

ELECTRICAL NOTES:

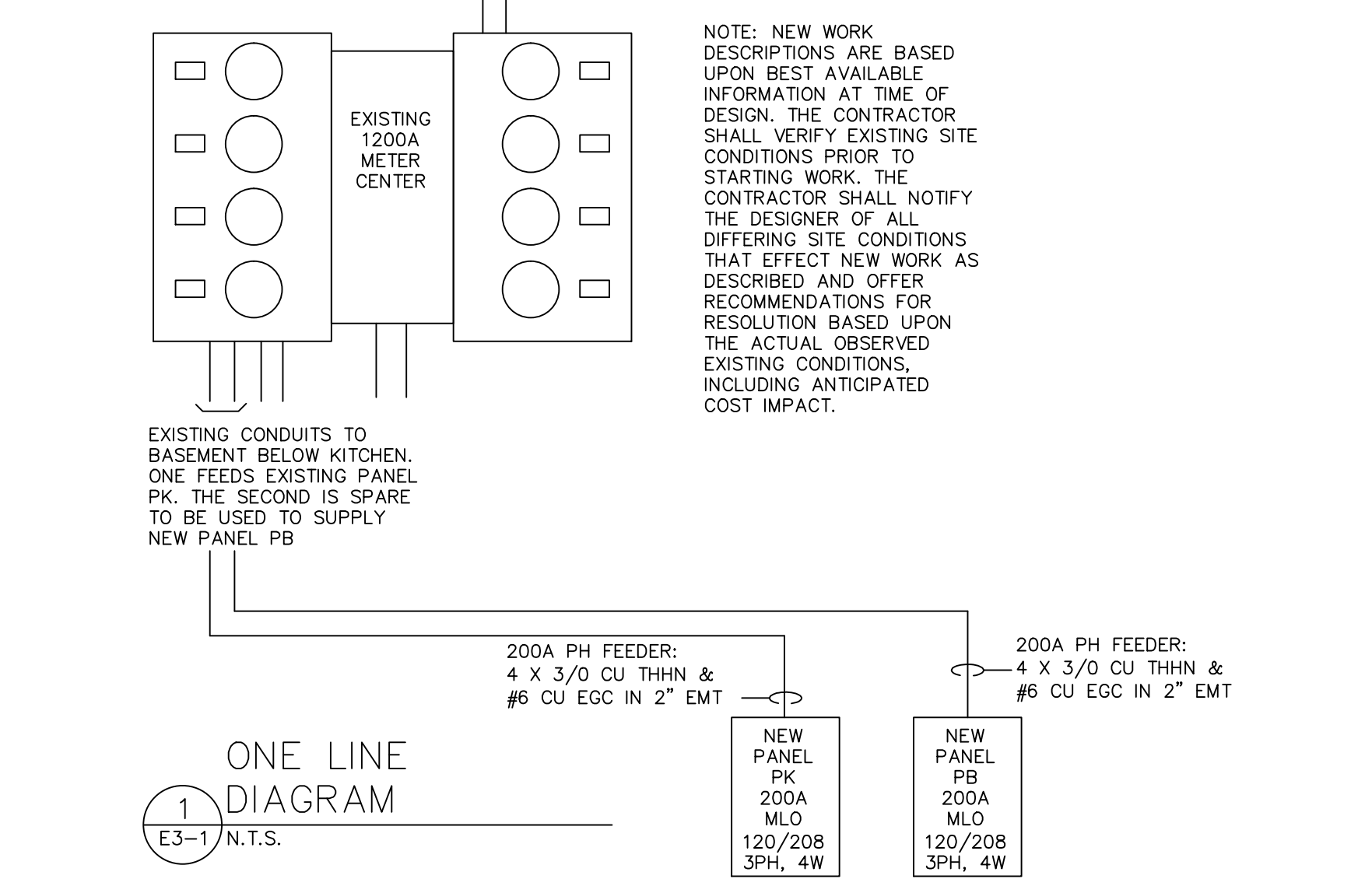
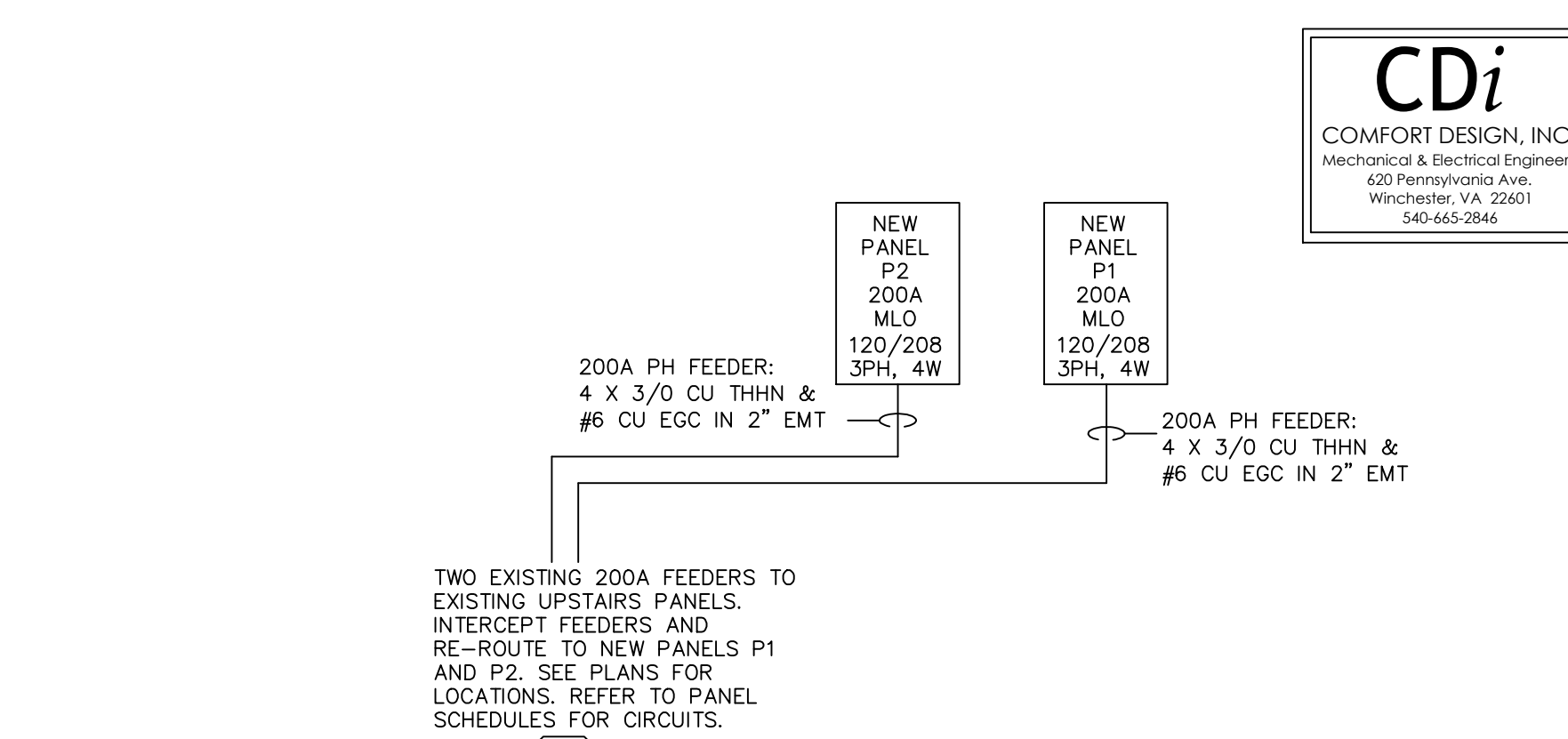
- 1. The Electrical Contractor shall provide all labor, material, equipment, tools and services required to construct, install, commission and maintain the electrical systems identified within the construction documents. The installation shall comply with applicable requirements of the International Building Code (IBC), NFPA 70 (NEC), NFPA 101 (Life Safety Code), and all local codes in effect at the project location at the time of contract award. It is the intent of these contract documents to call for finished work, tested, and ready for operation. Wherever the word "provide" is used it shall mean to furnish and install complete and ready for use. Provide all materials, bracing, hangers, and equipment as required to provide a complete operational electrical system.
2. The drawings indicate the extent, general location and arrangement of equipment and wiring. The Contractor shall become familiar with the work and verify all dimensions and locations so that the outlets, devices, raceways and equipment will be properly located and accessible. Actual field measurements shall prevail over any scaled measurements taken from these drawings. The Contractor shall confirm the location of all equipment that requires electrical connections with the trade installing the equipment prior to rough in of the associated electrical devices, disconnects, raceways, and wiring. The contractor shall confirm the electrical requirements and configuration (including overcurrent protective device ratings and conductor sizing) of circuits required for all equipment that requires electrical connection with the installer of such equipment prior to rough-in or installation of related electrical items. Rework required that results from failure to coordinate shall be done at contractor's expense. Lighting fixtures, outlets, and other items shall be located to avoid interference with mechanical or structural features. Lighting fixtures shall be symmetrically placed in rooms. Lighting fixtures that are non-IC rated shall be installed such that no insulation is within 3 inches of the fixture and none on top so as to trap heat. Non-IC lighting fixtures shall not be installed within 1/2 inch of combustible material. The contractor shall field confirm all new and existing ceiling types to identify mounting requirements prior to order of lighting fixtures. All accessories and options required to successfully install the fixtures in the ceilings shall be provided, including those needed for fire rated applications. The contractor shall review all project requirements and coordinate the electrical installation with all trades. The contractor shall provide product finishes and constructions compatible with wall and ceiling types based upon the contractor's review of all project requirements. All items not specifically shown in the design documents, but which are necessary for a complete working installation shall be provided at no additional cost.
3. Material and equipment shall be new and shall be the standard products of established manufacturers. Materials, equipment, and installation shall conform to the requirements of ANSI, IEEE, NEMA, and UL as applicable. Short circuit interrupting ratings (AIR) of all provided components shall be coordinated with the ratings of all new and any existing electrical gear. Series rated assemblies are not permitted. Penetrations of fire rated floors, walls, and ceilings shall be installed in accordance with listed UL applications. See architectural drawings for location of fire rated assemblies. Materials and equipment shall be installed in accordance with recommendations of the manufacturer. Devices shall be specification grade. Devices and coverplates shall be dark brown plastic.
4. Submit for approval catalog information for: Lighting Fixtures, Panelboards, and Fire Alarm System (when shown on dwgs).
