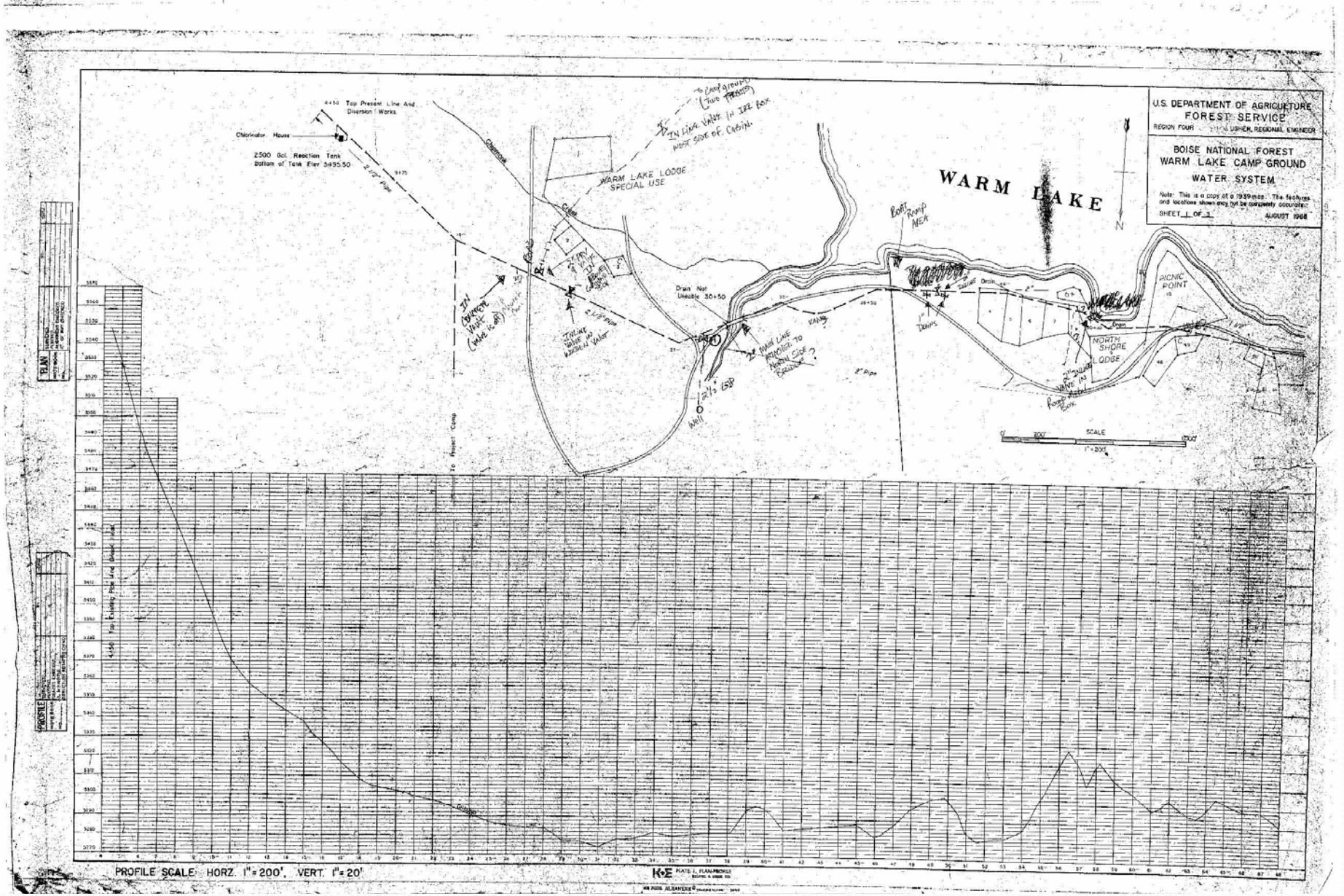
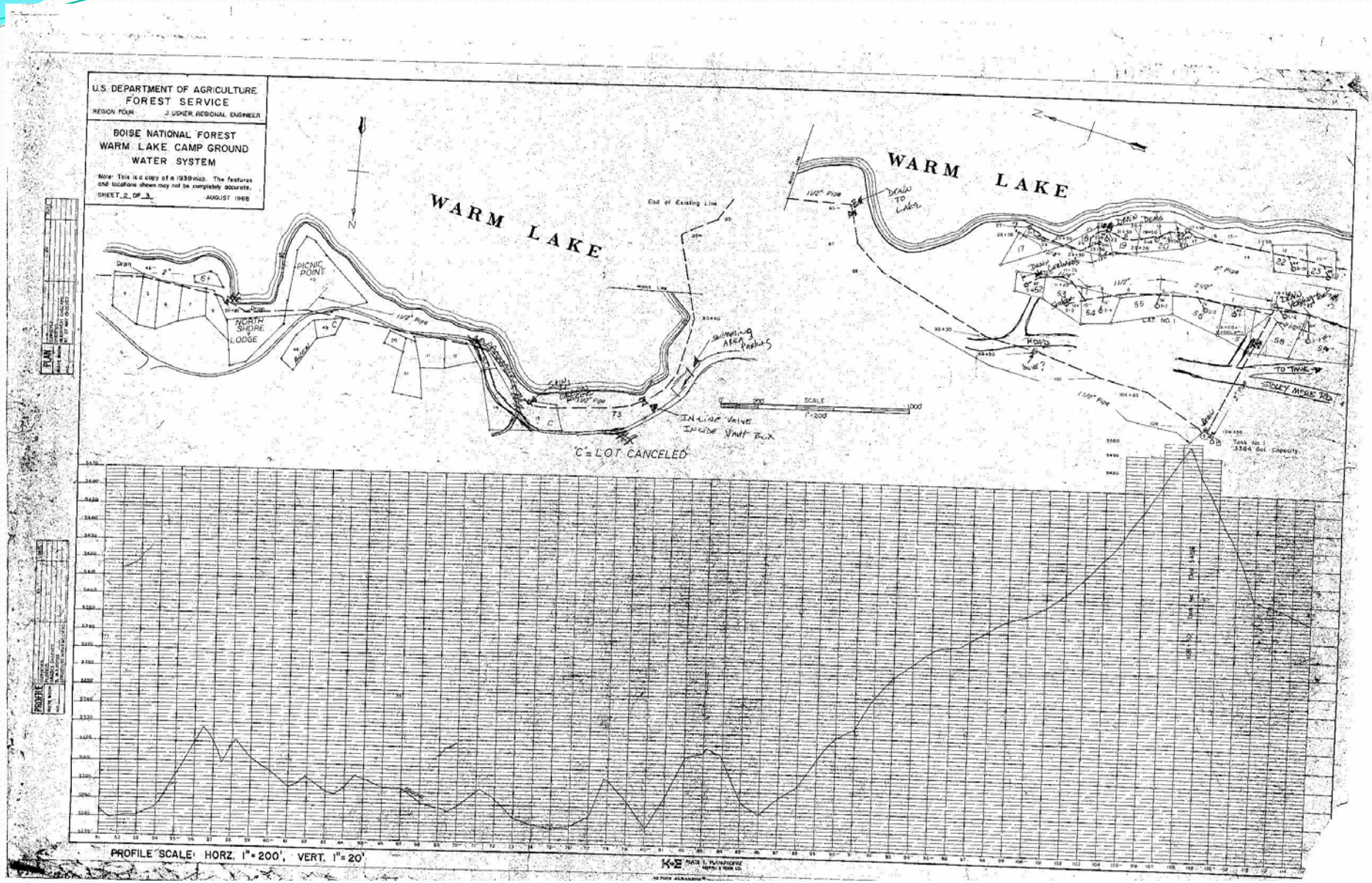
Lessons Learned. A Small Water District's System Upgrade and Working with Local, State, and Federal Agencies

