

## Phoenix Avenue Storm Drain Diversion to Sewer

September 21, 2021

Presented by:  
Amy McNeill, Senior Civil Engineer

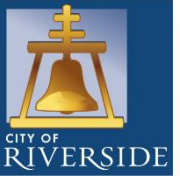


Mike Roberts, Environmental Services Manager





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## Phoenix Avenue Diversion to Sewer Project

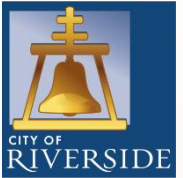
- ▶ The 1<sup>st</sup> application of sewer diversion within Riverside County







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## Phoenix Avenue Diversion to Sewer Project

- Divert bacteria-laden dry weather.
- Protect recreators within the Santa Ana River near Martha McLean – Anza Narrows Regional Park



Inland Empire WATERKEEPER presents,

### RIVERCAMP 2017

Rivercamp is a one of a kind interactive environmental science camp in Riverside that provides young students with the opportunity to connect with nature while learning about important concepts in ecology and earth science through hands-on activities. Children, ages 5-12, will learn about their watershed while exploring the natural treasure in their own backyard, the Santa Ana River. Rivercampers will go on nature walks, splash in the river, meet live animals, and learn how to be better environmental stewards! Students will have the chance to interact with zoologists, geologists, and biologists as they learn about science.



**COURSE DATES**  
ANIMAL WEEK: June 26-30  
GEOLOGY WEEK: July 10-14

**COURSE THEMES**  
**ANIMAL WEEK: WILD ABOUT RIVERSIDE**  
If you're fishing, bird watching, following tracks, spotting in the river and identifying animals, then this camp is for you! From amazing birds of prey to the threat of aquatic insects, we explore animals of the Santa Ana River using microscopes, binoculars, and more. Learn about their diets, habitats and use of the. At the end of the week, Rivercampers are treated to an amazing animal show featuring creatures from all over the Earth.

**GEOLOGY WEEK: HOW DID THE RIVER LOOK IN PREHISTORIC TIMES?**  
Enter into the river during prehistoric times as we explore the Earth and its hidden treasures. Discover the wonders of rocks, fossils, dinosaurs, rivers and geological phenomena the earth's history, and geology. Build your rock and fossil collection, and learn how to use the river, connect with the animals and get your hands on some fossils!

**REGISTRATION INFORMATION**  
Rivercamp will be held outdoors from 8am-3pm at the beautiful Martha McLean Park at 5759 Jurupa Ave, Riverside, CA 92504.

**FEES:** \$150 per youth per session plus a \$20 material fee due the first day of camp.

**ONLINE REGISTRATION:**  
[www.rivreg.org](http://www.rivreg.org)

**STUDENTS MUST BRING:** Lunch, 2 snacks, towel, water-shoes, sunscreen, and re-usable water bottle. Swimsuits must be worn underneath normal clothing.



