WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

NEW ELECTRONIC PAY PROGRAM (NEPP)

CONTRACT NO. FQ15233

METRORAIL ELECTRICAL AND DATA CABLE INSTALLATION

CONSTRUCTION SET
SEPTEMBER 22, 2015

DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES

OFFICE OF ENGINEERING SUPPORT SERVICES

DRAWING INDEX

METRO STATION NO.	METRO STATION NAME
A01	METRO CENTER EAST & WEST
A02	FARRAGUT NORTH NW & SE
A05	CLEVELAND PARK
A06	VAN NESS
A07	TENLEYTOWN
A08	FRIENDSHIP HEIGHTS NORTH & SOUTH
A11	GROSVENOR
A12	WHITE FLINT
A13	TWINBROOK
A14	ROCKVILLE
B02	JUDICIARY SQUARE EAST
B03	UNION STATION NORTH & SOUTH
B04	RHODE ISLAND
B05	BROOKLAND
B06	FORT TOTTEN
B07	TAKOMA
B08	SILVER SPRING NORTH & SOUTH
B10	WHEATON
B11	GLENMONT
B35	NEW YORK AVENUE NORTH & SOUTH
C01	METRO CENTER NORTH & SOUTH
F01	GALLERY PLACE NORTH & WEST

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

DRAWING INDEX

ELECTRICAL SYMBOL LIST

- QUADRUPLEX RECEPTACLE OUTLET– 20A, 125V WALL MOUNTED.
- J — JUNCTION BOX – SURFACE MOUNTED ON UNISTRUT CHANNEL
- CONDUIT – CONCEALED IN UNDER FLOOR DUCT U.O.N.
- #10-3/4 / EF 3,5 — 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	07-14	DATE
DRAWN	C. NGO	07-14	DATE
CHECKED	B. IDLISI	07-14	DATE
APPROVED	N/A		DATE

REFERENCE DRAWINGS

NUMBER	DESCRIPTION

REVISIONS

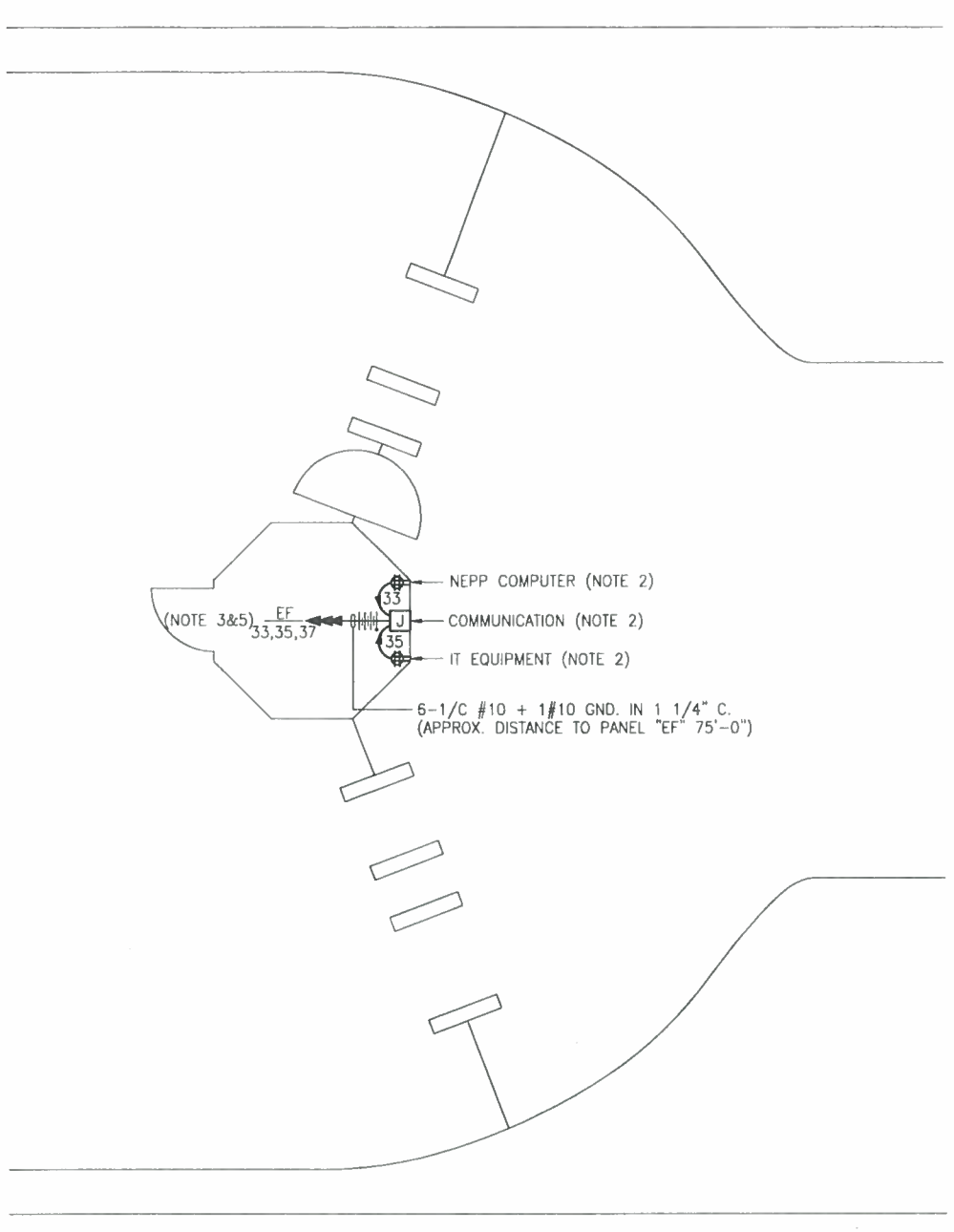
DATE	BY	DESCRIPTION

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

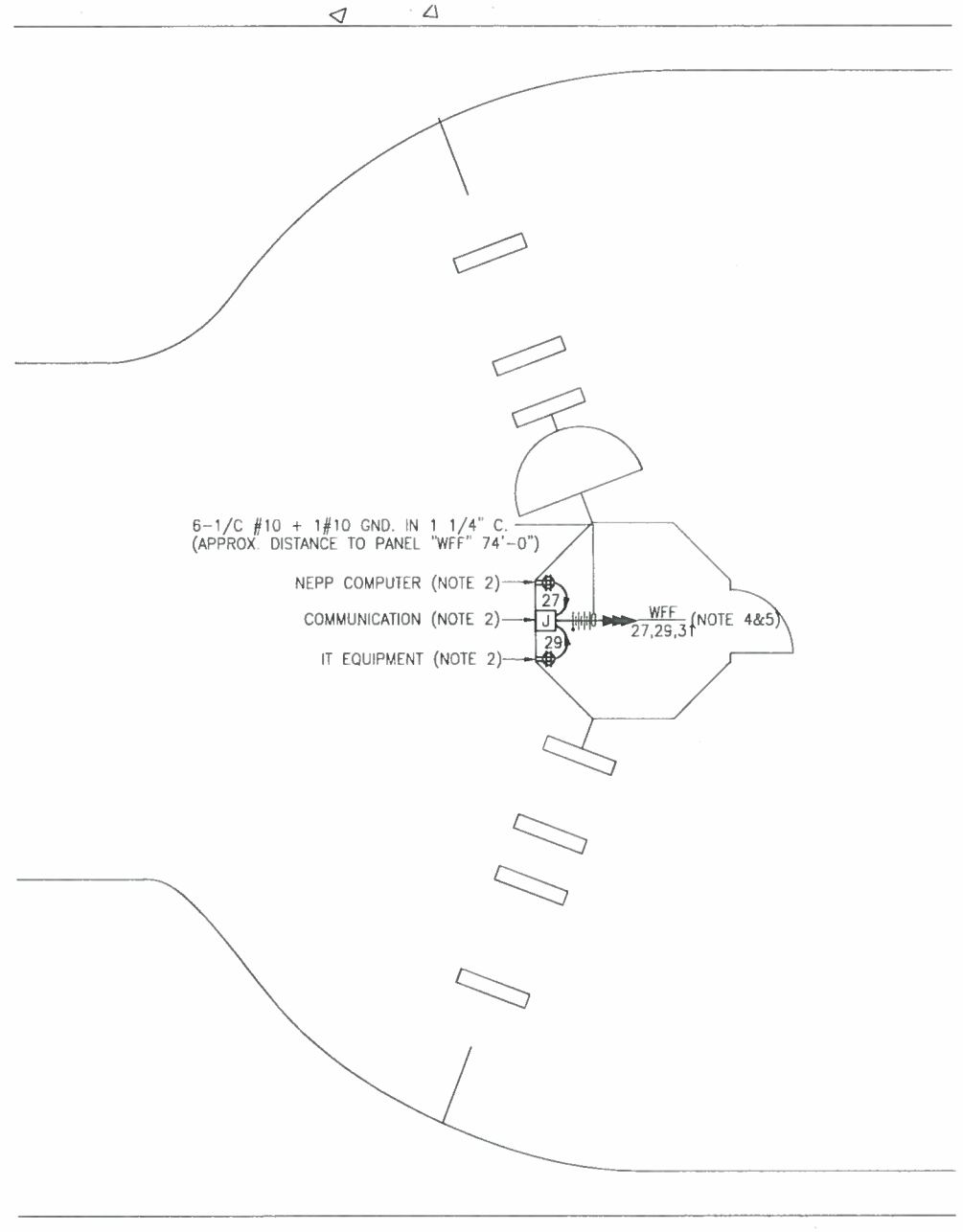
NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST

SCALE: NOT TO SCALE
DRAWING NO: A01-E-001



EAST MEZZANINE KIOSK - POWER

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



WEST MEZZANINE KIOSK - POWER

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

DRAWING NOTES:

1. USE EXISTING UNDER FLOOR DUCT FOR POWER WIRING. ALL OUTSIDE FLOOR DUCT WIRING SHALL BE IN CONDUIT.
2. VERIFY WITH WMATA PERSONNEL FOR LOCATION OF RECEPTACLES & JUNCTION BOXES.
3. AT AVAILABLE SPACE CIRCUIT #33, #35 & #37 PROVIDE 3-NEW 20A, 1P CIRCUIT BREAKERS IN THE EXISTING AVAILABLE SPACE, NEW CB SHALL MATCH EXISTING CB IN EXISTING PANEL "EF", CONNECT NEW CIRCUITS TO THESE BREAKERS. SEE PANEL SCHEDULE ON DWG. A01-E-102.
4. CONNECT CIRCUIT #27, #29 & #31 TO EXISTING 20A, 1P SPARE CIRCUIT BREAKERS IN THE EXISTING PANEL "WFF", SEE PANEL SCHEDULE ON DWG. A01-E-102.
5. PROVIDE A ROUGH-IN CIRCUIT FOR FUTURE AFC FARE GATE 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 07-14 DATE	REFERENCE DRAWINGS	REVISIONS
DRAWN C. NGO 07-14 DATE	NUMBER / DESCRIPTION	DATE / BY / DESCRIPTION
CHECKED B. IDILBI 07-14 DATE		9-22-15 / RBM / REV. 1
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

METRO CENTER - EAST & WEST
MEZZANINE KIOSK - POWER

SCALE: NOT TO SCALE

DRAWING NO.: A01-E-101

EXISTING PANEL "EF"

AMPERES: 225	VOLTS: 120/208	MOUNTING: SURFACE	
MAINS: 225A MLO	PHASE: 3	LOCATION: ROOM E200	
RATING: 10K AIC	WIRE: 4	SECTION: 1 OF 1	

		CKT BKRS		CKT.		CKT.	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.		NO.	POLE	AMP	KVA	LOAD DESCRIPTION
SPACE	0.0	-	-	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
SPACE	0.0	-	-	21	B	22	-	-	0.0	SPACE
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	30	1.0	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	29	C	30	1	30	1.0	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	31	A	32	2	30	1.6	EXISTING VENDOR
NEW KIOSK RECEPT. (IT & NCS)	0.8	20	1	33	B	34	-	-	1.6	
NEW KIOSK RECEPT. (NEPP&SOC)	0.8	20	1	35	C	36	-	-	0.0	SPACE
FUTURE AFC FARE GATE	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	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	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	26.8 KVA	TOTAL DEMAND KVA	18.4 KVA
		TOTAL DEMAND AMPS	51.1 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	9.6 KVA		
PHASE B:	9.0 KVA		
PHASE C:	9.0 KVA		

NOTES: A. EXISTING PANEL "EF" IS FED FROM 277/480V, 3ø, 4W EXISTING SWBD. "EGB" LOCATED IN AC SWBD ROOM E102, CIRCUIT (A01-EGB-02) #2-100/3P VIA 75KVA TRANSFORMER (SEE ATTACHED DWG. MM-A-E05).

B. EXISTING WIRING FED FROM TOP OF PANEL BY:
- 3-3/4" C. (WIRING FILL >40%).

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

EXISTING PANEL "WFF"

AMPERES: 225	VOLTS: 120/208	MOUNTING: SURFACE	
MAINS: 225A	PHASE: 3	LOCATION: ROOM W200	
RATING: 10K AIC	WIRE: 4	SECTION: 1 OF 1	

		CKT BKRS		CKT.		CKT.	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.		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	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	5	- - C	6	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	7	A - -	8	1	20	0.8	EXISTING VENDOR
SPARE (DEFECT)	0.0	20	1	9	- B -	10	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	11	- - C	12	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	13	A - -	14	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	15	- B -	16	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	17	- - C	18	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	19	A - -	20	1	20	0.8	EXISTING VENDOR
SPACE	0.0	-	-	21	- B -	22	-	-	0.0	SPACE
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
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	-	-	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	10.8 x 50%		5.4 KVA
MISC. APPLIANCES	0.0 x 100%		0.0 KVA
LARGEST MOTOR	0.0 x 125%		0.0 KVA
MOTORS	0.0 x 100%		0.0 KVA
HEAT	0.0 x 125%		0.0 KVA
AC	0.0 x 100%		0.0 KVA
WATER HEATING	0.0 x 125%		0.0 KVA
TOTAL CONNECTED LOAD	20.8 KVA	TOTAL DEMAND KVA	15.4 KVA
		TOTAL DEMAND AMPS	42.8 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	8.8 KVA		
PHASE B:	4.8 KVA		
PHASE C:	7.2 KVA		

NOTES: A. EXISTING PANEL "WFF" IS FED FROM 277/480V, 3ø, 4W EXISTING SWBD. "WGB" LOCATED IN AC SWBD ROOM W107, CIRCUIT (A01-WGB-10) #10-70A/3P VIA 45KVA TRANSFORMER (SEE ATTACHED DWG. MM-A-E05).

B. EXISTING WIRING FED FROM TOP OF PANEL BY:
- 1-3/4" C. (WIRING FILL >40%).

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

EXISTING WIRING FED FROM RIGHT SIDE OF PANEL BY:
- 1-2" C. TO TRANSFORMER (WIRING FILL >40%).

CONTRACT NO. 14-FQ10060-CENI-24

DESIGNED C. NGO 07-14 DATE
DRAWN C. NGO 07-14 DATE
CHECKED B. IDILBI 07-14 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

METRO CENTER - EAST & WEST
PANEL SCHEDULES

SCALE: NOT TO SCALE

DRAWING NO. A01-E-102

EXISTING PANEL "EF"

EXISTING PANEL "EF"

EXISTING PANEL "EF"

DESIGNED C. NGO 07-14 DATE	REFERENCE DRAWINGS	REVISIONS	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DRAWN C. NGO 07-14 DATE	NUMBER / DESCRIPTION	DATE / BY / DESCRIPTION	DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
CHECKED B. IDLER 07-14 DATE			APPROVED _____
APPROVED N/A DATE			GFP A Gannett Fleming/Parsons JOINT VENTURE SUBMITTED _____ PROJECT MANAGER

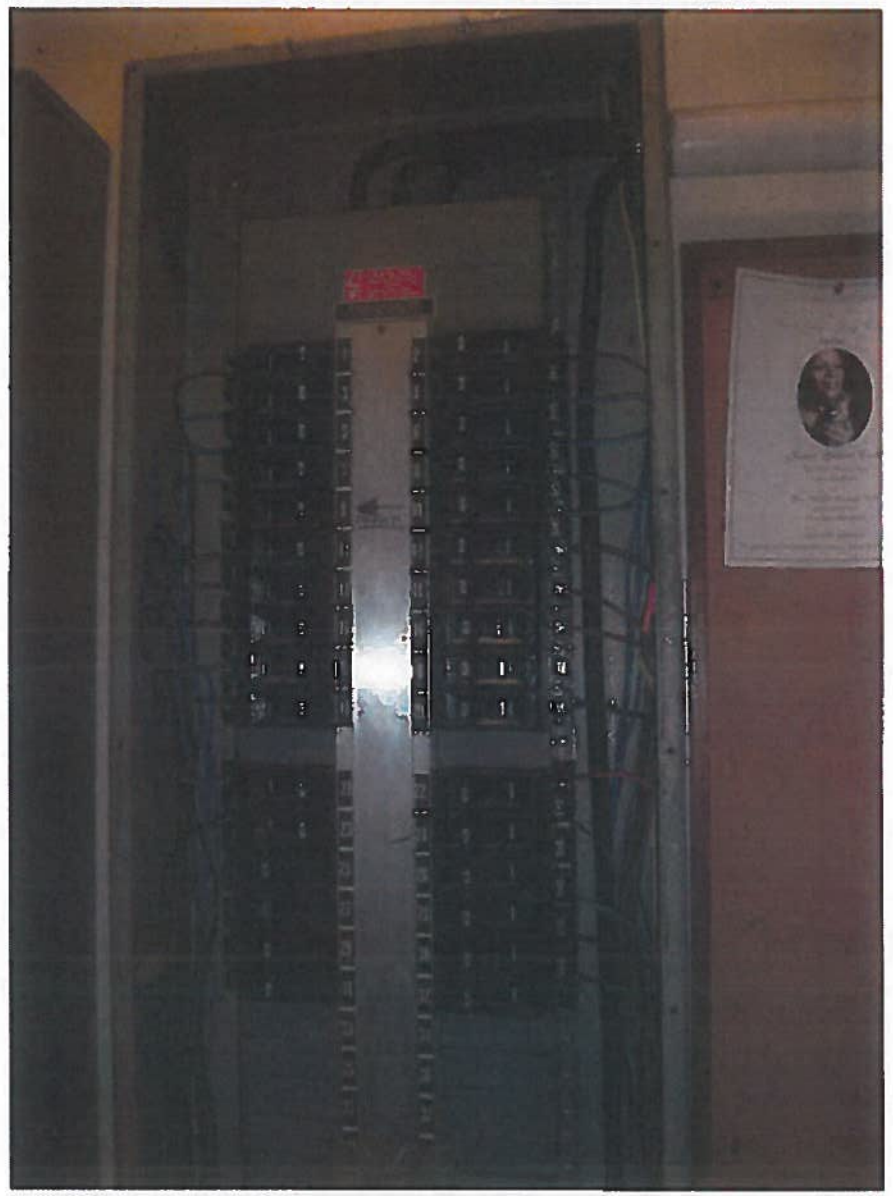
CONTRACT NO. 14-FQ10060-CENI-24

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
METRO CENTER - EAST & WEST
PANELBOARD IMAGE

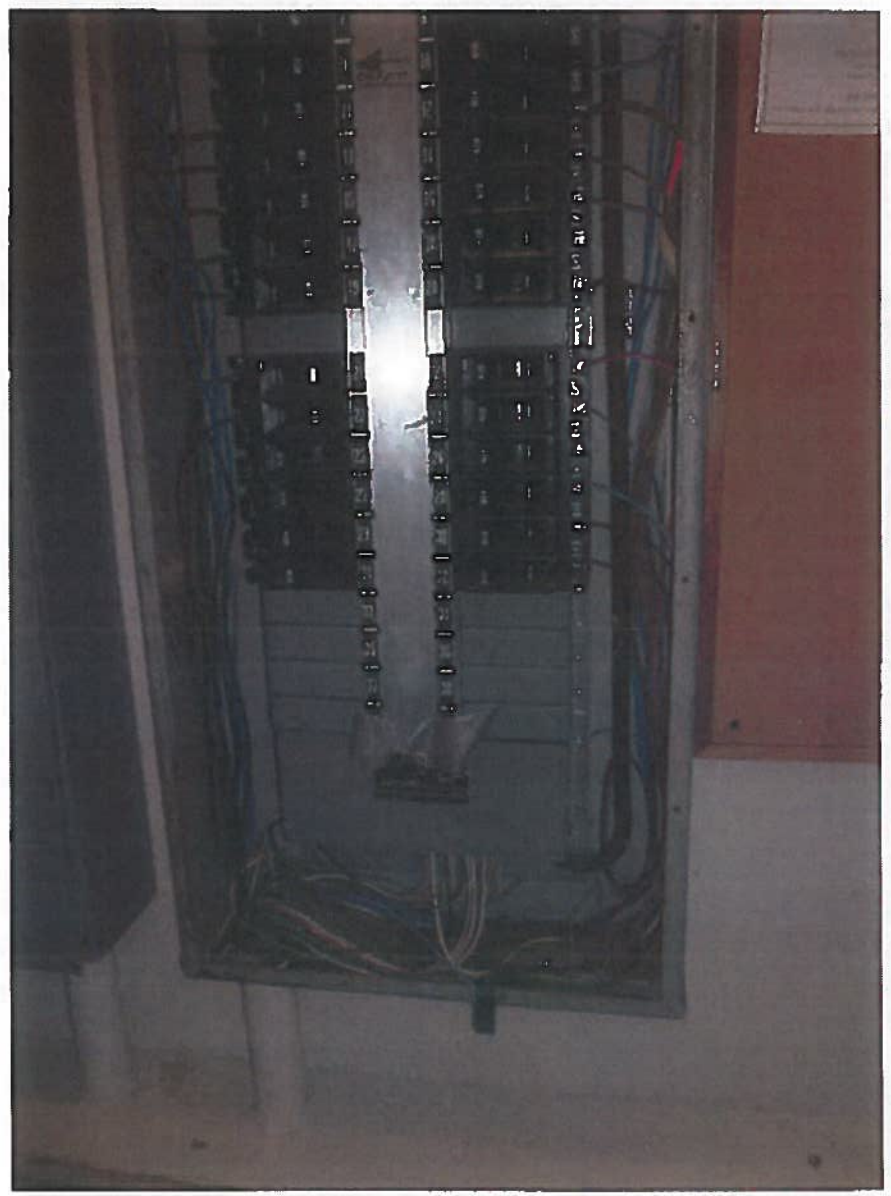
SCALE: NOT TO SCALE

DRAWING NO.: A01-E-301

EXISTING PANEL "WFF"



EXISTING PANEL "WFF"



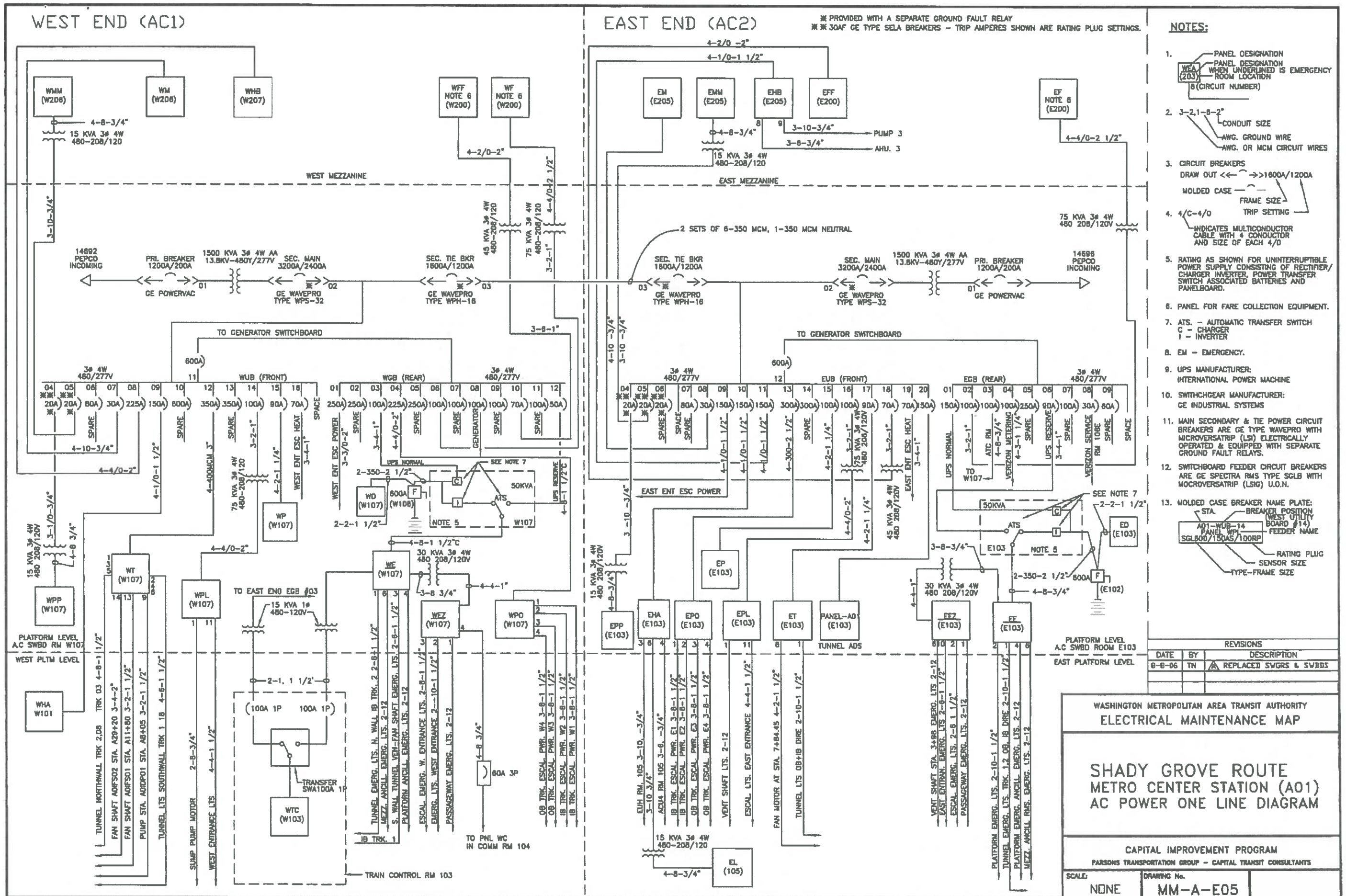
EXISTING PANEL "WFF"

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO 07-14 DATE	REFERENCE DRAWINGS	REVISIONS	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DRAWN C. NGO 07-14 DATE	NUMBER / DESCRIPTION	DATE / BY / DESCRIPTION	DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
CHECKED B. IDLIN 07-14 DATE			GFP A Granite Fleming/Parsons JOINT VENTURE
APPROVED N/A DATE			APPROVED _____ SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
METRO CENTER - EAST & WEST
PANELBOARD IMAGE

SCALE: NOT TO SCALE
DRAWING NO.: A01-E-302



NOTES:

1. PANEL DESIGNATION
   PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY
   ROOM LOCATION
   WEA (203) 8 (CIRCUIT NUMBER)
2. 3–2,1–8–2"
   CONDUIT SIZE
   AWG. GROUND WIRE
   AWG. OR MCM CIRCUIT WIRES
3. CIRCUIT BREAKERS
   DRAW OUT <<– ⌒ –>>1600A/1200A
   MOLDED CASE — ⌒ —
   FRAME SIZE
   TRIP SETTING
4. 4/C–4/0
   INDICATES MULTICONDUCTOR CABLE WITH 4 CONDUCTOR AND SIZE OF EACH 4/0
5. RATING AS SHOWN FOR UNINTERRUPTIBLE POWER SUPPLY CONSISTING OF RECTIFIER/ CHARGER INVERTER, POWER TRANSFER SWITCH ASSOCIATED BATTERIES AND PANELBOARD.
6. PANEL FOR FARE COLLECTION EQUIPMENT.
7. ATS. – AUTOMATIC TRANSFER SWITCH
   C – CHARGER
   I – INVERTER
8. EM – EMERGENCY.
9. UPS MANUFACTURER:
   INTERNATIONAL POWER MACHINE
10. SWITHCHGEAR MANUFACTURER:
    GE INDUSTRIAL SYSTEMS
11. MAIN SECONDARY & TIE POWER CIRCUIT BREAKERS ARE GE TYPE WAVEPRO WITH MICROVERSATRIP (LSI) ELECTRICALLY OPERATED & EQUIPPED WITH SEPARATE GROUND FAULT RELAYS.
12. SWITCHBOARD FEEDER CIRCUIT BREAKERS ARE GE SPECTRA RMS TYPE SGLB WITH MOCROVERSATRIP (LSIG) U.O.N.
13. MOLDED CASE BREAKER NAME PLATE:
    STA. BREAKER POSITION (WEST UTILITY BOARD #14) FEEDER NAME
    A01–WUB–14
    PANEL WP1
    SGL600/150AS/100RP
    RATING PLUG
    SENSOR SIZE
    TYPE–FRAME SIZE

REVISIONS		
DATE	BY	DESCRIPTION
8-8-06	TN	A REPLACED SWGRS & SWBDS

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

ELECTRICAL MAINTENANCE MAP

SHADY GROVE ROUTE
METRO CENTER STATION (A01)
AC POWER ONE LINE DIAGRAM

CAPITAL IMPROVEMENT PROGRAM

PARSONS TRANSPORTATION GROUP – CAPITAL TRANSIT CONSULTANTS

SCALE:	DRAWING No.	
NONE	MM–A–E05	

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 OEVICES 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 OUE 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, PANELBOAROS AND EQUIPMENT SHOWN IS BASED ON RECORD DRAWINGS AND CASUAL FIELD SURVEY. CONTRACTOR SHALL VERIFY ALL ELECTRICAL EQUIPMENT IN FIELD.

ABBREVIATIONS

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

DRAWING INDEX

ELECTRICAL SYMBOL LIST

- QUADRUPLEX RECEPTACLE OUTLET– 20A, 125V WALL MOUNTED.
- J — JUNCTION BOX – SURFACE MOUNTED ON UNISTRUT CHANNEL
- CONDUIT – CONCEALED IN UNDER FLOOR DUCT U.O.N.
- #10-3/4 EF 3,5 — 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	07-14	DATE
DRAWN	C. NGO	07-14	DATE
CHECKED	B. IDLIBI	07-14	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

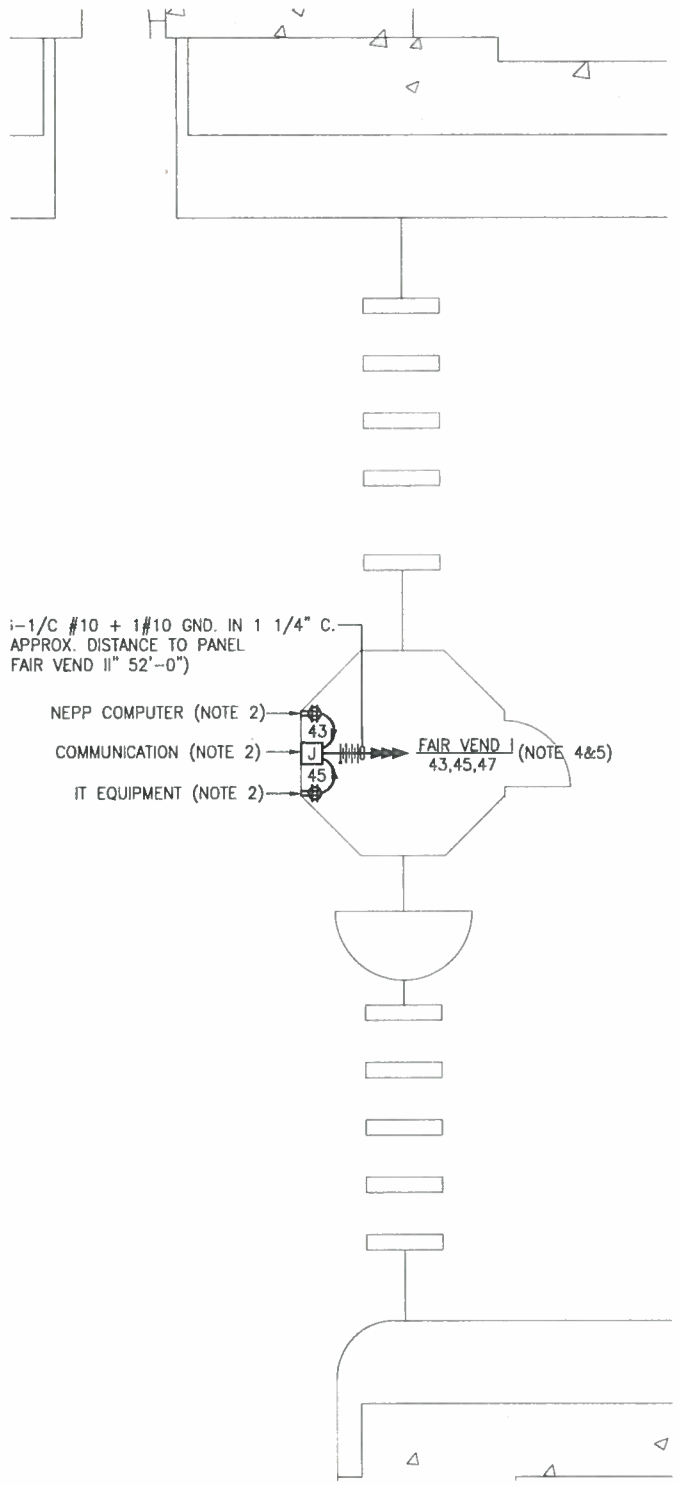
DRAWING NO.: A02-E-001

DRAWING NOTES:

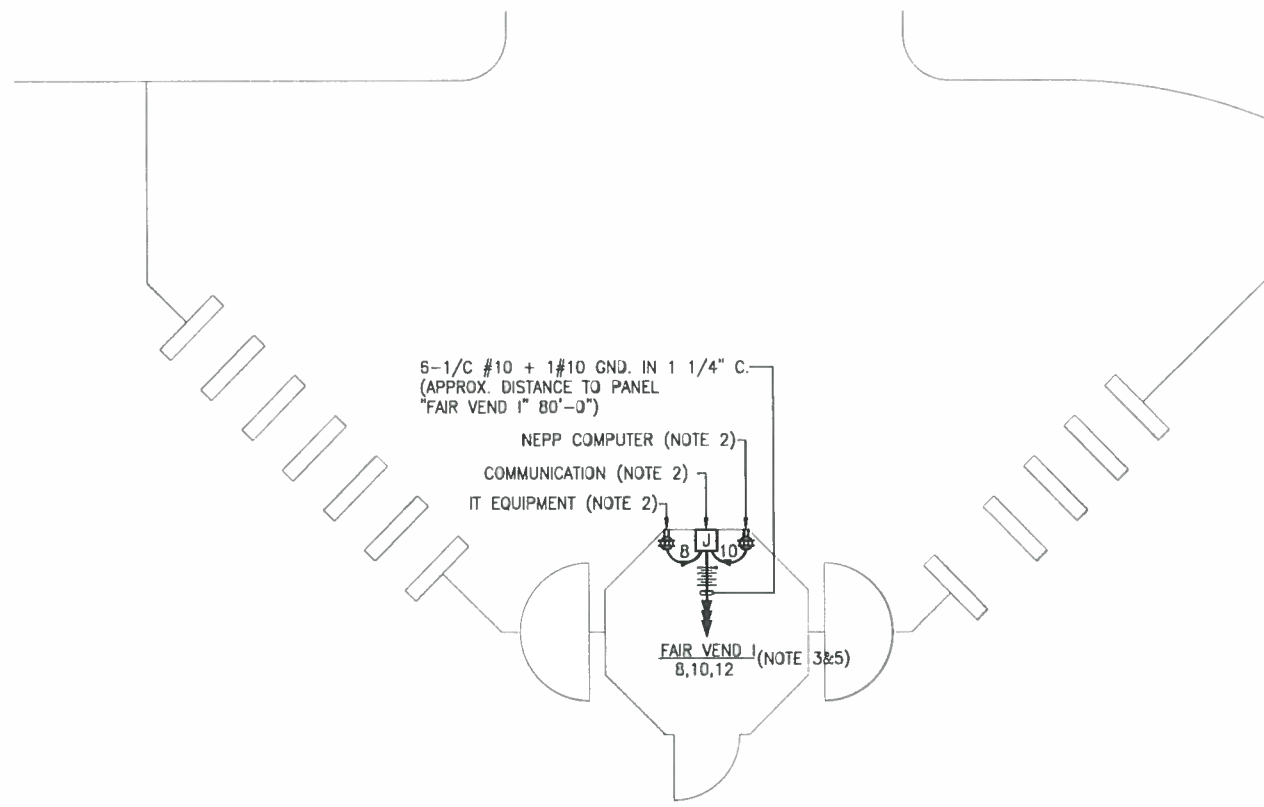
1. USE EXISTING UNDER FLOOR DUCT FOR POWER WIRING. ALL OUTSIDE FLOOR DUCT WIRING SHALL BE IN CONDUIT.
2. VERIFY WITH WMATA PERSONNEL FOR LOCATION OF RECEPTACLES & JUNCTION BOXES.
3. CONNECT CIRCUIT #8 #10 & #12 TO NEW 20A, 1P CIRCUIT BREAKERS IN THE EXISTING PANEL "FAIR VEND I", NEW CIRCUIT BREAKER TO MATCH EXISTING CIRCUIT BREAKER PHYSICAL & TECHNICAL RATING. SEE PANEL SCHEDULE ON DWG. A02-E-102.
4. CONNECT CIRCUIT #43 #45 & #47 TO EXISTING 20A, 1P SPARE CIRCUIT BREAKERS IN THE EXISTING PANEL "FAIR VEND II", SEE PANEL SCHEDULE ON DWG. A02-E-102.
5. PROVIDE A ROUGHIN CIRCUIT FOR FUTURE AFC FARE GATE 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.



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



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

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO	07-14 DATE	
DRAWN C. NGO	07-14 DATE	
CHECKED B. IDILBI	07-14 DATE	
APPROVED N/A	DATE	

REFERENCE DRAWINGS

NUMBER	DESCRIPTION

REVISIONS

DATE	BY	DESCRIPTION
9-22-15	RBM	REV. 1

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
FARRAGUT NORTH - NORTHWEST & SOUTHEAST MEZZANINE KIOSK - POWER

SCALE: AS SHOWN
DRAWING NO.: A02-E-101

EXISTING PANEL "FAIR VEND I"

AMPERES: 225	VOLTS: 120/208			MOUNTING: SURFACE						
MAINS: 150A MCB	PHASE: 3			LOCATION: AC SWBD RM 256						
RATING: 10K AIC	WIRE: 4			SECTION: 1 OF 1						
		CKT BKRS		CKT		CKT.	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.		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	0.8	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	NEW KIOSK RECEPT. (IT&NCS)
SPACE	0.0			9	- B -	10	1	20	0.8	NEW KIOSK RECEPT. (NEPP/SOC)
SPACE	0.0			11	- - C	12	1	20	0.0	FUTURE AFC FARE GATE
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
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	0.0	SPACE
EXISTING VENDOR	0.8	20	1	35	- - C	36	1	20	0.0	SPACE
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
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
SPARE	0.0	20	1	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	14.8 x 50%		7.4 KVA
MISC. APPLIANCES	0.0 x 100%		0.0 KVA
LARGEST MOTOR	0.0 x 125%		0.0 KVA
MOTORS	0.0 x 100%		0.0 KVA
HEAT	0.0 x 125%		0.0 KVA
AC	0.0 x 100%		0.0 KVA
WATER HEATING	0.0 x 125%		0.0 KVA
TOTAL CONNECTED LOAD	24.8 KVA	TOTAL DEMAND KVA	17.4 KVA
		TOTAL DEMAND AMPS	48.3 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	9.6 KVA		
PHASE B:	8.0 KVA		
PHASE C:	8.0 KVA		

NOTES: A. EXISTING PANEL "FAIR VEND I" IS FED FROM 277/480V, 3ø, 4W EXISTING SWITCHBOARD "NGB" LOCATED IN AC SWBD. RM. 256, CIRCUIT (A02-NGB-04) #4-100A/3P VIA 75KVA TRANSFORMER (SEE ATTACHED DWG. MM-A-E08).

B. EXISTING WIRING FED FROM TOP OF PANEL BY:
- 6-1" C. (4-WIRING FILL >40%)(2-WIRING FILL >20%).

EXISTING WIRING FED FROM LEFT SIDE OF PANEL BY:
- 1-3" C. TO TRANSFORMER (WIRING FILL >40%).
- 1-3/4" C. (WIRING FILL >40%).

EXISTING PANEL "FAIR VEND II"

AMPERES: 225	VOLTS: 120/208			MOUNTING: SURFACE						
MAINS: 150A MCB	PHASE: 3			LOCATION: ROOM 206						
RATING: 10K AIC	WIRE: 4			SECTION: 1 OF 1						
		CKT BKRS		CKT.		CKT.	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.		NO.	POLE	AMP	KVA	LOAD DESCRIPTION
EXISTING VENDOR	1.0	30	2	1	A - -	2	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	1.0	-	-	3	- B -	4	1	20	0.8	EXISTING VENDOR
SPACE	0.0			5	- - C	6			0.0	SPACE
EXISTING VENDOR	0.8	20	1	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
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
EXISTING VENDOR	0.8	20	1	35	- - C	36	1	20	0.0	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	37	A - -	38	1	20	0.0	SPARE
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	0.0	SPARE
NEW KIOSK RECEPT. (IT & NCS)	0.8	20	1	43	A - -	44	1	20	0.0	SPARE
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	45	- B -	46	1	20	0.8	EXISTING VENDOR
FUTURE AFC FARE GATE	9.0	20	1	47	- - C	48	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	15.2 x 50%		7.6 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	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	25.2 KVA	TOTAL DEMAND KVA	17.6 KVA
		TOTAL DEMAND AMPS	48.9 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	9.0 KVA		
PHASE B:	9.8 KVA		
PHASE C:	16.2 KVA		

NOTES: A. EXISTING PANEL "FAIR VEND II" IS FED FROM 277/480V, 3ø, 4W EXISTING SWITCHBOARD "SGB" LOCATED IN AC SWBD. RM. 209, CIRCUIT (A02-SGB-02) #5-125A/3P VIA 75KVA TRANSFORMER (SEE ATTACHED DWG. MM-A-E07).

B. EXISTING WIRING FED FROM TOP OF PANEL BY:
- 6-1" C. (4-WIRING FILL >40%)(2-WIRING FILL >20%).

EXISTING WIRING FED FROM LEFT SIDE OF PANEL BY:
- 1-3" C. TO TRANSFORMER (WIRING FILL >40%).

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO	07-14 DATE	REFERENCE DRAWINGS	REVISIONS
DRAWN C. NGO	07-14 DATE	NUMBER / DESCRIPTION	DATE / BY / DESCRIPTION
CHECKED B. IDILBI	07-14 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
FARRAGUT NORTH - NORTHEAST & SOUTHEAST
PANEL SCHEDULES

SCALE: NOT TO SCALE

DRAWING NO.: A02-E-102

EXISTING PANEL "FAIR VEND III"

AMPERES: 225	VOLTS: 120/208	MOUNTING: SURFACE	
MAINS: 150A MCB	PHASE: 3	LOCATION: CLEANER ROOM 206	
RATING: 10K A/C	WIRE: 4	SECTION: 1 OF 1	

		CKT BKRS		CKT.		CKT.	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.		NO.	POLE	AMP	KVA	LOAD DESCRIPTION
EXISTING CIRCUIT	1.0	30	2	1	A - -	2	1	20	0.8	NEW KIOSK RECEPT. (IT & NCS)
	1.0	-	-	3	- B -	4	1	20	0.8	NEW KIOSK RECEPT. (NEPP/SOC)
SPARE	0.0	20	1	5	- - C	6	1	20	0.0	FUTURE AFC FARE GATE
SPARE	0.0	20	1	7	A - -	8	1	20	0.8	EXISTING VENDOR
SPACE	0.0	-	-	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
SPACE	0.0	-	-	17	- - C	18	-	-	0.0	SPACE
SPARE	0.0	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
EXISTING VENDOR	0.8	20	1	35	- - C	36	1	20	0.0	SPARE
SPARE	0.0	20	1	37	A - -	38	1	20	0.0	SPARE
SPARE	0.0	20	1	39	- B -	40	1	20	0.0	SPARE
EXISTING VENDOR	0.8	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
SPARE	0.0	20	1	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	6.8 x 50%		3.4 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	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	18.8 KVA	TOTAL DEMAND KVA	15.9 KVA
		TOTAL DEMAND AMPS	44.2 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	6.6 KVA		
PHASE B:	7.4 KVA		
PHASE C:	5.6 KVA		

NOTES: A. EXISTING PANEL "FAIR VEND III" IS FED FROM 277/480V, 3ø, 4W EXISTING SWITCHBOARD "SGB" LOCATED IN AC SWBD. RM. 209, CIRCUIT (A02-SGB-02) #6-125A/3P VIA 75KVA TRANSFORMER (SEE ATTACHED DWG. MM-A-E07).

B. EXISTING WIRING FED FROM TOP OF PANEL BY:
- 1-3/4" C. (WIRING FILL >30%).
- 6-1" C. (WIRING FILL >40%).

EXISTING WIRING FED FROM LEFT SIDE OF PANEL BY:
- 1-4" C. TO TRANSFORMER (WIRING FILL >40%).
- 1-12"x 10'0" WIRE TROUGH W/3"x12" OPENING (WIRING FILL >30%).

CONTRACT NO. 14-FQ10060-CENI-24

DESIGNED C. NGO 07-14 DATE
DRAWN C. NGO 07-14 DATE
CHECKED B. IDILBI 07-14 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

FARRAGUT NORTH - NORTHWEST

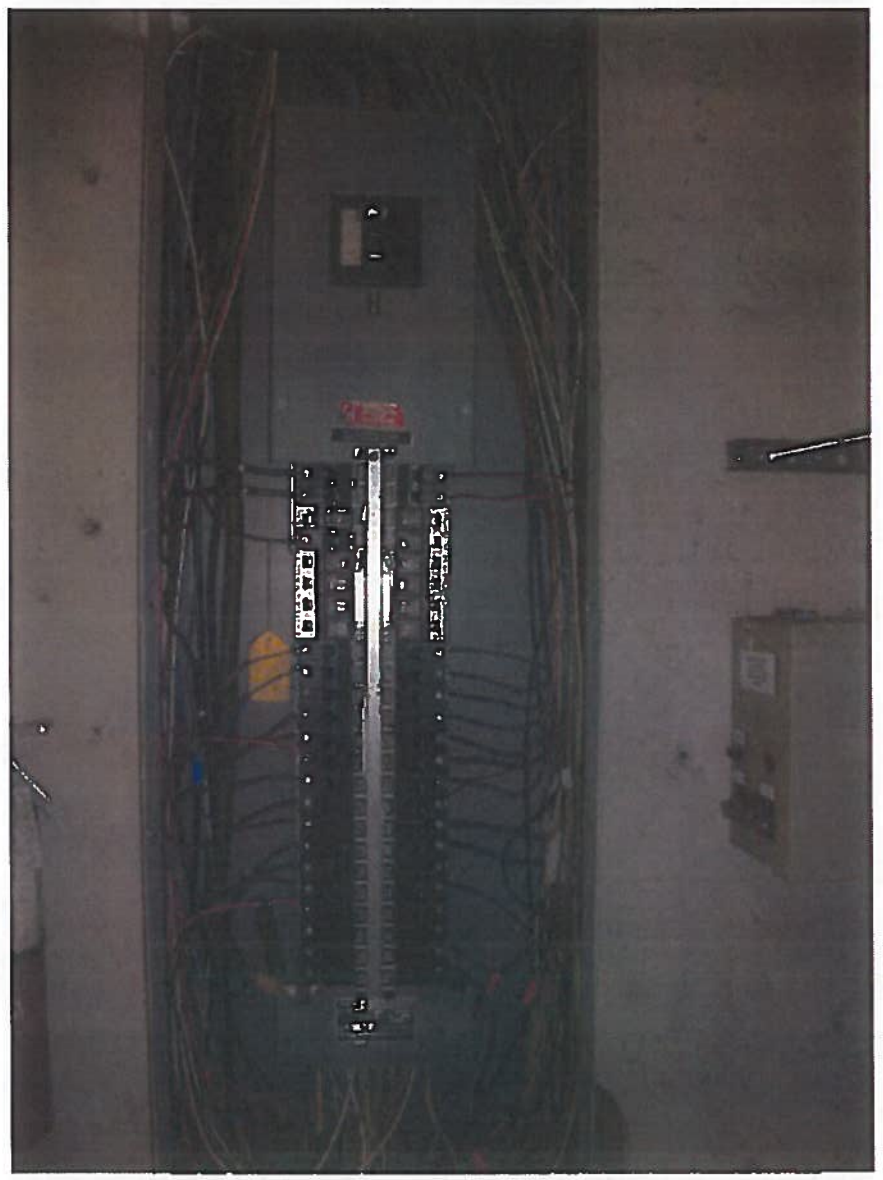
PANEL SCHEDULE

SCALE: NOT TO SCALE

DRAWING NO.: A02-E-103

EXISTING PANEL "FAIR VEND II"

EXISTING PANEL "FAIR VEND II"



EXISTING PANEL "FAIR VEND II"

CONTRACT NO.
14-FQ10060-CENI-24

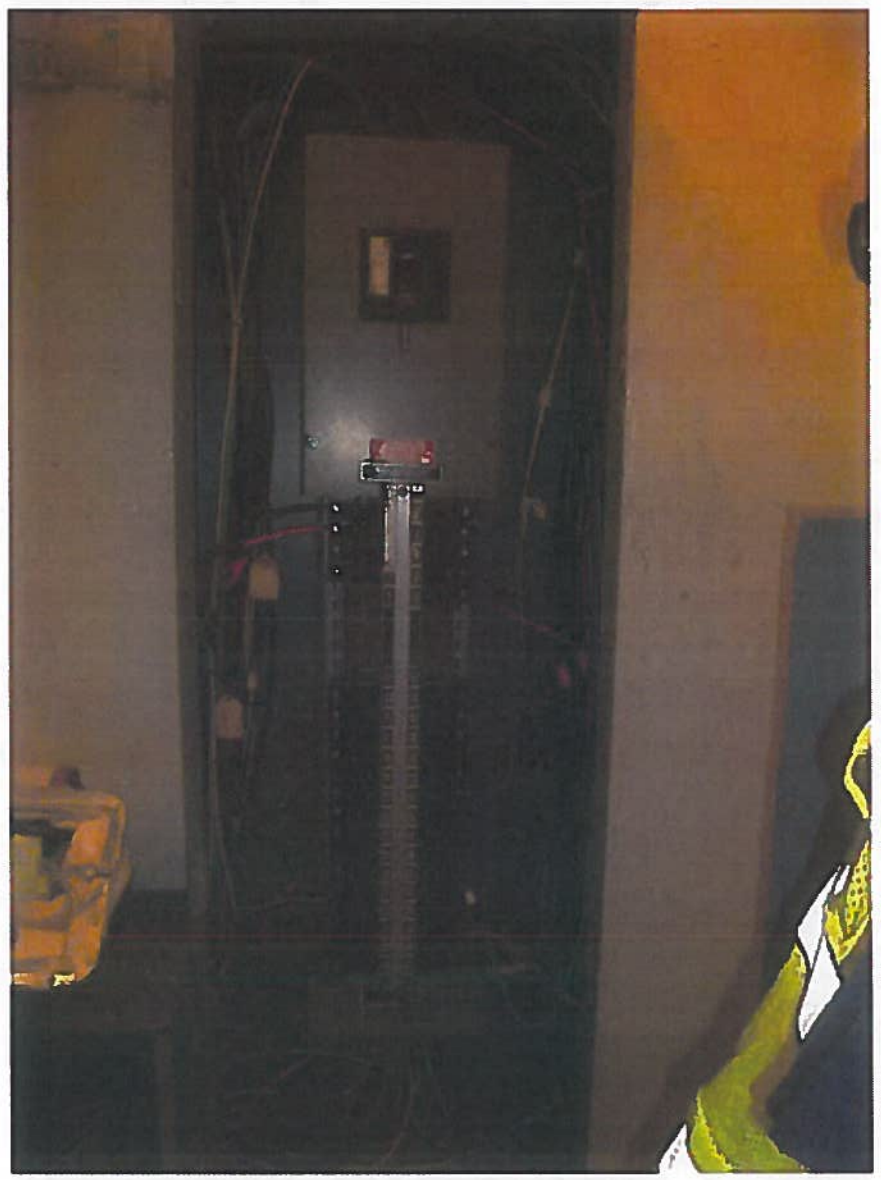
DESIGNED C. NGO 07-14 DATE	REFERENCE DRAWINGS: NUMBER / DESCRIPTION	REVISIONS: DATE / BY / DESCRIPTION	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DRAWN C. NGO 07-14 DATE			DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
CHECKED B. IDILBI 07-14 DATE			APPROVED _____
APPROVED N/A DATE			GFP A Gannett Fleming/Parsons JOINT VENTURE SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
FARRAGUT NORTH - SOUTHEAST
PANELBOARD IMAGE

SCALE	DRAWING NO.	
NOT TO SCALE	A02-E-302	

EXISTING PANEL "FAIR VEND III"

EXISTING PANEL "FAIR VEND III"



EXISTING PANEL "FAIR VEND III"

CONTRACT NO.
14-FQ10060-CENI-24

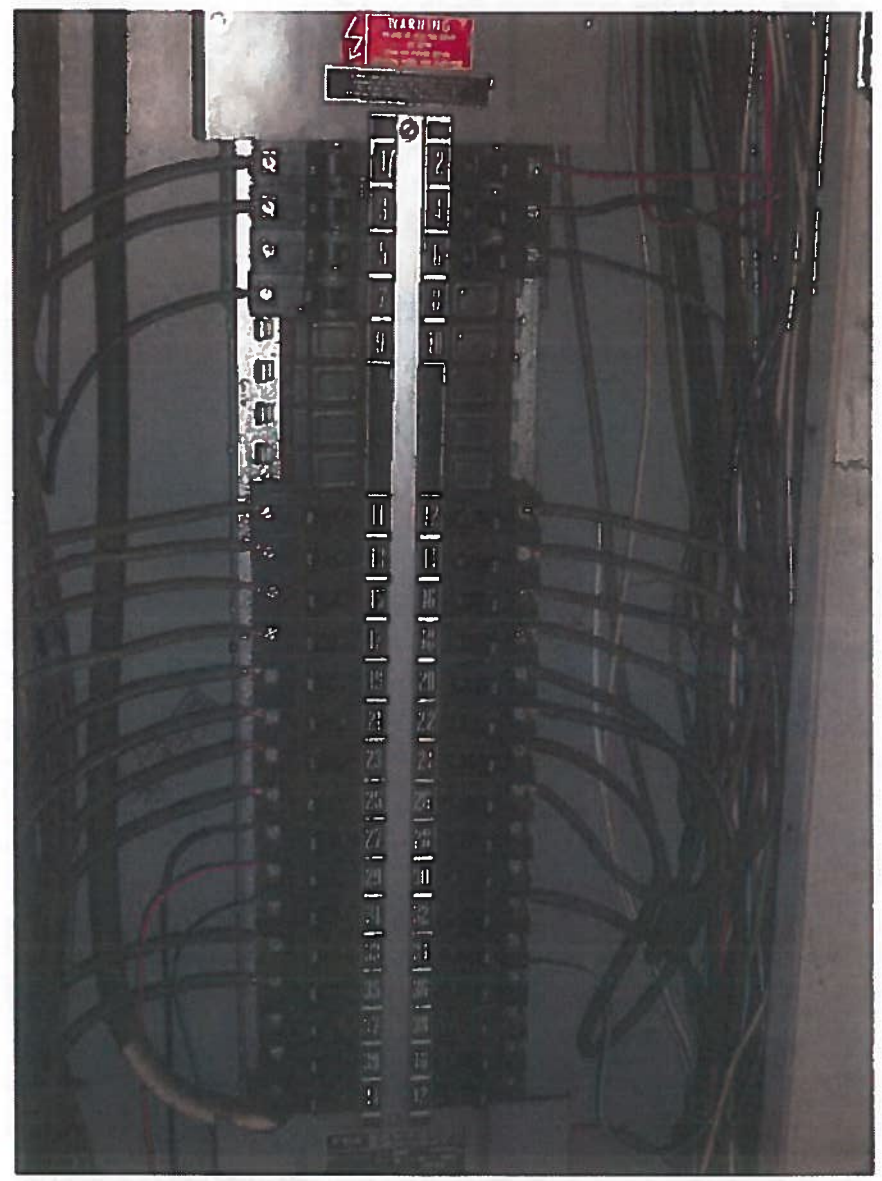
DESIGNED C. NGO 07-14 DATE	REFERENCE DRAWINGS	REVISIONS	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DRAWN C. NGO 07-14 DATE	NUMBER / DESCRIPTION	DATE / BY / DESCRIPTION	DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
CHECKED B. IDLIBI 07-14 DATE			APPROVED
APPROVED N/A DATE			GFP A Gannett Fleming/Parsons JOINT VENTURE SUBMITTED PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
FARRAGUT NORTH - NORTHWEST
PANELBOARD IMAGE

SCALE: NOT TO SCALE
DRAWING NO.: A02-E-303

EXISTING PANEL "FAIR VEND I"

EXISTING PANEL "FAIR VEND I"



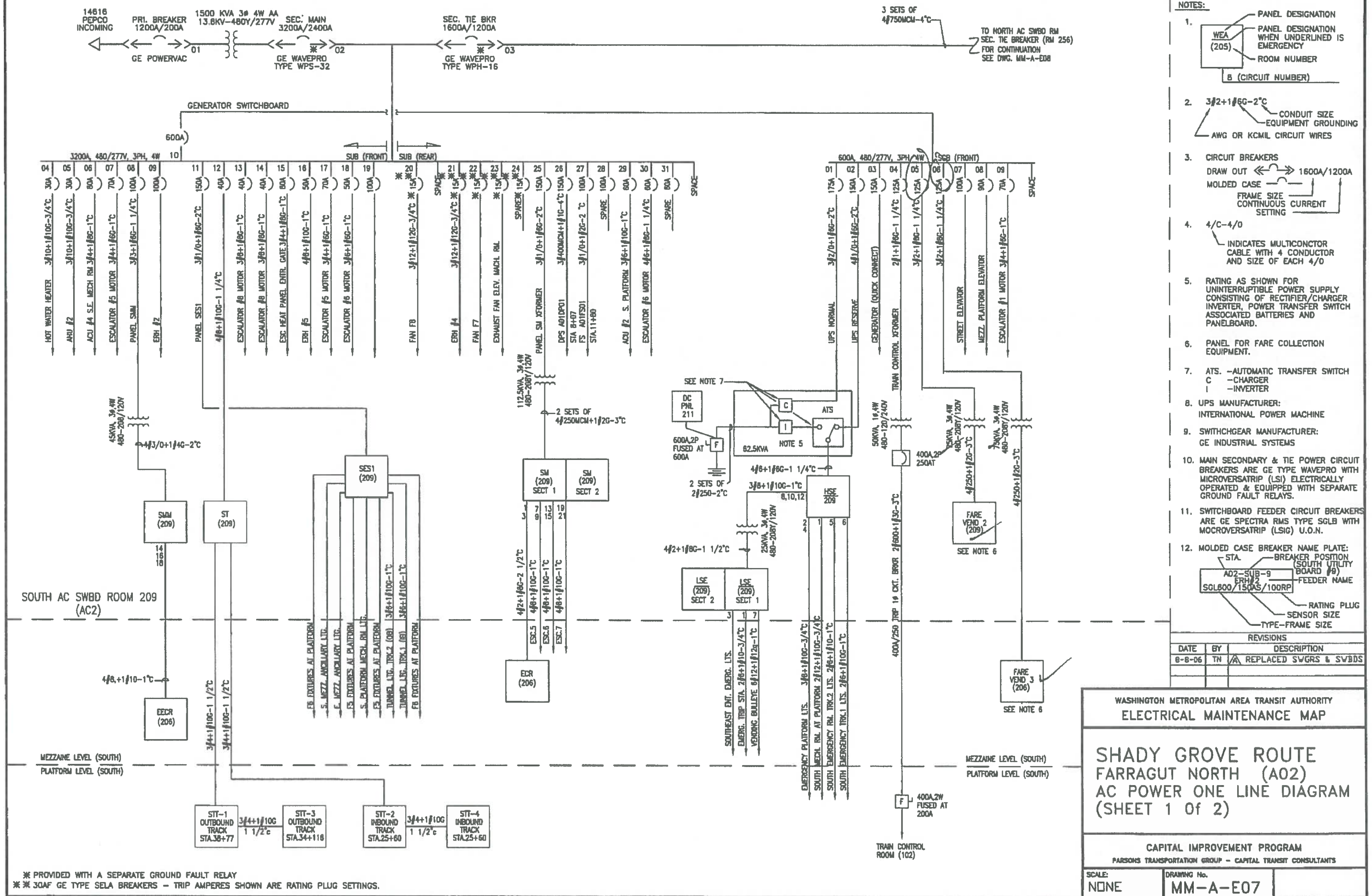
EXISTING PANEL "FAIR VEND I"

DESIGNED C. NGO 07-14 DATE	REFERENCE DRAWINGS	REVISIONS	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DRAWN C. NGO 07-14 DATE	NUMBER / DESCRIPTION	DATE / BY / DESCRIPTION	DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
CHECKED B. IDILBI 07-14 DATE			GFP A Gannett Fleming/Parsons JOINT VENTURE
APPROVED N/A DATE			APPROVED _____ SUBMITTED _____ PROJECT MANAGER

CONTRACT NO. 14-FQ10060-CENI-24

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
FARRAGUT NORTH - NORTHEAST
PANELBOARD IMAGE

SCALE: NOT TO SCALE | DRAWING NO.: A02-E-301



NOTES:

1. WEA (205) B — PANEL DESIGNATION; PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY; ROOM NUMBER; B (CIRCUIT NUMBER)
2. 3#2+1#6G-2"C — CONDUIT SIZE; EQUIPMENT GROUNDING; AWG OR KCMIL CIRCUIT WIRES
3. CIRCUIT BREAKERS — DRAW OUT; MOLDED CASE; FRAME SIZE; CONTINUOUS CURRENT SETTING (1600A/1200A)
4. 4/C-4/0 — INDICATES MULTICONCTOR CABLE WITH 4 CONDUCTOR AND SIZE OF EACH 4/0
5. RATING AS SHOWN FOR UNINTERRUPTIBLE POWER SUPPLY CONSISTING OF RECTIFIER/CHARGER INVERTER, POWER TRANSFER SWITCH ASSOCIATED BATTERIES AND PANELBOARD.
6. PANEL FOR FARE COLLECTION EQUIPMENT.
7. ATS. –AUTOMATIC TRANSFER SWITCH
   C –CHARGER
   I –INVERTER
8. UPS MANUFACTURER: INTERNATIONAL POWER MACHINE
9. SWITHCHGEAR MANUFACTURER: GE INDUSTRIAL SYSTEMS
10. MAIN SECONDARY & TIE POWER CIRCUIT BREAKERS ARE GE TYPE WAVEPRO WITH MICROVERSATRIP (LSI) ELECTRICALLY OPERATED & EQUIPPED WITH SEPARATE GROUND FAULT RELAYS.
11. SWITCHBOARD FEEDER CIRCUIT BREAKERS ARE GE SPECTRA RMS TYPE SGLB WITH MOCROVERSATRIP (LSIG) U.O.N.
12. MOLDED CASE BREAKER NAME PLATE: STA.; BREAKER POSITION (SOUTH UTILITY BOARD #9); FEEDER NAME; RATING PLUG; SENSOR SIZE; TYPE–FRAME SIZE
    (AO2-SUB-9 ERH#2 SGL800/150AS/100RP)

REVISIONS

DATE	BY	DESCRIPTION
8-8-06	TN	A REPLACED SWGRS & SWBDS

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

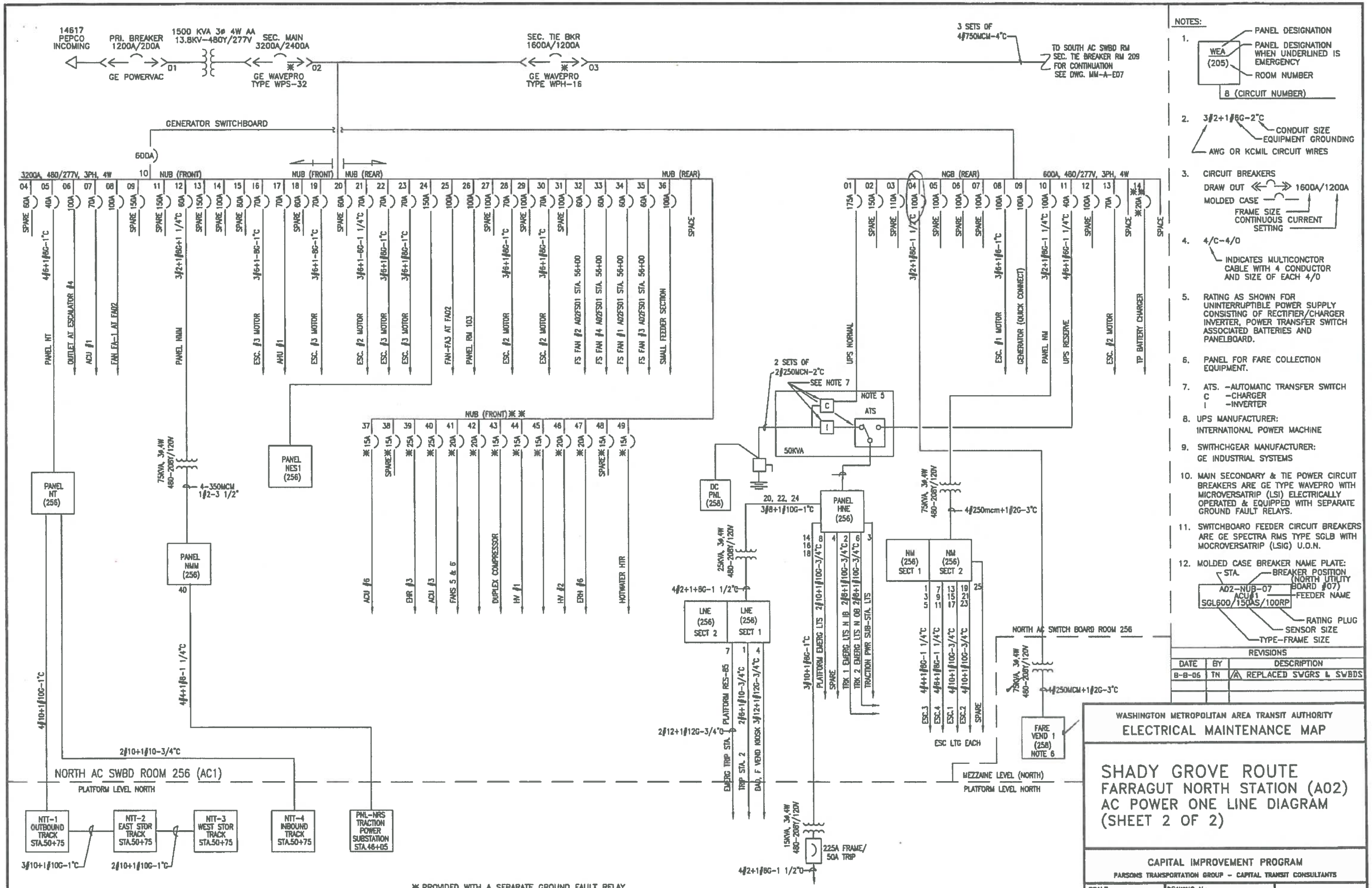
ELECTRICAL MAINTENANCE MAP

SHADY GROVE ROUTE
FARRAGUT NORTH (A02)
AC POWER ONE LINE DIAGRAM (SHEET 1 Of 2)

CAPITAL IMPROVEMENT PROGRAM

PARSONS TRANSPORTATION GROUP – CAPITAL TRANSIT CONSULTANTS

SCALE: NONE | DRAWING No. MM-A-E07



✱ PROVIDED WITH A SEPARATE GROUND FAULT RELAY
✱✱ 30AF GE TYPE SELA BREAKERS – TRIP AMPERES SHOWN ARE RATING PLUG SETTINGS.

NOTES:

1. WEA (205) 8 (CIRCUIT NUMBER) — PANEL DESIGNATION; PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY; ROOM NUMBER
2. 3#2+1#6G–2"C — CONDUIT SIZE; EQUIPMENT GROUNDING; AWG OR KCMIL CIRCUIT WIRES
3. CIRCUIT BREAKERS — DRAW OUT; MOLDED CASE; FRAME SIZE; CONTINUOUS CURRENT SETTING; 1600A/1200A
4. 4/C–4/0 — INDICATES MULTICONCTOR CABLE WITH 4 CONDUCTOR AND SIZE OF EACH 4/0
5. RATING AS SHOWN FOR UNINTERRUPTIBLE POWER SUPPLY CONSISTING OF RECTIFIER/CHARGER INVERTER, POWER TRANSFER SWITCH ASSOCIATED BATTERIES AND PANELBOARD.
6. PANEL FOR FARE COLLECTION EQUIPMENT.
7. ATS. –AUTOMATIC TRANSFER SWITCH
   C –CHARGER
   I –INVERTER
8. UPS MANUFACTURER: INTERNATIONAL POWER MACHINE
9. SWITHCHGEAR MANUFACTURER: GE INDUSTRIAL SYSTEMS
10. MAIN SECONDARY & TIE POWER CIRCUIT BREAKERS ARE GE TYPE WAVEPRO WITH MICROVERSATRIP (LSI) ELECTRICALLY OPERATED & EQUIPPED WITH SEPARATE GROUND FAULT RELAYS.
11. SWITCHBOARD FEEDER CIRCUIT BREAKERS ARE GE SPECTRA RMS TYPE SGLB WITH MOCROVERSATRIP (LSIG) U.O.N.
12. MOLDED CASE BREAKER NAME PLATE: STA. — BREAKER POSITION (NORTH UTILITY BOARD #07); A02–NUB–07 ACU #1 — FEEDER NAME; SGL600/150AS/100RP — RATING PLUG; SENSOR SIZE; TYPE–FRAME SIZE

REVISIONS		
DATE	BY	DESCRIPTION
8–8–06	TN	/A REPLACED SWGRS & SWBDS

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

ELECTRICAL MAINTENANCE MAP

SHADY GROVE ROUTE
FARRAGUT NORTH STATION (A02)
AC POWER ONE LINE DIAGRAM
(SHEET 2 OF 2)

CAPITAL IMPROVEMENT PROGRAM

PARSONS TRANSPORTATION GROUP – CAPITAL TRANSIT CONSULTANTS

SCALE:	DRAWING No.	
NONE	MM–A–E08	16

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 OUCT.
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 ANO 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
AC	ALTERNATING CURRENT
AF	AMPERE FRAME
AFC	AUTOMATED FARE COLLECTION SYSTEM
AFF	ABOVE FINISHED FLOOR
AIC	AMPERE INTERRUPTING CAPACITY
AT	AMPERE TRIP
BKR	BREAKER
C	CONDUIT
CB	CIRCUIT BREAKER
CCT	CIRCUIT
℄	CENTER LINE
CLG	CEILING
CONST	CONSTRUCTION
DISC	DISCONNECT
E	ELECTRICAL
GND	GROUND
JB	JUNCTION BOX
KAIC	THOUSAND AMPERE INTERRUPTING CAPACITY
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
NEC	NATIONAL ELECTRIC CODE
P	POLE
PH	PHASE
PNL	PANELBOARD
PRI	PRIMARY
PROP	PROPOSED
RGS	RIGID GALVANIZED STEEL
SEC	SECONDARY
SHT	SHEET
SW	SWITCH
SWBD	SWITCHBOARD
TYP	TYPICAL
U/G	UNDER GROUND
U.L.	UNDERWRITERS LABORATORIES
UON	UNLESS OTHERWISE NOTED
VOLT	VOLTAGE
W	WATT
WMATA	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
WP	WEATHERPROOF

DRAWING INDEX

ELECTRICAL SYMBOL LIST

- QUADRUPLEX RECEPTACLE OUTLET– 20A, 125V WALL MOUNTED.
- J — JUNCTION BOX – SURFACE MOUNTED ON UNISTRUT CHANNEL
- CONDUIT – CONCEALED IN UNDER FLOOR OUCT U.O.N.
- #10-3/4 — 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
  - FF 1,3 – INDICATES CIRCUIT HOME RUN PANELBOARD AND CIRCUIT NUMBER IDENTIFICATION

FF 3,5

CONTRACT NO. 14-FQ10060-CENI-24

DESIGNED C. NGO 07-14 DATE
DRAWN C. NGO 07-14 DATE
CHECKED B. IDLEBI 07-14 DATE
APPROVED N/A DATE

REFERENCE DRAWINGS	
NUMBER	DESCRIPTION

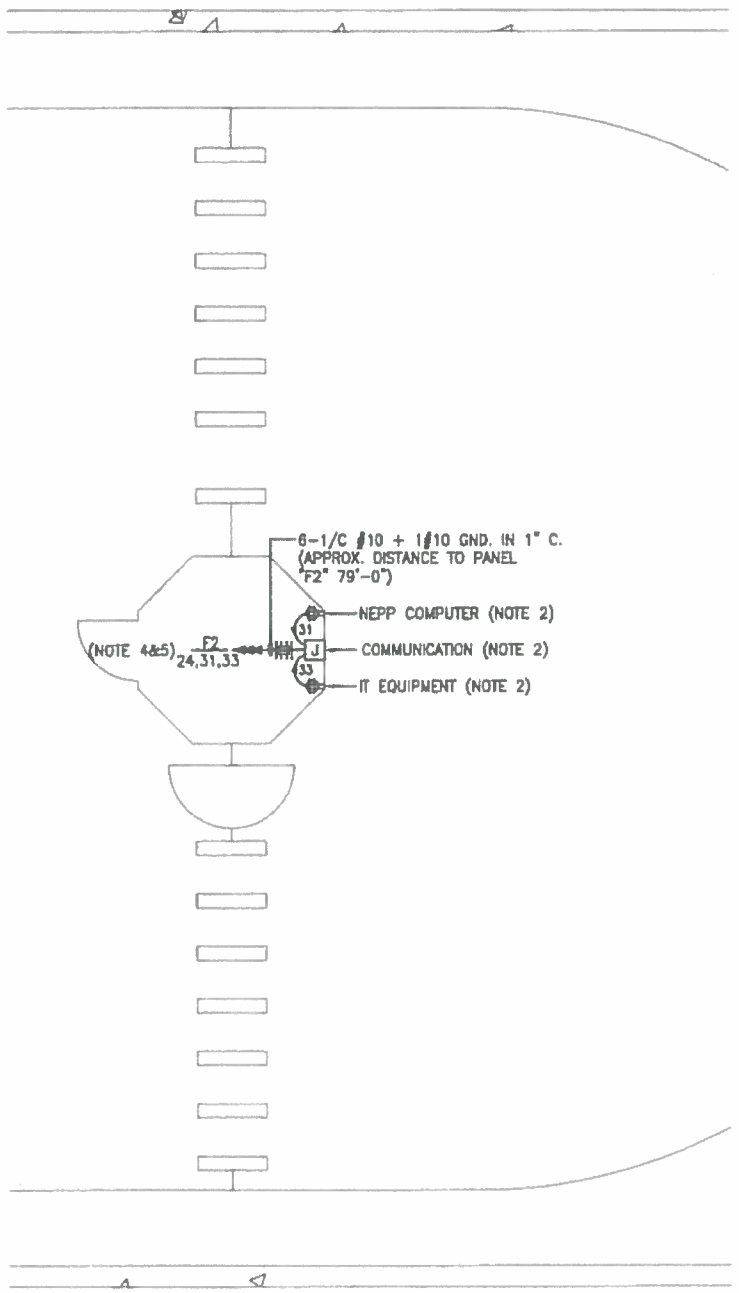
REVISIONS		
DATE	BY	DESCRIPTION

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

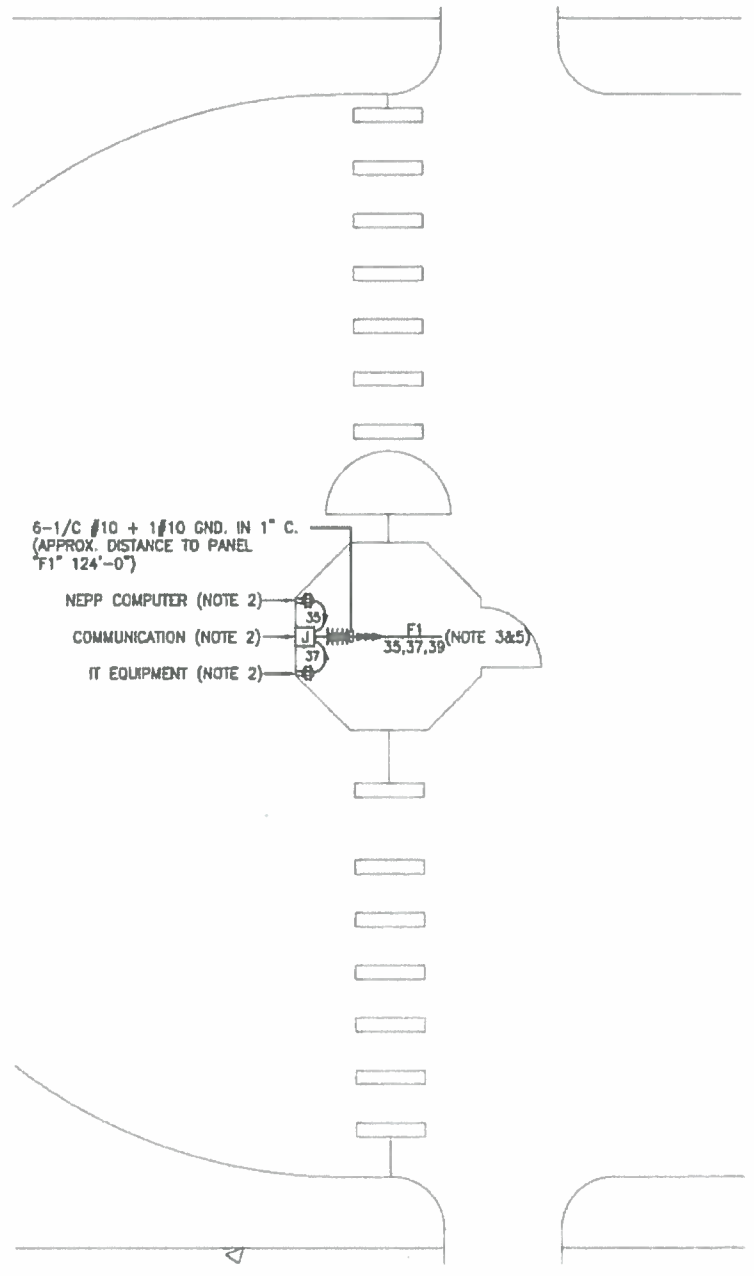
GFP A Gannett Fleming/Parsons JOINT VENTURE
SUBMITTED PROJECT MANAGER

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

SCALE NOT TO SCALE
DRAWING NO. A03-E-001



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



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

DRAWING NOTES:

1. USE EXISTING UNDER FLOOR DUCT FOR POWER WIRING. ALL OUTSIDE FLOOR DUCT WIRING SHALL BE IN CONDUIT.
2. VERIFY WITH WMATA PERSONNEL FOR LOCATION OF RECEPTACLES & JUNCTION BOXES.
3. CONNECT CIRCUIT #35, #37 & #39 TO EXISTING 20A, 1P SPARE CIRCUIT BREAKERS IN THE EXISTING PANEL "F1", SEE PANEL SCHEDULE ON DWG. A03-E-102.
4. CONNECT CIRCUIT #24, #31 & #33 TO EXISTING 20A, 1P SPARE CIRCUIT BREAKERS IN THE EXISTING PANEL "F2", PROVIDE A NEW 20A, 1P CIRCUIT BREAKER MATCHING EXISTING CIRCUIT BREAKER AT PANEL "F2" AS WELL AS FOR CIRCUIT #24, SEE PANEL SCHEDULE ON DWG. A03-E-102.
5. PROVIDE A ROUGHIN CIRCUIT FOR FUTURE AFC FARE GATE 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 07-14 DATE	REFERENCE DRAWINGS: NUMBER / DESCRIPTION	REVISIONS: DATE / BY / DESCRIPTION	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DRAWN C. NGO 07-14 DATE			DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
CHECKED B. IDLIBI 07-14 DATE			OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
APPROVED N/A DATE			APPROVED

GFP A Gannett Fleming/Parsons JOINT VENTURE
SUBMITTED PROJECT MANAGER

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

SCALE: AS SHOWN
DRAWING NO: A03-E-101

EXISTING PANEL "F1" (NORTH)

AMPERES: 225	VOLTS 120/208			MOUNTING SURFACE						
MAINS 225A MLO	PHASE 3			LOCATION AC SWBD RM 214						
RATING 10K AIC	WIRE 4			SECTION 1 OF 1						
		CKT BKRS		CKT		CKT	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO		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	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	5	- - C	6	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	7	A - -	8	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	9	- B -	10	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	11	- - C	12	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	13	A - -	14	1	20	0.8	EXISTING VENDOR
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 LOAD CENTER "KES"	3.4	60	2	23	- - C	24	1	20	0.8	EXISTING VENDOR
	3.0	-	-	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	0.0	SPARE
NEW KIOSK RECEPT. (IT & NCS)	0.8	20	1	35	- - C	36	1	20	0.0	SPARE
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	37	A - -	38	1	20	0.0	SPARE
FUTURE AFC FARE GATE	0.0	20	1	39	- B -	40	1	20	0.0	SPARE
EXISTING VENDOR	0.8	-	-	41	- - C	42	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	-	-	43	A - -	44	2	30	1.5	EXISTING VENDOR
SPACE	0.0	-	-	45	- B -	46	-	-	1.5	
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	20.6 x 50%		10.3 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	2.0 x 125%		2.5 KVA
AC	4.0 x 100%		4.0 KVA
WATER HEATING	0.0 x 125%		0.0 KVA
TOTAL CONNECTED LOAD	**36.6 KVA**	**TOTAL DEMAND KVA**	**26.8 KVA**
		TOTAL DEMAND AMPS	**74.4 AMPS**

CONNECTED LOAD PHASE SUMMARY

PHASE A	14.9 KVA
PHASE B	9.5 KVA
PHASE C	13.0 KVA

NOTES:
A. EXISTING PANEL "F1" IS FED FROM 277/480V, 3ø, 4W EXISTING SWBD. "NGB" LOCATED IN AC SWBD RM 214, CIRCUIT #3-175/3P VIA 112KVA TRANSFORMER (SEE ATTACHED DWG. MM-A-E10).
B. EXISTING WIRING FED FROM BOTTOM OF PANEL BY:
- 1-4" C. TO TRANSFORMER (WIRING FILL >40%).
- 4-1 1/2" C. (WIRING FILL >40%).