5. Unless otherwise indicated, wiring shall consist of insulated conductors installed in conduit or tubing. All conductors shall be type THWN/THHN insulation rated 90C. Conduit sizing based upon use of terminals rated 75C. Aluminum conductors of equivalent ampacity may be used for circuits 100 Amps or larger. Cable shown as MC shall be type HCF-MC-AP for all patient care areas, exam rooms, and medical equipment connection circuits. The Contractor shall make all required changes to conduit sizes for conductor substitutions at no additional cost. Nonmetallic conduit and tubing shall be used in damp, wet, or corrosive locations. EMT may be installed only within buildings. EMT may be installed in concrete and grout in dry locations. EMT shall not be installed in damp or wet locations, or in the air space of exterior masonry cavity walls. Aluminum conduit may be used only where installed exposed in dry locations. Non-aluminum sleeves shall be used where aluminum conduit passes through concrete floors and fire walls. Conduit used in areas subject to damage shall be rigid steel up to a height of 10 Ft above finished floor. Flexible metallic cable (Type MC) may be used where allowed by NFPA 70. Non-metallic cable (Type NM) may only be used where allowed by NFPA 70 and when wiring type is shown as NM in panel schedules.
6. Bushings shall be of the insulating type. Penetrations of above grade floor slabs, time-rated partitions, and fire walls shall be fire stopped. Raceways shall be kept 6 inches away from parallel runs of Flues and hot-water pipes. Raceways shall be concealed within finished walls, ceilings, and floors of finished areas. Raceways may be run exposed in non-finished areas, such as utility rooms. All electrical wiring below slab on grade shall be protected by a PVC conduit system. Raceways crossing structural expansion joints shall have expansion fittings. Changes in direction of runs shall be made with symmetrical bends or fittings. Crushed or deformed raceways shall not be installed. Trapped raceways in damp and wet locations shall not be installed. Clogged raceways shall be entirely free of obstructions or shall be replaced.
7. In the event of conflict between various parts of the contract documents, including but not limited to drawings and general conditions, the more stringent (more costly) of the conditions shall apply for bidding purposes. The contractor shall request clarification for all conflicts prior to construction. The contractor shall make a thorough examination of the site and the contract documents. No claim for extra compensation will be recognized if difficulties are encountered which an examination of site conditions and contract documents prior to executing the contract would have revealed. Failure to request clarification shall not relieve the contractor of the requirement to provide the more costly implementation. If any conflicts occur necessitating departures from the drawings, details of and reasons for departures shall be submitted and approved prior to implementing any change.
8. All wiring not furnished and installed by others but which is required to provide a complete and operational system for equipment indicated on the drawings shall be furnished and installed by the electrical contractor. Except as otherwise noted, automatic control wiring, signaling, and protective devices for mechanical equipment shall be furnished and installed by the mechanical contractor. Each motor or group of motors requiring a single control shall be provided by others with a suitable controller. The electrical contractor shall install and connect the motor controllers furnished by others. Low voltage control devices (thermostats, limit switches, etc.) and wiring (24 Volts max.) will be installed by others. Control devices and wiring above 24 Volts shall be installed by the electrical contractor. Each motor shall be provided with a disconnecting means where required by NFPA 70, even if not shown on the drawings.
9. The Electrical contractor shall coordinate with the Mechanical contractor for the installation of electrical components required to serve mechanical equipment. The contractor shall confirm equipment circuit requirements with the Mechanical contractor prior to rough-in of electrical circuits. Any re-work required to provide the electrical installation needed for compliance with actual nameplate requirements for equipment shall be accomplished at no additional cost. Nameplate data of actual equipment supplied shall be used for final circuit configurations. Adjustments from values shown on panel schedules shall be made as part of the contract. Duct smoke detector requirements shall be per local code requirements. The Electrical contractor shall coordinate with the Mechanical contractor for control interface requirements. For buildings with sprinkler systems the fire alarm control panel shall monitor all monitoring points shown on the drawings of the sprinkler system. The electrical contractor shall coordinate with the sprinkler designer for final requirements. All flow switches and valves shall be monitored. Fire pump monitoring shall include fault, run, and phase reversal.
