



Bid Package 02 - Construction Bulletin 01

**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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Division 0 – Contract & Bidding Documents

Advertisement for Bids

00 1000 Solicitation for Bids

Bidding Documents

00 2000 Bid Form

00 2100 Bid Affidavits

- a. Non-collusion Affidavit
- b. Business Relationship Affidavit
- c. Safety Policy Affidavit
- d. Project Management Affidavit
- e. Hazard Notification
- f. Contract Drawings, Specifications, Reports Package Affidavit

00 2200 Trade Contractors Checklist for Bid Submittal

Instructions to Bidders & Exhibits

00 3000 Instructions to Bidders

00 3100 Geotechnical Report

00 3200 Construction Schedule

00 3300 Electrical Utility Details

Forms & Contract Documents

00 4000 Sample Subcontract Form

00 4100 Sample of Packet Accompanying Contract

00 4200 Final Payment Affidavit

00 4300 Certification of Asbestos Free Construction

00 4400 Special Conditions of the Subcontract

Trade Package Scopes of Work

00 5000 Trade Package Scopes of Work (Revised)

00 5100 Bid Package 01 – Addendum 01 Clarifications

00 5200 Bid Package 01 – Addendum 02

00 5201 Bid Package 01 – Addendum 02 Clarifications

00 5202 Bid Package 01 – Addendum 02 Clarifications

00 5203 Bid Package 02 – Construction Bulletin 01 – Clarifications

Specifications

32 84 00 Landscape Irrigation System

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Canadian County Expo Center

Bid Package #02 – RFI Questions from 3/20/2020 Permit Set.

Construction Bulletin 01 Addendum 02:

Please note that Addendum 01 was a part of Bid Package 01. Construction Bulletin 01 is the first clarification of Bid Package 02.

Questions:

1. Bird Control Devices: Please specify Bird Control Device type and location.
 - a. No Bird Control Devices in the project.
2. Ground Set Flagpole: Please specify ground set flagpole location.
 - a. No ground set flagpole in the project.
3. Please clarify that PVC is acceptable to use for grease waste as specifications do not require alternate or indicate alternate such as cast-iron.
 - a. 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
4. Refer to design team narrative attached for additional clarifications.

TO:	Jacob Lingo	Addendum NO#:	002
ISSUE DATE:	4/24/2020	PROJECT NAME:	Canadian County Expo Center
COPIES:	Stan Lingo Travis Pawley Todd Gralla Charlie Kolarik Kristin Gardner Jonathan Heusel Nate Clair Scott Barrett Kellie Johnston Larry Curtis Art Lantagne Kevin Parsons Will Davis Chris Mosteiro Tim Van Ostran Tracy Taraski	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:

CIVIL

- C1-3 Street Typicals
 - All modified subgrade under the asphalt, gravel and concrete typicals was changed to aggregate base to match the geotechnical report.
 - The 3" S3 type asphalt was thickened to 5" S3 type asphalt (2" lift on top of 3" lift). To match the geotech report.
 - The mountable 6" concrete apron adjacent to the building was thickened to 7".
 - The 7" concrete apron created a 1" lip onto the gravel road.
 - Asphalt road typical clarified to include driveways.
- C5-0 Roadway Plan and Profile – Station 200+00 to 210+00
 - Storm Line 3 (15" Class IV RCP) was changed to 18" Class IV RCP.
 - Added sleeves to sleeve callouts
- C5-1 Roadway Plan and Profile – Station 210+00 to 219+37
 - Storm Line 2 (15" Class IV RCP) was changed to 18" Class IV RCP.
- C5-2 Parking Lot Plan and Profile – Station 220+00 to 225+65
 - Added sleeves to sleeve callouts
 - 6" waterline callout changed to 12" waterline
- C7-0 Overall Utility Plan
 - The 4" domestic water line was changed to a 3" line.
 - Changed the 1" maintenance building meter to a 2" meter
 - Added a 4" sanitary sewer connection for the Stall Barn at the SW corner.
 - Changed the 12" line from the east side of the Expo to an 8" water line south and east of the Stall Barn to the FH.
 - Added 8" gate valves near the FH assembly north of the Stall Barn
 - Changed the 12" plug to an 8" plug
 - Revised the 12" x 6" tee to an 8"x6" tee.
 - Storm Line 2 (15" Class IV RCP) was changed to 18" Class IV RCP.

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- Storm Line 3 (15" Class IV RCP) was changed to 18" Class IV RCP.
- C8-0 Storm Sewer Plan and Profile - Lines 1 & 2
 - Added sleeves to sleeve callouts
 - Storm Line 2 (15" Class IV RCP) was changed to 18" Class IV RCP in plan view.
 - Storm Line 2 (15" Class IV RCP) was changed to 18" Class IV RCP in profile view.
- C8-1 Storm Sewer Plan and Profile - Line 3
 - Added sleeves to sleeve callouts
 - Storm Line 3 (15" Class IV RCP) was changed to 18" Class IV RCP in plan view.
 - Storm Line 3 (15" Class IV RCP) was changed to 18" Class IV RCP in profile view.
- C8-2 Storm Sewer Plan and Profile - Line 4
 - Callouts for fence moved
- C8-3 Storm Sewer Plan and Profile - Line 5
 - Added sleeves to sleeve callouts
- C9-0 Sanitary Sewer Plan and Profile - Line A
 - Callouts for fence removed
- C9-1 Sanitary Sewer Plan and Profile - Line B
 - Callouts for tanks relocated
- C9-2 Sanitary Sewer Plan and Profile - Line B
 - 1.5" domestic line changed to 3" domestic line
 - 12" fire line callout changed to 8" fire line callout
- C10-1 Erosion Control Plan
 - Callouts for silt fence changed
- C11-0 ADA Compliance and Pavement Details
 - Detail 7 - Modified Subgrade changed to aggregate base.
 - Detail 8 – Modified subgrade changed to aggregate base.
 - Detail 8 – 6" concrete or asphalt pavement thickened to 7".
 - Detail 8 – 8" flush curb has 1" lip onto the gravel road.
 - Detail 9 – Modified subgrade changed to aggregate base.
 - Detail 9 – 6" concrete or asphalt pavement thickened to 7".
 - Detail 9 – 8" valley curb has 1" lip onto the gravel road.
 - Detail 10 – Modified subgrade changed to aggregate base.
 - Detail 10 – 6" concrete pavement thickened to 7".
 - Detail 10 – Thickened concrete has 1" lip onto the gravel road.
 - Added Detail 11 - Asphalt Parking Lot Typical.
 - Added Detail 12 - Concrete Parking Lot Typical.
 - Added Detail 13 – 4' Concrete Flume
 - Added Detail 14 – 10' x 20' Spillway

LANDSCAPE

- 32 84 00 – LANDSCAPE IRRIGATION SYSTEM
 - New Specification Section Added
- L2-0 Irrigation Plan
 - Replace existing L2-0 sheet
- L2-1 Irrigation Plan
 - New Sheet
- L2-2 Irrigation Plan
 - New Sheet

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- L2-3 Irrigation Notes & Schedule
 - New Sheet
- L2-4 Irrigation Details
 - New Sheet

STRUCTURAL

- S1-00 (General Notes)
 - Changed Note 5.D.1 to eliminate confusion about the slab reinforcing. Slab reinforcing shall be dictated by the Slab on Grade Schedule.
 - Added Note 5.D.9 for requirements about Evaporation Retarders.
- S1-01 (General Notes)
 - Added note 11 to the Slab on grade schedule to only saw cut alternating reinforcing bars.
- S2-00 (Overall Foundation Plan)
 - Changed Plan Note 3 to eliminate confusion about the slab reinforcing. Slab reinforcing shall be dictated by the Slab on Grade Schedule.
- S2-1B (Foundation Plan – Area B)
 - Placed Arena Columns on Pedestals with reinforcing around the re-entrant corners.
 - Adjusted SJ on the north side of the Arena.
 - Added section call-out 9/S5-1 for transition of thickened slab to spot footing.
- S2-1C (Foundation Plan – Area C)
 - Placed Arena Columns on Pedestals with reinforcing around the re-entrant corners.
 - Adjusted SJ on the north side of the Arena.
 - Added section call-out 9/S5-1 for transition of thickened slab to spot footing.
- S5-1 (Foundation Sections)
 - 4/S5-1: Placed Arena Columns on Pedestals and removed hairpin tie reinforcing.
 - 6/S5-1: Reduced Expo tie beam depth to coordinate with other sections.
 - 9/S5-1: Changed 9/S5-1 to show transition of thickened slab to spot footing.
 - 10/S5-1: Updated 10/S5-1 for thickened slab requirements.
 - 11/S5-1: Visually reduced Arena tie beam depth to coordinate with other sections.
- S5-2 (Foundation Sections)
 - 2/S5-2: Placed Arena Columns on Pedestals and removed hairpin tie reinforcing.
 - 7/S5-2: Corrected a spelling error for clarity.

ARCHITECTURE

- X0-1-1
 - Landscape sheets added
- LS1-1

- Lobby occupancy numbers and egress numbers updated per correspondence with the Oklahoma State Fire Marshal.
- A2-1A
 - Partition types updated along south side of Corridor 01.04.01. These pilaster walls changed from brick veneer to wood slat veneer WD1.
- A5-1-1
 - Canopy tags and dimensions updated
- A5-1-2
 - Canopy tags and dimensions updated
- A6-2
 - Lobby East elevation updated – The recessed display areas and associated lighting were removed. Power and data will be provided for a video display by owner.
 - Trim and associated details added to WD1 wall corners/transitions.
- A6-3
 - Pilasters on south side of Corridor 01.04.01 changed from brick veneer to wood veneer WD1 with CTB1 base.
 - Wall finish at water fountain recess in Corridor 01.04.01 changed from wall graphic to wall tile CT2/CT4.
 - Trim and associated details added to WD1 wall corners/transitions.
- A7-2
 - Canopy labels updated to match spec section.
- A7-4
 - Canopy labels updated to match spec section.
- A8-5
 - Details 19 & 20 added.
- A8-6
 - Detail 2 – Display Niche removed.
- A9-3-1
 - Finish schedule updated to reflect removal of tack boards and brick veneer.
- A9-3-2
 - Finish and graphics schedules updated to reflect the interior material changes – the graphic on the north side of Corridor 01.04.01 and the pilasters on the south side of that corridor.
- A9-4-1A
 - Pilasters in Corridor 01.04.01 changed from brick veneer to wood veneer WD1 with CTB1 base.

ELECTRICAL

Note, only sheets E2-1A, E3-3, and E5-3 are included in drawing sheets. All other revisions listed below are in the form of a write up only.

ADD ALTERNATES listed below are for RGB lighting in the lobby, final acceptance to be determined by owner.

- Sheet E0-1 Electrical Notes, Legends & Abbreviations

- ADD ALTERNATE – Select light fixtures in LOBBY 01.03.02 shall be provide 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 Electrical Lighting Relay Panels
 - ADD ALTERNATE – One additional relay must be added to Relay 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 E2-1A Electrical Power Plan – Area A
 - Added Receptacles to corridor 01.04.01., top of cove, and displays in Lobby.
- Sheet E3-3 Electrical IT/Data Systems Plan
 - Added data receptacles (rough in) for displays in Lobby.
- Sheet E5-1 Electrical Panel Schedules Sheet
 - ADD ALTERNATE – 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.
- Sheet E5-3 Electrical Panel Schedules Sheet.
 - Sheet included due to added circuits.

PLUMBING

Note, the following revisions are issued in write-up form only for clarification, no drawings or spec sections are included.

- 22 30 00 Plumbing Equipment
 - Section 22 30 00.2.1 Commercial Gas-Fired Water Heaters – Tankless Type
 - Noritz America Corporation is acceptable as an alternate manufacturer.
- 22 10 06 Plumbing Piping Specialties
 - Section 22 10 06.2.8 Interceptors
 - IPEX Endura is acceptable as an alternate manufacturer.
- Sheet P1-1 Plumbing Plan – Overall
 - All references to Civil Site Plan shall refer to sheet C7.0 in lieu of C5.0.

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- Sheet P2-1A Plumbing Plan Below Grade – Area A
 - All grease waste piping to inlet of 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 RFI-11.