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

EXISTING PANEL "F2" (SOUTH)

AMPERES: 225	VOLTS 120/208			MOUNTING SURFACE						
MAINS 225A MLO	PHASE 3			LOCATION AC SWBD RM 215.						
RATING 10K AIC	WIRE 4			SECTION 1 OF 1						
		CKT BKRS		CKT		CKT	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO		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	0.8	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	0.0	20	1	9	- B -	10	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	11	- - C	12	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	13	A - -	14	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	15	- B -	16	1	20	0.8	EXISTING VENDOR
SPACE	0.8	20	1	17	- - C	18	1	20	0.8	EXISTING VENDOR
EXISTING LOAD CENTER "KES"	2.9	50	3	19	A - -	20	1	20	0.8	EXISTING VENDOR
	2.5	-	-	21	- B -	22	1	20	0.8	EXISTING VENDOR
	2.5	-	-	23	- - C	24	1	20	0.0	FUTURE AFC FARE GATE
SPARE	0.0	50	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
NEW KIOSK RECEPT. (IT & NCS)	0.8	20	1	31	A - -	32	1	20	0.8	EXISTING VENDOR
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	33	- B -	34	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	35	- - C	36	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	37	A - -	38	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	2.0	50	1	45	- B -	46	1	30	1.8	EXISTING VENDOR
EXISTING VENDOR	2.0	50	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	25.8 x 50%		12.9 KVA
MISC. APPLIANCES	0.0 x 100%		0.0 KVA
LARGEST MOTOR	0.0 x 125%		0.0 KVA
MOTORS	0.0 x 100%		0.0 KVA
HEAT	3.0 x 125%		3.8 KVA
AC	4.5 x 100%		4.5 KVA
WATER HEATING	0.0 x 125%		0.0 KVA
TOTAL CONNECTED LOAD	**43.3 KVA**	**TOTAL DEMAND KVA**	**31.2 KVA**
		TOTAL DEMAND AMPS	**86.8 AMPS**

CONNECTED LOAD PHASE SUMMARY

PHASE A	14.1 KVA
PHASE B	15.9 KVA
PHASE C	14.1 KVA

NOTES:
A. EXISTING PANEL "F2" IS FED FROM 277/480V, 3ø, 4W EXISTING SWBD. "A03-SGB-04" LOCATED IN AC SWBD RM 215, CIRCUIT #4-175/3P VIA 112KVA TRANSFORMER (SEE ATTACHED DWG. MM-A-E10).
B. EXISTING WIRING FED FROM BOTTOM OF PANEL BY:
- 1-4" C. TO TRANSFORMER (WIRING FILL >40%).
- 3-2" C. (WIRING FILL >40%).

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

CONTRACT NO
14-FQ10060-CENI-24

DESIGNED C. NGO 07-14 DATE
DRAWN C. NGO 07-14 DATE
CHECKED B. IORGI 07-14 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

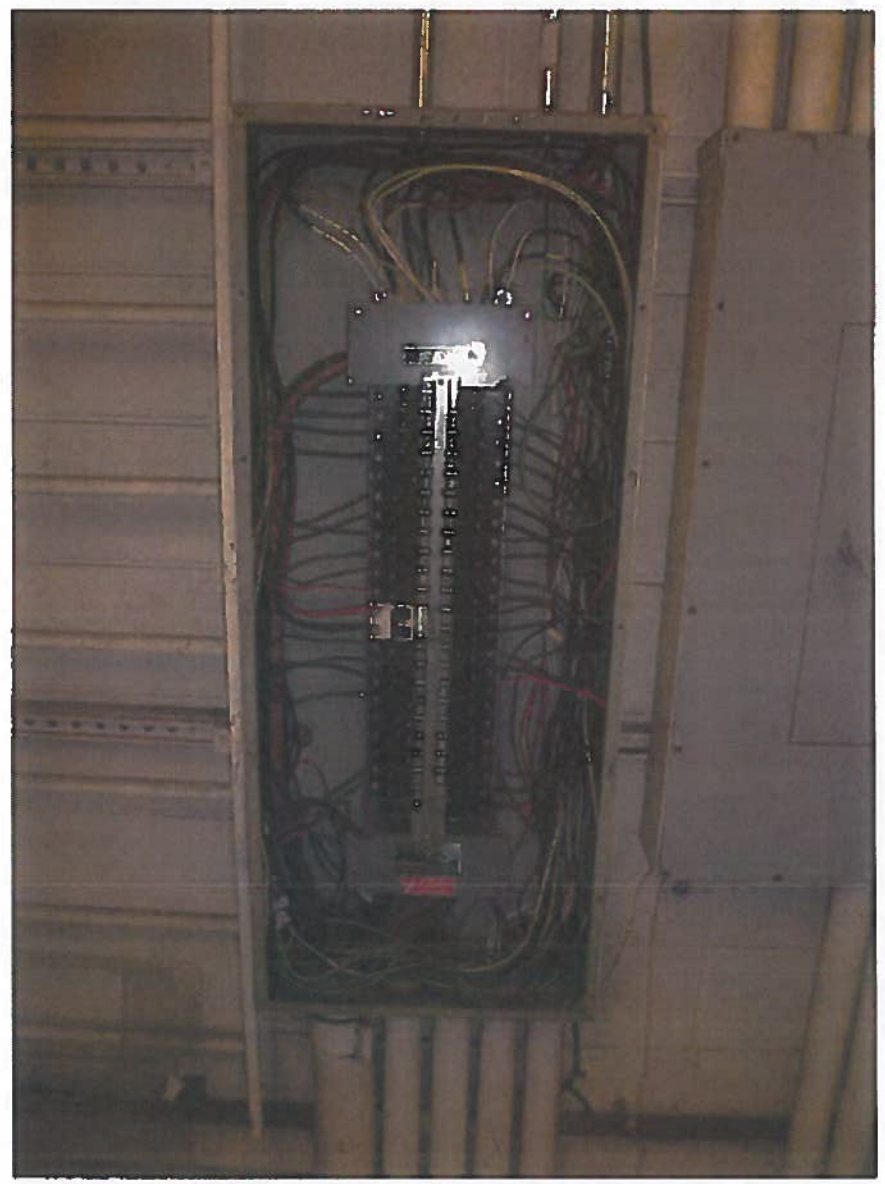
GFP A Gannett Fleming/Parsons JOINT VENTURE
SUBMITTED
PROJECT MANAGER

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

SCALE NOT TO SCALE
DRAWING NO A03-E-102

EXISTING PANEL "F1"

EXISTING PANEL "F1"



EXISTING PANEL "F1"

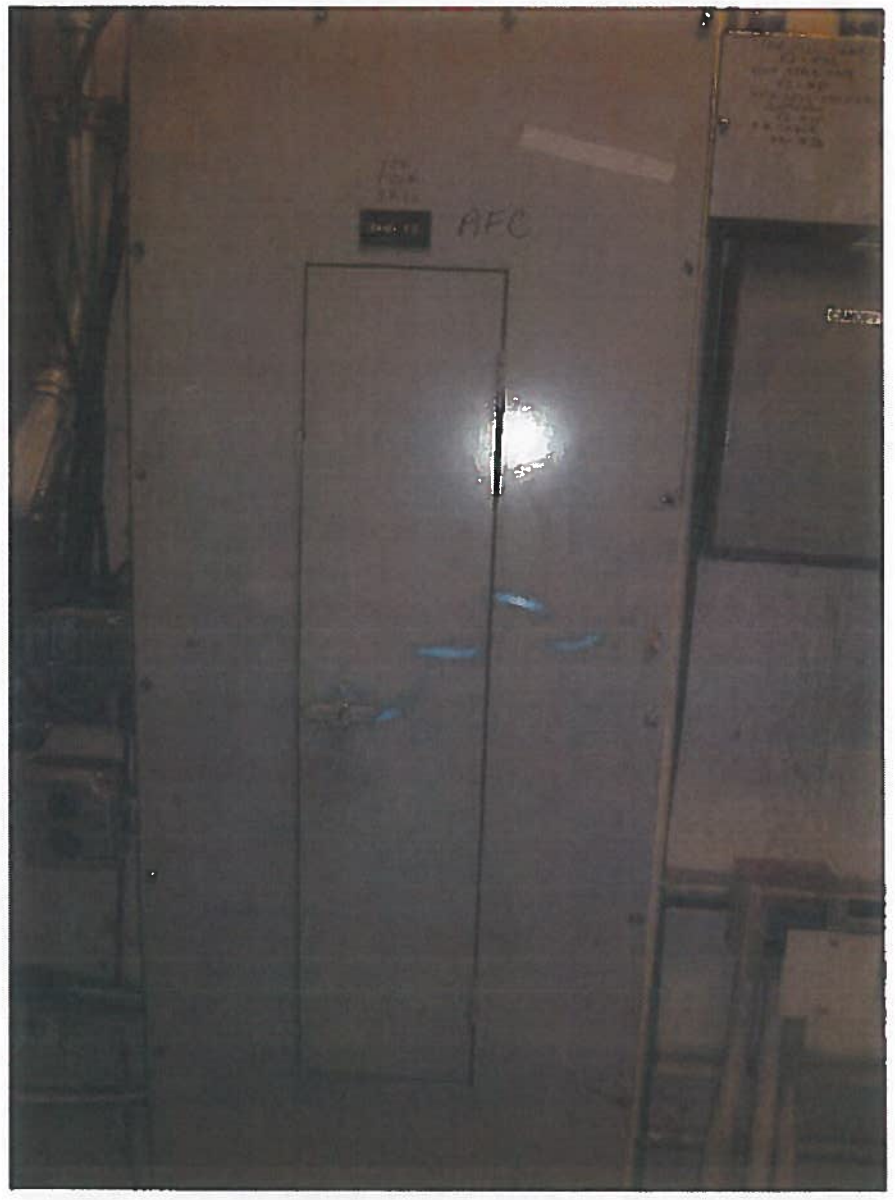
CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO 07-14 DATE	REFERENCE DRAWINGS	REVISIONS	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DRAWN C. NGO 07-14 DATE	NUMBER / DESCRIPTION	DATE / BY / DESCRIPTION	DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
CHECKED B. IDLBI 07-14 DATE			APPROVED _____
APPROVED N/A DATE			SUBMITTED _____ PROJECT MANAGER

GFP A Gassett Fleming/Parsons JOINT VENTURE

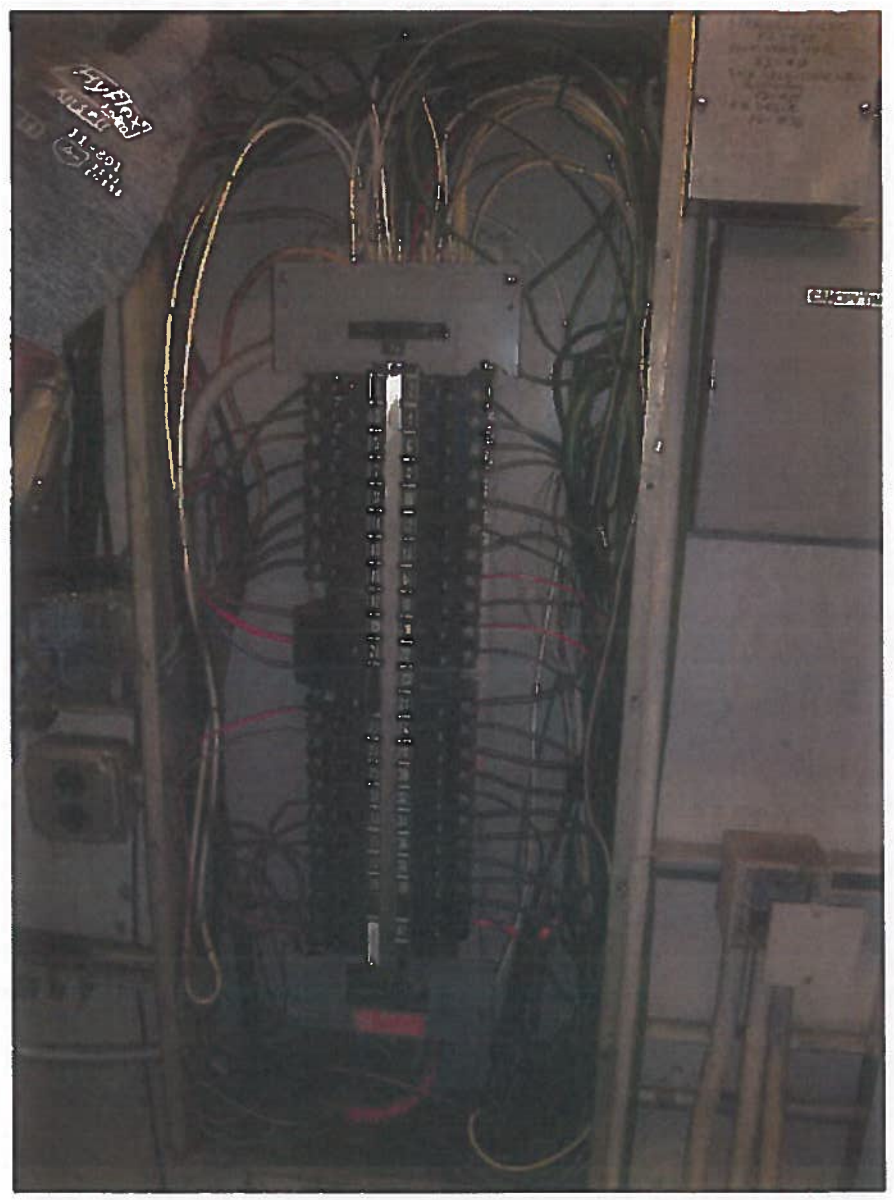
NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
DUPONT CIRCLE - NORTH & SOUTH
PANELBOARD IMAGE

SCALE: NOT TO SCALE
DRAWING NO.: A03-E-301



EXISTING PANEL "F2"

EXISTING PANEL "F2"



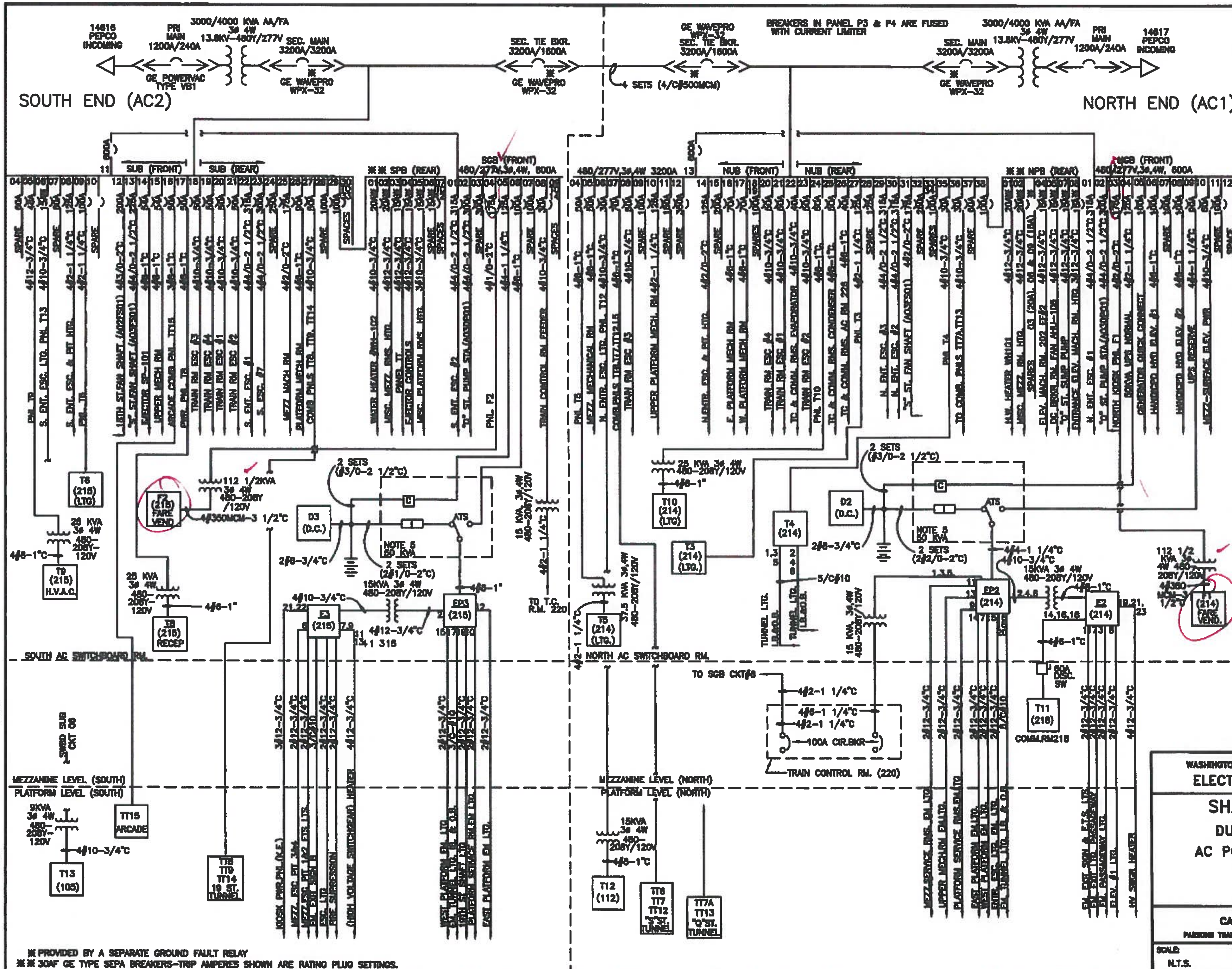
EXISTING PANEL "F2"

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO 07-14 DATE	REFERENCE DRAWINGS: NUMBER / DESCRIPTION	REVISIONS: DATE / BY / DESCRIPTION	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DRAWN C. NGO 07-14 DATE			DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
CHECKED B. IDLBI 07-14 DATE			APPROVED
APPROVED N/A DATE			GFP A Gannett Fleming/Parsons JOINT VENTURE SUBMITTED PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
DUPONT CIRCLE - NORTH & SOUTH
PANELBOARD IMAGE

SCALE	DRAWING NO.	
NOT TO SCALE	A03-E-302	



NOTES:

1. PANEL DESIGNATION
   PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY
   ROOM LOCATION
   (CIRCUIT NUMBER)
   WEA (203) 8
   \+ IF NO CIRCUITS SHOWN
2. 3-2,1-8 2" — CONDUIT SIZE; AWG. GROUND WIRE; AWG. OR MCM CIRCUIT WIRES
3. CIRCUIT BREAKERS
   DRAW OUT <<—⌒—>>1600A/1200A
   MOLDED CASE —⌒—
   FRAME SIZE
   TRIP SETTING
4. 4/C-4/0 — INDICATES MULTICONDUCTOR CABLE WITH 4 CONDUCTOR AND SIZE OF EACH 4/0
5. RATING AS SHOWN FOR UNINTERRUPTIBLE POWER SUPPLY CONSISTING OF RECTIFIER CHARGER INVERTER, POWER TRANSFER SWITCH ASSOCIATED BATTERIES AND PANELBOARD.
6. SWITCHGEAR MANUFACTURER: GE INDUSTRIAL SYSTEMS
7. DISTRIBUTION TRANSFORMER MANUFACTURER: DYNA POWER CAST COIL
8. UPS MANUFACTURER: IPM
9. MAIN SECONDARY & TIE POWER CIRCUIT BREAKERS ARE GE TYPE WAVEPRO WITH MICROVERSATRIP (LSI) ELECTRICALLY OPERATED & EQUIPPED WITH SEPARATE GROUND FAULT RELAYS.
10. SWITCHBOARD FEEDER CIRCUIT BREAKERS ARE GE SPECTRA RMS TYPE SGLB WITH MOCROVERSATRIP (LSIG) U.O.N.
11. MOLDED CASE BREAKER NAME PLATE:
    STA. / BREAKER POSITION / (SOUTH UTILITY BOARD (23)) / FEEDER NAME / RATING PLUG / SENSOR SIZE / TYPE-FRAME SIZE
    A03-SUB-23 S. ESC. #7 SGL800/400AS/300RP

REVISIONS		
DATE	BY	DESCRIPTION
9-1-06	REN/TH	NEW REPLACED SWBS & SWGRS

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

ELECTRICAL MAINTENANCE MAP

SHADY GROVE ROUTE
DUPONT CIRCLE STATION
AC POWER ONE LINE DIAGRAM

CAPITAL IMPROVEMENT PROGRAM

PARSONS TRANSPORTATION GROUP - CAPITAL TRANSIT CONSULTANTS

SCALE: N.T.S. DRAWING No. MM-A-E10

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

DRAWING INDEX

ELECTRICAL SYMBOL LIST

- QUADRUPLEX RECEPTACLE OUTLET– 20A, 125V WALL MOUNTED.
- J — JUNCTION BOX – SURFACE MOUNTED ON UNISTRUT CHANNEL
- CONDUIT – CONCEALED IN UNDER FLOOR DUCT U.O.N.
- #10-3/4 / EF 3,5 — 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 07-14 DATE
DRAWN C. NGO 07-14 DATE
CHECKED B. IDILBI 07-14 DATE
APPROVED N/A DATE

REFERENCE DRAWINGS	
NUMBER	DESCRIPTION

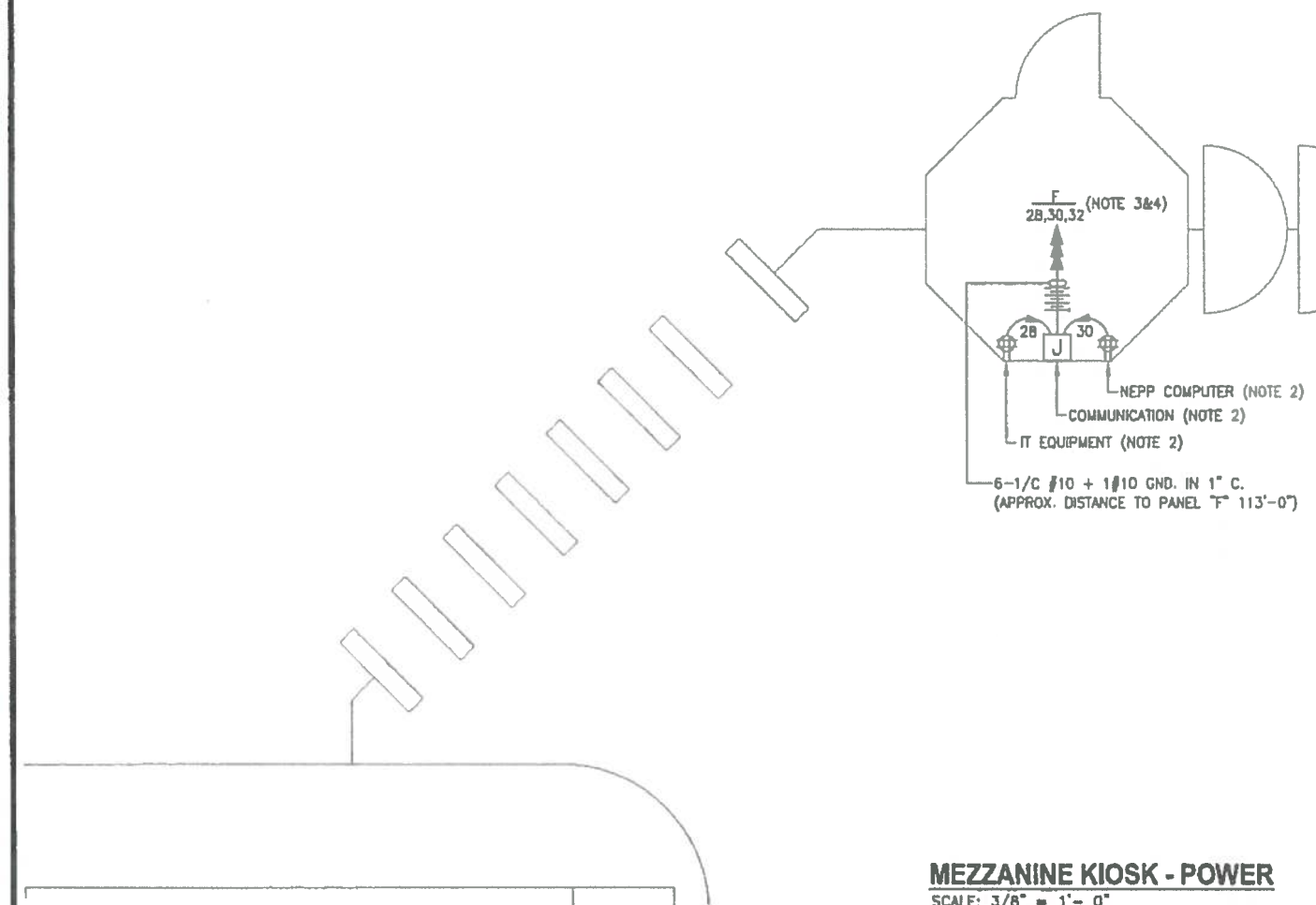
REVISIONS		
DATE	BY	DESCRIPTION

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.: A04-E-001



MEZZANINE KIOSK - POWER
SCALE: 3/8" = 1'- 0"

DRAWING NOTES:

1. USE EXISTING UNDER FLOOR DUCT FOR POWER WIRING. ALL OUTSIDE FLOOR DUCT WIRING SHALL BE IN CONDUIT.
2. VERIFY WITH WMATA PERSONNEL FOR LOCATION OF RECEPTACLES & JUNCTION BOXES.
3. CONNECT CIRCUIT #28 #30 & #32 TO EXISTING 20A, 1P SPARE CIRCUIT BREAKERS IN THE EXISTING PANEL "F". SEE PANEL SCHEDULE ON DWG. A04-E-102.
4. PROVIDE A ROUGHIN CIRCUIT FOR FUTURE AFC FARE GATE 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	07-14 DATE	
DRAWN C. NGO	07-14 DATE	
CHECKED B. IDLEBI	07-14 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

CONTRACT NO: 14-FQ10060-CENI-24

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

SCALE: AS SHOWN
DRAWING NO: A04-E-101

EXISTING PANEL "F"

AMPERES: 400	VOLTS: 120/208	MOUNTING: SURFACE	
MAINS: 300A	PHASE: 3	LOCATION: ROOM C207	
RATING: 10K AIC	WIRE: 4	SECTION: 1 OF 1	

		CKT BKRS		CKT.		CKT.	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.		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	0.8	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
SPARE	0.0	20	1	13	A - -	14	2	20	0.8	SPARE
SPARE	0.0	20	1	15	- B -	16	-	-	0.0	
SPARE	0.0	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
SPARE	0.0	20	1	23	- - C	24	1	20	0.0	SPARE
SPARE	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**	**NEW KIOSK RECEPT. (IT & NCS)**
EXISTING VENDOR	0.8	20	1	29	- - C	30	1	20	**0.8**	**NEW KIOSK RECEPT. (NEPP/SOC)**
EXISTING VENDOR	0.8	20	1	31	A - -	32	1	20	**0.0**	**FUTURE AFC FARE GATE**
EXISTING VENDOR	0.8	20	1	33	- B -	34	1	20	0.0	SPARE
SPARE	0.0	20	1	35	- - C	36	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	37	A - -	38	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	39	- B -	40	1	20	0.0	SPARE
EXISTING VENDOR	0.8	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	10.8 x 50%		5.4 KVA
MISC. APPLIANCES	0.0 x 100%		0.0 KVA
LARGEST MOTOR	0.0 x 125%		0.0 KVA
MOTORS	0.0 x 100%		0.0 KVA
HEAT	0.0 x 125%		0.0 KVA
AC	0.0 x 100%		0.0 KVA
WATER HEATING	0.0 x 125%		0.0 KVA
TOTAL CONNECTED LOAD	**20.8 KVA**	**TOTAL DEMAND KVA**	**15.4 KVA**
		TOTAL DEMAND AMPS	**42.8 AMPS**
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	**8.0 KVA**		
PHASE B:	**7.2 KVA**		
PHASE C:	**6.4 KVA**		

NOTES:
A. EXISTING PANEL "F" IS FED FROM 277/480V, 3P, 4W EXISTING SWITCHBOARD "NGB" LOCATED IN AC SWBD ROOM 104, CIRCUIT (A04-NGB-03) #3-125A/3P VIA 75KVA TRANSFORMER THRU 200A DISC. SW. (SEE ATTACHED DWG. MM-A-E13 SHOWS DIFFERENT).

B. EXISTING WIRING FED FROM BOTTOM OF PANEL BY:
- 4-2" C. (WIRING FILL >40%).

EXISTING WIRING FED FROM TOP OF PANEL BY:
- 5-3/4" C. (WIRING FILL >40%).
- 2-4" C. (1-4" C. TO TRANSFORMER) (1-4" C. WIRING FILL >40%).

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO 07-14 DATE
DRAWN C. NGO 07-14 DATE
CHECKED B. IDILBI 07-14 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
WOODLEY PARK
PANEL SCHEDULE

SCALE: NOT TO SCALE
DRAWING NO.: A04-E-102

EXISTING PANEL "F"

EXISTING PANEL "F"

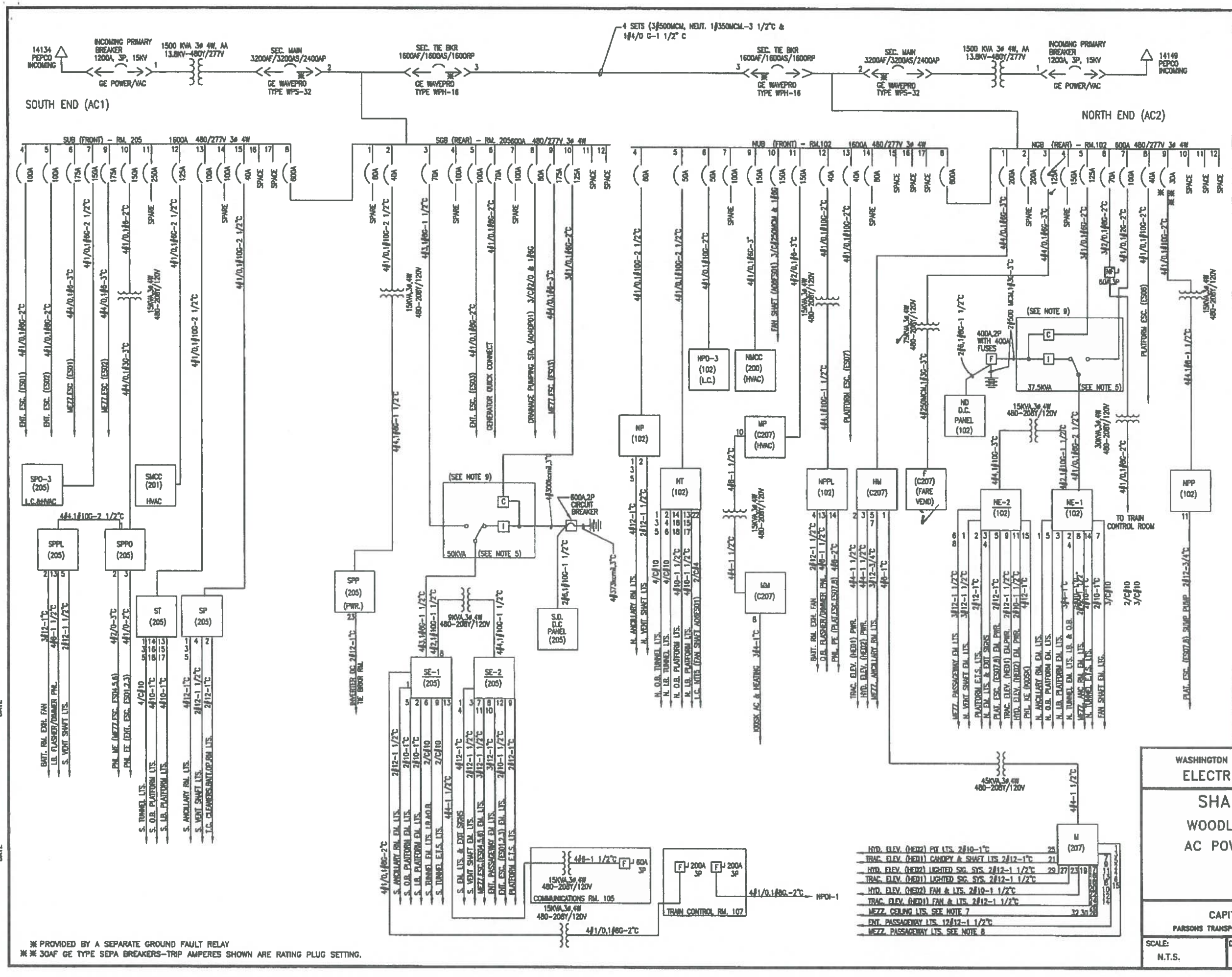
EXISTING PANEL "F"

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO 07-14 DATE	REFERENCE DRAWINGS	REVISIONS	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DRAWN C. NGO 07-14 DATE	NUMBER / DESCRIPTION	DATE / BY / DESCRIPTION	DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
CHECKED S. IDLBI 07-14 DATE			APPROVED _____
APPROVED N/A DATE			GFP A Gannett Fleming/Parsons JOINT VENTURE SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
WOODLEY PARK
PANELBOARD IMAGE

SCALE: NOT TO SCALE
DRAWING NO.: A04-E-301



NOTES:

1. PANEL DESIGNATION; PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY; ROOM LOCATION; (CIRCUIT NUMBER) + WHEN NO CKTS SHOWN
2. 3-2,1-6 2" — CONDUIT SIZE; AWG. GROUND WIRE; AWG. OR kcmil CIRCUIT WIRES
3. CIRCUIT BREAKERS — DRAW OUT; 600AF/1200A; TRIP SETTING; MOLDED CASE; 60A; TRIP SETTING; FRAME SIZE
4. 4/C-4/0 — INDICATES MULTICONDUCTORS CABLE WITH 4 CONDUCTORS AND SIZE OF EACH 4/0
5. RATING AS SHOWN FOR UNINTERRUPTIBLE POWER SUPPLY CONSISTING OF RECTIFIER/ CHARGER INVERTER, POWER TRANSFER SWITCH ASSOCIATED BATTERIES AND PANELBOARD.
6. SWITCHGEAR MANUFACTURER: GE INDUSTRIAL SYSTEMS
7. BRANCH CIRCUIT GROUPS (22,24,26) AND (28,30,32) CONSIST OF 4#12 U.F.D EACH. BRANCH CIRCUIT GROUP (17,18,18,20) CONSISTS OF 6#12.
8. BRANCH CIRCUIT GROUPS (1,3,5,2,4,6) CONSISTS OF 8#12-1"C BRANCH CIRCUIT (15) CONSISTS OF 2#12-1"C
9. UPS MANUFACTURER: IPM
10. MAIN SECONDARY & TIE POWER CIRCUIT BREAKERS ARE GE TYPE WAVEPRO WITH MICROVERSATRIP (LSI) ELECTRICALLY OPERATED & EQUIPPED WITH SEPATRATE GROUND FAULT RELAYS.
11. SWITCHBOARD FEEDER CIRCUIT BREAKERS ARE GE SPECTRA RMS TYPE SCLB WITH MOCROVERSATRIP (LSIG) U.O.N.

REVISIONS		
DATE	BY	DESCRIPTION
8/1/06	REITN	NEW HV, LV SWGRS & SWBDS

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

ELECTRICAL MAINTENANCE MAP

SHADY GROVE ROUTE

WOODLEY PARK-ZOO STATION

AC POWER ONE LINE DIAGRAM

CAPITAL IMPROVEMENT PROGRAM

PARSONS TRANSPORTATION GROUP - CAPITAL TRANSIT CONSULTANTS

SCALE:	DRAWING No.	
N.T.S.	MM-A-E13	27

DRAWN _____ DATE _____ APPROVED _____ DATE _____

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 OEVICES, 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 ANO DTHER 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 & INOICATE 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 PANELBOARO 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
AC	ALTERNATING CURRENT
AF	AMPERE FRAME
AFC	AUTOMATED FARE COLLECTION SYSTEM
AFF	ABOVE FINISHED FLOOR
AIC	AMPERE INTERRUPTING CAPACITY
AT	AMPERE TRIP
BKR	BREAKER
C	CONDUIT
CB	CIRCUIT BREAKER
CCT	CIRCUIT
℄	CENTER LINE
CLG	CEILING
CONST	CONSTRUCTION
DISC	DISCONNECT
E	ELECTRICAL
GND	GROUND
JB	JUNCTION BOX
KAIC	THOUSAND AMPERE INTERRUPTING CAPACITY
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
NEC	NATIONAL ELECTRIC CODE
P	POLE
PH	PHASE
PNL	PANELBOARD
PRI	PRIMARY
PROP	PROPOSED
RGS	RIGID GALVANIZED STEEL
SEC	SECONDARY
SHT	SHEET
SW	SWITCH
SWBO	SWITCHBOARD
TYP	TYPICAL
U/G	UNDER GROUND
U.L.	UNDERWRITERS LABORATORIES
UON	UNLESS OTHERWISE NOTED
VOLT	VOLTAGE
W	WATT
WMATA	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
WP	WEATHERPROOF

DRAWING INDEX

ELECTRICAL SYMBOL LIST

- QUADRUPLEX RECEPTACLE OUTLET– 20A, 125V WALL MOUNTED.
- J – JUNCTION BOX – SURFACE MOUNTED ON UNISTRUT CHANNEL
- CONDUIT – CONCEALED IN UNDER FLOOR DUCT U.O.N.
- #10-3/4 / EF 3,5 – 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	07-14 DATE
DRAWN	C. NGO	07-14 DATE
CHECKED	B. IDLBI	07-14 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

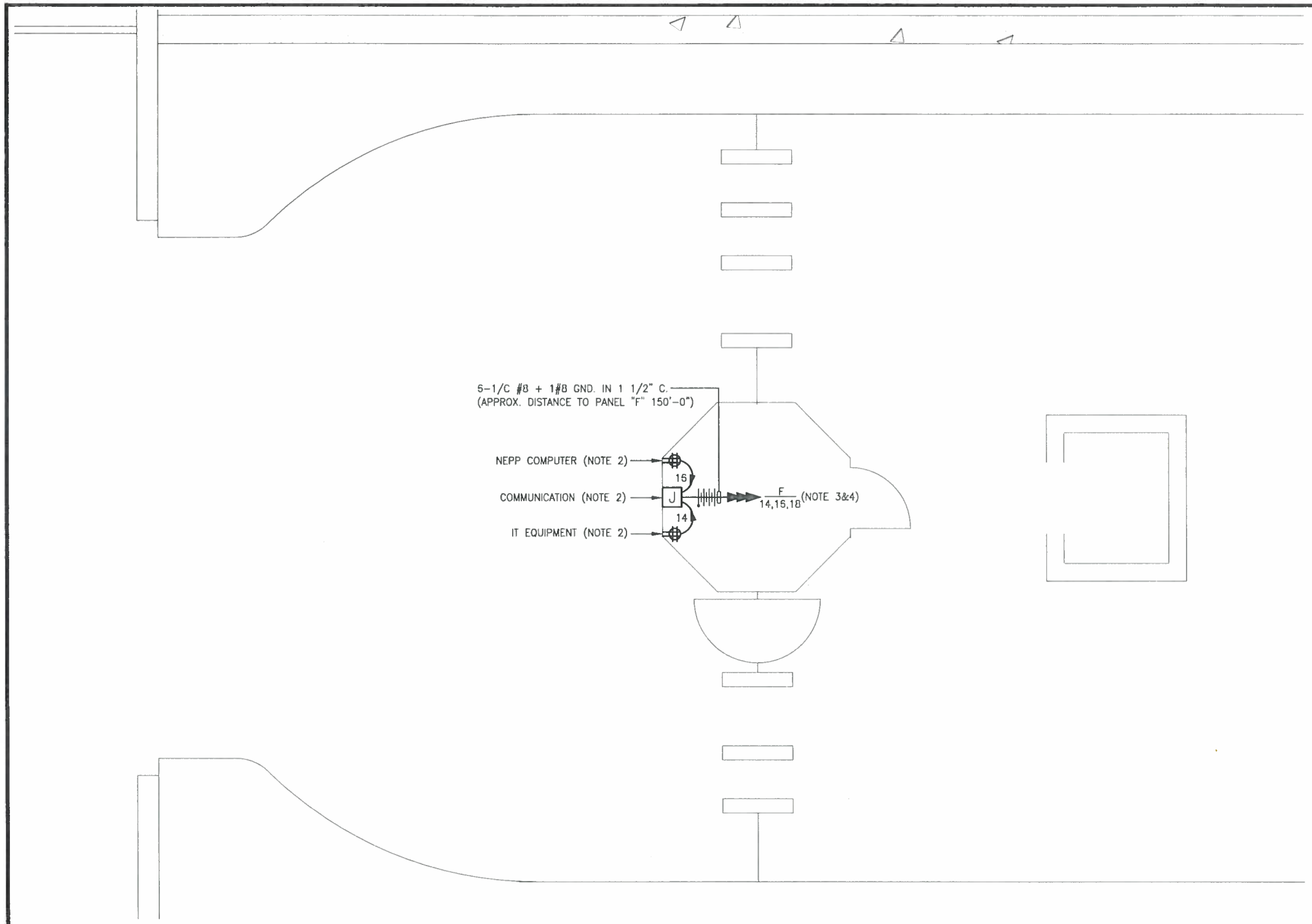
GFP A Gannett Fleming/Parsons JOINT VENTURE

SUBMITTED
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS

ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST

SCALE	DRAWING NO
NOT TO SCALE	A05-E-001



DRAWING NOTES:

1. USE EXISTING UNDER FLOOR DUCT FOR POWER WIRING. ALL OUTSIDE FLOOR DUCT WIRING SHALL BE IN CONDUIT.
2. VERIFY WITH WMATA PERSONNEL FOR LOCATION OF RECEPTACLES & JUNCTION BOXES.
3. CONNECT CIRCUIT #14 #15 & #18 TO EXISTING 20A, 1P SPARE CIRCUIT BREAKERS IN THE EXISTING PANEL "F", SEE PANEL SCHEDULE ON DWG. A05-E-102.
4. PROVIDE A ROUGHIN CIRCUIT FOR FUTURE AFC FARE GATE 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 07-14 DATE	REFERENCE DRAWINGS	REVISIONS
DRAWN C. NGO 07-14 DATE	NUMBER / DESCRIPTION	DATE / BY / DESCRIPTION
CHECKED B. IDILBI 07-14 DATE		9-22-15 / RBM / REV. 1
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
CLEVELAND PARK
MEZZANINE KIOSK - POWER

SCALE: AS SHOWN
DRAWING NO.: A05-E-101

EXISTING PANEL "F"

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

		CKT BKRS		CKT.		CKT.	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.		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	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	5	- - C	6	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	7	A - -	8	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	9	- B -	10	1	20	0.8	EXISTING VENDOR
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	NEW KIOSK RECEPT. (IT & NCS)
EXISTING VENDOR	0.8	20	1	15	- B -	16	1	20	0.8	NEW KIOSK RECEPT. (NEPP/SOC)
EXISTING VENDOR	0.8	20	1	17	- - C	18	1	20	0.0	FUTURE AFC FARE GATE
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	0.0	SPARE
SPARE	0.0	20	1	23	- - C	24	1	20	0.0	SPARE
SPARE	0.0	20	1	25	A - -	26	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	27	- B -	28	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	29	- - C	30	1	20	0.0	SPARE
EXISTING VENDOR	0.8	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
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	5.2 x 50%		2.6 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	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	15.2 KVA	TOTAL DEMAND KVA	12.6 KVA
		TOTAL DEMAND AMPS	35.0 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	7.2 KVA		
PHASE B:	4.8 KVA		
PHASE C:	4.0 KVA		

NOTES: A. EXISTING PANEL "F" IS FED FROM 277/480V, 3P, 4W EXISTING SWITCHBOARD "NGB" LOCATED IN BATTERY AC SWBD RM 216, CIRCUIT (A05-NGB-03) #3-125A/3P VIA 45KVA TRANSFORMER THRU 200A/3P DISC. SW. (SEE ATTACHED DWG. MM-A-E15 SHOWS DIFFERENT).

B. EXISTING WIRING FED FROM LEFT SIDE OF PANEL BY:
- 1-4" C. TO DISC. SWITCH (WIRING FILL >20%).

EXISTING WIRING FED FROM LEFT SIDE OF PANEL BY:
- 3-2" C. (WIRING FILL >40%).
- 1-3/4" C. (WIRING FILL >40%).

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO 07-14 DATE
DRAWN C. NGO 07-14 DATE
CHECKED B. DILBI 07-14 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

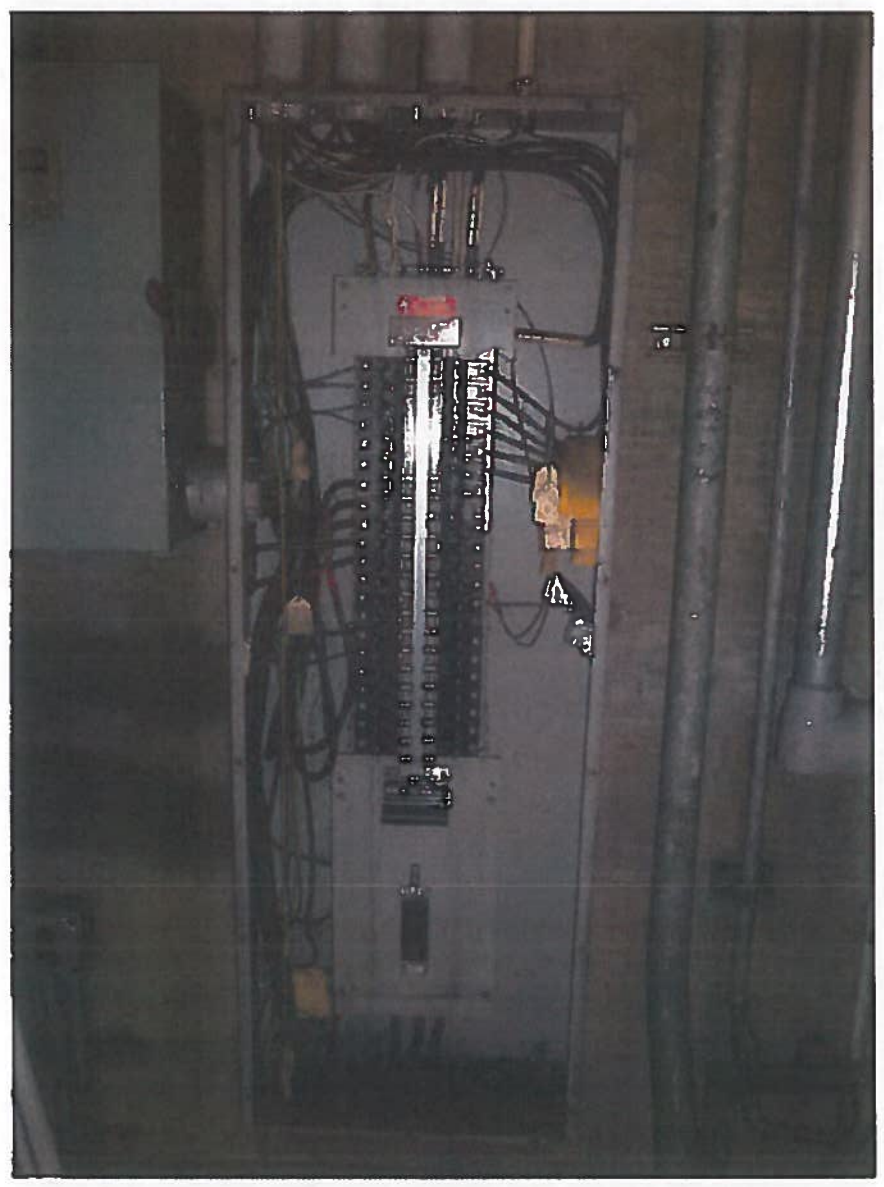
SUBMITTED
PROJECT MANAGER

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

SCALE: NOT TO SCALE
DRAWING NO.: A05-E-102

EXISTING PANEL "F"

EXISTING PANEL "F"



EXISTING PANEL "F"

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NDO 07-14 DATE DRAWN C. NDO 07-14 DATE CHECKED B. IDLBI 07-14 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

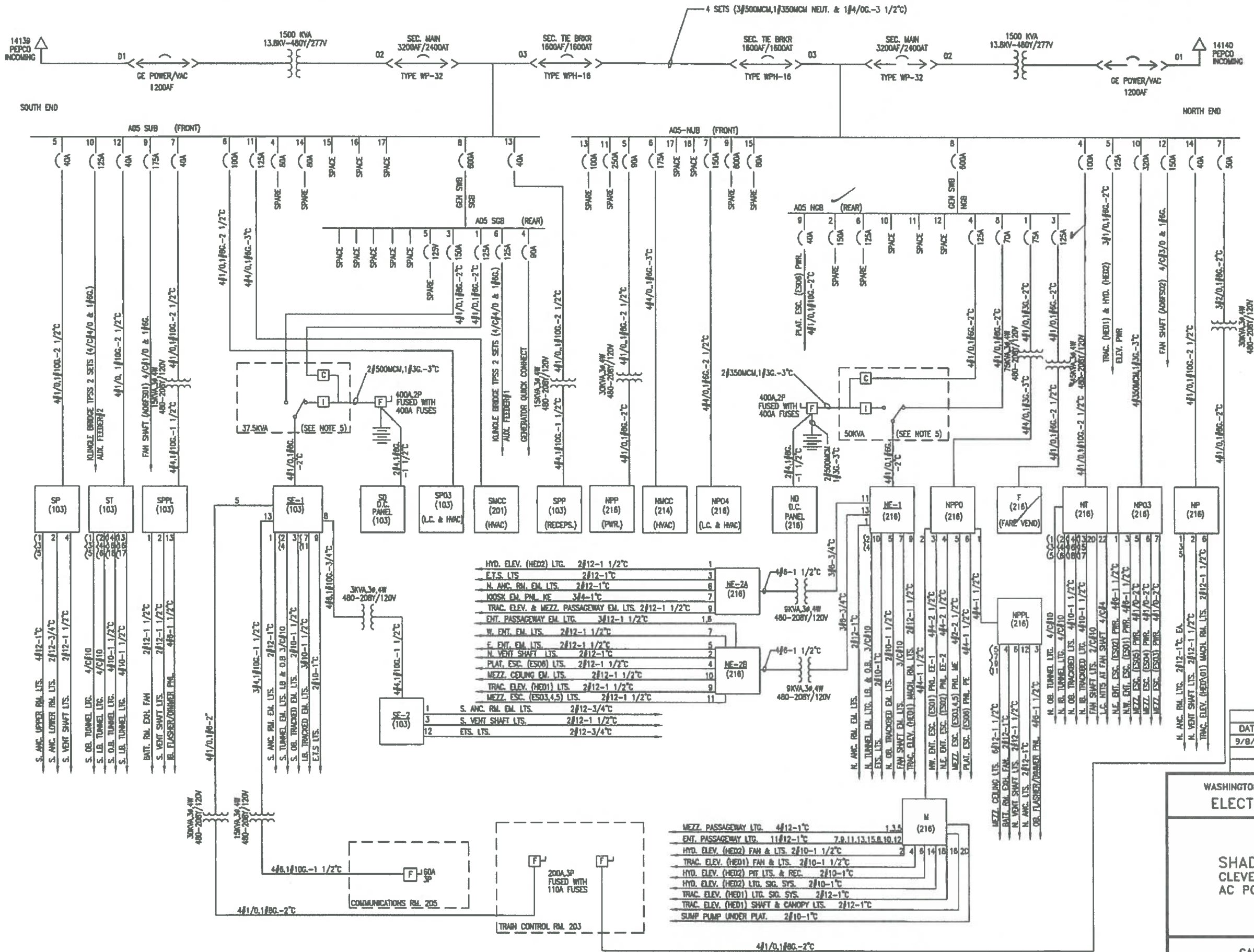
SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS

CLEVELAND PARK
PANELBOARD IMAGE

SCALE: NOT TO SCALE

DRAWING NO.: A05-E-301



NOTES:

1. PANEL DESIGNATION
   WEA (203) — PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY ROOM LOCATION
   8 (CIRCUIT NUMBER)
2. 3-2,1-6 2" — CONDUIT SIZE; AWG. GROUND WIRE; AWG. OR MCM CIRCUIT WIRES
3. CIRCUIT BREAKERS
   DRAW OUT <<- ->>1600A/1200A — TRIP SETTING; FRAME SIZE
   MOLDED CASE — 60A — TRIP SETTING
4. 4/C-4/0 — INDICATES MULTICONDUCTOR CABLE WITH 4 CONDUCTOR AND SIZE OF EACH 4/0
5. RATING AS SHOWN FOR UNINTERRUPTIBLE POWER SUPPLY CONSISTING OF RECTIFIER/CHARGER INVERTER, POWER TRANSFER SWITCH ASSOCIATED BATTERIES AND PANELBOARD.
6. SWITCHGEAR MANUFACTURER: GENERAL ELECTRIC CORP.
7. UPS MANUFACTURER: IPM

REVISIONS		
DATE	BY	DESCRIPTION
9/8/06	RJH	⚠ REVISED AND REDRAWN

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

ELECTRICAL MAINTENANCE MAP

SHADY GROVE ROUTE
CLEVELAND PARK STATION (A05)
AC POWER ONE LINE DIAGRAM

CAPITAL IMPROVEMENT PROGRAM
PARSONS TRANSPORTATION GROUP - CAPITAL TRANSIT CONSULTANTS

SCALE:	DRAWING No.	
SCALE	MM-A-E15	32

DRAWN ____ DATE ____ APPROVED ____ DATE ____

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.
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15. INCREASE ALL BRANCH CIRCUIT CONDUCTORS TO THE NEXT LARGER SIZE FROM THE PANEL TO THE FIRST OUTLET WHERE THE LENGTH OF THE HOMERUN EXCEEDS 100FT. ON 120/208V CIRCUITS.
16. PROVIDE A PULLWIRE OR FISHTAPE/CORD IN ALL EMPTY CONDUIT RUNS.
17. VERIFY WIRE SIZES, CIRCUIT BREAKERS AND FUSES RATINGS FOR ALL EQUIPMENT, AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES AFFECTING THE WORK PRIOR TO PROCEEDING.
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21. AT JOB COMPLETION, AND BEFORE FINAL ACCEPTANCE BY WMATA, TEST EACH RECEPTACLE AND PANELBOARD FOR PROPER OPERATION. WIRING SHALL BE TESTED FOR CONTINUITY, SHORTS, ETC... ALL WORK AREAS, ETC.. SHALL BE CLEANED AT THE COMPLETION OF THIS PROJECT.
22. FOR DEVICE IDENTIFICATION, THE ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELBOARDS, JUNCTION BOXES, ETC..TO INDICATE THE NAME, VOLTAGE, SERVING EQUIPMENT AND ITEM SERVED ETC... LABELS FOR EMERGENCY CIRCUITS SHALL BE IN RED, NORMAL CIRCUITS SHALL BE IN BLACK. ALL DEVICES SHALL BE IDENTIFIED EITHER ON THE FACE OF THE COVERPLATE OR INSIDE PER WMATA PREFERENCE. ALL JUNCTION BOXES SHALL BE LABELED TO INDICATE THE CIRCUITS CONTAINED BY THE JUNCTION BOX.
23. THE CONTRACTOR SHALL UPDATE THE SCHEDULES OF ALL PANELBOARDS AFFECTED BY THIS PROJECT TO REFLECT CHANGES DUE TO THE PROJECT WORK. PANEL SCHEDULE LOAD DESCRIPTIONS ARE TO INCLUDE THE FINAL ROOM OR AREA NUMBERS.
24. INCLUDE GPR FOR ANY CORE DRILLS OR DRILLED PENETRATIONS IN ANY WALLS.
25. SEAL OFF ALL PENETRATIONS THRU WALLS/FLOORS.
26. THE CONTRACTOR SHALL BECOME FAMILIAR WITH WMATA DESIGN CRITERIA SECTION 4 AND SECTION 13; WMATA SPECIFICATION SECTION 16120, 16130, AND 16125. ALL INSTALLATION SHALL BE IN COMPLIANCE WITH THE NEC, WMATA DESIGN CRITERIA, AND SPECIFICATIONS.
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
AC	ALTERNATING CURRENT
AF	AMPERE FRAME
AFC	AUTOMATED FARE COLLECTION SYSTEM
AFF	ABOVE FINISHED FLOOR
AIC	AMPERE INTERRUPTING CAPACITY
AT	AMPERE TRIP
BKR	BREAKER
C	CONDUIT
CB	CIRCUIT BREAKER
CCT	CIRCUIT
℄	CENTER LINE
CLG	CEILING
CONST	CONSTRUCTION
DISC	DISCONNECT
E	ELECTRICAL
GND	GROUND
JB	JUNCTION BOX
KAIC	THOUSAND AMPERE INTERRUPTING CAPACITY
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
NEC	NATIONAL ELECTRIC CODE
P	POLE
PH	PHASE
PNL	PANELBOARD
PRI	PRIMARY
PROP	PROPOSED
RGS	RIGID GALVANIZED STEEL
SEC	SECONDARY
SHT	SHEET
SW	SWITCH
SWBD	SWITCHBOARD
TYP	TYPICAL
U/G	UNDER GROUND
U.L.	UNDERWRITERS LABORATORIES
UON	UNLESS OTHERWISE NOTED
VOLT	VOLTAGE
W	WATT
WMATA	WASHINGTON METROPOLITIAN AREA TRANSIT AUTHORITY
WP	WEATHERPROOF

DRAWING INDEX

ELECTRICAL SYMBOL LIST

- QUADRUPLEX RECEPTACLE OUTLET- 20A, 125V WALL MOUNTED.
- J — JUNCTION BOX - SURFACE MOUNTED ON UNISTRUT CHANNEL
- CONDUIT - CONCEALED IN UNDER FLOOR DUCT U.O.N.
- #10-3/4 / FE 3,5 — 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
  - FE 1,3 - INDICATES CIRCUIT HOME RUN PANELBOARD AND CIRCUIT NUMBER IDENTIFICATION

CONTRACT NO. 14-FQ10060-CENI-24

DESIGNED	C. NGO	07-14 DATE
DRAWN	C. NGO	07-14 DATE
CHECKED	B. IDILBI	07-14 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 _____

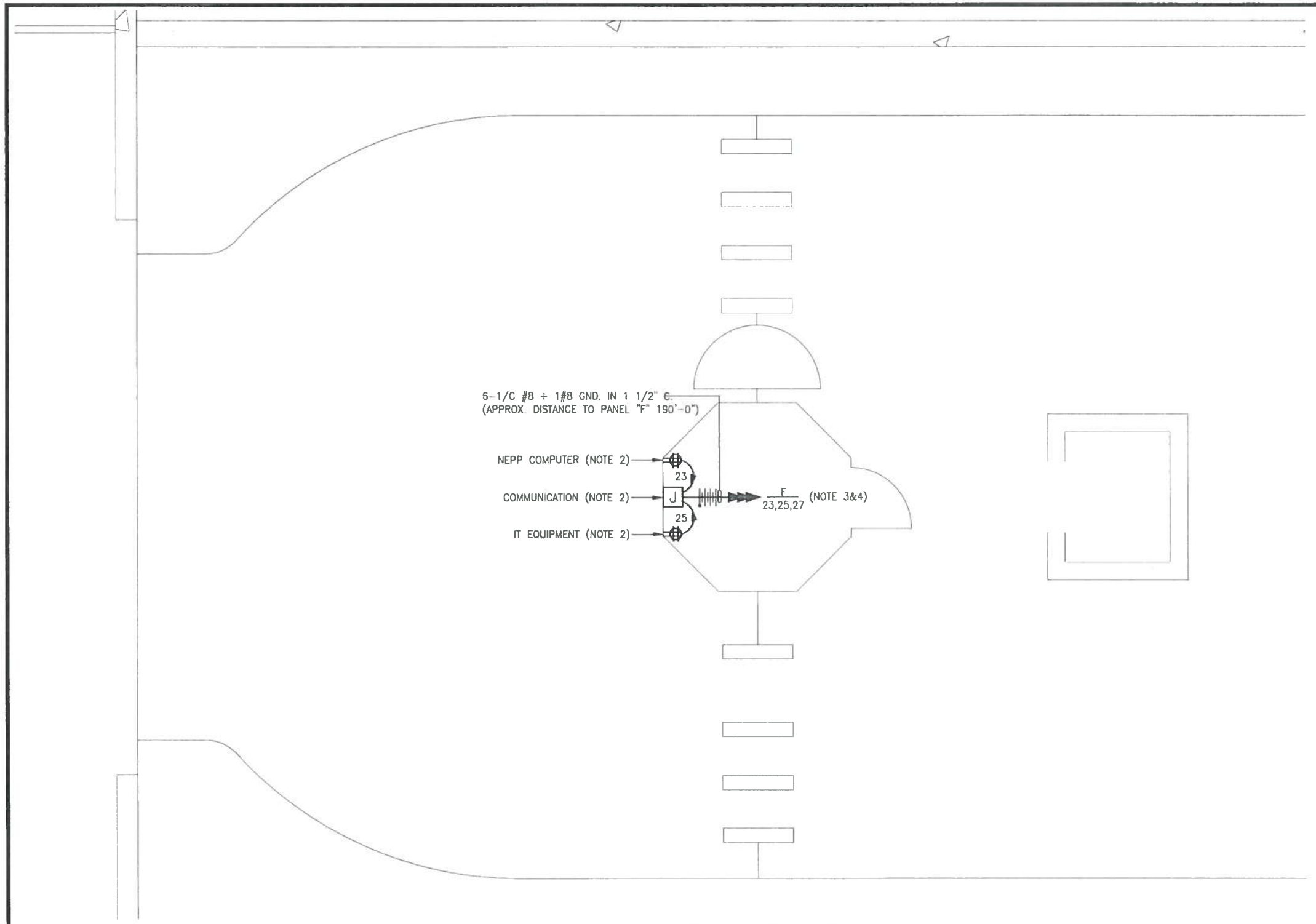
GFP A Gannett Fleming/Parsons JOINT VENTURE

SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS

ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST

SCALE	DRAWING NO.	
NOT TO SCALE	A06-E-001	



MEZZANINE KIOSK - POWER
SCALE: 3/8" = 1'- 0"

DRAWING NOTES:

1. USE EXISTING UNDER FLOOR DUCT FOR POWER WIRING. ALL OUTSIDE FLOOR DUCT WIRING SHALL BE IN CONDUIT.
2. VERIFY WITH WMATA PERSONNEL FOR LOCATION OF RECEPTACLES & JUNCTION BOXES.
3. CONNECT CIRCUIT #23 #25 & #27 TO EXISTING 20A, 1P SPARE CIRCUIT BREAKERS IN THE EXISTING PANEL "F", SEE PANEL SCHEDULE ON DWG. A06-E-102.
4. PROVIDE A ROUGHIN CIRCUIT FOR FUTURE AFC FARE GATE 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 07-14 DATE	REFERENCE DRAWINGS	REVISIONS
DRAWN C. NGO 07-14 DATE	NUMBER / DESCRIPTION	DATE / BY / DESCRIPTION
CHECKED B. IDILBI 07-14 DATE		9-22-15 / RBM / REV. 1
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
VAN NESS
MEZZANINE KIOSK - POWER

SCALE: AS SHOWN
DRAWING NO.: A06-E-101

EXISTING PANEL "F"

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

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

LOAD SUMMARY

LIGHTS	0.0 x 125%		0.0 KVA
RECEPTACLES, FIRST 10 KVA	10.0 x 100%		10.0 KVA
RECEPTACLES	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:	**10.9 KVA**		
PHASE B:	**8.1 KVA**		
PHASE C:	**7.3 KVA**		

NOTES:
A. EXISTING PANEL "F" IS FED FROM 277/480V, 3P, 4W EXISTING SWITCHBOARD "NGB" LOCATED IN BATTERY AC SWED RM. #216, CIRCUIT (A06-NGB-04) #4-125A, 3P VIA 45KVA TRANSFORMER (SEE ATTACHED DWG. MM-A-E17).

B. EXISTING WIRING FED FROM TOP OF PANEL BY:
- 3-2" C. (WIRING FILL >40%).

EXISTING WIRING FED FROM LEFT SIDE OF PANEL BY:
- 1-3" C. TO DISCONNECT SWITCH (WIRING FILL >40%).

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO 07-14 DATE
DRAWN C. NGO 07-14 DATE
CHECKED B. IDILBI 07-14 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

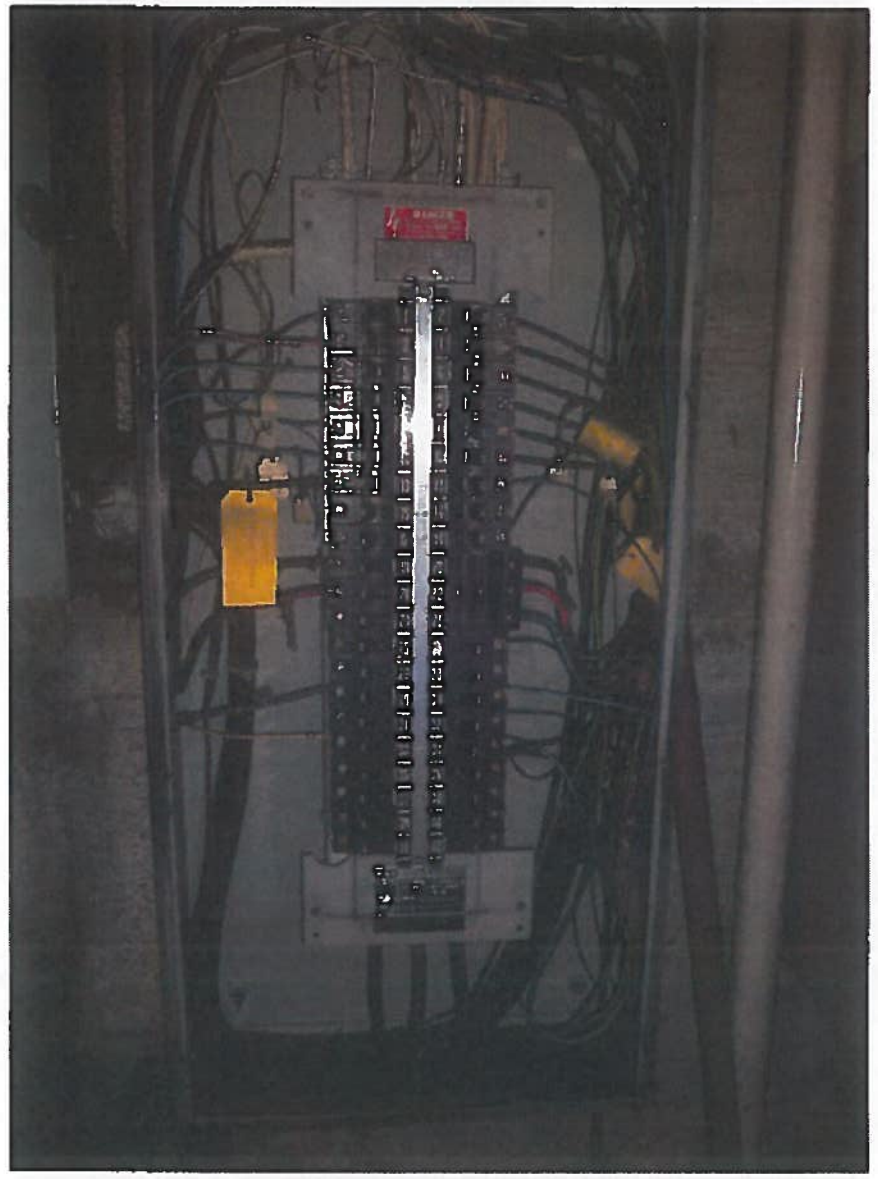
GFP A Gannett Fleming/Parsons JOINT VENTURE
SUBMITTED
PROJECT MANAGER

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

SCALE: NOT TO SCALE
DRAWING NO.: A06-E-102

EXISTING PANEL "F"

EXISTING PANEL "F"



EXISTING PANEL "F"

DESIGNED	C. NGO	07-14	DATE
DRAWN	C. NGO	07-14	DATE
CHECKED	B. IDLIB	07-14	DATE
APPROVED	N/A		DATE

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

APPROVED _____

GFP A Connetti Fleming/Parsons JOINT VENTURE

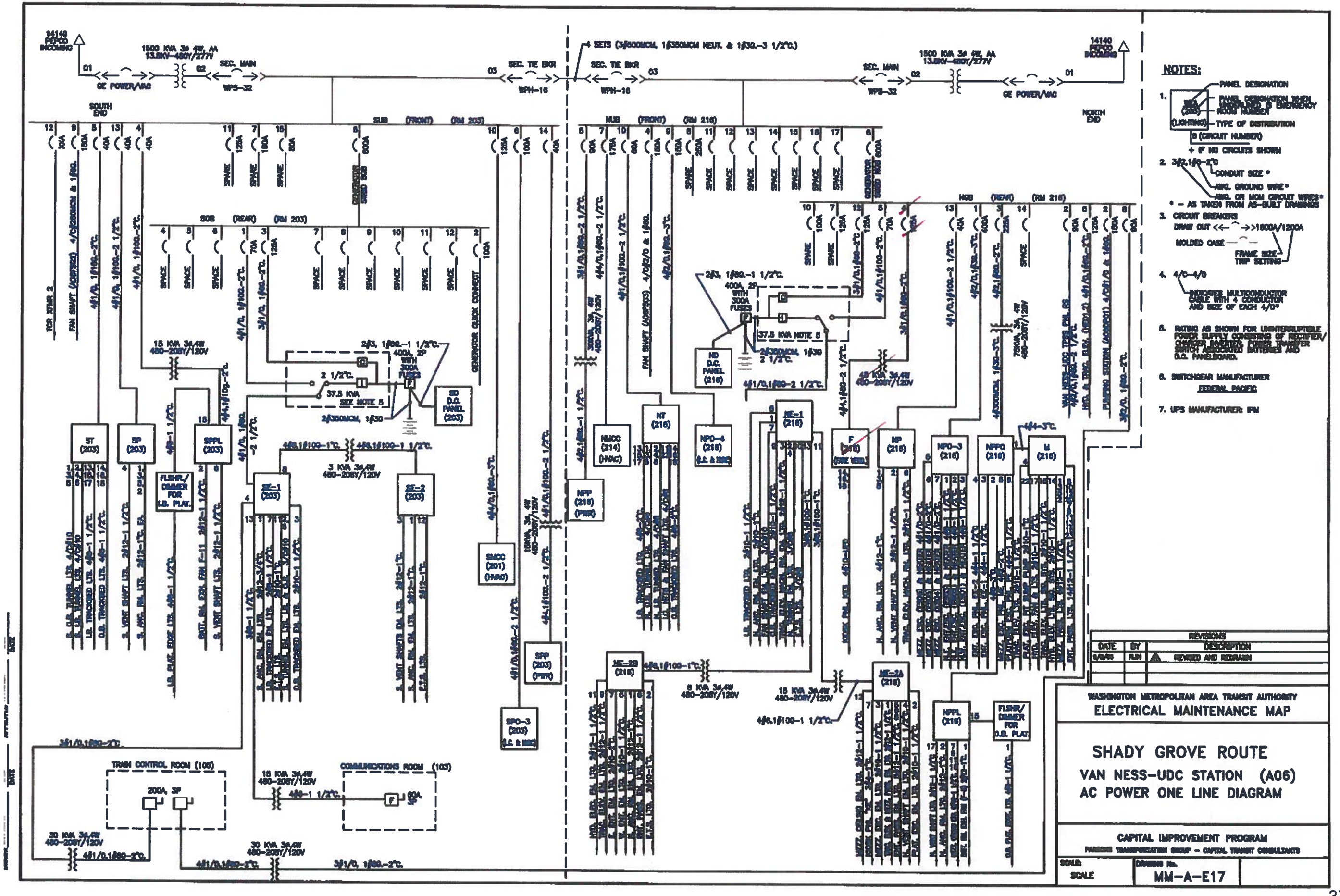
SUBMITTED _____
PROJECT MANAGER

CONTRACT NO.
14-FQ10060-CENI-24

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS

VAN NESS
PANELBOARD IMAGE

SCALE	DRAWING NO.	
NOT TO SCALE	A06-E-301	


14140 PEPCO INCOMING
1500 KVA 3ϕ 4W, AA 13.8KV-480Y/277V
01
02
03
SEC. MAIN
SEC. TIE BKR
WPS-32
WPH-16
GE POWER/VAC
4 SETS (3/#500MCM, 1/#350MCM NEUT. & 1/#2G.-3 1/2"C.)
SOUTH END
NORTH END
SUB (FRONT) (RM 203)
SUB (REAR) (RM 203)
NUB (FRONT) (RM 216)
NUB (REAR) (RM 216)
SPARE
SPACE
GENERATOR #800 SUB
GENERATOR #800 NUB
GENERATOR QUICK CONNECT
TCR XFMR 2
FAN SHAFT (ADP203)
FAN SHAFT (ADP216)
15 KVA 3ϕ/4W 480-208Y/120V
30 KVA 3ϕ/4W 480-208Y/120V
37.5 KVA 3ϕ/4W 480-208Y/120V
45 KVA 3ϕ/4W 480-208Y/120V
75KVA 3ϕ/4W 480-208Y/120V
2 1/2"C.
400A, 2P WITH 300A FUSES
SEE NOTE 5
SD D.C. PANEL (203)
ND D.C. PANEL (216)
ST (203)
SP (203)
SPPL (203)
FLSHR/ DIMMER FOR LB. PLAT.
NT (216)
NP (216)
NPO-3 (216)
NPPO (216)
M (216)
NPPL (216)
F (216)
NMCC (214) (HVAC)
NMCC (201) (HVAC)
NPP (216) (PWR)
SPP (203) (PWR)
SPO-3 (203) (L.C. & MISC)
NPO-4 (216) (L.C. & MISC)
ME-1 (216)
ME-2A (216)
ME-2B (216)
ME-1 (203)
ME-2 (203)
TRAIN CONTROL ROOM (105)
COMMUNICATIONS ROOM (103)
200A, 3P
60A, 3P
FLSHR/ DIMMER FOR D.B. PLAT.
NOTES:
1. PANEL DESIGNATION
PANEL DESIGNATION WHEN LOCATED IN EMERGENCY ROOM NUMBER
(LIGHTING) TYPE OF DISTRIBUTION
8 (CIRCUIT NUMBER)
+ IF NO CIRCUITS SHOWN
2. 3/#2.1/#6-2"C.
CONDUIT SIZE *
AWG. GROUND WIRE *
AWG. OR MCM CIRCUIT WIRES *
* - AS TAKEN FROM AS-BUILT DRAWINGS
3. CIRCUIT BREAKERS
DRAW OUT >>1600A/1200A
MOLDED CASE
FRAME SIZE
TRIP SETTING
4. 4/C-4/0
EXTERIOR MULTICONDUCTOR CABLE WITH 4 CONDUCTOR AND SIZE OF EACH 4/0*
5. RATING AS SHOWN FOR UNINTERRUPTIBLE POWER SUPPLY CONSISTING OF RECTIFIER/ CHARGER, INVERTER, POWER TRANSFER SWITCH, SEALED BATTERIES AND D.C. PANELBOARD.
6. SWITCHGEAR MANUFACTURER
FEDERAL PACIFIC
7. UPS MANUFACTURER: IPM
REVISIONS
DATE BY DESCRIPTION
6/6/89 RJH REVISED AND REDRAWN
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
ELECTRICAL MAINTENANCE MAP
SHADY GROVE ROUTE
VAN NESS-UDC STATION (A06)
AC POWER ONE LINE DIAGRAM
CAPITAL IMPROVEMENT PROGRAM
PARSONS TRANSPORTATION GROUP - CAPITAL TRANSIT CONSULTANTS
SCALE: SCALE
DRAWING No. MM-A-E17

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

DRAWING INDEX

ELECTRICAL SYMBOL LIST

- QUADRUPLEX RECEPTACLE OUTLET- 20A, 125V WALL MOUNTED.
- J — JUNCTION BOX - SURFACE MOUNTED ON UNISTRUT CHANNEL
- CONDUIT - CONCEALED IN UNDER FLOOR DUCT U.D.N.
- #10-3/4 EF 3,5 — 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	07-14 DATE
DRAWN	C. NGO	07-14 DATE
CHECKED	B. IDILBI	07-14 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 _____

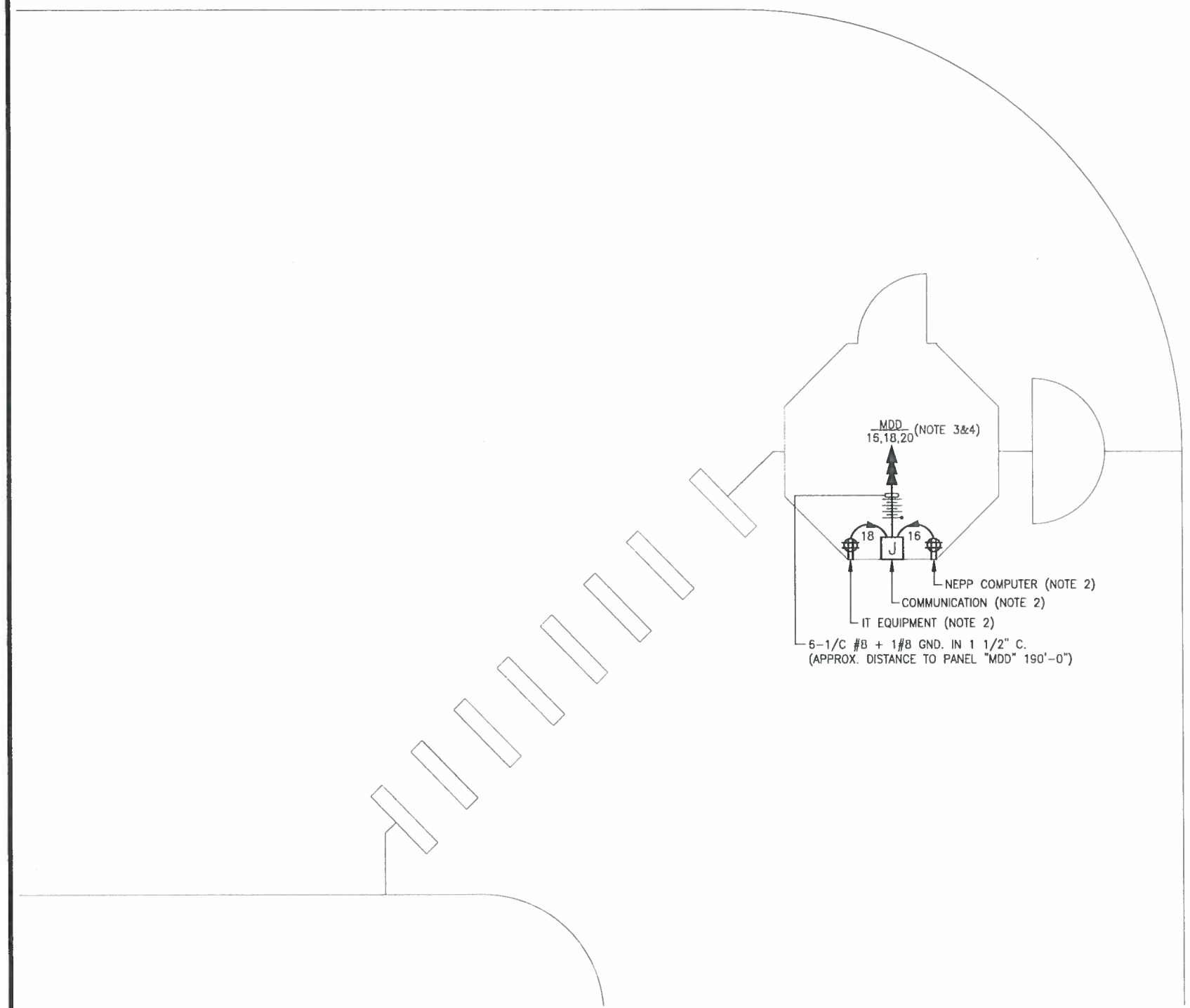
GFP A Gannett Fleming/Parsons JOINT VENTURE

SUBMITTED _____ PROJECT MANAGER

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

SCALE: NOT TO SCALE

DRAWING NO: A07-E-001



DRAWING NOTES:

1. USE EXISTING UNDER FLOOR DUCT FOR POWER WIRING. ALL OUTSIDE FLOOR DUCT WIRING SHALL BE IN CONDUIT.
2. VERIFY WITH WMATA PERSONNEL FOR LOCATION OF RECEPTACLES & JUNCTION BOXES.
3. CONNECT CIRCUIT #15 #18 & #20 TO EXISTING 20A, 1P SPARE CIRCUIT BREAKERS IN THE EXISTING PANEL "MDD", SEE PANEL SCHEDULE ON DWG. A07-E-102.
4. PROVIDE A ROUGHIN CIRCUIT FOR FUTURE AFC FARE GATE 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 07-14 DATE	REFERENCE DRAWINGS	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DRAWN C. NGO 07-14 DATE	NUMBER / DESCRIPTION	DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
CHECKED B. IDILBI 07-14 DATE	REVISIONS: DATE / BY / DESCRIPTION — 9-22-15 / RBM / REV. 1	OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
APPROVED N/A DATE		APPROVED
		GFP A Gannett Fleming/Parsons JOINT VENTURE — SUBMITTED PROJECT MANAGER

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

SCALE: AS SHOWN
DRAWING NO.: A07-E-101

EXISTING PANEL "MDD"

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

		CKT BKRS		CKT.		CKT.	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.		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	0.8	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**	**NEW KIOSK RECEPT. (IT & NEPP)**
EXISTING VENDOR	0.8	20	1	17	- - C	18	1	20	**0.8**	**NEW KIOSK RECEPT. (NEPP/SOC)**
EXISTING VENDOR	0.8	20	1	19	A - -	20	1	20	0.0	**FUTURE AFC FARE GATE**
EXISTING VENDOR	0.8	20	1	21	- B -	22	1	20	0.0	SPARE
SPARE	0.0	20	1	23	- - C	24	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	25	A - -	26	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	27	- B -	28	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	29	- - C	30	1	20	0.0	SPARE
EXISTING LOAD CENTER "KES"	2.9	40	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
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	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:	**10.1 KVA**		
PHASE B:	**8.9 KVA**		
PHASE C:	**7.3 KVA**		

NOTES:
A. EXISTING PANEL "MDD" IS FED FROM 277/480V, 3P, 4W EXISTING PANEL "MA" LOCATED IN MECHANICAL EQUIPMENT RM. C206, CIRCUIT #15–125A/3P VIA 75KVA TRANSFORMER TR–24 (SEE ATTACHED DWG. MM–A–E19).

