

ADDENDUM NO. 2

TO: PLANS AND SPECIFICATIONS FOR STATE OF MISSOURI

Rebuild Kitchen & Stabilize Structure
Tavern, Arrow Rock State Historic Site
Arrow Rock, Missouri
PROJECT NO. X2001-01

Bid Opening Date: 1:30 PM, Thursday, August 13, 2020

Bidders are hereby informed that the Construction Plans and/or Specifications are modified as follows:

SPECIFICATION CHANGES:

1. **SECTION 075213 – ATACTIC-POLYPROPYLENE (APP) MODIFIED BIT ROOFING**
 - a. REMOVE entire section and REPLACE with revised Section 075213 HYBRID MODIFIED BITUMINOUS MEMBRANE ROOFING, dated July 30, 2020. – Note both APP and SBS hot- and cold-applied are approved roofing products.
2. **Section 096720 – SEAMLESS EPOXY QUARTZ AND MARBLE-CHIP FLOORING:**
 - a. ADD the following acceptable manufacturer to Paragraph 2.1-A:
 - d) Florock 1-800-356-7625
3. **Section 096400 – WOOD FLOORING:**
 - a. REPLACE Paragraph 2.2-B with the following:
 - B. Urethane Finish System: Water-based OR Oil-Modified system of compatible components that is recommended by finish manufacturer for application indicated.
4. **Section 237413 – PACKAGED OUTDOOR CENTRAL STATION AIR HANDLING UNITS:**
 - a. ADD the following acceptable manufacturer to Paragraph 2.1-A:
 5. CaptiveAire

DRAWING CHANGES:

1. **Sheet C101:**
 - a. REMOVE entire sheet and REPLACE with revised Drawing C101, dated August 3, 2020.
2. **Sheet C301:**
 - a. REMOVE entire sheet and REPLACE with revised Drawing C301, dated August 3, 2020.
3. **Sheet C401:**
 - a. REMOVE entire sheet and REPLACE with revised Drawing C401, dated August 3, 2020.

4. **Sheet C501:**
 - a. **REMOVE** entire sheet and **REPLACE** with revised Drawing C501, dated August 3, 2020.
5. **Sheet A305:**
 - a. ADD the following general notes:
 1. Treads and solid risers shall be Redwood or Cedar, smooth all sides. Treads shall be 1 ½" thick (2X12 material) and risers shall be ¾" thick.
 2. Interior Steps shall be sealed/treated with Woodlife CopperCoat Green Wood Preservative, insecticidal preservative and fungal inhibitor
 3. All stair wood framing shall be pressure-treated lumber.
6. **Sheet A302:**
 - a. ADD the following general notes:
 1. Treads and solid risers shall be Redwood or Cedar, smooth all sides. Treads shall be 1 ½" thick (2X12 material) and risers shall be ¾" thick.
 2. Exterior steps and visible framing shall be treated (360 degrees) with exterior-grade, low-gloss, oil-based paint. (Color to be selected by Architect from full range of manufacturer's colors).
 3. All stair wood framing shall be pressure-treated lumber. Any cut surfaces of wood framing on the exterior stair (sky-ward facing under the treads and bottom of framing in contact with concrete) shall be covered with a butyl-based, Joist Protection Tape to prevent water infiltration.
7. **Sheet A502:**
 - a. OMIT Detail 6 – DOOR 106B THRESHOLD DETAIL. Detail is not used.
8. **Sheet M103**
 - a. REPLACE the following duct sizes noted at the kitchen hood grease ducts:
 1. The 20x10 grease duct shall be 22x9.
 2. The 18x10 grease duct shall be 20x9.
9. **Sheet PES100:**
 - a. **REMOVE** entire sheet and **REPLACE** with revised Drawing PES100, dated August 3, 2020.
10. **Sheet ED101:**
 - a. **REMOVE** entire sheet and **REPLACE** with revised Drawing ED101, dated August 3, 2020.
11. **Sheet E101:**
 - a. **REMOVE** entire sheet and **REPLACE** with revised Drawing E101, dated August 3, 2020.
12. **Sheet E301:**
 - a. **REMOVE** entire sheet and **REPLACE** with revised Drawing E301, dated August 3, 2020.
13. **Sheet Q-DT-01:**
 - a. **REMOVE** entire sheet and **REPLACE** with revised Drawing Q-DT-01, dated August 3, 2020.

14. **Sheet Q-DT-02:**

- a. **REMOVE** entire sheet and **REPLACE** with revised Drawing Q-DT-02, dated August 3, 2020.

15. **Sheet Q-DT-03:**

- a. **REMOVE** entire sheet and **REPLACE** with revised Drawing Q-DT-03, dated August 3, 2020.

GENERAL COMMENTS:

1. Please contact Mandy Roberson, Contract Specialist, at 573-522-0074 or mandy.roberson@oa.mo.gov for questions regarding bidding procedures and MBE/WBE/SDVE goals and submittal requirements.
2. The deadline for technical questions was Tuesday, August 4, 2020 at noon
3. Current Planholders list is available at <https://www.oafmdcplanroom.com/jobs/540/plan-holders/x2001-01-rebuild-kitchen-stabilize-structure-tavern-arrow-rock-state-historic-site>
4. Prospective bidders contact American Document Solutions (ADS). Phone 573-446-7768, Fax 573-355-5433, <https://www.adsplanroom.net>, to order official plans and specifications.

ATTACHMENTS:

1. Specification Section 075213 – Hybrid Modified Bituminous Membrane Roofing
2. Drawings: C101, C301, C401, C501, PES100, ED101, E101, E301, Q-DT-01, Q-DT-02, Q-DT-03

August 4, 2020

END ADDENDUM NO. 2

SECTION 075213 – HYBRID MODIFIED BITUMINOUS MEMBRANE ROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Refer to the *Architects/Engineer's Roof Design Manual*, Missouri Division of Facilities Management, Design and Construction for installation requirements.
https://archive.oa.mo.gov/fmdc/dc/fmdc_dip/6%20Roof%20Design%20Manual/Roof%20Design%20Manual.pdf
- C. All installation shall be consistent with the *2013 NRCA Roofing and Waterproofing Manual*.

1.2 SUMMARY

- A. Section Includes:
 - 1. Hybrid modified bitumen membrane roofing.
 - 2. Roof insulation.
 - 3. Cover board.
- B. Related Requirements:
 - 1. Section 076200 "Sheet Metal Flashing and Trim" for metal roof flashings and counterflashings.
 - 2. Section 079200 "Joint Sealants" for joint sealants, joint fillers, and joint preparation.

1.3 DEFINITIONS

- A. Roofing Terminology: Definitions in ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" apply to Work of this Section.
- B. Hot Roofing Asphalt: Roofing asphalt heated to its equiviscous temperature, the temperature at which its viscosity is 125 centipoise for mop-applied roofing asphalt and 75 centipoise for mechanical spreader-applied roofing asphalt, within a range of plus or minus 25 deg F (14 deg C), measured at the mop cart or mechanical spreader immediately before application.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product, including, but not limited to:
 - 1. Sheathing Paper
 - 2. Coated Heavy-Weight Base
 - 3. Primer
 - 4. Fasteners
 - 5. Asphalt
 - 6. Cold-Applied low-rise foam Adhesive (insulation attachment)
 - 7. Asphalt Roofing Cement

- 8. Insulation
 - 9. Coverboard
 - 10. SBS Cap Sheet (Hot-applied)
 - 11. SBS Cap Sheet (Cold-applied)
 - 12. SBS Cap Sheet Adhesive
 - 13. APP Cap Sheet
 - 12. Modified Flashing Plies
 - 13. Sealants and Mastic
- B. System Spec Plate: Submit a manufacturer's assembly spec plate depicting the ordering and attachment of the materials in the system.
- 1. Included with the spec plate, provide a narrative of the assembly including the application and attachment methods.
 - 2. Narrative must include all system components from the deck up through the cap sheet.
 - 3. Include manufacturer's system spec number for roof system.
- C. Schedule: Contractor shall provide a complete schedule for all roofing work indicating the sequence of removal and replacement of the roof. Show phasing on a roof plan defining each day's proposed work.
- D. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other work, including:
- 1. Manufacturer's approved, but project specific, installation details of roofing and flashings, including roof slopes and insulation lay-outs, penetration details, curbs, and accessories.
 - 2. Base flashings and membrane terminations.
 - 3. Crickets, saddles, and tapered edge strips.
 - 4. Insulation fastening patterns.
- E. Samples for Verification: For the following products:
- 1. Cap sheet, of color required.
 - 2. Flashing sheet, of color required.
 - 3. 12" X 12" sample of roof membrane from actual material used in project.
 - 4. Manufacturer's roof warranty.

1.5 INFORMATIONAL SUBMITTALS

- A. Installer Certificates: Signed by roofing system manufacturer certifying that Installer is approved, authorized, or licensed by manufacturer to install roofing system.
- B. Manufacturer Certificates: Signed by roofing manufacturer certifying that roofing system complies with requirements specified in "Performance Requirements" Article.
- 1. Submit evidence of compliance with performance requirements.
- C. Product Test Reports: For components of roofing system, for tests performed by manufacturer and witnessed by a qualified testing agency.
- D. Qualification Data: For the firm and persons completing the work.
- 1. Include lists of completed projects with the project names and addresses, names and addresses of architects and owners.
- E. Maintenance Data: For roofing system to include in maintenance manuals.

- F. A "systems" letter from the manufacturer agreeing "That all roofing components exclusive of the deck, contained in the system proposed are approved and compatible with the warranty requirements of the roof system as specified, and that the warranty specified will be issued at completion of project if system is installed as designed.
- G. Sample Warranties: For manufacturer's special warranties.
- H. Inspection Report: Copy of roofing system manufacturer's inspection report of completed roofing installation.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For roofing system to include in maintenance manuals.
- B. Manufacturer's roof warranty.

1.7 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer that is UL listed and FM Global approved for membrane roofing system identical to that used for this Project.
- B. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.
 - 1. Installer must have a minimum of three (3) years experience installing the roof system specified.
 - 2. Job Site Superintendent must have a minimum of five (5) years experience in roofing.
- C. Manufacturer Qualifications: A qualified manufacturer that has UL listing and FMG approval for a roofing system identical to the system specified for this Project.
- D. Source Limitations: Obtain components for roofing system from or approved by the roofing system manufacturer.
- E. Fire-Test-Response Characteristics: Provide roofing materials with the fire-test-response characteristics indicated as determined by testing identical products per test method below by UL, FMG, or another testing and inspecting agency acceptable to authorities having jurisdiction. Materials shall be identified with appropriate markings of applicable testing and inspecting agency.

- 1.8 Exterior Fire-Test Exposure: Class A; ASTM E 108, for application and roof slopes indicated.

1.9 PRE-INSTALLATION CONFERENCE

- A. A Pre-installation Conference shall be held no earlier than two weeks before the start of the roof work. This Conference shall not be scheduled until all submittals have been received and approved by the project A/E.
 - 1. Meet with Owner, Architect, Roofing Installer, roofing system manufacturer's representative, deck installer, and installers whose work interfaces with or affects roofing including installers of roof accessories and roof-mounted equipment.

2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
3. Review and finalize construction schedule and verify availability of materials, installer's personnel, equipment, and facilities needed to make progress and avoid delays.
4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
5. Review structural loading limitations on roof deck during and after roofing.
6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.
7. Review temporary protection requirements for roofing system during and after installation.
8. Review roof observation and repair procedures after roofing installation.
9. Review governing regulations and State of Missouri FMDC regulations and requirements for roofing system during and after installation.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.
 1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
- D. Handle and store roofing materials, and place equipment in a manner to avoid permanent deflection of deck.

1.11 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.
- B. No delay in the installation of the cap sheeting is allowable.

1.12 WARRANTY

- A. Manufacturer's Warranty: Manufacturer's form, without monetary limitation, in which manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period. Failure includes roof leaks.
 1. Special warranty includes roofing membrane, base flashings, roofing membrane accessories roof insulation fasteners cover boards walkway products and other components of roofing system.

2. Warranties that allow for arbitration are not acceptable.

3. Warranty must allow for litigation in the State of Missouri and be subject to Missouri law per Chapter 506, Section 506.500 of the Missouri Statutes.

4. Indicate by letter that "All roofing components exclusive of the deck are approved and compatible with the warranty requirements of the roof system as specified, and that the warranty specified will be issued at completion of the project if system is installed as designed."

5. Warranty Period Requested: Fifteen (15) years from date of Substantial Completion.

6. Owner reserves the right to purchase a Twenty (20) year warranty for all of the roofs covered under the scope of work, up through the substantial completion of the project.

- B. Installers Warranty: Submit roofing Installer's warranty, on warranty form at end of this Section, signed by Installer, covering Work of this Section, including all components of roofing system such as roofing membrane, ply sheets, base sheets, base flashing, roof insulation, fasteners, cover boards, and walkway products, for the following warranty period:

1. The liability of the Surety Company under the installer warranty provisions of this contract is limited to correcting defective workmanship and materials for a period of two years from the substantial completion date of the project. Any warranty beyond the first two years is an agreement between the owner and the contractor and falls outside the performance bond obligation.

2. Warranty Period: Five (5) years from date of Substantial Completion.

1.13 ROOF SYSTEM DESCRIPTION

- A. Hybrid Modified Roofing System on Wood Deck or Wood Fiber Deck.

1. Fastened Sheathing Paper, Fastened Heavy-Weight base sheet, asphalt, insulation, asphalt, cover board, asphalt, base sheet, asphalt, ply sheet, asphalt, ply sheet, asphalt, SBS Modified Cap Sheet.
2. Fastened Sheathing Paper, Fastened Heavy-Weight base sheet, asphalt, insulation, asphalt, cover board, asphalt, base sheet, asphalt, ply sheet, asphalt, ply sheet, cold-applied adhesive, SBS Modified Cap Sheet.
3. Fastened Sheathing Paper, Fastened Heavy-Weight base sheet, asphalt, insulation, asphalt, cover board, asphalt, base sheet, asphalt, ply sheet, asphalt, ply sheet, cold-applied adhesive, APP Modified Cap Sheet.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with requirements, provide products by the following:

1. Approved Manufacturers include, but are not limited to:
 - a. CertainTeed
 - b. Firestone Building Products
 - c. Johns Manville
 - d. GAF Materials Corporation
 - e. Performance Roofing Systems, Inc.

- f. TAMKO Roofing Products, Inc.
- g. Tremco

- B. Source Limitations: Obtain components including fasteners for roofing system from same manufacturer as membrane roofing.
- C. Substitutions: Any proposed substitution to the list of Manufacturer's above must be approved a minimum of 10 days in advance of the bid date by submitting the "SUBSTITUTION REQUEST" from enclosed with the bidding documents.
 - 1. No substitutions will be accepted for roof systems after the bid date.

2.2 PERFORMANCE REQUIREMENTS

- A. General Performance: Provide installed roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roofing and base flashings shall remain watertight.
 - 1. Accelerated Weathering: Roofing system shall withstand 2000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.
 - 2. Impact Resistance: Roofing system shall resist impact damage when tested according to ASTM D 3746 or ASTM D4272.
- B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.
- C. FM Global Listing: Roofing, base flashings, and component materials shall comply with requirements in FM Global 4450 or FM Global 4470 as part of a roofing system, and shall be listed in FM Global "RoofNav" for Class 1 or noncombustible construction, as applicable. Identify materials with FM Global markings.
 - 1. Fire/Windstorm Classification: Class 1A-90, 72 MPH peak wind speed.
 - 2. Hail-Resistance Rating: SH.
- D. Energy Star Listing: Roofing system shall be listed on the DOE's ENERGY STAR "Roof Products Qualified Product List" for low-slope roof products.
- E. Exterior Fire-Test Exposure: ASTM E 108 or UL 790, Class A; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
- F. Fire-Resistance Ratings: Comply with fire-resistance-rated assembly designs indicated. Identify products with appropriate markings of applicable testing agency.

2.3 BASE SHEET MATERIALS

- A. Sheathing Paper (Wood Deck): Red-rosin type, minimum 3 lb/100 sq. ft.
 - 1. To be tacked to any wood deck below the insulation and Heavy-Weight base sheet as a slip sheet.
- B. Base Sheet: ASTM D 4601, Type II, nonperforated, asphalt-impregnated and -coated, glass-fiber sheet, dusted with fine mineral surfacing on both sides.

1. To be fastened to the wood deck through the cover board, insulation and sheathing paper to stop asphalt bleed-through.
 2. Weight: 25 lb/100 sq ft. minimum.
- C. Roofing Membrane Sheet: ASTM D 6222/D 6222M, Grade S, Type I or II, APP-modified asphalt sheet (reinforced with polyester fabric); smooth surfaced; suitable for application method specified.
- D. SBS Modified Base Sheet: ASTM D 6163, Type II, Grade S, SBS modified Bitumen, glass-fiber reinforced base sheet as a base layer in a modified Bitumen roof assembly.
1. To be adhered between the coverboard and Type IV plies in a mopping of hot asphalt.