ISSUED BY:	Populous, Inc.	ACCEPTED BY:	
ARCHITECT:	Charlie Kolarik	CONTRACTOR:	
DATE:	4/24/2020	DATE:	

Canadian County Fairgrounds

ID	Task Name	Duration	Start	Finish	Gantt Chart											
					2020	2021	2022	2023	2024	2025	2026					
1	Preconstruction	249 days?	Mon 7/15/19	Thu 6/25/20	4/27/20 Preconstruction											
2	Concept Phase	44 days?	Mon 7/15/19	Thu 9/12/19	Concept Phase											
8	Design Development and PEMB, Civil Bid Package	144 days	Mon 12/9/19	Thu 6/25/20	% Design Development and PEMB, Civil Bid Package											
16	Construction Documents to 100%	110 days	Mon 12/30/19	Fri 5/29/20	1% Construction Documents to 100%											
23	Total Construction	313 days	Mon 4/13/20	Wed 6/23/21	0% Total Construction											
24	Construction	313 days	Mon 4/13/20	Wed 6/23/21	0% Construction											
25	Exterior Improvements	269 days	Mon 4/13/20	Thu 4/22/21	0% Exterior Improvements											
26	Site Grading Building Pad	25 days	Mon 4/13/20	Fri 5/15/20	4/13 Site Grading Building Pad											
28	Site Grading Balance of Site	25 days	Mon 5/18/20	Fri 6/19/20	5/18 Site Grading Balance of Site											
27	Sanitary Tank Installation	15 days	Fri 6/26/20	Thu 7/16/20	6/26 Sanitary Tank Installation											
29	Site Utilities	45 days	Fri 6/26/20	Thu 8/27/20	6/26 Site Utilities											
30	Paving	40 days	Fri 8/28/20	Thu 10/22/20	8/28 Paving											
31	Site Gravel by Owner	10 days	Fri 10/23/20	Thu 11/5/20	10/23 Site Gravel by Owner											
32	Site Gates, Structures	15 days	Fri 12/11/20	Thu 12/31/20	12/11 Site Gates, Structures											
33	Prefinised Canopy	15 days	Fri 1/22/21	Thu 2/11/21	1/22 Prefinised Canopy											
34	Sidewalk- Front Entry	20 days	Fri 2/12/21	Thu 3/11/21	2/12 Sidewalk- Front Entry											
35	Pavers	10 days	Fri 3/12/21	Thu 3/25/21	3/12 Pavers											
36	Site Sidewalk	10 days	Tue 3/2/21	Mon 3/15/21	3/2 Site Sidewalk											
37	Landscape	20 days	Fri 3/26/21	Thu 4/22/21	3/26 Landscape											
55	Building A - Red Iron Structure	240 days	Tue 6/16/20	Mon 5/17/21	0% Building A - Red Iron Structure											
56	Exterior	158 days	Tue 6/16/20	Thu 1/21/21	0% Exterior											
57	Foundations A	15 days	Tue 6/16/20	Mon 7/6/20	6/16 Foundations A											
58	Install Underground Plumbing - Area A	20 days	Tue 7/28/20	Mon 8/24/20	7/28 Install Underground Plumbing - Area A											
59	Underground Electrical - Building A	15 days	Tue 8/11/20	Mon 8/31/20	8/11 Underground Electrical - Building A											
60	Install Slab on Grade - Building A	10 days	Tue 9/1/20	Mon 9/14/20	9/1 Install Slab on Grade - Building A											
61	Erect Red Iron Structure and Deck - Building A	20 days	Tue 9/15/20	Mon 10/12/20	9/15 Erect Red Iron Structure and Deck - Building A											
62	Exterior Wall Framing - Area A	10 days	Tue 10/13/20	Mon 10/26/20	10/13 Exterior Wall Framing - Area A											
63	Exterior Sheathing - Area A	5 days	Fri 10/23/20	Thu 10/29/20	10/23 Exterior Sheathing - Area A											
64	Exterior Waterproofing - Building A	10 days	Fri 10/30/20	Thu 11/12/20	10/30 Exterior Waterproofing - Building A											
65	Install Metal Panel Roofing - Building A	3 days	Fri 10/30/20	Tue 11/3/20	10/30 Install Metal Panel Roofing - Building A											
66	Install TPO Roofing - Building A	10 days	Wed 11/4/20	Tue 11/17/20	11/4 Install TPO Roofing - Building A											
67	Install Exterior Brick Veneer - Building A	20 days	Fri 11/13/20	Thu 12/10/20	11/13 Install Exterior Brick Veneer - Building A											
68	Exterior Glass order Area A	20 days	Fri 11/13/20	Thu 12/10/20	11/13 Exterior Glass order Area A											
69	Exterior Glazing Area A	15 days	Fri 12/11/20	Thu 12/31/20	12/11 Exterior Glazing Area A											
70	Install EIFS - Building A	15 days	Fri 1/1/21	Thu 1/21/21	1/1 Install EIFS - Building A											
71	Interior	129 days	Wed 11/18/20	Mon 5/17/21	0% Interior											
72	Area A Block 1	107 days	Wed 11/18/20	Thu 4/15/21	0% Area A Block 1											
74	Sealed/Polished Concrete & flooring Protection Area AB1	5 days	Wed 11/18/20	Tue 11/24/20	11/18 Sealed/Polished Concrete & flooring Protection Area AB1											
73	Interior MEP Rough Area AB1	15 days	Fri 1/1/21	Thu 1/21/21	1/1 Interior MEP Rough Area AB1											
76	In Wall MEP - Area AB1	10 days	Fri 1/8/21	Thu 1/21/21	1/8 In Wall MEP - Area AB1											
75	Interior Framing Area AB1	5 days	Fri 1/15/21	Thu 1/21/21	1/15 Interior Framing Area AB1											
77	Drywall Area AB1	5 days	Fri 1/15/21	Thu 1/21/21	1/15 Drywall Area AB1											
79	Paint/Bed Area AB1	10 days	Fri 1/22/21	Thu 2/4/21	1/22 Paint/Bed Area AB1											
78	Interior Overhead MEP - Area AB1	10 days	Fri 1/29/21	Thu 2/11/21	1/29 Interior Overhead MEP - Area AB1											
80	Ceiling Grid Area AB1	10 days	Fri 2/5/21	Thu 2/18/21	2/5 Ceiling Grid Area AB1											
81	Tile Flooring Install Area AB1 Restrooms	10 days	Fri 2/5/21	Thu 2/18/21	2/5 Tile Flooring Install Area AB1 Restrooms											
82	Resinous Flooring Area AB1	5 days	Fri 2/5/21	Thu 2/11/21	2/5 Resinous Flooring Area AB1											
83	MEP Trim Area AB1	10 days	Fri 2/19/21	Thu 3/4/21	2/19 MEP Trim Area AB1											
84	Millwork Install Area AB1	5 days	Fri 3/5/21	Thu 3/11/21	3/5 Millwork Install Area AB1											

Date: Mon 4/27/20

Task
 Split
 Milestone
 Summary
 Project Summary

Group By Summary
 Rolled Up Task
 Rolled Up Critical Task
 Rolled Up Milestone
 Rolled Up Progress

External Tasks
 External Milestone
 Inactive Task
 Inactive Milestone
 Inactive Summary

Manual Task
 Duration-only
 Manual Summary Rollup
 Manual Summary
 Start-only

Finish-only
 Deadline
 Critical Task
 Progress
 Slack



Canadian County Fairgrounds

ID	Task Name	Duration	Start	Finish	2020												2021												2022												2023												2024												2025												2026											
					Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4																																																			
85	Owner Furnished Kitchen Equipment Install Area AB1	10 days	Fri 3/5/21	Thu 3/18/21	3/5 Owner Furnished Kitchen Equipment Install Area AB1																																																																																			
86	Fixture Install - Area AB1	10 days	Fri 3/12/21	Thu 3/25/21	3/12 Fixture Install - Area AB1																																																																																			
87	Door and Hardware Install - Area AB1	4 days	Fri 3/12/21	Wed 3/17/21	3/12 Door and Hardware Install - Area AB1																																																																																			
88	Toilet Partition Install Area AB1	10 days	Fri 3/26/21	Thu 4/8/21	3/26 Toilet Partition Install Area AB1																																																																																			
89	Final Coat Paint - Area AB1	5 days	Fri 4/9/21	Thu 4/15/21	4/9 Final Coat Paint - Area AB1																																																																																			
90	Area A Block 2	89 days	Fri 1/1/21	Wed 5/5/21	0% Area A Block 2																																																																																			
91	Sealed/Polished Concrete & flooring Protection Area AB2	5 days	Fri 1/1/21	Thu 1/7/21	1/1 Sealed/Polished Concrete & flooring Protection Area AB2																																																																																			
92	Interior MEP Rough Area AB2	10 days	Fri 1/1/21	Thu 1/14/21	1/1 Interior MEP Rough Area AB2																																																																																			
93	Interior Framing Area AB2	15 days	Fri 1/8/21	Thu 1/28/21	1/8 Interior Framing Area AB2																																																																																			
94	In Wall MEP - Area AB2	10 days	Fri 1/15/21	Thu 1/28/21	1/15 In Wall MEP - Area AB2																																																																																			
95	Drywall Area AB2	15 days	Fri 1/22/21	Thu 2/11/21	1/22 Drywall Area AB2																																																																																			
96	Interior Overhead MEP - Area AB2	5 days	Fri 2/5/21	Thu 2/11/21	2/5 Interior Overhead MEP - Area AB2																																																																																			
97	Hard Ceilings Area AB2	5 days	Fri 2/12/21	Thu 2/18/21	2/12 Hard Ceilings Area AB2																																																																																			
98	Paint/Bed Area AB2	15 days	Fri 2/19/21	Thu 3/11/21	2/19 Paint/Bed Area AB2																																																																																			
99	Ceiling Grid Area AB2	15 days	Fri 3/5/21	Thu 3/25/21	3/5 Ceiling Grid Area AB2																																																																																			
100	Carpet/Tile Flooring Office Area AB2	10 days	Fri 3/26/21	Thu 4/8/21	3/26 Carpet/Tile Flooring Office Area AB2																																																																																			
101	MEP Trim Area AB2	10 days	Fri 3/26/21	Thu 4/8/21	3/26 MEP Trim Area AB2																																																																																			
102	Millwork Install Area AB2	10 days	Fri 4/2/21	Thu 4/15/21	4/2 Millwork Install Area AB2																																																																																			
103	Door and Hardware Install - Area AB2	4 days	Fri 4/16/21	Wed 4/21/21	4/16 Door and Hardware Install - Area AB2																																																																																			
104	Final Coat Paint - Area AB2	10 days	Thu 4/22/21	Wed 5/5/21	4/22 Final Coat Paint - Area AB2																																																																																			
105	Area A Block 3	97 days	Fri 1/1/21	Mon 5/17/21	0% Area A Block 3																																																																																			
106	Sealed/Polished Concrete & flooring Protection Area AB3	10 days	Fri 1/1/21	Thu 1/14/21	1/1 Sealed/Polished Concrete & flooring Protection Area AB3																																																																																			
107	Interior MEP Rough Area AB3	10 days	Fri 1/15/21	Thu 1/28/21	1/15 Interior MEP Rough Area AB3																																																																																			
108	Interior Framing Area AB3	10 days	Fri 1/22/21	Thu 2/4/21	1/22 Interior Framing Area AB3																																																																																			
109	In Wall MEP - Area AB3	10 days	Fri 1/29/21	Thu 2/11/21	1/29 In Wall MEP - Area AB3																																																																																			
110	Drywall Area AB3	10 days	Fri 2/5/21	Thu 2/18/21	2/5 Drywall Area AB3																																																																																			
111	Interior Overhead MEP - Area AB3	10 days	Fri 2/19/21	Thu 3/4/21	2/19 Interior Overhead MEP - Area AB3																																																																																			
112	Hard Ceilings Area AB3	5 days	Fri 3/5/21	Thu 3/11/21	3/5 Hard Ceilings Area AB3																																																																																			
113	Paint/Bed Area AB3	15 days	Fri 3/12/21	Thu 4/1/21	3/12 Paint/Bed Area AB3																																																																																			
114	Ceiling Grid Area AB3	2 days	Fri 4/2/21	Mon 4/5/21	4/2 Ceiling Grid Area AB3																																																																																			
115	Tile Flooring Install Area AB3 Restrooms	5 days	Fri 4/2/21	Thu 4/8/21	4/2 Tile Flooring Install Area AB3 Restrooms																																																																																			
116	MEP Trim Area AB3	5 days	Tue 4/6/21	Mon 4/12/21	4/6 MEP Trim Area AB3																																																																																			
117	Millwork Install Area AB3	5 days	Tue 4/13/21	Mon 4/19/21	4/13 Millwork Install Area AB3																																																																																			
118	Fixture Install - Area AB3	10 days	Tue 4/20/21	Mon 5/3/21	4/20 Fixture Install - Area AB3																																																																																			
119	Door and Hardware Install - Area AB3	4 days	Tue 4/20/21	Fri 4/23/21	4/20 Door and Hardware Install - Area AB3																																																																																			
120	Toilet Partition Install Area AB3	5 days	Tue 5/4/21	Mon 5/10/21	5/4 Toilet Partition Install Area AB3																																																																																			
121	Final Coat Paint - Area AB3	5 days	Tue 5/11/21	Mon 5/17/21	5/11 Final Coat Paint - Area AB3																																																																																			
159	Building B&C - PEMB	181 days	Tue 6/16/20	Tue 2/23/21	0% Building B&C - PEMB																																																																																			
160	Foundations B & C	20 days	Tue 6/16/20	Mon 7/13/20	6/16 Foundations B & C																																																																																			
161	Underground French Drain Arena - Area B/C	15 days	Tue 6/16/20	Mon 7/6/20	6/16 Underground French Drain Arena - Area B/C																																																																																			
162	Underground MEP - Area B/C	10 days	Tue 6/30/20	Mon 7/13/20	6/30 Underground MEP - Area B/C																																																																																			
163	Temporary Arena Base - Area B/C	2 days	Tue 7/7/20	Wed 7/8/20	7/7 Temporary Arena Base - Area B/C																																																																																			
166	Slab on Grade Area B & C Prep	5 days	Tue 7/14/20	Mon 7/20/20	7/14 Slab on Grade Area B & C Prep																																																																																			
165	Erect PEMB - Area B/C	30 days	Tue 7/21/20	Mon 8/31/20	7/21 Erect PEMB - Area B/C																																																																																			
167	Masonry Exterior Veneer - Area B/C	20 days	Tue 8/11/20	Mon 9/7/20	8/11 Masonry Exterior Veneer - Area B/C																																																																																			
168	Hanger Install Prior to Simple Saver - Area B/C	20 days	Tue 9/1/20	Mon 9/28/20	9/1 Hanger Install Prior to Simple Saver - Area B/C																																																																																			
169	High Bay Windows Area B&C	10 days	Tue 9/1/20	Mon 9/14/20	9/1 High Bay Windows Area B&C																																																																																			

