STATE OF NEW YORK
OFFICE OF GENERAL SERVICES
DESIGN AND CONSTRUCTION GROUP
THE GOVERNOR NELSON A. ROCKEFELLER
EMPIRE STATE PLAZA
ALBANY, NY 12242

ADDENDUM NO. 1 TO PROJECT NO. 45097

CONSTRUCTION WORK, HVAC WORK, PLUMBING WORK, AND ELECTRICAL WORK
PROVIDE DAY CARE CENTER
BUILDING NO. 3
STATE OFFICE BUILDING CAMPUS
1220 WASHINGTON AVENUE
ALBANY, NY

June 5, 2015

NOTE: This Addendum forms a part of the Contract Documents. Insert it in the Project Manual. Acknowledge receipt of this Addendum in the space provided on the Bid Form.

CONSTRUCTION WORK SPECIFICATIONS

1. Page 087100-10, Paragraph 2.04 .I: Add the following Subparagraph:
   "5. Emergency entry via coin-turn cylinder. Free egress at all times. Anti-lockout feature".

2. Page 114100-3, Paragraph 2.05 A: Delete this Paragraph in its entirety and replace with the following:
   "A. Manufacturer: Advance Tabco Model SS-367 Work Table, Eagle, Elkay, or approved equivalent, 36" wide top, 84" long, with adjustable undershelf, stainless steel frame and shelf, 14-gauge 304 series stainless steel top, stainless steel bullet feet.
      1. Model TA-256 Casters, expanding adapter, for 1-5/8" dia. O.D. tube/table legs (3 braked).
      2. Model SS-2020 Deluxe Drawer, 20"W x 20"D x 5"deep drawer inset, stainless steel, with drawer slides.
      3. Model TA-14 Drawer Lock."

3. Page 114100-3, Paragraph 2.06 A: Delete this Paragraph in its entirety and replace with the following:
   "A. Manufacturer: Advance Tabco Model SS-367, Eagle, Elkay, or approved equivalent Work Table, 36" wide top, 84" long, with adjustable undershelf, stainless steel frame shelf, 14-gauge 304 series stainless steel top, stainless steel bullet feet.
      1. Model TA-256 Casters, expanding adapter, for 1-5/8" dia. O.D. tube/table legs, (3 braked).
      2. Model SS-2020 Deluxe Drawer, 20"W x 20"D x 5"deep drawer inset, stainless steel, with drawer slides.
      3. Model TA-14 Drawer Lock.
      4. Model TA-228 Mid mounting provision.
      5. Model PT-12-96 Shelf, table mounted, single deck, 12"W, 96"L, stainless steel, mid-mounted.

6. Model AUR-96 Utensil Rack, table mounted, 96" long, stainless steel, with (9) plated pot hooks."

HVAC WORK SPECIFICATIONS

4. Page 230719-15, Paragraph 3.13 A.: Add the following Subparagraph:
   "2. Insulate all ductwork exposed, inside the building insulation envelope, with fibrous glass board unless otherwise noted on plans as insulated with thermal and acoustic board (e.g. supply ductwork downstream of air terminal units)."

5. Page 230923-25, Paragraph 2.10 E: Add the following Subparagraph:
   "9. Carbon Dioxide Sensors:
      a. Materials: Molded plastic enclosure.
      b. Rating: 0 to 5000ppm.
      c. Mounting: Wall.
      d. Range: 0 to 2000ppm / 0-5000 User selectable.
      e. Accuracy: +/- 50ppm.
      f. Output: 0-10vDC, 4-20mA."

6. Page 230923-41, Paragraph 3.05 D: Add the following Subparagraph:
   "17. Discharge Duct Static Pressure Setpoint Optimization: The building automation system (BAS) shall continuously monitor the damper position of all VAV terminal units. Locate the static pressure sensor in the 22x12 supply duct above the Corridor C102 ceiling adjacent to Break Room 130.
      a. When any VAV damper is more than 75% (adj.) open, the supply fan discharge duct static pressure setpoint shall be reset upward by 0.1 in W.C. (adj.), at a frequency of 15 minutes (adj.), until no damper is more than 75% open or the static pressure setpoint has reset upward to the system maximum duct static pressure setpoint or the AHU variable-frequency drive is at the maximum speed setting.
      b. When all VAV dampers are less than 65% (adj.) open, the supply fan discharge duct static pressure setpoint shall be reset downward by 0.1 in W.C.(adj.), at a frequency of 15 minutes (adj.), until at least one damper is more than 65% open or the static pressure setpoint has reset downward to the system minimum duct static pressure setpoint or the AHU variable-frequency drive is at the minimum speed setting.
      c. The control bands, setpoint increment values, setpoint decrement values and adjustment frequencies shall be adjusted to maintain maximum static pressure optimization with stable system control and maximum comfort control.
      d. The BAS shall have the capability to allow the operator to exclude "problem" zones that should not be considered when determining the optimized setpoint.
      e. The BAS shall also read the status of the supply air static pressure sensor and display the active duct static pressure reading on the status screen.
      f. The BAS shall have the ability to identify, and display to the user, the VAV box that serves the Critical Zone (that is, the zone with the most wide-open VAV damper). This information shall update dynamically as the location of the Critical Zone changes based on building load, and duct static pressure setpoint optimization control."

