP)	
EXISTING LIGHTS PASSAGEWAY	0.8	20	1	17	- - C	18	1	20	0.8	EXIST. LIGHTS "C"	
NEW KIOSK RECEPT. (IT/NCS)	0.8	20	1	19	A - -	20	3	20	1.0	EXISTING CIRCUIT	
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	21	- B -	22	-	-	1.0		
FUTURE AFC FARE GATE	0.0	20	1	23	- - C	24	-	-	1.0		
EXISTING MAP BOARD LIGHTS	1.0	20	3	25	A - -	26	-	-	0.0	SPACE	
	1.0	-	-	27	- B -	28	-	-	0.0	SPACE	
	1.0	-	-	29	- - C	30	1	20	0.8	EXISTING ENTRY/EXIT GATE	
EXISTING VENDOR	0.8	20	1	31	A - -	32	1	20	0.8	EXISTING ENTRY/EXIT GATE	
EXISTING VENDOR	0.8	20	1	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	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	0.0 x 125%	0.0 KVA
AC	0.0 x 100%	0.0 KVA
WATER HEATING	0.0 x 125%	0.0 KVA
TOTAL CONNECTED LOAD	19.6 KVA	TOTAL DEMAND KVA 14.8 KVA
		TOTAL DEMAND AMPS 41.1 AMPS
CONNECTED LOAD PHASE SUMMARY		
PHASE A:	7.6 KVA	
PHASE B:	6.8 KVA	
PHASE C:	6.0 KVA	

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED <u>C. NGO</u>	11-14 DATE	REFERENCE DRAWINGS		REVISIONS		
DRAWN <u>C. NGO</u>	11-14 DATE	NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
CHECKED <u>B. IDILBI</u>	11-14 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 *[Signature]*

SUBMITTED _____
PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
C04-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

C05-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
C05-E-101	ROSSLYN - KIOSK - POWER
C05-E-102	ROSSLYN - PANEL SCHEDULE
MM-C-E21	ROSSLYN - 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

	REFERENCE DRAWINGS		REVISIONS		
	NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DESIGNED	C. NGO	11-14			
		DATE			
DRAWN	C. NGO	11-14			
		DATE			
CHECKED	B. IDILBI	11-14			
		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
ABBREVIATIONS □ DRAWING INDEX □
SPECIFICATIONS □ SYMBOL LIST

SCALE
NOT TO SCALE

DRAWING NO.
C05-E-001

MULTI BRANCH CIRCUIT IN RACEWAYS. USE 6-1/C #10 + 1#10 GND. IN 1 1/2" C. WHEN NEEDED. APPROX. DISTANCE FROM PANEL "F2" IS 82'-0". SEE NOTE #1

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

F2 (NOTE 3&4)
 11,13,15

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.

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

CONTRACT NO.
 14-FQ10060-CENI-24

DESIGNED C. NGO 11-14
 DATE 11-14
 DRAWN C. NGO 11-14
 DATE 11-14
 CHECKED B. IDILBI 11-14
 DATE 11-14
 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
 ROSSLYN
 KIOSK - POWER

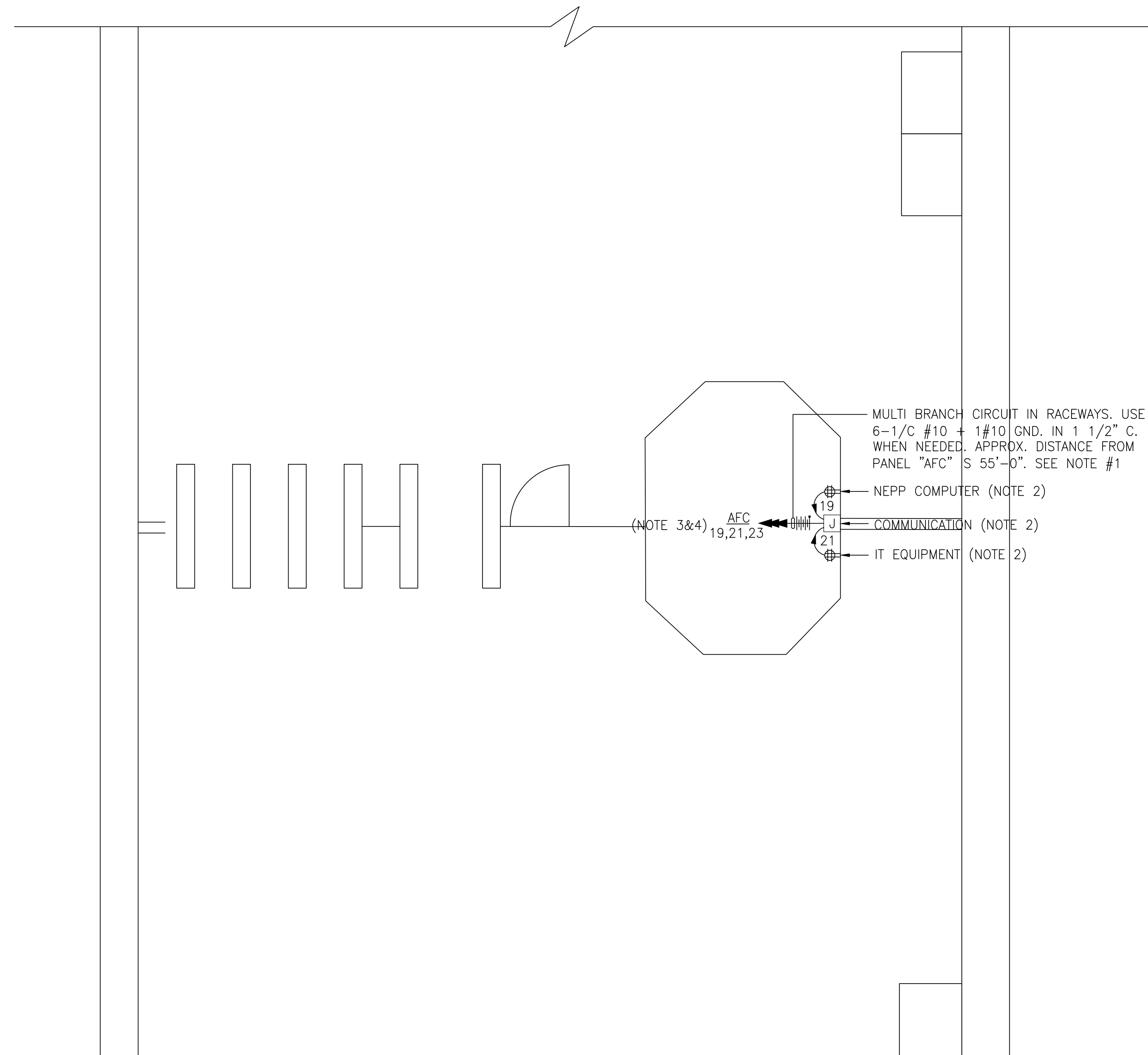
SCALE AS SHOWN
 DRAWING NO. C05-E-101

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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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.
5. CONTRACTOR TO FIELD VERIFY CIRCUIT BREAKER AVAILABILITY AT PANEL "AFC".

SAFETY PRECAUTION:

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



KIOSK (113) - POWER

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

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	11-14 DATE	REFERENCE DRAWINGS		REVISIONS			
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION	
DRAWN	C. NGO	11-14 DATE						
CHECKED	B. IDILBI	11-14 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
ROSSLYN (113)
MEZZANINE KIOSK - POWER

SCALE
AS SHOWN

DRAWING NO.
C05(113)-E-101

EXISTING PANEL "F2"

AMPERES: 150	VOLTS: 120/208	MOUNTING: SURFACE
MAINS: 150A MCB	PHASE: 3	LOCATION: ELEC. EQUIPMENT ROOM C304
RATING: 10K AIC	WIRE: 4	SECTION: 1 OF 1

LOAD DESCRIPTION	KVA	CKT BKRS			NO.	POLE	NO.	CKT BKRS			LOAD DESCRIPTION
		AMP	POLE	NO.				POLE	AMP	KVA	
SPARE	0.8	20	1	1	A - -	2	1	20	0.8	EXISTING VENDOR	
SPARE	0.8	20	1	3	- B -	4	1	20	0.0	SPARE	
EXISTING VENDOR	0.8	20	1	5	- - C	6	1	20	0.0	SPARE	
EXISTING CIRCUIT	2.6	60	2	7	A - -	8	1	20	0.0	SPARE	
	1.0	-	-	9	- B -	10	1	20	0.0	SPARE	
NEW KIOSK RECEPT. (IT/NCS)	0.8	20	1	11	- - C	12	1	20	0.0	SPARE	
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	13	A - -	14	1	20	0.0	SPARE	
FUTURE AFC FARE GATE	0.0	20	1	15	- B -	16	1	20	0.0	SPARE	
SPARE	0.0	20	1	17	- - C	18	1	20	0.8	EXISTING VENDOR	
SPARE	0.0	20	1	19	A - -	20	3	20	3.0	EXISTING CIRCUIT	
SPACE	0.0	20	1	21	- B -	22	-	-	0.0		
SPACE	0.0	20	1	23	- - C	24	-	-	0.0		
SPARE	0.0	20	1	25	A - -	26	1	20	0.0	SPARE	
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	
SPARE	0.0	20	1	31	A - -	32	1	20	0.8	EXISTING VENDOR	
SPACE	0.0	-	-	33	- B -	34	-	-	0.0	SPACE	
SPACE	0.0	-	-	35	- - C	36	-	-	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	0.2 x 50%	0.1 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	2.0 x 125%	2.5 KVA
AC	0.0 x 100%	0.0 KVA
WATER HEATING	0.0 x 125%	0.0 KVA
TOTAL CONNECTED LOAD	12.2 KVA	TOTAL DEMAND KVA 12.6 KVA
		TOTAL DEMAND AMPS 35.0 AMPS

CONNECTED LOAD PHASE SUMMARY

PHASE A:	8.8 KVA
PHASE B:	1.8 KVA
PHASE C:	2.4 KVA

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	11-14 DATE	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	11-14 DATE					
CHECKED	B. IDILBI	11-14 DATE					
APPROVED	N/A	DATE					

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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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
ROSSLYN
PANEL SCHEDULE

SCALE
NOT TO SCALE

DRAWING NO.
C05-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

C06-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
C06-E-101	ARLINGTON CEMETERY - KIOSK - POWER
C06-E-102	ARLINGTON CEMETERY - PANEL SCHEDULE
C06-E-301	ARLINGTON CEMETERY - PANELBOARD IMAGE
MM-C-E13	ARLINGTON CEMETERY - 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	C. NGO	10-14	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DATE							
DRAWN	C. NGO	10-14					
DATE							
CHECKED	B. IDLBI	10-14					
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