Date: Mon 4/27/20

Task Group By Summary External Tasks Manual Task Finish-only

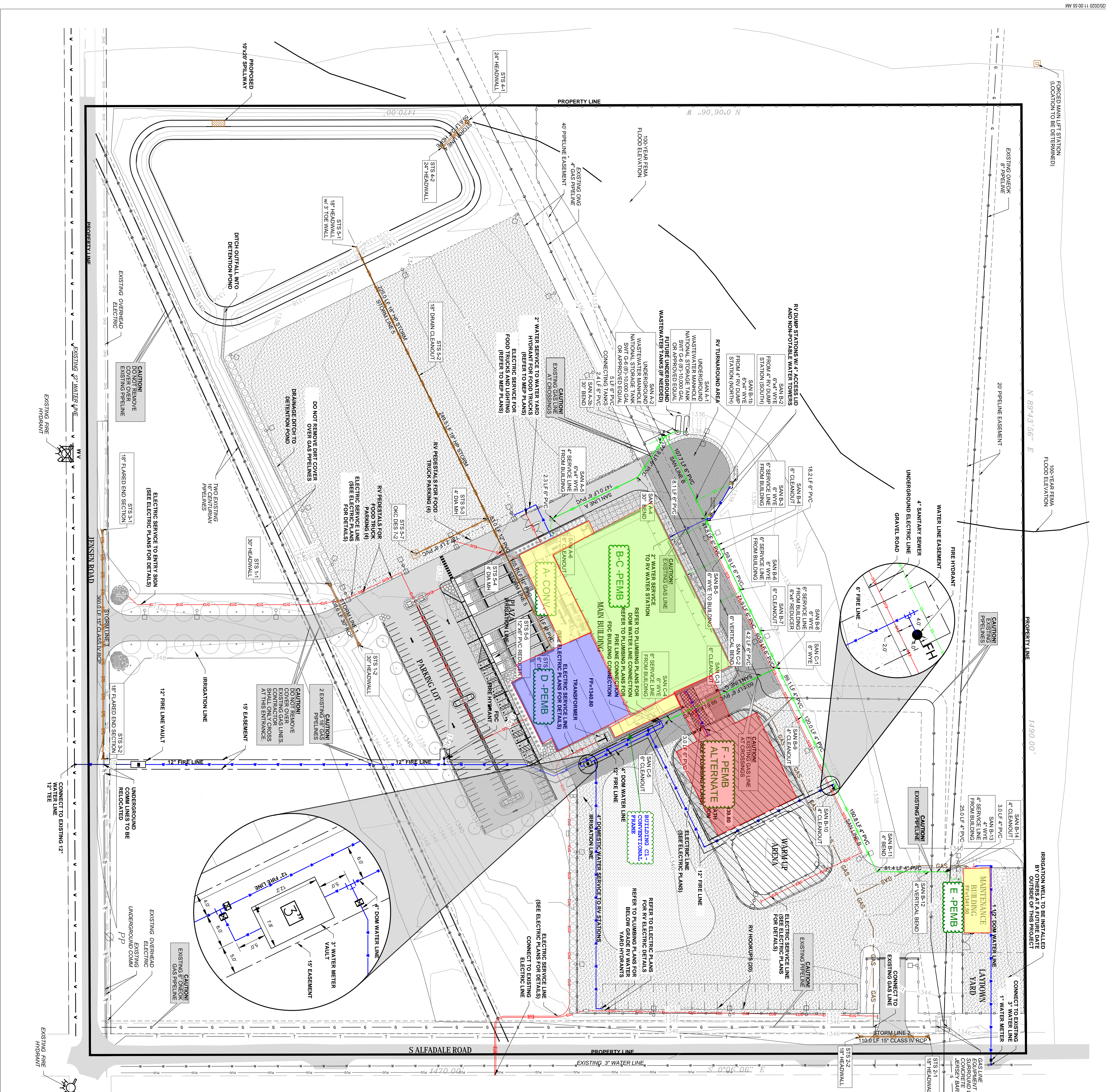
Split Rolled Up Task External Milestone Duration-only Deadline

Milestone Rolled Up Critical Task Inactive Task Manual Summary Rollup Critical Task

Summary Rolled Up Milestone Inactive Milestone Manual Summary Progress

Project Summary Rolled Up Progress Inactive Summary Start-only Slack





LEGAL DESCRIPTION:

A TRACT OF LAND LYING IN THE SOUTHEAST QUARTER (SE 1/4) OF SECTION TWENTY-TWO (22), TOWNSHIP 12 NORTH, RANGE 7 WEST OF THE INDIAN MERIDIAN, THENCE SOUTH 89°43'56" WEST, ALONG THE SOUTH LINE OF SAID SOUTHEAST QUARTER (SE 1/4), A DISTANCE OF 1490.00 FEET, TO THE POINT OF BEGINNING OF THE EAST LINE OF THE SOUTHEAST QUARTER (SE 1/4), THENCE SOUTH 00°05'05" EAST, ALONG THE EAST LINE OF SAID SOUTHEAST QUARTER (SE 1/4), A DISTANCE OF 1470.00 FEET TO THE POINT OF BEGINNING, SAID TRACT OF LAND CONTAINS AN AREA OF 2,190.291 SQUARE FEET OR 50.28 ACRES, MORE OR LESS.

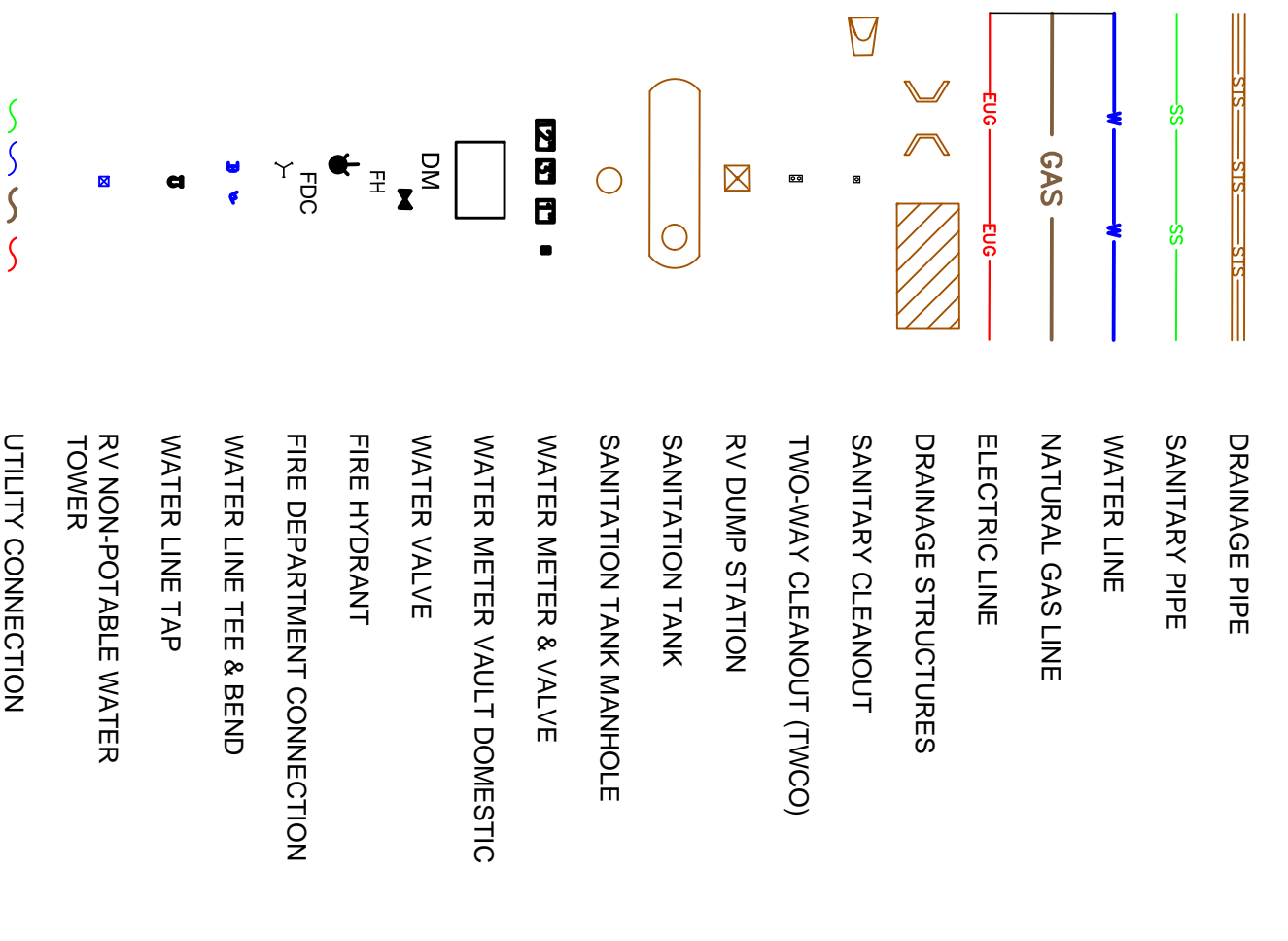
UTILITIES:

THE CONTRACTOR SHALL CONTACT THE ONE-CALL SYSTEM AT 1-800-522-6543 NO LESS THAN 48 HOURS PRIOR TO COMMENCING ANY EXCAVATION. THE CONTRACTOR SHALL ALSO COORDINATE WITH ALL ELECTRICAL, TELEPHONE, CABLE TELEVISION AND NATURAL GAS LINE RELOCATIONS AS NECESSARY.

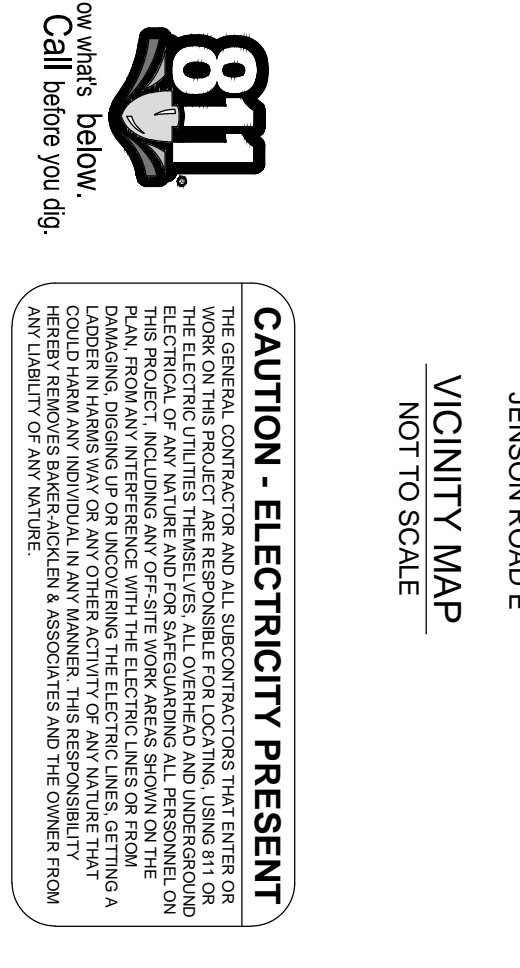
UTILITY CONTACTS:

- CITY OF EL RENO**
 CONTACT: JEFF KOUBA
 ADDRESS: 2404 SPUR LANE
 EL RENO, OK 73036
 PHONE: 405-422-2139
 FAX: 405-422-1920
- WATER AND SEWER**
 CANADIAN COUNTY RURAL WATER AUTHORITY
 CONTACT: DONNA YARBOROUGH
 ADDRESS: 2711 DARBEN AVENUE
 EL RENO, OK 73036
 PHONE: 405-282-8730
- GAS**
 OKLAHOMA NATURAL GAS
 CONTACT: JEFF KOUBA
 ADDRESS: 2404 SPUR LANE
 EL RENO, OK 73036
 PHONE: 405-422-2139
 FAX: 405-422-1920
- ELECTRIC**
 OKLAHOMA GAS & ELECTRIC (OG&E)
 CONTACT: RAE ANNE LAMWENCHE
 ADDRESS: 2001 S. HIGHWAY 81
 OKLAHOMA CITY, OK 73101
 PHONE: 405-553-5785
 FAX: 405-388-8599
- TELEPHONE & FIBER OPTIC**
 CONTACT: JEREMY EVANS
 ADDRESS: 2728 MARK LANE
 EL RENO, OKLAHOMA 73036
 PHONE: 405-433-1041
 FAX: 405-433-1041
 EMAIL: JEVANS@OKSTATE.EDU

UTILITY LEGEND



CAUTION - ELECTRICITY PRESENT



POPULOUS
 Architectural Planning
 Interior Programming
 1400 N. W. 10th Street
 Suite 100
 Oklahoma City, OK 73107
 (405) 241-1500

HALFF
 2000 N. Classen Blvd., Suite 128
 Oklahoma City, Oklahoma 73108
 MAIN (405) 546-3820
 FAX (405) 546-3820