7. Page 230923-43, Paragraph 3.05 E: Add the following Subparagraph:

"17. Demand Control Ventilation (AHU-3 only): Modulate the space ventilation rate utilizing the following ventilation reset equations using the carbon dioxide concentration as measured by the space carbon dioxide sensor in Multi-Purpose Room 138:
   a. Target Indoor Carbon Dioxide Concentration at unoccupied mode in parts per million (ppm): 350 ppm (equal to the carbon dioxide concentration in outside air).
   b. Target Indoor Carbon Dioxide Concentration at Minimum Outside Airflow: 875 ppm.
   c. Airflow CFM of outdoor air required:
      1. Airflow equals (Actual amount of Carbon Dioxide measured in ppm at CO2 sensor - 350 ppm) / (525 ppm)) X Minimum Outside Airflow.
      2. In occupied modes, should the actual Carbon Dioxide measured in ppm at the CO2 sensor be 350 ppm or less, the CFM of outdoor air required shall equal 20% of the Minimum Outside Airflow."

8. Page 235716-2, Paragraph 2.03 A: Delete this Paragraph in its entirety and replace with the following:
   "a. Frames: Carbon steel with baked epoxy enamel paint, galvanized steel side bolts, and aluminum shroud."

9. Page 260221-4, Subparagraph 2.01 C 1 a: Add the following to the end of the sentence, "unless otherwise noted on the drawing schedules."

ELECTRICAL WORK SPECIFICATIONS

10. SECTION 260573 SHORT CIRCUIT COORDINATION ARC FLASH HAZARD ANALYSIS: Add the attached Section (pages 260573-1 thru 260573-8) to the Project Manual.

11. Page 265110-3, Subparagraph 2.02 A.1.: Delete this Subparagraph in its entirety and replace with the following:
   "1. Fixture furnished by the State, and installed by Electrical Work Contractor."

12. Page 265110-4, Subparagraph 2.02 I.6.: Delete this Subparagraph in its entirety and replace with the following:
   "6. Installation: Suspend by manufacturer provided swivel mount cable attachment."

COMMON DRAWINGS

13. Drawing No. G-006, STAGING NOTES, Note 5: Add the following to the end of the Note: "Construction Work Contractor shall remove 10,000 sq ft of topsoil, 6 inches deep, and place in stockpile area, and provide 12 inch Subbase Course Type 2 over filter fabric in that area as directed by Director's Representative."

CONSTRUCTION WORK DRAWINGS

14. Drawing No. H-113, BASEMENT PIPING ABATEMENT PLAN:
   a. Add the following Note to hatched area between column line A-B along column line 1: "Remove and replace insulation only".

15. Drawing No. A-001, FIRST FLOOR REFERENCE:
   a. Detail Callout at Building Entry No. 1: Change "1/A-401" to read "2/A- 401".

b. Detail Callout at Building Entry No. 2: Change “4/A-402” to read “1/A- 402”.
c. Detail Callout at Building Entry No. 5: Change “3/A-403” to read “2/A- 403”.
d. Detail Callout at Building Entry No. 6: Change “2/A-403” to read “2/A- 404”.

16. Drawing No. A-001, GENERAL NOTES, Note 6: Delete this Note in its entirety, and replace with the following:
“6. Provide blocking in stud walls to support wall mounted casework, door wall stops, accessories, and other items indicated to receive blocking.”

17. Drawing No. A-102, BASEMENT FLOOR PLAN:
a. Electrical Room B41 Concrete Pad: Add Plan Keyed Note 1 symbol for a 2’-6” x 6’-0” concrete pad located parallel with the north wall and approximately 7’-0” west from door B62-B.

18. Drawing No. A-103, FIRST FLOOR PLAN:
a. Add Plan Keyed Note 3 symbol to the column at column line 6-D.

19. Drawing No. A-105, CEILING KEYED NOTES, Note 5.: Add the following to the end of the Note:
“Prepare existing surface in accordance with Spec Section 099101. Overhang dimension is approximately 12 feet 1-1/2 inches”

20. Drawing No. A-501, WINDOW HEAD AND SILL DETAIL 1, NOTES, Note 2: Delete this Note in its entirety and replace with the following:
“2. Coordinate with H-Contract on height of chilled beam enclosure (frit to cover chilled beam”.

HVAC WORK DRAWINGS

21. Drawing No. M-001, SYMBOLS LEGEND: Change “INTERNALLY LINED SUPPLY DUCTWORK” to read “DUCTWORK INSULATED WITH INTERNAL THERMAL AND ACOUSTIC BOARD INSULATION”.

22. Drawing M-104, FIRST FLOOR PIPING INSTALLATION PLAN: Add a wall-mounted carbon dioxide sensor adjacent to the combination space temperature/humidity sensor in Multi-Purpose Room 138.

