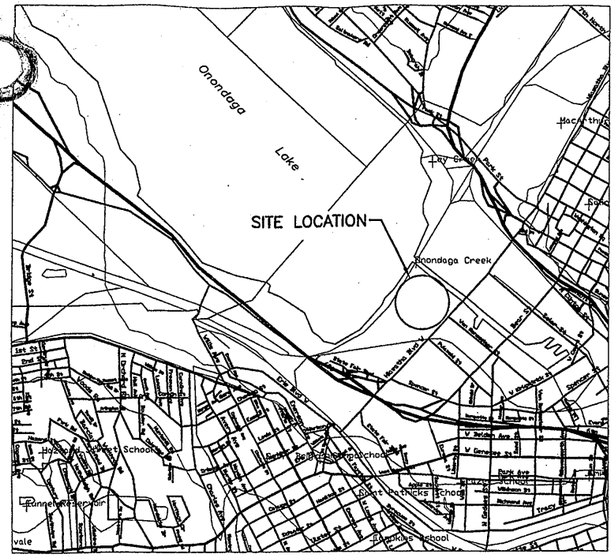
CONTRACT DRAWINGS - BOOK 3 of 3



LOCATION PLAN
SCALE: 1"=2000'

AREA LOCATION

STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT METROPOLITAN SYRACUSE WWTP

RECD
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RICHARD L. ELANDER, PE
COMMISSIONER

DATE

CONTRACT NO. 4A - GENERAL
CONTRACT NO. 4B - ELECTRIC
CONTRACT NO. 4C - HVAC
CONTRACT NO. 4D - PLUMBING & FIRE PROTECTION

BID REFERENCE 4841
PROJECT NUMBER 587961-001

ONONDAGA COUNTY
DEPARTMENT OF DRAINAGE AND SANITATION
SYRACUSE, NEW YORK

AUGUST 2001

07/01/05 OBG CMD
0659CVR4B.DWG

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

(RECORD DRAWING: MADE FROM DRAWING NO. CVR4BRD, FILE NO. 0659CVR4BRD, DATED AUGUST 2001)

RECORD DRAWINGS
TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.
ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
DATE 12/12/05 BY RCG

BOOK 1 of 3

GENERAL DRAWINGS

G-001 INDEX OF DRAWINGS
G-002 INDEX OF DRAWINGS
G-003 INDEX OF DRAWINGS
G-004 GENERAL NOTES, LEGEND & ABBREVIATIONS
G-005 EXISTING SITE PLAN
G-006 EXISTING PARTIAL SITE PLAN I
G-007 EXISTING PARTIAL SITE PLAN II
G-008 SITE PLAN
G-009 KEY PLAN - YARD PIPING
G-010 YARD PIPING - AREA A
G-011 YARD PIPING - AREA B
G-012 YARD PIPING - AREA C
G-013 YARD PIPING - AREA D
G-014 YARD PIPING - AREA E
G-015 YARD PIPING - AREA F
G-016 YARD PIPING - AREA G
G-017 YARD PIPING - AREA H
G-018 YARD PIPING PROFILES
G-019 YARD PIPING PROFILES
G-020 YARD PIPING PROFILES
G-021 YARD PIPING PROFILES AND SECTIONS
G-022 YARD PIPING DETAILS
G-023 ROADS - LAYOUT PLAN
G-024 GRADING AND DRAINAGE PLAN
G-025 STORM SEWER PIPING PROFILES
G-026 STORM SEWER PIPING PROFILES
G-027 STORM SEWER PIPING PROFILES
G-028 EROSION AND SEDIMENT CONTROL PLAN
G-029 EROSION AND SEDIMENT CONTROL DETAILS
G-030 LANDSCAPE PLAN
G-031 LANDSCAPE DETAILS
G-032 HYDRAULIC PROFILE
G-033 TEMPORARY TRAFFIC CONTROL PLAN
G-034 MISCELLANEOUS DETAILS
G-035 MISCELLANEOUS DETAILS
G-036 MISCELLANEOUS DETAILS
G-037 MISCELLANEOUS DETAILS
G-038 MISCELLANEOUS DETAILS
G-101 COORDINATE PLAN
G-102 GRADING PLAN I
G-103 GRADING PLAN II

ARCHITECTURAL DRAWINGS

TYPICAL ARCHITECTURAL DETAILS

A-001 SYMBOLS, ABBREVIATIONS & NOTES
A-002 MISCELLANEOUS ROOF DETAILS
A-003 OVERALL ROOF PLAN

SECONDARY EFFLUENT PUMPING STATION

A-101 SECONDARY EFFLUENT PUMPING STATION - FLOOR PLAN
A-102 SECONDARY EFFLUENT PUMPING STATION - ELEVATIONS
A-103 SECONDARY EFFLUENT PUMP STATION STAIRS - WALL SECTIONS
A-104 SECONDARY EFFLUENT PUMP STATION STAIRS - EXT. WALL DETAILS
A-105 SECONDARY EFFLUENT PUMP STATION - ROOF PLAN
A-105 SECONDARY EFFLUENT PUMP STATION - BUILDING SECTION/DETAILS

BIOLOGICAL AERATED FILTER (BAF) COMPLEX

A-201 BAF PROCESS/UTILITY BLDG. - PARTIAL FIRST FLOOR PLAN
A-202 BAF PROCESS/UTILITY BLDG. - PARTIAL SECOND FLOOR PLAN
A-203 BAF PROCESS/UTILITY BLDG. - PARTIAL ROOF PLANS
A-204 BAF PROCESS/UTILITY BLDG. - ELEVATION & WALL SECTIONS
A-205 BAF PROCESS/UTILITY BLDG. - STAIR PLANS & SECTIONS
A-206 BAF PROCESS/UTILITY BLDG. - NORTH/SOUTH/EAST/WEST ELEVATIONS
A-207 BAF PROCESS/UTILITY BLDG. - EXTERIOR DETAILS
A-208 BAF PROCESS/UTILITY BLDG. - EXTERIOR DETAILS
A-209 BAF PROCESS/UTILITY BLDG. - DETAILS
A-210 BAF PROCESS/UTILITY BLDG. - BACKWASH ELEVATIONS & DETAILS

HIGH-RATE FLOCCULATED SETTLING (HRFS) COMPLEX

A-301 HRFS COMPLEX - PARTIAL PLANS, SECTIONS AND DETAILS
A-302 UV DISINFECTION & HRFS BUILDING - DETAILS
A-303 UV DISINFECTION & HRFS BUILDING - SOUTH ELEVATION AND DETAIL
A-304 UV DISINFECTION & HRFS BUILDING NORTH & EAST ELEVATIONS

UV DISINFECTION

A-401 UV DISINFECTION FLOOR PLANS
A-402 UV DISINFECTION ROOF PLAN & DETAILS
A-403 UV DISINFECTION BUILDING SECTIONS
A-404 UV DISINFECTION BUILDING DETAILS

OPERATIONS CENTER AND CHEMICAL BUILDING C

A-501 OPERATIONS CENTER AND CHEM BLDG. C - FIRST FLOOR PLAN
A-502 OPERATIONS CENTER AND CHEM BLDG. C - SECOND FLOOR PLAN
A-503 OPERATIONS CENTER AND CHEM BLDG. C - THIRD FLOOR PLAN
A-504 OPERATIONS CENTER - ROOF PLAN
A-505 OPERATIONS CENTER AND CHEM BLDG C - EAST AND SOUTH ELEVATIONS
A-506 OPERATIONS CENTER AND CHEM BLDG C- WEST AND NORTH ELEVATIONS
A-507 OPERATIONS CENTER AND CHEM BLDG. C - WALL SECTIONS
A-508 OPERATIONS CENTER AND CHEM BLDG. C - WALL SECTIONS
A-509 OPERATIONS CENTER AND CHEM BLDG. C - WALL SECTIONS
A-510 OPERATIONS CENTER AND CHEM BLDG. C - BUILDING SECTION, STAIR AND ELEVATOR
A-511 OPERATIONS CENTER AND CHEM BLDG. C - WALL SECTIONS
A-512 OPERATIONS CENTER AND CHEM BLDG. C - DETAILS
A-513 OPERATIONS CENTER AND CHEM BLDG. C - DETAILS
A-514 OPERATIONS CENTER AND CHEM BLDG. C - CANOPY DETAILS
A-515 OPERATIONS CENTER AND CHEM BLDG. C - PLANS AND DETAILS
A-516 OPERATIONS CENTER AND CHEM BLDG. C - PLANS AND DETAILS
A-517 OPERATIONS CENTER AND CHEM BLDG. C - FLOOR FINISH LAYOUTS
A-518 ALL BUILDING STRUCTURES ROOM FINISH SCHEDULE
A-519 ALL BUILDING STRUCTURES DOOR SCHEDULE AND SIGNAGE
A-520 OPERATIONS CENTER AND CHEM BLDG. C - 1st AND 2nd FLOOR REF. CEIL. PLANS
A-521 OPERATIONS CENTER AND CHEM BLDG. C - 3rd FLOOR REF. CEIL. PLAN & DETAILS

STRUCTURAL DRAWINGS

STANDARD DETAILS

S-001 ABBREVIATIONS & GENERAL NOTES
S-002 STANDARD DETAILS
S-003 STANDARD DETAILS
S-004 STANDARD DETAILS
S-005 STANDARD DETAILS

SECONDARY EFFLUENT PUMPING STATION

S-101 SECONDARY EFFLUENT PUMPING STATION - FOUNDATION PLAN
S-102 SECONDARY EFFLUENT PUMPING STATION - SECTIONS
S-103 SECONDARY EFFLUENT PUMPING STATION - FLOOR PLAN
S-104 SECONDARY EFFLUENT PUMPING STATION - ROOF FRAMING PLAN
S-105 SECONDARY EFFLUENT PUMPING STATION - SECTIONS AND DETAILS
S-106 SECONDARY EFFLUENT PUMPING STATION - SECTIONS AND DETAILS
S-107 SECONDARY EFFLUENT PUMPING STATION - SECTIONS AND DETAILS
S-108 SECONDARY EFFLUENT PUMPING STATION - SECTIONS AND DETAILS
S-109 72" SECONDARY FORCEMAIN - PLAN, SECTIONS AND DETAILS
S-110 72" SECONDARY FORCEMAIN - SUPPORT SLAB DETAILS
S-111 SECONDARY EFFLUENT PUMPING STATION - PLATFORM PLAN SECTIONS & ELEVATION

BIOLOGICAL AERATED FILTER (BAF) COMPLEX

S-201 GENERAL OVERALL BAF FOUNDATION PLAN
S-202 BAF PARTIAL FOUNDATION PLAN
S-203 BAF PARTIAL FOUNDATION PLAN
S-204 BAF PARTIAL FOUNDATION PLAN
S-205 BAF PARTIAL FOUNDATION PLAN
S-206 BAF PARTIAL FOUNDATION PLAN
S-207 BAF PARTIAL FOUNDATION PLAN
S-208 GENERAL OVERALL BAF PLAN @ EL. 392.75
S-209 BAF PARTIAL PLAN @ EL. 392.75
S-210 BAF PARTIAL PLAN @ EL. 392.75
S-211 BAF PARTIAL PLAN @ EL. 392.75
S-212 BAF PARTIAL PLAN @ EL. 392.75
S-213 BAF PARTIAL PLAN @ EL. 392.75
S-214 BAF PARTIAL PLAN @ EL. 392.75
S-215 GENERAL OVERALL BAF PLAN @ EL. 407.84
S-216 BAF PARTIAL PLAN @ EL. 407.84
S-217 BAF PARTIAL PLAN @ EL. 407.84
S-218 BAF PARTIAL PLAN @ EL. 407.84
S-219 BAF PARTIAL PLAN @ EL. 407.84
S-220 BAF PARTIAL PLAN @ EL. 407.84
S-221 BAF PARTIAL PLAN @ EL. 407.84
S-222 ROOF FRAMING PLAN @ EL. 417.84
S-223 TYPICAL BAF CELL PLAN & SECTION
S-224 BAF PUMP ROOM / BAF GALLERY PARTIAL PLANS - SUMPS, TRENCH DRAINS & EQUIP. PADS
S-225 SECTIONS AND DETAILS
S-226 SECTIONS AND DETAILS
S-227 SECTIONS AND DETAILS
S-228 SECTIONS AND DETAILS
S-229 SECTIONS AND DETAILS
S-230 SECTIONS AND DETAILS
S-231 SECTIONS AND DETAILS
S-232 BEAM SCHEDULE, SECTIONS AND DETAILS

BIOLOGICAL AERATED FILTER (BAF) COMPLEX (CONT.)

S-233 BAF BLOWER ROOM / BAF ELEC. ROOM FOUNDATION, SECTIONS & DETAILS
S-234 BAF CONC. ROOF BEAMS & CONC. COLUMNS SECTIONS & DETAILS
S-235 STEEL FRAMING ELEVATIONS, SECTIONS & DETAILS
S-236 BAF GALLERY WALKWAY SECTIONS AND DETAILS
S-237 TYPICAL BAF NOZZLE DECK PLAN
S-238 TYPICAL BAF NOZZLE DECK SECTIONS
S-239 STAIRWELL NO. 1&2 - ROOF FRAMING PLANS

HIGH-RATE FLOCCULATED SETTLING (HRFS) COMPLEX

S-301 HRFS COMPLEX - PARTIAL LOWER PLAN
S-302 HRFS COMPLEX - PARTIAL LOWER PLAN
S-303 HRFS COMPLEX - PARTIAL UPPER PLAN
S-304 HRFS COMPLEX - PARTIAL UPPER PLAN
S-305 HRFS COMPLEX - SECTIONS
S-306 HRFS COMPLEX - SECTIONS AND DETAILS
S-307 HRFS COMPLEX - SECTIONS AND DETAILS
S-308 HRFS COMPLEX - SECTIONS AND DETAILS
S-309 HRFS COMPLEX - SECTIONS AND DETAILS
S-310 HRFS COMPLEX - SECTIONS AND DETAILS
S-311 HRFS COMPLEX - SCHEDULES AND MISC. DETAILS
S-312 HRFS PROCESS TANKS ROOF FRAMING PLAN
S-313 HRFS PROCESS TANKS CONC. ROOF BEAMS & CONC. COLUMNS SECTIONS & DETAILS

UV DISINFECTION

S-401 UV DISINFECTION/PARSHALL FLUME - FOUNDATION PLAN
S-402 UV DISINFECTION/PARSHALL FLUME - FIRST FLOOR PLAN
S-403 UV DISINFECTION/PARSHALL FLUME - SECTIONS AND DETAILS
S-404 UV DISINFECTION/PARSHALL FLUME - SECTIONS
S-405 UV DISINFECTION/PARSHALL FLUME - SECTIONS
S-406 UV DISINFECTION/PARSHALL FLUME - SECTIONS
S-407 UV DISINFECTION - ROOF PLAN AND MISCELLANEOUS DETAILS

OPERATIONS CENTER

S-501 OPERATIONS CENTER FIRST FLOOR PLAN
S-502 OPERATIONS CENTER SECOND FLOOR FRAMING PLAN
S-502A OPERATIONS CENTER & CHEMICAL BLDG C - STAIR PLAN & DETAILS
S-503 OPERATIONS CENTER THIRD FLOOR FRAMING PLAN
S-504 OPERATIONS CENTER ROOF FRAMING PLAN
S-505 OPERATIONS CENTER FRAMING ELEVATIONS
S-506 OPERATIONS CENTER FRAMING ELEVATIONS
S-507 OPERATIONS CENTER FOUNDATION & FIRST FLOOR SECTIONS & DETAILS
S-508 OPERATIONS CENTER - SECTIONS AND DETAILS
S-509 OPERATIONS CENTER - SECTIONS AND DETAILS
S-510 OPERATIONS CENTER - SECTIONS AND DETAILS
S-511 OPERATIONS CENTER - SECTIONS AND DETAILS

MISCELLANEOUS STRUCTURES

S-601 84" OUTFALL JUNCTION BOX - PLAN, SECTIONS AND DETAILS
S-602 84" SUPPORTS - PLAN, SECTIONS AND DETAILS
S-603 (NOT USED)
S-604 BULK CHEMICAL STORAGE & CONTAINMENT AREA - PLANS AND SECTIONS
S-605 BAF OUTDOOR SUBSTATION ELECTRICAL STRUCTURES PLAN AND SECTIONS
S-606 ELECTRICAL STRUCTURES - PLANS, SECTIONS AND DETAILS
S-607 LOW LIFT PUMP STATION BASEMENT FLOOR PLAN
S-608 LOW LIFT PUMP STATION BOILER ROOF PLAN
S-609 LOW LIFT PUMP STATION SECTION & DETAILS
S-610 EXISTING CHEMICAL GALLERY PILE SECTION & DETAILS
S-611 EXISTING MAIN GALLERY ACCESS HANDHOLE PLAN & SECTION
S-612 LOW LIFT PUMP STATION MEZZANINE FRAMING PLAN
S-613 PLANT OPERATIONS BUILDING MISCELLANEOUS DETAILS

BOOK 2 of 3

MECHANICAL DRAWINGS

MISCELLANEOUS DETAILS

M-001 SYMBOLS & ABBREVIATIONS
M-002 MISCELLANEOUS DETAILS
M-003 MISCELLANEOUS DETAILS
M-003A MISCELLANEOUS DETAILS
M-004 MISCELLANEOUS DETAILS
M-005 MISCELLANEOUS DETAILS

SECONDARY EFFLUENT PUMPING STATION

M-101 SECONDARY EFFLUENT PUMPING STATION - PLAN
M-102 SECONDARY EFFLUENT PUMPING STATION - SECTIONS
M-103 SECONDARY EFFLUENT PUMPING STATION - PLANS, SECTIONS AND DETAIL

BIOLOGICAL AERATED FILTER (BAF) COMPLEX

M-201 BAF PARTIAL LOWER PLAN
M-202 BAF PARTIAL LOWER PLAN
M-203 BAF PARTIAL LOWER PLAN
M-204 BAF BLOWER ROOM PLAN
M-205 BAF PLENUM ROOM & MECHANICAL ROOM PARTIAL PLAN
M-206 BAF CROSS GALLERY PARTIAL LOWER PLAN
M-207 BAF SECTIONS
M-208 BAF BLOWER ROOM SECTION
M-209 BACKWASH PUMP ROOM SECTIONS
M-210 BAF MISCELLANEOUS SECTIONS
M-211 PLANT AIR SCHEMATIC
M-212 BAF MISCELLANEOUS DETAILS
M-213 BAF AIR GRID MISC. DETAILS
M-214 BAF AIR GRID MISC. DETAILS
M-215 BIOSTYR PROCESS CELL FEED/BACKWASH CHANNELS ASSEMBLY
M-216 MODIFCATION NO. 4A-099

HIGH-RATE FLOCCULATED SETTLING (HRFS) COMPLEX

M-301 HRFS COMPLEX PROCESS FLOW SCHEMATICS - HRFS SYSTEM AND SAND MAKEUP SYSTEM
M-302 HRFS COMPLEX PROCESS FLOW SCHEMATIC - FERRIC CHLORIDE FEED SYSTEM
M-303 HRFS COMPLEX PROCESS FLOW SCHEMATIC - POLYMER FEED SYSTEM
M-304 HRFS COMPLEX LOWER PLAN (PARTIAL)
M-305 HRFS COMPLEX LOWER PLAN (PARTIAL)
M-306 HRFS COMPLEX LOWER PLAN (PARTIAL)
M-307 HRFS COMPLEX LOWER PLAN (PARTIAL)
M-308 HRFS COMPLEX UPPER PLAN (PARTIAL)
M-309 HRFS COMPLEX UPPER PLAN (PARTIAL)
M-310 HRFS COMPLEX UPPER PLAN (PARTIAL)
M-311 HRFS COMPLEX UPPER PLAN (PARTIAL)
M-312 HRFS COMPLEX PROCESS TANKS SECTION
M-313 HRFS COMPLEX PROCESS TANKS SECTION
M-314 HRFS COMPLEX PROCESS TANKS SECTIONS
M-315 HRFS COMPLEX CHEMICAL BUILDING "C" - PLAN
M-316 HRFS COMPLEX CHEMICAL BUILDING "C" - SECTION
M-317 HRFS COMPLEX CHEMICAL BUILDING "C" - SECTION
M-318 HRFS COMPLEX CHEMICAL BUILDING "B" - PARTIAL PLAN AND SECTIONS

UV DISINFECTION

M-401 UV DISINFECTION - PLAN
M-402 UV DISINFECTION - SECTION AND DETAILS

02/26/01 OBG JAS
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ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
DATE 12/12/05 BY RCG

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No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	RCG
1	7/9/01	AS BID	RCG
2	5/22/03	REVISED FOR MODIFICATION 4A-164	RCG
3	8/31/05	RECORD DRAWING	

In charge of AHS
Designed by AJS
Drawn by JAS
Checked by AJS

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

INDEX OF DRAWINGS
GENERAL

STATE OF NEW YORK ROBERT C. GANLEY 57013 LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
G-001

BOOK 2 of 3 (CONT.)

MECHANICAL DRAWINGS (CONT.)

OUTFALL 002 DECHLORINATION SYSTEM

M-501 BYPASS CHLORINE CONTACT TANK MODIFICATIONS – PLAN
M-502 BYPASS CHLORINE CONTACT TANK MODIFICATIONS – SECTIONS
M-503 EFFLUENT JUNCTION BOX PLAN & SECTIONS
M-504 BULK CHEMICAL STORAGE CONTAINMENT & TRANSFER AREA– DEMOLITION PLAN, DETAIL & SECTIONS
M-505 BULK CHEMICAL STORAGE, CONTAINMENT AND TRANSFER AREA – PLAN
M-506 CHEMICAL FEED BUILDING "A"– PLAN & SECTION
M-507 CHEMICAL FEED BUILDING "A"– SECTIONS & DETAIL
M-508 DETAILS AND SCHEMATIC
M-509 DETAIL AND SECTIONS
M-510 SODIUM BISULFITE CHEMICAL FEED SCHEMATIC

EXISTING GALLERIES

M-601 GALLERY MODIFICATIONS – KEY PLAN
M-602 SECONDARY GALLERY "A" MODIFICATIONS – PLAN AND SECTIONS
M-603 EFFLUENT GALLERY MODIFICATIONS– PLAN AND SECTIONS
M-604 PRIMARY GALLERY "A" MODIFICATIONS– PLAN AND SECTIONS
M-605 EFFLUENT GALLERY MODIFICATIONS– PLAN AND SECTIONS
M-606 PLANT OPERATIONS BUILDING MODIFICATIONS – BASEMENT PARTIAL PLAN
M-607 PLANT OPERATIONS BUILDING MODIFICATIONS – BASEMENT SECTIONS
M-608 CHEMICAL GALLERY MODIFICATIONS – PLAN AND SECTIONS
M-609 MAIN GALLERY MODIFICATIONS – PLAN AND SECTIONS
M-610 THICKENER GALLERY MODIFICATIONS – PLAN AND SECTIONS
M-611 THICKENER DISTRIBUTION STRUCTURE MODIFICATIONS – PLAN AND SECTIONS
M-612 PRIMARY GALLERY "B" MODIFICATIONS– PLAN AND SECTIONS
M-613 MAIN GALLERY MODIFICATIONS – PLAN AND SECTIONS
M-614 LOW LIFT PUMP STATION MODIFICATIONS – PLAN AND SECTIONS

BOOK 3 of 3

INSTRUMENTATION DRAWINGS

GENERAL INFORMATION

I-001 GENERAL NOTES, LEGEND & ABBREVIATIONS
I-002 CONTROL SYSTEM SITE PLAN
I-003 SCADA SYSTEM NOTES AND SCHEDULES
I-004 SCADA SYSTEM SCHEMATIC OVERALL ONELINE
I-005 SCADA SYSTEM SCHEMATIC COUNTYWIDE SUBSYSTEM
I-006 SCADA SYSTEM SCHEMATIC BAF / HRFS SUBSYSTEM
I-007 SCADA SYSTEM SCHEMATIC CHEMICAL FEED / PROCESS SUBSYSTEM
I-008 SCADA SYSTEM ENERGY MANAGEMENT SUBSYSTEM
I-009 SCADA SYSTEM SCHEMATIC HVAC DIRECT DIGITAL CONTROL SUBSYSTEM
I-010 SCADA SYSTEM BAF ELECTRIC ROOM ENERGY MANAGEMENT SUBSYSTEM
I-011 OPERATIONS CENTER CONTROL ROOM LAYOUT
I-012 PLANT OPERATIONS BLDG. CONTROL ROOM LAYOUT DEMOLITION PLAN

SECONDARY EFFLUENT PUMPING STATION

I-101 SECONDARY EFFLUENT PUMPING STATION PLAN
I-102 SECONDARY EFFLUENT PUMPING STATION (PLC M13) CONTROL DIAGRAM
I-103 SECONDARY EFFLUENT PUMPING STATION (PLC M13) CONTROL PANEL LAYOUT
I-104 SECONDARY EFFLUENT PUMPING STATION (PLC M13) BILL OF MATERIALS
I-105 SECONDARY EFFLUENT PUMPING STATION (PLC M13) CONTROL CIRCUIT WIRING
I-106 SECONDARY EFFLUENT PUMPING STATION (PLC M13) TERMINAL BLOCK LAYOUT
I-107 SECONDARY EFFLUENT PUMPING STATION (PLC M13) ANALOG INPUT MODULES
I-108 SECONDARY EFFLUENT PUMPING STATION (PLC M13) ANALOG INPUT MODULES
I-109 SECONDARY EFFLUENT PUMPING STATION (PLC M13) ANALOG INPUT MODULES
I-110 SECONDARY EFFLUENT PUMPING STATION (PLC M13) ANALOG OUTPUT MODULES
I-111 SECONDARY EFFLUENT PUMPING STATION (PLC M13) DIGITAL INPUT MODULES
I-112 SECONDARY EFFLUENT PUMPING STATION (PLC M13) DIGITAL INPUT MODULES
I-113 SECONDARY EFFLUENT PUMPING STATION (PLC M13) DIGITAL INPUT MODULES
I-114 SECONDARY EFFLUENT PUMPING STATION (PLC M13) DIGITAL INPUT MODULES
I-115 SECONDARY EFFLUENT PUMPING STATION (PLC M13) DIGITAL OUTPUT MODULES
I-116 SECONDARY EFFLUENT PUMPING STATION (PLC M13) DIGITAL OUTPUT MODULES

BIOLOGICAL AERATED FILTER (BAF) COMPLEX

I-201 BAF LOWER LEVEL PARTIAL PLAN SOUTH
I-202 BAF LOWER LEVEL PARTIAL PLAN CENTER
I-203 BAF LOWER LEVEL PARTIAL PLAN NORTH
I-204 BAF BLOWER AND ELECTRIC ROOM PLAN
I-205 BAF PLENUM AND MECHANICAL ROOM PLAN
I-206 BAF UPPER LEVEL PARTIAL PLAN
I-207 BAF (PLC M19) INTERCONNECTION DRAWING
I-208 BLOWER PANELS (PLC M21 & M22) INTERCONNECTION DRAWING
I-209 BAF ELECTRIC ROOM (PLC M24) INTERCONNECTION DIAGRAM

HIGH RATE FLOCCULATED SETTLING (HRFS) COMPLEX

I-301 HRFS LOWER LEVEL PLAN
I-302 HRFS UPPER LEVEL PLAN
I-303 CHEMICAL BUILDING C PLAN
I-304 HRFS (PLC M17) INTERCONNECTION DRAWING
I-305 FERRIC CHLORIDE FEED CONTROL DIAGRAM
I-306 POLYMER FEED CONTROL DIAGRAM
I-307 SAND STORAGE SILO AND SLURRY FEED SYSTEM CONTROL DIAGRAM
I-308 M12000 HRFS CHEMICAL FEED (PLC M18) INTERCONNECTION DRAWING
I-309 CHEMICAL BUILDING C INSTRUMENTATION MOUNTING DETAILS

UV DISINFECTION

I-401 UV DISINFECTION/PARSHALL FLUME INSTRUMENTATION PLAN AND DETAIL
I-402 UV DISINFECTION/FLOW MONITORING CONTROL DIAGRAM (PLC M14)
I-403 UV DISINFECTION/FLOW MONITORING INTERCONNECT ONELINE

MISCELLANEOUS

I-501 CHEMICAL BUILDING A AND POB PARTIAL PLANS
I-502 CHEMICAL BUILDING B INSTRUMENTATION PLAN
I-503 BYPASS CHLORINE CONTACT TANK AND BUILDING PLANS
I-504 SODIUM BISULFITE (PLC M20C) CONTROL DIAGRAM
I-505 BYPASS CHLORINE CONTACT/OUTFALL 002 PLAN (PLC M20D) CONTROL DIAGRAM
I-506 CONTROL MODIFICATIONS TO EXISTING CHLORINE INJECTOR PUMPS
I-507 INSTRUMENTATION CONTROL PANELS–LAYOUT
I-508 INSTRUMENTATION CONTROL PANELS–LAYOUT
I-509 LOOP WIRING DIAGRAMS
I-510 CONDUIT SCHEDULE
I-511 CONDUIT SCHEDULE (CONTINUED)
I-512 CONDUIT SCHEDULE (CONTINUED)
I-513 CONDUIT SCHEDULE (CONTINUED)

MISCELLANEOUS

I-601 CHEMICAL BUILDING "A" (PLC M20C) CONTROL PANEL LAYOUT
I-602 CHEMICAL BUILDING "A" (PLC M20C) BILL OF MATERIALS
I-603 CHEMICAL BUILDING "A" (PLC M20C) CONTROL CIRCUIT WIRING
I-604 CHEMICAL BUILDING "A" (PLC M20C) TERMINAL BLOCK LAYOUT
I-605 CHEMICAL BUILDING "A" (PLC M20C) ANALOG INPUT MODULES
I-606 CHEMICAL BUILDING "A" (PLC M20C) ANALOG INPUT MODULES
I-607 CHEMICAL BUILDING "A" (PLC M20C) ANALOG OUTPUT MODULES
I-608 CHEMICAL BUILDING "A" (PLC M20C) ANALOG OUTPUT MODULES
I-609 CHEMICAL BUILDING "A" (PLC M20C) DIGITAL INPUT MODULES
I-610 CHEMICAL BUILDING "A" (PLC M20C) DIGITAL INPUT MODULES
I-611 CHEMICAL BUILDING "A" (PLC M20C) DIGITAL INPUT MODULES
I-612 CHEMICAL BUILDING "A" (PLC M20C) DIGITAL OUTPUT MODULES
I-613 CHEMICAL BUILDING "A" (PLC M20C) DIGITAL OUTPUT MODULES
I-614 CHEMICAL BUILDING "C" (PLC M16) CONTROL PANEL LAYOUT
I-615 CHEMICAL BUILDING "C" (PLC M16) CONTROL CIRCUIT WIRING
I-616 CHEMICAL BUILDING "C" (PLC M16) TERMINAL BLOCK LAYOUT
I-617 CHEMICAL BUILDING "C" (PLC M16) ANALOG INPUT MODULES
I-618 CHEMICAL BUILDING "C" (PLC M16) DIGITAL INPUT MODULES
I-619 CHEMICAL BUILDING "C" (PLC M16) DIGITAL INPUT MODULES
I-620 CHEMICAL BUILDING "C" (PLC M16) DIGITAL INPUT MODULES
I-621 CHEMICAL BUILDING "C" (PLC M16) DIGITAL INPUT MODULES
I-622 CHEMICAL BUILDING "C" (PLC M16) DIGITAL OUTPUT MODULE
I-623 CHLORINE BYPASS BLDG. (PLC M20D) CONTROL PANEL LAYOUT
I-624 CHLORINE BYPASS BLDG. (PLC M20D) CONTROL CIRCUIT WIRING
I-625 CHLORINE BYPASS BLDG. (PLC M20D) TERMINAL BLOCK LAYOUT
I-626 CHLORINE BYPASS BLDG. (PLC M20D) ANALOG INPUT MODULES
I-627 CHLORINE BYPASS BLDG. (PLC M20D) DIGITAL INPUT MODULES
I-628 CHLORINE BYPASS BLDG. (PLC M20D) DIGITAL INPUT MODULES
I-629 CHLORINE BYPASS BLDG. (PLC M20D) DIGITAL OUTPUT MODULES
I-630 CHEMICAL BUILDING "B" (PLC M20B) CONTROL PANEL LAYOUT
I-631 CHEMICAL BUILDING "B" (PLC M20B) ANALOG INPUT MODULE
I-632 CHEMICAL BUILDING "B" (PLC M20B) DISCRETE INPUT MODULE
I-633 CHEMICAL BUILDING "B" (PLC M20B) DISCRETE OUTPUT MODULE
I-634 BAF ELECTRIC ROOM (PLC M24) CONTROL PANEL LAYOUT
I-635 BAF ELECTRIC ROOM (PLC M24) CONTROL CIRCUIT WIRING
I-636 BAF ELECTRIC ROOM (PLC M24) TERMINAL BLOCK LAYOUT
I-637 BAF ELECTRIC ROOM (PLC M24) ANALOG INPUT MODULES
I-638 BAF ELECTRIC ROOM (PLC M24) ANALOG INPUT MODULES
I-639 BAF ELECTRIC ROOM (PLC M24) DIGITAL INPUT MODULES
I-701 GALLERY GAS DETECTION SYSTEM

ELECTRICAL DRAWINGS

GENERAL INFORMATION

E-001 GENERAL NOTES, LEGEND & ABBREVIATIONS
E-002 ELECTRICAL SITE PLAN
E-003 GROUNDING PLAN
E-004 LIGHTNING PROTECTION PLAN
E-005 ONE–LINE – MAIN SUBSTATION
E-006 ONE–LINE – 5 KV DISTRIBUTION SYSTEM
E-007 MAIN SUBSTATION PLAN
E-008 MAIN SUBSTATION SWITCHGEAR DETAILS
E-009 MAIN SUBSTATION MODIFICATIONS
E-010 5 KV DUCTBANK PLAN AND SECTIONS
E-011 5 KV CABLE TRAY PLAN AND SECTIONS
E-012 5 KV CABLE TRAY PLAN AND SECTIONS
E-013 5 KV CABLE TRAY PLAN AND SECTIONS
E-014 5 KV CABLE TRAY PLAN AND SECTIONS
E-015 5 KV SECONDARY EFFLUENT PS PLANS & SECTIONS
E-016 BAF FIRST FLOOR ELECTRICAL PLAN
E-017 5 KV BAF SUBSTATION 1 & 2, SECTIONS, SCHEDULES
E-018 MAIN SUBSTATION SCHEDULES
E-019 34.5 KV SUBSTATION BATTERY BUILDING
E-020 LIGHTING FIXTURE SCHEDULE

SECONDARY EFFLUENT PUMPING STATION

E-101 SECONDARY EFFLUENT PUMPING STATION POWER PLAN
E-102 SECONDARY EFFLUENT PUMPING STATION LIGHTING PLAN
E-103 SECONDARY EFFLUENT PUMPING STATION LIGHTNING PROTECTION PLAN
E-104 SECONDARY EFFLUENT PUMPING STATION 5 KV SWITCHGEAR
E-105 SECONDARY EFFLUENT PUMPING STATION MCC 44 ONE–LINE DIAGRAM
E-106 SECONDARY EFFLUENT PUMPING STATION ELEMENTARY DIAGRAMS
E-107 SECONDARY EFFLUENT PUMPING STATION SCHEDULES & DETAILS

BIOLOGICAL AERATED FILTER (BAF) COMPLEX

E-201 BAF LOWER LEVEL POWER PLAN
E-202 BAF BLOWER AND ELECTRIC ROOM POWER PLAN
E-203 BAF LOWER LEVEL LIGHTING PLAN
E-204 BAF BLOWER AND ELECTRIC ROOM LIGHTING PLANS
E-205 BAF PLENUM AND MECHANICAL ROOM LIGHTING PLANS
E-206 BAF UPPER LEVEL LIGHTING PLAN
E-207 BAF MCC 30 AND 31 ONE–LINE DIAGRAMS
E-208 BAF MCC 42 AND 43 ONE–LINE DIAGRAMS
E-209 BAF MCC 34 ONE–LINE DIAGRAM
E-210 BAF MCC 34 ONE–LINE DIAGRAM (CONTINUED)
E-211 BAF MCC 38 ONE–LINE DIAGRAM
E-212 BAF MCC 38 ONE–LINE DIAGRAM (CONTINUED)
E-213 BAF MCC ELEVATIONS
E-214 BAF ELEMENTARY DIAGRAMS
E-215 BAF PLENUM AND MECHANICAL ROOM POWER PLAN
E-216 BAF SCHEDULES
E-217 BAF SCHEDULES (CONTINUED)
E-218 BAF COMPLEX ROOF PLAN
E-219 BAF ELEMENTARY DIAGRAMS

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Designed by AHS
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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

INDEX OF DRAWINGS
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STATE OF NEW YORK · ROBERT C. GANLEY · 57013 · LICENSED PROFESSIONAL ENGINEER

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G-002

BOOK 3 of 3 (CONT.)

ELECTRICAL DRAWINGS (CONT.)

UV DISINFECTION

E-401 UV DISINFECTION/PARSHALL FLUME POWER PLAN AND ROOM PLAN
E-402 UV DISINFECTION/PARSHALL FLUME LIGHTING PLANS
E-403 UV DISINFECTION/PARSHALL FLUME ONE-LINE DIAGRAM
E-404 UV DISINFECTION/PARSHALL FLUME ELEMENTARY DIAGRAMS
E-405 UV DISINFECTION/PARSHALL FLUME SCHEDULES

OPERATIONS CENTER

E-501 OPERATIONS CENTER 1ST FLOOR POWER PLAN
E-502 OPERATIONS CENTER 2ND FLOOR POWER PLAN
E-503 OPERATIONS CENTER 3RD FLOOR POWER PLAN
E-504 OPERATIONS CENTER 1ST FLOOR LIGHTING PLAN
E-505 OPERATIONS CENTER 2ND FLOOR LIGHTING PLAN
E-506 OPERATIONS CENTER 3RD FLOOR LIGHTING PLAN
E-507 OPERATIONS CENTER 1ST FLOOR MISCELLANEOUS SYSTEMS PLAN
E-508 OPERATIONS CENTER 2ND FLOOR MISCELLANEOUS SYSTEMS PLAN
E-509 OPERATIONS CENTER 3RD FLOOR MISCELLANEOUS SYSTEMS PLAN
E-510 OPERATIONS CENTER SCADA ROOM / CONTROL ROOM POWER PLAN
E-511 OPERATIONS CENTER MCC 35 ONE LINE DIAGRAM
E-512 OPERATIONS CENTER MCC 35 ONE LINE DIAGRAM
E-513 OPERATIONS CENTER ELEMENTARY DIAGRAMS
E-514 OPERATIONS CENTER SCHEDULES
E-515 OPERATIONS CENTER SCHEDULES AND DETAILS

MISCELLANEOUS

E-601 FIRE ALARM SYSTEM SCHEMATIC
E-602 FIRE ALARM SYSTEM SCHEMATIC
E-603 FIRE ALARM SYSTEM SCHEMATIC
E-604 TELEPHONE / PA SYSTEM SCHEMATIC
E-605 CCTV SYSTEM SCHEMATIC
E-606 MISCELLANEOUS SCHEMATICS AND DETAILS
E-607 EXTERIOR LIGHTING PLAN AND DETAILS
E-608 BULK STORAGE & CONTROL ROOM DEMOLITION & MODIFICATIONS & TRANSFER STATION MODIFICATIONS
E-609 CHEMICAL BUILDING A POWER PLAN
E-610 CHEMICAL FILL PORT MODIFICATIONS AND ONE-LINE DIAGRAMS
E-611 BYPASS CHLORINE CONTACT TANK PLAN AND BUILDING PLANS
E-612 BYPASS CHLORINE CONTACT TANK POWER PLAN AND DETAILS
E-613 CHLORINE BYPASS BUILDING PANEL SCHEDULES AND DETAIL
E-614 CHEMICAL BUILDING B POWER PLAN
E-615 LOW LIFT PUMP STATION BASEMENT
E-616 LOW LIFT PUMP STATION FIRST FLOOR
E-617 GATE OPERATOR SCHEMATIC, GATE AND SITE DETAILS
E-701 PARTIAL GALLERY PLAN

HEATING, VENTILATING & AIR CONDITIONING DRAWINGS

MISCELLANEOUS

H-001 ABBREVIATIONS, SYMBOLS & NOTES
H-002 SCHEDULES
H-003 EQUIPMENT SCHEDULES
H-004 SCHEMATICS AND DETAILS
H-005 SCHEMATICS AND DETAILS
H-006 DETAILS
H-007 HVAC CONTROL SYSTEM ARCHITECTURE

SECONDARY EFFLUENT PUMP STATION

H-101 SECONDARY EFFLUENT PUMP STATION HVAC PLAN

BIOLOGICAL AERATED FILTERS (BAF) COMPLEX

H-201 BAF GALLERY PARTIAL PLANS
H-202 PLENUM ROOM AND MECHANICAL ROOM PARTIAL PLAN
H-203 BLOWER ROOM AND ELECTRICAL ROOM PARTIAL PLAN

HIGH RATE FLOCCULATED SETTLING (HRFS) COMPLEX

H-301 HRFS GALLERY PARTIAL PLAN
H-302 HRFS GALLERY PARTIAL PLAN
H-303 CHEMICAL FEED BUILDING PLAN

UV DISINFECTION

H-401 UV DISINFECTION/PARSHALL FLUME STRUCTURS PLAN, SECTIONS & DETAILS

OPERATIONS CENTER

H-501 OPERATIONS CENTER FIRST FLOOR PLANS
H-502 OPERATIONS CENTER SECOND FLOOR PLANS
H-503 OPERATIONS CENTER THIRD FLOOR PLANS
H-504 OPERATIONS CENTER MECHANICAL ROOM PLANS
H-505 OPERATIONS CENTER SECTIONS
H-506 OPERATIONS CENTER SECTIONS
H-507 OPERATIONS CENTER SECTIONS
H-508 OPERATIONS CENTER PIPING SYSTEM SCHEMATICS

LOW LIFT PUMP STATION

H-601 LOW LIFT PUMP STATION BASEMENT FLOOR PLAN
H-602 LOW LIFT PUMP STATION ELEVATIONS, SCHEMATICS & DETAILS
H-603 LOW LIFT PUMP STATION BASEMENT DEMOLITION PLAN

GALLERIES VENTILATION

H-701 GALLERIES KEY PLAN
H-702 PLANT OPERATIONS BUILDING BASEMENT PLAN
H-703 PLANT OPERATIONS BUILDING FIRST FLOOR PLAN
H-704 PLANT OPERATIONS BUILDING ROOF PLAN
H-705 PLANT OPERATIONS BUILDING SECTIONS
H-706 PLANT OPERATIONS BUILDING SECTION
H-707 TERTIARY FLOW CONTROL STRUCTURES EQUIPMENT PLAN & DETAIL
H-708 LOW-LIFT PUMP STATION REMOVALS PLAN
H-709 LOW-LIFT PUMP STATION FIRST FLOOR PLAN
H-710 LOW-LIFT PUMP STATION MEZZANINE PLAN
H-901 SCREENING AND GRIT BUILDING PLAN

PLUMBING

MISCELLANEOUS

P-001 SYMBOL LIST & NOTES
P-002 SCHEDULES/SCHEMATICS

SECONDARY EFFLUENT PUMP STATION

P-101 SECONDARY EFFLUENT PUMP STATION FLOOR PLAN AND SCHEMATIC
P-102 SECONDARY EFFLUENT PUMP STATION ROOF PLAN

BIOLOGICAL AERATED FILTERS (BAF) COMPLEX

P-201 BAF - FIRST FLOOR PLAN
P-202 BAF - SECOND FLOOR PLAN
P-203 BAF - UPPER LEVEL PLAN

HIGH RATE FLOCCULATED SETTLING (HRFS) COMPLEX

P-301 HRFS GALLERY - FIRST FLOOR PLAN
P-302 HRFS GALLERY - SECOND FLOOR PLAN
P-303 HRFS GALLERY - ROOF PLAN

UV DISINFECTION

P-401 UV DISINFECTION/PARSHALL FLUME-PLAN AND ROOF PLAN

OPERATIONS CENTER

P-500 FOUNDATION PLUMBING PLAN - DRAIN/WASTE/VENT
P-501 FIRST FLOOR PLUMBING PLAN - DRAIN/WASTE/VENT
P-501A FIRST FLOOR PLUMBING PLAN - WATER
P-502 SECOND FLOOR PLUMBING PLAN - DRAIN/WASTE/VENT
P-502A SECOND FLOOR PLUMBING PLAN - WATER
P-503 THIRD FLOOR PLUMBING PLAN - DRAIN/WASTE/VENT
P-503A THIRD FLOOR PLUMBING PLAN - WATER
P-504 MECHANICAL ROOM PLAN
P-505 MISCELLANEOUS DETAILS
P-506 MISCELLANEOUS DETAILS AND SCHEDULE
P-507 SCHEDULES
P-600 YARD PIPING AREA D - HOT BOX LOCATION AND DETAIL

FIRE PROTECTION

FP-001 SYMBOL LIST & NOTES
FP-002 NOT USED
FP-003 OPERATIONS CENTER FIRST FLOOR SPRINKLER PLAN
FP-004 OPERATIONS CENTER SECOND FLOOR SPRINKLER PLAN
FP-005 OPERATIONS CENTER THIRD FLOOR SPRINKLER PLAN
FP-006 OPERATIONS CENTER SCHEMATICS AND DETAILS
FP-007 OPERATIONS CENTER SCHEMATICS AND DETAILS
FP-008 OPERATIONS CENTER DETAILS

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INDEX OF DRAWINGS
GENERAL

STATE OF NEW YORK ROBERT C. GANLEY 57013 LICENSED PROFESSIONAL ENGINEER

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G-003

INSTRUMENT IDENTIFICATION TABLE

ISA-S5.1-1991

LETTER	FIRST LETTER: MEASURED OR INITIATING VARIABLE	FIRST LETTER: MODIFIER	SUCCEEDING LETTERS: READOUT OR PASSIVE FUNCTION	SUCCEEDING LETTERS: OUTPUT FUNCTION	SUCCEEDING LETTERS: MODIFIER
A	ANALYSIS (2)		ALARM		
B	BURNER, COMBUSTION			CLOSE, STOP, DECREASE (1)	
C				CONTROL	
D	DENSITY (1)	DIFFERENTIAL		OPEN, START, INCREASE (1)	
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			FAIL (1)
G			GLASS, VIEWING DEVICE		
H	HAND				HIGH (OPENED)
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW (CLOSED)
M	MOTOR, MOTION (1)	MOMENTARY		MOTOR (1)	MIDDLE OR INTERMEDIATE
N					ON OR OPERATE (1)
O			ORIFICE, RESTRICTION		OVERLOAD (1)
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION	PUMP (1)	
Q	EVENT, QUANTITY (2)	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		
S	SPEED, FREQUENCY (3)	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE (2)		MULTIFUNCTION (2)	MULTIFUNCTION (2)	MULTIFUNCTION (2)
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL		
X	UNCLASSIFIED (2)	X AXIS	UNCLASSIFIED (2)	UNCLASSIFIED (2)	UNCLASSIFIED (2)
Y	STATE, PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

(1) USER'S CHOICE

(2) WHEN USED, SYMBOL OR SIGNAL LINE IS ANNOTATED.

(3) MAY BE PRECEEDED BY AN 'E' OR AN 'H' FOR ELECTRIC OR HAND

SYMBOL LEGEND:

- S/SL — START/STOP LOCK
- CONTACT
- GROUND
- TRANSFORMER
- FUSE
- HAND-OFF-AUTOMATIC (HOA)
- RECEPTACLE
- ANCHOR BOLT
- PB — PULL BOX
- TEARDROP FLOAT
- CIRCUIT BREAKER (CB)
- SWITCH
- XX HP — MOTOR (HP=HORSEPOWER)
- SURGE ARRESTOR
- PUBLIC ADDRESS SPEAKER
- TELEPHONE
- (S) — SMOKE DETECTOR
- (H) — HEAT DETECTOR
- (P) — MANUAL PULL STATION
- A V — AUDIO/VISUAL DEVICE
- PANEL LIGHT
- JB — JUNCTION BOX
- COMBINATION MOTOR STARTER
- CAMERA
- EMERGENCY EYEWASH/SHOWER
- S — SOLENOID VALVE
- M — MOTORIZED VALVE
- FLOW SWITCH
- LIMIT SWITCH
- ULTRASONIC LEVEL
- LEVEL FLOAT
- DEVICENET CONDUIT
- FIELDBUS CONDUIT

NOTE:

** INDICATES AN ITEM OR ITEMS SUPPLIED BY OWNER FOR INSTALLATION BY THE CONTRACTOR.

INSTRUMENT & FUNCTION SYMBOLS

- FIELD MOUNTED
- FACE OF PANEL MOUNTED
- MOTOR CONTROL CENTER MOUNTED
- INTERIOR OF PANEL MOUNTED
- INSTRUMENTS SHARING COMMON HOUSING
- PROGRAMMABLE PLC FUNCTION

Layer: ON=*; OFF=*REF*

5/30/01 BBL DCC
05503000/06591001.DWG

INSTRUMENT & FUNCTION TAGGING

XXXX #####X

- XXXX = FUNCTIONAL INSTRUMENT IDENTIFICATION LETTERS FROM GENERAL INSTRUMENTATION DESIGNATIONS
- #####X = LOOP NUMBER

ANALYZER DESIGNATIONS

- CL = CHLORINE RESIDUAL
- DO = DISSOLVED OXYGEN
- NH3 = AMMONIA
- ORP = OXIDATION REDUCTION POTENTIAL
- P = PHOSPHATE
- PH = pH
- TEMP = TEMPERATURE
- UVT = ULTRAVIOLET TRANSMITTANCE

TYPICAL P&ID DEVICE NUMBER DESCRIPTION

- 10000 = SECONDARY EFFLUENT SYSTEM
- 20000 = BAF SYSTEM (BAF CELL NO. 01-18)
- 30000 = HRFS SYSTEM (HRFS TRAIN NO. 01-04)
- 40000 = UV DISINFECTION/FLUME
- 50000 = CHEMICAL FEED/BYPASS CL2
- 60000 = RESERVED FOR EXISTING WWTP
- 70000 = GALLERY
- 80000 = HVAC/POWER MONITORING
- 90000 = RESERVED FOR EXISTING WWTP

20012A

- 20 — CELL/FLOW TRAIN/EQUIPMENT NO.
- 12 — DEVICE
- A — SUBSCRIPT (IF NEEDED)

GENERAL INSTRUMENTATION DESIGNATIONS

AA	ANALYZER ALARM
AE	ANALYZER ELEMENT
AIT	ANALYZER INDICATOR/TRANSMITTER
FC	FLOW CONTROL (STROKE LENGTH)
FE	FLOW ELEMENT
FIT	FLOW INDICATOR/TRANSMITTER
FQ	FLOW TOTALIZER
FS	FLOW SWITCH
FSA	FLOW SWITCH ALARM
FT	FLOW TRANSMITTER
FV	FLOW CONTROL VALVE
FVA	FLOW CONTROL VALVE ALARM
FVZI	FLOW CONTROL VALVE POSITION INDICATOR
FVZO	FLOW CONTROL VALVE POSITION COMMAND
HS	HAND SWITCH
II	SIGNAL ISOLATOR
LE	LEVEL ELEMENT
LIT	LEVEL INDICATOR/TRANSMITTER
LS	LEVEL SWITCH
LSH	LEVEL SWITCH HIGH
LSL	LEVEL SWITCH LOW
LSLL	LEVEL SWITCH LOW-LOW
LT	LEVEL TRANSMITTER
PDT	DIFFERENTIAL PRESSURE TRANSMITTER
PIT	PRESSURE INDICATOR/TRANSMITTER
PSHL	PRESSURE SWITCH - HIGH/LOW
PSL	PRESSURE SWITCH LOW
SC	SPEED CONTROL
SI	SPEED INDICATOR
SV	SOLENOID VALVE
TE	TEMPERATURE ELEMENT
TIT	TEMPERATURE INDICATOR/TRANSMITTER
TSH	TEMPERATURE SWITCH HIGH
TT	TEMPERATURE TRANSMITTER
UV	UNIVERSAL VALVE
VE	VIBRATION ELEMENT
VT	VIBRATION TRANSMITTER
XAH	MISC. ALARM HORN
XAL	MISC. ALARM LIGHT
XIT	MISC. INDICATOR/TRANSMITTER
XPB	MISC. PUSHBUTTON
XSA	MISC. ALARM
XSI	MISC. RUNNING INDICATOR
YC	START/STOP, CONTROL, RUN/STOP
YY	TRANSFER SWITCH
ZCC	POSITION CLOSED COMMAND
ZCO	POSITION OPEN COMMAND
ZS	POSITION SWITCH
ZSC	POSITION SWITCH CLOSED INDICATOR
ZSI	POSITION SWITCH INDICATOR
ZSO	POSITION SWITCH OPEN INDICATOR

CONTROL CONDUIT NUMBER DESCRIPTION

BCCD106A

- B — A = AUXILIARY; B = BAF SYSTEM; H = HRFS SYSTEM; S = SECONDARY EFFLUENT SYSTEM
- C — CONTROL CONDUIT
- C — D = DEVICENET OR CONTROLNET NETWORK; E = ETHERNET; F = FIELDBUS NETWORK; H = DH+ CONNECTION
- D — NETWORK NUMBER (1-9)
- 06 — GROUP NUMBER, IF APPLICABLE (I.E., CELL#, TRAIN#) OR SEQUENTIAL NUMBER "0" - PRECEEDS SINGLE DIGIT NUMBERS
- A — A-Z = SEQUENTIAL LETTERING OF CONDUITS IN A GROUP, OMIT "I" AND "O"

ABBREVIATIONS

%	PERCENT
@	AT
A	AMPERES
A/R	AS REQUIRED
AC	ALTERNATING CURRENT
ADMIN.	ADMINISTRATION
AI	ANALOG INPUT
AO	ANALOG OUTPUT
BAF	BIOLOGICAL AERATED FILTER
BLDG.	BUILDING
BLK	BLACK
BW	BACKWASH
C.	CONDUIT
CAT	CATEGORY
CB	CIRCUIT BREAKER
CCTV	CLOSED-CIRCUIT TELEVISION
CHEM.	CHEMICAL
CL_2	CHLORINE
CM, COM	COMMON
COAX	COAXIAL CABLE
CORP.	CORPORATE
CPT	CONTROL POWER TRANSFORMER
CPU	CONTROL PROCESSING UNIT
CPVC	CHLORINATED POLYVINYL CHLORIDE
CR	CONTROL RELAY
CR	CONTROL ROOM
CRGS	COATED RIGID GALVANIZED STEEL
CSU	CHANNEL SERVICE UNIT
D	DEEP
DC	DIRECT CURRENT
DDC	DIRECT DIGITAL CONTROL
DI	DISCRETE INPUT
DIST.	DISTRIBUTION
DIV.	DIVISION
DN	DEVICENET NETWORK
DO	DISCRETE OUTPUT
DSU	DATA SERVICE UNIT
DWG.	DRAWING
EFF.	EFFLUENT
EL, EL.	ELEVATION
ELEV.	ELEVATOR
ES	ELECTRIC SUPPLY
ø	DIAMETER OR PHASE
F.M.	FORCE MAIN
FACP	FIRE ALARM CONTROL PANEL
FL.	FLOOR
FO	FIBER OPTIC
FT, FT.	FEET
FU	FUSE
G, GRD	GROUND
GAL.	GALLON
GALV.	GALVANIZED
GB	GROUND BUSS
GPD	GALLONS PER DAY
GWD	GYPSUM WALL BOARD
HOA	HAND-OFF-AUTO
HRFS	HIGH-RATE FLOCCULATED SETTLING
HTR	HEATER
HVAC	HEATING, VENTILATION, AND AIR CONDITIONING
I/O	INPUT/OUTPUT
JB	JUNCTION BOX
JUNCT.	JUNCTION
KV	KILOVOLTS
KVA	KILOVOLT AMPERES
LAN	LOCAL AREA NETWORK
LOR	LOCAL--OFF--REMOTE
LP	LIGHTING PANELBOARD
MAINT.	MAINTENANCE
MCC	MOTOR CONTROL CENTER
MDF	MAIN DISTRIBUTION FRAME
MFG.	MANUFACTURER
MIN.	MINIMUM
MUC	MULTI-UNIT CONTROLLER
N	NEUTRAL
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
NO., #	NUMBER
NPT	NATIONAL PIPE THREAD
°F	DEGREES FAHRENHEIT
OIS	OPERATOR INTERFACE STATION
ORG	ORANGE
P.S.	PUMP STATION
PA	PUBLIC ADDRESS
PB	PULL BOX
PD	POSITIVE DISPLACEMENT
PDC	POWER DISTRIBUTION CENTER
PL	PILOT LIGHT
PLC	PROGRAMMABLE LOGIC CONTROLLER
POB	PLANT OPERATIONS BUILDING
POT.	POTABLE
PS	POWER SUPPLY
PVC	POLYVINYL CHLORIDE
R.O.W.	RIGHT OF WAY
REC	RECEPTACLE
REQ'D	REQUIRED
RGS	RIGID GALVANIZED STEEL
RMC	RIGID METAL CONDUIT
S/SL	START/STOP
SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
SCC	SYSTEM CONTROL CENTER
SEC. EFF.	SECONDARY EFFLUENT
SH	SHIELD
SPEC	MATERIAL AND PERFORMANCE SPECIFICATION
SQL	SEQUEL
SS	STAINLESS STEEL
TB	TERMINAL BLOCK
TBD	TO BE DETERMINED
TERT. P.S.	TERTIARY PUMP STATION
TPS	TWISTED PAIR SHIELDED
TS, T-STAT	THERMOSTAT
TYP.	TYPICAL
UPS	UNINTERRUPTABLE POWER SUPPLY
UV	ULTRAVIOLET
V	VOLTS
VAC	VOLTS ALTERNATING CURRENT
Vdc	VOLTS DIRECT CURRENT
VFD	VARIABLE FREQUENCY DRIVE
W	WIDE
w/	WITH
WHT	WHITE

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE 10/21/05 PER: LKampolet

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No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	LKC
1	7/11/01	AS BID	
2	10/31/05	RECORD DRAWING	

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Drawn by DCC
Checked by FKP

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

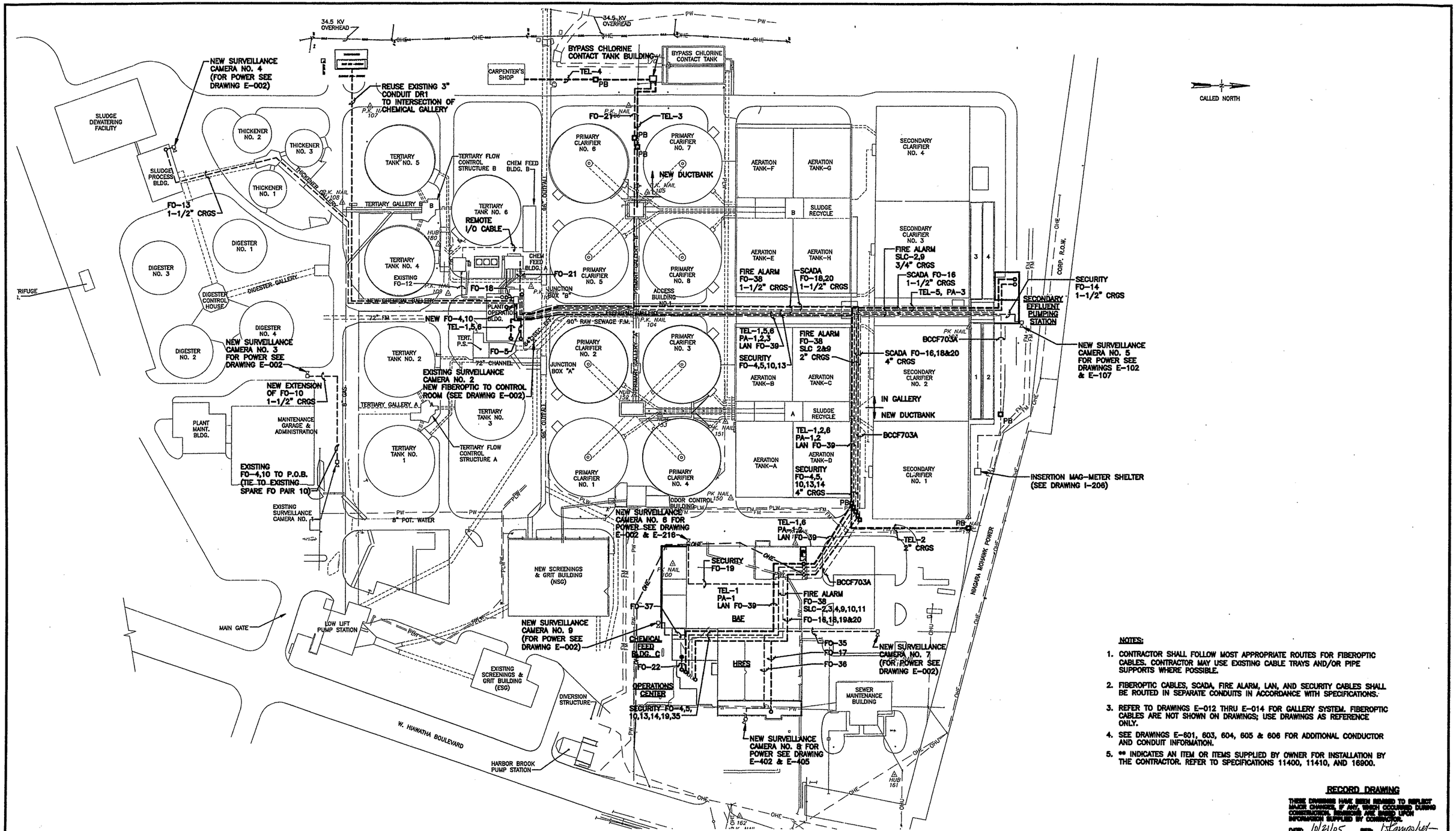
ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

GENERAL NOTES, LEGEND & ABBREVIATIONS
INSTRUMENTATION

STATE OF NEW YORK · LEONARD J. CAMPOLETTA · No. 60765 · LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
LKampolet

I-001



SITE PLAN

SCALE: 1"=80'-0"

NOTES:

1. CONTRACTOR SHALL FOLLOW MOST APPROPRIATE ROUTES FOR FIBEROPTIC CABLES. CONTRACTOR MAY USE EXISTING CABLE TRAYS AND/OR PIPE SUPPORTS WHERE POSSIBLE.
2. FIBEROPTIC CABLES, SCADA, FIRE ALARM, LAN, AND SECURITY CABLES SHALL BE ROUTED IN SEPARATE CONDUITS IN ACCORDANCE WITH SPECIFICATIONS.
3. REFER TO DRAWINGS E-012 THRU E-014 FOR GALLERY SYSTEM. FIBEROPTIC CABLES ARE NOT SHOWN ON DRAWINGS; USE DRAWINGS AS REFERENCE ONLY.
4. SEE DRAWINGS E-601, 603, 604, 605 & 606 FOR ADDITIONAL CONDUCTOR AND CONDUIT INFORMATION.
5. ** INDICATES AN ITEM OR ITEMS SUPPLIED BY OWNER FOR INSTALLATION BY THE CONTRACTOR. REFER TO SPECIFICATIONS 11400, 11410, AND 16900.

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MINOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATED 10/21/05 PER L.T.Campbell

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4/10/01 BBL DCC
05503000/0659I002.DWG

1"=80' 80' 0 80' 160'

No.	Date	Revisions	Init
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ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

CONTROL SYSTEM SITE PLAN

INSTRUMENTATION

STATE OF NEW YORK • LEONARD J. CAMPBELL • No. 60755 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2000

I-002

FIBER OPTIC CABLE NUMBER ASSIGNMENTS

NO.	FROM	TO	REMARKS
FO-1	LINKSYS HUB @ SLUDGE SIDE B	EXISTING SWITCH @ POB CONTROL ROOM	EXISTING TO REMAIN
FO-2	LINKSYS HUB @ SLUDGE SIDE A	EXISTING SWITCH @ POB CONTROL ROOM	EXISTING TO REMAIN
FO-3	LOW LIFT PS	EXISTING SWITCH @ SLUDGE CONTROL ROOM	EXISTING TO REMAIN
FO-3A	SCREEN & GRIT BLDG.	MODBUS/ETHERNET BRIDGE @ SLUDGE BLDG.	EXISTING TO REMAIN
FO-4	SURVEILLANCE CAMERAL NO. 1	OPERATIONS CENTER THIRD FLOOR CR	EXISTING TO REMAIN
FO-5	SURVEILLANCE CAMERAL NO. 2	OPERATIONS CENTER THIRD FLOOR CR	NEW
FO-6	ADMIN. BLDG. ELEVATOR ROOM	EXISTING SWITCH @ SLUDGE CONTROL RM.	
FO-7	ADMIN. BLDG. ELEVATOR ROOM	EXISTING SWITCH @ POB CONTROL ROOM	
FO-8	FIRE ALARM SYSTEM	OPERATIONS CENTER THIRD FLOOR CR	
FO-9	EXISTING SWITCH @ ADMIN. BLDG.	EXISTING ROUTER @ POB CONTROL ROOM	
FO-10	NEW SURVEILLANCE CAMERAL NO. 3	OPERATIONS CENTER THIRD FLOOR CR	NEW/EXISTING TO REMAIN
FO-11	LAN COMMUNICATIONS (POB BASEMENT)	OPERATIONS CENTER THIRD FLOOR CR	NEW
FO-12	GAS COMPRESSOR BLDG.	EXISTING SWITCH @ POB CONTROL ROOM	EXISTING TO REMAIN
FO-13	NEW SURVEILLANCE CAMERAL NO. 4	SLUDGE BUILDING	NEW
FO-14	NEW SURVEILLANCE CAMERAL NO. 5	SEPS	NEW
FO-15	LINKSYS HUB @ SLUDGE BLDG.	EXISTING SWITCH @ SLUDGE CONTROL ROOM	EXISTING TO REMAIN
FO-16	SECONDARY EFFLUENT PS PLC M13	OPERATIONS CENTER THIRD FLOOR CR SWITCH	NEW
FO-17	UV DISINFECT / PARSHALL PLC M14	OPERATIONS CENTER THIRD FLOOR CR SWITCH	NEW
FO-18	EXISTING SWITCH "A" @ POB CONTROL ROOM	OPERATORS CENTER 3rd FLOOR CR SWICH "D"	NEW
FO-19	NEW SURVEILLANCE CAMERAL NO. 6	BAF	NEW
FO-20	MAIN ELECTRIC SUBSTATION	EXISTING SWITCH @ POB CONTROL ROOM	NEW
FO-21	CHLORINE BYPASS BUILDING	CHEMICAL BUILDING "A"	NEW
FO-22	NOT USED		NEW
FO-23	BAF ELECTRIC ROOM PLC M24	OPERATIONS CENTER THIRD FLOOR CR SWITCH	NEW
FO-31	BAF/HRFS CONTROL PANEL HUB	OPERATIONS CENTER THIRD FLOOR CR SWITCH	NEW
FO-32	BAF/HRFS CONTROL PANEL HUB	BAF VIEW PC AT OPERATIONS CENTER THIRD FLOOR CR	NEW
FO-33	BAF/HRFS CONTROL PANEL HUB	OPERATIONS CENTER THIRD FLOOR CR SWITCH	NEW
FO-34	BAF/HRFS CONTROL PANEL HUB	HRFS VIEW PC AT OPERATIONS CENTER THIRD FLOOR CR	NEW
FO-35	NEW SURVEILLANCE CAMERAL NO. 7	BAF	NEW
FO-36	NEW SURVEILLANCE CAMERAL NO. 8	UV	NEW
FO-37	NEW SURVEILLANCE CAMERAL NO. 9	BAF	NEW

FIBER OPTIC CABLE NOTES:

1. EXISTING FIBER OPTIC CABLE TO POB 3rd FLOOR CONTROL ROOM. SWITCH "A" TO REMAIN IN POB CONTROL ROOM.
2. GENERALLY ALL ETHERNET CONNECTIONS LONGER THAN 100 FEET SHALL UTILIZE FIBER OPTIC CABLE.

PLC NUMBERING ASSIGNMENTS

NO.	LOCATION	PROVIDED BY	REMARKS
PLC-M01	SLUDGE PROCESSING BUILDING 2nd FLOOR	EXISTING (SI)	
PLC-M01B	SLUDGE PROCESSING BLDG. - 2nd FLOOR REM I/O	EXISTING (SI)	
PLC-M02	LOW LIFT PUMP STATION	EXISTING (SI)	
PLC-M03	SLUDGE RECYCLE BUILDING "A"	EXISTING (SI)	
PLC-M04	SLUDGE RECYCLE BUILDING "B"	EXISTING (SI)	
PLC-M05	POB 3rd FLOOR CONTROL ROOM MUX 5	EXISTING (SI)	
PLC-M06	POB 3rd FLOOR CONTROL ROOM MUX 6	EXISTING (SI)	
PLC-M07	SLUDGE DEWATERING FIRST FLOOR (MODICON #1)	EXISTING	
PLC-M08	DIGESTER CONTROL HOUSE (MODICON #2)	EXISTING	
PLC-M09	SCREEN & GRIT BUILDING (MODICON #3)	EXISTING	
PLC-M10	AERATION SIDE "A"	EXISTING	
PLC-M11	AERATION SIDE "B"	EXISTING	
PLC-M12	"NOT ASSIGNED"		
PLC-M13	SECONDARY EFFLUENT PUMP STATION	CONTRACT 4B - ELECTRIC	W/LOCAL PANELVIEW
PLC-M14	UV DISINFECT / PARSHALL FLUME	CONTRACT 4A - GENERAL	W/LOCAL AND REMOTE PANELVIEW
PLC-M15	"NOT ASSIGNED"		
PLC-M16	CHEMICAL BUILDING "C"	CONTRACT 4B - ELECTRIC	
PLC-M17A/B/C	HRFS / BAF CONTROL PANEL (HRFS SECTION)	OWNER (US FILTER / KRUGER)	W/LOCAL PANELVIEW
PLC-M18	M12000 CHEMICAL FEED CONTROL PANEL	OWNER (US FILTER / KRUGER)	W/LOCAL PANELVIEW
PLC-M19A/B/C	HRFS / BAF CONTROL PANEL (BAF SECTION)	OWNER (US FILTER / KRUGER)	W/LOCAL PANELVIEW
PLC-M20A	GAS COMPRESSOR BLDG.	EXISTING	W/LOCAL PANELVIEW
PLC-M20B	CHEMICAL BUILDING "B"	EXISTING	W/LOCAL PANELVIEW
PLC-M20C	CHEMICAL BUILDING "A"	CONTRACT 4B - ELECTRICAL	W/LOCAL PANELVIEW
PLC-M20D	CHLORINE BYPASS BLDG.	CONTRACT 4B - ELECTRICAL	W/LOCAL PANELVIEW
PLC-M21	BLOWER ROOM CONTROL PANEL	OWNER (US FILTER / KRUGER)	W/LOCAL PANELVIEW
PLC-M22	BLOWER ROOM CONTROL PANEL	OWNER (US FILTER / KRUGER)	W/LOCAL PANELVIEW
PLC-M23	POB 4th FLOOR - BURNET AVE DIAL-UP	EXISTING	W/LOCAL PANELVIEW
PLC-M24	BAF ELECTRIC ROOM	CONTRACT 4B - ELECTRICAL	W/LOCAL PANELVIEW

OPERATOR INTERFACE TERMINAL (OIT) AND SUPPORT EQUIPMENT NUMBERING

NO.	LOCATION	RESPONSIBILITY	REMARKS
DEWATER 1 VIEW	SLUDGE DEWATERING CONTROL ROOM	EXISTING (SI)	
DEWATER 2 VIEW	SLUDGE DEWATERING CONTROL ROOM	EXISTING (SI)	
METRO 1A SERVER	OPERATIONS CENTER SCADA ROOM	EXISTING (SI)	SEE NOTE 1
METRO 1B SERVER	OPERATIONS CENTER SCADA ROOM	EXISTING (SI)	SEE NOTE 1
METRO SQL SERVER	OPERATIONS CENTER SCADA ROOM	EXISTING (SI)	SEE NOTE 1
NETWORK ADMIN	ADMINISTRATION BUILDING	EXISTING (SI)	
METRO 2 VIEW	OPERATIONS CENTER CONTROL ROOM	EXISTING (SI)	SEE NOTE 1
METRO 3 VIEW	OPERATIONS CENTER LAB (OC-304)	EXISTING (SI)	SEE NOTE 1
HIAWATHA 1 VIEW	OPERATIONS CENTER CONTROL ROOM	EXISTING	SEE NOTE 1
FRANKLIN/BURNET 1 VIEW	OPERATIONS CENTER CONTROL ROOM	EXISTING	SEE NOTE 1
BAF VIEW	OPERATIONS CENTER CONTROL ROOM	US FILTER (KRUGER)	SEE NOTE 2
HRFS VIEW	OPERATIONS CENTER CONTROL ROOM	US FILTER (KRUGER)	SEE NOTE 2
METRO 4 VIEW	OPERATIONS CENTER OFFICE (OC-305)	CONTRACT 4B - ELECTRICAL	
LARGE SCREEN 1	OPERATIONS CENTER CONTROL ROOM	CONTRACT 4B - ELECTRICAL	
LARGE SCREEN 2	OPERATIONS CENTER CONTROL ROOM	CONTRACT 4B - ELECTRICAL	
DDC SYSTEM	OPERATIONS CENTER SCADA ROOM	CONTRACT 4C - HVAC	SEE NOTE 3
CISCO 4500 ROUTER	POB 3rd FLOOR CONTROL ROOM	EXISTING (SI)	TO REMAIN
24 PORT SWITCH "A"	POB 3rd FLOOR CONTROL ROOM	EXISTING (SI)	TO REMAIN
24 PORT SWITCH "B"	SLUDGE DEWATERING CONTROL ROOM	EXISTING (SI)	TO REMAIN
24 PORT SWITCH "C"	ADMINISTRATION BLDG.	EXISTING (SI)	TO REMAIN
24 PORT SWITCH "D"	OPERATIONS CONTROL ROOM	CONTRACT 4B - ELECTRICAL	
ENERGY MANAGE. SERVICER	OPERATIONS CENTER SCADA ROOM	CONTRACT 4B - ELECTRICAL	

OIT AND SUPPORT EQUIPMENT NOTES:

1. UNDER CONTRACT 4B - ELECTRICAL, THIS EQUIPMENT WILL BE RELOCATED FROM THE PLANT OPERATIONS BUILDING (POB) 3rd FLOOR CONTROL ROOM TO THE OPERATIONS CENTER CONTROL ROOM. STARTUP AND TESTING BY CONTRACT 4B - ELECTRICAL
2. THIS EQUIPMENT SHALL BE PROVIDED BY THE OWNER THROUGH US FILTER (KRUGER). IT WILL BE INSTALLED AND INTERCONNECTED BY CONTRACT 4B - ELECTRICAL. STARTUP AND TESTING BY THE OWNER THROUGH US FILTER (KRUGER) WITH THE ASSISTANCE OF CONTRACT 4B - ELECTRICAL.
3. THIS EQUIPMENT SHALL BE PROVIDED BY CONTRACT 4C - HVAC. CONTRACT 4B - ELECTRICAL SHALL PROVIDE INTERCONNECTING CABLING, AS SHOWN

RECORD DRAWING

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DATE 10/21/05 PER LCampolieti

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1	7/11/01	AS BID	↓
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Drawn by CRV
Checked by SAT

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

TEL

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

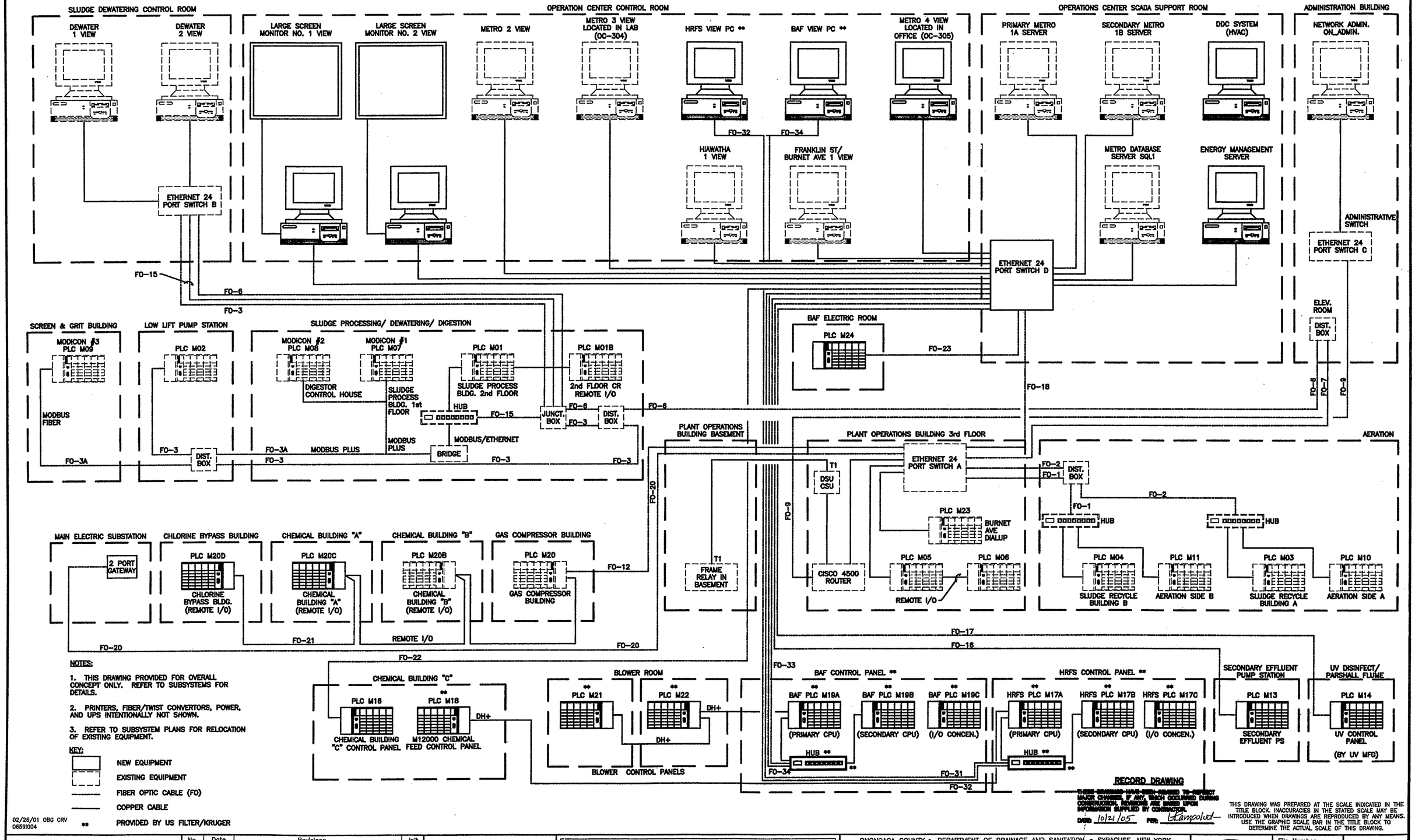
SCADA SYSTEM NOTES AND SCHEDULES

INSTRUMENTATION

LICENSED PROFESSIONAL ENGINEER • STATE OF NEW YORK • LEONARD J. CAMPOLIETI • No. 60761

File Number 00659
Date APRIL 2001
LCampolieti

I-003



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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

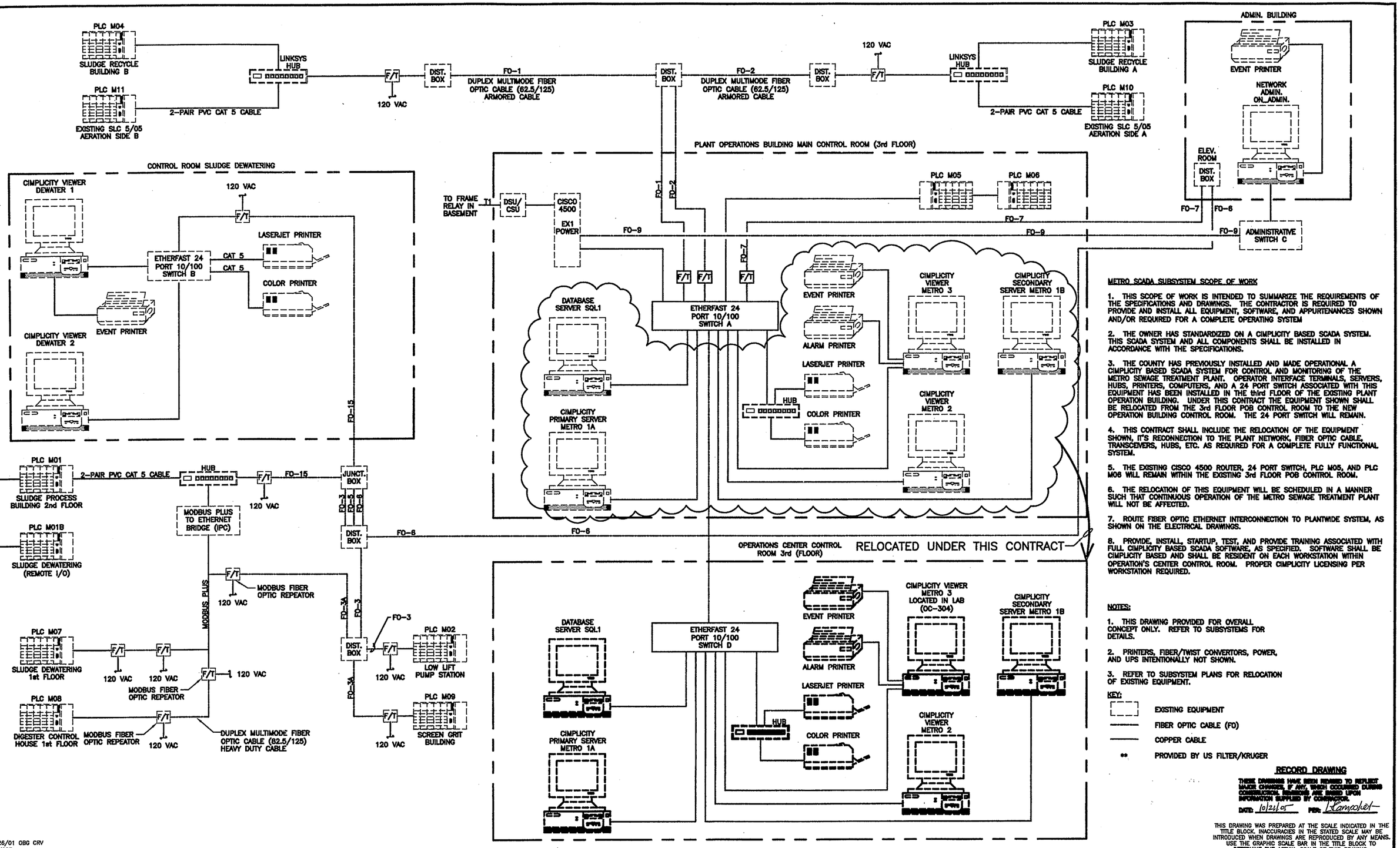
SCADA SYSTEM SCHEMATIC OVERALL ONELINE

INSTRUMENTATION

STATE OF NEW YORK · LEONARDO J. CAMPOLIETA · No. 80756 · LICENSED PROFESSIONAL ENGINEER

File Number 06591004
Date APRIL 2001
L.Campolieti

I-004



02/26/01 OBG CRV
06591005

METRO SCADA SUBSYSTEM SCOPE OF WORK

1. THIS SCOPE OF WORK IS INTENDED TO SUMMARIZE THE REQUIREMENTS OF THE SPECIFICATIONS AND DRAWINGS. THE CONTRACTOR IS REQUIRED TO PROVIDE AND INSTALL ALL EQUIPMENT, SOFTWARE, AND APPURTENANCES SHOWN AND/OR REQUIRED FOR A COMPLETE OPERATING SYSTEM

2. THE OWNER HAS STANDARDIZED ON A CIMPLICITY BASED SCADA SYSTEM. THIS SCADA SYSTEM AND ALL COMPONENTS SHALL BE INSTALLED IN ACCORDANCE WITH THE SPECIFICATIONS.