B. EXISTING WIRING FED FROM TOP OF PANEL BY:
- 1–3/4" C. (WIRING FILL >40%).

EXISTING WIRING FED FROM LEFT SIDE OF PANEL BY:
- 1–4" C. TO TRANSFORMER (WIRING FILL >40%).
- 1–6"x 3'0" WIRE TROUGH W/1–4" C. (WIRING FILL >40%).

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO 07–14 DATE
DRAWN C. NGO 07–14 DATE
CHECKED B. IDILBI 07–14 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
TENLEYTOWN
PANEL SCHEDULE

SCALE: NOT TO SCALE
DRAWING NO: A07-E-102

EXISTING PANEL "MDD"

EXISTING PANEL "MDD"

EXISTING PANEL "MDD"

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO 07-14 DATE	REFERENCE DRAWINGS		REVISIONS		
DRAWN C. NGO 07-14 DATE	NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
CHECKED S. IDLIBI 07-14 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

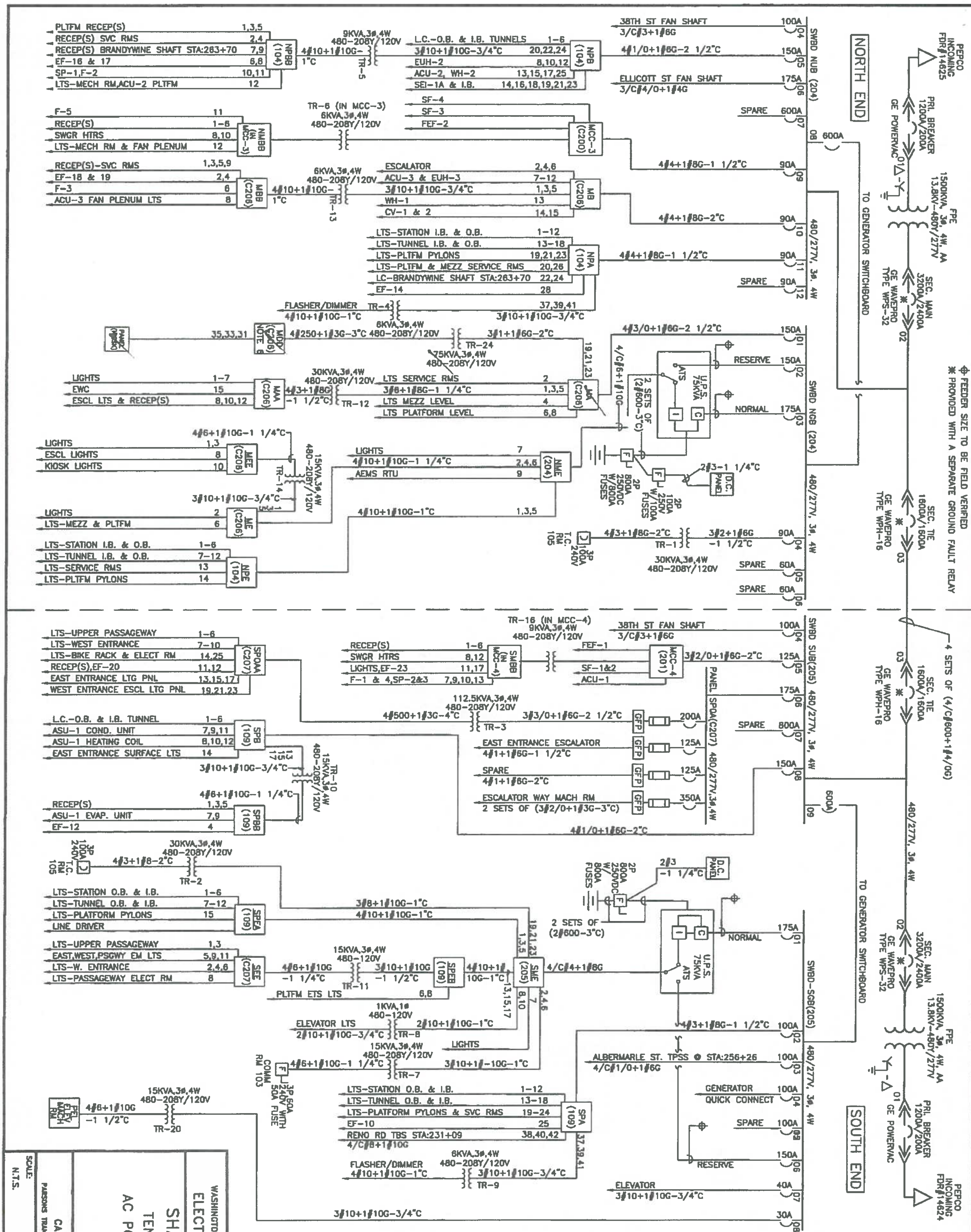
SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS

TENLEYTOWN
PANELBOARD IMAGE

SCALE: NOT TO SCALE

DRAWING NO.: A07-E-301



NOTES:

1. WEA (205) B (CIRCUIT NUMBER) — PANEL DESIGNATION; PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY; ROOM NUMBER
2. 3#2+1#6G-2"C — CONDUIT SIZE; EQUIPMENT GROUNDING; AWG OR KCMIL CIRCUIT WIRES
3. CIRCUIT BREAKERS DRAW OUT 1600A/1200A; MOLDED CASE; FRAME SIZE; CONTINUOUS CURRENT SETTING
4. 4/C-4/0 INDICATES MULTICONDUCTOR CABLE WITH 4 CONDUCTOR AND SIZE OF EACH 4/0
5. RATING AS SHOWN FOR UNINTERRUPTIBLE POWER SUPPLY CONSISTING OF RECTIFIER/CHARGER INVERTER, POWER TRANSFER SWITCH ASSOCIATED BATTERIES AND PANELBOARD.
6. PANEL FOR FARE COLLECTION EQUIPMENT.
7. ATS. -AUTOMATIC TRANSFER SWITCH; C -CHARGER; I -INVERTER
8. UPS MANUFACTURER: INTERNATIONAL POWER MACHINE
9. SWITCHGEAR MANUFACTURER: GE INDUSTRIAL SYSTEMS
10. MAIN SECONDARY & TIE POWER CIRCUIT BREAKERS ARE GE TYPE WAVEPRO WITH MICROVERSATRIP (LSI) ELECTRICALLY OPERATED & EQUIPPED WITH SEPARATE GROUND FAULT RELAYS.
11. SWITCHBOARD FEEDER CIRCUIT BREAKERS ARE GE SPECTRA RMS TYPE SKL (800AF) AND SGL (600AF) WITH MICROVERSATRIP (LSIG).
12. MOLDED CASE BREAKER NAME PLATE: A07-NUB-08 / MCC-3 / SGL600/150AS/100RP — STA.; BREAKER POSITION (NORTH UTILITY BOARD #04); FEEDER NAME; RATING PLUG; SENSOR SIZE; TYPE-FRAME SIZE

DATE	BY	DESCRIPTION
02-13-07	TN	NEW REPLACED SWGRS & SWBDS

REVISIONS

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

ELECTRICAL MAINTENANCE MAP

SHADY GROVE ROUTE
TENLEYTOWN-AU STATION
AC POWER ONE LINE DIAGRAM (A07)

CAPITAL IMPROVEMENT PROGRAM

PARSONS TRANSPORTATION GROUP - CAPITAL TRANSIT CONSULTANTS

SCALE: N.T.S.

DRAWING No. MM-A-E19

42

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.
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25. SEAL OFF ALL PENETRATIONS THRU WALLS/FLOORS.
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C	CONDUIT
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CCT	CIRCUIT
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E	ELECTRICAL
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KAIC	THOUSAND AMPERE INTERRUPTING CAPACITY
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
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P	POLE
PH	PHASE
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PRI	PRIMARY
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W	WATT
WMATA	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
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  - ↓ – 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	07-14	DATE
DRAWN	C. NGO	07-14	DATE
CHECKED	B. IDILBI	07-14	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

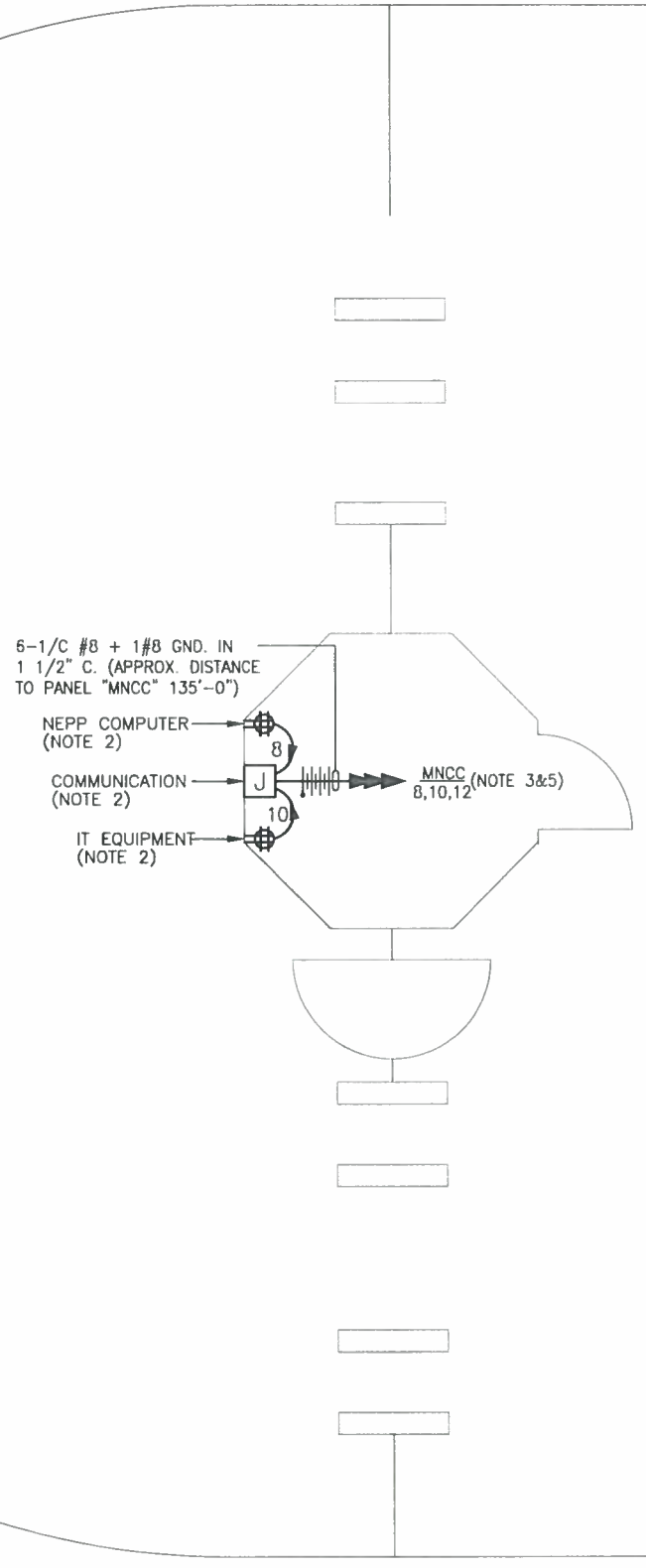
SUBMITTED
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS

ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST

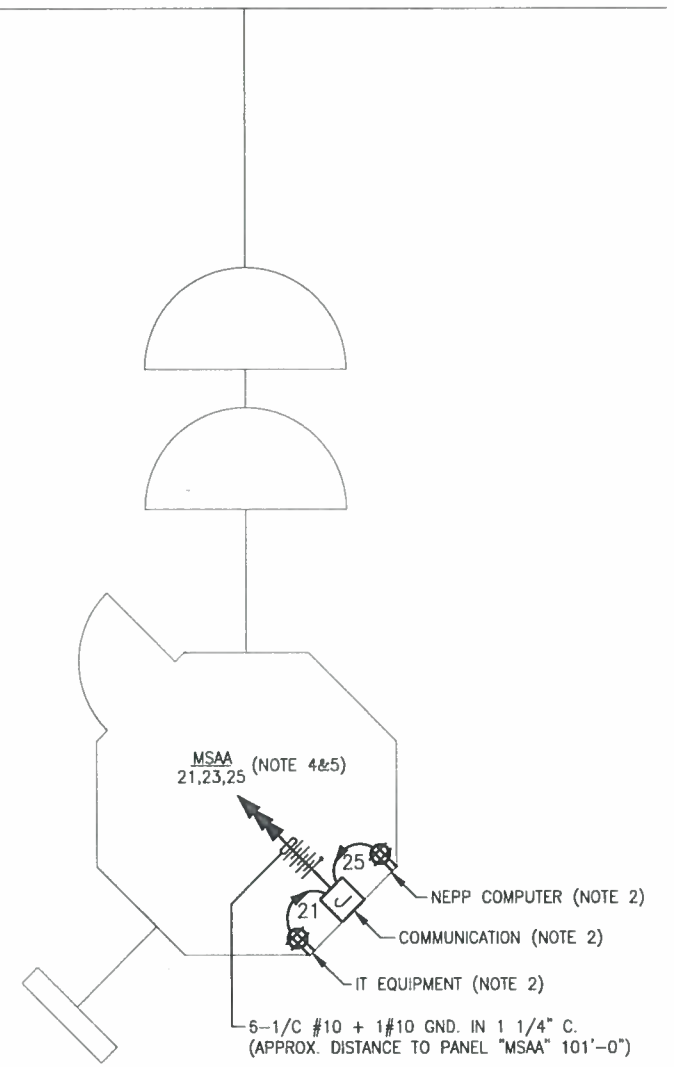
SCALE: NOT TO SCALE

DRAWING NO: A08-E-001



NORTH MEZZANINE KIOSK - POWER

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



SOUTH MEZZANINE KIOSK - POWER

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

DRAWING NOTES:

1. USE EXISTING UNDER FLOOR DUCT FOR POWER WIRING. ALL OUTSIDE FLOOR DUCT WIRING SHALL BE IN CONDUIT.
2. VERIFY WITH WMATA PERSONNEL FOR LOCATION OF RECEPTACLES & JUNCTION BOXES.
3. CONNECT CIRCUIT #8 #10 & #12 TO EXISTING 20A, 1P SPARE CIRCUIT BREAKERS IN THE EXISTING PANEL "MNCC", SEE PANEL SCHEDULE ON DWG. A08-E-102.
4. CONNECT CIRCUIT #21 #23 & #25 TO EXISTING 20A, 1P SPARE CIRCUIT BREAKERS IN THE EXISTING PANEL "MSAA", SEE PANEL SCHEDULE ON DWG. A08-E-102.
5. PROVIDE A ROUGHIN CIRCUIT FOR FUTURE AFC FARE GATE 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	07-14 DATE	
DRAWN C. NGO	07-14 DATE	
CHECKED B. IDILBI	07-14 DATE	
APPROVED N/A	DATE	

REFERENCE DRAWINGS

NUMBER	DESCRIPTION

REVISIONS

DATE	BY	DESCRIPTION
9-22-15	RBM	REV. 1

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

FRIENDSHIP HEIGHTS - NORTH & SOUTH MEZZANINE KIOSK - POWER

SCALE: AS SHOWN

DRAWING NO.: A08-E-101

EXISTING PANEL "MNCC"

AMPERES: 400	VOLTS: 120/208			MOUNTING: SURFACE						
MAINS: 300A MCB	PHASE: 3			LOCATION: ELEC. EQUIPMENT ROOM 202						
RATING: 10K AIC	WIRE: 4			SECTION: 1 OF 1						
		CKT BKRS		CKT.		CKT.	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.		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	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	5	- - C	6	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	7	A - -	8	1	20	**0.8**	**NEW KIOSK RECEPT. (IT & NCS)**
SPARE	0.0	20	1	9	- B -	10	1	20	**0.8**	**NEW KIOSK RECEPT. (NEPP/SOC)**
EXISTING VENDOR	0.8	20	1	11	- - C	12	1	20	0.0	**FUTURE AFC FARE GATE**
SPARE	0.0	20	1	13	A - -	14	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	15	- B -	16	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	17	- - C	18	1	20	0.0	EXISTING VENDOR
SPARE	0.0	20	1	19	A - -	20	1	20	2.9	SPARE
SPARE	0.0	20	1	21	- B -	22	1	20	2.5	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	23	- - C	24	1	20	2.5	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	25	A - -	26	1	20	0.0	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	27	- B -	28	1	20	0.0	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	29	- - C	30	1	20	0.0	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	0.0	SPARE
SPARE	0.0	20	1	35	- - C	36	1	20	0.0	SPARE
EXISTING LOAD CENTER "KES"	3.3	40	3	37	A - -	38	1	20	0.0	SPARE
	2.5	-	-	39	- B -	40	1	20	0.0	SPARE
	2.5	-	-	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	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	6.0 x 125%		7.5 KVA
AC	9.0 x 100%		9.0 KVA
WATER HEATING	0.0 x 125%		0.0 KVA
TOTAL CONNECTED LOAD	**30.6 KVA**	**TOTAL DEMAND KVA**	**29.3 KVA**
		TOTAL DEMAND AMPS	**81.4 AMPS**
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	**11.0 KVA**		
PHASE B:	**10.6 KVA**		
PHASE C:	**9.8 KVA**		

NOTES: A. EXISTING PANEL "MNCC" IS FED FROM 277/480V, 3ø, 4W EXISTING SWBD "NGB" LOCATED IN AC SWBD. ROOM E216, CIRCUIT (A08-NGB-01) #1-150/3P VIA 75KVA TRANSFORMER TR-16. PANEL "MNCC" IS ALSO FED FROM ATS #2 (150A). ATS #2 IS SUPPLIED FROM GENERATOR SWITCHBOARD VIA MCB #2 (SEE ATTACHED DWG. MM-B-E07).

B. EXISTING WIRING FED FROM BOTTOM OF PANEL BY:
- 1-6"x 6'0" WIRE TROUGH W/3-3" C. TO PANEL (1-3" C. TO TRANSFORMER)(2-3" C. WIRING FILL >40%).

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

EXISTING PANEL "MSAA"

AMPERES: 400	VOLTS: 120/208			MOUNTING: SURFACE						
MAINS: 300A MCB	PHASE: 3			LOCATION: AC SWBD ROOM 201						
RATING: 10K AIC	WIRE: 4			SECTION: 1 OF 1						
		CKT BKRS		CKT.		CKT.	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.		NO.	POLE	AMP	KVA	LOAD DESCRIPTION
SPARE	0.0	20	1	1	A - -	2	1	20	0.0	SPARE
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	0.0	SPARE
EXISTING VENDOR	0.8	20	1	9	- B -	10	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	11	- - C	12	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	13	A - -	14	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	15	- B -	16	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	17	- - C	18	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	19	A - -	20	3	40	2.9	EXISTING LOAD CENTER "KES"
NEW KIOSK RECEPT. (IT & NCS)	**0.8**	20	1	21	- B -	22	-	-	2.5	
NEW KIOSK RECEPT. (NEPP/SOC)	**0.8**	20	1	23	- - C	24	-	-	2.5	
FUTURE AFC FARE GATE	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	-	-	0.0	SPACE
SPARE	0.0	20	1	33	- B -	34	-	-	0.0	SPACE
SPARE	0.0	20	1	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	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:	**5.3 KVA**		
PHASE B:	**8.1 KVA**		
PHASE C:	**7.3 KVA**		

NOTES: A. EXISTING PANEL "MSAA" IS FED FROM 277/480V, 3ø, 4W EXISTING SWITCHBOARD "SGB" LOCATED IN AC SWBD. ROOM E203, CIRCUIT (A08-SGB-02) #2-150/3P VIA 75KVA TRANSFORMER (SEE ATTACHED DWG. MM-B-E07)

B. EXISTING WIRING FED FROM BOTTOM OF PANEL BY:
- 1-3" C. TO TRANSFORMER (WIRING FILL >40%).

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

CONTRACT NO. 14-FQ10060-CENI-24

DESIGNED C. NGO 07-14 DATE
DRAWN C. NGO 07-14 DATE
CHECKED B. IDLBI 07-14 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

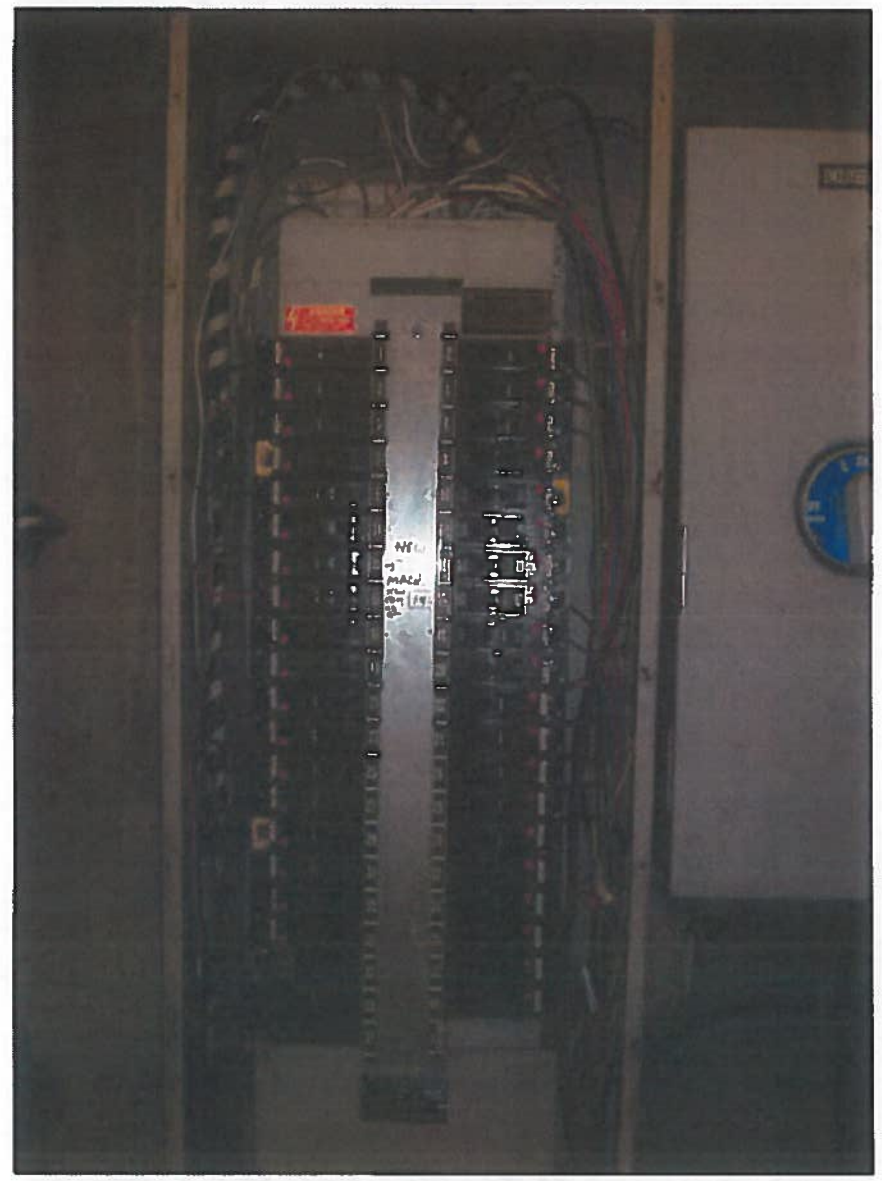
SUBMITTED PROJECT MANAGER

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

SCALE: NOT TO SCALE
DRAWING NO.: A08-E-102

EXISTING PANEL "MNCC"

EXISTING PANEL "MNCC"



EXISTING PANEL "MNCC"

CONTRACT NO.
14-FQ10060-CENI-24

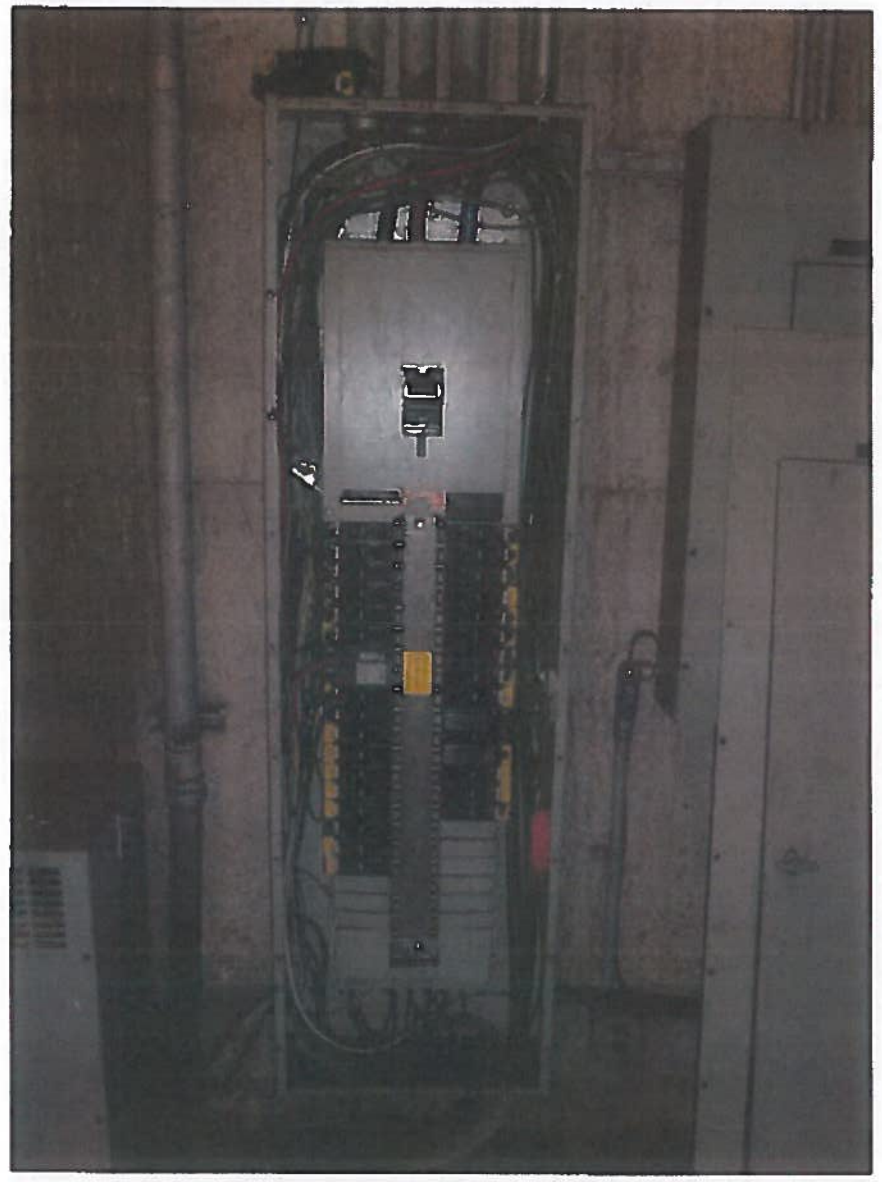
DESIGNED C. NGO 07-14 DATE	REFERENCE DRAWINGS	REVISIONS	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DRAWN C. NGO 07-14 DATE	NUMBER / DESCRIPTION	DATE / BY / DESCRIPTION	DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
CHECKED S. IDILBI 07-14 DATE			APPROVED _____
APPROVED N/A DATE			GFP A Gannett Fleming/Parsons JOINT VENTURE SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
FRIENDSHIP HEIGHTS - NORTH & SOUTH
PANELBOARD IMAGE

SCALE	DRAWING NO.	
NOT TO SCALE	A08-E-301	

EXISTING PANEL "MSAA"

EXISTING PANEL "MSAA"



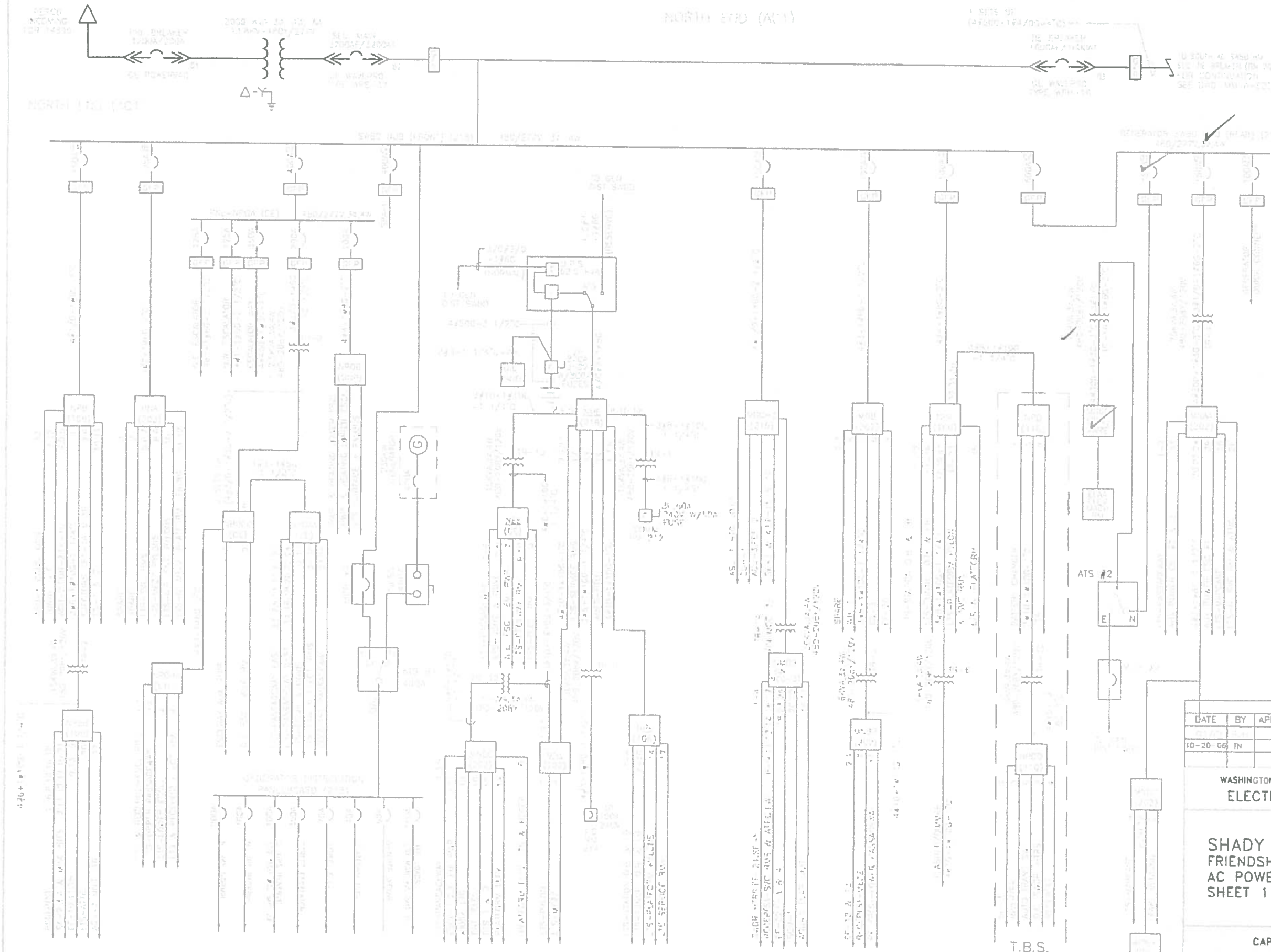
EXISTING PANEL "MSAA"

DESIGNED C. NGO 07-14 DATE	REFERENCE DRAWINGS	REVISIONS	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DRAWN C. NGO 07-14 DATE	NUMBER / DESCRIPTION	DATE / BY / DESCRIPTION	DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
CHECKED S. KOLB 07-14 DATE			APPROVED _____
APPROVED N/A DATE			GFP A Gannett Fleming/Parsons JOINT VENTURE SUBMITTED _____ PROJECT MANAGER

CONTRACT NO. 14-FQ10060-CENI-24

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
FRIENDSHIP HEIGHTS - NORTH & SOUTH
PANELBOARD IMAGE

SCALE: NOT TO SCALE | DRAWING NO.: A08-E-302



REVISIONS			
DATE	BY	APPVD	DESCRIPTION
10-20-06	TN		ADDE
			A

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

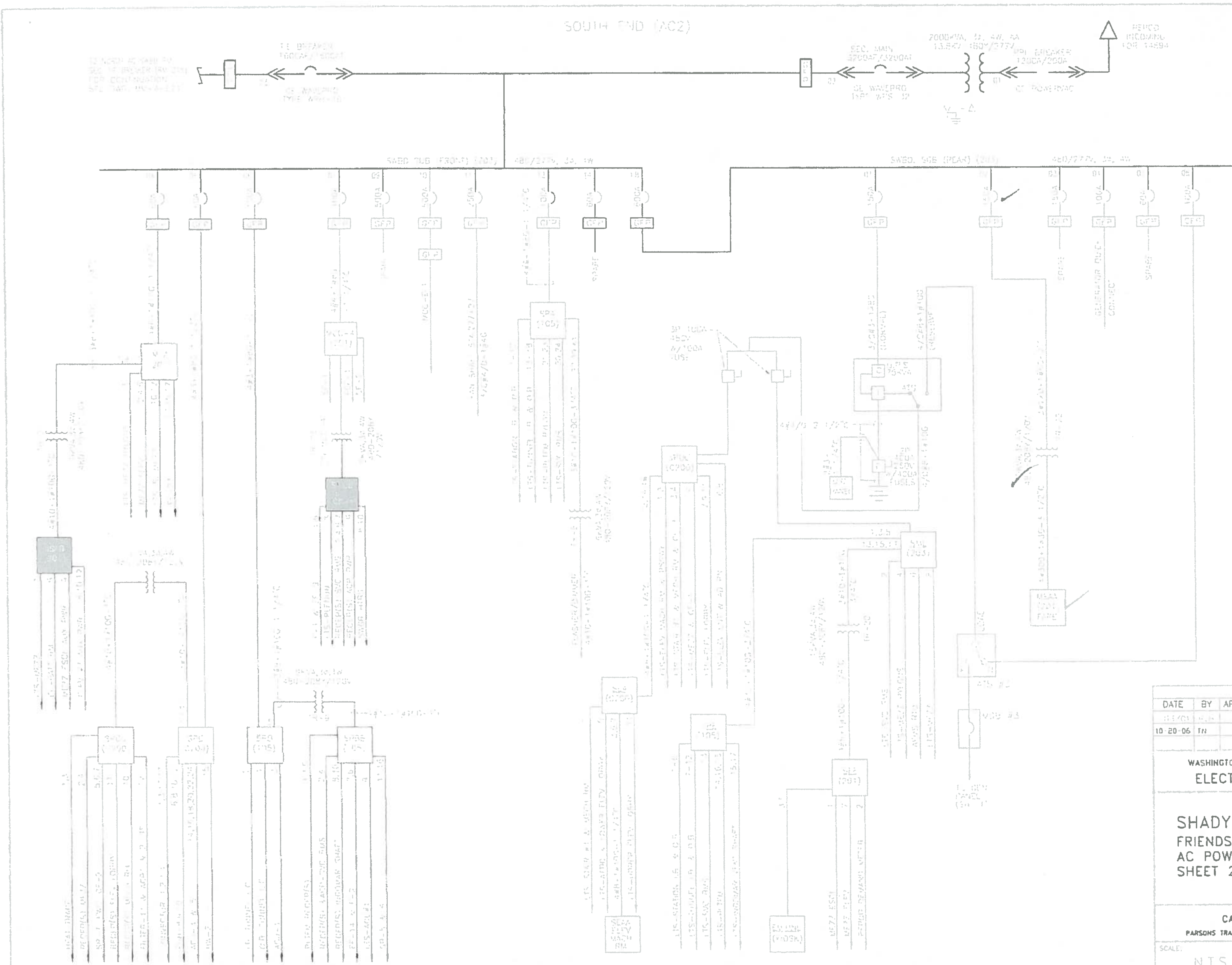
ELECTRICAL MAINTENANCE MAP

SHADY GROVE ROUTE
FRIENDSHIP HEIGHTS STATION (A08)
AC POWER ONE LINE DIAGRAM
SHEET 1 OF 2

CAPITAL IMPROVEMENT PROGRAM

PARSONS TRANSPORTATION GROUP – CAPITAL TRANSIT CONSULTANTS

SCALE	DRAWING No	
N.T.S	MM-A-E21	



DATE	BY	APRVD	DESCRIPTION
10-20-06	TN		

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

ELECTRICAL MAINTENANCE MAP

SHADY GROVE ROUTE

FRIENDSHIP HEIGHTS STATION (A08)
AC POWER ONE LINE DIAGRAM
SHEET 2 OF 2

CAPITAL IMPROVEMENT PROGRAM

PARSONS TRANSPORTATION GROUP - CAPITAL TRANSIT CONSULTANTS

SCALE: N.T.S

DRAWING No. MM-A-E22

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 SUBMISSIDN 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 OPERATIDN 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 DR 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 IDENTIFICATIDN 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
AC	ALTERNATING CURRENT
AF	AMPERE FRAME
AFC	AUTOMATED FARE COLLECTION SYSTEM
AFF	ABOVE FINISHED FLOOR
AIC	AMPERE INTERRUPTING CAPACITY
AT	AMPERE TRIP
BKR	BREAKER
C	CONDUIT
CB	CIRCUIT BREAKER
CCT	CIRCUIT
℄	CENTER LINE
CLG	CEILING
CONST	CONSTRUCTION
DISC	DISCONNECT
E	ELECTRICAL
GND	GROUND
JB	JUNCTION BOX
KAIC	THOUSAND AMPERE INTERRUPTING CAPACITY
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
NEC	NATIONAL ELECTRIC CODE
P	POLE
PH	PHASE
PNL	PANELBOARD
PRI	PRIMARY
PROP	PROPOSED
RGS	RIGID GALVANIZED STEEL
SEC	SECONDARY
SHT	SHEET
SW	SWITCH
SWBD	SWITCHBOARD
TYP	TYPICAL
U/G	UNDER GROUND
U.L.	UNDERWRITERS LABORATORIES
UON	UNLESS OTHERWISE NOTED
VOLT	VOLTAGE
W	WATT
WMATA	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
WP	WEATHERPROOF

DRAWING INDEX

ELECTRICAL SYMBOL LIST

- QUADRUPLEX RECEPTACLE OUTLET- 20A, 125V WALL MOUNTED.
- J — JUNCTION BOX - SURFACE MOUNTED ON UNISTRUT CHANNEL
- CONDUIT - CONCEALED IN UNDER FLOOR DUCT U.O.N.
- #10-3/4 EF 3,5 — 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 07-14 DATE
DRAWN C. NGO 07-14 DATE
CHECKED B. IDLBI 07-14 DATE
APPROVED N/A DATE

REFERENCE DRAWINGS

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REVISIONS

DATE	BY	DESCRIPTION

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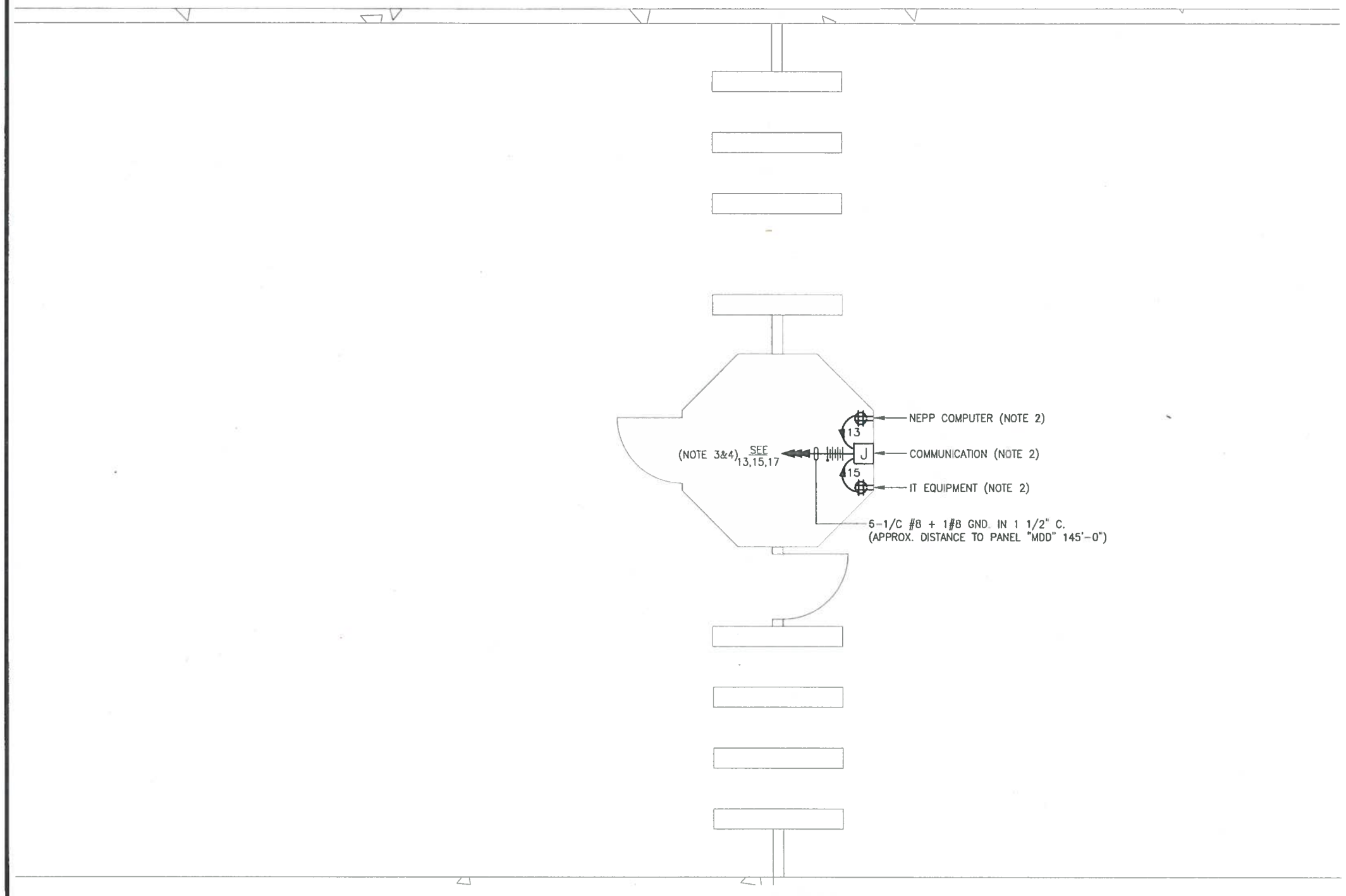
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
APPROVED

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. A11-E-001



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

DRAWING NOTES:

1. USE EXISTING UNDER FLOOR DUCT FOR POWER WIRING. ALL OUTSIDE FLOOR DUCT WIRING SHALL BE IN CONDUIT.
2. VERIFY WITH WMATA PERSONNEL FOR LOCATION OF RECEPTACLES & JUNCTION BOXES.
3. CONNECT CIRCUIT #13, #15 & #17 TO NEW 20A, 1P SPARE CIRCUIT BREAKERS PROVIDED IN THE EXISTING PANEL "SEE", SEE PANEL SCHEDULE ON DWG. A11-E-102.
4. PROVIDE A ROUGHIN CIRCUIT FOR FUTURE AFC FARE GATE 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	07-14 DATE	
DRAWN C. NGO	07-14 DATE	
CHECKED B. IDILBI	07-14 DATE	
APPROVED N/A	DATE	

REFERENCE DRAWINGS

NUMBER	DESCRIPTION

REVISIONS

DATE	BY	DESCRIPTION
9-22-15	RBM	REV. 1

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SUBMITTED PROJECT MANAGER

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

SCALE: AS SHOWN

DRAWING NO.: A11-E-101

EXISTING PANEL "SEE"

AMPERES: 50	VOLTS: 120/208	MOUNTING: SURFACE	
MAINS: 50 MCB	PHASE: 3	LOCATION: AC SWBD ROOM 107	
RATING: 10K AIC	WIRE: 4	SECTION: 1 OF 1	

		CKT BKRS		CKT.			CKT.	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.			NO	POLE	AMP	KVA	LOAD DESCRIPTION
EXISTING VENDOR	0.8	20	1	1	A	- -	2	3	50	0.0	EXISTING MAIN CB
EXISTING VENDOR	0.8	20	1	3	-	B -	4	-	-	0.0	
EXISTING VENDOR	0.8	20	1	5	-	- C	6	-	-	0.0	
EXISTING VENDOR	0.8	20	1	7	A	- -	8	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	9	-	B -	10	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	11	-	- C	12	1	20	0.8	EXISTING VENDOR
NEW KIOSK RECEPT. (IT & NCS)	**0.8**	**20**	**1**	13	A	- -	14	1	20	0.8	EXISTING VENDOR
NEW KIOSK RECEPT. (NEPP/SOC)	**0.8**	**20**	**1**	15	-	B -	16	1	20	0.8	EXISTING VENDOR
FUTURE AFC FARE GATE	0.0	20	1	17	-	- C	18	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	19	A	- -	20	1	20	0.8	EXISTING VENDOR
SPACE	0.0	-	-	21	-	B -	22	1	20	0.8	EXISTING VENDOR
SPACE	0.0	-	-	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	0.8	EXISTING VENDOR
SPARE	**0.0**	20	1	29	-	- C	30	1	20	**0.0**	**SPARE**

LOAD SUMMARY

LIGHTS	0.0 x 125%		0.0 KVA
RECEPTACLES, FIRST 10 KVA	10.0 x 100%		10.0 KVA
RECEPTACLES	6.0 x 50%		3.0 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	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	**16.0 KVA**	**TOTAL DEMAND KVA**	**13.0 KVA**
		TOTAL DEMAND AMPS	**36.1 AMPS**
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	7.2 KVA		
PHASE B:	6.4 KVA		
PHASE C:	3.2 KVA		

NOTES:
A. EXISTING PANEL "SEE" IS FED FROM 277/480V, 3ø, 4W EXISTING PANEL "SE" LOCATED IN AC SWBD. RM. 107, CIRCUIT #1–30A/3P VIA 15KVA TRANSFORMER (SEE ATTACHED DWG. MM–A–E29).

B. EXISTING WIRING FED FROM BOTTOM OF PANEL BY:
- 10–3/4" C. (WIRING FILL >40%).

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

EXISTING WIRING FED FROM RIGHT SIDE OF PANEL BY:
- 1– 1" C. (WIRING FILL >30%).

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO 07-14 DATE
DRAWN C. NGO 07-14 DATE
CHECKED B. IDILBI 07-14 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

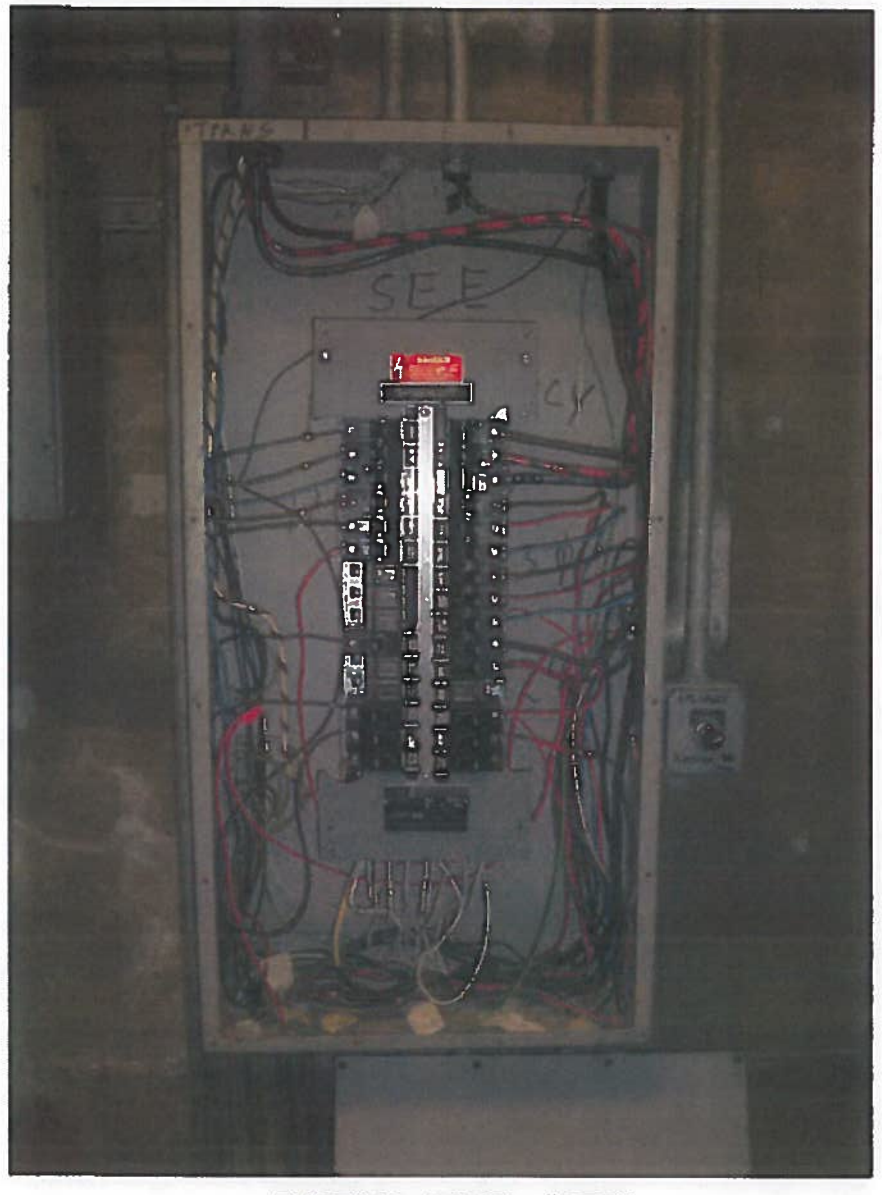
GFP A Gannett Fleming/Parsons JOINT VENTURE
SUBMITTED
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
GROSVENOR-STRATHMORE
PANEL SCHEDULE

SCALE: NOT TO SCALE
DRAWING NO.: A11-E-102

EXISTING PANEL "SEE"

EXISTING PANEL "SEE"



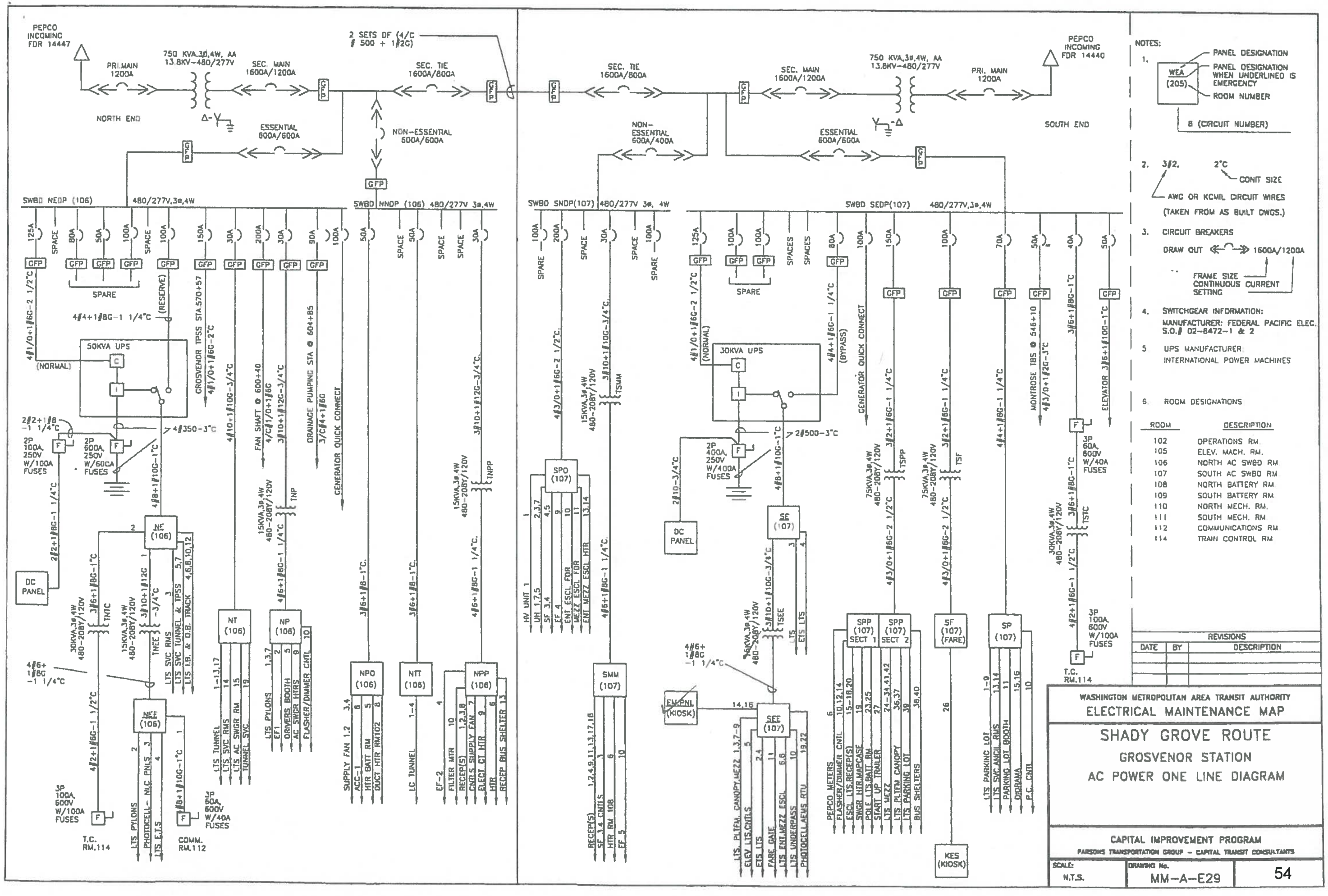
EXISTING PANEL "SEE"

DESIGNED C. NGO 07-14 DATE	REFERENCE DRAWINGS	REVISIONS	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DRAWN C. NGO 07-14 DATE	NUMBER / DESCRIPTION	DATE / BY / DESCRIPTION	DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
CHECKED B. IDILBI 07-14 DATE			APPROVED _____
APPROVED N/A DATE			GFP A Connell Fleming/Parsons JOINT VENTURE SUBMITTED _____ PROJECT MANAGER

CONTRACT NO. 14-FQ10060-CENI-24

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
GROSVENOR-STRATHMORE
PANELBOARD IMAGE

SCALE: NOT TO SCALE | DRAWING NO.: A11-E-301



NOTES:

1. WEA (205) B (CIRCUIT NUMBER)
   - WEA — PANEL DESIGNATION
   - WEA — PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY
   - 205 — ROOM NUMBER
2. 3#2, 2"C
   - 2"C — CONIT SIZE
   - 3#2, — AWG OR KCMIL CIRCUIT WIRES (TAKEN FROM AS BUILT DWGS.)
3. CIRCUIT BREAKERS
   DRAW OUT ⇐⇒ 1600A/1200A
   - 1600A/1200A — FRAME SIZE CONTINUOUS CURRENT SETTING
4. SWITCHGEAR INFORMATION:
   MANUFACTURER: FEDERAL PACIFIC ELEC.
   S.O.# 02-8472-1 & 2
5. UPS MANUFACTURER
   INTERNATIONAL POWER MACHINES
6. ROOM DESIGNATIONS

ROOM	DESCRIPTION
102	OPERATIONS RM.
105	ELEV. MACH. RM.
106	NORTH AC SWBD RM
107	SOUTH AC SWBD RM
108	NORTH BATTERY RM.
109	SOUTH BATTERY RM
110	NORTH MECH. RM.
111	SOUTH MECH. RM
112	COMMUNICATIONS RM
114	TRAIN CONTROL RM

REVISIONS		
DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

ELECTRICAL MAINTENANCE MAP

SHADY GROVE ROUTE

GROSVENOR STATION

AC POWER ONE LINE DIAGRAM

CAPITAL IMPROVEMENT PROGRAM

PARSONS TRANSPORTATION GROUP – CAPITAL TRANSIT CONSULTANTS

SCALE:	DRAWING No.	
N.T.S.	MM-A-E29	54

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
AC	ALTERNATING CURRENT
AF	AMPERE FRAME
AFC	AUTOMATED FARE COLLECTION SYSTEM
AFF	ABOVE FINISHED FLOOR
AIC	AMPERE INTERRUPTING CAPACITY
AT	AMPERE TRIP
BKR	BREAKER
C	CONDUIT
CB	CIRCUIT BREAKER
CCT	CIRCUIT
℄	CENTER LINE
CLG	CEILING
CONST	CONSTRUCTION
DISC	DISCONNECT
E	ELECTRICAL
GND	GROUND
JB	JUNCTION BOX
KAIC	THOUSAND AMPERE INTERRUPTING CAPACITY
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
NEC	NATIONAL ELECTRIC CODE
P	POLE
PH	PHASE
PNL	PANELBOARD
PRI	PRIMARY
PROP	PROPOSED
RGS	RIGID GALVANIZED STEEL
SEC	SECONDARY
SHT	SHEET
SW	SWITCH
SWBD	SWITCHBOARD
TYP	TYPICAL
U/G	UNDER GROUND
U.L.	UNDERWRITERS LABORATORIES
UON	UNLESS OTHERWISE NOTED
VOLT	VOLTAGE
W	WATT
WMATA	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
WP	WEATHERPRODF

DRAWING INDEX

ELECTRICAL SYMBOL LIST

- QUADRUPLEX RECEPTACLE OUTLET– 20A, 125V WALL MOUNTED.
- [J] JUNCTION BOX – SURFACE MOUNTED ON UNISTRUT CHANNEL
- CONDUIT – CONCEALED IN UNDER FLOOR DUCT U.O.N.
- #10-3/4 / EE 3,5 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	07-14	DATE
DRAWN	C. NGO	07-14	DATE
CHECKED	B. IDILBI	07-14	DATE
APPROVED	N/A		DATE

REFERENCE DRAWINGS

NUMBER	DESCRIPTION

REVISIONS

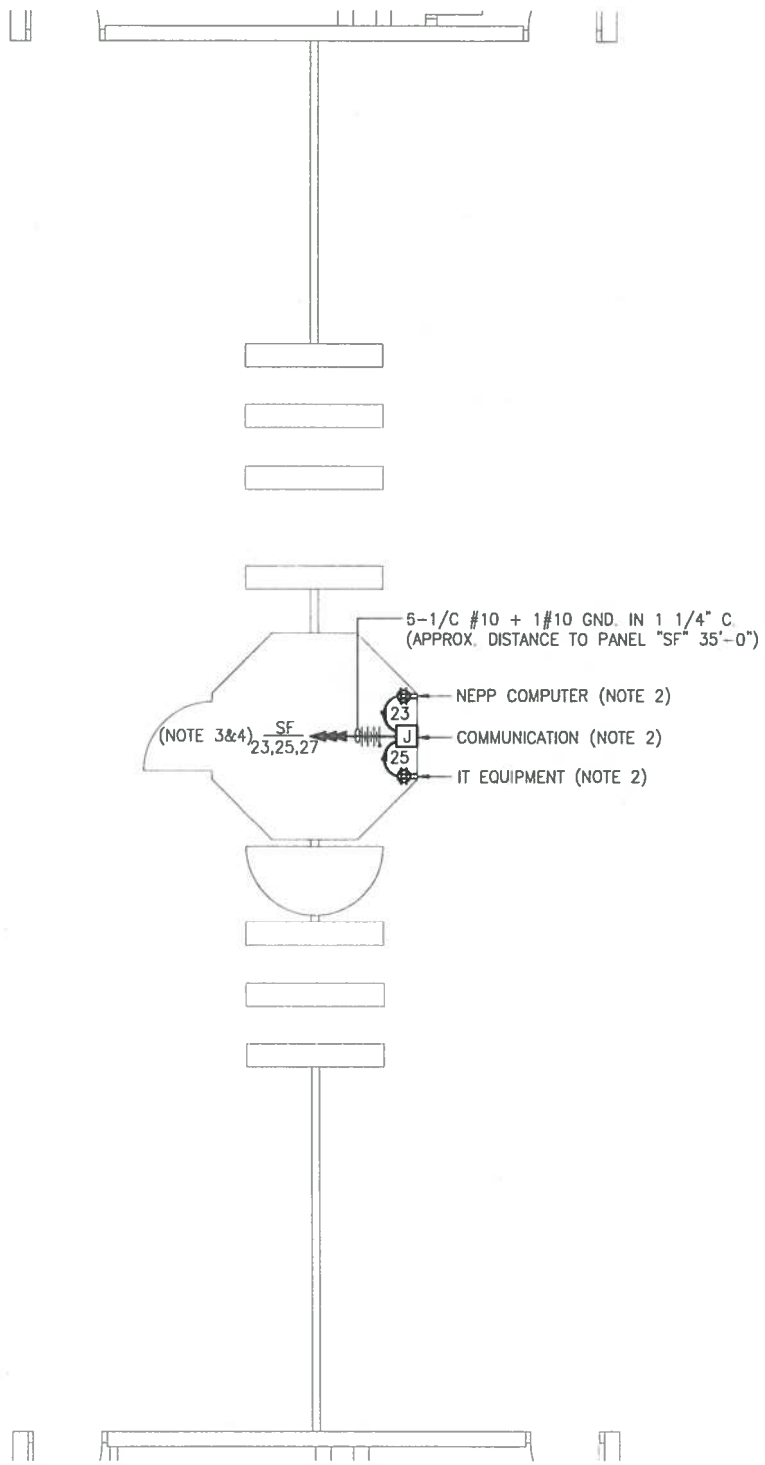
DATE	BY	DESCRIPTION

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: A12-E-001



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

DRAWING NOTES:

1. USE EXISTING UNDER FLOOR DUCT FOR POWER WIRING. ALL OUTSIDE FLOOR DUCT WIRING SHALL BE IN CONDUIT.
2. VERIFY WITH WMATA PERSONNEL FOR LOCATION OF RECEPTACLES & JUNCTION BOXES.
3. CONNECT CIRCUIT #23, #25 & #27 TO EXISTING 20A, 1P SPARE CIRCUIT BREAKERS IN THE EXISTING PANEL "SF", SEE PANEL SCHEDULE ON DWG. A12-E-1D2.
4. PROVIDE A ROUGHIN CIRCUIT FAR FUTURE AFC FARE GATE 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 07-14 DATE	REFERENCE DRAWINGS: NUMBER / DESCRIPTION	REVISIONS: DATE / BY / DESCRIPTION
DRAWN C. NGO 07-14 DATE		9-22-15 / RBM / REV. 1
CHECKED B. IDILBI 07-14 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
WHITE FLINT
KIOSK - POWER

SCALE: AS SHOWN
DRAWING NO.: A12-E-101

EXISTING PANEL "SF"

AMPERES: 225	VOLTS: 120/208	MOUNTING: SURFACE	
MAINS: 200A	PHASE: 3	LOCATION: ROOM 211	
RATING: 10K AIC	WIRE: 4	SECTION: 1 OF 1	

		CKT BKRS		CKT.		CKT.	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.		NO.	POLE	AMP	KVA	LOAD DESCRIPTION
EXISTING VENDOR	0.8	20	1	1	A - -	2	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	3	- B -	4	1	20	0.8	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	0.0	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	0.0	SPARE
NEW KIOSK RECEPT. (IT & NCS)	**0.8**	20	1	23	- - C	24	1	20	0.0	SPARE
NEW KIOSK RECEPT. (NEPP/SOC)	**0.8**	20	1	25	A - -	26	1	20	0.0	SPARE
FUTURE AFC FARE GATE	**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	0.0	SPARE
SPARE	0.0	20	1	37	A - -	38	3	40	2.9	EXIST. KIOSK LOAD CENTER "KES"
EXISTING VENDOR	0.8	20	1	39	- B -	40	-	-	2.5	
SPARE	0.0	20	1	41	- - C	42	-	-	2.5	

LOAD SUMMARY

LIGHTS	0.0 x 125%		0.0 KVA
RECEPTACLES, FIRST 10 KVA	10.0 x 100%		10.0 KVA
RECEPTACLES	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:	**9.3 KVA**		
PHASE B:	**8.1 KVA**		
PHASE C:	**7.3 KVA**		

NOTES: A. EXISTING PANEL "SF" IS FED FROM 277/480V, 3ø, 4W "S. SWBD ESSENTIAL" LOCATED IN AC SWBD ROOM 107 CIRCUIT #6-125/3P VIA 75KVA TRANSFORMER ST-4 THRU DISCONNECT SWITCH SF-PANEL-MEZZ (SEE ATTACHED DWG. MM-A-E31).

B. EXISTING WIRING FED FROM BOTTOM OF PANEL BY:
- 2-6 1/2"x 1 1/2" FLOOR DUCT (1-WIRING FILL >20%)(1-WIRING FILL>40%).

EXISTING WIRING FED FROM TOP OF PANEL BY:
- 1-6"x 24" WIRE TROUGH TO TRANSFORMER (WIRING FILL >30%).

EXISTING WIRING FED FROM LEFT SIDE OF PANEL BY:
- 1-3/4" C. (WIRING FILL >40%).

