WAYNE STATE UNIVERSITY
Facilities Planning & Management - Design & Construction Services

CSC TELECOM ELECTRICAL UPGRADE
VOIP - Phase 3A
Includes: 008 - Science & Engineering Library, 016 - State Hall, 017 Linsell House, 025 - Mort Harris Fitness Center
038 Schayer Music Bldg, 082 - Welcome Center, 507 - University Tower (WDET)

WSU PROJECT NO. 193 - 2 4 8 4 5 2
B I D S March 28, 2016

008 - Science & Engineering Library
5048 Gullen Mall
Detroit, Michigan 48202

GPS: 42.356124, -83.085105

INDEX OF DRAWINGS

<table>
<thead>
<tr>
<th>SHEET #</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVR</td>
<td>PROJECT COVER SHEET</td>
</tr>
<tr>
<td>E-6</td>
<td>ELECTRICAL STANDARDS AND NOTES</td>
</tr>
<tr>
<td>E-1</td>
<td>SUB - BASEMENT FLOOR POWER PLAN</td>
</tr>
<tr>
<td>E-2</td>
<td>BASEMENT FLOOR POWER PLAN</td>
</tr>
<tr>
<td>E-3</td>
<td>FIRST FLOOR POWER PLAN</td>
</tr>
<tr>
<td>E-4</td>
<td>SECOND FLOOR POWER PLAN</td>
</tr>
<tr>
<td>E-5</td>
<td>THIRD FLOOR POWER PLAN</td>
</tr>
<tr>
<td>E-6</td>
<td>FOURTH FLOOR POWER PLAN</td>
</tr>
<tr>
<td>E-7</td>
<td>FIFTH FLOOR POWER PLAN</td>
</tr>
<tr>
<td>E-8</td>
<td>SIXTH FLOOR POWER PLAN</td>
</tr>
<tr>
<td>E-9</td>
<td>SEVENTH FLOOR POWER PLAN</td>
</tr>
</tbody>
</table>

Project Location: Science and Engineering Library
WAYNE STATE UNIVERSITY
Facilities Planning & Management - Design & Construction Services

CSC TELECOM ELECTRICAL UPGRADE
VOIP - Phase 3A
Includes: 008 - Science & Engineering Library, 016 - State Hall, 017 Linsell House, 025 - Mort Harris Fitness Center
038 Schaver Music Bldg, 082 - Welcome Center, 507 - University Tower (WDET)

WSU PROJECT NO. 193 - 2 4 8 4 5 2
B I D S March 28, 2016

016 - State Hall
5143 Cass Avenue
Detroit, Michigan 48202

GPS: 42.357426, -83.067964

INDEX OF DRAWINGS

<table>
<thead>
<tr>
<th>SHEET #</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVR</td>
<td>PROJECT COVER SHEET</td>
</tr>
<tr>
<td>E-0</td>
<td>ELECTRICAL STANDARDS AND NOTES</td>
</tr>
<tr>
<td>E-1</td>
<td>BASEMENT FLOOR POWER PLAN</td>
</tr>
<tr>
<td>E-2</td>
<td>FIRST FLOOR POWER PLAN</td>
</tr>
<tr>
<td>E-3</td>
<td>SECOND FLOOR POWER PLAN</td>
</tr>
<tr>
<td>E-4</td>
<td>THIRD FLOOR POWER PLAN</td>
</tr>
<tr>
<td>E-5</td>
<td>FOURTH FLOOR POWER PLAN</td>
</tr>
</tbody>
</table>

REFERENCE ONLY

Project Location: State Hall
VOIP - PHASE 3A Building and Rooms

**Scope of Work**

The Contractor shall provide labor and materials for the following scope of work:


**Electrical Abbreviations List**

- **A**: Above Finish Floor
- **AP**: Approximate
- **E**: Electrical
- **G**: Grounding
- **J**: Junction Box
- **K**: Kilovolt
- **L**: Lighting Panel
- **M**: Mains Distribution Panel
- **N**: Neutral
- **O**: Overhead
- **P**: Pull
- **Q**: Quadruple Receptacle
- **R**: Receptacle
- **S**: Single Receptacle
- **T**: Transformer
- **V**: Volt
- **W**: Wall Mount
- **X**: Xenon Floodlight
- **Y**: Yard Light
- **Z**: Zone Lighting
WAYNE STATE UNIVERSITY
Facilities Planning & Management - Design & Construction Services