3. THE COUNTY HAS PREVIOUSLY INSTALLED AND MADE OPERATIONAL A CIMPLICITY BASED SCADA SYSTEM FOR CONTROL AND MONITORING OF THE METRO SEWAGE TREATMENT PLANT. OPERATOR INTERFACE TERMINALS, SERVERS, HUBS, PRINTERS, COMPUTERS, AND A 24 PORT SWITCH ASSOCIATED WITH THIS EQUIPMENT HAS BEEN INSTALLED IN THE third FLOOR OF THE EXISTING PLANT OPERATION BUILDING. UNDER THIS CONTRACT THE EQUIPMENT SHOWN SHALL BE RELOCATED FROM THE 3rd FLOOR POB CONTROL ROOM TO THE NEW OPERATION BUILDING CONTROL ROOM. THE 24 PORT SWITCH WILL REMAIN.

4. THIS CONTRACT SHALL INCLUDE THE RELOCATION OF THE EQUIPMENT SHOWN, IT'S RECONNECTION TO THE PLANT NETWORK, FIBER OPTIC CABLE, TRANSCEIVERS, HUBS, ETC. AS REQUIRED FOR A COMPLETE FULLY FUNCTIONAL SYSTEM.

5. THE EXISTING CISCO 4500 ROUTER, 24 PORT SWITCH, PLC M05, AND PLC M06 WILL REMAIN WITHIN THE EXISTING 3rd FLOOR POB CONTROL ROOM.

6. THE RELOCATION OF THIS EQUIPMENT WILL BE SCHEDULED IN A MANNER SUCH THAT CONTINUOUS OPERATION OF THE METRO SEWAGE TREATMENT PLANT WILL NOT BE AFFECTED.

7. ROUTE FIBER OPTIC ETHERNET INTERCONNECTION TO PLANTWIDE SYSTEM, AS SHOWN ON THE ELECTRICAL DRAWINGS.

8. PROVIDE, INSTALL, STARTUP, TEST, AND PROVIDE TRAINING ASSOCIATED WITH FULL CIMPLICITY BASED SCADA SOFTWARE, AS SPECIFIED. SOFTWARE SHALL BE CIMPLICITY BASED AND SHALL BE RESIDENT ON EACH WORKSTATION WITHIN OPERATION'S CENTER CONTROL ROOM. PROPER CIMPLICITY LICENSING PER WORKSTATION REQUIRED.

NOTES:

1. THIS DRAWING PROVIDED FOR OVERALL CONCEPT ONLY. REFER TO SUBSYSTEMS FOR DETAILS.

2. PRINTERS, FIBER/TWIST CONVERTORS, POWER, AND UPS INTENTIONALLY NOT SHOWN.

3. REFER TO SUBSYSTEM PLANS FOR RELOCATION OF EXISTING EQUIPMENT.

KEY:

- EXISTING EQUIPMENT
- FIBER OPTIC CABLE (FO)
- COPPER CABLE
- ** PROVIDED BY US FILTER/KRUGER

RECORD DRAWING

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DATED: 10/21/05 PER: L.Kampoliet

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ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

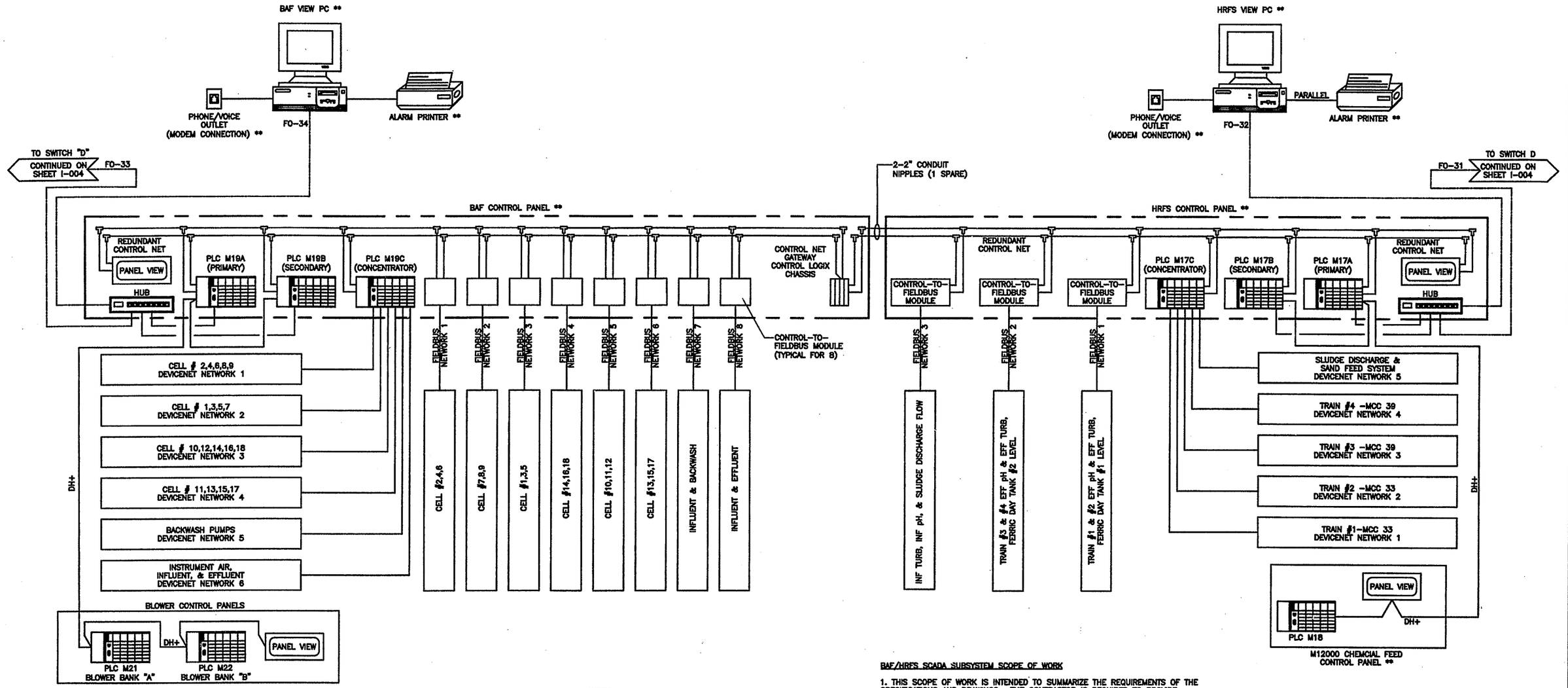
SCADA SYSTEM SCHEMATIC COUNTYWIDE SUBSYSTEM

INSTRUMENTATION

STATE OF NEW YORK · LEONARD J. CAMPOLIETA · No. 60751 · LICENSED PROFESSIONAL ENGINEER

File Number 06591005
Date APRIL 2001
L.Kampoliet

I-005



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3. REFER TO SUBSYSTEM PLANS FOR RELOCATION OF EXISTING EQUIPMENT.

KEY:

- EXISTING EQUIPMENT
- FIBER OPTIC CABLE (FO)
- COPPER CABLE
- ** PROVIDED BY US FILTER/KRUGER

BAF/HRFS SCADA SUBSYSTEM SCOPE OF WORK

1. THIS SCOPE OF WORK IS INTENDED TO SUMMARIZE THE REQUIREMENTS OF THE SPECIFICATIONS AND DRAWINGS. THE CONTRACTOR IS REQUIRED TO PROVIDE AND INSTALL ALL EQUIPMENT, SOFTWARE, AND APPURTENANCES SHOWN AND/OR REQUIRED FOR A COMPLETE OPERATING SYSTEM.
2. THE OWNER HAS STANDARDIZED ON A CIMPLICITY BASED SCADA SYSTEM. THIS SCADA SYSTEM AND ALL COMPONENTS SHALL BE INSTALLED IN ACCORDANCE WITH THE SPECIFICATIONS.
3. THE COUNTY HAS PREVIOUSLY CONTRACTED FOR A CIMPLICITY / A-B PLC BASED BAF / HRFS SCADA SUBSYSTEM WITH US FILTER / KRUGER. CONTRACT 4B ELECTRICAL SHALL INCLUDE THE INSTALLATION OF THE VARIOUS COMPONENTS ASSOCIATED WITH THIS SYSTEM INCLUDING, BUT NOT LIMITED TO ,THE TWO OPERATOR INTERFACE TERMINALS (OITs), PRINTERS, HUBS, TRANSCIEVERS, CONVERTERS, BAF/HRFS CONTROL PANEL, FIBER OPTIC AND COPPER INTERCONNECTION CABLES, SIGNAL WIRE, CONDUIT, ETC.
4. THIS CONTRACT SHALL INCLUDE THE INSTALLATION OF THE EQUIPMENT SHOWN, IT'S CONNECTION TO THE PLANT NETWORK, FIBER OPTIC CABLE, TRANSCEIVERS, CONVERTERS, HUBS, ETC. AS REQUIRED FOR A COMPETE FULLY FUNCTIONAL SYSTEM.
5. ROUTE FIBER OPTIC ETHERNET INTERCONNECTION TO PLANTWIDE SYSTEM, AS SHOWN ON THE ELECTRICAL DRAWINGS.
6. PROVIDE, INSTALL, AND ASSIST THE OWNER'S VENDOR (US FILTER / KRUGER) IN THE STARTUP, TESTING, AND TRAINING ASSOCIATED WITH THIS EQUIPMENT.

NOTE:
PROVIDED BY US FILTER/KRUGER INSTALLED UNDER CONTRACT NO. 4B UNLESS OTHERWISE NOTED.

RECORD DRAWING

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DATE: 10/21/05 PER: L.Rampolot

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04/10/01 OBG CRV
06591006

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Designed by PLD
Drawn by CRV
Checked by SAT

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

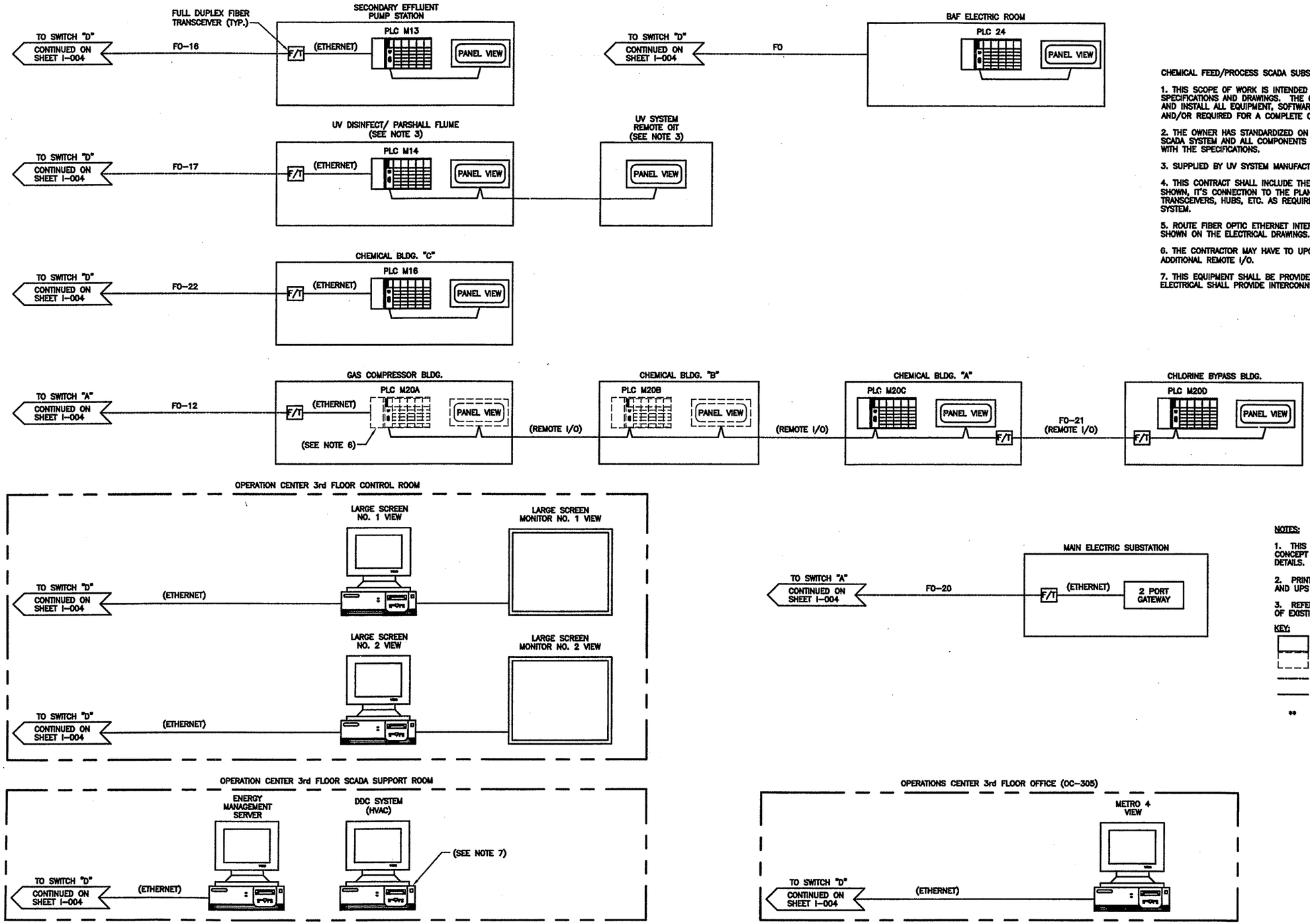
SCADA SYSTEM SCHEMATIC BAF/HRFS SUBSYSTEM

INSTRUMENTATION

LEONARD J. CAMPOLIETI LICENSED PROFESSIONAL ENGINEER No. 60755 STATE OF NEW YORK

File Number 06591006
Date APRIL 2001
L.Rampolot

I-006



CHEMICAL FEED/PROCESS SCADA SUBSYSTEM SCOPE OF WORK

1. THIS SCOPE OF WORK IS INTENDED TO SUMMARIZE THE REQUIREMENTS OF THE SPECIFICATIONS AND DRAWINGS. THE CONTRACTOR IS REQUIRED TO PROVIDE AND INSTALL ALL EQUIPMENT, SOFTWARE, AND APPURTENANCES SHOWN AND/OR REQUIRED FOR A COMPLETE OPERATING SYSTEM.

2. THE OWNER HAS STANDARDIZED ON A CIMPLICITY BASED SCADA SYSTEM. THIS SCADA SYSTEM AND ALL COMPONENTS SHALL BE INSTALLED IN ACCORDANCE WITH THE SPECIFICATIONS.

3. SUPPLIED BY UV SYSTEM MANUFACTURER.

4. THIS CONTRACT SHALL INCLUDE THE INSTALLATION OF THE EQUIPMENT SHOWN, IT'S CONNECTION TO THE PLANT NETWORK, FIBER OPTIC CABLE, TRANSCEIVERS, HUBS, ETC. AS REQUIRED FOR A COMPLETE FULLY FUNCTIONAL SYSTEM.

5. ROUTE FIBER OPTIC ETHERNET INTERCONNECTION TO PLANTWIDE SYSTEM, AS SHOWN ON THE ELECTRICAL DRAWINGS.

6. THE CONTRACTOR MAY HAVE TO UPGRADE THE PLC IN ORDER TO SUPPORT ALL ADDITIONAL REMOTE I/O.

7. THIS EQUIPMENT SHALL BE PROVIDED BY CONTRACT 4C – HVAC. CONTRACT 4B – ELECTRICAL SHALL PROVIDE INTERCONNECTING CABLING, AS SHOWN.

NOTES:

1. THIS DRAWING PROVIDED FOR OVERALL CONCEPT ONLY. REFER TO SUBSYSTEMS FOR DETAILS.

2. PRINTERS, FIBER/TWIST CONVERTORS, POWER, AND UPS INTENTIONALLY NOT SHOWN.

3. REFER TO SUBSYSTEM PLANS FOR RELOCATION OF EXISTING EQUIPMENT.

KEY:

- NEW EQUIPMENT
- EXISTING EQUIPMENT
- FIBER OPTIC CABLE (FO)
- COPPER CABLE
- ** PROVIDED BY US FILTER/KRUGER

NOTE:
PROVIDED AND INSTALLED UNDER CONTRACT NO. 4B UNLESS OTHERWISE NOTED.

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATED 10/21/05 PER L.Rampulet

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02/26/01 OBG CRV
06591007

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1	7/11/01	AS BID	
2	10/31/05	RECORD DRAWING	

In charge of PLD
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Drawn by CRV
Checked by SAT

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

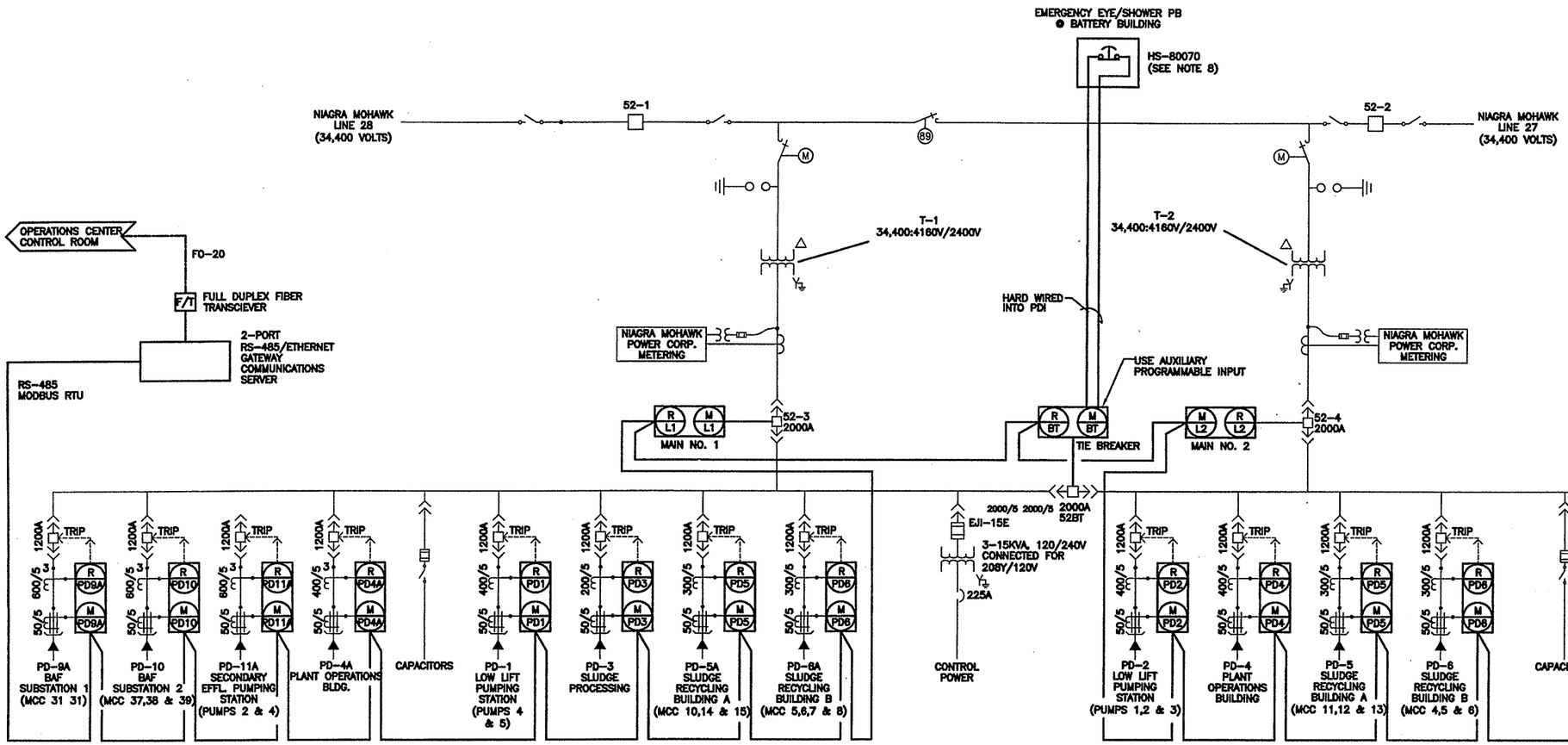
SCADA SYSTEM SCHEMATIC CHEMICAL FEED/PROCESS SUBSYSTEM

INSTRUMENTATION

LEONARD J. CAMPOLIETI — STATE OF NEW YORK — No. 60756 — LICENSED PROFESSIONAL ENGINEER

File Number 06591007
Date APRIL 2001
L.Rampulet

I-007



ENERGY MANAGEMENT SCADA SUBSYSTEM SCOPE OF WORK

1. THIS SCOPE OF WORK IS INTENDED TO SUMMARIZE THE REQUIREMENTS OF THE SPECIFICATION AND DRAWINGS. THE CONTRACTOR IS REQUIRED TO PROVIDE AND INSTALL ALL EQUIPMENT, SOFTWARE, AND APPURTENANCES SHOWN AND/OR REQUIRED FOR A COMPLETE OPERATING SYSTEM.
2. THE OWNER HAS STANDARDIZED ON A CIMPLICITY BASED ENERGY MANAGEMENT SOFTWARE. THE ENERGY MANAGEMENT SOFTWARE SHALL BE GE'S POWER MANAGEMENT CONTROL SYSTEM (PMCS) IN ACCORDANCE WITH THE SPECIFICATIONS.
3. PROVIDE AND INSTALL FEEDER PROTECTION RELAYS AT INDIVIDUAL 4160 VOLT FEEDER BREAKERS AT MAIN SUBSTATION. RELAYS SHALL BE CAPABLE OF COMMUNICATING WITH THE SPECIFIED ENERGY MANAGEMENT SOFTWARE (GE PMCS) VIA A RS485 LINK. COMMUNICATION RELAYS ARE SPECIFIED AND SHOWN ON THE ELECTRICAL CONTRACT DRAWINGS (SEE SHEET E-005).
4. PROVIDE AND INSTALL 2-PORT RS-485 / ETHERNET GATEWAY REMOTE COMMUNICATIONS SERVERS AS SHOWN. LOCATE WITHIN SUBSTATION SWITCHGEAR IN ACCORDANCE w/SPECIFICATION 16350.
5. PROVIDE AND INSTALL AN ETHERNET HUB AND ASSOCIATED COPPER/FIBER OPTIC FULL DUPLEX TRANSCEIVER WITHIN THE SUBSTATION SWITCHGEAR IN ACCORDANCE w/SPECIFICATION 16350.
6. ROUTE FIBER OPTIC ETHERNET INTERCONNECTION TO PLANTWIDE SYSTEM, AS SHOWN ON THE ELECTRICAL DRAWINGS.
7. PROVIDE, INSTALL, STARTUP, TESTING, AND TRAINING ASSOCIATED WITH FULL CIMPLICITY BASED ENERGY MANAGEMENT SOFTWARE, AS SPECIFIED. SOFTWARE SHALL BE CIMPLICITY BASED AND SHALL BE RESIDENT ON THE ENERGY MANAGEMENT SERVER WITHIN OPERATION'S CENTER SCADA SUPPORT ROOM.
8. AT BATTERY BUILDING PROVIDE EMERGENCY EYEWASH PB (MUSHROOM HEAD) ADJACENT TO EYEWASH W/ 12"x12" LAMACOID LABEL. CONNECT TO POWER MONITORING RELAY "BACKEND I/O INPUT" AS SHOWN.

KEY:

———— FIBER OPTIC CABLE (FO)

———— COPPER CABLE

NOTE:
PROVIDED AND INSTALLED UNDER
CONTRACT NO. 4B

RECORD DRAWING

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DATE: 10/21/05 PER: L.Kampolier

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06591008

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

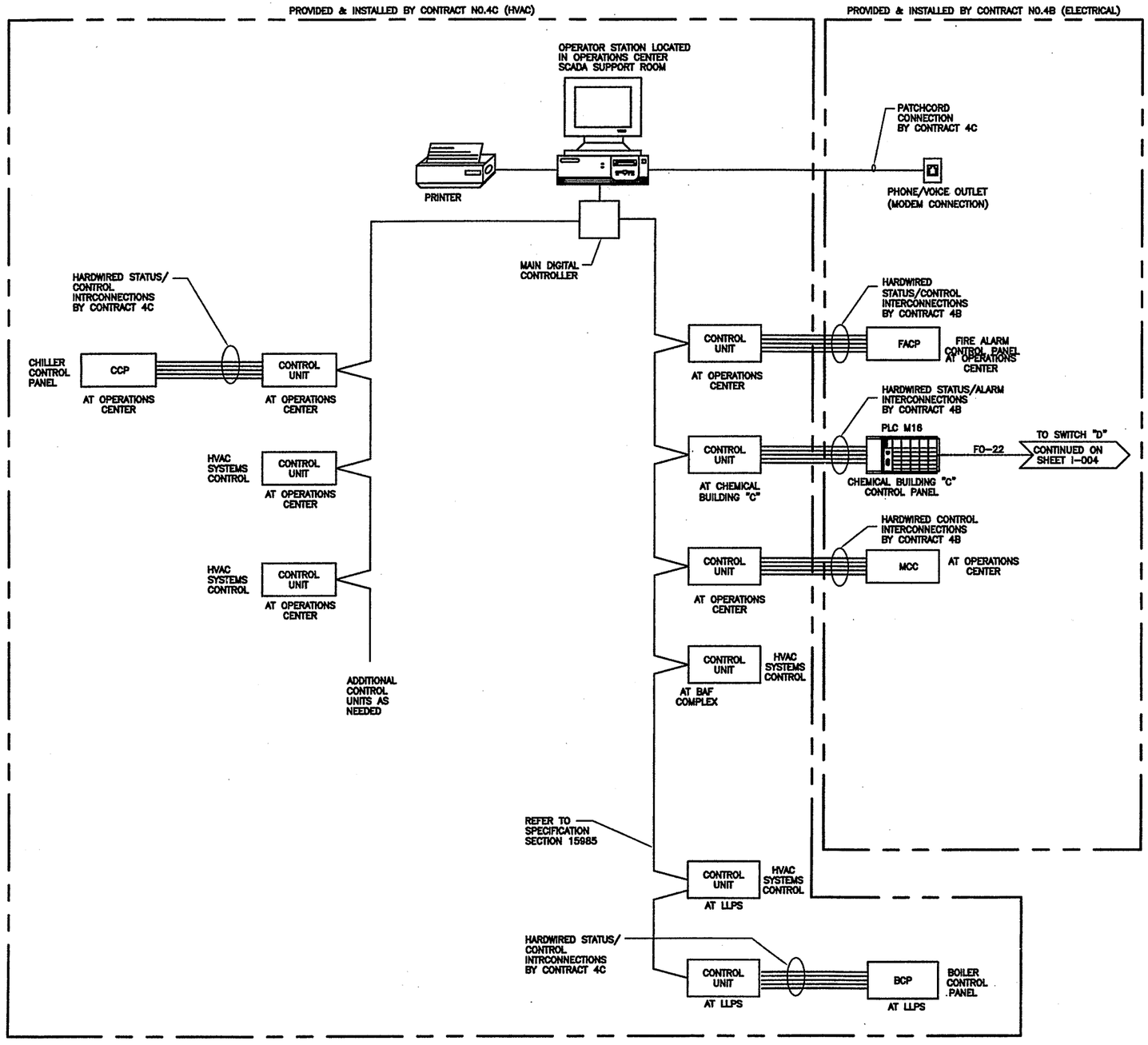
SCADA SYSTEM
ENERGY MANAGEMENT SUBSYSTEM

ELECTRICAL

STATE OF NEW YORK · LEONARD J. CAMPOLIETA · No. 60751 · LICENSED PROFESSIONAL ENGINEER

File Number 006591008
Date APRIL 2001
L.Kampolieta

I-008



HVAC DIRECT CONTROL (DDC) SCADA SUBSYSTEM SCOPE OF WORK

1. THIS SCOPE OF WORK IS INTENDED TO SUMMARIZE THE REQUIREMENTS OF THE SPECIFICATION AND DRAWINGS. THE CONTRACTOR IS REQUIRED TO PROVIDE AND INSTALL ALL EQUIPMENT, SOFTWARE, AND APPURTENANCES SHOWN AND/OR REQUIRED FOR A COMPLETE OPERATING SYSTEM.

2. THE BUILDING MANAGEMENT SUPERVISORY CONTROL AND DATA ACQUISITION SYSTEM SHALL BE A SEPARATE STAND-ALONE SYSTEM PROVIDED AND INSTALLED BY CONTRACT 4C – HVAC. THE BUILDING MANAGEMENT SYSTEM SHALL INTERFACE WITH THE OVERALL PLANTWIDE SCADA SYSTEM THROUGH A HARDWIRED INTERCONNECTION TO BE PROVIDED AND INSTALLED BY CONTRACT 4B – ELECTRICAL, AS SHOWN.

3. PROVIDE HARDWIRED INTERCONNECTION BETWEEN PLC M16 AND BUILDING MANAGEMENT LOCAL CONTROL UNIT, AS SHOWN.

4. ACTUAL BUILDING MANAGEMENT SYSTEM COMPONENTS AND CONNECTIONS SHALL BE AS SPECIFIED UNDER DIVISION 15 AND SHOWN ON "H" SHEETS.

5. CIMPLICITY BASED ALARM AND STATUS SCREENS FOR MONITORED POINTS AND ALARMS SHALL BE RESIDENT ON EACH WORKSTATION WITHIN OPERATIONS CENTER CONTROL ROOM.

6. PROVIDE, INSTALL, STARTUP, TEST, AND PROVIDE TRAINING ASSOCIATED INTERCONNECTION OF PLANTWIDE SCADA SYSTEM AND DIRECT DIGITAL CONTROL SYSTEM.

7. DDC SYSTEM (HVAC) OIT IS TO BE LOCATED IN THE OPERATION CENTER SCADA SUPPORT ROOM.

8. ACTUAL HVAC DDC SYSTEM COMPONENTS AND CONNECTIONS SHALL BE AS SPECIFIED UNDER DIVISION 15 AND SHOWN ON "H" SHEETS.

9. REFER TO DRAWING G-004 FOR PLANT LAYOUT AND BUILDING LOCATIONS.

LEGEND

LLPS– LOW-LIFT PUMP STATION
MCC– MOTOR CONTROL CENTER
PLC– PROGRAMMABLE LOGIC CONTROLLER
SCADA– SUPERVISORY CONTROL AND DATA ACQUISITION

KEY:

——— FIBER OPTIC CABLE (FO)
——— COPPER CABLE

RECORD DRAWING

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

SCADA SYSTEM SCHEMATIC HVAC DIRECT DIGITAL CONTROL SUBSYSTEM

INSTRUMENTATION

STATE OF NEW YORK • LEONARD J. CAMPOLIETI • No. 60758 • LICENSED PROFESSIONAL ENGINEER

File Number 06591009
Date APRIL 2001
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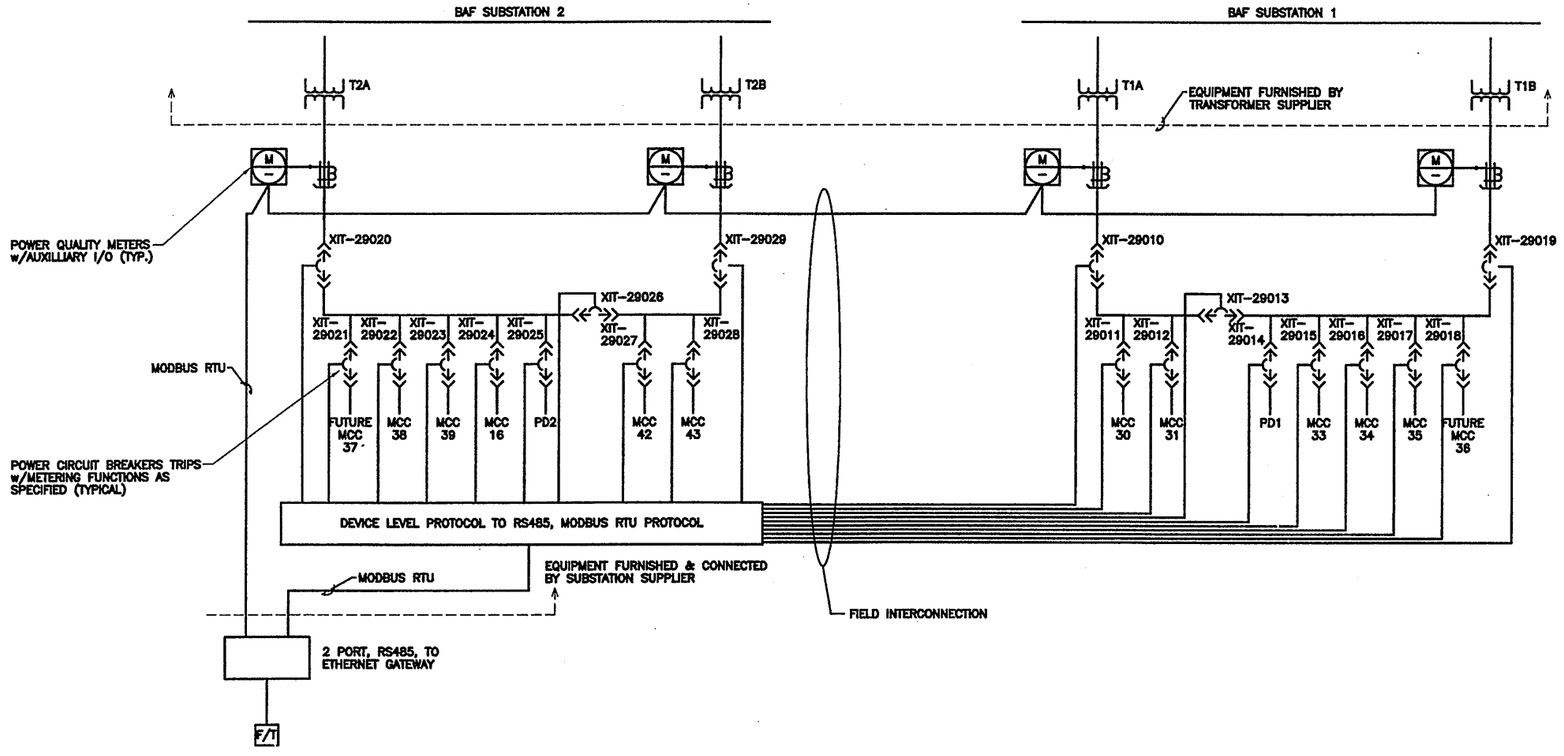
I-009



ENERGY MANAGEMENT SCADA SUBSYSTEM SCOPE OF WORK

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3. PROVIDE AND INSTALL FEEDER PROTECTION RELAYS AT INDIVIDUAL BREAKERS AS SHOWN. RELAYS SHALL BE CAPABLE OF COMMUNICATING WITH THE SPECIFIED ENERGY MANAGEMENT SOFTWARE (GE PMCS) VIA A RS485 LINK.
4. PROVIDE AND INSTALL DEVICE LEVEL PROTOCOL TO RS485, MODBUS RTU PROTOCOL AS SHOWN.
5. PROVIDE AND INSTALL AN ETHERNET HUB AND ASSOCIATED COPPER/FIBER OPTIC FULL DUPLEX TRANSCEIVER WITHIN THE SUBSTATION SWITCHGEAR IN ACCORDANCE w/SPECIFICATION 16350.
6. ROUTE FIBER OPTIC ETHERNET INTERCONNECTION TO PLANTWIDE SYSTEM, AS SHOWN ON THE ELECTRICAL DRAWINGS.
7. PROVIDE, INSTALL, STARTUP, TESTING, AND TRAINING ASSOCIATED WITH FULL CIMPLICITY BASED ENERGY MANAGEMENT SOFTWARE, AS SPECIFIED. SOFTWARE SHALL BE CIMPLICITY BASED AND SHALL BE RESIDENT ON THE ENERGY MANAGEMENT SERVER WITHIN OPERATION'S CENTER SCADA SUPPORT ROOM.

KEY:

——— FIBER OPTIC CABLE (FO)

——— COPPER CABLE

NOTE:
PROVIDED AND INSTALLED UNDER CONTRACT NO. 4B

RECORD DRAWING

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

SCADA SYSTEM BAF ELECTRIC ROOM ENERGY MANAGEMENT SUBSYSTEM

INSTRUMENTATION

STATE OF NEW YORK • LEONARD J. CAMPOLIETA • No. 60755 • LICENSED PROFESSIONAL ENGINEER

File Number 006591010
Date APRIL 2001
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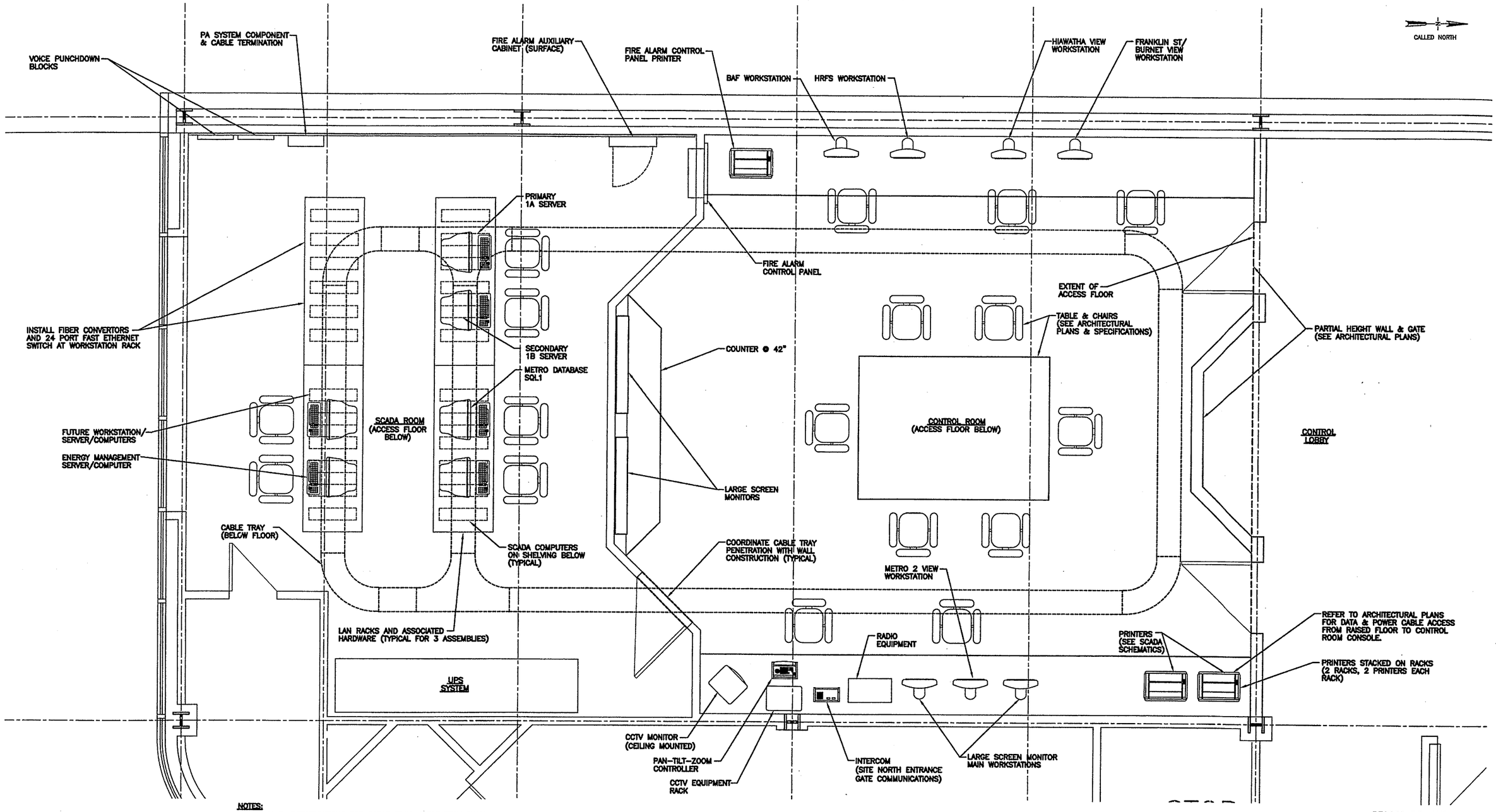
I-010



NOTES:

1. REFER TO SPECIFICATIONS FOR CABLE TRAY, CABLE TRAY SHALL BE 12"Wx3" DEEP.
2. REFER TO SPECIFICATION SECTION 17022 FOR 3-LAN RACKS AND 8-SCADA ROOM CHAIRS TO BE LOCATED IN SCADA ROOM. REFER TO SECTION 16760 FOR TELECOMMUNICATIONS RACKS.
3. SCADA SYSTEM COMPUTERS SHALL BE LOCATED ON LAN RACKS IN SCADA ROOM. PROVIDE CABLES & ASSOCIATED HARDWARE TO MONITORS, KEYBOARDS, & ASSOCIATED COMPONENTS.

RECORD DRAWING

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DATE 10/21/05 PER: [signature]

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

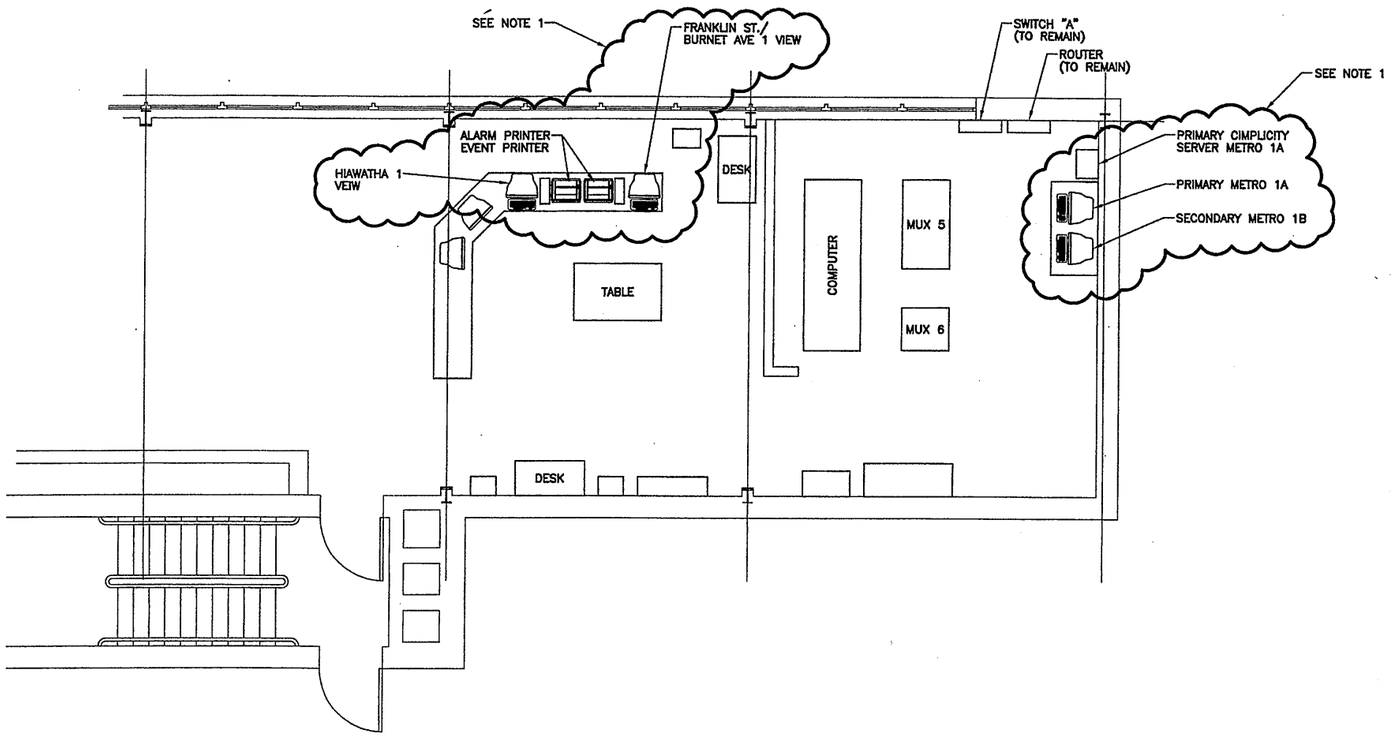
OPERATIONS CENTER
CONTROL ROOM LAYOUT

INSTRUMENTATION

LICENSED PROFESSIONAL ENGINEER · LEONARD J. CAMPOLIETI · No. 60755 · STATE OF NEW YORK

File Number 00659
Date APRIL 2001

I-011



EXISTING CONTROL ROOM PLAN
SCALE: 1/4"=1'-0"

NOTES:

1. EQUIPMENT TO BE RELOCATED TO NEW OPERATIONS CENTER CONTROL ROOM BY CONTRACT 4B-ELECTRICAL.
2. REFER TO DWG. I-004 FOR NETWORKING DETAILS AND SPEC SECTION 17021 FOR EQUIPMENT RELOCATION DETAILS.

RECORD DRAWING

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DATED 10/21/05 PER L.Rampoldi

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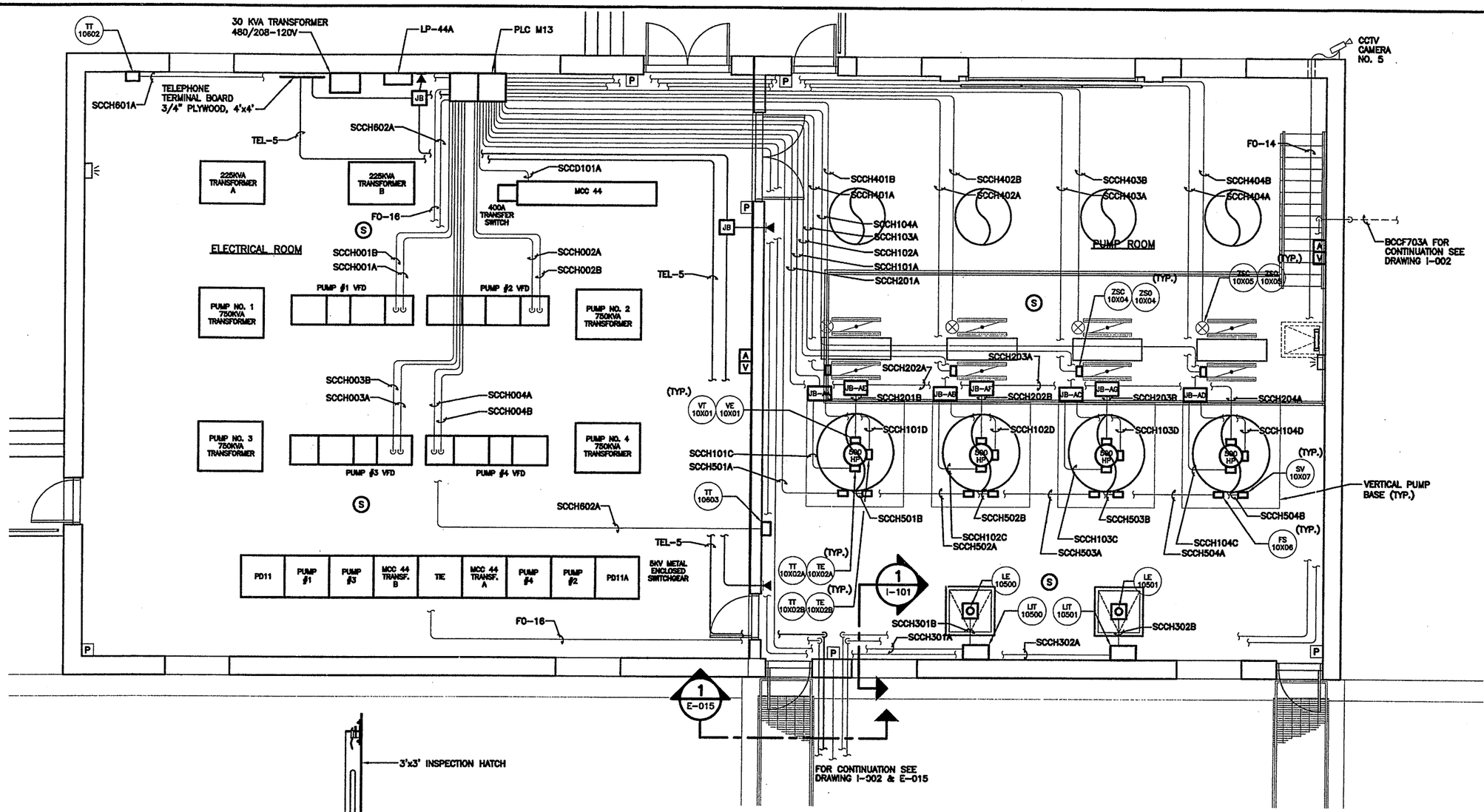
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
PLANT OPERATIONS BLDG. CONTROL ROOM LAYOUT
DEMOLITION PLAN
INSTRUMENTATION

STATE OF NEW YORK • LICENSED PROFESSIONAL ENGINEER • LEONARD J. CAMPOLIETI No. 50755

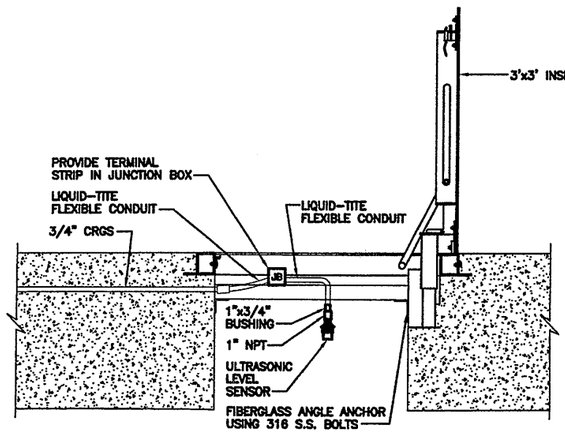
File Number 00659
Date APRIL 2001
L.Rampoliet

I-012



SECONDARY EFFLUENT PUMPING STATION PLAN

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



EFFLUENT PUMPING STATION LEVEL TRANSMITTER DETAIL

NOT TO SCALE

1 I-101

NOTES:

1. THE X IN INSTRUMENT TAG NUMBER REPRESENTS THE ASSOCIATED PUMP NUMBER.
2. FOR CONDUIT SCHEDULE SEE DRAWINGS I-510, I-511, I-512 & I-513.
3. FIRE ALARM CIRCUITS ARE TO BE RUN TO FIRE ALARM PANEL IN OPERATIONS CENTER CONTROL ROOM, SEE DRAWING E-510.
4. PROVIDE CONNECTION OF PUMP #1 THROUGH #4 MOTOR BEARING RTD'S TO TEMPERATURE TRANSMITTERS TT-10X02A AND TT-10X02B (8 TOTAL). WIRING SHALL BE 3-#14 IN 3/4" CONDUITS. CONNECTION TO RTD'S SHALL BE MADE IN PUMP MOTOR AUXILIARY TERMINAL BOXES.

RECORD DRAWING

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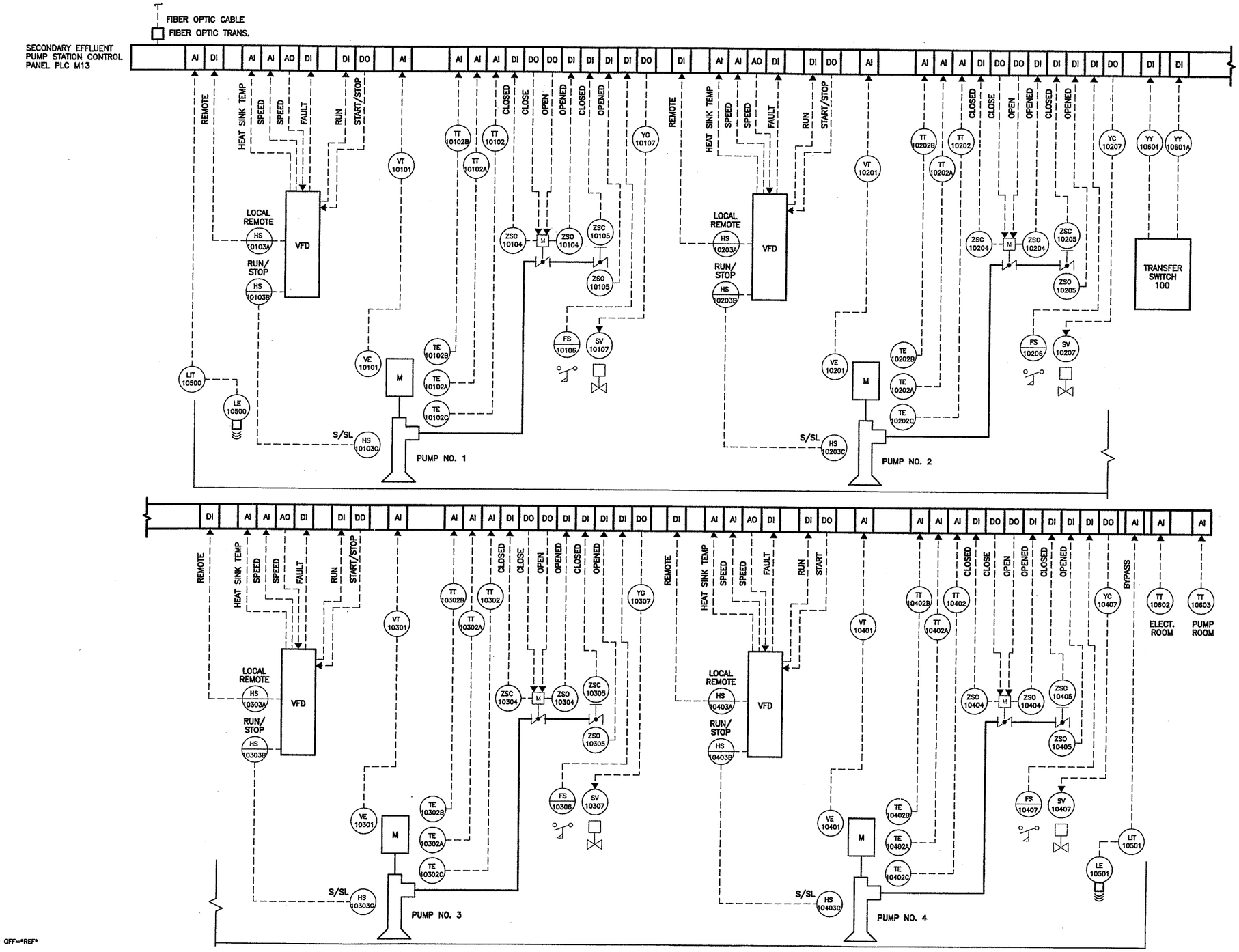
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
SECONDARY EFFLUENT PUMPING STATION
SECONDARY EFFLUENT PUMPING STATION PLAN
INSTRUMENTATION

LEONARD J. CAMPOLIETI • STATE OF NEW YORK • LICENSED PROFESSIONAL ENGINEER No. 60755

File Number 00659
Date APRIL 2001
Stampfel

I-101



NOTES:
1. CONTROL CABINET AND PLC M13 PROVIDED AND INSTALLED BY CONTRACT 4B – ELECTRICAL.

RECORD DRAWING

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DATE: 10/21/05 PER: L.F. Campbell

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05503046/08591102.DWG

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SYRACUSE, NEW YORK

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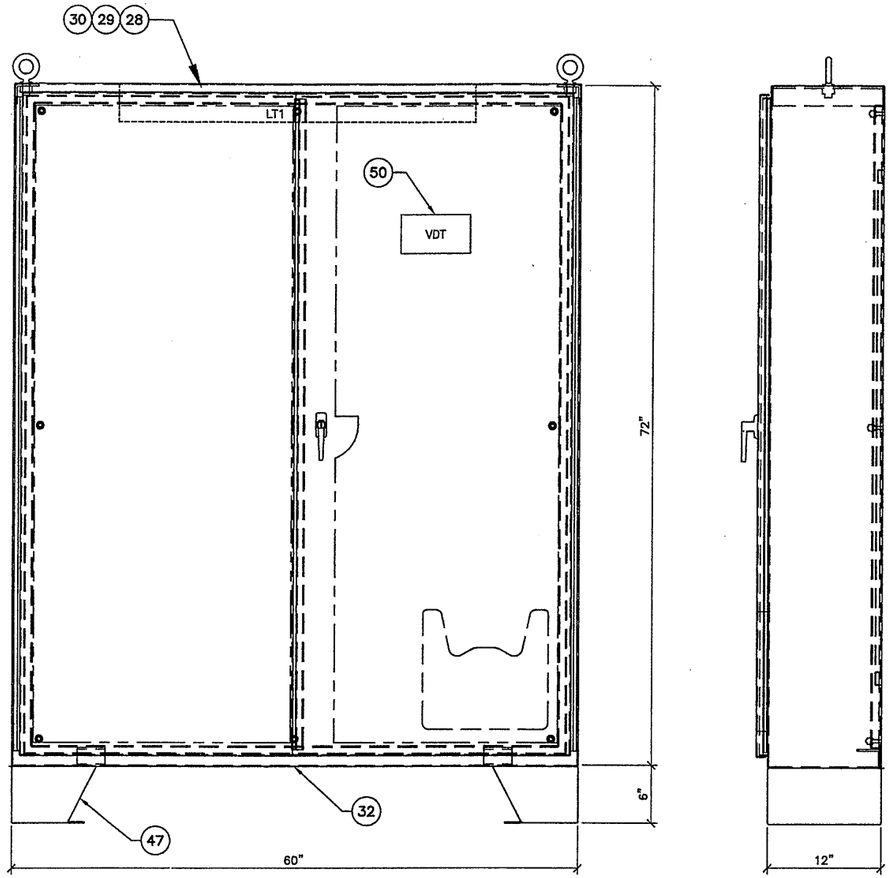
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

SECONDARY EFFLUENT PUMPING STATION (PLC M13) CONTROL DIAGRAM

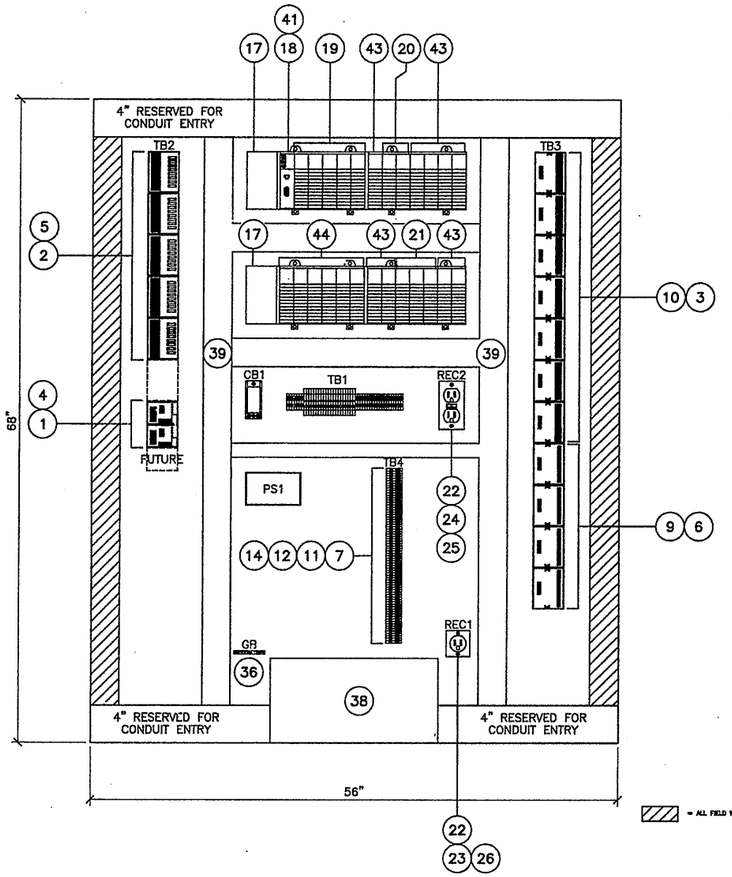
INSTRUMENTATION

LICENSED PROFESSIONAL ENGINEER · STATE OF NEW YORK · LEONARD J. CAMPBELL · No. 60754

File Number 00659
Date APRIL 2001
I–102



CONTROL PANEL FRONT VIEW



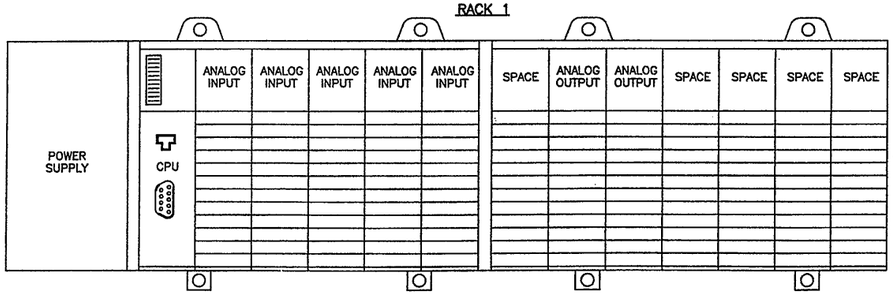
CONTROL PANEL INTERIOR VIEW

NOTES:

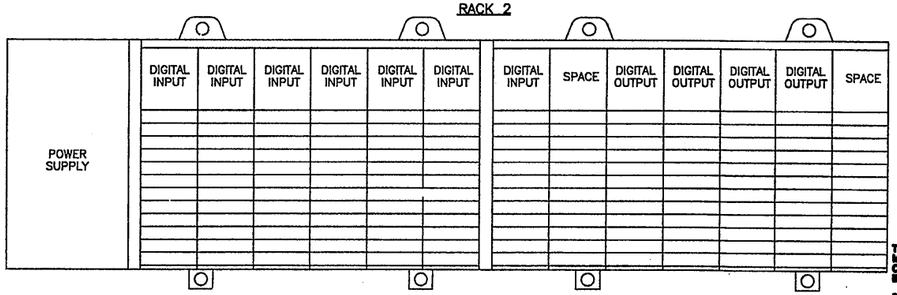
1. LAYOUT SHOWN IS FOR CONCEPT ONLY. CONTRACTOR SHALL PROVIDE ALL NECCESSARY APPURTENANCES REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.
2. PANEL SIZE IS APPROXIMATE ONLY. CONTRACTOR SHALL PROVIDE ENCLOSURE SIZE AS REQUIRED FOR EQUIPMENT.

SECONDARY EFFLUENT PUMP STATION CONTROL PANEL

RACK 1



RACK 2



RECORD DRAWING

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DATED 10/21/05 PER L.Campbell

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PLC MODULE LAYOUT

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
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Drawn by JEC
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ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

SECONDARY EFFLUENT PUMP STATION (PLC M13)
CONTROL PANEL LAYOUT
INSTRUMENTATION

LICENSED PROFESSIONAL ENGINEER · STATE OF NEW YORK · EDWARD J. CAMPBELL · No. 60754

File Number 00659
Date APRIL 2001
L.Campbell

I--103

BILL OF MATERIALS

SYMBOL	QUANTITY	MODEL NUMBER	MANUFACTURER	DESCRIPTION
1	A/R	SEE SPECIFICATIONS	Allen–Bradley	Analog Output Interface Module
2	A/R	SEE SPECIFICATIONS	Allen–Bradley	Analog Input Interface Module
3	A/R	SEE SPECIFICATIONS	Allen–Bradley	Digital Input Interface Cable – 1 meter
4	A/R	SEE SPECIFICATIONS	Allen–Bradley	Analog Output Interface Cable – 2.5 meter
5	A/R	SEE SPECIFICATIONS	Allen–Bradley	Analog Input Interface Cable – 1 meter
6	A/R	SEE SPECIFICATIONS	Allen–Bradley	Relay Output Interface Cable – 0.5 meter
7	A/R	SEE SPECIFICATIONS	Allen–Bradley	High Density Terminal Block
8	A/R	SEE SPECIFICATIONS	Allen–Bradley	Fusible Switch
9	A/R	SEE SPECIFICATIONS	Allen–Bradley	Relay Output Interface Module
10	A/R	SEE SPECIFICATIONS	Allen–Bradley	Digital Input Interface Module
11	A/R	SEE SPECIFICATIONS	Allen–Bradley	End Anchor
12	A/R	SEE SPECIFICATIONS	Allen–Bradley	High Density Terminal Block End Barrier
13	A/R	SEE SPECIFICATIONS	Allen–Bradley	Fusible Switch End Barrier
14	A/R	SEE SPECIFICATIONS	Allen–Bradley	High Density Jumper
15	A/R	SEE SPECIFICATIONS		
16	A/R	SEE SPECIFICATIONS	Allen–Bradley	13 Slot I/O Chassis
17	A/R	SEE SPECIFICATIONS	Allen–Bradley	I/O Chassis Power Supply
18	A/R	SEE SPECIFICATIONS	Allen–Bradley	CPU
19	A/R	SEE SPECIFICATIONS	Allen–Bradley	Analog Input – 8 point
20	A/R	SEE SPECIFICATIONS	Allen–Bradley	Analog Output – 4 point
21	A/R	SEE SPECIFICATIONS	Allen–Bradley	Relay Output – 8 point
22	A/R	SEE SPECIFICATIONS	RACO	Box
23	A/R	SEE SPECIFICATIONS	RACO	Cover – single 15 amp
24	A/R	SEE SPECIFICATIONS	RACO	Cover – duplex 15 amp
25	A/R	SEE SPECIFICATIONS	Hubbell	15A Duplex receptacle
26	A/R	SEE SPECIFICATIONS	Hubbell	15A Single receptacle
27	A/R	SEE SPECIFICATIONS		
28	A/R	SEE SPECIFICATIONS	Hoffman	Mounting bracket for light
29	A/R	SEE SPECIFICATIONS	Hoffman	2' light
30	A/R	SEE SPECIFICATIONS	Hoffman	Door Switch for light
31	A/R	SEE SPECIFICATIONS		
32	A/R	SEE SPECIFICATIONS	Hoffman	Nema 12 Enclosure
33	A/R	SEE SPECIFICATIONS	Hoffman	Sub–Panel
34	A/R	SEE SPECIFICATIONS	Panduit	3"W x 3"D Slotted Wiring Duct
35	A/R	SEE SPECIFICATIONS	Panduit	2"W x 3"D Slotted Wiring Duct
36	A/R	SEE SPECIFICATIONS	Square D	Ground Bar
37	A/R	SEE SPECIFICATIONS	Allen–Bradley	20 amp Circuit Breaker, single pole
38	A/R	SEE SPECIFICATIONS	Best Power	Uninterruptible Power Supply
39	A/R	SEE SPECIFICATIONS	Power One	DC Power Supply 24 Vdc Output
40	A/R	SEE SPECIFICATIONS	TBD	Fuses
41	A/R	SEE SPECIFICATIONS	Allen–Bradley	Flash EEprom Memory for CPU
42	A/R	SEE SPECIFICATIONS	–	–
43	A/R	SEE SPECIFICATIONS	Allen–Bradley	Blank Slot Filler Module
44	A/R	SEE SPECIFICATIONS	Allen–Bradley	Discrete Input – 8 point
45	A/R	SEE SPECIFICATIONS	–	–
46	A/R	SEE SPECIFICATIONS	–	–
47	A/R	SEE SPECIFICATIONS	Hoffman	Leg Kit
48	A/R	SEE SPECIFICATIONS	–	–
50	A/R	SEE SPECIFICATIONS	Allen–Bradley	VDT

RECORD DRAWING

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0	4/20/01	ISSUED FOR APPROVAL	LK
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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK

METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT

STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

SECONDARY EFFLUENT PUMPING STATION (PLC M13)

BILL OF MATERIALS

INSTRUMENTATION

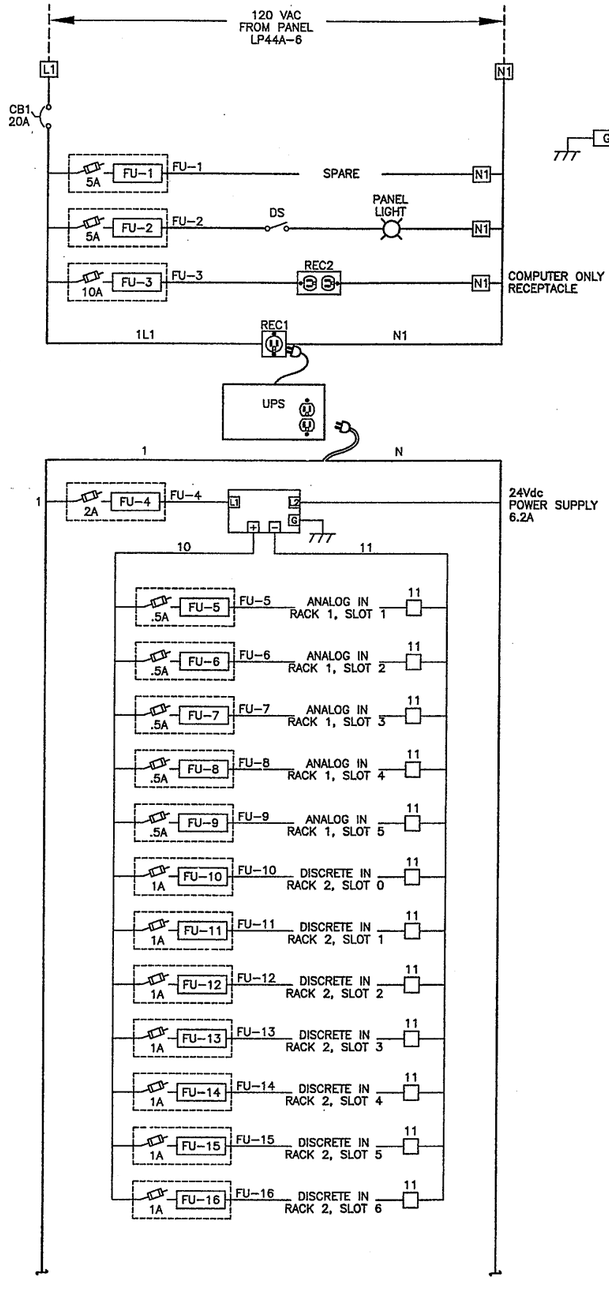
LICENSED PROFESSIONAL ENGINEER — EDWARD J. CAMPOLIETA — STATE OF NEW YORK — No. 60765

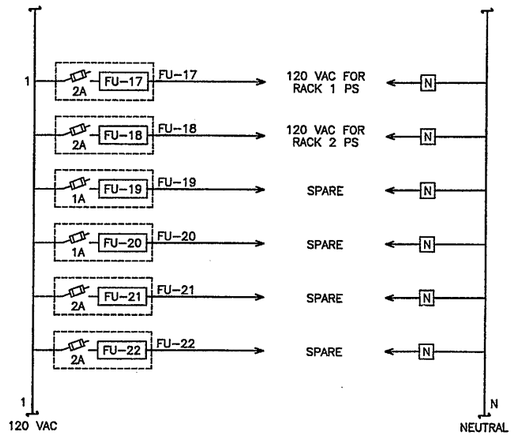
File Number 00659

Date APRIL 2001

LKampolver

I–104





Layer: ON=*; OFF=*REF*

07/17/00 OSG JEC

RECORD DRAWING

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DATE 10/21/05 PER: LStampolieta

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0	4/20/01	ISSUED FOR APPROVAL	LE
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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

SECONDARY EFFLUENT PUMPING STATION (PLC M13)
CONTROL CIRCUIT WIRING

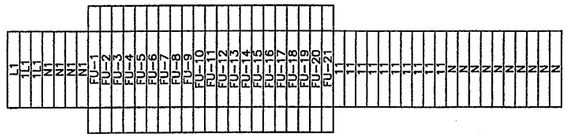
INSTRUMENTATION

STATE OF NEW YORK · LEONARD J. CAMPOLIETA · LICENSED PROFESSIONAL ENGINEER · No. 80755

File Number 00659
Date APRIL 2001
LStampolieta

I-105

TB1



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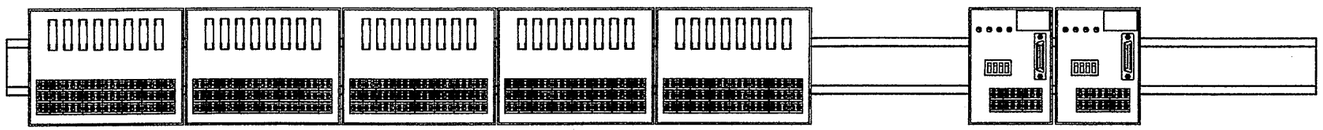

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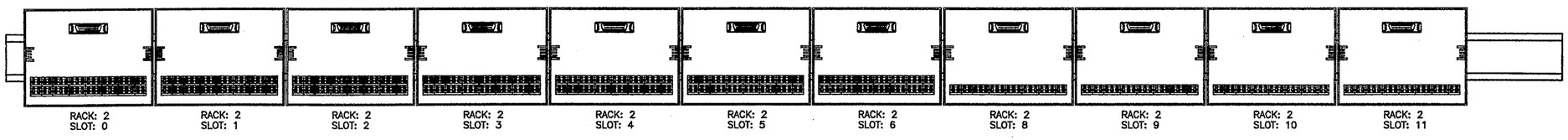

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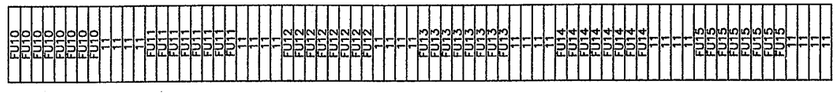

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

SECONDARY EFFLUENT PUMPING STATION (PLC M13)
TERMINAL BLOCK LAYOUT

INSTRUMENTATION

STATE OF NEW YORK · LEONARD J. CAMPOLIETA · LICENSED PROFESSIONAL ENGINEER · No. 60755

File Number 00659
Date APRIL 2001
[signature]

I-106

8 POINT ANALOG INPUT MODULE (AB 1746-NI8)

RACK 1 SLOT 1

ALLEN-BRADLEY 1492-AIFM8-F-5

LE 10500 / LIT 10500	0+	SECONDARY EFFLUENT WET WELL LEVEL 0-XX FT.
	0-	
	Vcom	
	V0	
	SHIELD	
	1+	SPARE
	1-	
	Vcom	
	V1	
	SHIELD	
SI 10103	2+	PUMP NO.1 SPEED 0-100 %
	2-	
	Vcom	
	V2	
	SHIELD	
VE 10101 / VT 10101	3+	PUMP NO.1 VIBRATION XX IN/SEC
	3-	
	Vcom	
	V3	
	SHIELD	
TE 10102A / TT 10102A	4+	PUMP NO.1 MOTOR TEMPERATURE 0-XX °F
	4-	
	Vcom	
	V4	
	SHIELD	
TE 10102B / TT 10102B	5+	PUMP NO.1 MOTOR TEMPERATURE 0-XX °F
	5-	
	Vcom	
	V5	
	SHIELD	
	6+	
	6-	
	Vcom	
	V6	
	SHIELD	
	7+	SPARE
	7-	
	Vcom	
	V7	
	SHIELD	
FU-5	V+	
11	VCOM	

8 POINT ANALOG INPUT MODULE (AB 1746-NI8)

RACK 1 SLOT 2

ALLEN-BRADLEY 1492-AIFM8-F-5

SI 10203	0+	PUMP NO.2 SPEED 0-100 %
	0-	
	Vcom	
	V0	
	SHIELD	
VE 10201 / VT 10201	1+	PUMP NO.2 VIBRATION XX IN/SEC
	1-	
	Vcom	
	V1	
	SHIELD	
TE 10202A / TT 10202A	2+	PUMP NO.2 MOTOR TEMPERATURE 0-XX °F
	2-	
	Vcom	
	V2	
	SHIELD	
TE 10202B / TT 10202B	3+	PUMP NO.2 MOTOR TEMPERATURE 0-XX °F
	3-	
	Vcom	
	V3	
	SHIELD	
	4+	
	4-	
	Vcom	
	V4	
	SHIELD	
	5+	SPARE
	5-	
	Vcom	
	V5	
	SHIELD	
SI 10303	6+	PUMP NO.3 SPEED 0-100 %
	6-	
	Vcom	
	V6	
	SHIELD	
VE 10301 / VT 10301	7+	PUMP NO.3 VIBRATION XX IN/SEC
	7-	
	Vcom	
	V7	
	SHIELD	
FU-6	V+	
11	VCOM	

RECORD DRAWING

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DATE 10/26/05 PER: Stampolet

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0	4/20/01	ISSUED FOR APPROVAL	LC
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SYRACUSE, NEW YORK

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

SECONDARY EFFLUENT PUMPING STATION (PLC M13)
ANALOG INPUT MODULES

INSTRUMENTATION

STATE OF NEW YORK • LEONARD J. CAMPOLIETA • LICENSED PROFESSIONAL ENGINEER • No. 60755

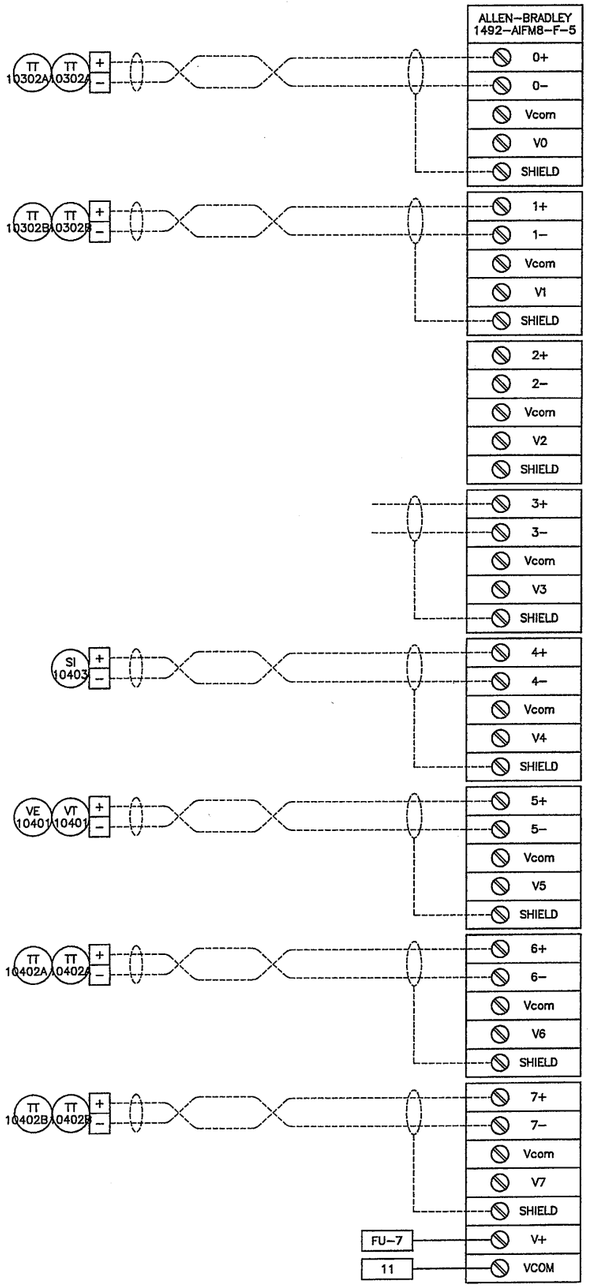
File Number 00659
Date APRIL 2001
Stampolet

I-107

8 POINT ANALOG INPUT MODULE (AB 1746-NI8)

RACK 1
SLOT 3

ALLEN-BRADLEY 1492-AIFM8-F-5



PUMP NO.3 MOTOR TEMPERATURE
0-XX °F

PUMP NO.3 MOTOR TEMPERATURE
0-XX °F

SPARE

PUMP NO.4 SPEED
0-100 %

PUMP NO.4 VIBRATION
XX IN/SEC

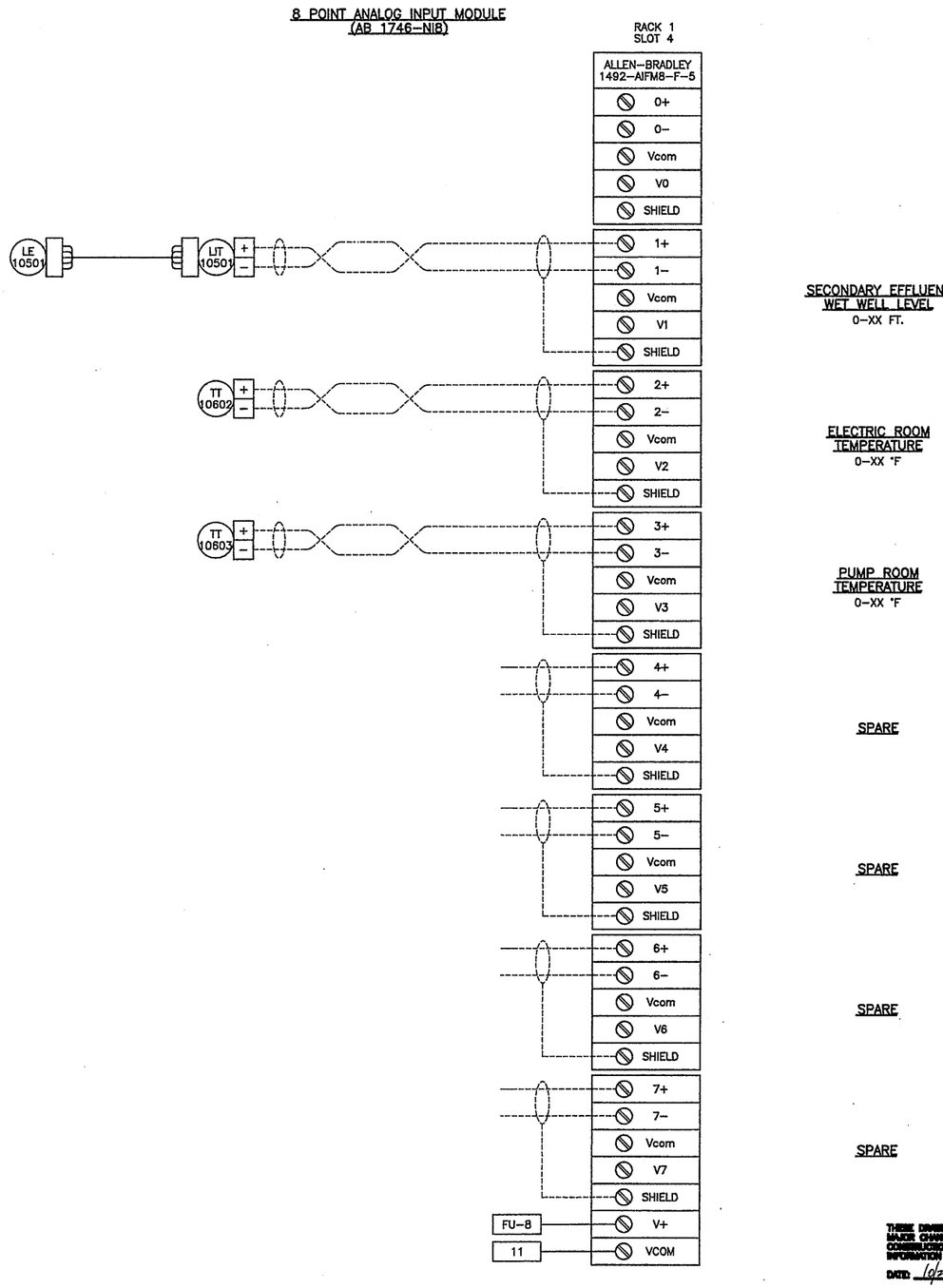
PUMP NO.4 MOTOR TEMPERATURE
0-XX °F

PUMP NO.4 MOTOR TEMPERATURE
0-XX °F

8 POINT ANALOG INPUT MODULE (AB 1746-NI8)

RACK 1
SLOT 4

ALLEN-BRADLEY 1492-AIFM8-F-5



SECONDARY EFFLUENT WET WELL LEVEL
0-XX FT.

