PAJARO VALLEY WATER MANAGEMENT AGENCY

Water Treatment Plant and Intake Facilities Design Update

College Lake

INTEGRATED RESOURCES MANAGEMENT PROJECT

carollo

Engineers...Working Wonders With Water®

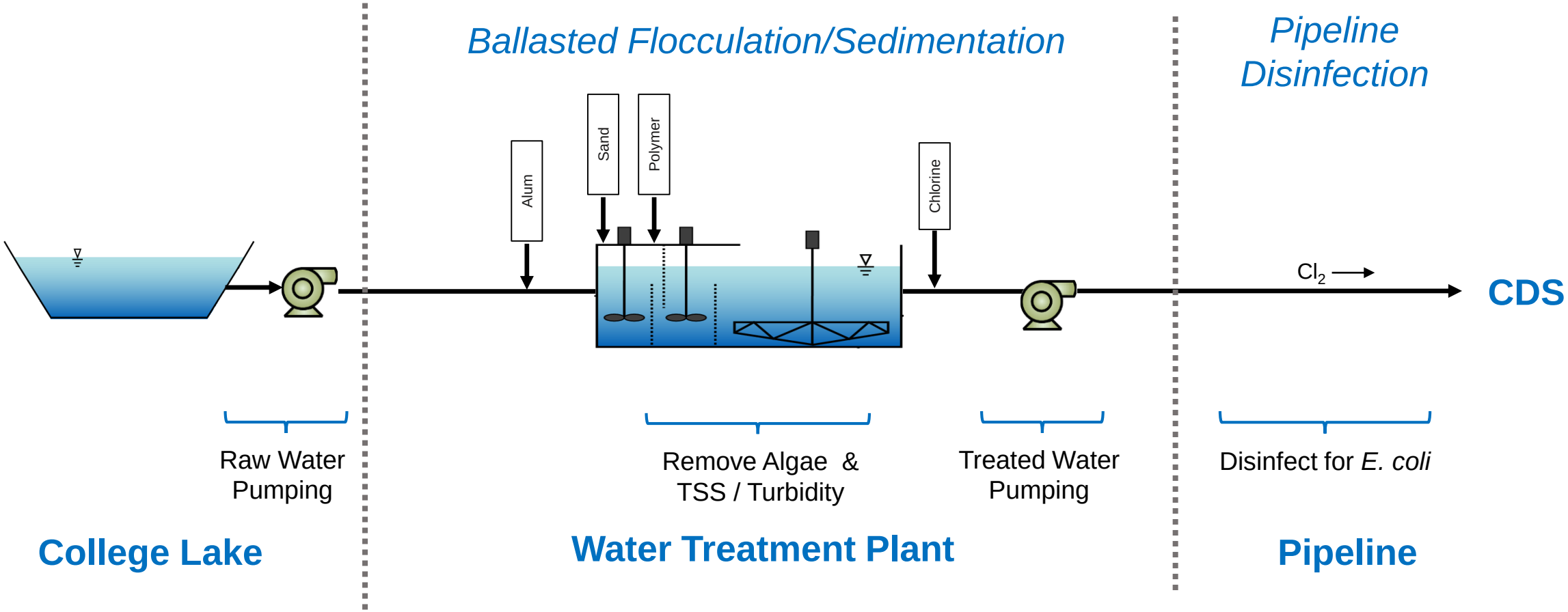
April 21, 2021

College Lake WTP and Intake Facilities Design Update

- Project overview
- Highlights of the water treatment plant and intake facilities
- Cost and schedule