CSC TELECOM ELECTRICAL UPGRADE
VOIP - Phase 3A Includes: 008 - Science & Engineering Library, 016 - State Hall, 017 Linsell House, 025 - Mort Harris Fitness Center
038 Schaver Music Bldg, 082 - Welcome Center, 507 - University Tower (WDET)

WSU PROJECT NO. 193 - 2 4 8 4 5 2
B I D S March 28, 2016

017 - Linsell House
5104 Gullen Mall
Detroit, Michigan 48202

GPS: 42.35549, -83.08842

INDEX OF DRAWINGS

<table>
<thead>
<tr>
<th>SHEET #</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVR</td>
<td>PROJECT COVER SHEET</td>
</tr>
<tr>
<td>E-6</td>
<td>ELECTRICAL STANDARDS AND NOTES</td>
</tr>
<tr>
<td>E-1</td>
<td>BASEMENT FLOOR POWER PLAN</td>
</tr>
<tr>
<td>E-2</td>
<td>FIRST FLOOR POWER PLAN</td>
</tr>
<tr>
<td>E-3</td>
<td>SECOND FLOOR POWER PLAN</td>
</tr>
</tbody>
</table>

Project Location: Linsell House
SCOPE OF WORK

The contractor shall provide labor and materials for the following scope of work:

1. Provide 30 amp 240 volt 3-phase 4wire receptacle in the closest gang box to the existing receptacle, terminated with #2 awg No.1 copper and circuit breaker in it, conform to the schedule. Complete all required work in it. Location of all gang boxes to be field coordinated with the contractor. A 240 volt circuit breaker shall be installed by the contractor to complete the panel.

2. The contractor shall read and connect the circuits in the receptacle panels to allow for the installation of one 30 amp 240 volt circuit breaker in it.

3. Provide 1/2" O.D. #2020 Type NMU wire in electrical room and the data room, between the receptacle and the circuit breaker, to be run as a conductor by the contractor and properly supported.

4. Install all #2020 Type NMU wire in the TRUECONE, data room, and electrical room, to be properly supported.

5. The contractor shall properly firestop all penetrations related to their work.

6. All work to be completed Monday thru Friday, from 8 AM to 3 PM.

7. If receptacle panel number “200” is full, the contractor shall install an alternate receptacle panel, 40 amp, 240 volt, 3-phase.

8. The contractor shall provide a label with the receptacle panel designation and circuit number at the device.

9. At the receptacle panel and in the panel, label all locations for all incoming and outgoing circuit breaker numbers and refer to existing panel boards.

10. The contractor shall provide all new 2 pole and 3 wire circuit breakers to match existing panel boards.

11. Receptacle panel designation on the drawings is not necessary. The receptacle panel designation in the field for labeling seal the receptacle panel designation in the field.

All conduit to be above painted ceiling, existing ceilings are either open or lay-in or lay-in.
WAYNE STATE UNIVERSITY
Facilities Planning & Management - Design & Construction Services

CSC TELECOM ELECTRICAL UPGRADE
VOIP - Phase 3A  Includes: 008 - Science & Engineering Library, 016 - State Hall, 017 Linsell House, 025 - Mort Harris Fitness Center
038 Schaver Music Bldg, 082 - Welcome Center, 507 - University Tower (WDET)

WSU PROJECT NO. 193 - 2 4 8 4 5 2
B I D S  March 28, 2016

025 - Mort Harris Fitness Center
5210 Gullen Mall
Detroit, Michigan 48202

INDEX OF DRAWINGS

<table>
<thead>
<tr>
<th>SHEET #</th>
<th>DESCRIPTION</th>
<th>INDEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRV</td>
<td>PROJECT COVER SHEET</td>
<td></td>
</tr>
<tr>
<td>E-6</td>
<td>ELECTRICAL STANDARDS AND NOTES</td>
<td></td>
</tr>
<tr>
<td>E-1</td>
<td>BASEMENT FLOOR POWER PLAN</td>
<td></td>
</tr>
<tr>
<td>E-2</td>
<td>FIRST FLOOR POWER PLAN</td>
<td>REFERENCE ONLY</td>
</tr>
<tr>
<td>E-3</td>
<td>SECOND FLOOR POWER PLAN</td>
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<tr>
<td>E-4</td>
<td>THIRD FLOOR POWER PLAN</td>
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</tr>
</tbody>
</table>