2.4 PLY SHEET MATERIALS

- A. Glass-Fiber Sheet: ASTM D 2178, Type IV, asphalt-impregnated, glass-fiber felt.
1. Type IV interplies to be adhered in hot asphalt between the base sheet and cap sheet.
 2. Acceptable Manufacturer's Products
 - a. Firestone: PLY IV (4) M
 - b. Certaineed: Flintglas Type IV Plysheet
 - c. GAF: GAFGLAS PLY 4
 - d. Johns Manville: Glas Ply IV
 - e. Performance Roofing: PRS Glass Ply IV
 - f. TAMKO: TAM PLY IV
 - g. TREMCO: Thermglass Type IV

2.5 BASE FLASHING SHEET MATERIALS

- A. SBS Flashing Sheet (Hot Asphalt Application): ASTM D 6164, Grade G, Type II, polyester-reinforced, SBS-modified asphalt sheet; granular surfaced; suitable for application method specified, and as follows:
1. Thickness: 160 mil
 2. Granule Color: White.
 3. Fire Resistant Sheet
 4. Acceptable Manufacturer's Products
 - a. Firestone: SBS PREM FR
 - b. Certaineed: Flintlastic FR-P
 - c. GAF: Ruberoid Mop FR
 - d. Johns Manville: Dynalastic 180 S
 - e. Performance Roofing: NA
 - f. TAMKO: Awaplan Premium
 - g. TREMCO: POWERply HE FR
- B. SBS Flashing Sheet (Cold-Applied Application): ASTM D 6164, Grade G, Type II, polyester-reinforced, SBS-modified asphalt sheet; granular surfaced; suitable for application method specified, and as follows:
1. Thickness: 160 mil
 2. Granule Color: White.
 3. Fire Resistant Sheet
 4. Acceptable Manufacturer's Products
 - a. Firestone: SBS PREM FR
 - b. Certaineed: Flintlastic FR-P
 - c. GAF: Ruberoid Mop FR
 - d. Johns Manville: Dynalastic 250 FR
 - e. Performance Roofing: NA

- f. TAMKO: Awaplan Premium ER
 - g. TREMCO: POWERply HE FR
- C. APP Flashing Sheet (Cold-Applied Application): ASTM D 6222, Grade G, Type I, non woven polyester-reinforced, APP-modified asphalt sheet; granular surfaced; suitable for application method specified, and as follows:
 - 1. Granule Color: Black or Charcoal, final color to be selected by Owner and Architect.
 - 2. Thickness 160 mils minimum
 - 3. Fire Resistant Sheet
 - 4. Acceptable Manufacturer's Products
 - a. Firestone: APP 180 FR COOL
 - b. Certainteed: NA
 - c. GAF: NA
 - d. Johns Manville: Bicolor MFR
 - e. Performance Roofing: Derbicolor GP FR
 - f. TAMKO: Awaplan Premium ER
 - g. TREMCO: POWERply HE FR

2.6 AUXILIARY ROOFING MATERIALS

- A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with roofing.
- B. Asphalt Primer: ASTM D 41/D 41M.
- C. Roofing Asphalt: ASTM D 312, Type III or IV as recommended by roofing system manufacturer for application.
- D. Roofing Asphalt: ASTM D 6152, SEBS modified.
- E. Cold-Applied Adhesive: Roofing system manufacturer's standard asphalt-based, one- or two-part, asbestos-free, cold-applied adhesive specially formulated for compatibility and use with roofing membrane and base flashings.
- F. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required by roofing system manufacturer for application.
- G. Mastic Sealant: Polyisobutylene, plain or modified bitumen; nonhardening, nonmigrating, nonskinning, and nondrying.
- H. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Global 4470, designed for fastening roofing components to substrate; tested by manufacturer for required pullout strength, and acceptable to roofing system manufacturer.
- I. Roofing Granules: Ceramic-coated roofing granules, No. 11 screen size with 100 percent passing No. 8 sieve and 98 percent of mass retained on No. 40 sieve, color to match roofing.
- J. Miscellaneous Accessories: Provide those recommended by roofing system manufacturer.

2.7 ROOF INSULATION

- A. General: Provide preformed roof insulation boards that comply with requirements and referenced standards, selected from manufacturer's standard sizes and of thicknesses indicated.
- B. Polyisocyanurate Board Insulation: ASTM C 1289, Type II, Class I, glass-fiber mat facer on both major surfaces.
 - 1. Preformed units to fit applications indicated, selected from the manufacturer's standard thicknesses, widths, and lengths.
 - 2. Manufacturers:
 - a. Atlas Roofing Corp.
 - b. Firestone Building Products Company
 - c. GAF Materials Corporation
 - d. Johns Manville International, Inc.
 - e. Certainteed Corp
- C. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated or needed for sloping to drain. Fabricate to slopes indicated.

2.8 INSULATION ACCESSORIES

- A. General: Roof insulation accessories recommended by insulation manufacturers for intended use and compatible with membrane roofing.
- B. Mechanical Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FMG 4470, designed for fastening roofing membrane and insulation components to substrate, tested by manufacturer for required pullout strength, and acceptable to roofing system manufacturer.
- C. Cold Fluid-Applied Low-Rise Foam Adhesive: Manufacturer's standard cold fluid-applied low-rise foam formulated to adhere roof insulation to substrate.
- D. Insulation Cant Strips: ASTM C278, perlite insulation board or cellulosic-fiber insulation board ASTM C208, Type II, Grade I. Approved for use in a Class A roof system and by roofing manufacturer.
- E. Provide tapered edge strips in the same material as the cant strips.
- F. Provide exterior grade wood nailer strips, as recommended by roofing manufacturer.
- G. Cover Board: ASTM C208, Type II, Grade 1, cellulosic-fiber insulation board, 1/2-inch thick. Approved for use in Class A roof system and by the roof system manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work:
 - 1. Verify that roof openings and penetrations are in place, curbs are set and braced, and roof-drain bodies are securely clamped in place.

2. Verify that wood cants, blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
 3. Verify that surface plane flatness and fastening of steel roof deck complies with requirements in Section 053100 "Steel Decking."
 4. Verify that deck is securely fastened with no projecting fasteners and with no adjacent units in excess of 1/16 inch out of plane relative to adjoining deck.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. The Contractor shall not remove any more roofs during the day than they can completely replace with new roofing materials including night seal-off and flashing of perimeter and accessories.
- D. Re-roofing shall not begin from November 1 through March 1, without specific approval from Deputy Director, Operations.**

3.2 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.
- B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.

3.3 INSTALLATION, GENERAL

- A. Comply with roofing system manufacturer's written instructions and applicable recommendations of ARMA/NRCA's "Quality Control Guidelines for the Application of Polymer Modified Bitumen Roofing."
- B. Start installation of roofing membrane in presence of roofing system manufacturer's technical personnel when required by the manufacturer or when requested by the designer or owner's representative.
- C. Where roof slope exceeds 1/2 inch per 12 inches, install roofing sheets parallel with slope.
1. Backnail roofing sheets to substrate according to roofing system manufacturer's written instructions.
- D. Cooperate with the construction administrator and allow for inspection of the roof system as it is being installed.
- E. Coordinate installing roofing system so insulation and other components of the roofing membrane system are not permanently exposed and are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecasted.
1. Provide tie-offs at end of each day's work to cover exposed roofing membrane sheets and insulation with a course of coated felt set in roofing cement or hot roofing asphalt with joints and edges sealed.
 2. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of the roofing system.
 3. Remove and discard temporary seals before beginning work on adjoining roofing.

- F. Asphalt Heating: Heat asphalt to its equiviscous temperature, measured at the mop cart or mechanical spreader immediately before application. Circulate asphalt during heating. Do not raise asphalt temperature above equiviscous temperature range more than one hour before time of application. Do not exceed asphalt manufacturer's recommended temperature limits during asphalt heating. Do not heat asphalt within 25 deg F of flash point. Discard asphalt maintained at a temperature exceeding finished blowing temperature for more than four hours.
 - 1. Apply hot roofing asphalt within plus or minus 25 deg F of equiviscous temperature.
- G. Absolutely No Torching of the membrane, flashing plies or any other components will be allowed.
 - 1. Do not torch to dry any substrate unless pre-approved and as directed by the owner's representative with approval from the designer.
- H. Heat Welding of seams will be permitted on cold-applied membrane cap sheets and flashing plies as required by the manufacturer.
- I. Coordinate installing roofing accessories, blocking, and nailers that are integral with the roof system.
 - 1. Temporarily flash until permanent flashing or similar measures can be put into place to prevent water from entering the roof system or building below.
- J. Substrate-Joint Penetrations: Prevent roofing asphalt and adhesives from penetrating substrate joints, entering building, or damaging roofing system components or adjacent building construction.

3.4 SLIP SHEET INSTALLATION

- A. Loosely lay one course of sheathing paper, lapping edges and ends a minimum of 2 inches and 6 inches, respectively. Minimally tack to deck to hold in place.

3.5 HEAVY WEIGHT BASE SHEET INSTALLATION

- A. Install one lapped coated heavy-weight base sheet course on top of the slip sheet and mechanically fasten to substrate according to roofing system manufacturer's written instructions and in accordance with the FMG requirements for this project.

3.6 INSULATION INSTALLATION

- A. Comply with roofing system manufacturer's written instructions for installing roof insulation.
- B. Nailer Strips: Mechanically fasten 4-inch nominal-width wood nailer strips as required by the manufacturer and for all penetrations.
- C. Install insulation with long joints of insulation in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding ¼ inch with insulation.
- D. Adhered insulation: Install each layer of insulation and adhere to substrate as follows:
 - 1. Set each layer of insulation in solid mopping of hot roofing asphalt.
 - 2. Set each layer of insulation in a cold fluid-applied low-rise foam adhesive.

- E. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Stagger joints from joints in insulation below a minimum of 6 inches in each direction. Loosely butt cover boards together and secure to roof deck.
 - 1. Install a mopping of hot roofing asphalt and immediately bond to previous layer of insulation.
 - 2. Install a cold fluid-applied low-rise foam adhesive to the top of the previous layer of insulation as recommended by the roof system manufacturer.
- F. Preformed Saddles and Crickets: Install and secure preformed saddles and crickets where indicated and secure with hot asphalt or cold fluid-applied low-rise foam adhesive, as recommended by the roofing system manufacturer.
- G. Insulation Cant Strips at vertical surfaces and Install tapered edge strips at perimeter edges of roof that do not terminate at vertical surfaces: Install an secure, 45-degree insulation cant strips at junctures of roofing membrane system with vertical surfaces or angle changes greater than 45 degrees. Install in mopping of hot roofing asphalt or cold fluid-applied low-rise foam adhesive, as recommended by the roofing system manufacturer.

3.7 SBS BASE-SHEET INSTALLATION

- A. Install lapped SBS base sheet course, extending sheet over and terminating beyond cants. Attach base sheet as follows:
 - 1. Adhere to substrate in solid mopping of hot roofing asphalt.

3.8 TYPE IV PLY SHEET INSTALLATION

- A. Install two (2) glass-fiber TYPE IV ply sheets according to roofing manufacturer's written instructions starting a low point of roofing system. Align glass-fiber base-ply sheets without stretching. Shingle side laps of glass-fiber base-ply sheets uniformly to ensure required number of glass-fiber base-ply sheets covers substrate at any point. Shingle in direction to shed water. Extend glass-fiber base ply sheets over and terminate beyond cants.
 - 1. Embed each glass-fiber ply sheet in a continuous mopping of hot asphalt, to form a uniform membrane without glass-fiber ply sheets touching.

3.9 SBS-MODIFIED BITUMINOUS MEMBRANE CAP SHEET INSTALLATION (HOT ASPHALT OR COLD-APPLIED)

- A. Install SBS modified Bituminous roofing cap sheet according to roofing manufacturer's written instructions, starting at low point of roofing system. Extend roofing cap sheet over and terminate beyond cants, installing as follows:
 - 1. Unroll roofing cap sheets and allow them to relax for time period required by manufacturer.
 - 2. Adhere to substrate in a solid mopping of hot roofing asphalt applied at not less than 425 deg F.
 - 3. Adhere to preceding plies in cold-applied adhesive.
 - 4. Prepare and seal seams per the manufacturer's written instructions.
- B. Laps: Accurately align roofing membrane sheets, without stretching, and maintain uniform side and end laps. Stagger end laps. Completely bond and seal laps, leaving no voids.
 - 1. Repair tears and voids in laps and lapped seams and not completely sealed.
 - 2. Apply roofing granules to cover bleed-out at laps while material is hot.
- C. Install roofing membrane sheets so side and end laps shed water.

3.10 APP-MODIFIED BITUMINOUS MEMBRANE INSTALLATION

- A. Install modified bituminous roofing cap sheet according to roofing manufacturer's written instructions, starting at low point of roofing system. Extend roofing sheets over and terminate beyond cants, installing as follows:
 - 1. Adhere to substrate in cold-applied adhesive.
 - 2. Torch apply to substrate.
 - 3. Unroll roofing sheets and allow them to relax for minimum time period required by manufacturer.
- B. Laps: Accurately align roofing sheets, without stretching, and maintain uniform side and end laps. Stagger end laps. Completely bond and seal laps, leaving no voids.
 - 1. Repair tears and voids in laps and lapped seams not completely sealed.
 - 2. Apply roofing granules to cover exuded bead at laps while bead is hot.
- C. Install roofing sheets so side and end laps shed water.

3.11 FLASHING AND STRIPPING INSTALLATION

- A. Install base flashing over cant strips and other sloping and vertical surfaces, at roof edges, and at penetrations through roof; secure to substrates according to roofing system manufacturer's written instructions and as follows:
 - 1. Prime substrates with asphalt primer if required by roofing system manufacturer.
 - 2. Backer-Sheet Application: Adhere backer sheet to substrate in a solid mopping of hot roofing asphalt.
 - 3. Flashing-Sheet Application: Adhere flashing sheet to substrate in asphalt roofing cement at rate required by roofing system manufacturer.
 - 4. Flashing-Sheet Application: Torch apply flashing sheet to substrate.
- B. Extend base flashing up walls or parapets a minimum of 8 inches above roofing membrane and 4 inches onto field of roofing membrane.
- C. Mechanically fasten top of base flashing securely at terminations and perimeter of roofing.
 - 1. Seal top termination of base flashing with a strip of glass-fiber fabric set in asphalt roofing cement.
- D. Install roofing cap-sheet stripping where metal flanges and edgings are set on roofing according to roofing system manufacturer's written instructions.

3.12 FIELD QUALITY CONTROL

- A. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion.
 - 1. Notify Architect and Owner 48 hours in advance of date and time of inspection.
- B. Repair or remove and replace components of roofing system where inspections indicate that they do not comply with specified requirements
- C. Repair or replace items damaged caused by the contractor or subcontractors.

- D. Roofing system will be considered defective if it does not pass tests and inspections.
 - 1. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

3.13 FINAL INSPECTION

- A. Roofing Contractor shall notify Construction Administrator when Manufacturer's final Warranty inspection is to occur. Furnish a copy of the warranty inspection report to Construction Administrator.
- B. The Contractor must provide copies of all disposal receipts for any hazardous materials removed from roof.

3.14 PROTECTING AND CLEANING

- A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.
- B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.
- D. Protect other roof and building areas adjacent to the work from damage due to construction operations.
- E. Do not store materials on or traffic roofs that are not part of the scope of work without approval.

3.15 ROOFING INSTALLER'S WARRANTY

- A. WHEREAS _____ of _____, herein called the "Roofing Installer," has performed roofing and associated work on the following project:
 - 1. Owner: State of Missouri
 - 2. Address: P.O. Box 809, 301 West High Street Jefferson City, Missouri 65102
 - 3. Building Name/Type: _____
 - 4. Address: _____
 - 5. Area of Work: _____
 - 6. Acceptance Date: _____
 - 7. Warranty Period: Five (5) Years from the date of substantial completion.
 - 8. Expiration Date: _____
- B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period.
- C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period he will, at his own cost and expense, make or cause to be

made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.

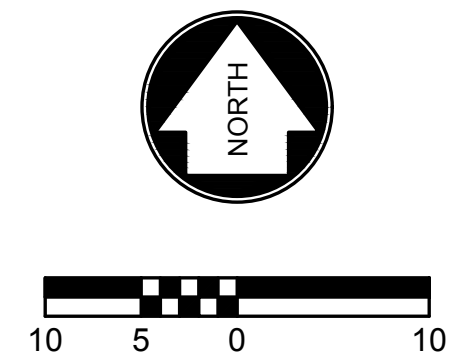
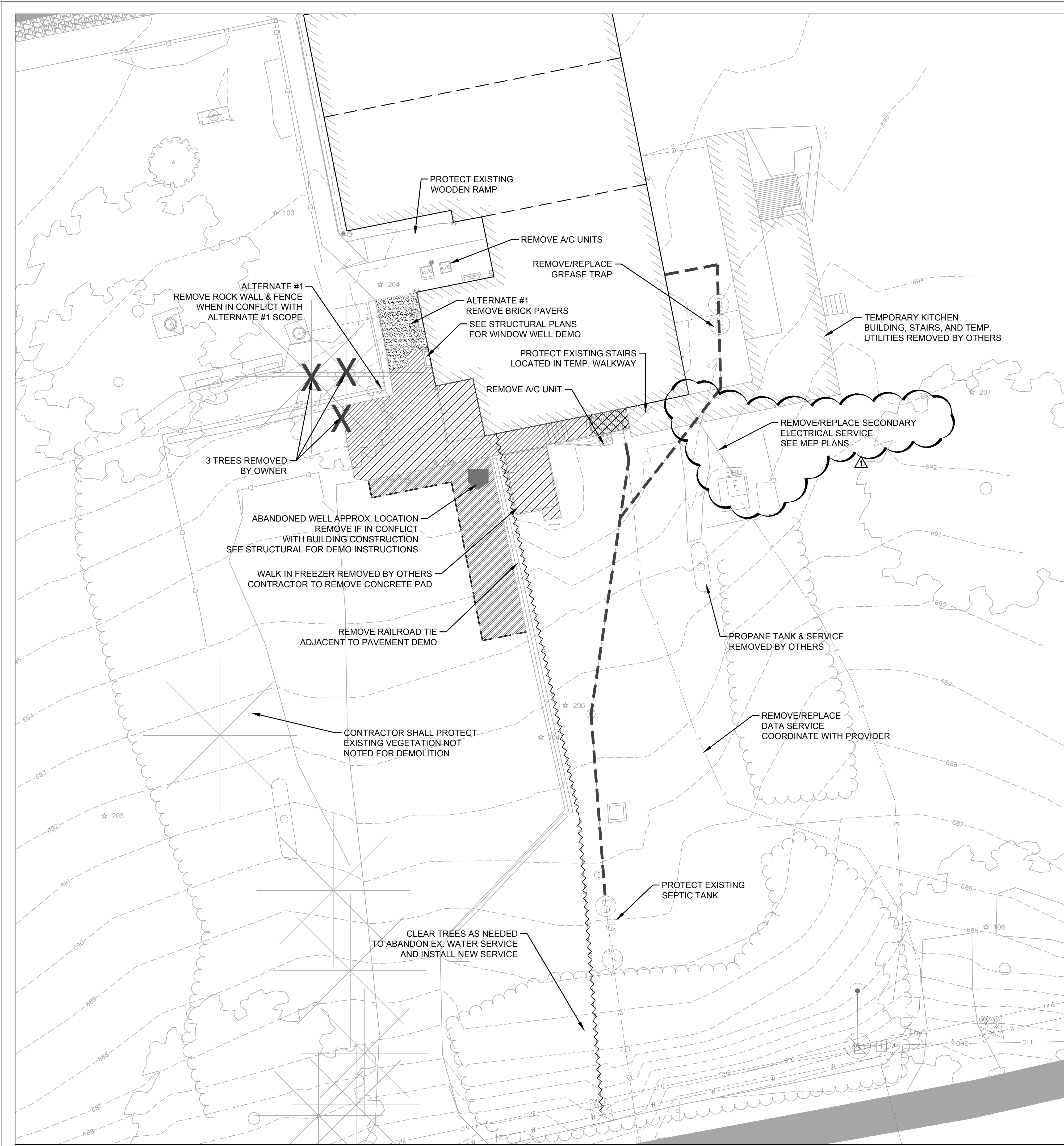
- D. This Warranty is made subject to the following in terms and conditions:
1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
 - a. Lightning;
 - b. Peak gust wind speed exceeding 72 mph;
 - c. Fire;
 - d. Failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
 - e. Faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
 - f. Vapor condensation on bottom of roofing; and
 - g. activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.
 2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
 3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.
 4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.
 5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.
 6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.
 7. The liability of the Surety Company under the installer warranty provisions of this contract is limited to correcting defective workmanship and materials for a period of two years from the substantial completion date of the project. Any warranty beyond the first two years is an agreement between the owner and the contractor and falls outside the performance bond obligation.
 8. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of re-

sponsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed this _____ day of _____, 20____.

