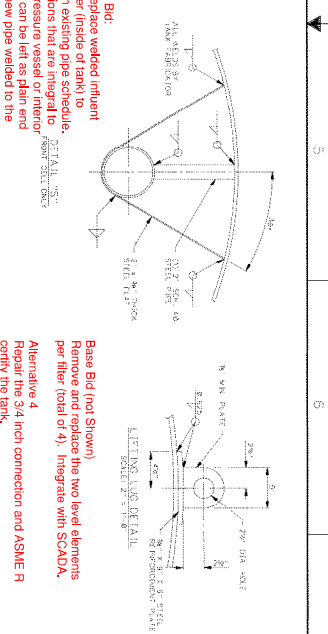
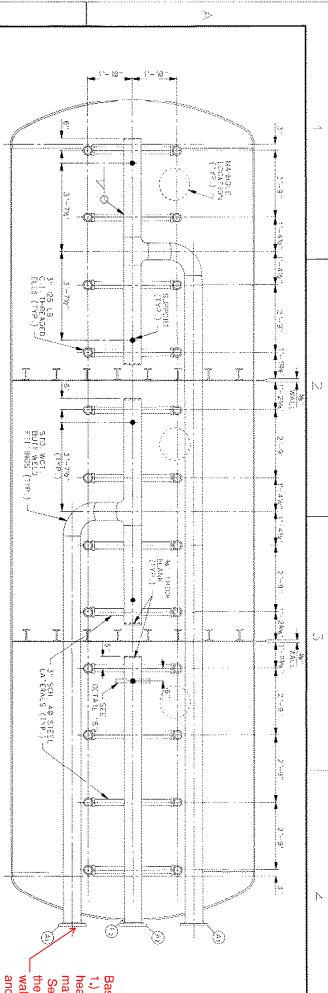


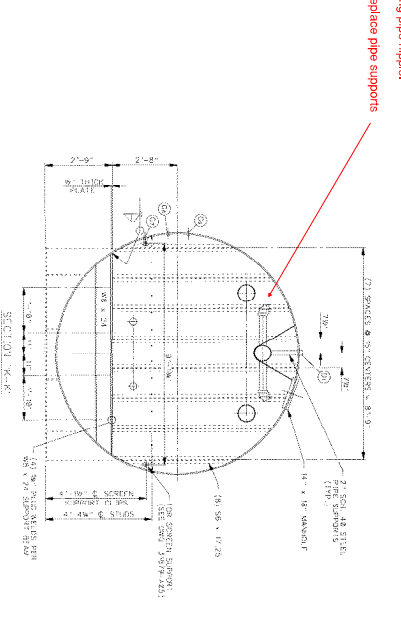
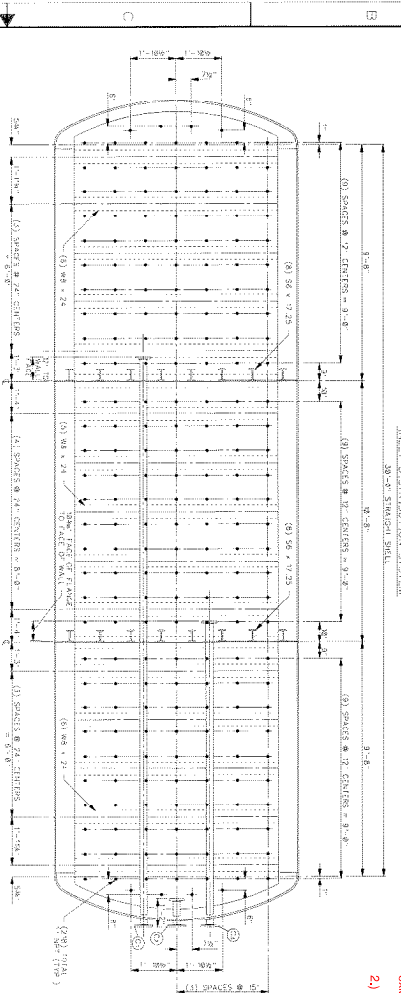
Volume 2 of 3 - This Volume is 50 pages

Hungerford and Terry Fabrication Dwgs.



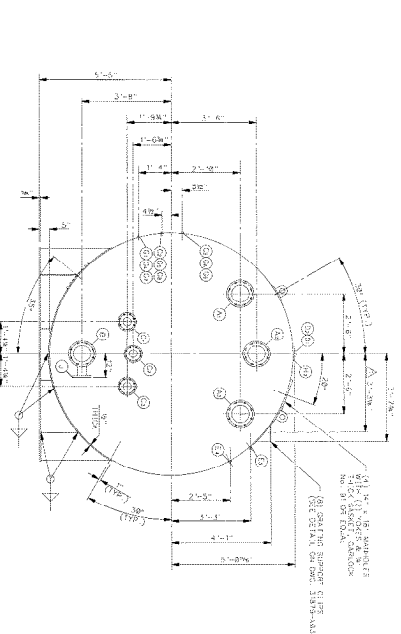
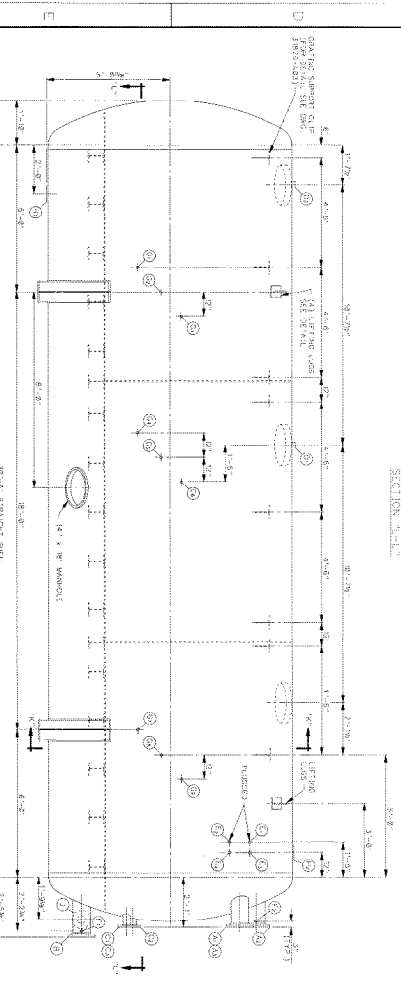
Notes to Contractor:

- Contractor shall confirm the information here. The following is the best information available to the District.
- Provide new gasket when hatch is opened.



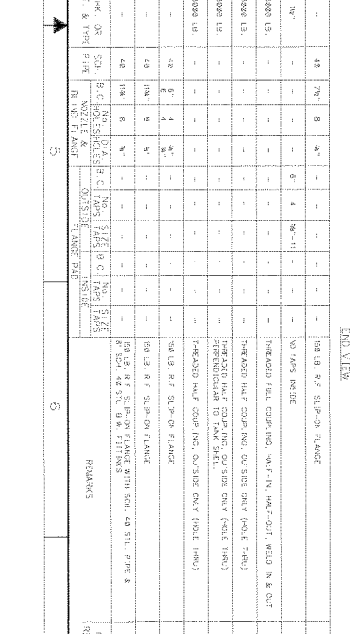
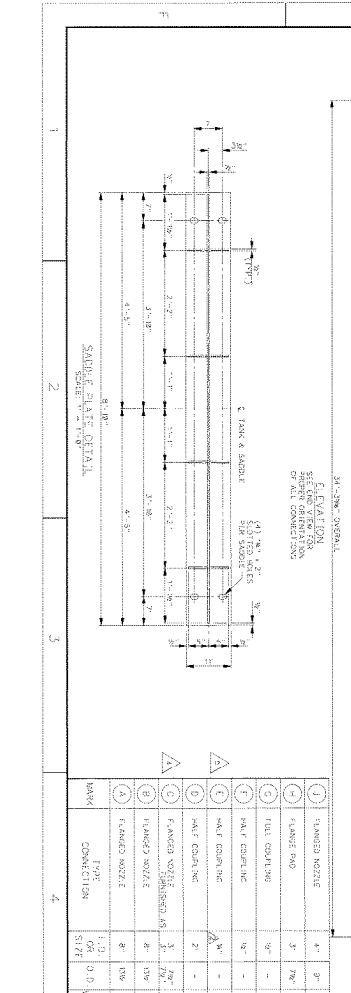
Notes to Contractor:

- Contractor shall confirm the information here. The following is the best information available to the District.
- Provide new gasket when hatch is opened.



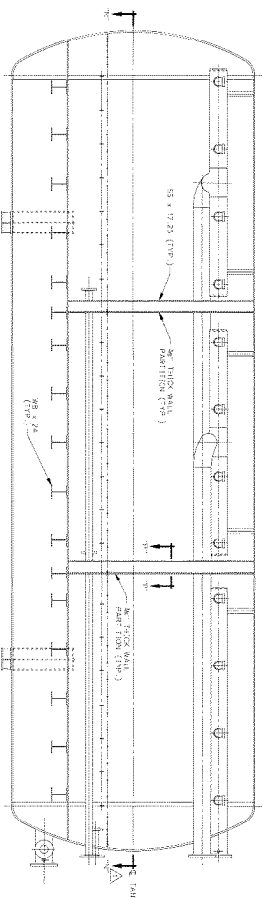
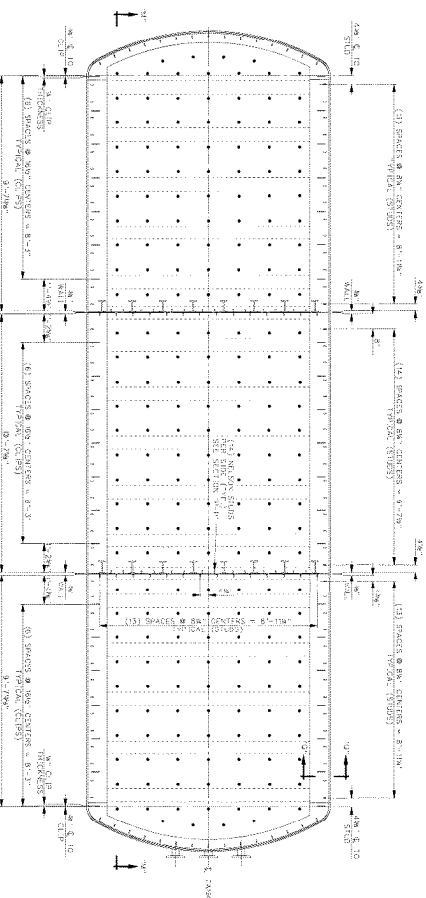
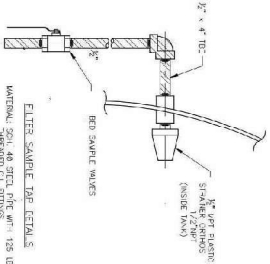
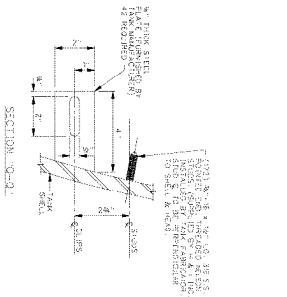
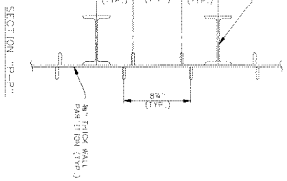
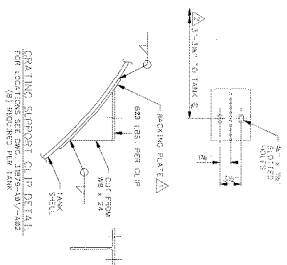
Notes to Contractor:

- Contractor shall confirm the information here. The following is the best information available to the District.
- Provide new gasket when hatch is opened.



Notes to Contractor:

- Contractor shall confirm the information here. The following is the best information available to the District.
- Provide new gasket when hatch is opened.



Notes to Contractor:
 1) Contractor shall field confirm the information here. The following is the best information available to the District.
 2) Provide new gasket when hatch is opened.



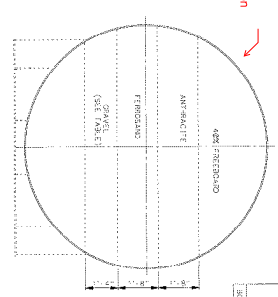
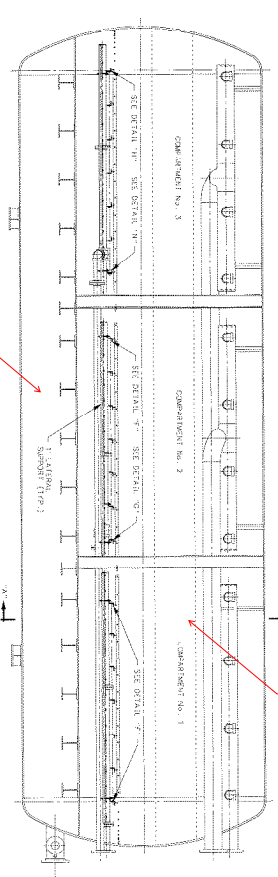
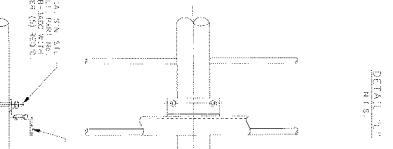
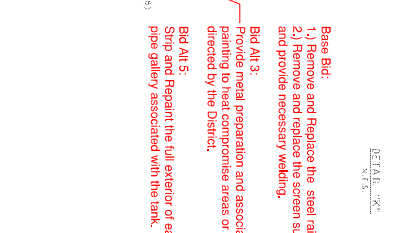
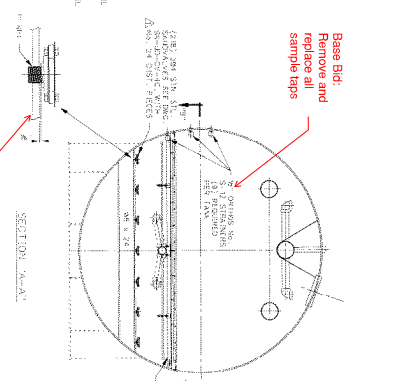
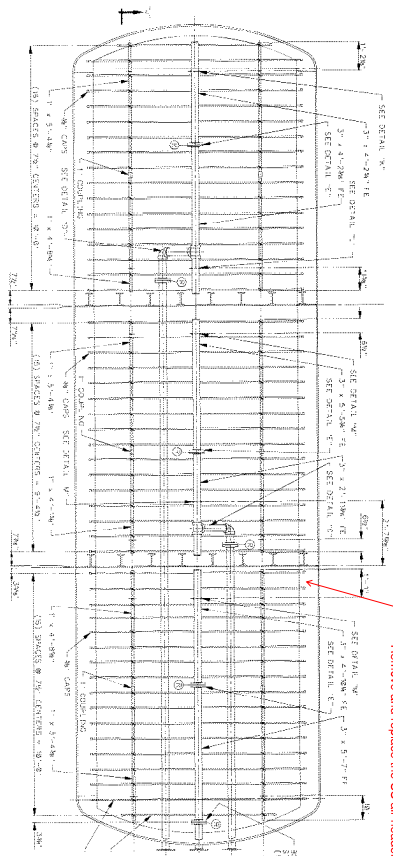
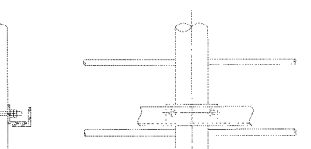
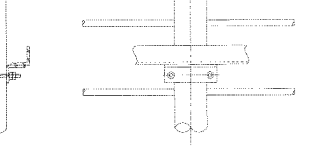
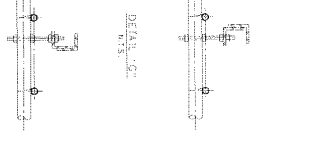
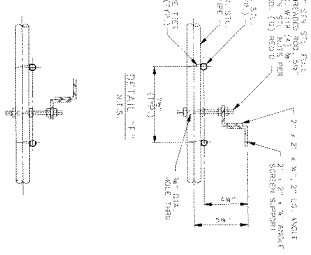
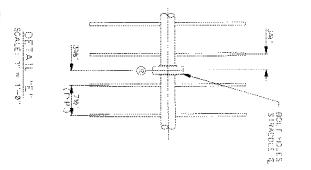
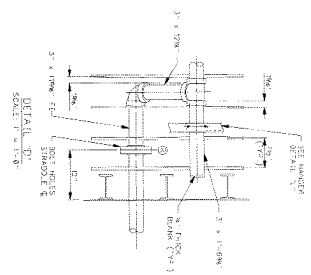
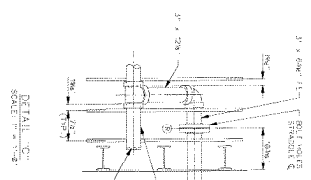
HUNGERTFORD & TERRY, INC.
 SANITARY ENGINEERING AND CONSTRUCTION
 1000 WEST 10TH AVENUE
 DENVER, COLORADO 80202

FOR SUBURBAN WATER DISTRICT
 WELLS NO. 2, 6, 7 & 9
 SUBURBAN, ILL.

