

August 5, 2019

A Special Meeting of Town Council was held on the above date at approximately 6:00 p.m., all requirements of the Freedom of Information Act having been satisfied.

Present were: Patrick M. O'Neil, Mayor
Chauncey Clark, Mayor Pro-Tem
Sarah Church, Councilmember
Tim Reese, Councilmember
Bachman Smith, IV, Councilmember
Kaye Smith, Councilmember

Mayor O'Neil called the meeting to order at 6:00 p.m. and stated the press and public had been notified in accordance with State Law. There were six (6) members of the audience present and no members of the media. The purpose of the special meeting was to discuss and consider a motion to authorize WK Dickson to commence design work to prepare construction drawings and specifications for five (5) wastewater lift stations as outlined by Option C.

Water and Sewer Committee Chair Bachman Smith, IV stated that Council has already approved the funding for WK Dickson to do the design work. The Town needs to flood proof all of the lift stations for the wastewater treatment system as part of the overall upgrade. WK Dickson provided the Town with 3 design options. The Water and Sewer Committee has reviewed all 3 option alternatives and recommends Option C to Council.

Water and Sewer Manager Greg Gress presented the 3 options as outlines in the Sullivan's Island Lift Station Conversion Alternatives Analysis (Attachment 1). Alternative A is to use existing wet well with deeper sump. Items this alternative includes are: demolish/remove existing building, floor slab, and wet well divider wall, reuse the existing wet well with a new concrete top slab for the conversion to a submersible pump station, install precast sump to increase the depth and eliminate surcharging of upstream collection system, electrical rack to be installed on a platform above 100-yr flood plain, all piping and valves installed above grade and privacy fence to be installed. Alternative B is to install new adjacent sump for submersible pumps. Items this alternative includes are: install a new sump for submersible pumps adjacent to the existing building slab and connect to existing wet well, existing building to be demolished and new top slab to be constructed, new sump to be deeper than wet well bottom to eliminate surcharge of upstream collection system, electrical rack to be installed on a platform above 100-yr flood plain, all piping and valves installed above grade and privacy fence to be installed. Alternative C is to install new wet well. Items this alternative includes are: install a new wet well and abandon existing wet well, existing building to be demolished and new top slab to be constructed, the new wet well to be designed to eliminate surcharge of upstream collection system, electrical rack to

be installed on a platform above 100-yr flood plain, all piping and valves installed above grade and privacy fence to be installed. A few items to consider: the overall cost of upgrade for each lift station and individual alternatives, proximity to residence for feasible construction, capacity of site to accommodate construction materials and spoils and bypass pumping during construction.

The cost for lift station 1 with alternative C is \$446,210.00. The cost for lift station 2 with alternative C is \$406,960.00. The cost for lift station 3 with alternative C is \$460,960.00. The cost for lift station 4 with alternative C is \$470,750.00. The cost for lift station 5 with alternative C is \$485,360.00. The total cost of all 5 lift stations is \$2,270,240.00.

Motion: Action: Authorize WK Dickson to commence design work to prepare construction drawings and specifications for five (5) wastewater lift stations as outlined by Option C. Moved by Councilmember Bachman Smith, IV, Seconded by Mayor Pro-Tem Clark. Motion passed unanimously.

Motion: Action: Adjourn Meeting at 6:19 p.m. Moved by Councilmember Tim Reese, Seconded by Mayor Pro-Tem Clark. Motion passed unanimously.

Respectfully submitted,


Courtney Liles

Sullivan's Island Lift Station Conversion Alternatives Analysis

07/17/2019

Presented by Walt Fletcher, PE



Lift Station Alternatives

- Retaining existing buildings is unfeasible with conversion to submersible pumps due to required height of electrical components to be above 100-yr flood elevation. Existing roof is too low.
- Alternative A – Use Existing Wet Well with Deeper Sump:
 - Demolish/remove existing building, floor slab, and wet well divider wall.
 - Reuse the existing wet well with a new concrete top slab for the conversion to a submersible pump station.
 - Install precast sump to increase the depth and eliminate surcharging of upstream collection system (except LS#3).
 - Electrical rack to be installed on a platform above 100-yr flood plain.
 - All piping and valves installed above grade
 - Privacy fence to be installed.
- Alternative B – Install New Adjacent Sump for Submersible Pumps
 - Install a new sump for submersible pumps adjacent to the existing building slab and connect to existing wet well.
 - Existing building to be demolished and new top slab to be constructed.
 - The new sump to be deeper than wet well bottom to eliminate surcharge of upstream collection system.
 - Electrical rack to be installed on a platform above 100-yr flood plain.
 - All piping and valves installed above grade
 - Privacy fence to be installed.

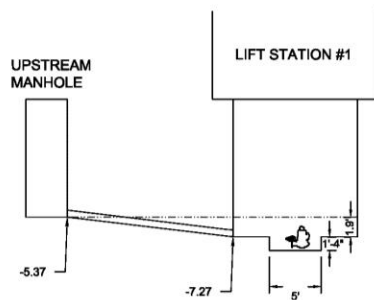
Lift Station Alternatives

- Alternative C – Install New Wet Well
 - Install a new wet well and abandon existing wet well.
 - Existing building to be demolished and new top slab to be constructed.
 - The new wet well to be designed to eliminate surcharge of upstream collection system.
 - Electrical rack to be installed on a platform above 100-yr flood plain.
 - All piping and valves installed above grade
 - Privacy fence to be installed.
- SCADA – Included with all alternatives
 - Improvements include replacing existing enclosures with larger enclosures for future PLC replacement and provide better equipment cooling
 - Cost include relocating equipment, replacing cables, replacing surge protectors, and installing new antenna poles where required

Lift Station #1 Preliminary Section Views

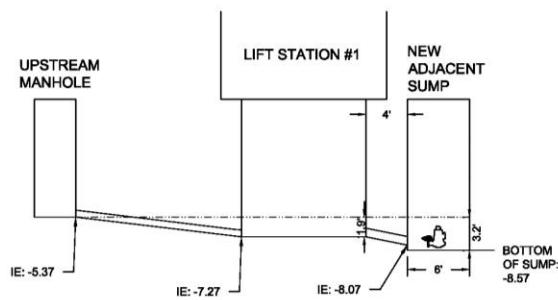
NOTES:

1. EXISTING WET WELL STORAGE IS EQUAL TO 823 GAL/FT.
2. 5' WET WELL IS EQUAL TO 147 GAL/FT.
3. 6' WET WELL IS EQUAL TO 211 GAL/FT.



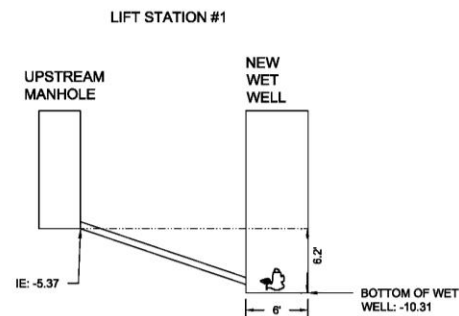
LS #1 SECTION WITH SUMP

Scale: NTS



LS #1 SECTION WITH NEW ADJACENT SUMP

Scale: NTS



LS #1 SECTION WITH NEW WET WELL

Scale: NTS

Lift Station #1 Preliminary Cost Estimate

Item No.	Item Description	Unit	Total Price
Lift Station #1 Alternative A - Use Existing Wet Well w/ Deeper Sump			
1	Mobilization	LS	\$ 12,000.00
2	Bypass system during construction	LS	\$ 50,000.00
3	Sediment and Erosion Control	LS	\$ 4,000.00
4	Conversion to submersible pumps, including piping, new precast wet well sump, new poured in place top slab, and flood proof hatch	LS	\$ 350,000.00
5	Raise pump control panel and other electrical equipment	LS	\$ 40,000.00
6	Replace Existing 8" CI Gravity Sewer with PVC	LS	\$ 14,000.00
7	Magnetic Flowmeter	LS	\$ 12,500.00
8	Retaining Wall	LS	\$ 75,000.00
9	Privacy Fence	LS	\$ 8,000.00
10	Aluminum Platform	LS	\$ 15,000.00
11	SCADA	LS	\$ 19,710.00
Subtotal for items 2 through 11			\$ 588,210.00
Total (with Mobilization)			\$ 600,210.00