23. Drawing M-503, DETAIL 2, Keyed Note 7: Change “SUCTION DIFFUSER” to read “SUCTION DIFFUSER, 3” DIAMETER PUMP CONNECTIONS AND LARGER, Y-TYPE STRAINER FOR PUMP CONNECTIONS 2-1/2” DIAMETER AND LESS.”

24. Drawing M-602, SHELL AND TUBE HEAT EXCHANGER SCHEDULE: Change “HEX-1” tag to read “HEX-1, -1A”.

25. Drawing M-701, HEATING FLOW DIAGRAM:
a. Change “ET-3” label for expansion tank serving HEX-2 to read “ET-2”.
b. Change the Note “AIR SEPARATOR AS-3” for HEX-2 to read “AIR SEPARATOR AS-2”.

PLUMBING WORK DRAWINGS

26. Addendum Drawings:

a. Drawing No. P-108, noted "ADDENDUM DRAWING 6/5/2015" accompanies this Addendum and forms part of the Contract Documents.

ELECTRICAL WORK DRAWINGS

27. Drawing No. E-104 BASEMENT LIGHTING PLAN:
    a. Change "Type H" lighting fixture designation to read "Type A".
    b. GENERAL NOTES: Add the following Note:
       "E. EXISTING SWITCHGEAR TO BE REMOVED BY C- CONTRACT."
    c. Add type "X" lighting fixture – Exit sign in Electrical Room B41 above door to Storage B63, circuit fixture to Circuit #2 of Panel LEBA.

28. Drawing No. E-105, BASEMENT POWER AND SYSTEMS PLAN:
    a. GENERAL NOTES: Add the following Note:
       "E. EXISTING SWITCHGEAR TO BE REMOVED BY C- CONTRACT."

    b. Change "42" Electrical Connection Identification Tag for SP-1 in Mechanical Equipment Room B45, to read "27".

29. Drawing No. E-106, FIRST FLOOR LIGHTING PLAN:
    a. Change "b" label of Ceiling Mounted Occupancy Sensor in Vestibule V101 to read "d" and to be switched with the surrounding fixtures and occupancy sensors in the Lobby.
    b. KEYED NOTES, Note 7.: Delete this Note in its entirety and replace with the following:
       "7. CONDUIT RUN TO FIXTURE SHALL BE BURIED IN APPROXIMATELY 1-9/16" PLASTER CEILING. CONDUIT SHALL BE 1/2" SIZE AND FOLLOW CONTOUR OF EXISTING CONCRETE CEILING. JUNCTION BOXES SHALL BE 1-1/2" DEEP."

30. Drawing No. E-107, FIRST FLOOR POWER AND SYSTEMS PLAN:
    a. KEYED NOTES, Note 13.: Delete this Note in its entirety and replace with the following:
       "13. CONDUIT RUN TO SMOKE DETECTOR SHALL BE BURIED IN APPROXIMATELY 1-9/16" PLASTER CEILING. CONDUIT SHALL BE 1/2" SIZE AND FOLLOW CONTOUR OF EXISTING CONCRETE CEILING. JUNCTION BOXES SHALL BE 1-1/2" DEEP."
    b. GENERAL NOTES: Add the following Note:
       "D. CONTRACTOR SHALL COORDINATE ACTUAL LOCATION OF PHONE HANDSET IN FIELD WITH DIRECTOR'S REPRESENTATIVE."

END OF ADDENDUM

Margaret F. Larkin
Executive Director
Design and Construction

JRC:jc

SECTION 260573

SHORT CIRCUIT/COORDINATION STUDY/ARC FLASH HAZARD ANALYSIS

PART 1 GENERAL

1.01 SCOPE

A. The contractor shall furnish short-circuit and protective device coordination studies which shall be prepared by the equipment manufacturer.

B. The contractor shall furnish an Arc Flash Hazard Analysis Study per NFPA 70E - Standard for Electrical Safety in the Workplace. Perform arc flash hazard analysis according to the IEEE Standard 1584, the IEEE Guide for Performing Arc-Flash Calculations.

1.02 REFERENCES

A. ANSI, IEEE, NFPA.

1.03 SUBMITTALS

A. Waiver of Submittals: The "Waiver of Certain Submittal Requirements" in Section 013300 does not apply to this Section.

B. Submittals Package: Submit the product data, qualifications, and study reports specified below. The studies shall be submitted prior to receiving final approval of the distribution equipment shop drawings and/or prior to release of equipment drawings for manufacturing. If formal completion of the studies may cause delay in equipment manufacturing, approval from the engineer may be obtained for preliminary submittal of sufficient study data to ensure that the selection of device and characteristics will be satisfactory. The formal studies shall be provided to verify preliminary findings.

C. The results of the short-circuit, protective device coordination and arc flash hazard analysis studies shall be summarized in a final report. No more than five (5) bound copies of the complete final report shall be submitted. For large system studies, submittals requiring more than five (5) copies of the report will be provided without the section containing the computer printout of the short-circuit input and output data. Provide additional copies, where required, on CD in .PDF format.

D. The report shall include the following sections:
1. Executive summary including Introduction, Scope of Work and Results/Recommendations.
2. Short-Circuit Methodology Analysis Results and Recommendations.
3. Short-Circuit Device Evaluation Table.
4. Protective Device Coordination Methodology Analysis Results and Recommendations.
5. Protective Device Settings Table.

