

Wallsburg Church Camp

Culinary Water Tank and Delivery System Design

Team Members:

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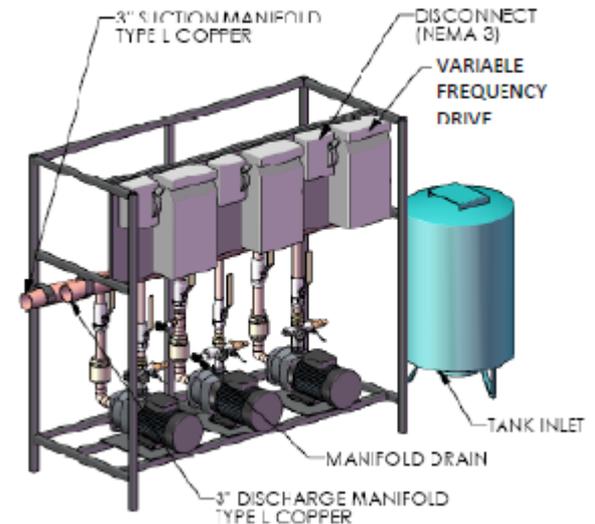


Scope

- * Problem:
 - * Current tank location does not provide adequate water pressure
 - * Current piping system does not supply the required demand
- * Purpose:
 - * Design new storage tank
 - * Determine adequate location for storage tank
 - * Check new valve pressures
 - * Ensure stable location
 - * Design pipe system from new tank to existing pipe system
 - * Design access road to tank site

