



WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

NEW ELECTRONIC PAY PROGRAM (NEPP)

CONTRACT NO. FQ15233

METRO RAIL ELECTRICAL AND DATA CABLE INSTALLATION

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, NE & SE
A03	DUPONT CIRCLE
A04	WOODLEY PARK
A05	CLEVELAND PARK
A06	VAN NESS
A07	TENLEYTOWN
A08	FRIENDSHIP HEIGHTS NORTH & SOUTH
A11	GROSVENOR
A12	WHITE FLINT
A13	TWINBROOK
A14	ROCKVILLE
B01	GALLERY PLACE EAST
B02	JUDICIARY SQUARE EAST & WEST
B03	UNION STATION NORTH & SOUTH
B04	RHODE ISLAND
B05	BROOKLAND
B06	FORT TOTTEN
B07	TAKOMA
B08	SILVER SPRING NORTH & SOUTH
B09	FOREST GLEN
B10	WHEATON
B11	GLENMONT
B35	NEW YORK AVENUE NORTH & SOUTH
C01	METRO CENTER NORTH & SOUTH
F01	GALLERY PLACE NORTH & WEST

ELECTRICAL SPECIFICATIONS

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

ABBREVIATIONS

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

DRAWING INDEX

A01-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
A01-E-101	METRO CENTER - EAST & WEST - MEZZANINE KIOSK - POWER
A01-E-102	METRO CENTER - EAST & WEST - PANEL SCHEDULES
A01-E-301	METRO CENTER - EAST & WEST - PANELBOARD IMAGE
A01-E-302	METRO CENTER - EAST & WEST - PANELBOARD IMAGE
MM-A-E05	METRO CENTER - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

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

CONTRACT NO
14-FQ10060-CENI-24

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

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

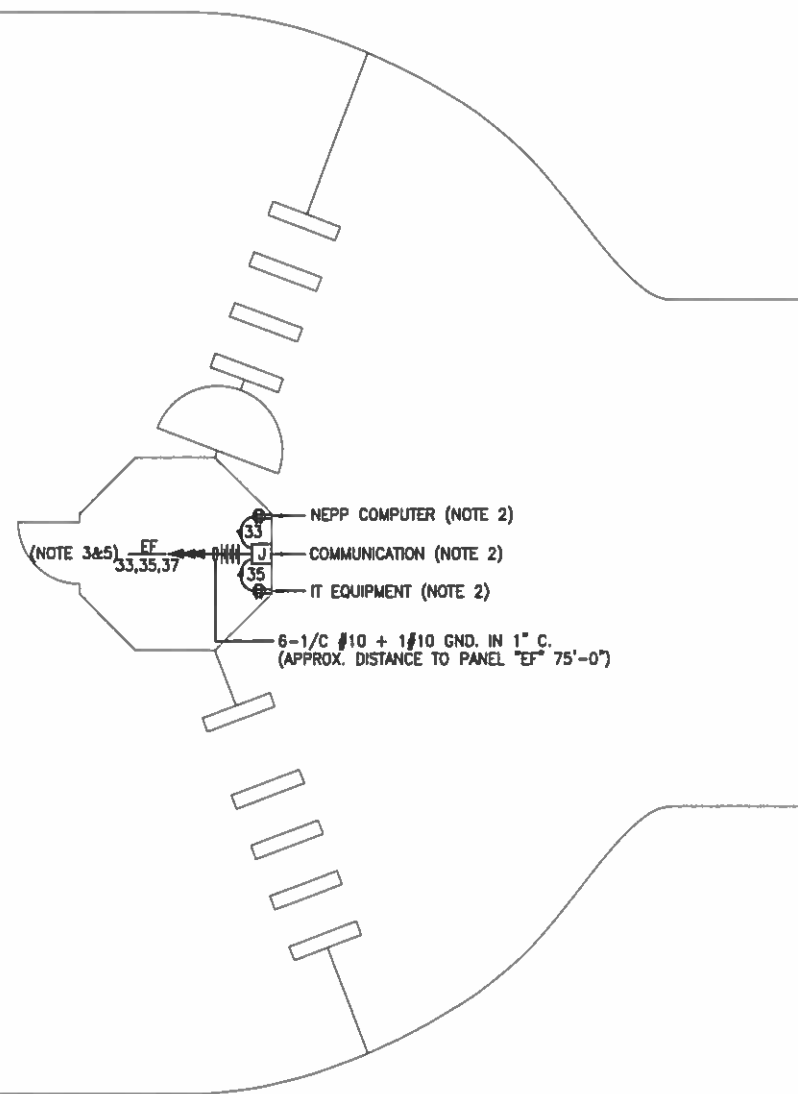
GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED SUBMITTED _____ PROJECT MANAGER

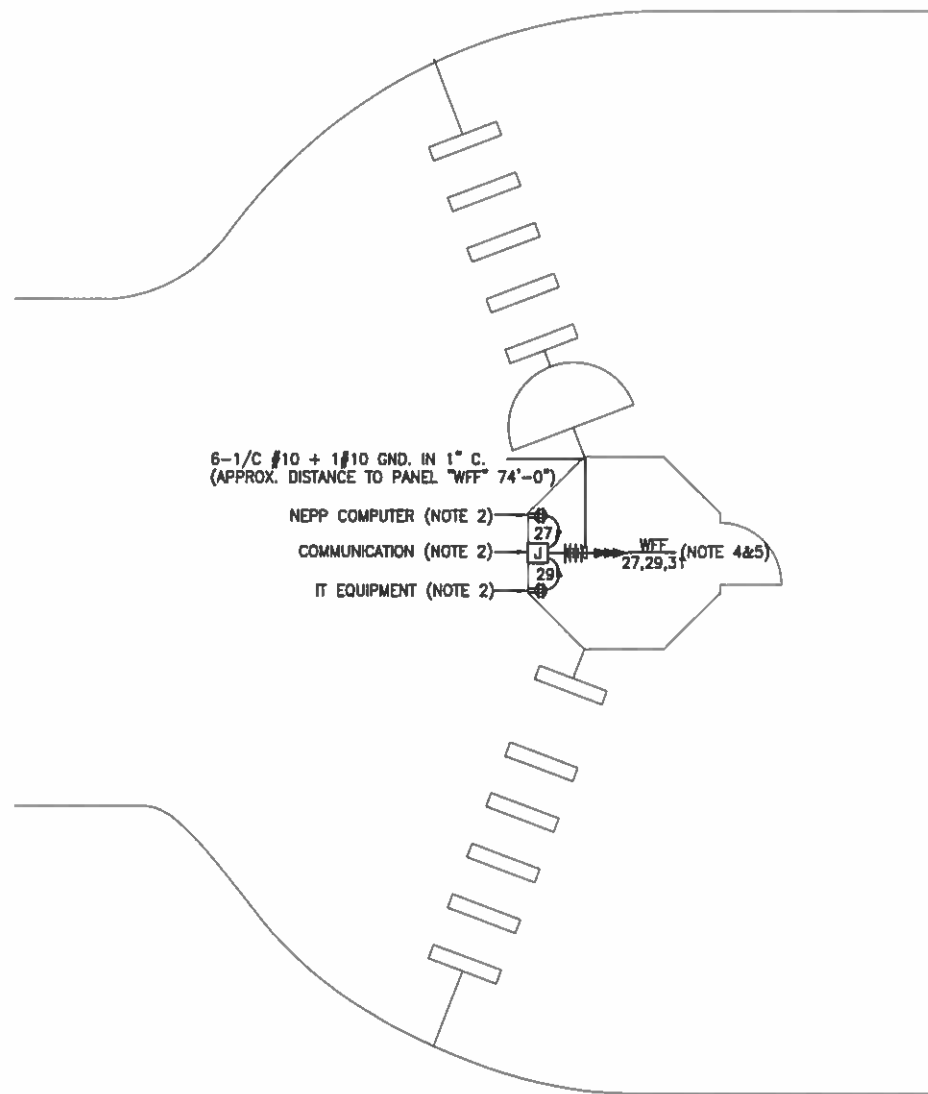
NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
ABBREVIATIONS, DRAWING INDEX,
SPECIFICATIONS & SYMBOL LIST

SCALE
NOT TO SCALE

DRAWING NO.
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. MGO	07-14	REFERENCE DRAWINGS		REVISIONS	
			NUMBER	DESCRIPTION	DATE	BY
DRAWN	C. MGO	07-14				
CHECKED	B. IDLER	07-14				
APPROVED	N/A					

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

APPROVED

GFP A Gannett Fleming/Parsons
JOINT VENTURE

SUBMITTED

PROJECT MANAGER

**NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
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								
LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	POLE	AMP	KVA	LOAD DESCRIPTION	
		NO.	POLE	AMP						
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	18.4 KVA
		TOTAL DEMAND 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								
LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	POLE	AMP	KVA	LOAD DESCRIPTION	
		NO.	POLE	AMP						
EXISTING VENDOR	0.8	20	1	1	A	2	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	3	- B	4	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	5	- - C	6	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	7	A	8	1	20	0.8	EXISTING VENDOR
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
SPACE	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	15.4 KVA
		TOTAL DEMAND 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 <u>C. NGO</u>	07-14	REFERENCE DRAWINGS		REVISIONS	
DATE		NUMBER	DESCRIPTION	DATE	BY
DRAWN <u>C. NGO</u>	07-14				
DATE					
CHECKED <u>B. IDLBI</u>	07-14				
DATE					
APPROVED <u>N/A</u>					
DATE					

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRO RAIL 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"

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED		DATE		REFERENCE DRAWINGS		REVISIONS	
NUMBER	DESCRIPTION	DATE	BY	NUMBER	DESCRIPTION	DATE	BY
C. NGO	07-14						
C. NGO	07-14						
B. IDLEBI	07-14						
N/A							

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



APPROVED _____

SUBMITTED _____
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
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		DRAWN		CHECKED		APPROVED	
	NAME	DATE	NAME	DATE	NAME	DATE	NAME	DATE
	C. NGO	07-14	C. NGO	07-14	B. IOLEBI	07-14	N/A	

REFERENCE DRAWINGS		REVISIONS		
NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION

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

GFP A GRANT FLOWING/POISSONS
 JOINT VENTURE

APPROVED _____ SUBMITTED _____
 PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
A01-E-302

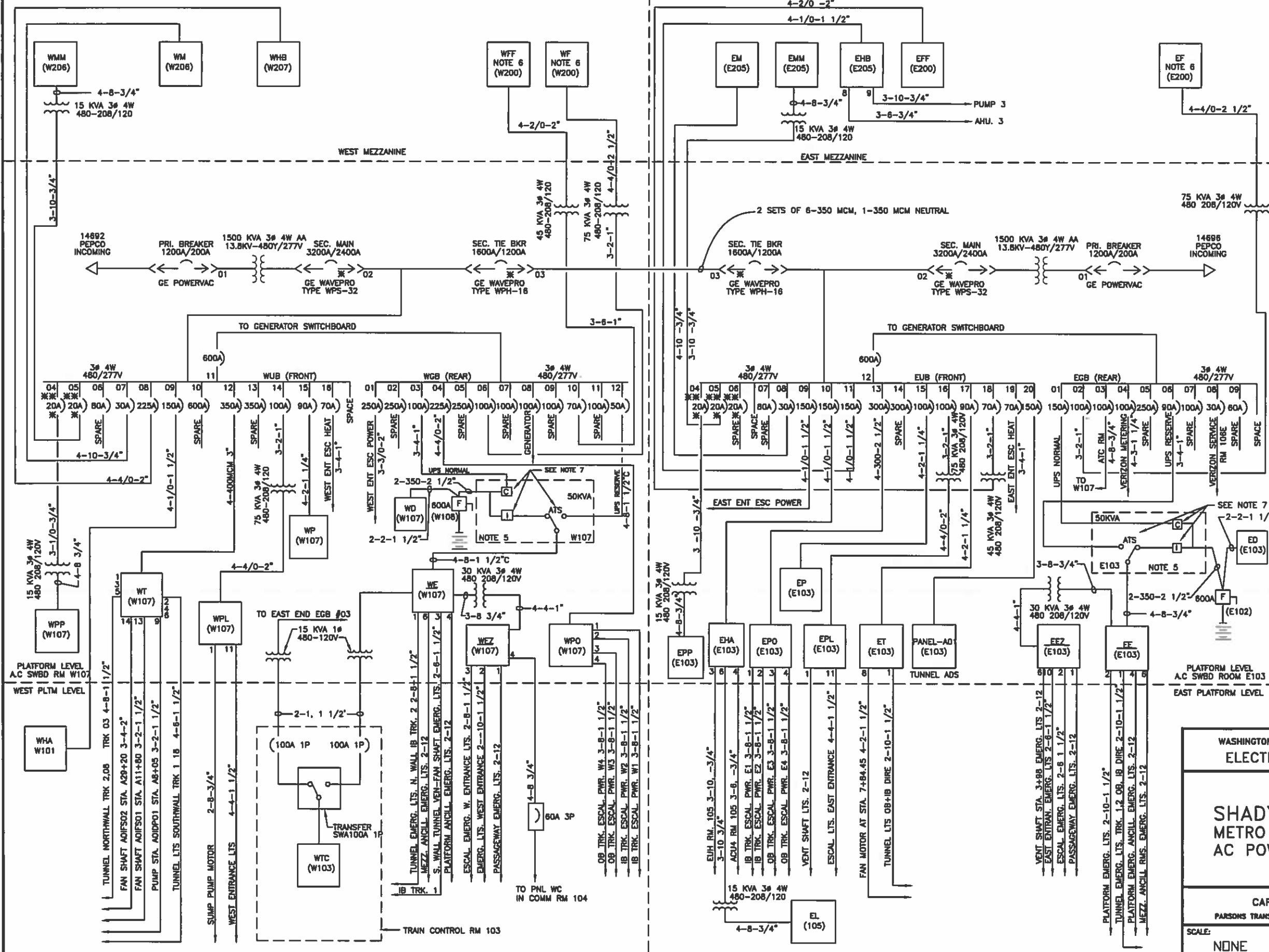
WEST END (AC1)

EAST END (AC2)

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

NOTES:

1. PANEL DESIGNATION
 PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY
 ROOM LOCATION
 (CIRCUIT NUMBER)
2. 3-2-1-8-2"
 CONDUIT SIZE
 AWG. GROUND WIRE
 AWG. OR MCM CIRCUIT WIRES
3. CIRCUIT BREAKERS
 DRAW OUT << >> 1800A/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. SWITCHGEAR MANUFACTURER:
 GE INDUSTRIAL SYSTEMS
11. MAIN SECONDARY & TIE POWER CIRCUIT BREAKERS ARE GE TYPE WAVEPRO WITH MICROVERSATIP (LSI) ELECTRICALLY OPERATED & EQUIPPED WITH SEPARATE GROUND FAULT RELAYS.
12. SWITCHBOARD FEEDER CIRCUIT BREAKERS ARE GE SPECTRA RMS TYPE SGLB WITH MICROVERSATIP (LSIG) U.O.N.
13. MOLDED CASE BREAKER NAME PLATE:
 STA - BREAKER POSITION (WEST UTILITY BOARD #14)
 PANEL WPI - FEEDER NAME
 SGL600/130AS/100RP - RATING PLUG
 - SENSOR SIZE
 - TYPE-FRAME SIZE



REVISIONS		
DATE	BY	DESCRIPTION
8-8-86	TN	REPLACED SVGRS & SVBDS

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: NONE DRAWING No. **MM-A-E05**

ELECTRICAL SPECIFICATIONS

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




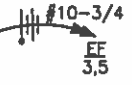


ABBREVIATIONS

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

DRAWING INDEX

A02-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
A02-E-101	FARRAGUT NORTH - NORTHEAST, SOUTHEAST & NORTHWEST - MEZZANINE KIOSK - POWER
A02-E-102	FARRAGUT NORTH NORTHEAST & SOUTHEAST - PANEL SCHEDULES
A02-E-103	FARRAGUT NORTH NORTHWEST - PANEL SCHEDULE
A02-E-301	FARRAGUT NORTH NORTHEAST - PANELBOARD IMAGE
A02-E-302	FARRAGUT NORTH SOUTHEAST - PANELBOARD IMAGE
A02-E-303	FARRAGUT NORTH NORTHWEST - PANELBOARD IMAGE
MM-A-E07	FARRAGUT NORTH - AC POWER ONE LINE DIAGRAM
MM-A-E08	FARRAGUT NORTH - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

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


CONTRACT NO. 14-FQ10060-CENI-24

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

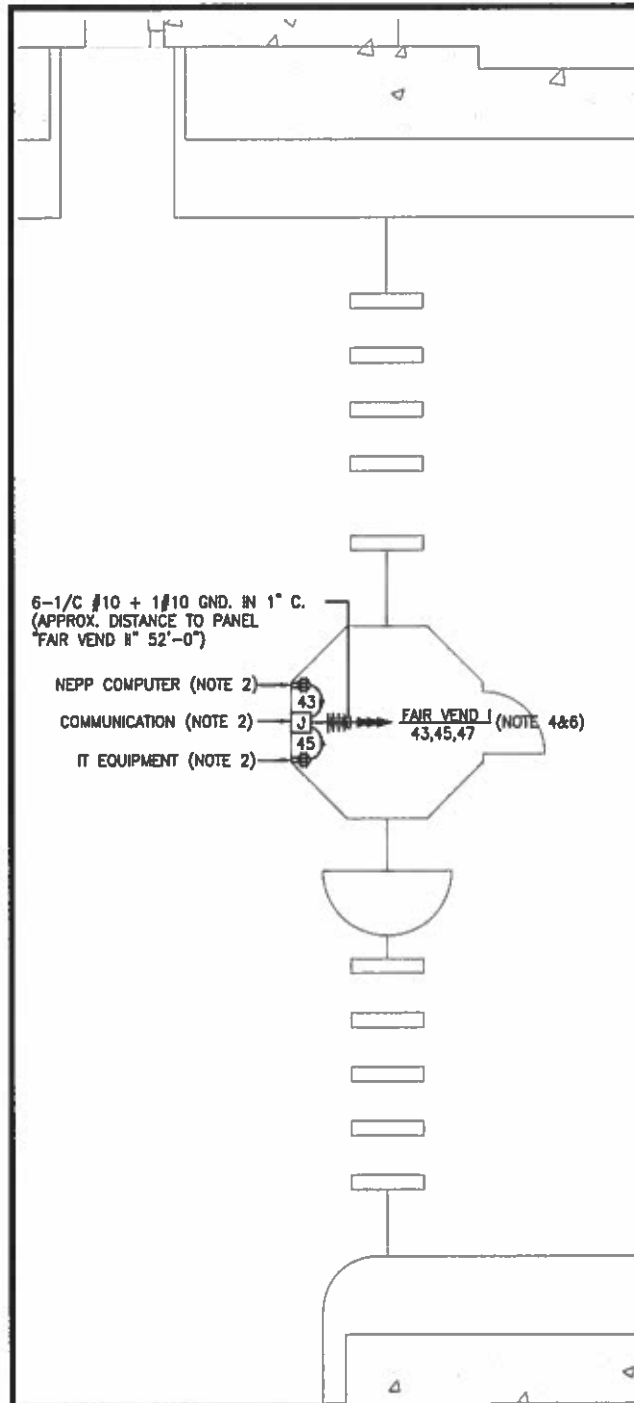
APPROVED  SUBMITTED _____ PROJECT MANAGER

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

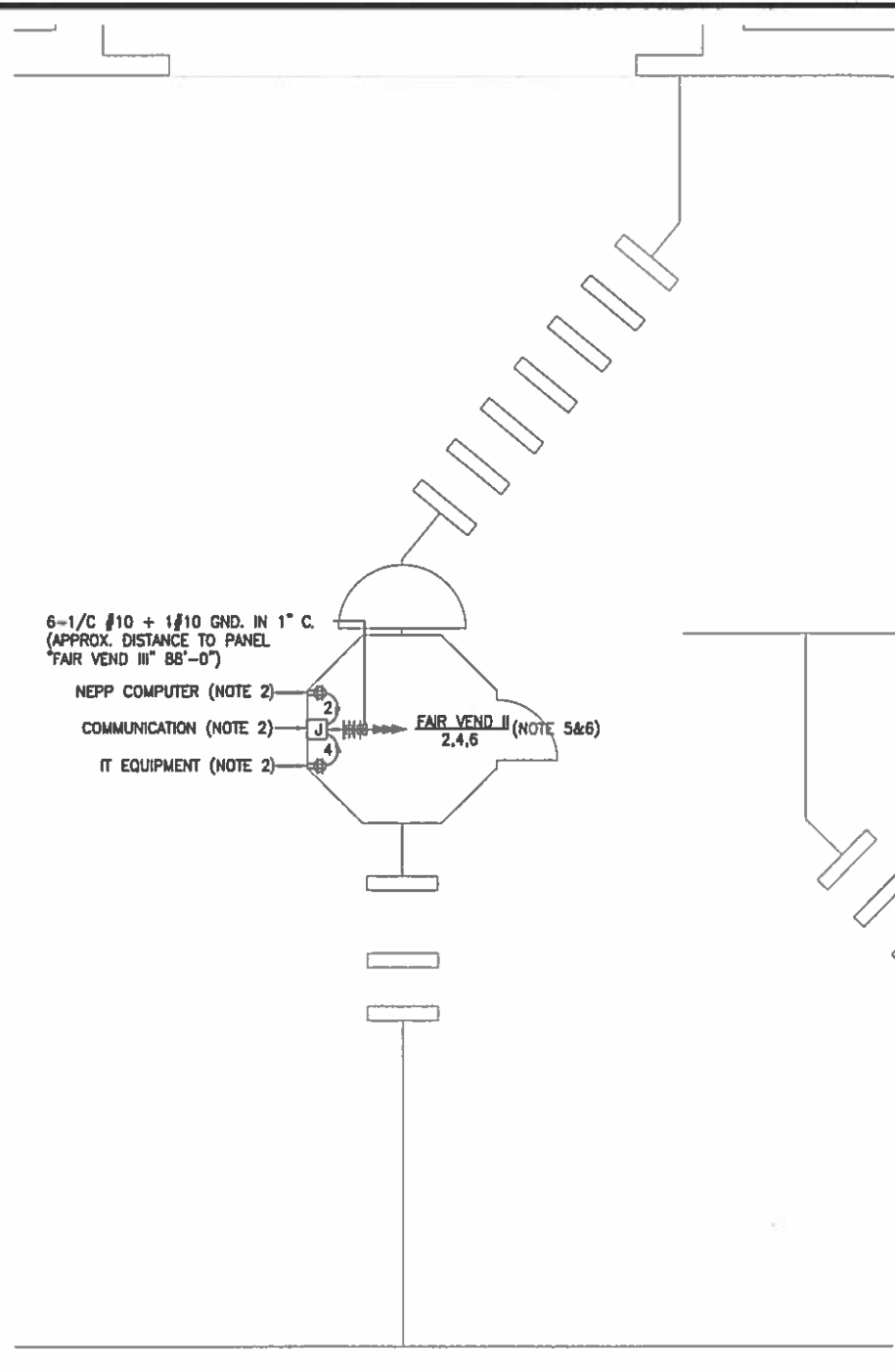
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DRAWING NO. A02-E-001

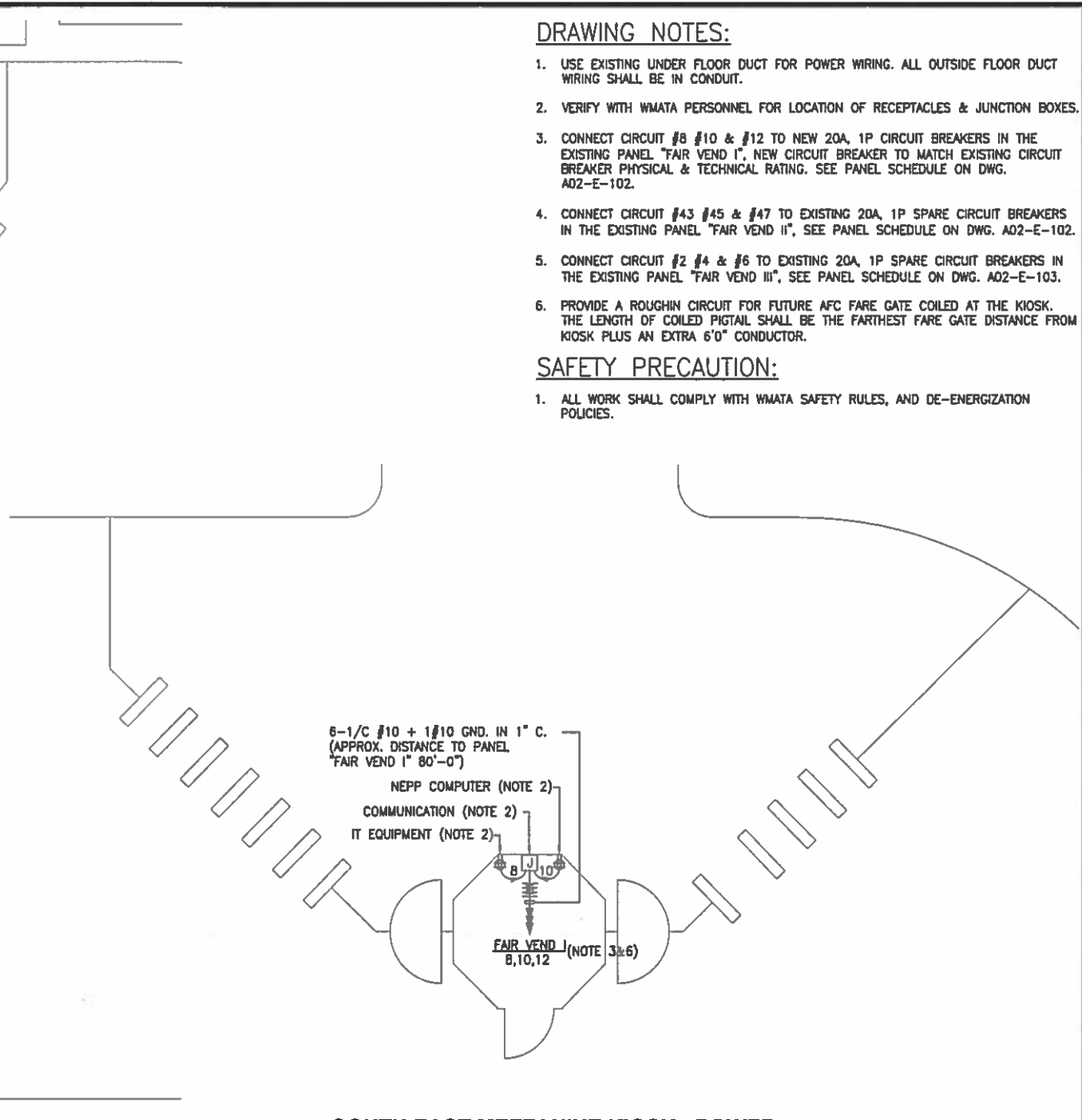
8



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



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



SOUTH 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. 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. CONNECT CIRCUIT #2 #4 & #6 TO EXISTING 20A, 1P SPARE CIRCUIT BREAKERS IN THE EXISTING PANEL "FAIR VEND III", SEE PANEL SCHEDULE ON DWG. A02-E-103.
6. 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" 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	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DATE							
DRAWN	C. NGO	07-14					
DATE							
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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
FARRAGUT NORTH - NORTHWEST, NORTHEAST & 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: 150AMCB		PHASE: 3		LOCATION: AC SWBD RM 256						
RATING: 10K A/C		WIRE: 4		SECTION: 1 OF 1						
LOAD DESCRIPTION	KVA	CKT BKRS			NO.	NO.	CKT BKRS			LOAD DESCRIPTION
		AMP	POLE	NO.			NO.	POLE	AMP	
EXISTING VENDOR	0.8	20	1	1	A - -	2	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	3	- B -	4	1	20	0.8	EXISTING VENDOR
SPACE	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
SPACE	0.0	20	1	43	A - -	44	1	20	0.0	SPACE
SPACE	0.0	20	1	45	- B -	46	1	20	0.0	SPACE
SPACE	0.0	20	1	47	- - C	48	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	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: 150AMCB		PHASE: 3		LOCATION: ROOM 206						
RATING: 10K A/C		WIRE: 4		SECTION: 1 OF 1						
LOAD DESCRIPTION	KVA	CKT BKRS			NO.	NO.	CKT BKRS			LOAD DESCRIPTION
		AMP	POLE	NO.			NO.	POLE	AMP	
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	SPACE
EXISTING VENDOR	0.8	20	1	37	A - -	38	1	20	0.0	SPACE
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	SPACE
NEW KIOSK RECEPT. (IT & NCS)	0.8	20	1	43	A - -	44	1	20	0.0	SPACE
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	REFERENCE DRAWINGS		REVISIONS	
			NUMBER	DESCRIPTION	DATE	BY
DATE						
DRAWN	C. NGO	07-14				
DATE						
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

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRO RAIL 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

LOAD DESCRIPTION	KVA	CKT BKRS		CKT. NO.	POLE	CKT. NO.	CKT BKRS		KVA	LOAD DESCRIPTION
		AMP	POLE				AMP	POLE		
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	DATE	REFERENCE DRAWINGS		REVISIONS	
			NUMBER	DESCRIPTION	DATE	DESCRIPTION
DESIGNED	C. NGO	07-14				
DATE						
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 _____

SUBMITTED _____
PROJECT MANAGER

**NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
FARRAGUT NORTH - NORTHWEST
PANEL SCHEDULE**

SCALE
NOT TO SCALE

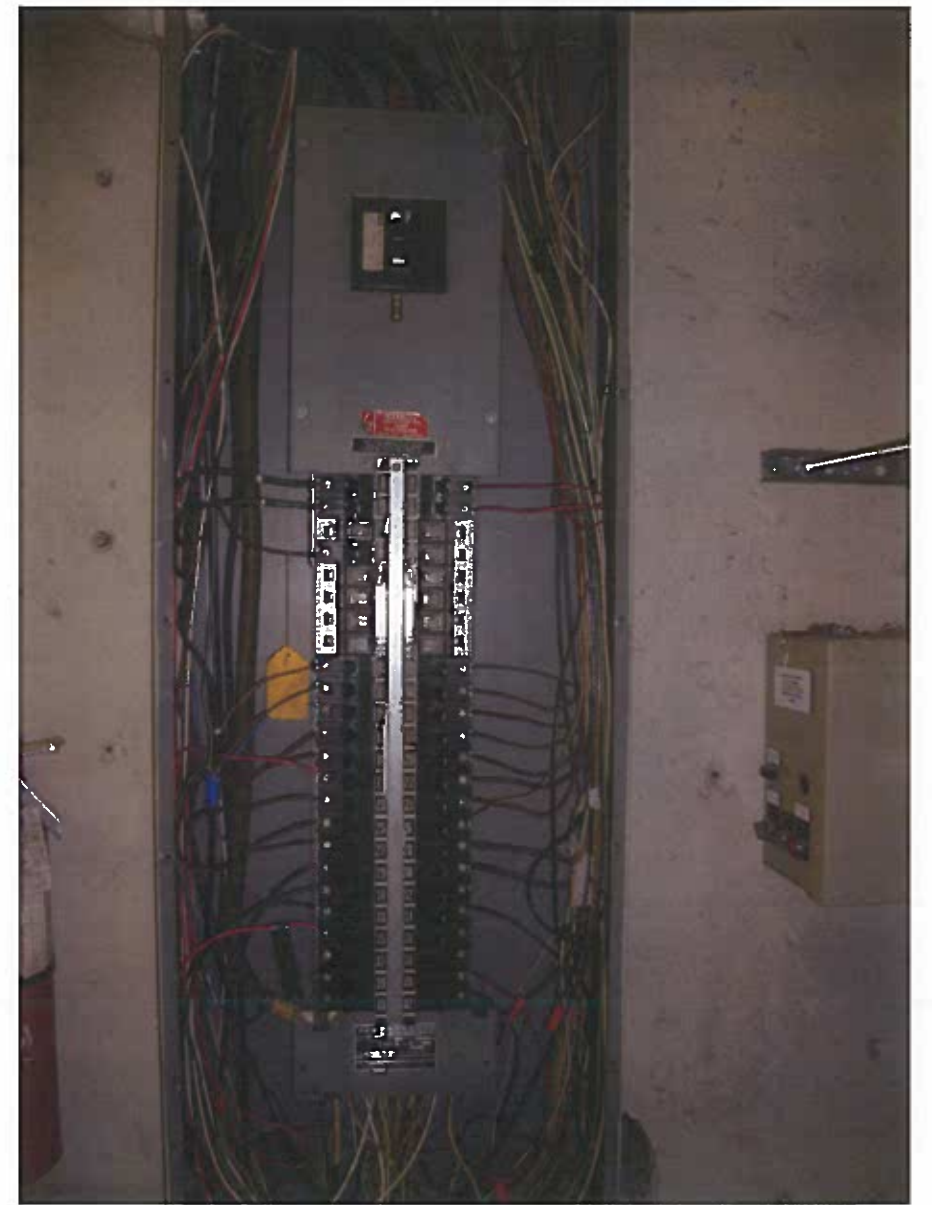
DRAWING NO.
A02-E-103



EXISTING PANEL "FAIR VEND II"



EXISTING PANEL "FAIR VEND II"



EXISTING PANEL "FAIR VEND II"

CONTRACT NO.
14-FQ10060-CENI-24

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

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



APPROVED _____ SUBMITTED _____
PROJECT MANAGER

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

SCALE: NOT TO SCALE
DRAWING NO.: 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	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	07-14					
CHECKED	B. BOLBI	07-14					
APPROVED	N/A						

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



APPROVED _____

SUBMITTED _____
PROJECT MANAGER

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

SCALE
NOT TO SCALE

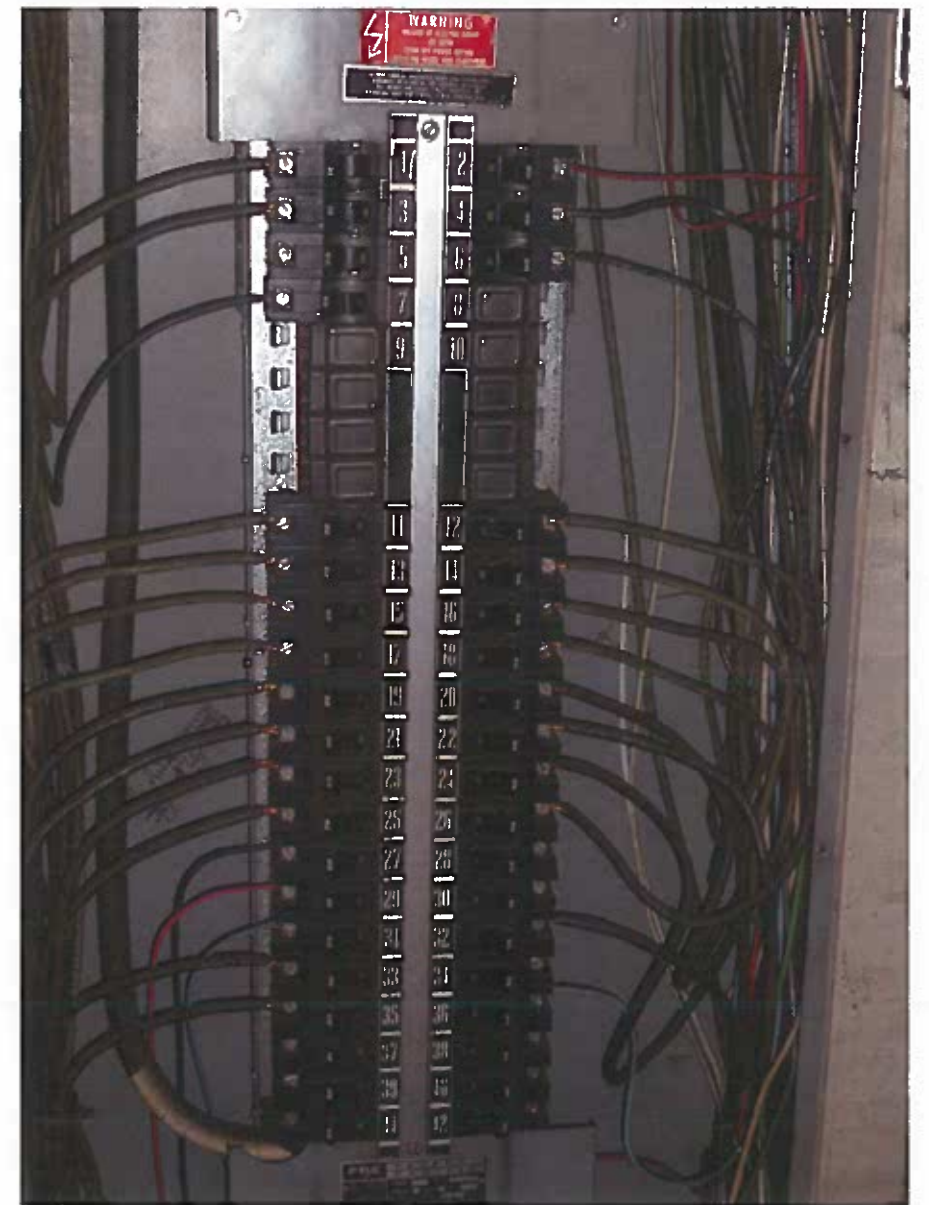
DRAWING NO.
A02-E-303



EXISTING PANEL "FAIR VEND 1"



EXISTING PANEL "FAIR VEND 1"



EXISTING PANEL "FAIR VEND 1"

CONTRACT NO.
14-FQ10060-CENI-24

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

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



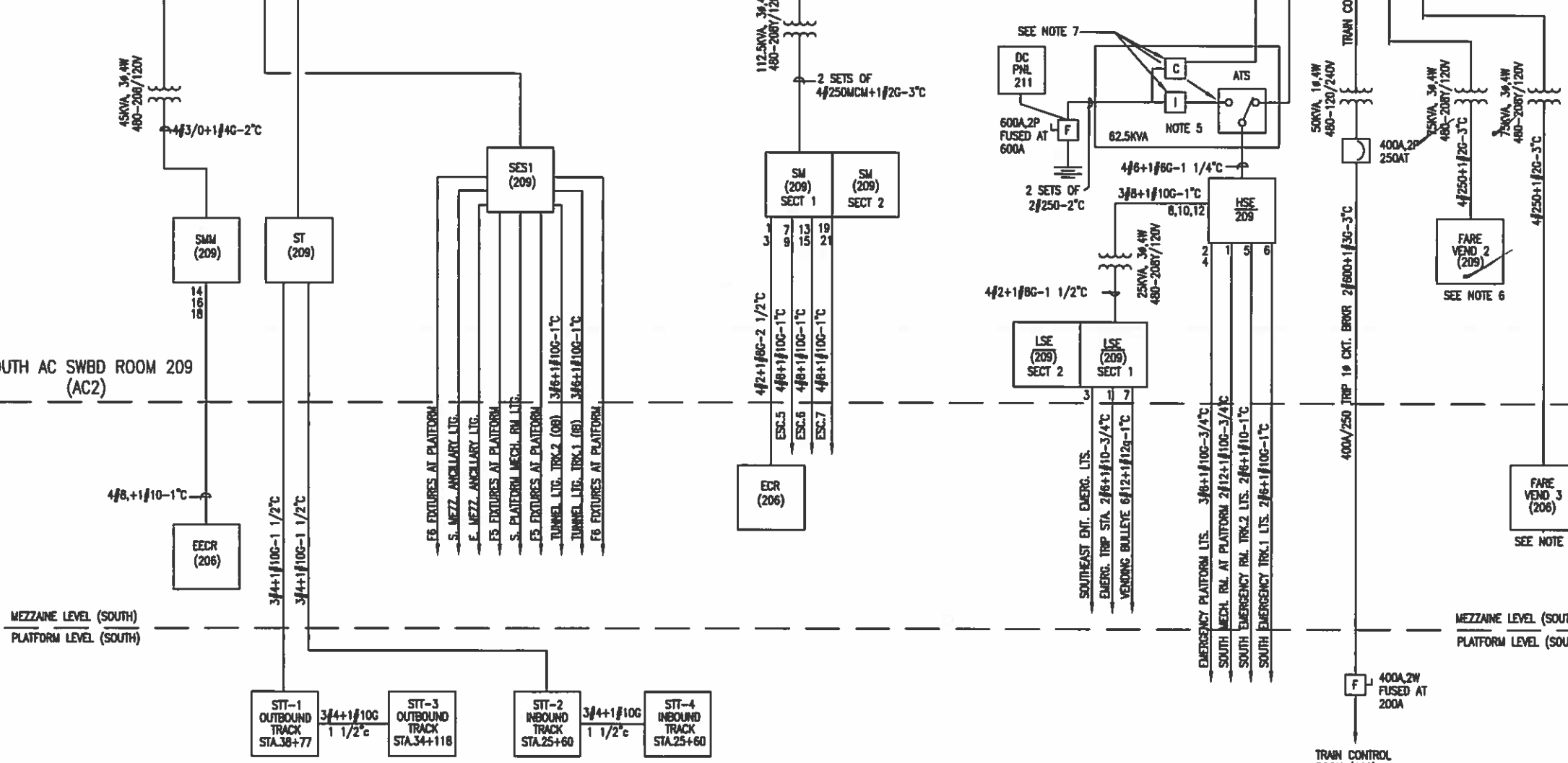
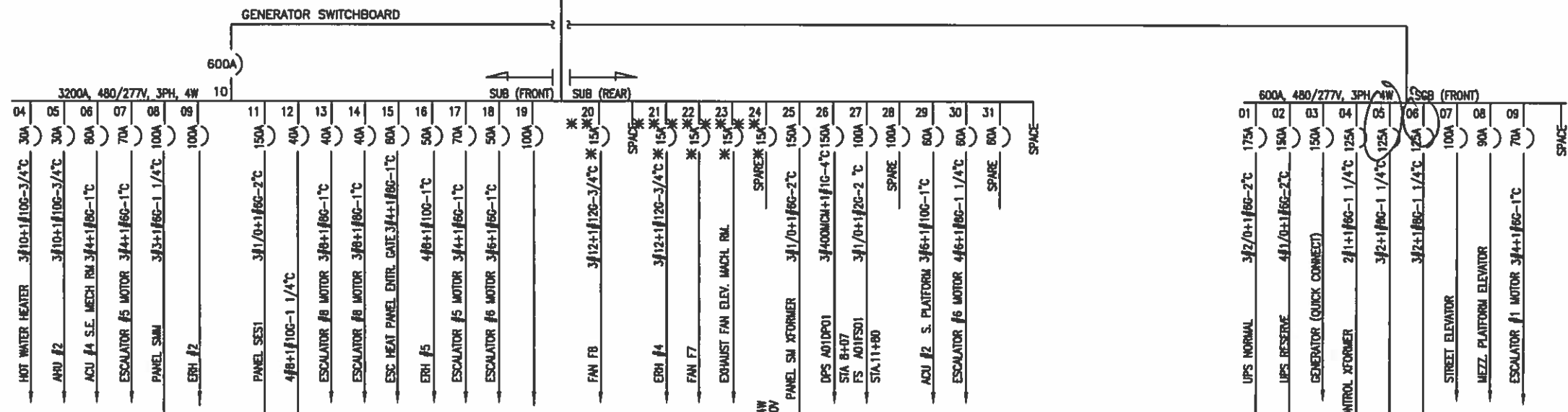
APPROVED _____

SUBMITTED _____
PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
A02-E-301



- NOTES:
- PANEL DESIGNATION
PANEL DESIGNATION WHEN UNDERLINED IS IN EMERGENCY
ROOM NUMBER
B (CIRCUIT NUMBER)
 - 3/2+1/86-2°C
CONDUIT SIZE
EQUIPMENT GROUNDING
AWG OR KCMIL CIRCUIT WIRES
 - CIRCUIT BREAKERS
DRAW OUT
MOLDED CASE
FRAME SIZE
CONTINUOUS CURRENT SETTING
 - 4/C-4/0
INDICATES MULTICONDUCTOR CABLE WITH 4 CONDUCTOR AND SIZE OF EACH 4/0
 - RATING AS SHOWN FOR UNINTERRUPTIBLE POWER SUPPLY CONSISTING OF RECTIFIER/CHARGER INVERTER, POWER TRANSFER SWITCH ASSOCIATED BATTERIES AND PANELBOARD.
 - PANEL FOR FARE COLLECTION EQUIPMENT.
 - ATS. -AUTOMATIC TRANSFER SWITCH
C -CHARGER
I -INVERTER
 - UPS MANUFACTURER: INTERNATIONAL POWER MACHINE
 - SWITCHGEAR MANUFACTURER: GE INDUSTRIAL SYSTEMS
 - MAIN SECONDARY & TIE POWER CIRCUIT BREAKERS ARE GE TYPE WAVEPRO WITH MICROVERSATRIP (LSI) ELECTRICALLY OPERATED & EQUIPPED WITH SEPARATE GROUND FAULT RELAYS.
 - SWITCHBOARD FEEDER CIRCUIT BREAKERS ARE GE SPECTRA RMS TYPE SGLB WITH MICROVERSATRIP (LSIG) U.O.N.
 - MOLDED CASE BREAKER NAME PLATE:
STA - BREAKER POSITION (SOUTH UTILITY BOARD #9)
FEEDER NAME
RATING PLUG
SENSOR SIZE
TYPE-FRAME SIZE

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

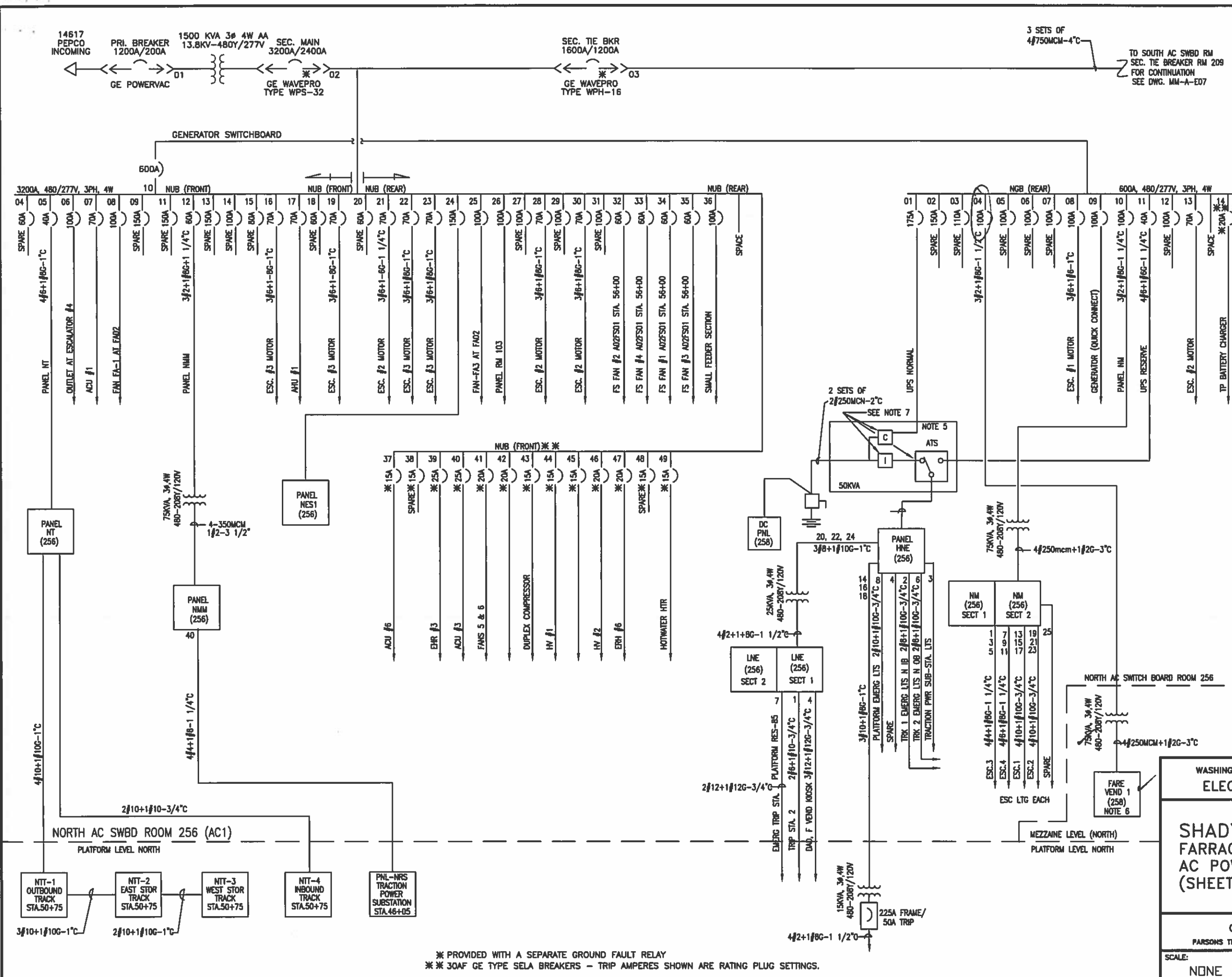
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
ELECTRICAL MAINTENANCE MAP

**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. PANEL DESIGNATION

WEA
PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY
(205)
ROOM NUMBER

B (CIRCUIT NUMBER)
 - 3/2+1#6G-2" C

CONDUIT SIZE

EQUIPMENT GROUNDING

AWG OR KCMIL CIRCUIT WIRES
 3. CIRCUIT BREAKERS

DRAW OUT $\leftarrow \rightarrow$ 1600A/1200A

MOLDED CASE

FRAME SIZE

CONTINUOUS CURRENT SETTING
 - 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 SGLB WITH MICROVERSATRIP (LSIG) U.O.N.
 12. MOLDED CASE BREAKER NAME PLATE:

STA. BREAKER POSITION (NORTH UTILITY BOARD #07)

ACU #1 FEEDER NAME

SGL600/150AS/100RP

RATING PLUG

SENSOR SIZE

TYPE-FRAME SIZE

REVISIONS		
DATE	BY	DESCRIPTION
B-8-06	TN	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: NONE	DRAWING No. MM-A-E08	16
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* PROVIDED WITH A SEPARATE GROUND FAULT RELAY
** 30AF GE TYPE SELA BREAKERS - TRIP AMPERES SHOWN ARE RATING PLUG SETTINGS.