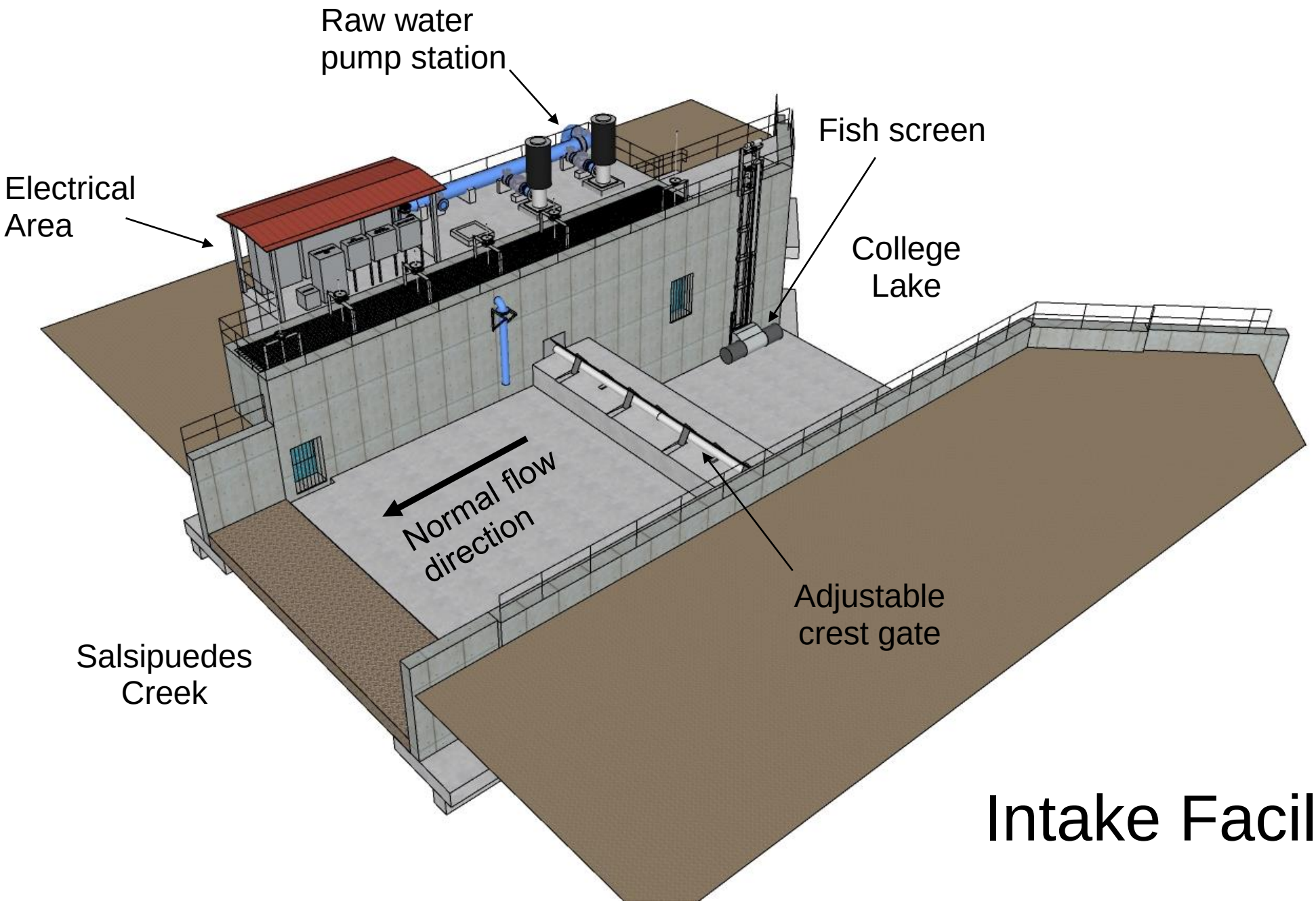
Project Overview

Project Overview

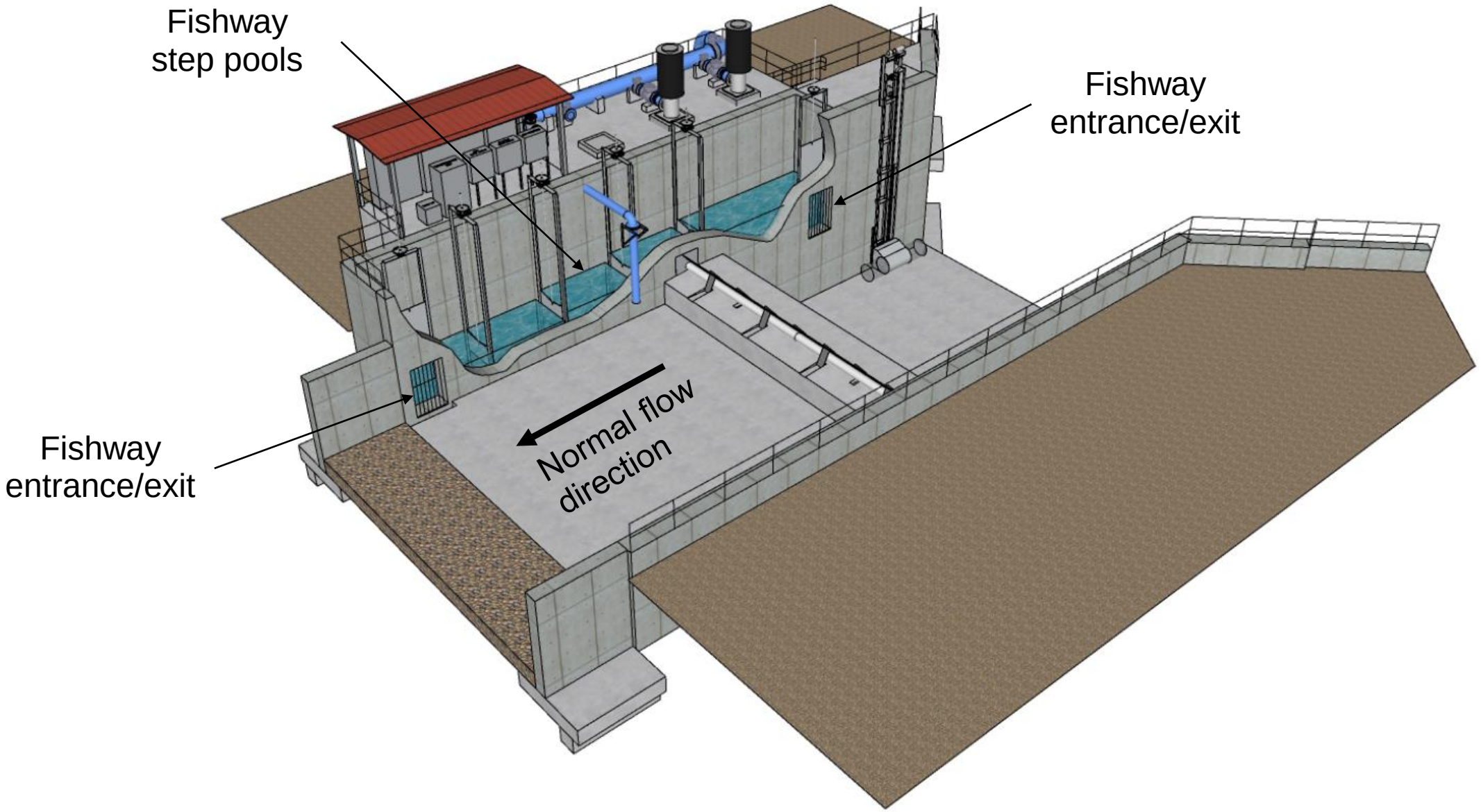


Location of Facilities

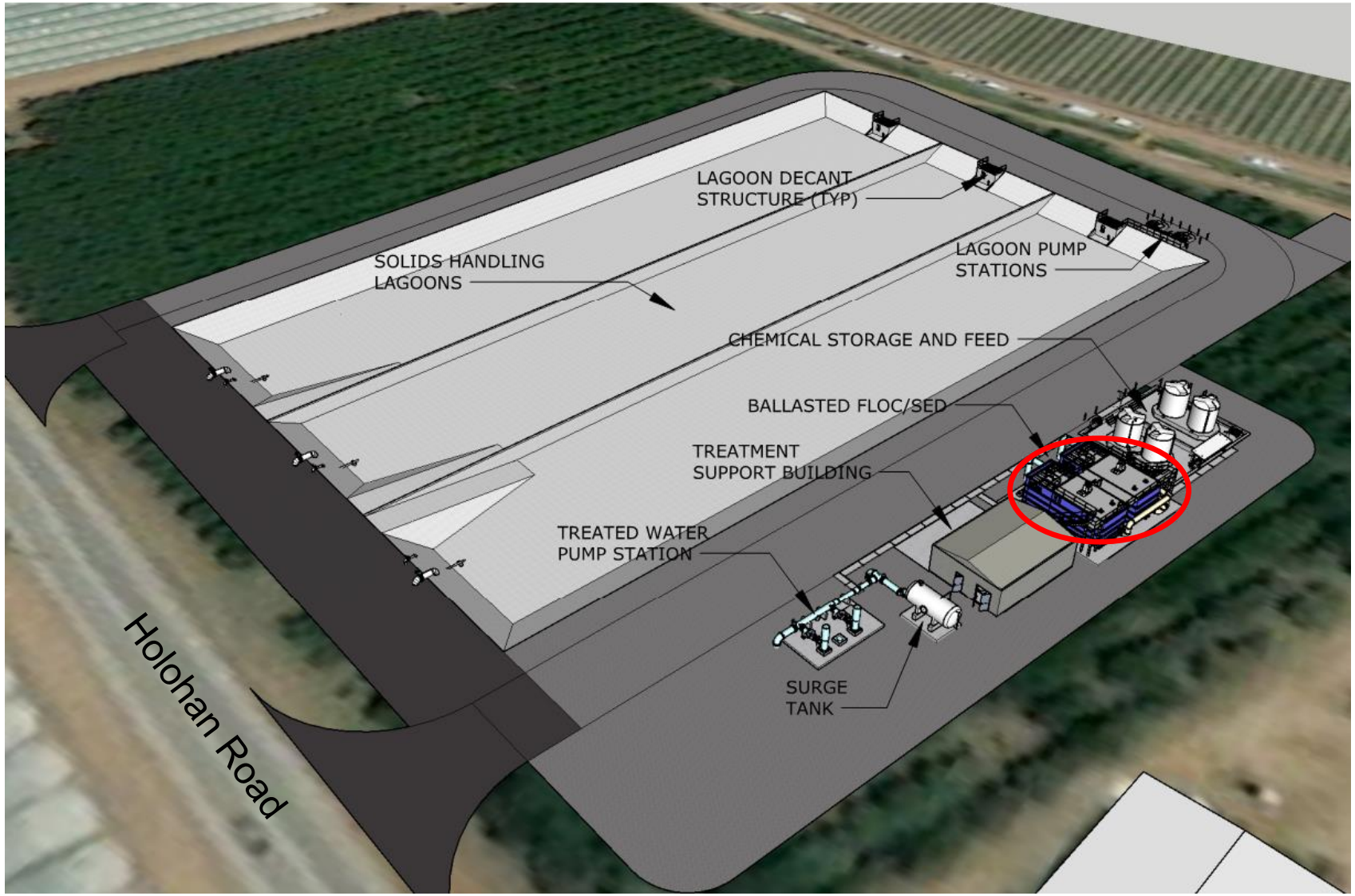
