PUBLIC HEALTH DIVISION
Office of Environmental Public Health, Drinking Water Program
Kate Brown, Governor

Oregon Health Authority

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February 16, 2022

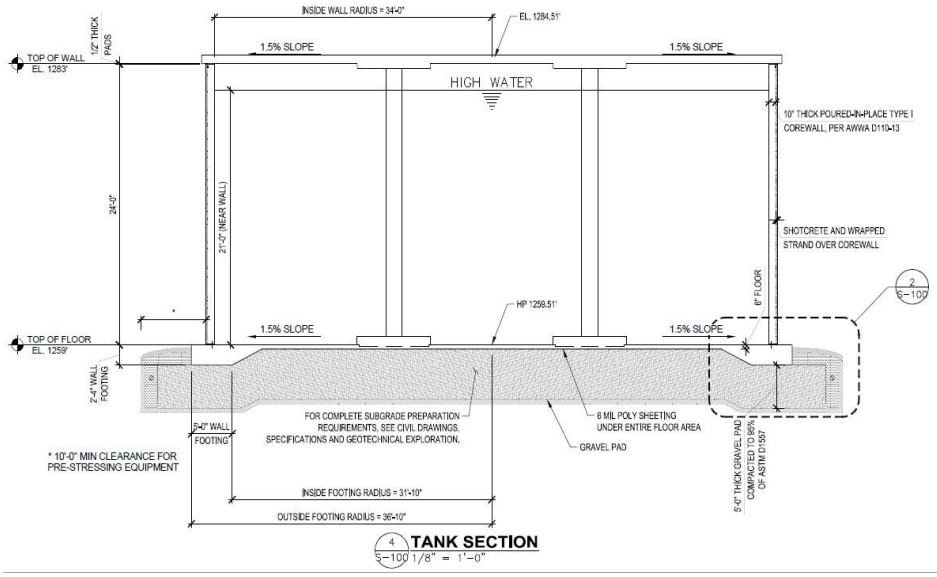
Tom Ferrell, PE
TomF@paceengrs.com
PACE Engineers, Inc.
4500 Kruse Way, Suite 250
Lake Oswego, OR 97035-2564

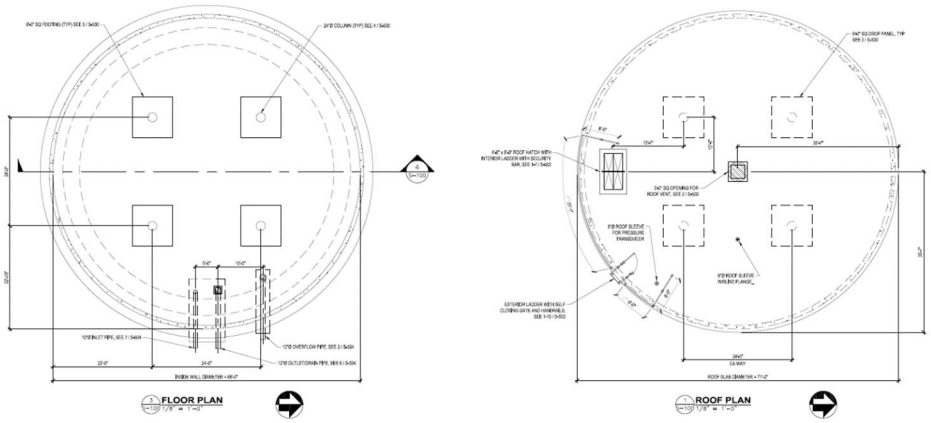
Re: Crystal Springs Water District (PWS ID #00386)
West Side Reservoir & Waterlines Phase 2 (PACE Project #17816)
Final Approval – Plan Review #55-2020

Dear Mr. Ferrell,

Thank you for submitting the post-disinfection coliform test results and completed Project Final Approval Request form received February 16, 2022. The Project Final Approval Request form addressed the conditions in my Conditional Approval letter dated April 14, 2020 and highlighted some minor changes to proposed plans that were made during construction. It is understood that the water facilities are constructed, tested, and operational, however, there are some items that remain for the entire construction project to be completed (reservoir site grading, fences, gates, and road re-surfacing remain and will be completed this spring when the weather allows). **The Project is granted Final Approval and the water facilities may be placed into service**. Once completed, please e-mail me a set of record (as-built) drawings for the project, which clearly show how the conditions in the Conditional Approval letter were met.