ADDITIONAL TANK DETAILS

DATE: _____
 DRAWN BY: _____
 CHECKED BY: _____
 APPROVED BY: _____

SCALE: _____
 SHEET NO.: _____
 TOTAL SHEETS: _____



COMPETITION No. 1 & No. 2				COMPETITION No. 2		25.5000	
SIZES				CU. FT. E.C.		CU. FT.	
100	40	100	40	25	24	1	1
80	30	80	30	17	16	1	1
60	20	60	20	17	16	1	1
40	10	40	10	17	16	1	1
20	5	20	5	17	16	1	1
10	2	10	2	17	16	1	1
5	1	5	1	17	16	1	1
2	0.5	2	0.5	17	16	1	1
1	0.25	1	0.25	17	16	1	1
0.5	0.125	0.5	0.125	17	16	1	1
0.25	0.0625	0.25	0.0625	17	16	1	1
0.125	0.03125	0.125	0.03125	17	16	1	1
0.0625	0.015625	0.0625	0.015625	17	16	1	1
0.03125	0.0078125	0.03125	0.0078125	17	16	1	1
0.015625	0.00390625	0.015625	0.00390625	17	16	1	1
0.0078125	0.001953125	0.0078125	0.001953125	17	16	1	1
0.00390625	0.0009765625	0.00390625	0.0009765625	17	16	1	1
0.001953125	0.00048828125	0.001953125	0.00048828125	17	16	1	1
0.0009765625	0.000244140625	0.0009765625	0.000244140625	17	16	1	1
0.00048828125	0.0001220703125	0.00048828125	0.0001220703125	17	16	1	1
0.000244140625	0.00006103515625	0.000244140625	0.00006103515625	17	16	1	1
0.0001220703125	0.000030517578125	0.0001220703125	0.000030517578125	17	16	1	1
0.00006103515625	0.0000152587890625	0.00006103515625	0.0000152587890625	17	16	1	1
0.000030517578125	0.00000762939453125	0.000030517578125	0.00000762939453125	17	16	1	1
0.0000152587890625	0.000003814697265625	0.0000152587890625	0.000003814697265625	17	16	1	1
0.00000762939453125	0.0000019073486328125	0.00000762939453125	0.0000019073486328125	17	16	1	1
0.000003814697265625	0.00000095367431640625	0.000003814697265625	0.00000095367431640625	17	16	1	1
0.0000019073486328125	0.000000476837158203125	0.0000019073486328125	0.000000476837158203125	17	16	1	1
0.00000095367431640625	0.0000002384185791015625	0.00000095367431640625	0.0000002384185791015625	17	16	1	1
0.000000476837158203125	0.00000011920928955078125	0.000000476837158203125	0.00000011920928955078125	17	16	1	1
0.0000002384185791015625	0.000000059604644775390625	0.0000002384185791015625	0.000000059604644775390625	17	16	1	1
0.00000011920928955078125	0.0000000298023223876953125	0.00000011920928955078125	0.0000000298023223876953125	17	16	1	1
0.000000059604644775390625	0.00000001490116119384765625	0.000000059604644775390625	0.00000001490116119384765625	17	16	1	1
0.0000000298023223876953125	0.000000007450580596923828125	0.0000000298023223876953125	0.000000007450580596923828125	17	16	1	1
0.00000001490116119384765625	0.0000000037252902984619140625	0.00000001490116119384765625	0.0000000037252902984619140625	17	16	1	1
0.000000007450580596923828125	0.00000000186264514923095703125	0.000000007450580596923828125	0.00000000186264514923095703125	17	16	1	1
0.0000000037252902984619140625	0.000000000931322574615478515625	0.0000000037252902984619140625	0.000000000931322574615478515625	17	16	1	1
0.00000000186264514923095703125	0.0000000004656612873077392578125	0.00000000186264514923095703125	0.0000000004656612873077392578125	17	16	1	1
0.000000000931322574615478515625	0.00000000023283064365386962890625	0.000000000931322574615478515625	0.00000000023283064365386962890625	17	16	1	1
0.0000000004656612873077392578125	0.000000000116415321826934814453125	0.0000000004656612873077392578125	0.000000000116415321826934814453125	17	16	1	1
0.00000000023283064365386962890625	0.0000000000582076609134674072265625	0.00000000023283064365386962890625	0.0000000000582076609134674072265625	17	16	1	1
0.000000000116415321826934814453125	0.00000000002910383045673370361328125	0.000000000116415321826934814453125	0.00000000002910383045673370361328125	17	16	1	1
0.0000000000582076609134674072265625	0.000000000014551915228366851806640625	0.0000000000582076609134674072265625	0.000000000014551915228366851806640625	17	16	1	1
0.00000000002910383045673370361328125	0.0000000000072759576141834259033203125	0.00000000002910383045673370361328125	0.0000000000072759576141834259033203125	17	16	1	1
0.000000000014551915228366851806640625	0.00000000000363797880709171295166015625	0.000000000014551915228366851806640625	0.00000000000363797880709171295166015625	17	16	1	1
0.0000000000072759576141834259033203125	0.000000000001818989403545856475830078125	0.0000000000072759576141834259033203125	0.000000000001818989403545856475830078125	17	16	1	1
0.00000000000363797880709171295166015625	0.0000000000009094947017729282379150390625	0.00000000000363797880709171295166015625	0.0000000000009094947017729282379150390625	17	16	1	1
0.000000000001818989403545856475830078125	0.00000000000045474735088646411895751953125	0.000000000001818989403545856475830078125	0.00000000000045474735088646411895751953125	17	16	1	1
0.0000000000009094947017729282379150390625	0.000000000000227373675443232059478759765625	0.0000000000009094947017729282379150390625	0.000000000000227373675443232059478759765625	17	16	1	1
0.00000000000045474735088646411895751953125	0.0000000000001136868377216160297393798828125	0.00000000000045474735088646411895751953125	0.0000000000001136868377216160297393798828125	17	16	1	1
0.000000000000227373675443232059478759765625	0.00000000000005684341886080801486968994140625	0.000000000000227373675443232059478759765625	0.00000000000005684341886080801486968994140625	17	16	1	1
0.0000000000001136868377216160297393798828125	0.000000000000028421709430404007434844970703125	0.0000000000001136868377216160297393798828125	0.000000000000028421709430404007434844970703125	17	16	1	1
0.00000000000005684341886080801486968994140625	0.0000000000000142108547152020037174224853515625	0.00000000000005684341886080801486968994140625	0.0000000000000142108547152020037174224853515625	17	16	1	1
0.000000000000028421709430404007434844970703125	0.00000000000000710542735760100185871124267578125	0.000000000000028421709430404007434844970703125	0.00000000000000710542735760100185871124267578125	17	16	1	1
0.0000000000000142108547152020037174224853515625	0.000000000000003552713678800500929355621136953125	0.0000000000000142108547152020037174224853515625	0.000000000000003552713678800500929355621136953125	17	16	1	1
0.00000000000000710542735760100185871124267578125	0.000000000000001776356839400250464677810568953125	0.00000000000000710542735760100185871124267578125	0.000000000000001776356839400250464677810568953125	17	16	1	1
0.000000000000003552713678800500929355621136953125	0.0000000000000008881784197001252323389052844765625	0.000000000000003552713678800500929355621136953125	0.0000000000000008881784197001252323389052844765625	17	16	1	1
0.000000000000001776356839400250464677810568953125	0.00000000000000044408920985006261616945264223828125	0.000000000000001776356839400250464677810568953125	0.00000000000000044408920985006261616945264223828125	17	16	1	1
0.0000000000000008881784197001252323389052844765625	0.000000000000000222044604925031308084726321119140625	0.0000000000000008881784197001252323389052844765625	0.000000000000000222044604925031308084726321119140625	17	16	1	1
0.00000000000000044408920985006261616945264223828125	0.0000000000000001110223024625156540423631605595703125	0.00000000000000044408920985006261616945264223828125	0.0000000000000001110223024625156540423631605595703125	17	16	1	1
0.000000000000000222044604925031308084726321119140625	0.00000000000000005551115123125782702118158027978515625	0.000000000000000222044604925031308084726321119140625	0.00000000000000005551115123125782702118158027978515625	17	16	1	1
0.0000000000000001110223024625156540423631605595703125	0.0000000000000000277555756156289135105907901398928125	0.0000000000000001110223024625156540423631605595703125	0.0000000000000000277555756156289135105907901398928125	17	16	1	1
0.00000000000000005551115123125782702118158027978515625	0.00000000000000001387778780781445675529539506994640625	0.00000000000000005551115123125782702118158027978515625	0.00000000000000001387778780781445675529539506994640625	17	16	1	1
0.0000000000000000277555756156289135105907901398928125	0.000000000000000006938893903907228377647697534973203125	0.0000000000000000277555756156289135105907901398928125	0.000000000000000006938893903907228377647697534973203125	17	16	1	1
0.00000000000000001387778780781445675529539506994640625	0.0000000000000000034694469519536141888238487674866015625	0.00000000000000001387778780781445675529539506994640625	0.0000000000000000034694469519536141888238487674866015625	17	16	1	1
0.000000000000000006938893903907228377647697534973203125	0.00000000000000000173472347597680709441192438374330078125	0.000000000000000006938893903907228377647697534973203125	0.00000000000000000173472347597680709441192438374330078125	17	16	1	1
0.0000000000000000034694469519536141888238487674866015625	0.000000000000000000867361737988403547205596219187150390625	0.0000000000000000034694469519536141888238487674866015625	0.000000000000000000867361737988403547205596219187150390625	17	16	1	1
0.00000000000000000173472347597680709441192438374330078125	0.0000000000000000004336808689942017736027981095935751953125	0.00000000000000000173472347597680709441192438374330078125	0.0000000000000000004336808689942017736027981095935751953125	17	16	1	1
0.000000000000000000867361737988403547205596219187150390625	0.00000000000000000021684043449710088680139905479678759765625	0.000000000000000000867361737988403547205596219187150390625	0.00000000000000000021684043449710088680139905479678759765625	17	16	1	1
0.0000000000000000004336808689942017736027981095935751953125	0.000000000000000000108420217248550443400699527398393798828125	0.0000000000000000004336808689942017736027981095935751953125	0.000000000000000000108420217248550443400699527398393798828125	17	16	1	1
0.00000000000000000021684043449710088680139905479678759765625	0.000000000000000000108420217248550443400699527398393798828125	0.00000000000000000021684043449710088680139905479678759765625	0.000000000000000000108420217248550443400699527398393798828125	17	16	1	1
0.000000000000000000108420217248550443400699527398393798828125	0.0000000000000000000542101086242752217003497636991968994140625	0.000000000000000000108420217248550443400699527398393798828125	0.000000000000000000054210108624275221700				

ANALYTICAL DATA (TABLE 1)			
COMPOSITION NO. 1	ANALYST	COMPOSITION NO. 2	ANALYST
12	12	12	12
EFFECTIVE SIZE: $\alpha = 0.05$		EFFECTIVE SIZE: $\alpha = 0.05$	
UNBIASED COEFFICIENT: < 10		UNBIASED COEFFICIENT: < 10	

Base Bid:
Remove access hatch. Clean and inspect plenum. Provide recommendations for repairs if needed.

Base Bid:
Visual inspect the underdrain
nozzles and the filter vessel for any
problems or concerns

- 1.) Remove, replace the existing media
- 2.) Disinfection, Condition media for filtration, and performance testing

Bid Alt. 1
 1.) Recommend sand valves to be replaced.
 2.) Upon approved from District, remove and replace degraded sand valves

Base Bid:
1.) Remove and Replace the steel raining screen.
2.) Remove and replace the screen support system and provide necessary welding.

Bid Alt 5:
Strip and Repaint the full exterior of each tank and pipe gallery associated with the tank.

- 1.) Contractor shall field confirm the information here. The following is the best information available to the District. For example, the Effective Size for Ferrosand and Attritach has been reversed. Contractor shall confirm by their own calculations, measurements, etc. the volume of media required. Similar for lengths and dimensions shown on this drawing.
- 2.) Provide new gasket for hatchets that are opened

1. ORDER TYPE: ☐ NEW ☐ RENEWAL		2. ORDER NUMBER:	
3. ORDER DATE:		4. ORDER MONTH:	
5. ORDER YEAR:		6. ORDER DAY:	
7. ORDER TIME:		8. ORDER MIN:	
9. ORDER SEC:		10. ORDER MS:	
11. ORDER US:		12. ORDER MS:	
13. ORDER MS:		14. ORDER MS:	
15. ORDER MS:		16. ORDER MS:	
17. ORDER MS:		18. ORDER MS:	
19. ORDER MS:		20. ORDER MS:	
21. ORDER MS:		22. ORDER MS:	
23. ORDER MS:		24. ORDER MS:	
25. ORDER MS:		26. ORDER MS:	
27. ORDER MS:		28. ORDER MS:	
29. ORDER MS:		30. ORDER MS:	
31. ORDER MS:		32. ORDER MS:	
33. ORDER MS:		34. ORDER MS:	
35. ORDER MS:		36. ORDER MS:	
37. ORDER MS:		38. ORDER MS:	
39. ORDER MS:		40. ORDER MS:	
41. ORDER MS:		42. ORDER MS:	
43. ORDER MS:		44. ORDER MS:	
45. ORDER MS:		46. ORDER MS:	
47. ORDER MS:		48. ORDER MS:	
49. ORDER MS:		50. ORDER MS:	
51. ORDER MS:		52. ORDER MS:	
53. ORDER MS:		54. ORDER MS:	
55. ORDER MS:		56. ORDER MS:	
57. ORDER MS:		58. ORDER MS:	
59. ORDER MS:		60. ORDER MS:	
61. ORDER MS:		62. ORDER MS:	
63. ORDER MS:		64. ORDER MS:	
65. ORDER MS:		66. ORDER MS:	
67. ORDER MS:		68. ORDER MS:	
69. ORDER MS:		70. ORDER MS:	
71. ORDER MS:		72. ORDER MS:	
73. ORDER MS:		74. ORDER MS:	
75. ORDER MS:		76. ORDER MS:	
77. ORDER MS:		78. ORDER MS:	
79. ORDER MS:		80. ORDER MS:	
81. ORDER MS:		82. ORDER MS:	
83. ORDER MS:		84. ORDER MS:	
85. ORDER MS:		86. ORDER MS:	
87. ORDER MS:		88. ORDER MS:	
89. ORDER MS:		90. ORDER MS:	
91. ORDER MS:		92. ORDER MS:	
93. ORDER MS:		94. ORDER MS:	
95. ORDER MS:		96. ORDER MS:	
97. ORDER MS:		98. ORDER MS:	
99. ORDER MS:		100. ORDER MS:	

H2O Engineering Bid Dwg for Raymond
Road Water Treatment Plant

CONTRACT NO. 2000-025

WATER TREATMENT PLANT FOR WELLS NO. 2A, 6, 7, & 9

52

SUDBURY WATER DISTRICT 199 RAYMOND ROAD

SUDBURY, MASSACHUSETTS

Note to Contractor: Contractor shall field confirm the information here. The following is the best information available to the District. Contractor shall confirm dimensions and qualities.

CIVIL

- COVER SHEET
- C-1 GENERAL NOTES AND LEGEND
- C-2 SITE PLAN AND GRADING
- C-3 OUTSIDE PIPING PLAN
- C-4 SLUDGE DRYING LAGOONS - PLAN, SECTIONS & DETAILS
- C-5 EROSION CONTROL AND FENCE DETAILS
- C-6 MISCELLANEOUS DETAILS I
- C-7 MISCELLANEOUS DETAILS II
- C-8 MISCELLANEOUS DETAILS III
- C-9 SLUDGE DRYING LAGOONS, PIPING PROFILES

ARCHITECTURAL

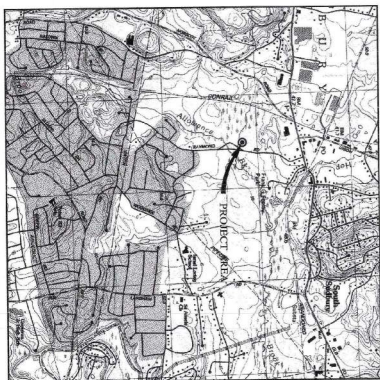
- A-1 PRE-ENGINEERED BUILDING PLANS & ELEVATIONS
- A-2 MISCELLANEOUS SECTIONS AND DETAILS I
- A-3 BUILDING CHLORINE STORAGE ROOM - PLANS, ELEVATIONS & DETAILS
- A-4 MISCELLANEOUS SECTIONS & DETAILS II
- A-5 CONTROL ROOM ROOF STORAGE AREA
- A-6 BULK CHLORINE STORAGE ROOM - OVERHEAD DOOR DETAILS

STRUCTURAL

- S-1 FOUNDATION PLAN AND GENERAL NOTES
- S-2 FOUNDATION SECTIONS I
- S-3 FOUNDATION SECTIONS II
- S-4 LOWER FOUNDATION PLAN
- S-5 SECTIONS AND DETAILS I
- S-6 DETAILS I
- S-7 DETAILS II

MECHANICAL

- M-1 SIMPLIFIED PROCESS FLOW DIAGRAM
- M-2 WTP FLOOR PLAN
- M-3 EXISTING HIGH LIFT PUMP STATION & CHEMICAL STORAGE AREAS
- M-4 BACKWASH RECLAIM TANK PIPING
- M-5 FILTER FACE PIPING AT PIPE TRENCH & WTP WET WELL & PIPING DETAILS
- M-6 PUMP SCHEDULES & BULK STORAGE TANK DETAILS
- M-7 PROCESS ANALYZERS AND PIPING DETAILS
- M-8 CHEMICAL FEED SYSTEM - DETAIL SCHEMATIC DIAGRAMS
- M-9



LOCUS PLAN

INSTRUMENTATION

- I-1 SYMBOLS, BLOCKS DIAGRAMS & NOTES
- I-2 LOOP DIAGRAMS I
- I-3 LOOP DIAGRAMS II
- I-4 LOOP DIAGRAMS III
- I-5 LOOP DIAGRAMS IV
- I-6 LOOP DIAGRAM V
- I-7 PANEL ELEVATIONS
- I-8 WIRING DIAGRAMS & CONTROL
- I-9 WIRING DIAGRAMS & DETAILS "IT"

HVAC

- H-1 W.T.P. BUILDING PLAN
- H-2 EXISTING HIGH LIFT PUMP STATION & CHLORINATION ADDITION
- H-3 SECTIONS & DETAILS

PLUMBING

- P-1 W.T.P. BUILDING PLAN
- P-2 EXISTING HIGH LIFT PUMP STATION & CHLORINATION ADDITION
- P-3 MISCELLANEOUS DETAILS

ELECTRICAL

- E-1 SYMBOLS, ABBREVIATIONS & NOTES
- E-2 SITE PLAN & DETAILS
- E-3 WATER TREATMENT BUILDING - POWER PLAN
- E-4 WATER TREATMENT BUILDING - LIGHTING PLAN
- E-5 HIGH LIFT PUMP STATION - POWER & LIGHTING PLAN
- E-6 MISC. PARTIAL BUILDING-POWER PLANS & DETAILS "IT"
- E-7 BUILDING WIRING DETAILS II
- E-8 RISER DIAGRAMS I
- E-9 RISER DIAGRAMS II
- E-10 RISER DIAGRAMS III
- E-11 DETAILS I
- E-12 DETAILS II
- E-13 SCHEDULES I
- E-14 SCHEDULES II

JANUARY, 2002
H₂O Engineering
Consulting Associates Inc.

2 ALFRED CIRCLE
BEDFORD, MA 01730



RECEIVED
FEB 13 2002
CMA Inc.

BID SET

NO.	DESCRIPTION	DATE	BY
1	DESIGNED BY		DO
2	CHECKED BY		WOW
3	DATE		
4	BY		
5			
6			
7			
8			
9			
10			



SCALE: 1"=20'-0"
DESIGNED BY: DO
CHECKED BY: WOW
DATE: 1/1/2012

**SUDBURY WATER DISTRICT
TOWN OF SUDBURY
199 RAYMOND ROAD
SUDBURY, MASSACHUSETTS**

**WATER TREATMENT PLAN
FOR WELLS NO. 2A, 6, 7, AND 9
OUTSIDE PIPING PLAN
CIVIL**

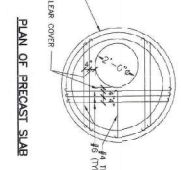
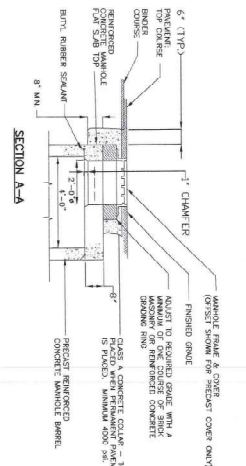
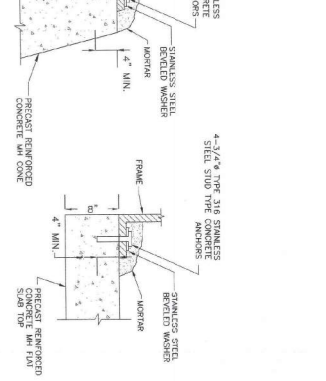
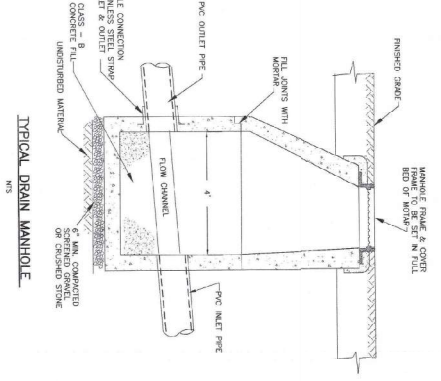
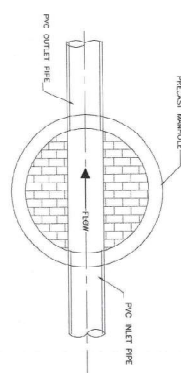
PROJECT NO. 09-025
DATE: 11/20/01
DRAWING NO. C-3
SHEET 1 OF 13 SHEETS

NOTE: SEE DRAWING C-1 FOR GENERAL NOTES AND SPECIFICATIONS.

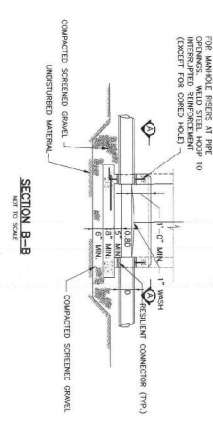
RECEIVED
FEB 13 2002
CAM INC

BID SET

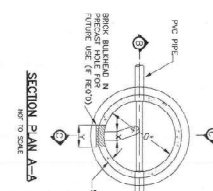




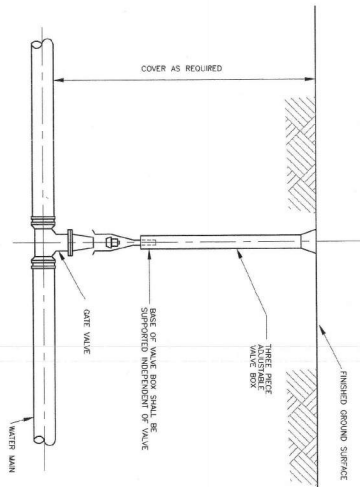
PRECAST FLAT SLAB TOP
FOR SHALLOW MANHOLE - TYPE A
NOT TO SCALE



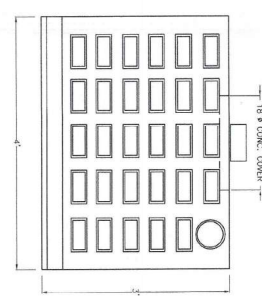
SECTION B-B
NOT TO SCALE



SECTION C-C
NOT TO SCALE



BURIED GATE VALVE DETAIL
NOT TO SCALE



PRECAST CONCRETE GALLEY UNIT
NOT TO SCALE

BID SET

H₂O Engineering
Consulting Associates, Inc.

SUDBURY WATER DISTRICT
TOWN OF SUDBURY
199 RAYMOND ROAD
SUDBURY, MASSACHUSETTS

WATER TREATMENT PLANT FOR
WELLS NO. 2A, 6, 7 & 9
MISCELLANEOUS DETAILS I

DATE: 11/20/01
DRAWING NO.: C-6
SHEET OF: 10

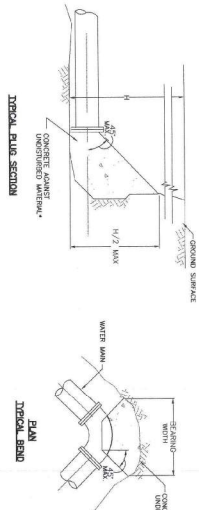


TABLE OF SPACING RATES IN 50' T. AGAINST UNDESIGNED WATERWAY AND THROUGH CONCRETE AGAINST UNDESIGNED WATERWAY

SPACING RATE (IN)	50' T. AGAINST UNDESIGNED WATERWAY	THROUGH CONCRETE AGAINST UNDESIGNED WATERWAY
4	2	2
6	3	3
8	4	4
10	5	5
12	6	6
14	7	7
16	8	8
18	9	9
20	10	10
22	11	11
24	12	12

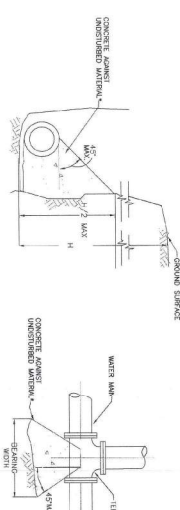


TABLE OF SPACING RATES IN 50' T. AGAINST UNDESIGNED WATERWAY AND THROUGH CONCRETE AGAINST UNDESIGNED WATERWAY

SPACING RATE (IN)	50' T. AGAINST UNDESIGNED WATERWAY	THROUGH CONCRETE AGAINST UNDESIGNED WATERWAY
4	2	2
6	3	3
8	4	4
10	5	5
12	6	6
14	7	7
16	8	8
18	9	9
20	10	10
22	11	11
24	12	12

CONCRETE THRUST BLOCK DETAILS

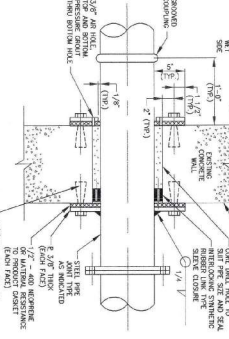
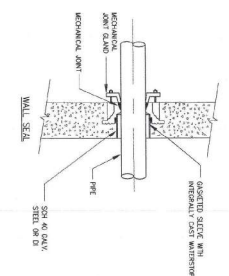
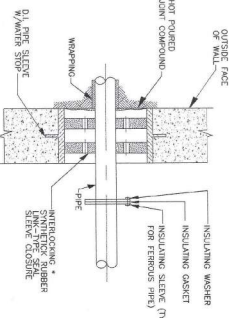
SEE TABLE ON THRUST BLOCK BEARING AREAS FOR THE AREA OF CONCRETE BEARING.