1011 S. D. BLVD. | info@inlandwaterkeeper.org | www.inlandwaterkeeper.org  
6250 Indiana Ave., Ste. 10, Riverside

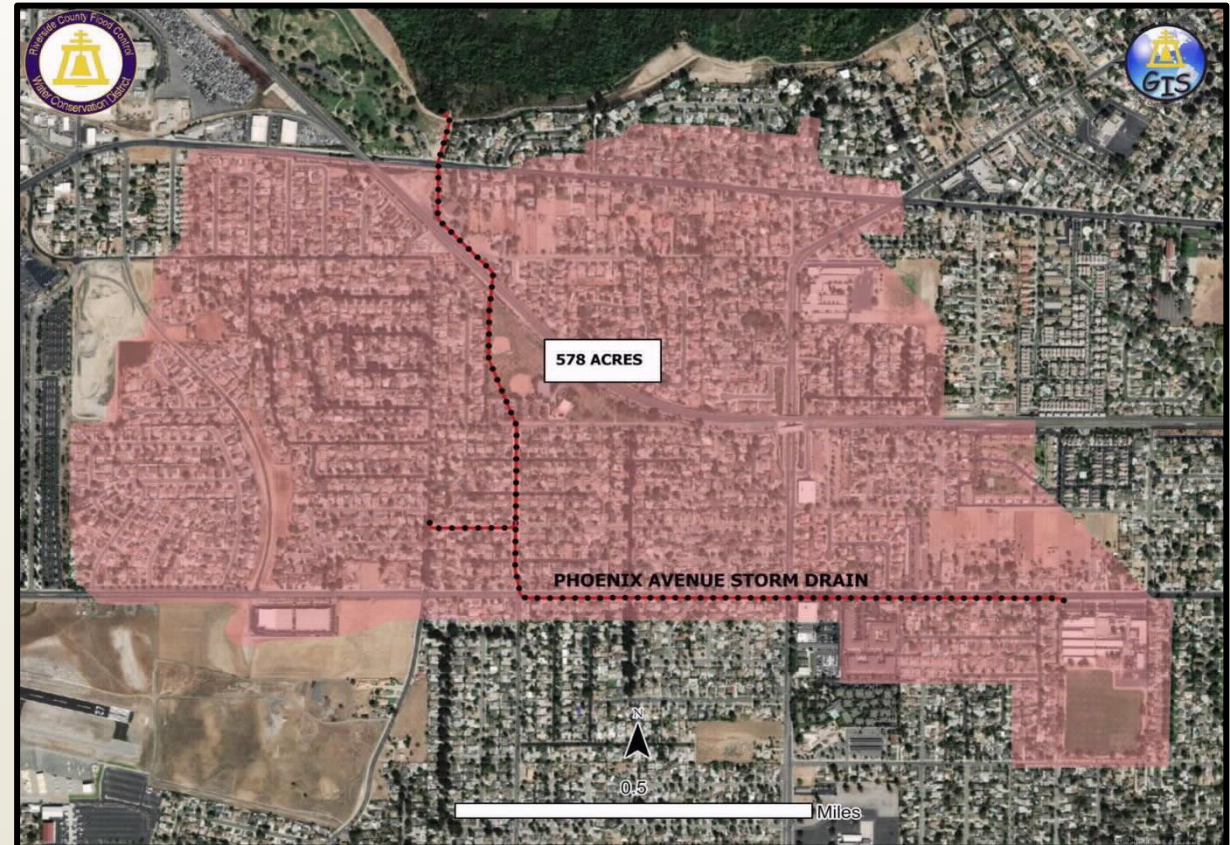
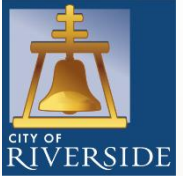


# Phoenix Avenue Diversion to Sewer Project

- ▶ Partnership with City of Riverside
  - ▶ District funded design & construction
  - ▶ City to operate and maintain



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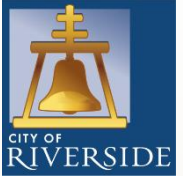


# Phoenix Avenue Diversion to Sewer Project

## ► Project Feasibility

- City owns nearby park land
- City owns sewer system
- Wastewater treatment plant is operated by the City.
- Outfall adjacent to sewer
- Capability for gravity-flow design in comparison to a pump system.

## ► Lower project budget, quicker turnaround, sustainable and cost-effective design

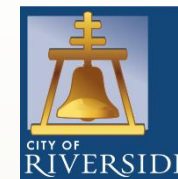




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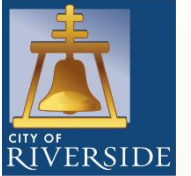
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- Total Project Costs: **\$753,216**
  - Design Costs: \$119,655
  - Construction Costs: \$633,561 (Low Bid at \$567,729)
  - Estimated Annual O&M Costs: \$25,000
  
- Project Challenges
  - Intradepartmental Coordination
  - SCADA - Remote Shutoff Capability & Flow