The Conditional Approval was issued based on plans and a geotechnical report (received on April 3, 2020) along with a check for $4,125 (received April 10, 2020) for waterlines and a 570,000-gallon prestressed concrete reservoir to be constructed on the west side of the Crystal Springs Water District (CSWD) near Odell.

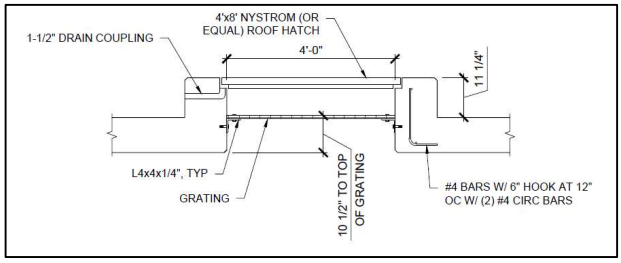


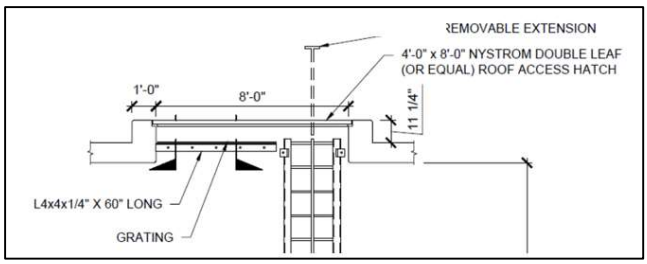


Since the waterlines are covered under CSWD's existing Waterline Exemption, waterline plans were not reviewed and $825 of the $4,125 fee already submitted has been re-assigned to plan review #56-2020 for a new 830,000-gallon pre-stressed reservoir located on the south end of CSWD near Dog River Road.

The project conditions and how they were met are as follows:

1. An access manhole shall be provided to permit entry to the interior for cleaning and maintenance. When the access manhole is on the roof of the reservoir there shall be a curbing around the opening and a lockable, watertight cover that overlaps the curbing [OAR 333-061-0050(6)(J)]. The proposed hatch did not appear to meet this requirement as shown below:





2. Should the interior surface of the finished water storage tank be provided with a protective coating, the coating shall meet the requirements of NSF Standard 61: Drinking Water System Components - Health Effects or equivalent [OAR 333-061-0050(6)(Q)].

The Final Project Approval Request form stated:

Both conditions listed in the Conditional Approval letter sent by OHA on April 14, 2020 were met.
1) A concrete curb was poured around the access hatch on the roof. The access hatch itself has an integral curb with a lockable, watertight cover that overlaps the curb.
2) No coating was applied to the interior surface of the storage tank, so this condition is not applicable.

As listed in the Final Project Approval Request form**, the following changes were made during construction and will be noted on the record drawings**.

1) The Schedule 80 PVC interior inlet piping on concrete pedestals was removed. This was intended for duckbill valves. The reservoir is mechanically mixed, so the interior piping and valves was not needed. A 45-degree fitting was connected to the inlet pipe stubbed through the floor.
2) The interior overflow piping was changed from Schedule 80 PVC to stainless steel.
3) All floor penetrations were moved to be 8-ft radially from the inside wall face to provide additional clearance from the rebar in the thickened edge of the floor slab.
4) The 3/4-in sensing line from the altitude valve was routed through a floor slab sleeve, not placed through the sidewall of the tank.
5) An additional roof sleeve was installed to aid in construction. It was capped with a blind flange, matching the spare sleeve indicated on the drawings.
6) The roof railing and ladder were moved 2-ft west radially to provide extra clearance around the roof access hatch.
7) The perforated foundation ring drain pipe was relocated to be closer to the reservoir footing.
8) The access hatch has a clear opening of 4-ft x 8-ft, slightly larger than on the plans.

