



## **Bid Package 02 - Construction Bulletin 05**

**05/05/2020**

**Canadian County Expo Center  
3001 Jensen Road East  
El Reno, OK 73036**

Bid Package #2 includes the following trade contracts:

1. Trade Package 2-2: Site Utilities
2. Trade Package 2-3: Fences and Gates
3. Trade Package 2-4: Paving & Site Concrete
4. Trade Package 2-5: Concrete Pavers
5. Trade Package 2-6: Landscaping & Irrigation
6. Trade Package 2-7: Equine Protective Surface System
7. Trade Package 3-1: Structural Concrete
8. Trade Package 3-2: Polished Concrete Floors & Sealer
9. Trade Package 4-1: Masonry
10. Trade Package 5-1a: Structural Steel Fabrication
11. Trade Package 5-1b: Structural Steel Erection
12. Trade Package 5-1c: Structural Steel Supply and Erection
13. Trade Package 6-1: Millwork
14. Trade Package 7-1 Waterproofing
15. Trade Package 7-2: TPO Roofing
16. Trade Package 7-3 EIFS
17. Trade Package 8-1: Glass & Glazing
18. Trade Package 8-2: Doors, Frames, & Hardware
19. Trade Package 8-3: Coiling and Sectional Doors
20. Trade Package 9-1 Cold Form Framing & Drywall
21. Trade Package 9-2: Tape, Bed, Paint
22. Trade Package 9-3: Flooring & Tile
23. Trade Package 9-4: Resinous Flooring
24. Trade Package 10-1: Specialties Supply
25. Trade Package 10-2: Misc. & Install
26. Trade Package 10-3: Graphics & Signage
27. Trade Package 10-4 Prefabricated Metal Canopies
28. Trade Package 15-1: Fire Suppression
29. Trade Package 15-2: Mechanical
30. Trade Package 15-3: Plumbing
31. Trade Package 16-1: Electrical & Fire Alarm

**Construction Manager:**

Lingo Construction  
1135 North Robinson Ave.  
Oklahoma City, OK 73103

**Architect:**

Populous  
3151 West Tecumseh Road, Suite 220  
Norman, Oklahoma 73072

**Owner:**

Canadian County Public Facilities Authority  
201 N Choctaw Ave  
El Reno, OK 73036

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00 5000 Trade Package Scopes of Work (Revised)

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### Specifications

32 84 00 Landscape Irrigation System

**Refer to Architectural narrative for Addenda 03 on following pages**

**End of Table of Contents**



## Canadian County Expo Center

### Bid Package #02 – Construction Bulletin 05:

05/05/2020

#### Questions/Clarifications:

1. Refer to attached Revised trade Package specifications.
2. Alternates located on bid form shall be indicated per the addendum numbers noted in the Trade Package specifications 00 50000. The Alternates listed in division 01 are not to be used for indication on the bid form. Where bidder does not wish to provide number for alternate bidder shall indicate N/A. Where alternate is left blank it shall be considered as “no cost”.
3. Refer to items from Addendum 03 Narrative and outlined below.

#### Architectural

- a. LS1-1
  - i. Automated External Defibrillators (AED) were added to plans.
- b. A9-3-1
  - i. Tile CT1 Color updated

#### Plumbing

- a. Revisions have been made to the specifications in the form of a write up.
  - a. 22 40 00 Plumbing Fixtures
    - i. Vitreous China: Zurn is acceptable as an alternate manufacturer.
    - ii. Flush Valves: Zurn is acceptable as an alternate manufacturer.

#### ELECTRICAL

- a. Sheet E0-3 Electrical site enlarged area plan
  - a. Increased from 10 to 20 pedestals at East side of property.
- b. Sheet E2-0 Electrical power plan overall
  - a. included for completeness, no new specific information.
- c. Sheet E2-1A Electrical Power Plan - Area A



- a. Removed stray disconnect in room Comm 01.02.03.
- d. Sheet E2-1B Electrical Power Plan - Area B
  - a. Added ceiling mount receptacles for overhead doors.
- e. Sheet E2-1C Electrical Power Plan - Area C
  - a. Added ceiling mount receptacles for overhead doors.
- f. Sheet E2-1D Electrical Power Plan - Area D
  - a. Added ceiling mount receptacles for overhead doors.
  - b. Added info for key note three floorboxes.
- g. Sheet E2-1F Electrical Power Plan – Alt 1 Barn
  - a. Added a keyed note 2, gives clarification on corral panel power intent.
- h. Sheet E2-3 Electrical Roof Plan
  - a. Added EF-5.
- i. Sheet E2-4 Electrical Connections Schedule
  - a. Added EF-5.
- j. Sheet E3-2 Electrical PA/AV Systems Plan
  - a. Clarified conduit size for speaker cable, 3”.
- k. Sheet E4-1 Electrical one line diagram
  - a. Edited two disconnects.
- l. Sheet E5-2,-3, -4, -5 Electrical panel schedules sheet
  - a. Added Breakers etc to reflect changes on the floor plan sheets.
- m. Sheet E6-2 Electrical details sheet.
  - a. Edited detail 4 and 7, livestock corral electrical.

MECHANICAL - Revisions have been made to the following drawings in the form of full size sheets and specifications:

- a. Provide factory- mounted VFD with bypass for Single Zone VAV fan operation.
- b. 50 ton units to have a building pressure tracking system. Units to be able to adjust airflow based on building pressure.
- c. 50 ton units to have clogged filter switch, fan failure switch, condensate overflow switch, and discharge air temp sensor.
- d. 50 ton units to have a stainless steel drain-pan.
- e. Demand Control Ventilation with Wall-Mounted CO2 sensor



- f. Sheet M0-2 MECHANICAL SCHEDULES SHEET
  - a. Packaged Rooftop Unit Schedule
    - i. Added staging and information.
    - ii. Removed unused hot gas reheat note.
    - iii. Added BACNET card requirement
  - b. Exhaust Fan Schedule
    - i. Added EF-5. This fan serves the restrooms in area A.
  - c. Louver Schedule
    - i. Added L-C for additional information for the clerestory louvers.
- g. Sheet M1-1a MECHANICAL DUCTWORK PLAN – AREA A
  - d. Shifted 14x14 duct riser that connects to EF-5 to give it 10'-0" clearance from nearby rooftop units.
- h. Sheet M1-1D MECHANICAL DUCTWORK PLAN – AREA D
  - e. Supply and return ducts have been swapped to match unit configuration.
- i. Sheet M3-2 MECHANICAL PLAN - ROOF
  - f. EF-5 has been added to the roof plan
  - g. L-C louvers have been added to the arena.
- j. Additional approved mechanical manufacturers:
  - h. Tempmaster
  - i. Smartflex

**Refer Trade Package for other items noted but not identified here.**

**On bid form indicate CB-5 for acknowledgement of this Construction Bulletin.**

## Trade Package Scopes of Work

The following Trade Packages describe the scope of work to be included in each bid package. Bids shall include all items listed in the General Bid Package as well as the individual bid package relative to your trade and listed below:

1. Bid Package 1 (Bid Date 2/24/2020) (**Items already awarded**)

- |                        |  |
|------------------------|--|
| a. Trade Package 02-1  | Earthwork, Haul-off, and Erosion Control         |
| b. Trade Package 05-1a | Pre-Engineered Metal Buildings Supply            |
| c. Trade Package 05-1b | Pre-Engineered Metal Buildings Erection          |
| d. Trade Package 05-1c | Pre-Engineered Metal Buildings Supply & Erection |

2. Bid Package 2 (**Bid Date 05/07/2020**)

- |   |   |
|---|---|
| a. Trade Package 2-2: Site Utilities                        | o. Trade Package 7-2: TPO Roofing                   |
| b. Trade Package 2-3: Fences and Gates                      | p. Trade Package 7-3 EIFS                           |
| c. Trade Package 2-4: Paving & Site Concrete                | q. Trade Package 8-1: Glass & Glazing               |
| d. Trade Package 2-5: Concrete Pavers                       | r. Trade Package 8-2: Doors, Frames, & Hardware     |
| e. Trade Package 2-6: Landscaping & Irrigation              | s. Trade Package 8-3: Coiling and Sectional Doors   |
| f. Trade Package 2-7: Equine Protective Surface System      | t. Trade Package 9-1 Cold Form Framing & Drywall    |
| g. Trade Package 3-1: Structural Concrete                   | u. Trade Package 9-2: Tape, Bed, Paint              |
| h. Trade Package 3-2: Polished Concrete Floors & Sealer     | v. Trade Package 9-3: Flooring & Tile               |
| i. Trade Package 4-1: Masonry                               | w. Trade Package 9-4: Resinous Flooring             |
| j. Trade Package 5-1a: Structural Steel Fabrication         | x. Trade Package 10-1: Specialties Supply           |
| k. Trade Package 5-1b: Structural Steel Erection            | y. Trade Package 10-2: Misc. & Install              |
| l. Trade Package 5-1c: Structural Steel Supply and Erection | z. Trade Package 10-3: Graphics & Signage           |
| m. Trade Package 6-1: Millwork                              | aa. Trade Package 10-4 Prefabricated Metal Canopies |
| n. Trade Package 7-1 Waterproofing                          | bb. Trade Package 15-1: Fire Suppression            |
|   | cc. Trade Package 15-2: Mechanical                  |
|   | dd. Trade Package 15-3: Plumbing                    |
|   | ee. Trade Package 16-1: Electrical & Fire Alarm     |

Should any bidder be unclear as to the work associated with the General Trade Package or the individual Trade Packages they are directed to contact the Construction Manager.

## General Trade Package

- A. Trade Contractor has visited and carefully studied the site conditions above and below grade which may affect cost, progress or performance of the work and/or means, methods, techniques, sequences and procedures of construction expressly required by the bidding documents to be employed by the Trade Contractor and considerations are included in the bid.
- B. The bidding documents are generally sufficient to indicate and convey understanding of all the terms and conditions for the work performance of the work for which this bid is submitted. The Trade Contractor acknowledges the more stringent requirements should a conflict between the Construction Documents, building code and requirements and manufacturer's recommendation arises without compromising design intent.
- C. Provide bonds and insurance per the bidding requirements.
- D. Trade Contractor assumes all risk of any and all price increases associated with the cost of their work. Examples of this are material price escalation, lack of availability of materials, labor shortages, etc.
- E. Trade Contractor has given Lingo Construction written notice of all conflicts, errors, ambiguities or discrepancies that the Trade Contractor has discovered in the Bidding Documents and the written resolution by the Architect or Engineer is acceptable to the Trade Contractor.
- F. Lay down and storage space will be available in designated locations at times approved by Construction Manager. Scheduling the delivery of materials, including the hauling and hoisting of any such items required for this scope of work will be the sole responsibility of the Trade Contractor. Space required for preparation and installation will be coordinated with Construction Manager.
- G. Construction Manager or Owner will provide Builder's Risk Insurance. Deductibles shall be the responsibility of the Trade Contractor if the event was a result of the Trade Contractors failure to secure, store, or protect from loss.
- H. Each individual Trade Contractor is responsible for all means of access to complete the specified work. This includes any scaffolding, lifts, booms, related engineering, etc. to reach all required areas or facades of the building. Access plans shall be submitted to and coordinated with Construction Manager. Access equipment shall not impose loading to the structure greater than that of the design loading indicated by the Construction Documents. For all elevated decks, the Trade Contractor shall submit signed and sealed calculations showing loading of the Trade Contractor's selected access equipment on the existing structure. The Trade Contractor shall be responsible for engineering costs associated with determining the loading of the access equipment on the structure. The access equipment loading (with appropriate factors of safety) shall not exceed design loading. Where structure is not capable of supporting proposed access equipment, the Trade Contractor shall either use alternate acceptable equipment or shall provide load distribution systems to support loading to acceptable structure. Trade Contractor shall be responsible for installation and removal of such distribution systems unless coordinated otherwise with CM.
- I. Safety
  - a. Basic Personal Protective Equipment (PPE) including hard hats, safety glasses and vests, is required at all times while on the project site.

- b. Trade Contractor is fully responsible for ensuring that employees are competent and certified to operate any tools/equipment needed or used.
  - c. Trade Contractor is responsible for immediately repairing any safety rails or guardrails removed or damaged as a result of their respective work.
  - d. Trade Contractor shall have onsite MSDS folder prior to mobilization. Folder may be stored in CM office or in Trade Contractor designated location but location must be coordinated with CM.
- J. Regular operating hours are 7:00 am to 3:30 pm Monday thru Friday. Work can take place at off times if approved by C.M. in advance. Trade Contractor shall provide written request for approval 48 hours before proposed work time.
- K. Revisions in the planned schedule are intrinsic with the nature of construction. Trade Contractors acknowledge that the Owner and Construction Manager cannot guarantee work will commence on a certain date or continue without interruption. Trade Contractor has included all costs associate with this risk.
- L. Trade Contractor will provide adequate labor to carry out and/or complete the scope of work in the scheduled time and will not be eligible for compensation for excess hours or overtime worked to meet the schedule. If an expedited schedule is requested compensation will be negotiated prior to initiation. Trade Contractor further agrees to cooperate and work harmoniously with other trades in achieving completion dates, and to coordinate the work to avoid compression (to the extent possible) for the benefit of all trades.
- M. Trade Contractors shall sequence their work to coincide with the Construction Manager's Project Schedule. The subcontractor shall demobilize/remobilize as necessary due to the sequence of construction activities.
- N. Trade Contractors will be required to coordinate with Construction Manager as well as other Trade Contractors. If any conflict occurs, immediately notify Construction Manager.
- O. Trade Contractor is responsible for coordination of testing for the Trade Contractor's work in accordance with the Construction Documents as well as local code and city requirements.
- P. The Trade Contractor will send a competent field supervisor with the authority to make decisions on behalf of the Trade Contractor to project coordination meetings prior to beginning the Trade Contractors work, during and after completion of the work as required for the coordination of the project. In addition, the Trade Contractor will maintain, at all times, a suitably sized and skilled crew to proceed rapidly and logically through the work per the direction of the Construction Manager and the amended and published Project Schedule.
- Q. A dedicated project Superintendent will be identified for dissemination of jobsite communication between Lingo and Trade Contractor's field personnel.
- R. Trade Contractor starting work will be considered acceptance of the substrate or previous work.
- S. Construction Manager or Owner will pay for third party testing. Trade Contractors are responsible for coordination of testing, through the Construction Manager. Proper notice must be given to ensure availability of the testing company. Reinspection fee's shall be the responsibility of the Trade Contractor who failed the inspection. Costs associated with delays due to lack of coordination between Trade Contractor and testing agency shall be the responsibility of the Trade Contractor.



- T. All layout, product submittals, mockups, field measurements, coordination with other trades, fees, inspections, tests and certificates as required by law or jurisdictional oversight will be paid by those specific Trade Contractors.
- U. Prior to establishing building pad elevation Construction Manager will provide benchmark elevations. All additional layout, elevations, grade stakes, and surveying required are the responsibility of the Trade Contractor.
- V. Surveying control points will be provided by the Construction Manager after building pad elevation is established. All additional layout, elevations, grade stakes, and surveying required are the responsibility of the Trade Contractor.
- W. Trade Contractor is responsible for providing dewatering and pumping necessary to complete their scope of work.
- X. Electronic copies of shop drawings and submittals must be provided to the Construction Manager within fifteen (15) days of the Trade Contractor receiving the Notice To Proceed or as approved by the Construction Manager.
- Y. Trade Contractors are responsible for ensuring their materials are delivered to the project at a time that coincides with the project schedule.
- Z. Trade Contractors are responsible for protecting cast in place concrete (to remain exposed) against markings. Examples of markings include tire marks from equipment as well as chalk lines that are not removeable. Trade Contractor shall be responsible for all costs associated with removal of such markings if they occur.
- AA. Trade Contractors are responsible for taking precautions to protect their work as well as adjacent property (such as utilities, city roads & streets, private property, etc.).
- BB. Trade Contractors shall provide drinking water for their employee's.
- CC. Trade Contractor's shall have a foreman capable of speaking fluent English and translating for any non-English speaking personnel on their crew.
- DD. Instructions of Owner's Personnel on operation of systems and startup of systems as detailed in the Contract Documents are included. Provide electronic files of all operation and maintenance manuals, warranties, as-built drawings and any other closeout documentation. Trade Contractor to include cutting, sealing and patching (including fire caulking) of all penetrations relating to the work made by that Trade Contractor. All patching activities for a uniform acceptable finish are included. Trade Contractor to submit proposed fire stop materials to Construction Manager for review prior to installation.
- EE. Extra items, requested by Lingo or the Owner, will have a markup not to exceed 10% of labor and material cost. A fully detailed breakdown including, however not limited to labor, materials, equipment and incidentals will be required for any additional work. All requests for change order pricing must be turned in within 3 working days of the request for a price unless coordinated otherwise.
- FF. All specifications (including Divisions 00 and 01) are part of this bid package.
- GG. Submit written daily activity reports to Lingo's Superintendent by 3:00pm daily.
- HH. All trash and debris resulting from Trade Contractor's work shall be daily cleaned up, broken down, and placed in the dumpster (provided by Lingo) by the Trade Contractor. Any material not acceptable to the local landfill or roll off provided will be removed from the site and legally disposed of by the

Trade Contractor. Trade Contractors are responsible for maintaining a safe, clean, uncluttered workplace.

- II. Trade Contractors are required to provide copies of inspection tags to the Construction Manager immediately following inspections.
- JJ. Closeout Procedures – The following are required in order to expedite closing the job out and applying for retainage
  - a. Closeout documents (O&M manuals, warranties, training, etc) will be requested approximately ninety (90) days prior to substantial completion.
  - b. Start dates on warranties shall read “From the Date of Substantial Completion” in lieu of a specific date.
  - c. A certificate will be issued, included in the warranty manual and distributed to the trade contractors, with the actual date of substantial completion.
- KK. Trade Contractors are responsible for providing task lighting as necessary to perform their work.
- LL. Trade Contractors to remove their spoils from underground work from site. Trade Contractor to backfill their underground work per the geotechnical report recommendations.
- MM. Concrete Penetrations, Sleeves, & Sawcutting
  - a. Trade Contractors are responsible for identifying, locating, and ensuring blockouts and penetrations are incorporated into concrete pours such that their work can be installed properly.
  - b. For openings in concrete walls or slabs not specifically detailed in Contract Documents Trade Contractor requiring the opening shall be responsible for blockouts or void forms.
  - c. Trade Contractors shall provide supervision at concrete pours involving penetrations and sleeves associated with their work.
  - d. In the event concrete sleeves or blockouts are not identified, located, or placed properly the Trade Contractor requiring the opening shall be responsible for the full cost of demolition, removal, and replacement of all concrete required for the installation of their work. Costs shall include removal of material off site, testing of new material as required, and all reinforcement, vapor barrier, and finished necessary to install blockout.
  - e. Saw cutting and patching are the responsibility of the Trade Contractor who requires the work.
  - f. Trade Contractors to submit core drilling and/or sawcutting locations & sizes to the Construction Manager for approval by the EOR prior to proceeding with work. Where Construction Manager/EOR require scanning or locating of cast in reinforcement, the Trade Contractor shall be responsible for these costs.
- NN. Warranty period shall start at the date of substantial completion.
- OO. Trade Contractors shall provide their own flagmen and traffic control as necessary for their scope of work as well as deliveries.
- PP. For trades requiring inspections partial inspections shall be included in the cost of work.
- QQ. Trade Contractors shall be responsible for providing their own GFCI protection if using permanent power from the building.
- RR. Provide any temporary lighting required to complete work. Construction Manager will only supply minimum required by OSHA.

- SS. All Trade Contractors shall submit their company safety policy, identified competent person, and any job specific job hazard safety documents to CM prior to start of work. This does not relieve the Trade Contractor from responsibility of implementing their own safety policy but is used to promote a more comprehensive safety environment on the project.
- TT. Project shall be tax exempt. Trade Contractor shall take this into account for material that is to remain onsite only. Temporary materials that do not remain as a part of the structure cannot be considered for tax exempt status. Refer to local rules/regulations for more information.
- UU. Clarification: Refer to bonding requirements listed on bid form 00 2000 in specifications for information about requirements.
- VV. Trade Contractors will not be compensated for time or money due to rework items not correctly installed or not meeting QC requirements. Trade Contractor shall be required to review trade specific work as completed to ensure it meets specification requirements.
- WW. Trade Contractor shall refer to schedule in section 00 32 00 for reference to durations noted. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights outlined in the schedule. To maintain project completion date, blocks in various areas will be phased concurrently. Trade Contractor will be required to provide multiple crews, equipment, material, and the leadership required to work in areas concurrently as shown in the project schedule.

## Bid Package 01

## Trade Package 2-1: Excavation, Haul-off, and Erosion Control

This bid package shall include the cost of providing all labor, material, equipment, supervision, services, insurance, fees, permits, overhead and profit, etc. necessary or incidentally required for the **Excavation, Haul-off, and Erosion Control** including work from referenced specifications and normally associated with this trade, whether referenced or not.

Specification Section:	Description:
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Section 31 1000	Site Clearing
Section 31 2000	Earth Moving

**Quantity Check:** On Section #5 of the bid form please list total anticipated quantities for the following in the quantity check section:

- CY of cut
- CY of fill
- CY of export
- Duration for building pad and pavement preparation (working days)

These quantities are for reference only. Trade contractor is responsible for the actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below.

- Provide additional mobilization for backfilling against curbs, final grade at areas shown and distributing topsoil.
- Milestones:
  - Project Scheduled Start: 3/23/2020
  - Building Pads complete: 4/17/2020
  - Site Grading Complete for Paving Start: 6/1/2020

**The following is a highlight of the scope of work associated and to be included in this bid package:**

1. All items listed in General Trade Package.
2. While on site ensure public streets remain clean from any mud or debris tracked out of jobsite. During earthwork activities when necessary due to water, excavation contractor to provide power washer and attendant to clean mud off tires of vehicles existing jobsite. Further, excavation contractor to provide street sweeper and operators as necessary to maintain clean streets. If vacuum tracks or

steam cleaning required, due to earthwork activities, it shall be at the expense of the earthwork Trade Contractor. To reduce dust and spillage, truck beds must be covered and rims of truck beds swept upon exiting jobsite.

3. Provide dust control per governing authorities and as required by the Construction Manager throughout this scope of work by this Trade Package.
4. Protect all items noted to remain that are in or adjacent to the work zone.
5. Prepare site and building pad and grade/compact per evaluations and recommendations provided in the geotechnical report included in the project manual.
6. Verify locations and protect all utilities prior to and during work. Trade Contractors are responsible for calling in and maintaining locates adjacent to their work.
7. Include temporary hydrant meter and water trucks for any water required to complete the work in this bid package.

### **Demo and Clearing**

8. This Trade Package to provide their own haul off of demo'd or cleared material. Dumpsters will not be provided by Construction Manager.
9. This Trade Package shall be responsible for removal of natural materials, vegetation, and trees. Additionally, will be responsible for removal of surface and subsurface gravel drives, pavement, abandoned pipe, conduit, wire, etc. from the existing site/structures where interference with grading occurs. The utility contractor will be responsible for cutting and capping the existing utilities as shown in the contract documents.
10. This Trade Package shall be responsible for removal of barbed wire fence as noted on demolition plan. Fence shall be removed at completion of earthwork scope or as coordinate with CM.
11. This Trade Package shall be responsible for the removal of existing culverts and cattle guards as noted on demolition plans. Removal timeline to be coordinated with CM.
12. When trees are removed the entire tree, including stump and roots, is to be removed.
13. Clear and grub obstructions, shrubs, trees, and other vegetation within footprint of building as well as areas where exterior paving or improvements occur.
14. Include generators if electricity is required for work in this package.
15. Construction Entrance – Provide rock construction entrance with filter fabric underneath at the east end of project at location directed by CM. Provide culvert +/-25' for entrance. Near the east entrance provide additional 1800 sf (30'X60' approx.) gravel area with filter fabric for use as a wheel wash/mud removal station. Maintain construction entrances throughout work associated with the Earthwork Trade Package.

### **Erosion Control**

16. Erosion control equipment and devices shown on plans will be provided and installed by this Trade Package. Inspections and maintenance are not included in this Trade Package.

17. This Trade Package to provide silt fencing for stockpiles of topsoil as well as berms not specifically shown on the drawings. In addition, this Trade Package to include erosion control required for earthwork activities due to sequencing of temporary stockpiles that is not shown on the plans.
18. Rip rap at storm drain shall be provided and installed by this trade package at time of final grading. Temporary discharge erosion control measures shall be installed by this trade package.
19. Provide and install all erosion control shown on the Construction Documents.
20. Include all rock dams, rock dikes, filter fabric, silt fencing and all other erosion control measures shown and referenced in the specification.
21. Provide temporary inlet and outlet protection.
22. Removal of erosion control items is included in this Trade Package.
23. Provide silt fence around perimeter of construction entrances and wash off areas.

## **Grading**

24. At areas, under the building pad, receiving greater than 10' of fill provide crushed stone or gravel per Section 5 Evaluations & Recommendations in the Geotechnical Report.
25. Because of the depth of fill at large portions of the slab on grade it is critical that positive drainage be provided away from the fill to avoid excess water being directed into the fill. Trade Contractor shall be liable for removal/replacement if fill becomes saturated due to negligence.
26. Supply and installation of granular backfill at retaining walls or under building pads as directed by Geotechnical report, specifications, or construction documents. Slab on grade sub-base as specified in structural drawings shall be by concrete subcontractor and not this Trade Package.
27. Strip and stockpile all topsoil on site to areas designated by the site superintendent. Provide stabilization of stockpiles as necessary to prevent wind and water erosion. Provide and install silt fencing around stockpiles.
28. Provide dewatering as required to perform the work in this bid package.
29. Provide all importation, placement, compaction of select fill material required to establish finish grades per the Contract Documents and geotechnical report. Provide acceptable fill material or treat existing material so that it will meet the requirements of the Contract Documents.
30. This Trade Package shall include proof rolling and watering as required to meet specified compaction and moisture requirements.
31. Concrete Trade Contractor to provide and install gravel base at building pad. Earthwork contractor to prepare subgrade to elevation corresponding with the bottom of aggregate base. Carry building pad 5' beyond perimeter of building pad unless obstructed by retaining walls.
32. Final grading and compacting of subbase material to within  $\pm 1 \frac{1}{4}$  (.10) of the specified elevations. This  $\pm$  requirement shall be balanced to zero. Provide positive drainage away from building pads. Notify site superintendent if this is not possible.
33. Protect survey control points by marking them clearly. Earthwork Trade Contractor shall be responsible for costs associated with replacing control points, unless caused by another trade.
34. Scarifying and re-compaction as required.
35. At the floor slab overcut and recompaction may be required. Trade Contractor to include over excavation and fill/compaction with suitable soil as directed by the Geotechnical Report.

36. Stockpile and spread topsoil for areas to receive sod. Landscape Trade Contractor to provide and install topsoil for beds.
37. Earthwork Trade Contractor to backfill against curbs and paving.
38. Earthwork operation over existing onsite utility lines should be limited according to the stipulations outlined on sheet C6-0. Note existing pothole over "Centurion" owned 16" pipelines indicated 2'-0" +/- from existing grade. Trade Contractor shall be required to have a roadway of minimum 4'-0" fill over top of pipeline when crossing perpendicular.

**Alternates:**

39. Alternate 01 shall be for Grading out Stall Barn as indicated on the Construction Documents.
  - a. Trade Package 01: Earthwork, Haul-off, and Erosion Control: Base Bid Shall include cost of Stall Barn building pad preparation according to geotechnical report and Construction Documents.  
Alternate 01 price shall be to overlay Base-Bid Stall Barn building pad with 8" topsoil.
40. Alternate 02: Trade Contractor to provide an Add Alternate for a per sf price for 4" thick crusher run construction parking lot applied over filter fabric at location specified by CM onsite.
41. Alternate 03: Trade Contractor to provide an Add Alternate for 18" RCP Storm Line 2 noted on north east permanent site entrance installation. Trade Contractor shall indicate "Excluded" for exclusion of this alternate.
42. Alternate 04: Building Owner to provide, spread, and compact gravel parking areas under base bid. This Trade Contract shall not include gravel drives or parking as indicated in documents as a portion of the base bid. This Trade Contract shall include add alternate cost of supplying, spreading, and compacting gravel as indicated in drawings as a part of Alternate #04.
43. Alternate 05: The most recent report includes soils test pits to verify that existing soils can be modified with hydrated lime to be utilized for select fill. Imported select fill should be priced as the base bid. Trade Package 02-1 Alternate 05 shall be to use existing onsite soils, improved to meet requirements outlined in geotechnical report.



## Trade Package 5-1a: Pre-Engineered Metal Building Structures Supply

This bid package shall include the cost of providing all labor, material, equipment, supervision, services, insurance, fees, permits, overhead and profit, etc. necessary or incidentally required for the **Pre-Engineered Metal Building Structures** including work from referenced specifications and normally associated with this trade, whether referenced or not.

Specification Section:	Description:
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Division 13 3419	Metal Building Systems

**Quantity Check:** On Section #5 of the bid form please list total anticipated quantities for the following in the quantity check section.

- Total tonnage of fabricated steel/connections/stiffeners etc. (tons)
- Lead time to produce shop drawings for Anchor Bolts from date of release (days)
- Lead time to deliver anchor bolts from receipt of approved shop drawings. (days)
- Duration for shop drawings (weeks)
- Duration for fabrication/delivery from approved shop drawings (weeks)

These quantities are for reference only. Trade contractor is responsible for actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below.

- Submittals due to CM:
  - Anchor Bolt Shop Drawings: 6 weeks after Notice to Proceed
  - PEMB Shop Drawings (Expo Hall): 6 weeks after Notice to Proceed
  - PEMB Shop Drawings: Remaining buildings: 8 weeks after Notice to Proceed.
  - PEMB Expo Arena – Delivery to Site: 12 weeks from approved shop drawings
  - PEMB Remaining – Delivery to Site : 14 weeks from approved shop drawings

**The following is a highlight of the scope of work associated and to be included in this bid package:**

1. All items listed in General Trade Package.
2. The Pre-Engineered Metal Building fabricator shall be responsible for providing shop drawings, connection design, fabrication, and delivery of the following items: Pre-Engineered Metal Building Anchor Bolts, Frames, Purlins, Bracing, Miscellaneous Steel, Associated fasteners, Embeds, Roof Decking, bearing plates, miscellaneous steel typically required, and Metal deck panels on interior and exterior of building as shown on the architectural and structural plans.
3. Provide design, engineering, and Oklahoma licensed professional engineer's seal for all connection calculations that are not shown in the contract documents.
4. Provide shop-made steel templates for each set of anchor bolts.

5. Provide primer at all steel that is to receive primer or paint.
6. Galvanize steel as noted on the Contract Documents for items provided by this Trade Package.
7. Provide mechanical unit support framing for units supported by Pre-Engineered Metal Building Structures.
8. Provide all fasteners (bolts, nuts, washers, tension control fasteners, anchors, and epoxy adhesives) necessary to complete installation for the items provided in this Trade Package.
9. Provide and remove all temporary bracing and shoring as required for stability during erection.
10. All exposed steel members to be treated and fabricated as architectural steel.
11. Provide shop visual and non-destructive testing as noted in the contract documents or required by Building Code.
12. On the bid form indicate Yes/No for Certified Fabricator as required per specification. If the answer is no, the Fabricator shall include the cost for the "In Plan Inspections" associated with the special inspections requirements of the IBC.
13. Deliveries to be scheduled and sequenced in coordination with the Site Superintendent and Erector.
14. Provide camber on framing as indicated by Contract Documents.
15. Install steel for roof openings, penetrations, supports, etc. located in Pre-Engineered Metal Building Structures.
16. Provide metal decking and all decking accessories for the project. This Trade Contract shall include metal decking over non-pre-engineered metal building structures. Trade Contract shall include flashings, fasteners, and other items typically required.
17. Dewater of column blockouts while performing work in this Trade Package.
18. Provide temporary perimeter fall protection/guardrail systems required for erection of this work. Temporary protection shall not be welded to exposed structure. Removal by erector.
19. This Trade Package shall be responsible for shipping. Receive, offload, stage, inventory, layout, and install all Pre-Engineered Structure, metal decking, metal decking accessories, and misc. steel associated with this Trade Package shall be by the Pre-Engineered Metal Building Erector.
20. This Trade Package shall include interior insulation at Metal Building structures. This shall include any accessories needed for installation of such system.
21. This Trade Package shall not be responsible for glazing/louvers in Pre-engineered structures but shall provide openings with opening framing as directed by Contract Documents and typical details required for such installation.
22. Anchor bolt templates shall be by the PEMB Supply Trade Package. Templates shall include minimum (1) template per layout type. When the same layout is used for multiple instances, supplier shall provide (1) template for each instance up to a maximum of (5) templates of the same layout pattern.
23. **Liquidated Damages:** Subcontractor acknowledges and agrees that if it fails to complete the Work on or before the applicable Trade Contract Milestone date, Contractor will sustain damages and loss as a result of such failure and such damages will be assessed to the Contractor by the Owner. Subcontractor agrees to be liable to Contractor for liquidated damages for each calendar day of delay in achieving Trade Contract Milestone date in the amount of two hundred fifty dollars (\$250) per day. Contractor and Subcontractor agree that these liquidated damages are reasonable in light of the actual or anticipated damages and harm caused by a delay in achieving Trade Contract Milestone date. Trade Contract Milestone Dates are indicated above in "Schedule".
24. This Trade Package shall include snow guards on PEMB roofs.

Alternates:

25. Alternate 01 shall be for including Stall Barn as indicated on the Construction Documents.

- a. Trade Package 05-1a: Pre-Engineered Metal Building Structures Supply: Base Bid Shall not include cost of Stall Barn. Alternate 01 price shall be to include Stall Barn with framing, decking, accessories indicated. Alternate 01 Stall Barn shall be with all framing primed. Epoxy Painting all Stall Barn to be included in Painting Scope of work.
26. Alternate 02 shall be for including Stall Barn as indicated on the Construction Documents with galvanized framing.
- a. Trade Package 05-1a: Pre-Engineered Metal Building Structures Supply: Base Bid Shall not include cost of Stall Barn. Alternate 02 price shall be to include Stall Barn with framing, decking, accessories indicated. Alternate 02 Stall Barn shall be with all framing galvanized as indicated by specifications.
27. Alternate 03 shall be for including galvanized secondary framing for Pre-Engineered Metal Buildings except for maintenance building and Alternate 01/02 Stall Barn.
- a. Trade Package 05-1a: Pre-Engineered Metal Building Structures Supply: Base Bid Price shall be for primed Pre-Engineered Metal Buildings. Alternate 03 shall be for galvanizing all secondary metal building framing.
28. Alternate 04 shall be for including galvanized Primary and secondary framing for Pre-Engineered Metal Buildings except for maintenance building and Alternate 01/02 Stall Barn.
- a. Trade Package 05-1a: Pre-Engineered Metal Building Structures Supply: Base Bid Price shall be for primed Pre-Engineered Metal Buildings. Alternate 04 shall be for galvanizing all Primary and Secondary metal building framing.

## Trade Package 5-1b: Pre-Engineered Metal Building Structures Erection

This bid package shall include the cost of providing all labor, material, equipment, supervision, services, insurance, fees, permits, overhead and profit, etc. necessary or incidentally required for the **Pre-Engineered Metal Building Structures** including work from referenced specifications and normally associated with this trade, whether referenced or not.

Specification Section:	Description:
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Division 13 3419	Metal Building Systems

**Quantity Check:** On Section #5 of the bid form please list total anticipated quantities for the following in the quantity check section.

- Total tonnage of erected steel. (tons)
- Duration for erection (weeks)

These quantities are for reference only. Trade contractor is responsible for actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below.

- Milestones:
  - Area D (Expo Hall) PEMB Frame Erection – 20 days
  - Area D (Expo Hall) PEMB Standing Seam Roof, Veneer, and Simple Saver Erection – 20 days
  - Area B/C (Arena) PEMB Frame Erection – 30 days
  - Area B/C (Arena) PEMB Standing Seam Roof, Veneer, and Simple Saver Erection – 25 days
  - Area E (Maintenance) PEMB Frame Erection – 10 days
  - Area E (Maintenance) PEMB Standing Seam Roof, Veneer, and Simple Saver Erection – 10 days
  - Area F (Alt. 1 – Stall Barn) PEMB Frame & Roof Paneling Erection – 20 days

Milestones:

- Durations for Frame Erection activities listed above start at the time that both PEMB Material is delivered to site and slab on grade has reached adequate strength.
- Durations for Standing Seam Roof, Veneer, and Simple Saver Erection activities listed above start at the time that MEP hanger install is complete to receive Simple Saver.
- Milestone for Frame Erection indicates that all primary and secondary framing are installed and have passed third party inspections. Structure shall be required to be plumb, self supporting, permanent bracing installed, safe for other trades to occupy, and ready for succeeding work.

- Milestone for Standing Seam Roof, Veneer, and Simple Saver Erection indicates that structure is complete. Structure is watertight at wall sections except at locations for openings to be filled by other trades such as door, window, or MEP trades. Simple Saver system shall be installed and ready for MEP overhead hanger and piping to occur.

Note: Trade Contractor is not scheduled to erect primary and secondary PEMB Framing at the same time in two different structures. However, failure to meet durations above may require Trade Contractor to require multiple Frame erection crews in multiple structures. Trade Contractor will be required to be erecting primary and secondary framing in one area while installing metal panel roof, veneer, or simple saver insulation in the other area. Trade Contractor shall allow for MEP hanger install on PEMB structure prior to install of simple saver system. Trade Contractor shall coordinate this hanger install time with CM and other Trade Contractors.

**The following is a highlight of the scope of work associated and to be included in this bid package:**

1. All items listed in General Trade Package.
2. The Pre-Engineered Metal Building fabricator shall be responsible for providing shop drawings, connection design, fabrication, and delivery of the following items: Pre-Engineered Metal Building Anchor Bolts, Frames, Purlins, Bracing, Miscellaneous Steel, Associated fasteners, Embeds, Roof Decking, bearing plates, miscellaneous steel typically required, and Metal deck panels on interior and exterior of building as shown on the architectural and structural plans.
3. Unload, Inventory, and Install of all items/material provided by the Pre-Engineered Metal Building Supplier (Trade Package #5-1a).
4. Install mechanical unit support framing for units supported by Pre-Engineered Metal Building Structures.
5. Provide and remove all temporary bracing and shoring as required for stability during erection.
6. All exposed steel members to be treated and fabricated as architectural steel.
7. Coordinate field visual and non-destructive testing as noted in the contract documents or required by Building Code.
8. Deliveries to be scheduled and sequenced in coordination with the Site Superintendent.
9. Install steel for roof openings, penetrations, supports, etc. located in Pre-Engineered Metal Building Structures
10. Dewater of column blockouts while performing work in this Trade Package.
11. Install all temporary perimeter fall protection/guardrail systems required for erection of this work. Temporary protection shall not be welded to exposed structure. Removal by erector.
12. Receive, offload, stage, inventory, layout, and install all Pre-Engineered Structure, metal decking, metal decking accessories, and misc. steel shall be by the Pre-Engineered Metal Building Erector.
13. Erector shall provide field touchups of shop finish primer and galvanizing at locations where finish is damaged during handling, or erection, including, but not limited to field connection points, bolts, handrails, and hoisting pick points.
14. Clean all steel of dirt, mud, dust, and piece mark identifications prior to completion of erection.
15. Removal of temporary erection aids, welds, run off tabs, and backing strips.
16. Coordination of third party testing.
17. Provide temporary shores, guys, bracing, etc. required for erection.
18. Provide lifts and accommodations for 3<sup>rd</sup> party testers to access areas to be inspected or tested.
19. All welders to be certified. Trade Contractor will not be responsible for cost of testing and inspections; however, Trade Contractor will be responsible for costs associated with reinspection due to inadequate or unsuitable welds and connections.

20. Provide, install, and demo any concrete required for this trade package. Examples include temporary bracing shores.
21. Provide and install crane pads as required to complete the scope of work in this Trade Package.
22. Trade Contractor will be responsible for any and all means necessary to achieve compliance with OSHA policy. Violation of OSHA policy will result in expulsion of personnel from project.
23. This Trade Package shall include install of interior insulation at Metal Building structures. This shall include any accessories needed for installation of such system.
24. This Trade Package shall not be responsible for glazing/louvers in Pre-engineered structures but shall provide openings with opening framing as directed by Contract Documents and typical details required for such installation.
25. Slab on grade in Expo Hall and Arena shall be installed prior to PEMB erection. Erector shall be required to erect Expo Hall (Area D) from location outside of the building footprint. Scissor lifts shall be acceptable to be placed on the slab on grade. Any lifts or equipment used on finished surfaces such as slab on grade or finished pavement/sidewalks shall be required to use protection to prevent marking. Forms of protection may include temporary floor protection material, socks on tires, non-marking tires, diapers on equipment, or other common forms of protection. Protection shall be provided by the Trade using the equipment and shall be improved as directed by the CM. Trade Contractor shall be required to clean, and replace if necessary, any areas where proper protection was not implemented or where inadequate protection was used.
26. Trade Contractor responsible for erection of PEMB shall have the ability to erect arena framing (Area B/C) from inside of arena floor footprint where not on slab on grade conditions. Trade Contractor shall coordinate access with CM. Trade Contractor shall supply, construct, and deconstruct any temporary crane pads determined to be needed.
27. **Liquidated Damages:** Subcontractor acknowledges and agrees that if it fails to complete the Work on or before the applicable Trade Contract Milestone date, Contractor will sustain damages and loss as a result of such failure and such damages will be assessed to the Contractor by the Owner. Subcontractor agrees to be liable to Contractor for liquidated damages for each calendar day of delay in achieving Trade Contract Milestone date in the amount of two hundred fifty dollars (\$250) per day. Contractor and Subcontractor agree that these liquidated damages are reasonable in light of the actual or anticipated damages and harm caused by a delay in achieving Trade Contract Milestone date. Trade Contract Milestone Dates are indicated above in "Schedule".

Alternates:

28. Alternate 01 shall be for including Stall Barn as indicated on the Construction Documents. Trade Package 05-1b: Pre-Engineered Metal Building Structures Erection: Base Bid Shall not include cost of Stall barn. Alternate 01 price shall be to include erection for Stall Barn with framing, decking, accessories indicated.

## Trade Package 5-1c: Pre-Engineered Metal Building Structures Supply & Erection

This bid package shall include the cost of providing all labor, material, equipment, supervision, services, insurance, fees, permits, overhead and profit, etc. necessary or incidentally required for the **Pre-Engineered Metal Building Structures** including work from referenced specifications and normally associated with this trade, whether referenced or not.

Specification Section:	Description:
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Division 13 3419	Metal Building Systems

**Quantity Check:** On Section #5 of the bid form please list total anticipated quantities for the following in the quantity check section.

- Total tonnage of fabricated steel/connections/stiffeners etc. (tons)
- Lead time to produce shop drawings for Anchor Bolts from date of release (days)
- Lead time to deliver anchor bolts from receipt of approved shop drawings. (days)
- Duration for shop drawings (weeks)
- Duration for fabrication/delivery from approved shop drawings (weeks) Total tonnage of erected steel. (tons)
- Duration for erection (weeks)

These quantities are for reference only. Trade contractor is responsible for actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below.

- Submittals due to CM:
  - Anchor Bolt Shop Drawings: 6 weeks after Notice to Proceed
  - PEMB Shop Drawings (Expo Hall): 6 weeks after Notice to Proceed
  - PEMB Shop Drawings: Remaining buildings: 8 weeks after Notice to Proceed.
  - PEMB Expo Arena – Delivery to Site: 12 weeks from approved shop drawings
  - PEMB Remaining – Delivery to Site : 14 weeks from approved shop drawings
- Milestones:
  - Area D (Expo Hall) PEMB Frame Erection – 20 days
  - Area D (Expo Hall) PEMB Standing Seam Roof, Veneer, and Simple Saver Erection – 20 days
  - Area B/C (Arena) PEMB Frame Erection – 30 days
  - Area B/C (Arena) PEMB Standing Seam Roof, Veneer, and Simple Saver Erection – 25 days
  - Area E (Maintenance) PEMB Frame Erection – 10 days
  - Area E (Maintenance) PEMB Standing Seam Roof, Veneer, and Simple Saver Erection – 10 days
  - Area F (Alt. 1 – Stall Barn) PEMB Frame & Roof Paneling Erection – 20 days

#### Milestones:

- Durations for Frame Erection activities listed above start at the time that both PEMB Material is delivered to site and slab on grade has reached adequate strength.
- Durations for Standing Seam Roof, Veneer, and Simple Saver Erection activities listed above start at the time that MEP hanger install is complete to receive Simple Saver.
- Milestone for Frame Erection indicates that all primary and secondary framing are installed and have passed third party inspections. Structure shall be required to be plumb, self supporting, permanent bracing installed, safe for other trades to occupy, and ready for succeeding work.
- Milestone for Standing Seam Roof, Veneer, and Simple Saver Erection indicates that structure is complete. Structure is watertight at wall sections except at locations for openings to be filled by other trades such as door, window, or MEP trades. Simple Saver system shall be installed and ready for MEP overhead hanger and piping to occur.

Note: Trade Contractor is not scheduled to erect primary and secondary PEMB Framing at the same time in two different structures. However, failure to meet durations above may require Trade Contractor to require multiple Frame erection crews in multiple structures. Trade Contractor will be required to be erecting primary and secondary framing in one area while installing metal panel roof, veneer, or simple saver insulation in the other area. Trade Contractor shall allow for MEP hanger install on PEMB structure prior to install of simple saver system. Trade Contractor shall coordinate this hanger install time with CM and other Trade Contractors.

#### **The following is a highlight of the scope of work associated and to be included in this bid package:**

1. All items listed in General Trade Package.
2. All items listed in Trade Package 5-1a.
3. All items listed in Trade Package 5-1b.

#### Alternates:

4. Alternate 01 shall be for including Stall Barn as indicated on the Construction Documents. Trade Package 05-1c: Pre-Engineered Metal Building Structures Supply & Erection: Base Bid Shall not include cost of Stall Barn. Alternate 01 price shall be to include Stall Barn with framing, decking, accessories indicated.

#### Alternates:

5. Alternate 02 shall be for including Stall Barn as indicated on the Construction Documents with galvanized framing.
  - a. Trade Package 05-1c: Pre-Engineered Metal Building Structures Supply & Erection: Base Bid Shall not include cost of Stall Barn. Alternate 02 price shall be to include Stall Barn with framing, decking, accessories indicated. Alternate 02 Stall Barn shall be with all framing galvanized as indicated by specifications.
6. Alternate 03 shall be for including galvanized secondary framing for Pre-Engineered Metal Buildings except for maintenance building and Alternate 01/02 Stall Barn.



- a. Trade Package 05-1c: Pre-Engineered Metal Building Structures Supply & Erection: Base Bid Price shall be for primed Pre-Engineered Metal Buildings. Alternate 03 shall be for galvanizing all secondary metal building framing.
- 7. Alternate 04 shall be for including galvanized Primary and secondary framing for Pre-Engineered Metal Buildings except for maintenance building and Alternate 01/02 Stall Barn.
  - a. Trade Package 05-1c: Pre-Engineered Metal Building Structures Supply & Erection: Base Bid Price shall be for primed Pre-Engineered Metal Buildings. Alternate 04 shall be for galvanizing all Primary and Secondary metal building framing.

## Bid Package 02

Trade Package 2-2: Site Utilities  
Trade Package 2-3: Fences and Gates  
Trade Package 2-4: Paving & Site Concrete  
Trade Package 2-5: Concrete Pavers  
Trade Package 2-6: Landscaping & Irrigation  
Trade Package 2-7: Equine Protective Surface System  
Trade Package 3-1: Structural Concrete  
Trade Package 3-2: Polished Concrete Floors & Sealer  
Trade Package 4-1: Masonry  
Trade Package 5-1a: Structural Steel Fabrication  
Trade Package 5-1b: Structural Steel Erection  
Trade Package 5-1c: Structural Steel Supply and Erection  
Trade Package 6-1: Millwork  
Trade Package 7-1 Waterproofing  
Trade Package 7-2: TPO Roofing  
Trade Package 7-3 EIFS  
Trade Package 8-1: Glass & Glazing  
Trade Package 8-2: Doors, Frames, & Hardware  
Trade Package 8-3: Coiling and Sectional Doors  
Trade Package 9-1 Cold Form Framing & Drywall  
Trade Package 9-2: Tape, Bed, Paint  
Trade Package 9-3: Flooring & Tile  
Trade Package 9-4: Resinous Flooring  
Trade Package 10-1: Specialties Supply  
Trade Package 10-2: Misc. & Install  
Trade Package 10-3: Graphics & Signage  
Trade Package 10-4 Prefabricated Metal Canopies  
Trade Package 15-1: Fire Suppression  
Trade Package 15-2: Mechanical  
Trade Package 15-3: Plumbing  
Trade Package 16-1: Electrical & Fire Alarm

## Trade Package 2-2: Site Utilities

This bid package shall include the cost of providing all labor, material, equipment, supervision, services, insurance, fees, permits, overhead and profit, etc. necessary or incidentally required for the **Utilities** including work from referenced specifications and normally associated with this trade, whether referenced or not.

Specification Section:	Description:
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Section 00 3100	Geotechnical Report
Section 32 40 10	Water Distribution
Section 32 40 20	Sanitary Sewerage
Section 32 40 30	Storm Drainage

**Quantity Check:** On section #5 of the bid form please list total anticipated quantities for the following in the quantity check section.

- Total LF of Storm Drain Piping
- Lead Time from approval for Sewer Collection Tanks (Days)
- Duration for installation of Sewer Collection Tanks (Days)

These quantities are for reference only. Trade contractor is responsible for actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below.

- Sewer collection tank product data shall be submitted within 2 weeks of Notice to proceed.

**The following is a highlight of the scope of work associated and to be included in this bid package:**

1. All items listed in General Trade Package.
2. Provide and install all underground site utility systems as specified including underground water lines (domestic water, storm sewer, sanitary sewer, fire lines), fire hydrants, thrust blocks, meters, tracer wires, backflow preventers, culverts, headwalls, meter vaults, and sewer collection tanks along with subsequent equipment.
3. Storm Sewer Line 2 (110.0 LF 18" Class IC RCP) shall not be included in this trade package as is was installed through Trade Package 2-1 Alternate.
4. Fire line to be installed to riser room and stubbed up 2'-5' by this Trade Package. Backflow preventers to be provided and installed by the Utilities Trade Contractor. Final coordination of fire line elevation and location to be coordinated with sprinkler contractor and CM.
5. Conduits for communications (Cox, AT&T, etc.) to be a portion of the Electrical Trade Package.

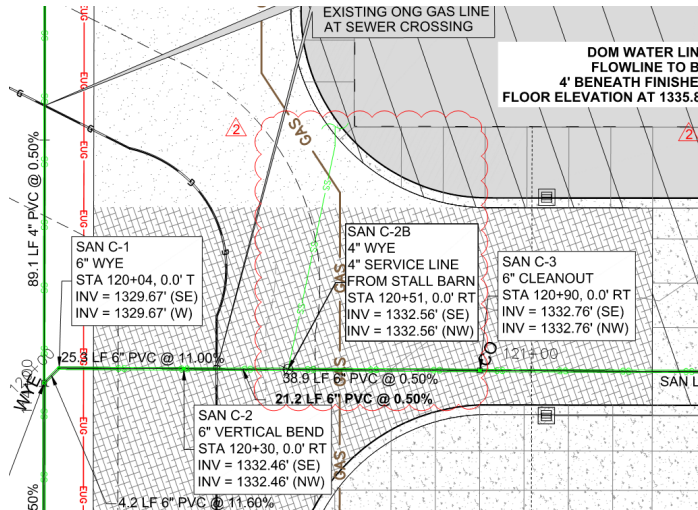
6. Final connections (at the building) for domestic water, storm sewer, roof drains, and sanitary sewer to be performed by the Plumbing contractor. Utility contractor to provide lines installed to a point within 5' of where line would enter building with fitting installed and ready for plumber to make final connection. At these locations the Trade Contractor shall provide temporary riser to 3' above grade for final removal and connection by the plumbing Trade Contractor.
- ~~7. This Trade Contractor shall be responsible for connecting underslab drainage piping more than 5' from the building. Plumbing Trade Contractor shall be responsible for underslab drainage piping within 5' of exterior of building and under building. At these locations the Trade Contractor shall provide temporary riser to 3' above grade for final removal and connection by the plumbing Trade Contractor.~~
8. Demolition of existing utilities is included in this trade package where existing utilities interferes. Example would include existing, abandoned oil and natural gas service lines. Existing abandoned line is noted as line from battery to northeast corner and shown on C1-1 as located in easement defined by "20' Delhi easement BK.1452, pg 212 Exception 8"
9. Provide final connections of all site utilities at tie ins.
10. Include any tap fees, permit fees, and meter fees. Impact fees to be paid by CM.
11. Provide all equipment for the work in this trade package.
12. Carefully review geotechnical report for identified subsurface soil conditions. Trade Contractor shall be responsible for shoring, trench boxes, etc that may be required for installation of utilities.
13. Include meters as well as concrete vaults and all other meter enclosures.
14. Provide all earthwork necessary for utility installation. This includes haul off of spoils as well as meeting compaction requirements set forth in the Contract Documents and geotechnical report.
15. Restore areas where ties ins are made to existing utilities (provide all demolition, cutting, patch, and sod work necessary).
16. Where grading is complete prior to utility installation, finish grading and compacting trenches to within +/- 1 ¼ (.10) of the specified elevations. This +/- requirement shall be balanced to zero. Provide positive drainage away from building pads. Notify site superintendent if this is not possible. This trade package to include repair of any settlement in the utility trenches.
17. Provide tracer wire on all utility piping, whether included in the specifications or not.
18. Coordination of required testing per the Contract Documents and the geotechnical report as it pertains to this Trade Package. Payment for the testing fees will be by others, however, cost for any rework due to failed test remains the responsibility of the earthwork contractor.
19. Update on site as-built set, kept in CM's jobsite trailer, daily with dimensions and elevations of installed utilities.
20. Include protection at open trenches per OSHA standards.
21. Include generators if electricity is required for work in this package.
22. Include temporary dewatering for work included in this trade package.
23. Provide traffic control required for work associated with this trade.