Project Location: Mort Harris Fitness Center
scope of work

the contractor shall provide labor and materials for the following scope of work:

1. provide 30 amp 240 volt 3-pole single phase w/ground, from existing receptacle panel, terminated w/ a 30 amp nema receptacle in the closest (as designated in voip - phase 3a building and room schedule) complete w/ a disconnected switch in it closest, exact location of up var outlet to be field coordinated w/ c it. electrical contractor to install center-fired 30amp fuse, exact location to be field coordinated w/ c it.

2. the contractor shall rework existing circuits in receptacle panels to allow for the installation of one (1) new 30 amp 3 pole circuit breaker.

3. provide 30 c40-90 ctp in electrical room and the data room, between the room above the ceiling will be run a conductor ms cable and properly supported.

4. install 30 amp 90c low fixed disconnect lockable switch in data room next to a 30 amp 90c switch lock receptacle.

5. the contractor shall properly fire stop all penetrations related to their work.

all work to be completed monday thru saturday from 8:00 am to 5:00 pm.

1. if receptacle panel, "rip is full, the contractor shall locate an alternate receptacle panel within 300'-0" of the data room.

2. the contractor shall provide a label of the receptacle panel designation and circuit number at the device.

3. at the receptacle panel, and install labels for all changes and the 3 pole breaker feeding the data circuit.

4. the contractor shall provide all neutral 3 pole and 240v circuit breakers to match existing panels/boards.

5. receptacle panel designation on the drawings is not necessarily the receptacle panel designation in the field for labeling use the receptacle panel designation in the field.

1. all conduit to be above framed ceilings existing ceilings are either open or lay in or lean.

Electrical Abbreviations List:

A - Ampere(s) NEC National Electrical Code
APF - Above Floor
C - Circuit
CR - Circuit Breaker
CT - Circuit
DC - Disconnect
DP - Distribution Panel
EC - Electrical Contractor
EC - Electrical
FFT - Electrical Metallic Tubing
F - Foot
G - Grommet
J - Junction Box
KB - Knife Block
KVA - Kilo Voltamp
LP - Lighting Panel
LDP - Lighting Distribution Panel
M - Main
MM - Master Meter
MCP - Metal Clad Pipe
MSC - Miscellaneous
N - Neutral
ELECTRICAL SYMBOL LIST

VOIP - PHASE 3A Building and Rooms

<table>
<thead>
<tr>
<th>HT IN PROJECT</th>
<th>BUILDING NAME</th>
<th>ROOM NUMBER</th>
<th>208 VOLT SINGLE PHASE 3 A LINE-TO-LINE</th>
<th>208 VOLT SINGLE PHASE 3 A LINE-TO-LINE</th>
<th>NOTES</th>
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<td>-</td>
<td>-</td>
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HEIGHT OF FINISH FLOOR TO FRIED FLOOR ABOVE:

<table>
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<th>FLOOR</th>
<th>ELEVATION</th>
<th>FT TO FT ABOVE</th>
</tr>
</thead>
</table>
| ROOF  | 10'-6" + 4'-0" (8'-0" - 2'-0"
| 0'    | 10'-6" + 4'-0" |
| 0'    | 12'-0" + 4'-0" |
| 20'   | 6'-0" + 8'-0"  |

SCOPE OF WORK

The contractor shall provide labor and materials for the following scope of work:

1. Provide 30 amp 208 volt 3 phase 4 wire (ground) from existing receptacle panel, terminated with a 14 AWG NEMA receptacle in the closest room designated in VOIP - PHASE 3A building and room schedule. Complete at a disconnecting switch in the closet. Exact location of the wire outlet to be field coordinated with C.E. electrical contractor to install center-terminated fuse circuit breaker, exact location to be field coordinated with C.E.

2. The contractor shall remove existing circuits in receptacle panels to allow for the installation of one (1) new 30 amp 3 pole circuit breaker.

3. Provide 30 amp 4 wire 208 volt in electrical room and the data room, between the room above and the ceiling shall be run through a conductor raceway and properly supported.