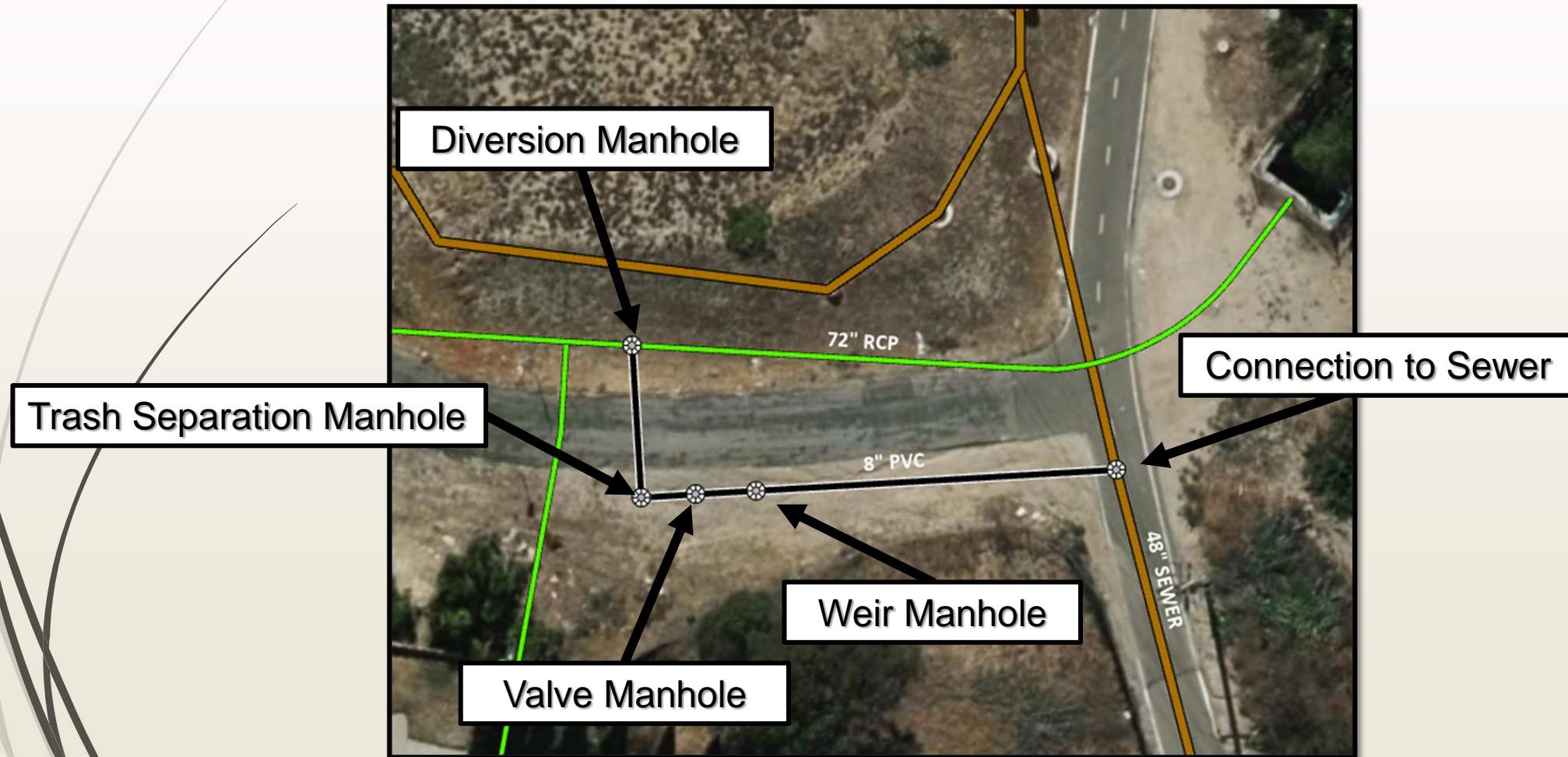


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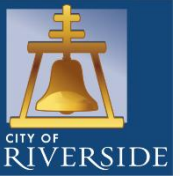
# Phoenix Avenue Diversion to Sewer Project





