SITE DEMOLITION KEY NOTES:

1. NITROGEN TANK & ASSOCIATED PIPING TO BE REMOVED BY OTHERS
2. REMOVE EXISTING PAVEMENT, CONCRETE PADS, FENCING & MISCELLANEOUS SITE ELEMENTS
3. REMOVE GUARD POST AS INDICATED ON PLAN.
4. REMOVE EXISTING ASPHALT PAVING.
5. PROTECT EXISTING GENERATOR & MAINTAIN IN CONTINUOUS OPERATIONAL CONDITION.
6. REFER TO STRUCTURAL & ELECTRICAL DRAWINGS FOR BUILDING INTERFACE REQUIREMENTS.
7. REMOVE APPROXIMATELY 12'-0" OF EXISTING STORM LINE FOR NEW MANHOLE & OIL STOP VALVE
8. REMOVE EXIST. MASONRY WALL FULL HEIGHT, FOUNDATION, ETC.
9. FOR SITE DEMOLITION RECONSTRUCTION MAINTAIN PASSABLE LANE AND ACCESS TO PARKING AT ALL TIMES
10. EXISTING CONCRETE PAVEMENT TO REMAIN
11. EXISTING ASPHALT PAVING TO REMAIN
12. REMOVE PORTION OF EXISTING CURB
13. EXISTING SHED STRUCTURE, WALL & SILANE STORAGE TO REMAIN.

PLAN NOTES:

1. SITE SURVEY PROVIDED BY NOWAK & FRAUS DATED 6-25-2014 IS USED AS A BASIS FOR SITE DEMOLITION, DESIGN & RESTORATION.
2. BENCHMARK: EXISTING STORM CATCH BASIN RIM TO BE MODIFIED = REF EL 110'-0".
3. UNCHARTED UTILITIES MAY EXIST & THE UTILITIES NOTED ON PLANS MAY VARY FROM LOCATIONS SHOWN ON THE SURVEY. ELEVATION DATA IS UNAVAILABLE FOR INSERTS & UTILITY DEPTHS. PROVIDE GROUND PENETRATION RADAR SURVEY TO LOCATE EXISTING UNDERGROUND UTILITIES. HAND DIG AS NECESSARY TO AVOID DAMAGE TO EXISTING UTILITIES.
4. REFER TO STRUCTURAL & ELECTRICAL DRAWINGS FOR BUILDING INTERFACE REQUIREMENTS.

SITE DEMOLITION PLAN

CONTRACTOR
SITE STAGING & LAY DOWN AREA, COORDINATE EXTENTS & LOCATION WITH OWNER.