4. Install a 3 amp 208 volt non fuse disconnect switch in data room next to a 3 amp 208 volt test lock receptacle.

5. The contractor shall properly install all penetrations related to their work.

6. All work to be completed Monday thru Friday from 7AM to 3PM.

7. If receptacle panel, "POP" is able, the contractor shall locate an alternate receptacle panel within 30' of the data room.

8. The contractor shall provide a label with the receptacle panel designation and circuit number at the device.

9. At the receptacle panel and install labels for all changes and the 3 pole breaker feeding the data circuit.

10. The contractor shall provide all new 2 pole and 3 circuit breakers to match existing panelboards.

11. Receptacle panel designation on the drawings is not necessary. The receptacle panel designation in the field. For labeling use the receptacle panel designation in the field.

12. All conduit to be above finished ceiling. Existing ceilings are either open or lay in or below.

ELECTRICAL ABBREVIATIONS LIST

A = AMPERES
APP = ABOVE FLOOR PLAN
C = CONDUIT
CR = CIRCUIT BREAKER
CT = CIRCUIT
DC = CONDUCTOR
DP = DISTRIBUTION PANEL
EC = ELECTRICAL CONTRACTOR
ELEC = ELECTRICAL
EPC = ELECTRICAL PANEL
EV = ELECTRICAL VOLTAGE
G = GROUND
J = JUNCTION BOX
PB = PANELBOARD
KVA = KILOWATT HOUR
LP = LIGHTING PANEL
LDP = LIGHTING DISTRIBUTION PANEL
MA = MAIN PANEL
MB = MAIN BREAKER
MSC = MISC.
N = NEUTRAL
VOLT = VOLTAGE
W = WIRE
X = EXISTING
( ) = RELOCATED
WAYNE STATE UNIVERSITY
Facilities Planning & Management - Design & Construction Services

CSC TELECOM ELECTRICAL UPGRADE
VOIP - Phase 3A   Includes: 008 - Science & Engineering Library, 016 - State Hall, 017 Linsell House, 025 - Mort Harris Fitness Center
  038 Schauer Music Bldg, 082 - Welcome Center, 507 - University Tower (WDET)

WSU PROJECT NO. 193 - 248452
B I D S March 28, 2016

082 - Welcome Center
42 West Warren Avenue
Detroit, Michigan 48202

GP8: 42.35678, -83.065275

INDEX OF DRAWINGS

<table>
<thead>
<tr>
<th>SHEET #</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVR</td>
<td>PROJECT COVER SHEET</td>
</tr>
<tr>
<td>E-0</td>
<td>ELECTRICAL STANDARDS AND NOTES</td>
</tr>
<tr>
<td>E-1</td>
<td>FIRST FLOOR POWER PLAN</td>
</tr>
<tr>
<td>E-2</td>
<td>SECOND FLOOR POWER PLAN</td>
</tr>
<tr>
<td>E-3</td>
<td>THIRD FLOOR POWER PLAN</td>
</tr>
<tr>
<td>E-4</td>
<td>FOURTH FLOOR POWER PLAN</td>
</tr>
</tbody>
</table>

Project Location: WELCOME CENTER
ELECTRICAL SYMBOL LIST

- DUPLEX RECEPTACLE
- Quad Receptacle
- 30 AMP Special Receptacle as noted
- 20 AMP Special Receptacle as noted
- Non-Fuseable Disconnect Switch
- Junction Box
- Branch Circuit Panelboard
- Transformer
- Distribution Panel
- Ground Bus

ELECTRICAL ABBREVIATIONS LIST

- AMPERES NEC NATIONAL ELECTRICAL CODE
- A.F.P. ABOVE FINISH FLOOR
- NP NON-FUSEABLE
- G CONDUCT NS NOT TO SCALE
- CB CIRCUIT BREAKER OC ON CENTER
- CKT CIRCUIT P POLE
- DCC Disconnect PH PHASE
- DP DISTRIBUTION PANEL PL PLASTER
- RC ELECTRICAL RECEIVER RECEPTACLE
- ELEC ELECTRICAL RP RECEPTACLE PANEL
- BMF ELECTRICAL METALLIC TUBES BURIED BESIDE ELECTRICAL RACEWAY BS RACEWAY
- G GRD GROUND TB TERMINAL BOX
- JB JUNCTION BOX TELECOM TELECOMMUNICATIONS
- KV KNUDSON U D K UNLESS OTHERWISE NOTED
- KVA KNUDSON - AMPERES V VOLTS
- LP LIGHTING PANEL U UMP
- LDP LIGHTING DISTRIBUTION PANEL UMP UNDERGROUND PROOF
- M MAXIMUM VPN TRANSMITTER
- MHP MAXIMUM RP EXPLOSION PROOF
- MHC. RELOCATED (R) EXISTING
- N NEUTRAL (R) RELOCATED