ELECTRIC ROOM TEMPERATURE
0-XX °F

PUMP ROOM TEMPERATURE
0-XX °F

SPARE

SPARE

SPARE

SPARE

RECORD DRAWING

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
SECONDARY EFFLUENT PUMPING STATION (PLC M13)
ANALOG INPUT MODULES
INSTRUMENTATION

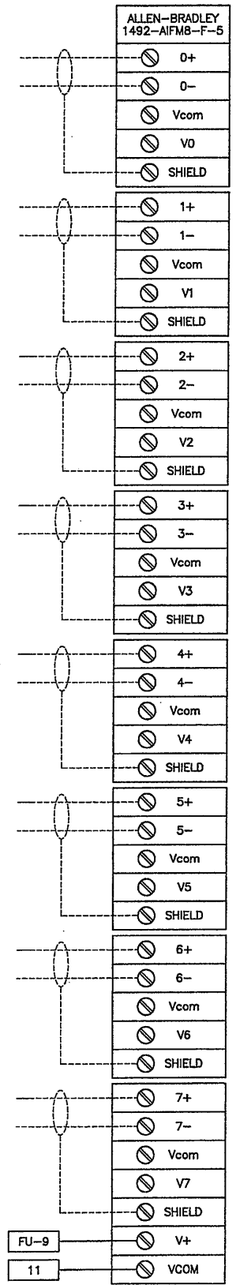
LEONARD J. CAMPOLIETA — LICENSED PROFESSIONAL ENGINEER — No. 60755 — STATE OF NEW YORK

File Number 00659
Date APRIL 2001
[signature]

I-108

8 POINT ANALOG INPUT MODULE
(AB 1746-NI8)

RACK 1
SLOT 5



SPARE

SPARE

SPARE

SPARE

SPARE

SPARE

SPARE

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
SECONDARY EFFLUENT PUMPING STATION (PLC M13)

ANALOG INPUT MODULES

INSTRUMENTATION

STATE OF NEW YORK · LEONARD J. CAMPOLETA · LICENSED PROFESSIONAL ENGINEER · No. 60765

File Number 00659

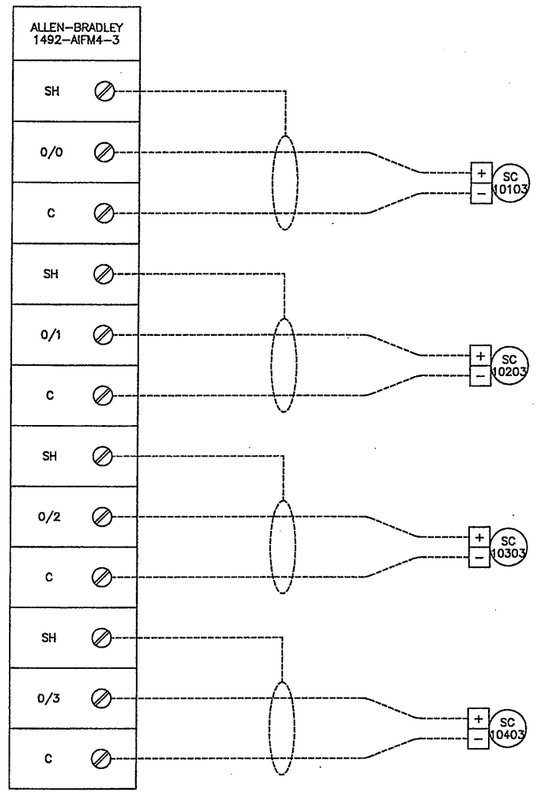
Date APRIL 2001

LStampfel

I-109

4 POINT ANALOG OUTPUT MODULE
(AB 1746-NO4I)

RACK 1
SLOT 7



PUMP NO.1
SPEED CONTROL

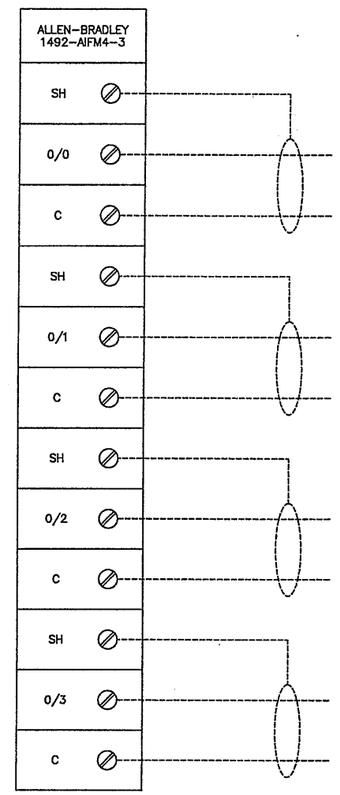
PUMP NO.2
SPEED CONTROL

PUMP NO.3
SPEED CONTROL

PUMP NO.4
SPEED CONTROL

4 POINT ANALOG OUTPUT MODULE
(AB 1746-NO4I)

RACK 1
SLOT 8



SPARE

SPARE

SPARE

SPARE

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DATE: 6/21/01 PER: L. Kampolcet

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ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

SECONDARY EFFLUENT PUMPING STATION (PLC M13)
ANALOG OUTPUT MODULES

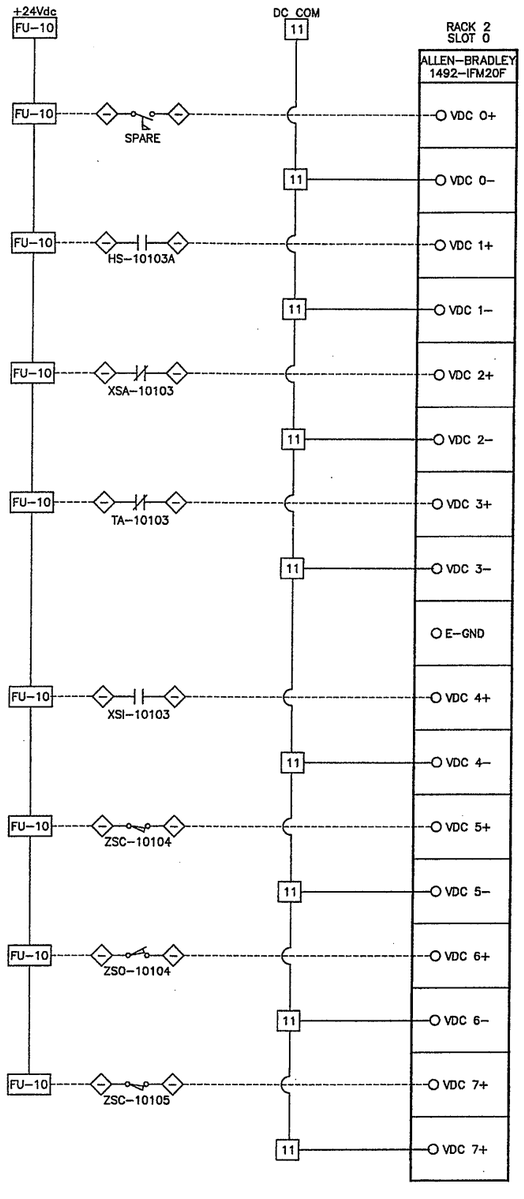
INSTRUMENTATION

LEONARD J. CAMPOLIETI — LICENSED PROFESSIONAL ENGINEER — No. 60765 — STATE OF NEW YORK

File Number 00659
Date APRIL 2001
L. Kampolieti

I-110

8 POINT ISOLATED 24Vdc
(1746sc-IB8)
DISCRETE INPUT



SPARE

PUMP NO.1
REMOTE CONTROL

PUMP NO.1
VFD FAULT STATUS

PUMP NO.1
VFD TEMPERATURE ALARM

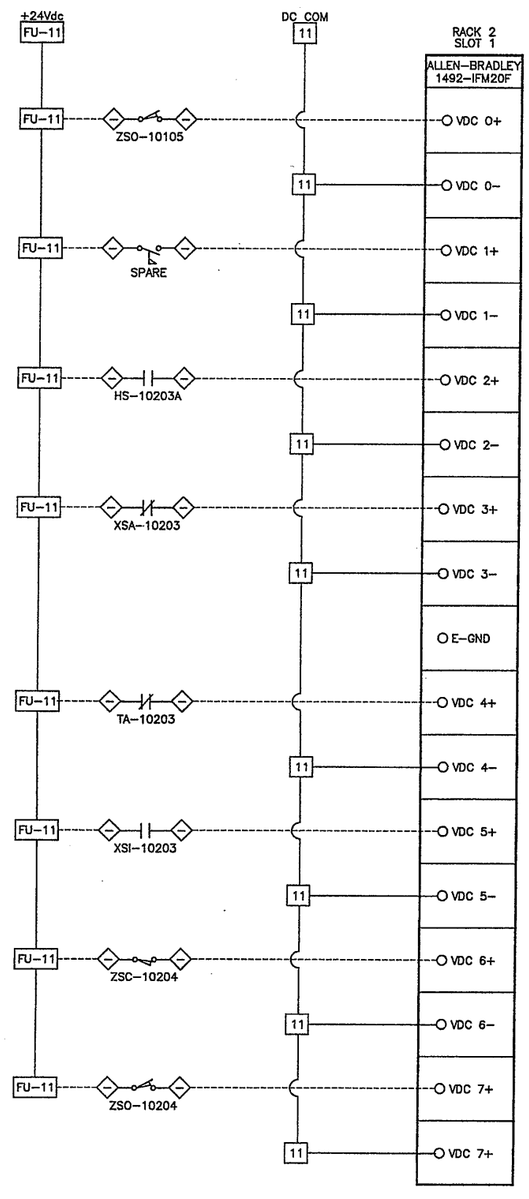
PUMP NO.1
VFD RUN

PUMP NO.1 AUTOMATIC
DISCHARGE VALVE FULLY CLOSED

PUMP NO.1 AUTOMATIC
DISCHARGE VALVE FULLY OPENED

PUMP NO.1 HAND
DISCHARGE VALVE FULLY CLOSED

8 POINT ISOLATED 24Vdc
(1746sc-IB8)
DISCRETE INPUT



PUMP NO.1 HAND
DISCHARGE VALVE FULLY OPENED

SPARE

PUMP NO.2
REMOTE CONTROL

PUMP NO.2
VFD FAULT STATUS

PUMP NO.2
VFD TEMPERATURE ALARM

PUMP NO.2
VFD RUN

PUMP NO.2 AUTOMATIC
DISCHARGE VALVE FULLY CLOSED

PUMP NO.2 AUTOMATIC
DISCHARGE VALVE FULLY OPENED

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MINOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE: 10/21/05 PER: LStampolit

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Layer: ON=*; OFF=*REF*

01/12/01 OBG JEC
EEA-VERT

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
1	7/11/01	AS BID	
2	10/31/05	RECORD DRAWING	

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Designed by SAT
Drawn by JEC
Checked by PLD

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
SECONDARY EFFLUENT PUMPING STATION (PLC M13)

DIGITAL INPUT MODULES

INSTRUMENTATION

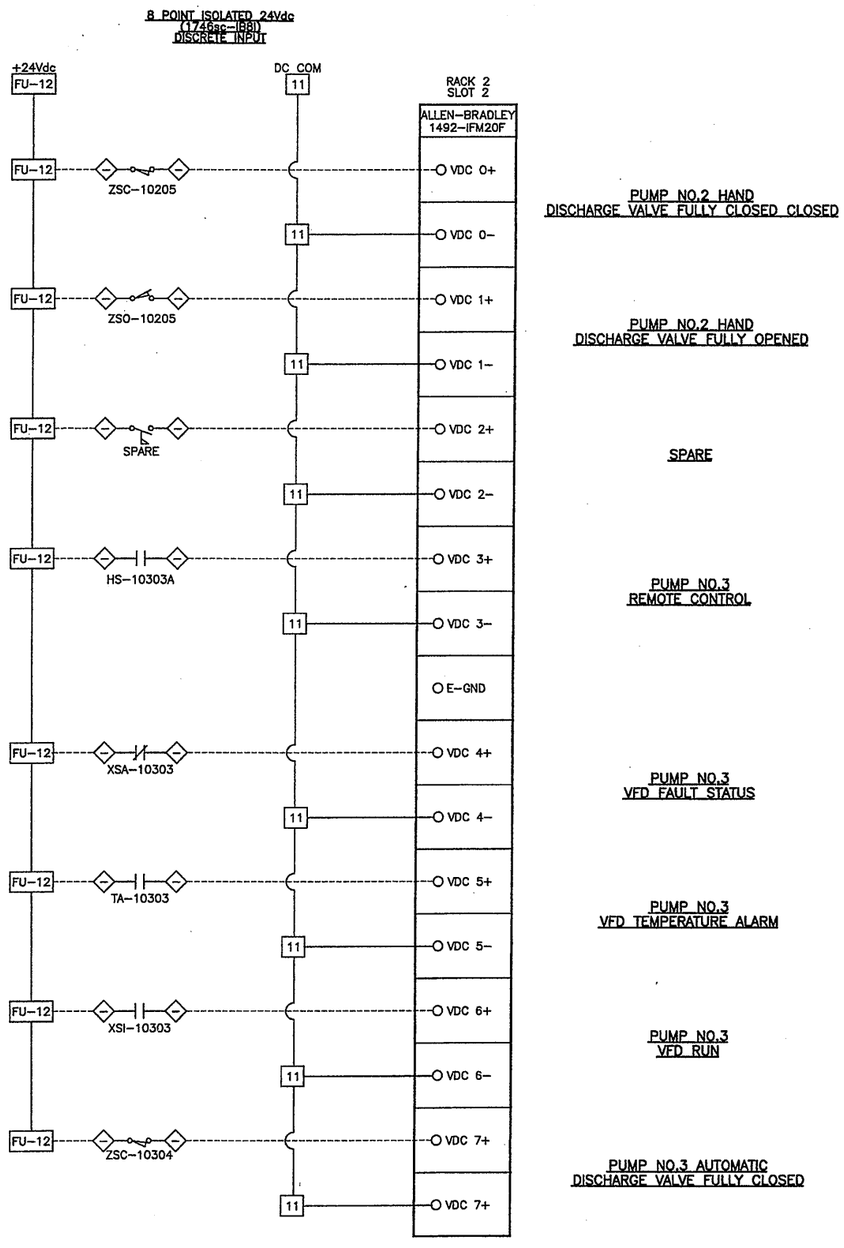
STATE OF NEW YORK • LEONARD J. CAMPOLETA • No. 60756 • LICENSED PROFESSIONAL ENGINEER

File Number 00659

Date APRIL 2001

LStampolit

I-111



PUMP NO.2 HAND
DISCHARGE VALVE FULLY CLOSED CLOSED

PUMP NO.2 HAND
DISCHARGE VALVE FULLY OPENED

SPARE

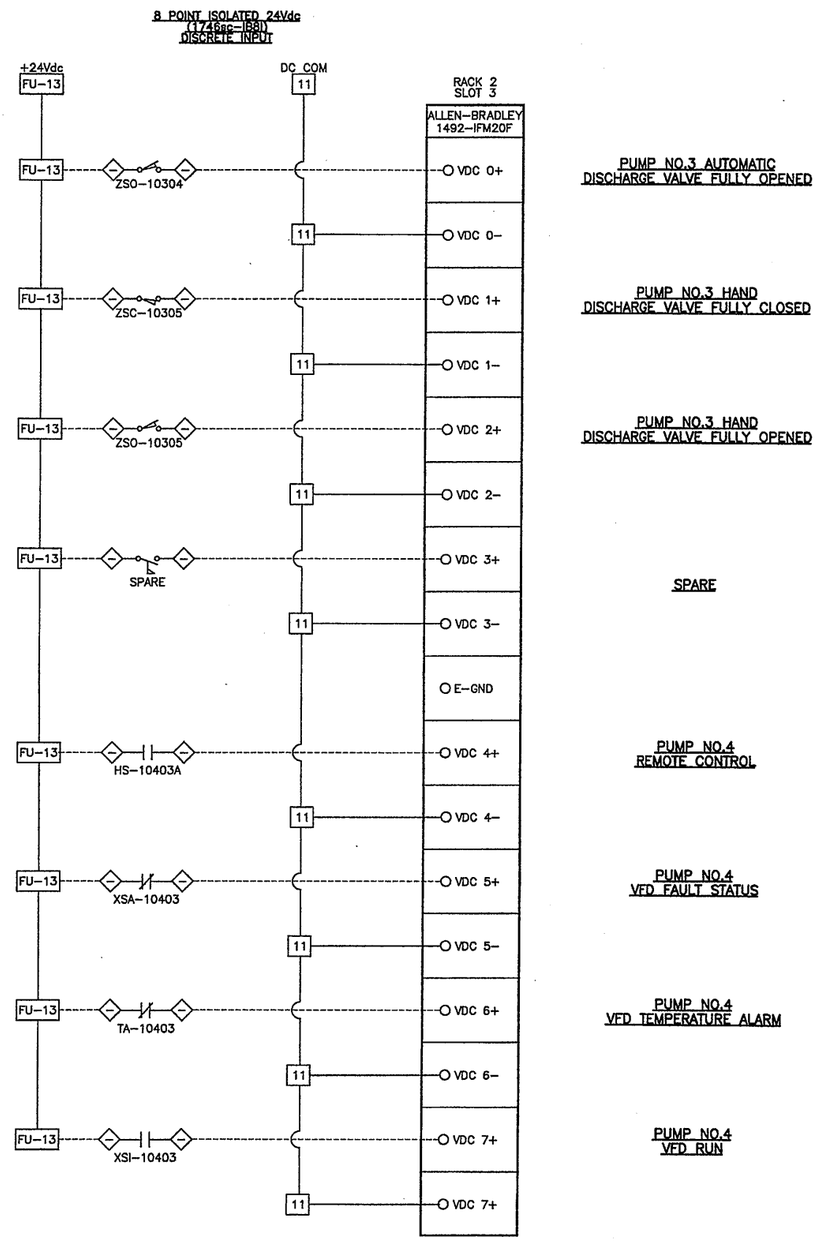
PUMP NO.3
REMOTE CONTROL

PUMP NO.3
VFD FAULT STATUS

PUMP NO.3
VFD TEMPERATURE ALARM

PUMP NO.3
VFD RUN

PUMP NO.3 AUTOMATIC
DISCHARGE VALVE FULLY CLOSED



PUMP NO.3 AUTOMATIC
DISCHARGE VALVE FULLY OPENED

PUMP NO.3 HAND
DISCHARGE VALVE FULLY CLOSED

PUMP NO.3 HAND
DISCHARGE VALVE FULLY OPENED

SPARE

PUMP NO.4
REMOTE CONTROL

PUMP NO.4
VFD FAULT STATUS

PUMP NO.4
VFD TEMPERATURE ALARM

PUMP NO.4
VFD RUN

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE: 10/21/05 PER: L. Ramp Liet

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No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	JC
1	7/11/01	AS BID	
2	10/31/05	RECORD DRAWING	

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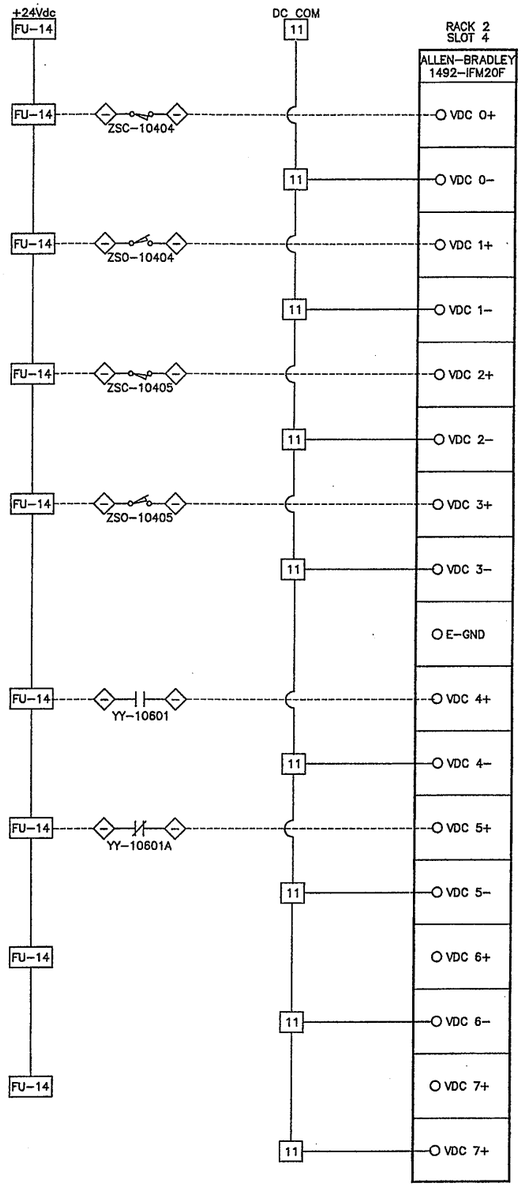
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

SECONDARY EFFLUENT PUMPING STATION (PLC M13)
DIGITAL INPUT MODULES

INSTRUMENTATION

File Number 00659
Date APRIL 2001
L. Ramp Liet

I-112



PUMP NO.4 AUTOMATIC DISCHARGE VALVE FULLY CLOSED

PUMP NO.4 AUTOMATIC DISCHARGE VALVE FULLY OPENED

PUMP NO.4 HAND DISCHARGE VALVE FULLY CLOSED

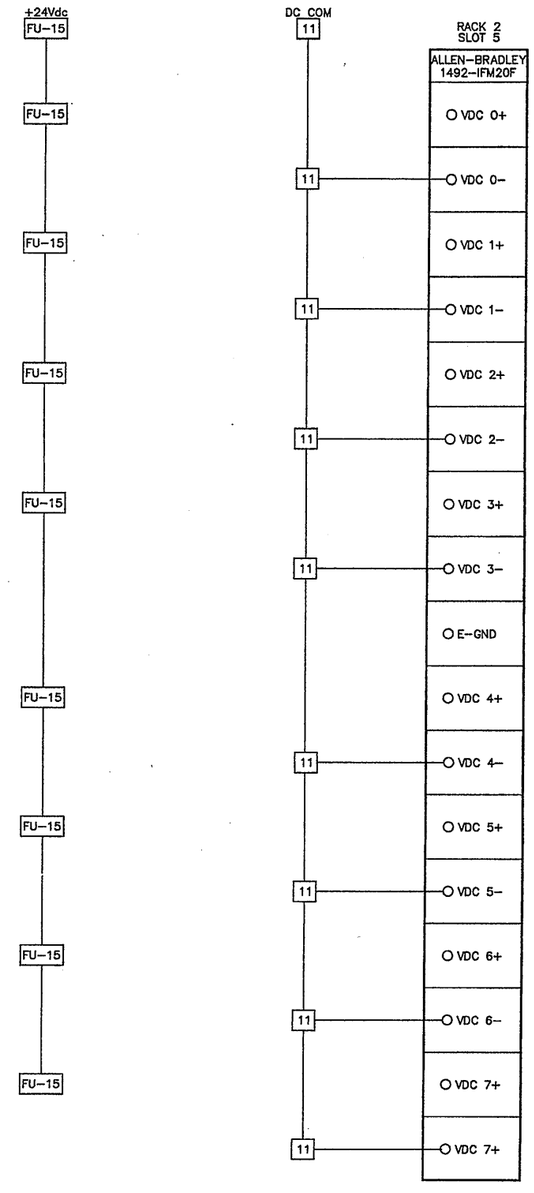
PUMP NO.4 HAND DISCHARGE VALVE FULLY OPENED

TRANSFER SWITCH 100 NORMAL POWER

TRANSFER SWITCH 100 STANDBY EMERGENCY POWER

SPARE

SPARE



SPARE

SPARE

SPARE

SPARE

SPARE

SPARE

RECORD DRAWING

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DATE 10/21/05 PER Stamped

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No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	JC
1	7/11/01	AS BID	
2	10/31/05	RECORD DRAWING	

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ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
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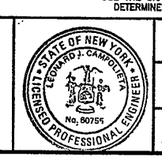
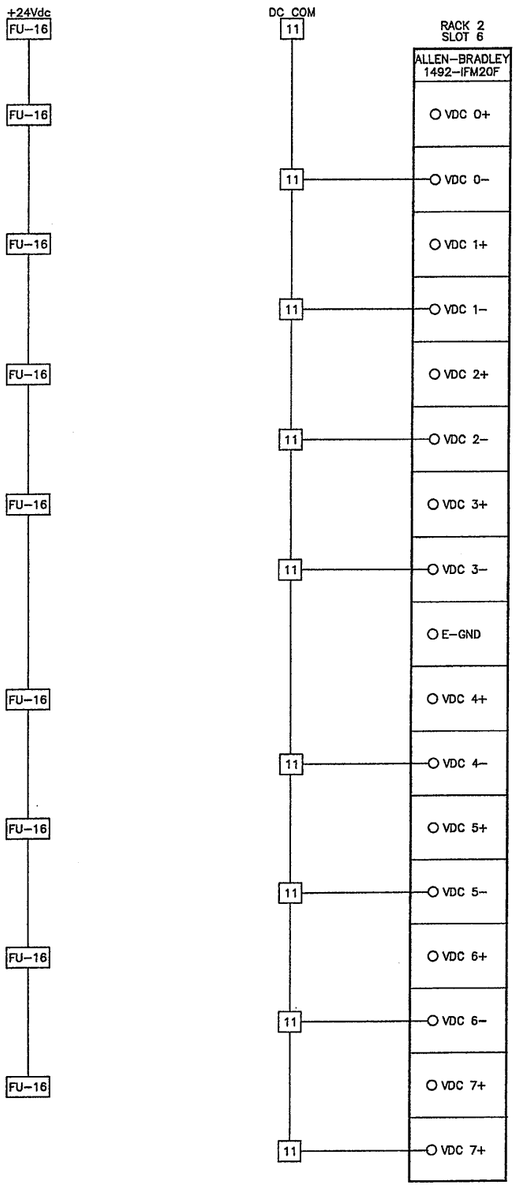
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
SECONDARY EFFLUENT PUMPING STATION (PLC M13)
DIGITAL INPUT MODULES
INSTRUMENTATION



File Number 00659
Date APRIL 2001
Stamped

I-113

8 POINT ISOLATED 24Vdc
(1746sc-IB8I)
DISCRETE INPUT



SPARE

SPARE

SPARE

SPARE

SPARE

SPARE

SPARE

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE: 10/21/11 PER: LCampolieti

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No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	JEC
1	7/11/01	AS BID	↓
2	10/31/05	RECORD DRAWING	

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Drawn by JEC
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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

SECONDARY EFFLUENT PUMPING STATION (PLC M13)
DIGITAL INPUT MODULES

INSTRUMENTATION

STATE OF NEW YORK • LICENSED • LEONARD J. CAMPOLIETI • No. 60755 • LICENSED PROFESSIONAL ENGINEER

LCampolieti

File Number 00659
Date APRIL 2001

I-114

RACK 2
SLOT 8

ALLEN-BRADLEY
1492-IFM20F-FS-2

8 POINT ISOLATED RELAY OUTPUT
(AB 1746-OX8)

0L1	YC-10103	PUMP NO.1 VFD START/STOP
0		
1L1	SV-10107	PUMP NO.1 SEAL WATER VALVE SOLENOID
1		
2L1	ZCC-10104	PUMP NO.1 DISCHARGE VALVE CLOSE COMMAND
2		
3L1	ZCO-10104	PUMP NO.1 DISCHARGE VALVE OPEN COMMAND
3		
4L1	YC-10203	PUMP NO.2 VFD START/STOP
4		
5L1	SV-10207	PUMP NO.2 SEAL WATER VALVE SOLENOID
5		
6L1	ZCC-10204	PUMP NO.2 DISCHARGE VALVE CLOSE COMMAND
6		
7L1	ZCO-10204	PUMP NO.2 DISCHARGE VALVE OPEN COMMAND
7		

RACK 2
SLOT 9

ALLEN-BRADLEY
1492-IFM20F-FS-2

8 POINT ISOLATED RELAY OUTPUT
(AB 1746-OX8)

0L1	YC-10303	PUMP NO.3 VFD START/STOP
0		
1L1	SV-10307	PUMP NO.3 SEAL WATER VALVE SOLENOID
1		
2L1	ZCC-10304	PUMP NO.3 DISCHARGE VALVE CLOSE COMMAND
2		
3L1	ZCO-10304	PUMP NO.3 DISCHARGE VALVE OPEN COMMAND
3		
4L1	YC-10403	PUMP NO.4 VFD START/STOP
4		
5L1	SV-10407	PUMP NO.4 SEAL WATER VALVE SOLENOID
5		
6L1	ZCC-10404	PUMP NO.4 DISCHARGE VALVE CLOSE COMMAND
6		
7L1	ZCO-10404	PUMP NO.4 DISCHARGE VALVE OPEN COMMAND
7		

RECORD DRAWING

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DATED 10/21/05 PER Stampolat

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Layer: ON=*; OFF=*REF*

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No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	Ldc
1	7/11/01	AS BID	
2	10/31/05	RECORD DRAWING	

In charge of PLD
Designed by SAT
Drawn by JEC
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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

SECONDARY EFFLUENT PUMPING STATION (PLC M13)
DIGITAL OUTPUT MODULES

INSTRUMENTATION

STATE OF NEW YORK · LEONARD J. CAMPOLIETA · LICENSED PROFESSIONAL ENGINEER · No. 60765

File Number 00659
Date APRIL 2001
Stampolat

I-115

RACK 2
SLOT 10

ALLEN–BRADLEY
1492–IFM20F–FS–2

8 POINT ISOLATED RELAY OUTPUT
(AB 1746–OX8)

0L1	SPARE
0	
1L1	SPARE
1	
2L1	SPARE
2	
3L1	SPARE
3	
4L1	SPARE
4	
5L1	SPARE
5	
6L1	SPARE
6	
7L1	SPARE
7	

RACK 2
SLOT 11

ALLEN–BRADLEY
1492–IFM20F–FS–2

8 POINT ISOLATED RELAY OUTPUT
(AB 1746–OX8)

0L1	SPARE
0	
1L1	SPARE
1	
2L1	SPARE
2	
3L1	SPARE
3	
4L1	SPARE
4	
5L1	SPARE
5	
6L1	SPARE
6	
7L1	SPARE
7	

RECORD DRAWING

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DATED: 10/21/05 PER: L Campbell

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11/27/00 OBG JEC
EEA–VERT

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	LJC
1	7/11/01	AS BID	
2	10/31/05	RECORD DRAWING	

In charge of PLD
Designed by SAT
Drawn by JEC
Checked by PLD

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

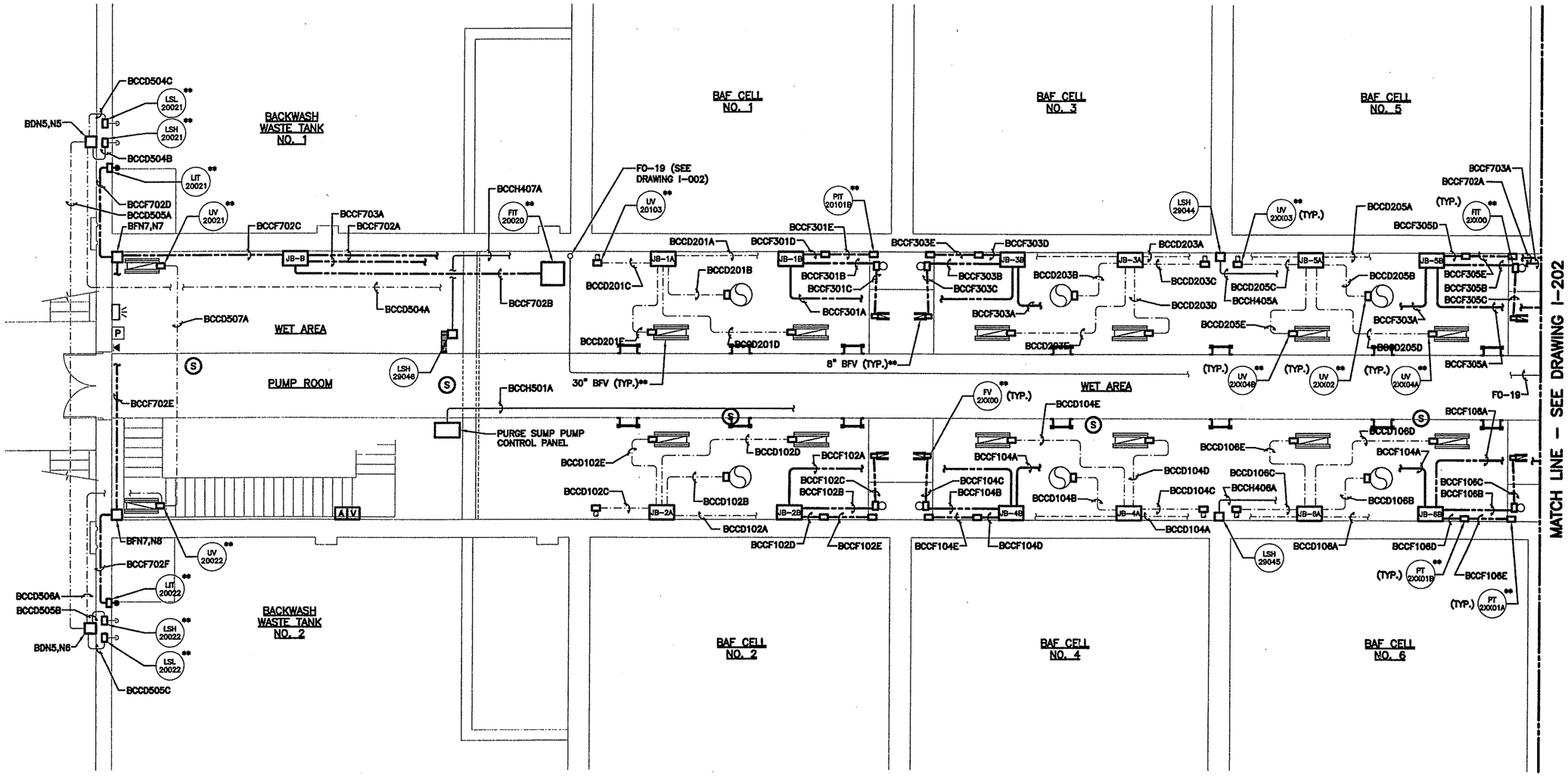
SECONDARY EFFLUENT PUMPING STATION (PLC M13)
DIGITAL OUTPUT MODULE

INSTRUMENTATION

LICENSED PROFESSIONAL ENGINEER • LEONARD J. CAMPOLIETA • No. 60755 • STATE OF NEW YORK

File Number 00659
Date APRIL 2001
L Campbell

I–116



BAF LOWER LEVEL PARTIAL PLAN SOUTH

SCALE: 3/16"=1'-0"

NOTES:

1. THE XX IN EACH TAG NUMBER REPRESENTS THE ASSOCIATED CELL NUMBER.
2. PT-2X01A AND PT-2X01B ARE VERTICALLY ALIGNED AT EL. 379.20 AND EL. 371.75 RESPECTIVELY; HORIZONTAL VIEW IS FOR CLARITY ONLY.
3. ** INDICATES AN ITEM OR ITEMS SUPPLIED BY OWNER FOR INSTALLATION BY THE CONTRACTOR.
4. FOR CONDUIT SCHEDULES SEE DRAWINGS I-510, I-511, I-512 & I-513.

RECORD DRAWING

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DATE: 10/26/05 PER: H Rampelotti

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Layer: ON=*; OFF=*REF*
X: 0659X201, 212.DWG
4/23/01 BBL DCC
05503000/0659I201.DWG

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

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	bdc
1	7/11/01	AS BID	↓
2	10/31/05	RECORD DRAWING	↓

NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

In charge of TEL
Designed by AHL
Drawn by DCC
Checked by FKP

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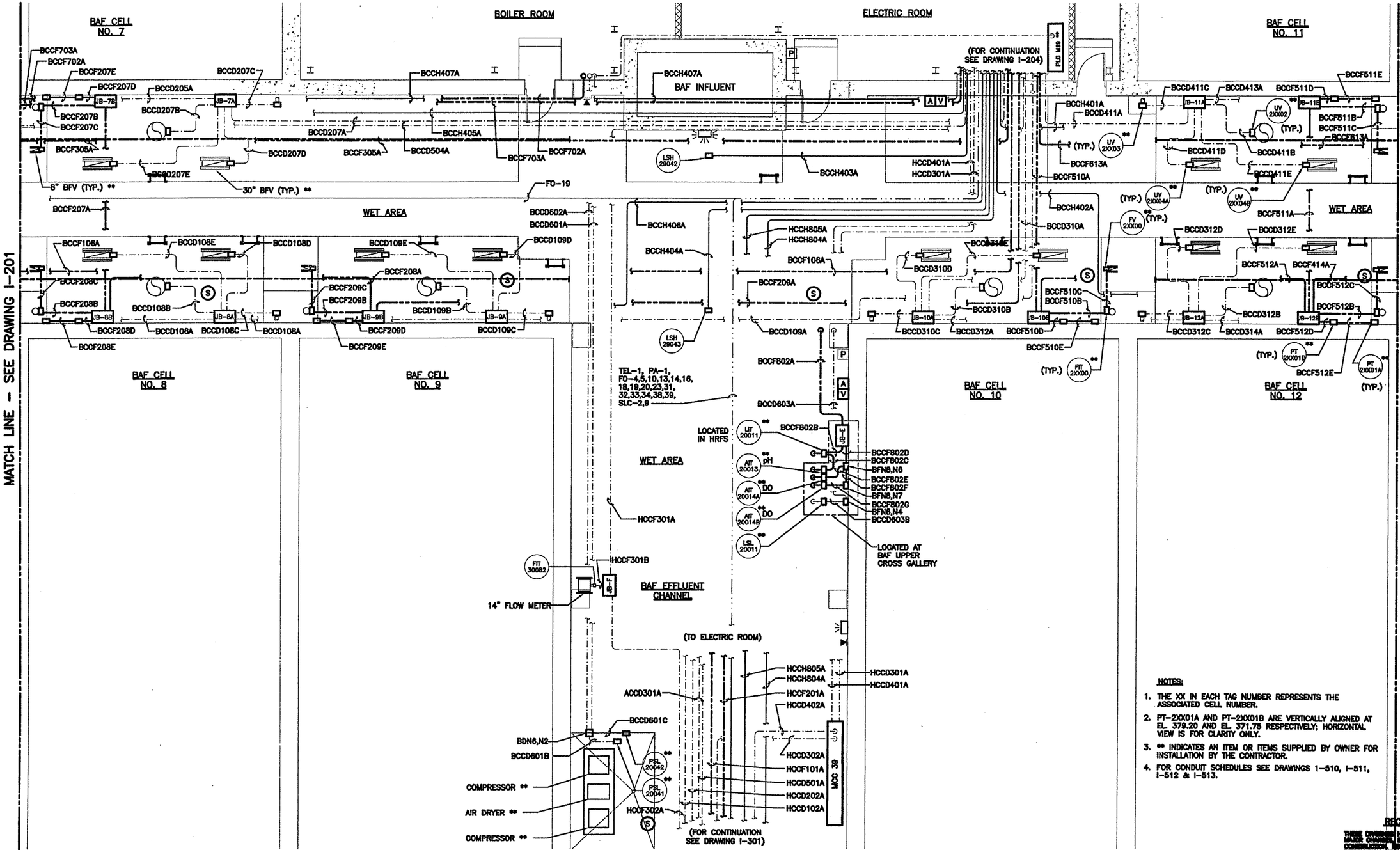
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BAF COMPLEX
BAF LOWER LEVEL PARTIAL PLAN SOUTH
INSTRUMENTATION

LEONARD J. CAMPOLIETI · STATE OF NEW YORK · No. 60756 · LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
H Rampelotti

I-201



BAF LOWER LEVEL PARTIAL PLAN CENTER

SCALE: 3/16"=1'-0"

NOTES:

1. THE XX IN EACH TAG NUMBER REPRESENTS THE ASSOCIATED CELL NUMBER.
2. PT–2XX01A AND PT–2XX01B ARE VERTICALLY ALIGNED AT EL. 379.20 AND EL. 371.75 RESPECTIVELY; HORIZONTAL VIEW IS FOR CLARITY ONLY.
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4. FOR CONDUIT SCHEDULES SEE DRAWINGS I–510, I–511, I–512 & I–513.

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES IN ANY WORK OCCURRED DURING CONSTRUCTION. CHANGES ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATED 10/21/05 PER: LCampolieti

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Layer: ON=*; OFF=*REF*
X: 0659X201, 212.DWG
4/23/01 BBL DCC
05503000/0659I202.DWG

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

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No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	LC
1	7/11/01	AS BID	
2	10/31/05	RECORD DRAWING	LC

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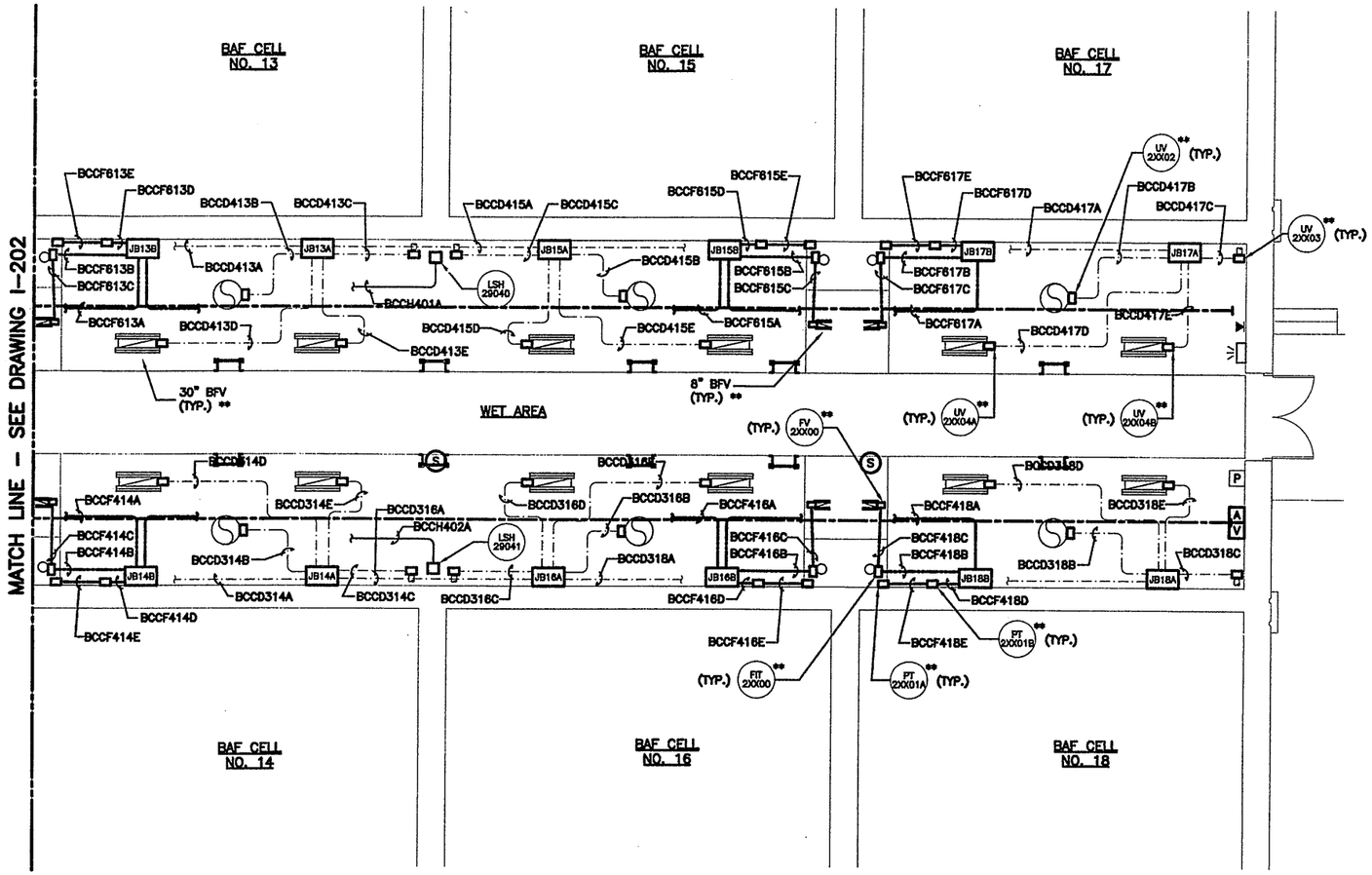
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BAF COMPLEX
BAF LOWER LEVEL PARTIAL PLAN CENTER
INSTRUMENTATION

STATE OF NEW YORK · LEONARD J. CAMPOLIETA · No. 60755 · LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
LCampolieti

I–202

CALLED NORTH



BAF LOWER LEVEL PARTIAL PLAN NORTH

SCALE: 3/16"=1'-0"

NOTES:

1. THE XX IN EACH TAG NUMBER REPRESENTS THE ASSOCIATED CELL NUMBER.
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RECORD DRAWING

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DATE: 10/21/05 PER: L Ramsdell

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Layer: ON=*; OFF=*REF*
X: 0559X201, 212.DWG
4/13/01 BBL DCC
05503000/05591203.DWG

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

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
1	7/11/01	AS BID	
2	10/31/05	RECORD DRAWING	

In charge of TEL
Designed by AHL
Drawn by DCC
Checked by TEL

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ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BAF COMPLEX

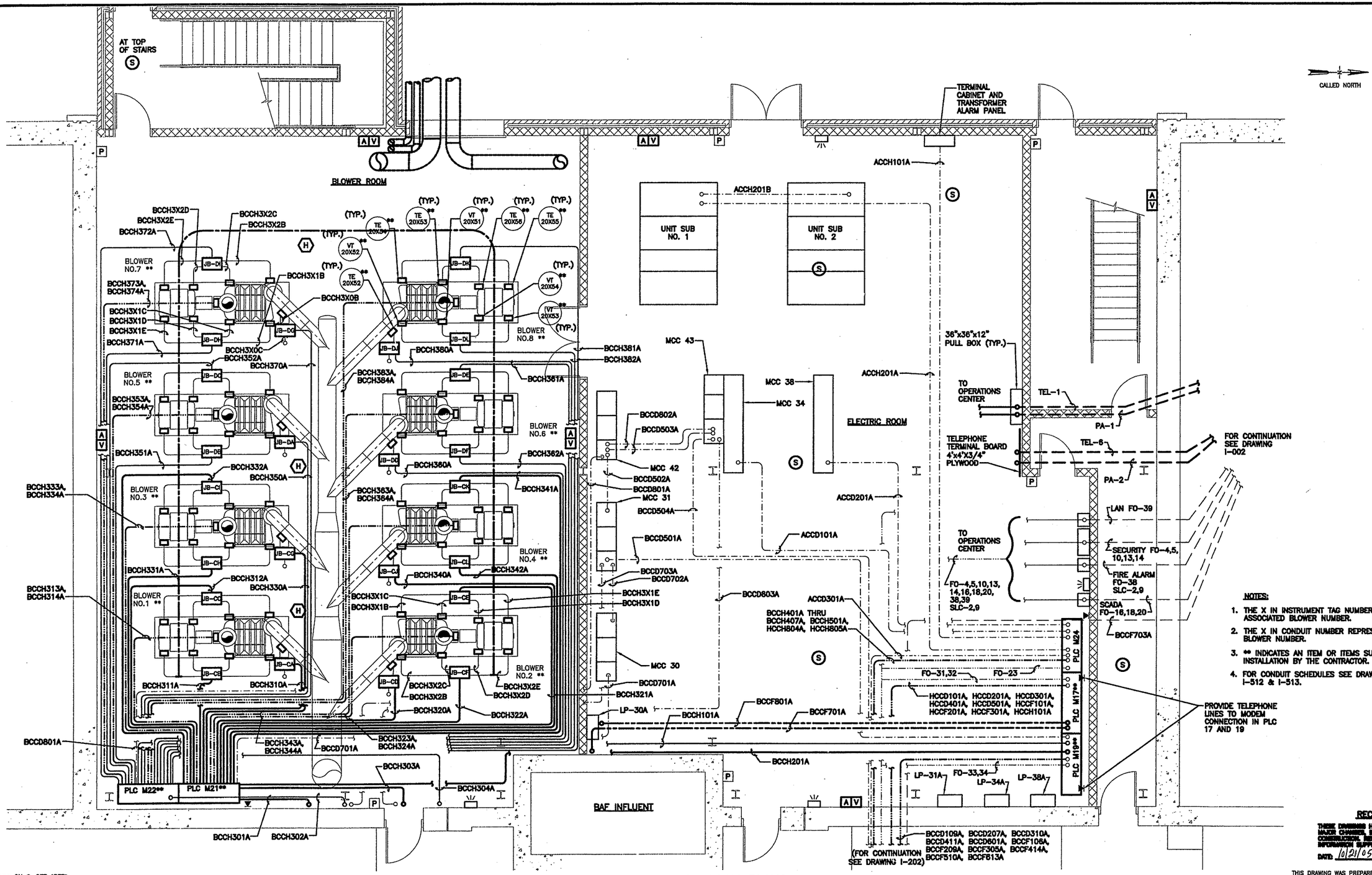
BAF LOWER LEVEL PARTIAL PLAN NORTH

INSTRUMENTATION

LEONARD J. CAMPOLIETA LICENSED PROFESSIONAL ENGINEER No. 60755 STATE OF NEW YORK

File Number 00659
Date APRIL 2001
L Ramsdell

I-203



NOTES:

1. THE X IN INSTRUMENT TAG NUMBER REPRESENTS THE ASSOCIATED BLOWER NUMBER.
2. THE X IN CONDUIT NUMBER REPRESENTS THE ASSOCIATED BLOWER NUMBER.
3. ** INDICATES AN ITEM OR ITEMS SUPPLIED BY OWNER FOR INSTALLATION BY THE CONTRACTOR.
4. FOR CONDUIT SCHEDULES SEE DRAWINGS 1-510, I-511, I-512 & I-513.

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE 10/21/05 PER: L.Campolieti

BAF BLOWER AND ELECTRIC ROOM PLANS

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

Layer: ON=*; OFF=*REF*
X: 0659X201.DWG
4/23/01 BBL DCC
05503000/0859E204.DWG

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED IN THE TITLE BLOCK. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.

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

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	DCC
1	7/11/01	AS BID	
2	10/31/05	RECORD DRAWING	

In charge of TEL
Designed by AHL
Drawn by DCC
Checked by TEL

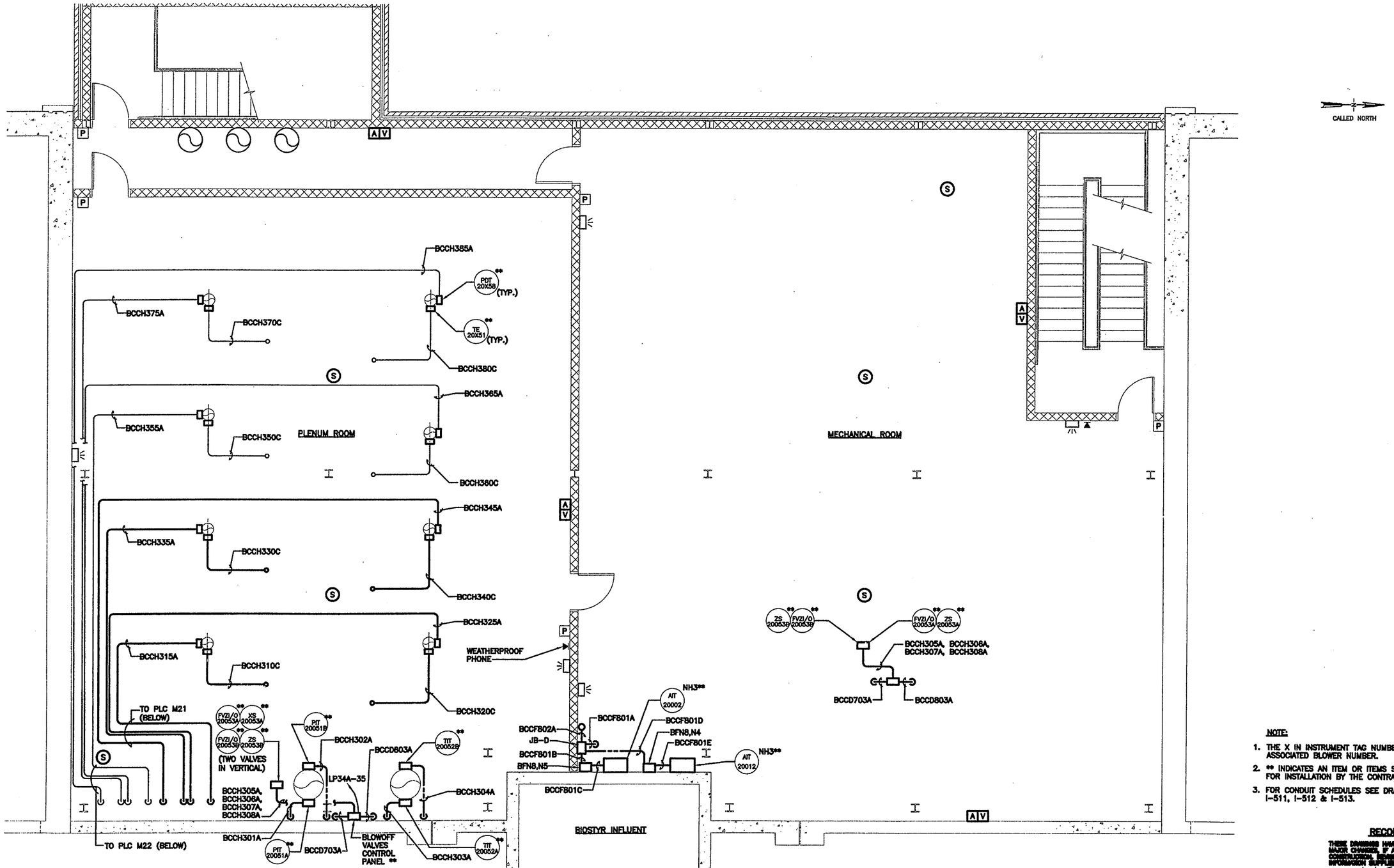
ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BAF COMPLEX
BAF BLOWER AND ELECTRIC ROOM PLANS
INSTRUMENTATION

LICENSED PROFESSIONAL ENGINEER — LEONARD J. CAMPOLIETI — No. 60755 — STATE OF NEW YORK

File Number 00659
Date APRIL 2001
L.Campolieti

I-204



NOTE:

1. THE X IN INSTRUMENT TAG NUMBER REPRESENTS THE ASSOCIATED BLOWER NUMBER.
2. ** INDICATES AN ITEM OR ITEMS SUPPLIED BY OWNER FOR INSTALLATION BY THE CONTRACTOR.
3. FOR CONDUIT SCHEDULES SEE DRAWINGS I-510, I-511, I-512 & I-513.

RECORD DRAWING

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DATE: 10/21/05 PER: LKampoliet

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Layer: ON=*; OFF=*REF*
X: 0659X20Z.DWG
4/15/01 BBL DCC
05503000/06591205.DWG

BAF PLENUM AND MECHANICAL ROOM PLAN

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

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

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	JC
1	7/11/01	AS BID	
2	10/31/05	RECORD DRAWING	

In charge of TEL
Designed by AHL
Drawn by DCC
Checked by TEL

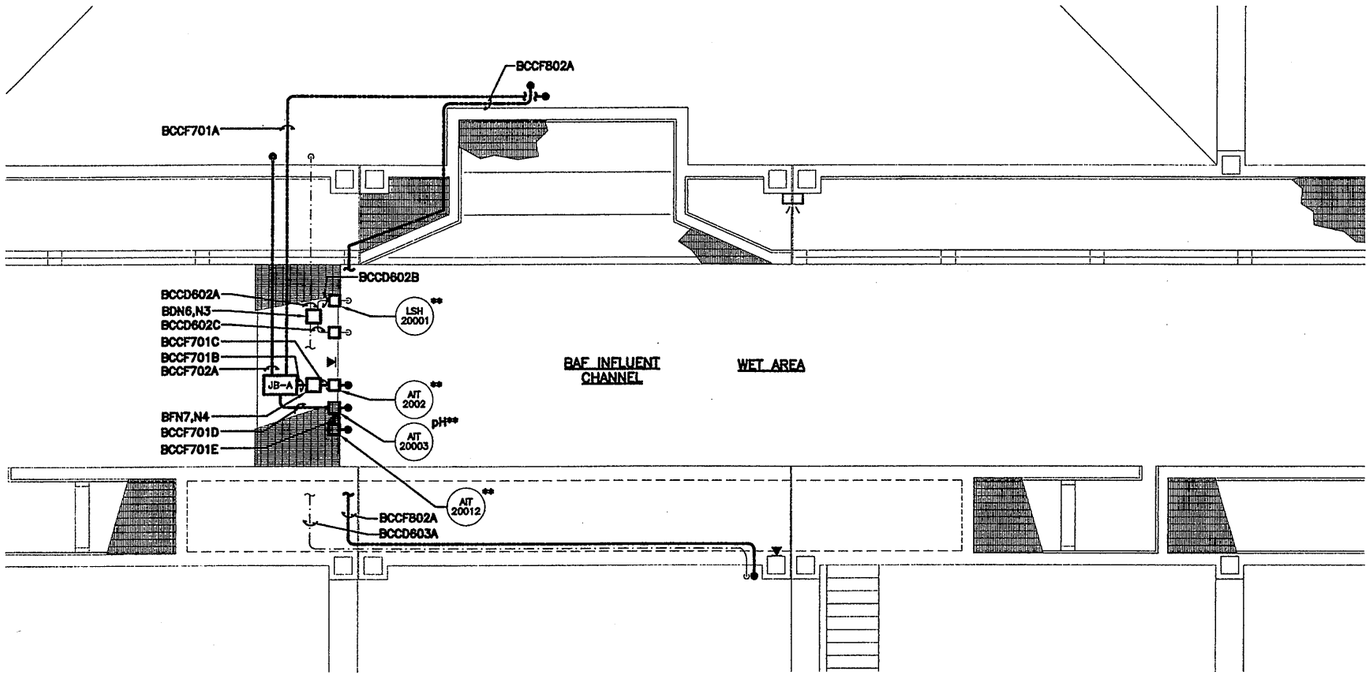
ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BAF COMPLEX
BAF PLENUM AND MECHANICAL ROOM PLAN
INSTRUMENTATION

STATE OF NEW YORK LEONARD J. CAMPOLIETA LICENSED PROFESSIONAL ENGINEER No. 60755

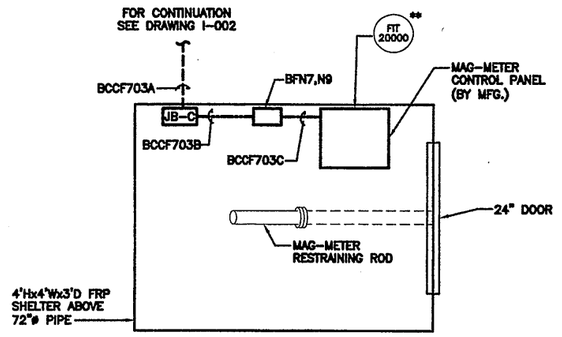
File Number 00659
Date APRIL 2001
LKampoliet

I-205



BAF UPPER LEVEL PARTIAL PLAN
SCALE: 3/16"=1'-0"

CALLED NORTH



INSERTION MAG-METER SHELTER
NOT TO SCALE

NOTE:

1. FOR CONDUIT SCHEDULES SEE DRAWINGS 1-510, I-511, I-512 & I-513.
2. ** INDICATES AN ITEM OR ITEMS TO BE SUPPLIED BY OWNER FOR INSTALLATION BY THE CONTRACTOR.

RECORD DRAWING

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DATE: 10/21/05 PER: L Campolieti

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Layer: ON=*; OFF=*REF*
X: 0659X203, 212.DWG
4/10/01 EBL DCC
05503000/0659I206.DWG

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

NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	LJC
1	7/11/01	AS BID	
2	10/31/05	RECORD DRAWING	

In charge of TEL
Designed by AHL
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ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
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BAF UPPER LEVEL PARTIAL PLAN
INSTRUMENTATION

STATE OF NEW YORK • LEONARD J. CAMPOLIETI • LICENSED PROFESSIONAL ENGINEER • No. 60755

File Number 00659
Date APRIL 2001
L Campolieti

I-206

ELECTRIC BAF CONTROL PANEL **

ALARM PRINTER

PLC 17A

PLC 17B

PLC 17C

FOR CONTINUATION SEE DRAWING I-304

CONTROLNET TO FIELDBUS MODULE

DH+

DEVICENET NETWORK 1

BCCD102A — 02-JB-A — CELL #2 AIR VALVE UV-20203 — CELL #2 INLET VALVE UV-20202 — BCCD102B,C,D,E — CELL #2 BW VALVE 1 UV-20204A — CELL #2 BW VALVE 2 UV-20204B

BCCD104A — 04-JB-A — CELL #4 AIR VALVE UV-20403 — CELL #4 INLET VALVE UV-20402 — BCCD104B,C,D,E — CELL #4 BW VALVE 1 UV-20404A — CELL #4 BW VALVE 2 UV-20404B

BCCD106A — 06-JB-A — CELL #6 AIR VALVE UV-20603 — CELL #6 INLET VALVE UV-20602 — BCCD106B,C,D,E — CELL #6 BW VALVE 1 UV-20604A — CELL #6 BW VALVE 2 UV-20604B

BCCD108A — 08-JB-A — CELL #8 AIR VALVE UV-20803 — CELL #8 INLET VALVE UV-20802 — BCCD108B,C,D,E — CELL #8 BW VALVE 1 UV-20804A — CELL #8 BW VALVE 2 UV-20804B

BCCD109A — 09-JB-A — CELL #9 AIR VALVE UV-20903 — CELL #9 INLET VALVE UV-20902 — BCCD109B,C,D,E — CELL #9 BW VALVE 1 UV-20904A — CELL #9 BW VALVE 2 UV-20904B

DEVICENET NETWORK 2

BCCD201A — 01-JB-A — CELL #1 AIR VALVE UV-20103 — CELL #1 INLET VALVE UV-20102 — BCCD201B,C,D,E — CELL #1 BW VALVE 1 UV-20104A — CELL #1 BW VALVE 2 UV-20104B

BCCD203A — 03-JB-A — CELL #3 AIR VALVE UV-20303 — CELL #3 INLET VALVE UV-20302 — BCCD203B,C,D,E — CELL #3 BW VALVE 1 UV-20304A — CELL #3 BW VALVE 2 UV-20304B

BCCD205A — 05-JB-A — CELL #5 AIR VALVE UV-20503 — CELL #5 INLET VALVE UV-20502 — BCCD205B,C,D,E — CELL #5 BW VALVE 1 UV-20504A — CELL #5 BW VALVE 2 UV-20504B

BCCD207A — 07-JB-A — CELL #7 AIR VALVE UV-20703 — CELL #7 INLET VALVE UV-20702 — BCCD207B,C,D,E — CELL #7 BW VALVE 1 UV-20704A — CELL #7 BW VALVE 2 UV-20704B

DEVICENET NETWORK 3

BCCD318A — 18-JB-A — CELL #18 AIR VALVE UV-21803 — CELL #18 INLET VALVE UV-21802 — BCCD318B,C,D,E — CELL #18 BW VALVE 1 UV-21804A — CELL #18 BW VALVE 2 UV-21804B

BCCD316A — 16-JB-A — CELL #16 AIR VALVE UV-21603 — CELL #16 INLET VALVE UV-21602 — BCCD316B,C,D,E — CELL #16 BW VALVE 1 UV-21604A — CELL #16 BW VALVE 2 UV-21604B

BCCD314A — 14-JB-A — CELL #14 AIR VALVE UV-21403 — CELL #14 INLET VALVE UV-21402 — BCCD314B,C,D,E — CELL #14 BW VALVE 1 UV-21404A — CELL #14 BW VALVE 2 UV-21404B

BCCD312A — 12-JB-A — CELL #12 AIR VALVE UV-21203 — CELL #12 INLET VALVE UV-21202 — BCCD312B,C,D,E — CELL #12 BW VALVE 1 UV-21204A — CELL #12 BW VALVE 2 UV-21204B

BCCD310A — 10-JB-A — CELL #10 AIR VALVE UV-21003 — CELL #10 INLET VALVE UV-21002 — BCCD310B,C,D,E — CELL #10 BW VALVE 1 UV-21004A — CELL #10 BW VALVE 2 UV-21004B

DEVICENET NETWORK 4

BCCD417A — 17-JB-A — CELL #17 AIR VALVE UV-21703 — CELL #17 INLET VALVE UV-21702 — BCCD417B,C,D,E — CELL #17 BW VALVE 1 UV-21704A — CELL #17 BW VALVE 2 UV-21704B

BCCD415A — 15-JB-A — CELL #15 AIR VALVE UV-21503 — CELL #15 INLET VALVE UV-21502 — BCCD415B,C,D,E — CELL #15 BW VALVE 1 UV-21504A — CELL #15 BW VALVE 2 UV-21504B

BCCD413A — 13-JB-A — CELL #13 AIR VALVE UV-21303 — CELL #13 INLET VALVE UV-21302 — BCCD413B,C,D,E — CELL #13 BW VALVE 1 UV-21304A — CELL #13 BW VALVE 2 UV-21304B

BCCD411A — 11-JB-A — CELL #11 AIR VALVE UV-21103 — CELL #11 INLET VALVE UV-21102 — BCCD411B,C,D,E — CELL #11 BW VALVE 1 UV-21104A — CELL #11 BW VALVE 2 UV-21104B

DEVICENET NETWORK 5

BCCD501A — BCCD504A — BDNSH5 — BACKWASH PUMP #3 P-20033

BCCD502A — BACKWASH PUMP #2 P-20032

BACKWASH PUMP #1 P-20031

DEVICENET NETWORK 6

BCCD601A — INSTRUMENT AIR ALARMS PSL-20041 PSL-20042

BCCD602A — INFLUENT LEVEL ALARMS

BCCD603A — EFFLUENT LEVEL ALARMS

BCCD505A — BDNSH6

BCCD506A — BACKWASH TANK #1 VALVE ACTUATOR

BCCD507A — BACKWASH TANK #2 VALVE ACTUATOR

DH+

BLOWER CONTROL PANEL – BLOWER BANK A

BLOWER CONTROL PANEL – BLOWER BANK B

Layer: ON=*; OFF=*REF*

02/01/01 OBG JEC
EEA-VERT

FIELDBUS NETWORK 1

BCCF106A — 6-JB-B — CELL #6 FIT-20600 — CELL #6 FV-20600 BCCF106B,C,D,E — CELL #6 LOWER PIT-20601B — CELL #6 UPPER PIT-20601A

BCCF104A — 4-JB-B — CELL #4 FIT-20400 — CELL #4 FV-20400 BCCF104B,C,D,E — CELL #4 LOWER PIT-20401B — CELL #4 UPPER PIT-20401A

BCCF102A — 2-JB-B — CELL #2 FIT-20200 — CELL #2 FV-20200 BCCF102B,C,D,E — CELL #2 LOWER PIT-20201B — CELL #2 UPPER PIT-20201A

HARD WIRED

TRAIN #4 SOLENOID VALVE

TRAIN #3 SOLENOID VALVE

TRAIN #2 SOLENOID VALVE

TRAIN #1 SOLENOID VALVE

FIELDBUS NETWORK 2

BCCF209A — 9-JB-B — CELL #9 FIT-20900 — CELL #9 FV-20900 BCCF209B,C,D,E — CELL #9 LOWER PIT-20901B — CELL #9 UPPER PIT-20901A

BCCF208A — 8-JB-B — CELL #8 FIT-20800 — CELL #8 FV-20800 BCCF208B,C,D,E — CELL #8 LOWER PIT-20801B — CELL #8 UPPER PIT-20801A

BCCF207A — 7-JB-B — CELL #7 FIT-20700 — CELL #7 FV-20700 BCCF207B,C,D,E — CELL #7 LOWER PIT-20701B — CELL #7 UPPER PIT-20701A

FIELDBUS NETWORK 3

BCCF305A — 5-JB-B — CELL #5 FIT-20500 — CELL #5 FV-20500 BCCF305B,C,D,E — CELL #5 LOWER PIT-20501B — CELL #5 UPPER PIT-20501A

BCCF303A — 3-JB-B — CELL #3 FIT-20300 — CELL #3 FV-20300 BCCF303B,C,D,E — CELL #3 LOWER PIT-20301B — CELL #3 UPPER PIT-20301A

BCCF301A — 1-JB-B — CELL #1 FIT-20100 — CELL #1 FV-20100 BCCF301B,C,D,E — CELL #1 LOWER PIT-20101B — CELL #1 UPPER PIT-20101A

FIELDBUS NETWORK 4

BCCF414A — 14-JB-B — CELL #14 FIT-21400 — CELL #14 FV-21400 BCCF414B,C,D,E — CELL #14 LOWER PIT-21401B — CELL #14 UPPER PIT-21401A

BCCF416A — 16-JB-B — CELL #16 FIT-21600 — CELL #16 FV-21600 BCCF416B,C,D,E — CELL #16 LOWER PIT-21601B — CELL #16 UPPER PIT-21601A

BCCF207A — BCCF418A — 18-JB-B — CELL #18 FIT-21800 — CELL #18 FV-21800 BCCF418B,C,D,E — CELL #18 LOWER PIT-21801B — CELL #18 UPPER PIT-21801A

FIELDBUS NETWORK 5

BCCF510A — 10-JB-B — CELL #10 FIT-21000 — CELL #10 FV-21000 BCCF510B,C,D,E — CELL #10 LOWER PIT-21001B — CELL #10 UPPER PIT-21001A

BCCF512A — 12-JB-B — CELL #12 FIT-21200 — CELL #12 FV-21200 BCCF512B,C,D,E — CELL #12 LOWER PIT-21201B — CELL #12 UPPER PIT-21201A

BCCF511A — BCCF617A — 17-JB-B — CELL #17 FIT-21700 — CELL #17 FV-21700 BCCF617B,C,D,E — CELL #17 LOWER PIT-21701B — CELL #17 UPPER PIT-21701A

FIELDBUS NETWORK 6

BCCF613A — 13-JB-B — CELL #13 FIT-21300 — CELL #13 FV-21300 BCCF613B,C,D,E — CELL #13 LOWER PIT-21301B — CELL #13 UPPER PIT-21301A

BCCF615A — 15-JB-B — CELL #15 FIT-21500 — CELL #15 FV-21500 BCCF615B,C,D,E — CELL #15 LOWER PIT-21501B — CELL #15 UPPER PIT-21501A

BCCF703A — INFLUENT TIT — INFLUENT pH AIT-20003 — BCCF701B,C,D,E,F,G — INFLUENT LIT-20001 — JB-C — INFLUENT FIT-20000 — BCCF703B,C

FIELDBUS NETWORK 7

BCCF701A — JB-A — AIT-2002

BCCF512A — BCCF702A — BCCF615A — BCCF802A — BACKWASH TANK 1 LIT-20021 — BACKWASH TANK 2 LIT-20022 — BCCF702B,C,D,E,F — BACKWASH FIT

FIELDBUS NETWORK 8

BCCF801A — JB-D — EFFLUENT AMMONIA AIT-20012 — EFFLUENT pH AIT-20013 — BCCF801B,C,D,E — EFFLUENT LIT-20011

JB-E — EFFLUENT DO #1 AIT-20014A — BCCF802B,C,D,E — EFFLUENT DO #2 AIT-20014B

THE INFORMATION CONTAINED ON THIS DRAWING IS SUBSTANTIALLY COMPLETE AND IS BEING PROVIDED FOR CONCEPT ONLY. THE CONTROL PANEL SHOWN IS BEING SUPPLIED BY THE OWNER IN ACCORDANCE WITH THE SPECIFICATIONS. THE CONTRACTOR WILL BE PROVIDED WITH A SHOP DRAWING SUBMITTAL INCLUDING FULL CONTROL PANEL DRAWINGS AND DETAILS AT THE TIME OF CONSTRUCTION. INSTALLATION CONDUIT, CABLE, DEVICES, AND TERMINATIONS SHALL BE IN ACCORDANCE WITH EQUIPMENT CONTROL PANEL DRAWINGS AND SUBMITTAL INFORMATION.

