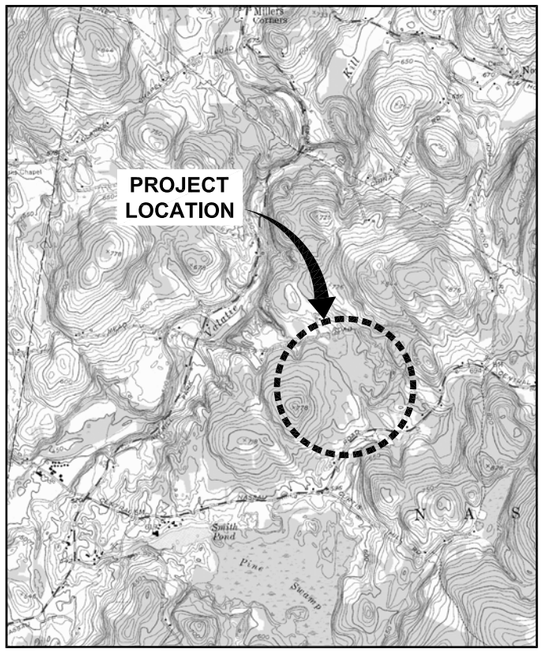
Appendix C

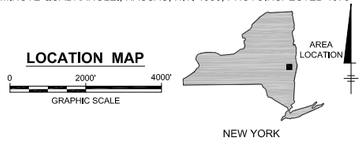
Contract Drawings

CONTRACT DRAWINGS

GROUNDWATER AND LEACHATE TREATMENT SYSTEM



REFERENCE: BASE MAP USGS 7.5 MINUTE QUADRANGLE., NASSAU, N.Y. 1953, PHOTOINSPECTED 1978



DEWEY LOEFFEL LANDFILL SUPERFUND SITE NASSAU, NEW YORK

DATE ISSUED

FEBRUARY 2013

SUBMITTED FOR APPROVAL

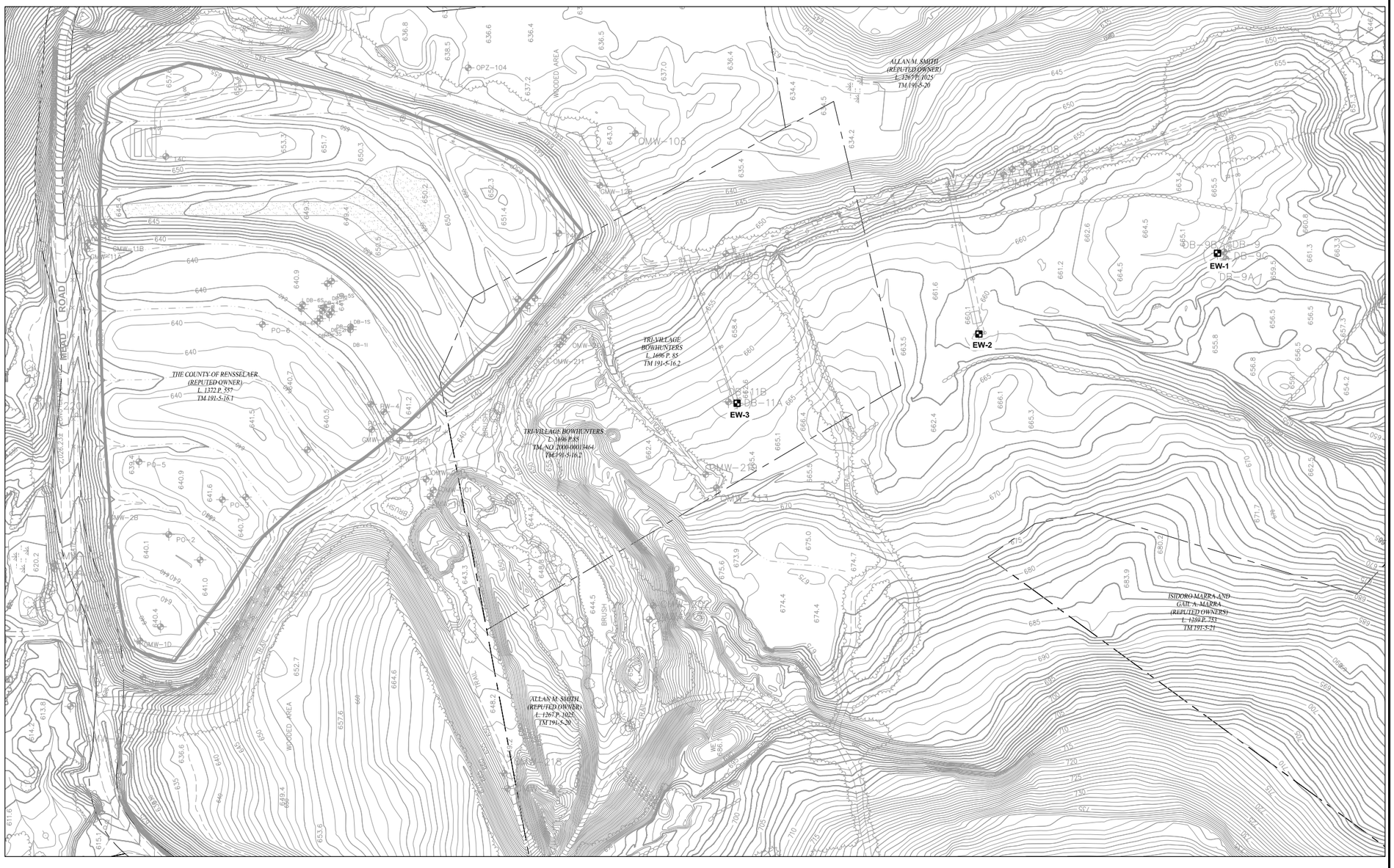
ARCADIS

ARCADIS OF NEW YORK, INC.

INDEX TO DRAWINGS

NOTES:

1. ALL WORK DESCRIBED IN THESE DRAWINGS/SPECIFICATIONS SHALL BE PERFORMED ON BEHALF OF GENERAL ELECTRIC COMPANY (GE) AND SI GROUP, INC. (SI GROUP) (COLLECTIVELY, RESPONDENTS).
2. THE CONTRACTOR SHALL VISIT THE SITE AND EXAMINE ALL OF THE PHYSICAL CONDITIONS THAT AFFECT THE FINAL BID PRICE.
3. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY FIELD MEASUREMENTS TO VERIFY THE ABILITY TO EXECUTE THE WORK IN ACCORDANCE WITH THESE DRAWINGS. NO ADDITIONS OR REVISIONS TO THE BID OR CONTRACT PRICE WILL BE PERMITTED BASED ON EXISTING CONDITIONS.
4. THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIAL, AND EQUIPMENT, UNLESS OTHERWISE STATED, NECESSARY TO PERFORM THIS WORK.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL TRADE PERMITS AND APPROVALS NECESSARY TO PERFORM THIS WORK.
6. CONTRACTOR SHALL KEEP ALL INFORMATION PRESENTED IN THESE DRAWINGS REGARDING THE SITE AS CONFIDENTIAL.
7. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UTILITIES WITHIN THE AREA AFFECTED BY CONSTRUCTION.
8. THE CONTRACTOR IS RESPONSIBLE FOR KEEPING A LOG OF DAILY PROGRESSION OF WORK.
9. THE CONTRACTOR SHALL PROVIDE AS–BUILT RECORD DRAWINGS (RED LINES) SHOWING ACTUAL DETAILS, DIMENSIONS, AND OTHER PERTINENT FEATURES THAT VARY FROM THE ORIGINAL DESIGN.
10. UNLESS OTHERWISE NOTED, ALL AREAS DISTURBED BY THIS WORK SHALL BE RESTORED TO ORIGINAL CONDITION.
11. UNLESS OTHERWISE NOTED, THE CONTRACTOR SHALL PROTECT AND PRESERVE ALL EXISTING FEATURES WITHIN AREAS AFFECTED BY CONSTRUCTION. DAMAGE SUSTAINED TO AN EXISTING FEATURE WILL BE REPAIRED/REPLACED AT CONTRACTOR'S EXPENSE.
12. THE CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH ALL COUNTY, LOCAL, STATE, AND FEDERAL REGULATIONS, INCLUDING, BUT NOT LIMITED TO, ALL APPLICABLE LOCAL, STATE, AND/OR FEDERAL (OSHA, USEPA, AND DOT, ETC.) RULES AND REGULATIONS.
13. UNLESS OTHERWISE INDICATED HEREIN, ALL MATERIALS AND EQUIPMENT FURNISHED UNDER THIS CONTRACT SHALL BE NEW, FREE FROM DEFECTS, AND SHALL BE GUARANTEED FOR A PERIOD OF AT LEAST ONE YEAR FROM THE DATE OF ACCEPTANCE OF THE WORK. THE CONTRACTOR SHALL FURNISH, AT NO COST, ALL LABOR AND MATERIALS NECESSARY TO CORRECT PROBLEMS DUE TO FAULTY WORKMANSHIP OR MATERIALS.
14. THE INFORMATION SHOWN ON THE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATIONS AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO AND HARM THEREFROM.
15. PIPE ROUTING SHOWN FOR CONSTRUCTION LAYOUT PURPOSES ONLY. ACTUAL ROUTING TO BE FIELD DETERMINED AND IS SUBJECT TO THE APPROVAL OF THE RESPONDENTS' REPRESENTATIVES.
16. ALL PIPING PRESSURE TESTS SHALL BE PERFORMED IN ACCORDANCE WITH ASTM F 2164 AND MADE BY THE CONTRACTOR IN THE PRESENCE OF THE RESPONDENTS' REPRESENTATIVES.
17. THE CONTRACTOR SHALL PROVIDE ALL PRODUCTS AND PROPERLY CALIBRATED TESTING EQUIPMENT REQUIRED TO PERFORM THE PIPING PRESSURE TESTING WORK.
18. TESTS MAY BE PERFORMED ON SEPARATE SECTIONS OF PIPING TO EXPEDITE CONSTRUCTION. THE CONTRACTOR SHALL NOT PERFORM PRESSURE TESTING AGAINST SYSTEM VALVES.
19. AFTER THE INITIAL PRESSURE TEST ON PIPING IS SUCCESSFULLY COMPLETED, THE CONTRACTOR SHALL BACKFILL THE TRENCHES AS SPECIFIED.
20. EXCAVATIONS SHALL BE KEPT FREE FROM STANDING WATER.
21. THE CONTRACTOR SHALL PROVIDE APPROPRIATE SAFETY BARRICADES AROUND TRENCHING AND EXCAVATION TO PREVENT ACCIDENTS OR UNAUTHORIZED ENTRY.
22. BACKFILL OF TRENCHES SHALL BE APPLIED IN 1–FOOT COMPACTED LIFTS UNLESS OTHERWISE INDICATED HEREIN.
23. CONTRACTOR'S FILL SOURCE MUST BE TESTED BY CONTRACTOR AND APPROVED BY THE RESPONDENTS' REPRESENTATIVES PRIOR TO COMMENCING THE WORK AND/OR PLACING THE MATERIAL.
24. EXCAVATIONS SHALL BE BACKFILLED AS PROMPTLY AS WORK PERMITS ONCE REQUIRED INSPECTIONS HAVE BEEN COMPLETED.
25. PRIOR TO COMMENCING WORK ON EXISTING GROUNDWATER PIPING, PIPES SHALL BE BLOWN OUT WITH COMPRESSED AIR IN ORDER TO PUSH ANY RESIDUAL WATER TO THE EXISTING FRAC TANKS IN THE POLE BARN.



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XREFS: 31174X00, 31174X01
IMAGES: ARMSTRONG.jpg, SAUDA.jpg

100' 0 100' 200'
1"=100'

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING; USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd

Professional Engineer's Name: **DONALD F. SAUDA**
Professional Engineer's No.: 084145

State	Date Signed	Project Mgr.
NY		DFS
Designed by	Drawn by	Checked by
SAB	GHS	TEM

ARCADIS OF NEW YORK, INC.

DEWEY LOEFFEL LANDFILL SUPERFUND SITE • NASSAU, NEW YORK
GROUNDWATER AND LEACHATE TREATMENT SYSTEM

GENERAL SPECIFICATIONS AND EXISTING SITE CONDITIONS

GENERAL

ARCADIS Project No.: B00311174.0003.00002
Date: FEBRUARY 2013

ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse, NY 13214
Tel: 315.446.9120

G1

EXISTING UNDERGROUND GROUNDWATER TRANSFER PIPELINE AND CONTROL LINES (TO BE TAKEN OUT OF SERVICE AFTER TREATMENT SYSTEM START-UP)

EXISTING DOUBLE-WALLED FRAC TANKS WITHIN POLE BARN

INSTALL NEW UNDERGROUND ELECTRICAL AND INSTRUMENTATION CONDUIT IN ACCORDANCE WITH NOTES ON DRAWING G1, DETAIL 1 ON DRAWING C5, AND DRAWING E1

EXISTING ELECTRICAL SERVICE COMPOUND (TO BE TAKEN OUT OF SERVICE)

NEW VALVE VAULT – TIE IN NEW 2"ø SDR 11 X 4"ø SDR 17 DUAL-CONTAINED HDPE FORCEMAINS INTO EXISTING 2" SDR 11 X 4" SDR 17 DUAL-CONTAINED FORCEMAIN IN ACCORDANCE WITH DETAIL 2 ON DRAWING M5

NEW EXTRACTION WELL COMPOUNDS SHALL BE CONSTRUCTED IN ACCORDANCE WITH DRAWING M3 AND DETAIL 4 ON DRAWING M5 (TYP. OF FIVE)

MODIFY EXISTING EXTRACTION WELL COMPOUNDS IN ACCORDANCE WITH DRAWING M3 AND DETAIL 3 ON DRAWING M5 (TYP. OF THREE)

EXISTING SLURRY WALL

RAISE LOW AREAS IN ACCORDANCE WITH DETAIL 1 ON DRAWING C3

EXISTING LEACHATE UNDERGROUND STORAGE TANK

INSTALL NEW 2"ø SDR 11 X 4"ø SDR 17 DUAL-CONTAINED FORCEMAIN FOR NEW EXTRACTION WELLS EW-4 THROUGH EW-8

INSTALL NEW 2"ø SDR 11 X 4"ø SDR 17 DUAL-CONTANED HDPE LATERALS IN ACCORDANCE WITH NOTES ON DRAWING G1 AND DETAIL 1 ON DRAWING C5

INSTALL NEW 2"ø SDR 11 X 4"ø SDR 17 DUAL-CONTAINED HDPE FORCEMAINS IN ACCORDANCE WITH NOTES ON DRAWING G1 AND DETAIL 1 ON DRAWING C5

INSTALL SECONDARY CONTAINMENT ACCESS PORTS ADJACENT TO BUILDING IN ACCORDANCE WITH DETAIL 5 ON DRAWING M5

INSTALL NEW TREATMENT BUILDING IN ACCORDANCE WITH DRAWINGS S1 THROUGH S12

INSTALL NEW GRAVEL PAD AND DRIVE IN ACCORDANCE WITH DRAWING C3

NEW ELECTRIC SERVICE POLE, UTILITY TRANSFORMER, AND METER (TO BE INSTALLED BY NATIONAL GRID)

MATCH LINE SEE SHEET C1B

ALLAN M. SMITH (REPUTED OWNER) L. 1267 P. 1025 TM 191-5-20

THE COUNTY OF RENSSELAER (REPUTED OWNER) L. 1372 P. 557 TM 191-5-16.1

TRI-VILLAGE BOWHUNTERS L. 1696 P. 85 TM 191-5-16.2

TRI-VILLAGE BOWHUNTERS L. 1696 P.85 TM, NO. 2000-00013464 TM 191-5-16.2

ISIDORO MARRA AND GAIL A. MARRA (REPUTED OWNERS) L. 1299 P. 753 TM 191-5-21

ALLAN M. SMITH (REPUTED OWNER) L. 1267 P. 1025 TM 191-5-20

LEGEND

- NEW FORCEMAIN
- NEW UNDERGROUND ELECTRIC SERVICE
- NEW CHAIN LINK FENCE
- PROPERTY LINES
- EXISTING ROADWAY
- EXISTING EXTRACTION WELL
- NEW EXTRACTION WELL
- EXISTING MONITORING WELL
- NEW ELECTRICAL SERVICE POLE

SUBMITTED FOR APPROVAL

1"=100' (100' 0 100' 200')

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Professional Engineer's Name: DONALD F. SAUDA
Professional Engineer's No.: 084145
State: NY | Date Signed | Project Mgr.: DFS
Designed by: SAB | Drawn by: GHS | Checked by: TEM

ARCADIS
ARCADIS OF NEW YORK, INC.

DEWEY LOEFFEL LANDFILL SUPERFUND SITE • NASSAU, NEW YORK
GROUNDWATER AND LEACHATE TREATMENT SYSTEM

SITE PLAN (1 OF 2)

CIVIL

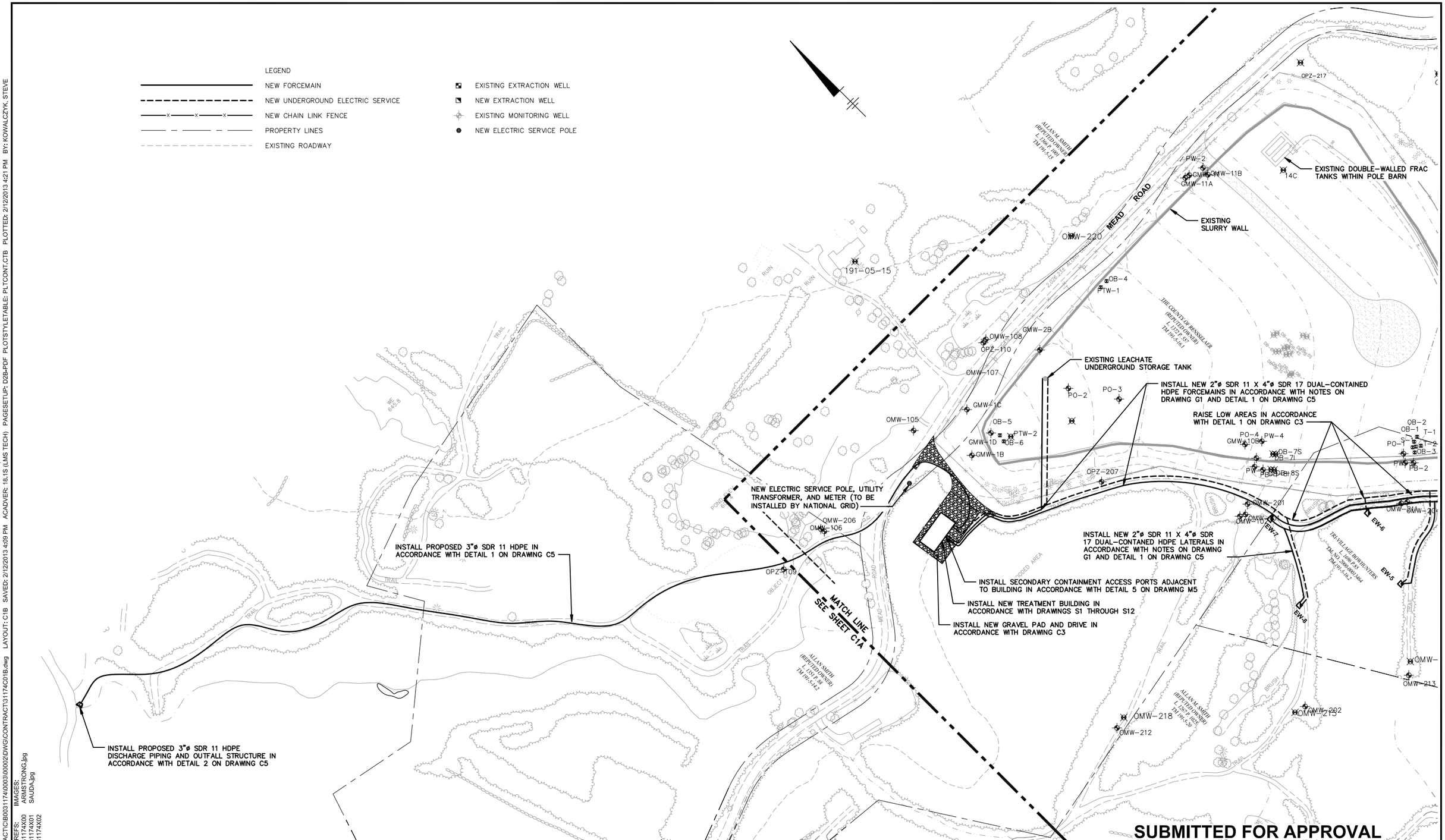
ARCADIS Project No. B0031174.0003.00002
Date: FEBRUARY 2013

ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse, NY 13214
Tel: 315.446.9120

C1A

LEGEND

- NEW FORCEMAIN
- NEW UNDERGROUND ELECTRIC SERVICE
- NEW CHAIN LINK FENCE
- PROPERTY LINES
- EXISTING ROADWAY
- EXISTING EXTRACTION WELL
- NEW EXTRACTION WELL
- EXISTING MONITORING WELL
- NEW ELECTRIC SERVICE POLE



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1"=100' — 100' 0 100' 200'

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USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd

Professional Engineer's Name: DONALD F. SAUDA		
Professional Engineer's No.: 084145		
State: NY	Date Signed:	Project Mgr.: DFS
Designed by: SAB	Drawn by: GHS	Checked by: TEM

ARCADIS

ARCADIS OF NEW YORK, INC.

DEWEY LOEFFEL LANDFILL SUPERFUND SITE • NASSAU, NEW YORK
GROUNDWATER AND LEACHATE TREATMENT SYSTEM

SITE PLAN (2 OF 2)

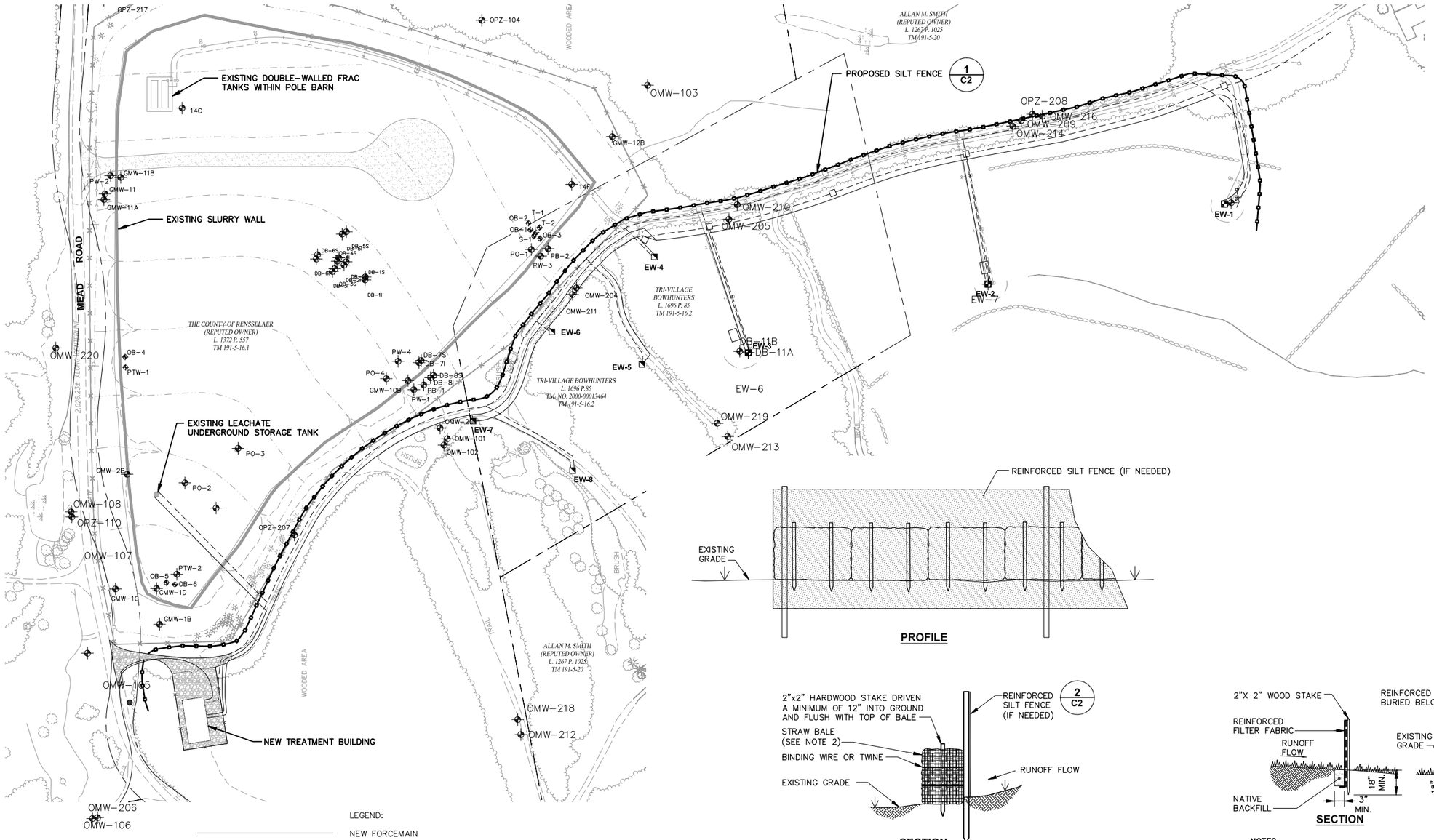
CIVIL

ARCADIS Project No.: B0031174.0003.00002

Date: FEBRUARY 2013

ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse, NY 13214
Tel: 315.446.9120

C1B



LEGEND:

- NEW FORCEMAIN
- NEW CHAIN LINK FENCE
- PROPERTY LINES
- NEW SILT FENCE
- EXISTING ROADWAY
- EXISTING EXTRACTION WELL
- NEW EXTRACTION WELL
- EXISTING MONITORING WELL
- NEW ELECTRIC SERVICE POLE

PROFILE

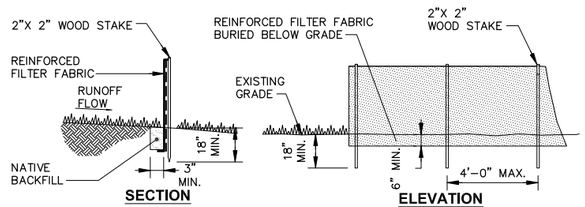
SECTION

NOTES:

1. SEDIMENT DEPOSITS SHALL BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF OF THE HEIGHT OF THE SILT FENCE (OR LESSER HEIGHT IF SILT FENCE FILTER FABRIC IS OVER STRESSED).
2. STRAW BALES SHALL BE OATS, WHEAT, RYE GRAIN, BROOMSAGE OR OTHER STRAW, OR NATIVE GRASS HAY.
3. BALES SHALL BE SOUND WITH BALE TIES INTACT.

STRAW BALE / SILT FENCE 1

NOT TO SCALE



NOTES:

1. FILTER FABRIC TO BE FASTENED SECURELY TO UPGRADIENT FACE OF WOOD STAKES WITH STAPLES.
2. WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED A MINIMUM OF 6 INCHES.

REINFORCED SILT FENCE 2

NOT TO SCALE

NOTES:

1. ACTUAL LOCATIONS OF EROSION AND SEDIMENT CONTROL FEATURES MAY VARY BASED ON ACTUAL SITE CONDITIONS ENCOUNTERED AT TIME OF CONSTRUCTION.
2. EROSION AND SEDIMENT CONTROLS SHALL BE INSTALLED PRIOR TO DISTURBANCE OF EXISTING SITE SOILS AND VEGETATION.
3. ALL WORK SHALL BE LIMITED TO WITHIN THE DESIGNATED PROPERTY, RIGHT OF WAY, EASEMENT, OR PROJECT WORK LIMITS.
4. ALL NECESSARY PRECAUTIONS SHALL BE TAKEN TO PREVENT MIGRATION OF CONSTRUCTION RELATED SILT, SEDIMENT, OR ANY OTHER MATERIALS BEYOND THE WORK LIMITS.
5. ALL EROSION AND SEDIMENT CONTROL MEASURES TO BE MAINTAINED THROUGHOUT THE COURSE OF CONSTRUCTION ACTIVITIES. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED ONLY AFTER ESTABLISHMENT OF RESTORED SURFACES.
6. EXISTING VEGETATION WILL BE LEFT IN PLACE TO THE EXTENT PRACTICABLE.
7. THE CONTRACTOR SHALL INITIATE STABILIZATION MEASURES SUCH AS TEMPORARY SEEDING, MULCHING AND/OR EROSION CONTROL MATTING PRACTICES AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED.
8. LOCATION AND PLACEMENT OF ALL EROSION AND SEDIMENT CONTROL FEATURES SHALL BE DETERMINED BY THE CONTRACTOR AND APPROVED BY RESPONDENTS' REPRESENTATIVES. AT THE DISCRETION OF THE CONSTRUCTION MANAGER, ADDITIONAL OR REINFORCED EROSION AND SEDIMENT CONTROL MEASURES MAY BE REQUIRED.
9. ACCESS POINTS SHALL BE INSTALLED IN SILT FENCING AT ALL ACCESS ROAD CROSSINGS.

SUBMITTED FOR APPROVAL

XREFS: 31174X00, 31174X01, 31174X02
IMAGES: ARMSTRONG.jpg, SAUDA.jpg

100' 0 100' 200'
1"=100'

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Professional Engineer's Name: DONALD F. SAUDA
Professional Engineer's No.: 084145
State: NY | Date Signed | Project Mgr.: DFS
Designed by: SAB | Drawn by: GHS | Checked by: TEM

ARCADIS OF NEW YORK, INC.

DEWEY LOEFFEL LANDFILL SUPERFUND SITE • NASSAU, NEW YORK
GROUNDWATER AND LEACHATE TREATMENT SYSTEM

SITE SEDIMENT AND EROSION CONTROL PLAN

CIVIL

ARCADIS Project No.: B0031174.0003.00002
Date: FEBRUARY 2013

ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse, NY 13214
Tel: 315.446.9120

C2

CITY:SYRACUSE-NY DIV/GROUP:ENVCAD DB:G.STEINBERGER K.SARTORI LDG:G.STEINBERGER PIC:P.FARR PM:D.SAUDA TM:S.BATTAGLIA LYR:ON=*;OFF=*REF*
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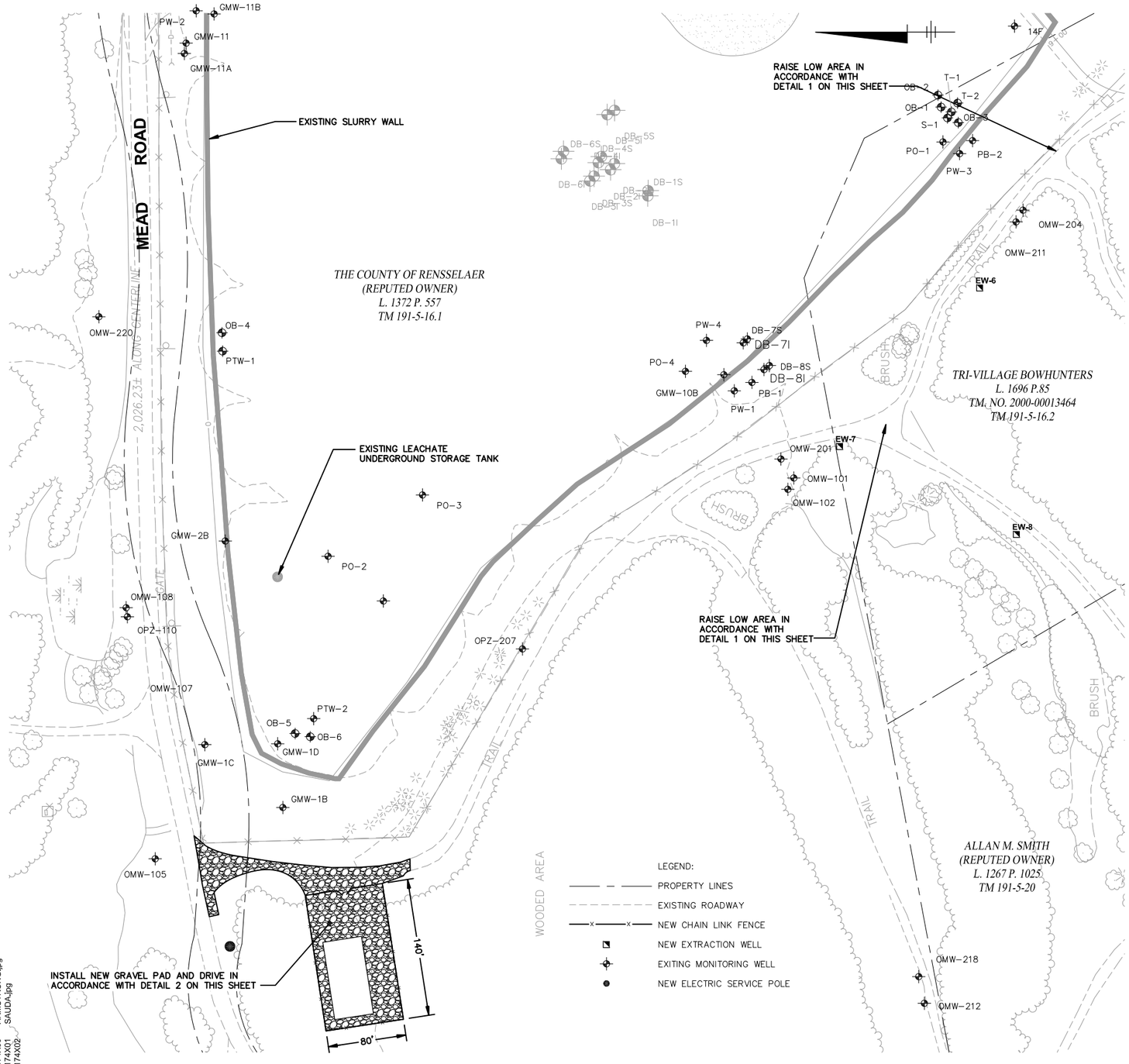
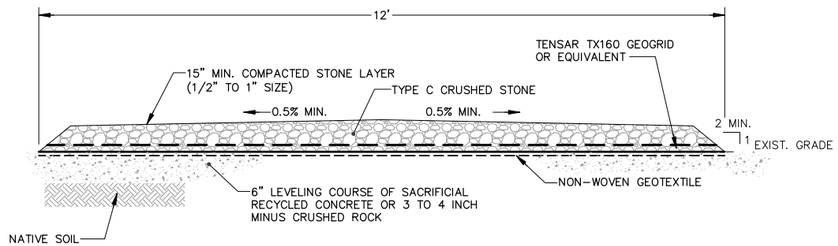


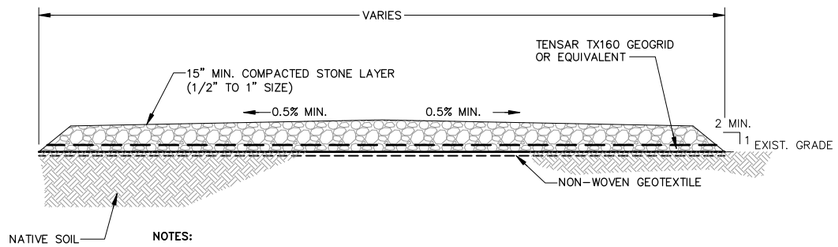


NOTES:

1. ACTUAL THICKNESS MAY VARY BASED ON FIELD CONDITIONS ENCOUNTERED AT THE TIME OF CONSTRUCTION.
2. GEOGRID SHALL BE PLACED APPROXIMATELY 4 INCHES ABOVE BOTTOM OF CRUSHED STONE.
3. ACCESS ROAD SHALL BE INSTALLED IN FOUR LOW AREAS AS DEFINED ON DRAWING C1A FOR AN AVERAGE LENGTH OF 100 LINEAR FEET.

NEW ACCESS ROAD LOW AREA SECTION 1

NOT TO SCALE



NOTES:

1. ACTUAL THICKNESS MAY VARY BASED ON FIELD CONDITIONS ENCOUNTERED AT THE TIME OF CONSTRUCTION.
2. GEOGRID SHALL BE PLACED APPROXIMATELY 4 INCHES ABOVE BOTTOM OF CRUSHED STONE.

NEW GRAVEL PAD AND DRIVE SECTION 2

NOT TO SCALE

SUBMITTED FOR APPROVAL

1"=60' (60' 0 60' 120')

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No.	Date	Revisions	By	Ckd

Professional Engineer's Name: **DONALD F. SAUDA**
Professional Engineer's No.: 084145
State: NY | Date Signed: | Project Mgr.: DFS
Designed by: SAB | Drawn by: GHS | Checked by: TEM

ARCADIS OF NEW YORK, INC.

DEWEY LOEFFEL LANDFILL SUPERFUND SITE • NASSAU, NEW YORK
GROUNDWATER AND LEACHATE TREATMENT SYSTEM

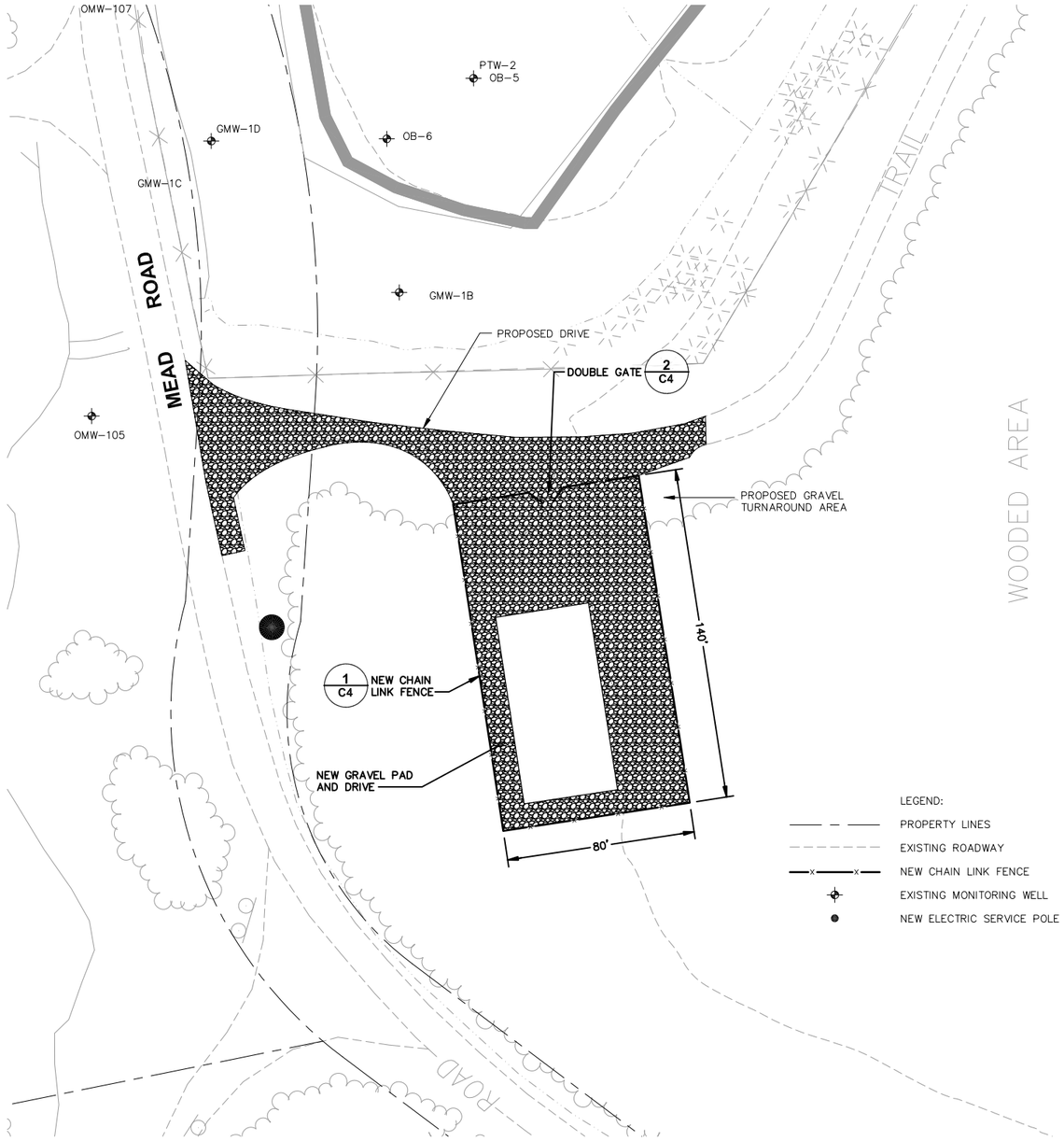
SITE GRADING AND ACCESS ROAD PLAN

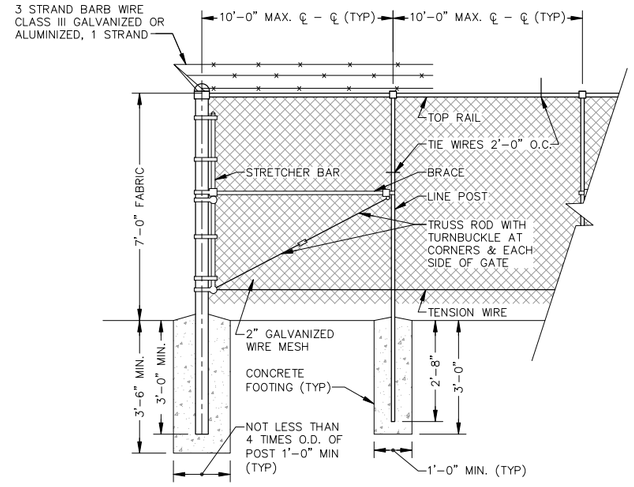
CIVIL

ARCADIS Project No. B0031174.0003.00002
Date FEBRUARY 2013

ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse, NY 13214
Tel: 315.446.9120

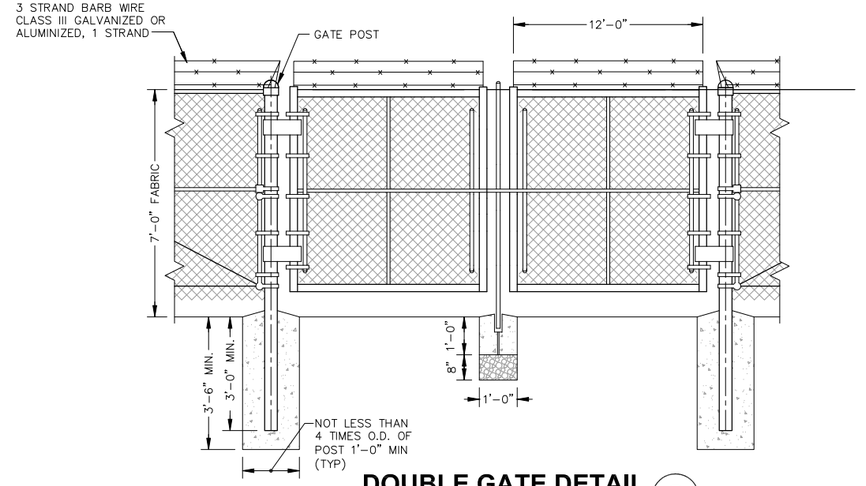
C3





CHAIN LINK FENCE DETAIL 1

NOT TO SCALE



DOUBLE GATE DETAIL 2

NOT TO SCALE

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IMAGES: ARMSTRONG.jpg SAUDA.jpg

CITY:SYRACUSE-NY DIV/GROUP:ENVCAD DB:G.STEINBERGER LD:G.STEINBERGER PIC:P.FARR PM:D.SAUDA TM:S.BATTAGLIA LYR:ON=*;OFF=*REF*
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1"=30' (30' 0 30' 60')

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No.	Date	Revisions	By	Ckd

Professional Engineer's Name: DONALD F. SAUDA
Professional Engineer's No.: 084145

State	Date Signed	Project Mgr.
NY		DFS
Designed by	Drawn by	Checked by
SAB	GHS	TEM

ARCADIS OF NEW YORK, INC.