1. Authorized Signature: _____
2. Name: _____
3. Title: _____

END OF SECTION 075213



| DEMOLITION LEGEND | |
|-------------------|----------------------------------|
| | DENOTES ASPHALT PAVEMENT REMOVAL |
| | DENOTES WOOD DECK/RAMP REMOVAL |
| | DENOTES BRICK PAVEMENT REMOVAL |
| | DENOTES CONCRETE REMOVAL |
| | DENOTES CURB REMOVAL |
| | DENOTES FULL DEPTH SAW CUT |
| | DENOTES SEWER REMOVAL |
| | DENOTES FENCE REMOVAL |
| | DENOTES TREE REMOVAL |
| | DENOTES WATERLINE REMOVAL |

- DEMOLITION NOTES:**
- THE SCOPE OF DEMOLITION IS NOT LIMITED EXCLUSIVELY TO THE WORK INDICATED ON THE DEMOLITION PLAN. THE CONSTRUCTION DOCUMENTS ARE PROVIDED AS A GENERAL GUIDE FOR DEMOLITION. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ADDITIONAL DEMOLITION THAT MAY BE REQUIRED FOR PROPER INSTALLATION OF NEW WORK. SEE ALL CONSTRUCTION DOCUMENTS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
 - CONTRACTOR SHALL ERECT BARRIERS, FENCES, GUARDRAILS, ENCLOSURES, CHUTES, OR OTHER MEANS NECESSARY TO PROTECT PERSONNEL, STRUCTURES, AND UTILITIES REMAINING INTACT.
 - UNLESS NOTED FOR DEMOLITION, PROTECT ALL TREES AND PLANTS FROM DAMAGE.
 - ALL UTILITIES NOT SPECIFICALLY MARKED FOR DEMOLITION, SHALL BE PROTECTED THROUGHOUT CONSTRUCTION. SPECIAL SUPPORTS, BRACING ETC. SHOULD BE PROVIDED TO PROTECT EXISTING UTILITIES TO REMAIN.
 - THE CONTRACTOR SHALL SCHEDULE AND COORDINATE ALL UTILITY DEMOLITION, SHUTOFFS AND SWITCH OVERS WITH THE RESPECTIVE UTILITY COMPANY.
 - THE CONTRACTOR SHALL PROTECT ALL ITEMS, NOT SPECIFICALLY NOTED FOR DEMOLITION. IF ITEMS ARE DAMAGED BY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL REPAIR THE ITEMS AT NO ADDITIONAL COST TO THE OWNER.
 - THE CONTRACTOR SHALL REPAIR ALL SURROUNDING PAVEMENTS, SIDEWALKS AND CURBS DAMAGED BY CONSTRUCTION ACTIVITIES.
 - ALL UTILITY BOXES, MANHOLES, VALVES, POLES AND OTHER APPURTENANCES TO REMAIN, SHALL BE ADJUSTED TO MATCH THE FINISHED GRADE.
 - ALL CONSTRUCTION DEBRIS SHALL BE DISPOSED OF OFFSITE.

UTILITY CONTACTS

WATER - VILLAGE OF ARROW ROCK - SUSAN MCDANIEL 660-837-3608
PROVIDED BY SLATER WATER DISTRICT

ELECTRIC - EVERGY - TONY BACHTEL 660-548-3144

TELEPHONE/DATA - OTELCO - BOBBY BROWNFELD 660-621-2512

SEWER - VILLAGE OF ARROW ROCK - SUSAN MCDANIEL 660-837-3608

| CONTROL POINTS TABLE | | | | |
|----------------------|-------------|-------------|-----------|-------------|
| POINT # | NORTHING | EASTING | ELEVATION | DESCRIPTION |
| 100 | 1178812.58' | 1514130.17' | 695.12' | PK |
| 101 | 1178770.83' | 1513823.39' | 704.47' | PK |
| 102 | 1178527.02' | 1514009.27' | 681.50' | PK |
| 103 | 1178735.94' | 1514015.11' | 698.93' | NAIL |
| 104 | 1178633.24' | 1514067.09' | 691.82' | PK |
| 105 | 1178663.50' | 1514038.03' | 695.71' | PK |
| 106 | 1178596.10' | 1514154.31' | 685.21' | NAIL |
| 200 | 1178812.58' | 1514130.17' | 695.06' | GPS PK |
| 201 | 1178770.82' | 1513823.39' | 704.48' | GPS PK |

STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR



Missouri State Certificate of Authority: #2009024884

OFFICE OF
ADMINISTRATION

DIVISION OF FACILITIES
MANAGEMENT, DESIGN,
AND CONSTRUCTION

PROJECT TITLE:
**J HUSTON TAVERN
KITCHEN REBUILD**

**ARROW ROCK STATE
HISTORIC SITE**

ARROW ROCK, MISSOURI

PROJECT #: X2001-01
ASSET #: 7815102008

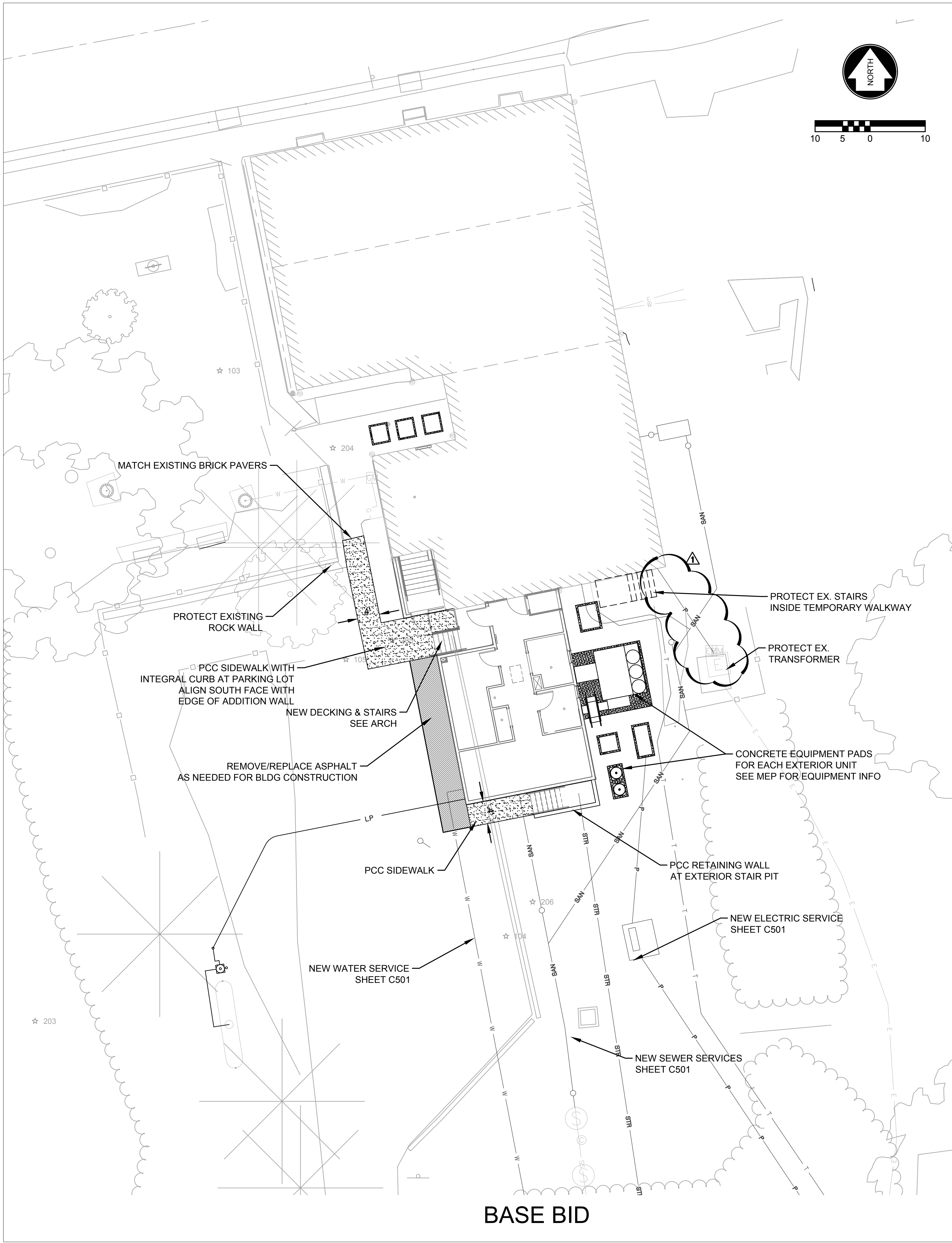
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Demolition Plan


SHEET NUMBER:

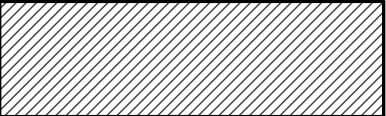
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OF 76 SHEETS
CONSTRUCTION DOCUMENTS
MAY 12, 2020



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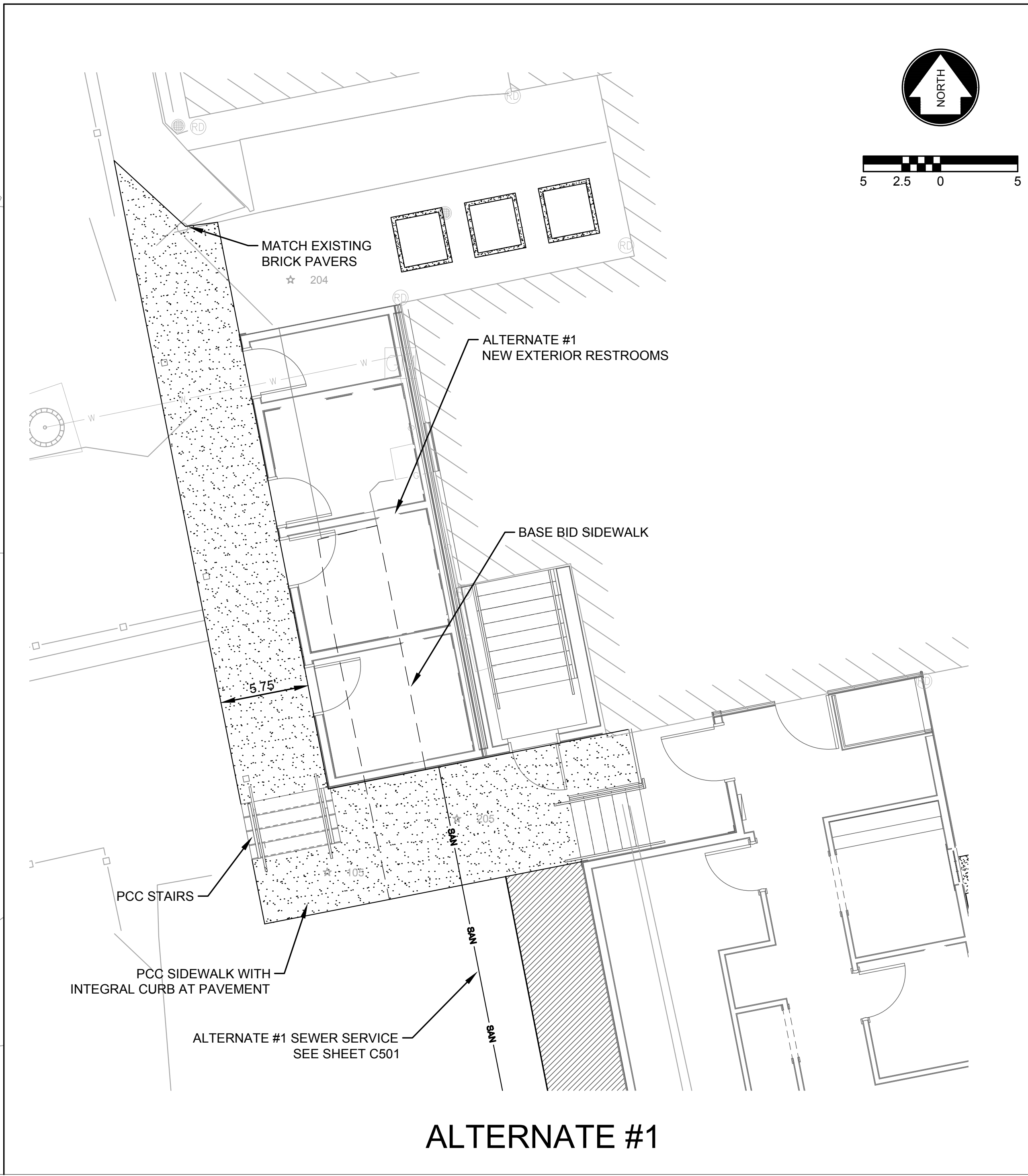
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 DENOTES NEW CONCRETE SIDEWALK

 DENOTES NEW ASPHALT PAVEMENT

GENERAL NOTES:

1. SEE SHEET C601 FOR CONSTRUCTION DETAILS

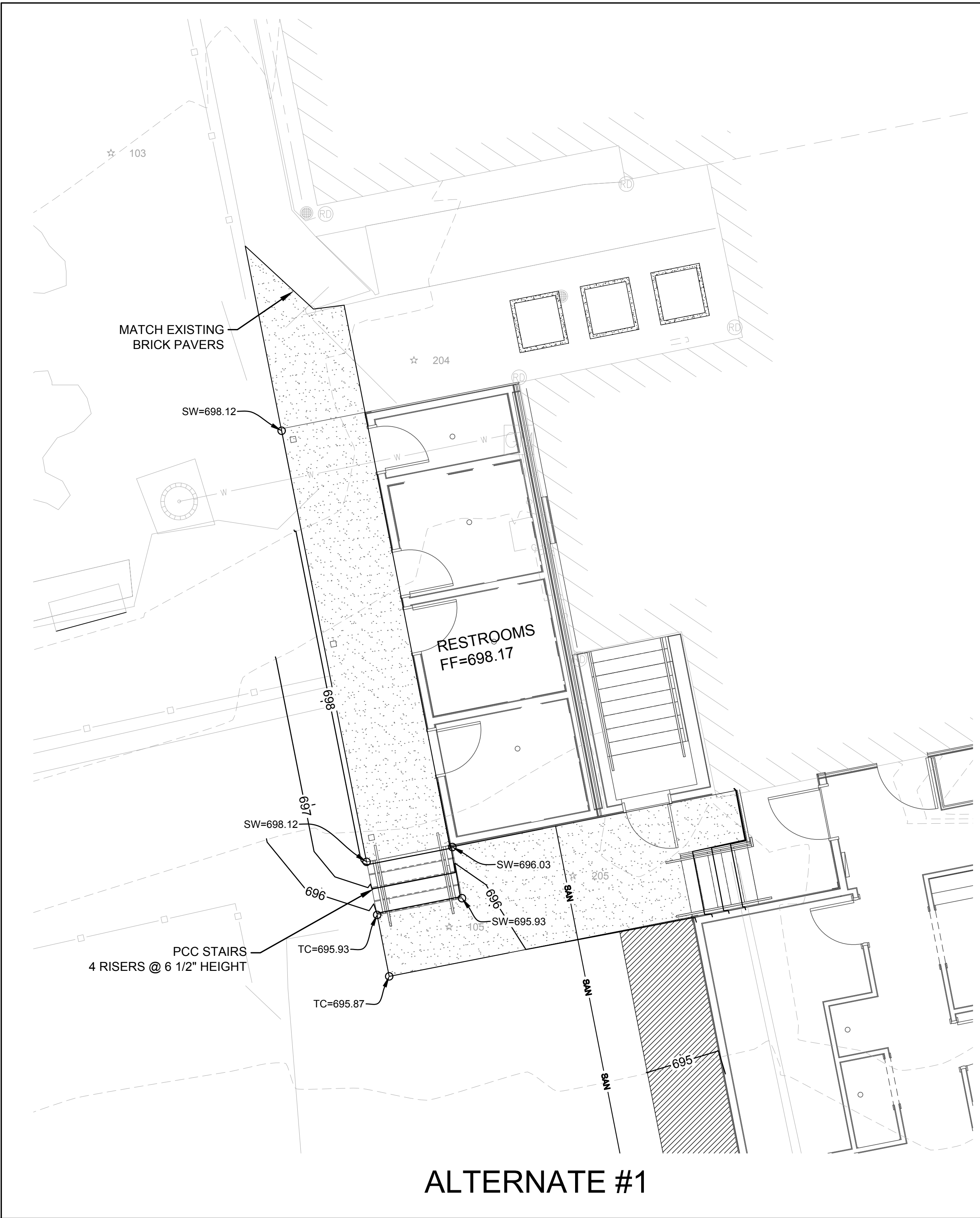


ALTERNATE #1



- SITE GRADING GENERAL NOTES**
1. ALL ELEVATIONS SHOWN ARE TO FINISHED GRADE.
 2. ALL GRADING OPERATIONS, EXCAVATION, FILL, COMPACTION TESTING, AND BACKFILL SHALL BE OBSERVED AND TESTED BY A QUALIFIED GEOTECHNICAL ENGINEER.
 3. THE UPPER 36" OF MATERIAL BELOW THE BUILDING SLAB SHALL BE LOW VOLUME CHANGE MATERIAL (LL<45 & PI<25).
 4. NO PAVEMENTS SHALL BE PLACED PRIOR TO APPROVAL OF THE SUBGRADE BY THE GEOTECHNICAL ENGINEER.
 5. ALL FILL MATERIAL SHALL BE IN COMPLIANCE WITH THE PROJECT SPECIFICATIONS. .
 6. ALL GRADING OPERATIONS SHALL BE STAKED BY A REGISTERED CIVIL ENGINEER OR A LICENSED LAND SURVEYOR.
 7. ALL SIDEWALKS SHALL HAVE A CROSS SLOPE OF 1.5%. (2.0% MAX)
 8. ALL BUILDING ENTRANCES SHALL HAVE A MINIMUM 5' LANDING WITH 1.5% SLOPE AWAY FROM THE BUILDING (2% MAX).