THIS DRAWING IS SCHEMATIC ONLY. FOR SHOWING CONDUIT NUMBERING. CONTRACTOR TO FIELD VERIFY LOCATION OF ALL DEVICES

LEGEND

- MODEM
- ETHERNET HUB
- PANEL VIEW
- PLC
- DEVICENET CONDUIT
- FIELDBUS CONDUIT
- CONVENTIONAL WIRING
- DH+ CONDUIT

RECORD DRAWING

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DATED 4/26/02 BY: [signature]

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No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
1	7/11/01	AS BID	
2	10/31/05	RECORD DRAWING	

In charge of PLD
Designed by SAT
Drawn by JEC
Checked by PLD

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

BAF (PLC M19)
INTERCONNECTION DRAWING

INSTRUMENTATION

LEONARD J. CARPONETA — STATE OF NEW YORK — No. 60755 — LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001

I-207

THE INFORMATION CONTAINED ON THIS DRAWING IS SUBSTANTIALLY COMPLETE AND IS BEING PROVIDED FOR CONCEPT ONLY. THE CONTROL PANEL SHOWN IS BEING SUPPLIED BY THE OWNER IN ACCORDANCE WITH THE SPECIFICATIONS. THE CONTRACTOR WILL BE PROVIDED WITH A SHOP DRAWING SUBMITTAL INCLUDING FULL CONTROL PANEL DRAWINGS AND DETAILS AT THE TIME OF CONSTRUCTION. INSTALLATION CONDUIT, CABLE, DEVICES, AND TERMINATIONS SHALL BE IN ACCORDANCE WITH EQUIPMENT CONTROL PANEL DRAWINGS AND SUBMITTAL INFORMATION.

BLOWER ROOM CONTROL PANEL – BLOWER BANK "A" (PLC M21)

FOR CONTINUATION SEE DRAWING I-207

DEVICENET NETWORK 7

BCCD701A — MCC 30 (PROCESS AIR BLOWER NO.1, PROCESS AIR BLOWER NO.2) — BCCD702A — MCC 31 (PROCESS AIR BLOWER NO.3, PROCESS AIR BLOWER NO.4)

BCCH312A — JB-CC — BLOWER #1 VT-20151, BLOWER #1 VT-20153, BCCH312B,C,D,E — BLOWER #1 VT-20152, BLOWER #1 VT-20154

BCCH311A — JB-CB — BLOWER #1 TE-20153, BLOWER #1 TE-20155, BCCH311B,C,D,E — BLOWER #1 TE-20154, BLOWER #1 TE-20156

BCCH310A — JB-CA — BLOWER #1 TE-20152, BLOWER #1 TE-20151, BCCH310B,C

BCCH320A — JB-CD — BLOWER #2 TE-20251, BLOWER #2 TE-20252, BCCH320B,C

BCCH321A — JB-CE — BLOWER #2 TE-20255, BLOWER #2 TE-20253, BCCH321B,C,D,E — BLOWER #2 TE-20256, BLOWER #2 TE-20254

BCCH322A — JB-CF — BLOWER #2 VT-20253, BLOWER #2 VT-20251, BCCH322B,C,D,E — BLOWER #2 VT-20254, BLOWER #2 VT-20252

BCCH315A — BLOWER #1 PDT-20158

BCCH313A — BCCH314A — BLOWER #1 ZSO/ZSC/FVA/HS-20157, BLOWER #1 FVZO/FVZI-20157

BCCH323A — BLOWER #2 FVZO/FVZI-20257, BLOWER #2 ZSO/ZSC/FVA/HS-20257

BCCH325A — BCCH324A — BLOWER #2 PDT-20258

BCCH332A — JB-CI — BLOWER #3 VT-20351, BLOWER #3 VT-20353, BCCH332B,C,D,E — BLOWER #3 VT-20352, BLOWER #3 VT-20354

BCCH331A — JB-CH — BLOWER #3 TE-20353, BLOWER #3 TE-20355, BCCH331B,C,D,E — BLOWER #3 TE-20354, BLOWER #3 TE-20356

BCCH330A — JB-CG — BLOWER #3 TE-20352, BLOWER #3 TE-20351, BCCH330B,C

BCCH340A — JB-CJ — BLOWER #4 TE-20451, BLOWER #4 TE-20452, BCCH340B,C

BCCH341A — JB-CK — BLOWER #4 TE-20455, BLOWER #4 TE-20453, BCCH341B,C,D,E — BLOWER #4 TE-20456, BLOWER #4 TE-20454

BCCH342A — JB-CL — BLOWER #4 VT-20453, BLOWER #4 VT-20451, BCCH342B,C,D,E — BLOWER #4 VT-20454, BLOWER #4 VT-20452

BCCH335A — PIT-20051A

BCCH333A — BLOWER #3 PDT-20358

BCCH301A — BCCH334A — BLOWER #3 ZSO/ZSC/FVA/HS-20357, BLOWER #3 FVZO/FVZI-20357

BCCH343A — BLOWER #4 FVZO/FVZI-20457

BCCH345A — BCCH344A — BLOWER #4 ZSO/ZSC/FVA/HS-20457

BCCH303A — BLOWER #4 PDT-20458

TIT-20052A

BCCH306A — ZSO/ZSC/FVA/HS-20053A

BCCH305A — FVZI/FVZO-20053A

BLOWER ROOM CONTROL PANEL – BLOWER BANK "B" (PLC M22)

FOR CONTINUATION SEE DRAWING I-207

DEVICENET NETWORK 8

BCCD801A — MCC 42 (PROCESS AIR BLOWER NO.5, PROCESS AIR BLOWER NO.6) — BCCD802A — MCC 43 (PROCESS AIR BLOWER NO.7, PROCESS AIR BLOWER NO.8)

BCCH352A — JB-DC — BLOWER #5 VT-20551, BLOWER #5 VT-20553, BCCH352B,C,D,E — BLOWER #5 VT-20552, BLOWER #5 VT-20554

BCCH351A — JB-DB — BLOWER #5 TE-20553, BLOWER #5 TE-20555, BCCH351B,C,D,E — BLOWER #5 TE-20554, BLOWER #5 TE-20556

BCCH350A — JB-DA — BLOWER #5 TE-20552, BLOWER #5 TE-20551, BCCH350B,C

BCCH360A — JB-DD — BLOWER #6 TE-20651, BLOWER #6 TE-20652, BCCH360B,C

BCCH361A — JB-DE — BLOWER #6 TE-20655, BLOWER #6 TE-20653, BCCH361B,C,D,E — BLOWER #6 TE-20656, BLOWER #6 TE-20654

BCCH362A — JB-DF — BLOWER #6 VT-20653, BLOWER #6 VT-20651, BCCH362B,C,D,E — BLOWER #6 VT-20654, BLOWER #6 VT-20652

BCCH355A — BLOWER #5 PDT-20558

BCCH353A — BCCH354A — BLOWER #5 ZSO/ZSC/FVA/HS-20557, BLOWER #5 FVZO/FVZI-20557

BCCH363A — BLOWER #6 FVZO/FVZI-20657

BCCH365A — BCCH364A — BLOWER #6 ZSO/ZSC/FVA/HS-20657

BLOWER #6 PDT-20658

BCCH372A — JB-DI — BLOWER #7 VT-20751, BLOWER #7 VT-20753, BCCH372B,C,D,E — BLOWER #7 VT-20752, BLOWER #7 VT-20754

BCCH371A — JB-DH — BLOWER #7 TE-20753, BLOWER #7 TE-20755, BCCH371B,C,D,E — BLOWER #7 TE-20754, BLOWER #7 TE-20756

BCCH370A — JB-DG — BLOWER #7 TE-20752, BLOWER #7 TE-20751, BCCH370B,C

BCCH380A — JB-DJ — BLOWER #8 TE-20851, BLOWER #8 TE-20852, BCCH380B,C

BCCH381A — JB-DK — BLOWER #8 TE-20855, BLOWER #8 TE-20853, BCCH381B,C,D,E — BLOWER #8 TE-20856, BLOWER #8 TE-20854

BCCH382A — JB-DL — BLOWER #8 VT-20853, BLOWER #8 VT-20851, BCCH382B,C,D,E — BLOWER #8 VT-20854, BLOWER #8 VT-20852

BCCH375A — BLOWER #7 PDT-20758

BCCH373A — BCCH374A — BLOWER #7 ZSO/ZSC/FVA/HS-20757, BLOWER #7 FVZO/FVZI-20757

BCCH383A — BLOWER #8 FVZO/FVZI-20857

BCCH385A — BCCH384A — BLOWER #8 ZSO/ZSC/FVA/HS-20857

BLOWER #8 PDT-20858

BCCHXXXX — ZSO/ZSC/FVA/HS-20053B

BCCHXXXX — FVZI/FVZO-20053B

BCCH302A — PIT-20051B

BCCH304A — TIT-20052B

LEGEND

- MODEM
- ETHERNET HUB
- PANEL VIEW
- PLC
- DEVICENET CONDUIT
- FIELDBUS CONDUIT
- CONVENTIONAL WIRING
- DH+ CONDUIT

Layer: ON=*; OFF=*REF*

02/01/01 OBG JEC
EEA-VERT

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATED 10/24/05 PER: L.Kamplavet

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED IN THE TITLE BLOCK. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.

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0	4/20/01	ISSUED FOR APPROVAL	
1	7/11/01	AS BID	
2	10/31/05	RECORD DRAWING	

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Drawn by JEC
Checked by PLD

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

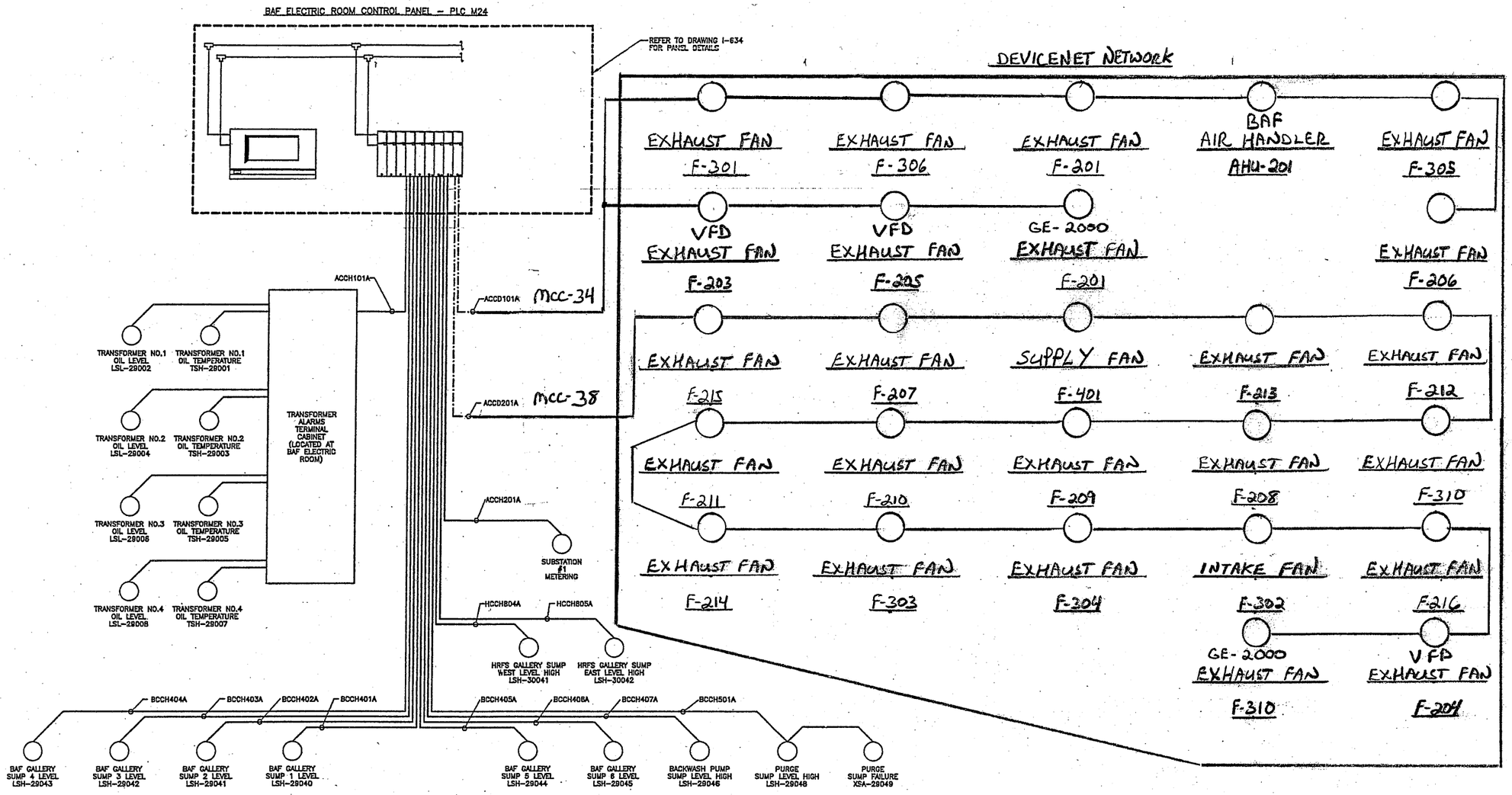
BLOWER PANELS (PLC M21 & M22) INTERCONNECTION DRAWING

INSTRUMENTATION

STATE OF NEW YORK · LEONARD J. CAMPOLIETA · LICENSED PROFESSIONAL ENGINEER · No. 90785

File Number 00659
Date APRIL 2001
L.Kamplavet

I-208



THIS DRAWING IS SCHEMATIC ONLY, FOR SHOWING CONDUIT NUMBERING. CONTRACTOR TO FIELD VERIFY LOCATION OF ALL DEVICES

LEGEND

- MODEM
- ETHERNET HUB
- PANEL VIEW
- PLC
- DEVICENET CONDUIT
- FIELDBUS CONDUIT
- CONVENTIONAL WIRING
- DH+ CONDUIT

RECORD DRAWING

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DATE: 10/21/05 PER: HKampolet

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04/10/01 OBG JEC
EEA-VERT

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0	4/20/01	ISSUED FOR APPROVAL	
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2	10/31/05	RECORD DRAWING	
3	2-28-06	REVISED FOR F/E CORD.	DSP

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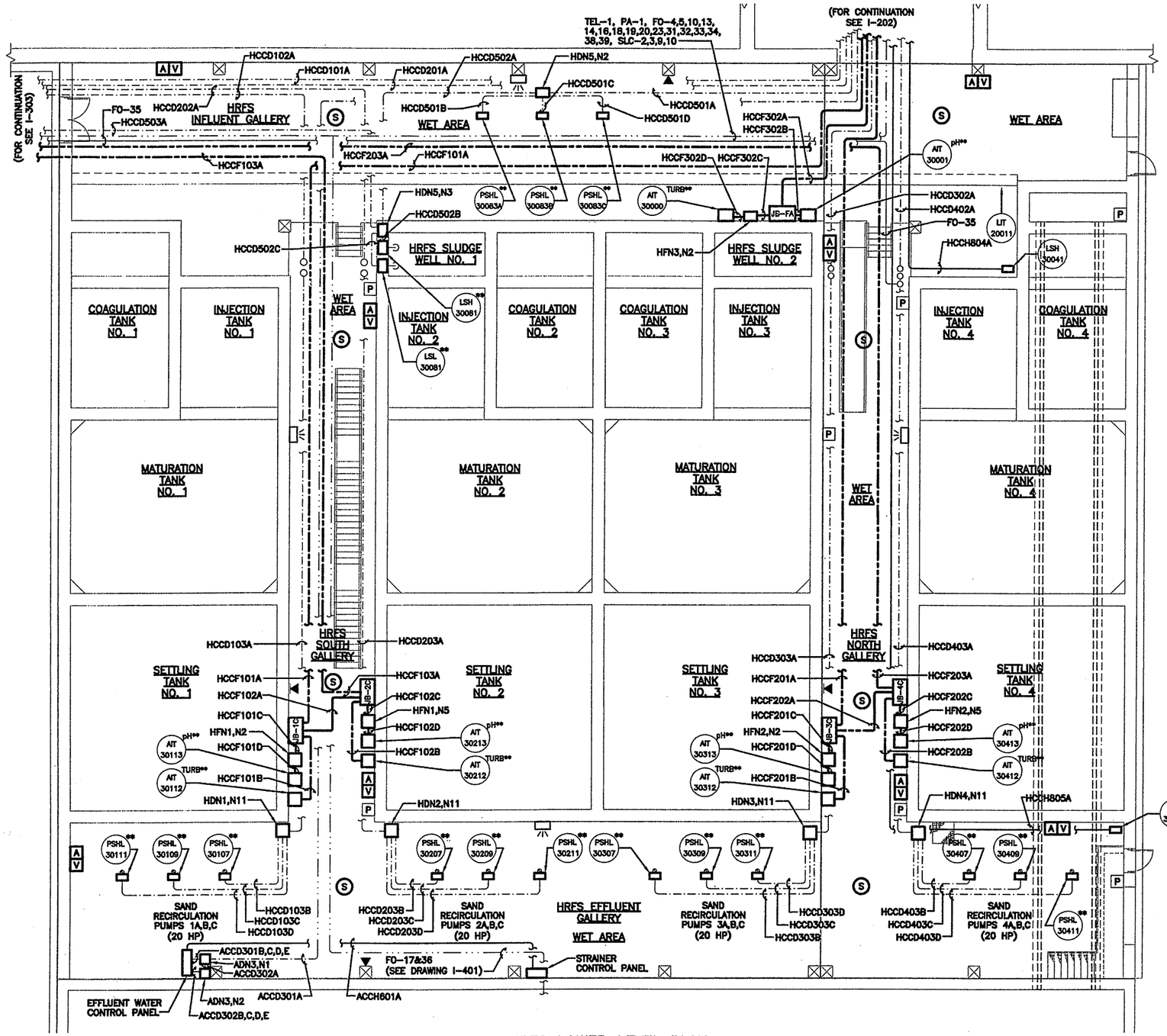
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BAF ELECTRIC ROOM (PLC M24)
INTERCONNECTION DIAGRAM
INSTRUMENTATION

LEONARD J. CASPOWITZ — STATE OF NEW YORK — No. 60755 — LICENSED PROFESSIONAL ENGINEER

File Number: 00659
Date: APRIL 2001
HKampolet

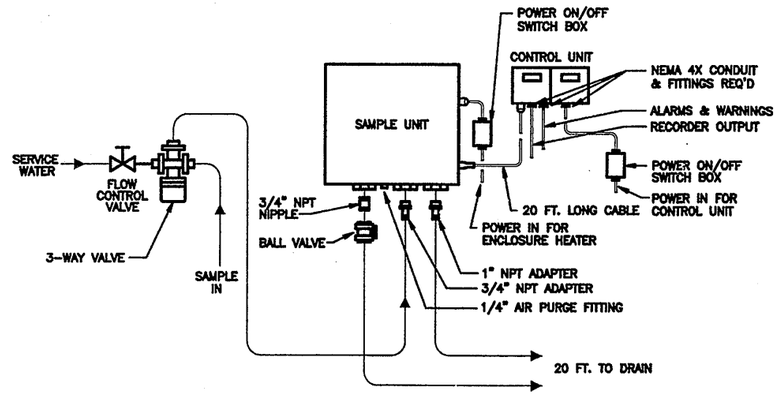
I-209



HRFS LOWER LEVEL PLAN

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

CALLED NORTH



SAMPLE UNIT INSTALLATION DETAIL

NOT TO SCALE

NOTE:

1. FOR CONDUIT SCHEDULES REFER TO DRAWINGS I-510, I-511, I-512 & I-513.
2. ** INDICATES AN ITEM OR ITEMS SUPPLIED BY OWNER FOR INSTALLATION BY THE CONTRACTOR.

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE 10/21/05 PER LRampolet

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Layer: ON=*; OFF=*REF*
X: 0659X301.DWG
4/23/01 BBL DCC
05503000/0659I301.DWG

1/8"=1'-0" (8' 0 8' 16')

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0	4/20/01	ISSUED FOR APPROVAL	
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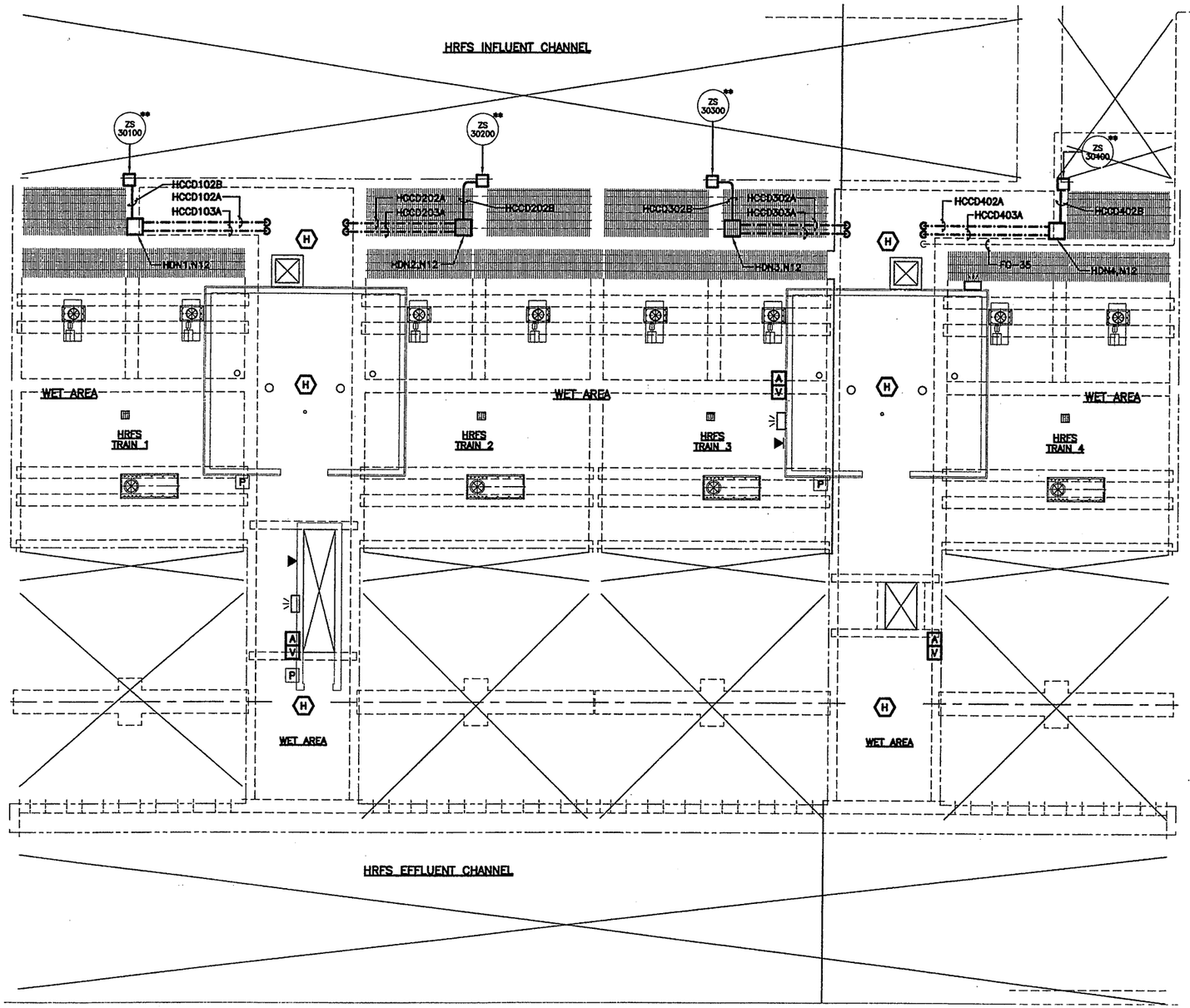
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
HRFS COMPLEX
HRFS LOWER LEVEL PLAN
INSTRUMENTATION

STATE OF NEW YORK • LEONARD J. CAMPOLIETA • LICENSED PROFESSIONAL ENGINEER • No. 60755

File Number 00659
Date APRIL 2001
LRampolieta

I-301



FO-35 TO SURVEILLANCE CAMERA NO. 7 (SEE DRAWING I-002)

CALLED NORTH

HRFS UPPER LEVEL PLAN

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

NOTES:

1. ** INDICATES AN ITEM OR ITEMS SUPPLIED BY OWNER FOR INSTALLATION BY THE CONTRACTOR.
2. FOR CONDUIT SCHEDULES SEE DRAWINGS I-510, I-511, I-512 & I-513.
3. PROVIDE THE FOLLOWING WORK ASSOCIATED WITH HRFS SLUDGE WET WELLS NO. 1 AND 2:
   a. COMPLETE INSTALLATION OF TWO ADDITIONAL LEVEL FLOAT SWITCHES IN HRFS SLUDGE WELL NO.1 (FURNISHED BY CONTRACT 1B). SWITCHES SHALL BE DESIGNATED LSHH-30081 AND LSLL-30081. ELEVATIONS SHALL BE AS SUMMARIZED IN THE TABLE BELOW. PROVIDE CONNECTION OF EACH SWITCH TO DEVICENET INTERFACE MODULE HDN5, N3 WITH 2#14 IN 3/4" CONDUIT.
   b. COMPLETE INSTALLATION OF FOUR LEVEL FLOAT SWITCHES IN HRFS SLUDGE WELL NO. 2 (FURNISHED BY CONTRACT 1B). SWITCHES SHALL BE DESIGNATED LSHH-30084, LSH-30084, LSL-30084 AND LSLL-30084. ELEVATIONS SHALL BE AS SUMMARIZED IN THE TABLE BELOW. PROVIDE CONNECTION OF EACH SWITCH TO DEVICENET INTERFACE MODULE (ITEM 3 BELOW) WITH 2#14 IN 3/4" CONDUIT.
   c. COMPLETE INSTALLATION OF DEVICENET INTERFACE MODULE (FURNISHED BY CONTRACT 1B) ADJACENT TO HRFS SLUDGE WELL NO. 2 IN THE HRFS NORTH GALLERY. PROVIDE CONNECTION OF MODULE TO DEVICENET NETWORK 5 DOWNSTREAM OF MODULE HDN5, N3. PROVIDE TWO BELDEN 3083A IN 1" CONDUIT ROUTED FROM HDN5, N3 TO HRFS SLUDGE WELL NO. 2 DEVICENET INTERFACE MODULE TO FACILITATE CONNECTION.
   d. FLOAT LEVEL SWITCH ELEVATIONS;

	ELEVATION
HIGH LEVEL ALARM	391.50
PUMP ON	390.50
PUMP OFF	380.50
LOW LEVEL ALARM	379.50

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATED 10/21/05 PER L.Rampolet

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X: 0659X302.DWG
4/4/01 BBL DCC
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1/8"=1'-0" (8' 0 8' 16')

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0	4/4/01	ISSUED FOR APPROVAL	DCC
1	7/11/01	AS BID	
2	10/31/05	RECORD DRAWING	↓

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SYRACUSE, NEW YORK

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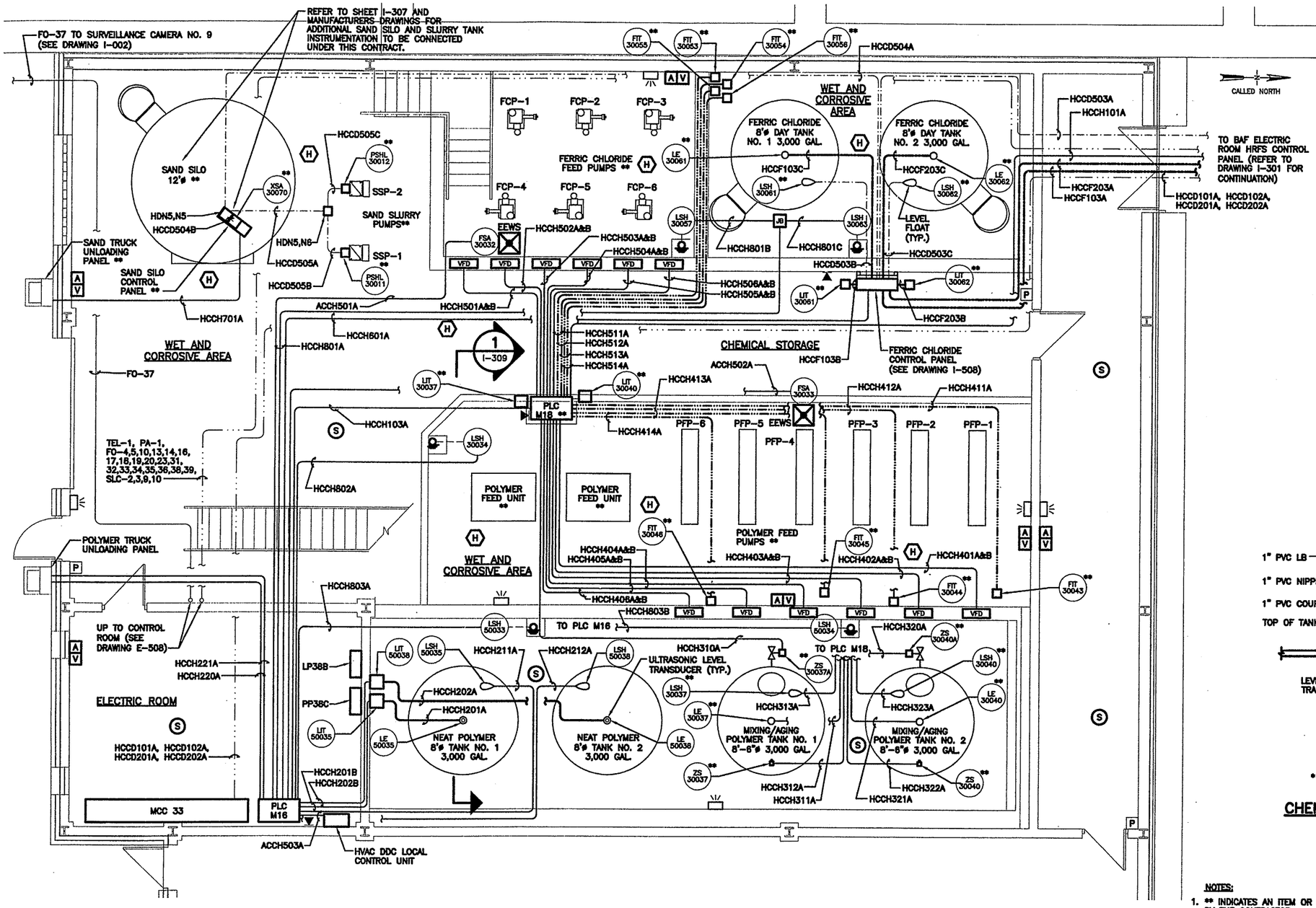
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
HRFS COMPLEX
HRFS UPPER LEVEL PLAN
INSTRUMENTATION

STATE OF NEW YORK · LEONARD J. CAMPOLIETA · No. 60755 · LICENSED PROFESSIONAL ENGINEER

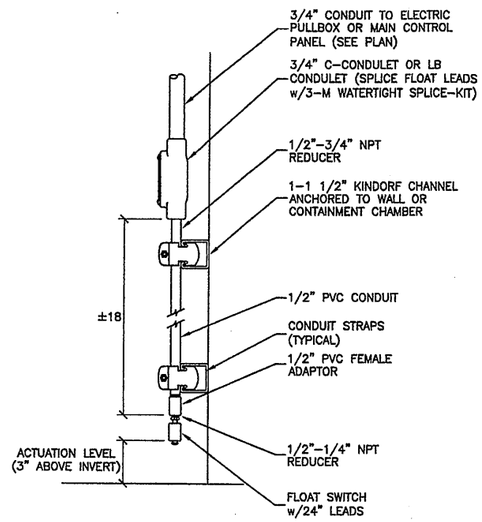
File Number 00659
Date APRIL 2001
L.Campolieta

I-302



CHEMICAL BUILDING C PLAN

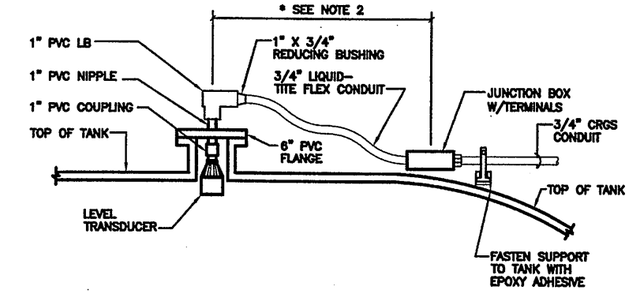
SCALE: 1/4"=1'-0"



STEM TYPE FLOAT SWITCH DETAIL

NOT TO SCALE

TYPICAL FOR LSH-29040, LSH-29041, LSH-29042, LSH-29043, LSH-29044, LSH-29045, LSH-29046, LSH-30041, LSH-30042, LSH-30057, LSH-30063, LSH-50032, LSH-50033, LSH-50034, LSH-50106, LSH-50107



CHEMICAL STORAGE TANK LEVEL TRANSMITTER DETAIL

NOT TO SCALE

TYPICAL FOR LIT-30037, LIT-30040, LIT-30061, LIT-30062, LIT-50035, LIT-50038, LIT-50059A, LIT-50059B, LIT-50100, LIT-50200, LIT-50200A

NOTES:

1. PROVIDE INSTALLATION FOR ULTRASONIC LEVEL TRANSDUCER AS DETAILED.
* 2. LOCATE JUNCTION BOX WITH TERMINALS WITHIN REACH OF GRATING ON SIDE OF TANK.

NOTES:

1. ** INDICATES AN ITEM OR ITEMS SUPPLIED BY OWNER FOR INSTALLATION BY THE CONTRACTOR.
2. FOR CONDUIT SCHEDULES SEE DRAWINGS I-510, I-511, I-512 & I-513.
3. PROVIDE 8-#14, 1-#14 GROUND IN 3/4" CONDUIT FROM PLCM18 TO FERRIC CHLORIDE PUMP DISCHARGE FLOW METERS FIT-30053, FIT-30059, FIT-30055 AND FIT-30056 (120VAC POWER).

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MINOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATED 4/12/06 PER: LKampoliet

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Layer: ON=*; OFF=*REF*
X: 0659X501.DWG
4/23/01 BBL DCC
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1/4"=1'-0" 4' 0 4' 8'

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No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	LKe
1	7/11/01	AS BID	
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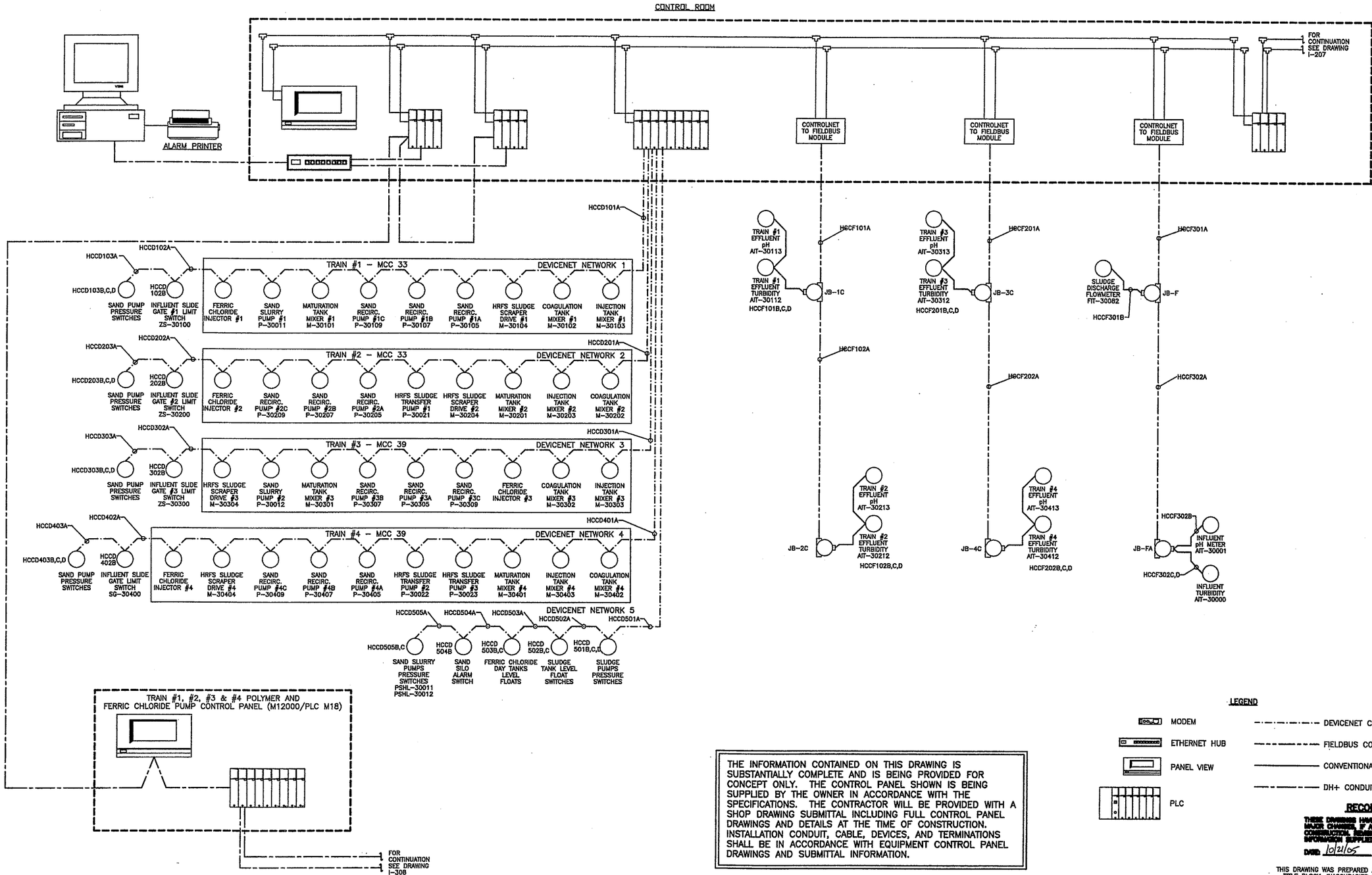
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHEMICAL BUILDING C
CHEMICAL BUILDING C PLAN
INSTRUMENTATION

STATE OF NEW YORK • LEONARD J. CAMPOLIETA • No. 60757 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
LKampoliet

I-303



LEGEND

- MODEM
- ETHERNET HUB
- PANEL VIEW
- PLC
- DEVICENET CONDUIT
- FIELDBUS CONDUIT
- CONVENTIONAL WIRING
- DH+ CONDUIT

THE INFORMATION CONTAINED ON THIS DRAWING IS SUBSTANTIALLY COMPLETE AND IS BEING PROVIDED FOR CONCEPT ONLY. THE CONTROL PANEL SHOWN IS BEING SUPPLIED BY THE OWNER IN ACCORDANCE WITH THE SPECIFICATIONS. THE CONTRACTOR WILL BE PROVIDED WITH A SHOP DRAWING SUBMITTAL INCLUDING FULL CONTROL PANEL DRAWINGS AND DETAILS AT THE TIME OF CONSTRUCTION. INSTALLATION CONDUIT, CABLE, DEVICES, AND TERMINATIONS SHALL BE IN ACCORDANCE WITH EQUIPMENT CONTROL PANEL DRAWINGS AND SUBMITTAL INFORMATION.

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. RECORDS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DWG. 10/21/05 PER: L.Kampoliet

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EEA-VERT

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2	10/31/05	RECORD DRAWING	↓

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
HRFS (PLC M17)

INTERCONNECTION DRAWING

INSTRUMENTATION

EDWARD J. CAMPOLIETA · LICENSED PROFESSIONAL ENGINEER · STATE OF NEW YORK · No. 60759

File Number 00659
Date APRIL 2001
L.Kampoliet

I-304

EXISTING CHEMICAL BUILDING "B" CONTROL PANEL PLC M20B

CHEMICAL BUILDING "C" CONTROL PANEL PLC M16

M12000 CHEMICAL FEED CONTROL PANEL PLC M18

RUN/STOP

RUN/STOP

FERRIC CHLORIDE CONTROL PANEL

FERRIC CHLORIDE BULK STORAGE TANK NO.1

10,000 GALLONS

FERRIC CHLORIDE BULK STORAGE TANK NO.2

10,000 GALLONS

FERRIC CHLORIDE TRANSFER PUMP NO.1

FERRIC CHLORIDE TRANSFER PUMP NO.2

CHEMICAL BUILDING "B" BULK STORAGE CHEMICAL ROOM

HRFS CHEMICAL ROOM CHEMICAL BUILDING "C"

FERRIC CHLORIDE DAY TANK 1

3,000 GALLONS

FERRIC CHLORIDE DAY TANK 2

3,000 GALLONS

AUTO

FAIL

STROKE LENGTH

RUNNING

FERRIC CHLORIDE PUMP NO.1

FERRIC CHLORIDE PUMP NO.2 SAME AS ABOVE (EXCEPT TAG NO. = 30051B)

FERRIC CHLORIDE PUMP NO.3 SAME AS ABOVE (EXCEPT TAG NO. = 30051C)

FERRIC CHLORIDE PUMP NO.4 SAME AS ABOVE (EXCEPT TAG NO. = 30052A)

FERRIC CHLORIDE PUMP NO.5 SAME AS ABOVE (EXCEPT TAG NO. = 30052B)

FERRIC CHLORIDE PUMP NO.6 SAME AS ABOVE (EXCEPT TAG NO. = 30052C)

HRFS TRAIN NO. 1

HRFS TRAIN NO. 2

HRFS TRAIN NO. 3

HRFS TRAIN NO. 4

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE 10/24/05 PER: L. Lampliet

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SYRACUSE, NEW YORK

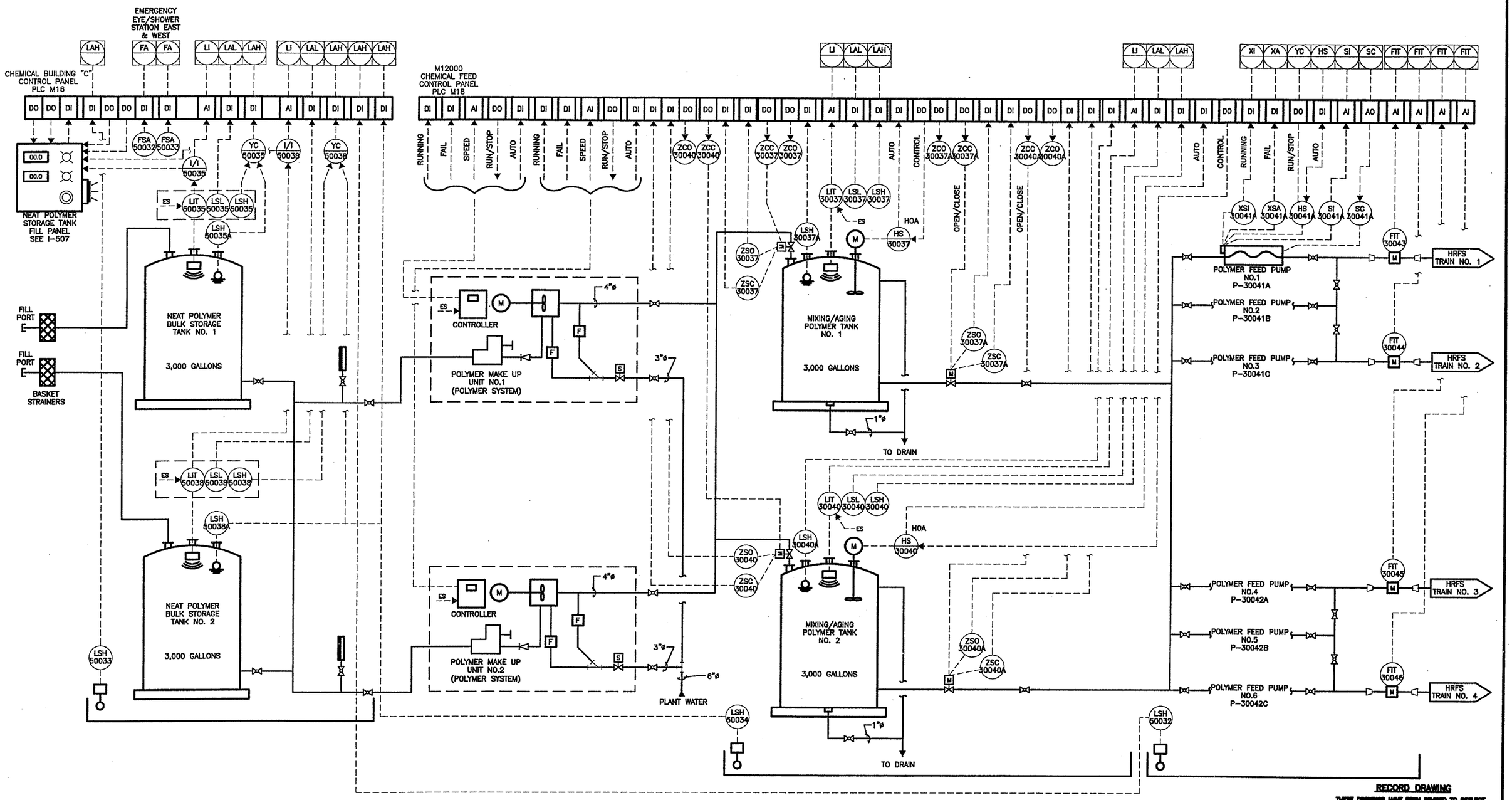
ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

FERRIC CHLORIDE FEED CONTROL DIAGRAM
INSTRUMENTATION

LEONARD J. CAMPOLIETO LICENSED PROFESSIONAL ENGINEER No. 60755 STATE OF NEW YORK

File Number 00659
Date APRIL 2001
L. Lampliet

I-305



RECORD DRAWING

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DATE: 10/21/05 PER: L. Campoliete

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05503046/0659I306.DWG

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2	10/31/05	RECORD DRAWING	

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Drawn by JEC
Checked by PLD

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SYRACUSE, NEW YORK

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

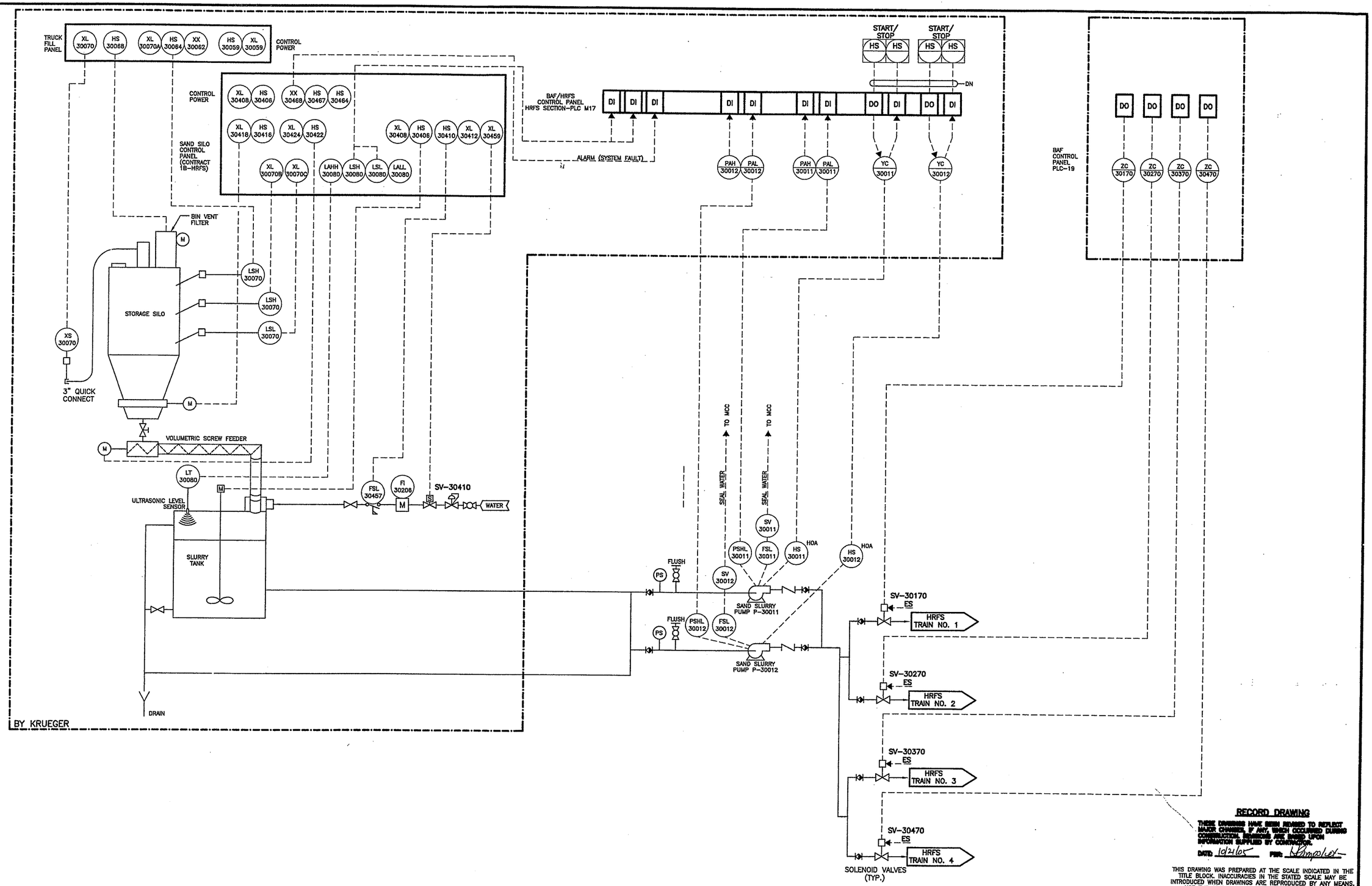
POLYMER FEED CONTROL DIAGRAM

INSTRUMENTATION

LICENSED PROFESSIONAL ENGINEER · LEONARD J. CAMPOLIETA · No. 60755 · STATE OF NEW YORK

File Number 00659
Date APRIL 2001

I-306



RECORD DRAWING

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DATED 10/26/05 PER: L. Campbell

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EEA-VERT

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Drawn by JEC
Checked by PLD

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

SAND STORAGE SILO AND SLURRY FEED SYSTEM CONTROL DIAGRAM

INSTRUMENTATION

STATE OF NEW YORK • LEONARD J. CAMPBELL • No. 60756 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
L. Campbell

I-307

CONTROL ROOM

M MIXER M-30037

M MIXER M-30040

M MAKEUP UNIT MIXER #1

M MAKEUP UNIT MIXER #2

FOR CONTINUATION SEE DRAWING I-304 1

HCCH403A HCCH403B — POLYMER PUMP NO.3 PFP-30041C

HCCH402A HCCH402B — POLYMER PUMP NO.2 PFP-30041B

HCCH401A HCCH401B — POLYMER PUMP NO.1 PFP-30041A

HCCH511A — FERRIC CHLORIDE FEED FLOWMETER #1 FIT-30053

HCCH512A — FERRIC CHLORIDE FEED FLOWMETER #2 FIT-30054

HCCH513A — FERRIC CHLORIDE FEED FLOWMETER #3 FIT-30055

HCCH514A — FERRIC CHLORIDE FEED FLOWMETER #4 FIT-30056

HCCH408A HCCH408B — POLYMER PUMP NO.6 PFP-30042C

HCCH405A HCCH405B — POLYMER PUMP NO.5 PFP-30042B

HCCH404A HCCH404B — POLYMER PUMP NO.4 PFP-30042A

HCCH310A — POLYMER AGING TANK NO.1 DISCHARGE VALVE ZSO/ZSC-30037A

HCCH311A — POLYMER AGING TANK NO.1 LEVEL TRANSMITTER LIT-30037

HCCH312A — POLYMER AGING TANK NO.1 FILL VALVE ZSO/ZSC-30037

HCCH503A HCCH503B — FERRIC CHLORIDE PUMP NO.3 FCFP-30051C

HCCH502A HCCH502B — FERRIC CHLORIDE PUMP NO.2 FCFP-30051B

HCCH501A HCCH501B — FERRIC CHLORIDE PUMP NO.1 FCFP-30051A

HCCH320A — POLYMER AGING TANK NO.2 DISCHARGE VALVE ZSO/ZSC-30040A

HCCH321A — POLYMER AGING TANK NO.2 LEVEL TRANSMITTER LIT-30040

HCCH322A — POLYMER AGING TANK NO.2 FILL VALVE ZSO/ZSC-30040

HCCH506A HCCH506B — FERRIC CHLORIDE PUMP NO.6 FCFP-30052C

HCCH505A HCCH505B — FERRIC CHLORIDE PUMP NO.5 FCFP-30052B

HCCH504A HCCH504B — FERRIC CHLORIDE PUMP NO.4 FCFP-30052A

HCCH411A — POLYMER FEED HRFS TRAIN NO. 1 FLOW TRANSMITTER FIT-30043

HCCH412A — POLYMER FEED HRFS TRAIN NO. 2 FLOW TRANSMITTER FIT-30044

HCCH413A — POLYMER FEED HRFS TRAIN NO. 3 FLOW TRANSMITTER FIT-30045

HCCH414A — POLYMER FEED HRFS TRAIN NO. 4 FLOW TRANSMITTER FIT-30046

HCCH313A — MIXING/AGING POLYMER TANK NO.1 LEVEL SWITCH LSH-30037A

HCCH323A — MIXING/AGING POLYMER TANK NO.2 LEVEL SWITCH LSH-30040A

THE INFORMATION CONTAINED ON THIS DRAWING IS SUBSTANTIALLY COMPLETE AND IS BEING PROVIDED FOR CONCEPT ONLY. THE CONTROL PANEL SHOWN IS BEING SUPPLIED BY THE OWNER IN ACCORDANCE WITH THE SPECIFICATIONS. THE CONTRACTOR WILL BE PROVIDED WITH A SHOP DRAWING SUBMITTAL INCLUDING FULL CONTROL PANEL DRAWINGS AND DETAILS AT THE TIME OF CONSTRUCTION. INSTALLATION CONDUIT, CABLE, DEVICES, AND TERMINATIONS SHALL BE IN ACCORDANCE WITH EQUIPMENT CONTROL PANEL DRAWINGS AND SUBMITTAL INFORMATION.

LEGEND

- MODEM
- ETHERNET HUB
- PANEL VIEW
- PLC
- DEVICENET CONDUIT
- FIELDBUS CONDUIT
- CONVENTIONAL WIRING
- DH+ CONDUIT

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE 10/21/05 PER: L Campoletta

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED IN THE TITLE BLOCK. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.

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No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
1	7/11/01	AS BID	
2	10/31/05	RECORD DRAWING	

In charge of PLD
Designed by SAT
Drawn by JEC
Checked by PLD

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

M12000 HRFS CHEMICAL FEED (PLC M18)
INTERCONNECTION DRAWING

INSTRUMENTATION

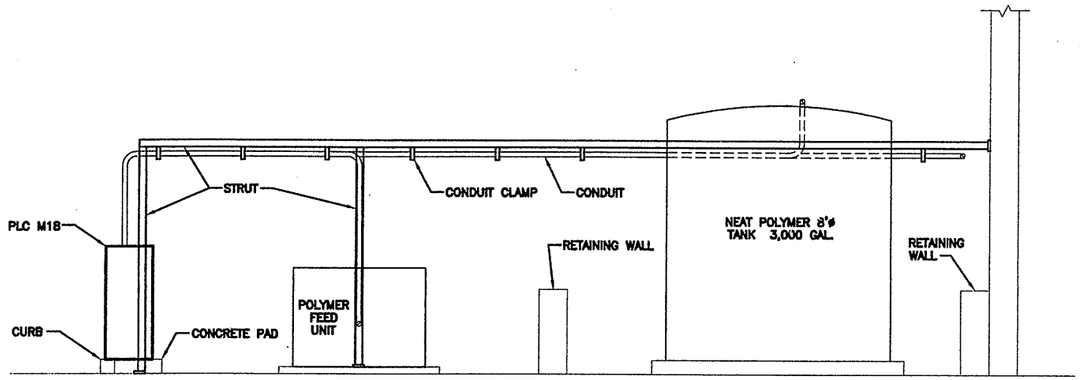
STATE OF NEW YORK • LEONARD J. CAMPOLETTA • LICENSED PROFESSIONAL ENGINEER • No. 60705

File Number 00659

Date APRIL 2001

L Campoletta

I-308



CONDUIT MOUNTING DETAIL

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

1
I-303

Layer: ON=*; OFF=*REF*

4/4/00 BBL DCC
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3/8"=1'-0" 2' 0 3' 6'

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

No.	Date	Revisions	Init
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1	7/11/01	AS BID	↓
2	10/31/05	RECORD DRAWING	

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Drawn by DCC
Checked by WSH

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ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHEMICAL BUILDING C

INSTRUMENTATION MOUNTING DETAILS

INSTRUMENTATION

STATE OF NEW YORK • LEONARD J. CAMPOLIETA • No. 60755 • LICENSED PROFESSIONAL ENGINEER

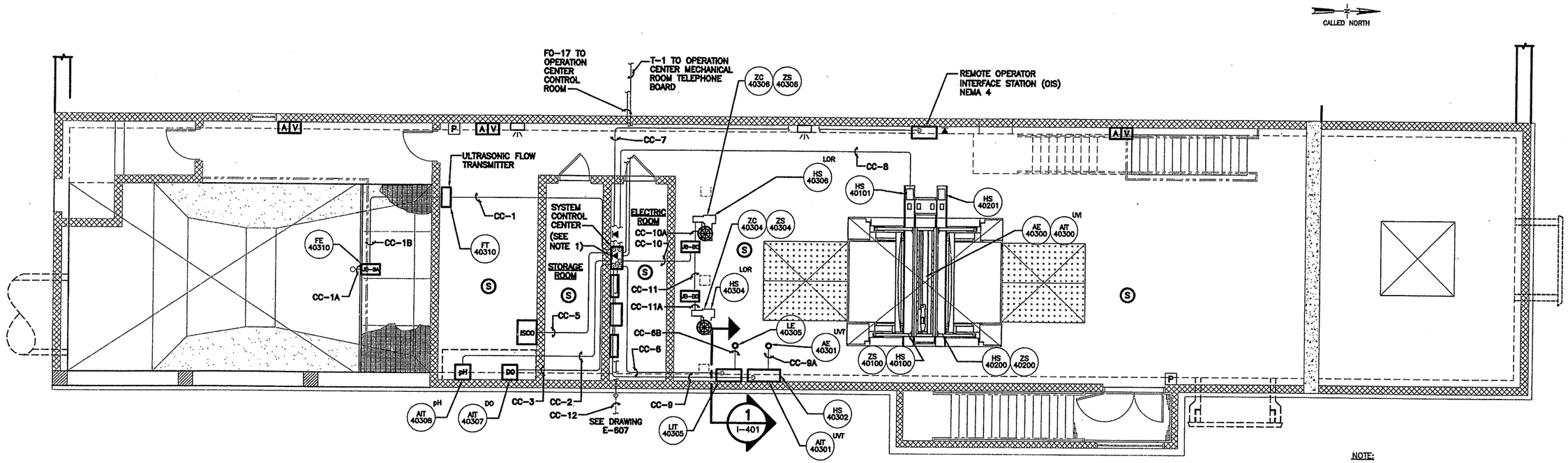
File Number 00659
Date APRIL 2001
LCampoLet

I-309

RECORD DRAWING

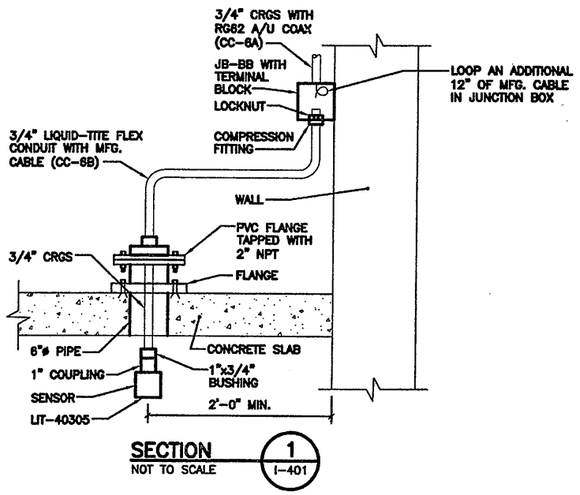
THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS WERE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE 10/21/05 PER LCampoLet



INSTRUMENTATION PLAN

SCALE: 3/16"=1'-0"



SECTION 1 / I-401

NOT TO SCALE

CIRCUIT/CONDUIT SCHEDULE				
CKT. NO.	CONDUIT SIZE	NO./SIZE CONDUCTORS	FROM	TO
CC-1	3/4" CRGS	1 TPS #16	SYSTEM CONTROL CENTER (SCC)	ULTRASONIC FLOW TRANSMITTER (AIT-40310)
CC-1A	3/4" CRGS	RG 62 A/U	ULTRASONIC FLOW TRANSMITTER (AIT-40310)	JB-BA ON RAILING
CC-1B	3/4" LIQUID-TITE	MFG. CABLE	JB-BA ON RAILING	ULTRASONIC FLOW TRANSDUCER (AE-40310)
CC-2	3/4" CRGS	1-16 TSP	SYSTEM CONTROL CENTER (SCC)	pH ANALYZER (AIT-40308)
CC-3	3/4" CRGS	1-16 TSP	SYSTEM CONTROL CENTER (SCC)	DO ANALYZER (AIT-40307)
CC-5	3/4" CRGS		SYSTEM CONTROL CENTER (SCC)	ISCO SAMPLER
CC-6	3/4" CRGS	1 TPS #16	SYSTEM CONTROL CENTER (SCC)	ULTRASONIC LEVEL TRANSMITTER (LIT-40305)
CC-8A	3/4" CRGS	RG 62 A/U	ULTRASONIC LEVEL TRANSMITTER (LIT-40305)	JB-BB ON WALL
CC-8B	3/4" LIQUID-TITE	1 TPS #16	JB-BB ON WALL	ULTRASONIC LEVEL TRANSDUCER (LE-40305)
CC-7	3/4" CRGS		SYSTEM CONTROL CENTER (SCC)	REMOTE OPERATOR INTERFACE
CC-8	3/4" CRGS	2 TPS #16	SYSTEM CONTROL CENTER (SCC)	UV REACTOR POWER DIST. CENTER (PDC)
CC-9	3/4" CRGS	1 TPS #16	SYSTEM CONTROL CENTER (SCC)	ON-LINE TRANSMISSION UNIT (UVT) (AIT-40301)
CC-9A	3/4" LIQUID-TITE	MFG. CABLE	UVT (AIT-40301)	UVT SENSOR (AE-40301)
CC-11	1" CRGS	6 #14	SYSTEM CONTROL CENTER (SCC)	JB-BC BY WEIR GATE NO. 2
CC-10	3/4" LIQUID-TITE	1 TPS	JB-BC BY WEIR GATE NO. 2	WEIR GATE NO. 2 (HS-40306)
CC-1A	3/4" CRGS	6 #14	JB-BC BY WEIR GATE NO. 2	JB-BD BY WEIR GATE NO. 1
CC-10A	3/4" LIQUID-TITE	1 TPS	JB-BD BY WEIR GATE NO. 1	WEIR GATE NO. 1 (HS-40304)
CC-12	1-1/2" CRGS	6 #14	SYSTEM CONTROL CENTER (SCC)	GATE RECEIVER
T-1	1" CRGS	2 #22	SYSTEM CONTROL CENTER (SCC)	TELEPHONE BOARD/JACK
CC-13	3/4" CRGS	4 #12, 1 #12G	SYSTEM CONTROL CENTER (SCC)	REMOTE OPERATOR INTERFACE

NOTE:

1. LOCATE TELEPHONE JACK WITHIN UV SYSTEM CONTROL CENTER FOR REMOTE DIAL-IN CONNECTION.

RECORD DRAWING

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DATE 10/21/05 PER L.Campobell

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Layer: ON=*; OFF=*REF*
X: 0659X402.DWG
4/13/01 BBL DCC
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3/16"=1'-0" (4' 0 6' 12')

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	DCC
1	7/11/01	AS BID	
2	10/31/05	RECORD DRAWING	

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Designed by AHL
Drawn by DCC
Checked by TEL

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
UV DISINFECTION

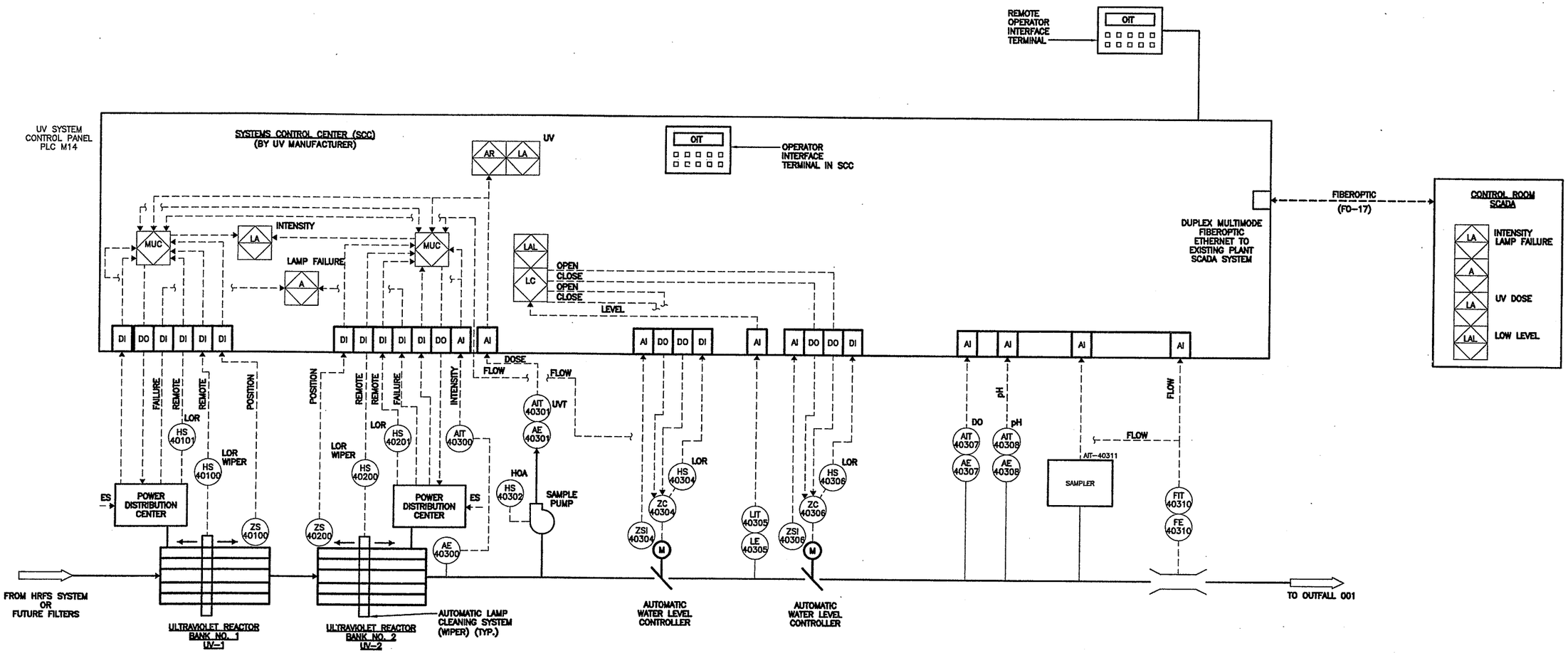
UV DISINFECTION/PARSHALL FLUME INSTRUMENTATION PLAN AND DETAIL

INSTRUMENTATION

STATE OF NEW YORK • EDWARD J. CAMPOBELL • No. 60756 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
L.Campobell

I-401



UV DISINFECTION SYSTEM CONTROL DIAGRAM

NOT TO SCALE

RECORD DRAWING

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0	4/20/01	ISSUED FOR APPROVAL	
1	7/11/01	AS BID	
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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

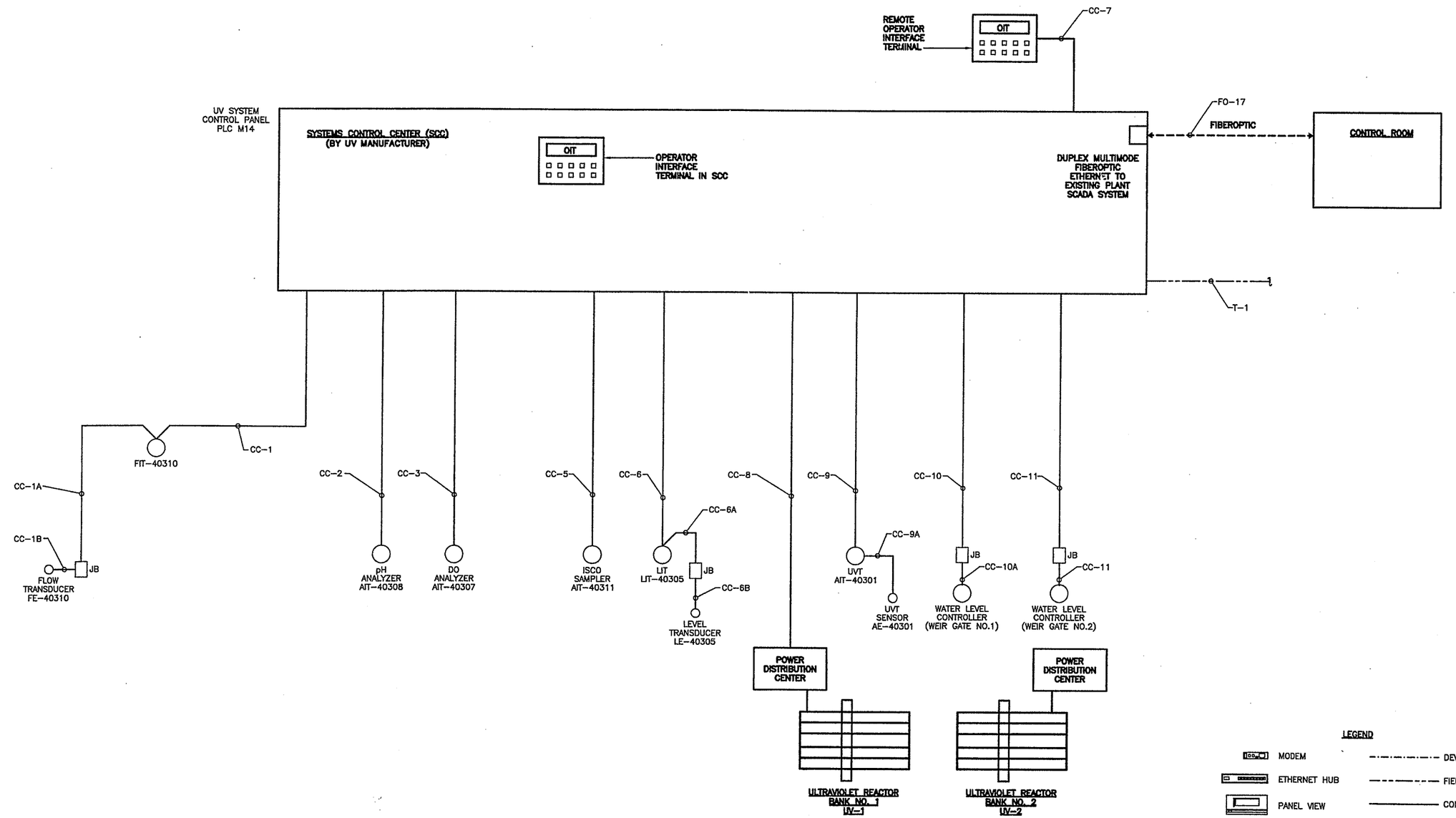
UV DISINFECTION/FLOW MONITORING CONTROL DIAGRAM (PLC M14)

INSTRUMENTATION

STATE OF NEW YORK • LEONARD J. CAMPOSEA • No. 60765 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001

I-402



UV DISINFECTION SYSTEM

NOT TO SCALE

THIS DRAWING IS SCHEMATIC ONLY, FOR SHOWING CONDUIT NUMBERING. CONTRACTOR TO FIELD VERIFY LOCATION OF ALL DEVICES

RECORD DRAWING

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DATE: _____ FIELD: _____

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No.	Date	Revisions	Init
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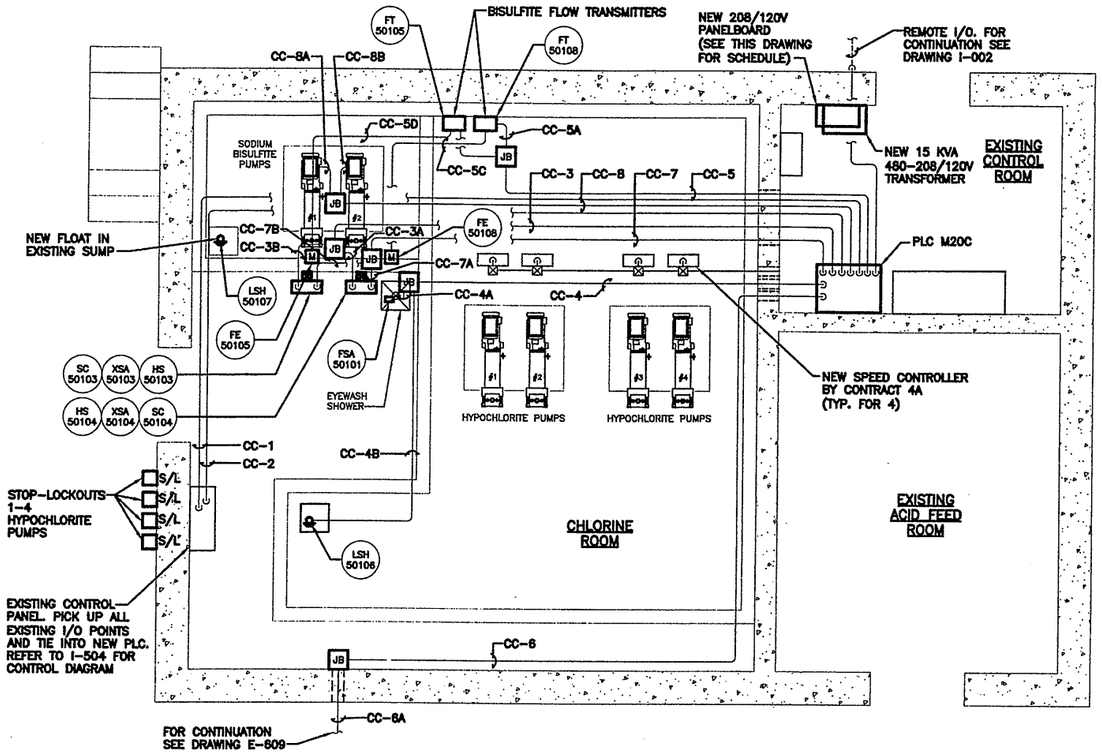
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

UV DISINFECTION/FLOW MONITORING INTERCONNECT ONELINE

INSTRUMENTATION

File Number 00659
Date APRIL 2001

I-403

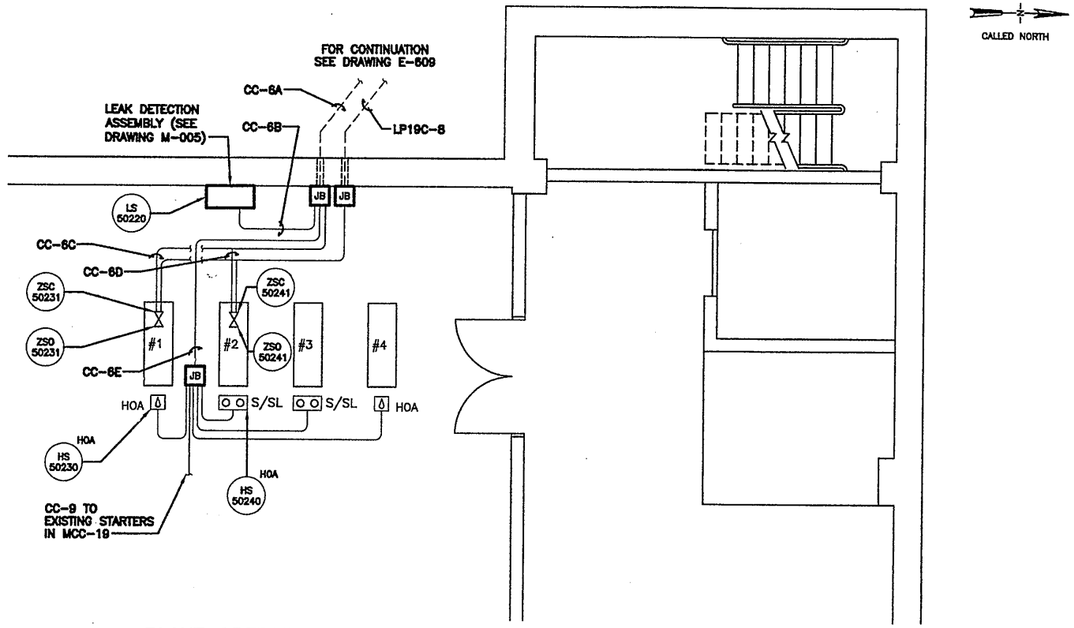


NOTES:

1. ALL CONDUITS SHALL BE 3/4"ø PVC COATED RGS UNLESS INDICATED OTHERWISE.
2. SEE SHEET E-608 FOR LSH-50102 AT MANHOLE.
3. ELECTRICAL CONTRACTOR IS ALSO RESPONSIBLE FOR RELOCATING EXISTING INSTRUMENT LOOPS, ALTHOUGH NOT SHOWN IN DRAWING. THESE LOOPS ARE FOUND IN THE EXISTING "SODIUM HYPOCHLORITE CONTROL PANEL".

POWER AND INSTRUMENTATION PLAN
CHEMICAL FEED BUILDING

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



PLANT OPERATIONS BUILDING BASEMENT PARTIAL PLAN

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

NOTES:

1. REFER TO M-509 FOR NEW MOTORIZED BUTTERFLY VALVES AT CARRIER WATER PUMPS.
2. PROVIDE 3/4"C w/3-#12 & #12G FROM EACH VALVE TO LOCAL 480V PANEL. PROVIDE DISCONNECT AT VALVE OPERATORS.