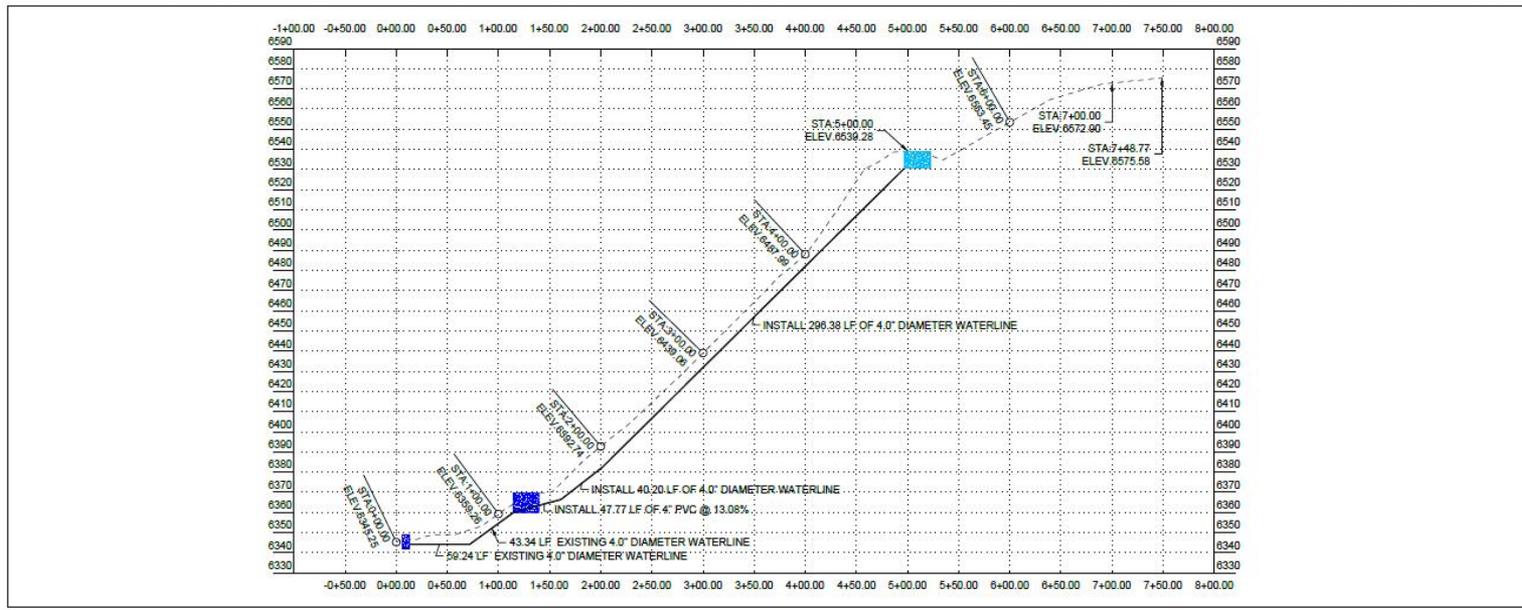
Alternatives

- * Top of Hill
 - * Water tank with reducer valve
- * Original Site
 - * Water tank with booster pump





Tank Location