ELECTRICAL SPECIFICATIONS

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

ABBREVIATIONS

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

DRAWING INDEX

A03-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
A03-E-101	DUPONT CIRCLE NORTH & SOUTH - MEZZANINE KIOSK - POWER
A03-E-102	DUPONT CIRCLE NORTH & SOUTH - PANEL SCHEDULES
A03-E-301	DUPONT CIRCLE NORTH & SOUTH - PANELBOARD IMAGE
A03-E-302	DUPONT CIRCLE NORTH & SOUTH - PANELBOARD IMAGE
MM-A-E10	DUPONT CIRCLE - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

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

CONTRACT NO.
14-FQ10060-CENI-24

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED

SUBMITTED _____ PROJECT MANAGER

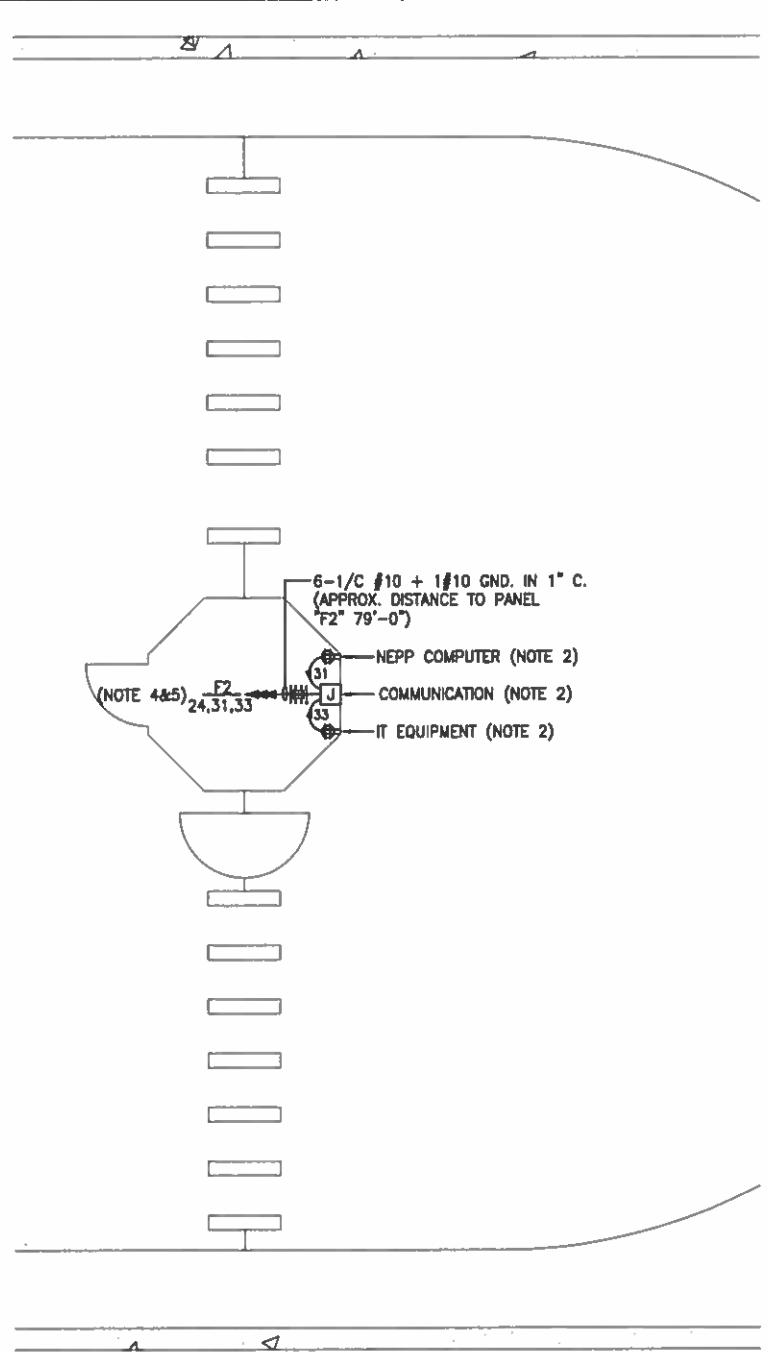
NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS

ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST

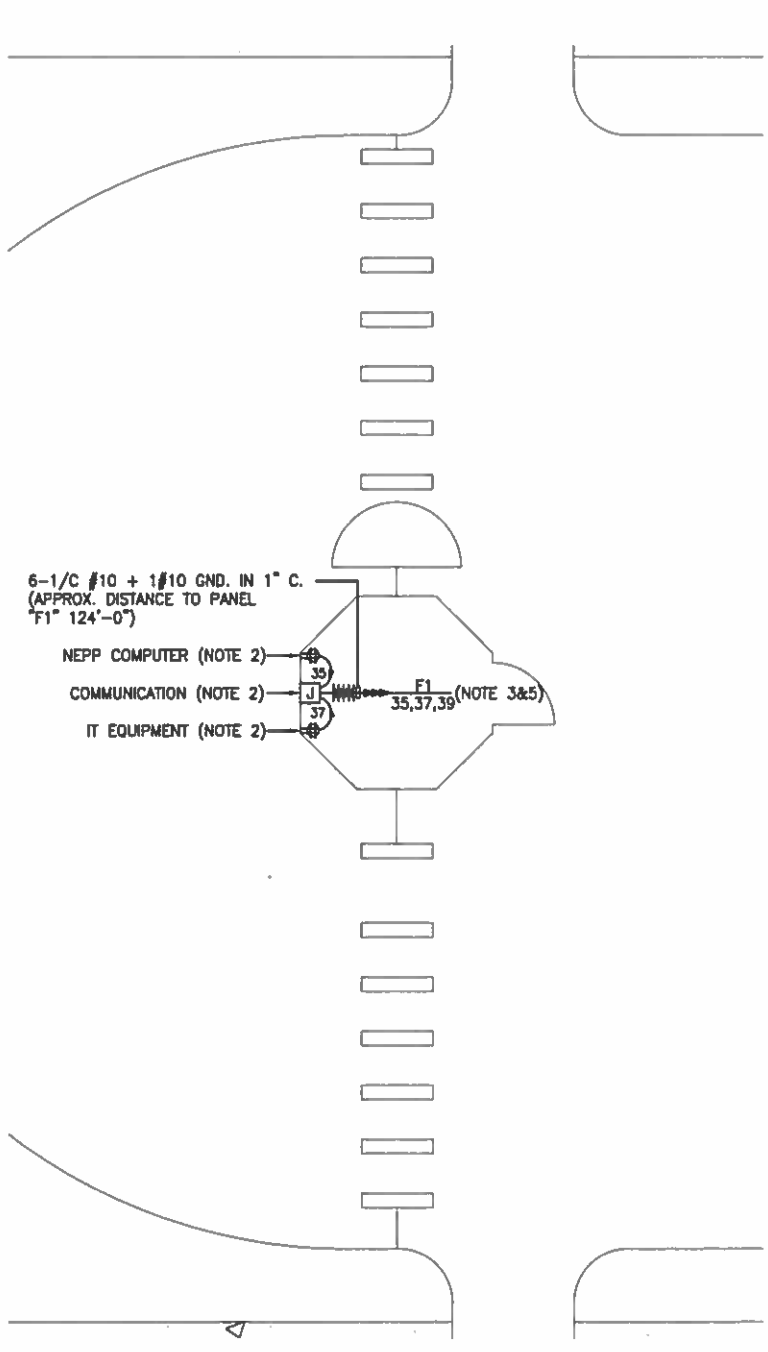
SCALE: NOT TO SCALE

DRAWING NO. A03-E-001

17



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		DATE		NUMBER		DESCRIPTION		DATE		BY		DESCRIPTION	
C. MGO		07-14											
DRAWN		DATE		NUMBER		DESCRIPTION		DATE		BY		DESCRIPTION	
C. MGO		07-14											
CHECKED		DATE		NUMBER		DESCRIPTION		DATE		BY		DESCRIPTION	
B. IDLBI		07-14											
APPROVED		DATE		NUMBER		DESCRIPTION		DATE		BY		DESCRIPTION	
M/A													

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED *[Signature]* SUBMITTED PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
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									
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									
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	86.6 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	DATE	REFERENCE DRAWINGS		REVISIONS	
		NUMBER	DESCRIPTION	DATE	DESCRIPTION
C. NGO	07-14				
DRAWN	C. NGO				
CHECKED	B. IDLEB				
APPROVED	N/A				

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

APPROVED 

GFP A Gannett Fleming/Parsons JOINT VENTURE

SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
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		DATE		REFERENCE DRAWINGS		REVISIONS	
	NUMBER	DESCRIPTION	DATE	BY	NUMBER	DESCRIPTION	DATE	BY
DESIGNED	C. NGO		07-14					
DRAWN	C. NGO		07-14					
CHECKED	B. IDLEBI		07-14					
APPROVED	N/A							

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



APPROVED _____

SUBMITTED _____
PROJECT MANAGER

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

SCALE
NOT TO SCALE

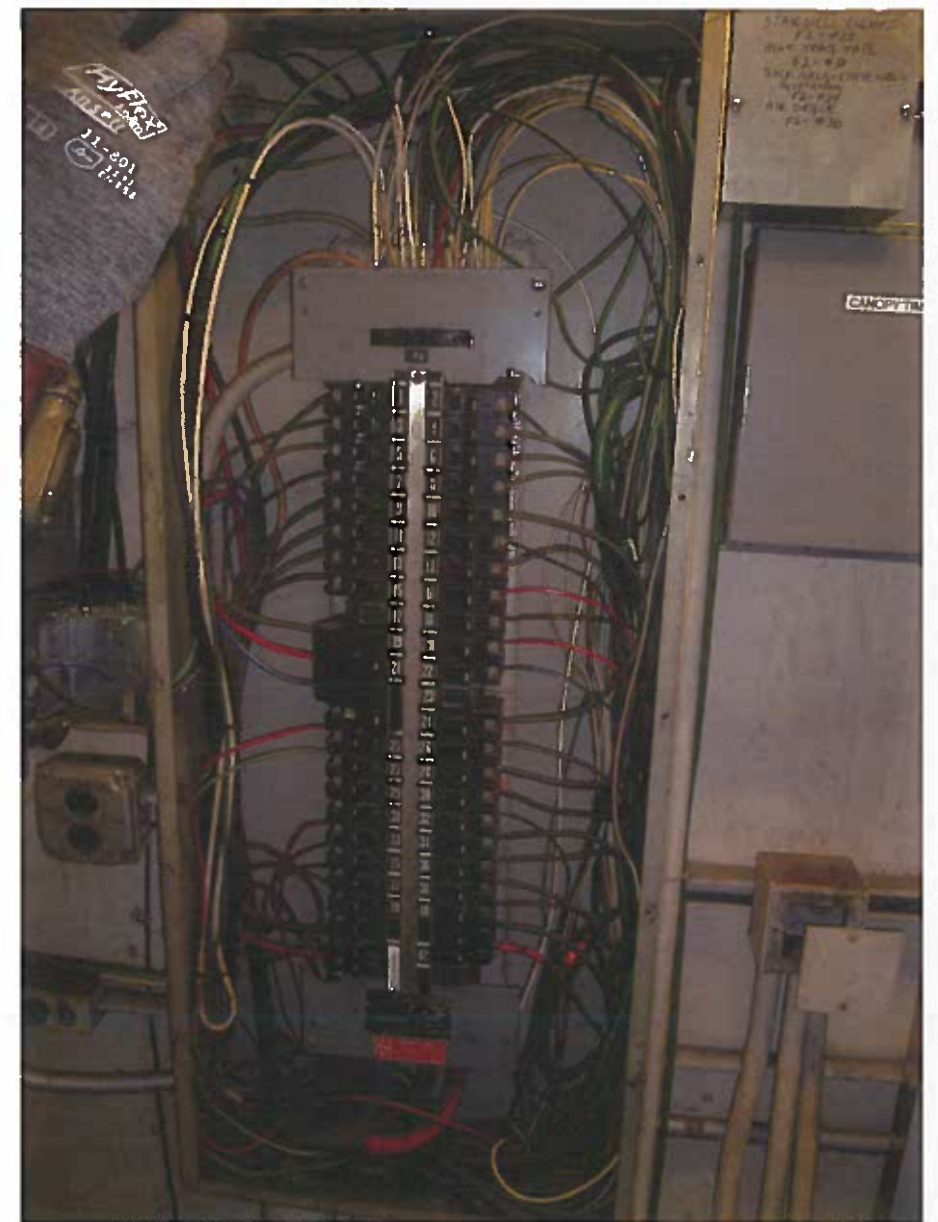
DRAWING NO.
A03-E-301



EXISTING PANEL "F2"



EXISTING PANEL "F2"



EXISTING PANEL "F2"

CONTRACT NO.
14-FQ10060-CENI-24

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

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

GFP A Connell Fleming/Parsons
 JOINT VENTURE

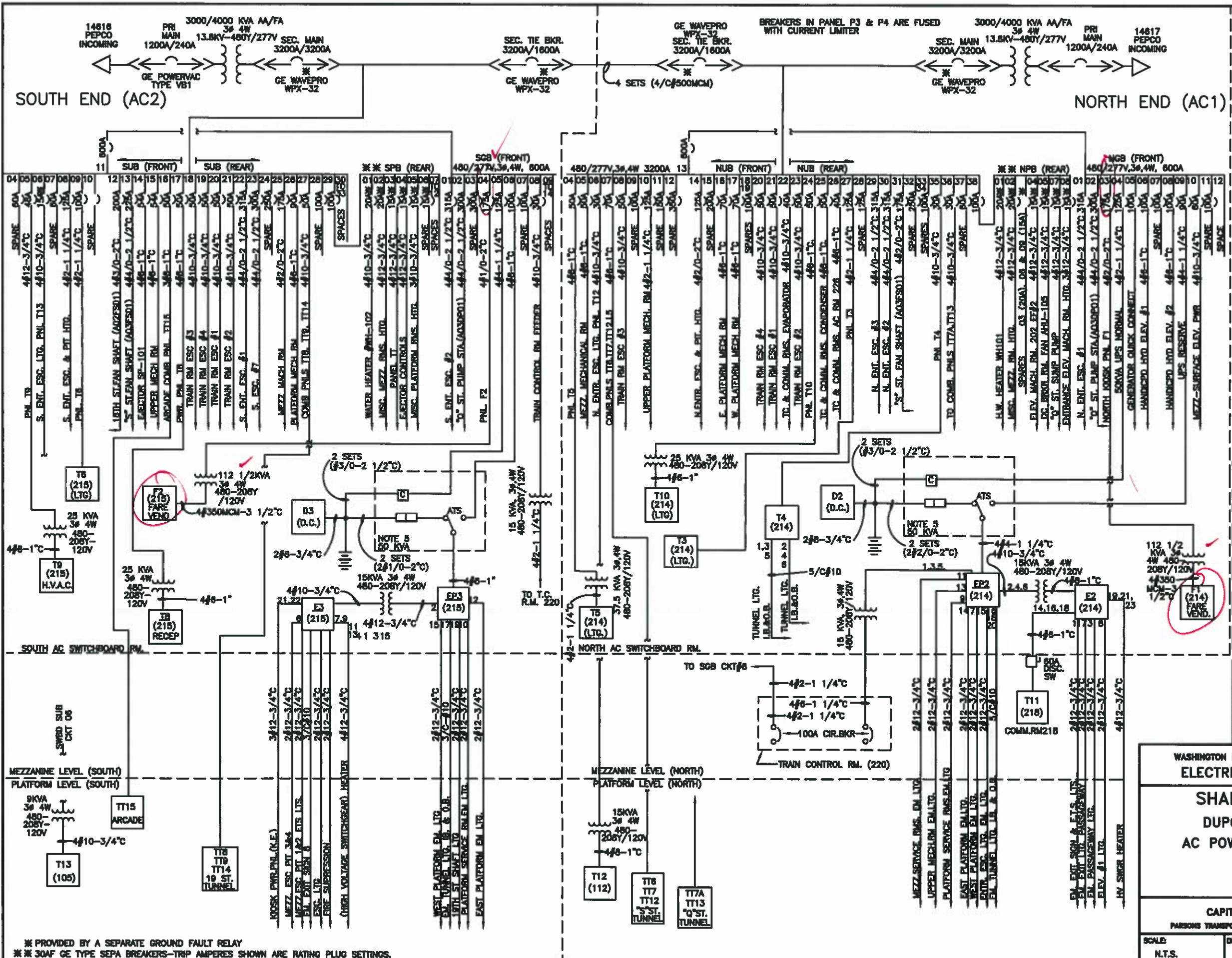
NEW ELECTRONIC PAY PROGRAM (NEPP)
 IN METRO RAIL STATIONS
 DUPONT CIRCLE - NORTH & SOUTH
 PANELBOARD IMAGE

APPROVED _____

SUBMITTED _____
 PROJECT MANAGER

SCALE
 NOT TO SCALE

DRAWING NO.
 A03-E-302



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

REVISIONS		
DATE	BY	DESCRIPTION
8-1-06	REJTN	REV REPLACED SVGRS & SVGRS

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**

DATE _____ APPROVED BY _____ DATE _____

* PROVIDED BY A SEPARATE GROUND FAULT RELAY
 ** 30A GE TYPE SEPA BREAKERS-TRIP AMPERES SHOWN ARE RATING PLUG SETTINGS.

ELECTRICAL SPECIFICATIONS

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

ABBREVIATIONS

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

DRAWING INDEX

A04-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
A04-E-101	WOODLEY PARK - MEZZANINE KIOSK - POWER
A04-E-102	WOODLEY PARK - PANEL SCHEDULE
A04-E-301	WOODLEY PARK - PANELBOARD IMAGE
MM-A-E13	WOODLEY PARK - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

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

CONTRACT NO.
14-FQ10060-CENI-24

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

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

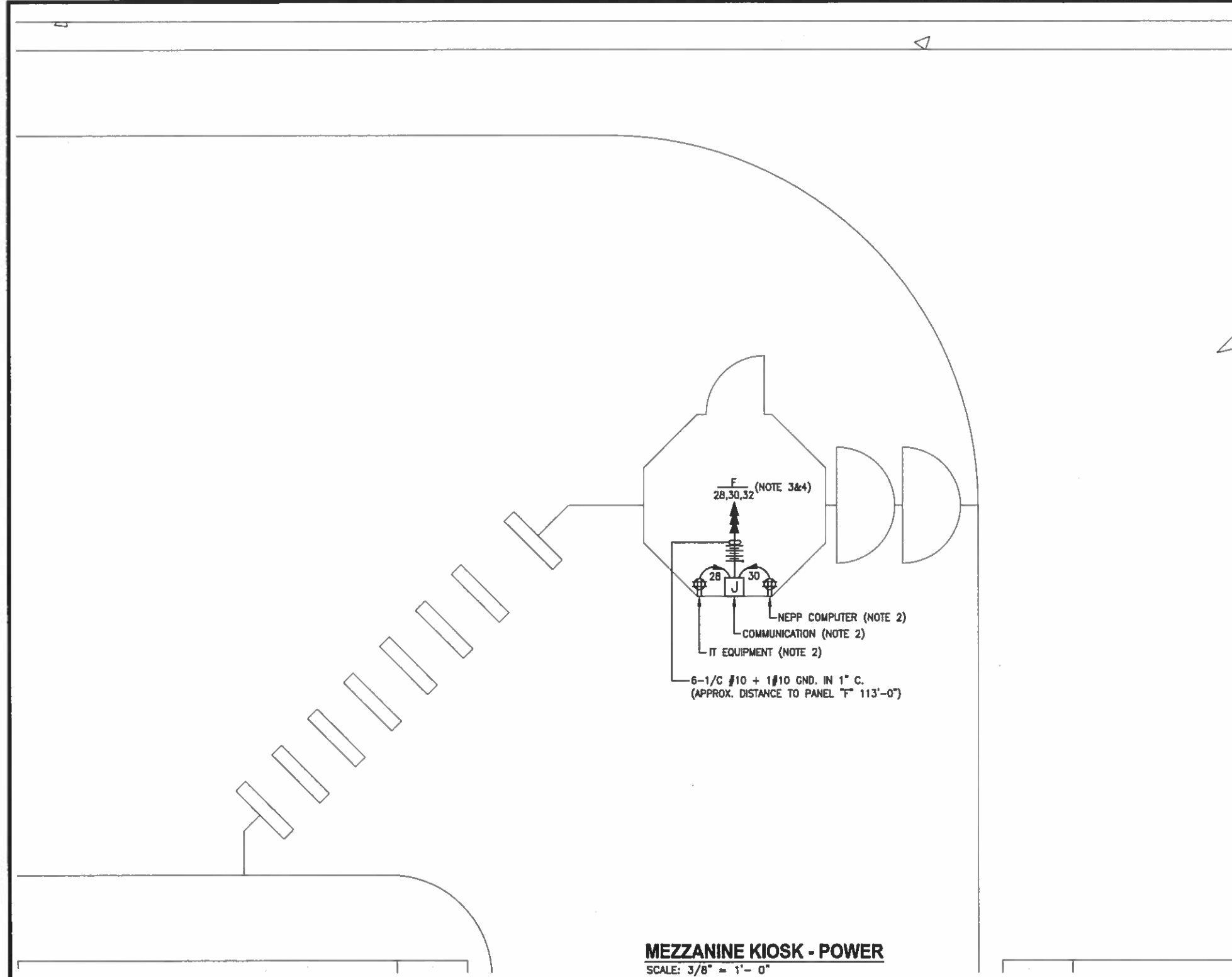
APPROVED

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.

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NGO	07-14	REFERENCE DRAWINGS		REVISIONS	
			NUMBER	DESCRIPTION	DATE	BY
DATE						
DRAWN	C. NGO	07-14				
DATE						
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 RENOVATION PROGRAM
APPROVED *[Signature]*

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

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 A/C	WIRE: 4	SECTION: 1 OF 1

LOAD DESCRIPTION	CKT BKRS			CKT. NO.		CKT. NO.	CKT BKRS			LOAD DESCRIPTION
	KVA	AMP	POLE				POLE	AMP	KVA	
EXISTING VENDOR	0.8	20	1	1	A - -	2	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	3	- B -	4	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	5	- - C	6	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	7	A - -	8	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	9	- B -	10	1	20	0.8	EXISTING VENDOR
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	REFERENCE DRAWINGS		REVISIONS	
DATE	NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN C. NGO	07-14				
DATE					
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

A Gannett Fleming/Parsons JOINT VENTURE

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

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



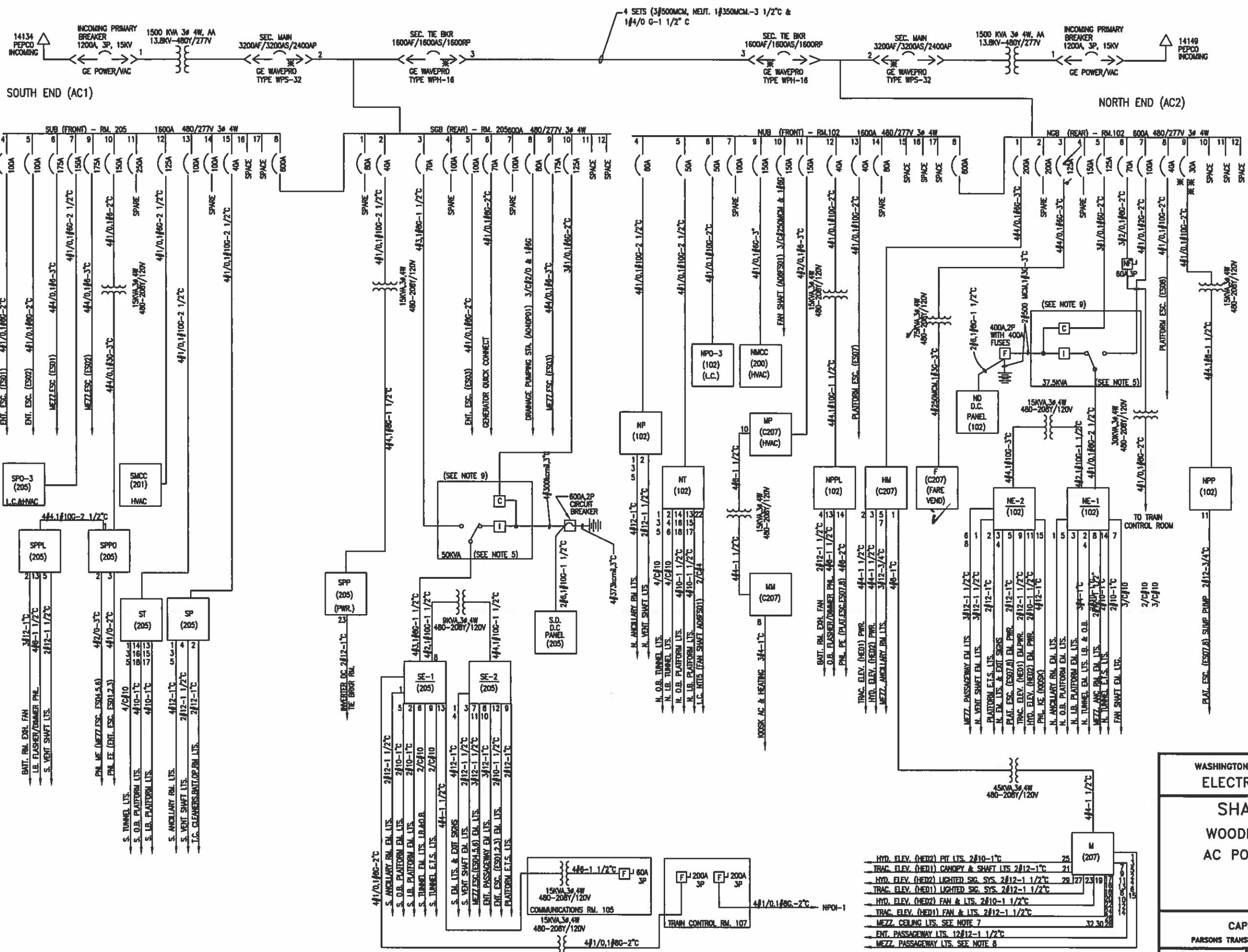
APPROVED _____

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
 B (CIRCUIT NUMBER)
 + WHEN NO CKTS SHOWN
 2. 3-2.1-B 2" CONDUIT SIZE
 AWG. GROUND WIRE
 AWG. OR kcmil CIRCUIT WIRES
 3. CIRCUIT BREAKERS
 DRAW OUT <<< >>> 600AF/1200A TRIP SETTING
 MOLDED CASE 80A FRAME SIZE
 TRIP SETTING
 TRIP SETTING
 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 (17,16,18,20) CONSISTS OF 6#12.
 8. BRANCH CIRCUIT GROUPS (1,3,5,2,4,6) CONSISTS OF 6#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 SEPARATE GROUND FAULT RELAYS.
 11. SWITCHBOARD FEEDER CIRCUIT BREAKERS ARE GE SPECTRA RMS TYPE SGLB WITH MICROVERSATRIP (LSIG) U.O.N.

REVISIONS

DATE	BY	DESCRIPTION
8/1/06	RELTN	REV HV, LV SVGRS & SVBDS

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

* PROVIDED BY A SEPARATE GROUND FAULT RELAY
 ** 30AF GE TYPE SEPA BREAKERS-TRIP AMPERES SHOWN ARE RATING PLUG SETTING.

APPROVED DATE DATE

ELECTRICAL SPECIFICATIONS

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

ABBREVIATIONS

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

DRAWING INDEX

A05-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
A05-E-101	CLEVELAND PARK - MEZZANINE KIOSK - POWER
A05-E-102	CLEVELAND PARK - PANEL SCHEDULE
A05-E-301	CLEVELAND PARK - PANELBOARD IMAGE
MM-A-E15	CLEVELAND PARK - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

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

CONTRACT NO.
14-FQ10060-CENI-24

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

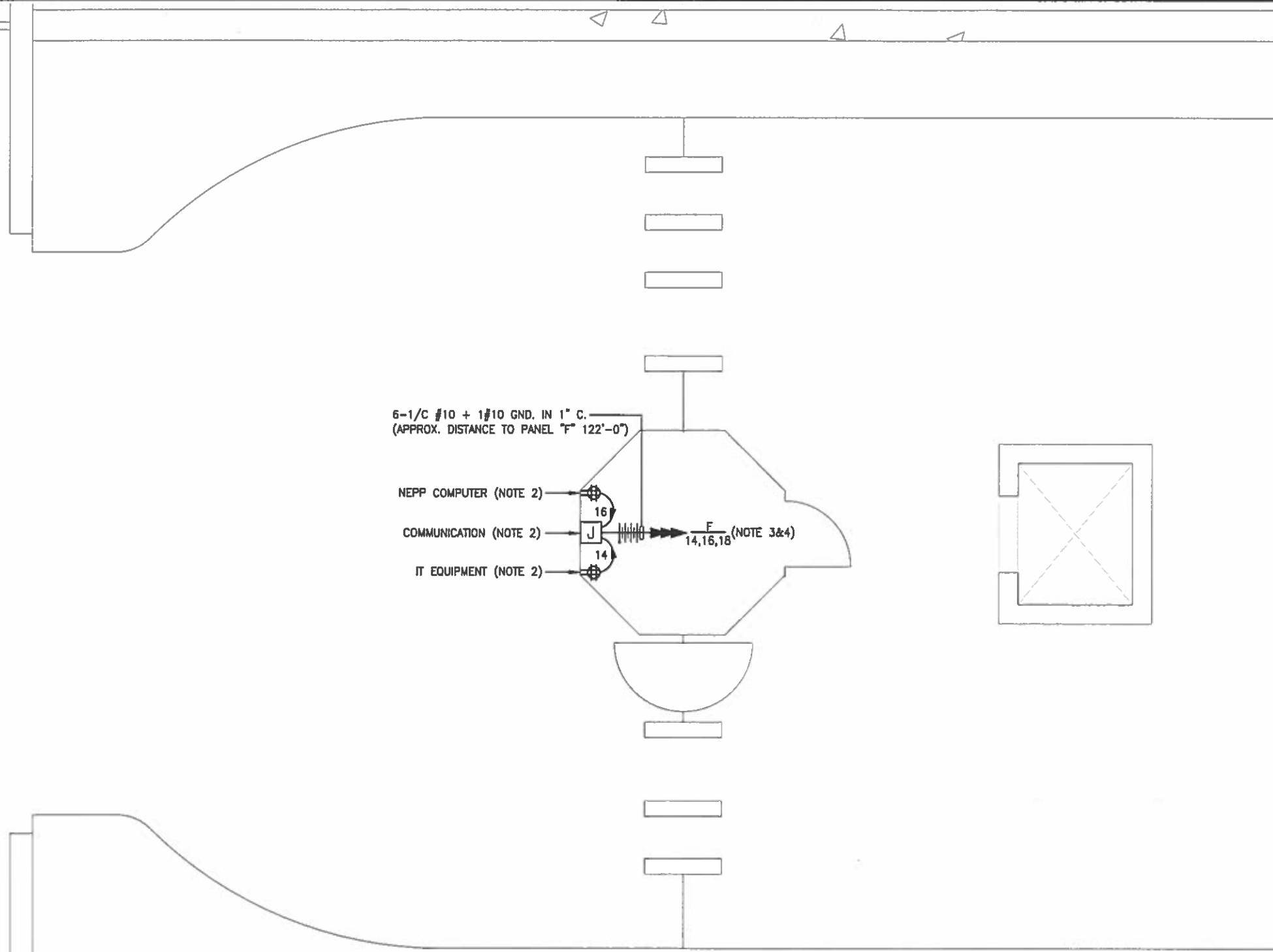
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
 DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
 OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ SUBMITTED _____
PROJECT MANAGER

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

SCALE: NOT TO SCALE
 DRAWING NO: 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 #16 & #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	DATE	REFERENCE DRAWINGS		REVISIONS	
			NUMBER	DESCRIPTION	DATE	DESCRIPTION
DESIGNED	C. NGO	07-14				
DATE		07-14				
DRAWN	C. NGO	07-14				
DATE		07-14				
CHECKED	B. IDLBI	07-14				
DATE		07-14				
APPROVED	N/A					
DATE						

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ SUBMITTED _____
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
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						
LOAD DESCRIPTION	CKT BKRS			CKT. NO.	POLE	CKT. BKRS			LOAD DESCRIPTION	
	KVA	AMP	POLE			NO.	POLE	AMP		KVA
EXISTING VENDOR	0.8	20	1	1	A - -	2	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	3	- B -	4	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	5	- - C	6	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	7	A - -	8	1	20	0.8	EXISTING VENDOR
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 <u>C. NGO</u>	07-14 DATE	REFERENCE DRAWINGS		REVISIONS	
DRAWN <u>C. NGO</u>	07-14 DATE	NUMBER	DESCRIPTION	DATE	BY
CHECKED <u>B. IDLBI</u>	07-14 DATE				
APPROVED <u>N/A</u>	DATE				

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

A Gannett Fleming/Parsons
JOINT VENTURE

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

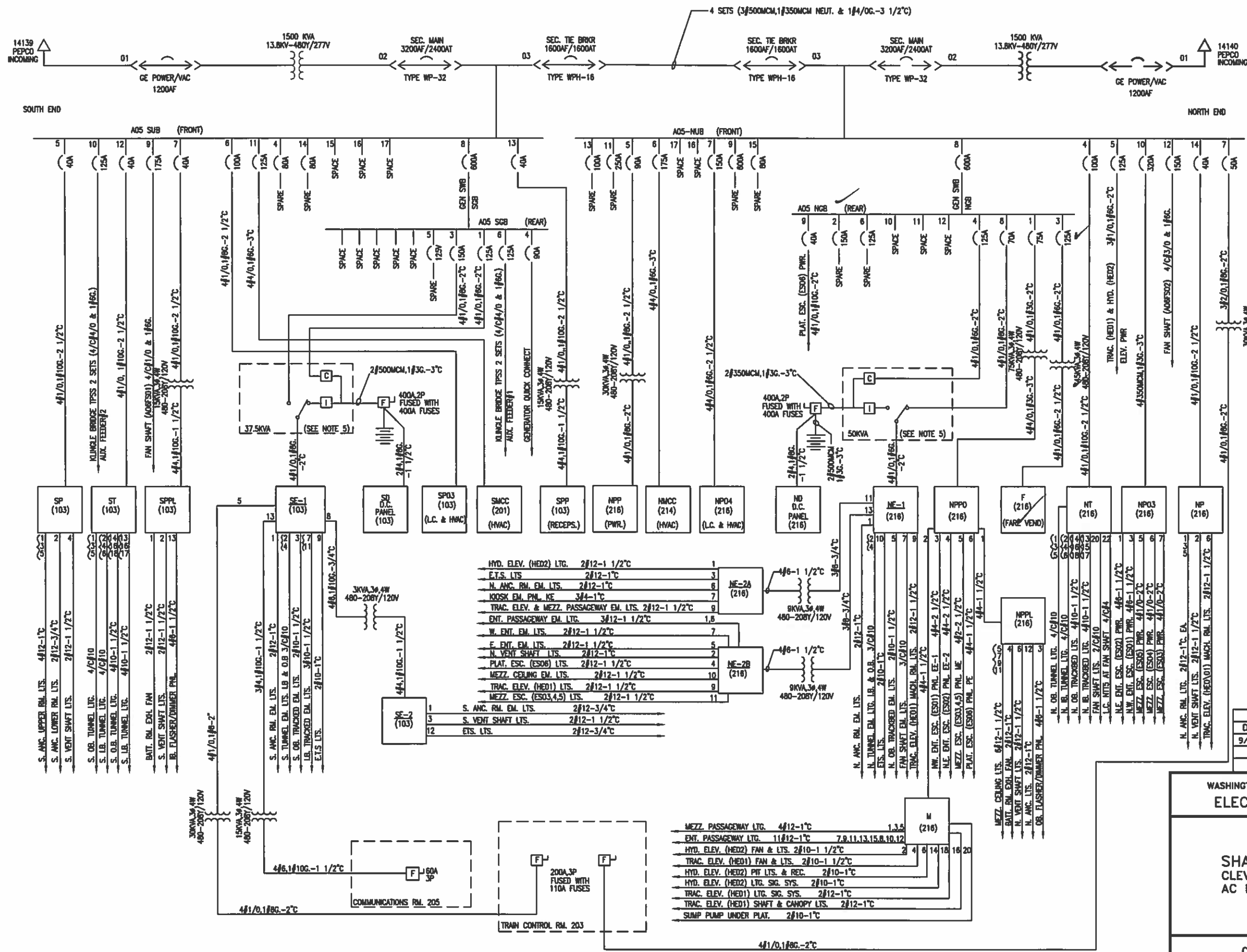
REFERENCE DRAWINGS	
NUMBER	DESCRIPTION

REVISIONS		
NUMBER	DATE	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 METRO RAIL STATIONS
CLEVELAND PARK
PANELBOARD IMAGE
SCALE
NOT TO SCALE
DRAWING NO.
A05-E-301



- NOTES:**
- PANEL DESIGNATION
 - PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY
 - ROOM LOCATION
 - (CIRCUIT NUMBER)
 - 3-2.1-6 2" CONDUIT SIZE
 - AWG. GROUND WIRE
 - AWG. OR MCM CIRCUIT WIRES
 - CIRCUIT BREAKERS
 - DRAW OUT <<< >>> 1600A/1200A
 - MOLDED CASE 60A
 - TRIP SETTING
 - TRIP SETTING
 - FRAME SIZE
 - 4/C-4/0
 - INDICATES MULTICONDUCTOR CABLE WITH 4 CONDUCTOR AND SIZE OF EACH 4/0
 - RATING AS SHOWN FOR UNINTERRUPTIBLE POWER SUPPLY CONSISTING OF RECTIFIER/CHARGER INVERTER, POWER TRANSFER SWITCH ASSOCIATED BATTERIES AND PANELBOARD.
 - SWITCHGEAR MANUFACTURER: GENERAL ELECTRIC CORP.
 - UPS MANUFACTURER: IPM

REVISIONS		
DATE	BY	DESCRIPTION
9/8/06	R/JH	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.	32
SCALE	MM-A-E15	

DRAWN: [blank] DATE: [blank] APPROVED: [blank] DATE: [blank]

ELECTRICAL SPECIFICATIONS

- ALL WORK, MATERIAL AND EQUIPMENT SHALL COMPLY WITH THE LATEST NATIONAL ELECTRICAL CODE BEING USED BY THE LOCAL JURISDICTION AND SHALL COMPLY WITH ALL LOCAL CODES AND ORDINANCES.
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- ALL MATERIALS AND EQUIPMENT SHALL BEAR U.L. LISTING.
- MAINTAIN GROUNDING CONTINUITY TO ALL DEVICES AND EQUIPMENT IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
- WORK NOT SPECIFICALLY SPECIFIED OR INDICATED SHALL CONFORM WITH SPECIFICATIONS.
- ALL CONDUITS SHALL BE RUN CONCEALED IN UNDER FLOOR DUCT.
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- THE CONTRACTOR SHALL VISIT THE SITE AND EXAMINE THE CONDITION OF THE PREMISES AND THE CHARACTER AND EXTENT OF WORK REQUIRED PRIOR TO SUBMISSION OF BIDS.
- OBTAIN ALL PERMITS AND PAY ALL FEES NECESSARY FOR INSPECTIONS, TESTS & OTHER SERVICES REQUIRED FOR THE COMPLETION OF THIS WORK.
- ALL WORK SHALL BE DONE AT SUCH TIMES AND IN SUCH A MANNER THAT WILL LEAST INTERFERE WITH THE MAINTENANCE AND OPERATION OF ALL RELATED OR AFFECTED SYSTEMS. COORDINATE ALL POWER OUTAGES WITH WMATA PROJECT MANAGER.
- IT IS THE INTENT OF THESE DRAWINGS AND OTHER RELATED DOCUMENTS TO PRODUCE A COMPLETE AND FUNCTIONING ELECTRICAL SYSTEM. PROVIDE ALL LABOR, MATERIAL AND OTHER SERVICES NECESSARY TO ACHIEVE THIS PRODUCT. NOTIFY THE ENGINEER OF ANY DISCREPANCIES IN THE PLANS & SPECIFICATIONS THAT WILL AFFECT THE WORK, PRIOR TO SUBMISSION OF THE BID PRICE.
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- EXISTING SWITCHBOARDS, PANELBOARDS AND EQUIPMENT SHOWN IS BASED ON RECORD DRAWINGS AND CASUAL FIELD SURVEY. CONTRACTOR SHALL VERIFY ALL ELECTRICAL EQUIPMENT IN FIELD.

ABBREVIATIONS

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

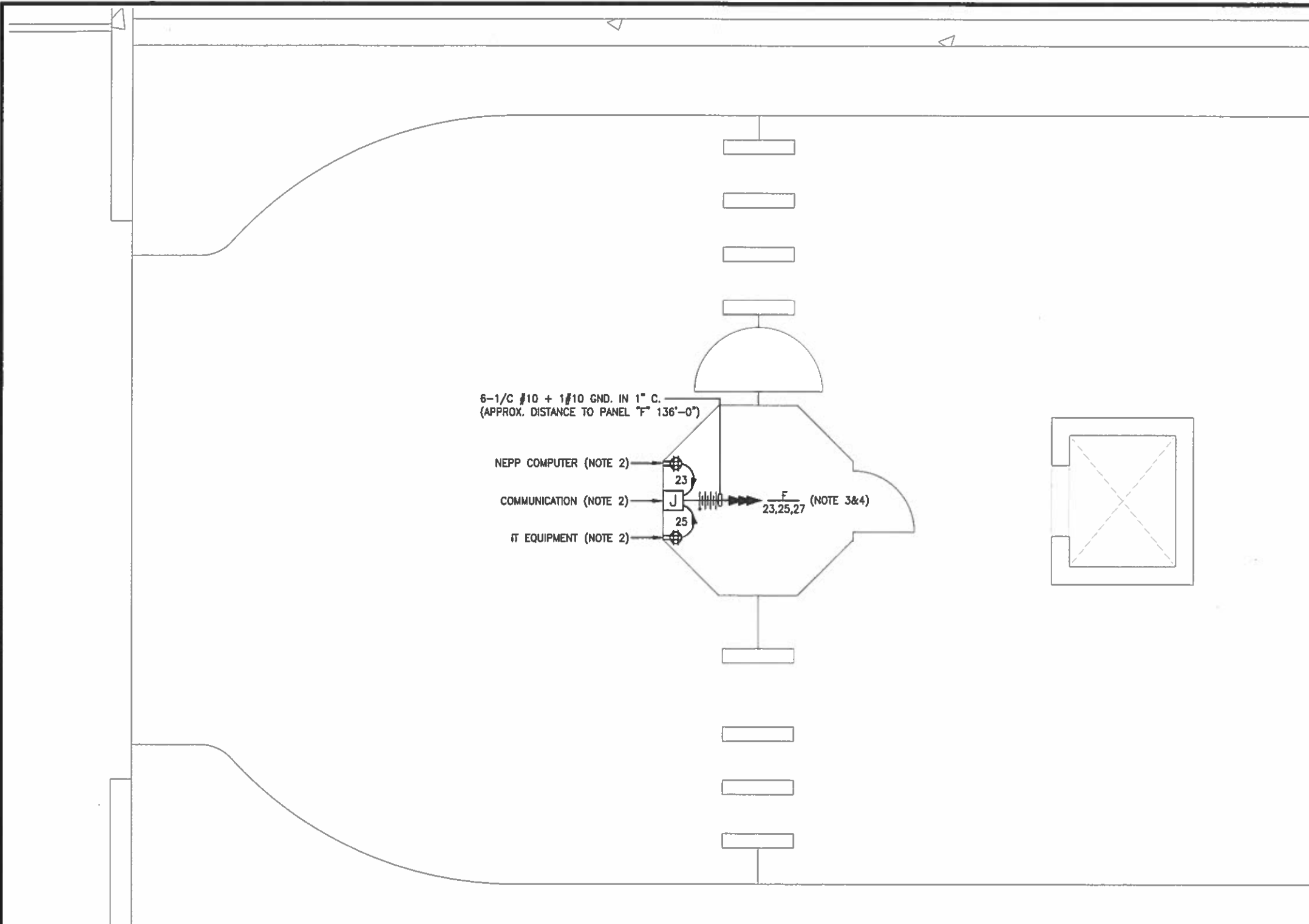
DRAWING INDEX

A06-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
A06-E-101	VAN NESS - MEZZANINE KIOSK - POWER
A06-E-102	VAN NESS - PANEL SCHEDULE
A06-E-301	VAN NESS - PANELBOARD IMAGE
MM-A-E17	VAN NESS - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

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

DESIGNED C. NGO 07-14 DRAWN C. NGO 07-14 CHECKED B. IDLBI 07-14 APPROVED N/A	REFERENCE DRAWINGS <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>NUMBER</th><th>DESCRIPTION</th></tr> </thead> <tbody> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </tbody> </table>	NUMBER	DESCRIPTION											REVISIONS <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>DATE</th><th>BY</th><th>DESCRIPTION</th></tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	DATE	BY	DESCRIPTION																WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM APPROVED	A Gannett Fleming/Parsons JOINT VENTURE SUBMITTED _____ PROJECT MANAGER	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. A06-E-001
NUMBER	DESCRIPTION																																		
DATE	BY	DESCRIPTION																																	



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.