6. Time-Current Coordination Graphs and Recommendations.
7. Arc Flash Hazard Methodology Analysis Results and Recommendations including the details of the incident energy level and flash protection boundary calculations,
8. Arc Flash labeling section showing types of labels to be provided. Section will contain descriptive information as well as typical label images.
9. One-line system diagram that shall be computer generated and will clearly identify individual equipment buses, bus numbers or names used in the short-circuit analysis, cable and bus connections between equipment, calculated maximum short-circuit current at each bus location, device numbers or names used in the time-current coordination analysis, and other information pertinent to the computer analysis.

E. Product Data:
1. Computer software program to be used for the analysis certifying compliance with IEEE.

F. Quality Control Submittals:
1. Qualifications:
a. The short-circuit, protective coordination and arc flash hazard analysis studies shall be conducted under the responsible charge and approval of a Registered Professional Electrical Engineer in the State of New York skilled in performing and interpreting the power system studies.
b. The Registered Professional Electrical Engineer shall be an employee of the equipment manufacturer or an approved engineering firm.
c. The Registered Professional Engineer shall have a minimum of five (5) years of experience in performing power system studies.
d. The approved engineering firm shall demonstrate experience with Arc Flash Hazard Analysis by submitting names of at least ten actual arc flash hazard analyses it has performed.

G. Contract Closeout Submittals:
1. Submit final short-circuit, protective device coordination and arc flash hazard analysis studies incorporating any changes made due to field coordination and commissioning. Final report shall depict final values of device settings, feeder length changes and any other pertinent information that changed.

1.04 COMPUTER ANALYSIS SOFTWARE

A. Computer software Developers:
1. CGI CYME.
2. EDSA Micro Corporation.
3. ESA, Inc.
4. Operation Technology, Inc. (ETAP).
5. SKM Systems Analysis, Inc.

PART 2 PRODUCTS

2.01 STUDIES

A. Contractor to furnish short-circuit and protective device coordination studies as prepared by equipment manufacturer. By using the equipment manufacturer the study allows coordination of proper breakers, fuses, and current transformers. The coordination study shall begin with the owner's feeder protective device and include all of the electrical protective devices down to and including the largest feeder circuit breaker in power distribution panelboards. The study shall also include variable frequency drives, motor starters, transformers and protective devices associated with variable frequency drives, and distribution switchgear.

B. The contractor shall furnish an Arc Flash Hazard Analysis Study per NFPA 70E - Standard for Electrical Safety in the Workplace, reference Article 130.3 and Annex D.

2.02 DATA COLLECTION

A. Contractor shall furnish all field data as required by the power system studies. The Engineer performing the short-circuit, protective device coordination, and arc flash hazard analysis studies shall furnish the Contractor with a listing of required data immediately after award of the contract. The Contractor shall expedite collection of the data to eliminate unnecessary delays and assure completion of the studies as required for final approval of the distribution equipment shop drawings and/or prior to the release of the equipment for manufacturing.

B Source combination includes two 13.8kV owner supplies (closed transition switching), and motors.

C. Load data utilized may include proposed loads obtained from Contract Documents provided by Contractor.

2.03 SHORT-CIRCUIT STUDY

A. Use actual conductor impedances if known. If unknown, use typical conductor impedances based on IEEE Standards 141, latest edition.

B. Transformer design impedances and standard X/R ratios shall be used when test values are not available.

C. Provide the following:
   1. Calculation methods and assumptions.
   2. Selected base per unit quantities.
   3. One-line diagram of the system being evaluated that clearly identifies individual equipment buses, bus numbers or names used in the short circuit analysis, cable and bus connections between the equipment, calculated maximum short circuit current at each bus location and other information pertinent to the computer analysis.

4. The study shall include input circuit data including source impedance data, conductor lengths, number of conductors per phase, conductor impedance values, insulation types, transformer impedances and X/R ratios, motor contributions, and other circuit information as related to the short-circuit calculations.
5. Tabulations of calculated quantities including short-circuit currents, X/R ratios, equipment short-circuit interrupting or withstand current ratings and notes regarding adequacy or inadequacy of the equipment rating.
6. Results, conclusions, and recommendations. A comprehensive discussion section evaluating the adequacy or inadequacy of the equipment must be provided and include recommendations as appropriate for improvements to the system.

D. Calculate short-circuit momentary and interrupting duties for a three-phase bolted fault at each:
1. Incoming switchgear.
2. Substation primary and secondary terminals.
3. Low voltage switchgear.
4. Distribution panelboards and switchboards.
5. Branch circuit panelboards.
6. Other significant locations throughout the system.

E. For solidly-grounded systems, provide a bolted line-to-ground fault current study for applicable buses as determined by the engineer performing the study.

F. Protective Device Evaluation:
1. Evaluate equipment and protective devices and compare short circuit ratings.
2. Adequacy of switchgear, switchboard, and panelboard bus bracing to withstand short circuit stresses.
3. State in report any circuit protective devices improperly rated for the calculated available fault current.