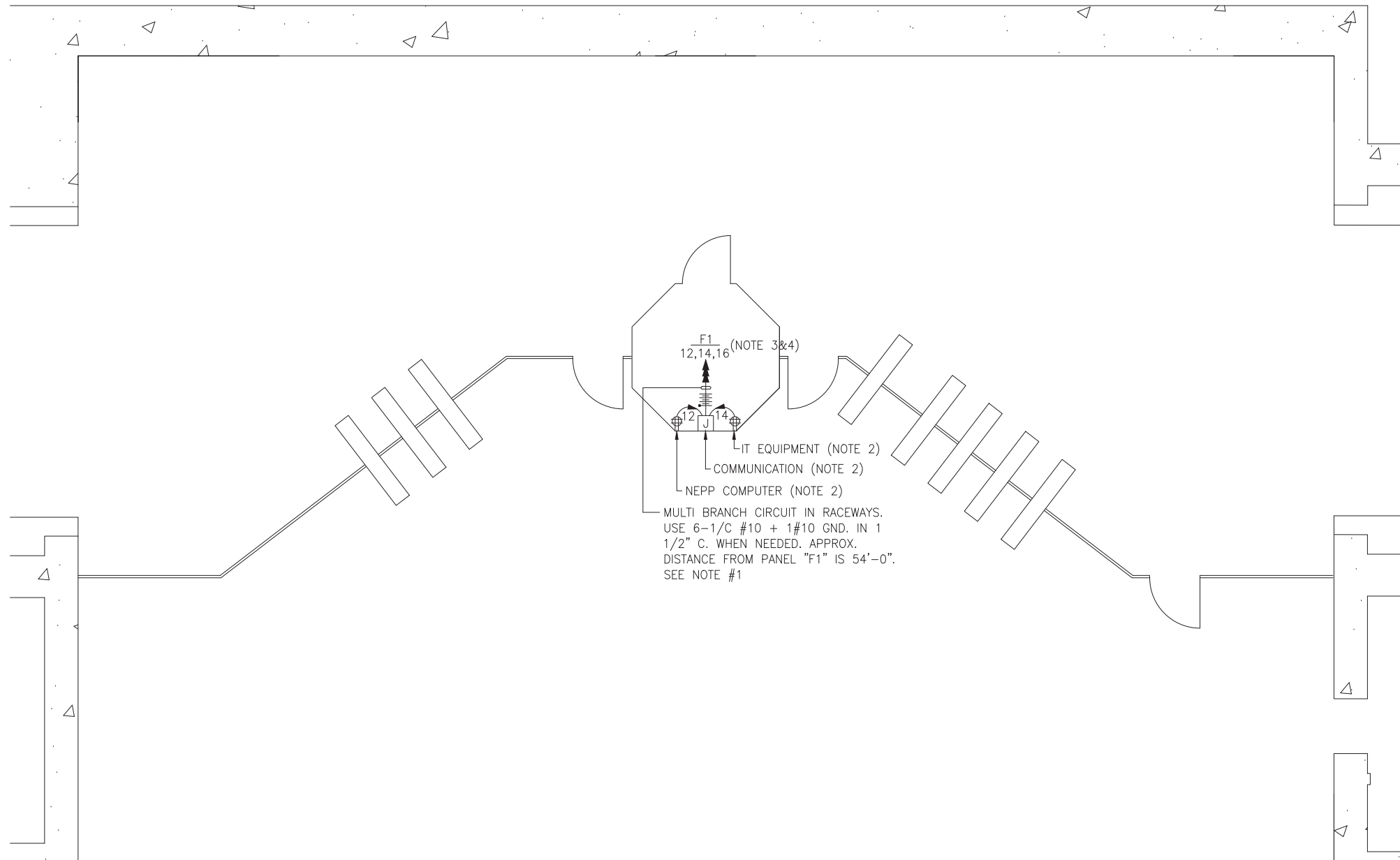
DRAWING NO.
C06-E-001

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

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14-FQ10060-CENI-24

DESIGNED	C. NGO	10-14
		DATE
DRAWN	C. NGO	10-14
		DATE
CHECKED	B. IDILBI	10-14
		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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED *[Signature]* SUBMITTED _____ PROJECT MANAGER

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

SCALE AS SHOWN DRAWING NO. C06-E-101 20

EXISTING PANEL "F1"											
AMPERES: 225		VOLTS: 120/208		MOUNTING: SURFACE							
MAINS: 225A		PHASE: 3		LOCATION: ROOM C100							
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	
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	
SPARE	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	NEW KIOSK RECEPT. (IT & NEPP)	
EXISTING VENDOR	0.8	20	1	13	A - -	14	1	20	0.0	SPARE (KIOSK)	
EXISTING VENDOR	0.8	20	1	15	- B -	16	1	20	0.0	SPARE	
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	0.0	SPARE	
SPARE	0.0	20	1	21	- B -	22	1	20	0.0	SPARE	
SPARE	0.0	20	1	23	- - C	24	1	20	0.0	SPARE	
SPARE	0.0	20	1	25	A - -	26	1	20	0.0	SPARE	
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	
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	0.8	EXISTING VENDOR	
EXIST. LOAD CENTER "KES"	2.9	30	3	37	A - -	38	3	30	0.0	SPARE	
	2.5	-	-	39	- B -	40	-	-	0.0		
	2.5	-	-	41	- - C	42	-	-	0.0		

NOTES: 1. CONNECT NEW FEEDER TO EXISTING SPARE 20A, 1P CB
 2. CB TO BE RESERVED FOR FUTURE AFC

LOAD SUMMARY

LIGHTS	0.0 x 125%	0.0 KVA
RECEPTACLES, FIRST 10 KVA	10.0 x 100%	10.0 KVA
RECEPTACLES	2.4 x 50%	1.2 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	19.9 KVA	TOTAL DEMAND KVA 19.5 KVA
		TOTAL DEMAND AMPS 54.0 AMPS

CONNECTED LOAD PHASE SUMMARY

PHASE A: 6.9 KVA
 PHASE B: 5.7 KVA
 PHASE C: 7.3 KVA

NOTES: A. EXISTING PANEL "F1" IS FED FROM 120/208V, 3Ø, 4W EXISTING PANEL "N. DIST. PANEL" LOCATED IN BATTERY AC SWBD. RM. C206, CIRCUIT #1,3,5-100A/3P (SEE ATTACHED DWG. MM-C-E13).

B. EXISTING WIRING FED FROM BOTTOM OF PANEL BY:
 * 2-1 1/2" C. (WIRING FILL >40%).

EXISTING WIRING FED FROM TOP OF PANEL BY:
 * 1-4" C. TO DIST. PANEL (WIRING FILL >40%).
 * 1-3/4" C. (WIRING FILL >40%)(1-WIRING FILL >20%).
 * 1-1/2" C. (WIRING FILL >40%)(1-WIRING FILL >20%).

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	10-14	REFERENCE DRAWINGS		REVISIONS	
			NUMBER	DESCRIPTION	DATE	BY
DRAWN	C. NGO	10-14				
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APPROVED	N/A					

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APPROVED *[Signature]*

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DRAWING NO. C06-E-102

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25. SEAL OFF ALL PENETRATIONS THRU WALLS/FLOORS.
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AC	ALTERNATING CURRENT	P	POLE
AF	AMPERE FRAME	PH	PHASE
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AFF	ABOVE FINISHED FLOOR	PRI	PRIMARY
AIC	AMPERE INTERRUPTING CAPACITY	PROP	PROPOSED
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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

D01-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
D01-E-101	FEDERAL TRIANGLE - MEZZANINE KIOSK - POWER
D01-E-102	FEDERAL TRIANGLE - PANEL SCHEDULE
MM-D-E06	FEDERAL TRIANGLE - AC POWER ONE LINE DIAGRAM

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	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	10-14 DATE	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	10-14 DATE					
CHECKED	B. IDILBI	10-14 DATE					
APPROVED	N/A	DATE					

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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



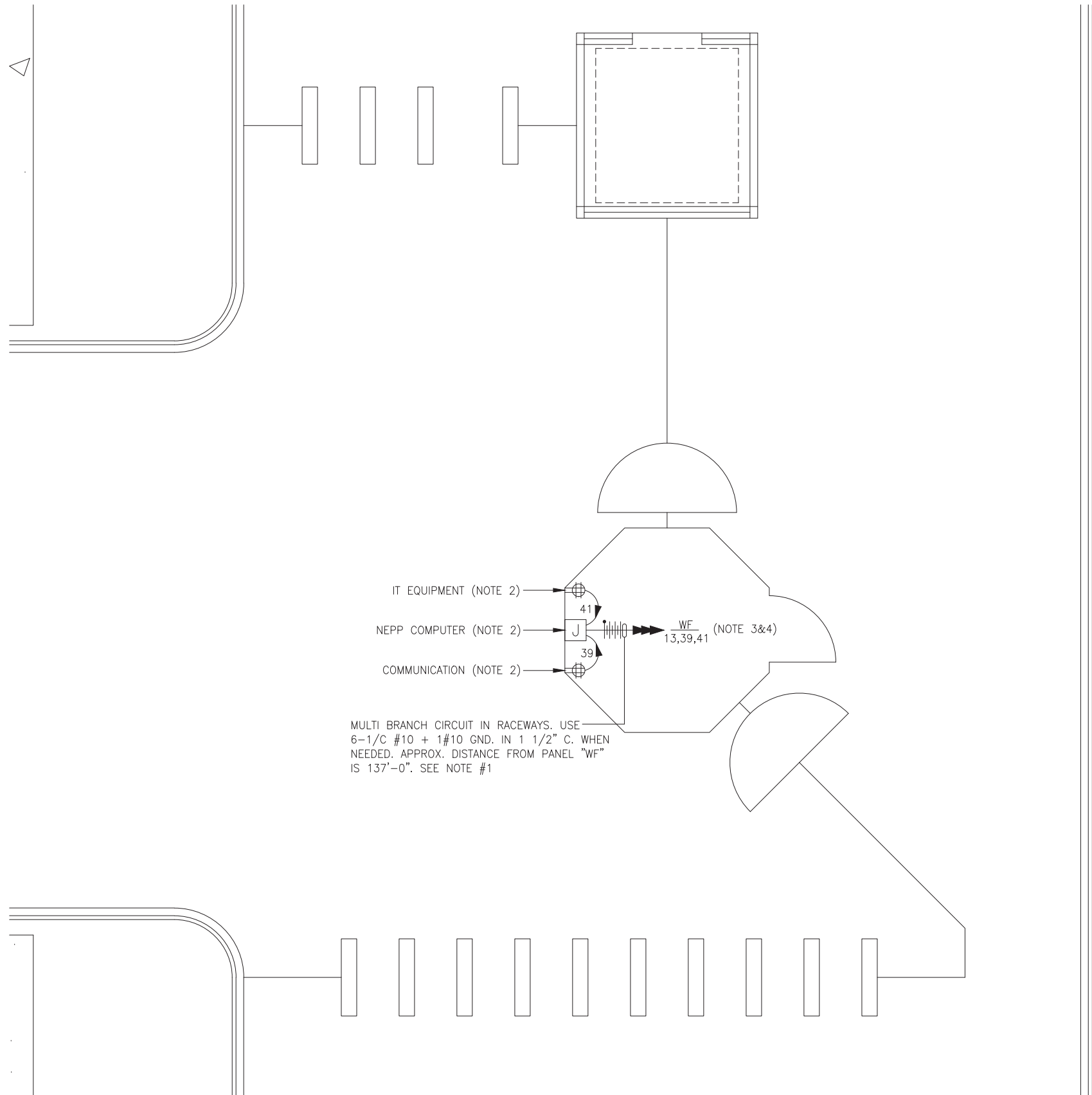
APPROVED _____

SUBMITTED _____
PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
D01-E-001



MEZZANINE KIOSK - POWER

SCALE: 3/8" = 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.