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. IDLBI 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 [Signature] 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			

LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	POLE	AMP	KVA	LOAD DESCRIPTION
		AMP	POLE	NO.					
EXISTING VENDOR	0.8	20	1	1	A - -	2	1	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	3	- B -	4	1	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	5	- - C	6	1	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	7	A - -	8	1	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	9	- B -	10	1	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	11	- - C	12	1	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	13	A - -	14	1	0.8	EXISTING VENDOR
SPARE	0.0	20	1	15	- B -	16	1	0.0	SPARE
SPARE	0.0	20	1	17	- - C	18	1	0.0	SPARE
EXISTING VENDOR	0.8	20	1	19	A - -	20	3	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	0.8	EXISTING VENDOR
FUTURE AFC FARE GATE	0.0	20	1	27	- B -	28	1	0.0	SPARE
EXISTING VENDOR	0.8	20	1	29	- - C	30	1	0.0	SPARE
SPARE	0.0	20	1	31	A - -	32	1	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	33	- B -	34	1	0.8	EXISTING VENDOR
SPARE	0.0	20	1	35	- - C	36	1	0.0	SPARE
SPARE	0.0	40	3	37	A - -	38	1	0.0	SPARE
SPARE	0.0	-	-	39	- B -	40	1	0.0	SPARE
SPARE	0.0	-	-	41	- - C	42	1	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 SWBD 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	DATE	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	07-14					
CHECKED	B. IDLBI	07-14					
APPROVED	N/A						

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ SUBMITTED _____
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS

VAN NESS
PANEL SCHEDULE

SCALE: NOT TO SCALE

DRAWING NO. A06-E-102



EXISTING PANEL "F"



EXISTING PANEL "F"



EXISTING PANEL "F"

CONTRACT NO.
14-FQ10060-CENI-24

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

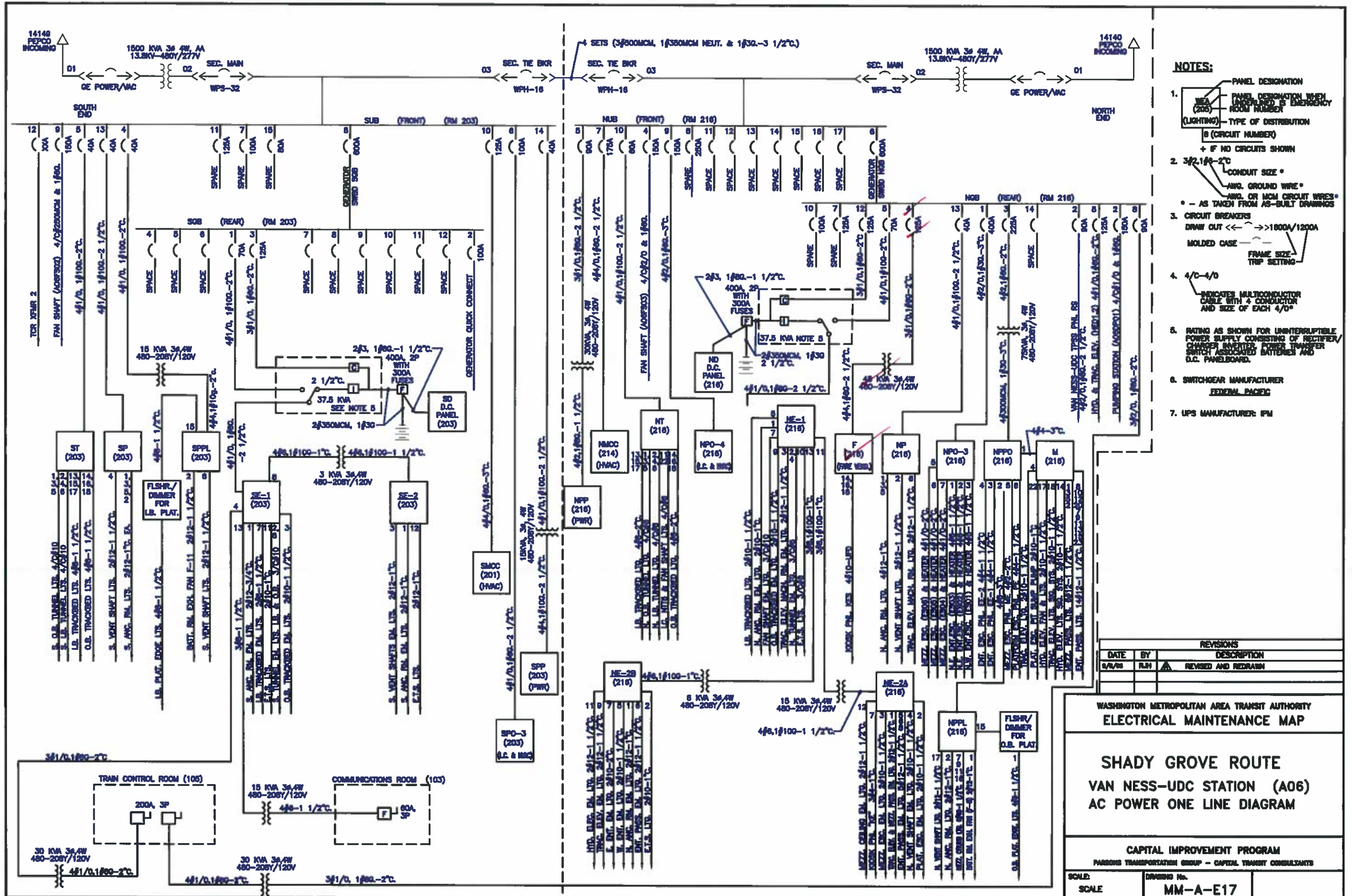
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
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APPROVED _____ SUBMITTED _____
 PROJECT MANAGER

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

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



- NOTES:**
- PANEL DESIGNATION
 - PANEL DESIGNATION WHEN UNDER LOAD IS EMERGENCY
 - ROOM NUMBER
 - (LIGHTING) - TYPE OF DISTRIBUTION
 - B (CIRCUIT NUMBER)
 - + IF NO CIRCUITS SHOWN
 - 3/2-1/2-2/C
 - CONDUIT SIZE *
 - ANG. GROUND WIRE *
 - ANG. OR MCM CIRCUIT WIRE*
 - * - AS TAKEN FROM AS-BUILT DRAWINGS
 - CIRCUIT BREAKERS
 - DRAW OUT <<< >>> 1800A/1200A
 - MOLDED CASE
 - FRAME SIZE
 - TRIP SETTING
 - 4/C-4/0
 - INDICATES MULTICONDUCTOR CABLE WITH 4 CONDUCTOR AND SIZE OF EACH 4/0"
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 - UPS MANUFACTURER: IPM

REVISIONS		
DATE	BY	DESCRIPTION
6/2/96	RLH	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: _____ DRAWING No. **MM-A-E17**

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

DRAWING INDEX

A07-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
A07-E-101	TENLEYTOWN - MEZZANINE KIOSK - POWER
A07-E-102	TENLEYTOWN - PANEL SCHEDULE
A07-E-301	TENLEYTOWN - PANELBOARD IMAGE
MM-A-E19	TENLEYTOWN - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

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

CONTRACT NO.
14-FQ10060-CENI-24

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES

OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED

SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS

ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST

SCALE: NOT TO SCALE

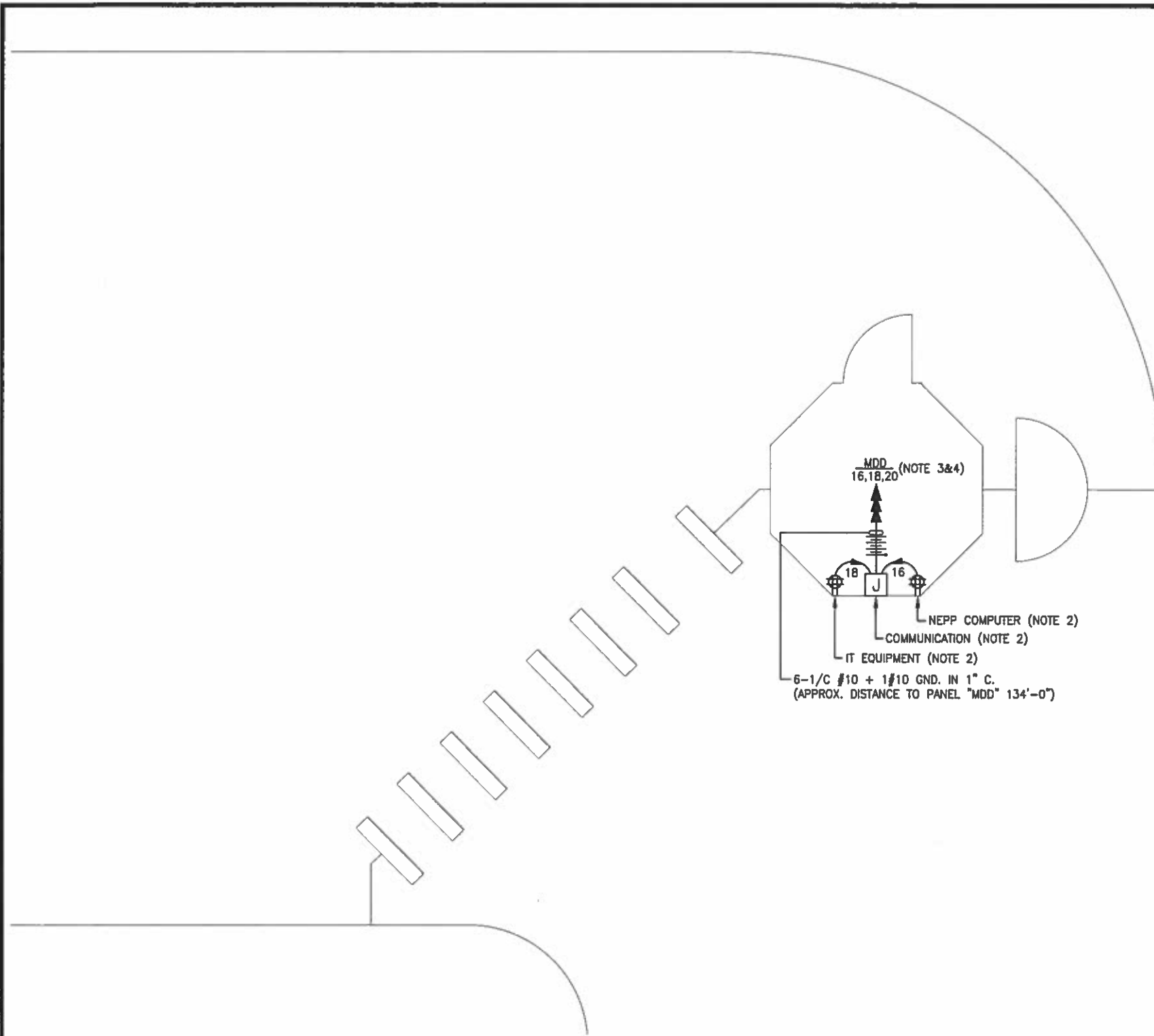
DRAWING NO. A07-E-001

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 #16 #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
DRAWN C. NGO 07-14
DATE
CHECKED B. IDILBI 07-14
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APPROVED N/A _____
DATE

REFERENCE DRAWINGS	
NUMBER	DESCRIPTION

REVISIONS		
DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

GFP A Gannett Fleming/Parsons
JOINT VENTURE

APPROVED _____
SUBMITTED _____
PROJECT MANAGER

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

SCALE AS SHOWN
DRAWING NO. A07-E-101

EXISTING PANEL "MDD"											
AMPERES: 225			VOLTS: 120/208			MOUNTING: SURFACE					
MANS: 200AMCB			PHASE: 3			LOCATION: ROOM C206 MECH. EQUIPMENT					
RATING: 10K A/C			WIRE: 4			SECTION: 1 OF 1					
LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	POLE	CKT. NO.	CKT BKRS			LOAD DESCRIPTION
		AMP	POLE	NO.				AMP	KVA		
EXISTING VENDOR	0.8	20	1	1	A - -	2	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	3	- B -	4	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	5	- - C	6	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	7	A - -	8	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	9	- B -	10	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	11	- - C	12	1	20	0.8	EXISTING VENDOR	
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	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DATE							
DRAWN	C. NGO	07-14					
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WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ SUBMITTED _____
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
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		DATE		REFERENCE DRAWINGS		REVISIONS	
NUMBER	DESCRIPTION	DATE	BY	NUMBER	DESCRIPTION	DATE	BY
C. NGO	07-14						
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B. IDLBI	07-14						
M/A							

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



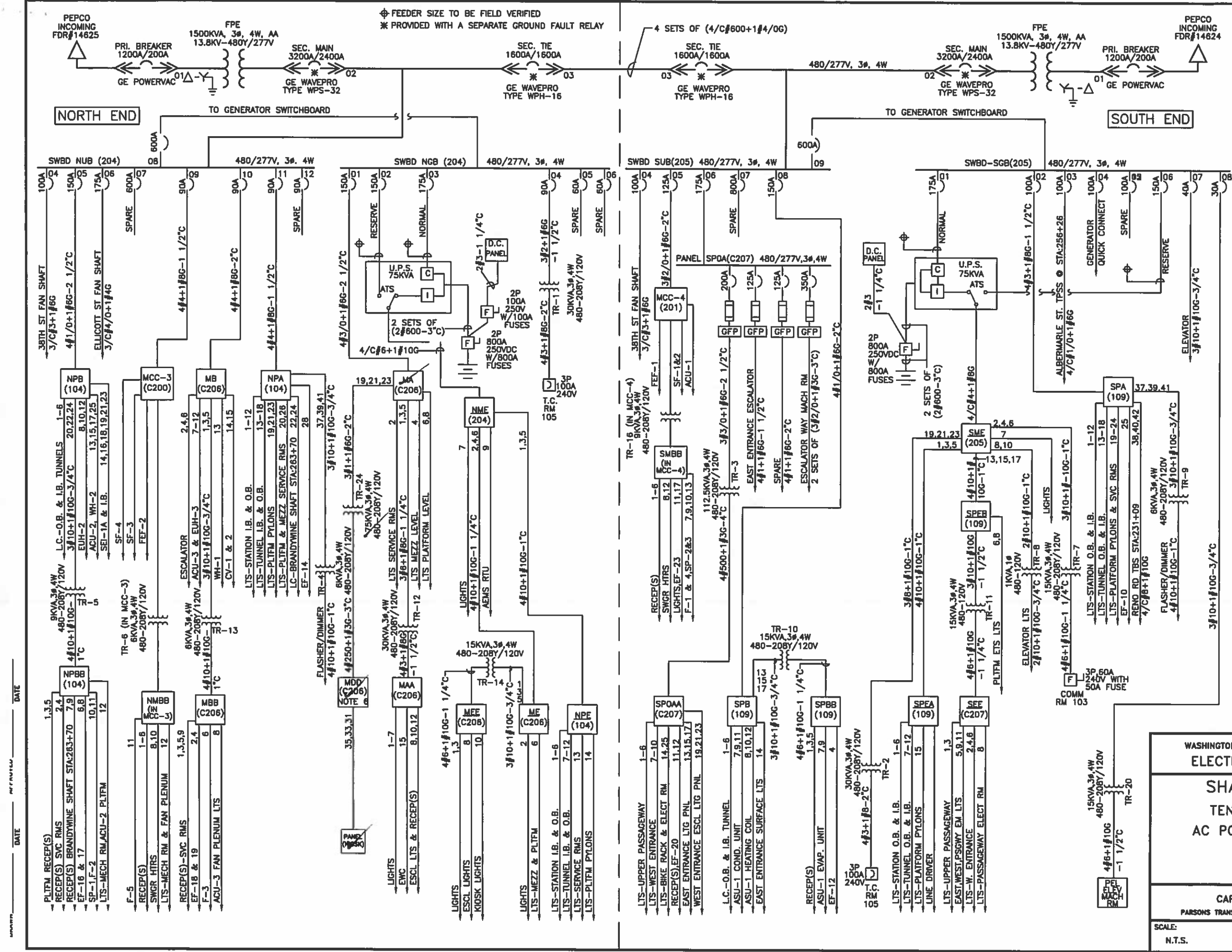
APPROVED _____

SUBMITTED _____
PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
A07-E-301



- NOTES:**
- PANEL DESIGNATION
 - PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY
 - ROOM NUMBER
 - CONDUIT SIZE
 - EQUIPMENT GROUNDING
 - AWG OR KCMIL CIRCUIT WIRES
 - CIRCUIT BREAKERS
 - DRAW OUT \leftarrow \rightarrow 1500A/1200A
 - MOLDED CASE
 - FRAME SIZE
 - CONTINUOUS CURRENT SETTING
 - INDICATES MULTICONDUCTOR CABLE WITH 4 CONDUCTOR AND SIZE OF EACH 4/0
 - RATING AS SHOWN FOR UNINTERRUPTIBLE POWER SUPPLY CONSISTING OF RECTIFIER/CHARGER INVERTER, POWER TRANSFER SWITCH ASSOCIATED BATTERIES AND PANELBOARD.
 - PANEL FOR FARE COLLECTION EQUIPMENT.
 - ATS. -AUTOMATIC TRANSFER SWITCH
 - C -CHARGER
 - I -INVERTER
 - UPS MANUFACTURER: INTERNATIONAL POWER MACHINE
 - SWITCHGEAR MANUFACTURER: GE INDUSTRIAL SYSTEMS
 - MAIN SECONDARY & TIE POWER CIRCUIT BREAKERS ARE GE TYPE WAVEPRO WITH MICROVERSATIP (LSI) ELECTRICALLY OPERATED & EQUIPPED WITH SEPARATE GROUND FAULT RELAYS.
 - MOLDED CASE BREAKER NAME PLATE: STA. BREAKER POSITION (NORTH UTILITY BOARD #04) FEEDER NAME
 - RATING PLUG
 - SENSOR SIZE
 - TYPE-FRAME SIZE

REVISIONS		
DATE	BY	DESCRIPTION
03-13-07	TN	NEW REPLACED SWGRS & SWBDS

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

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

ABBREVIATIONS

A, AMP	AMPERES	NEC	NATIONAL ELECTRIC CODE
AC	ALTERNATING CURRENT	P	POLE
AF	AMPERE FRAME	PH	PHASE
AFC	AUTOMATED FARE COLLECTION SYSTEM	PNL	PANELBOARD
AFF	ABOVE FINISHED FLOOR	PRI	PRIMARY
AIC	AMPERE INTERRUPTING CAPACITY	PROP	PROPOSED
AT	AMPERE TRIP	RGS	RIGID GALVANIZED STEEL
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KVA	KILOVOLT AMPERE		
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MEZZ	MEZZANINE		
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MLO	MAIN LUGS ONLY		

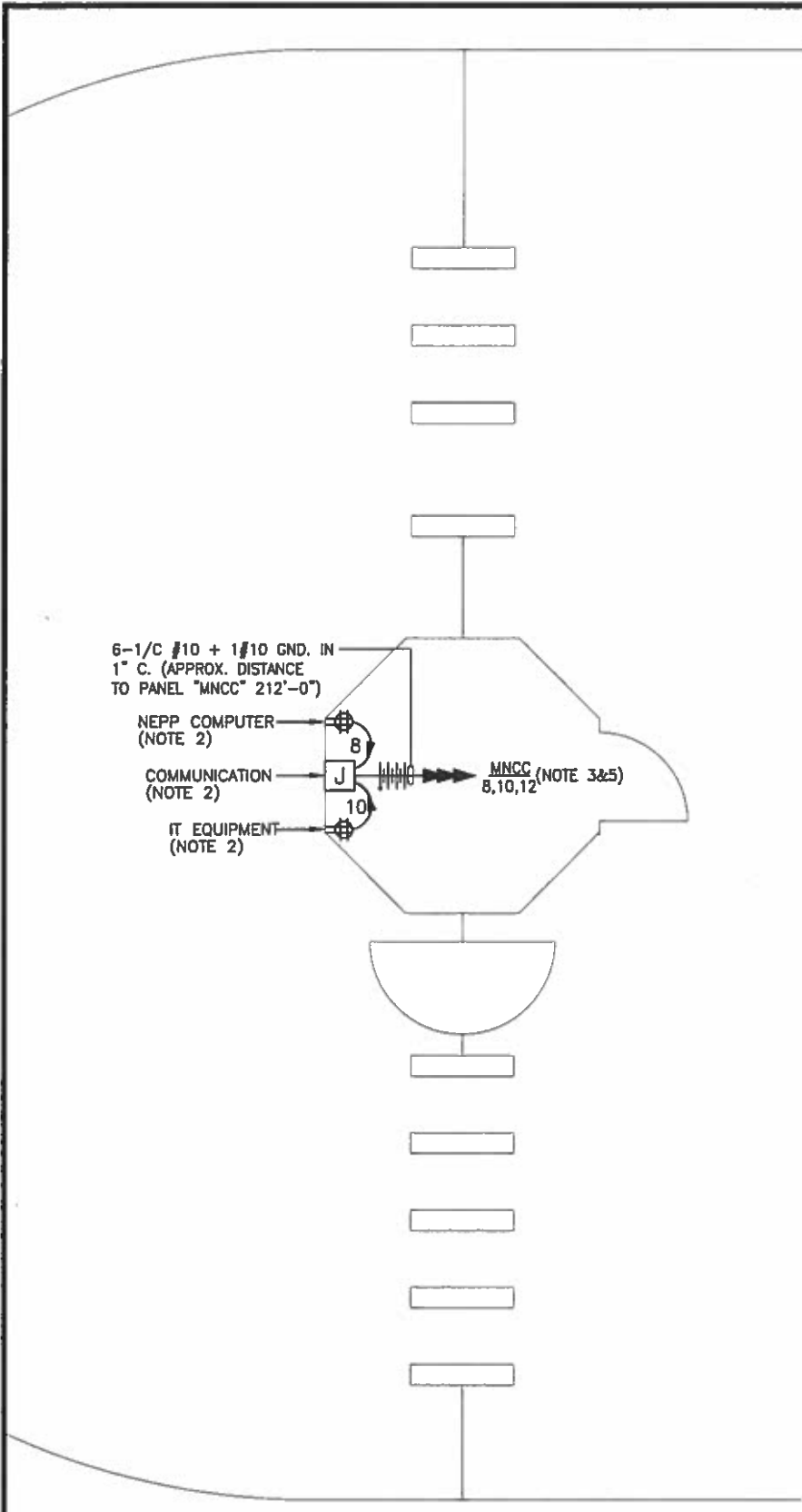
DRAWING INDEX

A08-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
A08-E-101	FRIENDSHIP HEIGHTS NORTH & SOUTH - MEZZANINE KIOSK - POWER
A08-E-102	FRIENDSHIP HEIGHTS NORTH & SOUTH - PANEL SCHEDULES
A08-E-301	FRIENDSHIP HEIGHTS NORTH & SOUTH - PANELBOARD IMAGE
A08-E-302	FRIENDSHIP HEIGHTS NORTH & SOUTH - PANELBOARD IMAGE
MM-A-E21	FRIENDSHIP HEIGHTS - AC POWER ONE LINE DIAGRAM
MM-A-E22	FRIENDSHIP HEIGHTS - AC POWER ONE LINE DIAGRAM

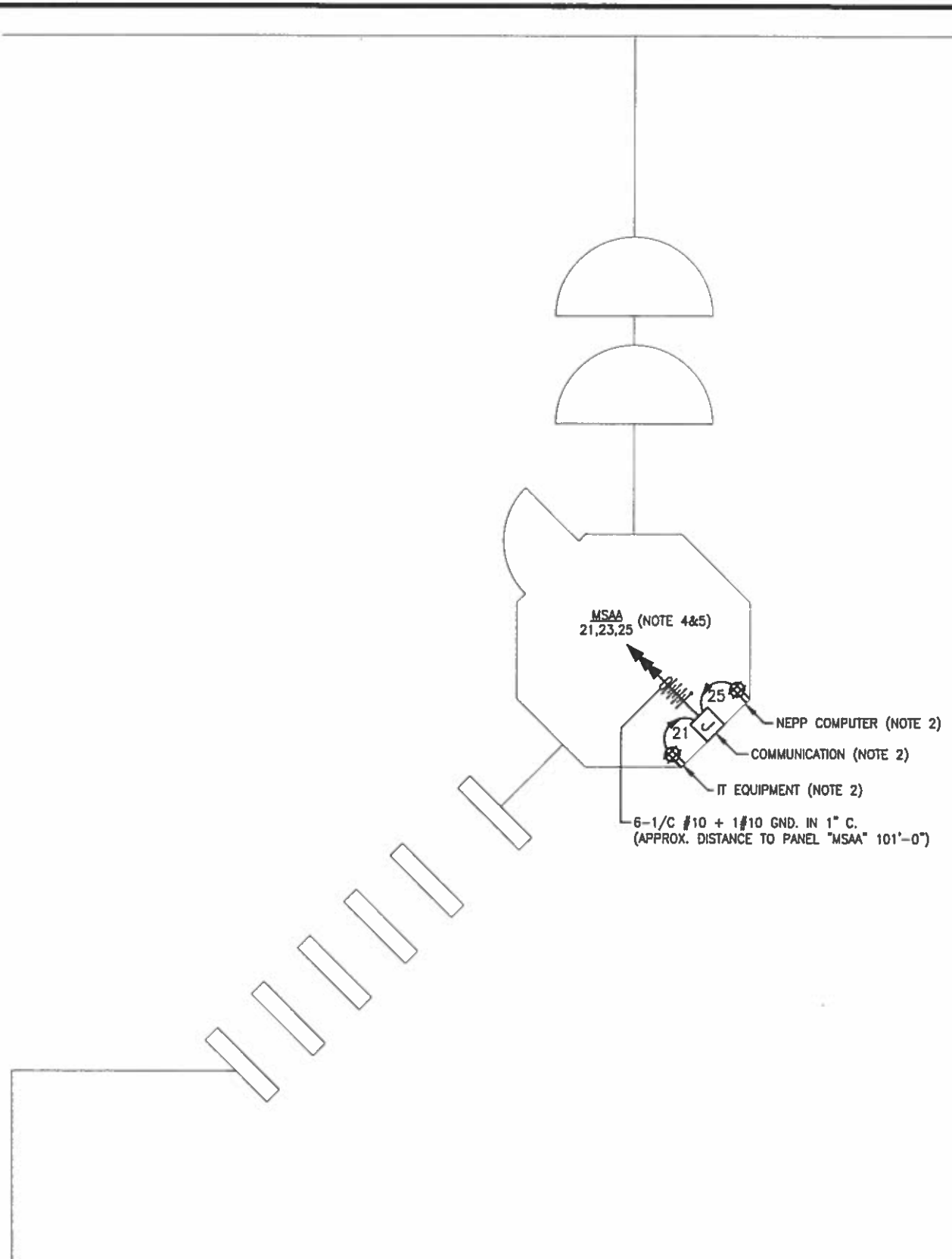
ELECTRICAL SYMBOL LIST

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	CONDUIT - CONCEALED IN UNDER FLOOR DUCT U.O.N.
	HOMERUN TO PANEL, NUMBER OF ARROWHEADS INDICATES NUMBER OF CIRCUITS. CROSS HATCHING INDICATES NUMBER OF CONDUCTORS, NUMBER INDICATES SIZE OF CONDUCTOR AND SIZE OF CONDUIT
	↓ - INDICATES GROUNDING WIRE TO GROUNDING BUS AT THE PANELBOARD
	EE 1,3 - INDICATES CIRCUIT HOME RUN PANELBOARD AND CIRCUIT NUMBER IDENTIFICATION

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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.

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

REFERENCE DRAWINGS		REVISIONS	
NUMBER	DESCRIPTION	DATE	DESCRIPTION

REFERENCE DRAWINGS		REVISIONS	
NUMBER	DESCRIPTION	DATE	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ SUBMITTED _____
PROJECT MANAGER

CONTRACT NO. 14-FQ10060-CENI-24

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: 300AMCB		PHASE: 3		LOCATION: ELEC. EQUIPMENT ROOM 202						
RATING: 10KAC		WIRE: 4		SECTION: 1 OF 1						
LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	POLE	AMP	KVA	LOAD DESCRIPTION	
		NO.	NO.	NO.						
EXISTING VENDOR	0.8	20	1	1	A - -	2	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	3	- B -	4	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	5	- - C	6	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	7	A - -	8	1	20	0.8	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: 300AMCB		PHASE: 3		LOCATION: AC SWBD ROOM 201						
RATING: 10KAC		WIRE: 4		SECTION: 1 OF 1						
LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	POLE	AMP	KVA	LOAD DESCRIPTION	
		NO.	NO.	NO.						
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	REFERENCE DRAWINGS		REVISIONS	
			NUMBER	DESCRIPTION	DATE	BY
DATE						
DRAWN	C. NGO	07-14				
DATE						
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 _____

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

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



APPROVED _____

SUBMITTED _____
PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
A08-E-301



EXISTING PANEL "MSAA"



EXISTING PANEL "MSAA"



EXISTING PANEL "MSAA"

CONTRACT NO.
14-FQ10060-CENI-24

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

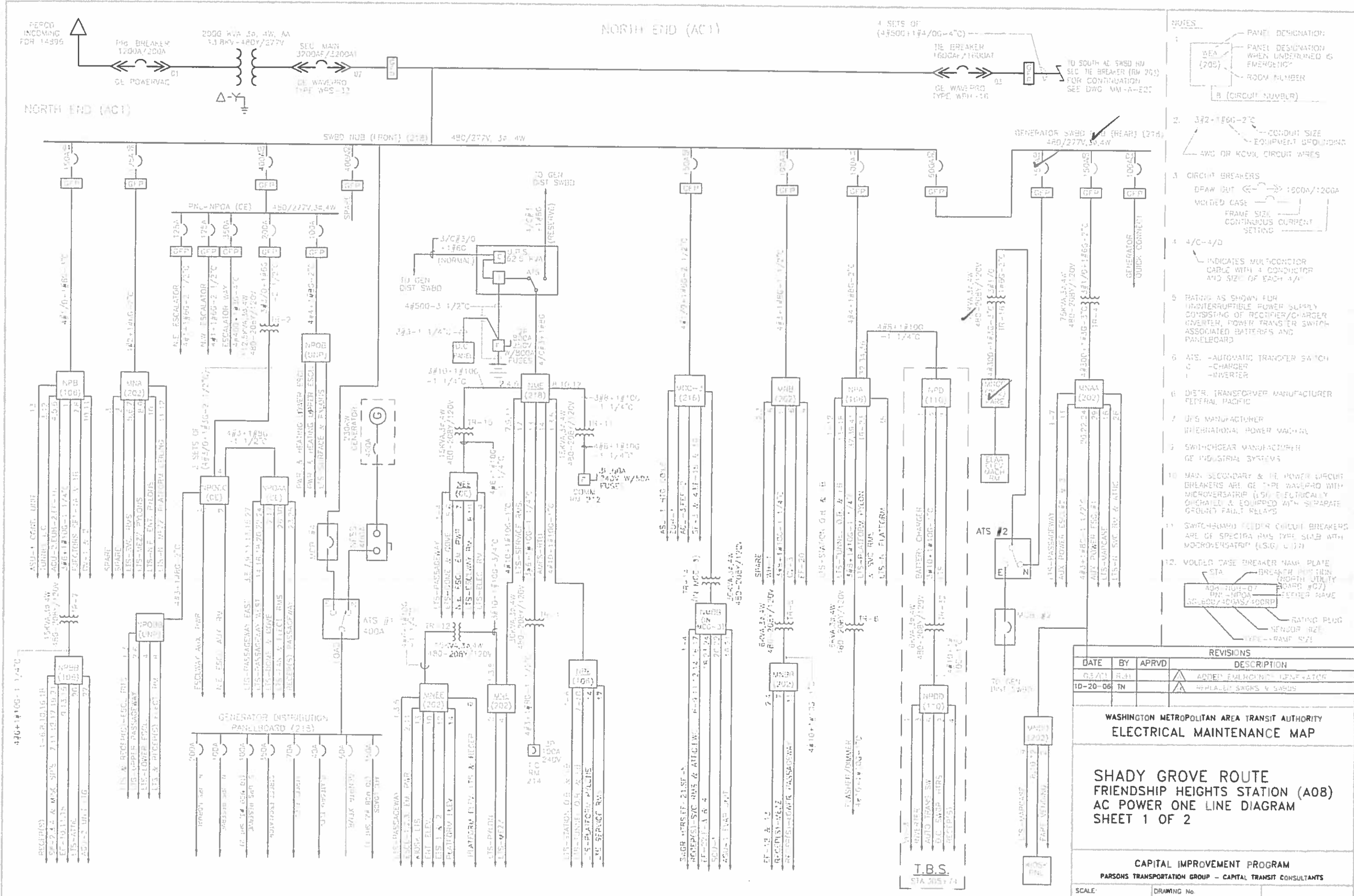
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
 DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
 OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

GFP A CORNETT FLEMING/PATRONS JOINT VENTURE

APPROVED _____ SUBMITTED _____ PROJECT MANAGER

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

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



- NOTES**
- PANEL DESIGNATION:
 3EA (205) - PANEL DESIGNATION WHEN UNDERBUILT IS EMERGENCY
 B (CIRCUIT NUMBER)
 - 3/2-1866-2" - CONDUIT SIZE
 EQUIPMENT GROUNDING:
 AWG OR KCMIL, CIRCUIT WIRES
 - CIRCUIT BREAKERS
 DPAW BUT ← → 1500A/1200A
 MOLDED CASE
 FRAME SIZE
 CONTINUOUS CURRENT
 SETTING
 - 4/C-4/D
 INDICATES MULTICONDUCTOR
 CABLE WITH 4 CONDUCTOR
 AND SIZE OF EACH 4/A
 - RATING AS SHOWN FOR
 INTERRUPTIBLE POWER SUPPLY
 CONSISTING OF RECTIFIER/CHARGER
 CONVERTER, POWER TRANSFER SWITCH,
 ASSOCIATED BATTERIES AND
 PANELBOARD
 - ATS - AUTOMATIC TRANSFER SWITCH
 C - CHARGER
 I - INVERTER
 - DISTR. TRANSFORMER MANUFACTURER
 FEDERAL PACIFIC
 - UPS MANUFACTURER
 INTERNATIONAL POWER MACHIN.
 - SWITCHGEAR MANUFACTURER
 GE INDUSTRIAL SYSTEMS
 - MAIN SECONDARY & HE POWER CIRCUIT
 BREAKERS ARE GE TYPE WAVEPRO WITH
 MICROVERSATRIP (LSIG) ELECTRICALLY
 OPERATED & EQUIPPED WITH SEPARATE
 GROUND FAULT RELAYS
 - SWITCHBOARD FEEDER CIRCUIT BREAKERS
 ARE GE SPECTRA RMS TYPE S41B WITH
 MICROVERSATRIP (LSIG) (LSI)
 - MOLDED CASE BREAKER NAME PLATE
 STA - BREAKER POSITION
 (NORTH UTILITY
 BOARD #C7)
 PNL - NPOA - FEEDER NAME
 SC-600/400AS/400RP
 RATING PLUG
 SENSOR SIZE
 TYPE - RAMP SIZE

REVISIONS			
DATE	BY	APRVD	DESCRIPTION
05/01	R-J		ADDED EMERGENCY GENERATOR
10-20-06	TN		REPLACED SAGRS & S41BS

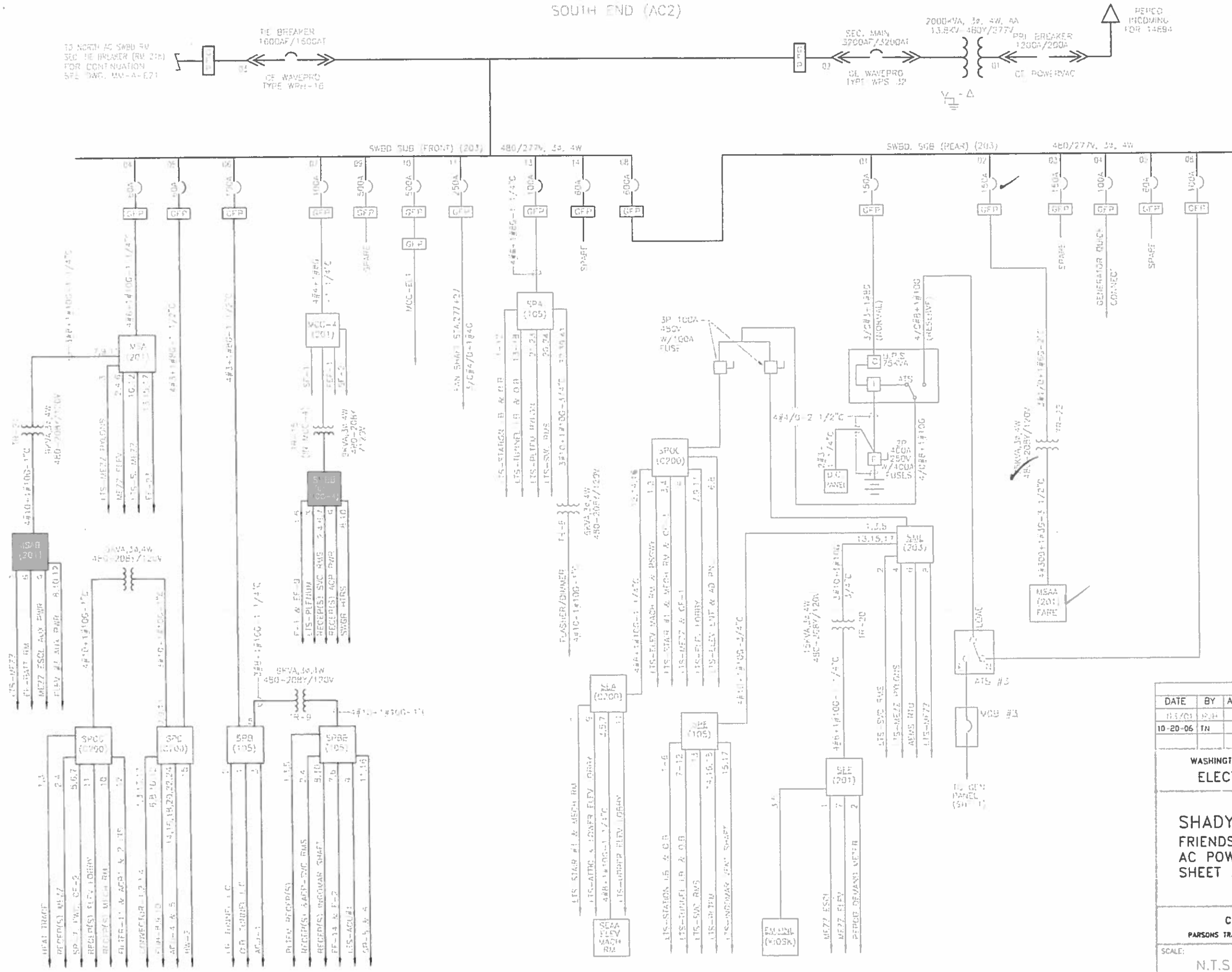
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
ELECTRICAL MAINTENANCE MAP

**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: N.T.S. DRAWING No: MM-A-E21

SOUTH END (AC2)



- NOTES
1. PANEL DESIGNATION: WEA (205) B (CIRCUIT NUMBER)
 2. 3/2-1#00-2" CONDUIT SIZE EQUIPMENT GROUNDING AWG OR NOM. CIRCUIT WIRES
 3. CIRCUIT BREAKERS: DRAW OUT ← → 100A/1200A MOLDED CASE. FRAME SIZE CONTINUOUS CURRENT SETTING
 4. 4/C-4/0 INDICATES MULTICONDUCTOR CABLE WITH 4 CONDUCTOR AND SIZE OF EACH 4/C
 5. RATING AS SHOWN FOR UNINTERRUPTIBLE POWER SUPPLY CONSISTING OF RECTIFIER/CHARGER INVERTER, POWER TRANSFER SWITCH ASSOCIATED BATTERIES AND PANEL BOARD
 6. ATS - AUTOMATIC TRANSFER SWITCH C - CHARGER I - INVERTER
 7. UPS MANUFACTURER: INTERNATIONAL POWER MACHINE
 8. SWITCHGEAR MANUFACTURER: GE INDUSTRIAL SYSTEMS
 9. MAIN SECONDARY & ITS POWER CIRCUIT BREAKERS ARE GE TYPE WAVEPRO WITH MICROVERSATIP (M) ELECTRICALLY OPERATED & EQUIPPED WITH SEPARATE GROUND FAULT RELAYS
 10. SWITCHBOARD FEEDER CIRCUIT BREAKERS ARE GE SPECTRA RMS TYPE SOLE WITH MICROVERSATIP (M) D.O.N.
 11. MOLDED CASE BREAKER NAME PLATE: STA - BREAKER POSITION (CIRCUIT UTIL. BOARD #00) FEEDER NAME RATING PLUG SENSOR SIZE TYPE - FRAME SIZE

REVISIONS			
DATE	BY	APRVD	DESCRIPTION
11/20/01	TJH		ADD EMERGENCY GENERATOR
10-20-06	TN		REPLACED SWGS & SWMS

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
ELECTRICAL MAINTENANCE MAP

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

ELECTRICAL SPECIFICATIONS

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

ABBREVIATIONS

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

DRAWING INDEX

A11-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
A11-E-101	GROSVENOR-STRATHMORE - KIOSK - POWER
A11-E-102	GROSVENOR-STRATHMORE - PANEL SCHEDULE
A11-E-301	GROSVENOR-STRATHMORE - PANELBOARD IMAGE
MM-A-E29	GROSVENOR STATION - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

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

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED		DATE		REFERENCE DRAWINGS				REVISIONS			
NUMBER	DESCRIPTION	DATE	BY	NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
C. NGO	07-14										
C. NGO	07-14										
B. EDLBI	07-14										
N/A											

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED SUBMITTED _____ PROJECT MANAGER

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

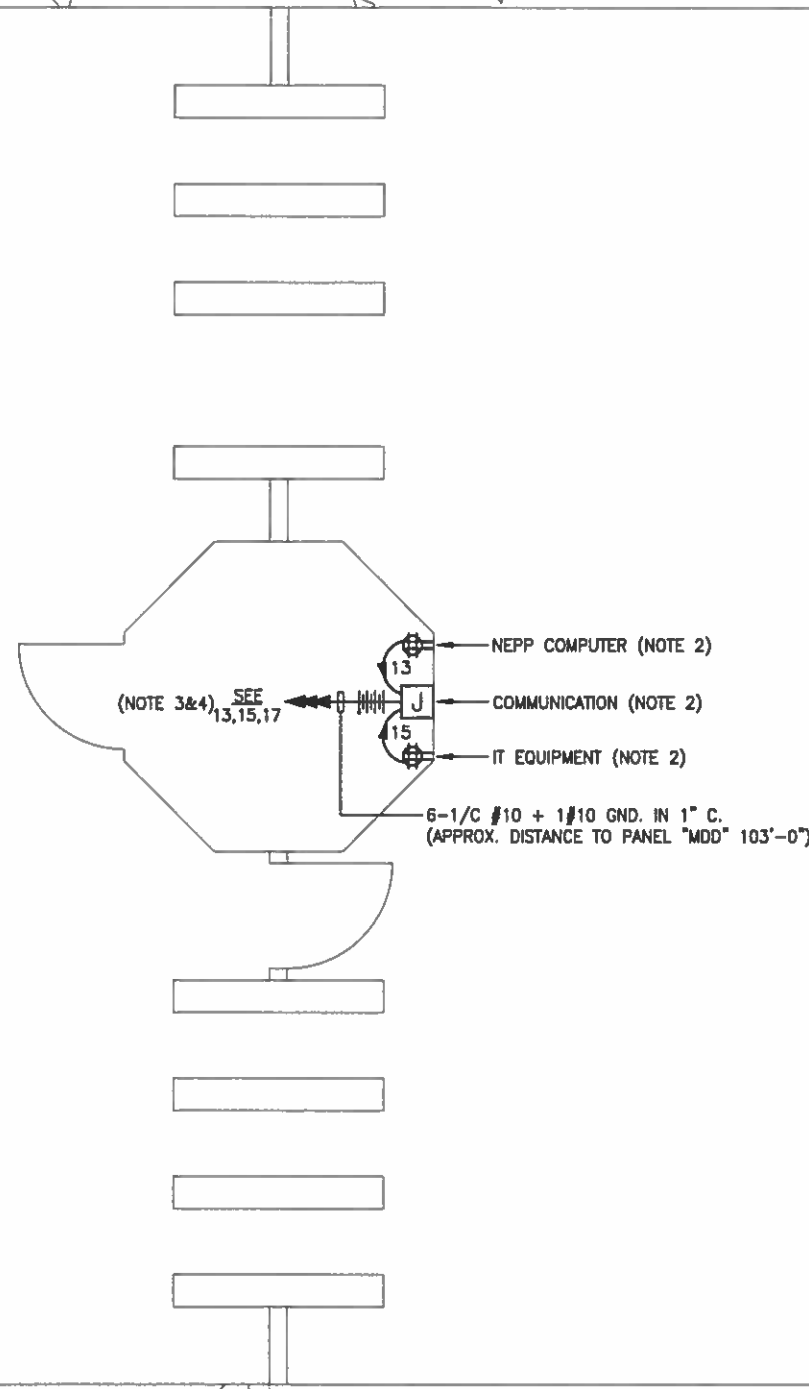
SCALE: NOT TO SCALE
DRAWING NO.: A11-E-001
50

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.