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480 SOUTH MAIN STREET
DALLAS, TEXAS 75201
(817) 648-4229



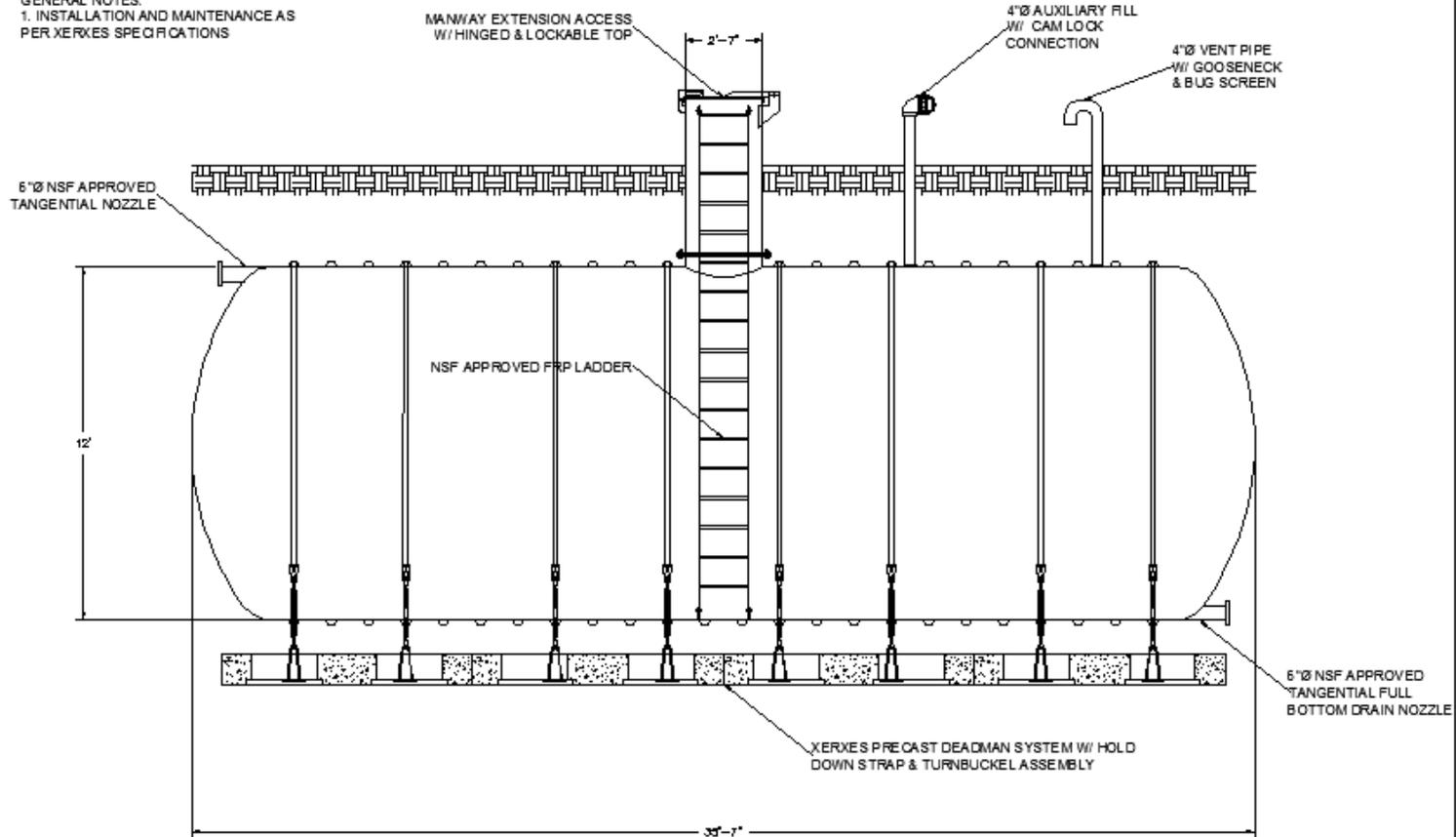
WALLSBURG CHURCH CAMP
TANK SITE SELECTION