24. Utility Trade Contractor shall be responsible for all costs associated with lane closures as well as traffic control necessary for utility tie ins.
25. Rip rap at storm drain shall be provided and installed by the earthwork Trade Contractor.
26. Provide trench plating and barricading as necessary to maintain safe access for residents and commuters on public streets.
27. Stormlines and headwalls at detention pond to be by this Trade Contractor.
28. This Trade Contractor shall be responsible for coordinating construction around existing pipelines. Trade Contractor shall be familiar with and responsible for published restrictions outlined in plans for work in these areas.
29. This Trade Contractor shall be required to bore under roadways and existing pipelines rather than trench. Trade Contractor shall verify accessibility prior to bidding.
30. This Trade Contractor shall be responsible for coordinating the relocation of the existing communication lines at the south entrance.
31. This Trade Contractor is responsible for the detention pond spillway and outflow structure.
32. Site Plumbing shown on P1-1 shall be provided by the plumbing Trade Contractor and shall be connected to continuation lines as shown on Civil Drawings that are provided by the Utility Trade Contractor. At connection between Plumbing and Utility Trade Contractor, the Utility Trade Contractor shall provide coupling/connection ready to receive piping by plumbing Trade Contractor. 6" Vertical PVC shall be used to mark end of line and trench shall not be required to be left open. *Refer to 00 34 00 for site plumbing/utility coordination drawing. 2" Water service line from building to food truck plaza south of the building shall be provided by the plumbing Trade Contractor. Utility Trade Contractor shall not have scope for this line. 2" Cold Water to RV Dump Station on Northwest side of building shall be provided by plumbing Trade Contractor. Utility Trade Contractor shall not have scope for this line. Water Supply from Arena to Stall Barn (Alternate) shall be supplied by plumbing Trade Contractor and shall not be included in utility scope of work.*
33. Site Plumbing such as yard hydrants shall be provided and installed by Plumbing Trade Contractor.
34. This Trade Package shall provide tee along with minimum 3' stub to roof drain locations. Example includes storm line 5. This Trade Package shall turn roof drain to 2' minimum above grade for final locate by plumbing trade contractor.
35. Trade Contractor shall use washed rock backfill, or compacted rock per specifications, at vehicular pavement areas as backfill at area above piping. Refer detail on C11-2.
36. Clarification: Utility Trade Contractor shall provide 4" access with lid for RV Dump Stations. Refer 10/C11-1. Trade Contractor shall supply Concrete pad around dump station. Bollard details to be by other Trade Package.
37. Portable Waste Water Pump as indicated by General Notes C1-2 shall not be considered as base bid. This shall be provided in alternate as shown below. Refer C1-2 for specification requirements.
38. All items required for installation of the underground sanitary storage tanks are to be included as part of the scope including any deadman, foundations, etc. Installation should follow manufacturers recommendation for installation unless directed otherwise by drawings. If information provided in drawings is insufficient to order storage tanks, this Trade Package shall

provide calculations/additional information required to provide full system. Additional information shall be submitted to EOR for verification prior to ordering.

39. Clarification: Signage at RV dump station to be by Signage Trade Package.
40. Gas piping to building to be by ONG and not by this trade package.
41. Level alarms are required for sanitary waste tanks.
42. Sanitary Sewer Line C shall pick up both 4" Sanitary sewer lines from stall barn shown on sheet P2-1F even though this is not shown on plans at this time.

See image for clarification.



43. F2-1 and P2-2C indicate 6" fire line entering building. Fire Line shall be 12" as shown on C7-0.
44. FDC lines shall be provided by and installed by the Utility Trade Contractor. Trade Contractor shall supply all components shown on 11/C11-1; Fire Hydrant Assembly on C11-2. All install shall meet City of El Reno requirements and State of Oklahoma Requirements unless noted otherwise.

#### Alternates

45. Base Bid pricing shall include fire line material and all install associated with scope of work described above. Alternate 01 for this trade package shall be the price to exclude the fire line connection from south side of Jensen Road to the fire riser room. Alternate 01 shall include the cost to exclude the following: boring under Jensen, water vault located off of Jensen Road, Fire Line, Boring under (2) existing 16" pipelines, Fire hydrant at parking lot, piping into riser room, valves, couplings, permitting, closures, etc. The following shall still be provided outside of Alternate 01: domestic water vault and couplings to fire line. Alternate 01 price shall be used to compare alternate fire protection methods for the site.
46. Base bid price shall be to backfill utility piping in landscaped areas with Type A aggregate to base of landscape soil. Refer C11-2. Alternate 02 shall be (add/(Deduct)) price to provide 6" of Type A

Bedding over pipe and onsite backfill to 95% standard proctor compaction up to bottom of landscape soil.

47. Alternate 03: Portable Waste Water Pump as indicated by General Notes C1-2 shall not be considered as base bid. This shall be provided in alternate 03 on bid form. Refer C1-2 for specification requirements.

## Trade Package 2-3: Fences and Gates

This bid package shall include the cost of providing all labor, material, equipment, supervision, services, insurance, fees, permits, overhead and profit, etc. necessary or incidentally required for the Fences and Gates including work from referenced specifications and normally associated with this trade, whether referenced or not.

Specification Section:	Description:
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Division 32 31 13	Chain Link Fences and Gates
Division 32 31 19	Decorative Metal Fences and Gates

**Quantity Check:** On section #5 of the bid form please list total anticipated quantities for the following in the quantity check section.

- Total LF of Chain Link Fence
- Total LF of Decorative Metal Fence & Supplier/Manufacturer
- Duration for total installation (Days)

These quantities are for reference only. Trade contractor is responsible for actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below.

- Product data and typical details shall be submitted within 2 weeks of Notice to proceed in order to coordinate with other trades.

**The following is a highlight of the scope of work associated and to be included in this bid package:**

1. All items listed in General Trade Package.
2. Trade Contractor shall be responsible for all install of gate and fence system.
3. Trade Contractor shall provide all layout work required.
4. Trade Contractor shall be responsible for providing foundation embeds, anchors, etc required for gate attachment to foundations where required.
5. Trade Contractor shall be responsible for Knox Padlocks at gates.
6. Track and attachment at sliding gate shall be by this trade contractor.
7. Trade Contractor shall provide all accessories required for complete installation.
8. **Clarification: Post size shall be as determined by the manufacturer for a 6' chain link fence. 2" minimum. Maximum post spacing is 96" o.c.**



9. Clarification: A1-0 and C2-0 have discrepancies in fence type and location. A1-0 should govern for locations and types.
10. Clarification: Specifications indicate items such as Electric Strike, this is not required.
11. Clarification: Specifications indicate items such as automated gates. Gates are to be manual and not require automated gates.
12. Clarification: Specifications indicate items such as Gate Operators, vehicular loop detectors, and obstruction devices, these are not required.
13. Clarification: Decorative fence and gate height shall be 8' standard panel.
14. Clarification: Chainlink Fence not required to have intermediate (3<sup>rd</sup>) horizontal rail unless needed at corners for reinforcement.
15. Clarification: Galvanized chainlink at locations noted on plans shall not require bottom or intermediate rail. Instead bottom wire/cable can be used. At Black Vinyl, bottom rail is required.

Alternates:

16. Alternate 01: Alternate 01 for this Trade Package shall be add/(deduct) price to remove bottom rail from black vinyl fencing. Base bid shall include bottom rail at black vinyl fencing.

## Trade Package 2-4: Paving & Site Concrete

This bid package shall include the cost of providing all labor, material, equipment, supervision, services, insurance, fees, permits, overhead and profit, etc. necessary or incidentally required for the **Utilities** including work from referenced specifications and normally associated with this trade, whether referenced or not.

Specification Section:	Description:
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Section 00 31 00	Geotechnical Report
Section 32 50 10	Hot Mix Asphalt Pavement
Section 32 50 15	Cement Concrete Paving
Section 32 50 20	Pavement Joint Sealants

**Quantity Check:** On section #5 of the bid form please list total anticipated quantities for the following in the quantity check section.

- Total SF of asphalt
- Total SF of Concrete Sidewalk
- Total LF of Concrete Curb

These quantities are for reference only. Trade contractor is responsible for actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below.

- In order to facilitate construction traffic the curbs and the base course of asphalt at project main drives will be installed early in the project under a first mobilization.
- Top course to be installed under an additional mobilization at end of project.
- Sidewalks to be installed under separate mobilization following completion of exterior veneer.

**The following is a highlight of the scope of work associated and to be included in this bid package:**

1. All items listed in General Trade Package.
2. At time of tie in at locations where new pavement meets the city streets mill and patch streets as required to ensure existing to remain is free of damage.
3. The Paving & Site Concrete Trade Contractor shall be responsible for all site paving, sidewalks, and curbs.
4. Earthwork Trade Contractor will be responsible for providing grading to +/- 1 ¼ (.10). Paving & Sidewalks Trade Contractor shall be responsible for fine grading.

5. This bid package shall include the parking lot striping including any incidental marking of concrete curbs.
6. This bid package shall be responsible for protection of adjacent surfaces from splatter of asphalt or concrete.
7. Provide detectable warnings where required by drawings or codes at sidewalks.
8. Provide parking stops where indicated on the plans.
9. This Trade Package is not responsible for any gravel pavement, filter fabric, Tensar Triax Geogrid, separation fabric, stabilization, or underlayment beneath gravel paving as a part of the base bid. Gravel Paving to be provided by the owner. Gravel, filter fabric, stabilization, etc beneath asphalt or concrete paving to be by this Trade Package.
10. Provide layout and final grade checks/acceptance prior to commencing work for a given area.
11. This bid package will be responsible for all parking, traffic related signage, and any convenience signage required by code, plans, and specs.
12. Provide curing compound as required by specifications, but not limited to general construction practice.
13. ~~Paving bid package shall be responsible for supplying and installing all pipe bollards that are located in paving areas.~~ Bollards to be provided by Structural Steel Fabrication and installed by Structural Concrete Trade Package.
14. This bid package will be responsible for caulking at all expansion joints within and at perimeters of installation. This will include where concrete meets the building or vertical surfaces.
15. Supply and install all reinforcing required for the work described in this Trade Package.
16. Paving & Site Concrete Trade Contractor shall be responsible for ensuring that site paving, sidewalks, and ramps meet ADA requirements as well as city requirements regardless of what is shown on the plans. Ramps shall be installed per City of El Reno standards. Trade Contractor to notify Construction Manager to coordinate any areas determined to be out of tolerances prior to pouring/placing.
17. If lane closures or traffic control are required for paving work the Paving & Site Concrete Trade Contractor will be responsible for drafting, submitting, paying for, and pulling the lane closure permit. In addition the setup, breakdown, traffic control equipment, flaggers, etc are all included with the Asphalt & Site Paving bid package.
18. Disposal of concrete from washout area.
19. This bid package includes all layout required to complete included work.
20. This Trade Package responsible for lime stabilization under pavement or concrete sidewalk/paving.
21. This Trade Package shall be responsible for subgrade improvement/gravel/fabric matting under pavement and/or sidewalk.
22. Earthwork Trade Contractor to backfill against curbs and pavement.
23. This Trade Contractor shall not include Polylast flooring as called off in documents but should provide adequate blackout for such system where applied over concrete/asphalt paving by this Trade Package.
24. Structural Steel Fabrication Trade Package shall be responsible for providing Hydrant Protection detail tube enclosure as shown by detail 4 & 5 A8-3. Installation shall be coordinated with Plumbing Trade Contractor. Plumbing Trade Contractor shall be responsible for hydrant, under grade connections, backfill of gravel fill, and limestone screenings inside of hydrant enclosure. Concrete Cap to be by Trade Responsible for Concrete surface surrounding hydrant.
25. Per Bid Package 01 – Addendum 02: Sidewalks and associated section shall be as follows:  
Standard Concrete Sidewalks that are not a part of the special plaza surfacing shall be 7" of 3500 psi reinforced concrete with 6"x6" WWF over a 8" aggregate base and compacted subgrade.

26. Per Bid Package 01 – Addendum 02: Surfacing around the immediate perimeter of the Stall Barn shall be 2-inches of S5 asphaltic concrete (PC-64-22 OK) over 3-inches of S3 asphaltic concrete (PG-64-22 OK) over a 8-inch aggregate base and compacter subgrade. This does not apply to the Portland Cement paving that shall be placed under dumpster and trash collection areas

Alternates:

27. Base Bid shall not include “Gravel with Tensar Triax Geogrid” as shown on 2/C1-3 and C2-0. Alternate 01 shall include add alternate price to base bid to include this at areas indicated. Add Alternate 01 price shall be for 6” compacted gravel over Tensar Triax Geogrid over 8” modified subgrade and shall include improving subgrade, geogrid, gravel, and all material and labor to form the complete roadway section indicated in drawings.
28. Base Bid shall not include area indicated as “Gravel” as shown on 2/C1-3 and C2-0. Alternate 02 shall include add alternate price to base bid to include this at areas indicated. Add Alternate 02 price shall be for 6” compacted gravel on 8” modified subgrade and shall include improving subgrade with 5% lime, providing material, and gravel placement to form the complete roadway section indicated in drawings.
29. Base Bid shall not include asphalt paving noted in S2-1F for Stall Barn. Alternate 03 shall be to include Asphalt paving with required subbase requirements to the extents shown for the Stall Barn.
30. Base Bid: Trade contractor shall be responsible for Paving 2 noted on A2-1A for concrete paving between vehicle grade pavers. Concrete paving 2 shall go in place prior to pavers and shall maintain dimension constraints for the pavers. Alternate 04 shall be deduct pricing to remove this area from this Trade Package scope of work.
31. Base Bid shall not include area indicated as “Gravel” as shown on 2/C1-3 and C2-0. Alternate 05 shall include add alternate price to base bid to include this at areas indicated. Add Alternate 05 price shall be for 6” compacted gravel, mat, on 8” gravel subgrade. Providing material, and gravel placement to form the complete roadway section indicated in drawings.
32. Base Bid shall include area indicated as “Paving” as shown on 2/C1-3 and C2-0. Alternate 06 shall include alternate (add/deduct) price to base bid to provide 5% lime modified subgrade under paving instead of 8” stabilized gravel. Price shall be for asphalt section on separator fabric on 8” modified subgrade and shall include improving subgrade with 5% lime, providing material, and placement to form the complete roadway section indicated.

## wTrade Package 2-5: Concrete Pavers

This bid package shall include the cost of providing all labor, material, equipment, supervision, services, insurance, fees, permits, overhead and profit, etc. necessary or incidentally required for the Concrete Paving including work from referenced specifications and normally associated with this trade, whether referenced or not.

Specification Section:	Description:
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Division 32 14 00	Unit Paving

**Quantity Check:** On section #5 of the bid form please list total anticipated quantities for the following in the quantity check section.

- Total SF of Pavers
- Paver type and lead time
- Duration for total installation (Days)

These quantities are for reference only. Trade contractor is responsible for actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below.

- Product data and typical details shall be submitted within 2 weeks of Notice to proceed in order to coordinate with other trades.

**The following is a highlight of the scope of work associated and to be included in this bid package:**

1. All items listed in General Trade Package.
2. Trade Contractor shall be responsible for all install of paver system including any trim/transition pieces required, curbs and edge restraint, joint filler, and setting bed materials to provide a complete system.
3. Trade Contractor shall provide all layout work required.
4. Trade Contractor shall be responsible for cutting and cleanup of material.
5. Trade Contractor shall refer to A2-1A for notes on fit, layout, and performance.
6. Trade Contractor shall be responsible for compacted drainage aggregate base, geotextile fabric, bedding layer, and paver curb under adhered edge paver as shown in detail 2/A8-2.
7. Trade Contractor shall be responsible for compacting aggregate base and bedding layer per requirements of the specifications, documents, and manufactures requirements.

8. The paver pattern and edge restraint details will ultimately depend on what paver is submitted. Coordination will be needed to select the proper pattern and edge for a vehicle-grade application. Based on the Belgard Moduline Paver (basis of design), Sheet A2-1A shows the correct pattern and edge: K pattern w/ 6x6 & 6x9 pavers, c.i.p. curb edge. This, along with detail 2/A8-2, is based on the Belgard standard details. The concrete curb and rebar is per their details, no civil reference.

## Trade Package 2-6: Landscaping & Irrigation

This bid package shall include the cost of providing all labor, material, equipment, supervision, services, insurance, fees, permits, overhead and profit, etc. necessary or incidentally required for the **Landscaping & Irrigation** including work from referenced specifications and normally associated with this trade, whether referenced or not.

Specification Section:	Description:
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Division 32 92 00	Turf and Grasses
Division 32 93 00	Plants

**Quantity Check:** On section #5 of the bid form please list total anticipated quantities for the following in the quantity check section:

- Total Weeks of Install (Plants, Trees, Irrigation, hardscape)

These quantities are for reference only. Trade contractor is responsible for the actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below.

- **Trade Contractor shall include a mobilization(s) in Fall of 2020 in order to seed/sod disturbed grading areas. At CM's direction prior to final landscaping, selected areas will be seeded/sodded.**

**The following is a highlight of the scope of work associated and to be included in this bid package:**

1. All items listed in General Trade Package.
2. Trade Contractor shall include all landscaping, trees, plantings, grasses, planting beds, sodding, turf, seeding, irrigation, hardscapes for a complete and operational system as indicated in the Contract Documents.
3. Provide and install irrigation system & associated control wiring per Contract Documents.
4. Irrigation meter will be provided by the Utility Trade Contractor. Landscape Trade Contractor to tie into meter and provide remainder irrigation of system.
5. Backflow preventers for irrigation shall be provided by this Trade Package.
6. Provide and install landscape boulders and decorative stone per the Contract Documents.
7. Provide and install lawns and grasses per the Contract Documents. Include finish grading, raking, rolling, and watering.
8. Sod installed on a slope shall be pinned down.

9. Provide and install seeding per the Contract Documents.
10. Provide temporary irrigation and lawn maintenance per the Contract Documents.
11. Furnish and install all underground irrigation piping, sleeves, backflow preventers, controllers, rain/freeze sensors, drip control kits, vacuum breakers, valves, flush valves, gravel, pressure regulator, basket filters, control valves, soil staples, fittings, low voltage wiring, controller, environmental sensors, marking tapes, trenching, backfilling, and miscellaneous required for complete, operational, and finished systems.
12. Provide and install exterior plants as indicated in the Contract Documents. Furnish and install all trees, T-posts & tie wire, camb guards, straps, mulch, mycor tree saver, backfilling, and edging as noted in the Contract Documents.
13. Topsoil
  - a. Earthwork Trade Contractor will provide topsoil at sodded areas to within +/- 1 ¼" (.10).
  - b. Landscaping Trade Contractor shall provide final grade of sodded areas.
  - c. Landscaping Trade Contractor shall provide and install topsoil at areas with trees, plants, and shrubs per the Contract Documents.
  - d. Landscape Trade Contractor shall provide topsoil at beds and planters per the Contract Documents.
14. Provide and maintain temporary Irrigation until landscaping, seeding, and sod is established per Contract Documents and Specifications.
15. Provide all planting accessories necessary for a complete installation of the items within this trade package and as indicated in the Contract Documents.
16. Provide sleeves for irrigation lines crossing under hard surfaces.
17. Provide pex-A supply piping to the backflow preventer. PVC may be used after backflow preventer.
18. Provide and install concrete foundation(s) for irrigation RPZ.
19. All structure beyond what is shown in the Contract Documents necessary for a complete installation shall be included by this Trade Contractor.
20. Remove masking and protective films from equipment and dispose of at dumpster.
21. Hydroseeding shall be per the specifications. Only approved product with Bonded Fiber Matrix will be allowed. Landscape subcontractor shall be responsible for patching areas where first application was insufficient, thin, and/or did not seed. Hydroseeding shall be applied at rates that match manufacturers recommendations for slope/grading/soil type indicated on the drawings and at a minimum rate as required by the specifications.
22. After application of hydroseeding/sod, any rutting or washouts that occur shall be repaired by the landscaping subcontractor.
23. Unit Pavers are not considered part of this base bid scope of work.
24. Trade Contractor shall include fabric wrap, aggregate base, and planting mix for planters as shown in detail 2/A8-2.

Alternate:

25. Alternate: Provide Add alternate 01 for this trade package to be responsible for all elements noted on A2-1A for concrete paving, pavers, concrete planters, subbase, and woodwork in addition to landscape



and irrigation requirements already in this Trade Package Scope of Work. Concrete paving 2 shall go in place prior to pavers and shall maintain dimension constraints for the pavers. Alternate 01 shall be to include this complete scope of work as a part of this trade package.

## Trade Package 2-7: Equine Protective Surface System

This bid package shall include the cost of providing all labor, material, equipment, supervision, services, insurance, fees, permits, overhead and profit, etc. necessary or incidentally required for the Equine Protective Surface System including work from referenced specifications and normally associated with this trade, whether referenced or not.

Specification Section:	Description:
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Division 32 18 16	Equine Protective Surface System

**Quantity Check:** On section #5 of the bid form please list total anticipated quantities for the following in the quantity check section.

- Total SF of Equine Protective Surface System
- Lead Time from approval for Installation
- Duration for total installation (Days)

These quantities are for reference only. Trade contractor is responsible for actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below.

- Product data and typical details shall be submitted within 2 weeks of Notice to proceed in order to coordinate with other trades.

**The following is a highlight of the scope of work associated and to be included in this bid package:**

1. All items listed in General Trade Package.
2. Trade Contractor shall be responsible for all install of surface system including any trim/transition pieces required.
3. Trade Contractor shall be responsible for cleaning substrates prior to install of surface system.
4. Trade Contractor shall be responsible for any moisture/adhesion testing required for install.
5. Trade Contractor shall be responsible for providing protective covering over finished product such as Ram Board or other approved product.

## Trade Package 3-1: Structural Concrete

Specification Section:	Description:
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Specification 03 30 00	Cast-in-Place Concrete
Specification 03 35 43	Polished Concrete Finishing
Specification 07 26 00	Vapor Retarders
Specification 07 19 00	Water Repellents

**Quantity Check:** On section #5 of the bid form please list total anticipated quantities for the following in the quantity check section:

- [CY of concrete]
- [SF of slab]
- Tons of rebar
- SF of Concrete slab on grade to be polished by others

These quantities are for reference only. Trade contractor is responsible for the actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below.

**The following is a highlight of the key items but not a complete list, refer to plans and specifications:**

1. All items listed in the Standard Bid Instructions for All Bidders.
2. General Structural Concrete Items
  - a. Provide turnkey concrete scope of work as shown in the Contract Documents or as typically performed by this Trade Package. This includes providing all labor, material and equipment necessary for a complete concrete installation.
  - b. Provide all layout of the work within this Trade Package.
  - c. Concrete materials and methods are required to be per the ACI Manual of Concrete Practice, unless noted otherwise in the Contract Documents. Some examples of requirements covered in the Manual of Concrete Practice are concrete mixture proportioning, mixing, transporting, concrete placing, hot and cold weather concreting, formwork, and construction tolerances.
  - d. If lane closures or traffic control are required for concrete work provide all drafting, submitting, paying for, and pulling the lane closure permit. In addition; the setup, breakdown, traffic control equipment, flaggers, etc. shall be included.
  - e. This Trade Contractor shall be responsible for creating, maintaining, using and disposing of the concrete washout area in coordination with SWPPP drawings and guidelines.

- f. Protect adjacent surfaces from splatter of concrete. This Trade Contractor shall be responsible for costs associated with cleaning splatter that occurs as a result of improper protection.
- g. Provide all concrete accessories required for this scope of work.
- h. Provide and install perimeter insulation board adjacent to footings.
- i. Supply, install and maintain OSHA approved reinforcing protection caps where necessary for the concrete within this bid package. Caps shall remain in place until no longer necessary.
- j. Shop drawings shall consist of detailed drawings showing all bends, lengths, sizes, splices, development lengths, mechanical accessories, etc. Plans, elevations, and sections shall be shown for footings, walls, and elevated beams.
- k. To the greatest extent possible all bending, cutting, and fabrication shall be performed in the shop by a reinforcing fabricator unless approved otherwise by Lingo Construction.
- l. This Trade Package shall be responsible for layout and installation of all embeds and anchor bolts (provided by others). Clean anchor bolts of any concrete and/or dirt and leave them such that they are ready for nuts to be threaded by steel erector. Damaged anchor bolts shall be replaced or substituted by this Trade Packaged.
- m. Provide final survey of installed anchor bolts as well as any baseplate adjustments for bolts that are slightly off the mark. Notify Lingo Construction within 7 days of placing anchor bolts, if any anchor bolts are not located correctly.
- n. Costs associated with modification to steel structural framing due to misplaced anchor bolts shall be by this Trade Contractor for incorrectly located anchor bolts that are not corrected.
- o. Include haul off of all spoils created as a result of work associated with this Trade Contract.
- p. Foundations
  - i. This Trade Contractor will have final responsibility of accepting the pad after grading is complete.
  - ii. After the building pad is accepted this Trade Contractor will be responsible for excavating all footings & thickened slab edges and hauling spoils offsite. Backfill to grade at foundations is also the responsibility of this Trade Contractor.
  - iii. This Trade Package shall be responsible for reinforcing dowels from footings to the masonry walls but not for reinforcement in the masonry walls.
- q. Slabs
  - i. This Trade Contractor to submit expansion/control joint layout plan four weeks prior to pouring any slabs. Layout Plan shall be submitted to AOR/EOR for approval and comment. Control joints are to be saw-cut the same day as concrete placement.
  - ii. Provide the underslab termite treatment and warranty.
  - iii. Provide gravel and vapor barrier underlayment for slab on grade. Install vapor barrier per manufacturer's recommendations.
  - iv. If building slab is placed in low light conditions this Trade Package shall be responsible for providing light towers to ensure workers have enough light to provide a quality finish on the slab.
- r. Provide all concrete accessories required for this scope of work.
- s. Concrete blockouts for structural steel columns, precast columns, mechanical piping, or other items deemed necessary shall be installed by this Trade Package. In addition, this Trade Package shall be responsible for filling concrete blockouts after steel columns, or other items are installed (this may require a separate mobilization).
- t. This Trade Package shall be responsible for grouting all baseplates.
- u. Provide and install all mechanical equipment pads and curbs inside the building.

- v. This trade package shall not be responsible for the polishing of concrete slab on grade but shall be responsible for the placing of the concrete slab on grade.
- w. This trade package is responsible for gate foundations, ramps, stairs, dumpster slabs, transformer pads, and lightpole bases.
- x. This Trade Contractor shall be responsible for blockouts for items such as, but not limited to, walkoff mats, expansion joint covers, walk in cooler/freezers, or other items shown but not specifically detailed on the contract documents.
- y. Trade Contractor shall adhere to FF/FL requirements detailed in the specifications for slabs.
- z. Trade Contractor shall cure slabs as required by specifications for polished areas.
- aa. This Trade Package shall be responsible for site wall, gate, bollard foundations. Refer A8-2, A8-2-1 for example. **This Trade Package shall be responsible for setting bollards. This shall include monument signs.**
- bb. This Trade Package shall be responsible for concrete cast-in-place planters shown on A2-1A and in details shown on A8-2. Trade Contractor shall be responsible for foundation for planters, formwork, placement, and smooth rub finish as specified in details. Refer Specifications for formwork requirements for concrete exposed to public view.
- cc. Slab on grade in expo and arena shall not be placed before CMU wall and PEMB framing. Refer S5-2 for pedestal foundation at Expo. Grade beams, tie beams, and pedestal shall be placed and PEMB erected before slab on grade is placed. This shall be typical at other locations such as Arena.
- dd. This Trade package shall be responsible for concrete-cast trench drains when trench drains are not premanufactured.
- ee. Structural Steel Fabrication Trade Package shall be responsible for providing Hydrant Protection detail tube enclosure as shown by detail 4 & 5 A8-3. Installation shall be coordinated with Plumbing Trade Contractor. Plumbing Trade Contractor shall be responsible for hydrant, under grade connections, backfill of gravel fill, and limestone screenings inside of hydrant enclosure. Concrete Cap to be by Trade Responsible for Concrete surface surrounding hydrant.
- ff. This Trade Package shall provide waterstop, key, etc for floor boxes as shown by example in detail 6 & 15/S5-1.
- gg. This Trade Package shall be responsible for providing recessed section at Overhead Doors and other areas required by drawings as shown in detail 3/S5-1.
- hh. This Trade Contractor shall be responsible for roughly 9'-4 x 9'-8" Transformer Pad.
- ii. **Light Pole base for light fixture R1/R2 shall be based off of type P base detail with 5' exposed and the same amount embedded in ground.**
- jj. **Slab on grade shall be 6" thick in Arena, Expo, and Kitchen. Slab on grade in other areas shall be 4" thick. A plan note for 8" slab on grade is incorrect.**
- kk.

**Alternates:**

- ll. This Trade Package shall include Stall Barn foundations, tie beams, etc as part of Alternate #01. Base bid shall not include elements required for Stall Barn.
- mm. This Trade Package shall include deduct alternate to not include planters as shown on A2-1A as a part of Alternate #02.

## Trade Package 3-2: Polished Concrete Floors & Sealer

This bid package shall include the cost of providing all labor, material, equipment, supervision, services, insurance, fees, permits, overhead and profit, etc. necessary or incidentally required for the **Polished Concrete Floors & Sealer** including work from referenced specifications and normally associated with this trade, whether referenced or not.

Specification Section:	Description:
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Division 03 35 43	Polished Concrete Floor Finish
Division 07 92 00	Joint Sealants

**Quantity Check:** On section #5 of the bid form please list total anticipated quantities for the following in the quantity check section:

- SF of polished concrete

These quantities are for reference only. Trade contractor is responsible for the actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below.

- Submit product data within two weeks of notice to proceed.

**The following is a highlight of the scope of work associated and to be included in this bid package:**

1. All items listed in General Trade Package.
2. Polished Concrete Trade Contractor to polish concrete floors per plans and specifications.
3. At time of work electricity will not yet be available. Therefore, Polished Concrete Trade Contractor to source and provide generator.
4. Polished Concrete Trade Contractor shall also be responsible for staining and sealing of all interior and exterior concrete as indicated on the Contract Documents.
5. After polishing and staining of interior slabs provide and install Surface Shields Builder Board with Liquid Shield floor protection along with Surface Shields Builder Board Tape on full surfaces.
6. Provide 1/8" hardboard as required by specification for all corridors/heavy traffic areas with polished or sealed concrete. This shall be as a minimum all of Corridors in office area (1.03.02) and 48" min. width walkway across Arena east and south wall and Expo hall west wall.
7. This Trade Package shall provide slab on grade joint sealants at polished/sealed floors.

## Trade Package 4-1: Masonry

This bid package shall include the cost of providing all labor, material, equipment, supervision, services, insurance, fees, permits, overhead and profit, etc. necessary or incidentally required for the **Masonry** including work from referenced specifications and normally associated with this trade, whether referenced or not.

Specification Section:	Description:
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Division 04 20 00	Unit Masonry
Division 04 21 13	Brick Masonry
Division 04 72 00	Cast Stone Masonry

**Quantity Check:** On section #5 of the bid form please list total anticipated quantities for the following in the quantity check section:

- SF of face brick
- SF of block
- Lead Time for materials

These quantities are for reference only. Trade contractor is responsible for the actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below.

- Trade Contractor shall submit Product Data, Product samples, and manufacturer's standard details applicable to this project within 15 days of Notice to Proceed to facilitate procurement of materials for project mockup.
- Structural lintels shall be installed prior to masonry mobilization to accommodate weather barrier installation. Masonry Contractor shall provide adequate time for waterproofing Trade Contractor to waterproof and flash loose laid lintels.
- Masonry Contractor shall coordinate a minimum 24 hours in advance for waterproofing trade contractor to provide waterproofing required at loose lintels.
- Where sequencing/schedule references two areas at one time, the contractor shall provide equipment and crew of sufficient size to complete work concurrently in each area.

**The following is a highlight of the scope of work associated and to be included in this bid package:**

1. All items listed in General Trade Package.

2. Masonry Trade Contractor shall include CMU, brick, mortar, grout, mortar net, weep vents, all reinforcement, masonry anchors, masonry flashings, and masonry accessories.
3. Exterior Masonry Veneer: refer to Contract Documents
4. Interior Masonry Veneer: Colored Split Face CMU as indicated in plans
5. Interior Masonry Veneer: Refer A9-3-1 (SP2) – Brick Interior Veneer
6. Brick Selection: refer to Contract Documents
7. Furnish and install all through wall flashing within perimeter of masonry walls.
8. The Masonry Trade Contractor shall be responsible for supplying and installing all reinforcing and dowels required in CMU walls. Concrete Trade Contractor to provide and install dowels from foundation to base of CMU walls only if they are noted to be cast in place and not installed after concrete work is complete.
9. Door jambs within CMU block shall be provided by the Construction Manager and installed by the Masonry Trade Contractor.
10. Grout filling of all hollow metal frames shall be the responsibility of the Masonry Trade Contractor. Supply and install foam blocking for hardware in grouted hollow metal frames.
11. Waterproofing & Flashing Coordination:
  - a. The Roofing Trade Contractor will be responsible for installing the roofing membrane underneath the parapet caps.
  - b. The weather barrier installer shall be responsible for flashing and sealing penetrations through walls. Examples of penetrations are j-boxes, hose bibs, security camera boxes, vents, etc.
  - c. The Masonry Trade Contractor is responsible for installing brick ties in a way that is acceptable by the approved weather barrier manufacturer as well as supplying and installing the material necessary for sealing the fastener penetrations.
  - d. The Masonry Trade Contractor shall be responsible for providing through wall flashing where necessary at the masonry walls. This shall include the base of the wall, under brick rowlocks, at the top of openings such as windows & doors.
  - e. The Masonry Trade Contractor shall be responsible for placing end dams along vertical transitions where masonry abuts other materials.
  - f. The Roofing Trade Contractor shall be responsible for all flashing touching the roof system, including the parapet caps. Parapet caps to be designed in such a way that sections can be removed individually, without taking off adjacent sections.
  - g. Mechanical, Plumbing, and Electrical Trade Contractors shall be responsible for providing and installing pipe portals for all rooftop penetrations associated with their work. The roofing Trade Contractor shall be responsible for the roofing membrane and flashing of pipe portals.
  - h. The Waterproofing Trade Contractor shall be responsible for the sealant associated with expansion joints located within masonry.
  - i. The Waterproofing Trade Contractor shall be responsible for insulating/caulking required around penetrations, hollow metal doors, and perimeter openings.
  - j. Glass & Glazing Trade Contractor to furnish and install all flashings and sealants at the perimeter and within their glazing systems.
  - k. The Roofing Trade Contractor shall provide and install all material associated with rooftop expansion joints.



12. All masonry trash, debris, concrete, grout etc. or other materials produced by this Trade Contractor are to be removed from the site by this Trade Contractor.
13. Fasteners associated with masonry ties shall be installed prior to rigid insulation. Provide and install masonry ties designed to accommodate this.
14. Install loose lintels.
15. All accessories for a complete system are included with this Trade Package: horizontal reinforcing, brick ties, base flashing, sill flashing, through wall flashing, weeps, control joints, cavity vents, cavity mortar control, non-shrink grout at base cavity, etc.
16. All concrete reinforcing that goes in unit masonry work is included in this bid package including drilling and epoxy dowels into slab/footings.
17. Masonry Trade Contractor to install all loose brick lintels and relief angles provided by Construction Manager.
18. Trade Contractor shall provide and erect all scaffolding and hoisting related to the Masonry work. Receive, unload and provide storage of items, furnished by others and installed by this Bidder. Daily inspections and sign offs for OSHA compliance will be provided by this subcontractor for the scaffolding associated with masonry work.
19. Weather protection including all cold, hot and inclement weather protection to maintain the project schedule including the proper masonry additives and protection.
20. Clean up and wash down of work.
21. Masonry Trade Contractor to provide and install interior block walls.
22. Mock ups, shop drawings, submittals, product data, maintenance data, certifications, samples, warranties per specifications as required for approval.
23. Protection of in-place items and finished surfaces.
24. Repair incidental damage, due to masonry installation, to the dampproofing. Examples would be missing a stud when installing a masonry tie and filling void with NP1.
25. Trade Contractor shall be responsible for re-testing fees due to failure/performance issues of Construction Manager provided special inspections.
26. Brick should be cleaned before scaffold is relocated and/or within 3 days of installing.
27. Exterior Facade Mockup
  - a. Trade Contractor shall include cost associated with a large mockup in which all facades, waterproofing, air barriers, framing, etc. are coordinated.
  - b. Approximate mockup size is 10' tall by 12' wide and will incorporate parapet and corner.
  - c. Final design of mockup to be determined.
28. Provide and install masonry at dumpster enclosure and entry signage.
29. Trade Contractor shall supply cast stone caps and banding where noted.
30. This trade Contractor shall not be responsible for interlocked block waste bunkers.
31. This Trade Package shall supply and install in-wall CMU Block insulation items per specifications.

**Alternates:**

32. This Trade Package shall include Stall Barn Masonry Scope as part of Alternate #01. Base bid shall not include elements required for Stall Barn.
33. Alternate 02: Alternate 02 shall be to provide Core-fill type insulation equivalent to the CMU insulation indicated by the specification. Fill insulation shall meet same insulating requirements as that of the specified product. Provide add/(deduct) price to provide Core-fill type insulation.

## Trade Package 5-1a: Structural Steel Fabrication

Specification Section:	Description:
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Specification Section 05 12 00	Structural Steel Framing
Specification Section 05 21 00	Steel Joist Framing
Specification Section 05 31 00	Steel Decking
Specification Section 05 50 00	Metal Fabrications

**Quantity Check:** On section #5 of the bid form please list total anticipated quantities for the following in the quantity check section:

- Total number of tons
- Lead time for shop drawings to be provided. (Days)
- Steel delivery from receipt of approved shop drawings. (Days)

These quantities are for reference only. Trade contractor is responsible for the actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below.

**The following is a highlight of the key items but not a complete list, refer to plans and specifications:**

1. General Structural Steel Items
  - a. All items listed in General Trade Package.
  - b. The structural steel fabricator, this trade package, shall be responsible for providing shop drawings, connection design, fabrication, and delivery of all structural steel related items. This Trade Package no responsible for Pre-Engineered Metal Building Frame. This Trade Package shall provide design, engineering, and licensed professional engineer's seal for all connection calculations that are not shown in the contract documents or that are designated as part of a delegated design. Items typically provided by this trade shall include, but not be limited to the following: structural steel framing; galvanized structural steel framing; steel columns, bracing, beams, fixed and loose lintels, associated fasteners, embeds, anchor bolts, headed studs, steel stair framing, joists and decking, bearing plates, top of CMU wall bracing, miscellaneous steel typically required, and steel framed canopies as shown on the architectural and structural plans.
  - c. This trade contractor shall include all items associated with the joist and decking including but not limited to decking, joist, bridging, bridging attachment, collector angles, fasteners, acoustical decking, acoustical decking insulation and accessories, composite decking and

accessories, closure angles. This Trade Package does not include PEMB metal paneling or accessories for PEMB metal paneling attachment.

- d. Provide all handrails and guardrails inside the building as well as on site that are primed/painted. Stainless steel handrails are not provided by this trade, although stanchions for posts shall be provided by this trade.
- e. Provide mechanical unit, exhaust frame, or other roof penetration support framing as required to support roof decking at openings or under concentrated loading.
- f. Provide all fasteners (bolts, nuts, washers, tension control fasteners, anchors, and epoxy adhesives) necessary to complete installation for the items provided in this Trade Package.
- g. Provide connections to concrete, masonry, or other non-steel substrates where installation of steel must occur after substrate is already in place. This does not include PEMB to CMU/Concrete connections.
- h. Provide shop-made steel templates for each set of anchor bolts.
- i. Provide grey primer at all steel that is to receive primer or paint.
- j. Hot dip galvanize steel as noted on the Contract Documents shall be provided by this Trade Package.
- k. Provide shop visual and non-destructive testing as noted in the contract documents.
- l. On the bid form indicate Yes/No AISC Certified per specification. If the answer is no, the Fabricator shall include the cost for the "In Plan Inspections" associated with the special inspection's requirements of the IBC.
- m. Steel deliveries to be scheduled and sequenced in coordination with the Site Superintendent and Steel Erector. This trade contractor shall coordinate for delivery arrival the week prior to erection start dates listed in schedule.
- n. Provide dumpster gate and enclosure steel framing, bollards, and other miscellaneous steel framing around the site. Exterior steel framing shall be hot-dipped galvanized unless noted otherwise in drawings.
- o. Provide camber on framing as indicated by Contract Documents.
- p. This Trade Package shall provide embeds for C.I.P. concrete and CMU elements.
- q. Provide fabricated and prefabricated items such as ladders as mentioned in structural steel framing specification.
- r. Areas to receive spray on fire proofing, or similar material, shall not be primed or painted but shall be prepped for application of approved fire proofing.
- s. This trade package shall include ½" diameter minimum cable and attachment brackets for an OSHA compliant guardrail system along elevated deck edges during construction. Material shall be installed and removed by the steel erector.
- t. All exposed steel members to be treated and fabricated as architectural steel. This trade contractor shall be responsible for repair of items damaged/scuffed during shipping. Material damaged prior to unloading at site shall be the responsibility of this trade package.
- u. Refer detail 2&3/S3-2C. This Trade Contractor to provide horizontal girt shown along with embed and DBA for anchorage to CMU wall.
- v. At HSS Framing in exterior wall, provide ¾" diameter hole @ 4'-0" o.c. in tube to infill with spray foam. Spray foam by others. Refer detail 2&3/S3-2C, 5/A8-1, and other similar details for conditions not specifically shown.
- w. Structural Steel Fabrication Trade Package shall be responsible for providing Hydrant Protection detail tube enclosure as shown by detail 4 & 5 A8-3. Installation shall be coordinated with Plumbing Trade Contractor. Plumbing Trade Contractor shall be responsible for hydrant, under

grade connections, backfill of gravel fill, and limestone screenings inside of hydrant enclosure.  
Concrete Cap to be by Trade Responsible for Concrete surface surrounding hydrant.

- x. Valley and Ridge Plates as shown by 13 & 14 S6-2 shall be provided by this Trade Contractor.
- y. This Trade Contractor shall include Steel plates and angle shown in detail 8/A8-3.

## Trade Package 5-1b: Structural Steel Erection

Specification Section:	Description:
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Specification Section 05 12 00	Structural Steel Framing
Specification Section 05 21 00	Steel Joist Framing
Specification Section 05 31 00	Steel Decking
Specification Section 05 50 00	Metal Fabrications

**Quantity Check:** On section #5 of the bid form please list total anticipated quantities for the following in the quantity check section:

- Approximate crane size to be provided by erector. (Height & tons)
- Total Tonnage of Steel to be erected (tons)
- Contractor duration for total Trade Package erection (days)
  - Crew Size (men)

These quantities are for reference only. Trade contractor is responsible for the actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below as well as durations from schedule.

**The following is a highlight of the key items but not a complete list, refer to plans and specifications:**

1. General Steel Erection Items
  - a. All items listed in General Trade Package.
  - b. The structural steel erector shall be responsible for installation of the following items: all items provided by the structural steel fabricator, structural steel framing, miscellaneous steel, fixed lintels and associated fasteners, stair, joists and decking along with joist and decking accessories, and bearing plates as shown on the architectural and structural plans. Loose lintels to be installed by the Masonry Trade Contractor. Installation of all field welded edge angles and bent plate slab extensions as well as loose deformed bar anchors. Install steel for roof and floor openings, penetrations, supports, etc. Install all interior handrails and guardrails that weld to stair stringers or slab edges. Stainless handrails and guardrails to be installed by a separate Trade Package. Pre-Engineered Metal Building to be installed by a Separate Trade Package.
  - c. Steel Erection Trade Contractor responsible for setting anchor bolt bearing elevations based off of project Benchmarks. Steel Erection Trade Contractor shall be responsible for verifying

- anchor bolt and embed layout prior to erection. This Trade Contractor shall be responsible for notifying CM of any discrepancy in layouts prior to erection to avoid delays.
- d. Dewater of column blockouts while performing work in this Trade Package.
  - e. Provide and install all temporary perimeter fall protection/guardrail systems, including but not limited to 2<sup>nd</sup> floor edge and stairwells. Removal by others. Coordinate system with CM prior to installation.
  - f. Receive, offload, stage, inventory, layout, and install all structural steel, metal decking, metal decking accessories, stairs, steel joists, and misc. steel associated with this Trade Package.
  - g. Provide field touchups of shop finish primer and galvanizing at locations where finish is damaged during delivery, handling, or erection, including, but not limited to field connection points, bolts, handrails, and hoisting pick points.
  - h. Removal of temporary erection aids, welds, run off tabs, and backing strips.
  - i. Coordination of third party testing. Trade Contractor will not be responsible for cost of testing and inspections; however, Trade Contractor will be responsible for costs associated with reinspection due to inadequate or unsuitable welds and connections.
  - j. Provide temporary shores, guys, bracing, etc. required for erection. This Trade Contractor to provide all necessary equipment required to complete erection.
  - k. Provide lifts and accommodations for 3<sup>rd</sup> party testers to access areas to be inspected or tested.
  - l. All welders to be certified.
  - m. Provide, install, and demo any temporary concrete required for this trade package. Examples would include crane pads, tiebacks, and deadman.
  - n. Provide, install, and remove crane pads as required to complete the scope of work in this Trade Package.
  - o. Trade Contractor will be responsible for any and all means necessary to achieve compliance with OSHA policy. Violation of OSHA policy will result in expulsion of personnel from project.
  - p. For their equipment Trade Contractor shall obtain all required permits and clearance.
  - q. All exposed steel members to be treated as architectural exposed steel. This trade contractor shall be responsible for repair of items damaged/scuffed during handling and erection. This trade contractor shall accept condition of material at time of delivery to site. Material damaged prior to unloading shall be the responsibility of the steel fabricator. Trade Contractor shall document and report any prior conditions prior to unloading. Clean all steel of dirt, mud, dust, and piece mark identifications prior to completion of erection.
  - r. Trade Contractor shall verify all material prior to installation.
  - s. Valley and Ridge Plates as shown by 13 & 14 S6-2 shall be provided by this Trade Contractor.
  - t. This Trade Contractor shall include Steel plates and angle shown in detail 8/A8-3.

## Trade Package 5-1c: Structural Steel Supply and Erection

Specification Section:	Description:
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Specification Section 05 12 00	Structural Steel Framing
Specification Section 05 21 00	Steel Joist Framing
Specification Section 05 31 00	Steel Decking
Specification Section 05 50 00	Metal Fabrications

**Quantity Check:** On section #5 of the bid form please list total anticipated quantities for the following in the quantity check section:

- Total number of tons
- Lead time for shop drawings to be provided. (Days)
- Steel delivery from receipt of approved shop drawings. (Days)
- Approximate crane size to be provided by erector. (Height & tons)
- Total Tonnage of Steel to be erected (tons)
- Contractor duration for total Trade Package erection (days)
- Crew Size (men)

These quantities are for reference only. Trade contractor is responsible for the actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below as well as durations from schedule.

**The following is a highlight of the key items but not a complete list, refer to plans and specifications:**

1. General Steel Supply and Erection Items
  - a. All items listed in General Trade Package.
  - b. All items listed in Trade Package 05-1a: Structural Steel Supply
  - c. All items listed in Trade Package 05-1b: Structural Steel Erection
  - d. Trade Contractor shall be responsible for coordination between Trade Packages 05-1a and 05-1b.

## Trade Package 6-1: Millwork

This bid package shall include the cost of providing all labor, material, equipment, supervision, services, insurance, fees, permits, overhead and profit, etc. necessary or incidentally required for the **Millwork** including work from referenced specifications and normally associated with this trade, whether referenced or not.

Specification Section:	Description:
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Specification Section 06 20 23	Interior Finish Carpentry
Specification Section 06 41 16	Plastic-Laminate Face Architectural Cabinets
Specification Section 12 36 61	Simulated Stone Countertops

**Quantity Check:** On section #5 of the bid form please list total anticipated quantities for the following in the quantity check section:

- Time required to submit shops after NTP (Days)
- Time required to fabricate and procure material upon return of approved shops (Days)
- Time Required to install (Days)
- Total sf of countertop

These quantities are for reference only. Trade contractor is responsible for the actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below as well as durations from schedule.

**The following is a highlight of the scope of work associated and to be included in this bid package:**

1. All items listed in General Trade Package.
2. Provide and install all labor, materials, and equipment required to install all casework, millwork, architectural woodwork, base & upper cabinets, countertops, solid surface countertops, backsplashes, adjustable shelving, hardware and accessories, grommets, cubbies, hanger rods, support panels, solid surface window sills, laminate wall panels, and digital prints on high pressure laminate wall panels for a complete and finished interior architectural woodwork system.
3. Provide and install all laminate clad casework, wall paneling, backsplashes, and countertops.
4. Provide submittals and shop drawings for all millwork and wall paneling.
5. This trade contract responsible for all field verification of dimensions and conditions. Where sequence of measuring substrates before fabrication would delay the project, proceed with fabrication (without



field measurements) and provide ample borders and edges to allow for subsequent scribing and trimming of casework and millwork for accurate fit.

6. This trade contractor shall provide protection of all stored work and finished work.
7. Provide and install the aluminum corner molding associated with millwork.
8. Provide all glass doors, shelving standards and shelving, locks, and tackable surfaces located within the display cabinets.
9. Provide and install all countertop brackets and associated blocking necessary for countertop supports. Coordinate installation with Interior Framing Trade Contractor if placement of metal studs is critical.
10. Provide caulking of all backsplashes, countertops, cabinets, and work where it abuts walls or other dissimilar materials.
11. Provide all cutouts for sinks, data, and electrical as laid out in the field by other trades and as directed by the Construction Manager.
12. Provide layout and fasten templates for in-wall blocking and backing by others. Exact locations, elevations, sections, details and attachments for the blocking requirements, as required.
13. Prior to closing walls, this trade contractor shall inspect/verify via site visit of any blocking installed for millwork and notify Construction Manager of any discrepancies prior to walls being closed.
14. Provide and install site fabricated tackable wall systems.
15. Note: per Contract Documents, floor finishes shall extend under millwork.
16. Millwork Trade Contractor shall be responsible for providing and installing floating bracket supports as indicated by detail 16/A8-5. Millwork Trade Contractor shall install brackets in coordination with Framing Trade Contractor. Millwork Trade Contractor shall provide shop drawing indicating layout prior to installation for Framing Trade Contractor to use in wall stud framing layout.
17. Trade Contractor shall provide, install, and finish wood planking as described in drawings. Examples include detail 6&7/A6-3 and 2/A8-6.

## Trade Package 7-1 Waterproofing

This bid package shall include the cost of providing all labor, material, equipment, supervision, services, insurance, fees, permits, overhead and profit, etc. necessary or incidentally required for the **Waterproofing** including work from referenced specifications and normally associated with this trade, whether referenced or not.

Specification Section:	Description:
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Specification 07 27 26	Fluid Applied Membrane Air Barriers
Specification 07 13 26	Self Adhering Sheet Waterproofing
Specification 07 92 00	Joint Sealants
Specification 07 95 00	Expansion Control

**Quantity Check:** On section #5 of the bid form please list total anticipated quantities for the following in the quantity check section:

- Total SF of weather barrier
- Crew Size (#) & Duration (Days)

These quantities are for reference only. Trade contractor is responsible for the actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below as well as durations from schedule.

- Trade Contractor shall submit Product Data and manufacturer's standard details applicable to this project within 15 days of Notice to Proceed to facilitate procurement of materials for project mockup.

**The following is a highlight of the scope of work associated and to be included in this bid package:**

- a. All items listed in General Trade Package.
- b. Provide and install all products per the manufacturer's recommendations.
- c. Regardless if shown on the Contract Documents provide all accessories required or recommended by manufacturer for a warrantable and leak free installation.
- d. Provide and install vertical expansion joint covers located within building facades.
- e. Waterproofing & Flashing Coordination:

- i. The Roofing Trade Contractor will be responsible for installing the roofing membrane underneath the parapet caps.
  - ii. The weather barrier installer shall be responsible for flashing and sealing penetrations through walls. Examples of penetrations are j-boxes, hose bibs, security camera boxes, vents, etc.
  - iii. The Masonry Trade Contractor is responsible for installing brick ties in a way that is acceptable by the approved weather barrier manufacturer as well as supplying and installing the material necessary for sealing the fastener penetrations.
  - iv. The Masonry Trade Contractor shall be responsible for providing through wall flashing where necessary at the masonry walls. This shall include the base of the wall, under brick rowlocks, at the top of openings such as windows & doors.
  - v. The Masonry Trade Contractor shall be responsible for placing end dams along vertical transitions where masonry abuts other materials.
  - vi. The Roofing Trade Contractor shall be responsible for all flashing touching the roof system, including the parapet caps. Parapet caps to be designed in such a way that sections can be removed individually, without taking off adjacent sections.
  - vii. Mechanical, Plumbing, and Electrical Trade Contractors shall be responsible for providing and installing pipe portals for all rooftop penetrations associated with their work. The roofing Trade Contractor shall be responsible for the roofing membrane and flashing of pipe portals.
  - viii. The Waterproofing Trade Contractor shall be responsible for the sealant associated with expansion joints located within masonry.
  - ix. The Waterproofing Trade Contractor shall be responsible for insulating/caulking required around penetrations, hollow metal doors, and perimeter openings.
  - x. Glass & Glazing Trade Contractor to furnish and install all flashings and sealants at the perimeter and within their glazing systems.
  - xi. The Roofing Trade Contractor shall provide and install all material associated with rooftop expansion joints.
- f. Exterior Facade Mockup
  - i. Trade Contractor shall include cost associated with a large mockup in which all facades, waterproofing, air barriers, framing, etc. are coordinated.
  - ii. Approximate mockup size is 10' tall by 12' wide and will incorporate parapet and corner.
  - iii. Final design of mockup to be determined.
- g. Provide and install all exterior weather barrier.
- h. Weather Barrier (Spec: 07 27 26) shall be applied by weather barrier trade contractor.
- i. Provide all necessary lifts and scaffolding to complete this scope of work.
- j. Exterior Facade Mockup
  - a. Trade Contractor shall include cost associated with a large mockup in which all facades, waterproofing, air barriers, framing, etc. are coordinated.
- k. Approximate mockup size is 10' tall by 12' wide and will incorporate parapet and corner.
- l. Final design of mockup to be determined.

- m. This Trade Package shall provide below grade waterproofing membrane as shown by 6 & 15/S5-1.
- n. This Trade Package shall provide all exterior exposed Vertical Expansion Joints. Refer 7/A8-4 for detail. Interior Framing Trade Package shall be responsible for interior expansion joints and covers.
- o. Air/Water barrier behind EIFS shall be by EIFS trade Contractor.

## Trade Package 7-2: TPO Roofing

This bid package shall include the cost of providing all labor, material, equipment, supervision, services, insurance, fees, permits, overhead and profit, etc. necessary or incidentally required for the **TPO Roofing** including work from referenced specifications and normally associated with this trade, whether referenced or not.