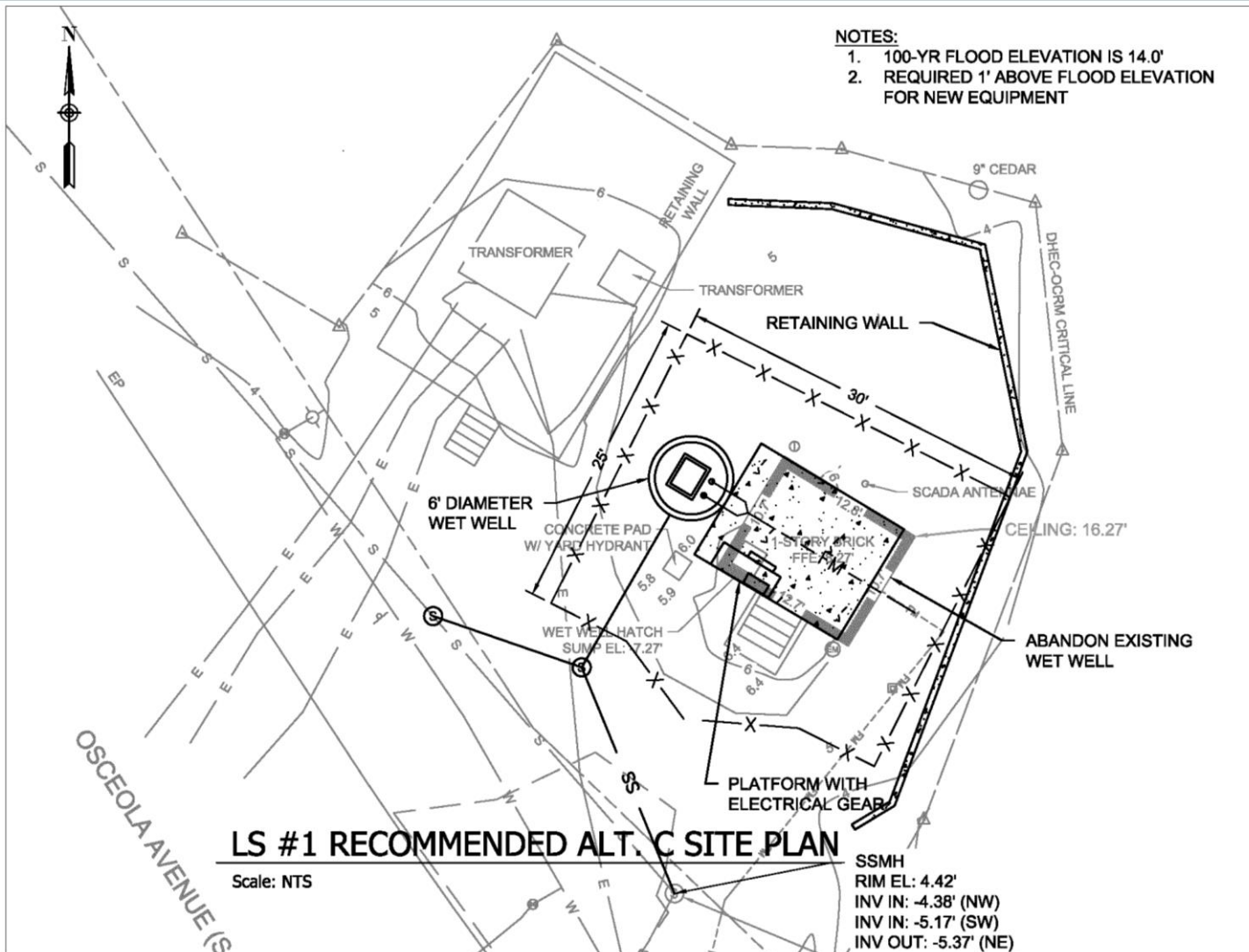
Item No.	Item Description	Unit	Total Price
Lift Station #1 Alternative B - Install New Adjacent Sump			
1	Mobilization	LS	\$ 12,000.00
2	Bypass system during construction	LS	\$ 35,000.00
3	Sediment and Erosion Control	LS	\$ 4,000.00
4	Conversion to submersible pumps, including new concrete slab and flood proof hatch	LS	\$ 175,000.00
5	5-ft Diameter Precast sump	LS	\$ 60,000.00
6	Replace Existing 8" CI Gravity Sewer with PVC	LS	\$ 20,000.00
7	Raise pump control panel and other electrical equipment	LS	\$ 40,000.00
8	Magnetic Flowmeter	LS	\$ 12,500.00
9	Retaining Wall	LS	\$ 75,000.00
10	Privacy Fence	LS	\$ 8,000.00
11	Aluminum Platform	LS	\$ 15,000.00
12	SCADA	LS	\$ 19,710.00
Subtotal for items 2 through 12			\$ 464,210.00
Total (with Mobilization)			\$ 476,210.00

Item No.	Item Description	Unit	Total Price
Lift Station #1 Alternative C - Install New Wet Well			
1	Mobilization	LS	\$ 12,000.00
2	Bypass system during construction	LS	\$ 15,000.00
3	Sediment and Erosion Control	LS	\$ 4,000.00
4	Abandonment of Existing Wet Well	LS	\$ 15,000.00
5	Conversion to submersible pumps, including new concrete slab and flood proof hatch	LS	\$ 130,000.00
6	New 8-ft Diameter Wet Well	LS	\$ 80,000.00
7	Raise pump control panel and other electrical equipment	LS	\$ 40,000.00
8	Reroute Influent Gravity Sewer	LS	\$ 20,000.00
9	Retaining Wall	LS	\$ 75,000.00
10	Magnetic Flowmeter	LS	\$ 12,500.00
11	Privacy Fence	LS	\$ 8,000.00
12	Aluminum Platform	LS	\$ 15,000.00
13	SCADA	LS	\$ 19,710.00
Subtotal for items 2 through 13			\$ 434,210.00
Total (with Mobilization)			\$ 446,210.00

Adder for Building

Prefab Building	LS	\$ 20,000.00
Explosion Proof Components	LS	\$ 20,000.00
Total		\$ 40,000.00

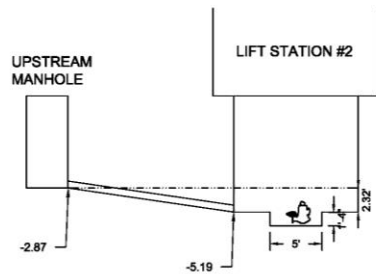
Lift Station #1 Recommended Preliminary Site Plan



Lift Station #2 Preliminary Section View

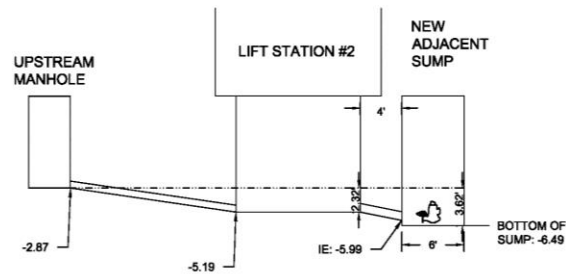
NOTES:

1. EXISTING WET WELL STORAGE IS EQUAL TO 823 GAL/FT.
2. 5' WET WELL IS EQUAL TO 147 GAL/FT.
3. 6' WET WELL IS EQUAL TO 211 GAL/FT.