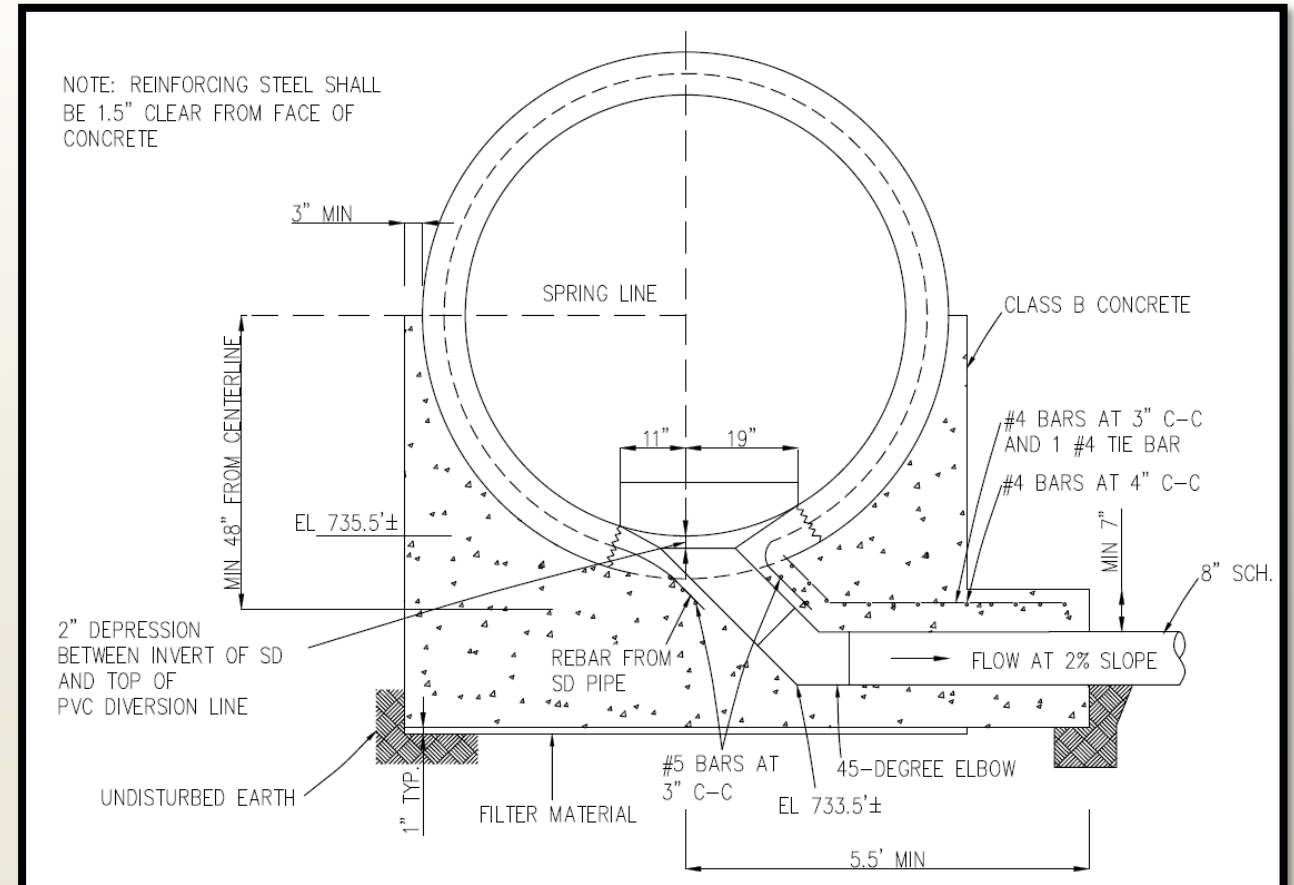


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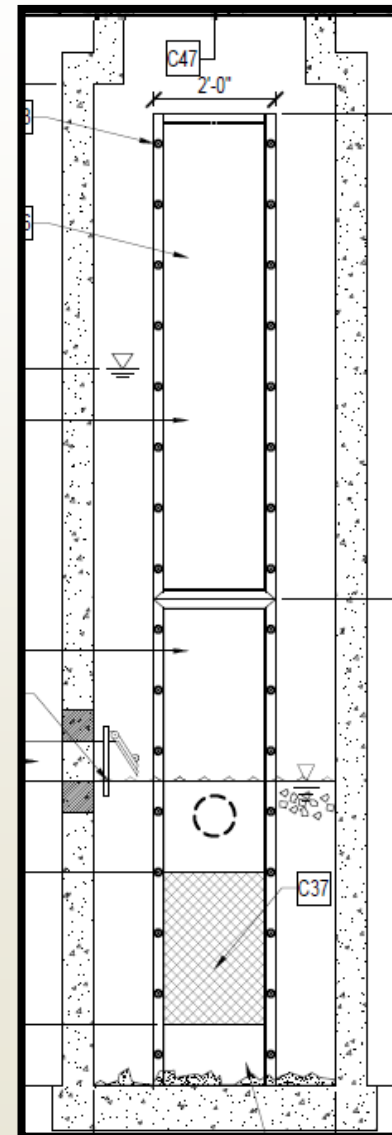
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# Diversion Manhole

