

February 27, 2014

K.E. Project #: 214-525-006

Weber County
Building Inspection Department
2380 Washington Blvd., Suite 240
Ogden, Utah 84401
Phone: (801) 399-8374

Attention: Craig Browne, Building Official

Subject: Ogden City Water Treatment Plant – Plan Review Comments

Mr. Browne:

Kimball Engineering has completed the first review of the proposed Ogden Water Treatment Plant Renovation project located in Ogden, Utah. This proposed project consists of the demolition and construction of a new building. This review was based upon the following:

1. Architectural drawings dated 01/17/2014 sealed and signed by James A. Nielson, Licensed Architect.
2. Structural drawings and calculations dated 01/17/2014 by Sunrise Engineering, sealed and signed by Steven M. Hansen, Licensed Structural Engineer.
3. Mechanical drawings dated 01/17/2014 by Spectrum Engineers, sealed and signed by Scott Deakins, Licensed Professional Engineer.
4. Plumbing drawings dated 01/17/2014 by Sunrise Engineering, sealed and signed by Robert W. Worley, Licensed Professional Engineer.
5. Electrical drawings dated 01/31/2014 by SMD Engineering, sealed and signed by Christopher Kobayashi, Licensed Professional Engineer.

The 2012 International Codes and 2011 NEC, as adopted by the State of Utah, were used as the basis of our review. Specific comments in regards to this project are enclosed with this cover letter. If you have any questions in regards to this review please do not hesitate to contact me.

Sincerely,



Mike Molyneux, P.E.

Attachment: Comments

Plan Review Comments

Project Name: Ogden City Water Treatment Plant

K.E. Project #: 214-525-006

Location(s): Ogden Canyon, Utah

Structural By: Mike Molyneux

Code Review By: John Saunders

Checked By: Todd Snider

Date of Comments: 02/27/2012

OCCUPANCY & BUILDING SUMMARY:

Building	Type of Construction	Use Group(s)	Occupant Load	Risk Category	Square Footage	Building Height	Sprinkled
Filter	II-B	F1/B	71	III	13,048 ft ²	2-story/ 34'-0"	No
Dewatering	II-B	F-2/S-2	-	III	2,224 ft ²	1-story/ 23'-6"	No

GENERAL INFORMATION:

The plans and structural calculations for the above-mentioned project have been reviewed. The following comments address areas of concern, non-compliance with the governing code, potential errors, or omissions in the proposed design. The appropriate design professional must address each comment below and submit a written response in addition to revised plans and calculations if necessary. **Please cloud any revisions made to the construction drawings and provide the date of the latest revision on each revised sheet.**

CODE REVIEW COMMENTS:

- A1. Please indicate the size and location of portable fire extinguishers as required by IBC 906.3.
- A2. Sheet AE004: Please clearly identify the location of the Vertical Grab Bar shown in Detail 604.7 as provided for in Section 604.5.1 of ICC A117.1-2009.
- A3. Sheet EL101: Additional Exit Illumination is needed through-out the facility as provided for in Section 1006 of the IBC. It appears that the Control Room and Lab on Level 01 and the Board Room and Storage Room on Level 02 have been provided with Exit Illumination. Please address this in the remainder of the facility.
- A4. Sheet EL103: Please provide an Exit Sign over the 2nd Exit (door 201C) from the Board Room as provide for in Section 1011 of the IBC.

- A5. Please provide heavy-duty main runners for the suspended ceiling per Section 13.5.6 of ASCE 7-10.

MECHANICAL REVIEW COMMENTS:

- M1. It appears that several mechanical items such as pipes, tanks, pumps, ducts and or suspended unit heaters may require seismic restraint in accordance with IBC 1613.1. The restraint for these items does not appear to currently be provided on the plans. Restraint must be provided for the following conditions unless otherwise excluded by Chapter 13 of ASCE 7-10: (1) $I_p > 1.0$, (2) MEP components > 400 pounds and supported by a floor or roof; (3) MEP components > 20 pounds and supported by a ceiling or wall; or (4) MEP distribution systems weighing > 5 plf. Please address.
- M2. Detail 1/MH501 indicates that the unit heater will be provided with Seismic Bracing. How will the noted cables be attached to the top cord of the roof trusses? Please clarify.