10. The work shall be laid out in advance, and where cutting, channeling, chasing, or drilling of floors, walls, partitions, ceilings, or other surfaces is necessary for the proper installation, support, or anchorage of the conduit, raceways, or other electrical work, this work shall be done and any damage to building, piping, or equipment shall be repaired by skilled tradesmen of the trades involved at no additional cost to the owner.
11. The drawings are diagrammatic only, intending to show general location of circuits, equipment, fixtures, and devices; and do not show all required details. All work shall be accurately laid out with reference to the drawings and in cooperation with other trades to avoid conflicts and to obtain a neat and workable installation which will afford maximum accessibility for operation, maintenance, and headroom. The electrical contractor is responsible for determining optimal routing of circuits and field investigations required to complete the installation in a professional workmanship manner. Refer to architectural drawings for exact dimensions and to mechanical drawings for locations of mechanical equipment.
12. The drawings are not intended to be rigid in specific details. In the event they are in conflict with requirements of other drawings, codes, or recommendations of the manufacturers of equipment furnished, the Electrical Contractor shall inform the General Contractor and make recommendations as required to insure that equipment is installed and connected in conformance with codes and manufacturer's recommendations for safe, proper, and efficient operation. The General Contractor shall issue a Request for Information with the proposed recommendation to the Architect. The contractor, by accepting the work, represents that it is qualified to successfully accomplish the work without additional direction by the design engineer. The design engineer is not responsible for means, methods, techniques, or procedures used by the contractor during construction.
13. The contractor shall perform all temporary work necessary to maintain continuity of electrical service when connection is made to existing systems and facilities. Existing services shall not be interrupted without prior consent of the owner's authorized representative and may be interrupted only at and for the specified time designated by the owner's representative.
14. Major pieces of electrical equipment shall be permanently marked with an identification nameplate. All panelboards shall have removable typewritten panel directories inserted into plastic sleeves mounted on the inside face of the panelboard door. The directory shall describe as-built circuit configurations of the panel per NEC requirements. Marking directly on the panelboard is not permitted.
15. After the electrical installation is completed, the Electrical Contractor shall conduct a safety and an operating test of the electrical system. The electrical contractor shall furnish all instruments and personnel required for the tests. No part of the electrical distribution system shall be energized prior to the testing of the grounding system. Resistance tests shall be made for service entrances and feeders installed as part of this project. Proper phase rotation shall be confirmed for all 3 phase motors.
16. All work shall pass inspection by proper authorities prior to acceptance by the owner. Costs for permits, certificates, and inspections required for completion of the work shall be paid by the Electrical Contractor.
17. The contractor shall warrant the complete electrical installation at the time of completion for a period of one year. During the warranty period the contractor shall replace or repair any components or work which develop defects beyond normal wear and tear. The electrical contractor shall be responsible for, and shall incur financial responsibility for any damages caused by or resulting from defects in his work.
18. The contractor shall provide as-built and record drawings indicating all changes in equipment, devices, and conduit locations to the general contractor for delivery to the owner as part of the project close-out.