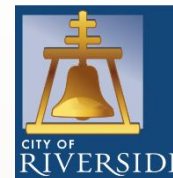




# Trash Separation Manhole



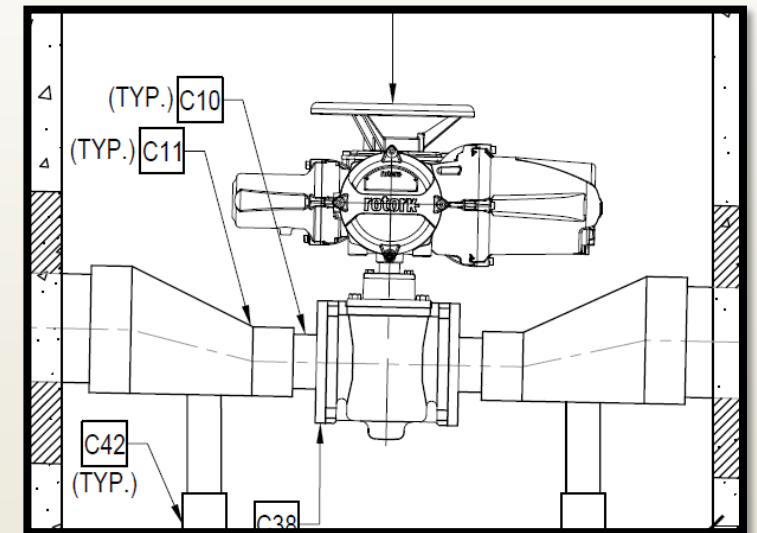
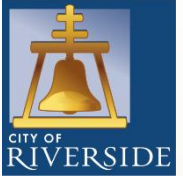
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# Valve Manhole



