

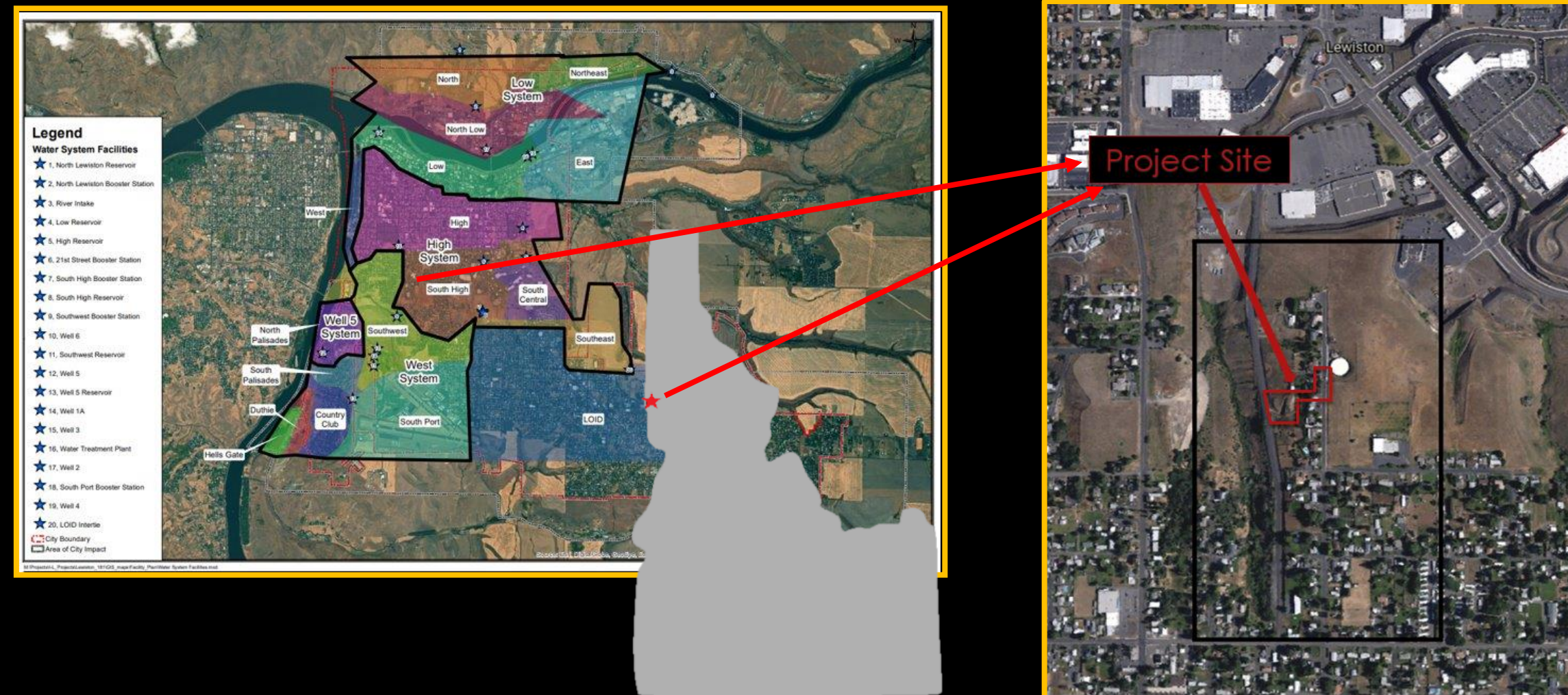
City of Lewiston Well No. 7

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