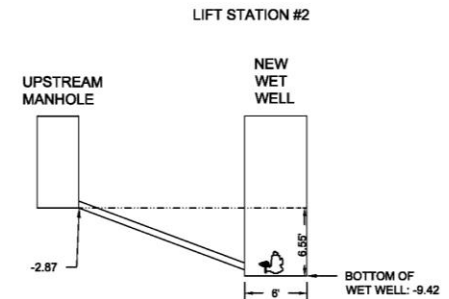
LS #2 SECTION WITH SUMP

Scale: NTS



LS #2 SECTION WITH NEW ADJACENT SUMP

Scale: NTS



LS #2 SECTION WITH NEW WET WELL

Scale: NTS

Lift Station #2 Preliminary Cost Estimate

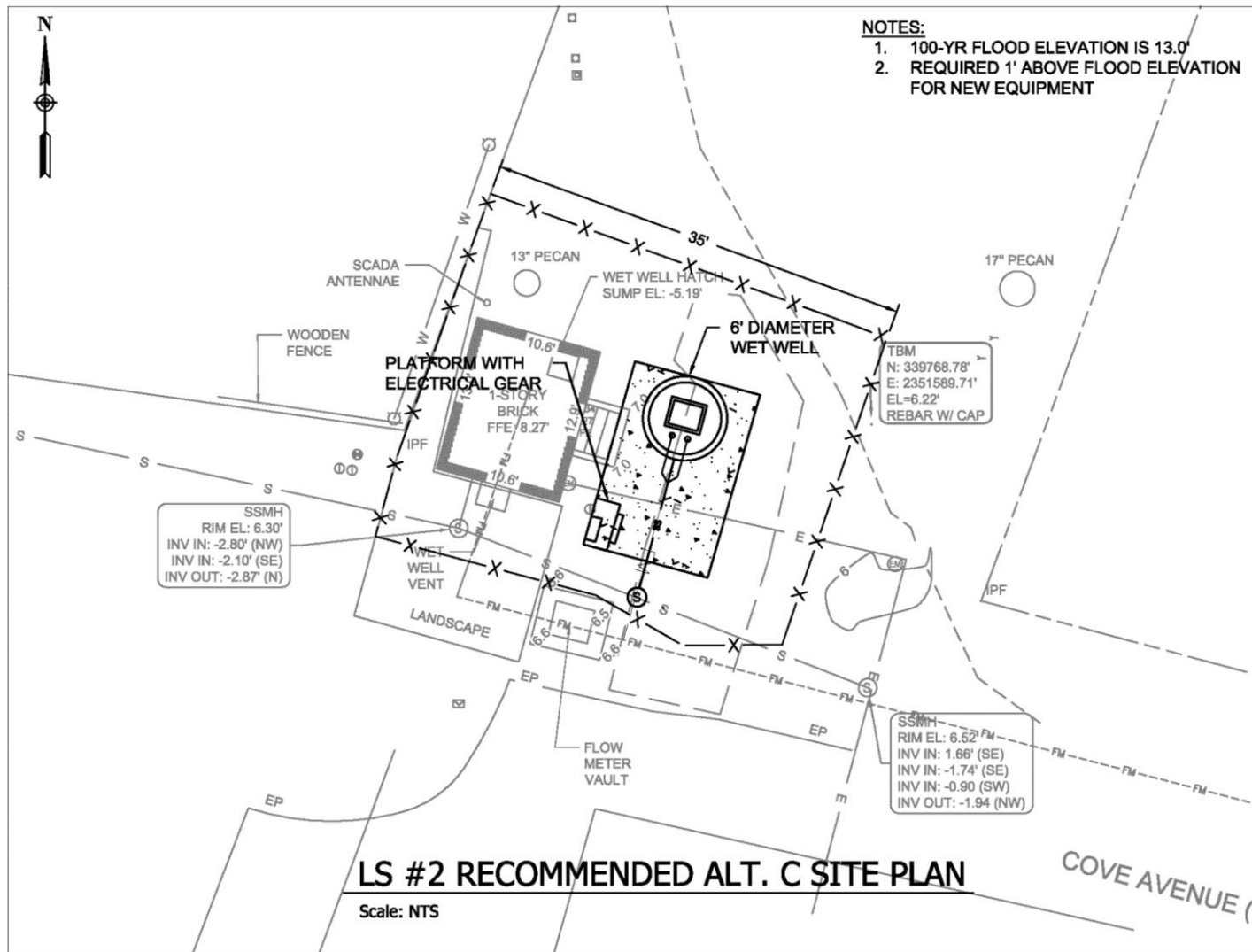
Item No.	Item Description	Unit	Total Price
Lift Station #2 Alternative A - Use Existing Wet Well w/ Deeper Sump			
1	Mobilization	LS	\$ 12,000.00
2	Bypass system during construction	LS	\$ 50,000.00
3	Sediment and Erosion Control	LS	\$ 4,000.00
4	Conversion to submersible pumps, including piping, new precast wet well sump, new poured in place top slab, and flood proof hatch	LS	\$ 350,000.00
5	Raise pump control panel and other electrical equipment	LS	\$ 65,000.00
6	Replace Existing 8" CI Gravity Sewer with PVC	LS	\$ 3,600.00
7	Privacy Fence	LS	\$ 8,000.00
8	Aluminum Platform	LS	\$ 15,000.00
9	SCADA	LS	\$ 17,960.00
Subtotal for items 2 through 9			\$ 513,560.00
Total (with Mobilization)			\$ 525,560.00

Item No.	Item Description	Unit	Total Price
Lift Station #2 Alternative B - Install New Adjacent Sump			
1	Mobilization	LS	\$ 12,000.00
2	Bypass system during construction	LS	\$ 35,000.00
3	Sediment and Erosion Control	LS	\$ 4,000.00
4	Conversion to submersible pumps, including new concrete slab and flood proof hatch	LS	\$ 175,000.00
5	5-ft Diameter Precast sump	LS	\$ 60,000.00
6	Replace Existing 8" CI Gravity Sewer with PVC	LS	\$ 3,600.00
7	Raise pump control panel and other electrical equipment	LS	\$ 65,000.00
8	Privacy Fence	LS	\$ 8,000.00
9	Aluminum Platform	LS	\$ 15,000.00
10	SCADA	LS	\$ 17,960.00
Subtotal for items 2 through 10			\$ 383,560.00
Total (with Mobilization)			\$ 395,560.00

Item No.	Item Description	Unit	Total Price
Lift Station #2 Alternative C - Install New Wet Well			
1	Mobilization	LS	\$ 12,000.00
2	Bypass system during construction	LS	\$ 15,000.00
3	Sediment and Erosion Control	LS	\$ 4,000.00
4	Conversion to submersible pumps, including new concrete slab and flood proof hatch	LS	\$ 150,000.00
5	Abandonment of Existing Wet Well	LS	\$ 15,000.00
6	New 8-ft Diameter Wet Well	LS	\$ 80,000.00
7	Raise pump control panel and other electrical equipment	LS	\$ 65,000.00
8	Reroute 8" Influent Gravity Sewer (PVC)	LS	\$ 15,000.00
9	Reroute Force Main/Relocate Flow Meter	LS	\$ 10,000.00
10	Privacy Fence	LS	\$ 8,000.00
11	Aluminum Platform	LS	\$ 15,000.00
12	SCADA	LS	\$ 17,960.00
Subtotal for items 2 through 12			\$ 394,960.00
Total (with Mobilization)			\$ 406,960.00

Adder for Building		
Prefab Building	LS	\$ 20,000.00
Explosion Proof Components	LS	\$ 20,000.00
Total		\$ 40,000.00

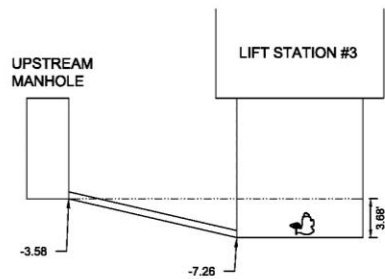
Lift Station #2 Recommended Preliminary Site Plan



Lift Station #3 Preliminary Section View

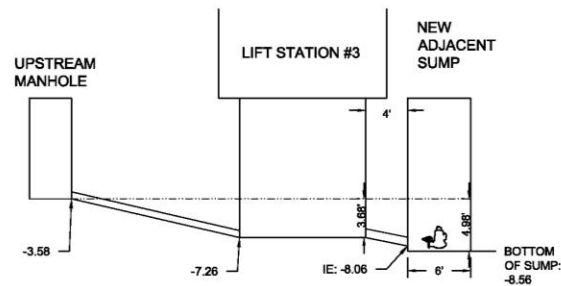
NOTES:

1. EXISTING WET WELL STORAGE IS EQUAL TO 823 GAL/FT.
2. 5' WET WELL IS EQUAL TO 147 GAL/FT.
3. 6' WET WELL IS EQUAL TO 211 GAL/FT.