Highlights of WTP and Intake Facilities



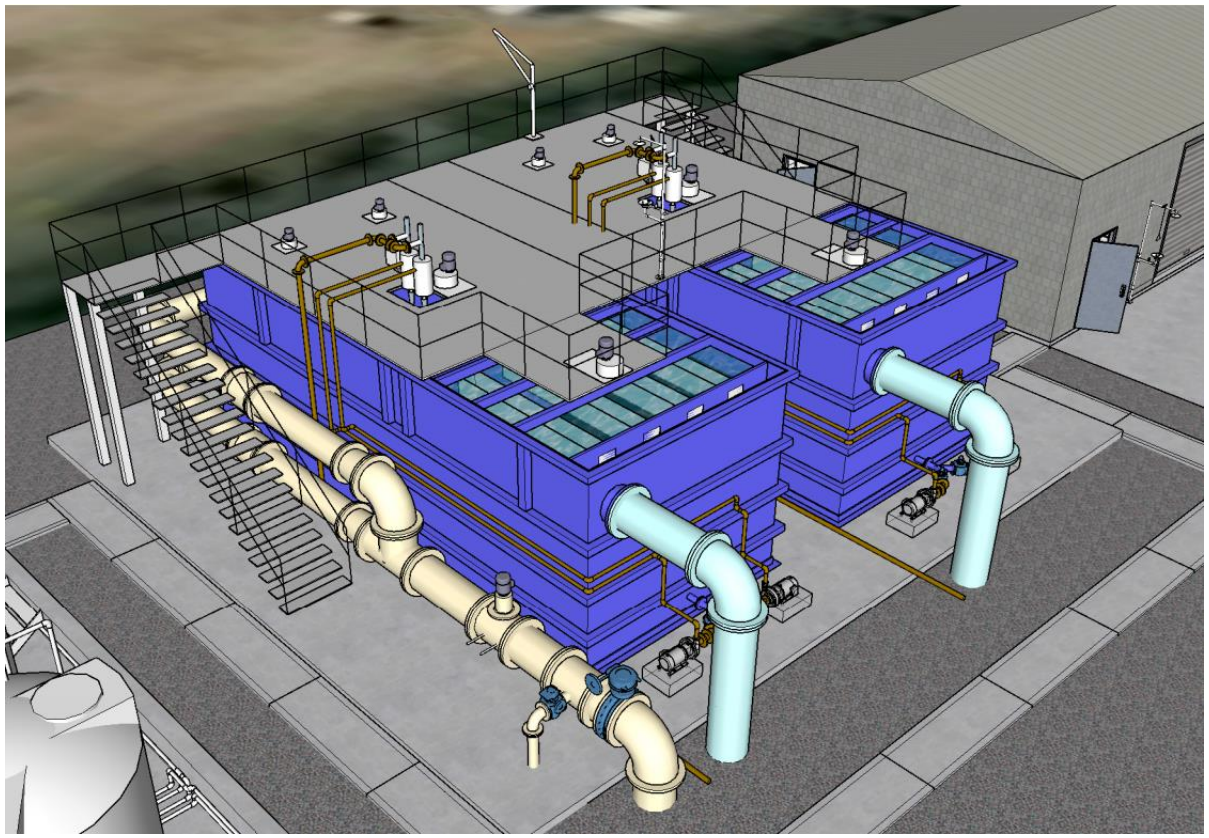
Intake Facilities


Fishway
step pools
Fishway
entrance/exit
Fishway
entrance/exit
Normal flow
direction