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO 07-14 DATE
DRAWN C. NGO 07-14 DATE
CHECKED B. IDILBI 07-14 DATE
APPROVED N/A DATE

REFERENCE DRAWINGS	
NUMBER	DESCRIPTION

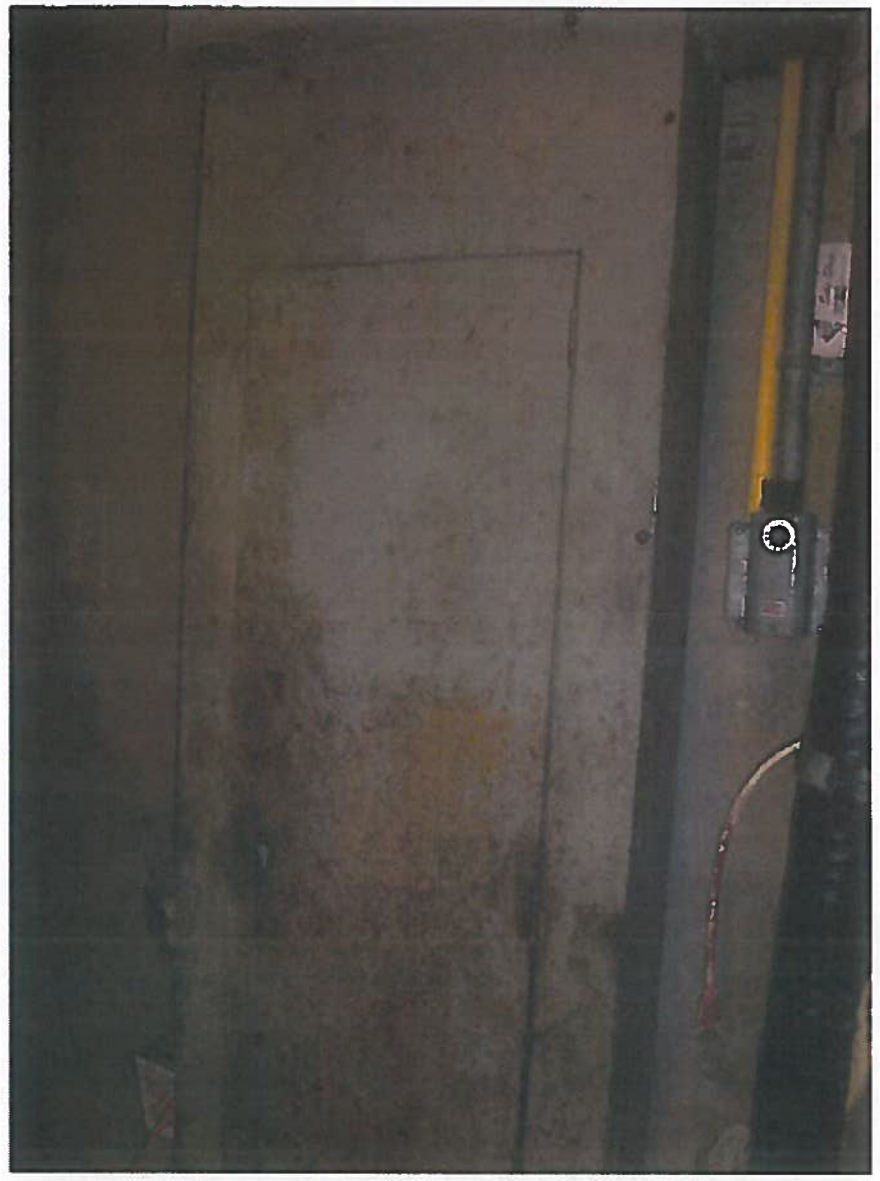
REVISIONS		
DATE	BY	DESCRIPTION

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
WHITE FLINT
PANEL SCHEDULE

SCALE: NOT TO SCALE
DRAWING NO.: A12-E-102



EXISTING PANEL "SF"

EXISTING PANEL "SF"

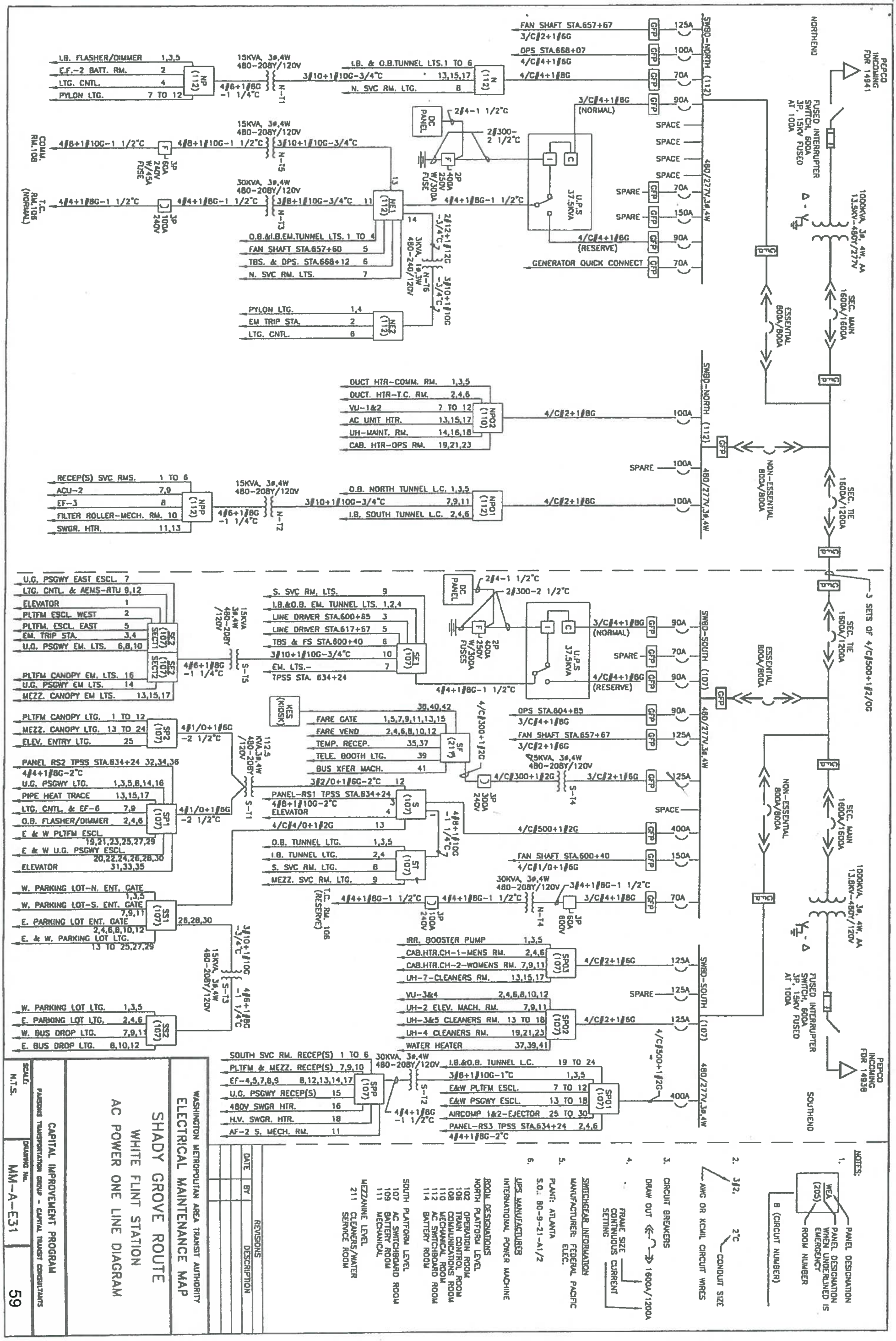
EXISTING PANEL "SF"

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO 07-14 DATE	REFERENCE DRAWINGS	REVISIONS	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DRAWN C. NGO 07-14 DATE	NUMBER / DESCRIPTION	DATE / BY / DESCRIPTION	DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
CHECKED B. IDILBI 07-14 DATE			APPROVED _____
APPROVED N/A DATE			GFP A Gannett Fleming/Parsons JOINT VENTURE SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
WHITE FLINT
PANELBOARD IMAGE

SCALE: NOT TO SCALE
DRAWING NO.: A12-E-301


PEPCO INCOMING FDR 14941
NORTHEND
FUSED INTERRUPTER SWITCH, 600A 3P, 15KV FUSED AT 100A
1000KVA, 3ø, 4W, AA 13.5KV-480Y/277V
SEC. MAIN 1600A/1600A
SEC. TIE 1600A/1200A
ESSENTIAL 800A/800A
NON-ESSENTIAL 800A/800A
SWBD-NORTH (112)
480/277V,3ø,4W
FAN SHAFT STA.657+67 3/C#2+1#6G 125A
OPS STA.668+07 4/C#4+1#6G 100A
4/C#4+1#8G 70A
3/C#4+1#8G (NORMAL) 90A
SPACE
SPACE
SPACE
SPACE
SPARE 70A
SPARE 150A
4/C#4+1#8G (RESERVE) 90A
GENERATOR QUICK CONNECT 70A
U.P.S 37.5KVA
DC PANEL
2#4-1 1/2"C
2#300-2 1/2"C
2P 400A 250V W/300A FUSES
I.B. FLASHER/DIMMER 1,3,5
E.F.-2 BATT. RM. 2
LTG. CNTL. 4
PYLON LTG. 7 TO 12
NP (112)
15KVA, 3ø,4W 480-208Y/120V
4#6+1#8G -1 1/4"C
N-T1
I.B. & O.B.TUNNEL LTS.1 TO 6 13,15,17
N. SVC RM. LTG. 8
3#10+1#10G-3/4"C
N (112)
COMM. RM.108
4#8+1#10G-1 1/2"C
3P 60A 240V W/45A FUSE
15KVA, 3ø,4W 480-208Y/120V
N-T5
T.C. RM.106 (NORMAL)
4#4+1#8G-1 1/2"C
J 3P 100A 240V
30KVA, 3ø,4W 480-208Y/120V
N-T3
NE1 (112)
13
14
O.B.&I.B.EM.TUNNEL LTS. 1 TO 4 5
FAN SHAFT STA.657+60 6
TBS. & DPS. STA.668+12 7
N. SVC RM. LTS.
2#12+1#12G -3/4"C
3KVA, 1ø,3W 480-240/120V
N-T6
3#10+1#10G -3/4"C
PYLON LTG. 1,4
EM TRIP STA. 2
LTG. CNTL. 6
NE2 (112)
DUCT HTR-COMM. RM. 1,3,5
DUCT. HTR-T.C. RM. 2,4,6
VU-1&2 7 TO 12
AC UNIT HTR. 13,15,17
UH-MAINT. RM. 14,16,18
CAB. HTR-OPS RM. 19,21,23
NPO2 (110)
4/C#2+1#8G 100A
RECEP(S) SVC RMS. 1 TO 6
ACU-2 7,9
EF-3 8
FILTER ROLLER-MECH. RM. 10
SWGR. HTR. 11,13
NPP (112)
15KVA, 3ø,4W 480-208Y/120V
4#6+1#8G -1 1/4"C
N-T2
O.B. NORTH TUNNEL L.C. 1,3,5 7,9,11
I.B. SOUTH TUNNEL L.C. 2,4,6
NPO1 (112)
4/C#2+1#8G 100A
SPARE 100A
U.G. PSGWY EAST ESCL. 7
LTG. CNTL. & AEMS-RTU 9,12
ELEVATOR 1
PLTFM ESCL. WEST 2
PLTFM. ESCL. EAST 5
EM. TRIP STA. 3,4
U.G. PSGWY EM. LTS. 6,8,10
PLTFM CANOPY EM. LTS. 16
U.G. PSGWY EM LTS. 14
MEZZ. CANOPY EM LTS. 13,15,17
SE2 (107) SECT1
SE2 (107) SECT2
15KVA 3ø,4W 480-208Y /120V
4#6+1#8G -1 1/4"C
S-T5
S. SVC RM. LTS. 9
I.B.&O.B. EM. TUNNEL LTS. 1,2,4
LINE DRIVER STA.600+85 3
LINE DRIVER STA.617+67 5
TBS & FS STA.600+40 6
3#10+1#10G-3/4"C 10
EM. LTS.- 7
TPSS STA. 634+24
SE1 (107)
2#4-1 1/2"C
2#300-2 1/2"C
DC PANEL
2P 400A 250V W/300A FUSES
U.P.S 37.5KVA
3/C#4+1#8G (NORMAL) 90A
SPARE 70A
4/C#4+1#8G (RESERVE) 90A
4#4+1#8G-1 1/2"C
SWBD-SOUTH (107)
480/277V,3ø,4W
ESSENTIAL 800A/800A
NON-ESSENTIAL 800A/800A
SEC. TIE 1600A/1200A
SEC. MAIN 1600A/1600A
3 SETS OF 4/C#500+1#2/0G
1000KVA, 3ø, 4W, AA 13.8KV-480Y/120V
FUSED INTERRUPTER SWITCH, 600A 3P, 15KV FUSED AT 100A
SOUTHEND
PEPCO INCOMING FDR 14938
PLTFM CANOPY LTG. 1 TO 12
MEZZ. CANOPY LTG. 13 TO 24
ELEV. ENTRY LTG. 25
SP2 (107)
4#1/0+1#6G -2 1/2"C
PANEL RS2 TPSS STA.634+24 32,34,36
4#4+1#8G-2"C
U.G. PSGWY LTG. 1,3,5,8,14,16
PIPE HEAT TRACE 13,15,17
LTG. CNTL. & EF-6 7,9
O.B. FLASHER/DIMMER 2,4,6
E & W PLTFM ESCL. 19,21,23,25,27,29
E & W U.G. PSGWY ESCL. 20,22,24,26,28,30
ELEVATOR 31,33,35
SP1 (107)
4#1/0+1#6G -2 1/2"C
112.5 KVA,3ø,4W 480-208Y /120V
S-T1
KES (KIOSK)
38,40,42
FARE GATE 1,5,7,9,11,13,15
FARE VEND 2,4,6,8,10,12
TEMP. RECEP. 35,37
TELE. BOOTH LTG. 39
BUS XFER MACH. 41
SF (217)
4/C#300+1#2G
3#2/0+1#6G-2"C 12
PANEL-RS1 TPSS STA.634+24 1
4#8+1#10G-2"C
ELEVATOR 4
4/C#4/0+1#2G 13
S (107)
4#8+1#10G -1 1/4"C
O.B. TUNNEL LTG. 1,3,5
I.B. TUNNEL LTG. 2,4
S. SVC RM. LTG. 8
MEZZ. SVC RM. LTG. 9
ST (107)
T.C. RM. 106 (RESERVE)
4#4+1#8G-1 1/2"C
J 3P 100A 240V
30KVA, 3ø,4W 480-208Y/120V
N-T4
3#4+1#8G-1 1/2"C
J 3P 60A 600V
3/C#4+1#8G 70A
OPS STA.604+85 3/C#4+1#8G 90A
FAN SHAFT STA.657+67 3/C#2+1#6G 125A
75KVA, 3ø,4W 480-208Y/120V
4/C#300+1#2G
3/C#2+1#6G 125A
S-T4
J 3P 300A 240V
SPACE
4/C#500+1#2G 400A
FAN SHAFT STA.600+40 4/C#1/0+1#6G 150A
IRR. BOOSTER PUMP 1,3,5
CAB.HTR.CH-1-MENS RM. 2,4,6
CAB.HTR.CH-2-WOMENS RM. 7,9,11
UH-7-CLEANERS RM. 13,15,17
SPO3 (107)
4/C#2+1#6G 125A
VU-3&4 2,4,6,8,10,12
UH-2 ELEV. MACH. RM. 7,9,11
UH-3&5 CLEANERS RM. 13 TO 18
UH-4 CLEANERS RM. 19,21,23
WATER HEATER 37,39,41
SPO2 (107)
4/C#2+1#6G 125A
SPARE 125A
4/C#500+1#2G
400A
SOUTH SVC RM. RECEP(S) 1 TO 6
PLTFM & MEZZ. RECEP(S) 7,9,10
EF-4,5,7,8,9 8,12,13,14,17
U.G. PSGWY RECEP(S) 15
480V SWGR HTR. 16
H.V. SWGR. HTR. 18
AF-2 S. MECH. RM. 11
SPP (107)
30KVA, 3ø,4W 480-208Y/120V
S-T2
4#4+1#8G -1 1/2"C
I.B.&O.B. TUNNEL L.C. 19 TO 24
3#8+1#10G-1"C 1,3,5
E&W PLTFM ESCL. 7 TO 12
E&W PSGWY ESCL. 13 TO 18
AIRCOMP 1&2-EJECTOR 25 TO 30
PANEL-RSJ TPSS STA.634+24 2,4,6
4#4+1#8G-2"C
SPO1 (107)
W. PARKING LOT-N. ENT. GATE 1,3,5
W. PARKING LOT-S. ENT. GATE 7,9,11
E. PARKING LOT ENT. GATE 2,4,6,8,10,12
E. & W. PARKING LOT LTG. 13 TO 25,27,29
SS1 (107)
26,28,30
3#10+1#10G -3/4"C
15KVA, 3ø,4W 480-208Y/120V
S-T3
4#6+1#8G -1 1/4"C
W. PARKING LOT LTG. 1,3,5
E. PARKING LOT LTG. 2,4,6
W. BUS DROP LTG. 7,9,11
E. BUS DROP LTG. 8,10,12
SS2 (107)
NOTES:
1. PANEL DESIGNATION
WEA (205)
PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY
ROOM NUMBER
8 (CIRCUIT NUMBER)
2. 3/2: 2"C
CONDUIT SIZE
AWG OR KCMIL CIRCUIT WIRES
3. CIRCUIT BREAKERS
DRAW OUT 1600A/1200A
FRAME SIZE CONTINUOUS CURRENT SETTING
4.
SWITCHGEAR INFORMATION
MANUFACTURER: FEDERAL PACIFIC ELEC.
5. PLANT: ATLANTA
S.O.: 80-9-21-A1/2
6. UPS MANUFACTURER
INTERNATIONAL POWER MACHINE
ROOM DESIGNATIONS
NORTH PLATFORM LEVEL
102 OPERATION ROOM
106 TRAIN CONTROL ROOM
108 COMMUNICATIONS ROOM
110 MECHANICAL ROOM
112 AC SWITCHBOARD ROOM
114 BATTERY ROOM
SOUTH PLATFORM LEVEL
107 AC SWITCHBOARD ROOM
109 BATTERY ROOM
111 MECHANICAL
MEZZANINE LEVEL
211 CLEANERS/WATER SERVICE ROOM
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
ELECTRICAL MAINTENANCE MAP
SHADY GROVE ROUTE
WHITE FLINT STATION
AC POWER ONE LINE DIAGRAM
CAPITAL IMPROVEMENT PROGRAM
PARSONS TRANSPORTATION GROUP - CAPITAL TRANSIT CONSULTANTS
SCALE: N.T.S.
DRAWING No. MM-A-E31
59
REVISIONS
DATE
BY
DESCRIPTION

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

DRAWING INDEX

ELECTRICAL SYMBOL LIST

- QUADRUPLEX RECEPTACLE OUTLET– 20A, 125V WALL MOUNTED.
- J — JUNCTION BOX – SURFACE MOUNTED ON UNISTRUT CHANNEL
- CONDUIT – CONCEALED IN UNDER FLOOR DUCT U.O.N.
- #10-3/4 — 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	07-14	DATE
DRAWN	C. NGO	07-14	DATE
CHECKED	B. IDILBI	07-14	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

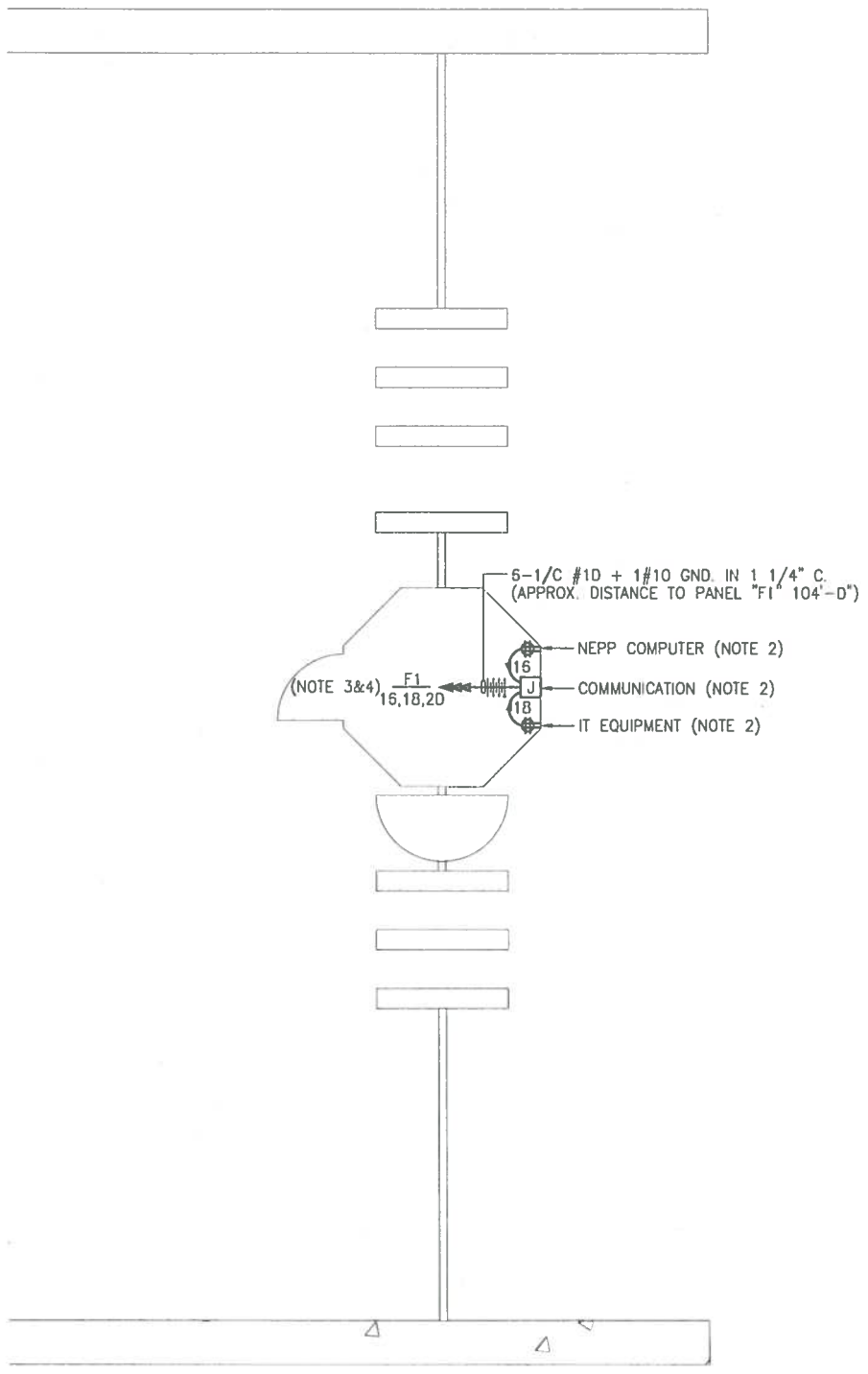
APPROVED

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	DRAWING NO	
NOT TO SCALE	A13-E-001	60



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

DRAWING NOTES:

1. USE EXISTING UNDER FLOOR DUCT FOR POWER WIRING. ALL OUTSIDE FLOOR DUCT WIRING SHALL BE IN CONDUIT.
2. VERIFY WITH WMATA PERSONNEL FOR LOCATION OF RECEPTACLES & JUNCTION BOXES.
3. CONNECT CIRCUIT #16, #18 & #20 TO EXISTING 20A, 1P SPARE CIRCUIT BREAKERS IN THE EXISTING PANEL "F1", SEE PANEL SCHEDULE ON DWG. A13-E-102.
4. PROVIDE A ROUGHIN CIRCUIT FOR FUTURE AFC FARE GATE 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 07-14 DATE	REFERENCE DRAWINGS	REVISIONS
DRAWN C. NGO 07-14 DATE	NUMBER / DESCRIPTION	DATE / BY / DESCRIPTION
CHECKED B. IDILBI 07-14 DATE		9-22-15 / RBM / REV. 1
APPROVED N/A DATE		

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

GFP A Garnett Fleming/Parsons JOINT VENTURE
SUBMITTED
PROJECT MANAGER

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

SCALE: AS SHOWN
DRAWING NO.: A13-E-101

EXISTING PANEL "F1"

AMPERES: 250	VOLTS: 120/208	MOUNTING: SURFACE	
MAINS: 250A	PHASE: 3	LOCATION: AC SWBD ROOM 101	
RATING: 10K AIC	WIRE: 4	SECTION: 1 OF 1	

		CKT BKRS		CKT.		CKT.	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.		NO.	POLE	AMP	KVA	LOAD DESCRIPTION
EXIST. KIOSK LOAD CENTER "KES"	2.9	40	3	1	A - -	2	-	-	0.0	SPACE
	2.5	-	-	3	- B -	4	-	-	0.0	SPACE
	2.5	-	-	5	- - C	6	-	-	0.0	SPACE
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**	**NEW KIOSK RECEPT. (IT & NCS)**
EXISTING VENDOR	0.8	20	1	17	- - C	18	1	20	**0.8**	**NEW KIOSK RECEPT. (NEPP/SOC)**
EXISTING VENDOR	0.8	20	1	19	A - -	20	1	20	0.0	**FUTURE AFC FARE GATE**
EXISTING VENDOR	0.8	20	1	21	- B -	22	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	23	- - C	24	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	25	A - -	26	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	27	- B -	28	1	20	0.0	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	0.0	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
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	5.6 x 50%		2.8 KVA
MISC. APPLIANCES	0.0 x 100%		0.0 KVA
LARGEST MOTOR	0.0 x 125%		0.0 KVA
MOTORS	0.0 x 100%		0.0 KVA
HEAT	3.0 x 125%		3.8 KVA
AC	4.5 x 100%		4.5 KVA
WATER HEATING	0.0 x 125%		0.0 KVA
TOTAL CONNECTED LOAD	23.1 KVA	TOTAL DEMAND KVA	21.1 KVA
		TOTAL DEMAND AMPS	58.5 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	7.7 KVA		
PHASE B:	7.3 KVA		
PHASE C:	8.9 KVA		

NOTES:
A. EXISTING PANEL "F1" IS FED FROM 277/480V, 3P, 4W EXISTING SWITCHBOARD "SB-2" LOCATED IN AC SWBD ROOM #101, CIRCUIT (A13-SB2-03) #3-125A/3P VIA 75KVA TRANSFORMER (SEE ATTACHED DWG. MM-A-E33).

B. EXISTING WIRING FED FROM BOTTOM OF PANEL BY:
- 2-6 1/2"x 1 1/2" FLOOR DUCT (WIRING FILL >40%).

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

EXISTING WIRING FED FROM LEFT SIDE OF PANEL BY:
- 1-4" C. TO TRANSFORMER (WIRING FILL >40%).
- 1-3/4" C. (WIRING FILL >40%).

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO	07-14	DATE
DRAWN C. NGO	07-14	DATE
CHECKED B. IDILBI	07-14	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

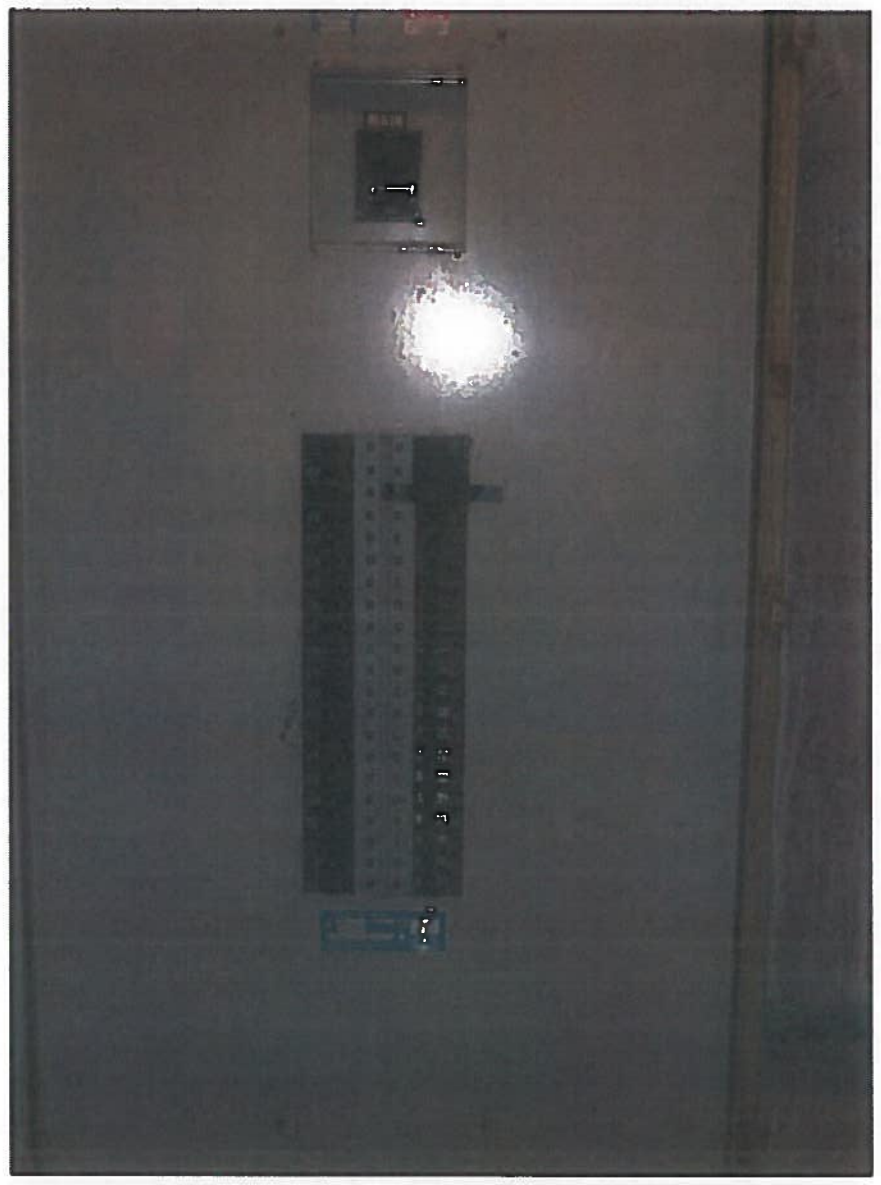
SUBMITTED _____ PROJECT MANAGER

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

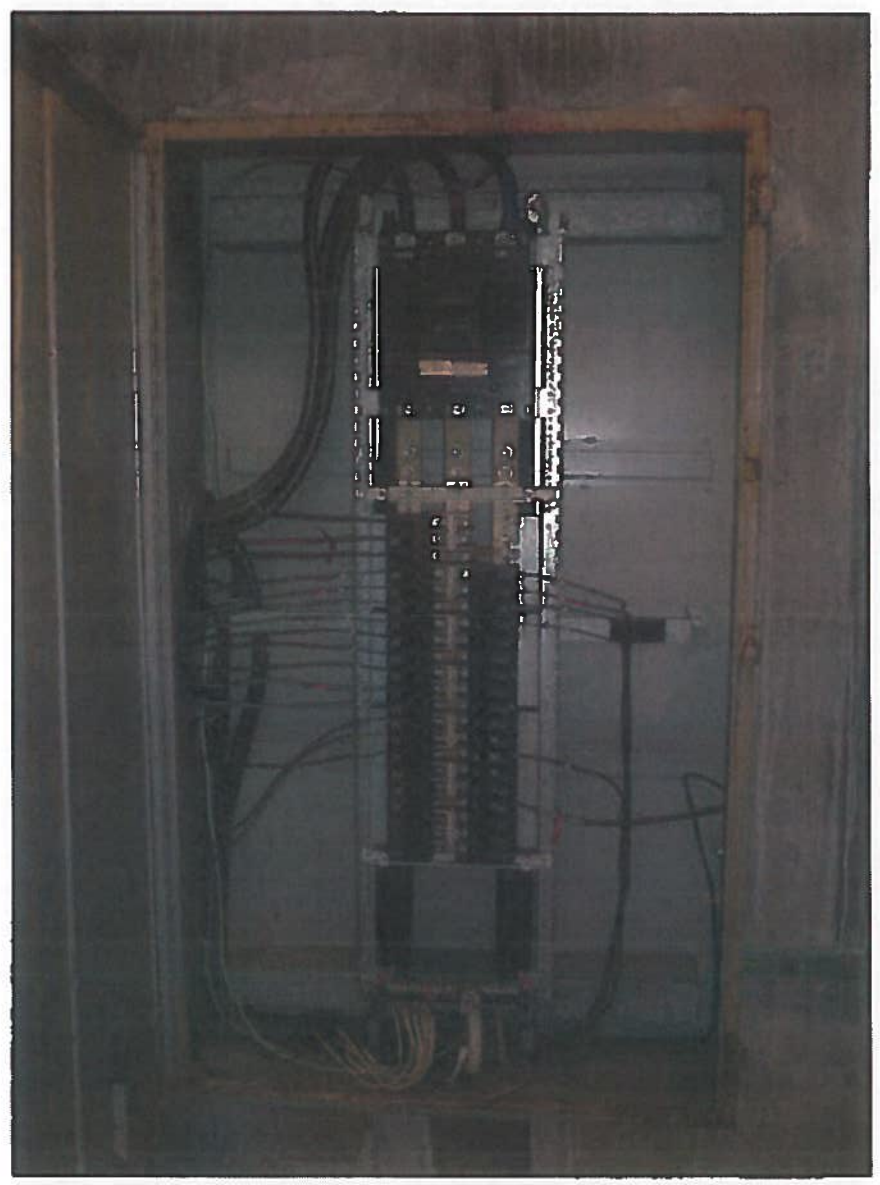
SCALE: NOT TO SCALE

DRAWING NO.: A13-E-102

EXISTING PANEL "F1"



EXISTING PANEL "F1"



EXISTING PANEL "F1"

CONTRACT NO.
14-FQ10060-CENI-24

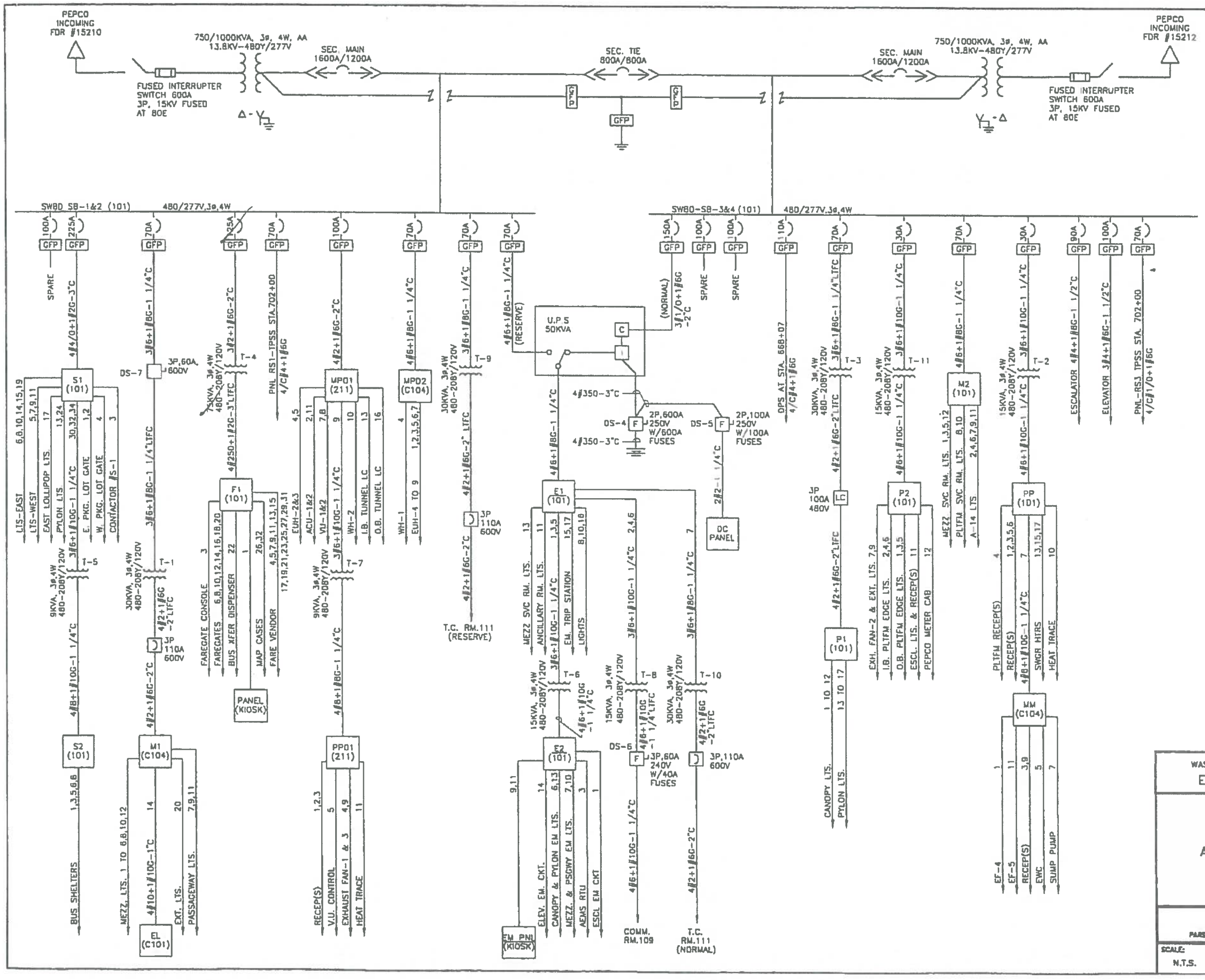
DESIGNED C. NGO 07-14 DATE	REFERENCE DRAWINGS		REVISIONS				WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DRAWN C. NGO 07-14 DATE	NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION		DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
CHECKED B. IDILBI 07-14 DATE							APPROVED
APPROVED N/A DATE							

GFP A Gannett Fleming/Parsons JOINT VENTURE

SUBMITTED
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
TWINBROOK
PANELBOARD IMAGE

SCALE	DRAWING NO.	
NOT TO SCALE	A13-E-301	



NOTES:

1. WEA (205) B
   - WEA: PANEL DESIGNATION
   - PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY
   - 205: ROOM NUMBER
   - B: CIRCUIT NUMBER
2. 3#2, 2"C
   - 2": CONIT SIZE
   - 3#2: AWG OR KCMIL CIRCUIT WIRES
3. CIRCUIT BREAKERS
   - DRAW OUT
   - 1600A/1200A: FRAME SIZE MAXIMUM CONTINUOUS CURRENT
4. SWITCHGEAR INFORMATION
   MANUFACTURER:
   ABBOT POWER CORPORATION
   SERIAL No. 6046-2
5. UPS MANUFACTURER
   INTERNATIONAL POWER MACHINE
6. ROOM DESIGNATIONS

MEZZANINE

101	A.C. SWBD RM.
103	BATTERY RM.
109	COMMUNICATION RM.
111	TRAIN CONTROL RM.
C101	ELEVATOR MACHINE RM.
C104	ELECTRIC CLOSET
C106	CLEANERS/WATER SERVICE

PLATFORM

209	OPERATIONS RM.
211	MECHANICAL RM.

REVISIONS

DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

ELECTRICAL MAINTENANCE MAP

SHADY GROVE ROUTE

TWINBROOK STATION

AC POWER ONE LINE DIAGRAM

CAPITAL IMPROVEMENT PROGRAM

PARSONS TRANSPORTATION GROUP – CAPITAL TRANSIT CONSULTANTS

SCALE:	DRAWING No.	
N.T.S.	MM-A-E33	64

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

DRAWING INDEX

ELECTRICAL SYMBOL LIST

- QUADRUPLEX RECEPTACLE OUTLET– 20A, 125V WALL MOUNTED.
- J — JUNCTION BOX – SURFACE MOUNTED ON UNISTRUT CHANNEL
- CONDUIT – CONCEALED IN UNDER FLOOR DUCT U.O.N.
- 10-3/4 / FF 3,5 — 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
  - FF 1,3 – INDICATES CIRCUIT HOME RUN PANELBOARD AND CIRCUIT NUMBER IDENTIFICATION

DESIGNED C. NGO 07-14 DATE
DRAWN C. NGO 07-14 DATE
CHECKED G. IDILBI 07-14 DATE
APPROVED N/A DATE

REFERENCE DRAWINGS

NUMBER	DESCRIPTION

REVISIONS

DATE	BY	DESCRIPTION

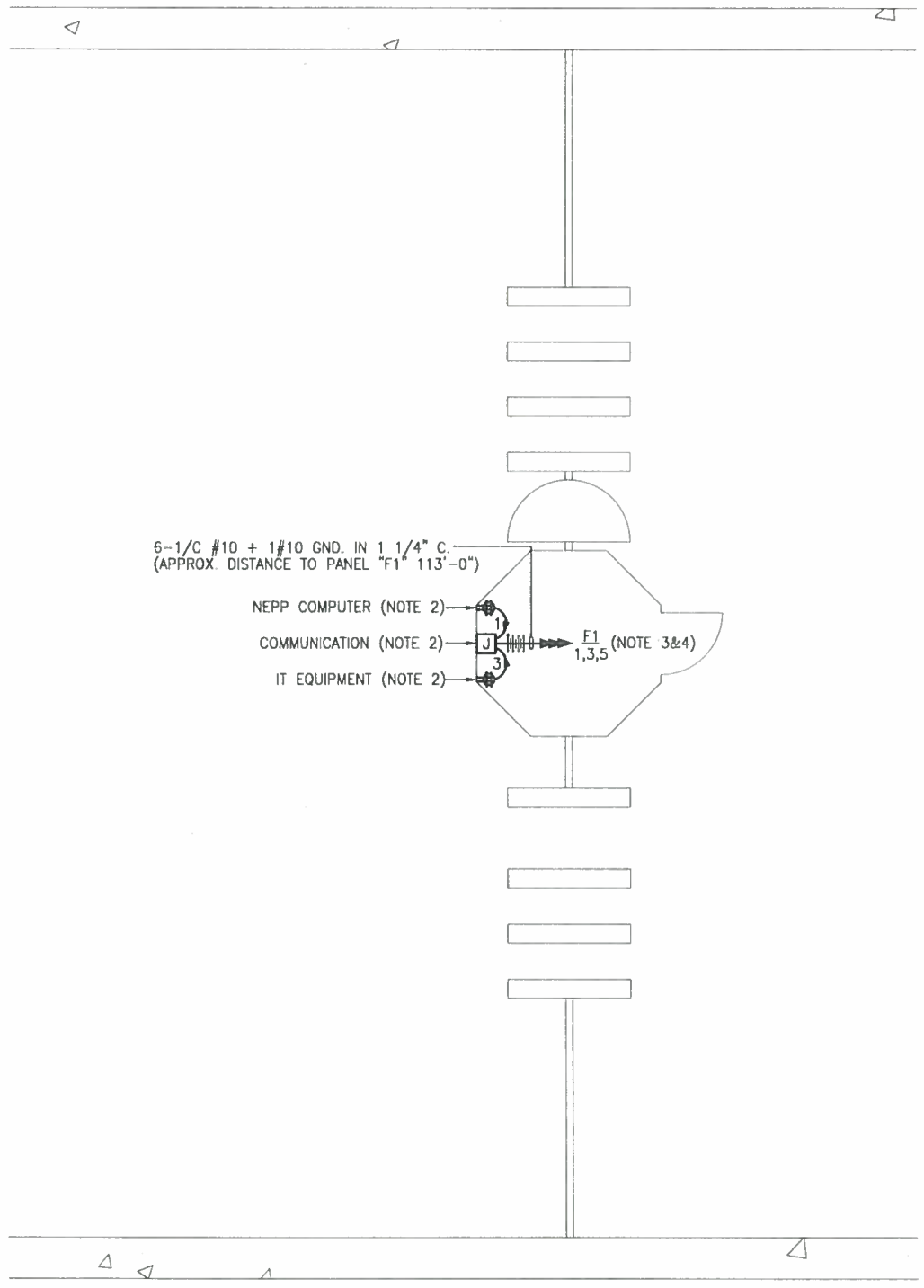
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
APPROVED

GFP A Gannett Fleming/Parsons JOINT VENTURE
SUBMITTED PROJECT MANAGER

CONTRACT NO 14-FQ10060-CENI-24

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

SCALE NOT TO SCALE
DRAWING NO A14-E-001



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

DRAWING NOTES:

1. USE EXISTING UNDER FLOOR DUCT FOR POWER WIRING. ALL OUTSIDE FLOOR DUCT WIRING SHALL BE IN CONDUIT.
2. VERIFY WITH WMATA PERSONNEL FOR LOCATION OF RECEPTACLES & JUNCTION BOXES.
3. CONNECT CIRCUIT #1, #3 & #5 TO NEW 20A, 1P CIRCUIT BREAKERS PROVIDED IN THE EXISTING PANEL "F1", SEE PANEL SCHEDULE ON DWG. A14-E-102.
4. PROVIDE A ROUGHIN CIRCUIT FOR FUTURE AFC FARE GATE 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	07-14 DATE	
DRAWN C. NGO	07-14 DATE	
CHECKED B. IDILBI	07-14 DATE	
APPROVED N/A	DATE	

REFERENCE DRAWINGS

NUMBER	DESCRIPTION

REVISIONS

DATE	BY	DESCRIPTION
9-22-15	RBM	REV. 1

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
ROCKVILLE
KIOSK - POWER

SCALE: AS SHOWN
DRAWING NO.: A14-E-101

EXISTING PANEL "F1"

AMPERES: 250	VOLTS: 120/208			MOUNTING: SURFACE						
MAINS: 250AMCB	PHASE: 3			LOCATION: WATER SERVICE CLEANER ROOM C111						
RATING: 10K AIC	WIRE: 4			SECTION: 1 OF 1						
	CKT BKRS		CKT		CKT	CKT BKRS				
LOAD DESCRIPTION	KVA	AMP	POLE	NO.		NO	POLE	AMP	KVA	LOAD DESCRIPTION
SPACE	0.8	20	1	1	A - -	2	-	-	0.0	SPACE
SPACE	0.8	20	1	3	- B -	4	-	-	0.0	SPACE
SPACE	0.0	20	1	5	- - C	6	-	-	0.0	SPACE
NEW KIOSK RECEPT. (IT & NCS)	0.8	20	1	7	A - -	8	1	20	0.0	SPARE
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	9	- B -	10	1	20	0.0	SPARE
FUTURE AFC FARE GATE	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	-	-	23	- - C	24	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	-	-	25	A - -	26	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	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
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. KIOKS LOAD CENTER "KES"	2.9	40	3	37	A - -	38	1	20	0.0	SPARE
	2.5	-	-	39	- B -	40	1	20	0.0	SPARE
	2.5	-	-	41	- - C	42	1	20	0.0	SPARE

LOAD SUMMARY

LIGHTS	0.0 x 125%		0.0 KVA
RECEPTACLES, FIRST 10 KVA	10.0 x 100%		10.0 KVA
RECEPTACLES	6.4 x 50%		3.2 KVA
MISC. APPLIANCES	0.0 x 100%		0.0 KVA
LARGEST MOTOR	0.0 x 125%		0.0 KVA
MOTORS	0.0 x 100%		0.0 KVA
HEAT	3.0 x 125%		3.8 KVA
AC	4.5 x 100%		4.5 KVA
WATER HEATING	0.0 x 125%		0.0 KVA
TOTAL CONNECTED LOAD	23.9 KVA	TOTAL DEMAND KVA	21.5 KVA
		TOTAL DEMAND AMPS	59.6 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	10.1 KVA		
PHASE B:	8.1 KVA		
PHASE C:	8.1 KVA		

NOTES:
A. EXISTING PANEL "F1" IS FED FROM 277/480V, 3P, 4W EXISTING SWITCHBOARD "SB1" LOCATED IN AC SWBD BATTERY RM. C107, CIRCUIT (A14-SB1-02) #2-125A/3P VIA 75KVA TRANSFORMER T-4 (SEE ATTACHED DWG. MM-A-E35).

B. EXISTING WIRING FED FROM BOTTOM OF PANEL BY:
- 2-6 1/2"x 1 1/2" FLOOR DUCT (WIRING FILL >40%).
- 1-4" C. TO TRANSFORMER (WIRING FILL >40%).

CONTRACT NO
14-FQ10060-CENI-24

DESIGNED C. NGO 07-14 DATE
DRAWN C. NGO 07-14 DATE
CHECKED B. IDLBI 07-14 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
ROCKVILLE
PANEL SCHEDULE

SCALE: NOT TO SCALE
DRAWING NO.: A14-E-102

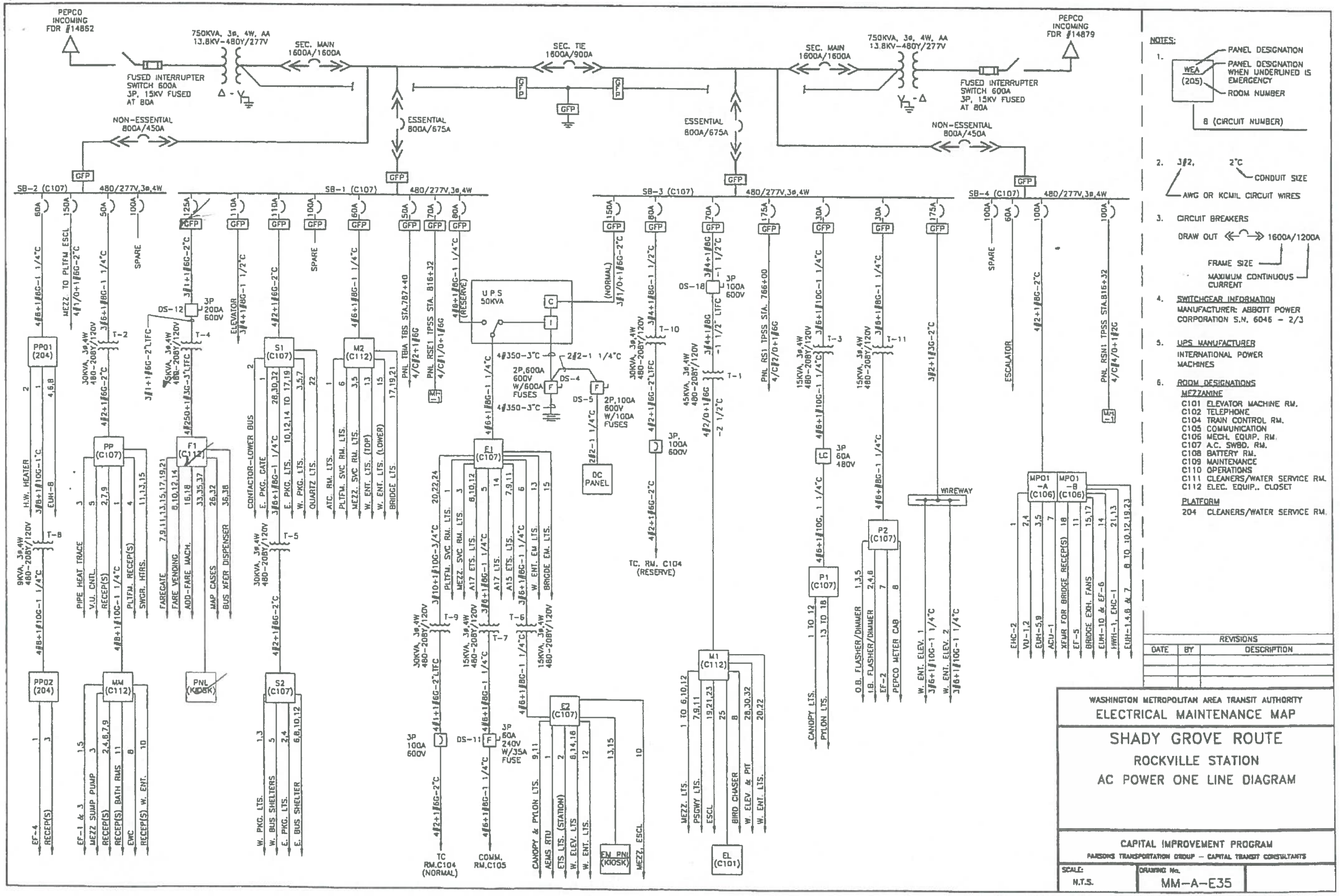
EXISTING PANEL "F1"

EXISTING PANEL "F1"

EXISTING PANEL "F1"

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO 07-14 DATE	REFERENCE DRAWINGS		REVISIONS			WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY	NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
DRAWN C. NGO 07-14 DATE	NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION	DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM	ROCKVILLE PANELBOARD IMAGE
CHECKED B. IDLBI 07-14 DATE						APPROVED	SCALE: NOT TO SCALE
APPROVED N/A DATE						GFP A Gannett Fleming/Parsons JOINT VENTURE SUBMITTED PROJECT MANAGER	DRAWING NO.: A14-E-301


PEPCO INCOMING FDR #14862
750KVA, 3ø, 4W, AA 13.8KV-480Y/277V
SEC. MAIN 1600A/1600A
FUSED INTERRUPTER SWITCH 600A 3P, 15KV FUSED AT 80A
SEC. TIE 1600A/900A
PEPCO INCOMING FDR #14879
NON-ESSENTIAL 800A/450A
ESSENTIAL 800A/675A
SB-2 (C107) 480/277V,3ø,4W
SB-1 (C107) 480/277V,3ø,4W
SB-3 (C107) 480/277V,3ø,4W
SB-4 (C107) 480/277V,3ø,4W
UPS 50KVA
PP01 (204)
PP (C107)
MM (C112)
PP02 (204)
PNL (KIOSK)
S1 (C107)
S2 (C107)
M2 (C112)
F1 (C112)
F1 (C107)
M1 (C112)
P1 (C107)
P2 (C107)
P (C101)
E1 (C107)
E2 (C107)
DC PANEL
TC RM.C104 (NORMAL)
COMM. RM.C105
TC, RM. C104 (RESERVE)
EN. PNL (KIOSK)
MPO1 -A (C106)
MPO1 -B (C106)
WIREWAY
H.W. HEATER
EF-4
RECEP(S)
EF-1 & 3
MEZZ SUMP PUMP
RECEP(S)
RECEP(S) BATH RMS
EWC
RECEP(S) W. ENT.
PIPE HEAT TRACE
V.U. CNTL.
RECEP(S)
PLTFM. RECEP(S)
SWGR. HTRS.
FARE GATE
FARE VENDING
ADD-FARE MACH.
MAP CASES
BUS XFER DISPENSER
CONTACTOR-LOWER BUS
E. PKG. GATE
E. PKG. LTS.
W. PKG. LTS.
QUARTZ LTS.
ATC. RM. LTS.
PLTFM. SVC RM. LTS.
MEZZ. SVC RM. LTS.
W. ENT. LTS. (TOP)
W. ENT. LTS. (LOWER)
BRIDGE LTS.
W. PKG. LTS.
W. BUS SHELTERS
E. PKG. LTS.
E. BUS SHELTER
ELEVATOR
SPARE
PNL TBA TBS STA.787+40
PNL RSE1 TPSS STA. B16+32
PNL RS1 TPSS STA. 766+00
PNL RSW1 TPSS STA.B16+32
ESCALATOR
CANOPY & PYLON LTS.
AEMS RTU
ETS LTS. (STATION)
W. ELEV. LTS
W. ENT. LTS.
MEZZ. ESCL
MEZZ. LTS.
PSGWY LTS.
ESCL
BIRD CHASER
W. ELEV & PIT
W. ENT. LTS.
CANOPY LTS.
PYLON LTS.
O.B. FLASHER/DIMMER
I.B. FLASHER/DIMMER
EF-2
PEPCO METER CAB
W. ENT. ELEV. 1
W. ENT. ELEV. 2
EHC-2
VU-1,2
EUH-5,9
ACU-1
XFMR FOR BRIDGE RECEP(S)
EF-5
BRIDGE EXH. FANS
EUH-10 & EF-6
HWH-1, EHC-1
EUH-1,4,6 & 7
NOTES:
1. PANEL DESIGNATION
WEA (205) 8
PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY
ROOM NUMBER
8 (CIRCUIT NUMBER)
2. 3#2, 2"C
CONDUIT SIZE
AWG OR KCMIL CIRCUIT WIRES
3. CIRCUIT BREAKERS
DRAW OUT
1600A/1200A
FRAME SIZE
MAXIMUM CONTINUOUS CURRENT
4. SWITCHGEAR INFORMATION
MANUFACTURER: ABBOTT POWER CORPORATION S.N. 6046 - 2/3
5. UPS MANUFACTURER
INTERNATIONAL POWER MACHINES
6. ROOM DESIGNATIONS
MEZZANINE
C101 ELEVATOR MACHINE RM.
C102 TELEPHONE
C104 TRAIN CONTROL RM.
C105 COMMUNICATION
C106 MECH. EQUIP. RM.
C107 A.C. SWBD. RM.
C108 BATTERY RM.
C109 MAINTENANCE
C110 OPERATIONS
C111 CLEANERS/WATER SERVICE RM.
C112 ELEC. EQUIP., CLOSET
PLATFORM
204 CLEANERS/WATER SERVICE RM.
REVISIONS
DATE BY DESCRIPTION
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
ELECTRICAL MAINTENANCE MAP
SHADY GROVE ROUTE
ROCKVILLE STATION
AC POWER ONE LINE DIAGRAM
CAPITAL IMPROVEMENT PROGRAM
PARSONS TRANSPORTATION GROUP — CAPITAL TRANSIT CONSULTANTS
SCALE: N.T.S.
DRAWING No. MM-A-E35

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

DRAWING INDEX

ELECTRICAL SYMBOL LIST

- QUADRUPLEX RECEPTACLE OUTLET– 20A, 125V WALL MOUNTED.
- J — JUNCTION BOX – SURFACE MOUNTED ON UNISTRUT CHANNEL
- CONDUIT – CONCEALED IN UNDER FLOOR DUCT U.O.N.
- #10-3/4 / EF 3,5 — 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

DESIGNED C. NGO 07-14 DATE
DRAWN C. NGO 07-14 DATE
CHECKED B. IDILBI 07-14 DATE
APPROVED N/A DATE

REFERENCE DRAWINGS

NUMBER	DESCRIPTION

REVISIONS

DATE	BY	DESCRIPTION

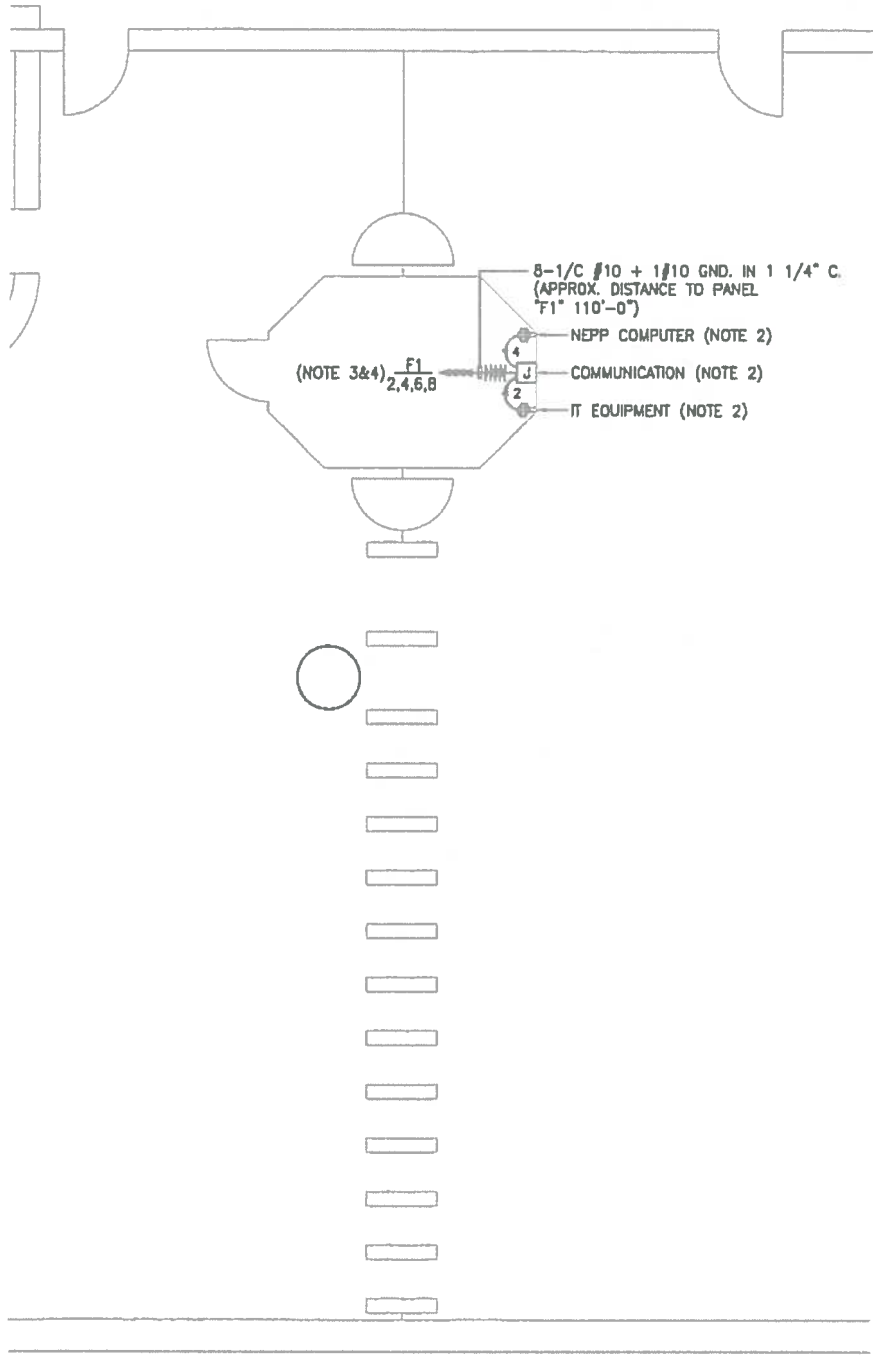
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
APPROVED

GFP A Granbill Fleming/Parsons JOINT VENTURE
SUBMITTED PROJECT MANAGER

CONTRACT NO 14-FQ10060-CENI-24

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

SCALE NOT TO SCALE
DRAWING NO B01-E-001



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

DRAWING NOTES:

1. USE EXISTING UNDER FLOOR DUCT FOR POWER WIRING. ALL OUTSIDE FLOOR DUCT WIRING SHALL BE IN CONDUIT.
2. VERIFY WITH WMATA PERSONNEL FOR LOCATION OF RECEPTACLES & JUNCTION BOXES.
3. CONNECT CIRCUIT #2, #4, #6 & #8 TO EXISTING 20A, 1P SPARE CIRCUIT BREAKERS IN THE EXISTING PANEL "F1", SEE PANEL SCHEDULE ON DWG. B01-E-102.
4. PROVIDE A ROUGHIN CIRCUIT FOR FUTURE AFC FARE GATE 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 07-14 DATE	REFERENCE DRAWINGS: NUMBER / DESCRIPTION	REVISIONS: DATE / BY / DESCRIPTION
DRAWN C. NGO 07-14 DATE		
CHECKED B. IDILBI 07-14 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
GALLERY PLACE - EAST
KIOSK - POWER

SCALE: AS SHOWN
DRAWING NO.: B01-E-101

EXISTING PANEL "F1" (East)

AMPERES: 60	VOLTS: 120/208	MOUNTING: SURFACE	
MAINS: 50A MCB	PHASE: 3	LOCATION: ELECTRICAL ROOM E206	
RATING: 10K AIC	WIRE: 4	SECTION: 1 OF 1	

		CKT BKRS		CKT.		CKT.	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.		NO.	POLE	AMP	KVA	LOAD DESCRIPTION
EXISTING VENDOR	1.0	20	1	1	A - -	2	1	20	**0.8**	**NEW KIOSK RECEPT. (IT & NCS)**
EXISTING VENDOR	1.0	20	1	3	- B -	4	1	20	**0.8**	**NEW KIOSK RECEPT. (NEPP/SOC)**
EXISTING VENDOR	1.0	20	1	5	- - C	6	1	20	**0.0**	**FUTURE AFC FARE GATE**
EXISTING VENDOR	1.0	20	1	7	A - -	8	1	20	**0.0**	**SPARE (KIOSK)**
EXISTING VENDOR	1.0	20	1	9	- B -	10	-	-	0.0	SPACE
EXISTING VENDOR	1.0	20	1	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

LOAD SUMMARY

LIGHTS	0.0 x 125%		0.0 KVA
RECEPTACLES, FIRST 10 KVA	6.8 x 100%		6.8 KVA
RECEPTACLES	0.0 x 50%		0.0 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	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	6.8 KVA	TOTAL DEMAND KVA	6.8 KVA
		TOTAL DEMAND AMPS	18.9 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	2.8 KVA		
PHASE B:	2.8 KVA		
PHASE C:	2.0 KVA		

NOTES: A. THE EXISTING PANEL "F1" IS FED FROM 120/208VV, 3ø, 4W EXISTING PANEL "I" LOCATED IN ELECTRICAL ROOM E206, CIRCUIT #38–30/3P (REPLACE EXISTING CIRCUIT #38–30/3P W/NEW 50/3P AND EXISTING FEEDER 3#10 W/NEW FEEDER 3#8 AND RECONNECT, ALSO REPLACE EXISTING 30A MCB @ PANEL "F1" W/NEW 50A MCB)(SEE ATTACHED DWG. MM–B–E07).

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

CONTRACT NO: 14-FQ10060-CENI-24

DESIGNED C. NGO	07–14 DATE
DRAWN C. NGO	07–14 DATE
CHECKED B. EXLEY	07–14 DATE
APPROVED N/A	DATE

REFERENCE DRAWINGS		REVISIONS		
NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

APPROVED _____

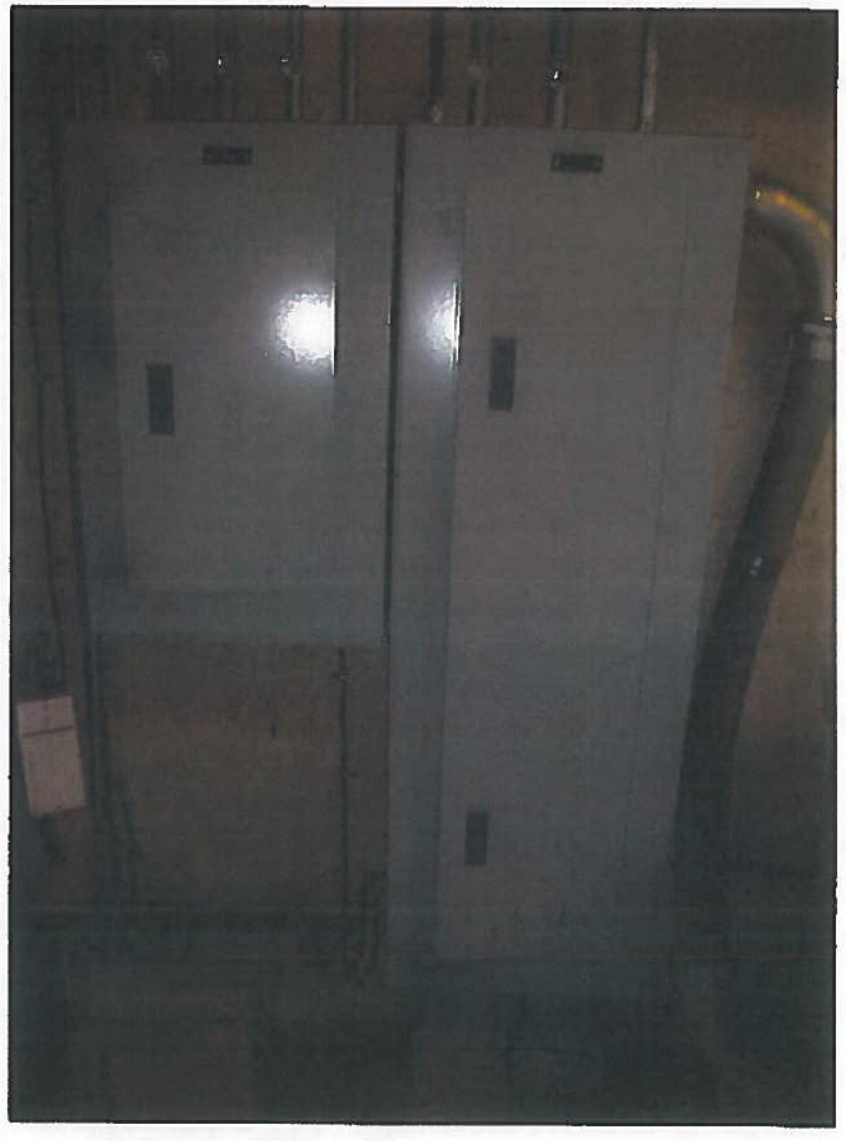
GFP A Gannett Fleming/Parsons JOINT VENTURE

SUBMITTED _____ PROJECT MANAGER

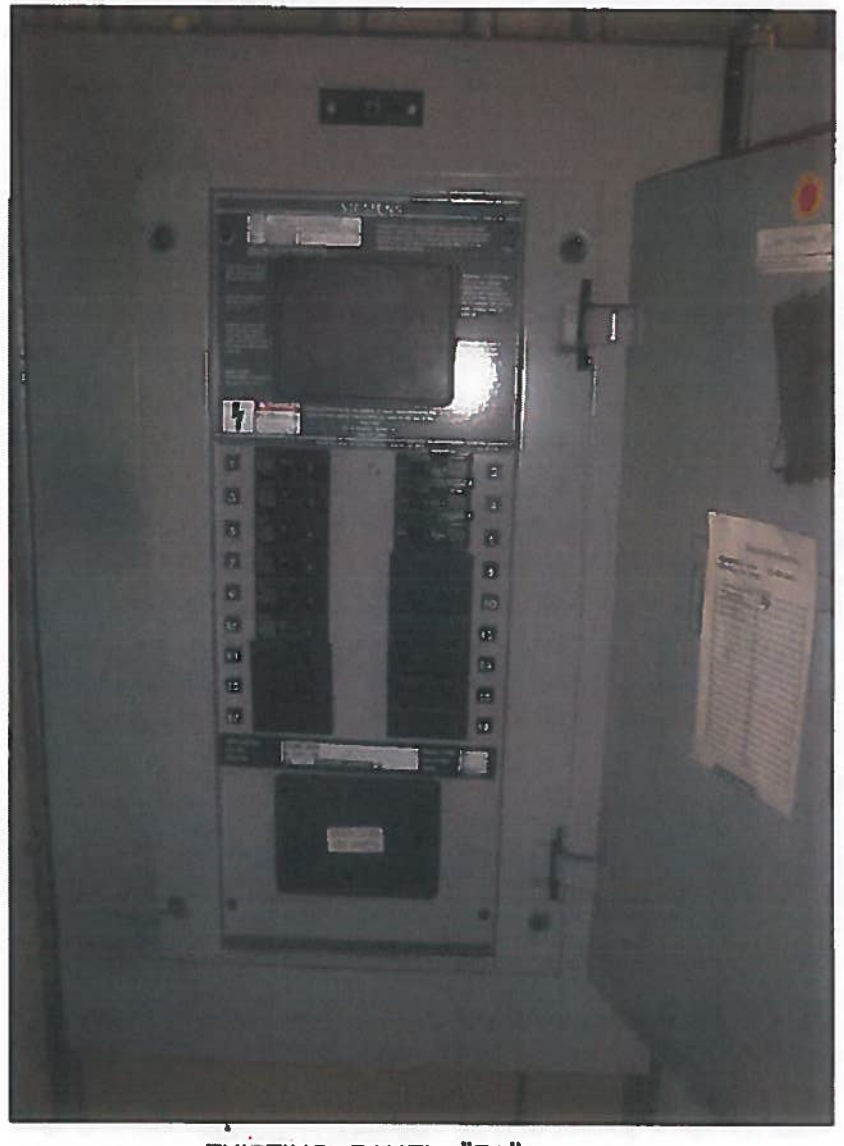
NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
GALLERY PLACE - EAST
PANEL SCHEDULE

SCALE: NOT TO SCALE

DRAWING NO: B01-E-102



EXISTING PANEL "F1"



EXISTING PANEL "F1"

EXISTING PANEL "F1"

DESIGNED C. NGO 07-14 DATE	REFERENCE DRAWINGS		REVISIONS		
DRAWN C. NGO 07-14 DATE	NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
CHECKED S. IDILBI 07-14 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

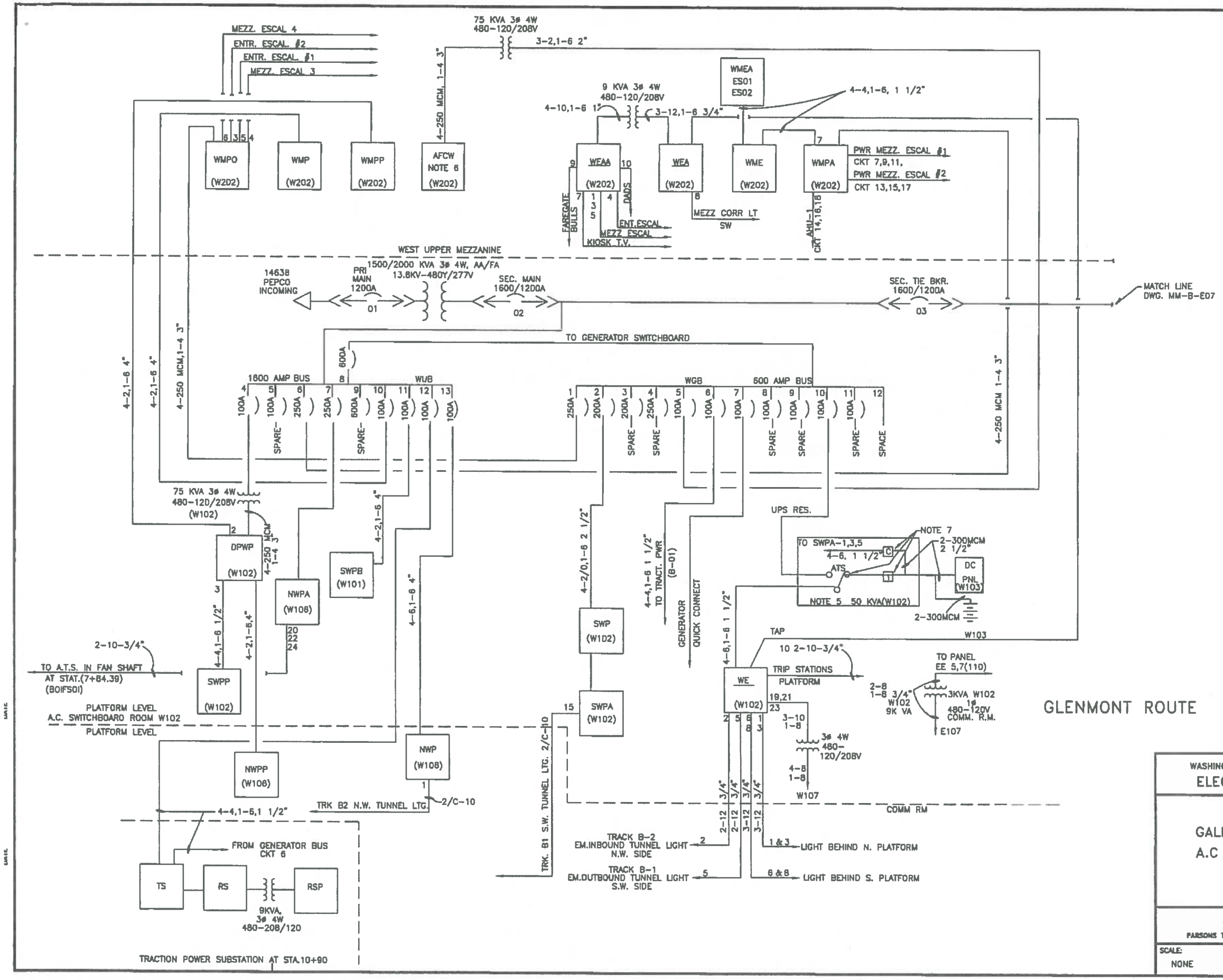
SUBMITTED _____ PROJECT MANAGER

CONTRACT NO. 14-FQ10060-CENI-24

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
GALLERY PLACE - EAST
PANELBOARD IMAGE

SCALE NOT TO SCALE

DRAWING NO. B01-E-301



NOTES:

1. WEA (203) — PANEL DESIGNATION; PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY; ROOM LOCATION; 8 (CIRCUIT NUMBER)
2. 3-2,1-6 2" — CONDUIT SIZE; AWG. GROUND WIRE; AWG. OR MCM CIRCUIT WIRES
3. CIRCUIT BREAKERS — DRAW OUT <<—>> 1600A/1200A; MOLDED CASE — FRAME SIZE; TRIP SETTING
4. 4/C-4/0 — INDICATES MULTICONCTOR CABLE WITH 4 CONCTOR AND SIZE OF EACH 4/0
5. RATING AS SHOWN FOR UNINTERRUPTIBLE POWER SUPPLY CONSISTING OF RECTIFIER CHARGER INVERTER, POWER TRANSFER SWITCH ASSOCIATED BATTERIES AND PANELBOARD.
6. PANEL FOR FARE COLLECTION EQUIPMENT.
7. ATS. – AUTOMATIC TRANSFER SWITCH
   C – CHARGER
   I – INVERTER
   TS – TRANSFER SWITCH
8. UPS MANUFACTURER: IPM
9. SWITCHGEAR MANUFACTURER: FEDERAL PACIFIC ELECTRIC (FPE)

REVISIONS		
DATE	BY	DESCRIPTION
11/02/10	GH	UPDATE AS BUILT DRAWING

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

ELECTRICAL MAINTENANCE MAP

GLENMONT ROUTE

GALLERY PLACE STATION (B01)

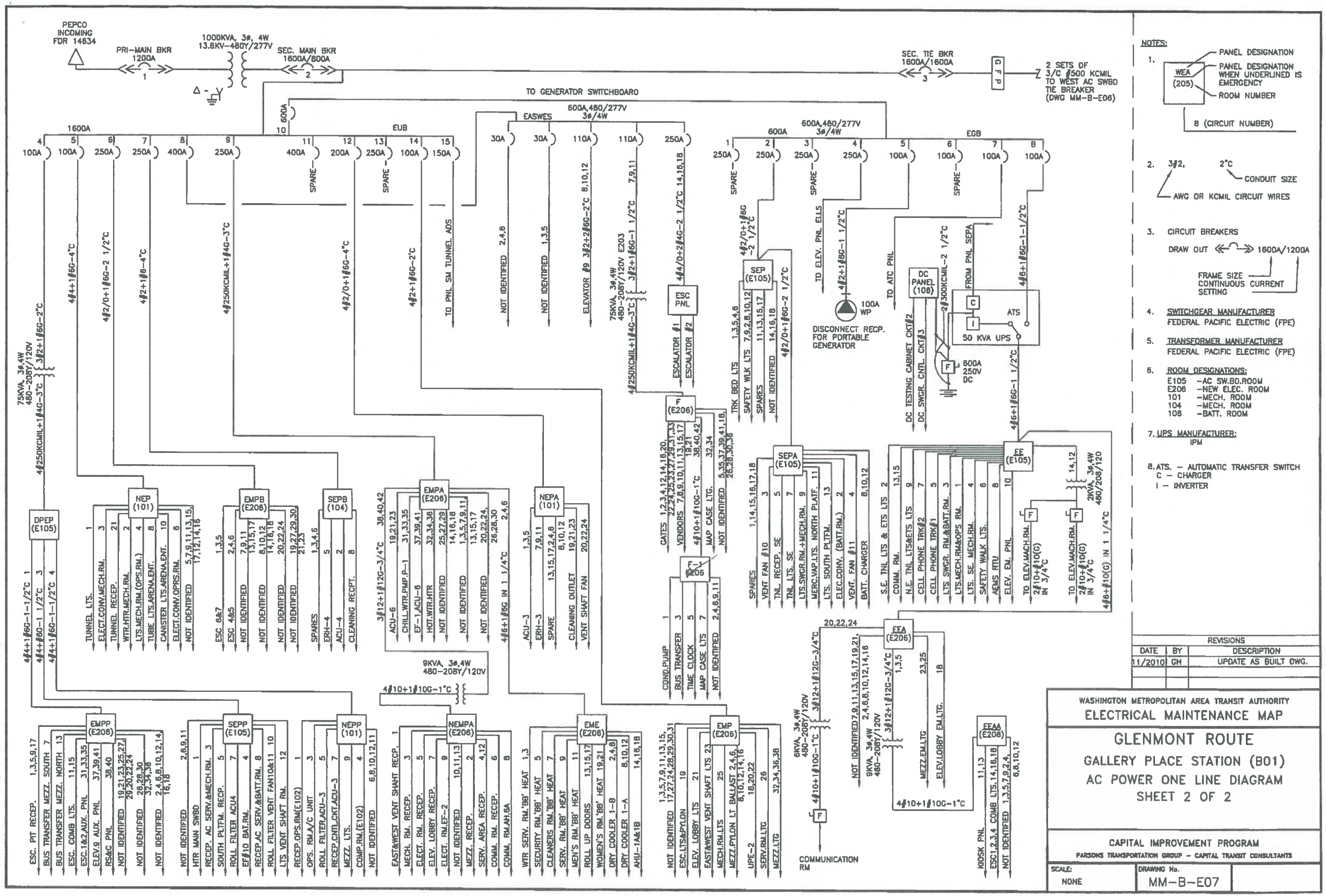
A.C POWER ONE LINE DIAGRAM

SHEET 1 OF 2

CAPITAL IMPROVEMENT PROGRAM

PARSONS TRANSPORTATION GROUP – CAPITAL TRANSIT CONSULTANTS

SCALE:	DRAWING No.	
NONE	MM-B-E06	


PEPCO INCOMING FDR 14634
PRI-MAIN BKR 1200A
1000KVA, 3ø, 4W 13.8KV-480Y/277V
SEC. MAIN BKR 1600A/800A
SEC. TIE BKR 1600A/1600A
2 SETS OF 3/C #500 KCMIL TO WEST AC SWBD TIE BREAKER (DWG MM-B-E06)
TO GENERATOR SWITCHBOARD
1600A
EUB
600A,480/277V 3ø/4W
EASWES
600A,480/277V 3ø/4W
EGB
SPARE
TO PNL SM TUNNEL ADS
NOT IDENTIFIED 2,4,6
NOT IDENTIFIED 1,3,5
ELEVATOR #9 3#2+2#6G-2"C 8,10,12
75KVA, 3ø,4W 480-208Y/120V E203
ESCALATOR #1
ESCALATOR #2
TO ELEV. PNL ELLS
TO ATC PNL
FROM PNL SEPA
100A WP
DISCONNECT RECP. FOR PORTABLE GENERATOR
DC PANEL (108)
50 KVA UPS
800A 250V DC
ATS
SEP (E105)
ESC PNL
(E206)
TRK BED LTS
SAFETY WLK LTS
SPARES
NOT IDENTIFIED
DC TESTING CABINET CKT#2
DC SWGR. CNTL. CKT#3
DPEP (E105)
NEP (101)
EMPB (E206)
SEPB (104)
EMPA (E206)
NEPA (101)
SEPA (E105)
EF (E105)
EFA (E206)
EFAA (E206)
EMPP (E206)
SEPP (E105)
NEPP (101)
NEMPA (E206)
EME (E206)
EMP (E206)
9KVA, 3ø,4W 480-208Y/120V
6KVA, 3ø,4W 480-208Y/120V
2KVA, 3ø,4W 480/208/120
COMMUNICATION RM
CONDUIT SIZE
AWG OR KCMIL CIRCUIT WIRES
CIRCUIT BREAKERS
DRAW OUT
FRAME SIZE
CONTINUOUS CURRENT SETTING
SWITCHGEAR MANUFACTURER
FEDERAL PACIFIC ELECTRIC (FPE)
TRANSFORMER MANUFACTURER
FEDERAL PACIFIC ELECTRIC (FPE)
ROOM DESIGNATIONS:
E105 -AC SW.BD.ROOM
E206 -NEW ELEC. ROOM
101 -MECH. ROOM
104 -MECH. ROOM
108 -BATT. ROOM
7. UPS MANUFACTURER: IPM
8. ATS. - AUTOMATIC TRANSFER SWITCH
C - CHARGER
I - INVERTER
REVISIONS
DATE BY DESCRIPTION
11/2010 GH UPDATE AS BUILT DWG.
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
ELECTRICAL MAINTENANCE MAP
GLENMONT ROUTE
GALLERY PLACE STATION (B01)
AC POWER ONE LINE DIAGRAM
SHEET 2 OF 2
CAPITAL IMPROVEMENT PROGRAM
PARSONS TRANSPORTATION GROUP - CAPITAL TRANSIT CONSULTANTS
SCALE: NONE
DRAWING No. MM-B-E07

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

DRAWING INDEX

ELECTRICAL SYMBOL LIST

- QUADRUPLEX RECEPTACLE OUTLET– 20A, 125V WALL MOUNTED.
- J — JUNCTION BOX – SURFACE MOUNTED ON UNISTRUT CHANNEL
- CONDUIT – CONCEALED IN UNDER FLOOR DUCT U.O.N.
- #10-3/4 / EF 3,5 — 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	07-14	DATE
DRAWN	C. NGO	07-14	DATE
CHECKED	B. IDLIBI	07-14	DATE
APPROVED	N/A		DATE

REFERENCE DRAWINGS

NUMBER	DESCRIPTION

REVISIONS

DATE	BY	DESCRIPTION

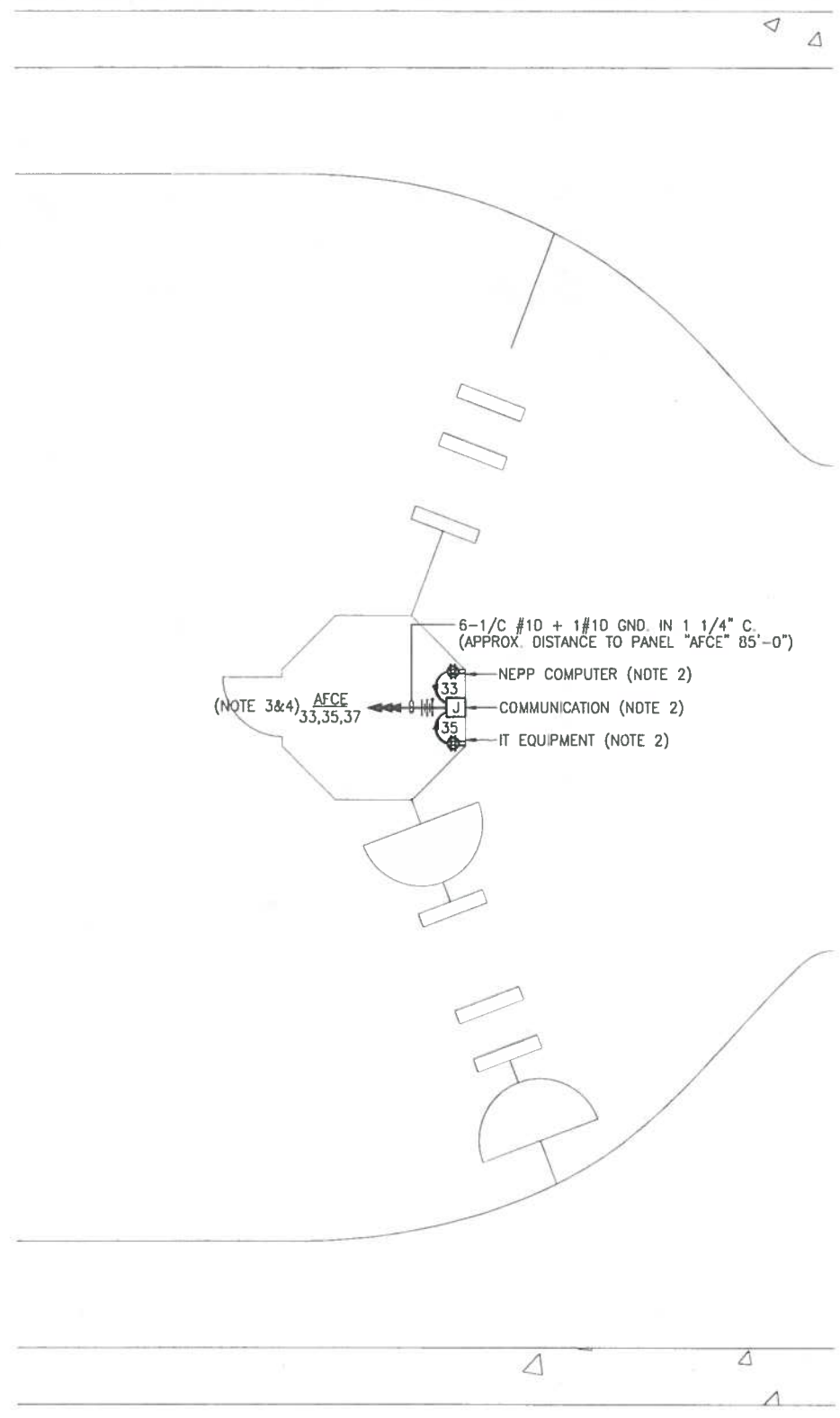
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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.: B02-E-001



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

DRAWING NOTES:

1. USE EXISTING UNDER FLOOR DUCT FOR POWER WIRING. ALL OUTSIDE FLOOR DUCT WIRING SHALL BE IN CONDUIT.
2. VERIFY WITH WMATA PERSONNEL FOR LOCATION OF RECEPTACLES & JUNCTION BOXES.
3. AT AVAILABLE CIRCUIT BREAKER SPACE PROVIDE 3-NEW 20A, 1P CIRCUIT BREAKERS IN THE EXISTING AVAILABLE SPACE FOR CIRCUIT #33, #35 & #37, NEW CB SHALL MATCH EXISTING CB IN EXISTING PANEL "EF", CONNECT NEW CIRCUITS TO THESE BREAKERS. SEE PANEL SCHEDULE ON DWG. A01-E-102.
4. PROVIDE A ROUGH-IN CIRCUIT FOR FUTURE AFC FARE GATE COILED AT THE KIOSK. THE LENGTH OF COILED PIGTAIL SHALL BE THE FARTHEST FARE GATE DISTANCE FROM KIOSK PLUS AN EXTRA 5'0" 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 07-14 DATE	REFERENCE DRAWINGS	REVISIONS
DRAWN C. NGO 07-14 DATE	NUMBER / DESCRIPTION	DATE / BY / DESCRIPTION
CHECKED B. IDILBI 07-14 DATE		9-22-15 / RBM / REV. 1
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
JUDICIARY SQUARE EAST
MEZZANINE KIOSK - POWER

SCALE: AS SHOWN
DRAWING NO.: B02-E-101

EXISTING PANEL "AFCW"

AMPERES 225	VOLTS 120/208			MOUNTING SURFACE						
MAINS: 225A MLO	PHASE 3			LOCATION MECH EQUIPMENT ROOM 205						
RATING: 10K AIC	WIRE 4			SECTION 1 OF 1						
		CKT BKRS		CKT.		CKT.	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.		NO.	POLE	AMP	KVA	LOAD DESCRIPTION
EXISTING VENDOR	0.8	20	1	1	A - -	2	1	20	0.8	EXISTING VENDOR
SPARE	0.8	20	1	3	- B -	4	1	20	0.8	EXISTING VENDOR
SPARE	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	EXIST NG 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
SPARE	0.0	20	1	19	A - -	20	1	20	0.0	SPARE
SPARE	0.0	20	1	21	- B -	22	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	23	- - C	24	1	20	0.0	SPARE
NEW KIOSK RECEPT. (IT & NCS)	0.8	20	1	25	A - -	26	1	20	0.0	SPARE
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	27	- B -	28	1	20	0.0	SPARE
FUTURE AFC FARE GATE	0.0	20	1	29	- - C	30	1	20	0.0	SPARE
SPARE	0.0	20	1	31	A - -	32	1	20	0.0	SPARE
SPARE	0.0	20	1	33	- B -	34	1	20	0.0	SPARE
SPARE	0.0	20	1	35	- - C	36	1	20	0.0	SPARE
SPARE	0.0	20	1	37	A - -	38	3	30	2.9	EXIST. KIOSK LOAD CENTER "KES"
SPARE	0.0	20	1	39	- B -	40	-	-	2.5	
SPARE	0.0	20	1	41	- - C	42	-	-	2.5	

LOAD SUMMARY

LIGHTS	0.0 x 125%		0.0 KVA
RECEPTACLES, FIRST 10 KVA	10.0 x 100%		10.0 KVA
RECEPTACLES	5.6 x 50%		2.8 KVA
MISC APPLIANCES	0.0 x 100%		0.0 KVA
LARGEST MOTOR	0.0 x 125%		0.0 KVA
MOTORS	0.0 x 100%		0.0 KVA
HEAT	3.0 x 125%		3.8 KVA
AC	4.5 x 100%		4.5 KVA
WATER HEATING	0.0 x 125%		0.0 KVA
TOTAL CONNECTED LOAD	**23.1 KVA**	**TOTAL DEMAND KVA**	**21.1 KVA**
		TOTAL DEMAND AMPS	**58.5 AMPS**
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	**8.5 KVA**		
PHASE B:	**8.1 KVA**		
PHASE C	**7.3 KVA**		

NOTES: A. EXISTING PANEL "AFCW" IS FED FROM 277/480V, 3ø, 4W EXISTING SWITCHBOARD "WB" LOCATED IN AC SWBD. RM. 105, CIRCUIT (B02-WB-04) #4-100A/3P VIA 75KVA TRANSFORMER (SEE ATTACHED DWG. MM-B-E08).