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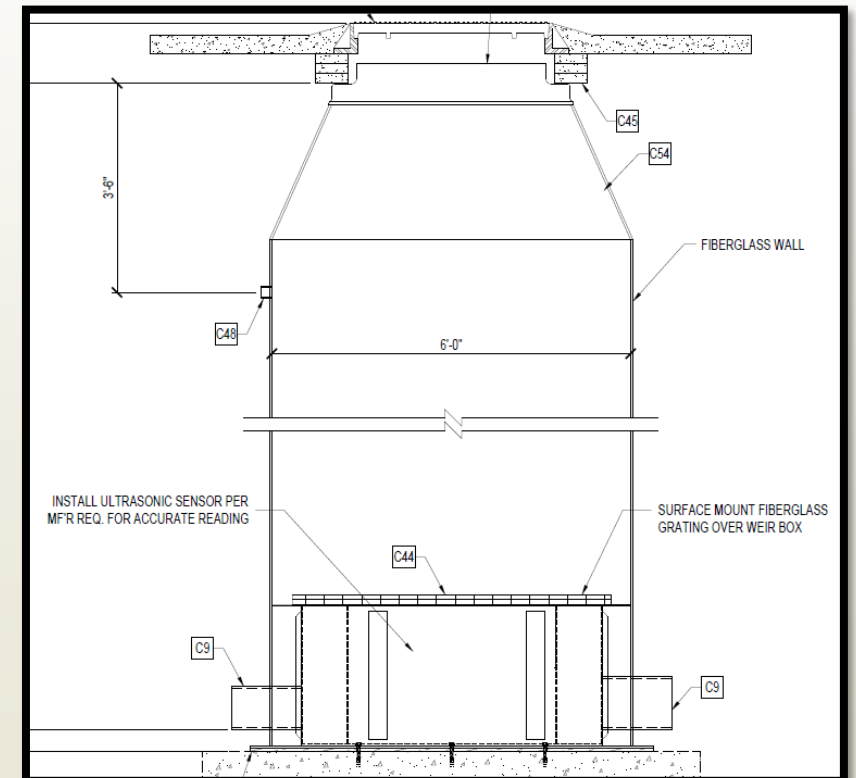
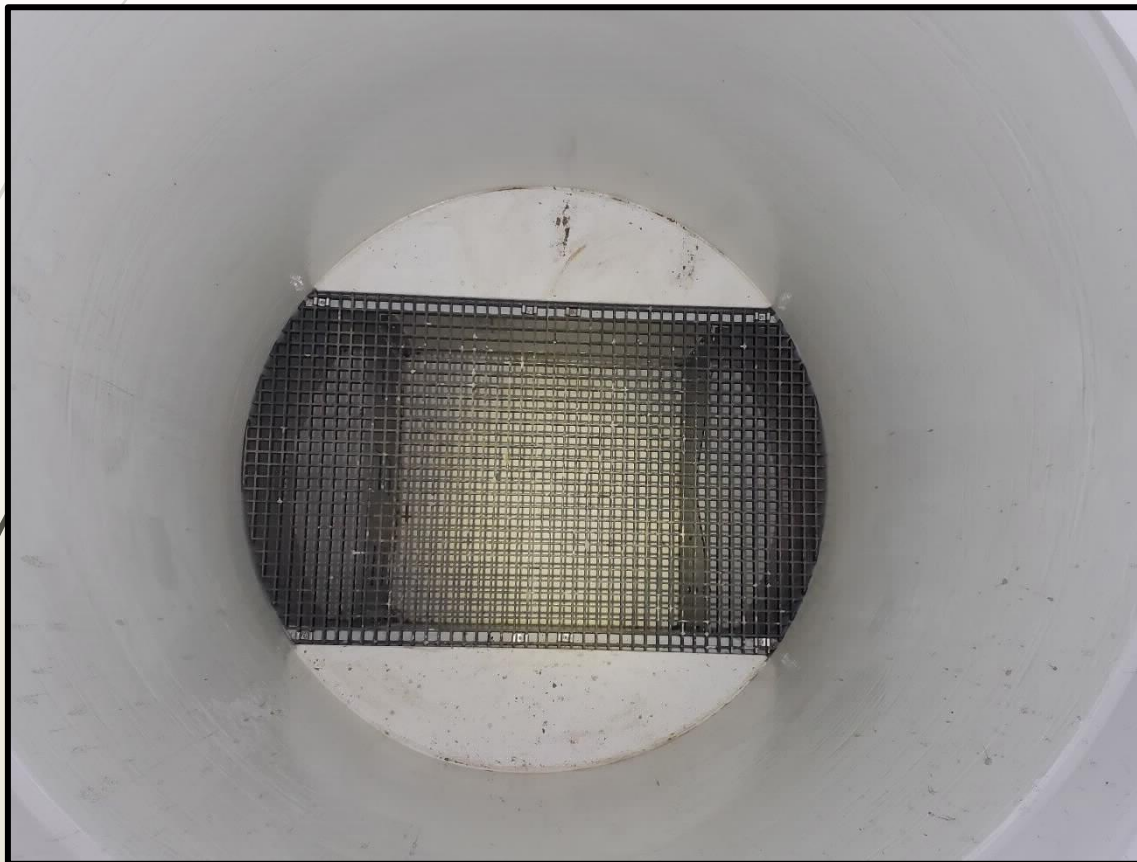
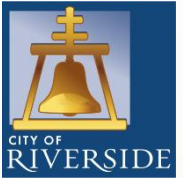




# Weir Manhole



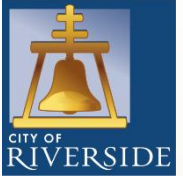
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## Connection to Sewer Trunkline