2.04 PROTECTIVE DEVICE COORDINATION STUDY

A. Proposed protective device coordination time-current curves shall be graphically displayed on log-log scale paper.

B. Include on each curve sheet a complete title and one-line diagram with legend identifying the specific portion of the system covered.

C. Terminate device characteristic curves at a point reflecting maximum symmetrical or asymmetrical fault current to which device is exposed.

D. Identify device associated with each curve by manufacturer type, function, and, if applicable, tap, time delay, and instantaneous settings recommended.

E. Plot the following characteristics on the curve sheets, where applicable:
1. Campus distribution's protective device.
2. Medium and low voltage fuses including manufacturer's minimum melt, total clearing, tolerance, and damage bands.

3. Low voltage equipment circuit breaker trip devices, including manufacturer's tolerance bands.
4. Transformer full-load current, magnetizing inrush current, and ANSI transformer withstand parameters.
5. Conductor damage curves.
6. Ground fault protective devices, as applicable.
7. Pertinent motor starting characteristics and motor damage points.
8. Other system load protective devices for the largest branch circuit and the largest feeder circuit breaker in each distribution panel.

F. Provide adequate time margins between device characteristics such that selective operation is provided, while providing proper protection.

G. Provide the following:
1. A one-line diagram shall be provided which clearly identifies individual equipment buses, bus numbers or names, device identification, and the maximum available short circuit current at each bus.
2. A sufficient number of log-log plots shall be provided to indicate the degree of system protection and coordination by displaying the time-current characteristics of series connected overcurrent devices and other pertinent system parameters.
3. Computer printouts shall accompany the log-log plots and will contain descriptions for each of the devices shown, settings of the adjustable devices, and device identification to aid in locating the devices in the log-log plots and the system one-line diagram.
4. The study shall include a separate, tabular printout containing the recommended settings of all adjustable overcurrent protective devices, the equipment designation where the device is located, and the device name or number corresponding to the device on the system one-line diagram.
5. A discussion section which evaluates the degree of system protection and service continuity with overcurrent devices, along with recommendations as required for addressing system protection or device coordination deficiencies.

2.05 ARC FLASH HAZARD ANALYSIS

A. The arc flash hazard analysis shall be performed according to the IEEE 1584 equations that are presented in NFPA70E, Annex D. The arc flash hazard analysis shall be performed in conjunction with the short-circuit study and the protective device time-current coordination study.

B. The flash protection boundary and the incident energy shall be calculated at significant locations in the electrical distribution system (Substations, switchgear, switchboards, panelboards, motor controllers, and control panels by other contracts) where work could be performed on energized parts.

C. Circuits 240 Volts or less fed by a single transformer rated at less than 125kVA may be omitted from the computer model and will be assumed to have a hazard risk category 0 per NFPA 70E.

D. Safe working distances shall be specified for calculated fault locations based upon the calculated arc flash boundary considering an incident energy of 1.2 cal/cm^2.

E. When appropriate, the short circuit calculations and the clearing times of the phase overcurrent devices will be retrieved from the short-circuit and coordination study model. Ground overcurrent relays should not be taken into consideration when determining the clearing time when performing incident energy calculations.

F. The short-circuit calculations and the corresponding incident energy calculations for multiple system scenarios must be compared and the greatest incident energy must be uniquely reported for each equipment location in a single table. Calculations must be performed to represent the maximum and minimum contributions of fault current magnitude for normal and emergency operating conditions. The minimum calculation will assume that the utility contribution is at a minimum. Conversely, the maximum calculation will assume a maximum contribution from the utility. Calculations shall take into consideration the closed transition switching schemes as well as any stand-by generator applications.

G. The incident energy calculations must consider the accumulation of energy over time when performing arc flash calculations on buses with multiple sources. Iterative calculations must take into account the changing current contributions, as the sources are interrupted or decremented with time. Fault contribution from induction motors should not be considered beyond 5 cycles.

H. For each equipment location with a separately enclosed main device (where there is adequate separation between the line side terminals of the main protective device and the work location), calculations for incident energy and flash protection boundary shall include both the line and load side of the main breaker.

I. When performing incident energy calculations on the line side of a main breaker (as required per above), the line side and load side contributions must be included in the fault calculation.

J. Mis-coordination should be checked amongst all devices within the branch containing the immediate protective device upstream of the calculation location and the calculation should utilize the fastest device to compute the incident energy for the corresponding location.

K. Arc Flash calculations shall be based on actual overcurrent protective device clearing time. A maximum clearing time of 2 seconds will be used based on IEEE 1584 section B.1.2. Where it is not physically possible to move outside of the flash protection boundary in less than 2 seconds during an arc flash event, a maximum clearing time based on the specific location shall be utilized.

L. Provide the following:
   1. Results of the Arc-Flash Hazard Analysis shall be submitted in tabular form, and shall include device or bus name, bolted fault and arcing fault current levels, flash protection boundary distances, working distances, personal-protective equipment classes and AFIE (Arc Flash Incident Energy) levels.
   2. The Arc-Flash Hazard Analysis shall report incident energy values based on recommended device settings for equipment within the scope of the study.
   3. The Arc-Flash Hazard Analysis may include recommendations to reduce AFIE levels and enhance worker safety.