DEWEY LOEFFEL LANDFILL SUPERFUND SITE • NASSAU, NEW YORK
GROUNDWATER AND LEACHATE TREATMENT SYSTEM

FENCING PLAN

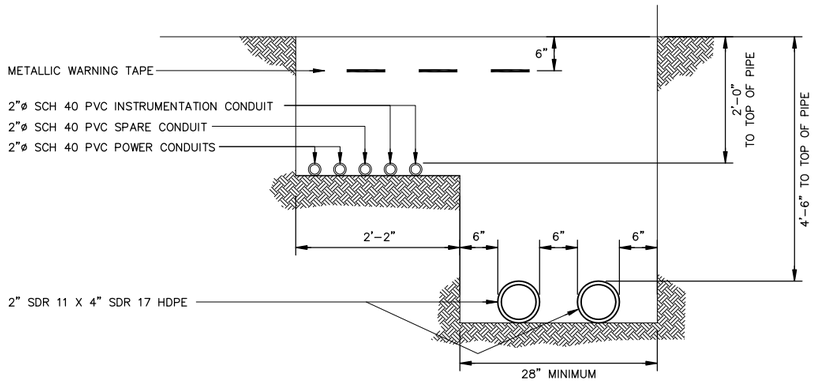
CIVIL

ARCADIS Project No.
B0031174.0003.00002

Date
FEBRUARY 2013

ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse, NY 13214
Tel: 315.446.9120

C4



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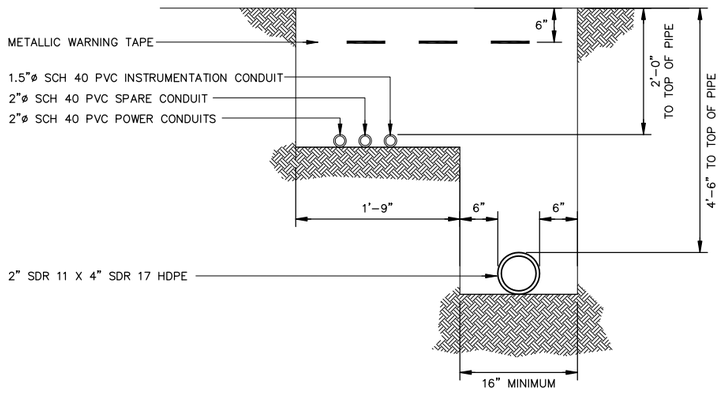

LATERALS

NOTES:

1. BURIED UNDERGROUND WARNING TAPE MUST BE PLACED 6 INCHES BELOW GRADE ABOVE ALL ELECTRICAL CONDUIT AND HDPE PIPE.
2. CONDUIT SHOULD HAVE AT LEAST 2 INCHES BETWEEN OTHER CONDUIT.
3. SPACING BETWEEN FINAL CONDUIT AND HDPE PIPE SHOULD BE AT LEAST 12 INCHES.
4. TRENCH DIMENSIONS SHOWN ARE MINIMUM VALUES AND MAY BE SIZED LARGER AS NECESSARY.
5. SPACING BETWEEN CONDUIT AND TRENCH WALL SHOULD BE AT LEAST 6 INCHES.
6. A NATURALLY OR ARTIFICIALLY GRADED MIXTURE OF NATURAL CRUSHED GRAVEL, CRUSHED STONE, AND NATURAL OR CRUSHED SAND MEETING ASTM D 2940 THAT 100 PERCENT PASSES 1.5 INCH SIEVE WILL BE ALLOWABLE FOR USE WITHIN 6 INCHES OF ALL BURIED PIPE AND CONDUIT.
7. SOIL CLASSIFIED IN ASTM D 2487 GROUPS GC, SC, CL, ML, GW, GP, GM, SW, SP, AND SM OR A COMBINATION OF THESE GROUPS THAT IS ALSO FREE OF ROCK OR GRAVEL LARGER THAN 3 INCHES IN ANY DIMENSION WILL BE ALLOWABLE FOR TRENCH BACKFILL FURTHER THAN 6 INCHES FROM ALL BURIED PIPE AND CONDUIT.
8. WHERE FORCEMAIN TRENCH ONLY CONTAINS ONE HDPE PIPE, A 6-INCH SPACING SHALL BE MAINTAINED BETWEEN PIPE AND TRENCH WALL.
9. FORCEMAIN DETAIL SHALL BE UTILIZED FOR TRENCH TO OUTFALL STRUCTURE WITH 3" HDPE PIPE. NO CONDUIT WILL BE INSTALLED TO THE OUTFALL STRUCTURE.

TYPICAL TRENCH DETAIL 1

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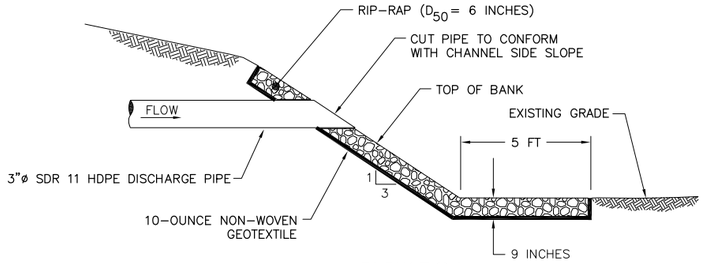
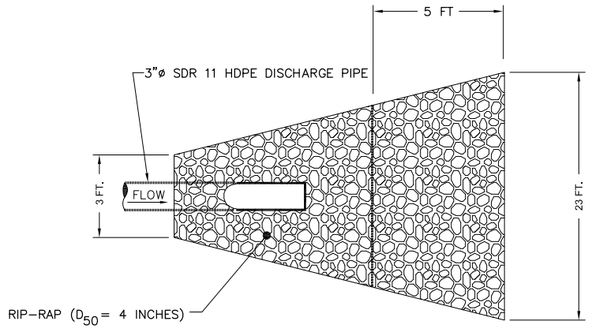


ELEVATION



PLAN

NOTES:

1. THE SUBGRADE FOR THE STONE AND FILTER FABRIC SHALL BE PREPARED TO THE REQUIRED LINES AND GRADES.
2. GEOTEXTILE FABRIC SHALL HAVE A MAXIMUM APPARENT OPENING SIZE OF 0.60 MM, A MINIMUM GRAB TENSILE STRENGTH OF 90 LBS, AND A MINIMUM BURST STRENGTH OF 145 PSI. THE FABRIC SHALL BE PROTECTED FROM PUNCHING, CUTTING, OR TEARING. ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE SHALL BE REPAIRED BY PLACING ANOTHER PIECE OF GEOTEXTILE FABRIC OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE FABRIC. ALL OVERLAPS WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES OF GEOTEXTILE FABRIC SHALL BE A MINIMUM OF ONE FOOT IN ALL DIRECTIONS.
3. ROCK FOR THE RIPRAP OUTLET MAY BE PLACED BY EQUIPMENT. THE OUTLET SHALL BE CONSTRUCTED TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. THE STONE FOR THE RIPRAP OUTLET SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. RIPRAP SHALL BE PLACED IN A MANNER TO PREVENT DAMAGE TO THE FILTER BLANKET OR GEOTEXTILE FABRIC. HAND PLACEMENT WILL BE REQUIRED TO THE EXTENT NECESSARY TO PREVENT DAMAGE TO THE PERMANENT WORKS.
4. THE ROCK FOR RIPRAP SHALL BE PLACED SO THAT IT BLENDS WITH THE EXISTING GROUND.

OUTLET PROTECTION DETAIL 2

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No.	Date	Revisions	By	Ckd

Professional Engineer's Name: **DONALD F. SAUDA**
Professional Engineer's No.: 084145

State	Date Signed	Project Mgr.
NY		DFS
Designed by	Drawn by	Checked by
SAB	GHS	TEM

ARCADIS OF NEW YORK, INC.

DEWEY LOEFFEL LANDFILL SUPERFUND SITE • NASSAU, NEW YORK
GROUNDWATER AND LEACHATE TREATMENT SYSTEM

MISCELLANEOUS CIVIL DETAILS

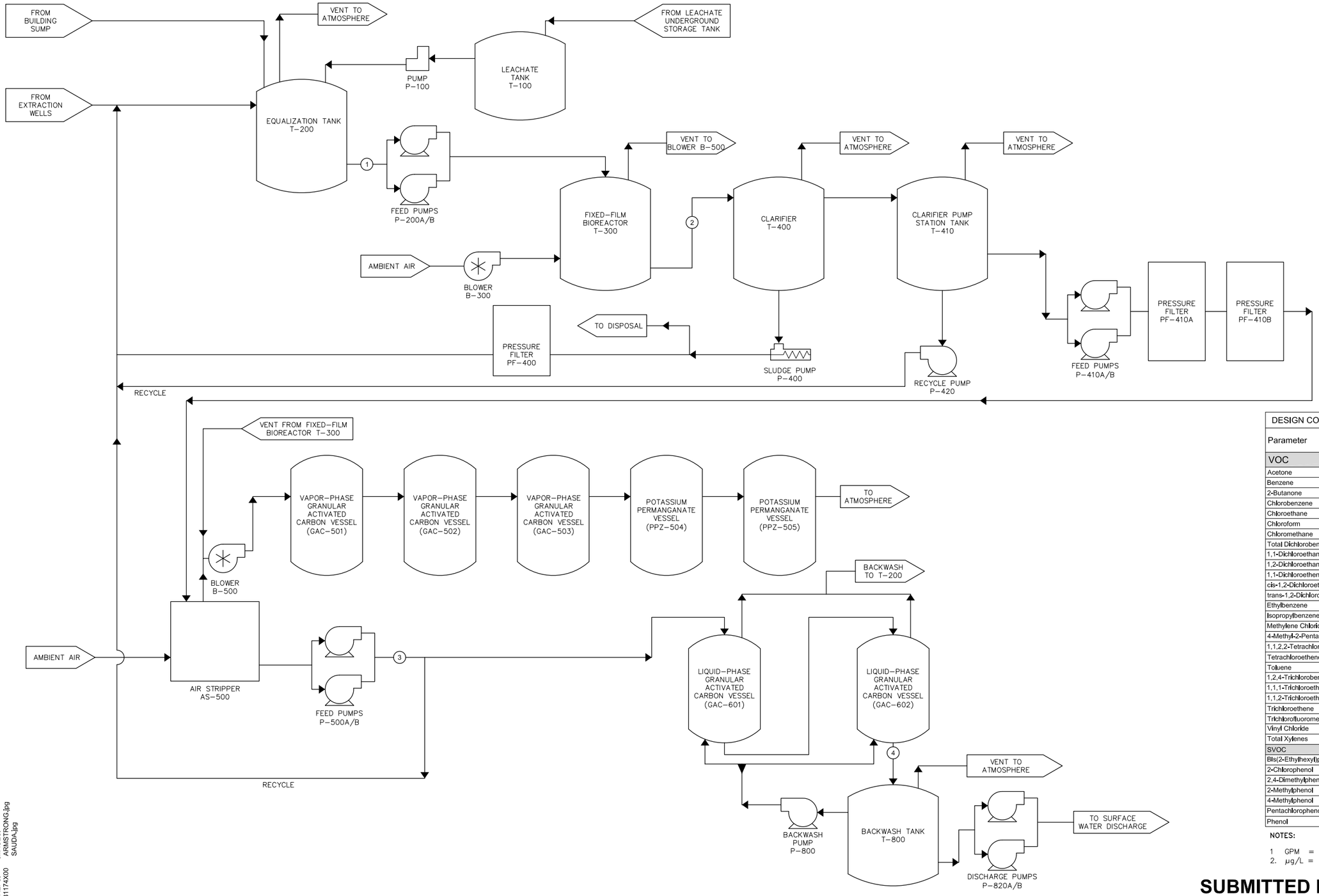
CIVIL

ARCADIS Project No.
B0031174.0003.00002

Date
FEBRUARY 2013

ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse, NY 13214
Tel: 315.446.9120

C5



DESIGN CONCENTRATIONS AT 15 GPM FLOW RATE				
Parameter	(1)	(2)	(3)	(4)
VOC				
Acetone	810	16	16	16
Benzene	9,800	784	<1	<1
2-Butanone	330	7	7	7
Chlorobenzene	1,900	570	<1	<1
Chloroethane	15	5	<1	<1
Chloroform	740	222	<1	<1
Chloromethane	60	18	<1	<1
Total Dichlorobenzenes	50	15	<1	<1
1,1-Dichloroethane	120	36	<1	<1
1,2-Dichloroethane	450	135	<1	<1
1,1-Dichloroethene	40	12	<1	<1
cis-1,2-Dichloroethene	2,400	720	<1	<1
trans-1,2-Dichloroethene	55	17	<1	<1
Ethylbenzene	210	17	<1	<1
Isopropylbenzene	14	4	<1	<1
Methylene Chloride	3,600	1,080	<1	<1
4-Methyl-2-Pentanone	140	3	<1	<1
1,1,2,2-Tetrachloroethane	50	15	<1	<1
Tetrachloroethene	120	36	<1	<1
Toluene	7,800	624	<1	<1
1,2,4-Trichlorobenzene	300	90	<1	<1
1,1,1-Trichloroethane	90	27	<1	<1
1,1,2-Trichloroethane	5	2	<1	<1
Trichloroethene	17,000	5,100	<1	<1
Trichlorofluoromethane	5	2	<1	<1
Vinyl Chloride	570	46	<1	<1
Total Xylenes	870	70	<1	<1
SVOC				
Bis(2-Ethylhexyl)phthalate	8	2	2	<1
2-Chlorophenol	5	1	1	<1
2,4-Dimethylphenol	85	17	17	<1
2-Methylphenol	90	18	18	<1
4-Methylphenol	310	62	62	<1
Pentachlorophenol	10	2	2	<1
Phenol	270	54	54	<1

NOTES:

1 GPM = GALLONS PER MINUTE
2. µg/L = MICROGRAMS PER LITER

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Professional Engineer's No.: 084145

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Designed by	Drawn by	Checked by
SAB	KLS	TEM

ARCADIS OF NEW YORK, INC.

DEWEY LOEFFEL LANDFILL SUPERFUND SITE • NASSAU, NEW YORK
GROUNDWATER AND LEACHATE TREATMENT SYSTEM

PROCESS FLOW DIAGRAM

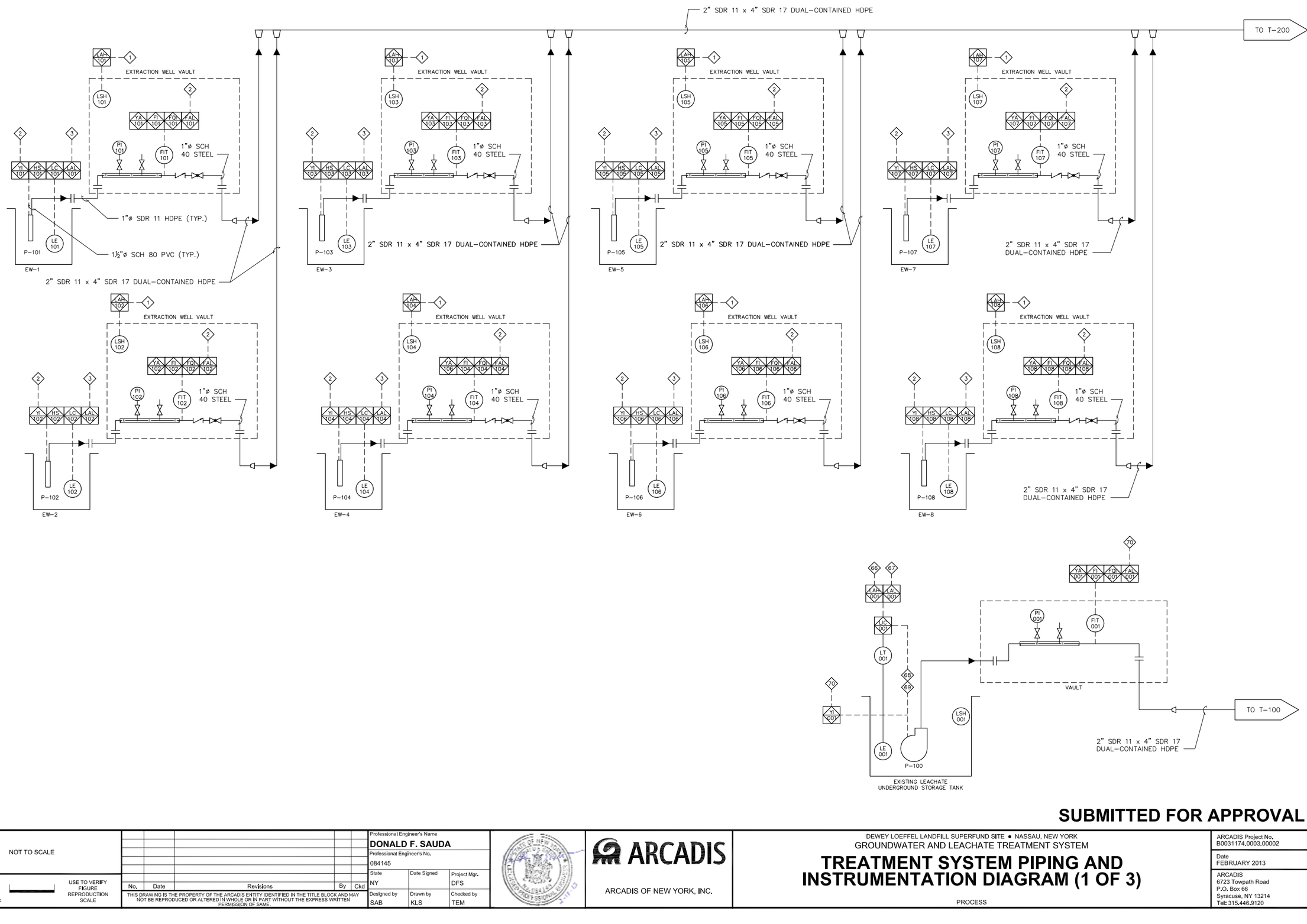
PROCESS

ARCADIS Project No.
B0031174.0003.00002

Date
FEBRUARY 2013

ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse, NY 13214
Tel: 315.446.9120

P1



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DEWEY LOEFFEL LANDFILL SUPERFUND SITE • NASSAU, NEW YORK
GROUNDWATER AND LEACHATE TREATMENT SYSTEM

TREATMENT SYSTEM PIPING AND INSTRUMENTATION DIAGRAM (1 OF 3)

PROCESS

ARCADIS Project No.
B0031174.0003.00002

Date
FEBRUARY 2013

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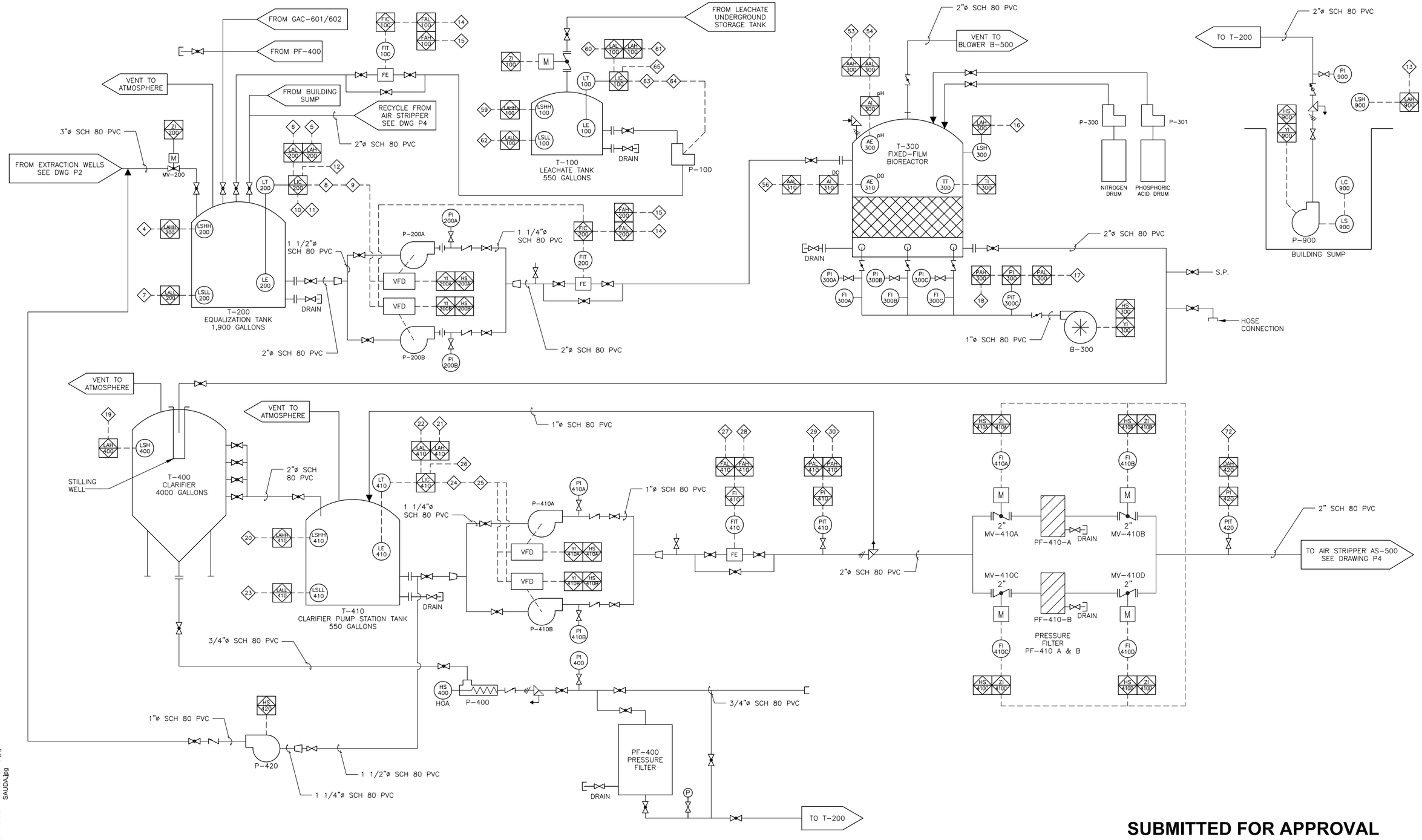
P2



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Professional Engineer's No.: 084145
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DEWEY LOEFFEL LANDFILL SUPERFUND SITE • NASSAU, NEW YORK
GROUNDWATER AND LEACHATE TREATMENT SYSTEM

TREATMENT SYSTEM PIPING AND INSTRUMENTATION DIAGRAM (2 OF 3)

PROCESS

ARCADIS Project No. B0031174.0003.00002
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Syracuse, NY 13214
Tel: 315.446.9120

P3

VENT FROM FIXED-FILM BIOREACTOR T-300

VI 500

HS 500 YI 500

40 PAH 510 PIT 510

PIT 510

6"ø SCH 80 PVC

6"ø HOSE

TO ATMOSPHERE

FRESH AIR INLET

DUCT HEATER

6"ø SCH 80 PVC

B-500

6"ø SCH 80 PVC

S.P.

31 TAH 500 TI 500 TT 500

32 TAL 500

FIT 500 FI 500

FAL 500 FAH 500

38 39

GAC-501
VAPOR-PHASE GRANULAR ACTIVATED CARBON VESSEL

PI 501

GAC-502
VAPOR-PHASE GRANULAR ACTIVATED CARBON VESSEL

PI 502

GAC-503
VAPOR-PHASE GRANULAR ACTIVATED CARBON VESSEL

PI 503

PPZ-504
VAPOR-PHASE POTASSIUM PERMANGANATE VESSEL

PI 504

PPZ-505
VAPOR-PHASE POTASSIUM PERMANGANATE VESSEL

PI 505

S.P.

33 PAL 500 PSH 500

34 PAH 500 PSL 500

LSH 500 LAH 500 35

LT 500 LI 500 36 37

AS-500
LOW-PROFILE AIR STRIPPER

VFD

PI 500A

P-500A

YI 500A HS 500A

VFD

PI 500B

P-500B

YI 500B HS 500B

DRAIN

FROM PF-410A/410B SEE DRAWING P3

2"ø SCH 80 PVC

1 1/4"ø SCH 80 PVC

2"ø SCH 80 PVC

1"ø SCH 80 PVC

FAH 510 42

FAL 510 41

FI 510

FIT 510

FM

FAH 520 44

FAL 520 43

PI 520

PIT 520

RECYCLE TO T-200 SEE DRAWING P3

2"ø SCH 80 PVC

MV-500 M ZI 500

2"ø SCH 80 PVC

MV-510 M ZI 510

TO T-200 SEE DRAWING P3

PI 601A

GAC 601
LIQUID-PHASE GRANULAR ACTIVATED CARBON VESSEL

PI 602A

GAC 602
LIQUID-PHASE GRANULAR ACTIVATED CARBON VESSEL

PI 601B S.P.

NC

PI 602B S.P.

2"ø SCH 80 PVC

FI 800 FQI 800

FIT 800

FE

PI 800

YI 800 HS 800

P-800

DRAIN

73 AL 800 LAH 800 74

LT 800 LIC 800 76 77

75

VENT TO ATMOSPHERE

LE 800

T-800
BACKWASH SUPPLY HOLDING TANK
2,000 GALLONS

1 1/2"ø SCH 80 PVC

LSH 800 LAHH 800 45

LSL 800 LAL 800 46

HS 810

P-810

HOSE CONNECTION

1"ø SCH 80 PVC

DRAIN TO SUMP

PROCESS WASH VESSEL

1 1/4"ø SCH 80 PVC

VFD

PI 820A

P-820A

YI 820A HS 820A

VFD

PI 820B

P-820B

YI 820B HS 820B

FAH 900 FAL 900

FI 900 FQI 900

FIT 900

FE

PH AIT 900 AE

AAH 900 51

AAL 900 52

3"ø SCH 80 PVC

DISCHARGE TO SURFACE WATER

3"ø SDR 11 HDPE

TAH 900 47

TT 900 TAL 900 48

UNAUTHORIZED BUILDING ENTRY

ZS 900 ZA 900 49

LOSS OF POWER

JS 900 JA 900 50

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ARCADIS OF NEW YORK, INC.

DEWEY LOEFFEL LANDFILL SUPERFUND SITE • NASSAU, NEW YORK
GROUNDWATER AND LEACHATE TREATMENT SYSTEM

TREATMENT SYSTEM PIPING AND INSTRUMENTATION DIAGRAM (3 OF 3)

PROCESS

ARCADIS Project No.: B0031174.0003.00002
Date: FEBRUARY 2013

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P4

EQUIPMENT LEGEND:

- HEAT–TRACED PROCESS PIPING
- PROCESS PIPING
- INSTRUMENTATION SIGNAL
- SKID MOUNTED EQUIPMENT
- SAMPLE TAP
- PRESSURE GAUGE (PI 100)
- VACUUM GAUGE (VI 100)
- MOTOR CONTROLLED BALL VALVE (M)
- BALL VALVE
- CHECK VALVE
- UNION
- REDUCER
- BUTTERFLY VALVE
- HOSE CONNECTION
- BOOSTER PUMP
- PRESSURE RELIEF VALVE
- FLANGE
- LOCAL, FIELD MOUNT
- MAIN PLC CONTROLLER (LAH 100)
- MAIN PLC INTERLOCK (1)
- CENTRIFUGAL PUMP
- BLOWER
- METERING PUMP
- SUBMERSIBLE WELL PUMP
- PROGRESSIVE CAVITY PUMP
- VACUUM RELIEF VALVE

ABBREVIATIONS:

A	AIR
AAH	ANALYSIS ALARM HIGH
AAL	ANALYSIS ALARM LOW
AE	ANALYSIS ELEMENT
AIT	ANALYSIS INDICATING TRANSMITTER
AS	AIR STRIPPER
BF	BAG FILTER
ø	DIAMETER
DC	DOUBLE–CONTAINED
EW	EXTRACTION WELL
FAH	FLOW ALARM HIGH
FAL	FLOW ALARM LOW
FE	FLOW ELEMENT
FI	FLOW INDICATOR
FIT	FLOW INDICATING TRANSMITTER
FM	FLOW METER
FO	FAIL OPEN
FP	FLOOR PENETRATION
FQI	TOTALIZED FLOW INDICATOR
GAC	GRANULAR ACTIVATED CARBON
GA	GAUGE
HDPE	HIGH DENSITY POLYETHYLENE
HOA	HAND–OFF–AUTO
HP	HORSEPOWER
HS	HAND SWITCH
INS	INSULATED
KI	PUMP RUN TIME INDICATOR
KW	KILOWATT
LAH	LEVEL ALARM HIGH
LAHH	LEVEL ALARM HIGH–HIGH
LAL	LEVEL ALARM LOW
LALL	LEVEL ALARM LOW–LOW
LE	LEVEL ELEMENT
LI	LEVEL INDICATOR
LIC	LEVEL INDICATING CONTROLLER
LSH	LEVEL SWITCH HIGH
LSL	LEVEL SWITCH LOW
LT	LEVEL TRANSMITTER
MV	MOTORIZED VALVE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
PAH	PRESSURE ALARM HIGH
PAL	PRESSURE ALARM LOW
PF	PRESSURE FILTER
PT	PRESSURE TRANSMITTER
PI	PRESSURE INDICATOR
PLC	PROGRAMMABLE LOGIC CONTROLLER
PPZ	POTASSIUM PERMANANATE ZEOLITE
PSL	PRESSURE SWITCH LOW
PSH	PRESSURE SWITCH HIGH
PVC	POLYVINYL CHLORIDE
SCH	SCHEDULE
SDR	STANDARD DIMENSION RATIO
TAL	TEMPERATURE ALARM LOW
TI	TEMPERATURE INDICATOR
TT	TEMPERATURE INDICATING TRANSMITTER
TYP	TYPICAL
UG	UNDERGROUND
VFD	VARIABLE FREQUENCY DRIVE
W	WATER
YI	RUN INDICATION
ZI	POSITION INDICATOR

CONTROL SYSTEM INTERLOCKS

INTERLOCK #	DESCRIPTION
1	IF HIGH LEVEL AT EXTRACTION WELL VAULT (LAH–1XX), SIGNAL ALARM AT MAIN CONTROL PANEL (MCP) AND TURN OFF ALL EXTRACTION WELLS. ALL LEVEL SWITCHES SHALL BE WIRED NORMALLY CLOSED SO THAT LOSS OF SIGNAL WILL CONSTITUTE ALARM.
2	IF PUMP RUN SIGNAL DETECTED (YI–1XX) AT EXTRACTION WELLS AND RESPECTIVE FLOW RATE IS 0 AFTER 5 MINUTES, SIGNAL ALARM AT MCP (FAL–1XX) AND TURN OFF ALL EXTRACTION WELLS.
3	IF LOW LEVEL IN EXTRACTION WELL (LAL–1XX), SIGNAL ALARM AT MCP AND TURN OFF EXTRACTION WELL PUMP.
4	IF HIGH–HIGH LEVEL ALARM SWITCH ACTIVATED AT T–200 (LAHH–200), SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–200A/B, P–400, P–410A/B, P–420, P–500A/B, AND P–800 TURN OFF ALL EXTRACTION WELL PUMPS, TURN OFF BUILDING SUMP PUMP P–900, AND CLOSE MV–200 AND MV–500. ALL LEVEL SWITCHES SHALL BE WIRED NORMALLY CLOSED SO THAT LOSS OF SIGNAL WILL CONSTITUTE ALARM.
5	IF HIGH LEVEL ALARM AT T–200 (LAH–200), SIGNAL ALARM AT MCP AND TURN OFF ALL EXTRACTION WELL PUMPS, TURN OFF PUMPS P–400 AND P–800, AND CLOSE MV–200.
6	IF LOW LEVEL ALARM AT T–200 (LAL–200), SIGNAL ALARM AT MCP, TURN OFF PUMPS P–200A /B AND P–800, TURN OFF ALL EXTRACTION WELL PUMPS, TURN OFF BUILDING SUMP PUMP P–900, AND CLOSE MV–200.
7	IF LOW–LOW LEVEL ALARM SWITCH ACTIVATED AT T–200 (LALL–200), SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–200A/B AND P–800, TURN OFF ALL EXTRACTION WELL PUMPS, AND CLOSE MV–200. ALL LEVEL SWITCHES SHALL BE WIRED NORMALLY CLOSED SO THAT LOSS OF SIGNAL WILL CONSTITUTE ALARM.
8	IF HIGH LEVEL SETPOINT #1 AT T–200, TURN ON LEAD PUMP (P–200A OR B) – LEAD/LAG PUMPS SHALL BE ALTERNATING.
9	IF LOW LEVEL SETPOINT #1 AT T–200, TURN OFF PUMPS P–200A/B.
10	IF HIGH LEVEL SETPOINT #2 AT T–200, OPEN MV–510 AND CLOSE MV–500.
11	IF LOW LEVEL SETPOINT #2 AT T–200, OPEN MV–500 AND CLOSE MV–510.
12	IF T–200 LEVEL TRANSMITTER SIGNAL (LT–200) IS DETECTED OUT OF ACCEPTABLE RANGE, SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–200A/B, TURN OFF EXTRACTION WELL PUMPS, AND CLOSE MV–200.
13	IF HIGH LEVEL ALARM (LAH–900) AT BUILDING SUMP, SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–200A/B, P–400, P–410A/B, P–420, P–500A/B, AND P–800, TURN OFF ALL EXTRACTION WELL PUMPS, AND CLOSE MV–200. ALL LEVEL SWITCHES SHALL BE WIRED NORMALLY CLOSED SO THAT LOSS OF SIGNAL WILL CONSTITUTE ALARM.
14	IF LOW FLOW ALARM AT T–200 DISCHARGE (FAL–200), SIGNAL ALARM AT MCP, TURN OFF PUMPS P–200A/B, TURN OFF ALL EXTRACTION WELL PUMPS, AND CLOSE MV–200.
15	IF HIGH FLOW ALARM AT T–200 DISCHARGE (FAH–200), SIGNAL ALARM AT MCP, TURN OFF PUMPS P–200A/B, TURN OFF ALL EXTRACTION WELL PUMPS, AND CLOSE MV–200.
16	IF HIGH LEVEL ALARM SWITCH ACTIVATED AT T–300 (LAH–300), SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–200A/B. ALL LEVEL SWITCHES SHALL BE WIRED NORMALLY CLOSED SO THAT LOSS OF SIGNAL WILL CONSTITUTE ALARM.
17	IF LOW BLOWER DISCHARGE PRESSURE (PAL–300) AT T–300, SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–200A/B.
18	IF HIGH BLOWER DISCHARGE PRESSURE (PAH–300) AT T–300, SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–200A/B.
19	IF HIGH LEVEL ALARM SWITCH ACTIVATED AT T–400 (LAH–400), SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–200A/B. ALL LEVEL SWITCHES SHALL BE WIRED NORMALLY CLOSED SO THAT LOSS OF SIGNAL WILL CONSTITUTE ALARM.
20	IF HIGH–HIGH LEVEL ALARM SWITCH ACTIVATED AT T–410 (LAHH–410), SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–200A/B, P–400, P–410A/B, P–420, P–500A/B, AND P–800 TURN OFF ALL EXTRACTION WELL PUMPS, TURN OFF BUILDING SUMP PUMP P–900, AND CLOSE MV–200 AND MV–500. ALL LEVEL SWITCHES SHALL BE WIRED NORMALLY CLOSED SO THAT LOSS OF SIGNAL WILL CONSTITUTE ALARM.
21	IF HIGH LEVEL ALARM AT T–410 (LAH–410), SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–200A/B.
22	IF LOW LEVEL ALARM AT T–400 (LAL–400), SIGNAL ALARM AT MCP, TURN OFF PUMPS P–200A/B AND P–410A/B.
23	IF LOW–LOW LEVEL ALARM SWITCH ACTIVATED AT T–400 (LALL–400), SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–200A/B, P–410A/B AND P–420. ALL LEVEL SWITCHES SHALL BE WIRED NORMALLY CLOSED SO THAT LOSS OF SIGNAL WILL CONSTITUTE ALARM.
24	IF HIGH LEVEL SETPOINT #1 AT T–410, TURN ON LEAD PUMP (P–410A OR B) – LEAD/LAG PUMPS SHALL BE ALTERNATING.
25	IF LOW LEVEL SETPOINT #1 AT T–410, TURN OFF PUMPS P–410A/B.
26	IF T–410 LEVEL TRANSMITTER SIGNAL (LT–410) IS DETECTED OUT OF ACCEPTABLE RANGE, SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–200A/B AND P–410A/B.
27	IF LOW FLOW ALARM AT T–410 DISCHARGE (FAL–410), SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–410A/B.
28	IF HIGH FLOW ALARM AT T–410 DISCHARGE (FAH–410), SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–410A/B
29	IF LOW PRESSURE ALARM AT T–410 EFFLUENT (PAL–410), SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–410A/B.
30	IF HIGH PRESSURE ALARM AT T–410 EFFLUENT, (PAH–410), SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–410A/B.
31	IF HIGH TEMPERATURE ALARM (TAH–500) AT AIR STRIPPER INLET DUCT, SIGNAL ALARM AT MCP AND TURN OFF P–410A/B AND TURN OFF BLOWERS B–300 AND B–500 AFTER 10 MINUTE DELAY.
32	IF LOW TEMPERATURE ALARM (TAL–500) AT AIR STRIPPER INLET DUCT, SIGNAL ALARM AT MCP AND TURN OFF P–410A/B AND TURN OFF BLOWERS B–300 AND B–500 AFTER 10 MINUTE DELAY.
33	IF HIGH PRESSURE ALARM ACROSS AIR STRIPPER SYSTEM (PAH–500), SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–410 A/B AND TURN OFF BLOWERS B–300 AND B–500 AFTER 10 MINUTE DELAY.
34	IF LOW PRESSURE ALARM ACROSS AIR STRIPPER SYSTEM (PAL–500), SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–410 A/B AND TURN OFF BLOWERS B–300 AND B–500 AFTER 10 MINUTE DELAY.
35	IF HIGH AIR STRIPPER SUMP SWITCH ALARM (LAH–500), SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–410 A/B AND TURN OFF BLOWERS B–300 AND B–500 AFTER 10 MINUTE DELAY. ALL LEVEL SWITCHES SHALL BE WIRED NORMALLY CLOSED SO THAT LOSS OF SIGNAL WILL CONSTITUTE ALARM.
36	IF AIR STRIPPER SUMP HIGH LEVEL SETPOINT #1 ACTIVATED, TURN ON LEAD AIR STRIPPER DISCHARGE PUMP P–500A/B.– LEAD/LAG PUMPS SHALL BE ALTERNATING.
37	IF AIR STRIPPER SUMP LOW LEVEL SETPOINT #1 ACTIVATED, TURN OFF AIR STRIPPER DISCHARGE PUMPS P–500A/B.
38	IF LOW BLOWER AIR FLOW ALARM AT AIR STRIPPER (FAL–500), SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–410A/B AND TURN OFF BLOWERS B–300 AND B–500 AFTER 10 MINUTE DELAY.
39	IF HIGH BLOWER AIR FLOW ALARM AT AIR STRIPPER (FAH–500), SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–410A/B AND TURN OFF BLOWERS B–300 AND B–500 AFTER 10 MINUTE DELAY.
40	IF HIGH BLOWER DISCHARGE PRESSURE ALARM AT AIR STRIPPER (PAH–510), SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–410A/B AND TURN OFF BLOWERS B–300 AND B–500 AFTER 10 MINUTE DELAY.
41	IF LOW FLOW ALARM AT AIR STRIPPER DISCHARGE (FAL–510), SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–500A/B AND P–410A/B AND TURN OFF BLOWERS B–300 AND B–500 AFTER 10 MINUTE DELAY.
42	IF HIGH FLOW ALARM AT AIR STRIPPER DISCHARGE (FAH–510), SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–500A/B AND P–410A/B AND TURN OFF BLOWERS B–300 AND B–500 AFTER 10 MINUTE DELAY.
43	IF LOW PRESSURE ALARM AT P–500A/B DISCHARGE (PAL–520), SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–410A/B AND P–500A/B AND TURN OFF BLOWERS B–300 AND B–500 AFTER 10 MINUTE DELAY.
44	IF HIGH PRESSURE ALARM AT P–500A/B DISCHARGE (PAH–520), SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–410A/B AND P–500A/B AND TURN OFF BLOWERS B–300 AND B–500 AFTER 10 MINUTE DELAY.
45	IF HIGH LEVEL ALARM SWITCH ACTIVATED AT T–800 (LAHH–800), SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–500A/B AND P–410A/B. ALL LEVEL SWITCHES SHALL BE WIRED NORMALLY CLOSED SO THAT LOSS OF SIGNAL WILL CONSTITUTE ALARM.