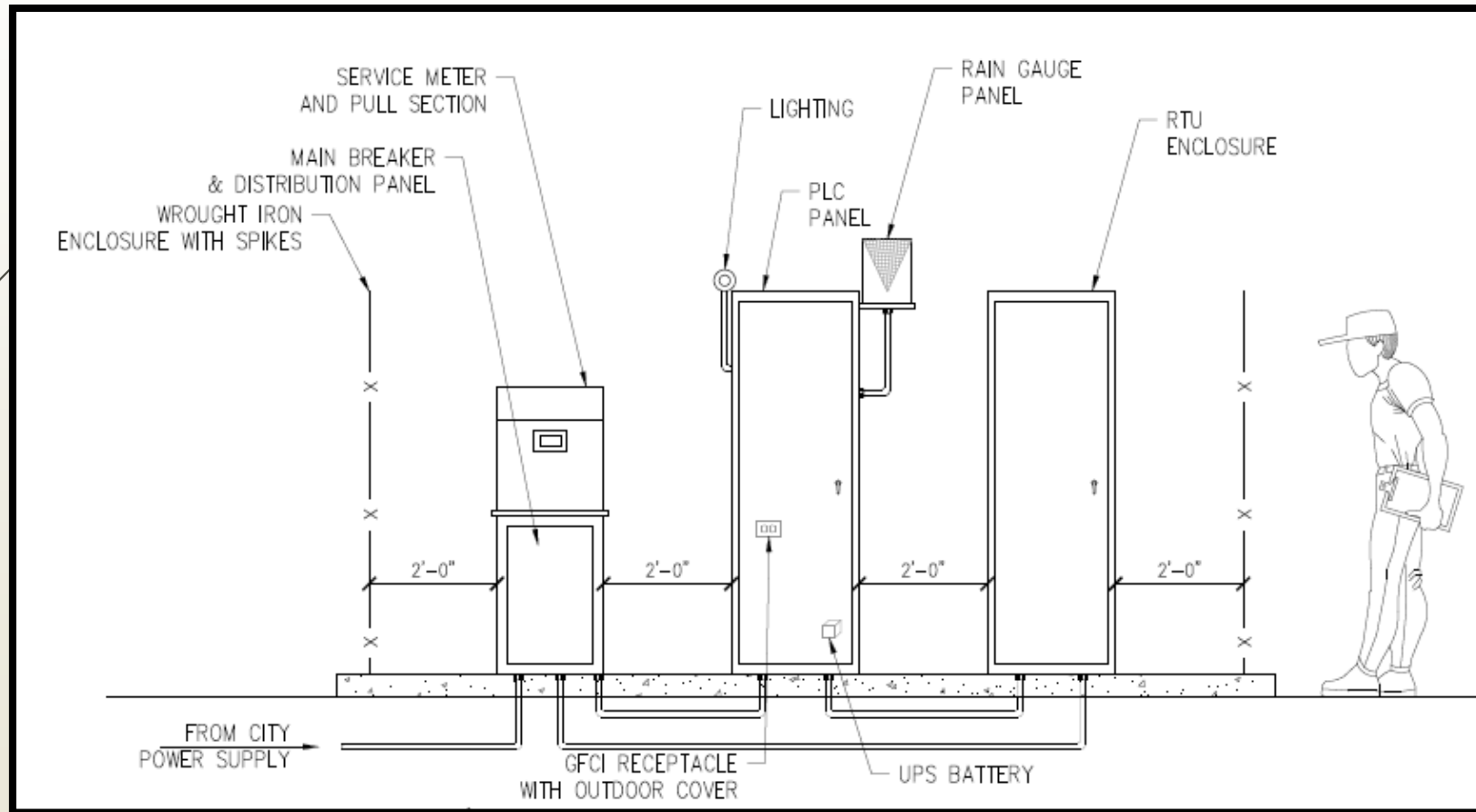
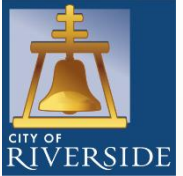