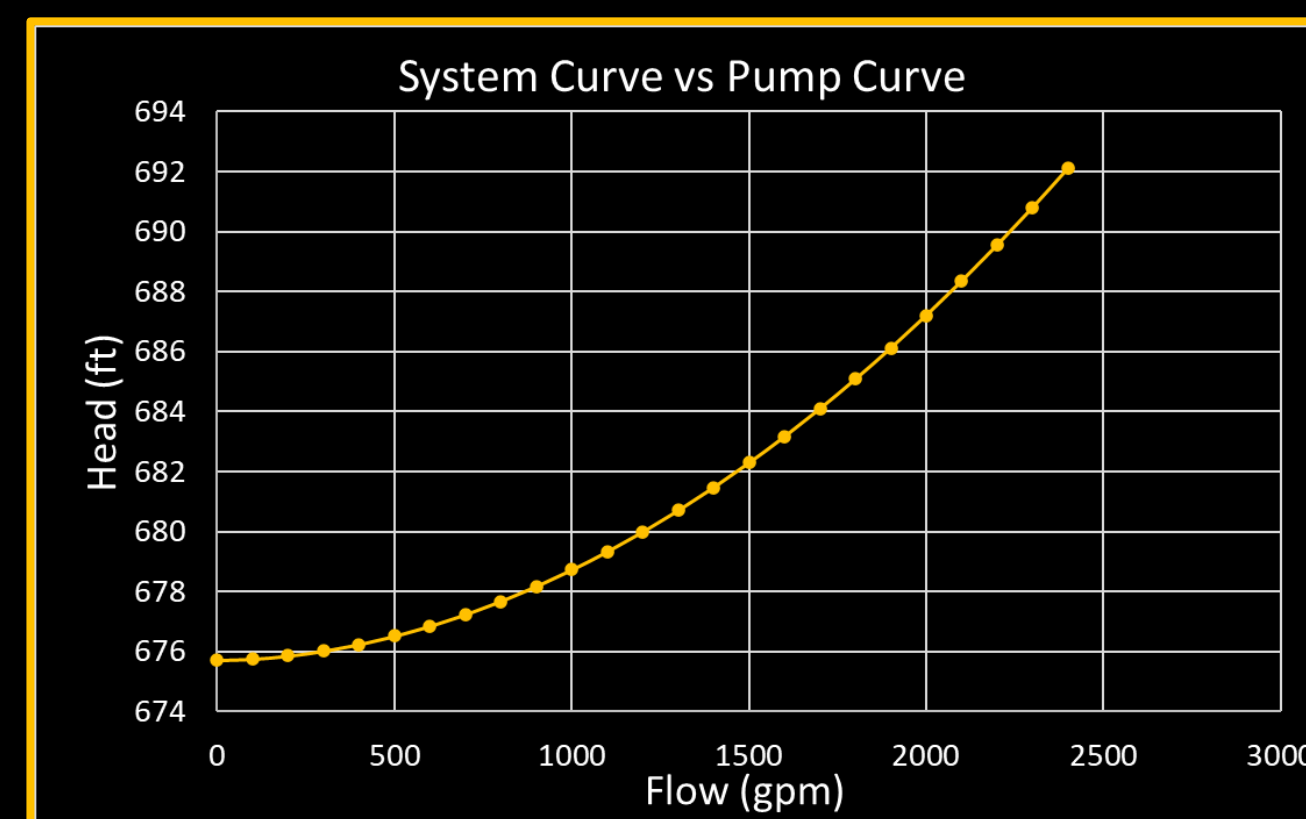
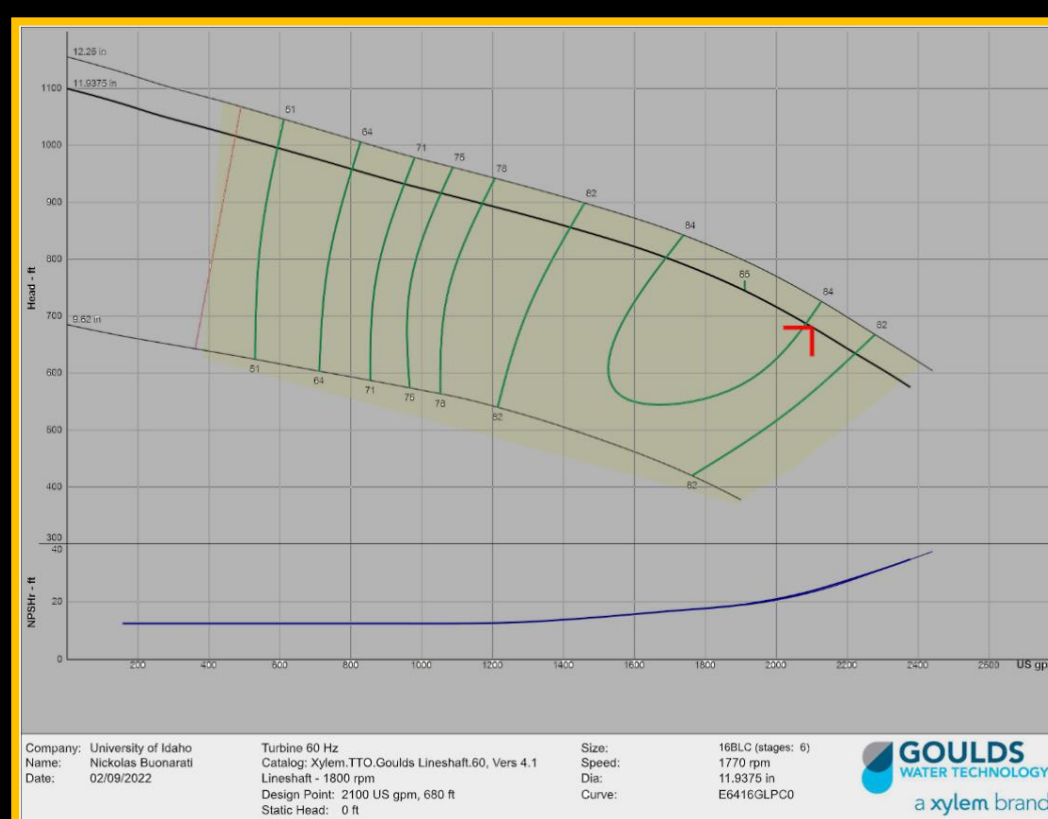
Objectives

