

**DOCUMENT 00 9113**

**ADDENDA**

**SPECIFICATION NO. 22-11495**

**CITY OF BERKELEY**

**NORTH BERKELEY SENIOR CENTER POWER, DATA, & KITCHEN UPGRADES**

**1901 HEARST AVE**

The following Addenda were issued, modifying the Project Manual:

Addendum No. 1, issued on **April 25, 2024**

**END OF DOCUMENT**

**ADDENDUM NO. 1****April 25, 2023**

The bid documents for specification no. 22-11495 for the North Berkeley Senior Center Power, Data, & Kitchen Upgrades are amended as follows:

**1-1. ARTICLE 2.01, DOCUMENT 00 1113 – NOTICE INVITING BIDS**

A California “A” or “B” contractor’s license is required to bid this contract. Joint ventures must secure a joint venture license prior to award of this Contract. Specialty work may require a specialty contractor’s license, held by Bidder or a listed subcontractor.

**1-2. ARTICLE 1.01 DOCUMENT 00 1113 – NOTICE INVITING BIDS**

City of Berkeley (“City”) will receive sealed Bids at City of Berkeley, Purchasing Manager’s Office, located at the Martin Luther King Jr. Civic Center, 2180 Milvia Street, Third Floor, Berkeley, CA 94704, Telephone (510) 981-7320, until **2:00 PM Thursday, May 9, 2024** for the following public work:

**1-3. ARTICLE 4.01 DOCUMENT 00 5200 - LIQUIDATED DAMAGE AMOUNTS**

A. As liquidated damages for delay, Contractor shall pay City one thousand nine hundred dollars (\$1,900.00) for each Day that expires after the time specified herein for Contractor to achieve Substantial Completion of the entire Work, until achieved.

B. As liquidated damages for delay, Contractor shall pay City one thousand nine hundred dollars (\$1,900.00) for each Day that expires after the time specified herein for Contractor to achieve Final Completion of the entire Work, until achieved.

**1-4. TECHNICAL SPECIFICATIONS**

Spec section 26 24 00 SERVICE AND DISTRIBUTION SYSTEM added to the contract.

**1-5. DRAWINGS**

Detail numbers on Sheet E7.02 corrected.

**1-6. Document 00 4314-4 SAFETY EXPERIENCE**

Use Bidder’s last year’s Cal/OSHA 300 log to fill in the following number of injuries and illnesses

**QUESTIONS AND RESPONSES:****2-1. Will we be able to bid this project as an A licensed contractor?**

City Response: Yes. “A” license contractor will be added as a required contractor’s license.

**2-2. Does the City want wheels or legs on the oven? Drawing 1/A4.06 shows it both ways**

City Response: Oven with wheels.

**2-3. How will you remove the existing Oven?**

City Response: The existing oven will need to be taken apart to be able to remove it from the building.

**2-4. Does the new oven fit through the kitchen door?**

City Response: Yes. VC44ED oven will through a 36” doorway. From the manufacturer *“the height for a single oven measures 31.00”*. You can turn the oven its side and use a pallet jack to maneuver the unit through the doorway. Just be sure to lay the oven on its **LEFT** side or the **NON-CONTROL** side.”

**2-5. There is a discrepancy in liquidated damages in 00 5200, 4.01 A & B. Just to verify, should we go with the “one thousand two hundred dollar” instead of the (\$1,900.00)?**

City Response: “One thousand nine hundred dollars” (\$1,900.00).

**2-6. Drawing 1/E4.01 specifies a 75kVA NEMA 3R transformer. Please note that a NEMA 3R enclosure does provide a degree of protection against inclement weather but does not replace the need for a reinforced structure (E-house) against high winds, heavy rain, dust, snow, or other inclement weather or ambient conditions. A NEMA 3 does. Do you want to spec a NEMA 3 instead of a NEMA 3R?**

City Response: OMM With the Bay Area climate NEMA 3R is sufficient.

**2-7. There is a wide range of difference in cost and specification between various 75kVA transformers as specified on Drawing 1/E4.01. What is the make and model of the one that you prefer?**

City Response: Response: Eaton-Cutler Hammer, Schneider-Square D, General Electric. Refer to Spec section 26 24 00.

**2-8. It appears that drawings 1/E7.02 and 4/E7.02 are mis-identified on sheet E7.02 as 1E7.04 and 4E7.04.**

City Response: Corrected. See Sheet E7.02.

**2-9. Where is Panel K located?**

City Response: Please refer to sheet E4.01 for panel location. There is access through the T-bar ceiling.

**2-10. Where is the Transformer location?**

City Response: Please refer to sheet A4.25 for the transformer location.

**2-11. Is the conduit pathway from the MSB to the new transformer to be installed underground or aboveground?**

City Response: Aboveground.

**2-12. Our understanding is that the building is open to the public so will it be OK to view the areas that need glazing film and are those areas accessible?**

City Response: That is correct. Yes, these areas are accessible.

**2-13. This film is typically used for privacy or decorative needs and will not provide an appreciable amount of shading. Typically, this is not used on skylights**

City Response: The film is used for obscurity only, not sun shading. It is not used at the sloped portion of the skylight, only at the vertical sections. Refer to detail 10 on sheet A7.11.

**2-14. Is it necessary to obtain a the license before award of contract?**

City Response: No, please hold off on doing that. Business licenses will be necessary when the contractor is awarded the project.

**2-15. Can we still bid on this project even though we missed the Pre-Bid Site Visit?**

City Response: Yes, the bid walk was not mandatory. The site is open to the public. We recommend you visit the site.

**2-16. Document 00 4314-4 SAFETY EXPERIENCE requires submittal of Experience Modification Rate and last year's Cal/OSHA 200 log. However, on January 1, 2002, OSHA eliminated the 200 form and replaced it with the 300 series. Starting in 2024 only establishments with 100 or more employees in designated high-hazard industries are required to submit forms. Previously, the number of employees that made submission a requirement was 250. We are pretty sure that there will be no contractors or subcontractors submitting bids for the project that are that large. Please clarify.**

City Response: Please provide your company's safety experience. If you've filed a Cal/OSHA 300 log, please provide that information.

**2-17. For the general liability insurance, do each one of the limits (each occurrence, general aggregate, and aggregate for products and completed operations) need to be at \$2,000,000? Do we need to comply with these requirements for the bid?**

City Response: Yes and yes, all contractors bidding need to comply with the insurance requirements as noted in the specifications.

**2-18. Can you extend the bid date?**

City Response: Yes. Bid will be extended 1 week. New due date is Thursday May 9 at 2:00 PM.

**2-19. Will there be parking available?**

City Response: Parking can be arranged.

**2-20. Will staging area be provided?**

City Response: The City will help facilitate your permit request to use the right of way for staging purposes

**2-21. What is the issue with the hood & make-up air?**

City Response: The interconnection between the make-up air and hood needs to be re-established.