REGISTERED PROFESSIONAL ENGINEER
 JONATHAN W. WILSON
 No. 10000
 State of Oklahoma
 (405) 771-1999

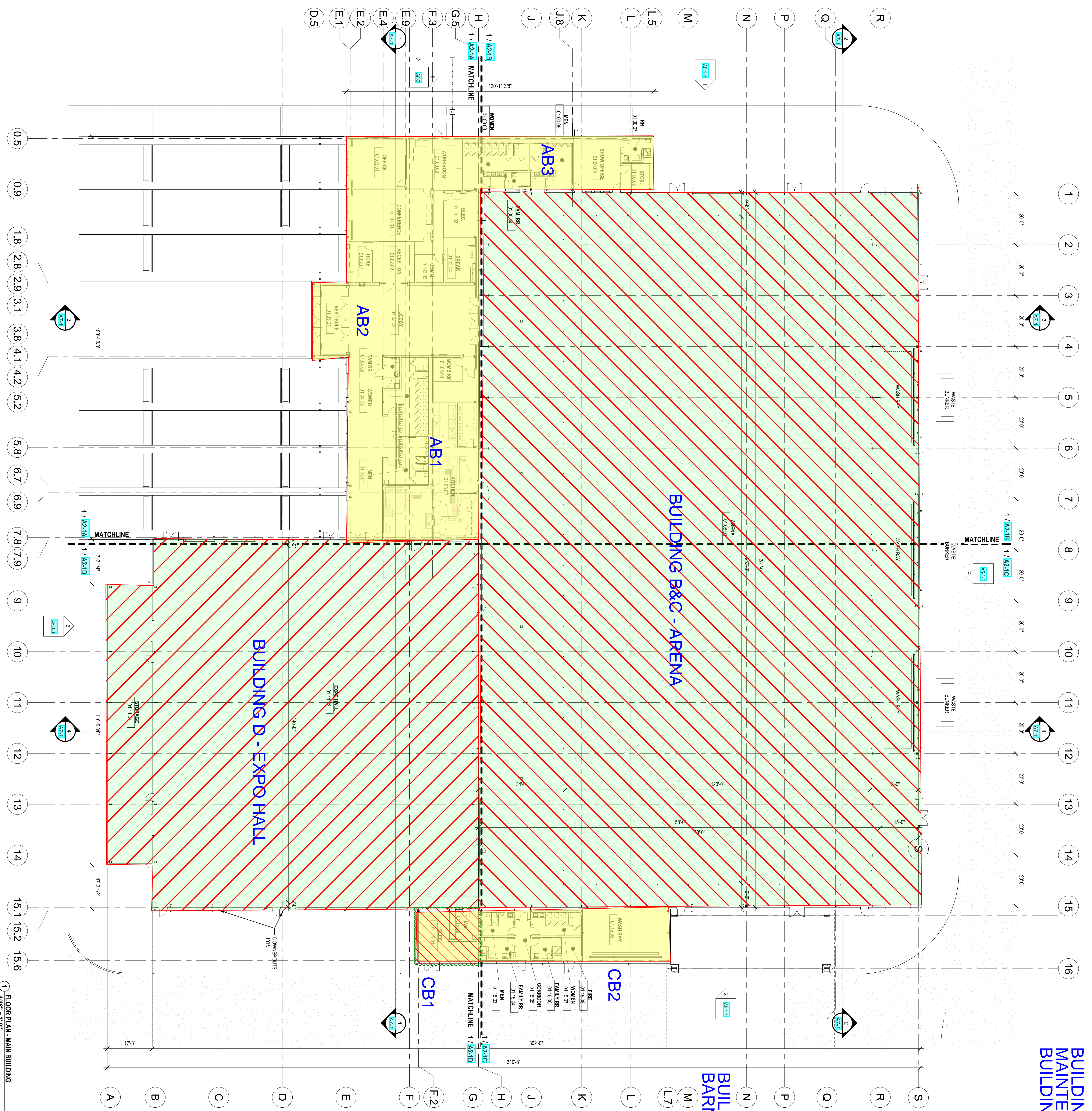
3/20/2020

REVISIONS

NO.	DATE	DESCRIPTION
1	3/20/2020	ISSUE FOR PERMIT

OVERALL UTILITY PLAN
 (PRINT IN COLOR)

C7-0



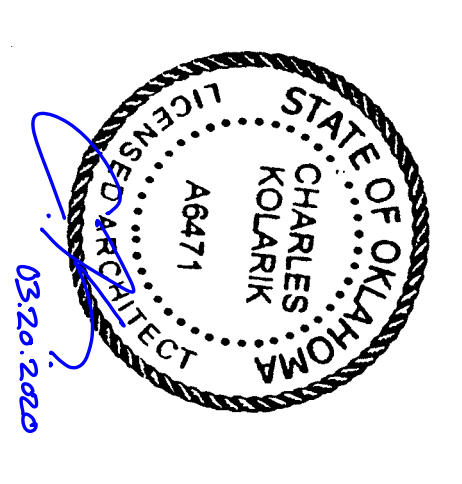
**BUILDING E -
 MAINTENANCE
 BUILDING**

**BUILDING F - STALL
 BARN ALTERNATE**

1 FLOOR PLAN - MAIN BUILDING
 1/8" = 1'-0"

- GENERAL NOTES**
1. ALL CONSTRUCTION TO CONFORM TO SPECIFICATIONS AND BUILDING CODES, REFER TO THE SPECIFICATIONS.
 2. ALL BUILDING ELEMENTS AND MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL AND STATE REQUIREMENTS.
 3. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE SPECIFICATIONS SHALL BE REFERRED TO THE ARCHITECT FOR CLARIFICATION.
 4. INSTALL ALL PRODUCTS AND MATERIALS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS.
 5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS.
 6. CALLER ALL JOINTS OR SPACES WHICH ARE NOT SHOWN SHALL BE FILLED WITH MATERIALS INTEREST.
 7. PROVIDE & INSTALL GIVE WALL TOP OF FINISH FLOOR TO MATCH THE FINISH FLOOR ON ALL WALLS WHERE REQUIRED. COORDINATE LOCATION IN THE DRAWINGS WITH THE INTENT OF THE DESIGN TO AVOID CONTROL JOINTS.
 8. CONTRACTOR TO PROVIDE SOLID BLOCKING FOR ALL WALLWORK. PROVIDE BLOCKING FOR ALL WALLWORK TO ALLOW ACCESSORS, STORAGE, AND TOILET ACCESSORIES, SIGNAGE, AND REPAIRS TO BE INSTALLED.
 9. ARCHITECTURAL PLANS TAKE PRECEDENCE OVER CONTRACT DOCUMENTS IN THE EVENT OF ANY DISCREPANCIES BETWEEN ARCHITECTURAL AND ENGINEERING DRAWINGS.

POPULOUS
 Architects, Planners, Engineers, Programmers
 1000 N. Main Street
 Suite 1100
 Oklahoma City, OK 73102
 (405) 241-1500



CANADIAN COUNTY EXPO CENTER
 3001 Jensen Rd E
 El Reno, OK 73036

CONSTRUCTION DOCUMENTS
 3/20/2020

NO.	DATE	DESCRIPTION

TRUE NORTH

PROJECT NORTH

0' 1" = 1'-0"

POPULOUS
 18.4703

REFERENCE PLAN - GROUND LEVEL

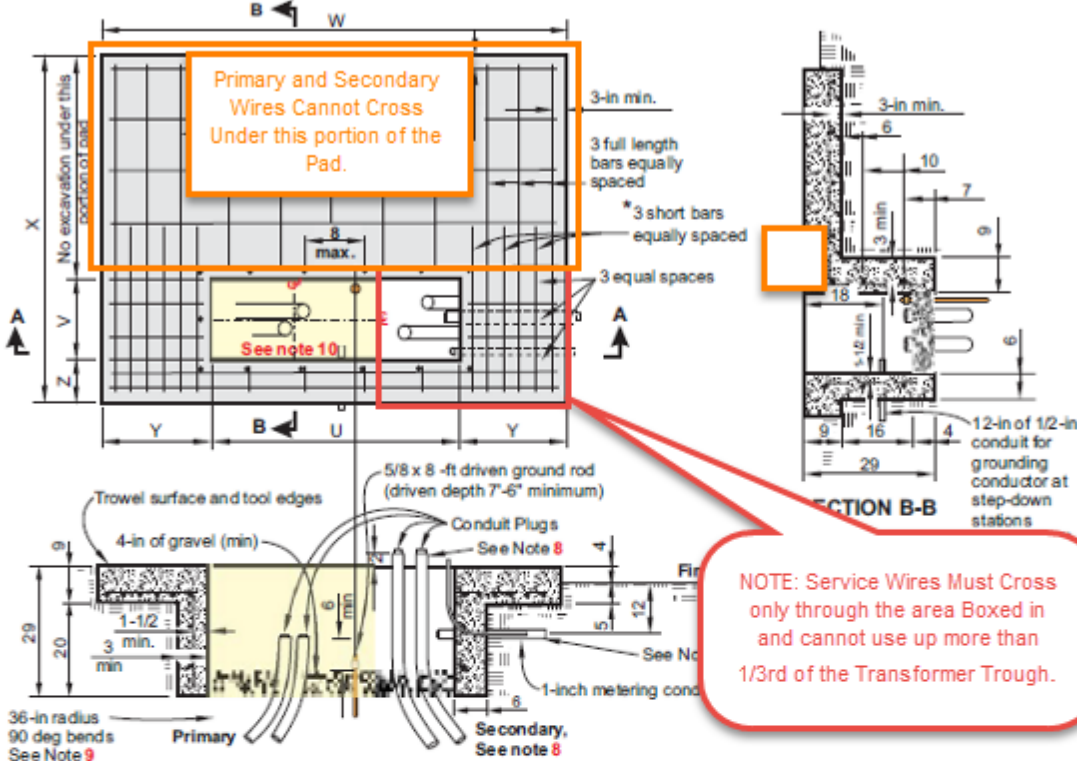
A1-1

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UNDERGROUND STANDARD
 FEB 2018

U190



12.5 kV	24.9 kV	34.5 kV	Transformer Size (kVA)	U	V	W	X	Y	Z	Concrete Cubic Yards
X			UP to 750	58	16	80	80	*11	12	2.0
X			1000 to 2500	70	20	108	112	19	16	3.0
	X	X	150 to 2500	70	20	108	112	19	16	3.0
			Step Down Transf. 1000 to 5000	70	20	108	112	19	16	3.0
			Step Down Transf. 7500	88	20	136	126	24	16	4.5

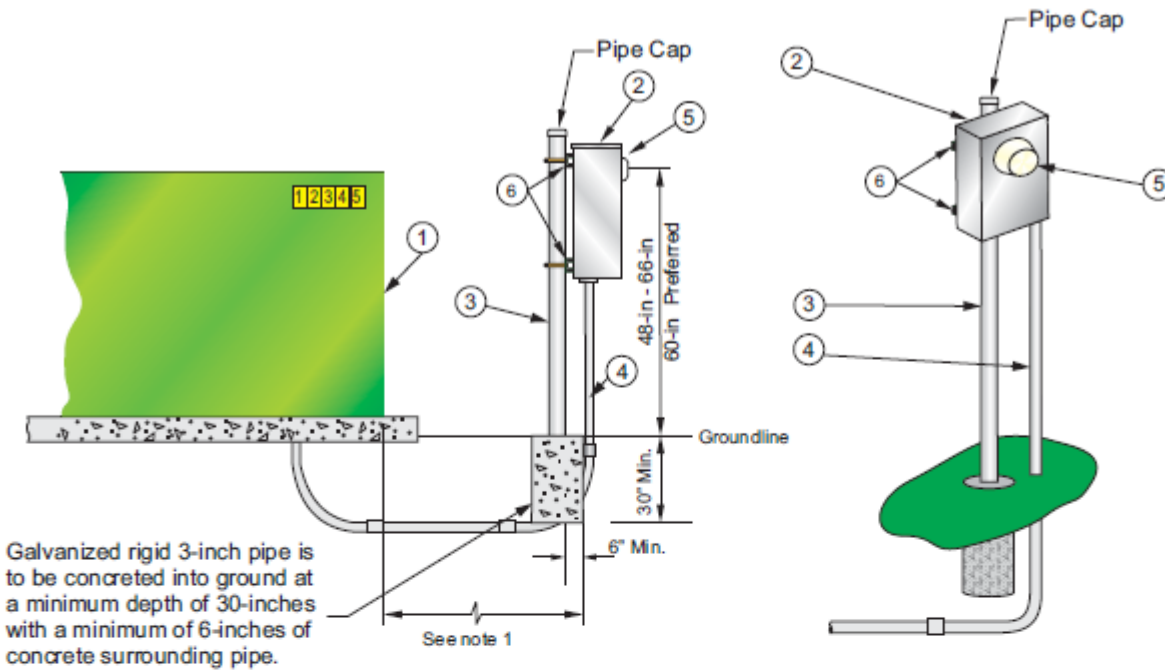
* Leave 3 short bars out between trough and side of pads

- NOTES:**
1. Pad is to be poured on undisturbed earth. If pad is not poured on undisturbed earth, see U180.1 (Pad Foundation).
 2. Transformer pad must be installed as level. Pads supporting oil-filled equipment must be level.
 3. Contact OG&E to inspect forms and conduit installations prior to pouring concrete.
 4. All reinforcing steel shall be No.4 round deformed bars.
 5. Concrete shall be 3000-PSI with 3/4 aggregate and dust fines with just enough water to make a workable mix.
 6. Minimum concrete cover over reinforcing steel shall be 3-inches when against the earth and 1-1/2-inch when formed.
 7. Install 2-inch PVC conduit plugged at both ends for temporary service. This conduit can come from bottom like the secondary conduit rather than through the concrete wall.
 8. When applicable run secondary conduit 2-inches above pad to prevent fluid from funneling into customers building. If conduit conflicts with cable training then it is recommended that the conduit be cut off at a depth that will allow cable training. The conduit should still be left at a distance to prevent fluids from draining into the customers service entrance and no less than 6 inches above gravel in bottom of trough.
 9. Primary conduit shall extend a minimum of 6-inches above the gravel in bottom of trough. If conduit extends higher than the minimum of 6-inches and interferes with cable training then cut the conduit to a height that will allow the necessary cable training, but no lower than the 6-inch minimum. **Primary conduits shall be centered in primary area.**
 10. The left two-thirds of trough to be reserved for OG&E primary.