CONTROL SYSTEM INTERLOCKS

INTERLOCK #	DESCRIPTION
46	IF LOW LEVEL ALARM SWITCH ACTIVATED AT T–800 (LAL–400), SIGNAL ALARM AT MCP AND TURN OFF PUMP P–800. ALL LEVEL SWITCHES SHALL BE WIRED NORMALLY CLOSED SO THAT LOSS OF SIGNAL WILL CONSTITUTE ALARM.
47	IF HIGH BUILDING TEMPERATURE ALARM (TAH–900), SIGNAL ALARM AT MCP.
48	IF LOW BUILDING TEMPERATURE ALARM (TAH–900), SIGNAL ALARM AT MCP AND TURN OFF ALL EXTRACTION WELL PUMPS AND CLOSE MV–200.
49	IF UNAUTHORIZED BUILDING ENTRY ALARM ACTIVATED, SIGNAL ALARM AT MCP.
50	IF LOSS OF SYSTEM POWER DETECTED, SIGNAL ALARM AT MCP AND CLOSE MV–200.
51	HIGH pH ALARM AT DISCHARGE, SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–500A/B, AND P–410A/B.
52	LOW pH ALARM AT DISCHARGE, SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–500A/B, AND P–410A/B.
53	HIGH pH ALARM AT T–300 (AAH–300), SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–200A/B.
54	LOW pH ALARM AT T–300 (AAL–300), SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–200A/B.
55	HIGH DISSOLVED O2 ALARM AT T–300 (AAH–310), SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–200A/B.
56	LOW DISSOLVED O2 ALARM AT T–300 (AAL–310), SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–200A/B.
57	HIGH TEMPERATURE ALARM AT T–300 (TAH–300), SIGNAL ALARM AT MCP.
58	LOW TEMPERATURE ALARM AT T–300 (TAL–300), SIGNAL ALARM AT MCP.
59	IF HIGH–HIGH LEVEL ALARM SWITCH ACTIVATED AT T–100 (LAHH–100), SIGNAL ALARM AT MCP, TURN OFF P–001 AND CLOSE MV–100. ALL LEVEL SWITCHES SHALL BE WIRED NORMALLY CLOSED SO THAT LOSS OF SIGNAL WILL CONSTITUTE ALARM.
60	IF HIGH LEVEL ALARM AT T–100 (LAH–100), SIGNAL ALARM AT MCP, TURN OFF P–001 AND CLOSE MV–100.
61	IF LOW LEVEL ALARM AT T–100 (LAL–100), SIGNAL ALARM AT MCP, TURN OFF BUILDING SUMP PUMP P–900, TURN OFF P–001 AND CLOSE MV–100.
62	IF LOW–LOW LEVEL ALARM SWITCH ACTIVATED AT T–100 (LALL–100), SIGNAL ALARM AT MCP, TURN OFF BUILDING SUMP PUMP P–900, TURN OFF P–001 AND CLOSE MV–100. ALL LEVEL SWITCHES SHALL BE WIRED NORMALLY CLOSED SO THAT LOSS OF SIGNAL WILL CONSTITUTE ALARM.
63	IF HIGH LEVEL SETPOINT AT T–100, TURN ON P–100.
64	IF LOW LEVEL SETPOINT AT T–100, TURN OFF P–100.
65	IF T–100 LEVEL TRANSMITTER SIGNAL (LT–100) IS DETECTED OUT OF ACCEPTABLE RANGE, SIGNAL ALARM AT MCP, TURN OFF P–001 AND CLOSE MV–100.
66	IF HIGH LEVEL ALARM AT LEACHATE UNDERGROUND STORAGE TANK (LAH–001), SIGNAL ALARM AT MCP AND TURN OFF P–001.
67	IF LOW LEVEL ALARM AT LEACHATE UNDERGROUND STORAGE TANK (LAL–001), SIGNAL ALARM AT MCP AND TURN OFF P–001.
68	IF HIGH LEVEL SETPOINT AT LEACHATE UNDERGROUND STORAGE TANK, TURN ON P–001.
69	IF LOW LEVEL SETPOINT AT LEACHATE UNDERGROUND STORAGE TANK, TURN OFF P–001.
70	IF PUMP RUN SIGNAL DETECTED (YI–001) AND FLOW RATE IS 0 AFTER 5 MINUTES, SIGNAL ALARM AT MCP (FAL–1XX) AND TURN OFF P–001.
71	IF LEVEL TRANSMITTER SIGNAL (LT–001) IS DETECTED OUT OF ACCEPTABLE RANGE, SIGNAL ALARM AT MCP AND TURN OFF P–001.
72	IF HIGH DIFFERENTIAL PRESSURE ALARM ACROSS PF–410A/B (DAH–420), SWITCH FROM LEAD VESSEL TO LAG VESSEL.
73	IF HIGH LEVEL ALARM AT T–800 (LAH–800), SIGNAL ALARM AT MCP, TURN OFF P–500A/B AND CLOSE MV–510.
74	IF LOW LEVEL ALARM AT T–800 (LAL–800), SIGNAL ALARM AT MCP, TURN OFF PUMPS P–500A/B AND P–820A/B AND CLOSE MV–510.
75	IF T–800 LEVEL TRANSMITTER SIGNAL (LT–800) IS DETECTED OUT OF ACCEPTABLE RANGE, SIGNAL ALARM AT MCP AND TURN OFF PUMPS P–500A/B AND P–820A/B.
76	IF HIGH LEVEL SETPOINT #1 AT T–800, TURN ON LEAD PUMP (P–820A OR B) – LEAD/LAG PUMPS SHALL BE ALTERNATING.
77	IF LOW LEVEL SETPOINT #1 AT T–800, TURN OFF PUMPS P–820A/B.

CONTROL LOGIC

PUMP	DESCRIPTION
EXTRACTION WELL PUMPS	WELL PUMP OPERATION IS CONTROLLED BY THE LOCAL WELL PUMP CONTROL PANEL. PUMP OPERATION IS INITIATED WHEN THE PUMP ON LEVEL SETPOINT IS REACHED. PUMP OPERATION IS STOPPED WHEN THE PUMP OFF LEVEL SETPOINT IS REACHED.
P–001	LEACHATE COLLECTION SUMP PUMP OPERATION IS CONTROLLED BY THE LOCAL CONTROL PANEL. PUMP OPERATION IS INITIATED WHEN THE PUMP ON LEVEL SETPOINT IS REACHED. PUMP OPERATION IS STOPPED WHEN THE PUMP OFF LEVEL SETPOINT IS REACHED.
P–100	PUMP OPERATION SHALL BE CONTROLLED BASED ON LEVEL SETPOINT. PUMP OPERATION IS INITIATED WHEN THE PUMP ON LEVEL SETPOINT IS REACHED. PUMP OPERATION IS STOPPED WHEN THE PUMP OFF LEVEL SETPOINT IS REACHED. PUMP PERMISSIVE CONDITIONS ARE IDENTIFIED IN THE INTERLOCK LIST.
P–200A/B	TRANSFER PUMP OPERATION SHALL BE ALTERNATING LEAD/LAG. LAG PUMP SHALL NOT TURN ON AUTOMATICALLY. PUMP OPERATION SHALL BE CONTROLLED BY VFD BASED ON FLOW SETPOINT. PUMP PERMISSIVE CONDITIONS ARE IDENTIFIED IN THE INTERLOCK LIST.
MV–200	MOTORIZED VALVE MV–200 SHALL BE EITHER 100% OPEN OR CLOSED. PERMISSIVE CONDITIONS ARE IDENTIFIED IN THE INTERLOCK LIST. IN THE EVENT OF A POWER LOSS, MV–200 SHALL BE CLOSED WITH POWER FROM UPS BACK–UP BATTERY.
B–300	BLOWER OPERATION SHALL BE CONSTANT AND NOT DEPENDENT UPON ANY SETPOINTS. BLOWER PERMISSIVE CONDITIONS ARE IDENTIFIED IN THE INTERLOCK LIST.
P–400	TRANSFER PUMP OPERATION SHALL BE MANUALLY INITIATED AND TURNED OFF BY OPERATOR. PUMP PERMISSIVE CONDITIONS ARE IDENTIFIED IN THE INTERLOCK LIST.
P–410A/B	TRANSFER PUMP OPERATION SHALL BE ALTERNATING LEAD/LAG. LAG PUMP SHALL NOT TURN ON AUTOMATICALLY. PUMP OPERATION SHALL BE CONTROLLED BY VFD BASED ON CONSTANT TANK T–410 LEVEL SETPOINT. PUMP PERMISSIVE CONDITIONS ARE IDENTIFIED IN THE INTERLOCK LIST.
P–420	RECYCLE PUMP OPERATION SHALL BE CONSTANT AND NOT DEPENDENT UPON ANY SETPOINTS. PUMP PERMISSIVE CONDITIONS ARE IDENTIFIED IN THE INTERLOCK LIST.
P–900	SUMP PUMP OPERATION SHALL BE AUTOMATIC BASED ON LOCAL SUMP LEVEL SWITCH POSITION. PUMP PERMISSIVE CONDITIONS ARE IDENTIFIED IN THE INTERLOCK LIST.
B–500	BLOWER OPERATION SHALL BE CONSTANT AND NOT DEPENDENT UPON ANY SETPOINTS. BLOWER PERMISSIVE CONDITIONS ARE IDENTIFIED IN THE INTERLOCK LIST.
P–500A/B	TRANSFER PUMP OPERATION SHALL BE ALTERNATING LEAD/LAG. LAG PUMP SHALL NOT TURN ON AUTOMATICALLY. PUMP OPERATION SHALL BE CONTROLLED BY VFD BASED ON CONSTANT AS–500 SUMP LEVEL SETPOINT. PUMP PERMISSIVE CONDITIONS ARE IDENTIFIED IN THE INTERLOCK LIST.
MV–500	MOTORIZED VALVE MV–500 SHALL BE EITHER 100% OPEN OR CLOSED. PERMISSIVE CONIDTIONS ARE IDENTIFIED IN THE INTERLOCK LIST. IN THE EVENT OF A POWER LOSS, MV–200 SHALL BE CLOSED WITH POWER FROM UPS BACK–UP BATTERY.
MV–510	MOTORIZED VALVE MV–510 SHALL BE EITHER 100% OPEN OR CLOSED. PERMISSIVE CONDITIONS ARE IDENTIFIED IN THE INTERLOCK LIST. IN THE EVENT OF A POWER LOSS, MV–200 SHALL BE CLOSED WITH POWER FROM UPS BACK–UP BATTERY.
P–800	TRANSFER PUMP OPERATION SHALL BE MANUALL INITIATED BY OPERATOR . PUMP PERMISSIVE CONDITIONS ARE IDENTIFIED IN THE INTERLOCK LIST.
P–820A/B	TRANSFER PUMP OPERATION SHALL BE ALTERNATING LEAD/LAG. LAG PUMP SHALL NOT TURN ON AUTOMATICALLY. PUMP OPERATION SHALL BE CONTROLLED BY VFD BASED ON FLOW SETPOINT. PUMP PERMISSIVE CONDITIONS ARE IDENTIFIED IN THE INTERLOCK LIST.

SUBMITTED FOR APPROVAL

NOT TO SCALE

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING: USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd

Professional Engineer's Name: **DONALD F. SAUDA**
Professional Engineer's No.: 084145

State	Date Signed	Project Mgr.
NY		DFS
Designed by: SAB	Drawn by: KLS	Checked by: TEM

ARCADIS OF NEW YORK, INC.

DEWEY LOEFFEL LANDFILL SUPERFUND SITE • NASSAU, NEW YORK
GROUNDWATER AND LEACHATE TREATMENT SYSTEM

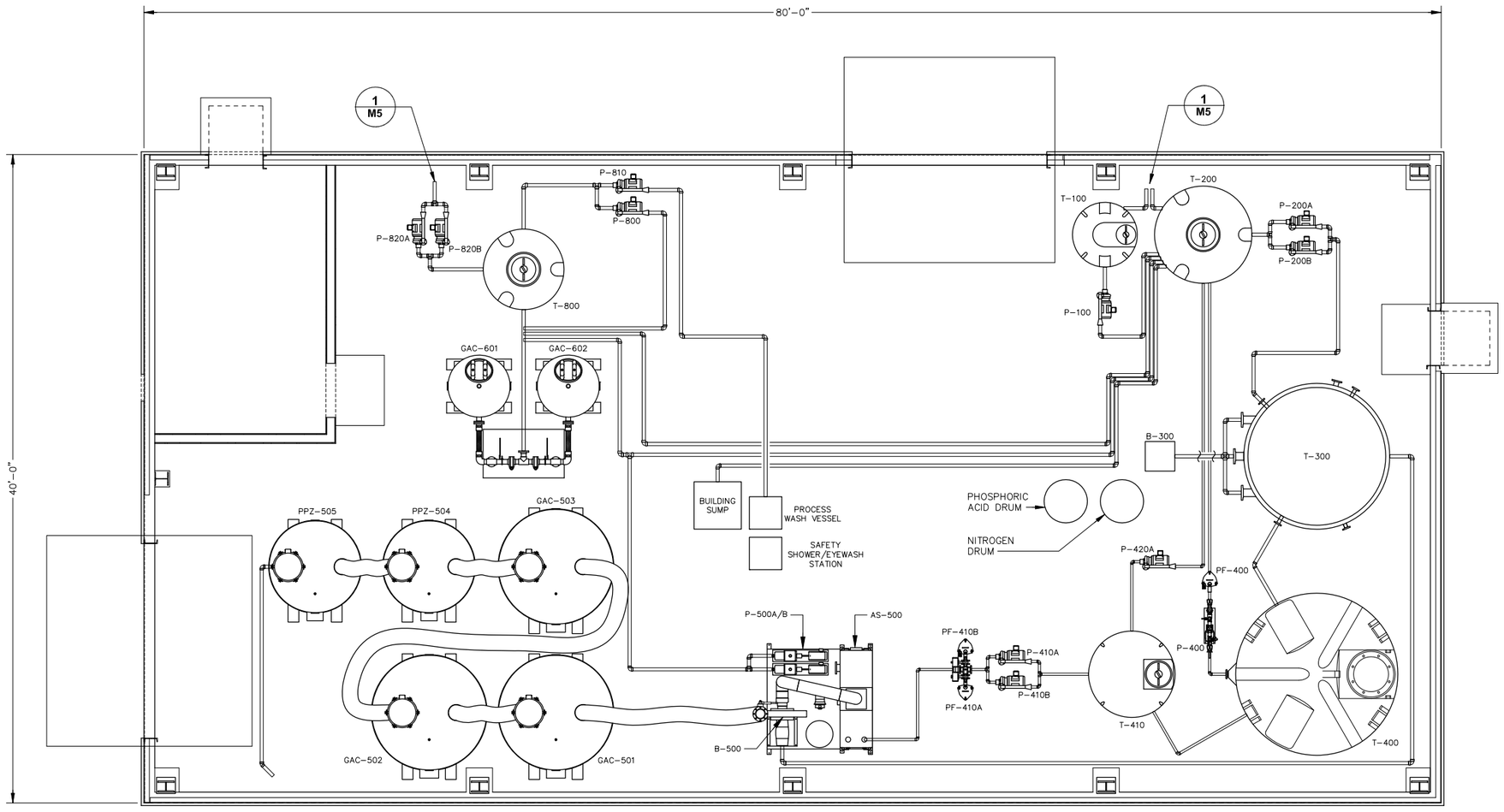
LEGEND, ABBREVIATIONS, AND INTERLOCKS

PROCESS

ARCADIS Project No.: B0031174.0003.00002
Date: FEBRUARY 2013

ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse, NY 13214
Tel: 315.446.9120

P5



NOTES:

1. REFER TO CONTRACT DRAWING M4 FOR HVAC PLAN.
2. REFER TO CONTRACT DRAWING E5 FOR INSTRUMENTATION PLAN.
3. REFER TO CONTRACT DRAWINGS S1 THROUGH S12 FOR FOUNDATION AND BUILDING DETAILS AND SPECIFICATIONS.
4. REFER TO CONTRACT DRAWINGS P3 AND P4 FOR VALVE, SAMPLE TAP, PRESSURE GAUGE, AND TEMPERATURE GAUGE LOCATIONS.
5. REFER TO CONTRACT DRAWING M9 FOR EQUIPMENT, INSTRUMENT, AND MECHANICAL SPECIFICATIONS.
6. REFER TO CONTRACT DRAWINGS E3, E4 AND E5 FOR EQUIPMENT POWER, LIGHTING, AND INSTRUMENTATION PLAN.
7. ALL PROCESS PIPING SHALL BE ELEVATED WHERE POSSIBLE.
8. PHOSPHORIC ACID AND NITROGEN DRUMS SHALL BE STAGED WITHIN DEDICATED SECONDARY CONTAINMENT.

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1/4"=1'-0" (4' 0 4' 8')

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No.	Date	Revisions	By	Ckd

Professional Engineer's Name: **DONALD F. SAUDA**
Professional Engineer's No.: 084145
State: NY | Date Signed: | Project Mgr.: DFS
Designed by: SAB | Drawn by: | Checked by: TEM

ARCADIS OF NEW YORK, INC.

DEWEY LOEFFEL LANDFILL SUPERFUND SITE • NASSAU, NEW YORK
GROUNDWATER AND LEACHATE TREATMENT SYSTEM

TREATMENT BUILDING FLOOR PLAN AND EQUIPMENT LAYOUT

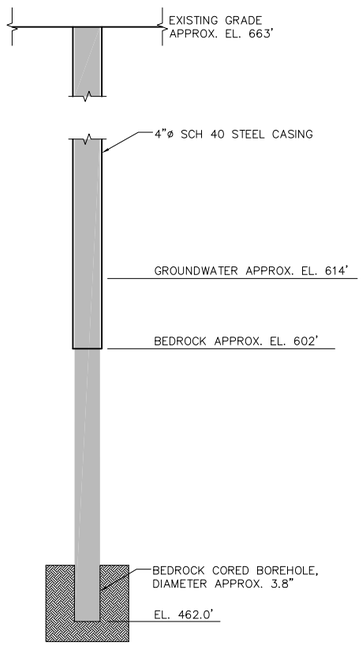
MECHANICAL

ARCADIS Project No.
B0031174.0003.00002

Date
FEBRUARY 2013

ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse, NY 13214
Tel: 315.446.9120

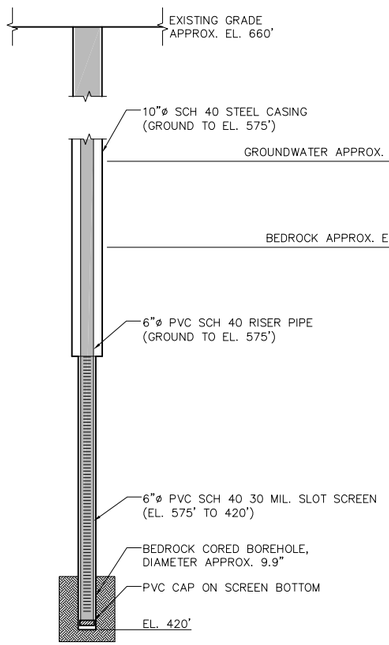
M1



EXTRACTION WELL EW-1

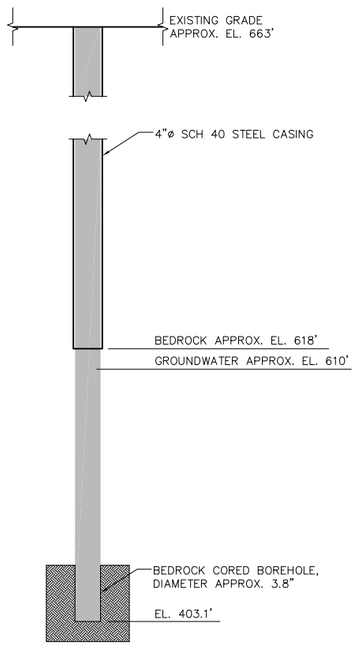
(FORMER MONITORING WELL DB-9B)

NOT TO SCALE



EXTRACTION WELL EW-2

NOT TO SCALE



EXTRACTION WELL EW-3

(FORMER MONITORING WELL DB-11A)

NOT TO SCALE

NOTES:

1. SEE DETAIL 3 ON DRAWING M5 FOR EXISTING CONDITIONS AT THE SURFACE OF THESE WELLS.
2. SEE DETAILS 1 AND 2 ON DRAWING M3 FOR INFORMATION ON NEW EQUIPMENT TO BE INSTALLED AT THE SURFACE OF THESE WELLS.

SUBMITTED FOR APPROVAL

CITY:SYRACUSE=NY DIV/GROUP=ENVCAD DB:G.STEINBERGER LD:G.STEINBERGER PIC:P.FARR PM:D.SAUDA TM:S.BATTAGLIA LYR:ON=*;OFF=*REF*
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No.	Date	Revisions	By	Ckd

Professional Engineer's Name		
DONALD F. SAUDA		
Professional Engineer's No.		
084145		
State	Date Signed	Project Mgr.
NY		DFS
Designed by	Drawn by	Checked by
SAB	KLS	TEM

ARCADIS OF NEW YORK, INC.

DEWEY LOEFFEL LANDFILL SUPERFUND SITE • NASSAU, NEW YORK

GROUNDWATER AND LEACHATE TREATMENT SYSTEM

EXISTING EXTRACTION WELL DETAILS

MECHANICAL

ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse, NY 13214
Tel: 315.446.9120

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Date
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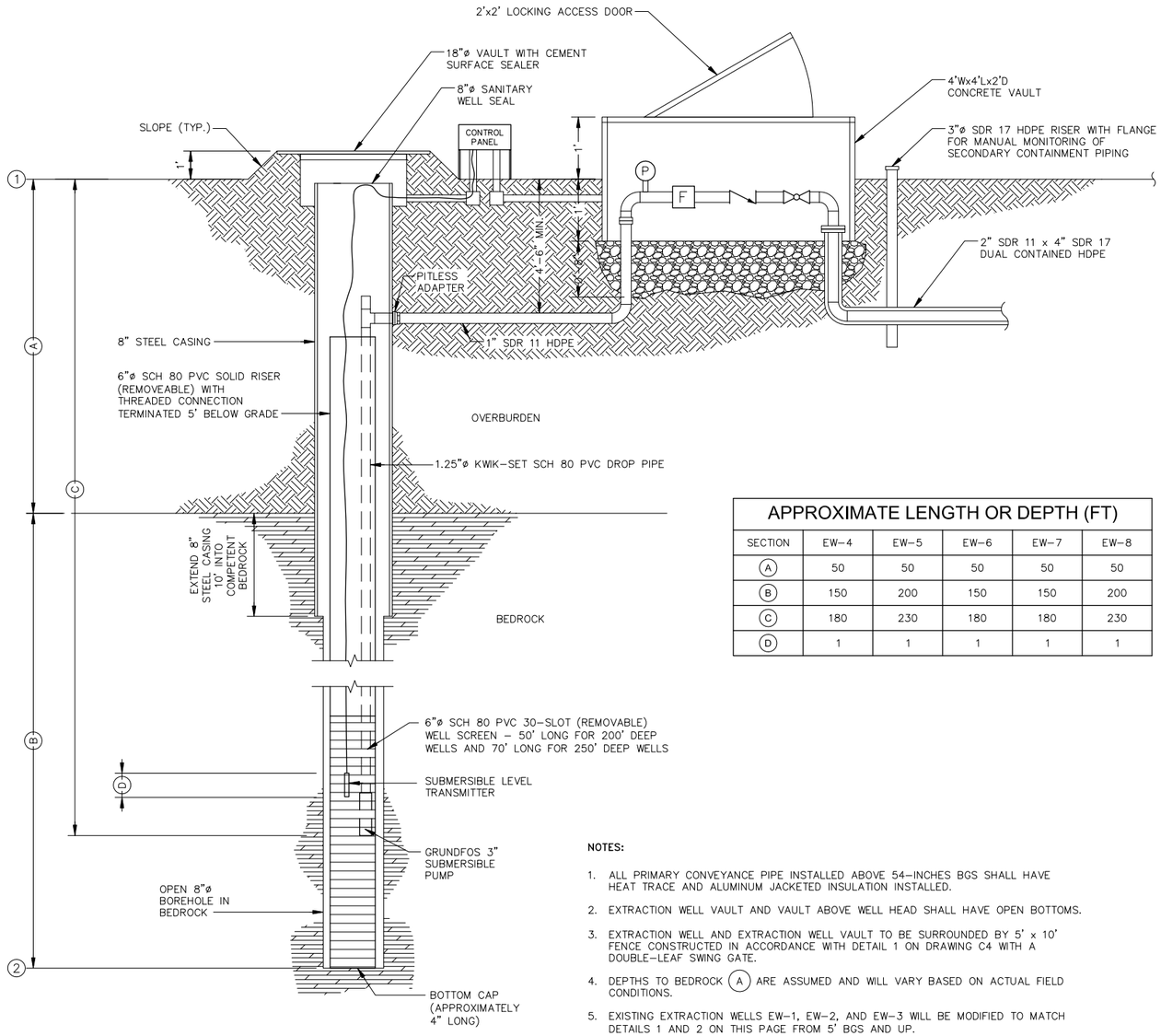
M2



APPROXIMATE LENGTH OR DEPTH (FT)					
SECTION	EW-4	EW-5	EW-6	EW-7	EW-8
(A)	50	50	50	50	50
(B)	150	200	150	150	200
(C)	180	230	180	180	230
(D)	1	1	1	1	1

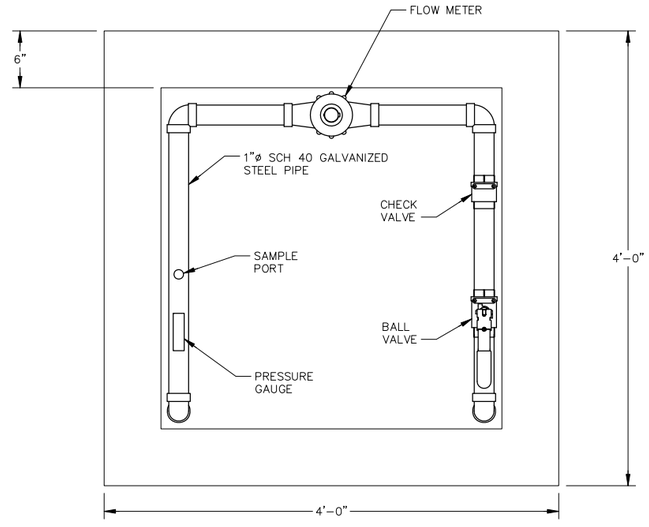
APPROXIMATE ELEVATIONS (FT)					
	EW-4	EW-5	EW-6	EW-7	EW-8
(1)	649	660	650	643	645
(2)	449	410	450	443	395

NOTES:

1. ALL PRIMARY CONVEYANCE PIPE INSTALLED ABOVE 54-INCHES BGS SHALL HAVE HEAT TRACE AND ALUMINUM JACKETED INSULATION INSTALLED.
2. EXTRACTION WELL VAULT AND VAULT ABOVE WELL HEAD SHALL HAVE OPEN BOTTOMS.
3. EXTRACTION WELL AND EXTRACTION WELL VAULT TO BE SURROUNDED BY 5' x 10' FENCE CONSTRUCTED IN ACCORDANCE WITH DETAIL 1 ON DRAWING C4 WITH A DOUBLE-LEAF SWING GATE.
4. DEPTHS TO BEDROCK (A) ARE ASSUMED AND WILL VARY BASED ON ACTUAL FIELD CONDITIONS.
5. EXISTING EXTRACTION WELLS EW-1, EW-2, AND EW-3 WILL BE MODIFIED TO MATCH DETAILS 1 AND 2 ON THIS PAGE FROM 5' BGS AND UP.
6. PIPING FOR LEACHATE UNDERGROUND STORAGE TANK WILL BE MODIFIED TO MATCH DETAILS 1 AND 2 ON THIS PAGE FROM 5' BGS AND UP.
7. CONTROL PANEL TO BE INSTALLED ON FREE-STANDING RACK CONSTRUCTED OF UNI-STRUT OR EQUIVALENT.
8. CONCRETE VAULT SHALL BE INSTALLED ON 8-INCHES OF COMPACTED GRAVEL.

TYPICAL PROPOSED EXTRACTION WELL DETAIL (1)

NOT TO SCALE



TYPICAL PROPOSED EXTRACTION WELL VAULT DETAIL (2)

NOT TO SCALE

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NOT TO SCALE

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Professional Engineer's Name: **DONALD F. SAUDA**
Professional Engineer's No.: 084145

State	Date Signed	Project Mgr.
NY		DFS
Designed by	Drawn by	Checked by
SAB	KLS	TEM

ARCADIS OF NEW YORK, INC.

DEWEY LOEFFEL LANDFILL SUPERFUND SITE • NASSAU, NEW YORK
GROUNDWATER AND LEACHATE TREATMENT SYSTEM

PROPOSED EXTRACTION WELL DETAILS

MECHANICAL

ARCADIS Project No.
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Date
FEBRUARY 2013

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6723 Towpath Road
P.O. Box 66
Syracuse, NY 13214
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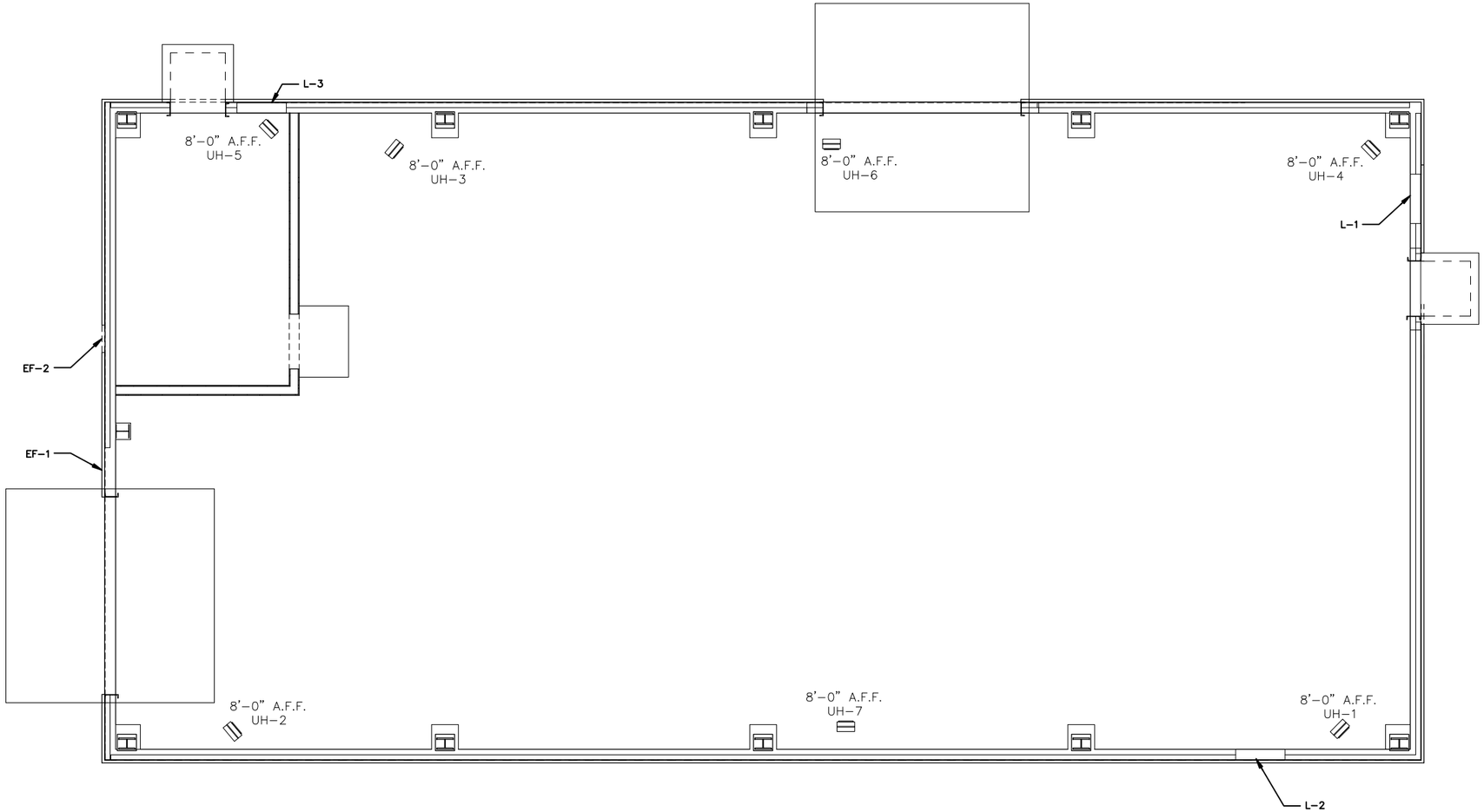
M3



NOTE:

SEE DRAWING M9 FOR EQUIPMENT SPECIFICATIONS.

SUBMITTED FOR APPROVAL

CITY:SYRACUSE-NY DIV/GROUP:ENVCAD DB:G.STEINBERGER LD:G.STEINBERGER PIC:P.FARR PM:D.SAUDA TM:S.BATTAGLIA LYR:ON=*;OFF=*REF*
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XREFS: 31174X00
IMAGES: ARMSTRONG.jpg SAUDA.jpg

1/4"=1'-0" (4' 0 4' 8')

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USE TO VERIFY FIGURE REPRODUCTION SCALE

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Professional Engineer's No.: 084145

State	Date Signed	Project Mgr.
NY		DFS
Designed by	Drawn by	Checked by
SAB	KLS	TEM

ARCADIS OF NEW YORK, INC.

DEWEY LOEFFEL LANDFILL SUPERFUND SITE • NASSAU, NEW YORK
GROUNDWATER AND LEACHATE TREATMENT SYSTEM

HVAC PLAN

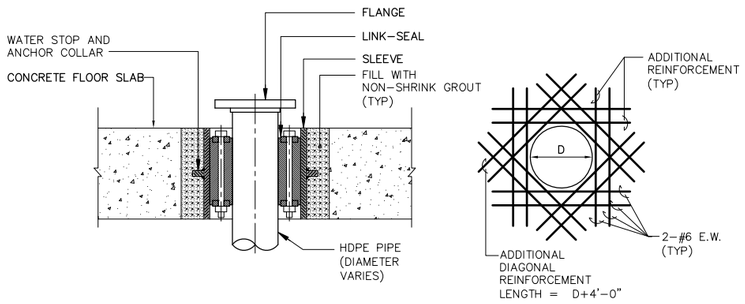
MECHANICAL

ARCADIS Project No.
B0031174.0003.00002

Date
FEBRUARY 2013

ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse, NY 13214
Tel: 315.446.9120

M4

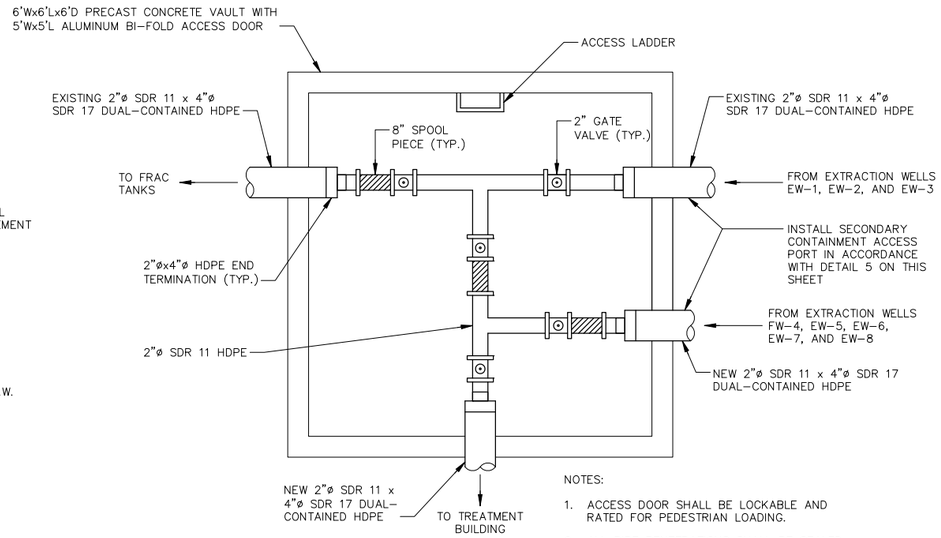


NOTE:

EXTEND REINFORCEMENT A MINIMUM OF 48 BAR DIAMETERS BEYOND THE FACE OF THE OPENING.

TYPICAL FLOOR SLAB PENETRATION (1)

NOT TO SCALE

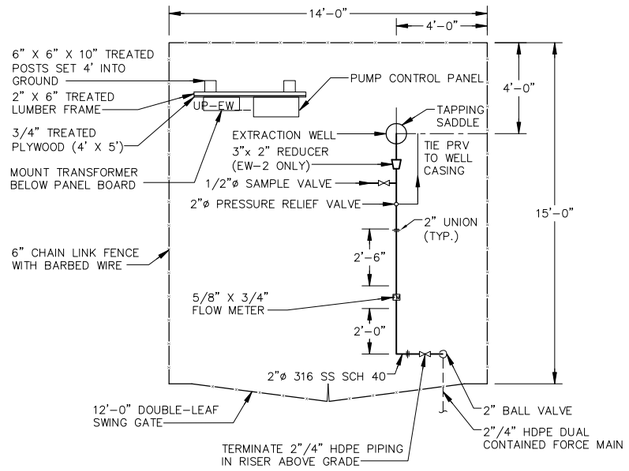


NOTES:

1. ACCESS DOOR SHALL BE LOCKABLE AND RATED FOR PEDESTRIAN LOADING.
2. ALL PIPE PENETRATIONS SHALL BE SEALED WITH LINK–SEAL OR EQUIVALENT.
3. CONCRETE VAULT SHALL BE WATER–TIGHT.
4. ALL PIPING AND VALVES SHALL BE PROPERLY SUPPORTED.
5. GATE VALVES SHALL BE WHEEL–OPERATED.

VALVE VAULT DETAIL (2)

NOT TO SCALE



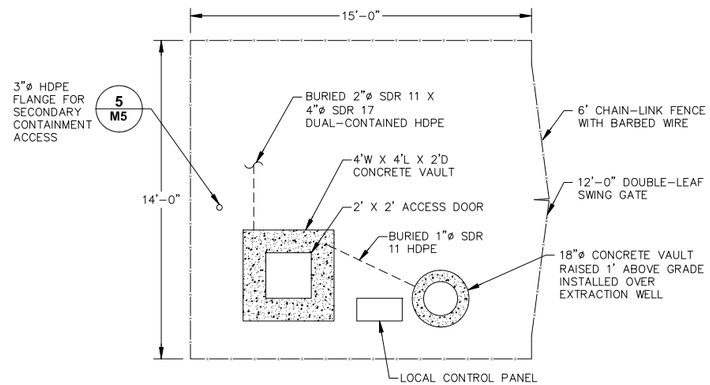
NOTES:

1. ALL EXISTING ABOVE GRADE EQUIPMENT AND PIPING SHALL BE REMOVED FROM THE COMPOUND.
2. NEW VAULTS, CONTROL PANEL, AND SECONDARY CONTAINMENT ACCESS SHALL BE INSTALLED IN ACCORDANCE WITH DETAIL 4 ON THIS SHEET.
3. EXISTING BURIED 2"/4" HDPE PIPING SHALL BE EXPOSED AND CONNECTED TO NEW HDPE PIPING FROM NEW WELL VAULT.

TYPICAL EXISTING EXTRACTION WELL COMPOUND (3)

0 40' 80'

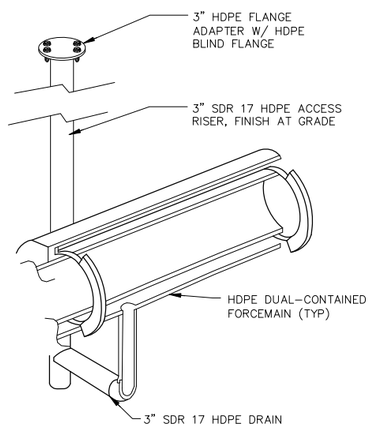
SCALE: 1"=40'



TYPICAL PROPOSED EXTRACTION WELL COMPOUND (4)

0 40' 80'

SCALE: 1"=40'



TYPICAL SECONDARY CONTAINMENT ACCESS PORTS (5)

NOT TO SCALE

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CITY:SYRACUSE-NY DIV/GROUP:ENVCAD DB:G.STEINBERGER LD:G.STEINBERGER PIC:P.FARR PM:D.SAUDA TM:S.BATTAGLIA LYR:ON=*;OFF=*REF*
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XREFS: 31174X00 IMAGES: ARMSTRONG.jpg SAUDA.jpg

SCALE AS INDICATED

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING: _____ USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd

Professional Engineer's Name: DONALD F. SAUDA
Professional Engineer's No.: 084145

State	Date Signed	Project Mgr.
NY		DFS
Designed by: SAB	Drawn by: KLS	Checked by: TEM

ARCADIS OF NEW YORK, INC.

DEWEY LOEFFEL LANDFILL SUPERFUND SITE • NASSAU, NEW YORK
GROUNDWATER AND LEACHATE TREATMENT SYSTEM

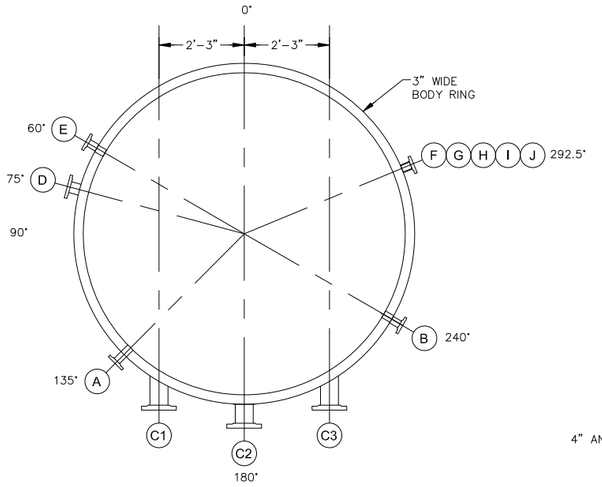
MECHANICAL DETAILS

MECHANICAL

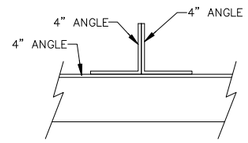
ARCADIS Project No.: B0031174.0003.00002
Date: FEBRUARY 2013

ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse, NY 13214
Tel: 315.446.9120

M5



NOZZLE PLAN
NOT TO SCALE



PACKING SUPPORT DETAIL 1
NOT TO SCALE

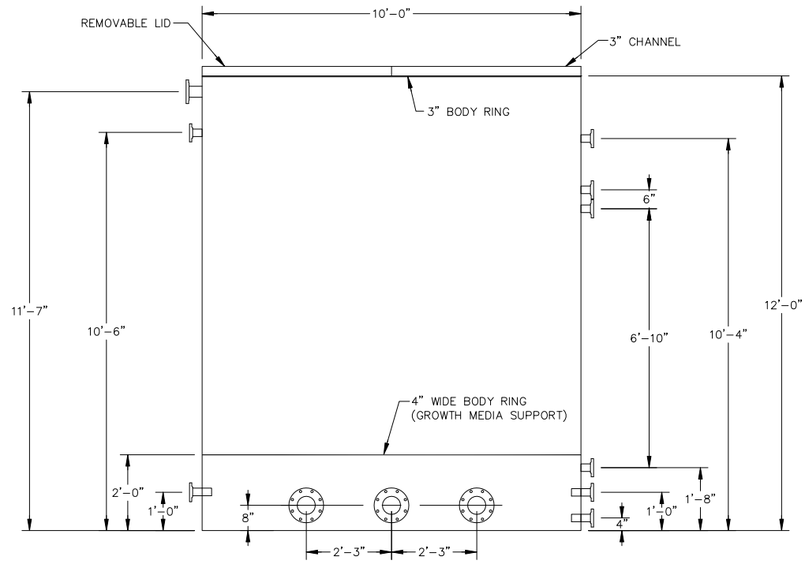
DESIGN DATA	
OPERATING PRESSURE:	ATMOSPHERIC
DESIGN PRESSURE:	ATMOSPHERIC
OPERATING TEMPERATURE:	50°–100° F
DESIGN TEMPERATURE:	150° F
CORROSION ALLOWANCE:	1/8"
RADIOGRAPHY REQ'D.	☑ NONE ☐ SPOT XRAY
WIND EXPOSURE:	NA, VESSEL LOCATED INDOORS
SEISMIC:	NASSAU, NEW YORK
SP. GR. CONTENTS:	1.00
SHELL:	5/16" CARBON STEEL (VESSEL BOTTOM 1/2" C.S.)
LADDER, PLATFORMS AND CAGES:	NONE
TESTING REQ'D.:	HYDROSTATIC LEAK TEST @ FULL CONDITION
INSPECTION:	☑ REQUIRED ☐ NOT REQUIRED
LINING:	NONE
INSULATION:	NONE
JACKET:	NONE
PAINTING:	INTERIOR/EXTERIOR EPOXY COATING

NOZZLE SCHEDULE

NOZZLE	SIZE	ANSI RATING	NOZZLE SCH.	FLANGES TYPE	FLANGES FACE	FUNCTION	ELEVATION	ORIENTATION	COMMENTS
A	3"	150#	80	SLIP-ON	F.F.	INFLUENT	10'-6"	135°	
B	2"	150#	80	SLIP-ON	F.F.	EFFLUENT	1'-0"	240°	
C1	6"	150#	80	SLIP-ON	F.F.	AERATION INLET	0'-8"	SEE DWG.	
C2	6"	150#	80	SLIP-ON	F.F.	AERATION INLET	0'-8"	SEE DWG.	
C3	6"	150#	80	SLIP-ON	F.F.	AERATION INLET	0'-8"	SEE DWG.	
D	3"	150#	80	SLIP-ON	F.F.	OVERFLOW	11'-7"	75°	
E	2"	150#	80	SLIP-ON	F.F.	EFFLUENT CLEANOUT	1'-0"	60°	
F	2"	150#	80	SLIP-ON	F.F.	DRAIN	0'-4"	292.5°	
G	2"	150#	80	SLIP-ON	F.F.	LEVEL SWITCH LSL-106	10'-4"	292.5°	
H	2"	150#	80	SLIP-ON	F.F.	TEMPERATURE SENSOR	1'-8"	292.5°	
I	2"	150#	80	SLIP-ON	F.F.	DISSOLVED OXYGEN SENSOR	8'-6"	292.5°	
J	2"	150#	80	SLIP-ON	F.F.	pH SENSOR	9'-0"	292.5°	

NOZZLE NOTES:

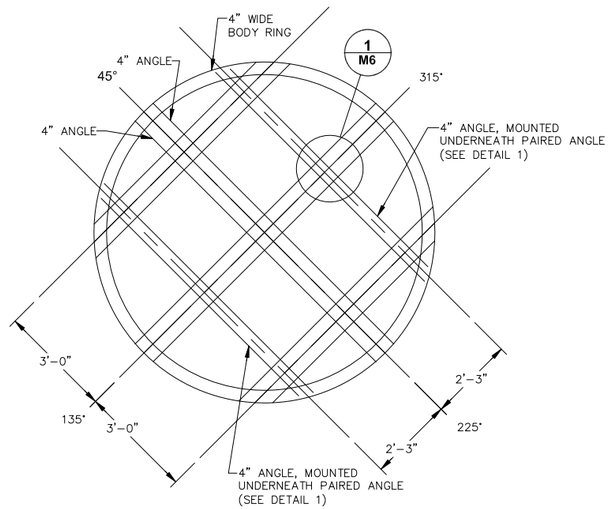
1. NOZZLES C1 , C2 AND C3 SHALL HAVE A 6" BLIND FLANGE CONFIGURED WITH A 1" NPT FULL COUPLING LOCATED AT THE CENTER.
2. NOZZLES A, B, AND E: PIPE EXTENDS 3" INTO BIOREACTOR VESSEL AS A SUPPORT FOR THE INFLUENT/EFFLUENT LATERALS. SEE DRAWING M7.
3. 3" FLANGED NOZZLES AND SMALLER SHALL PROJECT 4" FROM VESSEL.
4. 4" FLANGED NOZZLES AND LARGER SHALL PROJECT 6" FROM VESSEL.