PART 3 EXECUTION

3.01 FIELD ADJUSTMENT

A. Adjust relay and protective device settings according to the recommended settings table provided by the coordination study.

B. Make minor modifications to equipment as required to accomplish conformance with final short circuit and protective device coordination studies.

C. Notify Director in writing of any required major equipment modifications.

3.02 ARC FLASH WARNING LABELS

A. The vendor shall provide a 3.5 in. x 5 in. minimum thermal transfer type label of high adhesion polyester for each work location analyzed.

B. The label shall have an orange header with the wording, “WARNING, ARC FLASH HAZARD”, and shall include the following information:
   1. Flash Hazard Protection Boundary.
   2. Limited Approach Boundary.
   3. Restricted Boundary.
   4. Prohibited Boundary
   5. Incident Energy Level
   6. Required Personal Protective Equipment Class
   7. Type of Fire Rating Clothing

C. Labels shall be machine printed, with no field markings.

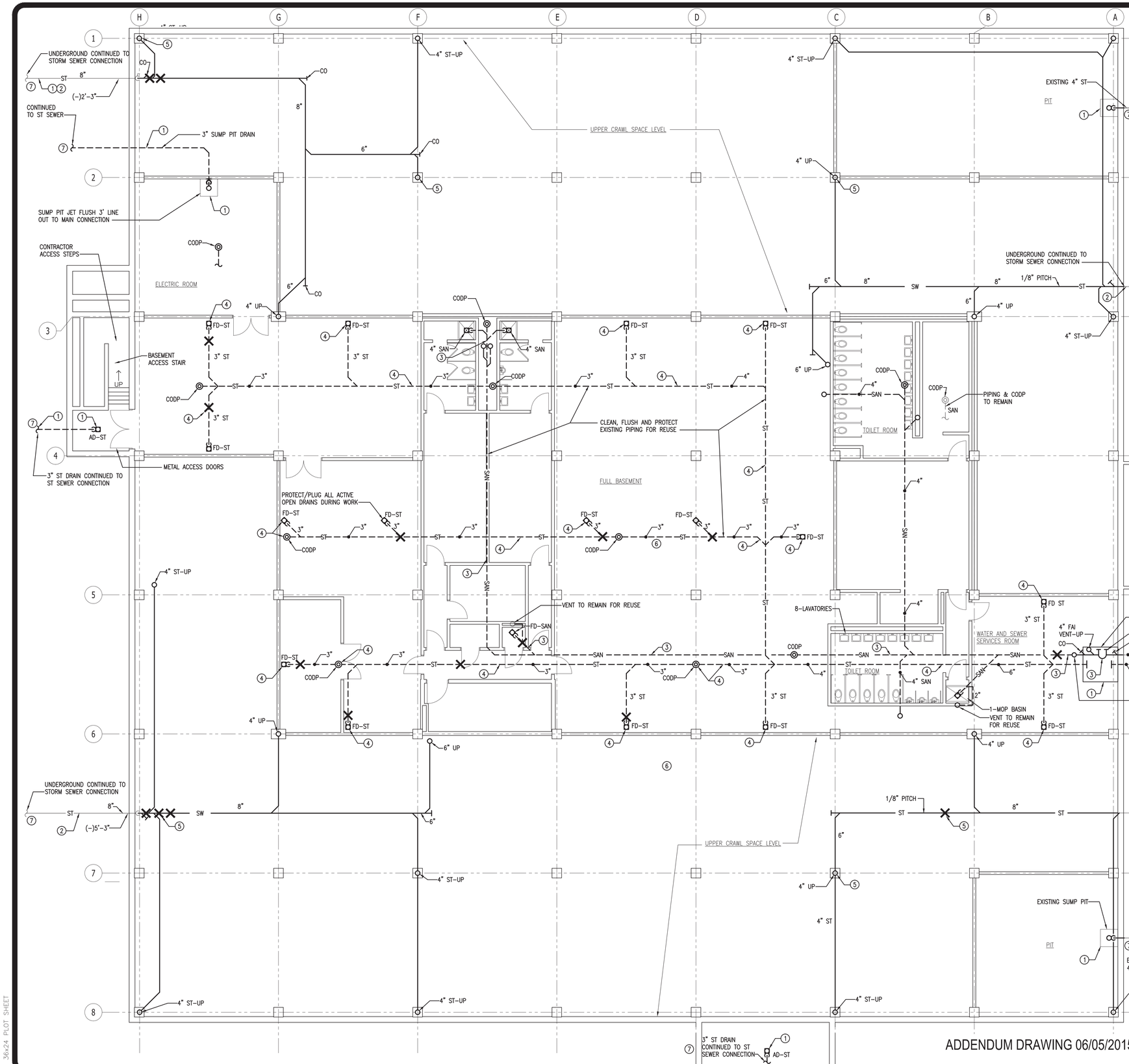
D. Arc flash labels shall be provided for equipment as identified in the study and the respective equipment access areas per the following:
   1. Floor Standing Equipment: Labels shall be provided on the front of each individual section. Equipment requiring rear and/or side access shall have labels provided on each individual section access area. Equipment line-ups containing sections with multiple incident energy and flash protection boundaries shall be labeled as identified in the Arc Flash Analysis table.