**POURED THREE PHASE TRANSFORMER PAD
 FOR PADMOUNTED DISTRIBUTION TRANSFORMERS**

APPROVED SIGNATURES ON FILE SUPERSEDES MAR 2012 ISSUE

MAIN EXPO CENTER METER STANDARD



ITEM Number	DESCRIPTION	FURNISHED BY		INSTALLED BY	
		O.G.&E.	CONSUMER	O.G.&E.	CONSUMER
1	Transformer	X		X	
2	CT Meter Base	X			X
3	3-inch Galvanized Rigid pipe set in concrete		X		X
4	Metering Conduit 1-inch sch 40 or rigid		X		X
5	Meter	X		X	
6	1 5/8-inch Kindorf and Clamps		X		X

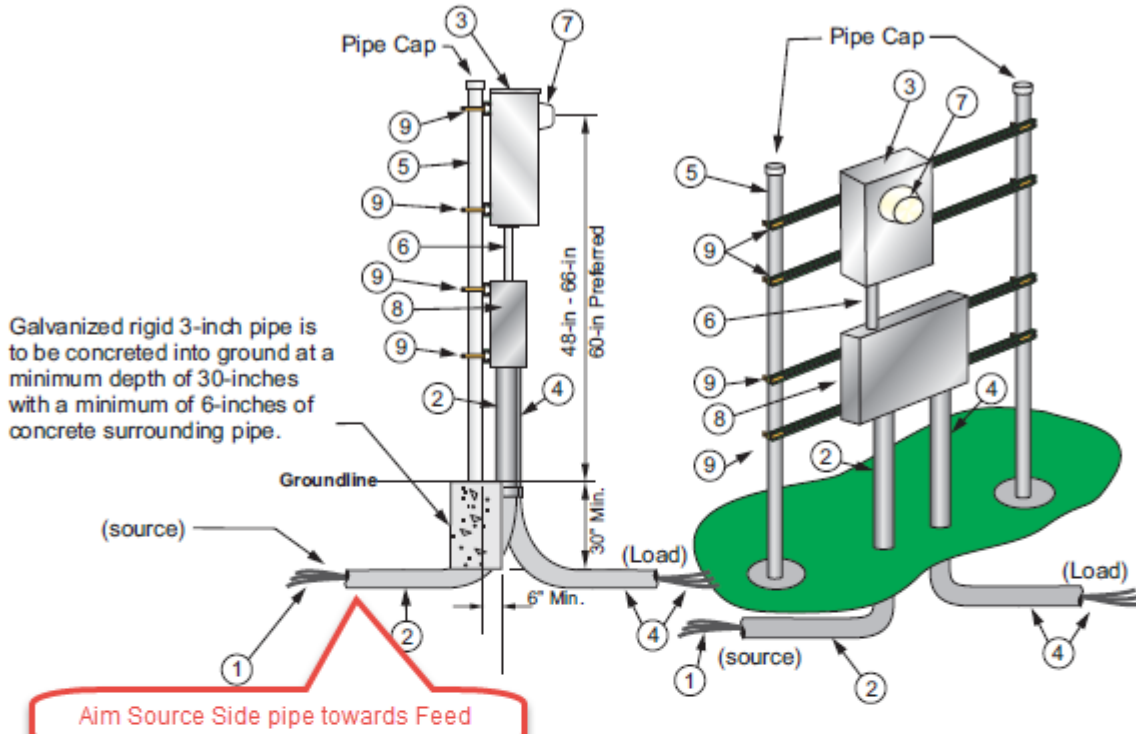
Notes

1. **Metering to be on free-standing structure adjacent to transformer pad. CT wiring not to exceed 20 feet in total length.**
2. Place cap on top of pipe to keep moisture from inside of pipe to prevent deterioration.
3. Pipe to be galvanized rigid 3-inch pipe. Pipe to be set at a minimum depth of 30-inches with a minimum of 6-inches of concrete surrounding pipe.
3. In order for the meter to be accessible for operation and maintenance, a minimum of 4 feet clearance from all obstructions must be maintained in front of the meter.
4. Refer to U16 for proper identification and marking.

**CT METERING COMPONENTS
 INSTALLATION INSTRUCTIONS
 ONE CUSTOMER AND CT'S IN TRANSFORMER
 THREE-PHASE ONLY**

RV PARK METER STANDARD FOR A 400AMP, 480Y/277 Meter Free Standing Meter Base. Electrician will be responsible for the placement of the CT's with in the CT Can.

U773.10



ITEM Number	DESCRIPTION	FURNISHED BY		INSTALLED BY	
		O.G.&E.	CONSUMER	O.G.&E.	CONSUMER
1	Service Lateral	X		X	
‡ 2	Service Lateral Raceway & 90° Bend		X		X
3	CT Meter Base	X			X
4	Conduit and wire		X		X
5	3-inch Galvanized Rigid Pipe set in concrete		X		X
6	Metering Conduit 1-inch sch 40		X		X
7	Meter	X		X	
* 8	CT Cabinet	X			X
9	1 5/8-inch Kindorf and Clamps		X		X

‡ Size and number of conduits as specified by OG&E
 * Secondary Connection Box shall be bonded to neutral block

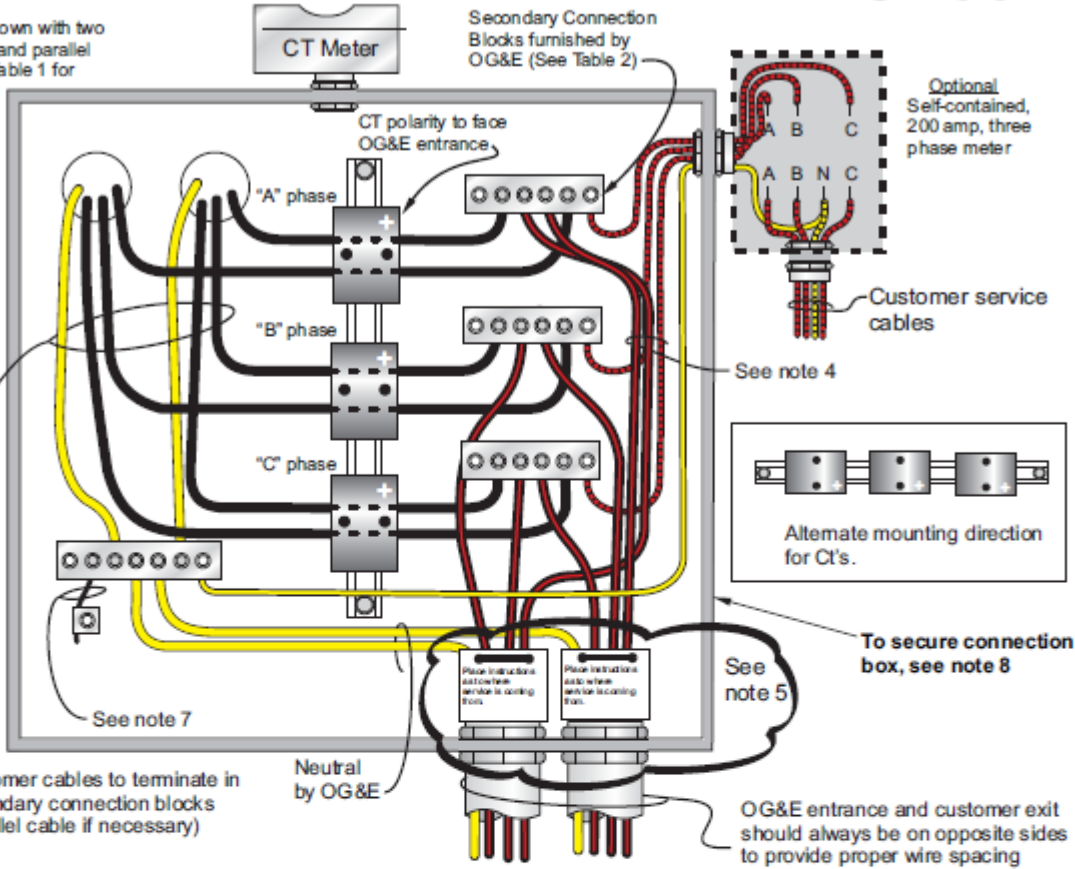
Notes

1. Place caps on top of pipes to keep moisture from inside of pipe to prevent deterioration.
2. Pipe to be galvanized rigid 3-inch pipe. Pipe to be set at a minimum depth of 30-inches with a minimum of 6-inches of concrete surrounding pipe.
3. Refer to U16 for proper identification and marking.
4. In order for the meter to be accessible for operation and maintenance, a minimum of 4 feet clearance from all obstructions must be maintained in front of the meter.

**CT METERING COMPONENTS
 INSTALLATION INSTRUCTIONS
 ONE CUSTOMER AND CTS IN CT CABINET
 SINGLE-PHASE OR THREE-PHASE**

U765.1

CT cabinet shown with two 4-in conduits and parallel cables (See Table 1 for cabinet sizes)



NOTES:

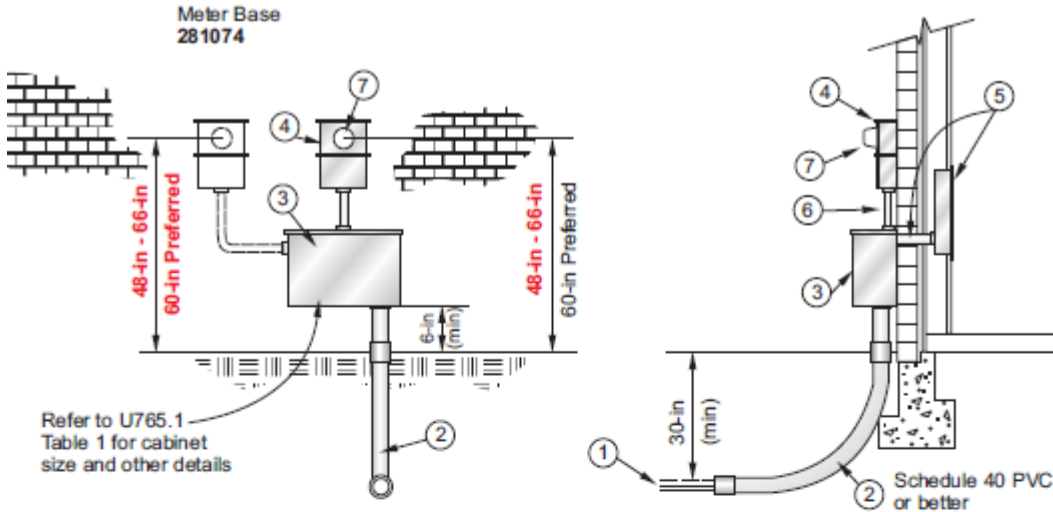
1. Current transformers to be installed in the position that provides the best spacing for line and load conductors.
2. Service and metering connections made by OG&E.

TABLE 1

TYPE	MAX CURRENT	STOCK ACCOUNT	CONNECTION POINTS	TAP SIZE	SERVICE
0-KCMI	600	264366	2 6 AWG thru 300-KCMI	2 6 AWG thru 36	
0-KCMI	600	264196	2 6 AWG thru 600-KCMI	4 6 AWG thru 60	
0-KCMI	1200	1019076	2 0 AWG thru 760-KCMI	4 0 AWG thru 76	
0-KCMI	1200	264224	2 0 AWG thru 760-KCMI	6 0 AWG thru 76	

CONNECTION DIAGRAM
 THREE PHASE CT METER IN ORIGINAL POSITION WITH OPTIONAL SELF-CONTAINED METER

400Amp Meter Base on Maintenance Building, 480Y/277.



Refer to U765.1
 Table 1 for cabinet
 size and other details

ITEM Number	DESCRIPTION	FURNISHED BY		INSTALLED BY	
		O.G.&E.	CONSUMER	O.G.&E.	CONSUMER
1	Service Lateral	X		X	
‡ 2	Service Lateral Raceway		X		X
+ 3	Current Transformer Enclosure	X			X
+ 4	Transformer rated Meter Base	X			X
5	Service Equipment		X		X
6	Metering Conduit 1-inch		X		X
7	Meter	X		X	
* 8	Grounding Electrode & Grounding Electrode Conductor		X		X

‡ Size and number of conduits as specified by OG&E
 + Alternate location is shown dotted
 * Current transformer enclosure shall be bonded to neutral block
 * Not shown

- Notes:
- Where metering equipment is exposed to vehicular traffic a protective pipe should be installed in concrete 4-ft in front of metering equipment.
 - Wiring from CTs to meter is not to exceed 20 feet in total length.
 - OG&E equipment is to be installed on outside surface of structure and is not to be recessed.
 - Refer to U16 for proper identification and marking.