VOIP - PHASE 3A Building and Rooms

<table>
<thead>
<tr>
<th>pt. 1 PROJECT</th>
<th>BUILDING NAME</th>
<th>ROOM NUMBER</th>
<th>30 VOLT SINGLE PHASE 20 AMP CIRCUIT</th>
<th>LEV</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
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</table>

HEIGHT OF FINISH FLOOR TO FINISH FLOOR ABOVE

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<th>ELEVATION</th>
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</tr>
<tr>
<td>3rd Fl</td>
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<tr>
<td>4th Fl</td>
<td>18' - 0&quot;</td>
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</table>

SCOPE OF WORK

The contractor shall provide labor and materials for the following scope of work:

1. Provide 20 amp 120 volt 1 pole single phase 150 amperes from existing receptacle panel, terminated on a 15 amp 120/240v receptacle in it closest to a designated in VOIP - PHASE 3 and room schedule to complete 24 disconnect switch in it closet. Exact location of 120/240v outlet to be field coordinated with C.E. Electrical contractor to install center-mounted pushbutton switch, exact location to be field coordinated with C.E.

2. The contractor shall rework existing circuits in receptacle panels to allow for the installation of one (1) new 30 amp 1 pole circuit breaker.

3. Provide 120 V C-V-R GFI outlet in electrical room and the data room, between the rooms above the ceiling with a 10 amp 1 pole GFI circuit breaker and properly supported.

4. Install a 30 amp GFI outlet on 30 amp disconnect location in data room next to a 360 amp 300 amp fastlock receptacle.

5. The contractor shall properly file stop all penetrations related to their work.

6. All work to be completed Monday thru Friday from 8AM to 3:30 PM.

7. If receptacle panel "100\" is full, the contractor shall locate an alternate receptacle panel within 100\" of the data room.

8. The contractor shall provide labels with the receptacle panel designation and circuit number at the device.

9. At the receptacle panel, and install labels for all changes and the 3 pole breaker feeding the data circuit.

10. The contractor shall provide all New 3 pole and 20 amp C circuit breakers to match existing panelboards.

11. Receptacle panel designation on the drawings is not necessary. The receptacle panel designation in the field for labeling use the receptacle panel designation in the field.

12. All conduit to be above finished ceilings. Existing ceilings are either open or lay in or below.
WAYNE STATE UNIVERSITY
Facilities Planning & Management - Design & Construction Services

CSC TELECOM ELECTRICAL UPGRADE
VOIP - Phase 3A  Includes: 008 - Science & Engineering Library, 016 - State Hall, 017 Linsell House, 025 - Mort Harris Fitness Center 038 Schaver Music Bldg, 082 - Welcome Center, 507 - University Tower (WDET)

W5U  PROJECT NO. 193 - 2 4 8 4 5 2
B I D S  March 28, 2016

507 - University Towers (WDET)
4500 Cass Avenue
Detroit, Michigan 48202

GP8: 42.352776, -83.064395

INDEX OF DRAWINGS

<table>
<thead>
<tr>
<th>SHEET #</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVR</td>
<td>PROJECT COVER SHEET</td>
</tr>
<tr>
<td>E-0</td>
<td>ELECTRICAL STANDARDS AND NOTES</td>
</tr>
<tr>
<td>E-1</td>
<td>FIRST FLOOR POWER PLAN</td>
</tr>
<tr>
<td>E-2</td>
<td>SECOND FLOOR POWER PLAN</td>
</tr>
<tr>
<td>E-3</td>
<td>THIRD FLOOR POWER PLAN</td>
</tr>
<tr>
<td>E-4</td>
<td>FOURTH FLOOR POWER PLAN</td>
</tr>
<tr>
<td>E-5</td>
<td>FIFTH FLOOR POWER PLAN</td>
</tr>
<tr>
<td>E-6</td>
<td>SIXTH FLOOR POWER PLAN</td>
</tr>
<tr>
<td>E-7</td>
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</tr>
<tr>
<td>E-8</td>
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</tr>
<tr>
<td>E-9</td>
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</tr>
<tr>
<td>E-10</td>
<td>TENTH FLOOR POWER PLAN</td>
</tr>
<tr>
<td>E-11</td>
<td>ELEVENTH FLOOR POWER PLAN</td>
</tr>
<tr>
<td>E-12</td>
<td>PENTHOUSE FLOOR POWER PLAN  REFERENCE ONLY</td>
</tr>
</tbody>
</table>