KIOSK - POWER

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

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED <u>C. NGO</u> 07-14 DATE DRAWN <u>C. NGO</u> 07-14 DATE CHECKED <u>B. IDLBI</u> 07-14 DATE APPROVED <u>N/A</u> DATE	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">REFERENCE DRAWINGS</th> <th colspan="2">REVISIONS</th> </tr> <tr> <th>NUMBER</th> <th>DESCRIPTION</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	REFERENCE DRAWINGS		REVISIONS		NUMBER	DESCRIPTION	DATE	DESCRIPTION																	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM APPROVED	A Gannett Fleming/Parsons JOINT VENTURE SUBMITTED _____ PROJECT MANAGER	NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS GROSVENOR-STRATHMORE KIOSK - POWER SCALE AS SHOWN DRAWING NO. A11-E-101
REFERENCE DRAWINGS		REVISIONS																										
NUMBER	DESCRIPTION	DATE	DESCRIPTION																									

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

LOAD DESCRIPTION	KVA	CKT BKRS			NO.	NO.	CKT BKRS			KVA	LOAD DESCRIPTION
		AMP	POLE	NO.			POLE	AMP	KVA		
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	13.0 KVA
		TOTAL DEMAND 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

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

A Gannett Fleming/Parsons
JOINT VENTURE

APPROVED _____ SUBMITTED _____ PROJECT MANAGER

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

SCALE: NOT TO SCALE

DRAWING NO.: A11-E-102

52



EXISTING PANEL "SEE"



EXISTING PANEL "SEE"



EXISTING PANEL "SEE"

CONTRACT NO.
14-FQ10060-CENI-24

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

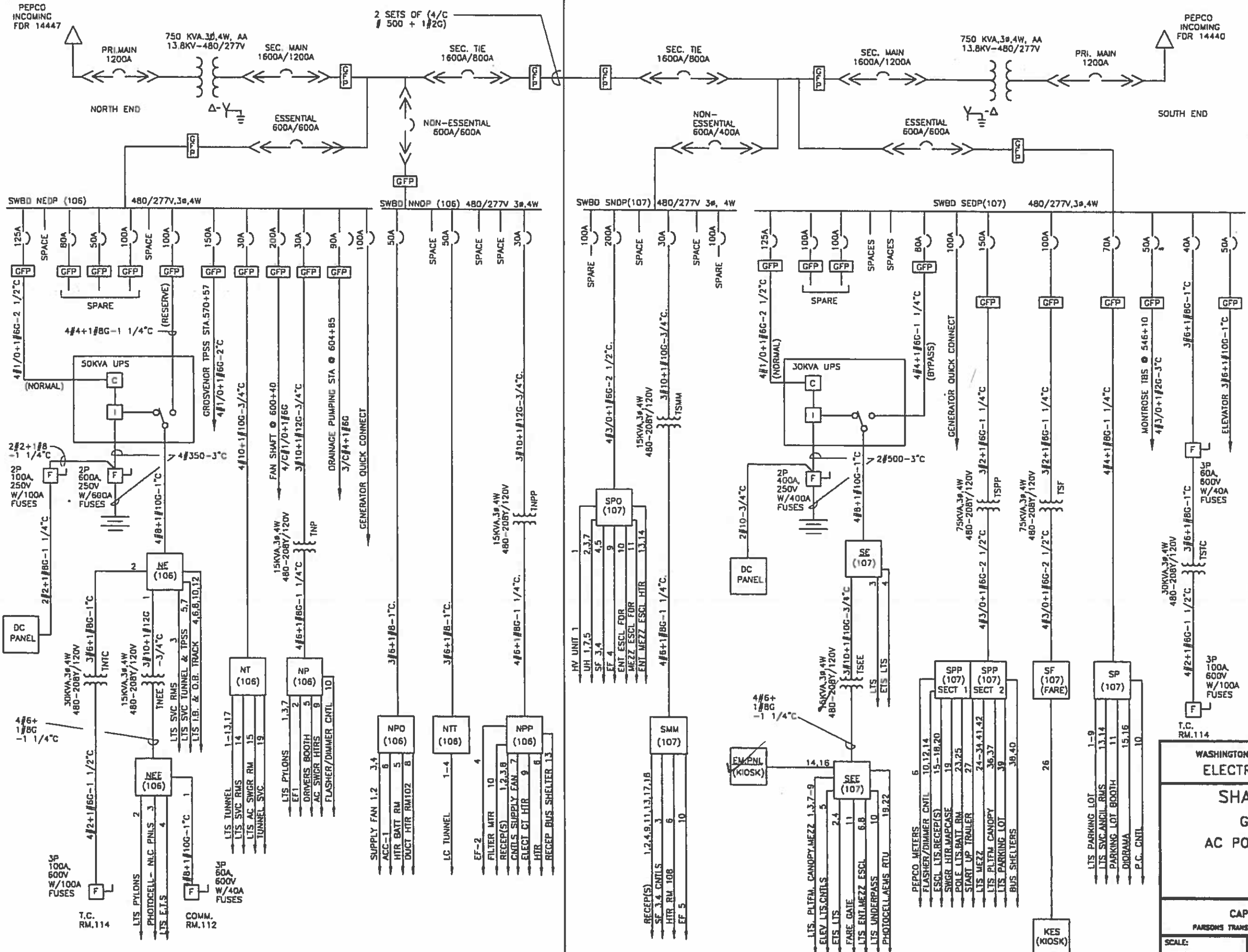
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
 DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
 OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

GFP A Carrutell Fleming/Parsons JOINT VENTURE

APPROVED _____ SUBMITTED _____ PROJECT MANAGER _____

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

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



- NOTES:
- PANEL DESIGNATION
PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY
ROOM NUMBER
8 (CIRCUIT NUMBER)
 - CONIT SIZE
AWG OR KCMIL CIRCUIT WIRES
(TAKEN FROM AS BUILT DWGS.)
 - CIRCUIT BREAKERS
DRAW OUT 1600A/1200A
FRAME SIZE CONTINUOUS CURRENT SETTING
 - SWITCHGEAR INFORMATION:
MANUFACTURER: FEDERAL PACIFIC ELEC. S.O.# 02-8472-1 & 2
 - UPS MANUFACTURER:
INTERNATIONAL POWER MACHINES
 - 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: N.T.S. DRAWING No. MM-A-E29 54

ELECTRICAL SPECIFICATIONS

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

ABBREVIATIONS

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

DRAWING INDEX

A12-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
A12-E-101	WHITE FLINT - KIOSK - POWER
A12-E-102	WHITE FLINT - PANEL SCHEDULE
A12-E-301	WHITE FLINT - PANELBOARD IMAGE
MM-A-E31	WHITE FLINT - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

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

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

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

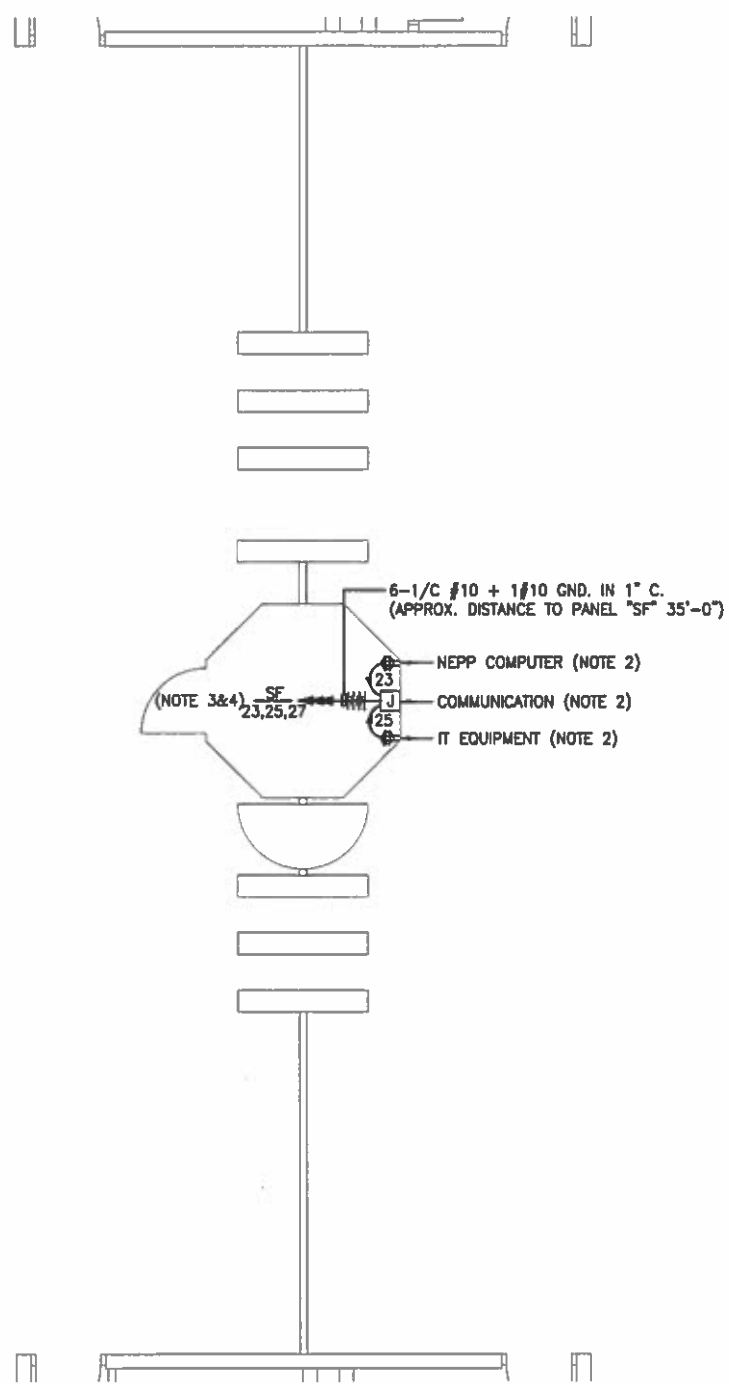
APPROVED SUBMITTED PROJECT MANAGER

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. A12-E-001

55



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-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.

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

CONTRACT NO.
14-FQ10060-CENI-24

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

APPROVED 

GFP A Gannett Fleming/Parsons JOINT VENTURE

SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
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 AC	WIRE: 4	SECTION: 1 OF 1

LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	POLE	AMP	KVA	LOAD DESCRIPTION	
		AMP	POLE	NO.						
EXISTING VENDOR	0.8	20	1	1	A - -	2	1	20	0.8	EXISTING VENDOR
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

	REFERENCE DRAWNGS		REVISIONS	
	NUMBER	DESCRIPTION	DATE	BY
DESIGNED	C. NGO	07-14		
DATE		07-14		
DRAWN	C. NGO	07-14		
DATE		07-14		
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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ SUBMITTED _____
PROJECT MANAGER

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

SCALE: NOT TO SCALE

DRAWING NO. A12-E-102

57



EXISTING PANEL "SF"



EXISTING PANEL "SF"



EXISTING PANEL "SF"

CONTRACT NO.
14-FQ10060-CENI-24

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

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

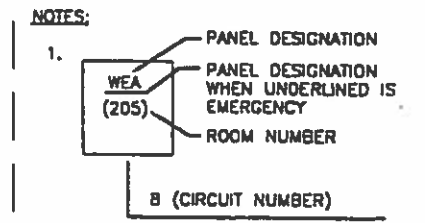
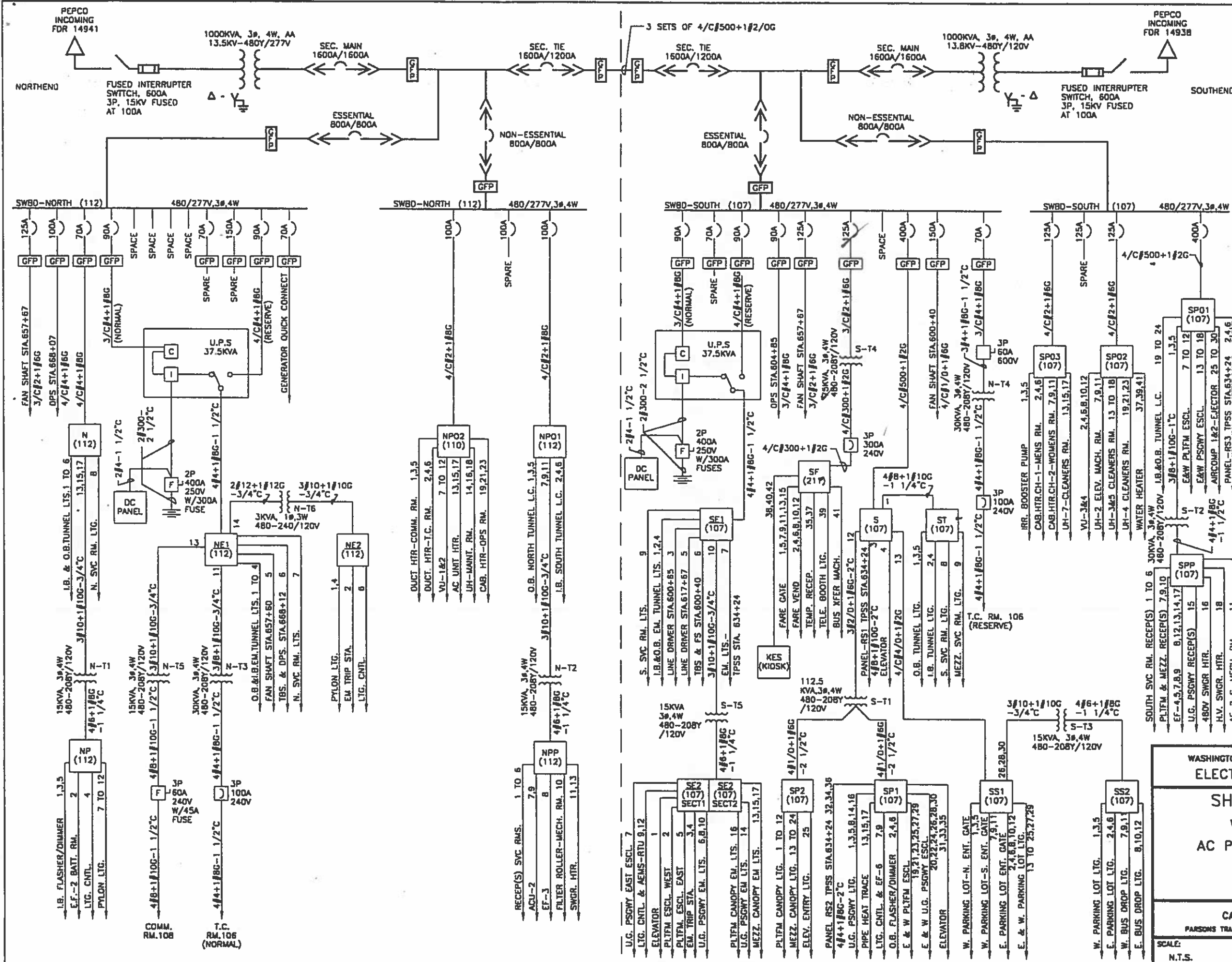
GFP A Gannett Fleming/Parsons
 JOINT VENTURE

APPROVED _____ SUBMITTED _____
 PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
A12-E-301



AWG OR KCMIL CIRCUIT WIRES

SWITCHGEAR INFORMATION
 MANUFACTURER: FEDERAL PACIFIC ELEC.
 PLANT: ATLANTA
 S.O.: 80-9-21-A1/2
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

REVISIONS

DATE	BY	DESCRIPTION

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

ELECTRICAL SPECIFICATIONS

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

ABBREVIATIONS

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

DRAWING INDEX

A13-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
A13-E-101	TWINBROOK - KIOSK - POWER
A13-E-102	TWINBROOK - PANEL SCHEDULE
A13-E-301	TWINBROOK - PANELBOARD IMAGE
MM-A-E33	TWINBROOK - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

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

CONTRACT NO.
14-FQ10060-CENI-24

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED SUBMITTED _____ PROJECT MANAGER

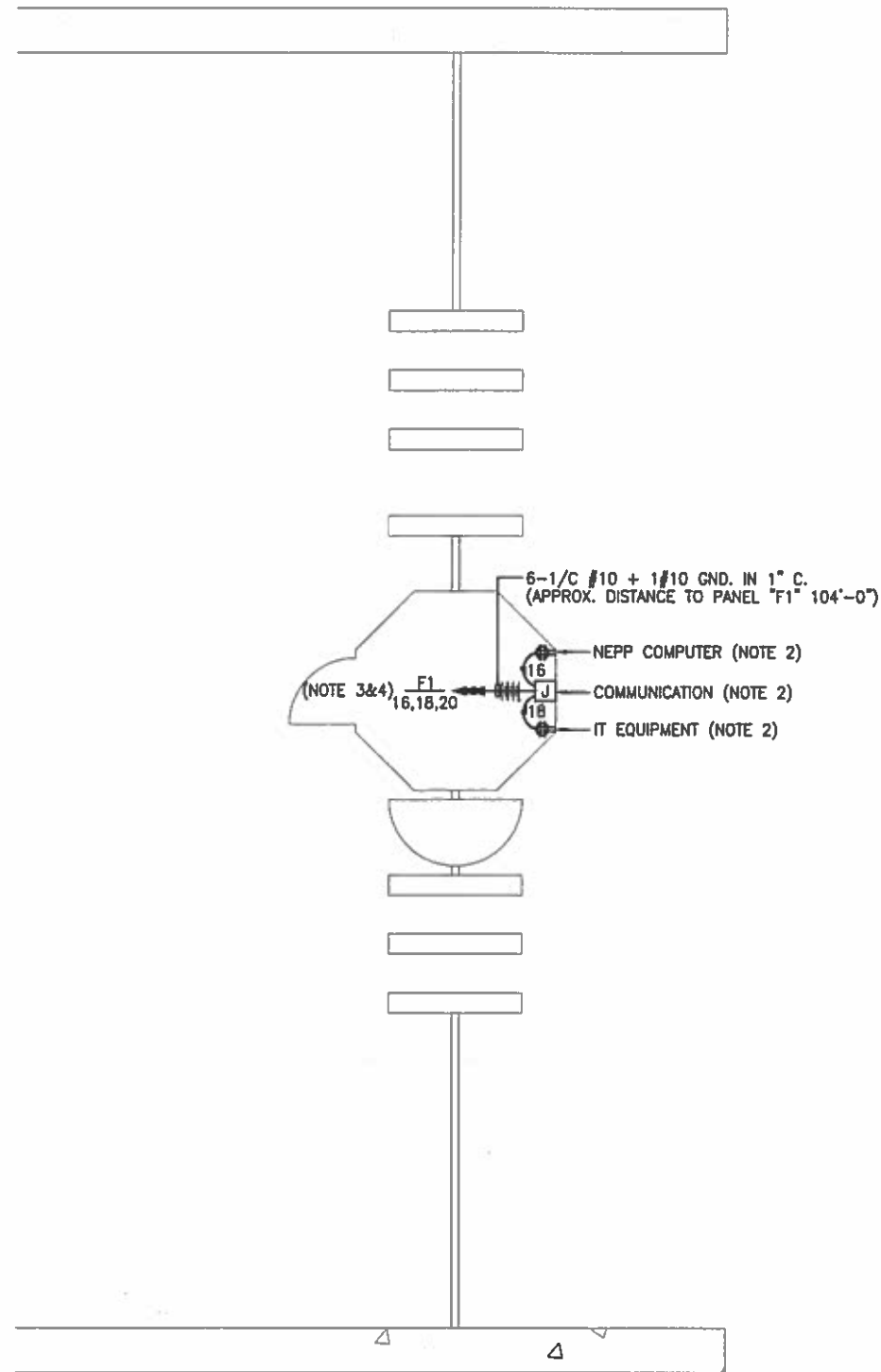
NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS

ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST

SCALE: NOT TO SCALE

DRAWING NO. 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	DATE	REFERENCE DRAWINGS		REVISIONS	
			NUMBER	DESCRIPTION	DATE	DESCRIPTION
DESIGNED	C. NGO	07-14				
		DATE				
DRAWN	C. NGO	07-14				
		DATE				
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

GFP A Gannett Fleming/Parsons
JOINT VENTURE

APPROVED _____

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 AC	WIRE: 4	SECTION: 1 OF 1

LOAD DESCRIPTION	KVA	CKT BKRS			CKT.		CKT BKRS			LOAD DESCRIPTION
		AMP	POLE	NO.	NO.	POLE	AMP	KVA		
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

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

APPROVED _____

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
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62



EXISTING PANEL "F1"



EXISTING PANEL "F1"



EXISTING PANEL "F1"

CONTRACT NO.
14-FQ10060-CENI-24

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
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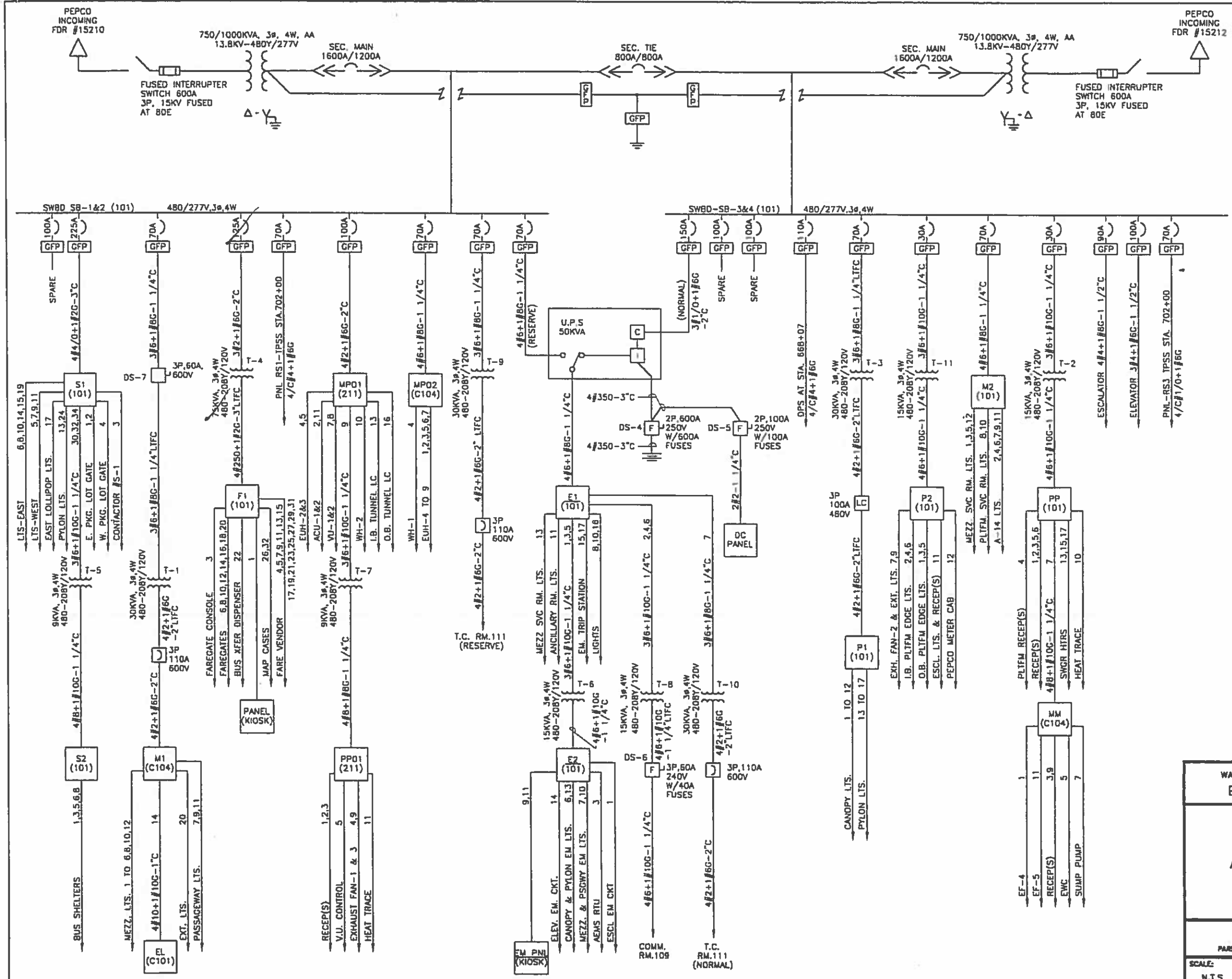
GFP A Gannett Fleming/Parsons
 JOINT VENTURE

APPROVED _____ SUBMITTED _____
 PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
A13-E-301



- NOTES:**
1. PANEL DESIGNATION

WEA (205)

PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY

ROOM NUMBER

B (CIRCUIT NUMBER)
 2. 3/2, 2" CONIT SIZE

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: N.T.S.	DRAWING No. MM-A-E33	64
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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	NEC	NATIONAL ELECTRIC CODE
AC	ALTERNATING CURRENT	P	POLE
AF	AMPERE FRAME	PH	PHASE
AFC	AUTOMATED FARE COLLECTION SYSTEM	PNL	PANELBOARD
AFF	ABOVE FINISHED FLOOR	PRI	PRIMARY
AIC	AMPERE INTERRUPTING CAPACITY	PROP	PROPOSED
AT	AMPERE TRIP	RGS	RIGID GALVANIZED STEEL
BKR	BREAKER	SEC	SECONDARY
C	CONDUIT	SHT	SHEET
CB	CIRCUIT BREAKER	SW	SWITCH
CCT	CIRCUIT	SWBD	SWITCHBOARD
CL	CENTER LINE	TYP	TYPICAL
CLG	CEILING	U/G	UNDER GROUND
CONST	CONSTRUCTION	U.L.	UNDERWRITERS LABORATORIES
DISC	DISCONNECT	UON	UNLESS OTHERWISE NOTED
E	ELECTRICAL	VOLT	VOLTAGE
GND	GROUND	W	WATT
JB	JUNCTION BOX	WMATA	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
KAIC	THOUSAND AMPERE INTERRUPTING CAPACITY	WP	WEATHERPROOF
KCMIL	THOUSAND CIRCULAR MILL		
KVA	KILOVOLT AMPERE		
MAX	MAXIMUM		
MCA	MINIMUM CIRCUIT AMPERE		
MCB	MAIN CIRCUIT BREAKER		
MEZZ	MEZZANINE		
MIN	MINIMUM		
MLO	MAIN LUGS ONLY		

DRAWING INDEX

A14-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
A14-E-101	ROCKVILLE - KIOSK - POWER
A14-E-102	ROCKVILLE - PANEL SCHEDULE
A14-E-301	ROCKVILLE - PANELBOARD IMAGE
MM-A-E35	ROCKVILLE - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

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

CONTRACT NO
14-FQ10060-CENI-24

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

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

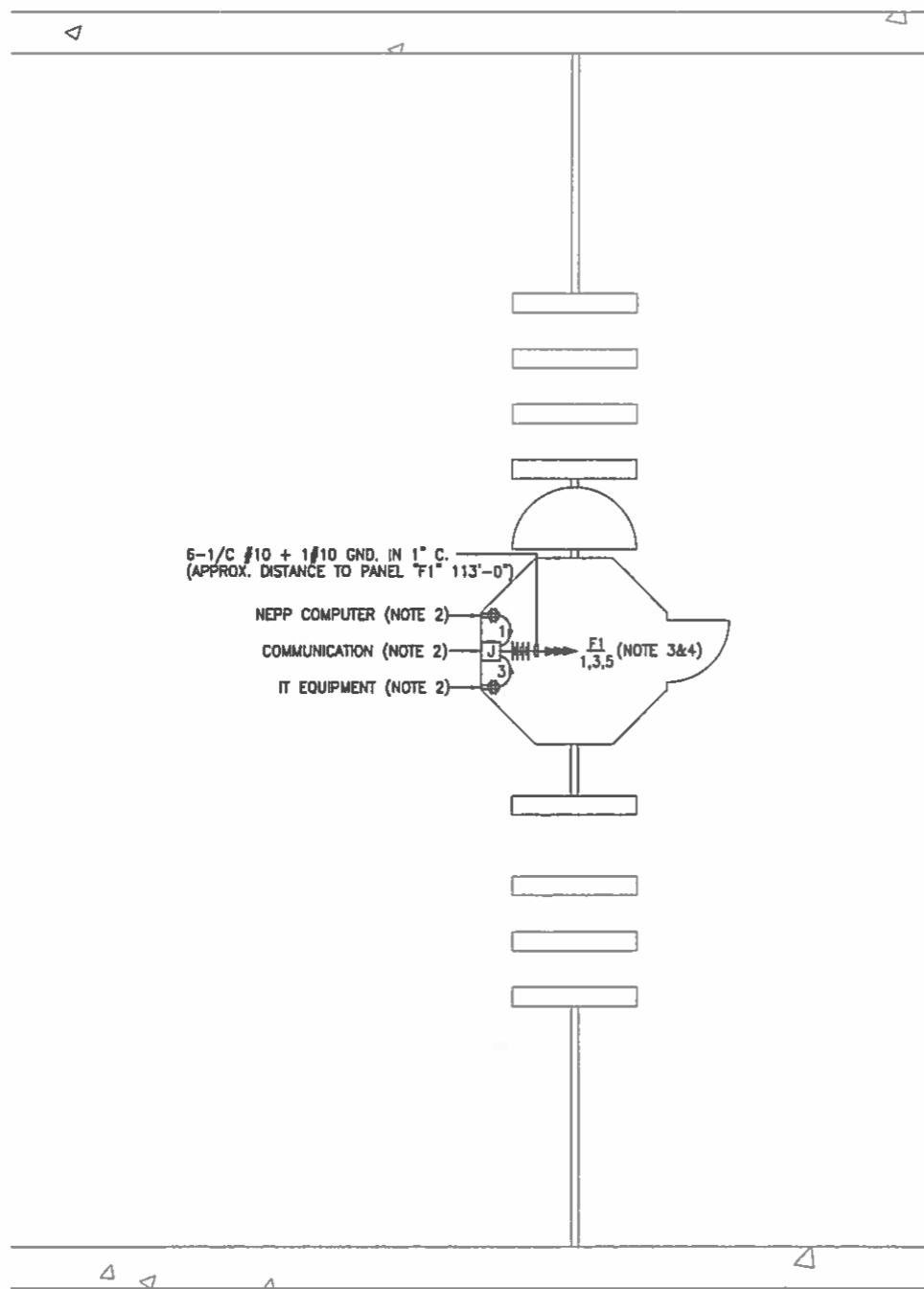
APPROVED

SUBMITTED _____ PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
A14-E-001



6-1/C #10 + 1#10 GND. IN 1" C.
(APPROX. DISTANCE TO PANEL "F1" 113'-0")

NEPP COMPUTER (NOTE 2)

COMMUNICATION (NOTE 2)

IT EQUIPMENT (NOTE 2)

F1 (NOTE 3&4)
1,3,5

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		DATE		REFERENCE DRAWINGS		REVISIONS	
	NUMBER	DESCRIPTION	NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION	
DESIGNED	C. NCO	07-14						
DATE								
DRAWN	C. NCO	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

GFP A Gannett Fleming/Parsons
JOINT VENTURE

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

APPROVED _____

SUBMITTED _____
PROJECT MANAGER

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						
LOAD DESCRIPTION	KVA	AMP	CKT BKRS			NO.	POLE	AMP	KVA	LOAD DESCRIPTION		
			NO.	NO.	NO.							
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. KIOSK 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	DATE	REFERENCE DRAWINGS		REVISIONS	
			NUMBER	DESCRIPTION	DATE	BY
DRAWN	C. NGO	07-14				
CHECKED	B. IDLBI	07-14				
APPROVED	N/A	DATE				

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ SUBMITTED _____ PROJECT MANAGER

**NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
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. MGD	07-14	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DATE							
DRAWN	C. MGD	07-14					
DATE							
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



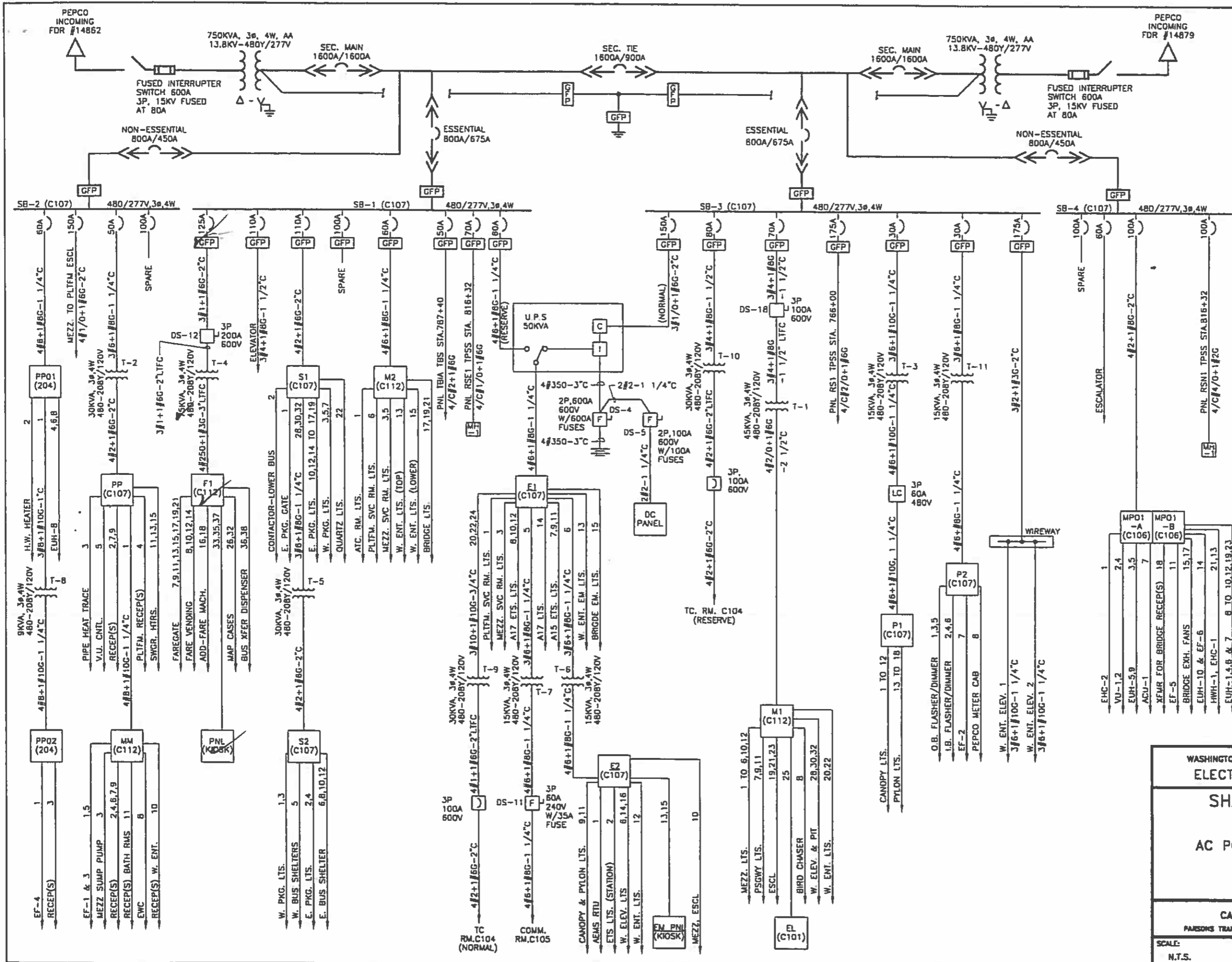
APPROVED _____

SUBMITTED _____
PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
A14-E-301



- NOTES:**
1. PANEL DESIGNATION

WEA (205)

PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY

ROOM NUMBER

8 (CIRCUIT NUMBER)
 2. 3/2, 2" 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.
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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

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AFF	ABOVE FINISHED FLOOR	PRI	PRIMARY
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JB	JUNCTION BOX	WMATA	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
KAIC	THOUSAND AMPERE INTERRUPTING CAPACITY	WP	WEATHERPROOF
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MLO	MAIN LUGS ONLY		

DRAWING INDEX

B01-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
B01-E-101	GALLERY PLACE EAST - KIOSK - POWER
B01-E-102	GALLERY PLACE EAST - PANEL SCHEDULE
B01-E-301	GALLERY PLACE EAST - PANELBOARD IMAGE
MM-B-E07	GALLERY PLACE - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

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

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

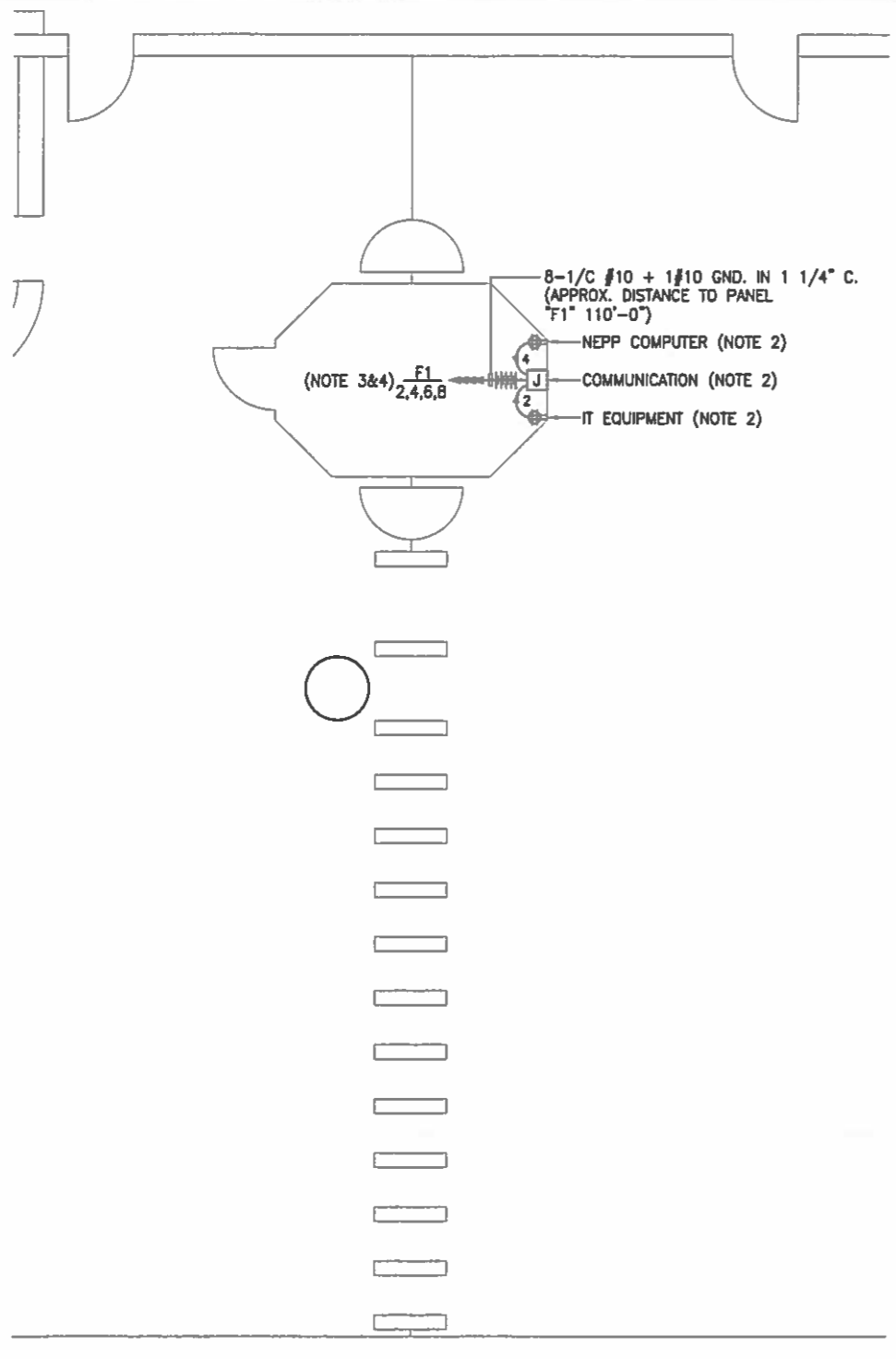
GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED: SUBMITTED: _____ PROJECT MANAGER

CONTRACT NO
14-FQ10060-CENI-24

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

SCALE: NOT TO SCALE DRAWING NO: B01-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 #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.

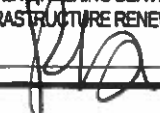
KIOSK - POWER
SCALE: 1/4" = 1'- 0"

CONTRACT NO.
14-FQ10060-CENI-24

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

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED  SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
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

LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	POLE	CKT. NO.	CKT BKRS			KVA	LOAD DESCRIPTION
		AMP	POLE	NO.				AMP	POLE	NO.		
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	6.8 KVA
		TOTAL DEMAND 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 120/208V, 3Ø, 4W EXISTING PANEL "F" 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-ED7).
 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. NDO	07-14	REFERENCE DRAWINGS		REVISIONS	
			NUMBER	DESCRIPTION	DATE	BY
DRAWN	C. NDO	07-14				
CHECKED	B. ELSB	07-14				
APPROVED	N/A					

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED: _____ SUBMITTED: _____
PROJECT MANAGER

**NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRO RAIL STATIONS**

GALLERY PLACE - EAST
PANEL SCHEDULE

SCALE: NOT TO SCALE
DRAWING NO.: B01-E-102



EXISTING PANEL "F1"



EXISTING PANEL "F1"



EXISTING PANEL "F1"

CONTRACT NO.
14-FQ10060-CENI-24

		DATE	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DESIGNED	C. NGO	07-14					
		DATE					
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

GFP A Gannett Fleming/Parsons
JOINT VENTURE

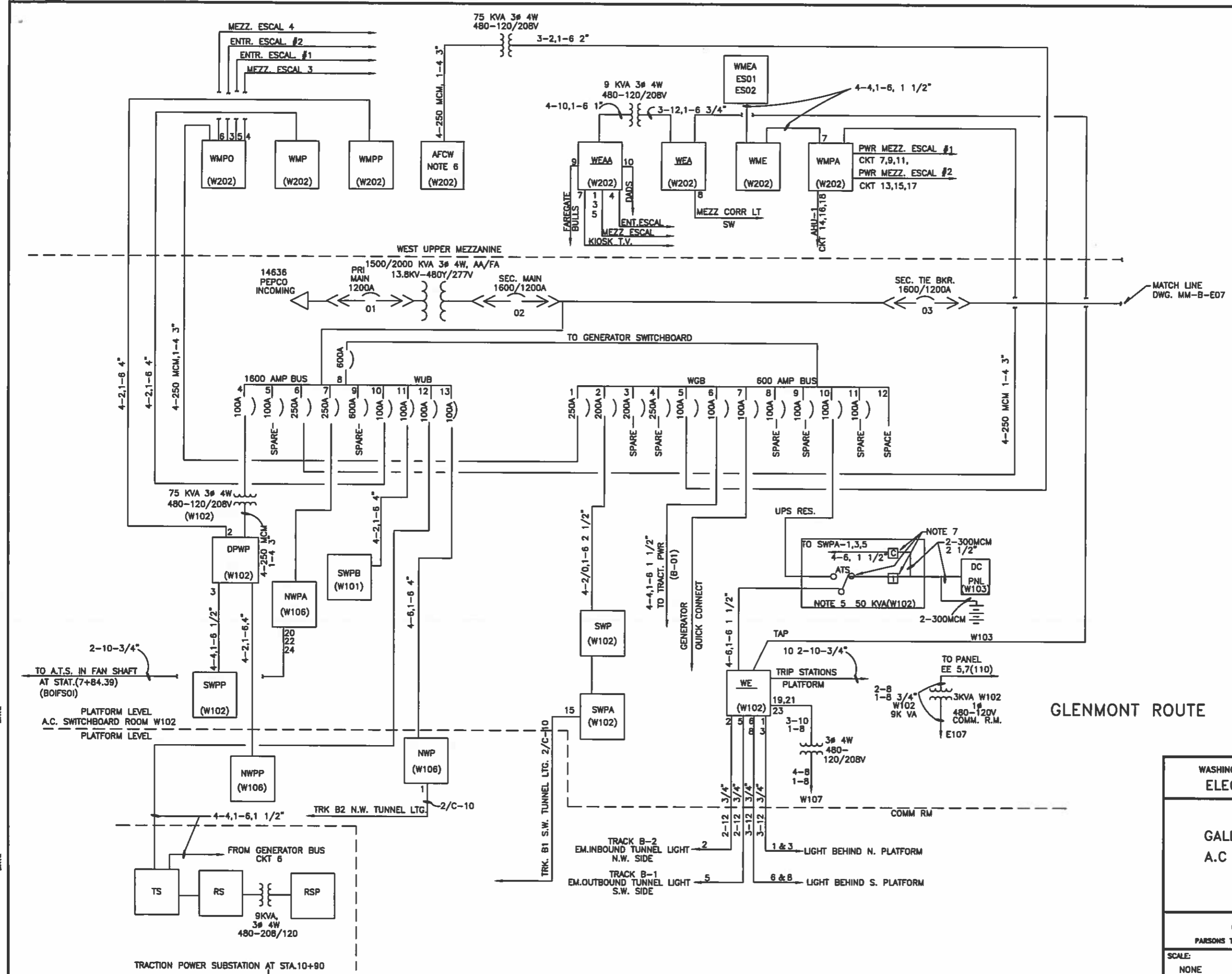
APPROVED _____

SUBMITTED _____
PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
B01-E-301



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

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

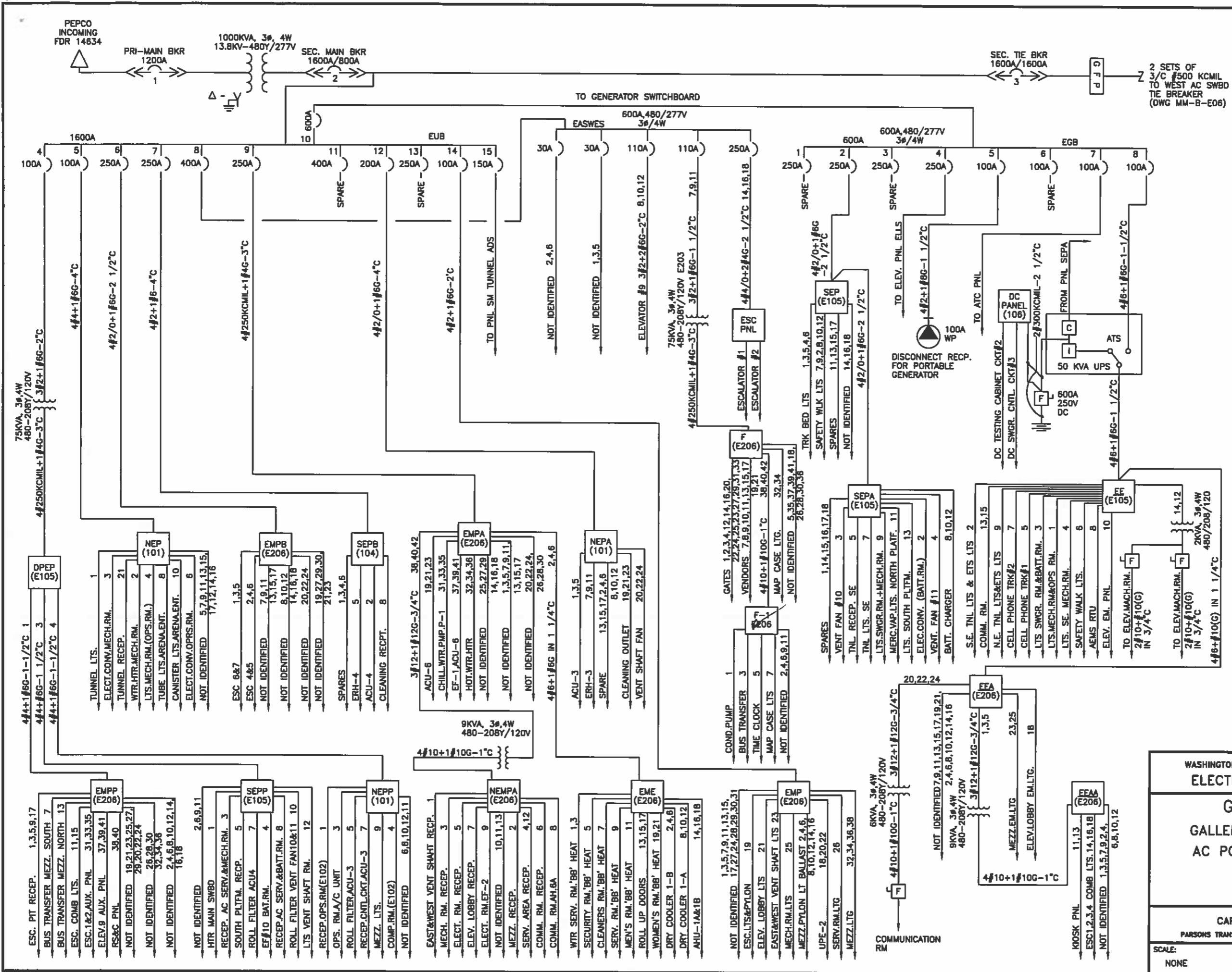
GLENMONT ROUTE

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: NONE DRAWING No. MM-B-E06



- NOTES:**
1. PANEL DESIGNATION

WEA (205)

PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY

ROOM NUMBER

B (CIRCUIT NUMBER)
 2. 3#2, 2" CONDUIT SIZE

AWG OR KCMIL CIRCUIT WIRES
 3. CIRCUIT BREAKERS

DRAW OUT ← → 1600A/1200A

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
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ELECTRICAL SPECIFICATIONS

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

ABBREVIATIONS

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

DRAWING INDEX

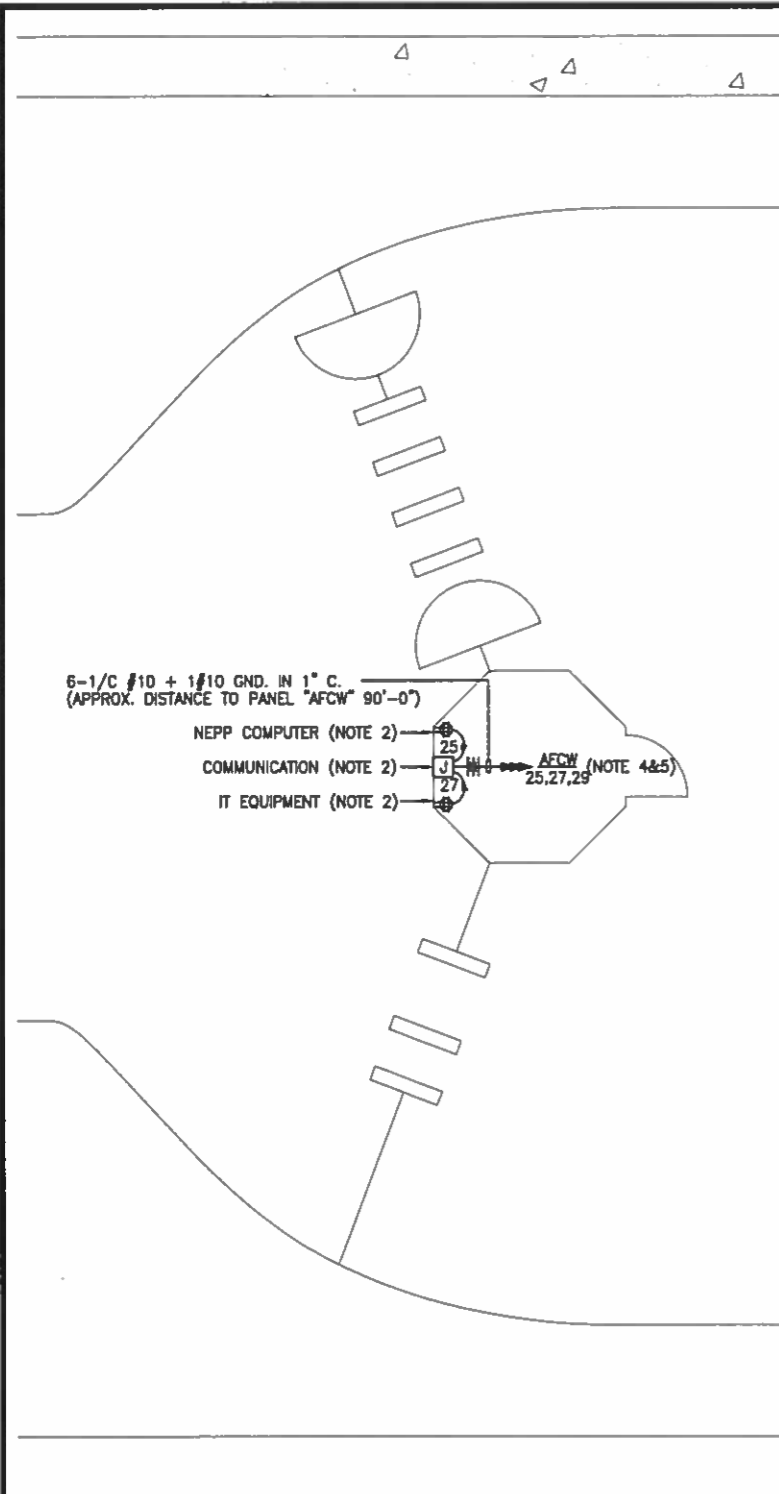
B02-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
B02-E-101	JUDICIARY SQUARE EAST & WEST - MEZZANINE KIOSK - POWER
B02-E-102	JUDICIARY SQUARE EAST & WEST - PANEL SCHEDULES
B02-E-301	JUDICIARY SQUARE EAST & WEST - PANELBOARD IMAGE
B02-E-302	JUDICIARY SQUARE EAST & WEST - PANELBOARD IMAGE
MM-B-E08	JUDICIARY SQUARE - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

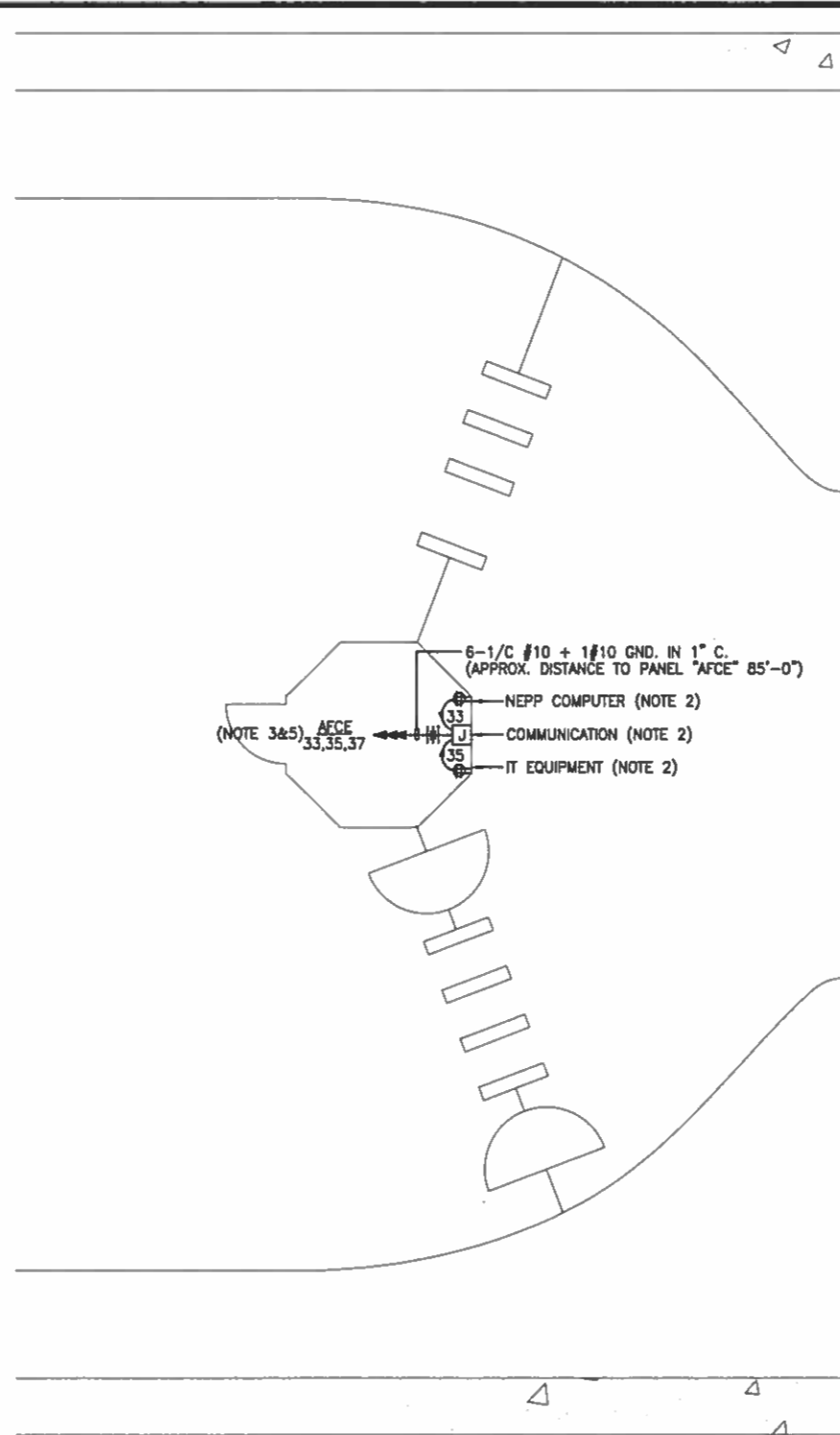
	QUADRUPEX RECEPTACLE OUTLET- 20A, 125V WALL MOUNTED.
	JUNCTION BOX - SURFACE MOUNTED ON UNISTRUT CHANNEL
	CONDUIT - CONCEALED IN UNDER FLOOR DUCT U.O.N.
	HOMERUN TO PANEL, NUMBER OF ARROWHEADS INDICATES NUMBER OF CIRCUITS. CROSS HATCHING INDICATES NUMBER OF CONDUCTORS, NUMBER INDICATES SIZE OF CONDUCTOR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

DESIGNED <u>C. NGO</u> 07-14 DATE DRAWN <u>C. NGO</u> 07-14 DATE CHECKED <u>B. IDLBI</u> 07-14 DATE APPROVED <u>N/A</u> DATE	REFERENCE DRAWINGS <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>NUMBER</th> <th>DESCRIPTION</th> <th>DATE</th> <th>BY</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION																					REVISIONS <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>NUMBER</th> <th>DESCRIPTION</th> <th>DATE</th> <th>BY</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION																					WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM A Gannett Fleming/Parsons JOINT VENTURE APPROVED _____ SUBMITTED _____ PROJECT MANAGER	NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRO RAIL STATIONS ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST SCALE NOT TO SCALE DRAWING NO. B02-E-001
NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION																																																		
NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION																																																		

CONTRACT NO. 14-FQ10060-CENI-24



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



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. CONNECT CIRCUIT #25, #27 & #29 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" CONDUCTOR.

SAFETY PRECAUTION:

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

DESIGNED		DATE		REFERENCE DRAWINGS		REVISIONS	
NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
C. NGO	07-14						
C. NGO	07-14						
B. IDLEBI	07-14						
N/A							

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED: *[Signature]* SUBMITTED: _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
JUDICIARY SQUARE EAST & WEST
MEZZANINE KIOSK - POWER

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

CONTRACT NO: 14-FQ10060-CENI-24

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						
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	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	0.0	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						
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:	5.6 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	DATE	REFERENCE DRAWINGS		REVISIONS	
			NUMBER	DESCRIPTION	DATE	DESCRIPTION
DRAWN	C. NGO	07-14				
CHECKED	B. IDLEB	07-14				
APPROVED	N/A					

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

APPROVED _____

SUBMITTED _____ PROJECT MANAGER

GFP A Gannett Fleming/Parsons JOINT VENTURE

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

SCALE: NOT TO SCALE

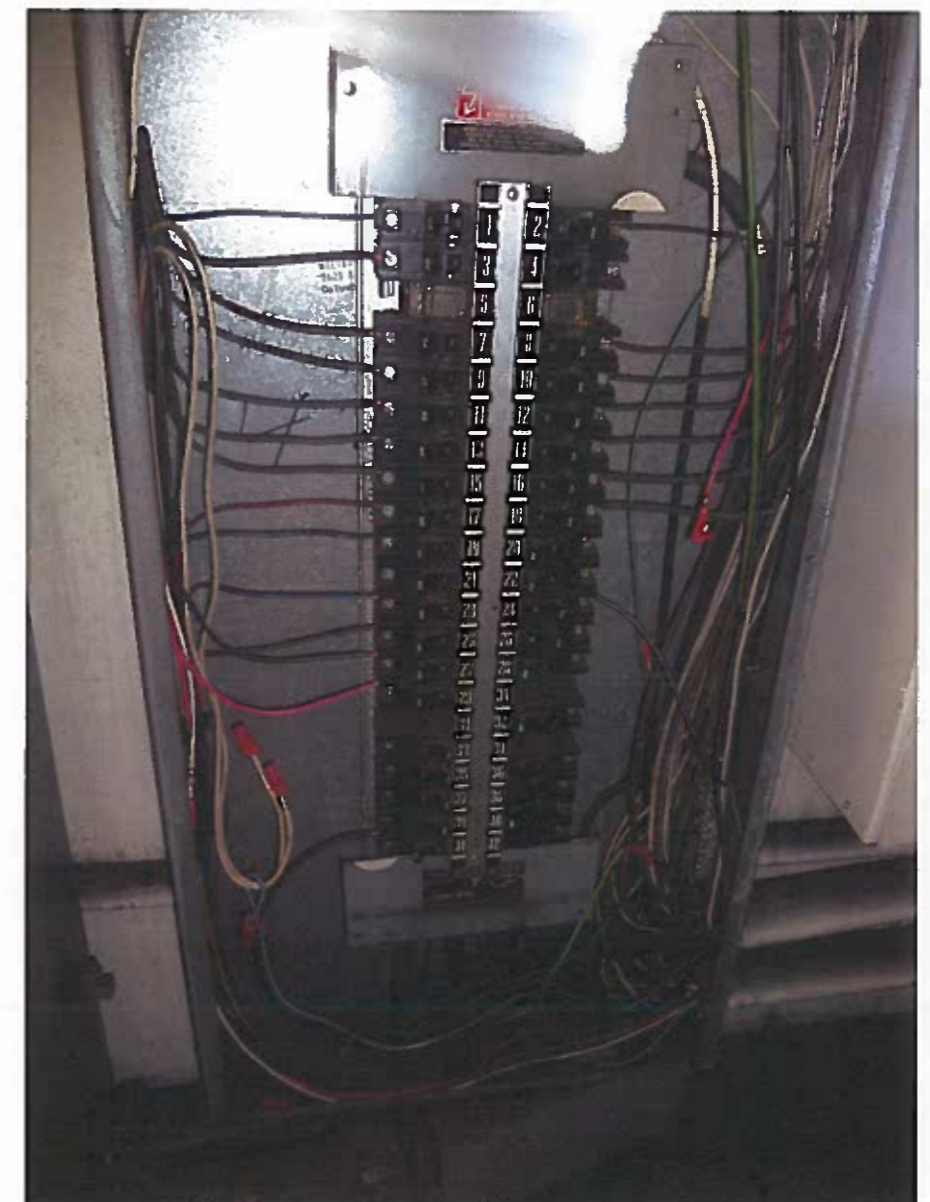
DRAWING NO. B02-E-102



EXISTING PANEL "AFCE"



EXISTING PANEL "AFCE"



EXISTING PANEL "AFCE"

CONTRACT NO.
14-FQ10060-CENI-24

	DESIGNED	DATE	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DESIGNED	C. NGO	07-14					
		DATE					
DRAWN	C. NGO	07-14					
		DATE					
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 _____ SUBMITTED _____
 PROJECT MANAGER



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

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

APPROVED _____

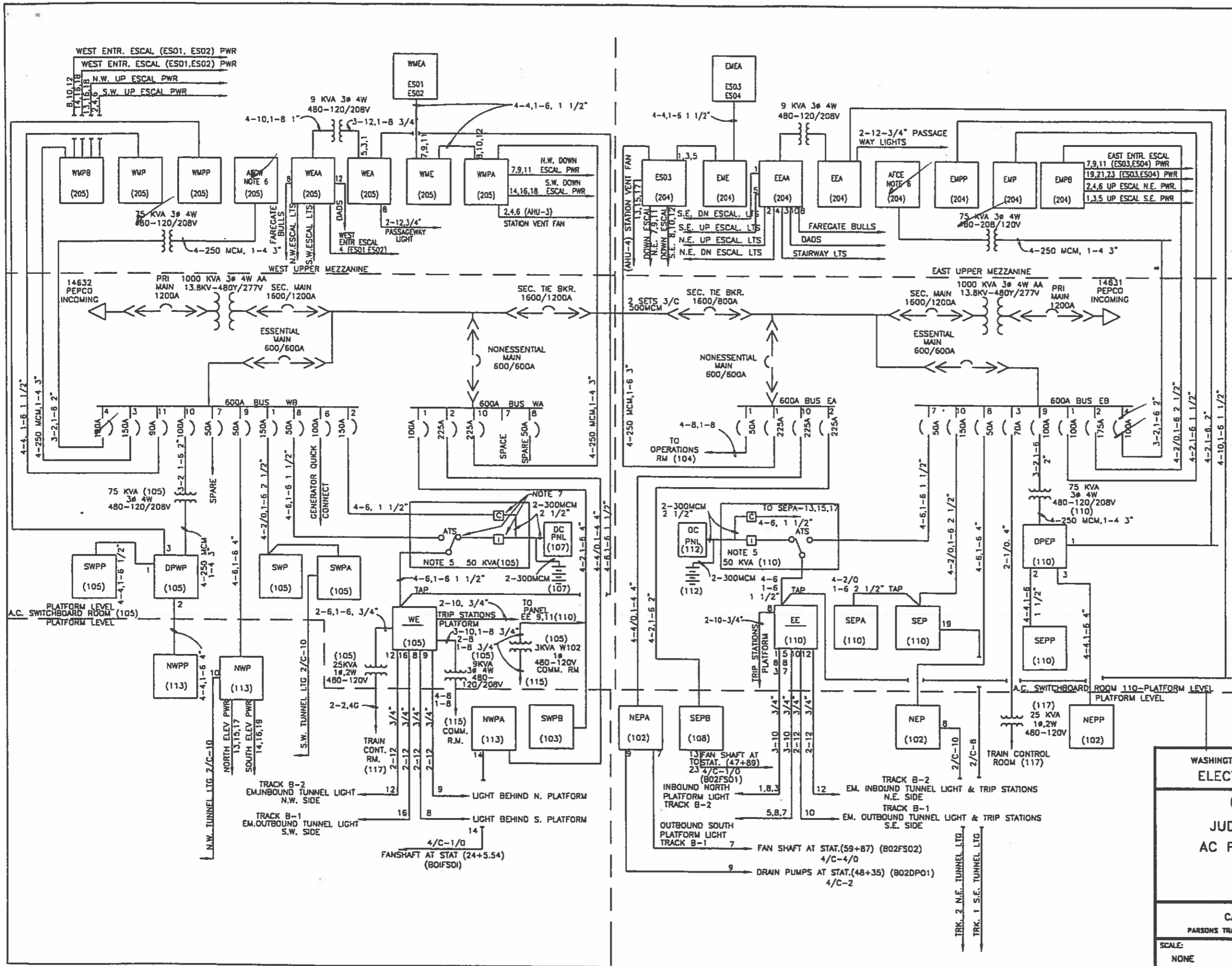
GFP A Gannett Fleming/Parsons
JOINT VENTURE

SUBMITTED _____
PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
B02-E-302



- NOTES:**
1. 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
 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

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




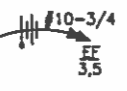


ABBREVIATIONS

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

DRAWING INDEX

- B03-E-001 ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
- B03-E-101 UNION STATION NORTH & SOUTH - KIOSK - POWER
- B03-E-102 UNION STATION NORTH & SOUTH - PANEL SCHEDULES
- B03-E-301 UNION STATION NORTH & SOUTH - PANELBOARDS IMAGE
- B03-E-302 UNION STATION NORTH & SOUTH - PANELBOARDS IMAGE
- MM-B-E10 UNION STATION - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

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

CONTRACT NO
14-FQ10060-CENI-24

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

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

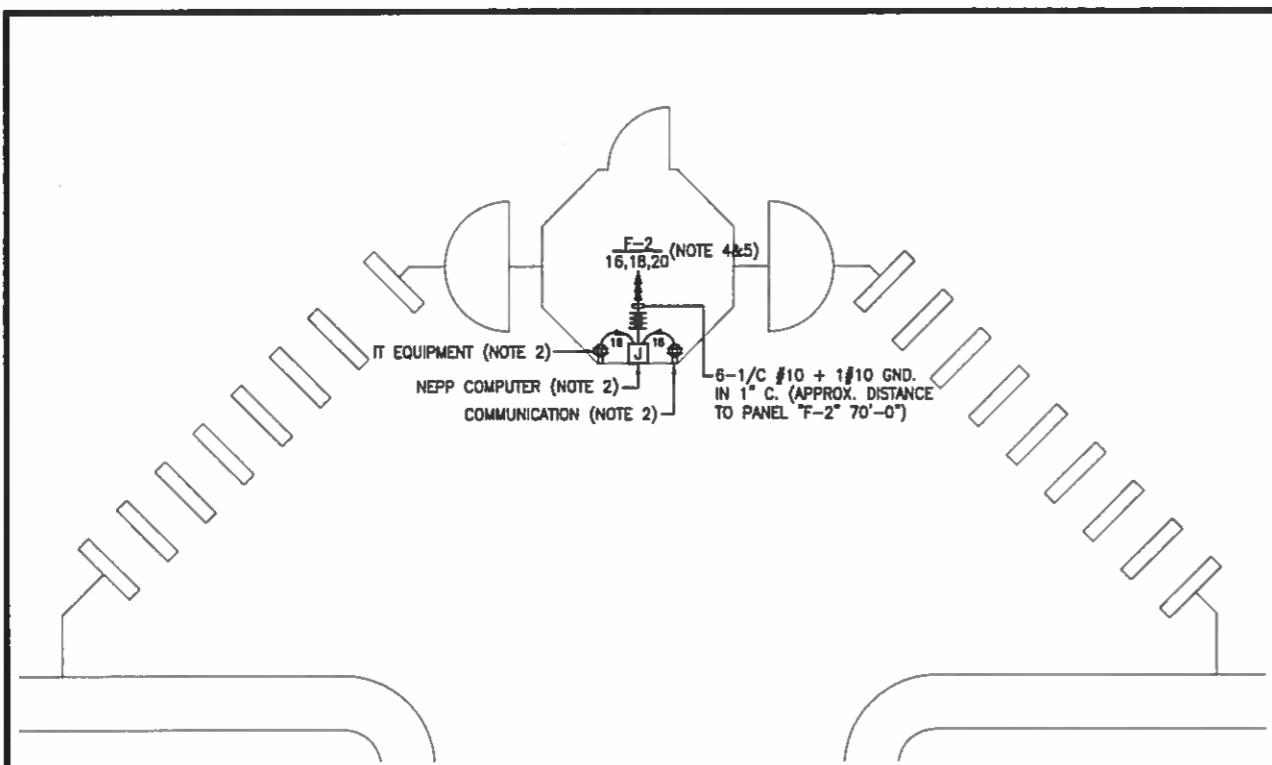
GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED  SUBMITTED _____ PROJECT MANAGER

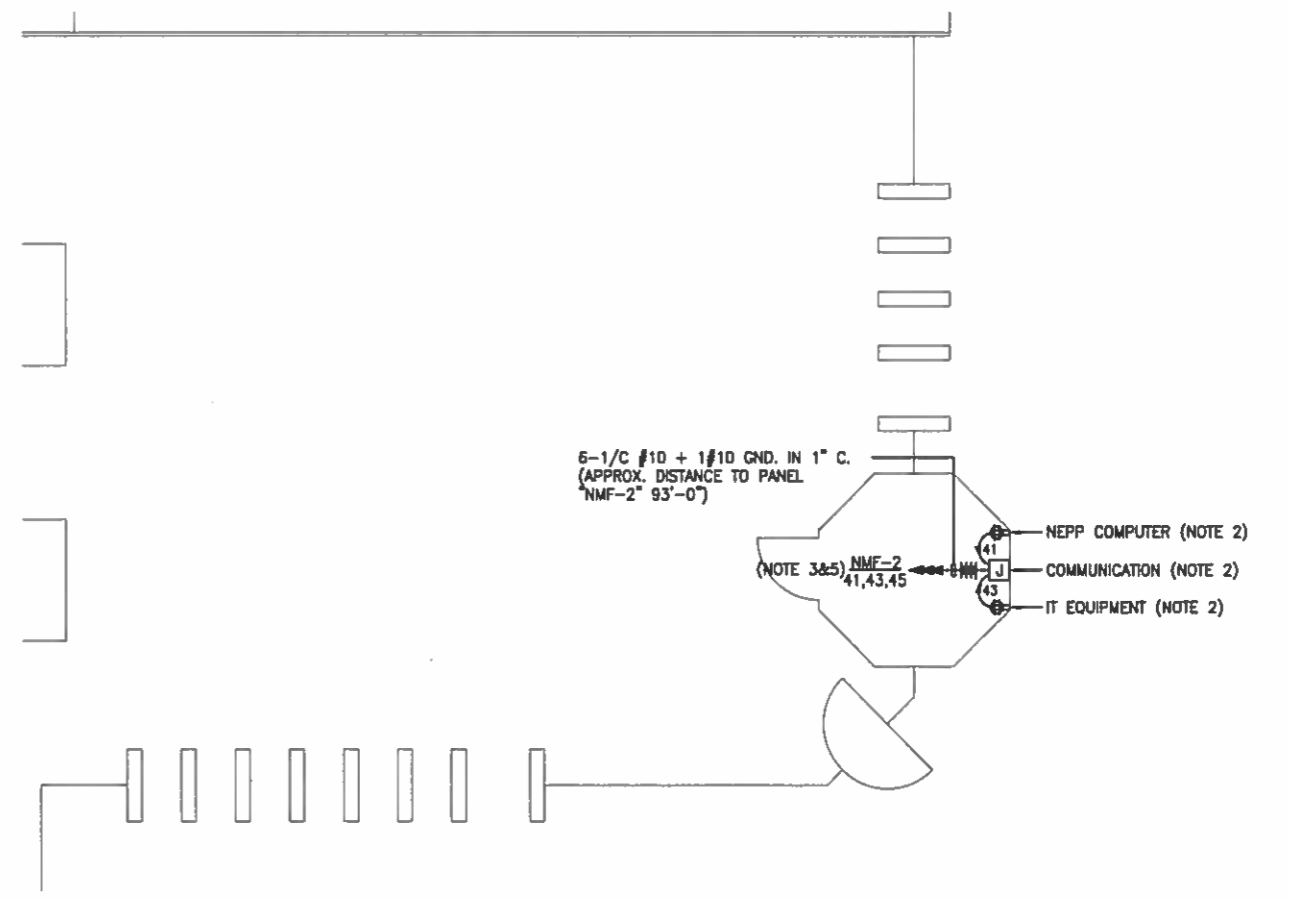
NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST

SCALE: NOT TO SCALE

DRAWING NO: B03-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 #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.

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

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ SUBMITTED _____ PROJECT MANAGER _____

CONTRACT NO. 14-FQ10060-CENI-24

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRO RAIL 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 AC		WIRE: 4		SECTION: 1 OF 1						
LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	POLE	CKT. BKRS			LOAD DESCRIPTION
		AMP	POLE	NO.			NO.	AMP	KVA	
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	18.7 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 AC		WIRE: 4		SECTION: 1 OF 1						
LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	POLE	CKT. BKRS			LOAD DESCRIPTION
		AMP	POLE	NO.			NO.	AMP	KVA	
SPACE	0.0	-	-	-	A - -	3	100	0.0	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%	0.0 KVA
RECEPTACLES, FIRST 10 KVA	10.0 x 100%	10.0 KVA
RECEPTACLES	4.0 x 50%	2.0 KVA
MISC. APPLIANCES	0.0 x 100%	0.0 KVA
LARGEST MOTOR	0.0 x 125%	0.0 KVA
MOTORS	0.0 x 100%	0.0 KVA
HEAT	3.0 x 125%	3.8 KVA
AC	4.5 x 100%	4.5 KVA
WATER HEATING	0.0 x 125%	0.0 KVA
TOTAL CONNECTED LOAD	21.5 KVA	TOTAL DEMAND KVA 20.3 KVA
		TOTAL DEMAND AMPS 56.3 AMPS
CONNECTED LOAD PHASE SUMMARY		
PHASE A:	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%).

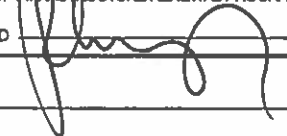
CONTRACT NO. 14-FQ10060-CENI-24

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED  SUBMITTED _____ PROJECT MANAGER _____

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS 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"

CONTRACT NO.
14-FQ10060-CENI-24

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

GFP A Gambell Fleming/Parsons
JOINT VENTURE

APPROVED _____

SUBMITTED _____
PROJECT MANAGER

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

SCALE
NOT TO SCALE

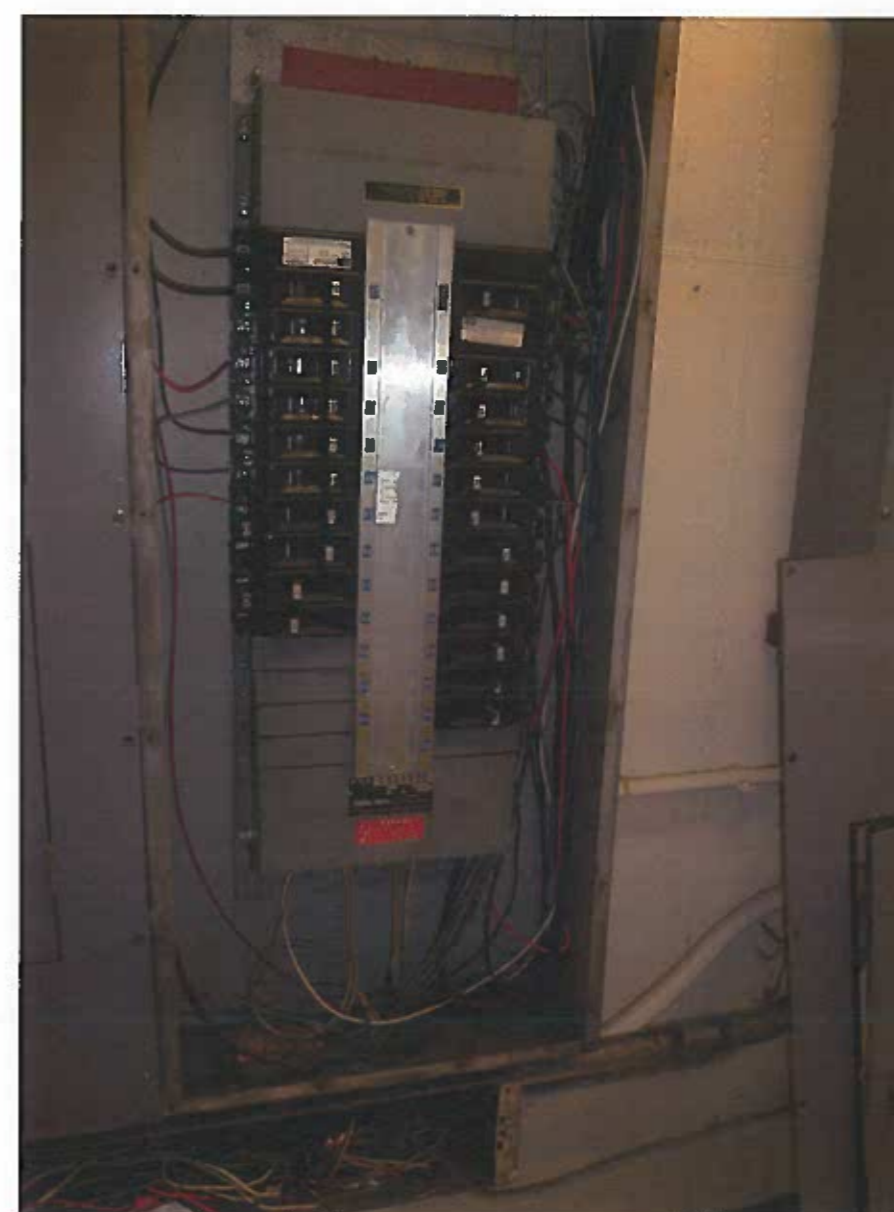
DRAWING NO.
B03-E-301



EXISTING PANEL "F-2"



EXISTING PANEL "F-2"



EXISTING PANEL "F-2"

CONTRACT NO.
14-FQ10060-CENI-24

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

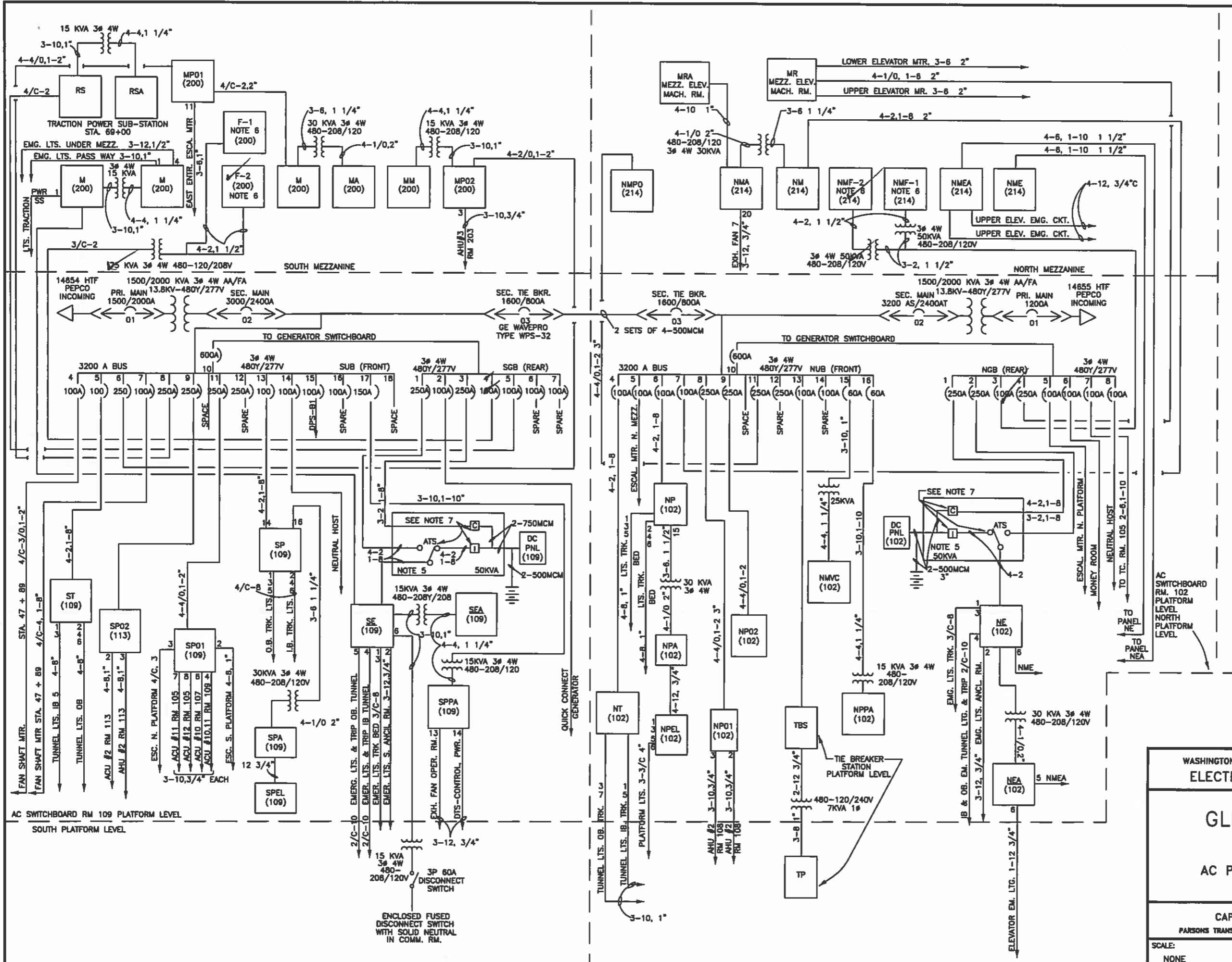


APPROVED _____ SUBMITTED _____
 PROJECT MANAGER

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

SCALE: NOT TO SCALE
 DRAWING NO.: B03-E-302

DATE 10/20/10 APPROVED AMBROSE DATE 10/20/10
 DATE 10/20/10 APPROVED AMBROSE DATE 10/20/10



- NOTES:**
1. PANEL DESIGNATION
 PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY
 ROOM LOCATION
 (CIRCUIT NUMBER)
 2. 3-2,1-5 2"
 CONDUIT SIZE
 AWG. GROUND WIRE
 AWG. OR MCM CIRCUIT WIRES
 3. CIRCUIT BREAKERS
 DRAW OUT <<->> >1600A/1200A
 FRAME SIZE
 TRIP SETTING
 MOLDED CASE
 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: IPM
 9. SGB- SOUTH GENERATOR BUS
 NGB- NORTH GENERATOR BUS
 UB- UTILITY BUS

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#

ELECTRICAL SPECIFICATIONS

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

ABBREVIATIONS

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

DRAWING INDEX

B04-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
B04-E-101	RHODE ISLAND AVENUE - KIOSK - POWER
B04-E-102	RHODE ISLAND AVENUE - PANEL SCHEDULE
B04-E-301	RHODE ISLAND AVENUE - PANELBOARD IMAGE
MM-B-E14	RHODE ISLAND AVENUE - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

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

CONTRACT NO
14-FQ10060-CENI-24

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

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

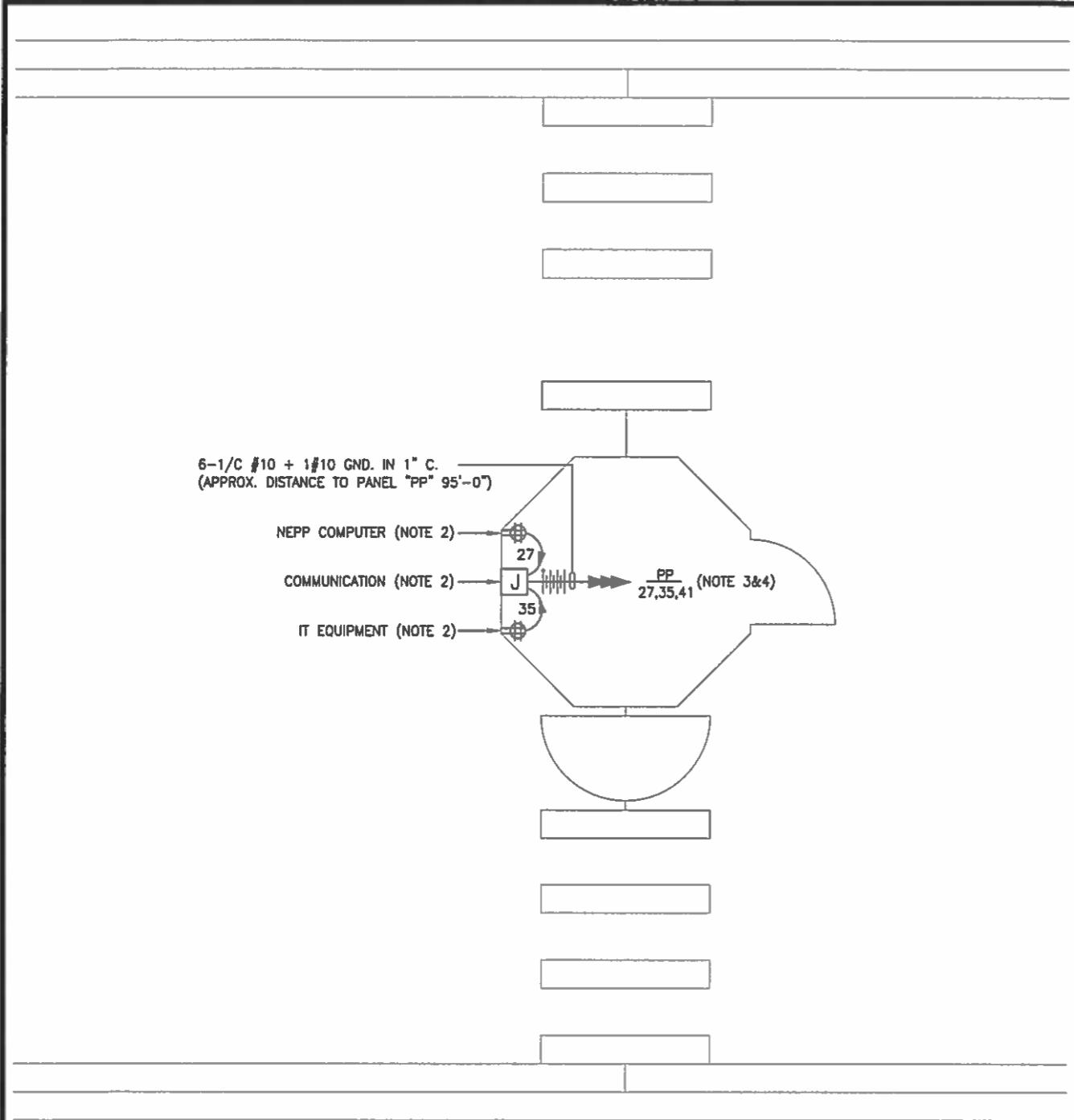
APPROVED

SUBMITTED _____ PROJECT MANAGER

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

SCALE NOT TO SCALE

DRAWING NO B04-E-001



6-1/C #10 + 1#10 GND. IN 1" C.
(APPROX. DISTANCE TO PANEL "PP" 95'-0")

NEPP COMPUTER (NOTE 2)

COMMUNICATION (NOTE 2)

IT EQUIPMENT (NOTE 2)

PP
27,35,41 (NOTE 3&4)

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

	REFERENCE DRAWINGS		REVISIONS		
	NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DESIGNED C. NGO	07-14				
DATE					
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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ 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 AC			WIRE: 4			SECTION: 1 OF 1					
LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	POLE	CKT. NO.	CKT BKRS			LOAD DESCRIPTION
		AMP	POLE					POLE	AMP	KVA	
EXISTING VENDOR	0.8	20	1		1	A - -	2	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1		3	- B -	4	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1		5	- - C	6	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1		7	A - -	8	1	20	0.0	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	DATE 07-14	REFERENCE DRAWINGS		REVISIONS	
		NUMBER	DESCRIPTION	DATE	BY
DRAWN C. NGO	DATE 07-14				
CHECKED B. IDILBI	DATE 07-14				
APPROVED N/A	DATE				

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ SUBMITTED _____ PROJECT MANAGER

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

RHODE ISLAND AVENUE
PANEL SCHEDULE

SCALE: NOT TO SCALE

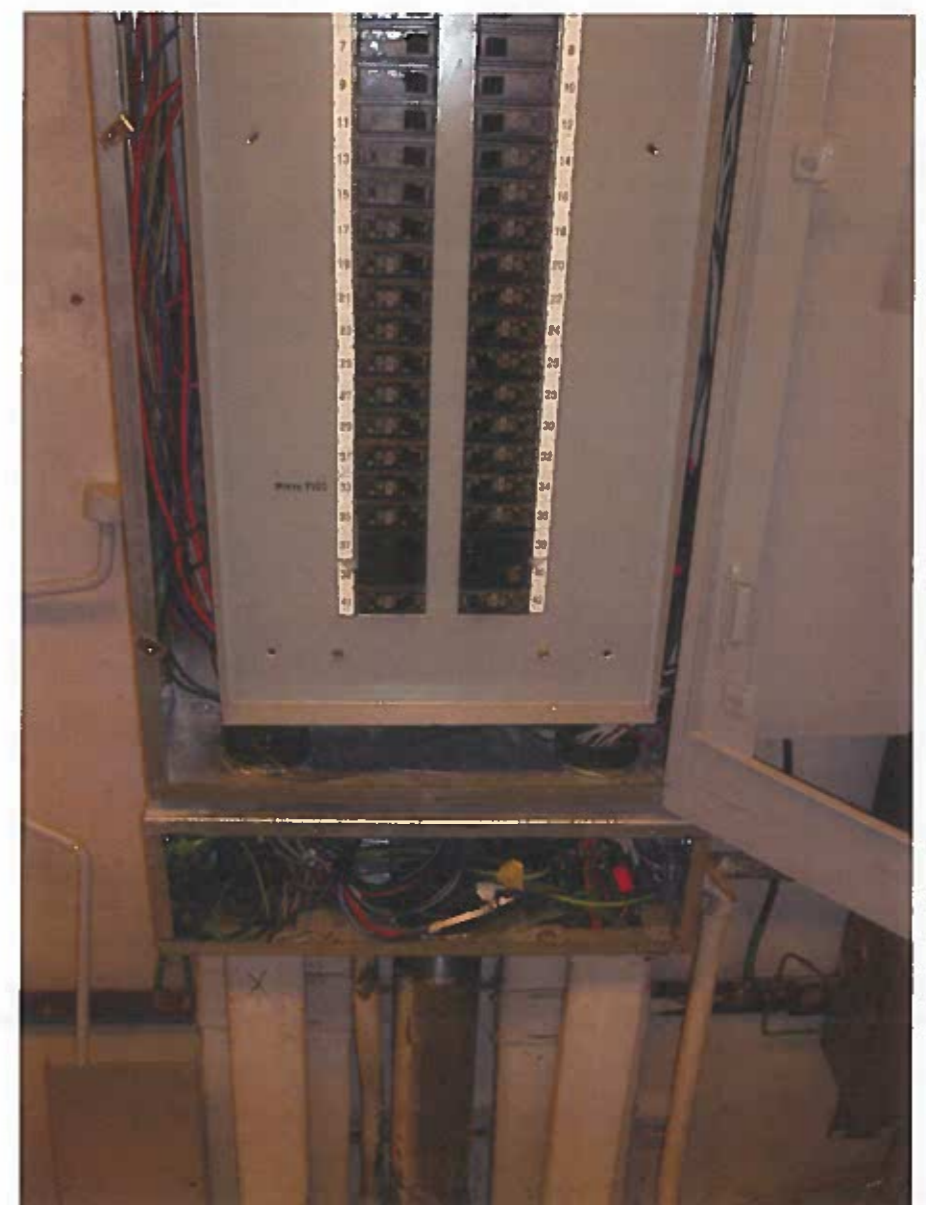
DRAWING NO. B04-E-102



EXISTING PANEL "PP"



EXISTING PANEL "PP"



EXISTING PANEL "PP"