DATE	BY	REVISION

SCALE: 1" = 90'
DRAWING # 1 OF 2

Fiberglass Tank

GENERAL NOTES:
1. INSTALLATION AND MAINTENANCE AS PER XERXES SPECIFICATIONS

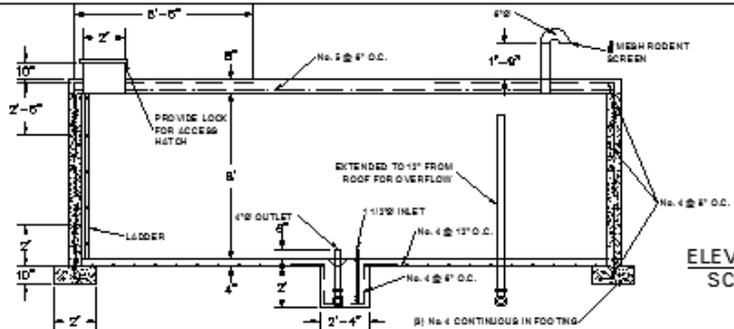


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1000 W. 10TH STREET
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WALLISBURG CHURCH CAMP
TANK SITE SELECTION DWG

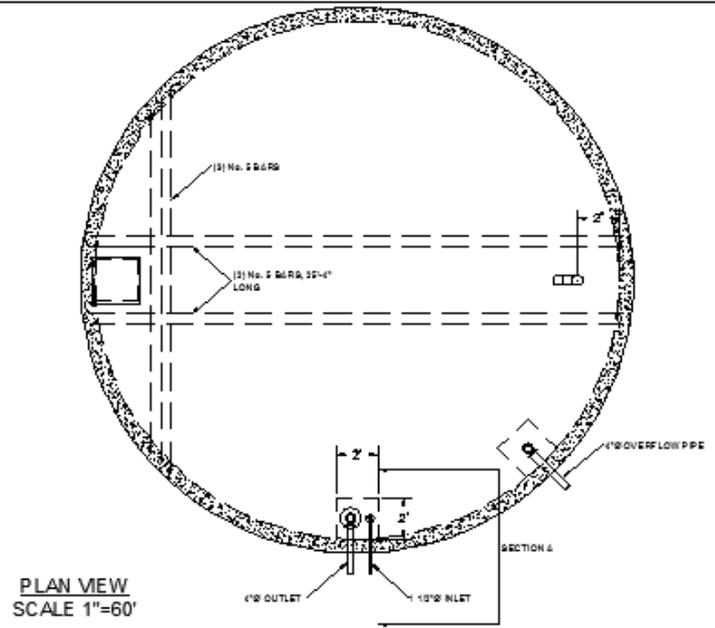
DATE	
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SCALE	

Concrete Tank

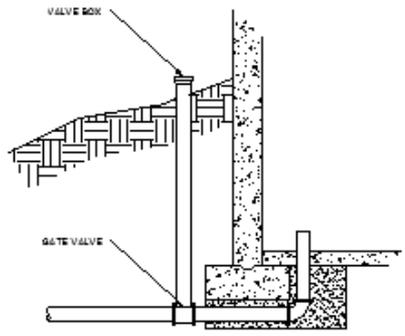


ELEVATION VIEW
SCALE 1"=60'