TYPICAL SECTION

TYPICAL PLAN

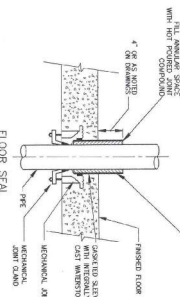
THRUST BLOCK BEARING AREAS FOR WATERWAYS

1. FOR FIRMING WITH LOTS OF DEFLECTION USE
2. BEARING AREA SHALL BE HORIZONTAL INSIDE SOLE
3. THE CONCRETE SHALL BE CLASS - A
4. CONCRETE SHALL BE CLASS - A



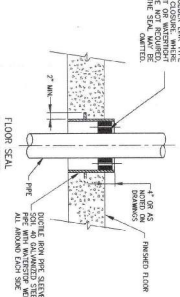
BURIED WALL SLEEVE CLOSURE

NOTE: SIZE OF SLEEVE TO SUIT PIPE SIZE AND SOIL.



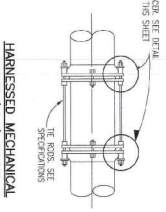
MECHANICAL JOINT TYPE WALL SLEEVE CLOSURE

NOTE: SIZE OF SLEEVE TO SUIT PIPE SIZE AND SOIL.

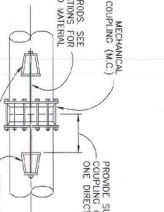


LINK TYPE FLOOR SLEEVE CLOSURE

NOTE: SIZE OF SLEEVE TO SUIT PIPE SIZE AND SOIL.

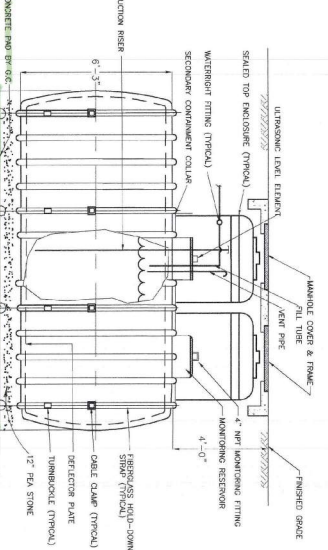


NOTE: IF HARNESSED MECHANICAL JOINTS ARE USED IN PLACE OF THRUST BLOCKS, THEY MUST BE INSTALLED TO RESIST THE PIPE TEST PRESSURE. SEE SPECIFICATION.



HARNESSED MECHANICAL COUPLING (HMC) DETAIL

NOTE: USE DESIGNED COUPLING ON ALL MAJOR PIPE RUN INSIDE WATERWAY.

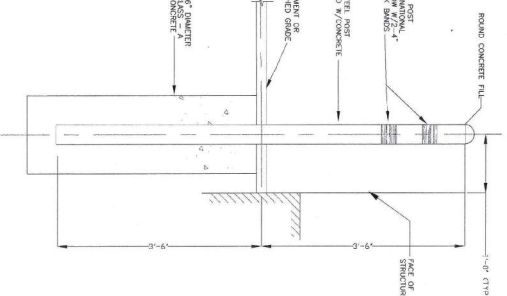


DOUBLE WALL FIBERGLASS UNDERGROUND WASTE STORAGE TANK

DETAIL

GUARD POST DETAIL

NTS



H₂O Engineering Consulting Associates, Inc.

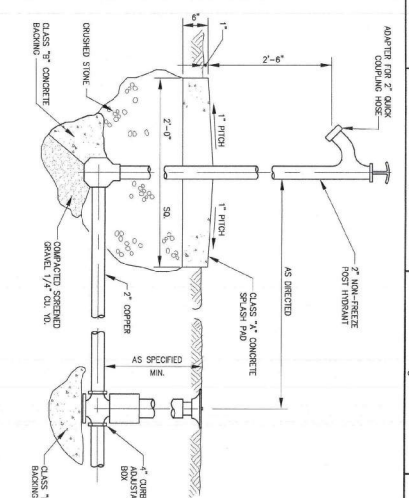
SUBURBY WATER DISTRICT
TOWN OF SUBURBY
199 RAYMOND ROAD
SUBURBY, MASSACHUSETTS

WATER TREATMENT PLANT FOR
WELLS NO. 2A, 6, 7 & 9
MISCELLANEOUS DETAILS II

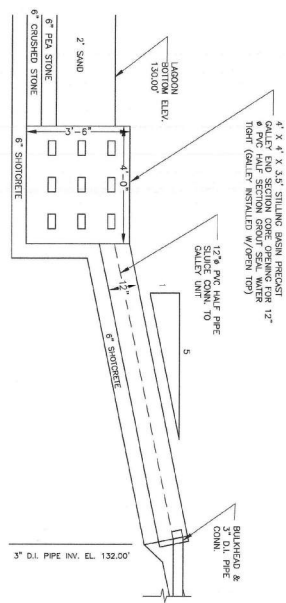
BID SET

PROJECT NO. 2000-025
DATE 11/20/01
DRAWING NO. C-7
SHEET OF SHEETS

BID SET



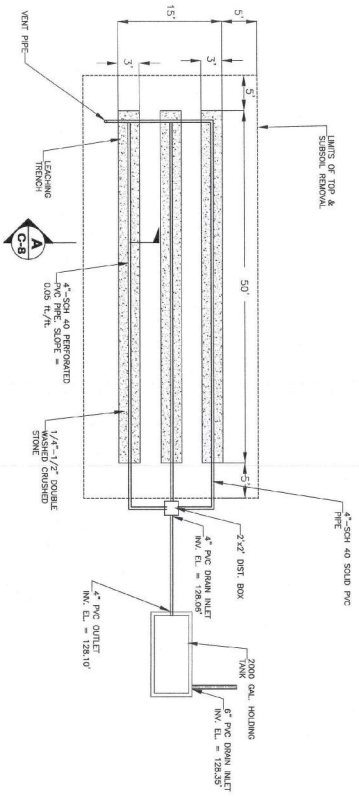
YARD HYDRANT
NOT TO SCALE



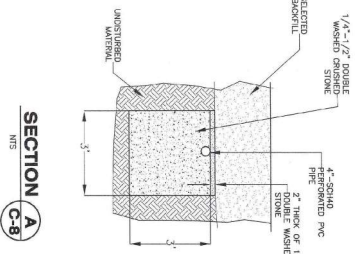
SLUDGE DISCHARGE SECTION
SCALE: 1/2"=1'-0"

TRENCH WIDTH W ₁ OR W ₂	THICKNESS OF PIPE	THICKNESS OF PIPE	THICKNESS OF PIPE	THICKNESS OF PIPE	THICKNESS OF PIPE	THICKNESS OF PIPE	THICKNESS OF PIPE	THICKNESS OF PIPE	THICKNESS OF PIPE
12"	12"	12"	12"	12"	12"	12"	12"	12"	12"
18"	18"	18"	18"	18"	18"	18"	18"	18"	18"
24"	24"	24"	24"	24"	24"	24"	24"	24"	24"
30"	30"	30"	30"	30"	30"	30"	30"	30"	30"
36"	36"	36"	36"	36"	36"	36"	36"	36"	36"
42"	42"	42"	42"	42"	42"	42"	42"	42"	42"
48"	48"	48"	48"	48"	48"	48"	48"	48"	48"
54"	54"	54"	54"	54"	54"	54"	54"	54"	54"
60"	60"	60"	60"	60"	60"	60"	60"	60"	60"
66"	66"	66"	66"	66"	66"	66"	66"	66"	66"
72"	72"	72"	72"	72"	72"	72"	72"	72"	72"
78"	78"	78"	78"	78"	78"	78"	78"	78"	78"
84"	84"	84"	84"	84"	84"	84"	84"	84"	84"
90"	90"	90"	90"	90"	90"	90"	90"	90"	90"
96"	96"	96"	96"	96"	96"	96"	96"	96"	96"
102"	102"	102"	102"	102"	102"	102"	102"	102"	102"
108"	108"	108"	108"	108"	108"	108"	108"	108"	108"
114"	114"	114"	114"	114"	114"	114"	114"	114"	114"
120"	120"	120"	120"	120"	120"	120"	120"	120"	120"

TRENCH WIDTH W₁ OR W₂
NOT TO SCALE



PLAN
N/S

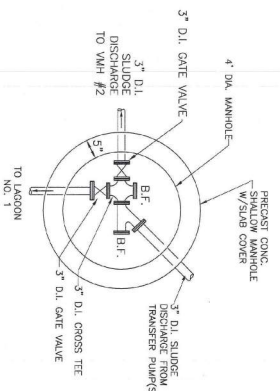


SECTION A
N/S

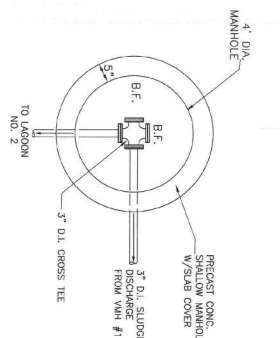
- NOTES:
1. TRENCHES MAY BE EXCAVATED UNDER TRENCH WIDTH W₁ ABOVE THE LINE OF PLACEMENT.
 2. TRENCHES MAY BE EXCAVATED UNDER TRENCH WIDTH W₂ ABOVE THE LINE OF PLACEMENT.
 3. TRENCHES MAY BE EXCAVATED UNDER TRENCH WIDTH W₃ ABOVE THE LINE OF PLACEMENT.
 4. TRENCHES MAY BE EXCAVATED UNDER TRENCH WIDTH W₄ ABOVE THE LINE OF PLACEMENT.
 5. TRENCHES MAY BE EXCAVATED UNDER TRENCH WIDTH W₅ ABOVE THE LINE OF PLACEMENT.

DRAINAGE DISPOSAL SYSTEM
N/S

TYPICAL WATER MAIN TRENCH SECTION
UP TO 24" DIAMETER
N/S



VMH #1 DETAIL
SCALE: 1/2"=1'-0"



VMH #2 DETAIL
SCALE: 1/2"=1'-0"

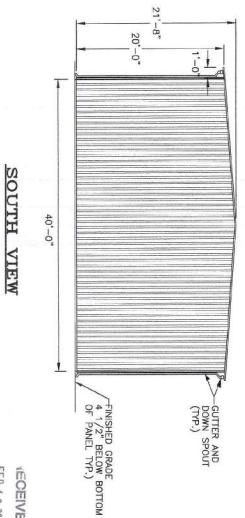
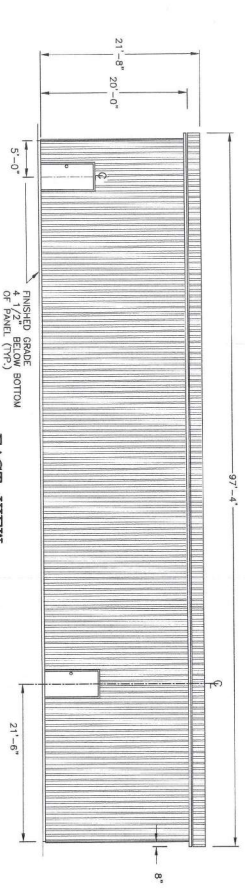
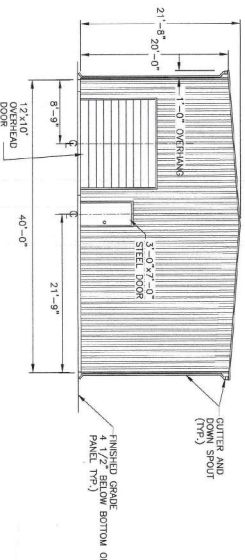
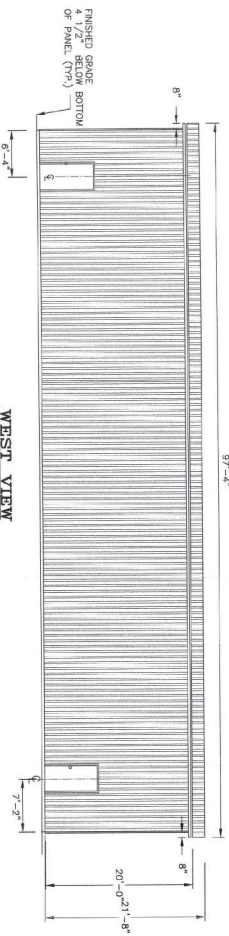
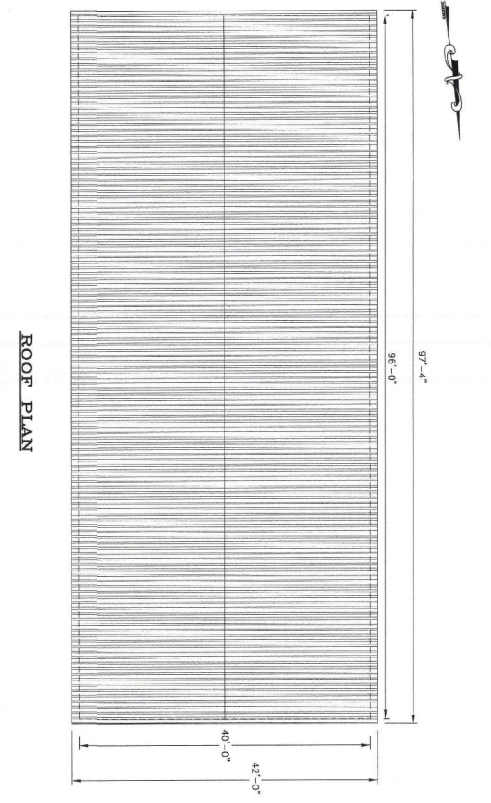
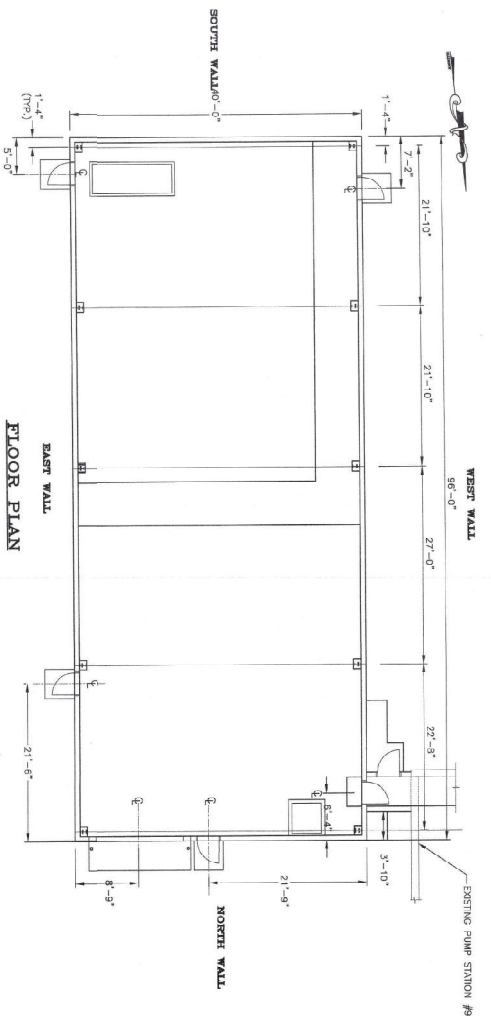
SUBURBY WATER DISTRICT
TOWN OF SUBURBY
199 RAYMOND ROAD
SUBURBY, MASSACHUSETTS

WATER TREATMENT PLANT
FOR WELLS NO. 2A, 6, 7, AND 9
MISCELLANEOUS DETAILS III

PROJECT NO. 2000-025
DATE 11/20/01
DRAWING NO. C-8
SHEET 1 OF 10 SHEETS

H₂O Engineering
Consulting Associates, Inc.
25 STATE STREET, SUITE 200
BOSTON, MA 02109
TEL: 617.552.1234
FAX: 617.552.1235
WWW.H2OENGINEERING.COM

BID SET



- NOTE:
1. GUTTER AND DOWN SPOUTS SHALL BE PROVIDED EACH SIDE OF BUILDING. THE DOWN SPOUTS SHALL BE PROVIDED ON EACH SIDE - ONE AT EACH END AND THREE EQUALLY SPACED ALONG WALL SPACE TO AVOID CONTACT WITH DOORS & OTHER WALL PROJECTIONS.
 2. UNLESS OTHERWISE NOTED, ALL DOORS SHALL HAVE A CLEAR OPENING OF 3'-0" x 7'-0" (UNLESS SHOWN OTHERWISE ON THE DRAWINGS).
 3. EXTERIOR DOOR/DOOR SHALL HAVE A CLEAR OPENING OF WIDTH OF 12'-0" AND HEIGHT OF 10'-0".
 4. ALL DOORS SHALL BE SEALED AGAINST RAIN WITH WATER STOPPING.
 5. THE FINISHED GRADE SHALL BE 4'-0" ABOVE THE FINISHED GRADE OF THE ADJACENT ROAD. THE FINISHED GRADE SHALL BE 16'-0" ABOVE THE FINISHED GRADE OF THE ADJACENT ROAD.

BID SET

H₂O Engineering
Consulting Associates, Inc.

SUDBURY WATER DISTRICT
TOWN OF SUDBURY
199 RAYMOND ROAD
SUDBURY, MASSACHUSETTS

WATER TREATMENT PLANT FOR
WELLS NO. 2A, 6, 7 & 9
PRE-ENGINEERED BUILDING, PLANS & ELEVATIONS
ARCHITECTURAL

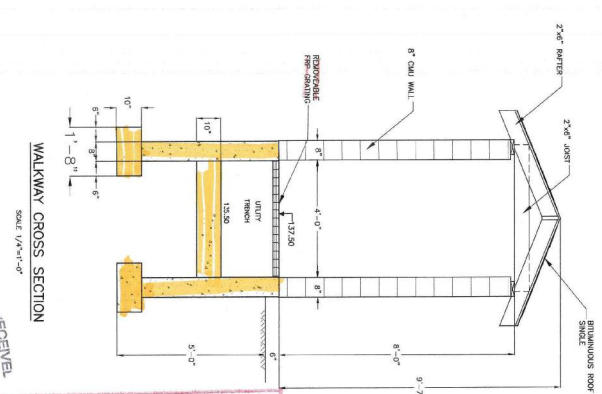
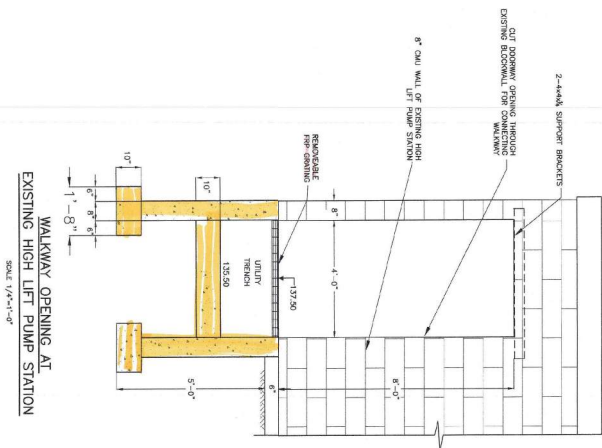
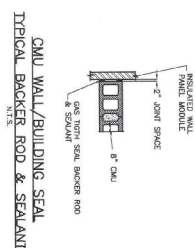
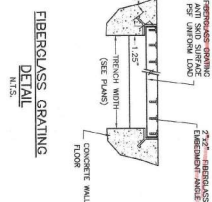
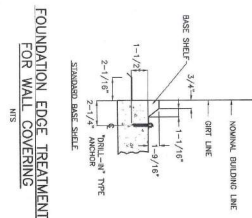
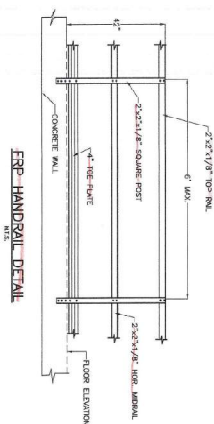
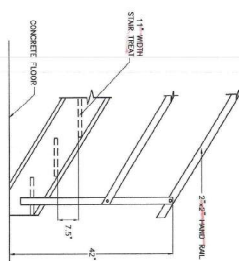
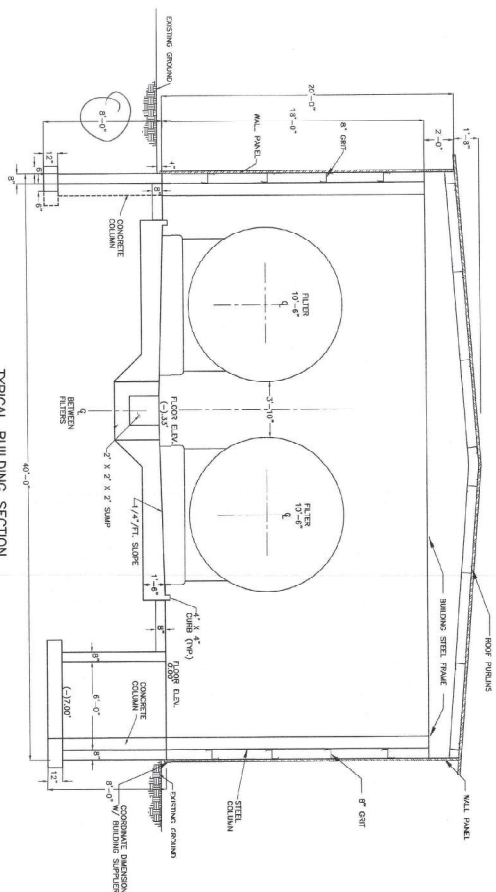
PROJECT NO. 2020-025
DATE 11/26/01
DRAWING NO. A-1
SHEET OF SHEETS