2. Wall Mounted Equipment: Labels shall be provided on the front cover or a nearby adjacent surface, depending upon equipment configuration.
3. General Use Safety labels shall be installed on equipment in coordination with the Arc Flash labels. The General Use Safety labels shall warn of general electrical hazards associated with shock, arc flash, and explosions, and instruct workers to turn off power prior to work.

3.03 ARC FLASH TRAINING

A. The vendor supplying the Arc Flash Hazard Analysis shall train the owner's qualified electrical personnel of the potential arc flash hazards associated with working on energized equipment (minimum of 4 hours). The training shall be certified for continuing education units (CEUs) by the International Association for Continuing Education Training (IACET) or equivalent.

END OF SECTION



KEYED NOTES:

1. CLEAN OUT PIPE DEBRIS, HYDRO-JET PIPELINE & INSPECT. WORK LIMITS ARE FROM SUMP LINE LEAVING BUILDING OUT TO NEAREST DOWNSTREAM MANHOLE OR CATCH BASIN STRUCTURE. INTERCEPT AND REMOVE ALL DEBRIS FROM CLEANING, DO NOT ALLOW TO TRAVEL DOWNSTREAM. FLUSH LINES CLEAN IN A DOWNSTREAM DIRECTION WITH CLEAN WATER FROM FIRE HYDRANT. VERIFY CLEAN WATER FLOW AT FIRST & SECOND DOWNSTREAM MANHOLE OR DRAINAGE STRUCTURE. AFTER, PLUG SUMP PIT OUTLET PIPE TO PROTECT PIPE FOR FUTURE WORK OF P-CONTARCT.
2. CLEAN OUT PIPE DEBRIS, HYDRO-JET PIPELINE & INSPECT. WORK LIMITS ARE FROM STORM LINE LEAVING BUILDING OUT TO NEAREST DOWNSTREAM MANHOLE OR CATCH BASIN STRUCTURE. INTERCEPT AND REMOVE ALL DEBRIS FROM CLEANING, DO NOT ALLOW TO TRAVEL DOWNSTREAM. FLUSH LINES CLEAN IN A DOWNSTREAM DIRECTION WITH CLEAN WATER FROM FIRE HYDRANT. VERIFY CLEAN WATER FLOW AT FIRST & SECOND DOWNSTREAM MANHOLE OR DRAINAGE STRUCTURE. AFTER, PLUG END OF OUTLET PIPE TO PROTECT FOR FUTURE WORK OF P-CONTRACT AFFECTED BY ROOF DRAINAGE. CLOSELY COORDINATE STORM LINE WORK WITH DIRECTORS REPRESENTATIVE AND MONITOR LOCAL WEATHER CONDITIONS. IMMEDIATELY RECONNECT STORM LINES TO MAINTAIN DRAINAGE OF ROOF. COORDINATE SANITARY LINE WORK ADVISING ALL FACILITIES IN THE BUILDING MUST BE SHUT DOWN AND NOT USED.
3. CLEAN OUT PIPE DEBRIS, HYDRO-JET PIPELINE & INSPECT. WORK LIMITS ARE FROM SANITARY HUB IN CHASE BETWEEN TOILETS TO HOUSE TRAP. INTERCEPT AND REMOVE ALL DEBRIS FROM CLEANING, DO NOT ALLOW TO TRAVEL DOWNSTREAM. FLUSH LINES CLEAN IN A DOWNSTREAM DIRECTION WITH CLEAN WATER AND VERIFY CLEAN WATER FLOW THROUGH HOUSE TRAP. AFTER, PLUG SANITARY PIPE ENDS TO PROTECT PIPE FOR FUTURE WORK OF P-CONTRACT.
4. CLEAN OUT PIPE DEBRIS, HYDRO-JET PIPELINE AND INSPECT. WORK LIMITS ARE FROM FLOOR DRAINS (FD) AND CLEANOUTS (CO) TO MAIN UTILITY PIT OUTLET AT NORTH WALL. INTERCEPT AND REMOVE ALL DEBRIS FROM CLEANING, DO NOT ALLOW TO TRAVEL DOWNSTREAM OR REMAIN IN UTILITY PIT. FLUSH LINES CLEAN IN A DOWNSTREAM DIRECTION WITH CLEAN WATER AND VERIFY CLEAN WATER FLOE AT THE OUTLET. MAINTAIN SAFE & DRY CONDITIONS IN UTILITY PIT, PROVIDE TEMPORARY METHODS TO DISPOSE OF FLUSHING WATER. AFTER, PLUG STORM PIPE ENDS WITH FLOOR DRAINS WORK, TO PROTECT PIPE FOR FUTURE WORK OF P-CONTRACT.
5. CLEAN OUT PIPE DEBRIS AND CLOGS AT BASE OF RDL RISERS AND STORM LINE, TO MAINTAIN SERVICE DURING WORK OF THIS CONTRACT AND THE ROOF REPLACEMENT CONTRACT. COORDINATE SCHEDULES WITH AND THROUGH THE DIRECTORS REPRESENTATIVE. PHASE ACCORDINGLY SO NOT TO CAUSE DELAY OR A POTENTIAL DAMAGING CONDITION TO THE BUILDING. CLEAN LOCATION TO RESTORE FULL FLOW AND REASSEMBLE INCLUDING AND MATERIALS NEEDED FOR CONNECTION. COORDINATE WITH ALL INSTALLATIONS WORK.
6. IT IS THE INTENT TO PERFORM ADEQUATE CLEANING, FLUSHING AND RESTORING ON ALL EXISTING STORM AND SANITARY PIPING TO BE LEFT IN PLACE OR TEMPORARILY LEFT IN PLACE AS REQUIRED BY CONSTRUCTION PHASING, SO LIKE NEW CONDITIONS ARE ACCOMPLISHED PRIOR TO CONNECTION OF INSTALLATIONS WORK. CONTRACTOR SHALL REPORT ANY FOUND CONDITIONS THAT MAY REQUIRE FURTHER ATTENTION OR REPAIRS TO THE DIRECTORS REPRESENTAITVE.
7. REFER TO C-CONTRACT DRAWING C101 SHOWING EXISTING UTILITY IN THE VICINITY OF THE BUILDING, TO COORDINATE CLEANING, FLUSHING AND INSPECTION REQUIREMENTS IN CONJUNCTION WITH INTERIOR WORK, EXISTING SEWER UTILITIES AND DIRECTIVES OF THE DIRECTORS REPRESENTATIVE. CONTRACTOR SHALL DYE TEST STORM AND SANITARY LINE LEAVING BUILDING TO CONFIRM CONNECTION TO SITE SEWER SYSTEM. ALL CLEANING PROCEDURE DEBRIS MUST BE CAPTURED AND REMOVED AT NEAREST POINT OF ACCESS, MANHOLE OR DRAINAGE STRUCTURE. COORDINATE OPERATIONS WITH THE DIRECTORS REPRESENTATIVE.
8. CLEAN OUT AND INSPECT UNDERSLAB PIPING AND BEND INTO PIT.