DESIGNED	C. NGO	10-14
		DATE
DRAWN	C. NGO	10-14
		DATE
CHECKED	B. IDILBI	10-14
		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

SUBMITTED _____

PROJECT MANAGER

A Gannett Fleming/Parsons
JOINT VENTURE

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

**FEDERAL TRIANGLE
MEZZANINE KIOSK - POWER**

SCALE AS SHOWN	DRAWING NO. D01-E-101
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CONTRACT NO.
14-FQ10060-CENI-24

EXISTING PANEL "WF"

AMPERES: 400	VOLTS: 120/208	MOUNTING: SURFACE
MAINS: 400A 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.				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	
EXISTING VENDOR	0.8	20	1	11	- - C	12	1	20	0.8	EXISTING VENDOR	
FUTURE AFC FARE GATE	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	
EXISTING VENDOR	0.8	20	1	29	- - C	30	1	20	0.0	EXISTING VENDOR	
EXISTING VENDOR	1.4	30	3	31	A - -	32	1	20	0.0	EXISTING VENDOR	
	1.0	-	-	33	- B -	34	1	20	0.8	EXISTING VENDOR	
	1.0	-	-	35	- - C	36	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.0	20	1	37	A - -	38	3	30	2.9	EXIST. LOAD CENTER "KES"	
NEW KIOSK RECEPT. (IT & NCS)	0.8	20	1	39	- B -	40	-	-	2.5		
NEW KIOSK RECEPT. (NEPP/SOC)	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	15.6 x 50%	7.8 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	6.0 x 125%	7.5 KVA
AC	4.5 x 100%	4.5 KVA
WATER HEATING	0.0 x 125%	0.0 KVA
TOTAL CONNECTED LOAD	36.1 KVA	TOTAL DEMAND KVA 29.8 KVA
		TOTAL DEMAND AMPS 82.8 AMPS
CONNECTED LOAD PHASE SUMMARY		
PHASE A:	11.5 KVA	
PHASE B:	13.1 KVA	
PHASE C:	12.3 KVA	

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	10-14 DATE	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	10-14 DATE					
CHECKED	B. IDILBI	10-14 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



A Gannett Fleming/Parsons
JOINT VENTURE

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

FEDERAL TRIANGLE
PANEL SCHEDULE

SCALE
NOT TO SCALE

DRAWING NO.
D01-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

D02-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
D02-E-101	SMITHSONIAN NORTH & SOUTH - MEZZANINE KIOSK - POWER
D02-E-102	SMITHSONIAN NORTH & SOUTH - PANEL SCHEDULES
MM-D-E07	SMITHSONIAN - 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	10-14 DATE	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	10-14 DATE					
CHECKED	B. IDILBI	10-14 DATE					
APPROVED	N/A	DATE					

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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



APPROVED _____

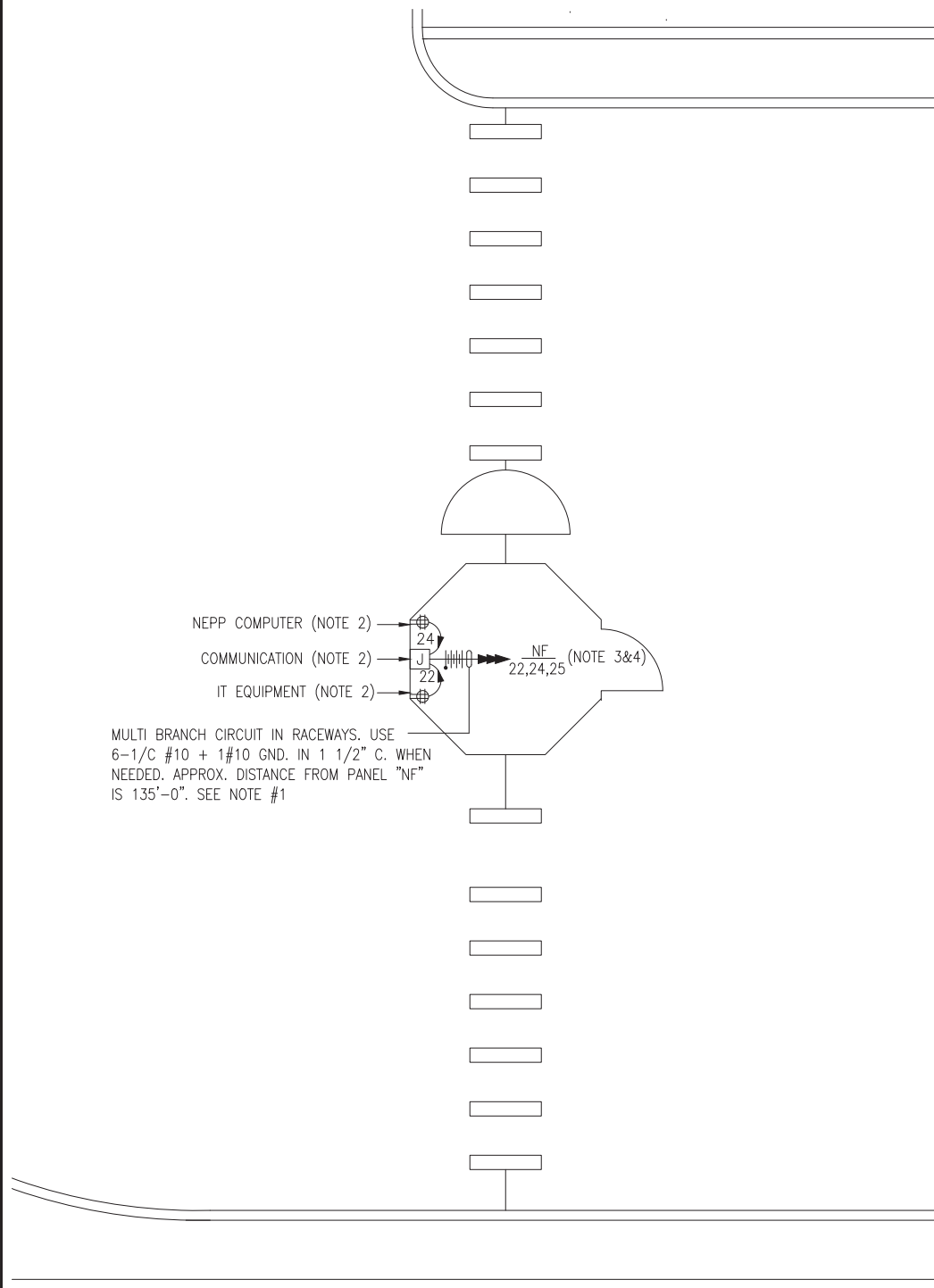
SUBMITTED _____
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS

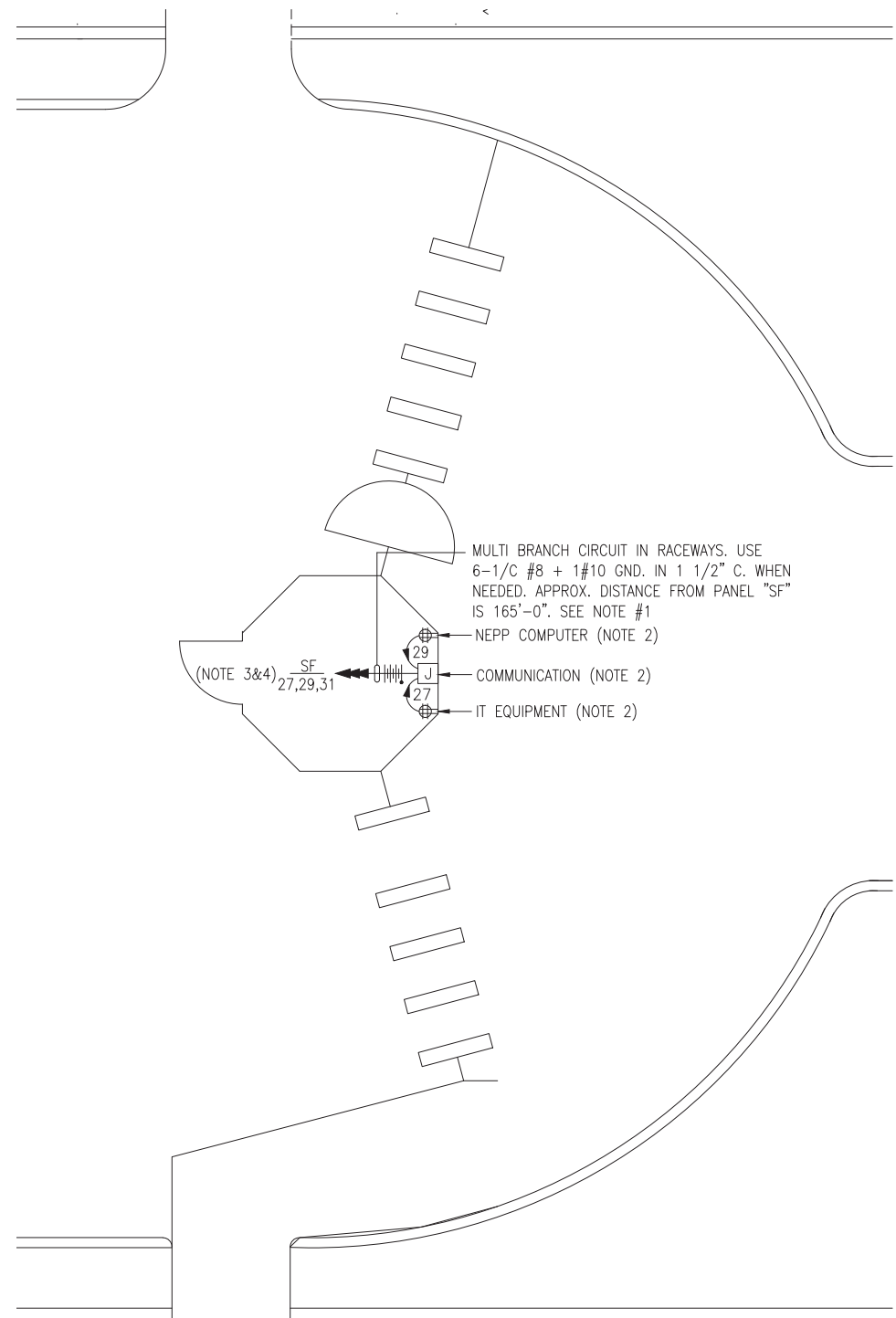
ABBREVIATIONS □ DRAWING INDEX □
SPECIFICATIONS □ SYMBOL LIST

SCALE
NOT TO SCALE

DRAWING NO.
D02-E-001



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



SOUTH 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.

