



ELECTRICAL AND DATA CABLE INSTALLATION

for

Washington Metropolitan Area Transit Authority

Contract Number FQ17021

VOLUME 3

**Drawings Part 1b
Electrical
Green and Yellow Lines**

November 13, 2016

January 5, 2017

Final Submission

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

PAGE NO.

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GREEN & YELLOW LINES
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ELECTRICAL SPECIFICATIONS

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

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

ABBREVIATIONS

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

DRAWING INDEX

| | |
|-----------|--|
| C09-E-001 | ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST |
| C09-E-101 | CRYSTAL CITY - MEZZANINE KIOSK - POWER |
| C09-E-102 | CRYSTAL CITY - PANEL SCHEDULE |
| C09-E-301 | CRYSTAL CITY - PANELBOARD IMAGE |
| MM-C-E19 | CRYSTAL CITY - AC POWER ONE LINE DIAGRAM |

ELECTRICAL SYMBOL LIST

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

CONTRACT NO.
14-FQ10060-CENI-24

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

APPROVED

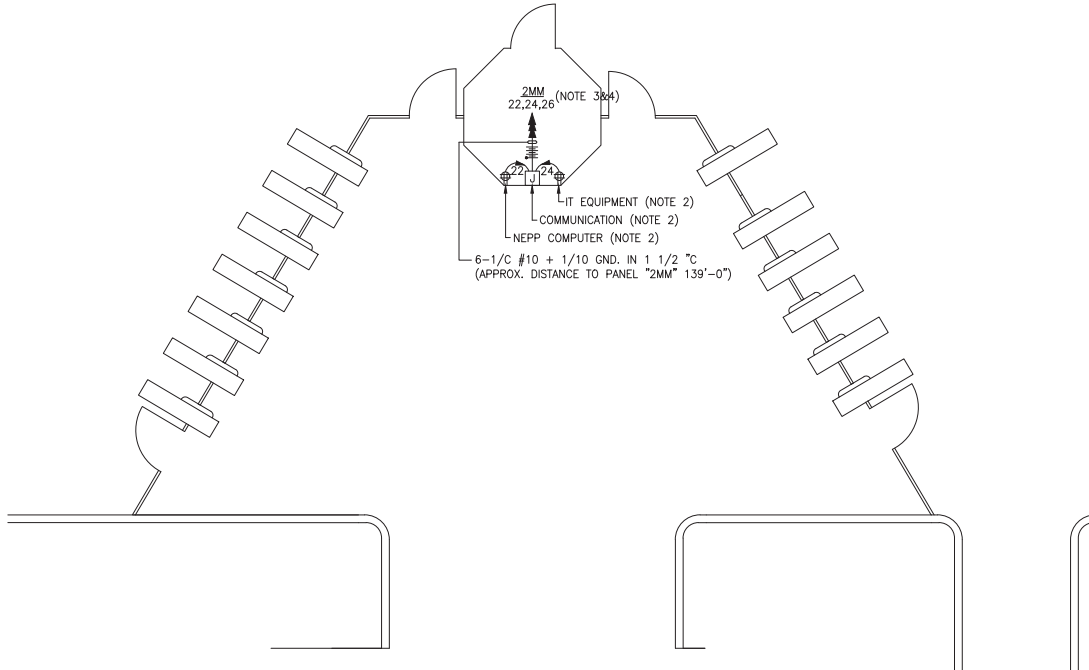
GFP A Gannett Fleming/Parsons JOINT VENTURE

SUBMITTED _____
PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
C09-E-001



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

DRAWING NOTES:

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

SAFETY PRECAUTION:

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

CONTRACT NO.
14-FQ10060-CENI-24

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

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
CRYSTAL CITY
MEZZANINE KIOSK - POWER**

SCALE
AS SHOWN

DRAWING NO.
C09-E-101

EXISTING PANEL "2MM"

| | | |
|-----------------|----------------|-------------------------------------|
| AMPERES: 300 | VOLTS: 120/208 | MOUNTING: SURFACE |
| MAINS: 200A MCB | PHASE: 3 | LOCATION: ELEC. EQUIPMENT ROOM C302 |
| RATING: 10K AIC | WIRE: 4 | SECTION: 1 OF 1 |

| LOAD DESCRIPTION | KVA | CKT BKRS | | | CKT. NO. | POLE | AMP | KVA | LOAD DESCRIPTION | |
|------------------|-----|----------|------|-----|----------|------|-----|-----|------------------|--------------------------------|
| | | AMP | POLE | NO. | | | | | | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 1 | A - - | 2 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 3 | - B - | 4 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 5 | - - C | 6 | 1 | 20 | 0.0 | SPARE |
| EXISTING VENDOR | 0.8 | 20 | 1 | 7 | A - - | 8 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 9 | - B - | 10 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 11 | - - C | 12 | 1 | 20 | 0.0 | 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 |
| EXISTING VENDOR | 0.8 | 20 | 1 | 17 | - - C | 18 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 19 | A - - | 20 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 21 | - B - | 22 | 1 | 20 | 0.8 | NEW KIOSK RECEIPT. (IT/NCIS) |
| EXISTING VENDOR | 0.8 | 20 | 1 | 23 | - - C | 24 | 1 | 20 | 0.8 | NEW KIOSK RECEIPT. (NEPP/SOC) |
| EXISTING VENDOR | 0.8 | 20 | 1 | 25 | A - - | 26 | 1 | 20 | 0.0 | FUTURE AFC FARE GATE |
| EXISTING VENDOR | 0.8 | 20 | 1 | 27 | - B - | 28 | 1 | 20 | 0.0 | SPARE |
| EXISTING VENDOR | 0.8 | 20 | 1 | 29 | - - C | 30 | 1 | 20 | 0.0 | SPARE |
| 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 |
| SPACE | 0.0 | - | - | 35 | - - C | 36 | 1 | 20 | 0.8 | EXISTING VENDOR |
| SPACE | 0.0 | - | - | 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 | 12.8 x 50% | 6.4 KVA |
| MISC. APPLIANCES | 0.0 x 100% | 0.0 KVA |
| LARGEST MOTOR | 0.0 x 125% | 0.0 KVA |
| MOTORS | 0.0 x 100% | 0.0 KVA |
| HEAT | 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 | 30.3 KVA | TOTAL DEMAND KVA 24.7 KVA |
| CONNECTED LOAD PHASE SUMMARY | | TOTAL DEMAND AMPS 68.5 AMPS |
| PHASE A: | 11.7 KVA | |
| PHASE B: | 10.5 KVA | |
| PHASE C: | 8.9 KVA | |

CONTRACT NO.
14-FQ10060-CENI-24

| DESIGNED | C. NGO | 09-14 | REFERENCE DRAWINGS | | REVISIONS | |
|----------|----------|-------|--------------------|-------------|-----------|----|
| | | | NUMBER | DESCRIPTION | DATE | BY |
| 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 *[Signature]*

SUBMITTED _____
PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
C09-E-102

5

ELECTRICAL SPECIFICATIONS

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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 W/SCREW IN COUPLING FOR COMPLETE WATER PROOF INSTALLATION.
- AT JOB COMPLETION, AND BEFORE FINAL ACCEPTANCE BY WMATA, TEST EACH RECEPTACLE AND PANELBOARD FOR PROPER OPERATION. WIRING SHALL BE TESTED FOR CONTINUITY, SHORTS, ETC... ALL WORK AREAS, ETC.. SHALL BE CLEANED AT THE COMPLETION OF THIS PROJECT.
- FOR DEVICE IDENTIFICATION, THE ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELBOARDS, JUNCTION BOXES, ETC.. TO INDICATE THE NAME, VOLTAGE, SERVING EQUIPMENT AND ITEM SERVED ETC... LABELS FOR EMERGENCY CIRCUITS SHALL BE IN RED, NORMAL CIRCUITS SHALL BE IN BLACK. ALL DEVICES SHALL BE IDENTIFIED EITHER ON THE FACE OF THE COVERPLATE OR INSIDE PER WMATA PREFERENCE. ALL JUNCTION BOXES SHALL BE LABELED TO INDICATE THE CIRCUITS CONTAINED BY THE JUNCTION BOX.
- THE CONTRACTOR SHALL UPDATE THE SCHEDULES OF ALL PANELBOARDS AFFECTED BY THIS PROJECT TO REFLECT CHANGES DUE TO THE PROJECT WORK. PANEL SCHEDULE LOAD DESCRIPTIONS ARE TO INCLUDE THE FINAL ROOM OR AREA NUMBERS.
- INCLUDE GPR FOR ANY CORE DRILLS OR DRILLED PENETRATIONS IN ANY WALLS.
- SEAL OFF ALL PENETRATIONS THRU WALLS/FLOORS.
- THE CONTRACTOR SHALL BECOME FAMILIAR WITH WMATA DESIGN CRITERIA SECTION 4 AND SECTION 13; WMATA SPECIFICATION SECTION 16120, 16130, AND 16125. ALL INSTALLATION SHALL BE IN COMPLIANCE WITH THE NEC, WMATA DESIGN CRITERIA, AND SPECIFICATIONS.
- THE CONTRACTOR SHALL IDENTIFY SPARE CIRCUIT WITH "RESERVED FOR AFC".
- EXISTING SWITCHBOARDS, PANELBOARDS AND EQUIPMENT SHOWN IS BASED ON RECORD DRAWINGS AND CASUAL FIELD SURVEY. CONTRACTOR SHALL VERIFY ALL ELECTRICAL EQUIPMENT IN FIELD.

ABBREVIATIONS

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

DRAWING INDEX

| | |
|-----------|--|
| C10-E-001 | ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST |
| C10-E-101 | NATIONAL AIRPORT - NORTH & SOUTH - KIOSK - POWER |
| C10-E-102 | NATIONAL AIRPORT - NORTH & SOUTH - PANEL SCHEDULE |
| C10-E-301 | NATIONAL AIRPORT - NORTH & SOUTH - PANELBOARD IMAGE |
| C10-E-302 | NATIONAL AIRPORT - NORTH & SOUTH - PANELBOARD IMAGE |
| MM-C-E22 | NATIONAL AIRPORT - 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 | | | REFERENCE DRAWINGS | | REVISIONS | |
|----------|-------------|-------|--------------------|-------------|-----------|----|
| NUMBER | DESCRIPTION | DATE | BY | DESCRIPTION | DATE | BY |
| C. NGO | | 09-14 | | | | |
| | | DATE | | | | |
| C. NGO | | 09-14 | | | | |
| | | DATE | | | | |
| B. IDLBI | | 09-14 | | | | |
| | | DATE | | | | |
| 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

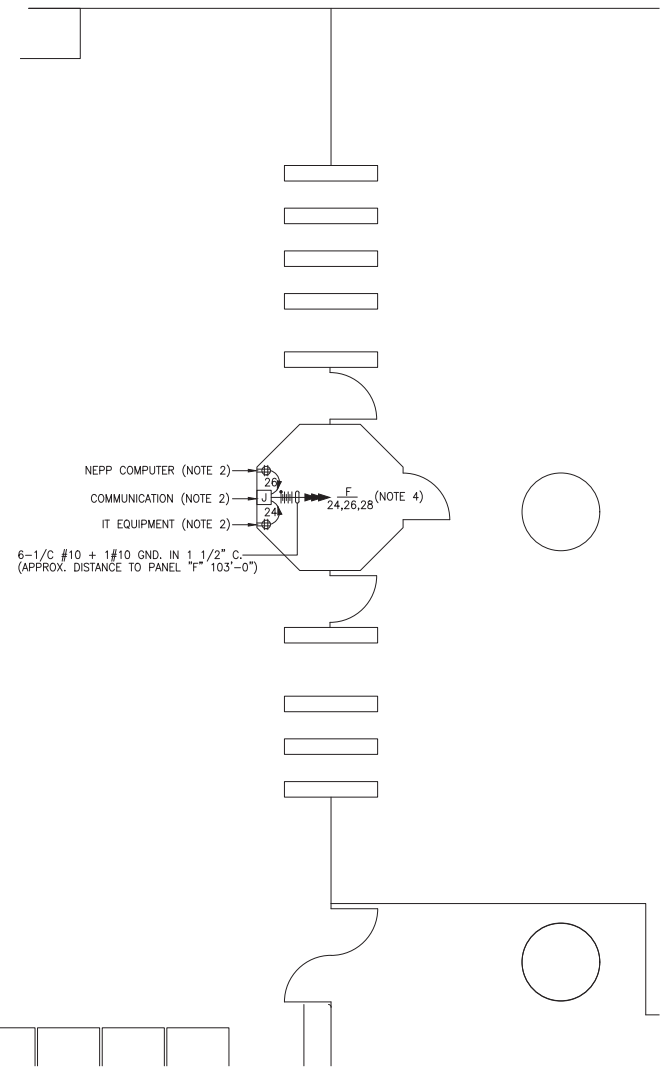
APPROVED _____

SUBMITTED _____
PROJECT MANAGER

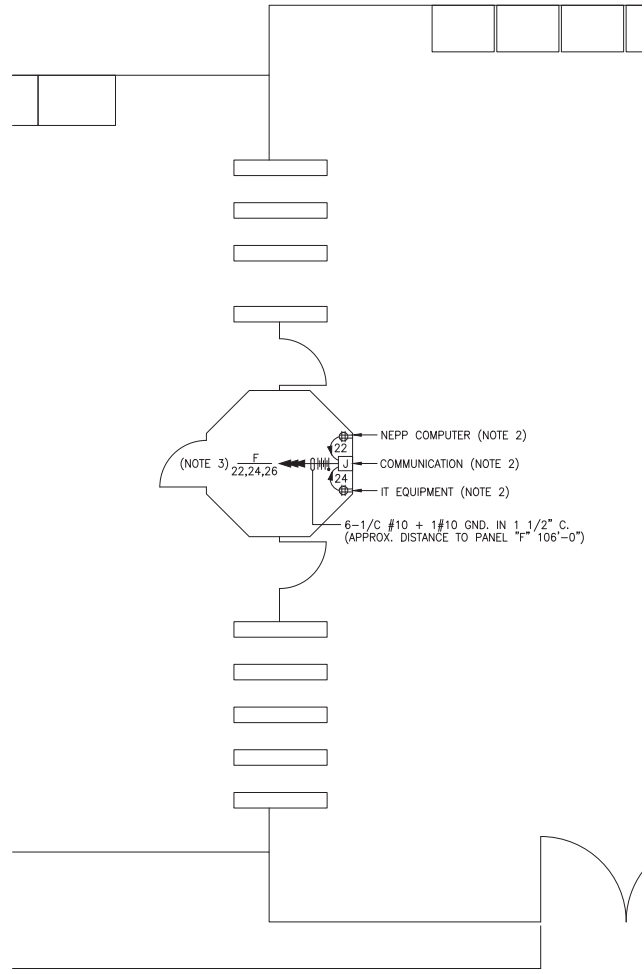
NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
ABBREVIATIONS, DRAWING INDEX,
SPECIFICATIONS & SYMBOL LIST

SCALE
NOT TO SCALE

DRAWING NO.
C10-E-001



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



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

DRAWING NOTES:

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

SAFETY PRECAUTION:

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

CONTRACT NO.
14-FQ10060-CENI-24

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED *[Signature]* PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP) IN METRORAIL STATIONS