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

EXISTING WIRING FED FROM BOTTOM OF PANEL BY:
- 1-4" C. TO TRANSFORMER (WIRING FILL >40%).

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

EXISTING PANEL "AFCE"

AMPERES 225	VOLTS 120/208			MOUNTING SURFACE						
MAINS: 225A MLO	PHASE 3			LOCATION MECHANICAL EQUIPMENT ROOM 204						
RATING: 10K AIC	WIRE 4			SECTION 1 OF 1						
		CKT BKRS		CKT.		CKT.	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.		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
SPACE	0.0	-	-	5	- - C	6	-	-	0.0	SPACE
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	0.0	SPARE
SPARE	0.0	20	1	21	- B -	22	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	23	- - C	24	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	25	A - -	26	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	27	- B -	28	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	29	- - C	30	-	-	0.0	SPACE
SPACE	0.0	20	1	31	A - -	32	1	20	0.0	SPARE
NEW KIOSK RECEPT. (IT & NCS)	0.8	20	1	33	- B -	34	-	-	0.0	SPACE
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	35	- - C	36	1	20	0.0	SPARE
FUTURE AFC FARE GATE	0.0	20	1	37	A - -	38	3	30	0.0	SPARE
SPARE	0.0	20	1	39	- B -	40	-	-	0.0	SPACE
EXISTING VENDOR	0.8	20	1	41	- - C	42	-	-	0.0	

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	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	**18.4 KVA**	**TOTAL DEMAND KVA**	**14.2 KVA**
		TOTAL DEMAND AMPS	**39.4 AMPS**
CONNECTED LOAD PHASE SUMMARY			
PHASE A	**6.4 KVA**		
PHASE B:	**5.5 KVA**		
PHASE C	**7.2 KVA**		

NOTES: A. EXISTING PANEL "AFCE" IS FED FROM 277/480V, 3ø, 4W EXISTING SWITCHBOARD "EB" LOCATED IN AC SWBD RM. 110, CIRCUIT (B02-EB-04) #4-100A/3P VIA 75KVA TRANSFORMER (SEE ATTACHED DWG. MM-B-E08).

B. EXISTING WIRING FED FROM TOP OF PANEL BY:
- 3-1/2" C. (WIRING FILL >40%).

EXISTING WIRING FED FROM BOTTOM OF PANEL BY:
- 1-6"x 12" WIRE TROUGH W/2" C. TO TRANSFORMER (WIRING FILL >40%).

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

CONTRACT NO. 14-FQ10060-CENI-24

DESIGNED C. NGO 07-14 DATE
DRAWN C. NGO 07-14 DATE
CHECKED B. IDILBI 07-14 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

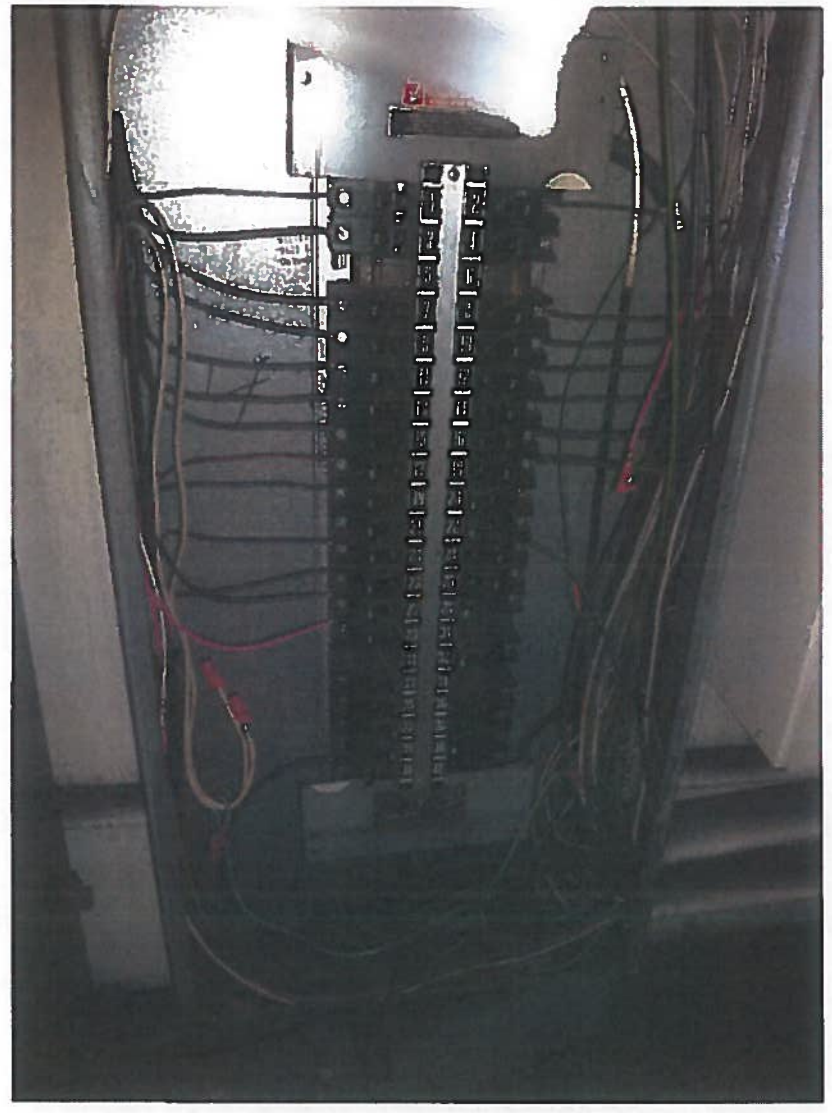
GFP A Gannett Fleming/Parsons JOINT VENTURE
SUBMITTED PROJECT MANAGER

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

SCALE: NOT TO SCALE
DRAWING NO: B02-E-102

EXISTING PANEL "AFCE"

EXISTING PANEL "AFCE"

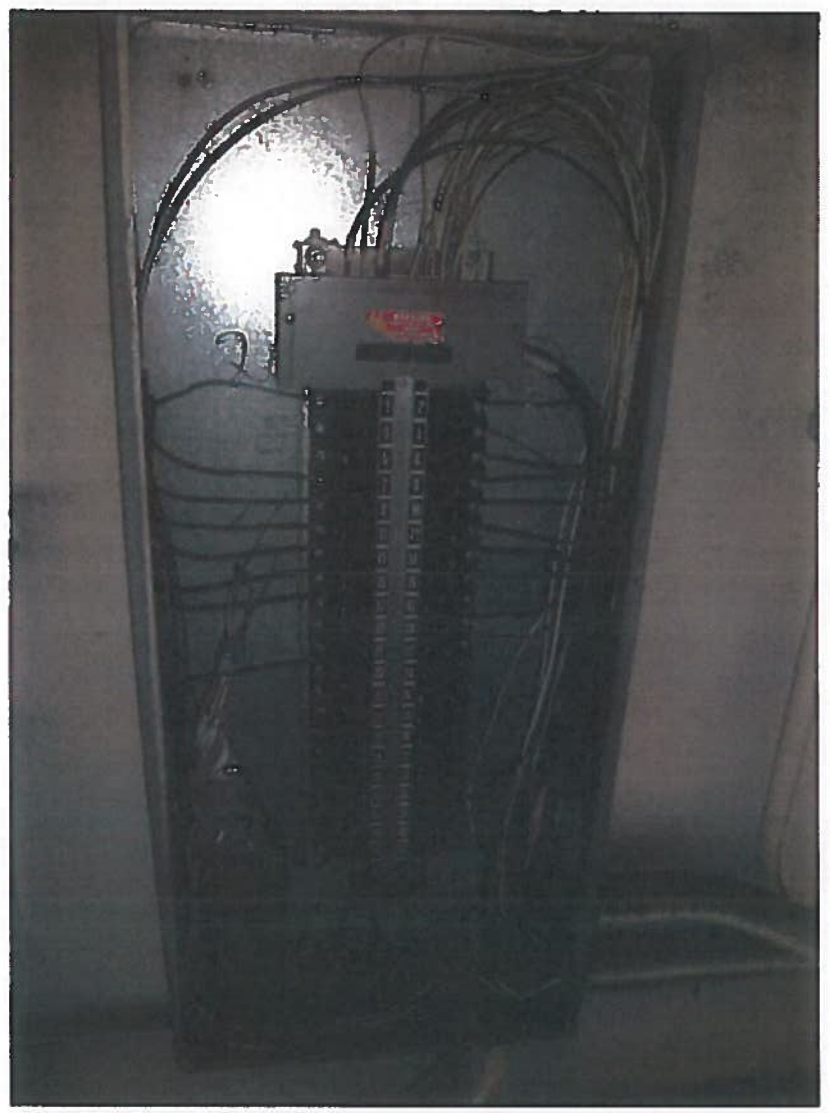


EXISTING PANEL "AFCE"

DESIGNED C. NGO 07-14 DATE	REFERENCE DRAWINGS		REVISIONS			WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY	CONTRACT NO 14-FQ10060-CENI-24
DRAWN C. NGO 07-14 DATE	NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION	DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM	NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS JUDICIARY SQUARE EAST & WEST PANELBOARD IMAGE
CHECKED B. IDRIS 07-14 DATE						APPROVED	GFP A Gannett Fleming/Parsons JOINT VENTURE
APPROVED N/A DATE						SUBMITTED PROJECT MANAGER	SCALE NOT TO SCALE / DRAWING NO. B02-E-301

EXISTING PANEL "AFCW"

EXISTING PANEL "AFCW"



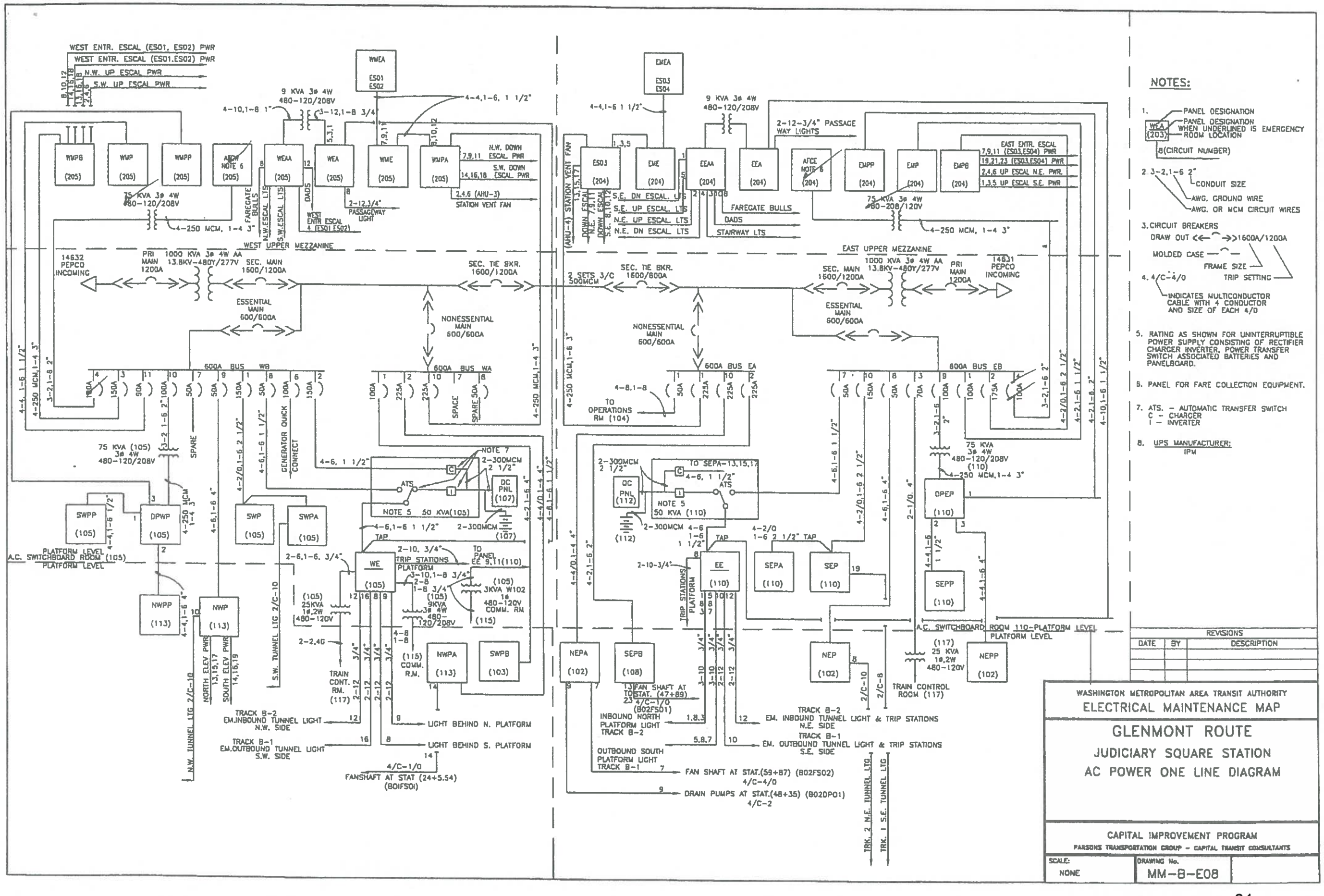
EXISTING PANEL "AFCW"

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO 07-14 DATE	REFERENCE DRAWINGS		REVISIONS			WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DRAWN C. NGO 07-14 DATE	NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION	DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
CHECKED S. IDLBI 07-14 DATE						APPROVED _____
APPROVED N/A DATE						GFP A Gannett Fleming/Parsons JOINT VENTURE SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
JUDICIARY SQUARE EAST & WEST
PANELBOARD IMAGE

SCALE	DRAWING NO.	
NOT TO SCALE	B02-E-302	


WEST ENTR. ESCAL (ES01, ES02) PWR
WEST ENTR. ESCAL (ES01.ES02) PWR
N.W. UP ESCAL PWR
S.W. UP ESCAL PWR
WMEA ES01 ES02
9 KVA 3ø 4W 480-120/208V
4-10,1-8 1"
3-12,1-8 3/4"
4-4,1-6, 1 1/2"
WMPB (205)
WMP (205)
WMPP (205)
ABCW NOTE 6 (205)
WEAA (205)
WEA (205)
WME (205)
WMPA (205)
75 KVA 3ø 4W 480-120/208V
4-250 MCM, 1-4 3"
FARECATE BULLS
N.W.ESCAL LTS
S.W.ESCAL LTS
DADS
WEST ENTR ESCAL 4 (ES01 ES02)
2-12,3/4" PASSAGEWAY LIGHT
N.W. DOWN 7,9,11 ESCAL PWR
S.W. DOWN 14,16,18 ESCAL PWR
2,4,6 (AHU-3) STATION VENT FAN
WEST UPPER MEZZANINE
14632 PEPCO INCOMING
PRI MAIN 1200A
1000 KVA 3ø 4W AA 13.8KV-480Y/277V
SEC. MAIN 1600/1200A
SEC. TIE BKR. 1600/1200A
ESSENTIAL MAIN 600/600A
NONESSENTIAL MAIN 600/600A
600A BUS WB
600A BUS WA
SPACE
SPARE 50A
4-250 MCM,1-4 3"
4-4,1-6 1 1/2"
3-2,1-6 2"
4-2/0,1-6 2 1/2"
4-6,1-6 1 1/2"
4-6,1-6 4"
GENERATOR QUICK CONNECT
75 KVA (105) 3ø 4W 480-120/208V
SPARE
SWPP (105)
DPWP (105)
SWP (105)
SWPA (105)
PLATFORM LEVEL
A.C. SWITCHBOARD ROOM (105)
PLATFORM LEVEL
NOTE 7
2-300MCM 2 1/2"
ATS
DC PNL (107)
NOTE 5 50 KVA(105)
4-6,1-6 1 1/2"
2-300MCM (107)
TAP
2-10, 3/4" TRIP STATIONS PLATFORM
TO PANEL EE 9,11(110)
WE (105)
2-6,1-6, 3/4"
3-10,1-8 3/4"
2-8
1-8 3/4"
(105) 25KVA 1ø,2W 480-120V
(105) 9KVA 3ø 4W 480-120/208V
(105) 3KVA W102 1ø 480-120V COMM. RM
(115)
4-8 1-8
(115) COMM. R.M.
NWPP (113)
NWP (113)
NWPA (113)
SWPB (103)
2-2.4G
TRAIN CONT. RM. (117)
NORTH ELEV PWR 13,15,17
SOUTH ELEV PWR 14,16,19
N.W. TUNNEL LTG 2/C-10
S.W. TUNNEL LTG 2/C-10
TRACK 8-2 EM.INBOUND TUNNEL LIGHT N.W. SIDE
LIGHT BEHIND N. PLATFORM
TRACK 8-1 EM.OUTBOUND TUNNEL LIGHT S.W. SIDE
LIGHT BEHIND S. PLATFORM
4/C-1/0
FANSHAFT AT STAT (24+5.54) (B01FS01)
EMEA ES03 ES04
9 KVA 3ø 4W 480-120/208V
4-4,1-6 1 1/2"
2-12-3/4" PASSAGE WAY LIGHTS
(AHU-4) STATION VENT FAN
ES03 (204)
EME (204)
EEAA (204)
EEA (204)
AFCE NOTE 6 (204)
EMPP (204)
EMP (204)
EMPB (204)
EAST ENTR. ESCAL 7,9,11 (ES03,ES04) PWR
19,21,23 (ES03,ES04) PWR
2,4,6 UP ESCAL N.E. PWR.
1,3,5 UP ESCAL S.E. PWR
DOWN ESCAL N.E. 7,9,11
DOWN ESCAL S.E. 8,10,12
S.E. DN ESCAL. LTS
S.E. UP ESCAL LTS
N.E. UP ESCAL LTS
N.E. DN ESCAL LTS
FAREGATE BULLS
DADS
STAIRWAY LTS
75 KVA 3ø 4W 480-208/120V
4-250 MCM, 1-4 3"
EAST UPPER MEZZANINE
1000 KVA 3ø 4W AA 13.8KV-480Y/277V
14631 PEPCO INCOMING
PRI MAIN 1200A
SEC. MAIN 1600/1200A
SEC. TIE BKR. 1600/800A
2 SETS 3/C 500MCM
ESSENTIAL MAIN 600/600A
NONESSENTIAL MAIN 600/600A
600A BUS EA
600A BUS EB
4-8,1-8
TO OPERATIONS RM (104)
4-250 MCM,1-6 3"
4-2/0,1-6 2 1/2"
4-2,1-6 2"
4-10,1-6 1 1/2"
4-6,1-6 1 1/2"
4-6,1-6 4"
2-1/0, 4"
75 KVA 3ø 4W 480-120/208V (110)
4-250 MCM,1-4 3"
2-300MCM 2 1/2"
QC PNL (112)
TO SEPA-13,15,17
4-6, 1 1/2" ATS
NOTE 5 50 KVA (110)
2-300MCM 4-6 1-6 1 1/2"
(112)
TAP
4-2/0 1-6 2 1/2" TAP
4-4/0,1-4 4"
4-2,1-6 2"
2-10-3/4"
TRIP STATIONS PLATFORM
EE (110)
SEPA (110)
SEP (110)
DPEP (110)
SEPP (110)
4-4,1-6 1 1/2"
4-1,1-6 4"
A.C. SWITCHBOARD ROOM 110-PLATFORM LEVEL
PLATFORM LEVEL
(117) 25 KVA 1ø,2W 480-120V
NEPP (102)
NEPA (102)
SEPB (108)
NEP (102)
2/C-10
2/C-8
TRAIN CONTROL ROOM (117)
13 FAN SHAFT AT TO STAT. (47+89) 23 4/C-1/0 (B02FS01)
INBOUND NORTH PLATFORM LIGHT TRACK 8-2
OUTBOUND SOUTH PLATFORM LIGHT TRACK 8-1
TRACK 8-2 EM. INBOUND TUNNEL LIGHT & TRIP STATIONS N.E. SIDE
TRACK 8-1 EM. OUTBOUND TUNNEL LIGHT & TRIP STATIONS S.E. SIDE
FAN SHAFT AT STAT.(59+87) (B02FS02) 4/C-4/0
DRAIN PUMPS AT STAT.(48+35) (B02DP01) 4/C-2
TRK. 2 N.E. TUNNEL LTG.
TRK. 1 S.E. TUNNEL LTG
NOTES:
1. PANEL DESIGNATION
WEA (203) PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY ROOM LOCATION
8 (CIRCUIT NUMBER)
2 3-2,1-6 2" CONDUIT SIZE
AWG. GROUND WIRE
AWG. OR MCM CIRCUIT WIRES
3. CIRCUIT BREAKERS
DRAW OUT 1600A/1200A
MOLDED CASE FRAME SIZE
4. 4/C-4/0 TRIP SETTING
INDICATES MULTICONDUCTOR CABLE WITH 4 CONDUCTOR AND SIZE OF EACH 4/0
5. RATING AS SHOWN FOR UNINTERRUPTIBLE POWER SUPPLY CONSISTING OF RECTIFIER CHARGER INVERTER, POWER TRANSFER SWITCH ASSOCIATED BATTERIES AND PANELBOARD.
6. PANEL FOR FARE COLLECTION EQUIPMENT.
7. ATS. - AUTOMATIC TRANSFER SWITCH
C - CHARGER
I - INVERTER
8. UPS MANUFACTURER: IPM
REVISIONS
DATE BY DESCRIPTION
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
ELECTRICAL MAINTENANCE MAP
GLENMONT ROUTE
JUDICIARY SQUARE STATION
AC POWER ONE LINE DIAGRAM
CAPITAL IMPROVEMENT PROGRAM
PARSONS TRANSPORTATION GROUP - CAPITAL TRANSIT CONSULTANTS
SCALE: NONE
DRAWING No. MM-B-E08

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

DRAWING INDEX

ELECTRICAL SYMBOL LIST

- QUADRUPLEX RECEPTACLE OUTLET- 20A, 125V WALL MOUNTED.
- J — JUNCTION BOX - SURFACE MOUNTED ON UNISTRUT CHANNEL
- CONDUIT - CONCEALED IN UNDER FLOOR DUCT U.O.N.
- 10-3/4 — 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

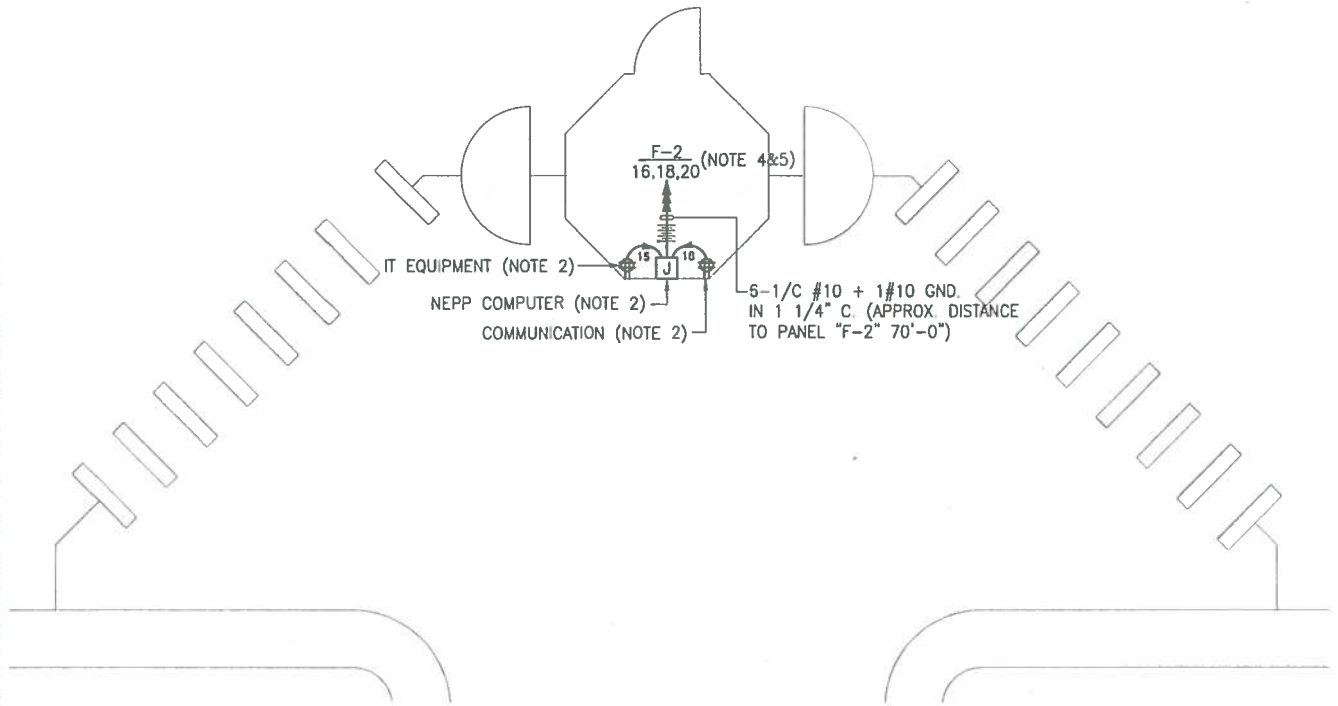
DESIGNED C. NGO 07-14 DATE	REFERENCE DRAWINGS	REVISIONS
DRAWN C. NGO 07-14 DATE	NUMBER / DESCRIPTION	DATE / BY / DESCRIPTION
CHECKED B. IDLIB 07-14 DATE		
APPROVED N/A DATE		

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: B03-E-001



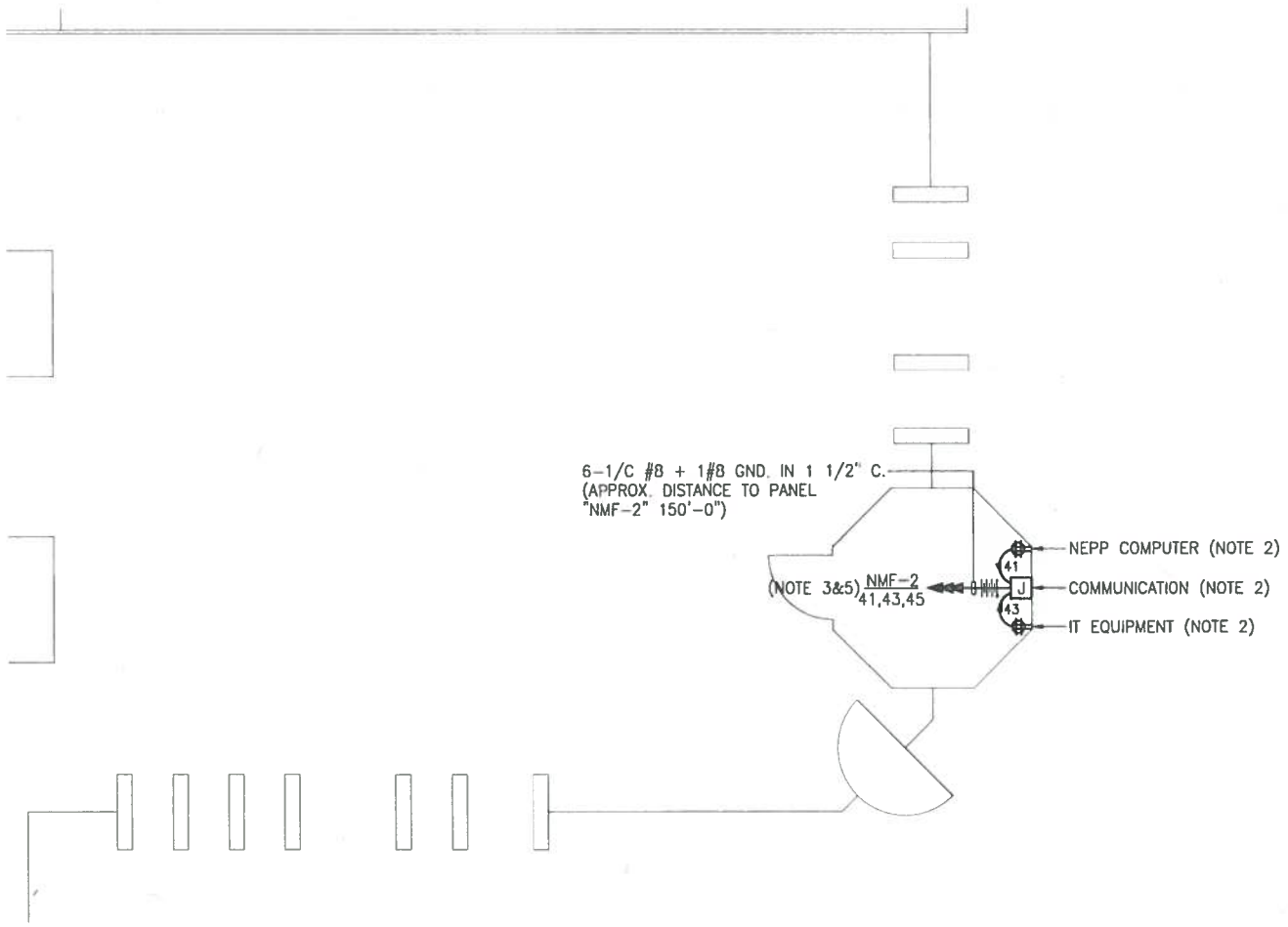
SOUTH KIOSK - POWER
SCALE: 1/4" = 1'- 0"

DRAWING NOTES:

1. USE EXISTING UNDER FLOOR DUCT FOR POWER WIRING. ALL OUTSIDE FLOOR DUCT WIRING SHALL BE IN CONDUIT.
2. VERIFY WITH WMATA PERSONNEL FOR LOCATION OF RECEPTACLES & JUNCTION BOXES.
3. CONNECT CIRCUIT #41 #43 & #45 TO EXISTING 20A, 1P SPARE CIRCUIT BREAKERS IN THE EXISTING PANEL "NMF-2", SEE PANEL SCHEDULE ON DWG. B03-E-102.
4. CONNECT CIRCUIT #16, #18 & #20 TO EXISTING 20A, 1P SPARE CIRCUIT BREAKERS IN THE EXISTING PANEL "F-2", SEE PANEL SCHEDULE ON DWG. B03-E-102.
5. PROVIDE A ROUGHIN CIRCUIT FOR FUTURE AFC FARE GATE 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.



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

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO	07-14 DATE	
DRAWN C. NGO	07-14 DATE	
CHECKED B. IDILBI	07-14 DATE	
APPROVED N/A	DATE	

REFERENCE DRAWINGS

NUMBER	DESCRIPTION

REVISIONS

DATE	BY	DESCRIPTION
9-22-15	RBM	REV. 1

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
UNION STATION - NORTH & SOUTH KIOSK - POWER

SCALE: AS SHOWN
DRAWING NO.: B03-E-101

EXISTING PANEL "F-2"

AMPERES: 100	VOLTS: 120/208			MOUNTING: SURFACE						
MAINS: 70A	PHASE: 3			LOCATION: C200 FIRE EQUIPMENT CABINET						
RATING: 10K AIC	WIRE: 4			SECTION: 1 OF 1						
	CKT BKRS			CKT.		CKT.	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.		NO	POLE	AMP	KVA	LOAD DESCRIPTION
EXISTING VENDOR	0.0	60	2	1	A - -	2	3	100	2.9	MAIN
	0.0	-	-	3	- B -	4	-	-	2.5	
EXISTING VENDOR	0.0	20	1	5	- - C	6	-	-	2.5	
EXISTING VENDOR	0.8	20	1	7	A - -	8	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	9	- B -	10	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	11	- - C	12	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	13	A - -	14	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	15	- B -	16	1	20	0.8	NEW KIOSK RECEPT. (IT & NCS)
EXISTING VENDOR	0.8	20	1	17	- - C	18	1	20	0.8	NEW KIOSK RECEPT. (NEPP/SOC)
SPARE	0.0	20	1	19	A - -	20	1	20	0.0	FUTURE AFC FARE GATE
SPARE	0.0	20	1	21	- B -	22	1	20	0.0	SPARE
SPACE	0.0	20	1	23	- - C	24	1	20	0.0	SPARE
SPACE	0.0	20	1	25	A - -	26	1	20	0.0	SPARE
SPACE	0.0	20	1	27	- B -	28	1	20	0.0	SPARE
SPACE	0.0	20	1	29	- - C	30	-	-	0.0	SPACE

LOAD SUMMARY

LIGHTS	0.0 x 125%		0.0 KVA
RECEPTACLES, FIRST 10 KVA	9.2 x 100%		9.2 KVA
RECEPTACLES	0.0 x 50%		0.0 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	16.7 KVA	TOTAL DEMAND KVA	17.5 KVA
		TOTAL DEMAND AMPS	48.5 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A	6.1 KVA		
PHASE B	5.7 KVA		
PHASE C	5.7 KVA		

NOTES: A. THE EXISTING PANEL "F-2" IS FED FROM 277/480V, 3ø, 4W EXISTING SWBD. "SGB" LOCATED IN AC SWBD ROOM 109 CIRCUIT (B03-SGB-04) #4-100/3P VIA 75 KVA TRANSFORMER (SEE ATTACHED DWG. MM-B-E10).

B. EXISTING WIRING FED FROM BOTTOM OF PANEL BY:
- 1-8"x 36" WIRE TROUGH (WIRING FILL >40%).
- 2-4" C. (WIRING FILL >40%).

EXISTING WIRING FED FROM TOP OF PANEL BY:
- 1-3" C. TO TRANSFORMER (WIRING FILL >40%).

EXISTING PANEL "NMF-2"

AMPERES: 225	VOLTS: 120/208			MOUNTING: SURFACE						
MAINS: 100A	PHASE: 3			LOCATION: ROOM 214						
RATING: 10K AIC	WIRE: 4			SECTION: 1 OF 1						
	CKT BKRS			CKT.		CKT.	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.		NO	POLE	AMP	KVA	LOAD DESCRIPTION
SPACE	0.0	-	-		A		3	100	0.0	MAIN
	0.0	-			- B	26	-		0.0	
	0.0	-	-		- - C		-	-	0.0	
EXISTING VENDOR	0.8	20	3		A - -	28	1	20	0.8	EXISTING VENDOR
	0.8			27	- B	30	1	20	0.8	EXISTING VENDOR
	0.8	-	-		- - C	32	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	29	A	34	2	50	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	31	- B	36	-	-	0.8	
EXISTING VENDOR	0.8	20	1	33	- - C	38	2	30	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	35	A - -	40		-	0.8	
EXISTING VENDOR	0.8	20	1	37	- B	42	3	50	2.9	EXIST. LOAD CENTER "KES"
EXISTING VENDOR	0.8	20	1	39	- - C	44		-	2.5	
NEW KIOSK RECEPT. (IT & NCS)	0.8	20	1	41	A	46			2.5	
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	43	- B	48			0.0	SPACE
FUTURE AFC FARE GATE	0.0	20	1	45	- - C	50			0.0	SPACE

LOAD SUMMARY

LIGHTS	0.0 x 125%		0 KVA
RECEPTACLES, FIRST 10 KVA	10.0 x 100%		10 KVA
RECEPTACLES	4.0 x 50%		2.0 KVA
MISC APPLIANCES	0.0 x 100%		0.0 KVA
LARGEST MOTOR	0.0 x 125%		0.0 KVA
MOTORS	0.0 x 100%		0.0 KVA
HEAT	3.0 x 125%		3.8 KVA
AC	4.5 x 100%		4.5 KVA
WATER HEATING	0.0 x 125%		0.0 KVA
TOTAL CONNECTED LOAD	21.5 KVA	TOTAL DEMAND KVA	20.3 KVA
		TOTAL DEMAND AMPS	56.3 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A	8.1 KVA		
PHASE B	7.7 KVA		
PHASE C	6.5 KVA		

NOTES: A. THE EXISTING PANEL "NMF-2" IS FED FROM 277/480V, 3ø, 4W EXISTING SWBD "NGB" LOCATED IN AC SWBD ROOM 102, CIRCUIT (B03-NGB-03) #3-100/3P VIA 50 KVA TRANSFORMER (SEE ATTACHED DWG. MM-B-E10).

B. EXISTING WIRING FED FROM BOTTOM OF PANEL BY:
- 1-8"x 36" WIRE TROUGH (WIRING FILL >40%).
- 2-4" C. (WIRING FILL >40%).

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

CONTRACT NO: 14-FQ10060-CENI-24

DESIGNED C. NGO 07-14 DATE
DRAWN C. NGO 07-14 DATE
CHECKED B. IDLIB 07-14 DATE
APPROVED N/A DATE

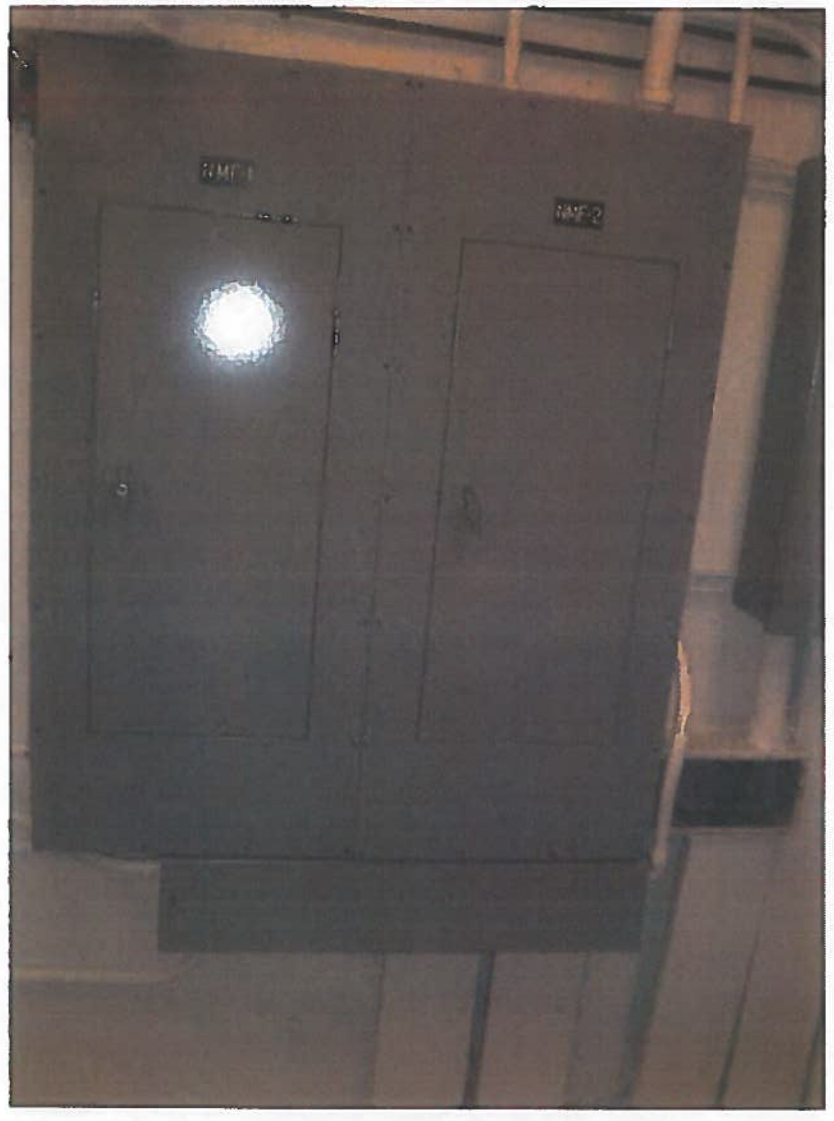
REFERENCE DRAWINGS		REVISIONS		
NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION

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

GFP A Gannett Fleming/Parsons JOINT VENTURE
SUBMITTED PROJECT MANAGER

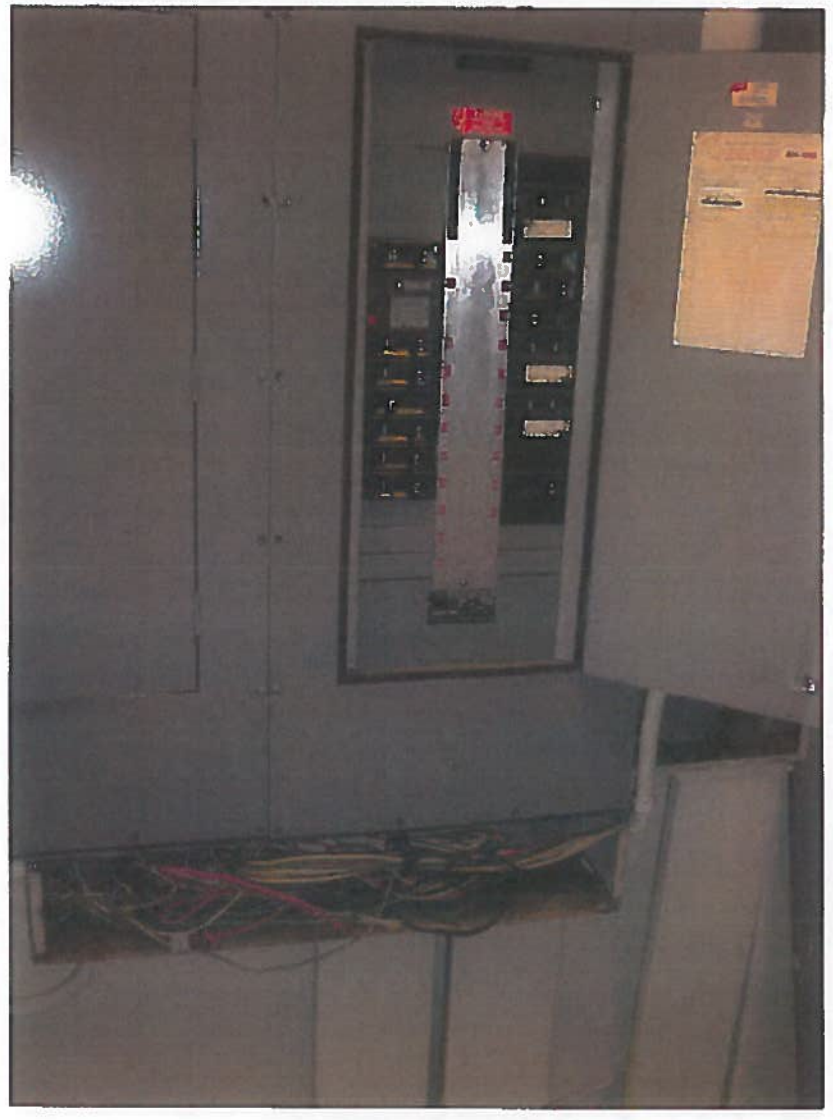
NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
UNION STATION - NORTH & SOUTH
PANEL SCHEDULES

SCALE: NOT TO SCALE
DRAWING NO: B03-E-102



EXISTING PANEL "NMF-2"

EXISTING PANEL "NMF-2"



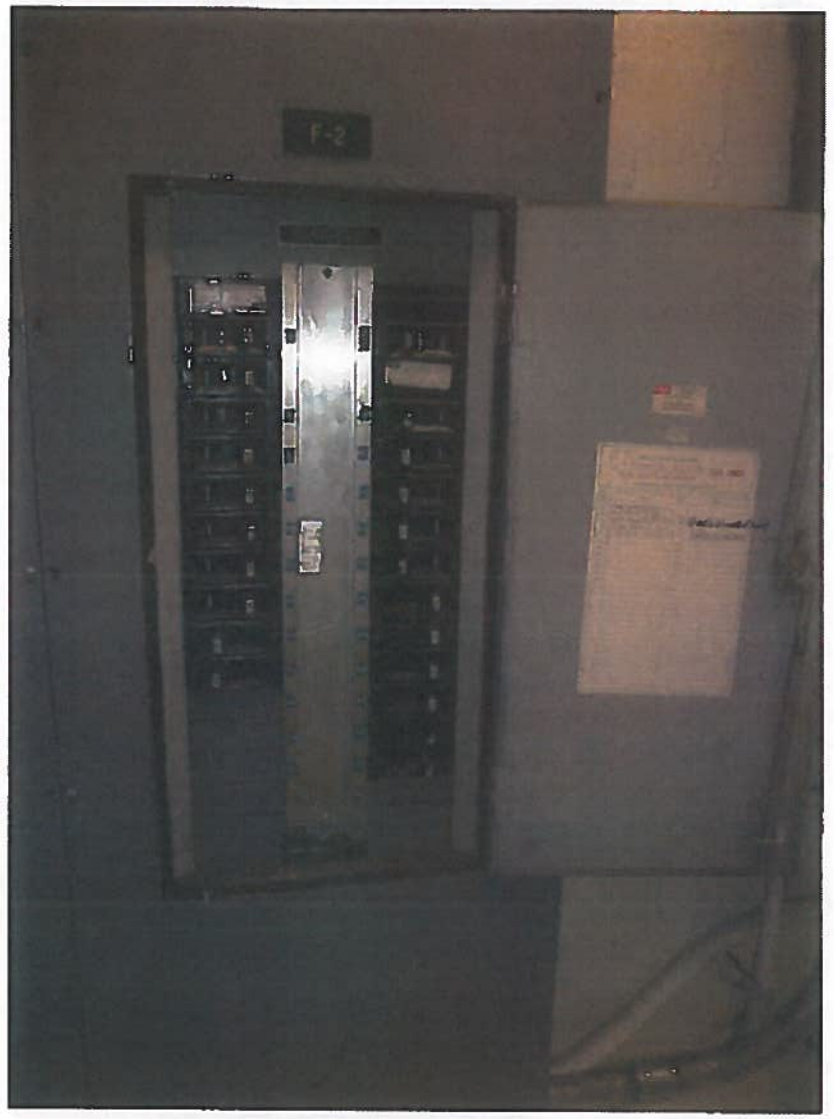
EXISTING PANEL "NMF-2"

DESIGNED C. NGO 07-14 DATE	REFERENCE DRAWINGS	REVISIONS	CONTRACT NO. 14-FQ10060-CENI-24
DRAWN C. NGO 07-14 DATE	NUMBER / DESCRIPTION	DATE / BY / DESCRIPTION	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
CHECKED B. IDLIB 07-14 DATE			DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
APPROVED N/A DATE			APPROVED
			GFP A Gannett Fleming/Parsons JOINT VENTURE SUBMITTED PROJECT MANAGER

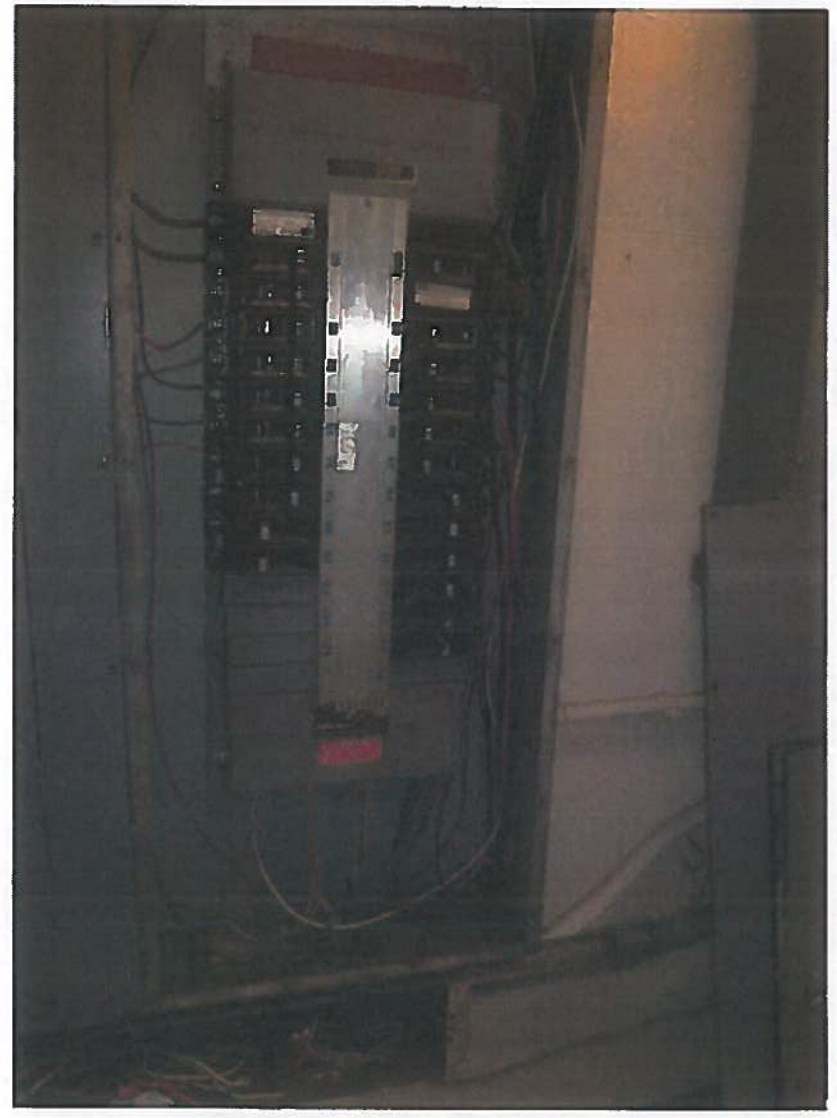
NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
UNION STATION - NORTH & SOUTH
PANELBOARD IMAGE

SCALE: NOT TO SCALE | DRAWING NO.: B03-E-301

EXISTING PANEL "F-2"



EXISTING PANEL "F-2"



EXISTING PANEL "F-2"

DESIGNED C. NGO 07-14 DATE	REFERENCE DRAWINGS		REVISIONS		
DRAWN C. NGO 07-14 DATE	NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
CHECKED B. IDLBI 07-14 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

CONTRACT NO. 14-FQ10060-CENI-24

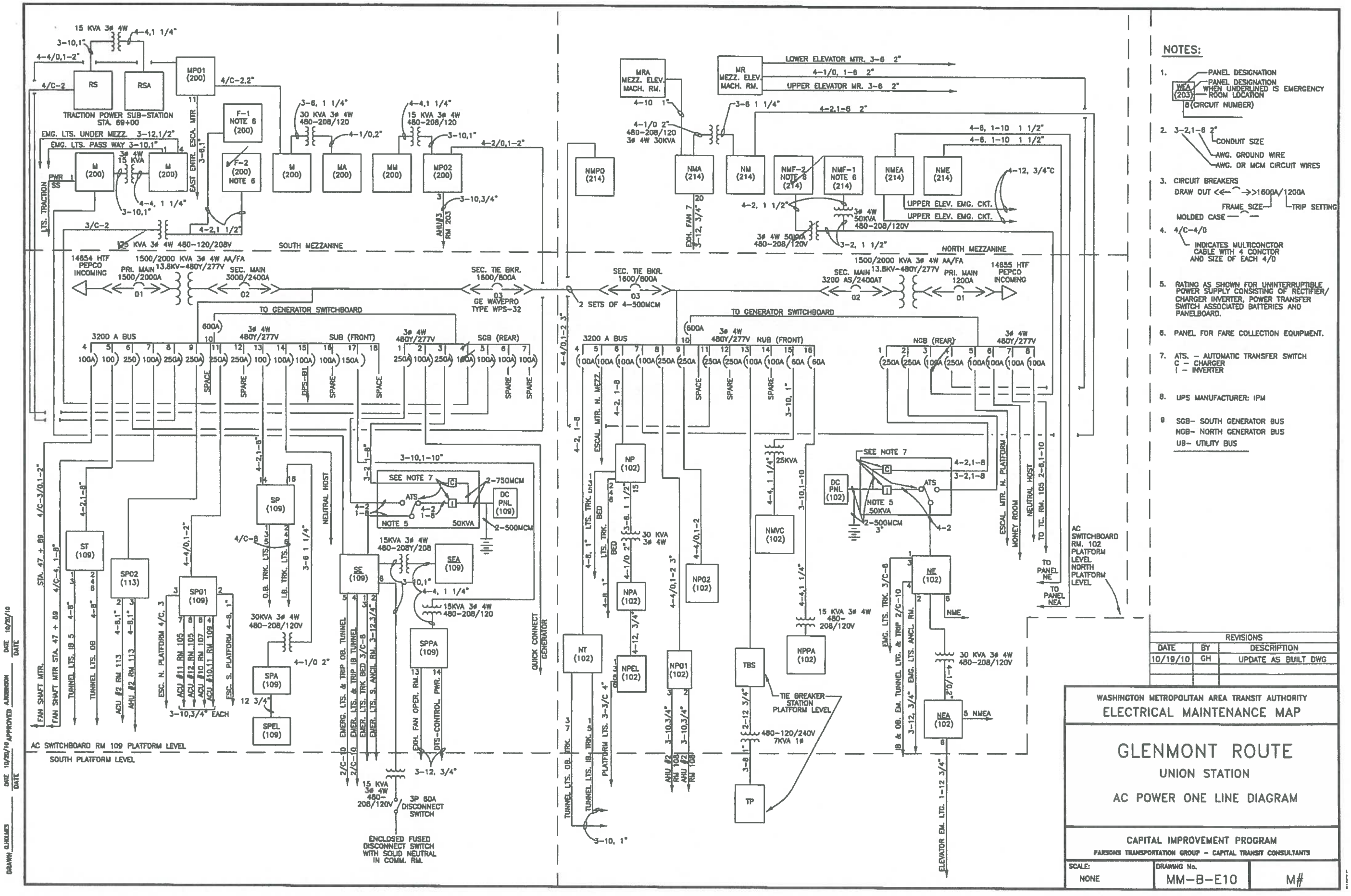
NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS

UNION STATION - NORTH & SOUTH

PANELBOARD IMAGE

SCALE NOT TO SCALE

DRAWING NO. B03-E-302


NOTES:
1. PANEL DESIGNATION
PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY
ROOM LOCATION
CIRCUIT NUMBER
2. CONDUIT SIZE
AWG. GROUND WIRE
AWG. OR MCM CIRCUIT WIRES
3. CIRCUIT BREAKERS
DRAW OUT
FRAME SIZE
TRIP SETTING
MOLDED CASE
4. INDICATES MULTICONCTOR CABLE WITH 4 CONCTOR AND SIZE OF EACH 4/0
5. RATING AS SHOWN FOR UNINTERRUPTIBLE POWER SUPPLY CONSISTING OF RECTIFIER/ CHARGER INVERTER, POWER TRANSFER SWITCH ASSOCIATED BATTERIES AND PANELBOARD.
6. PANEL FOR FARE COLLECTION EQUIPMENT.
7. ATS. – AUTOMATIC TRANSFER SWITCH
C – CHARGER
I – INVERTER
8. UPS MANUFACTURER: IPM
9 SGB– SOUTH GENERATOR BUS
NGB– NORTH GENERATOR BUS
UB– UTILITY BUS
SOUTH MEZZANINE
NORTH MEZZANINE
TRACTION POWER SUB-STATION STA. 69+00
14854 HTF PEPCO INCOMING
14855 HTF PEPCO INCOMING
1500/2000 KVA 3ø 4W AA/FA
13.8KV–480Y/277V
3200 A BUS
TO GENERATOR SWITCHBOARD
2 SETS OF 4–500MCM
GE WAVEPRO TYPE WPS–32
AC SWITCHBOARD RM 109 PLATFORM LEVEL
SOUTH PLATFORM LEVEL
AC SWITCHBOARD RM. 102 PLATFORM LEVEL NORTH PLATFORM LEVEL
MONEY ROOM
ENCLOSED FUSED DISCONNECT SWITCH WITH SOLID NEUTRAL IN COMM. RM.
TIE BREAKER STATION PLATFORM LEVEL
EMG. LTS. UNDER MEZZ. 3–12,1/2"
EMG. LTS. PASS WAY 3–10,1"
LTS. TRACTION
UPPER ELEV. EMG. CKT.
QUICK CONNECT GENERATOR
REVISIONS
DATE | BY | DESCRIPTION
10/19/10 | GH | UPDATE AS BUILT DWG
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
ELECTRICAL MAINTENANCE MAP
GLENMONT ROUTE
UNION STATION
AC POWER ONE LINE DIAGRAM
CAPITAL IMPROVEMENT PROGRAM
PARSONS TRANSPORTATION GROUP – CAPITAL TRANSIT CONSULTANTS
SCALE: NONE
DRAWING No. MM–B–E10
M#
DRAWN GJHOLMES DATE 10/20/10
APPROVED AJOHNSON DATE 10/20/10

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

DRAWING INDEX

ELECTRICAL SYMBOL LIST

- QUADRUPLEX RECEPTACLE OUTLET– 20A, 125V WALL MOUNTED.
- [J] JUNCTION BOX – SURFACE MOUNTED ON UNISTRUT CHANNEL
- CONDUIT – CONCEALED IN UNDER FLOOR DUCT U.O.N.
- #10–3/4 / EF 3,5 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	07-14 DATE	
DRAWN C. NGO	07-14 DATE	
CHECKED B. IDLBI	07-14 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

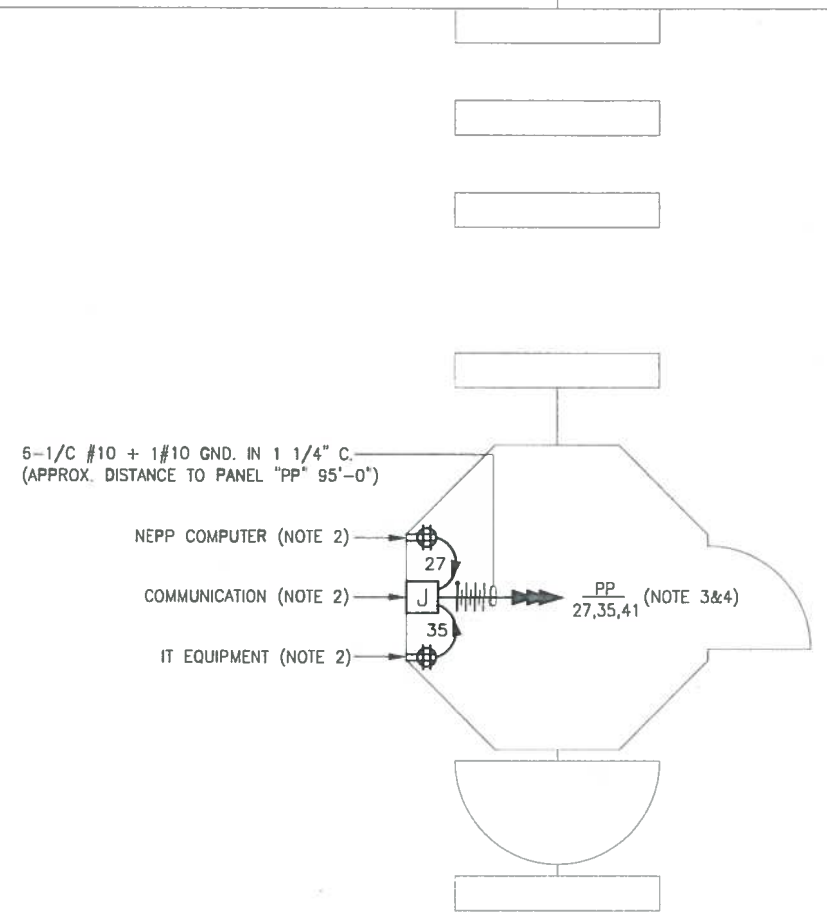
GFP A Gannett Fleming/Parsons JOINT VENTURE

SUBMITTED PROJECT MANAGER

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

SCALE: NOT TO SCALE

DRAWING NO: B04-E-001



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

DRAWING NOTES:

1. USE EXISTING UNDER FLOOR DUCT FOR POWER WIRING. ALL OUTSIDE FLOOR DUCT WIRING SHALL BE IN CONDUIT.
2. VERIFY WITH WMATA PERSONNEL FOR LOCATION OF RECEPTACLES & JUNCTION BOXES.
3. CONNECT CIRCUIT #27 #35 & #41 TO EXISTING 20A, 1P SPARE CIRCUIT BREAKERS IN THE EXISTING PANEL "PP", SEE PANEL SCHEDULE ON DWG. B04-E-102.
4. PROVIDE A ROUGHIN CIRCUIT FOR FUTURE AFC FARE GATE 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	07-14 DATE	
DRAWN C. NGO	07-14 DATE	
CHECKED B. IDILBI	07-14 DATE	
APPROVED N/A	DATE	

REFERENCE DRAWINGS

NUMBER	DESCRIPTION

REVISIONS

DATE	BY	DESCRIPTION
9-22-15	RBM	REV. 1

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
RHODE ISLAND AVENUE
KIOSK - POWER

SCALE: AS SHOWN

DRAWING NO.: B04-E-101

EXISTING PANEL "PP"

AMPERES: 225	VOLTS: 120/208	MOUNTING: SURFACE	
MAINS: 150A MCB	PHASE: 3	LOCATION: AC SWBD ROOM 101	
RATING: 10K AIC	WIRE: 4	SECTION: 1 OF 1	

		CKT BKRS		CKT.		CKT.	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.		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	0.8	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	0.0	SPARE
EXISTING VENDOR	0.8	20	1	9	- B -	10	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	11	- - C	12	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	13	A - -	14	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	15	- B -	16	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	17	- - C	18	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	19	A - -	20	1	20	0.8	EXISTING VENDOR
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	0.0	SPARE
NEW KIOSK RECEPT.	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
SPARE (KIOSK)	0.8	20	1	35	- - C	36	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	2	37	A - -	38	2	70	3.4	EXIST. KIOSK LOAD CENTER "KES"
	0.8	-	-	39	- B -	40	-	-	3.0	
SPARE (KIOSK)	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	18.4 x 50%		9.2 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	4.0 x 100%		4.0 KVA
WATER HEATING	0.0 x 125%		0.0 KVA
TOTAL CONNECTED LOAD	34.4 KVA	TOTAL DEMAND KVA	25.7 KVA
		TOTAL DEMAND AMPS	71.4 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	12.2 KVA		
PHASE B:	13.4 KVA		
PHASE C:	9.6 KVA		

NOTES: A. EXISTING PANEL "PP" IS FED FROM 277/480V, 3ø, 4W EXISTING SWITCHBOARD "B04" LOCATED IN AC SWBD. RM. 101, BREAKER B04-02-05 (100A/3P) VIA 45KVA TRANSFORMER (SEE ATTACHED DWG. MM-B-E14 SHOW DIFFERENT).