- Design a well, complete with well house, pump and motor, and transmission lines connecting to existing South High Reservoir.
- The City of Lewiston will meet the growing water demand it has through drilling various wells throughout the city, with Well No. 7 being drilled for the South reservoir areas.



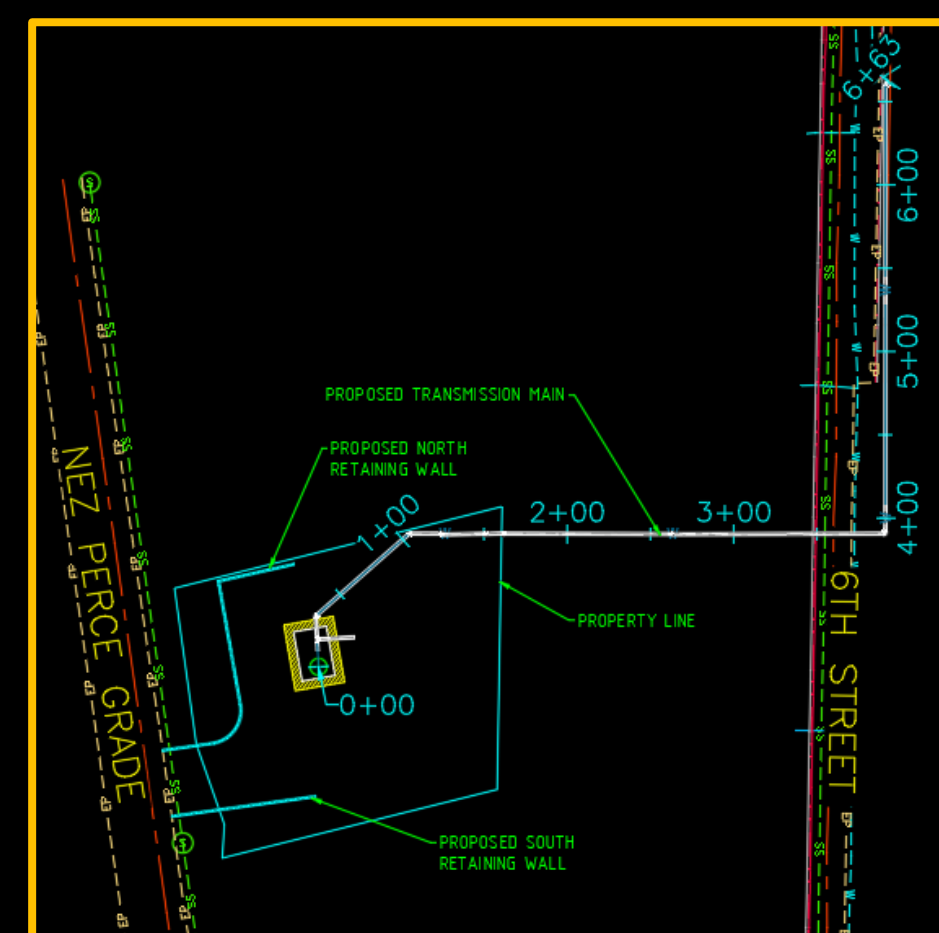
Pump

- A line shaft vertical turbine pump will be selected to deliver 1,400-2,100 gpm from the Grande Ronde Aquifer into the South High Reservoir.
- Well drilled to 1,800 ft., static water level at 675 ft.
- Total dynamic head = 688.4 ft.
- Pump Specifications: 16BLC (6 stage), 12 in. impeller, 84% efficiency, 1,770 rpm, recommended by Pumptech.