ISSUANCE	3	DESCRIPTION	4	DATE	BY		SOLE AS NO
						DRAWN BY DO	
						CHECKED BY WGW	
						CHECKED BY WGW	

**SUDBURY WATER DISTRICT
TOWN OF SUDBURY
199 RAYMOND ROAD
SUDBURY, MASSACHUSETTS**

PROJECT:	WATER TREATMENT PLAN FOR WELLS NO. 2A, 6, 7, AND 9		
PRODUCT NO.	2000-025	DATE:	11/20/01
TITLE:		DESIGN NO.	A-2
MISCELLANEOUS SECTIONS, AND DETAILS I		SHEET 1 OF 10 SHEETS	
ARCHITECTURAL			
8	9	10	

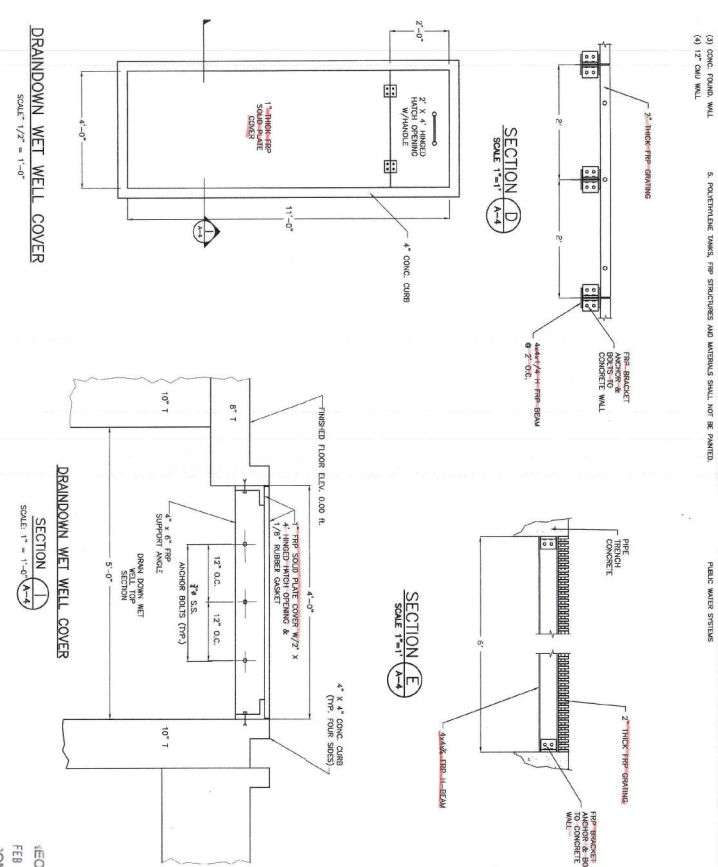


BID SET

[illegible][illegible]

NOTES: 1. PAINT PRE-ENGINEERED BLDG. COLUMNS TO MATCH WALLS.
2. ALL CONCRETE FLOORS SHALL BE STEEL TRAPACTO ENGRA

- (1) 8' CHD WALLS
1. THE EXISTING TOOTH SHALL BE REINFORCED WITH STEEL OR ANCHORED.
2. FLOOR SLAB(S) SHALL BE DETONATE BY GRACE CONSTRUCTION PRODUCTS OR APPROVED EQUIV.
3. PAINT COLOR NUMBERS AND DESCRIPTIONS FROM INMEX CO., INC. MUSTER COLORBOARD.
(2) BLOS PANEL
4. PAINT COLOR NUMBERS AND DESCRIPTIONS FROM INMEX CO., INC. MUSTER COLORBOARD.
(3) CONC. PAVID, WALL
5. POLYURETHANE Joints, JPP STRUCTURES AND INTERIORS SHALL NOT BE PAINTED.
(4) 12' CHD WALL
6. EXISTENT LUMEN COVER SHALL BE DEMO.
7. LUMEN STRUT SHALL BE DEMO.
8. PROCESS PIPING SHALL BE PAINTED IN ACCORDANCE WITH REP CUSTOMERS & POLICES FOR PLANT WATER SYSTEM.



SCALE 1/4"=1'-0"

SCALE: 1/2" = 1'-0"

SCALE: 1" = 1'-0"

RECEIVED
FEB 19 2000
COM INF

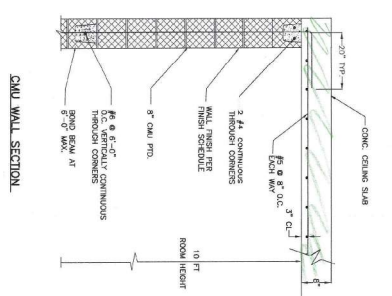
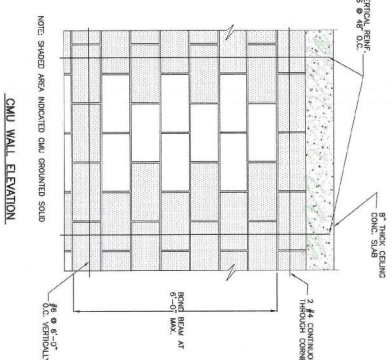
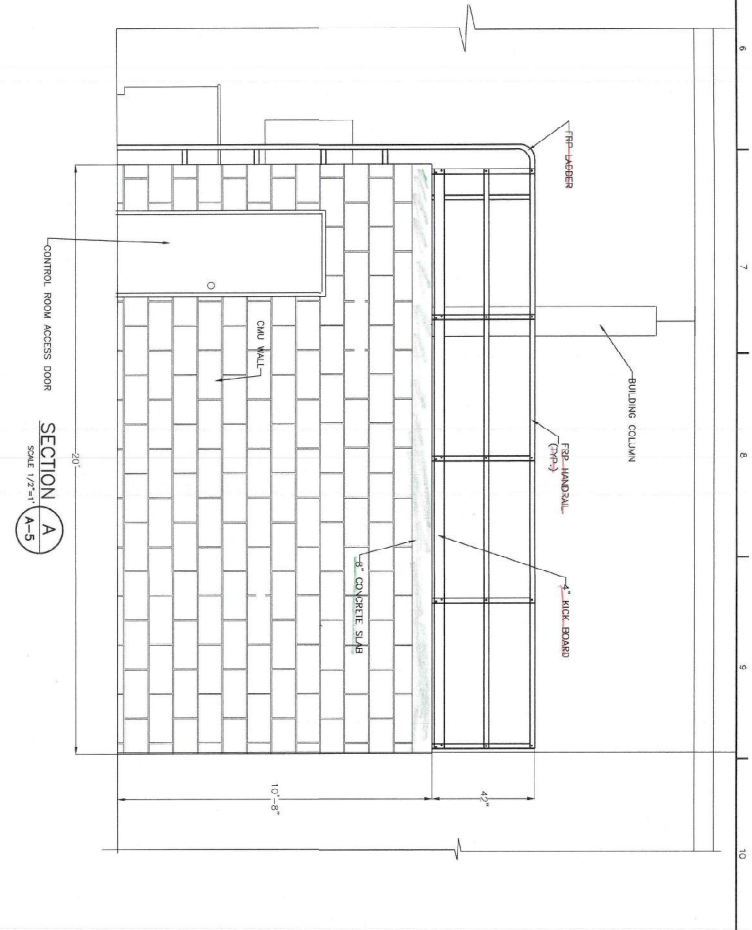
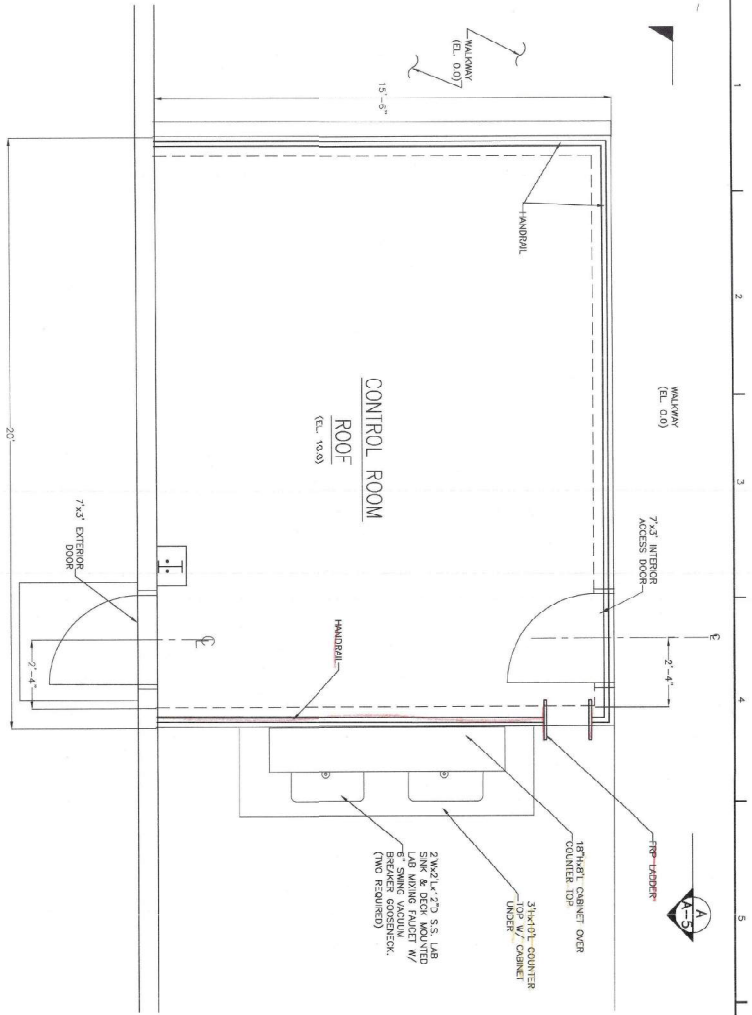
TOWN OF SUDBURY

SUDBURY, MASSACHUSETTS

WELLS NO. 2A, 6, 7 & 8

003 SECTIONS & DETAILS

RECEIVED
FEB 19 2000
COMM INS



CONTROL ROOM DETAILS

RECEIVED
FEB 19 2002
WMA INF

BID SET

CONTROL ROOM ROOF
STORAGE AREA
SCALE 1/2"=1'

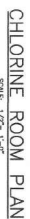
SECTION A
SCALE 1/2"=1'

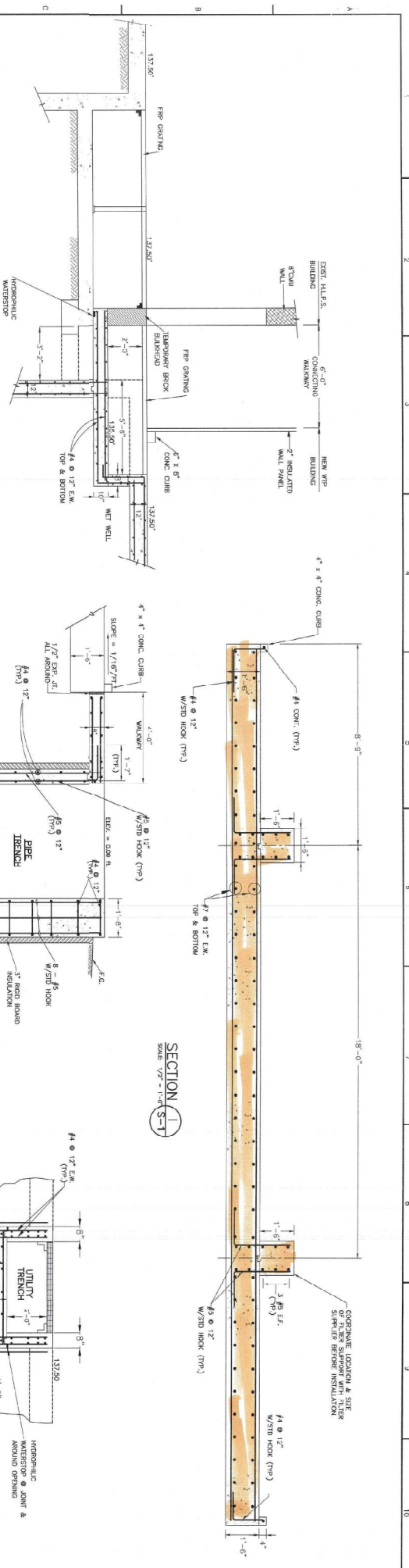
H2O Engineering
Consulting Associates, Inc.

SUDBURY WATER DISTRICT
TOWN OF SUDBURY
199 RAYMOND ROAD
SUDBURY, MASSACHUSETTS

WATER TREATMENT PLAN
FOR WELLS NO. 2A, 6, 7, AND 9
CONTROL ROOM ROOF STORAGE AREA
ARCHITECTURAL

PROJECT NO. 00-025
DATE 11/20/01
DRAWING NO. A-5
SHEET 1 OF 10 SHEETS

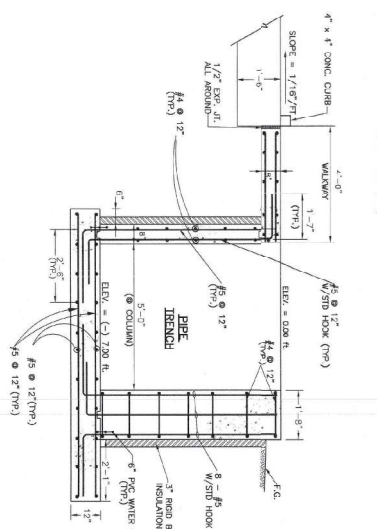
A-5BID
SET



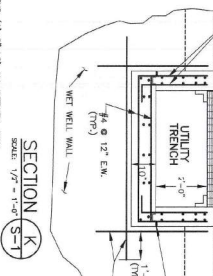
CONNECTING WALKWAY SECTION **G**

SCALE: 3/8" = 1'-0"

S-1

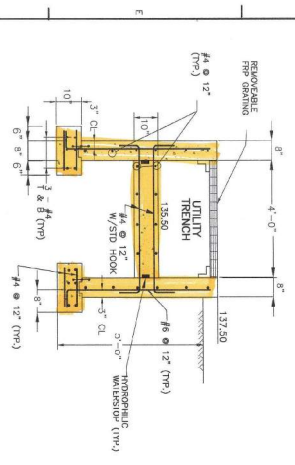


SECTION 2
SCALE: 1/2" = 1'-0" S-1

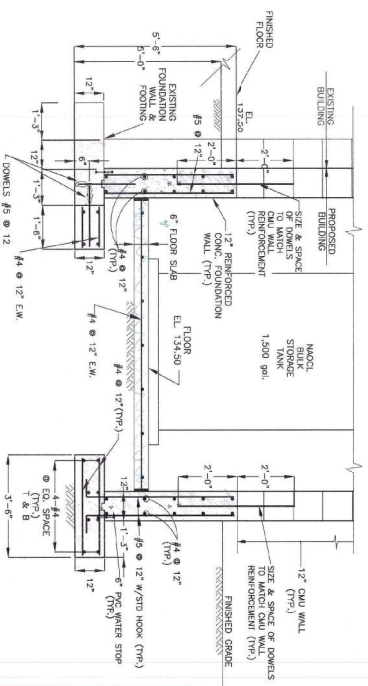


SECTION K
SCALE: 1/2" = 1'-0"
WALL INTO S-1

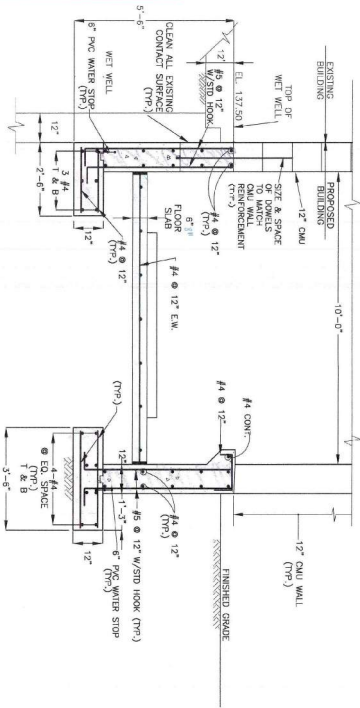
NOTE: BEND (1'-6" LG) ALL WETWELL HORIZONTAL OR VERTICAL BARS TRENCH WALL & BOTTOM SLAB.



SECTION H
SCHE: 1/2" - 1"=0" S-1



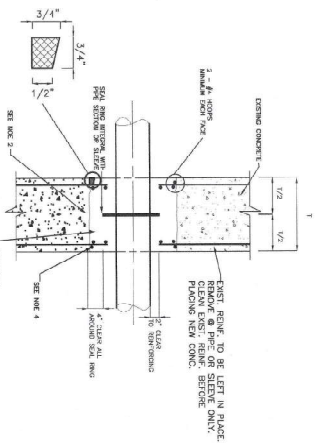
SECTION C
SCALE: 1/2" = 1'-0"
M-3



SECTION D
SCALE: 1/2" = 1'-0"
M-3

RECEIVED
FEB 19 2002
JPM INR

BID SET



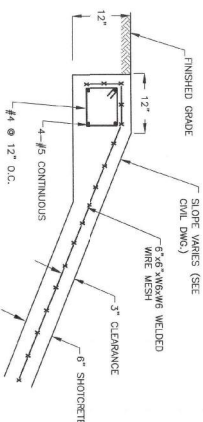
NOTES:

1. THE USE OF HEAVY-DUTY PNEUMATIC HAMMERS ARE NOT PERMITTED TO REMOVE EXISTING CONCRETE FOR NEW PIPE OPENING

2. WITH MANUFACTURER'S PRINTED INSTRUCTIONS, PRIMEING AGENT TO BE LARSEN WEDGECRETE AS MANUFACTURED BY LARSEN PRODUCTS CORP. OF ROCKFALL, MD. OR AN ACCEPTABLE EQUIVALENT PRODUCT.
3. AFTER PPT IS SET, FILL PENETRATION WITH CONCRETE, HAVING A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI, PER SQUARE INCH AT THE END OF 28 DAYS.

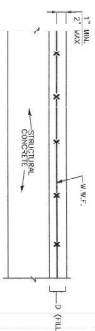
PIPE PENETRATION CLOSURE AT EXISTING WALL

N.T.5



TYPICAL TOP SECTION
SLUDGE DRYING LAGOONS
NTS

N.T.S.

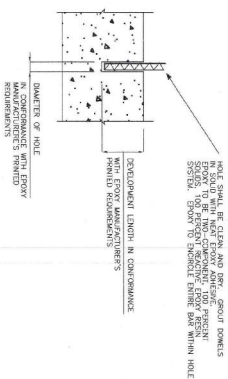


NOTE: PROVIDE W.R.F. IN CONCRETE TILL SIZE AS TABULATED, UNLESS NOTED OTHERWISE ON THE PLANS AND/OR SECTIONS

D	W/F ₁
2° 30' 4"	603 - W 1.4 X N 1.4
2° 19' 8"	603 - W 2.0 X N 2.0
9° PLUS	603 - W 2.0 X N 2.0

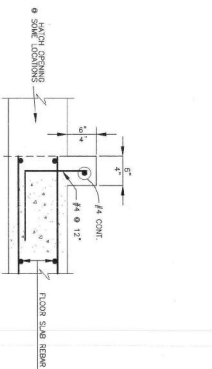
TYPICAL W.W.F. FOR CONCRETE FILL

N.T.S.



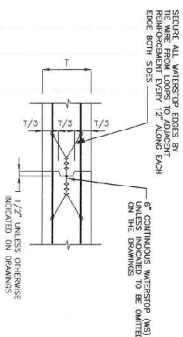
PLAN OR SECTION BONDING NEW CONCRETE
TO EXISTING CONCRETE

M.T.



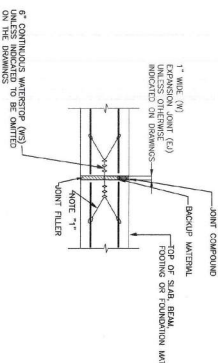
CURB DETAIL, (TYPICAL)

SCALE: 1"=1'-0"



PLAN OR SECTION—CONSTRUCTION JOINT
WITH WATERSTOP FOR SLABS,
FOOTINGS, FOUNDATION MATS AND WALLS.

N.T.S.



1. SECURE ALL WATERSTOP EDGES BY THE WIRE FROM LOOPS TO ADJACENT REINFORCEMENT EVERY 12" ALONG EACH EDGE BOTH SIDES.
2. JOINT COMPOUND W/ X 1/2" MIN. DEEP WITH BOND BREAKER BETWEEN BACK-UP MATERIAL AND JOINT COMPOUND.
3. JOINT COMPOUND TO BE CARRIED VERTICALLY ONE-FOOT MINIMUM BELOW FINISH GRADE ON BOTH SIDE OF SLABS, BEAMS, FOOTINGS AND FOUNDATION WALLS.
4. JOINT COMPOUND TO BE CARRIED VERTICALLY DOWN SIDES TO BOTTOM OF ELEVATED SLABS AND BEAMS WHICH ARE EXPOSED TO VIEW.

SECTION-EXPANSION JOINT
WITH WATERSTOP FOR SLABS,
FOOTINGS, FOUNDATION MATS AND WALLS

N.T.9

RECEIVED
FEB 19 2002
JAMA INC

Midwest

H₂O Engineering
Consulting Associates, Inc.