Specification Section:	Description:
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Specification Section 06 6100	Rough Carpentry
Specification Section 07 5419	Polyvinyl-Chloride (PVC) Roofing
Specification Section 07 5423	Thermoplastic Polyolefin Membrane Roofing
Specification Section 07 6200	Sheet Metal Flashing and Trim
Specification Section 07 7200	Roof Accessories
Specification Section 10 7313	Awnings

**Quantity Check:** On section #5 of the bid form please list total anticipated quantities for the following in the quantity check section:

- Total SF of roofing membrane

These quantities are for reference only. Trade contractor is responsible for the actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below as well as durations from schedule.

- Trade Contractor shall submit Product Data and manufacturer's standard details applicable to this project within 15 days of Notice to Proceed to facilitate procurement of materials for project mockup.

**The following is a highlight of the scope of work associated and to be included in this bid package:**

1. All items listed in General Trade Package.
2. Trade Contractor must hold and maintain a State of Oklahoma Roofing Contractor's License. Submit copy of license with the bid packet.
3. Roofing Trade Contractor must be an approved installer by the roof membrane manufacturer. Submit approval letter along with the bid packet.
4. Provide and install TPO roofing, roof insulation, and associated protection board per the Contract Documents.

5. Provide all sheet metal flashing, counterflashing, roof coping, closures, accessories, clips, fasteners, gaskets and sealants related to the roofing work.
6. Provide and install expansion joint systems located within the roof system.
7. Provide and install metal flashings associated with the roof expansion joints. In addition, provide sealants associated with metal flashings.
8. Provide and install gutters, downspouts, and associated precast concrete splash pads.
9. Detailing around all penetrations by other trades.
10. Provide and install all products per the manufacturer's recommendations.
11. Regardless if shown on the Contract Documents provide all accessories required or recommended by manufacturer for a warrantable and leak free installation.
12. Waterproofing & Flashing Coordination:
  - a. The Roofing Trade Contractor will be responsible for installing the roofing membrane underneath the parapet caps.
  - b. The weather barrier installer shall be responsible for flashing and sealing penetrations through walls. Examples of penetrations are j-boxes, hose bibs, security camera boxes, vents, etc.
  - c. The Masonry Trade Contractor is responsible for installing brick ties in a way that is acceptable by the approved weather barrier manufacturer as well as supplying and installing the material necessary for sealing the fastener penetrations.
  - d. The Masonry Trade Contractor shall be responsible for providing through wall flashing where necessary at the masonry walls. This shall include the base of the wall, under brick rowlocks, at the top of openings such as windows & doors.
  - e. The Masonry Trade Contractor shall be responsible for placing end dams along vertical transitions where masonry abuts other materials.
  - f. The Roofing Trade Contractor shall be responsible for all flashing touching the roof system, including the parapet caps. Parapet caps to be designed in such a way that sections can be removed individually, without taking off adjacent sections.
  - g. Mechanical, Plumbing, and Electrical Trade Contractors shall be responsible for providing and installing pipe portals for all rooftop penetrations associated with their work. The roofing Trade Contractor shall be responsible for the roofing membrane and flashing of pipe portals.
  - h. The Waterproofing Trade Contractor shall be responsible for the sealant associated with expansion joints located within masonry.
  - i. The Waterproofing Trade Contractor shall be responsible for insulating/caulking required around penetrations, hollow metal doors, and perimeter openings.
  - j. Glass & Glazing Trade Contractor to furnish and install all flashings and sealants at the perimeter and within their glazing systems.
  - k. The Roofing Trade Contractor shall provide and install all material associated with rooftop expansion joints.
13. Exterior Facade Mockup
  - a. Trade Contractor shall include cost associated with a large mockup in which all facades, waterproofing, air barriers, framing, etc. are coordinated.
  - b. Approximate mockup size is 10' tall by 12' wide and will incorporate parapet and corner.
  - c. Final design of mockup to be determined.

14. Provide manufacturer's system warranty per the Contract Documents warranty to start at date of substantial completion for the building and not from install date.
15. Provide and install walking pads as indicated on the Contract Documents. Regardless of what is shown on the Contract Documents provide walking pads from the roof hatch to each piece of equipment located on the roof.
16. Provide walking pad material for MEP trades to cut and install underneath conduit, gas line supports, etc.
17. Provide roofing and parapet mockup to be incorporated into larger mockup with other trades.
18. Provide and install roof hatches, prefabricated ladders hatch ladders, safety ups, hatch guardrails, and prefabricated rooftop ladders as indicated on the contract documents.
19. Provide and install all lumber and blocking necessary for the roof parapet, roof blocking, roof hatches, roof mounted ladders, roof penetrations, and expansion joint.
20. Provide and install cants at roof curbs.
21. Provide and install all prefabricated roof ladders and hatches and associated blocking.
22. Provide and install parapet cap at dumpster enclosure.
23. Framing and Drywall Trade Contractor shall provide blocking, sheathing, and framing associated with roof scuppers. Flashing and all weather barrier for through wall application to be provided by Roofing Trade Contractor.
24. Plumbing Trade Package to provide roof pipe supports. Attachment of pipe support to roof shall be by the roofing trade contractor to provide a warrantable roof install.
25. Clarification: Splash blocks by this trade package.
26. Clarification: Gutter from PEMB to ground/to lower TPO roof are by PEMB supplier.

## Trade Package 7-3 EIFS

This bid package shall include the cost of providing all labor, material, equipment, supervision, services, insurance, fees, permits, overhead and profit, etc. necessary or incidentally required for the **EIFS** including work from referenced specifications and normally associated with this trade, whether referenced or not.

Specification Section:	Description:
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Specification 07 24 19	Water-Drainage Exterior Insulation and Finish

**Quantity Check:** On section #5 of the bid form please list total anticipated quantities for the following in the quantity check section:

- Total SF of EIFS
- Crew Size (#) & Duration (Days)

These quantities are for reference only. Trade contractor is responsible for the actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below as well as durations from schedule.

- Trade Contractor shall submit Product Data and manufacturer's standard details applicable to this project within 15 days of Notice to Proceed to facilitate procurement of materials for project mockup.

**The following is a highlight of the scope of work associated and to be included in this bid package:**

- All items listed in General Trade Package.
- Provide and install all products per the manufacturer's recommendations.
- Regardless if shown on the Contract Documents provide all accessories required or recommended by manufacturer for a warrantable and leak free installation.
- Provide and install vertical expansion joint covers located within building facades.
- Waterproofing & Flashing Coordination:
  - The Roofing Trade Contractor will be responsible for installing the roofing membrane underneath the parapet caps.
  - This Trade Package shall be responsible for flashing and sealing penetrations through EIFS walls. Examples of penetrations are j-boxes, hose bibs, security camera boxes, vents, etc.
  - Trade Contractor shall be responsible for providing through wall flashing where necessary. This shall include the base of the wall, at the top of openings such as windows & doors.



- d. The Roofing Trade Contractor shall be responsible for all flashing touching the roof system, including the parapet caps. Parapet caps to be designed in such a way that sections can be removed individually, without taking off adjacent sections.
- e. Glass & Glazing Trade Contractor to furnish and install all flashings and sealants at the perimeter and within their glazing systems.
- f. The Roofing Trade Contractor shall provide and install all material associated with rooftop expansion joints.
- g. Provide complete EIFS system to include; fluid applied water barrier, primer/sealers, flexible membrane flashings, adhesives, polystyrene board, reinforcing mesh, trim accessories, soffit vents, base and finish coats.
- h. Include fluid applied water barrier at soffits.
- i. Scaffolding and hoisting related to the work. Receive, unload and provide storage of items, furnished by others and installed by this Bidder
- j. Review Drawings for Flashing Transitions between different materials.
- k. Flashing installed behind the EIFS system that transition to masonry should be provided by EIFS Trade Contractor.
- l. Roofing counterflashing that terminates the top of a roof system should be included in the Roofing scope of work.
- m. Include EIFS signs, buildouts, or blockouts as indicated
- n. Exterior Facade Mockup
  - a. Trade Contractor shall include cost associated with a large mockup in which all facades, waterproofing, air barriers, framing, etc. are coordinated.
  - b. Approximate mockup size is 10' tall by 12' wide and will incorporate parapet and corner.
  - c. Final design of mockup to be determined.
- o. Provide all necessary lifts and scaffolding to complete this scope of work.
- p. Air/Water barrier behind EIFS shall be by EIFS trade Contractor.

## Trade Package 8-1: Glass & Glazing

This bid package shall include the cost of providing all labor, material, equipment, supervision, services, insurance, fees, permits, overhead and profit, etc. necessary or incidentally required for the **Glass & Glazing** including work from referenced specifications and normally associated with this trade, whether referenced or not.

Specification Section:	Description:
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Specification Section 08 41 13	Aluminum Framed Entrances and Storefronts
Specification Section 08 44 13	Glazed Aluminum Curtain Wall
Specification Section 08 51 13	Aluminum Windows
Specification Section 08 71 00	Door Hardware
Specification Section 08 71 00	Hardware Schedule
Specification Section 08 80 00	Glazing
Specification Section 08 88 53	Security Glazing

**Quantity Check:** On section #5 of the bid form please list total anticipated quantities for the following in the quantity check section:

- Total SF of storefront
- Total SF of curtain wall
- Lead Time on Aluminum
- Lead Time on glass/glazing

These quantities are for reference only. Trade contractor is responsible for the actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below as well as durations from schedule.

- Trade Contractor shall submit Product Data and manufacturer's standard details applicable to this project within 15 days of Notice to Proceed to facilitate procurement of materials for project mockup.

**The following is a highlight of the scope of work associated and to be included in this bid package:**

1. All items listed in General Trade Package.
2. Provide and install aluminum framed storefront and curtain wall systems per the Contract Documents.
3. Provide all accessories necessary for a complete installation of work in this Trade Package

4. This Trade Package shall be considered as a delegated design. The Trade Contractor shall be responsible for hiring a licensed engineer registered in the state of Oklahoma to design and detail the glazing framing system of the building. Delegated designer shall size mullions, connections between mullions, and connections of mullions/glazing system to the structural support indicated by the EOR. The Trade Package's Delegated Design Engineer shall design the system to meet minimum requirements/sizing shown on the Construction Documents and Specifications unless noted otherwise by the EOR/AOR. Delegated Design Engineer shall provide submitted calculations for mullion member/connection sizing for all conditions unless specifically noted by EOR/AOR. The Trade Contractor shall be responsible for shop drawings detailing all conditions not specifically noted by EOR/AOR.
5. Any structure necessary for installation of the aluminum framing in this Trade Package that is not specifically shown on the plans shall be provided and installed by this Trade Package.
6. Waterproofing & Flashing Coordination:
  - a. The Roofing Trade Contractor will be responsible for installing the roofing membrane underneath the parapet caps.
  - b. The weather barrier installer shall be responsible for flashing and sealing penetrations through walls. Examples of penetrations are j-boxes, hose bibs, security camera boxes, vents, etc.
  - c. The Masonry Trade Contractor is responsible for installing brick ties in a way that is acceptable by the approved weather barrier manufacturer as well as supplying and installing the material necessary for sealing the fastener penetrations.
  - d. The Masonry Trade Contractor shall be responsible for providing through wall flashing where necessary at the masonry walls. This shall include the base of the wall, under brick rowlocks, at the top of openings such as windows & doors.
  - e. The Masonry Trade Contractor shall be responsible for placing end dams along vertical transitions where masonry abuts other materials.
  - f. The Roofing Trade Contractor shall be responsible for all flashing touching the roof system, including the parapet caps. Parapet caps to be designed in such a way that sections can be removed individually, without taking off adjacent sections.
  - g. Mechanical, Plumbing, and Electrical Trade Contractors shall be responsible for providing and installing pipe portals for all rooftop penetrations associated with their work. The roofing Trade Contractor shall be responsible for the roofing membrane and flashing of pipe portals.
  - h. The Waterproofing Trade Contractor shall be responsible for the sealant associated with expansion joints located within masonry.
  - i. The Waterproofing Trade Contractor shall be responsible for insulating/caulking required around penetrations, hollow metal doors, and perimeter openings.
  - j. Glass & Glazing Trade Contractor to furnish and install all flashings and sealants at the perimeter and within their glazing systems.
  - k. The Roofing Trade Contractor shall provide and install all material associated with rooftop expansion joints.
7. Hardware Coordination (Reference Hardware Set in Specification Section 08 71 00 Hardware Schedule):
  - a. Hardware indicated as an item in Specification Section 08 71 00 shall be provided by the Hardware Trade Contractor.
    - i. Install shall be as follows:

1. Glass & Glazing Trade Contractor to prepare doors and frames as well as install this hardware in aluminum doors/frames.
2. Hollow Metal Door & Frame Install Trade Contractor to install all hardware in wood doors and hollow metal doors and frames.
- ii. Hardware Trade Contractor to turn over hardware associated with aluminum doors to Glass & Glazing Trade Contractor for door prep. Hardware will be inventoried and accepted at time of turnover. After turnover accepting Trade Contractor shall be responsible for replacing any missing and/or unaccounted for hardware items.
- b. Hardware indicated as an item by the Aluminum Door Supplier shall be provided and installed by the Glass & Glazing Trade Contractor.
- c. Hardware Trade Contractor to Provide all keyed cores and keying for the project, including for doors provided by others. Examples of other types of doors are aluminum doors overhead doors and grills, overhead sectional doors, and coiling counter doors.
- d. All types of door locks shall be provided with temporary construction cores from the party responsible for the lock.
8. Provide and install door operators within aluminum doors.
9. Provide and install all interior glazing. Examples are within hollow metal doors and frames, wood doors, sidelights, and vision lights.
10. Provide and install mirrors that are not within casework or identified with the toilet accessories.
11. Provide and install window films as indicated in the Contract Documents.
12. Provide and install windows in PEMB structures. Trade Contractor shall be responsible for protecting adjacent surfaces during install and providing a leak free installation.
13. Permanent cores for all doors to be provided by the Hardware Trade Contractor. Installation of these cores remains within the scope of this Trade Package.
14. Provide temporary construction cores for all doors. Temporary construction cores shall be able to be locked with a key.
15. Exterior Facade Mockup
  - a. Trade Contractor shall include cost associated with a large mockup in which all facades, waterproofing, air barriers, framing, etc. are coordinated.
  - b. Approximate mockup size is 10' tall by 12' wide and will incorporate parapet and corner.
  - c. Final design of mockup to be determined.
16. Trade Contractor shall supply and install interior metal MTL1 as noted on A9-3-1 at locations such as 5/A8-1 and other similar locations following that detail or where MTL1 is noted as finish.

## Trade Package 8-2: Doors, Frames, & Hardware

This bid package shall include the cost of providing all labor, material, equipment, supervision, services, insurance, fees, permits, overhead and profit, etc. necessary or incidentally required for the **Doors, Frames, & Hardware** including work from referenced specifications and normally associated with this trade, whether referenced or not.

<b>Specification Section:</b>	<b>Description:</b>
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Specification Section 08 11 13	Hollow Metal Doors & Frames
Specification Section 08 14 16	Flush Wood Doors
Specification Section 08 14 33	Stile and Rail Wood Doors
Specification Section 08 71 00	Door Hardware
Specification Section 08 7100	Hardware Schedule

**Quantity Check:** On section #5 of the bid form please list total anticipated quantities for the following in the quantity check section:

- Total number of Wood doors
- Total number of HM doors
- Lead time for frames from approval

These quantities are for reference only. Trade contractor is responsible for the actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below as well as durations from schedule.

- Trade Contractor shall submit Product Data and manufacturer's standard details applicable to this project within 15 days of Notice to Proceed to facilitate procurement of materials for project mockup.

**The following is a highlight of the scope of work associated and to be included in this bid package:**

1. All items listed in General Trade Package.
2. Furnish, for installation by others, all materials, equipment, and accessories as shown or specified in the Contract Documents for a complete installation of the items listed in above table.
3. Provide shop drawings, submittals, and samples for all items in above table as indicated in Construction Documents.
4. Hardware Coordination:

- i. Hardware indicated as an item in Specification Section 08 71 00 shall be provided by the Hardware Trade Contractor.
    - ii. Install shall be as follows:
      - 1. Glass & Glazing Trade Contractor to prepare doors and frames as well as install this hardware in aluminum doors/frames.
      - 2. Hollow Metal Door & Frame Install Trade Contractor to install all hardware in wood doors and hollow metal doors and frames.
    - iii. Hardware Trade Contractor to turn over hardware associated with aluminum doors to Glass & Glazing Trade Contractor for door prep. Hardware will be inventoried and accepted at time of turnover. After turnover accepting Trade Contractor shall be responsible for replacing any missing and/or unaccounted for hardware items.
  - b. Hardware indicated as an item by the Aluminum Door Supplier shall be provided and installed by the Glass & Glazing Trade Contractor.
  - c. Hardware Trade Contractor to Provide all keyed cores and keying for the project, including for doors provided by others. Examples of other types of doors are aluminum doors overhead doors and grills, overhead sectional doors, and coiling counter doors.
  - d. All types of door locks shall be provided with temporary construction cores from the party responsible for the lock. Temporary Construction Core shall be key operated type.
5. Attend a coordination meeting with the Security Trade Contractor.
  6. Attend all coordination meetings regarding keying.
  7. Provide all hollow metal doors, frames, and associated per the Contract Documents.
  8. Provide labeling at fire rated doors and frames.
  9. Clearly label all doors, frames, and hardware with the correct opening number.
  10. Fabricate doors and frames to accommodate slab depressions and flooring systems.
  11. Glass inserts in hollow metal will be provided by others.
  12. Furnish all window lites, vision kits, and louver grills in hollow metal and wood doors.
  13. Furnish all peepholes in doors per drawings.
  14. Provide all hardware prep for hollow metal doors & frames as well as wood doors.
  15. If required by Contract Documents, provide stickers associated with emergency exit alarms such as "Emergency Exit Only – Alarm Will Sound".
  16. Hardware sets shall be grouped and labeled pre-opening. Provide a qualified representative on site at the time of deliveries to catalog, organize, and label hardware in the Construction Manager's designated storage area.
  17. Verify and coordinate final keying of the project per the Contract Documents.
  18. Provide all wood doors per Contract Documents.
  19. Wood doors to be prefinished per the Contract Documents.
  20. Deliver, receive, unload, inventory, hoist, and stock materials and equipment for this Trade Package. Materials shall be stocked at in areas designated by the Construction Manager.
  21. Provide layout and fasten templates for in-wall blocking and backing by others. Exact locations, elevations, sections, details and attachments for the blocking requirements, as required.
  22. Ensure all materials, equipment, and accessories provided conform with ADA requirements.

## Trade Package 8-3: Coiling and Sectional Doors

This bid package shall include the cost of providing all labor, material, equipment, supervision, services, insurance, fees, permits, overhead and profit, etc. necessary or incidentally required for the **Coiling and Sectional Doors** including work from referenced specifications and normally associated with this trade, whether referenced or not.

<b>Specification Section:</b>	<b>Description:</b>
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Specification Section 08 33 13	Coiling Counter Doors
Specification Section 08 36 13	Overhead Section Doors

**Quantity Check:** On section #5 of the bid form please list total anticipated quantities for the following in the quantity check section:

- Total number of coiling counter doors
- Total number of overhead section doors

These quantities are for reference only. Trade contractor is responsible for the actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below as well as durations from schedule.

- Trade Contractor shall submit Product Data and manufacturer's standard details applicable to this project within 15 days of Notice to Proceed to facilitate procurement of materials.
- Trade Contractor shall submit project specific layout details within 25 days of Notice to Proceed to be used for in wall framing and blocking layout.

**The following is a highlight of the scope of work associated and to be included in this bid package:**

1. All items listed in General Trade Package.
2. Furnish and install all materials, equipment, and accessories as shown or specified in the Contract Documents for a complete installation of the items listed in above table.
3. Provide shop drawings, submittals, and samples for all items in above table as indicated in Construction Documents.
4. Special Door Power & wiring coordination
  - a. A single point of connection for power will be provided to the doors associated with this Trade Package.

- b. Unless shown otherwise on the Contract Documents Electrical Trade Contractor to provide a ¾" conduit and wire from the door motor to the switch location(s).
  - c. The Electrical Trade Contractor will provide a ¾" conduit and wire from the door motor to the door interlock.
  - d. The Coiling and Sectional Door Trade Contractor will provide a step-down transformer at the motor.
  - e. Other wiring and conduits, including low voltage, will be provided by the Coiling and Sectional Door trade contractor.
- 5. Provide layout and fasten templates for in-wall blocking and backing by others. Exact locations, elevations, sections, details and attachments for the blocking requirements, as required.
- 6. Any structure, other than wood blocking that has been properly coordinated, necessary for installation of the doors in this Trade Package that is not specifically shown on the plans shall be provided and installed by this Trade Package.
- 7. Trade Contractor to provide door track , hanger bracket, hanger rods and any closet framing special to door system.
- 8. At penetrations for doors associated with this Trade Package provide and install fire and/or acoustical sealants/materials as necessary to maintain ratings in walls.
- 9. Provide interlock at overhead doors.
- 10. Door Hardware Trade Contractor to provide permanent cores for doors within this Trade Package. This Trade Package is responsible for providing temporary construction cores.
- 11. Provide temporary construction cores. Permanent cores will be provided by the Hardware Trade Contractor.
- 12. Provide cylinders that are compatible with cores described in the door hardware specification.
- 13. Hardware Coordination (Reference Hardware Set in Specification Section 08 71 00 Hardware Schedule):
  - a. Hardware indicated as an item in Specification Section 08 71 00 shall be provided by the Hardware Trade Contractor.
    - i. Install shall be as follows:
      - 1. Glass & Glazing Trade Contractor to prepare doors and frames as well as install this hardware in aluminum doors/frames.
      - 2. Hollow Metal Door & Frame Install Trade Contractor to install all hardware in wood doors and hollow metal doors and frames.
    - ii. Hardware Trade Contractor to turn over hardware associated with aluminum doors to Glass & Glazing Trade Contractor for door prep. Hardware will be inventoried and accepted at time of turnover. After turnover accepting Trade Contractor shall be responsible for replacing any missing and/or unaccounted for hardware items.
- 14. Date of substantial completion shall be based off of building completion and not install completion. Trade Contractor shall be responsible for negotiating/extending warranty to cover the construction time period.



## Trade Package 9-1 Cold Form Framing & Drywall

This bid package shall include the cost of providing all labor, material, equipment, supervision, services, insurance, fees, permits, overhead and profit, etc. necessary or incidentally required for the **Cold Form Framing & Drywall** including work from referenced specifications and normally associated with this trade, whether referenced or not.

Specification Section:	Description:
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Specification Section 05 40 00	Cold-Formed Metal Framing
Specification Section 06 10 53	Misc Rough Carpentry
Specification Section 06 16 00	Sheathing
Specification Section 06 64 00	Plastic Paneling
Specification Section 07 21 00	Thermal Insulation
Specification Section 07 84 13	Penetration Firestopping
Specification Section 07 84 43	Joint Firestopping
Specification Section 07 95 00	Expansion Control
Specification Section 08 11 13	Hollow Metal Doors & Frames
Specification Section 09 22 16	Non-Structural Metal Framing
Specification Section 09 29 00	Gypsum Board
Specification Section 09 51 23	Acoustical Tile Ceilings
Specification Section 09 77 23	Fabric Wrapped Panels

**Quantity Check:** On section #5 of the bid form please list total anticipated quantities for the following in the quantity check section:

- Total SF of gypsum board
- Crew Size (#)

These quantities are for reference only. Trade contractor is responsible for the actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below as well as durations from schedule.

- Trade Contractor shall submit Product Data and manufacturer's standard details applicable to this project within 15 days of Notice to Proceed to facilitate procurement of materials for project mockup.
- Trade Contractor shall supply crew with capacity to run exterior framing and exterior sheathing concurrently.

- Trade Contractor shall supply crew with capacity to run interior framing, interior drywall, and interior ceiling grid installation concurrently in different areas when schedule requires.

**The following is a highlight of the scope of work associated and to be included in this bid package:**

1. All items listed in General Trade Package.
2. Provide and install all framing & sheathing at exterior walls, walls with facades, walls with parapet, walls with exterior doors, and exterior soffits and overhangs.
3. Provide plumb and square walls within tolerances listed in Contract Documents and Specifications.
4. This Trade Package shall be considered as delegated design. The Trade Contractor shall be responsible for hiring a licensed engineer registered in the state of Oklahoma to design and detail the cold form framing system of the building. Where sizes of cold form framing are indicated, the delegated design engineer shall verify sizes shown conform to the load and deflection requirements of the Construction Documents and Specifications. Sizes shown on Contract Documents shall be considered minimum sizing unless approved otherwise by EOR through written approval. Delegated Design Engineer shall provide calculations and member/connection sizing for all conditions unless specifically noted by EOR. The Trade Contractor shall be responsible for shop drawings detailing all conditions not specifically noted by EOR.
5. This Trade Package shall provide and install Glass- Fiber Reinforced Plastic Paneling at areas indicated by the specifications.
6. This Trade Package shall provide and install Fabric Wrapped Panels as indicated in drawings and specifications. Trade Contractor shall be responsible for blocking/mounting required.
7. This Trade Package shall provide and install interior expansion joints in gypsum walls and for interior expansion joints between cold form framed walls/ceilings and Pre-engineered Metal Building system.
8. This Trade Package shall provide sheathing on PEMB purlins where indicated by plans. Refer 3/A7-2 and 2/A8-1 for example of sheathing on metal purlins.
9. Refer 6/A7-2. Where cold form metal framing supports metal panel, Cold Form Framing and Drywall Trade Contractor shall provide cold form framing, insulation, metal panel and accessories to compose entire wall system. Wall Panel shall run vertically and may require horizontal hat channel or blocking not detailed in wall section 6/A8-1. Trade Contractor shall be responsible for providing and installing additional hat channel or blocking where required for complete installation.
10. Where CFMF anchors to horizontal girts, Refer 2 & 3/S3-2C, Trade Contractor shall be responsible for providing clip to girt from CFMF. At this detail, and similar conditions, Trade Contractor to provide CFMF not detailed to support exterior metal panel to top of wall.
11. Where insulation R value is indicated on plans or specifications, this shall be considered minimum R value. Insulation shall fill cavity space to prevent condensate.
12. Blocking
  - a. Roof parapet cap, roof hatch blocking, and mechanical curb blocking shall be by others. Identifying, quantifying, and pricing in wall blocking is the sole responsibility of the Framing & Gypsum Trade Contractors. Blocking is a means and methods issue and therefore not shown on the drawings. Provide non-corrosive fasteners for attachment to treated lumber. Examples of blocking to be provided by the Framing & Gypsum Trade Contractor are:
    - i. All in wall blocking indicated in the Contract Documents

- ii. All ceiling blocking as indicated in Contract Documents
  - iii. Toilet partition blocking
  - iv. Casework
  - v. TV Blocking
  - vi. Handrails
  - vii. MEP Control Cabinets
  - viii. Marker Boards
  - ix. Mounting boards at communications and electrical rooms
  - x. Window & door lintels – Provide 2x blocking at these locations
  - xi. Head of storefront and curtain wall openings – Provide 2x blocking at these locations
  - xii. Any other items mounted on walls or a gypsum board ceiling
- b. Framing Trade Contractor shall be responsible for providing and installing all in wall blocking.
13. Millwork Trade Contractor shall be responsible for providing and installing floating bracket supports as indicated by detail 16/A8-5. Millwork Trade Contractor shall install brackets in coordination with Framing Trade Contractor. Millwork Trade Contractor shall provide shop drawing indicating layout prior to installation for Framing Trade Contractor to use in wall stud framing layout.
  14. Identify, quantify, and price recessed and semi-recessed items that require framed openings such as toilet paper dispensers and fire extinguisher cabinets.
  15. Provide and install wood blocking around window openings as indicated by details A9-2.
  16. Provide and install wall sheathing as indicated in the Contract Documents
  17. Weather Barrier (Spec: 07 27 26) shall be applied by weather barrier trade contractor. This Trade Package shall be responsible for providing sheathed surface meeting requirements of the specified Fluid Applied Membrane and shall be responsible for not counter-sinking exterior sheathing screws. This Trade Package shall not be responsible for sheathing joint membrane application, sealant at details, etc but is responsible for providing firm, uniform sheathing surface, including fastener locations that can be waterproofed over.
  18. Provide all layout necessary to complete the framing/drywall scope.
  19. Provide all necessary lifts and scaffolding to complete the framing/drywall scope.
  20. Provide kickers at strike side of all interior doors.
  21. Install exterior hollow metal door and window frames in gypsum board partitions (frames provided by others). This includes receiving, unloading, keeping inventory, quantity verification, damage inspections, and distribution.
  22. Verify that all door frames are square prior to gypsum board installation.
  23. For walls to deck provide slip tracks and insulation as well as tooth gypsum board to abut metal decking as necessary.
  24. Framing and blockouts for through wall penetrations
  25. Coordinate rough-in requirements for doors and frames with electrical and security subcontractors.
  26. Exterior Facade Mockup
    - a. Trade Contractor shall include cost associated with a large mockup in which all facades, waterproofing, air barriers, framing, etc. are coordinated.
    - b. Approximate mockup size is 10' tall by 12' wide and will incorporate parapet and corner.
    - c. Final design of mockup to be determined.

27. Provide and install fire and smoke assembly identification at all walls where required per Contract Documents.
28. Provide and install all batt insulation and sound attenuation bats per the Contract Documents.
29. If listed as an option in the Contract Documents use tear away trim where applicable.
30. Access doors in walls or ceilings will be furnished by the subcontractor whose work is accessed by the door. Installation shall be including in the framing/drywall scope. Access door to be supplied to Framing & Gypsum Trade Contractor prior to starting work in a given area.
31. The Framing & Gypsum Trade Contractor shall be responsible for all acoustical caulking, sealant, fire stopping at the top, bottom and ends of walls. Sealing of MEP penetrations will be the responsibility of the respective trade.
32. Provide an allowance of **40 working hours as well as \$1,000** for materials to repair work damaged by other trades. This time shall include all necessary taxes, insurance, overhead, profit, and other markups included. The hours will be tracked by Lingo's jobsite superintendent and the drywall & framing foreman. If it is not all used it will be credited back to Lingo on a pro-rated basis. The subcontractor's total cost for this allowance, including material, is \_\_\_\_\_ (Write into bid form in section 5).
33. At locations to receive wall tile provide and install cement backer board per the Contract Documents. Wall tile shall match thickness of gypsum board framing above/adjacent to tile, or as indicated by specifications.
34. Provide and install shaft wall framing and liner per the Contract Documents.
35. Prior to framing walls coordinate with MEP Trade Contractors for size, elevation, and location of all wall openings.
36. Prior to installing gypsum board, vacuum base of wall tracks.
37. Framing and Drywall Trade Contractor shall provide blocking, sheathing, and framing associated with roof scuppers. Flashing and all weather barrier for through wall application to be provided by Roofing Trade Contractor.
38. Coordinate ceiling framing with other trades to ensure their fixtures or devices can be mounted at desired locations.
39. Coordinate rough-in requirements for doors and frames with electrical and security subcontractors.
40. Provide and install all fiberglass reinforced paneling (FRP) including sealants, trim, and adhesive.
41. Tape & bedding will be provided by the Painting Trade Contractor.
42. Provide and install acoustical ceilings as called for in the Contract Documents.
43. Provide and install closure trim for acoustical ceilings as called for in the Contract Documents.
44. Provide and install ceiling suspension systems for acoustical ceilings.
45. Provide and install all interior wall and ceiling expansion joints per Contract Documents.
46. Provide and install impact resistant gypsum board as indicated in the Contract Documents.
47. This Trade Package to provide foam insulation as described in areas such as 5/A8-1, 2/A8-1.
48. This Trade Package to provide top of wall fire and other insulation and sealant as described in 8 & 9/A8-3. Sealant and backer rod to be provided by painting Trade Contractor.
49. Waterproofing Trade Package shall provide all exterior exposed Vertical Expansion Joints. Refer 7/A8-4 for detail. Interior Framing Trade Package shall be responsible for interior expansion joints and covers.
50. Clarification: PEMB insulation is to be provided by PEMB installer. Insulation inbetween PEMB girt walls is by PEMB supplier/erector.

51. Clarification: Fur-out walls along grid E.1 are labeled as 6" S6A.2 but are graphically 3 5/8" and should be wall type S3A.2.

## Trade Package 9-2: Tape, Bed, Paint

This bid package shall include the cost of providing all labor, material, equipment, supervision, services, insurance, fees, permits, overhead and profit, etc. necessary or incidentally required for the **Tape, Bed, Paint** including work from referenced specifications and normally associated with this trade, whether referenced or not.

Specification Section:	Description:
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Specification Section 09 29 00	Gypsum Board
Specification Section 09 61 13	Floor Sealers
Specification Section 09 72 19	Textile Wall Coverings
Specification Section 09 91 13	Exterior Painting
Specification Section 09 91 23	Interior Painting
Specification Section 09 93 00	Staining and Transparent Finishing
Specification Section 09 96 00	High Performance Coatings

**Quantity Check:** On section #5 of the bid form please list total anticipated quantities for the following in the quantity check section:

- Total sf of painted gypsum board
- Total sf of floor sealant

These quantities are for reference only. Trade contractor is responsible for the actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below as well as durations from schedule.

Where sequencing references two areas at one time, the contractor shall provide equipment and crew of sufficient size to complete work concurrently in each area.

**The following is a highlight of the scope of work associated and to be included in this bid package:**

1. All items listed in General Trade Package.
2. Provide all materials, labor, and accessories to provide a complete paint, coating, and wall covering system.
3. Provide all preparation, tape, bed, and paint per the Contract Documents.
4. Provide all gypsum board assembly joint treatments and accessories.
5. Provide and install all field applied finishes listed out in specification section 09 29 00.

6. The Painting Trade Contractor shall be responsible for thoroughly reviewing the entire set of Construction Documents and including all painting work regardless if it is mentioned in Specification
7. Painting Trade Contractor to ensure proper coverage of paint is provided for color, regardless of how many coats are required in the specifications.
8. Paint doors and frames as called for in the contract documents.
9. This Trade Package shall not provide and install concrete floor sealers as indicated in the Contract Documents. This shall be provided by Polishing/Sealing Concrete Trade Package.
10. Exterior steel and floor/roof decking will be provided galvanized. Painting Trade Contractor shall be responsible for preparing galvanized surfaces for paint per the manufacturer's instructions and ensuring proper adhesion. Provide etching primers as necessary to ensure adhesion per manufacturer's instructions.
11. Pavement striping will be provided by others.
12. Provide and install all wall coverings to include fabric wall covering, dry erase wall coverings, tackable wall coverings, and rigid vinyl sheet coverings along with any associated trim and accessories where noted on the plans.
13. Provide all metal trim associated with wall coverings.
14. Painting Trade Contractor shall be responsible for painting all items noted as exposed such as ceilings, ductwork, conduit, steel, decking, etc.
15. Where wall coverings are installed in a horizontal band they shall be installed without seams.
16. Provide and install the following interior joint sealants:
  - a. Interior wall and ceiling control joints
  - b. Joints between door and window frames (hollow metal) and wall surfaces
  - c. Gap between hollow metal door frame and gypsum boards.
  - d. Millwork Trade Contractor to provide sealants where their items meet walls.
  - e. Other interior joints for which no other type of sealant is indicated.
  - f. Fire stopping and sealants provided by other trade packages.
17. Trade contractor to construct and maintain a washout area in a location approved by the Construction Manager that contains all wash water to prevent pollution through the storm drain system.
18. The Signage Trade Contractor shall be responsible for the painted signage.
19. ~~Provide and install sealed concrete floor as indicated on the Contract Documents.~~ Sealed, polished, and stained floors will be provided by another trade contractor.
20. Clean all taping mud from windows, door frames, floors, and adjacent surfaces.
21. Painting Trade Contractor will paint exposed gas and water piping with rust inhibitive paint per the Contact Documents.
22. This Trade Package shall be responsible for sealant and backer rod at tops of walls as shown in 8/A8-3. Fire rated sealant and batt insulation to be provided by Cold Form Framing and Drywall package.
23. Provide an allowance of 60 working hours to repair work damaged by other trades. This time shall include all necessary taxes, insurance, overhead, profit, and other markups included. The hours will be tracked by Lingo's jobsite superintendent and the drywall & framing foreman. If it is not all used it will be credited back to Lingo on a pro-rated basis. The subcontractor's total cost for this allowance, including material, is \_\_\_\_\_ (Write into bid form in section 5).

Alternates:

24. Trade Contractor shall be responsible for high performance coatings and epoxy paints. Base bid shall be to not include epoxy coating as shown on S4-0. Alternate 01 shall be to include epoxy paints as shown for stall barn and connector 3&5/S4-0. Alternate 02 shall be to include epoxy coating for main building columns as shown on 1&4/S4-0.



## Trade Package 9-3: Flooring & Tile

This bid package shall include the cost of providing all labor, material, equipment, supervision, services, insurance, fees, permits, overhead and profit, etc. necessary or incidentally required for the **Flooring & Tile** including work from referenced specifications and normally associated with this trade, whether referenced or not.

Specification Section:	Description:
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Specification Section 03 54 16	Hydraulic Cement Underlayment
Specification Section 09 30 13	Ceramic Tiling
Specification Section 09 65 13	Resilient Base and Accessories
Specification Section 09 65 36	Static-Control Resilient Flooring
Specification Section 09 68 00	Carpeting
Specification Section 12 48 13	Entrance Floor Mats and Frames

**Quantity Check:** On section #5 of the bid form please list total anticipated quantities for the following in the quantity check section:

- Total SF of tile
- Total SF of Carpet

These quantities are for reference only. Trade contractor is responsible for the actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below as well as durations from schedule.

Where sequencing references two areas at one time, the contractor shall provide equipment and crew of sufficient size to complete work concurrently in each area.

**The following is a highlight of the scope of work associated and to be included in this bid package:**

1. All items listed in General Trade Package.
2. Provide and install all tiling and associated components per the Contract Documents for a complete tile installation.
3. Provide all components and accessories of the resilient flooring and tile carpeting systems for a complete flooring installation.
4. The Tiling Trade Contractor shall be responsible for installation of waterproofing under tiles at showers and service sinks as well as areas where indicated on the Contract Documents.

5. Trade Contractor shall test all shower assemblies by means of water flooding for leaks before proceeding with tile. Trade Contractor shall be required to give Lingo 48 hour notice of such test. Lingo shall observe the test unless specifically directed in writing that it is acceptable to proceed without Lingo's observance.
6. Provide and install all Schluter trim and transitions called for in the Contract Documents and the General Notes for Tile Installation.
7. Provide and install all stone thresholds as called for in the Contract Documents.
8. Tiling Trade Contractor shall provide soft joints at all inside corners as well as sealants within and at the perimeter of their work.
9. Tiling Trade Contractor shall be responsible for installing grout sealer as indicated in the Contract Documents.
10. Provide all floor surface preparation, leveling and cleaning including all required underlayment, and patching compounds. Floor preparation is limited to the filing and leveling of all saw joints.
11. Clean tile upon completion of grouting.
12. Trade Contractor shall inspect substrate prior to commencement of work. Any deficiencies shall be reported to Construction Manager.
13. Trade Contractor is responsible for the protection of all adjacent finishes for example painted walls and ceilings, fiberglass tub shower units, and counter tops.
14. Trade Contractor to construct and maintain a washout area in a location approved by the Construction Manager that will contain all wash water to prevent pollution through the storm sewer system.
15. Provide and install walk off carpets.
16. Remove excess glue if necessary, after installation of flooring products.
17. Provide and install tile carpeting per the plans and specifications.
18. Provide and install edge strips per the Contract Documents.
19. Provide all maintenance materials as indicated in the Contract Documents.
20. Provide manufacturer's written installation recommendations along with submittals. Installation shall be provided per these instructions unless discussed and agreed upon prior to installation commencing.
21. Provide and install floor protection at walkpaths in corridors. Provide 38" wide Ram Board at all corridors and 5' into each room. Construction Manager to maintain after initial installation.
22. Sand or scarify floors to meet manufacturer's recommendations for porosity. Trade contractor shall control Dust during all sanding or scarifying activities so as to comply with OSHA guidelines and not interfere with other contractors working in the same area.
23. Provide and install one ten lb. bag of feather edge floor stone per 200sf of resilient flooring as well as carpet tile for the repair of minor slab imperfections as well as fill in concrete saw joints.. Fifty pound bags will not be accepted. Use of floor prep shall be verified by Lingo jobsite superintendent.
24. At the completion of carpet installation in a given area trade contractor shall clean and vacuum the carpet utilizing a vacuum with a mechanical brush.
25. Note: per Contract Documents, floor finishes shall extend under millwork.
26. Moisture Remediation
  - a. Alternates – Provide Add/(Deduct) in alternate section of the Bid Form provided in section 00 2000 Bid Form. Testing shall be performed per manufacturer's recommendations by this trade

package. However, if acceptable to the manufacturer, Construction Manager requires Percent Relative Humidity or RH type testing.

- i. Alternate 1 (Trade Package 9-3) – \$\_\_\_\_\_SF Add/(Deduct) If Moisture Vapor Reduction Admixture is omitted from the project and the Resilient Flooring & Tile Carpeting Trade Contractor provides glues and floor prep necessary to install Tile Carpeting on a slab containing 86%-90% relative humidity and maintain manufacturer's warranty.
- ii. Alternate 2 (Trade Package 9-3) – \$\_\_\_\_\_SF Add/(Deduct) If Moisture Vapor Reduction Admixture is omitted from the project and the Resilient Flooring & Tile Carpeting Trade Contractor provides glues and floor prep necessary to install Tile Carpeting on a slab containing 91%-95% relative humidity and maintain manufacturer's warranty.
- iii. Alternate 3 (Trade Package 9-3) – \$\_\_\_\_\_SF Add/(Deduct) If Moisture Vapor Reduction Admixture is omitted from the project and the Resilient Flooring & Tile Carpeting Trade Contractor provides glues and floor prep necessary to install Tile Carpeting on a slab containing 96%-99% relative humidity and maintain manufacturer's warranty.

## Trade Package 9-4: Resinous Flooring

This bid package shall include the cost of providing all labor, material, equipment, supervision, services, insurance, fees, permits, overhead and profit, etc. necessary or incidentally required for the **Resinous Flooring** including work from referenced specifications and normally associated with this trade, whether referenced or not.

Specification Section:	Description:
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Specification Section 09 67 23	Resinous Flooring

**Quantity Check:** On section #5 of the bid form please list total anticipated quantities for the following in the quantity check section:

- Total SF of fluid applied flooring

These quantities are for reference only. Trade contractor is responsible for the actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below as well as durations from schedule.

**The following is a highlight of the scope of work associated and to be included in this bid package:**

1. All items listed in General Trade Package.
2. Provide and install all components and accessories of the fluid-applied flooring and wall base per the Contract Documents and manufacturer's recommendations for a complete installation.
3. Sand or scarify floors to meet manufacturer's recommendations for porosity. Trade contractor shall control Dust during all sanding or scarifying activities so as to comply with OSHA guidelines and not interfere with other contractors working in the same area.
4. Work areas will be broom swept prior to turning over for fluid applied flooring installation. Any surface preparation beyond this shall be the responsibility of the Fluid Applied Flooring Trade Contractor.
5. Provide and install all caulking and sealants within and at the perimeter of the fluid applied flooring.
6. Trade Contractor to include labor for the off hours application for products with High VOCs or noxious fumes that would negatively effect other trades.
7. Moisture Remediation
  - a. Alternates – Provide Add/(Deduct) in alternate section of the Bid Form provided in section 00 2000 Bid Form. Testing shall be performed per manufacturer's recommendations by this trade

package. However, if acceptable to the manufacturer, Construction Manager requires Percent Relative Humidity or RH type testing.

- i. Alternate 1 (Trade Package 9-4) – \$\_\_\_\_\_SF Add/(Deduct) If Moisture Vapor Reduction Admixture is omitted from the project and the Fluid Applied Flooring Trade Contractor provides glues and floor prep necessary to install Fluid Applied Flooring on a slab containing 86%-90% relative humidity and maintain manufacturer's warranty.
- ii. Alternate 2 (Trade Package 9-4) – \$\_\_\_\_\_SF Add/(Deduct) If Moisture Vapor Reduction Admixture is omitted from the project and the Fluid Applied Flooring Trade Contractor provides glues and floor prep necessary to install Fluid Applied Flooring on a slab containing 91%-95% relative humidity and maintain manufacturer's warranty.
- iii. Alternate 3 (Trade Package 9-4) – \$\_\_\_\_\_SF Add/(Deduct) If Moisture Vapor Reduction Admixture is omitted from the project and the Fluid Applied Flooring Trade Contractor provides glues and floor prep necessary to install Fluid Applied Flooring on a slab containing 96%-99% relative humidity and maintain manufacturer's warranty.

8. Provide and install Ram Board floor protection at floors after installation is complete.

## Trade Package 10-1: Specialties Supply

This bid package shall include the cost of providing all labor, material, equipment, supervision, services, insurance, fees, permits, overhead and profit, etc. necessary or incidentally required for the **Specialties Supply** including work from referenced specifications and normally associated with this trade, whether referenced or not.

Specification Section:	Description:
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Specification Section 10 21 13	Toilet Compartments
Specification Section 10 26 00	Wall and Door Protection
Specification Section 10 28 00	Toilet Bath and Laundry Accessories
Specification Section 10 43 13	Defibrillator Cabinets
Specification Section 10 43 14	Automated External Defibrillators
Specification Section 10 44 13	Fire Protection Cabinets
Specification Section 10 44 16	Fire Extinguishers

**Quantity Check:** On section #5 of the bid form please list total anticipated quantities for the following in the quantity check section:

- Number of toilet compartments

These quantities are for reference only. Trade contractor is responsible for the actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below as well as durations from schedule.

- Trade Contractor shall submit Product Data and manufacturer's standard details applicable to this project within 15 days of Notice to Proceed to facilitate procurement of materials.
- Trade Contractor shall submit project specific layout details within 25 days of Notice to Proceed to be used for in wall framing and blocking layout.

**The following is a highlight of the scope of work associated and to be included in this bid package:**

1. All items listed in General Trade Package.
2. Furnish, for installation by others, all materials and accessories associated with Specialties as shown or specified in the Contract Documents for a complete installation of the items listed in above table.
3. Provide shop drawings, submittals, and samples for all items in above table as indicated in Construction Documents.

4. Installation of doors and hardware provided in Trade Package 8-2. Frames will be installed by another Trade Contractor.
5. Hardware Coordination:
  - a. Hardware indicated as an item in Specification Section 08 71 00 shall be provided by the Hardware Trade Contractor.
    - i. Install shall be as follows:
      1. Glass & Glazing Trade Contractor to prepare doors and frames as well as install this hardware in aluminum doors/frames.
      2. Hollow Metal Door & Frame Install Trade Contractor to install all hardware in wood doors and hollow metal doors and frames.
    - ii. Hardware Trade Contractor to turn over hardware associated with aluminum doors to Glass & Glazing Trade Contractor for door prep. Hardware will be inventoried and accepted at time of turnover. After turnover accepting Trade Contractor shall be responsible for replacing any missing and/or unaccounted for hardware items.
  - b. Hardware indicated as an item by the Aluminum Door Supplier shall be provided and installed by the Glass & Glazing Trade Contractor.
  - c. Hardware Trade Contractor to Provide all keyed cores and keying for the project, including for doors provided by others. Examples of other types of doors are aluminum doors overhead doors and grills, overhead sectional doors, and coiling counter doors.
  - d. All types of door locks shall be provided with temporary construction cores from the party responsible for the lock. Temporary Construction Cores shall be lockable.
6. Provide toilet compartments and associated accessories per Contract Documents. Final dimensions to be verified through field dimensions provided by Construction Manager.
7. Provide toilet and janitor accessories per the Contract Documents
8. Provide Defibrillator and cabinets as specified.
9. Provide wall protection devices as called for in the Contract Documents
10. Provide Fire protection specialties and accessories per the Contract Documents.
11. Provide Fire Extinguishers inspected and ready for use.
12. Deliver, receive, unload, inventory, hoist, and stock materials and equipment for this Trade Package. Materials shall be stocked at in areas designated by the Construction Manager.
13. Provide layout and fasten templates for in-wall blocking and backing by others. Exact locations, elevations, sections, details and attachments for the blocking requirements, as required.
14. Ensure all materials, equipment, and accessories provided conform with ADA requirements.
15. Toilet Partitions and accessories shall be shipped either under separate shipments as they correspond to the schedule or shall be bundled under a single shipment so as areas can be stored and installed without sorting entire shipment.
16. This trade Package shall include (2) defibrillators as indicated in the specifications but not shown on plans.

## Trade Package 10-2: Misc. & Install

This bid package shall include the cost of providing all labor, material, equipment, supervision, services, insurance, fees, permits, overhead and profit, etc. necessary or incidentally required for the **Misc & Install** including work from referenced specifications and normally associated with this trade, whether referenced or not.

<b>Specification Section:</b>	<b>Description:</b>
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Specification Section 03 30 00	Cast-in-Place Concrete
Specification Section 05 52 13	Pipe and Tube Railings
Specification Section 08 1113	Hollow Metal Doors & Frames
Specification Section 08 1416	Flush Wood Doors
Specification Section 08 7100	Door Hardware
Specification Section 08 7100	Hardware Schedule
Specification Section 10 21 13	Toilet Compartments
Specification Section 10 26 00	Wall and Door Protection
Specification Section 10 28 00	Toilet Bath and Laundry Accessories
Specification Section 10 43 13	Defibrillator Cabinets
Specification Section 10 43 14	Automated External Defibrillators
Specification Section 10 44 13	Fire Protection Cabinets
Specification Section 10 44 16	Fire Extinguishers
Specification Section 12 24 13	Roller Window Shades
Specification Section 23 05 93	Testing, Adjusting, and Balancing for HVAC

**Quantity Check:** On section #5 of the bid form please list total anticipated quantities for the following in the quantity check section:

- Number of doors installed
- Number of waste bunkers

These quantities are for reference only. Trade contractor is responsible for the actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below as well as durations from schedule.

**The following is a highlight of the scope of work associated and to be included in this bid package:**

1. All items listed in General Trade Package.



2. Installation of doors and hardware provided in Trade Package 8-2. Frames will be installed by another Trade Contractor.
3. Hardware Coordination:
  - a. Hardware indicated as an item in Specification Section 08 71 00 shall be provided by the Hardware Trade Contractor.
    - i. Install shall be as follows:
      1. Glass & Glazing Trade Contractor to prepare doors and frames as well as install this hardware in aluminum doors/frames.
      2. Hollow Metal Door & Frame Install Trade Contractor to install all hardware in wood doors and hollow metal doors and frames.
    - ii. Hardware Trade Contractor to turn over hardware associated with aluminum doors to Glass & Glazing Trade Contractor for door prep. Hardware will be inventoried and accepted at time of turnover. After turnover accepting Trade Contractor shall be responsible for replacing any missing and/or unaccounted for hardware items.
  - b. Hardware indicated as an item by the Aluminum Door Supplier shall be provided and installed by the Glass & Glazing Trade Contractor.
  - c. Hardware Trade Contractor to Provide all keyed cores and keying for the project, including for doors provided by others. Examples of other types of doors are aluminum doors overhead doors and grills, overhead sectional doors, and coiling counter doors.
  - d. All types of door locks shall be provided with temporary construction cores from the party responsible for the lock. Temporary Construction Cores shall be lockable.
4. Commissioning & Test and Balance
  - a. Test, Balance, & Commission Trade Contractor shall be 3<sup>rd</sup> Party NEBB Independent Certified. Submit certification along with bid packet.
  - b. Provide testing, adjusting, and balancing for HVAC per the Contract Documents.
  - c. Provide commissioning of HVAC per the Contract Documents.
  - d. Include testing, adjusting, and balancing of kitchen hood system.
5. Provide and Install Pipe Railings Refer 1/A8-3,
6. Provide and Install Waste Bunkers and blocking as indicated by plans.
7. Install toilet compartments and associated accessories per Contract Documents.
8. Install toilet and janitor accessories per the Contract Documents
9. Install wall protection devices as called for in the Contract Documents
10. Install Fire protection specialties and accessories per the Contract Documents.
11. Fire Extinguishers shall be inspected and ready for use.
12. Deliver, receive, unload, inventory, hoist, and stock materials and equipment for this Trade Package. Materials shall be stocked at in areas designated by the Construction Manager.
13. Provide and Install Manual Roller Window Shades as indicated in documents.
  - a. Provide and install window treatments per the Contract Documents.
  - b. Field measure each opening prior to fabrication.

- c. Provide layout and fasten templates for in-wall blocking and backing by others. Exact locations, elevations, sections, details and attachments for blocking requirements, as required.
  - d. All structure beyond what is shown in the Contract Documents necessary for a complete installation shall be included by this Trade Contractor.
  - e. Installers to wear clean gloves while installing so that incidental handprints are not left on the adjacent painted surfaces or ceilings.
14. This Trade Package shall not be responsible for providing Arena Rail Fencing as this will be supplied by the Owner. Refer 6/A8-3.
15. This trade Package shall be responsible for providing tie rail at section 2/A8-3.
16. Structural Steel Fabrication Trade Package shall be responsible for providing Hydrant Protection detail tube enclosure as shown by detail 4 & 5 A8-3. Installation shall be coordinated with Plumbing Trade Contractor. Plumbing Trade Contractor shall be responsible for hydrant, under grade connections, backfill of gravel fill, and limestone screenings inside of hydrant enclosure. Concrete Cap to be by Trade Responsible for Concrete surface surrounding hydrant.
17. This Trade Package shall be responsible for commissioning and test and balance of mechanical systems.

Alternates:

18. Alternate 01: Price shall be for addition of Alternate 01, Stall barn. Alternate shall include pricing to include all scope above associated with work in Stall Barn. Base Bid shall not include stall barn.

## Trade Package 10-3: Graphics & Signage

This bid package shall include the cost of providing all labor, material, equipment, supervision, services, insurance, fees, permits, overhead and profit, etc. necessary or incidentally required for the **Graphics & Signage** including work from referenced specifications and normally associated with this trade, whether referenced or not.

Specification Section:	Description:
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Specification Section 09 72 19	Textile Wall Coverings
Specification Section 10 14 00	Signage
Specification Section 10 14 19	Dimensional Letter Signage

**Quantity Check:** On section #5 of the bid form please list total anticipated quantities for the following in the quantity check section:

- Total number room signs.
- Lead time for lettering from Notice to Proceed:

These quantities are for reference only. Trade contractor is responsible for the actual quantities, not anticipated.

**Schedule:** Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below as well as durations from schedule.

- Provide product information for illuminated signage for coordination with Electrical Trade Partner within 4 weeks of notice to proceed
- Provide Product Information for any signage requiring blocking by others by 6 weeks after notice to proceed.