GENERAL NOTES:

1. PIPING SHOWN WAS OBTAINED FROM NYS OGS RECORD DRAWINGS SUPPLEMENTED WITH AVAILABLE FIELD OBSERVATIONS. VERIFY EXISTING CONDITIONS IN FIELD.
2. MAINTAIN SUMP PIT DRY AND IN A SAFE CONDITION DURING WORK. PROVIDE ALL TEMPORARY CONTROLS AND EQUIPMENT INCLUDING BUT NOT LIMITED TO PUMPS, PUMPING EQUIPMENT, HOSE, SAFETY BARRIERS, AND ACCESS REQUIRED BY CONDITIONS AND FLOW FLUSHING ACTIVITIES.
3. UNDERSLAB PIPING SHALL BE SERVICED AS INDICATED IN "KEYED NOTES" AND PROTECTED DURING WORK. FLUSH ALL PIPING SHALL CLEAN A SECOND TIME, AT THE COMPLETION OF WORK.
4. COORDINATE WORK WITH ROOF REPLACEMENT AND REMOVALS CONTRACTS THROUGH DIRECTORS REPRESENTATIVE.

✕ = FOUND PIPE CLOG LOCATION (FOUND DEBRIS IN PIPE DURING PREVIOUS PARTIAL INSPECTION EFFORT)

PIPE FLUSHING FLOW RATES

PIPE SIZE (IN.)	FLOW (GPM)	VELOCITY (FPS)
3	45	2
4	75	2
6	250	2
8	480	2

CONTRACTOR SHALL PROVIDE TEMPORARY WATER FACILITIES TO APPLY FLUSHING FLOW RATES.

ADDENDUM DRAWING 06/05/2015

1 / P-108 BASEMENT PIPE CLEANING & INSPECTION PLAN
SCALE: 1/8"=1'-0"

36x24 PLOT SHEET

NEW YORK STATE OF OPPORTUNITY. Office of General Services
DESIGN & CONSTRUCTION

SAGE ENGINEERING ASSOCIATES, LLP
1211 WESTERN AVENUE
ALBANY, NY 12203
(518)453-6091 FAX(518)453-6092

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STATE OF NEW YORK · DAVID P. LAPOLLA · 077492 · LICENSED PROFESSIONAL ENGINEER

CONTRACT:
PLUMBING

TITLE:
PROVIDE DAY CARE CENTER
BUILDING NO. 3

LOCATION:
STATE OFFICE BUILDING CAMPUS
1220 WASHINGTON AVENUE
ALBANY, NY

CLIENT:
OFFICE OF GENERAL SERVICES

MARK	DATE	DESCRIPTION
	06/05/15	ADDENDUM DRAWING

PROJECT NUMBER:	45097 – P
DESIGNED BY:	EJC
DRAWN BY:	STV
FIELD CHECK:	
APPROVED:	

SHEET TITLE:
BASEMENT PIPE CLEANING & INSPECTION PLAN

DRAWING NUMBER:
P-108