

SECTION B:
CIVIL-STRUCTURAL
SPECIFICATIONS



Exponential
Engineering
Company



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PART 1 SITE CIVIL SPECIFICATION 3
1.01 SITE CIVIL DESIGN 3
PART 2 BUILDING SPECIFICATION 3
2.01 BUILDING DESIGN 3
PART 3 CONSTRUCTION SPECIFICATION..... 5
3.01 SITE WORK AND BUILDING CONSTRUCTION 5

PART 1 SITE CIVIL SPECIFICATION

1.01 SITE CIVIL DESIGN

- A. The project shall be designed by a Nebraska Licensed Professional Engineer to comply with all City of Kimball, County, and State requirements and shall consider the following at a minimum:
 - 1. Existing site conditions and overall site plan and access.
 - 2. Grading and Drainage Design including any necessary detention.
 - 3. Stormwater management.
 - 4. Erosion Control.
- B. Deliverables:
 - 1. Provide Construction Drawings and Specifications sealed by a Nebraska Licensed Professional Engineer.
 - 2. Drawings shall include but not be limited to the following:
 - a. Site Plan
 - b. Utility Plan
 - c. Grading, Drainage, and Erosion Control Plans

PART 2 BUILDING SPECIFICATION

2.01 BUILDING DESIGN

- A. The building shall be designed and sealed by Nebraska Licensed Professional Engineers and Architects and shall comply with the following:
 - 1. 2018 International Building Code (IBC)
 - a. Building Risk Category: IV
 - 2. 2018 International Energy Conservation Code (IECC)
 - 3. Nebraska State Fire Code
 - 4. Geotechnical Engineering Report (GER) – Generator Building at Kimball Substation by Earth Engineering Consultants, EEC Project Number 1222087
- B. The building will be a Pre-Engineered Metal Building. The size and layout are to be determined by the Design-Builder and coordinated to accommodate the Owner's needs and to meet all code requirements. In addition, the building must meet the following minimum requirements:
 - 1. Performance Requirements:
 - a. Design for structural loads, deflections, and requirements of the 2018 IBC, AISC 360, and Metal Building Manufacturer's Association, Metal Building Systems Manual.
 - b. Collateral Loads: Design building for a minimum of 5 pounds per square foot collateral dead load in addition to all other loads on the building.
 - 2. Primary Frames (Interior Frames): Rigid clear span with straight (non-tapered) columns.
 - 3. End Wall Frames: Manufacturer's standard for buildings not required to be expandable.
 - 4. Walls:
 - a. Exterior: Provide Manufacturer's standard ribbed exterior wall panels, 24-gauge minimum thickness, zinc-coated (galvanized) and painted.
 - b. Interior: Provide Manufacturer's standard ribbed wall panels, 26-gauge minimum thickness, zinc-coated (galvanized) and painted.

- c. Interior Liner Panels: Provide Manufacturer's standard interior liner panels on all exterior walls to 8 feet above finished floor elevation, 24-gauge minimum thickness, zinc-coated (galvanized) and painted.
 5. Roof: Provide Manufacturer's standard standing seam metal panels, 24-gauge minimum thickness, zinc-coated (galvanized) and painted.
 6. Color: Owner will select the building color from Manufacturer's standard color options.
 7. Configuration: Building configuration is to be determined by the Design-Builder and coordinated with the Owner to achieve the following objectives at a minimum:
 - a. Comply with 2018 IBC requirements.
 - b. Provide access for generator maintenance.
 - c. Provide sufficient access for removal and installation of any individual generator while keeping others in service.
 - d. Provide a separate room to accommodate the switchgear specified in Section C, desk, and additional storage for equipment such as spare 15kV breaker. Provide sound attenuation in the separate room to provide a maximum Noise Criterion level of 40 (as recommended for a standard office conference room space). Provide sufficient access for removal and installation of switchgear lineup.
 - e. Provide an area for fuel pumps and system.
 - f. Provide means for collection and containment of generator fluid leaks, spills and washdown water that will prevent contamination of the public sewer and stormwater systems and the surrounding environment.
 - g. Provide a safety eyewash station.
 8. Doors:
 - a. Provide a minimum of three 3'-0" X 7'-0" extra heavy duty seamless exterior doors and frames to meet IBC egress requirements, 16-gauge minimum thickness (ANSI A250.8 Level 3, Model 2)
 - 1) Finish: galvanized and painted to match the building.
 - b. Provide an insulated overhead steel door of sufficient size to allow installation and removal of the generators.
 - 1) Door must be designed for the design wind load.
 - 2) Minimum thickness: 24 gauge.
 - 3) Finish: Galvanized and painted to match the building.
 9. Windows: Provide a minimum of four 4'-0" x 4'-0" reinforced windows to provide natural light.
 10. Foundations:
 - a. Comply with recommendations in the GER.
 - b. Provide concrete foundations and floor slab.
 - c. Isolate generators from the rest of the floor system in order to minimize vibrations in the floor.
 - d. Coordinate foundations with existing site conditions to avoid interference with the existing structures and utilities or to reroute existing utilities as needed.
 11. Warranty:
 - a. Provide Manufacturer's standard warranty on materials and finishes and weather-tightness for a period of 20 years from the date of Substantial Completion. Warranty shall include manufacturer's agreement to repair or replace deficient items within the specified warranty period.
- C. Deliverables:

1. Provide Construction Drawings and Specifications sealed by Nebraska Registered Professional Engineers and Architects.
2. Drawings and Specifications shall include but not be limited to the following:
 - a. Architectural Plans, Sections, and Details
 - b. Structural Plans, Sections, and Details
 - c. Mechanical Plans, Sections, and Details
 - d. Electrical Plans, Sections, and Details

PART 3 CONSTRUCTION SPECIFICATION

3.01 SITE WORK AND BUILDING CONSTRUCTION

- A. All Construction work shall be conducted by a licensed contractor registered with the City of Kimball and shall be in accordance with applicable Local, State, and Federal Requirements and the 2018 IBC.
- B. Permitting:
 1. City of Kimball permitting is not required for this project.
 2. State and Federal Permits required for the project shall be obtained by the Design-Builder prior to beginning construction.
- C. Special Inspections, Tests, and Structural Observation
 1. Design-Builder shall appoint a Registered Design Professional in Responsible Charge (RDRP) as defined by the 2018 IBC.
 2. The RDRP will be responsible to ensure compliance with the requirements of Sections 1704 and 1705 of the 2018 IBC.
 3. Design-Builder shall conduct Special Inspections and Structural Observation as required for compliance with Sections 1704 and 1705 of the 2018 IBC.
 4. Design-Builder shall contract for third-party testing to demonstrate compliance with the 2018 IBC requirements.
- D. Submittals:
 1. Design-Builder shall provide standard submittals to the City of Kimball Building Department during the Construction process to demonstrate compliance with the Construction Drawings and Specifications.
 2. Submit IBC Statement of Special Inspections to Owner.
 3. Submit Special Inspection and Test Reports to Owner.
 4. Submit applicable certificates of compliance as required by Section 1704.5 of the 2018 IBC.
 5. At the conclusion of the work, Design-Builder's structural observer shall submit a written statement of observations as required by Section 1704.6 of the 2018 IBC.
 6. At the conclusion of the project, submit Record Drawings and Specifications which include any approved changes to the Contract Drawings and Specifications.
- E. Coordination: Design-Builder will be responsible for all necessary coordination including but not limited to coordination with:
 1. Local utilities.
 2. Traffic control.
 3. State Fire Marshall.

END OF SECTION