**The following is a highlight of the scope of work associated and to be included in this bid package:**

1. All items listed in General Trade Package.
2. The Signage Trade Contractor will be fully responsible for all cost and work associated with obtaining the signage permits and passing associated inspections including submission, interaction with inspectors, payment of fees, and pulling the permit.
3. Provide material, labor, and equipment necessary for a complete installation of all signage as called for in the Contract Documents.
4. Examples of signage to be included in this Trade Contract are all sign types on the ROOM ID & Regulatory Signage Types as well as the Special Signage & Graphics legends located on page A9-3-2
5. Signs are required to comply with ADA Standards and ICC A117.1 unless otherwise noted.

6. Provide submittals and shop drawings for all signage.
7. Traffic, parking, and exterior convenience related signage will be provided and installed by the Paving Trade Contractor.
8. Where signs mount on glass provide blank sign/modesty panel for inside face to conceal fastening tape.
9. Provide all required mounting devices, standoffs, and fasteners for installation of the signage.
10. Provide and install lettering noted for monument signage per detail 5 & 7 on A8-2-1.
11. Provide and install signage shown on interior and exterior elevations.
12. Clarification: Signage at RV dump station to be by Signage Trade Package.

## Trade Package 10-4 Prefabricated Metal Canopies

This bid package shall include the cost of providing all labor, material, equipment, supervision, services, insurance, fees, permits, overhead and profit, etc. necessary or incidentally required for the **Prefabricated Metal Canopies** including work from referenced specifications and normally associated with this trade, whether referenced or not.

Specification Section:	Description:
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Specification 10 73 18	Prefabricated Metal Canopies

**Quantity Check:** On section #5 of the bid form please list total anticipated quantities for the following in the quantity check section:

- Total SF of Canopy Decking
- Crew Size (#) & Duration (Days) for install
- Lead Time from approved shop drawings

These quantities are for reference only. Trade contractor is responsible for the actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below as well as durations from schedule.

- Trade Contractor shall submit Product Data and manufacturer's standard details applicable to this project within 20 days of Notice to Proceed to facilitate procurement of materials for project mockup.

**The following is a highlight of the scope of work associated and to be included in this bid package:**

1. All items listed in General Trade Package.
2. Provide all items listed in the Standard Bid Instructions For All Bidders.
3. Provide all labor, materials, delegated engineering, permits (other than the general building permit), and equipment, necessary for a complete installation of the canopies and associated materials per the Contract Documents.
4. This Trade Package shall be considered as delegated design. The Trade Contractor shall be responsible for hiring a licensed engineer registered in the state of Oklahoma to design and detail the Aluminum Walkway Covers and Cantilevered Walkway Covers and any other items necessary to complete the indicated scope of work. Sizes shown on Contract Documents shall be considered minimum sizing unless approved otherwise by EOR through written approval. Delegated Design Engineer shall provide calculations and member/connection sizing for all conditions unless

specifically noted by EOR. The Trade Contractor shall be responsible for shop drawings detailing all conditions not specifically noted by EOR.

5. Some examples of the materials to be included in this Trade Package are columns, beams, decking, gutter, struts, false fascia, flashing, and fasteners.
6. Finishes shall be as described in the specification. Alternate finishes are not accepted.
7. Trade Contractor shall be responsible for providing detailed drawings of in-wall blocking and support layout for the prefinished canopy system.

## Trade Package 15-1: Fire Suppression

This bid package shall include the cost of providing all labor, material, equipment, supervision, services, insurance, fees, permits, overhead and profit, etc. necessary or incidentally required for the **Fire Suppression** including work from referenced specifications and normally associated with this trade, whether referenced or not.

<b>Specification Section:</b>	<b>Description:</b>
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Specification Section 06 10 53	Rough Carpentry
Specification Section 07 84 13	Penetration Firestopping
Specification Section 07 84 43	Joint Firestopping
Specification Section 11 40 00	Foodservice Equipment
Division 21	Fire Suppression
Specification Section 21 05 00	Common Work Results for Fire Suppression
Specification Section 21 05 53	Identification for Fire-Suppression Piping and Equipment
Specification Section 21 13 00	Fire-Suppression Sprinkler Systems

**Quantity Check:** On section #5 of the bid form please list total anticipated quantities for the following in the quantity check section:

- Count for total expected sprinkler heads
- SF dry line protection system
- SF wet line protection system

These quantities are for reference only. Trade contractor is responsible for the actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below as well as durations from schedule.

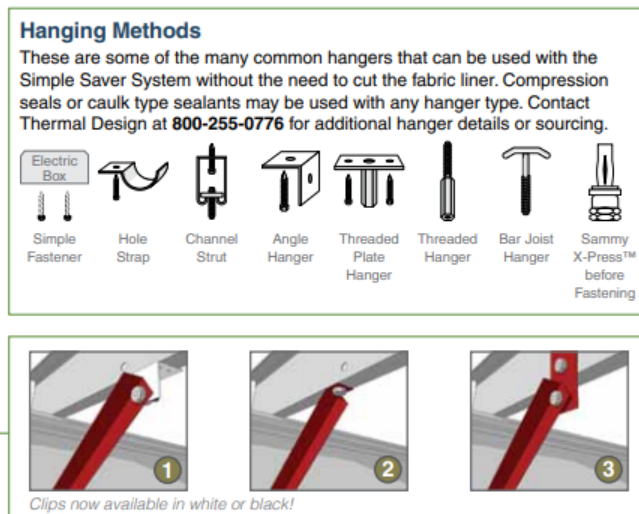
**The following is a highlight of the scope of work associated and to be included in this bid package:**

1. All items listed in General Trade Package.
2. Fire Suppression Trade Contractor shall be responsible for providing a complete and working fire suppression system.
3. Provide all devices for fire suppression system including flow switches, tamper switches, and control panels.

4. The Fire Suppression Trade Contractor will be fully responsible for all cost and work associated with designing the fire-alarm (suppression) system, obtaining permits and passing associated inspections including submission, interaction with inspectors, payment of fees, and pulling the permit. Fire Alarm to be supplied and installed by Electrical and Fire Alarm Trade Package.
5. Fire suppression is a delegated design system. The Fire Suppression Trade Contractor shall be responsible for ensuring the system meets permitting requirements, Contract Document requirements, specified NFPA requirements, all applicable building code requirements, and fire marshal requirements as well as any other entity that qualifies as an authority having jurisdiction over the fire suppression system.
6. Fire line to be installed, by Utilities Trade Contractor, to riser room and stubbed up 2'-5'. Final coordination of fire line elevation and location to be coordinated with sprinkler contractor and CM.
7. Fire pump is not required unless noted in the Construction Documents or specifications.
8. Backflow preventers to be provided and installed by the Utilities Trade Contractor.
9. Provide sprinkler heads at confined spaces where required.
10. The Fire Suppression Trade Contractor shall furnish and install all tamper and flow switches required for their system. The Electrical and Fire Alarm Trade Contractors will be responsible for providing all conduit, wire and terminations of these devices. Commissioning will be a joint effort of the Fire Suppression and Alarm Trade Contractors.
11. Trade Contractor acknowledges that placement of heads is visually important and has reviewed notes in the specs/architectural drawings to comply with architects' comments regarding the fire sprinkler system.
12. At all locations other than exposed ceilings and back of house areas provide and install flexible sprinkler heads.
13. Install sprinkler heads in the center of ceiling tile unless shown otherwise in the Contract Documents.
14. Prior to starting the engineering/shop drawing process the Fire Suppression Trade Contractor will be required to schedule and attend a design meeting with Construction Manager and the Architect to review their requirements.
15. Fire Suppression Trade Contractor shall be responsible for identifying and including all sprinkler heads, whether shown on the plans or not. This includes obscure, code-required locations such as at an elevator pit, top of elevator shaft, and walk in cooler/freezer, overhang, obstruction, etc.
16. Fire Suppression Trade Contractor is responsible for reviewing various ceiling types and ensuring appropriate head coverage is included for each ceiling system.
17. Provide expansion joints for fire protection system where piping crosses the building expansion joint as applicable.
18. After award of the contract Fire Suppression Trade Contractor shall verify that the delivered water main pressure at the site is sufficient to meet the protection requirements. Submit flow test results for review with the sprinkler shop drawings.
19. Each area of the building must be designed in a way that it can be tested individually with pressurized air.
20. Exhaust Hood(s) Coordination Hoods shall match that specified in Mechanical Kitchen Plans, not Food Service
  - a. Food Service Equipment Trade Contractor Responsibilities
    - i. Supply and hang exhaust hoods.
    - ii. Supply and install stainless steel wall paneling at hoods.
    - iii. Provide and install ansul system as well as coordinate with fire marshal for inspection.



- iv. Provide all low voltage controls and wiring other than the single point of electrical connections by the Electrical Trade Contractor.
  - v. Commission the hood system.
  - b. Mechanical Trade Contractor
    - i. Provide and install the hood fans.
    - ii. Provide and install grease ductwork and associated fire insulation.
    - iii. Provide access doors per code and as required for access to clean.
  - c. Electrical Trade Contractor
    - i. Provide a single point of electrical connection at each control panel and fan unless otherwise shown on the drawings.
    - ii. Provide and install raceways for controls wiring from hood to makeup-air and exhaust fans.
  - d. Fire Alarm Trade Contractor
    - i. Provide tie in of fire alarm system to ansul system.
21. Hangers used in PEMB shall not interfere with Simple Saver installation. Hangers shall be laid out prior to Simple Saver system and coordinated in order to install hangers at locations after Simple Saver Install without cutting Simple Saver System. Hangers shall not hang down past bottom of purlin prior to Simple Saver Install. As little of the hangers/supports for suspended items through the simple saver system to be seen. All items spanning PEMB purlins/beams to be above the simple saver membrane. Refer to <https://cmi-insulation.com/wp-content/uploads/2011/07/Simple%20Saver%20Brochure.pdf>



**Alternates:**

- a. Alternate 01: Price shall be for addition of Alternate 01, Stall barn. Alternate shall include pricing to include all scope above associated with work in Stall Barn. Base Bid shall not include stall barn.

## Trade Package 15-2: Mechanical

This bid package shall include the cost of providing all labor, material, equipment, supervision, services, insurance, fees, permits, overhead and profit, etc. necessary or incidentally required for the **Mechanical** including work from referenced specifications and normally associated with this trade, whether referenced or not.

Specification Section:	Description:
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Specification Section 06 10 00	Rough Carpentry
Specification Section 07 72 00	Roof Accessories
Specification Section 07 84 13	Firestopping
Specification Section 08 31 13	Access Doors & Frames
Specification Section 11 31 00	Residential Appliances
Specification Section 11 40 00	Foodservice Equipment
Division 23	Heating Ventilating and Air Conditioning

**Quantity Check:** On section #5 of the bid form please list total anticipated quantities for the following in the quantity check section:

- Total LF of ductwork

These quantities are for reference only. Trade contractor is responsible for the actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below as well as durations from schedule.

- **NOTICE: To maintain project completion date, blocks in various areas will be phased concurrently. Trade Contractor will be required to provide multiple crews, equipment, material, and the leadership required to work in areas concurrently as shown in the project schedule.**

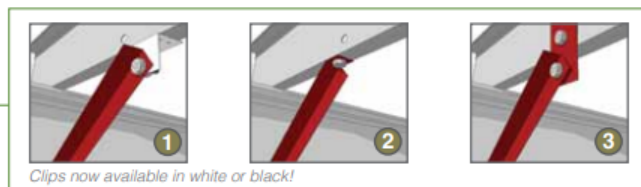
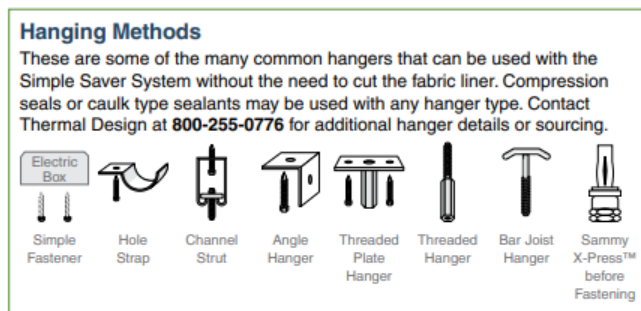
**The following is a highlight of the scope of work associated and to be included in this bid package:**

1. All items listed in General Trade Package.
2. The Mechanical Trade Contractor will be fully responsible for all cost and work associated with obtaining the mechanical permits and passing associated inspections including submission, interaction with inspectors, payment of fees, and pulling the permit.
3. Provide a complete and working mechanical system.

4. Any structure or blocking necessary for installation of the systems in this Trade Package that is not specifically shown on the plans shall be provided and installed by this Trade Package.
5. Provide and install all heating, ventilating, and air conditioning systems.
6. Provide and install HVAC controls and associated wiring per the sequence drawings in the Contract Documents.
7. Mechanical Trade Contractor to provide and install all exhaust systems except for the kitchen exhaust.
8. Access doors in walls or ceilings will be furnished by the subcontractor whose work is accessed by the door. Installation shall be including in the framing/drywall scope. Access door to be supplied to Framing & Gypsum Trade Contractor prior to starting work in a given area.
9. Provide and install any step down transformers required for low voltage work. Electrical Trade Contractor to provide electrical connection points as shown in the Contract Documents. Anything further is the responsibility of this Trade Contract.
10. Duct detectors will be furnished by the Fire Alarm Trade Contractor to the Mechanical Trade Contractor. Mechanical Trade Contractor will mount the duct detector and provide access door in the duct for access by the Fire Alarm Trade Contractor. At exposed ceiling locations Electrical Trade Contractor will provide the conduit and the Fire Alarm Trade Contractor will complete all wiring, terminations, and commissioning of the devices.
11. Coordinate with Roofing Trade Contractor to ensure roof membrane is installed over curbs. If roofing membrane is not installed over curb Mechanical Trade Contractor to supply and install roof flashings as well as sealants for equipment over curbs.
12. Provide and install blocking as necessary to ensure mechanical roof curbs are installed at correct elevations to maintain roof install requirements.
13. Supply and install all louvers including mechanical and architectural or not. An example is the louvers for PEMB.
14. Furnish and install flues from gas-fired equipment.
15. Provide all fire, fire-smoke, and smoke dampers and associated actuators.
16. Provide all related equipment accessories including bases, supports, hangers, clips, etc.
17. Provide vibration isolation systems if called out in the Contract Documents.
18. Coordinate locations of ductwork with Electrical and Fire Sprinkler Trade Contractors.
19. Ductwork shall be delivered to jobsite with ends sealed and protected from water. If inside of ductwork becomes wet due to improper storage or water infiltration through curb openings Mechanical Trade Contractor shall remove and replace at their expense.
20. Provide and install temporary waterproof caps at all roof curbs.
21. Equipment will be required to be used during construction. Provide temporary construction filters and prefilters on equipment (change or clean when needed). Provide and install a new set of filters prior to test and balance work. If filters are not maintained during construction Mechanical Trade Contractor shall be responsible for cleaning coils prior to test and balance.
22. Provide paint grip ductwork at locations where ducts are to remain exposed and do not receive a covering. Clean and remove stickers for ductwork at these locations after installation.
23. Provide and install lockable covers at sensors that have adjustable items. Covers should be opaque unless indicated otherwise by the specifications or construction documents.
24. This trade Package shall provide and install louvers in PEMB. Trade Contractor shall be responsible for protecting adjacent finishes during installation and for providing a leak free installation. Trade Contractor responsible for controller devices and installation of operator and full system.
25. Test & balance as well as commissioning are not included within this Trade Package. Coordinate with Test & Balance Trade Contractor.
26. Residential Appliance Installation Coordination

- a. Residential Appliance Trade Contractor to deliver, unbox, and dispose of trash for residential appliances. Deliver to room in which appliance will install.
  - b. Residential Appliance Trade Contractor to provide all necessary install kits. Examples of items in kits are electrical whips, stacking kits, flexible dryer vents, refrigerator water lines, etc.
  - c. Electrical Trade Contractor to provide hardwired connections.
  - d. Mechanical Trade Contractor to provide hard ducted connections.
  - e. Plumbing Trade Contractor to provide all water and gas connections.
  - f. Residential Appliance Trade Contractor to make all other installations not mentioned above.
27. Exhaust Hood(s) Coordination – Hoods shall match that specified in Mechanical Kitchen Plans, not Food Service
- a. Food Service Equipment Trade Contractor Responsibilities
    - i. Supply and hang exhaust hoods. (Except for Alternate shown below)
    - ii. Supply and install stainless steel wall paneling at hoods. (Except for Alternate shown below)
    - iii. Provide and install ansul system as well as coordinate with fire marshal for inspection. (Except for Alternate shown below)
    - iv. Provide all low voltage controls and wiring other than the single point of electrical connections by the Electrical Trade Contractor. (Except for Alternate shown below)
    - v. Commission the hood system. (Except for Alternate shown below)
  - b. Mechanical Trade Contractor
    - i. Provide and install the hood fans.
    - ii. Provide and install grease ductwork and associated fire insulation.
    - iii. Provide access doors per code and as required for access to clean.
  - c. Electrical Trade Contractor
    - i. Provide a single point of electrical connection at each control panel and fan unless otherwise shown on the drawings.
    - ii. Provide and install raceways for controls wiring from hood to makeup-air and exhaust fans.
  - d. Fire Alarm Trade Contractor
    - i. Provide tie in of fire alarm system to ansul system.
28. Permanent Heating & Cooling Coordination
- a. Permanent HVAC system will be required to be available to use for construction starting the December 11, 2020.
  - b. For each area of the building Mechanical, Electrical, & Plumbing Trade Contractors must install all work necessary for HVAC systems to be fully functional for heat within the durations between the roof installation and gypsum board being complete.
  - c. If Mechanical, Electrical or Plumbing Trade Contractors fail to finish installing and commissioning their portions of the install prior to cold weather they shall be responsible for the cost of supplying temporary heating as necessary to maintain project schedule.
  - d. Construction Manager shall be responsible for coordination of Utility Service Providers and ensuring service is available by November of 2020.

- e. If the above conditions are met and Mechanical Trade Contractor refuses to start up equipment for any reason then the Mechanical Trade Contractor shall be fully responsible for providing temporary construction heating sufficient for finish trades to perform their work.
  - f. The Mechanical Trade Contractor shall be responsible for ensuring that warranty term requirements indicated in the Contract Documents are met starting at substantial completion. If the startup of equipment initiates commencement of warranty, then the Mechanical Trade Contractor shall provide extended warranty to cover time period from start to substantial completion.
29. Mechanical Trade Contractor shall be responsible for providing, mounting, etc of Gas Fired Heating Units. Connection of gas line to be by Plumbing Trade Contractor.
  30. Regulator for gas fired equipment shall be provided by the Plumbing Trade Contractor. Mechanical Trade Contractor shall supply units meeting requirements of regulators indicated on P7-1.
  31. Hangers used in PEMB shall not interfere with Simple Saver installation. Hangers shall be laid out prior to Simple Saver system and coordinated in order to install hangers at locations after Simple Saver Install without cutting Simple Saver System. Hangers shall not hang down past bottom of purlin prior to Simple Saver Install. **As little of the hangers/supports for suspended items through the simple saver system to be seen. All items spanning PEMB purlins/beams to be above the simple saver membrane. Refer to <https://cmi-insulation.com/wp-content/uploads/2011/07/Simple%20Saver%20Brochure.pdf>**



**What is intended is for hangers to not protrude down from space and require large cuts in the fabric. We have had some contractors want to install their full hanger then have to overcut a large slit in the material and this will not be allowed. The preference is for the hanger to be either post installed through, or the hanger only hang down a short distance then coupled to extend down lower afterwards.**

32. Specification 23 31 00 calls for Duct Leak and Duct Structure testing. No specified testing is required to occur, however ducts are required to be sealed per the specification requirements and the structure of the duct should be sound. Trade Contractor shall not include any cost for such testing in bid pricing.
33. Electrical Trade Package shall be responsible for providing and installing High Volume Low Speed Fans (HVLS) as noted in the schedule on M0-2. No alternative to HVLS fan specified in the drawings has been approved by the Architect. Big-Ass Fans (BAF) shall be the supplier. Color shall be one of the BAF Classic Colors as selected by the architect at a later date. BAF Controllers shall be located in Show Office 01.00.06.

Controller shall be touchscreen with password protection capability. Control wiring shall be in conduit. Mounting height is 21'-2" A.F.F. Electrical Trade Shall be responsible for fully functional system.

34. Clarification: In bid documents M1-1A, Vestibule 01.03.01 has a HP-3 shown that should be labeled MS-3.
35. Roof top equipment condensate drainage piping shall be provided by and installed by the Plumbing Trade Package. Mini-split system condensate drainage piping, pump, and any other required accessories shall be installed by the Mechanical Trade Package. Lines shall be routed to closest storm drain, sink p-trap, or indirect sanitary connection. Drain lines shall not be connected to roof drains that daylight over sidewalks, pavement, or public space areas unless approved otherwise.
36. Electrical Trade Contractor shall provide power to motorized dampers (insulated damper (Greenheck ICD-44 or equal) with a 120V actuator at each louver) provided by the Mechanical Trade Package in high roof area of Arena. Conduit for controllers shall be routed by Electrical Trade Package to Show Office room 01.00.06. Controller shall be provided by the Mechanical Trade Package. Circuit two 120v 20A circuits from panel L3B. One switched circuit controls North louvers, other controls south. Set the control switches in the Show Office beside the HVLS fan controls. Labeled switches "Arena Louvers North / South", label switch positions open/close. Louver, Damper, and Controller shall be provided by the Mechanical Trade Package. Mechanical Trade Package shall be responsible for extended sill to make watertight install.
37. Clarification: Notes/Specifications conflicted in drawings for 23 07 00 3.9-A & M1-1A-M1-1D. Clarification: All exposed spiral ductwork is to be double wall insulated as described in the general note **"All exposed spiral duct in arena and expo areas to be double wall insulated with interior wall solid (not perforated)."** All non-exposed supply ductwork where the ductwork is above a ceiling is to be wrapped. Return ductwork and exhaust ductwork that are located within the insulated building envelope do not require insulation.
38. Clarification: The duct cleaning requirement from **23 31 00, para. 3.7, B** can be waived if the three steps indicated are followed.
  - a. The ends of ductwork are covered prior to shipping and remain covered during installation.
  - b. Proper maintenance, replacement of temporary filters during use of temporary heat or a/c.
  - c. Inspection and approval by AOR and EOR that ductwork is satisfactorily clean before acceptance.
39. Clarification: Exterior Louver Basis of Design should be Greenheck ESD-403
40. Clarification: Restroom exhaust fans are not shown on the duct plan or roof plans for MEP for Area A restrooms. It will be a roof mounted downblast fan. 1350 CFM Greenheck G-133-VG or equal. Tag will be EF-5. It will connect to the 14x14 riser shown on the ductwork plan.

#### Alternates:

41. Alternate 01: Alternate 01 shall be for this trade package to provide and install entire kitchen hood package as scheduled for a fully functioning system. Hoods shall match that specified in Mechanical Kitchen Plans, not Food Service
  - a. Supply and hang exhaust hoods.
  - b. Supply and install stainless steel wall paneling at hoods.
  - c. Provide and install ansul system as well as coordinate with fire marshal for inspection.

- d. Provide all low voltage controls and wiring other than the single point of electrical connections by the Electrical Trade Contractor.
- e. Commission the hood system.

## Trade Package 15-3: Plumbing

This bid package shall include the cost of providing all labor, material, equipment, supervision, services, insurance, fees, permits, overhead and profit, etc. necessary or incidentally required for the **Plumbing** including work from referenced specifications and normally associated with this trade, whether referenced or not.

Specification Section:	Description:
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Specification Section 06 10 00	Rough Carpentry
Specification Section 07 72 00	Roof Accessories
Specification Section 07 84 00	Firestopping
Specification Section 08 31 00	Access Doors & Frames
Specification Section 11 30 13	Residential Appliances
Specification Section 11 40 00	Foodservice Equipment
Division 22	Plumbing

**Quantity Check:** On section #5 of the bid form please list total anticipated quantities for the following in the quantity check section:

- Total number of plumbing fixtures

These quantities are for reference only. Trade contractor is responsible for the actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below as well as durations from schedule

- **NOTICE: To maintain project completion date, blocks in various areas will be phased concurrently. Trade Contractor will be required to provide multiple crews, equipment, material, and the leadership required to work in areas concurrently as shown in the project schedule.**

**The following is a highlight of the scope of work associated and to be included in this bid package:**

1. All items listed in General Trade Package.
2. Provide and install all plumbing systems including, but not limited to, plumbing fixtures, plumbing equipment, propane equipment and piping, sanitary waste piping and vents, water heaters, domestic water system, storm drainage system, sump pumps, drinking fountains and water coolers, chemical waste systems, valves, tees and piping insulation.
3. Provide a complete and working plumbing system.

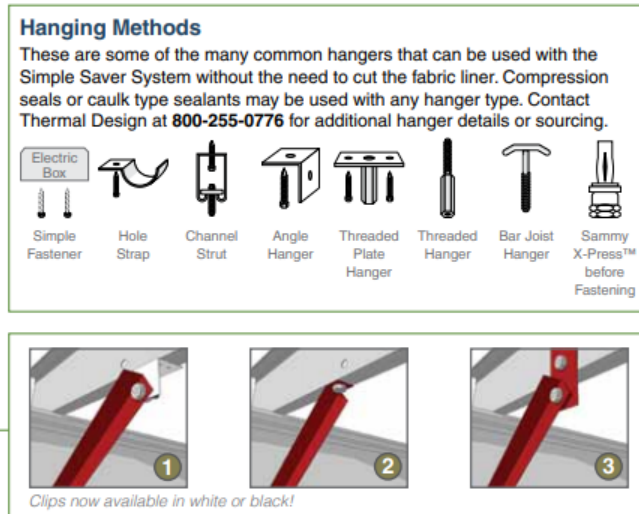


4. The Plumbing Trade Contractor will be fully responsible for all cost and work associated with obtaining the plumbing permits and passing associated inspections including submission, interaction with inspectors, payment of fees (other than impact fees), and pulling the permit. Construction Manager to pay the impact fees.
5. Gas provider to provide and install gas piping up to and including the meter. Plumbing Trade Contractor to provide and install gas piping continuing from the meter into and throughout the building.
  48. Utility Trade Contractor shall provide and install all underground site utility systems including underground water lines (domestic water, storm sewer, sanitary sewer, fire lines), fire hydrants, thrust blocks, meters, tracer wires, and backflow preventers. All lines shall be provided up to 5' from the edge of the building at the location specified for tie-in except for the fire line. Plumbing Trade Contractor to carry lines into and distribute throughout building. *Fire line to be installed to riser room and stubbed up 2'-5' by the Utility Trade Package. Backflow preventers to be provided and installed by the Utilities Trade Contractor. Final coordination of fire line elevation and location to be coordinated with sprinkler contractor and CM.*
6. Final connections (at the building) for domestic water, storm sewer, roof drains, and sanitary sewer to be performed by the Plumbing contractor.
7. Plumbing Trade Contractor to provide and install all roof drainage systems from the drain body to storm drain line tie in as shown on the Contract Documents.
8. Provide and install grease interceptor and associated piping and tie ins to sanitary sewer system.
9. Plumbing Trade Contractor to excavate, install, backfill, and carry on grease line into and throughout building. Ensure backfill is performed per geotechnical recommendations. Plumbing Trade Contractor to ensure grease interceptor inlets/outlets coordinate with the invert elevations shown in the Civil Drawings.
10. Roof top equipment condensate drainage piping shall be provided by and installed by the Plumbing Trade Package. Mini-split system condensate drainage piping, pump, and any other required accessories shall be installed by the Mechanical Trade Package. Lines shall be routed to closest storm drain, sink p-trap, or indirect sanitary connection. Drain lines shall not be connected to roof drains that daylight over sidewalks, pavement, or public space areas unless approved otherwise.
11. Complete all sealants and caulking related to plumbing work. This includes caulking water closets to walls, sealing hose bib penetrations through exterior walls, penetrations through fire or sound rated walls (as mentioned in General Trade Package), etc.
12. Plumbing Trade Contractor to provide connections for all equipment requiring plumbing connections, even equipment not provided as part of this Trade Package. Examples include kitchen equipment, refrigerators, ice makers, dishwashers, washing machines, etc.
13. Provide and install thrust blocks, concrete, anchors, and guides for underground piping.
14. Provide all disinfectants, chlorination/flushing, and testing of domestic water systems per the Contract Documents.
15. Provide temporary water at building for construction purposes.
16. At exterior gas lines prime all exposed fittings and welds to prevent rusting. Painting Trade Contractor will paint exposed gas and water piping with rust inhibitive paint per the Contract Documents.
17. Provide regulators and valves as indicated in the Plumbing Drawings.
18. Residential Appliance Installation Coordination

- a. Residential Appliance Trade Contractor to deliver, unbox, and dispose of trash for residential appliances. Deliver to room in which appliance will install.
  - b. Residential Appliance Trade Contractor to provide all necessary install kits. Examples of items in kits are electrical whips, stacking kits, flexible dryer vents, refrigerator water lines, etc.
  - c. Electrical Trade Contractor to provide hardwired connections.
  - d. Mechanical Trade Contractor to provide hard ducted connections.
  - e. Plumbing Trade Contractor to provide all water and gas connections.
  - f. Residential Appliance Trade Contractor to make all other installations not mentioned above.
19. Exhaust Hood(s) Coordination **Hoods shall match that specified in Mechanical Kitchen Plans, not Food Service**
- a. Food Service Equipment Trade Contractor Responsibilities
    - i. Supply and hang exhaust hoods.
    - ii. Supply and install stainless steel wall paneling at hoods.
    - iii. Provide and install ansul system as well as coordinate with fire marshal for inspection.
    - iv. Provide all low voltage controls and wiring other than the single point of electrical connections by the Electrical Trade Contractor.
    - v. Commission the hood system.
  - b. Mechanical Trade Contractor
    - i. Provide and install the hood fans.
    - ii. Provide and install grease ductwork and associated fire insulation.
    - iii. Provide access doors per code and as required for access to clean.
  - c. Electrical Trade Contractor
    - i. Provide a single point of electrical connection at each control panel and fan unless otherwise shown on the drawings.
    - ii. Provide and install raceways for controls wiring from hood to makeup-air and exhaust fans.
  - d. Fire Alarm Trade Contractor
    - i. Provide tie in of fire alarm system to ansul system.
20. Permanent Heating & Cooling Coordination
- a. Permanent HVAC system will be required to be available to use for construction starting the December 11, 2020.
  - b. For each area of the building Mechanical, Electrical, & Plumbing Trade Contractors must install all work necessary for HVAC systems to be fully functional for heat within the durations between the roof installation and gypsum board being complete.
  - c. If Mechanical, Electrical or Plumbing Trade Contractors fail to finish installing and commissioning their portions of the install prior to cold weather they shall be responsible for the cost of supplying temporary heating as necessary to maintain project schedule.
  - d. Construction Manager shall be responsible for coordination of Utility Service Providers and ensuring service is available by November of 2020.

- e. If the above conditions are met and Mechanical Trade Contractor refuses to start up equipment for any reason, then the Mechanical Trade Contractor shall be fully responsible for providing temporary construction heating sufficient for finish trades to perform their work.
  - f. The Mechanical Trade Contractor shall be responsible for ensuring that warranty term requirements indicated in the Contract Documents are met starting at substantial completion. If the startup of equipment initiates commencement of warranty, then the Mechanical Trade Contractor shall provide extended warranty to cover time period from start to substantial completion.
21. Structural Steel Fabrication Trade Package shall be responsible for providing Hydrant Protection detail tube enclosure as shown by detail 4 & 5 A8-3. Installation shall be coordinated with Plumbing Trade Contractor. Plumbing Trade Contractor shall be responsible for hydrant, under grade connections, backfill of gravel fill, and limestone screenings inside of hydrant enclosure. Concrete Cap to be by Trade Responsible for Concrete surface surrounding hydrant.
  22. This Trade Package shall be responsible for providing backfill under hydrant connections such as 6/A8-4. Concrete topping to be provided by Trade Package placing concrete adjacent to hydrant.
  23. This Trade Contractor shall include plumbing and product for trench drains.
  24. All the grease waste piping below floor to the inlet of the grease interceptor shall be cast iron including associated branch pipes to floor sinks (KS-1 & KS-2), trench drain (K403), handsink (K23) and floor drain (KD-1). Refer to Plumbing specification section 22-10-05 (2.1)A. for cast iron piping below grade.
  25. Site Plumbing shown on P1-1 shall be provided by the plumbing Trade Contractor and shall be connected to continuation lines as shown on Civil Drawings that are provided by the Utility Trade Contractor. At connection between Plumbing and Utility Trade Contractor, the Utility Trade Contractor shall provide coupling/connection ready to receive piping by plumbing Trade Contractor. 6" Vertical PVC shall be used to mark end of line and trench shall not be required to be left open. *Refer to 00 34 00 for site plumbing/utility coordination drawing. 2" Water service line from building to food truck plaza south of the building shall be provided by the plumbing Trade Contractor. Utility Trade Contractor shall not have scope for this line. 2" Cold Water to RV Dump Station on Northwest side of building shall be provided by plumbing Trade Contractor. Utility Trade Contractor shall not have scope for this line. Water Supply from Arena to Stall Barn (Alternate) shall be supplied by plumbing Trade Contractor and shall not be included in utility scope of work.*
  26. Site Plumbing such as yard hydrants shall be provided and installed by Plumbing Trade Contractor. Refer P1-1 for hydrants noted.
  27. Mechanical Trade Contractor shall be responsible for providing, mounting, etc of Gas Fired Heating Units. Connection of gas line to be by Plumbing Trade Contractor.
  28. Grease Interceptor and components required for complete installation to be provided by this Trade Package.
  29. Plumbing Trade Package to provide roof pipe supports. Attachment of pipe support to roof shall be by the roofing trade contractor to provide a warrantable roof install.
  42. *Refer to 00 34 00 for site plumbing/utility coordination drawing.*
  43. Regulator for gas fired equipment shall be provided by the Plumbing Trade Contractor. Mechanical Trade Contractor shall supply units meeting requirements of regulators indicated on P7-1.

44. Hangers used in PEMB shall not interfere with Simple Saver installation. Hangers shall be laid out prior to Simple Saver system and coordinated in order to install hangers at locations after Simple Saver Install without cutting Simple Saver System. Hangers shall not hang down past bottom of purlin prior to Simple Saver Install. **As little of the hangers/supports for suspended items through the simple saver system to be seen. All items spanning PEMB purlins/beams to be above the simple saver membrane. Refer to <https://cmi-insulation.com/wp-content/uploads/2011/07/Simple%20Saver%20Brochure.pdf>**



What is intended is for hangers to not protrude down from space and require large cuts in the fabric. We have had some contractors want to install their full hanger then have to overcut a large slit in the material and this will not be allowed. The preference is for the hanger to be either post installed through, or the hanger only hang down a short distance then coupled to extend down lower afterwards.

45. Clarification: In bid documents M1-1A, Vestibule 01.03.01 has a HP-3 shown that should be labeled MS-3.
46. Clarification: Utility Trade Contractor shall provide 4" access with lid for RV Dump Stations.
47. Alternate 01: Water and Sanitary Sewer for Stall Barn shall be provided as part of Alternate 01 Pricing. Base Bid shall include piping with accessible shut off valve ready to receive future stall barn piping if determined to be added later.
48. Alternate 02: Portable Waste Water Pump as indicated by General Notes C1-2 shall not be considered as base bid. This shall be provided in alternate 02 on bid form. Refer C1-2 for specification requirements.
49. Alternate 03: Base Bid Price will be to include scope above. Alternate 03 Price shall be to add/(Deduct) entirety of Trade Package 15-2 (HVAC/Mechanical). Alternate price shall be to complete both trade package scopes of work. Trade Contractor shall supply and staff project as if the Trade Package scopes of work were separate. This combination should result in multiple crews completing tasks concurrently as indicated in project schedule. Trade Contractor must indicate for Alternate 03 the price to combine Bid Packages. Bids from Bid Package 15-2 and 15-3 will not be compared/added/adjusted and assumed to be considered combined unless indicated by this Alternate.



## Trade Package 16-1: Electrical & Fire Alarm

This bid package shall include the cost of providing all labor, material, equipment, supervision, services, insurance, fees, permits, overhead and profit, etc. necessary or incidentally required for the **Electrical** including work from referenced specifications and normally associated with this trade, whether referenced or not.

Specification Section:	Description:
Division 00	Contract & Bidding Documents
Division 01	General Requirements
Specification Section 06 1000	Rough Carpentry
Specification Section 07 72 00	Roof Accessories
Specification Section 07 84 13	Penetration Firestopping
Specification Section 07 84 43	Joint Firestopping
Specification Section 08 31 13	Access Doors and Frames
Specification Section 08 33 13	Coiling Counter Doors
Specification Section 08 36 13	Sectional Doors
Specification Section 08 95 16	Wall Vents
Specification Section 10 14 00	Signage
Specification Section 10 14 19	Dimensional Letter Signage
Specification Section 08 71 00	Door Hardware
Specification Section 08 71 00	Hardware Schedule
Specification Section 11 31 00	Residential Appliances
Specification Section 11 40 00	Foodservice Equipment
Division 23	Heating, Ventilating, and Air Conditioning
Division 26	Electrical
Specification Section 28 31 00	Fire Detection and Alarm

**Quantity Check:** On section #5 of the bid form please list total anticipated quantities for the following in the quantity check section:

- Total number of light fixtures

These quantities are for reference only. Trade contractor is responsible for the actual quantities, not anticipated.

**Schedule:** This section is a highlight of the durations and activities that pertain to the project. Bidders shall ensure size and number of crews, equipment, and materials are sufficient to meet highlights below as well as durations from schedule

- **NOTICE: To maintain project completion date, blocks in various areas will be phased concurrently. Trade Contractor will be required to provide multiple crews, equipment,**

**material, and the leadership required to work in areas concurrently as shown in the project schedule.**

**The following is a highlight of the scope of work associated and to be included in this bid package:**

1. All items listed in General Trade Package.
2. The Electrical Trade Contractor will be fully responsible for all cost and work associated with obtaining the electrical permits and passing associated inspections including submission, interaction with inspectors, payment of fees, and pulling the permit.
3. Provide a complete and working electrical system.
4. Provide complete building and site electrical systems as indicated in the Contract Document including, but not limited to, electrical, services, distribution, power, lighting, grounding, communications, electronic safety and security, and emergency power.
5. Trade Contractor to perform all trenching, backfill, cabling, sleeving, and other work necessary for site electrical work.
6. Transformer pads will be provided by the Concrete Trade Contractor.
7. ~~Provide and install underground conduits from the transformer to OG&E tie in point.~~ Trade Contractor to provide and install underground conduits from the transformer to OG&E tie in point outside of transformer pad if OG&E has not provided conduit at time of transformer pad being poured. Conduit to OGE service connection point shall not be by this Trade Package.
8. Provide disconnect switches, starters, and VFD's that are not identified to be furnished by the Mechanical, Plumbing, and Fire Protection Trade Contractors.
9. Electrical Trade Contractor to provide all power and wiring to and installation of all motors, controllers, VFD's, starters and disconnects provided by the Mechanical, Plumbing, and Fire Protection Trade Contractors.
10. Test all breakers.
11. Any structure or blocking necessary for installation of the systems in this Trade Package that is not specifically shown on the plans shall be provided and installed by this Trade Package.
12. Provide power and electrical terminations to all fire, fire-smoke, and smoke dampers and associated actuators.
13. Temporary power & lighting
  - a. Electrical Trade Contractor to provide additional conduit from permanent transformer pad for service equipment as necessary to provide temporary construction power.
  - b. Provide adequate temporary service for the project, including the following:
  - c. Provide spider boxes throughout building for temporary power. Minimum two in each area of the building.
  - d. The Electrical Trade Contractor will provide, maintain, and remove temporary construction lighting throughout the building. Corridors and egress lighting to be provided and must be fully illuminated. Access lighting shall be provided such that each room may be safely accessed without additional lighting source.
  - e. Upon award of project, and as temporary power allows, provide and install five temporary exterior flood lights and poles for jobsite security.
  - f. Demo and remove existing temporary power serving CM's construction trailer at the end of the project.
  - g. Demo and remove all temporary power, conduit, and wiring included in this Trade Package.
  - h. Provide main breaker and over current protection
14. The following low voltage work is the responsibility of the Electrical Trade Contractor. They shall provide work as indicated and/or retain the services of and coordinate qualified lower tier Trade Contractors.

- a. Conduits Raceways & Cable Trays For Low Voltage Systems
    - i. The Electrical Trade Contractor shall be responsible for installation of all conduits, with pull strings and labels, and cable trays for low voltage systems specifically identified on the Contract Documents.
    - ii. The Electrical Trade Contractor shall be responsible for installing all outlet boxes and conduit stub-ups for low voltage systems.
    - iii. Electrical Trade Contractor to provide conduit raceways anywhere low voltage wiring is run in a non-accessible space, such as in a wall cavity or above a gypsum board ceiling.
    - iv. Electrical Trade Contractor to provide conduit raceways at exposed ceilings as indicated on the Contract Documents.
    - v. Associated Low Voltage Trade Contractor to provide and install j-hook or other individual support anywhere that a cable tray or conduit does not occur, such as above lay-in ceiling grids.
    - vi. If j-hooks are utilized in plenum space then plenum rated cables shall be provided.
  - b. Communications Trade Package
    - i. Structured Telecommunications Cabling System:
      - 1. Provide and install Structured Telecommunications Cabling Systems per the Contract Documents.
      - 2. Electrical Trade Contractor to provide and install underground exterior pathways and conduits per the Contract Documents.
      - 3. If required, Electrical Trade Contractor to ground cable trays and equipment racks.
  - c. Safety and Security
    - i. Fire-Alarm and Emergency Communications System
      - 1. The Fire Alarm Trade Contractor (This Trade Package) will be fully responsible for all cost and work associated with designing the fire alarm system, obtaining the fire alarm permits and passing associated inspections including submission, interaction with inspectors, payment of fees, and pulling the permit.
      - 2. Fire alarm is a delegated design system. The Fire Alarm Trade Contractor shall be responsible for ensuring the system meets permitting requirements, code requirements, Contract Document requirements, and fire marshal requirements as well as any other entity that qualifies as an authority having jurisdiction over the fire alarm system.
      - 3. Duct detectors will be furnished by the Fire Alarm Trade Contractor to the Mechanical Trade Contractor. Mechanical Trade Contractor will mount the duct detector and provide access door in the duct for access by the Fire Alarm Trade Contractor. At exposed ceiling locations Electrical Trade Contractor will provide the conduit and the Fire Alarm Trade Contractor will complete all wiring, terminations, test stations, and commissioning of the devices.
      - 4. The Fire Alarm Trade Contractor will maintain responsibility for wiring and tie-in of devices, provided by others, which are required to be monitored by the fire alarm systems. Examples of these types of systems are tamper switches, flow switches, connection to the elevator, connection to automated fire doors, access control doors, etc.
    - ~~ii. Provide and install Video Surveillance per the Contract Documents.~~
    - ~~iii. Provide and install Intrusion Detection per the Contract Documents.~~
    - ~~iv. Provide and install Door Entry System per the Contract Documents.~~
15. Provide and install electrical conduit, cabling, and outlets required for site lighting, irrigation controllers, irrigation backflow preventer heat tape and associated outlets, and landscaping requirements.



16. Residential Appliance Installation Coordination

- a. Residential Appliance Trade Contractor to deliver, unbox, and dispose of trash for residential appliances. Deliver to room in which appliance will install.
- b. Residential Appliance Trade Contractor to provide all necessary install kits. Examples of items in kits are electrical whips, stacking kits, flexible dryer vents, flexible gas connection lines, refrigerator water lines, etc.
- c. Electrical Trade Contractor to provide hardwired connections.
- d. Mechanical Trade Contractor to provide hard ducted connections.
- e. Plumbing Trade Contractor to provide all water and gas connections.
- f. Residential Appliance Trade Contractor to make all other installations not mentioned above.
- g. Mechanical Trade Contractor to supply and install residential style hoods.

17. Exhaust Hood(s) Coordination **Hoods shall match that specified in Mechanical Kitchen Plans, not Food Service**

- a. Food Service Equipment Trade Contractor Responsibilities
  - i. Supply and hang exhaust hoods.
  - ii. Supply and install stainless steel wall paneling at hoods.
  - iii. Provide and install ansul system as well as coordinate with fire marshal for inspection.
  - iv. Provide all low voltage controls and wiring other than the single point of electrical connections by the Electrical Trade Contractor.
  - v. Commission the hood system.
- b. Mechanical Trade Contractor
  - i. Provide and install the hood fans.
  - ii. Provide and install grease ductwork and associated fire insulation.
  - iii. Provide access doors per code and as required for access to clean.
- c. Electrical Trade Contractor
  - i. Provide a single point of electrical connection at each control panel and fan unless otherwise shown on the drawings.
  - ii. Provide and install raceways for controls wiring from hood to makeup-air and exhaust fans.
- d. Fire Alarm Trade Contractor
  - i. Provide tie in of fire alarm system to ansul system.

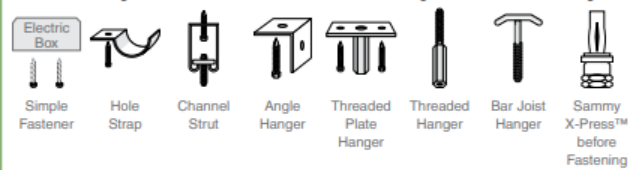
18. Permanent Heating & Cooling Coordination

- a. Permanent HVAC system will be required to be available to use for construction starting the December 11, 2020.
- b. For each area of the building Mechanical, Electrical, & Plumbing Trade Contractors must install all work necessary for HVAC systems to be fully functional for heat within the durations between the roof installation and gypsum board being complete.
- c. If Mechanical, Electrical or Plumbing Trade Contractors fail to finish installing and commissioning their portions of the install prior to cold weather they shall be responsible for the cost of supplying temporary heating as necessary to maintain project schedule.

- d. Construction Manager shall be responsible for coordination of Utility Service Providers and ensuring service is available by November of 2020.
  - e. If the above conditions are met and Mechanical Trade Contractor refuses to start up equipment for any reason then the Mechanical Trade Contractor shall be fully responsible for providing temporary construction heating sufficient for finish trades to perform their work.
  - f. The Mechanical Trade Contractor shall be responsible for ensuring that warranty term requirements indicated in the Contract Documents are met starting at substantial completion. If the startup of equipment initiates commencement of warranty, then the Mechanical Trade Contractor shall provide extended warranty to cover time period from start to substantial completion.
- 19. This Trade Package shall be responsible for in-slab raceways, junction boxes, cable trays, etc such as those shown for the expo hall.
  - 20. This trade Package shall be responsible for power/data to the video walls/displays as shown on the contract documents. Refer 2/A6-2
  - 21. This Trade Package shall supply PA/AV scope of work conduit as shown on E3-2, E3-3
  - 22. This Trade Package shall provide (4) 4" conduits from ~~each~~ data/IT room to point outside of building for fiber data and phone line service provider. In ground junction box to be provided by This trade Package for meet up point. Refer E3-3.
  - 23. This Trade Package shall be responsible for providing power to site services such as lighting, signage, gates, and other items shown on the electrical site plan.
  - 24. This Trade Package shall be responsible for the RV Pedestal and all components outlined in/E0-3.
  - 25. This Trade Package shall be responsible for providing mounting pole and foundation for non-pad mounted transformers. Refer OGE typical meter details for questions about this Trade Package scope of work for this item.
  - 26. This Trade Package shall be responsible for providing conduit from transformers to buildings or load location. REFER 01 32 00.
  - 27. Hangers used in PEMB shall not interfere with Simple Saver installation. Hangers shall be laid out prior to Simple Saver system and coordinated in order to install hangers at locations after Simple Saver Install without cutting Simple Saver System. Hangers shall not hang down past bottom of purlin prior to Simple Saver Install. **As little of the hangers/supports for suspended items through the simple saver system to be seen. All items spanning PEMB purlins/beams to be above the simple saver membrane. Refer to <https://cmi-insulation.com/wp-content/uploads/2011/07/Simple%20Saver%20Brochure.pdf>**

### Hanging Methods

These are some of the many common hangers that can be used with the Simple Saver System without the need to cut the fabric liner. Compression seals or caulk type sealants may be used with any hanger type. Contact Thermal Design at 800-255-0776 for additional hanger details or sourcing.



What is intended is for hangers to not protrude down from space and require large cuts in the fabric. We have had some contractors want to install their full hanger then have to overcut a large slit in the material and this will not be allowed. The preference is for the hanger to be either post installed through, or the hanger only hang down a short distance then coupled to extend down lower afterwards.

28. Electrical Trade Package shall be responsible for providing and installing High Volume Low Speed Fans (HVLS) as noted in the schedule on M0-2. No alternative to HVLS fan specified in the drawings has been approved by the Architect. Big-Ass Fans (BAF) shall be the supplier. Color shall be one of the BAF Classic Colors as selected by the architect at a later date. BAF Controllers shall be located in Show Office 01.00.06. Controller shall be touchscreen with password protection capability. Control wiring shall be in conduit. Mounting height is 21'-2" A.F.F. Electrical Trade Shall be responsible for fully functional system.
29. Clarification: In bid documents M1-1A, Vestibule 01.03.01 has a HP-3 shown that should be labeled MS-3.
30. Clarification: E0-3 detail (4) indicates 28 total power pedestals (8 & 20). Detail 1/E0-3 indicates only (10) locations. Each location shown should be a back-to-back set of pedestals to account for (20) total on east vendor area. (8) single pedestals are indicated on west vendor area and (8) singles are required.
31. Trade Contractor shall provide 120V, 5 amp service to each of the (2) existing and (2) future sanitary sewer holding tanks for level alarms. Alarm system to be provided by the Utility Trade Package.
32. Electrical Trade Contractor shall provide power to motorized dampers (insulated damper (Greenheck ICD-44 or equal) with a 120V actuator at each louver) provided by the Mechanical Trade Package in high roof area of Arena. Conduit for controllers shall be routed by Electrical Trade Package to Show Office room 01.00.06. Controller shall be provided by the Mechanical Trade Package. Circuit two 120v 20A circuits from panel L3B. One switched circuit controls North louvers, other controls south. Set the control switches in the Show Office beside the HVLS fan controls. Labeled switches "Arena Louvers North / South", label switch positions open/close.
33. Trade Contractor to provide lighting to signage noted to have lighting components such as illuminated letters.
34. Trade Contractor shall provide power to overhead door operators. Power paths may not be shown on plans but shall be accounted for by this Trade Package. Connections shall be at head of overhead doors.
35. Bathroom Exhaust Fan power shall be supplied by this trade contractor. Trade Contractor shall provide space in panel for connections not shown.
36. Clarification: Restroom exhaust fans are not shown on the duct plan or roof plans for MEP for Area A restrooms. It will be a roof mounted downblast fan. 1350 CFM Greenheck G-133-VG or equal. Tag will be EF-5. It will connect to the 14x14 riser shown on the ductwork plan.

37. Clarification: Referring to one-line page E4-1, transformer T3B shows just one disconnect on the primary side. However page E2-1A shows a disconnect on both sides. E2-1A is correct, disconnect on both sides.
38. Clarification: Refer to one-line page E4-1, transformer TM shows no disconnects. However, page E2-1E shows a disconnect next to the transformer. E2-1E is correct, high side disconnect is needed.
39. Clarification: Referring to one-line page E4-1, transformer T3A shows a disconnect on the secondary side. However page E2-1B shows the transformer on the primary side. Neither, needs to be low side disconnect, Source panel H3 is close by and within sight.
40. Clarification: Refer to one-line page E4-1, transformer T5 shows no disconnect next to it. However, page E2-1A shows a disconnect in the electrical room near it. Response: Disconnect removed, disregard.
41. Clarification: E2-1D keynote 3 indicates quad, traffic rated floorbox. Basis of design shall be Legrand Wiremold "Resource RFB Series Floor Box" with Wiremold Evolution Series Heavy Duty Round Covers.
42. Clarification: Refer to page E2-1A, conference room 01.01.01. What are the type of floor boxes wanted in this room? The data drawings show one of the floor boxes to have data. Typical office floorboxes for power. Not traffic rated, or special in any particular way.
43. Clarification: Refer to page E2-1D, Expo Hall. There is a key note 5 in the expo hall that states "rigging power", however keynote #5 does not correlate to that item. What is wanted here, please advise? Gone now, disregard it.
44. Clarification: Refer to page E3-2, keynote #3. This states to provide conduit for audio cables. What size of conduit is wanted? 3" conduit.
45. Clarification: Refer to page E6-2, detail 1. What is the comment 6" conduit stub refer to? I'm assuming you want a 1" conduit stubbed 6" out, and not a 6" conduit stubbed out? True 1" conduit stubbed 6" from concrete base, detail edited.
46. Clarification: Refer to page E6-2, detail 4&7. Where is the location of these details on the prints? Where does this apply? Those livestock panels are modular movable panels. They are shown on E2-1F. drawing edited to show there are 8 instances of the elec panel, and quads mounted to the panels that get power by plugging into the receptacles that are powered by the 100A panel. These are part of Alt 1 Bid (stall barn). Detail edited, included in AD03.
- 47.
- 48.

Alternate:

49. Alternate 01: Price shall be for addition of Alternate 01, Stall barn. Alternate shall include pricing to include all scope above associated with work in Stall Barn. Base Bid shall not include stall barn.
50. Alternate 02: Price shall be for items noted in Construction Bulletin 01 Narrative and as shown below. Alternate 02 shall be to make changes noted to provide light fixtures in Lobby 01.03.02 with color tunable capabilities. The fixtures shall be provided as previously specified if the alternate is not accepted. Type B/BE fixtures in LOBBY 01.03.02 shall be provided with AXITUNE color tuning capability for the indirect portion of the fixture only. The direct portion of the fixture shall remain white light only. Type D fixtures in LOBBY 01.03.02 shall be provided with AXITUNE color tuning capability. The color tuning capability for both Type B/BE & Type D must be provided from the same manufacturer. DMX controls must be provided for both fixtures for the color tuning capability. Sheet E1-2, One additional relay must be added to replay panel RP-1. The new relay shall be DMX capable and control the indirect portion of the Type B/BE fixtures as described above. Relay 'CR 3' shall be revised to be DMX capable. Add one new switch capable of DMX controls to the wall stations shown for LV-1. Sheet E5-1, Add one additional 20A, 277V circuit to Panel H5.