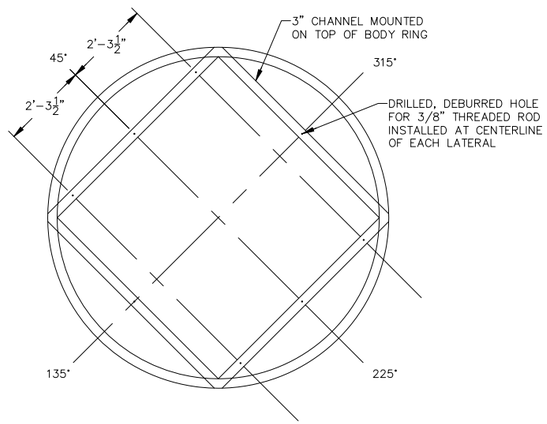
ELEVATION
ORIENT FROM PLAN

0 2' 4'

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



PACKING SUPPORT PLAN
NOT TO SCALE



INFLUENT LATERAL SUPPORT PLAN
NOT TO SCALE

SUBMITTED FOR APPROVAL

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IMAGES: ARMSTRONG.jpg SAUDA.jpg

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Professional Engineer's Name: DONALD F. SAUDA
Professional Engineer's No.: 084145
State: NY | Date Signed | Project Mgr.: DFS
Designed by: SAB | Drawn by: GHS | Checked by: TEM

ARCADIS OF NEW YORK, INC.

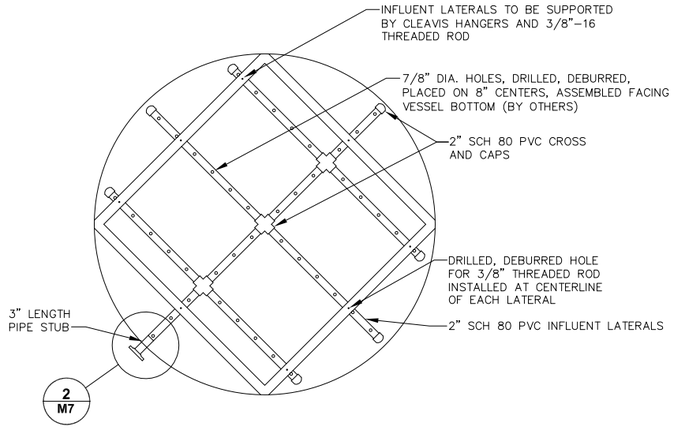
DEWEY LOEFFEL LANDFILL SUPERFUND SITE • NASSAU, NEW YORK
GROUNDWATER AND LEACHATE TREATMENT SYSTEM

FIXED-FILM BIOREACTOR VESSEL INTERNALS DETAIL

MECHANICAL

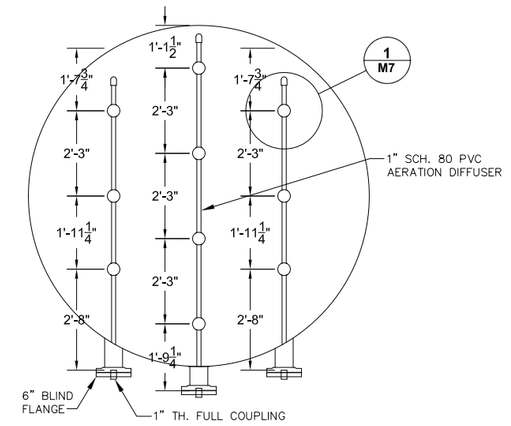
ARCADIS Project No.: B0031174.0003.00002
Date: FEBRUARY 2013
ARCADIS 6723 Towpath Road P.O. Box 66 Syracuse, NY 13214 Tel: 315.446.9120

M6



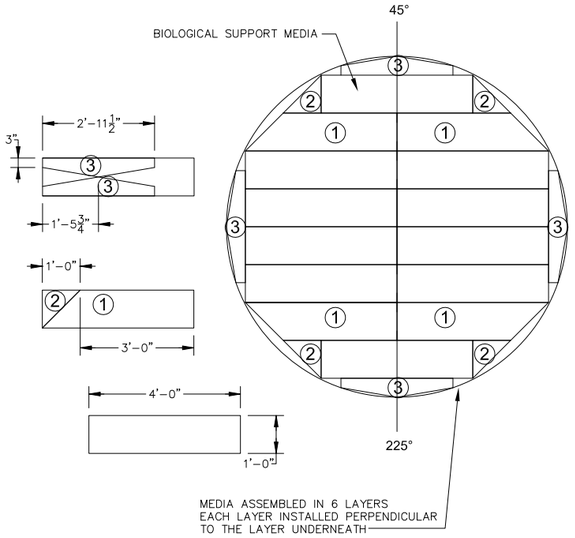
INFLUENT LATERAL AND SUPPORT PLAN

NOT TO SCALE



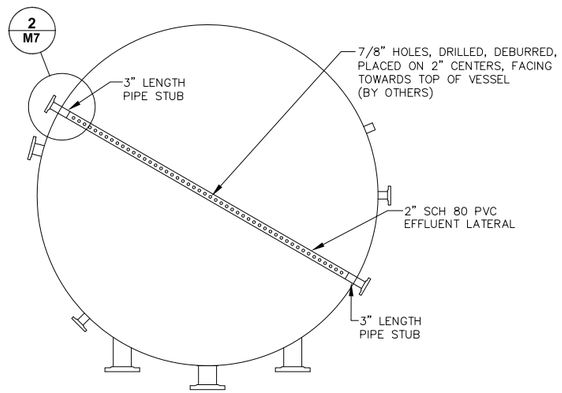
AERATION DIFFUSER LATERALS PLAN

NOT TO SCALE



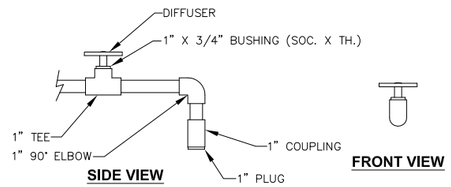
MEDIA ASSEMBLY PLAN

NOT TO SCALE



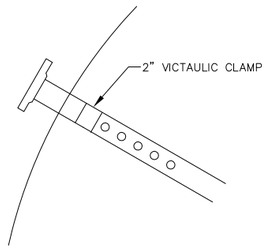
EFFLUENT LATERAL AND SUPPORT PLAN

NOT TO SCALE



DIFFUSER DETAIL 1

NOT TO SCALE



INFLUENT/EFFLUENT LATERAL CONNECTION DETAIL 2

NOT TO SCALE

SUBMITTED FOR APPROVAL

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Professional Engineer's Name		
DONALD F. SAUDA		
Professional Engineer's No.		
084145		
State	Date Signed	Project Mgr.
NY		DFS
Designed by	Drawn by	Checked by
SAB	GHS	TEM

ARCADIS OF NEW YORK, INC.

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MECHANICAL

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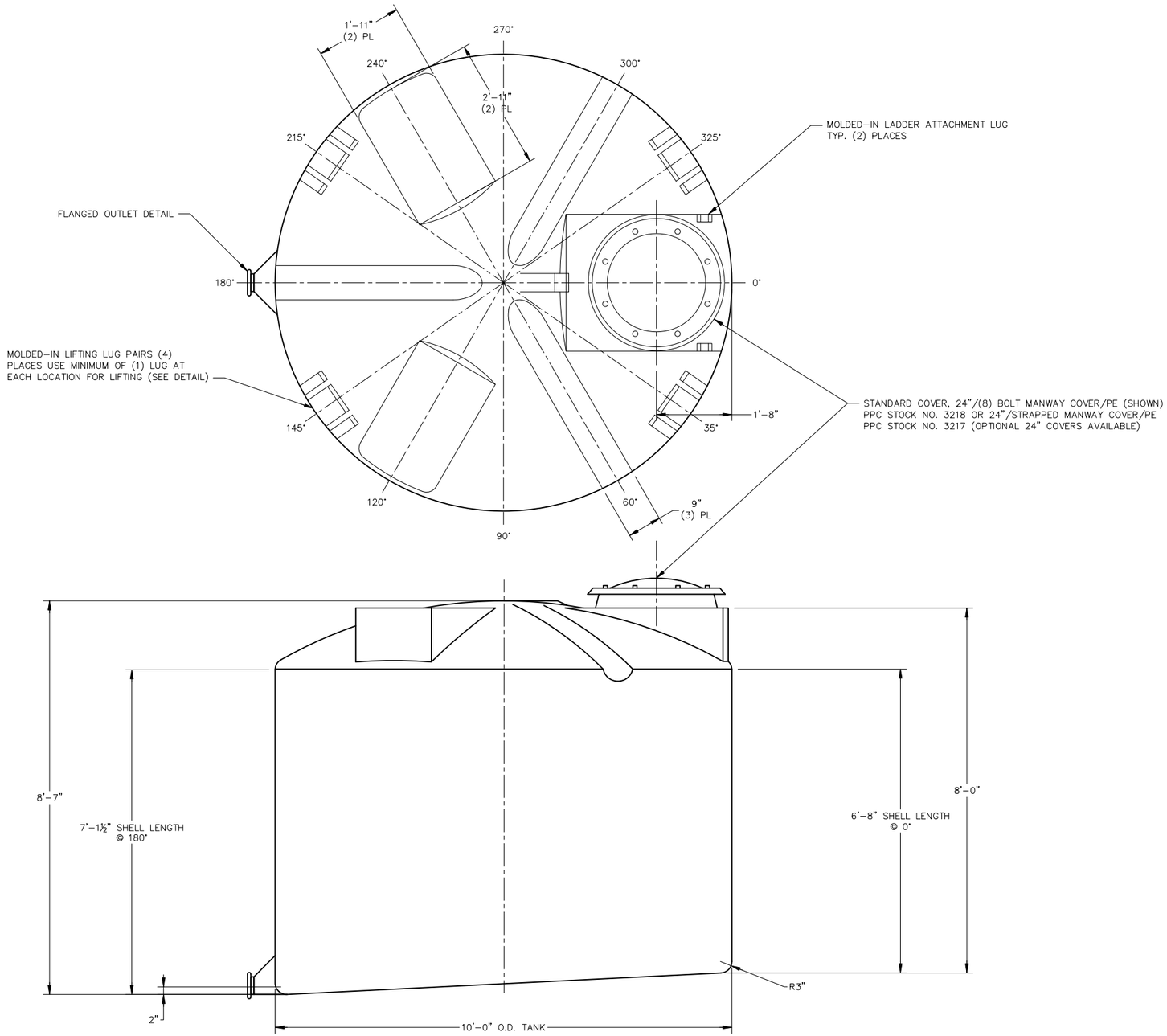
M7

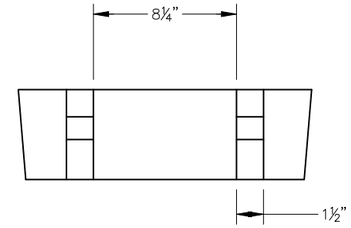


4000 GALLON SLOPE BOTTOM IMFO TANK

0 1' 2'
SCALE: 3/4"=1'-0"

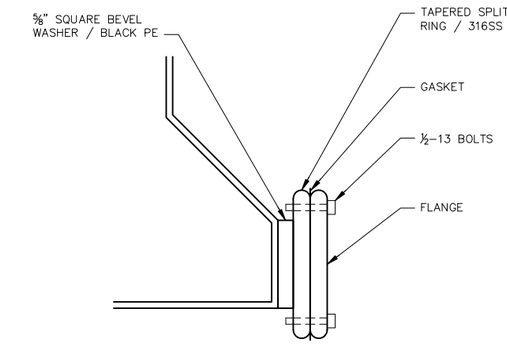
NOTE:

DETAILS FOR CONCRETE PAD PROVIDED IN STRUCTURAL DRAWINGS.



LIFTING LUG DETAIL

NOT TO SCALE



FLANGED OUTLET DETAIL

NOT TO SCALE

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Professional Engineer's No.: 084145
State: NY | Date Signed: | Project Mgr.: DFS
Designed by: SAB | Drawn by: KLS | Checked by: TEM

ARCADIS OF NEW YORK, INC.

DEWEY LOEFFEL LANDFILL SUPERFUND SITE • NASSAU, NEW YORK
GROUNDWATER AND LEACHATE TREATMENT SYSTEM

CLARIFIER DETAILS

MECHANICAL

ARCADIS Project No.: B0031174.0003.00002
Date: FEBRUARY 2013
ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse, NY 13214
Tel: 315.446.9120

M8

MAJOR TREATMENT EQUIPMENT SPECIFICATIONS

1. WELL PUMPS (P–101, P–102, P–103, P–104, P–105, P–106, P–107 & P–108) SHALL BE GRUNDFOS MODEL 10REDI–FLO3–260 OR EQUAL WITH 1HP 230V SINGLE PHASE MOTOR, 150 FOOT TEFLON COVERED MOTOR LEAD, AND CAPABLE OF 5 GPM AT 340 FT TDH
2. LEACHATE UNDERGROUND STORAGE TANK PUMP (P–001) SHALL BE GOULDS MODEL XGOWS0712BF OR EQUAL WITH A ½ HP 230V SINGLE PHASE MOTOR AND BE CAPABLE OF 20 GPM AT 35 FT TDH
3. LEACHATE TANK (T–100) SHALL BE SNYDER INDUSTRIES MODEL 1800000N OR EQUAL WITH HIGH DENSITY POLYETHYLENE CONSTRUCTION
4. EQUALIZATION TANK (T–200) SHALL BE SNYDER INDUSTRIES MODEL 1780200N OR EQUAL WITH HIGH DENSITY POLYETHYLENE CONSTRUCTION
5. LEACHATE FEED PUMP (P–100) SHALL BE LMI MODEL SD8387P OR EQUAL AND BE CAPABLE OF FLOWING 115 GPH AT 75 PSI
6. FIXED–FILM BIOREACTOR FEED PUMPS (P–200A/B) SHALL BE GOULDS MODEL 2ST2C4K4 OR EQUAL WITH 1/2 HP 240V, 3–PHASE TOTALLY ENCLOSED FAN COOLED 1750 RPM VFD–CAPABLE MOTOR AND CAPABLE OF 25 GPM AT 33 FT TDH
7. BIOREACTOR (T–300) SHALL BE CONSTRUCTED IN ACCORDANCE WITH CONTRACT DRAWINGS M6, M7, AND M8
8. BIOREACTOR BLOWER (B–300) SHALL BE DRESSER INDUSTRIES MODEL PC–12–22 OR EQUAL WITH 5 HP MOTOR CAPABLE OF 36 CFM AT 10 PSI
9. BIOREACTOR CHEMICAL FEED PUMPS (P–300 AND P–301) SHALL BE PULSAFEEDER PULSATRON MODEL LE03 OR EQUAL AND BE CAPABLE OF FLOWING 0.50 GPH AT 150 PSI
10. CLARIFIER (T–400) SHALL BE CONSTRUCTED IN ACCORDANCE WITH CONTRACT DRAWING M8
11. SLUDGE PUMP (P–400) SHALL BE MOYNO MODEL 33152 OR EQUAL WITH 5 HP 230V SINGLE PHASE 1750 RPM MOTOR AND CAPABLE OF 1.7 GPM AT 30 PSI TDH
12. CLARIFIER PUMP STATION TANK (T–410) SHALL BE SNYDER INDUSTRIES MODEL 8060000N OR EQUAL WITH HIGH DENSITY POLYETHYLENE CONSTRUCTION
13. AIR STRIPPER FEED AND DISCHARGE PUMPS (P–410A/B AND P–500A/B) SHALL BE GOULDS MODEL 1ST1D4E4 OR EQUAL WITH 3/4 HP 240V, 3–PHASE TOTALLY ENCLOSED FAN COOLED 3500 RPM VFD–CAPABLE MOTOR AND CAPABLE OF 25 GPM AT 58 FT TDH
14. RECYCLE PUMP (P–420) SHALL BE GOULDS MODEL 1ST2C4A4 OR EQUAL WITH 1/2 HP 240V SINGLE PHASE TOTALLY ENCLOSED FAN COOLED 1750 RPM MOTOR AND CAPABLE OF 15 GPM AT 33 FT TDH
15. BAG FILTER HOUSINGS (PF–410A AND PF–410B) SHALL BE ROSEDALE MODEL 8–30 OR EQUAL AND BE OF STAINLESS STEEL CONSTRUCTION
16. AIR STRIPPER (AS–500) SHALL BE NEEP SYSTEMS SHALLOWTRAY MODEL 2650 AND CAPABLE OF TREATING WATER AT A FLOW RATE UP TO 25 GPM
17. AIR STRIPPER BLOWER (B–500) SHALL BE NEW YORK BLOWER COMPANY MODEL 2606A WITH 10 HP MOTOR AND CAPABLE OF 600 CFM AT 52 INCHES OF WATER COLUMN
18. AIR STRIPPER INLET DUCT HEATER SHALL BE INDEECO MODEL QUZ OR EQUAL AND BE CAPABLE OF PRODUCING 10KW OF HEAT OUTPUT AND BE EQUIPPED WITH SCR CONTROL AND AN INTEGRAL DISCONNECT SWITCH
19. LIQUID–PHASE GRANULAR ACTIVATED CARBON VESSELS (GAC–601 & GAC–602) SHALL BE SIEMENS MODEL PV–2000 OR EQUAL AND FILLED WITH 2,000 POUNDS OF MEDIA
20. VAPOR PHASE GRANULAR ACTIVATED CARBON VESSELS (GAC–501, GAC–502, AND GAC–503) SHALL BE TIGG MODEL N–4000–PDB OR EQUAL AND FILLED WITH 4,000 POUNDS OF MEDIA
21. VAPOR PHASE POTASSIUM PERMANGANATE (PPZ–504 AND PPZ–505) SHALL BE SIEMENS MODEL FB–2000 OR EQUAL AND FILLED WITH 3,500 POUNDS OF MEDIA
22. BACKWASH SUPPLY TANK (T–800) SHALL BE SNYDER INDUSTRIES MODEL 1831000N OR EQUAL WITH HIGH DENSITY POLYETHYLENE CONSTRUCTION
23. BACKWASH PUMP (P–800) SHALL BE GOULDS MODEL 2ST1E4E4 OR EQUAL WITH 1 AND 1/2 HP 240V SINGLE PHASE TOTALLY ENCLOSED FAN COOLED 3500 RPM MOTOR AND CAPABLE OF 50 GPM AT 58 FT TDH
24. BACKWASH SUPPLY TANK DISCHARGE PUMPS (P–820A/B) SHALL BE GOULDS MODEL 1ST1D4E4 OR EQUAL WITH 3/4 HP 240V, 3–PHASE TOTALLY ENCLOSED FAN COOLED 3500 RPM VFD–CAPABLE MOTOR AND CAPABLE OF 25 GPM AT 58 FT TDH
25. PROCESS WASH VESSEL FEED PUMP (P–810) SHALL BE SHALL BE DAVEY MODEL HS12–40HT1 OR EQUAL WITH 304 SS CASING AND SHAFT, EPOXY–COATED STEEL PRESSURE TANK, 120 V SINGLE PHASE 0.9 KW MOTOR, AND CAPABLE OF 12 GPM AT 40 PSI TDH
26. PROCESS WASH VESSEL SHALL BE EAGLE GROUP MODEL 314–16–1–18–R OR EQUAL AND BE OF 304 STAINLESS STEEL CONSTRUCTION
27. PROCESS SUMP PUMP (P–900) SHALL BE GOULDS MODEL WE0312M OR EQUAL WITH 1/3 HP 230V SINGLE PHASE 1750 RPM MOTOR AND CAPABLE OF 10 GPM AT 26 FT TDH

INSTRUMENTATION SPECIFICATIONS

1. FLOWMETERS IN EXTRACTION WELL VAULTS AND LEACHATE UNDERGROUND STORAGE TANK VAULT (FIT–001, FIT–101, FIT–102, FIT–103, FIT–104, FIT–105, FIT–106, FIT–107, & FIT–108) SHALL BE BADGER RECORDALL MODEL 55 WITH RTR FLOW TRANSMITTER OR EQUAL
2. FLOWMETERS IN TREATMENT BUILDING (FIT–100, FIT–200, FIT–410, FIT–510, FIT–800, AND FIT–900) SHALL BE 1–INCH BADGER MAGNETOFLOW MAGNETIC WAFER–STYLE FLOWMETERS OR EQUAL WITH LINER SUITABLE FOR WATER SERVICE, 316 SS ELECTRODES, GROUNDING RINGS, AND INTEGRAL MOUNT ELECTRONICS WITH LOCAL RATE AND TOTAL DISPLAY
3. ALL TANK LEVEL TRANSMITTERS (LE/LT–100, LE/LT–200, LE/LT–410, AND LE/LT–800) SHALL BE WIKA MODEL LS10 OR EQUAL WITH AN OPERATING RANGE OF 0 TO 10 PSI
4. ALL TANK LEVEL SWITCHES (LSHH–100, LSLL–100, LSHH–200, LSLL–200, LSHH–410, LSLL–410, LSH–800, AND LSL–800) SHALL BE GEMS MODEL LS750 OR EQUAL WITH A 4–20MA OUTPUT
5. LIQUID PRESSURE TRANSMITTERS (PIT–410, PIT–420 AND PIT–520) SHALL BE FOXBORO MODEL IGP10–T22D1F–M1L1 GAUGE PRESSURE TRANSMITTER OR EQUAL WITH LOCAL DISPLAY, 10–300 PSI RANGE, STAINLESS STEEL WETTED MATERIAL, 4–20 MA OUTPUT, LOOP POWERED
6. AIR PRESSURE TRANSMITTERS (PIT–300C AND PIT–510) SHALL BE FOXBORO MODEL IGP20–T22B21F–M1L1 GAUGE PRESSURE TRANSMITTER OR EQUAL WITH LOCAL DISPLAY, 3.5–200 INCHES H20 RANGE, STAINLESS STEEL WETTED MATERIAL, 4–20 MA OUTPUT, LOOP POWERED
7. BIOREACTOR AIR FLOWMETERS (FI–300A, FI–300B, AND FI–300C) SHALL BE DWYER INSTRUMENTS MODEL RMB–52 OR EQUAL WITH A RANGE OF 5–50 SCFH
8. ALL PH METERS (AE–300 AND AE–900) SHALL BE FOXBORO MODEL 870ITPH OR EQUAL WITH A 4–20 MA OUTPUT
9. BIOREACTOR DO METER (AE–310) SHALL BE HACH MODEL 5790000 OR EQUAL WITH A 4–20 MA OUTPUT
10. TEMPERATURE TRANSMITTERS (TT–300 AND TT–500) SHALL BE FOXBORO MODEL RTT15–T1WCQNAF–L1 INSERTION–STYLE TEMPERATURE TRANSMITTER OR EQUAL WITH LOCAL DISPLAY, NEMA RATED ENCLOSURE, 3–INCH RTD WITH NO WELL, 4–20 MA OUTPUT, LOOP POWERED
11. AIR FLOW METER (FIT–500) SHALL BE SIERRA MODEL 620S–L06M1EN2V4DD0 INSERTION–STYLE THERMA MASS METER OR EQUAL FOR AIR FLOW, 18–30 VDC, 3/8–INCH DIAMETER PROBE, 4–20 MA OUTPUT WITH DISPLAY
12. ALL MOTORIZED CONTROL VALVES (MV–410A, MV–410B, MV–410C, AND MV–410D) SHALL BE ASAHI MODEL 3730020 OR EQUAL AND HAVE 2"FLANGED CONNECTIONS
13. ALL LIQUID PRESSURE GAUGES WITHIN THE TREATMENT BUILDING SHALL BE WIKA MODEL 232 OR EQUAL 4.5–INCH PROCESS GAUGE WITH LOWER MOUNT, 316 SS CONNECTION, 0–30 PSI RANGE
14. ALL AIR PRESSURE GAUGES SHALL BE WIKA MODEL 232 OR EQUAL 4.5–INCH LOW PRESSURE PROCESS GAUGE WITH LOWER MOUNT, 316 SS CONNECTION, 0–20 INCHES H2O RANGE
15. ALL TANK LEVEL SWITCHES SHALL BE GEMS MODEL MBLU40T OR EQUAL FLOAT SWITCH, NORMALLY OPEN OUTPUT WITH 40'CABLE

GENERAL MECHANICAL SPECIFICATIONS

1. ALL PIPING WITHIN THE TREATMENT BUILDING SHALL BE PVC SCHEDULE 80
2. ALL PVC PIPE JOINTS SHALL BE SOLVENT WELDED
3. ALL UNDERGROUND HDPE PIPE SHALL BE DUAL CONTAINED HDPE (SDR 11 CARRIER, SDR 17 CONTAINMENT), UNLESS OTHERWISE SPECIFIED
4. ALL HDPE PIPES SHALL BE BUTT–FUSED
5. ALL PIPING SHALL BE INSTALLED AND PRESSURE TESTED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. ZERO LEAKAGE IS ALLOWED FOR ALL JOINTS
6. ALL PIPING WITHIN THE TREATMENT BUILDING SHALL BE SUPPORTED AT 7'–0"O.C. (MAX.) AND LOCATED 2'–0" FROM ALL JOINT LOCATIONS
7. ALL BALL VALVES WITHIN THE TREATMENT BUILDING SHALL BE PVC TRUE UNION BALL VALVES WITH VITON O–RING SEAL, TEFLON SELF–LUBRICATING SEATS, TIGHT SHUTOFF IN EITHER DIRECTION, FULL PORT DESIGN, SOLVENT WELDED SOCKET ENDS AND OPERATING HANDLE. MANUFACTURER: HAYWARD, NIBCO, PLASTO–MATIC, OR EQUAL
8. MOTORIZED BALL VALVES (MV–200, MV–500, AND MV–510) SHALL CONSIST OF A BALL VALVE WITH HAYWARD SERIES EJM ELECTRIC ACTUATOR, 115VAC
9. ALL CHECK VALVES WITHIN THE TREATMENT BUILDING SHALL BE SWING CHECK TYPE WITH VITON SEATS. MANUFACTURER: HAYWARD, NIBCO, PLASTO–MATIC, OR EQUAL
10. ALL SAMPLE TAPS AND DRAIN VALVES WITHIN THE TREATMENT BUILDING SHALL CONSIST OF A ½"DIAMETER PVC PIPE EXTENSION, BALL VALVE AND NIPPLE. SAMPLE TAPS AND DRAIN VALVES SHALL BE LOCATED AT LOCATIONS SHOWN ON THE DRAWINGS AND AT ALL LOW ELEVATIONS IN THE PROCESS PIPING
11. ALL FLOW METERS SHALL HAVE STRAIGHT PIPE AT A MINIMUM OF 10 PIPE DIAMETERS PRECEDING AND 5 PIPE DIAMETERS FOLLOWING, OR AS SPECIFIED BY THE MANUFACTURER

HEATING AND VENTALATION SPECIFICATIONS

1. TREATMENT AREA UNIT HEATERS (UH–1, UH–2, UH–3, UH–4, UH–6, AND UH–7) SHALL BE CHROMALOX MODEL LUH–07–21–34 OR EQUAL WITH 7.5 KW OUTPUT, 240V SINGLE PHASE, INTEGRAL DISCONNECT SWITCH, WALL HANGER BRACKET, AND REMOTE WALL–MOUNTED THERMOSTAT
2. TREATMENT AREA LOUVERS (L–1 AND L–3) SHALL BE RUSKIN MODEL ELC6375DAX 36"W X 36"W OR EQUAL WITH MOTORIZED DAMPER, EXTERIOR BIRD SCREEN, AND INTERIOR INSECT SCREEN
3. TREATMENT AREA EXHAUST FAN (EF–1) SHALL BE GREENHECK MODEL AWB 24A6B OR EQUAL AND BE EQUIPPED WITH ½ HP 240V SINGLE PHASE MOTOR, GRAVITY DAMPER, FIELD–MOUNTED NEMA–1 DISCONNECT SWITCH, REMOTE WALL–MOUNTED THERMOSTAT, AND BE CAPABLE OF 4700 CFM
4. CONTROL ROOM UNIT HEATER (UH–5) SHALL BE CHROMALOX MODEL LUH–04–21–34 OR EQUAL WITH 4 KW OUTPUT, 240V SINGLE PHASE, INTEGRAL DISCONNECT SWITCH, WALL HANGER BRACKET, AND REMOTE WALL–MOUNTED THERMOSTAT
5. CONTROL ROOM LOUVER (L–2) SHALL BE RUSKIN MODEL ELC6375DAX 12"WX 18"H OR EQUAL WITH MOTORIZED DAMPER, EXTERIOR BIRD SCREEN, AND INTERIOR INSECT SCREEN
6. CONTROL ROOM EXHAUST FAN (EF–2) SHALL BE GREENHECK MODEL SE1–12–432–E–1 OR EQUAL AND BE EQUIPPED WITH 1/20 HP 120V SINGLE PHASE MOTOR, GRAVITY DAMPER, FIELD–MOUNTED NEMA–1 DISCONNECT SWITCH, REMOTE WALL–MOUNTED THERMOSTAT, AND BE CAPABLE OF 300 CFM

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NOT TO SCALE

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING: _____ USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd

Professional Engineer's Name: DONALD F. SAUDA		
Professional Engineer's No.: 084145		
State: NY	Date Signed:	Project Mgr.: DFS
Designed by: SAB	Drawn by: GHS	Checked by: TEM

ARCADIS OF NEW YORK, INC.

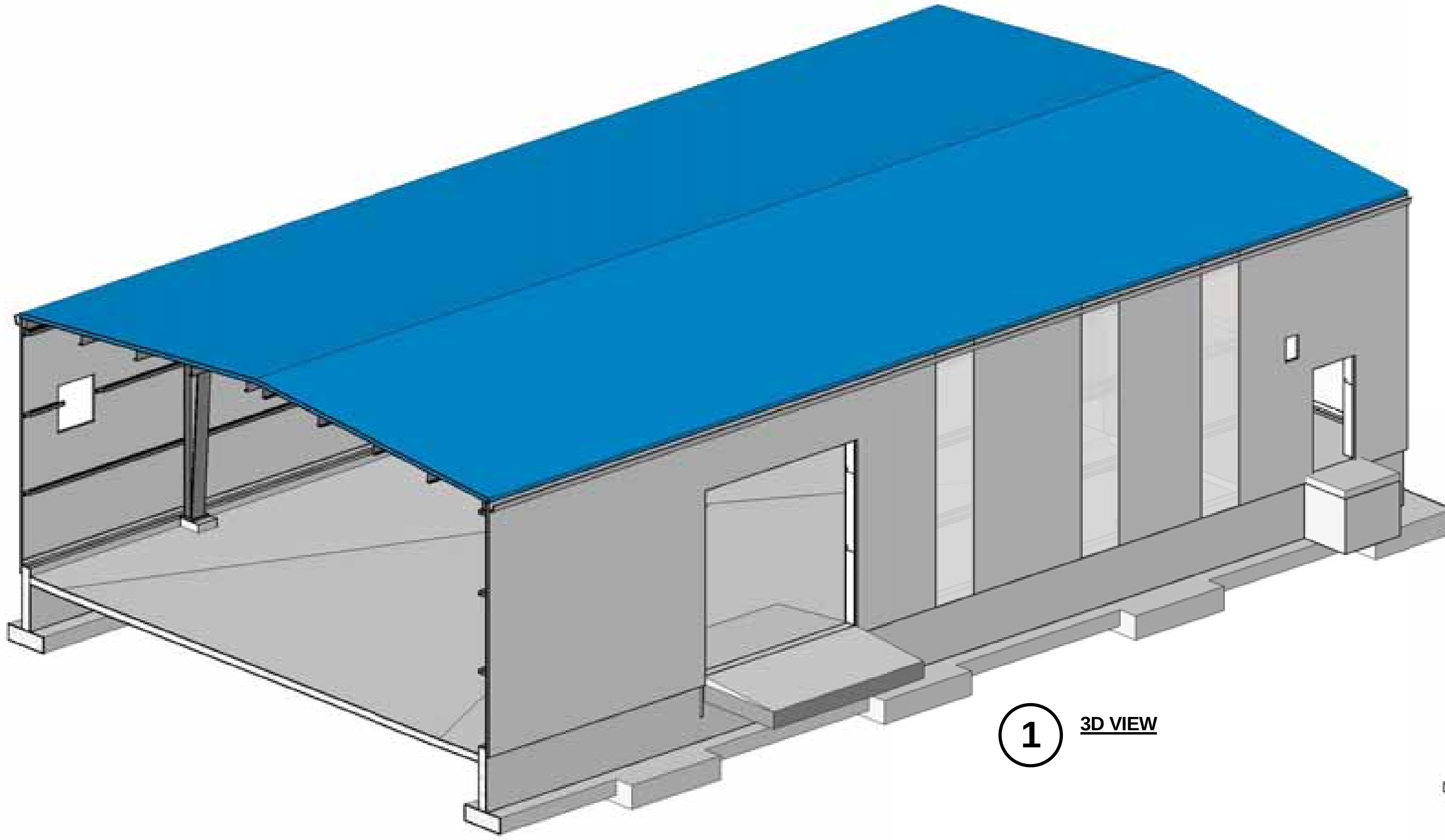
DEWEY LOEFFEL LANDFILL SUPERFUND SITE • NASSAU, NEW YORK
GROUNDWATER AND LEACHATE TREATMENT SYSTEM

MECHANICAL SPECIFICATIONS

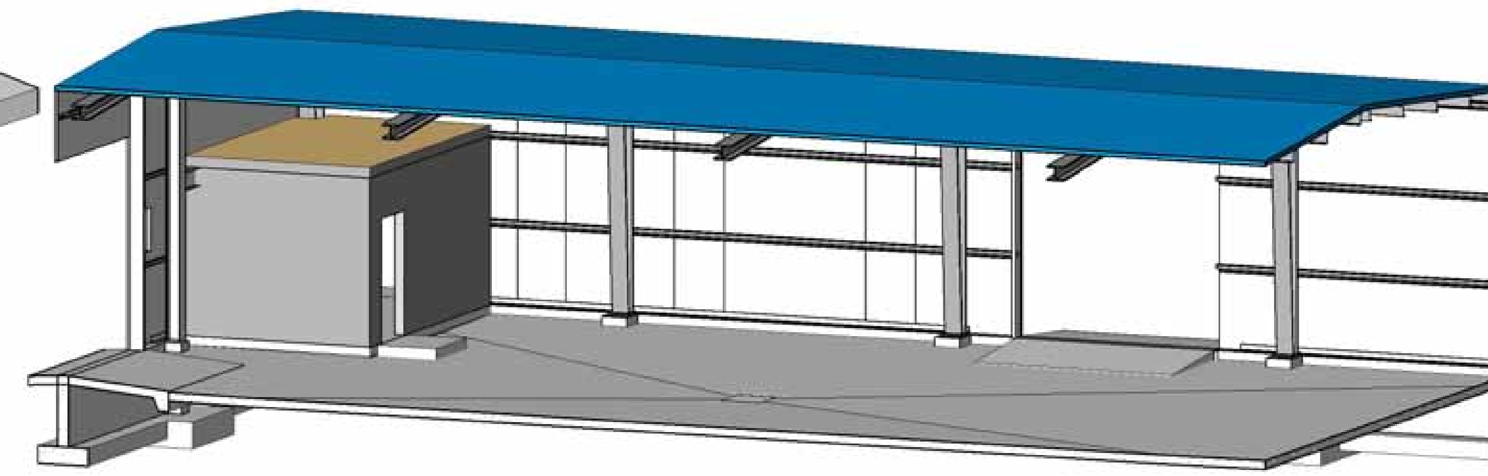
MECHANICAL

ARCADIS Project No.: B0031174.0003.00002
Date: FEBRUARY 2013
ARCADIS, 6723 Towpath Road, P.O. Box 66, Syracuse, NY 13214, Tel: 315.446.9120

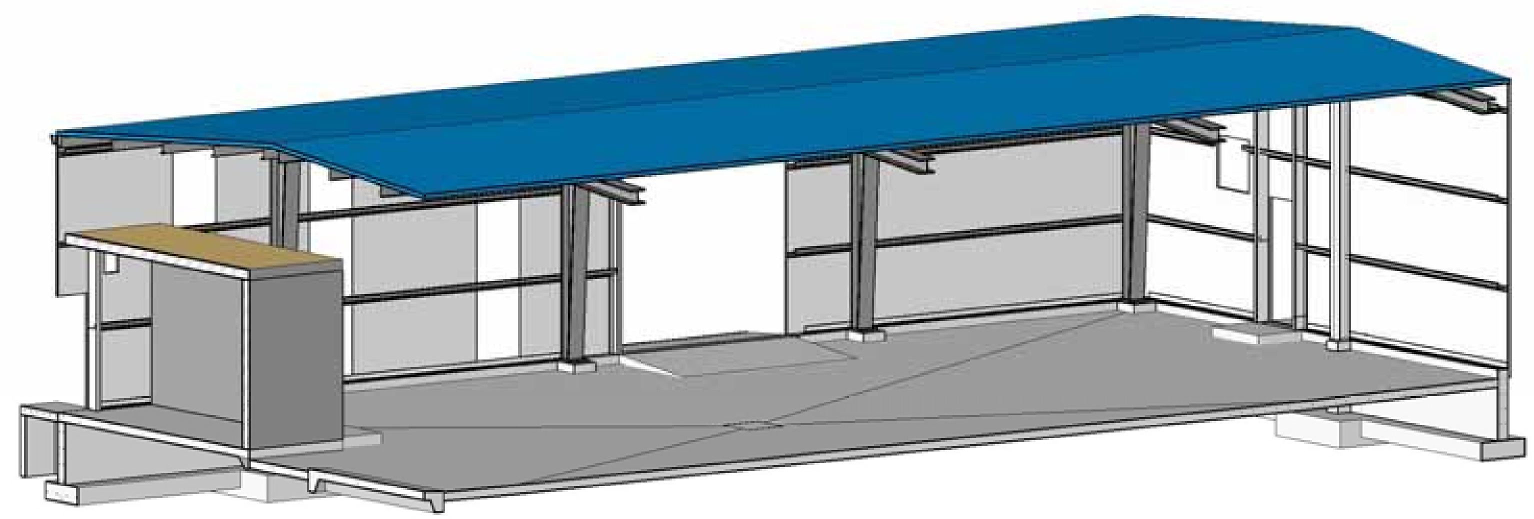
M9



1 **3D VIEW**



2 **BUILDING SECTION 2**



3 **BUILDING SECTION 1**

DESIGN INFORMATION 2010 BUILDING CODE NEW YORK STATE (BCNYS))	
DESIGN ROOF LIVE LOAD 20 psf DESIGN ROOF COLLATERAL LOAD 2 psf (APPLY PURLINS AND FRAMES) NET ALLOWABLE DESIGN SOIL BEARING PRESSURE 1500 psf DESIGN SNOW LOAD BCNYS 2010 SECTION 1608 GROUND SNOW LOAD 40 PSF SNOW EXPOSURE FACTOR, Ce 0.9 SNOW LOAD IMPORTANCE FACTOR, Is 1.0 THERMAL FACTOR, ct 1.0 FLAT ROOF SNOW LOAD, Pf 25.2 psf SLOPED ROOF SNOW LOAD, Ps 25.2 psf	DESIGN WIND LOAD BCNYS 2010 SECTION 1609 BASIC WIND SPEED 90 MPH WIND LOAD IMPORTANCE FACTOR = 1.0 OCCUPANCY CATEGORY II WIND EXPOSURE 'C' INTERNAL PRESSURE COEFFICENT 0.18 COMPONENTS AND CLADDING LOADS ROOF: ZONE 1 +9.2 PSF, -22.7 PSF ZONE 2 +9.2 PSF, -38.1 PSF WALLS: ZONE 4 +22.7 PSF, -24.6 PSF ZONE 5 +22.7 PSF, -30.4 PSF DESIGN SEISMIC LOADS BCNYS 2010 SECTION 1613 SEISMIC LOAD IMPORTANCE FACTOR = 1.0 MAPPED SPECTRAL RESPONSE ACCELERATIONS Ss 0.182 S1 0.07 SITE CLASS D SPECTRAL RESPONSE COEFFICIENTS Sds 0.194 Sd1 0.112 SEISMIC DESIGN CATAGORY B BASIC SEISMIC FORCE RESISTING SYSTEM: TO BE DETERMINED DESIGN BASE SHEAR: TO BE DETERMINED SEISMIC RESPONSE COEFFICIENT Cs: TO BE DETERMINED RESPONSE MODIFICATION FACTOR: TO BE DETERMINED ANALYSIS PROCEDURE USED: TO BE DETERMINED

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3/16"=1'-0" 4' 0 6' 12'

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Professional Engineer's Name		
LISA A. BOWE		
Professional Engineer's No.		
086254		
State NY	Date Signed 2/13/2013	Project Mgr. DFS
Designed by AAH	Drawn by AAH	Checked by LAB

STATE OF NEW YORK · LISA A. BOWE · 086254 · LICENSED PROFESSIONAL ENGINEER

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GROUNDWATER AND LEACHATE TREATMENT SYSTEM

ISOMETRIC VIEWS

STRUCTURAL

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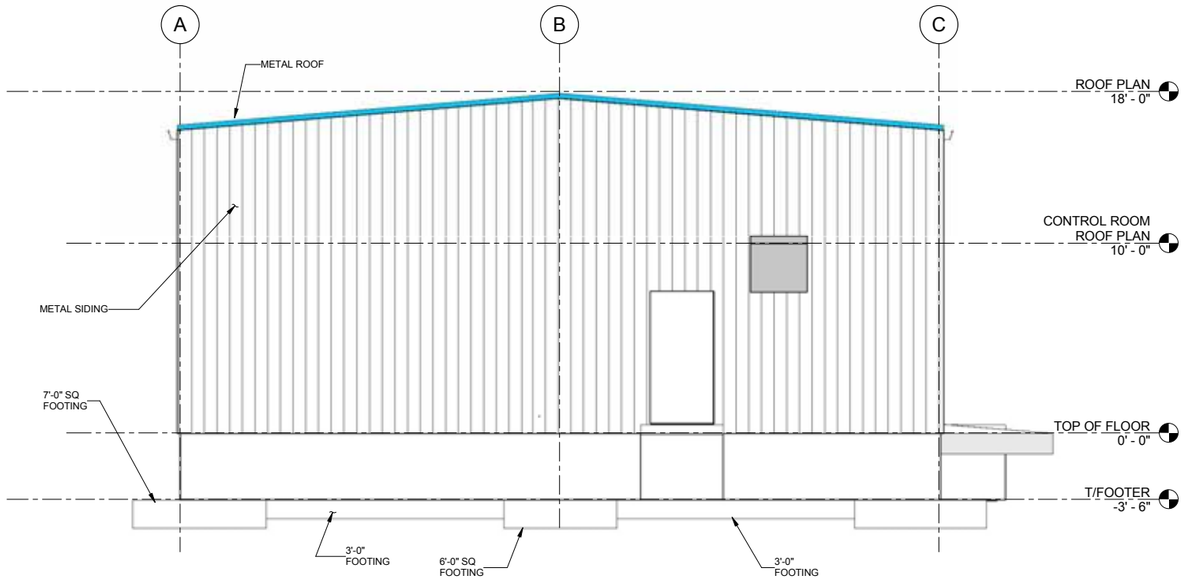
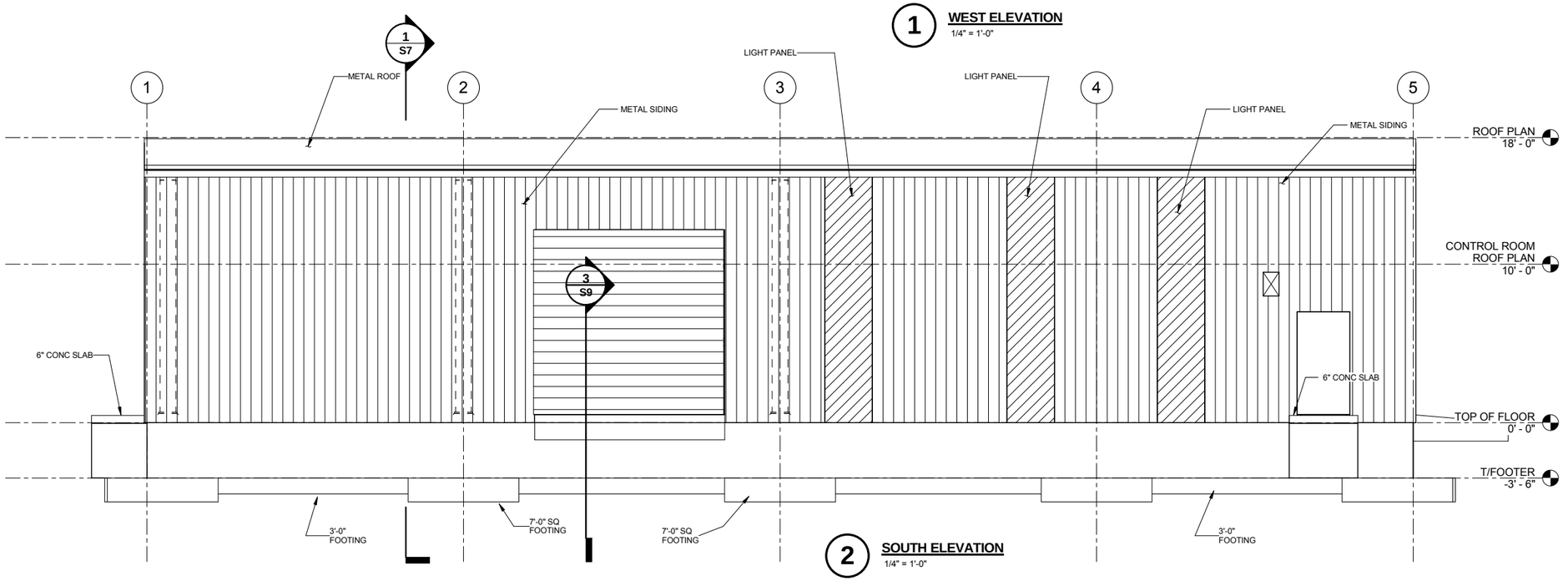
S1



1 WEST ELEVATION
1/4" = 1'-0"



2 SOUTH ELEVATION
1/4" = 1'-0"

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1/4"=1'-0" 4' 0 4' 8'

No.	Date	Revisions	By	Ckd

Professional Engineer's Name: LISA A. BOWE		
Professional Engineer's No.: 086254		
State: NY	Date Signed: 2/13/2013	Project Mgr.: DFS
Designed by: AAH	Drawn by: AAH	Checked by: LAB

ARCADIS OF NEW YORK, INC.