8'-0" MOVABLE FENCE SECTIONS WITH LOCKING GATE.
2. Refer to E125 thru E129 for Circuit and Panel Schedules.
3. New Circuits Extend from UPS Panels (URP-1 and URP-2) to Designated Loads throughout the Engineering Building.
4. Exposed Surface MTD Raceway Shall be Solid Wire Duct with Black Cover.
5. Coordinate with Owners Rep for Device Req to Make Connection to User Equipment.
6. Coordinate with Owners Rep for Exact Location of Device to Be Installed.
7. Conduits Are Shown Diagramatic. Exact Routing and Penetration, Thru Ceiling and Walls Shall be Coordinated with the Owners Representative.
9. For Bid Purposes Contractor Shall Assume 20' Cable Extension into Each Room.
10. Install 3.5 Ton HVAC Unit on Inside Wall of UPS Enclosure.
11. Contractor to Provide Needed Anchor Bolts Per Manufacturers Anchor Bolt Pattern.
12. Contractor to Ground Battery Rack W/ 2EA. #4 AWG Wires. Provide Enviro Guard or Equal Spill Containment System around Battery Racks.
14. HVAC Units. Each 50% Capacity Each Unit with its Separate Overlapping Tstat Controls. To Ensure Toshiba's Optimal Ambient Temperature for Maximum Battery Life. Overlapping Tstat Controls Will Be Deployed to Allow for Staggered Operation. i.e. HVAC 1 Set at 70F and HVAC 2 at 75F, HVAC 3 at 78F and HVAC 4 at 85F.
15. Add Fire Monitoring Smoke Enclosure Detector to the Existing Building Monitoring System.
16. Electrical Equipment Ground Circuits (Bonding) Shall Be Provided for All New Electrical Equipment and Racks Per NEC.
17. Implement Raised Floor System Design for Wires and Cables. To Be Installed Per NEC.
18. Coordinate with Owners Representative for Device Req'd to Make Connections to New UPS.
20. Plumbing Outlets shall Be Located in CEILING CAVITY.
21. WARNING: ADDITIONAL FULLY AREAS INDICATE NEW UPS CIRCUIT LOCATIONS TO SERVE EQUIPMENT LOADS.
22. REFER TO E125 THRU E129 FOR CIRCUIT AND PANEL SCHEDULES.
23. NEW CIRCUITS EXTEND FROM UPS PANELS (URP-1 AND URP-2) TO DESIGNATED LOADS THROUGHOUT THE ENGINEERING BUILDING.
24. EXPOSED SURFACE MTD RACEWAY SHALL BE SOLID WIRE DUCT WITH BLACK COVER.
25. COORDINATE WITH OWNERS REP FOR DEVICE REQ TO MAKE CONNECTION TO USER EQUIPMENT.
26. COORDINATE WITH OWNERS REP FOR EXACT LOCATION OF DEVICE TO BE INSTALLED.
27. CONDUITS ARE SHOWN DIAGRAMATIC. EXACT ROUTING AND PENETRATION THRU CEILING AND WALLS SHALL BE COORDINATED WITH THE OWNERS REPRESENTATIVE.
28. VERIFY ALL ELECTRICAL LOADS FOR VOLTAGE AND AMPERAGE PRIOR TO MAKING FINAL CONNECTIONS. NOTIFY OWNERS REPRESENTATIVE FOR ANY LOADS THAT DOES NOT COMPLY.
29. FOR BID PURPOSES CONTRACTOR SHALL ASSUME 20’ CABLING EXTENSION INTO EACH ROOM.
30. INSTALL 3.5 TON HVAC UNIT ON INSIDE WALL OF UPS ENCLOSURE.
31. CONTRACTOR TO PROVIDE NEEDED ANCHOR BOLTS PER MANUFACTURES ANCHOR BOLT PATTERN.
32. CONTRACTOR TO GROUND BATTERY RACK W/ 2 EA. #4 AWG WIRES. PROVIDE ENVIRO GUARD OR EQUAL SPILL CONTAINMENT SYSTEM AROUND BATTERY RACKS.
33. REVIEW EXTERNAL MONITORING, ALARM AND CONTROL REQUIREMENTS ASSOCIATED WITH UPS (NEW UPS PROTECTIONS) CONNECT CIRCUIT MONITORING AND MONITORING CIRCUITS CONCERNED WITH UPS READINGS TO PERFORM. SHOULD BE NETWORKED WITH EXISTING BUILDING AUTOMATION SYSTEM OR DATA CONCENTRATION SCHEMES.
34. HVAC UNITS. EACH 50% CAPACITY EACH UNIT WITH ITS PROTECT SENSOR THERMOSTAT CONTROL. TO ENSURE TOSHIBA’S OPTIMAL AMBIENT TEMPERATURE FOR MAXIMUM BATTERY LIFE. OVERLAPPING TSTAT CONTROLS WILL BE DEPLOYED TO ALLOW FOR STAGGERED OPERATION. i.e. HVAC 1 SET AT 70F AND HVAC 2 AT 75F, HVAC 3 AT 78F AND HVAC 4 AT 85F.
35. ADD FIRE MONITORING SMOKE ENCLOSURE DETECTOR TO THE EXISTING BUILDING MONITORING SYSTEM.
36. ELECTRICAL EQUIPMENT GROUND CIRCUITS (BONDING) SHALL BE PROVIDED FOR ALL NEW ELECTRICAL EQUIPMENT AND RACKS PER NEC.
37. PLAN FOR RACEWAY SYSTEM DESIGN FOR WIRING AND CABLES TO BE INSTALLED PER NEC.
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**CABLE / CONDUIT SCHEDULE FOR PANEL URP-1**