Thank you for your assistance in completing the plan review process and if you have any questions or would like this information in an alternate format, please feel free to contact me at any time at 971-200-0288 or via e-mail at evan.e.hofeld@dhsoha.state.or.us.

Sincerely,

Evan Hofeld, Regional Engineer
Oregon Health Authority – Drinking Water Services

Cc. Fredrick Schatz
Fred@cswdhr.com
Crystal Springs Water District
PO Box 187
Odell, OR 97044

Encl. February 16, 2022 e-mail requesting Final Approval
Project Final Approval Request form
Microbiology Report

From: Tom Ferrell <TomF@paceengrs.com>
Sent: Wednesday, February 16, 2022 1:32 PM
To: Hofeld Evan E
Subject: Crystal Springs West Side Tank
Attachments: West Side Reservoir Bac-t Results 112221.pdf; OHA Drinking Water Services Project Final Approval Request Form signed 021622.pdf

February 16, 2022
Project 17816

Hi Evan,

We met on site last week to create an electrical punchlist for the West Side Reservoir project. The remaining items to be completed are mostly related to the concurrent SCADA/telemetry project the District is working on to provide communication/monitoring between their facilities.

I have attached the Final Project Approval Request form. There are a handful of punchlist/insignificant items remaining, but the District would like to turn the tank on. I have also attached the sample result from when the tank was originally disinfected and tested. The District took a follow up sample yesterday to confirm the previous results. With the mixer on, the tank appears to be working as designed.

Please take a look and let me know if you have any questions. They might want to turn the tank on once the confirmation sample is back (tomorrow), or they may wait til Monday.

Thanks.
Tom

Tom Ferrell, PE
Project Engineer
4500 Kruse Way | Suite 250
Lake Oswego OR 97035
503.597.3222

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Health

Drinking Water Services
Project Final Approval Request Form

Print

Project Name: West Side Reservoir and Transmission Mains
PR#: 55-2020
Public Water System ID#: 41- 386
PWS Name: Crystal Springs Water District
Click to locate PWS ID#

	YES	NO	DATE
1. Was the project undertaken? If so, what was the starting date?	☑	☐	08/27/2020
2. If project was not undertaken, has the project been abandoned?	☐	☑	
3. Was the project completed? If so, when? If project not complete, estimated completion date: 06/30/2022	☐	☑	
4. If completed, was the work accomplished in conformance with all conditions listed in the Conditional Approval letter and DWS Construction Standards, Oregon Administrative Rule (OAR) 61-0050? **In the comments below or on a separate sheet please make clear how all conditions specified in the Conditional Approval letter were met.**	☑	☐	
5. If the project was completed, were there any differences between what is shown on the plans and what was actually installed?	☑	☐	
6. If the completed project is different from what is shown on the plans, were the plans modified to show as-built conditions?	☑	☐	
7. Have as-builts been sent to Drinking Water Services? **NOTE: As-builts are not required if there were no significant changes noted in 5.**	☐	☑	
8. Are the facilities operating? If so, starting when?	☐	☑	2/18/2022

Signature of Engineer: Thomas P. Ferrell
Date: 02/16/2022
Name: Thomas Ferrell
OR PE#: 79447
Firm: PACE Engineers, Inc.
Phone: (503) 597-3222

Comments
All components of the water system are now installed and operational. All waterlines have been pressure tested, disinfected, and bacteriological samples taken and passed. The storage tank was leakage tested, disinfected, and bacteriological samples taken and passed. The overflow pipe has a flap valve where it daylights. A PACE representative was on site through construction, and special inspections and structural observations occurred during tank construction. The altitude valve, tank mixer, and pressure transducer have been installed, and all electrical components are now in place.