Pipe Network

- 16 in. Cast Iron
- Three 90° bends
- Four 45° bends
- Three 11.25° bends
- Two standard tee valves
- Three gate valves
- Four check valves
- One coupling reducer
- Length = 669 ft.



Site Design

Earthwork

- 1,728 Cubic Yards General Excavation.
- 3,417 Cubic Yards of Rock Excavation.
- 674 Cubic Yards of General Backfill.

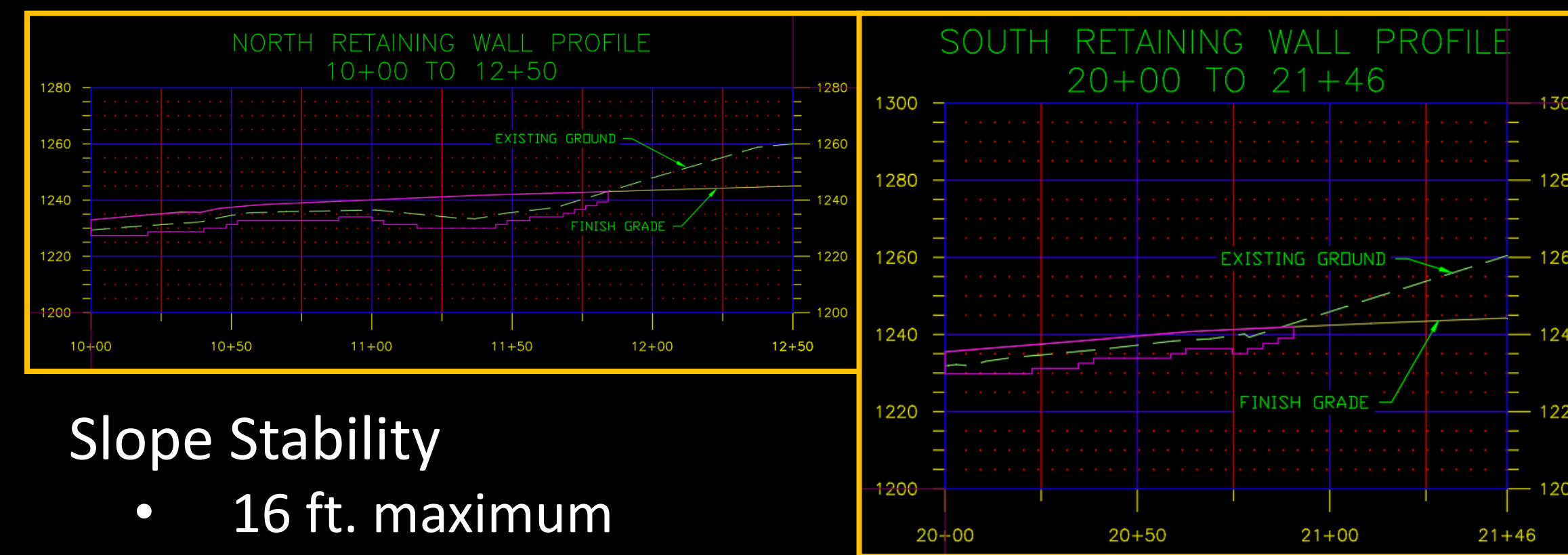
MSE Retaining Wall

North Portion

- Maximum Height – 12 ft.
- Total Length – 184 ft.

South Portion

- Maximum Height – 8 ft.
- Total Length – 91 ft.