**END OF DOCUMENT**

## Documents

The following documents have been updated and added to the contract documents. Please be sure to review and verify you have downloaded the most current version.

of the work. City may reject any and all Bids and waive any minor irregularities in the Bids.

## ARTICLE 2 - LEGAL REQUIREMENTS

- 2.01 Required Contractor's License(s):** A California "A" or "B" contractor's license is required to bid this contract. Joint ventures must secure a joint venture license prior to award of this Contract. Specialty work may require a specialty contractor's license, held by Bidder or a listed subcontractor.
- 2.02 Bid Alternates:** Bid alternates are identified in Document 00 4113 (Bid Form). The determination of lowest bid shall be based upon: Base contract bid price only.
- 2.03 Substitution of Securities:** City will permit the successful bidder to substitute securities for any retention monies withheld to ensure performance of the contract, as set forth in Document 00 6290 Escrow Agreement For Security Deposits In Lieu Of Retention and incorporated herein in full by this reference, in accordance with Section 22300 of the California Public Contract Code.
- 2.04 Prevailing Wage Laws:** The successful Bidder must comply with all prevailing wage laws applicable to the Project, and related requirements contained in the Contract Documents. Copies of the general prevailing rates of per diem wages for each craft, classification, or type of worker needed to execute the Contract, as determined by Director of the State of California Department of Industrial Relations, are on file at <http://www.dir.ca.gov/oprl/pwd/> and are deemed included in the Bidding Documents. The successful Bidder shall post the applicable prevailing wage rates at the Site.
- 2.05 Community Workforce Agreement:** This contract **WILL NOT** be subject to the Community Workforce Agreement approved by the Berkeley City Council on June 23, 2015 (See Document 00 6580 – City of Berkeley Contracting Policies). The successful bidder and all subcontractors, at any tier, **WILL NOT** be required to sign an Agreement to be Bound as a condition precedent to entering into any contract for this project.
- 2.06 First Source Construction Agreement:** This contract **WILL** be subject to the First Source Construction Agreement (See Document 00 6580 – City of Berkeley Contracting Policies).
- 2.07** This contract **WILL NOT** be subject to Supplementary Conditions for Federal Funding. Section 00 7201.

END OF SECTION

**DOCUMENT 00 1113****NOTICE INVITING BIDS****ARTICLE 1 - INVITATION TO BID**

- 1.01 Notice Inviting Bids:** City of Berkeley ("City") will receive sealed Bids at City of Berkeley, Purchasing Manager's Office, located at the Martin Luther King Jr. Civic Center, 2180 Milvia Street, Third Floor, Berkeley, CA 94704, Telephone (510) 981-7320, until **2:00 PM Thursday, May 9, 2024** for the following public work:

**SPECIFICATION NO. 22-11495  
CITY OF BERKELEY  
North Berkeley Senior Center Power, Data, & Kitchen Upgrades  
1901 Hearst Ave**

- 1.02 Project Description: Interior surface-mounted electrical and data raceway upgrades and the replacement of gas-fired kitchen appliances with electrical appliances,** including ancillary work in accordance with the terms and conditions of the Contract Documents. Work shall be completed within **84** Calendar Days from the date when Contract Time commences to run.
- 1.03 Procurement of Bidding Documents:**  
Bidding Documents contain the full description of the Work. Bidders may obtain Bidding Documents by Thursday, May 9, 2024 from City of Berkeley's Public Works website under Current Construction Project Bid Opportunities:  
<https://berkeleyca.gov/doing-business/working-city/bid-proposal-opportunities>  
For information pertaining to the Bidding Documents, please contact the Project Manager, Uriel Gonzalez, 1947 Center Street, 5<sup>th</sup> Floor, Berkeley, CA 94704, by Email at [UGonzalez@berkeleyca.gov](mailto:UGonzalez@berkeleyca.gov) or by Telephone at (510) 981-6627 or by FAX **(510) 981-6390**.
- 1.04 Planholders List:**  
Bidders are responsible for notifying Uriel Gonzalez, via email at [UGonzalez@berkeleyca.gov](mailto:UGonzalez@berkeleyca.gov) to be included on the Planholders List. Please include the following in the email subject header: "Planholders list for Specification No. 22-11495 for North Berkeley Senior Center Power, Data, & Kitchen Upgrades". In the body of the email, please state the Name of the Company Representative, Company Name, Address, Telephone Number, Fax Number, and Email Address.
- 1.05 Instructions:** Bidders shall refer to Document 00 2113 (Instructions to Bidders) for required documents and items to be submitted in a sealed envelope for deposit into the Bid Box, located at **City of Berkeley, Purchasing Manager's Office, Martin Luther King Jr. Civic Center, 2180 Milvia Street, Third Floor, Berkeley, CA 94704, Telephone (510) 981-7320** no later than the time and date set forth in Paragraph 1.01 above.
- 1.06 Non-Mandatory Pre-Bid Site Visit:** City **WILL** conduct a Non-Mandatory Pre-Bid Conference and Site Visit at 1901 Hearst Ave. The location of work is open to the public during normal business or daylight hours. It is recommended that potential bidders visit the site independently to review site conditions prior to bid. City will conduct a Pre-Bid Conference and Site Visit at **1901 Hearst Ave, at 10:00 AM , Tuesday, April 9, 2024**.
- 1.07 Bid Preparation Cost:** Bidders are solely responsible for the cost of preparing their Bids.
- 1.08 Reservation of Rights:** City specifically reserves the right, in its sole discretion, to reject any or all Bids, to re-bid, or to waive inconsequential defects in bidding not involving time, price or quality

and to make decisions or actions binding on City, and shall have sole signature authority on behalf of City.

- C. City may assign all or part of the Project Manager’s rights, responsibilities and duties to a Construction Manager, or other City Representative.

**3.02 CONTRACTOR’S PROJECT MANAGER**

- A. Contractor has designated [\_\_\_\_\_ or other] as its Project Manager to act as Contractor’s Representative in all matters relating to the Contract Documents.

**3.03 ARCHITECT/ENGINEER**

- A. **Noll & Tam Architects** furnished the Plans and Specifications and shall have the rights assigned to Architect/Engineer in the Contract Documents.
- B. Architect/Engineer has designated **Tom Beil** as its project manager, to act as its representative for receiving and making communications authorized under the Contract Documents.

**ARTICLE 4 – LIQUIDATED DAMAGES FOR DELAY IN COMPLETION OF WORK**

**4.01 LIQUIDATED DAMAGE AMOUNTS**

- A. As liquidated damages for delay, Contractor shall pay City one thousand nine hundred dollars (\$1,900.00) for each Day that expires after the time specified herein for Contractor to achieve Substantial Completion of the entire Work, until achieved.
- B. As liquidated damages for delay, Contractor shall pay City one thousand nine hundred dollars (\$1,900.00) for each Day that expires after the time specified herein for Contractor to achieve Final Completion of the entire Work, until achieved.