CHEMICAL FEED BUILDING A CONDUIT SCHEDULE

CKT. NO.	CONDUIT SIZE	NO.SIZE CONDUCTORS	FROM	TO
CC-1	3" CRGS	11 TPS #16	REMOTE I/O M20C	EXISTING CONTROL PANEL
CC-2	1" CRGS	16 #14	REMOTE I/O M20C	EXISTING CONTROL PANEL
CC-3	1-1/2" CRGS	2 TPS #16	REMOTE I/O M20C	JB ABOVE DECHLOR PUMP NO. 2
CC-3A	3/4" CRGS	1 TPS #16	JB ABOVE DECHLOR PUMP NO. 2	VARIABLE SPEED CONTROLLER NO. 2
CC-3B	3/4" CRGS	1 TPS #16	JB ABOVE DECHLOR PUMP NO. 2	VARIABLE SPEED CONTROLLER NO. 1
CC-4	3/4" CRGS	6 #14	REMOTE I/O M20C	JB ABOVE EYE/SHOWER STATION
CC-4A	3/4" CRGS	2 #14	JB ABOVE EYE/SHOWER STATION	EYE/SHOWER STATION FLOW SWITCH
CC-4B	3/4" CRGS	2 #14	JB ABOVE EYE/SHOWER STATION	HYPOCHLORITE AREA SUMP FLOAT
CC-5	3/4" CRGS	2 TPS #16	REMOTE I/O M20C	JB ABOVE FLOW TRANSMITTER NO. 2
CC-5A	3/4" CRGS	1 TPS #16	JB ABOVE FLOW TRANSMITTER NO. 2	FLOW TRANSMITTER NO. 2
CC-5B	3/4" CRGS	1 TPS #16	JB ABOVE FLOW TRANSMITTER NO. 2	FLOW TRANSMITTER NO. 1
CC-5C	3/4" CRGS	1 TPS #16	FLOW TRANSMITTER NO. 2	FLOW METER NO. 2
CC-5D	3/4" CRGS	1 TPS #16	FLOW TRANSMITTER NO. 1	FLOW METER NO. 1
CC-6	1" CRGS	30 #14	REMOTE I/O M20C	JB ON EAST WALL
CC-6A	3/4" CRGS	12 #14	JB ON EAST WALL	JB ON POB WALL
CC-6B	3/4" CRGS	2 #14	JB ON POB WALL	LEAK DETECTION FLOAT
CC-6C	3/4" CRGS	8 #14	JB ON POB WALL	VALVE CARRIER PUMP NO. 1
CC-6D	3/4" CRGS	8 #14	JB ON POB WALL	VALVE CARRIER PUMP NO. 2
CC-6E	3/4" CRGS	12 #14	JB ON POB WALL	JB ABOVE CARRIER PUMPS
CC-7	3/4" CRGS	12 #14	REMOTE I/O M20C	JB ABOVE DECHLOR. PUMP NO. 2
CC-7A	3/4" CRGS	6 #14	JB ABOVE DECHLOR. PUMP NO. 2	VARIABLE FEED CONTROLLER NO. 1
CC-7B	3/4" CRGS	6 #14	JB ABOVE DECHLOR. PUMP NO. 2	VARIABLE FEED CONTROLLER NO. 2
CC-8	3/4" CRGS	4 #14	REMOTE I/O M20C	JB BETWEEN DECHLOR. PUMPS
CC-8A	3/4" LIQUIDTITE	2 #14	JB BETWEEN PUMPS	PUMP NO. 1
CC-8B	3/4" LIQUIDTITE	2 #14	JB BETWEEN PUMPS	PUMP NO. 2
CC-9	3/4" CRGS	8 #14	JB BETWEEN PUMPS	MCC 19
CC-10	1" CRGS	24 #14	PLC M20C	HYPOCHLORITE PUMP SPEED CONTROL
CC-11	3/4" CRGS	4 TPS #16	PLC M20C	HYPOCHLORITE PUMP SPEED CONTROL

RECORD DRAWING

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DATE 10/21/05 PER L.Campbell

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

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
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2	10/31/05	RECORD DRAWING	

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In charge of TEL
Designed by MEE
Drawn by DCC
Checked by WSH

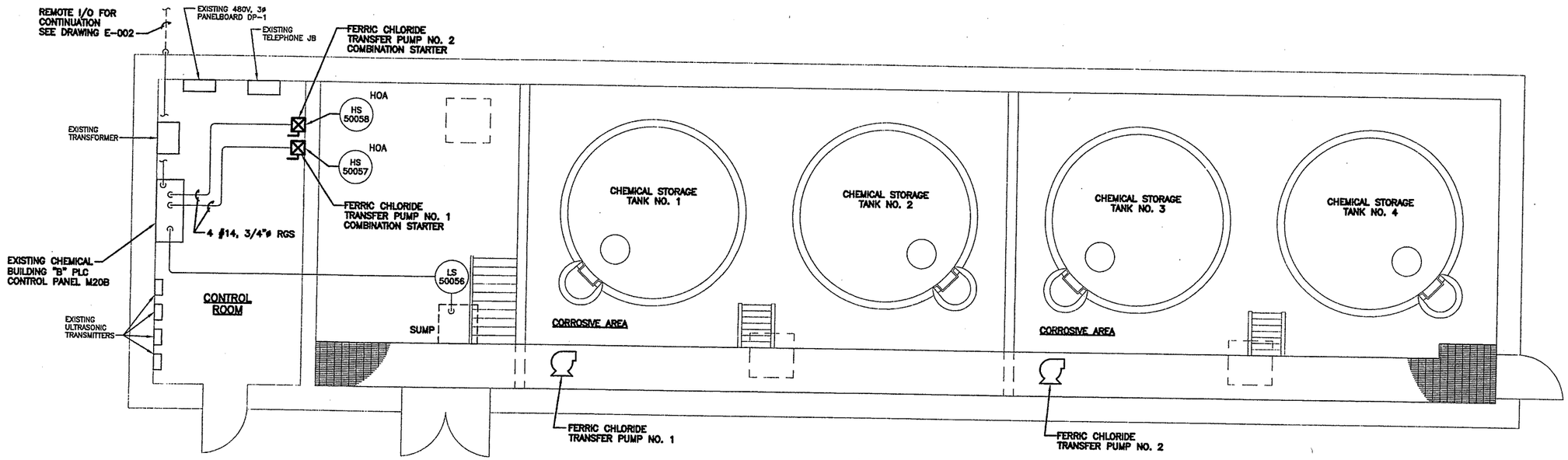
ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

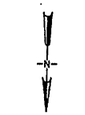
ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHEMICAL BUILDING A
CHEMICAL BUILDING A AND POB PARTIAL PLANS
INSTRUMENTATION

STATE OF NEW YORK · LEONARD J. CAMPBELL · No. 60757 · LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
L.Campbell

I-501





CHEMICAL BUILDING B INSTRUMENTATION PLAN

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

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4/5/01 BBL DCC
05503000/0659I502.DWG

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

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1	7/11/01	AS BID	
2	10/31/05	RECORD DRAWING	

In charge of TEL
Designed by MEE
Drawn by DCC
Checked by WSH

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHEMICAL BUILDING B
CHEMICAL BUILDING B INSTRUMENTATION PLAN
INSTRUMENTATION

RECORD DRAWING
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DATE: 12/21/05 PER: L.Campolieti

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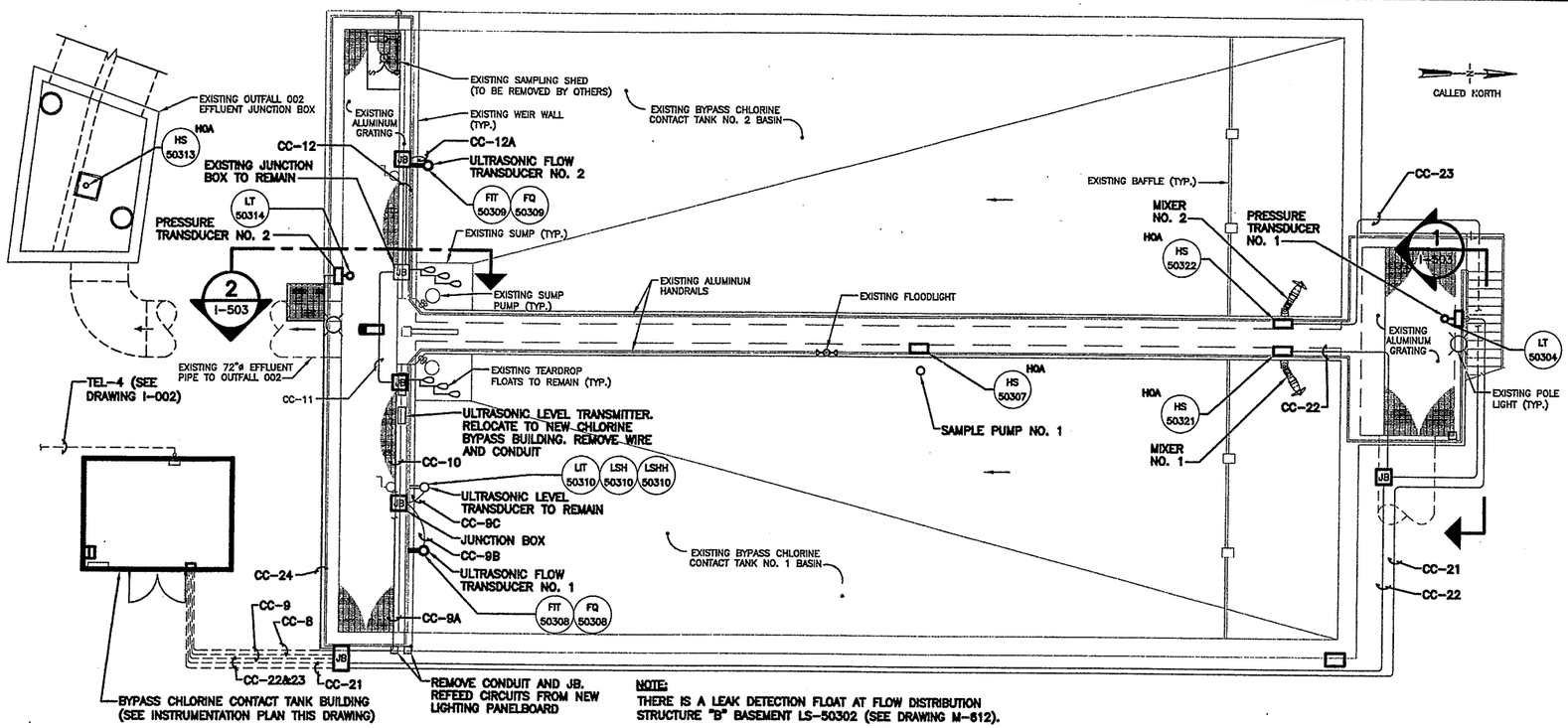
LEONARD J. CAMPOLIETI — STATE OF NEW YORK — LICENSED PROFESSIONAL ENGINEER — No. 60756

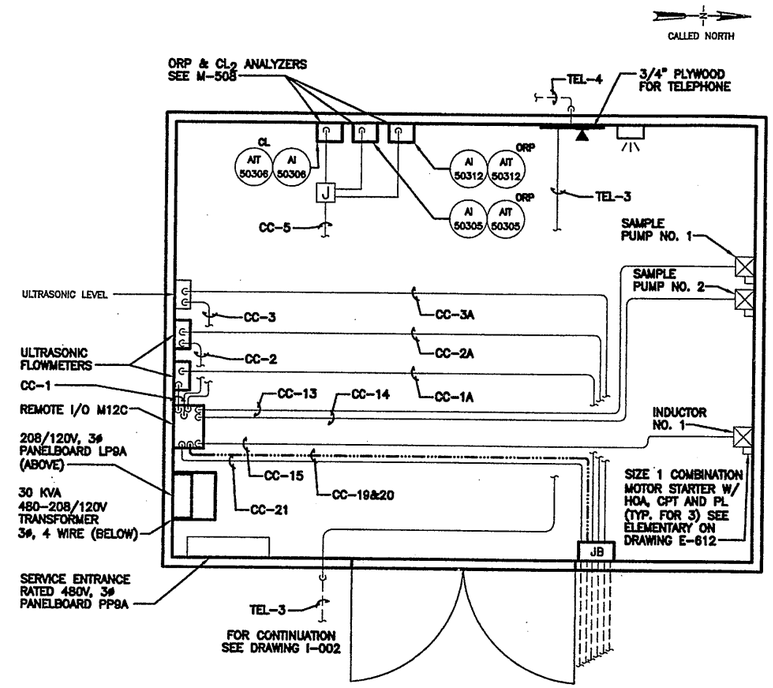
File Number 00659
Date APRIL 2001
L.Campolieti

I-502

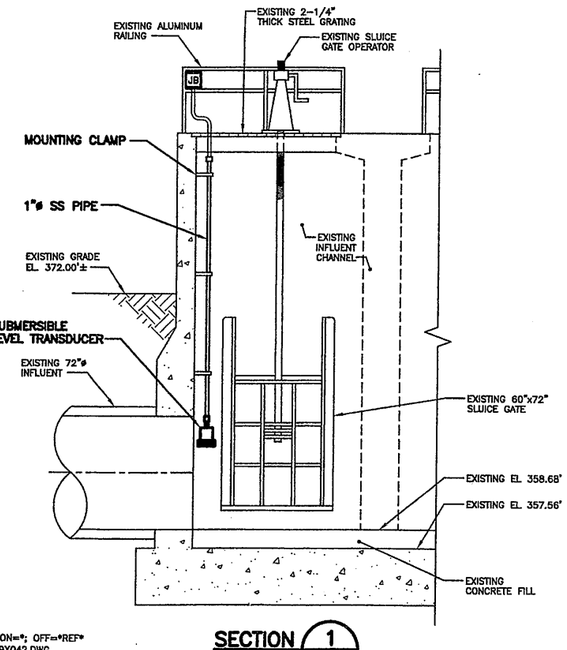


NOTE:
THERE IS A LEAK DETECTION FLOAT AT FLOW DISTRIBUTION STRUCTURE "B" BASEMENT LS-50302 (SEE DRAWING M-612).

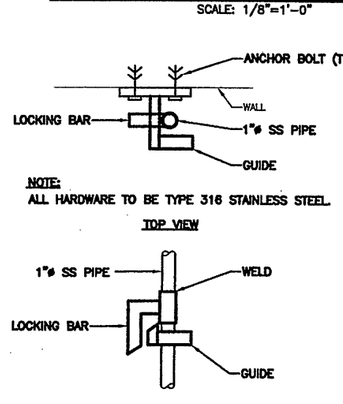
BYPASS CHLORINE CONTACT TANK PLAN
SCALE: 1/8"=1'-0"



BYPASS CHLORINE CONTACT TANK BUILDING INSTRUMENTATION PLAN
SCALE: 1/2"=1'-0"



SECTION 1
1/4"=1'-0" | I-503

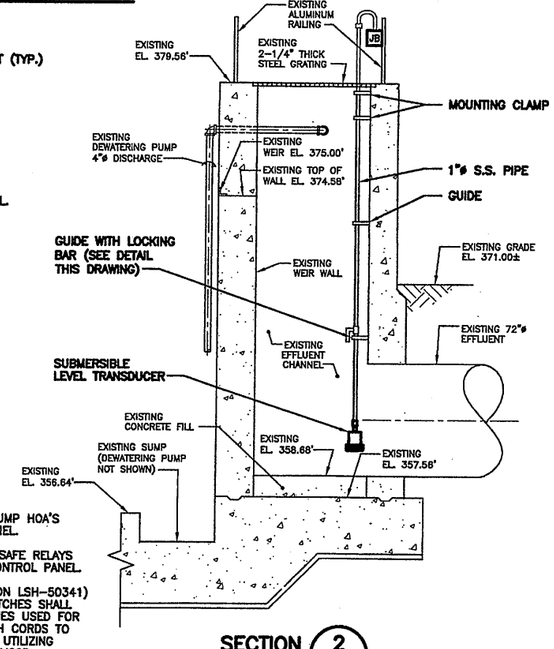


NOTE:
ALL HARDWARE TO BE TYPE 316 STAINLESS STEEL.

TOP VIEW

SIDE VIEW

GUIDE DETAIL
NOT TO SCALE



SECTION 2
1/4"=1'-0" | I-503

NOTES:

1. ADD ADDITIONAL CONTACT BLOCKS TO EXISTING PUMP HOA'S IN THE EXISTING DEWATERING PUMP CONTROL PANEL.
2. ADD A NEMA 4X ENCLOSURE WITH INTRINSICALLY SAFE RELAYS ADJACENT TO THE EXISTING DEWATERING PUMP CONTROL PANEL.
3. ADD FLOAT TYPE LEVEL SWITCHES (LSH-50331 ADN LSH-50341) IN CHLORINE CONTACT BASINS NO. 1 AND 2. SWITCHES SHALL BE LOCATED ADJACENT TO EXISTING LEVEL SWITCHES USED FOR DEWATERING PUMP CONTROL. ROUTE LEVEL SWITCH CORDS TO THE EXISTING DEWATERING PUMP CONTROL PANEL UTILIZING EXISTING CONDUITS. PROVIDE CONNECTION TO PLCM20D UTILIZING CONDUIT CC-4.

BYPASS CHLORINE CONTACT TANK BUILDING CONDUIT SCHEDULE

CKT. NO.	CONDUIT SIZE	NO.SIZE CONDUCTORS	FROM	TO
CC-1	3/4" RGS	1 TPS #16	REMOTE I/O PANEL	ULTRASONIC FLOW TRANSMITTER NO. 1
CC-1A	3/4" RGS	1 TPS #16	ULTRASONIC FLOW TRANSMITTER NO.1	CONTROL JUNCTION BOX
CC-2	3/4" RGS	1 TPS #16	REMOTE I/O PANEL	ULTRASONIC FLOW TRANSMITTER NO. 2
CC-2A	3/4" RGS	1 TPS #16	ULTRASONIC FLOW TRANSMITTER NO.2	CONTROL JUNCTION BOX
CC-3	3/4" RGS	1 TPS #16	REMOTE I/O PANEL	ULTRASONIC LEVEL TRANSMITTER
CC-3A	3/4" RGS	1 TPS #16	ULTRASONIC LEVEL TRANSMITTER	CONTROL JUNCTION BOX
CC-4	3/4" RGS	16 #14	REMOTE I/O PANEL	DEWATERING PUMP PANEL
CC-5	3/4" RGS	3 TPS #16	REMOTE I/O PANEL	ANALYZERS
CC-6	3/4" RGS	2 #14	REMOTE I/O PANEL	STRANTROL ANALYZER
CC-7	3/4" RGS	4 #14	REMOTE I/O PANEL	SAMPLE PUMP PANEL
CC-8	3/4" CRGS	12 #14	CONTROL JUNCTION BOX	JUNCTION BOX AT CL2 CONTACT TANK
CC-8A	3/4" RGS	12 #14	JUNCTION BOX AT CL2 CONTACT TANK	ULTRASONIC FLOW METER JB
CC-9	1-1/2" CRGS	4 TPS #16	CONTROL JUNCTION BOX	JUNCTION BOX AT CL2 CONTACT TANK
CC-9A	1-1/2" RGS	3 TPS #16	JUNCTION BOX AT CL2 CONTACT TANK	ULTRASONIC FLOW METER JB
CC-9B	3/4" LIQUID TITE	1 TPS #16	ULTRASONIC FLOW METER JB	ULTRASONIC FLOW TRANSDUCER NO.1
CC-9C	3/4" LIQUID TITE	1 TPS #16	ULTRASONIC FLOW METER JB	EXISTING U-SONIC LEVEL TRANSDUCER
CC-10	1" RGS	1 TPS #16	ULTRASONIC FLOW METER JB	DEWATERING PUMP NO. 1 FLOATS JB
CC-11	EXISTING C.	1 TPS #16, 6 #14	DEWATERING PUMP NO. 1 FLOATS JB	DEWATERING PUMP NO. 2 FLOATS JB
CC-12	3/4" RGS	1 TPS #16	DEWATERING PUMP NO. 2 FLOATS JB	ULTRASONIC FLOW METER JB
CC-12A	3/4" LIQUID TITE	1 TPS #16	ULTRASONIC FLOW METER JB	ULTRASONIC FLOW TRANSDUCER NO.2
CC-13	3/4" RGS	6 #14	REMOTE I/O PANEL	COMBINATION STARTER
CC-14	3/4" RGS	6 #14	REMOTE I/O PANEL	COMBINATION STARTER
CC-15	3/4" RGS	4 #14	REMOTE I/O PANEL	COMBINATION STARTER
CC-21	3/4" RGS	1 TPS #16	REMOTE I/O PANEL	PRESSURE TRANSDUCER NO. 1
CC-22	3/4" RGS	10 #14	REMOTE I/O PANEL	MIXER NO. 1
CC-23	3/4" RGS	10 #14	REMOTE I/O PANEL	MIXER NO. 2
CC-24	3/4" RGS	1 TPS #16	REMOTE I/O PANEL	PRESSURE TRANSDUCER NO. 2
CC-25	3/4" RGS	2 #14	REMOTE I/O PANEL	PLANT WATER SOLENOID VALVE
CC-26	3/4" RGS	8 #14	REMOTE I/O PANEL	CHLORINE ANALYZERS

RECORD DRAWING
THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.
DATE 10/21/05 PER [signature]

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1/8"=1'-0" | 1/4"=1'-0" | 1/2"=1'-0"

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1	7/11/01	AS BID	
2	10/31/05	RECORD DRAWING	

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Drawn by DCC
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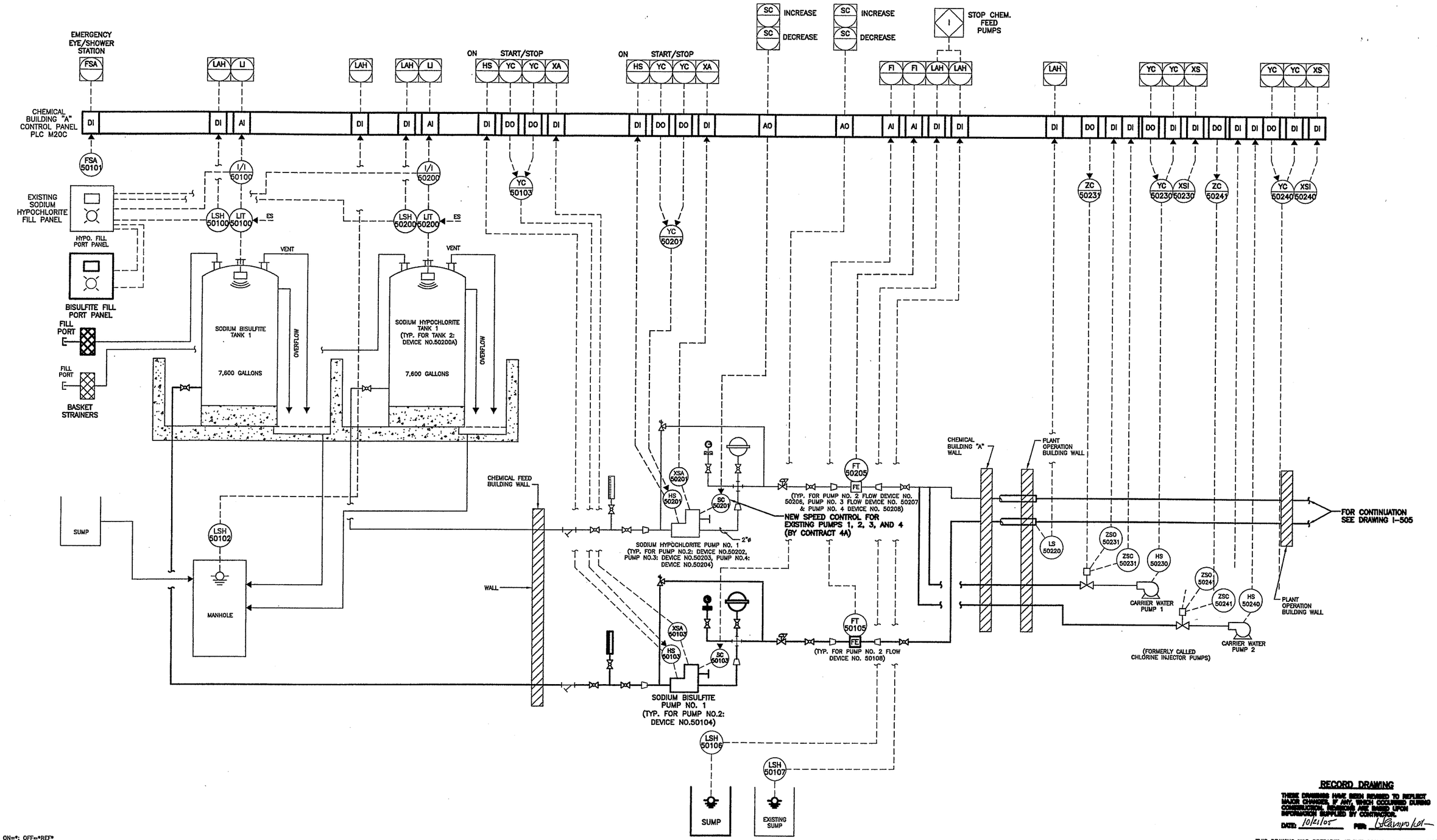
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BYPASS CHLORINE CONTACT TANK
BYPASS CHLORINE CONTACT TANK AND BUILDING PLANS
INSTRUMENTATION

STATE OF NEW YORK • LICENSED PROFESSIONAL ENGINEER • EDWARD J. CAMPOSITA • No. 60755

File Number 00659
Date APRIL 2001
[signature]

I-503



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DATED 10/1/05 PER L.V.Campoluri

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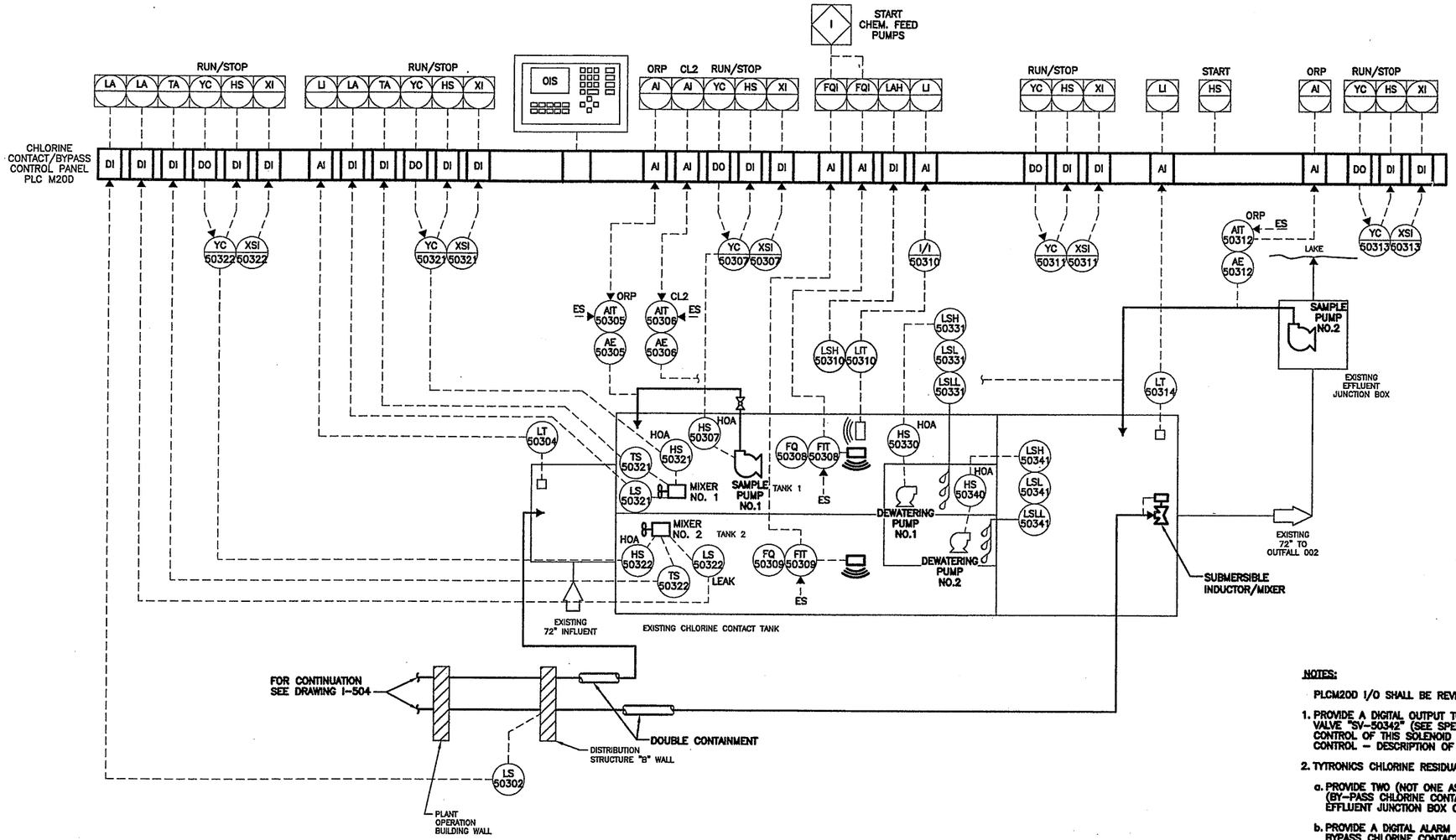
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
SODIUM BISULFITE (PLC M20C) CONTROL DIAGRAM
INSTRUMENTATION

LICENSED PROFESSIONAL ENGINEER • LEONARD J. CAMPOLIETI • No. 60761 • STATE OF NEW YORK

File Number 00659
Date APRIL 2001
L.V.Campoluri

I-504



NOTES:

PLCM20D I/O SHALL BE REVISED AS FOLLOWS USING SPARE PLC I/O:

1. PROVIDE A DIGITAL OUTPUT TO THE ANALYZER WASH WATER SOLENOID VALVE "SV-50342" (SEE SPECIFICATION 17012 AND DRAWING M-508). CONTROL OF THIS SOLENOID WILL BE IN ACCORDANCE WITH THE PROCESS CONTROL – DESCRIPTION OF OPERATION.
2. TYTRONICS CHLORINE RESIDUAL ANALYZER AIT-50306.
   a. PROVIDE TWO (NOT ONE AS SHOWN) ANALOG INPUTS TO THE PLCM20D (BY-PASS CHLORINE CONTACT TANK CHLORINE RESIDUAL "AIT-50306" AND EFFLUENT JUNCTION BOX CHLORINE RESIDUAL "AIT-50343".
   b. PROVIDE A DIGITAL ALARM INPUT (CHLORINE ANALYZER ALARM) FOR THE BYPASS CHLORINE CONTACT TANK CHLORINE RESIDUAL ANALYZER (YA-50306) AND THE EFFLUENT JUNCTION BOX CHLORINE RESIDUAL ANALYZER (YA-50343).
3. STRANTROL ORP CONTROLLER AIT-50305 (BY-PASS TANK ORP).
   a. PROVIDE ANALOG OUTPUT FROM PLCM20D (BY-PASS TOTAL FLOW "FQ-50344B") TO AIT-50305. THIS OUTPUT SHALL BE THE TOTAL OF FIT-50308 AND FIT-50309.
4. STRANTROL ORP CONTROLLER AIT-50312 (EFFLUENT JUNCTION BOX ORP).
   a. PROVIDE ANALOG OUTPUT FROM PLCM20D (BY-PASS TOTAL FLOW "FQ-50344B") TO AIT 50312. THIS OUTPUT SHALL BE THE TOTAL OF FIT-50308 AND FIT-50309.

RECORD DRAWING

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

BYPASS CHLORINE CONTACT/OUTFALL 002 PLAN (PLC M20D)

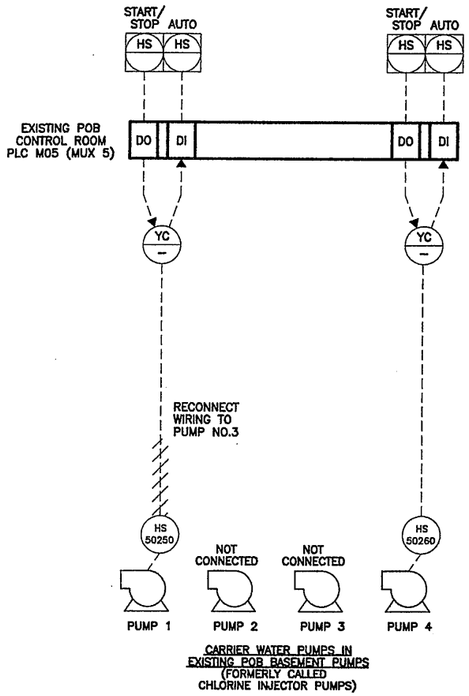
CONTROL DIAGRAM

INSTRUMENTATION

STATE OF NEW YORK · LEONARD J. CAMPOCCIA · LICENSED PROFESSIONAL ENGINEER · No. 90755

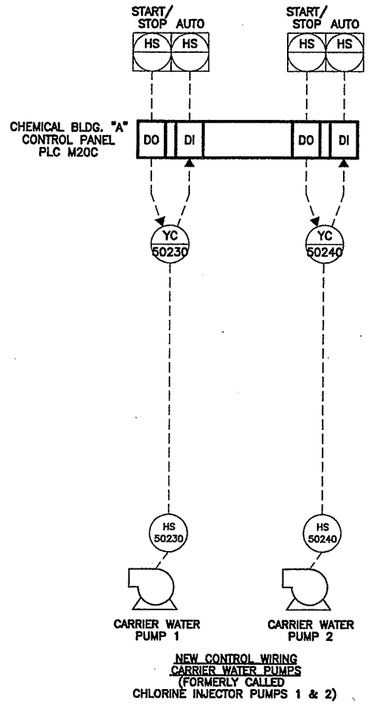
File Number 00659
Date APRIL 2001
L Rampulet

I-505

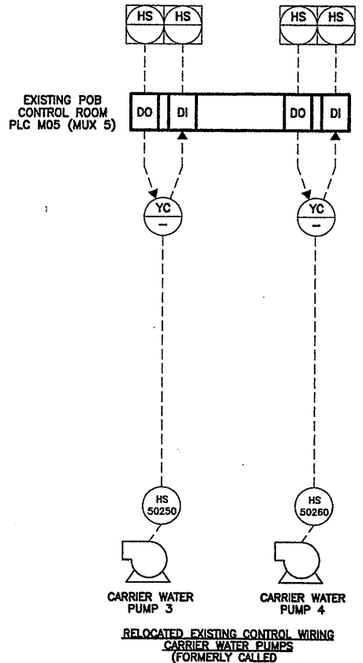


CARRIER WATER PUMPS IN EXISTING POB BASEMENT PUMPS (FORMERLY CALLED CHLORINE INJECTOR PUMPS)

PROPOSED CHANGES



NEW CONTROL WIRING CARRIER WATER PUMPS (FORMERLY CALLED CHLORINE INJECTOR PUMPS 1 & 2)



RELOCATED EXISTING CONTROL WIRING CARRIER WATER PUMPS (FORMERLY CALLED CHLORINE INJECTOR PUMPS)

RECORD DRAWING

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

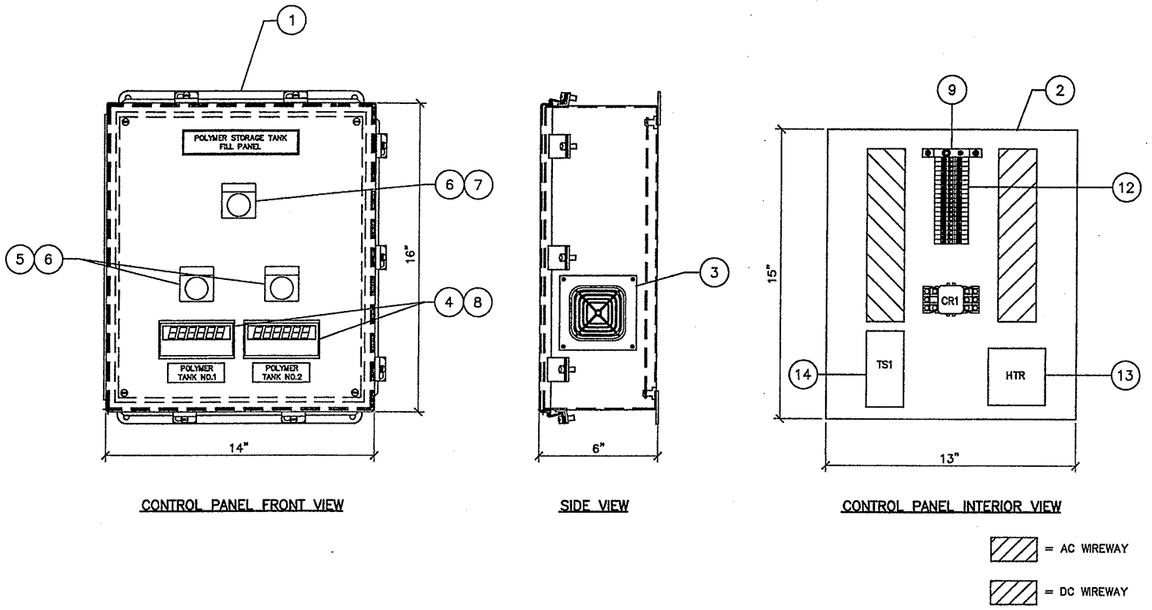
CONTROL MODIFICATIONS TO EXISTING CHLORINE INJECTOR PUMPS

INSTRUMENTATION

STATE OF NEW YORK • LEONARDO J. CAMPOLIETI • No. 60759 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
L.Campolieti

I-506

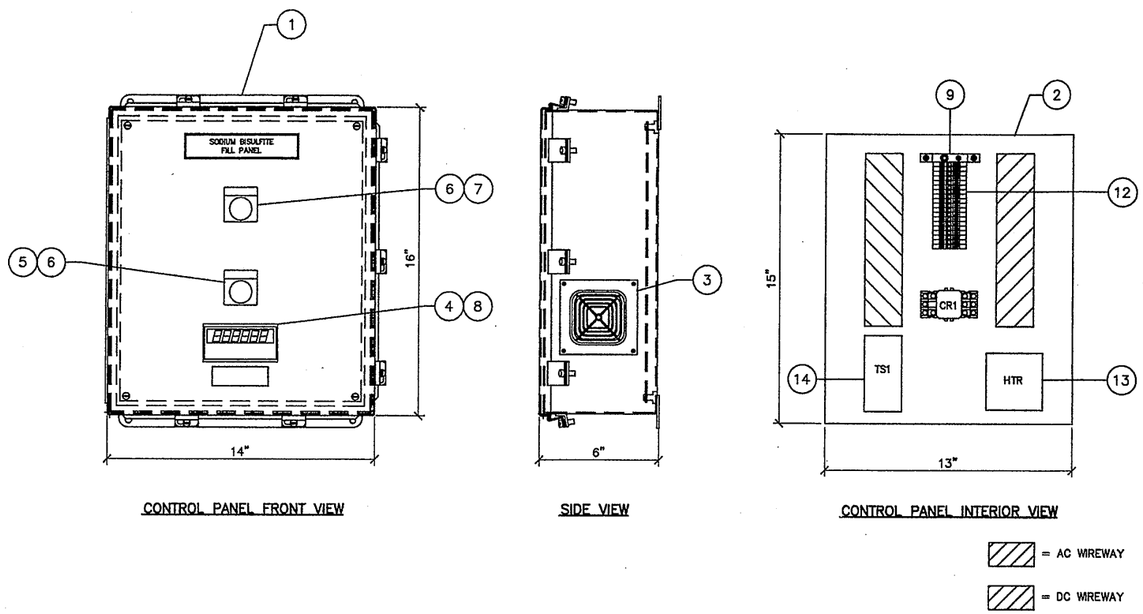


CONTROL PANEL FRONT VIEW

SIDE VIEW

CONTROL PANEL INTERIOR VIEW

POLYMER STORAGE TANK FILL PANEL DETAIL



CONTROL PANEL FRONT VIEW

SIDE VIEW

CONTROL PANEL INTERIOR VIEW

SODIUM BISULFITE FILL PANEL DETAIL

BILL OF MATERIALS

SYMBOL	QUANTITY	MODEL NUMBER	MANUFACTURER	DESCRIPTION
1	A/R	SEE SPECIFICATIONS	Hoffman	NEMA 4X Enclosure
2	A/R	SEE SPECIFICATIONS	Hoffman	Sub-panel
3	A/R	SEE SPECIFICATIONS	Federal	Alarm Horn
4	A/R	SEE SPECIFICATIONS	Red Lion	Process Meter, MA
5	A/R	SEE SPECIFICATIONS	Allen-Bradley	Indicating Light
6	A/R	SEE SPECIFICATIONS	Allen-Bradley	Engraved Legend Nameplate
7	A/R	SEE SPECIFICATIONS	Allen-Bradley	Momentary Pushbutton
8	A/R	SEE SPECIFICATIONS	Red Lion	Process Meter Power Supply
9	A/R	SEE SPECIFICATIONS	--	Circuit Breaker
10	A/R	SEE SPECIFICATIONS	P&B	Relay, 24dc Coil
11	A/R	SEE SPECIFICATIONS	Allen-Bradley	Relay base, Din Rail
12	A/R	SEE SPECIFICATIONS	--	Terminal Block
13	A/R	SEE SPECIFICATIONS	Chromalox	Heater
14	A/R	SEE SPECIFICATIONS	Chromalox	Thermostat

RECORD DRAWING

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

INSTRUMENTATION CONTROL PANELS LAYOUT

INSTRUMENTATION

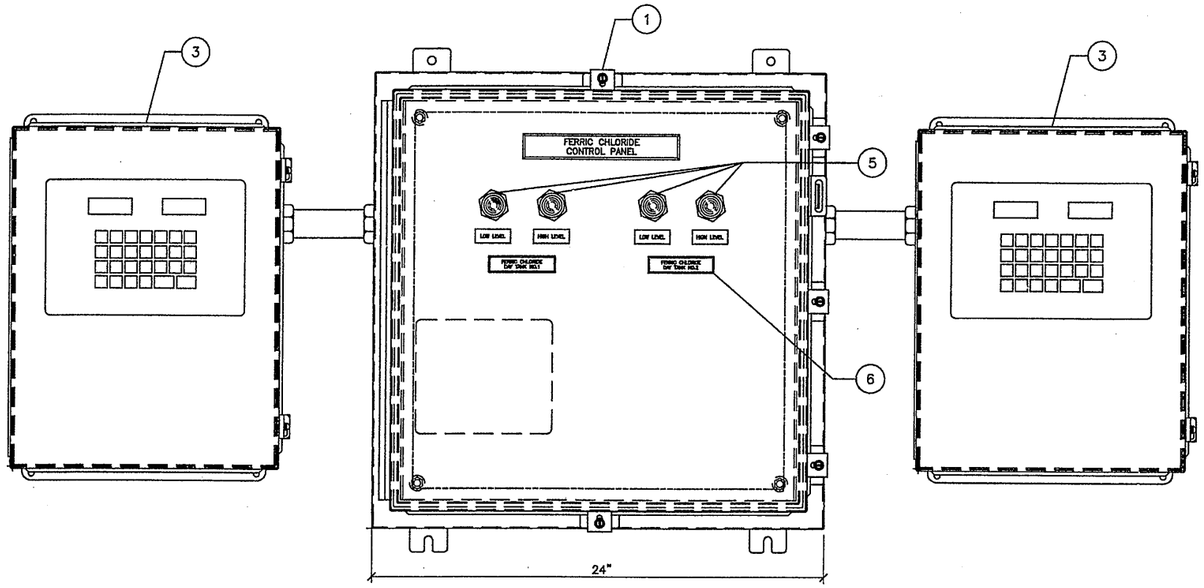
STATE OF NEW YORK · LEONARD J. CAMPBELL · No. 60755 · LICENSED PROFESSIONAL ENGINEER

File Number 00659

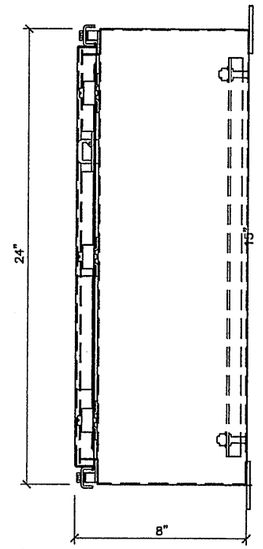
Date APRIL 2001

LCampbell

I-507



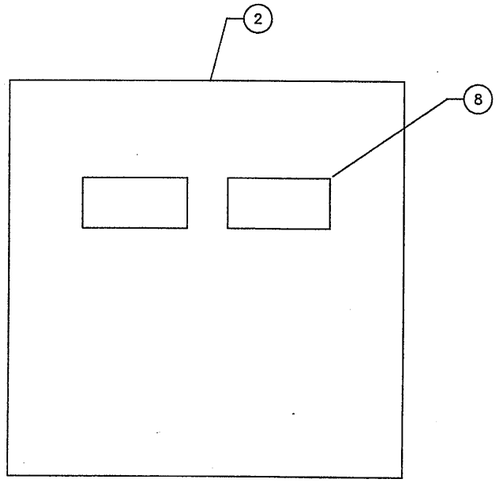
CONTROL PANEL FRONT VIEW



SIDE VIEW

BILL OF MATERIALS

SYMBOL	QUANTITY	MODEL NUMBER	MANUFACTURER	DESCRIPTION
1	A/R	SEE SPECIFICATIONS	Hoffman	NEMA 4X Enclosure
2	A/R	SEE SPECIFICATIONS	Hoffman	Sub-panel
3	A/R	SEE SPECIFICATIONS	By Contract 1B	Level Indicating Controller
4	–	–	–	–
5	A/R	SEE SPECIFICATIONS	Allen-Bradley	Indicating Light
6	A/R	SEE SPECIFICATIONS	–	Engraved Legend Nameplate
7	–	–	–	–
8	A/R	SEE SPECIFICATIONS	–	I/I Isolators
9	A/R	SEE SPECIFICATIONS	–	–
10	A/R	SEE SPECIFICATIONS	–	–
11	A/R	SEE SPECIFICATIONS	–	–
12	A/R	SEE SPECIFICATIONS	–	–
13	A/R	SEE SPECIFICATIONS	–	–
14	A/R	SEE SPECIFICATIONS	–	–



CONTROL PANEL INTERIOR VIEW

RECORD DRAWING

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FERRIC CHLORIDE CONTROL PANEL DETAIL

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

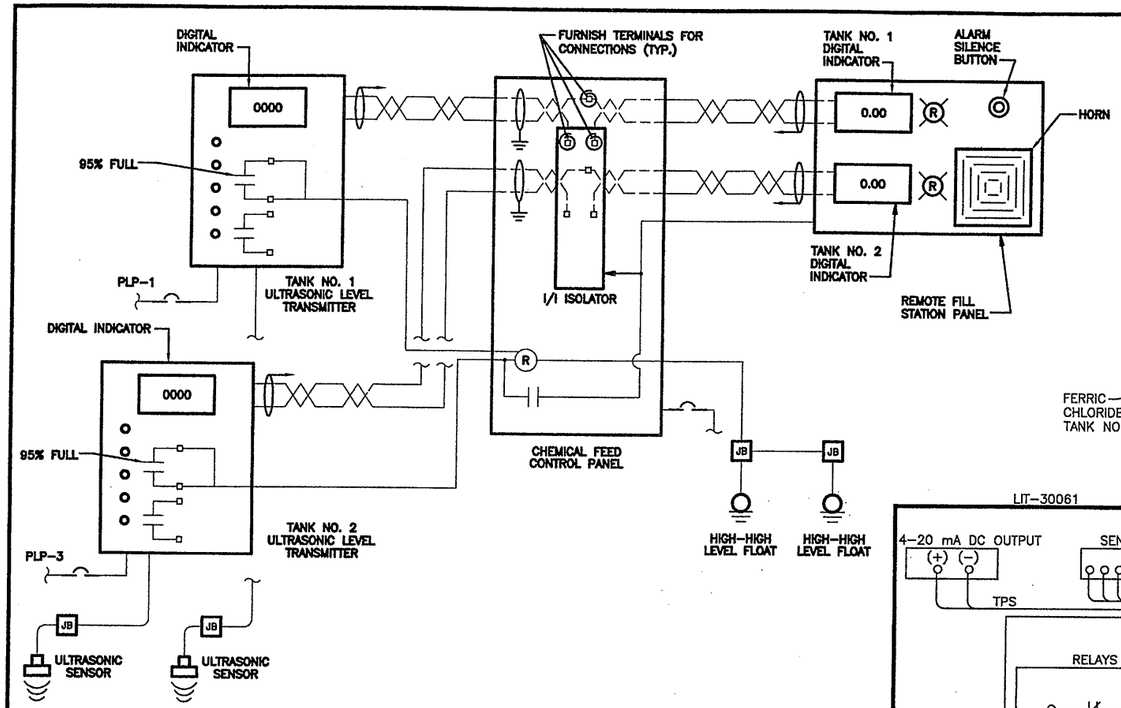
INSTRUMENTATION CONTROL PANELS LAYOUT
INSTRUMENTATION

STATE OF NEW YORK · LEONARD J. CAMPOLIETA · LICENSED PROFESSIONAL ENGINEER · No. 60795

File Number 00659
Date APRIL 2001
Stampfel

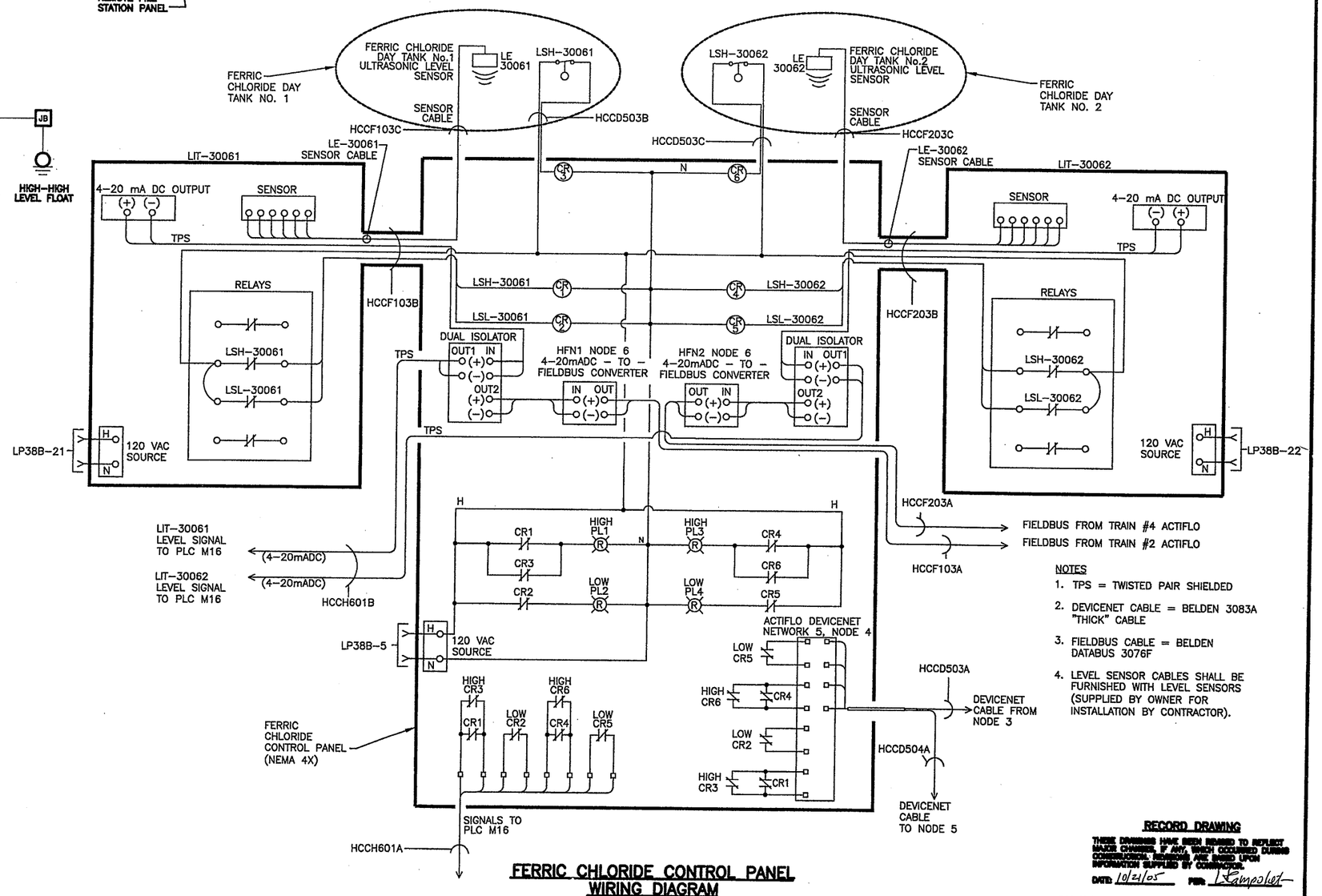
I-508

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED IN THE TITLE BLOCK. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.



STORAGE TANK LEVEL MONITORING DIAGRAM

NOT TO SCALE



FERRIC CHLORIDE CONTROL PANEL WIRING DIAGRAM

NOT TO SCALE

NOTES

1. TPS = TWISTED PAIR SHIELDED
2. DEVICENET CABLE = BELDEN 3083A "THICK" CABLE
3. FIELDBUS CABLE = BELDEN DATABUS 3076F
4. LEVEL SENSOR CABLES SHALL BE FURNISHED WITH LEVEL SENSORS (SUPPLIED BY OWNER FOR INSTALLATION BY CONTRACTOR).

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATED 10/21/05 PER L.Campolieti

Layer: ON=*; OFF=*REF*

4/4/00 BBL DCC
05503000/0659I509.DWG

NOT TO SCALE

NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

No.	Date	Revisions	Init
0	3/30/01	ISSUED FOR APPROVAL	
1	7/11/01	AS BID	
2	10/31/05	RECORD DRAWING	

In charge of TEL
Designed by MEE
Drawn by DCC
Checked by FKP

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

LOOP WIRING DIAGRAMS

INSTRUMENTATION

STATE OF NEW YORK · LEONARD J. CAMPOLIETI · No. 60765 · LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
L.Campolieti

I-509

CONDUIT NO.	CONDUIT SIZE	NO./SIZE CONDUCTORS	FROM	TO
ACCD101A	3/4" CRGS	1 BELDEN 3083A	PLC M24	MCC 34
ACCD201A	3/4" CRGS	1 BELDEN 3083A	PLC M24	MCC 38
ACCD301A	3/4" CRGS		PLC M24	ADN3, N1
ACCD301B	3/4" CRGS	TPS #16	ADN3, N1	EWP-1 MOTOR OVERLOAD
ACCD301C	3/4" CRGS	TPS #16	ADN3, N1	EWP-2 MOTOR OVERLOAD
ACCD301D	3/4" CRGS	TPS #16	ADN3, N1	EWP-1 RUN STATUS
ACCD301E	3/4" CRGS	TPS #16	ADN3, N1	EWP-2 RUN STATUS
ACCD302A	3/4" CRGS	1 BELDEN 3083A	ADN3, N1	ADN3, N2
ACCD302B	3/4" CRGS	TPS #16	ADN3, N2	EWP-3 MOTOR OVERLOAD
ACCD302C	3/4" CRGS	TPS #16	ADN3, N2	EWP-3 RUN STATUS
ACCD302D	3/4" CRGS	TPS #16	ADN3, N2	CLOGGED STRAINER ALARM
ACCD302E	3/4" CRGS	TPS #16	ADN3, N2	LOSS OF SYSTEM PRESSURE ALARM
ACCH101A	3/4" CRGS	16 #14	PLC M24	TRANSFORMER ALARM PANEL
ACCE201A	3/4" CRGS	CAT 5E	PLC M24	UNIT SUBSTATION #1
ACCH201B	3/4" CRGS	GE CABLE	UNIT SUBSTATION #1	UNIT SUBSTATION #2
ACCH401A	3/4" CRGS	TPS #16	GAS DETECTION PANEL	AIT-70012, GAS DETECTOR
ACCH401B	3/4" CRGS	4 #14	PLC IN LOW LIFT PUMP STATION	GAS DETECTION PANEL
ACCH402A	2" CRGS	11 TPS #16	GAS DETECTION PANEL	JB-701
ACCH402B	3/4" CRGS	TPS #16	JB-701	AIT-70011, GAS DETECTOR
ACCH403A	1-1/2" CRGS	10 TPS #16	JB-701	JB-702
ACCH403B	3/4" CRGS	TPS #16	JB-702	AIT-70010, GAS DETECTOR
ACCH404A	1-1/2" CRGS	9 TPS #16	JB-702	JB-703
ACCH404B	3/4" CRGS	TPS #16	JB-703	AIT-70009, GAS DETECTOR
ACCH405A	1-1/2" CRGS	8 TPS #16	JB-703	JB-704
ACCH405B	3/4" CRGS	TPS #16	JB-704	AIT-70008, GAS DETECTOR
ACCH406A	1-1/4" CRGS	7 TPS #16	JB-704	JB-705
ACCH406B	3/4" CRGS	TPS #16	JB-705	AIT-70007, GAS DETECTOR
ACCH407A	1-1/4" CRGS	6 TPS #16	JB-705	JB-706
ACCH407B	3/4" CRGS	TPS #16	JB-706	AIT-70006, GAS DETECTOR
ACCH408A	1-1/4" CRGS	5 TPS #16	JB-706	JB-707
ACCH408B	3/4" CRGS	TPS #16	JB-707	AIT-70005, GAS DETECTOR
ACCH409A	1" CRGS	4 TPS #16	JB-707	JB-708
ACCH409B	3/4" CRGS	TPS #16	JB-708	AIT-70004, GAS DETECTOR
ACCH410A	1" CRGS	3 TPS #16	JB-708	JB-709
ACCH410B	3/4" CRGS	TPS #16	JB-709	AIT-70003, GAS DETECTOR
ACCH411A	3/4" CRGS	2 TPS #16	JB-709	JB-710
ACCH411B	3/4" CRGS	TPS #16	JB-710	AIT-70002, GAS DETECTOR
ACCH411C	3/4" CRGS	TPS #16	JB-710	AIT-70001, GAS DETECTOR
ACCH501A	3/4" CRGS	2 #14	PLC M16	FSA-50032, EAST EEWS FLOW SWITCH, CHEM BLDG C
ACCH502A	3/4" CRGS	2 #14	PLC M16	FSA-50033, WEST EEWS FLOW SWITCH, CHEM BLDG C
ACCH503A	CRGS	80 #14	PLC M16	HVAC DDC LOCAL CONTROL UNIT
ACCH601A	3/4" CRGS	TPS #16	STRAINER CONTROL PANEL	EFFLUENT WATER CONTROL PANEL
BCCD102A	3/4" CRGS	1 BELDEN 3083A	JB-4A	JB-2A
BCCD102B	3/4" CRGS	1 BELDEN 3085A	JB-2A	UV-20202, BAF CELL #2 INLET VALVE
BCCD102C	3/4" CRGS	1 BELDEN 3085A	JB-2A	UV-20203, BAF CELL #2 AIR PURGE GRID VALVE
BCCD102D	3/4" CRGS	1 BELDEN 3085A	JB-2A	UV-20204A, CELL #2 BACKWASH VALVE #1
BCCD102E	3/4" CRGS	1 BELDEN 3085A	JB-2A	UV-20204B, CELL #2 BACKWASH VALVE #2
BCCD104A	3/4" CRGS	1 BELDEN 3083A	JB-6A	JB-4A
BCCD104B	3/4" CRGS	1 BELDEN 3085A	JB-4A	UV-20402, BAF CELL #4 INLET VALVE
BCCD104C	3/4" CRGS	1 BELDEN 3085A	JB-4A	UV-20403, BAF CELL #4 AIR PURGE GRID VALVE
BCCD104D	3/4" CRGS	1 BELDEN 3085A	JB-4A	UV-20404A, CELL #4 BACKWASH VALVE #1
BCCD104E	3/4" CRGS	1 BELDEN 3085A	JB-4A	UV-20404B, CELL #4 BACKWASH VALVE #2
BCCD106A	3/4" CRGS	1 BELDEN 3083A	JB-8A	JB-6A
BCCD106B	3/4" CRGS	1 BELDEN 3085A	JB-6A	UV-20602, BAF CELL #6 INLET VALVE
BCCD106C	3/4" CRGS	1 BELDEN 3085A	JB-6A	UV-20603, BAF CELL #6 AIR PURGE GRID VALVE
BCCD106D	3/4" CRGS	1 BELDEN 3085A	JB-6A	UV-20604A, CELL #6 BACKWASH VALVE #1
BCCD106E	3/4" CRGS	1 BELDEN 3085A	JB-6A	UV-20604B, CELL #6 BACKWASH VALVE #2
BCCD108A	3/4" CRGS	1 BELDEN 3083A	JB-9A	JB-8A
BCCD108B	3/4" CRGS	1 BELDEN 3085A	JB-8A	UV-20802, BAF CELL #8 INLET VALVE
BCCD108C	3/4" CRGS	1 BELDEN 3085A	JB-8A	UV-20803, BAF CELL #8 AIR PURGE GRID VALVE
BCCD108D	3/4" CRGS	1 BELDEN 3085A	JB-8A	UV-20804A, CELL #8 BACKWASH VALVE #1
BCCD108E	3/4" CRGS	1 BELDEN 3085A	JB-8A	UV-20804B, CELL #8 BACKWASH VALVE #2
BCCD109A	3/4" CRGS	1 BELDEN 3083A	PLC M19	JB-9A
BCCD109B	3/4" CRGS	1 BELDEN 3085A	JB-9A	UV-20902, BAF CELL #9 INLET VALVE
BCCD109C	3/4" CRGS	1 BELDEN 3085A	JB-9A	UV-20903, BAF CELL #9 AIR PURGE GRID VALVE
BCCD109D	3/4" CRGS	1 BELDEN 3085A	JB-9A	UV-20904A, CELL #9 BACKWASH VALVE #1
BCCD109E	3/4" CRGS	1 BELDEN 3085A	JB-9A	UV-20904B, CELL #9 BACKWASH VALVE #2
BCCD201A	3/4" CRGS	1 BELDEN 3083A	JB-3A	JB-1A
BCCD201B	3/4" CRGS	1 BELDEN 3085A	JB-1A	UV-20102, BAF CELL #1 INLET VALVE
BCCD201C	3/4" CRGS	1 BELDEN 3085A	JB-1A	UV-20103, BAF CELL #1 AIR PURGE GRID VALVE
BCCD201D	3/4" CRGS	1 BELDEN 3085A	JB-1A	UV-20104A, CELL #1 BACKWASH VALVE #1
BCCD201E	3/4" CRGS	1 BELDEN 3085A	JB-1A	UV-20104B, CELL #1 BACKWASH VALVE #2
BCCD203A	3/4" CRGS	1 BELDEN 3083A	JB-5A	JB-3A
BCCD203B	3/4" CRGS	1 BELDEN 3085A	JB-3A	UV-20302, BAF CELL #3 INLET VALVE
BCCD203C	3/4" CRGS	1 BELDEN 3085A	JB-3A	UV-20303, BAF CELL #3 AIR PURGE GRID VALVE
BCCD203D	3/4" CRGS	1 BELDEN 3085A	JB-3A	UV-20304A, CELL #3 BACKWASH VALVE #1
BCCD203E	3/4" CRGS	1 BELDEN 3085A	JB-3A	UV-20304B, CELL #3 BACKWASH VALVE #2
BCCD205A	3/4" CRGS	1 BELDEN 3083A	JB-7A	JB-5A
BCCD205B	3/4" CRGS	1 BELDEN 3085A	JB-5A	UV-20502, BAF CELL #5 INLET VALVE
BCCD205C	3/4" CRGS	1 BELDEN 3085A	JB-5A	UV-20503, BAF CELL #5 AIR PURGE GRID VALVE
BCCD205D	3/4" CRGS	1 BELDEN 3085A	JB-5A	UV-20504A, CELL #5 BACKWASH VALVE #1
BCCD205E	3/4" CRGS	1 BELDEN 3085A	JB-5A	UV-20504B, CELL #5 BACKWASH VALVE #2
BCCD207A	3/4" CRGS	1 BELDEN 3083A	PLC M19	JB-7A
BCCD207B	3/4" CRGS	1 BELDEN 3085A	JB-7A	UV-20702, BAF CELL #7 INLET VALVE
BCCD207C	3/4" CRGS	1 BELDEN 3085A	JB-7A	UV-20703, BAF CELL #7 AIR PURGE GRID VALVE
BCCD207D	3/4" CRGS	1 BELDEN 3085A	JB-7A	UV-20704A, CELL #7 BACKWASH VALVE #1
BCCD207E	3/4" CRGS	1 BELDEN 3085A	JB-7A	UV-20704B, CELL #7 BACKWASH VALVE #2
BCCD310A	3/4" CRGS	1 BELDEN 3083A	PLC M19	JB-10A
BCCD310B	3/4" CRGS	1 BELDEN 3085A	JB-10A	UV-21002, BAF CELL #10 INLET VALVE
BCCD310C	3/4" CRGS	1 BELDEN 3085A	JB-10A	UV-21003, BAF CELL #10 AIR PURGE GRID VALVE
BCCD310D	3/4" CRGS	1 BELDEN 3085A	JB-10A	UV-21004A, CELL #10 BACKWASH VALVE #1
BCCD310E	3/4" CRGS	1 BELDEN 3085A	JB-10A	UV-21004B, CELL #10 BACKWASH VALVE #2
BCCD312A	3/4" CRGS	1 BELDEN 3083A	JB-10A	JB-12A
BCCD312B	3/4" CRGS	1 BELDEN 3085A	JB-12A	UV-21202, BAF CELL #12 INLET VALVE
BCCD312C	3/4" CRGS	1 BELDEN 3085A	JB-12A	UV-21203, BAF CELL #12 AIR PURGE GRID VALVE
BCCD312D	3/4" CRGS	1 BELDEN 3085A	JB-12A	UV-21204A, CELL #12 BACKWASH VALVE #1
BCCD312E	3/4" CRGS	1 BELDEN 3085A	JB-12A	UV-21204B, CELL #12 BACKWASH VALVE #2
BCCD314A	3/4" CRGS	1 BELDEN 3083A	JB-12A	JB-14A
BCCD314B	3/4" CRGS	1 BELDEN 3085A	JB-14A	UV-21402, BAF CELL #14 INLET VALVE
BCCD314C	3/4" CRGS	1 BELDEN 3085A	JB-14A	UV-21403, BAF CELL #14 AIR PURGE GRID VALVE
BCCD314D	3/4" CRGS	1 BELDEN 3085A	JB-14A	UV-21404A, CELL #14 BACKWASH VALVE #1
BCCD314E	3/4" CRGS	1 BELDEN 3085A	JB-14A	UV-21404B, CELL #14 BACKWASH VALVE #2
BCCD316A	3/4" CRGS	1 BELDEN 3083A	JB-14A	JB-16A
BCCD316B	3/4" CRGS	1 BELDEN 3085A	JB-16A	UV-21602, BAF CELL #16 INLET VALVE
BCCD316C	3/4" CRGS	1 BELDEN 3085A	JB-16A	UV-21603, BAF CELL #16 AIR PURGE GRID VALVE
BCCD316D	3/4" CRGS	1 BELDEN 3085A	JB-16A	UV-21604A, CELL #16 BACKWASH VALVE #1
BCCD316E	3/4" CRGS	1 BELDEN 3085A	JB-16A	UV-21604B, CELL #16 BACKWASH VALVE #2
BCCD318A	3/4" CRGS	1 BELDEN 3083A	JB-16A	JB-18A
BCCD318B	3/4" CRGS	1 BELDEN 3085A	JB-18A	UV-21802, BAF CELL #18 INLET VALVE
BCCD318C	3/4" CRGS	1 BELDEN 3085A	JB-18A	UV-21803, BAF CELL #18 AIR PURGE GRID VALVE
BCCD318D	3/4" CRGS	1 BELDEN 3085A	JB-18A	UV-21804A, CELL #18 BACKWASH VALVE #1
BCCD318E	3/4" CRGS	1 BELDEN 3085A	JB-18A	UV-21804B, CELL #18 BACKWASH VALVE #2
BCCD411A	3/4" CRGS	1 BELDEN 3083A	PLC M19	JB-11A
BCCD411B	3/4" CRGS	1 BELDEN 3085A	JB-11A	UV-21102, BAF CELL #11 INLET VALVE
BCCD411C	3/4" CRGS	1 BELDEN 3085A	JB-11A	UV-21103, BAF CELL #11 AIR PURGE GRID VALVE
BCCD411D	3/4" CRGS	1 BELDEN 3085A	JB-11A	UV-21104A, CELL #11 BACKWASH VALVE #1
BCCD411E	3/4" CRGS	1 BELDEN 3085A	JB-11A	UV-21104B, CELL #11 BACKWASH VALVE #2
BCCD413A	3/4" CRGS	1 BELDEN 3083A	JB-11A	JB-13A
BCCD413B	3/4" CRGS	1 BELDEN 3085A	JB-13A	UV-21302, BAF CELL #13 INLET VALVE
BCCD413C	3/4" CRGS	1 BELDEN 3085A	JB-13A	UV-21303, BAF CELL #13 AIR PURGE GRID VALVE
BCCD413D	3/4" CRGS	1 BELDEN 3085A	JB-13A	UV-21304A, CELL #13 BACKWASH VALVE #1
BCCD413E	3/4" CRGS	1 BELDEN 3085A	JB-13A	UV-21304B, CELL #13 BACKWASH VALVE #2
BCCD415A	3/4" CRGS	1 BELDEN 3083A	JB-13A	JB-15A
BCCD415B	3/4" CRGS	1 BELDEN 3085A	JB-15A	UV-21502, BAF CELL #15 INLET VALVE
BCCD415C	3/4" CRGS	1 BELDEN 3085A	JB-15A	UV-21503, BAF CELL #15 AIR PURGE GRID VALVE
BCCD415D	3/4" CRGS	1 BELDEN 3085A	JB-15A	UV-21504A, CELL #15 BACKWASH VALVE #1
BCCD415E	3/4" CRGS	1 BELDEN 3085A	JB-15A	UV-21504B, CELL #15 BACKWASH VALVE #2
BCCD417A	3/4" CRGS	1 BELDEN 3083A	JB-15A	JB-17A
BCCD417B	3/4" CRGS	1 BELDEN 3085A	JB-17A	UV-21702, BAF CELL #17 INLET VALVE
BCCD417C	3/4" CRGS	1 BELDEN 3085A	JB-17A	UV-21703, BAF CELL #17 AIR PURGE GRID VALVE
BCCD417D	3/4" CRGS	1 BELDEN 3085A	JB-17A	UV-21704A, CELL #17 BACKWASH VALVE #1
BCCD417E	3/4" CRGS	1 BELDEN 3085A	JB-17A	UV-21704B, CELL #17 BACKWASH VALVE #2
BCCD501A	3/4" CRGS	1 BELDEN 3083A	PLC M19	MCC 31, BUCKET 1D (BWP-20031)
BCCD502A	3/4" CRGS	1 BELDEN 3083A	MCC 31, BUCKET 1D (BWP-20031)	MCC 42, BUCKET 1D (BWP-20032)
BCCD503A	3/4" CRGS	1 BELDEN 3083A	MCC 42, BUCKET 1D (BWP-20032)	MCC 43, BUCKET 1D (BWP-20033)
BCCD504A	3/4" CRGS	1 BELDEN 3083A	MCC 43, BUCKET 1D (BWP-20033)	LSH-20021, BACKWASH TANK #1 HIGH LEVEL
BCCD504B	3/4" LIQUID-TITE	TPS #16	BND5, NODE 5 - BACKWASH TANK #1 LEVEL ALARMS	LSL-20021, BACKWASH TANK #1 LOW LEVEL
BCCD504C	3/4" LIQUID-TITE	TPS #16	BND5, NODE 5 - BACKWASH TANK #1 LEVEL ALARMS	BND5, NODE 5 - BACKWASH TANK #1 LEVEL ALARMS
BCCD505A	3/4" CRGS	1 BELDEN 3083A	BND5, NODE 5 - BACKWASH TANK #1 LEVEL ALARMS	LSH-20022, BACKWASH TANK #2 HIGH LEVEL
BCCD505B	3/4" LIQUID-TITE	TPS #16	BDN5, NODE 6 - BACKWASH TANK #2 LEVEL ALARMS	LSL-20022, BACKWASH TANK #2 LOW LEVEL
BCCD505C	3/4" LIQUID-TITE	TPS #16	BDN5, NODE 6 - BACKWASH TANK #2 LEVEL ALARMS	BDN5, NODE 6 - BACKWASH TANK #2 LEVEL ALARMS
BCCD506A	3/4" CRGS	1 BELDEN 3083A	BDN5, NODE 6 - BACKWASH TANK #2 LEVEL ALARMS	UV-20022, BACKWASH TANK #2 VALVE ACTUATOR
BCCD507A	3/4" CRGS	1 BELDEN 3083A	UV-20022, BACKWASH TANK #2 VALVE ACTUATOR	UV-20021, BACKWASH TANK #1 VALVE ACTUATOR
BCCD601A	3/4" CRGS	1 BELDEN 3083A	PLC M19	BDN6, NODE 2 - INSTRUMENT AIR ALARMS
BCCD601B	3/4" LIQUID-TITE	TPS #16	BDN6, NODE 2 - INSTRUMENT AIR ALARMS	PSL-20041, INSTRUMENT AIR LOW PRESSURE #1
BCCD601C	3/4" LIQUID-TITE	TPS #16	BDN6, NODE 2 - INSTRUMENT AIR ALARMS	PSL-20042, INSTRUMENT AIR LOW PRESSURE #2
BCCD602A	3/4" CRGS	1 BELDEN 3083A	BDN6, NODE 2 - INSTRUMENT AIR ALARMS	BDN6, NODE 3 - INFLUENT LEVEL ALARMS
BCCD602B	3/4" LIQUID-TITE	TPS #16	BDN6, NODE 3 - INFLUENT LEVEL ALARMS	LSH-20001, BAF INFLUENT CHANNEL HIGH LEVEL
BCCD602C	NOT USED			
BCCD603A	3/4" CRGS	1 BELDEN 3083A	BDN6, NODE 3 - INFLUENT LEVEL ALARMS	BDN6, NODE 4 - EFFLUENT LEVEL ALARMS
BCCD603B	3/4" LIQUID-TITE	TPS #16	BDN6, NODE 4 - EFFLUENT LEVEL ALARMS	LSL-20011, BAF EFFLUENT CHANNEL LOW LEVEL
BCCD701A	3/4" CRGS	1 BELDEN 3083A	PLC M21	MCC 30
BCCD702A	3/4" CRGS	1 BELDEN 3083A	MCC 30	MCC 31
BCCD703A	3/4" CRGS	1 BELDEN 3083A	MCC 31	BLOW OFF VALVE CONTROL PANEL
BCCD801A	3/4" CRGS	1 BELDEN 3083A	PLC M22	MCC 42
BCCD802A	3/4" CRGS	1 BELDEN 3083A	MCC 42	MCC 43
BCCD803A	3/4" CRGS	1 BELDEN 3083A	MCC 43	BLOW OFF VALVE CONTROL PANEL
BCCF102A	3/4" CRGS	1 BELDEN 3076F	JB-4B	JB-2B
BCCF102B	3/4" CRGS	1 BELDEN 3076F	JB-2B	FIT-20200, BAF CELL #2 AIR FLOW
BCCF102C	3/4" CRGS	1 BELDEN 3076F	FIT-20200, BAF CELL #2 AIR FLOW	FV-20200, BAF CELL #2 AIR FLOW CONTROL VALVE
BCCF102D	3/4" CRGS	1 BELDEN 3076F	JB-2B	PIT-20201B, BAF CELL #2 LOWER PRESSURE
BCCF102E	3/4" CRGS	1 BELDEN 3076F	PIT-20201B, BAF CELL #2 LOWER PRESSURE	PIT-20201A, BAF CELL #2 UPPER PRESSURE
BCCF104A	3/4" CRGS	1 BELDEN 3076F	JB-6B	JB-4B
BCCF104B	3/4" CRGS	1 BELDEN 3076F	JB-4B	FIT-20400, BAF CELL #4 AIR FLOW
BCCF104C	3/4" CRGS	1 BELDEN 3076F	FIT-20400, BAF CELL #4 AIR FLOW	FV-20400, BAF CELL #4 AIR FLOW CONTROL VALVE
BCCF104D	3/4" CRGS	1 BELDEN 3076F	JB-4B	PIT-20401B, BAF CELL #4 LOWER PRESSURE
BCCF104E	3/4" CRGS	1 BELDEN 3076F	PIT-20401B, BAF CELL #4 LOWER PRESSURE	PIT-20401A, BAF CELL #4 UPPER PRESSURE
BCCF106A	3/4" CRGS	1 BELDEN 3076F	PLC M19	JB-8B
BCCF106B	3/4" CRGS	1 BELDEN 3076F	JB-6B	FIT-20600, BAF CELL #6 AIR FLOW
BCCF106C	3/4" CRGS	1 BELDEN 3076F	FIT-20600, BAF CELL #6 AIR FLOW	FV-20600, BAF CELL #6 AIR FLOW CONTROL VALVE
BCCF106D	3/4" CRGS	1 BELDEN 3076F	JB-6B	PIT-20601B, BAF CELL #6 LOWER PRESSURE
BCCF106E	3/4" CRGS	1 BELDEN 3076F	PIT-20601B, BAF CELL #6 LOWER PRESSURE	PIT-20601A, BAF CELL #6 UPPER PRESSURE
BCCF207A	3/4" CRGS	1 BELDEN 3076F	JB-8B	JB-7B
BCCF207B	3/4" CRGS	1 BELDEN 3076F	JB-7B	FIT-20700, BAF CELL #7 AIR FLOW
BCCF207C	3/4" CRGS	1 BELDEN 3076F	FIT-20700, BAF CELL #7 AIR FLOW	FV-20700, BAF CELL #7 AIR FLOW CONTROL VALVE
BCCF207D	3/4" CRGS	1 BELDEN 3076F	JB-7B	PIT-20701B, BAF CELL #7 LOWER PRESSURE
BCCF207E	3/4" CRGS	1 BELDEN 3076F	PIT-20701B, BAF CELL #7 LOWER PRESSURE	PIT-20701A, BAF CELL #7 UPPER PRESSURE
BCCF208A	3/4" CRGS	1 BELDEN 3076F	JB-9B	JB-8B

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATED 10/21/05 PER: Lampolet

Layer: ON=*; OFF=*REF*

4/24/01 BBL DCC
05503000/0859I510.DWG

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED IN THE TITLE BLOCK. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.