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ELEVATIONS (1 OF 2)

STRUCTURAL

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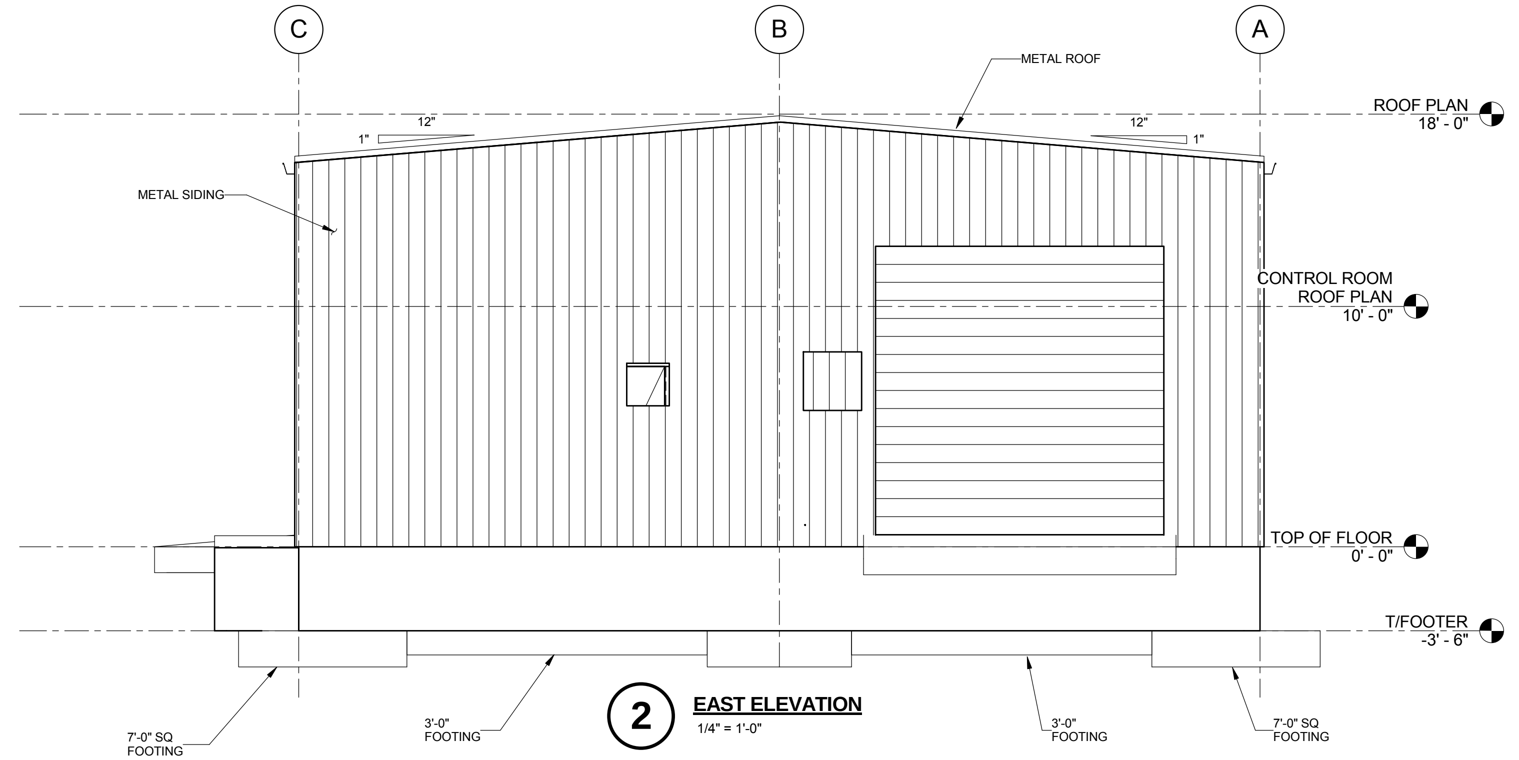
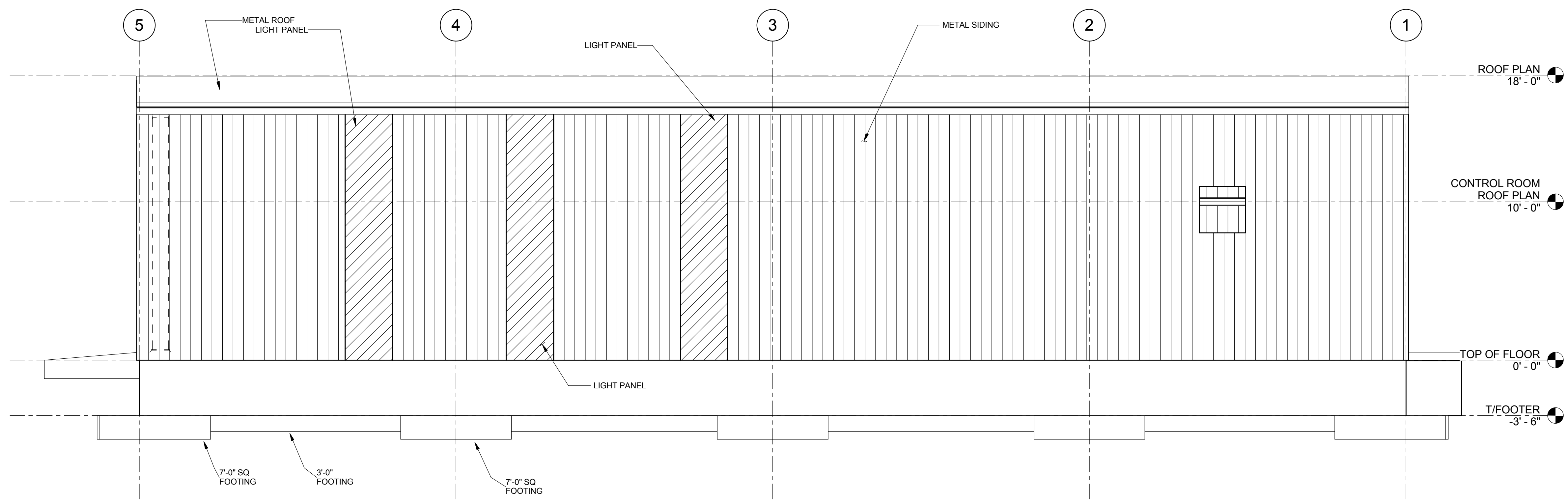


2 **EAST ELEVATION**
1/4" = 1'-0"



1 **NORTH ELEVATION**
1/4" = 1'-0"

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1/4"=1'-0" 4' 0 4' 8'

No.	Date	Revisions	By	Ckd

Professional Engineer's Name: **LISA A. BOWE**
Professional Engineer's No.: 086254

State	Date Signed	Project Mgr.
NY	2/13/2013	DFS
Designed by	Drawn by	Checked by
AAH	AAH	LAB

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ELEVATIONS (2 OF 2)

STRUCTURAL

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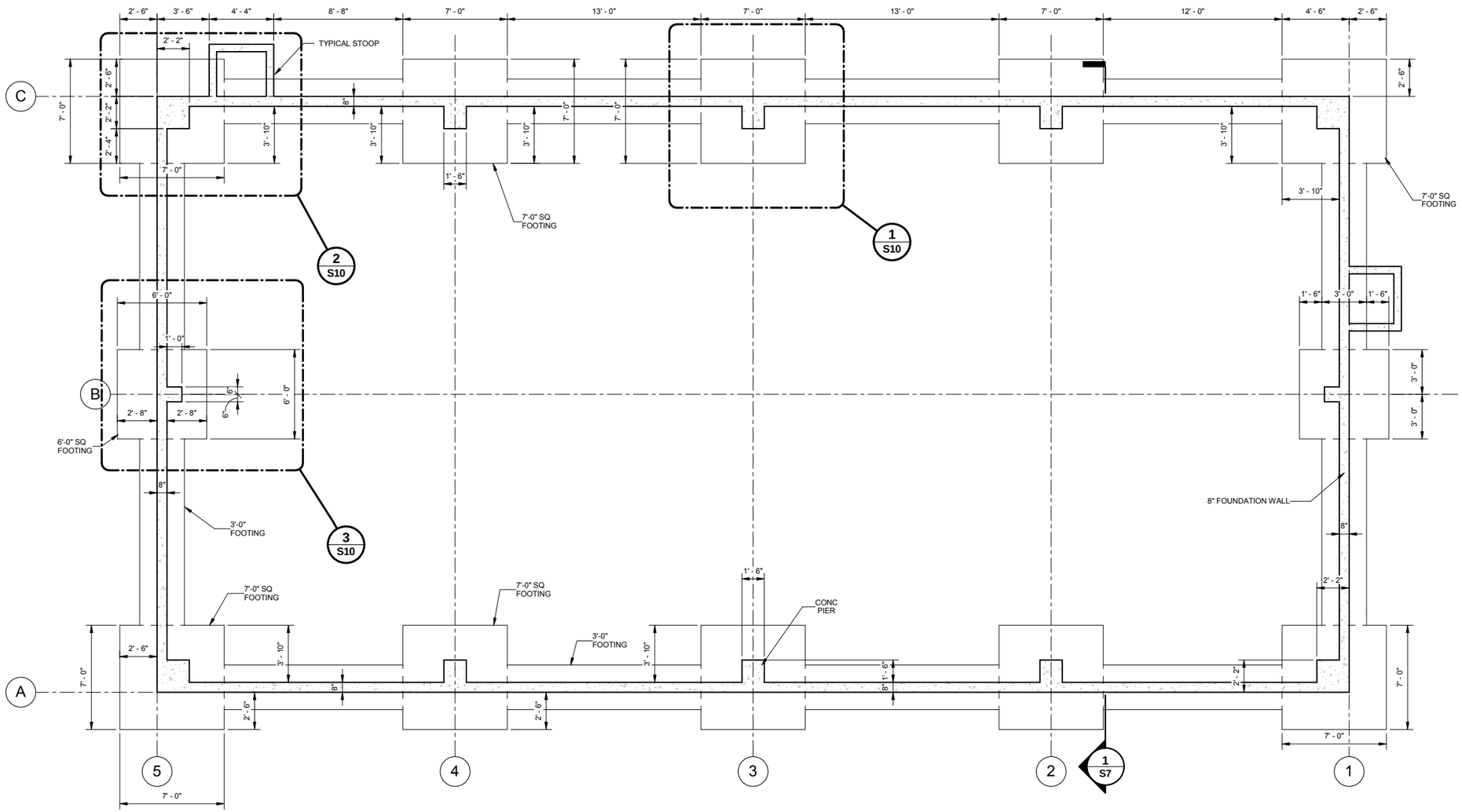
S3



NOTE: FOUNDATION DETAILS AND DIMENSIONS TO BE VERIFIED BY ENGINEER OF RECORD BASED ON BUILDING MANUFACTURERS APPROVED SHOP DRAWINGS

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1/4"=1'-0" (4' 0 4' 8')

No.	Date	Revisions	By	Ckd

Professional Engineer's Name: LISA A. BOWE		
Professional Engineer's No.: 086254		
State: NY	Date Signed: 2/13/2013	Project Mgr.: DFS
Designed by: AAH	Drawn by: AAH	Checked by: LAB

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DEWEY LOEFFEL LANDFILL SUPERFUND SITE ● NASSAU, NEW YORK
GROUNDWATER AND LEACHATE TREATMENT SYSTEM

FOUNDATION PLAN

STRUCTURAL

ARCADIS Project No.: B0031174.0003.00002
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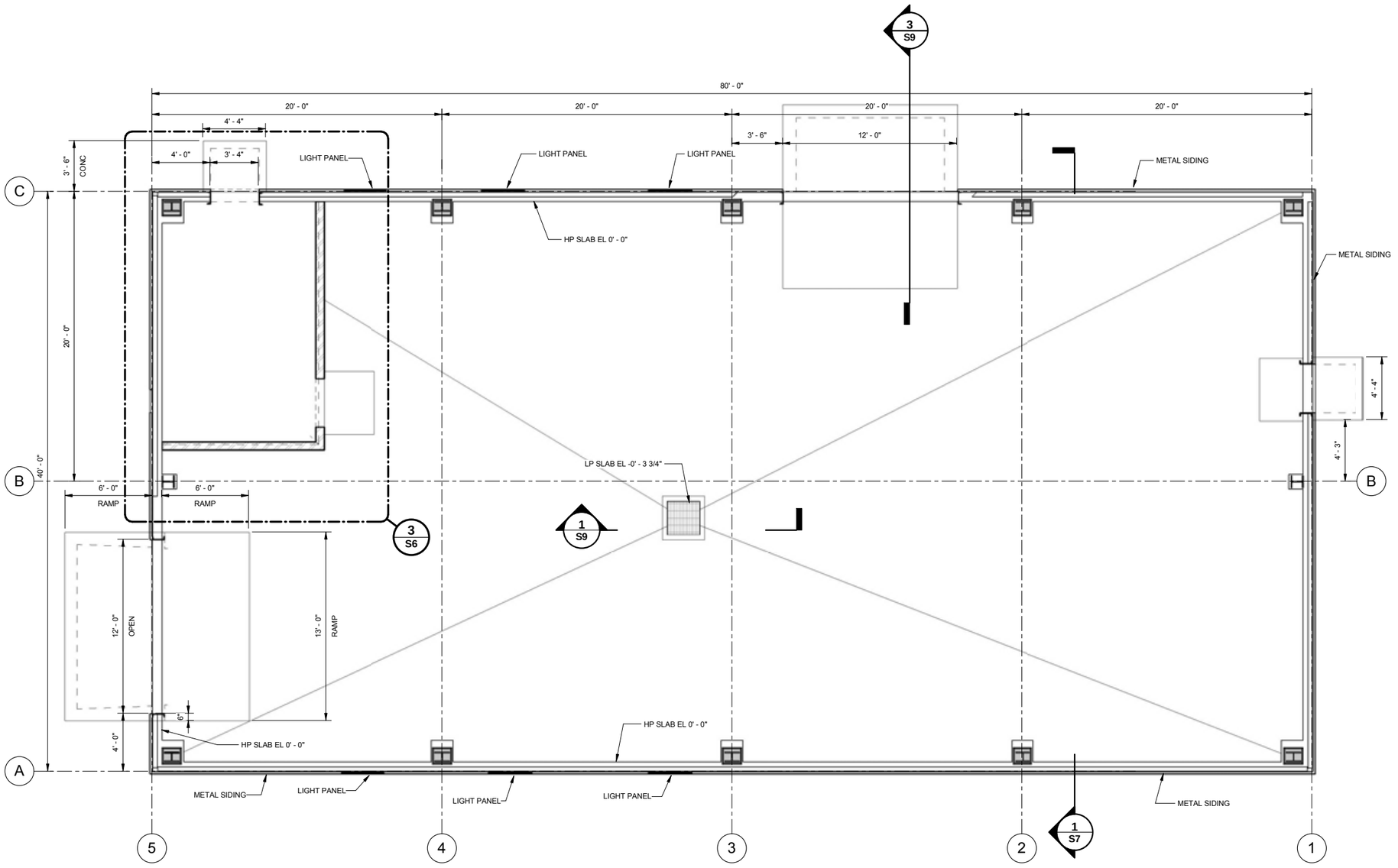

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3/16"=1'-0" (4' 0 6' 12')

No.	Date	Revisions	By	Ckd

Professional Engineer's Name: LISA A. BOWE		
Professional Engineer's No.: 086254		
State: NY	Date Signed: 2/13/2013	Project Mgr.: DFS
Designed by: AAH	Drawn by: AAH	Checked by: LAB

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ARCADIS OF NEW YORK, INC.

DEWEY LOEFFEL LANDFILL SUPERFUND SITE ● NASSAU, NEW YORK

GROUNDWATER AND LEACHATE TREATMENT SYSTEM

FLOOR PLAN

STRUCTURAL

ARCADIS Project No.: B0031174.0003.00002

Date: FEBRUARY 2013

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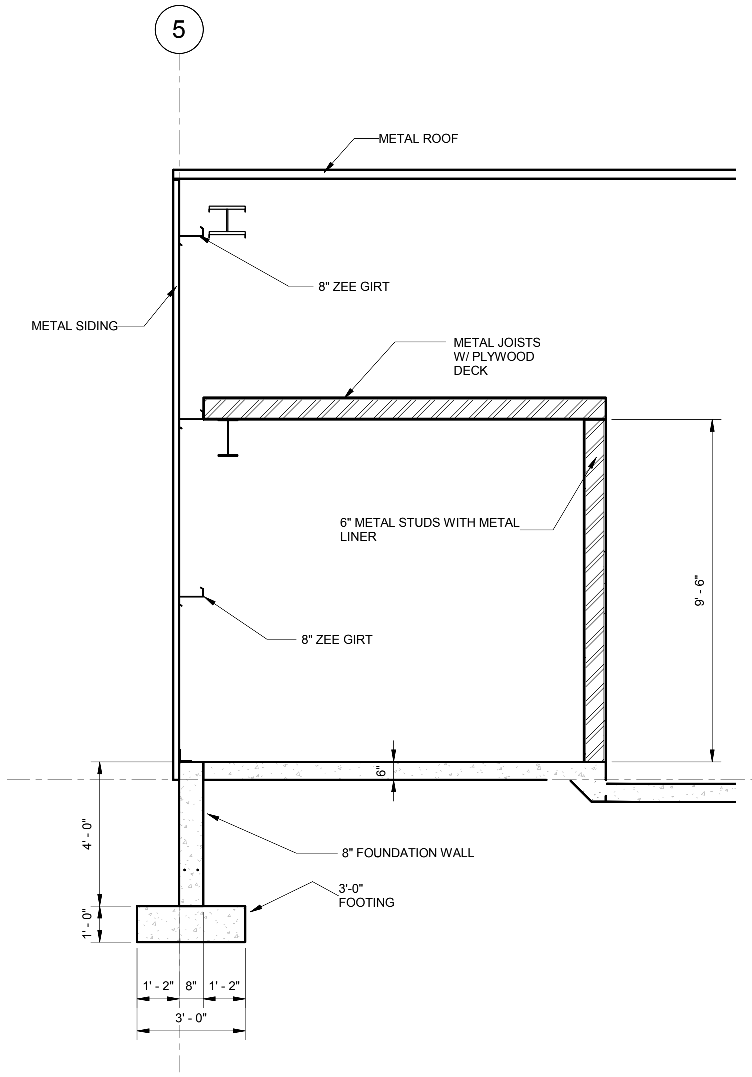
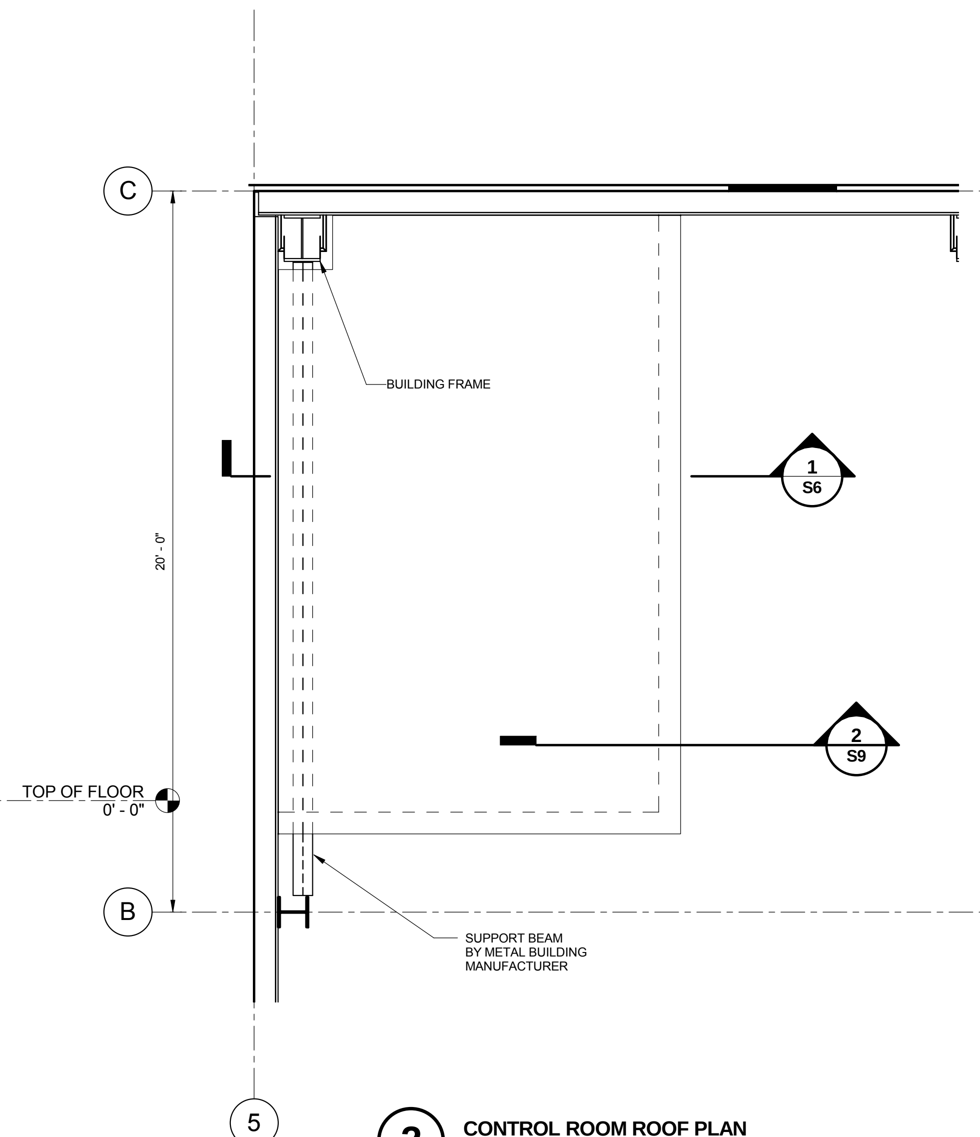
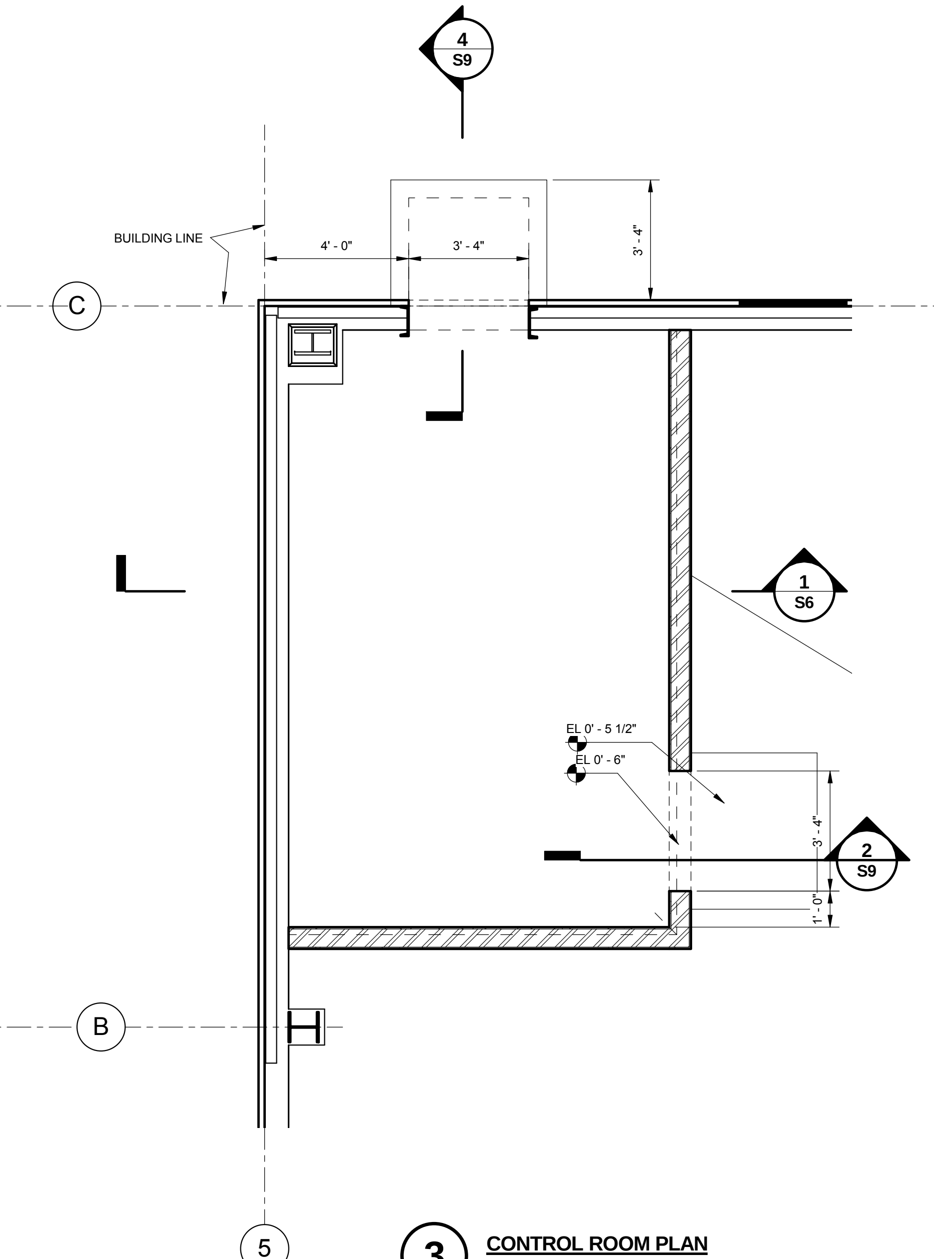


1 **CONTROL ROOM**
3/8" = 1'-0"



2 **CONTROL ROOM ROOF PLAN**
3/8" = 1'-0"



3 **CONTROL ROOM PLAN**
3/8" = 1'-0"

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3/8"=1'-0" 2' 0 3' 6'

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Professional Engineer's Name: LISA A. BOWE
Professional Engineer's No.: 086254

State	Date Signed	Project Mgr.
NY	2/13/2013	DFS
Designed by	**Drawn by**	**Checked by**
AAH	AAH	LAB

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CONTROL ROOM

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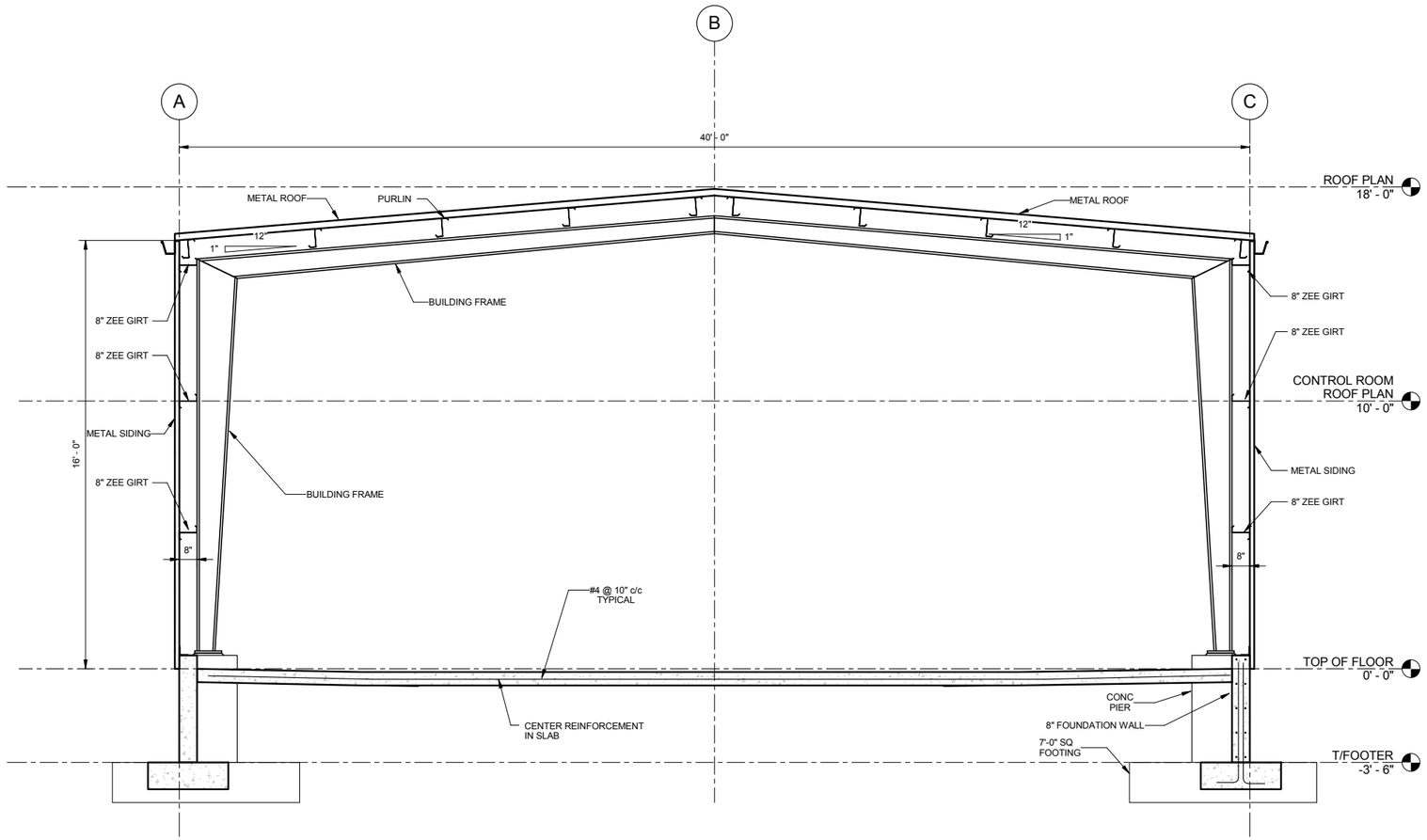

1 **TYPICAL FRAME**
3/8" = 1'-0"

SUBMITTED FOR APPROVAL

2' 0 3' 6'
3/8"=1'-0"

No.	Date	Revisions	By	Ckd

Professional Engineer's Name
LISA A. BOWE
Professional Engineer's No.
086254

State	Date Signed	Project Mgr.
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SECTION-TYPICAL FRAME

STRUCTURAL

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Tel: 315.446.9120

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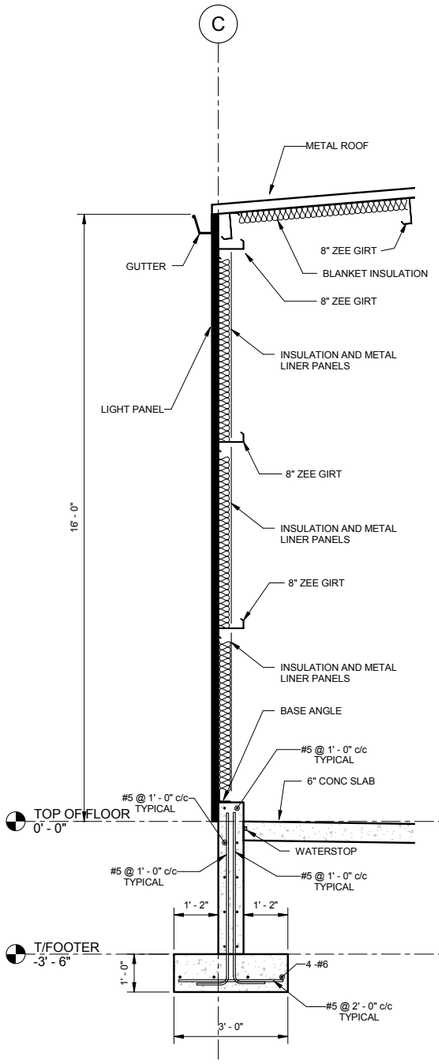
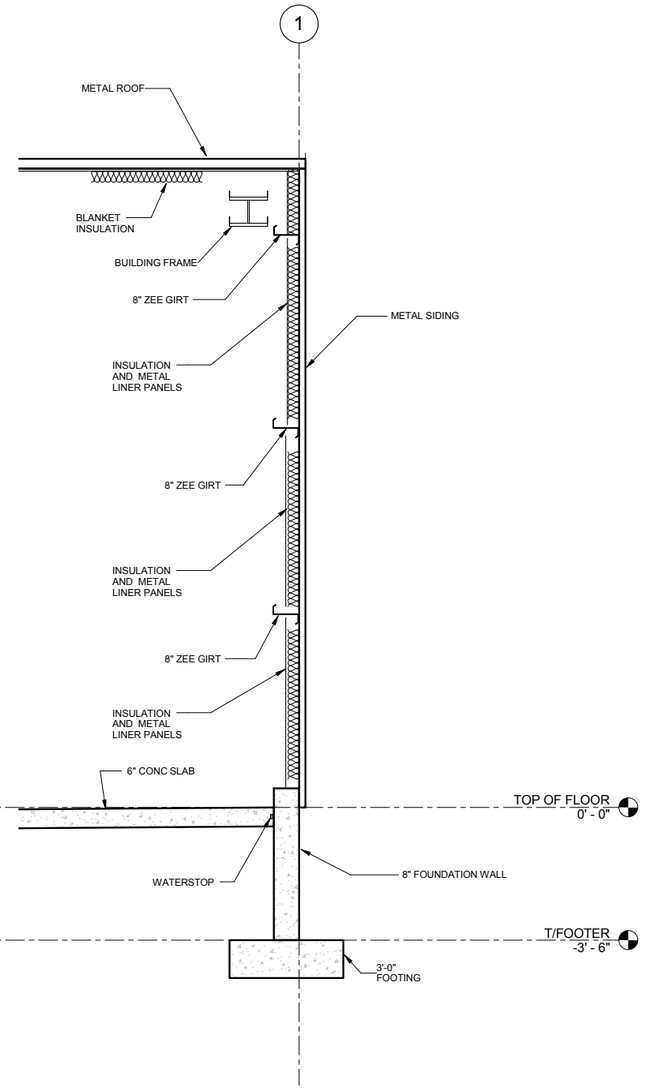


1 **TYPICAL SIDEWALL SECTION**
1/2" = 1'-0"



2 **ENDWALL SECTION**
1/2" = 1'-0"

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1/2"=1'-0" 2' 0 2' 4'

No.	Date	Revisions	By	Ckd

Professional Engineer's Name
LISA A. BOWE
Professional Engineer's No.
086254

State	Date Signed	Project Mgr.
NY	2/13/2013	DFS
Designed by	Drawn by	Checked by
AAH	AAH	LAB

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GROUNDWATER AND LEACHATE TREATMENT SYSTEM

WALL SECTIONS

STRUCTURAL

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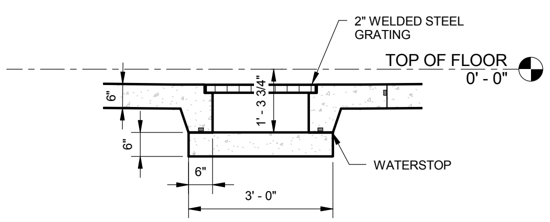
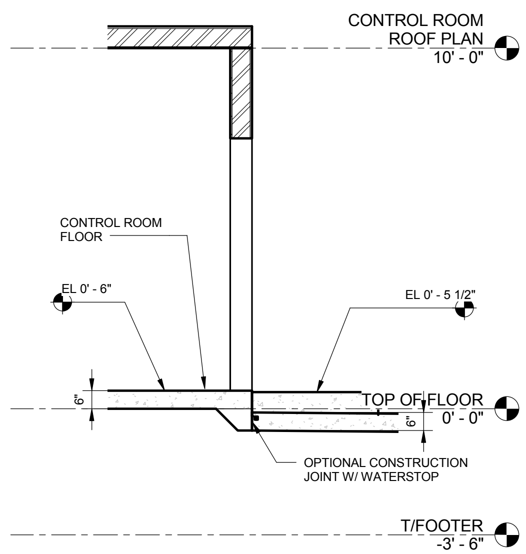
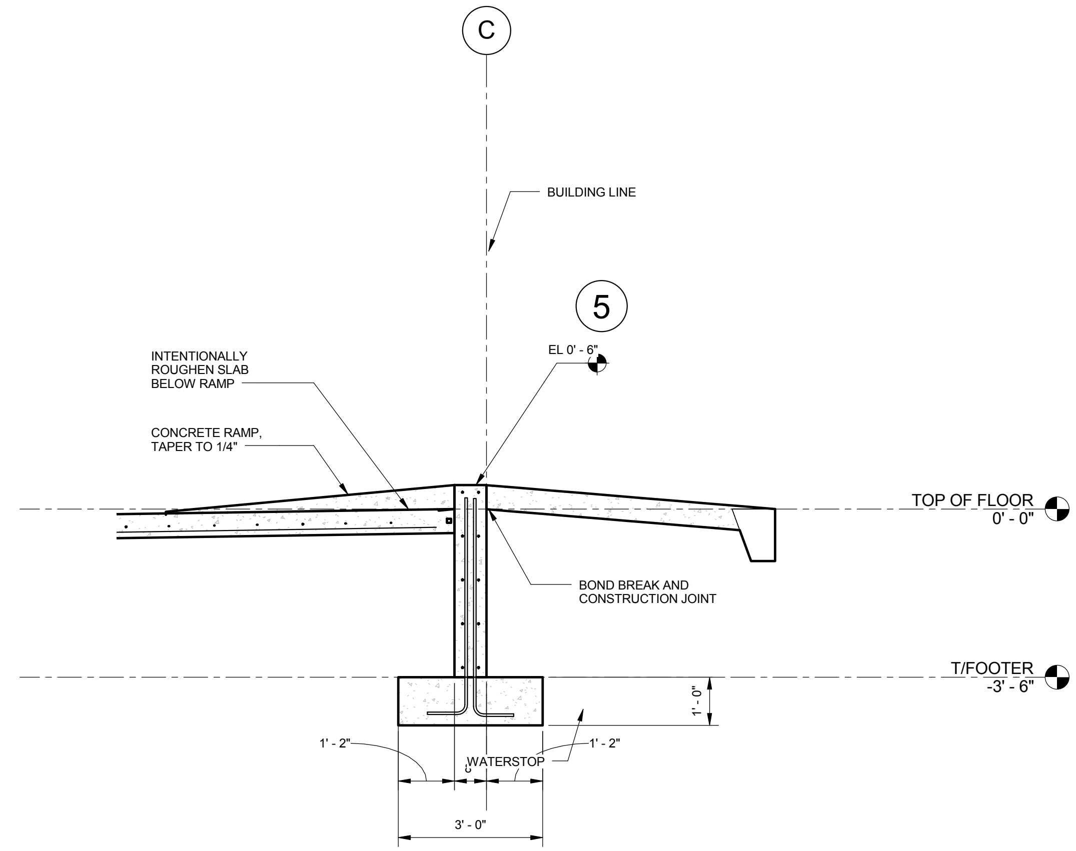