DESIGNED	C. NGO	10-14	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	10-14					
CHECKED	B. IDILBI	10-14					
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 *[Signature]* SUBMITTED _____ PROJECT MANAGER

CONTRACT NO. 14-FQ10060-CENI-24

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS SMITHSONIAN - NORTH & SOUTH MEZZANINE KIOSK - POWER

SCALE AS SHOWN DRAWING NO. D02-E-101

EXISTING PANEL "SF"										
AMPERES: 400		VOLTS: 120/208		MOUNTING: SURFACE						
MAINS: 400A MLO		PHASE: 3		LOCATION: MECHANICAL EQUIP. ROOM 214						
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	0.0	SPARE
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	0.0	SPARE
SPACE	0.0	-	-	19	A - -	20	3	20	2.9	EXIST. LOAD CENTER "KES"
EXISTING VENDOR	0.8	20	1	21	- B -	22	-	-	2.5	
SPACE	0.0	-	-	23	- - C	24	-	-	2.5	
EXISTING VENDOR	0.8	20	1	25	A - -	26	1	20	0.0	SPARE
NEW KIOSK RECEPT. (IT/NCS)	0.8	20	1	27	- B -	28	1	20	0.0	SPARE
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	29	- - C	30	1	20	0.8	EXISTING VENDOR
FUTURE AFC FARE GATE	0.0	20	1	31	A - -	32	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	33	- B -	34	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	35	- - C	36	1	20	0.8	EXISTING VENDOR
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	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:	8.9 KVA		
PHASE C:	8.9 KVA		

EXISTING PANEL "NF"										
AMPERES: 400		VOLTS: 120/208		MOUNTING: SURFACE						
MAINS: 400A MLO		PHASE: 3		LOCATION: MECHANICAL EQUIP. ROOM 205						
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
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	NEW KIOSK RECEPT. (IT/NCS)
EXISTING VENDOR	0.8	20	1	23	- - C	24	1	20	0.8	NEW KIOSK RECEPT. (NEPP/SOC)
SPARE	0.0	20	1	25	A - -	26	1	20	0.8	FUTURE AFC FARE GATE
EXIST. LOAD CENTER "KES"	2.9	40	3	27	- B -	28	1	20	0.8	EXISTING VENDOR
	2.5	-	-	29	- - C	30	-	-	0.0	SPACE
	2.5	-	-	31	A - -	32	-	-	0.0	SPACE
SPACE	0.0	-	-	33	- B -	34	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	35	- - C	36	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	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	12.0 x 50%		6.0 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	29.5 KVA	TOTAL DEMAND KVA	24.3 KVA
		TOTAL DEMAND AMPS	67.4 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	9.7 KVA		
PHASE B:	10.9 KVA		
PHASE C:	9.7 KVA		

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	10-14 DATE	REFERENCE DRAWINGS		REVISIONS			
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION	
DRAWN	C. NGO	10-14 DATE						
CHECKED	B. IDILBI	10-14 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
SMITHSONIAN - NORTH & SOUTH
PANEL SCHEDULES

SCALE: NOT TO SCALE

DRAWING NO. D02-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.

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

D03-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
D03-E-101	L'ENFANT PLAZA - EAST & WEST - MEZZANINE KIOSK - POWER
D03-E-102	L'ENFANT PLAZA - EAST & WEST - PANEL SCHEDULES
D03-E-301	L'ENFANT PLAZA - EAST & WEST - PANELBOARD IMAGE
D03-E-302	L'ENFANT PLAZA - EAST & WEST - PANELBOARD IMAGE
MM-D-E09	L'ENFANT PLAZA - 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 C. NGO DATE 08-14	REFERENCE DRAWINGS		REVISIONS	
	NUMBER	DESCRIPTION	DATE	BY
DRAWN C. NGO DATE 08-14				
CHECKED B. IDILBI DATE 08-14				
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

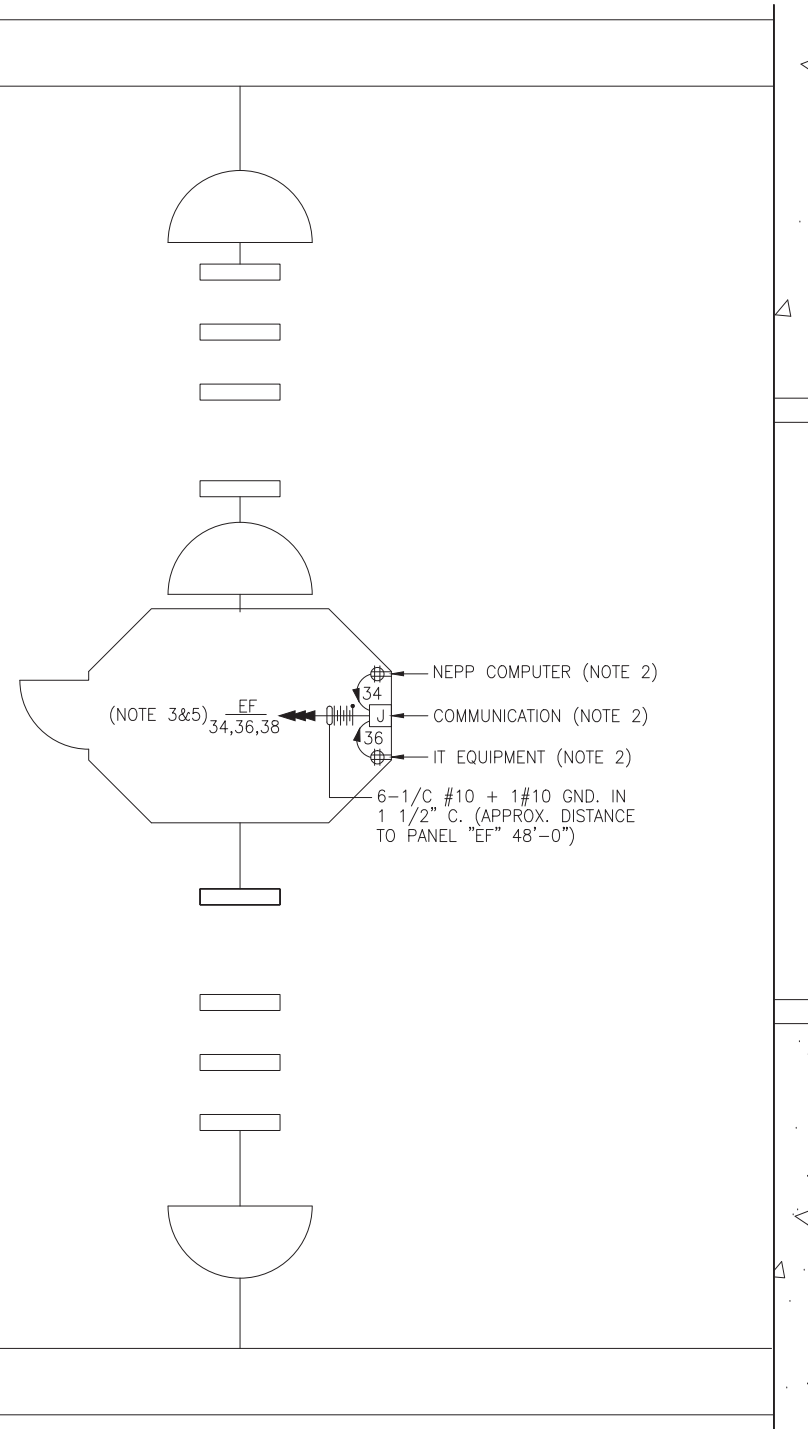
SCALE NOT TO SCALE DRAWING NO. D03-E-001

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 AS 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.

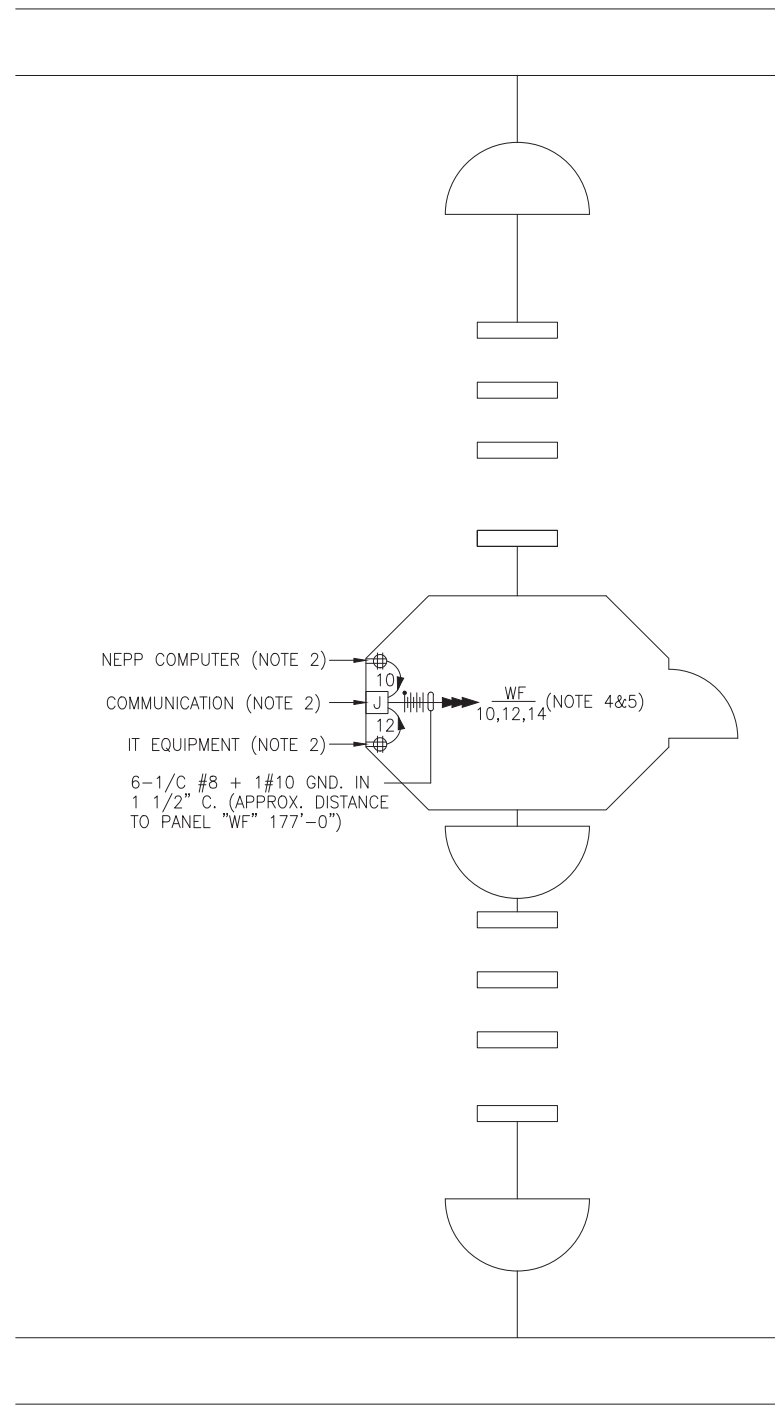
SAFETY PRECAUTION:

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



EAST MEZZANINE KIOSK - POWER

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



WEST MEZZANINE KIOSK - POWER

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

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
L'ENFANT PLAZA - EAST & WEST
MEZZANINE KIOSK - POWER**

SCALE
AS SHOWN

DRAWING NO.
D03-E-101

EXISTING PANEL "EF"										
AMPERES: 400		VOLTS: 120/208		MOUNTING: SURFACE						
MAINS: 400AMLO		PHASE: 3		LOCATION: ROOM E206						
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
EXIST. KIOSK LOAD CENTER "KES"	2.9	30	3	5	- - C	6	1	20	0.8	EXISTING VENDOR
	2.5	-	-	7	A - -	8	1	20	0.8	EXISTING VENDOR
	2.5	-	-	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	0.0	SPARE
EXISTING VENDOR	0.8	20	1	21	- B -	22	1	20	0.8	EXISTING VENDOR
SPACE	0.0	-	-	23	- - C	24	-	-	0.0	SPACE
EXISTING VENDOR	0.8	20	1	25	A - -	26	-	-	0.0	SPACE
SPARE	0.0	20	1	27	- B -	28	-	-	0.0	SPACE
SPARE	0.0	20	1	29	- - C	30	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	31	A - -	32	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	33	- B -	34	1	20	0.8	NEW KIOSK RECEPT. (IT/NCS)
SPARE	0.0	20	1	35	- - C	36	1	20	0.8	NEW KIOSK RECEPT. (NEPP/SOC)
SPARE	0.0	20	1	37	A - -	38	1	20	0.0	FUTURE AFC FARE GATE
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
SPARE	0.0	20	1	43	A - -	44	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	8.0 x 50%		4.0 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	25.5 KVA	TOTAL DEMAND KVA	22.3 KVA
		TOTAL DEMAND AMPS	61.8 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	9.7 KVA		
PHASE B:	8.9 KVA		
PHASE C:	7.7 KVA		