This circuit will power the indirect portion of the Type B/BE fixtures as described above. This circuit shall interface with the newly added relay in Relay Panel RP-1

**End of Bid Packages**

TO:	Jacob Lingo	Addendum NO#:	003
ISSUE DATE:	5/5/2020	PROJECT NAME:	Canadian County Expo Center
COPIES:	Stan Lingo Travis Pawley Todd Gralla Charlie Kolarik Kristin Gardner Art Lantagne Will Davis Chris Mosteiro Tim Van Ostran	PROJECT NUMBER:	18.4703

The work shall be carried out in accordance with the following supplemental instructions issued in accordance with the contract documents without change in contract sum or contract time. Prior to proceeding in accordance with these instructions, indicate your acceptance of these instructions for minor change to the work as consistent with the contract documents and return a copy to the architect.

#### DESCRIPTION:

#### ARCHITECTURE

- LS1-1
  - Automated External Defibrillators (AED) were added to plans, as noted in RFI #7.
- A9-3-1
  - Tile CT1 color updated.

Revisions have been made to the following drawings and specifications in the form of a write up.

#### MECHANICAL

Revisions have been made to the following drawings and specifications in the form of a write up.

##### From the specifications for additional clarification:

- Provide factory-mounted VFD with bypass for Single Zone VAV fan operation.
- 50 ton units to have a building pressure tracking system. Units to be able to adjust airflow based on building pressure.
- 50 ton units to have clogged filter switch, fan failure switch, condensate overflow switch, and discharge air temp sensor.
- 50 ton units to have a stainless steel drain-pan.
- Demand Control Ventilation with Wall-Mounted CO2 sensor.

#### PLUMBING

Revisions have been made to the specifications in the form of a write up.

- 22 40 00 Plumbing Fixtures
  - Vitreous China: Zurn is acceptable as an alternate manufacturer.
  - Flush Valves: Zurn is acceptable as an alternate manufacturer.

PROJECT NAME Canadian County Expo Center

April 24, 2020  
Page 2 of 3

Revisions have been made to the following drawings in the form of full size sheets.

**ELECTRICAL**

- Sheet E0-3 Electrical site enlarged area plan
  - Increased from 10 to 20 pedestals at East side of property.
- Sheet E2-0 Electrical power plan overall
  - included for completeness, no new specific information.
- Sheet E2-1A Electrical Power Plan - Area A
  - Removed stray disconnect in room Comm 01.02.03.
- Sheet E2-1B Electrical Power Plan - Area B
  - Added ceiling mount receptacles for overhead doors.
- Sheet E2-1C Electrical Power Plan - Area C
  - Added ceiling mount receptacles for overhead doors.
- Sheet E2-1D Electrical Power Plan - Area D
  - Added ceiling mount receptacles for overhead doors.
  - Added info for key note three floorboxes.
- Sheet E2-1F Electrical Power Plan – Alt 1 Barn
  - Added a keyed note 2, gives clarification on corral panel power intent.
- Sheet E2-3 Electrical Roof Plan
  - Added EF-5.
- Sheet E2-4 Electrical Connections Schedule
  - Added EF-5.
- Sheet E3-2 Electrical PA/AV Systems Plan
  - Clarified conduit size for speaker cable, 3".
- Sheet E4-1 Electrical one line diagram
  - Edited two disconnects.
- Sheet E5-2,-3, -4, -5 Electrical panel schedules sheet
  - Added Breakers etc to reflect changes on the floor plan sheets.
- Sheet E6-2 Electrical details sheet.
  - Edited detail 4 and 7, livestock corral electrical.

**MECHANICAL**

-Revisions have been made to the following drawings in the form of full size sheets:

**PROJECT NAME** Canadian County Expo CenterApril 24, 2020  
Page 3 of 3

- Sheet M0-2 MECHANICAL SCHEDULES SHEET
  - Packaged Rooftop Unit Schedule
    - Added staging and information.
    - Removed unused hot gas reheat note.
    - Added BACNET card requirement
  - Exhaust Fan Schedule
    - Added EF-5. This fan serves the restrooms in area A.
  - Louver Schedule
    - Added L-C for additional information for the clerestory louvers.
- Sheet M1-1a MECHANICAL DUCTWORK PLAN – AREA A
  - Shifted 14x14 duct riser that connects to EF-5 to give it 10'-0" clearance from nearby rooftop units.
- Sheet M1-1D MECHANICAL DUCTWORK PLAN – AREA D
  - Supply and return ducts have been swapped to match unit configuration.
- Sheet M3-2 MECHANICAL PLAN - ROOF
  - EF-5 has been added to the roof plan
  - L-C louvers have been added to the arena.

Additional approved mechanical manufacturers:

- Tempmaster
- Smartflex

<b>ISSUED BY:</b>	Populous, Inc.	<b>ACCEPTED BY:</b>	
<b>ARCHITECT:</b>	Charlie Kolarik	<b>CONTRACTOR:</b>	
<b>DATE:</b>	5/5/2020	<b>DATE:</b>	



## MAIN BUILDING

CODE SUMMARY	
APPLICABLE CODES:	2015 IBC w/ OUBCC MODIFICATIONS  2014 NEC  2015 OK-MC  2015 OK-IPC  2015 OK-IFC  2015 OK-IFGC
CONSTRUCTION TYPE:	TYPE II-B, FULLY SPRINKLERED
OCCUPANCY TYPE:	A4 - PRIMARY A3 - ACCESSORY (2% OF TOTAL AREA) S1 - ACCESSORY (2% OF TOTAL AREA)
BUILDING OCCUPANCY:	A4 - 1,348 PER FIRE MARSHAL DIRECTIVE. THIS NUMBER IS BEING UTILIZED FOR FIREGRESS REFER PLUMBING FIXTURE TABLE FOR PLUMBING OCC. CALCS  A3 - 1,340 B - 37 TOTAL - 2,725
ALLOWABLE AREA:	UNLIMITED (PER SECTION 507)
ACTUAL DESIGN AREA:	81,753 GSF
ALLOWABLE STORES/HEIGHT:	3 / 75'
ACTUAL STORES/HEIGHT:	1 / 50'
FRONTAGE INCREASE:	NOT APPLICABLE, UNLIMITED AREA PER 507.4
SPRINKLER INCREASE:	UTILIZED FOR UNLIMITED AREA PER 507.4
FIRE SUPPRESSION:	FULLY SPRINKLERED
FIRE ALARM:	YES
ROOF ASSEMBLY:	CLASS C, PER 1505.1

BUILDING ELEMENT	FIRE RESISTANCE RATING (IN HOURS)
	TYPE I-B, SPRINKLED
STRUCTURAL FRAME	0
EXTERIOR BEARING WALLS	0
INTERIOR BEARING WALLS	0
EXTERIOR NONBEARING WALLS	0
FLOORS (INCLUDING BEAMS)	0
ROOFS (INCLUDING BEAMS)	0

OCCUPANCY	SPRINKLERED		
	Interior exit stairways, ramps, & passageways	Corridors & enclosure for exit access stairways & ramps	Rooms & enclosed spaces
A-3, A-4	B	B	C
B	B	C	C

CORRIDOR RATINGS (TABLE 1020.1)	
OCCUPANCY	SPRINKLERED
	Required fire-resistance rating (hours), With Sprinkler
A, B, S	0

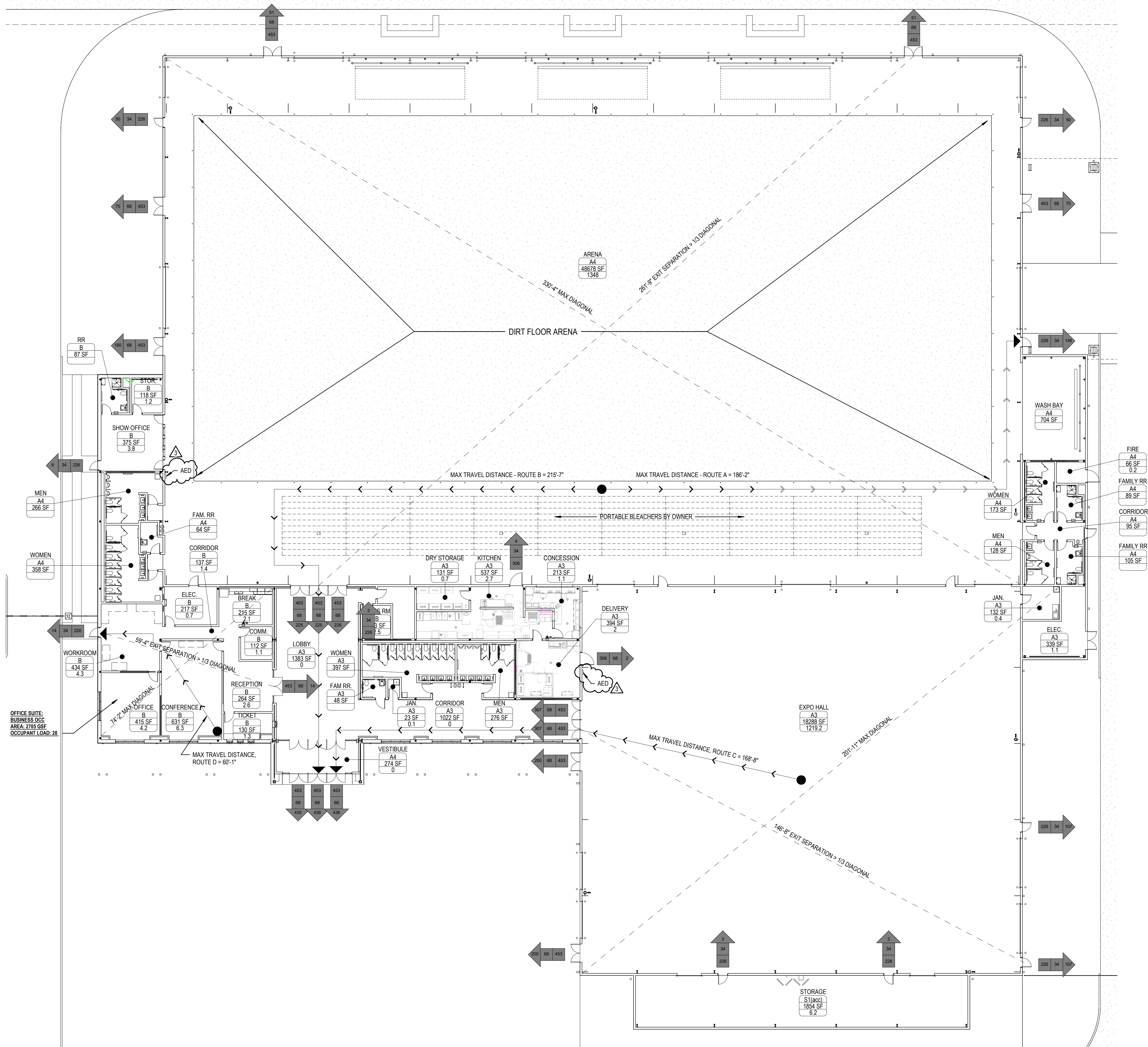
MAX TRAVEL DISTANCE (SECT. 1016)	
OCCUPANCY	DISTANCE (SPRINKLERED)
A	250'
B	300'

OCCUPANT LOAD PER ROOM									
NUMBER	NAME	AREA	OCC. TYPE	OCC. LOAD FACTOR	CALCULATED LOAD	TAGGED OCC. LOAD		OCC. NOTES	
01.00.01	OFFICE	415 SF	B	100	4.2	4.2			
01.00.02	WORKROOM	434 SF	B	100	4.3	4.3			
01.00.03	WOMEN	358 SF	A4	0					
01.00.04	FAM. RR	54 SF	A4	0					
01.00.05	MEN	266 SF	A4	0					
01.00.06	SHOW OFFICE	375 SF	B	100	3.8	3.8			
01.00.07	RR	87 SF	B	0					
01.00.08	STOR.	145 SF	B	100	1.2	1.2			
01.01.01	CONFERENCE	631 SF	B	100	6.3	6.3			
01.01.02	CORRIDOR	137 SF	B	100	1.4	1.4			
01.01.03	ELEC.	217 SF	B	300	0.7	0.7			
01.02.01	TICKET	130 SF	B	100	1.3	1.3			
01.02.02	RECEPTION	124 SF	B	100	2.6	2.6			
01.02.03	COMB.	112 SF	B	111	1.0	1.1			
01.02.04	BREAK	215 SF	B	100	2.1	2.1			
01.03.01	VESTIBULE	274 SF	A4	0					
01.03.02	LOBBY	1383 SF	A3	0					
01.04.01	CORRIDOR	1022 SF	A3	0					
01.04.01	JAN.	23 SF	A3	300	0.1	0.1			
01.04.02	FAM RR	48 SF	A3	0					
01.04.03	WOMEN	397 SF	A3	0					
01.04.04	MOIMS RM	103 SF	B	100	2.5				
01.04.05	MICHAELC	151 SF	A3	0					
01.05.01	DRY STORAGE	131 SF	A3	200	0.7	0.7			
01.06.01	MEN	276 SF	A3	0					
01.06.02	KITCHEN	337 SF	A3	200	2.7	2.7			
01.07.01	DELIVERY	384 SF	A3	200	2.0	2			
01.07.02	CONCESSION	213 SF	A3	200	1.1	1.1			
01.08.01	ARENA	48679 SF	A4			1348			
01.10.01	STORAGE	1884 SF	(Storage)	6.2					ARENA OCCUPANCY IS BASED ON THE LARGEST ANTICIPATED EVENT, WITH PORTABLE BLEACHERS
01.11.02	EXPO HALL	16288 SF	A3	15	1219.2	1219.2			ALONG THE SOUTH SIDE
01.15.01	ELEC.	338 SF	A3	300	1.1	1.1			
01.15.02	JAN.	132 SF	A3	300	0.4	0.4			
01.15.03	MEN	129 SF	A4	0					
01.15.04	FAMILY RR	105 SF	A4	0					
01.15.05	CORRIDOR	95 SF	A4	0					
01.15.06	FAMILY RR	99 SF	A4	0					
01.15.07	WOMEN	173 SF	A4	0					
01.15.08	FIRE	66 SF	A4	300	0.2	0.2			
01.15.09	WASH/BAY	794 SF	A4	0					INCLUDED IN ARENA OCCUPANCY
01.40.01	TOLLET	59 SF	S1	0					MAINTENANCE BUILDING, RR, LS1-2
01.40.02	TOOL STORAGE	660 SF	S1	300	2.3	2.3			MAINTENANCE BUILDING, RR, LS1-2
01.40.03	VEHICLE STORAGE	1603 SF	S1	4.5	5.5	5.5			MAINTENANCE BUILDING, RR, LS1-2
01.40.04	EXCHANGE STORAGE	1985 SF	S1	300	5.3	5.3			MAINTENANCE BUILDING, RR, LS1-2


## PLUMBING FIXTURE REQUIREMENTS

	A3		A4		B		TOTAL REQUIRED		TOTAL PROVIDED	
	EXPO, STORAGE, LOBBY & KITCHEN		ARENA		OFFICE SUITE, MOTHER'S ROOM, & SHOW OFFICE					
OCCUPANT LOAD	1,340		1,130**		37					
	MEN (670)	WOMEN (670)	MEN (565)	WOMEN (565)	MEN (18)	WOMEN (19)	MEN	WOMEN	MEN	WOMEN
TOILETS	5.36 (1/125)	10.3 (1/68)	7.53 (1/75)	14.13 (1/40)	0.72 (1/25)	0.76 (1/25)	13.61 = 14	25.19 = 26	14	26*
LAVS	3.35 (1/200)	3.35 (1/200)	2.83 (1/200)	3.77 (1/150)	0.45 (1/40)	0.48 (1/40)	6.86 = 7	7.83 = 8	8	13*
DRINKING FOUNTAINS	2.68 (1/500)		1.13 (1/1,000)		0.37 (1/100)		4.18 = 5		4	
SERVICE SINKS	1		1		1		1**		2	

\*\*\* THE ARENA FIXTURES ARE BASED ON THE MAXIMUM OCCUPANCY ANTICIPATED IN THE ARENA AT ITS LARGEST EVENT, WHILE THE REMAINDER OF THE BUILDING IS SIMULTANEOUSLY UTILIZED AT MAX OCCUPANCY. IF AN EVENT EVER OCCURS IN THE ARENA THAT IS LARGER THAN THIS, THE EXPO HALL WOULD NOT BE USED SIMULTANEOUSLY AT MAX OCCUPANCY, AND THEREFOR THOSE RESTROOMS ALLOCATED FOR EXPO (LOCATED OFF THE LOBBY) COULD BE UTILIZED/SHARED BY THE ARENA OCCUPANTS.




**ROOM TAGS**




A rectangular tag divided into three horizontal sections. The top section is labeled 'NAME', the middle section is labeled 'OCC. AREA', and the bottom section is labeled 'OCC. LOAD'.

**EGRESS DOORS**



A triangular symbol divided into three horizontal sections. The top section is labeled 'A', the middle section is labeled 'B', and the bottom section is labeled 'C'.

**FIRE EXTINGUISHER SYMBOLS**



FIRE EXTINGUISHER,  
CABINET OR BRACKET MOUNTED

1 OCCUPANCY - MAIN BLDG.  
1/16" = 1'-0"

**POPULOUS**  
Architecture, Planning,  
Interiors, Programming  
4800 Main St., Suite 300  
Kansas City, MO 64112  
(816) 221-1500

**Civil & Landscape**  
Haff Associates, Inc.  
2000 North Cassen Blvd., Suite S120  
Independence, MO 67316  
(314) 346-6200

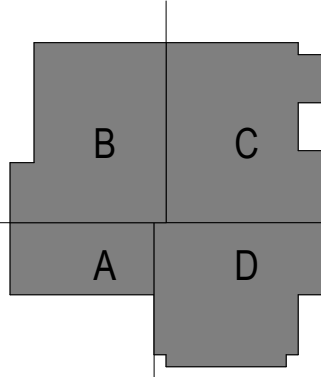
**Mechanical, Electrical, Plumbing & Fire Protection**  
MEP Associates, LLC  
2600 Van Buren St. Suite 2635  
Norman, OK 73102  
(405) 364-9926

**Structural**  
KFC Engineering  
353 Central Park Drive, Suite 202  
Oklahoma City, OK 73105  
(405) 528-4596

**Food Service**  
S20 Consultants  
530 N. Wood, #2  
Chicago, IL 60622  
(212) 771-1999

3001 Jensen Rd E  
El Reno, OK 73036

CONSTRUCTION  
DOCUMENTS  
3/20/2020

[illegible]

PROJECT	ISSUED BY:
18.4703	<b>POPULOUS</b>

SHEET

CODE ANALYSIS & LIFE  
SAFETY - MAIN BUILDING

DISCIPLINE - CATEGORY - SUB CATEGORY -

LS1-1



FINISH LEGEND								
TAG	LOCATION	MANUFACTURER	STYLE NAME / NUMBER	COLOR / FINISH	SIZE	CONTACT	NOTES	LEAD TIME
ACOUSTICAL CEILING TILE								
09 51 23								
ACT1	RESTROOMS, OFFICES, CONFERENCE, CORRIDOR	ARMSTRONG CEILING	SQUARE OPTIMA TEGULAR 9/16" WITH SUPRAFINE WHITE 9/16"	WHITE	24" X 24"	JANICE MEYERHOFFER 717.369.3251 JMMEYERHOFFER@ARMS TRONGCEILINGS.COM	-	
ACT2	CONCESSIONS, KITCHEN	ARMSTRONG CEILING	SQUARE OPTIMA HEALTH ZONE LAY-IN 9/16" WITH SUPRAFINE WHITE 9/16"	WHITE	24" X 24"	JANICE MEYERHOFFER 717.369.3251 JMMEYERHOFFER@ARMS TRONGCEILINGS.COM	-	
CARPET TILE								
09 68 00								
CA1	CONFERENCE, RECEPTION, FLEX/MOM, OFFICES, TICKET BOOTH	SHAW CONTRACT	FAMILIAR TILE / 5T235	TRUFFLE 35760	9" X 36" X 8MM THICK	MELISSA NAU 214.914.4242 MELISSA.NAU@SHAWCON TRACT.COM	HERRINGBONE INSTALLATION	
CONCRETE								
03 35 43 / 09 61 13								
SC1	EXPO, BREAK, SHOW OFFICE, RESTROOMS	RE: SPECIFICATIONS	POLISHED	-	-	-	-	
SC2	LOBBY	BOMANITE	RENAISSANCE, INTEGRAL COLOR	COBBLESTONE GRAY	-	CHANDLER BALCH 214.624.6515 CBALCH@TEXASBOMANIT E.COM	-	
SC3	ARENA	RE: SPECIFICATIONS	SEALED, BROOM FINISH	-	-	-	-	
SC4	JAN, STORAGE, ETC.	RE: SPECIFICATIONS	SEALED, TROWEL FINISH	-	-	-	-	
CORNER GUARD								
10 26 00								
CG1	LOBBY, CORRIDOR	KOROSEAL	AC ANODIZED ALUMINUM CORNER GUARD	BRONZE ALUMINUM	1/2" W X FULL HEIGHT X 1.6MM THICK	ANGELA HEINEN 469.396.9461 AHEINEN@KOROSEAL.CO M	-	
ENTRANCE FLOOR MATS AND GRILLS								
12 48 13								
EM1	LOBBY	CONSTRUCTION SPECIALISTS	PEDIMAT M1 SURFACE MOUNTED	ANTHRACITE 9332	7/16" THICK	-	-	
EXPOSED								
EXP1	-	-	EXPOSED TO STRUCTURE	NO FINISH	-	-	-	
EXP2	-	-	EXPOSED TO PAINTED STRUCTURE AND EQUIPMENT ABOVE	P1	-	-	-	
EXP3	-	SIMPLE SAVER	EXPOSED TO PAINTED STRUCTURE AND EQUIPMENT ABOVE AND SIMPLE SAVER SYSTEM ABOVE	-	-	-	-	
FIBER-REINFORCED PLASTIC								
06 64 00								
FRP1	CONCESSIONS	MARLITE	STANDARD	S100 S2S WHITE	4' X 8' X 3/32" THICK PANELS	DAN EGBERS 800.377.1221 DEGBERS@MARLITE.COM	-	
FLOOR TOPPING								
09 67 23								
FT1	FOOD SERVICES	BASF	MASTERTOP SRS 1851 CF	CUSTOM 3 COLOR MIX - 80% BLACK, 10% DARK GRAY, 10% WHITE	-	-	POURED WITH INTEGRAL 4" COVE BASE	
LAMINATE								
06 41 16								
L1	BREAKROOM	FORMICA	8846	OILED LEGNO	144" X 65.2" SHEETS	LAURIE HOLCOMB 972.795.3018 LHOLCOMB@WURTHLAC.C OM	-	
L2	BREAKROOM	FORMICA	299	EBONY OXIDE	144" X 65.2" SHEETS	LAURIE HOLCOMB 972.795.3018 LHOLCOMB@WURTHLAC.C OM	-	
MANUAL ROLLER SHADE								
12 24 13								
RS1	OFFICES	MECHO	RE: SPEC	RE: SPEC	RE: DRAWINGS	LEE BECKMAN 347.684.1821 LEE.BECKMAN@MECHOSH ADE.COM	-	
METAL								
05 50 00								
MTL1	-	GC TO SOURCE	-	DARK BRONZE TO MATCH STOREFRONT SYSTEMS	4' X 8" SHEETS	-	-	
PAINT								
09 91 23								
P1	GENERAL CEILING PAINT	SHERWIN WILLIAMS	RE: SPEC	ARCADE WHITE SW7100	-	BRETT C HUCKELBURY 214.553.3940 BCHUCKELBURY@SHERWI N.COM	-	
P2	GENERAL WALL PAINT	SHERWIN WILLIAMS	RE: SPEC	ORIGAMI WHITE SW7636	-	BRETT C HUCKELBURY 214.553.3940 BCHUCKELBURY@SHERWI N.COM	-	
P3	LOBBY, BATHROOM DOORS	SHERWIN WILLIAMS	RE: SPEC	RED BARN SW7591	-	BRETT C HUCKELBURY 214.553.3940 BCHUCKELBURY@SHERWI N.COM	-	
P4	DOORS	SHERWIN WILLIAMS	RE: SPEC	IRON ORE SW7069	-	BRETT C HUCKELBURY 214.553.3940 BCHUCKELBURY@SHERWI N.COM	-	
P5	LOBBY, CORRIDOR, VESTIBULE, WALL PAINT	WOLF GORDON	RE: SPEC	MATCH P2	-	APRIL WILLIS 800.347.0550 APRIL.WILLIS@WOLFGORD ON.COM	-	
PORCELAIN TILE								
09 30 35								
CT1	RESTROOM FLOORS	HORIZON TILE	CHEVRON	FONCE	15" X 60" X 10MM THICK	AMBER JONES REDDICK 214.741.4447 AMBER@HORIZONTILE.CO M	LEFT AND RIGHT HAND TILES REQUIRED FOR CHEVRON INSTALLATION 1/16" GROUT (LATICRETE RAVEN #45)	8-10 WEEKS
CT2	RESTROOM ACCENT WALLS	ARIZONA TILE	STAGE	RED	12" X 24" X 9MM THICK	MARCK ROBERTS 972.456.0935 MRROBERTS@ARIZONTIL E.COM	HORIZONTAL STACKED INSTALLATION 1/16" GROUT (LATICRETE RAVEN #45)	2 WEEKS
CT3	RESTROOM WALLS	CONCEPT SURFACES	TUDOR	BIANCO	12" X 24" X 9MM THICK	MAGGIE CURTIS 972.386.4900 MAGGIEC@CONCEPTSUR	HORIZONTAL STACKED INSTALLATION 1/16" GROUT (CUSTOM BUILDING PRODUCT GRAYSTON #542)	2 WEEKS

FINISH LEGEND								
TAG	LOCATION	MANUFACTURER	STYLE NAME / NUMBER	COLOR / FINISH	SIZE	CONTACT	NOTES	LEAD TIME
CT4	RESTROOM ACCENT WALLS	ARIZONA TILE	STAGE	RED BOSS	12" X 24" X 9MM THICK	MARCY ROBERTS 972.456.0935 MRROBERTS@ARIZONATILE.COM	HORIZONTAL STACKED INSTALLATION 1/16" GROUT (LATICRETE RAVEN #45)	2 WEEKS
CT5	SHOWER FLOOR AND WALLS	CONCEPT SURFACES	ALCHIMIA MOSAIC / GCLC09R	-	12" X 12" MESH MOUNT X 3/8" THICK	MAGGIE CURTIS 972.386.4900 MAGGIEC@CONCEPTSURFACES.COM	1/16" GROUT (LATICRETE RAVEN #45)	8-10 WEEKS
CT6	BREAKROOM	CERAMIC TECHNICS	SASSUOLO ORGANIC BRICK	ICE GLOSSY	3" X 12" X 9MM THICK	SHARON GLIDDEN 214.533.4523 SGLIDDEN@CERAMICTECHNICS.COM	HORIZONTAL STACKED INSTALLATION 1/8" GROUT (CUSTOM BUILDING PRODUCT SNOW WHITE #11)	6-8 WEEKS
PORCELAIN TILE COVE BASE 09 30 13								
CTB1	LOBBY, CORRIDOR	HORIZON TILE	BUILT / HIT120	BLOCK	9" X 24" X 9MM THICK	AMBER JONES REDDICK 214.741.4447 AMBER@HORIZONTILE.COM	FACTORY CUT, 1/16" GROUT (LATICRETE RAVEN #45)	-
RUBBER BASE 09 65 13								
RB1	-	ROPPE	STANDARD PINNACLE	193 BLACK BROWN	4" HEIGHT	VANCE HAAS 419.619.7314 VHAAS@ROPPE.COM	-	-
RUBBER FLOOR 32 18 16								
RF1	WASH BAY	POLYLAST	SUPER DUTY FLOORING	ALUMINUM STONE	-	KIRK STICKLER 801.460.0299 KSSURFACING@GMAIL.COM	-	-
SOLID SURFACE MATERIAL 12 36 61								
SSM1	RESTROOMS	CAMBRIA	LUXURY SERIES	HUNTLEY	2CM THICK	COURTNEY TORNBLOM 469.601.4635 COURTNEY.TORNBLOM@CAMBRIAUSA.COM	-	-
SSM2	BREAKROOM	CAMBRIA	SIGNATURE SERIES	TORQUAY	2CM THICK	COURTNEY TORNBLOM 469.601.4635 COURTNEY.TORNBLOM@CAMBRIAUSA.COM	-	-
SPECIALTY PANEL 09 77 23/ 04 21 13.13								
SP1	NOT USED	-	-	-	-	-	-	-
SP2	NOT USED	-	-	-	-	-	-	-
STATIC DISSIPATIVE TILE 09 65 36								
SDT1	COMM. ROOM	TARKETT	iQ TORO SC	OLD BARK	24" X 24" X 2MM THICK	MICHELLE HARPOLE 217.471.7631 MICHELLE.HARPOLE@TARKETT.COM	-	-
WOOD 06 20 23								
WD1	LOBBY, LOBBY VESTIBULE	DELTA MILLWORKS	ACCOYA SMOOTH	CUSTOM NANO TEAK	6"W X 5/8" THICK X RANDOM LENGTHS	CLAUDIA HOFFMANS 512.385.1812 CLAUDIA@DELTAMILLWORKS.COM	-	-

PACKAGED ROOFTOP GAS/ELECTRIC UNIT SCHEDULE																				
RTU #	LOCATION	INPUT MBH	OUTPUT MBH	COOLING		EER	TOTAL CFM	MIN F.A. CFM	ELEC. V / HZ / PH	MCA	MOP	WEIGHT LBS	HEATING COIL			HEATING CAPACITY (MBH)	HEATING STAGES / TURNDOWN	TEMP RISE (°F)	MANUFACTURER & MODEL NO.	NOTES
				NOMINAL TONS	HEAT TYPE								HEAT (°F)	LAT (°F)						
1	ROOF	750	600	50	10.4	18000	2000	460 / 60 / 3	119	125	6147	60.0	91.2	GAS	600	5:1	31.2	TRANE - YCH000B4	1-11	
2	ROOF	750	600	50	10.4	18000	2000	460 / 60 / 3	119	125	6147	60.0	91.2	GAS	600	5:1	31.2	TRANE - YCH000B4	1-11	
3	ROOF	750	600	50	10.4	18000	2000	460 / 60 / 3	119	125	6147	60.0	91.2	GAS	600	5:1	31.2	TRANE - YCH000B4	1-11	
4	ROOF	750	600	50	10.4	18000	2000	460 / 60 / 3	119	125	6147	60.0	91.2	GAS	600	5:1	31.2	TRANE - YCH000B4	1-11	
5	ROOF	750	600	50	10.4	18000	2000	460 / 60 / 3	119	125	6147	60.0	91.2	GAS	600	5:1	31.2	TRANE - YCH000B4	1-11	
6	ROOF	200	160	10	10.0	4000	500	460 / 60 / 3	22	25	2413	60.0	83.0	GAS	200.0	2	23.04	TRANE - YSC120H4	1-9	
7	--- REFER TO M42 FOR RTU-7 INFORMATION ---																			
8	ROOF	200	160	10	10.0	4000	500	460 / 60 / 3	22	25	2413	60.0	83.0	GAS	200.0	2	23.04	TRANE - YSC120H4	1-9	
9	ROOF	750	600	50	10.4	18000	2000	460 / 60 / 3	119	125	6147	60.0	91.2	GAS	600	MOD	31.2	TRANE - YCH000B4	1-11	
NOTES:																				
1. PROVIDE CONDENSER COIL HAIL GUARD.																				
2. PROVIDE FACTORY-INSTALLED UNIT DISCONNECT SWITCH.																				
3. PROVIDE FACTORY-INSTALLED RETURN DUCT SMOKE DETECTOR W/ REMOTE TEST STATION TO BE LOCATED IN OCCUPIED SPACE. INSTALLATION OF REMOTE TEST STATION & CONNECTION TO FIRE ALARM SYSTEM BY EC.																				
4. PROVIDE FACTORY-INSTALLED 120V GFCI CONVENIENCE OUTLET, GFCI POWERED FROM UNIT.																				
5. PROVIDE ANTI-SHORT CYCLE TIMER AND LOW AMBIENT CONTROLS AND PHASE MONITOR.																				
6. PROVIDE MINIMUM 14" FACTORY ROOF CURB.																				
7. PROVIDE HINGED AND TOOL-LESS ACCESS DOORS.																				
8. PROVIDE FULL ENTHALPY ECONOMIZER WITH POWERED EXHAUST WITH ULTRA LOW LEAK DAMPERS.																				
9. PROVIDE FACTORY BAGNET CARD AND WIRELESS INTERFACE FOR INTEGRATION INTO CONTROLS SYSTEM.																				
10. HORIZONTAL DISCHARGE.																				
11. 5 STAGE COOLING. MINIMUM 20% TURNDOWN.																				

ELECTRIC FAN FORCED HEATER SCHEDULE											
EFH #	LOCATION	CFM	WALL OR CEILING	KW	MOUNTING	AMPS	SPEEDS	CONTROL	VOLT	MANUFACTURER & MODEL NO.	NOTES
1	MEN 01.00.06	300	CEILING	4	RECESSED	19.2	1	INT STAT	208/1	BERKO - FFCH-548	1-3
2	WOMEN'S 01.00.03	300	CEILING	3	RECESSED	14.4	1	INT STAT	208/1	BERKO - FFCH-548	1-3
3	MEN 01.15.03	300	CEILING	3	RECESSED	14.4	1	INT STAT	208/1	BERKO - FFCH-548	1-3
4	FAMILY RR 01.15.04	300	CEILING	4	RECESSED	19.2	1	INT STAT	208/1	BERKO - FFCH-548	1-3
5	CORRIDOR 01.15.05	300	CEILING	2	RECESSED	9.6	1	INT STAT	208/1	BERKO - FFCH-548	1-3
6	FAMILY RR 01.15.06	300	CEILING	3	RECESSED	14.4	1	INT STAT	208/1	BERKO - FFCH-548	1-3
7	WOMEN 01.15.07	300	CEILING	3	RECESSED	14.4	1	INT STAT	208/1	BERKO - FFCH-548	1-3
8	FIRE 01.15.08	100	WALL	2	SURFACE	9.6	1	INT STAT	1400	BERKO - FRCA020	1,2,4
9	MAINTENANCE BLDG	300	CEILING	3	RECESSED	14.4	1	INT STAT	208/1	BERKO - FFCH-548	1-3
10	RR 01.00.07	300	CEILING	2	RECESSED	9.6	1	INT STAT	208/1	BERKO - FFCH-548	1-3

NOTES:

- PROVIDE INTERNAL THERMOSTAT.
- RECESSED MOUNTED UNIT. PROVIDE RECESSED MOUNTING KIT.
- PROVIDE BUILT-IN DISCONNECT.
- SURFACE MOUNTED UNIT. PROVIDE SURFACE MOUNTING KIT.
- PROVIDE WALL MOUNTING BRACKET.

HIGH VOLUME LOW SPEED FAN SCHEDULE										
HVLS #	TYPE	BLADE DIA (FT)	COLOR	MAX SOUND (dBA)	RPM	ELECT CHAR	KW	WEIGHT (LBS)	MANUFACTURER & MODEL NO.	NOTES
1	HVLS	20	CUSTOM	30	76	208/1	1.5	242	BIGASS FANS - POWERFOL 8	ALL
2	HVLS	20	CUSTOM	30	76	208/1	1.5	242	BIGASS FANS - POWERFOL 8	ALL
3	HVLS	20	CUSTOM	30	76	208/1	1.5	242	BIGASS FANS - POWERFOL 8	ALL
4	HVLS	20	CUSTOM	30	76	208/1	1.5	242	BIGASS FANS - POWERFOL 8	ALL
5	HVLS	20	CUSTOM	30	76	208/1	1.5	242	BIGASS FANS - POWERFOL 8	ALL
6	HVLS	20	CUSTOM	30	76	208/1	1.5	242	BIGASS FANS - POWERFOL 8	ALL
7	HVLS	20	CUSTOM	30	76	208/1	1.5	242	BIGASS FANS - POWERFOL 8	ALL
8	HVLS	20	CUSTOM	30	76	208/1	1.5	242	BIGASS FANS - POWERFOL 8	ALL

NOTES:

- CUSTOM COLOR. COLOR CHOSEN BY ARCHITECT.
- DOWNRODS AS REQUIRED. LENGTH VARIES W/ITCHED ROOF. PROVIDE STRUT MOUNTING PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- SOLID STATE SPEED CONTROLLER.
- REMOTE SWITCH AND FAN SPEED CONTROL. PROVIDE THREE (3) TOTAL FRONT-END CONTROLLERS ALL OF THE FANS IN THE: THE MAIN ARENA, THE WARM UP ARENA, AND STALL BARN. COORDINATE EXACT LOCATION OF CONTROLLERS WITH OWNER. COORDINATE POWER CONNECTION WITH E.C.
- FAN TO BE MOUNTED TO SOLID BEAM CARRY BEAM. PROVIDE MOUNTING KIT FOR BEAM INSTALLATIONS. REFER TO STRUCTURAL DRAWINGS AND METAL BUILDING MANUFACTURER SUBMITTAL FOR BEAM SIZE. COORDINATE WITH METAL BUILDING CONTRACTOR FOR EXACT LOCATION OF MOUNTING BEAMS PRIOR TO CONSTRUCTION. MOUNT FAN TO STRUCTURE IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- PROVIDE GUY WIRE KIT FOR FANS WITH EXTENSION TUBES 4'-0" OR LONGER. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS.

LOUVER SCHEDULE								
L #	CONNECTED TO	SIZE (IN)	MINIMUM FREE AREA	FLANGE	CONSTRUCTION	INCLUDE MOD	MANUFACTURER AND MODEL NUMBER	COMMENTS
1	EF-1	24X24	1.78	YES	ALUMINUM	YES	GREENHECK ESD-403	4" DRAINABLE BLADE LOUVER
2	EF-2	30X24	2.28	YES	ALUMINUM	YES	GREENHECK ESD-403	4" DRAINABLE BLADE LOUVER
3	ARENA	102X39	12.17	YES	ALUMINUM	YES	GREENHECK ESD-403	4" DRAINABLE BLADE LOUVER

NOTES:

- PROVIDE 1/2" BIRD SCREEN.
- PROVIDE PAINTED KYNAR FINISH. COLOR BY ARCHITECT.

GAS FIRED UNIT HEATER													
GUH #	INPUT MBH	OUTPUT MBH	C.F.M.	HEAT EXCHANGER MATERIAL		FAN SIZE		H.P.	WATTS	FLA	MOP	VENT	MANUFACTURER & MODEL NO.
				ALUMINIZED STEEL	ALUMINIZED STEEL	18"	18"						
1	150	124.5	1920	ALUMINIZED STEEL	ALUMINIZED STEEL	18"	18"	1/6	392	3.8	15	5"	REZNOR - UDAP - 150
2	150	124.5	1920	ALUMINIZED STEEL	ALUMINIZED STEEL	18"	18"	1/6	392	3.8	15	5"	REZNOR - UDAP - 150
3	150	124.5	1920	ALUMINIZED STEEL	ALUMINIZED STEEL	18"	18"	1/6	392	3.8	15	5"	REZNOR - UDAP - 150
4	150	124.5	1920	ALUMINIZED STEEL	ALUMINIZED STEEL	18"	18"	1/6	392	3.8	15	5"	REZNOR - UDAP - 150
5	150	124.5	1920	ALUMINIZED STEEL	ALUMINIZED STEEL	18"	18"	1/6	392	3.8	15	5"	REZNOR - UDAP - 150
6	150	124.5	1920	ALUMINIZED STEEL	ALUMINIZED STEEL	18"	18"	1/6	392	3.8	15	5"	REZNOR - UDAP - 150
7	150	124.5	1920	ALUMINIZED STEEL	ALUMINIZED STEEL	18"	18"	1/6	392	3.8	15	5"	REZNOR - UDAP - 150
8	150	124.5	1920	ALUMINIZED STEEL	ALUMINIZED STEEL	18"	18"	1/6	392	3.8	15	5"	REZNOR - UDAP - 150
9	100	87.1	1920	ALUMINIZED STEEL	ALUMINIZED STEEL	16"	16"	1/20	276	3.9	15	4"	REZNOR - UDAP - 100
10	100	87.1	1920	ALUMINIZED STEEL	ALUMINIZED STEEL	16"	16"	1/20	276	3.9	15	4"	REZNOR - UDAP - 100
11	100	87.1	1920	ALUMINIZED STEEL	ALUMINIZED STEEL	16"	16"	1/20	276	3.9	15	4"	REZNOR - UDAP - 100

NOTES:

- PROVIDE CONCENTRIC SIDEWALL VENT. VENT OUT NEAREST EXTERIOR WALL WHILE MAINTAINING CODE REQUIRED CLEARANCES.
- PROVIDE LINE VOLTAGE THERMOSTAT W/ SUMMER SWITCH AND WIRE CAGE WITH LOCKING COVER. THERMOSTAT TO BE MOUNTED IN LOCATION SHOWN ON PLAN BY ELECTRICAL CONTRACTOR.
- MOUNT 18'-0" AFF. IN LOCATIONS WHERE THE ROOF DOES NOT ALLOW 18'-0" MOUNTING. MOUNT 2'-0" FROM ROOF.

GRILLE, REGISTER, AND DIFFUSER SCHEDULE				
PLAN SYMBOL	DESCRIPTION	MANUFACTURER & MODEL NO.	MATERIAL	FINISH
RG-1	SQUARE PATTERN GRILLE, FIXED CORE OF 1/2"X1/2"X1/2" FABRICATED ALUMINUM SQUARES, FLAT FRAME WITH 1 1/4" MARGIN, FOR CEILING INSTALLATION.	PRICE 80	ALUMINUM	WHITE
RG-2	HEAVY DUTY SIDEWALL GRILLED, STATIONARY DEFLECTION VANES, 3/4" O.C. FLAT FRAME WITH 1 1/4" MARGIN, HORIZONTAL FRONT	PRICE 90	ALUMINUM	COLOR BY ARCHITECT
EG-1	SQUARE PATTERN GRILLE, FIXED CORE OF 1/2"X1/2"X1/2" FABRICATED ALUMINUM SQUARES, FLAT FRAME WITH 1 1/4" MARGIN, FOR CEILING INSTALLATION.	PRICE 90	ALUMINUM	WHITE
CD-1	24X24 SQUARE FACE, ROUND NECK, PLAQUE TYPE CEILING DIFFUSER, SPRING LOCK INNER CORE, FOR LAY-IN CEILING INSTALLATION.	PRICE SPQ	STEEL	WHITE
CD-2	24X24 SQUARE FACE, ROUND NECK, 4-WAY DEFLECTION CEILING DIFFUSER, PLAQUE FACE	PRICE SPD	ALUMINUM	WHITE
SG-1	DOUBLE DEFLECTION SIDEWALL GRILLE, ADJUSTABLE DEFLECTION VANES, 3/4" O.C. FLAT FRAME WITH 1 1/4" MARGIN, HORIZONTAL FRONT	PRICE 540	ALUMINUM	COLOR BY ARCHITECT
HCD-1	HIGH CAPACITY DRUM DIFFUSER/LOWOVER, PROVIDE WITH OPTIONAL SPIRAL DUCT FRAME AND OPPOSED BLADE DAMPER.	PRICE HCD	STEEL	COLOR BY ARCHITECT
TG-1	12X12 SQUARE PATTERN GRILLE, FIXED CORE OF 1/2"X1/2"X1/2" FABRICATED ALUMINUM SQUARES, FLAT FRAME WITH 1 1/4" MARGIN, FOR CEILING INSTALLATION.	PRICE 80	ALUMINUM	WHITE

NOTES:

- COORDINATE FINAL AIR DEVICE LOCATION AND COLOR WITH ARCHITECT.

EXHAUST FAN SCHEDULE													
EF #	LOCATION	SYSTEM	CFM	SP (IN)	RPM	MOTOR H.P.	ELECTRICAL V / PH	BACK DRAFT DAMPER	DRIVE	FAN TYPE	INTERLOCK/CONTROL	MANUFACTURER & MODEL NO.	NOTES
1	ROOF	RESTROOM EXHAUST	1050	0.3	1442	NA	120/1	YES	DIRECT	INLINE	RTU SERVING RR	GREENHECK SQ-100-VG	1,3
2	ROOF	RESTROOM EXHAUST	1175	0.3	1569	NA	120/1	YES	DIRECT	INLINE	RTU SERVING RR	GREENHECK SQ-100-VG	1,3
3	ROOF	RESTROOM EXHAUST	75	0.3	900	NA	120/1	YES	DIRECT	CEILING	RR LIGHTS	GREENHECK SP-A80	1,2,3
4	ROOF	RESTROOM EXHAUST	75	0.3	900	NA	120/1	YES	DIRECT	CEILING	RR LIGHTS	GREENHECK SP-A80	1,2,3
5	ROOF	RESTROOM EXHAUST	1350	0.3	1140	NA	120/1	YES	DIRECT	ROOF	RR LIGHTS	GREENHECK G-133-VG	1,2,3

NOTES:

- PROVIDE FAN SPEED CONTROLLER.
- PROVIDE WITH VIBRATION ISOLATION KIT AND DESIGNER GRILLE.
- PROVIDE WITH DISCONNECT SWITCH.

VENTILATION FAN SCHEDULE													
VF #	LOCATION	SYSTEM	CFM	SP (IN)	RPM	MOTOR H.P.	ELECTRICAL V / PH	MOTORIZ DAMPER	DRIVE	FAN TYPE	INTERLOCK/CONTROL	MANUFACTURER & MODEL NO.	NOTES
1	ARENA	GABLE	60000	0.25	386	10	460/3	YES	BELT	PROP	SWITCH/DAMPERS	GREENHECK SBE-3L72	ALL
2	ARENA	GABLE	60000	0.25	386	10	460/3	YES	BELT	PROP	SWITCH/DAMPERS	GREENHECK SBE-3L72	ALL

NOTES:

- PROVIDE FAN SPEED CONTROLLER.
- PROVIDE WITH IC-44 INSULATED DAMPER AND ACTUATOR. DAMPER OPERATION TO BE INTERLOCKED WITH FAN.
- PROVIDE FAN SAFETY CAGE.
- MOUNT 25'-0" AFF TO BOTTOM OF FAN.

MINI SPLIT HEAT PUMP SCHEDULE - INDOOR & OUTDOOR UNIT													
MS #	OUTDOOR UNIT						INDOOR UNIT						
	NOMINAL TON	ELEC. CHAR	SEER	MCA	MOP	COMPRESSOR TYPE	MANUFACTURER & MODEL NUMBER	TYPE	CFM	CONDENSATE PUMP	WEIGHT	MANUFACTURER & MODEL NUMBER	NOTES
1	2	208/1	17.0	18	25	INVERTER	MTSUBISHI PUZ-A24	CLG	635-775	YES	46	MTSUBISHI PLA-A24	ALL
2	2	208/1	17.0	18	25	INVERTER	MTSUBISHI PUZ-A24	WALL	635-775	YES	46	MTSUBISHI PKA-A24	ALL
3	2	208/1	17.0	18	25	INVERTER	MTSUBISHI PUZ-A24	WALL	635-775	YES	46	MTSUBISHI PKA-A24	ALL

NOTES:

- MS IS RESPONSIBLE FOR PROVIDING ALL NECESSARY DIMENSION, ELECTRICAL, MECHANICAL, AND STRUCTURAL ALTERATIONS NECESSITATED BY PROVIDING ALTERNATE EQUIPMENT.
- PROVIDE DISCONNECT FOR INSTALLATION BY EC.
- INDOOR UNIT POWERED FROM OUTDOOR UNIT. EC RESPONSIBLE FOR INSTALLING ELECTRICAL CONNECTION BETWEEN UNITS. COORDINATE WITH EC.
- PROVIDE AND INSTALL CONDENSATE PUMP. ROUTE CONDENSATE TO NEAREST OPEN SITE.
- PROVIDE CONDENSER COIL HAIL GUARD.

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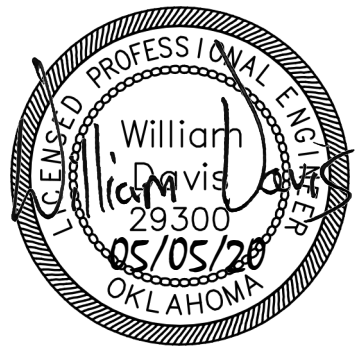
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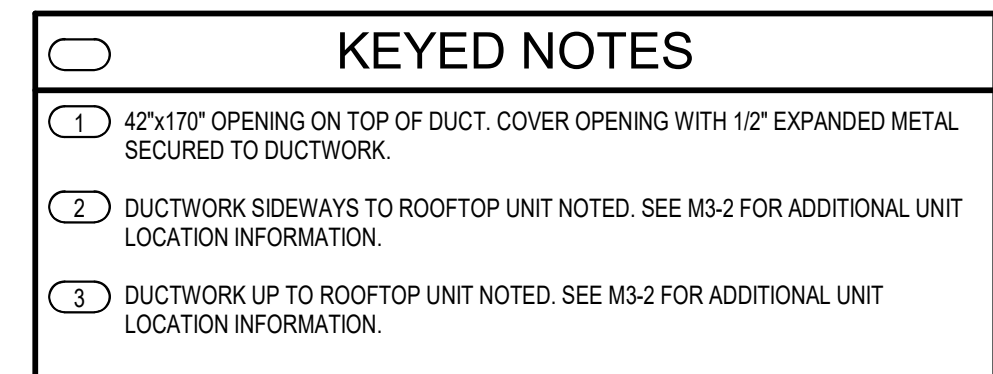
## CONSTRUCTION DOCUMENTS

3/20/2020

### REVISIONS

NO.	DATE	DESCRIPTION
2	5/04/2020	ADDENDUM #3





**1/8" = 1'-0"**

**1/8" = 1'-0"**

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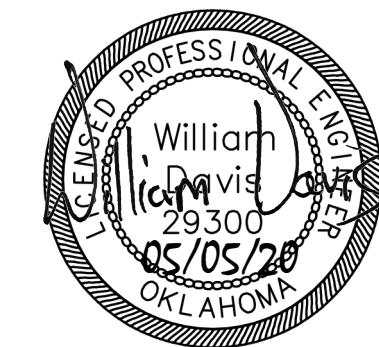
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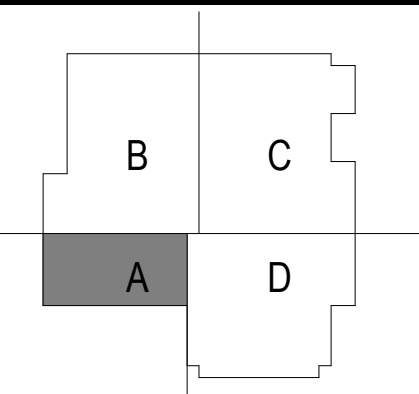


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3/20/2020

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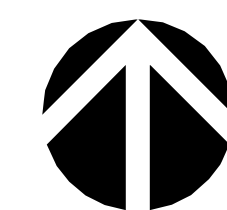
PROJECT	ISSUED BY:
18.4703	<b>POPULOUS</b>

SHEET TITLE:

MECHANICAL DUCTWORK  
PLAN - AREA A

DISCIPLINE - CATEGORY - SUB CATEGORY -

M1-1A

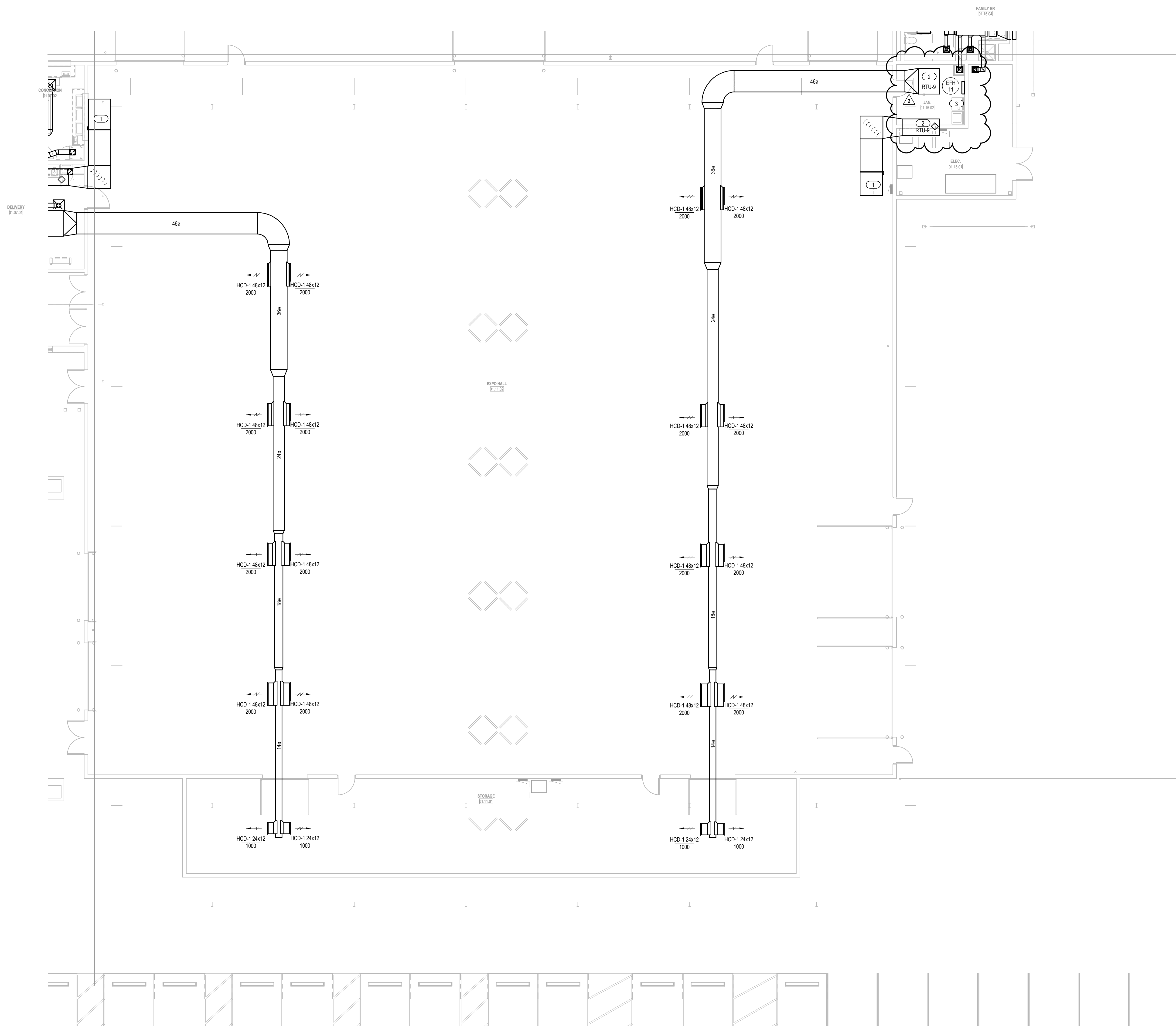


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# 1 MECHANICAL DUCTWORK PLAN - AREA D

**1/8" = 1'-0"**

## GENERAL NOTES

1. ALL EXPOSED SPIRAL DUCT IN ARENA AND EXPO AREAS TO BE DOUBLE WALL INSULATED WITH INTERIOR WALL SOLID (NOT PERFORATED).