B. EXISTING WIRING FED FROM BOTTOM OF PANEL BY:
- 1-2"x 6" WIRE TROUGH W/2-4" C. (WIRING FILL >40%).

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

CONTRACT NO. 14-FQ10060-CENI-24

DESIGNED C. NGO 07-14 DATE
DRAWN C. NGO 07-14 DATE
CHECKED B. IDILBI 07-14 DATE
APPROVED N/A DATE

REFERENCE DRAWINGS	
NUMBER	DESCRIPTION

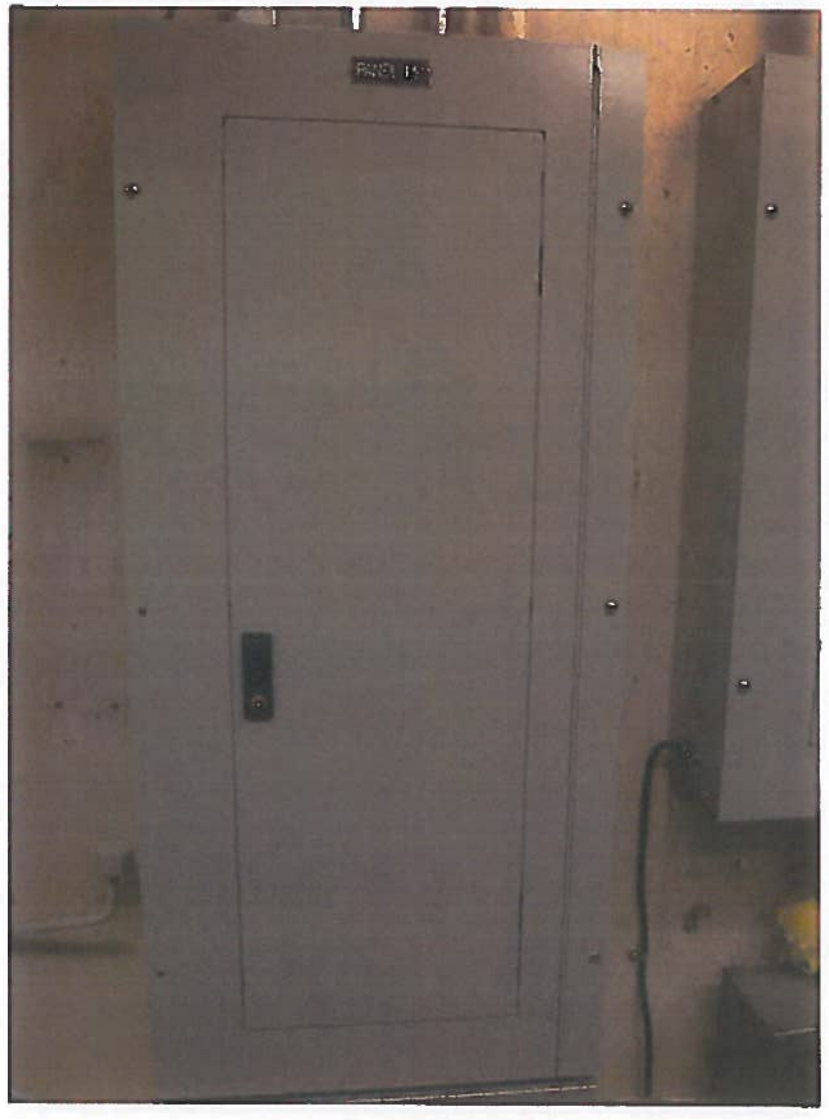
REVISIONS		
DATE	BY	DESCRIPTION

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
RHODE ISLAND AVENUE
PANEL SCHEDULE

SCALE: NOT TO SCALE
DRAWING NO: B04-E-102



EXISTING PANEL "PP"

EXISTING PANEL "PP"

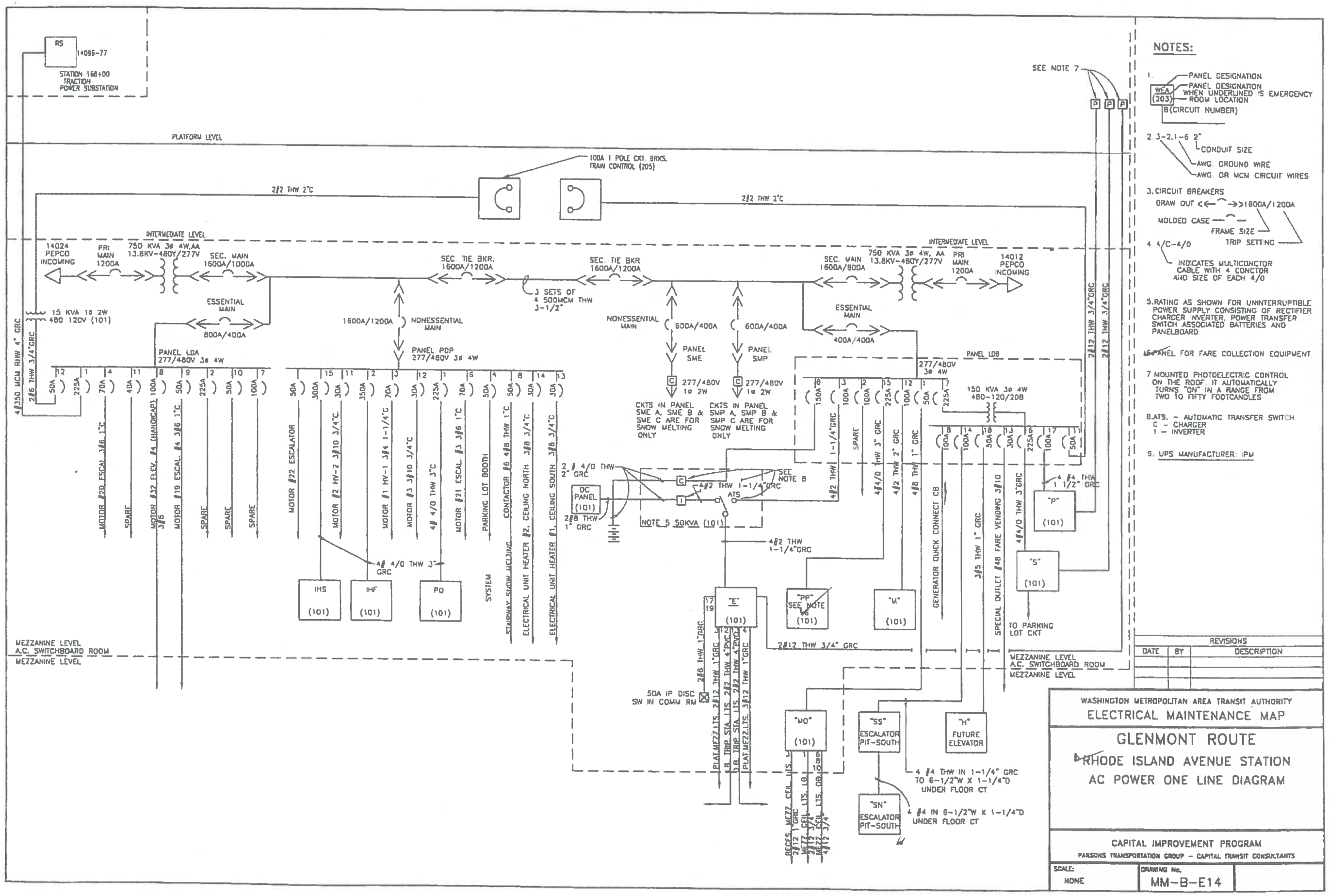
EXISTING PANEL "PP"

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO 07-14 DATE	REFERENCE DRAWINGS	REVISIONS	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DRAWN C. NGO 07-14 DATE	NUMBER / DESCRIPTION	DATE / BY / DESCRIPTION	DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
CHECKED S. IDLBI 07-14 DATE			APPROVED _____
APPROVED N/A DATE			GFP A Gannett Fleming/Parsons JOINT VENTURE SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
RHODE ISLAND AVENUE
PANELBOARD IMAGE

SCALE	DRAWING NO.	
NOT TO SCALE	B04-E-301	



NOTES:

1. PANEL DESIGNATION
   PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY
   ROOM LOCATION
   CIRCUIT NUMBER
   (WEA (203) 8)
2. 3-2,1-6 2" — CONDUIT SIZE; AWG. GROUND WIRE; AWG. OR MCM CIRCUIT WIRES
3. CIRCUIT BREAKERS
   DRAW OUT; MOLDED CASE; FRAME SIZE; TRIP SETTING — 1600A/1200A
   4 4/C-4/0 — INDICATES MULTICONCTOR CABLE WITH 4 CONCTOR AND SIZE OF EACH 4/0
5. RATING AS SHOWN FOR UNINTERRUPTIBLE POWER SUPPLY CONSISTING OF RECTIFIER CHARGER INVERTER, POWER TRANSFER SWITCH ASSOCIATED BATTERIES AND PANELBOARD
6. PANEL FOR FARE COLLECTION EQUIPMENT
7. MOUNTED PHOTOELECTRIC CONTROL ON THE ROOF. IT AUTOMATICALLY TURNS "ON" IN A RANGE FROM TWO TO FIFTY FOOTCANDLES
8. ATS. - AUTOMATIC TRANSFER SWITCH
   C - CHARGER
   I - INVERTER
9. UPS MANUFACTURER: IPM

REVISIONS		
DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

ELECTRICAL MAINTENANCE MAP

GLENMONT ROUTE

RHODE ISLAND AVENUE STATION

AC POWER ONE LINE DIAGRAM

CAPITAL IMPROVEMENT PROGRAM

PARSONS TRANSPORTATION GROUP - CAPITAL TRANSIT CONSULTANTS

SCALE:	DRAWING No.	
NONE	MM-B-E14	

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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 INOICATE THE NAME, VOLTAGE, SERVING EQUIPMENT ANO ITEM SERVED ETC... LABELS FOR EMERGENCY CIRCUITS SHALL BE IN RED, NORMAL CIRCUITS SHALL BE IN BLACK. ALL DEVICES SHALL BE IOENTIFIED EITHER ON THE FACE OF THE COVERPLATE OR INSIOE 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 PANELBOAROS AFFECTED BY THIS PROJECT TO REFLECT CHANGES OUE 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
AC	ALTERNATING CURRENT
AF	AMPERE FRAME
AFC	AUTOMATED FARE COLLECTION SYSTEM
AFF	ABOVE FINISHED FLOOR
AIC	AMPERE INTERRUPTING CAPACITY
AT	AMPERE TRIP
BKR	BREAKER
C	CONOUIT
CB	CIRCUIT BREAKER
CCT	CIRCUIT
℄	CENTER LINE
CLG	CEILING
CONST	CONSTRUCTION
DISC	DISCONNECT
E	ELECTRICAL
GND	GROUND
JB	JUNCTION BOX
KAIC	THOUSAND AMPERE INTERRUPTING CAPACITY
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
NEC	NATIONAL ELECTRIC CODE
P	POLE
PH	PHASE
PNL	PANELBOARO
PRI	PRIMARY
PROP	PROPOSED
RGS	RIGID GALVANIZED STEEL
SEC	SECONDARY
SHT	SHEET
SW	SWITCH
SWBD	SWITCHBOARO
TYP	TYPICAL
U/G	UNDER GROUND
U.L.	UNDERWRITERS LABORATORIES
UON	UNLESS OTHERWISE NOTED
VOLT	VOLTAGE
W	WATT
WMATA	WASHINGTON METROPOLITIAN AREA TRANSIT AUTHORITY
WP	WEATHERPROOF

DRAWING INDEX

ELECTRICAL SYMBOL LIST

- QUADRUPLEX RECEPTACLE OUTLET- 20A, 125V WALL MOUNTED.
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- CONDUIT - CONCEALED IN UNDER FLOOR DUCT U.O.N.
- #10-3/4 / FE 3,5 — HOMERUN TO PANEL, NUMBER OF ARROWHEADS INDICATES NUMBER OF CIRCUITS. CROSS HATCHING INDICATES NUMBER OF CONDUCTORS, NUMBER INDICATES SIZE OF CONOUCTOR AND SIZE OF CONDUIT
  - | - INDICATES GROUNDING WIRE TO GROUNDING BUS AT THE PANELBOARD
  - FE 1,3 - INDICATES CIRCUIT HOME RUN PANELBOARD AND CIRCUIT NUMBER IDENTIFICATION

CONTRACT NO
14-FQ10060-CENI-24

DESIGNED	C. NGO	07-14	DATE
DRAWN	C. NGO	07-14	DATE
CHECKED	B. IDLIBI	07-14	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

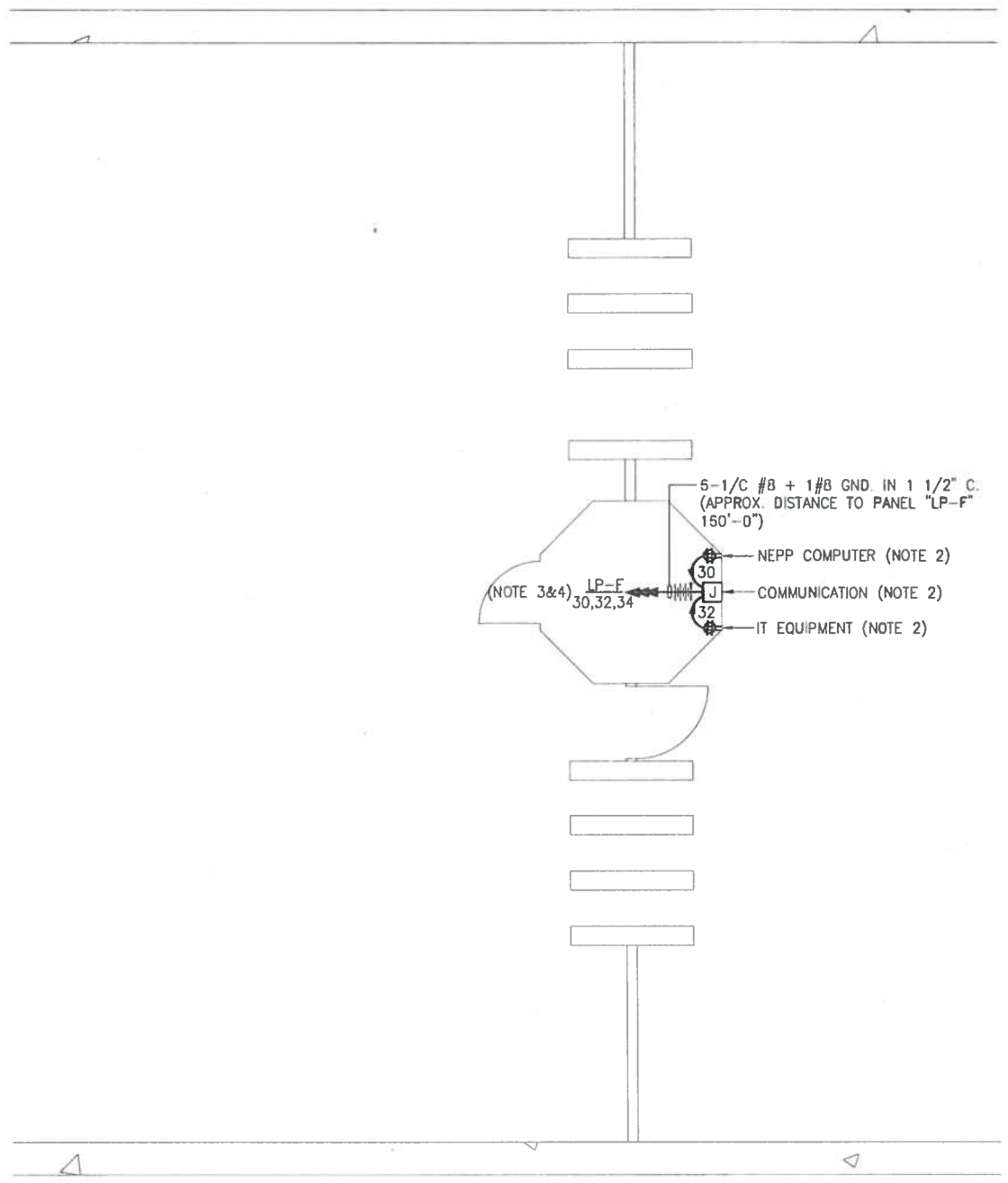
APPROVED

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.: B05-E-001



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

DRAWING NOTES:

1. USE EXISTING UNDER FLOOR DUCT FOR POWER WIRING. ALL OUTSIDE FLOOR DUCT WIRING SHALL BE IN CONDUIT.
2. VERIFY WITH WMATA PERSONNEL FOR LOCATION OF RECEPTACLES & JUNCTION BOXES.
3. CONNECT CIRCUIT #30 #32 & #34 TO EXISTING 20A, 1P SPARE CIRCUIT BREAKERS IN THE EXISTING PANEL "LP-F", SEE PANEL SCHEDULE ON DWG. B05-E-102.
4. PROVIDE A ROUGHIN CIRCUIT FOR FUTURE AFC FARE GATE 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	07-14 DATE	REFERENCE DRAWINGS	
DRAWN C. NGO	07-14 DATE	NUMBER	DESCRIPTION
CHECKED B. IDILBI	07-14 DATE		
APPROVED N/A	DATE		

REVISIONS		
DATE	BY	DESCRIPTION
9-22-15	RBM	REV. 1

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
BROOKLAND
KIOSK - POWER

SCALE	DRAWING NO.	
AS SHOWN	B05-E-101	

EXISTING PANEL "LP-F"

AMPERES: 225	VOLTS: 120/208			MOUNTING: SURFACE						
MAINS: 225A MLO	PHASE: 3			LOCATION: ELEC EQUIPMENT ROOM C106						
RATING: 10K AIC	WIRE: 4			SECTION: 1 OF 1						
		CKT BKRS		CKT		CKT	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.		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	0.8	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	0.0	SPARE
EXISTING VENDOR	0.8	20	1	9	- B -	10	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	11	- - C	12	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	13	A - -	14	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	15	- B -	16	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	17	- - C	18	1	20	0.8	EXISTING VENDOR
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
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
EXIST. KIOSK LOAD CENTER "KES"	2.9	30	2	27	- B -	28	1	20	0.8	EXISTING VENDOR
	2.5	-	-	29	- - C	30	1	20	0.8	NEW KIOSK RECEPT. (IT & NCS)
SPARE	0.0	30	3	31	A - -	32	1	20	0.8	NEW KIOSK RECEPT. (NEPP/SOC)
	0.0	-	-	33	- B -	34	1	20	0.0	FUTURE AFC FARE GATE
	0.0	-	-	35	- - C	36	1	20	0.0	SPARE
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	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	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	**22.2 KVA**	**TOTAL DEMAND KVA**	**19.1 KVA**
		TOTAL DEMAND AMPS	**53.1 AMPS**
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	5.6 KVA		
PHASE B:	9.3 KVA		
PHASE C:	8.1 KVA		

NOTES: A. EXISTING PANEL "LP-F" IS FED FROM 277/480V, 3Ø, 4W EXISTING SWITCHBOARD "DP-2" LOCATED IN AC SWBD. RM. 216, CIRCUIT #1-400A/3P VIA 150KVA TRANSFORMER.

B. EXISTING WIRING FED FROM BOTTOM OF PANEL BY:
- 1-8"x 8" WIRE TROUGH W/4-2" C. (WIRING FILL >40%).

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

CONTRACT NO
14-FQ10060-CENI-24

DESIGNED C. NGO	07-14 DATE	
DRAWN C. NGO	07-14 DATE	
CHECKED B. IDILBI	07-14 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

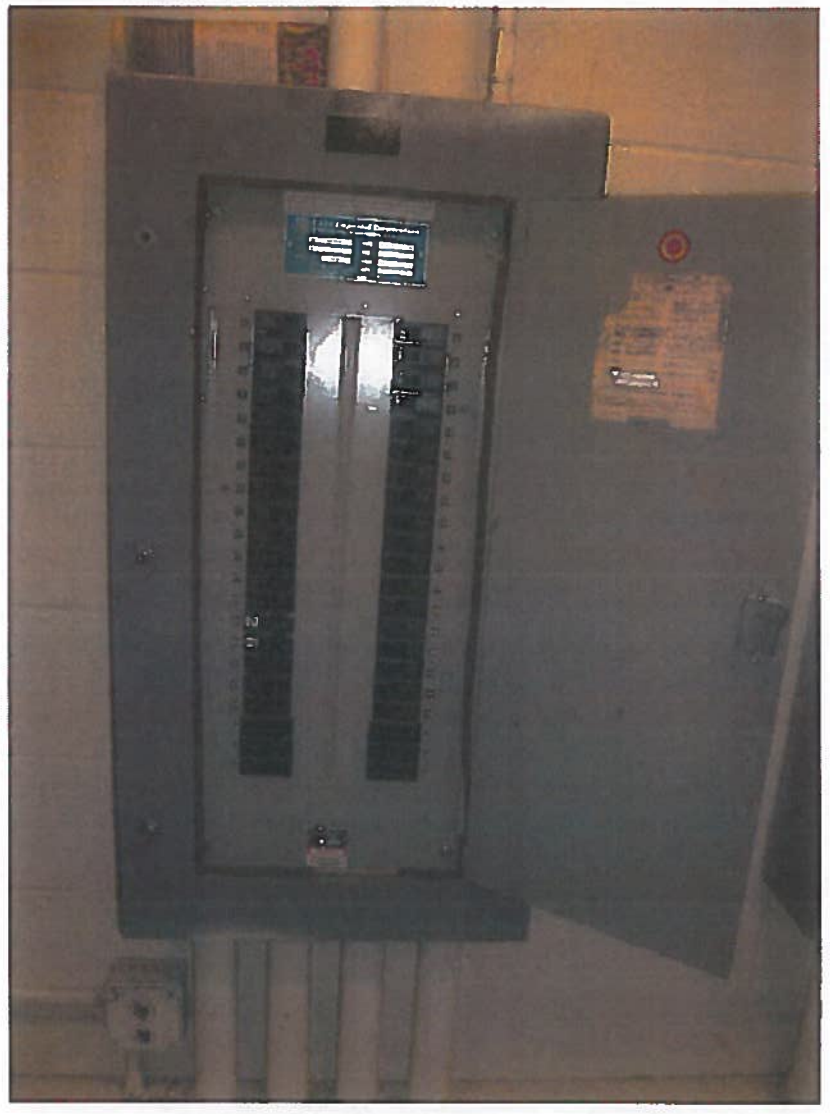
SUBMITTED _____ PROJECT MANAGER

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

SCALE: NOT TO SCALE

DRAWING NO.: B05-E-102

EXISTING PANEL "LP–F"



EXISTING PANEL "LP–F"

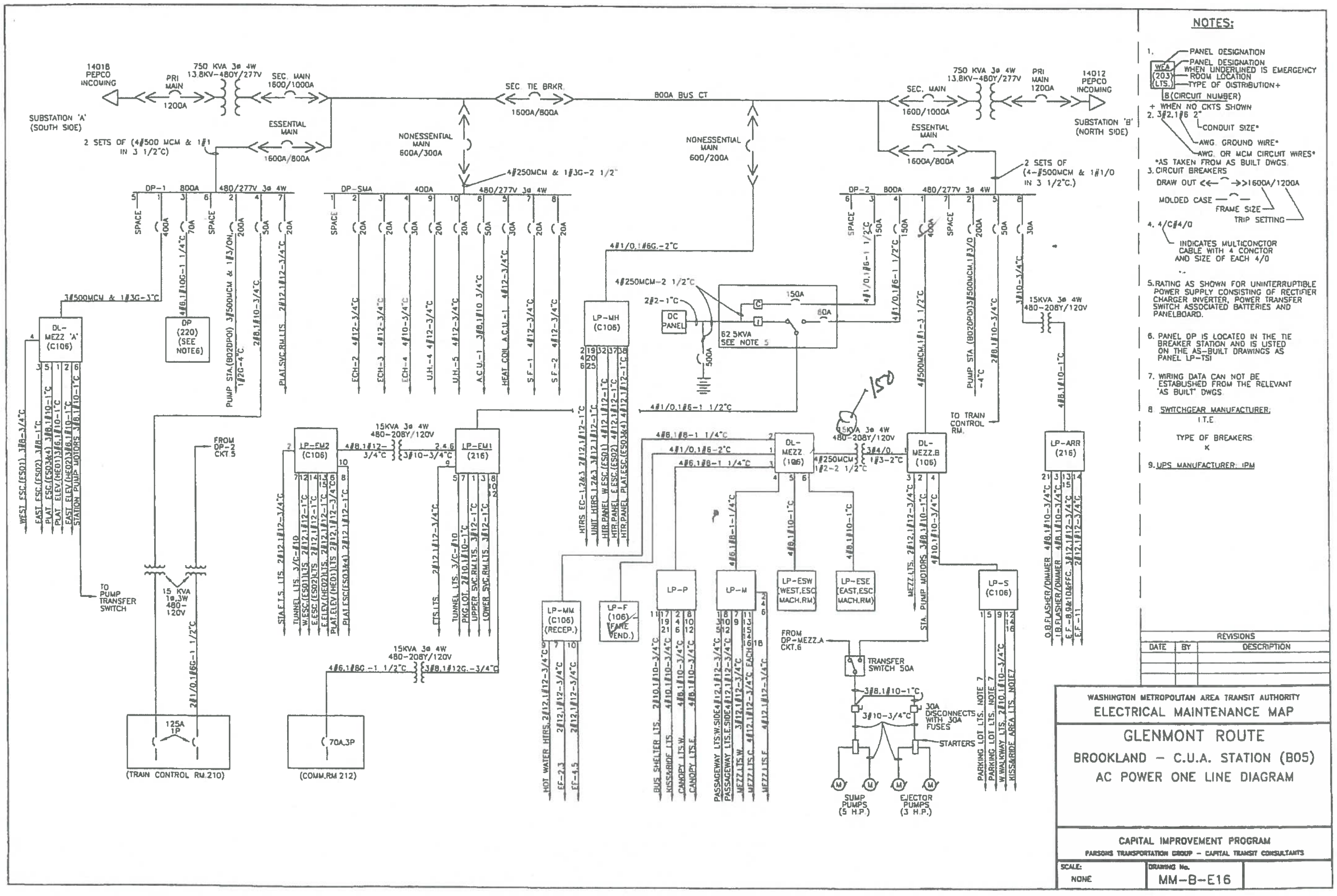
EXISTING PANEL "LP–F"

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO 07–14 DATE	REFERENCE DRAWINGS	REVISIONS	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DRAWN C. NGO 07–14 DATE	NUMBER / DESCRIPTION	DATE / BY / DESCRIPTION	DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
CHECKED B. IDILBI 07–14 DATE			APPROVED
APPROVED N/A DATE			GFP A Gannett Fleming/Parsons JOINT VENTURE SUBMITTED PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
BROOKLAND
PANELBOARD IMAGE

SCALE: NOT TO SCALE
DRAWING NO.: B05-E-301



NOTES:

1. PANEL DESIGNATION
   WEA (203) LTS. — PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY; ROOM LOCATION; TYPE OF DISTRIBUTION+
   B(CIRCUIT NUMBER)
   + WHEN NO CKTS SHOWN
2. 3#2,1#6 2" — CONDUIT SIZE* — AWG. GROUND WIRE* — AWG. OR MCM CIRCUIT WIRES*
   *AS TAKEN FROM AS BUILT DWGS.
3. CIRCUIT BREAKERS
   DRAW OUT <<— —>> 1600A/1200A
   MOLDED CASE — FRAME SIZE — TRIP SETTING
4. 4/C#4/0 — INDICATES MULTICONCTOR CABLE WITH 4 CONCTOR AND SIZE OF EACH 4/0
5. RATING AS SHOWN FOR UNINTERRUPTIBLE POWER SUPPLY CONSISTING OF RECTIFIER CHARGER INVERTER, POWER TRANSFER SWITCH ASSOCIATED BATTERIES AND PANELBOARD.
6. PANEL DP IS LOCATED IN THE TIE BREAKER STATION AND IS LISTED ON THE AS–BUILT DRAWINGS AS PANEL LP–TSI
7. WIRING DATA CAN NOT BE ESTABLISHED FROM THE RELEVANT "AS BUILT" DWGS.
8. SWITCHGEAR MANUFACTURER: I.T.E
   TYPE OF BREAKERS: K
9. UPS MANUFACTURER: IPM

REVISIONS		
DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

ELECTRICAL MAINTENANCE MAP

GLENMONT ROUTE

BROOKLAND – C.U.A. STATION (B05)

AC POWER ONE LINE DIAGRAM

CAPITAL IMPROVEMENT PROGRAM

PARSONS TRANSPORTATION GROUP – CAPITAL TRANSIT CONSULTANTS

SCALE:	DRAWING No.	
NONE	MM–B–E16	

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 SUBMISSIDN 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.
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SHT	SHEET
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WMATA	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
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CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	07-14	DATE
DRAWN	C. NGO	07-14	DATE
CHECKED	B. IDLIBI	07-14	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

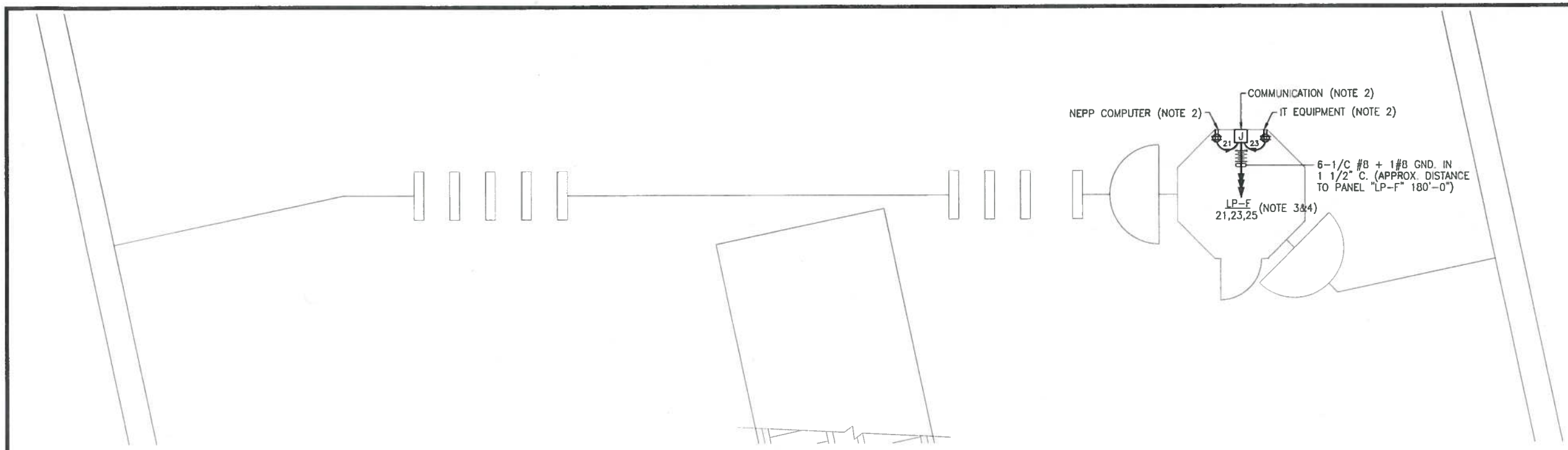
APPROVED

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: B06-E-001



KIOSK - POWER

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

DRAWING NOTES:

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3. CONNECT CIRCUIT #21 #23 & #25 TO EXISTING 20A, 1P SPARE CIRCUIT BREAKERS IN THE EXISTING PANEL "LP-F", SEE PANEL SCHEDULE ON DWG. B05-E-102.
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SAFETY PRECAUTION:

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

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO	07-14 DATE	
DRAWN C. NGO	07-14 DATE	
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APPROVED N/A	DATE	

REFERENCE DRAWINGS

NUMBER	DESCRIPTION

REVISIONS

DATE	BY	DESCRIPTION
9-22-15	RBM	REV. 1

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

FORT TOTTEN
KIOSK - POWER

SCALE	DRAWING NO.	
AS SHOWN	B06-E-101	

EXISTING PANEL "LP-F"

AMPERES: 225	VOLTS: 120/208	MOUNTING: SURFACE	
MAINS: 225AMLO	PHASE: 3	LOCATION: ELEC. EQUIPMENT ROOM C100	
RATING: 10K AIC	WIRE: 4	SECTION: 1 OF 1	

		CKT BKRS		CKT.		CKT.	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.		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	0.8	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	0.0	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	SPARE
EXISTING VENDOR	0.8	20	1	17	- - C	18	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	19	A - -	20	1	20	0.8	EXISTING VENDOR
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	1	20	0.0	SPARE
FUTURE AFD FARE GATE	0.0	20	1	25	A - -	26	1	20	0.0	SPARE
SPARE	0.0	20	1	27	- B -	28	1	20	0.8	SPARE
SPARE	0.0	20	1	29	- - C	30	1	20	0.8	SPARE
SPARE	0.0	20	1	31	A - -	32	1	20	0.0	SPARE
SPARE	0.0	20	1	33	- B -	34	-	-	0.0	SPACE
SPARE	0.0	20	1	35	- - C	36	-	-	0.0	SPACE
EXISTING VENDOR	0.0	20	1	37	A - -	38	-	-	0.0	SPACE
EXIST. KIOSK LOAD CENTER "KES"	2.9	40	3	39	- B -	40	-	-	0.0	SPACE
	2.5	-	-	41	- - C	42	-	-	0.0	SPACE
	2.5	-	-	43	- - C	44	-	-	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	8.8 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	**25.3 KVA**	**TOTAL DEMAND KVA**	**22.7 KVA**
		TOTAL DEMAND AMPS	**62.9 AMPS**
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	**5.6 KVA**		
PHASE B:	**10.1 KVA**		
PHASE C:	**8.9 KVA**		

NOTES: A. EXISTING PANEL "LP-F" IS FED FROM 277/480V, 3ø, 4W EXISTING 600A PANEL "GENERAL" LOCATED IN ELEC. EQUIPMENT C100, CIRCUIT #2-175A/3P VIA 112KVA TRANSFORMER (SEE ATTACHED DWG. MM-B-E18).

B. EXISTING WIRING FED FROM BOTTOM OF PANEL BY:
- 1-6"x 6" WIRE TROUGH W/3-1 1/2" C. (WIRING FILL >40%).

EXISTING WIRING FED FROM TOP OF PANEL BY:
- 1-3" C. TO TRANSFORMER (WIRING FILL >40%).

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO	07-14 DATE	
DRAWN C. NGO	07-14 DATE	
CHECKED B. IDLBI	07-14 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

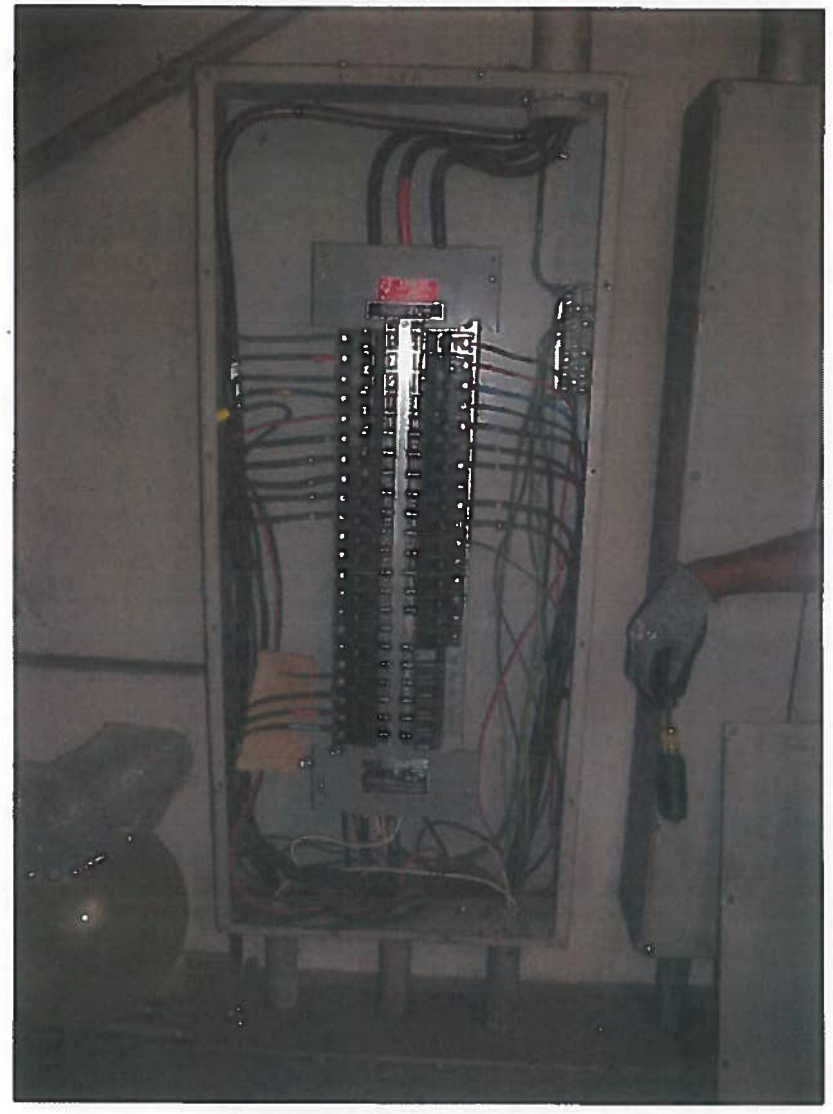
NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
FORT TOTTEN
PANEL SCHEDULE

SCALE: NOT TO SCALE

DRAWING NO.: B06-E-102

EXISTING PANEL "LP–F"

EXISTING PANEL "LP–F"



EXISTING PANEL "LP–F"

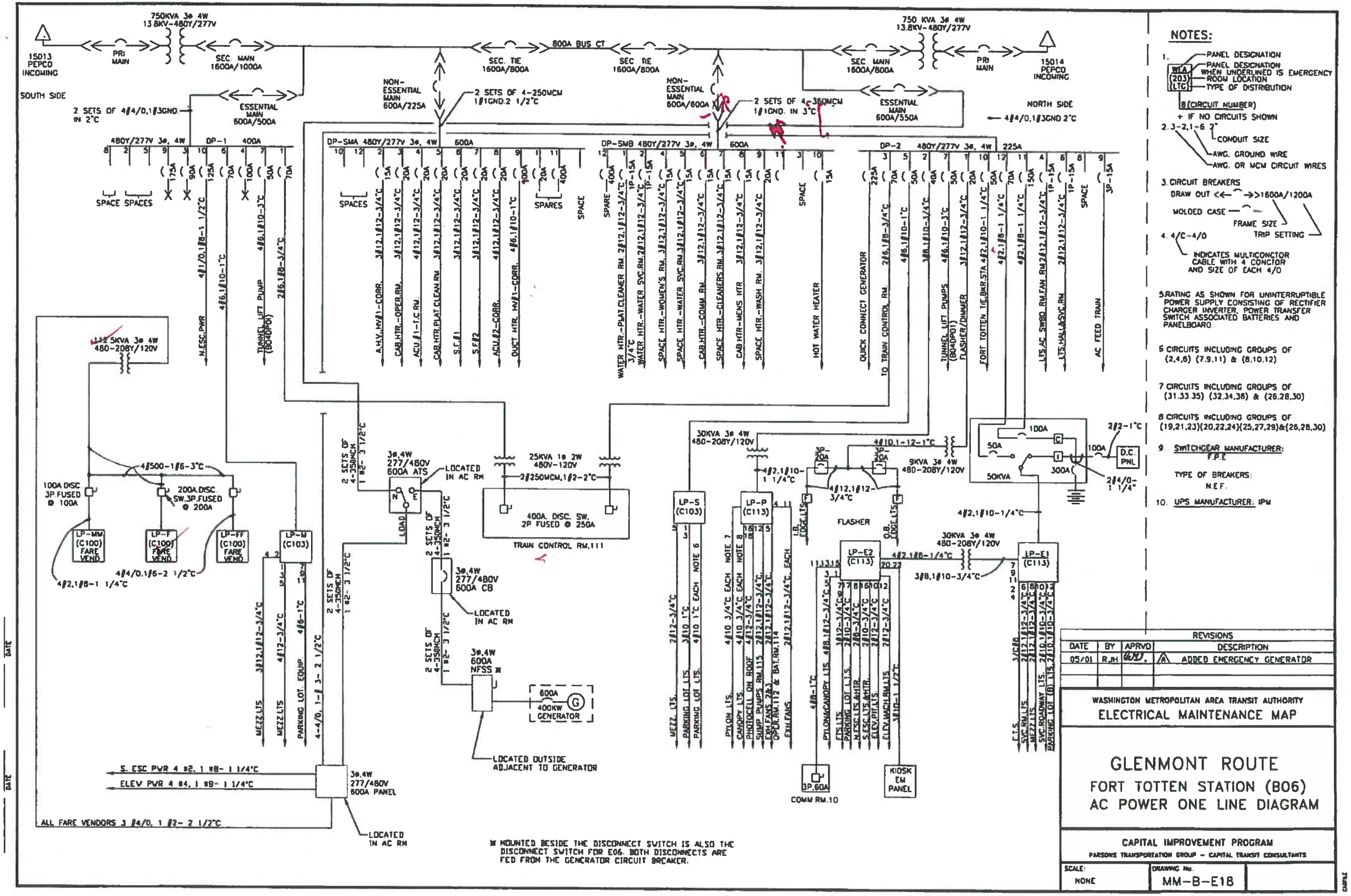
DESIGNED C. NGO 07-14 DATE	REFERENCE DRAWINGS	REVISIONS	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DRAWN C. NGO 07-14 DATE	NUMBER / DESCRIPTION	DATE / BY / DESCRIPTION	DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
CHECKED B. IDILBI 07-14 DATE			GFP A Gannett Fleming/Parsons JOINT VENTURE
APPROVED N/A DATE			APPROVED _____ SUBMITTED _____ PROJECT MANAGER

CONTRACT NO. 14-FQ10060-CENI-24

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
FORT TOTTEN
PANELBOARD IMAGE

SCALE: NOT TO SCALE

DRAWING NO.: B06-E-301



NOTES:

1. PANEL DESIGNATION
   (WEA) (203) (LTG) — PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY; ROOM LOCATION; TYPE OF DISTRIBUTION
   8 (CIRCUIT NUMBER)
   + IF NO CIRCUITS SHOWN
2. 3-2,1-6 2" — CONDUIT SIZE; AWG. GROUND WIRE; AWG. OR MCM CIRCUIT WIRES
3. CIRCUIT BREAKERS
   DRAW OUT <<← →>> 1600A/1200A
   MOLDED CASE — FRAME SIZE; TRIP SETTING
4. 4/C-4/0 — INDICATES MULTICONCTOR CABLE WITH 4 CONCTOR AND SIZE OF EACH 4/0
5. RATING AS SHOWN FOR UNINTERRUPTIBLE POWER SUPPLY CONSISTING OF RECTIFIER CHARGER INVERTER, POWER TRANSFER SWITCH ASSOCIATED BATTERIES AND PANELBOARD.
6. CIRCUITS INCLUDING GROUPS OF (2,4,6) (7,9,11) & (8,10,12)
7. CIRCUITS INCLUDING GROUPS OF (31,33,35) (32,34,36) & (26,28,30)
8. CIRCUITS INCLUDING GROUPS OF (19,21,23)(20,22,24)(25,27,29)&(26,28,30)
9. SWITCHGEAR MANUFACTURER: F.P.E
   TYPE OF BREAKERS: N.E.F.
10. UPS MANUFACTURER: IPM

REVISIONS			
DATE	BY	APRVD	DESCRIPTION
05/01	R.JH		A ADDED EMERGENCY GENERATOR

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

ELECTRICAL MAINTENANCE MAP

GLENMONT ROUTE
FORT TOTTEN STATION (B06)
AC POWER ONE LINE DIAGRAM

CAPITAL IMPROVEMENT PROGRAM
PARSONS TRANSPORTATION GROUP – CAPITAL TRANSIT CONSULTANTS

SCALE:	DRAWING No.	
NONE	MM-B-E18	

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

DRAWING INDEX

ELECTRICAL SYMBOL LIST

- QUADRUPLEX RECEPTACLE OUTLET– 20A, 125V WALL MOUNTED.
- J — JUNCTION BOX – SURFACE MOUNTED ON UNISTRUT CHANNEL
- CONDUIT – CONCEALED IN UNDER FLOOR DUCT U.O.N.
- #10-3/4 — 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	07-14	DATE
DRAWN	C. NGO	07-14	DATE
CHECKED	B. EDLEI	07-14	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

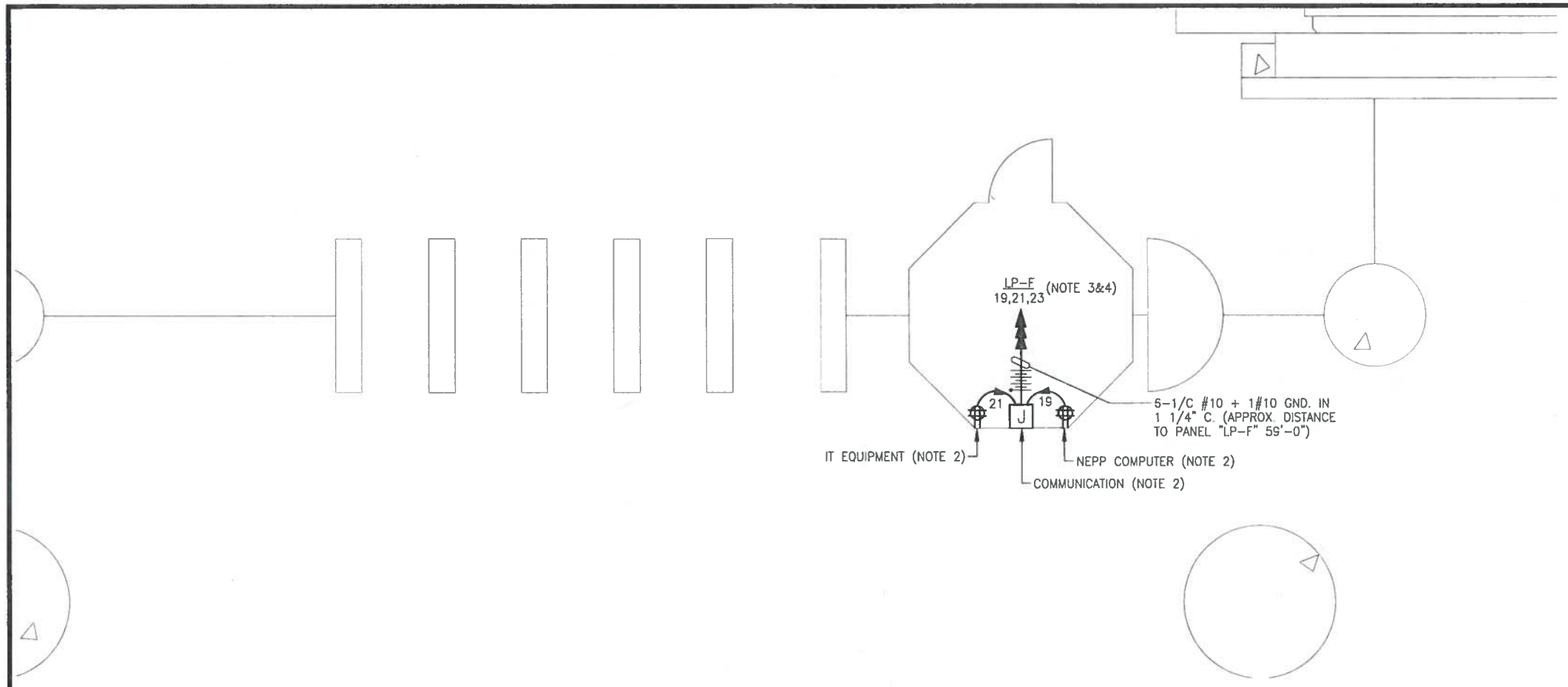
APPROVED _____

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	DRAWING NO.	
NOT TO SCALE	B07-E-001	



KIOSK - POWER

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

DRAWING NOTES:

1. USE EXISTING UNDER FLOOR DUCT FOR POWER WIRING. ALL OUTSIDE FLOOR DUCT WIRING SHALL BE IN CONDUIT.
2. VERIFY WITH WMATA PERSONNEL FOR LOCATION OF RECEPTACLES & JUNCTION BOXES.
3. CONNECT CIRCUIT #19 #21 & #23 TO EXISTING 20A, 1P SPARE CIRCUIT BREAKERS IN THE EXISTING PANEL "LP-F", SEE PANEL SCHEDULE ON DWG. BD7-E-102.
4. PROVIDE A ROUGHIN CIRCUIT FOR FUTURE AFC FARE GATE COILED AT THE KIOSK. THE LENGTH OF COILED PIGTAIL SHALL BE THE FARTHEST FARE GATE DISTANCE FROM KIOSK PLUS AN EXTRA 5'0" 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 07-14 DATE	REFERENCE DRAWINGS	REVISIONS	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DRAWN C. NGO 07-14 DATE	NUMBER / DESCRIPTION	DATE / BY / DESCRIPTION	DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
CHECKED B. IDILBI 07-14 DATE		9-22-15 / RBM / REV. 1	OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
APPROVED N/A DATE			APPROVED
			GFP A Gannett Fleming/Parsons JOINT VENTURE
			SUBMITTED PROJECT MANAGER

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

SCALE: AS SHOWN

DRAWING NO.: B07-E-101

EXISTING PANEL "LP-F"

AMPERES: 225	VOLTS: 120/208			MOUNTING: SURFACE						
MAINS: 225A MCB	PHASE: 3			LOCATION: C100 FIRE EQUIPMENT CABINET						
RATING: 10K AIC	WIRE: 4			SECTION: 1 OF 1						
	CKT BKRS			CKT.		CKT.	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.		NO.	POLE	AMP	KVA	LOAD DESCRIPTION
SPARE	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
SPARE	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
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	0.8	EXISTING VENDOR
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	0.8	EXISTING VENDOR
SPARE	0.0	20	1	31	A - -	32	1	20	0.0	SPARE
SPACE	0.0	-	-	33	- B -	34	-	-	0.0	SPACE
SPACE	0.0	-	-	35	- - C	36	-	-	0.0	SPACE
EXISTING VENDOR	0.0	20	1	37	A - -	38	3	50	2.9	EXIST. KIOSK LOAD CENTER "KES"
SPARE	0.0	20	1	39	- B -	40	-	-	2.5	
EXISTING VENDOR	0.0	20	1	41	- - C	42	-	-	2.5	
EXISTING CONDESING UNIT	1.5	30	3	43	A - -	44	1	20	0.0	SPARE
	1.5	-	-	45	- B -	46	-	-	0.0	SPACE
	1.5	-	-	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	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	9.0 x 100%		9.0 KVA
WATER HEATING	0.0 x 125%		0.0 KVA
TOTAL CONNECTED LOAD	**27.6 KVA**	**TOTAL DEMAND KVA**	**25.6 KVA**
		TOTAL DEMAND AMPS	**71.0 AMPS**
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	7.1 KVA		
PHASE B:	7.1 KVA		
PHASE C:	6.3 KVA		

NOTES: A. EXISTING PANEL "LP-F" IS FED FROM 277/480V, 3ø, 4W EXISTING PANEL "DP-MEZ" LOCATED IN FIRE EQUIPMENT CABINET RM. C100, CIRCUIT #6-110A/3P VIA 75KVA TRANSFORMER (SEE ATTACHED DWG. MM-B-E20).

B. EXISTING WIRING FED FROM BOTTOM OF PANEL BY:
- 2-6"x 1 1/2" FLOOR DUCTS (WIRING FILL >40%).
- 1-4"x 1 1/2" FLOOR DUCT (WIRING FILL >40%).

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

EXISTING WIRING FED FROM LEFT SIDE OF PANEL BY:
- 2-3/4" C. (WIRING FILL >40%).

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO	07-14 DATE	
DRAWN C. NGO	07-14 DATE	
CHECKED B. IDILBI	07-14 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

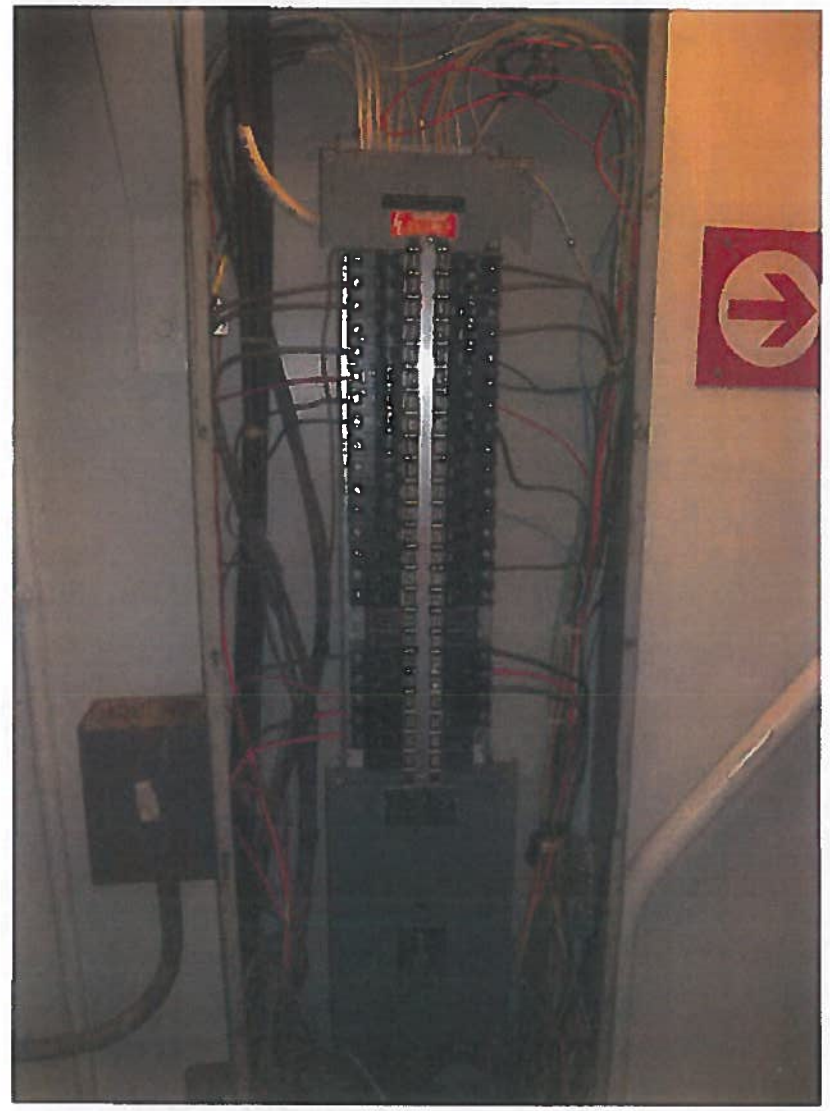
NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
TAKOMA
PANEL SCHEDULE

SCALE: NOT TO SCALE

DRAWING NO.: B07-E-102

EXISTING PANEL "LP-F"

EXISTING PANEL "LP-F"



EXISTING PANEL "LP-F"

DESIGNED C. NGO	07-14 DATE	REFERENCE DRAWINGS	REVISIONS
DRAWN C. NGO	07-14 DATE	NUMBER / DESCRIPTION	DATE / BY / DESCRIPTION
CHECKED B. IDLBI	07-14 DATE		
APPROVED N/A	DATE		

CONTRACT NO. 14-FQ10060-CENI-24

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

APPROVED _____

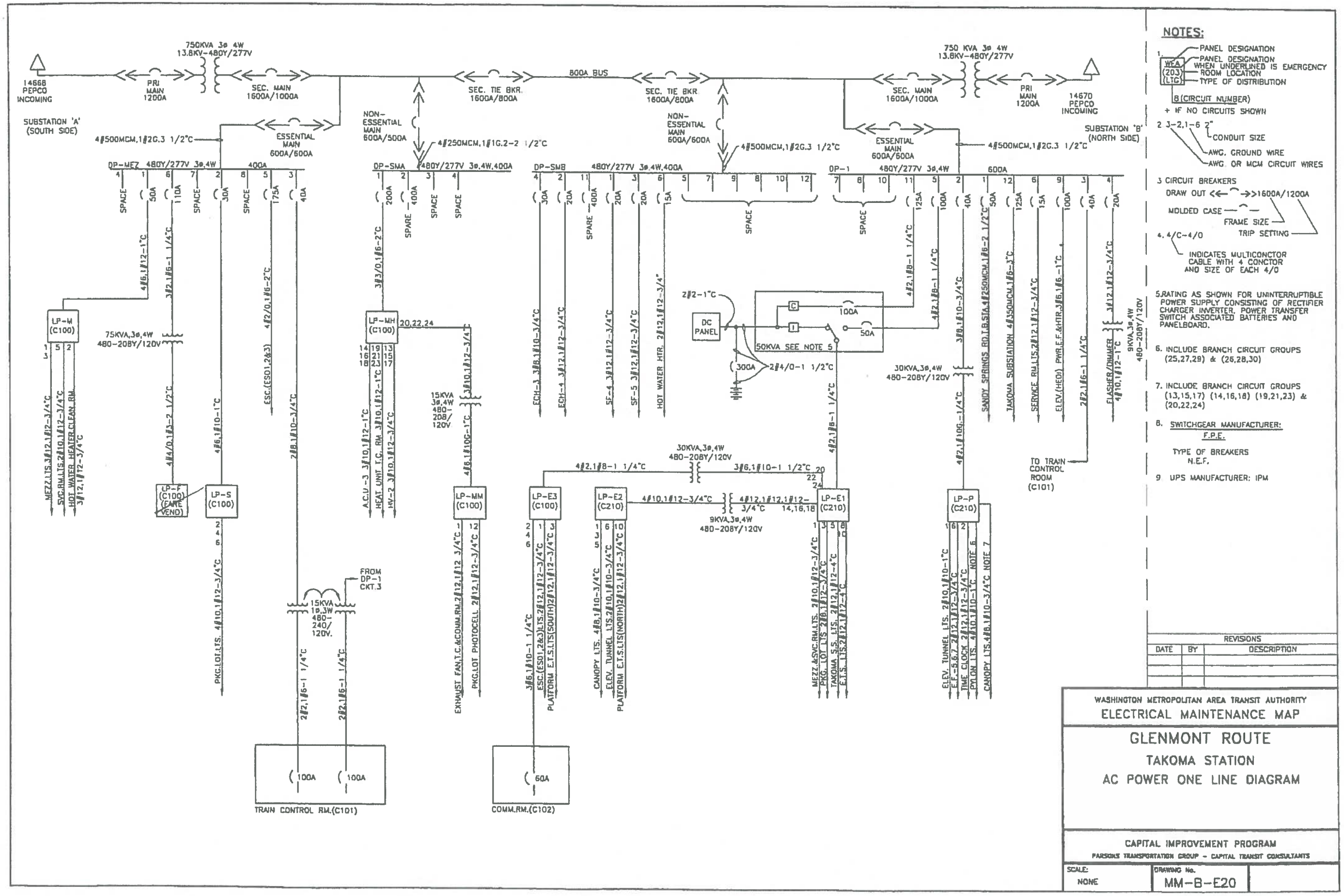
GFP A Granite Fleming/Parsons JOINT VENTURE

SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
TAKOMA
PANELBOARD IMAGE

SCALE NOT TO SCALE

DRAWING NO. B07-E-301



NOTES:

1. PANEL DESIGNATION
   WEA (203) LTG — PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY; ROOM LOCATION; TYPE OF DISTRIBUTION
   8 (CIRCUIT NUMBER)
   + IF NO CIRCUITS SHOWN
2. 3-2,1-6 2" — CONDUIT SIZE; AWG. GROUND WIRE; AWG. OR MCM CIRCUIT WIRES
3. CIRCUIT BREAKERS
   DRAW OUT 1600A/1200A
   MOLDED CASE — FRAME SIZE
   TRIP SETTING
4. 4/C-4/0 — INDICATES MULTICONCTOR CABLE WITH 4 CONCTOR AND SIZE OF EACH 4/0
5. RATING AS SHOWN FOR UNINTERRUPTIBLE POWER SUPPLY CONSISTING OF RECTIFIER CHARGER INVERTER, POWER TRANSFER SWITCH ASSOCIATED BATTERIES AND PANELBOARD.
6. INCLUDE BRANCH CIRCUIT GROUPS (25,27,29) & (26,28,30)
7. INCLUDE BRANCH CIRCUIT GROUPS (13,15,17) (14,16,18) (19,21,23) & (20,22,24)
8. SWITCHGEAR MANUFACTURER: F.P.E.
   TYPE OF BREAKERS N.E.F.
9. UPS MANUFACTURER: IPM

REVISIONS		
DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

ELECTRICAL MAINTENANCE MAP

GLENMONT ROUTE

TAKOMA STATION

AC POWER ONE LINE DIAGRAM

CAPITAL IMPROVEMENT PROGRAM

PARSONS TRANSPORTATION GROUP - CAPITAL TRANSIT CONSULTANTS

SCALE:	DRAWING No.	
NONE	MM-B-E20	

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
AC	ALTERNATING CURRENT
AF	AMPERE FRAME
AFC	AUTOMATED FARE COLLECTION SYSTEM
AFF	ABOVE FINISHED FLOOR
AIC	AMPERE INTERRUPTING CAPACITY
AT	AMPERE TRIP
BKR	BREAKER
C	CONDUIT
CB	CIRCUIT BREAKER
CCT	CIRCUIT
℄	CENTER LINE
CLG	CEILING
CONST	CONSTRUCTION
DISC	DISCONNECT
E	ELECTRICAL
GND	GROUND
JB	JUNCTION BOX
KAIC	THOUSAND AMPERE INTERRUPTING CAPACITY
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
NEC	NATIONAL ELECTRIC CODE
P	PDLE
PH	PHASE
PNL	PANELBOARD
PRI	PRIMARY
PROP	PROPOSED
RGS	RIGID GALVANIZED STEEL
SEC	SECONDARY
SHT	SHEET
SW	SWITCH
SWBD	SWITCHBOARD
TYP	TYPICAL
U/G	UNDER GROUND
U.L.	UNDERWRITERS LABORATORIES
UON	UNLESS OTHERWISE NOTED
VOLT	VOLTAGE
W	WATT
WMATA	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
WP	WEATHERPROOF

DRAWING INDEX

ELECTRICAL SYMBOL LIST

- QUADRUPLEX RECEPTACLE OUTLET– 20A, 125V WALL MOUNTED.
- J — JUNCTION BOX – SURFACE MOUNTED ON UNISTRUT CHANNEL
- CONDUIT – CONCEALED IN UNDER FLOOR DUCT U.O.N.
- #10-3/4 EF 3,5 — 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	07-14 DATE	REFERENCE DRAWINGS: NUMBER / DESCRIPTION	REVISIONS: DATE / BY / DESCRIPTION
DRAWN C. NGO	07-14 DATE		
CHECKED B. IDLIBI	07-14 DATE		
APPROVED N/A	DATE		

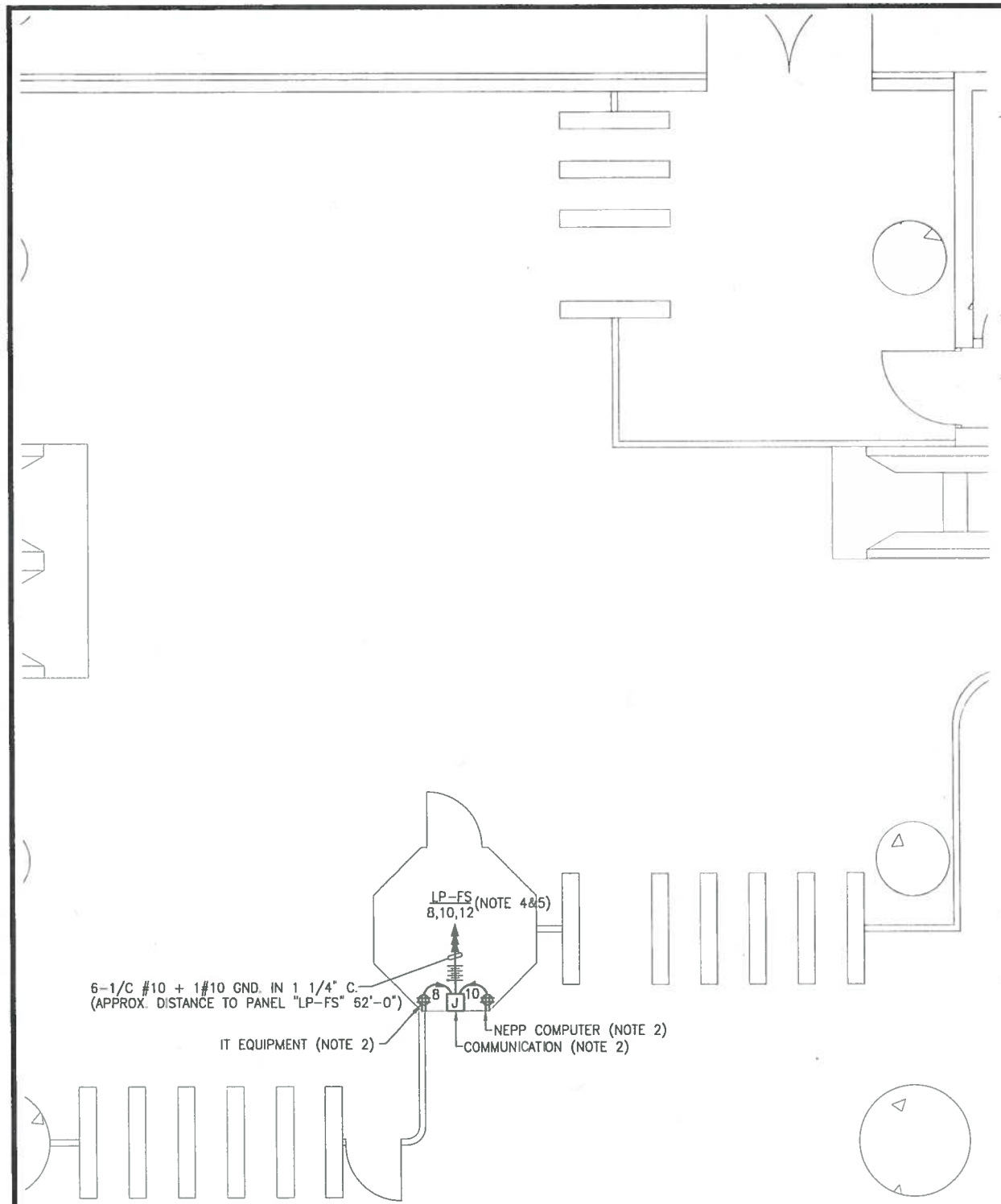
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

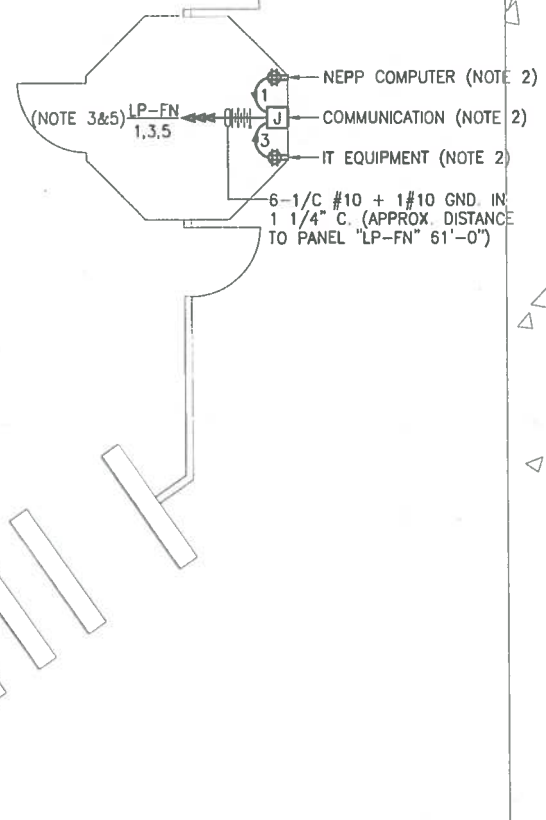
GFP A Gannett Fleming/Parsons JOINT VENTURE
SUBMITTED PROJECT MANAGER

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

SCALE: NOT TO SCALE | DRAWING NO.: B08-E-001



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



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

DRAWING NOTES:

1. USE EXISTING UNDER FLOOR DUCT FOR POWER WIRING. ALL OUTSIDE FLOOR DUCT WIRING SHALL BE IN CONDUIT.
2. VERIFY WITH WMATA PERSONNEL FOR LOCATION OF RECEPTACLES & JUNCTION BOXES.
3. CONNECT CIRCUIT #1 #3 & #5 TO EXISTING 20A, 1P SPARE CIRCUIT BREAKERS IN THE EXISTING PANEL "LP-FN", SEE PANEL SCHEDULE ON DWG. B08-E-102.
4. CONNECT CIRCUIT #8 #10 & #12 TO NEW 20A, 1P CIRCUIT BREAKERS PROVIDED IN THE EXISTING PANEL "LP-FS", SEE PANEL SCHEDULE ON DWG. B08-E-102.
5. PROVIDE A ROUGHIN CIRCUIT FOR FUTURE AFC FARE GATE COILED AT THE KIOSK. THE LENGTH OF COILED PIGTAIL SHALL BE THE FARTHEST FARE GATE DISTANCE FROM KIOSK PLUS AN EXTRA 5'0" 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	07-14 DATE
DRAWN	C. NGO	07-14 DATE
CHECKED	B. IDILBI	07-14 DATE
APPROVED	N/A	DATE

REFERENCE DRAWINGS	
NUMBER	DESCRIPTION

REVISIONS		
DATE	BY	DESCRIPTION
9-22-15	RBM	REV. 1

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
SILVER SPRING - NORTH & SOUTH KIOSK - POWER

SCALE: AS SHOWN

DRAWING NO.: B08-E-101

EXISTING PANEL "LP-FS"

AMPERES: 225	VOLTS: 120/208			MOUNTING SURFACE							
MAINS: 225A MCB	PHASE: 3			LOCATION ELECTRICAL EQUIPMENT 119							
RATING: 10K AIC	WIRE: 4			SECTION: 1 OF 1							
		CKT BKRS		CKT			CKT	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.			NO	POLE	AMP	KVA	LOAD DESCRIPTION
EXISTING VENDOR	0.8	20	1	1	A	-	2	3	30	2.9	EXIST. KIOSK LOAD CENTER "KES"
EXISTING VENDOR	0.8	20	1	3	-	B	4	-	-	2.5	
EXISTING VENDOR	0.8	20	1	5	-	C	6	-	-	2.5	
SPARE	0.0	20	1	7	A	-	8	1	20	**0.8**	**NEW KIOSK RECEPT. (IT & NCS)**
SPACE	0.0	-	-	9	-	B	10	1	20	**0.8**	**NEW KIOSK RECEPT. (NEPP/SOC)**
SPACE	0.0	-	-	11	-	C	12	1	20	0.0	**FUTURE AFC FARE GATE**
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
SPARE	0.0	20	1	17	-	C	18	1	20	0.8	EXISTING VENDOR
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
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	0.0	SPARE
EXISTING VENDOR	0.8	20	1	27	-	B	28	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	29	-	C	30	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	31	A	-	32	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	33	-	B	34	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	35	-	C	36	1	20	0.0	SPARE
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
SPACE	0.0	-	-	43	A	-	44	-	-	0.0	SPACE
SPACE	0.0	-	-	45	-	B	46	-	-	0.0	SPACE
SPACE	0.0	-	-	47	-	C	48	-	-	0.0	SPACE

LOAD SUMMARY

LIGHTS	0.0 x 125%		0.0 KVA
RECEPTACLES, FIRST 10 KVA	10.0 x 100%		10.0 KVA
RECEPTACLES	13.6 x 50%		6.8 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	31.1 KVA	TOTAL DEMAND KVA	25.1 KVA
		TOTAL DEMAND AMPS	69.6 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	9.3 KVA		
PHASE B:	9.7 KVA		
PHASE C:	8.1 KVA		

NOTES: A. EXISTING PANEL "LP-FS" IS FED FROM 277/480V, 3Ø, 4W EXISTING PANEL "MZS" LOCATED IN ELEC. EQUIPMENT RM. 119, CIRCUIT #2-100A/3P VIA 75KVA TRANSFORMER (SEE ATTACHED DWG. MM-B-E22).

B. EXISTING WIRING FED FROM BOTTOM OF PANEL BY:
- 2-6 1/2"x 1 1/2" FLOOR DUCT (WIRING FILL >40%).

EXISTING WIRING FED FROM TOP OF PANEL BY:
- 2-3/4" C. (1-EMPTY CONDUIT)(1-WIRING FILL 20%).

EXISTING WIRING FED FROM LEFT SIDE OF PANEL BY:
- 1-3" C. TO TRANSFORMER (WIRING FILL >40%).

EXISTING PANEL "LP-FN"

AMPERES: 225	VOLTS: 120/208			MOUNTING: SURFACE							
MAINS: 225A MCB	PHASE: 3			LOCATION: ROOM 108							
RATING: 10K AIC	WIRE: 4			SECTION: 1 OF 1							
		CKT BKRS		CKT			CKT	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.			NO.	POLE	AMP	KVA	LOAD DESCRIPTION
NEW KIOSK RECEPT. (IT & NCS)	0.8	20	1	1	A	-	2	3	30	2.9	EXIST. KIOSK LOAD CENTER "KES"
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	3	-	B	4	-	-	2.5	
FUTURE AFC FARE GATE	0.0	20	1	5	-	C	6	-	-	2.5	
SPARE	0.0	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
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
EXISTING VENDOR	0.8	20	1	21	-	B	22	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	23	-	C	24	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	25	A	-	26	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	27	-	B	28	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	29	-	C	30	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	31	A	-	32	1	20	0.0	SPARE
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
EXISTING VENDOR	0.8	20	1	37	A	-	38	1	20	0.0	SPARE
SPARE	0.0	20	1	39	-	B	40	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	41	-	C	42	1	20	0.0	SPARE
SPARE	0.0	20	1	43	A	-	44	1	20	0.0	SPARE
SPARE	0.0	20	1	45	-	B	46	-	-	0.0	SPACE
SPACE	0.0	-	-	47	-	C	48	-	-	0.0	SPACE

LOAD SUMMARY

LIGHTS	0.0 x 125%		0.0 KVA
RECEPTACLES, FIRST 10 KVA	10.0 x 100%		10.0 KVA
RECEPTACLES	4.8 x 50%		2.4 KVA
MISC. APPLIANCES	0.0 x 100%		0.0 KVA
LARGEST MOTOR	0.0 x 125%		0.0 KVA
MOTORS	0.0 x 100%		0.0 KVA
HEAT	3.0 x 125%		3.8 KVA
AC	4.5 x 100%		4.5 KVA
WATER HEATING	0.0 x 125%		0.0 KVA
TOTAL CONNECTED LOAD	22.3 KVA	TOTAL DEMAND KVA	20.7 KVA
		TOTAL DEMAND AMPS	57.4 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	8.5 KVA		
PHASE B:	7.3 KVA		
PHASE C:	5.7 KVA		

NOTES: A. EXISTING PANEL "LP-FN" IS FED FROM 277/480V, 3Ø, 4W EXISTING PANEL "DP-MZN" LOCATED IN RM. 108, CIRCUIT #20,22,24-100A/3P VIA 75KVA TRANSFORMER THRU 200A DISC. SW. (SEE ATTACHED DWG. MM-B-E22 SHOWS DIFFERENT).

B. EXISTING WIRING FED FROM BOTTOM OF PANEL BY:
- 2-6 1/2"x 1 1/2" FLOOR DUCT (WIRING FILL >40%).

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

EXISTING WIRING FED FROM LEFT SIDE OF PANEL BY:
- 1-6"x 6" WIRE TROUGH W/2"C. (EMPTY CONDUIT).

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	07-14 DATE
DRAWN	C. NGO	07-14 DATE
CHECKED	B. IDILSI	07-14 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
SILVER SPRING - NORTH & SOUTH
PANEL SCHEDULES

SCALE: NOT TO SCALE

DRAWING NO.: B08-E-102

EXISTING PANEL "LP–FN"

EXISTING PANEL "LP–FN"

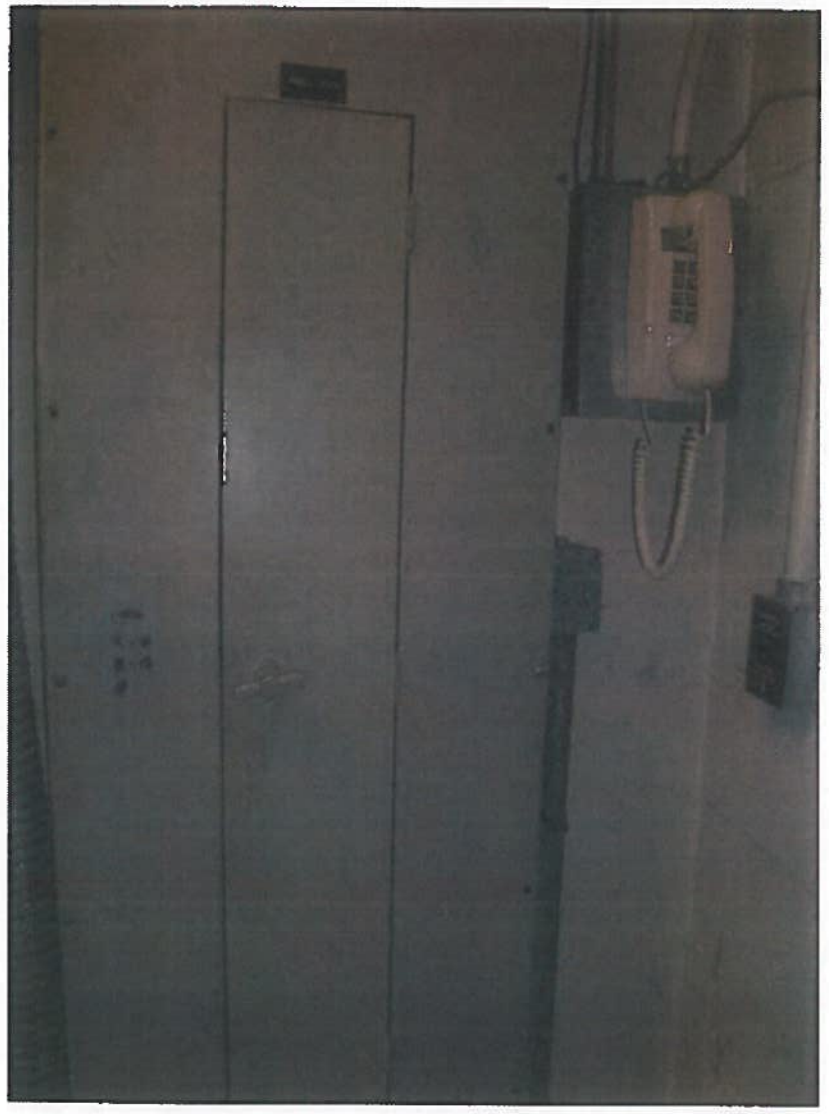
EXISTING PANEL "LP–FN"

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO 07-14 DATE	REFERENCE DRAWINGS: NUMBER / DESCRIPTION	REVISIONS: DATE / BY / DESCRIPTION	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DRAWN C. NGO 07-14 DATE			DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
CHECKED B. IDLBI 07-14 DATE			APPROVED _____
APPROVED N/A DATE			GFP A Gannett Fleming/Parsons JOINT VENTURE SUBMITTED _____ PROJECT MANAGER

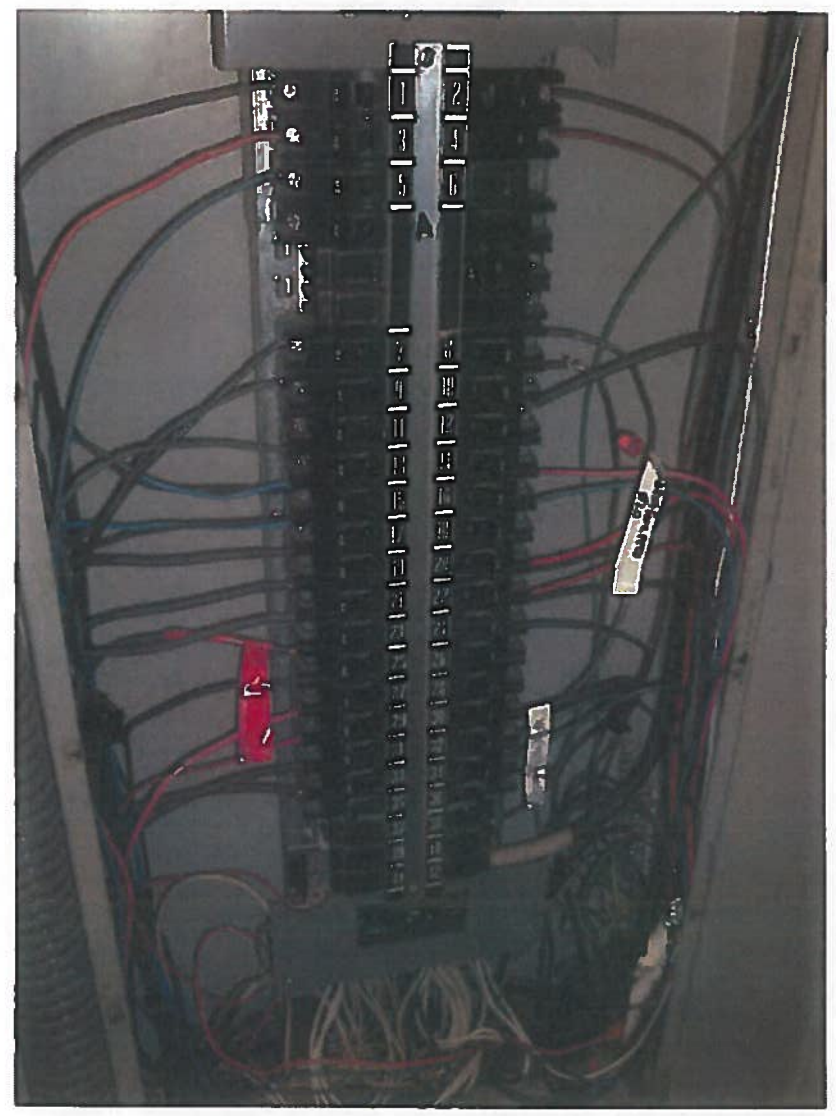
NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
SILVER SPRING - NORTH & SOUTH
PANELBOARD IMAGE

SCALE	DRAWING NO.	
NOT TO SCALE	B08-E-301	



EXISTING PANEL "LP–FS"

EXISTING PANEL "LP–FS"



EXISTING PANEL "LP–FS"

DESIGNED C. NCO 07-14 DATE	REFERENCE DRAWINGS	REVISIONS	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DRAWN C. NCO 07-14 DATE	NUMBER / DESCRIPTION	DATE / BY / DESCRIPTION	DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
CHECKED B. IDILBI 07-14 DATE			OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
APPROVED N/A DATE			APPROVED

GFP A Gannett Fleming/Parsons JOINT VENTURE

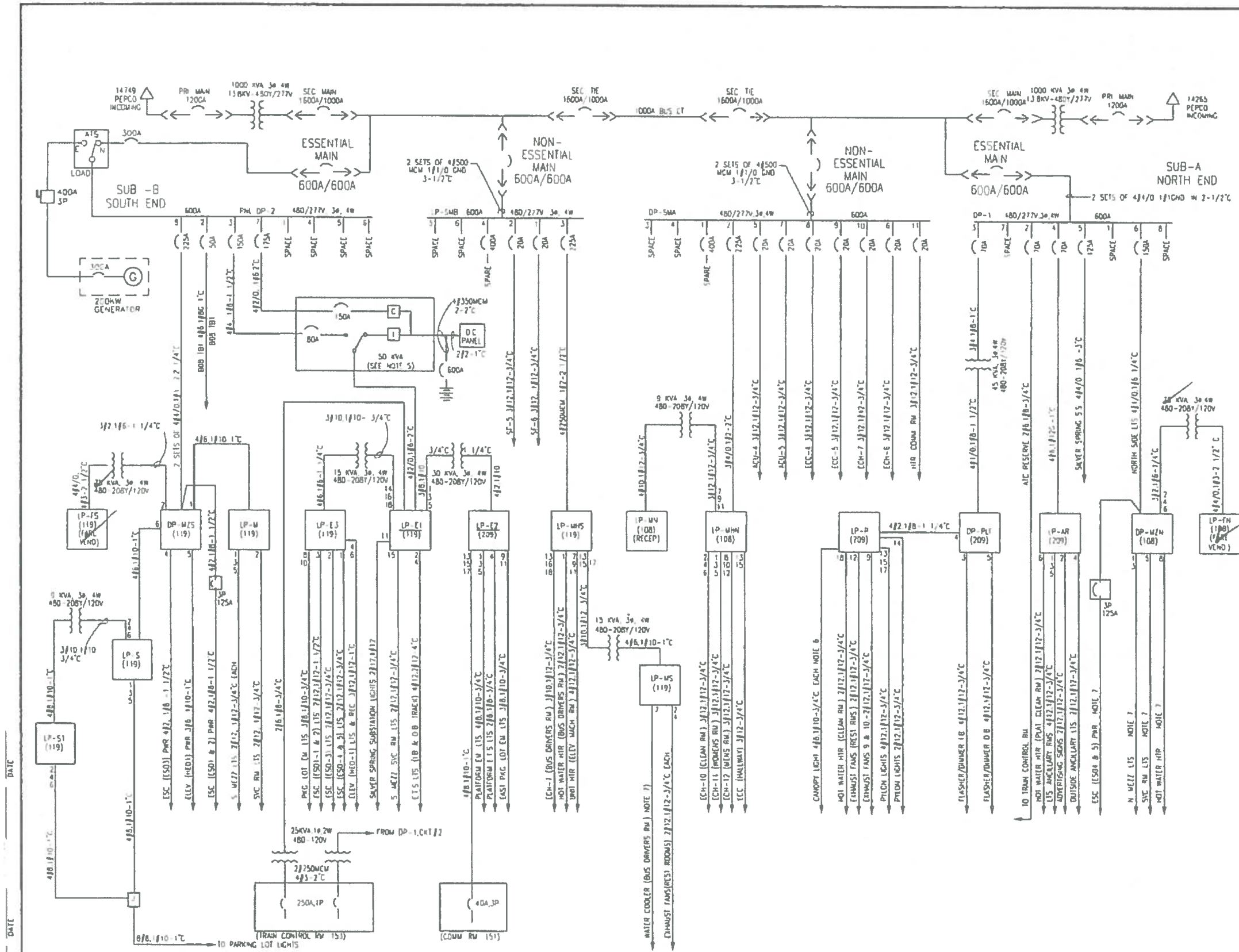
SUBMITTED PROJECT MANAGER

CONTRACT NO. 14-FQ10060-CENI-24

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
SILVER SPRING - NORTH & SOUTH
PANELBOARD IMAGE

SCALE NOT TO SCALE

DRAWING NO. B08-E-302



NOTES:

1. PANEL DESIGNATION
   PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY
   ROOM LOCATION
   (CIRCUIT NUMBER)
2. 3#2,1#6 2"C
   CONDUIT SIZE
   AWG GROUND WIRE
   AWG OR MCM CIRCUIT WIRES
3. CIRCUIT BREAKERS
   DRAW OUT >1600A/1200A
   TRIP SETTING
   MOLDED CASE 60A
   TRIP SETTING
   FRAME SIZE
4. 4/C-4/0
   INDICATES MULTICONCTOR CABLE WITH 4 CONCTOR AND SIZE OF EACH 4/0
5. RATING AS SHOWN FOR UNINTERRUPTIBLE POWER SUPPLY CONSISTING OF RECTIFIER/CHARGER INVERTER POWER TRANSFER SWITCH ASSOCIATED BATTERIES AND PANELBOARD
6. INCLUDES BRANCH CIRCUIT GROUPS (1,3,5) (2,4,6) (7,9,11) & (8,10,12) ON SPLIT BUS PORTION
7. NO WIRING DATA CAN BE EXTRACTED FROM THE RELEVANT AS BUILT DWGS
8. SWITCHGEAR MANUFACTURER
   GPE
   TYPE OF BREAKERS
   HEG
9. UPS MANUFACTURER IPM

REVISIONS			
DATE	BY	APRVD	DESCRIPTION
11/00	RJH		A ADDED EMERGENCY GENERATOR

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

ELECTRICAL MAINTENANCE MAP

GLENMONT ROUTE
SILVER SPRING STATION (B08)
A.C. POWER ONE LINE DIAGRAM

CAPITAL IMPROVEMENT PROGRAM

PARSONS TRANSPORTATION GROUP – CAPITAL TRANSIT CONSULTANTS

SCALE	DRAWING No
NONE	MM-B-22

DATE

DATE

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

DRAWING INDEX

ELECTRICAL SYMBOL LIST

- QUADRUPLEX RECEPTACLE OUTLET– 20A, 125V WALL MOUNTED.
- J — JUNCTION BOX – SURFACE MOUNTED ON UNISTRUT CHANNEL
- CONDUIT – CONCEALED IN UNDER FLOOR DUCT U.O.N.
- #10-3/4 / EF 3,5 — 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	07-14	DATE
DRAWN	C. NGO	07-14	DATE
CHECKED	B. IDLIBI	07-14	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 _____

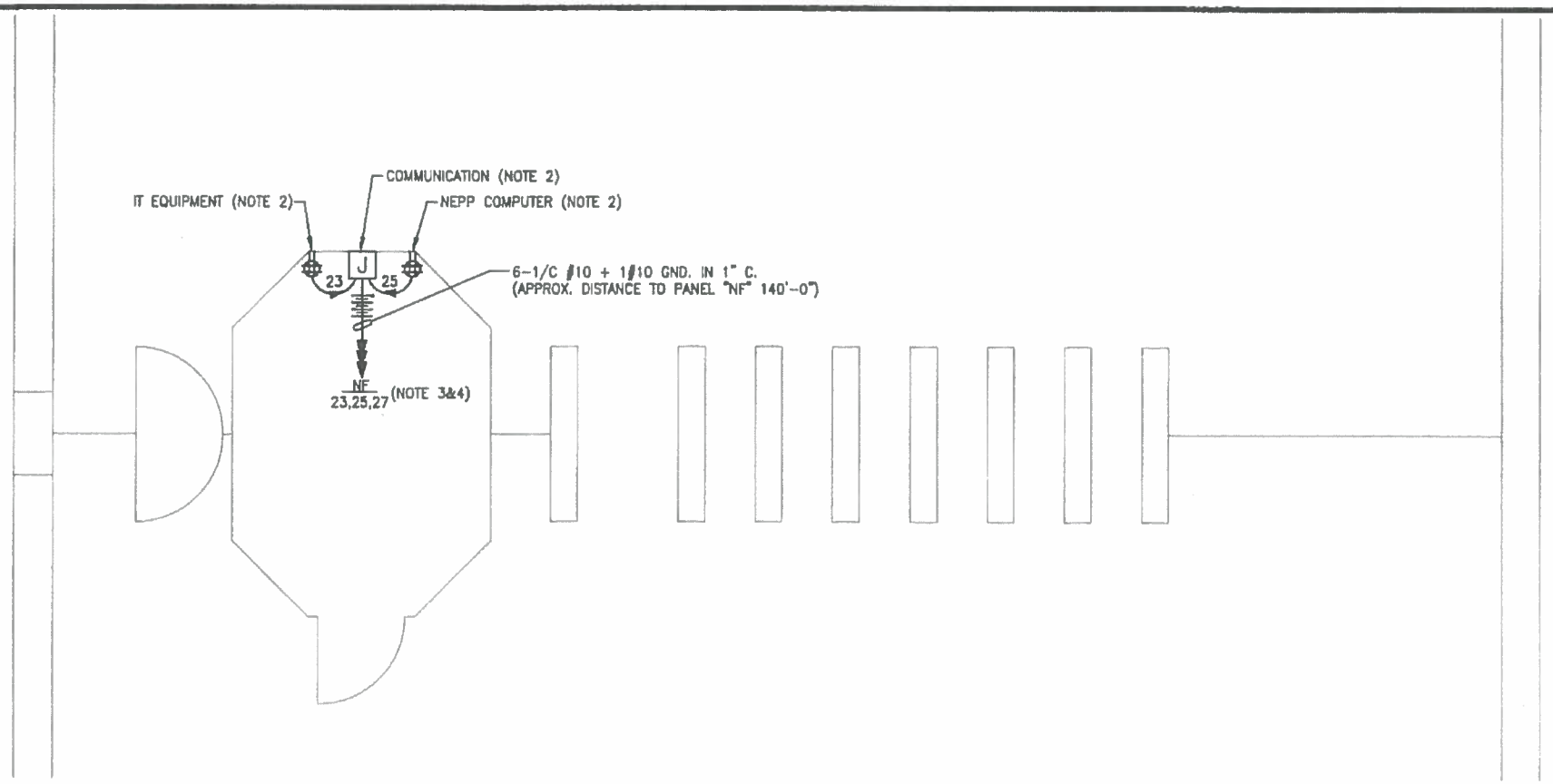
GFP A Gannett Fleming/Parsons JOINT VENTURE

SUBMITTED _____ PROJECT MANAGER

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

SCALE: NOT TO SCALE

DRAWING NO: B09-E-001



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

DRAWING NOTES:

1. USE EXISTING UNDER FLOOR DUCT FOR POWER WIRING. ALL OUTSIDE FLOOR DUCT WIRING SHALL BE IN CONDUIT.
2. VERIFY WITH WMATA PERSONNEL FOR LOCATION OF RECEPTACLES & JUNCTION BOXES.
3. CONNECT CIRCUIT #23 #25 & #27 TO EXISTING 20A, 1P SPARE CIRCUIT BREAKERS IN THE EXISTING PANEL "NF", SEE PANEL SCHEDULE ON DWG. B09-E-102.
4. PROVIDE A ROUGHIN CIRCUIT FOR FUTURE AFC FARE GATE 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 07-14 DATE
DRAWN C. NGO 07-14 DATE
CHECKED B. IDILBI 07-14 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
FOREST GLEN
KIOSK - POWER

SCALE: AS SHOWN
DRAWING NO.: B09-E-101

EXISTING PANEL "NF"

AMPERES: 250	VOLTS 120/208	MOUNTING: SURFACE
MAINS: 225A MCB	PHASE: 3	LOCATION: AC SWBD BATTERY RM. C106
RATING: 10K AIC	WIRE: 4	SECTION: 1 OF 1

		CKT BKRS		CKT.		CKT.	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.		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	0.8	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	0.8	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
SPARE	0.0	20	1	17	- - C	18	1	20	0.8	EXISTING VENDOR
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	0.0	SPARE
NEW KIOSK RECEPT. (IT & NCS)	**0.8**	20	1	23	- - C	24	1	20	0.0	SPARE
NEW KIOSK RECEPT. (NEPP/SOC)	**0.8**	20	1	25	A - -	26	1	20	0.0	SPARE
FUTURE AFC FARE GATE	0.0	20	1	27	- B -	28	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	29	- - C	30	3	100	2.9	EXIST. KIOSK LOAD CENTER "KES"
SPARE	0.0	20	1	31	A - -	32	-	-	2.5	
SPARE	0.0	20	1	33	- B -	34	-	-	2.5	
SPARE	0.0	20	1	35	- - C	36	-	-	0.0	SPACE
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	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:	**8.9 KVA**		
PHASE B:	**8.9 KVA**		
PHASE C:	**6.9 KVA**		

NOTES: A. EXISTING PANEL "NF" IS FED FROM 277/480V, 3ø, 4W EXISTING SWITCHBOARD "NA" LOCATED IN AC SWBD. BATTERY RM. C105, CIRCUIT (B09-NA-02) ∯2-125A/3P VIA 75KVA TRANSFORMER (SEE ATTACHED DWG. MM-B-E24).