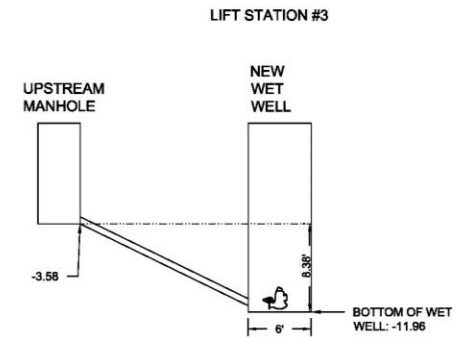
LS #3 SECTION WITH NEW PUMP

Scale: NTS



LS #3 SECTION WITH NEW ADJACENT SUMP

Scale: NTS



LS #3 SECTION WITH NEW WET WELL

Scale: NTS

Lift Station #3 Preliminary Cost Estimate

Item No.	Item Description	Unit	Total Price
Lift Station #3 Alternative A - Use Existing Wet Well			
1	Mobilization	LS	\$ 12,000.00
2	Bypass system during construction	LS	\$ 50,000.00
3	Sediment and Erosion Control	LS	\$ 4,000.00
4	Conversion to submersible pumps, including piping, new poured in place top slab, and flood proof hatch	LS	\$ 175,000.00
5	Raise pump control panel and other electrical equipment	LS	\$ 65,000.00
6	Privacy Fence	LS	\$ 8,000.00
7	Generator	LS	\$ 58,000.00
8	Aluminum Platform for Control Panel and Generator	LS	\$ 36,000.00
9	SCADA	LS	\$ 17,960.00
Subtotal for items 2 through 9			\$ 413,960.00
Total (with Mobilization)			\$ 425,960.00

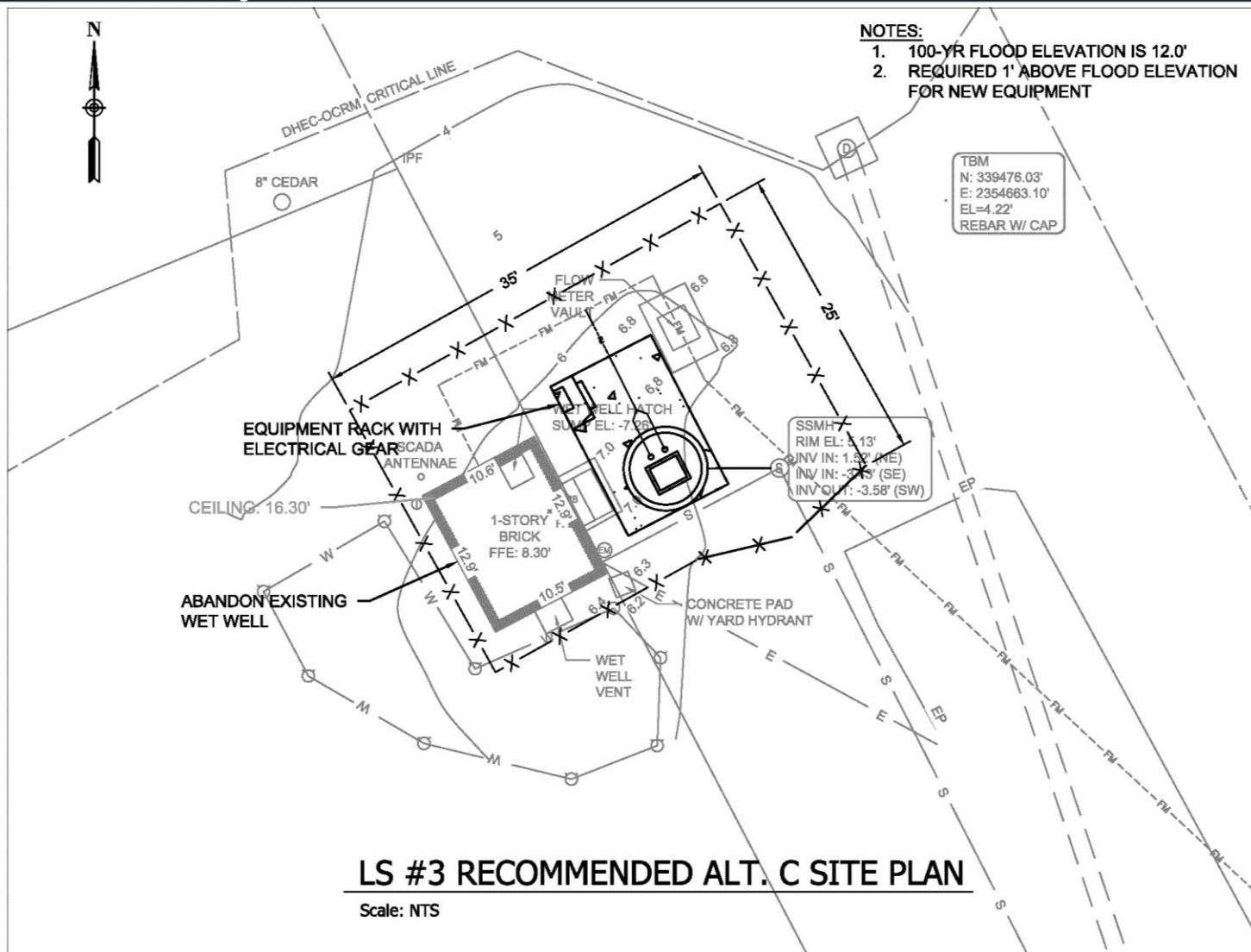
Item No.	Item Description	Unit	Total Price
Lift Station #3 Alternative B - Install New Adjacent Sump			
1	Mobilization	LS	\$ 12,000.00
2	Bypass system during construction	LS	\$ 35,000.00
3	Sediment and Erosion Control	LS	\$ 4,000.00
4	Conversion to submersible pumps, including new concrete slab and flood proof hatch	LS	\$ 175,000.00
5	5-ft Diameter Precast sump	LS	\$ 60,000.00
6	Raise pump control panel and other electrical equipment	LS	\$ 65,000.00
7	Privacy Fence	LS	\$ 8,000.00
8	Generator	LS	\$ 58,000.00
9	Aluminum Platform for Control Panel and Generator	LS	\$ 36,000.00
10	SCADA	LS	\$ 17,960.00
Subtotal for items 2 through 10			\$ 458,960.00
Total (with Mobilization)			\$ 470,960.00

Item No.	Item Description	Unit	Total Price
Lift Station #3 Alternative C - Install New Wet Well			
1	Mobilization	LS	\$ 12,000.00
2	Bypass system during construction	LS	\$ 15,000.00
3	Sediment and Erosion Control	LS	\$ 4,000.00
4	Conversion to submersible pumps, including new concrete slab and flood proof hatch	LS	\$ 150,000.00
5	Abandonment of Existing Wet Well	LS	\$ 15,000.00
6	New 8-ft Diameter Wet Well	LS	\$ 80,000.00
7	Raise pump control panel and other electrical equipment	LS	\$ 65,000.00
8	Privacy Fence	LS	\$ 8,000.00
9	Generator	LS	\$ 58,000.00
10	Aluminum Platform for Control Panel and Generator	LS	\$ 36,000.00
11	SCADA	LS	\$ 17,960.00
Subtotal for items 2 through 11			\$ 448,960.00
Total (with Mobilization)			\$ 460,960.00

Adder for Building

Prefab Building	LS	\$ 20,000.00
Explosion Proof Components	LS	\$ 20,000.00
Total		\$ 40,000.00

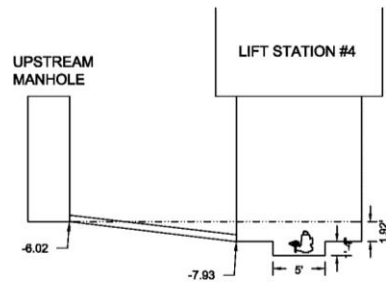
Lift Station #3 Recommended Preliminary Site Plan



Lift Station #4 Preliminary Section View

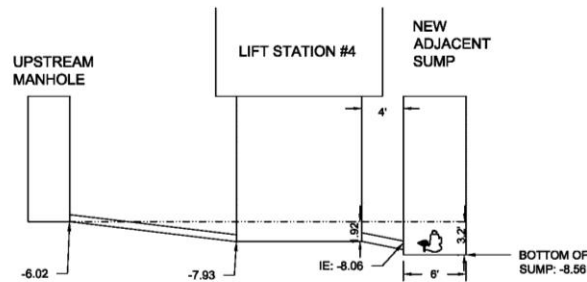
NOTES:

1. EXISTING WET WELL STORAGE IS EQUAL TO 823 GAL/FT.
2. 5' WET WELL IS EQUAL TO 147 GAL/FT.
3. 6' WET WELL IS EQUAL TO 211 GAL/FT.