CONTRACT NO.
14-FQ10060-CENI-24

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

GFP A Garrett Fleming/Parsons
JOINT VENTURE

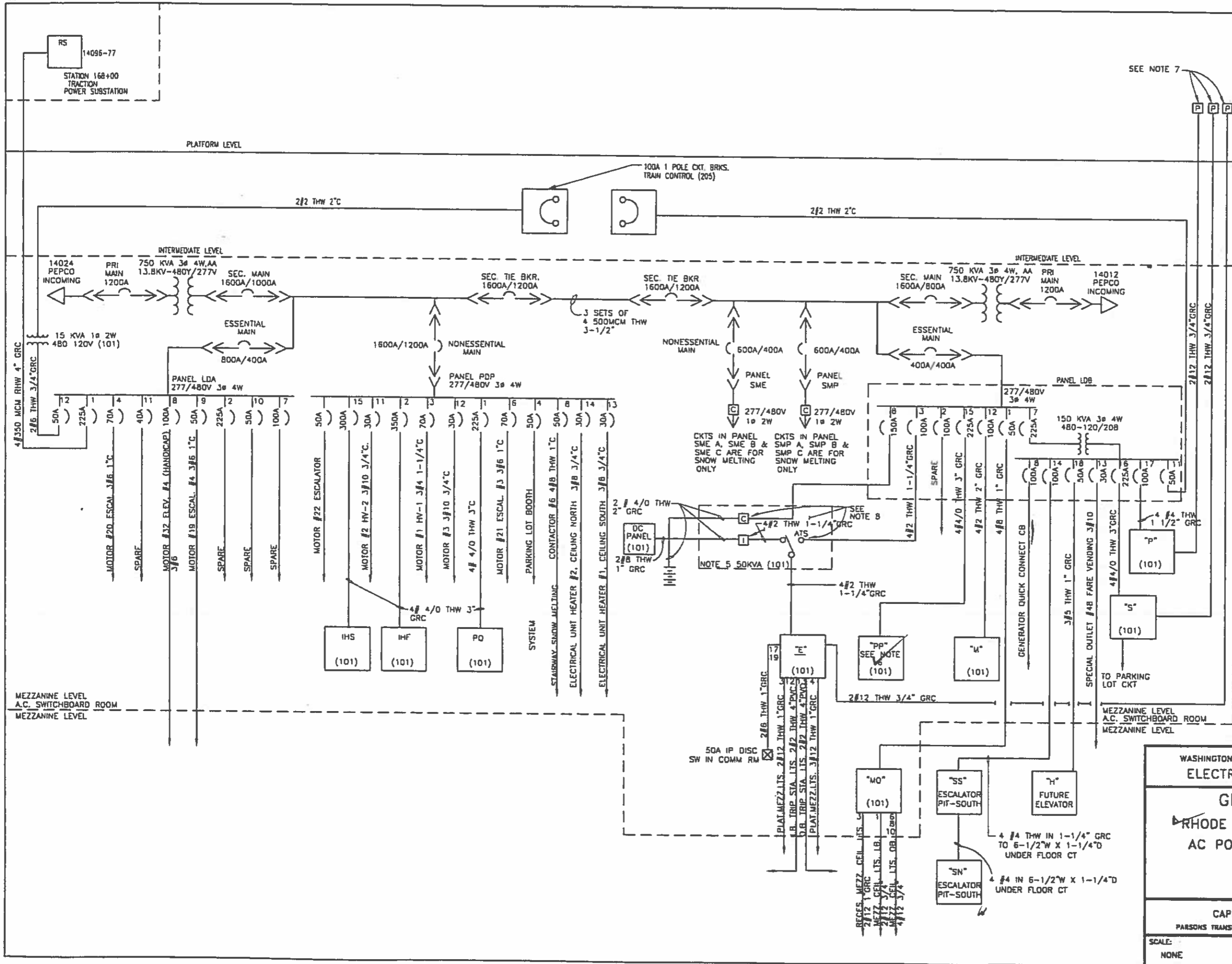
APPROVED _____

SUBMITTED _____
PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
B04-E-301



- NOTES:**
1. PANEL DESIGNATION
 PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY ROOM LOCATION
 B (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 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. MOUNTED PHOTOELECTRIC CONTROL ON THE ROOF. IT AUTOMATICALLY TURNS "ON" IN A RANGE FROM TWO TO FIFTY FOOTCANDLES
 8. B.A.T.S. - 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: NONE DRAWING No. **MM-B-E14**

ELECTRICAL SPECIFICATIONS

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

ABBREVIATIONS

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

DRAWING INDEX

B05-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
B05-E-101	BROOKLAND - KIOSK - POWER
B05-E-102	BROOKLAND - PANEL SCHEDULE
B05-E-301	BROOKLAND - PANELBOARD IMAGE
MM-B-E16	BROOKLAND - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

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

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

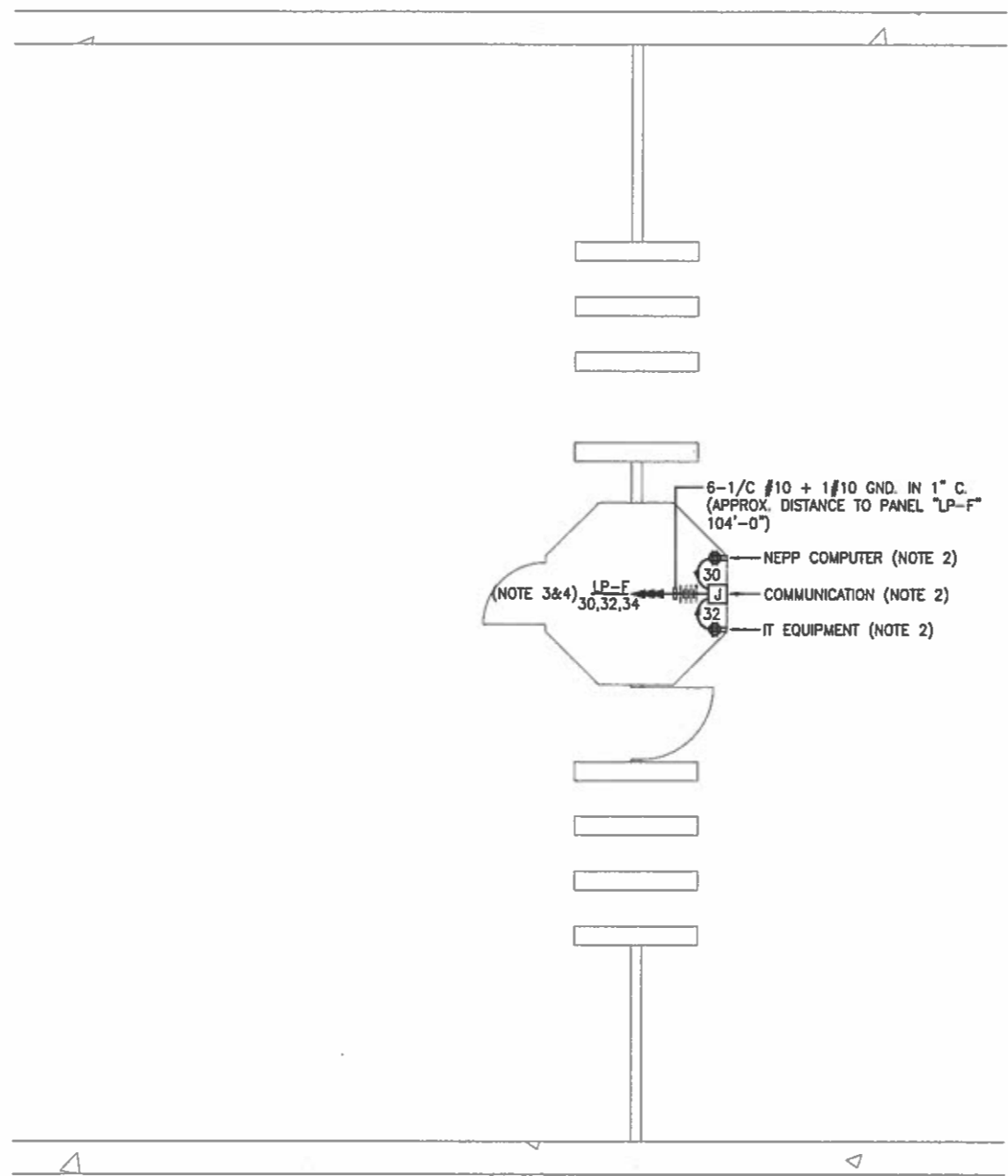
GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED SUBMITTED _____ PROJECT MANAGER

CONTRACT NO. 14-FQ10060-CENI-24

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

SCALE: NOT TO SCALE DRAWING NO: B05-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 #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.

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. 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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ SUBMITTED _____
PROJECT MANAGER

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

SCALE AS SHOWN DRAWING NO. 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: 10KAIC	WIRE: 4	SECTION: 1 OF 1

LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	POLE	CKT. NO.	CKT BKRS			LOAD DESCRIPTION
		AMP	POLE	NO.				AMP	POLE	NO.	
EXISTING VENDOR	0.8	20	1	1	A - -	2	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	3	- B -	4	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	5	- - C	6	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	7	A - -	8	1	20	0.0	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	REFERENCE DRAWINGS		REVISIONS	
			NUMBER	DESCRIPTION	DATE	BY
DRAWN	C. NGO	07-14				
CHECKED	B. IDLBI	07-14				
APPROVED	N/A					

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ SUBMITTED _____
PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS

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

	REFERENCE DRAWINGS		REVISIONS	
	NUMBER	DESCRIPTION	DATE	DESCRIPTION
DESIGNED	C. NGO	07-14		
		DATE		
DRAWN	C. NGO	07-14		
		DATE		
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 _____

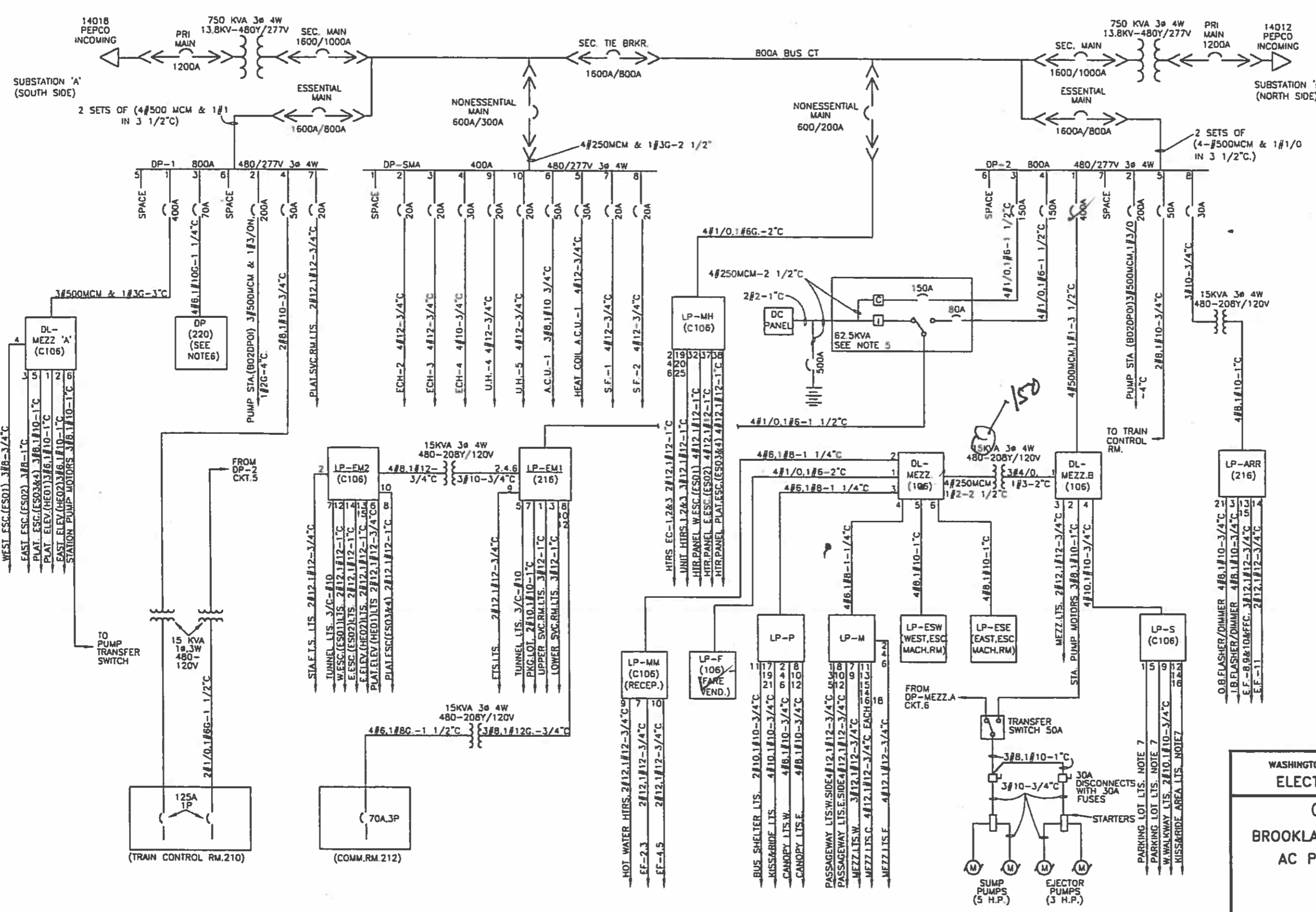
GFP A Gannett Fleming/Parsons
JOINT VENTURE

SUBMITTED _____
PROJECT MANAGER

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: PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY
 (203): ROOM LOCATION
 (LTS.): 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 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 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: X
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: NONE DRAWING No. MM-B-E16

ELECTRICAL SPECIFICATIONS

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- INCREASE ALL BRANCH CIRCUIT CONDUCTORS TO THE NEXT LARGER SIZE FROM THE PANEL TO THE FIRST OUTLET WHERE THE LENGTH OF THE HOMERUN EXCEEDS 100FT. ON 120/208V CIRCUITS.
- PROVIDE A PULLWIRE OR FISHTAPE/CORD IN ALL EMPTY CONDUIT RUNS.
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- INCLUDE GPR FOR ANY CORE DRILLS OR DRILLED PENETRATIONS IN ANY WALLS.
- SEAL OFF ALL PENETRATIONS THRU WALLS/FLOORS.
- THE CONTRACTOR SHALL BECOME FAMILIAR WITH WMATA DESIGN CRITERIA SECTION 4 AND SECTION 13; WMATA SPECIFICATION SECTION 16120, 16130, AND 16125. ALL INSTALLATION SHALL BE IN COMPLIANCE WITH THE NEC, WMATA DESIGN CRITERIA, AND SPECIFICATIONS.
- THE CONTRACTOR SHALL IDENTIFY SPARE CIRCUIT WITH "RESERVED FOR AFC".
- EXISTING SWITCHBOARDS, PANELBOARDS AND EQUIPMENT SHOWN IS BASED ON RECORD DRAWINGS AND CASUAL FIELD SURVEY. CONTRACTOR SHALL VERIFY ALL ELECTRICAL EQUIPMENT IN FIELD.

ABBREVIATIONS

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

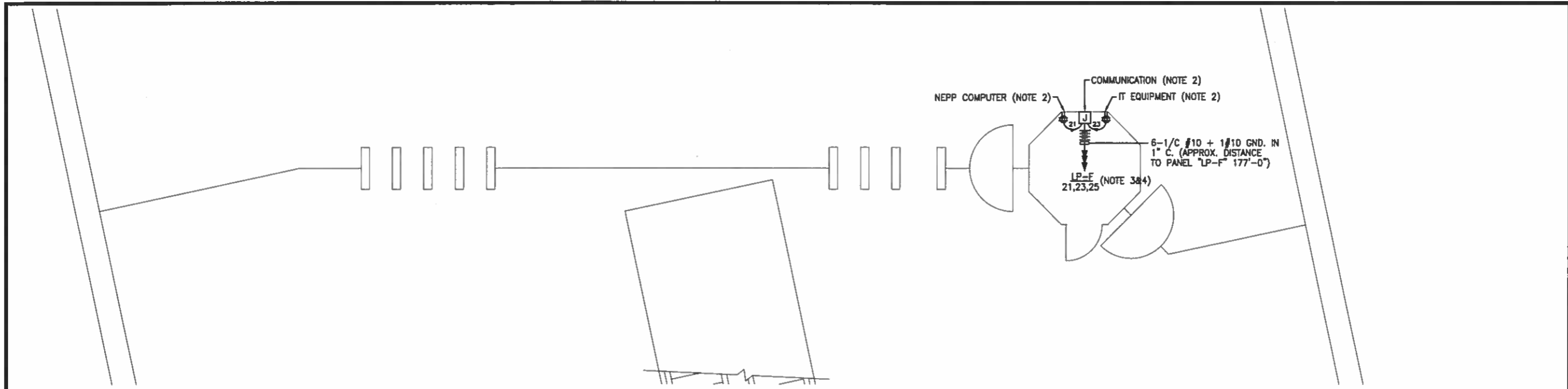
DRAWING INDEX

B06-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
B06-E-101	FORT TOTTEN - KIOSK - POWER
B06-E-102	FORT TOTTEN - PANEL SCHEDULE
B06-E-301	FORT TOTTEN - PANELBOARD IMAGE
MM-B-E18	FORT TOTTEN - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

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

DESIGNED <u>C. NGO</u> 07-14 DATE DRAWN <u>C. NGO</u> 07-14 DATE CHECKED <u>B. IDLBI</u> 07-14 DATE APPROVED <u>N/A</u> _____ DATE	REFERENCE DRAWINGS <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>NUMBER</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </tbody> </table>	NUMBER	DESCRIPTION									REVISIONS <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>DATE</th> <th>BY</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	DATE	BY	DESCRIPTION													WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM APPROVED SUBMITTED _____ PROJECT MANAGER	NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST SCALE: NOT TO SCALE DRAWING NO. B06-E-001
NUMBER	DESCRIPTION																												
DATE	BY	DESCRIPTION																											



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 #21 #23 & #25 TO EXISTING 20A, 1P SPARE CIRCUIT BREAKERS IN THE EXISTING PANEL "LP-F", SEE PANEL SCHEDULE ON DWG. B06-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		DATE		REFERENCE DRAWINGS		REVISIONS	
	NUMBER	DESCRIPTION	DATE	BY	NUMBER	DESCRIPTION	DATE	BY
DESIGNED	C. NGO	07-14						
DRAWN	C. NGO	07-14						
CHECKED	B. IDLBI	07-14						
APPROVED	N/A							

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED:  SUBMITTED: _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRO RAIL STATIONS
FORT TOTTEN
KIOSK - POWER

SCALE AS SHOWN DRAWING NO. B06-E-101

EXISTING PANEL "LP-F"

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

LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	PHASE	CKT. NO.	CKT BKRS			LOAD DESCRIPTION
		AMP	POLE					POLE	AMP	KVA	
EXISTING VENDOR	0.8	20	1	1	A - -	2	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	3	- B -	4	1	20	0.8	EXISTING VENDOR	
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	26.3 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-E1B).
 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

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ SUBMITTED _____
PROJECT MANAGER

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

SCALE: NOT TO SCALE

DRAWING NO. B06-E-102



EXISTING PANEL "LP-F"

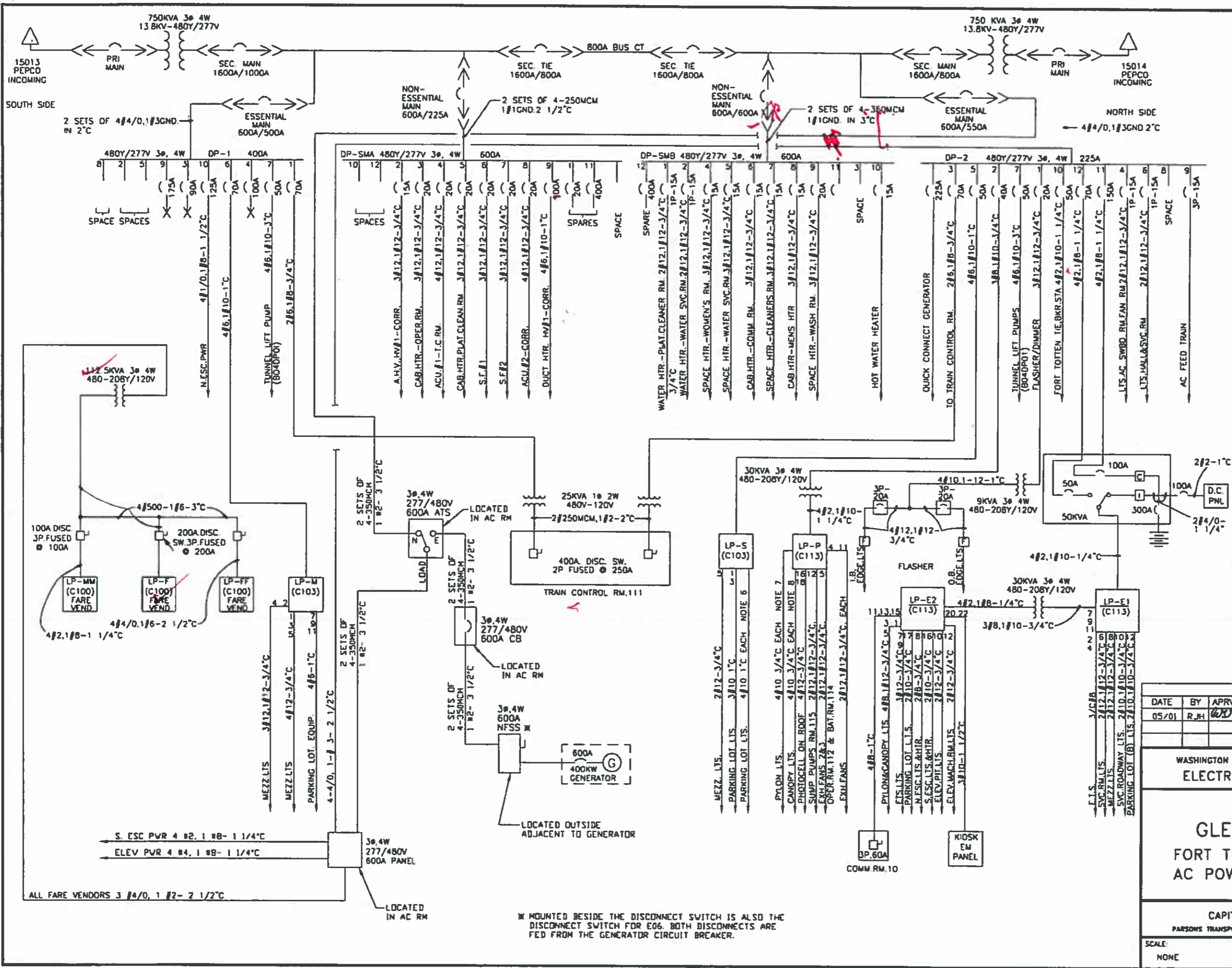


EXISTING PANEL "LP-F"



EXISTING PANEL "LP-F"

DESIGNED <u>C. NGO</u> 07-14 DATE DRAWN <u>C. NGO</u> 07-14 DATE CHECKED <u>B. IOILBI</u> 07-14 DATE APPROVED <u>N/A</u> DATE	REFERENCE DRAWINGS <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>NUMBER</th> <th>DESCRIPTION</th> <th>DATE</th> <th>BY</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	NUMBER	DESCRIPTION	DATE	BY																	REVISIONS <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>NUMBER</th> <th>DESCRIPTION</th> <th>DATE</th> <th>BY</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	NUMBER	DESCRIPTION	DATE	BY																	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM APPROVED _____	GFP <small>A Cassatt Fleming/Parsons JOINT VENTURE</small> SUBMITTED _____ <small>PROJECT MANAGER</small>	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
NUMBER	DESCRIPTION	DATE	BY																																										
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- NOTES:**
- PANEL DESIGNATION
 - WCA (203) WHEN UNDERLINED IS EMERGENCY
 - (LTC) ROOM LOCATION
 - (LTC) TYPE OF DISTRIBUTION
 - B (CIRCUIT NUMBER)
 - + IF NO CIRCUITS SHOWN
 - 2.3-2.1-6 2" CONDUIT SIZE
 - AWG. GROUND WIRE
 - AWG. OR MCM CIRCUIT WIRES
 - CIRCUIT BREAKERS
 - DRAW OUT <-> >1600A/1200A
 - MOLDED CASE
 - FRAME SIZE
 - TRIP SETTING
 - 4/C-4/0
 - INDICATES MULTICONDUCTOR CABLE WITH 4 CONDUCTOR AND SIZE OF EACH 4/0
 - SRATING 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.J.H.	W.D.	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: NONE	DRAWING No. MM-B-E18

* MOUNTED BESIDE THE DISCONNECT SWITCH IS ALSO THE DISCONNECT SWITCH FOR E06. BOTH DISCONNECTS ARE FED FROM THE GENERATOR CIRCUIT BREAKER.

DATE _____ DATE _____

COPY

ELECTRICAL SPECIFICATIONS

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

B07-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
B07-E-101	TAKOMA - KIOSK - POWER
B07-E-102	TAKOMA - PANEL SCHEDULE
B07-E-301	TAKOMA - PANELBOARD IMAGE
MM-B-E20	TAKOMA - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

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	CONDUIT - CONCEALED IN UNDER FLOOR DUCT U.O.N.
	HOMERUN TO PANEL, NUMBER OF ARROWHEADS INDICATES NUMBER OF CIRCUITS. CROSS HATCHING INDICATES NUMBER OF CONDUCTORS, NUMBER INDICATES SIZE OF CONDUCTOR AND SIZE OF CONDUIT
	↓ - INDICATES GROUNDING WIRE TO GROUNDING BUS AT THE PANELBOARD
	EE 1,3 - INDICATES CIRCUIT HOME RUN PANELBOARD AND CIRCUIT NUMBER IDENTIFICATION

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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



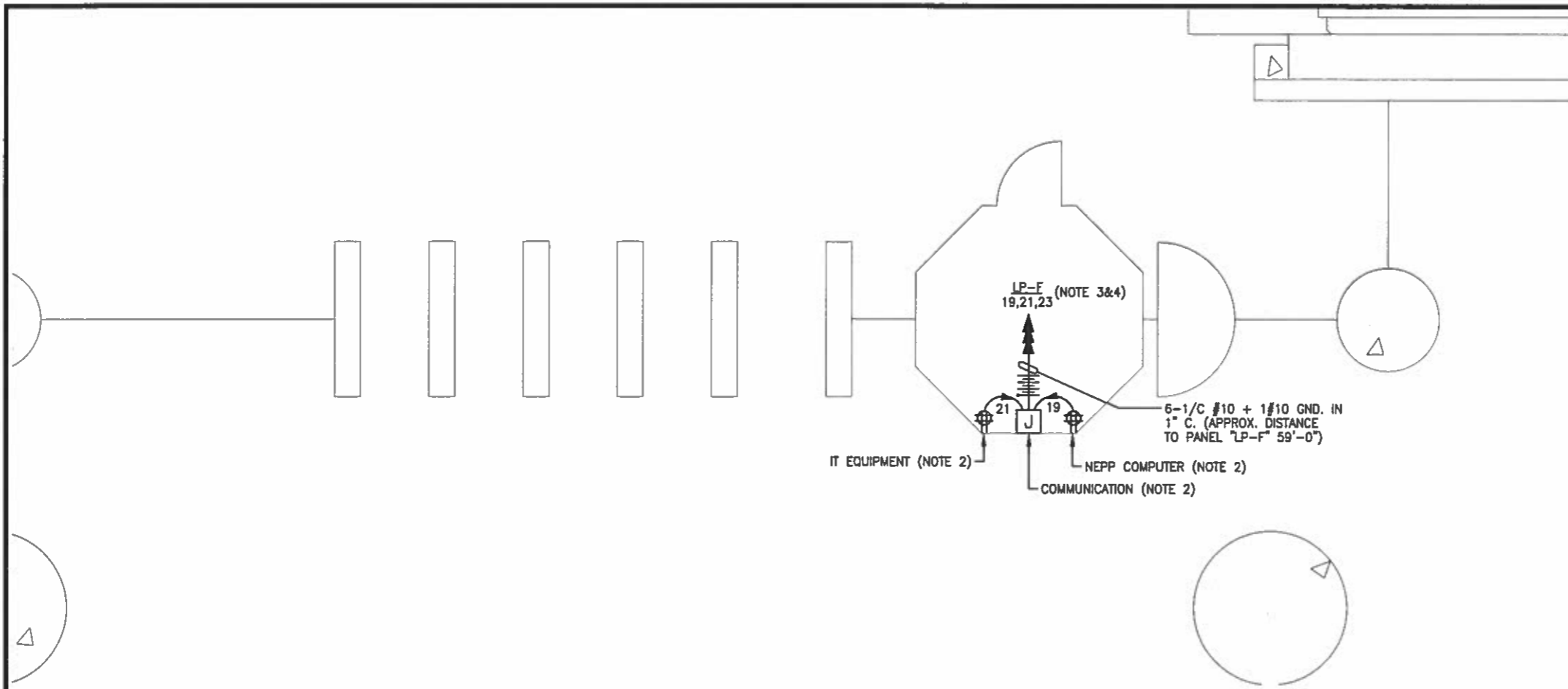
APPROVED

SUBMITTED _____
PROJECT MANAGER

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

SCALE NOT TO SCALE	DRAWING NO. B07-E-001
-----------------------	--------------------------

CONTRACT NO.
14-FQ10060-CENI-24



- 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. B07-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.

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

CONTRACT NO.
14-FQ10060-CENI-24

DESIGNED	C. NCO	07-14
		DATE
DRAWN	C. NCO	07-14
		DATE
CHECKED	B. IDLBI	07-14
		DATE
APPROVED	N/A	
		DATE

REFERENCE DRAWINGS		REVISIONS	
NUMBER	DESCRIPTION	DATE	BY

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ 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

LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	POLE	AMP	KVA	LOAD DESCRIPTION	
		AMP	POLE	NO.						
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 CONDENSING 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	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	07-14					
CHECKED	B. IDLBI	07-14					
APPROVED	N/A						

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ SUBMITTED _____
PROJECT MANAGER

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

SCALE: NOT TO SCALE

DRAWING NO. B07-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	REFERENCE DRAWINGS		REVISIONS			
			DATE	NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	07-14						
CHECKED	B. IDILBI	07-14						
APPROVED	N/A							

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

GFP A Cassetti Fleming/Parsons
JOINT VENTURE

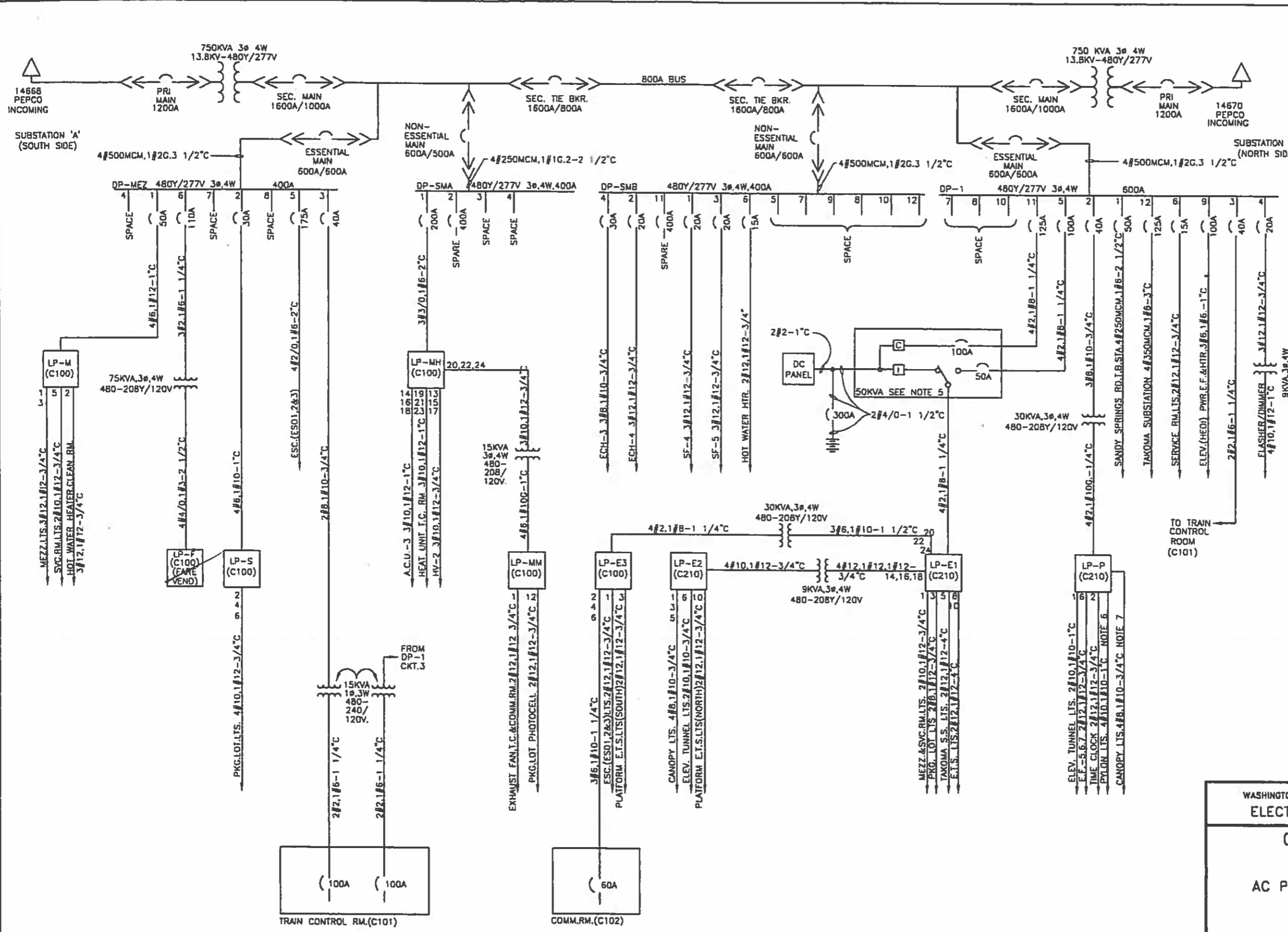
NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
TAKOMA
PANELBOARD IMAGE

APPROVED _____

SUBMITTED _____
PROJECT MANAGER

SCALE
NOT TO SCALE

DRAWING NO.
B07-E-301



- NOTES:**
- 1. PANEL DESIGNATION
 - 2. PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY
 - 3. ROOM LOCATION
 - 4. TYPE OF DISTRIBUTION
 - 5. (CIRCUIT NUMBER)
 - 6. + IF NO CIRCUITS SHOWN
 - 7. 2, 3-2, 1-5 2"
 - 8. CONDUIT SIZE
 - 9. AWG. GROUND WIRE
 - 10. AWG. OR MCM CIRCUIT WIRES
 - 11. 3 CIRCUIT BREAKERS
 - 12. DRAW OUT ← → >1600A/1200A
 - 13. MOLDED CASE
 - 14. FRAME SIZE
 - 15. 4, 4/C-4/0
 - 16. TRIP SETTING
 - 17. INDICATES MULTICONDUCTOR CABLE WITH 4 CONDUCTOR AND SIZE OF EACH 4/0
 - 18. 5. RATING AS SHOWN FOR UNINTERRUPTIBLE POWER SUPPLY CONSISTING OF RECTIFIER CHARGER INVERTER, POWER TRANSFER SWITCH ASSOCIATED BATTERIES AND PANELBOARD.
 - 19. 6. INCLUDE BRANCH CIRCUIT GROUPS (25,27,29) & (26,28,30)
 - 20. 7. INCLUDE BRANCH CIRCUIT GROUPS (13,15,17) (14,16,18) (19,21,23) & (20,22,24)
 - 21. 8. SWITCHGEAR MANUFACTURER: F.P.E.
 - 22. TYPE OF BREAKERS N.E.F.
 - 23. 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: NONE	DRAWING No. MM-B-E20
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ELECTRICAL SPECIFICATIONS

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

ABBREVIATIONS

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

DRAWING INDEX

B08-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
B08-E-101	SILVER SPRING - NORTH & SOUTH - KIOSK - POWER
B08-E-102	SILVER SPRING - NORTH & SOUTH - PANEL SCHEDULES
B08-E-301	SILVER SPRING - NORTH & SOUTH - PANELBOARD IMAGE
B08-E-302	SILVER SPRING - NORTH & SOUTH - PANELBOARD IMAGE
MM-B-E22	SILVER SPRING - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

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

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

APPROVED

SUBMITTED _____
PROJECT MANAGER

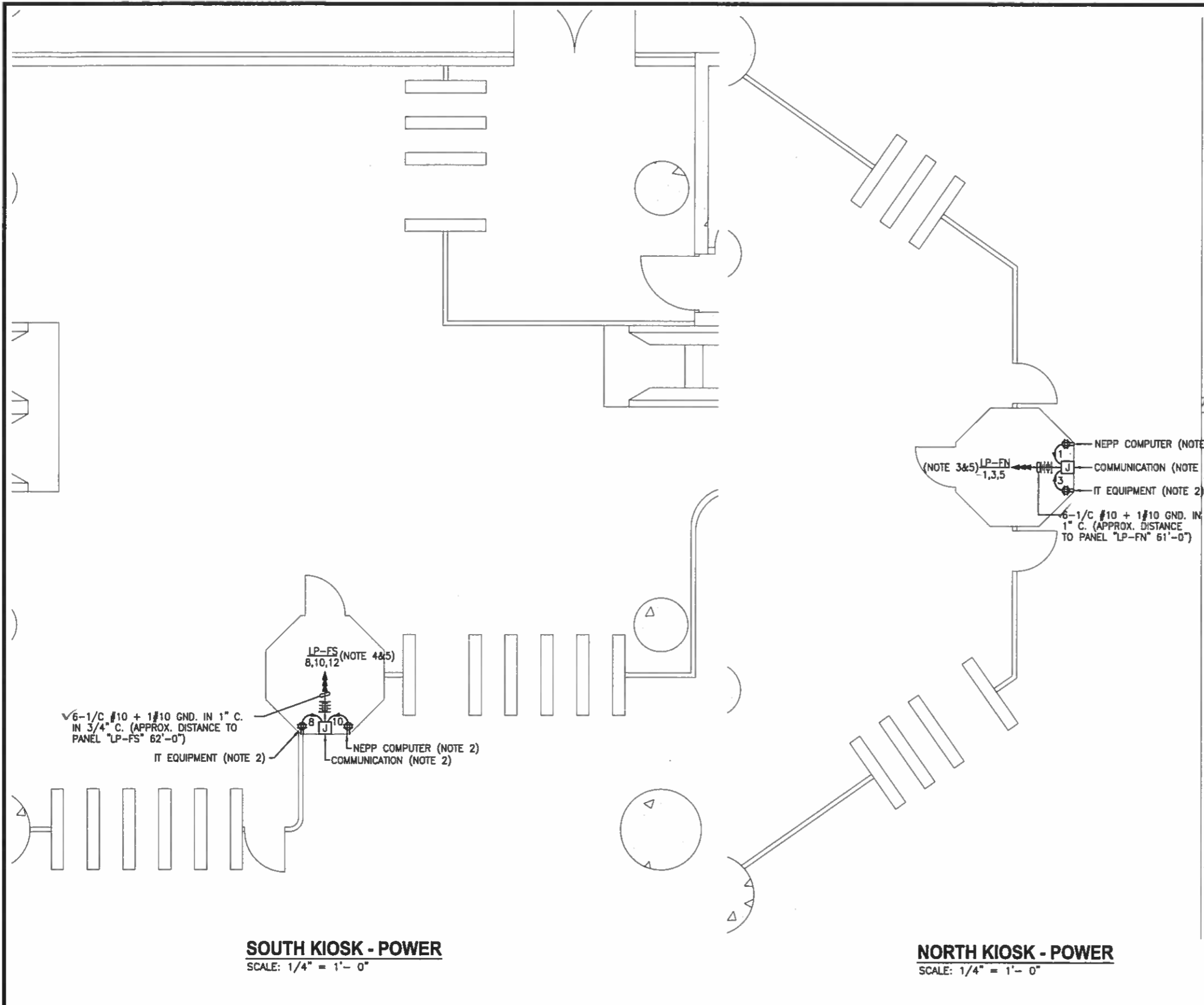
**NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS**

ABBREVIATIONS, DRAWING INDEX,
SPECIFICATIONS & SYMBOL LIST

SCALE: NOT TO SCALE

DRAWING NO. B08-E-001

CONTRACT NO.
14-FQ10060-CENI-24



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 6'0" CONDUCTOR.

SAFETY PRECAUTION:

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

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

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

CONTRACT NO.
14-FQ10060-CENI-24

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

REFERENCE DRAWINGS		REVISIONS	
NUMBER	DESCRIPTION	DATE	DESCRIPTION

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED: *[Signature]* 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: 225AMCB		PHASE: 3		LOCATION: ELECTRICAL EQUIPMENT 119						
RATING: 10K A/C		WIRE: 4		SECTION: 1 OF 1						
LOAD DESCRIPTION	KVA	AMP	POLE	CKT. BKRS			KVA	LOAD DESCRIPTION		
				NO.	NO.	NO.				
EXISTING VENDOR	0.8	20	1	1	A - -	2	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	0.8	NEW KIOSK RECEPT. (IT & NCS)	
SPACE	0.0	-	-	9	- B -	10	1	0.8	NEW KIOSK RECEPT. (NEPP/SOC)	
SPACE	0.0	-	-	11	- - C	12	1	0.0	FUTURE AFC FARE GATE	
EXISTING VENDOR	0.8	20	1	13	A - -	14	1	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	15	- B -	16	1	0.8	EXISTING VENDOR	
SPARE	0.0	20	1	17	- - C	18	1	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	19	A - -	20	1	0.0	SPARE	
EXISTING VENDOR	0.8	20	1	21	- B -	22	1	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	23	- - C	24	1	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	25	A - -	26	1	0.0	SPARE	
EXISTING VENDOR	0.8	20	1	27	- B -	28	1	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	29	- - C	30	1	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	31	A - -	32	1	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	33	- B -	34	1	0.0	SPARE	
EXISTING VENDOR	0.8	20	1	35	- - C	36	1	0.0	SPARE	
EXISTING VENDOR	0.8	20	1	37	A - -	38	1	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	39	- B -	40	1	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	41	- - C	42	1	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: 225AMCB		PHASE: 3		LOCATION: ROOM 108						
RATING: 10K A/C		WIRE: 4		SECTION: 1 OF 1						
LOAD DESCRIPTION	KVA	AMP	POLE	CKT. BKRS			KVA	LOAD DESCRIPTION		
				NO.	NO.	NO.				
NEW KIOSK RECEPT. (IT & NCS)	0.8	20	1	1	A - -	2	3	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	0.8	EXISTING VENDOR	
SPARE	0.0	20	1	9	- B -	10	1	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	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	19	A - -	20	1	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	21	- B -	22	1	0.8	EXISTING VENDOR	
SPARE	0.0	20	1	23	- - C	24	1	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	25	A - -	26	1	0.8	EXISTING VENDOR	
SPARE	0.0	20	1	27	- B -	28	1	0.8	EXISTING VENDOR	
SPARE	0.0	20	1	29	- - C	30	1	0.0	SPARE	
EXISTING VENDOR	0.8	20	1	31	A - -	32	1	0.0	SPARE	
SPARE	0.0	20	1	33	- B -	34	1	0.8	EXISTING VENDOR	
SPARE	0.0	20	1	35	- - C	36	1	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	37	A - -	38	1	0.0	SPARE	
SPARE	0.0	20	1	39	- B -	40	1	0.0	SPARE	
EXISTING VENDOR	0.8	20	1	41	- - C	42	1	0.0	SPARE	
SPARE	0.0	20	1	43	A - -	44	1	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:


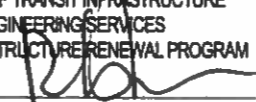
- 1-3" C. TO TRANSFORMER (WIRING FILL >40%).
- 2-3/4" C. (WIRING FILL >40%).