NOT TO SCALE

NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
1	7/11/01	AS BID	
2	10/31/05	RECORD DRAWING	

In charge of TEL
Designed by AHL
Drawn by DCC
Checked by FKP

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

CONDUIT SCHEDULE

INSTRUMENTATION

STATE OF NEW YORK • LEONARD J. CAMPOLETA • No. 60755 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
Lampolet

I-510

CONDUIT NO.	CONDUIT SIZE	NO./SIZE CONDUCTORS	FROM	TO
BCCF208B	3/4" CRGS	1 BELDEN 3076F	JB-8B	FIT-20800, BAF CELL #8 AIR FLOW
BCCF208C	3/4" CRGS	1 BELDEN 3076F	FIT-20800, BAF CELL #8 AIR FLOW	FV-20800, BAF CELL #8 AIR FLOW CONTROL VALVE
BCCF208D	3/4" CRGS	1 BELDEN 3076F	JB-8B	PIT-20801B, BAF CELL #8 LOWER PRESSURE
BCCF208E	3/4" CRGS	1 BELDEN 3076F	PIT-20801B, BAF CELL #8 LOWER PRESSURE	PIT-20801A, BAF CELL #8 UPPER PRESSURE
BCCF209A	3/4" CRGS	1 BELDEN 3076F	PLC M19	JB-9B
BCCF209B	3/4" CRGS	1 BELDEN 3076F	JB-9B	FIT-20900, BAF CELL #9 AIR FLOW
BCCF209C	3/4" CRGS	1 BELDEN 3076F	FIT-20900, BAF CELL #9 AIR FLOW	FV-20900, BAF CELL #9 AIR FLOW CONTROL VALVE
BCCF209D	3/4" CRGS	1 BELDEN 3076F	JB-9B	PIT-20901B, BAF CELL #9 LOWER PRESSURE
BCCF209E	3/4" CRGS	1 BELDEN 3076F	PIT-20901B, BAF CELL #9 LOWER PRESSURE	PIT-20901A, BAF CELL #9 UPPER PRESSURE
BCCF301A	3/4" CRGS	1 BELDEN 3076F	JB-3B	JB-1B
BCCF301B	3/4" CRGS	1 BELDEN 3076F	JB-1B	FIT-20100, BAF CELL #1 AIR FLOW
BCCF301C	3/4" CRGS	1 BELDEN 3076F	FIT-20100, BAF CELL #1 AIR FLOW	FV-20100, BAF CELL #1 AIR FLOW CONTROL VALVE
BCCF301D	3/4" CRGS	1 BELDEN 3076F	JB-1B	PIT-20101B, BAF CELL #1 LOWER PRESSURE
BCCF301E	3/4" CRGS	1 BELDEN 3076F	PIT-20101B, BAF CELL #1 LOWER PRESSURE	PIT-20101A, BAF CELL #1 UPPER PRESSURE
BCCF303A	3/4" CRGS	1 BELDEN 3076F	JB-5B	JB-3B
BCCF303B	3/4" CRGS	1 BELDEN 3076F	JB-3B	FIT-20300, BAF CELL #3 AIR FLOW
BCCF303C	3/4" CRGS	1 BELDEN 3076F	FIT-20300, BAF CELL #3 AIR FLOW	FV-20300, BAF CELL #3 AIR FLOW CONTROL VALVE
BCCF303D	3/4" CRGS	1 BELDEN 3076F	JB-3B	PIT-20301B, BAF CELL #3 LOWER PRESSURE
BCCF303E	3/4" CRGS	1 BELDEN 3076F	PIT-20301B, BAF CELL #3 LOWER PRESSURE	PIT-20301A, BAF CELL #3 UPPER PRESSURE
BCCF305A	3/4" CRGS	1 BELDEN 3076F	PLC M19	JB-5B
BCCF305B	3/4" CRGS	1 BELDEN 3076F	JB-5B	FIT-20500, BAF CELL #5 AIR FLOW
BCCF305C	3/4" CRGS	1 BELDEN 3076F	FIT-20500, BAF CELL #5 AIR FLOW	FV-20500, BAF CELL #5 AIR FLOW CONTROL VALVE
BCCF305D	3/4" CRGS	1 BELDEN 3076F	JB-5B	PIT-20501B, BAF CELL #5 LOWER PRESSURE
BCCF305E	3/4" CRGS	1 BELDEN 3076F	PIT-20501B, BAF CELL #5 LOWER PRESSURE	PIT-20501A, BAF CELL #5 UPPER PRESSURE
BCCF414A	3/4" CRGS	1 BELDEN 3076F	PLC M19	JB-14B
BCCF414B	3/4" CRGS	1 BELDEN 3076F	JB-14B	FIT-21400, BAF CELL #14 AIR FLOW
BCCF414C	3/4" CRGS	1 BELDEN 3076F	FIT-21400, BAF CELL #14 AIR FLOW	FV-21400, BAF CELL #14 AIR FLOW CONTROL VALVE
BCCF414D	3/4" CRGS	1 BELDEN 3076F	JB-14B	PIT-21401B, BAF CELL #14 LOWER PRESSURE
BCCF414E	3/4" CRGS	1 BELDEN 3076F	PIT-21401B, BAF CELL #14 LOWER PRESSURE	PIT-21401A, BAF CELL #14 UPPER PRESSURE
BCCF416A	3/4" CRGS	1 BELDEN 3076F	JB-14B	JB-16B
BCCF416B	3/4" CRGS	1 BELDEN 3076F	JB-16B	FIT-21600, BAF CELL #16 AIR FLOW
BCCF416C	3/4" CRGS	1 BELDEN 3076F	FIT-21600, BAF CELL #16 AIR FLOW	FV-21600, BAF CELL #16 AIR FLOW CONTROL VALVE
BCCF416D	3/4" CRGS	1 BELDEN 3076F	JB-16B	PIT-21601B, BAF CELL #16 LOWER PRESSURE
BCCF416E	3/4" CRGS	1 BELDEN 3076F	PIT-21601B, BAF CELL #16 LOWER PRESSURE	PIT-21601A, BAF CELL #16 UPPER PRESSURE
BCCF418A	3/4" CRGS	1 BELDEN 3076F	JB-16B	JB-18B
BCCF418B	3/4" CRGS	1 BELDEN 3076F	JB-18B	FIT-21800, BAF CELL #18 AIR FLOW
BCCF418C	3/4" CRGS	1 BELDEN 3076F	FIT-21800, BAF CELL #18 AIR FLOW	FV-21800, BAF CELL #18 AIR FLOW CONTROL VALVE
BCCF418D	3/4" CRGS	1 BELDEN 3076F	JB-18B	PIT-21801B, BAF CELL #18 LOWER PRESSURE
BCCF418E	3/4" CRGS	1 BELDEN 3076F	PIT-21801B, BAF CELL #18 LOWER PRESSURE	PIT-21801A, BAF CELL #18 UPPER PRESSURE
BCCF510A	3/4" CRGS	1 BELDEN 3076F	PLC M19	JB-10B
BCCF510B	3/4" CRGS	1 BELDEN 3076F	JB-10B	FIT-21000, BAF CELL #10 AIR FLOW
BCCF510C	3/4" CRGS	1 BELDEN 3076F	FIT-21000, BAF CELL #10 AIR FLOW	FV-21000, BAF CELL #10 AIR FLOW CONTROL VALVE
BCCF510D	3/4" CRGS	1 BELDEN 3076F	JB-10B	PIT-21001B, BAF CELL #10 LOWER PRESSURE
BCCF510E	3/4" CRGS	1 BELDEN 3076F	PIT-21001B, BAF CELL #10 LOWER PRESSURE	PIT-21001A, BAF CELL #10 UPPER PRESSURE
BCCF511A	3/4" CRGS	1 BELDEN 3076F	JB-12B	JB-11B
BCCF511B	3/4" CRGS	1 BELDEN 3076F	JB-11B	FIT-21100, BAF CELL #11 AIR FLOW
BCCF511C	3/4" CRGS	1 BELDEN 3076F	FIT-21100, BAF CELL #11 AIR FLOW	FV-21100, BAF CELL #11 AIR FLOW CONTROL VALVE
BCCF511D	3/4" CRGS	1 BELDEN 3076F	JB-11B	PIT-21101B, BAF CELL #11 LOWER PRESSURE
BCCF511E	3/4" CRGS	1 BELDEN 3076F	PIT-21101B, BAF CELL #11 LOWER PRESSURE	PIT-21101A, BAF CELL #11 UPPER PRESSURE
BCCF512A	3/4" CRGS	1 BELDEN 3076F	JB-10B	JB-12B
BCCF512B	3/4" CRGS	1 BELDEN 3076F	JB-12B	FIT-21200, BAF CELL #12 AIR FLOW
BCCF512C	3/4" CRGS	1 BELDEN 3076F	FIT-21200, BAF CELL #12 AIR FLOW	FV-21200, BAF CELL #12 AIR FLOW CONTROL VALVE
BCCF512D	3/4" CRGS	1 BELDEN 3076F	JB-12B	PIT-21201B, BAF CELL #12 LOWER PRESSURE
BCCF512E	3/4" CRGS	1 BELDEN 3076F	PIT-21201B, BAF CELL #12 LOWER PRESSURE	PIT-21201A, BAF CELL #12 UPPER PRESSURE
BCCF613A	3/4" CRGS	1 BELDEN 3076F	PLC M19	JB-13B
BCCF613B	3/4" CRGS	1 BELDEN 3076F	JB-13B	FIT-21300, BAF CELL #13 AIR FLOW
BCCF613C	3/4" CRGS	1 BELDEN 3076F	FIT-21300, BAF CELL #13 AIR FLOW	FV-21300, BAF CELL #13 AIR FLOW CONTROL VALVE
BCCF613D	3/4" CRGS	1 BELDEN 3076F	JB-13B	PIT-21301B, BAF CELL #13 LOWER PRESSURE
BCCF613E	3/4" CRGS	1 BELDEN 3076F	PIT-21301B, BAF CELL #13 LOWER PRESSURE	PIT-21301A, BAF CELL #13 UPPER PRESSURE
BCCF615A	3/4" CRGS	1 BELDEN 3076F	JB-13B	JB-15B
BCCF615B	3/4" CRGS	1 BELDEN 3076F	JB-15B	FIT-21500, BAF CELL #15 AIR FLOW
BCCF615C	3/4" CRGS	1 BELDEN 3076F	FIT-21500, BAF CELL #15 AIR FLOW	FV-21500, BAF CELL #15 AIR FLOW CONTROL VALVE
BCCF615D	3/4" CRGS	1 BELDEN 3076F	JB-15B	PIT-21501B, BAF CELL #15 LOWER PRESSURE
BCCF615E	3/4" CRGS	1 BELDEN 3076F	PIT-21501B, BAF CELL #15 LOWER PRESSURE	PIT-21501A, BAF CELL #15 UPPER PRESSURE
BCCF617A	3/4" CRGS	1 BELDEN 3076F	JB-15B	JB-17B
BCCF617B	3/4" CRGS	1 BELDEN 3076F	JB-17B	FIT-21700, BAF CELL #17 AIR FLOW
BCCF617C	3/4" CRGS	1 BELDEN 3076F	FIT-21700, BAF CELL #17 AIR FLOW	FV-21700, BAF CELL #17 AIR FLOW CONTROL VALVE
BCCF617D	3/4" CRGS	1 BELDEN 3076F	JB-17B	PIT-21701B, BAF CELL #17 LOWER PRESSURE
BCCF617E	3/4" CRGS	1 BELDEN 3076F	PIT-21701B, BAF CELL #17 LOWER PRESSURE	PIT-21701A, BAF CELL #17 UPPER PRESSURE
BCCF701A	3/4" CRGS	1 BELDEN 3076F	PLC M19	JB-A
BCCF701B	3/4" CRGS	1 BELDEN 3076F	JB-A	BFN7, NODE 4 - CONVERTER
BCCF701C	3/4" LIQUID-TITE	TPS #16	BFN7, NODE 4 - CONVERTER	LIT-20001, BAF INFLUENT LEVEL TRANSMITTER
BCCF701D	3/4" CRGS	1 BELDEN 3078F	JB-A	AIT-20003, BAF INFLUENT PH
BCCF701E	3/4" CRGS	1 BELDEN 3076F	AIT-20003, BAF INFLUENT PH	TIT-20004, BAF INFLUENT TEMPERATURE
BCCF702A	3/4" CRGS	1 BELDEN 3076F	JB-A	JB-B
BCCF702B	3/4" CRGS	1 BELDEN 3076F	JB-B	FIT-20020, USED BACKWASH FLOW
BCCF702C	3/4" CRGS	1 BELDEN 3076F	JB-B	BFN7, NODE 7 - CONVERTER
BCCF702D	3/4" LIQUID-TITE	TPS #16	BFN7, NODE 7 - CONVERTER	LIT-20021, BACKWASH TANK #1 LEVEL TRANSMITTER
BCCF702E	3/4" CRGS	1 BELDEN 3076F	BFN7, NODE 7 - CONVERTER	BFN7, NODE 8 - CONVERTER
BCCF702F	3/4" LIQUID-TITE	TPS #16	BFN7, NODE 8 - CONVERTER	LIT-20022, BACKWASH TANK #2 LEVEL TRANSMITTER
BCCF703A	3/4" CRGS	1 BELDEN 3076F	JB-B	JB-C
BCCF703B	3/4" CRGS	1 BELDEN 3076F	JB-C	BFN7, NODE 9 - CONVERTER
BCCF703C	3/4" LIQUID-TITE	TPS #16	BFN7, NODE 9 - CONVERTER	FIT-20000, BAF INFLUENT FLOW
BCCF801A	3/4" CRGS	1 BELDEN 3076F	PLC M19	JB-D
BCCF801B	3/4" CRGS	1 BELDEN 3076F	JB-D	BFN8, NODE 5 - CONVERTER
BCCF801C	3/4" LIQUID-TITE	TPS #16	BFN8, NODE 5 - CONVERTER	AIT-20002, BAF INFLUENT NH3
BCCF801D	3/4" CRGS	1 BELDEN 3076F	JB-D	BFN8, NODE 4 - CONVERTER
BCCF801E	3/4" LIQUID-TITE	TPS #16	BFN8, NODE 4 - CONVERTER	AIT-20012, BAF EFFLUENT NH3
BCCF802A	3/4" CRGS	1 BELDEN 3076F	JB-D	JB-E
BCCF802B	3/4" CRGS	1 BELDEN 3076F	JB-E	LIT-20011, BAF EFFLUENT CHANNEL LEVEL TRANSMITTER
BCCF802C	3/4" CRGS	1 BELDEN 3076F	LIT-20011, BAF EFFLUENT CHANNEL LEVEL TRANSMITTER	AIT-20013, BAF EFFLUENT PH
BCCF802D	3/4" CRGS	1 BELDEN 3076F	JB-E	BFN8, NODE 6 - CONVERTER
BCCF802E	3/4" LIQUID-TITE	TPS #16	BFN8, NODE 6 - CONVERTER	AIT-20014A, BAF EFFLUENT DO #1
BCCF802F	3/4" CRGS	1 BELDEN 3076F	BFN8, NODE 6 - CONVERTER	BFN8, NODE 5 - CONVERTER
BCCF802G	3/4" LIQUID-TITE	TPS #16	BFN8, NODE 5 - CONVERTER	AIT-20014B, BAF EFFLUENT DO #2
BCCH101A	3/4" CRGS	1 BELDEN 9463	PLC M19	PLC M21
BCCH201A	3/4" CRGS	1 BELDEN 9463	PLC M19	PLC M22
BCCH301A	3/4" CRGS	TPS #16	PLC M21	PIT-20051A, BLOWER HEADER PRESSURE A
BCCH302A	3/4" CRGS	TPS #16	PLC M22	PIT-20051B, BLOWER HEADER PRESSURE B
BCCH303A	3/4" CRGS	TPS #16 (3 COND.)	PLC M21	TIT-20052A, BLOWER HEADER TEMPERATURE A
BCCH304A	3/4" CRGS	TPS #16 (3 COND.)	PLC M22	TIT-20052B, BLOWER HEADER TEMPERATURE B
BCCH305A	3/4" CRGS	2 TPS #16	BLOW OFF VALVE CONTROL PANEL	FVZI/FVZO-20053A, BLOWER HEADER BLOW-OFF VALVE A
BCCH306A	3/4" CRGS	8 #14	BLOW OFF VALVE CONTROL PANEL	ZSO/ZSC/FVA/HS-20053A, BLOWER BLOW-OFF VALVE A
BCCH307A	3/4" CRGS	2 TPS #16	BLOW OFF VALVE CONTROL PANEL	FVZI/FVZO-20053B, BLOWER HEADER BLOW-OFF VALVE B
BCCH308A	3/4" CRGS	8 #14	BLOW OFF VALVE CONTROL PANEL	ZSO/ZSC/FVA/HS-20053B, BLOWER BLOW-OFF VALVE B
BCCH310A	3/4" CRGS	2 TPS #16 (3 COND.)	PLC M21	JB-CA
BCCH310B	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-CA	TE-20152, BLOWER #1 OUTLET TEMPERATURE
BCCH310C	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-CA	TE-20151, BLOWER #1 INLET TEMPERATURE
BCCH311A	1-1/4" CRGS	4 TPS #16 (3 COND.)	PLC M21	JB-CB
BCCH311B	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-CB	TE-20154, MOTOR #1 NON-SHAFT END TEMP.
BCCH311C	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-CB	TE-20153, BLOWER #1 BLOWER INBOARD TEMP.
BCCH311D	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-CB	TE-20156, MOTOR #1 SHAFT END TEMP.
BCCH311E	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-CB	TE-20155, BLOWER #1 OUTBOARD TEMP.
BCCH312A	1" CRGS	4 TPS #16	PLC M21	JB-CC
BCCH312B	3/4" LIQUID-TITE	TPS #16	JB-CC	VT-20152, BLOWER #1 OUTBOARD VIBRATION
BCCH312C	3/4" LIQUID-TITE	TPS #16	JB-CC	VT-20151, BLOWER #1 INBOARD VIBRATION
BCCH312D	3/4" LIQUID-TITE	TPS #16	JB-CC	VT-20154, MOTOR #1 SHAFT END VIBRATION
BCCH312E	3/4" LIQUID-TITE	TPS #16	JB-CC	VT-20153, MOTOR #1 NON-SHAFT END VIBRATION
BCCH313A	3/4" CRGS	2 TPS #16	PLC M21	FVZO/FVZI-20157, BLOWER #1 INLET VALVE
BCCH314A	3/4" CRGS	8 #14	PLC M21	ZSO/ZSC/FVA/HS-20157, BLOWER #1 INLET VALVE
BCCH315A	3/4" CRGS	TPS #16	PLC M21	PDT-20158, BLOWER #1 INLET FILTER
BCCH320A	3/4" CRGS	2 TPS #16 (3 COND.)	PLC M21	JB-CD
BCCH320B	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-CD	TE-20252, BLOWER #2 OUTLET TEMPERATURE
BCCH320C	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-CD	TE-20251, BLOWER #2 INLET TEMPERATURE
BCCH321A	1-1/4" CRGS	4 TPS #16 (3 COND.)	PLC M21	JB-CE
BCCH321B	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-CE	TE-20254, MOTOR #2 NON-SHAFT END TEMP.
BCCH321C	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-CE	TE-20253, BLOWER #2 BLOWER INBOARD TEMP.
BCCH321D	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-CE	TE-20256, MOTOR #2 SHAFT END TEMP.
BCCH321E	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-CE	TE-20255, BLOWER #2 OUTBOARD TEMP.
BCCH322A	1" CRGS	4 TPS #16	PLC M21	JB-CF
BCCH322B	3/4" LIQUID-TITE	TPS #16	JB-CF	VT-20252, BLOWER #2 OUTBOARD VIBRATION
BCCH322C	3/4" LIQUID-TITE	TPS #16	JB-CF	VT-20251, BLOWER #2 INBOARD VIBRATION
BCCH322D	3/4" LIQUID-TITE	TPS #16	JB-CF	VT-20254, MOTOR #2 SHAFT END VIBRATION
BCCH322E	3/4" LIQUID-TITE	TPS #16	JB-CF	VT-20253, MOTOR #2 NON-SHAFT END VIBRATION
BCCH323A	3/4" CRGS	2 TPS #16	PLC M21	FVZO/FVZI-20257, BLOWER #2 INLET VALVE
BCCH324A	3/4" CRGS	8 #14	PLC M21	ZSO/ZSC/FVA/HS-20257, BLOWER #2 INLET VALVE
BCCH325A	3/4" CRGS	TPS #16	PLC M21	PDT-20258, BLOWER #2 INLET FILTER
BCCH330A	3/4" CRGS	2 TPS #16 (3 COND.)	PLC M21	JB-CG
BCCH330B	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-CG	TE-20352, BLOWER #3 OUTLET TEMPERATURE
BCCH330C	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-CG	TE-20351, BLOWER #3 INLET TEMPERATURE
BCCH331A	1-1/4" CRGS	4 TPS #16 (3 COND.)	PLC M21	JB-CH
BCCH331B	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-CH	TE-20354, MOTOR #3 NON-SHAFT END TEMP.
BCCH331C	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-CH	TE-20353, BLOWER #3 BLOWER INBOARD TEMP.
BCCH331D	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-CH	TE-20356, MOTOR #3 SHAFT END TEMP.
BCCH331E	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-CH	TE-20355, BLOWER #3 OUTBOARD TEMP.
BCCH332A	1" CRGS	4 TPS #16	PLC M21	JB-CI
BCCH332B	3/4" LIQUID-TITE	TPS #16	JB-CI	VT-20352, BLOWER #3 OUTBOARD VIBRATION
BCCH332C	3/4" LIQUID-TITE	TPS #16	JB-CI	VT-20351, BLOWER #3 INBOARD VIBRATION
BCCH332D	3/4" LIQUID-TITE	TPS #16	JB-CI	VT-20354, MOTOR #3 SHAFT END VIBRATION
BCCH332E	3/4" LIQUID-TITE	TPS #16	JB-CI	VT-20353, MOTOR #3 NON-SHAFT END VIBRATION
BCCH333A	3/4" CRGS	2 TPS #16	PLC M21	FVZO/FVZI-20357, BLOWER #3 INLET VALVE
BCCH334A	3/4" CRGS	8 #14	PLC M21	ZSO/ZSC/FVA/HS-20357, BLOWER #3 INLET VALVE
BCCH335A	3/4" CRGS	TPS #16	PLC M21	PDT-20358, BLOWER #3 INLET FILTER
BCCH340A	3/4" CRGS	2 TPS #16 (3 COND.)	PLC M21	JB-CJ
BCCH340B	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-CJ	TE-20452, BLOWER #4 OUTLET TEMPERATURE
BCCH340C	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-CJ	TE-20451, BLOWER #4 INLET TEMPERATURE
BCCH341A	1-1/4" CRGS	4 TPS #16 (3 COND.)	PLC M21	JB-CK
BCCH341B	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-CK	TE-20454, MOTOR #4 NON-SHAFT END TEMP.
BCCH341C	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-CK	TE-20453, BLOWER #4 BLOWER INBOARD TEMP.
BCCH341D	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-CK	TE-20456, MOTOR #4 SHAFT END TEMP.
BCCH341E	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-CK	TE-20455, BLOWER #4 OUTBOARD TEMP.
BCCH342A	1" CRGS	4 TPS #16	PLC M21	JB-CL
BCCH342B	3/4" LIQUID-TITE	TPS #16	JB-CL	VT-20452, BLOWER #4 OUTBOARD VIBRATION
BCCH342C	3/4" LIQUID-TITE	TPS #16	JB-CL	VT-20451, BLOWER #4 INBOARD VIBRATION
BCCH342D	3/4" LIQUID-TITE	TPS #16	JB-CL	VT-20454, MOTOR #4 SHAFT END VIBRATION
BCCH342E	3/4" LIQUID-TITE	TPS #16	JB-CL	VT-20453, MOTOR #4 NON-SHAFT END VIBRATION
BCCH343A	3/4" CRGS	2 TPS #16	PLC M21	FVZO/FVZI-20457, BLOWER #4 INLET VALVE
BCCH344A	3/4" CRGS	8 #14	PLC M21	ZSO/ZSC/FVA/HS-20457, BLOWER #4 INLET VALVE
BCCH345A	3/4" CRGS	TPS #16	PLC M21	PDT-20458, BLOWER #4 INLET FILTER
BCCH350A	3/4" CRGS	2 TPS #16 (3 COND.)	PLC M22	JB-DA
BCCH350B	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-DA	TE-20552, BLOWER #5 OUTLET TEMPERATURE
BCCH350C	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-DA	TE-20551, BLOWER #5 INLET TEMPERATURE
BCCH351A	1-1/4" CRGS	4 TPS #16 (3 COND.)	PLC M22	JB-DB
BCCH351B	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-DB	TE-20554, MOTOR #5 NON-SHAFT END TEMP.
BCCH351C	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-DB	TE-20553, BLOWER #5 BLOWER INBOARD TEMP.
BCCH351D	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-DB	TE-20556, MOTOR #5 SHAFT END TEMP.
BCCH351E	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-DB	TE-20555, BLOWER #5 OUTBOARD TEMP.
BCCH352A	1" CRGS	4 TPS #16	PLC M22	JB-DC
BCCH352B	3/4" LIQUID-TITE	TPS #16	JB-DC	VT-20552, BLOWER #5 OUTBOARD VIBRATION
BCCH352C	3/4" LIQUID-TITE	TPS #16	JB-DC	VT-20551, BLOWER #5 INBOARD VIBRATION

Layer: ON=*; OFF=*REF*

4/23/01 BBL DCC
05503000/06591511.DWG

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE: 10/24/05 PER: [signature]

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED IN THE TITLE BLOCK. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.

NOT TO SCALE

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	LJE
1	7/11/01	AS BID	
2	10/31/05	RECORD DRAWING	

In charge of TEL
Designed by AHL
Drawn by DCC
Checked by FKP

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

CONDUIT SCHEDULE (CONTINUED)

INSTRUMENTATION

STATE OF NEW YORK · LEONARD J. CAMPOLIETI · No. 60755 · LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
[signature]

I-511

CONDUIT NO.	CONDUIT SIZE	NO./SIZE CONDUCTORS	FROM	TO
BCCH352D	3/4" LIQUID-TITE	TPS #16	JB-DC	VT-20554, MOTOR #5 SHAFT END VIBRATION
BCCH352E	3/4" LIQUID-TITE	TPS #16	JB-DC	VT-20553, MOTOR #5 NON-SHAFT END VIBRATION
BCCH353A	3/4" CRGS	2 TPS #16	PLC M22	FVZO/FVZI-20557, BLOWER #5 INLET VALVE
BCCH354A	3/4" CRGS	8 #14	PLC M22	ZSO/ZSC/FVA/HS-20557, BLOWER #5 INLET VALVE
BCCH355A	3/4" CRGS	TPS #16	PLC M22	PDT-20558, BLOWER #5 INLET FILTER
BCCH360A	3/4" CRGS	2 TPS #16 (3 COND.)	PLC M22	JB-DD
BCCH360B	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-DD	TE-20852, BLOWER #8 OUTLET TEMPERATURE
BCCH360C	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-DD	TE-20851, BLOWER #8 INLET TEMPERATURE
BCCH361A	1-1/4" CRGS	4 TPS #16 (3 COND.)	PLC M22	JB-DE
BCCH361B	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-DE	TE-20854, MOTOR #8 NON-SHAFT END TEMP.
BCCH361C	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-DE	TE-20853, BLOWER #8 BLOWER INBOARD TEMP.
BCCH361D	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-DE	TE-20856, MOTOR #8 SHAFT END TEMP.
BCCH361E	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-DE	TE-20855, BLOWER #8 OUTBOARD TEMP.
BCCH362A	1" CRGS	4 TPS #16	PLC M22	JB-DF
BCCH362B	3/4" LIQUID-TITE	TPS #16	JB-DF	VT-20852, BLOWER #6 OUTBOARD VIBRATION
BCCH362C	3/4" LIQUID-TITE	TPS #16	JB-DF	VT-20851, BLOWER #6 INBOARD VIBRATION
BCCH362D	3/4" LIQUID-TITE	TPS #16	JB-DF	VT-20854, MOTOR #8 SHAFT END VIBRATION
BCCH362E	3/4" LIQUID-TITE	TPS #16	JB-DF	VT-20853, MOTOR #8 NON-SHAFT END VIBRATION
BCCH363A	3/4" CRGS	2 TPS #16	PLC M22	FVZO/FVZI-20857, BLOWER #8 INLET VALVE
BCCH364A	3/4" CRGS	8 #14	PLC M22	ZSO/ZSC/FVA/HS-20657, BLOWER #8 INLET VALVE
BCCH365A	3/4" CRGS	TPS #16	PLC M22	PDT-20658, BLOWER #8 INLET FILTER
BCCH370A	3/4" CRGS	2 TPS #16 (3 COND.)	PLC M22	JB-DG
BCCH370B	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-DG	TE-20752, BLOWER #7 OUTLET TEMPERATURE
BCCH370C	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-DG	TE-20751, BLOWER #7 INLET TEMPERATURE
BCCH371A	1-1/4" CRGS	4 TPS #16 (3 COND.)	PLC M22	JB-DH
BCCH371B	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-DH	TE-20754, MOTOR #7 NON-SHAFT END TEMP.
BCCH371C	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-DH	TE-20753, BLOWER #7 BLOWER INBOARD TEMP.
BCCH371D	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-DH	TE-20758, MOTOR #7 SHAFT END TEMP.
BCCH371E	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-DH	TE-20755, BLOWER #7 OUTBOARD TEMP.
BCCH372A	1" CRGS	4 TPS #16	PLC M22	JB-DI
BCCH372B	3/4" LIQUID-TITE	TPS #16	JB-DI	VT-20752, BLOWER #7 OUTBOARD VIBRATION
BCCH372C	3/4" LIQUID-TITE	TPS #16	JB-DI	VT-20751, BLOWER #7 INBOARD VIBRATION
BCCH372D	3/4" LIQUID-TITE	TPS #16	JB-DI	VT-20754, MOTOR #7 SHAFT END VIBRATION
BCCH372E	3/4" LIQUID-TITE	TPS #16	JB-DI	VT-20753, MOTOR #7 NON-SHAFT END VIBRATION
BCCH373A	3/4" CRGS	2 TPS #16	PLC M22	FVZO/FVZI-20757, BLOWER #7 INLET VALVE
BCCH374A	3/4" CRGS	8 #14	PLC M22	ZSO/ZSC/FVA/HS-20757, BLOWER #7 INLET VALVE
BCCH375A	3/4" CRGS	TPS #16	PLC M22	PDT-20758, BLOWER #7 INLET FILTER
BCCH380A	3/4" CRGS	2 TPS #16 (3 COND.)	PLC M22	JB-DJ
BCCH380B	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-DJ	TE-20852, BLOWER #8 OUTLET TEMPERATURE
BCCH380C	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-DJ	TE-20851, BLOWER #8 INLET TEMPERATURE
BCCH381A	1-1/4" CRGS	4 TPS #16 (3 COND.)	PLC M22	JB-DK
BCCH381B	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-DK	TE-20854, MOTOR #8 NON-SHAFT END TEMP.
BCCH381C	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-DK	TE-20853, BLOWER #8 BLOWER INBOARD TEMP.
BCCH381D	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-DK	TE-20856, MOTOR #8 SHAFT END TEMP.
BCCH381E	3/4" LIQUID-TITE	TPS #16 (3 COND.)	JB-DK	TE-20855, BLOWER #8 OUTBOARD TEMP.
BCCH382A	1" CRGS	4 TPS #16	PLC M22	JB-DL
BCCH382B	3/4" LIQUID-TITE	TPS #16	JB-DL	VT-20852, BLOWER #8 OUTBOARD VIBRATION
BCCH382C	3/4" LIQUID-TITE	TPS #16	JB-DL	VT-20851, BLOWER #8 INBOARD VIBRATION
BCCH382D	3/4" LIQUID-TITE	TPS #16	JB-DL	VT-20854, MOTOR #8 SHAFT END VIBRATION
BCCH382E	3/4" LIQUID-TITE	TPS #16	JB-DL	VT-20853, MOTOR #8 NON-SHAFT END VIBRATION
BCCH383A	3/4" CRGS	2 TPS #16	PLC M22	FVZO/FVZI-20857, BLOWER #8 INLET VALVE
BCCH384A	3/4" CRGS	8 #14	PLC M22	ZSO/ZSC/FVA/HS-20857, BLOWER #8 INLET VALVE
BCCH385A	3/4" CRGS	TPS #16	PLC M22	PDT-20858, BLOWER #8 INLET FILTER
BCCH401A	3/4" CRGS	2 #14	PLC M24	LSH-29040, BAF GALLERY SUMP #1
BCCH402A	3/4" CRGS	2 #14	PLC M24	LSH-29041, BAF GALLERY SUMP #2
BCCH403A	3/4" CRGS	2 #14	PLC M24	LSH-29042, BAF GALLERY SUMP #3
BCCH404A	3/4" CRGS	2 #14	PLC M24	LSH-29043, BAF GALLERY SUMP #4
BCCH405A	3/4" CRGS	2 #14	PLC M24	LSH-29044, BAF GALLERY SUMP #5
BCCH406A	3/4" CRGS	2 #14	PLC M24	LSH-29045, BAF GALLERY SUMP #6
BCCH407A	3/4" CRGS	2 #14	PLC M24	LSH-29046, BACKWASH SUMP
BCCH501A	3/4" CRGS	4 #14	PLC M24	BAF SUMP CONTROL PANEL
HCCD101A	3/4" CRGS	1 BELDEN 3083A	PLC M17	MCC 33
HCCD102A	3/4" CRGS	1 BELDEN 3083A	MCC 33	HDN1, NODE 12 - TRAIN #1 INFLUENT SLIDE GATE
HCCD102B	3/4" LIQUID-TITE	TPS #16	HDN1, NODE 12 - TRAIN #1 INFLUENT SLIDE GATE	ZS-30100, HRFS TRAIN #1 SLIDE GATE LIMIT SWITCH
HCCD103A	3/4" CRGS	1 BELDEN 3083A	HDN1, NODE 12 - TRAIN #1 INFLUENT SLIDE GATE	HDN1, NODE 11 - TRAIN #1 SAND PUMP PRESSURE SWITCHES
HCCD103B	3/4" LIQUID-TITE	4 #14	HDN1, NODE 11 - TRAIN #1 SAND PUMP PRESSURE SWITCHES	PSHL-30107, HRFS TRAIN #1 SAND PUMP #1A
HCCD103C	3/4" LIQUID-TITE	4 #14	HDN1, NODE 11 - TRAIN #1 SAND PUMP PRESSURE SWITCHES	PSHL-30109, HRFS TRAIN #1 SAND PUMP #1B
HCCD103D	3/4" LIQUID-TITE	4 #14	HDN1, NODE 11 - TRAIN #1 SAND PUMP PRESSURE SWITCHES	PSHL-30111, HRFS TRAIN #1 SAND PUMP #1C
HCCD201A	3/4" CRGS	1 BELDEN 3083A	PLC M17	MCC 33
HCCD202A	3/4" CRGS	1 BELDEN 3083A	MCC 33	HDN2, NODE 12 - TRAIN #2 INFLUENT SLIDE GATE
HCCD202B	3/4" LIQUID-TITE	TPS #16	HDN2, NODE 12 - TRAIN #2 INFLUENT SLIDE GATE	XZS-30200, HRFS TRAIN #2 SLIDE GATE LIMIT SWITCH
HCCD203A	3/4" CRGS	1 BELDEN 3083A	HDN2, NODE 12 - TRAIN #2 INFLUENT SLIDE GATE	HDN2, NODE 11 - TRAIN #2 SAND PUMP PRESSURE SWITCHES
HCCD203B	3/4" LIQUID-TITE	4 #14	HDN2, NODE 11 - TRAIN #2 SAND PUMP PRESSURE SWITCHES	PSHL-30207, HRFS TRAIN #2 SAND PUMP #2A
HCCD203C	3/4" LIQUID-TITE	4 #14	HDN2, NODE 11 - TRAIN #2 SAND PUMP PRESSURE SWITCHES	PSHL-30209, HRFS TRAIN #2 SAND PUMP #2B
HCCD203D	3/4" LIQUID-TITE	4 #14	HDN2, NODE 11 - TRAIN #2 SAND PUMP PRESSURE SWITCHES	PSHL-30211, HRFS TRAIN #2 SAND PUMP #2C
HCCD301A	3/4" CRGS	1 BELDEN 3083A	PLC M17	MCC 39
HCCD302A	3/4" CRGS	1 BELDEN 3083A	MCC 39	HDN3, NODE 12 - TRAIN #3 INFLUENT SLIDE GATE
HCCD302B	3/4" LIQUID-TITE	TPS #16	HDN3, NODE 12 - TRAIN #3 INFLUENT SLIDE GATE	ZS-30300, HRFS TRAIN #3 SLIDE GATE LIMIT SWITCH
HCCD303A	3/4" CRGS	1 BELDEN 3083A	HDN3, NODE 12 - TRAIN #3 INFLUENT SLIDE GATE	HDN3, NODE 11 - TRAIN #3 SAND PUMP PRESSURE SWITCHES
HCCD303B	3/4" LIQUID-TITE	4 #14	HDN3, NODE 11 - TRAIN #3 SAND PUMP PRESSURE SWITCHES	PSHL-30307, HRFS TRAIN #3 SAND PUMP #3A
HCCD303C	3/4" LIQUID-TITE	4 #14	HDN3, NODE 11 - TRAIN #3 SAND PUMP PRESSURE SWITCHES	PSHL-30309, HRFS TRAIN #3 SAND PUMP #3B
HCCD303D	3/4" LIQUID-TITE	4 #14	HDN3, NODE 11 - TRAIN #3 SAND PUMP PRESSURE SWITCHES	PSHL-30311, HRFS TRAIN #3 SAND PUMP #3C
HCCD401A	3/4" CRGS	1 BELDEN 3083A	PLC M17	MCC 39
HCCD402A	3/4" CRGS	1 BELDEN 3083A	MCC 39	HDN4, NODE 12 - TRAIN #4 INFLUENT SLIDE GATE
HCCD402B	3/4" LIQUID-TITE	TPS #16	HDN4, NODE 12 - TRAIN #4 INFLUENT SLIDE GATE	ZS-30400, HRFS TRAIN #4 SLIDE GATE LIMIT SWITCH
HCCD403A	3/4" CRGS	1 BELDEN 3083A	HDN4, NODE 12 - TRAIN #4 INFLUENT SLIDE GATE	HDN4, NODE 11 - TRAIN #4 SAND PUMP PRESSURE SWITCHES
HCCD403B	3/4" LIQUID-TITE	4 #14	HDN4, NODE 11 - TRAIN #4 SAND PUMP PRESSURE SWITCHES	PSHL-30407, HRFS TRAIN #4 SAND PUMP #4A
HCCD403C	3/4" LIQUID-TITE	4 #14	HDN4, NODE 11 - TRAIN #4 SAND PUMP PRESSURE SWITCHES	PSHL-30409, HRFS TRAIN #4 SAND PUMP #4B
HCCD403D	3/4" LIQUID-TITE	4 #14	HDN4, NODE 11 - TRAIN #4 SAND PUMP PRESSURE SWITCHES	PSHL-30411, HRFS TRAIN #4 SAND PUMP #4C
HCCD501A	3/4" CRGS	1 BELDEN 3083A	PLC M17	HDN5, NODE 2

CONDUIT NO.	CONDUIT SIZE	NO./SIZE CONDUCTORS	FROM	TO
HCCD501B	3/4" LIQUID-TITE	4 #14	HDN5, NODE 2	PSHL-30083A, SLUDGE TRANSFER PUMP #1 PRESSURE SWITCH
HCCD501C	3/4" LIQUID-TITE	4 #14	HDN5, NODE 2	PSHL-30083B, SLUDGE TRANSFER PUMP #2 PRESSURE SWITCH
HCCD501D	3/4" LIQUID-TITE	4 #14	HDN5, NODE 2	PSHL-30083C, SLUDGE TRANSFER PUMP #3 PRESSURE SWITCH
HCCD502A	3/4" CRGS	1 BELDEN 3083A	HDN5, NODE 2	HDN5, NODE 3
HCCD502B	3/4" LIQUID-TITE	TPS #16	HDN5, NODE 3	LSH-30081, HRFS SLUDGE TANK HIGH LEVEL
HCCD502C	3/4" LIQUID-TITE	TPS #16	HDN5, NODE 3	LSL-30081, HRFS SLUDGE TANK LOW LEVEL
HCCD503A	3/4" CRGS	1 BELDEN 3083A	HDN5, NODE 3	HDN5, NODE 4
HCCD503B	3/4" LIQUID-TITE	2 #14	CR3F.CHLORIDE CP	LSH-30061, FERRIC CHLORIDE DAY TANK #1 LEVEL FLOAT
HCCD503C	3/4" LIQUID-TITE	2 #14	CRC FERRIC CHLORIDE CP	LSH-30062, FERRIC CHLORIDE DAY TANK #2 LEVEL FLOAT
HCCD504A	3/4" CRGS	1 BELDEN 3083A	HDN5, NODE 4	HDN5, NODE 5
HCCD504B	3/4" LIQUID-TITE	TPS #16	HDN5, NODE 5	XSA-30070, SAND SILO ALARM
HCCD505A	3/4" CRGS	1 BELDEN 3083A	HDN5, NODE 5	HDN5, NODE 6
HCCD505B	3/4" LIQUID-TITE	4 #14	HDN5, NODE 6	PSHL-30071, SAND SLURRY PUMP #1
HCCD505C	3/4" LIQUID-TITE	4 #14	HDN5, NODE 6	PSHL-30072, SAND SLURRY PUMP #2
HCCF101A	3/4" CRGS	1 BELDEN 3076F	PLC M17	JB-1C
HCCF101B	3/4" CRGS	1 BELDEN 3076F	JB-1C	HFN1, NODE 2 - CONVERTER
HCCF101C	3/4" LIQUID-TITE	TPS #16	HFN1, NODE 2 - CONVERTER	AIT-30112, HRFS TRAIN #1 EFFLUENT TURBIDITY
HCCF101D	3/4" CRGS	1 BELDEN 3076F	HFN1, NODE 2 - CONVERTER	AIT-30113, HRFS TRAIN #1 EFFLUENT PH
HCCF102A	3/4" CRGS	1 BELDEN 3076F	JB-1C	JB-2C
HCCF102B	3/4" CRGS	1 BELDEN 3076F	JB-2C	HFN1, NODE 5 - CONVERTER
HCCF102C	3/4" LIQUID-TITE	TPS #16	HFN1, NODE 5 - CONVERTER	AIT-30212, HRFS TRAIN #2 EFFLUENT TURBIDITY
HCCF102D	3/4" LIQUID-TITE	TPS #16	HFN1, NODE 5 - CONVERTER	AIT-30213, HRFS TRAIN #2 EFFLUENT PH
HCCF103A	3/4" CRGS	1 BELDEN 3076F	JB-2C	HFN1, NODE 6 - CONVERTER FERRIC CHLORIDE CP
HCCF103B	3/4" CRGS	1-16 TPS + 3 #14		LIT-30061
HCCF103C	3/4" LIQUID-TITE	TPS #16	LIT-30061, FC DAY TANK #1 LEVEL	LE-30061, FERRIC CHLORIDE DAY TANK #1 LEVEL
HCCF201A	3/4" CRGS	1 BELDEN 3076F	PLC M17	JB-3C
HCCF201B	3/4" CRGS	1 BELDEN 3076F	JB-3C	HFN2, NODE 2 - CONVERTER
HCCF201C	3/4" LIQUID-TITE	TPS #16	HFN2, NODE 2 - CONVERTER	AIT-30312, HRFS TRAIN #3 EFFLUENT TURBIDITY
HCCF201D	3/4" LIQUID-TITE	TPS #16	HFN2, NODE 2 - CONVERTER	AIT-30313, HRFS TRAIN #3 EFFLUENT PH
HCCF202A	3/4" CRGS	1 BELDEN 3076F	JB-3C	JB-4C
HCCF202B	3/4" CRGS	1 BELDEN 3076F	JB-4C	HFN2, NODE 5 - CONVERTER
HCCF202C	3/4" LIQUID-TITE	TPS #16	HFN2, NODE 5 - CONVERTER	AIT-30412, HRFS TRAIN #4 EFFLUENT TURBIDITY
HCCF202D	3/4" CRGS	1 BELDEN 3076F	HFN2, NODE 5 - CONVERTER	AIT-30413, HRFS TRAIN #4 EFFLUENT PH
HCCF203A	3/4" CRGS	1 BELDEN 3076F	JB-4C	HFN2, NODE 6 - CONVERTER FERRIC CHLORIDE CP
HCCF203B	3/4" CRGS	1-16 TPS + 3 #14	HFN2, NODE 8 - CONVERTER	LIT-30062, FERRIC CHLORIDE DAY TANK #2 LEVEL
HCCF203C	3/4" LIQUID-TITE	TPS #16		LIT-30062
HCCF301A	3/4" CRGS	1 BELDEN 3076F	PLC M17	JB-F
HCCF301B	3/4" LIQUID-TITE	TPS #16	JB-F	FIT-30082, HRFS SLUDGE DISCHARGE FLOW
HCCF302A	3/4" CRGS	1 BELDEN 3076F	JB-F	JB-FA
HCCF302B	3/4" CRGS	1 BELDEN 3076F	JB-FA	AIT-30001, HRFS INFLUENT PH
HCCF302C	3/4" CRGS	1 BELDEN 3076F	JB-FA	HFN3, NODE 2 - CONVERTER
HCCF302D	3/4" LIQUID-TITE	TPS #16	HFN3, NODE 2 - CONVERTER	AIT-30000, HRFS INFLUENT TURBIDITY
HCCH101A	3/4" CRGS	1 BELDEN 9463	PLC M17, NODE 11	PLC M18
HCCH103A			PLC M16	PLC M18
HCCH201A	3/4" CRGS	MFR. CABLE	LE-30035, NEAT POLYMER TANK #1 LEVEL	LIT-30035, NEAT POLYMER TANK #1 LEVEL
HCCH201B	3/4" CRGS	1 TPS #16	LIT-30035, NEAT POLYMER TANK #1 LEVEL	PLC M16
HCCH202A	3/4" CRGS	MFR. CABLE	LE-30038, NEAT POLYMER TANK #2 LEVEL	LIT-30038, NEAT POLYMER TANK #2 LEVEL
HCCH202B	3/4" CRGS	1 TPS #16	LIT-30038, NEAT POLYMER TANK #2 LEVEL	PLC M16
HCCH211A	3/4" CRGS	2 #14	PLC M16	LSH-30035, NEAT POLYMER TANK #1 LEVEL FLOAT
HCCH212A	3/4" CRGS	2 #14	PLC M16	LSH-30038, NEAT POLYMER TANK #2 LEVEL FLOAT
HCCH220A	3/4" CRGS	8 #14, 3 #12	PLC M16	POLYMER TRUCK UNLOADING PANEL
HCCH221A	3/4" CRGS	2 TPS #16	PLC M16	POLYMER TRUCK UNLOADING PANEL
HCCH310A	3/4" CRGS	6 #14	PLC M18	ZS-30037, POLYMER MIXING/AGING TANK #1 INLET VALVE
HCCH311A	3/4" CRGS	TPS #16	LE-30037	LIT-30037, POLYMER MIXING/AGING TANK #1 LEVEL
HCCH312A	3/4" CRGS	6 #14	PLC M18	ZS-30037A, POLYMER MIXING/AGING TANK #1 DISCH. VALVE
HCCH313A	3/4" CRGS	7 #14	PLC M18	LSH-30037, POLYMER MIXING/AGING TANK #1 LEVEL FLOAT
HCCH320A	3/4" CRGS	6 #14	PLC M18	ZS-30040A, POLYMER MIXING/AGING TANK #2 DISCH. VALVE
HCCH321A	3/4" CRGS	TPS #16	LE-30040	LIT-30040, POLYMER MIXING/AGING TANK #2 LEVEL
HCCH322A	3/4" CRGS	6 #14	PLC M18	ZS-30040, POLYMER MIXING/AGING TANK #2 INLET VALVE
HCCH323A	3/4" CRGS	7 #14	PLC M18	LSH-30040, POLYMER MIXING/AGING TANK #2 LEVEL FLOAT
HCCH401A	3/4" CRGS	8 #14	PLC M18	PFP-30041A, POLYMER FEED PUMP #1
HCCH401B	3/4" CRGS	2 TPS #16	PLC M18	PFP-30041A, POLYMER FEED PUMP #1
HCCH402A	3/4" CRGS	8 #14	PLC M18	PFP-30041B, POLYMER FEED PUMP #2
HCCH402B	3/4" CRGS	2 TPS #16	PLC M18	PFP-30041B, POLYMER FEED PUMP #2
HCCH403A	3/4" CRGS	8 #14	PLC M18	PFP-30041C, POLYMER FEED PUMP #3
HCCH403B	3/4" CRGS	2 TPS #16	PLC M18	PFP-30041C, POLYMER FEED PUMP #3
HCCH404A	3/4" CRGS	8 #14	PLC M18	PFP-30042A, POLYMER FEED PUMP #4
HCCH404B	3/4" CRGS	2 TPS #16	PLC M18	PFP-30042A, POLYMER FEED PUMP #4
HCCH405A	3/4" CRGS	8 #14	PLC M18	PFP-30042B, POLYMER FEED PUMP #5
HCCH405B	3/4" CRGS	2 TPS #16	PLC M18	PFP-30042B, POLYMER FEED PUMP #5
HCCH406A	3/4" CRGS	8 #14	PLC M18	PFP-30042C, POLYMER FEED PUMP #6
HCCH406B	3/4" CRGS	2 TPS #16	PLC M18	PFP-30042C, POLYMER FEED PUMP #6
HCCH411A	3/4" CRGS	TPS #16	PLC M18	FIT-30043, POLYMER FEED TO TRAIN #1
HCCH412A	3/4" CRGS	TPS #16	PLC M18	FIT-30044, POLYMER FEED TO TRAIN #2
HCCH413A	3/4" CRGS	TPS #16	PLC M18	FIT-30045, POLYMER FEED TO TRAIN #3
HCCH414A	3/4" CRGS	TPS #16	PLC M18	FIT-30046, POLYMER FEED TO TRAIN #4
HCCH501A	3/4" CRGS	8 #14	PLC M18	FCFP-30051A, FERRIC CHLORIDE FEED PUMP #1
HCCH501B	3/4" CRGS	2 TPS #16	PLC M18	FCFP-30051A, FERRIC CHLORIDE FEED PUMP #1
HCCH502A	3/4" CRGS	8 #14	PLC M18	FCFP-30051B, FERRIC CHLORIDE FEED PUMP #2
HCCH502B	3/4" CRGS	2 TPS #16	PLC M18	FCFP-30051B, FERRIC CHLORIDE FEED PUMP #2
HCCH503A	3/4" CRGS	8 #14	PLC M18	FCFP-30051C, FERRIC CHLORIDE FEED PUMP #3
HCCH503B	3/4" CRGS	2 TPS #16	PLC M18	FCFP-30051C, FERRIC CHLORIDE FEED PUMP #3
HCCH504A	3/4" CRGS	8 #14	PLC M18	FCFP-30052A, FERRIC CHLORIDE FEED PUMP #4
HCCH504B	3/4" CRGS	2 TPS #16	PLC M18	FCFP-30052A, FERRIC CHLORIDE FEED PUMP #4
HCCH505A	3/4" CRGS	8 #14	PLC M18	FCFP-30052B, FERRIC CHLORIDE FEED PUMP #5
HCCH505B	3/4" CRGS	2 TPS #16	PLC M18	FCFP-30052B, FERRIC CHLORIDE FEED PUMP #5
HCCH506A	3/4" CRGS	8 #14	PLC M18	FCFP-30052C, FERRIC CHLORIDE FEED PUMP #6
HCCH506B	3/4" CRGS	2 TPS #16	PLC M18	FCFP-30052C, FERRIC CHLORIDE FEED PUMP #6
HCCH511A	3/4" CRGS	1 TPS #16 + 9 #14	PLC M18	FIT-30053, FERRIC CHLORIDE TO TRAIN #1
HCCH512A	3/4" CRGS	1 TPS #16 + 9 #14	PLC M18	FIT-30054, FERRIC CHLORIDE TO TRAIN #2

Layer: ON=*; OFF=*REF*

4/23/01 BBL DCC
05503000/0659I512.DWG

RECORD DRAWING

WHERE CHANGES FROM BIDDER REFERRED TO HEREON MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION, REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATED 10/24/01 PER: L Rampolett

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No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
1	7/11/01	AS BID	
2	10/31/05	RECORD DRAWING	

In charge of TEL
Designed by AHL
Drawn by DCC
Checked by FKP

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

CONDUIT SCHEDULE (CONTINUED)

INSTRUMENTATION

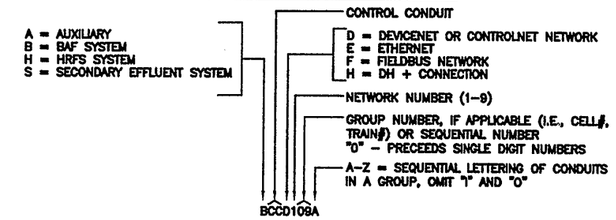
LEONARD J. CAMPOLETTA — No. 50755 — LICENSED PROFESSIONAL ENGINEER — STATE OF NEW YORK

File Number 00659
Date APRIL 2001
L Rampolett

I-512

CONDUIT NO.	CONDUIT SIZE	NO./SIZE CONDUCTORS	FROM	TO
HCCH513A	3/4" CRGS	TPS #16 + 9 #14	PLC M18	FIT-30055, FERRIC CHLORIDE TO TRAIN #3
HCCH514A	3/4" CRGS	TPS #16 + 9 #14	PLC M18	FIT-30056, FERRIC CHLORIDE TO TRAIN #4
HCCH601A	3/4" CRGS	8 #14	PLC M16	FERRIC CHLORIDE CONTROL PANEL
HCCH701A	3/4" CRGS	4 #14	SAND SILO CONTROL PANEL	SAND TRUCK UNLOADING PANEL
HCCH801A	3/4" CRGS	2 #14	PLC M16	JB-G
HCCH801B	3/4" CRGS	2 #14	JB-G	LSH-30057, FERRIC CHLORIDE PUMPS SUMP
HCCH801C	3/4" CRGS	2 #14	JB-G	LSH-30083, FERRIC CHLORIDE DAY TANKS SUMP
HCCH802A	3/4" CRGS	2 #14	PLC M16	LSH-50032, POLYMER PUMPS SUMP
HCCH803A	3/4" CRGS	2 #14	PLC M16	LSH-50033, POLYMER NEAT TANKS SUMP
HCCH803B	3/4" CRGS	2 #14	PLC M16	LSH-50034, POLYMER MIXING/AGING TANKS SUMP
HCCH804A	3/4" CRGS	2 #14	PLC M24	LSH-30041, WEST HRFS GALLERY SUMP
HCCH805A	3/4" CRGS	2 #14	PLC M24	LSH-30042, EAST HRFS GALLERY SUMP
SCCD101A	3/4" CRGS	1 BELDEN 3083A	PLC M13	MCC 44
SCCH001A	1" CRGS	3 TPS #16	PLC M13	SECONDARY EFFLUENT PUMP #1 VFD
SCCH001B	3/4" CRGS	10 #14	PLC M13	SECONDARY EFFLUENT PUMP #1 VFD
SCCH002A	1" CRGS	3 TPS #16	PLC M13	SECONDARY EFFLUENT PUMP #2 VFD
SCCH002B	3/4" CRGS	10 #14	PLC M13	SECONDARY EFFLUENT PUMP #2 VFD
SCCH003A	1" CRGS	3 TPS #16	PLC M13	SECONDARY EFFLUENT PUMP #3 VFD
SCCH003B	3/4" CRGS	10 #14	PLC M13	SECONDARY EFFLUENT PUMP #3 VFD
SCCH004A	1" CRGS	3 TPS #16	PLC M13	SECONDARY EFFLUENT PUMP #4 VFD
SCCH004B	3/4" CRGS	10 #14	PLC M13	SECONDARY EFFLUENT PUMP #4 VFD
SCCH101A	1" CRGS	3 TPS #16	PLC M13	JB-AA
SCCH101C	3/4" LIQUID-TITE	TPS #16	JB-AA	TT-10102A, SEC. EFF. PUMP #1 TEMP. A
SCCH101D	3/4" LIQUID-TITE	TPS #16	JB-AA	
SCCH102A	1" CRGS	3 TPS #16	PLC M13	JB-AB
SCCH102C	3/4" LIQUID-TITE	TPS #16	JB-AB	TT-10202A, SEC. EFF. PUMP #2 TEMP. A
SCCH102D	3/4" LIQUID-TITE	TPS #16	JB-AB	
SCCH103A	1" CRGS	3 TPS #16	PLC M13	JB-AC
SCCH103C	3/4" LIQUID-TITE	TPS #16	JB-AC	TT-10302A, SEC. EFF. PUMP #3 TEMP. A
SCCH103D	3/4" LIQUID-TITE	TPS #16	JB-AC	
SCCH104A	1" CRGS	3 TPS #16	PLC M13	JB-AD
SCCH104C	3/4" LIQUID-TITE	TPS #16	JB-AD	TT-10402A, SEC. EFF. PUMP #4 TEMP. A
SCCH104D	3/4" LIQUID-TITE	TPS #16	JB-AD	
SCCH201A	1" CRGS	4 TPS #16	PLC M13	JB-AE
SCCH201B	3/4" LIQUID-TITE	TPS #16	JB-AE	VT-10101, SEC. EFF. PUMP #1 VIBRATION
SCCH202A	1" CRGS	3 TPS #16	JB-AE	JB-AF
SCCH202B	3/4" LIQUID-TITE	TPS #16	JB-AF	VT-10201, SEC. EFF. PUMP #2 VIBRATION
SCCH203A	3/4" CRGS	2 TPS #16	JB-AF	JB-AG
SCCH203B	3/4" LIQUID-TITE	TPS #16	JB-AG	VT-10301, SEC. EFF. PUMP #3 VIBRATION
SCCH204A	3/4" LIQUID-TITE	TPS #16	JB-AG	VT-10401, SEC. EFF. PUMP #4 VIBRATION
SCCH301A	3/4" CRGS	TPS #16	PLC M13	LIT-10500, WET WELL LEVEL #1
SCCH301B	3/4" CRGS	MFG. CABLE	LIT-10500, WET WELL LEVEL #1	LE-10500, WET WELL LEVEL #1
SCCH302A	3/4" CRGS	TPS #16	PLC M13	LIT-10501, WET WELL LEVEL #2
SCCH302B	3/4" CRGS	MFG. CABLE	LIT-10501, WET WELL LEVEL #2	LE-10501, WET WELL LEVEL #2
SCCH401A	3/4" CRGS	8 #14	PLC M13	ZSC/ZSO-10104, PUMP #1 AUTO DISCHARGE VALVE
SCCH401B	3/4" CRGS	4 #14	PLC M13	ZSC/ZSO-10105, PUMP #1 MANUAL DISCHARGE VALVE
SCCH402A	3/4" CRGS	8 #14	PLC M13	ZSC/ZSO-10204, PUMP #2 AUTO DISCHARGE VALVE
SCCH402B	3/4" CRGS	4 #14	PLC M13	ZSC/ZSO-10205, PUMP #2 MANUAL DISCHARGE VALVE
SCCH403A	3/4" CRGS	8 #14	PLC M13	ZSC/ZSO-10304, PUMP #3 AUTO DISCHARGE VALVE
SCCH403B	3/4" CRGS	4 #14	PLC M13	ZSC/ZSO-10305, PUMP #3 MANUAL DISCHARGE VALVE
SCCH404A	3/4" CRGS	8 #14	PLC M13	ZSC/ZSO-10404, PUMP #4 AUTO DISCHARGE VALVE
SCCH404B	3/4" CRGS	4 #14	PLC M13	ZSC/ZSO-10405, PUMP #4 MANUAL DISCHARGE VALVE
SCCH501A	3/4" CRGS	2 #14	PLC M13	FS-10106, PUMP #1 SEAL WATER FLOW
SCCH501B	3/4" CRGS	2 #14	PLC M13	SV-10107, PUMP #1 SEAL WATER SOLENOID
SCCH502A	3/4" CRGS	2 #14	PLC M13	FS-10206, PUMP #2 SEAL WATER FLOW
SCCH502B	3/4" CRGS	2 #14	PLC M13	SV-10207, PUMP #2 SEAL WATER SOLENOID
SCCH503A	3/4" CRGS	2 #14	PLC M13	FS-10306, PUMP #3 SEAL WATER FLOW
SCCH503B	3/4" CRGS	2 #14	PLC M13	SV-10307, PUMP #3 SEAL WATER SOLENOID
SCCH504A	3/4" CRGS	2 #14	PLC M13	FS-10406, PUMP #4 SEAL WATER FLOW
SCCH504B	3/4" CRGS	2 #14	PLC M13	SV-10407, PUMP #4 SEAL WATER SOLENOID
SCCH601A	3/4" CRGS	2 #14	PLC M13	TT-10602, ELECTRIC ROOM TEMPERATURE
SCCH602A	3/4" CRGS	2 #14	PLC M13	TT-10603, PUMP ROOM TEMPERATURE
HCCH801B	3/4" CRGS	2 TPS #16	PLC M16	FERRRIC CHLORIDE CP

CONTROL CONDUIT NUMBER DESCRIPTION



RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE: 10/21/05 PER: [signature]

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No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
1	7/11/01	AS BID	
2	10/31/05	RECORD DRAWING	

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Designed by AHL
Drawn by DCC
Checked by FKP

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

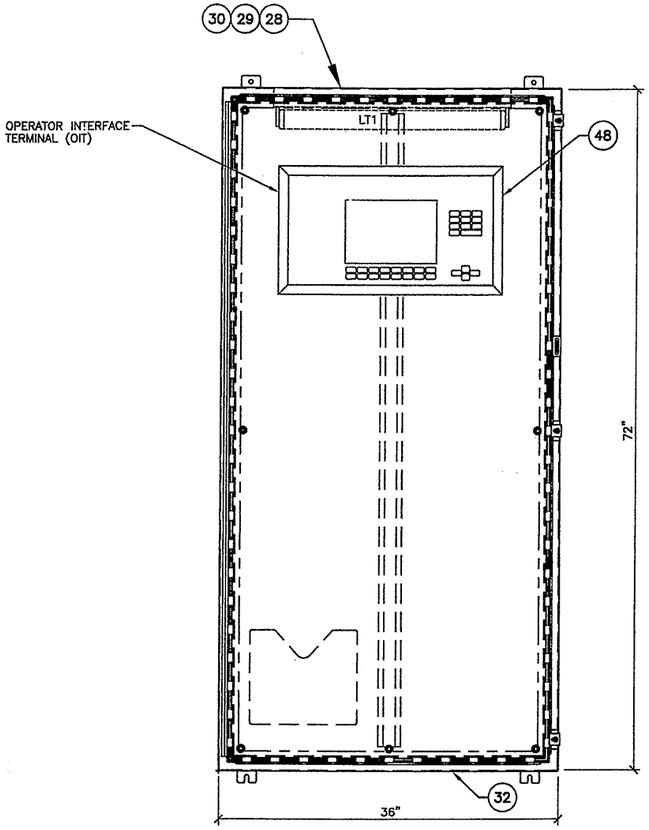
CONDUIT SCHEDULE (CONTINUED)

INSTRUMENTATION

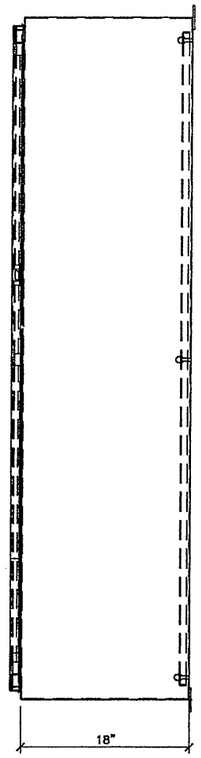
LICENSED PROFESSIONAL ENGINEER · STATE OF NEW YORK · EDWARD J. CAMPBELL · No. 60765

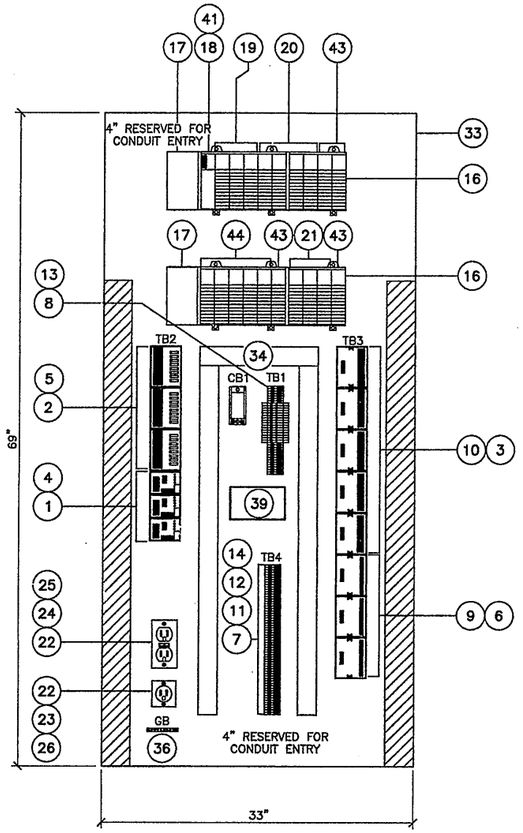
File Number 00659
Date APRIL 2001
[signature]

I-513



CONTROL PANEL FRONT VIEW





CONTROL PANEL INTERIOR VIEW

NOTES:

1. LAYOUT SHOWN IS FOR CONCEPT ONLY. CONTRACTOR SHALL PROVIDE ALL NECCESSARY APPURTENANCES REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.
2. PANEL SIZE IS APPROXIMATE ONLY. CONTRACTOR SHALL PROVIDE ENCLOSURE SIZE AS REQUIRED FOR EQUIPMENT.

▨ = ALL FIELD WIRES

CHEMICAL BUILDING "A" CONTROL PANEL

RACK 1

POWER SUPPLY	ANALOG INPUT	ANALOG INPUT	ANALOG INPUT	ANALOG OUTPUT	ANALOG OUTPUT	ANALOG OUTPUT	ANALOG OUTPUT	SPACE	SPACE

RACK 2

POWER SUPPLY	DIGITAL INPUT	DIGITAL INPUT	DIGITAL INPUT	DIGITAL INPUT	DIGITAL INPUT	SPACE	DIGITAL OUTPUT	DIGITAL OUTPUT	DIGITAL OUTPUT	SPACE

PLC MODULE LAYOUT

RECORD DRAWING

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DATE 10/21/05 PER L.Pampalone

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02/02/01 OBG JEC

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0	4/20/01	ISSUED FOR APPROVAL	
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In charge of PLD
Designed by SAT
Drawn by JEC
Checked by PLD

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHEMICAL BUILDING "A" (PLC M20C)
CONTROL PANEL LAYOUT
INSTRUMENTATION

STATE OF NEW YORK • LEONARD J. CAMPOLETA • No. 60756 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
L.Pampalone

I-601

BILL OF MATERIALS

SYMBOL	QUANTITY	MODEL NUMBER	MANUFACTURER	DESCRIPTION
1	A/R	SEE SPECIFICATIONS	Allen–Bradley	Analog Output Interface Module
2	A/R	SEE SPECIFICATIONS	Allen–Bradley	Analog Input Interface Module
3	A/R	SEE SPECIFICATIONS	Allen–Bradley	Digital Input Interface Cable – 1 meter
4	A/R	SEE SPECIFICATIONS	Allen–Bradley	Analog Output Interface Cable – 2.5 meter
5	A/R	SEE SPECIFICATIONS	Allen–Bradley	Analog Input Interface Cable – 1 meter
6	A/R	SEE SPECIFICATIONS	Allen–Bradley	Relay Output Interface Cable – 0.5 meter
7	A/R	SEE SPECIFICATIONS	Allen–Bradley	High Density Terminal Block
8	A/R	SEE SPECIFICATIONS	Allen–Bradley	Fusible Switch
9	A/R	SEE SPECIFICATIONS	Allen–Bradley	Relay Output Interface Module
10	A/R	SEE SPECIFICATIONS	Allen–Bradley	Digital Input Interface Module
11	A/R	SEE SPECIFICATIONS	Allen–Bradley	End Anchor
12	A/R	SEE SPECIFICATIONS	Allen–Bradley	High Density Terminal Block End Barrier
13	A/R	SEE SPECIFICATIONS	Allen–Bradley	Fusible Switch End Barrier
14	A/R	SEE SPECIFICATIONS	Allen–Bradley	High Density Jumper
15	A/R	SEE SPECIFICATIONS		
16	A/R	SEE SPECIFICATIONS	Allen–Bradley	13 Slot I/O Chassis
17	A/R	SEE SPECIFICATIONS	Allen–Bradley	I/O Chassis Power Supply
18	A/R	SEE SPECIFICATIONS	Allen–Bradley	Remote I/O Adapter
19	A/R	SEE SPECIFICATIONS	Allen–Bradley	Analog Input – 8 point
20	A/R	SEE SPECIFICATIONS	Allen–Bradley	Analog Output – 4 point
21	A/R	SEE SPECIFICATIONS	Allen–Bradley	Relay Output – 8 point
22	A/R	SEE SPECIFICATIONS	RACO	Box
23	A/R	SEE SPECIFICATIONS	RACO	Cover – single 15 amp
24	A/R	SEE SPECIFICATIONS	RACO	Cover – duplex 15 amp
25	A/R	SEE SPECIFICATIONS	Hubbell	15A Duplex receptacle
26	A/R	SEE SPECIFICATIONS	Hubbell	15A Single receptacle
27	A/R	SEE SPECIFICATIONS		
28	A/R	SEE SPECIFICATIONS	Hoffman	Mounting bracket for light
29	A/R	SEE SPECIFICATIONS	Hoffman	2' light
30	A/R	SEE SPECIFICATIONS	Hoffman	Door Switch for light
31	A/R	SEE SPECIFICATIONS		
32	A/R	SEE SPECIFICATIONS	Hoffman	Nema 12 Enclosure
33	A/R	SEE SPECIFICATIONS	Hoffman	Sub–Panel
34	A/R	SEE SPECIFICATIONS	Panduit	3"W x 3"D Slotted Wiring Duct
35	A/R	SEE SPECIFICATIONS	Panduit	2"W x 3"D Slotted Wiring Duct
36	A/R	SEE SPECIFICATIONS	Square D	Ground Bar
37	A/R	SEE SPECIFICATIONS	Allen–Bradley	20 amp Circuit Breaker, single pole
38	A/R	SEE SPECIFICATIONS	Best Power	Uninterruptible Power Supply
39	A/R	SEE SPECIFICATIONS	Power One	DC Power Supply 24 Vdc Output
40	A/R	SEE SPECIFICATIONS	TBD	Fuses
41				
42	A/R	SEE SPECIFICATIONS	–	–
43	A/R	SEE SPECIFICATIONS	Allen–Bradley	Blank Slot Filler Module
44	A/R	SEE SPECIFICATIONS	Allen–Bradley	Discrete Input – 8 point
45	A/R	SEE SPECIFICATIONS	–	–
46	A/R	SEE SPECIFICATIONS	–	–
47				
48	A/R	SEE SPECIFICATIONS	Allen–Bradley	Operator Interface

RECORD DRAWING

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DATED 10/21/05 PER: [signature]

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No.	Date	Revisions	Init
0	4/01/01	ISSUED FOR APPROVAL	LE
1	7/11/01	AS BID	
2	10/31/05	RECORD DRAWING	

In charge of PLD
Designed by SAT
Drawn by JEC
Checked by PLD

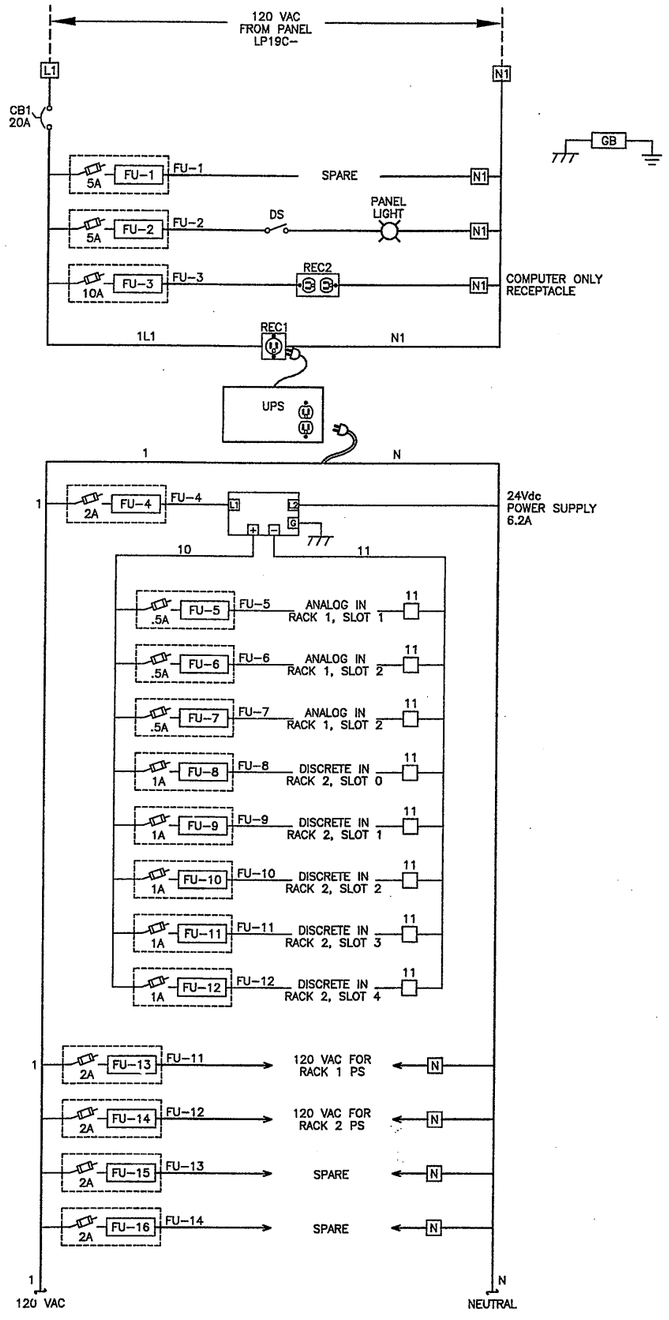
ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHEMICAL BUILDING "A" (PLC M20C)
BILL OF MATERIALS
INSTRUMENTATION

STATE OF NEW YORK • LEONARD J. CAMPOLIETI • LICENSED PROFESSIONAL ENGINEER • No. 60765

File Number 00659
Date APRIL 2001

I–602



Layer: ON=*; OFF=*REF*

07/17/00 OBG JEC

RECORD DRAWING

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DATE: 10/21/05 PER: L Campbell

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No.	Date	Revisions	Init
0	3/30/01	ISSUED FOR APPROVAL	JEC
1	7/11/01	AS BID	
2	10/31/05	RECORD DRAWING	

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In charge of 4/20/01

Designed by SAT

Drawn by JEC

Checked by PLD

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

CHEMICAL BUILDING "A" (PLC M20C)
CONTROL CIRCUIT WIRING

INSTRUMENTATION

LICENSED PROFESSIONAL ENGINEER — LEONARD J. CAMPBELL — No. 60765 — STATE OF NEW YORK

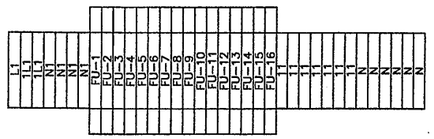
File Number 00659

Date APRIL 2001

L Campbell

I-603

TB1



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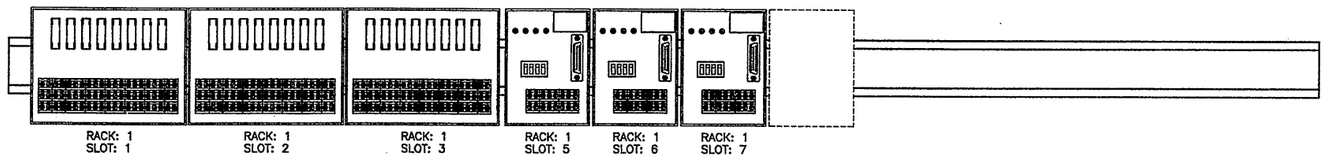

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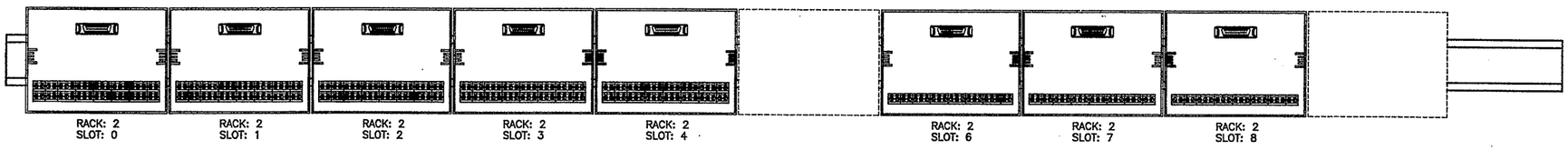

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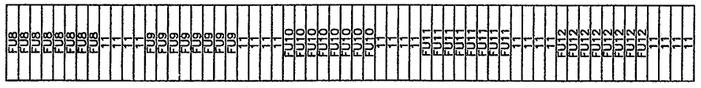

RECORD DRAWING

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1	7/11/01	AS BID	✓
2	10/31/05	RECORD DRAWING	✓

In charge of PLD

Designed by SAT

Drawn by JEC

Checked by PLD

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHEMICAL BUILDING "A" (PLC M20C)

TERMINAL BLOCK LAYOUT

INSTRUMENTATION

STATE OF NEW YORK • LEONARD J. CAMPOLIETI • No. 60755 • LICENSED PROFESSIONAL ENGINEER

File Number 00659

Date APRIL 2001

LKampolver

I-604

8 POINT ANALOG INPUT MODULE (AB 1746-NI8)

RACK 1
SLOT 1

ALLEN-BRADLEY
1492-AIFM8-F-5

LIT 50100	0+, 0–, Vcom, V0, SHIELD	SODIUM BISULFITE TANK NO.1 LEVEL 0–XX FT.
LSH 50100	1+, 1–, Vcom, V1, SHIELD	SODIUM HYPOCHLORITE TANK NO.1 LEVEL 0–XX FT.
LSH 50200	2+, 2–, Vcom, V2, SHIELD	SODIUM HYPOCHLORITE TANK NO.2 LEVEL 0–XX FT.
FT 50105	3+, 3–, Vcom, V3, SHIELD	SODIUM BISULFITE PUMP NO. 1 FLOW 0–XX GPD
FT 50205	4+, 4–, Vcom, V4, SHIELD	SODIUM HYPOCHLORITE PUMP NO. 1 FLOW 0–XX GPD
FT 50108	5+, 5–, Vcom, V5, SHIELD	SODIUM BISULFITE PUMP #2 FLOW 0–XX GPD
FT 50202	6+, 6–, Vcom, V6, SHIELD	SODIUM HYPOCHLORITE PUMP #2 FLOW 0–XX GPD
FT 50203	7+, 7–, Vcom, V7, SHIELD	SODIUM HYPOCHLORITE PUMP #3 FLOW 0–XX GPD
FU–5 / 11	V+, VCOM	

8 POINT ANALOG INPUT MODULE (AB 1746-NI8)

RACK 1
SLOT 2

ALLEN-BRADLEY
1492-AIFM8-F-5

FT 50208	0+, 0–, Vcom, V0, SHIELD	SODIUM HYPOCHLORITE PUMP #4 FLOW 0–XX GPD
	1+, 1–, Vcom, V1, SHIELD	SPARE
	2+, 2–, Vcom, V2, SHIELD	SPARE
	3+, 3–, Vcom, V3, SHIELD	SPARE
	4+, 4–, Vcom, V4, SHIELD	SPARE
	5+, 5–, Vcom, V5, SHIELD	SPARE
	6+, 6–, Vcom, V6, SHIELD	SPARE
	7+, 7–, Vcom, V7, SHIELD	SPARE
FU–6 / 11	V+, VCOM	

RECORD DRAWING

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DATE: 10/24/07 PER: L.Kampolis

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STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHEMICAL BUILDING "A" (PLC M20C)
ANALOG INPUT MODULES
INSTRUMENTATION

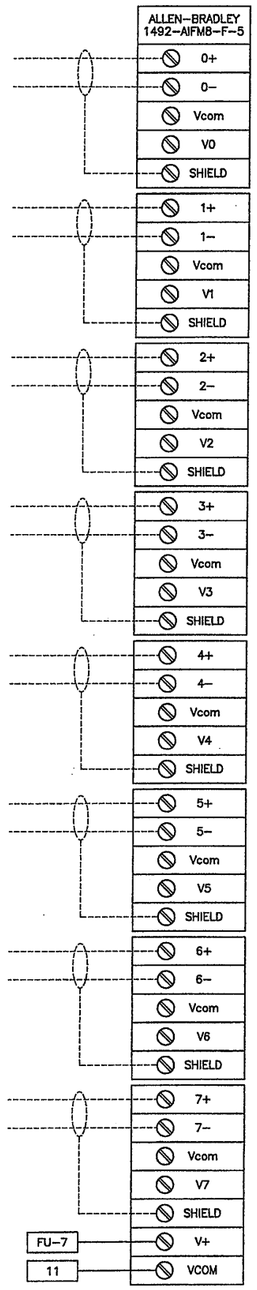
LICENSED PROFESSIONAL ENGINEER · LEONARD J. CAMPOLIETA · No. 50795 · STATE OF NEW YORK

File Number 00659
Date APRIL 2001
L.Kampolieta

I–605

8 POINT ANALOG INPUT MODULE (AB 1746-NI8)

RACK 1
SLOT 3



SPARE

SPARE

SPARE

SPARE

SPARE

SPARE

RECORD DRAWING

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DATED 10/21/05 PER: LStampolet

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Drawn by JEC
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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHEMICAL BUILDING "A" (PLC M20C)