NATIONAL AIRPORT - NORTH & SOUTH KIOSK - POWER

SCALE AS SHOWN DRAWING NO. C10-E-101

| EXISTING PANEL "F"(North) | | | | | | | | | | |
|---------------------------|-----|----------------|------|-----------------------------------|-------|------|------|-----|-----|-------------------------------|
| AMPERES: 225 | | VOLTS: 120/208 | | MOUNTING: SURFACE | | | | | | |
| MAINS: 225AMCB | | PHASE: 3 | | LOCATION: ELEC. EQUIPMENT RM. 119 | | | | | | |
| RATING: 10K AC | | WIRE: 4 | | SECTION: 1 OF 1 | | | | | | |
| LOAD DESCRIPTION | KVA | CKT BKRS | | | NO. | CKT. | | | NO. | LOAD DESCRIPTION |
| | | AMP | POLE | NO. | | NO. | POLE | AMP | | |
| SPARE | 0.0 | 20 | 1 | 1 | A - - | 2 | 3 | 20 | 3.3 | EXIST. LOAD CENTER "KES" |
| EXISTING VENDOR | 0.8 | 20 | 1 | 3 | - B - | 4 | - | - | 3.3 | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 5 | - C | 6 | - | - | 3.3 | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 7 | A - - | 8 | 3 | 20 | 0.8 | EXISTING VENDOR |
| SPARE | 0.0 | 20 | 1 | 9 | - B - | 10 | - | - | 0.8 | |
| SPARE | 0.0 | 20 | 1 | 11 | - C | 12 | - | - | 0.8 | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 13 | A - - | 14 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 15 | - B - | 16 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 17 | - C | 18 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 19 | A - - | 20 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 21 | - B - | 22 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 23 | - C | 24 | 1 | 20 | 0.8 | NEW KIOSK RECEPT. (IT & NEPP) |
| EXISTING VENDOR | 0.8 | 20 | 1 | 25 | A - - | 26 | 1 | 20 | 0.8 | NEW KIOSK RECEPT. (IT & NEPP) |
| EXISTING VENDOR | 0.8 | 20 | 1 | 27 | - B - | 28 | 1 | 20 | 0.0 | SPARE (KIOSK) |
| SPARE | 0.0 | 20 | 1 | 29 | - C | 30 | 1 | 20 | 0.0 | SPARE |
| EXISTING VENDOR | 0.8 | 20 | 1 | 31 | A - - | 32 | - | - | 0.0 | SPARE |
| SPARE | 0.0 | 20 | 1 | 33 | - B - | 34 | - | - | 0.0 | SPARE |
| EXISTING VENDOR | 0.8 | 20 | 1 | 35 | - C | 36 | - | - | 0.0 | SPARE |
| EXISTING VENDOR | 0.8 | 20 | 1 | 37 | A - - | 38 | - | - | 0.0 | SPARE |
| EXISTING VENDOR | 0.8 | 20 | 1 | 39 | - B - | 40 | - | - | 0.0 | SPARE |
| EXISTING VENDOR | 0.8 | 20 | 1 | 41 | - C | 42 | - | - | 0.0 | SPARE |

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

| LOAD SUMMARY | | | |
|-----------------------------|-----------------|--------------------------|------------------|
| LIGHTS | 0.0 x 125% | | 0.0 KVA |
| RECEPT ACLES, FIRST 10 KVA | 10.0 x 100% | | 10.0 KVA |
| RECEPT ACLES | 12.4 x 50% | | 6.2 KVA |
| MISC. APPLIANCES | 0.0 x 100% | | 0.0 KVA |
| LARGEST MOTOR | 0.0 x 125% | | 0.0 KVA |
| MOTORS | 0.0 x 100% | | 0.0 KVA |
| HEAT | 3.0 x 125% | | 3.8 KVA |
| AC | 4.5 x 100% | | 4.5 KVA |
| WATER HEATING | 0.0 x 125% | | 0.0 KVA |
| TOTAL CONNECTED LOAD | 29.9 KVA | TOTAL DEMAND KVA | 24.5 KVA |
| | | TOTAL DEMAND AMPS | 67.9 AMPS |

| CONNECTED LOAD PHASE SUMMARY | | |
|------------------------------|----------|--|
| PHASE A: | 11.3 KVA | |
| PHASE B: | 9.7 KVA | |
| PHASE C: | 9.7 KVA | |

| EXISTING PANEL "F"(South) | | | | | | | | | | |
|---------------------------|-----|----------------|------|------------------------------------|-------|------|------|-----|-----|-------------------------------|
| AMPERES: 225 | | VOLTS: 120/208 | | MOUNTING: SURFACE | | | | | | |
| MAINS: 200AMCB | | PHASE: 3 | | LOCATION: ELEC. EQUIPMENT RM. C108 | | | | | | |
| RATING: 10K AC | | WIRE: 4 | | SECTION: 1 OF 1 | | | | | | |
| LOAD DESCRIPTION | KVA | CKT BKRS | | | NO. | CKT. | | | NO. | LOAD DESCRIPTION |
| | | AMP | POLE | NO. | | NO. | POLE | AMP | | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 1 | A - - | 2 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 3 | - B - | 4 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 5 | - C | 6 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 7 | A - - | 8 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 9 | - B - | 10 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 11 | - C | 12 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 13 | A - - | 14 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 15 | - B - | 16 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 17 | - C | 18 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 19 | A - - | 20 | 1 | 20 | 0.8 | EXISTING VENDOR |
| SPARE | 0.0 | 20 | 1 | 21 | - B - | 22 | 1 | 20 | 0.8 | NEW KIOSK RECEPT. (IT & NEPP) |
| EXISTING VENDOR | 0.8 | 20 | 1 | 23 | - C | 24 | 1 | 20 | 0.0 | SPARE (KIOSK) |
| EXISTING VENDOR | 0.8 | 20 | 1 | 25 | A - - | 26 | 1 | 20 | 0.8 | NEW KIOSK RECEPT. (IT & NEPP) |
| EXISTING VENDOR | 0.8 | 20 | 1 | 27 | - B - | 28 | 1 | 20 | 0.0 | SPARE |
| EXISTING VENDOR | 0.8 | 20 | 1 | 29 | - C | 30 | 1 | 20 | 0.0 | SPARE |
| EXISTING VENDOR | 0.8 | - | - | 31 | A - - | 32 | 1 | 20 | 0.0 | SPARE |
| SPARE | 0.0 | - | - | 33 | - B - | 34 | 1 | 20 | 0.0 | SPARE |
| SPARE | 0.0 | - | - | 35 | - C | 36 | 1 | 20 | 0.0 | SPARE |
| EXISTING VENDOR | 0.8 | - | - | 37 | A - - | 38 | 3 | 30 | 2.9 | EXIST. LOAD CENTER "KES" |
| SPARE | 0.0 | - | - | 39 | - B - | 40 | - | - | 2.5 | |
| EXISTING VENDOR | 0.8 | - | - | 41 | - C | 42 | - | - | 2.5 | |

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

| LOAD SUMMARY | | | |
|-----------------------------|-----------------|--------------------------|------------------|
| LIGHTS | 0.0 x 125% | | 0.0 KVA |
| RECEPT ACLES, FIRST 10 KVA | 10.0 x 100% | | 10.0 KVA |
| RECEPT ACLES | 12.8 x 50% | | 6.4 KVA |
| MISC. APPLIANCES | 0.0 x 100% | | 0.0 KVA |
| LARGEST MOTOR | 0.0 x 125% | | 0.0 KVA |
| MOTORS | 0.0 x 100% | | 0.0 KVA |
| HEAT | 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 | 30.3 KVA | TOTAL DEMAND KVA | 24.7 KVA |
| | | TOTAL DEMAND AMPS | 68.5 AMPS |

| CONNECTED LOAD PHASE SUMMARY | | |
|------------------------------|----------|--|
| PHASE A: | 12.5 KVA | |
| PHASE B: | 8.9 KVA | |
| PHASE C: | 9.7 KVA | |

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

APPROVED: *[Signature]*

PROJECT MANAGER: _____

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

CONTRACT NO. 14-FQ10060-CENI-24

SCALE: NOT TO SCALE

DRAWING NO. C10-E-102

ELECTRICAL SPECIFICATIONS

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

ABBREVIATIONS

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

DRAWING INDEX

| | |
|-----------|--|
| C12-E-001 | ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST |
| C12-E-101 | BRADDOCK ROAD - KIOSK - POWER |
| C12-E-102 | BRADDOCK ROAD - PANEL SCHEDULE |
| C12-E-301 | BRADDOCK ROAD - PANELBOARD IMAGE |
| MM-C-E25 | BRADDOCK ROAD - AC POWER ONE LINE DIAGRAM |

ELECTRICAL SYMBOL LIST

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

CONTRACT NO.
14-FQ10060-CENI-24

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

APPROVED

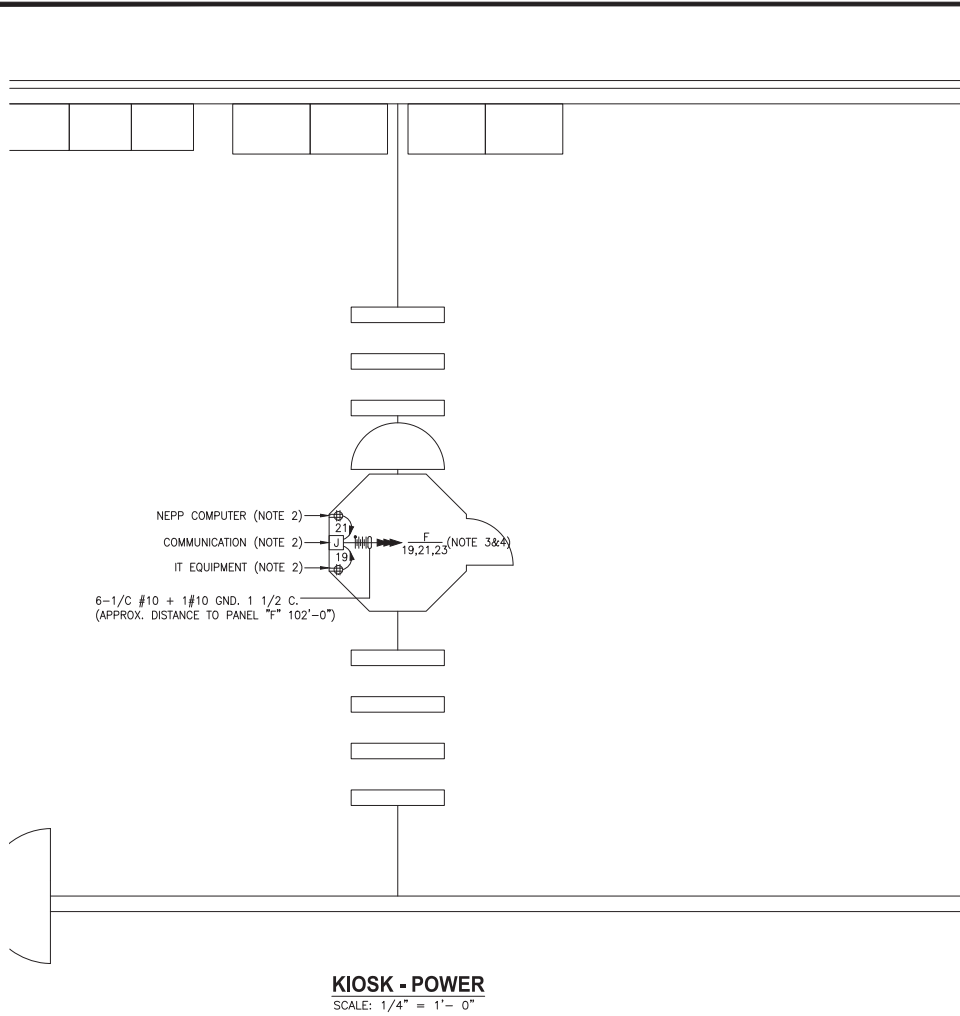
GFP A Gannett Fleming/Parsons JOINT VENTURE

SUBMITTED _____
PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
C12-E-001



DRAWING NOTES:

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

SAFETY PRECAUTION:

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

CONTRACT NO.
14-FQ10060-CENI-24

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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



APPROVED *[Signature]*

SUBMITTED _____
PROJECT MANAGER

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

SCALE
AS SHOWN

DRAWING NO.
C12-E-101

10

EXISTING PANEL "F"

| | | |
|-----------------|----------------|----------------------------|
| AMPERES: 225 | VOLTS: 120/208 | MOUNTING: SURFACE |
| MAINS: 225A MCB | PHASE: 3 | LOCATION: AC SWBD RM. C111 |
| RATING: 10K AIC | WIRE: 4 | SECTION: 1 OF 1 |

| LOAD DESCRIPTION | KVA | CKT BKRS | | | CKT. NO. | POLE | AMP | KVA | LOAD DESCRIPTION |
|-------------------------------------|------------|----------|------|-----|----------|------|-----|-----|---------------------|
| | | AMP | POLE | NO. | | | | | |
| EXIST. LOAD CENTER "KES" | 2.9 | 20 | 3 | 1 | A - - | 2 | 1 | 20 | 0.8 EXISTING VENDOR |
| | 2.5 | - | - | 3 | - B - | 4 | 1 | 20 | 0.8 EXISTING VENDOR |
| | 2.5 | - | - | 5 | - - C | 6 | 1 | 30 | 0.8 SPARE |
| EXISTING VENDOR | 0.8 | 30 | 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 |
| NEW KIOSK RECEPT. (IT/NCS) | 0.8 | 20 | 1 | 19 | A - - | 20 | 1 | 20 | 0.8 EXISTING VENDOR |
| NEW KIOSK RECEPT. (NEPP/SOC) | 0.8 | 20 | 1 | 21 | - B - | 22 | 1 | 20 | 0.8 EXISTING VENDOR |
| FUTURE AFC FARE GATE | 0.0 | 20 | 1 | 23 | - - C | 24 | 1 | 20 | 0.8 EXISTING VENDOR |
| 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 EXISTING VENDOR |
| SPARE | 0.0 | 20 | 1 | 29 | - - C | 30 | 1 | 20 | 0.0 SPARE |
| SPACE | 0.0 | - | - | 31 | A - - | 32 | 1 | 20 | 0.8 EXISTING VENDOR |
| SPACE | 0.0 | - | - | 33 | - B - | 34 | 1 | 20 | 0.8 EXISTING VENDOR |
| 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 | 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 | |

CONTRACT NO.
14-FQ10060-CENI-24

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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



APPROVED

[Signature]

SUBMITTED

PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
C12-E-102

ELECTRICAL SPECIFICATIONS

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

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

ABBREVIATIONS

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

DRAWING INDEX

| | |
|-----------|--|
| C13-E-001 | ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST |
| C13-E-101 | KING STREET NORTH & SOUTH – KIOSK – POWER |
| C13-E-102 | KING STREET NORTH & SOUTH – PANEL SCHEDULES |
| C13-E-301 | KING STREET NORTH & SOUTH – PANELBOARD IMAGE |
| C13-E-302 | KING STREET NORTH & SOUTH – PANELBOARD IMAGE |
| MM-C-E26 | KING STREET – AC POWER ONE LINE DIAGRAM |