FIRE ALARM OPERATIONAL MATRIX table with columns for INITIATING DEVICES (MANUAL PULL STATIONS, SYSTEM SMOKE DETECTORS, HOOD SYSTEM INTERFACE, SPRINKLER FLOW SWITCH, SPRINKLER TAMPER SWITCH, DUCT SMOKE DETECTOR, AC POWER FAILURE, SYSTEM BATTERY LOW, OPEN CIRCUIT WIRING) and OUTPUTS (SOUND FACP ALARM, SOUND FACP SUPERVISE, SOUND FACP TROUBLE, SOUND PUBLIC AV DEVICES, SOUND ALARM AT REMOTE MONITORING STATION, SOUND SUPERVISORY ALARM AT REMOTE MONITORING STATION, SOUND TROUBLE ALARM AT REMOTE MONITORING STATION, RELEASE DOOR-HOLD OPEN DEVICES, SHUT DOWN FUEL/PURIFIER TO EQUIPMENT UNDER HOOD, SHUT DOWN RELATED EQUIPMENT).

- NOTES:
1. THE CONTRACTOR SHALL PROVIDE AND INSTALL AN ADDRESSIBLE FIRE ALARM SYSTEM TO ACHIEVE THE PERFORMANCE DEFINED IN THE MATRIX AND AS SHOWN ON THE DRAWINGS.
2. THE CONTRACTOR SHALL ENGAGE A NICET CERTIFIED TECHNICIAN TO COMPLETE THE FIRE ALARM DESIGN. THE DRAWINGS AND FIRE ALARM MATRIX DEFINE THE GENERAL PERFORMANCE REQUIREMENTS OF THE SYSTEM.
3. FINAL EQUIPMENT SELECTION, LOCATION OF DEVICES, CIRCUIT LAYOUTS, CALCULATIONS AND PREPARATION OF FIRE MARSHAL SUBMITTAL SHALL BE ACCOMPLISHED BY THE CONTRACTOR.