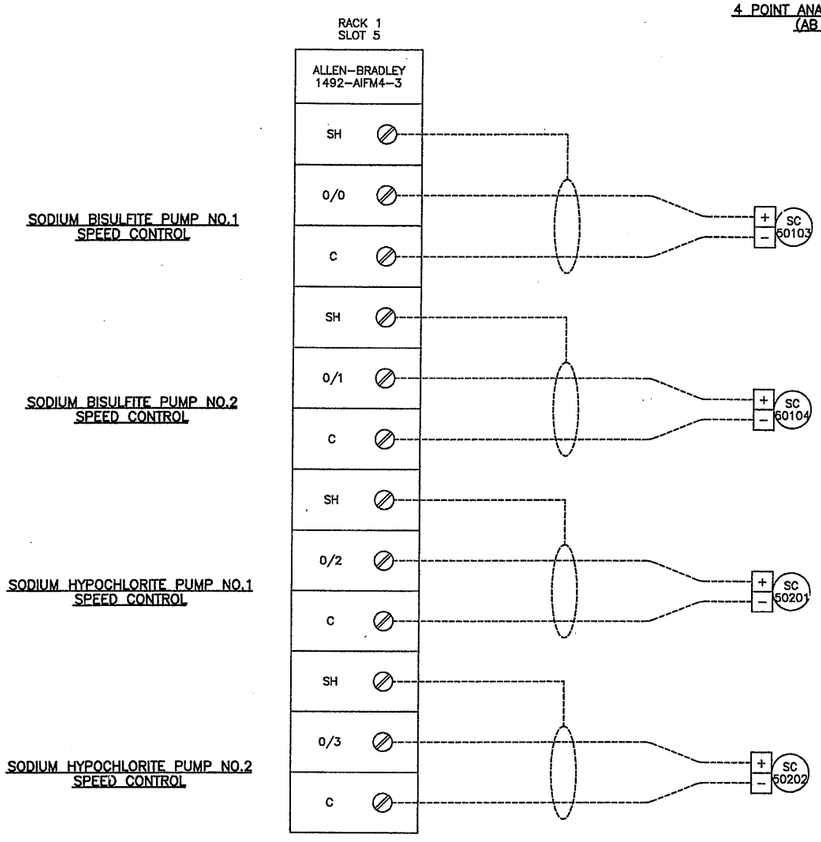
ANALOG INPUT MODULES

INSTRUMENTATION

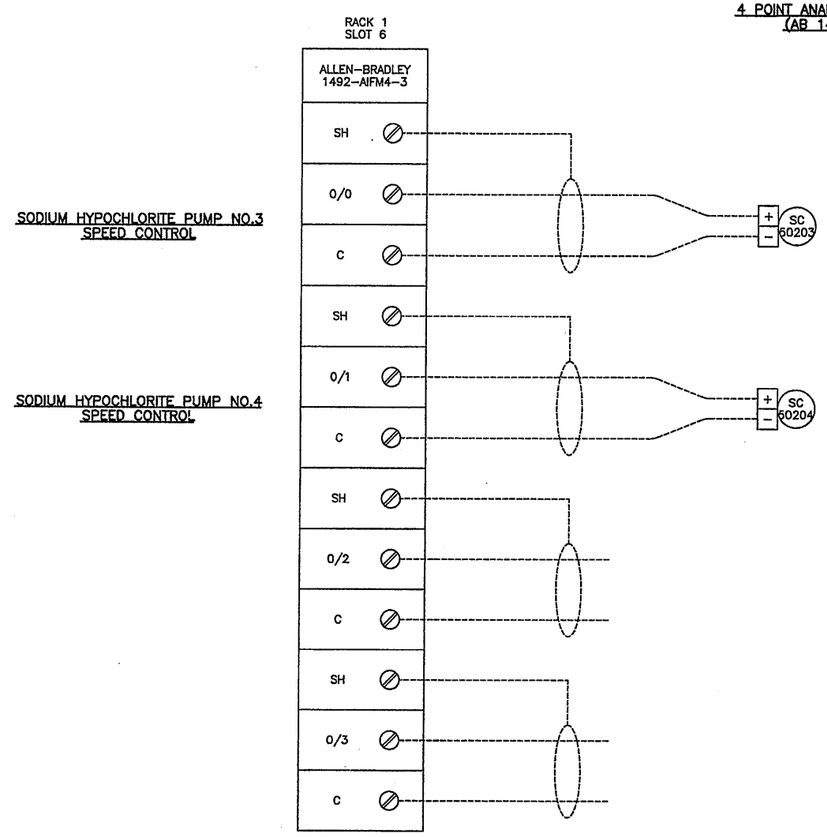
STATE OF NEW YORK • LEONARD J. CAMPOLETA • LICENSED PROFESSIONAL ENGINEER • No. 60765

File Number 00659
Date APRIL 2001
LStampolet

I-606



4 POINT ANALOG OUTPUT MODULE
(AB 1746–NO4I)



4 POINT ANALOG OUTPUT MODULE
(AB 1492–AIFM4–3)

RECORD DRAWING

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STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

CHEMICAL BUILDING "A" (PLC M20C)
ANALOG OUTPUT MODULES

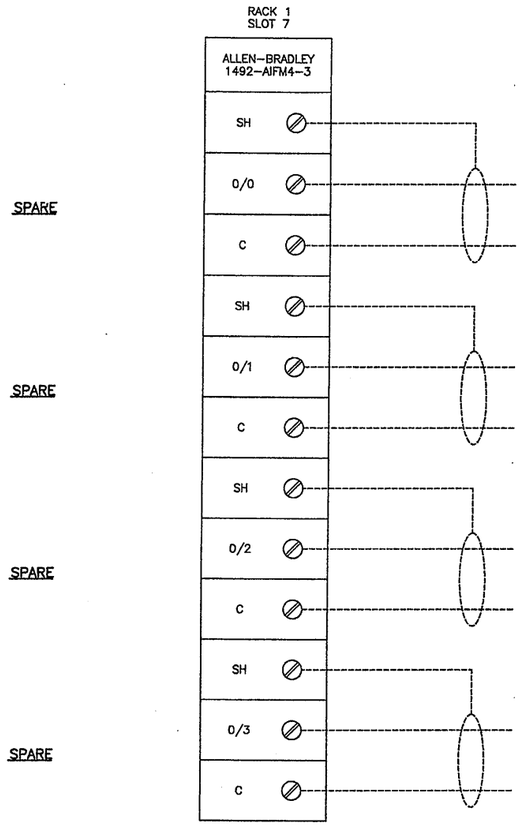
INSTRUMENTATION

LEONARD J. CASPOWITZ — STATE OF NEW YORK — LICENSED PROFESSIONAL ENGINEER — No. 067657

File Number 00659
Date APRIL 2001
L.Sampolski

I–607

4 POINT ANALOG OUTPUT MODULE
(AB 1746-NO4I)



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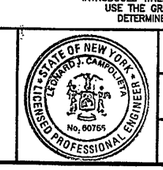
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHEMICAL BUILDING "A" (PLC M20C)

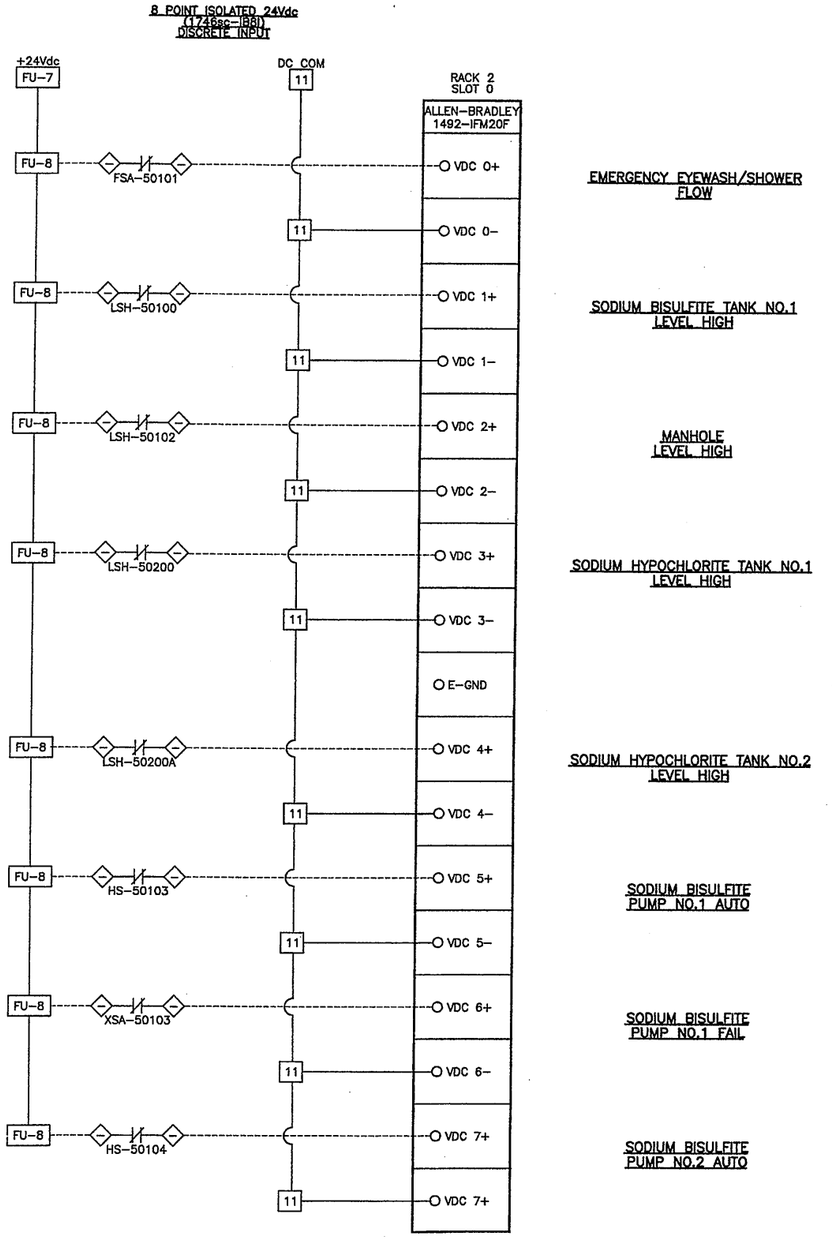
ANALOG OUTPUT MODULES

INSTRUMENTATION



File Number 00659
Date APRIL 2001
L.Campbell

I-608



EMERGENCY EYEWASH/SHOWER FLOW

SODIUM BISULFITE TANK NO.1 LEVEL HIGH

MANHOLE LEVEL HIGH

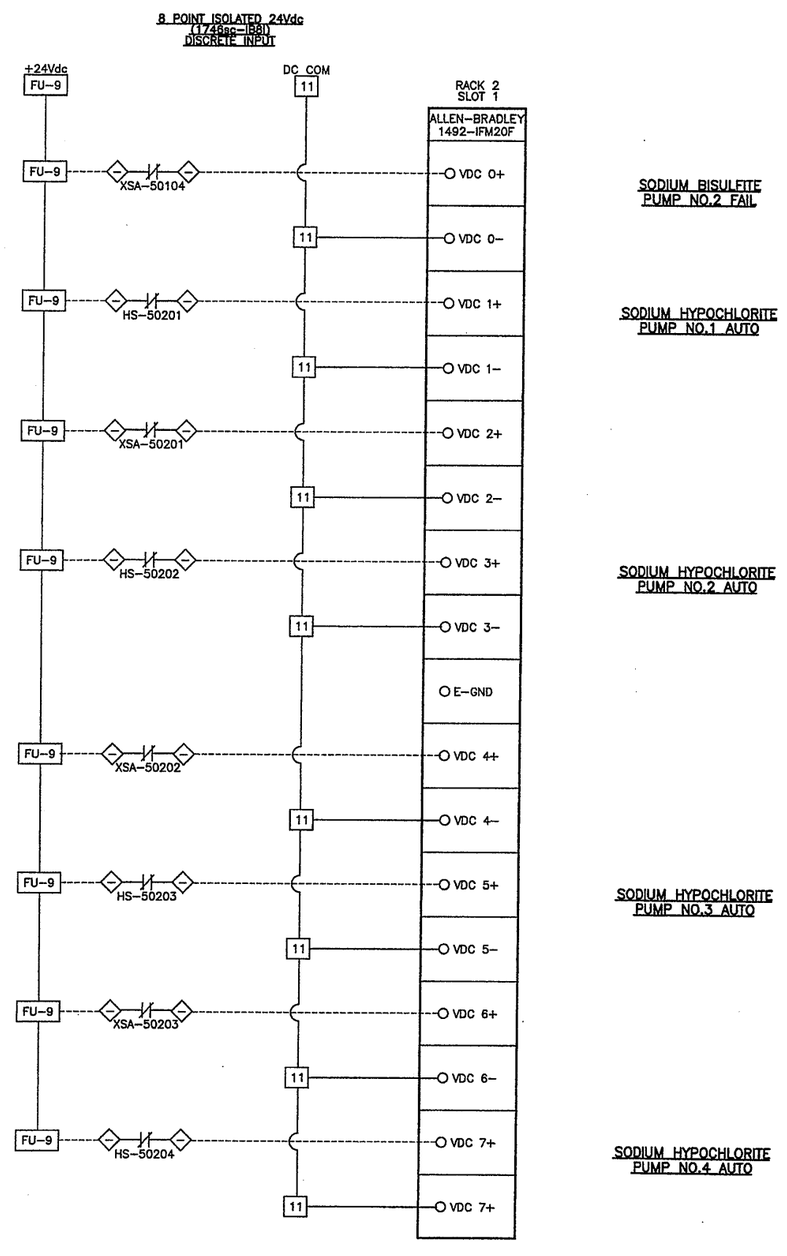
SODIUM HYPOCHLORITE TANK NO.1 LEVEL HIGH

SODIUM HYPOCHLORITE TANK NO.2 LEVEL HIGH

SODIUM BISULFITE PUMP NO.1 AUTO

SODIUM BISULFITE PUMP NO.1 FAIL

SODIUM BISULFITE PUMP NO.2 AUTO



SODIUM BISULFITE PUMP NO.2 FAIL

SODIUM HYPOCHLORITE PUMP NO.1 AUTO

SODIUM HYPOCHLORITE PUMP NO.2 AUTO

SODIUM HYPOCHLORITE PUMP NO.3 AUTO

SODIUM HYPOCHLORITE PUMP NO.4 AUTO

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DATE 10/26/05 PER L.D'Ampolito

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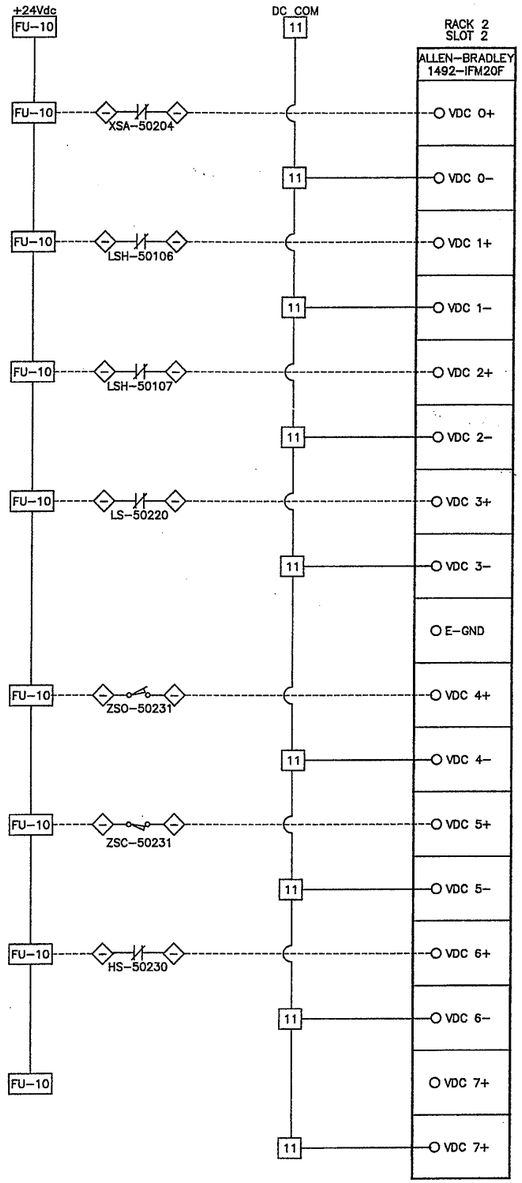
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHEMICAL BUILDING "A" (PLC M20C)
DIGITAL INPUT MODULES
INSTRUMENTATION

STATE OF NEW YORK • LEONARD J. CAMPOLITO • LICENSED PROFESSIONAL ENGINEER • No. 60765

File Number 00659
Date APRIL 2001
L.D'Ampolito

I-609

8 POINT ISOLATED 24Vdc
(1746sc-IB8I)
DISCRETE INPUT



SODIUM HYPOCHLORITE SUMP LEVEL HIGH

SODIUM BISULFITE SUMP LEVEL HIGH

SODIUM BISULFITE TRANSFER PIPE LEAK

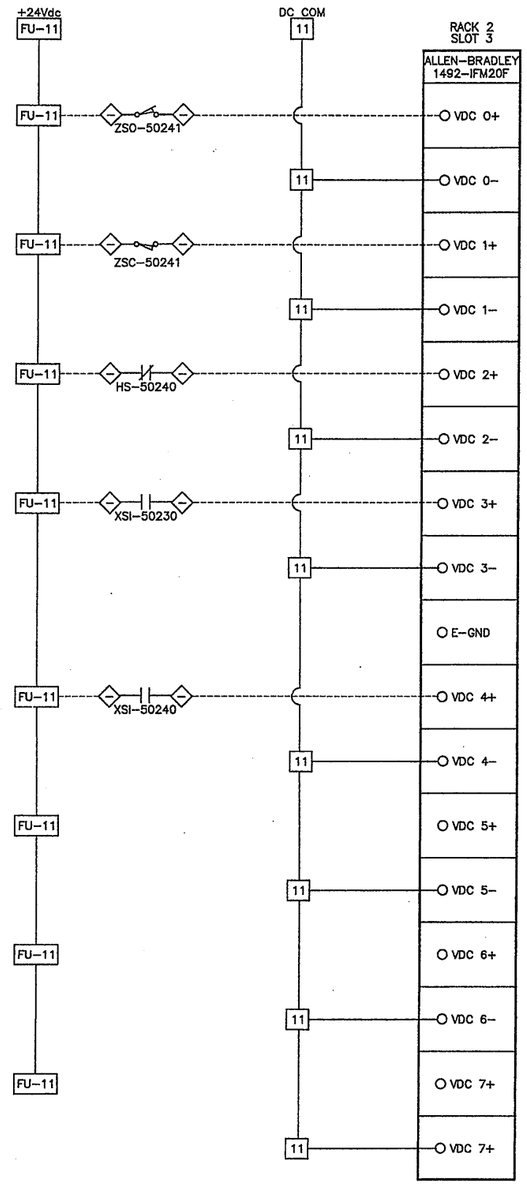
CARRIER WATER PUMP 1 DISCHARGE VALVE FULLY OPEN

CARRIER WATER PUMP 1 DISCHARGE VALVE FULLY CLOSED

CARRIER WATER PUMP 1 AUTO

SPARE

8 POINT ISOLATED 24Vdc
(1746sc-IB8I)
DISCRETE INPUT



CARRIER WATER PUMP 2 DISCHARGE VALVE FULLY OPEN

CARRIER WATER PUMP 2 DISCHARGE VALVE FULLY CLOSED

CARRIER WATER PUMP 2 AUTO

CARRIER WATER PUMP 1 RUNNING

CARRIER WATER PUMP 2 RUNNING

SPARE

-

SPARE

SPARE

RECORD DRAWING

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DATED 10/21/05 PER L.Rampolla

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Checked by PLD

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SYRACUSE, NEW YORK

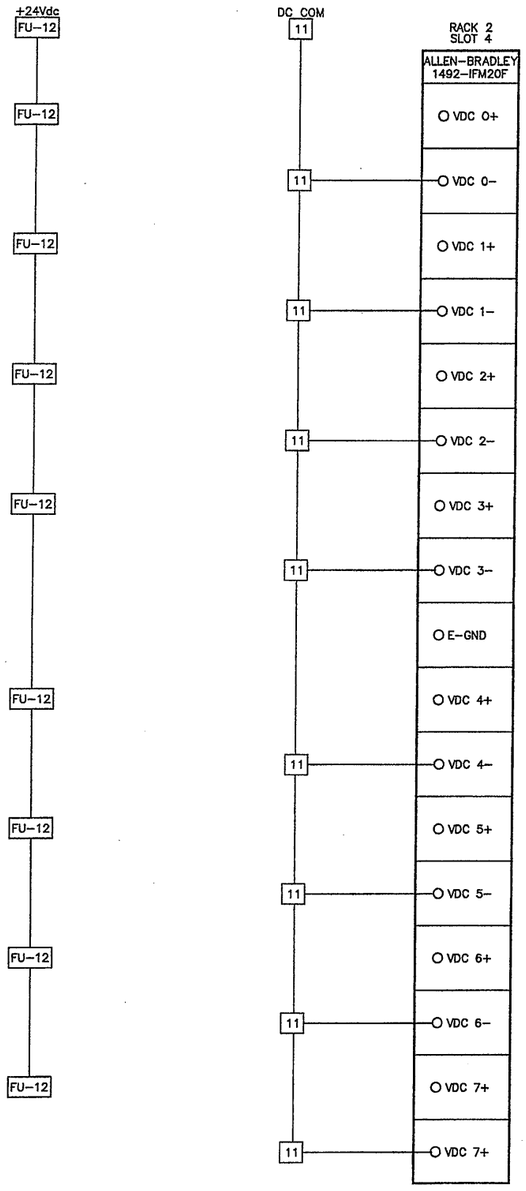
ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHEMICAL BUILDING "A" (PLC M20C)
DIGITAL INPUT MODULES
INSTRUMENTATION

STATE OF NEW YORK · LEONARD J. CAMPOLLA · LICENSED PROFESSIONAL ENGINEER · No. 60755

File Number 00659
Date APRIL 2001

I-610

8 POINT ISOLATED 24Vdc
(1746-IB8)
DISCRETE INPUT



SPARE

SPARE

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SPARE

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DATE: 10/16/02 PER: L.Rampolla

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SYRACUSE, NEW YORK

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INSTRUMENTATION

STATE OF NEW YORK • LEONARD J. CAMPOLETTA • No. 60765 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
L.Rampolla

I-611

RACK 2
SLOT 6

ALLEN-BRADLEY
1492-IFM20F-FS-2

8 POINT ISOLATED RELAY OUTPUT
(AB 1746-OX8)

0L1	YC-50103A	SODIUM BISULFITE PUMP NO.1 REMOTE START (HS-50103)
0		
1L1	YC-50103B	SODIUM BISULFITE PUMP NO.1 REMOTE STOP (HS-50103)
1		
2L1	YC-50104A	SODIUM BISULFITE PUMP NO.2 REMOTE START (HS-50104)
2		
3L1	YC-50104B	SODIUM BISULFITE PUMP NO.2 REMOTE STOP (HS-50104)
3		
4L1	YC-50201A	SODIUM HYPOCHLORITE PUMP NO.1 REMOTE START (HS-50201)
4		
5L1	YC-50201B	SODIUM HYPOCHLORITE PUMP NO.1 REMOTE STOP (HS-50201)
5		
6L1	YC-50202A	SODIUM HYPOCHLORITE PUMP NO.2 REMOTE START (HS-50202)
6		
7L1	YC-50202B	SODIUM HYPOCHLORITE PUMP NO.2 REMOTE STOP (HS-50202)
7		

RACK 2
SLOT 7

ALLEN-BRADLEY
1492-IFM20F-FS-2

8 POINT ISOLATED RELAY OUTPUT
(AB 1746-OX8)

0L1	YC-50203A	SODIUM HYPOCHLORITE PUMP NO.3 REMOTE START (HS-50203)
0		
1L1	YC-50203B	SODIUM HYPOCHLORITE PUMP NO.3 REMOTE STOP (HS-50203)
1		
2L1	YC-50204A	SODIUM HYPOCHLORITE PUMP NO.4 REMOTE START (HS-50204)
2		
3L1	YC-50204B	SODIUM HYPOCHLORITE PUMP NO.4 REMOTE STOP (HS-50204)
3		
4L1	ZCO-50231	CARRIER WATER PUMP 1 DISCHARGE VALVE OPEN COMMAND
4		
5L1	ZCC-50231	CARRIER WATER PUMP 1 DISCHARGE VALVE CLOSE COMMAND
5		
6L1	YC-50230	CARRIER WATER PUMP 1 REMOTE RUN/STOP (HS-50230)
6		
7L1	YC-50240	CARRIER WATER PUMP 2 REMOTE RUN/STOP (HS-50240)
7		

RECORD DRAWING

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ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

CHEMICAL BUILDING "A" (PLC M20C)
DIGITAL OUTPUT MODULES

INSTRUMENTATION

STATE OF NEW YORK • LEONARD J. CAMPOLIETA • No. 60765 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
LStampolski

I-612

RACK 2
SLOT 8

ALLEN-BRADLEY
1492-IFM20F-FS-2

8 POINT ISOLATED RELAY OUTPUT
(AB 1746-OX8)

0L1	ZCO-50241	CARRIER WATER PUMP 2 DISCHARGE VALVE OPEN COMMAND
0		
1L1	ZCC-50241	CARRIER WATER PUMP 2 DISCHARGE VALVE CLOSE COMMAND
1		
2L1		SPARE
2		
3L1		SPARE
3		
4L1		SPARE
4		
5L1		SPARE
5		
6L1		SPARE
6		
7L1		SPARE
7		

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MINOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE: 10/21/05 PER: LStampfler

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11/27/00 OBG JEC
EEA-VERT

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	JEC
1	7/11/01	AS BID	
2	10/31/05	RECORD DRAWING	LS

NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

In charge of PLD
Designed by SAT
Drawn by JEC
Checked by PLD

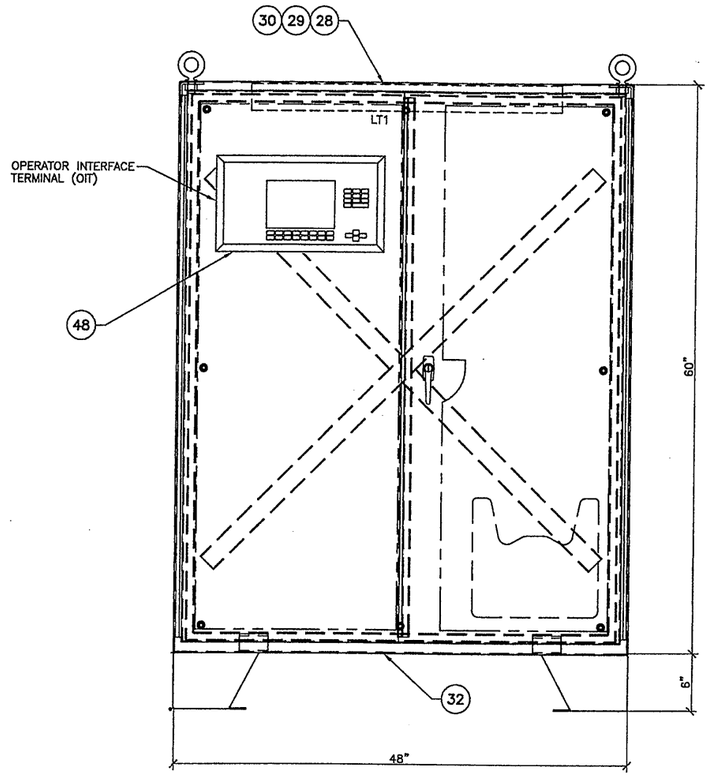
ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHEMICAL BUILDING "A" (PLC M20C)
DIGITAL OUTPUT MODULES
INSTRUMENTATION

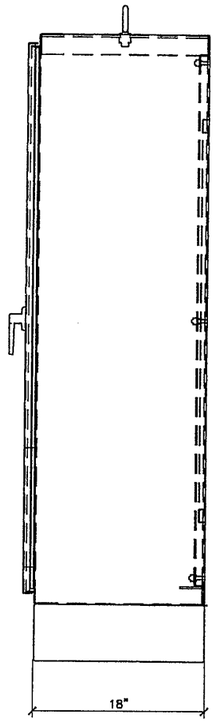
STATE OF NEW YORK • LEONARD J. CAMPOLIETA • LICENSED PROFESSIONAL ENGINEER • No. 60765

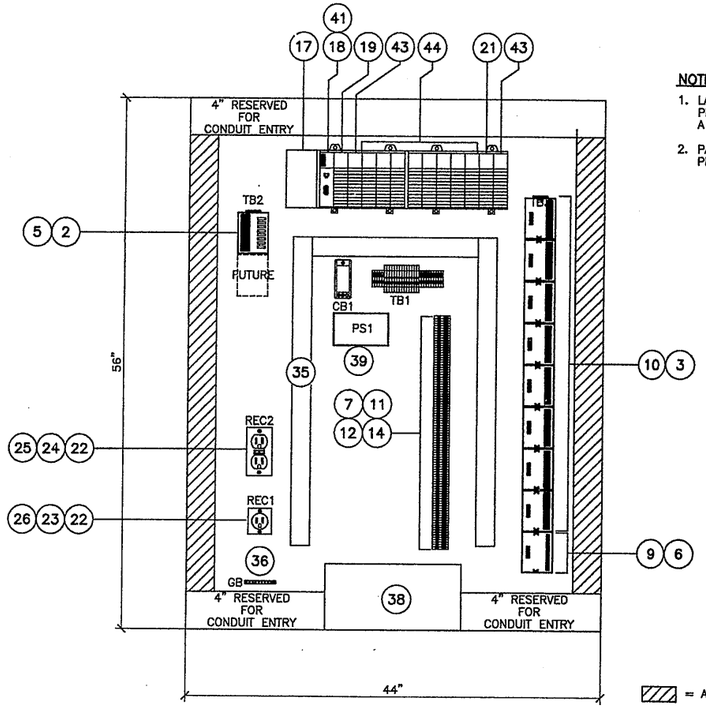
File Number 00659
Date APRIL 2001
LStampfler

I-613



CONTROL PANEL FRONT VIEW





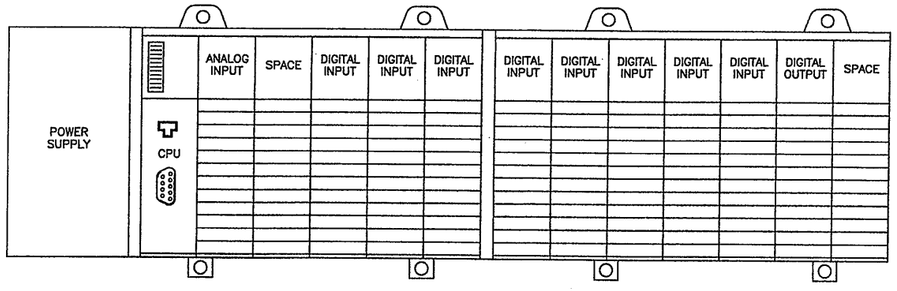
CONTROL PANEL INTERIOR VIEW

NOTES:

1. LAYOUT SHOWN IS FOR CONCEPT ONLY. CONTRACTOR SHALL PROVIDE ALL NECCESSARY APPURTENANCES REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.
2. PANEL SIZE IS APPROXIMATE ONLY. CONTRACTOR SHALL PROVIDE ENCLOSURE SIZE AS REQUIRED FOR EQUIPMENT.

CHLORINE BYPASS BLDG. CONTROL PANEL

RACK 1



PLC MODULE LAYOUT

01/12/01 OBG JEC

RECORD DRAWING

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DATE: 10/1/05 PER: L.D'Amplett

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2	10/31/05	RECORD DRAWING	"

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Drawn by JEC
Checked by PLD

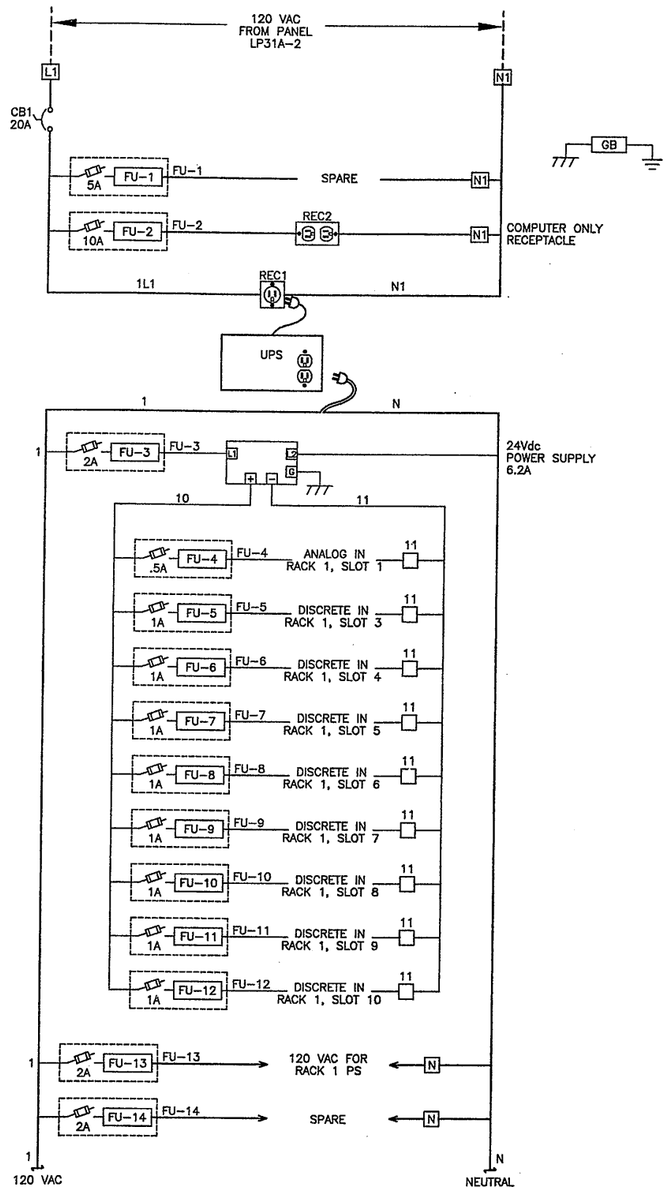
ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHEMICAL BUILDING "C" (PLC M16)
CONTROL PANEL LAYOUT
INSTRUMENTATION

LEONARD J. CAMPOLIETI — STATE OF NEW YORK — No. 60756 — LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
L.D'Amplett

I-614



BILL OF MATERIALS

SYMBOL	QUANTITY	MODEL NUMBER	MANUFACTURER	DESCRIPTION
1				
2	A/R	SEE SPECIFICATIONS	Allen–Bradley	Analog Input Interface Module
3	A/R	SEE SPECIFICATIONS	Allen–Bradley	Digital Input Interface Cable – 1 meter
4				
5	A/R	SEE SPECIFICATIONS	Allen–Bradley	Analog Input Interface Cable – 1 meter
6	A/R	SEE SPECIFICATIONS	Allen–Bradley	Relay Output Interface Cable – 0.5 meter
7	A/R	SEE SPECIFICATIONS	Allen–Bradley	High Density Terminal Block
8	A/R	SEE SPECIFICATIONS	Allen–Bradley	Fusible Switch
9	A/R	SEE SPECIFICATIONS	Allen–Bradley	Relay Output Interface Module
10	A/R	SEE SPECIFICATIONS	Allen–Bradley	Digital Input Interface Module
11	A/R	SEE SPECIFICATIONS	Allen–Bradley	End Anchor
12	A/R	SEE SPECIFICATIONS	Allen–Bradley	High Density Terminal Block End Barrier
13	A/R	SEE SPECIFICATIONS	Allen–Bradley	Fusible Switch End Barrier
14	A/R	SEE SPECIFICATIONS	Allen–Bradley	High Density Jumper
15				
16	A/R	SEE SPECIFICATIONS	Allen–Bradley	13 Slot I/O Chassis
17	A/R	SEE SPECIFICATIONS	Allen–Bradley	I/O Chassis Power Supply
18	A/R	SEE SPECIFICATIONS	Allen–Bradley	CPU
19	A/R	SEE SPECIFICATIONS	Allen–Bradley	Analog Input – 8 point
20				
21	A/R	SEE SPECIFICATIONS	Allen–Bradley	Relay Output – 8 point
22	A/R	SEE SPECIFICATIONS	RACO	Box
23	A/R	SEE SPECIFICATIONS	RACO	Cover – single 15 amp
24	A/R	SEE SPECIFICATIONS	RACO	Cover – duplex 15 amp
25	A/R	SEE SPECIFICATIONS	Hubbell	15A Duplex receptacle
26	A/R	SEE SPECIFICATIONS	Hubbell	15A Single receptacle
27				
28				
29				
30				
31				
32	A/R	SEE SPECIFICATIONS	Hoffman	Nema 12 Enclosure
33	A/R	SEE SPECIFICATIONS	Hoffman	Sub–Panel
34	A/R	SEE SPECIFICATIONS	Panduit	3"W x 3"D Slotted Wiring Duct
35	A/R	SEE SPECIFICATIONS	Panduit	2"W x 3"D Slotted Wiring Duct
36	A/R	SEE SPECIFICATIONS	Square D	Ground Bar
37	A/R	SEE SPECIFICATIONS	Allen–Bradley	20 amp Circuit Breaker, single pole
38	A/R	SEE SPECIFICATIONS	Best Power	Uninterruptible Power Supply
39	A/R	SEE SPECIFICATIONS	Power One	DC Power Supply 24 Vdc Output
40	A/R	SEE SPECIFICATIONS	TBD	Fuses
41	A/R	SEE SPECIFICATIONS	Allen–Bradley	Flash EEprom Memory for CPU
42	A/R	SEE SPECIFICATIONS	–	–
43	A/R	SEE SPECIFICATIONS	Allen–Bradley	Blank Slot Filler Module
44	A/R	SEE SPECIFICATIONS	Allen–Bradley	Discrete Input – 8 point
45				
46				
47				
48	A/R	SEE SPECIFICATIONS	Allen–Bradley	Operator Interface Terminal (OIT)

RECORD DRAWING

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DATED 10/21/05 PER LCampbell

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In charge of PLD
Designed by SAT
Drawn by JEC
Checked by PLD

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

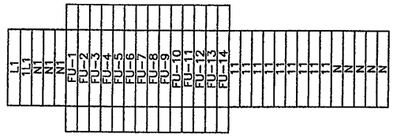
CHEMICAL BUILDING "C" (PLC M16)
CONTROL CIRCUIT WIRING

INSTRUMENTATION

File Number 00659
Date APRIL 2001
LCampbell

I–615

TB1



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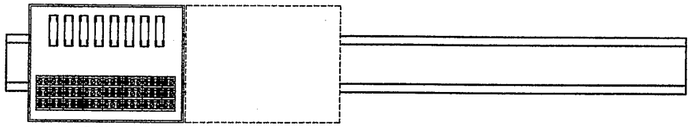

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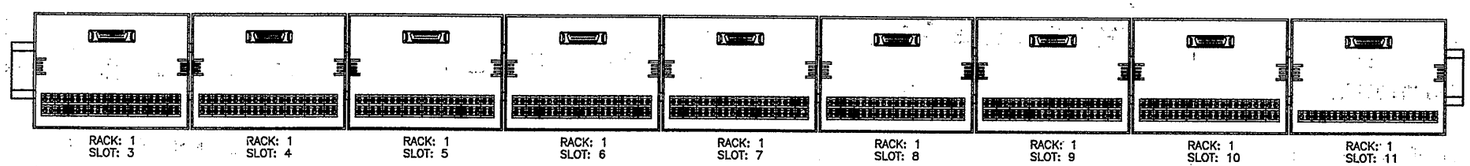
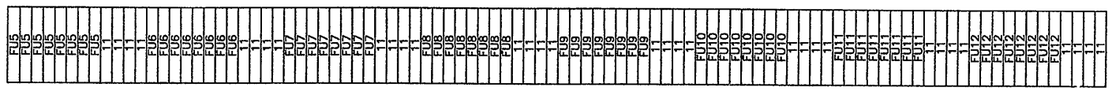


TB4 (24Vdc DI)



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DATE: 10/21/05 PER: LRampolla

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0	4/20/01	ISSUED FOR APPROVAL	JE
1	7/11/01	AS BID	
2	10/31/05	RECORD DRAWING	

In charge of PLD

Designed by SAT

Drawn by JEC

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ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

CHEMICAL BUILDING "C" (PLC M16)
TERMINAL BLOCK LAYOUT

INSTRUMENTATION

LEONARD J. CAMPOLLA — STATE OF NEW YORK — No. 60755 — LICENSED PROFESSIONAL ENGINEER

File Number 00659

Date APRIL 2001

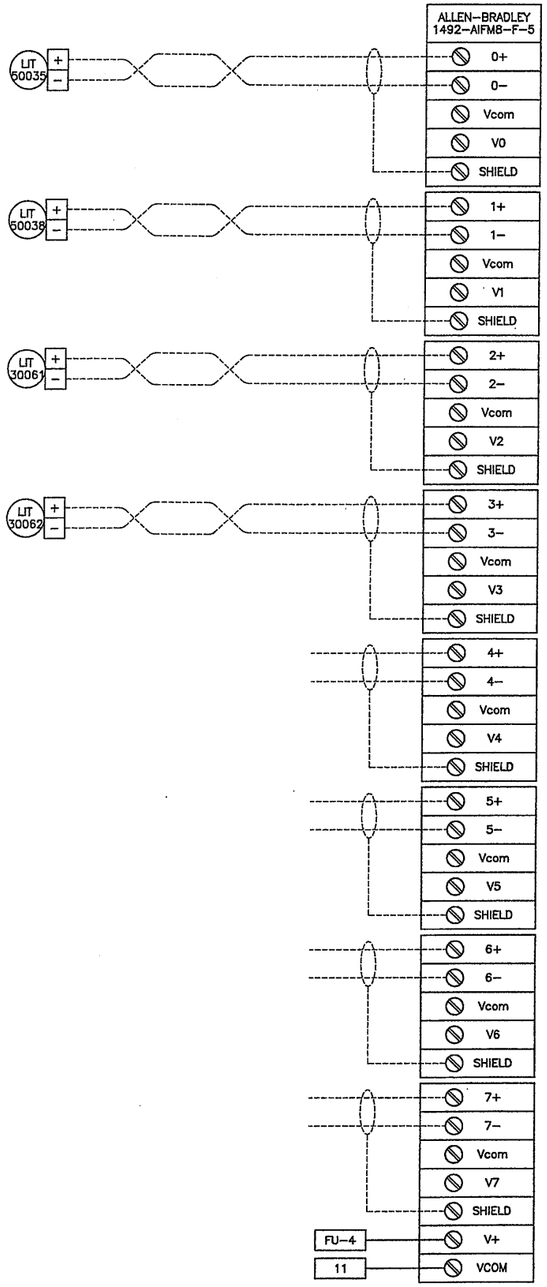
LRampolla

I-616

8 POINT ANALOG INPUT MODULE
(AB 1746-NI8)

RACK 1
SLOT 1

ALLEN-BRADLEY
1492-AIFM8-F-5



NEAT POLYMER BULK STORAGE TANK NO.1 LEVEL
0-XX FT.

NEAT POLYMER BULK STORAGE TANK NO.2 LEVEL
0-XX FT.

FERRIC CHLORIDE DAY TANK 1 LEVEL
0-XX FT.

FERRIC CHLORIDE DAY TANK 2 LEVEL
0-XX FT.

SPARE

SPARE

SPARE

SPARE

RECORD DRAWING

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DATE: 10/21/05 PER: [signature]

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Designed by SAT
Drawn by JEC
Checked by PLD

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHEMICAL BUILDING "C" (PLC M16)

ANALOG INPUT MODULES

INSTRUMENTATION

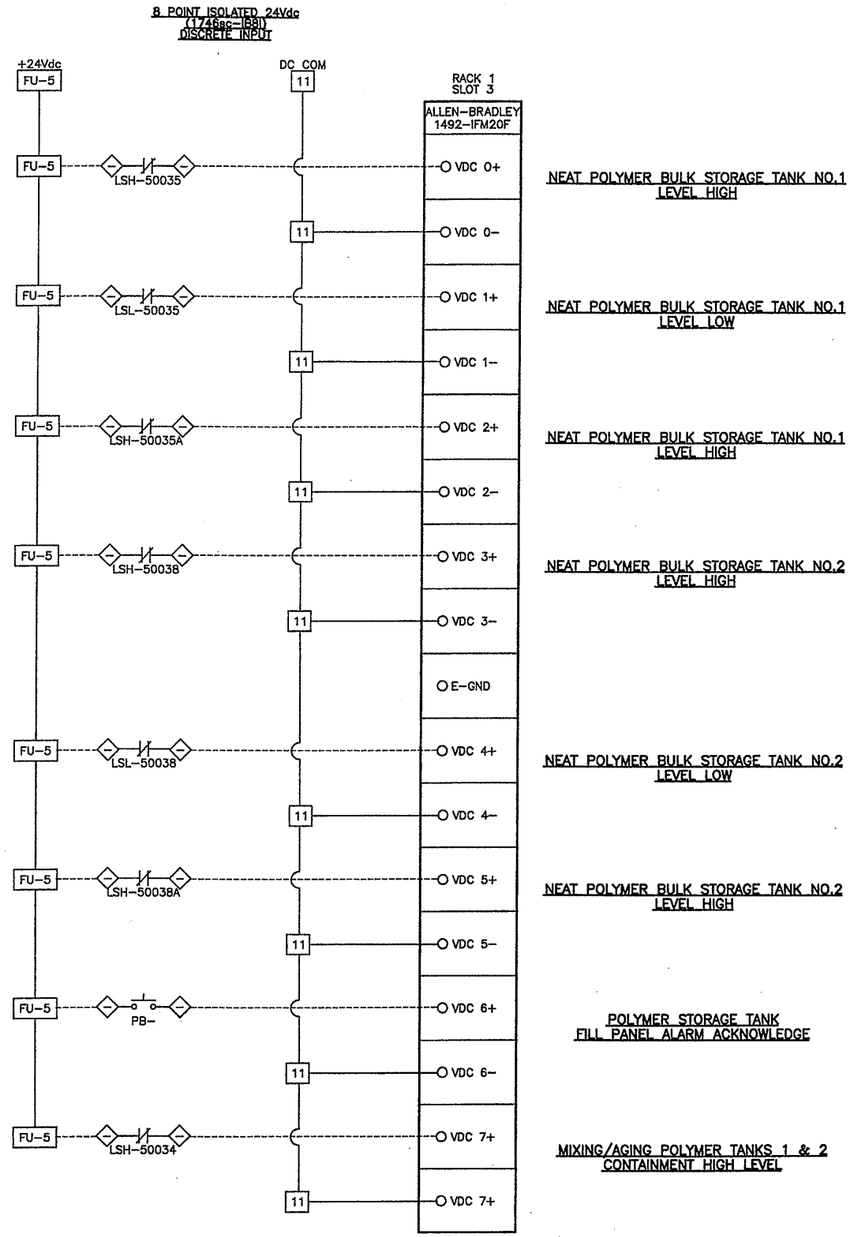
STATE OF NEW YORK · GERARD J. CARDINALE · LICENSED PROFESSIONAL ENGINEER · No. 60765

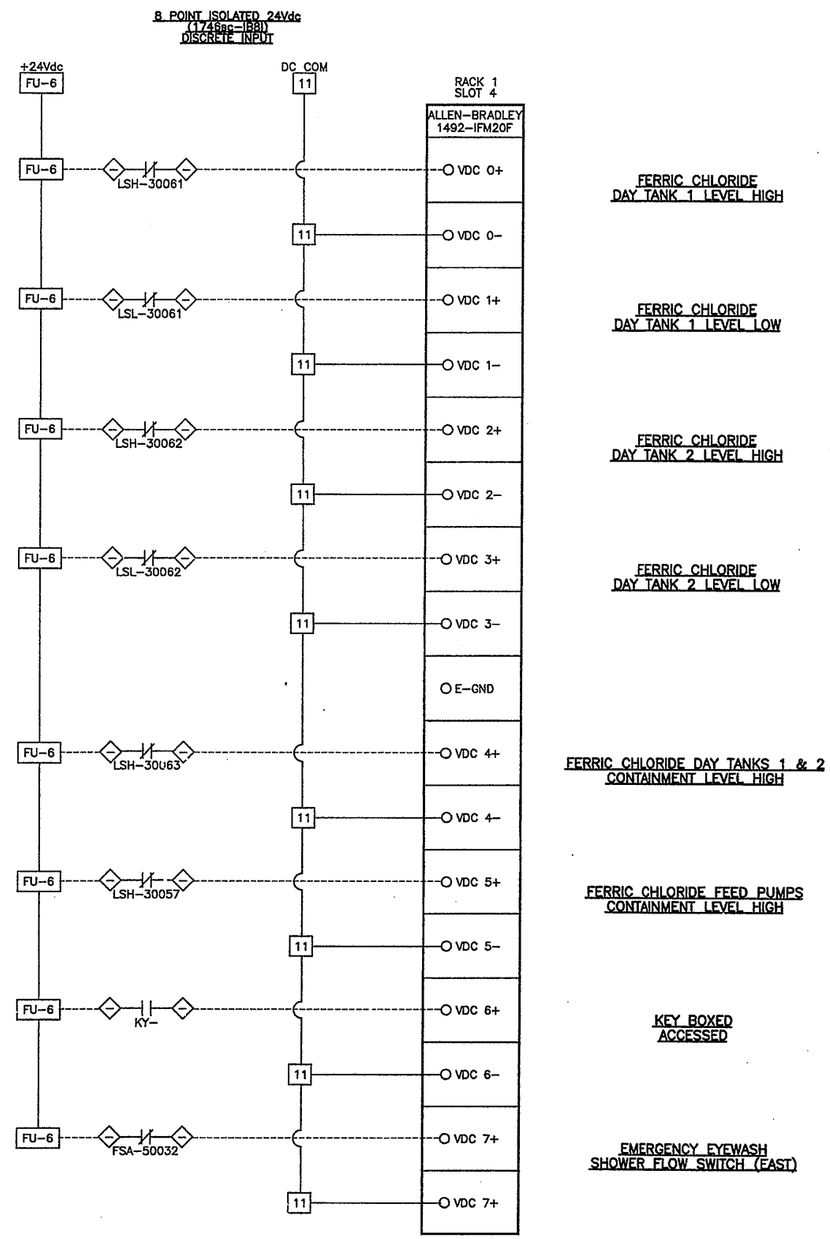
File Number 00659

Date APRIL 2001

[signature]

I-617





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DATE 10/21/05 PER L.Campobello

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHEMICAL BUILDING "C" (PLC M16)
DIGITAL INPUT MODULES
INSTRUMENTATION

STATE OF NEW YORK • LEONARD J. CAMPOBELLO • LICENSED PROFESSIONAL ENGINEER • No. 60755

File Number 00659
Date APRIL 2001
L.Campobello

I-618

8 POINT ISOLATED 24Vdc
(1746sc-IB8)
DISCRETE INPUT

RACK 1
SLOT 5

ALLEN-BRADLEY
1492-IFM20F

+24Vdc		DC COM	
FU-7		11	
FU-7	LSH-50032		VDC 0+
		11	VDC 0-
FU-7	LSH-50033		VDC 1+
		11	VDC 1-
FU-7	FSA-50033		VDC 2+
		11	VDC 2-
FU-7	XSI-80001		VDC 3+
		11	VDC 3-
			E-GND
FU-7	XSI-80002		VDC 4+
		11	VDC 4-
FU-7	XSI-80003		VDC 5+
		11	VDC 5-
FU-7	XSI-80004		VDC 6+
		11	VDC 6-
FU-7	XSI-80005		VDC 7+
		11	VDC 7+

POLYMER PUMPS
SUMP LEVEL HIGH

NEAT POLYMER STORAGE
SUMP LEVEL HIGH

EMERGENCY EYEWASH
SHOWER FLOW SWITCH (WEST)

DDC (HVAC SYSTEM)
STATUS & ALARM POINTS

8 POINT ISOLATED 24Vdc
(1746sc-IB8)
DISCRETE INPUT

RACK 1
SLOT 6

ALLEN-BRADLEY
1492-IFM20F

+24Vdc		DC COM	
FU-8		11	
FU-8	XSI-80006		VDC 0+
		11	VDC 0-
FU-8	XSI-80007		VDC 1+
		11	VDC 1-
FU-8	XSI-80008		VDC 2+
		11	VDC 2-
FU-8	XSI-80009		VDC 3+
		11	VDC 3-
			E-GND
FU-8	XSI-80010		VDC 4+
		11	VDC 4-
FU-8	XSI-80011		VDC 5+
		11	VDC 5-
FU-8	XSI-80012		VDC 6+
		11	VDC 6-
FU-8	XSI-80013		VDC 7+
		11	VDC 7+

DDC (HVAC SYSTEM)
STATUS & ALARM POINTS

RECORD DRAWING

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Drawn by JEC
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ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHEMICAL BUILDING "C" (PLC M16)
DIGITAL INPUT MODULES
INSTRUMENTATION

STATE OF NEW YORK · LEONARD J. CAMPBELL · LICENSED PROFESSIONAL ENGINEER · No. 80765

File Number 00659
Date APRIL 2001

I-619

8 POINT ISOLATED 24Vdc
(1746sc-IB8I)
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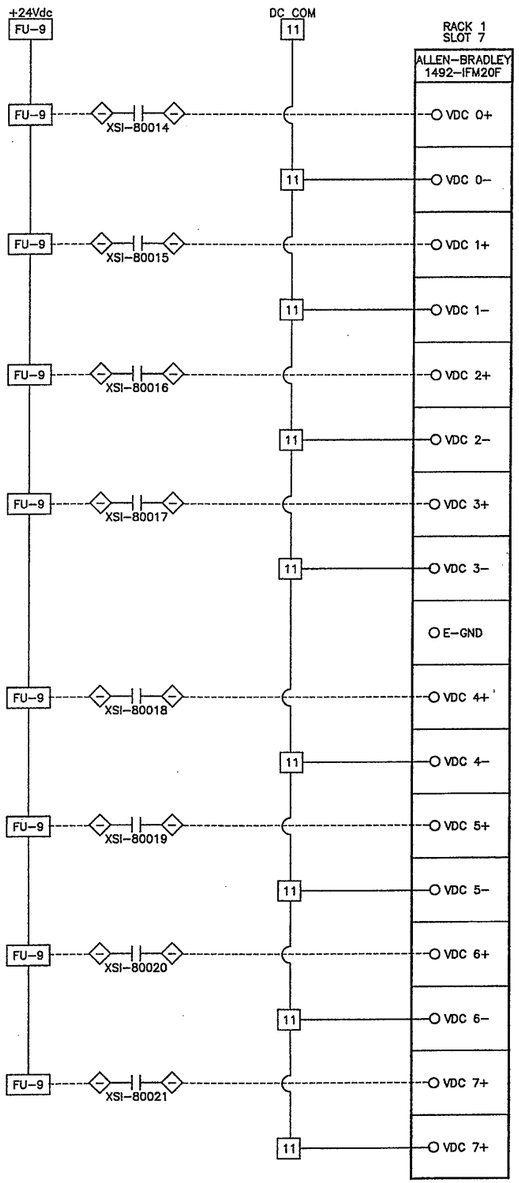
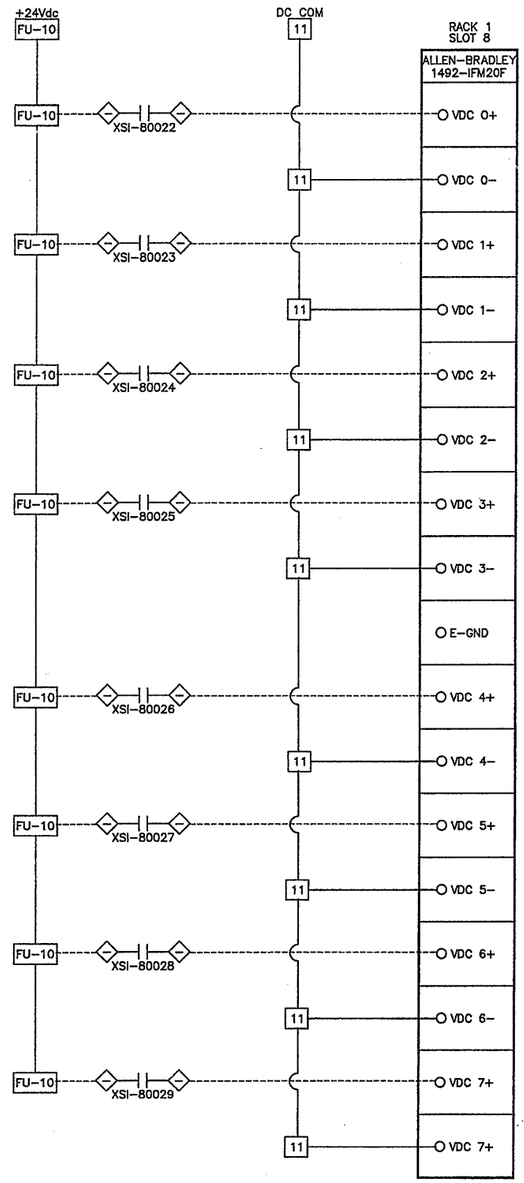


DDC (HVAC SYSTEM)
STATUS & ALARM POINTS

8 POINT ISOLATED 24Vdc
(1746sc-IB8I)
DISCRETE INPUT



DDC (HVAC SYSTEM)
STATUS & ALARM POINTS

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DATED: 10/21/05 PER: L. Campolieta

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ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHEMICAL BUILDING "C" (PLC M16)

DIGITAL INPUT MODULES

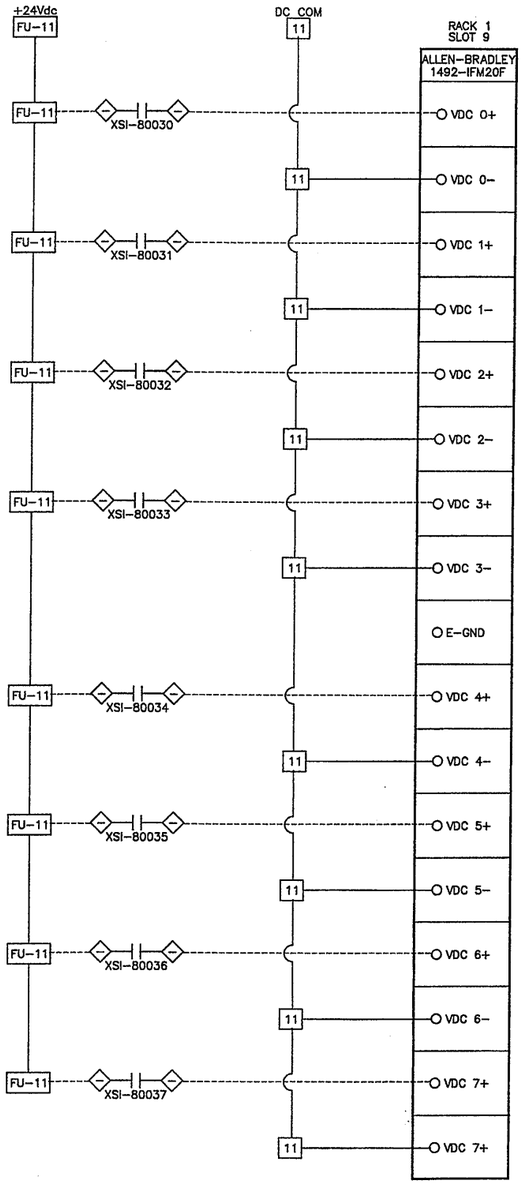
INSTRUMENTATION

LEONARD J. CAMPOLIETA LICENSED PROFESSIONAL ENGINEER No. 060151 STATE OF NEW YORK

File Number 00659
Date APRIL 2001

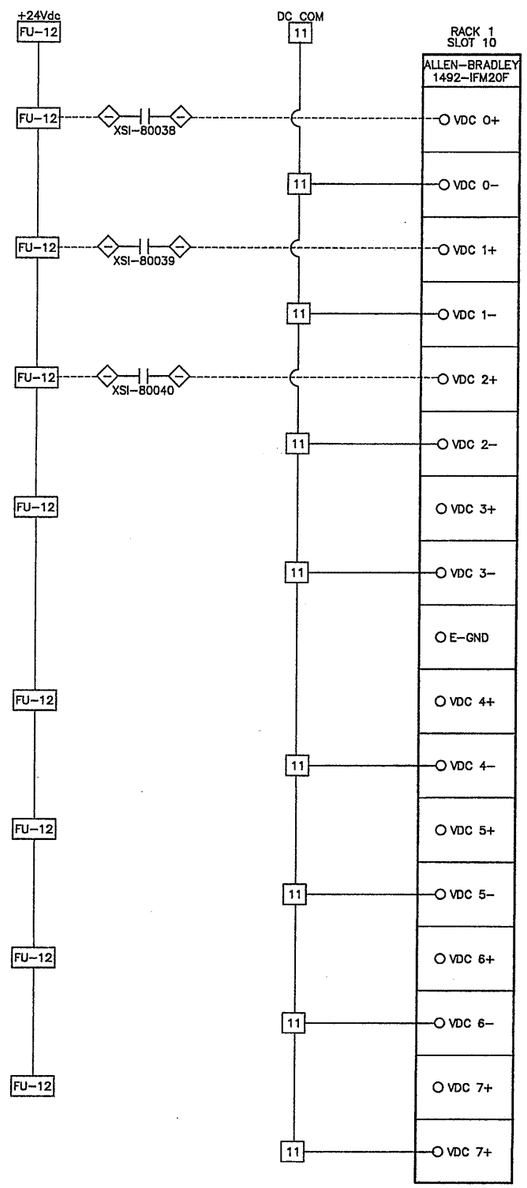
I-620

8 POINT ISOLATED 24Vdc
(1746sc-IB8)
DISCRETE INPUT



DDC (HVAC SYSTEM)
STATUS & ALARM POINTS

8 POINT ISOLATED 24Vdc
(1746sc-IB8)
DISCRETE INPUT



DDC (HVAC SYSTEM)
STATUS & ALARM POINTS

SPARE

SPARE

SPARE

SPARE

SPARE

RECORD DRAWING

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DATE: 10/21/05 PER: L.Rampolla

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1	7/11/01	AS BID	
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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHEMICAL BUILDING "C" (PLC M16)
DIGITAL INPUT MODULES
INSTRUMENTATION

STATE OF NEW YORK · LEONARD J. CAMPOLETA · LICENSED PROFESSIONAL ENGINEER · No. 60755

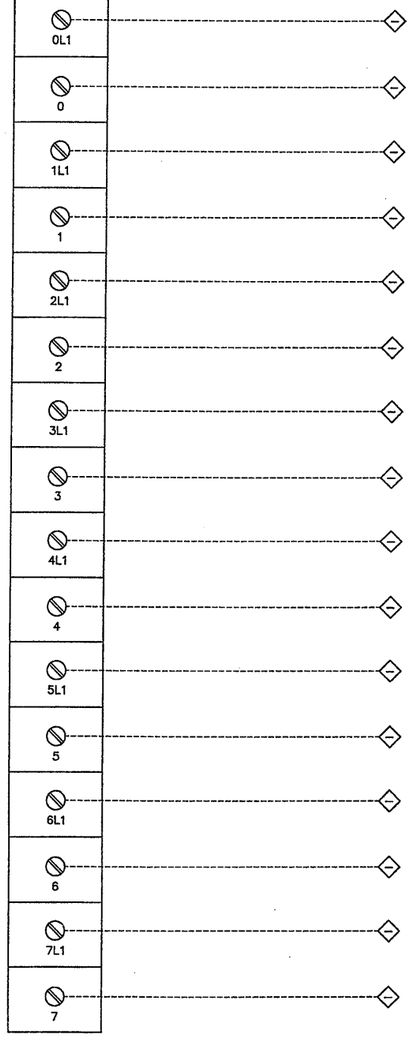
File Number 00659
Date APRIL 2001
L.Rampolla

I-621

RACK 2
SLOT 11

ALLEN–BRADLEY
1492–IFM20F–FS–2

8 POINT ISOLATED RELAY OUTPUT
(AB 1746–OX8)



POLYMER BULK STORAGE TANK NO.1
HIGH LEVEL INDICATING LIGHT

POLYMER BULK STORAGE TANK NO.2
HIGH LEVEL INDICATING LIGHT

SPARE

SPARE

SPARE

RECORD DRAWING

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

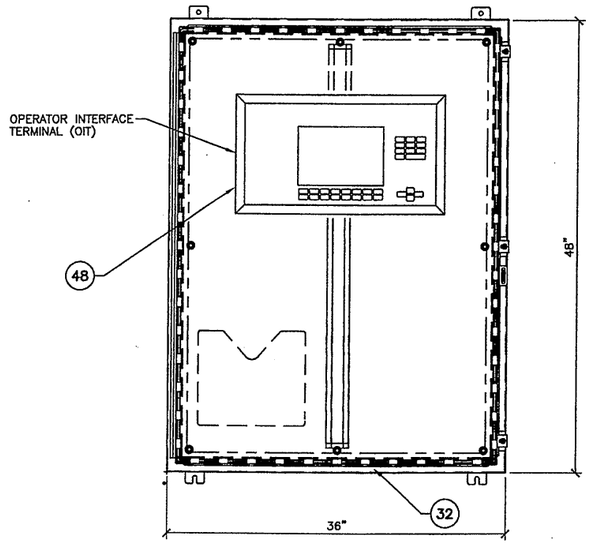
CHEMICAL BUILDING "C" (PLC M16)
DIGITAL OUTPUT MODULE

INSTRUMENTATION

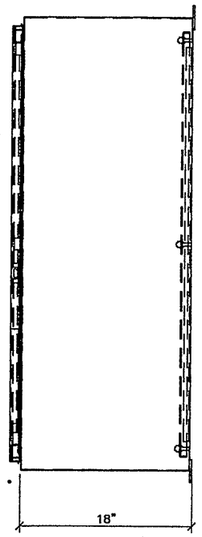
LEONARD J. CAMPOLIETA — STATE OF NEW YORK — No. 60751 — LICENSED PROFESSIONAL ENGINEER

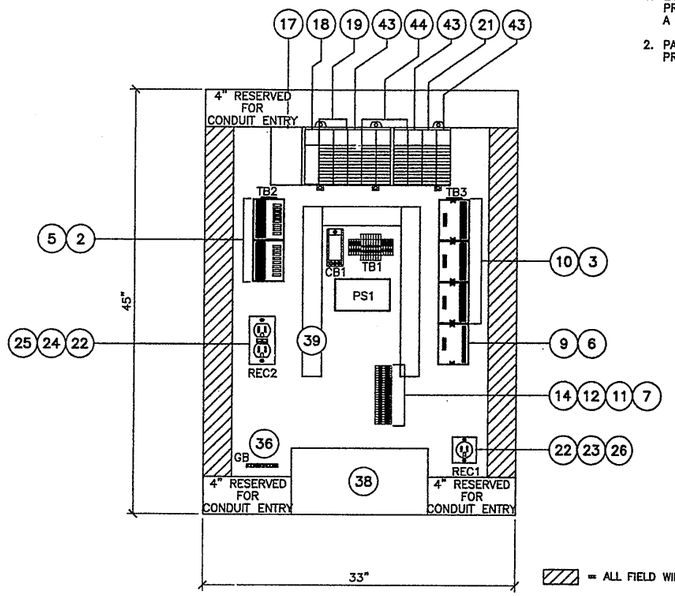
File Number 00659
Date APRIL 2001
LKampoli

I–622



CONTROL PANEL FRONT VIEW



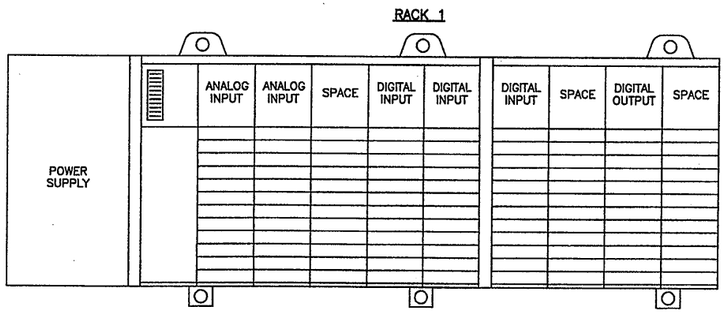


CONTROL PANEL INTERIOR VIEW

NOTES:

1. LAYOUT SHOWN IS FOR CONCEPT ONLY. CONTRACTOR SHALL PROVIDE ALL NECCESSARY APPURTENANCES REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.
2. PANEL SIZE IS APPROXIMATE ONLY. CONTRACTOR SHALL PROVIDE ENCLOSURE SIZE AS REQUIRED FOR EQUIPMENT.