ELECTRICAL SYMBOL LIST

| | |
|--|--|
| | QUADRUPLEX RECEPTACLE OUTLET- 20A, 125V WALL MOUNTED. |
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| | INDICATES CIRCUIT HOME RUN PANELBOARD AND CIRCUIT NUMBER IDENTIFICATION |

CONTRACT NO.
14-FQ10060-CENI-24

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

| REFERENCE DRAWINGS | | REVISIONS | |
|--------------------|-------------|-----------|----|
| NUMBER | DESCRIPTION | DATE | BY |
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WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

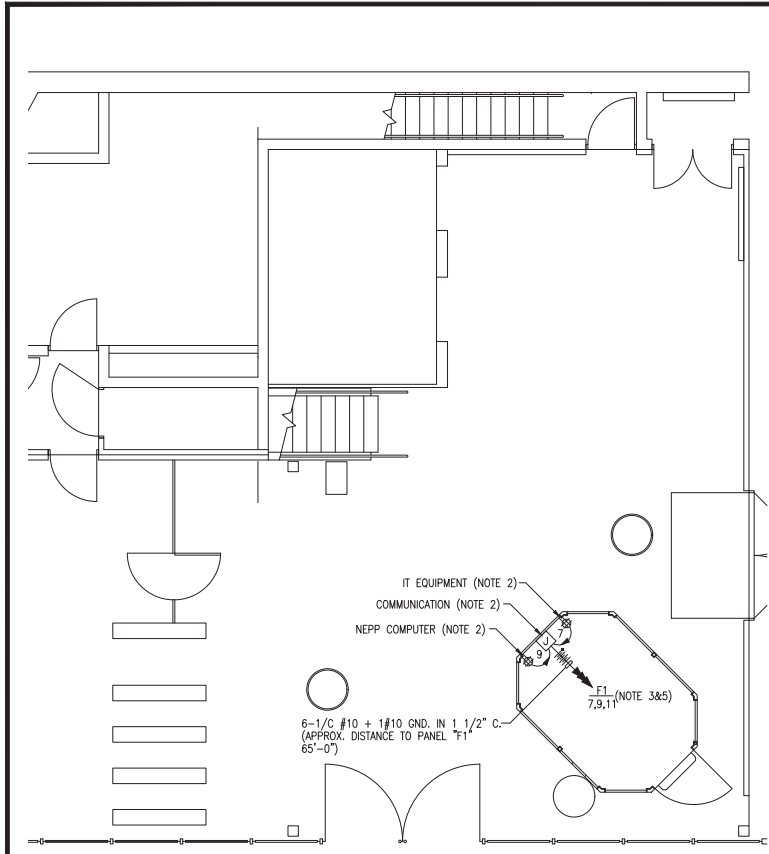
GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ SUBMITTED _____
PROJECT MANAGER

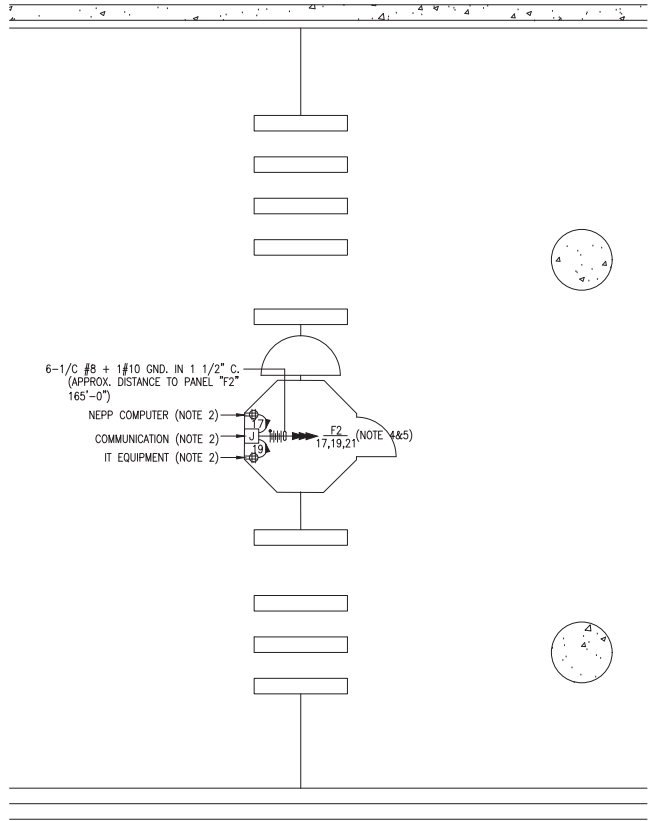
NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
ABBREVIATIONS, DRAWING INDEX,
SPECIFICATIONS & SYMBOL LIST

SCALE: NOT TO SCALE

DRAWING NO. C13-E-001



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



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

DRAWING NOTES:

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

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

| DESIGNED | C. NGO | DATE | 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 *[Signature]*

PROJECT MANAGER



CONTRACT NO. 14-FQ10060-CENI-24

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

SCALE AS SHOWN DRAWING NO. C13-E-101

| EXISTING PANEL "F1" | | | | | | | | | | | | |
|------------------------------|-----|----------------|------|------------------------------------|----------|----------|------|-----|-----|------------------|-----------------|-----------------|
| AMPERES: 150 | | VOLTS: 120/208 | | MOUNTING: SURFACE | | | | | | | | |
| MAINS: 150A MCB | | PHASE: 3 | | LOCATION: AC SWBD BATTERY RM. C103 | | | | | | | | |
| RATING: 10K AC | | WIRE: 4 | | SECTION: 1 OF 1 | | | | | | | | |
| LOAD DESCRIPTION | KVA | CKT BKRS | | | CKT. NO. | 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 | 0.0 | SPARE |
| EXISTING VENDOR | 0.8 | 20 | 1 | 5 | - | - | C | 6 | 1 | 20 | 0.0 | SPARE |
| NEW KIOSK RECEPT. (IT/NC) | 0.8 | 20 | 1 | 7 | A | - | 8 | 1 | 20 | 0.8 | EXISTING VENDOR | |
| NEW KIOSK RECEPT. (NEPP/SOC) | 0.8 | 20 | 1 | 9 | - | B | - | 10 | 1 | 20 | 0.8 | EXISTING VENDOR |
| FUTURE AFC FARE GATE | 0.8 | 20 | 1 | 11 | - | - | C | 12 | 1 | 20 | 0.8 | EXISTING VENDOR |
| SPARE | 0.0 | 20 | 1 | 13 | A | - | 14 | 1 | 20 | 0.0 | SPARE | |
| SPARE | 0.0 | 20 | 1 | 15 | - | B | - | 16 | 1 | 20 | 0.0 | SPARE |
| EXISTING VENDOR | 0.8 | 20 | 1 | 17 | - | - | C | 18 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 19 | A | - | 20 | 1 | 20 | 0.8 | EXISTING VENDOR | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 21 | - | B | - | 22 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 23 | - | - | C | 24 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 25 | A | - | 26 | 1 | 20 | 0.8 | EXISTING VENDOR | |
| SPARE | 0.0 | 20 | 1 | 27 | - | B | - | 28 | 1 | 20 | 0.8 | EXISTING VENDOR |
| SPARE | 0.0 | 20 | 1 | 29 | - | - | C | 30 | 1 | 20 | 0.0 | SPARE |
| SPACE | 0.0 | - | - | 31 | A | - | 32 | - | - | 0.0 | SPACE | |
| SPACE | 0.0 | - | - | 33 | - | B | - | 34 | - | 0.0 | SPACE | |
| SPACE | 0.0 | - | - | 35 | - | - | C | 36 | - | 0.0 | SPACE | |

| 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: | 5.6 KVA | | |
| PHASE B: | 4.8 KVA | | |
| PHASE C: | 5.6 KVA | | |

| EXISTING PANEL "F2" | | | | | | | | | | | | |
|------------------------------|-----|----------------|------|-----------------------------------|----------|----------|------|-----|-----|------------------|--------------------------|-----------------|
| AMPERES: 150 | | VOLTS: 120/208 | | MOUNTING: SURFACE | | | | | | | | |
| MAINS: 150A MCB | | PHASE: 3 | | LOCATION: AC SWBD BATTERY RM C103 | | | | | | | | |
| RATING: 10K AC | | WIRE: 4 | | SECTION: 1 OF 1 | | | | | | | | |
| LOAD DESCRIPTION | KVA | CKT BKRS | | | CKT. NO. | 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 | EXISTING VENDOR | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 9 | - | B | - | 10 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 11 | - | - | C | 12 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 13 | A | - | 14 | 1 | 20 | 0.0 | SPARE | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 15 | - | B | - | 16 | 1 | 20 | 0.8 | EXISTING VENDOR |
| NEW KIOSK RECEPT. (IT/NC) | 0.8 | 20 | 1 | 17 | - | - | C | 18 | 1 | 20 | 0.8 | EXISTING VENDOR |
| NEW KIOSK RECEPT. (NEPP/SOC) | 0.8 | 20 | 1 | 19 | A | - | 20 | 1 | 20 | 2.9 | EXIST. LOAD CENTER "KES" | |
| FUTURE AFC FARE GATE | 0.0 | 20 | 1 | 21 | - | B | - | 22 | 1 | 20 | 2.5 | |
| SPARE | 0.0 | 20 | 1 | 23 | - | - | C | 24 | 1 | 20 | 2.5 | |
| 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 | EXISTING VENDOR |
| SPARE | 0.0 | 20 | 1 | 29 | - | - | C | 30 | 1 | 20 | 0.0 | SPARE |
| SPACE | 0.0 | - | - | 31 | A | - | 32 | - | - | 0.0 | SPACE | |
| SPACE | 0.0 | - | - | 33 | - | B | - | 34 | - | 0.0 | SPACE | |
| SPACE | 0.0 | - | - | 35 | - | - | C | 36 | - | 0.0 | SPACE | |

| 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 | | |

CONTRACT NO.
14-FQ10060-CENI-24

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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



APPROVED *[Signature]*

SUBMITTED PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
C13-E-102

ELECTRICAL SPECIFICATIONS

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

ABBREVIATIONS

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

DRAWING INDEX

| | |
|-----------|--|
| C15-E-001 | ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST |
| C15-E-101 | HUNTINGTON NORTH & SOUTH - KIOSK - POWER |
| C15-E-102 | HUNTINGTON NORTH & SOUTH - PANEL SCHEDULE |
| C15-E-301 | HUNTINGTON NORTH & SOUTH - PANELBOARD IMAGE |
| C15-E-302 | HUNTINGTON NORTH & SOUTH - PANELBOARD IMAGE |
| MM-C-E37 | HUNTINGTON NORTH & SOUTH - 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 | 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 METRORAIL STATIONS
ABBREVIATIONS, DRAWING INDEX,
SPECIFICATIONS & SYMBOL LIST

SCALE
NOT TO SCALE

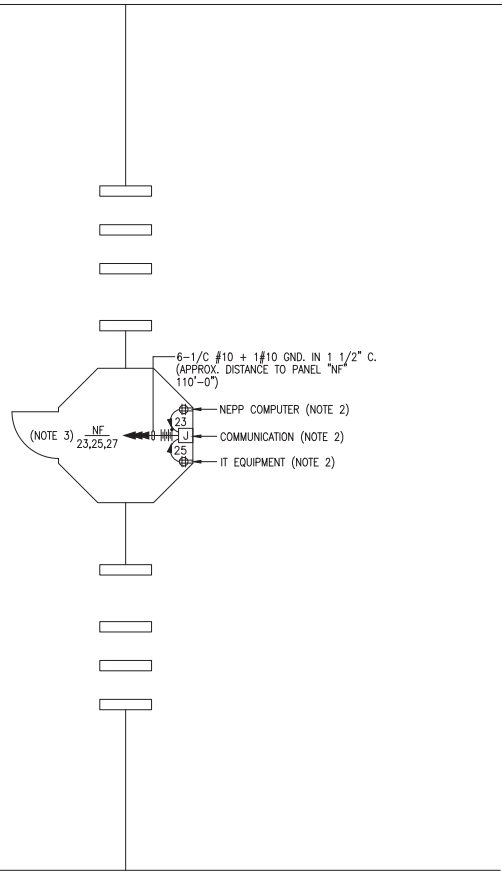
DRAWING NO.
C15-E-001

DRAWING NOTES:

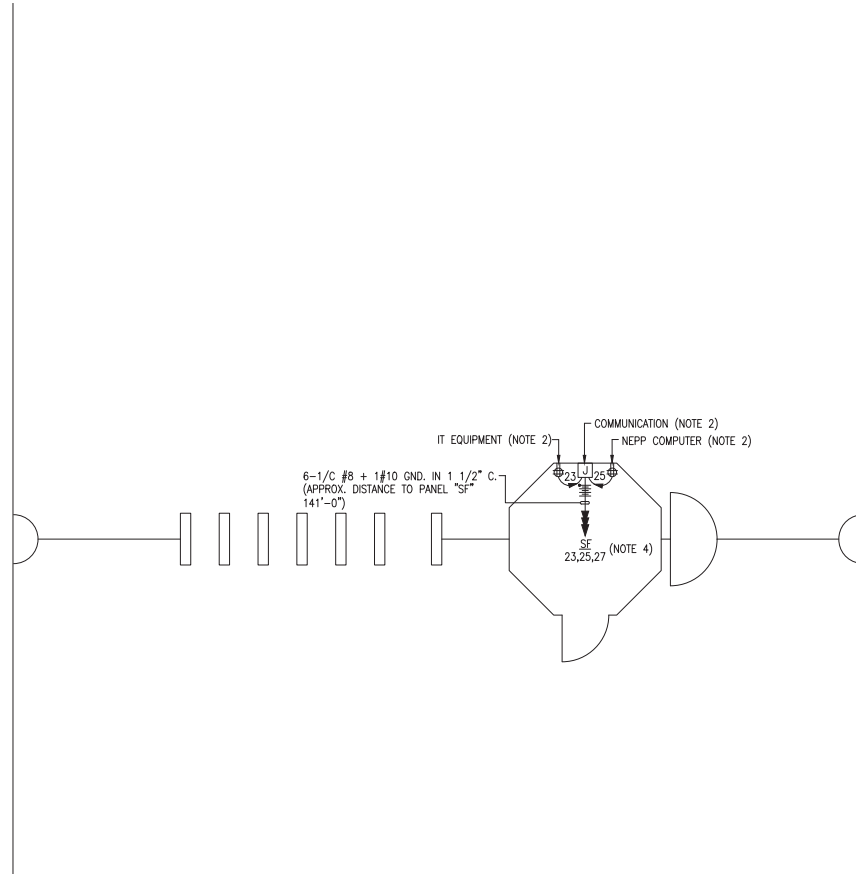
- CONTRACTOR TO REFER TO SUPPLEMENTAL MEZZANINE INSPECTION REPORT, VOLUME 4 FURNISHED UNDER THIS SOLICITATION PACKAGE TO BE INFORMED THAT THE TOTAL LENGTH OF THE MULTI WIRE BRANCH CIRCUIT DEPICTED IN THE ELECTRICAL PLAN MAY EITHER CONSIST OF EXISTING POWER UNDER FLOOR DUCTS; OR IT COULD BE ALL CONDUIT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