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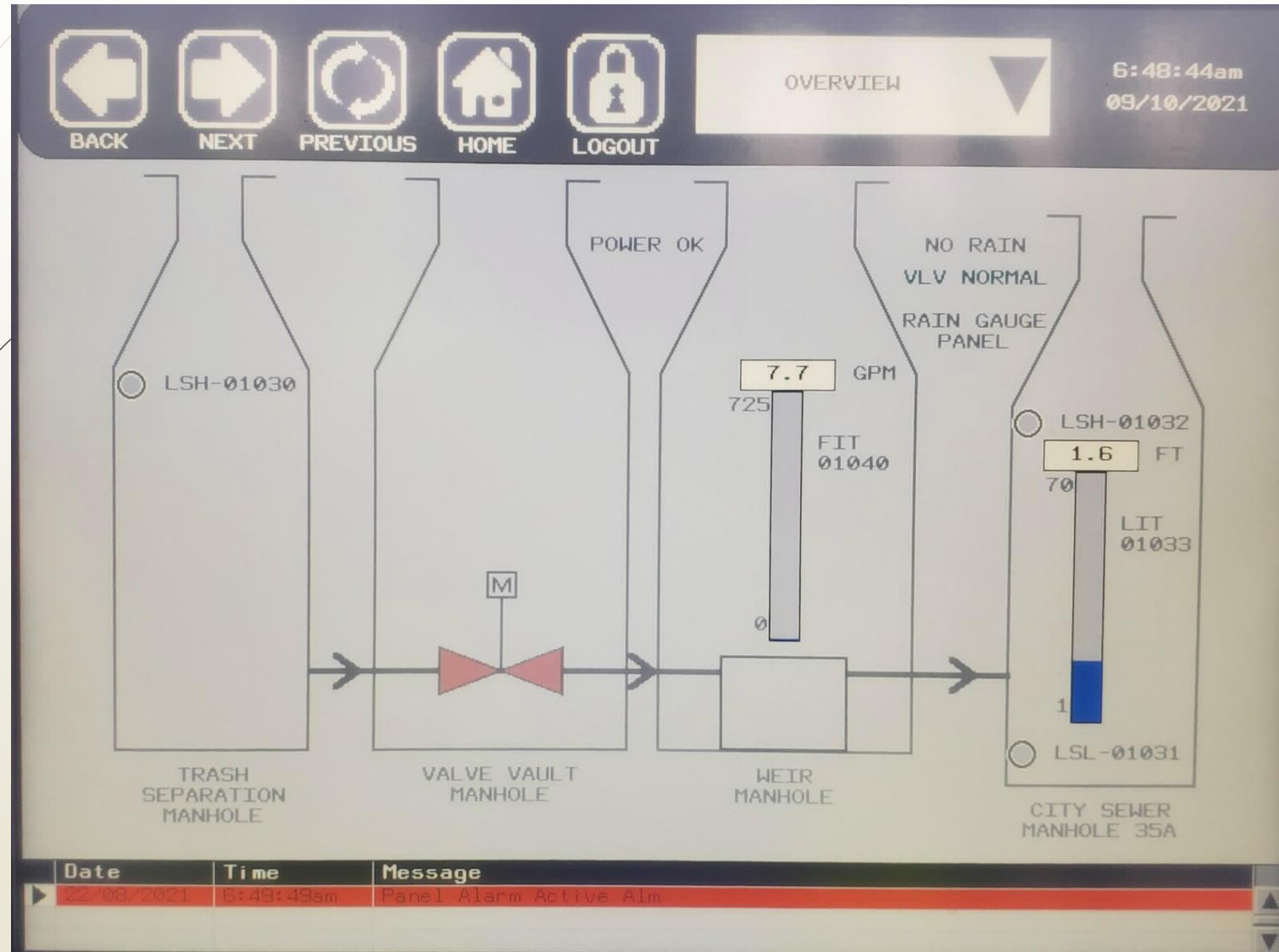
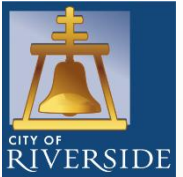
# Electrical and SCADA Equipment



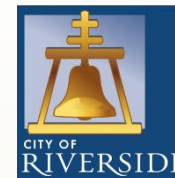
# SCADA Screen



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- ▶ System is online and in the first 5 days removed 6,300 gallons of bacteria-laden dry weather runoff to be treated.
- ▶ Monitor Local Limits Quarterly
  - ▶ Include bacteria as a constituent.
  - ▶ Additional bacteria samples
- ▶ First cleaning of trash separator manhole.
  - ▶ 5 ft<sup>3</sup> removed



# Questions?

- Amy McNeill, PE | Senior Civil Engineer
  - [ammcneil@rivco.org](mailto:ammcneil@rivco.org)
- Mike Roberts | Environmental Services Manager
  - [mdroberts@riversideca.gov](mailto:mdroberts@riversideca.gov)