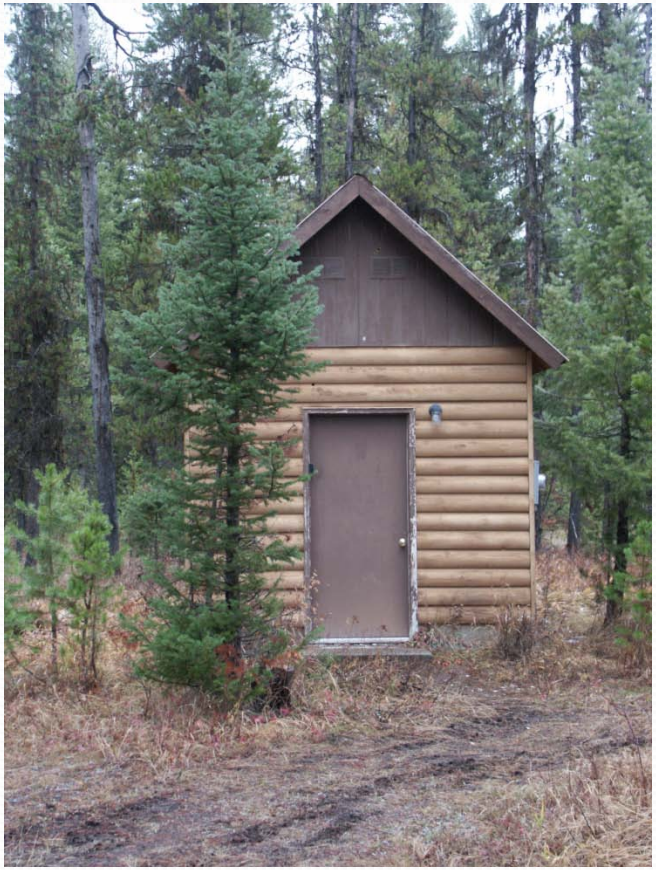
Robert Barrett, President
Warm Lake Recreational Water District