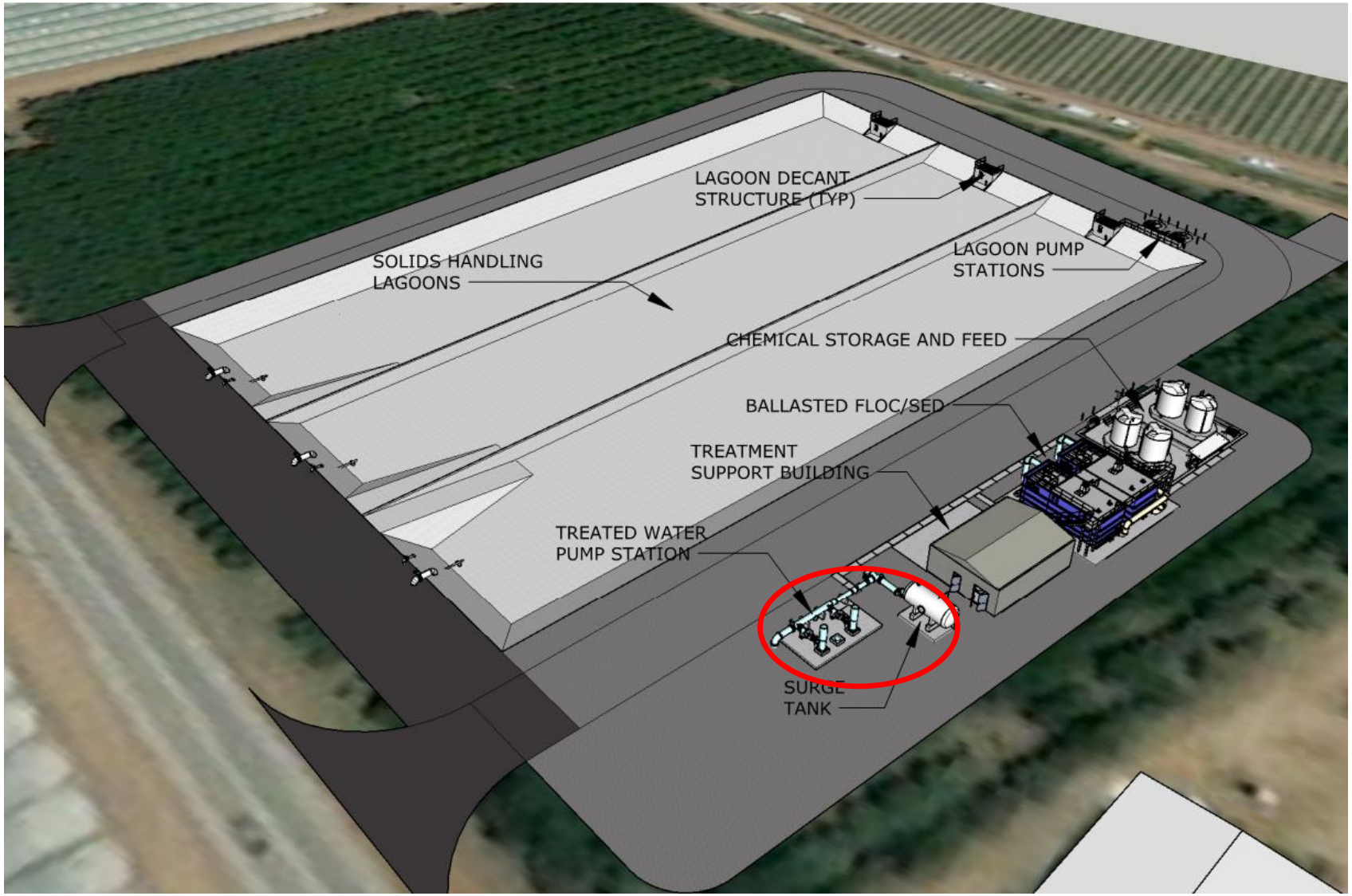
Water Treatment Plant



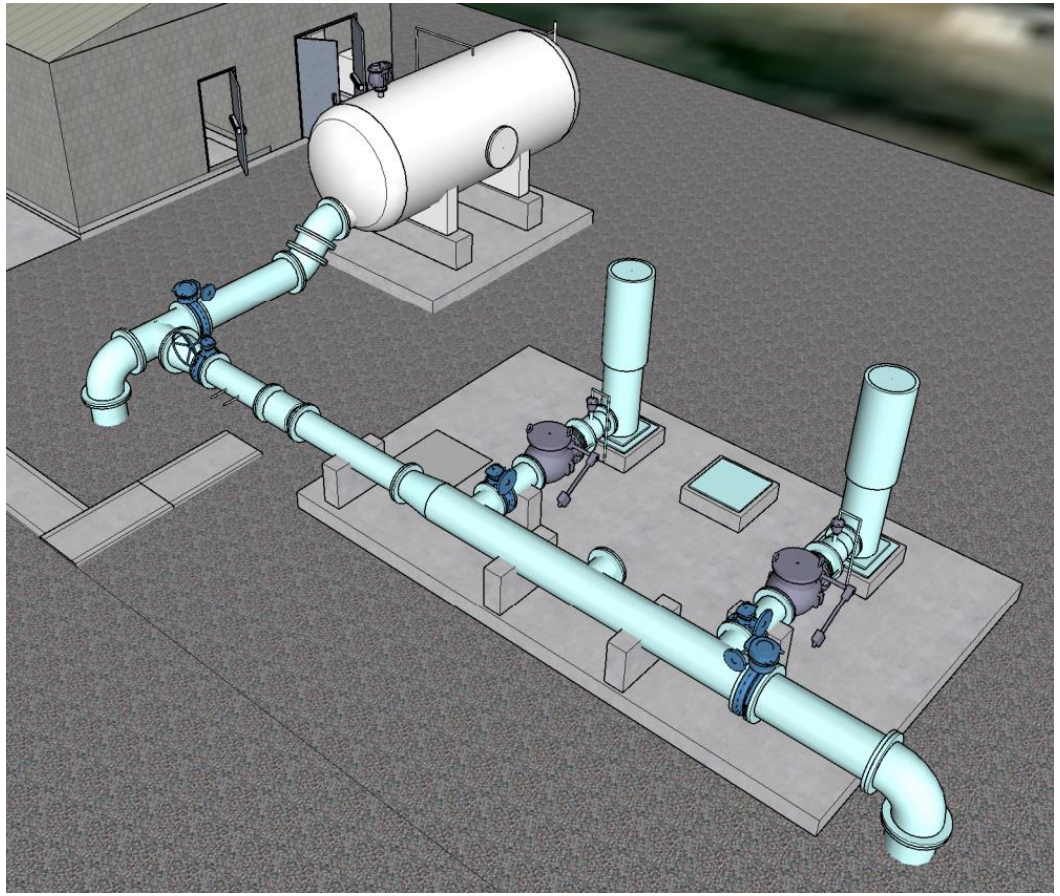
Ballasted Flocculation/Sedimentation Process