SAFETY PRECAUTION:

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



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



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

CONTRACT NO.
14-FQ10060-CENI-24

| DESIGNED | C. NGD | 09-14 | REFERENCE DRAWINGS | | REVISIONS | |
|----------|---------|-------|--------------------|-------------|-----------|----|
| | | | NUMBER | DESCRIPTION | DATE | BY |
| DRAWN | C. NGD | 09-14 | | | | |
| CHECKED | S. DDLB | 09-14 | | | | |
| APPROVED | N/A | | | | | |

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

GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED *[Signature]* SUBMITTED PROJECT MANAGER

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

SCALE AS SHOWN DRAWING NO. C15-E-101

| EXISTING PANEL "NF" | | | | | | | | | | | | | |
|---------------------------------|-----|----------------|------|---------------------------------------|----------|------|-----|-----|------------------|-----|-----------------|--------------------------|--|
| AMPERES: 225 | | VOLTS: 120/208 | | MOUNTING: SURFACE | | | | | | | | | |
| MAINS: 200A MCB | | PHASE: 3 | | LOCATION: ELEC. EQUIPMENT BATTERY 129 | | | | | | | | | |
| 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 | | |
| 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 | 0.0 | SPARE | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 19 | A | - | 20 | 1 | 20 | 0.0 | SPARE | | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 21 | - | B | - | 22 | 1 | 20 | 0.8 | EXISTING VENDOR | |
| 1 NEW KIOSK RECEPT. (IT & NEPP) | 0.8 | 20 | 1 | 23 | - | C | - | 24 | 1 | 20 | 0.8 | EXISTING VENDOR | |
| 1&2 SPARE (KIOSK) | 0.0 | 20 | 1 | 25 | A | - | 26 | 1 | 20 | 0.8 | EXISTING VENDOR | | |
| 1 NEW KIOSK RECEPT. (IT & NEPP) | 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 | - | - | 0.0 | SPACE | | |
| SPARE | 0.0 | 20 | 1 | 33 | - | B | - | 34 | - | - | 0.0 | SPACE | |
| SPARE | 0.0 | 20 | 1 | 35 | - | C | - | 36 | 3 | 40 | 2.9 | EXIST. LOAD CENTER "KES" | |
| SPACE | 0.0 | - | - | 37 | A | - | 38 | - | - | 2.5 | | | |
| SPACE | 0.0 | - | - | 39 | - | B | - | 40 | - | - | 2.5 | | |
| SPACE | 0.0 | - | - | 41 | - | C | - | 42 | - | - | 0.0 | SPACE | |

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

| LOAD SUMMARY | | | |
|----------------------------|-------------|-------------------|-----------|
| LIGHTS | 0.0 x 125% | | 0.0 KVA |
| RECEPT ACLES, FIRST 10 KVA | 10.0 x 100% | | 10.0 KVA |
| RECEPT ACLES | 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 | 8.1 KVA |
| PHASE B | 9.7 KVA |
| PHASE C | 8.5 KVA |

| EXISTING PANEL "SF" | | | | | | | | | | | | | |
|---------------------------------|-----|----------------|------|-------------------------------|----------|------|-----|-----|------------------|-----|--------------------------|-----------------|--|
| AMPERES: 225 | | VOLTS: 120/208 | | MOUNTING: SURFACE | | | | | | | | | |
| MAINS: 225A MLO | | PHASE: 3 | | LOCATION: ELEC. EQUIPMENT 416 | | | | | | | | | |
| 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 | | |
| 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 | 1 | 20 | 0.8 | EXISTING VENDOR | | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 15 | - | B | - | 16 | 1 | 20 | 0.0 | SPARE | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 17 | - | 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 | 30 | 0.0 | SPARE | |
| 1 NEW KIOSK RECEPT. (IT & NEPP) | 0.8 | 20 | 1 | 23 | - | C | - | 24 | 1 | 20 | 0.8 | EXISTING VENDOR | |
| 1&2 SPARE (KIOSK) | 0.0 | 20 | 1 | 25 | A | - | 26 | 1 | 20 | 0.8 | EXISTING VENDOR | | |
| 1 NEW KIOSK RECEPT. (IT & NEPP) | 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 | |
| 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 | 0.0 | SPARE | |
| SPARE | 0.0 | 20 | 1 | 37 | A | - | 38 | 3 | 40 | 2.9 | EXIST. LOAD CENTER "KES" | | |
| SPARE | 0.0 | 20 | 1 | 39 | - | B | - | 40 | - | - | 2.5 | | |
| SPARE | 0.0 | 20 | 1 | 41 | - | C | - | 42 | - | - | 2.5 | | |

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

| LOAD SUMMARY | | | |
|----------------------------|-------------|-------------------|-----------|
| LIGHTS | 0.0 x 125% | | 0.0 KVA |
| RECEPT ACLES, FIRST 10 KVA | 10.0 x 100% | | 10.0 KVA |
| RECEPT ACLES | 8.0 x 50% | | 4.0 KVA |
| MISC. APPLIANCES | 0.0 x 100% | | 0.0 KVA |
| LARGEST MOTOR | 0.0 x 125% | | 0.0 KVA |
| MOTORS | 0.0 x 100% | | 0.0 KVA |
| HEAT | 3.0 x 125% | | 3.8 KVA |
| AC | 4.5 x 100% | | 4.5 KVA |
| WATER HEATING | 0.0 x 125% | | 0.0 KVA |
| TOTAL CONNECTED LOAD | 25.5 KVA | TOTAL DEMAND KVA | 22.3 KVA |
| | | TOTAL DEMAND AMPS | 61.8 AMPS |

| CONNECTED LOAD PHASE SUMMARY | |
|------------------------------|---------|
| PHASE A | 9.3 KVA |
| PHASE B | 8.9 KVA |
| PHASE C | 8.1 KVA |

CONTRACT NO.
14-FQ10060-CENI-24

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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



APPROVED *[Signature]*

SUBMITTED PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
C15-E-102

ELECTRICAL SPECIFICATIONS

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

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

ABBREVIATIONS

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

DRAWING INDEX

| | |
|-----------|--|
| E01-E-001 | ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST |
| E01-E-101 | MT VERNON SQUARE - MEZZANINE KIOSK - POWER |
| E01-E-102 | MT VERNON SQUARE - PANEL SCHEDULE |
| E01-E-301 | MT VERNON SQUARE - PANELBOARD IMAGE |
| MM-E-E06 | MT VERNON SQUARE - 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 | 08-14 DATE | REFERENCE DRAWINGS | | REVISIONS | | |
|----------|-----------|---------------|--------------------|-------------|-----------|----|-------------|
| | | | NUMBER | DESCRIPTION | DATE | BY | DESCRIPTION |
| DRAWN | C. NGO | 08-14 DATE | | | | | |
| CHECKED | B. IDILBI | 08-14 DATE | | | | | |
| APPROVED | N/A | DATE | | | | | |

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

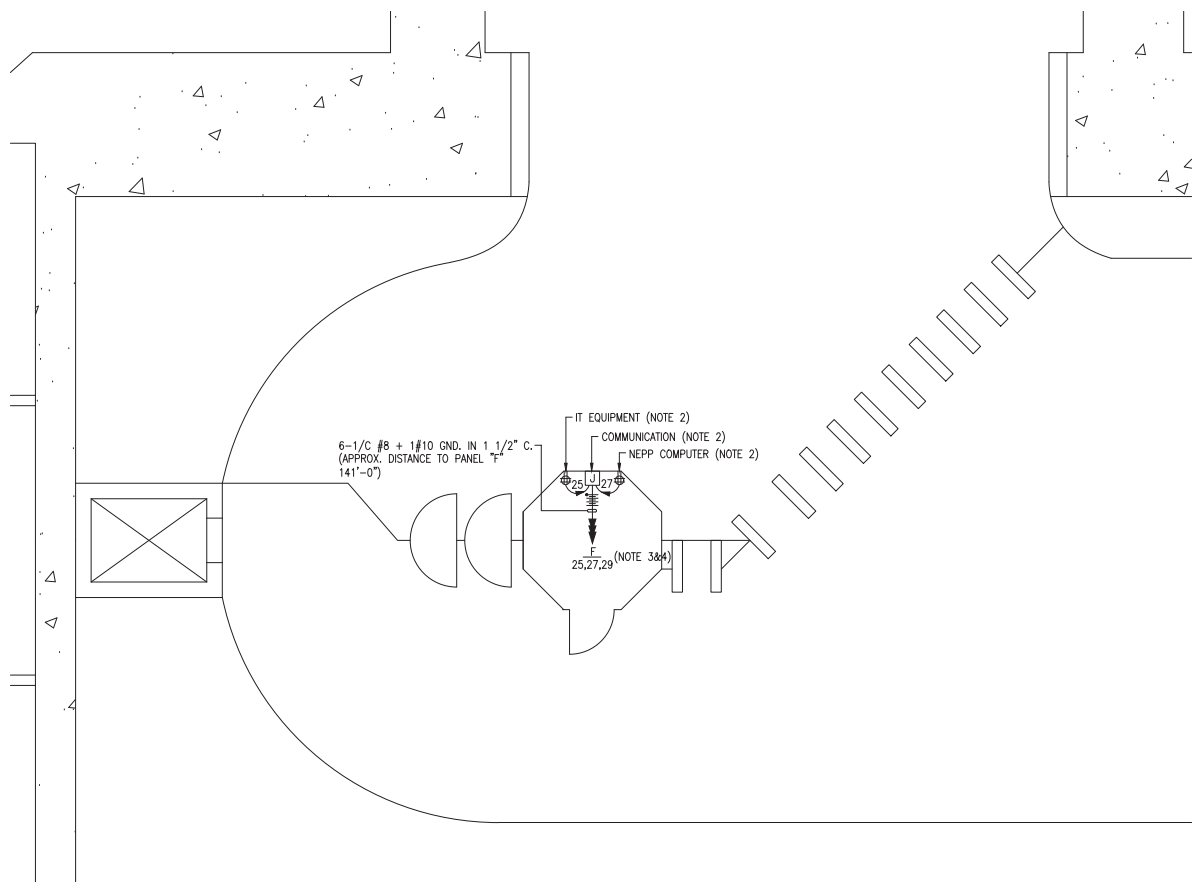
GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ SUBMITTED _____
PROJECT MANAGER

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

SCALE: NOT TO SCALE

DRAWING NO. E01-E-001



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

DRAWING NOTES:

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

SAFETY PRECAUTION:

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

CONTRACT NO.
 14-FQ10060-CENI-24

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

APPROVED *[Signature]*

GFP A Gannett Fleming/Parsons JOINT VENTURE

SUBMITTED _____ PROJECT MANAGER

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

SCALE AS SHOWN

DRAWING NO. E01-E-101

EXISTING PANEL "F"

| AMPERES: 225 | VOLTS: 120/208 | MOUNTING: SURFACE | | | | | | | | |
|--------------------------------|----------------|--|------|-----|-------|-----|------|-----|-----|------------------|
| MAINS: 225A MCB | PHASE: 3 | LOCATION: ELECTRICAL EQUIPMENT ROOM C207 | | | | | | | | |
| RATING: 10K AIC | WIRE: 4 | SECTION: 1 OF 1 | | | | | | | | |
| LOAD DESCRIPTION | KVA | AMP | POLE | NO. | NO. | NO. | POLE | AMP | KVA | LOAD DESCRIPTION |
| SPARE | 0.0 | 20 | 1 | 1 | A - - | 2 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 3 | - B - | 4 | 1 | 20 | 0.8 | EXISTING VENDOR |
| 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 |
| EXISTING VENDOR | 0.8 | 20 | 1 | 17 | - - C | 18 | 1 | 20 | 0.0 | SPARE |
| EXISTING VENDOR | 0.8 | 20 | 1 | 19 | A - - | 20 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 21 | - B - | 22 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 23 | - - C | 24 | 1 | 20 | 0.8 | EXISTING VENDOR |
| NEW KIOSK RECEPT. (IT/NC) | 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 | 0.0 | SPARE |
| SPACE | 0.0 | 20 | 1 | 31 | A - - | 32 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 33 | - B - | 34 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 35 | - - C | 36 | 1 | 20 | 0.0 | SPARE |
| EXIST. KIOSK LOAD CENTER "KES" | 3.3 | 40 | 3 | 37 | A - - | 38 | - | - | 0.0 | SPACE |
| | 2.5 | - | - | 39 | - B - | 40 | - | - | 0.0 | SPACE |
| | 2.5 | - | - | 41 | - - C | 42 | - | - | 0.0 | SPACE |
| | 0.0 | - | - | 43 | A - - | 44 | - | - | 0.0 | - |

LOAD SUMMARY

| | | |
|-------------------------------------|-----------------|------------------------------------|
| LIGHTS | 0.0 x 125% | 0.0 KVA |
| RECEPTACLES, FIRST 10 KVA | 10.0 x 100% | 10.0 KVA |
| RECEPTACLES | 13.2 x 50% | 6.6 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 | 30.7 KVA | TOTAL DEMAND KVA 24.9 KVA |
| | | TOTAL DEMAND AMPS 69.0 AMPS |
| CONNECTED LOAD PHASE SUMMARY | | |
| PHASE A: | 11.3 KVA | |
| PHASE B: | 12.1 KVA | |
| PHASE C: | 5.6 KVA | |

CONTRACT NO.
14-FQ10060-CENI-24

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

| REFERENCE DRAWINGS | | REVISIONS | |
|--------------------|-------------|-----------|-------------|
| NUMBER | DESCRIPTION | DATE | DESCRIPTION |
| | | | |
| | | | |
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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
MT VERNON SQUARE
PANEL SCHEDULE**

SCALE
NOT TO SCALE

DRAWING NO.
E01-E-102

20

ELECTRICAL SPECIFICATIONS

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

| | |
|-----------|--|
| E02-E-001 | ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST |
| E02-E-101 | SHAW - NORTH & SOUTH - MEZZANINE KIOSK - POWER |
| E02-E-102 | SHAW - NORTH & SOUTH - PANEL SCHEDULES |
| E02-E-301 | SHAW - NORTH & SOUTH - PANELBOARD IMAGE |
| E02-E-302 | SHAW - NORTH & SOUTH - PANELBOARD IMAGE |
| MM-E-E08 | SHAW - 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 | | NUMBER | | DESCRIPTION | | DATE | | BY | | DESCRIPTION | |
|----------|-----------|-------|--|--------|--|-------------|--|------|--|----|--|-------------|--|
| C. NGO | | 08-14 | | | | | | | | | | | |
| DRAWN | C. NGO | 08-14 | | | | | | | | | | | |
| CHECKED | B. IDILBI | 08-14 | | | | | | | | | | | |
| APPROVED | N/A | | | | | | | | | | | | |