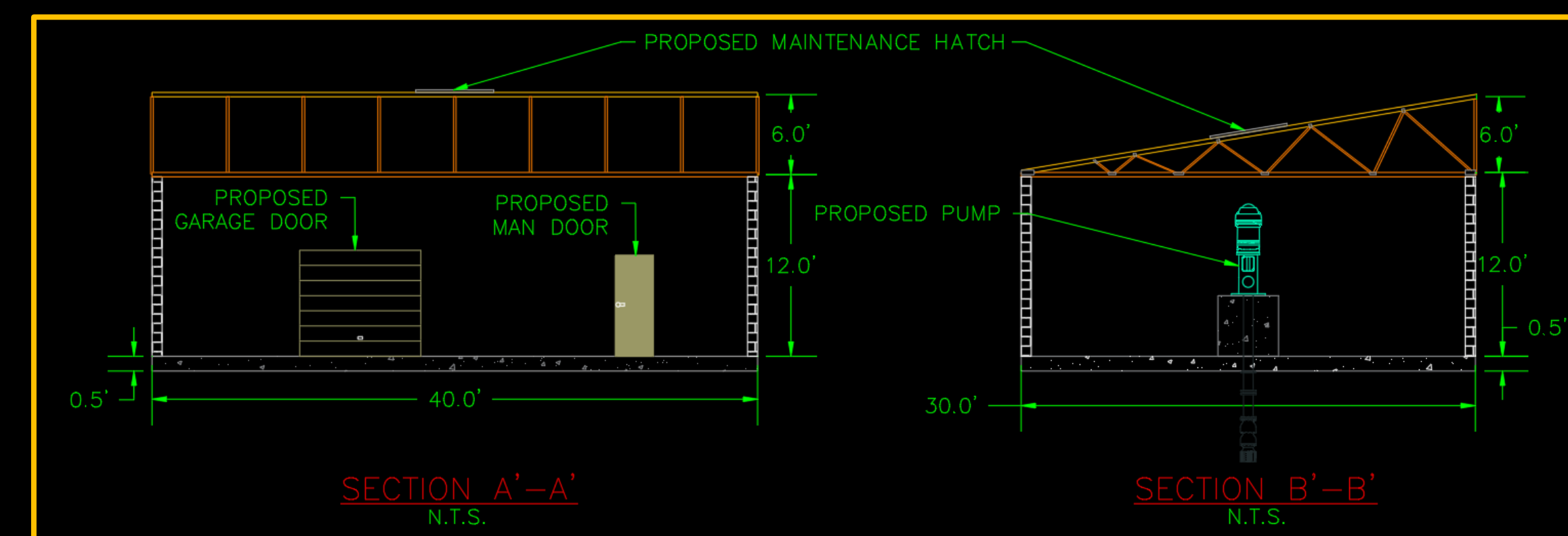


Slope Stability

- 16 ft. maximum height of Basalt Bedrock.

Wellhouse

- 1,200 sq. ft. structure with a mono-slope roof housing the pump and motor.
- Walls consist of CMU blocks.
- Roof is corrugated metal sheeting.
- 6 in. concrete slab foundation, reinforced with No. 4 Rebar, at 12 in. spacing.
- Nine prefabricated trusses, spaced 5 ft. apart.
- Trusses span 30 ft., with a 6 ft. height at a 2/12 pitch.