## KEYED NOTES

- 1 42"x170" OPENING ON TOP OF DUCT. COVER OPENING WITH 1/2" EXPANDED METAL SECURED TO DUCTWORK.
- 2 DUCTWORK SIDEWAYS TO ROOFTOP UNIT NOTED. SEE M3-2 FOR ADDITIONAL UNIT LOCATION INFORMATION.
- 3 PROVIDE 6" DRYER VENT. ROUTE TO EXTERIOR WALL. INSTALL PER MANUFACTURER'S INSTRUCTION.

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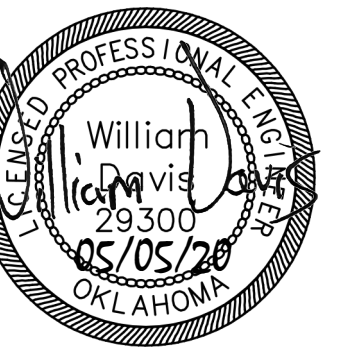
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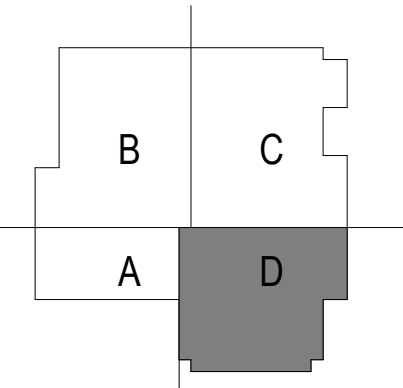
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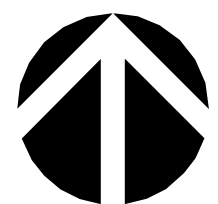
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SHEET TITLE:

MECHANICAL DUCTWORK  
PLAN - AREA D

DISCIPLINE - CATEGORY - SUB CATEGORY -

M1-1D



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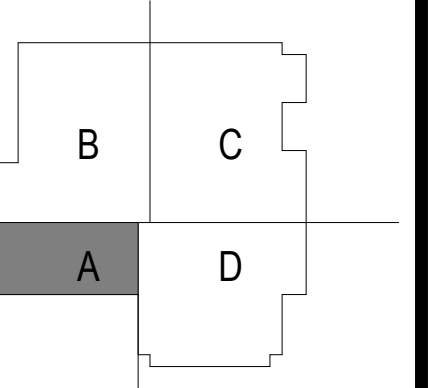


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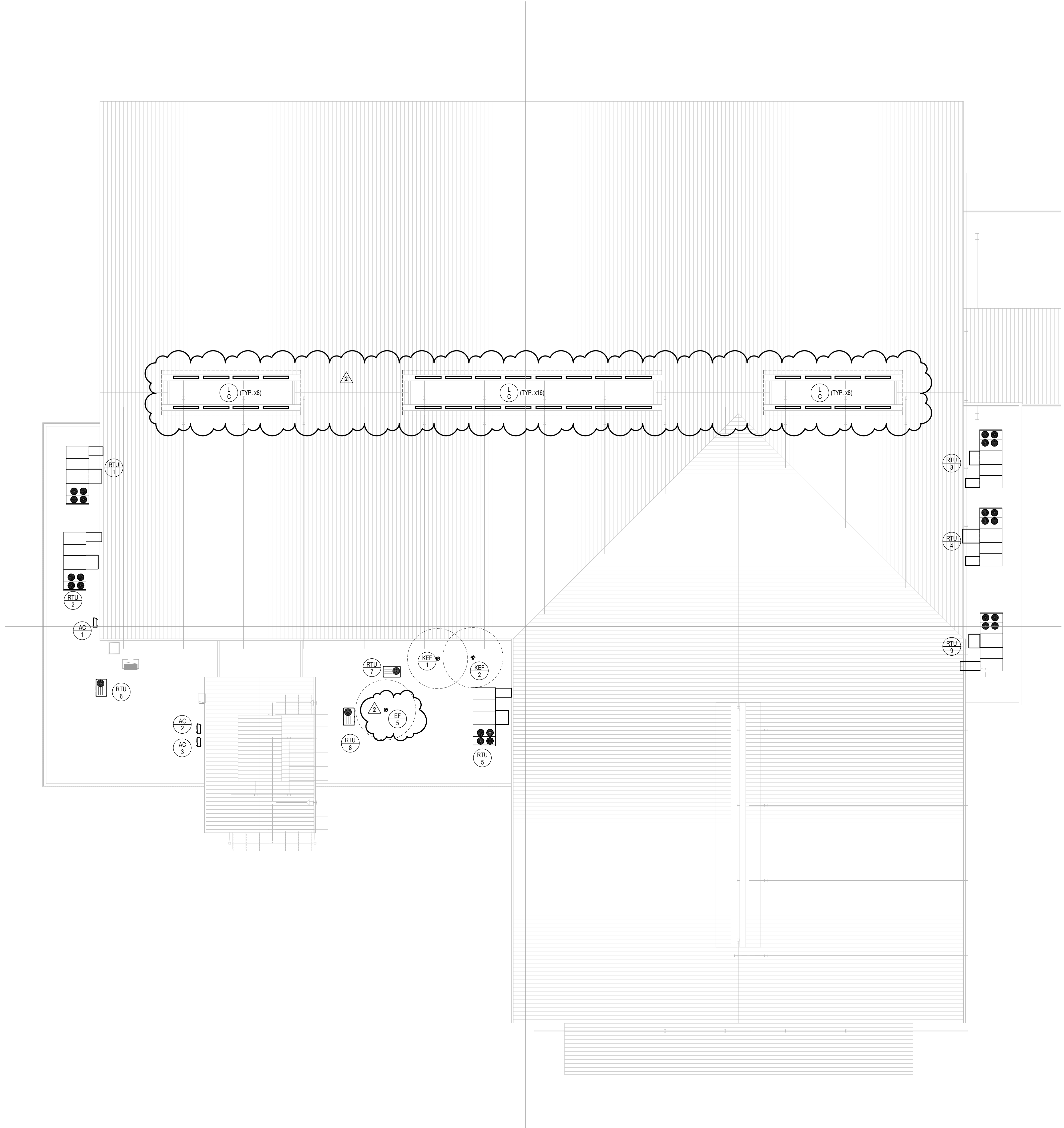
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SHEET TITLE:

MECHANICAL PLAN - ROOF

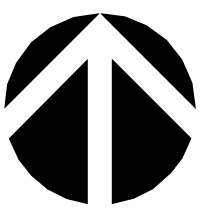
DISCIPLINE - CATEGORY - SUB CATEGORY -

M3-2



## 1 MECHANICAL ROOF PLAN

**1/16" = 1'-0"**

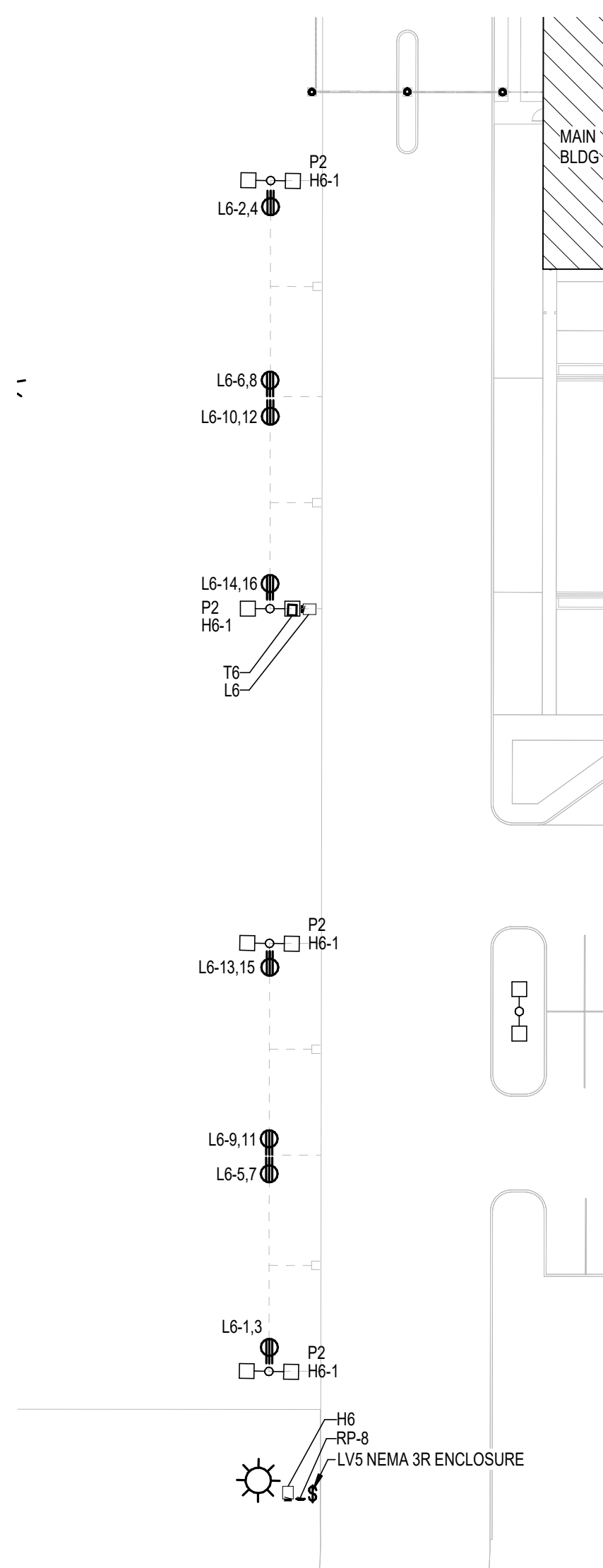


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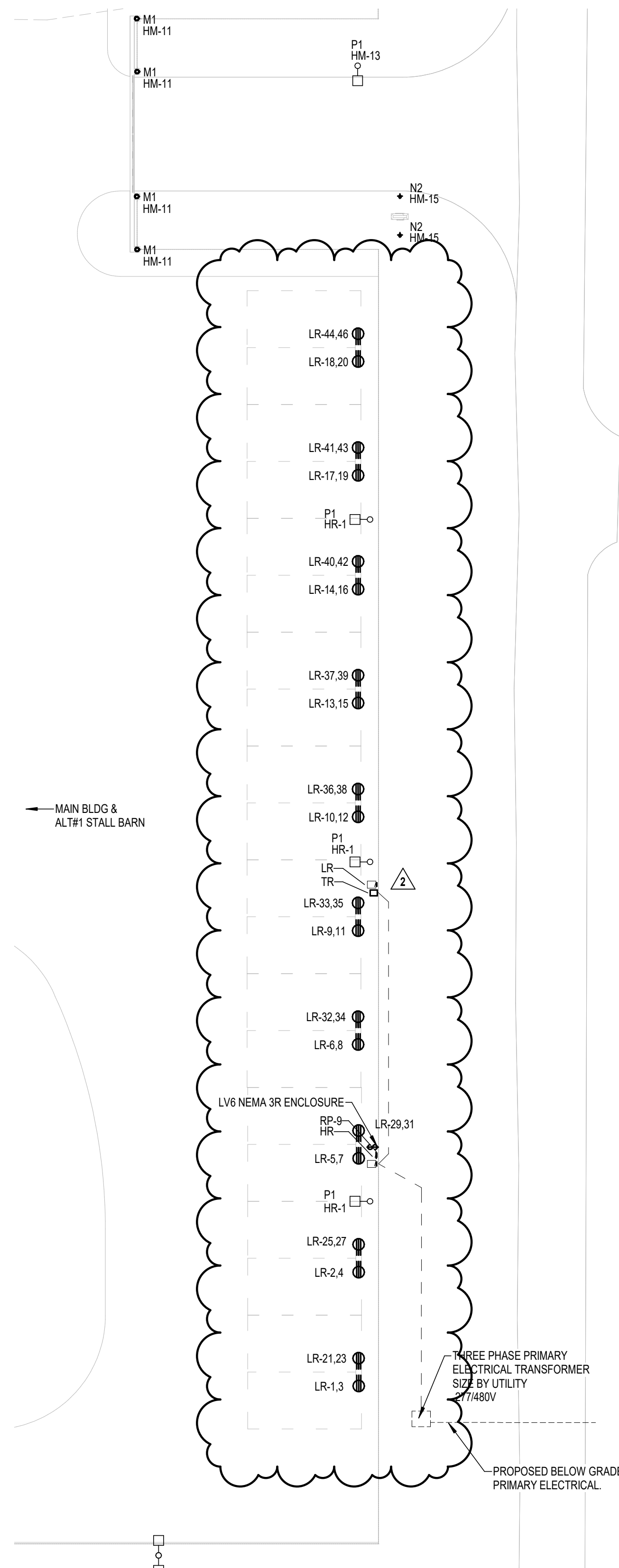


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### 3 ELECTRICAL FRONT ENTRANCE SIGN




## 2 ELECTRICAL VENDOR PLAN - WEST



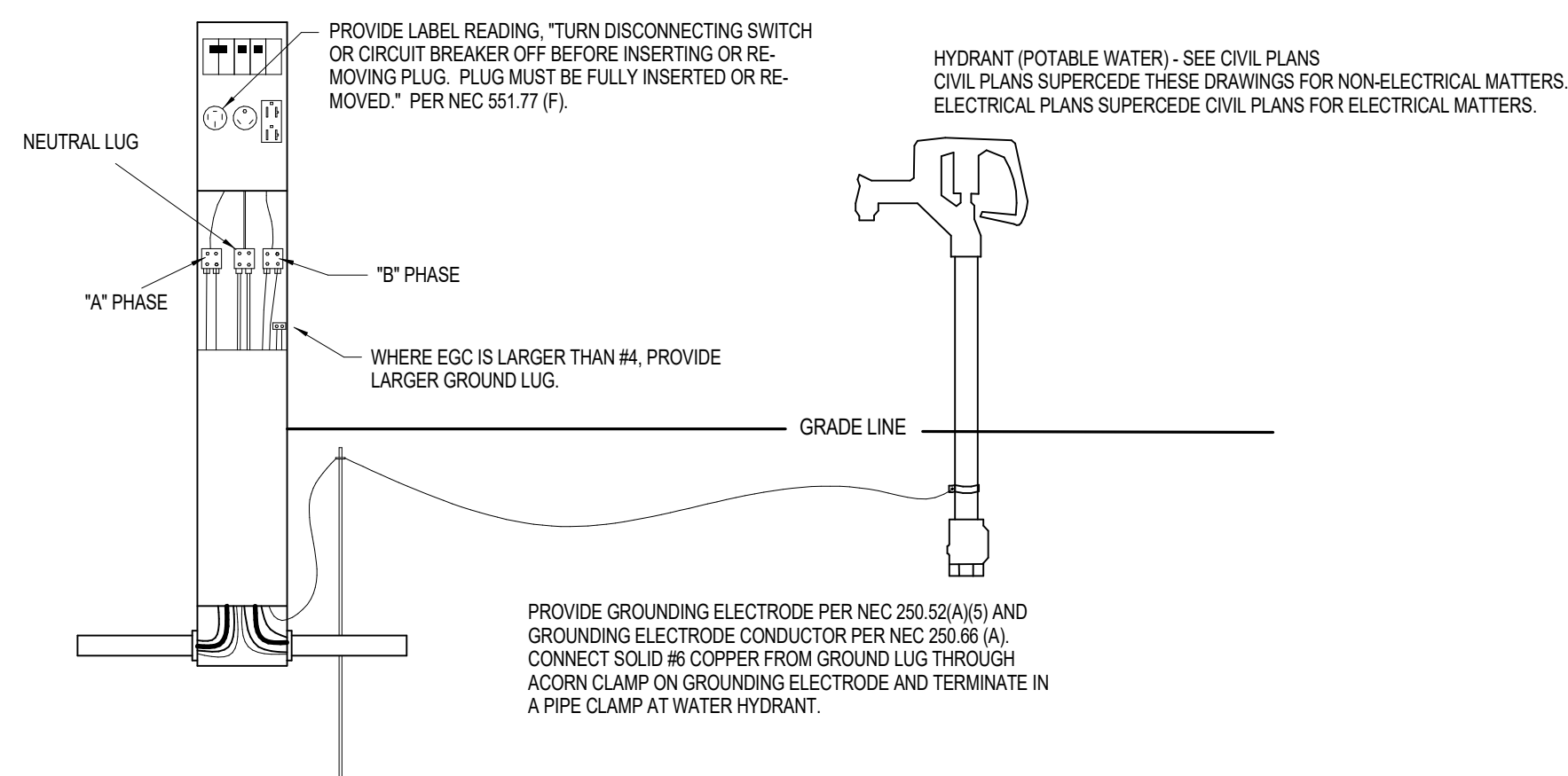
# 1 ELECTRICAL VENDOR PLAN - EAST

PER NEC 551, CALCULATED PANEL LOAD FOR # OF PEDESTALS:  
WEST SIDE  
 8 POWER PEDESTALS; THEREFORE 55% OF FULL LOAD AT EACH PEDESTAL  
 $50 \times 240V = 12,000$ ;  $12,000 \times .55 = 6,600VA$  EACH PEDESTAL

EAST SIDE  
 20 POWER PEDESTALS; THEREFORE 45% OF FULL LOAD AT EACH PEDESTAL  
 $50 \times 240V = 12,000$ ;  $12,000 \times .45 = 5,400VA$  EACH PEDESTAL

RECEPTACLE SCHEDULE	
SYMBOL	DESCRIPTION
	<p>[SYMBOL UNIQUE FOR THIS SHEET]</p> <p>50A MILBANK PEDESTAL            U3300-O-75.            RECEPTACLES:            1-50A 240V, 1-30A 120V, 2-120V.            BREAKERS:            1-50A 2P, 1-30A 1P, 1-20A 1P.</p> <p>100A FEED THRU MINIMUM.</p>

GENERAL NOTE:  
SEE SPECIFICATIONS FOR MANUFACTURERS



## 4 RV PEDESTAL DETAIL



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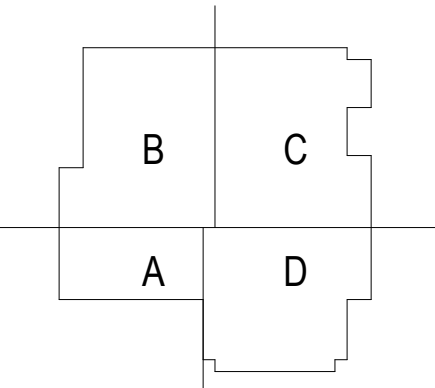
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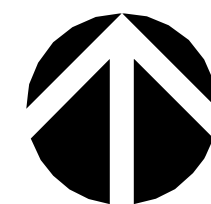
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SHEET TITLE:

ELECTRICAL SITE  
ENLARGED AREA PLAN

DISCIPLINE - CATEGORY - SUB CATEGORY -

E0-3

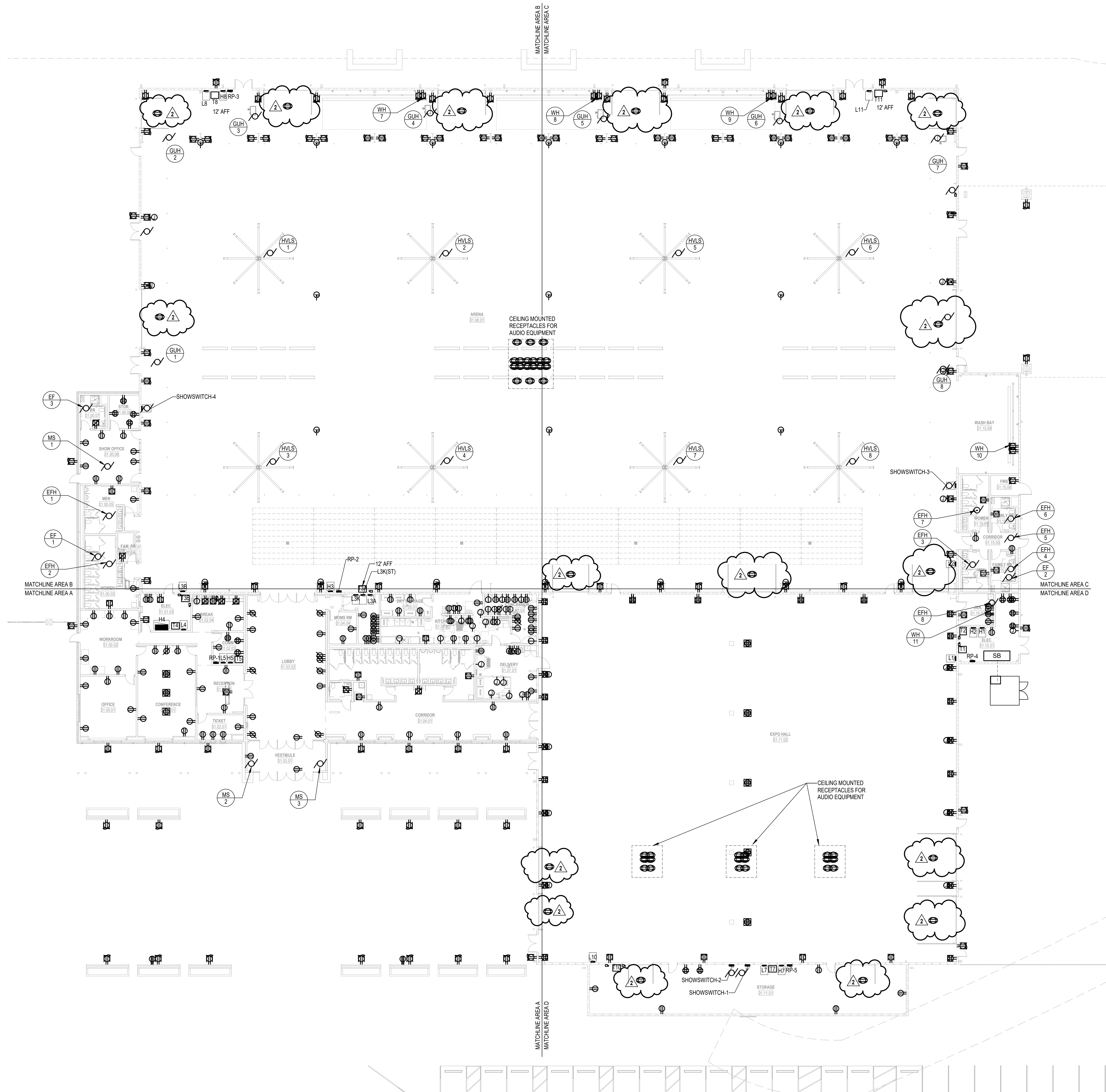


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## 1 ELECTRICAL POWER PLAN - OVERALL

**1/16" = 1'-0"**

## GENERAL NOTES

1. SEE E02 FOR SYMBOLS, ABBREVIATIONS AND ADDITIONAL, GENERAL NOTES.
2. SEE ARCHITECTURAL, MECHANICAL, PLUMBING, AND FIRE PROTECTION DRAWINGS FOR ADDITIONAL INFORMATION AND EQUIPMENT LOCATIONS.
3. FIRE STOP ALL PENETRATIONS IN FIRE AND SMOKE RATED WALLS. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS.
4. GFCI RECEPTACLES SHALL BE PROVIDED WHERE RECEPTACLES ARE LOCATED WITHIN 6' OF A SINK.
5. EXTERIOR RECEPTACLES SHALL HAVE WEATHERPROOF ENCLOSURE/COVER.
6. SEE PANEL SCHEDULE FOR NAME RATINGS OF PANELS.
7. GAS USED IN HEATERS (GHS) SHALL HAVE LINE VOLTAGE TRANSFORMER INSTALLED BY EC. PROVIDED BY MC. SEE MECHANICAL PLANS (AND COORDINATE WITH MC) FOR THE TRANSFORMER LOCATIONS.
8. RESTROOM EXHAUST FANS (120V, 1HP OR LESS TYPICAL) ARE INTERLOCKED WITH THE LIGHTS. TYPICALLY 2'20" PROVIDE RELAY FOR INTERLOCK WITH LIGHTS.
9. PROVIDE 4'0" HUEKING PANE FOR ALL ELECTRICAL EQUIPMENT ON GRADE (TRANSFORMERS, MBS, ETC).
10. MECHANICAL LOUVERS IN ARENA & EXPO SHALL HAVE INDIVIDUAL SWITCHES. LOUVERS BY MC, WIRING AND SWITCH BY EC.
11. DISCONNECTS FOR MECHANICAL EQUIPMENT ARE DESCRIBED ON MECHANICAL CONNECTION SCHEDULE ON SHEET E2-4.
12. WITHIN LARGE AREN OR AGRICULTURAL AREAS SUCH AS ARENA, EXPO & STALL BARN: -REVIEW AND FOLLOW NEW ARTICLE 547 FOR AGRICULTURAL BLDGS. -QUAD 10 RECEPTACLES 6' & 4' AFF. (UNLESS OTHERWISE NOTED). -QUAD 20 RECEPTACLES SHALL HAVE INTERNAL GFCI AND WEATHERPROOF ENCLOSURE THAT ALLOWS FOR USE WHILE COVERED, AND ACCEPT 5-UP & 5-OP PLUGS. -RIGID CONDUIT & BELOW. -WHERE SHOWN ON STRUCTURAL STEEL, INSTALL RECEPTACLE INSIDE W/EGG DUCT TO HELP PROTECT FROM DAMAGE. -STEPDOWN TRANSFORMERS HUNG OVERHEAD @ 12' AFF.



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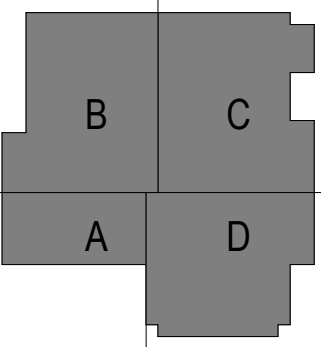


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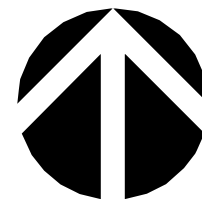
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SHEET TITLE:  
ELECTRICAL POWER PLAN -  
OVERALL

DISCIPLINE - CATEGORY - SUB CATEGORY -

E2-0

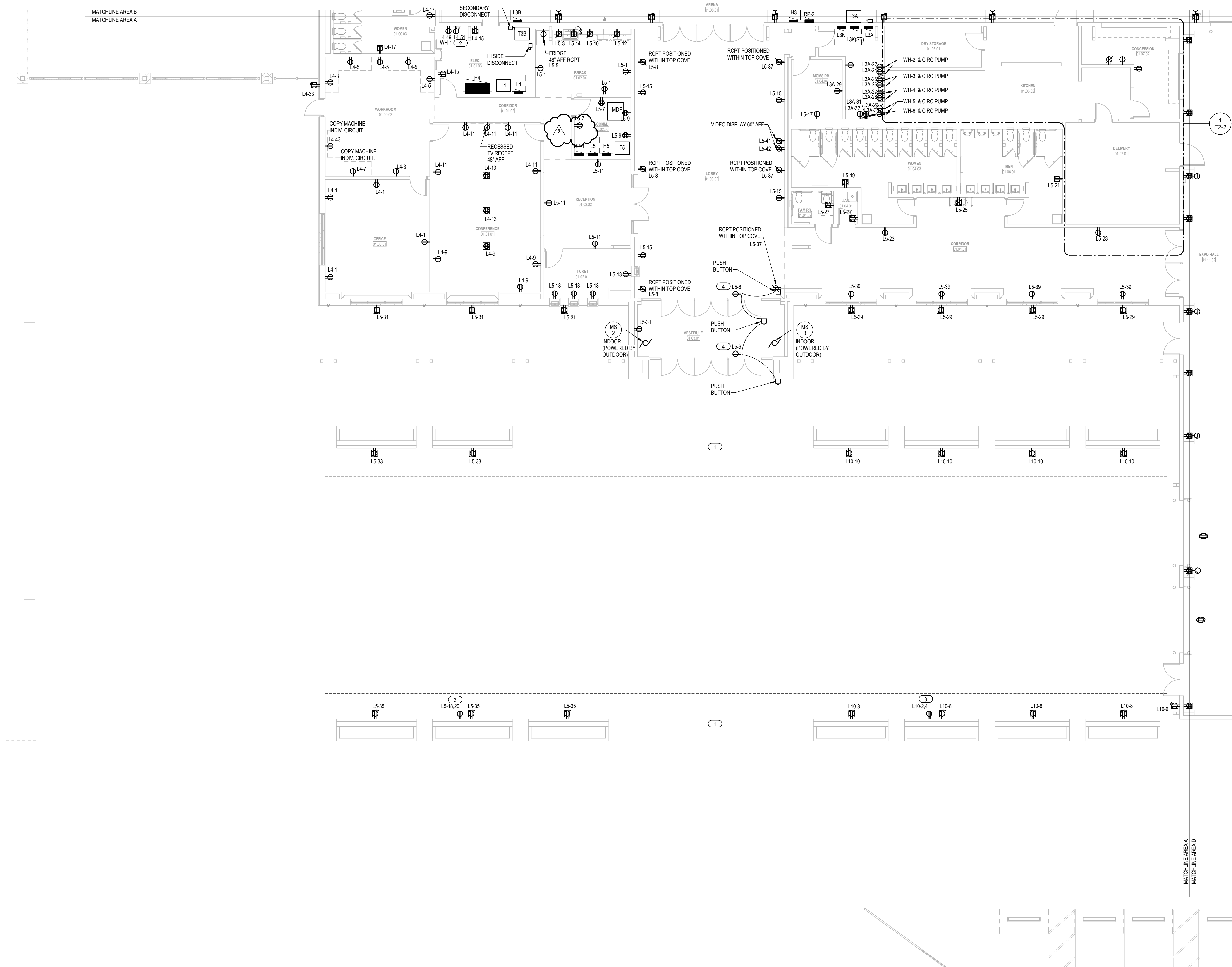


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## 1 ELECTRICAL POWER PLAN - AREA A

---

1/8" = 1'-0"

## GENERAL NOTES

3. EDP-1 FOR SYMBOLS, ABBREVIATIONS AND ADDITIONAL GENERAL NOTES.
4. SEE ARCHITECTURAL, MECHANICAL, PLUMBING, AND FIRE PROTECTION DRAWINGS FOR ADDITIONAL INFORMATION AND EQUIPMENT LOCATIONS.
5. FIRE STOP ALL PENETRATIONS IN FIRE AND SMOKE RATED WALLS. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS.
6. GFCI RECEPTACLES SHALL BE PROVIDED WHERE RECEPTACLES ARE LOCATED WITHIN 6' OF A SINI.
7. EXTERIOR RECEPTACLES SHALL HAVE WEATHERPROOF ENCLOSURE/COVER.
8. SEE PANEL SCHEDULE FOR NEMA RATINGS OF PANELS.
9. GAS UNIT VENTILATORS (GUVH) SHALL HAVE LINE VOLTAGE THERMOSTAT INSTALLED BY EC. PROVIDED BY MC. SEE MECHANICAL PLANS (AND COORDINATE WITH MC) FOR THE THERMOSTAT LOCATIONS.
10. RESTROOM EXHAUST FANS (120V, 1HP OR LESS TYPICAL) ARE INTERLOCKED WITH THE LIGHTS. TYPICALLY 27V. PROVIDE RELAY FOR INTERLOCK WITH LIGHTS.
11. PROVIDE 4" HOUSEKEEPING PAD FOR ALL ELECTRICAL EQUIPMENT LOCATED ON GRADE (TRANSFORMERS, MGR. ETC.)
12. MECHANICAL VENTILATORS IN ARENA & EXPO SHALL HAVE INDIVIDUAL SWITCHES. LOCATED BY MC. WIRING AND SWITCH BY EC.
13. DISCONNECTS FOR MECHANICAL EQUIPMENT ARE DESCRIBED ON MECHANICAL CONNECTION SCHEDULE ON SHEET EC.
14. WITHIN LARGE ARENA OPEN ARCHITECTURAL AREAS SUCH AS ARENA, EXPO & STALL BARN, REVIEW AND FOLLOW NEW ARTICLE 91.7 FOR ARCHITECTURAL BLDGS.  
-QUAD 20A RECEPTACLES @ 40' AFF. INTERNAL GFCI'S REQUIRED.  
-QUAD 20B RECEPTACLES SHALL HAVE INTERNAL GFCI'S.  
-QUAD 20C RECEPTACLES SHALL HAVE INTERNAL GFCI'S.  
-QUAD 20D RECEPTACLES SHALL HAVE INTERNAL GFCI'S.  
-QUAD 20E RECEPTACLES SHALL HAVE INTERNAL GFCI'S.  
-QUAD 20F RECEPTACLES SHALL HAVE INTERNAL GFCI'S.  
-QUAD 20G RECEPTACLES SHALL HAVE INTERNAL GFCI'S.  
-QUAD 20H RECEPTACLES SHALL HAVE INTERNAL GFCI'S.  
-QUAD 20I RECEPTACLES SHALL HAVE INTERNAL GFCI'S.  
-QUAD 20J RECEPTACLES SHALL HAVE INTERNAL GFCI'S.  
-QUAD 20K RECEPTACLES SHALL HAVE INTERNAL GFCI'S.  
-QUAD 20L RECEPTACLES SHALL HAVE INTERNAL GFCI'S.  
-QUAD 20M RECEPTACLES SHALL HAVE INTERNAL GFCI'S.  
-QUAD 20N RECEPTACLES SHALL HAVE INTERNAL GFCI'S.  
-QUAD 20O RECEPTACLES SHALL HAVE INTERNAL GFCI'S.  
-QUAD 20P RECEPTACLES SHALL HAVE INTERNAL GFCI'S.  
-QUAD 20Q RECEPTACLES SHALL HAVE INTERNAL GFCI'S.  
-QUAD 20R RECEPTACLES SHALL HAVE INTERNAL GFCI'S.  
-QUAD 20S RECEPTACLES SHALL HAVE INTERNAL GFCI'S.  
-QUAD 20T RECEPTACLES SHALL HAVE INTERNAL GFCI'S.  
-QUAD 20U RECEPTACLES SHALL HAVE INTERNAL GFCI'S.  
-QUAD 20V RECEPTACLES SHALL HAVE INTERNAL GFCI'S.  
-QUAD 20W RECEPTACLES SHALL HAVE INTERNAL GFCI'S.  
-QUAD 20X RECEPTACLES SHALL HAVE INTERNAL GFCI'S.  
-QUAD 20Y RECEPTACLES SHALL HAVE INTERNAL GFCI'S.  
-QUAD 20Z RECEPTACLES SHALL HAVE INTERNAL GFCI'S.

## KEYED NOTES

- 1 GFCI RECEPTACLES ON SEATING/PLANTER COMBO. RECESSED INTO THE VERTICAL CONCRETE FACE.
- 2 RECEPTACLE FOR CIRC PUMP.
- 3 NEMA 6-30P 208/1 PHASE, WEATHER RESISTANT COVER, GFCI BREAKER.
- 4 RECEPTACLE TO POWER HANDICAP DOOR OPENER. COORDINATE EXACT CONNECTION TYPE WITH INSTALLERS.

## POPULOUS

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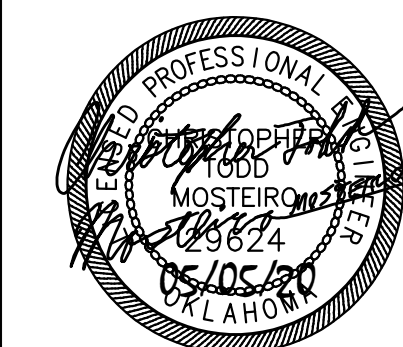
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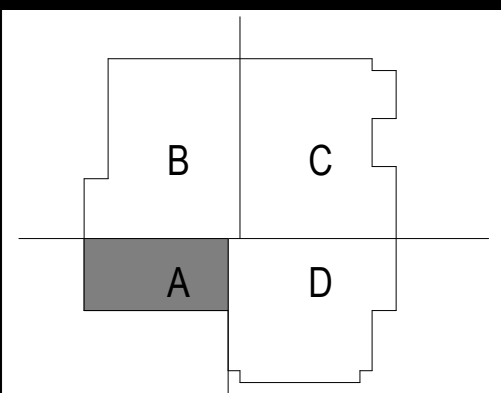


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CONSTRUCTION  
DOCUMENTS

3/20/2020

## REVISIONS

[illegible]

PROJECT	ISSUED BY:
18.4703	<b>POPULOUS</b>

SHEET TITLE:  
ELECTRICAL POWER PLAN -  
AREA A

DISCIPLINE - CATEGORY - SUB CATEGORY -

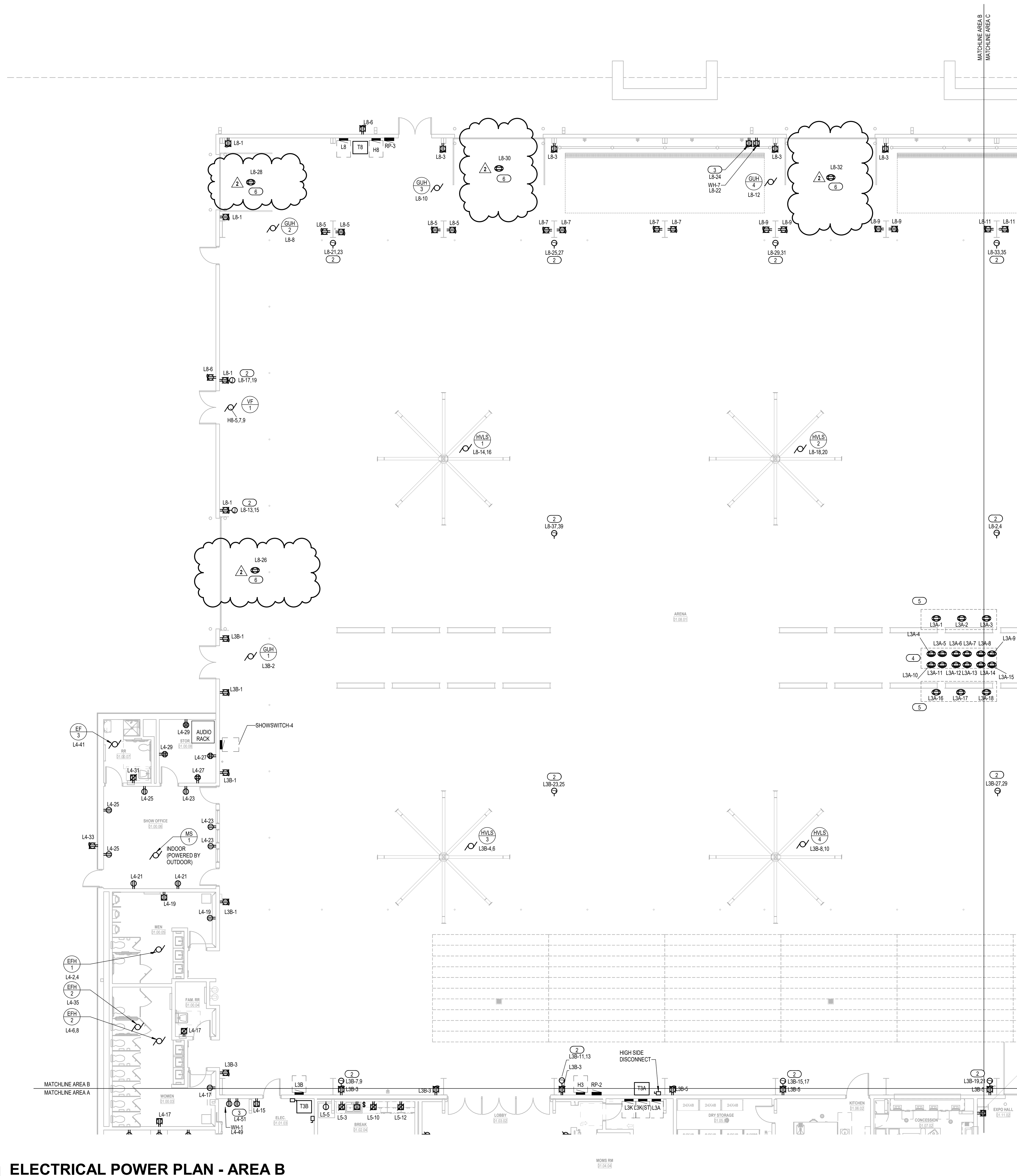
E2-1A



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## GENERAL NOTES

1. SEE E-2 FOR SYMBOLS, ABBREVIATIONS AND ADDITIONAL GENERAL NOTES.
2. SEE ARCHITECTURAL, MECHANICAL, PLUMBING, AND FIRE PROTECTION DRAWINGS FOR ADDITIONAL INFORMATION AND EQUIPMENT LOCATIONS.
3. FIRE STOP ALL PENETRATIONS IN FIRE AND SMOKE RATED WALLS. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS.
4. GFCI RECEPTACLES SHALL BE PROVIDED WHERE RECEPTACLES ARE LOCATED WITHIN 6' OF A SINK.
5. EXTERIOR RECEPTACLES SHALL HAVE WEATHERPROOF ENCLOSURE/COVER.
6. SEE PANEL SCHEDULE FOR NEMA RATINGS OF PANELS.
7. GAS BY PRODUCT (GUP) SHALL HAVE LINE VOLTAGE THERMOSTAT INSTALLED BY EC.
8. PROVIDED BY MC: SEE MECHANICAL PLANS AND COORDINATE WITH MC FOR THE THERMOSTAT LOCATION.
9. BRESTROOM EXHAUST FANS (120V, 1HP OR LESS TYPICAL) ARE INTERLOCKED WITH THE LIGHTS. TYPICALLY 1/200V PROVIDE DELAY FOR INTERLOCK WITH LIGHTS.
9. PROVIDE 4 HOUSEKEEPING PAD FOR ALL ELECTRICAL EQUIPMENT LOCATED ON GRADE (TRANSFORMERS, MSB, ETC).
10. MECHANICAL LOUVERS IN ARENA & EXPO SHALL HAVE INDIVIDUAL SWITCHES. LOUVERS BY MC. WIRING AND SWITCH BY EC.
11. DISCONNECTS FOR MECHANICAL EQUIPMENT ARE DESCRIBED ON MECHANICAL CONNECTION SCHEDULE ON SHEET E2-4.
12. WITHIN LARGE OPEN ARCHITECTURAL AREAS SUCH AS ARENA, EXPO & STALL BARN: REMOVE AND FOLLOW NEW ARTICLE 54-4 FOR AGRICULTURAL BUILDINGS.  
-QUAD 20 RECEPTACLES @ 48" AFF UNLESS OTHERWISE NOTED.  
-QUAD 20 RECEPTACLES SHALL BE PROVIDED IN ARENA, EXPO, AND STALL BARN.  
-QUAD 20 RECEPTACLES/ENCLOSURE THAT ALLOWS FOR USE WHILE CONNECTED AND ACCEPT 5 HP & 2-50P LOADS.  
-RIGID CONDUIT 2" AND BELOW  
-WHERE SHOWN ON STRUCTURAL STEEL, INSTALL RECEPTACLE INSIDE WEEP OF BEAM TO HELP PROTECT IT.  
-STEPDOWN TRANSFORMERS HUNG OVERHEAD @ 12" AFF.  
-STEPDOWN TRANSFORMER DISCONNECT - 48" AFF

## KEYED NOTES

- 1 HIGH AMP COMPANY SWITCH (AKA SHOW SWITCH)  
200A, 120/208V, 4W-G.
- 3 BUSES OF DESIGN 5A A STAGCRAFT SERIES 7 MODEL # 97A25111-310-1004 THAT HAS  
6.5 CMA/COOK OUTLET RECEPTACLES & 15 LUGS OUTPUTS FOR BARE WIRE  
CONNECTIONS.  
ENCLOSURE SIZE IS 24" W X 36" H X 10" D.
- 2 100A 120/208V 2-PHASE (NOT 3-PHASE) APPLITION PLUG, 1, 2, L, N, G.
- 3 RECEPTACLE FOR CIRC PUMP.
- 4 CLUSTER OF INDIVIDUALLY CIRCUITED DUPLEX RECEPTACLES IN OVERHEAD FOR  
AUDIO SYSTEM. COORDINATE EXACT LOCATION WITH AV INSTALLERS. PROVIDE  
UNINTRUST AND SURFACE MOUNT BOXES.
- 5 OVERHEAD RECEPTACLES FOR HOSTS ABOVE SPEAKER ARRAYS. COORDINATE  
EXACT LOCATION WITH AV INSTALLERS. PROVIDE UNINTRUST AND SURFACE MOUNT  
BOXES.
- 6 RECEPTACLE MOUNTED AT CEILING HEIGHT FOR MOTORIZED DOOR OPER.

## 1 ELECTRICAL POWER PLAN - AREA B

**1/8" = 1'-0"**

## POPULOUS

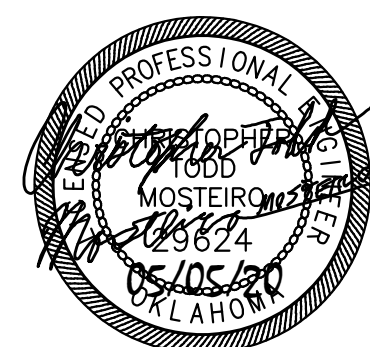
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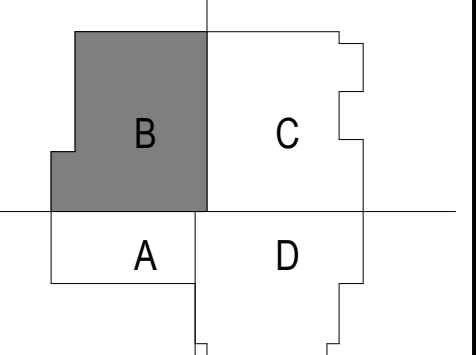
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DOCUMENTS

3/20/2020

## REVISIONS

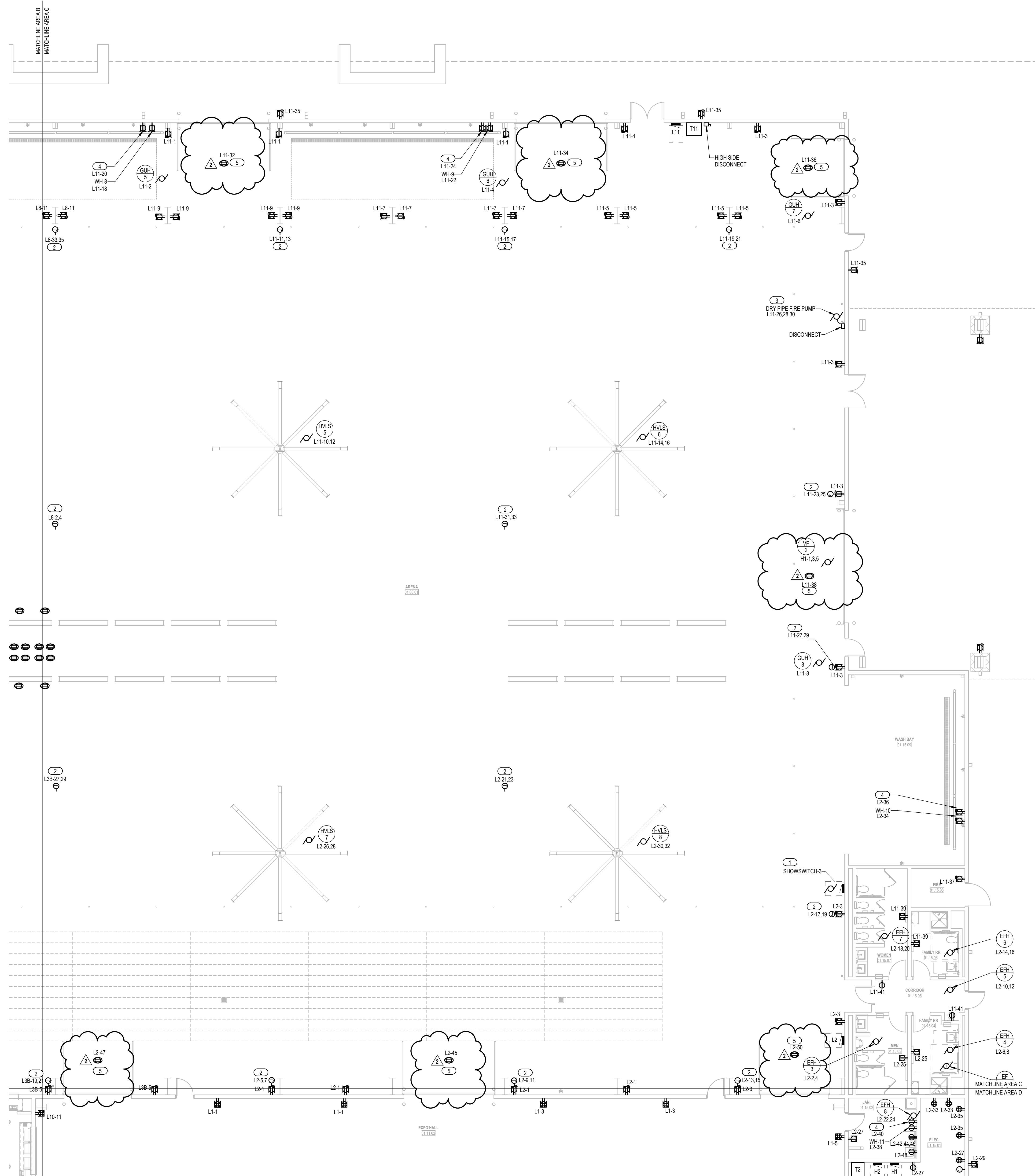
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PROJECT	ISSUED BY:
18.4703	<b>POPULOUS</b>

SHEET TITLE:  
ELECTRICAL POWER PLAN -  
AREA B

DISCIPLINE - CATEGORY - SUB CATEGORY

E2-1B



# 1 ELECTRICAL POWER PLAN - AREA C

**1/8" = 1'-0"**

## GENERAL NOTES

2. SEE E2-01 FOR SYMBOLS, ABBREVIATIONS AND ADDITIONAL, GENERAL, NOTES
3. SEE ARCHITECTURAL, MECHANICAL, PLUMBING, AND FIRE PROTECTION DRAWINGS FOR ADDITIONAL INFORMATION AND EQUIPMENT LOCATIONS.
3. FIRE STOP ALL PENETRATIONS IN FIRE AND SMOKE RATED WALLS. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS.
4. GFCI RECEPTACLES SHALL BE PROVIDED WHERE RECEPTACLES ARE LOCATED WITHIN 6' OF A SNK.
5. EXTERIOR RECEPTACLES SHALL HAVE WEATHERPROOF ENCLOSURE/COVER
6. SEE PANEL SCHEDULE FOR NEMA RATINGS OF PANELS.
7. GAS UTILITY METER(S) (GUH) SHALL HAVE LINE VOLTAGE THERMOSTAT INSTALLED BY EFC, PROVIDED BY MC. (SEE MECHANICAL PLANS) (AND COORDINATE WITH MC) FOR THE THERMOSTAT LOCATIONS.
8. RESTRICHT EXHAUST FANS (120V, 1HP OR LESS) TYPICALLY INTERLOCKED WITH THE LIGHTS, TYPICALLY 277V. PROVIDE RAY FOR INTERLOCK WITH LIGHTS.
9. PROVIDE 4' HOUSEKEEPING PAD FOR ALL ELECTRICAL EQUIPMENT LOCATED ON GRADE (TRANSFORMERS, MGB, ETC.)
10. MECHANICAL LOUVERS IN ARENA & EXPO SHALL HAVE INDIVIDUAL SWITCHES. LOUVERS BY MC, WIRING AND SWITCH BY EFC.
11. DISCONNECTS FOR MECHANICAL EQUIPMENT ARE DESCRIBED ON MECHANICAL CONNECTION SCHEDULE ON SHEET E2-4.
12. WITHIN LARGE OPEN AGRICULTURAL ARENAS SUCH AS ARENA, EXPO & STALL BARN: - REVIEW AND FOLLOW NEC ARTICLE 57 FOR AGRICULTURAL BLDGS. - QUAD 20A RECEPTACLES 20A 4P 40' AWAY OTHERWISE NOTED. - QUAD 20A RECEPTACLES SHALL HAVE INTERNAL GFCI AND WEATHERPROOF ENCLOSURE/COVER THAT ALLOWS FOR USE WHILE COVERED, AND ACCEPT 1500V 4-50P PLUGS. - RIGID CONDUIT & BELOW. - WHERE SHOWN ON STRUCTURAL STEEL, INSTALL RECEPTACLE INSIDE "NEST OF BEAM" TO HELP PROTECT IT. - STEP-DOWN TRANSFORMERS HUNG OVERHEAD @ 12' AFF.