2 ALFRED CIRCLE, BEDFORD MA 01730

[illegible]

SCALE	AS NOTED
DRAWN BY	DD
DESIGNED BY	WGW
CHECKED BY	WGW

SUDBURY WATER DISTRICT

TOWN OF SUDBURY
199 RAYMOND ROAD
SUDBURY, MASSACHUSETTS

WATER TREATMENT PLANT FOR

WELLS NO. 2A, 6, 7 & 9

DETAILS

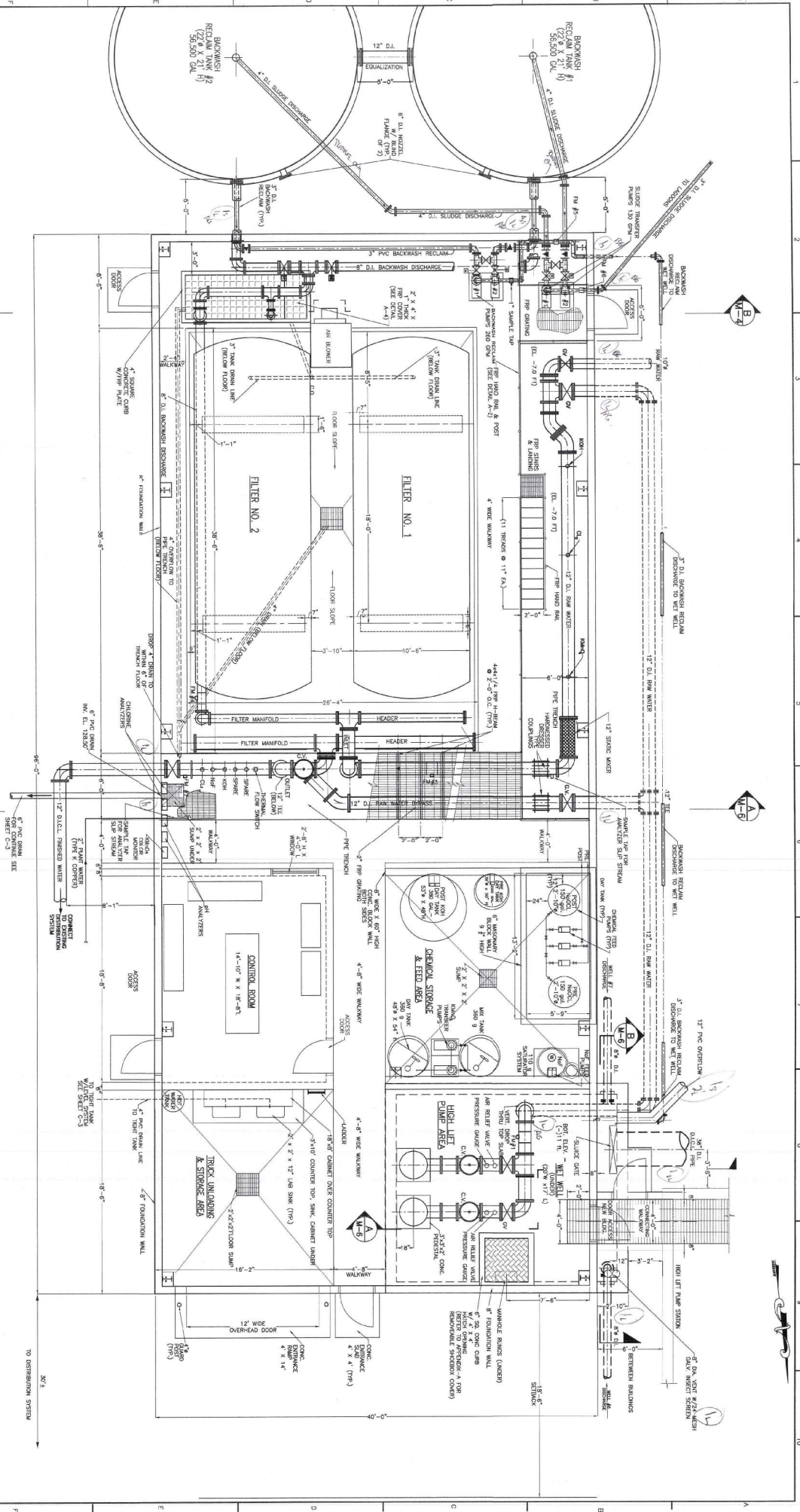
STRUCTURAL

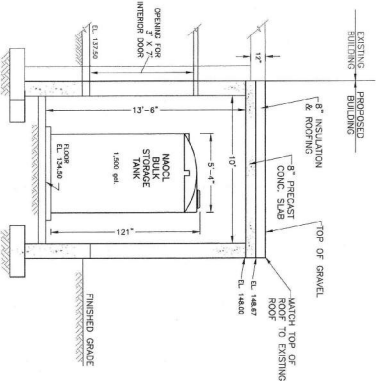
PROJECT NO.	2000-025
DATE	11/30/01
DRAWING NO.	S-7
SHEET OF SHEETS	

BID SET

NOTE: REFER TO DRAWING M-1 AND M-2 FOR PROCESS Piping THE GENERAL PIPING LAYOUT.

RECEIVED
FEB 13 2002
M-2





CHEMICAL NOTES

- BID SET**

BID SET

H₂O Engineering
Consulting Associates, Inc.

**WATER TREATMENT PLAN
FOR WELLS NO. 2A, 6, 7, AND 9
EXISTING HIGH LIFT PUMPING STATION AND
CHEMICAL STORAGE AREAS**

DATE	11/30/00
DRAWING NO.	M-3
SHEET OF	1

NUMBER	DESCRIPTION	DATE	BY
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			



**SUDBURY WATER DISTRICT
TOWN OF SUDBURY
199 RAYMOND ROAD
SUDBURY, MASSACHUSETTS**

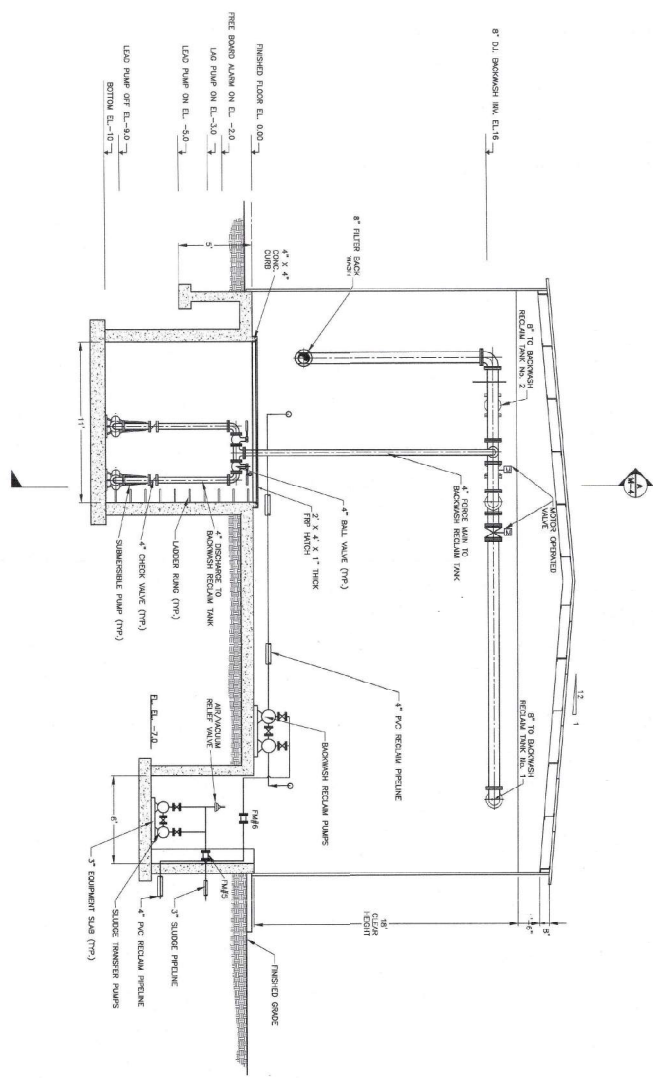
**WATER TREATMENT PLANT
FOR WELLS NO. 2A, 6, 7, AND 9
BACKWASH RECLAIM TANK PIPING
MECHANICAL**

PROJECT NO.	00-025
DATE	11/29/21
DRAWN BY	W-4
CHECKED BY	W-4
DESIGNED BY	W-4
SCALE	AS NOTED

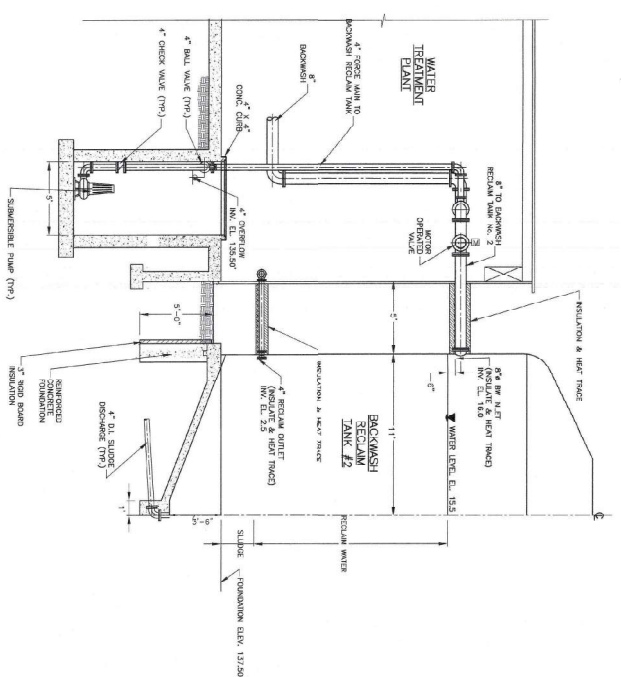
BID SET

RECEIVED
FEB 19 2022
TMA INC

SECTION B
SCALE: 1/4" = 1'-0"



SECTION A
SCALE: 1/4" = 1'-0"



**SUDBURY WATER DISTRICT
TOWN OF SUDBURY
199 RAYMOND ROAD
TOWN OF SUDBURY**

**WATER TREATMENT PLANT FOR
WELLS NO. 2A, 6, 7 & 9**

BACKWASH RECLAIM TANKS

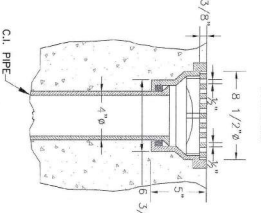
BID SET

- NOTES:
- THE 6" S. INLET AND 6" S. RECLAIM WATER WITHDRAWAL PIPES BETWEEN THE WTP BUILDING AND BACKWASH RECLAIM TANKS SHALL BE INSULATED & HEAT TRACED.
 - WHERE THE 4" S. SUDOE WITHDRAWAL PIPE PASSES THROUGH THE TANK FOUNDATION WALL THERE WILL PROVIDE 6" MINIMUM CLEARANCE BETWEEN CONCRETE AND OUTSIDE DIAMETER OF PIPE.
 - TANK SUPPLIER IS RESPONSIBLE FOR COMPLETE TANK STRUCTURAL MATERIALS INCLUDING FLOOR, FOUNDATION WATER WITHDRAWAL FLOOR, FOUNDATION WATER WITHDRAWAL FLOOR DECK AND INTERNAL PUMPING SYSTEM SUPPLIED AND INSTALLED BY OTHERS.
 - FLOOR DRAIN REFERENCE "B-4937-B" FROM KETNAH FOUNDRY COMPANY, OR EQUAL.

DETAIL-D

**B-4937-B
CAST IRON FLOOR
DRAIN WITH GRATE**

SECTION

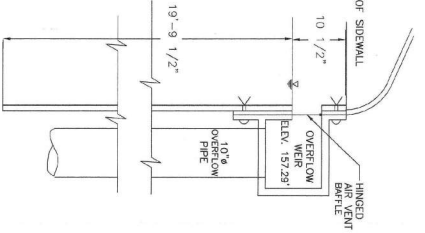


TOP VIEW



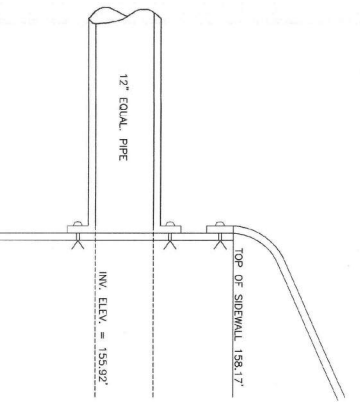
DETAIL-A

NOTES



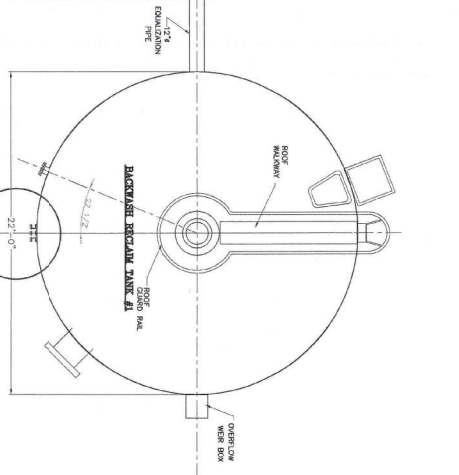
DETAIL-B

NOTES



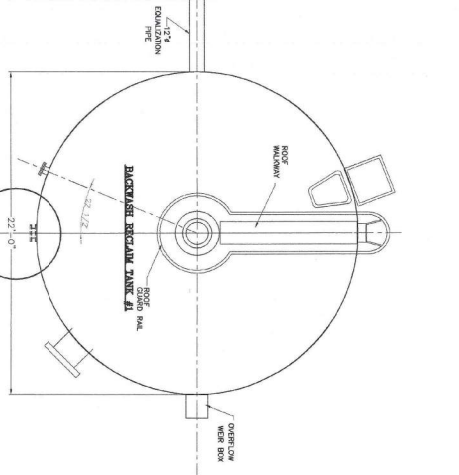
PLAN

DETAIL A



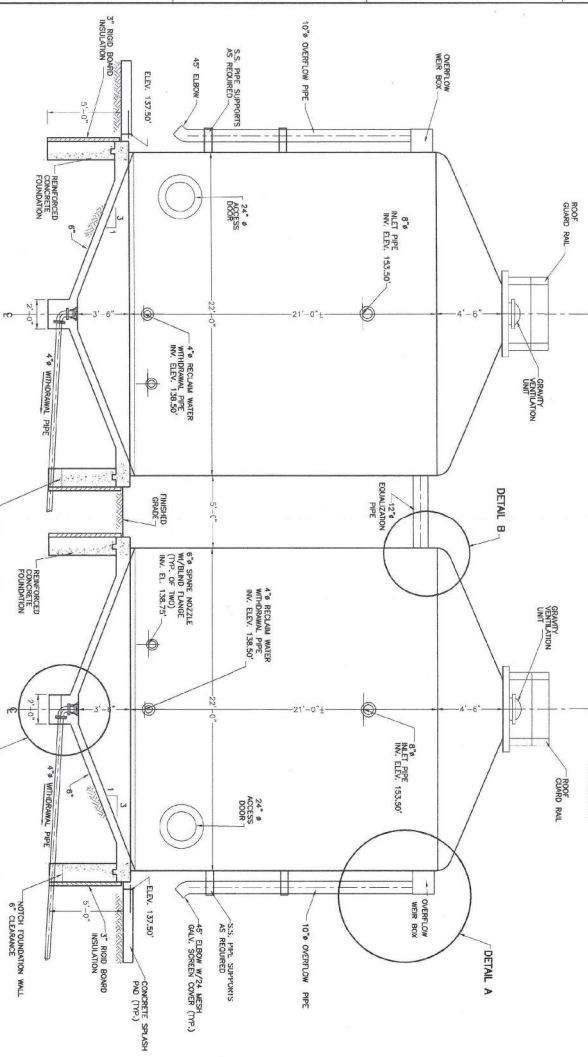
DETAIL B

NOTES



ELEVATION

SCALE 1/4" = 1'-0"



NOTE:

1. 1/2" ROD TO BE PARALLEL

2. 1/2" ROD TO BE PARALLEL

3. 1/2" ROD TO BE PARALLEL

4. 1/2" ROD TO BE PARALLEL

5. 1/2" ROD TO BE PARALLEL

6. 1/2" ROD TO BE PARALLEL

7. 1/2" ROD TO BE PARALLEL

8. 1/2" ROD TO BE PARALLEL

9. 1/2" ROD TO BE PARALLEL

10. 1/2" ROD TO BE PARALLEL

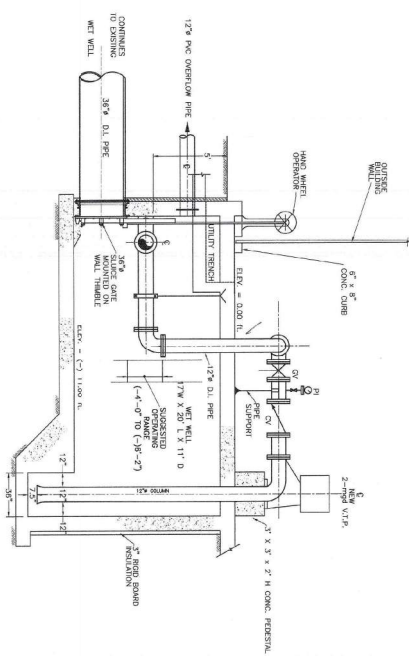
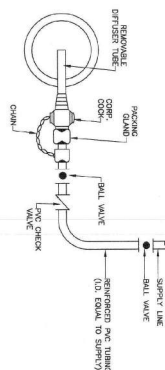
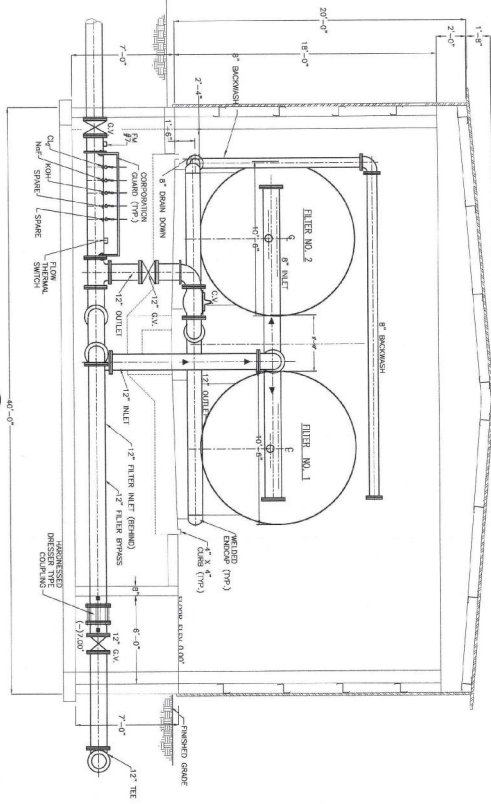
11. 1/2" ROD TO BE PARALLEL

12. 1/2" ROD TO BE PARALLEL

13. 1/2" ROD TO BE PARALLEL

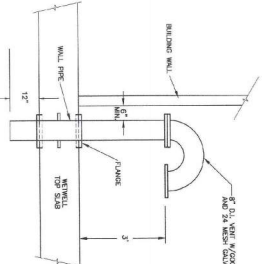
14. 1/2" ROD TO BE PARALLEL

15. 1/2" ROD TO BE PARALLEL

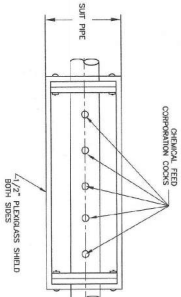


SECTION A-B
THROUGH PIPE TRENCH
IN FRONT OF FILTERS
SCALE 1/4"=1'-0"

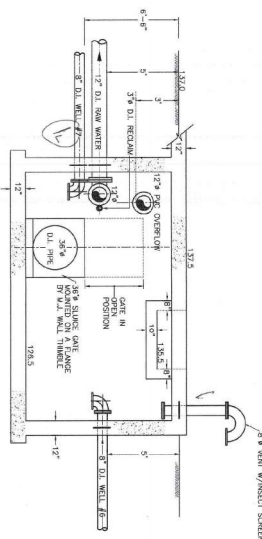
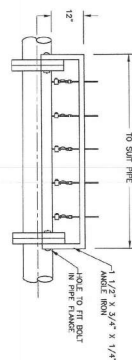
SECTION A-B
NEW WEL WELL
SCALE 1/4"=1'-0"



METWELL VENT DETAIL
NOT TO SCALE



CHEMICAL FEED
CORPORATION GUARD
NOT TO SCALE



SECTION A-B
NEW WEL WELL
SCALE 1/4"=1'-0"

BID SET

H₂O Engineering
Consulting Associates, Inc.