**4.02 SCOPE OF LIQUIDATED DAMAGES**

- A. Measures of liquidated damages shall apply cumulatively.
- B. Limitations and stipulations regarding liquidated damages are set forth in Document 00 7200 (General Conditions).

**ARTICLE 5 – CONTRACT DOCUMENTS**

**5.01** Contract Documents consist of the following documents, including all changes, Addenda, and Modifications thereto:

Document 00 5100	Notice of Award
Document 00 5200	Agreement
Document 00 5500	Notice to Proceed
Document 00 6113.13	Construction Performance Bond
Document 00 6113.16	Construction Labor and Material Payment Bond
Document 00 6536	Guaranty
Document 00 6530	Release of Claims
Document 00 6325	Substitution Request Form
Document 00 6290	Escrow Agreement for Security Deposits
Document 00 6580	City of Berkeley Contracting Policies
Document 00 7200	General Conditions
Document 00 7201	Supplementary Conditions
Document 00 7316	Supplementary Conditions – Insurance
Document 00 7317	Supplementary Conditions – Contracting Policies
Document 00 7319	Supplemental Conditions – Hazardous Materials
Document 00 7380	Apprenticeship Programs
Document 00 9113	Addenda
Specifications	Divisions 1 through 9



Division	Section	Title
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**GENERAL REQUIREMENTS**

01 1100	Summary of the Work
01 2000	Measurement and Payment
01 2600	Modification Procedures
01 3119	Project Meetings
01 3230	Progress Schedules and Submittals
01 3300	Submittals
01 4100	Regulatory Requirements
01 4200	References and Definitions
01 4500	Testing and Inspection
01 5200	Temporary Facilities
01 5526	Traffic Control
01 5700	Temporary Controls
01 7329	Cut-Patch
01 7413	Project Cleaning
01 7419	Construction Waste Management
01 7700	Contract Closeout
01 7800	Closeout Submittals

**TECHNICAL SPECIFICATIONS**

01 32 00	Cutting Patching and Alteration Procedure
02 41 13	Selective Demolition
08 80 00	Glazing Film
09 91 00	Painting
26 24 00	Service and Distribution System

**APPENDICES****END OF DOCUMENT**

**SECTION 26 24 00**  
**SERVICE AND DISTRIBUTION SYSTEM**

**PART 1 - GENERAL**

1.1 WORK INCLUDED

- A. Work Included in This Section: All materials, labor, equipment, services and incidentals necessary to install the electrical work as shown on the drawings and as specified hereinafter, including but not limited to the work listed below.
- B. Underground service distribution conduits and cables where noted for power and telecommunications services, including utility company coordination.
- C. Temporary power for construction.
- D. Concrete pad and ground rods for Utility installed padmounted transformer.
- E. Main switchboard, Motor Control Centers, Distribution Switchboards, Distribution Panels, Transformers, Distribution System, Panel Boards, Grounding, and Overcurrent Protective Devices.
- F. All required incidental work, such as excavating, backfilling, testing, and temporary power.
- G. Any other electrical work as might reasonably be implied as required, even though not specifically mentioned herein or shown on the drawings.
- H. All work shall comply with Sections 26 05 00 and 26 27 00.

1.2 RELATED WORK

- A. Division 09 - Finishes
- B. Division 23 - Heating, Ventilating, and Air Conditioning

1.3 SUBMITTALS

- A. Comply with the provisions of Section 26 05 00 - Submittals.

**PART 2 - PRODUCTS**

2.1 ACCEPTABLE MANUFACTURERS

- A. Refer to Section 26 05 00, Part 2 - Products
- B. All new equipment shall match existing.
- C. List of Equipment Manufacturers:

Switchboards, Panelboards and Distribution Panels

Eaton-Cutler Hammer, General Electric, Industrial Electric Manufacturing, Schneider-Square D.

Dry-type Transformers

Eaton-Cutler Hammer, Schneider-Square D, General Electric.

## 2.2 MATERIALS

- A. Provide and install conduits for primary cables by utility company, concrete pad and grounding for utility company transformer, and conduit for secondary service to main switchboard. Comply with all Utility Co. requirements.
- B. Furnish and install telecommunications service conduits and pullboxes; install conduits to main point-of-entry backboard as indicated on the drawings. All work shall conform to utility company requirements and to Section 26 27 00.
- C. Grounding:
  - 1. Provide and install grounding system as noted on the drawings.
  - 2. Grounding electrode conductor: bare stranded copper type, #4/0 minimum.
  - 3. Install ground wires in rigid conduit.
  - 4. All grounding electrode conductor connections "thermite" or "cad-weld" welded.
  - 5. Use approved pressure type solderless connector or use fusion welding for all connections to and bonding of grounding electrode system. All connections shall be visible, readily accessible for testing purposes. Grounding electrode conductor between the grounding electrode and service equipment: Minimum #4/0.
  - 6. Furnish and install solid copper 3/4" x 10'-0" ground rod(s). Where multiple ground rods are shown, install a minimum of 20'-0" apart. Install ground rods in accessible boxes with covers. Furnish and install 2-#4/0 bare copper cables between multiple ground rods and main switchboard ground bus.
  - 7. Terminate grounding conduits at equipment with ground bushing, with ground wire connected through bushing.
  - 8. Provide No. 12 stranded (green) THHN conductor from outlet box to ground screw of every receptacle.
  - 9. Ground all isolated sections of metallic raceways.
  - 10. Provide #12 minimum stranded (green) THHN conductor sized per NEC, or as noted, connected continuously throughout branch circuit for all circuits, bonded to panel ground bus, and to all electrical devices and equipment enclosures.
  - 11. Grounding electrode installed as follows:
    - a. Place #4/0 bare copper cable in foundation trench; tensioned, supported in such a manner that it cannot be less than two (2) inches from bottom or side of concrete when foundation concrete is poured; not less than one hundred feet of conductor. Embed in foundation with a loop at approximate center, brought out at top of foundation at location of building service equipment for connection to service equipment and for bonding to other parts of the grounding electrode system.
    - b. Use approved pressure type solderless connector or use fusion welding for all connections to grounding electrode. Connection visible, readily accessible for testing purposes. Grounding electrode conductor between the grounding electrode and service equipment: Minimum #4/0.