## KEYED NOTES

- 1 HIGH AMP SWITCH PLUG (AKA SHOW SWITCH)  
200A, 120/208V, 4W/4G
- 2 BASIC OF DESIGN IS A STAGEFACIT SERIES 7 MODEL AT 7A2511-131-0100 THAT HAS  
(5) CAILCLOCK OUTPUT RECEPTACLES & (5) LOG OUTPUTS FOR BARE WIRE  
CONNECTIONS.  
ENCLOSURE SIZE IS 24" W X 36" H X 10" D.
- 3 100A 120/208V 2 PHASE (NOT 3 PHASE) APPLETON PLUG (L1, L2, N, G).
- 4 DRY PIPE SPRINKLER PUMP ESTIMATED SIZE AT TIME OF DESIGN IS 2080 PSI, 203  
BREAKEP, COORDINATE ACTUAL CONNECTION AND ELEC FEED SIZE WITH FIRE  
PROTECTION CONTRACTOR.
- 5 RECEPTACLE FROM GROUND.
- 6 RECEPTACLE MOUNTED AT CEILING HEIGHT FOR MOTORIZED DOOR OPENER

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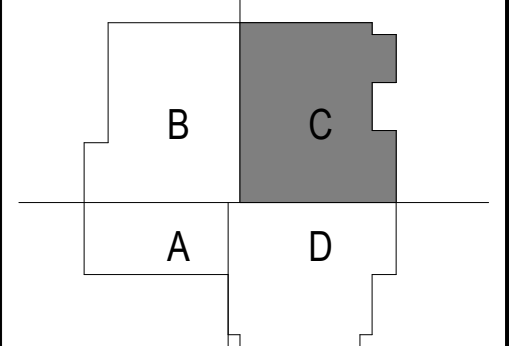
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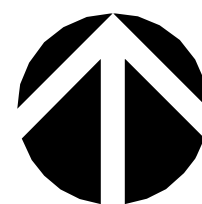
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PROJECT	ISSUED BY:
18.4703	<b>POPULOUS</b>

SHEET TITLE:  
ELECTRICAL POWER PLAN -  
AREA C

DISCIPLINE - CATEGORY - SUB CATEGORY

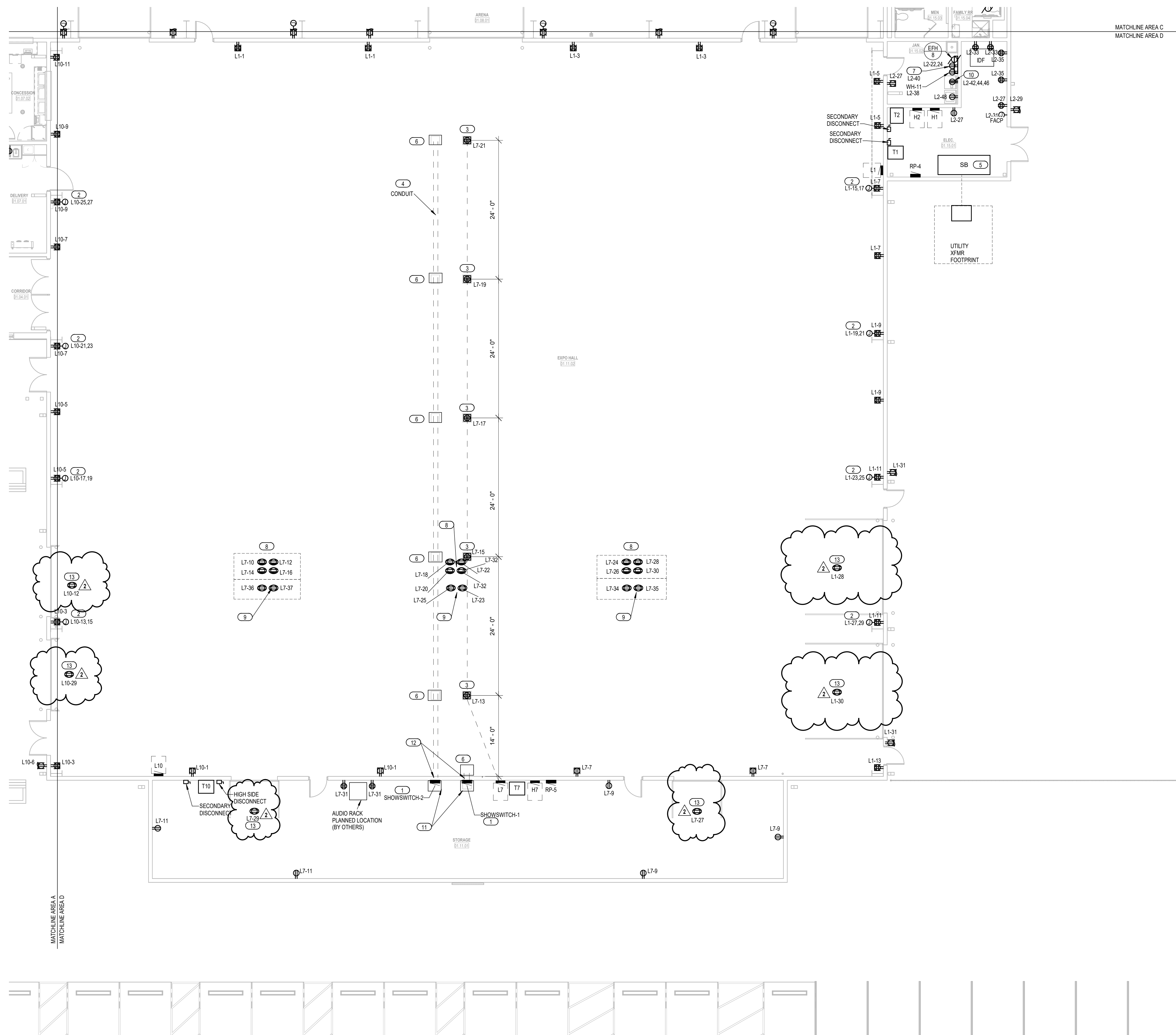
E2-1C



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# 1 ELECTRICAL POWER PLAN - AREA D

$$1/8'' = 1'-0''$$

## GENERAL NOTES

1. SEE E-1 FOR SYMBOLS, ABBREVIATIONS AND ADDITIONAL GENERAL NOTES.
2. SEE ARCHITECTURAL, MECHANICAL, PLUMBING AND FIRE PROTECTION DRAWINGS FOR ADDITIONAL INFORMATION AND EQUIPMENT LOCATIONS.
3. FIRE STOP ALL PENETRATIONS IN FIRE AND SMOKE TREATED WALLS. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS.
4. GFCI RECEPTACLES SHALL BE PROVIDED WHERE RECEPTACLES ARE LOCATED WITHIN 6' OF A SINK.
5. EXTERIOR RECEPTACLES SHALL HAVE WEATHERPROOF ENCLOSURE/COVER.
6. SEE PANEL SCHEDULE FOR NEMA RATINGS OF PANELS.
7. GAS UNIT HEATERS (GUH) SHALL HAVE LINE VOLTAGE THERMOSTAT INSTALLED BY FIRE. PROVIDED BY MC. SEE MECHANICAL PLANS (AND COORDINATE WITH MC) FOR THE THERMOSTAT LOCATIONS.
8. RESTRICT EXHAUST FANS (1/2HP, 1/4HP OR LESS TYPICAL) ARE INTERLOCKED WITH THE LIGHTS. PROVIDE REMOTE SWITCH FOR INTERLOCK WITH LIGHTS.
9. PROVIDE 4" HOUSEKEEPING PAD FOR ALL ELECTRICAL EQUIPMENT LOCATED ON GRADE TRANSFORMERS (MMS, ETC.)
10. MECHANICAL VULNERA N AREA AND EXPO SHALL HAVE INDIVIDUAL SWITCHES. LOUVERS BY MC. WIRING AND SWITCH BY EPC.
11. DISCONNECTS FOR MECHANICAL EQUIPMENT ARE DESCRIBED ON MECHANICAL CONNECTION SCHEDULE ON SHEET E2-4.
12. WITH LARGE OPEN AGRICULTURAL AREAS SUCH AS ARENA, EXPO & STALL BARN: REVIEW AND FOLLOW NEC ARTICLE 547 FOR AGRICULTURAL BLDGS.  
QUAD 20A RECEPTACLES @ 4" AFF UNLESS OTHERWISE NOTED.  
QUAD 20B RECEPTACLES @ 4" AFF UNLESS OTHERWISE NOTED (EPC) AND WEATHERPROOF ENCLOSURE/COVER THAT ALLOWS FOR USE WHILE COVERED, AND ACCEPT 5-15R & 20P LOADS.  
RIGID CONDUIT (1" AND 1 1/2")  
-WHERE SHOWN ON STRUCTURAL STEEL, INSTALL RECEPTACLE INSIDE  
-USE OF BEAM TO HELP PROTECT IT  
-STEPDOWN TRANSFORMER LOCATED OVERHEAD @ 12' DIFF.  
-STEPDOWN TRANSFORMER DISCONNECT - 48" AFF

## KEYED NOTES

- 1 HIGH CAMP COMPANY SWITCH (AKA SHOW SWITCH)  
200A, 120/208V, 4W/3G
- 3 BASIS OF DESIGN IS A STAGFIRE SERVICE TYPE MODEL #172511-11301-040 THAT HAS 5C/4W/0C OUTPUTS (RECEPTACLES & J) AND 0C/OUTPUTS FOR BARE WIRE CONNECTIONS.
- 4 ENCLOSURE SIZE IS 24" W X 36" H X 10" D.
- 5 100A 120/208V 3 PHASE W/OT 3 PHASE APPLETON PLUG (L1, L2, N, G).
- 6 TRAFFIC RATED FLOORBOX WITH QUAD RECEPTACLE BASIS OF DESIGN IS "RESOURCE RFB SERIES FLOOR BOX, WITH WIREMOLD EVOLUTION SERIES HEAVY DUTY ROUND COUPLERS"
- 7 BELOW GRADE CONDUIT 2"Ø EMPTY.
- 8 MAIN SWITCHBOARD PLANNED DIMENSIONS: 108" W X 36" D X 92" H.
- 9 CONVENTION CENTER FLOORBOX WITH ID HIGH LOAD CAPACITY. TRAFFIC RATED. BASIS OF DESIGN IS "LEGAND WIREMOLD CPFS TYPE L" IN FLOOR DIMENSIONS: APPROX 16"Wx15"xDx24"Ø. GRD DIMENSION--22"Wx20"L.
- 10 RECEPTACLE FOR CRC PLUMP.
- 11 CLUSTER OF INDIVIDUALLY CIRCUITED DUPLEX RECEPTACLES IN OVERHEAD FOR AUDIO SYSTEM. COORDINATE EXACT LOCATION WITH AN INSTALLERS. PROVIDE UNITSRST AND SUPPORT BOXES.
- 12 OVERHEAD RECEPTACLES FOR HOISTS ABOVE SPEAKER ARRAYS. COORDINATE EXACT LOCATION WITH AN INSTALLERS. PROVIDE UNITSRST AND SUPPORT BOXES.
- 13 POWER FOR ELECTRIC DRYER. EC COORDINATE WITH OWNERS FOR EXACT REQUIREMENTS. IN ABSENCE OF ANY OTHER INFO, 208V 3PHASE, 4W/IE L1/L2/NG 50A LOADWIRE USIPSED 125' (20) CONTINUOUS LOAD, 15-50°C RATED.
- 14 CONVENTION CENTER FLOORBOX (CPFS) SET BELOW SHOWSWITCH TO SERVE AS A BARE WIRE OVERHEAD CONNECTION FOR SUPPLYING CABLES FOR STAGE WIRE. SIDE FLOORBOX FEEDS ROW OF CPFS. EAST SIDE FLOORBOX SERVES ANOTHER FLOORBOX SET JUST ON THE OTHER SIDE OF THE WALL. 2-6" CONDUITS CONNECTING THEM.
- 15 COORDINATE WITH STRUCTURAL. SLEEVE FOOTING FOR THE 6" CONDUITS.
- 16 RECEPTACLE MOUNTED AT CEILING HEIGHT FOR MOTORIZED DOW OPENER.

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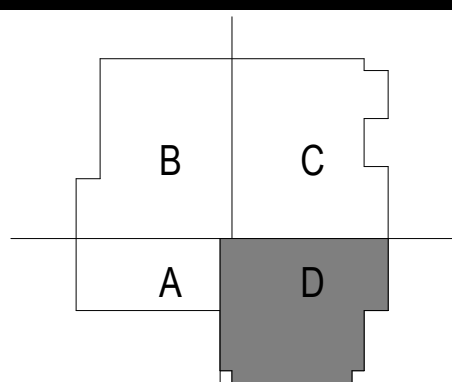


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DOCUMENTS

3/20/2020

## REVISIONS

[illegible]

PROJECT	ISSUED BY:
18.4703	<b>POPULOU</b>

SHEET TITLE:  
ELECTRICAL POWER PLAN  
AREA D

DISCIPLINE - CATEGORY - SUB CATEGORY

E2-1D

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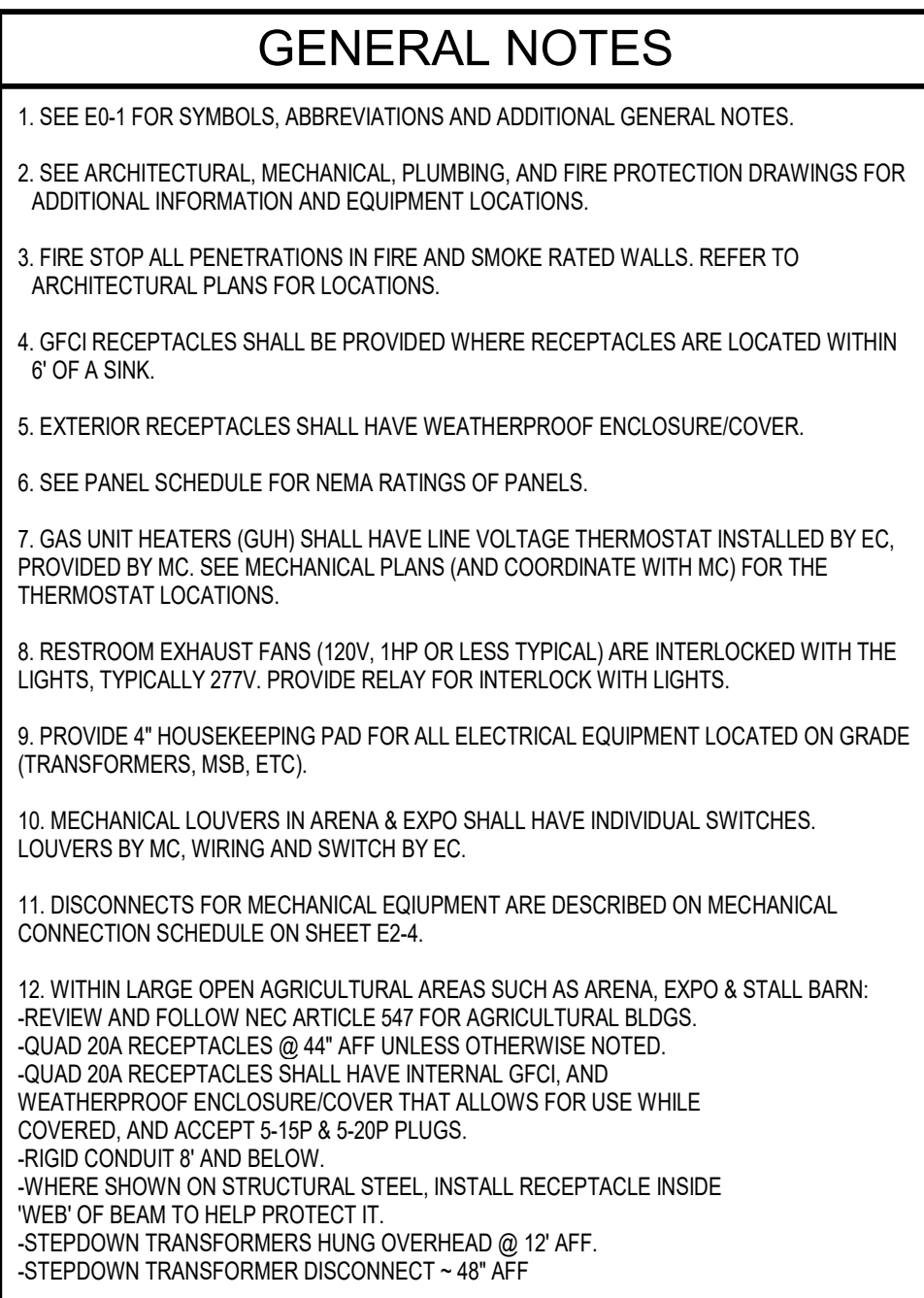


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## ALT #1 KEYED NOTES

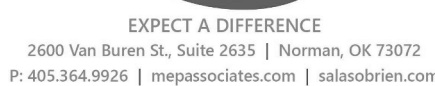
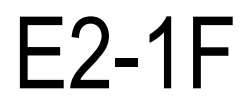
1	100A 120/208V 2 PHASE (NOT 3 PHASE) APPLETON PLUG (L1, L2, N, G) 2 POLE GFCI BREAKERS
2	SEE DETAIL SHEET FOR DIRECTION ON PLACING ELECTRICAL PANELS (01/18) ON THE NORTH AND SOUTH CORRAL PANELS TO PROVIDE POWER TO ONE QUAD RECEPTACLE MOUNTED IN EACH OF THE LIVESTOCK PANELS. TYPICAL OF ALL CORRAL PANELS.

1 100A 120/208V 2 PHASE (NOT 3 PHASE) APPLETON PLUG (L1, L2, N, G). 2 POLE GFCI BREAKERS

2 SEE DETAIL SHEET FOR DIRECTION ON PLACING ELECTRICAL PANELS (QTY:8) ON THE NORTH AND SOUTH CORRAL PANELS TO PROVIDE POWER TO ONE QUAD RECEPTACLE MOUNTED IN EACH OF THE LIVESTOCK PANELS. TYPICAL OF ALL CORRAL PANELS.

1 100A 120/208V 2 PHASE (NOT 3 PHASE) APPLETON PLUG (L1, L2, N, G). 2 POLE GFCI BREAKERS

2 SEE DETAIL SHEET FOR DIRECTION ON PLACING ELECTRICAL PANELS (QTY:8) ON THE NORTH AND SOUTH CORRAL PANELS TO PROVIDE POWER TO ONE QUAD RECEPTACLE MOUNTED IN EACH OF THE LIVESTOCK PANELS. TYPICAL OF ALL CORRAL PANELS.



# 1 ELECTRICAL ROOF PLAN

$$1/16'' = 1'-0''$$

## GENERAL NOTES

1. SEE E-01 FOR SYMBOLS, ABBREVIATIONS AND ADDITIONAL GENERAL NOTES.
2. SEE ARCHITECTURAL, MECHANICAL, PLUMBING, AND FIRE PROTECTION DRAWINGS FOR ADDITIONAL INFORMATION AND EQUIPMENT LOCATIONS.
3. FIRE STOP ALL PENETRATIONS IN FIRE AND SMOKE RATED WALLS. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS.
4. GFCI RECEPTACLES SHALL BE PROVIDED WHERE RECEPTACLES ARE LOCATED WITHIN 6' OF A SINK.
5. EXTERIOR RECEPTACLES SHALL HAVE WEATHERPROOF ENCLOSURE/COVER.
6. SEE PANEL SCHEDULE FOR NEMA RATINGS OF PANELS.
7. GAS WET HEATERS (GUH) SHALL HAVE LINE VOLTAGE THERMOSTAT INSTALLED BY EC.
8. PROVIDED BY MC. SEE MECHANICAL PLANS (AND COORDINATE WITH MC) FOR THE THERMOSTAT LOCATIONS.
9. RESTROOM EXHAUST FANS (120V, 1/4" OR LESS) TYPICAL ARE INTERLOCKED WITH THE LIGHTS. TYPICALLY 27V. PROVIDE PLAY FOR INTERLOCK WITH LIGHTS.
9. PROVIDE 4" NUISANCE EXC. PAD FOR ALL ELECTRICAL EQUIPMENT LOCATED ON GRADE (TRANSFORMERS, MISC.).
10. MECHANICAL WIRING IN ARENA & EXPO SHALL HAVE INDIVIDUAL SWITCHES. LOUVERS BY MC. LOUVERS AND SWITCH BY EC.
11. DISCONNECTS FOR MECHANICAL EQUIPMENT ARE DESCRIBED ON MECHANICAL CONNECTION SCHEDULE ON SHEET E2-4.
12. WITHIN LARGE OPEN ARCHITECTURAL AREAS SUCH AS ARENA, EXPO & STALL BARN, REFER AND FOLLOW NEC ARTICLE 54 FOR ARCHITECTURAL BULBS.  
QUAD 20A RECEPTACLES @ 44" AFF (UNLESS OTHERWISE NOTED).  
QUAD 20A RECEPTACLES SHALL BE PROVIDED IN ARENA, GFCI AND WEATHERPROOF ENCLOSURE/COVER THAT ALLOWS FOR USE WHILE COVERED, AND ACCEPT 5'HP & 20P LOADS.  
RSCD CONDUIT 6" AND BELOW  
--WHERE SHOWN ON STRUCTURAL STEEL, INSTALL RECEPTACLE INSIDE WEB OF BEAM TO HELP PROTECT IT.  
--STEPDOWN TRANSFORMER DISCONNECT @ 17.5' AFF  
--STEPDOWN TRANSFORMER DISCONNECT - 48" AFF

## GENERAL ROOF NOTES

1. SEE KITCHEN POWER PLAN FOR INFO REGARDING COOLER & FREEZER ROOFTOP CONDENSING UNITS.
2. RTU'S ARE SPECIFIED TO HAVE INTERNAL GFCI RECEPTACLE.

## KEYED NOTES

- 1 WP GFCI CONVENIENCE RECEPTACLE MOUNTED ON UNISTRUT



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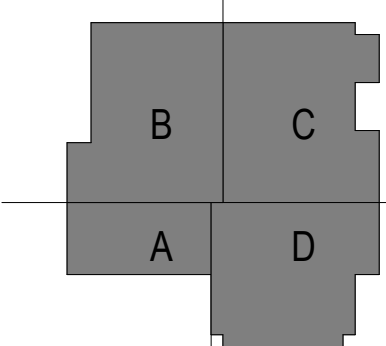
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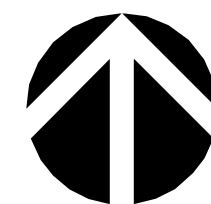
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18.4703	<b>POPULOUS</b>

SHEET TITLE:  
ELECTRICAL POWER PLAN -  
ROOF

DISCIPLINE - CATEGORY - SUB CATEGORY

E2-3



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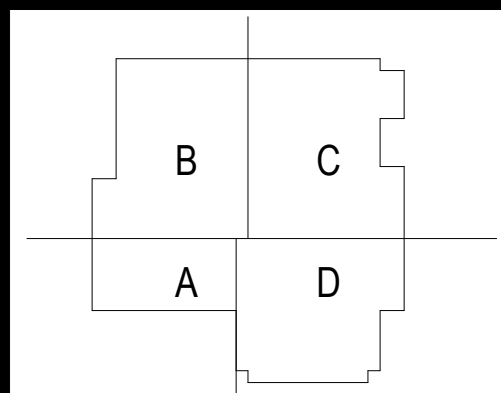
3001 Jensen Rd E

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CONSTRUCTION  
DOCUMENTS

3/20/2020

## REVISIONS

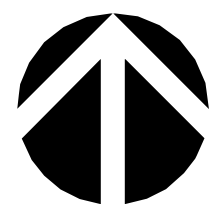
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PROJECT	ISSUED BY:
18.4703	<b>POPULOUS</b>

SHEET TITLE:  
**ELECTRICAL CONNECTIONS  
SCHEDULE**

DISCIPLINE - CATEGORY - SUB CATEGORY

E2-4



# PROJECT NORTH



EXPECT A DIFFERENCE  
2600 Van Buren St., Suite 2635 | Norman, OK 73072  
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EQUIPMENT COORDINATION SCHEDULE												
CALLOUT	DESCRIPTION	VOLTS	HP	VA	FLA	MCA	MCCP	WIRE CALLOUT	DISCONNECT	DISCONNECT PROVIDED BY	DISCONNECT INSTALLED BY	NOTES
GUH-1	GAS FIRED UNIT HEATER	120/1	1/16	392	3.8	20	15	3/4"C, 1#12, #12N, 12G	SWITCH	EC	EC	-
GUH-2	GAS FIRED UNIT HEATER	120/1	1/16	392	3.8	20	15	3/4"C, 1#12, #12N, 12G	SWITCH	EC	EC	-
GUH-3	GAS FIRED UNIT HEATER	120/1	1/16	392	3.8	20	15	3/4"C, 1#12, #12N, 12G	SWITCH	EC	EC	-
GUH-4	GAS FIRED UNIT HEATER	120/1	1/16	392	3.8	20	15	3/4"C, 1#12, #12N, 12G	SWITCH	EC	EC	-
GUH-5	GAS FIRED UNIT HEATER	120/1	1/16	392	3.8	20	15	3/4"C, 1#12, #12N, 12G	SWITCH	EC	EC	-
GUH-6	GAS FIRED UNIT HEATER	120/1	1/16	392	3.8	20	15	3/4"C, 1#12, #12N, 12G	SWITCH	EC	EC	-
GUH-7	GAS FIRED UNIT HEATER	120/1	1/16	392	3.8	20	15	3/4"C, 1#12, #12N, 12G	SWITCH	EC	EC	-
GUH-8	GAS FIRED UNIT HEATER	120/1	1/16	392	3.8	20	15	3/4"C, 1#12, #12N, 12G	SWITCH	EC	EC	-
GUH-9	GAS FIRED UNIT HEATER	120/1	1/16	392	2.5	20	15	3/4"C, 1#12, #12N, 12G	SWITCH	EC	EC	-
GUH-10	GAS FIRED UNIT HEATER	120/1	1/16	392	2.5	20	15	3/4"C, 1#12, #12N, 12G	SWITCH	EC	EC	-
GUH-11	GAS FIRED UNIT HEATER	120/1	1/16	392	2.5	20	15	3/4"C, 1#12, #12N, 12G	SWITCH	EC	EC	-
HVLS-1	HIGH VOLUME LOW SPEED FAN	208/1	2	1500	7.2	9	20	3/4"C, 2#12, #12G	NON FUSED DISCONNECT	EC	EC	-
HVLS-2	HIGH VOLUME LOW SPEED FAN	208/1	2	1500	7.2	9	20	3/4"C, 2#12, #12G	NON FUSED DISCONNECT	EC	EC	-
HVLS-3	HIGH VOLUME LOW SPEED FAN	208/1	2	1500	7.2	9	20	3/4"C, 2#12, #12G	NON FUSED DISCONNECT	EC	EC	-
HVLS-4	HIGH VOLUME LOW SPEED FAN	208/1	2	1500	7.2	9	20	3/4"C, 2#12, #12G	NON FUSED DISCONNECT	EC	EC	-
HVLS-5	HIGH VOLUME LOW SPEED FAN	208/1	2	1500	7.2	9	20	3/4"C, 2#12, #12G	NON FUSED DISCONNECT	EC	EC	-
HVLS-6	HIGH VOLUME LOW SPEED FAN	208/1	2	1500	7.2	9	20	3/4"C, 2#12, #12G	NON FUSED DISCONNECT	EC	EC	-
HVLS-7	HIGH VOLUME LOW SPEED FAN	208/1	2	1500	7.2	9	20	3/4"C, 2#12, #12G	NON FUSED DISCONNECT	EC	EC	-
HVLS-8	HIGH VOLUME LOW SPEED FAN	208/1	2	1500	7.2	9	20	3/4"C, 2#12, #12G	NON FUSED DISCONNECT	EC	EC	-
MS-1	MINI SPLIT A/C (OUTDOOR)	208/1	-	4910	14.4	18	25	3/4"C, 2#8, #10G	NON FUSED DISCONNECT	EC	EC	-
MS-1	MINI SPLIT A/C (INDOOR)	208/1	-	416	2	2.5	-	3/4"C, 2#8, #10G	SWITCH	EC	EC	-
MS-2	MINI SPLIT A/C (OUTDOOR)	208/1	-	4910	14.4	18	25	3/4"C, 2#8, #10G	NON FUSED DISCONNECT	EC	EC	-
MS-2	MINI SPLIT A/C (INDOOR)	208/1	-	416	2	2.5	-	3/4"C, 2#8, #10G	SWITCH	EC	EC	-
MS-3	MINI SPLIT A/C (OUTDOOR)	208/1	-	4910	14.4	18	25	3/4"C, 2#8, #10G	NON FUSED DISCONNECT	EC	EC	-
MS-3	MINI SPLIT A/C (INDOOR)	208/1	-	416	2	2.5	-	3/4"C, 2#8, #10G	SWITCH	EC	EC	-
RTU-1	ROOFTOP GASELECTRIC UNIT	480/3	-	79,111	-	119	125	2"C,3#10, #6G	NON FUSED DISCONNECT	MFR	MFR	-
RTU-2	ROOFTOP GASELECTRIC UNIT	480/3	-	79,111	-	119	125	2"C,3#10, #6G	NON FUSED DISCONNECT	MFR	MFR	-
RTU-3	ROOFTOP GASELECTRIC UNIT	480/3	-	79,111	-	119	125	2"C,3#10, #6G	NON FUSED DISCONNECT	MFR	MFR	-
RTU-4	ROOFTOP GASELECTRIC UNIT	480/3	-	79,111	-	119	125	2"C,3#10, #6G	NON FUSED DISCONNECT	MFR	MFR	-
RTU-5	ROOFTOP GASELECTRIC UNIT	480/3	-	79,111	-	119	125	2"C,3#10, #6G	NON FUSED DISCONNECT	MFR	MFR	-
RTU-6	ROOFTOP GASELECTRIC UNIT	480/3	-	11,944	-	22	25	1"C, 3#8, #10G	NON FUSED DISCONNECT	MFR	MFR	-
RTU-7	ROOFTOP GASELECTRIC UNIT	480/3	-	11,944	-	22	25	1"C, 3#8, #10G	NON FUSED DISCONNECT	MFR	MFR	-
RTU-8	ROOFTOP GASELECTRIC UNIT	480/3	-	11,944	-	22	25	1"C, 3#8, #10G	NON FUSED DISCONNECT	MFR	MFR	-
RTU-9	ROOFTOP GASELECTRIC UNIT	480/3	-	79,111	-	119	125	2"C,3#10, #6G	NON FUSED DISCONNECT	MFR	MFR	-
EFH-1	ELECTRIC FAN FORCED HEATER	208/1	-	4000	19.2	30	30	1"C, 2#8, #10G	SWITCH	MFR	MFR	-
EFH-2	ELECTRIC FAN FORCED HEATER	208/1	-	3000	14.4	20	20	3/4"C, 2#12, #12G	SWITCH	MFR	MFR	-
EFH-3	ELECTRIC FAN FORCED HEATER	208/1	-	3000	14.2	20	20	3/4"C, 2#12, #12G	SWITCH	MFR	MFR	-
EFH-4	ELECTRIC FAN FORCED HEATER	208/1	-	4000	19.2	30	30	1"C, 2#8, #10G	SWITCH	MFR	MFR	-
EFH-5	ELECTRIC FAN FORCED HEATER	208/1	-	2000	9.6	20	20	3/4"C, 2#12, #12G	SWITCH	MFR	MFR	-
EFH-6	ELECTRIC FAN FORCED HEATER	208/1	-	3000	14.4	20	20	3/4"C, 2#12, #12G	SWITCH	MFR	MFR	-
EFH-7	ELECTRIC FAN FORCED HEATER	208/1	-	3000	14.4	20	20	3/4"C, 2#12, #12G	SWITCH	MFR	MFR	-
EFH-8	ELECTRIC FAN FORCED HEATER	208/1	-	2000	9.6	20	20	3/4"C, 2#12, #12G	SWITCH	MFR	MFR	-
EFH-9	ELECTRIC FAN FORCED HEATER	208/1	-	3000	14.4	20	20	3/4"C, 2#12, #12G	SWITCH	MFR	MFR	-
EF-1	EXHAUST FAN	120/1	FRAC.	360	3	4	20	3/4"C, 1#12, #12N, 12G	SWITCH	EC	EC	-
EF-2	EXHAUST FAN	120/1	FRAC.	360	3	4	20	3/4"C, 1#12, #12N, 12G	SWITCH	EC	EC	-
EF-3	EXHAUST FAN	120/1	FRAC.	360	3	4	20	3/4"C, 1#12, #12N, 12G	SWITCH	EC	EC	-
EF-4	EXHAUST FAN	120/1	FRAC.	360	3	4	20	3/4"C, 1#12, #12N, 12G	SWITCH	EC	EC	-
EF-5	EXHAUST FAN	120/1	FRAC.	360	3	4	20	3/4"C, 1#12, #12N, 12G	SWITCH	EC	EC	-
VF-1	ARENA VENT FAN	480/3	10	11634	14	17.5	30	3/4"C, 3#10, 10G	NON FUSED DISCONNECT	EC	EC	-
VF-2	ARENA VENT FAN	480/3	10	11634	14	17.5	30	3/4"C, 3#10, 10G	NON FUSED DISCONNECT	EC	EC	-

## 1 ELECTRICAL PA/AV PLAN

$$1/16'' = 1'-0''$$

## PA/AV SYSTEM SCOPE OF WORK

1. AUDIO SYSTEM SCOPE OF WORK IS FOR EC TO PROVIDE AND INSTALL CONDUIT PATHWAYS FOR AUDIO CABLE FROM THE AUDIO RACK LOCATIONS AS SHOWN TO THE SPEAKER LOCATIONS.
2. SEE POWER PLANS FOR RECEPTACLE LOCATIONS.

## PA/AV KEYED NOTES

- 1 ARENA AREA MUSICAL AUDIO RACK LOCATION.
- 2 EXPO HALL PUBLIC ADDRESS SYSTEM AUDIO RACK LOCATION.
- 3 3" CONDUIT AND JUNCTION BOXES FOR AUDIO CABLES. AUDIO SYSTEM INSTALL BY OTHERS. PATH IS GENERAL, AND BEST DETERMINED IN THE FIELD. MINIMIZE BENDS AS PRACTICAL TO AID IN FUTURE INSTALL.

## POPULOUS

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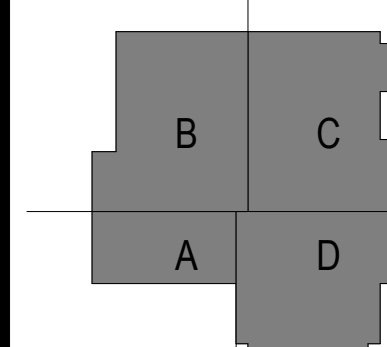
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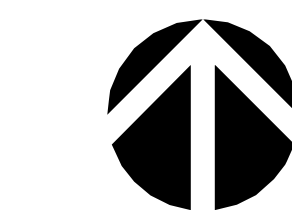
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PROJECT	ISSUED BY:
18.4703	<b>POPULOUS</b>

SHEET TITLE:  
ELECTRICAL PA & AV  
SYSTEM PLAN

DISCIPLINE - CATEGORY - SUB CATEGORY -

E3-2



PROJECT NORTH



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FEEDER SCHEDULE				
AMPS	CONDUIT SIZE IN INCH	CONDUIT SIZE IN INCH	PHASE CONDUCTORS	EQUIP. GROUND CONDUCTORS
20	3/4"	3/4"	#12	#12
25	3/4"	3/4"	#10	#10
30	3/4"	3/4"	#10	#10
35	1"	3/4"	#8	#10
40	1"	3/4"	#8	#10
45	1"	1"	#6	#10
50	1"	1"	#6	#10
60	1 1/4"	1 1/4"	#4	#10
70	1 1/4"	1 1/4"	#4	#6
80	1 1/4"	1 1/4"	#2	#6
90	1 1/2"	1 1/4"	#2	#6
100	1 1/2"	1 1/2"	#1	#6
110	2"	1 1/2"	#1	#6
125	2"	1 1/2"	#10	#6
150	2"	1 1/2"	#10	#6
175	2"	2"	#20	#6
200	2"	2"	#30	#6
225	2 1/2"	2"	#40	#4
250	3"	2 1/2"	250 kcmil	#4
300	3"	3"	350 kcmil	#4
350	3 1/2"	3"	500 kcmil	#3
400	(2) 2"	(2) 2"	2 SETS OF #30	#3
450	(2) 2 1/2"	(2) 2"	2 SETS OF #40	#2
500	(2) 2 1/2"	(2) 2 1/2"	2 SETS OF 250 kcmil	#2
600	(2) 3"	(2) 3"	2 SETS OF 350 kcmil	#1
700	(2) 3 1/2"	(2) 3"	2 SETS OF 500 kcmil	#10
800	(3) 3"	(2) 3 1/2"	3 SETS OF 300 kcmil	#10
900	(3) 3 1/2"	(3) 3"	3 SETS OF 400 kcmil	#20
1000	(3) 3 1/2"	(3) 3"	3 SETS OF 500 kcmil	#20
1200	(4) 3"	(4) 3"	4 SETS OF 350 kcmil	#30
1600	(5) 3 1/2"	(5) 3"	5 SETS OF 500 kcmil	#40
1800	(6) 3 1/2"	(6) 3"	6 SETS OF 400 kcmil	250 kcmil
2000	(6) 3 1/2"	(6) 3"	6 SETS OF 500 kcmil	250 kcmil

**NOTES:**

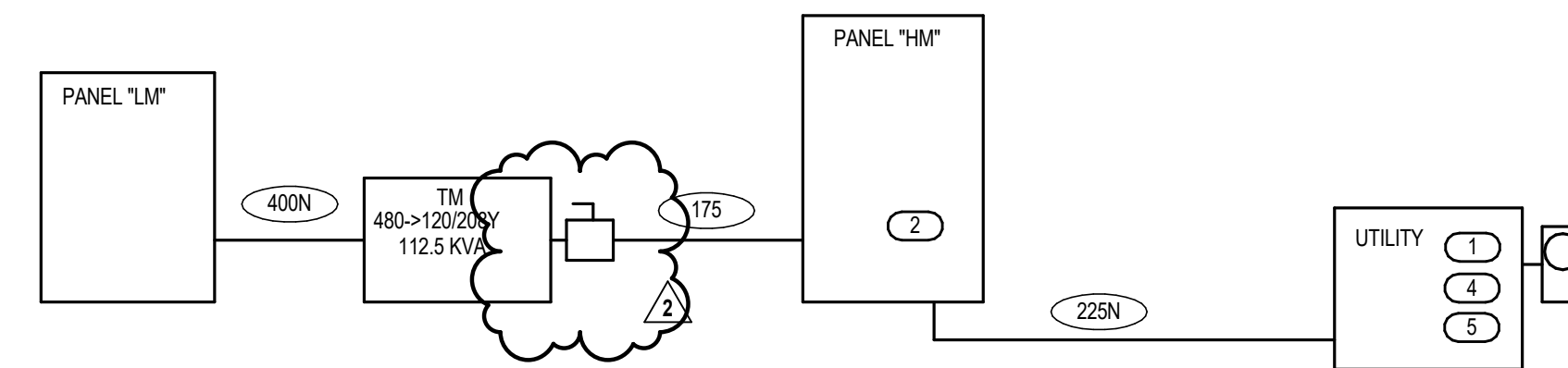
- FEEDER SIZES ARE ON THE PLAN WHERE 60 REFERS TO A 60A FEEDER WITHOUT NEUTRAL AND 80N REFERS TO A 80A FEEDER WITH NEUTRAL
- IF THE FEEDER DOES NOT MATCH BREAKER SIZE DUE TO UP-SIZING OF THE FEEDER FOR VOLTAGE DROP
- CONDUITS ARE SIZED PER NEC TABLES FOR THINWALL AND MAY BE USED FOR EASE OF PULLING OR DOWNSIZED AS ALLOWED PER NEC FOR CONDUIT TYPE(S) BEING INSTALLED
- ALL CONDUCTORS 100A AND LESS ARE SIZED PER 80 DEGREE LUOS, EC MAY BE USED FOR CONDUCTORS FOR ACTUAL RATING OF LUOS PER NEC.

## GENERAL NOTES

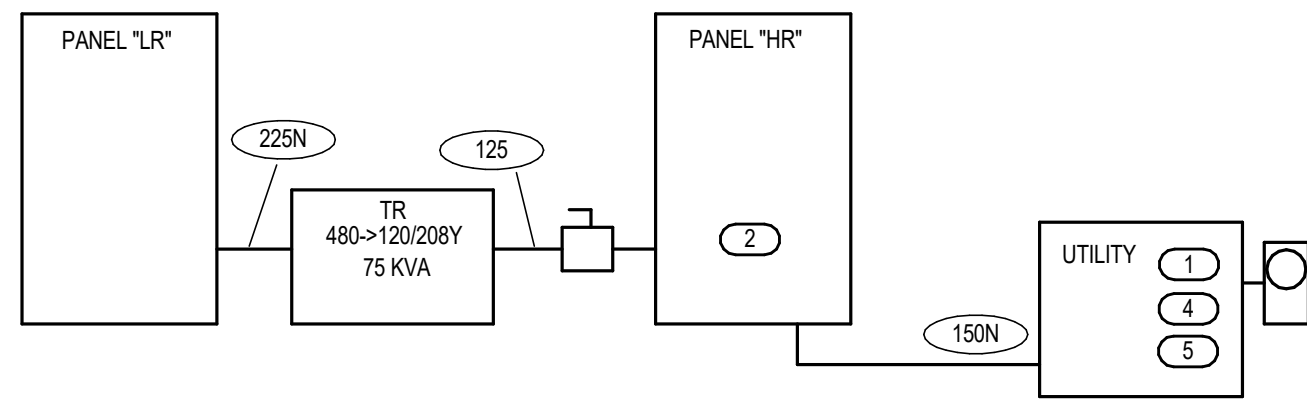
1. OHLINE DIAGRAM OF SERVICE, METERING, AND PANELS IS DIAGRAMMATICAL IN NATURE.
2. BASIC PRIOR CONSTRUCTION COORDINATION WITH UTILITY HAS BEEN PERFORMED. EGC/MC APPLY FOR AND COORDINATE CONSTRUCTION WITH UTILITY, PAY FEES, ADDRESS POSSIBLE EASEMENT NEEDS, ETC.
3. SEE SPECS FOR SHORT CIRCUIT COORDINATION/ARC FLASH STUDY.
4. SEE CHARTS/SCHEDULES FOR FEEDER & CONDUIT SIZES. ANY LENGTHS SHOWN ARE VERY GENERAL AND TO BE BIDDING/PLANNING. ACTUAL DISTANCES OF FEEDER DEPEND ON ROUTING & FIELD COORDINATION. ORDERING WIRE & CONDUIT IS THE RESPONSIBILITY OF THE EC.

## KEYED NOTES

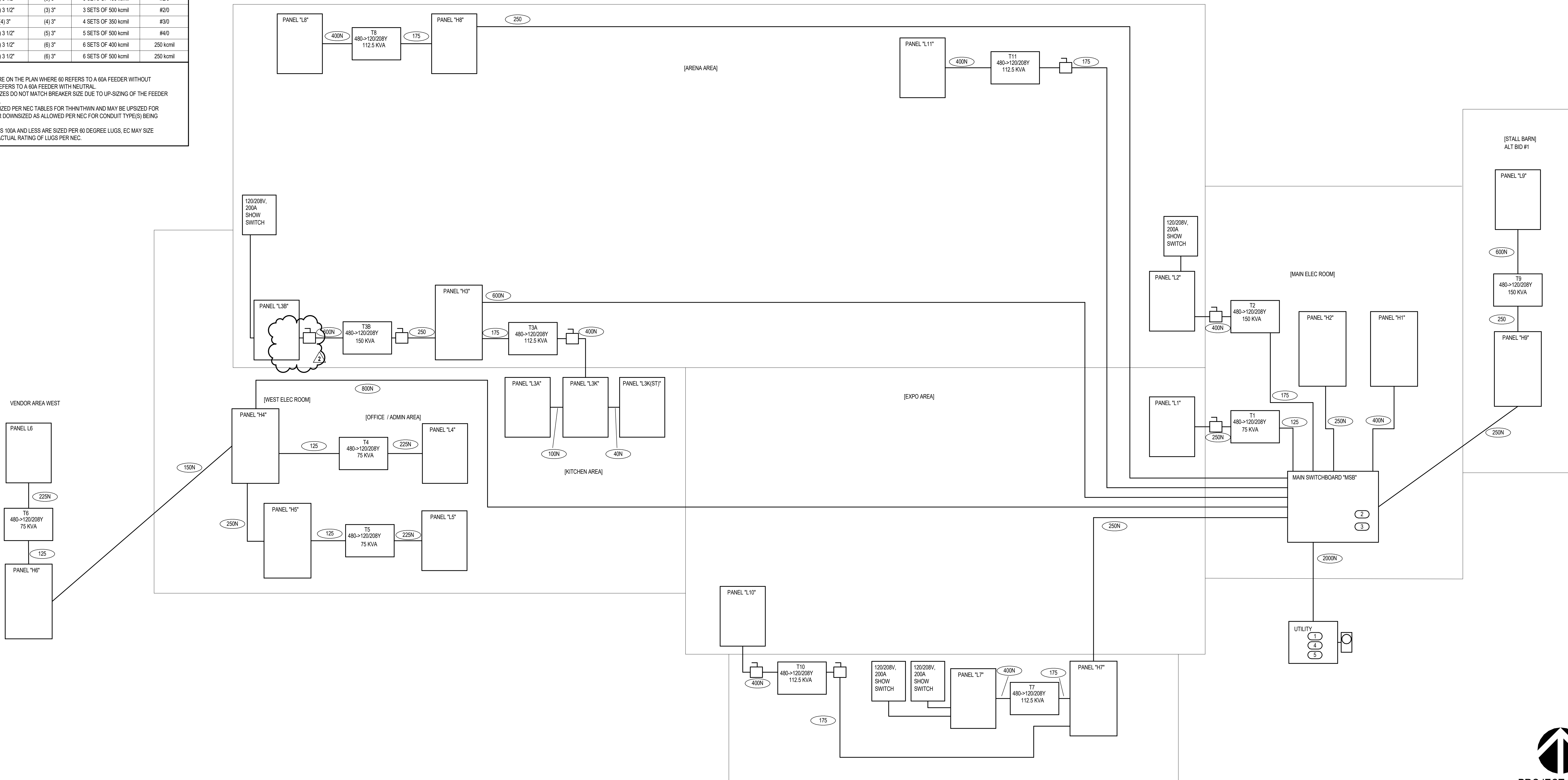
1. NEW UTILITY TRANSFORMER. INITIAL COORDINATION WITH UTILITY HAS BEEN DONE. EC COORDINATE WITH O&E FOR EXACT REQUIREMENTS AT THIS NEW TRANSFORMER. (METERINGS, PAD, ETC).
2. GROUNDING PER NEC 250.
3. SURGE PROTECTION DEVICE. INTERNAL OR EXTERNAL SEE SPECS.
4. CONCRETE PAD BY EC. PER UTILITY SPEC. SEE DETAIL SHEET.
5. CT METERING AT TRANSFORMER BY UTILITY.



### 3 ELECTRICAL ONE LINE DIAGRAM [MAINTENANCEBUILDING]



## 2 ELECTRICAL ONE LINE DIAGRAM [EAST VENDOR AREA]



# 1 ELECTRICAL ONE LINE DIAGRAM

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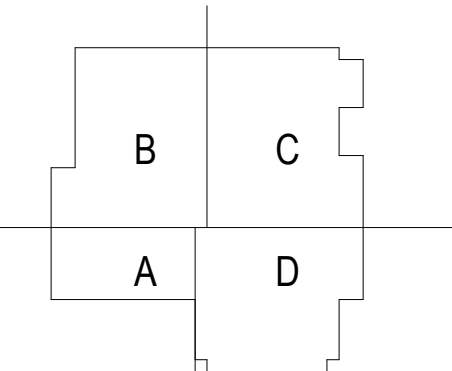


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CONSTRUCTION  
DOCUMENTS

3/20/2020

## REVISIONS

[illegible]

PROJECT	ISSUED BY:
18.4703	<b>POPULOUS</b>

SHEET TITLE:

ELECTRICAL ONE-LINE  
DIAGRAM

E4-1

PANELBOARD: H6													
Location: 480/277 Wye				Volts: 480/277 Wye				A.I.C. Rating: 30K					
Supply From: H4				Phases: 3				Bus Ampacity 150 A					
Mounting: Recessed				Wires: 4				Main Breaker 150 A					
NEMA 3R													
CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
H6-1	PARKING LIGHTS	20 A	1	1.5	1.3					2	20 A	SPORTS LIGHT	H6-2
H6-3	PARKING LIGHTS	20 A	1			0.6	1.3			--	--	--	H6-4
H6-5	SPORTS LIGHT	20 A	2					1.3	1.3	2	20 A	SPORTS LIGHT	H6-6
H6-7	--	--	--	1.3	1.3					--	--	--	H6-8
H6-9	SPORTS LIGHT	20 A	2			1.3	1.3			2	20 A	SPORTS LIGHT	H6-10
H6-11	--	--	--					1.3	1.3	--	--	--	H6-12
H6-13	SPORTS LIGHT	20 A	2	1.3	1.3					2	20 A	SPORTS LIGHT	H6-14
H6-15	--	--	--			1.3	1.3			--	--	--	H6-16
H6-17	SPORTS LIGHT	20 A	2					1.3	0.0	1	20 A	Entrance Sign Lighting	H6-18
H6-19	--	--	--	1.3	0.0					1	20 A	Spare	H6-20
H6-21	SPORTS LIGHT	20 A	2			1.3	0.0			1	20 A	Spare	H6-22
H6-23	--	--	--					1.3	0.0	1	20 A	Spare	H6-24
H6-25	SPORTS LIGHT	20 A	2	1.3	0.0					1	20 A	Spare	H6-26
H6-27	--	--	--			1.3	0.0			1	20 A	Spare	H6-28
H6-29	SPORTS LIGHT	20 A	2					1.3	0.0	1	20 A	Spare	H6-30
H6-31	--	--	--	1.3	0.0					1	20 A	Spare	H6-32
H6-33	SPORTS LIGHT	20 A	2			1.3	0.0			1	20 A	Spare	H6-34
H6-35	--	--	--					1.3	0.0	1	20 A	Spare	H6-36
H6-37	SPORTS LIGHT	20 A	2	1.3	19.8					3	125 A	T6	H6-38
H6-39	--	--	--			1.3	19.8			--	--	--	H6-40
H6-41	--	--	--					13.2		--	--	--	H6-42
Total Load:				32.0 kVA		31.1 kVA		22.9 kVA					
Total Amps:				120 A		117 A		83 A					
Load Classification													
Lighting		35091 VA		125.00%		43863 VA		Panel Totals					
Receptacle		52800 VA		59.47%		31400 VA		Total Conn. Load: 85991 VA					
								Total Est. Demand: 73614 VA					
								Total Conn. Current: 103 A					
								Total Est. Demand Current: 89 A					
								Non-Coincident... 0 A					
								Total Est. Demand - NC: 89 A					
Notes:													

PANELBOARD: H9											
Location: MSB Supply From: MSB Mounting: Surface NEMA 3R				Volts: 480/277 Wye Phases: 3 Wires: 4				A.I.C. Rating: 30K Bus Ampacity 250 A Main Breaker 250 A			
CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT	
H9-1	Lighting	20 A	1	1.3	19.3		3	250 A		T9	
H9-3	Lighting	20 A	1		1.3	16.3	--	--		--	
H9-5	Lighting	20 A	1			1.3	16.1	--		--	
H9-7	Lighting	20 A	1	1.3	0.0		--	--	Space	H9-8	
H9-9	Lighting	20 A	1		1.3	0.0	--	--	Space	H9-10	
H9-11	Lighting	20 A	1			1.3	0.0	--	Space	H9-12	
H9-13	Lighting	20 A	1	1.3	0.0		--	--	Space	H9-14	
H9-15	Lighting	20 A	1		0.2	0.0	--	--	Space	H9-16	
H9-17	Canopy Lighting	20 A	1			1.4	0.0	--	Space	H9-18	
H9-19	Lighting	20 A	1	1.4	0.0		--	--	Space	H9-20	
H9-21	Lighting	20 A	1		0.7	0.8	1	20 A	Lighting	H9-22	
H9-23							0.0	1	20 A	Spare	
H9-25				0.0				1	20 A	Spare	
H9-27					0.0			1	20 A	Spare	
H9-29						0.0	1	20 A	Spare	H9-30	
Total Load:				24.1 kVA	20.3 kVA	19.8 kVA					
Total Amps:				87 A	74 A	71 A					
Load Classification		Connected Load		Demand Factor		Estimated Demand		Panel Totals			
Equipment		48000 VA		100.00%		48000 VA		Total Conn. Load: 64182 VA			
Lighting		13438 VA		125.00%		16798 VA		Total Est. Demand: 67379 VA			
Receptacle		3600 VA		100.00%		3600 VA		Total Conn. Current: 77 A			
								Total Est. Demand Current: 81 A			
								Non-Coincident... 0 A			
								Total Est. Demand - NC: 81 A			
Notes:											

<b>PANELBOARD: L1</b>													
Location: EXPO HALL 01.11.02				Volts: 120/208 Wye				A.I.C. Rating:					
Supply From: T1				Phases: 3				Bus Ampacity 250 A					
Mounting: Surface				Wires: 4				Main Breaker 250 A					
NEMA 3R													
CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT			
L1-1	EXPO 1.11.02 RCPT.	20 A	1	0.7	0.0		1	20 A	Spare	L1-2			
L1-3	EXPO 1.11.02 RCPT.	20 A	1		0.7	0.0	1	20 A	Spare	L1-4			
L1-5	EXPO 1.11.02 RCPT.	20 A	1			0.7	0.0	1	20 A	Spare	L1-6		
L1-7	EXPO 1.11.02 RCPT.	20 A	1	0.7	0.0		1	20 A	Spare	L1-8			
L1-9	EXPO 1.11.02 RCPT.	20 A	1		0.7	0.0	1	20 A	Spare	L1-10			
L1-11	EXPO 1.11.02 RCPT.	20 A	1			0.7	0.0	1	20 A	Spare	L1-12		
L1-13	EXPO 1.11.02 RCPT.	20 A	1	0.4	0.0		1	20 A	Spare	L1-14			
L1-15	EXPO 1.11.02 PLUG RCPT.	100 A	2		3.0	0.0	1	20 A	Spare	L1-16			
L1-17	--	--	--			3.0	0.0	1	20 A	Spare	L1-18		
L1-19	EXPO 1.11.02 PLUG RCPT.	100 A	2	3.0	0.0		1	20 A	Spare	L1-20			
L1-21	--	--	--		3.0	0.0	1	20 A	Spare	L1-22			
L1-23	EXPO 1.11.02 PLUG RCPT.	100 A	2			3.0	0.0	1	20 A	Spare	L1-24		
L1-25	--	--	3.0	0.0			1	20 A	Spare	L1-26			
L1-27	EXPO 1.11.02 PLUG RCPT.	100 A	2		3.0	0.0	1	20 A	DOOR MOTOR RCPT	L1-28			
L1-29	--	--	--			3.0	0.0	1	20 A	DOOR MOTOR RCPT.	L1-30		
L1-31	EXTERIOR RCPT.	20 A	1	0.4							L1-32		
L1-33											L1-34		
L1-35											L1-36		
L1-37											L1-38		
L1-39											L1-40		
L1-41											L1-42		
Total Load:				8.2 kVA	10.4 kVA	10.4 kVA							
Total Amps:				68 A	90 A	90 A							
Load Classification		Connected Load		Demand Factor		Estimated Demand		Panel Totals					
Motor		0 VA		0.00%		0 VA		Total Conn. Load: 29040 VA					
Receptacle		29040 VA		67.22%		19520 VA		Total Est. Demand: 81 A					
								Total Est. Demand Current: 54 A					
								Non-Coincident... 0 A					
								Total Est. Demand - NC: 54 A					
Notes:													

