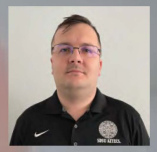
MFRO Intermediate Booster Pump Station

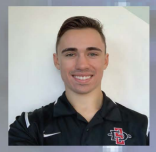
MEET THE TEAM

GREG JONES
Project Manager/Civil/Water

JUSTIN SLOMAN
CAD Manager/Earthwork



DANIEL KOOPMANS
Scheduling/Quality Assurance



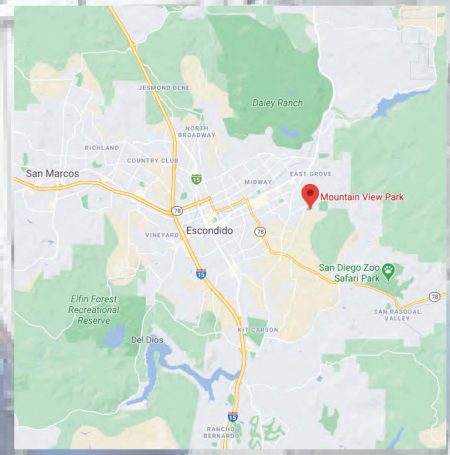
BLAKE STELZER
Hydraulic Design Engineer

Jordan Rodriguez
Site Development Engineer

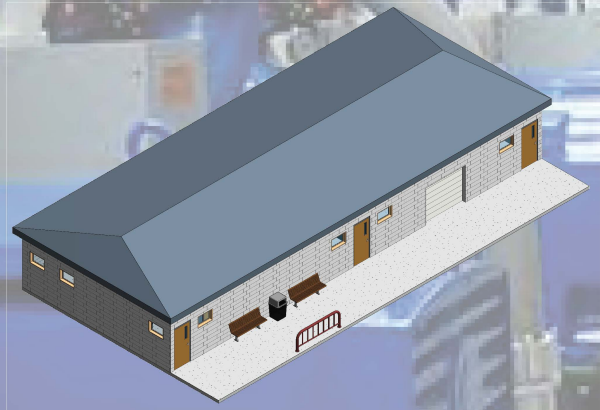
PROJECT DESCRIPTION

The City's initial planned project was to construct a new water reclamation plant at the west end of Escondido and install a new pipeline to Hogback Reservoir to distribute the reclaimed water to the agricultural industry at the east end of the city. During the planning process, it was determined that the pressure required to transport the desired flow rate would be excessively large, which would drastically increase the cost of both the pipeline and the pump necessary. Therefore, a more cost effective solution is to construct a system that contains an intermediate pump booster station located in Mountain View Park.