SUDBURY WATER DISTRICT

TOWN OF SUDBURY

199 RAYMOND ROAD
TOWN OF SUDBURY

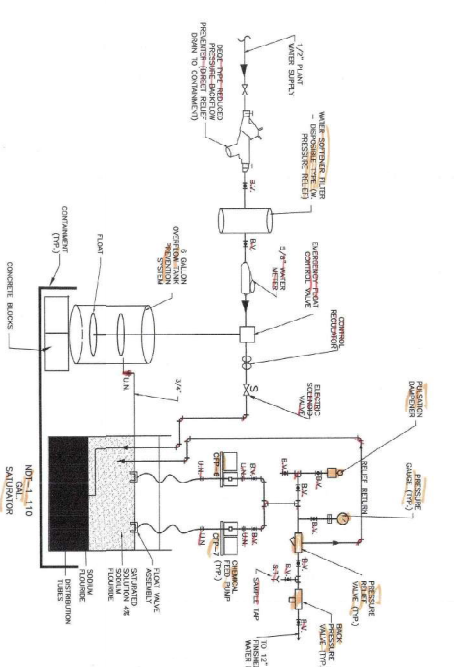
WATER TREATMENT PLANT FOR

WELLS No. 2A, 6, 7 & 9

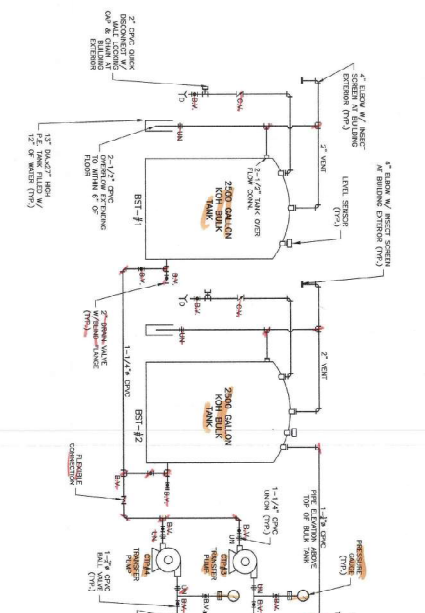
FILTER FACE PIPING AT PIPE TRENCH &
WTP WEL WELL & PIPING DETAILS

PROJECT NO. 2000-025
DATE 11/20/01
DRAWING NO. M-6
SHEET OF SHEETS

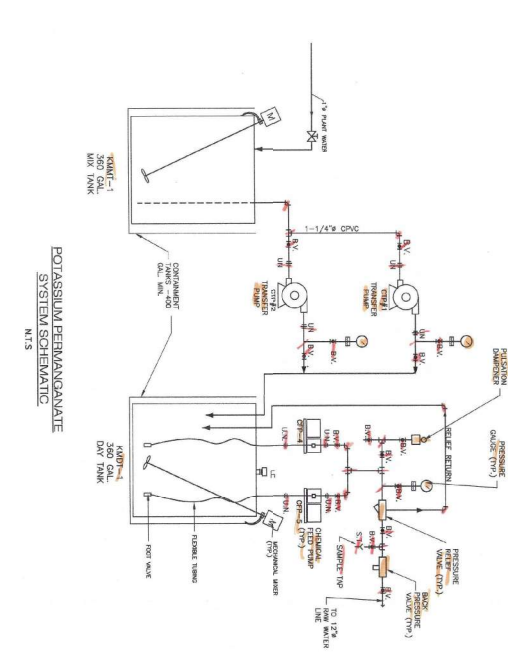
DESIGNED BY
FEB 13 2002
SCALE 1/4"=1'-0"



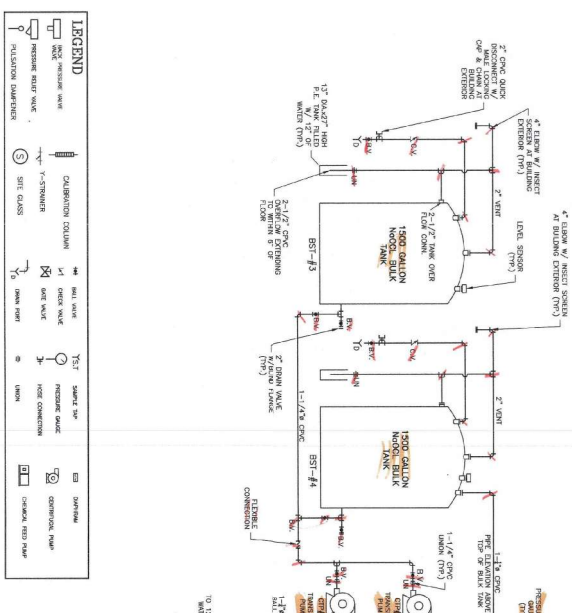
SODIUM FLUORIDE SYSTEM SCHEMATIC
N.T.S.



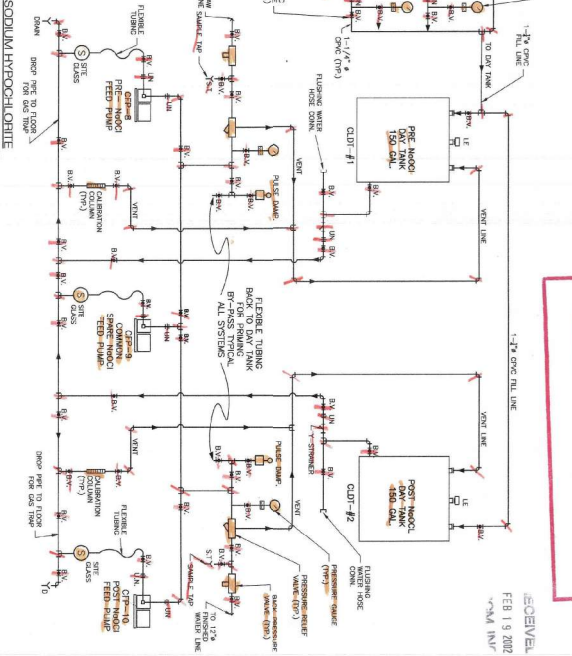
POTASSIUM HYDROXIDE FEED SYSTEM SCHEMATIC
N.T.S.



POTASSIUM PERMANGANATE
SYSTEM SCHEMATIC
N.T.S.



SODIUM HYDROCHLORIDE
CHEMICAL FEED SCHEMATIC
N.T.S.



WATER TREATMENT PLAN
FOR WELLS NO. 2A, 6, 7, AND 9
CHEMICAL FEED SYSTEM
DETAIL SCHEMATIC DIAGRAMS
N.T.S.

H₂O Engineering
Consulting Associates, Inc.

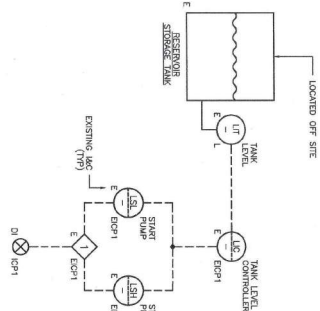
DATE	BY	SCALE	AS NOTED
12-5-01	TP	1" = 10'	TP
	WOW		WOW
	WOW		WOW

SUDBURY WATER DISTRICT
TOWN OF SUDBURY
199 RAYMOND ROAD
SUDBURY, MASSACHUSETTS

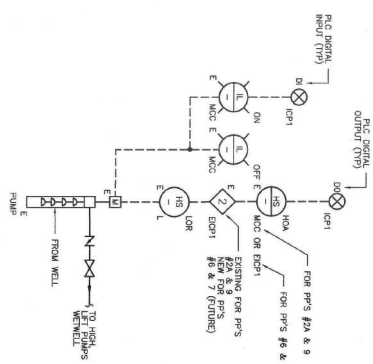
PROJECT NO. 00-025
DATE 11/6/01
DRAWING NO. M-9
SHEET 1 OF 3

BID SET

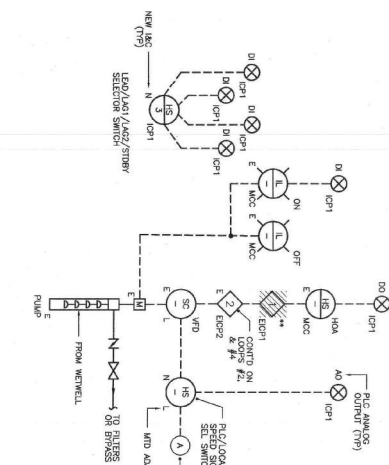
FEEL 19 2002
SMA INC



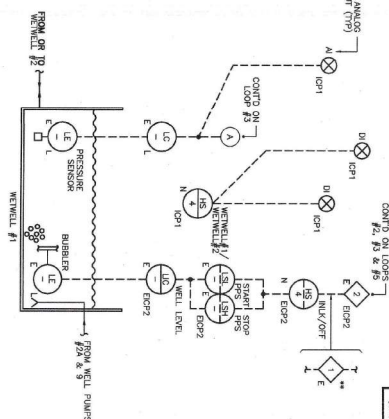
EXISTING RESERVOIR STORAGE TANK
I&C LOOP #1 DIAGRAM



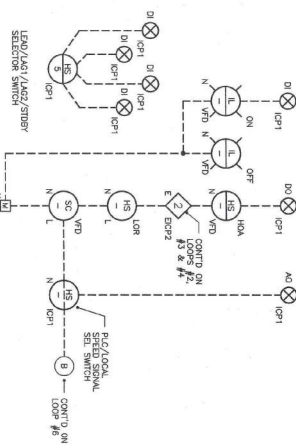
EXISTING LOW LIFT WELL PUMP #EWP-2A
I&C LOOP #2 DIAGRAM



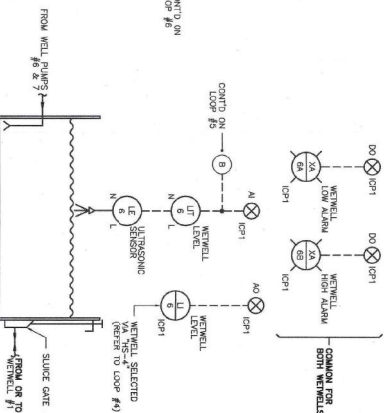
EXISTING HIGH LIFT PUMP EHL#1
I&C LOOP #3 DIAGRAM *



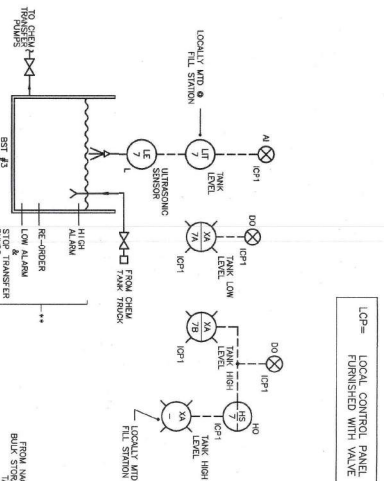
EXISTING HLP WETWELL,
1&C LOOP #4 DIAGRAM *



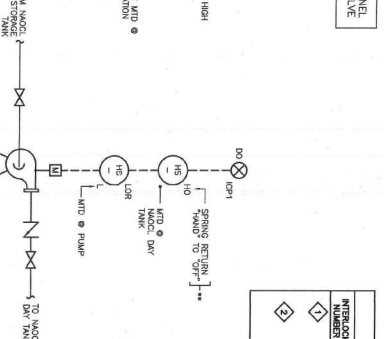
NEW WTP HIGH LIFT PUMP WTPP #1
I&C LOOP #5 DIAGRAM *



NEW WTP WETWELL,
1&C LOOP #6 DIAGRAM



SODIUM HYPOCHLORITE (NAOCL),
BULK STORAGE TANK
I&C LOOP #7 DIAGRAM *



SODIUM HYPOCHLORITE (NAOCL)
TRANSFER PUMP
I&C LOOP #9 DIAGRAM *

INSTRUMENTATION & CONTROL INTERLOCKS *	
INTERLOCK NUMBER	INTERLOCK DESCRIPTION
1	START WATER HIGH LIFT PUMPS #1 & #2 WHEN RESERVOIR TANK IS LOW AND STOP WATER PUMPS WHEN RESERVOIR TANK IS HIGH.
2	a) START WELL PUMPS WHEN WETWELL LEVEL IS LOW b) STOP WELL PUMPS WHEN WETWELL LEVEL IS HIGH c) STOP HIGH LIFT PUMPS WHEN WETWELL IS LOW/LOW

- * I&C SUPPLIER SHALL FIELD SURVEY AND FIELD MODIFY EXISTING I&C PANEL "EICP2" AS REQUIRED FOR INTERLOCKS

RECEIVED
FEB 19 2002
JGM INR

BID SET

ASTRINIZATION DRAWINGS REFERENCE NOTES

- 1) FOR GENERAL NOTES, SYMBOLS AND ABBREVIATIONS, REFER TO DWG # 1-1
- 2) FOR IAC LOOP DIAGRAMS, REFER TO DWGS # 1-2 THRU 1-6
- 3) FOR IAC PANELS, REFER TO DWGS # 1-7 AND 1-8
- 4) FOR IAC RISER DIAGRAM AND DETAILS, REFER TO DWG # 1-9

H₂O Engineering,
Consulting Associates
2 Alfred Circle
Bedford, MA 01730

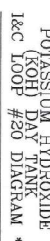
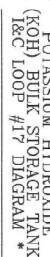
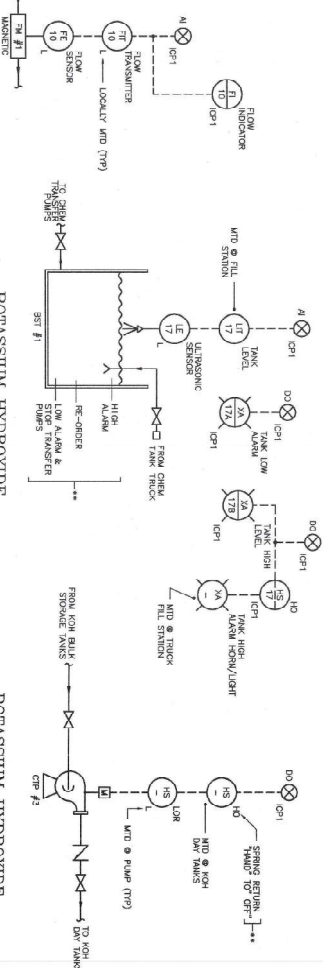
SED ASSOCIATES CORP.
Consulting Engineers
132 LINCOLN STREET
BOSTON, MA 02111
TEL: (617) 550-7245
FAX: (617) 550-0332

[illegible]

SCALE	NONE
DRAWN BY	CLB
DESIGNED BY	RTG
CHECKED BY	WPE

**SUDBURY WATER DISTRICT
TOWN OF SUDBURY
199 RAYMOND ROAD
SUDBURY, MASSACHUSETTS**

PROJECT	PROJECT NO. 2000-28
WATER TREATMENT PLANT FOR WELLS NO. 2a, 6, 7 & 9	
TITLE	DATE 1/09/02
LOOP DIAGRAMS 1st	
INSTRUMENTATION & CONTROL	
DRAWING NO.	1-2
SHEET 33 OF 60 SHEETS	



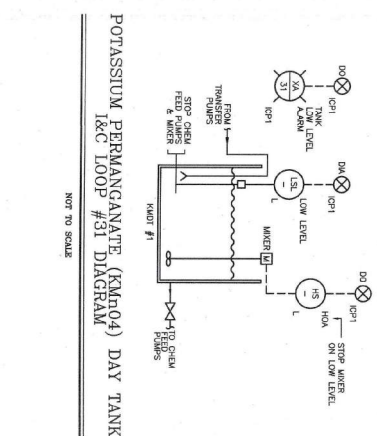
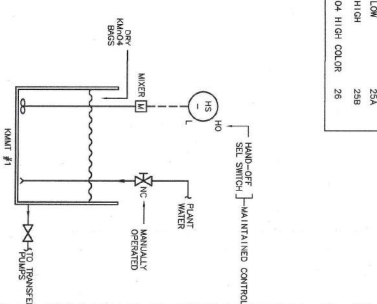
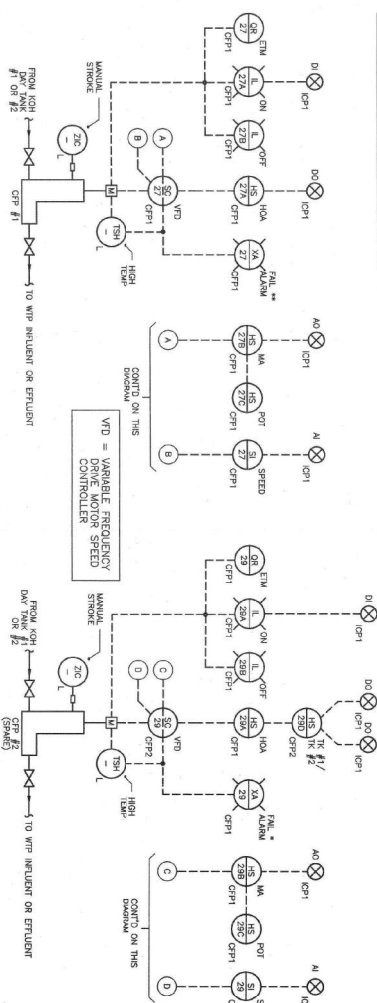
FLOW METERS SCHEDULE		
746	LOOP	SERVICE
		FLOW RANGE
FM #1	10	WTP PUMPS 0-2566 GPM
FM #2	11	ENT. PUMPS 0-1390 GPM
FM #3	12	WTP & ENT. PUMPS 0-2566 GPM
FM #4	13	BACKWASH 0-1200 GPM
FM #5	14	BACKWASH RECLAIM 0-2620 GPM
FM #6	15	SLUDGE TRANSFER 0-150 GPM
FM #7	16	FINISHED WATER 0-2566 GPM

CFP= CHEMICAL FEED PUMP
CONTROL PANEL, FURNISHED
WITH I&C SYSTEM (TYPICAL)

IF CHEMICAL FEED PUMPS REQUIRE A LEAK SENSOR, IAC SUPPLIER SHALL ADD TO "CIP PANEL AT NO ADDITIONAL COST VIA SEPARATE AUMM (TYPICAL).

CHEMICAL ANALYZERS ALARM SCHEDULE	LOOP NO
ALARM DESCRIPTION	
PRIE CL2 LOW	22A
PRIE CL2 HIGH	22B
PRIE PH LOW	23A
PRIE PH HIGH	23B
POST CL2 LOW	24A
POST CL2 HIGH	24B
POST PH LOW	25A
POST PH HIGH	25B
POST KANODA HIGH COLOR	26

CHEMICAL ANALYZERS SCHEDULE		
TAG	LOOP	SERVICE
PRE CL2	22	PRE CHLORINATION MONITORING
PRE PH	23	PRE PH MONITORING
POST CL2	24	POST CHLORINATION MONITORING
POST PH	25	POST PH MONITORING
POST KMnO4	26	POST KMnO4 MONITORING



馬 氏

```

graph LR
    CHART_RECORDER[M1 22 CHART RECORDER] -.-> INDICATING_TRANSMITTER[M2 22 INDICATING TRANSMITTER]
    INDICATING_TRANSMITTER --> SIGNAL_GENERATOR[M3 22 SIGNAL GENERATOR]
    SIGNAL_GENERATOR --> CHART_RECORDER
    CHART_RECORDER --> CHART_LOGIC[M4 22 CHART LOGIC]
    CHART_LOGIC --> CHART_DING[M5 22 CHART DING]
    CHART_DING --> CHART_LOGIC

```

NOTE: POST-AMPLIFIER DOES NOT HAVE A CHART RECORDER & HAS A CEN-10 OUTPUT FOR THE ALARM

- * PUMP CFP #3 IS SIMILAR EXCEPT FOR LOOP #28 AND I/O NUMBERS
- ** INDIVIDUAL ALARM LIGHTS FOR:
 - MOTOR OVERLOAD
 - MOTOR HIGH TEMP
 - VFD FAULT

PUMP CFP #2 IS STANDBY PUMP
FOR PUMP CFP #1 OR CFP #3

NOT TO SCALE

* INDIVIDUAL ALARM LIGHTS FOR

- MOTOR OVERLOAD
- MOTOR HIGH TEMP
- VFD FAULT

NOT TO SCALE

RECEIVED
FEB 19 2000
JCN IN

1) FOR GENERAL NOTES, SYMBOLS AND ABBREVIATION
REFER TO DMC 4.1-1

4) FOR IAC RISER DIMGRAM AND DETAILS, REFER TO DIMG # 1-9

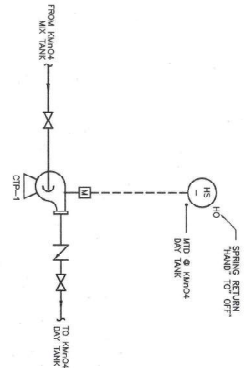
H2O Engineering
Consulting Associates, Inc.
Bedford, MA 01730

SED ASSOCIATES CORP.
Consulting Engineers
300 Main Street
Bedford, MA 01730
TEL: (617) 335-0332

NO.	DESCRIPTION	DATE	BY
1	AS SHOWN		
2	DESIGNED BY STG		
3	CHECKED BY JFC		

SUDBURY WATER DISTRICT
TOWN OF SUDBURY
199 RAYMOND ROAD
SUDBURY, MASSACHUSETTS

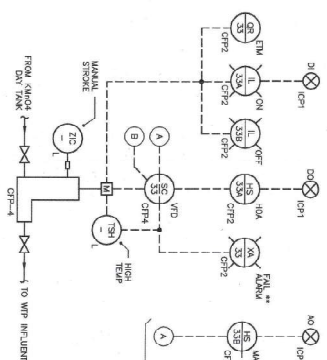
PROJECT	PROJ. NO.	DATE
WATER TREATMENT PLANT FOR WELLS NO. 2A, 6, 7 & 9	2000-25	1/09/02
LOOP DIAGRAMS "III"	DRAWING NO.	1-4
INSTRUMENTATION & CONTROL	SHEET 35 OF 80 SHEETS	



POTASSIUM PERMANGANATE
TRANSFER PUMP #CIP-1
I&C LOOP #32 DIAGRAM *

NOT TO SCALE

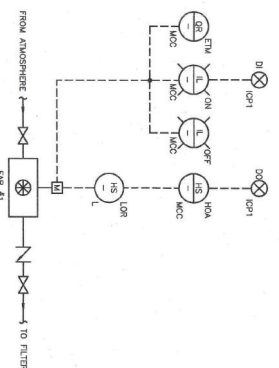
VFD = VARIABLE FREQUENCY DRIVE
MOTOR CONTROLLER