- TANK NOTES:**
- 3,000 # CONCRETE, 6 BAG MIN, 4" MAX SLLMP
 - CONTINUOUS POUR FOR FOOTINGS, WALLS, FLOOR AND ROOF
 - REINFORCING IN PLACE AS SHOWN
 - USE MECHANICAL VIBRATORS DURING CONC. PLACEMENT
 - GRADE ALL SLOPES AWAY FROM TANK & BOX
 - SPICES OVERLAP 24" AND TIED
 - FOOTINGS ON UNDISTURBED SOIL OR COMPACTED GRANULAR FILL
 - PAINT EXPOSED METAL
 - PLACE HATCH, VENT, ETC. AS CONC. IS POURED
 - REMOVE WALL AND ROOF FORMS AFTER 10 DAYS
 - KEEP ROOF AND FLOOR DAMP FOR 6 DAYS FOR CURRING
 - OVERFLOW TO SURFACE DITCH AND CAP WITH RODENT SCREEN



PLAN VIEW
SCALE 1"=60'



SECTION A
4" Ø OUTLET DETAIL /
1 1/2" Ø INLET SIMILAR
SCALE 1"=30'

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100 SOUTH STATE STREET
NAPER, ILLINOIS 62556
(618) 464-2200



WALLISBURG CHURCH CAMP
TANK SITE SELECTION DWG

DATE	
BY	
CHECKED BY	
DATE	
SCALE	

Distribution System Current Design

- Nodal elevations
- Static pressures

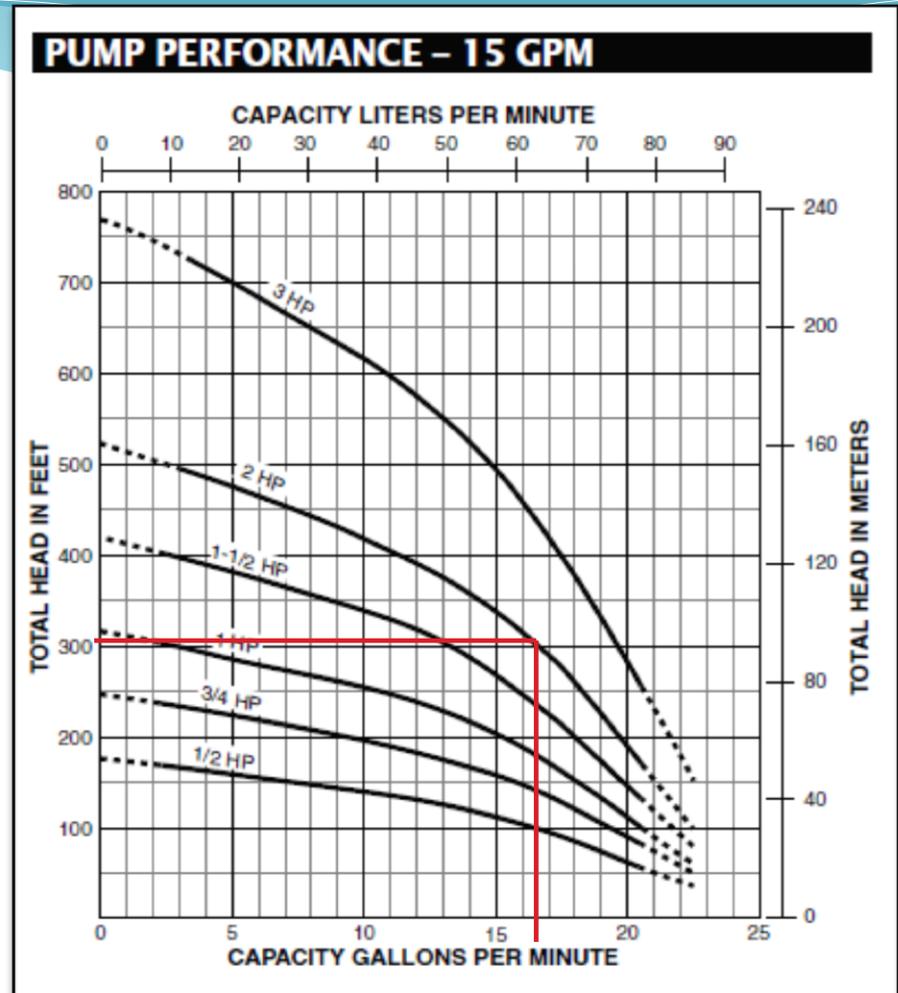
Node ID	Elevation (ft)	Pressure (psi)
Tap 2	6327	15.8
Tap 1	6307	24.4
Tap 4	6308	24.2
Tap 3	6304	25.8
Tap 5	6302	26.6
Tap 8	6304	25.7
Tap 7	6308	24.0
Tap 6	6305	25.3
Tap 9	6293	30.5
Tap 10	6291	31.4
Tap 11	6278	37.0
Tap 12	6277	37.4
System Drain	6272	39.6
Tap 13	6265	42.6
Tap 14	6269	41.1
Tap 15	6267	41.8
Tap 16	6245	51.2
Tap 20	6255	47.1
Lower Camp Bathroom	6261	44.4
System Drain 2	6240	53.3
Tap 17	6241	53.1
Tap 18	6246	51.0
Tap 19	6250	49.3
Upper Camp Bathroom 1	6305	25.3
Upper Camp Bathroom 2	6310	23.1
Water Tank	6356	3.0

