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

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July 29, 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)
South Reservoir & Transmission Main (PACE Project #18877)
Final Approval – Plan Review #56-2020

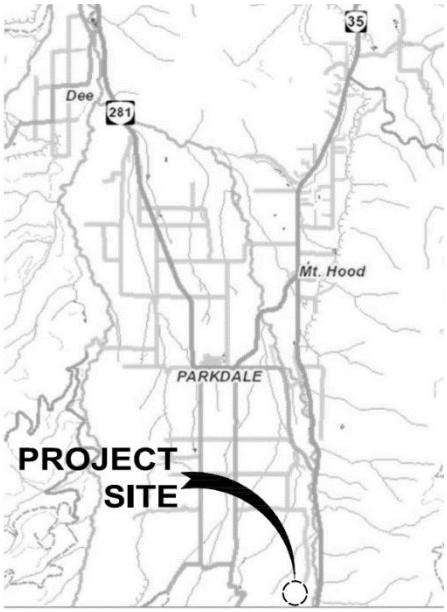
Dear Mr. Ferrell,

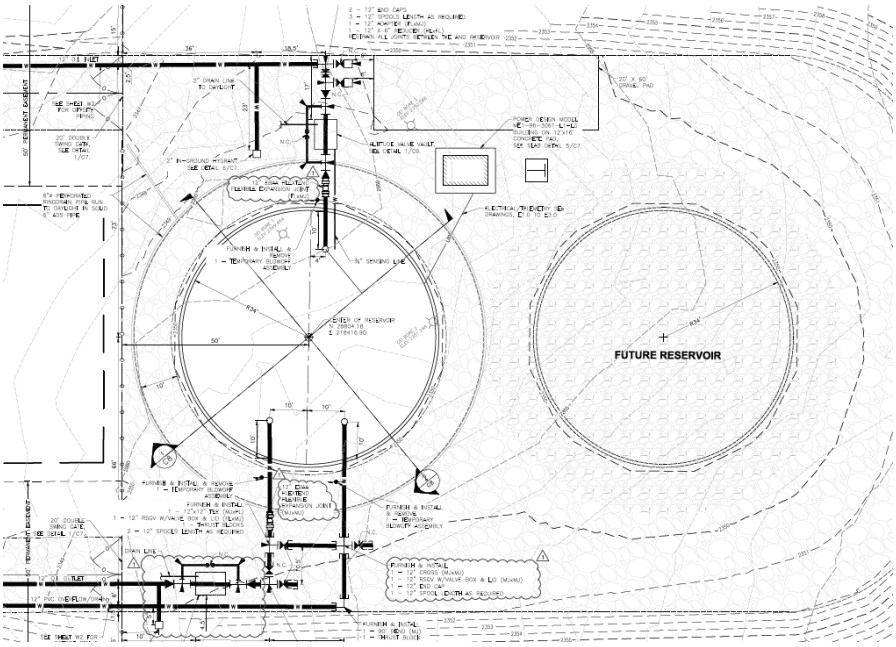
Thank you e-mailing me the Project Final Approval Request form signed and submitted on July 29, 2022 (enclosed) addressing the conditions in my Conditional Approval letter from September 2, 20220 for the original plan submittal (received on August 18, 2020, along with a check for $2,475 received August 26, 2020) for the South Reservoir and Transmission Mains (PACE Project #18877) on behalf of the Crystal Springs Water District (CSWD). Since the waterlines are covered under CSWD's existing Waterline Exemption, waterline plans were not reviewed. $825 was previously credited from plan review #55-2020, therefore the total plan review fee received for this project was $3,300. **The new reservoir is granted Final Approval and may be placed into service**.