PANELBOARD: L3K															
Location: MECH/ELEC 01.04.05				Volts: 120/208 Wye				A.I.C. Rating:							
Supply From: T3A				Phases: 3				Bus Ampacity 400 A							
Mounting: Surface				Wires: 4				Main Breaker 400 A							
CKT	Circuit Description			Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
L3K-1	L3K(ST)			40 A	3	2.7	0.9					3	100 A	L3A	L3K-2
L3K-3	--			--	--	--	--	0.7	0.5			--	--	--	L3K-4
L3K-5	--			--	--	--	--			0.4	0.5	--	--	--	L3K-6
L3K-7	[SHUNT TRIP SPACE]			--	--	0.0	0.4					1	20 A	--	L3K-8
L3K-9	POS REGISTER			20 A	1			0.2	0.6			1	20 A	POS REGISTER	L3K-10
L3K-11	MENU BOARD			20 A	1					0.6	0.7	1	20 A	Receptacle	L3K-11
L3K-13	Motor			20 A	1	1.4	0.8					1	20 A	FRIDGE	L3K-12
L3K-15	BOTTLE FRIDGE			20 A	1			1.9	1.9			1	20 A	FREEZER	L3K-13
L3K-17	NACHO CHEESE			20 A	1					0.6	1.9	1	20 A	BOTTLE FRIDGE	L3K-14
L3K-19	COOLER EVAP.			20 A	1	1.2	1.0					2	20 A	WALKIN HEATER LIGHTS ETC	L3K-15
L3K-21	Receptacle			20 A	1			1.0	1.0			--	--	FREEZER EVAP	L3K-16
L3K-23	Motor			20 A	1					0.8	0.2	1	20 A	--	L3K-20
L3K-25	FIRE SUP. CIRCUIT			20 A	1	1.2	0.7					1	20 A	Receptacle	L3K-24
L3K-27	PREP TABLE RECEP			20 A	1			1.2	1.2			1	20 A	MEAT SLICER	L3K-25
L3K-29	COFFEE BREWER			35 A	3					3.3	1.2	1	20 A	PREP TABLE RECEP	L3K-28
L3K-31	--			--	--	3.3	1.2					1	20 A	BVG CTR RECEP	L3K-30
L3K-33	--			--	--			3.3	5.4			3	60 A	BVG CTR RECEP	L3K-32
L3K-35	WARMER, DRYER TYPE			20 A	1					0.9	5.4	--	--	DISHWASHER	L3K-34
L3K-37	WARMER, DRYER TYPE			20 A	1	0.9	5.4					--	--	--	L3K-36
L3K-39	POS REGISTER			20 A	1			0.4	0.9			3	20 A	--	L3K-38
L3K-41	FREEZER COMP			20 A	3					1.5	0.9	--	--	COOLER COMP.	L3K-40
L3K-43	--			--	--	1.5	0.9					--	--	--	L3K-42
L3K-45	--			--	--			1.5	1.0			1	20 A	--	L3K-44
L3K-47	HOT FOOD WELL			20 A	1					1.7	1.7	1	20 A	Receptacle	L3K-46
L3K-49	Receptacle			20 A	1	0.7	1.1					3	20 A	HOT FOOD WELL	L3K-48
L3K-51	TEA BREWER			20 A	1			1.7	1.1			--	--	Kitchen Equipment - Non-Dwelling Unit	L3K-50
L3K-53	HOTCOLD FOOD WELL			20 A	1					1.3	1.1	--	--	--	L3K-54
L3K-55	HOTCOLD FOOD WELL			20 A	1	1.3	1.3					1	20 A	HOTCOLD FOOD WELL	L3K-56
L3K-57	Receptacle			20 A	1			0.6	0.6			1	20 A	--	L3K-58
L3K-59	Receptacle			20 A	1					0.4	0.2	1	20 A	MENU BOARD	L3K-59
L3K-61	Receptacle			20 A	1	0.4	0.4					1	20 A	Receptacle	L3K-60
L3K-63	--							0.5				1	20 A	Receptacle	L3K-62
L3K-65	--									0.0		1	20 A	Receptacle	L3K-64
L3K-67	--					0.0						1	20 A	Spare	L3K-66
L3K-69	--							0.0				1	20 A	Spare	L3K-68
L3K-71	--									0.0		1	20 A	Spare	L3K-70
L3K-73	--					0.0						1	20 A	Spare	L3K-72
L3K-75	--							0.0				1	20 A	Spare	L3K-74
L3K-77	--									0.0		1	20 A	Spare	L3K-76
L3K-79	--					0.0						1	20 A	Spare	L3K-78
L3K-81	--											1	20 A	Spare	L3K-80
L3K-83	--									0.0		1	20 A	Spare	L3K-82
												1	20 A	Spare	L3K-84
Total Load:				28.4 kVA		27.2 kVA		25.0 kVA							
Total Amps:				240 A		230 A		209 A							
Load Classification				Connected Load		Demand Factor		Estimated Demand		Panel Totals					
Kitchen Equipment - Non-Dwelling Unit				19540 VA		100.00%		19540 VA		Total Conn. Load: 80690 VA					
Motor				12450 VA		110.48%		13755 VA		Total Est. Demand: 62630 VA					
Receptacle				48730 VA		60.26%		29365 VA		Total Conn. Current: 224 A					
										Total Est. Demand Current: 174 A					
										Non-Coincident... 0 A					
										Total Est. Demand - NC: 174 A					
Notes:															

PANELBOARD: L3B																															
Location: ARENA 01.08.01						Volts: 120/208 Wye				A.I.C. Rating:																					
Supply From: T3B						Phases: 3				Bus Ampacity 600 A																					
Mounting: Surface						Wires: 4				Main Breaker 600 A																					
NEMA 3R																															
CKT	Circuit Description										Trip	Poles	A	B	C	Poles	Trip	Circuit Description										CKT			
L3B-1	ARENA 01.08.01 RCPT.										20 A	1	0.7	0.4				1	15 A	GUH-1										L3B-2	
L3B-3	ARENA 1.08.01 RCPT.										20 A	1			0.7	0.8			2	20 A	HVL5-3										L3B-4
L3B-5	ARENA 1.08.01 RCPT.										20 A	1					0.7	0.8	--	--	--										L3B-6
L3B-7	ARENA 1.08.01 PLUG RCPT										100 A	2	3.0	0.8					2	20 A	HVL5-4										L3B-8
L3B-9	--										--	--			3.0	0.8			--	--	--										L3B-10
L3B-11	ARENA 1.08.01 PLUG RCPT										100 A	2	--	--			3.0	0.0	1	20 A	Spare										L3B-12
L3B-13	--										--	--	3.0	0.0					1	20 A	Spare										L3B-14
L3B-15	ARENA 1.08.01 PLUG RCPT										100 A	2	--	--	3.0	0.0			1	20 A	Spare										L3B-16
L3B-17	--										--	--					3.0	0.0	1	20 A	Spare										L3B-18
L3B-19	ARENA 1.08.01 PLUG RCPT										100 A	2	7.7	0.0					1	20 A	Spare										L3B-20
L3B-21	--										--	--			7.7	0.0			1	20 A	Spare										L3B-22
L3B-23	ARENA 1.08.01 PLUG RCPT										100 A	2	--	--			3.0	0.0	1	20 A	Spare										L3B-24
L3B-25	--										--	--	3.0	0.0					1	20 A	Spare										L3B-26
L3B-27	ARENA 1.08.01 PLUG RCPT										100 A	2	--	--	3.0	0.0			1	20 A	Spare										L3B-28
L3B-29	--										--	--					3.0							L3B-30							
L3B-31	SHOWSWITCH-4										200 A	3	6.0										L3B-32								
L3B-33	--										--	--			6.0								L3B-34								
L3B-35	--										--	--					6.0						L3B-36								
L3B-37	--										--	--											L3B-38								
L3B-39	--										--	--											L3B-40								
L3B-41	--										--	--											L3B-42								
Total Load:											24.0 kVA		24.4 kVA		19.0 kVA																
Total Amps:											207 A		210 A		159 A																
Load Classification											Connected Load		Demand Factor		Estimated Demand		Panel Totals														
Motor											21392 VA		121.04%		25892 VA		Total Conn. Load: 67421 VA														
Receptacle											47520 VA		60.52%		28760 VA		Total Conn. Current: 187 A														
																	Total Est. Demand Current: 148 A														
																	Non-Coincident.... 0 A														
																	Total Est. Demand - NC: 148 A														
Notes:																															



<b>PANELBOARD: L6</b>											
Location: Supply From: T6 Mounting: Surface NEMA 3R				Volts: 120/208 Wye Phases: 3 Wires: 4				A.I.C. Rating: Bus Ampacity 225 A Main Breaker 225 A			
CKT	Circuit Description	Trip	Poles	A		B		Poles	Trip	Circuit Description	CKT
L6-1	POWER PEDESTAL	50 A	2	3.3	3.3			2	50 A	POWER PEDESTAL	L6-2
L6-3	--	--	--	--	--	3.3	3.3	--	--	--	L6-4
L6-5	POWER PEDESTAL	50 A	2	3.3	3.3			2	50 A	POWER PEDESTAL	L6-6
L6-7	--	--	--	--	--	0.0	0.0	--	--	--	L6-8
L6-9	POWER PEDESTAL	50 A	2	0.0	0.0			2	50 A	POWER PEDESTAL	L6-10
L6-11	--	--	--	--	--	3.3	3.3	--	--	--	L6-12
L6-13	POWER PEDESTAL	50 A	2	3.3	3.3			2	50 A	POWER PEDESTAL	L6-14
L6-15	--	--	--	--	--	3.3	3.3	--	--	--	L6-16
L6-17	Spare	20 A	1	0.0	0.0			1	20 A	Spare	L6-18
L6-19	Spare	20 A	1			0.0	0.0	1	20 A	Spare	L6-20
L6-21	Spare	20 A	1	0.0	0.0			1	20 A	Spare	L6-22
L6-23	Spare	20 A	1			0.0	0.0	1	20 A	Spare	L6-24
Total Load:				19.8 kVA		19.8 kVA					
Total Amps:				173 A		173 A					
Load Classification		Connected Load		Demand Factor		Estimated Demand		Panel Totals			
Receptacle		52800 VA		59.47%		31400 VA					
								Total Conn. Load: 52800 VA			
								Total Est. Demand: 31400 VA			
								Total Conn. Current: 147 A			
								Total Est. Demand Current: 87 A			
								Non-Coincident... 0 A			
								Total Est. Demand - NC: 87 A			
Notes: NEMA 3R, LOCKABLE COVER.											

PANELBOARD: L7											
Location: STORAGE 01.11.01				Volts: 120/208 Wye				A.I.C. Rating:			
Supply From: T7				Phases: 3				Bus Ampacity 400 A			
Mounting: Surface				Wires: 4				Main Breaker 400 A			
CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT	
L7-1	SHOWSWITCH-1	200 A	3	6.0	6.0		3	200 A	SHOWSWITCH-2	L7-2	
L7-3	--	--	--	--	6.0	6.0	--	--	--	L7-4	
L7-5	--	--	--	--	--	6.0	6.0	--	--	L7-6	
L7-7	EXPO 1.11.02 RCPT.	20 A	1	0.4	0.2		1	20 A	Receptacle	L7-8	
L7-9	RM 1.11.01 RCPT.	20 A	1		0.5	0.0		1	20 A	AUDIO RECEPT EXPO OH	L7-10
L7-11	RM 1.11.01 RCPT.	20 A	1			0.4	0.0	1	20 A	AUDIO RECEPT EXPO OH	L7-12
L7-13	EXPO 1.11.02 FB RCPT.	20 A	1	0.4	0.0		1	20 A	AUDIO RECEPT EXPO OH	L7-14	
L7-15	EXPO 1.11.02 FB RCPT.	20 A	1		0.4	0.0	1	20 A	AUDIO RECEPT EXPO OH	L7-16	
L7-17	EXPO 1.11.02 FB RCPT.	20 A	1			0.4	0.0	1	20 A	AUDIO RECEPT EXPO OH	L7-18
L7-19	EXPO 1.11.02 FB RCPT.	20 A	1	0.4	0.0		1	20 A	AUDIO RECEPT EXPO OH	L7-20	
L7-21	EXPO 1.11.02 FB RCPT.	20 A	1		0.4	0.0	1	20 A	AUDIO RECEPT EXPO OH	L7-22	
L7-23	HOIST RECEIPT EXPO OH	20 A	1			0.0	0.0	1	20 A	AUDIO RECEPT EXPO OH	L7-24
L7-25	HOIST RECEIPT EXPO OH	20 A	1	0.0	0.0		1	20 A	AUDIO RECEPT EXPO OH	L7-26	
L7-27	DOOR MOTOR RCPT.	20 A	1		0.0	0.0	1	20 A	AUDIO RECEPT EXPO OH	L7-28	
L7-29	DOOR MOTOR RCPT.	20 A	1			0.0	0.0	1	20 A	AUDIO RECEPT EXPO OH	L7-30
L7-31	Receptacle	20 A	1	0.7	0.0		1	20 A	AUDIO RECEPT EXPO OH	L7-32	
L7-33	--	--	--	--	--	0.0		1	20 A	HOIST RECEIPT EXPO OH	L7-34
L7-35	HOIST RECEIPT EXPO OH	20 A	1			0.0	0.0	1	20 A	HOIST RECEIPT EXPO OH	L7-36
L7-37	HOIST RECEIPT EXPO OH	20 A	1	0.0				1	20 A	HOIST RECEIPT EXPO OH	L7-38
L7-39	--	--	--	--	--	--	--	--	--	L7-40	
L7-41	--	--	--	--	--	--	--	--	--	L7-42	
Total Load:		13.9 kVA		13.2 kVA		12.7 kVA					
Total Amps:		116 A		111 A		106 A					
Load Classification		Connected Load		Demand Factor		Estimated Demand		Panel Totals			
Motor		36000 VA		112.50%		40500 VA					
Receptacle		3861 VA		100.00%		3861 VA					
								Total Conn. Load: 39755 VA			
								Total Est. Demand: 44254 VA			
								Total Conn. Current: 113 A			
								Total Est. Demand Current: 123 A			
								Non-Coincident... 0 A			
								Total Est. Demand - NC: 123 A			
Notes:											

PANELBOARD: L8

Location: ARENA 01.08.01

Supply From: T8

Mounting: Surface

NEMA 3R

Volts: 120/208 Wye

Phases: 3

Wires: 4

A.I.C. Rating: 30K

Bus Ampacity 400 A

Main Breaker 400 A

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT	
L8-1	ARENA 1.08.01 RCPT.	20 A	1	0.7	3.0		2	100 A	ARENA 1.08.01 PLUG RCPT	L8-2	
L8-3	ARENA 1.08.01 RCPT.	20 A	1		0.7	3.0	--	--		L8-4	
L8-5	ARENA 1.08.01 RCPT.	20 A	1				0.7	0.4	1	20 A	
L8-7	ARENA 1.08.01 RCPT.	20 A	1	0.7	0.4		1	15 A	EXTERIOR RCPT.	L8-6	
L8-9	ARENA 1.08.01 RCPT.	20 A	1		0.7	0.4		1	15 A	GUH-2	
L8-11	ARENA 1.08.01 RCPT.	20 A	1				0.4	0.4	1	15 A	
L8-13	ARENA 1.08.01 PLUG RCPT	100 A	2	3.0	0.8		2	20 A	GUH-4	L8-10	
L8-15	--	--	--	--	3.0	0.8	--	--	HVLS-1	L8-12	
L8-17	ARENA 1.08.01 PLUG RCPT	100 A	2			3.0	0.8	2	20 A	HVLS-2	
L8-19	--	--	--	3.0	0.8		--	--	L8-14	L8-18	
L8-21	ARENA 1.08.01 PLUG RCPT	100 A	2		3.0	0.2	1	20 A	--	L8-20	
L8-23	--	--	--				3.0	0.2	1	20 A	
L8-25	ARENA 1.08.01 PLUG RCPT	100 A	2	3.0	0.0		1	20 A	WH-7 RCPT	L8-22	
L8-27	--	--	--		3.0	0.0		1	20 A	WH-7 CIRC PUMP RCPT.	
L8-29	ARENA 1.08.01 PLUG RCPT	100 A	2			3.0	0.0	1	20 A	DOOR MOTOR RCPT.	
L8-31	--	--	--	3.0	0.0			1	20 A	DOOR MOTOR RCPT.	
L8-33	ARENA 1.08.01 PLUG RCPT	100 A	2		3.0	0.0		1	20 A	DOOR MOTOR RCPT.	
L8-35	--	--	--				3.0	0.0	1	20 A	
L8-37	ARENA 1.08.01 PLUG RCPT	100 A	2	3.0	0.0		1	20 A	Spare	L8-34	
L8-39	--	--	--		3.0	0.0		1	20 A	Spare	
L8-41	--	--	--				0.0	1	20 A	Spare	
Total Load:		21.2 kVA		20.7 kVA		14.7 kVA					
Total Amps:		184 A		180 A		122 A					
Load Classification		Connected Load		Demand Factor		Estimated Demand		Panel Totals			
Motor		4176 VA		108.98%		4551 VA		Total Conn. Load: 56468 VA			
Receptacle		52680 VA		59.49%		31340 VA		Total Est. Demand: 35491 VA			
								Total Conn. Current: 157 A			
								Total Est. Demand Current: 99 A			
								Non-Coincident... 0 A			
								Total Est. Demand - NC: 99 A			
Notes:											

PANELBOARD: L11											
Location: ARENA 01.08.01				Volts: 120/208 Wye				A.I.C. Rating:			
Supply From: T11				Phases: 3				Bus Ampacity 400 A			
Mounting: Surface				Wires: 4				Main Breaker 400 A			
NEMA 3R											
CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT	
L11-1	ARENA 1.08.01 RCPT.	20 A	1	0.7	0.4			1	15 A	GUH-5	
L11-3	ARENA 1.08.01 RCPT.	20 A	1		0.9	0.4		1	15 A	GUH-6	
L11-5	ARENA 1.08.01 RCPT.	20 A	1			0.7	0.4	1	15 A	GUH-7	
L11-7	ARENA 1.08.01 RCPT.	20 A	1	0.7	0.4			1	15 A	GUH-8	
L11-9	ARENA 1.08.01 RCPT.	20 A	2		0.7	0.8		2	20 A	HVLS-5	
L11-11	ARENA 1.08.01 PLUG RCPT	100 A	1				3.0	0.8	--	L11-12	
L11-13	--	--	3.0	0.8				2	20 A	HVLS-6	
L11-15	ARENA 1.08.01 PLUG RCPT	100 A	2		3.0	0.8		--	--	L11-16	
L11-17	--	--	--	--			3.0	0.2	1	20 A	
L11-19	ARENA 1.08.01 PLUG RCPT	100 A	2	3.0	0.2			1	20 A	WH-8 CIRC PUMP RCPT.	
L11-21	--	--	--	--	3.0	0.2		1	20 A	WH-9 RCPT.	
L11-23	ARENA 1.08.01 PLUG RCPT	100 A	2				3.0	0.2	1	20 A	
L11-25	--	--	3.0	0.9				3	20 A	FIRE DRY PIPE PUMP.	
L11-27	ARENA 1.08.01 PLUG RCPT	100 A	2		3.0	0.9		--	--	L11-28	
L11-29	--	--	--	--			3.0	0.9	--	L11-30	
L11-31	ARENA 1.08.01 PLUG RCPT	100 A	2	3.0	0.0			1	20 A	DOOR MOTOR RCPT.	
L11-33	--	--	--	--	3.0	0.0		1	20 A	DOOR MOTOR RCPT.	
L11-35	EXTERIOR RCPT.	20 A	1			0.5	0.0	1	20 A	DOOR MOTOR RCPT.	
L11-37	RM 1.15.08 RCPT.	20 A	1	0.2	0.0			1	20 A	DOOR MOTOR RCPT.	
L11-39	RR 1.15.07 & 1.15.06 RCPT.	20 A	1		0.4					L11-40	
L11-41	CORR 1.15.05 & FOUNTIAN RCPT.	20 A	1			0.4				L11-42	
		Total Load:		16.0 kVA	16.7 kVA	15.8 kVA					
		Total Amps:		134 A	140 A	132 A					
Load Classification		Connected Load		Demand Factor		Estimated Demand		Panel Totals			
Motor		7268 VA		109.29%		7943 VA		Total Est. Demand: 33299 VA			
Receptacle		41940 VA		61.92%		25970 VA		Total Conn. Load: 48585 VA			
								Total Demand Current: 135 A			
								Total Est. Demand Current: 92 A			
								Non-Coincident: 0 A			
								Total Est. Demand - NC: 92 A			
Notes:											

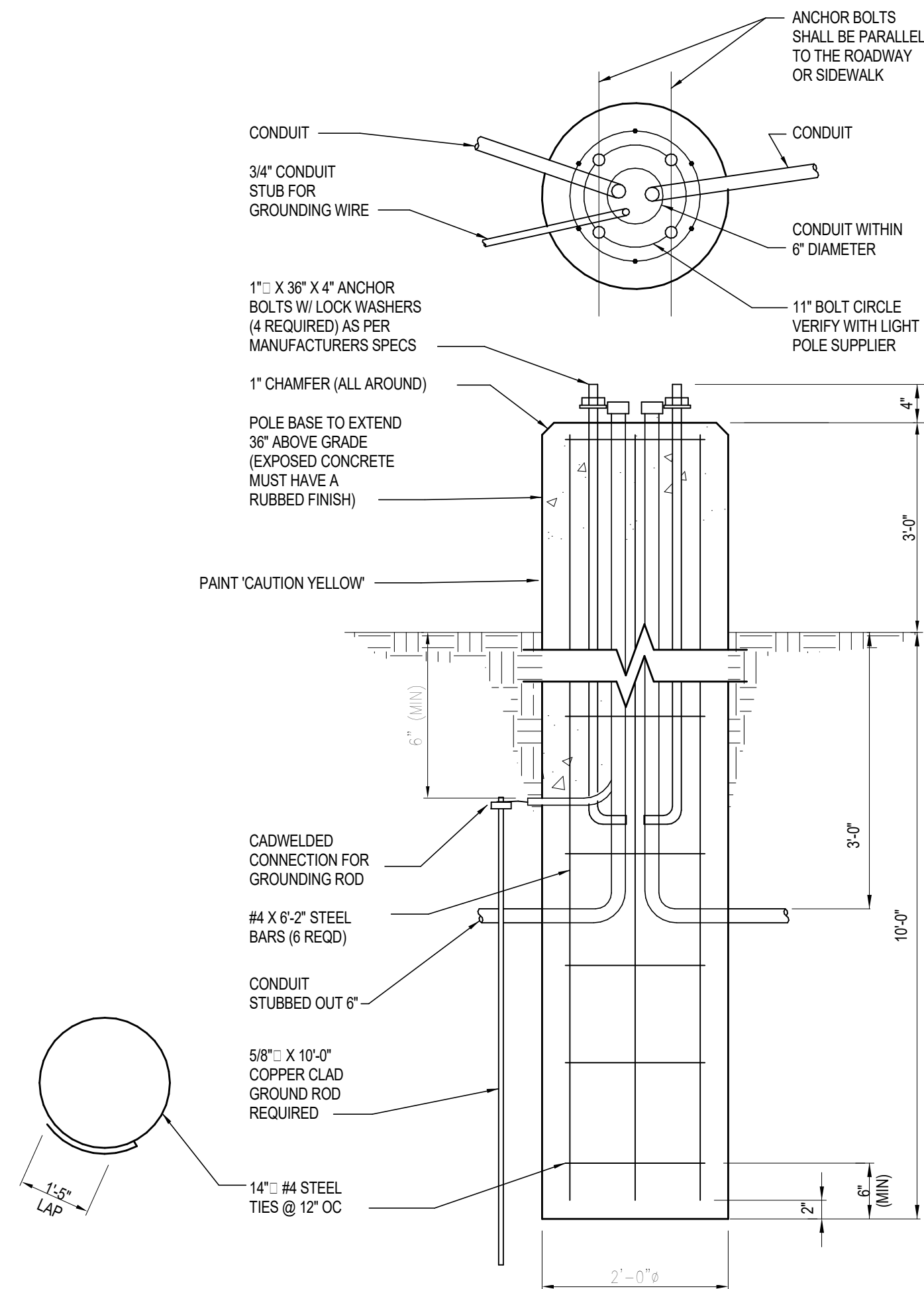
<b>PANELBOARD: HM</b>										
Location: EXTENSION STORAGE 01.44.01					Volts: 480/277 Wye			A.I.C. Rating: 30K		
Supply From:					Phases: 3			Bus Ampacity 225 A		
Mounting: Surface					Wires: 4			Main Breaker 225 A		
CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
HM-1	Lighting	20 A	1	0.5	4.4			3	175 A	TM-HM-2
HM-3	Lighting	20 A	1		1.4	5.5		--	--	--HM-4
HM-5	Lighting	20 A	1			1.4	3.2	--	--	--HM-6
HM-7	EXTERIOR Lighting	20 A	1	0.5	0.0			3	30 A	SPD-HM-8
HM-9	EXTERIOR Lighting	20 A	1		0.5	0.0		--	--	--HM-10
HM-11	GATE Lighting	20 A	1			0.2	0.0	--	--	--HM-12
HM-13	PARKING Lighting	20 A	1	0.9	0.0			1	20 A	Spare-HM-14
HM-15	Entrance Sign Lighting	20 A	1		0.0	0.0		1	20 A	Spare-HM-16
HM-17							0.0	1	20 A	Spare-HM-18
HM-19				0.0				1	20 A	Spare-HM-20
HM-21					0.0			1	20 A	Spare-HM-22
HM-23										HM-24
Total Load:				6.2 kVA	7.3 kVA	4.7 kVA				
Total Amps:				23 A	27 A	17 A				
Load Classification		Connected Load		Demand Factor		Estimated Demand		Panel Totals		
Equipment		540 VA		100.00%		540 VA		Total Conn. Load: 18254 VA		
Lighting		5278 VA		125.00%		6597 VA		Total Est. Demand: 20287 VA		
Motor		4188 VA		117.91%		4938 VA		Total Conn. Current: 22 A		
Receptacle		8640 VA		100.00%		8640 VA		Total Est. Demand Current: 24 A		
								Non-Coincident... 0 A		
								Total Est. Demand - NC: 24 A		
Notes:										

<b>PANELBOARD: HR</b>										
Location:				Volts: 480/277 Wye				A.I.C. Rating: 30K		
Supply From:				Phases: 3				Bus Ampacity 150 A		
Mounting: Recessed				Wires: 4				Main Breaker 150 A		
NEMA 3R										
CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
HR-1	PARKING LIGHTS	20 A	1	1.3	19.6			3	125 A	TR-HR-2
HR-3	SPORTS LIGHT	20 A	2		0.8	16.8		--	--	-- HR-4
HR-5	--	--	--			0.8	14.1	--	--	-- HR-6
HR-7	SPORTS LIGHT	20 A	2	0.8	0.0			1	20 A	Spare HR-8
HR-9	--	--	--		0.8	0.0		1	20 A	Spare HR-10
HR-11	SPORTS LIGHT	20 A	2			0.8	0.0	1	20 A	Spare HR-12
HR-13	--	--	--	0.8	0.0			1	20 A	Spare HR-14
HR-15					0.0			1	20 A	Spare HR-16
HR-17						0.0		1	20 A	Spare HR-18
HR-19				0.0				1	20 A	Spare HR-20
HR-21										HR-22
HR-23										HR-24
		Total Load:		22.3 kVA		18.2 kVA		15.5 kVA		
		Total Amps:		82 A		67 A		56 A		
Load Classification		Connected Load		Demand Factor		Estimated Demand		Panel Totals		
Lighting		5799 VA		125.00%		7248 VA		Total Conn. Load: 56057 VA		
Receptacle		50560 VA		59.89%		30290 VA		Total Est. Demand: 37176 VA		
								Total Conn. Current: 67 A		
								Total Est. Demand Current: 45 A		
								Non-Coincident... 0 A		
								Total Est. Demand - NC: 45 A		
Notes:										

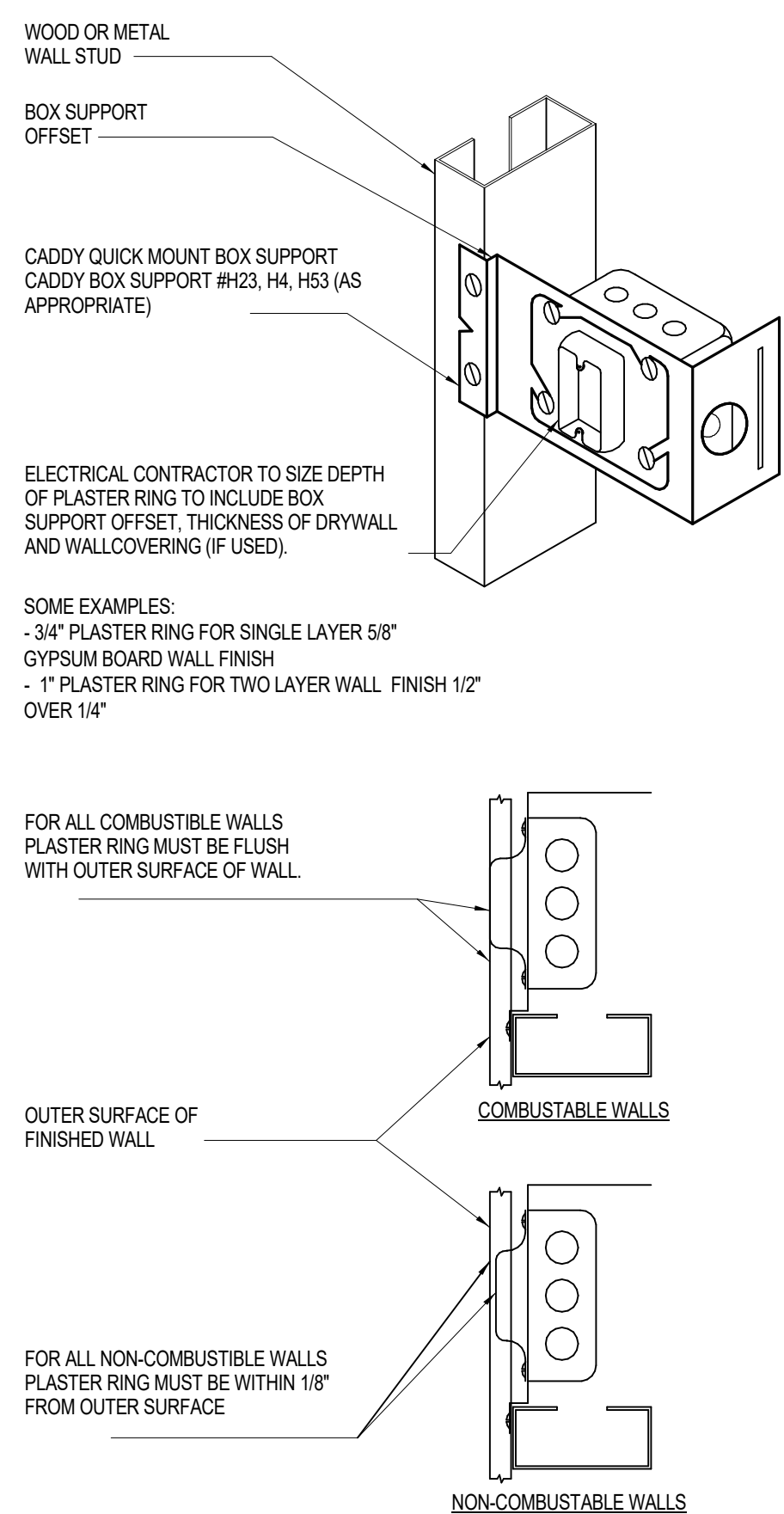
<b>PANELBOARD: LM</b>													
Location: VEHICLE STORAGE 01.42.01						Volts: 120/208 Wye				A.I.C. Rating:			
Supply From: TM						Phases: 3				Bus Ampacity 400 A			
Mounting: Surface						Wires: 4				Main Breaker 400 A			
CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT			
LM-1	RR 1.40.01 RCPT.	20 A	1	0.2	1.5		2	20 A	EFH-9	LM-2			
LM-3	TS 1.40.02 RCPT.	20 A	1		0.7	1.5		--		LM-4			
LM-5	TS 1.40.02 RCPT.	20 A	1			0.5	0.3	1	15 A	GUH-9	LM-6		
LM-7	TS 1.40.02 RCPT.	20 A	1	0.5	0.3			1	15 A	GUH-10	LM-8		
LM-9	TS 1.40.02 RCPT.	20 A	1		0.7	0.3		1	15 A	GUH-11	LM-10		
LM-11	VS 1.42.01 RCPT.	20 A	1			0.5	0.2	1	20 A	WH-6 RCPT.	LM-12		
LM-13	VS 1.42.01 RCPT.	20 A	1	0.5	0.2			1	20 A	WH-6 C PUMP RCPT.	LM-14		
LM-15	VS 1.42.01 RCPT.	20 A	1		0.7	0.1		2	60 A	WELDER EQUIPMENT	LM-16		
LM-17	VS 1.42.01 CEILING RCPT.	20 A	1			0.4	0.1	--	--	--	LM-18		
LM-19	VS 1.44.01 RCPT.	20 A	1	0.7	0.1			2	60 A	WELDER EQUIPMENT	LM-20		
LM-21	VS 1.44.01 RCPT.	20 A	1		0.5	0.1		--	--	--	LM-22		
LM-23	VS 1.44.01 RCPT.	20 A	1			0.7	0.1	2	60 A	WELDER EQUIPMENT	LM-24		
LM-25	VS 1.44.01 CEILING RCPT.	20 A	1	0.4	0.1			--	--	--	LM-26		
LM-27	EXTERIOR RCPT.	20 A	1		0.9	0.1		2	60 A	WELDER EQUIPMENT	LM-28		
LM-29	EF-4	20 A	1			0.4	0.1	--	--	--	LM-30		
LM-31				0.0				1	20 A	Spare	LM-32		
LM-33					0.0			1	20 A	Spare	LM-34		
LM-35							0.0	1	20 A	Spare	LM-36		
LM-37				0.0				1	20 A	Spare	LM-38		
LM-39					0.0			1	20 A	Spare	LM-40		
LM-41						0.0		1	20 A	Spare	LM-42		
Total Load:				4.4 kVA	5.5 kVA	3.2 kVA							
Total Amps:				38 A	48 A	27 A							
Load Classification		Connected Load		Demand Factor		Estimated Demand		Panel Totals					
Equipment		540 VA		100.00%		540 VA		Total Conn. Load: 13077 VA					
Motor		4188 VA		117.91%		4938 VA		Total Est. Demand: 13793 VA					
Receptacle		8640 VA		100.00%		8640 VA		Total Conn. Current: 36 A					
								Total Est. Demand Current: 38 A					
								Non-Coincident... 0 A					
								Total Est. Demand - NC: 38 A					
Notes:													

PANELBOARD: LR										
Location:				Volts: 120/208 Wye				A.I.C. Rating:		
Supply From: TR				Phases: 3				Bus Ampacity 225 A		
Mounting: Surface				Wires: 4				Main Breaker 225 A		
NEMA 3R										
CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
LR-1	POWER PEDESTAL	50 A	2	2.7	2.7			2	50 A	POWER PEDESTAL LR-2
LR-3	--	--	--		2.7	2.7		--	--	LR-4
LR-5	POWER PEDESTAL	50 A	2			2.7	2.7	2	50 A	POWER PEDESTAL LR-6
LR-7	--	--	--	2.7	2.7			--	--	LR-8
LR-9	POWER PEDESTAL	50 A	2		2.7	2.7		2	50 A	POWER PEDESTAL LR-10
LR-11	--	--	--			2.7	2.7	--	--	LR-12
LR-13	POWER PEDESTAL	50 A	2	2.7	2.7			2	50 A	POWER PEDESTAL LR-14
LR-15	--	--	--		2.7	2.7		--	--	LR-16
LR-17	POWER PEDESTAL	50 A	2			0.1	2.7	2	50 A	POWER PEDESTAL LR-18
LR-19	--	--	--	0.1	2.7			--	--	LR-20
LR-21	POWER PEDESTAL	20 A	2		0.1	0.0		1	20 A	Spare LR-22
LR-23	--	--	--			0.1	0.0	1	20 A	Spare LR-24
LR-25	POWER PEDESTAL	50 A	2	0.1	0.0			1	20 A	Spare LR-26
LR-27	--	--	--		0.1	0.0		1	20 A	Spare LR-28
LR-29	POWER PEDESTAL	50 A	2			0.1	0.0	1	20 A	Spare LR-30
LR-31	--	--	--	0.1	0.1			2	50 A	POWER PEDESTAL LR-32
LR-33	POWER PEDESTAL	50 A	2		0.1	0.1			--	LR-34
LR-35	--	--	--			0.1	0.1	2	50 A	POWER PEDESTAL LR-36
LR-37	POWER PEDESTAL	50 A	2	0.1	0.1			--	--	LR-38
LR-39	--	--	--		0.1	0.1		2	50 A	POWER PEDESTAL LR-40
LR-41	POWER PEDESTAL	50 A	2			0.1	0.1	--	--	LR-42
LR-43	--	--	--	0.1	0.1			2	50 A	POWER PEDESTAL LR-44
LR-45	--	--	--			0.1		--	--	LR-46
LR-47	--	--	--					--	--	LR-48
LR-49	--	--	--					--	--	LR-50
LR-51	--	--	--					--	--	LR-52
LR-53	--	--	--					--	--	LR-54
Total Load:				19.6 kVA	16.8 kVA	14.1 kVA				
Total Amps:				167 A	144 A	118 A				
Load Classification		Connected Load		Demand Factor		Estimated Demand		Panel Totals		
Receptacle		50580 VA		59.89%		30290 VA		Total Conn. Load: 50580 VA		
								Total Est. Demand: 30290 VA		
								Total Conn. Current: 140 A		
								Total Est. Demand Current: 84 A		
								Non-Coincident... 0 A		
								Total Est. Demand - NC: 84 A		
Notes:										

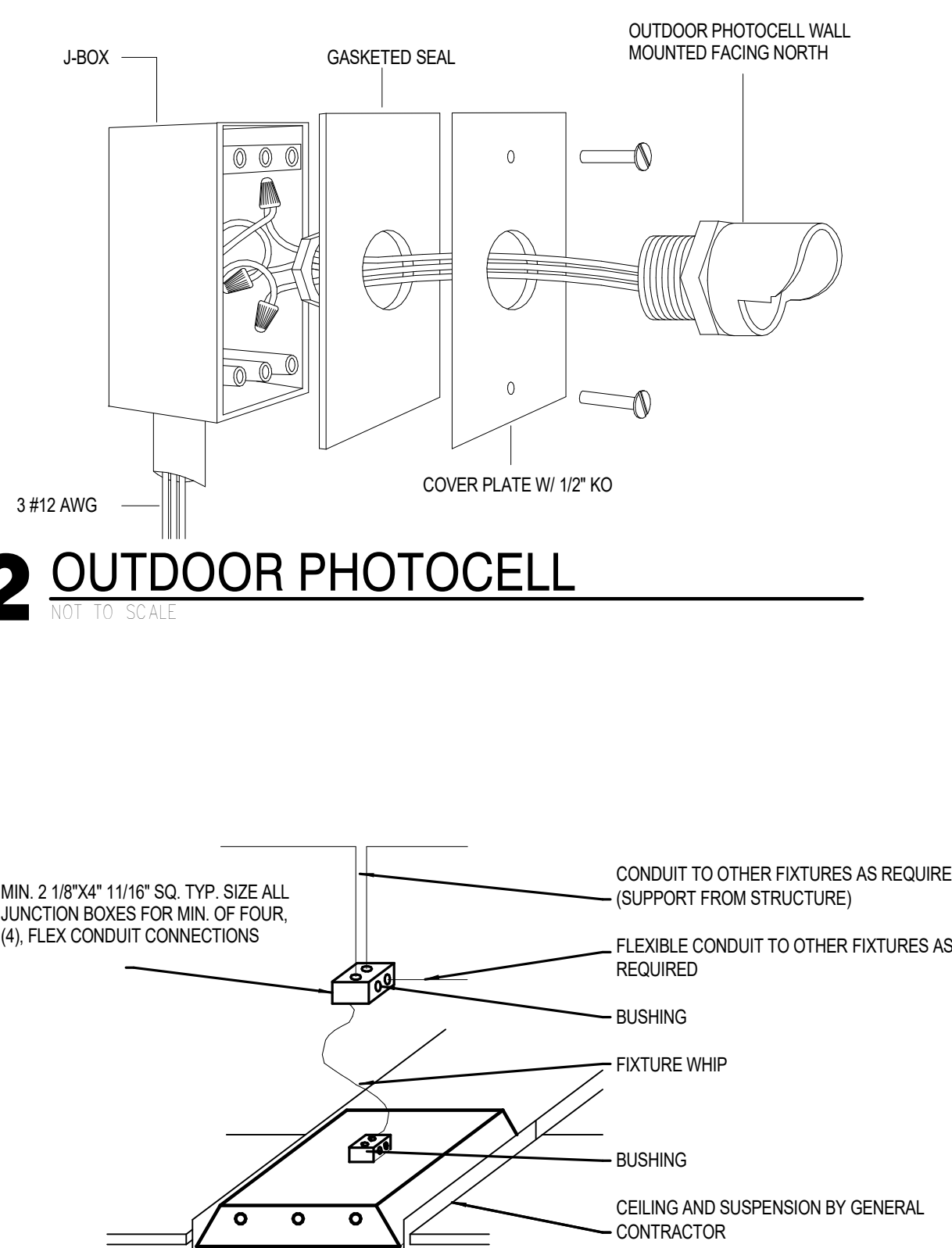
## 1 TYPE 'P' POLE BASE DETAIL



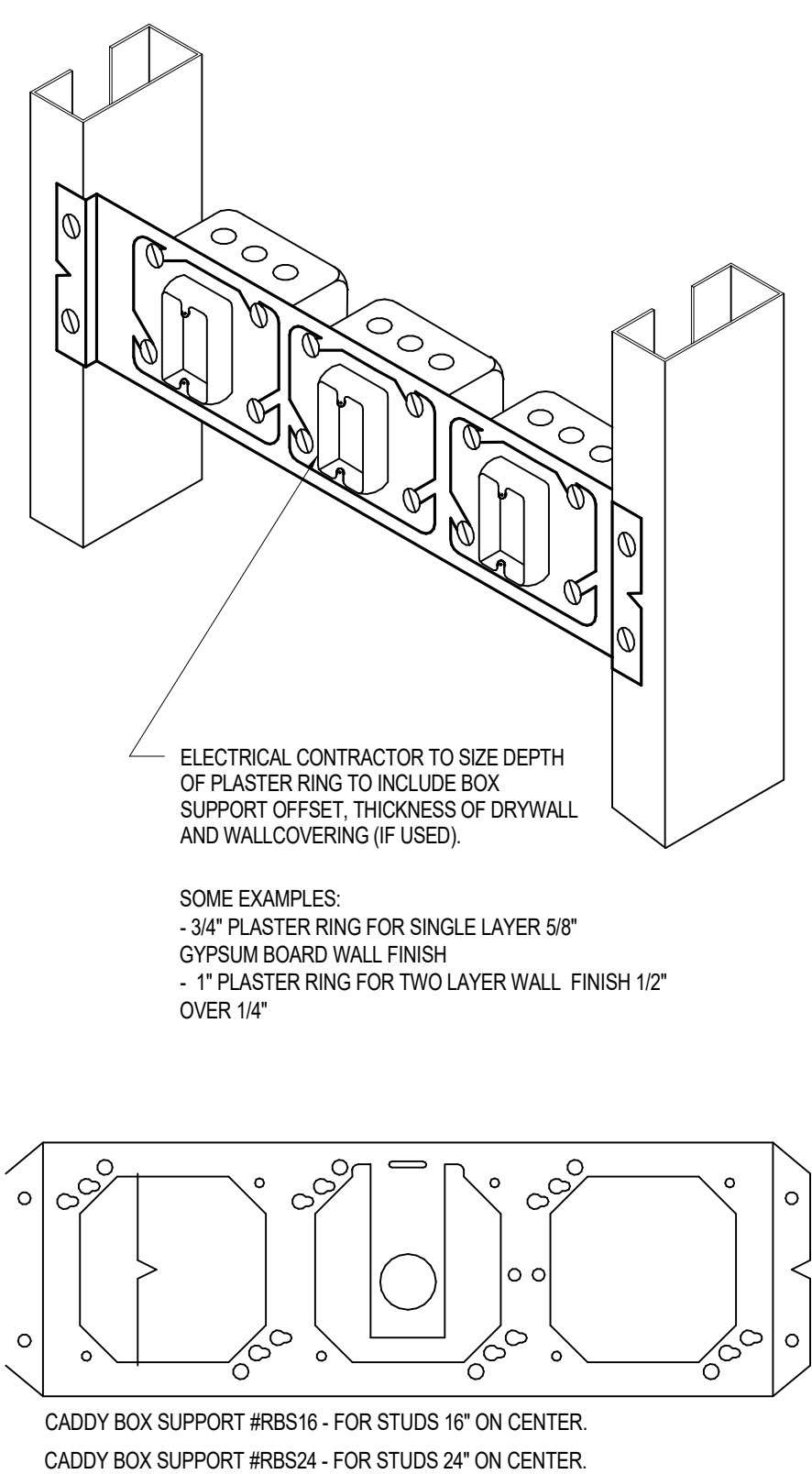
## 5 BOX SUPPORT DETAIL



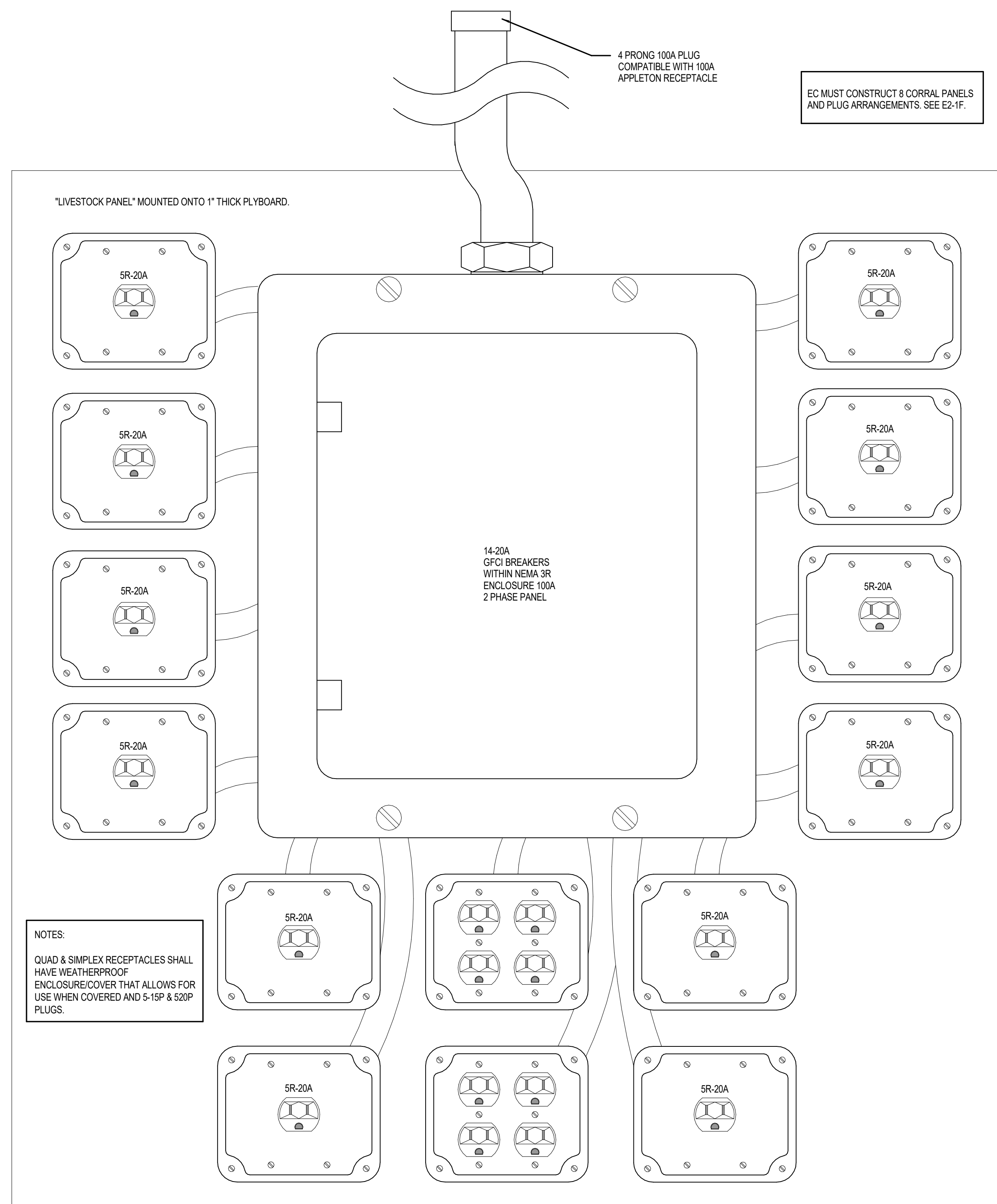
## 2 OUTDOOR PHOTOCELL



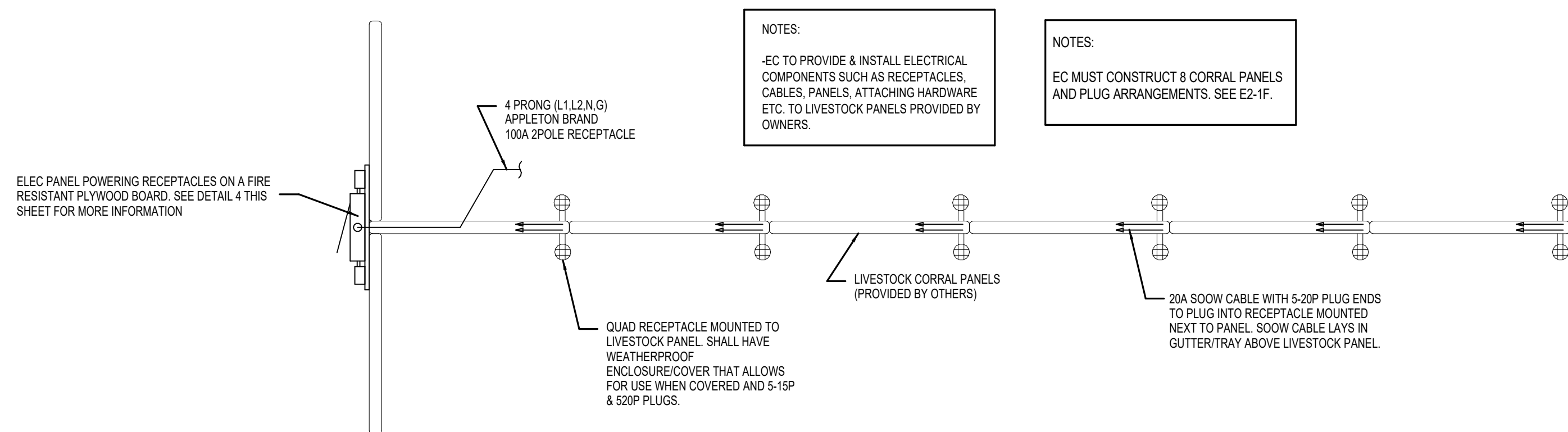
### 3 TYP.TROFFER POWER DETAIL



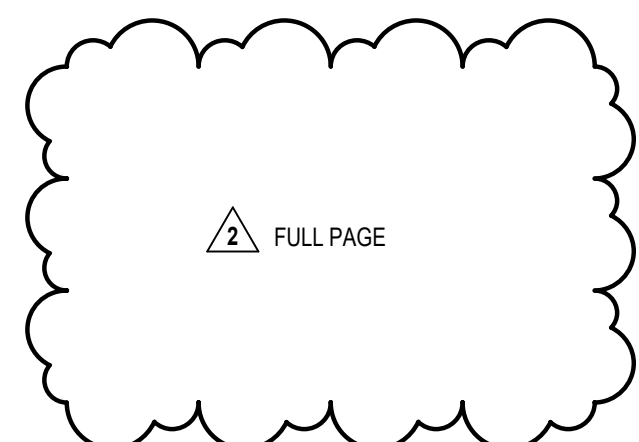
## 6 MULTIPLE BOX SUPPORT DETAIL



#### **4 LIVESTOCK CORRAL PANEL DETAIL (ALT BID 1)**



## 7 LIVESTOCK CORRAL PANEL SETUP - TOP VIEW (ALT BID 1)



**POPULOUS,**  
Architecture, Planning,  
Interior Design, Programing  
8900 Main St., Suite 300  
Kansas City, MO 64112  
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**Prill & Lascapes,**  
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1000 North Cassen Blvd., Suite S120  
Kalamazoo City, OK 73106  
(405) 394-6020

**Technical, Electrical, Plumbing & Fire Protection**  
PEP Associates, LLC  
600 Van Buren St. Suite 2635  
Tulsa, OK 73102  
(918) 394-8826

**Structural**  
FC Engineering  
225 Central Park Drive, Suite 202  
Tulsa, Oklahoma City, OK 73105  
(918) 425-4596

**Food Service**  
20 Consultants  
350 N. Wood, #9  
Chicago, IL 60622  
(224) 717-1999

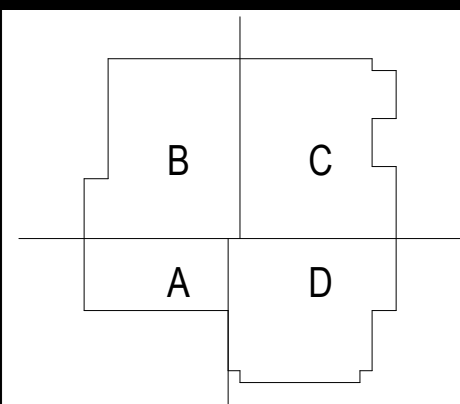


3001 Jensen Rd E  
El Reno, OK 73036

CONSTRUCTION  
DOCUMENTS

3/20/2020

## REVISIONS

[illegible]

PROJECT	ISSUED BY:
10.4702	BOBILLO

SHEET TITLE:

ELECTRICAL DETAILS  
SHEET

DISCIPLINE - CATEGORY - SUB CATEGORY

E6-2