**NOTES:**
1. **CAPACITY WAS ASSUMED TO BE 50% OF THE LOAD PROVIDED BY THE ELECTRICAL CONTRACTOR:** The contractor would supply all power requirements before routing and connecting circuits.
2. **CIRCUIT CONDUIT WORK IS PART OF CP-2671 CONDUIT DROP FROM PANEL TO END USER TO APPROXIMATELY 6 FT.** Conduit may be spliced to terminate at a connection point. Conduit ports on CP-2671 schedules do or require to an existing sub within a location as shown as a location preferable access drop housing. The notes indicate that circuits are included in this drawing. For convenience, variation of this approach is acceptable provided no more than 3 circuits per raceway is used.
3. **CIRCUITS WERE COMBINED INTO A COMMON BAY/FLY:** For convenience, variation of this approach is acceptable provided no more than 2 circuits per raceway is used.

**ENGINEERING BUILDING**

**UNINTERRUPTIBLE POWER SUPPLIES**

**WAYNE STATE UNIVERSITY**

**ELECTRICAL RELIABILITY UPGRADES**

**5050 ANTHONY WAYNE DRIVE**

**ELECTRICAL RELIABILITY UPGRADES**

**WAYNE STATE UNIVERSITY**

**FACILITIES PLANNING & MANAGEMENT**

**5444 CASS AVENUE DETROIT, MICHIGAN**

**JAS**

**CJM**

**OWNERS REVIEW**

**8-1-2014**

**BIDS**

**8/26/2014**

**ADDENDUM NO.2**

**9-15-2014**

**SHEETS**

**N/A**

**2**

**SCHEDULES**

**E-103**

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Sequence of operations for testing generator conditions monitored via the Siemens AP600 System:

Testing will provide generator "run" alarm, "fault" alarm, fuel "rupture" alarm, fuel "50%" alarm, fuel "80%" alarm. Once each alarm is triggered, it will provide a Siemens remote piping alarm and graphical command center alarm. Additionally, the fuel distribution system and phone line will be tested and verified for proper operation.

Test #1: NORMAL RUNNING ALARM

Start and run generator for normal monthly testing. Once generator starts, generator interlock relay provides Siemens remote piping and graphic alarms as shown. "Generator run status = on" and "generator run status = off" alarm.

Test #2: ALARM FAULT TEST

Generator off and panel selector switch in "auto", move selector switch to "manual run", (delay occurs after start) then push red stop button. This will force generator into an alarm condition. Generator interlock relay provides Siemens remote piping and graphic alarms as shown. To reset alarm, pull out red stop button, switch selector switch to "auto". Note that the generator selector switch should always be in the "auto" position.

Test #3: TANK RuptURE ALARM

Press and hold the momentary wall-mounted "rupture" push button (PS). Generator interlock relay provides Siemens remote piping and graphic alarms as shown. Note that the remote alarm should be broadcasted within 1 minute. Release PS once completed.

Fuel tank rupture = on and "fuel tank rupture = off".

Test #4: 50% Fuel Level Alarm

Fuel level box test activates both the local phone dialer and Siemens system. Contact fuel supply company representative (see analog phone dialer information). Inform fuel supply company representative: they will receive a 50% fuel call out from the respective building. Fuel supply company representative will be standing by and will need to call back the SU on-site person once each alarm has been received.

Test procedure as follows: Press and hold the momentary wall-mounted "50% test" push button (PB). Generator interlock relay provides phone dialer, Siemens remote piping and graphic alarms as follows: Note that alarm should be broadcasted within 1 minute. Continue to hold PS until fuel supply company representative receives call, accepts, and then returns their confirmation call that phone dialer was received. Phone message reads: WSU respective building generator started, delivered fuel within 4 hours. "50% fuel level = alarm" and "50% fuel level = normal".

Note: 2-minute delay before returning to normal on remote alarm.

Test #5: 80% Fuel Level Alarm

Fuel level box test activates both the local phone dialer and Siemens system. Contact fuel supply company representative (see analog phone dialer information). Inform fuel supply company representative that they will be receiving a 80% fuel call out fuel call out from the respective building. Fuel supply company representative will be standing by and will need to call back the SU on-site person once each alarm has been received.