- c. Connect grounding electrode system to metallic water service entry metallic cold water pipe (if available) with nonferrous clamp and bare copper cable (sized as required) in conduit. Connection shall be accessible for inspection.
  - d. Connect grounding electrode system to effectively grounded building steel as indicated on the drawings. Use exothermic weld, connection shall be accessible for inspection.
  - e. After installation, test system using the three-point fall of potential method only. Record results and submit to Architect for approval. If resistance to ground exceeds three ohms, install an additional ground rod, bonded and interconnected to the grounding electrode system.
  - f. Connect ground bar of separately derived systems (e.g all dry-type transformers) to effectively grounded building steel at the closest possible accessible location, or if building is concrete, or the steel is not effectively grounded, to the main switchboard ground bus: Use #4/0 copper conductor for all connections.
12. Ground rods: Lyncole XIT Electrolytic Grounding System with 4/0 AWG Cu Cadwelded (exothermically welded pigtail), protective box and backfill material - no known equal. Lyncole telephone number (800) 962-2610.
- a. Prior to installing ground rods the Contractor shall perform "Wenner four-point" soil resistivity tests at the grounding site to determine where the best installation, soil resistivity, and impedance level exist. The four point test shall be performed in a line 5, 10, and 20 feet apart. Also test perpendicular and at a diagonal to the first test. Therefore a total of 9 four point tests shall be performed.
  - b. Once the testing is complete the contractor shall estimate the quantity of ground rods required as determined in IEEE Standard 81-1983. Contact Lyncole for assistance. A minimum of two ground rods shall be installed.
  - c. Where soil conditions permit, straight, (or vertical), ground rods shall be installed. Lyncole model #K2-10CS - 10' complete grounding system. Length as required, 10 feet long minimum, unless otherwise noted.
  - d. Where poor soil conditions exist, such as rock at a shallow depth, 'L' shaped ground rods shall be installed. Lyncole model #K2L-10CS - 10' L-shaped complete grounding system. Ground rod shall be a minimum of ten feet long with a vertical riser 3' in length. The horizontal component of the ground rod shall be installed at 42" below grade.
  - e. The copper ground rod shall consist of a 2" nominal diameter hollow Type K copper tube with a wall thickness of not less than .083". The tube shall be permanently capped on the top and bottom. Air breather holes shall be provided in the top of vertical portion of the tube and drainage holes shall be provided along the bottom length of the tube for electrolyte drainage into the surrounding soil.
    - 1) The ground rod shall be filled from the factory with non-hazardous Calsolyte to enhance grounding performance.
    - 2) A stranded 4/0 AWG Cu ground wire shall be factory supplied Cadwelded to the side of the vertical portion of the rod for electrode conductor connection. Clamping "U-bolt" with pressure plate on the top end of the vertical tube shall be provided for testing and temporary connections.
    - 3) UL Listing: 467J, ANSI 633.8.
  - f. The Ground Access Box, for exterior applications, shall be a precast concrete box with slots for conduit entrances. Minimum size ten inch diameter by twelve inches high. Cast iron grate flush cover with "breather" slots, XIT model #XB-12.
  - g. The Ground Access Box, for interior applications, shall be a polyplastic box with bolt down flush cover and "breather" holes, XIT model #XB-11.

- h. Backfill Material shall be natural volcanic, non-corrosive form of bentonite clay grout backfill material free of polymer sealants. XIT model #LNC.
  - i. Install precisely to manufacturer's instruction, using only the backfill material supplied with the ground rod system.
  - j. Conventional ground rods are not acceptable.
- D. Main Switchboard, Distribution Switchboards, and Distribution Panels:
- 1. General: Switchboard shall be group-mounted type, metal enclosure with ground bus and insulated full capacity neutral bus.
  - 2. Equipment:
    - a. The switchboard shall be braced for a short circuit current of 65,000 amps minimum, and for 100,000 amps when indicated on the drawings. Bracing shall be per NEMA and UL standards.
    - b. The switchboard shall comply with all the requirements of the Utility Company.
  - 3. The switchboard shall be pad-mounted, self-supporting, dead-front and rear, front-operated, front-connected, distribution type. Nema 1 (indoor) or Nema 3R (outdoor). The enclosure shall be 90 inches high, made of cold rolled steel on a structural shape, or formed, steel frame and shall be mounted on two 3-inch, 5-pound continuous channel iron sills, which shall be closed at the ends between the two channels.
  - 4. This contractor is responsible for the complete installation of the switchboard within the space provided (both vertical and horizontal) and shall verify and/or coordinate all dimensions prior to ordering equipment. Proper allowances should be included to allow complete installation and erection.
  - 5. The switchboard shall be a minimum of 24 inches deep and shall be constructed of National Electrical Code (NEC) gauge steel.
  - 6. The switchboard shall be provided with a cable pull section at the top of the switchboard. Provide a minimum 12 inches of vertical clearance between the cable terminal lugs bolted to the switchboard busses and the top and bottom of the switchboard enclosure. Horizontal pull sections and gutters shall be kept free and clear of busses. Where busses cross vertical pull sections, the busses shall be insulated.
  - 7. All connections between bus bars shall be of a bolted type using Belleville washers. Clamps will not be accepted. All bus bars shall be accurately formed, and all holes shall be made in a manner which will permit bus bars and connections to be fitted into place without being forced.
  - 8. The design of all current-carrying devices or parts of the switchboard shall conform to the standard specified in the related sections of Underwriters' Laboratories, Inc. (UL) No. UL-891 and National Electric Manufacturer's Association (NEMA) Standard PB-2, except as these characteristics may be modified herein.
  - 9. Bus bars, connection bars and wiring on the back of the switchboard shall be arranged so that maximum accessibility is provided for cable connections from the front.
  - 10. Ampere ratings for rectangular bus bars shall be in accordance with the temperature rise standard of National Electric Manufacturer's Association (NEMA) and the Underwriters' Laboratories, Inc. (UL).
  - 11. The enclosure shall be chemically cleaned by parkerizing, bonderizing or phosporizing as a unit after all welding has been completed. The enclosure shall then be painted with a rust-resisting primer coat of paint and shall be finished with a coat of light gray, baked enamel.
  - 12. Each section shall be bussed for the full connected load of that section. Extend bussing to spare circuit breaker "Spaces." Drill busses for future circuit breakers, and provide

breaker connector hardware where indicated on the drawings or where required for ready installation of future circuit breakers.

13. Provide copper bus bars and connections with silver-plated contact surfaces.
14. The contact surfaces and studs of all devices to which bus connections are made shall also have silver-plated surfaces.
15. Provide a 200% rated neutral bus for switchboards supplied with 200% rated feeders (incoming or outgoing). Refer to single line riser diagram for feeder ratings.
16. Locate ground bus, with a cross-section equal to at least 25 percent of the capacity of the main bus rating, in the back of the switchboard and extend bus throughout the length of the switchboard assembly. Ground each housing of the assembly directly to this bus.
17. Rigidly support all bus and connection bars and current transformers.
18. Fit all nuts and connections with locking devices to prevent loosening.
19. Provide load connections with solderless lugs. Factory-install all devices shown on Drawings as specified herein.
20. Properly identify the "high leg" of 4-wire delta connected systems as required by NEC 110.15 and 230-56.
21. Provide ground fault protection for all main breakers or feeder breakers rated at 1000A or higher at 277/480V 3PH, and when otherwise indicated on the single line diagram or where otherwise noted on the drawings. Protection shall consist of a current sensor, relaying device, and the appropriately sized overcurrent protection device.
22. Provide a bonding strap from the equipment ground bus to the neutral bus.
23. Provide transient voltage surge protection, integral to or adjacent to the switchboard when indicated on the plans or where otherwise noted in the specifications herein. Refer to Section 26 43 00.
24. Distribution Panels shall comply with all relevant requirements of the above paragraphs - minimum 12" deep, for floor or wall-mounting.