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

GFP A Gannett Fleming/Parsons
JOINT VENTURE

APPROVED _____

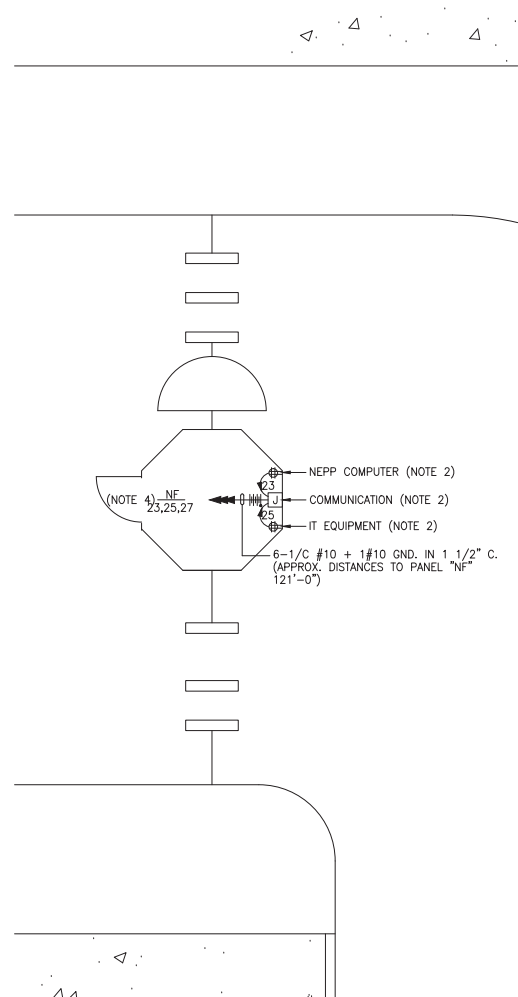
SUBMITTED _____
PROJECT MANAGER

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

SCALE
NOT TO SCALE

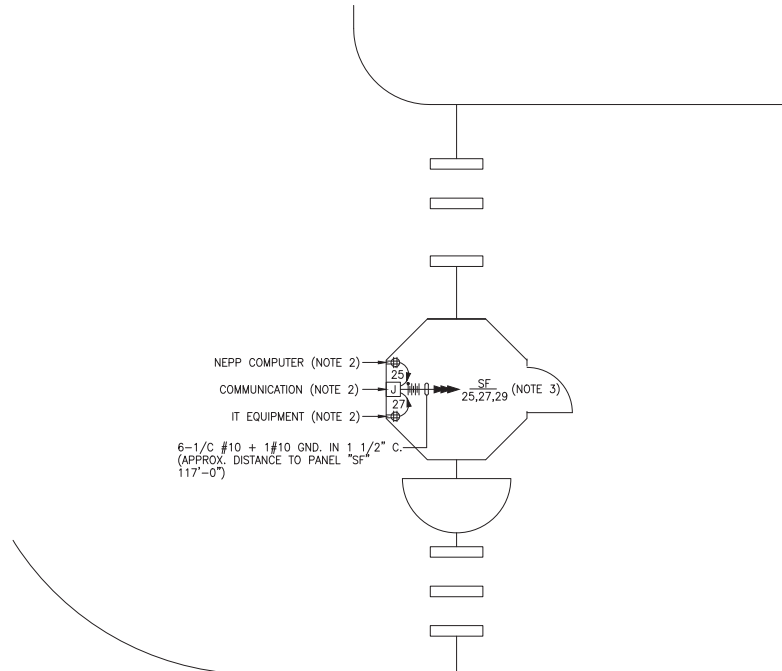
DRAWING NO.
E02-E-001

11-8



NORTH MEZZANINE KIOSK - POWER

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



SOUTH MEZZANINE KIOSK - POWER

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

DRAWING NOTES:

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

SAFETY PRECAUTION:

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

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. IDILBI | 08-14 | | | | |
| APPROVED | N/A | | | | | |

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

APPROVED *[Signature]*

GFP A Gannett Fleming/Parsons
JOINT VENTURE

SUBMITTED PROJECT MANAGER

**NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
SHAW-HOWARD UNIVERSITY - NORTH & SOUTH
MEZZANINE KIOSK - POWER**

SCALE
AS SHOWN

DRAWING NO.
E02-E-101

| EXISTING PANEL "NF" | | | | | | | | | | | | |
|------------------------------|----------------|-----|---|-----|-----|------|-----|-----|------------------|-----|-----------------|-----------------|
| AMPERES: 400 | VOLTS: 120/208 | | MOUNTING: SURFACE | | | | | | | | | |
| MAINS: 250AMCB | PHASE: 3 | | LOCATION: ELECTRICAL EQUIPMENT ROOM 205 | | | | | | | | | |
| RATING: 10K AC | 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 |
| 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 | |
| SPARE | 0.0 | 20 | 1 | 15 | - | B | - | 16 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 3.3 | 40 | 3 | 17 | - | - | C | 18 | 1 | 20 | 0.8 | EXISTING VENDOR |
| | 2.5 | | | 19 | A | - | 20 | 1 | 20 | 0.8 | EXISTING VENDOR | |
| | 2.5 | | | 21 | - | B | - | 22 | 1 | 20 | 0.8 | EXISTING VENDOR |
| NEW KIOSK RECEPT. (IT/NCS) | 0.8 | - | - | 23 | - | - | C | 24 | 1 | 20 | 0.8 | EXISTING VENDOR |
| NEW KIOSK RECEPT. (NEPP/SOC) | 0.8 | - | - | 25 | A | - | 26 | - | - | 0.0 | SPACE | |
| FUTURE AFC FARE GATE | 0.0 | - | - | 27 | - | B | - | 28 | - | - | 0.0 | SPACE |
| SPACE | 0.0 | - | - | 29 | - | - | C | 30 | - | - | 0.0 | SPACE |
| SPACE | 0.0 | - | - | 31 | A | - | 32 | - | - | 0.0 | SPACE | |
| SPACE | 0.0 | - | - | 33 | - | B | - | 34 | - | - | 0.0 | SPACE |
| SPACE | 0.0 | - | - | 35 | - | - | C | 36 | - | - | 0.0 | SPACE |
| SPACE | 0.0 | - | - | 37 | A | - | 38 | - | - | 0.0 | SPACE | |
| SPACE | 0.0 | - | - | 39 | - | B | - | 40 | - | - | 0.0 | SPACE |
| SPACE | 0.0 | - | - | 41 | - | - | C | 42 | - | - | 0.0 | SPACE |

| LOAD SUMMARY | | | |
|-----------------------------|-----------------|--------------------------|------------------|
| LIGHTS | 0.0 x 125% | | 0.0 KVA |
| RECEPTACLES, FIRST 10 KVA | 10.0 x 100% | | 10.0 KVA |
| RECEPTACLES | 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 | 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 | 23.5 KVA | TOTAL DEMAND KVA | 21.3 KVA |
| | | TOTAL DEMAND AMPS | 59.0 AMPS |

| CONNECTED LOAD PHASE SUMMARY | |
|------------------------------|---------|
| PHASE A: | 8.9 KVA |
| PHASE B: | 7.3 KVA |
| PHASE C: | 8.9 KVA |

| EXISTING PANEL "SF" | | | | | | | | | | | | |
|------------------------------|----------------|-----|---|-----|-----|------|-----|-----|------------------|-----|-----------------|-----------------|
| AMPERES: 400 | VOLTS: 120/208 | | MOUNTING: SURFACE | | | | | | | | | |
| MAINS: 250AMCB | PHASE: 3 | | LOCATION: ELECTRICAL EQUIPMENT ROOM 208 | | | | | | | | | |
| RATING: 10K AC | 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 | 0.8 | 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 |
| EXIST. LOAD CENTER "KES" | 3.3 | 40 | 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 | 0.8 | EXISTING VENDOR |
| NEW KIOSK RECEPT. (IT/NCS) | 0.8 | 20 | 1 | 25 | A | - | 26 | - | - | 0.0 | SPACE | |
| NEW KIOSK RECEPT. (NEPP/SOC) | 0.8 | 20 | 1 | 27 | - | B | - | 28 | - | - | 0.0 | SPACE |
| FUTURE AFC FARE GATE | 0.0 | - | - | 29 | - | - | C | 30 | - | - | 0.0 | SPACE |
| SPACE | 0.0 | - | - | 31 | A | - | 32 | - | - | 0.0 | SPACE | |
| SPACE | 0.0 | - | - | 33 | - | B | - | 34 | - | - | 0.0 | SPACE |
| SPACE | 0.0 | - | - | 35 | - | - | C | 36 | - | - | 0.0 | SPACE |
| SPACE | 0.0 | - | - | 37 | A | - | 38 | - | - | 0.0 | SPACE | |
| SPACE | 0.0 | - | - | 39 | - | B | - | 40 | - | - | 0.0 | SPACE |
| SPACE | 0.0 | - | - | 41 | - | - | C | 42 | - | - | 0.0 | SPACE |

| LOAD SUMMARY | | | |
|-----------------------------|-----------------|--------------------------|------------------|
| LIGHTS | 0.0 x 125% | | 0.0 KVA |
| RECEPTACLES, FIRST 10 KVA | 10.0 x 100% | | 10.0 KVA |
| RECEPTACLES | 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 | 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 | 25.9 KVA | TOTAL DEMAND KVA | 22.5 KVA |
| | | TOTAL DEMAND AMPS | 62.4 AMPS |

| CONNECTED LOAD PHASE SUMMARY | |
|------------------------------|---------|
| PHASE A: | 9.7 KVA |
| PHASE B: | 8.9 KVA |
| PHASE C: | 8.1 KVA |

CONTRACT NO.
14-FQ10060-CENI-24

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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



APPROVED *[Signature]*

SUBMITTED PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
SHAW-HOWARD UNIVERSITY - NORTH & SOUTH
PANEL SCHEDULES

SCALE
NOT TO SCALE

DRAWING NO.
E02-E-102

ELECTRICAL SPECIFICATIONS

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

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

ABBREVIATIONS

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

DRAWING INDEX

| | |
|-----------|--|
| E03-E-001 | ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST |
| E03-E-101 | U STREET - EAST & WEST - MEZZANINE KIOSK - POWER |
| E03-E-102 | U STREET - EAST & WEST - PANEL SCHEDULES |
| E03-E-301 | U STREET - EAST & WEST - PANELBOARD IMAGE |
| E03-E-302 | U STREET - EAST & WEST - PANELBOARD IMAGE |
| MM-E-E10 | U STREET - 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 | 08-14 |
| | | DATE |
| DRAWN | C. NGO | 08-14 |
| | | DATE |
| CHECKED | B. IDILBI | 08-14 |
| | | DATE |
| APPROVED | N/A | |
| | | DATE |

| REFERENCE DRAWINGS | | REVISIONS | |
|--------------------|-------------|-----------|----|
| NUMBER | DESCRIPTION | DATE | BY |
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| | | | |

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

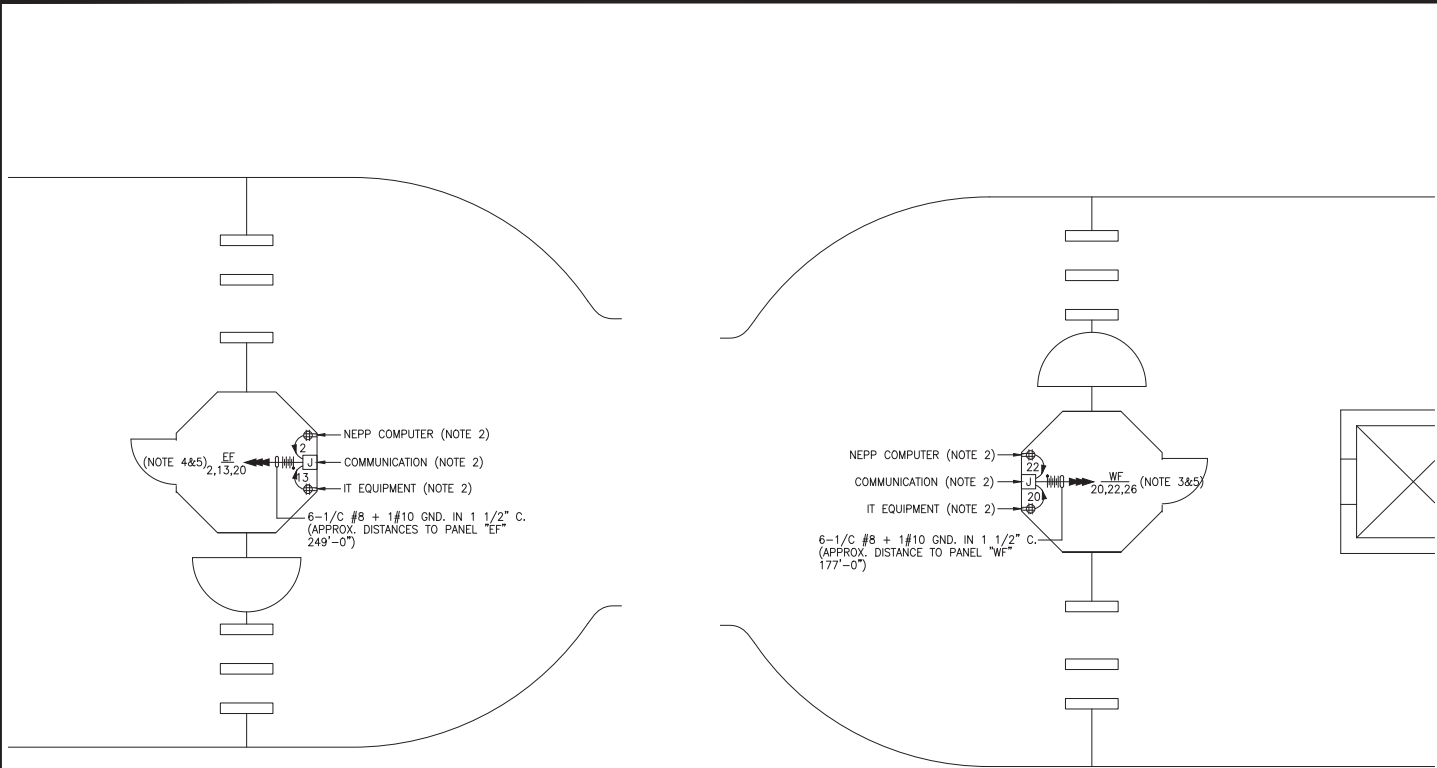
GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ SUBMITTED _____
PROJECT MANAGER

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

SCALE: NOT TO SCALE

DRAWING NO. E03-E-001



DRAWING NOTES:

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

SAFETY PRECAUTION:

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

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

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

CONTRACT NO.
14-FQ10060-CENI-24

| DESIGNED | C. NGO | 08-14 | REFERENCE DRAWINGS | | REVISIONS | | | |
|----------|----------|-------|--------------------|-------------|-----------|----|-------------|--|
| | | | NUMBER | DESCRIPTION | DATE | BY | DESCRIPTION | |
| 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