POTASSIUM PERMANGANATE FEED PUMP #CIP-4
I&C LOOP #33 DIAGRAM *

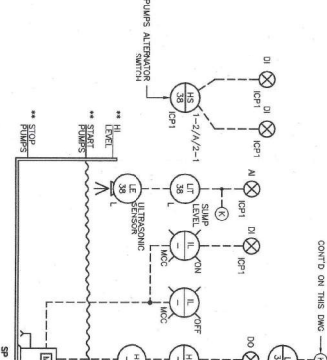
NOT TO SCALE

INSTRUMENTATION & CONTROL INTERLOCK
NUMBER
DESCRIPTION
WHEN VALVE IS FULLY OPEN OR FULLY CLOSED, INTERLOCKED VALVE POSITION INDICATING LIGHTS AND FIELD INDICATORS



FILTERS AIR BLOWER
I&C LOOP #37 DIAGRAM

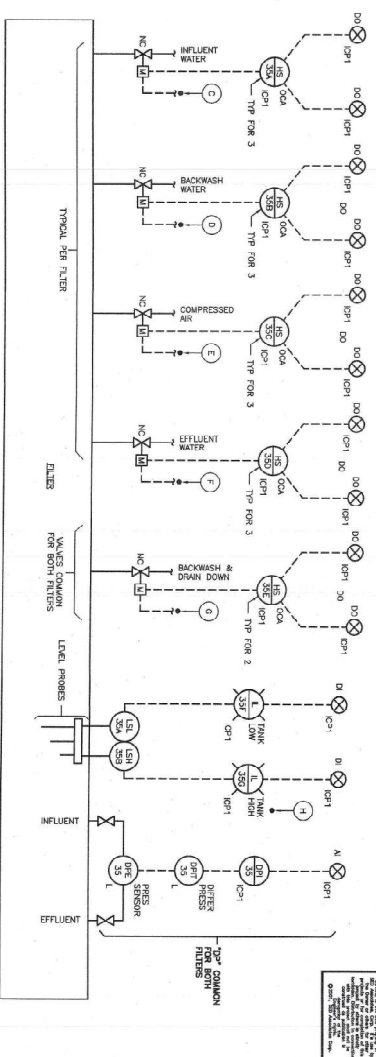
NOT TO SCALE



FILTERS DRAIN PUMP AND PUMP #SP-1
I&C LOOP #38 DIAGRAM *

NOT TO SCALE

* PUMP SP #1 IS SIMILAR EXCEPT FOR I/O'S
* LEVELS EXISTING PROVIDED BY PROCESS DRAWINGS



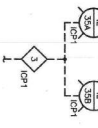
GREENSAND FILTER #1
I&C LOOP #35 DIAGRAM *

NOT TO SCALE

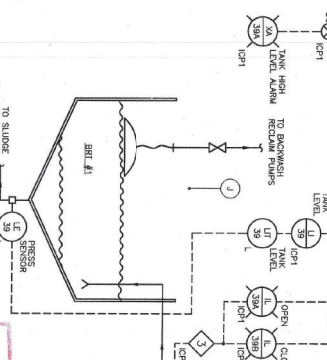
* FILTER #2 IS SIMILAR EXCEPT FOR LOOP #36 AND I/O'S

VALVE POSITION LIGHTS DETAIL

NOT TO SCALE



* DETAILS (1) THRU (4) ARE SIMILAR EXCEPT FOR LOOP NUMBERS AND I/O'S



BACKWASH RECLAIM TANK #1
I&C LOOP #39 DIAGRAM *

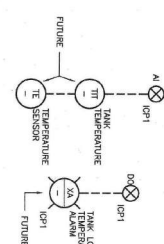
NOT TO SCALE

* TANK BERT #2 IS SIMILAR EXCEPT FOR LOOP #40 AND I/O'S

BID SET

BACKWASH RECLAIM TANK
TEMPERATURE DETAIL

NOT TO SCALE



INSTRUMENTATION DRAWINGS REFERENCE NOTES

- FOR GENERAL NOTES, SYMBOLS AND ABBREVIATIONS, REFER TO SHEET 1-1.
- FOR I&C LOOP DIAGRAMS, REFER TO SHEETS 1-2 THRU 1-4.
- FOR I&C PANELS, REFER TO SHEETS 1-7 AND 1-8.
- FOR I&C PNEUMATIC DIAGRAM AND DETAILS, REFER TO SHEET 1-9.

DESIGNED BY
FEB 19 2002
JMA

H₂O Engineering
Consulting Associates, Inc.
Bedford, MA 01730

SEI ASSOCIATES CORP.
Consulting Engineers
2000 N. 10th St.
Bedford, MA 01730
TEL: (617) 252-5333

NUMBER	DESCRIPTION	DATE	BY	SCALE	NOTES
1	DESIGNED BY			CLB	
2	DESIGNED BY			RTO	
3	CHECKED BY			WFE	



SUDBURY WATER DISTRICT
TOWN OF SUDBURY
199 RAYMOND ROAD
SUDBURY, MASSACHUSETTS

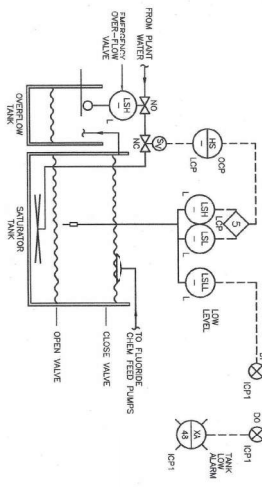
WATER TREATMENT PLANT FOR
WELLS NO. 2A, 6, 7 & 9

PROJECT	TITLE	DATE	PROJECT NO.
LOOP DIAGRAMS "TV"	WELLS NO. 2A, 6, 7 & 9	1/7/02	2000-25
INSTRUMENTATION & CONTROL			

PROJECT NO. 2000-25
DATE 1/7/02
DRAWING NO. I-5
SHEET 26 OF 60 SHEETS
FEB 13 2002

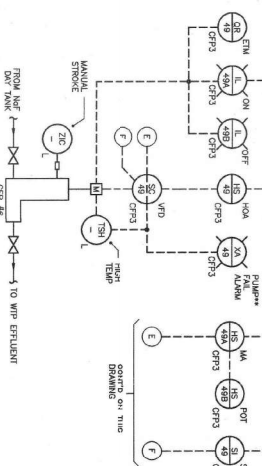
SODIUM FLUORIDE (NaF) SYSTEM I&C LOOP #48 DIAGRAM

NOT TO SCALE



SODIUM FLUORIDE (NaF) CHEMICAL FEED PUMP CFP #6 I&C LOOP #44 DIAGRAM

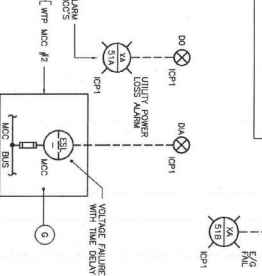
NOT TO SCALE



BID SET

WTP BUILDING POWER SYSTEM I&C LOOP #51 DIAGRAM

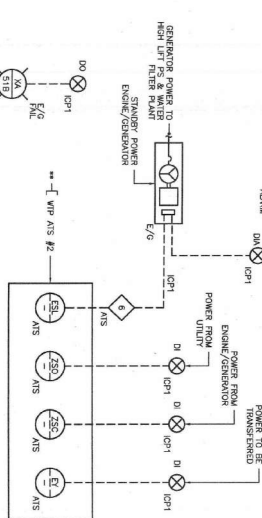
NOT TO SCALE



- INSTRUMENTATION DRAWINGS REFERENCE NOTES:
- 1) FOR GENERAL NOTES, SYMBOLS AND ABBREVIATIONS, REFER TO DWG # I-1
 - 2) FOR I&C LOOP DIAGRAMS, REFER TO DWG # I-2 THRU I-6
 - 3) AND I-5 PAGES, REFER TO DWG # I-7
 - 4) FOR I&C Riser Diagram AND DETAILS, REFER TO DWG # I-9

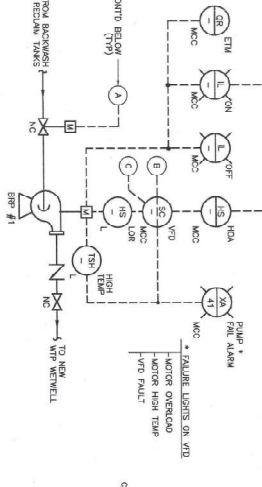
MCC AUTOMATIC TRANSFER SWITCH & ENGINE/GENERATOR DETAIL

NOT TO SCALE



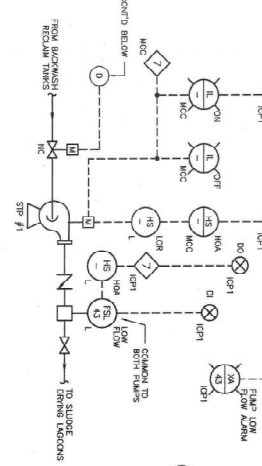
BACKWASH RECLAIM PUMP BRP #1 I&C LOOP #41 DIAGRAM

NOT TO SCALE



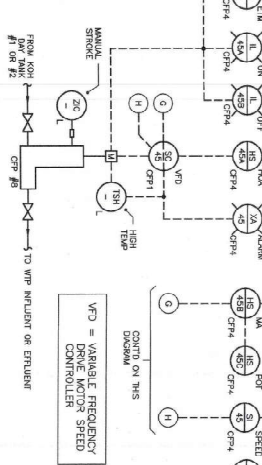
SLUDGE TRANSFER PUMP STP #1 I&C LOOP #43 DIAGRAM

NOT TO SCALE



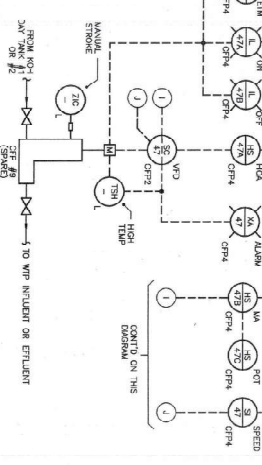
SODIUM HYPOCHLORITE (NaOCl) FEED PUMP I&C LOOP #46 DIAGRAM

NOT TO SCALE



SODIUM HYPOCHLORITE (NaOCl) FEED PUMP I&C LOOP #47 DIAGRAM

NOT TO SCALE



* PUMP CFP #10 IS SHARED EXCEPT FOR LOOP #46 AND I/O NUMBERS

* INVERTED ALARM LIGHTS FOR: - MOTOR OVERLOAD - MOTOR HIGH TEMP - VFD FAULT

* PUMP CFP #9 IS STANDBY PUMP FOR PUMP CFP #8 OR CFP #10

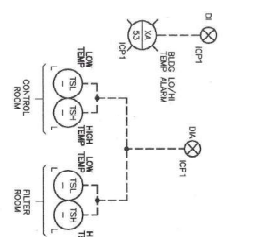
* INVERTED ALARM LIGHTS FOR: - MOTOR OVERLOAD - MOTOR HIGH TEMP - VFD FAULT

* PUMP CFP #10 IS STANDBY PUMP FOR PUMP CFP #8 OR CFP #10

* INVERTED ALARM LIGHTS FOR: - MOTOR OVERLOAD - MOTOR HIGH TEMP - VFD FAULT

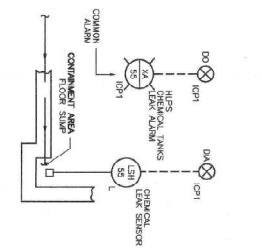
* PUMP CFP #10 IS STANDBY PUMP FOR PUMP CFP #8 OR CFP #10

* INVERTED ALARM LIGHTS FOR: - MOTOR OVERLOAD - MOTOR HIGH TEMP - VFD FAULT



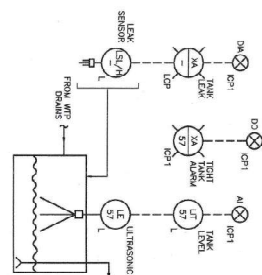
WWTP BUILDING LOW/HIGH TEMPERATURES
1&C LOOP #53 DIAGRAM*

* HIGH LIFT PUMP STATION & SODIUM HYPOCHLORITE BUILDING IS SIMILAR EXCEPT FOR I/O & LOOP #54 NUMBERS

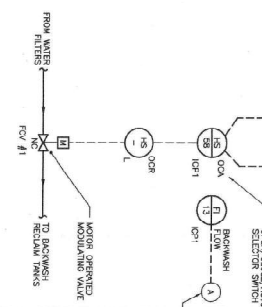


POTASSIUM HYDROXIDE
(KOH) BULK STORAGE TANKS/PUMP
CHEMICAL LEAK I&C LOOP #55 DIAGRAM

* SODIUM HYPOCHLORITE STORAGE TANKS ROOMS
SIMILAR EXCEPT LOOP #56 AND I/O'S

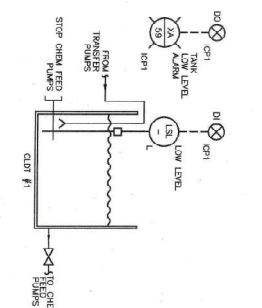
WTP DRAINS TIGHT TANK
I&C LOOP #57 DIAGRAM*

* TANK LEAK IBC FURNISHED WITH TIGHT TANK



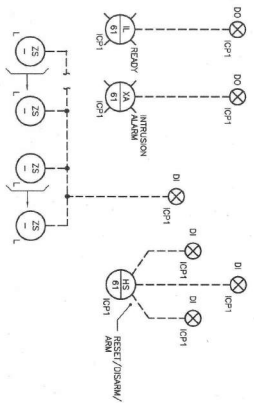
BACKWASH FLOW CONTROL
I&C LOOP #58 DIAGRAM*

MODULATING SERVICE (VALVE DRIVING OUTPUT)
OPERATE TO CONTROL TO FLOW SET-POINT



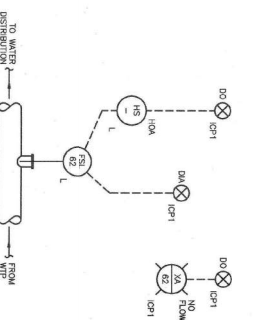
SODIUM HYPOCHLORITE (NaOCl)
DAY TANK
I&C LOOP #59 DIAGRAM *

* TANK CLDT #2 IS SIMILAR EXCEPT FOR LOOP #60 AND I/O'S



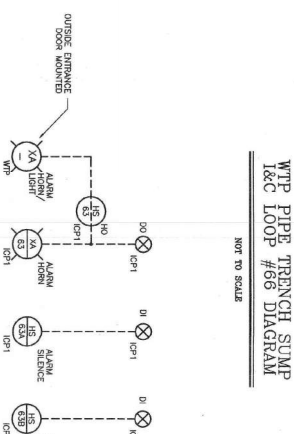
WTP BUILDING INTRUSION
I&C LOOP #61 DIAGRAM*

- * 1) UPON BLDG ENTRANCE, PROVIDE ADJUSTABLE TIME DELAY (PRIOR TO "DISARM" ACTUATION)
- 2) AFTER "ARMING", PROVIDE ADJUSTABLE TIME DELAY (PRIOR TO DOOR SWITCHES MONITORING)



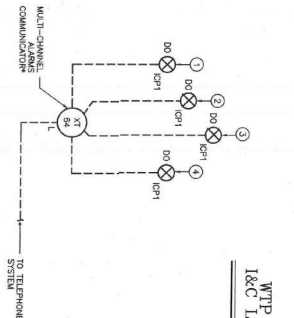
WTP FINISHED WATER "NO FLOW" SWITCH
I&C LOOP #62 DIAGRAM *

* ENERGIZE FLOW SWITCH (W/ ADJUSTABLE TIME DELAY ON ALARM WHEN PLANT IS OPERATING)



WTP PIPE TRENCH SUMP
I&C LOOP #66 DIAGRAM

NOT TO SCALE

WTP REMOTE ALARMS
I&C LOOP #64 DIAGRAM

① CRITICAL PROCESS ③ BLDGS INTRUSION
② NON-CRITICAL PROCESS ④ SPARE

WTP PLANT START-UP
I&C LOOP #65 DIAGRAM

NOT TO SCALE

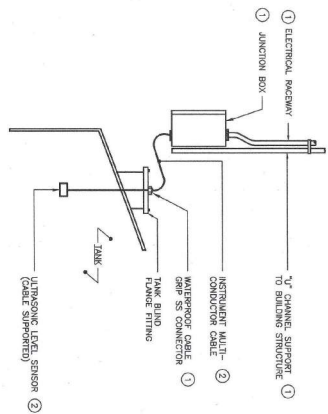
REFER TO DRAWING #1-8 FOR ALARM
ANNUNCIATOR ZONE SCHEDULE

BID SET

This document, as an instrument of service, is the sole property of 3M Innovative Corp. It is loaned to the owner or client for their use in the preparation of the project. It is not to be reproduced, distributed or used in any other project without the written consent of 3M Innovative Corp.



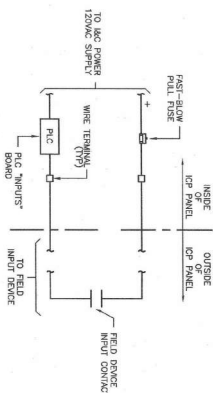
- 1) FOR GENERAL NOTES, SYMBOLS AND ABBREVIATIONS, REFER TO DWG # 1-1
- 2) FOR IAC LOOP DIAGRAMS, REFER TO DWGS # 1-2 THRU 1-6
- 3) FOR IAC PANELS, REFER TO DWGS # 1-7 AND 1-8
- 4) FOR IAC RISER DIAGRAM AND DETAILS, REFER TO DWG # 1-9



TYPICAL CHEMICAL BULK STORAGE TANK LEVEL SENSOR MTG & WIRING DETAIL

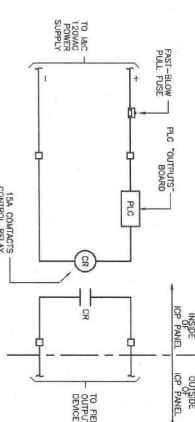
1. FINISHED & INSTALLED BY ELECTRICAL CONTRACTOR.
2. FINISHED WITH INSTRUMENTATION & INSTALLED BY ELECTRICAL CONTRACTOR.

NOT TO SCALE



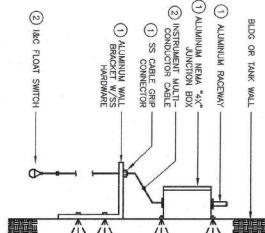
TYPICAL I&C PANEL PIG INPUTS WIRING DIAGRAM

NOT TO SCALE



TYPICAL I&C PANEL PIG OUTPUTS WIRING DETAIL

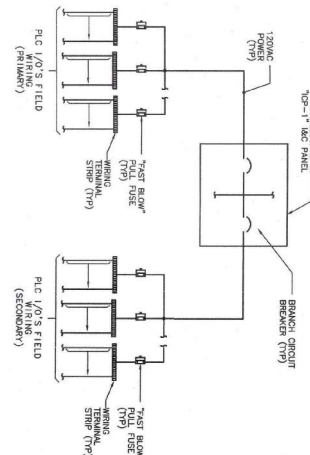
NOT TO SCALE



TYPICAL FLOAT SWITCH MOUNTING & WIRING DETAIL

1. FINISHED & INSTALLED BY ELECTRICAL CONTRACTOR.
2. FINISHED WITH INSTRUMENTATION & INSTALLED BY ELECTRICAL CONTRACTOR.

NOT TO SCALE



TYPICAL I&C'S POWER SUPPLY WIRING DETAIL

NOT TO SCALE

ALARM NO	LOCATION AND ALARM	INITIATING DEVICE DESCRIPTION
1	WATER TREATMENT PLANT AND HIGH LIFT PUMP STATION	WATER TREATMENT PLANT AND HIGH LIFT PUMP STATION
2	WATER TREATMENT PLANT AND HIGH LIFT PUMP STATION	WATER TREATMENT PLANT AND HIGH LIFT PUMP STATION
3	WATER TREATMENT PLANT AND HIGH LIFT PUMP STATION	WATER TREATMENT PLANT AND HIGH LIFT PUMP STATION
4	WATER TREATMENT PLANT AND HIGH LIFT PUMP STATION	WATER TREATMENT PLANT AND HIGH LIFT PUMP STATION
5	WATER TREATMENT PLANT AND HIGH LIFT PUMP STATION	WATER TREATMENT PLANT AND HIGH LIFT PUMP STATION
6	WATER TREATMENT PLANT AND HIGH LIFT PUMP STATION	WATER TREATMENT PLANT AND HIGH LIFT PUMP STATION
7	WATER TREATMENT PLANT AND HIGH LIFT PUMP STATION	WATER TREATMENT PLANT AND HIGH LIFT PUMP STATION
8	WATER TREATMENT PLANT AND HIGH LIFT PUMP STATION	WATER TREATMENT PLANT AND HIGH LIFT PUMP STATION
9	WATER TREATMENT PLANT AND HIGH LIFT PUMP STATION	WATER TREATMENT PLANT AND HIGH LIFT PUMP STATION
10	WATER TREATMENT PLANT AND HIGH LIFT PUMP STATION	WATER TREATMENT PLANT AND HIGH LIFT PUMP STATION