| LEGEND | | |
|--------|---------------------|-------------------------|
| | EXISTING 1' CONTOUR | TC - TOP OF CURB |
| | EXISTING 5' CONTOUR | SW - SIDEWALK ELEVATION |
| | PROPOSED 1' CONTOUR | |
| | PROPOSED 5' CONTOUR | |



STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR



Missouri State Certificate of Authority: #2009024884

OFFICE OF
ADMINISTRATION

DIVISION OF FACILITIES
MANAGEMENT, DESIGN,
AND CONSTRUCTION

PROJECT TITLE:

J HUSTON TAVERN
KITCHEN REBUILD

ARROW ROCK STATE
HISTORIC SITE

ARROW ROCK, MISSOURI

PROJECT #: X2001-01
ASSET #: 7815102008

REVISION:
DATE: 08.03.2020
REVISION:
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ISSUE DATE:

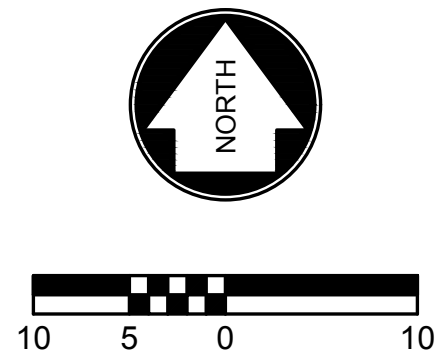
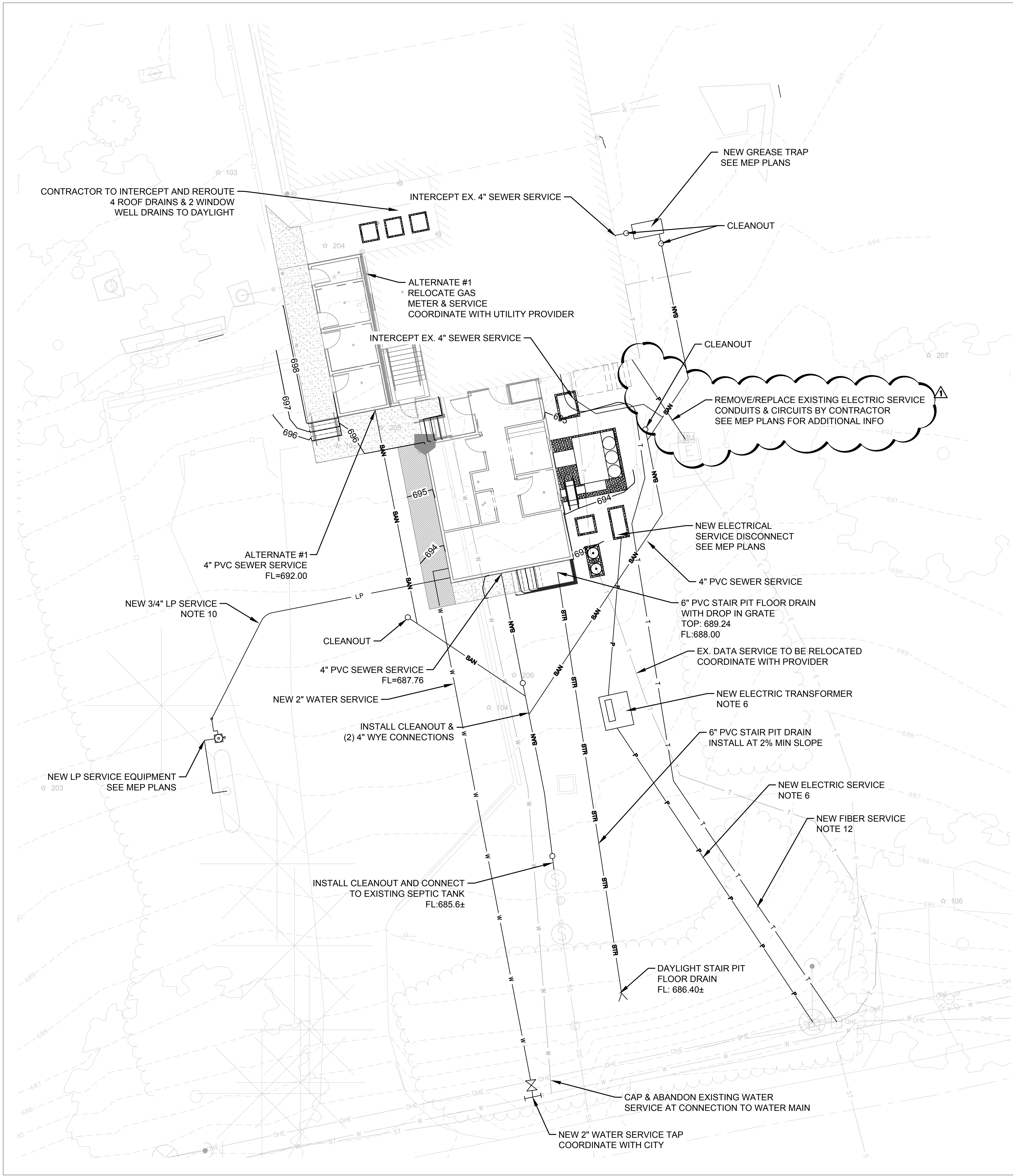
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DRAWN BY: SH/RF
CHECKED BY: RF
DESIGNED BY: RF

SHEET TITLE:
Grading Plan

SHEET NUMBER:

C401

OF 76 SHEETS
CONSTRUCTION DOCUMENTS
MAY 12, 2020



UTILITY GENERAL NOTES

1. PRIOR TO BEGINNING CONSTRUCTION, LOCATION OF SITE UTILITIES SHALL BE VERIFIED BY CONTACTING THE PROPER UTILITY COMPANY PROVIDING SERVICE, BY CONTACTING THE LOCAL ONE-CALL SERVICE OR BY CALLING 811.
2. UTILITY CONTRACTOR WILL BE RESPONSIBLE FOR ALL TAP AND TIE ON FEES REQUIRED, AS WELL AS COST OF UNDERGROUND SERVICE CONNECTIONS TO THE BUILDING.
3. DIMENSIONS SHOWN ARE TO CENTERLINE OF PIPE OR FITTING.
4. ALL WATER AND SANITARY SEWER LEADS TO BUILDING SHALL END 5' OUTSIDE THE BUILDING LIMITS.
5. UTILITY CONTRACTOR SHALL HAVE APPROVAL OF ALL GOVERNING AGENCIES HAVING JURISDICTION OVER UTILITIES SHOWN HEREON PRIOR TO INSTALLATION.
6. ELECTRIC SERVICE - ALL NEW ELECTRIC SERVICE CONDUIT AND TRANSFORMER PAD INSTALLED BY CONTRACTOR. CONDUIT FROM POWER POLE TO TRANSFORMER SHALL BE 4" PVC WITH 36" RADIUS SWEEPS AND PULL STRING. SECONDARY CONDUIT SHALL BE MINIMUM 3" AND NO HALF INCH SIZES WILL BE ALLOWED. ELECTRICAL SERVICE WIRING FROM TRANSFORMER TO KITCHEN ADDITION INSTALLED BY CONTRACTOR. SEE MEP FOR ADDITIONAL WIRING INFORMATION. TRANSFORMER AND PRIMARY SERVICE WIRES FROM POWER POLE TO TRANSFORMER INSTALLED BY UTILITY COMPANY. MAINTAIN 41" OF COVER ON ELECTRICAL PRIMARY AND SECONDARY CONDUITS.
7. REFER TO PLUMBING SHEETS FOR LOCATION OF SEWER AND DOMESTIC WATER CONNECTIONS.
8. CONNECTION TO THE GAS MAIN AND INSTALLATION OF THE GAS METER SHALL BE DONE BY THE GAS SERVICE PROVIDER. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION.
9. CONNECTION TO THE EXISTING WATER MAIN SHALL BE DONE BY THE CONTRACTOR UNDER SUPERVISION OF THE CITY WATER DEPARTMENT. CONTRACTOR TO COORDINATE CONNECTION WITH OWNER'S REPRESENTATIVE AND CITY UTILITY DEPARTMENT.
10. LIQUID PROPANE SERVICE - NEW LIQUID PROPANE (LP) SERVICE SHALL BE 3/4" IPS, SDR 11 POLYETHYLENE PIPE. SEE MEP PLANS FOR ADDITIONAL RISER AND EQUIPMENT INFORMATION.
11. PATCH EXISTING PAVEMENT PER DETAILS ON SHEET C601 IN LOCATIONS WHERE NEW PAVEMENT ISN'T SPECIFIED.
12. FIBER SERVICE - CONTRACTOR SHALL INSTALL 2" PVC CONDUIT. CONTRACTOR TO INSTALL MULE TAPE PROVIDED BY OTELCO IN CONDUIT. FIBER SERVICE CABLING TO BE INSTALLED BY OTELCO.
13. ALL UTILITY WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE UTILITY PROVIDER'S SPECIFICATIONS AND STANDARDS. SEE BELOW FOR UTILITY CONTACT INFORMATION.
14. SEWER SERVICES SHALL MAINTAIN A MINIMUM OF 36" OF COVER AND MINIMUM SLOPE OF 1%.

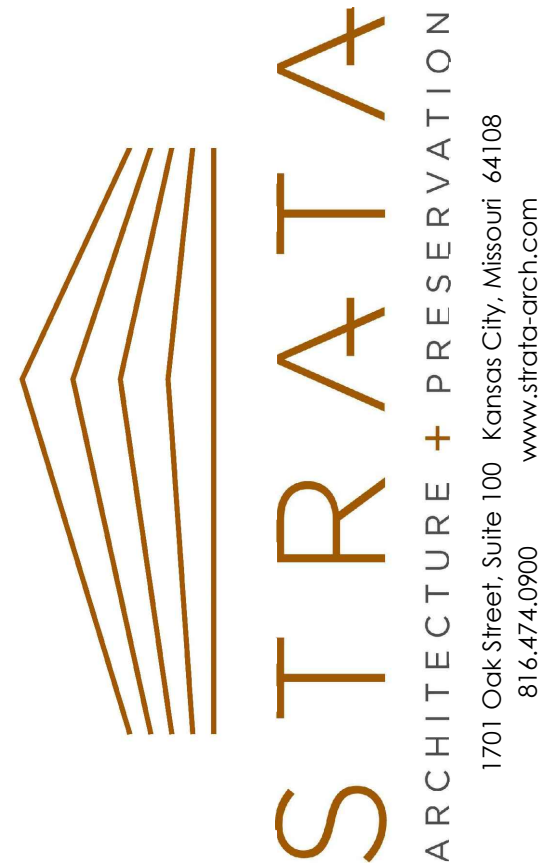
UTILITY CONTACTS

WATER - VILLAGE OF ARROW ROCK - SUSAN MCDANIEL 660-837-3608
PROVIDED BY SLATER WATER DISTRICT

ELECTRIC - EVERGY - TONY BACHTEL 660-548-3144

TELEPHONE/DATA - OTELCO - BOBBY BROWNFIELD 660-621-2512

SEWER - VILLAGE OF ARROW ROCK - SUSAN MCDANIEL 660-837-3608



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MANAGEMENT, DESIGN,
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


PROJECT TITLE:

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ARROW ROCK STATE
HISTORIC SITE

ARROW ROCK, MISSOURI

PROJECT #: X2001-01
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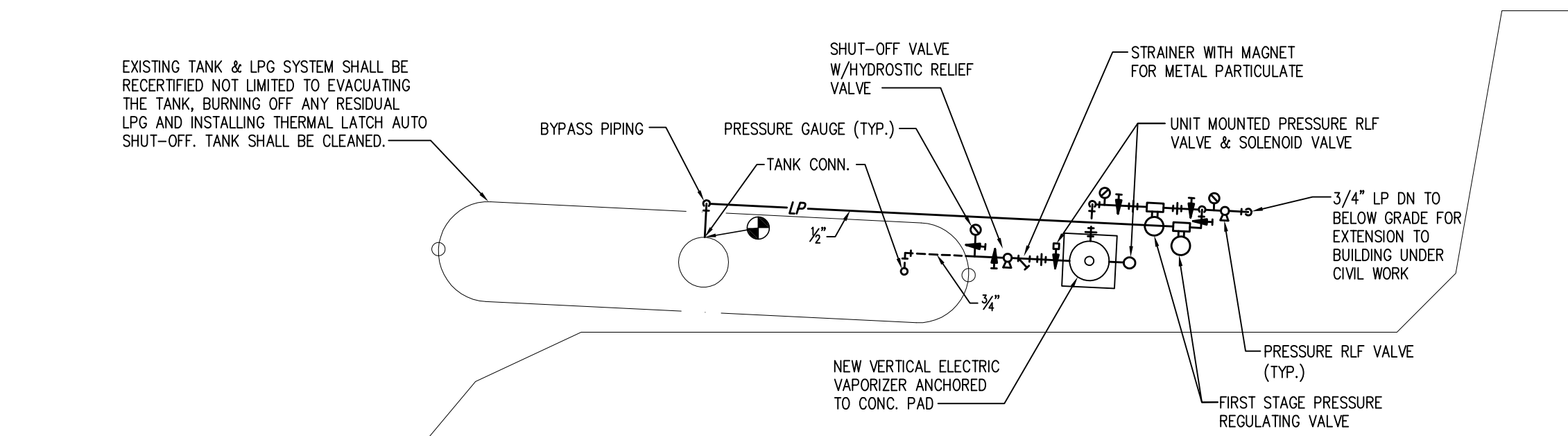
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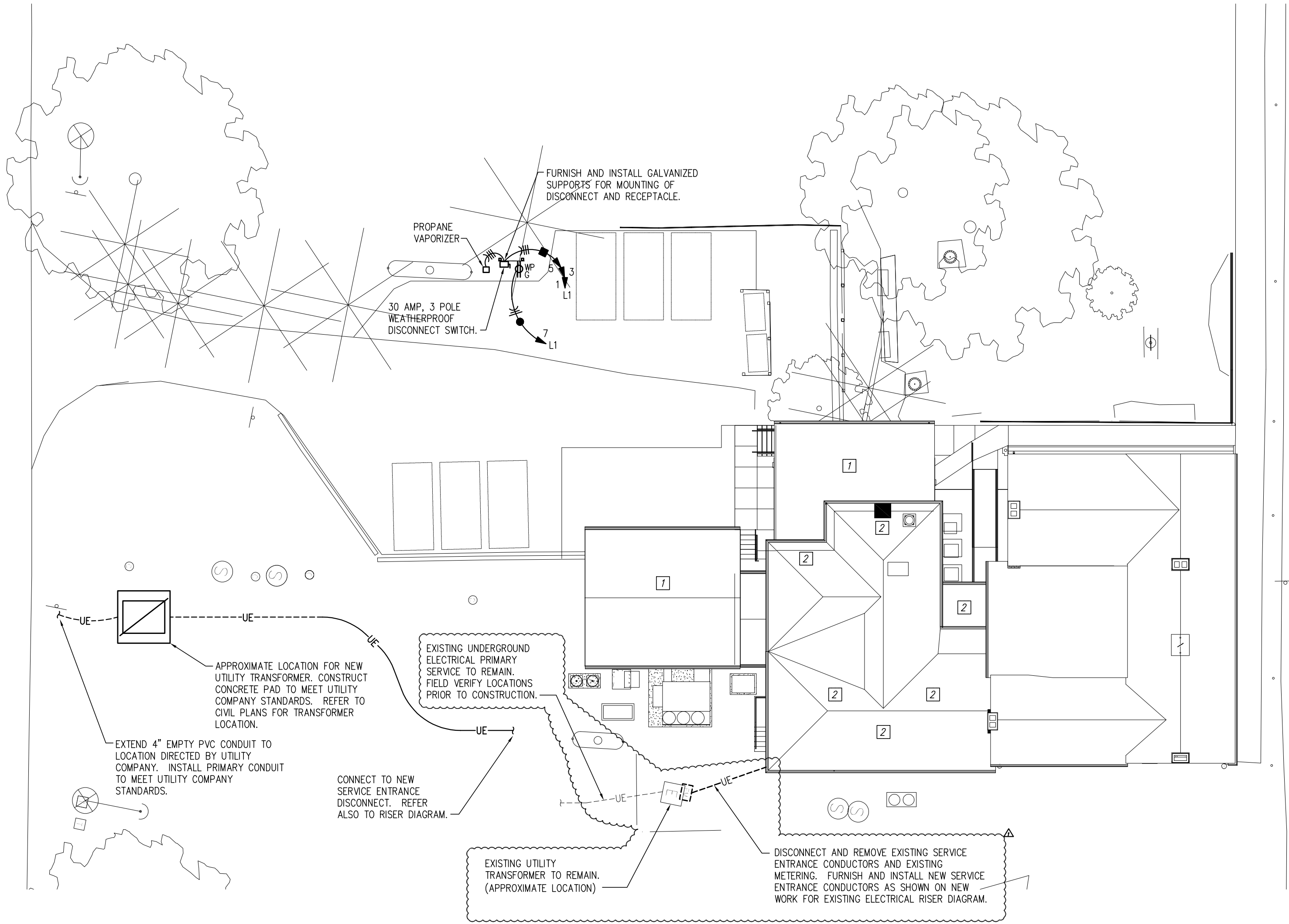
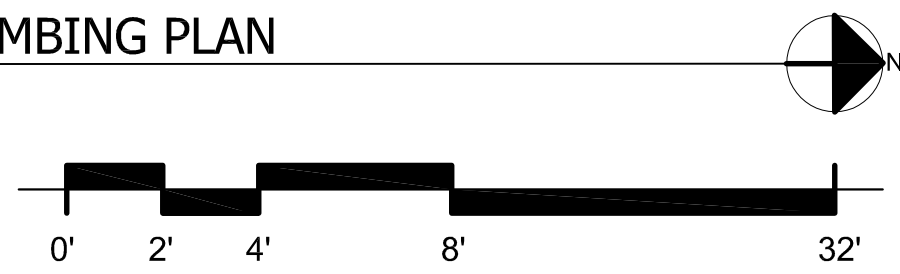
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SHEET NUMBER:

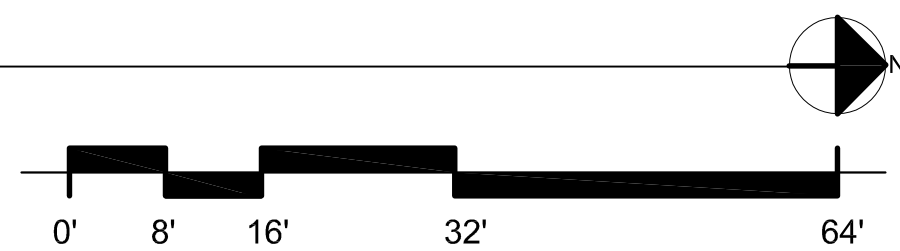
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2 LPG TANK & VAPORIZER - PLUMBING PLAN



1 PLUMBING AND ELECTRICAL SITE PLAN



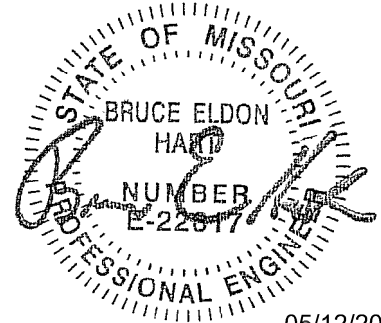
GENERAL NOTES:

1. LOCATE ALL EXISTING BURIED UNDERGROUND UTILITIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES. COORDINATE ALL NEW WORK WITH EXISTING CONDITIONS AND CIVIL DRAWINGS.

KEYED NOTES:

- 1 FURNISH AND INSTALL NEW LIGHTNING PROTECTION SYSTEM ON NEW ROOF. CONNECT TO EXISTING SYSTEM AS REQUIRED.
- 2 MODIFY, ADAPT, EXTEND, RELOCATE EXISTING LIGHTNING PROTECTION SYSTEM AS NEEDED FOR CONSTRUCTION OF NEW BUILDING AND ADDITIONS AND RE-ROOFING OF EXISTING BUILDING.

STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR



Bruce E. Hart - Engineer
Missouri # E-22817



Missouri State Certificate of Authority: #000396

OFFICE OF
ADMINISTRATION

DIVISION OF FACILITIES
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ARROW ROCK, MISSOURI

PROJECT #: X2001-01

ASSET #: 7815102008

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DATE:
REVISION:
DATE:
ISSUE DATE: 05.12.2020

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DRAWN BY: SGB/PIP
CHECKED BY: SGB/PIP
DESIGNED BY: SGB/PIP

SHEET TITLE:
PLUMBING &
ELECTRICAL SITE
PLAN

SHEET NUMBER:

W. L. CASSELL
ASSOCIATES INC.
Mechanical and Electrical Engineers • Since 1933
1600 Baltimore, Suite 300
Kansas City, Missouri 64108
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PES100
OF 101 SHEETS
CONSTRUCTION DOCUMENTS
MAY 12, 2020

OFFICE OF
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DIVISION OF FACILITIES
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REVISION: 05.12.2020
ISSUE DATE: 05.12.2020

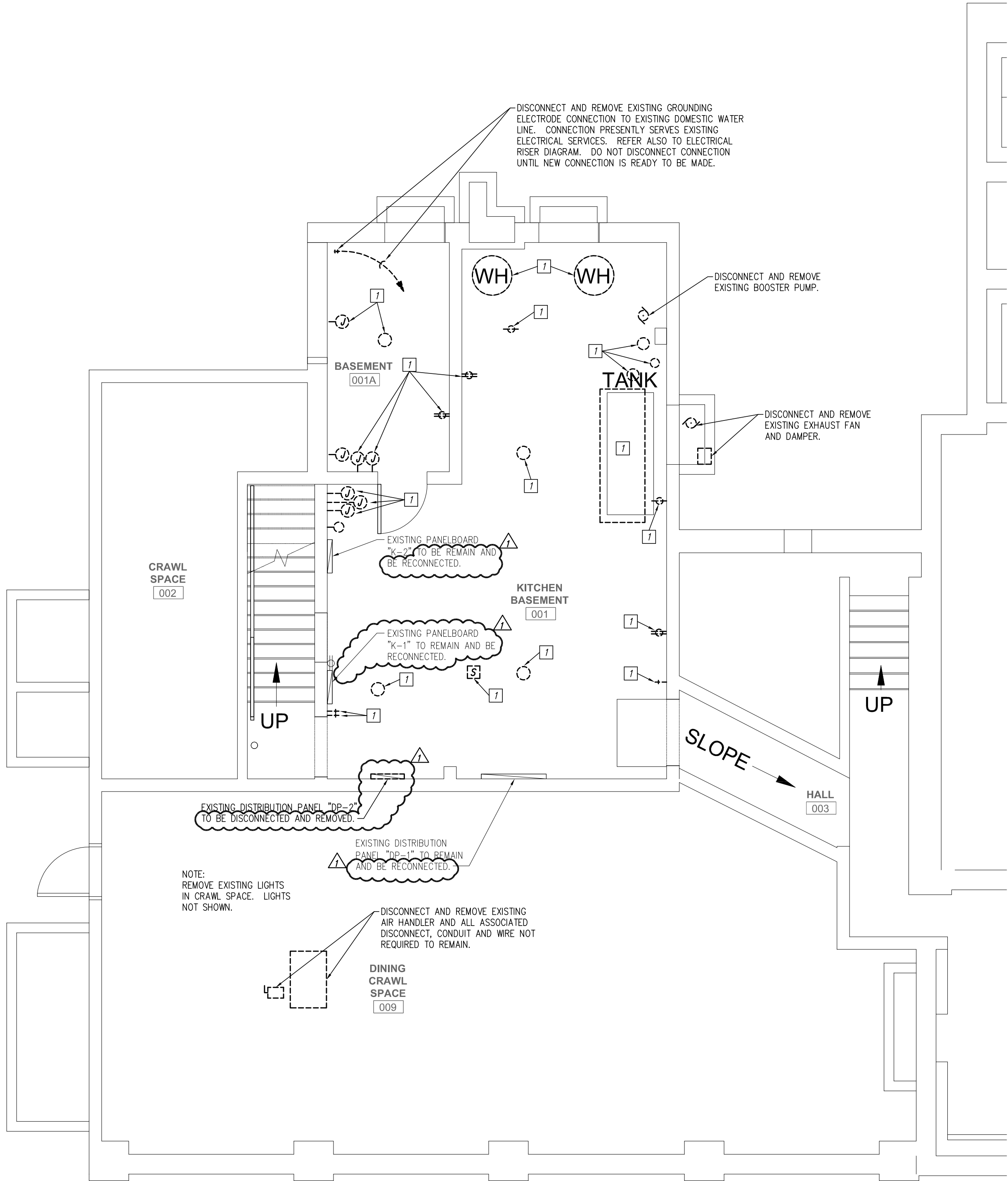
CAD DWG FILE: 19-175 ED050.dwg
DRAWN BY: PIP
CHECKED BY: PIP
DESIGNED BY: PIP

SHEET TITLE:

BASEMENT ELECTRICAL
DEMOLITION PLAN -
SOUTH

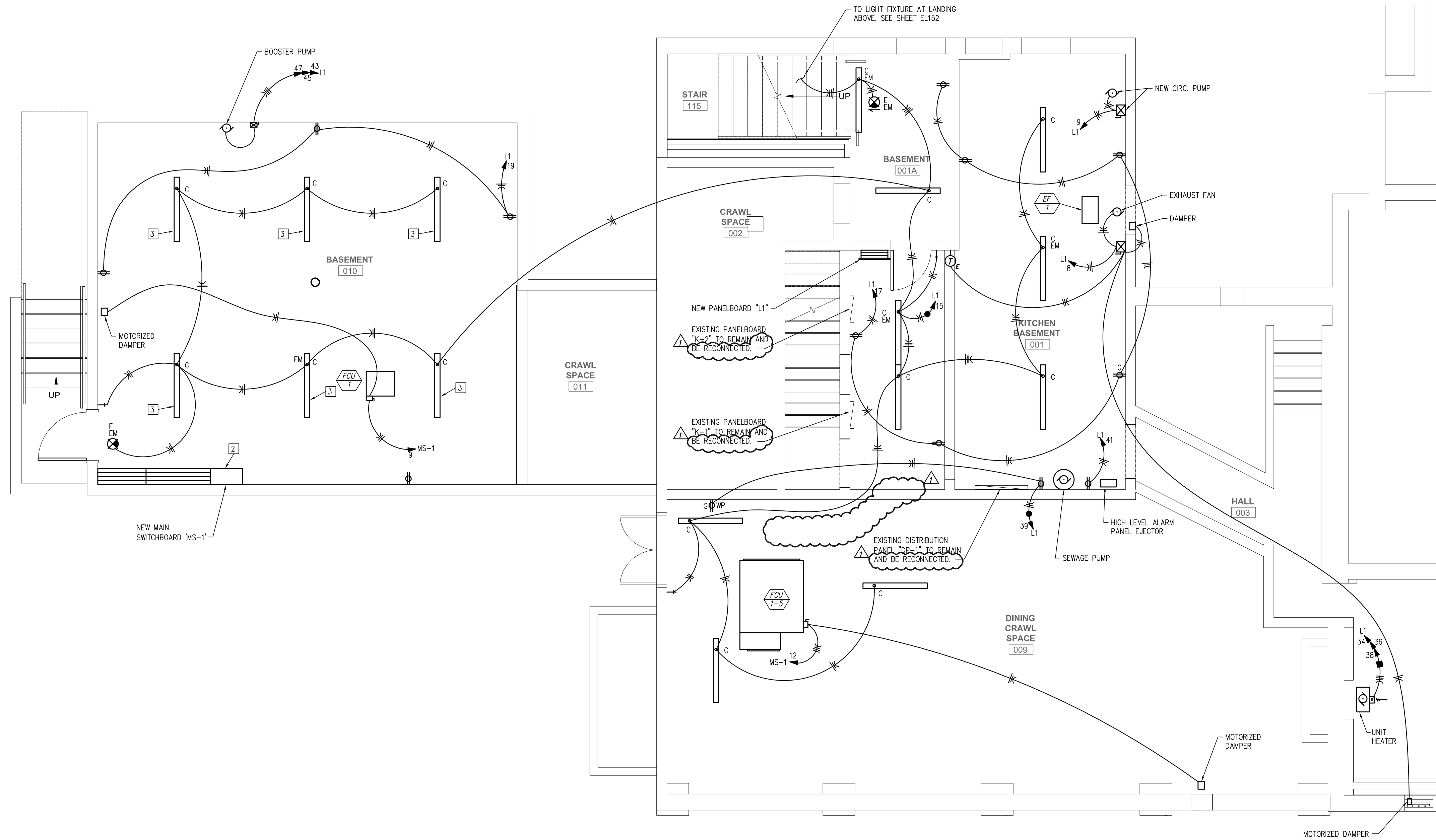
SHEET NUMBER:

ED101
OF 101 SHEETS
CONSTRUCTION DOCUMENTS
MAY 12, 2020

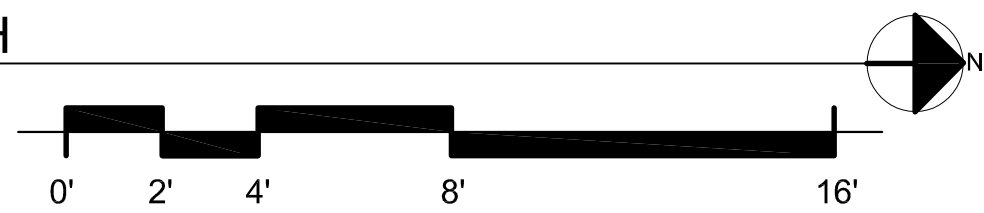


1 BASEMENT ELECTRICAL DEMOLITION PLAN - SOUTH

2019-175 E101.dwg



1 BASEMENT ELECTRICAL PLAN - SOUTH



GENERAL NOTES:

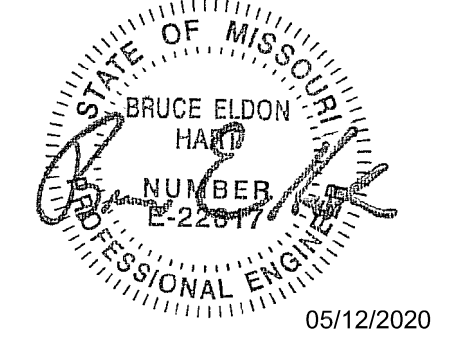
1. REFER TO PROJECT GENERAL NOTES ON SHEET E000.

KEYED NOTES:

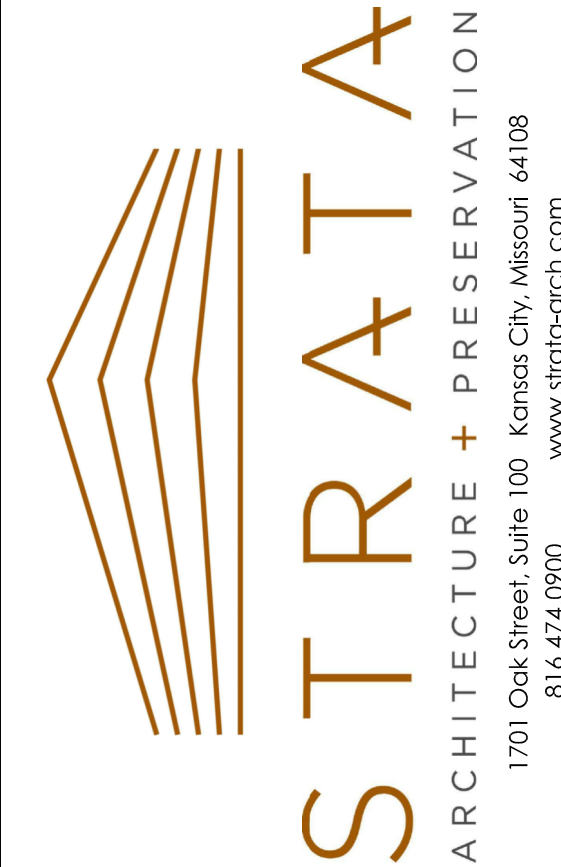
- 1 REFER TO RISER DIAGRAM FOR FEEDER SIZE.
- 2 FURNISH AND INSTALL PULL SECTION AS REQUIRED.
- 3 MOUNT TO STRUCTURE SUPPORTING FLOOR ABOVE.