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM		 A Gannett Fleming/Parsons JOINT VENTURE		NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS SILVER SPRING - NORTH & SOUTH PANEL SCHEDULES	
APPROVED		SUBMITTED	PROJECT MANAGER	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

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

GFP A Cornell Fleming/Parsons
JOINT VENTURE

APPROVED _____

SUBMITTED _____
PROJECT MANAGER

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

SCALE
NOT TO SCALE

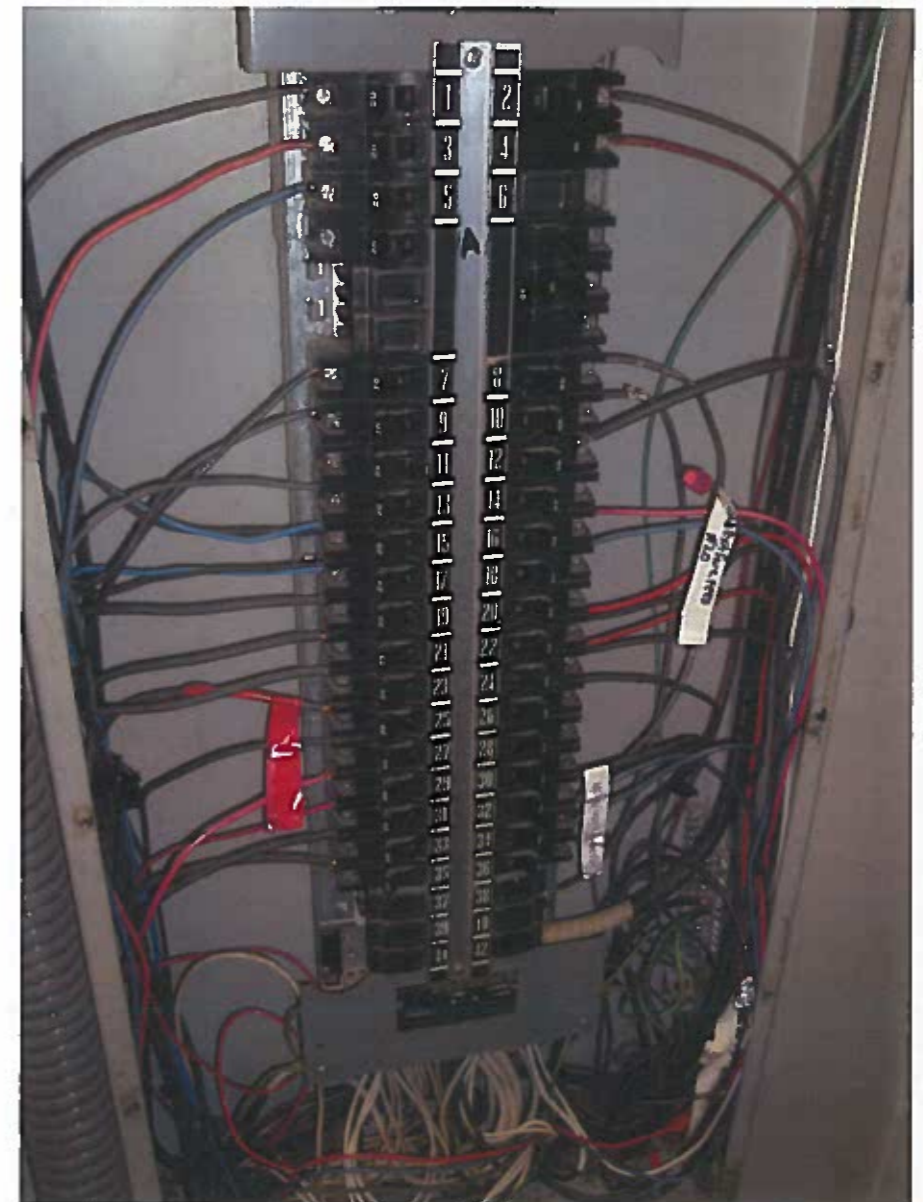
DRAWING NO.
B08-E-301



EXISTING PANEL "LP-FS"



EXISTING PANEL "LP-FS"



EXISTING PANEL "LP-FS"

CONTRACT NO.
14-FQ10060-CENI-24

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

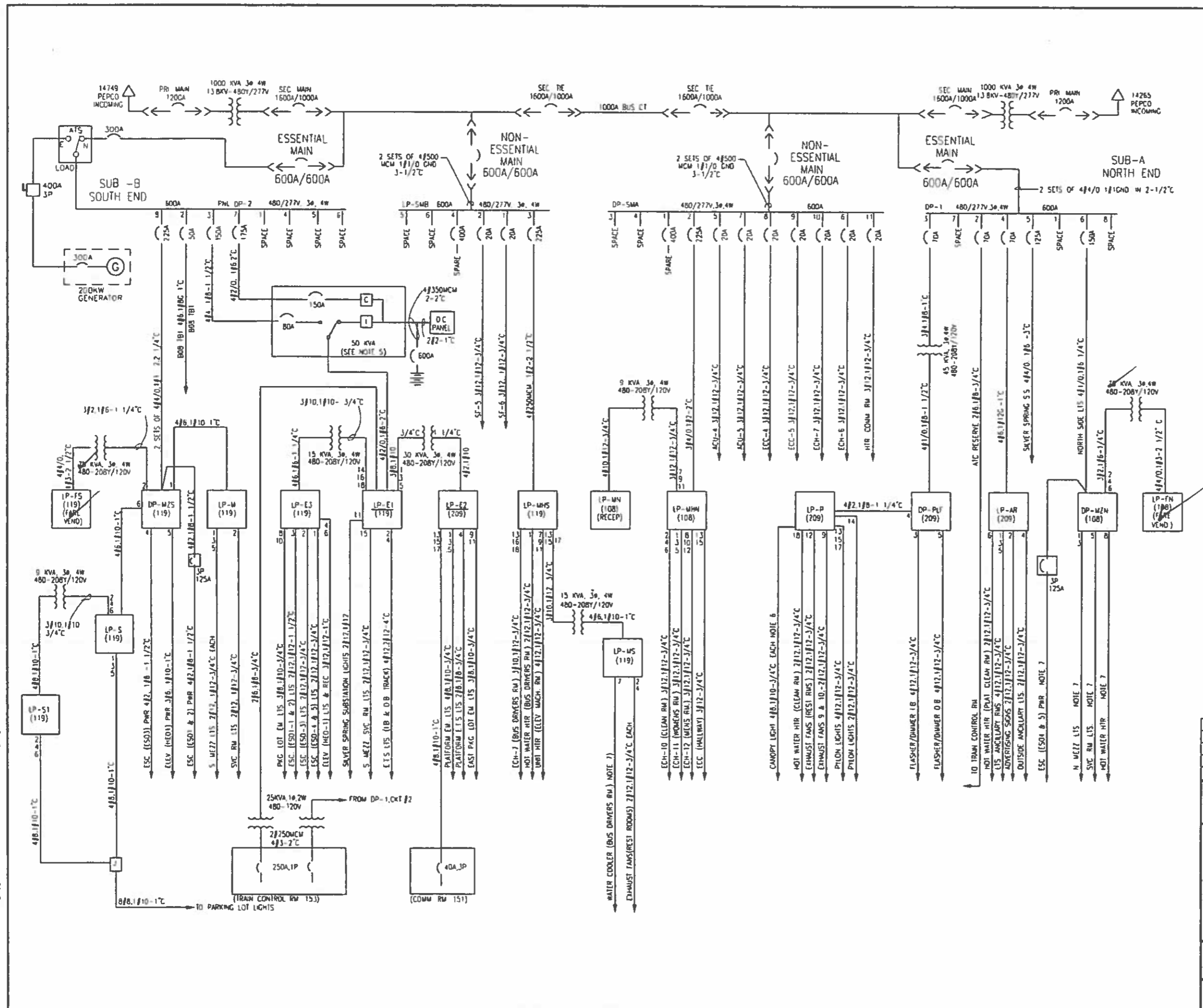
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DEPARTMENT OF TRANSIT INFRASTRUCTURE
AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM



APPROVED _____ SUBMITTED _____ PROJECT MANAGER _____

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

SCALE: NOT TO SCALE DRAWING NO. B08-E-302



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

REVISIONS			
DATE	BY	APRVD	DESCRIPTION
11/00	RJM	[Signature]	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

ELECTRICAL SPECIFICATIONS

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

ABBREVIATIONS

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

DRAWING INDEX

B09-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
B09-E-101	FOREST GLEN - KIOSK - POWER
B09-E-102	FOREST GLEN - PANEL SCHEDULE
B09-E-301	FOREST GLEN - PANELBOARD IMAGE
MM-B-E24	FOREST GLEN - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

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

CONTRACT NO
14-FQ10060-CENI-24

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

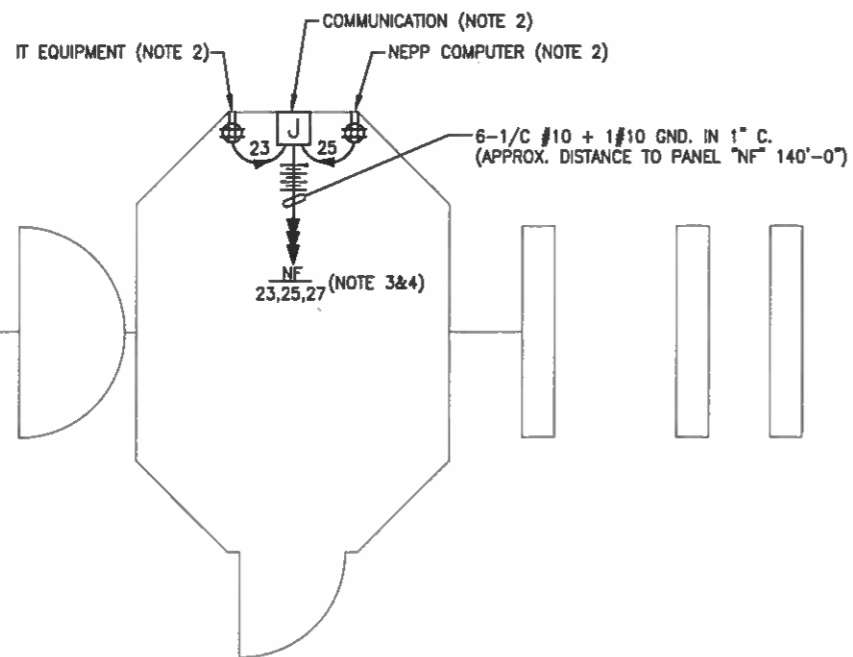
GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED SUBMITTED _____ PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
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	REFERENCE DRAWINGS		REVISIONS		
				NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
	DRAWN	C. NGO	07-14					
	CHECKED	B. IDILBI	07-14					
	APPROVED	N/A						

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
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						
LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	POLE	CKT. BKRS			LOAD DESCRIPTION
		AMP	POLE	NO.			NO.	POLE	AMP	
EXISTING VENDOR	0.8	20	1	1	A - -	2	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	3	- B -	4	1	20	0.8	EXISTING VENDOR
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. C106, 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	REFERENCE DRAWINGS		REVISIONS	
			NUMBER	DESCRIPTION	DATE	BY
DRAWN	C. NGO	07-14				
CHECKED	B. IDLBI	07-14				
APPROVED	N/A					

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS
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		DATE		REFERENCE DRAWINGS		REVISIONS		
NUMBER	DESCRIPTION	DATE	BY	NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
C. NGO	07-14							
C. NGO	07-14							
B. IDLBI	07-14							
N/A								

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

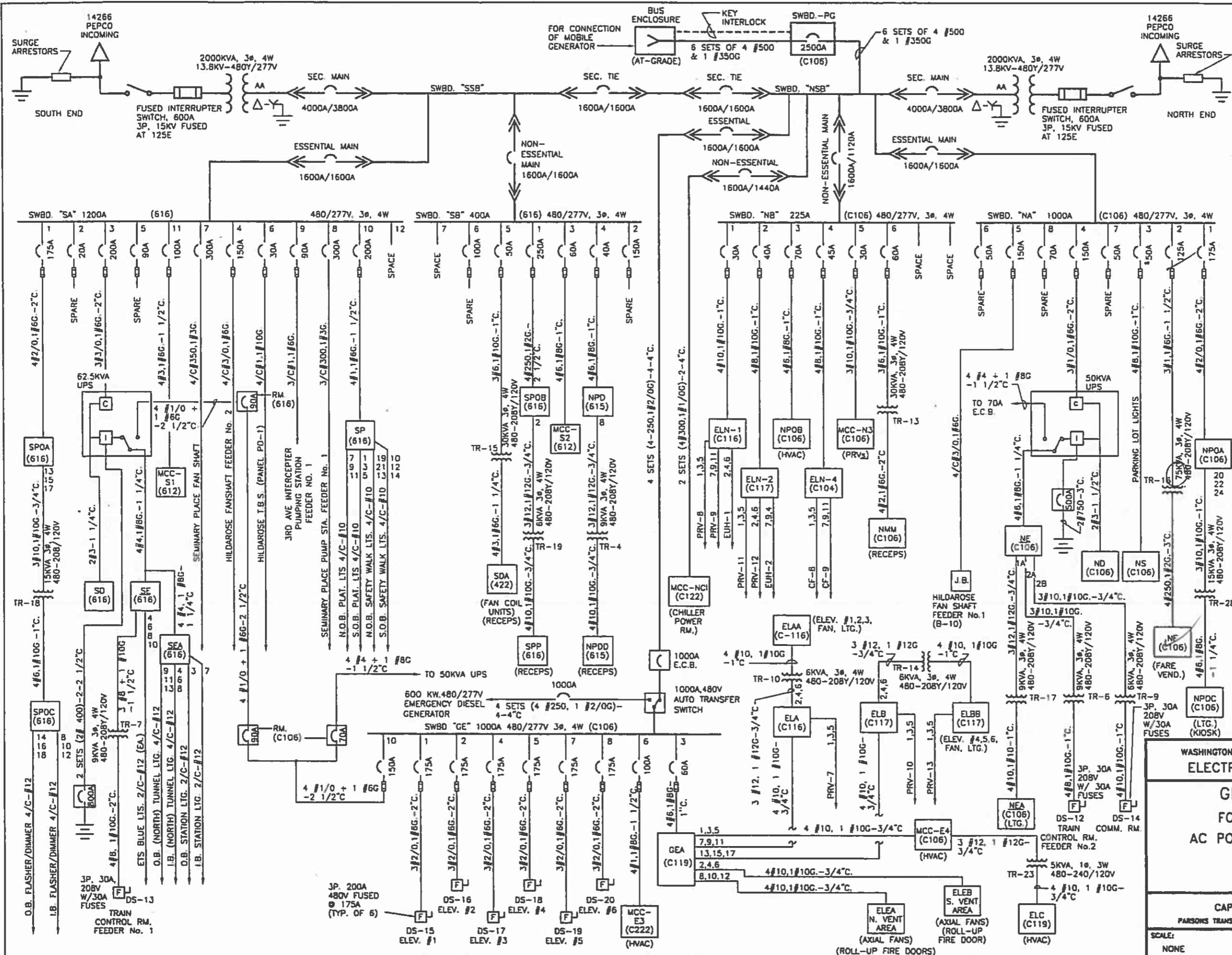
GFP A Connell Fleming/Parsons
 JOINT VENTURE

APPROVED _____
 SUBMITTED _____
 PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
B09-E-301



- NOTES:**
1. PANEL DESIGNATION
 WEA (205)
 (LIGHTING)
 ROOM NUMBER
 TYPE OF DISTRIBUTION
 B (CIRCUIT NUMBER)
 * WHEN NO CKTS SHOWN
 2. 3/2, 2" 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/C 4/0
 INDICATES MULTICONDUCTOR
 CABLE WITH 4 CONDUCTORS
 AND SIZE OF EACH 4/0
 4. RATING AS SHOWN FOR
 UNINTERRUPTIBLE POWER SUPPLY
 CONSISTING OF RECTIFIER/CHARGER,
 INVERTER, POWER TRANSFER SWITCH,
 ASSOCIATED BATTERIES AND D.C.
 PANELBOARD.
 5. SWITCHGEAR MANUFACTURERS
 a. MANUFACTURER:
 GENERAL ELECTRIC
 b. JOB No.: 53306
 c. PLANT CODE No. 7821+
 6. UPS MANUFACTURERS
 I.P.M.
 7. INDICATES BREAKER FUSED WITH
 CURRENT LIMITER.
 8. ROOM DESIGNATIONS

ROOM No.	DESCRIPTION
422	ELEC. RM. @ ENTRANCE SHAFT, LEVEL 6
612	SO. FAN RM.
615	NO. ANCHILARY MOTOR CONTROL RM.
616	SO. AC SWBD. RM.
C104	NO. FAN RM.
C106	NO. AC SWBD. RM.
C116	NO. ELEV. MACHINE RM.
 9. 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 DISCREPANCIES IN THE PLANS & SPECIFICATIONS THAT WILL AFFECT THE WORK, PRIOR TO SUBMISSION OF THE BID PRICE.
12. IF, DURING THE COURSE OF THE WORK, THE CONTRACTOR EXPERIENCES A CONFLICT RELATIVE TO THE PLANS AND SPECIFICATIONS, THE NEC OR OTHER APPLICABLE CODES AND GOVERNING DOCUMENTS, HE SHALL NOTIFY THE ENGINEER FOR DIRECTION PRIOR TO EXECUTION OF THIS WORK. ANY WORK INSTALLED IN VIOLATION OF THE CONTRACT DOCUMENT OR APPLICABLE CODES WHICH COULD HAVE BEEN AVOIDED BY CONTACTING THE ENGINEER SHALL BE RECTIFIED AT NO ADDITIONAL COST.
13. ELECTRICAL PLANS ARE DIAGRAMMATIC & INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE CONDITIONS, ETC. MAINTAIN WORKING CLEARANCES.
14. CIRCUIT NUMBERS ARE FOR IDENTIFICATION PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR CORRECTLY PHASING THE CIRCUITS IN THE PANEL AND SHALL BALANCE THE LOAD ON THE PHASES UNDER NORMAL OPERATING CONDITIONS. PROVIDE TYPEWRITTEN PANELBOARD DIRECTORIES. BALANCE THE PHASE LOADS TO WITHIN 20 PERCENT OF EACH OTHER.
15. INCREASE ALL BRANCH CIRCUIT CONDUCTORS TO THE NEXT LARGER SIZE FROM THE PANEL TO THE FIRST OUTLET WHERE THE LENGTH OF THE HOMERUN EXCEEDS 100FT. ON 120/208V CIRCUITS.
16. PROVIDE A PULLWIRE OR FISHTAPE/CORD IN ALL EMPTY CONDUIT RUNS.
17. VERIFY WIRE SIZES, CIRCUIT BREAKERS AND FUSES RATINGS FOR ALL EQUIPMENT, AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES AFFECTING THE WORK PRIOR TO PROCEEDING.
18. ALL PANELS IMPACTED BY THIS PROJECT SHALL BE PROVIDED WITH NEW, UPDATED TYPEWRITTEN PANEL SCHEDULES (FOR NEW AND EXISTING CIRCUITS) INDICATING THE FINAL ROOM NUMBER AND THE EQUIPMENT OR DEVICES SERVED BY THE CIRCUITS.
19. DEMOLITION OF EXISTING WORK SHALL BE PERFORMED AFTER HOURS. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE WMATA PROJECT MANAGER PRIOR TO PERFORMING ALL THE WORK. THE TIME OF DAY OR EVENING SHALL BE DESIGNATED BY THE WMATA PROJECT MANAGER.
20. ALL WIRING SHALL BE IN CONDUIT, MINIMUM SIZE 3/4 INCH WITH LARGER SIZES AS INDICATED OR REQUIRED BY NEC. ALL CONDUITS SHALL BE RIGID GALVANIZED STEEL THREADED COUPLING FOR COMPLETE WATER PROOF INSTALLATION.
21. AT JOB COMPLETION, AND BEFORE FINAL ACCEPTANCE BY WMATA, TEST EACH RECEPTACLE AND PANELBOARD FOR PROPER OPERATION. WIRING SHALL BE TESTED FOR CONTINUITY, SHORTS, ETC... ALL WORK AREAS, ETC.. SHALL BE CLEANED AT THE COMPLETION OF THIS PROJECT.
22. FOR DEVICE IDENTIFICATION, THE ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELBOARDS, JUNCTION BOXES, ETC.. TO INDICATE THE NAME, VOLTAGE, SERVING EQUIPMENT AND ITEM SERVED ETC... LABELS FOR EMERGENCY CIRCUITS SHALL BE IN RED, NORMAL CIRCUITS SHALL BE IN BLACK. ALL DEVICES SHALL BE IDENTIFIED EITHER ON THE FACE OF THE COVERPLATE OR INSIDE PER WMATA PREFERENCE. ALL JUNCTION BOXES SHALL BE LABELED TO INDICATE THE CIRCUITS CONTAINED BY THE JUNCTION BOX.
23. THE CONTRACTOR SHALL UPDATE THE SCHEDULES OF ALL PANELBOARDS AFFECTED BY THIS PROJECT TO REFLECT CHANGES DUE TO THE PROJECT WORK. PANEL SCHEDULE LOAD DESCRIPTIONS ARE TO INCLUDE THE FINAL ROOM OR AREA NUMBERS.
24. INCLUDE GPR FOR ANY CORE DRILLS OR DRILLED PENETRATIONS IN ANY WALLS.
25. SEAL OFF ALL PENETRATIONS THRU WALLS/FLOORS.
26. THE CONTRACTOR SHALL BECOME FAMILIAR WITH WMATA DESIGN CRITERIA SECTION 4 AND SECTION 13; WMATA SPECIFICATION SECTION 16120, 16130, AND 16125. ALL INSTALLATION SHALL BE IN COMPLIANCE WITH THE NEC, WMATA DESIGN CRITERIA, AND SPECIFICATIONS.
27. THE CONTRACTOR SHALL IDENTIFY SPARE CIRCUIT WITH "RESERVED FOR AFC".
28. EXISTING SWITCHBOARDS, PANELBOARDS AND EQUIPMENT SHOWN IS BASED ON RECORD DRAWINGS AND CASUAL FIELD SURVEY. CONTRACTOR SHALL VERIFY ALL ELECTRICAL EQUIPMENT IN FIELD.

ABBREVIATIONS

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

DRAWING INDEX

B10-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
B10-E-101	WHEATON - KIOSK - POWER
B10-E-102	WHEATON - PANEL SCHEDULE
B10-E-301	WHEATON - PANELBOARD IMAGE
MM-B-E26	WHEATON - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

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

CONTRACT NO.
14-FQ10060-CENI-24

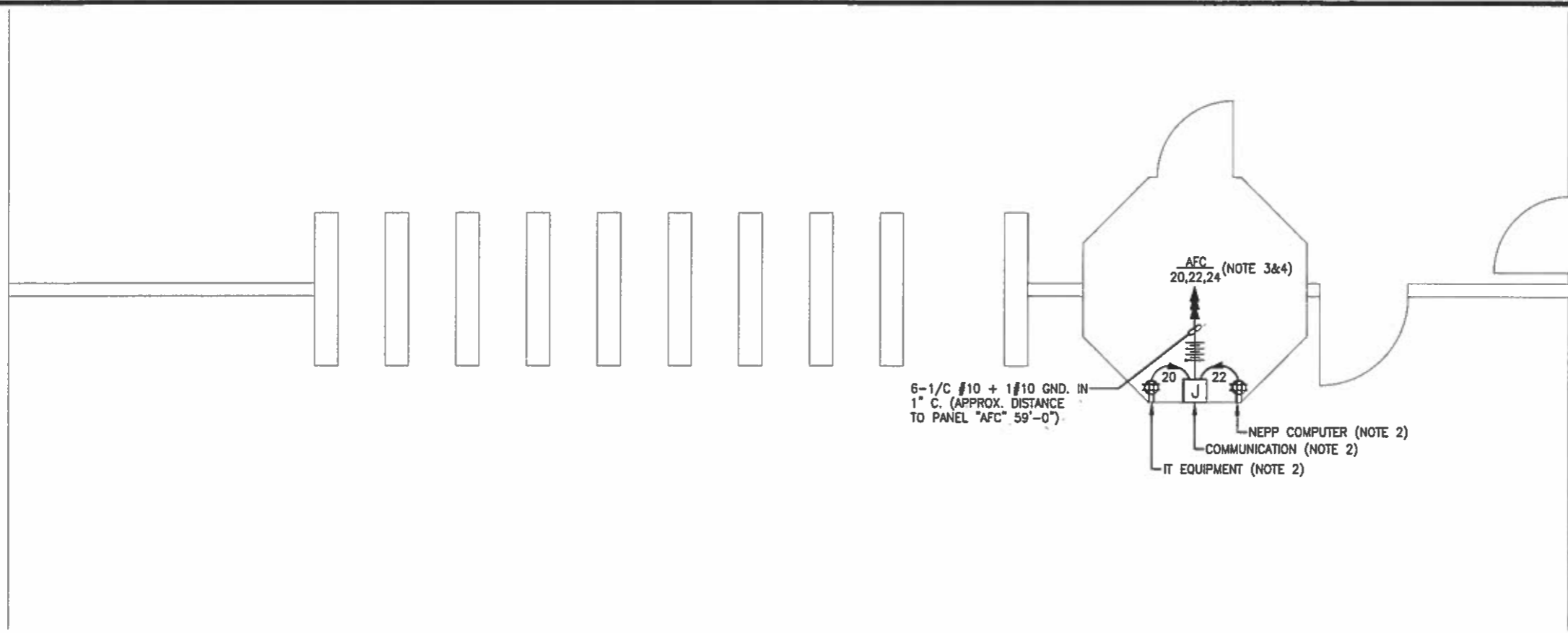
DESIGNED	C. NGO	07-14	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	C. NGO	07-14					
CHECKED	B. IDILBI	07-14					
APPROVED	N/A						

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

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

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

SCALE: NOT TO SCALE
 DRAWING NO: B10-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 #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 6'0" CONDUCTOR.

SAFETY PRECAUTION:

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

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		REVISIONS		
NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ SUBMITTED _____
PROJECT MANAGER

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

SCALE AS SHOWN DRAWING NO. B10-E-101

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						
LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	POLE	CKT BKRS			LOAD DESCRIPTION
		AMP	POLE	NO.			NO.	AMP	KVA	
SPARE	0.0	20	1	1	A - -	2	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	3	- B -	4	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	5	- - C	6	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	7	A - -	8	1	20	0.8	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 <u>C. NGO</u>	07-14	REFERENCE DRAWINGS		REVISIONS	
DRAWN <u>C. NGO</u>	07-14	NUMBER	DESCRIPTION	DATE	BY
CHECKED <u>B. IDLBI</u>	07-14				
APPROVED <u>N/A</u>					

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

GFP
A Gannett Fleming/Parsons
JOINT VENTURE

APPROVED _____

SUBMITTED _____

PROJECT MANAGER

**NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRO RAIL STATIONS**

WHEATON
PANEL SCHEDULE

SCALE
NOT TO SCALE

DRAWING NO.
B10-E-102



EXISTING PANEL "AFC"



EXISTING PANEL "AFC"



EXISTING PANEL "AFC"

CONTRACT NO.
14-FQ10060-CENI-24

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

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

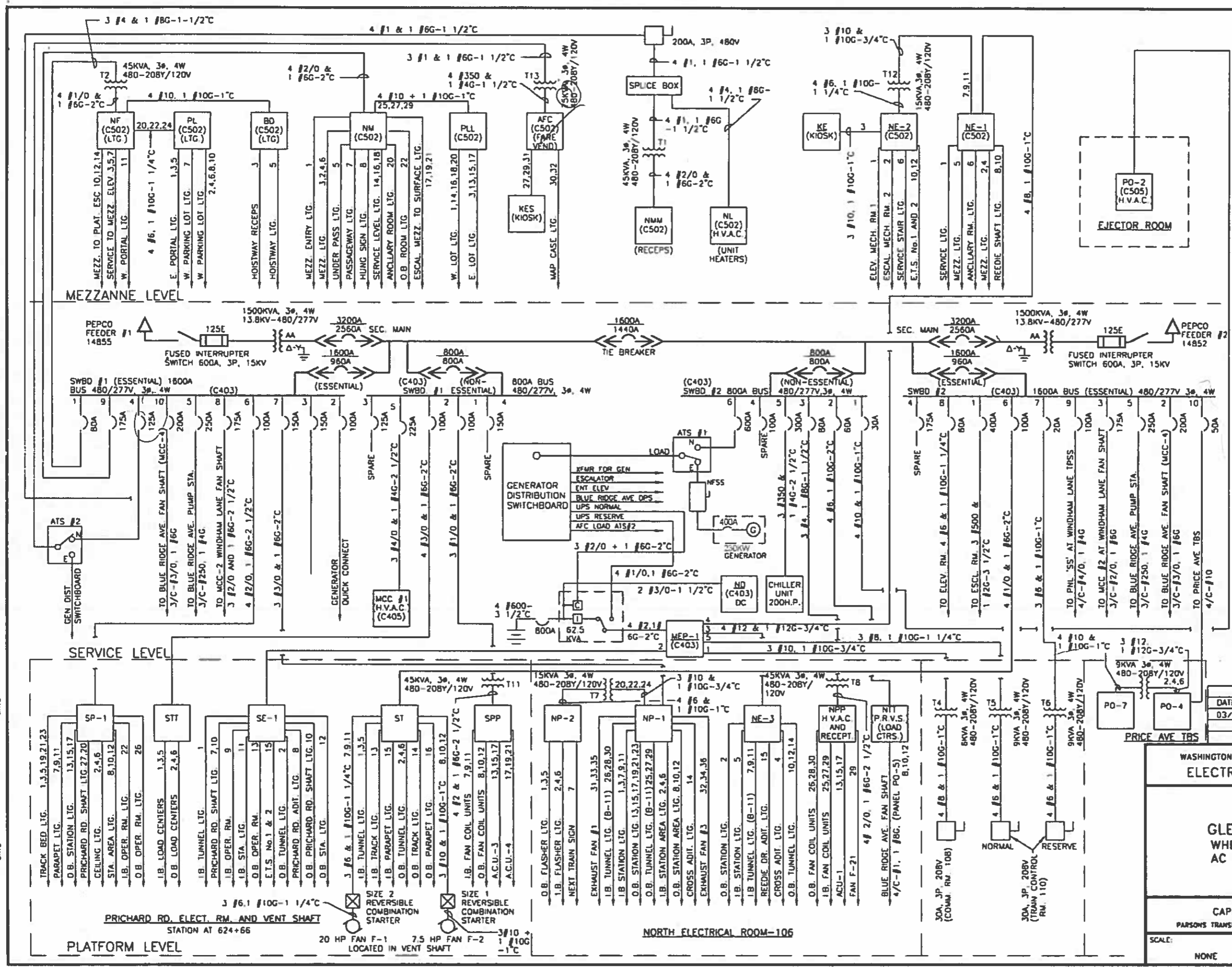
GFP A Garretti Fleming/Parsons
 JOINT VENTURE

APPROVED _____
 SUBMITTED _____
 PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
B10-E-301



- NOTES:**
- WEA (205) (LIGHTING)

PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY

ROOM NUMBER

TYPE OF DISTRIBUTION

B (CIRCUIT NUMBER)

• WHEN NO CKTS SHOWN
 - 3/2, 2" CONDUIT SIZE

AWG OR KCMIL CIRCUIT WIRES

• AS TAKEN FROM AS BUILT DWGS.
 - CIRCUIT BREAKERS

DRAW OUT $\leftarrow \rightarrow$ 1600A/1200A

FRAME SIZE CONTINUOUS CURRENT SETTING

MOLDED CASE 100A

TRIP SETTING
 - 4/C 4/0

INDICATES MULTICONDUCTOR CABLE WITH 4 CONDUCTORS AND SIZE OF EACH 4/0
 - RATING AS SHOWN FOR UNINTERRUPTIBLE POWER SUPPLY CONSISTING OF RECTIFIER/CHARGER, INVERTER, POWER TRANSFER SWITCH, ASSOCIATED BATTERIES AND D.C. PANELBOARD.
 - SWITCHGEAR INFORMATION**

a. MANUFACTURER: GENERAL ELECTRIC

b. JOB No.: 53790

c. PLANT CODE No.: (1) ESS SWBD-T904+ (2) NON-ESS SWBD-T905+
 - UPS MANUFACTURER:** I.P.M.
 - 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 | WJ | 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

DATE: _____

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

ABBREVIATIONS

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

DRAWING INDEX

B11-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
B11-E-101	GLENMONT - MEZZANINE KIOSK - POWER
B11-E-102	GLENMONT - PANEL SCHEDULE
B11-E-301	GLENMONT - PANELBOARD IMAGE
MM-B-E29	GLENMONT - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

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

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

REFERENCE DRAWINGS		REVISIONS		
NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED: _____ SUBMITTED: _____ PROJECT MANAGER

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

ABBREVIATIONS, DRAWING INDEX,
SPECIFICATIONS & SYMBOL LIST

SCALE: NOT TO SCALE

DRAWING NO. B11-E-001

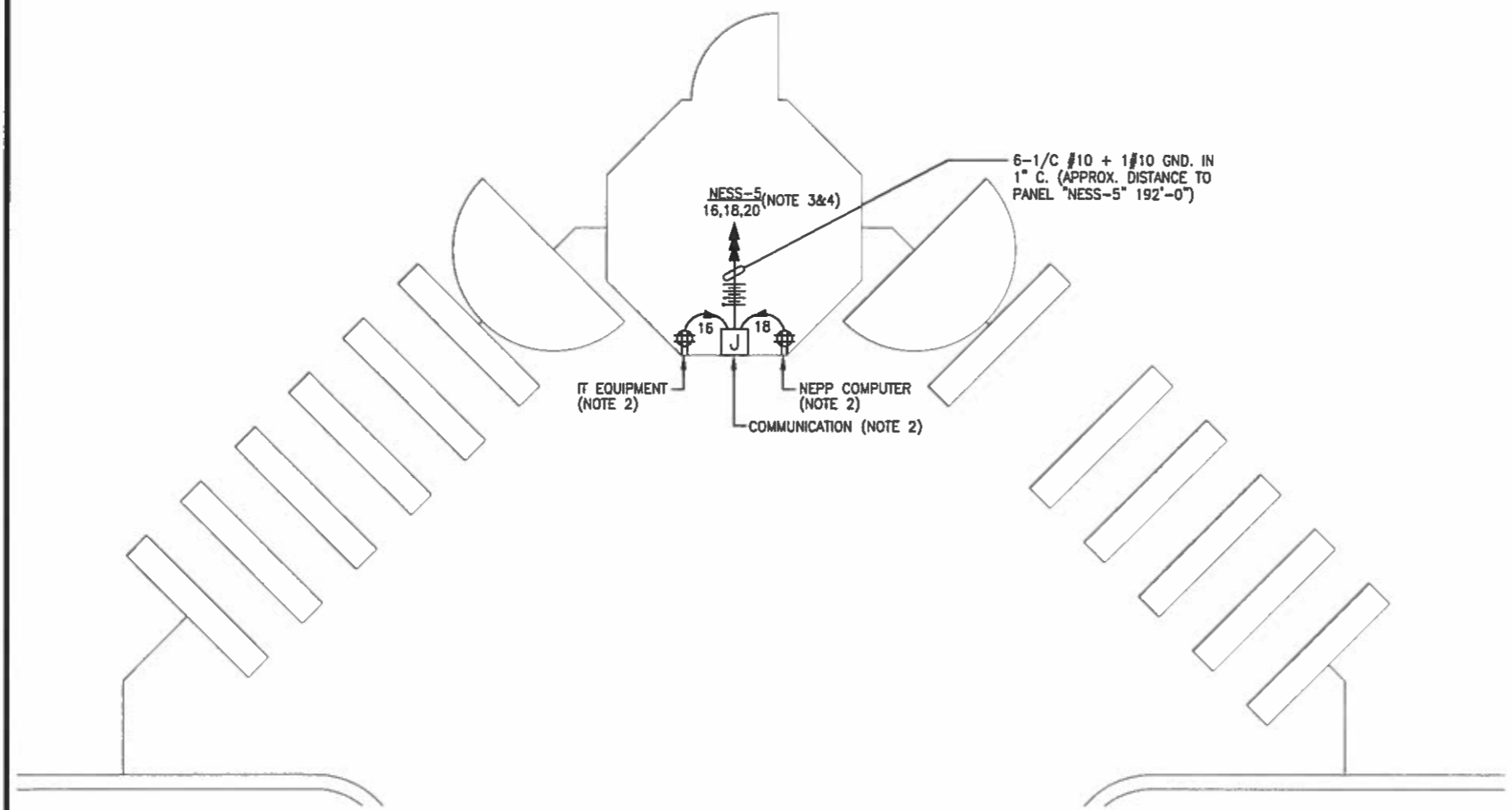
CONTRACT NO. 14-FQ10060-CENI-24

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.



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

CONTRACT NO.
14-FQ10060-CENI-24

		DATE	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DESIGNED	C. NGO	07-14					
		DATE					
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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ 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				
LOAD DESCRIPTION	KVA	AMP	POLE	CKT. NO.	CKT. NO.	CKT. BKRS	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	REFERENCE DRAWINGS		REVISIONS	
			NUMBER	DESCRIPTION	DATE	BY
DRAWN	C. NGO	07-14				
CHECKED	B. EDILBI	07-14				
APPROVED	N/A					

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED:  SUBMITTED: _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRO RAIL 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"

CONTRACT NO.
14-FQ10060-CENI-24

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

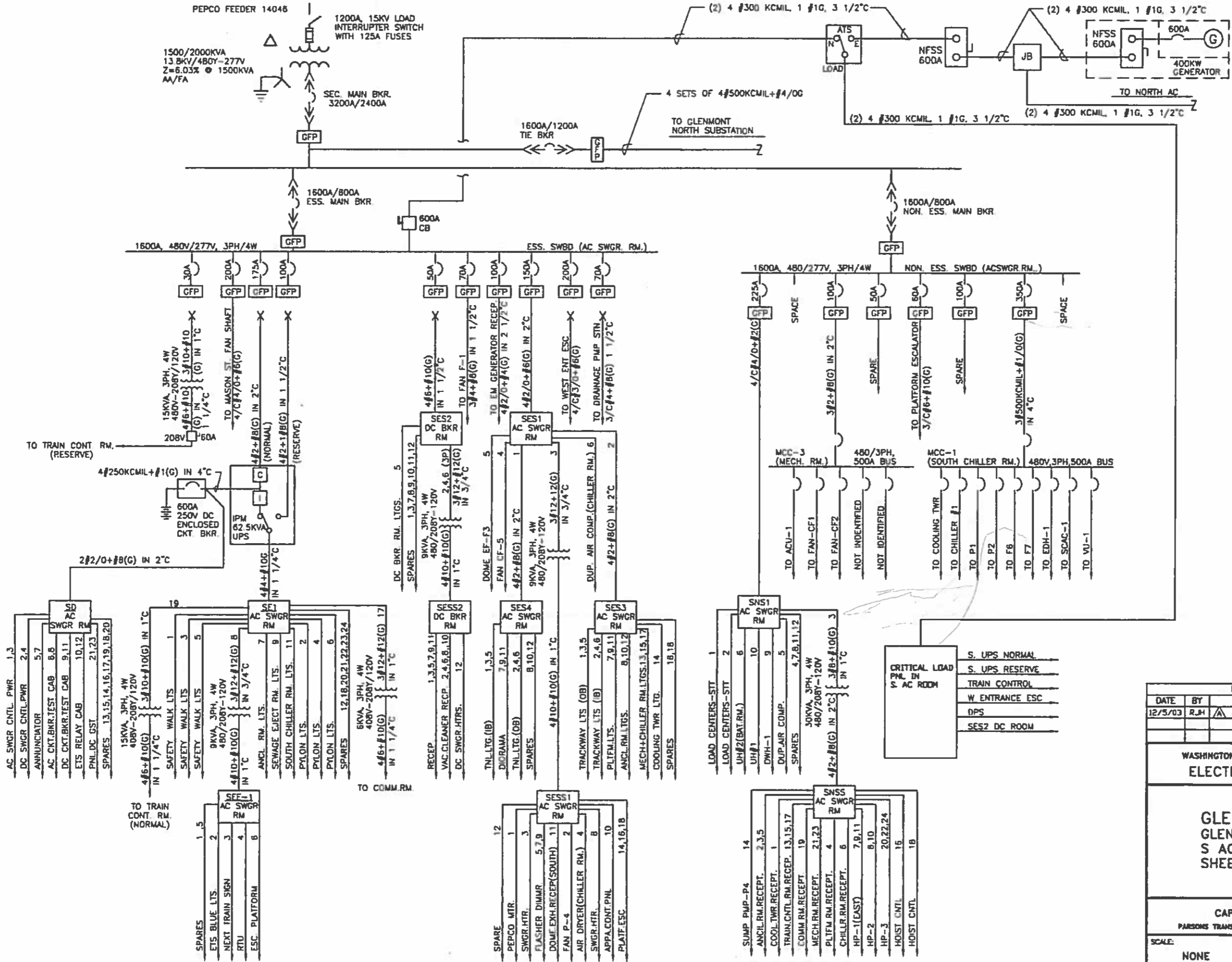
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DEPARTMENT OF TRANSIT INFRASTRUCTURE
AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM



APPROVED _____ SUBMITTED _____
PROJECT MANAGER

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

SCALE: NOT TO SCALE
DRAWING NO.: B11-E-301



- 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 MANUFACTURER
 SIEMENS
 5. TRANSFORMER MANUFACTURER
 VIRGINIA TRANSFORMER (VT)
 6. UPS MANUFACTURER
 INTERNATIONAL POWER MACHINE (IPM)
 7. X = REROUTED TO CRITICAL LOAD PANEL

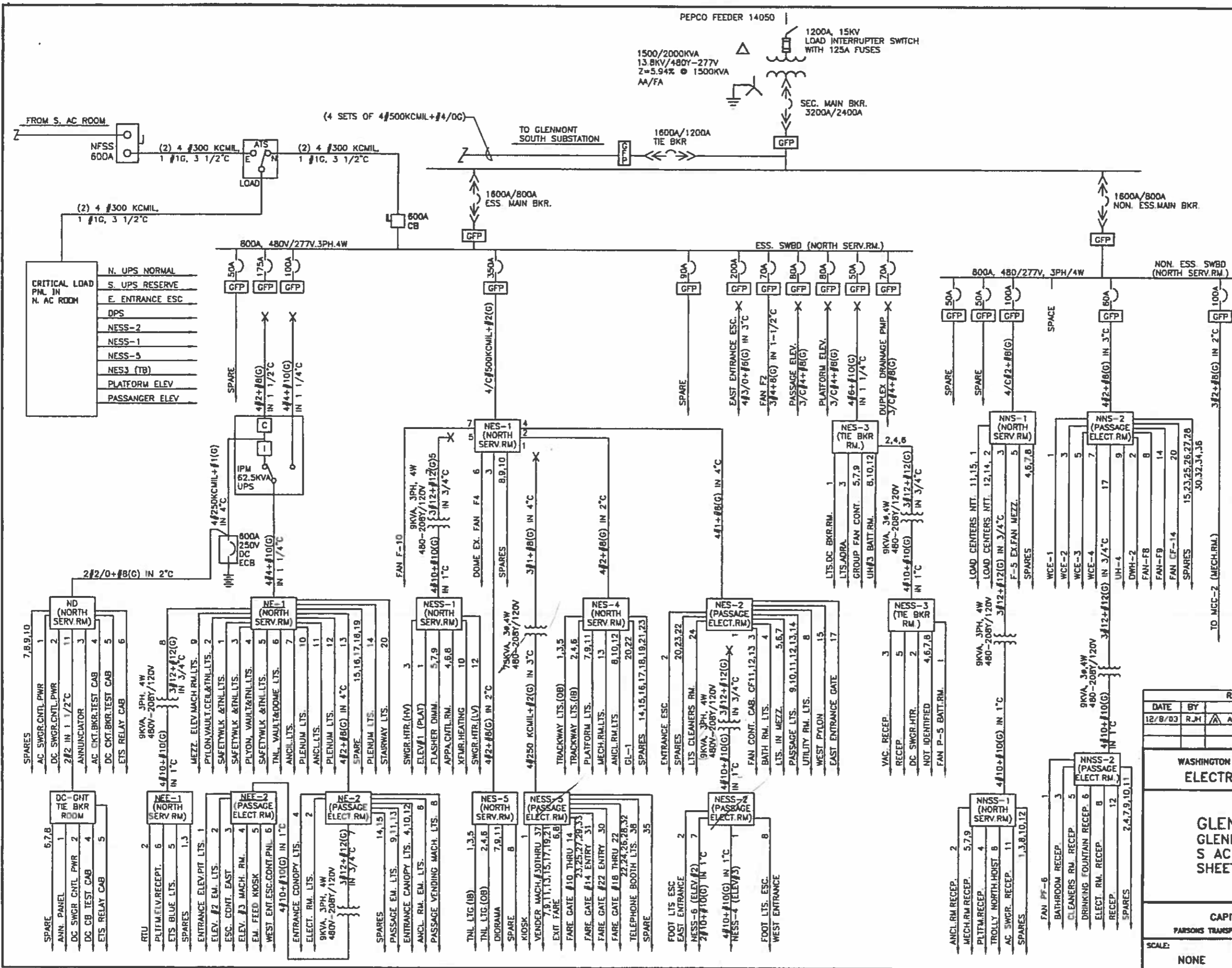
REVISIONS		
DATE	BY	DESCRIPTION
12/5/03	RJM	ADDED EMERGENCY GENERATOR

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
ELECTRICAL MAINTENANCE MAP

GLENMONT ROUTE
GLENMONT STATION B11
S AC POWER ONE-LINE DIAGRAM
SHEET 1 OF 2

CAPITAL IMPROVEMENT PROGRAM
 PARSONS TRANSPORTATION GROUP - CAPITAL TRANSIT CONSULTANTS

SCALE:	DRAWING No.
NONE	MM-B-E28



- NOTES:
1. PANEL DESIGNATION

WEA (205)

PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY

ROOM NUMBER

8 (CIRCUIT NUMBER)
 - 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.

REVISIONS		
DATE	BY	DESCRIPTION
12/8/03	RJM	ADDED EMERGENCY GENERATOR

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
ELECTRICAL MAINTENANCE MAP

GLENMONT ROUTE
GLENMONT STATION B11
S AC POWER ON-LINE DIAGRAM
SHEET 2 OF 2

CAPITAL IMPROVEMENT PROGRAM	
PARSONS TRANSPORTATION GROUP - CAPITAL TRANSIT CONSULTANTS	
SCALE: NONE	DRAWING NO. MM-B-E29

ELECTRICAL SPECIFICATIONS

- ALL WORK, MATERIAL AND EQUIPMENT SHALL COMPLY WITH THE LATEST NATIONAL ELECTRICAL CODE BEING USED BY THE LOCAL JURISDICTION AND SHALL COMPLY WITH ALL LOCAL CODES AND ORDINANCES.
- MATERIALS AND EQUIPMENT SHALL BE NEW EXCEPT WHERE INDICATED OTHERWISE. ALL OTHER WIRING DEVICES, CONDUIT, WIRE, ETC. SHALL BE NEW UNLESS NOTED OTHERWISE.
- ALL MATERIALS AND EQUIPMENT SHALL BEAR U.L. LISTING.
- MAINTAIN GROUNDING CONTINUITY TO ALL DEVICES AND EQUIPMENT IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
- WORK NOT SPECIFICALLY SPECIFIED OR INDICATED SHALL CONFORM WITH SPECIFICATIONS.
- ALL CONDUITS SHALL BE RUN CONCEALED IN UNDER FLOOR DUCT.
- ALL WIRE AND CABLE SHALL BE COPPER HAVING 600 VOLTS XHHW-2 OR RHW-2 INSULATIONS. PROVIDE #12 WIRE MINIMUM, UNLESS OTHERWISE NOTED. ALL CABLES SHALL BE LOW SMOKE ZERO HALOGEN CABLE.
- THE CONTRACTOR SHALL VISIT THE SITE AND EXAMINE THE CONDITION OF THE PREMISES AND THE CHARACTER AND EXTENT OF WORK REQUIRED PRIOR TO SUBMISSION OF BIDS.
- OBTAIN ALL PERMITS AND PAY ALL FEES NECESSARY FOR INSPECTIONS, TESTS & OTHER SERVICES REQUIRED FOR THE COMPLETION OF THIS WORK.
- ALL WORK SHALL BE DONE AT SUCH TIMES AND IN SUCH A MANNER THAT WILL LEAST INTERFERE WITH THE MAINTENANCE AND OPERATION OF ALL RELATED OR AFFECTED SYSTEMS. COORDINATE ALL POWER OUTAGES WITH WMATA PROJECT MANAGER.
- IT IS THE INTENT OF THESE DRAWINGS AND OTHER RELATED DOCUMENTS TO PRODUCE A COMPLETE AND FUNCTIONING ELECTRICAL SYSTEM. PROVIDE ALL LABOR, MATERIAL AND OTHER SERVICES NECESSARY TO ACHIEVE THIS PRODUCT. NOTIFY THE ENGINEER OF ANY DISCREPANCIES IN THE PLANS & SPECIFICATIONS THAT WILL AFFECT THE WORK, PRIOR TO SUBMISSION OF THE BID PRICE.
- IF, DURING THE COURSE OF THE WORK, THE CONTRACTOR EXPERIENCES A CONFLICT RELATIVE TO THE PLANS AND SPECIFICATIONS, THE NEC OR OTHER APPLICABLE CODES AND GOVERNING DOCUMENTS, HE SHALL NOTIFY THE ENGINEER FOR DIRECTION PRIOR TO EXECUTION OF THIS WORK. ANY WORK INSTALLED IN VIOLATION OF THE CONTRACT DOCUMENT OR APPLICABLE CODES WHICH COULD HAVE BEEN AVOIDED BY CONTACTING THE ENGINEER SHALL BE RECTIFIED AT NO ADDITIONAL COST.
- ELECTRICAL PLANS ARE DIAGRAMMATIC & INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE CONDITIONS, ETC. MAINTAIN WORKING CLEARANCES.
- CIRCUIT NUMBERS ARE FOR IDENTIFICATION PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR CORRECTLY PHASING THE CIRCUITS IN THE PANEL AND SHALL BALANCE THE LOAD ON THE PHASES UNDER NORMAL OPERATING CONDITIONS. PROVIDE TYPEWRITTEN PANELBOARD DIRECTORIES. BALANCE THE PHASE LOADS TO WITHIN 20 PERCENT OF EACH OTHER.
- INCREASE ALL BRANCH CIRCUIT CONDUCTORS TO THE NEXT LARGER SIZE FROM THE PANEL TO THE FIRST OUTLET WHERE THE LENGTH OF THE HOMERUN EXCEEDS 100FT. ON 120/208V CIRCUITS.
- PROVIDE A PULLWIRE OR FISHTAPE/CORD IN ALL EMPTY CONDUIT RUNS.
- VERIFY WIRE SIZES, CIRCUIT BREAKERS AND FUSES RATINGS FOR ALL EQUIPMENT, AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES AFFECTING THE WORK PRIOR TO PROCEEDING.
- ALL PANELS IMPACTED BY THIS PROJECT SHALL BE PROVIDED WITH NEW, UPDATED TYPEWRITTEN PANEL SCHEDULES (FOR NEW AND EXISTING CIRCUITS) INDICATING THE FINAL ROOM NUMBER AND THE EQUIPMENT OR DEVICES SERVED BY THE CIRCUITS.
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- ALL WIRING SHALL BE IN CONDUIT, MINIMUM SIZE 3/4 INCH WITH LARGER SIZES AS INDICATED OR REQUIRED BY NEC. ALL CONDUITS SHALL BE RIGID GALVANIZED STEEL THREADED COUPLING FOR COMPLETE WATER PROOF INSTALLATION.
- AT JOB COMPLETION, AND BEFORE FINAL ACCEPTANCE BY WMATA, TEST EACH RECEPTACLE AND PANELBOARD FOR PROPER OPERATION. WIRING SHALL BE TESTED FOR CONTINUITY, SHORTS, ETC... ALL WORK AREAS, ETC.. SHALL BE CLEANED AT THE COMPLETION OF THIS PROJECT.
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- INCLUDE GPR FOR ANY CORE DRILLS OR DRILLED PENETRATIONS IN ANY WALLS.
- SEAL OFF ALL PENETRATIONS THRU WALLS/FLOORS.
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- THE CONTRACTOR SHALL IDENTIFY SPARE CIRCUIT WITH "RESERVED FOR AFC".
- EXISTING SWITCHBOARDS, PANELBOARDS AND EQUIPMENT SHOWN IS BASED ON RECORD DRAWINGS AND CASUAL FIELD SURVEY. CONTRACTOR SHALL VERIFY ALL ELECTRICAL EQUIPMENT IN FIELD.