Water System History

- Located in central Idaho east of Cascade
- 6 miles of water lines hand dug by CCC in 1937
- 2 small reservoirs
- Operated by USFS until 1984
- Water District formed 1984
- Originally feed by a creek until 1994
- CL2 system installed and used until 1994
- 52 cabins 2 lodges with 12 cabins each
- Leased property


U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
REGION FOUR
BOISE NATIONAL FOREST
WARM LAKE CAMP GROUND
WATER SYSTEM
Note: This is a copy of a 1939 map. The features and locations shown may not be currently accurate.
SHEET 1 OF 3
AUGUST 1968
WARM LAKE
WARM LAKE LODGE SPECIAL USE
Chlorinator House
2500 Gal. Reaction Tank
Bottom of Tank Elev 5435.50
Top Present Line And Diversion Works
Drain Not Usable 30+50
BOAT RAMP NEW
PICNIC POINT
NORTH SHORE LODGE
Well
SCALE
PROFILE SCALE: HORZ. 1" = 200', VERT. 1" = 20'


U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
REGION FOUR
J. USHER, REGIONAL ENGINEER
BOISE NATIONAL FOREST
WARM LAKE CAMP GROUND
WATER SYSTEM
Note: This is a copy of a 1939 map. The features and locations shown may not be completely accurate.
SHEET 2 OF 3
AUGUST 1968
WARM LAKE
WARM LAKE
PICNIC POINT
NORTH SHORE LODGE
Drain
1 1/2" Pipe
End of Existing Line
DRAIN TO LAKE
Swimming AREA Parking
IN-LINE VALVE INSIDE VAULT BOX
"C" = LOT CANCELED
SCALE
1" = 200'
LAP NO. 1
TO TANK
STONEY MEADOW RD.
Tank No. 1
3584 Gal. Capacity
PROFILE SCALE: HORZ. 1" = 200', VERT. 1" = 20'