APPROVED *[Signature]*

GFP A Gannett Fleming/Parsons JOINT VENTURE

SUBMITTED _____ PROJECT MANAGER

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

SCALE AS SHOWN DRAWING NO. E03-E-101

25

| EXISTING PANEL "EF" | | | | | | | | | | | | |
|----------------------------|-----|----------------|------|---|----------|----------|-----|-----|------------------|------------------------------|--|--|
| AMPERES: 400 | | VOLTS: 120/208 | | MOUNTING: SURFACE | | | | | | | | |
| MAINS: 250A MCB | | PHASE: 3 | | LOCATION: ELECTRICAL EQUIPMENT ROOM 213 | | | | | | | | |
| RATING: 10K AIC | | WIRE: 4 | | SECTION: 1 OF 1 | | | | | | | | |
| LOAD DESCRIPTION | KVA | AMP | POLE | CKT. NO. | CKT. NO. | CKT BKRS | AMP | KVA | LOAD DESCRIPTION | | | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 1 | A - - | 2 | 1 | 20 | 0.8 | NEW KIOSK RECEPT. (NEPP/SOC) | | |
| 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/NC) | 0.8 | 20 | 1 | 13 | A - - | 14 | 1 | 20 | 0.8 | EXISTING VENDOR | | |
| EXISTING LOAD CENTER "KES" | 3.3 | 40 | 3 | 15 | - B - | 16 | 1 | 20 | 0.8 | EXISTING VENDOR | | |
| | 2.5 | - | - | 17 | - - C | 18 | 1 | 20 | 0.8 | EXISTING VENDOR | | |
| | 2.5 | - | - | 19 | A - - | 20 | 1 | 20 | 0.0 | FUTURE AFC FARE GATE | | |
| EXISTING VENDOR | 0.0 | 20 | 1 | 21 | - B - | 22 | 1 | 20 | 0.8 | EXISTING VENDOR | | |
| EXISTING VENDOR | 0.0 | 20 | 1 | 23 | - - C | 24 | 1 | 20 | 0.8 | EXISTING VENDOR | | |
| SPACE | 0.0 | - | - | 25 | A - - | 26 | 1 | 20 | 0.0 | SPACE | | |
| SPACE | 0.0 | - | - | 27 | - B - | 28 | 1 | 20 | 0.0 | SPACE | | |
| SPACE | 0.0 | - | - | 29 | - - C | 30 | 1 | 20 | 0.0 | SPACE | | |
| SPACE | 0.0 | - | - | 31 | A - - | 32 | 1 | 20 | 0.0 | SPACE | | |
| SPACE | 0.0 | - | - | 33 | - B - | 34 | 1 | 20 | 0.0 | SPACE | | |
| SPACE | 0.0 | - | - | 35 | - - C | 36 | 1 | 20 | 0.0 | SPACE | | |
| SPACE | 0.0 | - | - | 37 | A - - | 38 | 1 | 20 | 0.0 | SPACE | | |
| SPACE | 0.0 | - | - | 39 | - B - | 40 | 1 | 20 | 0.0 | SPACE | | |
| SPACE | 0.0 | - | - | 41 | - - C | 42 | 1 | 20 | 0.0 | SPACE | | |
| | 0.0 | - | - | 43 | A - - | 44 | 1 | 20 | 0.0 | - | | |

| LOAD SUMMARY | | | |
|-----------------------------|-----------------|--------------------------|------------------|
| LIGHTS | 0.0 x 125% | | 0.0 KVA |
| RECEPTACLES, FIRST 10 KVA | 10.0 x 100% | | 10.0 KVA |
| RECEPTACLES | 4.4 x 50% | | 2.2 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 | 21.9 KVA | TOTAL DEMAND KVA | 20.5 KVA |
| | | TOTAL DEMAND AMPS | 56.8 AMPS |

| CONNECTED LOAD PHASE SUMMARY | |
|------------------------------|---------|
| PHASE A: | 7.3 KVA |
| PHASE B: | 8.1 KVA |
| PHASE C: | 7.3 KVA |

| EXISTING PANEL "WF" | | | | | | | | | | | | |
|----------------------------|-----|----------------|------|---|----------|----------|-----|-----|------------------|-------------------------------|--|--|
| AMPERES: 400 | | VOLTS: 120/208 | | MOUNTING: SURFACE | | | | | | | | |
| MAINS: 250A MCB | | PHASE: 3 | | LOCATION: ELECTRICAL EQUIPMENT ROOM 212 | | | | | | | | |
| RATING: 10K AIC | | WIRE: 4 | | SECTION: 1 OF 1 | | | | | | | | |
| LOAD DESCRIPTION | KVA | AMP | POLE | CKT. NO. | CKT. NO. | CKT BKRS | AMP | KVA | LOAD DESCRIPTION | | | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 1 | A - - | 2 | 1 | 20 | 0.0 | SPARE | | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 3 | - B - | 4 | 1 | 20 | 0.8 | EXISTING VENDOR | | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 5 | - - C | 6 | 1 | 20 | 0.8 | EXISTING VENDOR | | |
| 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 | 1 | 20 | 0.0 | SPARE | | |
| EXISTING LOAD CENTER "KES" | 3.3 | 40 | 3 | 15 | - B - | 16 | 1 | 20 | 0.8 | EXISTING VENDOR | | |
| | 2.5 | - | - | 17 | - - C | 18 | 1 | 20 | 0.8 | EXISTING VENDOR | | |
| | 2.5 | - | - | 19 | A - - | 20 | 1 | 20 | 0.8 | NEW KIOSK RECEPT. (IT & NEPP) | | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 21 | - B - | 22 | 1 | 20 | 0.8 | NEW KIOSK RECEPT. (IT & NEPP) | | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 23 | - - C | 24 | 1 | 20 | 0.8 | EXISTING VENDOR | | |
| SPACE | 0.0 | - | - | 25 | A - - | 26 | - | - | 0.0 | SPARE (KIOSK) | | |
| SPACE | 0.0 | - | - | 27 | - B - | 28 | - | - | 0.0 | SPACE | | |
| SPACE | 0.0 | - | - | 29 | - - C | 30 | - | - | 0.0 | SPACE | | |
| SPACE | 0.0 | - | - | 31 | A - - | 32 | - | - | 0.0 | SPACE | | |
| SPACE | 0.0 | - | - | 33 | - B - | 34 | - | - | 0.0 | SPACE | | |
| SPACE | 0.0 | - | - | 35 | - - C | 36 | - | - | 0.0 | SPACE | | |
| SPACE | 0.0 | - | - | 37 | A - - | 38 | - | - | 0.0 | SPACE | | |
| SPACE | 0.0 | - | - | 39 | - B - | 40 | - | - | 0.0 | SPACE | | |
| SPACE | 0.0 | - | - | 41 | - - C | 42 | - | - | 0.0 | SPACE | | |

| LOAD SUMMARY | | | |
|-----------------------------|-----------------|--------------------------|------------------|
| LIGHTS | 0.0 x 125% | | 0.0 KVA |
| RECEPTACLES, FIRST 10 KVA | 10.0 x 100% | | 10.0 KVA |
| RECEPTACLES | 4.4 x 50% | | 2.2 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 | 21.9 KVA | TOTAL DEMAND KVA | 20.5 KVA |
| | | TOTAL DEMAND AMPS | 56.8 AMPS |

| CONNECTED LOAD PHASE SUMMARY | |
|------------------------------|---------|
| PHASE A: | 5.7 KVA |
| PHASE B: | 8.9 KVA |
| PHASE C: | 8.1 KVA |

1
1&2

CONTRACT NO.
14-FQ10060-CENI-24

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

APPROVED 

PROJECT MANAGER



A Gannett Fleming/Parsons JOINT VENTURE

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

SCALE: NOT TO SCALE

DRAWING NO.: E03-E-102

ELECTRICAL SPECIFICATIONS

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

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

ABBREVIATIONS

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

DRAWING INDEX

| | |
|-----------|--|
| E05-E-001 | ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST |
| E05-E-101 | GEORGIA AVENUE - MEZZANINE KIOSK - POWER |
| E05-E-102 | GEORGIA AVENUE - PANEL SCHEDULE |
| E05-E-301 | GEORGIA AVENUE - PANELBOARD IMAGE |
| MM-E-E18 | GEORGIA AVENUE - AC POWER ONE LINE DIAGRAM |

ELECTRICAL SYMBOL LIST

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

CONTRACT NO.
14-FQ10060-CENI-24

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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



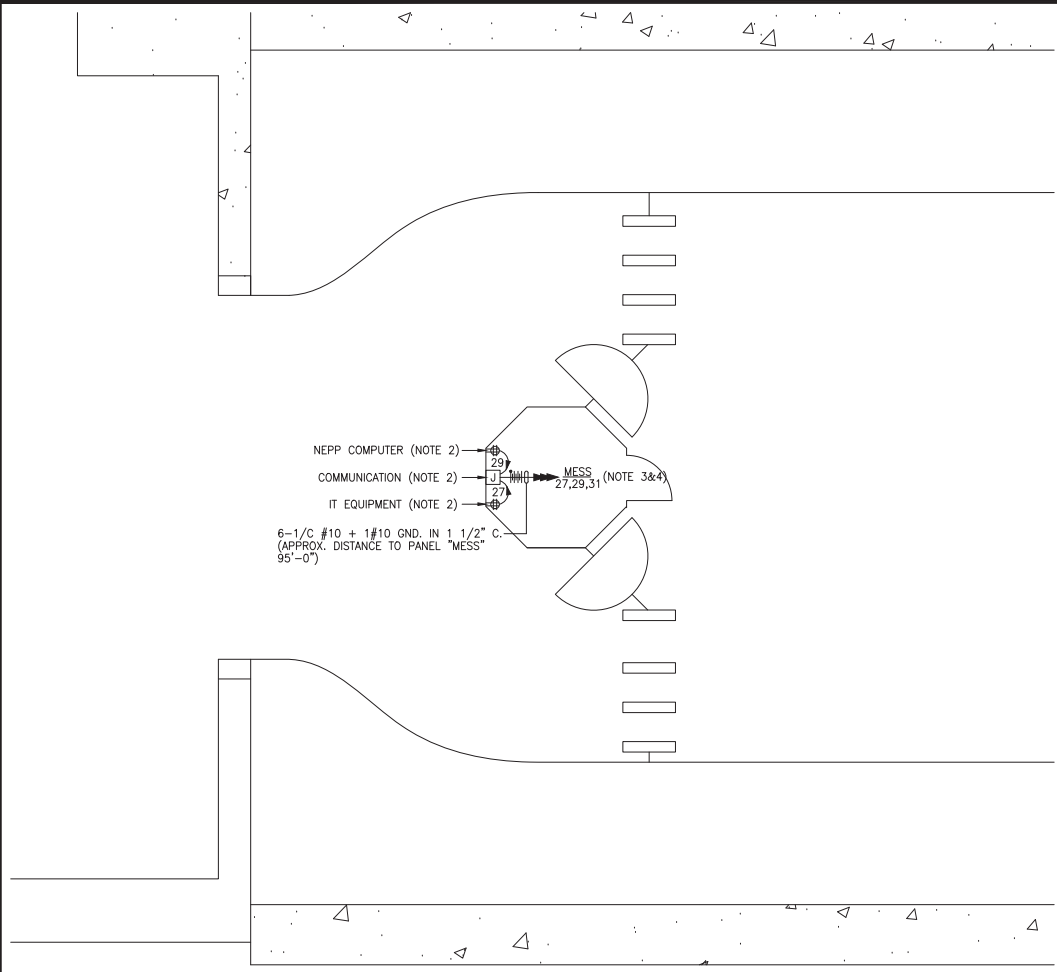
APPROVED _____

SUBMITTED _____
PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
E05-E-001



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

DRAWING NOTES:

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

SAFETY PRECAUTION:

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

CONTRACT NO.
14-FQ10060-CENI-24

| DESIGNED | C. NGO | 08-14 | REFERENCE DRAWINGS | | REVISIONS | |
|----------|----------|-------|--------------------|-------------|-----------|-------------|
| | | | NUMBER | DESCRIPTION | DATE | DESCRIPTION |
| DATE | | | | | | |
| 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



APPROVED *[Signature]*

SUBMITTED _____
PROJECT MANAGER

**NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS**
GEORGIA AVENUE
MEZZANINE KIOSK - POWER

SCALE AS SHOWN
DRAWING NO. E05-E-101

EXISTING PANEL "MESS"

| | | |
|----------------|----------------|--------------------------------|
| AMPERES: 225 | VOLTS: 120/208 | MOUNTING: SURFACE |
| MAINS: 225 MCB | PHASE: 3 | LOCATION: ELECTRICAL ROOM C213 |
| RATING: 10K AC | WIRE: 4 | SECTION: 1 OF 1 |

| LOAD DESCRIPTION | KVA | CKT BKRS | | | CKT. NO. | CKT. NO. | 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 | 0.0 | SPARE | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 5 | - - C | 6 | 1 | 20 | 0.8 | EXISTING VENDOR | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 7 | A - - | 8 | 1 | 20 | 0.8 | EXISTING VENDOR | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 9 | - B - | 10 | 1 | 20 | 0.8 | EXISTING VENDOR | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 11 | - - C | 12 | 1 | 20 | 0.8 | EXISTING VENDOR | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 13 | A - - | 14 | 1 | 20 | 0.8 | EXISTING VENDOR | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 15 | - B - | 16 | 1 | 20 | 0.8 | EXISTING VENDOR | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 17 | - - C | 18 | 1 | 20 | 0.8 | 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. (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 | 0.0 | SPARE | |
| FUTURE AFC FARE GATE | 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 | 3 | 37 | A - - | 38 | 3 | 100 | 3.3 | EXIST. KIOSK LOAD CENTER "KES" | |
| | 0.0 | - | - | 39 | - B - | 40 | - | - | 2.5 | | |
| | 0.0 | - | - | 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 | 10.0 x 50% | 5.0 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 | 27.5 KVA | |
| | | TOTAL DEMAND KVA 23.3 KVA |
| | | TOTAL DEMAND AMPS 64.6 AMPS |

| | |
|-------------------------------------|---------|
| CONNECTED LOAD PHASE SUMMARY | |
| PHASE A: | 9.7 KVA |
| PHASE B: | 8.9 KVA |
| PHASE C: | 7.2 KVA |

CONTRACT NO.
14-FQ10060-CENI-24

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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



APPROVED *[Signature]*

SUBMITTED _____
PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
E05-E-102

ELECTRICAL SPECIFICATIONS

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

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

ABBREVIATIONS

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

DRAWING INDEX

| | |
|-----------|--|
| E07-E-001 | ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST |
| E07-E-101 | WEST HYATTSVILLE - KIOSK - POWER |
| E07-E-102 | WEST HYATTSVILLE - PANEL SCHEDULE |
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ELECTRICAL SYMBOL LIST

| | |
|--|--|
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| | 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 |
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| | INDICATES CIRCUIT HOME RUN PANELBOARD AND CIRCUIT NUMBER IDENTIFICATION |