W. L. CASSELL & ASSOCIATES INC.
Mechanical and Electrical Engineers • Since 1933
1600 Baltimore, Suite 300
Kansas City, Missouri 64108
Phone: 816.842.8437
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STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR



Bruce E. Hart - Engineer
Missouri # E-22817



Missouri State Certificate of Authority: #000396

OFFICE OF
ADMINISTRATION

DIVISION OF FACILITIES
MANAGEMENT, DESIGN,
AND CONSTRUCTION

PROJECT TITLE:

J HUSTON TAVERN
KITCHEN REBUILD

ARROW ROCK STATE
HISTORIC SITE

ARROW ROCK, MISSOURI

PROJECT #: X2001-01
ASSET #: 7815102008

| | |
|-------------|------------|
| REVISION: | 1 |
| DATE: | 08.03.2020 |
| REVISION: | 2 |
| DATE: | |
| REVISION: | 3 |
| DATE: | |
| ISSUE DATE: | 05.12.2020 |

CAD DWG FILE: 19-175 E100.dwg
DRAWN BY: PIP
CHECKED BY: PIP
DESIGNED BY: PIP

SHEET TITLE:

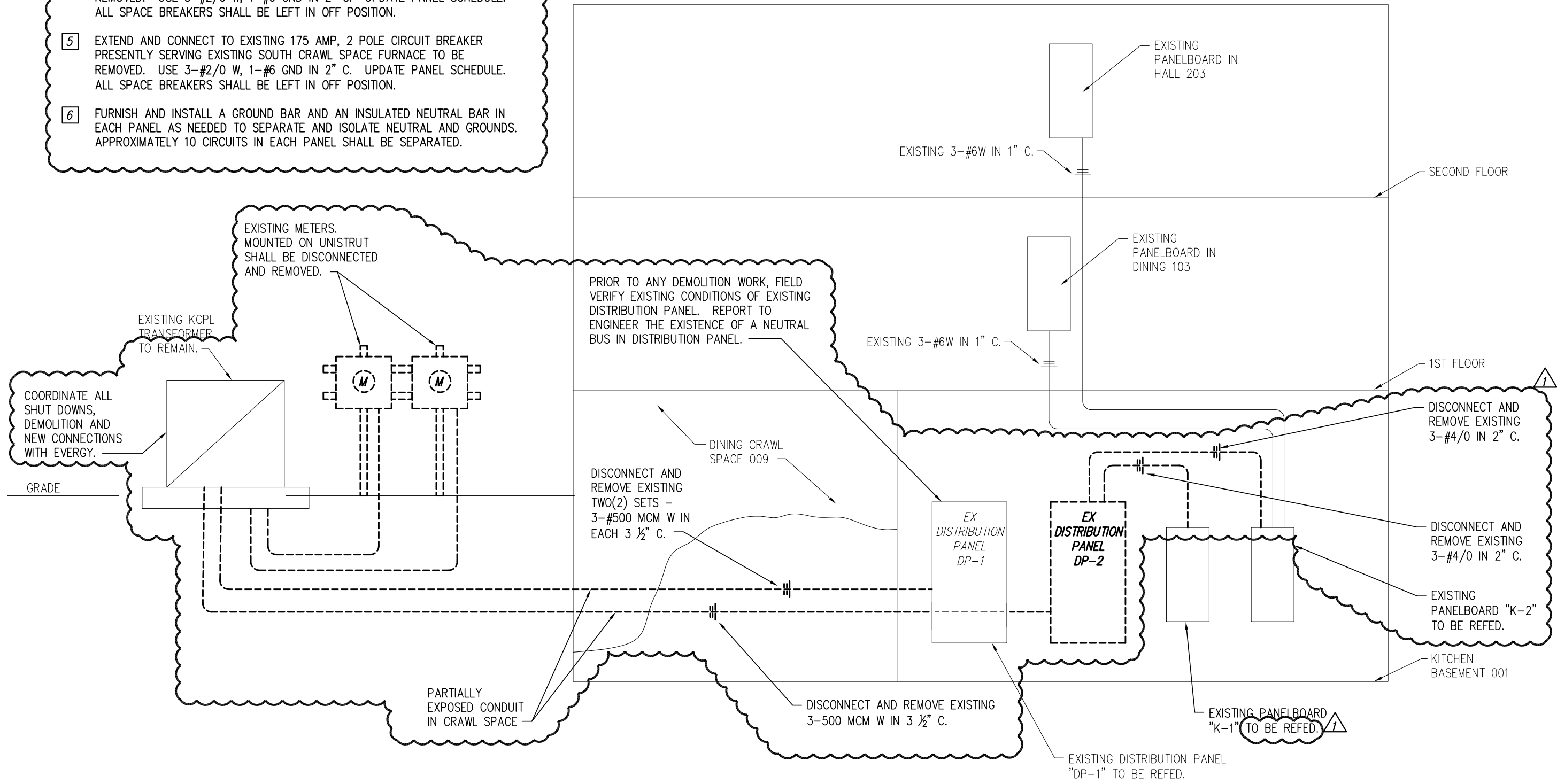
BASEMENT ELECTRICAL
PLAN - SOUTH

SHEET NUMBER:

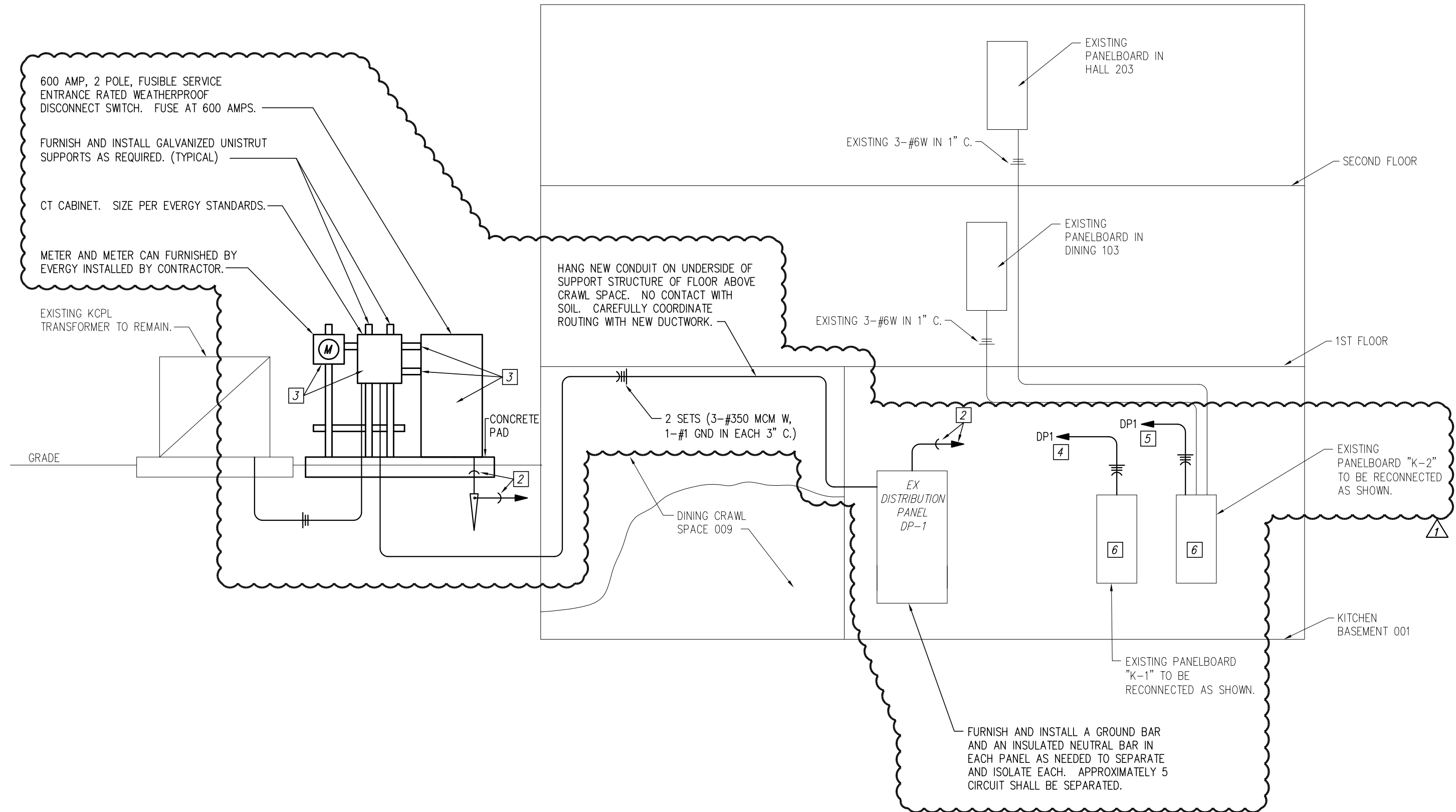
E101
OF 101 SHEETS
CONSTRUCTION DOCUMENTS
MAY 12, 2020

EXISTING RISER DIAGRAM
KEYED NOTES:

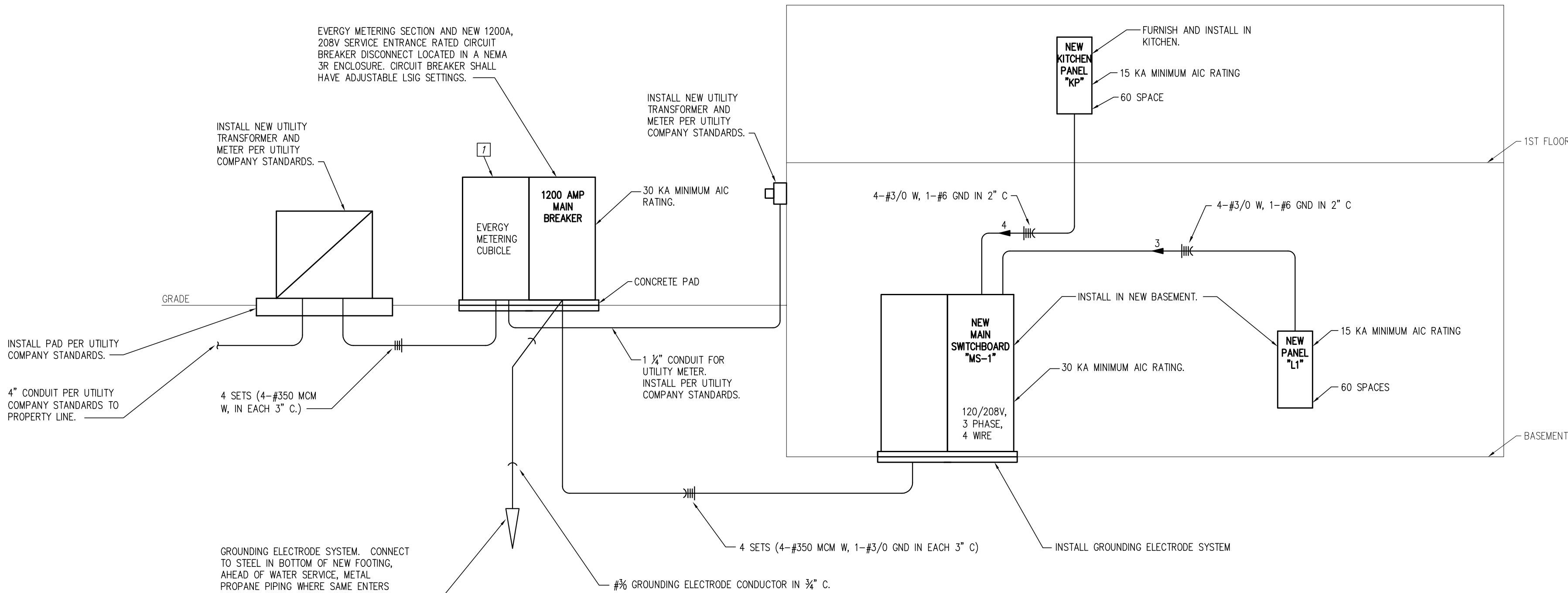
- 1 PROVIDE UTILITY APPROVED CT CABINET WITH SERVICE ENTRANCE BREAKER.
- 2 #6 GROUNDING ELECTRODE CONDUCTOR IN 3/4" C. CONNECT TO NEW GROUNDING ELECTRODE SYSTEM DESCRIBED IN NEW ELECTRICAL RISER DIAGRAM.
- 3 FURNISH AND INSTALL METER, CT, CONDUCTORS AND DISCONNECT TO MEET ALL EEVERY REQUIREMENTS. INCLUDE ALL RIGID CONDUIT, GROUNDING, SLIP FITTINGS, CLAMPS ETC. AS REQUIRED FOR EEVERY STANDARDS.
- 4 EXTEND AND CONNECT TO EXISTING 175 AMP, 2 POLE CIRCUIT BREAKER PRESENTLY SERVING EXISTING NORTH CRAWL SPACE FURNACE TO BE REMOVED. USE 3-#2/0 W, 1-#6 GND IN 2" C. UPDATE PANEL SCHEDULE. ALL SPACE BREAKERS SHALL BE LEFT IN OFF POSITION.
- 5 EXTEND AND CONNECT TO EXISTING 175 AMP, 2 POLE CIRCUIT BREAKER PRESENTLY SERVING EXISTING SOUTH CRAWL SPACE FURNACE TO BE REMOVED. USE 3-#2/0 W, 1-#6 GND IN 2" C. UPDATE PANEL SCHEDULE. ALL SPACE BREAKERS SHALL BE LEFT IN OFF POSITION.
- 6 FURNISH AND INSTALL A GROUND BAR AND AN INSULATED NEUTRAL BAR IN EACH PANEL AS NEEDED TO SEPARATE AND ISOLATE NEUTRAL AND GROUNDS. APPROXIMATELY 10 CIRCUITS IN EACH PANEL SHALL BE SEPARATED.



1 EXISTING AND DEMOLITION ELECTRICAL RISER DIAGRAM
NOT TO SCALE



1 NEW WORK FOR EXISTING AND DEMOLITION ELECTRICAL RISER DIAGRAM
NOT TO SCALE



2 NEW ELECTRICAL RISER DIAGRAM
NOT TO SCALE

HOOD INFORMATION – Job#4143273

| HOOD NO. | TAG | MODEL | LENGTH | MAX. COOKING TEMP. | TYPE | APPLIANCE DUTY | DESIGN CFM/IR | TOTAL EXH. CFM | EXHAUST PLENUM RISER(S) | | | | | | | TOTAL SUPPLY CFM | HOOD CONSTRUCTION | HOOD CONFIG. | |
|----------|---------|-----------------|--------|--------------------|------|----------------|---------------|----------------|-------------------------|-------|--------|------|------|------|---------|------------------|-------------------|--------------|-------|
| | | | | | | | | | WIDTH | LENG. | HEIGHT | DIA. | CFM | VEL. | S.P. | | | END TO END | ROW |
| 1 | Item 29 | 6024 ND-2-PSP-F | 8' 8" | 600 Deg. | I | Heavy | 250 | 2167 | 9" | 22" | 4" | | 2167 | 1560 | -0.765" | 1300 | 304 SS 100% | LEFT | ALONE |
| 2 | Item 29 | 6024 ND-2-PSP-F | 8' 8" | 600 Deg. | I | Heavy | 225 | 1950 | 9" | 20" | 4" | | 1950 | 1560 | -0.690" | 1300 | 304 SS 100% | RIGHT | ALONE |

HOOD INFORMATION

| HOOD NO. | TAG | TYPE | FILTER(S) | | | EFFICIENCY @ 7 MICRONS | QTY. | LIGHT(S) | | WIRE GUARD | LOCATION | SIZE | UTILITY CABINET(S) | | | | FIRE SYSTEM PIPING | HOOD HANGING WIGHT |
|----------|---------|----------------------|-----------|--------|--------|------------------------|------|----------|--|------------|----------|-------------|--------------------|-------------|----------|------------------|--------------------|--------------------|
| | | | QTY. | HEIGHT | LENGTH | | | TYPE | | | | | FIRE SYSTEM | ELECTRICAL | SWITCHES | | | |
| | | | | | | | | | | | | | TYPE | SIZE | MODEL # | QUANTITY | | |
| 1 | Item 29 | Captrate Solo Filter | 6 | 20" | 16" | 85% See Filter Spec. | 3 | Recessed | | NO | Wall Mnt | 12"x54"x24" | Ansul R102 | 3.0/3.0/3.0 | DCV-2111 | 1 Light 1 Fan | YES | 467 LBS |
| 2 | Item 29 | Captrate Solo Filter | 6 | 20" | 16" | 85% See Filter Spec. | 3 | Recessed | | NO | | | | | | | YES | 487 LBS |

HOOD OPTIONS

| HOOD NO. | TAG | OPTION |
|----------|---------|---|
| 1 | Item 29 | BACKSPLASH 122.00" High X 210.00" Long 304 SS Vertical |
| | | LEFT SIDESPLASH 122.00" High X 90.00" Long 304 SS Vertical |
| | | LEFT END STANDOFF (FINISHED) 1" Wide 60" Long Insulated |
| | | BACKSPLASH - INSIDE CORNER 80.00" High X 2.00" Leg Length 304 SS Vertical |
| | | BACKSPLASH - INSIDE CORNER 80.00" High X 2.00" Leg Length 304 SS Vertical |
| | | BACKSPLASH - OUTSIDE CORNER 122.00" High X 2.00" Leg Length 304 SS Vertical |
| 2 | Item 29 | SENSOR-CV |
| | | LEFT WALL AS END PANEL |
| | | FIELD WRAPPER 18.00" High Front |
| | | RIGHT SIDESPLASH 122.00" High X 90.00" Long 304 SS Vertical |
| | | RIGHT END STANDOFF (FINISHED) 1" Wide 60" Long Insulated |
| | | SENSOR-CV |
| | | RIGHT WALL AS END PANEL |

PERFORATED SUPPLY PLENUM(S)

| HOOD NO. | TAG | POS. | LENGTH | WIDTH | HEIGHT | TYPE | RISER(S) | | | |
|----------|---------|-------|--------|-------|--------|------|----------|-------|------|------------|
| | | | | | | | WIDTH | LENG. | DIA. | S.P. |
| 1 | Item 29 | Front | 105" | 14" | 6" | MUA | 12" | 28" | | 650 0.161" |
| | | | | | | MUA | 12" | 28" | | 650 0.161" |
| 2 | Item 29 | Front | 105" | 14" | 6" | MUA | 12" | 28" | | 650 0.161" |
| | | | | | | MUA | 12" | 28" | | 650 0.161" |

Fire System Information – Job#4143273

| FIRE SYSTEM NO. | Tag | TYPE | SIZE | FLOW POINTS | INSTALLATION | |
|-----------------|-----|------------|-------------|-------------|---------------------------|------------------|
| | | | | | SYSTEM | LOCATION ON HOOD |
| 1 | | Ansul R102 | 3.0/3.0/3.0 | 16 | Wall Utility Cabinet Left | N/A |

CAS VALVE(S)

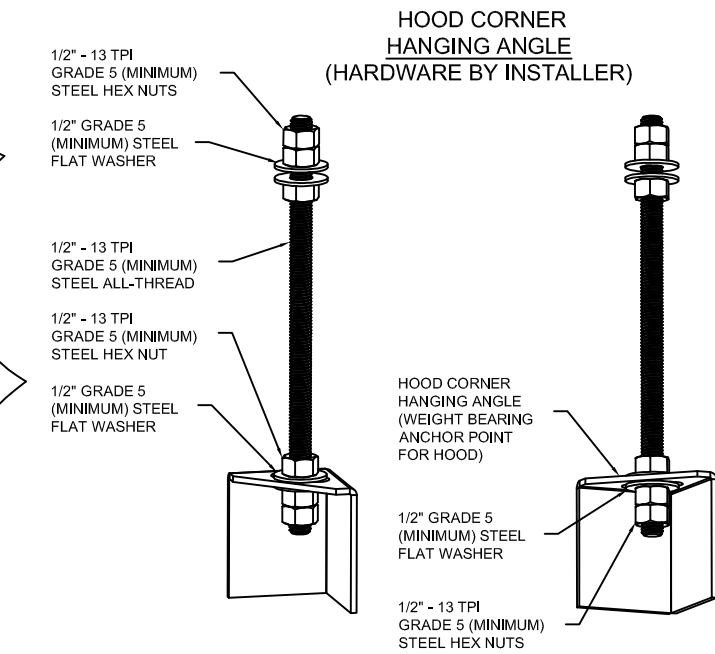
| FIRE SYSTEM NO. | TAG | TYPE | SIZE | SUPPLIED BY |
|-----------------|-----|------------|-------|-------------|
| 1 | | Mechanical | 2.000 | Distributor |

System Design Verification (SDV)

If ordered, CAS Service will perform a System Design Verification (SDV) once all equipment has had a complete start up per the Operation and Installation Manual. Typically, the SDV will be performed after all inspections are complete.