B. EXISTING WIRING FED FROM TOP OF PANEL BY:
- 1-4" C. (WIRING FILL >40%).
- 1-1 1/2" EMPTY CONDUIT.
- 1-∯12 WIRING.

EXISTING WIRING FED FROM LEFT SIDE OF PANEL BY:
- 1-3" C. TO TRANSFORMER (WIRING FILL >40%).

CONTRACT NO. 14-FQ10060-CENI-24

DESIGNED C. NGO 07-14 DATE
DRAWN C. NGO 07-14 DATE
CHECKED B. IDLEI 07-14 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

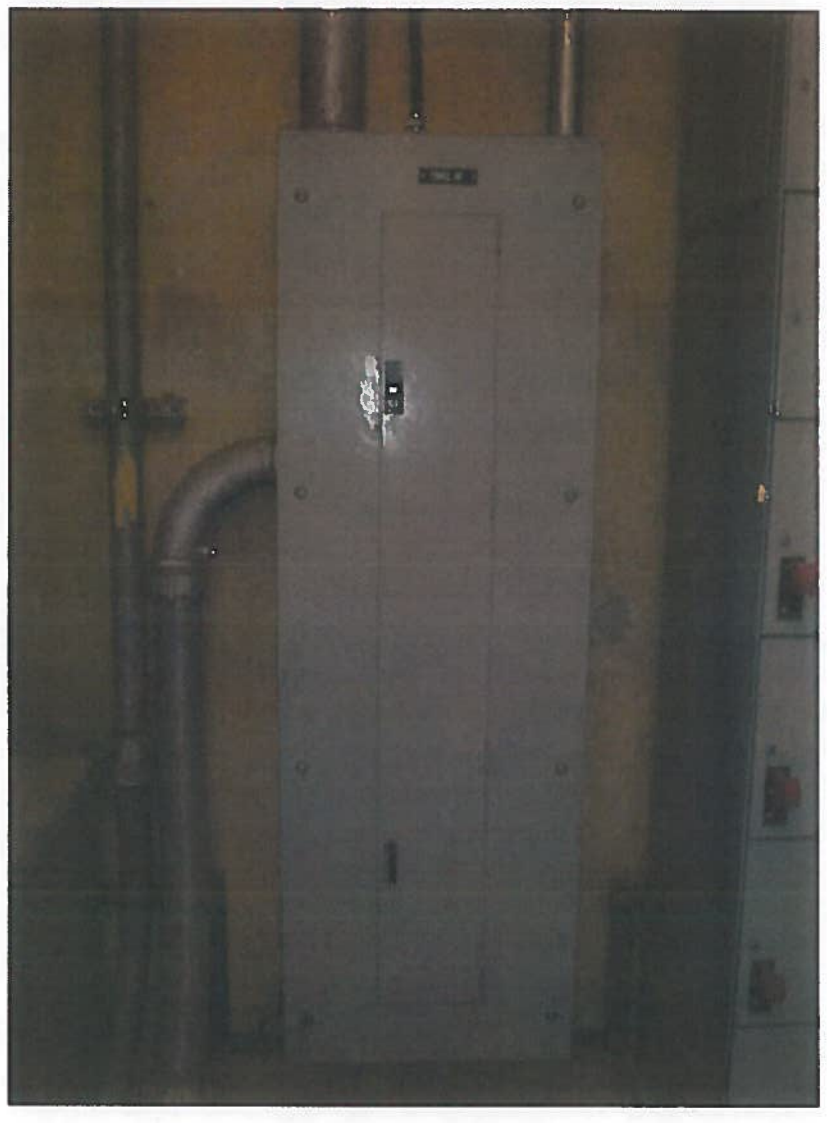
APPROVED _____

GFP A Gannett Fleming/Parsons JOINT VENTURE

SUBMITTED _____ PROJECT MANAGER

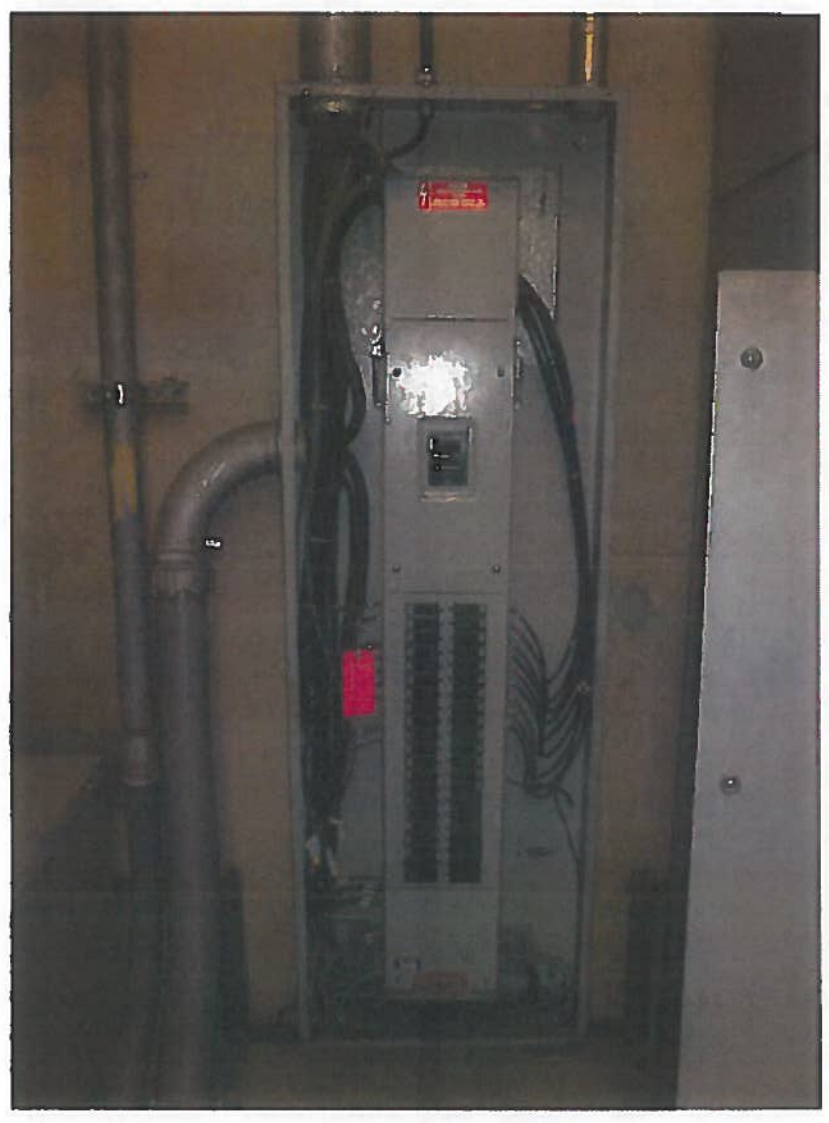
NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
FOREST GLEN
PANEL SCHEDULE

SCALE: NOT TO SCALE
DRAWING NO: B09-E-102



EXISTING PANEL "NF"

EXISTING PANEL "NF"



EXISTING PANEL "NF"

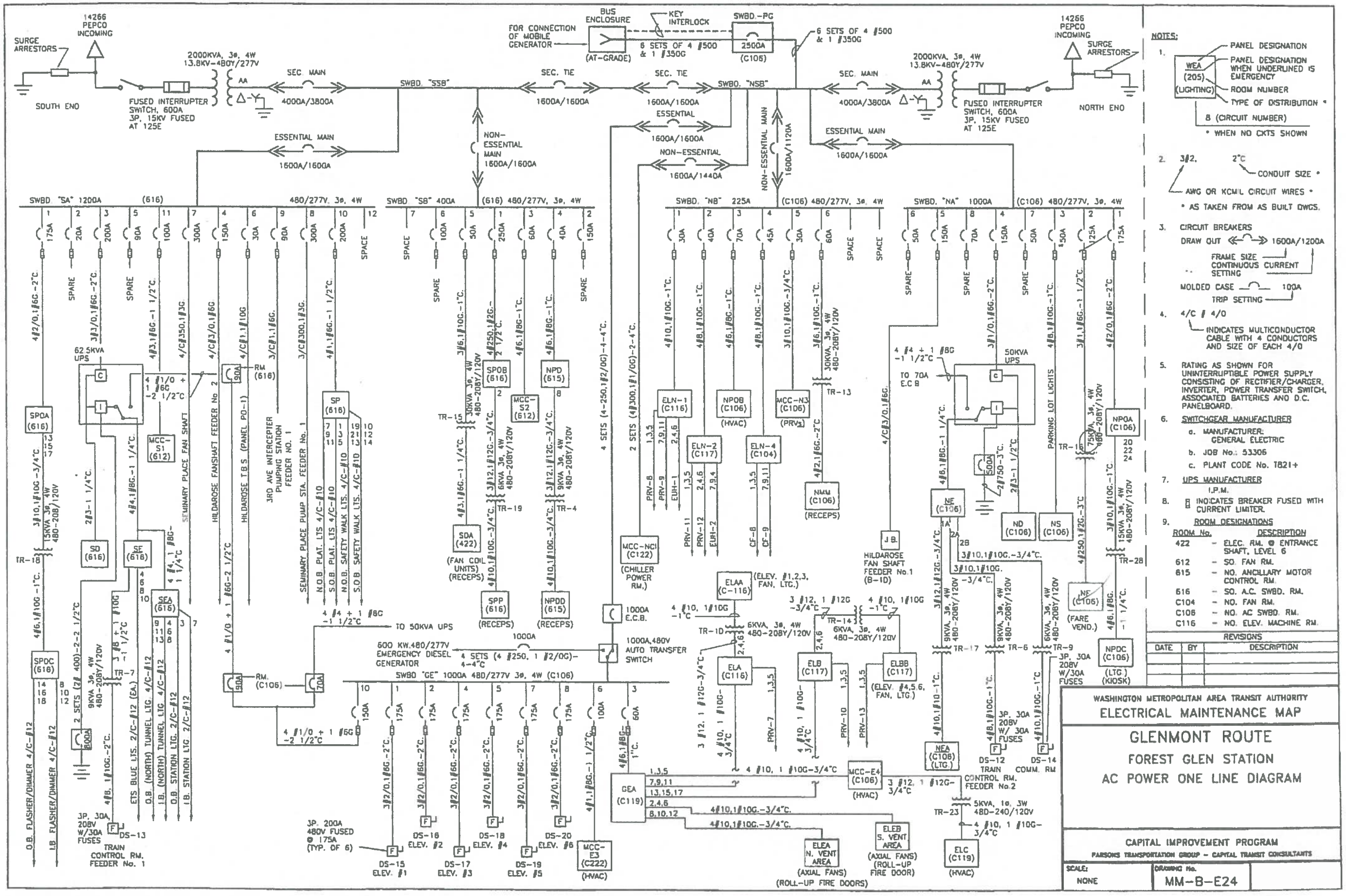
CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO 07-14 DATE	REFERENCE DRAWINGS		REVISIONS				WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DRAWN C. NGO 07-14 DATE	NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION		DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
CHECKED B. IDRIS 07-14 DATE							APPROVED _____
APPROVED N/A DATE							SUBMITTED _____ PROJECT MANAGER

GFP A Gannett Fleming/Parsons JOINT VENTURE

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
FOREST GLEN
PANELBOARD IMAGE

SCALE	DRAWING NO.	
NOT TO SCALE	B09-E-301	



NOTES:

1. WEA (205) (LIGHTING) — PANEL DESIGNATION; PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY; ROOM NUMBER; TYPE OF DISTRIBUTION *; 8 (CIRCUIT NUMBER); * WHEN NO CKTS SHOWN
2. 3#2, 2"C — CONDUIT SIZE *; AWG OR KCMIL CIRCUIT WIRES *; * AS TAKEN FROM AS BUILT DWGS.
3. CIRCUIT BREAKERS — DRAW OUT 1600A/1200A; FRAME SIZE CONTINUOUS CURRENT SETTING; MOLDED CASE 100A; TRIP SETTING
4. 4/C # 4/0 — INDICATES MULTICONDUCTOR CABLE WITH 4 CONDUCTORS AND SIZE OF EACH 4/0
5. RATING AS SHOWN FOR UNINTERRUPTIBLE POWER SUPPLY CONSISTING OF RECTIFIER/CHARGER, INVERTER, POWER TRANSFER SWITCH, ASSOCIATED BATTERIES AND D.C. PANELBOARD.
6. SWITCHGEAR MANUFACTURER
   a. MANUFACTURER: GENERAL ELECTRIC
   b. JOB No.: 53306
   c. PLANT CODE No. 7821+
7. UPS MANUFACTURER I.P.M.
8. B INDICATES BREAKER FUSED WITH CURRENT LIMITER.
9. ROOM DESIGNATIONS

ROOM No.	DESCRIPTION
422	ELEC. RM. @ ENTRANCE SHAFT, LEVEL 6
612	SO. FAN RM.
615	NO. ANCILLARY MOTOR CONTROL RM.
616	SO. A.C. SWBD. RM.
C104	NO. FAN RM.
C108	NO. AC SWBD. RM.
C116	NO. ELEV. MACHINE RM.

REVISIONS

DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

ELECTRICAL MAINTENANCE MAP

GLENMONT ROUTE

FOREST GLEN STATION

AC POWER ONE LINE DIAGRAM

CAPITAL IMPROVEMENT PROGRAM

PARSONS TRANSPORTATION GROUP – CAPITAL TRANSIT CONSULTANTS

SCALE: NONE

DRAWING No. MM-B-E24

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 OISCREPANCIES 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 PROVIOED 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 PERFORMEO 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 OESCRIPTIONS ARE TO INCLUDE THE FINAL ROOM DR AREA NUMBERS.
24. INCLUDE GPR FOR ANY CORE ORILLS OR ORILLED PENETRATIONS IN ANY WALLS.
25. SEAL OFF ALL PENETRATIONS THRU WALLS/FLOORS.
26. THE CONTRACTOR SHALL BECOME FAMILIAR WITH WMATA OESIGN 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 IOENTIFY 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
AC	ALTERNATING CURRENT
AF	AMPERE FRAME
AFC	AUTOMATED FARE COLLECTION SYSTEM
AFF	ABOVE FINISHED FLOOR
AIC	AMPERE INTERRUPTING CAPACITY
AT	AMPERE TRIP
BKR	BREAKER
C	CONDUIT
CB	CIRCUIT BREAKER
CCT	CIRCUIT
℄	CENTER LINE
CLG	CEILING
CONST	CONSTRUCTION
DISC	DISCONNECT
E	ELECTRICAL
GND	GROUND
JB	JUNCTION BOX
KAIC	THOUSAND AMPERE INTERRUPTING CAPACITY
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
NEC	NATIONAL ELECTRIC CODE
P	POLE
PH	PHASE
PNL	PANELBOARD
PRI	PRIMARY
PROP	PROPOSED
RGS	RIGID GALVANIZED STEEL
SEC	SECONDARY
SHT	SHEET
SW	SWITCH
SWBD	SWITCHBOARD
TYP	TYPICAL
U/G	UNDER GROUND
U.L.	UNOERWRITERS LABORATORIES
UON	UNLESS OTHERWISE NOTED
VOLT	VOLTAGE
W	WATT
WMATA	WASHINGTON METROPOLITIAN AREA TRANSIT AUTHORITY
WP	WEATHERPROOF

DRAWING INDEX

ELECTRICAL SYMBOL LIST

- QUADRUPLEX RECEPTACLE OUTLET- 20A, 125V WALL MOUNTED.
- [J] JUNCTION BOX - SURFACE MOUNTED ON UNISTRUT CHANNEL
- CONDUIT - CONCEALED IN UNDER FLOOR DUCT U.O.N.
- #10-3/4 / EF 3,5 — 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 PANELBOARO
  - EF 1,3 - INDICATES CIRCUIT HOME RUN PANELBOARD AND CIRCUIT NUMBER IDENTIFICATION

CONTRACT NO.
14-FQ10060-CENI-24

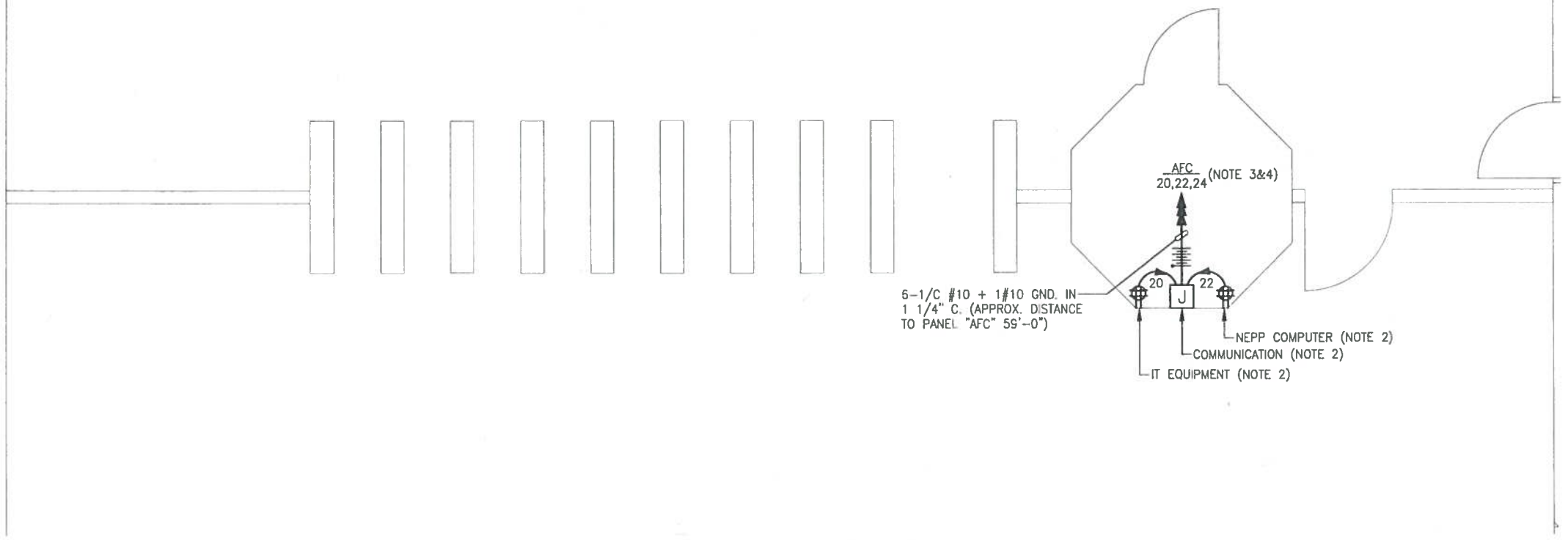
DESIGNED C. NGO	07-14 DATE	REFERENCE DRAWINGS: NUMBER / DESCRIPTION	REVISIONS: DATE / BY / DESCRIPTION
DRAWN C. NGO	07-14 DATE		
CHECKED B. IDILBI	07-14 DATE		
APPROVED N/A	DATE		

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: B10-E-001



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

DRAWING NOTES:

1. USE EXISTING UNOER FLOOR DUCT FOR POWER WIRING. ALL OUTSIOE FLOOR OUCT WIRING SHALL BE IN CONDUIT.
2. VERIFY WITH WMATA PERSONNEL FOR LOCATION OF RECEPTACLES & JUNCTION BOXES.
3. CONNECT CIRCUIT #20 #22 & #24 TO EXISTING 20A, 1P SPARE CIRCUIT BREAKERS IN THE EXISTING PANEL "AFC", SEE PANEL SCHEDULE ON DWG. B10-E-102.
4. PROVIDE A ROUGHIN CIRCUIT FOR FUTURE AFC FARE GATE COILED AT THE KIOSK. THE LENGTH OF COILED PIGTAIL SHALL BE THE FARTHEST FARE GATE DISTANCE FROM KIOSK PLUS AN EXTRA 5'0" CONOUCTOR.

SAFETY PRECAUTION:

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

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO 07-14 DATE	REFERENCE DRAWINGS	REVISIONS
DRAWN C. NGO 07-14 DATE	NUMBER / DESCRIPTION	DATE / BY / DESCRIPTION
CHECKED B. IDILBI 07-14 DATE		9-22-15 / RBM / REV. 1
APPROVED N/A DATE		

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

APPROVED _____

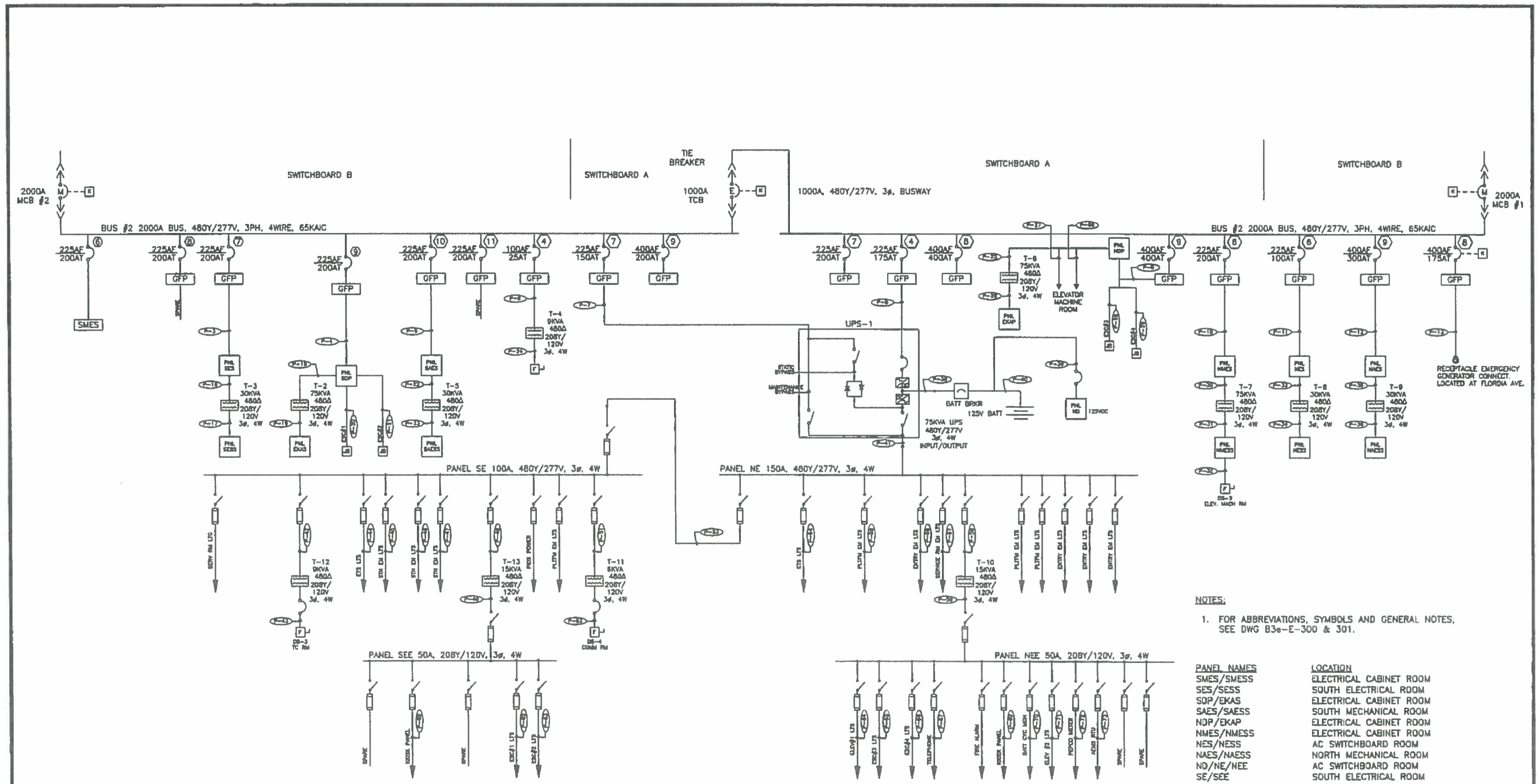
GFP A Gannett Fleming/Parsons JOINT VENTURE

SUBMITTED _____ PROJECT MANAGER

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

SCALE: AS SHOWN

DRAWING NO.: B10-E-101



NOTES:

1. FOR ABBREVIATIONS, SYMBOLS AND GENERAL NOTES, SEE DWG B3e-E-300 & 301.

PANEL NAMES	LOCATION
SMES/SMESS	ELECTRICAL CABINET ROOM
SES/SESS	SOUTH ELECTRICAL ROOM
SDP/EKAS	ELECTRICAL CABINET ROOM
SAES/SAESS	SOUTH MECHANICAL ROOM
NDP/EKAP	ELECTRICAL CABINET ROOM
NMES/NMESS	ELECTRICAL CABINET ROOM
NES/NESS	AC SWITCHBOARD ROOM
NAES/NAESS	NORTH MECHANICAL ROOM
ND/NE/NEE	AC SWITCHBOARD ROOM
SE/SEE	SOUTH ELECTRICAL ROOM

DESIGNED	R.E.	4/10 DATE
DRAWN	A.D.	4/10 DATE
CHECKED	B.G.	4/10 DATE
APPROVED	A.R.	4/10 DATE

REFERENCE DRAWINGS	
NUMBER	DESCRIPTION

REVISIONS		
DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES

SUBMITTED _____ DATE

APPROVED _____ DIRECTOR DATE

GLENMONT ROUTE
NEW YORK AVE STATION
480V AC POWER
SINGLE LINE DIAGRAM

SCALE	DRAWING NO.	SHEET NO.
	MM-B-E33	2 OF 2

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

DRAWING INDEX

ELECTRICAL SYMBOL LIST

- QUADRUPLEX RECEPTACLE OUTLET– 20A, 125V WALL MOUNTED.
- J — JUNCTION BOX – SURFACE MOUNTED ON UNISTRUT CHANNEL
- CONDUIT – CONCEALED IN UNDER FLOOR DUCT U.O.N.
- #10-3/4 / EF 3,5 — HOMERUN TO PANEL, NUMBER OF ARROWHEADS INDICATES NUMBER OF CIRCUITS. CROSS HATCHING INDICATES NUMBER OF CONDUCTORS, NUMBER INDICATES SIZE OF CONDUCTOR AND SIZE OF CONDUIT
  - ⏚ – INDICATES GROUNDING WIRE TO GROUNDING BUS AT THE PANELBOARD
  - EF 1,3 – INDICATES CIRCUIT HOME RUN PANELBOARD AND CIRCUIT NUMBER IDENTIFICATION

CONTRACT NO
14-FQ10060-CENI-24

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

REFERENCE DRAWINGS

NUMBER	DESCRIPTION

REVISIONS

DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

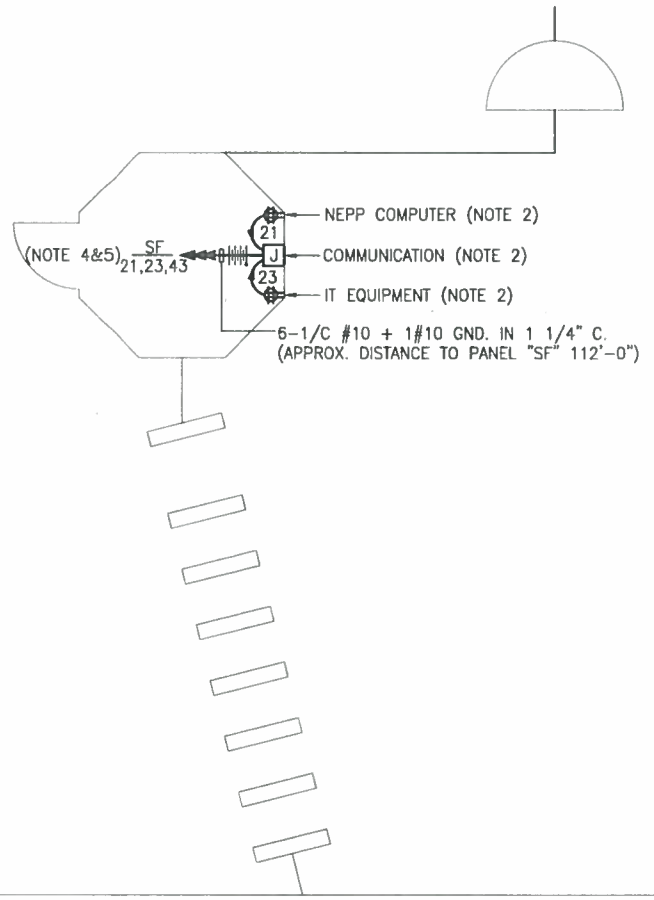
APPROVED

GFP A Gannett Fleming/Parsons JOINT VENTURE

SUBMITTED
PROJECT MANAGER

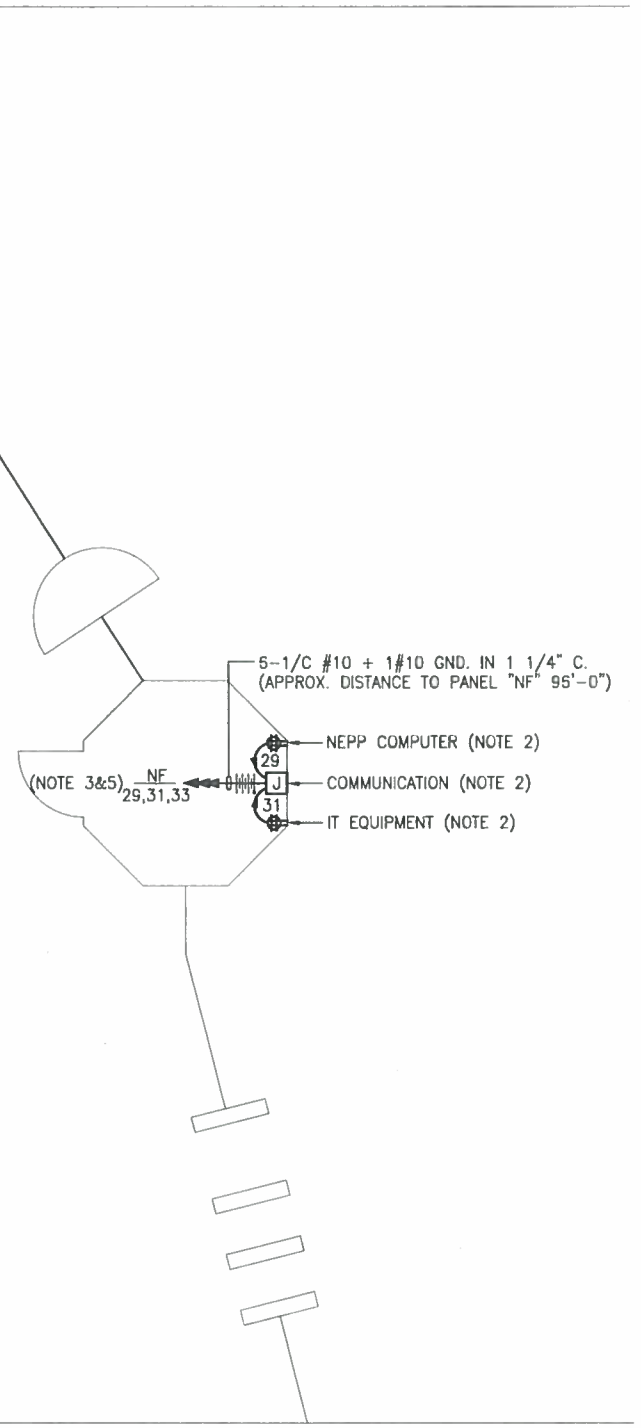
NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST

SCALE: NOT TO SCALE
DRAWING NO.: C01-E-001



SOUTH MEZZANINE KIOSK - POWER

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



NORTH MEZZANINE KIOSK - POWER

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

DRAWING NOTES:

1. USE EXISTING UNDER FLOOR DUCT FOR POWER WIRING. ALL OUTSIDE FLOOR DUCT WIRING SHALL BE IN CONDUIT.
2. VERIFY WITH WMATA PERSONNEL FOR LOCATION OF RECEPTACLES & JUNCTION BOXES.
3. CONNECT CIRCUIT #29 #31 & #33 TO TWO (2) EXISTING 20A, 1P SPARE CIRCUIT BREAKERS IN THE EXISTING PANEL "NF", SEE PANEL SCHEDULE ON DWG. C01-E-102.
4. INSTALL NEW 3-20A, 1P CB IN EXISTING 20A, 1P SPACES (NEW CB SHALL MATCH EXISTING CB), CONNECT CIRCUIT #21 #23 & #43 TO 20A, 1P CIRCUIT BREAKERS IN THE EXISTING PANEL "SF", SEE PANEL SCHEDULE ON DWG. C01-E-102.
5. PROVIDE A ROUGHIN CIRCUIT FOR FUTURE AFC FARE GATE 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	09-14 DATE
DRAWN	C. NGO	09-14 DATE
CHECKED	B. IDILBI	09-14 DATE
APPROVED	N/A	DATE

REFERENCE DRAWINGS

NUMBER	DESCRIPTION

REVISIONS

DATE	BY	DESCRIPTION
9-22-15	RBM	REV. 1

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
METRO CENTER - NORTH & SOUTH
MEZZANINE KIOSK - POWER

CONTRACT NO. 14-FQ10060-CENI-24

SCALE: AS SHOWN

DRAWING NO. C01-E-101

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						
		CKT BKRS		CKT.		CKT.	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.		NO.	POLE	AMP	KVA	LOAD DESCRIPTION
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	SPARE
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	0.0	20	1	33	- B -	34	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	35	- - C	36	1	20	0.0	SPARE
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:	8.9 KVA		
PHASE C:	8.1 KVA		

NOTES: A. EXISTING PANEL "NF" IS FED FROM 277/480V, 3ø, 4W EXISTING SWBD. "NGB" LOCATE IN AC SWBD ROOM N101, CIRCUIT (C01-NGB-06) #6-100A/3P VIA 75KVA TRANSFORMER (SEE ATTACHED DWG. MM-C-E05).

B. EXISTING WIRING FED FROM TOP OF PANEL BY:
- 2-3/4" C. (WIRING FILL >40%).

EXISTING WIRING FED FROM BOTTOM OF PANEL BY:
- 1-6"x 24" WIRE TROUGH (WIRING FILL >40%).

EXISTING WIRING FED FROM LEFT SIDE OF PANEL BY:
- 1-2" C. TO TRANSFORMER (WIRING FILL >40%).

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						
		CKT BKRS		CKT.		CKT.	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.		NO.	POLE	AMP	KVA	LOAD DESCRIPTION
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	SPARE
EXISTING VENDOR	0.8	20	1	37	A	38	-	-	0.0	
EXISTING VENDOR	0.8	20	1	39	B	40	2	20	0.0	SPARE
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	28.7 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		

NOTES: A. EXISTING PANEL "SF" IS FED FROM 277/480V, 3ø, 4W EXISTING SWBD. "SGB" LOCATE IN AC SWBD ROOM S106, CIRCUIT (C01-SGB-07) #7-100A/3P VIA 75KVA TRANSFORMER (SEE ATTACHED DWG. MM-C-E05).

B. EXISTING WIRING FED FROM TOP OF PANEL BY:
- 7-3/4" C. (WIRING FILL >40%).
- 1-2" C. TO TRANSFORMER (WIRING FILL >40%).

EXISTING WIRING FED FROM BOTTOM OF PANEL BY:
- 2-6 1/2"x 1 1/2" FLOOR DUCT (WIRING FILL >40%).

CONTRACT NO.
14-FQ10060-CENI-24

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

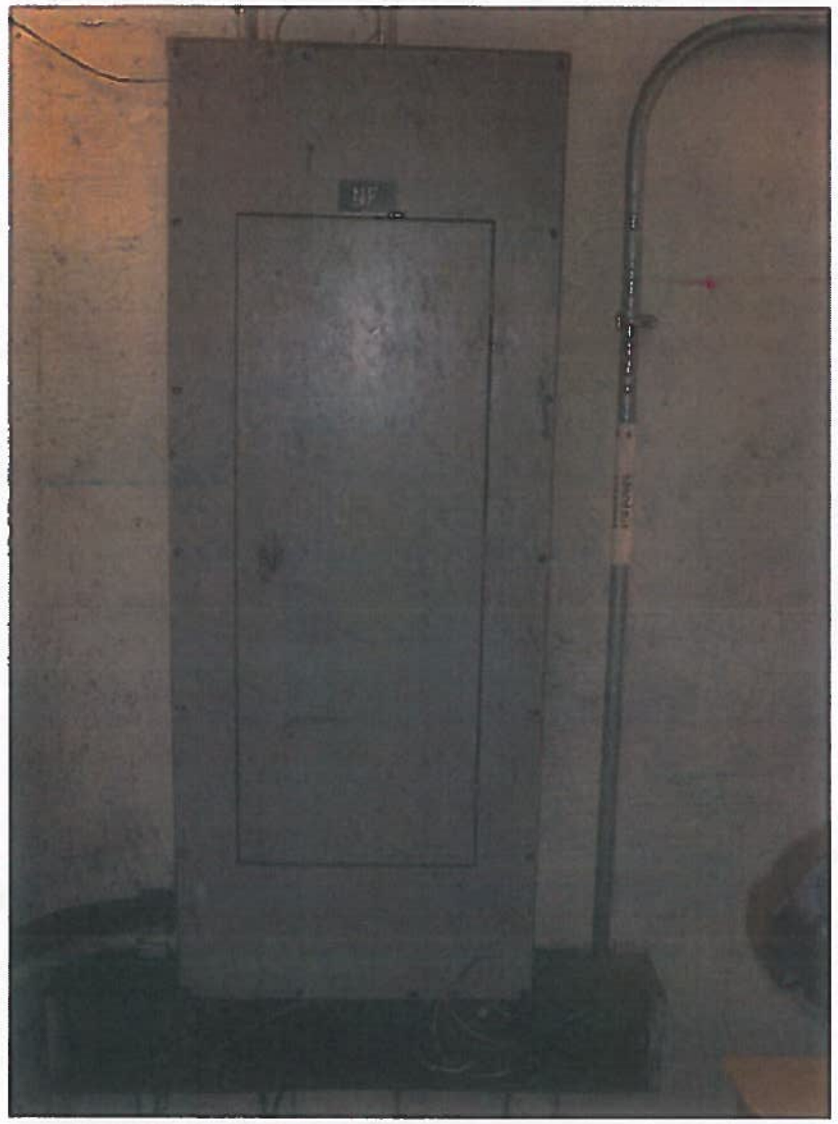
APPROVED

GFP A Gannett Fleming/Parsons JOINT VENTURE

SUBMITTED
PROJECT MANAGER

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

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



EXISTING PANEL "NF"

EXISTING PANEL "NF"

EXISTING PANEL "NF"

CONTRACT NO. 14-FQ10060-CENI-24

DESIGNED	C. HOO	07-14	DATE
DRAWN	C. HOO	07-14	DATE
CHECKED	S. GILB	07-14	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
METRO CENTER - NORTH
PANELBOARD IMAGE

SCALE: NOT TO SCALE

DRAWING NO. C01-E-301

EXISTING PANEL "SF"

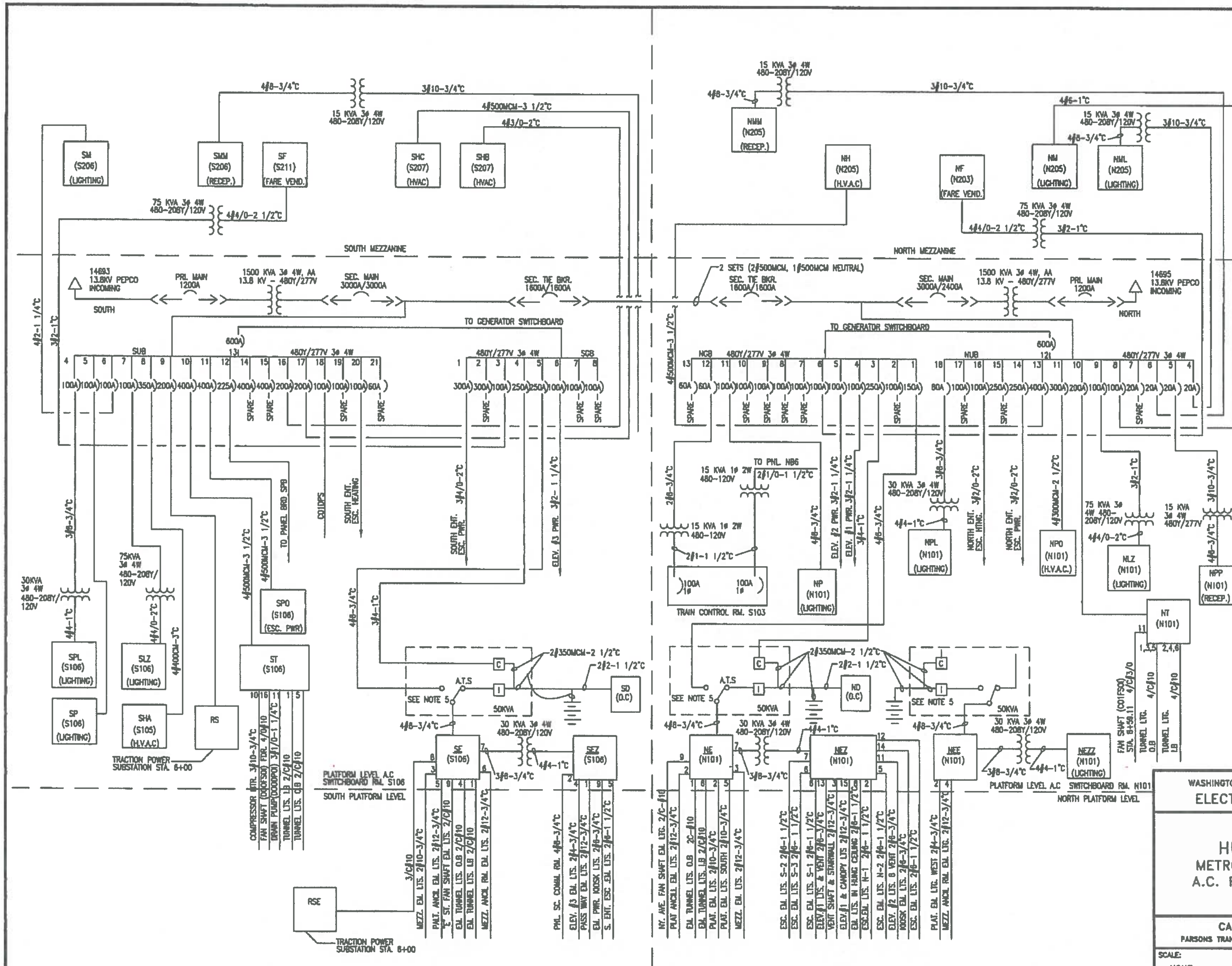
EXISTING PANEL "SF"

EXISTING PANEL "SF"

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. HSU 07-14 DATE	REFERENCE DRAWINGS		REVISIONS			WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY	NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
DRAWN C. HSU 07-14 DATE	NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION	DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM	METRO CENTER - SOUTH PANELBOARD IMAGE
CHECKED B. ERB 07-14 DATE						GFP A Gannett Fleming/Parsons JOINT VENTURE	SCALE: NOT TO SCALE
APPROVED N/A DATE						APPROVED _____ SUBMITTED _____ PROJECT MANAGER	DRAWING NO. C01-E-302

DESIGNED G HOLMES 11/07/10 DATE CHECKED B B GHORBAN 11/15/10 DATE
DRAWN G HOLMES 11/15/10 DATE APPROVED A ROBINSON 11/19/10 DATE



NOTES:

1. WEA (205) (LIGHTING) 8
   - PANEL DESIGNATION
   - PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY
   - ROOM NUMBER
   - TYPE OF DISTRIBUTION •
   - 8 (CIRCUIT NUMBER)
   - • WHEN NO CKTS SHOWN
2. 3#2, 2"C
   - CONDUIT SIZE •
   - AWG OR KCMIL CIRCUIT WIRES •
   - • AS TAKEN FROM AS BUILT DWGS.
3. CIRCUIT BREAKERS
   - DRAW OUT 1600A/1200A
   - MOLDED CASE
   - FRAME SIZE
   - CONTINUOUS CURRENT SETTING
4. 4/C # 4/0
   - INDICATES MULTICONDUCTOR CABLE WITH 4 CONDUCTORS AND SIZE OF EACH 4/0
5. RATING AS SHOWN FOR UNINTERRUPTIBLE POWER SUPPLY CONSISTING OF RECTIFIER/CHARGER, INVERTER,POWER TRANSFER SWITCH, ASSOCIATED BATTERIES AND D.C. PANELBOARD.
6. PANEL FOR FARE COLLECTION EQUIPMENT.
7. ATS. - AUTOMATIC TRANSFER SWITCH
   C - CHARGER
   I - INVERTER
8. THE NUMERALS REPRESENT THE CIRCUIT NUMBERING IN THE PANELBOARD
9. EM - EMERGENCY.
10. UPS MANUFACTURER: IPM.
11. SWITCHGEAR MANUFACTURER FEDERAL PACIFIC
    TYPE OF BREAKERS FPS

REVISIONS		
DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
ELECTRICAL MAINTENANCE MAP

HUNTINGTON ROUTE
METRO CENTER STATION (C01)
A.C. POWER ONE LINE DIAGRAM

CAPITAL IMPROVEMENT PROGRAM
PARSONS TRANSPORTATION GROUP - CAPITAL TRANSIT CONSULTANTS

SCALE: NONE
DRAWING No. MM-C-E05

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

DRAWING INDEX

ELECTRICAL SYMBOL LIST

- QUADRUPLEX RECEPTACLE OUTLET– 20A, 125V WALL MOUNTED.
- J — JUNCTION BOX – SURFACE MOUNTED ON UNISTRUT CHANNEL
- CONDUIT – CONCEALED IN UNDER FLOOR DUCT U.O.N.
- #10–3/4 / EF 3,5 — HOMERUN TO PANEL, NUMBER OF ARROWHEADS INDICATES NUMBER OF CIRCUITS. CROSS HATCHING INDICATES NUMBER OF CONDUCTORS, NUMBER INDICATES SIZE OF CONDUCTOR AND SIZE OF CONDUIT
  - | – INDICATES GROUNDING WIRE TO GROUNDING BUS AT THE PANELBOARD
  - EF 1,3 – INDICATES CIRCUIT HOME RUN PANELBOARD AND CIRCUIT NUMBER IDENTIFICATION

CONTRACT NO.
14-FQ10060-CENI-24

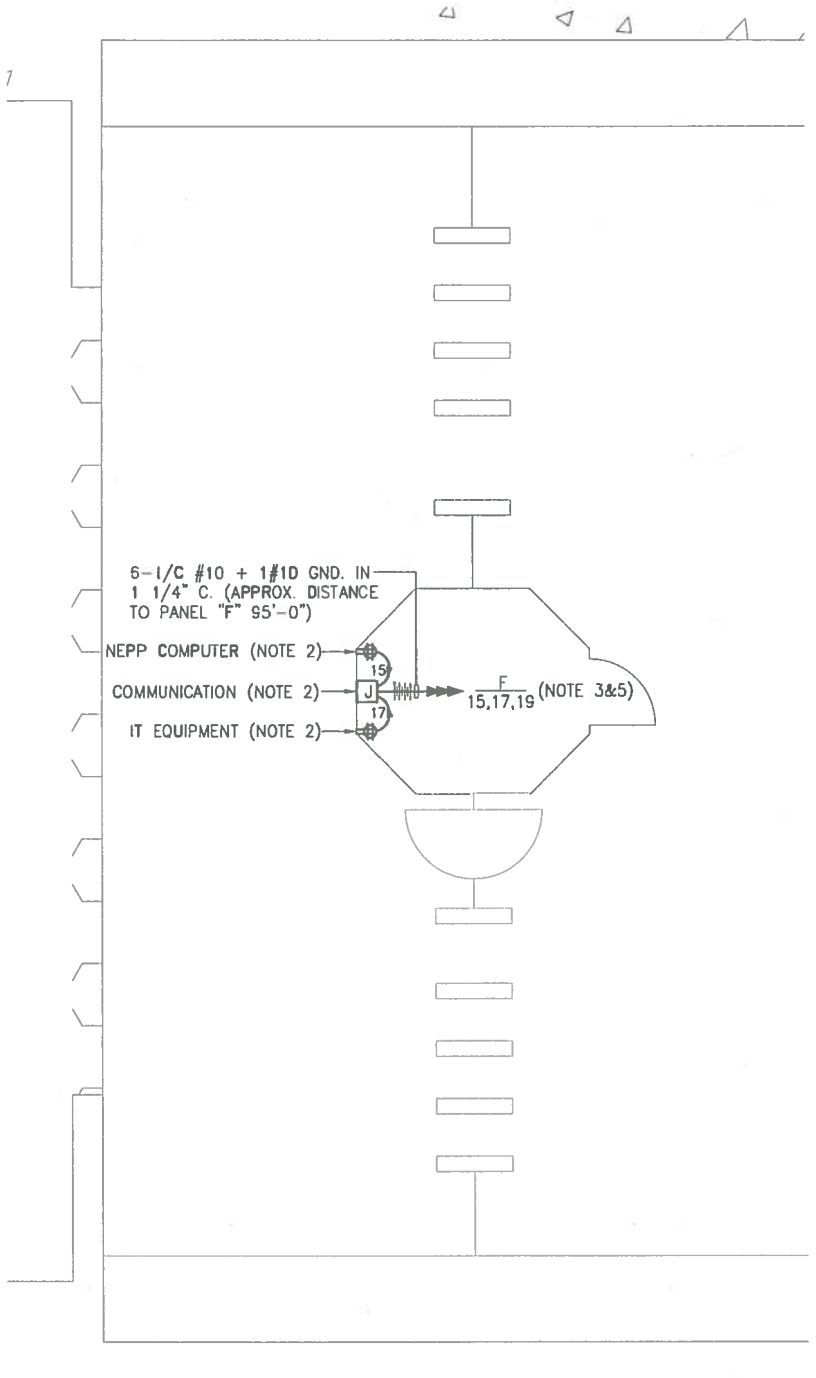
DESIGNED C. NGO	08-14 DATE	REFERENCE DRAWINGS: NUMBER / DESCRIPTION	REVISIONS: DATE / BY / DESCRIPTION
DRAWN C. NGO	08-14 DATE		
CHECKED B. IDLBI	08-14 DATE		
APPROVED N/A	DATE		

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

GFP A Gannett Fleming/Parsons JOINT VENTURE
SUBMITTED PROJECT MANAGER

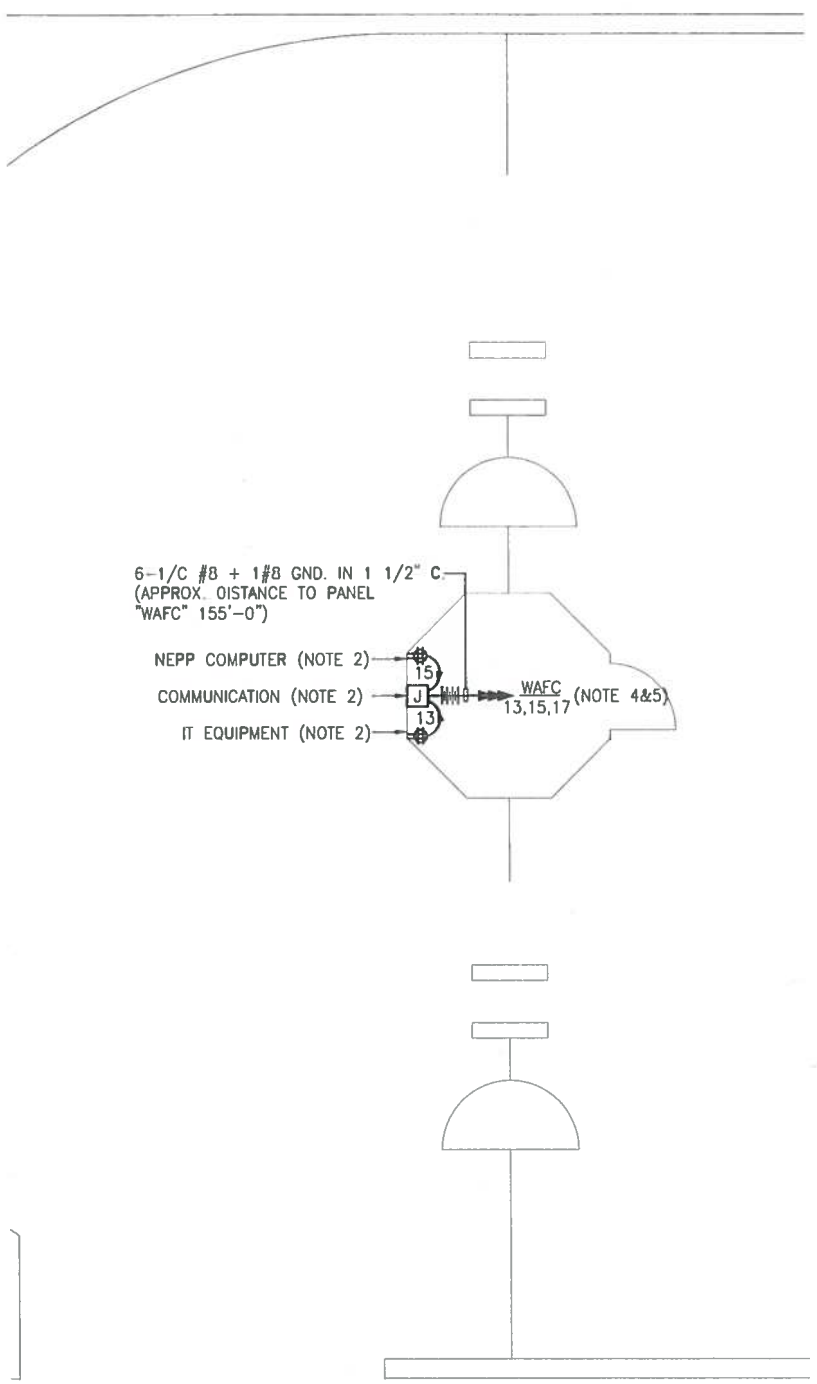
NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST

SCALE: NOT TO SCALE
DRAWING NO: F01-E-001



NORTH MEZZANINE KIOSK - POWER

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



WEST MEZZANINE KIOSK - POWER

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

DRAWING NOTES:

1. USE EXISTING UNDER FLOOR DUCT FOR POWER WIRING. ALL OUTSIDE FLOOR DUCT WIRING SHALL BE IN CONDUIT.
2. VERIFY WITH WMATA PERSONNEL FOR LOCATION OF RECEPTACLES & JUNCTION BOXES.
3. CONNECT CIRCUIT #15 #17 & #19 TO EXISTING 20A, 1P SPARE CIRCUIT BREAKERS IN THE EXISTING PANEL "F", SEE PANEL SCHEDULE ON DWG. F01-E-102.
4. CONNECT CIRCUIT #13 #15 & #17 TO EXISTING 20A, 1P SPARE CIRCUIT BREAKERS IN THE EXISTING PANEL "WAFC", SEE PANEL SCHEDULE ON DWG. FD1-E-102.
5. PROVIDE A ROUGHIN CIRCUIT FOR FUTURE AFC FARE GATE 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	REFERENCE DRAWINGS	REVISIONS
DRAWN C. NGO 08-14 DATE	NUMBER / DESCRIPTION	DATE / BY / DESCRIPTION
CHECKED B. ID/LBI 08-14 DATE		9-22-15 / RBM / REV. 1
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
GALLERY PLACE - NORTH & WEST
MEZZANINE KIOSK - POWER

SCALE: AS SHOWN

DRAWING NO.: F01-E-101

EXISTING PANEL "WAFC" (West)

AMPERES: 225	VOLTS: 120/208	MOUNTING: SURFACE	
MAINS: 225A MLO	PHASE: 3	LOCATION: MECH. EQUIPMENT RM W202	
RATING: 10K AIC	WIRE: 4	SECTION: 1 OF 1	

		CKT BKRS		CKT.		CKT.	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.		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	0.8	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
NEW KIOSK RECEPT. (IT & NEPP)	0.8	20	1	13	A - -	14	1	20	0.8	EXISTING VENDOR
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	15	- B -	16	1	20	0.8	EXISTING VENDOR
FUTURE AFC FARE GATE	0.0	20	1	17	- - C	18	1	20	0.8	EXISTING VENDOR
SPARE	0.0	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	0.8	EXISTING VENDOR
SPARE	0.0	20	1	29	- - C	30	1	20	0.0	SPARE
SPARE	0.0	20	1	31	A - -	32	1	20	0.0	SPARE
SPARE	0.0	20	1	33	- B -	34	1	20	0.0	SPARE
SPARE	0.0	20	1	35	- - C	36	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	37	A - -	38	3	30	2.9	EXIST. KIOSK LOAD CENTER "KE5"
SPARE	0.0	20	1	39	- B -	40	-	-	2.5	
SPARE	0.0	20	1	41	- - C	42	-	-	2.5	

LOAD SUMMARY

LIGHTS	0.0 x 125%		0.0 KVA
RECEPTACLES, FIRST 10 KVA	10.0 x 100%		10.0 KVA
RECEPTACLES	4.8 x 50%		2.4 KVA
MISC. APPLIANCES	0.0 x 100%		0.0 KVA
LARGEST MOTOR	0.0 x 125%		0.0 KVA
MOTORS	0.0 x 100%		0.0 KVA
HEAT	3.0 x 125%		3.8 KVA
AC	4.5 x 100%		4.5 KVA
WATER HEATING	0.0 x 125%		0.0 KVA
TOTAL CONNECTED LOAD	22.3 KVA	TOTAL DEMAND KVA	20.7 KVA
		TOTAL DEMAND AMPS	57.4 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	7.7 KVA		
PHASE B	8.1 KVA		
PHASE C	7.3 KVA		

NOTES: A. EXISTING PANEL "WAFC" IS FED FROM 277/480V, 3ø, 4W EXISTING SWBD. "WGB" LOCATED IN ROOM N101, CIRCUIT (B01-WGB-07) #7-150/3P VIA 75KVA TRANSFORMER (SEE ATTACHED DWG. MM-B-E06).

B. EXISTING WIRING FED FROM TOP OF PANEL BY:
- 2-3" C. (WIRING FILL >40%).

EXISTING WIRING FED FROM BOTTOM OF PANEL BY:
- 1-4" C. TO TRANSFORMER (WIRING FILL >40%).

EXISTING PANEL "F" (North)

AMPERES: 225	VOLTS: 120/208	MOUNTING: SURFACE	
MAINS: 225A MLO	PHASE: 3	LOCATION: MECH. EQUIPMENT N101	
RATING: 10K AIC	WIRE: 4	SECTION: 1 OF 1	

		CKT BKRS		CKT.		CKT.	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.		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	0.8	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
NEW KIOSK RECEPT. (IT & NCS)	0.8	20	1	15	- B -	16	1	20	0.8	EXISTING VENDOR
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	17	- - C	18	1	20	0.0	SPARE
FUTURE AFC FARE GATE	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
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	0.8	EXISTING VENDOR
SPARE	0.0	20	1	35	- - C	36	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	37	A - -	38	3	30	2.9	EXIST. KIOSK LOAD CENTER "KE5"
SPARE	0.0	20	1	39	- B -	40	-	-	2.5	
SPARE	0.0	20	1	41	- - C	42	-	-	2.5	

LOAD SUMMARY

LIGHTS	0.0 x 125%		0.0 KVA
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		

NOTES: A. EXISTING PANEL "F" IS FED FROM 277/480V, 3ø, 4W EXISTING SWBD. "FB2" LOCATED IN AC SWBD RM. N102, CIRCUIT (B01-FB2-12) #12-150/3P VIA 75KVA TRANSFORMER (SEE ATTACHED DWG. MM-B-E07).

B. EXISTING WIRING FED FROM RIGHT SIDE OF PANEL BY:
- 1-8"x 36" WIRE TROUGH W/3" C. (WIRING FILL >30%).
- 1-3" C. TO TRANSFORMER (WIRING FILL >40%).