NOTE: SUMP MAY BE PLACED MONNOLITHICALLY WITH FLOOR SLAB

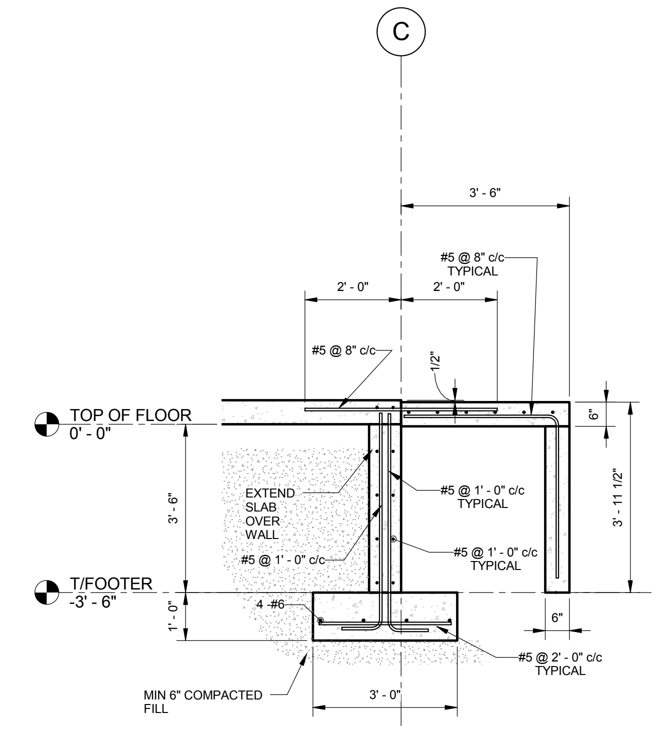
1 **SUMP SECTION**
1/2" = 1'-0"



2 **PAD AT CONTROL ROOM INTERIOR DOOR**
3/8" = 1'-0"



3 **RAMP SECTION**
1/2" = 1'-0"



4 **CONTROL ROOM DOOR**
1/2" = 1'-0"

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1/2"=1'-0" 2' 0 2' 4'

No.	Date	Revisions	By	Ckd

Professional Engineer's Name: LISA A. BOWE
Professional Engineer's No.: 086254

State	Date Signed	Project Mgr.
NY	2/13/2013	DFS
Designed by	Drawn by	Checked by
AAH	AAH	LAB

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GROUNDWATER AND LEACHATE TREATMENT SYSTEM

FOUNDATION DETAILS

STRUCTURAL

ARCADIS Project No. B0031174.0003.00002
Date FEBRUARY 2013

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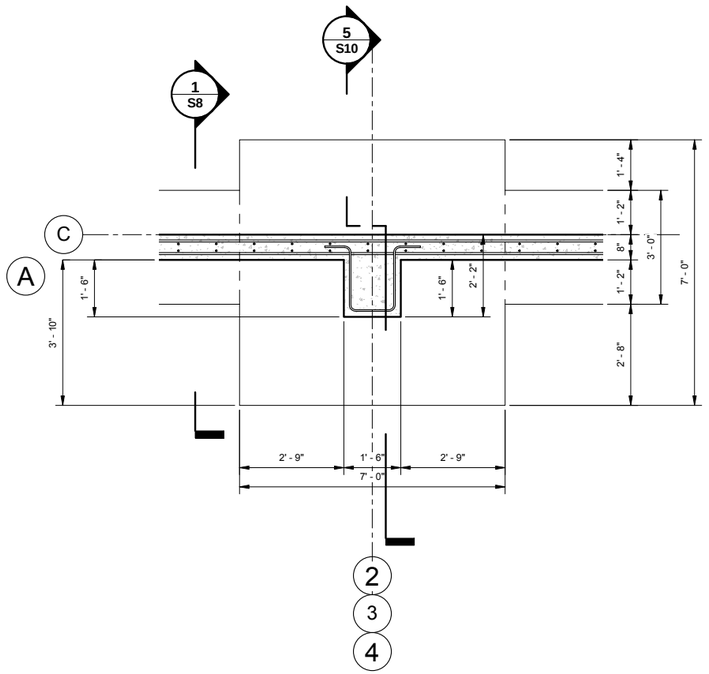
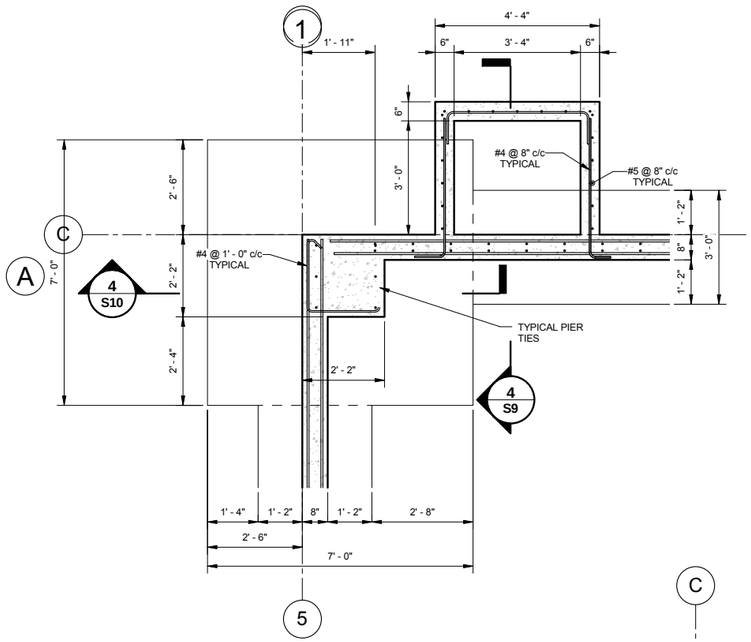
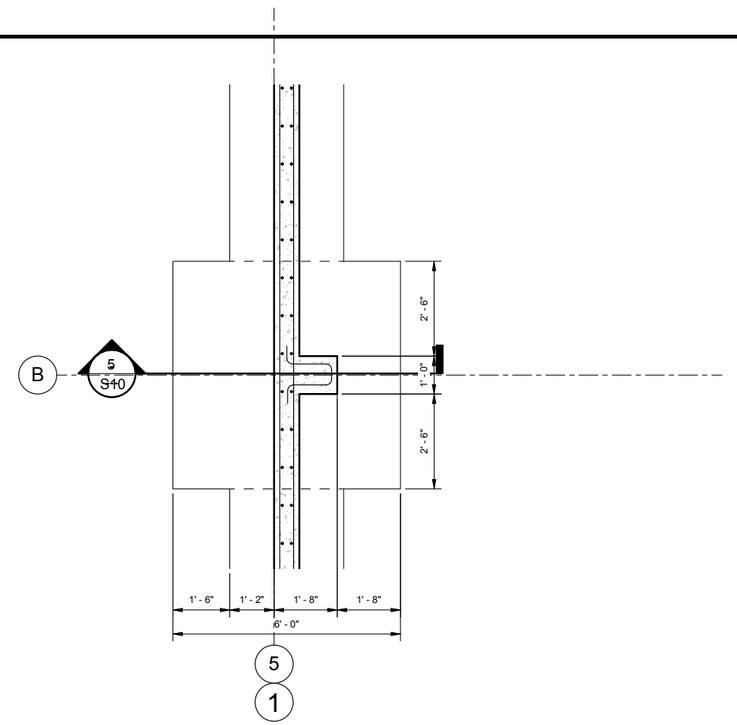


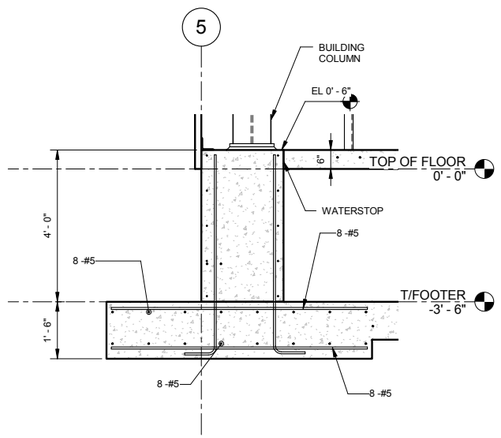
1 SIDEWALL INTERIOR FOOTING
1/2" = 1'-0"



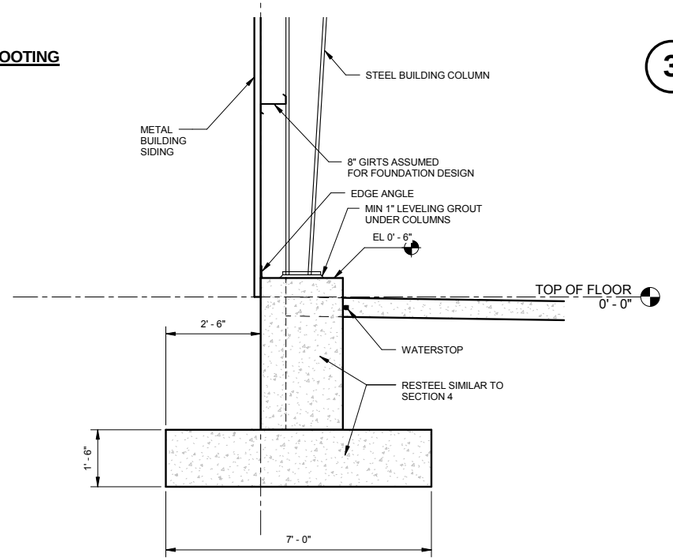
2 CORNER FOOTING
1/2" = 1'-0"



3 ENDWALL INTERIOR FOOTING
1/2" = 1'-0"



4 CORNER PIER IN CONTROL ROOM
1/2" = 1'-0"



5 TYPICAL ENDWALL AND SIDEWALL
1/2" = 1'-0"

SUBMITTED FOR APPROVAL

2' 0 2' 4'
1/2"=1'-0"

No.	Date	Revisions	By	Ckd

Professional Engineer's Name	LISA A. BOWE	
Professional Engineer's No.	086254	
State	Date Signed	Project Mgr.
NY	2/13/2013	DFS
Designed by	Drawn by	Checked by
AAH	AAH	LAB

STATE OF NEW YORK · LISA A. BOWE · 086254 · LICENSED PROFESSIONAL ENGINEER

ARCADIS

ARCADIS OF NEW YORK, INC.

DEWEY LOEFFEL LANDFILL SUPERFUND SITE ● NASSAU, NEW YORK
GROUNDWATER AND LEACHATE TREATMENT SYSTEM

COLUMN FOOTING DETAILS

STRUCTURAL

ARCADIS Project No.
B0031174.0003.00002

Date
FEBRUARY 2013

ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse, NY 13214
Tel: 315.446.9120

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GENERAL

1. QUALITY OF CONSTRUCTION REQUIRED, PERFORMANCE LEVELS OF WORKMANSHIP, MANUFACTURING AND INDUSTRY STANDARDS, STRENGTH AND PHYSICAL REQUIREMENTS OF MATERIALS, CONFORMANCE TO CODES AND REGULATIONS, GUARANTEES AND OTHER PROJECT REQUIREMENTS ARE SPECIFIED IN THE PROJECT MANUAL.
2. IF MATERIALS, QUANTITIES, STRENGTHS OR SIZES INDICATED BY THE DRAWINGS OR SPECIFICATIONS ARE NOT IN AGREEMENT WITH THESE NOTES, THE BETTER QUALITY AND/OR GREATER QUANTITY, STRENGTH OR SIZE INDICATED, SPECIFIED, OR NOTED SHALL BE PROVIDED.
3. PERFORM ALL WORK IN COORDINATION WITH ALL DRAWINGS AND INFORMATION RELATED TO STRUCTURAL WORK. ANY CHANGES TO THE EQUIPMENT REQUIRING CHANGES TO THE STRUCTURAL SYSTEMS SHALL BE REDESIGNED BY A PROFESSIONAL ENGINEER AT NO COST TO THE OWNER AND SUBMITTED TO THE ENGINEER. SUBMITTAL SHALL BE ACKNOWLEDGED IN WRITING BEFORE BEGINNING CONSTRUCTION.
4. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO INSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF WHATEVER TEMPORARY BRACING, GUYS OR TIE-DOWNS MAY BE NECESSARY. SUCH MATERIAL SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AFTER COMPLETION OF THE PROJECT.
5. FACILITIES HAVE BEEN DESIGNED FOR DESIGN LOADS SHOWN OR SPECIFIED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FACILITIES SUBJECT TO CONSTRUCTION LOADS EXCEEDING THE DESIGN LOADS AND SHALL NOTIFY THE ENGINEER OF ANY SUCH ADDITIONAL LOADS.
6. ALL DIMENSIONS AND ELEVATIONS NOTED THUS (*) ON STRUCTURES SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE VERIFIED BY THE CONTRACTOR IN THE FIELD OR WITH THE EQUIPMENT MANUFACTURER AND SHALL CONFORM TO THOSE SHOWN ON OTHER DRAWINGS.
7. DESIGN LOADS: BASED ON NEW YORK STATE 2010 BUILDING CODE. SEE DRAWING S1 FOR LOAD VALUES.

FOUNDATIONS

1. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE SURVEY AND THE SUBSURFACE INVESTIGATION REPORT BEFORE BEGINNING CONSTRUCTION.
2. NOTIFY THE ENGINEER AS SOON AS POSSIBLE OF ANY UNUSUAL SOIL CONDITIONS OR SOIL CONDITIONS IN VARIANCE WITH TEST BORINGS, SUCH AS UNEXPECTED SPRING OR SEEPAGE WATER, MATERIAL DIFFERING FROM TEST BORINGS, OR SOIL OF QUESTIONABLE BEARING CAPACITY.
3. SET FOUNDATIONS AT ELEVATIONS SHOWN. THE CONTRACTOR SHALL VERIFY WITH THE ENGINEER THAT EACH FOOTING PLACED IS BEARING ON DESIGN MATERIAL.
4. CONCRETE GENERAL NOTES APPLY TO FOUNDATIONS.
5. FOOTINGS SHALL REST ON UNDISTURBED SOIL OR COMPACTED SELECT OR CONCRETE FILL OR ROCK.
6. LEVELS OF BACKFILL AGAINST CONCRETE WALLS SHALL NOT DIFFER BY MORE THAN 2'-0" ON EITHER SIDE OF WALLS UNLESS ADEQUATELY BRACED.
7. THE CONTRACTOR SHALL PROTECT EXCAVATION FROM FLOODING UNTIL ALL WALLS AND FLOOR FRAMING UP TO AND INCLUDING GRADE LEVEL FLOORS ARE IN PLACE AND BACKFILLING HAS BEGUN. WATER LEVEL SHALL BE MAINTAINED BELOW EXCAVATION AT ALL TIMES.

CAST-IN-PLACE CONCRETE

1. CONCRETE SHALL HAVE THE FOLLOWING MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS: 4,000 POUNDS PER SQUARE INCH (PSI) WITH ENTRAINED AIR FOR ALL CONCRETE UNLESS SPECIFICALLY NOTED OTHERWISE IN SPECIFICATIONS OR ON CONTRACT DRAWINGS.
2. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH "THE BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" ACI 318. TOLERANCES SHALL BE IN ACCORDANCE WITH ACI 347, SECTION 3.3.1, TOLERANCES FOR REINFORCED CONCRETE BUILDINGS.
3. ALL REINFORCING STEEL SHALL BE NEW DOMESTIC DEFORMED BILLET STEEL CONFORMING TO ASTM A-615 GRADE 60.
4. ALL REINFORCING DETAILS SHALL CONFORM TO "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT", ACI 315, UNLESS DETAILED OTHERWISE ON THE STRUCTURAL DRAWINGS.
5. CONTRACTOR SHALL REVIEW ALL DRAWINGS FOR SIZE AND LOCATION OF EMBEDDED ITEMS, SLEEVES, SLAB DEPRESSIONS, REQUIRED. THESE ITEMS SHALL BE FURNISHED AND INSTALLED PRIOR TO PLACEMENT OF CONCRETE.
6. WHERE BAR LENGTHS ARE GIVEN ON THE DRAWINGS, THE LENGTH OF ANCHOR HOOK, IF REQUIRED, IS NOT INCLUDED.
7. FOUNDATION WALLS AND SLABS SHALL BE CAST MONOLITHICALLY, EXCEPT FOR REQUIRED CONSTRUCTION JOINTS. CONTRACTOR SHALL SUBMIT ANY AND ALL ALTERNATE AND ADDITIONAL CONSTRUCTION JOINT LOCATIONS AND DETAILS.
8. CONSTRUCTION JOINTS REQUIRED BY THE ENGINEER ARE SHOWN ON THE DRAWINGS. REINFORCEMENT SHALL BE CONTINUOUS ACROSS CONSTRUCTION JOINTS. SUBMIT ALL CONSTRUCTION JOINT LOCATIONS WITH REINFORCING STEEL SHOP DRAWINGS.
9. CLEARANCES FOR REINFORCING STEEL SHALL CONFORM TO THE FOLLOWING:
   TYPICAL REINFORCING BAR CLEARANCE TABLE CONCRETE CAST AGAINST EARTH 3"
   SURFACES EXPOSED TO EARTH OR WEATHER 2"
   SURFACES NOT EXPOSED EARTH OR WEATHER 1-1/2"
10. WELDING OF REINFORCING STEEL IS NOT PERMITTED.
11. CALCIUM CHLORIDE SHALL NOT BE PERMITTED NOR SHALL ANY ADMIXTURE CONTAINING CALCIUM CHLORIDE BE PERMITTED THAT RESULTS IN A TOTAL CONCRETE MIX IN WHICH THE PRESENCE OF CHLORIDE IONS EXCEED 0.15 PERCENT BY WEIGHT OF CEMENT.
12. ALUMINUM PIPE SHALL NOT BE USED WITH CONCRETE PUMPS.
13. CONCRETE SHALL BE DISCHARGED AT THE SITE WITHIN 75 MINUTES AFTER WATER HAS BEEN ADDED TO THE CEMENT AND AGGREGATES. ADDITION OF WATER TO THE MIX AT THE PROJECT SITE WILL NOT BE ALLOWED. ALL WATER MUST BE ADDED AT THE BATCH PLANT.
14. REINFORCING BARS REQUIRED FOR PROPER SUPPORT OF PRINCIPAL REINFORCING SHALL BE DETAILED AND SUPPLIED BY THE CONTRACTOR WHETHER OR NOT THEY ARE INDICATED ON THE DRAWINGS.
15. REINFORCING BAR LAP SPLICES, EMBEDMENT, AND HOOK LENGTHS SHALL CONFORM WITH "REINFORCEMENT LAP SPLICE, EMBEDMENT, AND STANDARD HOOKS TABLE".
16. BOND BREAKER MATERIAL SHALL BE 15 POUNDS FELT PAPER, UNLESS NOTED OTHERWISE.
17. JOINT FILLER: ASTM D1752; PRE-MOLDED SPONGE RUBBER FULLY COMPRESSIBLE WITH RECOVERY RATE OF MINIMUM 95 PERCENT; W.R. MEADOWS SPONGE RUBBER, OR AS APPROVED.
18. PROVIDE 1" CHAMFER ON ALL EXPOSED EDGES.
19. WATERSTOP: HYDROPHILIC AND RUBBER MATERIALS FOR POST APPLIED APPLICATIONS 1"x 3/4" SWELLSTOP BY GREENSTREAK.

STRUCTURAL STEEL

1. STRUCTURAL STEEL SHALL CONFORM TO THE AISC "SPECIFICATIONS FOR DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" LATEST EDITION.
2. WELDED CONNECTIONS SHALL CONFORM TO THE LATEST REVISED CODE THE AMERICAN WELDING SOCIETY, AWS D1.
3. BOLTS AND BOLTED CONNECTIONS SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 BOLTS" AS APPROVED BY THE COUNCIL ON RIVETED AND BOLTED JOINTS.
4. ANCHOR RODS: ASTM F1554 GRADE 36 KSI, EMBEDMENT, DIAMETER, AND QUANTITY TO BE DETERMINED BASED ON BUILDING MANUFACTURER APPROVED SHOP DRAWINGS.
5. STRUCTURAL STEEL:
   ROLLED STEEL PLATES, SHAPES (EXCEPT WIDE FLANGE SECTIONS), BARS & RODS; ASTM A36
   WIDE FLANGE SECTIONS; ASTM A992
   STEEL PIPE OR STRUCTURAL TUBING; ASTM A53; TYPE E OR S, GRADE B OR A 501.
6. WELDING ELECTRODES SHALL BE E-70XX. FOR WELDING SYMBOLS WITH NO LENGTH DIMENSION GIVEN, THE WELDING SHALL BE CONTINUOUS BETWEEN ABRUPT CHANGES IN DIRECTION. NO INTERMITTENT WELDS SHALL BE PERMITTED, UNLESS OTHERWISE NOTED.

REINFORCEMENT LAP SPLICE, EMBEDMENT LENGTH AND STANDARD HOOKS

BAR SIZE	MIN. LAP LENGTHS FOR BEAMS *		MIN. LAP LENGTHS FOR SLABS AND WALLS **		MIN. LAP LENGTHS FOR COLUMNS	MIN. EMBEDMENT LENGTHS			MIN. STD. HOOKS		
	CLASS B		CLASS B			STRAIGHT BARS*		WITH STANDARD HOOKS	90°	135°	
	TOP***	OTHERS	TOP***	OTHERS		TOP***	OTHERS		A OR G	A OR G	H
#3	25	19	16	16	12	19	15	5	6	4	2.5
#4	33	25	20	16	15	25	19	7	8	4.5	3
#5	41	31	25	19	19	31	24	9	10	5.5	3.75
#6	49	37	29	23	23	37	29	10	12	8	4.5
#7	71	54	43	33	27	54	42	12	14	9	5.25
#8	81	62	49	37	30	62	48	14	16	10.5	6
#9	91	70	60	46	34	70	54	15	19	-	-
#10	102	79	74	57	39	79	61	17	22	-	-
#11	114	87	89	69	43	87	67	19	24	-	-

REINFORCEMENT LAP SPLICE, EMBEDMENT LENGTH AND STANDARD HOOKS TABLE IS BASED ON A MINIMUM CONCRETE COMPRESSIVE STRENGTH OF 4000 PSI AND 60000 PSI REINFORCEMENT (WITH NO EPOXY COATING).

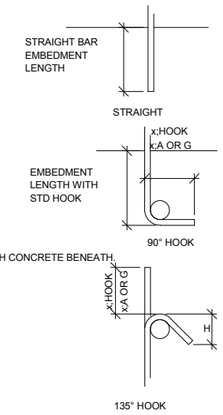
ALL LAPS SPLICES SHALL BE CLASS B SPLICES.

* THE MINIMUM LAP LENGTH FOR BEAMS AND STRAIGHT EMBEDMENTS ARE BASED ON A 3 BAR DIAMETER MINIMUM CENTER TO CENTER BAR SPACING AND A 2 INCH BAR COVER. IF THE SPLICE AND/OR EMBEDMENT DOES NOT CONFORM TO THESE REQUIREMENTS, THEN CONTRACTOR SHALL APPLY APPROPRIATE FACTORS IN COMPLIANCE WITH ACI 318 WITH APPROVAL BY ENGINEER.

** THE MINIMUM LAP LENGTH FOR SLABS AND WALLS IS BASED ON A 6 INCH BAR SPACING AND A 2 INCH BAR COVER. IF THE LAP CONDITION DOES NOT CONFORM TO THESE REQUIREMENTS, THEN USE BEAM LAP LENGTHS; OR COMPLY WITH LAP REQUIREMENTS OF ACI 318 WITH APPROVAL BY ENGINEER.

*** TOP BARS ARE DEFINED AS ALL WALL, BEAM, OR SLAB HORIZONTAL BARS WITH 12" OR MORE FRESH CONCRETE BENEATH.

WHERE SPLICES ARE INDICATED BETWEEN BARS OF DIFFERENT SIZES, THE SPLICE LENGTH SHALL BE BASED ON THE SMALLER BAR SIZE.



SUBMITTED FOR APPROVAL

No.	Date	Revisions	By	Ckd

Professional Engineer's Name: **LISA A. BOWE**
Professional Engineer's No.: 086254

State	Date Signed	Project Mgr.
NY	2/13/2013	DFS
Designed by	Drawn by	Checked by
AAH	AAH	LAB

STATE OF NEW YORK · LISA A. BOWE · 086254 · LICENSED PROFESSIONAL ENGINEER

ARCADIS

ARCADIS OF NEW YORK, INC.

DEWEY LOEFFEL LANDFILL SUPERFUND SITE ● NASSAU, NEW YORK
GROUNDWATER AND LEACHATE TREATMENT SYSTEM

GENERAL NOTES (1 OF 2)

STRUCTURAL

ARCADIS Project No.
B0031174.0003.00002

Date
FEBRUARY 2013

ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse, NY 13214
Tel: 315.446.9120

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PRE-ENGINEERED BUILDING

1.1 DESIGN REQUIREMENTS
- A. APPLICABLE BUILDING CODE: NEW YORK STATE BUILDING CODE 2010.
- B. DESIGN WALL AND ROOF PANEL SYSTEM TO WITHSTAND SPECIFIED LOADS WITH DEFLECTION OF 1/240TH OF SPAN, MAXIMUM.
- C. ANCHOR RODS: FURNISH DESIGN CRITERIA FOR ANCHOR BOLTS FURNISHED BY OTHERS, TO RESIST THE LOADS INDUCED BY THE DESIGN LOADS ON THE STRUCTURE.

1.2 SUBMITTALS
- A. DESIGN DATA: PROVIDE DETAILED DESIGN CRITERIA AND CALCULATIONS.
- B. CERTIFICATION: MANUFACTURER CERTIFICATION THAT THE BUILDING CONFORMS TO THE CONTRACT DOCUMENTS AND MANUFACTURER'S STANDARD DESIGN PROCEDURES.
- C. SHOP DRAWINGS: SHOW BUILDING LAYOUT, PRIMARY AND SECONDARY FRAMING MEMBER SIZES AND LOCATIONS, CROSS-SECTIONS, AND PRODUCT AND CONNECTION DETAILS.
- D. PRODUCT DATA: INFORMATION ON MANUFACTURED PRODUCTS TO BE INCORPORATED INTO THE PROJECT.
- E. COLOR CHARTS: FOR SELECTION OF COLORS.
- F. ANCHOR ROD INSTALLATION DRAWINGS: LAYOUTS WITH BOLT DIAMETERS.
- G. REACTIONS: SUBMIT REACTIONS FOR DESIGN OF FOUNDATION.
- H. SPECIMEN WARRANTY.

1.3 QUALITY ASSURANCE
- A. DESIGN STRUCTURAL COMPONENTS, DEVELOP SHOP DRAWINGS, AND PERFORM SHOP AND SITE WORK UNDER DIRECT SUPERVISION OF A PROFESSIONAL ENGINEER EXPERIENCED IN DESIGN OF THIS WORK AND LICENSED IN THE STATE OF NEW YORK.
- B. DESIGN DATA AND SHOP DRAWINGS SUBMITTED FOR REVIEW SHALL BEAR THE SEAL OF A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW YORK.
- C. QUALIFICATIONS:
  - 1. MANUFACTURER: COMPANY SPECIALIZING IN MANUFACTURING PRODUCTS SPECIFIED IN THIS SECTION WITH MINIMUM 5 YEARS DOCUMENTED EXPERIENCE.
  - 2. ERECTOR: COMPANY SPECIALIZING IN PERFORMING WORK OF THIS SECTION WITH MINIMUM 5 YEARS DOCUMENTED EXPERIENCE AND APPROVED BY MANUFACTURER.

1.4 WARRANTY
- A. PROVIDE MANUFACTURER'S STANDARD WARRANTY FOR:
  - 1. PANEL FINISH: 20 YEARS.
  - 2. WEATHER-TIGHTNESS: 20 YEARS

PART 2 PRODUCTS

2.1 MANUFACTURERS
- A. METALLIC BUILDING COMPANY.
- B. OR AS APPROVED.

2.2 METAL MATERIALS
- A. STRUCTURAL STEEL PLATE, BAR, SHEET, AND STRIP FOR USE IN BOLTED AND WELDED CONSTRUCTIONS: ASTM A572, A570, A529, OR A36, WITH MINIMUM YIELD STRENGTH OF 50,000 PSI.
- B. STRUCTURAL STEEL MATERIAL FOR USE IN ROLL FORMED OR PRESS BROKEN SECONDARY STRUCTURAL MEMBERS: ASTM A570, OR A607 WITH MINIMUM YIELD STRENGTH OF 55,000 PSI.
- C. GALVANIZED STEEL SHEET FOR ROLL-FORMED OR PRESS BROKEN ROOF AND WALL COVERINGS, TRIM AND FLASHING: ASTM A653, WITH MINIMUM YIELD STRENGTH OF 50,000 PSI.
- D. HOT-ROLLED STEEL SHAPES: W, M AND S SHAPES, ANGLES, RODS, CHANNELS AND OTHER SHAPES; ASTM A992 OR ASTM A36 AS APPLICABLE; WITH MINIMUM YIELD STRENGTHS REQUIRED FOR THE DESIGN.
- E. STRUCTURAL BOLTS AND NUTS USED WITH PRIMARY FRAMING: HIGH STRENGTH, ASTM A325.
- F. BOLTS AND NUTS USED WITH SECONDARY FRAMING MEMBERS: ASTM A307.

2.3 FRAMING COMPONENTS
- A. PRIMARY FRAMING: RIGID FRAME SOLID WEB FRAMING CONSISTING OF TAPERED OR UNIFORM DEPTH RAFTERS RIGIDLY CONNECTED TO TAPERED OR UNIFORM DEPTH COLUMNS. PROVIDE A CLEAR SPAN THAT SUPPORTS THE LOADS AT BAY SPACINGS INDICATED.
- B. ENDWALL FRAMING: PORTAL FRAME FRAMING.
- C. PURLINS: Z-SHAPED; DEPTH AS REQUIRED; WITH MINIMUM YIELD STRENGTH OF 55,000 PSI; SIMPLE SPAN OR CONTINUOUS SPAN AS REQUIRED FOR DESIGN.
- D. GIRTS: Z- OR C-SHAPED; DEPTH AS REQUIRED, WITH MINIMUM YIELD STRENGTH OF 55,000 PSI; SIMPLE SPAN OR CONTINUOUS SPAN AS REQUIRED FOR DESIGN.
- E. WIND BRACING: PORTAL, TORSIONAL, DIAGONAL BRACING OR DIAPHRAGM IN ACCORDANCE WITH MANUFACTURER'S STANDARD DESIGN PRACTICES; UTILIZING RODS, ANGLES, AND OTHER MEMBERS, WITH MINIMUM YIELD STRENGTHS AS REQUIRED FOR DESIGN.
- F. PRIMARY FRAME FLANGE BRACING: ATTACHED FROM PURLINS OR GIRTS TO THE PRIMARY FRAMING, MINIMUM YIELD STRENGTH AS REQUIRED FOR DESIGN.
- G. BASE ANGLES: 2 INCH BY 3 INCH BY 0.059 INCH STEEL ANGLES, WITH MINIMUM YIELD STRENGTH OF 55,000 PSI.
- H. DOOR HEADERS AND JAMBS: Z- OR C-SHAPED; DEPTH AS REQUIRED; WITH MINIMUM YIELD STRENGTH OF 55,000 PSI.
- I. SAG ANGLES AND BRIDGING: STEEL ANGLES WITH MINIMUM YIELD STRENGTH OF 36,000 PSI.
- J. FABRICATION: FABRICATE ACCORDING TO MANUFACTURER'S STANDARD PRACTICE.
  - 1. FABRICATE STRUCTURAL MEMBERS MADE OF WELDED PLATE SECTIONS BY JOINTING THE FLANGES AND WEBS BY CONTINUOUS AUTOMATIC SUBMERGED ARC WELDING PROCESS.
  - 2. ALL WELDING OPERATORS AND PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE, AWS D1.1.
  - 3. FIELD CONNECTIONS. PREPARE MEMBERS FOR BOLTED FIELD CONNECTIONS BY MAKING PUNCHED, DRILLED, OR REAMED HOLES IN THE SHOP.
- K. SHOP COATING: FINISH ALL STRUCTURAL STEEL MEMBERS USING ONE COAT OF MANUFACTURER'S STANDARD SHOP COAT, AFTER CLEANING OF OIL, DIRT, LOOSE SCALE AND FOREIGN MATTER.

2.4 ROOF AND WALL PANEL COMPONENTS
- A. ROOF PANELS: 36 INCH WIDE NET COVERAGE WITH 1-1/4 INCH HIGH MAJOR RIBS AT 12 INCHES ON CENTER WITH MINOR RIBS SPACED BETWEEN THE MAJOR RIBS.
  - 1. MATERIAL: GALVANIZED STEEL WITH G90 COATING.
  - 2. THICKNESS: 26 GAGE.
  - 3. SIDE LAPS: AT LEAST ONE FULL MAJOR RIB, WITH A SUPPORTING MEMBER BEARING EDGE ON THE LOWER PANEL AND AN ANTI-CAPILLARY GROOVE ON THE UPPER PANEL.
  - 4. LENGTH: CONTINUOUS FROM EAVE TO RIDGE.
  - 5. ENDLAPS WHERE REQUIRED: 6 INCHES WIDE, LOCATED AT A SUPPORT MEMBER.
  - 6. FINISH: KYNAR 500 PRE-PAINTED FINISH ON EXTERIOR SURFACE, WASH COAT ON INTERIOR SURFACE. COLOR SELECTED BY OWNER FROM MANUFACTURER'S FULL LINE.
  - 7. THE ROOF SHALL BE TESTED AND CERTIFIED TO MEET UNDERWRITERS LABORATORIES, INC., UPLIFT RATING: UL 90.
- B. WALL PANELS: 36 INCH WIDE NET COVERAGE WITH 1-1/4 INCH HIGH MAJOR RIBS AT 12 INCHES ON CENTER WITH MINOR RIBS SPACED BETWEEN THE MAJOR RIBS.
  - 1. MATERIAL: GALVANIZED STEEL WITH G90 COATING.
  - 2. THICKNESS: 26 GAGE.
  - 3. SIDE LAPS: TWO FULLY OVERLAPPING MAJOR RIBS SECURED TOGETHER WITH 1/4 INCH DIAMETER COLOR-MATCHED CARBON STEEL FASTENERS.
  - 4. LENGTH: CONTINUOUS FROM SILL TO EAVE.
  - 5. ENDLAPS WHERE REQUIRED: 4 INCHES WIDE, LOCATED AT A SUPPORT MEMBER.
  - 6. CRIMP PANELS AT THE BASE AND NOTCH TO MAKE ROOF PANEL CONFIGURATION AT THE EAVE.
  - 7. CUT PANELS SQUARE AT EACH END; PROVIDE BASE TRIM AT SILL.
  - 8. FINISH: KYNAR 500 PRE-PAINTED FINISH ON EXTERIOR SURFACE, WASH COAT ON INTERIOR SURFACE. COLOR SELECTED BY OWNER FROM MANUFACTURER'S FULL LINE.
- C. PANEL FASTENERS:
  - 1. FOR ROOF PANELS: STAINLESS STEEL-CAPPED CARBON STEEL FASTENERS WITH INTEGRAL SEALING WASHER.
  - 2. FOR WALL PANELS: COATED CARBON STEEL.
  - 3. COLOR OF EXPOSED FASTENER HEADS TO MATCH THE WALL PANEL FINISH.
  - 4. CONCEALED FASTENERS: SELF-DRILLING TYPE, OF SIZE AS REQUIRED.
  - 5. PROVIDE FASTENERS IN QUANTITIES AND LOCATION AS REQUIRED BY THE MANUFACTURER.

PRE-ENGINEERED BUILDING (CONT.)

- D. FLASHING AND TRIM: MATCH MATERIAL AND COLOR OF ADJACENT COMPONENTS. PROVIDE TRIM AT RAKES, INCLUDING PEAK AND CORNER ASSEMBLIES, HIGH AND LOW EAVES, CORNERS, BASES, FRAMED OPENINGS AND AS REQUIRED OR SPECIFIED TO PROVIDE WEATHER-TIGHTNESS AND A FINISHED APPEARANCE.
- E. PLASTIC PARTS: GLASS FIBER-REINFORCED RESIN OR THERMO-FORMED ABS.
  - 1. ABS: MINIMUM 1/8 INCH THICK.
  - 2. COLOR: MANUFACTURER'S STANDARD COLOR.
- F. SEALANTS, MASTICS AND CLOSURES: MANUFACTURER'S STANDARD TYPE.
  - 1. PROVIDE AT ROOF PANEL ENDLAPS, SIDELAPS, RAKE, EAVE, TRANSITIONS AND ACCESSORIES AS REQUIRED TO PROVIDE A WEATHER-RESISTANT ROOF SYSTEM; USE TAPE MASTIC OR GUNNABLE SEALANT AT SIDELAPS AND ENDLAPS.
  - 2. PROVIDE AT WALL PANEL RAKES, EAVES, TRANSITIONS AND ACCESSORIES.
  - 3. CLOSURES: FORMED TO MATCH PANEL PROFILES; CLOSED CELL ELASTIC MATERIAL, MANUFACTURER'S STANDARD COLOR.
  - 4. TAPE MASTIC: PRE-FORMED BUTYL RUBBER-BASED, NON-HARDENING, NON-CORROSIVE TO METAL; WHITE OR LIGHT GRAY.
  - 5. GUNNABLE SEALANT: NON-SKINNING SYNTHETIC ELASTOMER BASED MATERIAL; GRAY OR BRONZE.
- G. BLANKET INSULATION: GLASS FIBER WITH FACTORY-LAMINATED FACING MATERIAL:
  - 1. GLASS FIBER: ODORLESS, NEUTRAL-COLORED, LONG FILAMENT, FLEXIBLE RESILIENT, PRODUCED IN COMPLIANCE WITH THE NAIMA 202 SPECIFICATIONS.
  - 2. THERMAL RESISTANCE: TO MEET R=19 AT 75 DEGREES F MEAN TEMPERATURE.
  - 3. FLAME SPREAD INDEX: 25 OR LESS, WHEN TESTED IN ACCORDANCE WITH UL 723.
  - 4. SMOKE DEVELOPED INDEX: 50 OR LESS, WHEN TESTED IN ACCORDANCE WITH UL 723.
  - 5. UL CLASSIFIED.
  - 6. FACING: WHITE VINYL SCRIM POLYESTER; 0.0025 INCH THICK PVC FILM, GLASS FIBER SCRIM REINFORCING, 0.0005 INCH THICK POLYESTER FILM; PERMEANCE 0.02 PERMS. COMPOSITE FIBERGLASS AND FACING TO MEET FLAME SPREAD OF 25 OR LESS, SMOKE DEVELOPED OF 50 OR LESS, WHEN TESTED IN ACCORDANCE WITH UL 723.
  - 7. PROVIDE FACING 3 INCHES WIDER ON BOTH EDGES THAN BLANKET.
  - 8. WIDTH: AS REQUIRED FOR INSTALLATION.
  - 9. USE BLANKET INSULATION AT ROOF AND WALLS.

2.5 WALL ACCESSORIES
- A. SERVICE DOORS.
- B. SECTIONAL OVERHEAD DOORS.
- C. PROVIDE FRAMED OPENINGS FOR LOUVERS.

2.6 ROOF ACCESSORIES
- A. EAVE GUTTERS: ROLL-FORMED 26 GAGE STEEL SHEET, WITH GUTTER STRAPS, FASTENERS AND JOINT SEALANT; SAME COLOR AS WALL PANELS.
  - 1. DOWNSPOUTS: 4 BY 5 INCHES IN 10 FOOT LENGTHS WITH DOWNSPOUT ELBOWS AND DOWNSPOUT STRAPS; SAME COLOR AS WALL PANELS.
- B. SNOWGUARDS:
  - 1. MANUFACTURERS: SNOJAX, INC., OR AS APPROVED.
  - 2. FABRICATED FROM CLEAR POLYCARBONATE.
  - 3. PROVIDE ADHESIVE FOR SECURING SNOWGUARDS TO ROOF PANELS.
  - 4. CONSULT MANUFACTURER FOR SPACING RECOMMENDATIONS.
- C. PROVIDE FRAMED OPENINGS FOR FANS.

2.7 DOORS
- A. OVERHEAD DOORS TO BE COILING TYPE, STEEL CONSTRUCTION, INSULATED. CURTAIN SLATS MIN 20 GA EXTERIOR AND 24 GA BACK COVER. LOCKING MECHANISM REQUIRED. PROVIDE COUNTERBALANCING MECHANISM WITH HELICAL TORSIONAL SPRINGS. PLACE HOOD EXTERIOR OF BUILDING.
- B. INTERIOR MANDOOR - 20 GA., HONEY COMB CORE, WITH 16 GA. FRAME AND LOCKS.
- C. EXTERIOR MANDOOR - 18 GA., INSULATED CORE, STANDARD KEYING, BALL BEARING HINGES, AND 16 GA. FRAME.

COLD FORMED METAL FRAMING

1.1 MATERIALS
- A. STEEL SHEET: ASTM A653/A 653M, STRUCTURAL STEEL, ZINC COATED, OF GRADE AND COATING AS FOLLOWS:
  - 1. GRADE: 33 OR 50, CLASS 1 OR 2 AS REQUIRED BY STRUCTURAL CALCULATIONS.
  - 2. COATING: G60 (Z180).