E. Panelboards:

1. Surface (or flush where indicated on the drawings) mounted, with branch circuits as indicated on the drawings.
2. Enclosures: code gauge galvanized sheet steel with welded full flange end pieces, stretcher- leveled steel trim, backpan and door.
3. Bussing of copper with silver-plated contact surfaces.
4. Provide a 200% rated neutral bus for panels supplied with 200% rated feeders (incoming or outgoing). Refer to single line riser diagram for feeder ratings.
5. Properly identify the "high leg" of 4-wire delta connected systems as required by NEC 384-3(e).
6. Trims on surface-mounted cabinets secured with nickel-plated screws with cup washers, bottom of all trims to have lugs for resting on cabinet flange.
7. Panels shall be 20 inches minimum in width, provided with approved gutter space, barriers and adjustable supports. Doors mounted with concealed hinges provided with combination spring latch and lock. Doors and trims and surface mounted cabinets primed and finished with one coat baked on gray enamel. All visible panel enclosures and covers in finished (occupied) areas shall be painted to match adjacent wall finish.
8. Breakers on same phase to be aligned horizontally. Each panel provided with quantity (5) spare handle locks. Install handle locks on all breakers serving fire alarm equipment.
9. Each branch circuit of panelboards to have a permanently fixed number with one word directory, mounted under celluloid on inside of cabinet door, showing circuit numbers and typewritten description of outlets controlled by breakers. Color code mains and each breaker terminal, same as conductor insulation.

10. Each panel shall be equipped with a copper ground bus.
11. All panels shall be fully bussed to accept future circuit breakers, with breaker hardware provided where indicated on the drawings.
12. Panel board submittals shall include diagrams of the circuit breaker arrangements in the panels. Arrange circuit breakers in panels exactly as shown on the panel schedules in the construction documents - no deviations permitted.

F. Circuit Breakers:

1. General: Circuit breakers shall be molded case rated for 480 or 240 volts, multiple or single pole and amperage rating as shown on the drawings, bolt on, manually operated with "de-ion" arc chutes.
2. Main circuit breaker shall be rated to interrupt the available short circuit current - 65,000 amps RMS unless otherwise indicated on the drawings.
3. Distribution circuit breakers shall be rated for the amps interrupting capacity noted on the drawings or U.L. series rated with the main circuit breaker.
4. Branch circuit breakers shall be rated for the amps interrupting capacity or U.L. series rated with the distribution and main circuit breakers, General Electric type THQB or equal, minimum 10,000 A.I.C for 120/208 volt; type TEY or equal, minimum 14,000 A.I.C for 277/480 volt.
5. Branch breakers feeding dwelling unit Bedroom 15 and 20 Amp branch circuits shall be arc-fault circuit-interrupting type (per NEC 210-12).
6. Where mechanical equipment is U.L. listed for overcurrent protection with fuses or HACR type circuit breakers, provide fuses where a fused switch is shown. Where the overcurrent protection is a circuit breaker provide HACR, (Heating, Air-Conditioning and Refrigeration) type.
7. Provide switch rated type "SWD" circuit breakers where the circuit breaker is used as a switching device in a panelboard.

G. Dry-Type Transformers:

1. Ventilated type.
2. Dry-type general distribution transformers shall meet the California Title 24 requirements for energy efficiency standards and DOE 10 - CFR, Part 431 (2016) for energy efficient transformers.
3. Transformer shall be 3 phase, 60 Hertz. Primary winding shall be Delta connected and secondary winding shall be Wye connected. The temperature rise at rated voltage and full load shall not exceed 150 degrees C with a 220 degrees C U.L. Component Recognized Insulation System. The windings shall be aluminum or copper.
4. The higher voltage winding shall have quantity (6) 2.5% taps - (2) FCAN and (4) FCBN. Set secondary voltage for 120/208V.
5. Transformer terminals shall be front connected for ease of installation and maintenance.
6. Where the transformers are installed outdoors provide weatherproof drip cover, rodent screen and a weathertight rating of the enclosure.

H. 'K' Type Transformers:

1. The transformers shall be marked with a label stating "Suitable for Non-Sinusoidal Current Load with K Factor of 13 (or higher where indicated on the drawings) per UL Guide Specifications.
2. Transformers shall be 3 phase, 60 Hertz. Primary winding shall be Delta connected and secondary winding shall be Wye connected. The temperature rise at rated voltage and full

- load shall not exceed 150 degrees C with a 220 degrees C U.L. Component Recognized Insulation System. The windings shall be aluminum or copper.
3. The higher voltage winding shall have quantity (6) 2.5% taps - (2) FCAN and (4) FCBN. Set secondary voltage for 120/208V.
  4. A copper electrostatic shield shall be inserted between the primary and secondary windings. The primary and secondary conductors shall all be individually insulated, as small in size as possible, and transposed where necessary to keep eddy current losses at an absolute minimum. The primary winding conductor shall be of sufficient size to limit the temperature rise to its rated value even with the circulating 3rd harmonic current. The secondary neutral shall be twice the ampacity of the secondary phase conductors. The Basic Impulse Level of all windings shall be 10 KV. The core flux density shall be well below the saturation point to prevent core saturation caused by the harmonics even with a 10% primary overvoltage.
  5. Transformer terminals shall be front connected for ease of installation and maintenance.
  6. Transformers shall meet DOE 10 - CFR, Part 431 (2016) for energy efficient transformers.
- I. Magnetic starters: shall be rated in accordance with latest published NEMA standards for size and horsepower rating, Eaton-Cutler Hammer A-200 series or equal. Provide with overload sensor in each phase, hand-off-auto switch, red "run" pilotlight, in NEMA 1, NEMA 4X, or NEMA 3R enclosure or in motor control center where indicated. Coil shall be rated 120 VAC. Starters shall be across-the-line nonreversing unless otherwise noted.
1. Contacts: Across-the-line magnetic starters shall be equipped with double break silver alloy contacts. All contacts shall be replaceable without removing power wiring or removing starter from panel. The starter must have straight-through wiring.
  2. Coils: Coils shall be of molded construction. All coils shall be replaceable from the front without removing the starter from the panel.
  3. Overload Relays and Thermal Units: Overload relays shall be the melting alloy type with a replaceable control circuit module. Thermal units shall be of one-piece construction and interchangeable. The starter shall be inoperative if the thermal unit is removed.

### 2.3 ARC FLASH, SHORT CIRCUIT, AND COORDINATION STUDY

- A. See Section 26 05 73 for all requirements for Arc Flash Evaluation, Short Circuit Study, and Coordination Study for the distribution system.