Distribution System Current Design

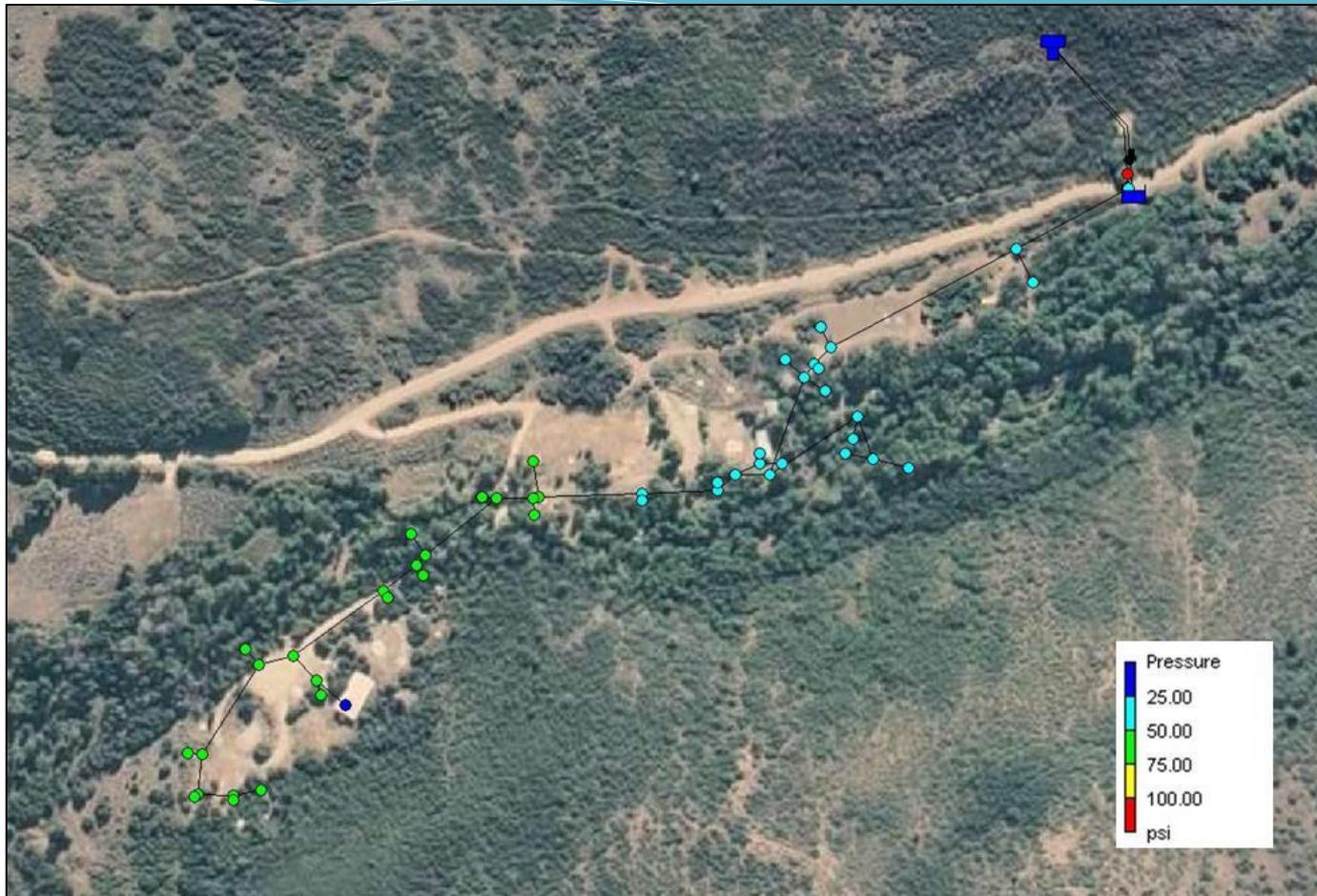
- Nodal elevations
- Demands
- Dynamic pressures