1.2 FRAMING ACCESSORIES
- A. FABRICATE STEEL-FRAMING ACCESSORIES OF THE SAME MATERIAL AND FINISH USED FOR FRAMING MEMBERS, WITH MINIMUM YIELD STRENGTH OF 33,000 PSI (230 MPA).
- B. PROVIDE ACCESSORIES OF MANUFACTURER'S STANDARD THICKNESS AND CONFIGURATION.

1.3 MISCELLANEOUS MATERIALS
- A. GALVANIZING REPAIR PAINT: SSPC-PAINT 20 OR DOD-P21035, ASTM A780.

1.4 FASTENERS
- A. SCREWS: CORROSION-RESISTANT COATED, SELF-DRILLING, PAN OR HEX WASHER HEAD. PROVIDE SCREW TYPE AND SIZE AS REQUIRED BY STRUCTURAL DESIGN CALCULATIONS FOR THE CONDITION AND THICKNESS OF MATERIALS BEING JOINED.

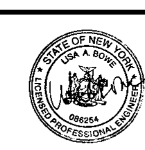
1.5 FABRICATION
- A. FABRICATE ASSEMBLIES TO SIZE AND CONFIGURATION REQUIRED.
- B. CUT ALL FRAMING COMPONENTS SQUARE FOR ATTACHMENT TO PERPENDICULAR MEMBERS, OR AS REQUIRED FOR AN ANGULAR FIT AGAINST ABUTTING MEMBERS.
- C. FASTEN COMPONENTS WITH SELF-DRILLING SCREWS OR WELDING. FURNISH SCREWS OF SIZES TO BE SUFFICIENT TO INSURE STRENGTH OF CONNECTION. TOUCH UP ALL WELDS WITH ZINC-RICH PRIMER. MECHANICAL FASTENERS, EITHER POWDER ACTUATED OR PNEUMATICALLY DRIVEN, ARE PROHIBITED.
- D. REINFORCE AND BRACE ASSEMBLIES TO WITHSTAND HANDLING STRESSES.
- E. COLD-FORMED METAL FRAMING MAY BE SHOP OR FIELD FABRICATED FOR INSTALLATION, OR IT MAY BE FIELD ASSEMBLED.
- F. INSTALL COLD-FORMED METAL FRAMING ACCORDING TO ASTM C1007, UNLESS MORE STRINGENT REQUIREMENTS ARE INDICATED.
- G. INSTALL COLD-FORMED METAL FRAMING AND ACCESSORIES PLUMB, SQUARE, AND TRUE TO LINE, AND WITH CONNECTIONS SECURELY FASTENED, ACCORDING TO MANUFACTURER'S WRITTEN RECOMMENDATIONS AND REQUIREMENTS IN THIS SECTION.
  - 1. CUT FRAMING MEMBERS BY SAWING OR SHEARING; DO NOT TORCH CUT.
  - 2. FASTEN COLD-FORMED METAL FRAMING MEMBERS BY WELDING OR SCREW FASTENING, AS STANDARD WITH FABRICATOR. WIRE TYING OF FRAMING MEMBERS IS NOT PERMITTED.
- H. INSTALL STUDS AT SPACING AS SHOWN ON DRAWINGS AND AS REQUIRED BY STRUCTURAL DESIGN CALCULATIONS, AT EACH SIDE OF OPENINGS AND NOT MORE THAN 2 INCHES FROM ABUTTING WALLS.
  - a. FRAME CORNERS WITH THREE STUDS.
  - b. FRAME WALL OPENINGS WIDER THAN STUD SPACING WITH DOUBLE STUD AT EACH JAMB.
  - 2. INSTALL SUPPLEMENTARY FRAMING OR BLOCKING TO SUPPORT WORK ATTACHED TO FRAMING.

1.6 TOLERANCES
- A. STUDS: VERTICAL ALIGNMENT (PLUMBNESS), 1/960 (1/8 INCH IN 10 FEET).
- B. WALLS: HORIZONTAL ALIGNMENT (LEVELNESS), 1/960 (1/8 INCH IN 10 FEET).
- C. STUD SPACING: 1/8 INCH FROM DESIGNATED SPACING PROVIDING THAT THE CUMULATIVE ERROR DOES NOT EXCEED REQUIREMENTS OF FINISHING MATERIALS.

SUBMITTED FOR APPROVAL

No.	Date	Revisions	By	Ckd

Professional Engineer's Name: LISA A. BOWE
Professional Engineer's No.: 086254
State: NY | Date Signed: 2/13/2013 | Project Mgr.: DFS
Designed by: AAH | Drawn by: AAH | Checked by: LAB



ARCADIS

ARCADIS OF NEW YORK, INC.

DEWEY LOEFFEL LANDFILL SUPERFUND SITE ● NASSAU, NEW YORK
GROUNDWATER AND LEACHATE TREATMENT SYSTEM

GENERAL NOTES (2 OF 2)

STRUCTURAL

ARCADIS Project No. B0031174.0003.00002
Date: FEBRUARY 2013

ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse, NY 13214
Tel: 315.446.9120

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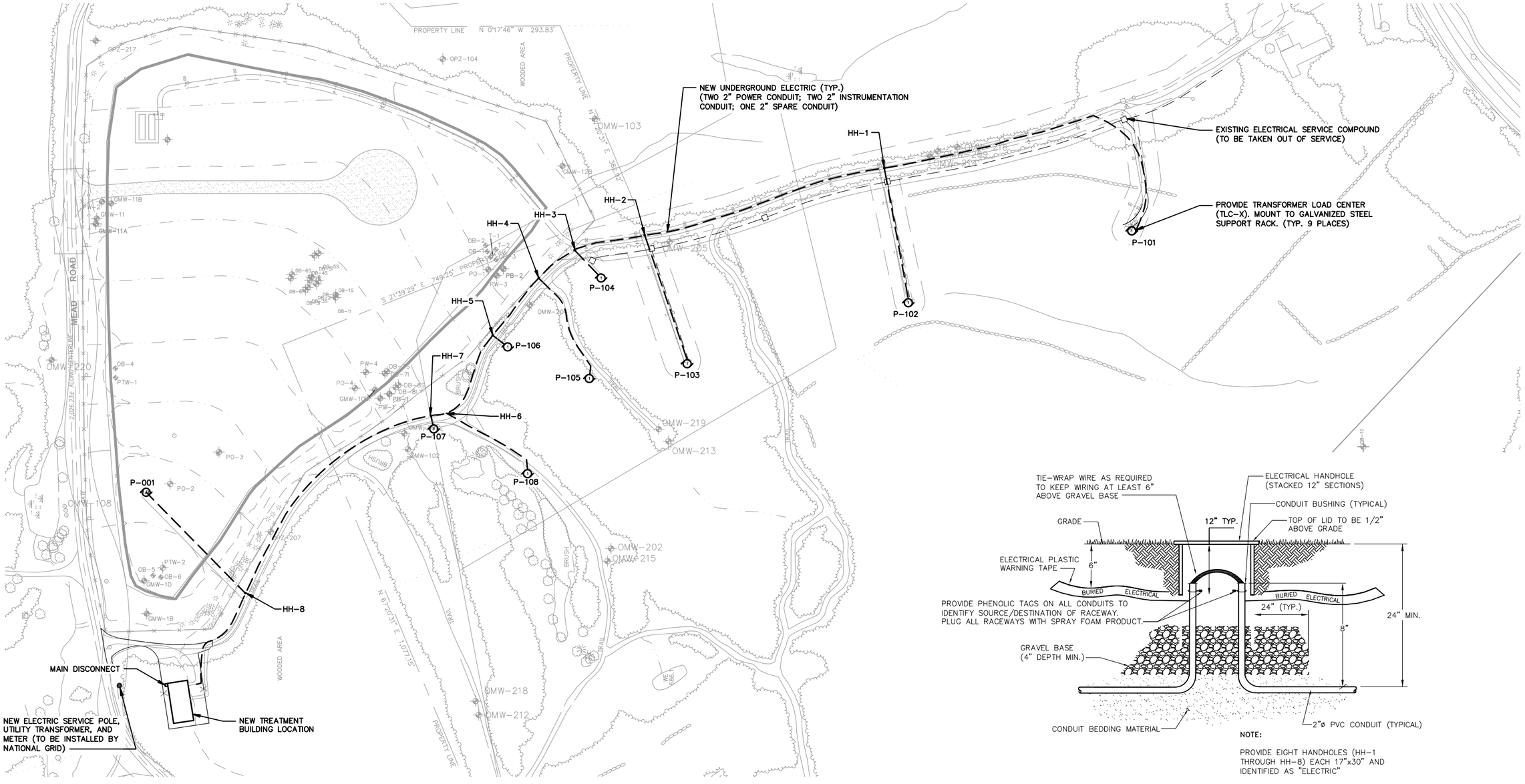

LEGEND:

PROPOSED UNDERGROUND CONDUIT

NOTE:

REFER TO E2 ONELINE FOR CONDUIT AND WIRING INFORMATION.

NOTE:

PROVIDE EIGHT HANDHOLES (HH-1 THROUGH HH-8) EACH 17"x30" AND IDENTIFIED AS "ELECTRIC"

SECTION ELECTRICAL HANDHOLE DETAIL

NOT TO SCALE

SUBMITTED FOR APPROVAL

CITY:(TOLETO) SYRACUSE-NY DIV/GROUP:ENVCAD DB:G.(T.ARMSTRONG) STEINBERGER K.SARTORI LD:G.STEINBERGER PIC:P.FARR PM:D.SAUDA TM:S.BATTAGLIA LYRON=*:OFF=*REF*
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31174X01 SAUDA.jpg
31174X02

1"=100' 100' 0 100' 200'

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING: USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd

Professional Engineer's Name: THOMAS P. ARMSTRONG JR.
Professional Engineer's No.: 085236

State	Date Signed	Project Mgr.
NY		DFS
Designed by	Drawn by	Checked by
SAB	GHS	TEM

ARCADIS OF NEW YORK, INC.

DEWEY LOEFFEL LANDFILL SUPERFUND SITE • NASSAU, NEW YORK
GROUNDWATER AND LEACHATE TREATMENT SYSTEM

ELECTRICAL SITE PLAN

ELECTRICAL

ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse, NY 13214
Tel: 315.446.9120

ARCADIS Project No.
B0031174.0003.00002

Date
FEBRUARY 2013

E1

CONDUCTOR SCHEDULE

(XX)

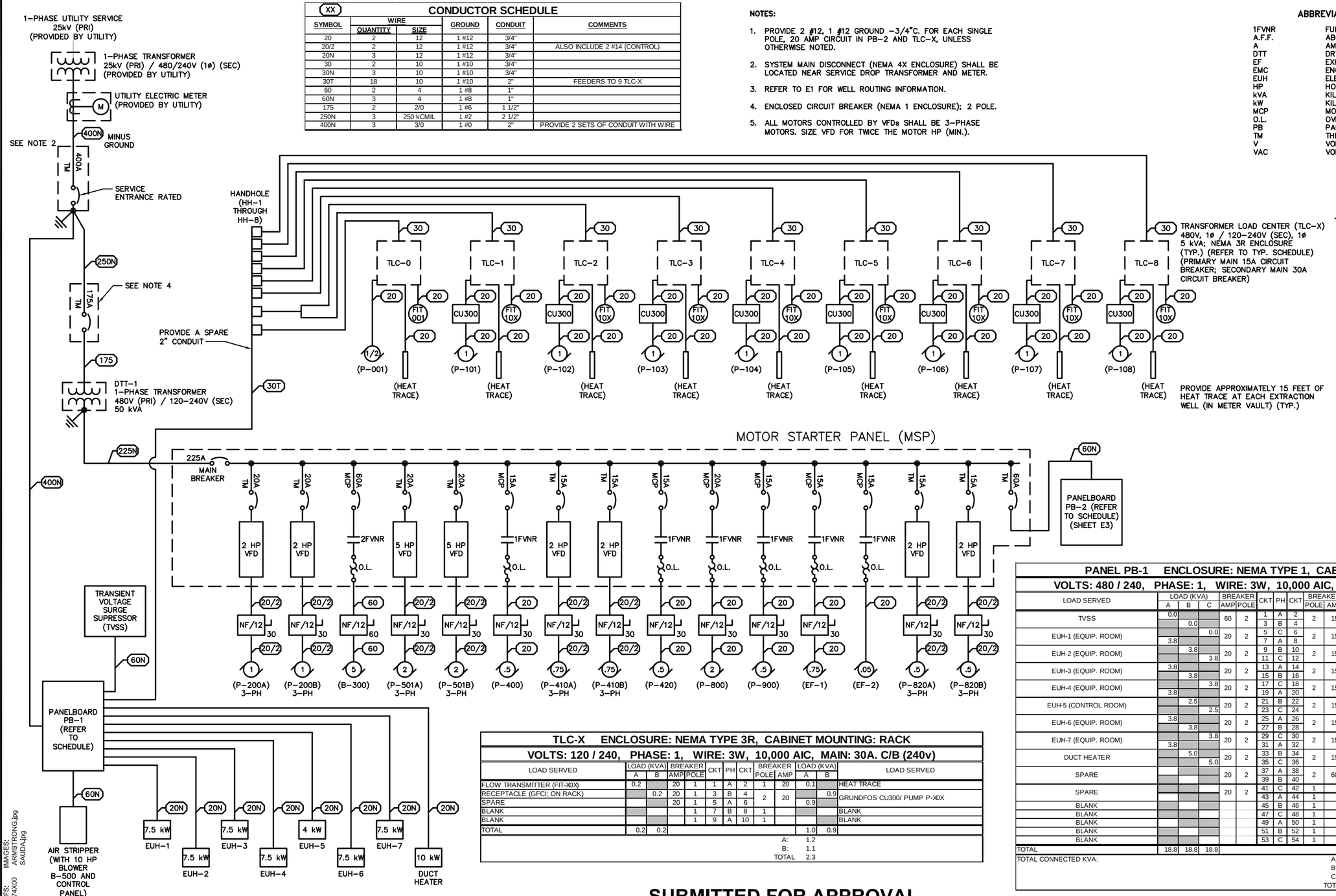
SYMBOL	WIRE QUANTITY	WIRE SIZE	GROUND	CONDUIT	COMMENTS
20	2	12	1 #12	3/4"	
20/2	2	12	1 #12	3/4"	ALSO INCLUDE 2 #14 (CONTROL)
20N	3	12	1 #12	3/4"	
30	2	10	1 #10	3/4"	
30N	3	10	1 #10	3/4"	
30T	18	10	1 #10	2"	FEEDERS TO 9 TLC-X
60	2	4	1 #8	1"	
60N	3	4	1 #8	1"	
175	2	2/0	1 #6	1 1/2"	
250N	3	250 kCMIL	1 #2	2 1/2"	
400N	3	3/0	1 #0	2"	PROVIDE 2 SETS OF CONDUIT WITH WIRE

NOTES:

1. PROVIDE 2 #12, 1 #12 GROUND –3/4"C. FOR EACH SINGLE POLE, 20 AMP CIRCUIT IN PB–2 AND TLC–X, UNLESS OTHERWISE NOTED.
2. SYSTEM MAIN DISCONNECT (NEMA 4X ENCLOSURE) SHALL BE LOCATED NEAR SERVICE DROP TRANSFORMER AND METER.
3. REFER TO E1 FOR WELL ROUTING INFORMATION.
4. ENCLOSED CIRCUIT BREAKER (NEMA 1 ENCLOSURE); 2 POLE.
5. ALL MOTORS CONTROLLED BY VFDs SHALL BE 3–PHASE MOTORS. SIZE VFD FOR TWICE THE MOTOR HP (MIN.).

ABBREVIATIONS:

1FVNR	FULL VOLTAGE, NON–REVERSING (SIZE 1) STARTER
A.F.F.	ABOVE FINISHED FLOOR
A	AMPERES
DTT	DRY TYPE TRANSFORMER
EF	EXHAUST FAN
EMC	ENCLOSED MOTOR CONTROLLER
EUH	ELECTRIC UNIT HEATER
HP	HORSEPOWER
kVA	KILOVOLT–AMPS
kW	KILOWATT
MCP	MOTOR CIRCUIT PROTECTOR CIRCUIT BREAKER
O.L.	OVERLOAD
PB	PANELBOARD
TM	THERMAL MAGNETIC CIRCUIT BREAKER
V	VOLTS
VAC	VOLTS AC



LEGEND:

- ENCLOSURE LIMITS
- MOTOR STARTER, FVNR–TYPE EQUIPPED WITH THERMAL OVERLOADS (FULL VOLTAGE, NON–REVERSING)
- MOTOR, # DENOTES H.P.
- EARTH GROUND
- TRANSFORMER, POWER
- MOLDED CASE CIRCUIT BREAKER
- ELECTRIC UTILITY METER CABINET
- ENCLOSED SWITCH NF = NON–FUSIBLE XX = NEMA RATING ZZ = AMPACITY RATING
- (#) CONDUCTOR SYMBOL
- $(##) LIGHT SWITCH (## = AMP RATING)
- CU300 GRUNDFOS PUMP CONTROLLER, MODEL CU300
- (J) JUNCTION BOX

TLC–X ENCLOSURE: NEMA TYPE 3R, CABINET MOUNTING: RACK

VOLTS: 120 / 240, PHASE: 1, WIRE: 3W, 10,000 AIC, MAIN: 30A. C/B (240v)

LOAD SERVED	LOAD (KVA) A	LOAD (KVA) B	BREAKER AMP	BREAKER POLE	CKT	PH	CKT	BREAKER POLE	BREAKER AMP	LOAD (KVA) A	LOAD (KVA) B	LOAD SERVED
FLOW TRANSMITTER (FIT–X0X)	0.2		20	1	1	A	2	1	20	0.1		HEAT TRACE
RECEPTACLE (GFCI; ON RACK)		0.2	20	1	3	B	4	2	20		0.9	GRUNDFOS CU300/ PUMP P–X0X
SPARE			20	1	5	A	6			0.9		
BLANK				1	7	B	8	1				BLANK
BLANK				1	9	A	10	1				BLANK
TOTAL	0.2	0.2								1.0	0.9	
									A:	1.2		
									B:	1.1		
									TOTAL	2.3		

PANEL PB-1 ENCLOSURE: NEMA TYPE 1, CABINET MOUNTING: SURFACE

VOLTS: 480 / 240, PHASE: 1, WIRE: 3W, 10,000 AIC, 400A. MAIN C/B FEED: BOTTOM

LOAD SERVED	LOAD (KVA) A	B	C	BREAKER AMP	POLE	CKT	PH	CKT	BREAKER POLE	BREAKER AMP	LOAD (KVA) A	B	C	LOAD SERVED
TVSS	0.0			60	2	1	A	2	2	15	1.2			TLC-0 / P-001
		0.0				3	B	4				1.2		
EUH-1 (EQUIP. ROOM)			0.0	20	2	5	C	6	2	15			1.2	TLC-1 / P-101
	3.8					7	A	8			1.2			
EUH-2 (EQUIP. ROOM)		3.8		20	2	9	B	10	2	15		1.2		TLC-2 / P-102
			3.8			11	C	12					1.2	
EUH-3 (EQUIP. ROOM)	3.8			20	2	13	A	14	2	15	1.2			TLC-3 / P-103
		3.8				15	B	16				1.2		
EUH-4 (EQUIP. ROOM)			3.8	20	2	17	C	18	2	15			1.2	TLC-4 / P-104
	3.8					19	A	20			1.2			
EUH-5 (CONTROL ROOM)		2.5		20	2	21	B	22	2	15		1.2		TLC-5 / P-105
			2.5			23	C	24					1.2	
EUH-6 (EQUIP. ROOM)	3.8			20	2	25	A	26	2	15	1.2			TLC-6 / P-106
		3.8				27	B	28				1.2		
EUH-7 (EQUIP. ROOM)			3.8	20	2	29	C	30	2	15			1.2	TLC-7 / P-107
	3.8					31	A	32			1.2			
DUCT HEATER		5.0		20	2	33	B	34	2	15		1.2		TLC-8 / P-108
			5.0			35	C	36					1.2	
SPARE				20	2	37	A	38	2	60	9.0			AIR STRIPPER PANEL (AS-500)
						39	B	40				9.0		
SPARE				20	2	41	C	42	1					BLANK
						43	A	44	1					BLANK
BLANK						45	B	46	1					BLANK
BLANK						47	C	48	1					BLANK
BLANK						49	A	50	1					BLANK
BLANK						51	B	52	1					BLANK
BLANK						53	C	54	1					BLANK
TOTAL	18.8	18.8	18.8								15.9	15.9	6.9	
TOTAL CONNECTED KVA:										A:	34.7			
										B:	34.7			
										C:	25.7			
										TOTAL	95.0			

SUBMITTED FOR APPROVAL

No.	Date	Revisions	By	Ckd

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING: _____ USE TO VERIFY FIGURE REPRODUCTION SCALE

Professional Engineer's Name: THOMAS P. ARMSTRONG JR.
Professional Engineer's No.: 085236
State: NY | Date Signed: | Project Mgr.: DFS
Designed by: SAB | Drawn by: GHS | Checked by: TEM

ARCADIS OF NEW YORK, INC.

DEWEY LOEFFEL LANDFILL SUPERFUND SITE • NASSAU, NEW YORK
GROUNDWATER AND LEACHATE TREATMENT SYSTEM

ONELINE DIAGRAM

ELECTRICAL

ARCADIS Project No. B0031174.0003.00002
Date: FEBRUARY 2013

ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse, NY 13214
Tel: 315.446.9120

E2

CITY:(TOLETO) SYRACUSE=NY DIV/GROUP:ENVCAD DB:G.(T.ARMSTRONG) STEINBERGER K.SARTORI LD:G.STEINBERGER PIC:P.FARR PM:D.SAUDA TM:S.BATTAGLIA LYR:ON=*;OFF=*REF*
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PANEL PB-2 ENCLOSURE: NEMA TYPE 1, CABINET MOUNTING: SURFACE
VOLTS: 120 / 240, PHASE: 1, WIRE: 3W, 10,000 AIC, 60A. MAIN LUGS, FEED: BOTTOM

LOAD SERVED	LOAD (KVA) A	LOAD (KVA) B	BREAKER AMP	BREAKER POLE	CKT	PH	CKT	BREAKER POLE	BREAKER AMP	LOAD (KVA) A	LOAD (KVA) B	LOAD SERVED
BLANK				1	1	A	2	1	20			SPARE
BLANK				1	3	B	4	1	20		0.4	METER PUMP 100
BLANK				1	5	A	6	1	20	0.2		EXTERIOR LIGHTING
BLANK				1	7	B	8	1	20		0.3	CONTROL ROOM LIGHTING
BLANK				1	9	A	10	1	20	0.8		EQUIPMENT ROOM RECEPTACLES
BLANK				1	11	B	12	1	20		0.6	CONTROL ROOM RECEPTACLES
BLANK				1	13	A	14	1	20	1.5		MAIN CONTROL PANEL (MCP) UPS
BLANK				1	15	B	16	1	20		0.4	METER PUMP 300
BLANK				1	17	A	18	1	20	0.4		METER PUMP 301
BLANK				1	19	B	20	1	20		0.1	EXIT LIGHTS
BLANK				1	21	A	22	1	20	0.9		EQUIPMENT ROOM LIGHTING (a)
BLANK				1	23	B	24	1	20		0.9	EQUIPMENT ROOM LIGHTING (b)
BLANK				1	25	A	26	1	20			SPARE
BLANK				1	27	B	28	1	20			SPARE
BLANK				1	29	A	30	1	20			SPARE
TOTAL	0.0	0.0								3.8	2.7	

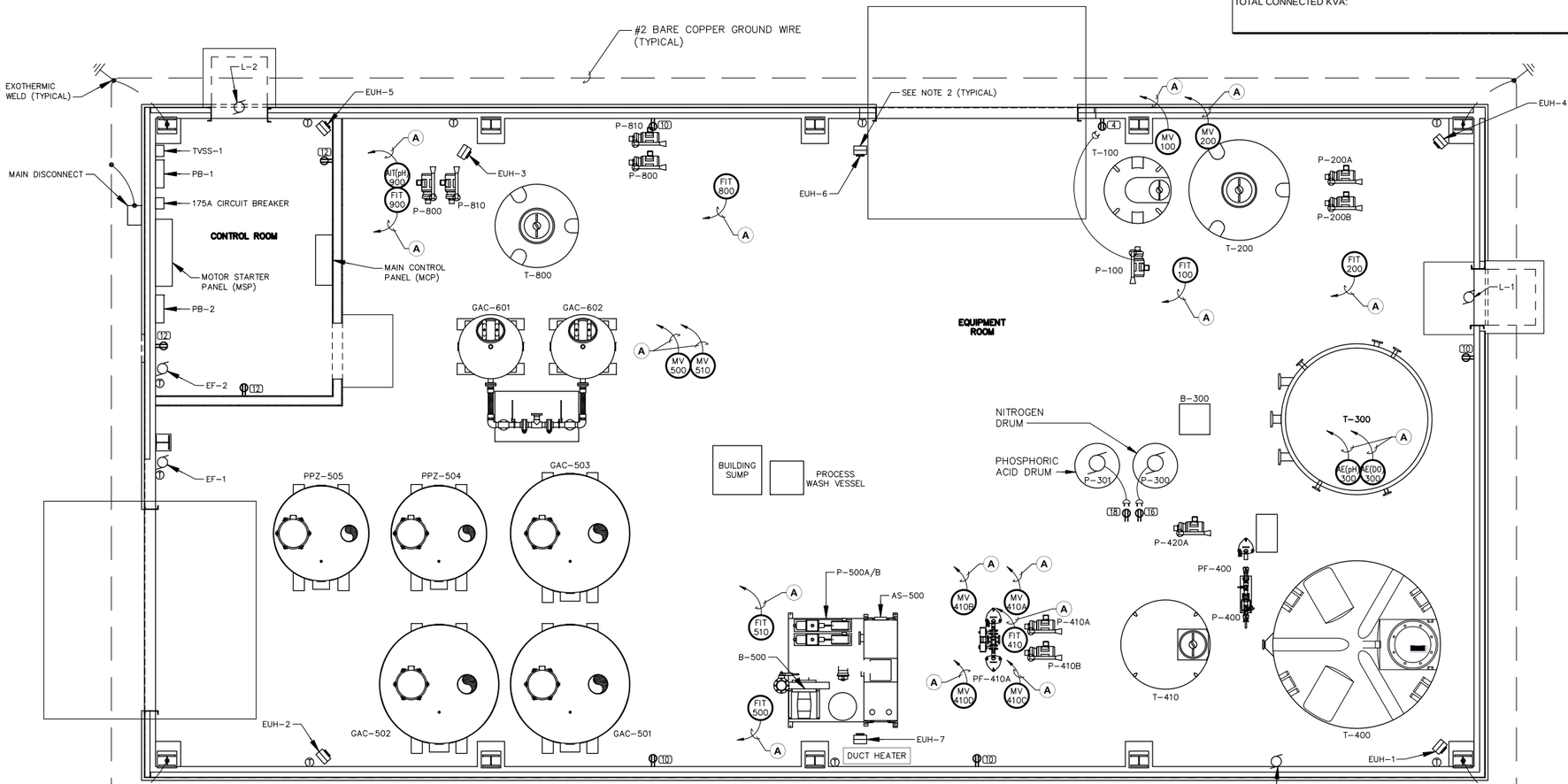
TOTAL CONNECTED KVA: A: 3.8 B: 2.7 TOTAL 6.5

NOTES:

1. PROVIDE THE CONDUIT AND WIRE TO THE MCP FOR EACH DEVICE AS INDICATED IN THE LEGEND.
2. REFER TO E2 ONE-LINE DIAGRAM FOR MOTOR AND HVAC CONDUIT AND WIRE REQUIREMENTS.
3. CIRCUIT NUMBERS (XX) REFER TO PB-1 CIRCUITS.
4. INSTALL RECEPTACLES 48" ABOVE FINISHED FLOOR.
5. PROVIDE LOCAL DISCONNECTS (AS INDICATED ON E2 ONE-LINE DIAGRAM). MOUNT DISCONNECTS TO UNISTRUT TO SUPPORT RACK ADJACENT TO MOTORS.

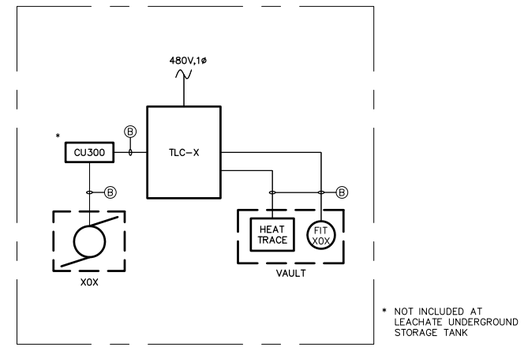
WIRE & CONDUIT LEGEND

WIRE TAG ID.	NUMBER OF CONDUCTORS	CONDUCTOR SIZE	+	NUMBER OF PHASES	GROUND WIRE	CONDUIT	
(A)	2	#12 AWG	+	1	#12	¾"	TO MCP
(B)	2	#12 AWG	+	1	#12	¾"	TO TLC-X



POWER PLAN (1)

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



EXTRACTION WELLS (TYPICAL FOR ALL 8 WELLS) AND LEACHATE UNDERGROUND STORAGE TANK

SUBMITTED FOR APPROVAL

1/4"=1'-0" (4' 0 4' 8')

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING: USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd

Professional Engineer's Name: THOMAS P. ARMSTRONG JR.
Professional Engineer's No.: 085236

State	Date Signed	Project Mgr.
NY		DFS
Designed by: SAB	Drawn by: BCS	Checked by: TEM

ARCADIS OF NEW YORK, INC.

DEWEY LOEFFEL LANDFILL SUPERFUND SITE • NASSAU, NEW YORK
GROUNDWATER AND LEACHATE TREATMENT SYSTEM

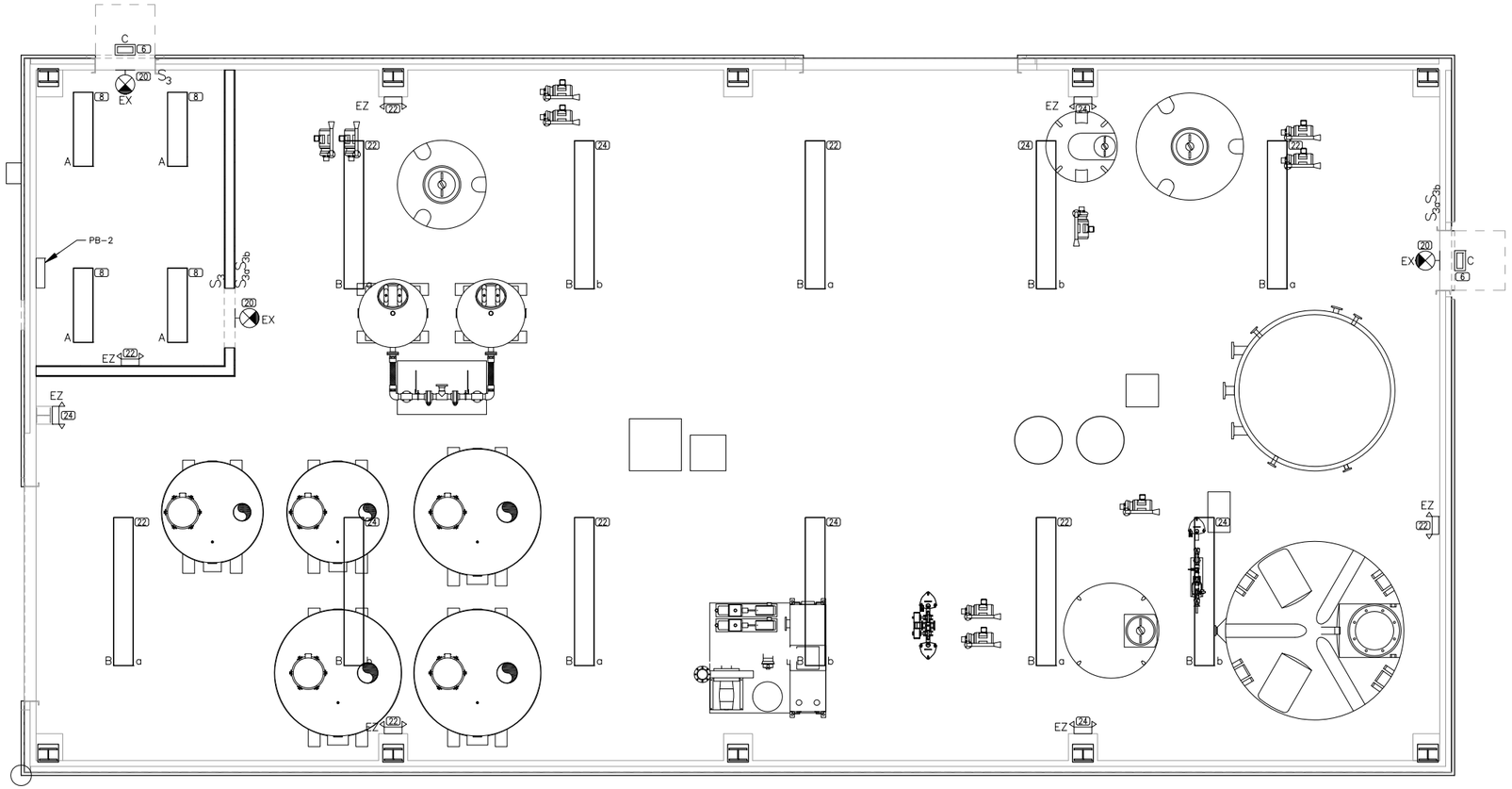
POWER PLAN

ELECTRICAL

ARCADIS Project No. B0031174.0003.00002
Date FEBRUARY 2013

ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse, NY 13214
Tel: 315.446.9120

E3



LIGHTING PLAN 1

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

NOTES:

1. ALL LIGHTING LOADS ON THIS SHEET SHALL BE FED FROM PANEL PB-2 LOCATED IIN CONTROL ROOM. CIRCUIT NUMBERS ARE (XX).
2. POWER EXIT AND EGRESS LIGHTING FROM LOCAL LIGHTING CIRCUIT AHEAD OF ANY SWITCHING.
3. FLOURESCENT LIGHTS (FIXTURE TYPES A & B) ARE TO BE CHAIN HUNG 9' AFF.

OFF-SITE GROUNDWATER TREATMENT SYSTEM - LIGHT FIXTURE SCHEDULE

TYPE	DESCRIPTION	LAMP	BALLAST	VOLTAGE	MOUNTING	MANUFACTURER	MODEL
A	4' FLOURESCENT TURRET INDUSTRIAL STRIP LIGHT	(2) - 32W T8	ELECTRONIC	120V	SUSPENDED	H.E. WILLIAMS	82-4-32-WG-8211-EB2-UNV
B	8' FLOURESCENT TURRET INDUSTRIAL STRIP LIGHT	(2) - 86W T8	ELECTRONIC	120V	SUSPENDED	H.E. WILLIAMS	82-8-2-86-WG-8211-EB2-UNV
C	EXTERIOR, BRONZE FINISH, ONE-PIECE POLYCARBONATE FRONT/LENS WALLPACK WITH MOTION SENSOR	100W COMPACT FLOURESCENT	ELECTRONIC	120V	WALL	GE LIGHTING SOLUTIONS	WML10S
EX	QLX-MRS QUICKIE II THERMOPLASTIC EXIT LIGHT WITH BATTERY AND RED LETTERING	LED	-	120V	WALL	LIGHT ALARMS	QLXN500-R
EZ	EMERGENCY BATTERY PACK (2) FULLY ADJUSTABLE GLARE-FREE LIGHT HEADS	(2) - 5.4W T5	-	120V	WALL	LIGHT ALARMS	LCA-2SQ-R

SUBMITTED FOR APPROVAL

CITY:(TOLET0) SYRACUSE-NY DIV/GROUP:ENVCAD DB:G.(T.ARMSTRONG) STEINBERGER K.SARTORI LD:G.STEINBERGER PIC:P.FARR PM:D.SAUDA TM:S.BATTAGLIA LYR:ON=*;OFF=*REF*
R:\ENVCAD\SYRACUSE\ACTIVE\CIB0031174\0003\00002\DWG\CONTRACT\31174E04.dwg LAYOUT: E4 SAVED: 2/12/2013 11:15 AM ACADVER: 18.1S (LMS TECH) PAGESETUP: D2B-PDF PLOTSTYLETABLE: PLTCONT.CTB PLOTTED: 2/12/2013 4:24 PM BY: KOWALCZYK, STEVE
XREFS: 31174X00 31174X04 IMAGES: ARMSTRONG.jpg SAUDA.jpg

1/4"=1'-0" (4' 0 4' 8')

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USE TO VERIFY FIGURE REPRODUCTION SCALE

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ARCADIS
ARCADIS OF NEW YORK, INC.

DEWEY LOEFFEL LANDFILL SUPERFUND SITE • NASSAU, NEW YORK
GROUNDWATER AND LEACHATE TREATMENT SYSTEM

LIGHTING PLAN

ELECTRICAL

ARCADIS Project No.: B0031174.0003.00002
Date: FEBRUARY 2013

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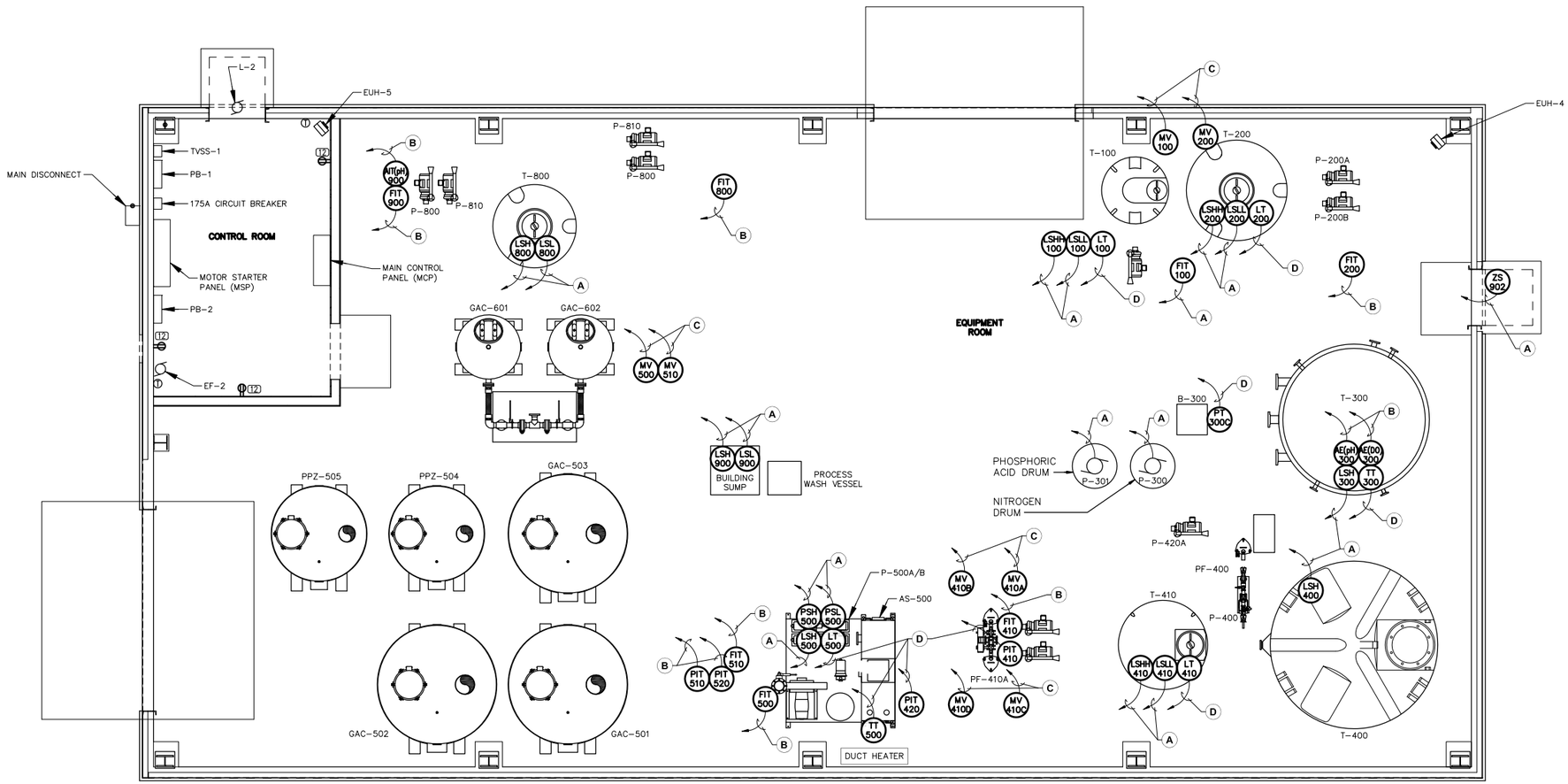
E4



INSTRUMENTATION PLAN 1

0 4' 8'

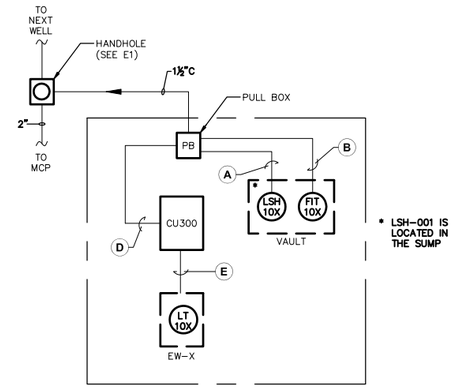
SCALE: 1/4"=1'-0"

NOTE:

PROVIDE THE CONDUIT AND WIRE TO THE MCP FOR EACH DEVICE AS INDICATED IN THE LEGEND.

WIRE & CONDUIT LEGEND

WIRE TAG ID.	NUMBER OF CONDUCTORS	CONDUCTOR SIZE	+	NUMBER OF PHASES	GROUND WIRE	CONDUIT
Ⓐ	2	#14 AWG	+	1	#14	¾"
Ⓑ	1 PAIR	#18 SHLD	+	1	#14	¾"
Ⓒ	8	#14 AWG	+	1	#14	¾"
Ⓓ	2 PAIR	#18 SHLD	+	1	#14	¾"
Ⓔ	–	MANUFACTURER	+	–	–	¾"



EXTRACTION WELLS (TYPICAL FOR ALL 8 WELLS) AND LEACHATE UNDERGROUND STORAGE TANK 2

NOT TO SCALE

SUBMITTED FOR APPROVAL

CITY:(TOLETO) SYRACUSE-NY DIV/GROUP:ENVCAD DB:G.(T.ARMSTRONG) STEINBERGER K.SARTORI LD:G.STEINBERGER PIC:P.FARR PM:D.SAUDA TM:S.BATTAGLIA LYR:ON=*;OFF=*REF*
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XREFS: 31174X00 31174X04
IMAGES: ARMSTRONG.jpg SAUDA.jpg

1/4"=1'-0" 4' 0 4' 8'

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING: ——— USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd

Professional Engineer's Name: **THOMAS P. ARMSTRONG JR.**
Professional Engineer's No.: 085236
State: NY | Date Signed: | Project Mgr.: DFS
Designed by: SAB | Drawn by: BCS | Checked by: TEM

ARCADIS OF NEW YORK, INC.