## PART 3 - EXECUTION

### 3.1 REFER TO SECTION 26 05 00 FOR DETAILS OF WORK UNDER THIS SECTION.

### 3.2 INSTALLATION/APPLICATION/ERECTION

- A. Electric Service: Contact the local electric utility company service planning representative and coordinate with and arrange with the utility company for electric service to the project, including finalization of service application as required. Furnish and install all materials and labor necessary for complete installation as noted on drawings. Submit shop drawings and obtain approval from the utility company prior to fabrication. Also provide and install temporary power as required for construction operations.
- B. Telecommunications Service: Contact the local telecommunications and broadband utility company service planning representative and coordinate with and arrange with the utility company for telecommunications service to the project, including finalization of service



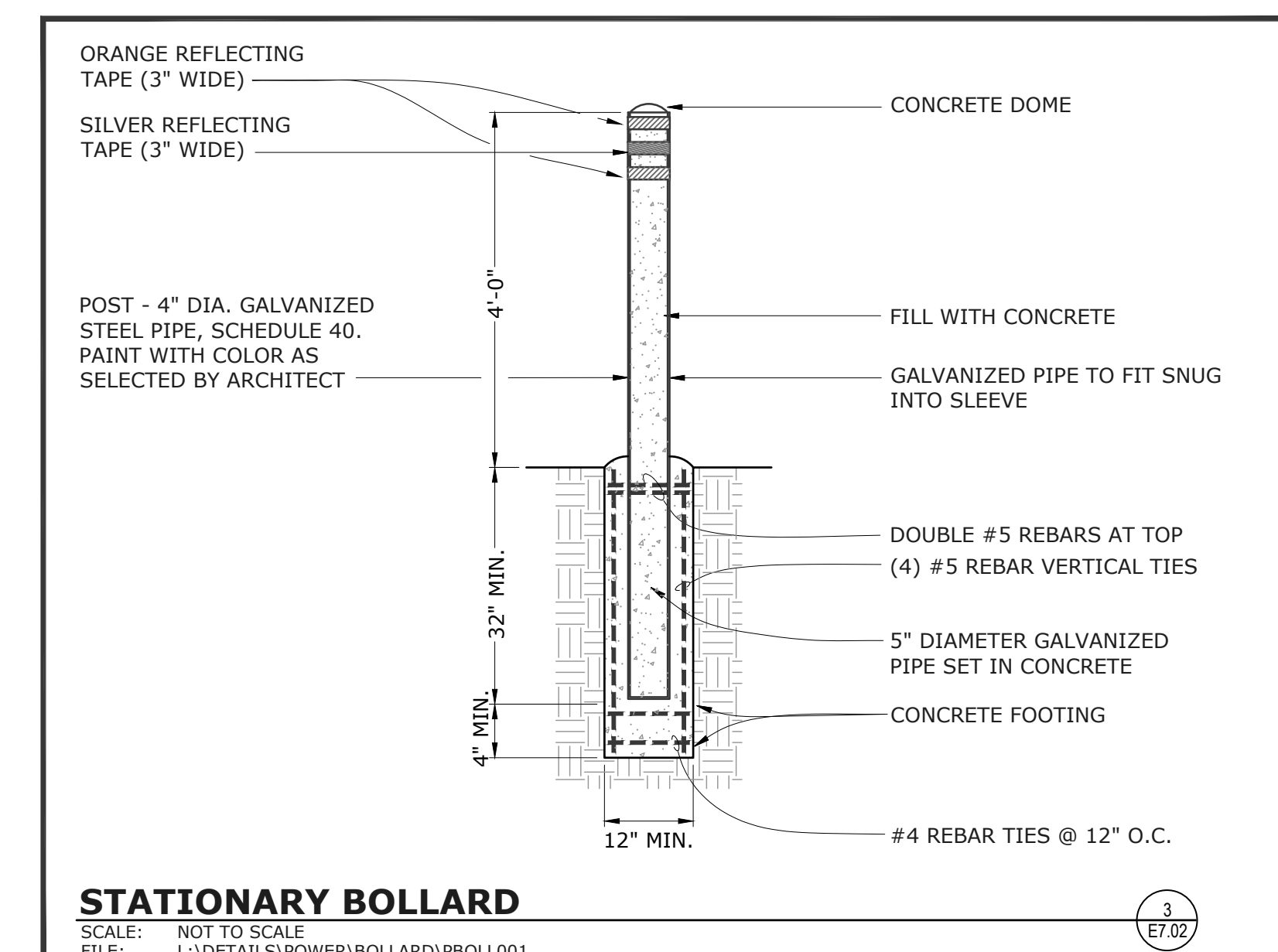
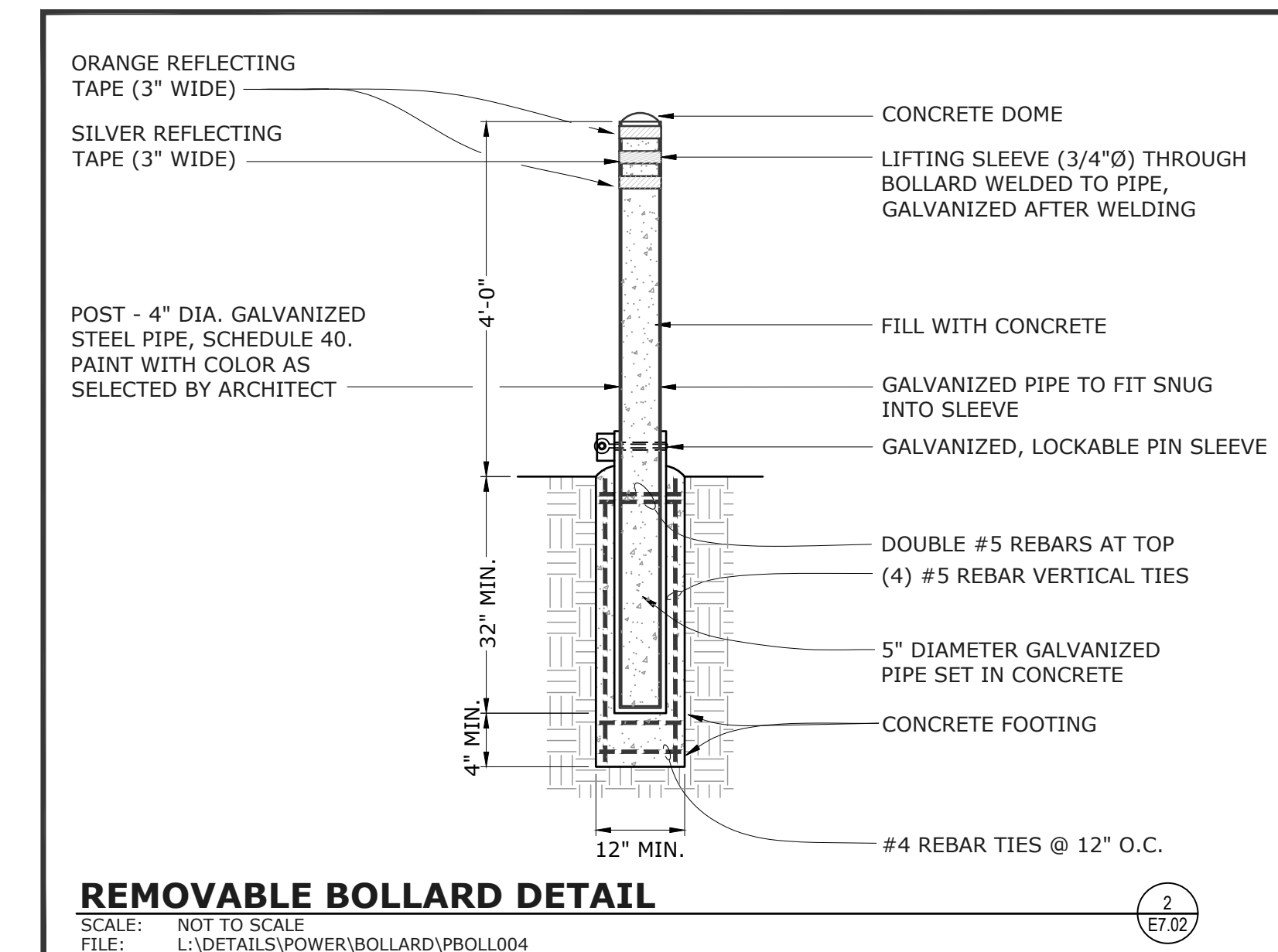
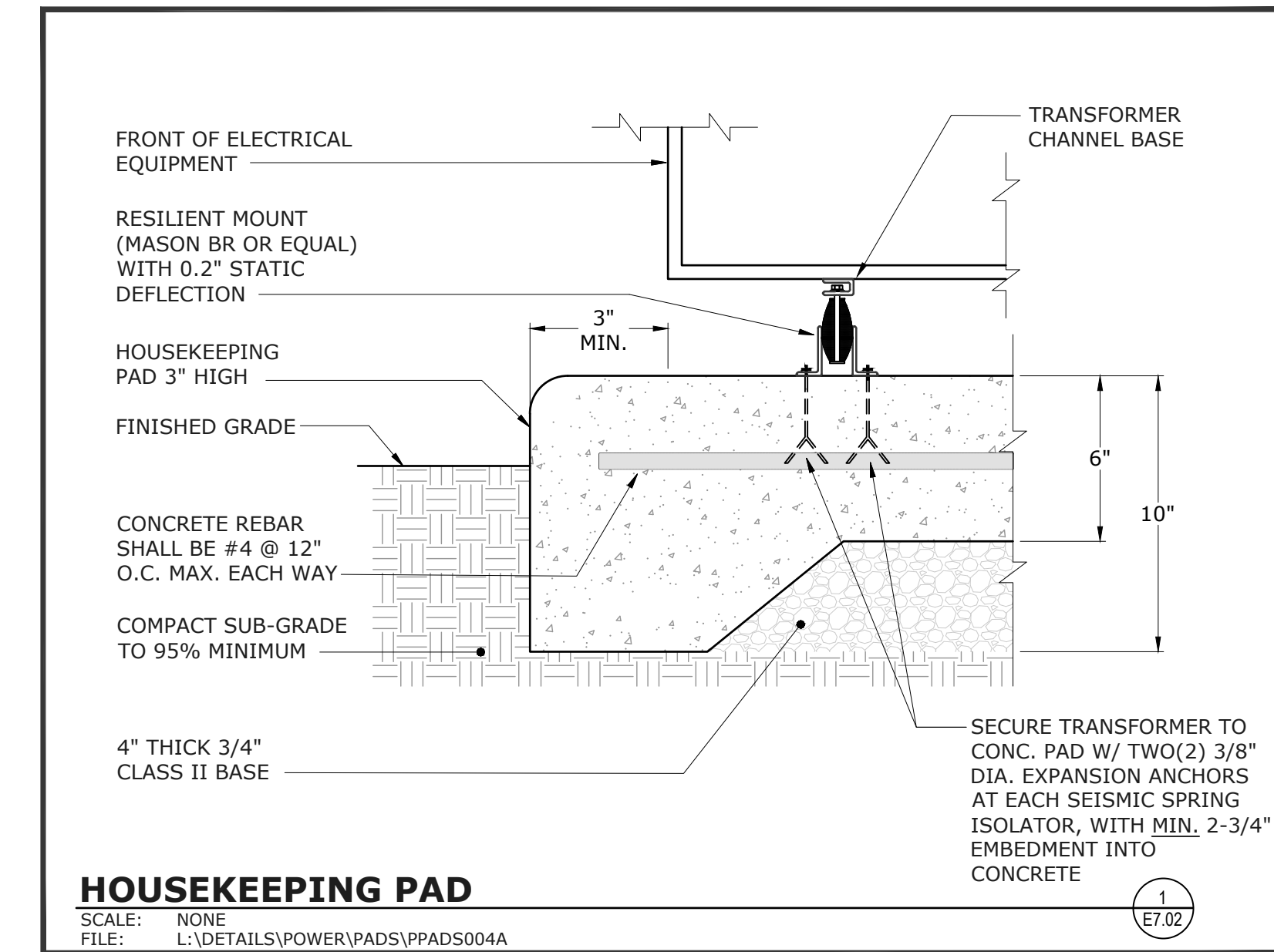
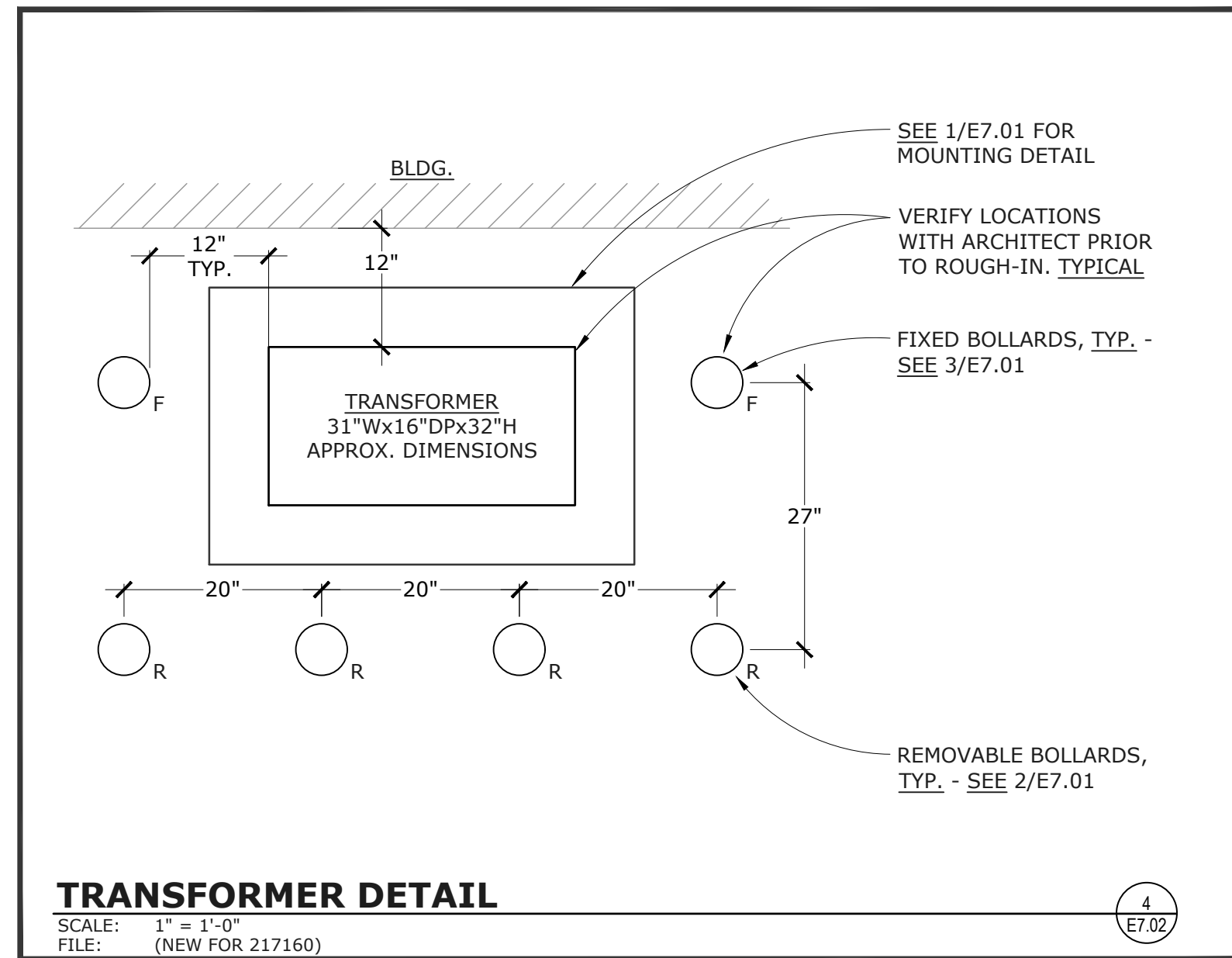
application as required. Furnish and install all materials and labor necessary for complete installation as noted on the drawings and as required by the utility company.