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

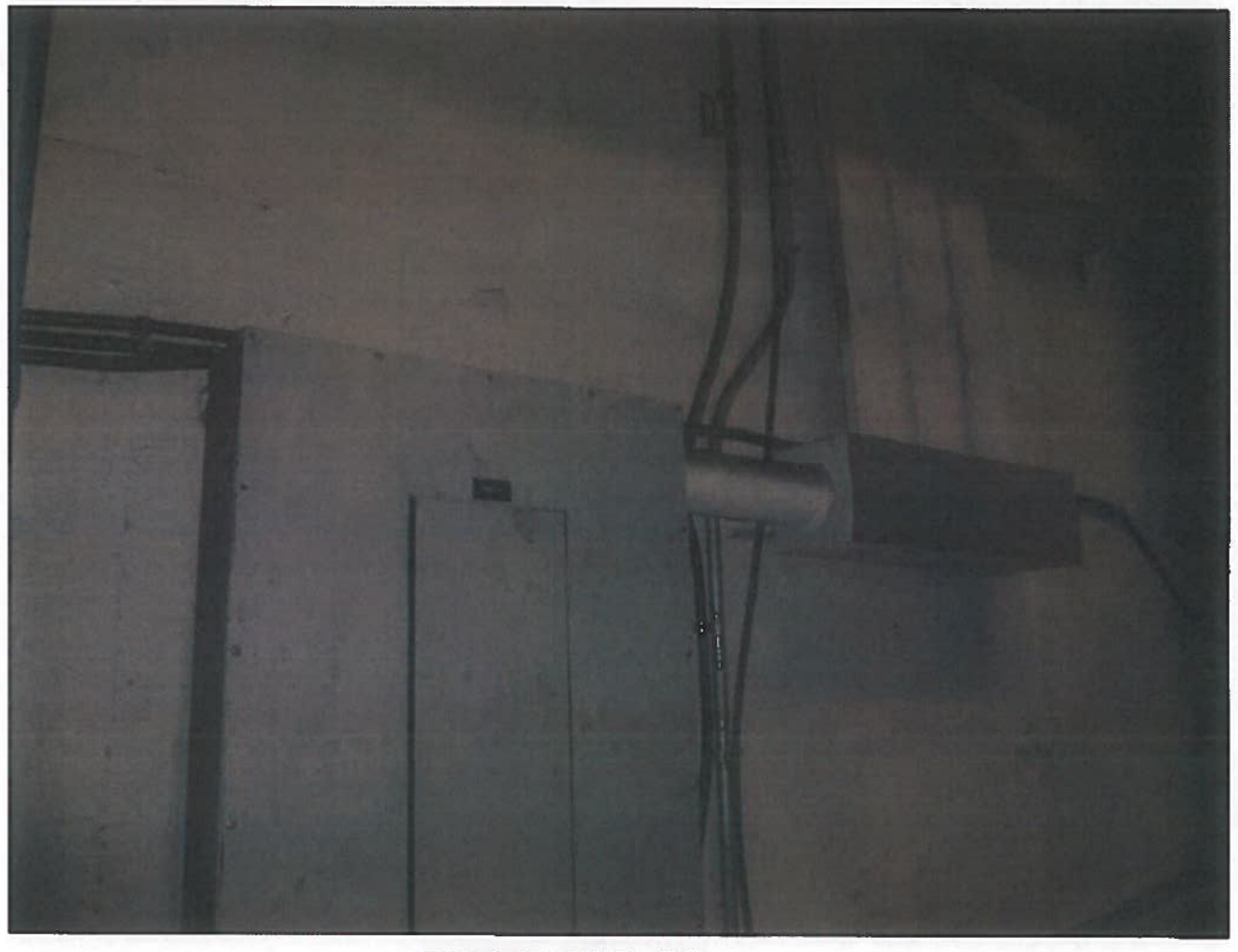
GFP A Gannett Fleming/Parsons JOINT VENTURE

SUBMITTED
PROJECT MANAGER

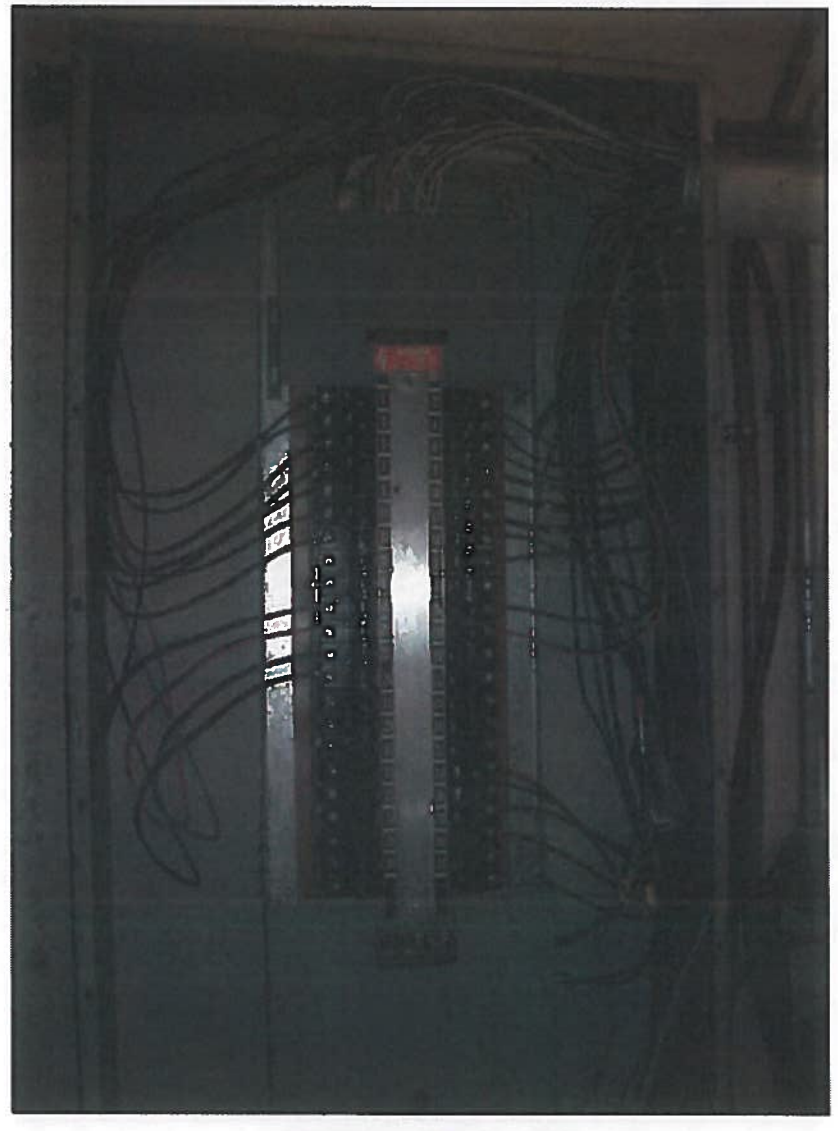
NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
GALLERY PLACE - NORTH & WEST
PANEL SCHEDULES

SCALE: NOT TO SCALE

DRAWING NO.: F01-E-102



EXISTING PANEL "F"



EXISTING PANEL "F"

DESIGNED C. NGO 08-14 DATE	REFERENCE DRAWINGS	REVISIONS	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DRAWN C. NGO 08-14 DATE	NUMBER / DESCRIPTION	DATE / BY / DESCRIPTION	DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
CHECKED B. IDLIB 08-14 DATE			OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
APPROVED N/A DATE			APPROVED

GFP A Gannett Fleming/Parsons JOINT VENTURE

SUBMITTED PROJECT MANAGER

CONTRACT NO. 14-FQ10060-CENI-24

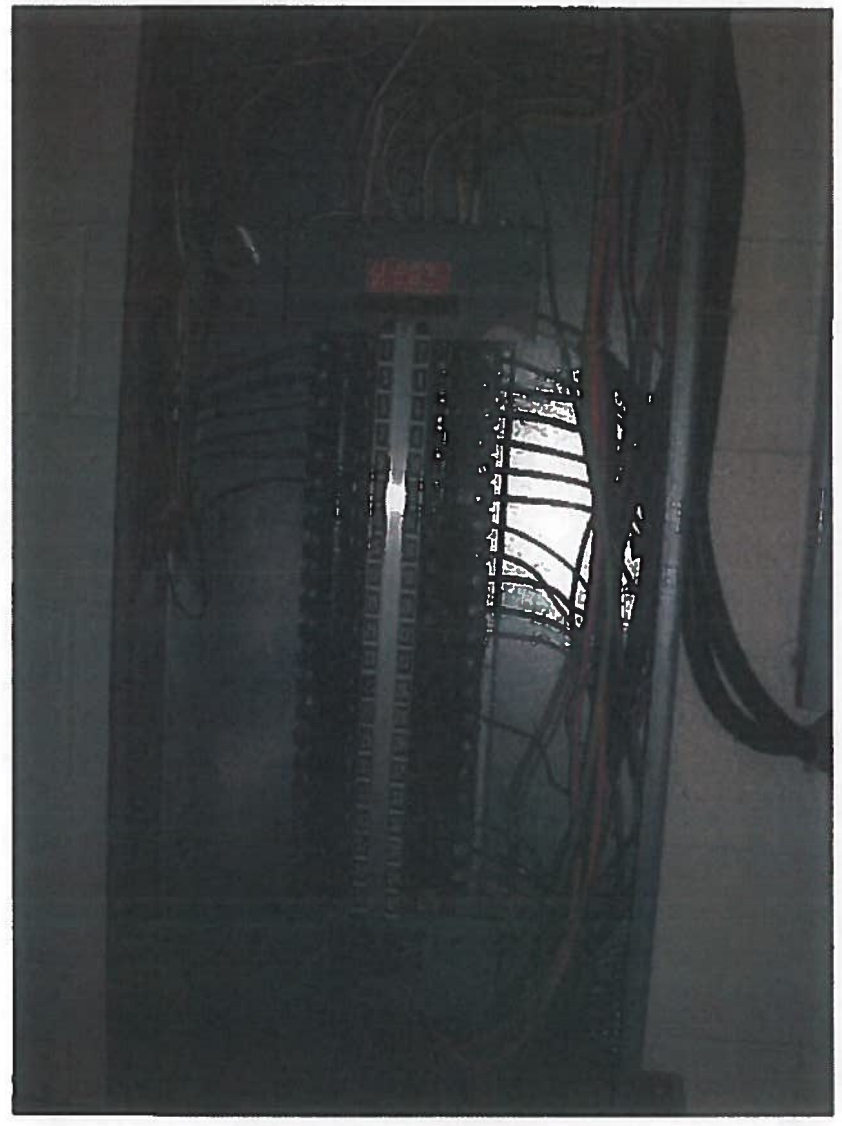
NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
GALLERY PLACE - NORTH & WEST
PANELBOARD IMAGE

SCALE: NOT TO SCALE

DRAWING NO.: F01-E-301

EXISTING PANEL "WAFC"

EXISTING PANEL "WAFC"



EXISTING PANEL "WAFC"

DESIGNED	C. NGO	08-14 DATE
DRAWN	C. NGO	08-14 DATE
CHECKED	S. DILB	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

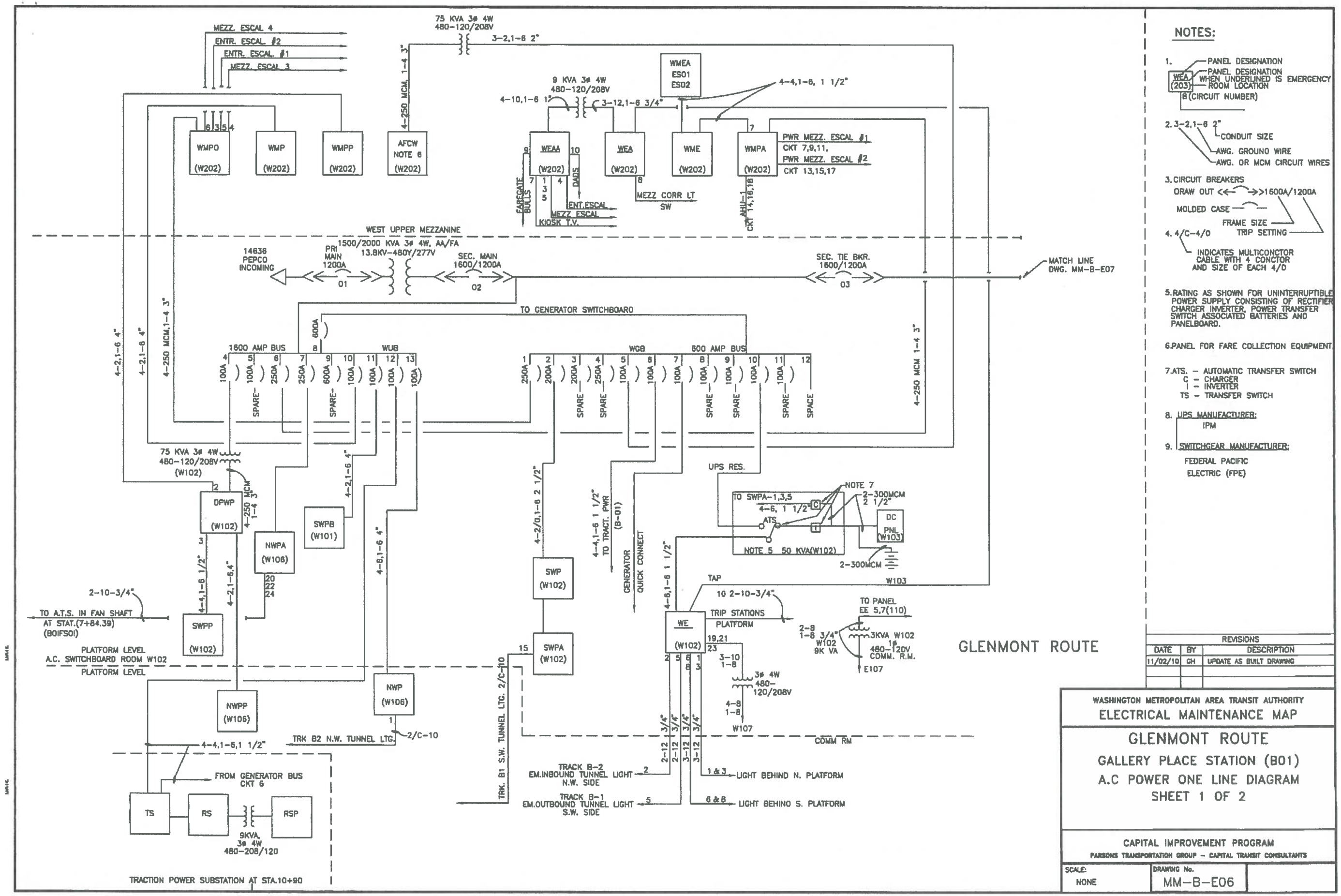
SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
GALLERY PLACE - NORTH & WEST
PANELBOARD IMAGE

CONTRACT NO. 14-FQ10060-CENI-24

SCALE NOT TO SCALE

DRAWING NO. F01-E-302



NOTES:

1. WEA (203) 6 — PANEL DESIGNATION; PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY; ROOM LOCATION; (CIRCUIT NUMBER)
2. 3-2,1-6 2" — CONDUIT SIZE; AWG. GROUND WIRE; AWG. OR MCM CIRCUIT WIRES
3. CIRCUIT BREAKERS — DRAW OUT <<- ->>; 1600A/1200A MOLDED CASE; FRAME SIZE; TRIP SETTING
4. 4/C-4/0 — INDICATES MULTICONCTOR CABLE WITH 4 CONCTOR AND SIZE OF EACH 4/0
5. RATING AS SHOWN FOR UNINTERRUPTIBLE POWER SUPPLY CONSISTING OF RECTIFIER CHARGER INVERTER, POWER TRANSFER SWITCH ASSOCIATED BATTERIES AND PANELBOARD.
6. PANEL FOR FARE COLLECTION EQUIPMENT
7. ATS. - AUTOMATIC TRANSFER SWITCH
   C = CHARGER
   I = INVERTER
   TS = TRANSFER SWITCH
8. UPS MANUFACTURER: IPM
9. SWITCHGEAR MANUFACTURER: FEDERAL PACIFIC ELECTRIC (FPE)

REVISIONS		
DATE	BY	DESCRIPTION
11/02/10	CH	UPDATE AS BUILT DRAWING

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

ELECTRICAL MAINTENANCE MAP

GLENMONT ROUTE

GALLERY PLACE STATION (B01)

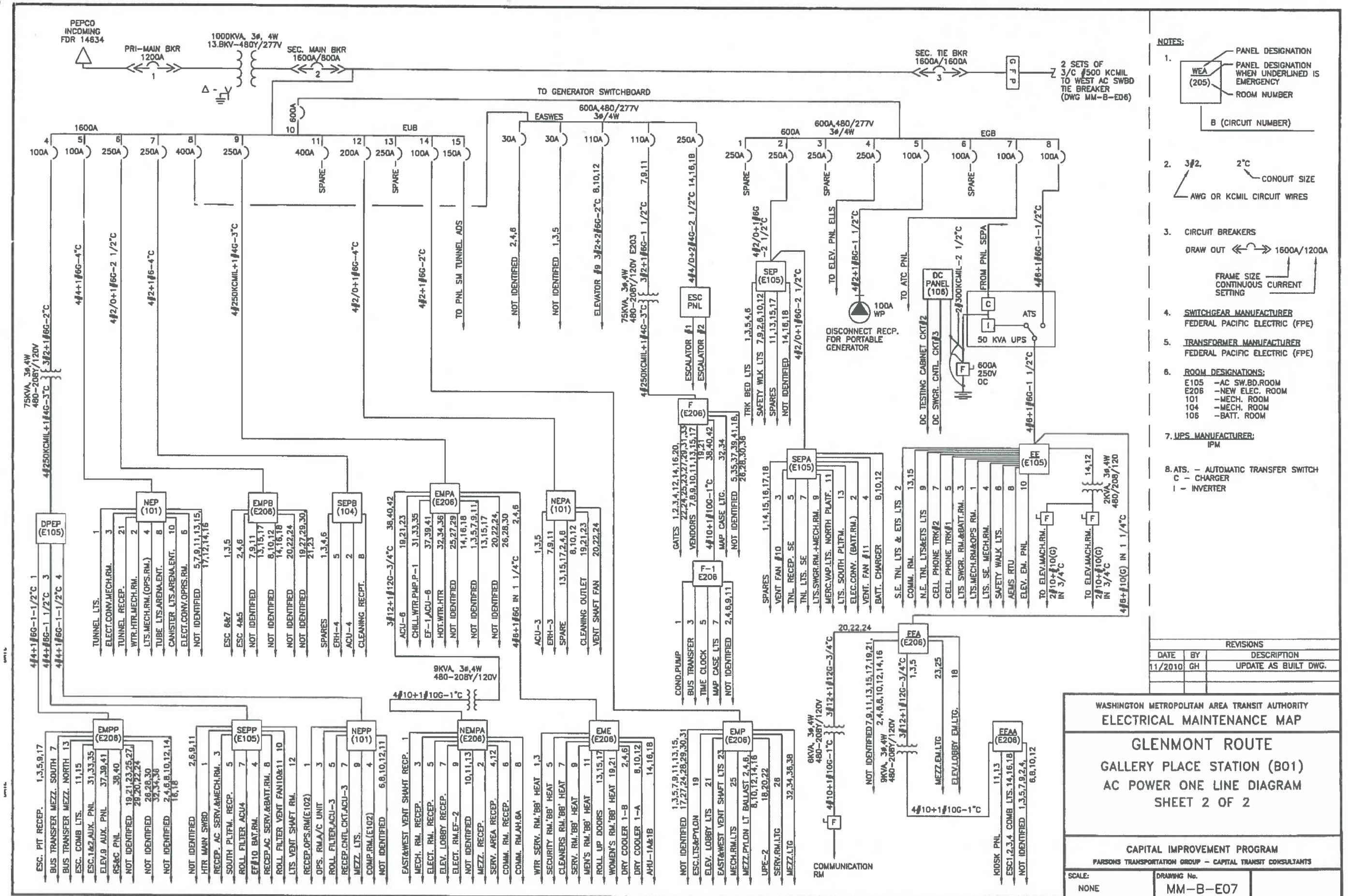
A.C POWER ONE LINE DIAGRAM

SHEET 1 OF 2

CAPITAL IMPROVEMENT PROGRAM

PARSONS TRANSPORTATION GROUP - CAPITAL TRANSIT CONSULTANTS

SCALE:	DRAWING No.	
NONE	MM-B-E06	


PEPCO INCOMING FDR 14634
PRI-MAIN BKR 1200A
1000KVA, 3ø, 4W 13.8KV-480Y/277V
SEC. MAIN BKR 1600A/800A
SEC. TIE BKR 1600A/1600A
2 SETS OF 3/C #500 KCMIL TO WEST AC SWBD TIE BREAKER (DWG MM-B-E06)
TO GENERATOR SWITCHBOARD
1600A
EUB
600A,480/277V 3ø/4W
EASWES
600A,480/277V 3ø/4W
600A
EGB
75KVA, 3ø,4W 480-208Y/120V
9KVA, 3ø,4W 480-208Y/120V
6KVA, 3ø,4W 480-208Y/120V
2KVA, 3ø,4W 480/208/120
DPEP (E105)
EMPP (E206)
SEPP (E105)
NEPP (101)
NEMPA (E206)
EME (E206)
EMP (E206)
EEA (E206)
EEAA (E206)
NEP (101)
EMPB (E206)
SEPB (104)
EMPA (E206)
NEPA (101)
SEP (E105)
ESC PNL
SEPA (E105)
EE (E105)
DC PANEL (108)
ATS
50 KVA UPS
100A WP
DISCONNECT RECP. FOR PORTABLE GENERATOR
600A 250V DC
COMMUNICATION RM
NOTES:
1. PANEL DESIGNATION
PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY
ROOM NUMBER
B (CIRCUIT NUMBER)
2. AWG OR KCMIL CIRCUIT WIRES
CONDUIT SIZE
3. CIRCUIT BREAKERS
DRAW OUT
FRAME SIZE CONTINUOUS CURRENT SETTING
4. SWITCHGEAR MANUFACTURER
FEDERAL PACIFIC ELECTRIC (FPE)
5. TRANSFORMER MANUFACTURER
FEDERAL PACIFIC ELECTRIC (FPE)
6. ROOM DESIGNATIONS:
E105 -AC SW.BD.ROOM
E206 -NEW ELEC. ROOM
101 -MECH. ROOM
104 -MECH. ROOM
106 -BATT. ROOM
7. UPS MANUFACTURER:
IPM
8. ATS. - AUTOMATIC TRANSFER SWITCH
C - CHARGER
I - INVERTER
REVISIONS
DATE BY DESCRIPTION
11/2010 GH UPDATE AS BUILT DWG.
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
ELECTRICAL MAINTENANCE MAP
GLENMONT ROUTE
GALLERY PLACE STATION (B01)
AC POWER ONE LINE DIAGRAM
SHEET 2 OF 2
CAPITAL IMPROVEMENT PROGRAM
PARSONS TRANSPORTATION GROUP - CAPITAL TRANSIT CONSULTANTS
SCALE: NONE
DRAWING No. MM-B-E07

EXISTING PANEL "AFC"

AMPERES: 400	VOLTS: 120/208	MOUNTING: SURFACE	
MAINS: 300A MCB	PHASE: 3	LOCATION: ROOM C502 ELEC. EQUIPMENT	
RATING: 10K AIC	WIRE: 4	SECTION: 1 OF 1	

	CKT BKRS			CKT.		CKT.	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.		NO.	POLE	AMP	KVA	LOAD DESCRIPTION
SPARE	0.0	20	1	1	A - -	2	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	3	- B -	4	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	5	- - C	6	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	7	A - -	8	1	20	0.8	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
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
SPARE	0.0	20	1	17	- - C	18	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	19	A - -	20	1	20	0.8	**NEW KIOSK RECEPT. (IT & NCS)**
EXISTING VENDOR	0.8	20	1	21	- B -	22	1	20	0.8	**NEW KOSK RECEPT. (NEPP/SOC)**
EXISTING VENDOR	0.8	20	1	23	- - C	24	1	20	0.0	**FUTURE AFC FARE GATE**
EXISTING VENDOR	0.8	20	1	25	A - -	26	1	20	0.8	EXISTING VENDOR
SPARE	0.0	20	1	27	- B -	28	1	20	0.8	EXISTING VENDOR
EXIST. KIOSK LOAD CENTER "KES"	2.9	50	3	29	- - C	30	1	20	0.8	EXISTING VENDOR
	2.5	-	-	31	A - -	32	1	20	0.8	EXISTING VENDOR
	2.5	-	-	33	- B -	34	1	20	0.0	SPARE
SPARE	0.0	20	1	35	- - C	36	1	20	0.0	SPARE
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	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:	9.7 KVA		
PHASE B:	9.7 KVA		
PHASE C:	7.7 KVA		

NOTES: A. EXISTING PANEL "AFC" IS FED FROM 75KVA TRANSFORMER WHICH IS SUPPLIED FROM ATS #2. ATS #2 NORMAL FEED IS SUPPLIED FROM 277/480V, 3ø, 4W EXISTING SWBD. "#1" LOCATED IN AC SWBD. RM. C403, CIRCUIT #4-125A/3P. ATS #2 EMERGENCY FEED IS SUPPLIED FROM 277/480V, 3ø, 4W EXISTING "GENERATOR DISTRIBUTION SWITCHBOARD" LOCATED IN SWBD. ROOM C403, CIRCUIT #7 (PANEL AFC) (SEE ATTACHED DWG. MM-B-E26).

B. EXISTING WIRING FED FROM TOP OF PANEL BY:
- 2-3" C. (WIRING FILL >40%).
- 5-3/4" C. (3 EMPTY CONDUIT)(2-WIRING FILL >40%).
- 2-3/4" C. (1-EMPTY CONDUIT)(1-WIRING FILL 20%).

EXISTING WIRING FED FROM LEFT SIDE OF PANEL BY:
- 1-8"x 3'0" WIRE TROUGH W/4" C. TO TRANSFORMER (WIRING FILL >40%).

CONTRACT NO.
14-FQ10060-CENI-24

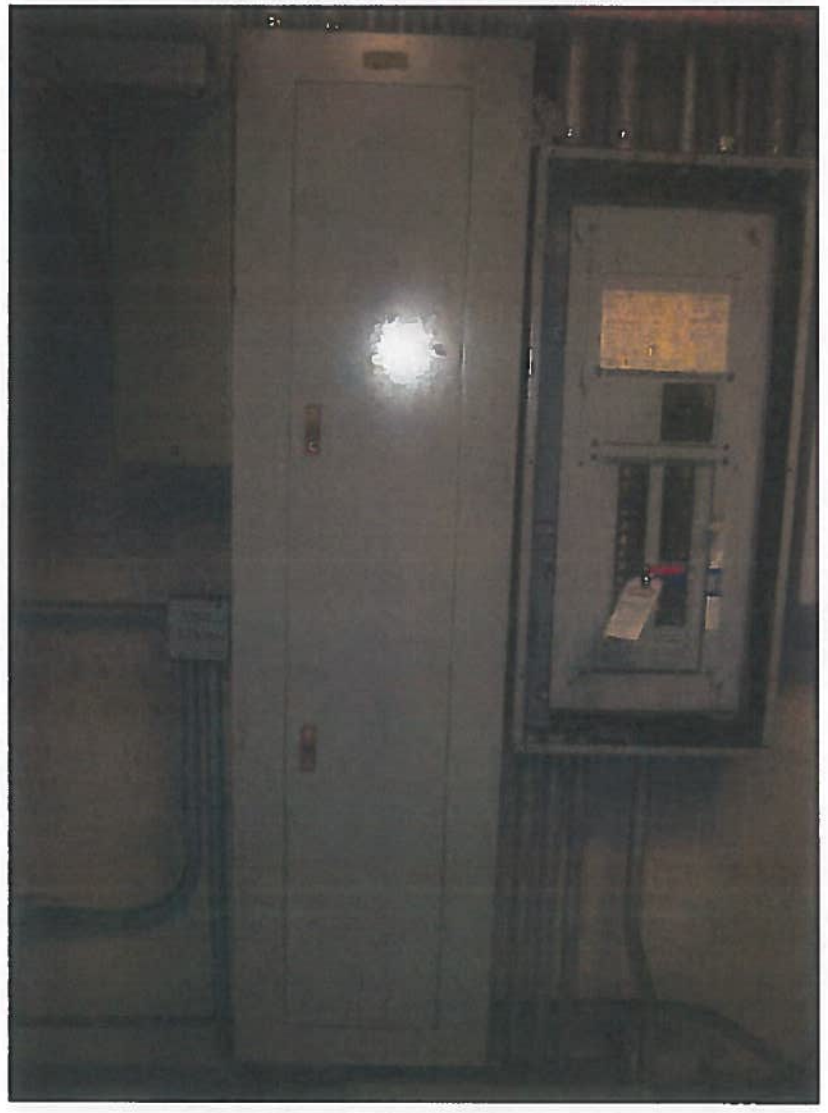
DESIGNED C. NGO	07-14 DATE	REFERENCE DRAWINGS	REVISIONS
DRAWN C. NGO	07-14 DATE	NUMBER / DESCRIPTION	DATE / BY / DESCRIPTION
CHECKED B. IDILBI	07-14 DATE		
APPROVED N/A	DATE		

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

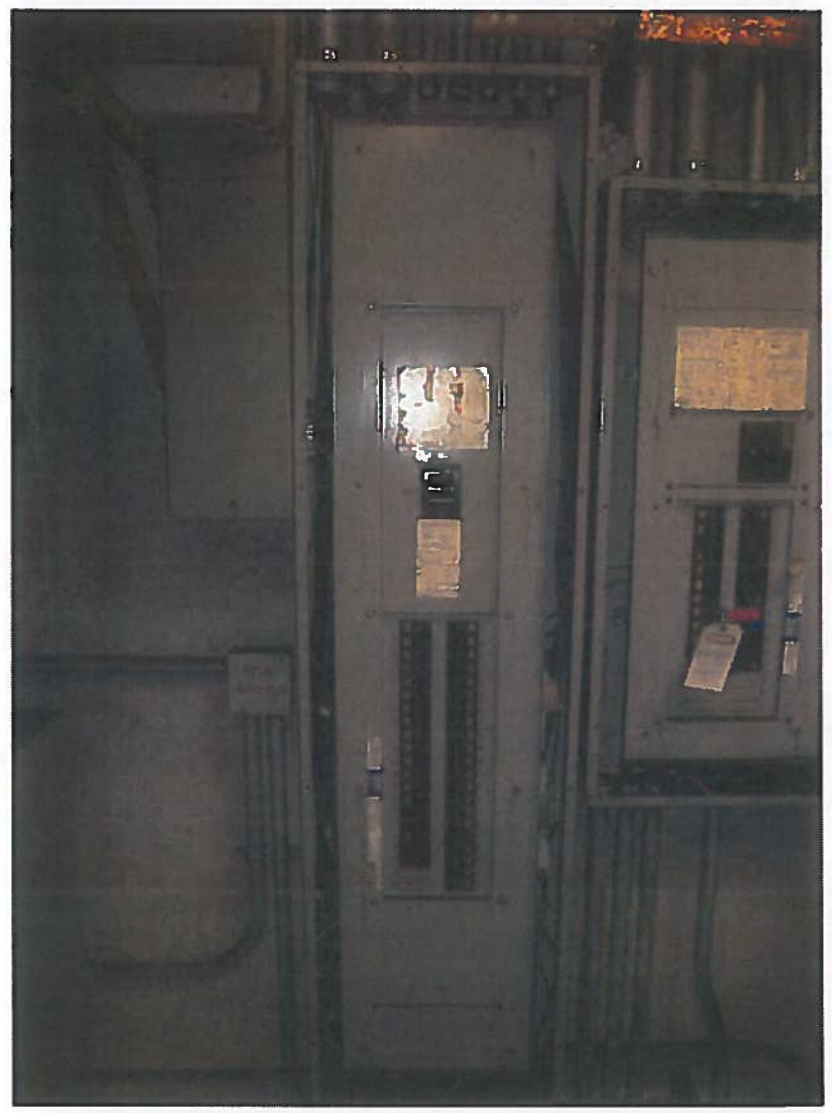
NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
WHEATON
PANEL SCHEDULE

SCALE: NOT TO SCALE
DRAWING NO: B10-E-102



EXISTING PANEL "AFC"

EXISTING PANEL "AFC"



EXISTING PANEL "AFC"

DESIGNED C. NGO 07-14 DATE	REFERENCE DRAWINGS		REVISIONS		
DRAWN C. NGO 07-14 DATE	NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
CHECKED B. IORDI 07-14 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

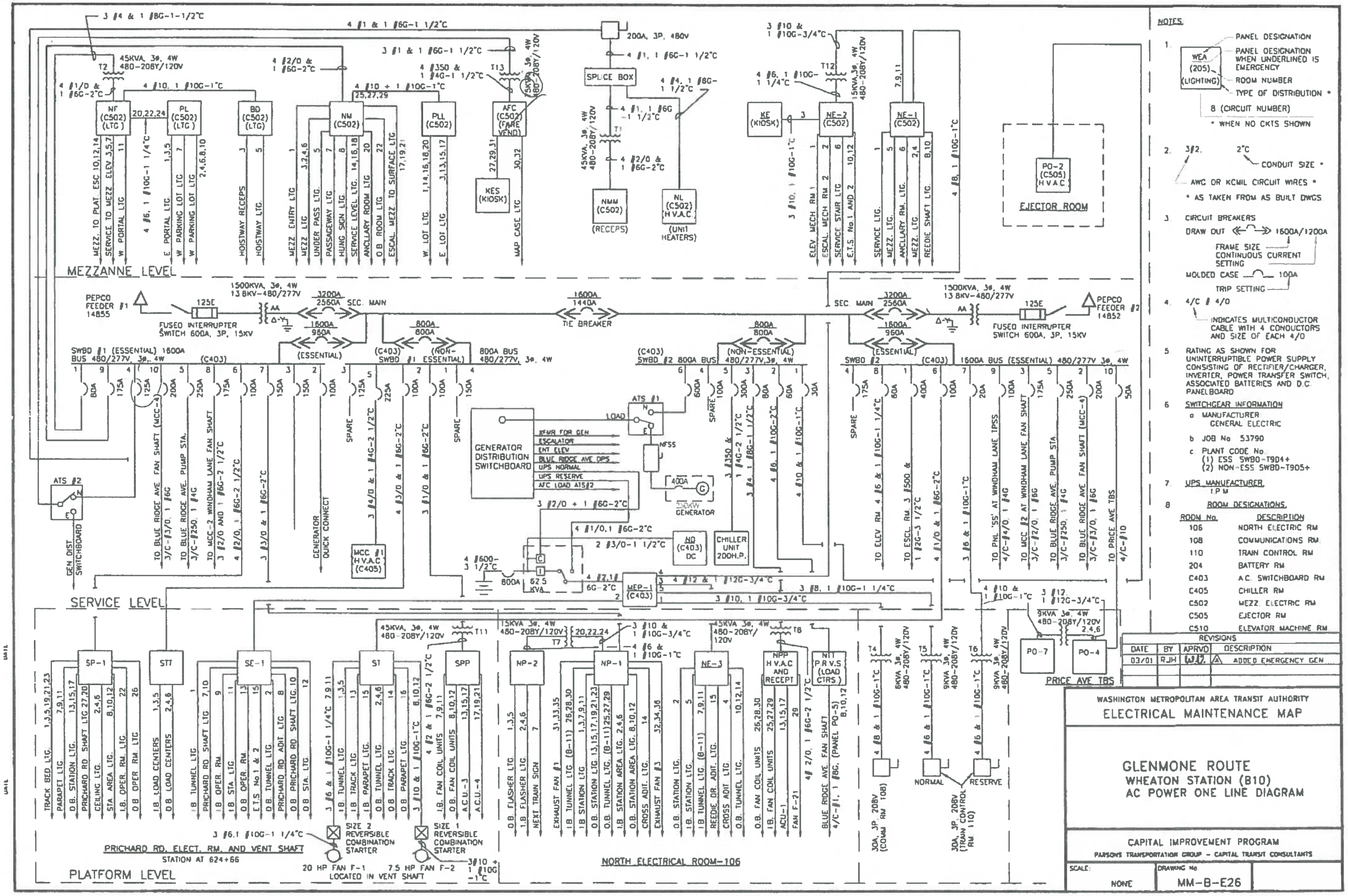
SUBMITTED _____ PROJECT MANAGER

CONTRACT NO. 14-FQ10060-CENI-24

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
WHEATON
PANELBOARD IMAGE

SCALE NOT TO SCALE

DRAWING NO. B10-E-301



NOTES.

1. WEA (205) (LIGHTING) — PANEL DESIGNATION; PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY; ROOM NUMBER; TYPE OF DISTRIBUTION *; 8 (CIRCUIT NUMBER); * WHEN NO CKTS SHOWN
2. 3#2, 2°C — CONDUIT SIZE *; AWG OR KCMIL CIRCUIT WIRES *; * AS TAKEN FROM AS BUILT DWGS.
3. CIRCUIT BREAKERS — DRAW OUT; FRAME SIZE / CONTINUOUS CURRENT SETTING; MOLDED CASE — 100A TRIP SETTING
4. 4/C # 4/0 — INDICATES MULTICONDUCTOR CABLE WITH 4 CONDUCTORS AND SIZE OF EACH 4/0
5. RATING AS SHOWN FOR UNINTERRUPTIBLE POWER SUPPLY CONSISTING OF RECTIFIER/CHARGER, INVERTER, POWER TRANSFER SWITCH, ASSOCIATED BATTERIES AND D.C. PANELBOARD
6. SWITCHGEAR INFORMATION
   a. MANUFACTURER: GENERAL ELECTRIC
   b. JOB No. 53790
   c. PLANT CODE No.: (1) ESS SWBD-T9D4+ (2) NON-ESS SWBD-T9D5+
7. UPS MANUFACTURER: I.P.M.
8. ROOM DESIGNATIONS:

ROOM No.	DESCRIPTION
106	NORTH ELECTRIC RM
108	COMMUNICATIONS RM
110	TRAIN CONTROL RM
204	BATTERY RM
C403	A.C. SWITCHBOARD RM
C405	CHILLER RM
C502	MEZZ. ELECTRIC RM
C505	EJECTOR RM
C510	ELEVATOR MACHINE RM

REVISIONS			
DATE	BY	APRVD	DESCRIPTION
03/01	RJH	WJF	ADDED EMERGENCY GEN

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

ELECTRICAL MAINTENANCE MAP

GLENMONE ROUTE
WHEATON STATION (B10)
AC POWER ONE LINE DIAGRAM

CAPITAL IMPROVEMENT PROGRAM
PARSONS TRANSPORTATION GROUP - CAPITAL TRANSIT CONSULTANTS

SCALE: NONE | DRAWING No. MM-B-E26

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

DRAWING INDEX

ELECTRICAL SYMBOL LIST

- QUADRUPLEX RECEPTACLE OUTLET- 20A, 125V WALL MOUNTED.
- J — JUNCTION BOX - SURFACE MOUNTED ON UNISTRUT CHANNEL
- CONDUIT - CONCEALED IN UNDER FLOOR DUCT U.O.N.
- #10-3/4, FF 3,5 — 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
  - FF 1,3 - INDICATES CIRCUIT HOME RUN PANELBOARD AND CIRCUIT NUMBER IDENTIFICATION

CONTRACT NO. 14-FQ10060-CENI-24

DESIGNED	C. NGO	07-14	DATE
DRAWN	C. NGO	07-14	DATE
CHECKED	B. IDLIBI	07-14	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

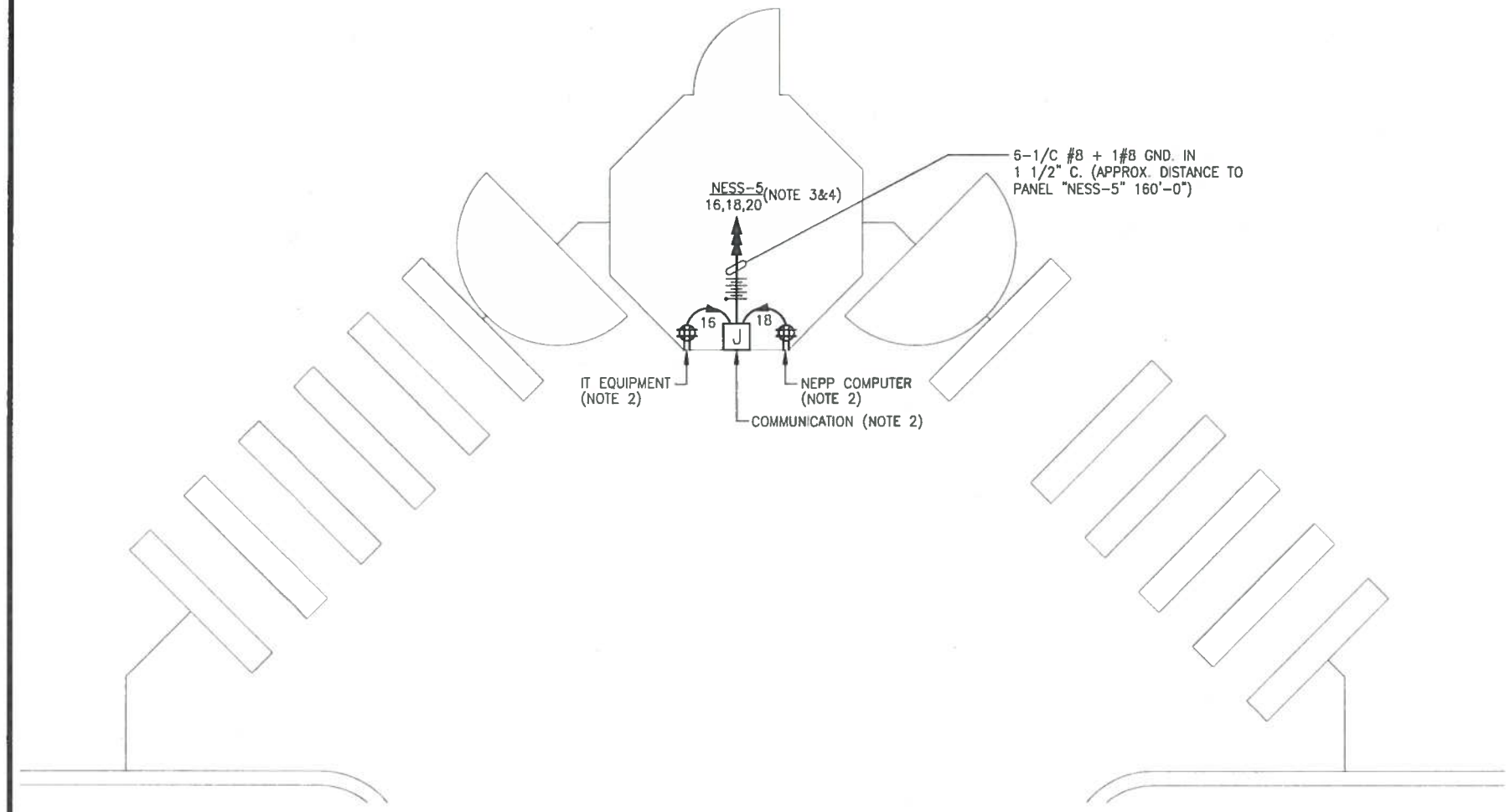
APPROVED _____

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.: B11-E-001



MEZZANINE KIOSK - POWER
SCALE: 3/8" = 1'- 0"

DRAWING NOTES:

1. USE EXISTING UNDER FLOOR DUCT FOR POWER WIRING. ALL OUTSIDE FLOOR DUCT WIRING SHALL BE IN CONDUIT.
2. VERIFY WITH WMATA PERSONNEL FOR LOCATION OF RECEPTACLES & JUNCTION BOXES.
3. CONNECT CIRCUIT #16 #18 & #20 TO EXISTING 20A, 1P SPARE CIRCUIT BREAKERS IN THE EXISTING PANEL "NESS-5", SEE PANEL SCHEDULE ON DWG. B11-E-102.
4. PROVIDE A ROUGHIN CIRCUIT FOR FUTURE AFC FARE GATE 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 07-14 DATE	REFERENCE DRAWINGS	REVISIONS
DRAWN C. NGO 07-14 DATE	NUMBER / DESCRIPTION	DATE / BY / DESCRIPTION
CHECKED B. IDILBI 07-14 DATE		9-22-15 / RBM / REV. 1
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
GLENMONT
MEZZANINE KIOSK - POWER

SCALE: AS SHOWN

DRAWING NO.: B11-E-101

EXISTING PANEL "NESS-5"

AMPERES: 400	VOLTS: 120/208			MOUNTING: SURFACE						
MAINS: 250A MCB	PHASE: 3			LOCATION: ELEC EQUIPMENT ROOM C103						
RATING: 10K AIC	WIRE: 4			SECTION: 1 OF 1						
		CKT BKRS		CKT.		CKT.	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.		NO	POLE	AMP	KVA	LOAD DESCRIPTION
EXIST. KIOSK LOAD CENTER "KES"	2.9	40	3	1	A - -	2	1	20	0.0	SPARE
	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	NEW KIOSK RECEPT. (IT & NCS)
EXISTING VENDOR	0.8	20	1	17	- - C	18	1	20	0.8	NEW KIOSK RECEPT. (NEPP/SOC)
EXISTING VENDOR	0.8	20	1	19	A - -	20	1	20	0.0	FUTURE AFC FARE GATE
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
EXISTING VENDOR	0.8	20	1	35	- - C	36	1	20	0.8	EXISTING VENDOR
SPACE	0.0	-	-	37	A - -	38	-	-	0.0	SPARE
SPACE	0.0	-	-	39	- B -	40	-	-	0.0	SPARE
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	14.4 x 50%		7.2 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	31.9 KVA	TOTAL DEMAND KVA	25.5 KVA
		TOTAL DEMAND AMPS	70.7 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	10.1 KVA		
PHASE B:	11.3 KVA		
PHASE C:	11.3 KVA		

NOTES: A. EXISTING PANEL "NESS-5" IS FED FROM 277/480V, 3ø, 4W EXISTING PANEL "EMERGENCY" LOCATED IN N. AC SWBD. RM. 105, CIRCUIT #7-125A/3P VIA 75KVA TRANSFORMER (SEE ATTACHED DWG. MM-B-E29).

B. EXISTING WIRING FED FROM BOTTOM OF PANEL BY:
- 1-12"x 10'0" WIRE TROUGH W/3-2" C. (WIRING FILL >40%).

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

EXISTING WIRING FED FROM RIGHT SIDE OF PANEL BY:
- 1-4" C. TO TRANSFORMER (WIRING FILL >40%).

EXISTING WIRING FED FROM LEFT SIDE OF PANEL BY:
- 1-3/4" C. TO (WIRING FILL >40%).

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO	07-14 DATE	
DRAWN C. NGO	07-14 DATE	
CHECKED B. IDRIS	07-14 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 Garnett Fleming/Parsons JOINT VENTURE

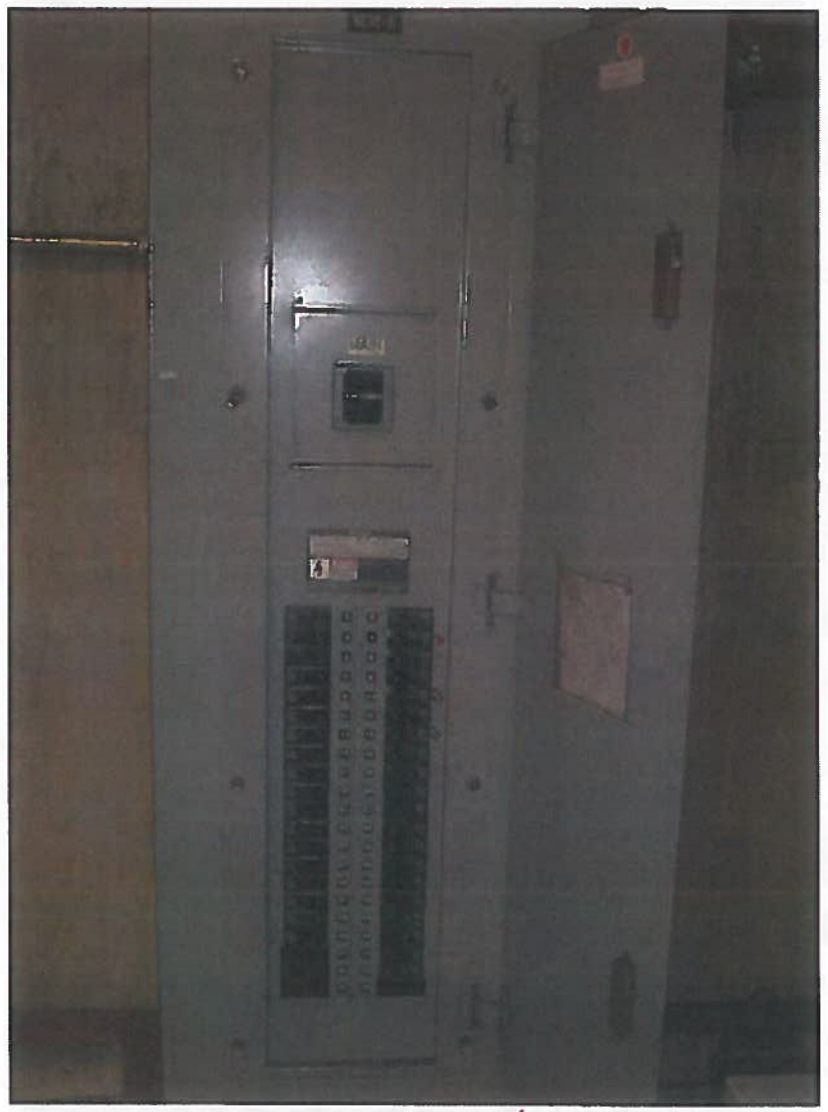
SUBMITTED
PROJECT MANAGER

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

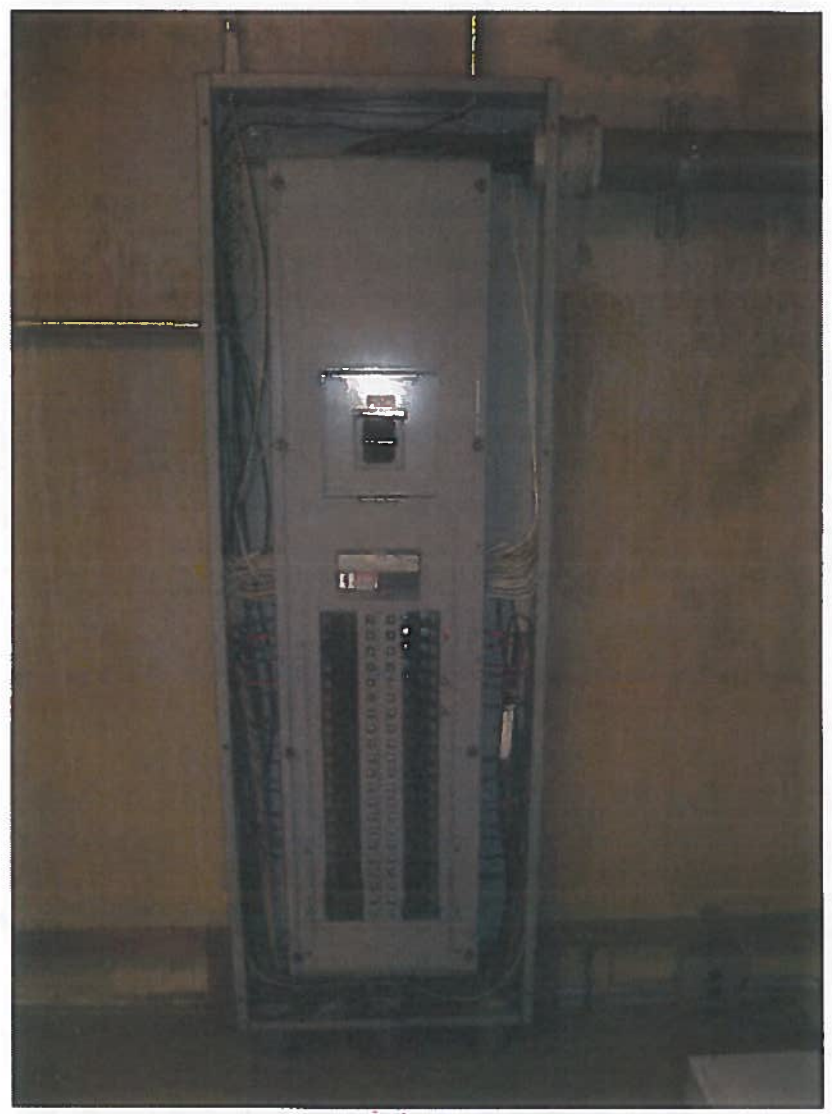
SCALE: NOT TO SCALE

DRAWING NO: B11-E-102

EXISTING PANEL "NESS–5"



EXISTING PANEL "NESS–5"



EXISTING PANEL "NESS–5"

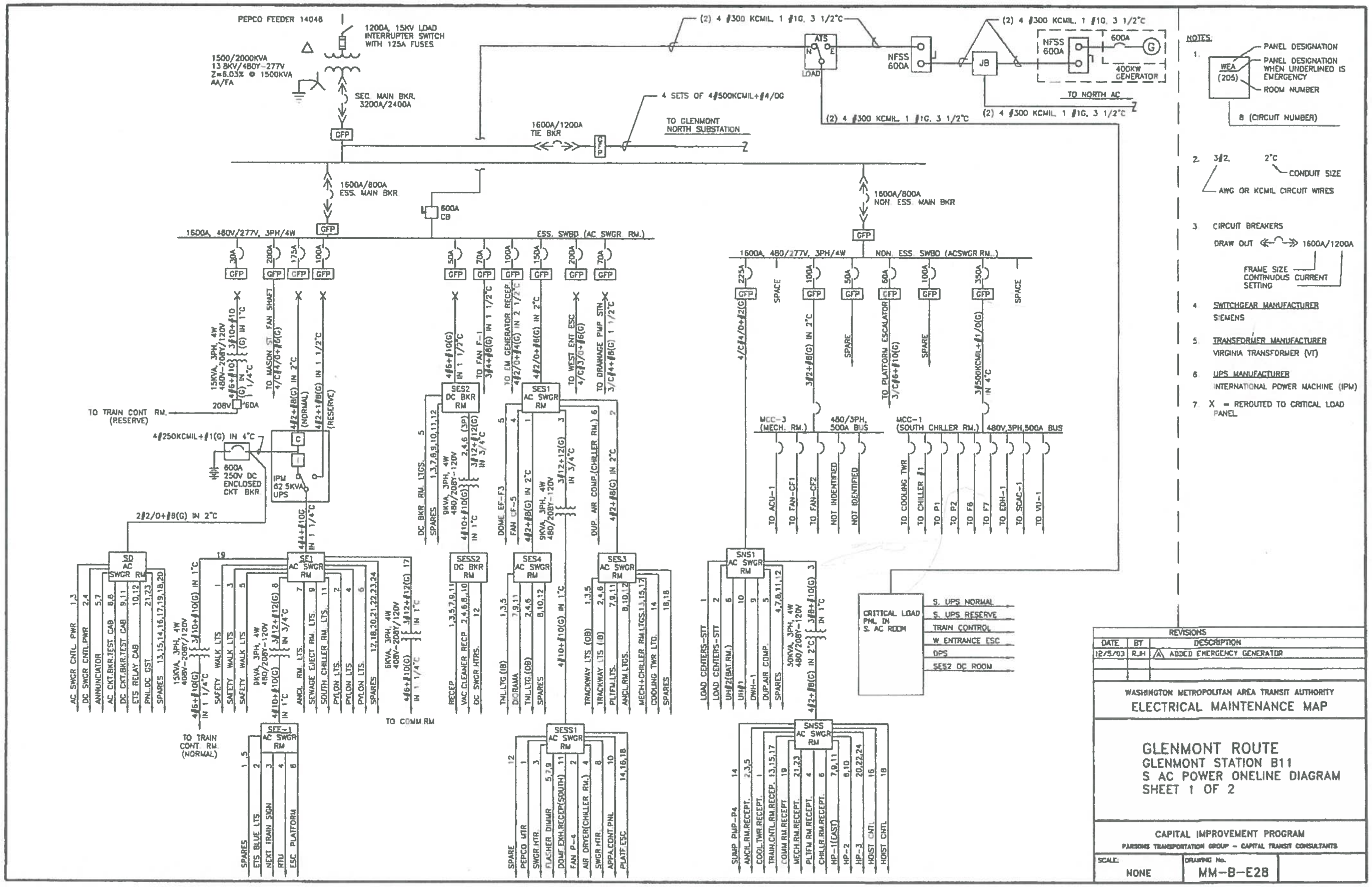
DESIGNED C. NGO 07–14 DATE	REFERENCE DRAWINGS: NUMBER / DESCRIPTION	REVISIONS: DATE / BY / DESCRIPTION	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DRAWN C. NGO 07–14 DATE			DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
CHECKED B. IDILBI 07–14 DATE			APPROVED
APPROVED N/A DATE			GFP A Gannett Fleming/Parsons JOINT VENTURE SUBMITTED PROJECT MANAGER

CONTRACT NO. 14-FQ10060-CENI-24

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
GLENMONT
PANELBOARD IMAGE

SCALE NOT TO SCALE

DRAWING NO. B11-E-301



NOTES:

1. WEA (205) — PANEL DESIGNATION; PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY; ROOM NUMBER; 8 (CIRCUIT NUMBER)
2. 3#2, 2"C — CONDUIT SIZE; AWG OR KCMIL CIRCUIT WIRES
3. CIRCUIT BREAKERS — DRAW OUT; 1600A/1200A — FRAME SIZE, CONTINUOUS CURRENT SETTING
4. SWITCHGEAR MANUFACTURER: SIEMENS
5. TRANSFORMER MANUFACTURER: VIRGINIA TRANSFORMER (VT)
6. UPS MANUFACTURER: INTERNATIONAL POWER MACHINE (IPM)
7. X = REROUTED TO CRITICAL LOAD PANEL

REVISIONS		
DATE	BY	DESCRIPTION
12/5/03	RJH	A ADDED EMERGENCY GENERATOR

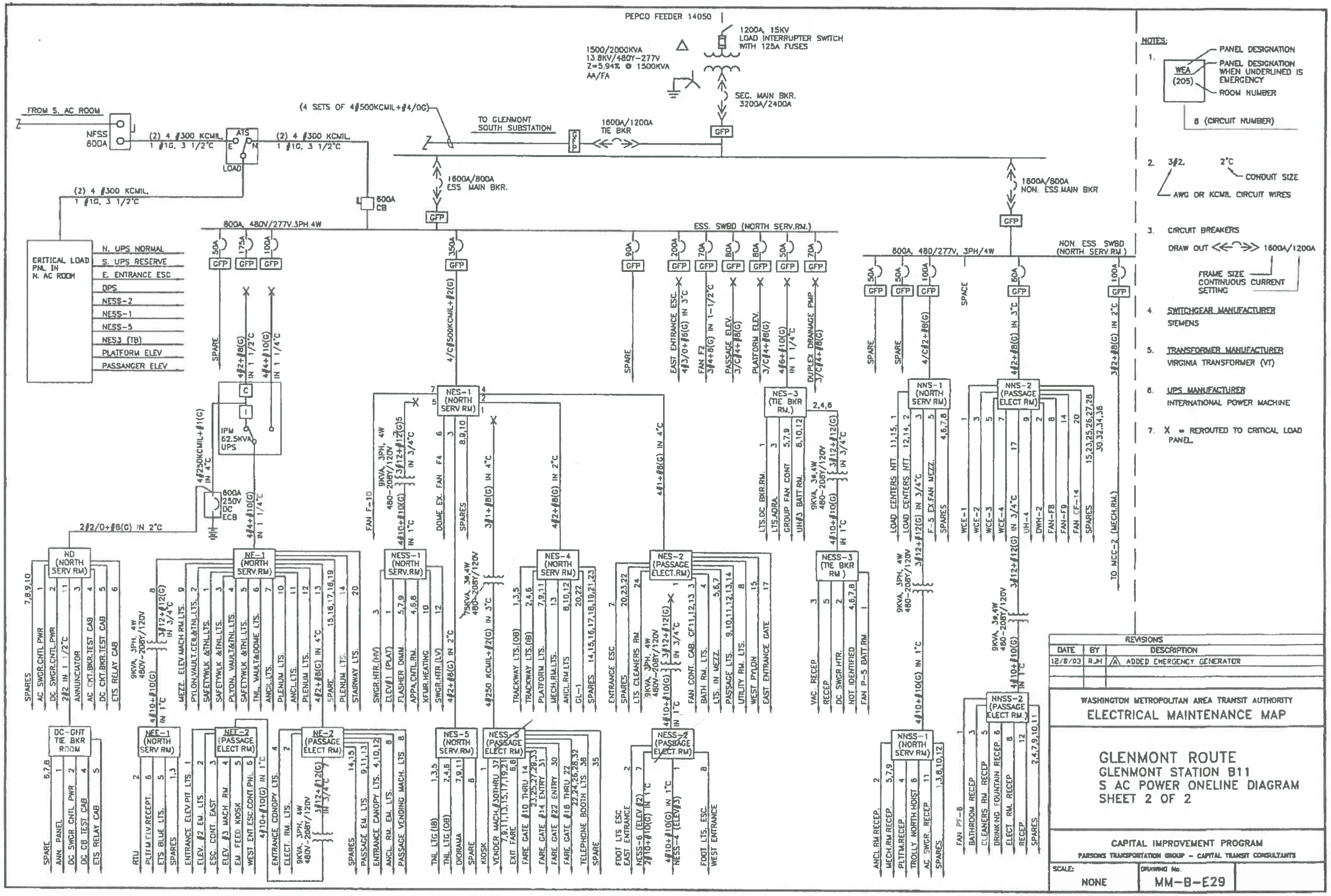
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

ELECTRICAL MAINTENANCE MAP

GLENMONT ROUTE
GLENMONT STATION B11
S AC POWER ONELINE DIAGRAM
SHEET 1 OF 2

CAPITAL IMPROVEMENT PROGRAM
PARSONS TRANSPORTATION GROUP – CAPITAL TRANSIT CONSULTANTS

SCALE: NONE
DRAWING No. MM-B-E28


PEPCO FEEDER 14050
1200A, 15KV LOAD INTERRUPTER SWITCH WITH 125A FUSES
1500/2000KVA 13.8KV/480Y-277V Z=5.94% @ 1500KVA AA/FA
SEC. MAIN BKR. 3200A/2400A
FROM S. AC ROOM
NFSS 600A
(2) 4 #300 KCMIL 1 #1G, 3 1/2"C
ATS
LOAD
(4 SETS OF 4#500KCMIL+#4/0G)
TO GLENMONT SOUTH SUBSTATION
1600A/1200A TIE BKR
1600A/800A ESS MAIN BKR.
1600A/800A NON. ESS MAIN BKR
800A CB
800A, 480V/277V,3PH,4W
ESS. SWBD (NORTH SERV.RM.)
NON. ESS SWBD (NORTH SERV.RM.)
CRITICAL LOAD PNL IN N. AC ROOM
N. UPS NORMAL
S. UPS RESERVE
E. ENTRANCE ESC
DPS
NESS-2
NESS-1
NESS-5
NES3 (TB)
PLATFORM ELEV
PASSANGER ELEV
IPM 52.5KVA UPS
600A 250V DC ECB
ND (NORTH SERV.RM)
NE-1 (NORTH SERV.RM)
NES-1 (NORTH SERV RM)
NES-2 (PASSAGE ELECT.RM)
NES-3 (TIE BKR RM.)
NES-4 (NORTH SERV RM)
NESS-1 (NORTH SERV.RM)
NESS-2 (PASSAGE ELECT.RM)
NESS-3 (TIE BKR RM.)
NESS-4 (PASSAGE ELECT RM)
NESS-5 (NORTH SERV.RM)
NNS-1 (NORTH SERV RM)
NNS-2 (PASSAGE ELECT RM)
NNSS-1 (NORTH SERV RM)
NNSS-2 (PASSAGE ELECT RM.)
DC-GNT TIE BKR ROOM
NEE-1 (NORTH SERV RM)
NEE-2 (PASSAGE ELECT RM)
NE-2 (PASSAGE ELECT RM)
9KVA, 3PH, 4W 480V-208Y/120V
75KVA, 3Ø,4W 480-208Y/120V
NOTES:
1. PANEL DESIGNATION
WEA (205) — PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY; ROOM NUMBER
B (CIRCUIT NUMBER)
2. 3#2, 2"C — CONDUIT SIZE; AWG OR KCMIL CIRCUIT WIRES
3. CIRCUIT BREAKERS DRAW OUT 1600A/1200A — FRAME SIZE CONTINUOUS CURRENT SETTING
4. SWITCHGEAR MANUFACTURER SIEMENS
5. TRANSFORMER MANUFACTURER VIRGINIA TRANSFORMER (VT)
6. UPS MANUFACTURER INTERNATIONAL POWER MACHINE
7. X = REROUTED TO CRITICAL LOAD PANEL
TO MCC-2 (MECH.RM.)
REVISIONS
DATE | BY | DESCRIPTION
12/8/03 | RJH | A | ADDED EMERGENCY GENERATOR
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
ELECTRICAL MAINTENANCE MAP
GLENMONT ROUTE
GLENMONT STATION B11
S AC POWER ONELINE DIAGRAM
SHEET 2 OF 2
CAPITAL IMPROVEMENT PROGRAM
PARSONS TRANSPORTATION GROUP – CAPITAL TRANSIT CONSULTANTS
SCALE: NONE
DRAWING No. MM-B-E29

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.
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14. CIRCUIT NUMBERS ARE FOR IDENTIFICATION PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR CORRECTLY PHASING THE CIRCUITS IN THE PANEL AND SHALL BALANCE THE LOAD ON THE PHASES UNDER NORMAL OPERATING CONDITIONS. PROVIDE TYPEWRITTEN PANELBOARD DIRECTORIES. BALANCE THE PHASE LOADS TO WITHIN 20 PERCENT OF EACH OTHER.
15. INCREASE ALL BRANCH CIRCUIT CONDUCTORS TO THE NEXT LARGER SIZE FROM THE PANEL TO THE FIRST OUTLET WHERE THE LENGTH OF THE HOMERUN EXCEEDS 100FT. ON 120/208V CIRCUITS.
16. PROVIDE A PULLWIRE OR FISHTAPE/CORD IN ALL EMPTY CONDUIT RUNS.
17. VERIFY WIRE SIZES, CIRCUIT BREAKERS AND FUSES RATINGS FOR ALL EQUIPMENT, AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES AFFECTING THE WORK PRIOR TO PROCEEDING.
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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
AC	ALTERNATING CURRENT
AF	AMPERE FRAME
AFC	AUTOMATED FARE COLLECTION SYSTEM
AFF	ABOVE FINISHED FLOOR
AIC	AMPERE INTERRUPTING CAPACITY
AT	AMPERE TRIP
BKR	BREAKER
C	CONDUIT
CB	CIRCUIT BREAKER
CCT	CIRCUIT
℄	CENTER LINE
CLG	CEILING
CONST	CONSTRUCTION
DISC	DISCONNECT
E	ELECTRICAL
GND	GROUND
JB	JUNCTION BOX
KAIC	THOUSAND AMPERE INTERRUPTING CAPACITY
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
NEC	NATIONAL ELECTRIC CODE
P	POLE
PH	PHASE
PNL	PANELBOARD
PRI	PRIMARY
PROP	PROPOSED
RGS	RIGID GALVANIZED STEEL
SEC	SECONDARY
SHT	SHEET
SW	SWITCH
SWBD	SWITCHBOARD
TYP	TYPICAL
U/G	UNDER GROUND
U.L.	UNDERWRITERS LABORATORIES
UON	UNLESS OTHERWISE NOTED
VOLT	VOLTAGE
W	WATT
WMATA	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
WP	WEATHERPROOF

DRAWING INDEX

ELECTRICAL SYMBOL LIST

- QUADRUPLEX RECEPTACLE OUTLET– 2DA, 125V WALL MOUNTED.
- [J] JUNCTION BOX – SURFACE MOUNTED ON UNISTRUT CHANNEL
- CONDUIT – CONCEALED IN UNDER FLOOR DUCT U.O.N.
- #1D-3/4 / EF 3,5 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	07-14	DATE
DRAWN	C. NGO	07-14	DATE
CHECKED	B. IDLIBI	07-14	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

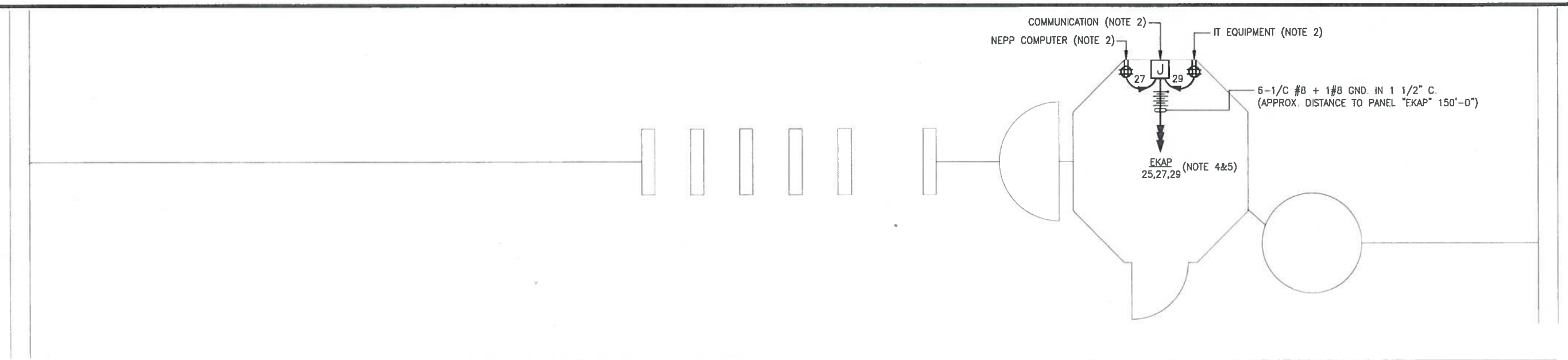
APPROVED

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	DRAWING NO.	
NOT TO SCALE	B35-E-001	



NORTH MEZZANINE KIOSK - POWER

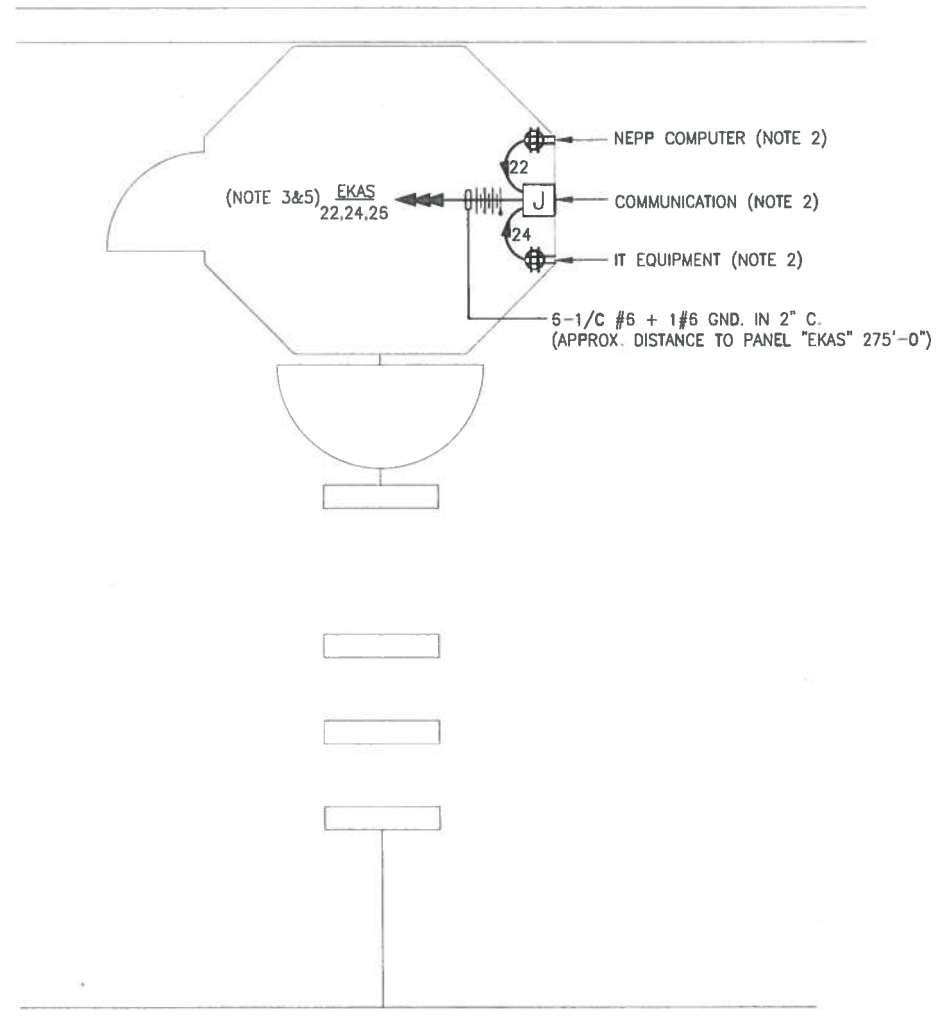
SCALE: 3/8" = 1'- 0"

DRAWING NOTES:

1. USE EXISTING UNDER FLOOR DUCT FOR POWER WIRING. ALL OUTSIDE FLOOR DUCT WIRING SHALL BE IN CONDUIT.
2. VERIFY WITH WMATA PERSONNEL FOR LOCATION OF RECEPTACLES & JUNCTION BOXES.
3. CONNECT CIRCUIT #22 #24 & #26 TO EXISTING 20A, 1P SPARE CIRCUIT BREAKERS IN THE EXISTING PANEL "EKAS", SEE PANEL SCHEDULE ON DWG. B35-E-102.
4. CONNECT CIRCUIT #25 #27 & #29 TO EXISTING 20A, 1P SPARE CIRCUIT BREAKERS IN THE EXISTING PANEL "EKAP", SEE PANEL SCHEDULE ON DWG. B35-E-102.
5. PROVIDE A ROUGHIN CIRCUIT FOR FUTURE AFC FARE GATE COILEO AT THE KIOSK. THE LENGTH OF COILEO PIGTAIL SHALL BE THE FARTHEST FARE GATE DISTANCE FROM KOISK PLUS AN EXTRA 5'0" CONDUCTOR.

SAFETY PRECAUTION:

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



SOUTH MEZZANINE KIOSK - POWER

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

CONTRACT NO. 14-FQ10060-CENI-24

DESIGNED	C. NGO	07-14 DATE
DRAWN	C. NGO	07-14 DATE
CHECKED	B. IDILBI	07-14 DATE
APPROVED	N/A	DATE

REFERENCE DRAWINGS

NUMBER	DESCRIPTION

REVISIONS

DATE	BY	DESCRIPTION
9-22-15	RBM	REV. 1

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

APPROVED

GFP A Gannett Fleming/Parsons JOINT VENTURE

SUBMITTED
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS

NEW YORK AVENUE - NORTH & SOUTH
MEZZANINE KIOSK - POWER

SCALE: AS SHOWN

DRAWING NO. B35-E-101

EXISTING PANEL "EKAP"

AMPERES: 225	VOLTS: 120/208			MOUNTING: SURFACE						
MAINS: 225A	PHASE: 3			LOCATION: ROOM 110 ELEC. CABINET ROOM						
RATING: 10K AIC	WIRE: 4			SECTION: 1 OF 1						
		CKT BKRS		CKT.		CKT.	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.		NO.	POLE	AMP	KVA	LOAD DESCRIPTION
EXISTING VENDOR	0.8	20	1	1	A - -	2	1	20	0.0	SPARE
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	0.0	20	1	7	A - -	8	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	9	- B -	10	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	11	- - C	12	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	13	A - -	14	1	20	0.8	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	3	21	- B -	22	1	20	0.8	EXISTING VENDOR
	0.0	-	-	23	- - C	24	1	20	0.8	EXISTING VENDOR
NEW KIOSK RECEPT. (IT&NCS)	0.8	20	1	25	A - -	26	1	20	0.8	EXISTING VENDOR
NEW KIOSK RECEPT. (NEPP/SOC)	0.8	20	1	27	- B -	28	1	20	0.8	EXISTING VENDOR
FUTURE AFC FARE GATE	0.0	20	1	29	- - C	30	1	20	0.8	EXISTING VENDOR
EXISTING CIRCUIT	1.0	20	3	31	A - -	32	3	50	2.9	EXIST. KIOSK LOAD CENTER "KES"
	0.0	-	-	33	- B -	34	-	-	2.5	
	0.0	-	-	35	- - C	36	-	-	2.5	
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	9.0 x 50%		4.5 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	26.5 KVA	TOTAL DEMAND KVA	22.8 KVA
		TOTAL DEMAND AMPS	63.2 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	9.5 KVA		
PHASE B:	9.7 KVA		
PHASE C:	8.1 KVA		

NOTES: A. EXISTING PANEL "EKAP" IS FED FROM 277/480V, 3ø, 4W EXISTING PANEL "NDP" LOCATED IN ELEC. CABINET RM. 110, CIRCUIT #1–100A/3P VIA 75KVA TRANSFORMER.

B. EXISTING WIRING FED FROM BOTTOM OF PANEL BY:
- 1–4" C. TO TRANSFORMER (WIRING FILL >40%).

EXISTING WIRING FED FROM TOP OF PANEL BY:
- 19–1/2" WIRING.
- 1–3/4" C. (WIRING FILL >40%).

EXISTING WIRING FED FROM RIGHT SIDE OF PANEL BY:
- 2–3/4" C. (WIRING FILL >40%).

EXISTING PANEL "EKAS"

AMPERES: 225	VOLTS: 120/208			MOUNTING: SURFACE						
MAINS: 225A MLO	PHASE: 3			LOCATION: ROOM 101 ELEC. CABINET ROOM						
RATING: 10K AIC	WIRE: 4			SECTION: 1 OF 1						
		CKT BKRS		CKT.		CKT.	CKT BKRS			
LOAD DESCRIPTION	KVA	AMP	POLE	NO.		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	0.8	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	SPARE
EXISTING VENDOR	0.8	20	1	9	- B -	10	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	11	- - C	12	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	13	A - -	14	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	15	- B -	16	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	17	- - C	18	1	20	0.0	SPARE
EXISTING VENDOR	0.8	20	1	19	A - -	20	1	20	2.9	EXIST. KIOSK LOAD CENTER "KES"
SPARE	0.0	20	3	21	- B -	22	1	20	0.8	NEW KIOSK RECEPT. (IT & NCS)
	0.0	-	-	23	- - C	24	1	20	0.8	NEW KIOSK RECEPT. (NEPP/SOC)
	0.0	-	-	25	A - -	26	1	20	0.0	FUTURE AFC FARE GATE
SPARE	0.0	20	1	27	- B -	28	1	20	0.0	SPARE
SPACE	0.0	20	1	29	- - C	30	1	20	0.0	SPACE
SPACE	0.0	20	1	31	A - -	32	1	20	0.0	SPACE
SPACE	0.0	20	1	33	- B -	34	1	20	0.0	SPACE
SPACE	0.0	20	1	35	- - C	36	1	20	0.0	SPACE
SPACE	0.0	20	1	37	A - -	38	1	20	0.0	SPACE
SPACE	0.0	20	1	39	- B -	40	1	20	0.0	SPACE
SPACE	0.0	20	1	41	- - C	42	1	20	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	3.2 x 50%		1.6 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	20.7 KVA	TOTAL DEMAND KVA	19.9 KVA
		TOTAL DEMAND AMPS	55.1 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	7.7 KVA		
PHASE B:	5.6 KVA		
PHASE C:	4.0 KVA		

NOTES: A. EXISTING PANEL "EKAS" IS FED FROM 277/480V, 3ø, 4W EXISTING PANEL "SDP" LOCATED IN ELEC. CABINET RM. 101, CIRCUIT #2–100A/3P VIA 75KVA TRANSFORMER.

B. EXISTING WIRING FED FROM TOP OF PANEL BY:
- 14–1/2" WIRING.

EXISTING WIRING FED FROM BOTTOM OF PANEL BY:
- 1–4" C. TO TRANSFORMER (WIRING FILL >40%).

CONTRACT NO: 14-FQ10060-CENI-24

DESIGNED C. NGO 07-14 DATE
DRAWN C. NGO 07-14 DATE
CHECKED B. IDLEI 07-14 DATE
APPROVED N/A DATE

REFERENCE DRAWINGS

NUMBER	DESCRIPTION

REVISIONS

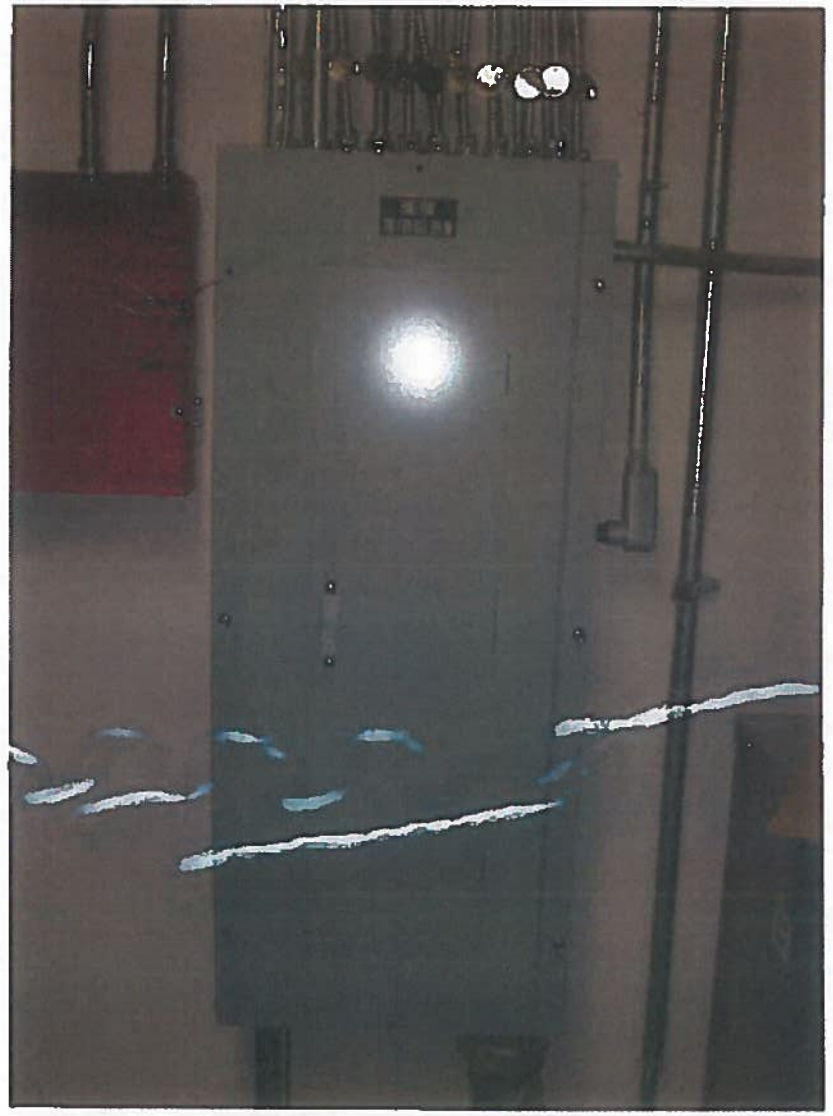
DATE	BY	DESCRIPTION

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

GFP A Garrett Flemig/Parsons JOINT VENTURE
SUBMITTED
PROJECT MANAGER

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

SCALE: NOT TO SCALE
DRAWING NO: B35-E-102



EXISTING PANEL "EKAP"

EXISTING PANEL "EKAP"

EXISTING PANEL "EKAP"

DESIGNED	C. NGO	07-14	DATE
DRAWN	C. NGO	07-14	DATE
CHECKED	B. IDILBI	07-14	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

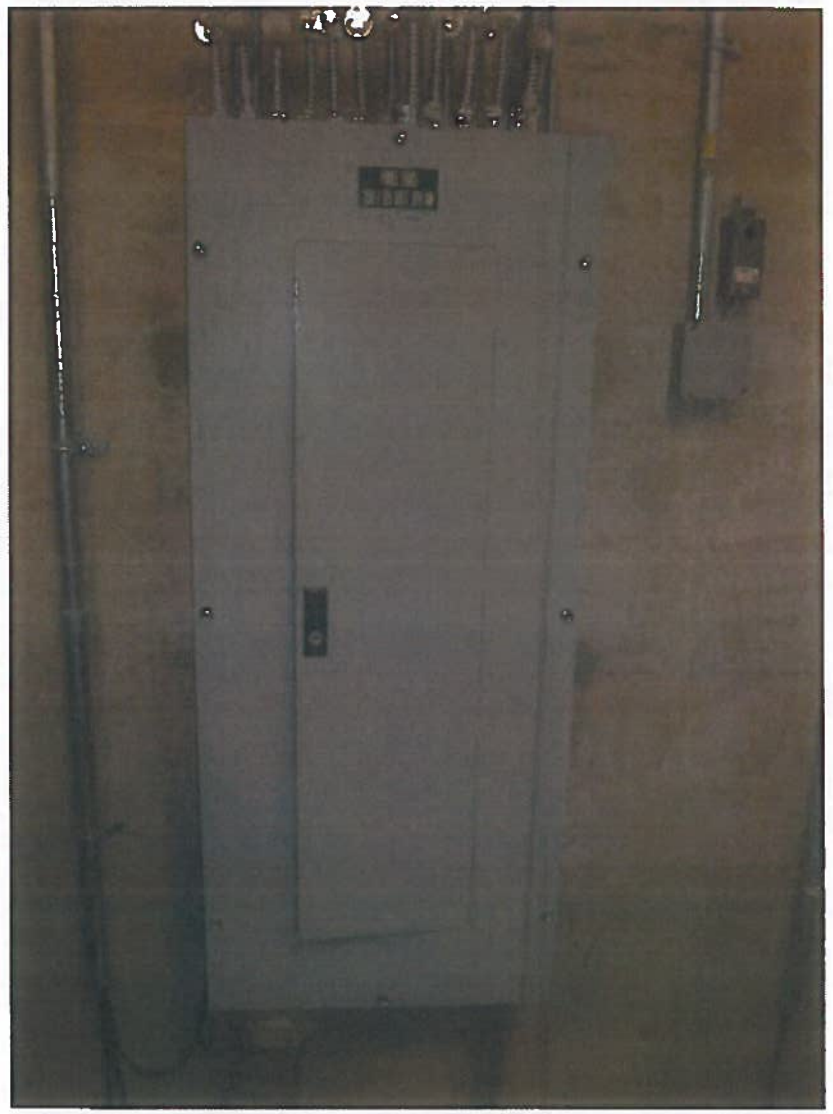
SUBMITTED _____ PROJECT MANAGER

CONTRACT NO.
14-FQ10060-CENI-24

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS

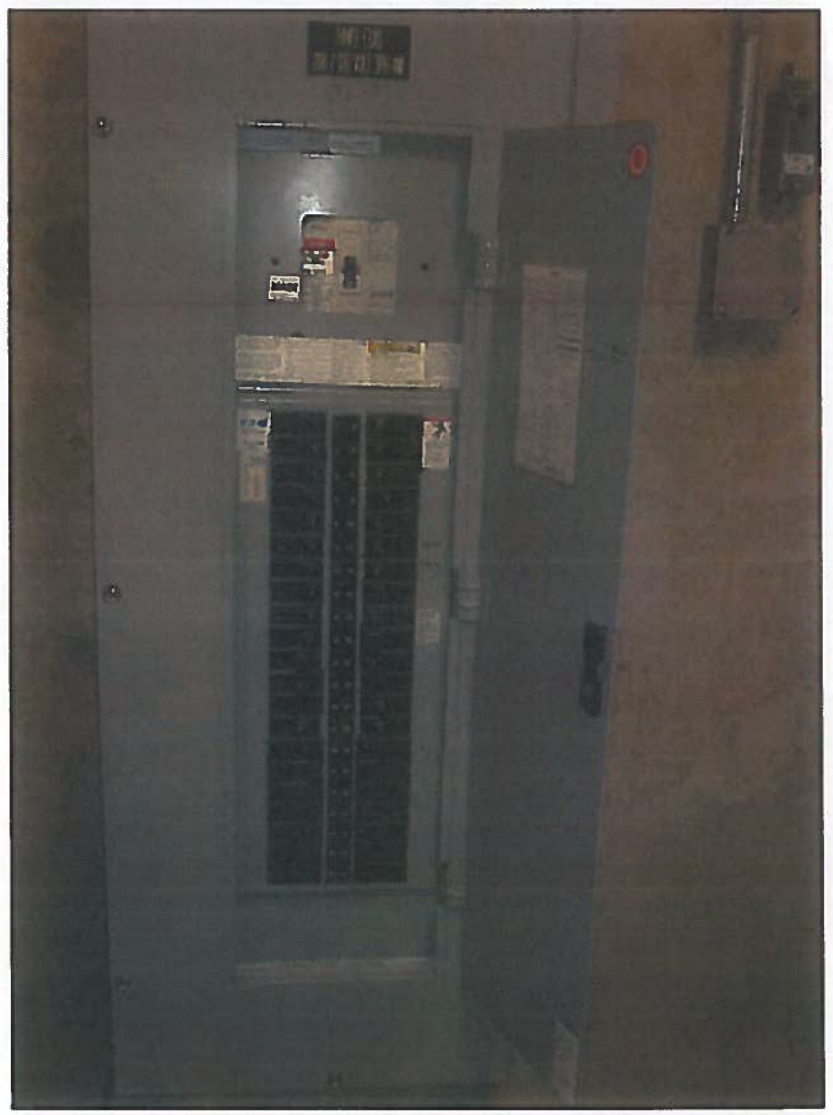
NEW YORK AVENUE - NORTH & SOUTH
PANELBOARD IMAGE

SCALE	DRAWING NO.	
NOT TO SCALE	B35-E-301	



EXISTING PANEL "EKAS"

EXISTING PANEL "EKAS"



EXISTING PANEL "EKAS"

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED C. NGO 07-14 DATE	REFERENCE DRAWINGS	REVISIONS	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DRAWN C. NGO 07-14 DATE	NUMBER / DESCRIPTION	DATE / BY / DESCRIPTION	DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
CHECKED B. IDILBI 07-14 DATE			APPROVED _____
APPROVED N/A DATE			GFP A Connell Fleming/Parsons JOINT VENTURE SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
NEW YORK AVENUE - NORTH & SOUTH
PANELBOARD IMAGE

SCALE	DRAWING NO.	
NOT TO SCALE	B35-E-302	