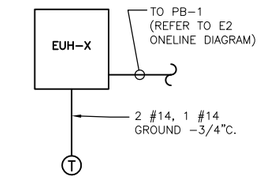
DEWEY LOEFFEL LANDFILL SUPERFUND SITE • NASSAU, NEW YORK
GROUNDWATER AND LEACHATE TREATMENT SYSTEM

INSTRUMENTATION PLAN

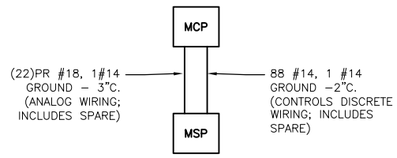
ELECTRICAL

ARCADIS Project No. B0031174.0003.00002
Date FEBRUARY 2013
ARCADIS 6723 Towpath Road P.O. Box 66 Syracuse, NY 13214 Tel: 315.446.9120

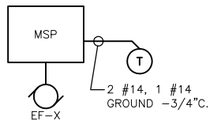
E5



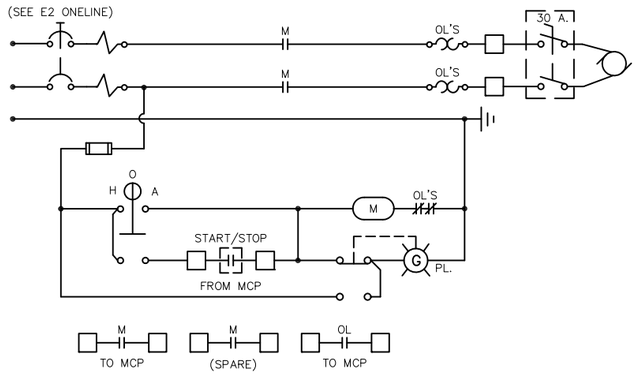
RISER DIAGRAM
ELECTRIC UNIT HEATER (EUH–X)



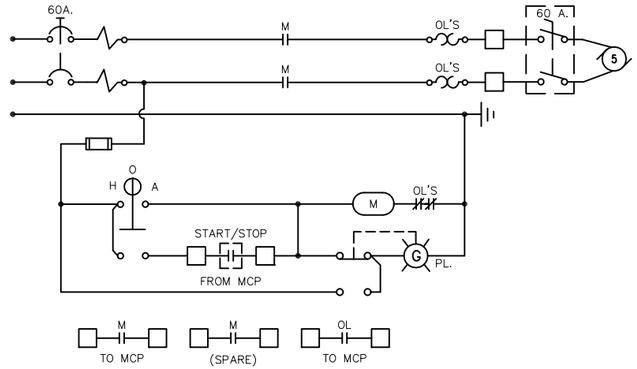
RISER DIAGRAM
MCP AND MSP



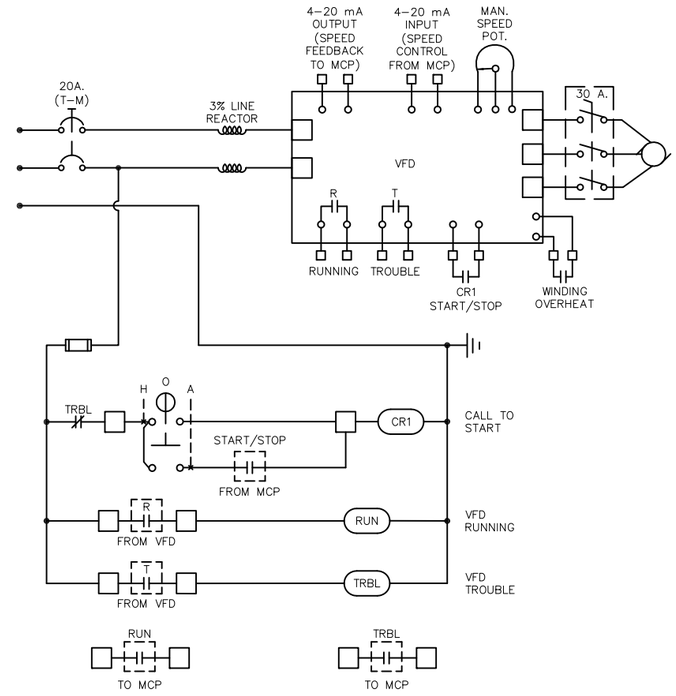
RISER DIAGRAM
EF–1 AND EF–2



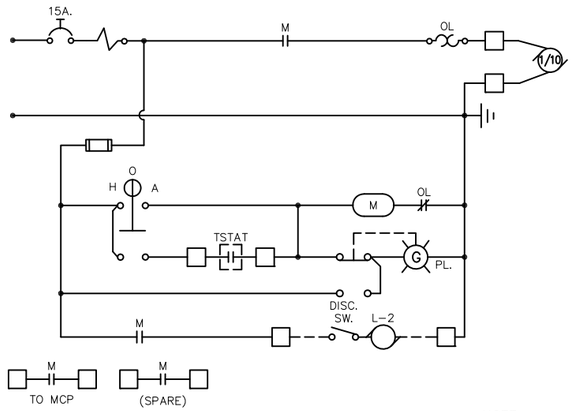
SCHEMATIC - PUMP
(TYP. 4 PLACES FOR P–400, P–420, P–800, P–900; STARTERS IN MSP)



SCHEMATIC - BLOWER
(FOR B–300: STARTER IN MSP)



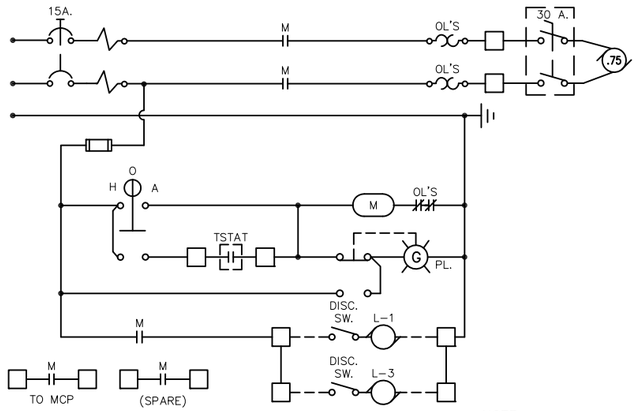
SCHEMATIC - PUMP WITH VFD
(TYP. 8 PLACES FOR P–200A, P–200B, P–410A, P–410B, P–501A, P–501B, P–820A, P–820B; VFDS IN MSP)



SCHEMATIC - EXHAUST FAN
(FOR EF–2: STARTER IN MSP)

NOTE:

LOUVER DISCONNECT SWITCH
IS INTEGRAL TO LOUVER.



SCHEMATIC - EXHAUST FAN
(FOR EF–1: STARTER IN MSP)

NOTE:

LOUVER DISCONNECT SWITCH
IS INTEGRAL TO LOUVER.

NOTE:

HAND–OFF–AUTO (HOA) CONTROL SWITCHES AND
PILOT LIGHTS SHALL BE MOUNTED ON THE MSP
DOOR FOR MOTOR STARTERS LOCATED IN THE MSP.

SUBMITTED FOR APPROVAL

NOT TO SCALE

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No.	Date	Revisions	By	Ckd

Professional Engineer's Name: **THOMAS P. ARMSTRONG JR.**
Professional Engineer's No.: 085236

State	Date Signed	Project Mgr.
NY		DFS
Designed by: SAB	Drawn by: BCS	Checked by: TEM

ARCADIS OF NEW YORK, INC.

DEWEY LOEFFEL LANDFILL SUPERFUND SITE • NASSAU, NEW YORK
GROUNDWATER AND LEACHATE TREATMENT SYSTEM

SCHEMATICS

ELECTRICAL

ARCADIS Project No.
B0031174.0003.00002

Date
FEBRUARY 2013

ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse, NY 13214
Tel: 315.446.9120

E6

DISCRETE INPUT

RACK:	1			
SLOT:	2			
	PID TAG			
ADDRESS	ID	LOOP	SOURCE	DESCRIPTION
00	-	-	PUSHBUTTON	E-STOP PUSHBUTTON (ON MCP DOOR)
01	P	400	MTR. STR.	P-400 RUNNING
02	P	400	MTR. STR.	P-400 TROUBLE (OVERLOAD)
03	P	410A	MTR. STR.	P-410A RUNNING
04	P	410A	MTR. STR.	P-410A TROUBLE (OVERLOAD)
05	P	410B	MTR. STR.	P-410B RUNNING
06	P	410B	MTR. STR.	P-410B TROUBLE (OVERLOAD)
07	P	420	MTR. STR.	P-420 RUNNING
08	P	420	MTR. STR.	P-420 TROUBLE (OVERLOAD)
09	P	800	MTR. STR.	P-800 RUNNING
10	P	800	MTR. STR.	P-800 TROUBLE (OVERLOAD)
11	P	900	MTR. STR.	P-900 RUNNING
12	P	900	MTR. STR.	P-900 TROUBLE (OVERLOAD)
13	B	300	MTR. STR.	B-300 RUNNING
14	B	300	MTR. STR.	B-300 TROUBLE (OVERLOAD)
15	-	-	-	<SPARE>

DISCRETE INPUT

RACK:	1			
SLOT:	3			
	PID TAG			
ADDRESS	ID	LOOP	SOURCE	DESCRIPTION
00	P	200A	VFD	P-200A RUNNING
01	P	200A	VFD	P-200A TROUBLE (VFD)
02	P	200B	VFD	P-200B RUNNING
03	P	200B	VFD	P-200B TROUBLE (VFD)
04	P	501A	VFD	P-501A RUNNING
05	P	501A	VFD	P-501A TROUBLE (VFD)
06	P	501B	VFD	P-501B RUNNING
07	P	501B	VFD	P-501B TROUBLE (VFD)
08	EF	1	MTR. STR.	EF-1 RUNNING
09	EF	2	MTR. STR.	EF-2 RUNNING
10	ZS	901	LIMIT SW.	CONTROL ROOM MAN-DOOR OPEN
11	ZS	902	LIMIT SW.	EQUIPMENT ROOM MAN-DOOR OPEN
12	LSHH	200	FLOAT SW.	T-200 HIGH-HIGH LEVEL
13	LSLL	200	FLOAT SW.	T-200 LOW-LOW LEVEL
14	P	810	MTR. STR.	P-810 RUNNING
15	P	810	MTR. STR.	P-810 TROUBLE (OVERLOAD)

DISCRETE INPUT

RACK:	1			
SLOT:	4			
	PID TAG			
ADDRESS	ID	LOOP	SOURCE	DESCRIPTION
00	LSH	300	FLOAT SW.	T-300 HIGH LEVEL
01	LSHH	410	FLOAT SW.	T-410 HIGH-HIGH LEVEL
02	LSLL	410	FLOAT SW.	T-410 LOW-LOW LEVEL
03	LSH	500	FLOAT SW.	AIR STRIPPER HIGH LEVEL
04	PSH	500	PRESS. SW.	AIR STRIPPER HIGH PRESSURE
05	PSL	500	PRESS. SW.	AIR STRIPPER LOW PRESSURE
06	LSH	800	FLOAT SW.	T-800 HIGH LEVEL
07	LSL	800	FLOAT SW.	T-800 LOW LEVEL
08	LSH	900	FLOAT SW.	SUMP 900 HIGH LEVEL
09	LSL	900	FLOAT SW.	SUMP 900 LOW LEVEL
10	LSH	101	FLOAT SW.	EW-1 HIGH LEVEL
11	LSH	102	FLOAT SW.	EW-2 HIGH LEVEL
12	LSH	103	FLOAT SW.	EW-3 HIGH LEVEL
13	LSH	104	FLOAT SW.	EW-4 HIGH LEVEL
14	LSH	105	FLOAT SW.	EW-5 HIGH LEVEL
15	LSH	106	FLOAT SW.	EW-6 HIGH LEVEL

DISCRETE INPUT

RACK:	1			
SLOT:	5			
	PID TAG			
ADDRESS	ID	LOOP	SOURCE	DESCRIPTION
00	LSH	107	FLOAT SW.	EW-7 HIGH LEVEL
01	-	-	RELAY	POWER LOSS
02	MV	200	ACTUATOR	FULL OPEN
03	MV	200	ACTUATOR	FULL CLOSE
04	MV	500	ACTUATOR	FULL OPEN
05	MV	500	ACTUATOR	FULL CLOSE
06	MV	510	ACTUATOR	FULL OPEN
07	MV	510	ACTUATOR	FULL CLOSE
08	LSH	108	FLOAT SW.	EW-8 HIGH LEVEL
09	LSH	001	FLOAT SW.	LEACHATE SUMP HIGH LEVEL
10	LSHH	100	FLOAT SW.	T-100 HIGH-HIGH LEVEL
11	LSLL	100	FLOAT SW.	T-100 LOW-LOW LEVEL
12	P	820A	VFD	P-820A RUNNING
13	P	820A	VFD	P-820A TROUBLE (VFD)
14	P	820B	VFD	P-820B RUNNING
15	P	820B	VFD	P-820B TROUBLE (VFD)

DISCRETE INPUT

RACK:	1			
SLOT:	6			
	PID TAG			
ADDRESS	ID	LOOP	SOURCE	DESCRIPTION
00	MV	100	ACTUATOR	FULL OPEN
01	MV	100	ACTUATOR	FULL CLOSE
02	MV	410A	ACTUATOR	FULL OPEN
03	MV	410A	ACTUATOR	FULL CLOSE
04	MV	410B	ACTUATOR	FULL OPEN
05	MV	410B	ACTUATOR	FULL CLOSE
06	MV	410C	ACTUATOR	FULL OPEN
07	MV	410C	ACTUATOR	FULL CLOSE
08	MV	410D	ACTUATOR	FULL OPEN
09	MV	410D	ACTUATOR	FULL CLOSE
10	-	-	-	<SPARE>
11	-	-	-	<SPARE>
12	-	-	-	<SPARE>
13	-	-	-	<SPARE>
14	-	-	-	<SPARE>
15	-	-	-	<SPARE>

DISCRETE OUTPUT

RACK:	1		
SLOT:	7		
	PID TAG		
ADDRESS	ID	LOOP	DESCRIPTION
00	P	400	P-400 RUN COMMAND
01	P	410A	P-410A RUN COMMAND
02	P	410B	P-410B RUN COMMAND
03	P	420	P-420 RUN COMMAND
04	P	800	P-800 RUN COMMAND
05	P	900	P-900 RUN COMMAND
06	B	300	B-300 RUN COMMAND
07	P	200A	P-200A RUN COMMAND
08	P	200B	P-200B RUN COMMAND
09	P	501A	P-501A RUN COMMAND
10	P	501B	P-501B RUN COMMAND
11	-	-	AUTODIALER OUTPUT ALERT
12	P	100	P-100 RUN COMMAND
13	P	300	P-300 RUN COMMAND
14	P	301	P-301 RUN COMMAND
15	-	-	<SPARE>

DISCRETE OUTPUT

RACK:	1		
SLOT:	8		
	PID TAG		
ADDRESS	ID	LOOP	DESCRIPTION
00	MV	200	OPEN COMMAND
01	MV	200	CLOSE COMMAND
02	MV	500	OPEN COMMAND
03	MV	500	CLOSE COMMAND
04	MV	510	OPEN COMMAND
05	MV	510	CLOSE COMMAND
06	MV	100	OPEN COMMAND
07	MV	100	CLOSE COMMAND
08	MV	410A	OPEN COMMAND
09	MV	410A	CLOSE COMMAND
10	MV	410B	OPEN COMMAND
11	MV	410B	CLOSE COMMAND
12	MV	410C	OPEN COMMAND
13	MV	410C	CLOSE COMMAND
14	MV	410D	OPEN COMMAND
15	MV	410D	CLOSE COMMAND

DISCRETE OUTPUT

RACK:	1		
SLOT:	9		
	PID TAG		
ADDRESS	ID	LOOP	DESCRIPTION
00	P	820A	P-820A RUN COMMAND
01	P	820B	P-820B RUN COMMAND
02	-	-	<SPARE>
03	-	-	<SPARE>
04	-	-	<SPARE>
05	-	-	<SPARE>
06	-	-	<SPARE>
07	-	-	<SPARE>
08	-	-	<SPARE>
09	-	-	<SPARE>
10	-	-	<SPARE>
11	-	-	<SPARE>
12	-	-	<SPARE>
13	-	-	<SPARE>
14	-	-	<SPARE>
15	-	-	<SPARE>

ANALOG INPUT

RACK:	2			
SLOT:	1			
	PID TAG			
ADDRESS	ID	LOOP	RANGE	DESCRIPTION
00	FIT	200	0 - __ GPM	P-200A/B DISCHARGE FLOW
01	LIT	200	0 - __ FT	T-200 LEVEL
02	AE	300	0 - 14	T-300 pH
03	AE	300	0 - 100%	T-300 DO
04	TT	300	0 - __ DEG	T-300 TEMPERATURE
05	PT	300C	0 - __ PSI	B-300 DISCHARGE PRESSURE
06	PIT	410	0 - __ PSI	P-410A/B DISCHARGE PRESSURE
07	FIT	410	0 - __ GPM	P-410A/B DISCHARGE FLOW

ANALOG INPUT

RACK:	2			
SLOT:	2			
	PID TAG			
ADDRESS	ID	LOOP	RANGE	DESCRIPTION
00	LT	410	0 - __ FT	T-410 LEVEL
01	TT	500	0 - __ DEG	AIR STRIPPER INFLUENT AIR TEMPERATURE
02	LT	500	0 - __ FT	AIR STRIPPER LEVEL
03	FIT	500	0 - __ GPM	B-500 INFLUENT FLOW
04	FIT	510	0 - __ GPM	P-501A/B DISCHARGE FLOW
05	PIT	510	0 - __ PSI	B-500 INFLUENT PRESSURE
06	PIT	520	0 - __ PSI	P-501A/B DISCHARGE PRESSURE
07	TT	900	0 - __ DEG	EQUIP ROOM AMBIENT TEMPERATURE

ANALOG INPUT

RACK:	2			
SLOT:	3			
	PID TAG			
ADDRESS	ID	LOOP	RANGE	DESCRIPTION
00	FIT	900	0 - __ GPM	SURFACE WATER DISCHARGE FLOW
01	AE	900	0 - 14	SURFACE WATER DISCHARGE pH
02	LT	101	0 - __ FT	EXTRACTION WELL EW-1 LEVEL
03	LT	102	0 - __ FT	EXTRACTION WELL EW-2 LEVEL
04	LT	103	0 - __ FT	EXTRACTION WELL EW-3 LEVEL
05	LT	104	0 - __ FT	EXTRACTION WELL EW-4 LEVEL
06	LT	105	0 - __ FT	EXTRACTION WELL EW-5 LEVEL
07	LT	106	0 - __ FT	EXTRACTION WELL EW-6 LEVEL

ANALOG INPUT

RACK:	2			
SLOT:	4			
	PID TAG			
ADDRESS	ID	LOOP	RANGE	DESCRIPTION
00	LT	107	0 - __ FT	EXTRACTION WELL EW-7 LEVEL
01	FT	101	0 - __ GPM	EXTRACTION WELL EW-1 FLOW
02	FT	102	0 - __ GPM	EXTRACTION WELL EW-2 FLOW
03	FT	103	0 - __ GPM	EXTRACTION WELL EW-3 FLOW
04	FT	104	0 - __ GPM	EXTRACTION WELL EW-4 FLOW
05	FT	105	0 - __ GPM	EXTRACTION WELL EW-5 FLOW
06	FT	106	0 - __ GPM	EXTRACTION WELL EW-6 FLOW
07	FT	107	0 - __ GPM	EXTRACTION WELL EW-7 FLOW

ANALOG INPUT

RACK:	2			
SLOT:	5			
	PID TAG			
ADDRESS	ID	LOOP	RANGE	DESCRIPTION
00	P	200A	0 - 100%	SPEED FEEDBACK
01	P	200B	0 - 100%	SPEED FEEDBACK
02	P	501A	0 - 100%	SPEED FEEDBACK
03	P	501B	0 - 100%	SPEED FEEDBACK
04	LT	108	0 - __ FT	EXTRACTION WELL EW-8 LEVEL
05	LT	001	1 - __ FT	LEACHATE SUMP LEVEL
06	FT	108	0 - __ GPM	EXTRACTION WELL EW-8 FLOW
07	FT	001	0 - __ GPM	LEACHATE SUMP FLOW

ANALOG INPUT

RACK:	2			
SLOT:	6			
	PID TAG			
ADDRESS	ID	LOOP	RANGE	DESCRIPTION
00	PIT	420	0 - __ PSI	PF-410A/B DISCHARGE PRESSURE
01	FIT	100	0 - __ GPM	P-100 FLOW
02	FIT	800	0 - __ GPM	P-800 FLOW
03	P	820A	0 - 100%	SPEED FEEDBACK
04	P	820B	0 - 100%	SPEED FEEDBACK
05	-	-	-	<SPARE>
06	-	-	-	<SPARE>
07	-	-	-	<SPARE>

ANALOG OUTPUT

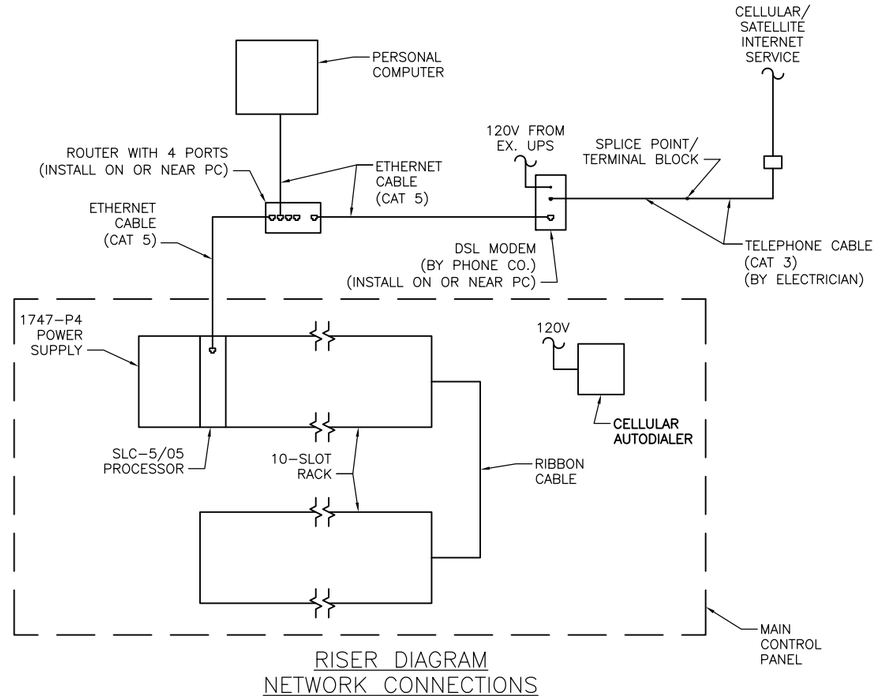
RACK:	2			
SLOT:	8			
	PID TAG			
ADDRESS	ID	LOOP	RANGE	DESCRIPTION
00	P	200A	0 - 100%	P-200A VFD SPEED CONTROL
01	P	200B	0 - 100%	P-200B VFD SPEED CONTROL
02	P	501A	0 - 100%	P-501A VFD SPEED CONTROL
03	P	501B	0 - 100%	P-501B VFD SPEED CONTROL

ANALOG OUTPUT

RACK:	2			
SLOT:	9			
	PID TAG			
ADDRESS	ID	LOOP	RANGE	DESCRIPTION
00	P	820A	0 - 100%	P-820A VFD SPEED CONTROL
01	P	820B	0 - 100%	P-820B VFD SPEED CONTROL
02	-	-	-	<SPARE>
03	-	-	-	<SPARE>

NOTES:

1. PROVIDE TWO 10–SLOT CHASSIS RACKS.
2. PROVIDE ALLEN–BRADLEY 1747–P4 POWER SUPPLY.
3. PROVIDE ALLEN–BRADLEY SLC–5/05 PROCESSOR IN SLOT 1 OF RACK 1.
4. SLOT 10 IN RACK 1 AND SLOTS 7 AND 10 IN RACK 2 SHALL BE BLANK FOR FUTURE USE.
5. PROVIDE 120 VAC POWER DISTRIBUTION, CIRCUIT BREAKER, RELAYS, AND ANCILLARY EQUIPMENT WITHIN MAIN CONTROL PANEL AS REQUIRED. REFER TO E3 POWER PLAN FOR 120V FIELD INSTRUMENTS TO BE POWERED FROM THE MCP.
6. PROVIDE AN UNINTERRUPTIBLE POWER SUPPLY (UPS) FOR THE PLC.
7. SIZE MAIN CONTROL PANEL TO ACCOMMODATE EQUIPMENT SHOWN IN THE DRAWINGS TO BE INCLUDED WITHIN THE PANEL AND ON THE DOOR OF THE PANEL, PLUS 30% INTERIOR SPACE.
8. PROVIDE A FLOOR–MOUNT (NEMA 12) ENCLOSURE WITH LEGS FOR THE MAIN CONTROL PANEL. PANEL DOOR SHALL BE CONTINUOUSLY HINGED DOWN ONE SIDE.
9. PROVIDE AN UNINTERRUPTIBLE POWER SUPPLY (UPS) RATED FOR 125% MINIMUM OF THE ENTIRE LOAD OF THE MCP. ALL LOADS WITHIN THE MCP SHALL BE BACKED UP BY THE UPS.
10. PANEL BUILDER SHALL PROVIDE ACCURATE AS–BUILT DRAWINGS UPON DELIVERY OF THE MAIN CONTROL PANEL.
11. CONTRACTOR SHALL INCLUDE BID OPTION COST PROPOSAL FOR PLC PROGRAMMING AS IDENTIFIED ON THE INTERLOCK DESCRIPTION SHEET P5.
12. CONTRACTOR SHALL INCLUDE BID OPTION COST PROPOSAL FOR A DESKTOP COMPUTER (DELL) WITH REMOTELY ANYWHERE SOFTWARE AND HMI PROGRAMMING (WONDERWARE, OR EQUAL) TO PROVIDE THE STATUS AND ALARM IDENTIFICATION FOR THE SYSTEM AS IDENTIFIED ON THE P&ID DRAWINGS (P2 THROUGH P4) AND THE INTERLOCK DESCRIPTION SHEET P5.



RISER DIAGRAM
NETWORK CONNECTIONS

SUBMITTED FOR APPROVAL

CITY:(TOLETO) SYRACUSE-NY DIV/GROUP:ENVCAD DB:G.(T.ARMSTRONG) STEINBERGER K.SARTORI LDG.STEINBERGER PIC:P.FARR PM:D.SAUDA TM:S.BATTAGLIA LYRON=*OFF=*REF*
R:\ENVCAD\SYRACUSE\ACTIC\B0031174\0003\00002\DWG\CONTRACT\31174E07.dwg LAYOUT: E7 SAVED: 2/12/2013 11:23 AM ACADVER: 18.1S (LMS TECH) PAGESETUP: D2B-PDF PLOTSTYLETABLE: PLTCONT.CTB PLOTTED: 2/12/2013 4:24 PM BY: KOWALCZYK, STEVE
XREFS: 31174X00 IMAGES: ARMSTRONG.jpg SAUDA.jpg

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Professional Engineer's No.: 085236

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GROUNDWATER AND LEACHATE TREATMENT SYSTEM

MCP / PLC SIGNAL LIST AND DETAILS

ELECTRICAL

ARCADIS Project No. B0031174.0003.00002
Date FEBRUARY 2013

ARCADIS
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P.O. Box 66
Syracuse, NY 13214
Tel: 315.446.9120

E7

PART 1 – GENERAL

1.01 RELATED DOCUMENTS:

THE GENERAL DOCUMENTS APPLY TO WORK SPECIFIED IN THIS SECTION; CONSULT THEM IN DETAIL FOR APPLICABLE INSTRUCTIONS.

1.02 WORK INCLUDED:

PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO COMPLETE ALL WORK OF THIS SECTION. WITHOUT RESTRICTING THE GENERALITY OF THE FOREGOING, THE FOLLOWING ITEMS OF WORK ARE INCLUDED:

A. PERMITS AND FEES
B. TEMPORARY POWER AND LIGHT
C. SERVICE PROVISIONS AND METERBANKS
D. PANELBOARDS
E. TELEPHONE PROVISIONS
F. RACEWAYS
G. BOXES
H. WIRING
I. GROUNDING
J. LIGHTING FIXTURES AND LAMPS
K. WIRING DEVICES AND PLATES
L. CONNECTIONS TO EQUIPMENT
M. DIRECTORIES AND NAMEPLATES
N. TESTING
O. CLEANING AND REMOVAL OF RUBBISH
P. SUBMITTALS

1.03 RELATED WORK OF OTHER SECTIONS

A. CONCRETE AND MASONARY

B. PAINTING

1.04 QUALITY ASSURANCE

A. USE ADEQUATE NUMBERS OF SKILLED WORKMEN WHO ARE THOROUGHLY TRAINED AND EXPERIENCED IN THE NECESSARY CRAFTS AND WHO ARE COMPLETELY FAMILIAR WITH THE SPECIFIED REQUIREMENTS AND THE METHODS NEEDED FOR THE PROPER PERFORMANCE OF THE WORK OF THIS SECTION.

B. ALL WORK SHALL BE OF THE HIGHEST QUALITY IN CONFORMANCE WITH THE BEST PRACTICES OF THE TRADE AND IN COMPLIANCE WITH ALL GOVERNING CODES.

1.05 CODES, PERMITS, FEES, AND REGULATIONS

A. ALL WORK SHALL BE CARRIED OUT IN CONFORMITY WITH THE RULES AND REGULATIONS OF THE NATIONAL ELECTRICAL CODE, LATEST EDITION, AND OF THE VARIOUS LOCAL AGENCIES HAVING JURISDICTION.

B. THE CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES, OBTAIN ALL PERMITS AND PAY ALL GOVERNMENTAL TAXES, FEES, DEPOSITS AND OTHER COSTS IN CONNECTION WITH HIS WORK; FILE ALL NECESSARY PLANS, PREPARE ALL DOCUMENTS AND OBTAIN NECESSARY APPROVALS OF ALL AGENCIES HAVING JURISDICTION; OBTAIN ALL REQUIRED CERTIFICATES OF INSPECTION AND APPROVALS FOR HIS WORK AND DELIVER SAME TO THE ARCHITECT BEFORE REQUEST FOR ACCEPTANCE AND FINAL PAYMENT FOR THE WORK.

1.06 STORAGE OF MATERIALS

A. STORE MATERIALS AND EQUIPMENT ON THE PREMISES WHERE DIRECTED BY THE OWNER.

1.07 OTHER TRADES

A. BIDDERS SHALL EXAMINE THE SITE AND THE COMPLETE SET OF PLANS AND SPECIFICATIONS COVERING THE ENTIRE PROJECT. THEY SHALL BECOME FULLY CONVERSANT WITH THE TYPE OF GENERAL CONSTRUCTION AS WELL AS ALL PERTINENT FACTS AFFECTING THE COST OF CARRYING OUT THE WORK THEY WILL CONTRACT TO PERFORM.

B. THIS CONTRACTOR SHALL COOPERATE TO THE FULLEST WITH ALL OTHER TRADES. HE SHALL PLAN HIS WORK IN SUCH A WAY, AND FURNISH ALL NECESSARY EQUIPMENT AND INFORMATION TO THE OTHER TRADES SO AS NOT TO DELAY ANY OTHER TRADE OR HINDER THE PROGRESS OF THE WORK.

1.08 SUBMITTALS

A. SUBMIT MANUFACTURERS TECHNICAL PRODUCT DATA LITERATURE FOR ALL MATERIALS SPECIFIED HEREIN. INDICATE AND HIGH LIGHT ON THE SUBMITTALS DETAILS OF ALL ITEMS TO INDICATE CORRECT INTERPRETATION OF THE CONTRACT DOCUMENTS. INCLUDE SUBMITTALS FOR THE FOLLOWING:

1. LIGHTING FIXTURES
2. WIRING DEVICES
3. PANELBOARDS
4. CONTACTORS/TIME CLOCKS
5. METERBANKS

1.09 CONFLICTIONS

A. ANY CONTRADICTIONS BETWEEN THE WRITTEN SPECIFICATIONS AND DRAWINGS SHALL BE CONSIDERED AMBIGUOUS, AND WILL BE THE RESPONSIBILITY OF THE BIDDER TO SECURE CLARIFICATION PRIOR TO BIDDING.

PART 2 – PRODUCTS

2.01 GENERAL

A. ALL MATERIAL, EQUIPMENT, AND INSTALLATIONS SHALL CONFORM TO THE REQUIREMENTS OF THE FOLLOWING CODES:
1. NATIONAL ELECTRICAL CODE
2. OSHA
3. LOCAL JURISDICTIONAL CODES

2.02 SERVICE PROVISIONS

A. FURNISH AND INSTALL ELECTRICAL PRIMARY SERVICE RACEWAYS TO TRANSFORMER PAD WITH PULL ROPE, AS INDICATED ON PLANS. COORDINATE WITH THE SERVING UTILITY COMPANY REQUIREMENTS FOR THE TRANSFORMER AND THE POINT OF CONNECTION. COORDINATE TRANSFORMER AND INSTALLATIONS WITH THE SERVING UTILITY COMPANY.

B. FURNISH AND INSTALL TELEPHONE SERVICE RACEWAYS FROM THE CONNECTION POINT TO CONTROL ROOM IN RACEWAYS WITH PULL ROPE AS SHOWN ON PLANS. COORDINATE TELEPHONE INSTALLATION REQUIREMENTS AND POINT OF CONNECTION WITH THE SERVING TELEPHONE CO.

2.03 PANELBOARDS

A. INSTALL NEW PANELBOARDS AS DETAILED ON THE DRAWINGS COMPLETE WITH REQUIRED CIRCUIT BREAKERS.

B. CIRCUIT BREAKERS SHALL BE QUICK MAKE, QUICK BREAK, THERMAL MAGNETIC, TRIP INDICATING. AIC RATING, AMPACITY, SIZE, AND DETAILS OF PANELBOARDS AND BRANCH CIRCUIT–CIRCUIT BREAKERS SHALL BE AS INDICATED ON THE DRAWING PANEL SCHEDULES.

2.04 LIGHTING FIXTURES AND LAMPS

A. THE CONTRACTOR SHALL PROVIDE ALL LIGHTING FIXTURES, POLES, AND LUMINAIRES IN CONFORMANCE WITH THE FIXTURE SCHEDULE ON THE DRAWINGS.

B. PROVIDE LAMPS IN ALL LIGHTING FIXTURES AND DEVICES IN ACCORDANCE WITH THE LIGHTING FIXTURE SCHEDULE.

C. LAMPS SHALL BE AS INDICATED ON FIXTURE SCHEDULE.

2.05 WIRING DEVICES

A. FURNISH AND INSTALL QUALITY DEVICES BEARING UL LABEL FOR THE SERVICE AND ELECTRICAL RATING WHERE USED.

1. SWITCHES SHALL BE 20 AMPERE, 120/277 VOLT A.C. RATED AS SCHEDULED IN LEGEND.

2. GFCI DEVICES SHALL BE 20 AMPERE DUPLEX W/U GROUND PIN.

2.06 RACEWAYS

A. ALL BRANCH CIRCUIT WIRING SHALL BE IN RIGID GALVANIZED CONDUIT WHERE EXPOSED TO DAMAGE AND PUBLIC: E.M.T. WITHIN BUILDING INTERIOR PROVIDED SAME IS FREE FROM EXPOSURE DAMAGE.

B. FLEXIBLE METAL CONDUIT WITH APPROVED TYPE FITTINGS MAY BE USED IN LIMITED LENGTHS FOR CONNECTIONS TO MOTORS AND RECESSED FIXTURES WHERE IT IS NECESSARY TO PROVIDE FLEXIBLE CONNECTIONS. IT MAY ALSO BE USED WHERE THE STRUCTURE PRECLUDES THE USE OF E.M.T. OR CONDUIT.

C. ALL RACEWAYS SHALL BE 1/2" MINIMUM SIZE.

D. UNDERGROUND CONDUIT SHALL BE RIGID PVC. CONDUIT SYSTEM SHALL TRANSITION TO RIGID GALVANIZED STEEL CONDUIT PRIOR TO EXPOSURE ABOVE GRADE

2.07 OUTLET AND JUNCTION BOXES

A. OUTLET BOXES FOR CEILING FIXTURES SHALL BE 4" OCTAGONAL GALVANIZED STEEL BOXES NOT LESS THAN 1/2" DEEP PROVIDED WITH 3/8" GALVANIZED MALLEABLE IRON FIXTURE STUD.

B. CONCEALED OUTLET BOXES FOR WALL BRACKETS, SWITCHES, AND RECEPTACLES SHALL BE A 4" SQUARE GALVANIZED STEEL BOX WITH RAISED COVER OF SUFFICIENT DEPTH TO ACCOMODATE WALL SURFACE MATERIAL.

C. EXPOSED OUTLET BOXES IN DRY LOCATIONS FOR SWITCHES AND RECEPTACLES SHALL BE A 4" CAST BOX WITH HEAVY DUTY COVER.

D. BOXES SHALL BE FORMED OF HOT DIPPED GALVANIZED SHEET STEEL WHERE INSTALLED FLUSH. WHERE BOXES ARE INSTALLED EXPOSED THEY SHALL BE OF THE CAST TYPE.

2.08 WIRES AND CABLES

A. PROVIDE AND INSTALL ALL WIRING AND CABLE AS REQUIRED TO CONNECT ALL ELECTRICAL EQUIPMENT AND DEVICES INDICATED ON THE PLANS.

B. ALL WIRES #10 GAUGE AND SMALLER SHALL BE SOLID COPPER 75 DEGREE C, AND 600 VOLT INSULATION.

C. ALL WIRES #8 GAUGE AND LARGER SHALL BE STRANDED COPPER, 75 DEGREE C, AND 600 VOLT INSULATION.

D. FIXTURE WIRES SHALL NOT BE LESS THAN #14 GAUGE, AND SHALL BE TYPE SFF–2.

E. UNLESS INDICATED OTHERWISE ALL LIGHT AND POWER CONDUCTORS SHALL BE #12 GAUGE MINIMUM.

2.09 MOTOR STARTER PANEL (MSP)

A. PANEL SHALL BE CUSTOM BUILT FOR THIS PROJECT

B. SIZE MSP TO ACCOMMODATE EQUIPMENT SHOWN IN THE DRAWINGS TO BE INCLUDED WITHIN THE PANEL AND ON THE DOOR OF THE PANEL, PLUS 30% INTERIOR SPACE.

C. PROVIDE A FLOOR–MOUNT ENCLOSURE (NEMA 12) WITH LEGS FOR THE MSP. PANEL DOOR SHALL BE CONTINUOUSLY HINGED DOWN ONE SIDE.

D. PANEL BUILDER SHALL PROVIDE ACCURATE AS–BUILT DRAWINGS UPON DELIVERY OF THE MSP.

PART 3 – EXECUTION

3.01 WORKMANSHIP

A. ALL WORK SHALL BE INSTALLED IN A NEAT WORKMANLIKE MANNER BY COMPETENT MECHANICS THOROUGHLY SKILLED IN THEIR RESPECTIVE TRADES AND IN STRICT ACCORDANCE WITH CODE REQUIREMENTS AND THE RESPECTIVE MANUFACTURERS INSTRUCTIONS.

3.02 TEMPORARY LIGHT AND POWER

A. FURNISH AND INSTALL TEMPORARY LIGHT & POWER AS MAY BE REQUIRED BY ALL TRADES.

3.03 SUPPORTS

A. PROVIDE ALL MATERIALS AND LABOR REQUIRED TO ADEQUATELY SUPPORT, BRACE AND STRENGTHEN EQUIPMENT AND MATERIALS FURNISHED AS PART OF THIS WORK.

B. ALL RACEWAYS, BOXES, ETC., SHALL BE SUPPORTED DIRECTLY FROM THE STRUCTURE, INDEPENDENT OF DUCT, PIPING OR OTHER WORK.

C. ALL CONDUITS SHALL BE SECURELY AND INDEPENDENTLY SUPPORTED SO THAT NO STRAIN WILL BE TRANSMITTED TO OUTLET BOX AND PULL BOX SUPPORTS, ETC.

3.04 BRANCH CIRCUITS

A. PROVIDE ALL CONDUITS, OUTLETS, BOXES, WIRES, SWITCHES, RECEPTACLES, ETC., FOR A COMPLETE ELECTRICAL SYSTEM AS SHOWN ON THE DRAWINGS.

B. CONTRACTOR SHALL CAREFULLY CHECK THE MECHANICAL DRAWINGS AND SPECIFICATIONS TO ESTABLISH THE EXTENT OF POWER AND CONTROL WIRING TO BE PROVIDED. CONTROL WIRING SHALL BE THE RESPONSIBILITY OF OTHERS.

3.05 GROUNDING

A. THE ELECTRICAL SYSTEMS SHALL BE COMPLETELY AND EFFECTIVELY GROUNDED AS REQUIRED BY THE NATIONAL ELECTRICAL CODE. ALL GROUND SYSTEMS AND CONNECTIONS SHALL BE MECHANICALLY SECURE AND ELECTRICALLY CONTINUOUS.

3.06 LOCATION OF OUTLETS AND ELECTRICAL EQUIPMENT

A. THE PLANS SHOW CONDITIONS AS ACCURATELY AS POSSIBLE BUT DO NOT NECESSARILY SHOW ALL THE FITTINGS, ETC., NECESSARY TO SUIT BUILDING CONDITIONS. LOCATIONS OF OUTLETS, APPLIANCES, ETC., ARE APPROXIMATE AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER LOCATIONS IN ORDER TO MAKE THEM FIT.

B. THE CONTRACTOR SHALL CAREFULLY CHECK WITH OTHER CONTRACTORS TO COORDINATE THE LOCATION OF ELECTRICAL EQUIPMENT WITH WORK OF OTHER TRADES.

C. VERIFY ALL DOOR SWINGS BEFORE ROUGHING IN FOR SWITCHES.

3.07 CLEANING AND REMOVAL OF RUBBISH

A. CONTRACTOR SHALL AT ALL TIMES KEEP THE PREMISES FREE OF ALL WASTE, SURPLUS MATERIALS, RUBBISH OR DEBRIS WHICH IS CAUSED BY HIS/HER EMPLOYEES OR RESULTING FROM HIS/HER WORK.

B. AFTER ALL EQUIPMENT AND DEVICES HAVE BEEN INSTALLED, REMOVE ALL LABELS, STICKERS, STAINS, TEMPORARY COVERS, ETC. IDENTIFICATION PLATES ON ALL EQUIPMENT.

SUBMITTED FOR APPROVAL

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING: _____ USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd

Professional Engineer's Name: **THOMAS P. ARMSTRONG JR.**
Professional Engineer's No.: 085236

State	Date Signed	Project Mgr.
NY		DFS
Designed by	Drawn by	Checked by
SAB		TEM

ARCADIS OF NEW YORK, INC.

DEWEY LOEFFEL LANDFILL SUPERFUND SITE • NASSAU, NEW YORK
GROUNDWATER AND LEACHATE TREATMENT SYSTEM

ELECTRICAL SPECIFICATIONS

MECHANICAL

ARCADIS Project No.
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Date
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ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse, NY 13214
Tel: 315.446.9120

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