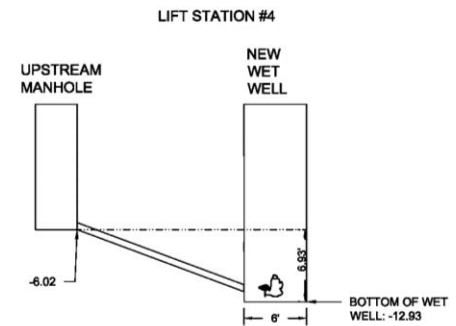
LS #4 SECTION WITH SUMP

Scale: NTS



LS #4 SECTION WITH NEW ADJACENT SUMP

Scale: NTS



LS #4 SECTION WITH NEW WET WELL

Scale: NTS

Lift Station #4 Preliminary Cost Estimate

Item No.	Item Description	Unit	Total Price
Lift Station #4 Alternative A - Use Existing Wet Well w/ Deeper Sump			
1	Mobilization	LS	\$ 12,000.00
2	Bypass system during construction	LS	\$ 50,000.00
3	Sediment and Erosion Control	LS	\$ 4,000.00
4	Conversion to submersible pumps, including piping, new precast wet well sump, new poured in place top slab, and flood proof hatch	LS	\$ 350,000.00
5	Raise pump control panel and other electrical equipment	LS	\$ 65,000.00
6	Privacy Fence	LS	\$ 8,000.00
7	Generator	LS	\$ 58,000.00
8	Aluminum Platform for Control Panel and Generator	LS	\$ 36,000.00
9	SCADA	LS	\$ 17,750.00
Subtotal for items 2 through 9			\$ 588,750.00
Total (with Mobilization)			\$ 600,750.00

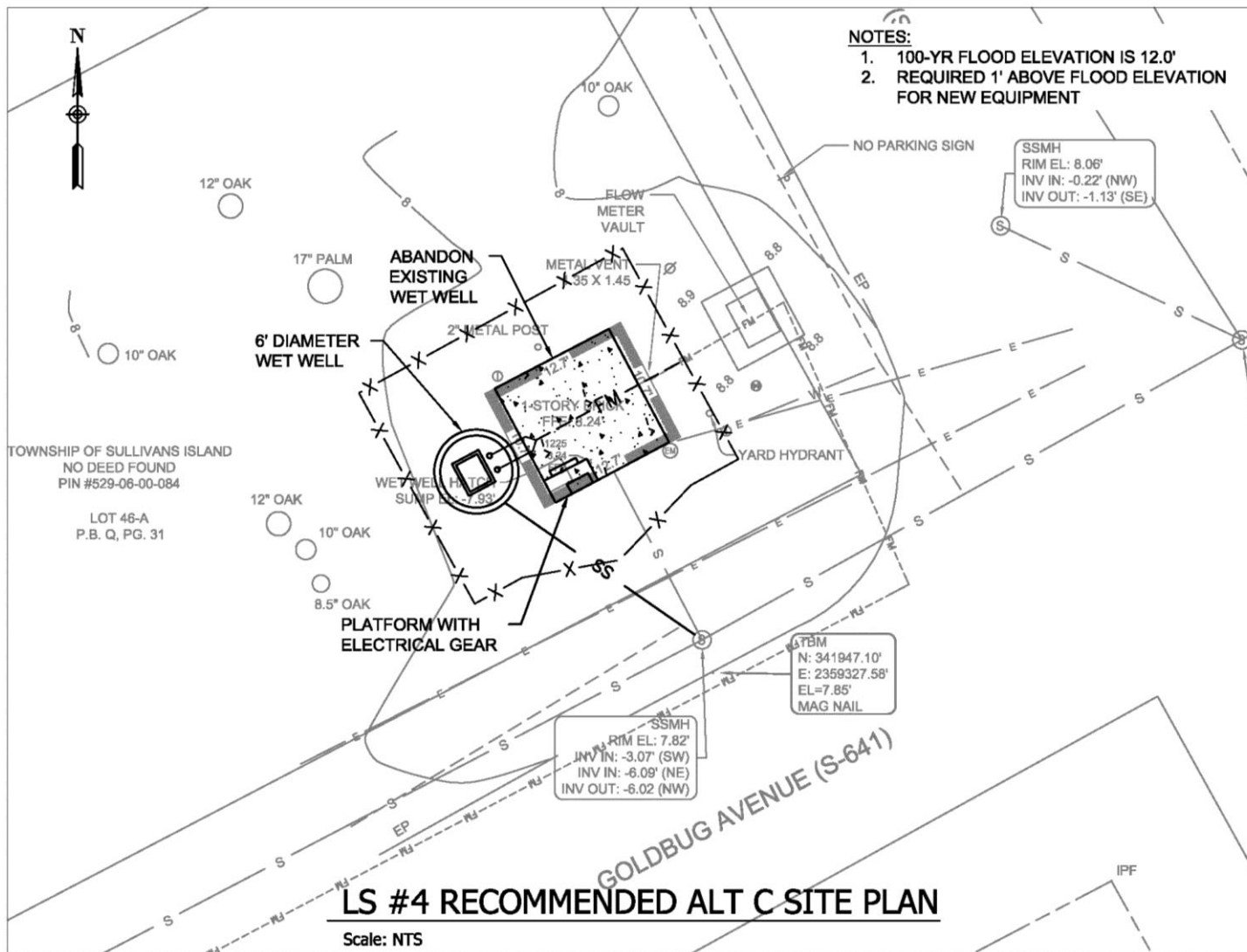
Item No.	Item Description	Unit	Total Price
Lift Station #4 Alternative B - Install New Adjacent Sump			
1	Mobilization	LS	\$ 12,000.00
2	Bypass system during construction	LS	\$ 35,000.00
3	Sediment and Erosion Control	LS	\$ 4,000.00
4	Conversion to submersible pumps, including new concrete slab and flood proof hatch	LS	\$ 175,000.00
5	5-ft Diameter Precast sump	LS	\$ 60,000.00
6	Raise pump control panel and other electrical equipment	LS	\$ 65,000.00
7	Privacy Fence (PVC)	LS	\$ 8,000.00
8	Generator	LS	\$ 58,000.00
9	Aluminum Platform for Control Panel and Generator	LS	\$ 36,000.00
10	SCADA	LS	\$ 17,750.00
Subtotal for items 2 through 10			\$ 458,750.00
Total (with Mobilization)			\$ 470,750.00

Item No.	Item Description	Unit	Total Price
Lift Station #4 Alternative C - Install New Wet Well			
1	Mobilization	LS	\$ 12,000.00
2	Bypass system during construction	LS	\$ 15,000.00
3	Sediment and Erosion Control	LS	\$ 4,000.00
4	Conversion to submersible pumps, including new concrete slab and flood proof hatch	LS	\$ 150,000.00
5	Abandonment of Existing Wet Well	LS	\$ 15,000.00
6	New 8-ft Diameter Wet Well	LS	\$ 80,000.00
7	Raise pump control panel and other electrical equipment	LS	\$ 65,000.00
8	Reroute 8" Inflow Gravity Sewer (PVC)	LS	\$ 10,000.00
9	Privacy Fence (PVC)	LS	\$ 8,000.00
10	Generator	LS	\$ 58,000.00
11	Aluminum Platform for Control Panel and Generator	LS	\$ 36,000.00
12	SCADA	LS	\$ 17,750.00
Subtotal for items 2 through 12			\$ 458,750.00
Total (with Mobilization)			\$ 470,750.00

Adder for Building

Prefab Building	LS	\$ 20,000.00
Explosion Proof Components	LS	\$ 20,000.00
Total		\$ 40,000.00

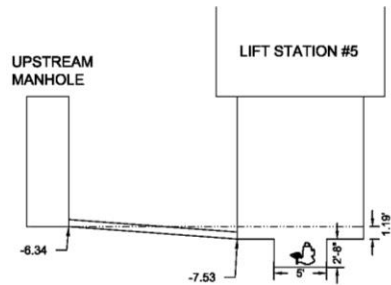
Lift Station #4 Recommended Preliminary Site Plan



Lift Station #5 Preliminary Section View

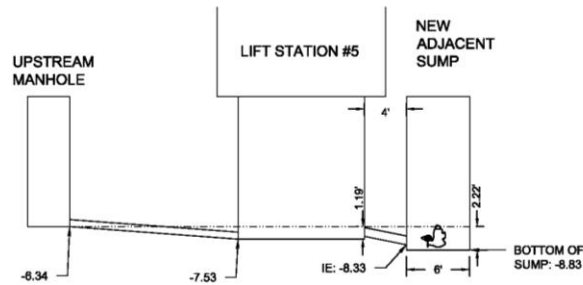
NOTES:

1. EXISTING WET WELL STORAGE IS EQUAL TO 823 GAL/FT.
2. 5' WET WELL IS EQUAL TO 147 GAL/FT.
3. 6' WET WELL IS EQUAL TO 211 GAL/FT.