Any field related discrepancies that are discovered during the SDV will be brought to the attention of the general contractor and corresponding trades on site. These Issues will be documented and forwarded to the appropriate sales office. If CAS Service has to resolve a discrepancy that is a field issue, the general contractor will be notified and billed for the work. Should a return trip be required due to any field related discrepancy that cannot be resolved during the SDV, there will be additional trip charges.

During the SDV, CAS Service will address any discrepancy that is the fault of the manufacturer. Should a return trip be required, the general contractor and appropriate sales office will be notified. There will be no additional charges for manufacturer discrepancies.



ASSEMBLY INSTRUCTIONS

HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD. SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. MUST USE DOUBLED HEX NUT CONFIGURATION BENEATH HOOD HANGING ANGLES AND ABOVE CEILING ANCHORS. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.

ND-2 Series with PSP Accessory Specification

The model ND-2 with PSP Accessory is a compensating canopy hood rated for all types of cooking equipment. The hood shall have the size, shape and performance specified on drawings.

Construction shall be type 430 stainless steel, with a #3 or #4 polish where exposed. The manufacturer, ETL and NSF shall determine the individual component construction. Construction shall be dependent on the structural application to minimize distortion and other defects. All seams, joints and penetrations of the hood enclosure to the lower outermost perimeter that directs and captures grease-laden vapor and exhaust gases shall have a liquid-tight continuous external weld in accordance with NFPA 96. The hood shall be wall type with a minimum of four connections for hanger rods. Connectors shall have 9/16" holes pre-punched in 1 1/2" x 1 1/2" angle iron at the factory to allow for hanger rod connection by others.

The hood shall be furnished with U.L. classified filters, supplied in size and quantity as required by ventilator. The filters shall extend the full length of the hood and the filler panels shall not be more than 6" in width.

The hood manufacturer shall supply complete computer generated submittal drawings including hood sections view(s) and hood plan view(s). These drawings must be available to the engineer, architect and owner for their use in construction, operation and maintenance.

Exhaust duct collar to be 4" high with 1" flange. Duct sizes, CFM and static pressure requirements shall be as shown on drawings. Static pressure requirements shall be precise and accurate; air velocity and volume information shall be accurate within 1-ft increments along the length of the ventilator.

U.L. Incandescent light fixtures and globes shall be installed and pre-wired to a junction box. The light fixtures shall be installed with a maximum of 4/0" spacing on center and allow up to a 100 watt standard light bulb.

The hood shall have:
- A double wall insulated front to eliminate condensation and increase rigidity. The insulation shall have a flexural modulus of 475 EI, meet UL 181 requirements and be in accordance with NFPA 90A and 90B.
- An integral front baffle to direct grease laden vapors toward the exhaust filter bank.
- A built-in wiring chase provided for outlets and electrical controls on the hood face and shall not penetrate the capture area or require an external chase way.
- Removable grease cup for easy cleaning.

The hood shall be ETL Listed as "Exhaust Hood Without Exhaust Damper", NSF Listed and built in accordance with NFPA 96.

The hood shall be listed for 450°F cooking surfaces at 150 CFM/ft, 600°F cooking surfaces at 200 CFM/ft, and 700°F cooking surfaces at 250 CFM/ft. The hood shall be ETL Listed as "Exhaust Hood Without Exhaust Damper".

SPECIFICATION: CAPTRATE GREASE-STOP SOLO FILTER

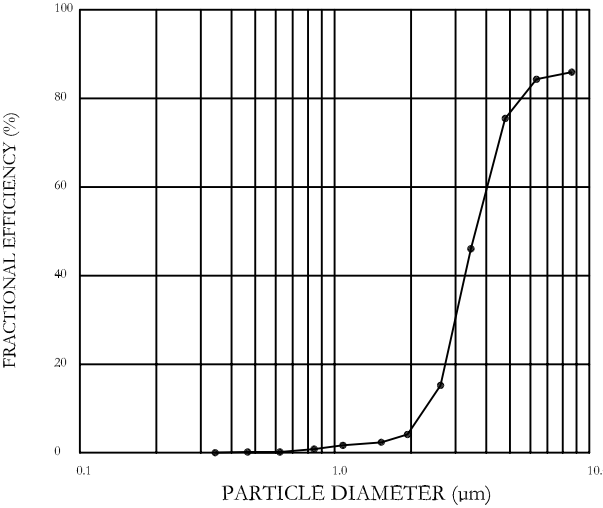
THE CAPTRATE GREASE-STOP SOLO FILTER IS A SINGLE-STAGE FILTER FEATURING A UNIQUE S-BAFFLE DESIGN IN CONJUNCTION WITH A SLOTTED REAR BAFFLE DESIGN, TO DELIVER EXCEPTIONAL FILTRATION EFFICIENCY.

FILTER IS STAINLESS STEEL CONSTRUCTION, AND SIZED TO FIT INTO STANDARD 2-INCH DEEP HOOD CHANNEL(S).

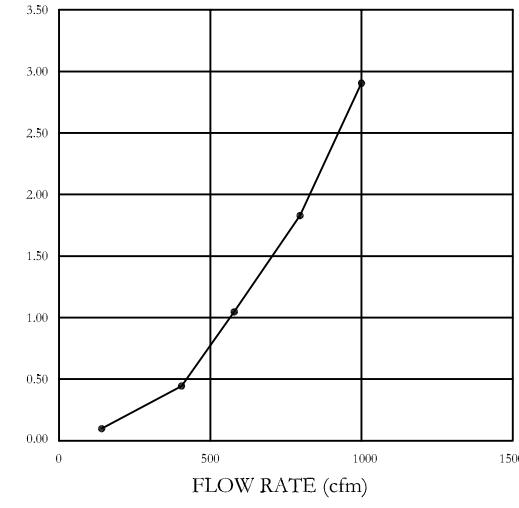
UNITS SHALL INCLUDE STAINLESS STEEL HANDLES AND A FASTENING DEVICE TO SECURE THE TWO COMPONENTS WHEN ASSEMBLED.

GREASE EXTRACTION EFFICIENCY PERFORMANCE SHALL REMOVE AT LEAST 75% OF GREASE PARTICLES FIVE MICRONS IN SIZE, AND 85% GREASE PARTICLES SEVEN MICRONS IN SIZE AND LARGER, WITH A CORRESPONDING PRESSURE DROP NOT TO EXCEED 1.0 INCHES OF WATER GAUGE. THE CAPTRATE GREASE-STOP SOLO WAS TESTED TO ASTM STANDARD ASTM F2519-05. MANUFACTURER APPROVED FOR USE IN SOLID FUEL APPLICATIONS AS A SPARK ARRESTER.

EFFICIENCY VS. PARTICLE DIAMETER

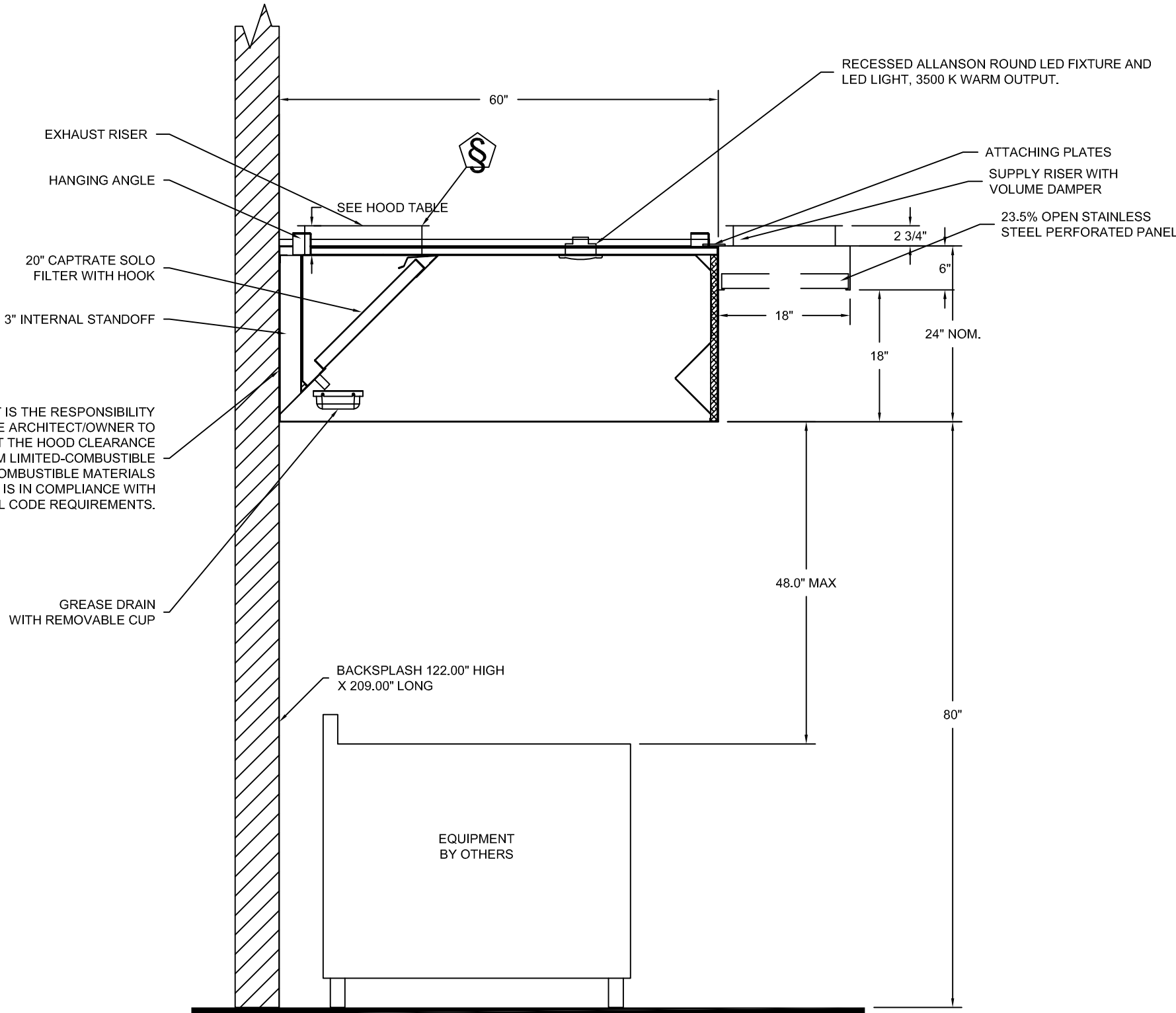


PRESSURE DROP VS. FLOW RATE



CAPTRATE FILTERS ARE BUILT IN COMPLIANCE WITH:

NFPA #96
NSF STANDARD #2
UL STANDARD #1046
INT. MECH. CODE (IMC)
ULC-S649



SECTION VIEW – MODEL 6024ND-2-PSP-F
HOOD – #1 (Item 29)

REVISIONS

| DESCRIPTION | DATE |
|-------------|------|
| | |
| | |
| | |
| | |



St. Louis Office
16024 Manchester Rd., Suite 233, Ellisville, MO, 63011 PHONE: (636) 225-3113 FAX: (919) 227-5939 EMAIL: reg7@captrate.com
www.captrate.com

Arrow Rock
39521 Visitor Center Drive,
ARROW ROCK, MO, 65320

DATE: 4/21/2020

DWG.#: 4143273

DRAWN BY: JB-72

SCALE: 3/4" = 1'-0"

MASTER DRAWING

SHEET NO.
1

STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR

STRATA
ARCHITECTURE + PRESERVATION
1701 Oak Street, Suite 100 Kansas City, Missouri 64108
816.474.0900 www.strata-arch.com

OFFICE OF
ADMINISTRATION

DIVISION OF FACILITIES
MANAGEMENT, DESIGN,
AND CONSTRUCTION

PROJECT TITLE:

J HUSTON TAVERN
KITCHEN REBUILD

ARROW ROCK STATE
HISTORIC SITE

ARROW ROCK, MISSOURI

PROJECT #: X2001-01

ASSET #: 7815102008

REVISION: 08.03.2020

REVISION: 08.03.2020

REVISION: 08.03.2020

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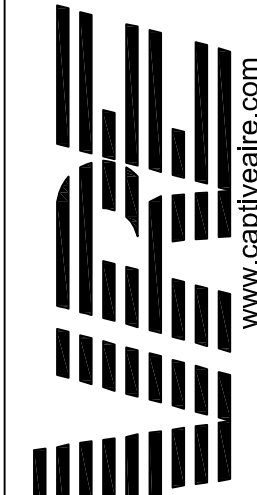
REVISION: 08.03.2020

THESE DRAWINGS ARE THE BASIS OF DESIGN. OTHER
MANUFACTURERS LISTED IN FOODSERVICE EQUIPMENT
SPECIFICATION SECTION 114000

4 OF 8 SHEETS
CONSTRUCTION DOCUMENTS
MAY 12, 2020

REVISIONS

| DESCRIPTION | DATE |
|-------------|------|
| | |
| | |
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| | |



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St. Louis Office

16024 Manchester Rd., Suite 233, Ellisville, MO, 63011 PHONE: (636) 225-3113 FAX: (619) 227-5939 EMAIL: rpg72@captivefire.com

Arrow Rock

39521 Visitor Center Drive,
ARROW ROCK, MO, 65320

DATE: 4/21/2020

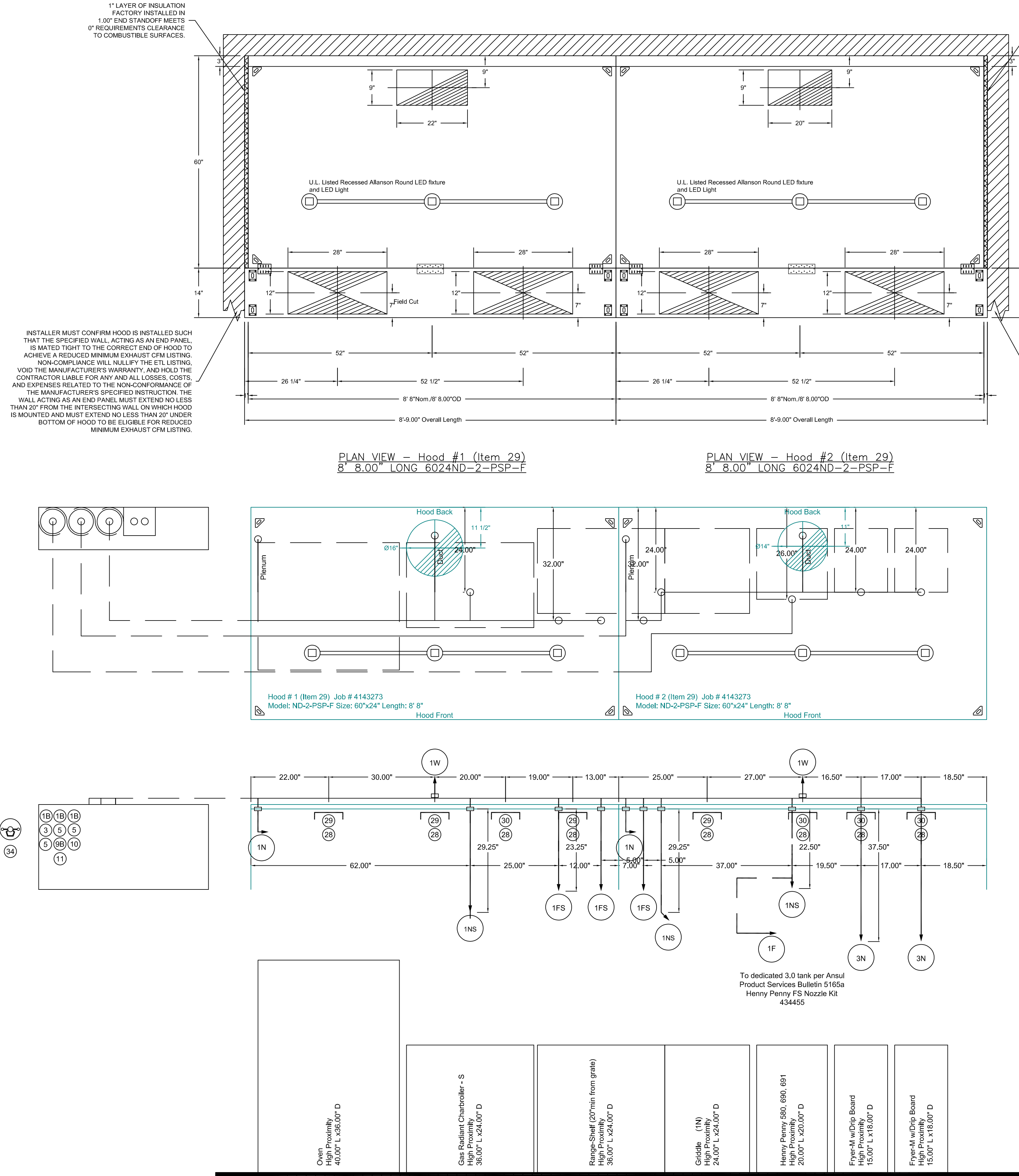
DWG.#:
4143273

DRAWN BY:
JB-72

SCALE:
3/4" = 1'-0"

MASTER DRAWING

SHEET NO.
2



- NOTES
- FIELD PIPE DROPS AS SHOWN
 - SLEEVING, ELBOWS, TEES, AND NOZZLES SUPPLIED BY CAS
 - RELOCATE NOZZLES IF FLOW PATTERN IS BLOCKED BY SHELVEING, SALAMANDERS, ETC.
 - MAXIMUM 9 ELBOWS IN SUPPLY LINE.
 - MINIMUM 72 INCHES OF AGENT LINE FROM TANK TO FIRST NOZZLE.
 - IF APPLICABLE, PRE-PIPED CHARBROILER DROPS ARE SHIPPED LOOSE.
 - FACTORY PIPING EXTENDS A MAXIMUM OF 6" ABOVE THE TOP OF THE HOOD.
- APPLIANCE DIMENSIONS LISTED REPRESENT THE COOKING SURFACE SIZE, NOT THE OVERALL APPLIANCE SIZE.
- THIS FIRE SYSTEM COMPLIES WITH U.L. 300 REQUIREMENTS