Stormwater

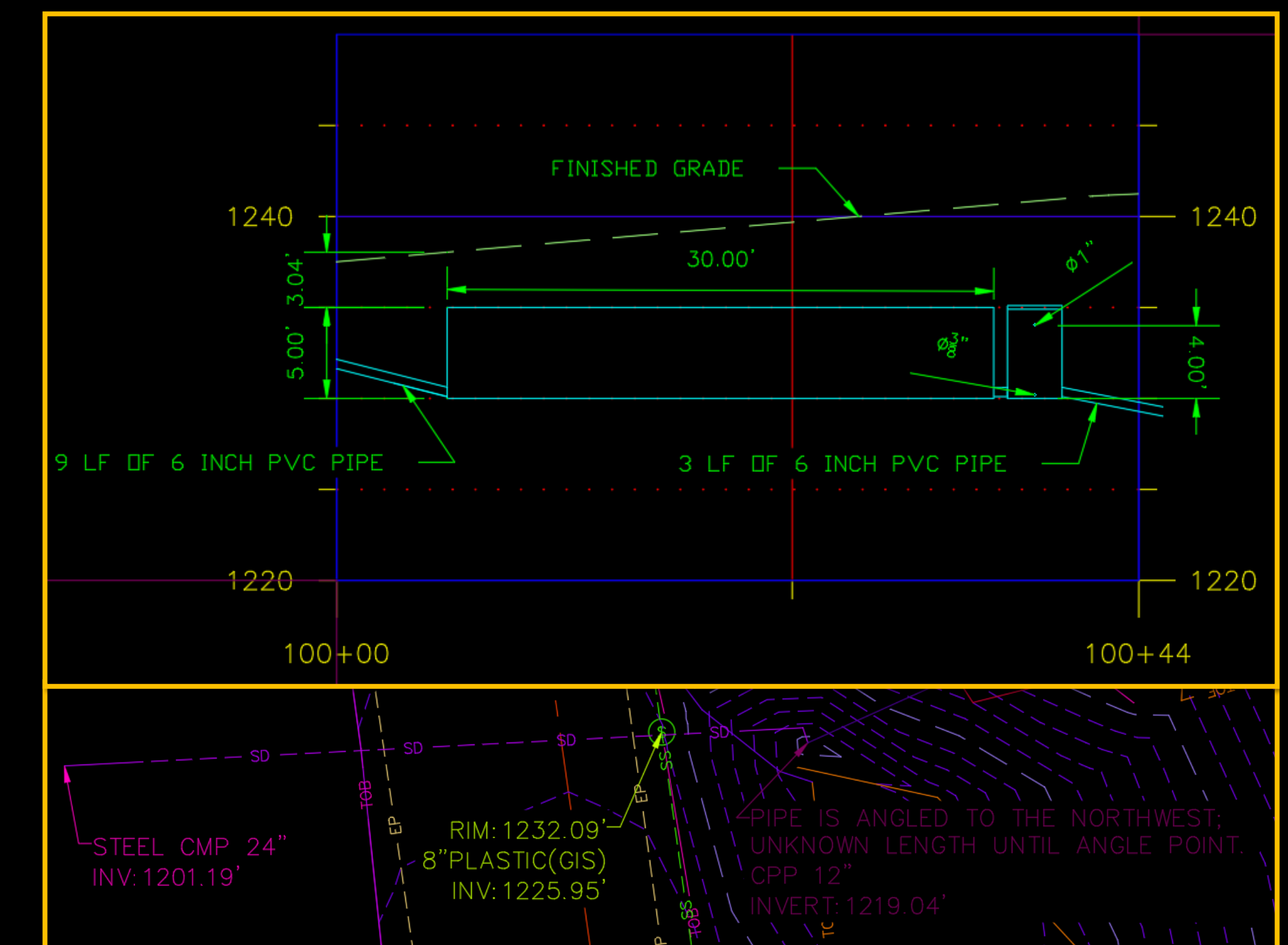
Disturbed Site Characteristics

- 0.384 Acres
- Type A Soil
- Deep sand and gravel
- No trees or underbrush



Discharge Structure

- According to the 2010 Stormwater Design Manual, the first 0.4 in. of a precipitation event is released at the predevelopment level of 0.008 cfs. For precipitation events between 0.4 in. to 1.2 in., stormwater is released over 72 hours. All precipitation events will be contained in the discharge structure, then released into the 12 in. culvert southwest of the site.



Cost Estimate

ENGINEER'S OPINION OF PROBABLE COST BID SCHEDULE					
CLIENT: City of Lewiston CLIENT PROJECT: Well No. 7				DATE: 4/15/2022	
ITEM NUMBER	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
	MOBILIZATION				\$116,000.00
	TRAFFIC CONTROL				\$19,000.00
	EROSION AND SEDIMENT CONTROL				\$16,000.00
	CONSTRUCTION SURVEY				\$37,200.00
	SITE IMPROVEMENTS				\$126,469.44
	GRADING AND FOUNDATION				\$642,391.00
	WELL HOUSE				\$134,740.26
	WATER AND PUMP				\$956,052.89
	SUBTOTAL				\$2,047,853.59
	CONTINGENCY		10%		204,785.36
	ADMIN AND LEGAL		2%		\$40,957.07
	CITY PERMITTING		1%		\$20,478.54
	2022 CONSTRUCTION TOTAL				\$2,300,000.00

Acknowledgements:

Richard Nielsen, Ph.D., P.E. | Eric Coats, Ph.D., P.E.
Ahmed Ibrahim, Ph. D., P.E. | Patricia Colberg, Ph. D. P.E.

Project Sponsor:

Braxton Klas, E.I.T.
J-U-B Engineers Inc.



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Environmental Engineering