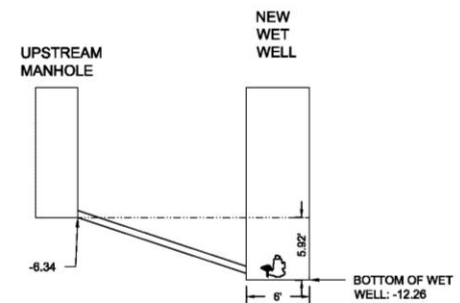
LS #5 SECTION WITH SUMP

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LS #5 SECTION WITH NEW ADJACENT SUMP

Scale: NTS



LS #5 SECTION WITH NEW WET WELL

Scale: NTS

Lift Station #5 Preliminary Cost Estimate

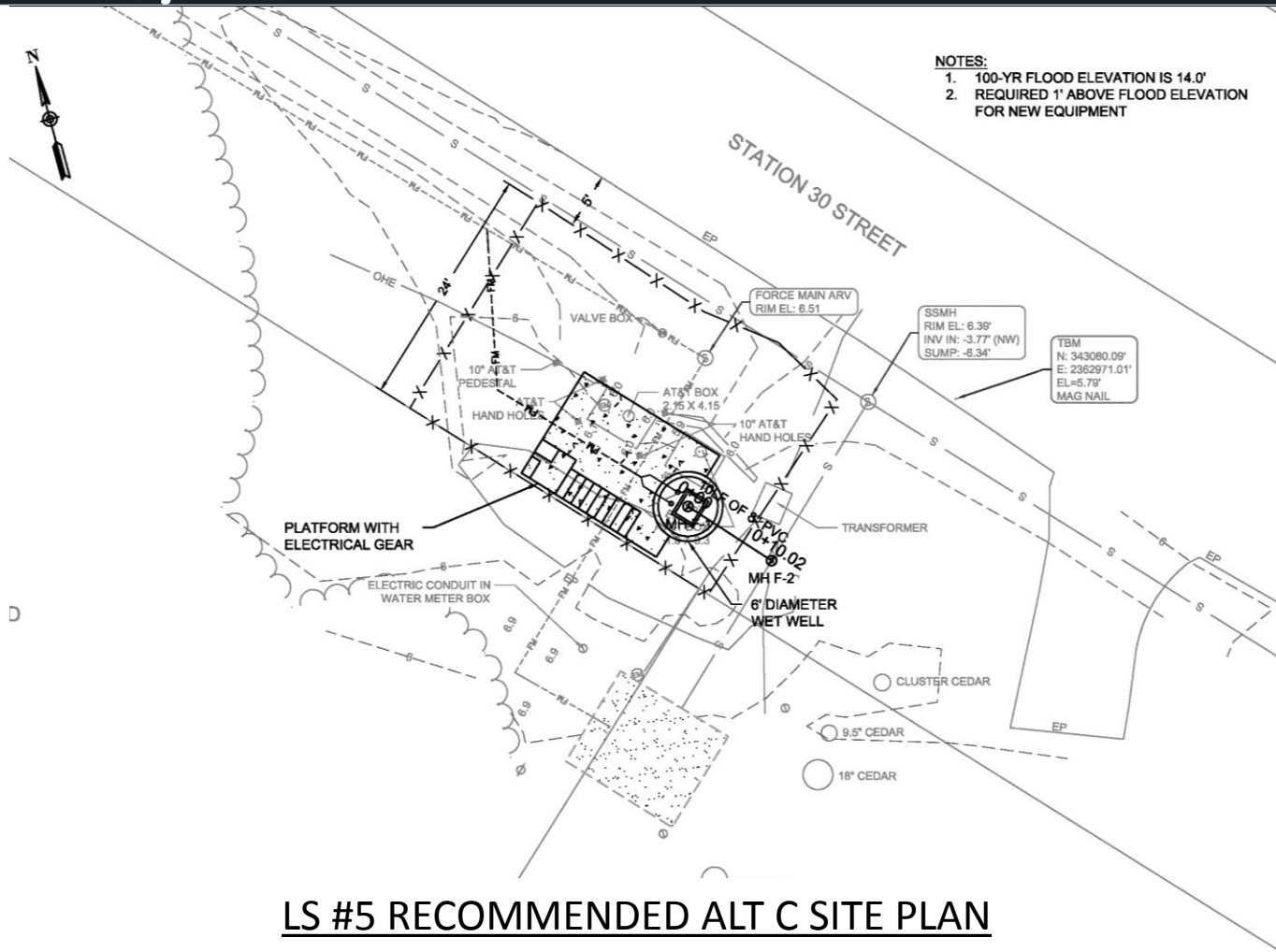
Item No.	Item Description	Unit	Total Price
Lift Station #5 Alternative A - Use Existing Wet Well w/ Deeper Sump			
1	Mobilization	LS	\$ 12,000.00
2	Bypass system during construction	LS	\$ 50,000.00
3	Sediment and Erosion Control	LS	\$ 4,000.00
4	Conversion to submersible pumps, including piping, new precast wet well sump, new poured in place top slab, and flood proof hatch	LS	\$ 350,000.00
5	Raise pump control panel and other electrical equipment	LS	\$ 65,000.00
6	Privacy Fence	LS	\$ 8,000.00
7	Aluminum Platform	LS	\$ 15,000.00
8	SCADA	LS	\$ 16,360.00
Subtotal for items 2 through 8			\$ 508,360.00
Total (with Mobilization)			\$ 520,360.00

Item No.	Item Description	Unit	Total Price
Lift Station #5 Alternative B - Install New Adjacent Sump			
1	Mobilization	LS	\$ 12,000.00
2	Bypass system during construction	LS	\$ 35,000.00
3	Sediment and Erosion Control	LS	\$ 4,000.00
4	Conversion to submersible pumps, including new concrete slab and flood proof hatch	LS	\$ 175,000.00
5	5-ft Diameter Precast sump	LS	\$ 60,000.00
6	Raise pump control panel and other electrical equipment	LS	\$ 65,000.00
7	Privacy Fence	LS	\$ 8,000.00
8	Aluminum Platform	LS	\$ 15,000.00
9	SCADA	LS	\$ 16,360.00
Subtotal for items 2 through 9			\$ 378,360.00
Total (with Mobilization)			\$ 390,360.00

Item No.	Item Description	Unit	Total Price
Lift Station #5 Alternative C - Install New Wet Well			
1	Mobilization	LS	\$ 12,000.00
2	Bypass system during construction	LS	\$ 15,000.00
3	Sediment and Erosion Control	LS	\$ 4,000.00
4	Conversion to submersible pumps, including new concrete slab and flood proof hatch	LS	\$ 150,000.00
5	Abandonment of Existing Wet Well	LS	\$ 15,000.00
6	New 8-ft Diameter Wet Well	LS	\$ 80,000.00
7	Raise pump control panel and other electrical equipment	LS	\$ 65,000.00
8	Reroute 8" Inflow Gravity Sewer (PVC)	LS	\$ 10,000.00
9	Privacy Fence	LS	\$ 8,000.00
10	AT&T Relocation	LS	\$ 80,000.00
11	Dominion Transformer Relocation	LS	\$ 15,000.00
12	Aluminum Platform	LS	\$ 15,000.00
13	SCADA	LS	\$ 16,360.00
Subtotal for items 2 through 13			\$ 473,360.00
Total (with Mobilization)			\$ 485,360.00

Adder for Building		
Prefab Building	LS	\$ 20,000.00
Explosion Proof Components	LS	\$ 20,000.00
Total		\$ 40,000.00