Project Location: UNIVERSITY TOWER (WDET)
ELECTRICAL SYMBOL LIST

VOIP - PHASE 3A Building and Rooms

<table>
<thead>
<tr>
<th>HT &amp; V PROJECT</th>
<th>BUILDING NAME</th>
<th>208 VOLT SINGLE PHASE 208 VOLT SINGLE PHASE 208 VOLT SINGLE PHASE 208 VOLT SINGLE</th>
<th>NOTES</th>
</tr>
</thead>
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HEIGHT OF FINISH FLOOR TO FINISH FLOOR ABOVE:

<table>
<thead>
<tr>
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<th>FT TO FT ABOVE</th>
</tr>
</thead>
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ELECTRICAL ABBREVIATIONS LIST

A = AMPS
A.F.P = ABOVE FINISH FLOOR
C = CABLE
c = CIRCUIT BREAKER
C.B = CIRCUIT BREAKER
C.G = CIRCUIT
C.D.C = DOOR CONNECT
D.P = DISTRIBUTION PANEL
E.C = ELECTRICAL CONTRACTOR
E.L.C = ELECTRICAL PANEL
E.M.T = ELECTRICAL METAL CRIB
G = GROUND
G.P = GROUND PLATE
J.B = JUNCTION BOX
J.B.T = JUNCTION BOX TERMINAL
K.V = KILOVOLT
K.V.A = KILOVOLT AMPS
L.P = LUMINA PANEL
L.D.P = LUMINA DISTRIBUTION PANEL
M.A.N = MAIN TERMINAL
M.P = MAIN PANEL
M.C.R = METAL CLAD RECEPTACLE
M.D.L = METAL CLAD LAMPS
N = NEUTRAL
W.P = WIRING PAN
W.P.T = WIRING TERMINAL
W.P.E = WIRING EXPLOSION PROOF
W.P.T.R = WIRING TERMINAL RELOCATED

SCOPE OF WORK

The contractor shall provide labor and materials for the following scope of work:

1. Provide 30 amp 208 volt, 2-pole single phase 208 volt from existing electrical service. Terminate all electrical wiring from a receptacle in the closest room as designated in VOIP - PHASE 1 and connect the receptacle to the existing electrical service. Use 208 volt, 2-pole single phase 208 volt service from the electrical service panel to be fed from the main electrical service panel at the building. The electrical contractor shall install 208 volt, 2-pole, single phase 208 volt service from the main electrical service panel to the building.

2. The contractor shall repair existing receptacles in existing electrical panels to allow for the installation of one 10 amp, 2-pole circuit breaker.

3. Provide 10 amp, 2-pole circuit breaker in electrical room and the data room, between the rooms above the ceiling shall be 208 volt, 2-pole circuit breaker and properly supported.

4. Install 208 volt, 2-pole, single phase 208 volt, non-fused disconnect switch in data room and the electrical room, next to a 208 volt, 2-pole, non-fused disconnect switch.

5. The contractor shall properly fix all penetrations related to their work.

6. All work to be completed Monday thru Friday 9AM to 3:30PM.

7. Provide 10 amp, 2-pole circuit breaker in existing electrical panel. The contractor shall locate an alternate electrical panel within 200 feet of the data room.

8. The contractor shall provide a label with the electrical panel designation and circuit number at the device.

9. At the electrical panel and existing electrical panels and the data room.

10. The contractor shall provide all 208 volt, 2-pole and 208 volt, 2-pole circuit breakers to match existing panels.

11. Receptacle panel designation on the drawings is not necessary the receptacle panel designation in the field for labeling use the receptacle panel designation in the field.

12. All conduit to be above finished ceilings existing ceilings are either open or lay-in or load.