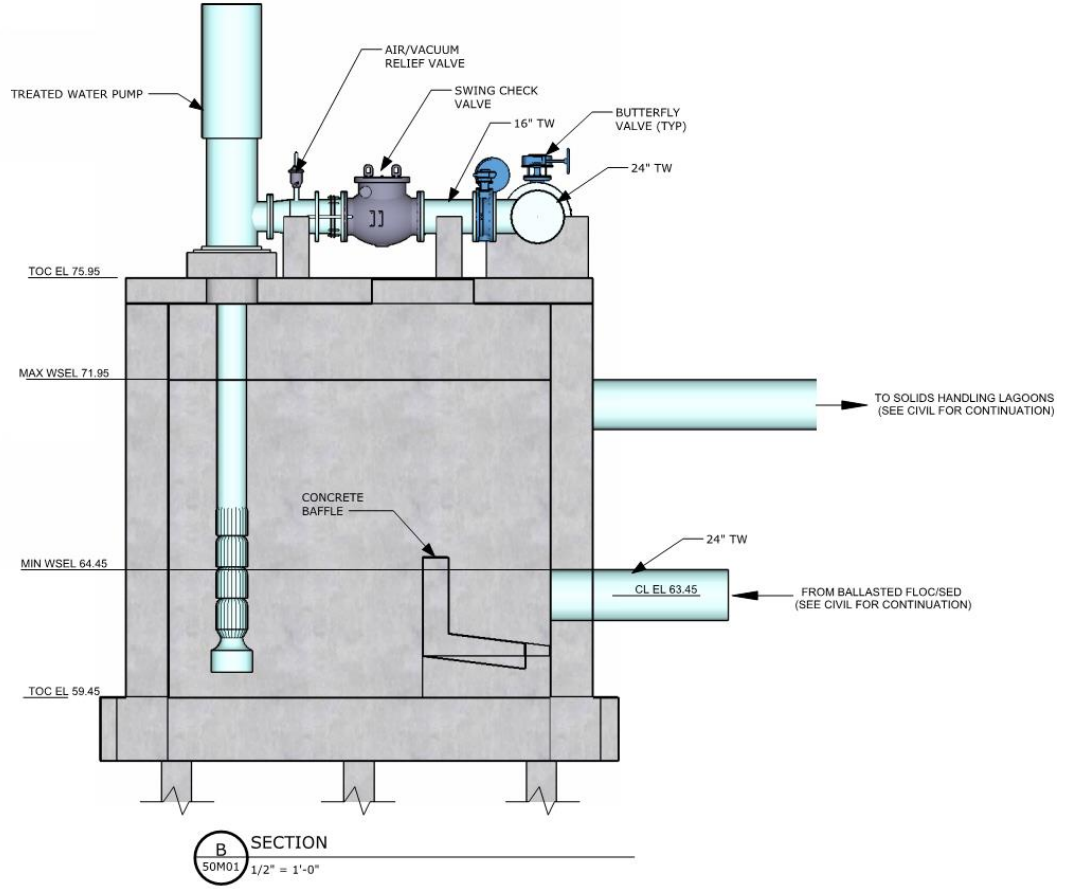


Water Treatment Plant



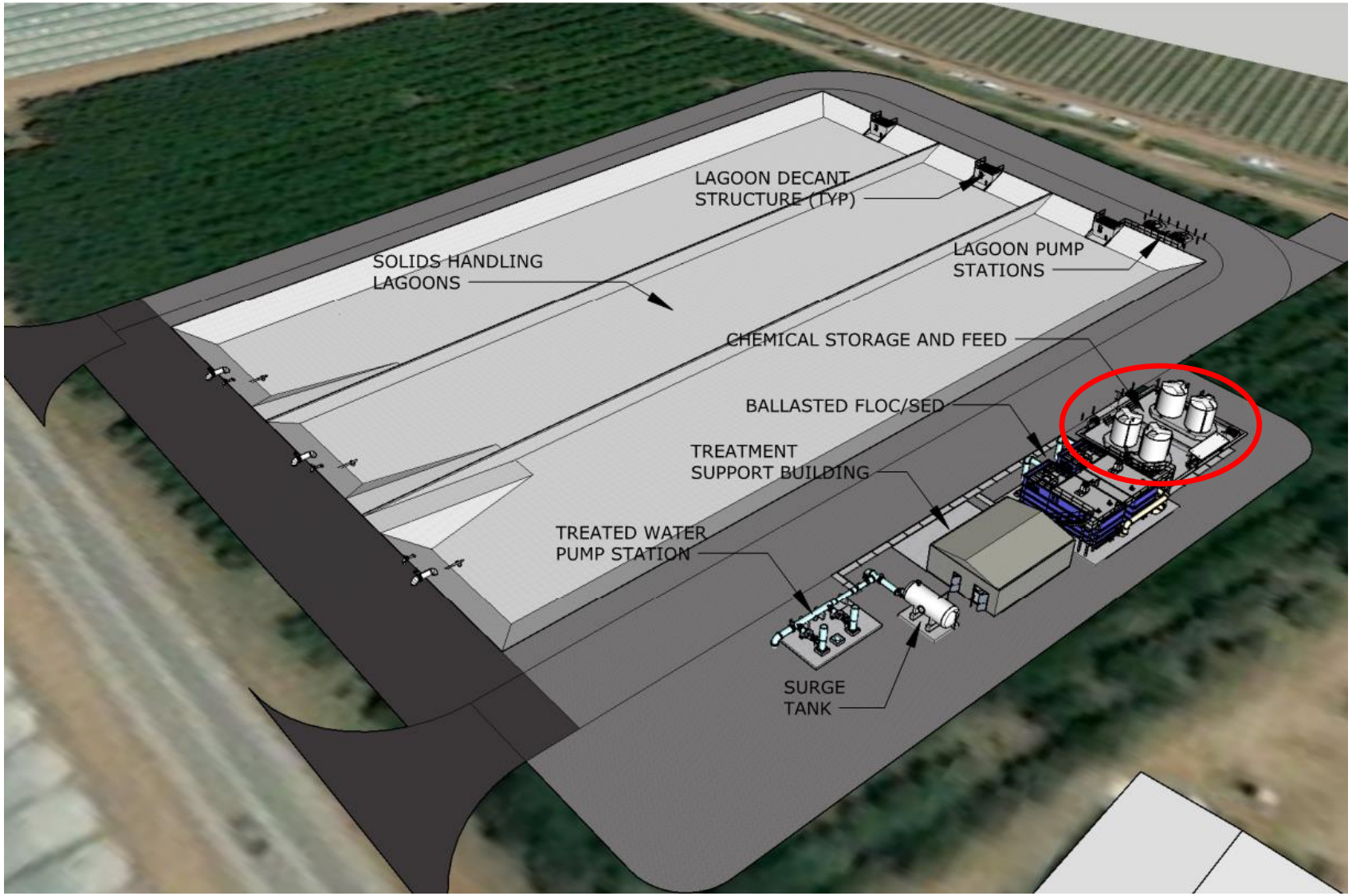
Treated Water Pumping