VICINITY MAP

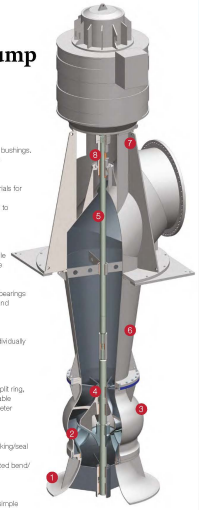


DESIGN



HYDROLOGY/PUMP SELECTION

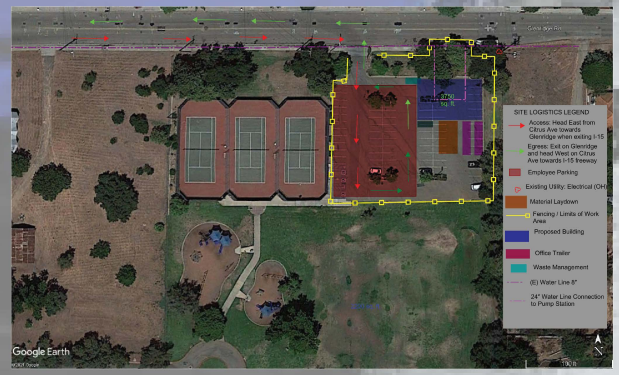
Sulzer SJT Vertical Turbine Pump



Features and Benefits

1. **Suction bell**
   - Each suction bell includes anti-vortex ribs and tail bearing bushings. The suction bells are available with replaceable wear rings
2. **Impeller**
   - Closed or semi-open designs and cast from various materials for versatility
   - Balanced to assure vibration-free operations and polished to optimize performance
   - Secured to shaft by a key and split thrust ring
3. **Bowls**
   - Combines the energy conversion and diffusion in one single casing, allowing for a direct connection to the column pipe
4. **Bowl bearings**
   - Bowls can be fitted with metal or dual (rubber and metal) bearings of many different materials to meet required applications and specifications
5. **Pump shaft**
   - The shaft is tailor-made to the service needs and sized individually for each installation; sized for maximum torque
   - A stepped shaft with sleeves can be supplied
6. **Column assembly**
   - Column pipes are flanged. Line shafts are connected by split ring, key and sleeve couplings. Line shaft bearings are replaceable
   - Column assemblies have integral spiders for column diameter above 14"
7. **Discharge head**
   - Integral driver stand allows easy access to removable packing/seal box and coupling
   - Each standardized discharge head comes with a segmented bend/ motor stool
8. **Shaft seal**
   - A packed stuffing box is provided for reliable sealing and simple maintenance

SITE PLAN



Cost Estimate

PROJECT:	Escondido MFRO Intermediate Booster Pump Station	TOTAL BUILDING SF:	2,250		For Construction Plans
OWNER:	City of Escondido	Duration MO:	12	LOCATION:	Escondido, California
ARCHITECT:	OCA	Site SF:	3,000	DATE:	March 26, 2021
MANAGER:	Greg Jones				COST ESTIMATE (@50%)
ESTIMATOR:				FILE NAME:	

SOFT SIDE BUDGET DESCRIPTION	QTY	UNIT	UNIT COST	AMOUNT	COMMENTS
DESIGN, PERMITS, FEE'S & SOFT SIDE	1	LS	10,000.00	10,000	
SOFT SIDE BUDGET	2,250	SF	0.00	0	
GENERAL CONDITIONS BUDGET DESCRIPTION	**QTY**	**UNIT**	**UNIT COST**	**AMOUNT**	**COMMENTS**
PRECONSTRUCTION PHASE	4	MO	5,000	20,000	
CONSTRUCTION PHASE	12	MO	23,032	276,383	
EQUIPMENT & HOISTING	11	MO	0	0	
GENERAL CONDITIONS BUDGET	2,250	SF	131.73	296,383	
SITEWORK BUDGET DESCRIPTION	**QTY**	**UNIT**	**UNIT COST**	**AMOUNT**	**COMMENTS**
OFFSITE IMPROVEMENTS	1	LS	0	0	
ONSITE IMPROVEMENTS	3,000	SF	290.00	870,000	
SITEWORK BUDGET	3,000	SF	290.00	870,000	
BUILDING BUDGET DESCRIPTION	**QTY**	**UNIT**	**UNIT COST**	**AMOUNT**	**COMMENTS**
ARCHITECTURAL	2,250	GSF	77.00	173,250	
SHELL CLADDING	2,250	GSF	39.01	87,771	
PUMP (x3) (CONTINGENCY)	1	LS	60,000.00	60,000	
YARD/INLET/OUTLET PIPING	2,250	GSF	300.00	675,000	
EQUIPMENT	2,250	GSF	35.00	78,750	
MECHANICAL	2,250	GSF	18.40	41,400	
ELECTRICAL	2,250	GSF	553.00	1,244,250	
BUILDING BUDGET	2,250	GSF	1,049.08	2,360,421	

SUMMARY			SF
SUBTOTAL: SOFT SIDE, GENERAL CONDITIONS, SITEWORK, BUILDING BUDGET		3,526,804	1,567.47
CONTINGENCY @	5.00%	176,340	78.37
SUBTOTAL		3,703,145	1,645.84
INSURANCES @	1.25%	46,289	20.57
SUBTOTAL		3,749,434	1,666.42
CONTRACTOR'S FEE @	4.00%	149,977	66.66
SUBTOTAL		3,899,411	1,733.07
SUBCONTRACTOR BONDS @	1.00%	38,994	17.33
SUBTOTAL		3,938,405	1,750.40
MATERIAL ESCALATION @	0.00%	0	0.00
TOTAL BUDGET		$ 3,938,405	$1,750.40