1	KOH BULK STORAGE TANK # 1 HIGH LEVEL	TANK # 1 LEVEL TRANSDUCER
2	KOH BULK STORAGE TANK # 1 LOW LEVEL	TANK # 1 LEVEL TRANSDUCER
3	KOH BULK STORAGE TANK # 2 HIGH LEVEL	TANK # 2 LEVEL TRANSDUCER
4	KOH BULK STORAGE TANK # 2 LOW LEVEL	TANK # 2 LEVEL TRANSDUCER
5	KOH BULK STORAGE TANK # 3 HIGH LEVEL	TANK # 3 LEVEL TRANSDUCER
6	KOH BULK STORAGE TANK # 3 LOW LEVEL	TANK # 3 LEVEL TRANSDUCER
7	KOH BULK STORAGE TANK # 4 HIGH LEVEL	TANK # 4 LEVEL TRANSDUCER
8	KOH BULK STORAGE TANK # 4 LOW LEVEL	TANK # 4 LEVEL TRANSDUCER
9	KOH BULK STORAGE TANK # 5 HIGH LEVEL	TANK # 5 LEVEL TRANSDUCER
10	KOH BULK STORAGE TANK # 5 LOW LEVEL	TANK # 5 LEVEL TRANSDUCER
11	KOH BULK STORAGE TANK # 6 HIGH LEVEL	TANK # 6 LEVEL TRANSDUCER
12	KOH BULK STORAGE TANK # 6 LOW LEVEL	TANK # 6 LEVEL TRANSDUCER
13	KOH BULK STORAGE TANK # 7 HIGH LEVEL	TANK # 7 LEVEL TRANSDUCER
14	KOH BULK STORAGE TANK # 7 LOW LEVEL	TANK # 7 LEVEL TRANSDUCER
15	KOH BULK STORAGE TANK # 8 HIGH LEVEL	TANK # 8 LEVEL TRANSDUCER
16	KOH BULK STORAGE TANK # 8 LOW LEVEL	TANK # 8 LEVEL TRANSDUCER
17	KOH BULK STORAGE TANK # 9 HIGH LEVEL	TANK # 9 LEVEL TRANSDUCER
18	KOH BULK STORAGE TANK # 9 LOW LEVEL	TANK # 9 LEVEL TRANSDUCER
19	KOH BULK STORAGE TANK # 10 HIGH LEVEL	TANK # 10 LEVEL TRANSDUCER
20	KOH BULK STORAGE TANK # 10 LOW LEVEL	TANK # 10 LEVEL TRANSDUCER
21	KOH BULK STORAGE TANK # 11 HIGH LEVEL	TANK # 11 LEVEL TRANSDUCER
22	KOH BULK STORAGE TANK # 11 LOW LEVEL	TANK # 11 LEVEL TRANSDUCER
23	KOH BULK STORAGE TANK # 12 HIGH LEVEL	TANK # 12 LEVEL TRANSDUCER
24	KOH BULK STORAGE TANK # 12 LOW LEVEL	TANK # 12 LEVEL TRANSDUCER
25	KOH BULK STORAGE TANK # 13 HIGH LEVEL	TANK # 13 LEVEL TRANSDUCER
26	KOH BULK STORAGE TANK # 13 LOW LEVEL	TANK # 13 LEVEL TRANSDUCER
27	KOH BULK STORAGE TANK # 14 HIGH LEVEL	TANK # 14 LEVEL TRANSDUCER
28	KOH BULK STORAGE TANK # 14 LOW LEVEL	TANK # 14 LEVEL TRANSDUCER
29	KOH BULK STORAGE TANK # 15 HIGH LEVEL	TANK # 15 LEVEL TRANSDUCER
30	KOH BULK STORAGE TANK # 15 LOW LEVEL	TANK # 15 LEVEL TRANSDUCER
31	KOH BULK STORAGE TANK # 16 HIGH LEVEL	TANK # 16 LEVEL TRANSDUCER
32	KOH BULK STORAGE TANK # 16 LOW LEVEL	TANK # 16 LEVEL TRANSDUCER
33	KOH BULK STORAGE TANK # 17 HIGH LEVEL	TANK # 17 LEVEL TRANSDUCER
34	KOH BULK STORAGE TANK # 17 LOW LEVEL	TANK # 17 LEVEL TRANSDUCER
35	KOH BULK STORAGE TANK # 18 HIGH LEVEL	TANK # 18 LEVEL TRANSDUCER
36	KOH BULK STORAGE TANK # 18 LOW LEVEL	TANK # 18 LEVEL TRANSDUCER
37	KOH BULK STORAGE TANK # 19 HIGH LEVEL	TANK # 19 LEVEL TRANSDUCER
38	KOH BULK STORAGE TANK # 19 LOW LEVEL	TANK # 19 LEVEL TRANSDUCER
39	KOH BULK STORAGE TANK # 20 HIGH LEVEL	TANK # 20 LEVEL TRANSDUCER
40	KOH BULK STORAGE TANK # 20 LOW LEVEL	TANK # 20 LEVEL TRANSDUCER
41	KOH BULK STORAGE TANK # 21 HIGH LEVEL	TANK # 21 LEVEL TRANSDUCER
42	KOH BULK STORAGE TANK # 21 LOW LEVEL	TANK # 21 LEVEL TRANSDUCER
43	KOH BULK STORAGE TANK # 22 HIGH LEVEL	TANK # 22 LEVEL TRANSDUCER
44	KOH BULK STORAGE TANK # 22 LOW LEVEL	TANK # 22 LEVEL TRANSDUCER
45	KOH BULK STORAGE TANK # 23 HIGH LEVEL	TANK # 23 LEVEL TRANSDUCER
46	KOH BULK STORAGE TANK # 23 LOW LEVEL	TANK # 23 LEVEL TRANSDUCER
47	KOH BULK STORAGE TANK # 24 HIGH LEVEL	TANK # 24 LEVEL TRANSDUCER
48	KOH BULK STORAGE TANK # 24 LOW LEVEL	TANK # 24 LEVEL TRANSDUCER
49	KOH BULK STORAGE TANK # 25 HIGH LEVEL	TANK # 25 LEVEL TRANSDUCER
50	KOH BULK STORAGE TANK # 25 LOW LEVEL	TANK # 25 LEVEL TRANSDUCER
51	KOH BULK STORAGE TANK # 26 HIGH LEVEL	TANK # 26 LEVEL TRANSDUCER
52	KOH BULK STORAGE TANK # 26 LOW LEVEL	TANK # 26 LEVEL TRANSDUCER
53	KOH BULK STORAGE TANK # 27 HIGH LEVEL	TANK # 27 LEVEL TRANSDUCER
54	KOH BULK STORAGE TANK # 27 LOW LEVEL	TANK # 27 LEVEL TRANSDUCER
55	KOH BULK STORAGE TANK # 28 HIGH LEVEL	TANK # 28 LEVEL TRANSDUCER
56	KOH BULK STORAGE TANK # 28 LOW LEVEL	TANK # 28 LEVEL TRANSDUCER
57	KOH BULK STORAGE TANK # 29 HIGH LEVEL	TANK # 29 LEVEL TRANSDUCER
58	KOH BULK STORAGE TANK # 29 LOW LEVEL	TANK # 29 LEVEL TRANSDUCER
59	KOH BULK STORAGE TANK # 30 HIGH LEVEL	TANK # 30 LEVEL TRANSDUCER
60	KOH BULK STORAGE TANK # 30 LOW LEVEL	TANK # 30 LEVEL TRANSDUCER
61	KOH BULK STORAGE TANK # 31 HIGH LEVEL	TANK # 31 LEVEL TRANSDUCER
62	KOH BULK STORAGE TANK # 31 LOW LEVEL	TANK # 31 LEVEL TRANSDUCER
63	KOH BULK STORAGE TANK # 32 HIGH LEVEL	TANK # 32 LEVEL TRANSDUCER
64	KOH BULK STORAGE TANK # 32 LOW LEVEL	TANK # 32 LEVEL TRANSDUCER
65	KOH BULK STORAGE TANK # 33 HIGH LEVEL	TANK # 33 LEVEL TRANSDUCER
66	KOH BULK STORAGE TANK # 33 LOW LEVEL	TANK # 33 LEVEL TRANSDUCER
67	KOH BULK STORAGE TANK # 34 HIGH LEVEL	TANK # 34 LEVEL TRANSDUCER
68	KOH BULK STORAGE TANK # 34 LOW LEVEL	TANK # 34 LEVEL TRANSDUCER
69	KOH BULK STORAGE TANK # 35 HIGH LEVEL	TANK # 35 LEVEL TRANSDUCER
70	KOH BULK STORAGE TANK # 35 LOW LEVEL	TANK # 35 LEVEL TRANSDUCER
71	KOH BULK STORAGE TANK # 36 HIGH LEVEL	TANK # 36 LEVEL TRANSDUCER
72	KOH BULK STORAGE TANK # 36 LOW LEVEL	TANK # 36 LEVEL TRANSDUCER
73	KOH BULK STORAGE TANK # 37 HIGH LEVEL	TANK # 37 LEVEL TRANSDUCER
74	KOH BULK STORAGE TANK # 37 LOW LEVEL	TANK # 37 LEVEL TRANSDUCER
75	KOH BULK STORAGE TANK # 38 HIGH LEVEL	TANK # 38 LEVEL TRANSDUCER
76	KOH BULK STORAGE TANK # 38 LOW LEVEL	TANK # 38 LEVEL TRANSDUCER
77	KOH BULK STORAGE TANK # 39 HIGH LEVEL	TANK # 39 LEVEL TRANSDUCER
78	KOH BULK STORAGE TANK # 39 LOW LEVEL	TANK # 39 LEVEL TRANSDUCER
79	KOH BULK STORAGE TANK # 40 HIGH LEVEL	TANK # 40 LEVEL TRANSDUCER
80	KOH BULK STORAGE TANK # 40 LOW LEVEL	TANK # 40 LEVEL TRANSDUCER
81	KOH BULK STORAGE TANK # 41 HIGH LEVEL	TANK # 41 LEVEL TRANSDUCER
82	KOH BULK STORAGE TANK # 41 LOW LEVEL	TANK # 41 LEVEL TRANSDUCER
83	KOH BULK STORAGE TANK # 42 HIGH LEVEL	TANK # 42 LEVEL TRANSDUCER
84	KOH BULK STORAGE TANK # 42 LOW LEVEL	TANK # 42 LEVEL TRANSDUCER
85	KOH BULK STORAGE TANK # 43 HIGH LEVEL	TANK # 43 LEVEL TRANSDUCER
86	KOH BULK STORAGE TANK # 43 LOW LEVEL	TANK # 43 LEVEL TRANSDUCER
87	KOH BULK STORAGE TANK # 44 HIGH LEVEL	TANK # 44 LEVEL TRANSDUCER
88	KOH BULK STORAGE TANK # 44 LOW LEVEL	TANK # 44 LEVEL TRANSDUCER
89	KOH BULK STORAGE TANK # 45 HIGH LEVEL	TANK # 45 LEVEL TRANSDUCER
90	KOH BULK STORAGE TANK # 45 LOW LEVEL	TANK # 45 LEVEL TRANSDUCER
91	KOH BULK STORAGE TANK # 46 HIGH LEVEL	TANK # 46 LEVEL TRANSDUCER
92	KOH BULK STORAGE TANK # 46 LOW LEVEL	TANK # 46 LEVEL TRANSDUCER
93	KOH BULK STORAGE TANK # 47 HIGH LEVEL	TANK # 47 LEVEL TRANSDUCER
94	KOH BULK STORAGE TANK # 47 LOW LEVEL	TANK # 47 LEVEL TRANSDUCER
95	KOH BULK STORAGE TANK # 48 HIGH LEVEL	TANK # 48 LEVEL TRANSDUCER
96	KOH BULK STORAGE TANK # 48 LOW LEVEL	TANK # 48 LEVEL TRANSDUCER
97	KOH BULK STORAGE TANK # 49 HIGH LEVEL	TANK # 49 LEVEL TRANSDUCER
98	KOH BULK STORAGE TANK # 49 LOW LEVEL	TANK # 49 LEVEL TRANSDUCER
99	KOH BULK STORAGE TANK # 50 HIGH LEVEL	TANK # 50 LEVEL TRANSDUCER
100	KOH BULK STORAGE TANK # 50 LOW LEVEL	TANK # 50 LEVEL TRANSDUCER

BID SET

RECEIVED
FEB 19 2002
VMA INC

**WATER TREATMENT PLANT FOR
WELLS NO. 2A, 6, 7 & 9**

WIRING DIAGRAMS & CONTROL

INSTRUMENTATION, DRAWINGS, REFERENCE NOTES

1) FOR GENERAL NOTES, SYMBOLS AND ABBREVIATIONS, REFER TO DWG # 1-1

2) FOR I&C LOOP DIAGRAMS, REFER TO DWG # 1-2

3) FOR I&C PANELS, REFER TO DWG # 1-3

4) FOR I&C BENCH DRAWING AND DETAILS, REFER TO DWG # 1-4

BACKWASH TANK LEVEL (PRESSURE) INSTRUMENTS MOUNTING & WIRING DETAIL

NOT TO SCALE

EST 2001 1001012 1-4-02 201301012

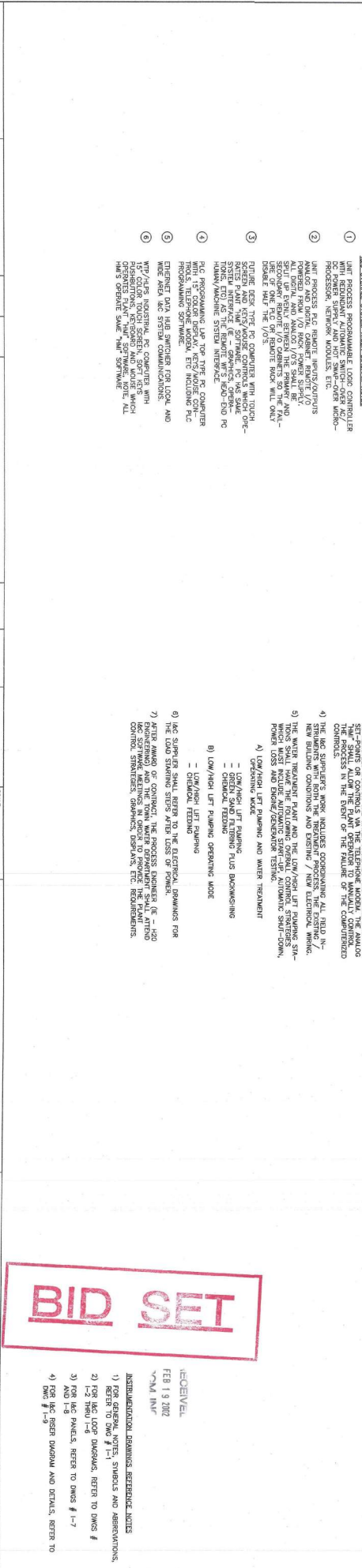
H2O Engineering
Consulting Engineers, Inc.
1001012
Bedford, MA 01730

SED ASSOCIATES CORP.
Consulting Engineers
1001012
Bedford, MA 01730

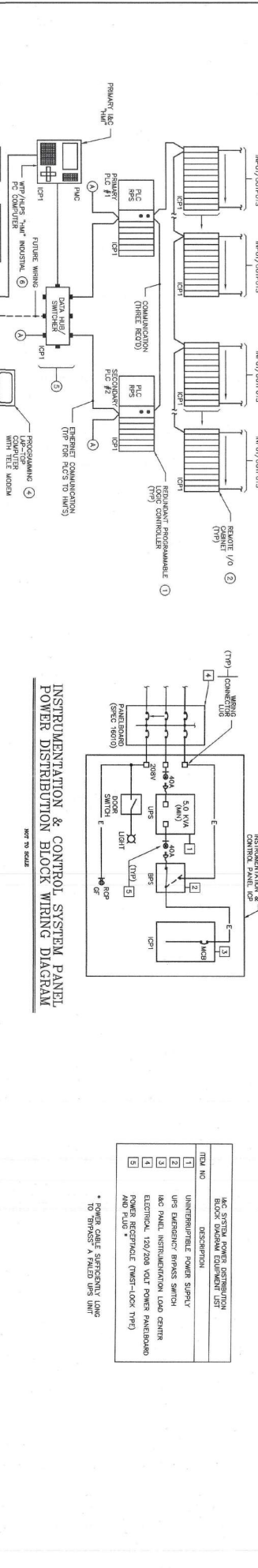
SUDBURY WATER DISTRICT
TOWN OF SUDBURY
199 RAYMOND ROAD
SUDBURY, MASSACHUSETTS

PRODUCT NO. 2000-25
DATE 1/28/02
DRAWING NO. 1-8
SHEET 38 OF 40 SHEETS

H₂O Engineering CONSULTING ENGINEERS, INC. 2 Alfred Circle Bedford, MA 01730		SED ASSOCIATES, INC. 133 Main Street Needham Heights, MA 02461 TEL: (617) 552-7200		SCALE: NONE DRAWN BY: DK CHECKED BY: RFG DATE:		PROJECT: WATER TREATMENT PLANT FOR WELLS NO. 2A, 6, 7 & 9 SHEET NO. 2000-25 DATE: 7/09/02	
PROJECT: SUBSIDIARY WATER DISTRICT TOWN OF SUBSIDIARY 199 RAYMOND ROAD SUBSIDIARY, MASSACHUSETTS		TITLE: WIRING DIAGRAMS & DETAILS "I"		DRAWING NO.: 1-9		SHEET 40 OF 86 SHEETS	



- I&C SYSTEM OVERALL RISER DIAGRAM**
- NOT TO SCALE
- 1) THE COMPLETE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER.
 - 2) THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER.
 - 3) THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER.
 - 4) THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER.
 - 5) THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER.
 - 6) THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER.
 - 7) THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER.
 - 8) THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER.
 - 9) THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER.
 - 10) THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER.
 - 11) THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER.
 - 12) THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER.
 - 13) THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER.
 - 14) THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER.
 - 15) THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER.
 - 16) THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER.
 - 17) THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER.
 - 18) THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER.
 - 19) THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER.
 - 20) THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER. THE I&C SYSTEM SHALL BE SUPPLIED BY THE SUPPLIER.



ITEM NO.	DESCRIPTION	QUANTITY	UNIT
1	UNINTERRUPTIBLE POWER SUPPLY	1	UNIT
2	UPS EXHAUSTION BRASS SWITCH	1	UNIT
3	I&C PANEL INSTRUMENTATION LOAD CENTER	1	UNIT
4	ELECTRICAL 120/208 VOLT POWER PANEBOARD	1	UNIT
5	POWER RECEPTACLE (TWIST-LOCK TYPE) AND FUSE	1	UNIT

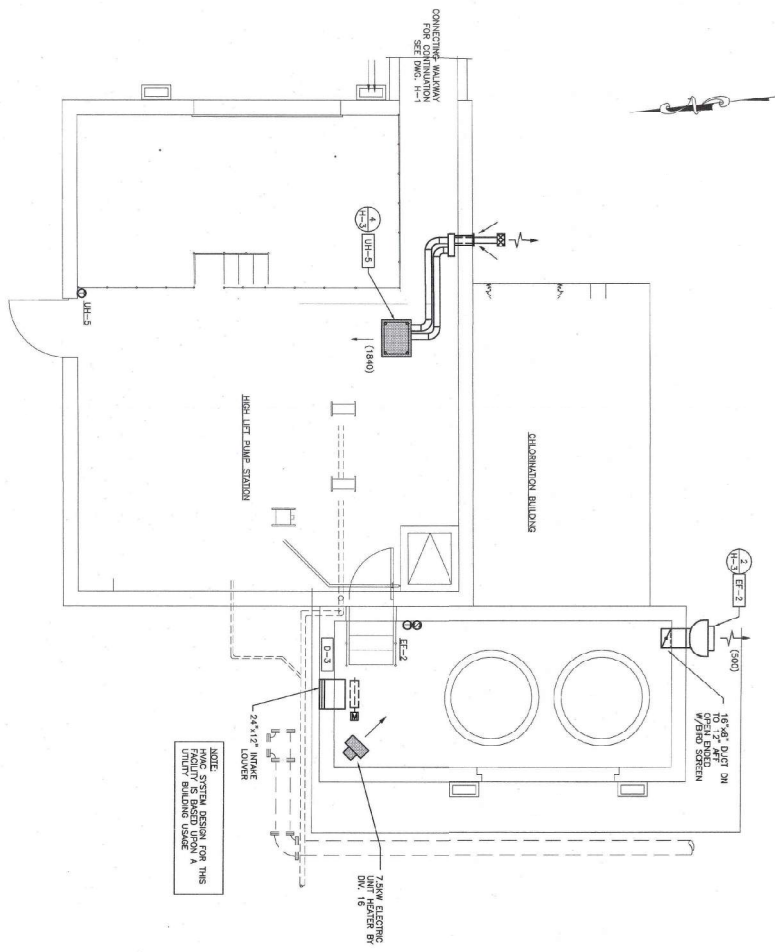
POWER CABLE SUFFICIENT LONG TO BYPASS A FIELD UPS UNIT

BID SET

RECEIVED
FEB 19 2002
T.M. INC.

INSTRUMENTATION DIAGRAMS REFERENCE NOTES
 1) FOR GENERAL NOTES, SYMBOLS AND ABBREVIATIONS, REFER TO DWG # 1-1
 2) FOR I&C LOOP DIAGRAMS, REFER TO DWG # 1-2
 3) FOR I&C PANELS, REFER TO DWG # 1-3
 4) FOR I&C RISER DIAGRAM AND DETAILS, REFER TO DWG # 1-4

This document is an independent
work. It is not property of
323 Associates, Corp. It is to be
loaned to others for their
private use only. It is not to be
copied, reproduced, or
distributed in any form
without the express written
consent of 323 Associates, Corp.



EXISTING HIGH LIFT PUMP STATION & CHLORINATION ADDITION PLAN

SCALE: 1/4" = 1'-0"

BEST MID

RECEIVED
FEB 19 2002
ONLINE