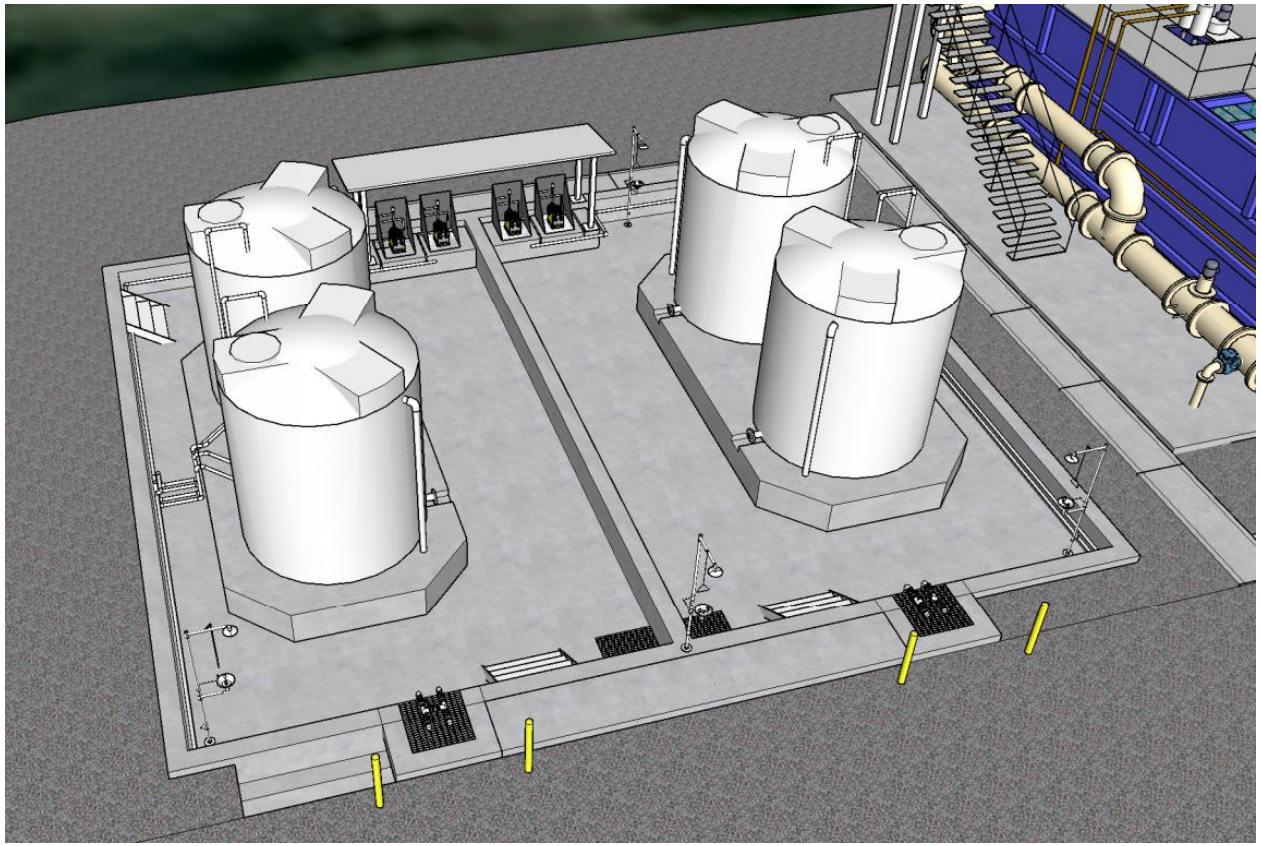


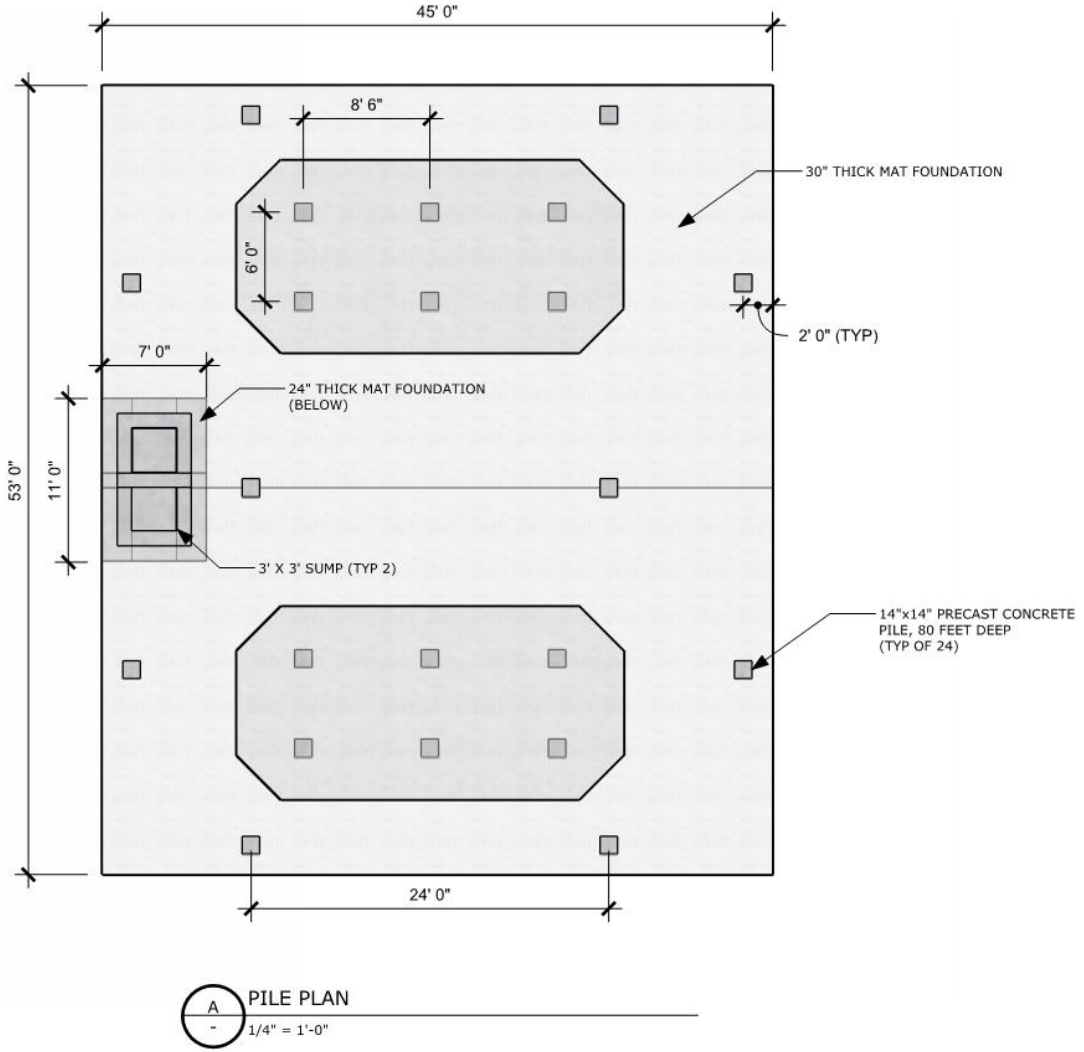
- Two duty pumps (no standby pump but space allotted for third pump)