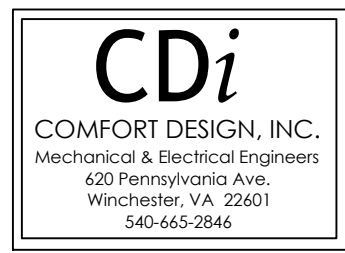
PB (Panelboard) schedule table with columns for CKT, DESCRIPTION, CB, POLE, PH, NEU, ECG, COND, VA, PH, VA, COND, ECG, NEU, PH, POLE, CB, DESCRIPTION, CKT. Includes sections for FED FROM BUILDING SERVICE and FED FROM METER CENTER.

PK (Panel) schedule table with columns for CKT, DESCRIPTION, CB, POLE, PH, NEU, ECG, COND, VA, PH, VA, COND, ECG, NEU, PH, POLE, CB, DESCRIPTION, CKT. Includes sections for FED FROM METER CENTER and FED FROM METER CENTER.

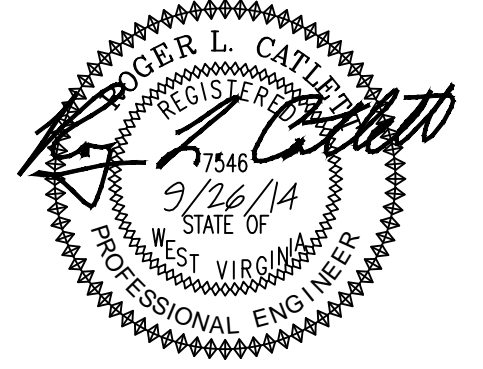


P1 (Panelboard) schedule table with columns for CKT, DESCRIPTION, CB, POLE, PH, NEU, ECG, COND, VA, PH, VA, COND, ECG, NEU, PH, POLE, CB, DESCRIPTION, CKT. Includes sections for FED FROM METER CENTER and FED FROM METER CENTER.

P2 (Panel) schedule table with columns for CKT, DESCRIPTION, CB, POLE, PH, NEU, ECG, COND, VA, PH, VA, COND, ECG, NEU, PH, POLE, CB, DESCRIPTION, CKT. Includes sections for FED FROM METER CENTER and FED FROM METER CENTER.



Charles Washington Hall RENOVATIONS. Corner of George & Washington Streets Charles Town, W.Va. For the City of Charles Town City of Ranson



- Planning & Engineering (prime)
Hall Planning & Engineering, Inc
316 Williams Street
Tallahassee, FL 32303
Landscape Architecture
Stromberg/Garrigan & Assoc., Inc.
102 E. Main Street-The Penn Bldg
Somerset, PA 15501
Historic Preservation & Architecture
Landmarks SGA, LLC
102 E. Main Street-The Penn Bldg
Somerset, PA 15501

- Structural Engineer
R.L. Silman Associates
1053 31st Street NW
Washington D.C. 20007
Mech/Elect Engineer
Comfort Designs
620 Pennsylvania Avenue
Winchester, VA 22601



Issue/Revision table with columns for Issue/Revision, Seal, Date, Scale, Project Number, Drawing Number.

E3.1

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