PLUMBING REVIEW COMMENTS:

- P1. Please provide a detail showing the installation of the Sand, Oil, and Grease Interceptor. Please include the size of the interceptor, the size and type of pipe, and the vent piping provided for in Section 1003 of the IPC.
- P2. Sheets PP401 and PP701: Show the Sanitary Drain from the Restrooms, Locker Rooms, and Break Rooms exiting to the east. The Proposed Yard Utilities drawings do not appear to show where or to what this drain connects. Please clarify.
- P3. Sheet PP501: Please address the following:
- A. Detail 3: Shows a chemical floor drain that dumps to where? Please clarify. Please note that as provide for in Section 901.3 of the IPC all Chemical Vents will vent to the exterior independent of the sanitary system and needs to terminate through the roof separately.
 - B. Please clarify Detail 5 Filter Room Trench Floor Drain. Please show the Vent as indicated in Section 901 of the IPC.
- P4. Sheet PP601: Trap Seal Primers shall be provided as required by Section 1002.4 of the IPC. All emergency floor drains, floor sinks or traps that are subject to evaporation from little use shall be provided with trap seal primers. Please provide listing information showing that this trap guard is an approved device meeting the requirements of Section 1002.4 of the IPC (ASSE Standard 1072) as amended by the State of Utah. Please review Fixtures FD-2, FD-3, FS-1, and TD-1.

ELECTRICAL REVIEW COMMENTS:

- E1. Please provide an available fault current analysis for the electrical system. Please note what the maximum available fault current will be at each electrical panel as required by NEC 110.9 and 110.10 and Field Markings need to be provided as indicated in Article 110.24 of the NEC.
- E2. Please show, or note on the plans, that this building is required to have a Ufer ground and the main panel grounding bus bar must have a grounding electrode conductor extend from it to the Ufer ground. Also please note that the grounding electrode conductor for the transformer will connect to building steel. NEC 250.
- E3. Sheet GE-2: Please address the following:
 - A. In the Main Distribution Panelboard drawing, under the 1600AT, it indicates to see drawing E-x. It appears that this referenced drawing has not been included in the set of drawings. Please clarify.
 - B. In the Main Distribution Panelboard drawing, under the 600AT, it indicates to see drawing E-x. It appears that this referenced drawing has not been included in the set of drawings. Please clarify.
- E4. Sheet GE-3: In the Single Line Diagram above the 600A MCP it notes to See Sheet GE-3. Is this the correct reference or should it reference Sheet GE.2 for continuance?

GEOTECHNICAL COMMENTS:

- G1. Please provide a geotechnical report for the proposed structure per Section 1803 of the IBC.

STRUCTURAL COMMENTS:

Structural Drawings:

- S1. Sheet S001: Please address the following:
 - A. Section 4.2.1 of ACI 318-11 requires the design professional to assign exposure classes to structural concrete members in accordance with Table 4.2.1.
 - B. Many of the concrete mixes are “C0” yet it appears that many of these mixes may actually be exposure “C2” in accordance with Table 4.2.1 of ACI 318-11 as they are exposed to moisture and external sources of chloride (i.e. chemical mixing tanks).
- S2. Sheet S002: Please address the following:
 - A. Masonry note 17 references Sheet S501. This does not appear to be the correct reference. Please address.
 - B. Steel note 2 references the 2006 IBC. Please address.
- S3. Sheet S100: Construction keynote 9 references S/S600. This appears to be the wrong reference. Please address.

- S4. Sheet S103: Please address the following:
 - A. Details 124/S304 and 125/S304 are shown at gridline 1 between gridlines A and B and gridline 4 respectively. Sheet S304 has not been provided. Please address.
 - B. Detail 122/S103 is shown at gridlines A and 4. This detail could not be found. Please clarify.
- S5. Sheet S104: CW12 is cut off of the concrete wall schedule. Please provide CW12 on the schedule or reference another sheet with CW12.
- S6. Sheet S502: Please provide the angle size shown in detail 325.
- S7. Sheet S700-S701: Please provide a column schedule for the pipe rack.

Structural Calculations:

- S8. Please provide calculations showing that the perpendicular angle shown at 30 inches on center in detail 310/S500 is sufficient to transfer shear forces into the shear all below.
- S9. The mezzanine appears to be causing a Vertical Geometric Irregularity as defined in Table 12.3-2 of ASCE 7-10. As such an equivalent lateral force analysis is not permitted per Table 12.6-1 of ASCE 7-10. Please address.
- S10. Calculations page 75 and 85 show #5 bars at 16" on center are required while the drawings show #5 at 24" on center. Please address.
- S11. Lintel number 1 for WP2 on calculations pages 155-164 show (2) #5 bars while detail D/S200 shows (1) #5 bar. Please address.
- S12. Calculations page 321 shows #5 horizontal bars at 12 inches on center while the drawings on Sheet S102 show #5 at 18 inches on center. Please address.
- S13. The footing calculations, on page 392, shows an allowable bearing pressure of 5,000psf. No soils report has been provided for this project. Please justify the use of 5,000psf.