Water Treatment Plant

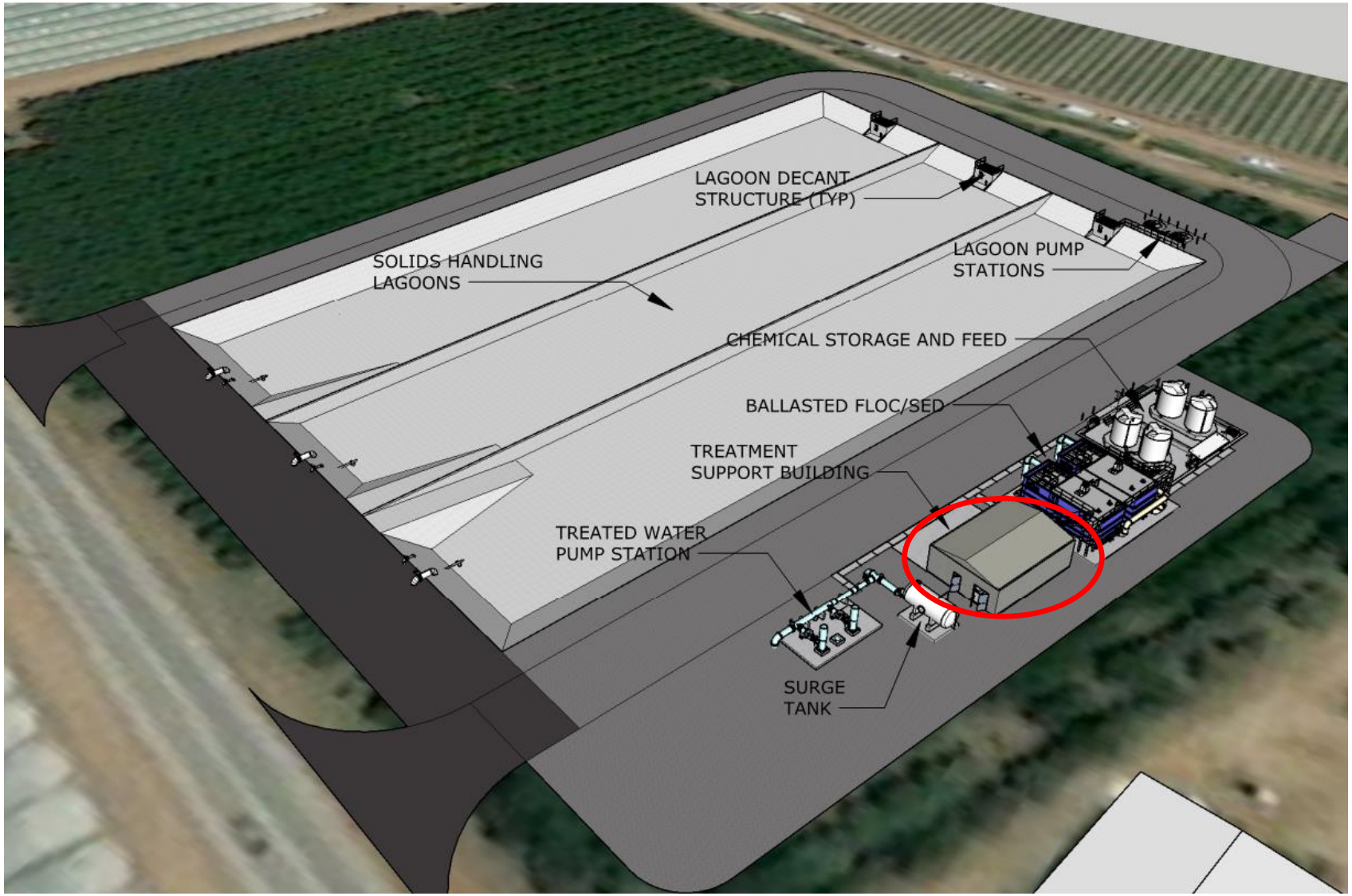


Chemical Storage

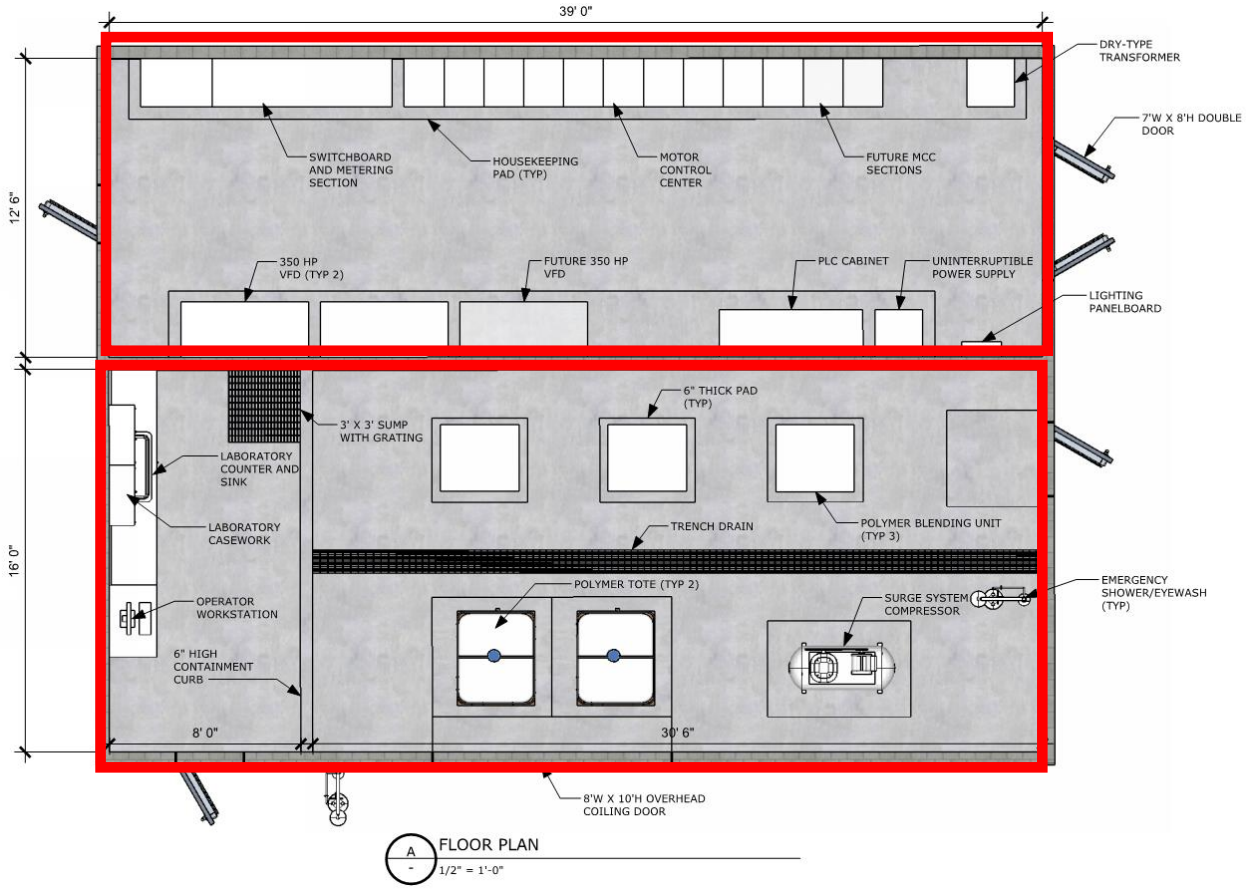




Water Treatment Plant

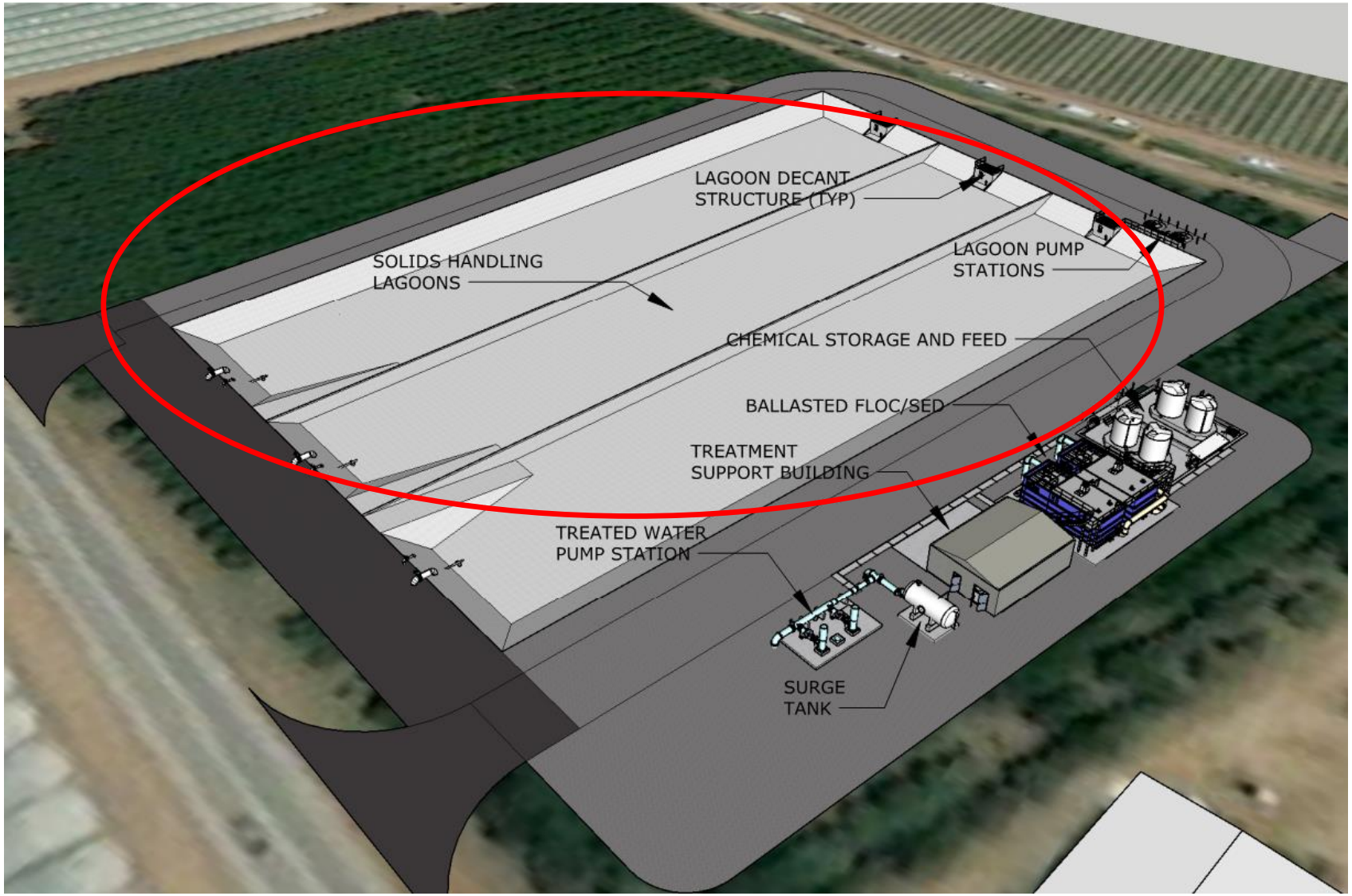


Treatment Support Building



- Cinderblock walls with wood truss roof framing and metal roof
- Includes polymer storage, small laboratory and electrical equipment