Node ID	Elevation (ft)	Base Demand (gpm)	Pressure (psi)
Tap2	6326.85	5	11.08
Tap1	6307.13	5	15.6
Tap4	6307.63	5	15.24
Tap3	6303.816	5	16.2
Tap5	6302	5.75	2.1
Tap8	6304	5	2.21
Tap7	6308	5	-4.09
Tap6	6305	5	-2.7
Tap9	6293	5	15.67
Tap10	6291	5	3.96
Tap11	6278	5	-6.59
Tap12	6277	5	-6.59
SystemDrain	6272	0	-8.58
Tap13	6265	5	-17.23
Tap14	6268.5	5	-20.01
Tap15	6267	5	-23.5
Tap16	6245.259	5	-24.72
Tap20	6254.7	5	-103.09
LowerCampBathroom	6261	53	-140.95
SystemDrain2	6240.3	0	-22.78
Tap17	6240.85	5	-23.22
Tap18	6245.6	5	-25.36
Tap19	6249.6	5	-27.52
UpperCampBathroom1	6304.9	35	0.82
UpperCampBathroom2	6310	32	1.5
Tank WaterTank	6356.39	#N/A	3.03

Proposed Design Selected Well Pump



Distribution System Proposed Design



Distribution System Proposed Design

- Nodal elevations
- Static pressures

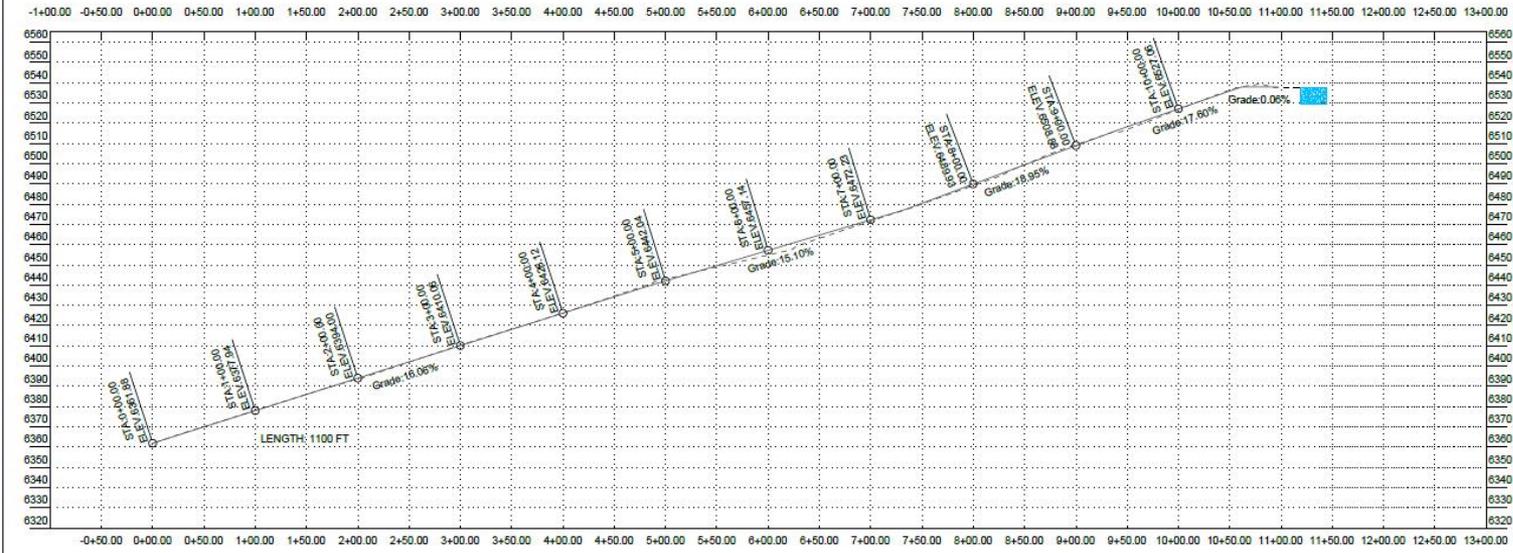
Node ID	Elevation (ft)	Base Demand (gpm)	Pressure (psi)
Tap2	6326.85	0	43.81
Tap1	6307.13	0	52.35
Tap4	6307.63	0	52.13
Tap3	6303.816	0	53.78
Tap5	6302	0	54.57
Tap8	6304	0	52.01
Tap7	6308	0	48.59
Tap6	6305	0	50.46
Tap9	6293	0	58.47
Tap10	6291	0	59.33
Tap11	6278	0	64.97
Tap12	6277	0	65.4
SystemDrain	6272	0	67.57
Tap13	6265	0	70.6
Tap14	6268.5	0	69.08
Tap15	6267	0	69.73
Tap16	6245.259	0	79.15
Tap20	6254.7	0	75.06
LowerCampBathroom	6261	0	72.33
SystemDrain2	6240.3	0	81.3
Tap17	6240.85	0	81.06
Tap18	6245.6	0	79
Tap19	6249.6	0	77.27
UpperCampBathroom1	6304.9	0	53.31
UpperCampBathroom2	6310	0	51.1
Resvr 1	6251	#N/A	0
Tank WaterTank	6545	#N/A	3.03

Distribution System Proposed Design

- Nodal elevations
- Demands
- Dynamic pressures

Node ID	Elevation (ft)	Base Demand (gpm)	Pressure (psi)
Tap2	6326.85	5	40.33
Tap1	6307.13	5	44.85
Tap4	6307.63	5	44.48
Tap3	6303.816	5	45.45
Tap5	6302	5.75	31.34
Tap8	6304	5	31.45
Tap7	6308	5	25.16
Tap6	6305	5	26.55
Tap9	6293	5	48.69
Tap10	6291	5	49.12
Tap11	6278	5	53.66
Tap12	6277	5	54.38
SystemDrain	6272	0	56.66
Tap13	6265	5	58.87
Tap14	6268.5	5	57.57
Tap15	6267	5	58.07
Tap16	6245.259	5	66.82
Tap20	6254.7	5	60.66
LowerCampBathroom	6261	53	22.8
SystemDrain2	6240.3	0	68.76
Tap17	6240.85	5	68.31
Tap18	6245.6	5	66.18
Tap19	6249.6	5	64.02
UpperCampBathroom1	6304.9	35	30.07
UpperCampBathroom2	6310	32	30.74
Resvr 1	6251	#N/A	0
Tank WaterTank	6545	#N/A	3.03

Access Road



UNITED ENGINEERING
 ARE SOUTH STATE STREET
 NAPER, IL 60563
 (630) 261-2229



WALLSBURG CHURCH CAMP
 MAINTENANCE ACCESS ROAD TO TANK

SCALE	DRAWN	REVISION	BY	DATE
1" = 100'	MFC			
	TECH: MFC			
	CHECK: JTT			
	DATE:			
				3/29/21



Wallsburg Church Camp