SPECIFICATIONS

THE RESTAURANT FIRE SUPPRESSION SYSTEM SHALL BE THE PRE-ENGINEERED TYPE WITH A FIXED NOZZLE AGENT DISTRIBUTION NETWORK. IT SHALL BE LISTED WITH UNDERWRITERS LABORATORIES, INC. (UL)

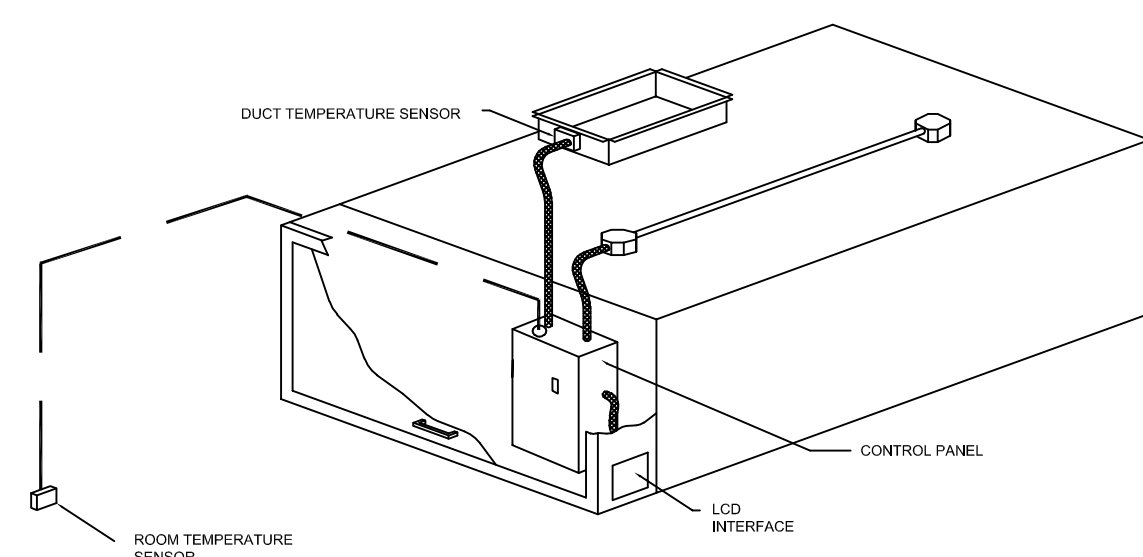
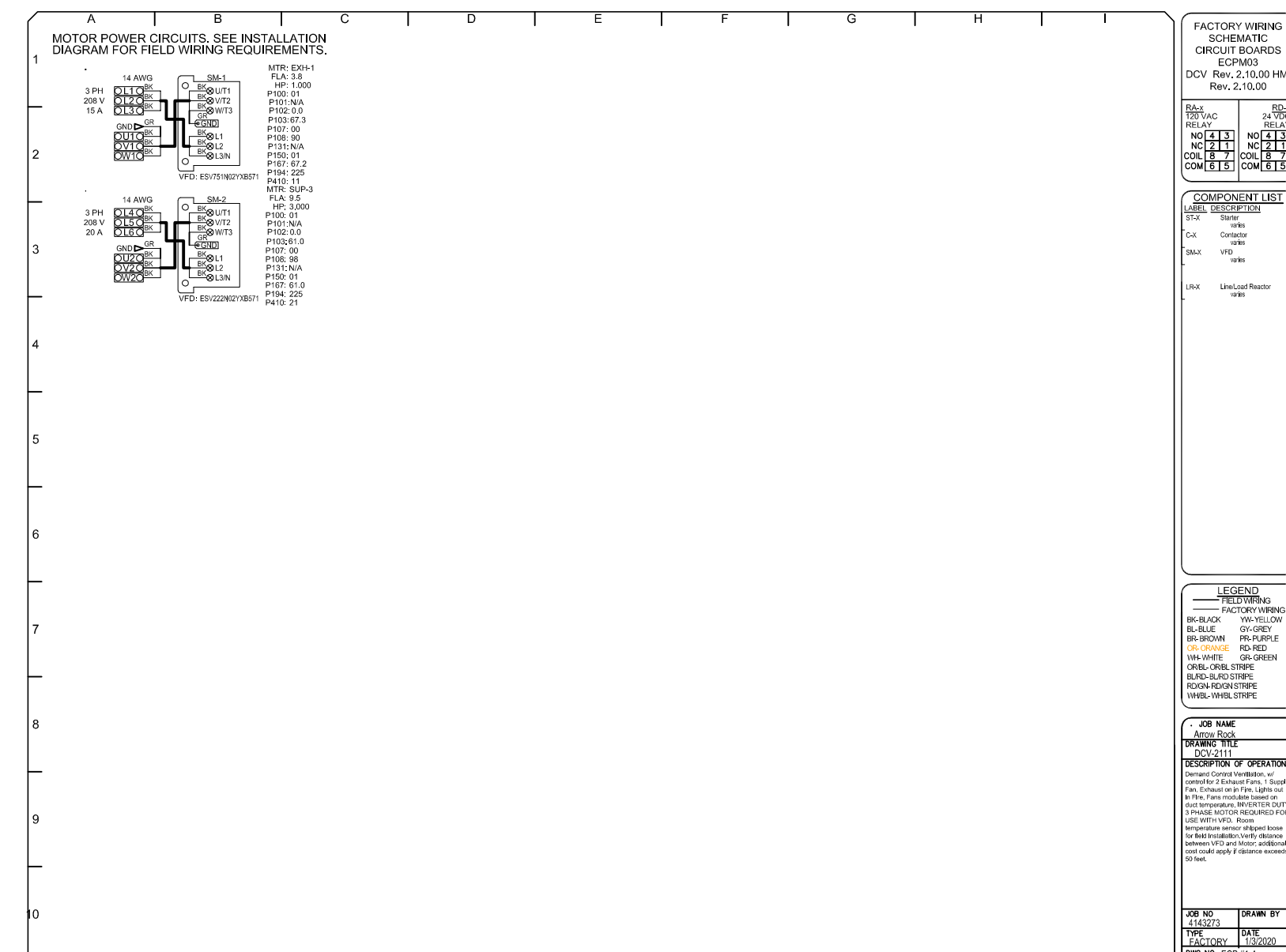
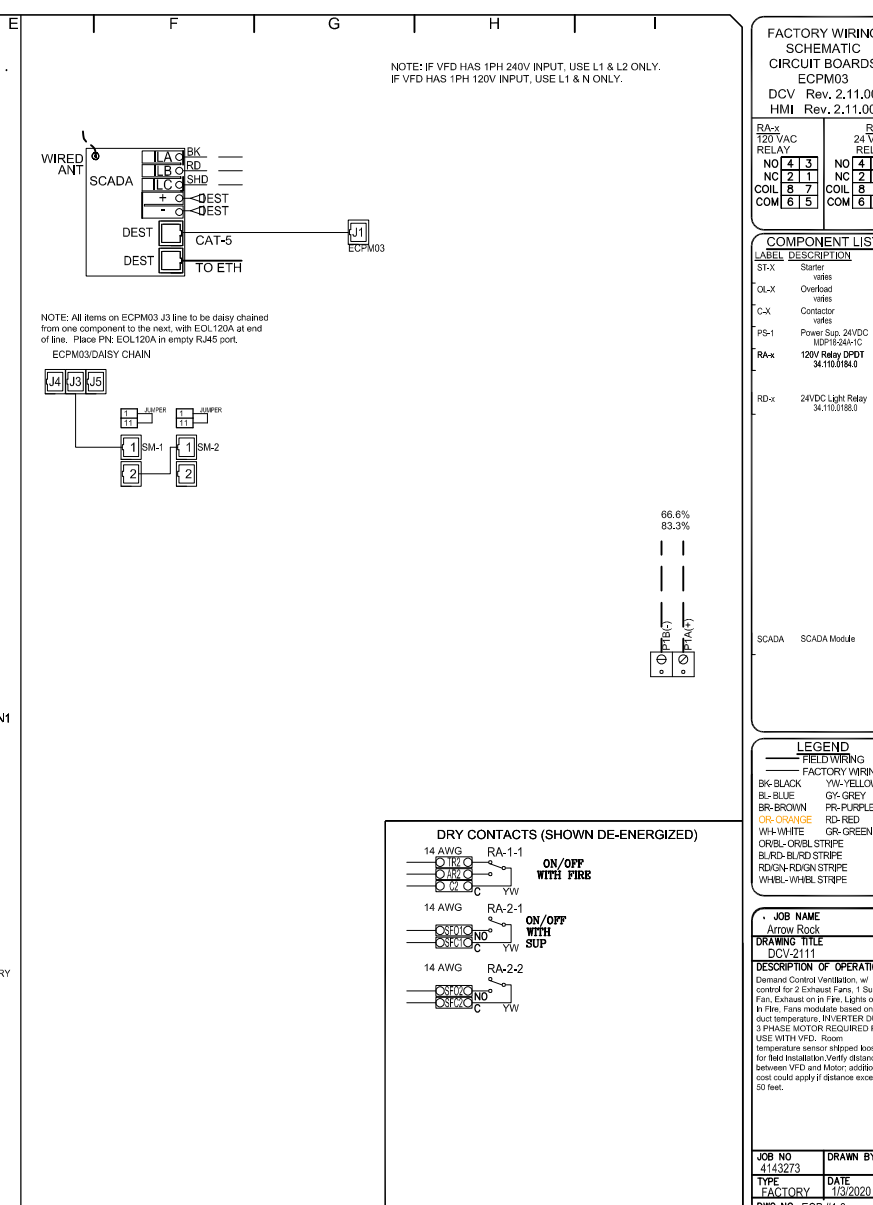
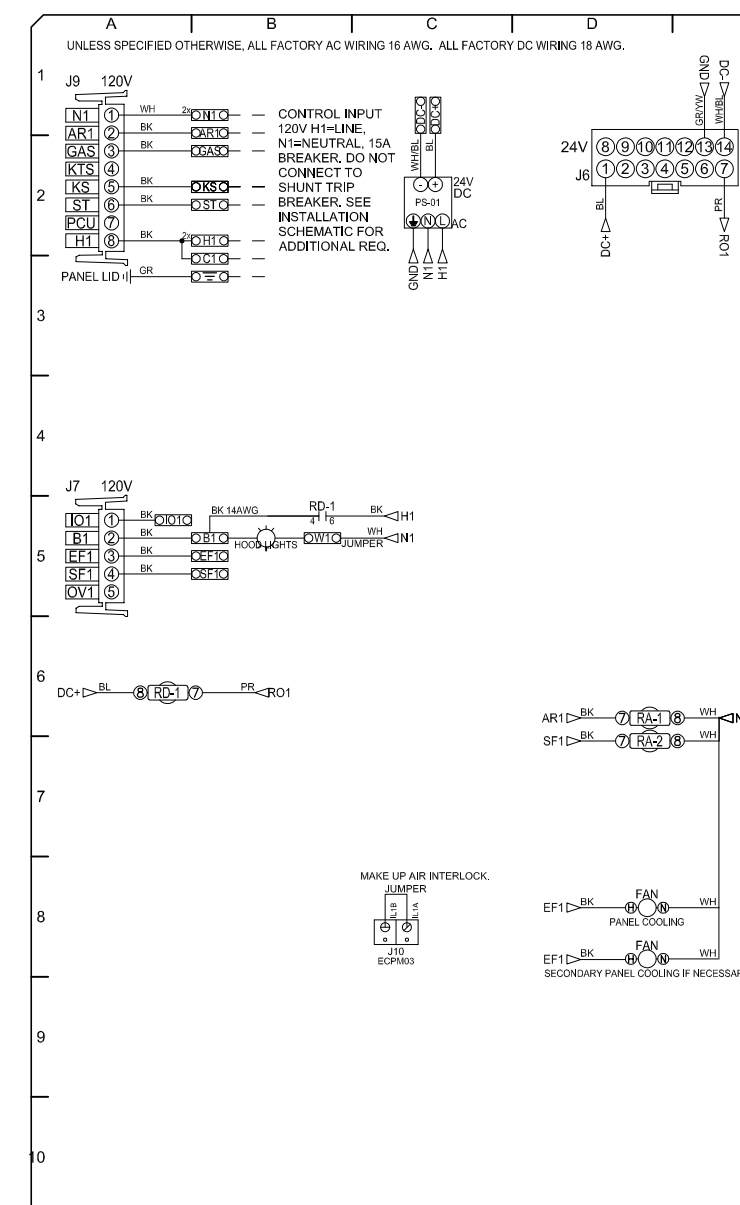
THE SYSTEM SHALL BE CAPABLE OF AUTOMATIC DETECTION AND ACTUATION WITH LOCAL OR REMOTE MANUAL ACTUATION. ACCESSORIES SHALL BE AVAILABLE FOR MECHANICAL OR ELECTRICAL GAS LINE SHUT-OFF APPLICATIONS.

THE EXTINGUISHING AGENT SHALL BE A POTASSIUM CARBONATE, POTASSIUM ACETATE-BASED FORMULATION DESIGNED FOR FLAME KNOCKDOWN AND SECUREMENT OF GREASE RELATED FIRES. IT SHALL BE AVAILABLE IN PLASTIC CONTAINERS WITH INSTRUCTIONS FOR LIQUID AGENT HANDLING AND USAGE.

THE REGULATED RELEASE MECHANISM SHALL BE COMPATIBLE WITH A FUSIBLE LINK DETECTION SYSTEM. THE FUSIBLE LINK SHALL BE SELECTED AND INSTALLED ACCORDING TO THE OPERATING TEMPERATURE IN THE VENTILATING SYSTEM. THE FUSIBLE LINK SHALL BE SUPPORTED BY A DETECTOR BRACKET/ LINKAGE ASSEMBLY.

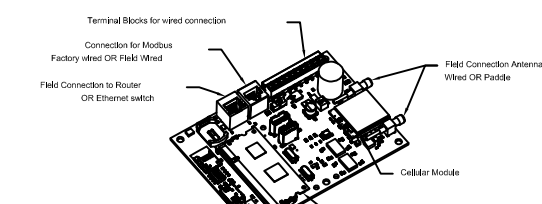
THESE DRAWINGS ARE THE BASIS OF DESIGN. OTHER
MANUFACTURERS LISTED IN FOODSERVICE EQUIPMENT
SPECIFICATION SECTION 414000

ELECTRICAL PACKAGE - Job#4143273

[illegible]

TYPICAL HOOD CONTROL PANEL INSTALLATION

- Other: The system operates based on the input from an external source (DDC, BMS or hard-wired interlock)




CASlink Monitor and Control




- Hood control panel to support communications to cloud-based Building Management System.
- Hood Control Panel to allow cloud-based Building Management System to monitor real time parameters outlined as MONITOR in the points list.
- Hood Control Panel to allow cloud-based Building Management System to control parameters outlined as CONTROL in the points list.
- Hood Control Panel to allow cloud-based Building Management System to implement SYSTEM ECONOMIZER control strategies for fully integrated Building

| MONITORING AND CONTROL POINT LIST | | | |
|-----------------------------------|-----------|------------------------------|-----------|
| SPV Pathogen | Provision | SPV Pathogen | Provision |
| Swine, Terrestrial | SPV001 | Swine, Terrestrial(a) | SPV001a |
| Swine, Terrestrial(b) | SPV001b | Swine, Terrestrial(b) | SPV001b |
| SPV Zoonotic Pathogen | SPV002 | SPV Zoonotic Pathogen | SPV002 |
| Human, SPV Zoonotic Pathogen | SPV003 | Human, SPV Zoonotic Pathogen | SPV003 |
| SPV Avian | SPV004 | SPV Avian | SPV004 |
| SPV Poultry | SPV005 | SPV Poultry | SPV005 |
| SPV Aquatic | SPV006 | SPV Aquatic | SPV006 |
| SPV Pesticide | SPV007 | SPV Pesticide | SPV007 |
| SPV Pesticide Residue | SPV008 | SPV Pesticide Residue | SPV008 |
| SPV Pesticide | SPV009 | SPV Pesticide | SPV009 |
| SPV Fish | SPV010 | SPV Fish | SPV010 |
| SPV Fish Pathogen | SPV011 | SPV Fish Pathogen | SPV011 |
| SPV Fish Pathogen | SPV012 | SPV Fish Pathogen | SPV012 |
| SPV Fish Pathogen | SPV013 | SPV Fish Pathogen | SPV013 |
| SPV Fish Pathogen | SPV014 | SPV Fish Pathogen | SPV014 |
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| SPV Fish Pathogen | SPV016 | SPV Fish Pathogen | SPV016 |
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| SPV Fish Pathogen | SPV019 | SPV Fish Pathogen | SPV019 |
| SPV Fish Pathogen | SPV020 | SPV Fish Pathogen | SPV020 |
| SPV Fish Pathogen | SPV021 | SPV Fish Pathogen | SPV021 |
| SPV Fish Pathogen | SPV022 | SPV Fish Pathogen | SPV022 |
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| SPV Fish Pathogen | SPV027 | SPV Fish Pathogen | SPV027 |
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| SPV Fish Pathogen | SPV030 | SPV Fish Pathogen | SPV030 |
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| SPV Fish Pathogen | SPV037 | SPV Fish Pathogen | SPV037 |
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www.captiveallie.com

St. Louis Office

16024 Manchester Rd., Suite 225, Ellisville, MO. 63011 PHONE: (636) 225-3113 FAX: (636) 225-3113 EMAIL: info@captivallie.com

Arrow Rock

39521 Visitor Center Drive,

ARROW ROCK, MO. 65320

DATE: 4/21/2020

DWG.#: 4143273

DRAWN BY: JB-72

SCALE: 3/4" = 1'-0"

MASTER DRAWING

SHEET NO.

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THESE DRAWINGS ARE THE BASIS OF DESIGN. OTHER
MANUFACTURERS LISTED IN FOODSERVICE EQUIPMENT
SPECIFICATION SECTION 114000