Problems

- Use of untreated creek water
- Voluntary State Consent Order
- Inaction by District
- Unapproved upgrades
- Leaks
- No working meter on well
- Over & under system pressure
- Well nearly dry
- Court ordered Consent Order

Funding

- No capital funds
- Limited tax income
- $25,000 State of Idaho 50/50 planning grant
- $400,000 SDWRF loan
- Limited Bonding Options

Governmental Agencies

- Idaho Department of Environmental Quality
- United States Forest Service
- US Fish & Wildlife Service
- EPA
- Valley County
- Idaho Attorney General
- Idaho Department of Water Resources

Studies

- Endangered Species
- Archeology Study
- Environmental Impact
- Wild and Scenic Designation
- USFS Study

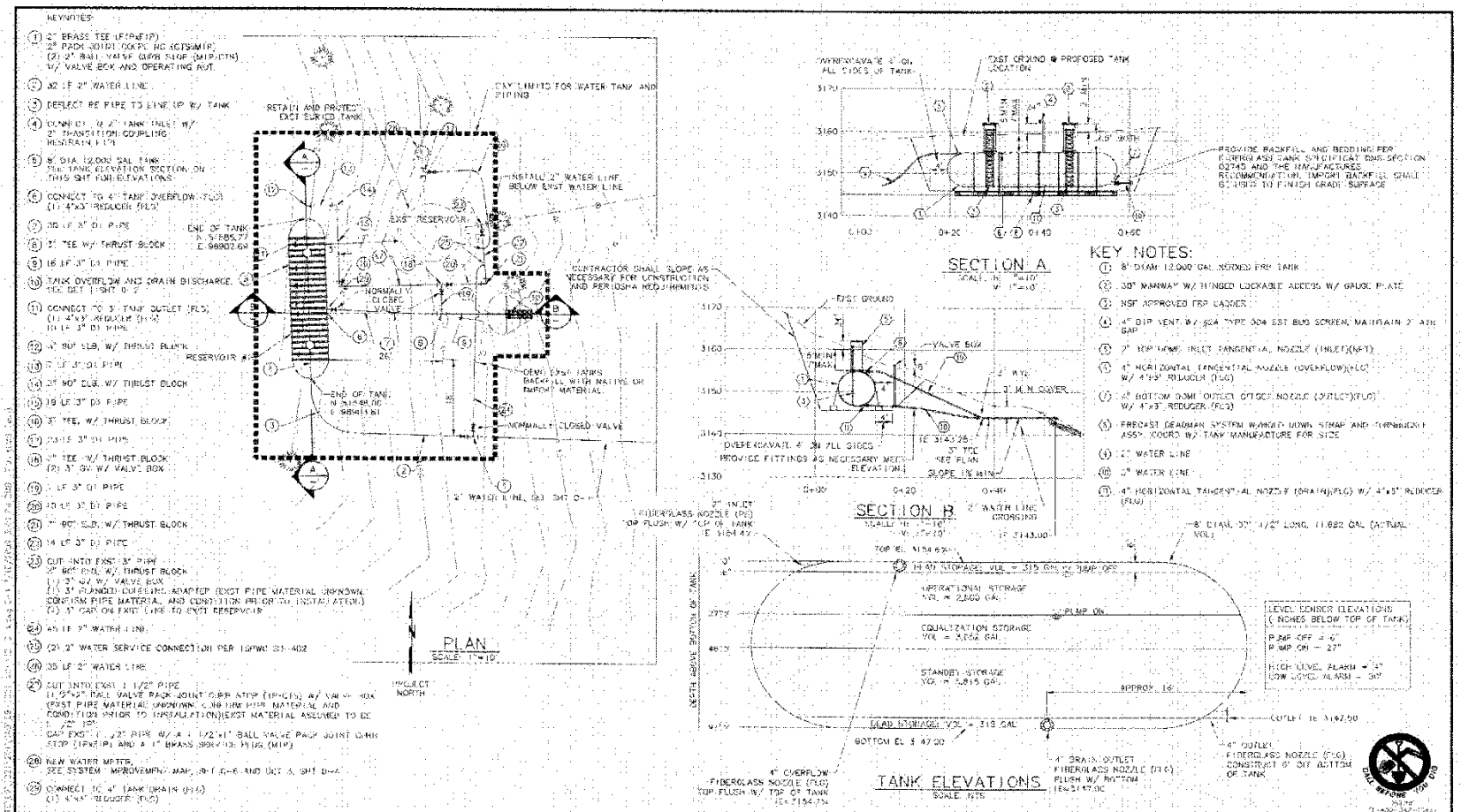
Communications

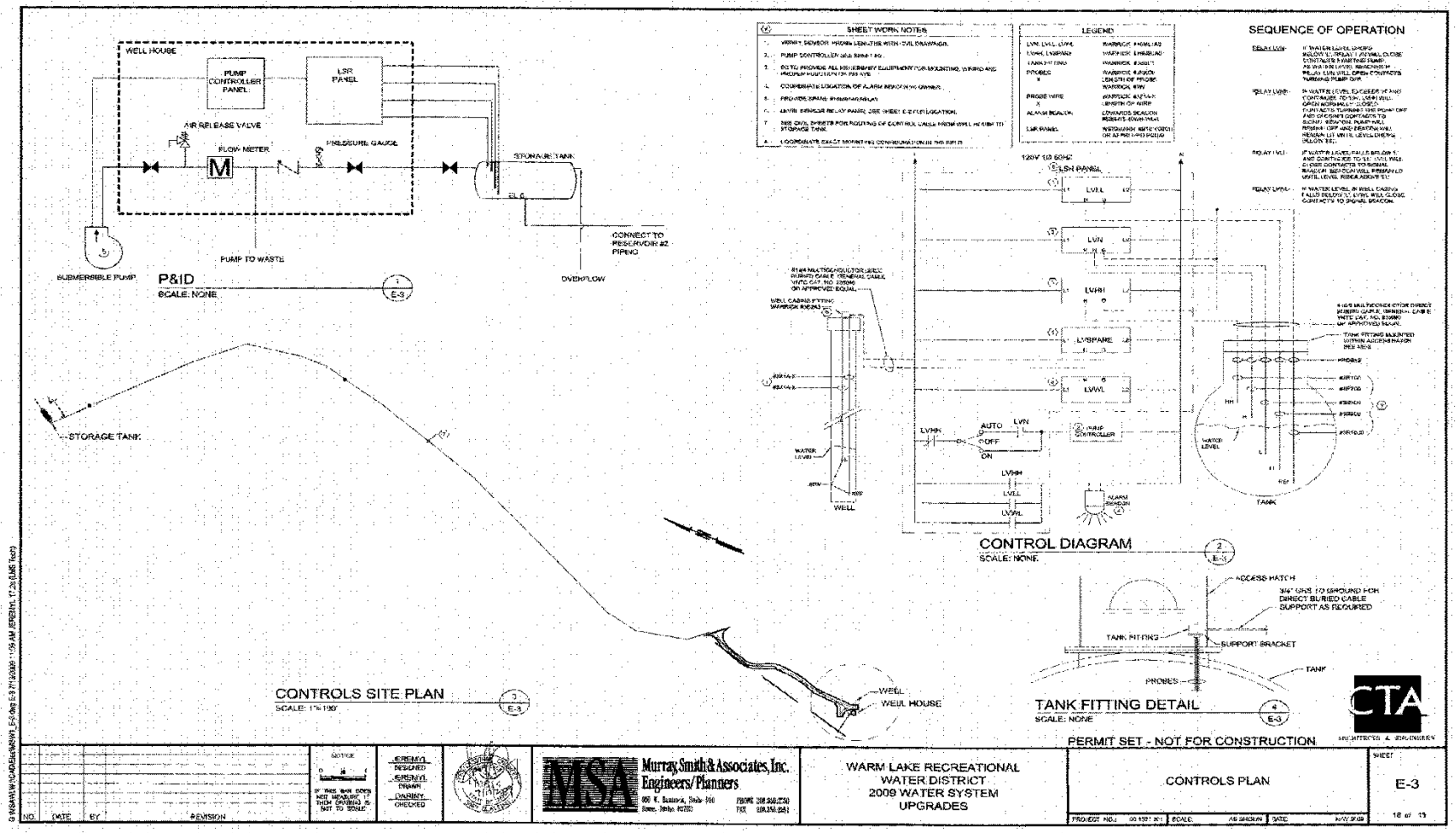
- Public hearings
- Meetings with governmental agencies
- Mailings
- Dealing with the opposition
- Bond elections
- Lawsuits