EXISTING PANEL "WF"										
AMPERES: 400		VOLTS: 120/208		MOUNTING: SURFACE						
MAINS: 225AMLO		PHASE: 3		LOCATION: AC SWBD ROOM W104						
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
EXIST. KIOSK LOAD CENTER "KES"	2.9	30	3	5	- - C	6	1	20	0.8	EXISTING VENDOR
	2.5	-	-	7	A - -	8	1	20	0.8	EXISTING VENDOR
	2.5	-	-	9	- B -	10	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	11	- - C	12	1	20	0.0	SPARE (KIOSK)
EXISTING VENDOR	0.8	20	1	13	A - -	14	1	20	0.8	NEW KIOSK RECEPT. (IT & NEPP)
EXISTING VENDOR	0.8	20	1	15	- B -	16	1	20	0.0	SPARE
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	0.0	SPARE
SPACE	0.0	-	-	21	- B -	22	-	-	0.0	SPACE
SPARE	0.0	20	1	23	- - C	24	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	25	A - -	26	1	20	0.0	SPARE
SPARE	0.0	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
SPARE	0.0	20	1	31	A - -	32	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	33	- B -	34	-	-	0.0	SPACE
EXISTING VENDOR	0.8	20	1	35	- - C	36	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	37	A - -	38	1	20	0.0	SPARE
SPARE	0.0	20	1	39	- B -	40	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	41	- - C	42	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	43	A - -	44	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	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:	7.3 KVA		
PHASE C:	8.5 KVA		

1
1&2
1

DESIGNED C. NGO 08-14 DATE
DRAWN C. NGO 08-14 DATE
CHECKED B. IDILBI 08-14 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
L'ENFANT PLAZA - EAST & WEST
PANEL SCHEDULES
SCALE NOT TO SCALE
DRAWING NO. D03-E-102
30

CONTRACT NO. 14-FQ10060-CENI-24

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

D04-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
D04-E-101	FEDERAL CENTER - MEZZANINE KIOSK - POWER
D04-E-102	FEDERAL CENTER - PANEL SCHEDULE
MM-D-E10	FEDERAL CENTER - 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

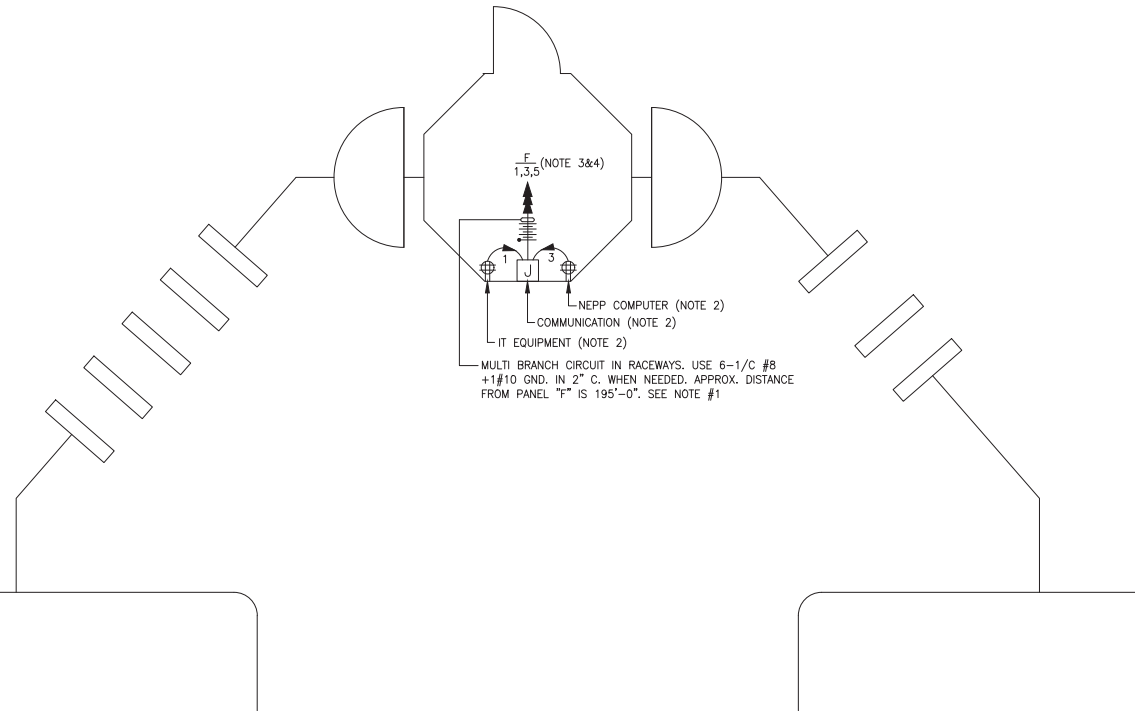
DRAWING NO.
D04-E-001

DRAWING NOTES:

- 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.
- COORDINATE WITH WMATA WHERE EXACTLY THE DUPLEX RECEPTACLE OUTLET AND JUNCTION BOX WILL BE INSTALLED IN THE KIOSK.
- 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.
- 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:

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



MEZZANINE KIOSK - POWER

SCALE: 3/8" = 1'- 0"

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	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

[Signature]

APPROVED _____

GFP A Gannett Fleming/Parsons JOINT VENTURE

SUBMITTED _____
PROJECT MANAGER

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

SCALE AS SHOWN

DRAWING NO. D04-E-101

EXISTING PANEL "F"

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

LOAD DESCRIPTION	KVA	AMP	POLE	CKT. NO.	CKT. NO.	CKT. AMP	KVA	LOAD DESCRIPTION	
NEW KIOSK RECEPT. (IT/NC)	0.8	20	1	1	A - -	2	-	0.0	SPACE
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	3	- B -	4	-	0.0	SPACE
FUTURE AFC FARE GATE	0.0	-	-	5	- - C	6	-	0.0	SPACE
SPACE	0.0	-	-	7	A - -	8	-	0.0	SPACE
SPACE	0.0	-	-	9	- B -	10	-	0.0	SPACE
SPACE	0.0	-	-	11	- - C	12	-	0.0	SPACE
SPACE	0.0	-	-	13	A - -	14	-	0.0	SPACE
SPACE	0.0	-	-	15	- B -	16	-	0.0	SPACE
SPACE	0.0	-	-	17	- - C	18	-	0.0	SPACE
SPARE	0.0	20	1	19	A - -	20	1	20.0	EXISTING VENDOR
SPACE	0.0	-	-	21	- B -	22	1	20.0	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	23	- - C	24	1	20.0	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	25	A - -	26	1	20.0	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	27	- B -	28	1	20.0	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	29	- - C	30	1	20.0	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	31	A - -	32	1	20.0	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	33	- B -	34	1	20.0	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	35	- - C	36	1	20.0	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	37	A - -	38	3	30.0	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	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	21.1 KVA
		TOTAL DEMAND KVA
		TOTAL DEMAND AMPS
		58.5 AMPS

CONNECTED LOAD PHASE SUMMARY	
PHASE A:	8.5 KVA
PHASE B:	8.1 KVA
PHASE C:	8.1 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



APPROVED *[Signature]*

SUBMITTED PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
D04-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

D05-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
D05-E-101	CAPITOL SOUTH - MEZZANINE KIOSK - POWER
D05-E-102	CAPITOL SOUTH - PANEL SCHEDULE
D05-E-301	CAPITOL SOUTH - PANELBOARD IMAGE
MM-D-E12A	CAPITOL SOUTH - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

	QUADRUPEX RECEPTACLE OUTLET- 20A, 125V WALL MOUNTED.
	JUNCTION BOX - SURFACE MOUNTED ON UNISTRUT CHANNEL
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	EF 1,3 - INDICATES CIRCUIT HOME RUN PANELBOARD AND CIRCUIT NUMBER IDENTIFICATION

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	08-14
		DATE
DRAWN	C. NGO	08-14
		DATE
CHECKED	B. IDLBI	08-14
		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

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

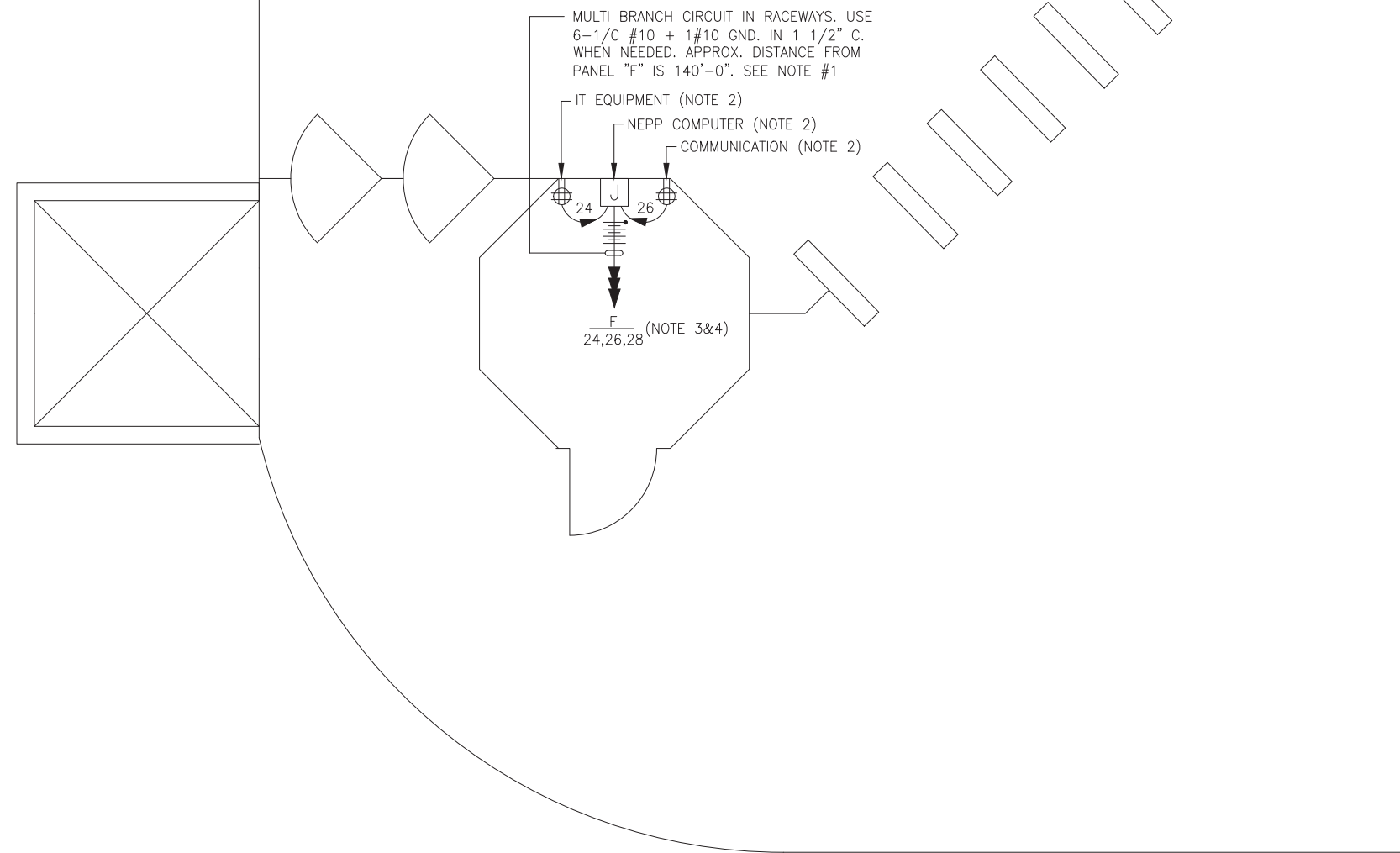
DRAWING NO.
D05-E-001

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: 3/8" = 1'- 0"