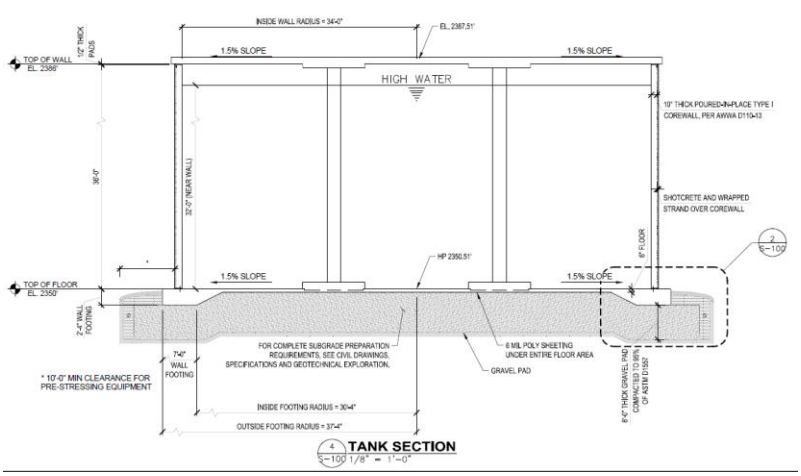
The project involved construction of an 880,000-gallon prestressed concrete reservoir on two tax lots near Dog River Road (1S, 10E, Sec 20, TL200 & 1S, 10E, Sec 21, TL400) owned by Hood River County. The site also has room for a future tank as shown on the submitted plans. The new reservoir ties into the existing CSWD 14" dia. cast iron pipe. The reservoir is not used for disinfection contact time, but rather serves the distribution system to maintain pressure, fire flow, and meet demands for the CSWD.

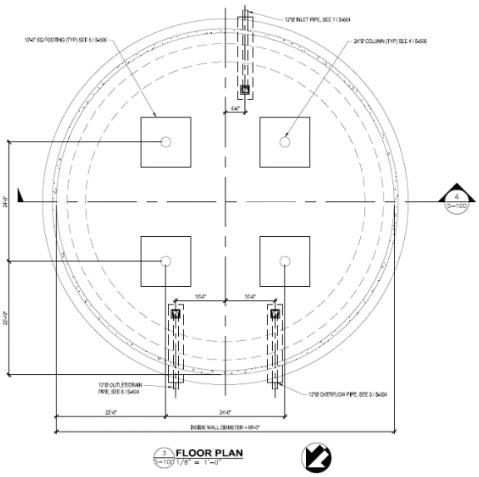
Crystal Springs Water District South Reservoir (PR #56-2020)

- 880,000 gallon pre-stressed concrete tank
- 32-ft water level depth
- Inside wall radius = 34-ft w/ 10" thick walls
- Inside diameter = 68-ft
- Top of floor elev. = 2,350-ft
- Top of wall elev. = 2,386-ft (wall height = 36-ft)
- Overflow elev. = 2,382-ft (4-ft from top of side wall = 32-ft water level depth)
- 12" dia. DIP inlet w/Flextend joint
- Separate 12" dia DIP outlet w/Flextend joint
- 12" PVC overflow/drain to daylight
- Altitude valve
- Flowmeter
- Screened roof vent with #24 mesh stainless steel screen
- Double-leaf roof hatch
- Interior ladder









Thank you for your cooperation in 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 E. Hofeld

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

Oregon Health Authority

Drinking Water Services
Project Final Approval Request Form

Print

Project Name South Reservoir and Transmission Mains **PR#** 56-2020

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?	☑	☐	03/23/2021
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:	☑	☐	07/22/2022
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?	☑	☐	07/22/2022

Signature of Engineer [signature] Date 07/29/2022

Name Thomas Ferrell OR PE# 79447

Firm PACE Engineers, Inc. Phone (503) 597-3222

Comments

All components of the project are now installed and operational. All waterlines have been pressure tested, disinfected, and bateriological 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 online.

There are a handful of punchlist items that remain to be completed. These items, however, will not affect the operation of the water system.

Revised date 10/2021 Page 1 of 2

Comments

All conditions listed in the Conditional Approval letter sent by OHA on September 2, 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) Tracer wire (No. 18 AWG solid copper with blue insulation) was installed above all waterlines on the project, including the PVC overflow/drain pipe.
3) 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) A 45 degree fitting was connected to the inlet pipe stubbed through the reservoir floor.
2) The interior overflow piping was changed from Schedule 80 PVC to stainless steel.
3) Additional rebar was added to the reservoir walls to match the spacing indicated on the drawings (not the number indicated).
4) A toe plate was added at the base of the reservoir roof railing.
5) The roof railing and ladder were moved 2-ft west radially to provide extra clearance around the roof access hatch
6) The 3/4-in sensing line from the altitude valve was routed through the floor slab sleeve, not placed through the sidewall of the tank. It is stainless steel and has heat trace and insulation for freeze protection. A valve was installed in the sensing line for maintenance.
7) The perforated foundation ring drain pipe was relocated to be closer to the reservoir footing.
8) A 3/4" service line was run to the building on site for a future chlorine residual monitor.