System Improvements

- New reservoir
- New well
- 2000' new water main
- PRVs, meters, drains

GENERAC


KEYNOTES:
PLAN
SCALE: 1"=10'
SECTION A
SECTION B
TANK ELEVATIONS
SCALE: NTS
KEY NOTES:
1. 8' DIAM 12,000 GAL MERDED FRP TANK
2. 30" MANWAY W/ HINGED LOCKABLE ACCESS W/ GAUGE PLATE
3. NSF APPROVED FRP LADDER
4. 4" DIP VENT W/ #24 TYPE 304 SST BUG SCREEN, MAINTAIN 2" AIR GAP
5. 2" TOP HOME INLET TANGENTIAL NOZZLE (INLET)(NPT)
6. 4" HORIZONTAL TANGENTIAL NOZZLE (OVERFLOW)(FLG) W/ 4"x3" REDUCER (FLG)
7. 6" BOTTOM DOME OUTLET OTSOC NOZZLE (OUTLET)(FLG) W/ 4"x3" REDUCER (FLG)
8. PRECAST DEADMAN SYSTEM W/WEIGHT DOWN STRAP AND TENSIONER ASSY. COORD W/ TANK MANUFACTURE FOR SIZE
9. 2" WATER LINE
10. 2" WATER LINE
11. 4" HORIZONTAL TANGENTIAL NOZZLE (DRAIN)(FLG) W/ 4"x3" REDUCER (FLG)
MSA
Murray, Smith & Associates, Inc.
Engineers/Planners
WARM LAKE RECREATIONAL WATER DISTRICT
2009 WATER SYSTEM UPGRADES
TANK SITE PLAN AND SECTIONS
C-4
7 of 19


WELL HOUSE
PUMP CONTROLLER PANEL
LSR PANEL
AIR RELEASE VALVE
FLOW METER
PRESSURE GAUGE
STORAGE TANK
CONNECT TO RESERVOIR #2 PIPING
OVERFLOW
PUMP TO WASTE
SUBMERSIBLE PUMP
P&ID
SCALE: NONE
SHEET WORK NOTES
LEGEND
SEQUENCE OF OPERATION
LSH PANEL
120V 1Ø 60HZ
LVLL
LVN
LVHH
LVSPARE
LVWL
PUMP CONTROLLER
AUTO
OFF
ON
WELL
TANK
CONTROL DIAGRAM
SCALE: NONE
STORAGE TANK
WELL
WELL HOUSE
CONTROLS SITE PLAN
SCALE: 1"=100'
ACCESS HATCH
SUPPORT BRACKET
TANK
PROBES
TANK FITTING DETAIL
SCALE: NONE
CTA
PERMIT SET - NOT FOR CONSTRUCTION
MSA
Murray, Smith & Associates, Inc.
Engineers/Planners
WARM LAKE RECREATIONAL WATER DISTRICT
2009 WATER SYSTEM UPGRADES
CONTROLS PLAN
E-3

Conclusions

- Start early
- Meet frequently with agencies
- Documentation
- Negotiations
- Communication