Test procedure as follows: Press and hold the momentary wall-mounted "80% test" push button (PB). Generator interlock relay provides phone dialer, Siemens remote piping and graphic alarms as follows: Note that alarm should be broadcasted within 1 minute. Continue to hold PS until fuel supply company representative receives call, accepts, and then returns their confirmation call that phone dialer was received. Phone message reads: WSU respective building generator fuel level low. Deliver fuel immediately. "80% fuel level = alarm" and "80% fuel level = normal".

Note: 2-minute delay before returning to normal on remote alarm.

Doc monitoring points per generator:

- Generator run: digital input via dry contact
- Generator fault: digital input via dry contact
BATTERY CHARGER FAULT  DIGITAL INPUT VIA DRY CONTACT

DOC MONITORING POINTS FOR FUEL STORAGE TANK:
FUEL LEVEL 80%  DIGITAL INPUT VIA DRY CONTACT
FUEL LEVEL 50%  DIGITAL INPUT VIA DRY CONTACT
TANK RuptURE ALARM  DIGITAL INPUT VIA DRY CONTACT
LOW DETECTION ALARM  DIGITAL INPUT VIA DRY CONTACT
TANK LEVEL  ANALOG INPUT VIA 4-20MA SIGNAL

RENO — REMOTE ENHANCEMENT THRU APOGEE
SET UP RENO GROUP FOR GENERATORS, "RESPECTIVE BUILDING) GENERATOR"
1.  SUPERVISOR PAGE (COMMAND CENTRAL)
2.  OWNER DEFINED
3.  OWNER DEFINED
4.  OWNER DEFINED

DEFINE THE FOLLOWING POINTS FOR RENO
GENERATOR RUN — "GEN # IS RUNNING" (USE RUNNING AND OFF AS CHANGE OF STATES)
RETURN TO NORMAL — "GEN # IS OFF"

GENERATOR ALARM — "GEN # FAILED TO START"

LOW FUEL LEVEL (DAY TANK) — "GEN # (ARE DAY TANKS NUMBERED)
50% FUEL LEVEL — "FUEL TANK 50% ALARM"
80% FUEL LEVEL — "FUEL TANK 80% ALARM"
NO ATS POINTS DEFINED FOR RENO

ANALOG PHONE DIALS INFORMATION

THE FOLLOWING FOUR NUMBERS TO BE PROGRAMMED INTO THE "DIALER" PANEL
1.  ATLAS OIL COMPANY (FUEL DELIVERY) 800-676-2000
2.  KATIE MILLMAN (ACCOUNT REPRESENTATIVE)—(OFFICE) 313-662-3621
     (CELL) 313-932-6493
3.  WSU SUPERVISOR (COMMAND CENTER) 313-577-4844
4.  WSU PUBLIC SAFETY (NON-EMERGENCY) 313-577-2224
Reference Only

This drawing is for reference only. This drawing must be used only to add additional detail to what is being provided by the engineer of record. Not all terminations, wire runs or interlocks are shown in these diagrams as this will be dependent on the equipment purchased by others. Once equipment submittals are secured, the final drawings will reflect all work necessary to provide a fully functioning control system as outlined in the plans and specs. It is the bidder's responsibility to review all contract documents provided by the engineer of record to ensure that a complete scope is bid. Quantity of items and location of devices/panels that are not clearly specified in the drawings must be field verified to ensure that the project is properly bid. It is assumed that the bidder of the temperature control electrical installation is knowledgeable in such work and requires minimal guidance. Siemens assumes no responsibility or risk for bidders not fully understanding the scope or extent of the work required.
Reference Only

This drawing is for reference only. This drawing must be used only to add additional detail to what is being provided by the engineer of record. Not all terminations, wire pulls or interlocks are shown in these diagrams as this will be dependent on the equipment purchased by others. Once equipment submittals are secured, the final drawings will reflect all work necessary to provide a full and functioning control system as outline in the plans and spec. It is the bidders responsibility to review all contract documents provided by engineer of record to ensure that a complete scope bid is bid. Quantity of items and location of devices/panels that are not clearly spelled out in the drawings must be field verified to ensure that the project is properly bid. It is assumed that the bidder of the temperature controls electrical installation is knowledgeable in such work and requires minimal guidance. Siemens assumes no responsibility or risk for bidders not fully understanding the scope or extend of the work required.