The project is not complete yet. Reservoir site grading, fences, gates, and road re-surfacing remain. These items will be completed this spring when the weather allows. Additionally, there are a handful of punchlist items. These items, however, will not affect the operation of the water system.

Revised date 10/2021 Page 1 of 2

Comments
Both conditions listed in the Conditional Approval letter sent by OHA on April 14, 2020 were met.
1) A concrete curb was poured around the access hatch on the roof. The access hatch itself has an integral curb with a lockable, watertight cover that overlaps the curb.
2) No coating was applied to the interior surface of the storage tank, so this condition is not applicable.

The following insignificant changes were made during construction and will be noted on the record drawings.

1) The Schedule 80 PVC interior inlet piping on concrete pedestals was removed. This was intended for duckbill valves. The reservoir is mechanically mixed, so the interior piping and valves was not needed. A 45 degree fitting was connected to the inlet pipe stubbed through the floor.
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8) The access hatch has a clear opening of 4-ft x 8-ft, slightly larger than on the plans.

City of The Dalles Water Quality Lab
Microbiology Report

PWS# 41 Crystal Springs
PWS Name: Crestline Const
City, County: The Dalles Wasco
Phone: 506-4908 Email:
Name: Crestline Const
Address: 3600 Crates Way Suite 100
City, State, Zip: The Dalles OR 97058

ORELAP#: OR100002
Lab Name: City of The Dalles Water Quality Lab
Address: 6780 Reservoir Road The Dalles
Phone/Fax: 541-298-2248 x5009/541-298-2129
Bottle#: 1 E78 Report to DHS? YES (NO)
Lab Sample ID#: 2088666

Sample Collected Date/Time: 11 / 27 / 2021 2 : 40 ☐ AM ☑ PM
Chlorinated: ☐No ☐Yes
Collected By: mark monette
Free Chlorine: _____ mg/L

DISTRIBUTION Sample Type: ☐ Routine ☐ *Repeat ☐ Temporary Routine ☐ Special
*Date of Initial Positive: ___/___/___ *Original Positive ID#:
Address: Reservoir Site Sampled at (ex. "SINK"): Reservoir

SOURCE Sample Type: ☐ *Triggered ☐ *Confirmation ☐ Assessment ☐ Special
*Date of Initial Positive: ___/___/___ *Original Positive ID#:
Source ID: SRC- Source name (ex. "WELL #1"):

Delivered By: Mark Monette Date: 11-18-21

LAB USE ONLY
Sample Received Date/Time: 11 / 18 / 2021 8:39 ☐AM ☐PM Initials: DCR Temp: 10 °C Evidence of cooling? ☑Yes ☐No
Analysis Start Date/Time: 11 / 18 / 2021 11:12 ☑AM ☐PM Initials: DCR
ORELAP Method(s): Check all that apply. ☑Colilert® SM Online Ed/SM 9223B ☐ Quantity Tray 2K ☐ Other:
Sample Results do not meet NELAC Standards because (check all that apply): ☐ Not received in lab-supplied bottle ☐ Not incubated at proper temperature ☐ Not received at proper temperature (below 10°C) ☐ Other Reason:
Sample invalidation: ☐ Over 30 hours ☐ Heavy non-coliform growth ☐ Leak

Test Results:
Total Coliforms: ☐ Present ☑ Absent
E. Coli: ☐ Present ☑ Absent
Total Coliforms: _____ MPN/100mls
E. Coli: _____ MPN/100mls

Analysis Complete Date/Time: 11 / 19 / 21 11:15 ☑AM ☐PM
Analyst: A. Mu
Review by: DCR 11 / 22 / 2021

Reported By: Ramos
Report Date 11 / 22 / 2021
Tests results sent: ☑Email ☐ Mail ☐ Fax OHA ☐ Fax ☐ Call

Test results relate only to the parameters tested and to the samples as received by the laboratory. Test results meet all requirements of NELAC unless otherwise noted. This report shall not be reproduced except in full, without written consent of this laboratory.

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