CONTRACT NO.
14-FQ10060-CENI-24

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

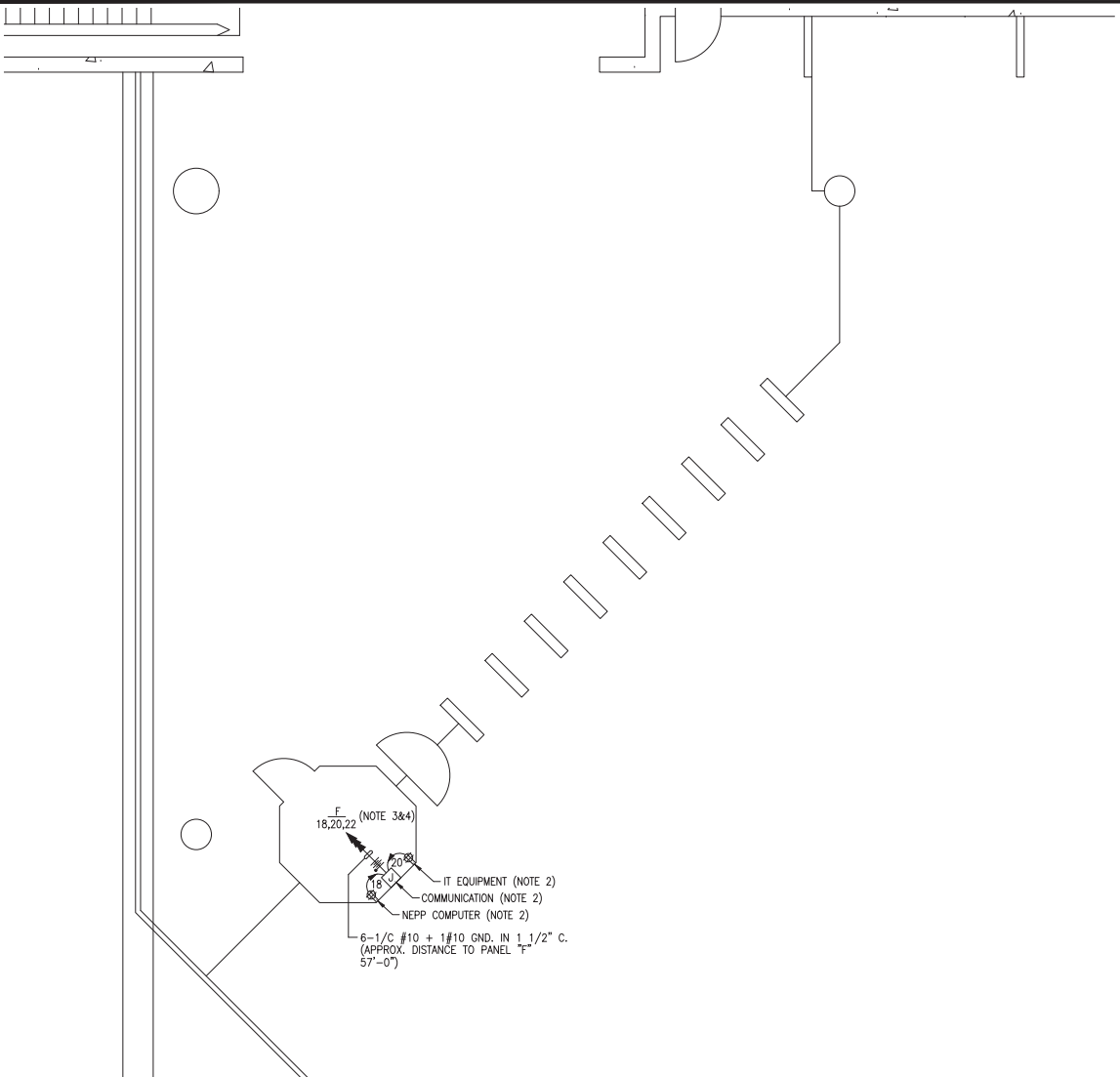
GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ SUBMITTED _____
PROJECT MANAGER

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

SCALE: NOT TO SCALE

DRAWING NO. E07-E-001



DRAWING NOTES:

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

SAFETY PRECAUTION:

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

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

CONTRACT NO.
14-FQ10060-CENI-24

| | DESIGNED | DATE | REFERENCE DRAWINGS | | REVISIONS | |
|----------|----------|-------|--------------------|-------------|-----------|-------------|
| | | | NUMBER | DESCRIPTION | DATE | DESCRIPTION |
| 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

APPROVED *[Signature]*

GFP A Gannett Fleming/Parsons JOINT VENTURE

SUBMITTED _____ PROJECT MANAGER

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

SCALE AS SHOWN DRAWING NO. E07-E-101

| EXISTING PANEL "F" | | | | | | | | | | | |
|--------------------|-----|-----|----------------|-----------|-------|---|-----------|------|-----|------------------------------|--|
| AMPERES: 250 | | | VOLTS: 120/208 | | | MOUNTING: SURFACE | | | | | |
| MAINS: 250A MCB | | | PHASE: 3 | | | LOCATION: ELECTRICAL EQUIPMENT ROOM 114 | | | | | |
| RATING: 10K AIC | | | WIRE: 4 | | | SECTION: 1 OF 1 | | | | | |
| LOAD DESCRIPTION | KVA | AMP | POLE | CKT. BKRS | | CKT. NO. | CKT. BKRS | | KVA | LOAD DESCRIPTION | |
| | | | | NO. | POLE | | NO. | POLE | | | |
| 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 | 0.0 | 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 | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 17 | - - C | 18 | 1 | 20 | 0.8 | NEW KIOSK RECEPT. (IT/NC) | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 19 | A - | 20 | 1 | 20 | 0.8 | NEW KIOSK RECEPT. (NEPP/SOC) | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 21 | - B - | 22 | 1 | 20 | 0.0 | FUTURE AFC FARE GATE | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 23 | - - C | 24 | 1 | 20 | 0.0 | SPARE | |
| SPARE | 0.0 | 20 | 1 | 25 | A - | 26 | 1 | 20 | 0.0 | SPARE | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 27 | - B - | 28 | 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 | 30 | 3 | 37 | A - | 38 | 1 | 20 | 0.0 | SPARE | |
| | 0.0 | - | - | 39 | - B - | 40 | 1 | 20 | 0.0 | SPARE | |
| | 0.0 | - | - | 41 | - - C | 42 | 1 | 20 | 0.0 | SPARE | |

| LOAD SUMMARY | | | |
|-----------------------------|-----------------|--------------------------|------------------|
| LIGHTS | 0.0 x 125% | | 0.0 KVA |
| RECEPTACLES, FIRST 10 KVA | 10.0 x 100% | | 10.0 KVA |
| RECEPTACLES | 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 | 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 | 16.8 KVA | TOTAL DEMAND KVA | 13.4 KVA |
| | | TOTAL DEMAND AMPS | 37.2 AMPS |

| CONNECTED LOAD PHASE SUMMARY | |
|------------------------------|---------|
| PHASE A: | 6.4 KVA |
| PHASE B: | 6.4 KVA |
| PHASE C: | 4.8 KVA |

CONTRACT NO.
14-FQ10060-CENI-24

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

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
WEST HYATTSVILLE
PANEL SCHEDULE**

SCALE: NOT TO SCALE

DRAWING NO.: E07-E-102

ELECTRICAL SPECIFICATIONS

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

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

ABBREVIATIONS

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

DRAWING INDEX

| | |
|-----------|--|
| E08-E-001 | ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST |
| E08-E-101 | PRINCE GEORGE'S PLAZA - KIOSK - POWER |
| E08-E-102 | PRINCE GEORGE'S PLAZA - PANEL SCHEDULE |
| E08-E-301 | PRINCE GEORGE'S PLAZA - PANELBOARD IMAGE |
| MM-E-E26 | PRINCE GEORGE'S PLAZA - 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 | 08-14 DATE | REFERENCE DRAWINGS | | REVISIONS | | | |
|----------|-----------|---------------|--------------------|-------------|-----------|----|-------------|--|
| | | | NUMBER | DESCRIPTION | DATE | BY | DESCRIPTION | |
| DRAWN | C. NGO | 08-14 DATE | | | | | | |
| CHECKED | B. IDILBI | 08-14 DATE | | | | | | |
| APPROVED | N/A | DATE | | | | | | |

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

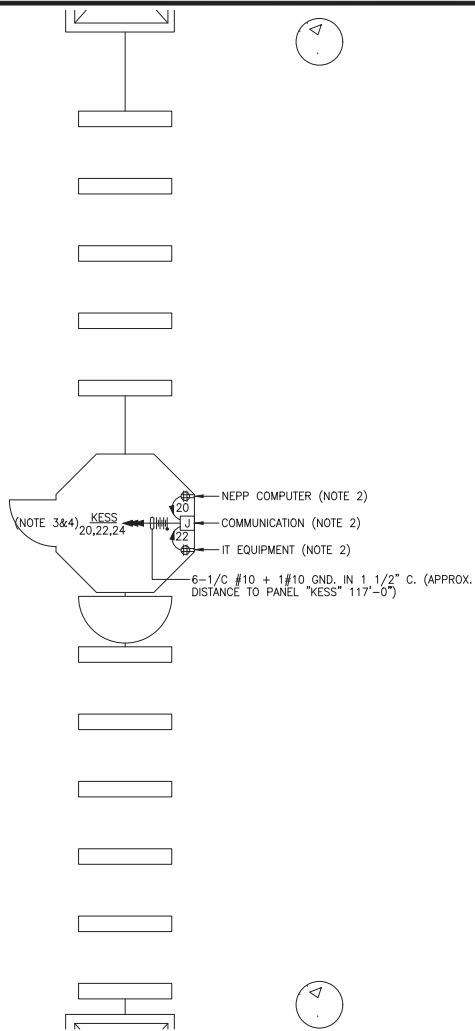
GFP A Gannett Fleming/Parsons JOINT VENTURE

APPROVED _____ SUBMITTED _____
PROJECT MANAGER

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

SCALE: NOT TO SCALE

DRAWING NO. E08-E-001



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

DRAWING NOTES:

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

SAFETY PRECAUTION:

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

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



**NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
PRINCE GEORGE'S PLAZA
KIOSK - POWER**

APPROVED *[Signature]*

SUBMITTED _____
PROJECT MANAGER

SCALE
AS SHOWN

DRAWING NO.
E08-E-101

| EXISTING PANEL "KESS" | | | | | | | | | | |
|--------------------------------|-----|-----|----------------|----------|----------|---|-----|-----|------------------|------------------------------|
| AMPERES: 400 | | | VOLTS: 120/208 | | | MOUNTING: SURFACE | | | | |
| MANS: 250A MCB | | | PHASE: 3 | | | LOCATION: ELECTRICAL EQUIPMENT ROOM 210 | | | | |
| RATING: 10K AIC | | | WIRE: 4 | | | SECTION: 1 OF 1 | | | | |
| LOAD DESCRIPTION | KVA | AMP | POLE | CKT. NO. | CKT. NO. | POLE | AMP | KVA | LOAD DESCRIPTION | |
| EXIST. KIOSK LOAD CENTER "KES" | 2.9 | 30 | 3 | 1 | A - | 2 | 1 | 20 | 0.8 | EXISTING VENDOR |
| | 2.5 | - | - | 3 | - B - | 4 | 1 | 20 | 0.8 | EXISTING VENDOR |
| | 2.5 | - | - | 5 | - - C | 6 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 7 | A - | 8 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 9 | - B - | 10 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 11 | - - C | 12 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 13 | A - | 14 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 15 | - B - | 16 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 17 | - - C | 18 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 19 | A - | 20 | 1 | 20 | 0.8 | NEW KIOSK RECEPT. (ITNCS) |
| EXISTING VENDOR | 0.8 | 20 | 1 | 21 | - B - | 22 | 1 | 20 | 0.8 | NEW KIOSK RECEPT. (NEPP/SOC) |
| EXISTING VENDOR | 0.8 | 20 | 1 | 23 | - - C | 24 | 1 | 20 | 0.0 | FUTURE AFC FARE GATE |
| 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 | 0.0 | SPARE |
| 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 |
| EXISTING VENDOR | 0.8 | 20 | 1 | 35 | - - C | 36 | 1 | 20 | 0.0 | SPARE |
| EXISTING VENDOR | 0.8 | 20 | 1 | 37 | A - | 38 | 1 | 20 | 0.0 | SPARE |
| EXISTING VENDOR | 0.8 | 20 | 1 | 39 | - B - | 40 | 2 | 80 | 0.0 | SPARE |
| EXISTING VENDOR | 0.8 | 20 | 1 | 41 | - - C | 42 | - | - | 0.0 | SPARE |

| LOAD SUMMARY | | |
|-------------------------------------|-----------------|------------------------------------|
| LIGHTS | 0.0 x 125% | 0.0 KVA |
| RECEPTACLES, FIRST 10 KVA | 10.0 x 100% | 10.0 KVA |
| RECEPTACLES | 12.8 x 50% | 6.4 KVA |
| MISC. APPLIANCES | 0.0 x 100% | 0.0 KVA |
| LARGEST MOTOR | 0.0 x 125% | 0.0 KVA |
| MOTORS | 0.0 x 100% | 0.0 KVA |
| HEAT | 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 | 30.3 KVA | TOTAL DEMAND KVA 24.7 KVA |
| | | TOTAL DEMAND AMPS 68.5 AMPS |
| CONNECTED LOAD PHASE SUMMARY | | |
| PHASE A: | 10.9 KVA | |
| PHASE B: | 10.5 KVA | |
| PHASE C: | 9.7 KVA | |

CONTRACT NO.
14-FQ10060-CENI-24

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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



APPROVED *[Signature]* SUBMITTED _____ PROJECT MANAGER

NEW ELECTRONIC PAY PROGRAM (NEPP)
IN METRORAIL STATIONS
PRINCE GEORGE'S PLAZA
PANEL SCHEDULE

SCALE NOT TO SCALE DRAWING NO. E08-E-102 35

ELECTRICAL SPECIFICATIONS

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

ABBREVIATIONS

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

DRAWING INDEX

| | |
|-----------|--|
| E09-E-001 | ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST |
| E09-E-101 | COLLEGE PARK - KIOSK - POWER |
| E09-E-102 | COLLEGE PARK - PANEL SCHEDULE |
| E09-E-301 | COLLEGE PARK - PANELBOARD IMAGE |
| MM-E-E28 | COLLEGE PARK - 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 | 08-14 | REFERENCE DRAWINGS | | REVISIONS | | | |
|----------|-----------|-------|--------------------|-------------|-----------|----|-------------|--|
| | | | NUMBER | DESCRIPTION | DATE | BY | DESCRIPTION | |
| DATE | | | | | | | | |
| DRAWN | C. NGO | 08-14 | | | | | | |
| DATE | | | | | | | | |
| CHECKED | B. IDILBI | 08-14 | | | | | | |
| DATE | | | | | | | | |
| APPROVED | N/A | | | | | | | |
| DATE | | | | | | | | |