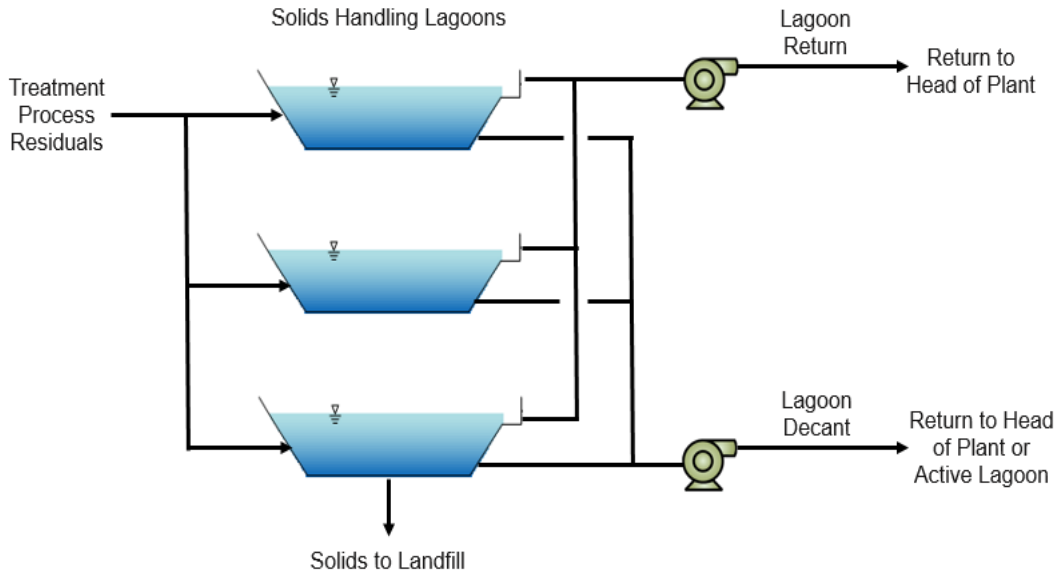
Water Treatment Plant



Solids Handling

- Engineered lagoons for WTP solids.
  - Simple operation
  - Lower cost than mechanical dewatering

- Design Criteria
  - 76,000 square foot floor (drying) area
  - Max liquid depth: 5 feet
  - Freeboard: 2 feet (total depth = 7 feet)



Cost and Schedule

Estimated WTP and Intake Facilities Construction Cost

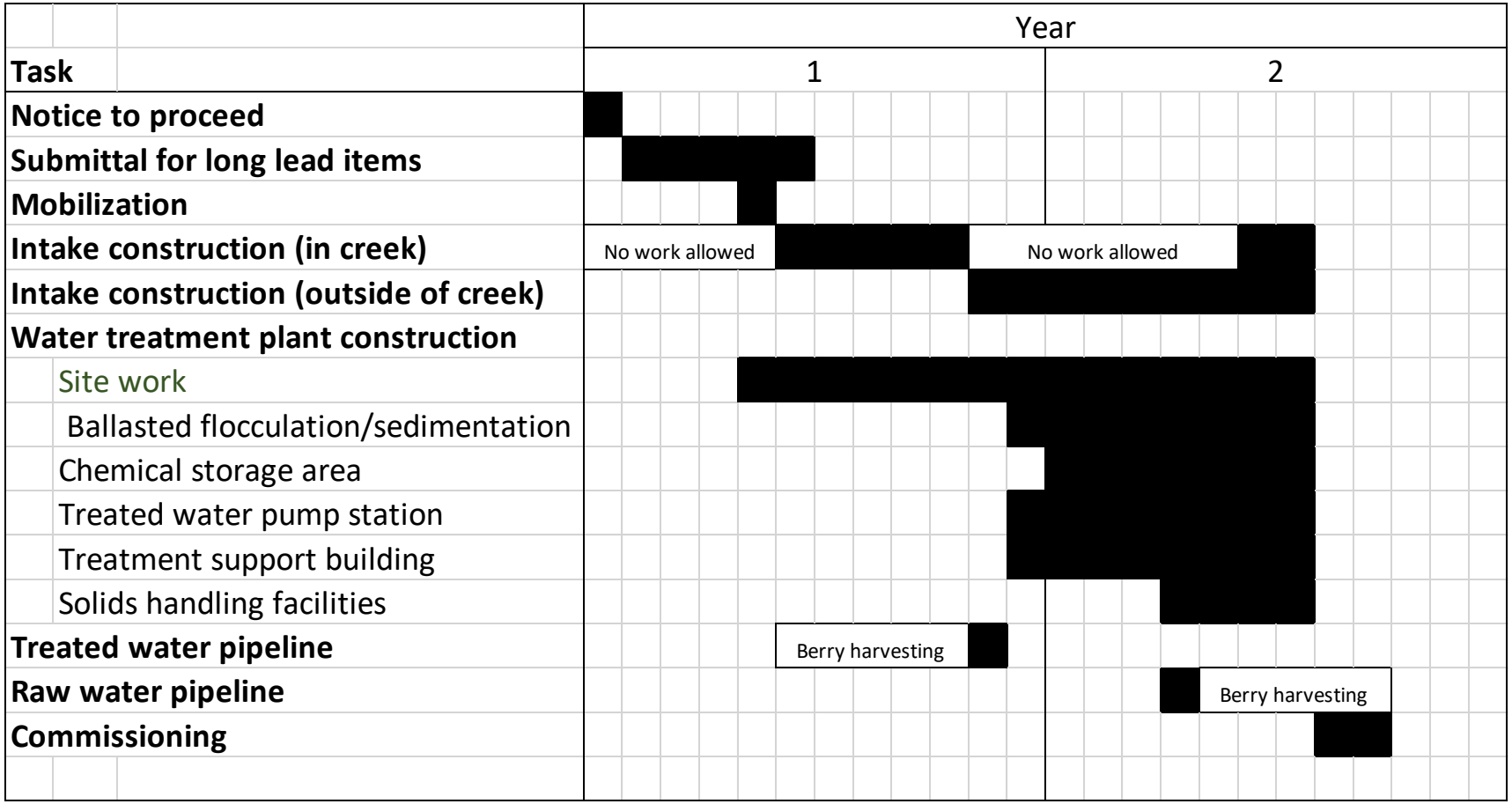
- 30% design estimate $32,400,000
- Changes from conceptual design:
  - Geotechnical mitigation
    - Deep foundations – $840k
    - Over excavation and soil improvements - $880k
    - Raising of lagoons due to high groundwater elevation - $680k
  - Farm road improvements to intake - $120k
  - Standby pump space for pump stations - $260k
  - 800’ segment of treated water pipeline costs transferred to this contract - $520k

Element	Cost
01 – General Conditions	$3,000,000
02 – Demolition	$100,000
03 – Site Civil	$2,900,000
04 – Weir and Intake Pump Station	$5,200,000
05 – Ballasted Floc/Sed	$3,200,000
06 – Treated Water Pump Station	$1,200,000
07 – Chemical Storage and Feed	$800,000
08 – Solids Handling	$3,100,000
09 – Treatment Support Building	$800,000
10 – Raw Water Pipeline	$600,000
11 – Treated Water Pipeline(1)	$300,000
Total Direct Cost	**$21,200,000**
Contingency (20 percent)	$4,200,000
Subtotal	*$25,400,000*
General Contractor Overhead, Profit, and Risk (15 percent)	$3,800,000
Subtotal	*$29,200,000*
Escalation to Mid-Point (7.2 percent)	$2,100,000
Subtotal	*$31,300,000*
Sales Tax (9.25 percent)	$1,000,000
Allow for Unknown Utilities	$100,000
Total Estimated Construction Cost	**$32,400,000**

Notes:
(1) Only the portion included in the WTP and Intake Facilities construction contract.

Preliminary Construction Schedule

- Intake construction is critical path
- Schedule risks
  - Property rights
  - Water right
  - Environmental permitting



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