**METER INSTALLATION
 FOR CURRENT TRANSFORMER METERING
 SINGLE OR THREE PHASE 1200-AMPERES MAXIMUM**

Please let me know if further information may be needed.

Sincerely
 James Pine

Oklahoma Gas & Electric

Project Manager

West District

1-(405)-365-8756

PineJC@OGE.Com

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
- b. Trade Package 2-3: Fences and Gates
- c. Trade Package 2-4: Paving & Site Concrete
- d. Trade Package 2-5: Concrete Pavers
- e. Trade Package 2-6: Landscaping & Irrigation
- f. Trade Package 2-7: Equine Protective Surface System
- g. Trade Package 3-1: Structural Concrete
- h. Trade Package 3-2: Polished Concrete Floors & Sealer
- i. Trade Package 4-1: Masonry
- j. Trade Package 5-1a: Structural Steel Fabrication
- k. Trade Package 5-1b: Structural Steel Erection
- l. Trade Package 5-1c: Structural Steel Supply and Erection
- m. Trade Package 6-1: Millwork
- n. Trade Package 7-1 Waterproofing
- o. Trade Package 7-2: TPO Roofing
- p. Trade Package 7-3 EIFS
- q. Trade Package 8-1: Glass & Glazing
- r. Trade Package 8-2: Doors, Frames, & Hardware
- s. Trade Package 8-3: Coiling and Sectional Doors
- t. Trade Package 9-1 Cold Form Framing & Drywall
- u. Trade Package 9-2: Tape, Bed, Paint
- v. Trade Package 9-3: Flooring & Tile
- w. Trade Package 9-4: Resinous Flooring
- x. Trade Package 10-1: Specialties Supply
- y. Trade Package 10-2: Misc. & Install
- z. Trade Package 10-3: Graphics & Signage
- aa. Trade Package 10-4 Prefabricated Metal Canopies
- 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 +/- 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.
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 3rd 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'. 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.
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. Final 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.
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 at vehicular pavement areas as backfill at area above piping. Refer detail on C11-2.

Alternates

36. 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.

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.

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. This bid package shall be responsible for supplying and installing all pipe bollards.
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 Polyplast flooring as called off in documents but should provide adequate blockout 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 8" modified subgrade and shall include improving subgrade, 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.

Trade 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.

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.
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.
- 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.**

Alternates:

- ii. 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.
- jj. 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.

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 damproofing. 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.

Alternates:

31. This Trade Package shall include Stall Barn Masonry Scope as part of Alternate #01. Base bid shall not include elements required for Stall Barn.

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 2nd 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 3rd 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.

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.

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.

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.

Specification Section:	Description:
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.

Specification Section:	Description:
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 120 working hours as well as \$5,000 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. 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.

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.
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. 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.**

Alternates:

23. 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.

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.

Specification Section:	Description:
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 3rd 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.

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.

Specification Section:	Description:
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 system, obtaining the fire alarm permits and passing associated inspections including submission, interaction with inspectors, payment of fees, and pulling the permit.
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
 - 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.

Alternates:

- e. **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
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

- 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.

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.

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.
6. 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. The fire line shall be stubbed up inside of the fire room.
7. Final connections (at the building) for domestic water, storm sewer, roof drains, and sanitary sewer to be performed by the Plumbing contractor.
8. 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.
9. Provide and install grease interceptor and associated piping and tie ins to sanitary sewer system.
10. 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.
11. Condensate drainage piping shall be provided by and installed by this 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.
12. 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.
13. 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.
14. Provide and install thrust blocks, concrete, anchors, and guides for underground piping.
15. Provide all disinfectants, chlorination/flushing, and testing of domestic water systems per the Contract Documents.
16. Provide temporary water at building for construction purposes.
17. 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.
18. Provide regulators and valves as indicated in the Plumbing Drawings.
19. 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.

20. Exhaust Hood(s) Coordination

- 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. 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.

22. 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.
23. 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.
24. This Trade Contractor shall include plumbing and product for trench drains.
25. 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.
26. 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.
27. Site Plumbing such as yard hydrants shall be provided and installed by Plumbing Trade Contractor.
28. 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.
29. Grease Interceptor and components required for complete installation to be provided by this Trade Package.
30. 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.

Alternate 01:

31. 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.

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.
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.
19. 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.
20. 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.

15. Exhaust Hood(s) Coordination

- 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.

16. 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.
17. This Trade Package shall be responsible for in-slab raceways, junction boxes, cable trays, etc such as those shown for the expo hall.
 18. This trade Package shall be responsible for video walls/displays as shown on the contract documents.
 19. This Trade Package shall supply PA/AV scope of work conduit as shown on E3-2, E3-3
 20. 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.
 21. 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.
 22. This Trade Package shall be responsible for the RV Pedestal and all components outlined in/E0-3.
 23. 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.
 24. This Trade Package shall be responsible for providing conduit from transformers to buildings or load location. REFER 01 32 00.

Alternate:

25. 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.



Canadian County Expo Center

Bid Package #02 – RFI Questions from 3/20/2020 Permit Set.

Construction Bulletin 01 Addendum 02:

Please note that Addendum 01 was a part of Bid Package 01. Construction Bulletin 01 is the first clarification of Bid Package 02.

Questions:

1. Bird Control Devices: Please specify Bird Control Device type and location.
 - a. No Bird Control Devices in the project.
2. Ground Set Flagpole: Please specify ground set flagpole location.
 - a. No ground set flagpole in the project.
3. Please clarify that PVC is acceptable to use for grease waste as specifications do not require alternate or indicate alternate such as cast-iron.
 - a. 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
4. Refer to design team narrative attached for additional clarifications.

TO:	Jacob Lingo	Addendum NO#:	002
ISSUE DATE:	4/24/2020	PROJECT NAME:	Canadian County Expo Center
COPIES:	Stan Lingo Travis Pawley Todd Gralla Charlie Kolarik Kristin Gardner Jonathan Heusel Nate Clair Scott Barrett Kellie Johnston Larry Curtis Art Lantagne Kevin Parsons Will Davis Chris Mosteiro Tim Van Ostran Tracy Taraski	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:

CIVIL

- C1-3 Street Typicals
 - All modified subgrade under the asphalt, gravel and concrete typicals was changed to aggregate base to match the geotechnical report.
 - The 3" S3 type asphalt was thickened to 5" S3 type asphalt (2" lift on top of 3" lift). To match the geotech report.
 - The mountable 6" concrete apron adjacent to the building was thickened to 7".
 - The 7" concrete apron created a 1" lip onto the gravel road.
 - Asphalt road typical clarified to include driveways.
- C5-0 Roadway Plan and Profile – Station 200+00 to 210+00
 - Storm Line 3 (15" Class IV RCP) was changed to 18" Class IV RCP.
 - Added sleeves to sleeve callouts
- C5-1 Roadway Plan and Profile – Station 210+00 to 219+37
 - Storm Line 2 (15" Class IV RCP) was changed to 18" Class IV RCP.
- C5-2 Parking Lot Plan and Profile – Station 220+00 to 225+65
 - Added sleeves to sleeve callouts
 - 6" waterline callout changed to 12" waterline
- C7-0 Overall Utility Plan
 - The 4" domestic water line was changed to a 3" line.
 - Changed the 1" maintenance building meter to a 2" meter
 - Added a 4" sanitary sewer connection for the Stall Barn at the SW corner.
 - Changed the 12" line from the east side of the Expo to an 8" water line south and east of the Stall Barn to the FH.
 - Added 8" gate valves near the FH assembly north of the Stall Barn
 - Changed the 12" plug to an 8" plug
 - Revised the 12" x 6" tee to an 8"x6" tee.
 - Storm Line 2 (15" Class IV RCP) was changed to 18" Class IV RCP.

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- Storm Line 3 (15" Class IV RCP) was changed to 18" Class IV RCP.
- C8-0 Storm Sewer Plan and Profile - Lines 1 & 2
 - Added sleeves to sleeve callouts
 - Storm Line 2 (15" Class IV RCP) was changed to 18" Class IV RCP in plan view.
 - Storm Line 2 (15" Class IV RCP) was changed to 18" Class IV RCP in profile view.
- C8-1 Storm Sewer Plan and Profile - Line 3
 - Added sleeves to sleeve callouts
 - Storm Line 3 (15" Class IV RCP) was changed to 18" Class IV RCP in plan view.
 - Storm Line 3 (15" Class IV RCP) was changed to 18" Class IV RCP in profile view.
- C8-2 Storm Sewer Plan and Profile - Line 4
 - Callouts for fence moved
- C8-3 Storm Sewer Plan and Profile - Line 5
 - Added sleeves to sleeve callouts
- C9-0 Sanitary Sewer Plan and Profile - Line A
 - Callouts for fence removed
- C9-1 Sanitary Sewer Plan and Profile - Line B
 - Callouts for tanks relocated
- C9-2 Sanitary Sewer Plan and Profile - Line B
 - 1.5" domestic line changed to 3" domestic line
 - 12" fire line callout changed to 8" fire line callout
- C10-1 Erosion Control Plan
 - Callouts for silt fence changed
- C11-0 ADA Compliance and Pavement Details
 - Detail 7 - Modified Subgrade changed to aggregate base.
 - Detail 8 – Modified subgrade changed to aggregate base.
 - Detail 8 – 6" concrete or asphalt pavement thickened to 7".
 - Detail 8 – 8" flush curb has 1" lip onto the gravel road.
 - Detail 9 – Modified subgrade changed to aggregate base.
 - Detail 9 – 6" concrete or asphalt pavement thickened to 7".
 - Detail 9 – 8" valley curb has 1" lip onto the gravel road.
 - Detail 10 – Modified subgrade changed to aggregate base.
 - Detail 10 – 6" concrete pavement thickened to 7".
 - Detail 10 – Thickened concrete has 1" lip onto the gravel road.
 - Added Detail 11 - Asphalt Parking Lot Typical.
 - Added Detail 12 - Concrete Parking Lot Typical.
 - Added Detail 13 – 4' Concrete Flume
 - Added Detail 14 – 10' x 20' Spillway

LANDSCAPE

- 32 84 00 – LANDSCAPE IRRIGATION SYSTEM
 - New Specification Section Added
- L2-0 Irrigation Plan
 - Replace existing L2-0 sheet
- L2-1 Irrigation Plan
 - New Sheet
- L2-2 Irrigation Plan
 - New Sheet

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- L2-3 Irrigation Notes & Schedule
 - New Sheet
- L2-4 Irrigation Details
 - New Sheet

STRUCTURAL

- S1-00 (General Notes)
 - Changed Note 5.D.1 to eliminate confusion about the slab reinforcing. Slab reinforcing shall be dictated by the Slab on Grade Schedule.
 - Added Note 5.D.9 for requirements about Evaporation Retarders.
- S1-01 (General Notes)
 - Added note 11 to the Slab on grade schedule to only saw cut alternating reinforcing bars.
- S2-00 (Overall Foundation Plan)
 - Changed Plan Note 3 to eliminate confusion about the slab reinforcing. Slab reinforcing shall be dictated by the Slab on Grade Schedule.
- S2-1B (Foundation Plan – Area B)
 - Placed Arena Columns on Pedestals with reinforcing around the re-entrant corners.
 - Adjusted SJ on the north side of the Arena.
 - Added section call-out 9/S5-1 for transition of thickened slab to spot footing.
- S2-1C (Foundation Plan – Area C)
 - Placed Arena Columns on Pedestals with reinforcing around the re-entrant corners.
 - Adjusted SJ on the north side of the Arena.
 - Added section call-out 9/S5-1 for transition of thickened slab to spot footing.
- S5-1 (Foundation Sections)
 - 4/S5-1: Placed Arena Columns on Pedestals and removed hairpin tie reinforcing.
 - 6/S5-1: Reduced Expo tie beam depth to coordinate with other sections.
 - 9/S5-1: Changed 9/S5-1 to show transition of thickened slab to spot footing.
 - 10/S5-1: Updated 10/S5-1 for thickened slab requirements.
 - 11/S5-1: Visually reduced Arena tie beam depth to coordinate with other sections.
- S5-2 (Foundation Sections)
 - 2/S5-2: Placed Arena Columns on Pedestals and removed hairpin tie reinforcing.
 - 7/S5-2: Corrected a spelling error for clarity.

ARCHITECTURE

- X0-1-1
 - Landscape sheets added
- LS1-1

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- Lobby occupancy numbers and egress numbers updated per correspondence with the Oklahoma State Fire Marshal.
- A2-1A
 - Partition types updated along south side of Corridor 01.04.01. These pilaster walls changed from brick veneer to wood slat veneer WD1.
- A5-1-1
 - Canopy tags and dimensions updated
- A5-1-2
 - Canopy tags and dimensions updated
- A6-2
 - Lobby East elevation updated – The recessed display areas and associated lighting were removed. Power and data will be provided for a video display by owner.
 - Trim and associated details added to WD1 wall corners/transitions.
- A6-3
 - Pilasters on south side of Corridor 01.04.01 changed from brick veneer to wood veneer WD1 with CTB1 base.
 - Wall finish at water fountain recess in Corridor 01.04.01 changed from wall graphic to wall tile CT2/CT4.
 - Trim and associated details added to WD1 wall corners/transitions.
- A7-2
 - Canopy labels updated to match spec section.
- A7-4
 - Canopy labels updated to match spec section.
- A8-5
 - Details 19 & 20 added.
- A8-6
 - Detail 2 – Display Niche removed.
- A9-3-1
 - Finish schedule updated to reflect removal of tack boards and brick veneer.
- A9-3-2
 - Finish and graphics schedules updated to reflect the interior material changes – the graphic on the north side of Corridor 01.04.01 and the pilasters on the south side of that corridor.
- A9-4-1A
 - Pilasters in Corridor 01.04.01 changed from brick veneer to wood veneer WD1 with CTB1 base.