Lift Station #5 Recommended Preliminary Site Plan



LS #5 RECOMMENDED ALT C SITE PLAN

Summary of Analysis

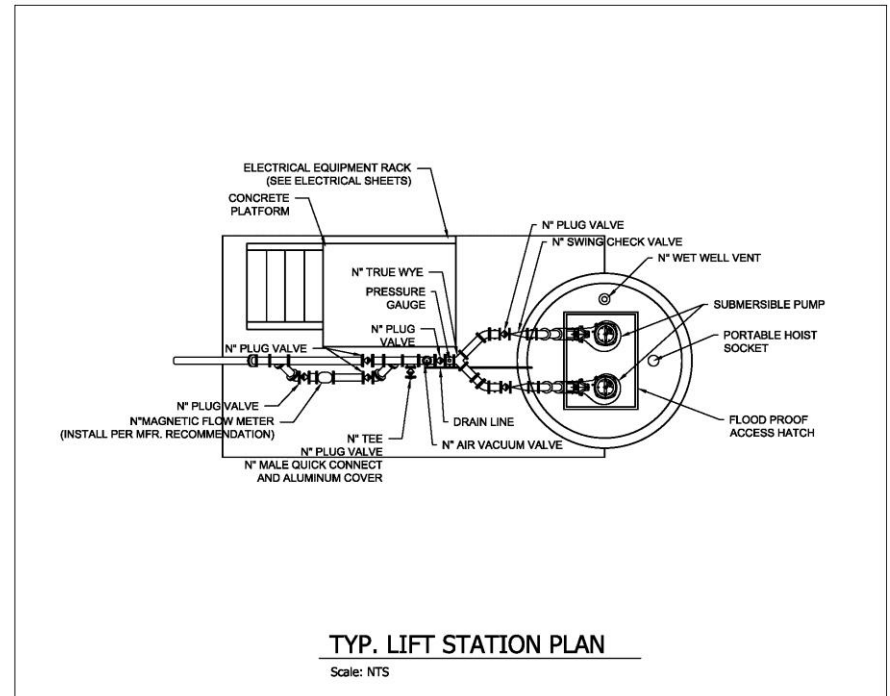
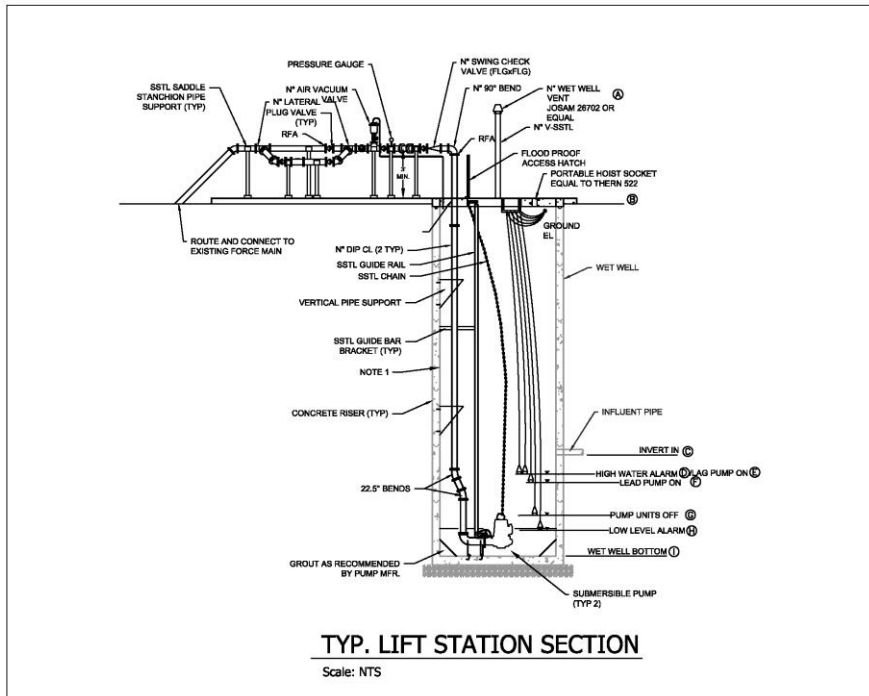
Considerations:

- Overall cost of upgrade for EACH lift station and individual alternatives
- Proximity to residence for feasible construction
- Capacity of site to accommodate construction materials and spoils.
- Bypass pumping during construction

Lift Station	Alternative	Cost
1	C	\$446,210.00
2	C	\$406,960.00
3	C	\$460,960.00
4	C	\$470,750.00
5	C	\$485,360.00
TOTAL		\$2,270,240.00

Additional Notes

Typical Lift Station Design:



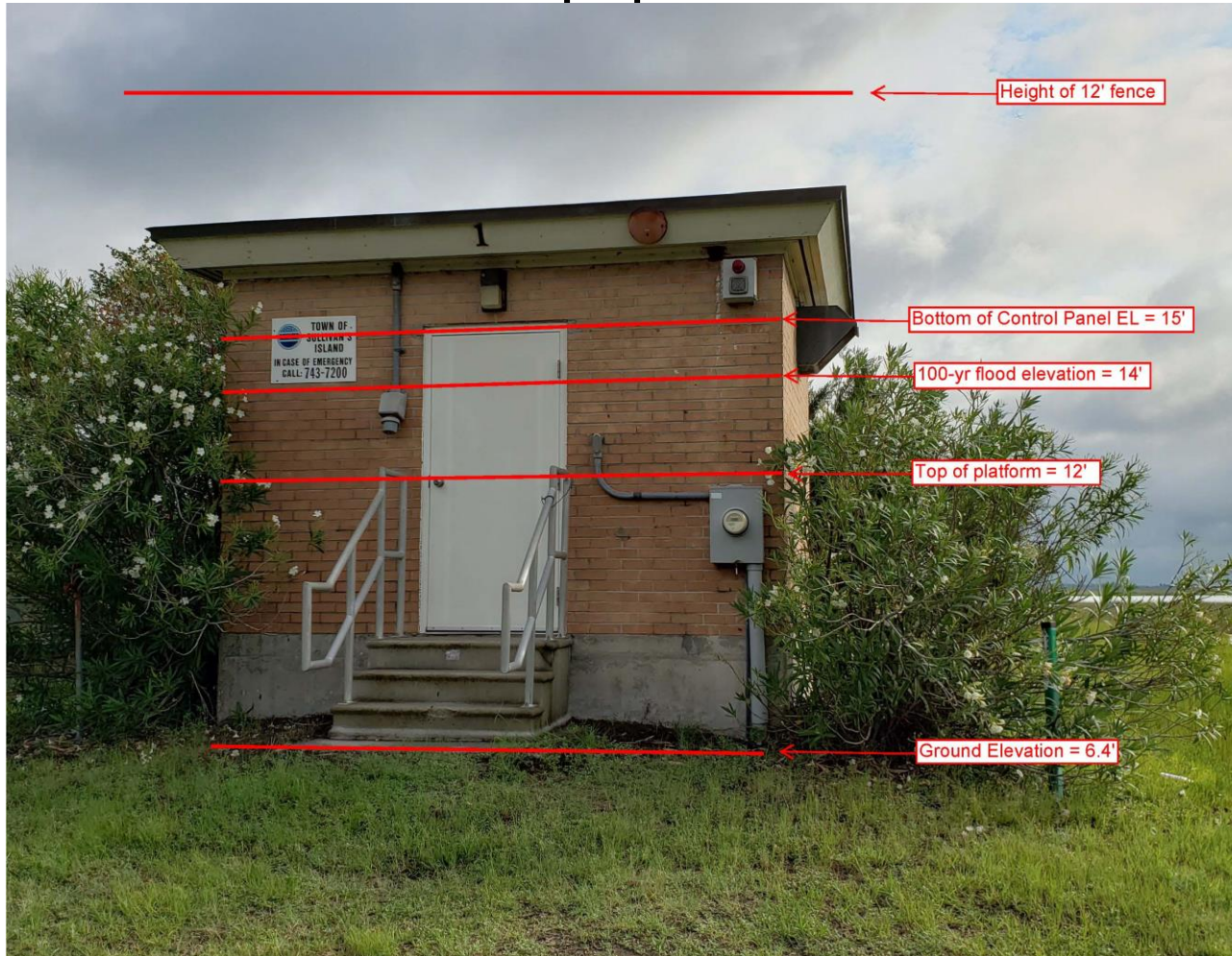
Additional Notes

Privacy Fence for Seabrook Island Utility Commission:



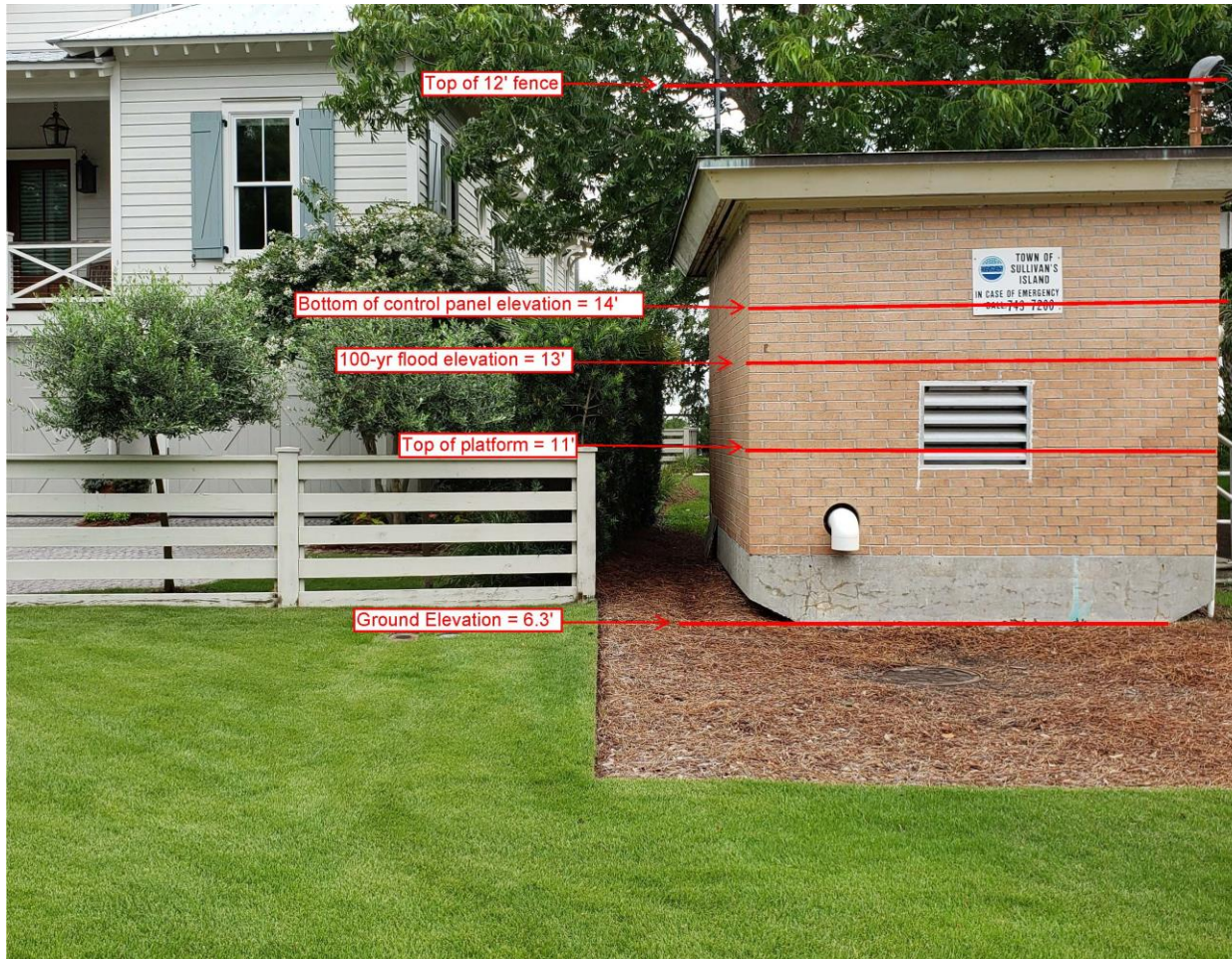
Additional Notes

General Elevations of Equipment for LS #1



Additional Notes

General Elevations of Equipment for LS #2



Additional Notes

General Elevations of Equipment for LS #3



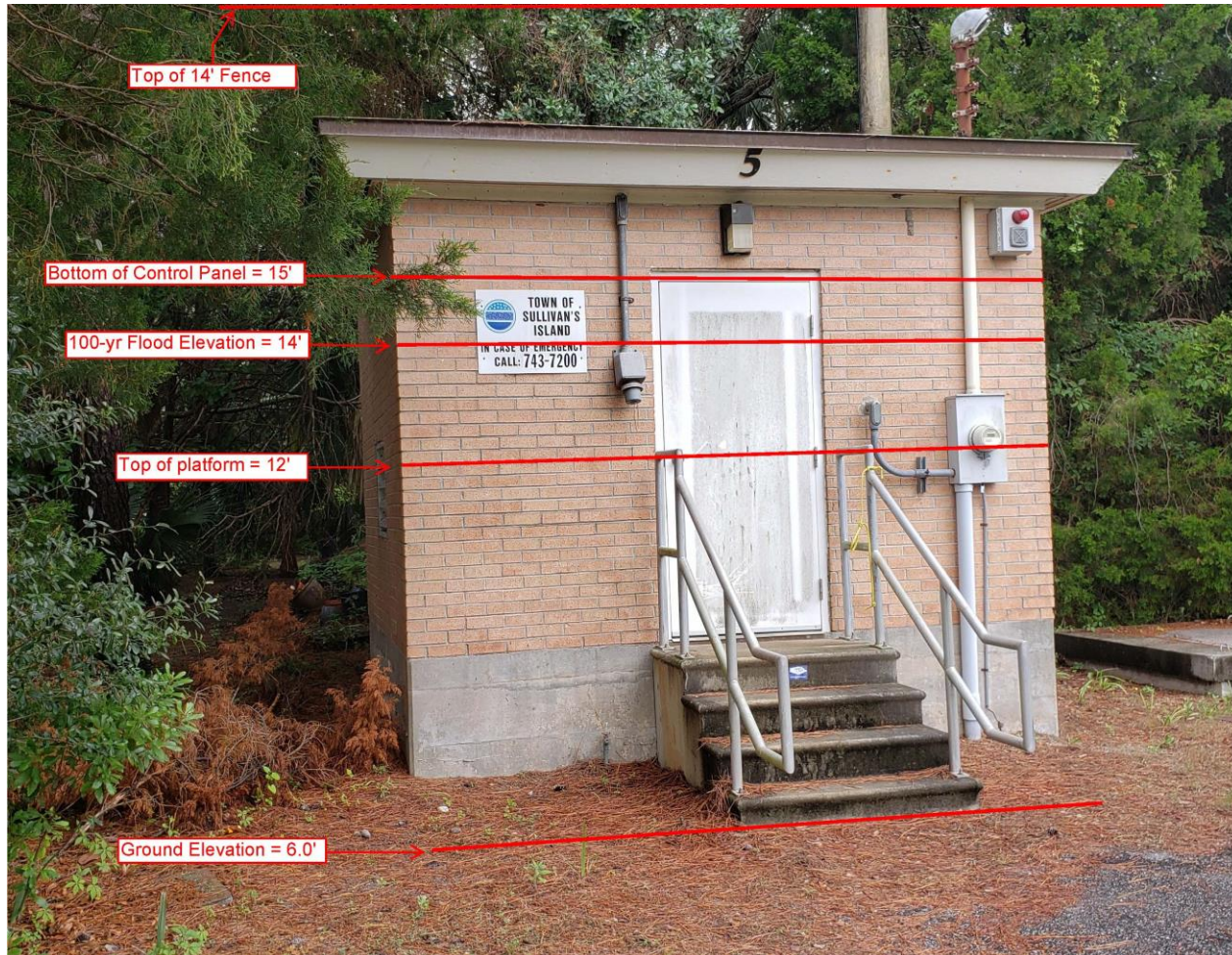
Additional Notes

General Elevations of Equipment for LS #4



Additional Notes

General Elevations of Equipment for LS #5



Additional Notes

Debris Basket Options:



- Halliday Debris Baskets
 - Series B1A: 316 SST
 - Cost: ~\$1,600 per station (installed)

Additional Notes

Approach Pipe

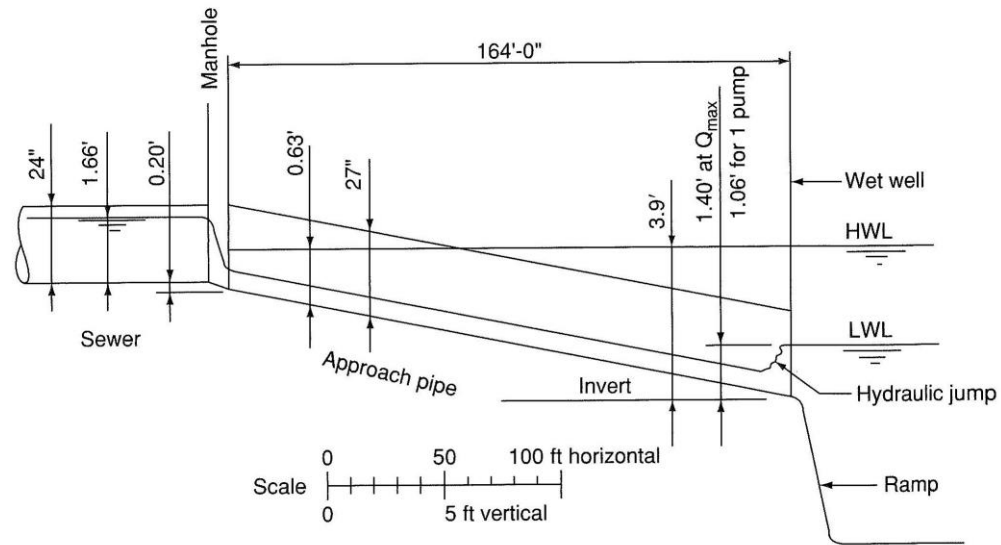


Figure 12-28. Sketch of approach pipe.