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

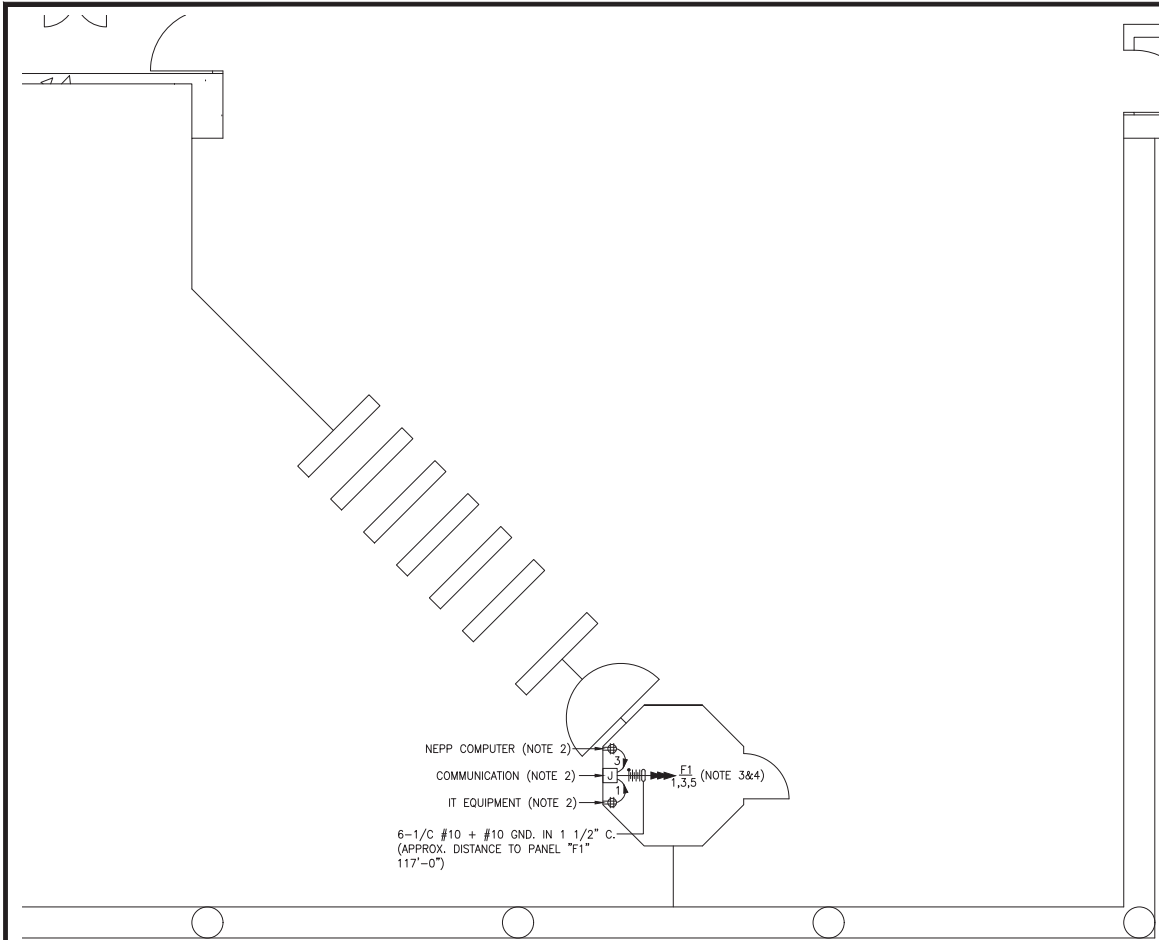
[Signature]
APPROVED

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.
E09-E-001



NEPP COMPUTER (NOTE 2)

COMMUNICATION (NOTE 2)

IT EQUIPMENT (NOTE 2)

6-1/C #10 + #10 GND. IN 1 1/2" C.
(APPROX. DISTANCE TO PANEL "E1"
117'-0")

E1 (NOTE 3&4)
1,3,5

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

DRAWING NOTES:

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

SAFETY PRECAUTION:

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

CONTRACT NO.
14-FQ10060-CENI-24

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

APPROVED *[Signature]*

PROJECT MANAGER



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

SCALE AS SHOWN
DRAWING NO. E09-E-101

EXISTING PANEL "F1"

| | | | | | |
|------------------------------|----------------|-------------------------------------|------|----------|--|
| AMPERES: 250 | VOLTS: 120/208 | MOUNTING: SURFACE | | | |
| MAINS: 250AMCB | PHASE: 3 | LOCATION: ELEC. EQUIPMENT ROOM C104 | | | |
| RATING: 10KAIC | WIRE: 4 | SECTION: 1 OF 1 | | | |
| | CKT BKRS | CKT. | CKT. | CKT BKRS | |
| | KVA | AMP | POLE | NO. | LOAD DESCRIPTION |
| NEW KIOSK RECEPT. (ITNCS) | 0.8 | 20 | 1 | 1 A - - | 2 1 20 0.8 EXISTING VENDOR |
| NEW KIOSK RECEPT. (NEPPISOC) | 0.8 | 20 | 1 | 3 - B - | 4 1 20 0.8 EXISTING VENDOR |
| FUTURE AFC FARE GATE | 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 0.0 SPARE |
| 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 |
| 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 |
| EXISTING VENDOR | 0.8 | 20 | 1 | 23 - - C | 24 1 20 0.0 SPARE |
| SPARE | 0.0 | 20 | 1 | 25 A - - | 26 1 20 0.0 SPARE |
| SPARE | 0.0 | 20 | 1 | 27 - B - | 28 1 20 0.0 SPARE |
| SPARE | 0.0 | 20 | 1 | 29 - - C | 30 1 20 0.0 SPARE |
| SPARE | 0.0 | 20 | 1 | 31 A - - | 32 1 20 0.0 SPARE |
| SPARE | 0.0 | 20 | 1 | 33 - B - | 34 1 20 0.0 SPARE |
| SPARE | 0.0 | 20 | 1 | 35 - - C | 36 1 20 0.0 SPARE |
| SPARE | 0.0 | 20 | 1 | 37 A - - | 38 3 30 3.3 EXIST. KIOSK LOAD CENTER 'KES' |
| SPARE | 0.0 | 20 | 1 | 39 - B - | 40 - - 2.5 |
| SPACE | 0.0 | 20 | 1 | 41 - - C | 42 - - 2.5 |

LOAD SUMMARY

| | | |
|-------------------------------------|-----------------|------------------------------------|
| LIGHTS | 0.0 x 125% | 0.0 KVA |
| RECEPT ACLES, FIRST 10 KVA | 10.0 x 100% | 10.0 KVA |
| RECEPT ACLES | 3.6 x 50% | 1.8 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 | 21.1 KVA | TOTAL DEMAND KVA 20.1 KVA |
| | | TOTAL DEMAND AMPS 55.7 AMPS |
| CONNECTED LOAD PHASE SUMMARY | | |
| PHASE A: | 8.9 KVA | |
| PHASE B: | 7.3 KVA | |
| PHASE C: | 3.2 KVA | |

CONTRACT NO.
14-FQ10060-CENI-24

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

| REFERENCE DRAWINGS | | REVISIONS | |
|--------------------|-------------|-----------|----|
| NUMBER | DESCRIPTION | DATE | BY |
| | | | |
| | | | |
| | | | |

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

APPROVED 

SUBMITTED _____
PROJECT MANAGER



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

SCALE: NOT TO SCALE

DRAWING NO.: E09-E-102

ELECTRICAL SPECIFICATIONS

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

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

ABBREVIATIONS

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

DRAWING INDEX

| | |
|-----------|--|
| E10-E-001 | ABBREVIATIONS, DRAWING INDEX, SPECIFICATIONS & SYMBOL LIST |
| E10-E-101 | GREENBELT - KIOSK - POWER |
| E10-E-102 | GREENBELT - PANEL SCHEDULE |
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| MM-E-E30 | GREENBELT - AC POWER ONE LINE DIAGRAM |

ELECTRICAL SYMBOL LIST

| | |
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| | 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 |
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CONTRACT NO.
14-FQ10060-CENI-24

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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



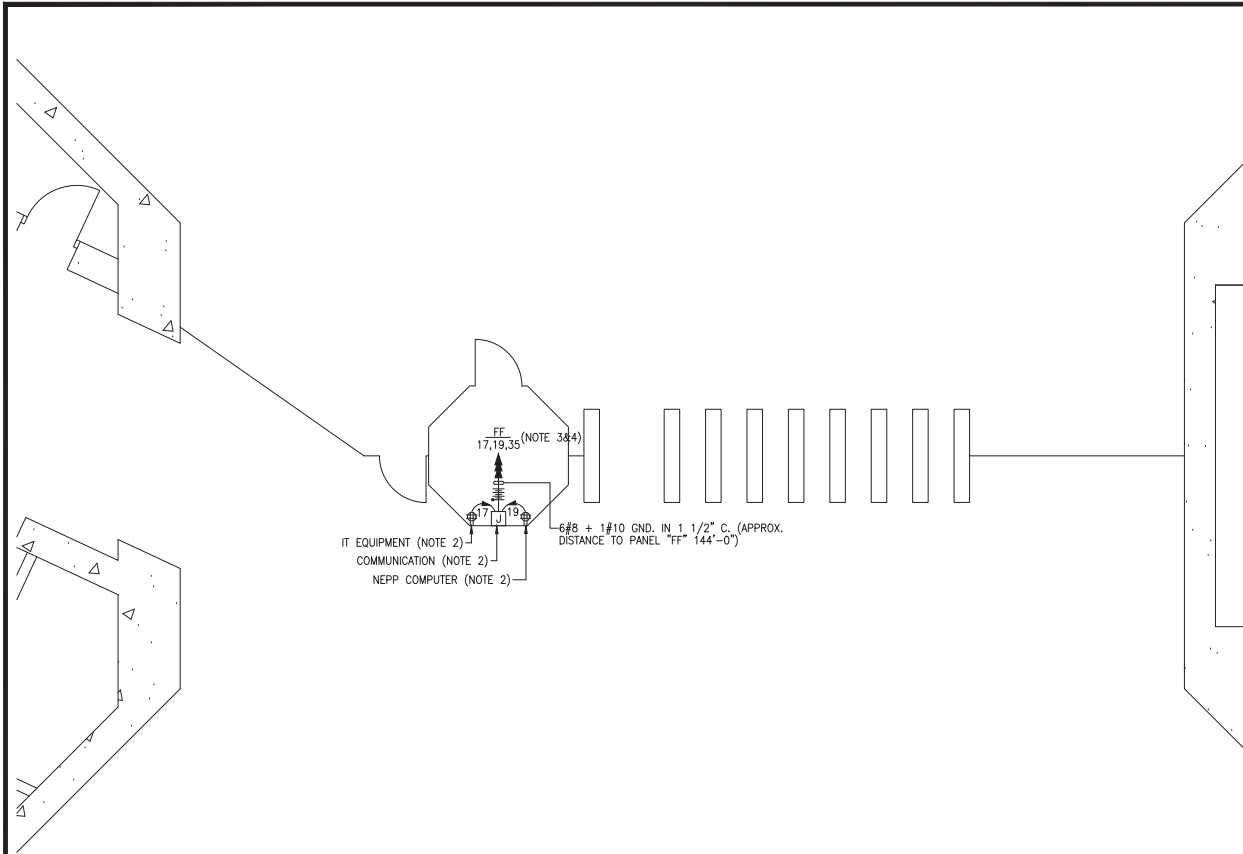
APPROVED _____

SUBMITTED _____
PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
E10-E-001



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

6#8 + 1#10 GND. IN 1 1/2" C. (APPROX. DISTANCE TO PANEL "FF" 144'-0")

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

DRAWING NOTES:

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

SAFETY PRECAUTION:

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

CONTRACT NO.
 14-FQ10060-CENI-24

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

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

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

APPROVED *[Signature]*

GFP A Gannett Fleming/Parsons JOINT VENTURE

SUBMITTED _____ PROJECT MANAGER

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

SCALE AS SHOWN DRAWING NO. E10-E-101 40

EXISTING PANEL "FF"

| | | |
|-----------------|----------------|--|
| AMPERES: 250 | VOLTS: 120/208 | MOUNTING: SURFACE |
| MAINS: 250AMCB | PHASE: 3 | LOCATION: ELECTRICAL EQUIPMENT ROOM C106 |
| RATING: 10K AIC | WIRE: 4 | SECTION: 1 OF 1 |

| LOAD DESCRIPTION | KVA | CKT BKRS | | | CKT. | | CKT BKRS | | | LOAD DESCRIPTION | | |
|------------------------------|-----|----------|------|-----|------|------|----------|-----|----|------------------|-----------------|--------------------------------|
| | | AMP | POLE | NO. | NO. | POLE | AMP | KVA | | | | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 1 | A | - | 2 | 1 | 20 | 0.8 | EXISTING VENDOR | |
| EXISTING VENDOR | 0.8 | 20 | 1 | 3 | - | B | - | 4 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 5 | - | - | C | 6 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 7 | A | - | - | 8 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 9 | - | B | - | 10 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 11 | - | - | C | 12 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 13 | A | - | - | 14 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 15 | - | B | - | 16 | 1 | 20 | 0.8 | EXISTING VENDOR |
| NEW KIOSK RECEPT. (ITNCS) | 0.8 | 20 | 1 | 17 | - | - | C | 18 | 1 | 20 | 0.8 | EXISTING VENDOR |
| NEW KIOSK RECEPT. (NEPPISOC) | 0.8 | 20 | 1 | 19 | A | - | - | 20 | 1 | 20 | 0.8 | EXISTING VENDOR |
| FUTURE AFC FARE GATE | 0.8 | 20 | 1 | 21 | - | B | - | 22 | 1 | 20 | 0.8 | EXISTING VENDOR |
| EXISTING VENDOR | 0.8 | 20 | 1 | 23 | - | - | C | 24 | 1 | 20 | 0.0 | SPARE |
| EXISTING VENDOR | 0.8 | 20 | 1 | 25 | A | - | - | 26 | 1 | 20 | 0.8 | 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 | 1.0 | 20 | 2 | 31 | A | - | - | 32 | 1 | 20 | 0.8 | EXISTING VENDOR |
| | 1.0 | - | - | 33 | - | B | - | 34 | 1 | 20 | 0.0 | SPARE |
| SPACE | 0.0 | 20 | 1 | 35 | - | - | C | 36 | 1 | 20 | 0.0 | SPARE |
| SPACE | 0.0 | 20 | 1 | 37 | A | - | - | 38 | 3 | 30 | 3.3 | EXIST. KIOSK LOAD CENTER "KES" |
| SPACE | 0.0 | 20 | 1 | 39 | - | B | - | 40 | - | - | 2.5 | |
| SPACE | 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 | 16.0 x 50% | 8.0 KVA |
| MISC. APPLIANCES | 0.0 x 100% | 0.0 KVA |
| LARGEST MOTOR | 0.0 x 125% | 0.0 KVA |
| MOTORS | 0.0 x 100% | 0.0 KVA |
| HEAT | 3.0 x 125% | 3.8 KVA |
| AC | 4.5 x 100% | 4.5 KVA |
| WATER HEATING | 0.0 x 125% | 0.0 KVA |
| TOTAL CONNECTED LOAD | 33.5 KVA | TOTAL DEMAND KVA 26.3 KVA |
| | | TOTAL DEMAND AMPS 72.9 AMPS |

| CONNECTED LOAD PHASE SUMMARY | |
|------------------------------|----------|
| PHASE A: | 13.1 KVA |
| PHASE B: | 11.5 KVA |
| PHASE C: | 7.2 KVA |

CONTRACT NO.
14-FQ10060-CENI-24

| DESIGNED | C. NGO | 08-14 DATE | REFERENCE DRAWINGS | | REVISIONS | | |
|----------|----------|---------------|--------------------|-------------|-----------|----|-------------|
| | | | NUMBER | DESCRIPTION | DATE | BY | DESCRIPTION |
| DRAWN | C. NGO | 08-14 | | | | | |
| 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



APPROVED _____

SUBMITTED _____
PROJECT MANAGER

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

SCALE
NOT TO SCALE

DRAWING NO.
E10-E-102