ELECTRICAL

Note, only sheets E2-1A, E3-3, and E5-3 are included in drawing sheets. All other revisions listed below are in the form of a write up only.

ADD ALTERNATES listed below are for RGB lighting in the lobby, final acceptance to be determined by owner.

- Sheet E0-1 Electrical Notes, Legends & Abbreviations

- ADD ALTERNATE – Select light fixtures in LOBBY 01.03.02 shall be provide 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 Electrical Lighting Relay Panels
 - ADD ALTERNATE – One additional relay must be added to Relay 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 E2-1A Electrical Power Plan – Area A
 - Added Receptacles to corridor 01.04.01., top of cove, and displays in Lobby.
- Sheet E3-3 Electrical IT/Data Systems Plan
 - Added data receptacles (rough in) for displays in Lobby.
- Sheet E5-1 Electrical Panel Schedules Sheet
 - ADD ALTERNATE – 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.
- Sheet E5-3 Electrical Panel Schedules Sheet.
 - Sheet included due to added circuits.

PLUMBING

Note, the following revisions are issued in write-up form only for clarification, no drawings or spec sections are included.

- 22 30 00 Plumbing Equipment
 - Section 22 30 00.2.1 Commercial Gas-Fired Water Heaters – Tankless Type
 - Noritz America Corporation is acceptable as an alternate manufacturer.
- 22 10 06 Plumbing Piping Specialties
 - Section 22 10 06.2.8 Interceptors
 - IPEX Endura is acceptable as an alternate manufacturer.
- Sheet P1-1 Plumbing Plan – Overall
 - All references to Civil Site Plan shall refer to sheet C7.0 in lieu of C5.0.

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- Sheet P2-1A Plumbing Plan Below Grade – Area A
 - All grease waste piping to inlet of 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 RFI-11.

ISSUED BY:	Populous, Inc.	ACCEPTED BY:	
ARCHITECT:	Charlie Kolarik	CONTRACTOR:	
DATE:	4/24/2020	DATE:	

SECTION 32 84 00 - LANDSCAPE IRRIGATION SYSTEM

PART 1 – GENERAL

1.1 SCOPE

- A. Furnish all work and materials, appliances, tools, equipment, facilities, transportation, and services necessary for and incidental to performing all operations in connection with the installation of underground irrigation system complete, as shown on drawings and/or specified herein. When the term "Contractor" is used in this section, it shall refer to the Irrigation Subcontractor.

1.2 REFERENCE STANDARDS

- A. ASTM International (Formerly known as American Society for Testing and Materials) (ASTM):
1. ASTM D2241 - Standard Specification for Poly (Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series)
 2. ASTM D2464 - Standard Specification for Threaded Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80
 3. ASTM D2466 - Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40
 4. STM D2564 - Standard Specification for Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Piping Systems

1.3 SUBMITTALS

- A. The Contractor shall submit shop drawings or manufacturer's "cut sheet" for each type of sprinkler head, pipe, controller, valves, check valve assemblies, valve boxes, wire, conduit, fittings, and all other types of fixtures and equipment which he proposes to install. The submittal shall include the manufacturer's name, model number, equipment capacity, and manufacturer's installation recommendation, if applicable, for each proposed item.
- B. No partial submittal will be accepted, and submittals shall be neatly bound into a binder and logically organized. After the submittal has been approved, substitutions will not be allowed except by written consent of the Owner's Representative.
- C. Record Drawings:
1. Record dimensioned locations and depths for each of the following:
 - a. Point of connection.
 - b. Irrigation pressure pipe routing (provide dimensions for each 100 linear feet (maximum) along each routing, and for each change in directions).
 - c. Gate valves.
 - d. Irrigation control valves.
 - e. Control wire routing.
 - f. Other related items as may be directed by the Owner's Representative.
 2. Locate all dimensions from two permanent points (buildings, monuments, sidewalks, curbs, or pavements).
 3. Record all changes, which are made from the Contract drawings, including changes in the pressure and non-pressure pipes.

4. Record all required information on a set of prints of the Contract drawings. Do not use these prints for any other purpose.
 5. Maintain information daily. Keep Contract drawings at the Worksite at all times and available for review by the Owner's Representative.
 6. When record drawings have been approved by the Owner's Representative, transfer all information to a set of reproducible mylars using permanent ink, or AutoCAD 2018 Files. Changes using ball-point pen are not acceptable. Make dimensions accurately at the same scale used on original Drawings, or larger. If photo reduction is required to facilitate controller chart housing, notes or dimension must be a minimum 1/4 inch in height.
- D. Controller Charts:
1. Do not prepare charts until record drawings have been approved by the Owner's Representative.
 2. Provide one controller chart for each automatic controller installed.
 - a. Chart may be a reproduction of the record drawing, if the scale permits fitting it into the controller door. If photo reduction prints are required, keep reduction to maximum size possible to retain full legibility.
 - b. Chart shall be a print of the actual system, showing the area covered by that controller.
 3. Identify the area of coverage of each remote-control valve, using a distinctly different pastel color, drawn over the entire area of coverage.
 4. Following approval of charts by the Owner's Representative, they shall be hermetically sealed between two layers of 20-millimeter-thick plastic sheet.
 5. Charts must be completed and approved prior to final acceptance of the irrigation system.
- E. Operating and Maintenance Manuals:
1. Provide one (1) individual bound manual detailing operating and maintenance requirements for irrigation systems.
 2. Manuals shall be delivered to the Owner's Representative no later than 10 days prior to final acceptance of work.
 3. Provide descriptions of all installed materials and systems in sufficient detail to permit maintenance personnel to understand, operate, and maintain the equipment.
 4. Provide the following in each manual:
 - a. Index sheet, stating Irrigation Contractor's name, address, telephone number, and name of person to contact.
 - b. Duration of guarantee period.
 - c. Equipment list providing the following for each item:
 1. Manufacturer's name.
 2. Make and model number.
 3. Name and address of local manufacturer's representative.
 4. Spare parts list in detail.
 5. Detailed operating and maintenance instructions of major equipment.
 6. Pressure pipe tests: by whom and date.
 7. Written guarantee: received by and date.

1.4 CODES/PERMITS

- A. All work under this section shall comply with the provisions of these Specifications, as illustrated on the accompanying drawings, or as directed by the Owner's Representative and shall satisfy all applicable local codes, ordinances, or regulations of the governing bodies and all authorities having jurisdiction over this Project.
- B. Installation of equipment and materials shall be done in accordance with requirements of the National Electrical Code, Plumbing code of jurisdictional city, and standard plumbing procedures. The drawings and these Specifications are intended to comply with all the necessary rules and regulations; however, some discrepancies may occur, the Contractor shall immediately notify the Owner's Representative in writing of the discrepancies and apply for an interpretation. Should the discovery and notification occur after the execution of a contract, any additional work required for compliance with the regulations shall be paid for as covered by these Contract documents.
- C. The Contractor shall give all necessary notices, obtain all permits, and pay all costs in connection with his work; file with all governmental departments having jurisdiction; obtain all required certificates of inspection for his work and deliver these to the Owner's Representative.
- D. The Contractor shall include in the work all labor, materials, services, apparatus, or drawings in order to comply with all applicable laws, ordinances, rules, and regulations whether or not shown on the drawings and/or specified.

1.5 REGULATORY REQUIREMENTS

- A. Conform to the City of El Reno code for piping and component requirements.
- B. Provide certificate of compliance from the City of El Reno indicating approval of products in system.
- C. All hard wiring shall be performed by a licensed electrician.
- D. All work shall be verified by a firm or individual duly certified by the Irrigation Association as a Certified Landscape Irrigation Auditor.

1.6 EXISTING UTILITIES - LOCATION AND ELEVATIONS

- A. Locations and elevations of various utilities included with the scope of this work have been obtained from the most reliable sources available and should serve as a general guide without guarantee to accuracy. The Contractor shall examine the site and verify to his own satisfaction the locations and elevation of all utilities and availability of utilities and services required. The Contractor shall inform himself as to their relation to the work and the submission of bids shall be deemed as evidence thereof. The Contractor shall repair at his own expense, and to the satisfaction of the Owner's Representative, for damage to any utility shown on the plans.
- B. Should utilities not shown on the plans be found during excavations, Contractor shall promptly notify the Owner's Representative for instructions as to further action.
- C. Contractor shall make necessary adjustments in the layout as may be required to connect to existing stub-outs, should such stub-outs not be located exactly as shown and as may be required to work around existing work, this shall be done at no increase in cost to the Authority. All such work will be recorded on record drawings and turned over to the Owner's Representative prior to final acceptance.

1.7 SLEEVES AND ELECTRICAL CONDUITS

- A. Sleeves and electrical conduits have been installed as noted on the drawings. Contractors shall be responsible for locating all sleeves and conduits at no additional cost to the Owner.

1.8 WARRANTY AND MAINTENANCE

- A. The Contractor shall warranty material and workmanship for (2) two years from final acceptance including repair and replacement of defective materials, workmanship, and repair of backfill settlement.
- B. Maintenance during warranty shall include, but not necessarily be limited to, the following:
 - 1. Adjustment of sprinkler height and plumb to compensate for settlement and/or plant growth.
 - 2. Backfilling of all trenches.
 - 3. Adjustment of head coverage (arc of spray) as necessary.
 - 4. Unstopping heads plugged by foreign material.
 - 5. Adjustment of controller as necessary to insure proper sequence and watering time.
 - 6. All maintenance necessary to keep the system in good operating order. Repair of damage caused by vandals, other contractors or weather conditions shall be considered extra to these specifications.
- C. Warranty and maintenance final acceptance does not include alterations as necessitated by re-landscaping, re-grading, addition of trees or the addition, and/or changes in sidewalks, walls, drives, etc.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Unless otherwise noted on the plans, all materials shall be new and unused. The irrigation equipment catalog numbers used for reference in these Specifications are to establish minimum quality standards and may be substituted with an "approved equal" as outlined in Paragraph 1.5 of this section.

2.2 POLYVINYL CHLORIDE PIPE (PVC PIPE)

- A. PVC pipe manufactured in accordance with ASTM Standards noted herein.
- B. Marking and Identification: PVC pipe shall be continuously and permanently marked with following information: Manufacturer's name, size, type of pipe, and material, SDR number, Product Standard number, and the NSF (National Sanitation Foundation) Seal.
- C. PVC pipe fittings: Shall be of the same material as the PVC pipe specified and compatible with PVC pipe furnished. Solvent weld type shall be Schedule 40.
- D. PVC Pipe: Shall be Schedule 40 solvent weld, SDR-21, PS 22-70 for all sizes 3/4 inch to 2 inches. All 1/2-inch pipe shall be solvent weld SDR- 13.5, Class 315.
- E. Flexible Connectors: All flexible connections to rigid PVC shall be manufactured by F.P. Parker Mfg. Inc. under the name of Cobra Connector. Flexible nipples shall be factory assembled only.
- F. Pipe sleeves: Shall be Schedule 40 solvent weld, SDR-21, PSD 22-70 for all sizes.

2.3 WIRE AND SPLICES

- A. All wire shall be single strand solid copper, minimum 14 gauge with type UF insulation which is Underwriters Laboratory approved for direct underground burial when used in a National Electrical Code Class II Circuit (30 volts AC or less) as per Articles 725 and 300. Voltage drop shall be taken into consideration.

- B. All wire shall be color coded so that the common wire shall have white insulation and the signal wires shall have red insulation.
- C. All wire connectors shall be Scotch Brand DBY or DBR style connectors with the appropriately sized Scotchlok wire nut connecting the bare copper wires together.
- D. All connectors shall be UL listed, rated 600 volt, for PVC insulated wire. No wire splices shall be buried.

2.4 MANUAL VALVES

- A. Manual valves 2-1/2 inches and larger shall be all brass, globe type with composition disc rated at 150 pounds W.O.G. All valves 2" and smaller shall be PVC, manufactured by Spears.
- B. All valves shall have brass cross handles.

2.5 ELECTRIC REMOTE CONTROL VALVES

- A. Electric remote control valves shall have plastic bodies and covers and shall be globe-type diaphragm valves of normally closed design.
- B. Operation shall be accomplished by means of integrally mounted heavy-duty 24-V AC solenoid complying with National Electrical Code, Class II Circuit. Solenoid coil shall be potted in epoxy resin within plastic coated stainless steel housing. Solenoids shall be completely waterproof, suitable for underground placement.
- C. A flow stem adjustment handle shall be included on each valve.

2.6 QUICK COUPLING VALVES

- A. Quick coupling valves shall be composed of a brass body with a weighted metal cover.
- B. The valve shall accept a single lug 1-inch bronze valve key for operation.
- C. Provide one (1) coupler and one (1) hose swivel ell for each quick coupling valve shown on the plans.
- D. Valves are to be installed as shown in the details. Units to be isolated from main pressure pipe with a ball valve as noted in the detail.