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO 08-14
DATE
DRAWN C. NGO 08-14
DATE
CHECKED B. IDILBI 08-14
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
CAPITOL SOUTH
MEZZANINE KIOSK - POWER
SCALE AS SHOWN
DRAWING NO. D05-E-101
35

EXISTING PANEL "F"

AMPERES: 100		VOLTS: 120/208		MOUNTING: SURFACE						
MAINS: 100A MLO		PHASE: 3		LOCATION: MECH. EQUIPMENT ROOM C201						
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
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	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
SPACE	0.0	-	-	29	- - C	30	1	20	0.8	EXISTING VENDOR
SPACE	0.0	-	-	31	A - -	32	2	60	2.9	EXIST. KIOSK LOAD CENTER "KES"
SPACE	0.0	-	-	33	- B -	34	-	-	2.5	
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	10.4 x 50%	5.2 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	2.0 x 125%	2.5 KVA
AC	3.0 x 100%	3.0 KVA
WATER HEATING	0.0 x 125%	0.0 KVA
TOTAL CONNECTED LOAD	25.4 KVA	TOTAL DEMAND KVA 20.7 KVA
		TOTAL DEMAND AMPS 57.5 AMPS
CONNECTED LOAD PHASE SUMMARY		
PHASE A:	10.1 KVA	
PHASE B:	8.9 KVA	
PHASE C:	7.2 KVA	

CONTRACT NO.
14-FQ10060-CENI-24

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

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 SOUTH
PANEL SCHEDULE

SCALE
NOT TO SCALE

DRAWING NO.
D05-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.

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

D06-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
D06-E-101	EASTERN MARKET – MEZZANINE KIOSK – POWER
D06-E-102	EASTERN MARKET – PANEL SCHEDULE
D06-E-301	EASTERN MARKET – PANELBOARD IMAGE
MM-D-E14	EASTERN MARKET – 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
	INDICATES CIRCUIT HOME RUN PANELBOARD AND CIRCUIT NUMBER IDENTIFICATION

CONTRACT NO.
14-FQ10060-CENI-24

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

REFERENCE DRAWINGS		REVISIONS	
NUMBER	DESCRIPTION	DATE	BY

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

GFP

A Gannett Fleming/Parsons
JOINT VENTURE

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

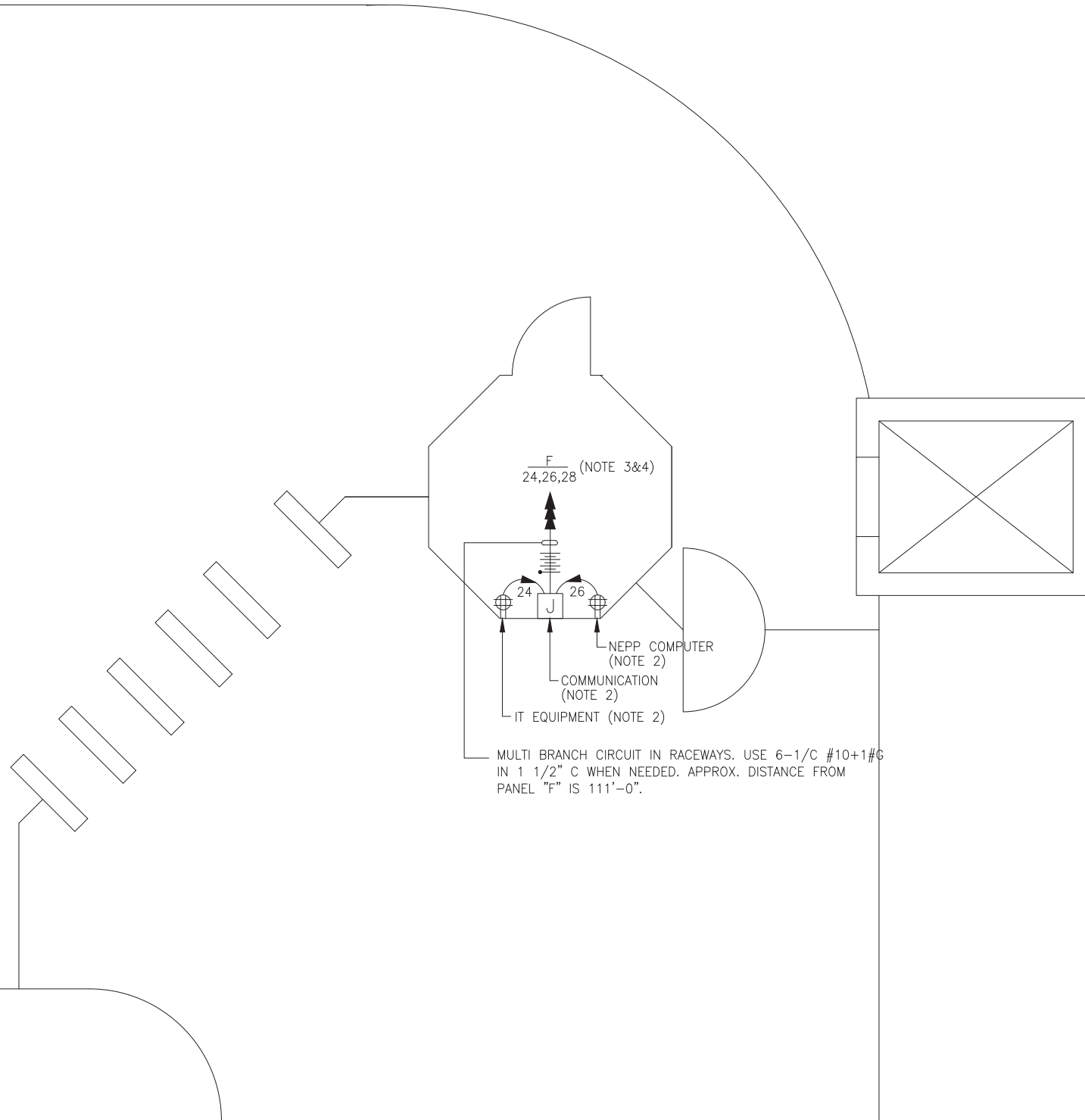
SCALE NOT TO SCALE	DRAWING NO. D06-E-001
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DRAWING NOTES:

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.
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: 3/8" = 1'- 0"

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	

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
EASTERN MARKET
MEZZANINE KIOSK - POWER

SCALE AS SHOWN

DRAWING NO. D06-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		CKT. NO.	POLE	CKT. NO.	CKT BKRS		KVA	LOAD DESCRIPTION
		AMP	POLE				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
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	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 *[Signature]*

SUBMITTED _____
PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
D06-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

D07-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
D07-E-101	POTOMAC AVENUE - MEZZANINE KIOSK - POWER
D07-E-102	POTOMAC AVENUE - PANEL SCHEDULE
MM-D-E16	POTOMAC AVENUE - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

	QUADRUPLIX 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	DESCRIPTION
DESIGNED	C. NGO	08-14			
		DATE			
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

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

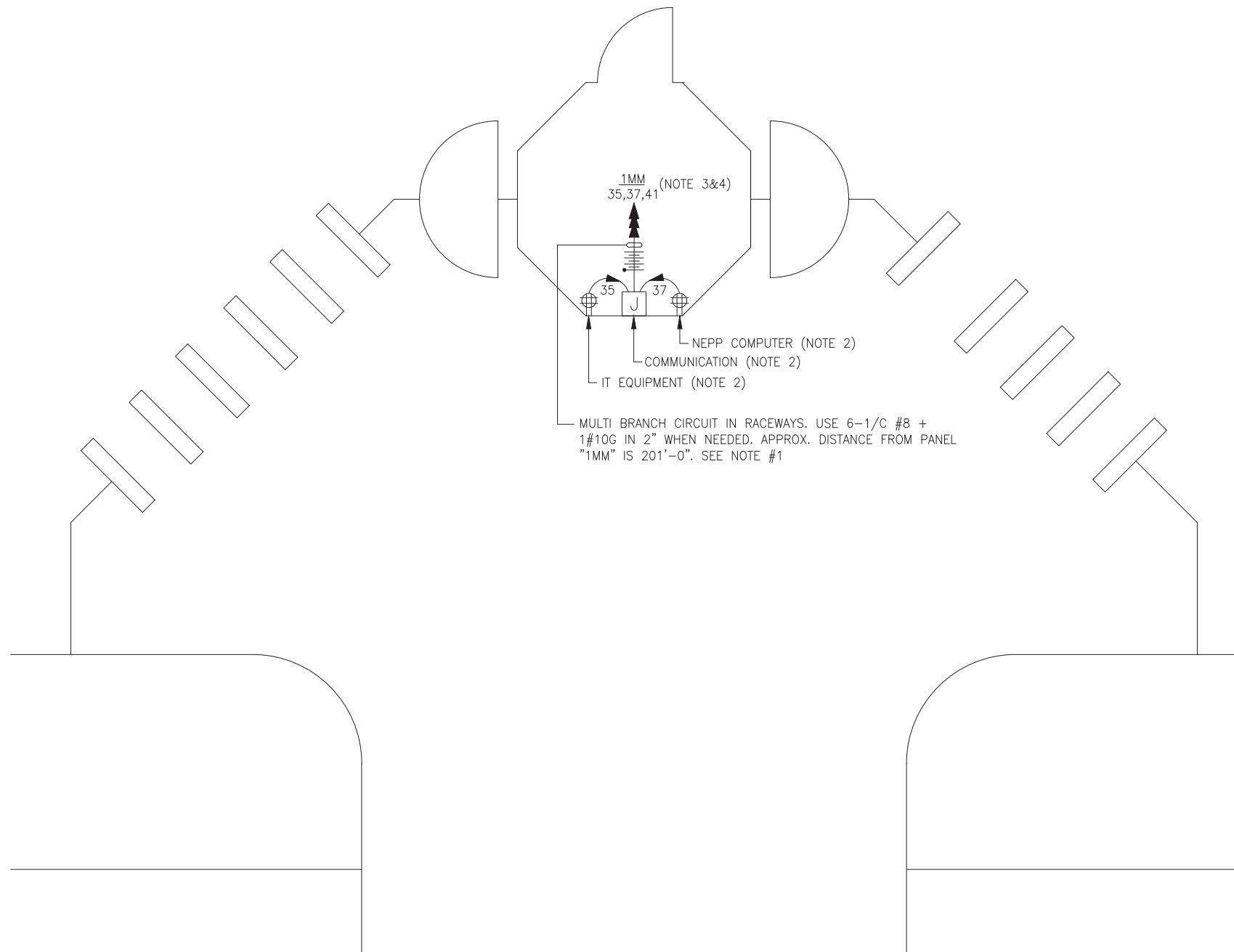
DRAWING NO. D07-E-001

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: 3/8" = 1'- 0"