ABBREVIATIONS

A, AMP	AMPERES	NEC	NATIONAL ELECTRIC CODE
AC	ALTERNATING CURRENT	P	POLE
AF	AMPERE FRAME	PH	PHASE
AFC	AUTOMATED FARE COLLECTION SYSTEM	PNL	PANELBOARD
AFF	ABOVE FINISHED FLOOR	PRI	PRIMARY
AIC	AMPERE INTERRUPTING CAPACITY	PROP	PROPOSED
AT	AMPERE TRIP	RGS	RIGID GALVANIZED STEEL
BKR	BREAKER	SEC	SECONDARY
C	CONDUIT	SHT	SHEET
CB	CIRCUIT BREAKER	SW	SWITCH
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E	ELECTRICAL	VOLT	VOLTAGE
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JB	JUNCTION BOX	WMATA	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
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KCMIL	THOUSAND CIRCULAR MILL		
KVA	KILOVOLT AMPERE		
MAX	MAXIMUM		
MCA	MINIMUM CIRCUIT AMPERE		
MCB	MAIN CIRCUIT BREAKER		
MEZZ	MEZZANINE		
MIN	MINIMUM		
MLO	MAIN LUGS ONLY		

DRAWING INDEX

B35-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
B35-E-101	NEW YORK AVENUE NORTH & SOUTH - MEZZANINE KIOSK - POWER
B35-E-102	NEW YORK AVENUE NORTH & SOUTH - PANEL SCHEDULES
B35-E-301	NEW YORK AVENUE NORTH & SOUTH - PANELBOARD IMAGE
B35-E-302	NEW YORK AVENUE NORTH & SOUTH - PANELBOARD IMAGE
MM-B-E33	NEW YORK AVENUE STATION - AC POWER SINGLE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

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

CONTRACT NO
14-FQ10060-CENI-24

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

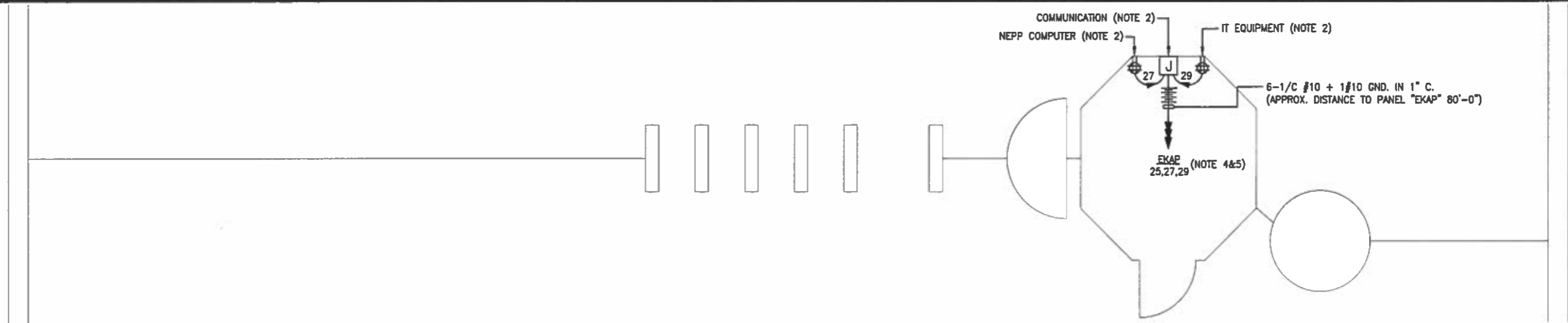
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
DEPARTMENT OF TRANSPORTATION INFRASTRUCTURE AND ENGINEERING SERVICES
OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED SUBMITTED _____ PROJECT MANAGER

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

SCALE NOT TO SCALE DRAWING NO. B35-E-001



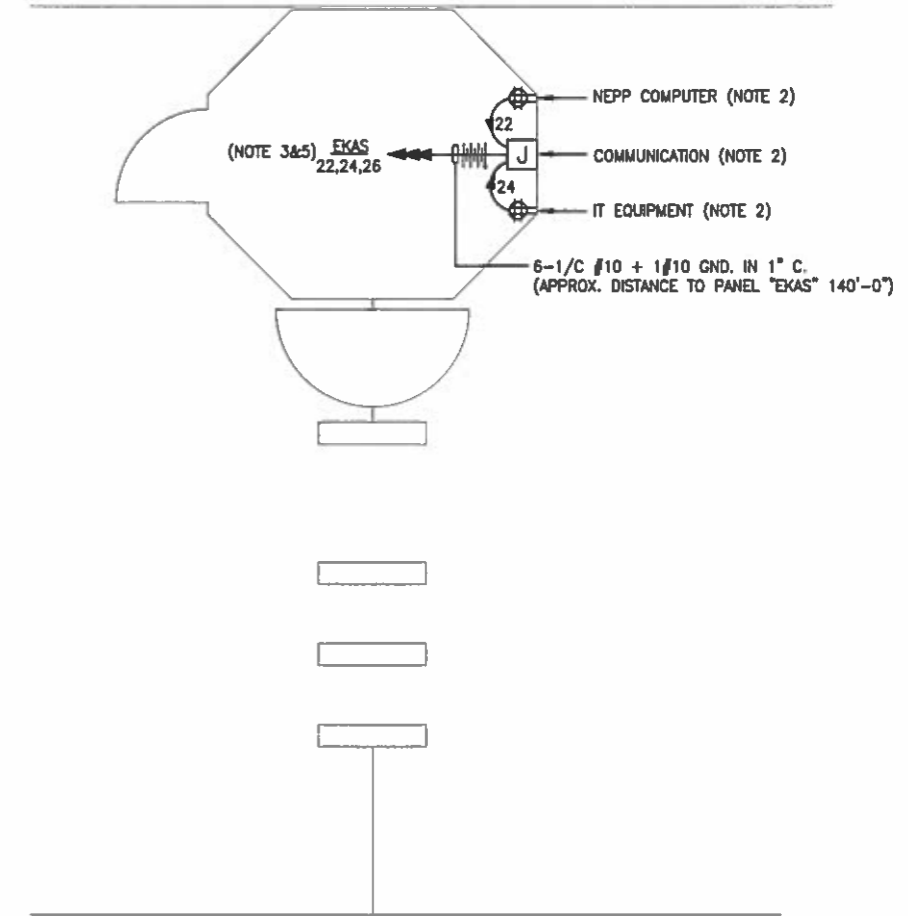
NORTH MEZZANINE KIOSK - POWER
SCALE: 3/8" = 1'- 0"

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 COILED AT THE KIOSK. THE LENGTH OF COILED PIGTAIL SHALL BE THE FARTHEST FARE GATE DISTANCE FROM KIOSK PLUS AN EXTRA 6'0" CONDUCTOR.

SAFETY PRECAUTION:

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



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

CONTRACT NO.
14-FQ10060-CENI-24

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

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRO RAIL 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							
LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	POLE	CKT BKRS			KVA	LOAD DESCRIPTION
		AMP	POLE	NO.			AMP	POLE	NO.		
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							
LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	POLE	CKT BKRS			KVA	LOAD DESCRIPTION
		AMP	POLE	NO.			AMP	POLE	NO.		
EXISTING VENDOR	0.8	20	1	1	A - -	2	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	3	- B -	4	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	5	- - C	6	1	20	0.8	EXISTING VENDOR	
EXISTING VENDOR	0.8	20	1	7	A - -	8	1	20	0.8	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	SPACE	
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	5.5 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	REFERENCE DRAWINGS		REVISIONS	
			NUMBER	DESCRIPTION	DATE	BY
DRAWN	C. NGO	07-14				
CHECKED	B. IDLEBI	07-14				
APPROVED	N/A					

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

GFP A Gannett Fleming/Parsons
JOINT VENTURE

APPROVED _____ SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
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"

CONTRACT NO.
14-FQ10060-CENI-24

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

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



APPROVED _____ SUBMITTED _____
PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
B35-E-301



EXISTING PANEL "EKAS"



EXISTING PANEL "EKAS"



EXISTING PANEL "EKAS"

CONTRACT NO.
14-FQ10060-CENI-24

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

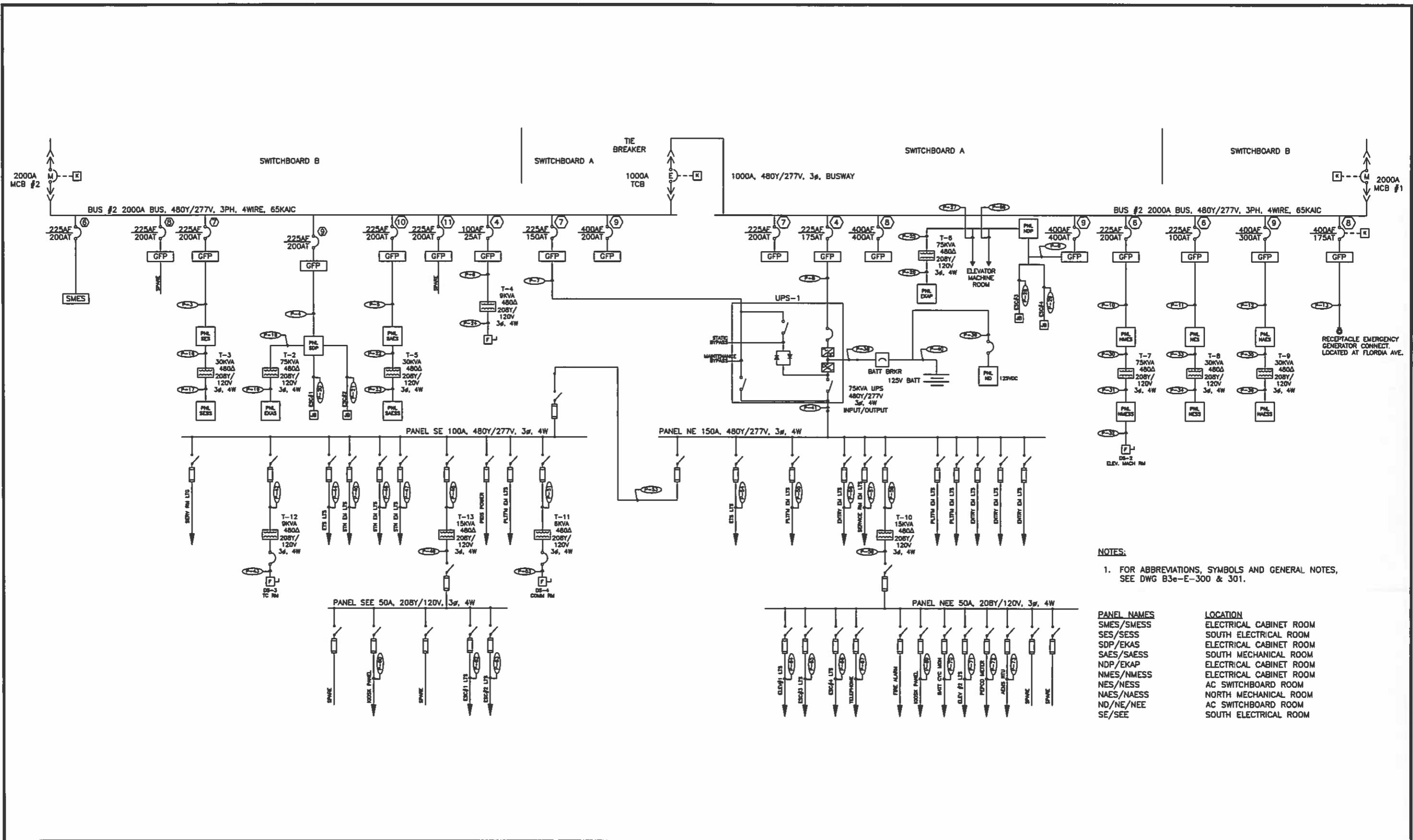
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
 DEPARTMENT OF TRANSIT INFRASTRUCTURE AND ENGINEERING SERVICES
 OFFICE OF INFRASTRUCTURE RENEWAL PROGRAM
 APPROVED _____



SUBMITTED _____
PROJECT MANAGER

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

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



NOTES:
 1. FOR ABBREVIATIONS, SYMBOLS AND GENERAL NOTES, SEE DWG 83e-E-300 & 301.

PANEL NAMES	LOCATION
SMES/SMES	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	REFERENCE DRAWINGS		REVISIONS		
			NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION
DRAWN	A.D.	4/10					
CHECKED	B.G.	4/10					
APPROVED	A.R.	4/10					

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. MM-B-E33 SHEET NO. 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	NEC	NATIONAL ELECTRIC CODE
AC	ALTERNATING CURRENT	P	POLE
AF	AMPERE FRAME	PH	PHASE
AFC	AUTOMATED FARE COLLECTION SYSTEM	PNL	PANELBOARD
AFF	ABOVE FINISHED FLOOR	PRI	PRIMARY
AIC	AMPERE INTERRUPTING CAPACITY	PROP	PROPOSED
AT	AMPERE TRIP	RGS	RIGID GALVANIZED STEEL
BKR	BREAKER	SEC	SECONDARY
C	CONDUIT	SHT	SHEET
CB	CIRCUIT BREAKER	SW	SWITCH
CCT	CIRCUIT	SWBD	SWITCHBOARD
CL	CENTER LINE	TYP	TYPICAL
CLG	CEILING	U/G	UNDER GROUND
CONST	CONSTRUCTION	U.L.	UNDERWRITERS LABORATORIES
DISC	DISCONNECT	UON	UNLESS OTHERWISE NOTED
E	ELECTRICAL	VOLT	VOLTAGE
GND	GROUND	W	WATT
JB	JUNCTION BOX	WMATA	WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
KAIC	THOUSAND AMPERE INTERRUPTING CAPACITY	WP	WEATHERPROOF
KCMIL	THOUSAND CIRCULAR MILL		
KVA	KILOVOLT AMPERE		
MAX	MAXIMUM		
MCA	MINIMUM CIRCUIT AMPERE		
MCB	MAIN CIRCUIT BREAKER		
MEZZ	MEZZANINE		
MIN	MINIMUM		
MLO	MAIN LUGS ONLY		

DRAWING INDEX

C01-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
C01-E-101	METRO CENTER - NORTH & SOUTH - MEZZANINE KIOSK - POWER
C01-E-102	METRO CENTER - NORTH & SOUTH - PANEL SCHEDULES
C01-E-301	METRO CENTER - NORTH - PANELBOARD IMAGE
C01-E-302	METRO CENTER - SOUTH - PANELBOARD IMAGE
MM-C-E05	METRO CENTER - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

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

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

APPROVED

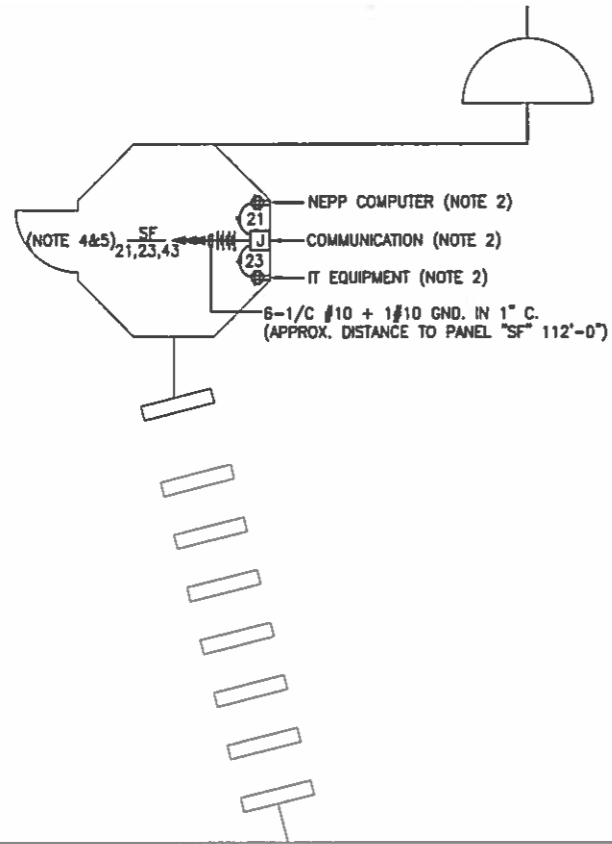
SUBMITTED _____ PROJECT MANAGER

CONTRACT NO.
14-FQ10060-CENI-24

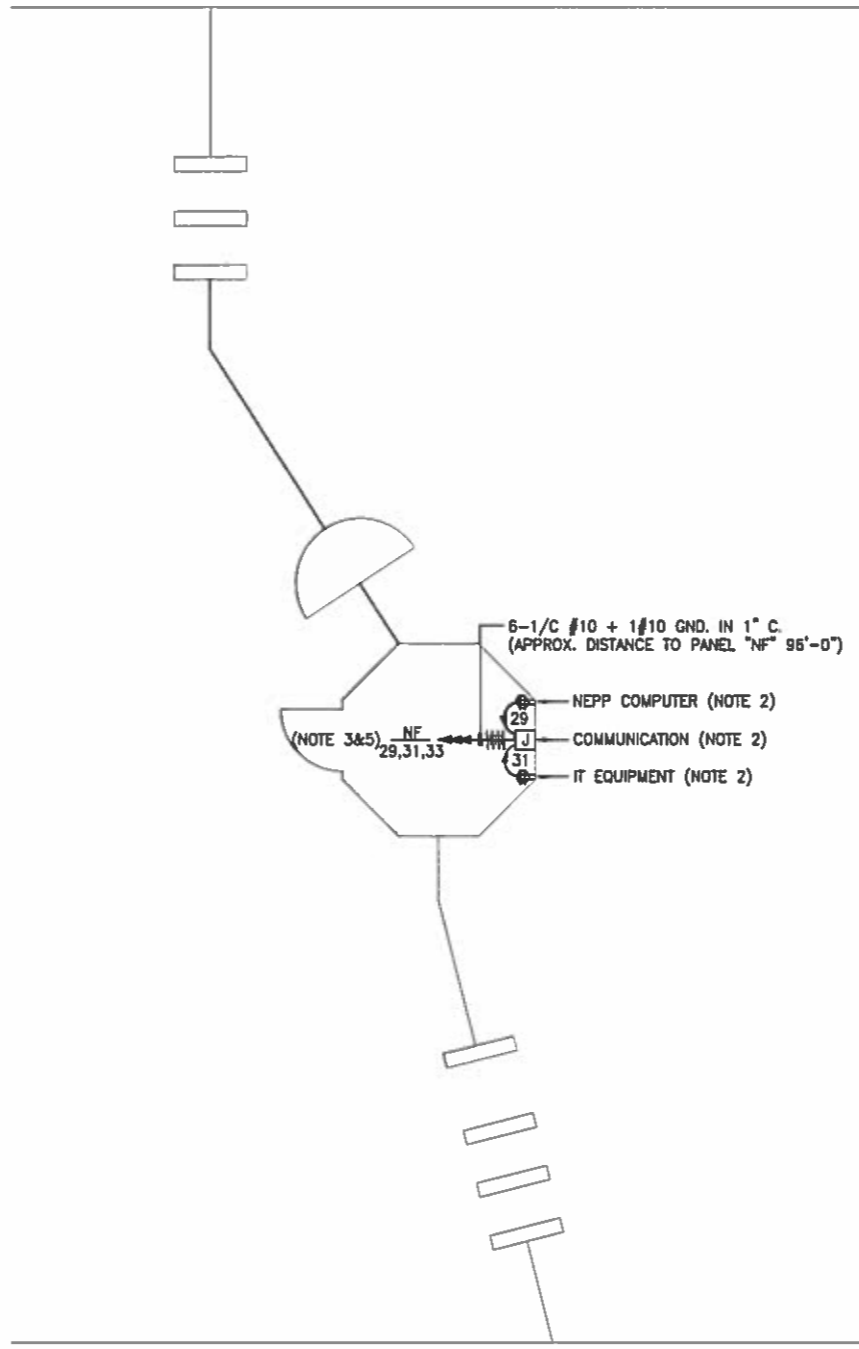
**NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRO RAIL STATIONS**
ABBREVIATIONS, DRAWING INDEX,
SPECIFICATIONS & SYMBOL LIST

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.

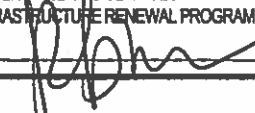
SAFETY PRECAUTION:

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

DESIGNED		DATE		REFERENCE DRAWINGS		REVISIONS	
NUMBER	DESCRIPTION	DATE	BY	NUMBER	DESCRIPTION	DATE	BY
C. NGO	09-14						
C. NGO	09-14						
B. IDLEB	09-14						
N/A							

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

GFP A CONSULTING ENGINEERING/PLANNING JOINT VENTURE

APPROVED:  SUBMITTED: _____ PROJECT MANAGER

CONTRACT NO. 14-FQ10060-CENI-24

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

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 AC		WIRE: 4		SECTION: 1 OF 1							
LOAD DESCRIPTION	KVA	AMP	POLE	CKT. NO.	CKT. NO.	CKT. NO.	CKT. NO.	CKT. NO.	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	-	-	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	-	-	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	-	-	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	-	-	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	-	-	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	-	-	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	-	-	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 AC		WIRE: 4		SECTION: 1 OF 1							
LOAD DESCRIPTION	KVA	AMP	POLE	CKT. NO.	CKT. NO.	CKT. NO.	CKT. NO.	CKT. NO.	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	-	-	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	-	-	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	-	-	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	-	-	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	-	-	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	-	-	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	-	-	42	-	-	0.0	
SPACE	0.0	20	1	43	A	-	44	1	20	0.8	EXISTING VENDOR

LOAD SUMMARY			
LIGHTS	0.0 x 125%		0.0 KVA
RECEPTACLES, FIRST 10 KVA	10.0 x 100%		10.0 KVA
RECEPTACLES	16.8 x 50%		8.4 KVA
MISC. APPLIANCES	0.0 x 100%		0.0 KVA
LARGEST MOTOR	0.0 x 125%		0.0 KVA
MOTORS	0.0 x 100%		0.0 KVA
HEAT	3.0 x 125%		3.8 KVA
AC	4.5 x 100%		4.5 KVA
WATER HEATING	0.0 x 125%		0.0 KVA
TOTAL CONNECTED LOAD	34.3 KVA	TOTAL DEMAND KVA	26.7 KVA
		TOTAL DEMAND AMPS	74.0 AMPS
CONNECTED LOAD PHASE SUMMARY			
PHASE A:	13.3 KVA		
PHASE B:	11.3 KVA		
PHASE C:	10.5 KVA		

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRO RAIL 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. MOO	07-14	REFERENCE DRAWINGS		REVISIONS		
			DATE	NUMBER	DESCRIPTION	DATE	BY
DRAWN	C. MOO	07-14					
CHECKED	B. OUB	07-14					
APPROVED	N/A						

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

GFP A Gannett Fleming/Parsons
 JOINT VENTURE

APPROVED _____ SUBMITTED _____
 PROJECT MANAGER

**NEW ELECTRONIC PAY PROGRAM (NEPP)
 IN METRO RAIL 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		DRAWN		CHECKED		APPROVED	
	NAME	DATE	NAME	DATE	NAME	DATE	NAME	DATE
	C. MOO	07-14	C. MOO	07-14	B. DUB	07-14	N/A	

REFERENCE DRAWINGS		REVISIONS		
NUMBER	DESCRIPTION	DATE	BY	DESCRIPTION

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

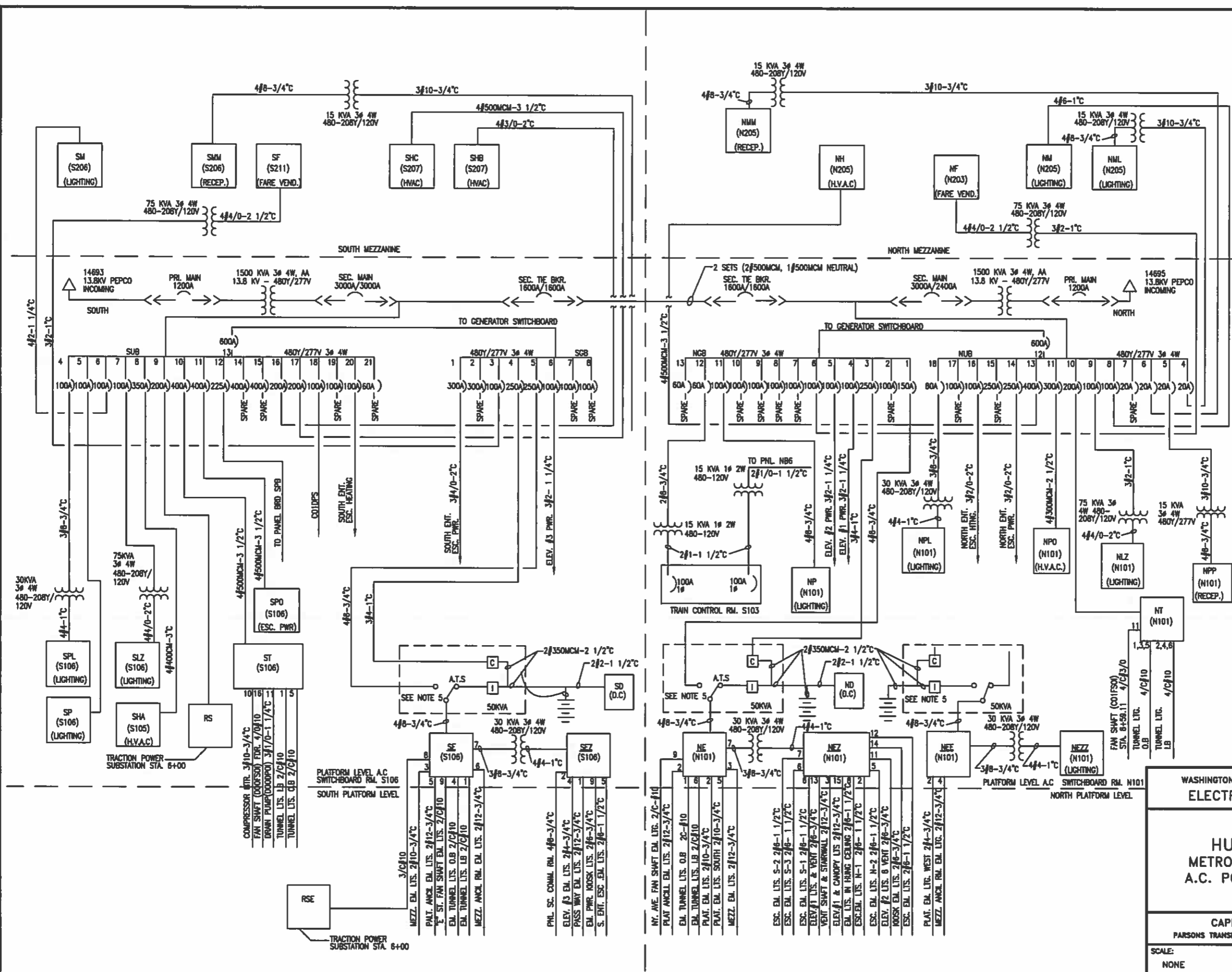
GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ SUBMITTED _____
 PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
 IN METRO RAIL STATIONS
 METRO CENTER - SOUTH
 PANELBOARD IMAGE

SCALE: NOT TO SCALE
 DRAWING NO.: C01-E-302

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



- NOTES:**
1. PANEL DESIGNATION

WEA (205) (LIGHTING)

PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY

ROOM NUMBER

TYPE OF DISTRIBUTION

8 (CIRCUIT NUMBER)

* WHEN NO CKTS SHOWN
 2. 3#2, 2" 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: IPML
 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
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ELECTRICAL SPECIFICATIONS

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

ABBREVIATIONS

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

DRAWING INDEX

F01-E-001	ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST
F01-E-101	GALLERY PLACE NORTH & WEST - MEZZANINE KIOSK - POWER
F01-E-102	GALLERY PLACE NORTH & WEST - PANEL SCHEDULES
F01-E-301	GALLERY PLACE NORTH & WEST - PANELBOARD IMAGE
F01-E-302	GALLERY PLACE NORTH & WEST - PANELBOARD IMAGE
MM-B-E06	GALLERY PLACE - AC POWER ONE LINE DIAGRAM
MM-B-E07	GALLERY PLACE - AC POWER ONE LINE DIAGRAM

ELECTRICAL SYMBOL LIST

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

CONTRACT NO.
14-FQ10060-CENI-24

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

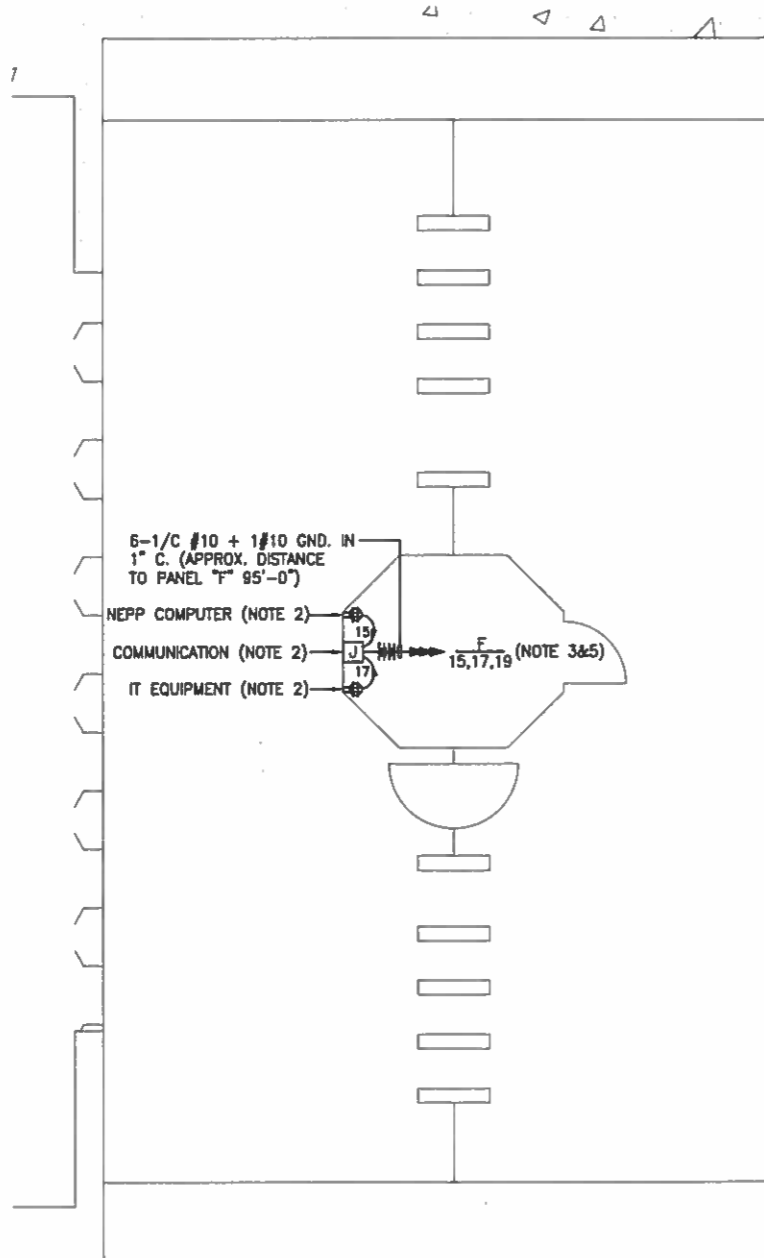
APPROVED

SUBMITTED _____ PROJECT MANAGER

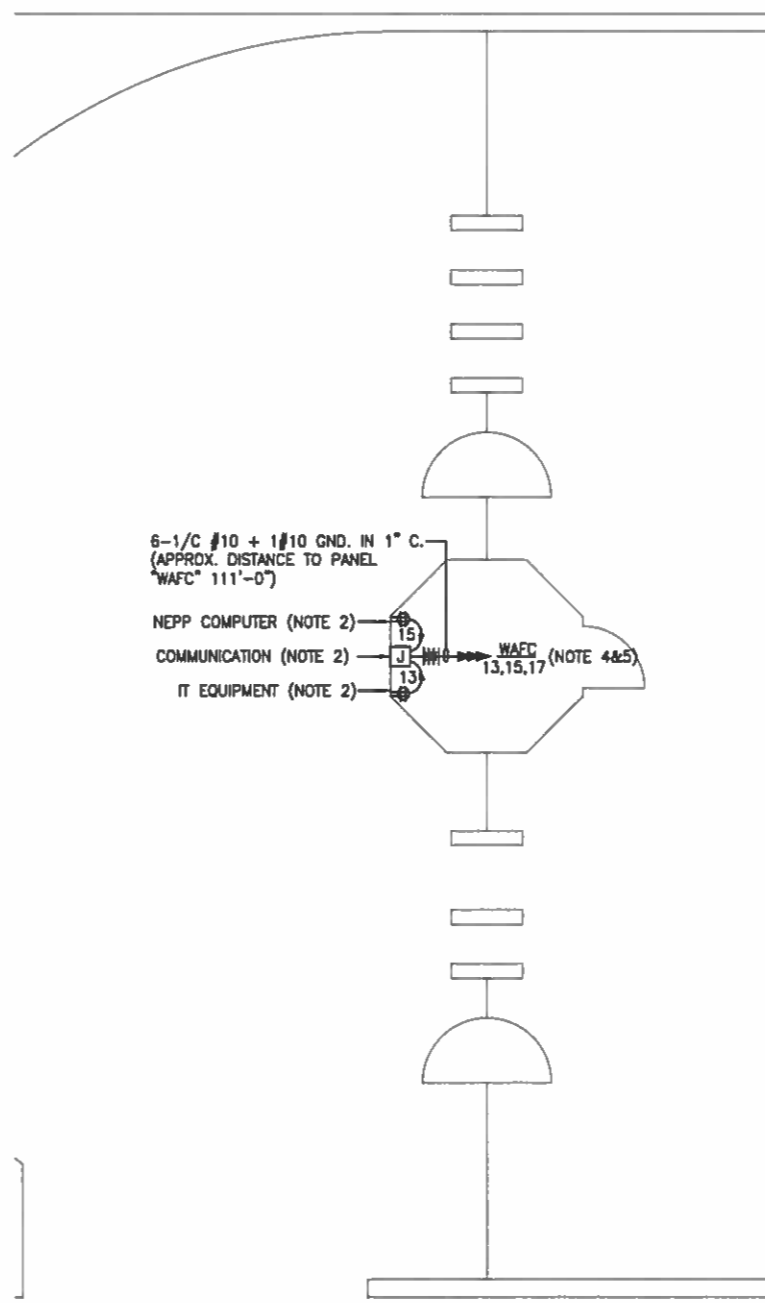
NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
ABBREVIATIONS, DRAWING INDEX,
SPECIFICATIONS & SYMBOL LIST

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. F01-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	REFERENCE DRAWINGS		REVISIONS	
			NUMBER	DESCRIPTION	DATE	BY
DRAWN	C. NGO	08-14				
CHECKED	B. IDLBI	08-14				
APPROVED	N/A					

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRO RAIL 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 A/C		WIRE: 4		SECTION: 1 OF 1						
LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	POLE	CKT BKRS			LOAD DESCRIPTION
		AMP	POLE	NO.			AMP	KVA		
EXISTING VENDOR	0.8	20	1	1	A - -	2	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	3	- B -	4	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	5	- - C	6	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	7	A - -	8	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	9	- B -	10	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	11	- - C	12	1	20	0.8	EXISTING VENDOR
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 "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	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 A/C		WIRE: 4		SECTION: 1 OF 1						
LOAD DESCRIPTION	KVA	CKT BKRS			CKT. NO.	POLE	CKT BKRS			LOAD DESCRIPTION
		AMP	POLE	NO.			AMP	KVA		
EXISTING VENDOR	0.8	20	1	1	A - -	2	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	3	- B -	4	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	5	- - C	6	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	7	A - -	8	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	9	- B -	10	1	20	0.8	EXISTING VENDOR
EXISTING VENDOR	0.8	20	1	11	- - C	12	1	20	0.8	EXISTING VENDOR
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 "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	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	REFERENCE DRAWINGS		REVISIONS	
			NUMBER	DESCRIPTION	DATE	BY
DRAWN	C. NGO	08-14				
CHECKED	B. IDLBI	08-14				
APPROVED	N/A					

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

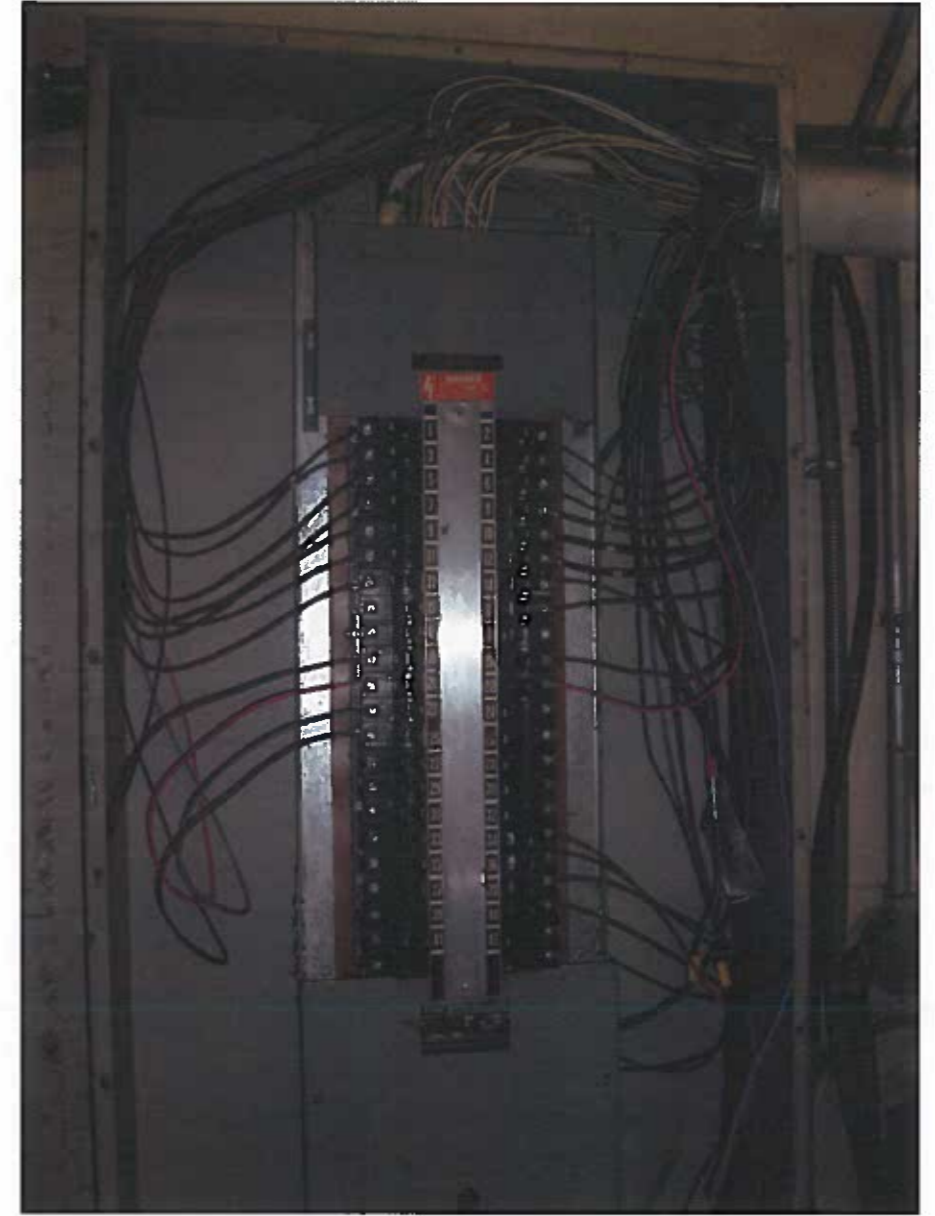
APPROVED _____ SUBMITTED _____ PROJECT MANAGER

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

SCALE: NOT TO SCALE
DRAWING NO.: F01-E-102



EXISTING PANEL "F"



EXISTING PANEL "F"

CONTRACT NO.
14-FQ10060-CENI-24

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

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



APPROVED _____ SUBMITTED _____
PROJECT MANAGER

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 "WAF-C"



EXISTING PANEL "WAF-C"



EXISTING PANEL "WAF-C"

CONTRACT NO.
14-FQ10060-CENI-24

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

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



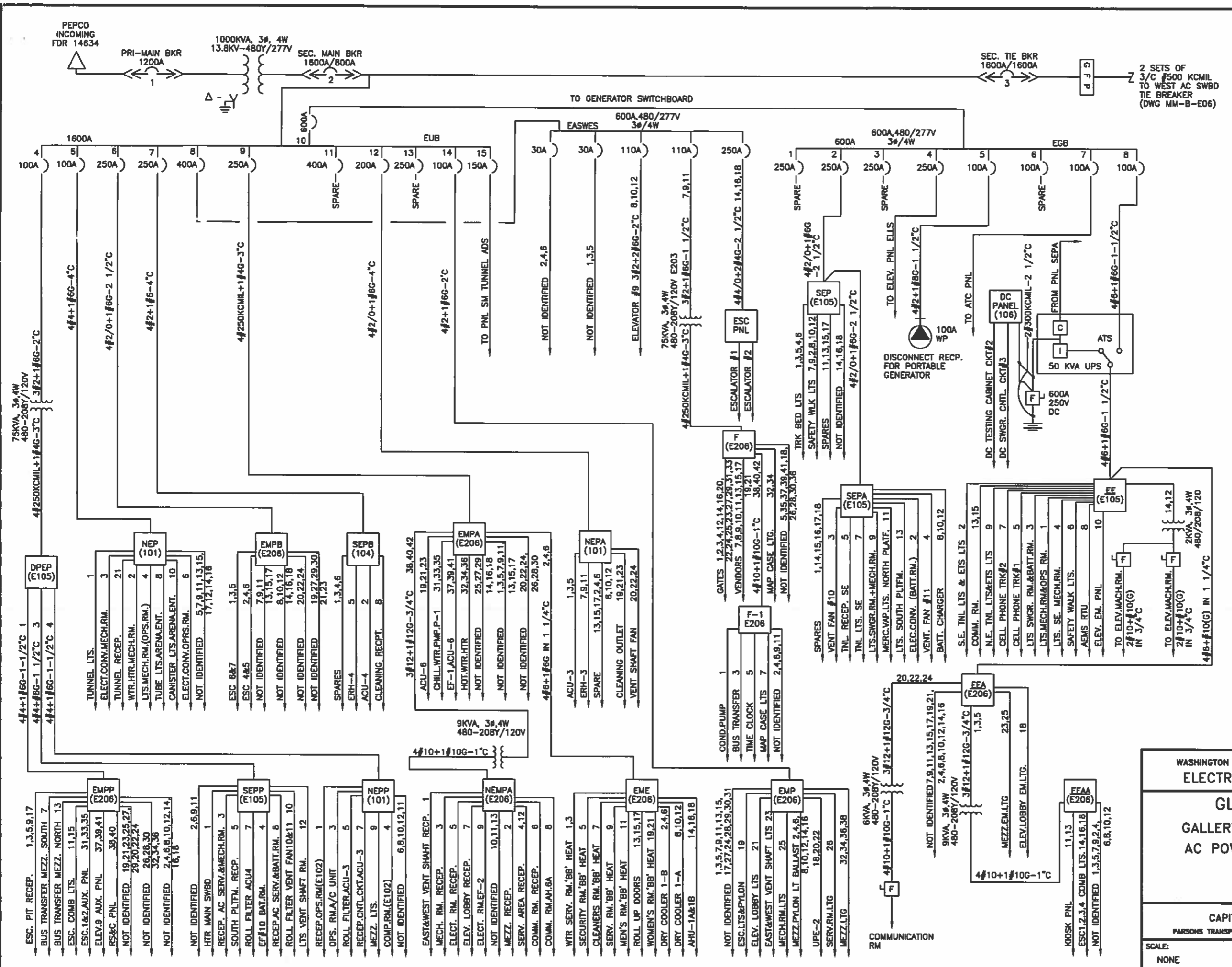
APPROVED _____

SUBMITTED _____
PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
F01-E-302



- NOTES:**
- PANEL DESIGNATION
 - PANEL DESIGNATION WHEN UNDERLINED IS EMERGENCY
 - ROOM NUMBER
 - CONDUIT SIZE
 - AWG OR KCML CIRCUIT WIRES
 - CIRCUIT BREAKERS
 - DRAW OUT
 - 1500A/1200A
 - 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
 - 106 - BATT. ROOM
 - UPS MANUFACTURER: IPM
 - 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