2.7 VALVE BOXES

- A. Plastic valve boxes shall be made of high-strength injection molded high density polypropylene or polyolefin plastic suitable for shrub bed irrigation purposes.
- B. Boxes shall be suitable in size and configuration for the operability and adjustment of the valve.
- C. Manufactured extension sections will be used as appropriate to the depth of piping.
- D. All plastic valve box covers shall bolt down or have locking mechanisms and shall be colored green or black as selected by the Owner's Representative.

2.8 SWING JOINTS

- A. PVC swing joints shall be pressure rated at 315 PSI and be Sch. 80 PVC rated units. The unitized assembly shall have NPT threads on both the inlet and outlet fittings.

2.9 ROTARY HEADS

- A. The sprinkler shall be gear driven, closed case rotary type unit having the following minimum characteristics. It shall have radius adjustment capabilities by means of a stainless-steel nozzle retainer/radius adjustment screw or have the ability to be adjusted by a top-mounted single adjustment screw which changes the discharging nozzle and angle of throw.
- B. The sprinkler shall be available in both full and part circle configurations. The adjustable part shall be adjustable from a minimum of 40 degrees to 330 degrees. The units shall have a

- minimum of a 4- inch rise and be equipped with an internal drain check valve to prevent low-head drainage and be capable of holding back water up to a 10-foot rise.
- C. The unit shall have a rubber cover attached to the top of the riser. When specified, the unit shall have a cover molded in purple rubber to indicate the use of reclaimed water. Each unit shall have NPT female threads and be either 1" or 3/4" in diameter. The unit shall be serviceable after installation from the top and each unit shall have a filter screen installed. There must be a stainless-steel spring from positive retraction of the riser upon completion of a cycle. Each unit shall be attached to a lateral pipe by means of a swing joint.
 - D. The unit shall carry a full 2-year exchange warranty from the date of installation.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Design Pressure: This irrigation system has been designed to operate with a minimum static inlet water pressure of 60 psi at the point of connection or as designated on the drawings. The Contractor shall take a pressure reading prior to beginning construction. If the pressure reading is less than above, the Contractor shall notify the Owner's Representative.
- B. Contractor Responsibility: The Contractor shall not willfully install the irrigation system as shown on the drawings when it is obvious in the field that obstructions, grade differences or discrepancies in equipment usage, area dimensions or water pressure exist that might not have been considered in the engineering. Such obstructions or differences shall be brought to the attention of the Owner's Representative in writing. In the event this notification is not performed, the Contractor shall assume full responsibility for any revision necessary.
- C. Staking: Before installation is started, place a stake or marking flag where each sprinkler is to be located, in accordance with drawing. Staking shall be approved by the Owner's Representative before proceeding.
- D. Piping Layout: Piping layout is somewhat diagrammatic. Route piping around existing trees and shrubs in such a manner as to avoid damage to plantings. Cut roots with a sharp axe to provide a clean cut. Do not dig within the ball of newly planted trees or shrubs.
- E. In areas where trees are present, trenches are to be adjusted on site to provide a minimum clearance of eight times the trunk diameter of the tree (at its base) between any tree and any trench.
- F. All material and equipment shall be delivered to the Worksite in unbroken reels, cartons or other packaging to demonstrate that such material is new and of a quality and grade in keeping with the intent of these Specifications.

3.2 EXCAVATION AND TRENCHING

- A. The Contractor shall perform all excavation to the depth indicated in these Specifications and Contract drawings. The banks of trenches shall be kept as nearly vertical as practicable. Trenches shall be wide enough to allow a minimum of 4" between parallel pipes and/or electrical wiring. Where rock excavation is required, or where stones are encountered in the bottom of the trench that would create a concentrated pressure on the pipe, the rock or stones shall be removed to a depth of 6" (minimum) below the trench depth indicated. The over depth rock excavation and all excess trench excavation shall be backfilled with loose, moist earth or sand, thoroughly tamped. Whenever wet or otherwise unstable soil that is incapable of properly supporting the pipe is encountered in the trench bottom, such shall be removed to a depth and length required, and the trench backfilled to trench bottom grade as hereinafter specified, with course sand, or other suitable material.
- B. Bottom of trench grade shall be continued past ground surface deviations to avoid air pockets and low collection points in the line. The minimum cover specifications shall govern

regardless of variations in ground surface profile and the occasional deeper excavation required at banks and other field conditions. Excavation shall be such that a uniform trench grade variation will occur in all cases where variations are necessary.

- C. Trench excavation shall comprise the satisfactory removal and disposition of all materials and shall include all shoring and sheeting required to protect the excavation and to safeguard employees as required by OSHA.
- D. During excavation, material suitable for backfilling shall be stockpiled in an orderly manner a sufficient distance back from edge of trenches to avoid overloading and prevent slides or cave-ins. Material unsuitable for backfilling shall be wasted as directed by the Owner's Representative. When excavated material is of a rocky nature and the topsoil or any other layer of excavated material is suitable for pipe bedding and backfill in the vicinity of the pipe, such material shall be separately stockpiled for use in such bedding and pipe backfill operations, unless satisfactory imported material is used.
- E. All excavations and backfill shall be unclassified and covered in the basic bid. No additional compensation will be allowed for rock encountered.
- F. Restore all surfaces, existing underground installations, etc., damaged or cut as a result of the excavations to their original conditions in a manner acceptable to the Owner's Representative.
- G. Electrical conduit cut or broken is the responsibility of the contractor to correct unless the conduit is above 24" in depth or unmarked.

3.3 PIPE INSTALLATION

- A. Irrigation Mains: Irrigation mains are that portion of piping from water source to solenoid valves. This portion of piping is subject to surges since it is a closed portion of the irrigation system. Irrigation mains shall be installed in a trench with a minimum of 18 inches of cover.
- B. Lateral Piping: Lateral piping is that portion of piping from a solenoid valve out to an irrigation head. This portion of piping is not subject to constant pressure since it is an "open end" portion of the irrigation system. Lateral piping shall be installed in a trench with a minimum of 12 inches of cover.
- C. Remove lumber, rubbish, and rocks from trenches. Provide firm, uniform bearing for entire length of each pipeline to prevent uneven settlement. Wedging or blocking of pipe will not be permitted. Remove foreign matter or dirt from inside of pipe before welding and keep piping clean during and after laying pipe.
- D. PVC pipe shall not be installed or welded where there is water in the trench, nor shall PVC pipe be laid when temperature is 32 deg. F or below or when rain is imminent. PVC pipe will expand and contract as the temperature changes. Therefore, pipe shall be snaked from side to side of trench bottom to allow for expansion and contraction.
- E. Flush mainline piping prior to head installation.
- F. Solvent: Use only solvent recommended by manufacturer to make solvent-welded joints following standards noted herein. Thoroughly clean pipe and fittings of dirt, dust, and moisture with an approved PVC purple tinted primer before applying solvent. Bevel all male ends of pipe prior to making solvent welds.
- G. PVC to Metal Connection: Work metal connections first. Use a non-hardening pipe dope such as Permatex No. 2 or "Teflon" tape on threaded PVC to metal joints. Use only light wrench pressure to tighten.
- H. Threaded PVC Connections: Where required, use threaded Sch. 40 PVC adapters into which pipe may be welded.

3.4 HYDROSTATIC TESTS

- A. Pressure Test: After the pipe is laid, the joints completed, and the trench partially backfilled, leaving the joints exposed for examination, the newly laid piping or any valved section of main pressure piping shall, unless otherwise specified, be subjected for four hours to a hydrostatic pressure test at normal city water pressure. Enclosed pipe, joints, fittings, and valves shall be carefully examined during the partially open trench test. Joints showing visible leakage shall be replaced or remade, as necessary. Cracked or defective pipe, joints, fittings, or valves leaking during this pressure test shall be replaced and retested until the test results are satisfactory. All replacement and repair shall be at Contractor's cost.

3.5 CONTROL WIRE INSTALLATION

- A. All control wire less than 500 feet in length shall be continuous without splices or joints from the controller to the valves. Connections to the solenoid valves shall be made at the valve using connectors specified in Paragraph 2.4 of this section, unless otherwise approved by the Owner's Representative in writing.
- B. All control wires shall be installed at least 18 inches deep. Contractor shall obtain the Owner's Representative's approval for wire routing when installed in a separate ditch. Control wires may be installed in a common ditch with piping; however, wires must be installed a minimum of 4 inches below or to one side of piping.
- C. All wire passing under existing or future paving, sidewalk construction, etc., shall be encased in PVC Schedule 40 conduit extending at least 2 feet beyond the edges of paving, sidewalks, or construction.
- D. Tape control wire bundles at 30'-0" on center maximum.

3.6 VALVE AND VALVE BOX PLACEMENT

- A. All manual, electric, and quick coupling valves shall be in boxes as detailed and shall be set with a minimum of twelve (12) inches of space between their top surfaces. Boxes shall be in a straight line and evenly spaced off adjacent hardscape a minimum of three (3) feet.
- B. Valves shall be fully opened and fully closed to ensure that all parts are in operating condition.
- C. Valve boxes shall be set plumb, vertical, and concentric with the valve stem.
- D. Any valve box, which has moved from this required position to prevent the use of the operating wheel of the valve or the ball valve, shall be reset by the Contractor at his own expense.

3.7 ELECTRIC SOLENOID CONTROL VALVES

- A. Solenoid valves shall be located and sized as shown on the plans. All electrical connections shall be made when the weather is dry with connection kits as specified in Paragraph 2.4 of this section in strict accordance with manufacturer's recommended procedures. All remote control valves shall be installed in a horizontal position, in accordance to the manufacturer's published installation instructions.
- B. It shall be the responsibility of the Contractor to furnish and install the proper size wire on each of the low voltage circuits from the controller to the solenoid control valves.
- C. Consideration shall be given to each circuit for allowance of voltage drop and economy consistent with accepted practices of electrical installation. Under no circumstances shall the voltage of any circuit be reduced more than proper due to length of run exceeding the maximum allowable for the wire size used.

3.8 POP-UP SPRAY AND ROTARY HEADS

- A. Provide heads and nozzles as specified and install in locations as shown on the Contract Drawings.

- B. Pop-up spray heads shall be installed on a flexible connector directly to lateral piping as detailed on the Contract drawings. Heads shall be installed with the top of the case and nozzle flush with the soil level in turf areas and the top of the mulch layer in shrub beds.
- C. Contractor will be required to adjust heads as necessary after establishment of grass or other plant material.
- D. Bubblers will be installed on flexible connectors and set to grade as noted and illustrated in the details.

3.9 QUICK COUPLING VALVES

- A. Quick coupling valves shall be installed on a swing-joint assembly as detailed on the drawings.
- B. Each quick coupling valve shall include an isolation ball valve in the closed position
- C. Under the warranty, the Contractor shall return to adjust valves and valve boxes to proper grade.

3.10 MANUAL VALVES

- A. Manual valves shall be sized and located where shown on the Contract drawings.
- B. Valve boxes shall be adjusted to be flush with finished grade. The Contractor will be required to adjust after establishment of grass.
- C. Valve boxes shall be properly supported as detailed and of sufficient construction that tractors and mowers crossing over the boxes will not push boxes down and crush the pipe, valve, or box.

3.11 BACKFILL AND COMPACTION

- A. After system is operating and required tests and inspections have been made, the trenches shall be carefully backfilled with the excavated materials approved for backfilling, consisting of earth, loam, sandy clay, sand or other approved materials, free from large clods of earth or stone. Rock, broken concrete, or pavement, shall not be used as backfill material. The backfill shall be thoroughly compacted and brought even with the adjacent undisturbed soil level.
- B. Compact trenches by thoroughly flooding the backfill and compacting. The jetting process may be used in areas when flooding.
- C. Backfill for all trenches, regardless of the type of pipe covered, shall be compacted to a minimum of 90% density.
- D. Any trenches improperly backfilled, or where settlement occurs, shall be reopened to the depth required for compaction, then refilled and compacted with the surface restored to the required grade and left in a completed surface condition as described above.
- E. Specifically tamp backfill under heads and around the flange of heads for one foot (1') by a suitable means after trench backfill has dried from flooding to prevent movement of heads.

3.12 FINAL ADJUSTMENT

- A. After installation has been completed, make final adjustment of irrigation system prior to Owner's Representative's final inspection.
- B. Completely flush system to remove debris from pipes without forcing debris through nozzles. Remove all nozzles from heads and turn on valves until clean water is being discharged. Replace nozzles.
- C. Check nozzling for proper coverage. Prevailing wind conditions may indicate that an arc or angle of spray should be other than as shown on the drawings. In this case, change nozzles to provide correct coverage and furnish record data to Owner's Representative with each change.

- D. Check and adjust each section for the proper operating pressure by use of the flow adjustment on each solenoid valve. Minimize any "misting" from sprinkler nozzles.
- E. After system is thoroughly flushed and ready for operation, each section of sprinklers shall be adjusted to control pressure at heads.

3.15 CLEAN-UP

- A. The Worksite shall be thoroughly cleaned of all waste materials and all unused or salvaged materials, equipment, tools, etc.
- B. After completion of the work, areas disturbed shall be leveled and the Worksite shall be raked clean and left in an orderly condition.

END OF SECTION