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO 08-14
DATE
DRAWN C. NGO 08-14
DATE
CHECKED B. IDILBI 08-14
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
POTOMAC AVENUE
MEZZANINE KIOSK - POWER
SCALE AS SHOWN
DRAWING NO. D07-E-101

EXISTING PANEL "1MM"										
AMPERES: 400			VOLTS: 120/208			MOUNTING: SURFACE				
MAINS: 400A MLO			PHASE: 3			LOCATION: MECH. EQUIPMENT ROOM C206				
RATING: 10K AIC			WIRE: 4			SECTION: 1 OF 1				
LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	CKT. NO.	CKT BKRS			LOAD DESCRIPTION
		AMP	POLE				POLE	AMP	KVA	
SPACE	0.0	-	-	1	A - -	2	1	20	0.8	SPACE
SPARE	0.0	30	3	3	- B -	4	1	20	0.8	SPACE
	0.0	-	-	5	- - C	6	1	20	0.8	SPACE
	0.0	-	-	7	A - -	8	1	20	0.8	SPACE
EXIST. KIOSK LOAD CENTER "KES"	3.3	50	2	9	- B -	10	1	50	0.8	EXISTING VENDOR
	2.5	-	-	11	- - C	12	1	50	0.0	SPARE
SPARE	0.0	50	1	13	A - -	14	1	50	0.0	SPARE
SPARE	0.0	50	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
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	EXISTING VENDOR
NEW KIOSK RECEPT. (IT & NCS)	0.8	20	1	35	- - C	36	1	20	0.8	EXISTING VENDOR
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	37	A - -	38	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	39	- B -	40	1	20	0.8	EXISTING VENDOR
FUTURE AFC FARE GATE	0.0	20	1	41	- - C	42	1	20	0.0	SPARE
SPARE	0.0	20	1	43	A - -	44	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	14.0 x 50%		7.0 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	2.0 x 125%		2.5 KVA
AC	3.0 x 100%		3.0 KVA
WATER HEATING	0.0 x 125%		0.0 KVA
TOTAL CONNECTED LOAD	29.0 KVA	TOTAL DEMAND KVA	22.5 KVA
		TOTAL DEMAND AMPS	62.5 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	8.0 KVA		
PHASE B:	10.5 KVA		
PHASE C:	9.7 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 *[Signature]*

SUBMITTED _____
PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
D07-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.
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- INCLUDE GPR FOR ANY CORE DRILLS OR DRILLED PENETRATIONS IN ANY WALLS.
- SEAL OFF ALL PENETRATIONS THRU WALLS/FLOORS.
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- 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
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DRAWING INDEX

D08-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
D08-E-101	STADIUM ARMORY - NORTH & SOUTH - MEZZANINE KIOSK - POWER
D08-E-102	STADIUM ARMORY - NORTH & SOUTH - PANEL SCHEDULES
MM-D-E17	STADIUM ARMORY - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

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CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	08-14
		DATE
DRAWN	C. NGO	08-14
		DATE
CHECKED	B. IDILBI	08-14
		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

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

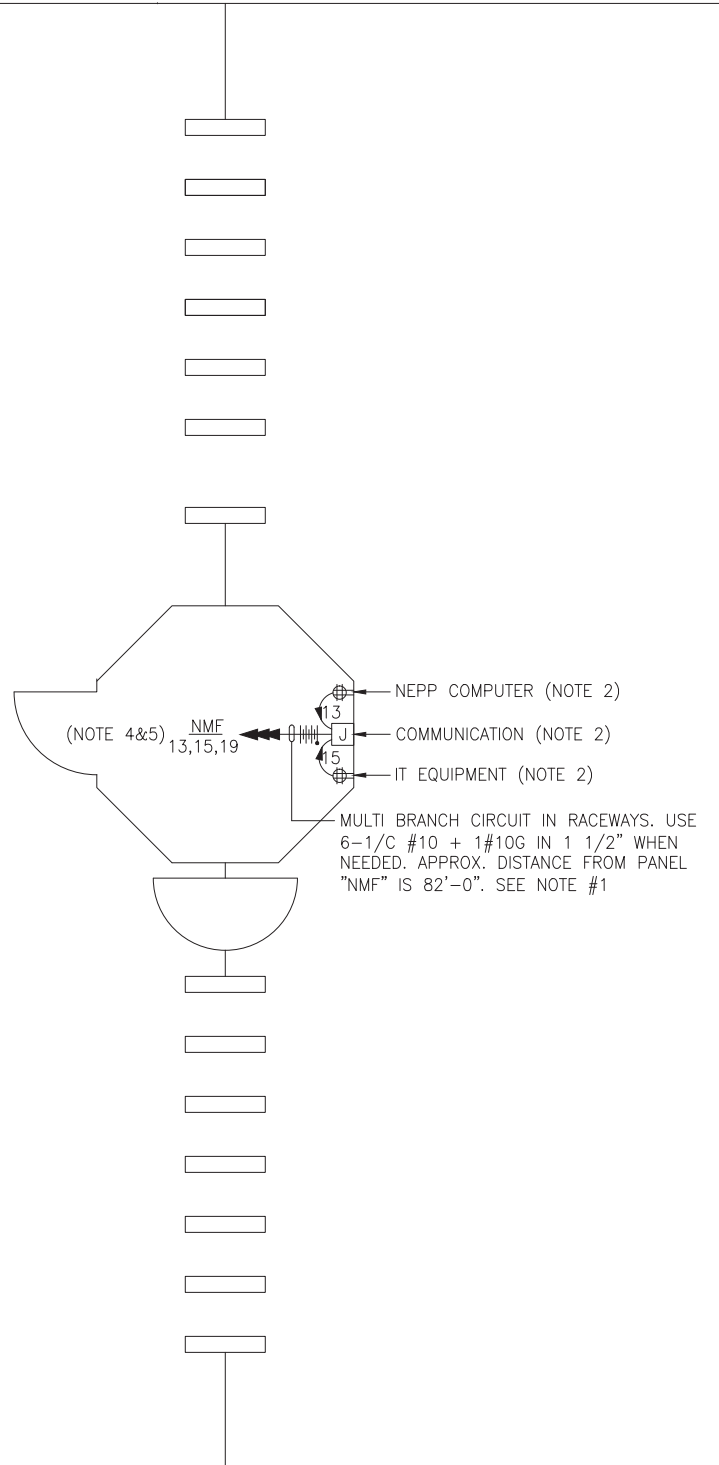
SCALE: NOT TO SCALE DRAWING NO. D08-E-001

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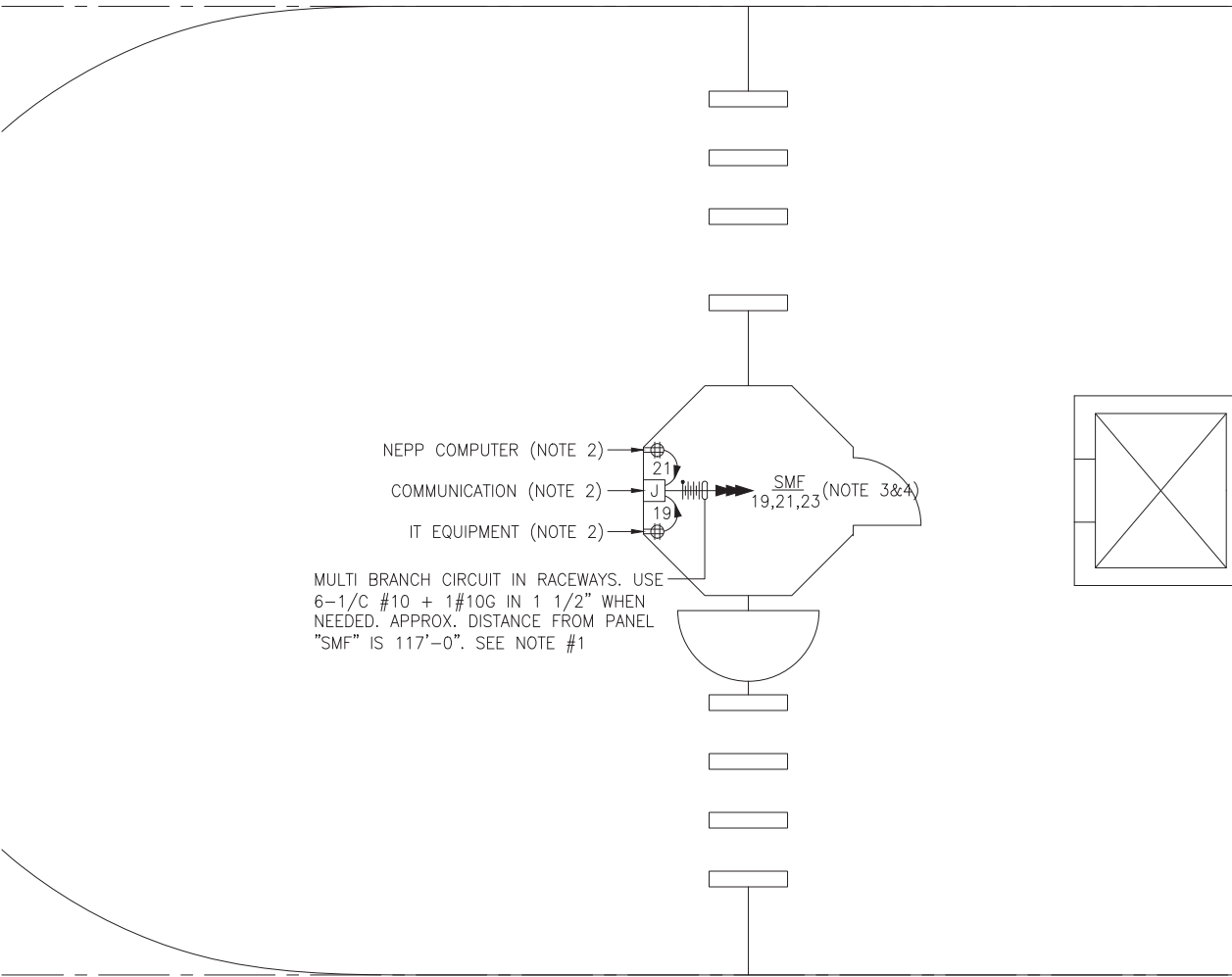
SAFETY PRECAUTION:

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



NORTH MEZZANINE KIOSK - POWER

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



SOUTH MEZZANINE KIOSK - POWER

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

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 *[Signature]*



SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
STADIUM ARMORY - NORTH & SOUTH MEZZANINE KIOSK - POWER

SCALE AS SHOWN

DRAWING NO. D08-E-101

CONTRACT NO. 14-FQ10060-CENI-24

EXISTING PANEL "NMF" (SECT. 2)											
AMPERES: 400		VOLTS: 120/208		MOUNTING: SURFACE							
MAINS: 350A MCB		PHASE: 3		LOCATION: MECH. EQUIPMENT ROOM 212							
RATING: 10K AIC		WIRE: 4		SECTION: 2 OF 2							
LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	POLE	AMP	KVA	LOAD DESCRIPTION		
		AMP	POLE	NO.					NO.	POLE	AMP
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	
SPARE	0.0	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	0.0	SPARE	
NEW KIOSK RECEPT. (IT/NCS)	0.8	20	1	13	A - -	14	1	20	0.0	SPARE	
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	15	- B -	16	1	20	0.0	SPARE	
FUTURE AFC FARE GATE	0.0	20	1	17	- - C	18	1	20	0.0	SPARE	
EXISTING VENDOR	0.8	20	1	19	A - -	20	3	30	3.3	EXIST. KIOSK LOAD CENTER "KES"	
SPARE	0.0	20	1	21	- B -	22	-	-	2.5		
SPARE	0.0	20	1	23	- - C	24	-	-	2.5		
SPARE	0.0	20	1	25	A - -	26	2	30	1.5	EXISTING VENDOR	
SPARE	0.0	20	1	27	- B -	28	-	-	1.5		
SPACE	0.0	-	-	29	- - C	30	2	30	0.0	SPARE	
SPACE	0.0	-	-	31	A - -	32	-	-	0.0		
SPACE	0.0	-	-	33	- B -	34	2	30	0.0	SPARE	
SPACE	0.0	-	-	35	- - C	36	-	-	0.0		
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	2.6 x 50%		1.3 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	20.1 KVA	TOTAL DEMAND KVA	19.6 KVA
		TOTAL DEMAND AMPS	54.3 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	8.8 KVA		
PHASE B:	8.0 KVA		
PHASE C:	4.1 KVA		


EXISTING PANEL "SMF"											
AMPERES: 225		VOLTS: 120/208		MOUNTING: SURFACE							
MAINS: 225A MCB		PHASE: 3		LOCATION: MECH EQUIPMENT ROOM 211							
RATING: 10K AIC		WIRE: 4		SECTION: 1 OF 1							
LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	POLE	AMP	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	0.0	SPARE	
SPARE	0.0	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	
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	0.0	SPARE	
FUTURE AFC FARE GATE	0.0	20	1	23	- - C	24	1	20	0.0	SPARE	
SPARE	0.0	20	1	25	A - -	26	1	20	0.0	SPARE	
EXISTING VENDOR	0.8	20	1	27	- B -	28	2	60	3.3	EXIST. KIOSK LOAD CENTER "KES"	
SPARE	0.0	20	1	29	- - C	30	-	-	3.3		
SPARE	0.0	20	1	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	1	20	0.0	SPARE	
SPACE	0.0	-	-	41	- - C	42	1	20	0.0	SPARE	
EXISTING VENDOR	0.8	20	1	43	A - -	44	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	45	- B -	46	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	8.4 x 50%		4.2 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	2.0 x 125%		2.5 KVA
AC	3.0 x 100%		3.0 KVA
WATER HEATING	0.0 x 125%		0.0 KVA
TOTAL CONNECTED LOAD	23.4 KVA	TOTAL DEMAND KVA	19.7 KVA
		TOTAL DEMAND AMPS	54.7 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	6.4 KVA		
PHASE B:	10.5 KVA		
PHASE C:	7.3 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



APPROVED *[Signature]* SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
STADIUM ARMORY - NORTH & SOUTH
PANEL SCHEDULES

SCALE: NOT TO SCALE DRAWING NO. D08-E-102 45

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

D09-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
D09-E-101	MINNESOTA AVENUE - KIOSK - POWER
D09-E-102	MINNESOTA AVENUE - PANEL SCHEDULE
MM-D-E20	MINNESOTA AVENUE - 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

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

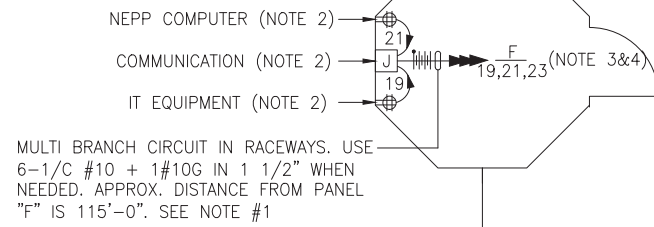
DRAWING NO. D09-E-001

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

APPROVED *[Signature]*

SUBMITTED _____
PROJECT MANAGER



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

SCALE AS SHOWN

DRAWING NO. D09-E-101

EXISTING PANEL "F"

AMPERES: 225	VOLTS: 120/208	MOUNTING: SURFACE
MAINS: 225A MCB	PHASE: 3	LOCATION: ROOM RM C107 OR DPS 009
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					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
SPACE	0.0	-	-		11	- - C	12	-	-	0.0	SPACE
SPACE	0.0	-	-		13	A - -	14	-	-	0.0	SPACE
SPACE	0.0	-	-		15	- B -	16	1	20	0.0	SPACE
EXISTING VENDOR	0.8	20	1		17	- - C	18	1	20	0.8	EXISTING VENDOR
NEW KIOSK RECEPT. (IT/NC)	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	0.8	20	1		23	- - C	24	1	20	0.0	SPARE
EXISTING VENDOR	0.0	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	0.8	20	1		29	- - C	30	1	20	0.0	SPARE
EXIST. LOAD CENTER "KES"	2.9	30	3		31	A - -	32	1	20	0.0	SPARE
	2.5	-	-		33	- B -	34	1	20	0.0	SPARE
	2.5	-	-		35	- - C	36	1	20	0.0	SPARE
SPARE	0.0	20	1		37	A - -	38	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1		39	- B -	40	1	20	0.8	EXISTING VENDOR
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

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:	8.9 KVA	
PHASE C:	7.3 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



APPROVED *[Signature]*

SUBMITTED _____ PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
D09-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.

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

D10-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
D10-E-101	DEANWOOD - KIOSK - POWER
D10-E-102	DEANWOOD - PANEL SCHEDULE
MM-D-E22	DEANWOOD - 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	C. NGO	08-14 DATE	REFERENCE DRAWINGS		REVISIONS		
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CHECKED	B. IDILBI	08-14 DATE					
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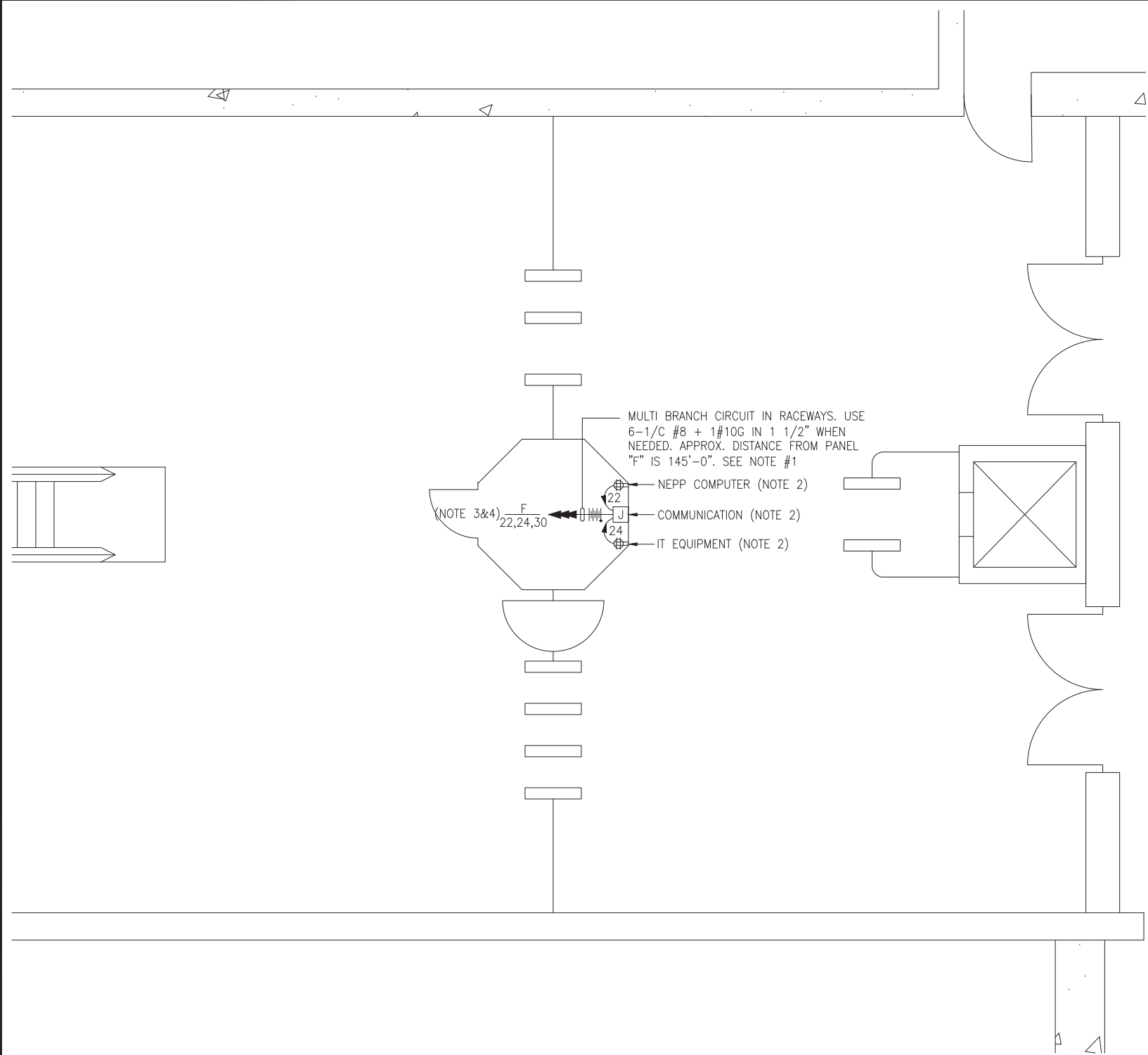
APPROVED _____

SUBMITTED _____
PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
D10-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
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DATE 08-14
APPROVED N/A
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REFERENCE DRAWINGS	
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REVISIONS		
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APPROVED *[Signature]*
SUBMITTED _____ PROJECT MANAGER



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

SCALE AS SHOWN DRAWING NO. D10-E-101 50

EXISTING PANEL "F"										
AMPERES: 225	VOLTS: 120/208	MOUNTING: SURFACE								
MAINS: 225A MCB	PHASE: 3	LOCATION: WATER SERVICE ROOM C104								
RATING: 10K AIC	WIRE: 4	SECTION: 1 OF 1								
LOAD DESCRIPTION	KVA	AMP	POLE	CKT. NO.		CKT. NO.	POLE	AMP	KVA	LOAD DESCRIPTION
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	0.0	SPARE
EXISTING VENDOR	0.8	20	1	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
SPACE	0.0	-	-	11	- - C	12	-	-	0.0	SPACE
SPACE	0.0	-	-	13	A - -	14	-	-	0.0	SPACE
SPACE	0.0	-	-	15	- B -	16	-	-	0.0	SPACE
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	0.8	NEW KIOSK RECEPT. (IT/NCS)
EXISTING VENDOR	0.8	20	1	23	- - C	24	1	20	0.8	NEW KIOSK RECEPT. (NEPP/SOC)
EXISTING VENDOR	0.8	20	1	25	A - -	26	1	20	0.8	FUTURE AFC FARE GATE
EXIST. LOAD CENTER "KES"	2.9	30	3	27	- B -	28	1	20	0.8	EXISTING VENDOR
	2.5	-	-	29	- - C	30	1	20	0.0	SPARE
	2.5	-	-	31	A - -	32	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	33	- B -	34	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	35	- - C	36	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	37	A - -	38	1	20	0.8	EXISTING VENDOR
SPACE	0.0	-	-	39	- B -	40	1	20	0.8	EXISTING VENDOR
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

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:	10.5 KVA		
PHASE B:	9.3 KVA		
PHASE C:	8.1 KVA		

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