- C. Excavate and trench as necessary for the electrical installation, and when the work has been installed, inspected and approved, backfill all excavations with clean earth from excavation, or imported sandy soil in maximum 8" (eight-inch) layers, moisten and machine tamp to 95% compaction, and restore the ground and/or paving or floor surfaces to their original condition.
- E. Switchboards and Distribution Panels Installation: Mount as detailed on the drawings.
- F. Motor Connections:
  - 1. Install motor circuits complete for all motors by other trades
  - 2. Furnish and install all disconnect switches, outlet boxes, etc., as required by code.
  - 3. All motor and temperature control low voltage wiring shall be installed and connected by Division 23 Section of specifications, unless otherwise indicated on electrical drawings.
- G. Motor Starters Installation:
  - 1. Deliver starters to site without thermal overload elements. Determine nameplate rating of each motor, after motor and starter installation, select thermal element rating from measured motor running current and install proper elements in starters.
    - a. Submit chart denoting motor designation, motor H.P., motor running current (N.P.), actual running current fuse/breaker size and thermal element catalog number. Take readings of motor running currents in conjunction with Division 23 - Heating, Ventilating, and Air Conditioning.

### 3.3 TESTS

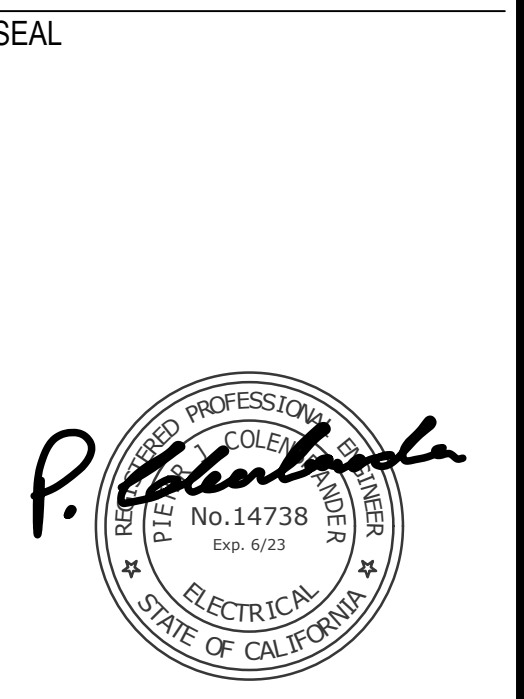
- A. Testing and Inspection: See Section 26 08 00 - Testing.

**END OF SECTION**



# NOLL & TAM ARCHITECTS

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## CITY OF BERKELEY NORTH BERKELEY SENIOR CENTER SEISMIC UPGRADES and RENOVATIONS

1901 HEARST AVE.  
BERKELEY CA 94709

### RECORD SET

ISSUE DATE	07/19/2022
N&T JOB #	X
REVISIONS	
DATE	DESCRIPTION

SHEET TITLE  
**DETAILS**

SHEET NUMBER

# E7.02

**SAFETY EXPERIENCE**

The following statements as to the Bidder's safety experience are submitted with the Bid, as part thereof, and the Bidder guarantees the truthfulness and accuracy of all information.

1. List Bidder's interstate Experience Modification Rate for the last three years.

[20\_\_] \_\_\_\_\_ [20\_\_] \_\_\_\_\_ [20\_\_] \_\_\_\_\_

2. Use Bidder's last year's Cal/OSHA 300 log to fill in the following number of injuries and illnesses:

a. Number of lost workday cases \_\_\_\_\_

b. Number of medical treatment cases \_\_\_\_\_

c. Number of fatalities \_\_\_\_\_

3. Employee hours worked last year \_\_\_\_\_

4. State the name of Bidder's safety engineer/manager:

Attach a resume or outline of this individual's safety and health qualifications and experience.

**I CERTIFY, UNDER PENALTY OF PERJURY, THAT THE FOREGOING INFORMATION IS CURRENT AND ACCURATE AND I AUTHORIZE OWNER, AND ITS AGENTS AND REPRESENTATIVES TO OBTAIN A CREDIT REPORT AND/OR VERIFY ANY OF THE ABOVE INFORMATION.**

**BIDDER:**

By: \_\_\_\_\_  
Signature

Its: \_\_\_\_\_  
Title

Date \_\_\_\_\_

**END OF SECTION**