CHLORINE BYPASS BLDG. CONTROL PANEL



PLC MODULE LAYOUT

01/12/01 OBG JEC

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHLORINE BYPASS BLDG. (PLC M20D)
CONTROL PANEL LAYOUT
INSTRUMENTATION

STATE OF NEW YORK • LEONARD J. CAMPOLIETA • LICENSED PROFESSIONAL ENGINEER • No. 60765

File Number 00659
Date APRIL 2001
LKampolieta

I-623

RECORD DRAWING

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DATE 10/21/05 PER LKampolieta

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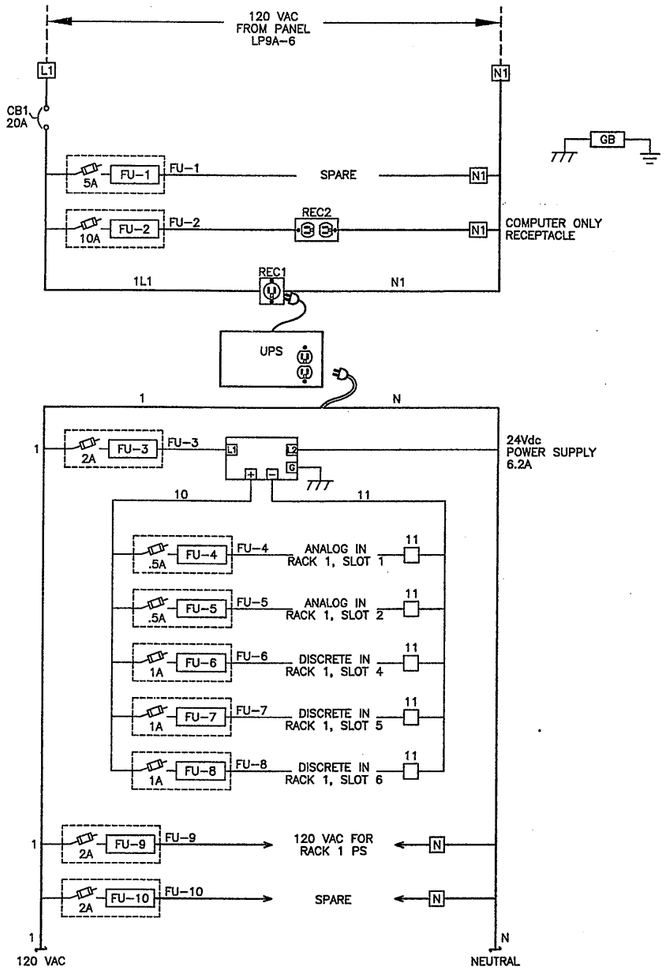

BILL OF MATERIALS

SYMBOL	QUANTITY	MODEL NUMBER	MANUFACTURER	DESCRIPTION
1				
2	A/R	SEE SPECIFICATIONS	Allen-Bradley	Analog Input Interface Module
3	A/R	SEE SPECIFICATIONS	Allen-Bradley	Digital Input Interface Cable - 1 meter
4				
5	A/R	SEE SPECIFICATIONS	Allen-Bradley	Analog Input Interface Cable - 1 meter
6	A/R	SEE SPECIFICATIONS	Allen-Bradley	Relay Output Interface Cable - 0.5 meter
7	A/R	SEE SPECIFICATIONS	Allen-Bradley	High Density Terminal Block
8	A/R	SEE SPECIFICATIONS	Allen-Bradley	Fusible Switch
9	A/R	SEE SPECIFICATIONS	Allen-Bradley	Relay Output Interface Module
10	A/R	SEE SPECIFICATIONS	Allen-Bradley	Digital Input Interface Module
11	A/R	SEE SPECIFICATIONS	Allen-Bradley	End Anchor
12	A/R	SEE SPECIFICATIONS	Allen-Bradley	High Density Terminal Block End Barrier
13	A/R	SEE SPECIFICATIONS	Allen-Bradley	Fusible Switch End Barrier
14	A/R	SEE SPECIFICATIONS	Allen-Bradley	High Density Jumper
15				
16	A/R	SEE SPECIFICATIONS	Allen-Bradley	13 Slot I/O Chassis
17	A/R	SEE SPECIFICATIONS	Allen-Bradley	I/O Chassis Power Supply
18	A/R	SEE SPECIFICATIONS	Allen-Bradley	Remote I/O Adapter
19	A/R	SEE SPECIFICATIONS	Allen-Bradley	Analog Input - 8 point
20				
21	A/R	SEE SPECIFICATIONS	Allen-Bradley	Relay Output - 8 point
22	A/R	SEE SPECIFICATIONS	RACO	Box
23	A/R	SEE SPECIFICATIONS	RACO	Cover - single 15 amp
24	A/R	SEE SPECIFICATIONS	RACO	Cover - duplex 15 amp
25	A/R	SEE SPECIFICATIONS	Hubbell	15A Duplex receptacle
26	A/R	SEE SPECIFICATIONS	Hubbell	15A Single receptacle
27				
28				
29				
30				
31				
32	A/R	SEE SPECIFICATIONS	Hoffman	Nema 12 Enclosure
33	A/R	SEE SPECIFICATIONS	Hoffman	Sub-Panel
34	A/R	SEE SPECIFICATIONS	Panduit	3"W x 3"D Slotted Wiring Duct
35	A/R	SEE SPECIFICATIONS	Panduit	2"W x 3"D Slotted Wiring Duct
36	A/R	SEE SPECIFICATIONS	Square D	Ground Bar
37	A/R	SEE SPECIFICATIONS	Allen-Bradley	20 amp Circuit Breaker, single pole
38	A/R	SEE SPECIFICATIONS	Best Power	Uninterruptible Power Supply
39	A/R	SEE SPECIFICATIONS	Power One	DC Power Supply 24 Vdc Output
40	A/R	SEE SPECIFICATIONS	TBD	Fuses
41				
42	A/R	SEE SPECIFICATIONS	-	-
43	A/R	SEE SPECIFICATIONS	Allen-Bradley	Blank Slot Filler Module
44	A/R	SEE SPECIFICATIONS	Allen-Bradley	Discrete Input - 8 point
45				
46				
47				
48	A/R	SEE SPECIFICATIONS	Allen-Bradley	Operator Interface Terminal (OIT)

RECORD DRAWING

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DWG 10/31/05 PER LKampoliet

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SYRACUSE, NEW YORK

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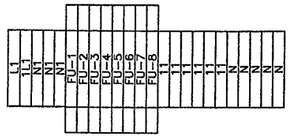
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHLORINE BYPASS BLDG. (PLC M20D)
CONTROL CIRCUIT WIRING
INSTRUMENTATION

STATE OF NEW YORK · LEONARD J. CAMPOLIETI · No. 60765 · LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
LKampoliet

I-624

TB1



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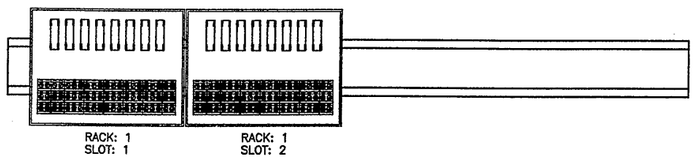

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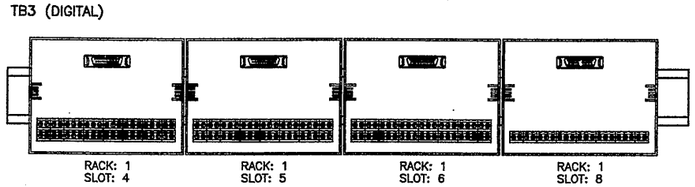

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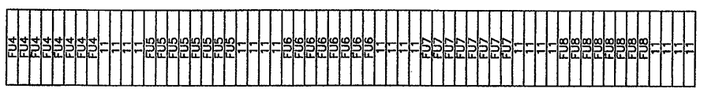

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SYRACUSE, NEW YORK

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

CHLORINE BYPASS BLDG. (PLC M20D)
TERMINAL BLOCK LAYOUT

INSTRUMENTATION

STATE OF NEW YORK · LEONARD J. CAMPOLIETA · No. 60756 · LICENSED PROFESSIONAL ENGINEER

File Number 00659

Date APRIL 2001

LKampoliet

I-625

8 POINT ANALOG INPUT MODULE (AB 1746-NI8)

RACK 1
SLOT 1

ALLEN-BRADLEY 1492-AIFM8-F-5

AIT 50305 (+/−)	0+ / 0− / Vcom / V0 / SHIELD	CHLORINE CONTACT TANK ORP DISINFECTION –
AIT 50306 (+/−)	1+ / 1− / Vcom / V1 / SHIELD	CHLORINE CONTACT TANK RESIDUAL –
FIT 50308 (+/−)	2+ / 2− / Vcom / V2 / SHIELD	BYPASS CHLORINE CONTACT TANK NO.1 FLOW 0-XXX GPD
FIT 50309 (+/−)	3+ / 3− / Vcom / V3 / SHIELD	BYPASS CHLORINE CONTACT TANK NO.2 FLOW 0-XXX GPD
LIT 50310 (+/−)	4+ / 4− / Vcom / V4 / SHIELD	BYPASS CHLORINE CONTACT TANK NO.1 LEVEL 0-XX FT.
AIT 50312 (+/−)	5+ / 5− / Vcom / V5 / SHIELD	CHLORINE CONTACT TANK 72" OUTFALL ORP –
LT 50304 (+/−)	6+ / 6− / Vcom / V6 / SHIELD	CHLORINE CONTACT TANK 72" INFLUENT LEVEL –
LT 50314 (+/−)	7+ / 7− / Vcom / V7 / SHIELD	BYPASS CHLORINE CONTACT TANK 72" EFFLUENT LEVEL –
FU-4	V+	
XX	VCOM	

8 POINT ANALOG INPUT MODULE (AB 1746-NI8)

RACK 1
SLOT 2

ALLEN-BRADLEY 1492-AIFM8-F-5

	0+ / 0− / Vcom / V0 / SHIELD	SPARE
	1+ / 1− / Vcom / V1 / SHIELD	SPARE
	2+ / 2− / Vcom / V2 / SHIELD	SPARE
	3+ / 3− / Vcom / V3 / SHIELD	SPARE
	4+ / 4− / Vcom / V4 / SHIELD	SPARE
	5+ / 5− / Vcom / V5 / SHIELD	SPARE
	6+ / 6− / Vcom / V6 / SHIELD	SPARE
	7+ / 7− / Vcom / V7 / SHIELD	SPARE
FU-5	V+	
XX	VCOM	

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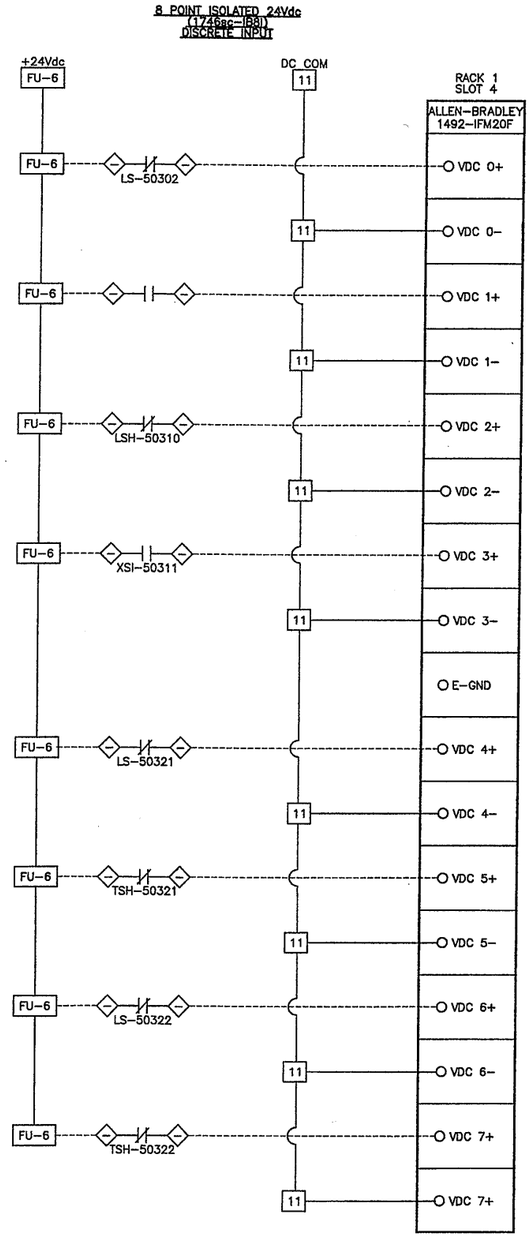
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHLORINE BYPASS BLDG. (PLC M20D)
ANALOG INPUT MODULES
INSTRUMENTATION

LEONARD J. CAMPOLIETA — LICENSED PROFESSIONAL ENGINEER — STATE OF NEW YORK — No. 60756

File Number 00659
Date APRIL 2001
LPampalone

I-626



DISTRIBUTION STRUCTURE "B"
WALL LEAK (BISULFITE)

BYPASS
CHLORINE CONTACT TANK 1
LEVEL HIGH

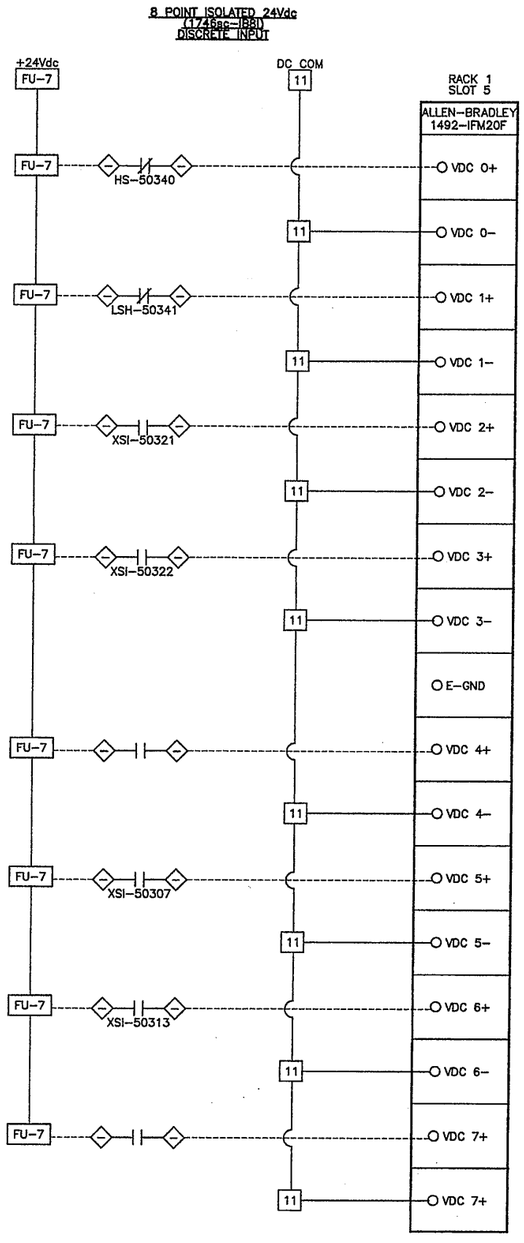
SUBMERSIBLE
INDUCTOR/MIXER RUNNING

BYPASS CHLORINE CONTACT TANK
MIXER NO.1
LEAK SENSOR

BYPASS CHLORINE CONTACT TANK
MIXER NO.1
TEMPERATURE HIGH

BYPASS CHLORINE CONTACT TANK
MIXER NO.2
LEAK SENSOR

BYPASS CHLORINE CONTACT TANK
MIXER NO.2
TEMPERATURE HIGH



BYPASS CHLORINE CONTACT TANK #2
DEWATERING PUMP #1
AUTO

BYPASS CHLORINE CONTACT TANK #2
DEWATERING
LEVEL HIGH

BYPASS CHLORINE CONTACT TANK
MIXER NO.1
RUNNING

BYPASS CHLORINE CONTACT TANK
MIXER NO.2
RUNNING

BYPASS
CHLORINE CONTACT TANK
SAMPLE PUMP 1 RUNNING

BYPASS
CHLORINE CONTACT TANK
SAMPLE PUMP 2 RUNNING

RECORD DRAWING

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SYRACUSE, NEW YORK

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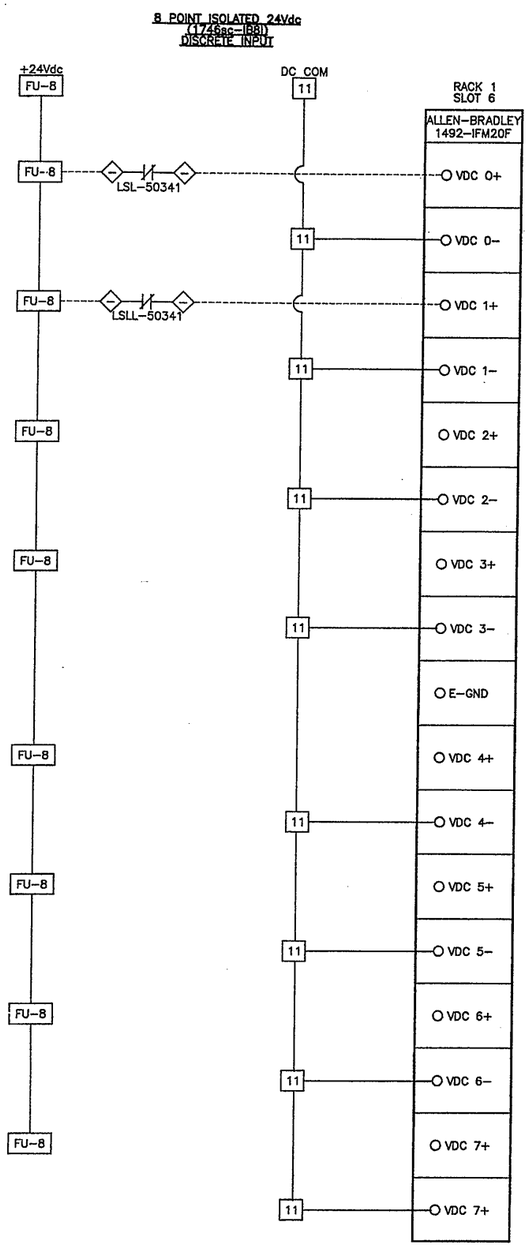
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHLORINE BYPASS BLDG. (PLC M20D)
DIGITAL INPUT MODULES
INSTRUMENTATION

STATE OF NEW YORK · LEONARD J. CAMPOLIETA · LICENSED PROFESSIONAL ENGINEER · No. 60765

File Number 00659
Date APRIL 2001
LKampfer

I-627



BYPASS CHLORINE CONTACT TANK #2 DEWATERING LEVEL LOW

BYPASS CHLORINE CONTACT TANK #2 DEWATERING LEVEL LOW/LOW

SPARE

SPARE

SPARE

SPARE

SPARE

SPARE

RECORD DRAWING

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHLORINE BYPASS BLDG. (PLC M20D)

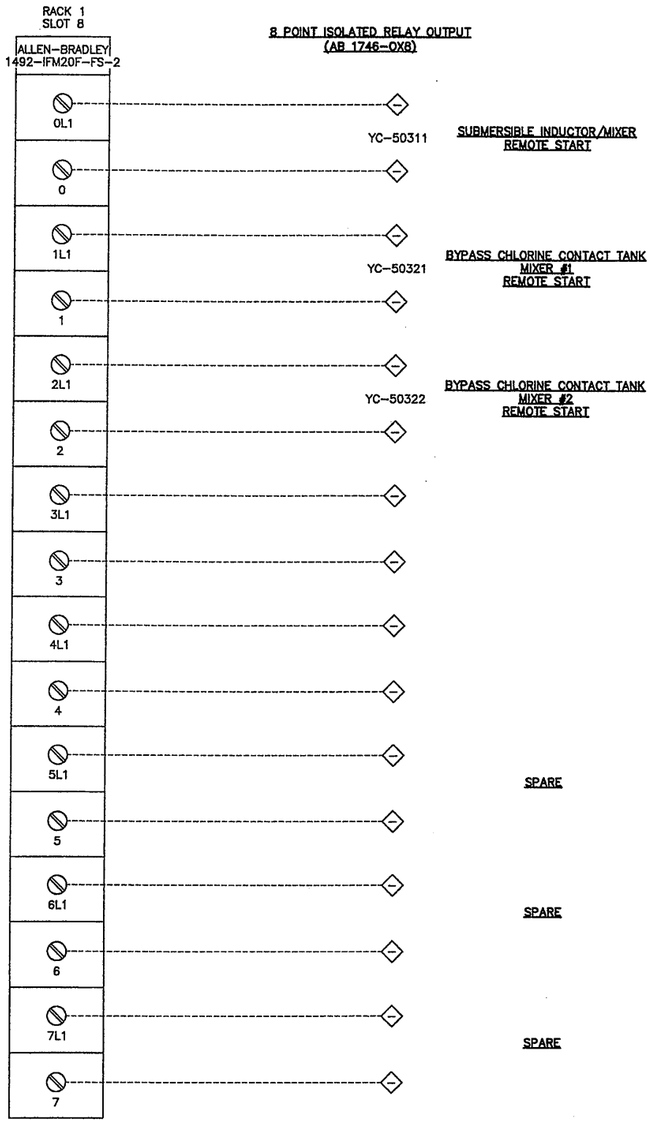
DIGITAL INPUT MODULES

INSTRUMENTATION

LEONARD J. CAMPOLIETI — LICENSED PROFESSIONAL ENGINEER — No. 60751 — STATE OF NEW YORK

File Number 00659
Date APRIL 2001
LCampolieti

I-628



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11/27/00 OBG JEC
EEA-VERT

RECORD DRAWING

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DATE 10/1/05 PER: LCampolieti

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No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	LJC
1	7/11/01	AS BID	↓
2	10/31/05	RECORD DRAWING	

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Drawn by JEC
Checked by PLD

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

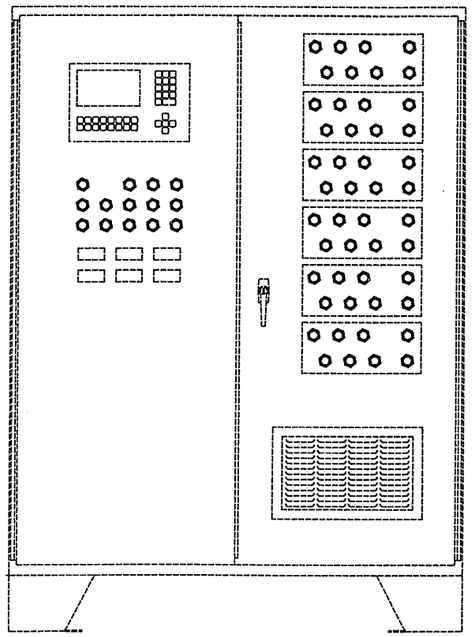
CHLORINE BYPASS BLDG. (PLC M20D)
DIGITAL OUTPUT MODULES

INSTRUMENTATION

STATE OF NEW YORK • LEONARD J. CAMPOLIETI • No. 80765 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
LCampolieti

I-629



CONTROL PANEL FRONT VIEW

NOTES:

1. PANEL IS EXISTING AND WAS CONSTRUCTED BY ENVIROMATION INC., SYRACUSE, NEW YORK. UPON AWARD OF CONTRACT, CONTRACTOR WILL RECEIVE A COPY OF PANEL AS-BUILT DRAWINGS.

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE: 10/24/07 PER: LKampolcut

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01/12/01 OBG JEC

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	LKC
1	7/11/01	AS BID	↓
2	10/31/05	RECORD DRAWING	

NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

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Designed by SAT
Drawn by JEC
Checked by PLD

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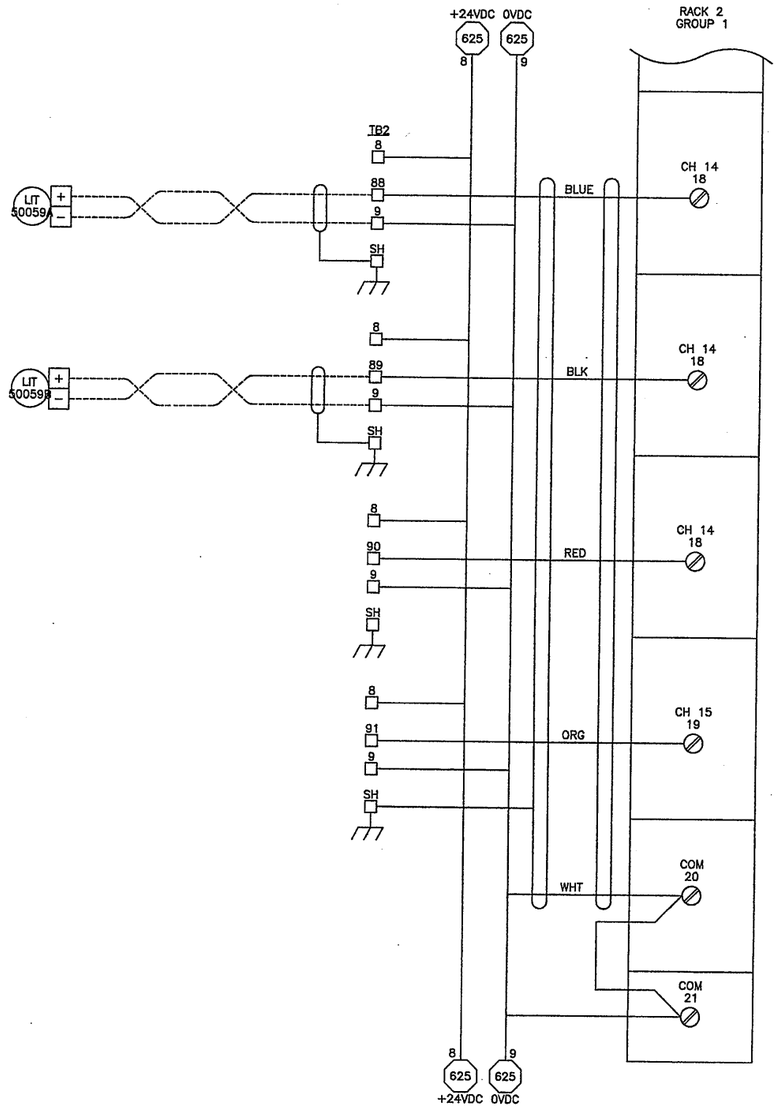
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHEMICAL BUILDING "B" (PLC M20B)
CONTROL PANEL LAYOUT
INSTRUMENTATION

STATE OF NEW YORK • LEONARD J. CAMPOLIETA • No. 60755 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
LKampolcut

I-630



FECL3 BULK STORAGE TANK NO.1
LEVEL
0–XX FT.

FECL3 BULK STORAGE TANK NO.2
LEVEL
0–XX FT.

SPARE

SPARE

NOTE:
CONTRACTOR SHALL UTILIZE EXISTING ANALOG INPUT SPARES LOCATED ON RACK 2, GROUP 1 AT THE CHEMICAL BUILDING "B" CONTROL PANEL. (REFER TO ENVIROMATION INC. FILE 99210E16, DWG. 99210–1, SHEET 6 OF 17, WHICH WILL BE AVAILABLE TO CONTRACTOR UPON AWARD OF CONTRACT)

RECORD DRAWING
THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MINOR CHANGES IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.
DATED: 10/21/05 PER: LKampfer

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EEA–VERT

No.	Date	Revisions	Init
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In charge of PLD
Designed by SAT
Drawn by JEC
Checked by PLD

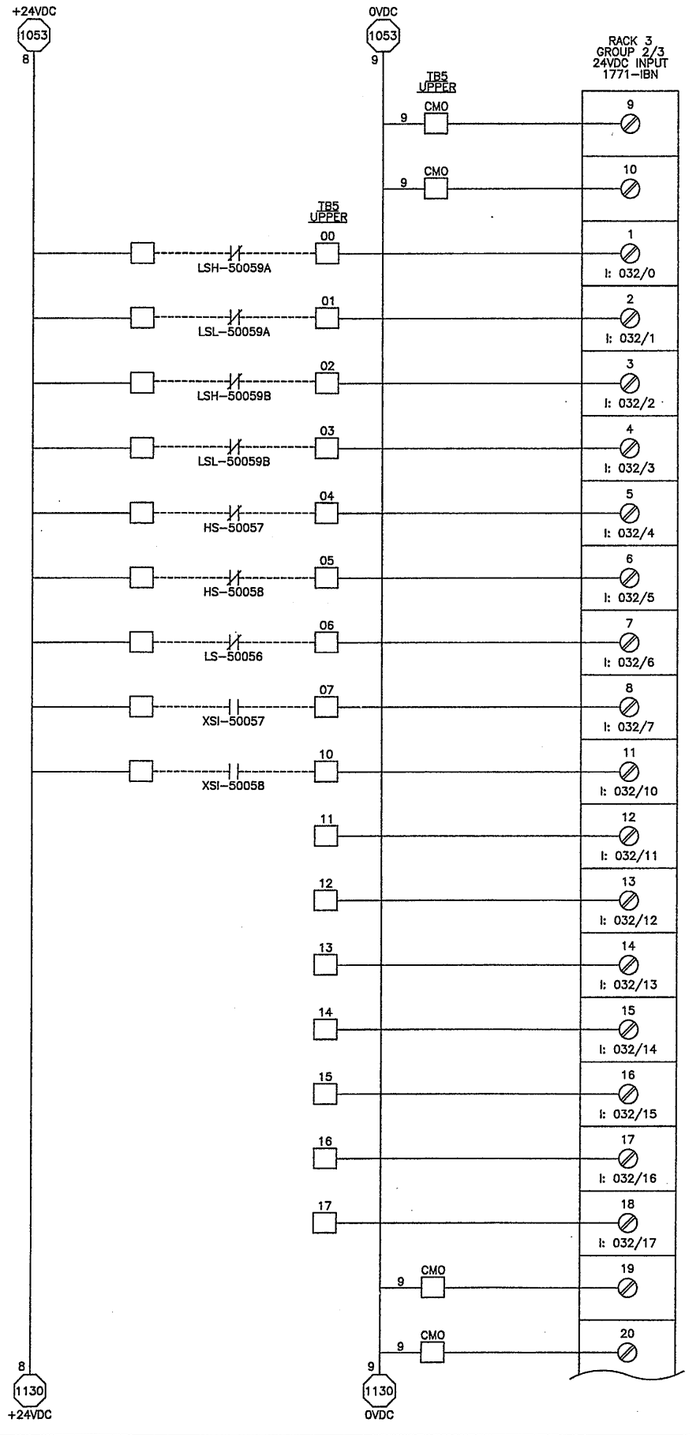
ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHEMICAL BUILDING "B" (PLC 20B)
ANALOG INPUT MODULE
INSTRUMENTATION

STATE OF NEW YORK • LEONARD J. CAMPOFELA • LICENSED PROFESSIONAL ENGINEER • No. 60755

File Number 00659
Date APRIL 2001
LKampfer

I–631



FECL3 BULK STORAGE TANK NO.1 LEVEL HIGH

FECL3 BULK STORAGE TANK NO.1 LEVEL LOW

FECL3 BULK STORAGE TANK NO.2 LEVEL HIGH

FECL3 BULK STORAGE TANK NO.2 LEVEL LOW

FERRIC CHLORIDE TRANSFER PUMP NO. 1 AUTO

FERRIC CHLORIDE TRANSFER PUMP NO. 2 AUTO

FERRIC CHLORIDE DISCHARGE PIPING LEAK

FERRIC CHLORIDE TRANSFER PUMP #1 RUNNING

FERRIC CHLORIDE TRANSFER PUMP #2 RUNNING

NOTE:
CONTRACTOR SHALL UTILIZE EXISTING DISCRETE INPUTS SPARES LOCATED ON RACK 3, GROUP 2/3 AT THE CHEMICAL BUILDING "B" CONTROL PANEL (REFER TO ENVIROMATION INC. FILE 99210E1B, DWG. 99210-1, SHEET 11 OF 17, WHICH WILL BE AVAILABLE TO CONTRACTOR UPON AWARD OF CONTRACT)

RECORD DRAWING

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No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	LC
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2	10/31/05	RECORD DRAWING	

In charge of PLD
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Drawn by JEC
Checked by PLD

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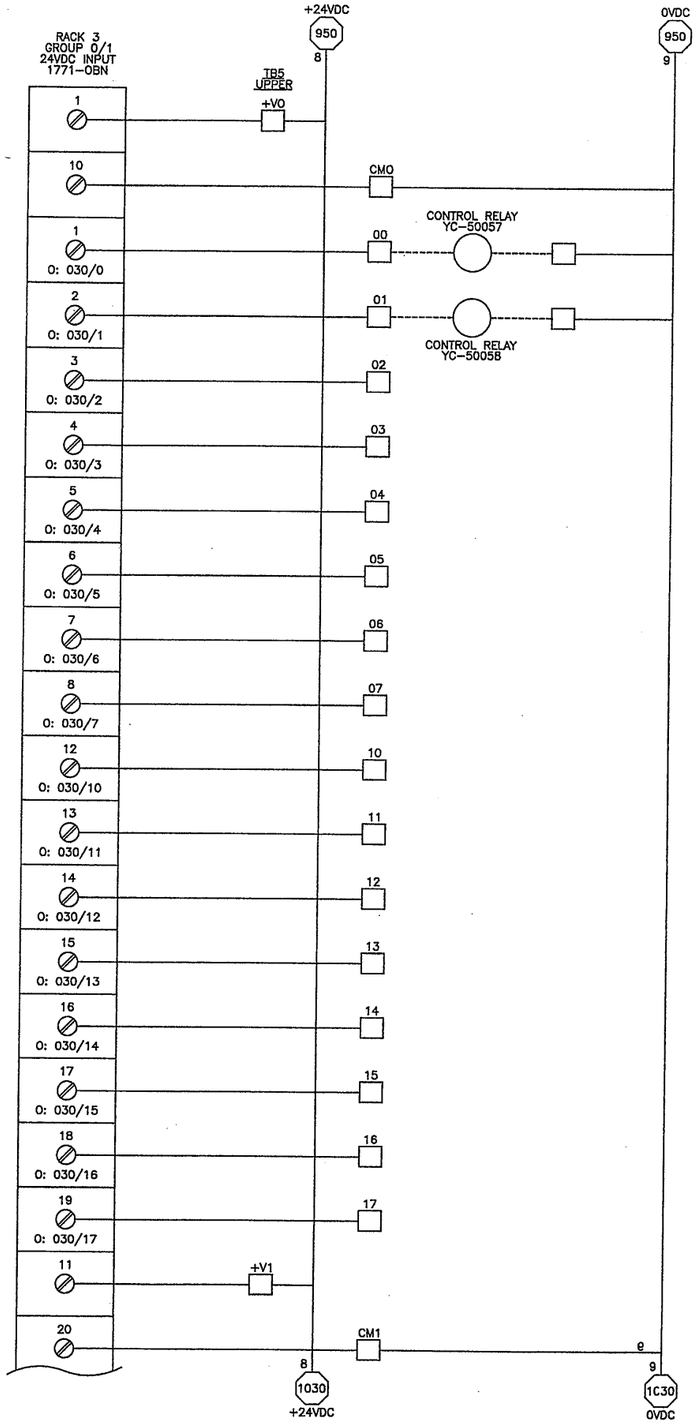
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHEMICAL BUILDING "B" (PLC 20B)
DISCRETE INPUT MODULE
INSTRUMENTATION

STATE OF NEW YORK • LEONARD J. CAMPOLIETA • No. 060765 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
[signature]

I-632



FECL3 TRANSFER PUMP NO.1 REMOTE START — YC-50057 → TO FECL3 TRANSFER PUMP NO. 1 HOA AUTO MODE (LOCATED IN PUMP COMBINATION STARTER)

FECL3 TRANSFER PUMP NO.2 REMOTE START — YC-50058 → TO FECL3 TRANSFER PUMP NO. 2 HOA AUTO MODE (LOCATED IN PUMP COMBINATION STARTER)

SPARE

SPARE

SPARE

SPARE

SPARE

SPARE

SPARE

SPARE

SPARE

SPARE

SPARE

NOTE:

CONTRACTOR SHALL UTILIZE EXISTING DISCRETE OUTPUTS SPARES LOCATED ON RACK 3, GROUP 0/1 AT THE CHEMICAL BUILDING "B" CONTROL PANEL (REFER TO ENVIROMATION INC. FILE 99210E1D, DWG. 99210-1, SHEET 13 OF 17, WHICH WILL BE AVAILABLE TO CONTRACTOR UPON AWARD OF CONTRACT)

RECORD DRAWING

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In charge of PLD
Designed by SAT
Drawn by JEC
Checked by PLD

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

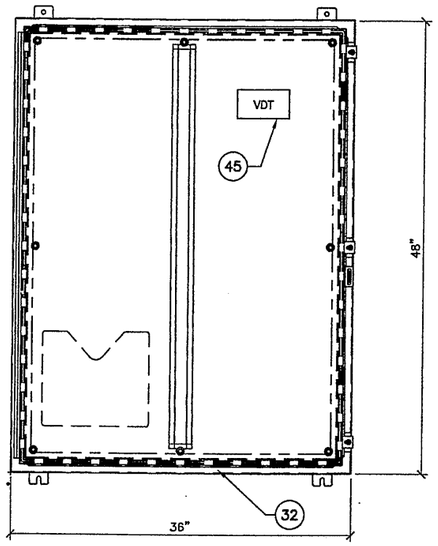
CHEMICAL BUILDING "B" (PLC 20B)
DISCRETE OUTPUT MODULE

INSTRUMENTATION

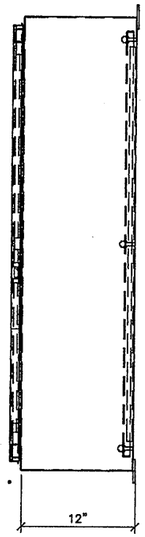
STATE OF NEW YORK · LEONARD J. CAMPOLIETA · LICENSED PROFESSIONAL ENGINEER · No. 90755

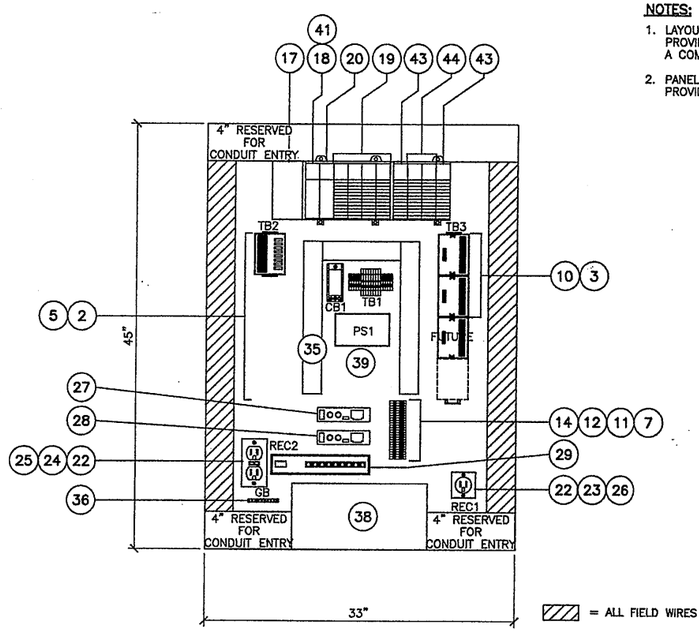
File Number 00659
Date APRIL 2001

I-633



CONTROL PANEL FRONT VIEW



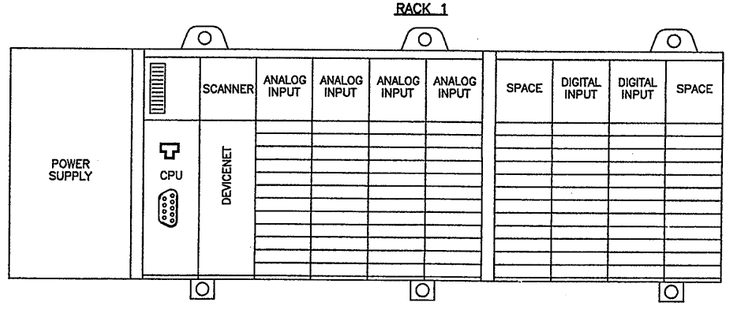


CONTROL PANEL INTERIOR VIEW

NOTES:

1. LAYOUT SHOWN IS FOR CONCEPT ONLY. CONTRACTOR SHALL PROVIDE ALL NECCESSARY APPURTENANCES REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.
2. PANEL SIZE IS APPROXIMATE ONLY. CONTRACTOR SHALL PROVIDE ENCLOSURE SIZE AS REQUIRED FOR EQUIPMENT.

BAF ELECTRIC ROOM CONTROL PANEL



PLC MODULE LAYOUT

01/12/01 OBG JEC

RECORD DRAWING

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DATE: 10/21/05 PER: L Campbell

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Designed by SAT
Drawn by JEC
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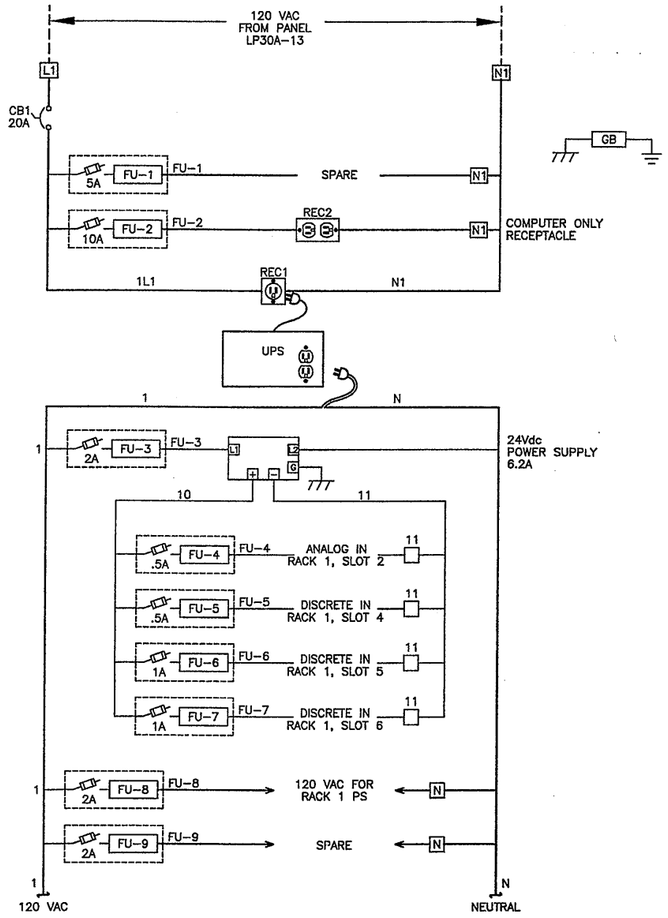
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BAF ELECTRIC ROOM (PLC M24)
CONTROL PANEL LAYOUT
INSTRUMENTATION

STATE OF NEW YORK · LEONARD J. CAMPBELL · No. 60765 · LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
L Campbell

I-634



BILL OF MATERIALS

SYMBOL	QUANTITY	MODEL NUMBER	MANUFACTURER	DESCRIPTION
1				
2	A/R	SEE SPECIFICATIONS	Allen-Bradley	Analog Input Interface Module
3	A/R	SEE SPECIFICATIONS	Allen-Bradley	Digital Input Interface Cable - 1 meter
4				
5	A/R	SEE SPECIFICATIONS	Allen-Bradley	Analog Input Interface Cable - 1 meter
6				
7	A/R	SEE SPECIFICATIONS	Allen-Bradley	High Density Terminal Block
8	A/R	SEE SPECIFICATIONS	Allen-Bradley	Fusible Switch
9				
10	A/R	SEE SPECIFICATIONS	Allen-Bradley	Digital Input Interface Module
11	A/R	SEE SPECIFICATIONS	Allen-Bradley	End Anchor
12	A/R	SEE SPECIFICATIONS	Allen-Bradley	High Density Terminal Block End Barrier
13	A/R	SEE SPECIFICATIONS	Allen-Bradley	Fusible Switch End Barrier
14	A/R	SEE SPECIFICATIONS	Allen-Bradley	High Density Jumper
15				
16	A/R	SEE SPECIFICATIONS	Allen-Bradley	10 Slot I/O Chassis
17	A/R	SEE SPECIFICATIONS	Allen-Bradley	I/O Chassis Power Supply
18	A/R	SEE SPECIFICATIONS	Allen-Bradley	CPU
19	A/R	SEE SPECIFICATIONS	Allen-Bradley	Analog Input - 8 point
20	A/R	SEE SPECIFICATIONS	Allen-Bradley	Devicenet Scanner Module
21				
22	A/R	SEE SPECIFICATIONS	RACO	Box
23	A/R	SEE SPECIFICATIONS	RACO	Cover - single 15 amp
24	A/R	SEE SPECIFICATIONS	RACO	Cover - duplex 15 amp
25	A/R	SEE SPECIFICATIONS	Hubbell	15A Duplex receptacle
26	A/R	SEE SPECIFICATIONS	Hubbell	15A Single receptacle
27	A/R	SEE SPECIFICATIONS	-	Hub
28	A/R	SEE SPECIFICATIONS	-	Fiber/Twist Media Converter
29	A/R	SEE SPECIFICATIONS	-	RS-485-Ethernet Gateway
30				
31				
32	A/R	SEE SPECIFICATIONS	Hoffman	Nema 12 Enclosure
33	A/R	SEE SPECIFICATIONS	Hoffman	Sub-Panel
34	A/R	SEE SPECIFICATIONS	Panduit	3"W x 3"D Slotted Wiring Duct
35	A/R	SEE SPECIFICATIONS	Panduit	2"W x 3"D Slotted Wiring Duct
36	A/R	SEE SPECIFICATIONS	Square D	Ground Bar
37	A/R	SEE SPECIFICATIONS	Allen-Bradley	20 amp Circuit Breaker, single pole
38	A/R	SEE SPECIFICATIONS	Best Power	Uninterruptible Power Supply
39	A/R	SEE SPECIFICATIONS	Power One	DC Power Supply 24 Vdc Output
40	A/R	SEE SPECIFICATIONS	TBD	Fuses
41	A/R	SEE SPECIFICATIONS	Allen-Bradley	Flash EEprom Memory for CPU
42				
43	A/R	SEE SPECIFICATIONS	Allen-Bradley	Blank Slot Filler Module
44	A/R	SEE SPECIFICATIONS	Allen-Bradley	Discrete Input - 8 point
45	A/R	SEE SPECIFICATIONS	Allen-Bradley	VDT
46				
47				
48				

RECORD DRAWING

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DATE: 10/24/05 PER: [signature]

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07/17/00 OBG JEC

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
1	7/11/01	AS BID	
2	10/31/05	RECORD DRAWING	

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Designed by SAT
Drawn by JEC
Checked by PLD

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

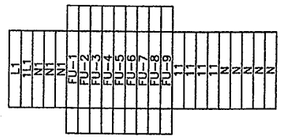
ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BAF ELECTRIC ROOM (PLC M24)
CONTROL CIRCUIT WIRING
INSTRUMENTATION

STATE OF NEW YORK • LEONARD J. CAMPOBELLO • No. 60765 • LICENSED PROFESSIONAL ENGINEER

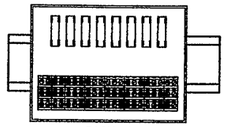
File Number 00659
Date APRIL 2001
[signature]

I-635

TB1

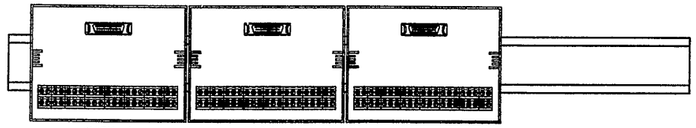


TB2 (ANALOG)



RACK: 1
SLOT: 2

TB3 (DIGITAL)

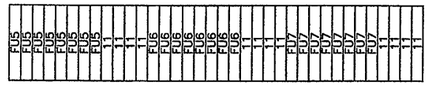


RACK: 1
SLOT: 4

RACK: 1
SLOT: 5

RACK: 1
SLOT: 6

TB4 (24Vdc DI)



Layer: ON=*; OFF=*REF*

11/27/00 OBG JEC

RECORD DRAWING

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DATE: 10/21/05 PER: LRampolet

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2	10/31/05	RECORD DRAWING	↓

In charge of PLD

Designed by SAT

Drawn by JEC

Checked by PLD

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

BAF ELECTRIC ROOM (PLC M24)
TERMINAL BLOCK LAYOUT

INSTRUMENTATION

STATE OF NEW YORK · LEONARD J. CAMPOLIETA · No. 60755 · LICENSED PROFESSIONAL ENGINEER

File Number 00659

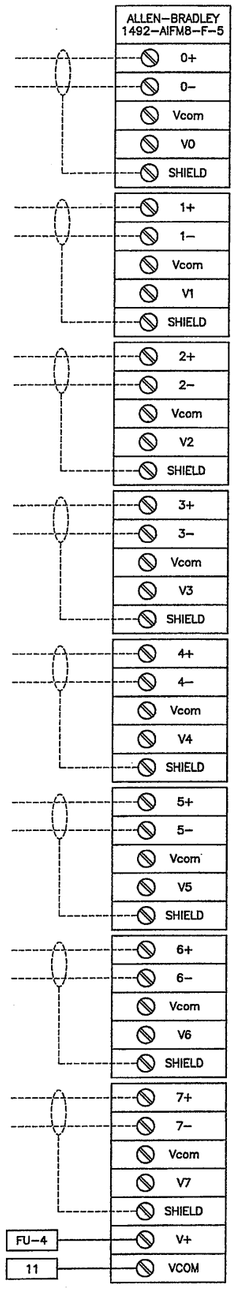
Date APRIL 2001

LRampolet

I-636

8 POINT ANALOG INPUT MODULE (AB 1746-NI8)

RACK 1
SLOT 2



SPARE

SPARE

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SPARE

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SPARE

RECORD DRAWING

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DATE 10/2/05 PER L.Campbell

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01/09/01 OBG JEC
EEA-VERT

No.	Date	Revisions	Init
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1	7/11/01	AS BID	✓
2	10/31/03	RECORD DRAWING	

In charge of PLD
Designed by SAT
Drawn by JEC
Checked by PLD

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BAF ELECTRIC ROOM (PLC M24)

ANALOG INPUT MODULES

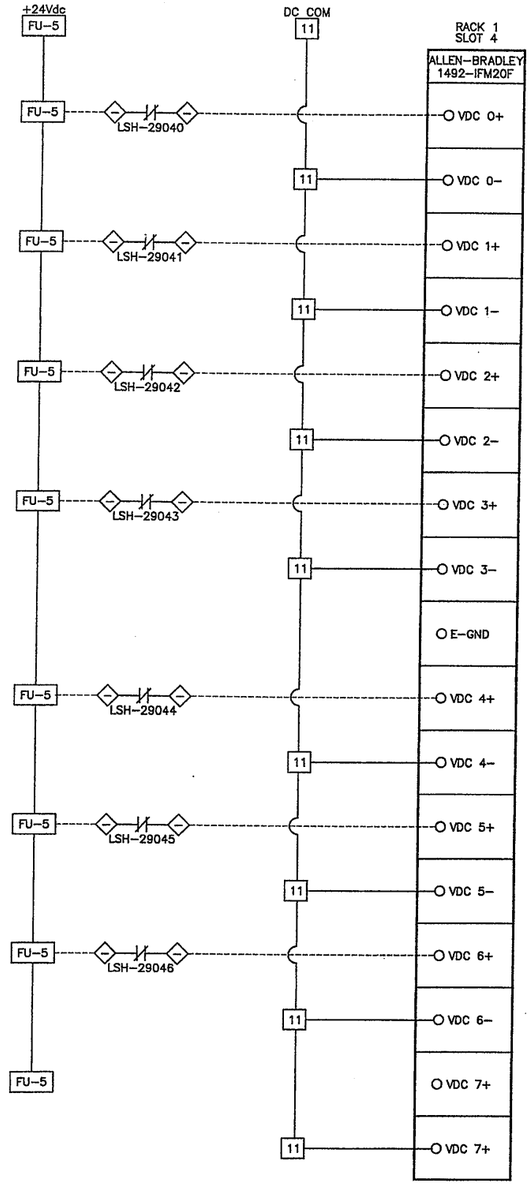
INSTRUMENTATION

STATE OF NEW YORK • LEONARD J. CAMPBELL • LICENSED PROFESSIONAL ENGINEER • No. 60755

File Number 00659
Date APRIL 2001
L.Campbell

I-637

8 POINT ISOLATED 24Vdc
(1746sc-IB8U)
DISCRETE INPUT



BAF GALLERY SUMP 1 LEVEL HIGH

BAF GALLERY SUMP 2 LEVEL HIGH

BAF GALLERY SUMP 3 LEVEL HIGH

BAF GALLERY SUMP 4 LEVEL HIGH

BAF GALLERY SUMP 5 LEVEL HIGH

BAF GALLERY SUMP 6 LEVEL HIGH

BACKWASH PUMP SUMP LEVEL HIGH

SPARE

8 POINT ISOLATED 24Vdc
(1746sc-IB8U)
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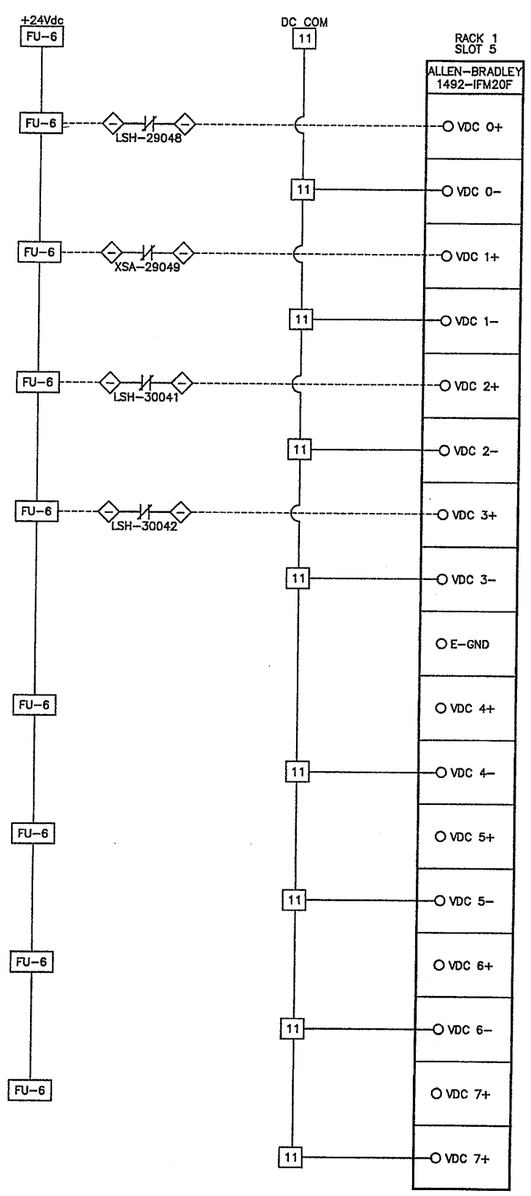

PURGE SUMP LEVEL HIGH

PURGE SUMP FAILURE

HRFS GALLERY SUMP WEST LEVEL HIGH

HRFS GALLERY SUMP EAST HIGH LEVEL

SPARE

SPARE

SPARE

SPARE

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE: 10/24/01 PER: [signature]

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No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
1	7/11/01	AS BID	
2	10/31/05	RECORD DRAWING	

In charge of PLD
Designed by SAT
Drawn by JEC
Checked by PLD

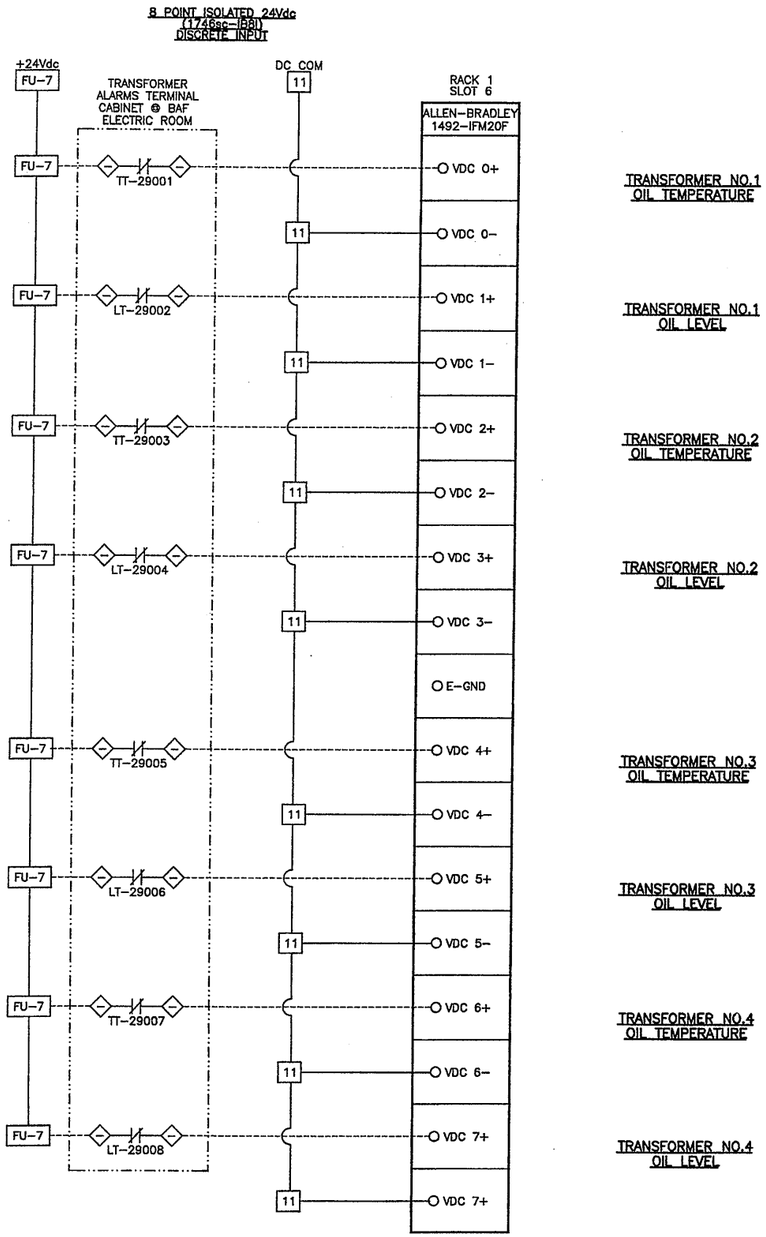
ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BAF ELECTRIC ROOM (PLC M24)
DIGITAL INPUT MODULES
INSTRUMENTATION

LICENSED PROFESSIONAL ENGINEER · STATE OF NEW YORK · LEONARD J. CAMPOLIETI · No. 60754

File Number 00659
Date APRIL 2001
[signature]

I-638



TRANSFORMER NO.1
OIL TEMPERATURE

TRANSFORMER NO.1
OIL LEVEL

TRANSFORMER NO.2
OIL TEMPERATURE

TRANSFORMER NO.2
OIL LEVEL

TRANSFORMER NO.3
OIL TEMPERATURE

TRANSFORMER NO.3
OIL LEVEL

TRANSFORMER NO.4
OIL TEMPERATURE

TRANSFORMER NO.4
OIL LEVEL

RECORD DRAWING

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DATED 10/2/05 PER LEampolini

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STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

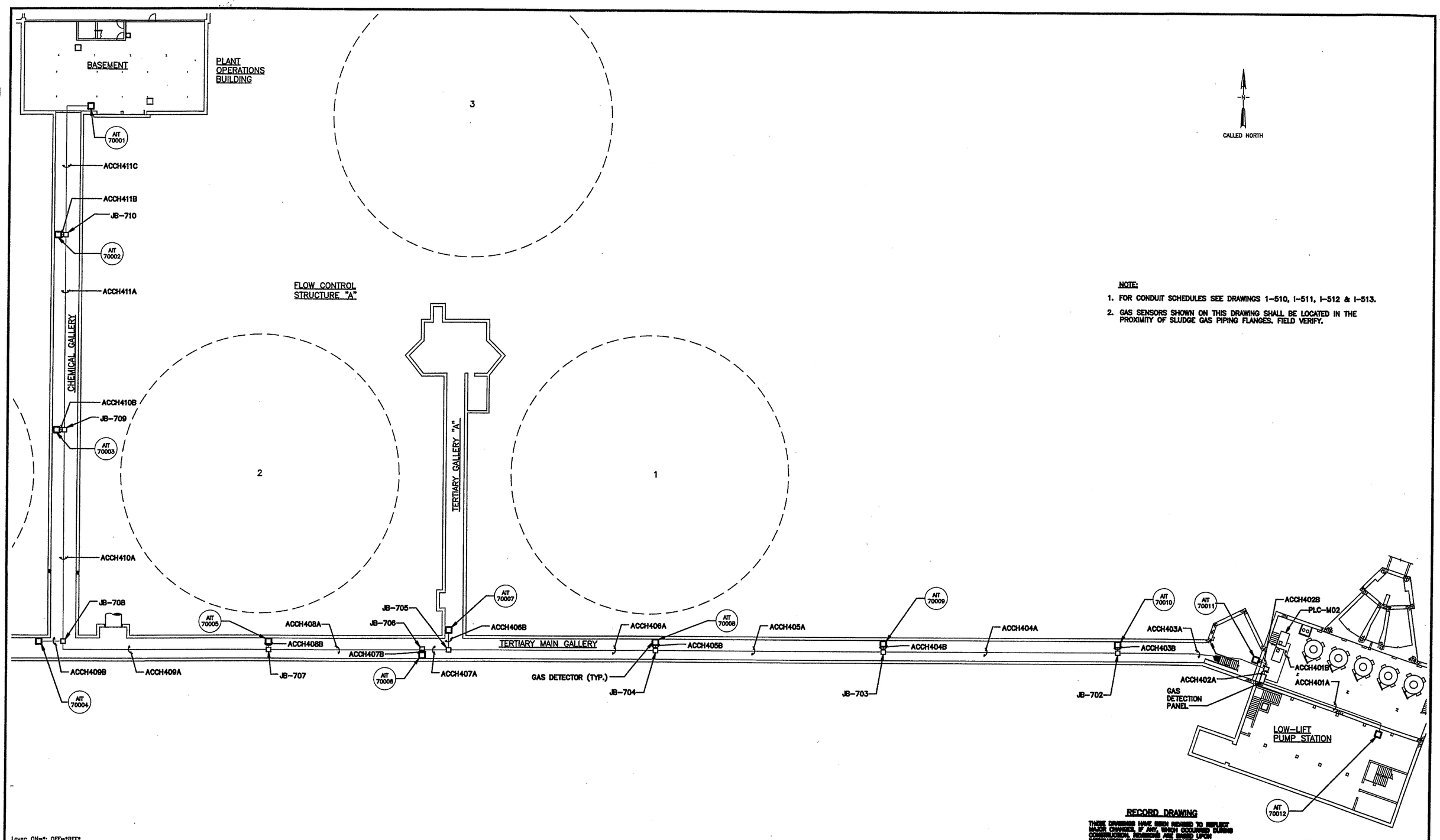
BAF ELECTRIC ROOM (PLC M24)
DIGITAL INPUT MODULES

INSTRUMENTATION

STATE OF NEW YORK • LEONARD J. CAMPOLIETA • No. 60756 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
LEampolini

I-639



NOTE:

1. FOR CONDUIT SCHEDULES SEE DRAWINGS I–510, I–511, I–512 & I–513.
2. GAS SENSORS SHOWN ON THIS DRAWING SHALL BE LOCATED IN THE PROXIMITY OF SLUDGE GAS PIPING FLANGES. FIELD VERIFY.

RECORD DRAWING

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4/11/01 BBL DCC
05503000/05503I701.dwg

20' 0 20' 40'
1"=20'

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	LE
1	7/11/01	AS BID	
2	10/31/05	RECORD DRAWING	

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Checked by TEL

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

GALLERY GAS DETECTION SYSTEM

INSTRUMENTATION

STATE OF NEW YORK · LEONARD J. CAMPOLETTA · LICENSED PROFESSIONAL ENGINEER · No. 60755

File Number 00659
Date APRIL 2001

I–701

LEGEND:

- DUPLEX RECEPTACLE
- DUPLEX WEATHER PROOF LOCKABLE RECEPTACLE
- DUPLEX GROUND FAULT INTERRUPT RECEPTACLE
- 220V. RECEPTACLE
- SINGLE POLE LIGHT SWITCH
- TWO-POLE SWITCH
- THREE-WAY SWITCH
- FOUR-WAY SWITCH
- DIMMER SWITCH
- SWITCH AND PILOT LIGHT

LIGHTING FIXTURES:

- TYPE A
- TYPE B
- TYPE C
- TYPE D
- TYPE E
- TYPE F
- TYPE G
- TYPE H
- TYPE I
- TYPE J
- TYPE K
- TYPE L1
- TYPE L2
- TYPE M
- TYPE N
- TYPE O
- TYPE P
- TYPE Q
- TYPE S
- TYPE S1
- TYPE S2
- TYPE X (SHADED QUADRANT INDICATES FACE; ARROW INDICATES DIRECTION)
- TYPE W1
- TYPE W2
- TYPE W3
- WALL MOUNTED PUBLIC ADDRESS SPEAKER
- CEILING MOUNTED PUBLIC ADDRESS SPEAKER
- TELEPHONE OUTLET (WALL MOUNTED)
- TELEPHONE OUTLET (FLOOR MOUNTED)
- DATA OUTLET (WALL MOUNTED)
- DATA OUTLET (FLOOR MOUNTED)
- JUNCTION BOX
- HOMERUN
- FLOOR RECEPTACLE
- SMOKE DETECTOR
- SMOKE DETECTOR w/AUXILIARY BASE
- DUCT SMOKE DETECTOR
- HEAT DETECTOR
- HEAT DETECTOR w/AUXILIARY CONTACT
- DISCONNECT SWITCH
- 50 VA TRANSFORMER
- MANUAL PULL STATION
- MANUAL MOTOR STARTER
- COMBINATION MOTOR STARTER
- HORN OR BELL
- STOP LOCKOUT
- AUDIO/VISUAL DEVICE
- 5KV DRAWOUT POWER CIRCUIT BREAKER
- TIME DELAY CONTACT (NORMALLY CLOSED; TIME DELAY ON DE-ENERGIZATION)
- TIME DELAY CONTACT (NORMALLY CLOSED; TIME DELAY ON ENERGIZATION)
- TIME DELAY CONTACT (NORMALLY OPEN; TIME DELAY ON ENERGIZATION)

Layer: ON=*, OFF=REF

4/23/01 BBL DCC
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- MOTOR OVERLOAD
- CONTROL RELAY CONTACT
- AUXILIARY CONTACT ON MOTOR STARTER
- NORMALLY OPEN CONTACT (N.O.)
- NORMALLY CLOSED CONTACT (N.C.)
- GROUND
- TRANSFORMER
- MOTOR OVERLOAD HEATER
- FUSE
- CIRCUIT BREAKER (CB)
- HAND-OFF-AUTO SWITCH (HOA)
- PHOTO ELECTRIC CELL (PE)
- RECEPTACLE
- MOTOR (HP=HORSEPOWER)
- CONTROL POWER TRANSFORMER
- VARIABLE FREQUENCY DRIVE
- SOLID STATE STARTER
- INDICATING LIGHT (R)ED, (Y)ELLOW, (G)REEN, (W)HITE
- ELAPSED TIME METER
- CONDUIT BEND DOWN
- CONDUIT BEND UP
- INDICATING LIGHT (PUSH TO TEST)
- LOW VOLTAGE 480V DRAWOUT POWER CIRCUIT BREAKER AT = AMPERE TRIP, AF = AMPERE FRAME
- KEY INTERLOCK, KEY REMOVABLE WHEN DEVICE IS LOCKED IN OPEN POSITION
- DISCONNECT SWITCH
- FUSED DISCONNECT SWITCH
- LOW VOLTAGE POWER CIRCUIT BREAKER WITH CURRENT LIMITER AND SOLID STATE TRIP UNIT. UPPER NO. INDICATES FRAME RATING, LOWER NO. INDICATES TRIP SENSOR RATING. L-LONG TIME, S-SHORT TIME, I-INSTANTANEOUS AND G-GROUND TRIP CHARACTERISTIC.
- POWER CIRCUIT
- CONTROL CIRCUITS
- POWER & CONTROL CIRCUITS
- LIGHTING CIRCUIT
- 4.16KV MAIN SUB POWER CIRCUIT
- 480V DISTRIBUTION FEEDERS
- FIBER OPTIC CIRCUIT
- MULTIPLE CONDUIT
- LEVEL SWITCHES
- TEMPERATURE SWITCHES
- FLOW SWITCHES
- LIMIT SWITCHES
- SWITCHES

- OCCUPANCY SENSOR
- END SWITCH
- LIMIT SWITCH
- FLOW SWITCH
- PRESSURE SWITCH
- TAMPER SWITCH
- VIDEO TRANSMITTER
- DATA TRANSMITTER
- DATA RECEIVER
- VIDEO RECEIVER
- SOLENOID VALVE
- ELECTRIC MANHOLE
- AIR TERMINAL FOR LIGHTNING PROTECTION
- CAMERA
- HEAT TRACING OR HEATER
- TOGGLE SWITCH
- EMERGENCY EYEWASH/SHOWER
- SOLENOID VALVE
- 3-WAY SWITCH
- 4-WAY SWITCH
- ANCHOR BOLT
- PULL BOX
- MOTOR STARTER COIL
- CONTROL RELAY COIL
- TEARDROP FLOAT
- MALE COAX CABLE WALL OUTLET(W/WALLPLATE)
- RESET
- PUSHBUTTON (MOMENTARY/NORMALLY OPEN)
- PUSHBUTTON (MOMENTARY/NORMALLY CLOSED)
- THREE POSITION SELECTOR SWITCH (X = CONTACT CLOSED)

LEFT POSITION
CENTER POSITION
RIGHT POSITION

ABBREVIATIONS:

@	AT
A	AMPERES
A.F.F.	ABOVE FINISHED FLOOR
AF	AMP FRAME
AHU	AIR HANDLING UNIT
AL	ALUMINUM
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ASYM.	ASYMMETRICAL
AT	AMP TRIP
AWG	AMERICAN WIRE GAUGE
BAF	BIOLOGICAL AERATED FILTER
BKR	BREAKER
BLDG.	BUILDING
C.	CONDUIT
CAV	CONSTANT AIR VOLUME
CB	CIRCUIT BREAKER
CCTV	CLOSED-CIRCUIT TELEVISION
CKT	CIRCUIT
CORP.	CORPORATE
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY
CRGS	COATED RIGID GALVANIZED STEEL
CT	CONTROL TRANSFORMER
CU	COPPER
D	DEEP
DC	DIRECT CURRENT
DDC	DIRECT DIGITAL CONTROL
DEC	NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIA.	DIAMETER
DISC. SW.	DISCONNECT SWITCH
DM	DAMPER MOTOR
DO	DISSOLVED OXYGEN
EFF.	EFFLUENT
EL.	ELEVATION
ELEV	ELEVATOR
ELR	END OF LINE RESISTOR
ELU	EMERGENCY LIGHT UNIT
EMH	ELECTRICAL MANHOLE
EMR	EMERGENCY MANUAL RELEASE
EMT	ELECTRICAL MECHANICAL TUBING
ES	EMERGENCY STOP
ETM	ELAPSED TIME METER
EUH	ELECTRIC UNIT HEATER
EXIST.	EXISTING
ø	DIAMETER OR PHASE
F.F.	FINISHED FLOOR
F.M.	FORCE MAIN
FL., FLUOR	FLUORESCENT
FO	FIBER OPTIC
FRP	FIBERGLASS REINFORCED PLASTIC
FU	FUSE
G, GRD	GROUND
GAL.	GALLON
GALV.	GALVANIZED
GFI, GFCI	GROUND FAULT INTERRUPTER
H	HIGH
HOA	HAND-OFF-AUTO
HORIZ.	HORIZONTAL
HP	HORSEPOWER
HRFS	HIGH-RATE FLOCCULATED SETTLING
HSC	HYDRAULIC SYSTEM CENTER
HT	HIGH TEMPERATURE
HVAC	HEATING, VENTILATION, AND AIR CONDITIONING
HZ	HERTZ
I/E	INSTRUMENT AND ELECTRICAL
I/O	INPUT/OUTPUT
INST	INSTRUMENT
INV.	INVERT
JAN.	JANITOR
JB	JUNCTION BOX
K	THOUSAND
KA	KILOAMPERE
KCMIL, kcmil	THOUSAND CIRCULAR MILLIMETERS
KV	KILOVOLTS
KVA	KILOVOLT AMPERES
KW	KILOWATTS
LAN	LOCAL AREA NETWORK
LBS.	POUNDS
LOL	LOW OIL LEVEL
LP	LIGHTING PANELBOARD
LTC	LOAD TAP CHANGER
LV	LOUVER
M	MOTOR
mA	MILLIAMPERES
MAINT.	MAINTENANCE
MB	MAIN BREAKER
MCC	MOTOR CONTROL CENTER
MF	MAIN FEEDER
MFR.	MANUFACTURER
MH	METAL HALIDE, MANHOLE
MIN.	MINIMUM
MISC.	MISCELLANEOUS
MRM	MODULE REMOVAL MECHANISM
MS	MOTOR STARTER
MTD	MOUNTED
Mx	MOTOR STARTER AUXILIARY CONTACT
N	NEUTRAL
N.O.	NORMALLY OPEN
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
NL	NIGHT LIGHT
NMPC	NIAGARA MOHAWK POWER COMPANY
NO., #	NUMBER
NTS	NOT TO SCALE
O.C.	ON CENTER
OA/FA	OUTSIDE AIR/FORCED AIR
°C	DEGREES CELSIUS
OIS	OPERATOR INTERFACE STATION
OLS	OVERLOADS
OPS BLDG	OPERATIONS BUILDING
OSHA	OCCUPATIONAL SAFETY AND HEALTH AGENCY
P	POLE, PHASE
PA	PUBLIC ADDRESS
PB	PULL BOX
PE	PHOTOELECTRIC CELL
PH	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PLW	PLANT WATER
POB	PLANT OPERATIONS BUILDING
POT.	POTABLE
PP	POWER PANELBOARD
PS, P.S.	PUMP STATION
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
PW	PROCESS WATER
QR	QUARTZ RESTRIKE
R	RADIUS
R.O.W.	RIGHT OF WAY
RECPT	RECEPTACLE
RGS, RSC	RIGID GALVANIZED STEEL
S.S.S.	SOLID-STATE STARTER
SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
SCC	SYSTEM CONTROL CENTER
SEC. EFF.	SECONDARY EFFLUENT
SL	STOP/LOCKOUT SWITCH
SLC	SIGNALING LINE CIRCUIT
SOL	SOLENOID
SS	STAINLESS STEEL
SWGR	SWITCHGEAR
SYS.	SYSTEM
TERT. P.S.	TERTIARY PUMP STATION
TPS	TWISTED PAIR SHIELDED
TR	TIMING RELAY
TRANS., TRANSF.	TRANSFORMER
T-STAT	THERMOSTAT
TS	TAMPER SWITCH
TYP.	TYPICAL
UC	UNDERGROUND CONDUIT
UGE	UNDERGROUND ELECTRIC
UH	UNIT HEATER
UPS	UNINTERRUPTABLE POWER SUPPLY
UV	ULTRAVIOLET, UNIT VENTILATOR
UVT	ULTRAVIOLET TRANSMITTANCE
V	VOLTS
VAC	VOLTS ALTERNATING CURRENT
VAV	VARIABLE AIR VOLUME
VDC	VOLTS DIRECT CURRENT
VFD	VARIABLE FREQUENCY DRIVE
VT	VOLTAGE TRANSFORMER
W	WIDE, WATTS, OR WIRE
w/	WITH
WL	WALL LIGHT
WP	WEATHER-PROOF
XFER SW.	TRANSFER SWITCH
2S2W	TWO SPEED, TWO WINDING
3/C	THREE CONTUCTOR CABLE

SECTION OR DETAIL SYMBOLS

SECTION MARKER

THIS IS SHOWN WHERE A SECTION IS TAKEN. THE NUMBER IN THE UPPER HALF OF THE CIRCLE IS THE SECTION OR DETAIL NUMBER. THE LETTER AND NUMBER IN THE BOTTOM HALF OF THE CIRCLE INDICATES THE DRAWING WHERE THE SECTION OR DETAIL IS LOCATED.

DRAWING WHERE SECTION OR DETAIL IS SHOWN

THIS IS SHOWN UNDER EACH SECTION OR DETAIL. THE NUMBER IN THE UPPER HALF OF THE CIRCLE IS THE SECTION OR DETAIL NUMBER. THE LETTER AND NUMBER IN THE BOTTOM HALF OF THE CIRCLE INDICATES THE DRAWING WHERE THE SECTION OR DETAIL WAS TAKEN.

MATCH LINE A-A SEE DRAWING M-1

NOTES:

** : INDICATES AN ITEM OR ITEMS SUPPLIED BY OWNER FOR INSTALLATION BY THE CONTRACTOR.

RECORD DRAWING

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DATE: 10/21/05 PER: [signature]

NOT TO SCALE

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	LJC
1		AS BID	
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Designed by TEL, AHL
Drawn by DCC
Checked by WFH

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

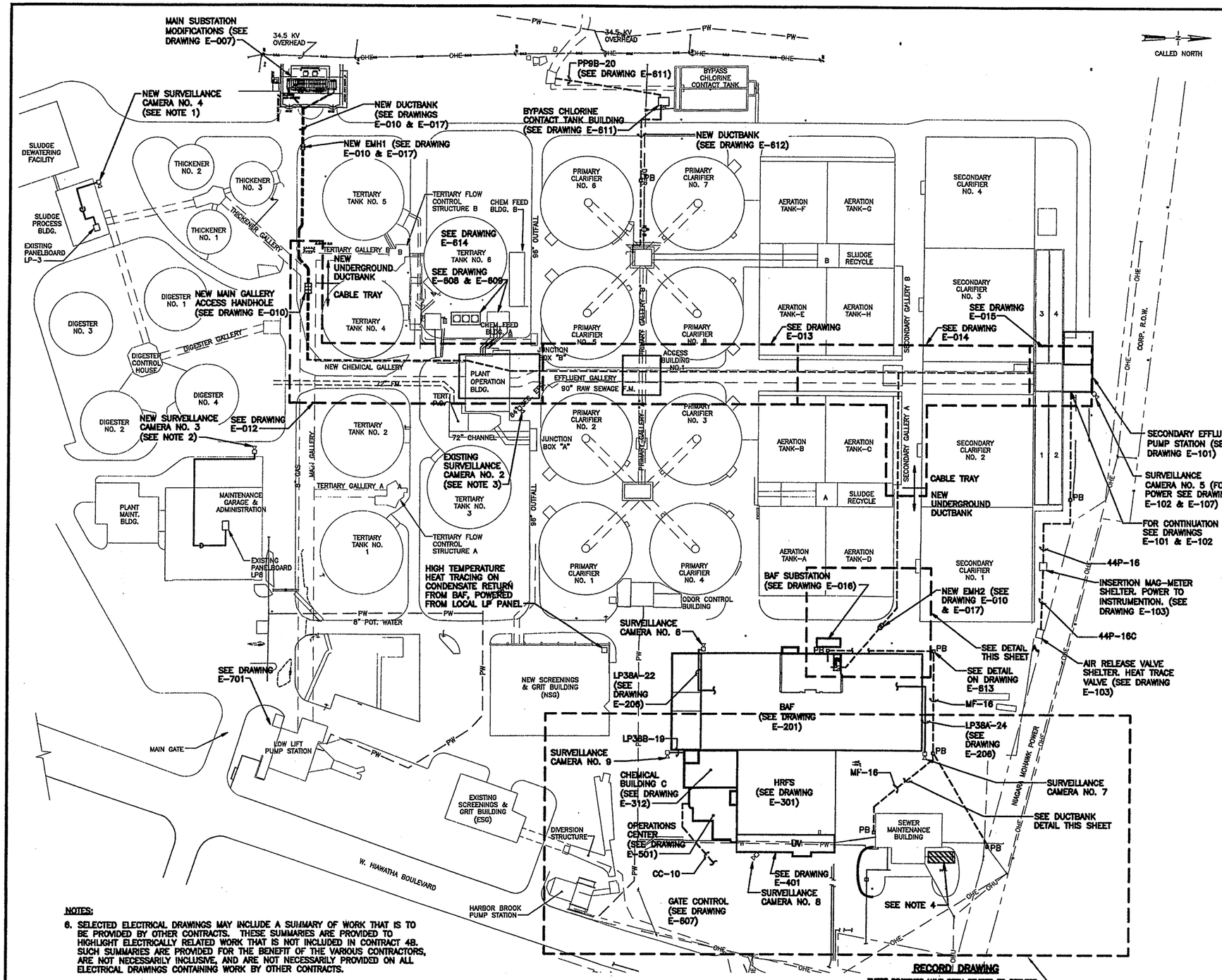
ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

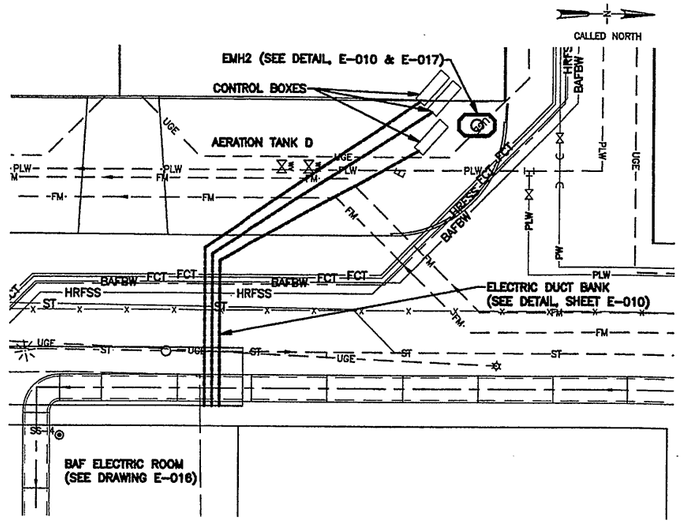
GENERAL NOTES, LEGEND & ABBREVIATIONS
ELECTRICAL

LEONARD J. CAMPOLIETA — STATE OF NEW YORK — LICENSED PROFESSIONAL ENGINEER — No. 60765

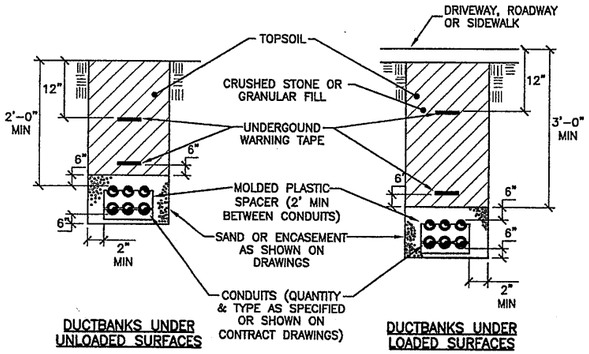
File Number 00659
Date APRIL 2001
[signature]

E-001





DETAIL A
SCALE: 1"=20'-0"



DUCTBANK DETAIL
NOT TO SCALE

NOTES:

1. SURVEILLANCE CAMERA NO. 4, AT SLUDGE PROCESS BUILDING ROOF, TO BE POWERED FROM EXISTING PANELBOARD LP-3 IN ELECTRIC ROOM. CONTRACTOR SHALL FIELD VERIFY CONDUIT ROUTE THROUGH BUILDING. COORDINATE WITH OWNER. 2 #12, 1 #12G, 3/4" CRGS.
2. SURVEILLANCE CAMERA NO. 3, AT ADMINISTRATION BUILDING WEST ROOF, TO BE POWERED FROM EXISTING PANLEBOARD LP8 IN MCC ELECTRIC ROOM ON THIRD FLOOR. CONDUIT SHALL BE ROUTED UP STAIRCASE AND AROUND PARAPIT WALL. PROVIDE AND INSTALL A 20A, 1P CIRCUIT BREAKER IN PANEL. 2 #12, 1 #12G, 3/4" CRGS.
3. SURVEILLANCE CAMERA NO. 2 NEW FIBEROPTIC TRANSMITTER, AT P.O.B. ROOF, SHALL BE POWERED FROM EXISTING SOURCE. CONTRACTOR TO TAP JUNCTION BOX ON ROOF.
4. CONTRACT-4B, ELECTRICAL, TO REMOVE TEMPORARY ELECTRIC SERVICE TO SEWER MAINTENANCE BUILDING AFTER MF-16 IS ENERGIZED.
5. SEE SPECIFICATION 16111 AND E-017 FOR SPECIAL REQUIRMENTS FOR CONDUITS LOCATED UNDERGROUND OR BENEATH STRUCTURES.
6. SELECTED ELECTRICAL DRAWINGS MAY INCLUDE A SUMMARY OF WORK THAT IS TO BE PROVIDED BY OTHER CONTRACTS. THESE SUMMARIES ARE PROVIDED TO HIGHLIGHT ELECTRICALLY RELATED WORK THAT IS NOT INCLUDED IN CONTRACT 4B. SUCH SUMMARIES ARE PROVIDED FOR THE BENEFIT OF THE VARIOUS CONTRACTORS, ARE NOT NECESSARILY INCLUSIVE, AND ARE NOT NECESSARILY PROVIDED ON ALL ELECTRICAL DRAWINGS CONTAINING WORK BY OTHER CONTRACTS.

NOTES:

6. SELECTED ELECTRICAL DRAWINGS MAY INCLUDE A SUMMARY OF WORK THAT IS TO BE PROVIDED BY OTHER CONTRACTS. THESE SUMMARIES ARE PROVIDED TO HIGHLIGHT ELECTRICALLY RELATED WORK THAT IS NOT INCLUDED IN CONTRACT 4B. SUCH SUMMARIES ARE PROVIDED FOR THE BENEFIT OF THE VARIOUS CONTRACTORS, ARE NOT NECESSARILY INCLUSIVE, AND ARE NOT NECESSARILY PROVIDED ON ALL ELECTRICAL DRAWINGS CONTAINING WORK BY OTHER CONTRACTS.

SITE PLAN
SCALE: 1"=80'-0"

RECORD DRAWING

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Layer: ON=*, OFF=*REF*
X: 0659X046, FOOTPRINT1.DWG
4/10/00 BBL DCC
05503000/0659E002.DWG

80' 0 80' 160'
1"=80'

NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

No.	Date	Revisions	Init
0	3/30/01	ISSUED FOR APPROVAL	
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SYRACUSE, NEW YORK

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

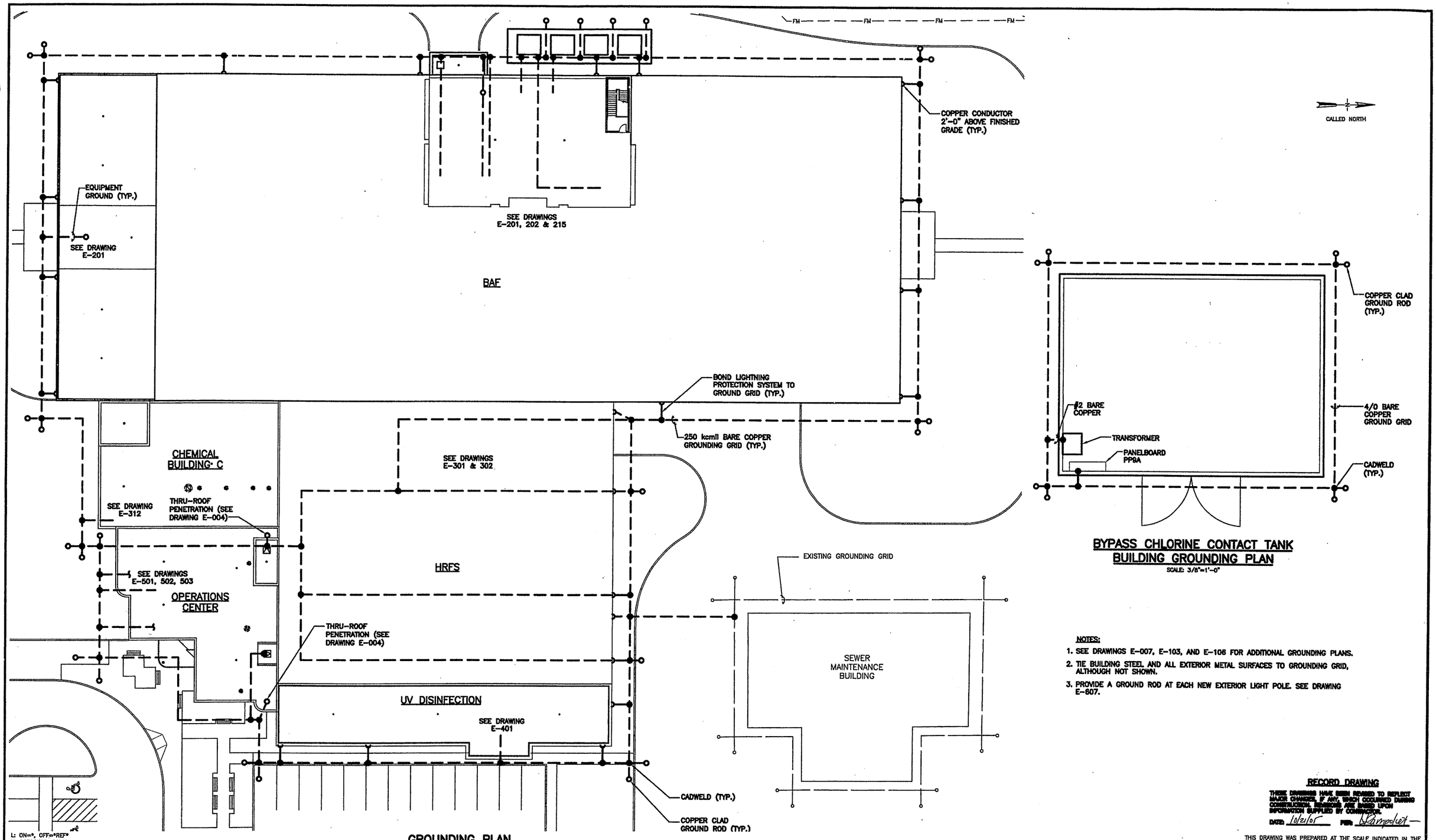
ELECTRICAL SITE PLAN

ELECTRICAL

LEONARD J. CAMPOLIETI — STATE OF NEW YORK — No. 60754 — LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
[signature]

E-002



L: ON=*, OFF=*REF*
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5/30/01 BBL DCC
05503000/0659E003.DWG

GROUNDING PLAN
SCALE: 1"=20'-0"

BYPASS CHLORINE CONTACT TANK BUILDING GROUNDING PLAN
SCALE: 3/8"=1'-0"

NOTES:

1. SEE DRAWINGS E-007, E-103, AND E-106 FOR ADDITIONAL GROUNDING PLANS.
2. TIE BUILDING STEEL AND ALL EXTERIOR METAL SURFACES TO GROUNDING GRID, ALTHOUGH NOT SHOWN.
3. PROVIDE A GROUND ROD AT EACH NEW EXTERIOR LIGHT POLE. SEE DRAWING E-807.

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.

DATE: 10/2/05 PER: [signature]

1"=20' 20' 0 20' 40'
3/8"=1'-0" 2' 0 3' 6'

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	[initials]
1		AS BID	
2	10/31/05	RECORD DRAWING	[initials]

In charge of TEL
Designed by MEE
Drawn by DCC
Checked by WFH

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

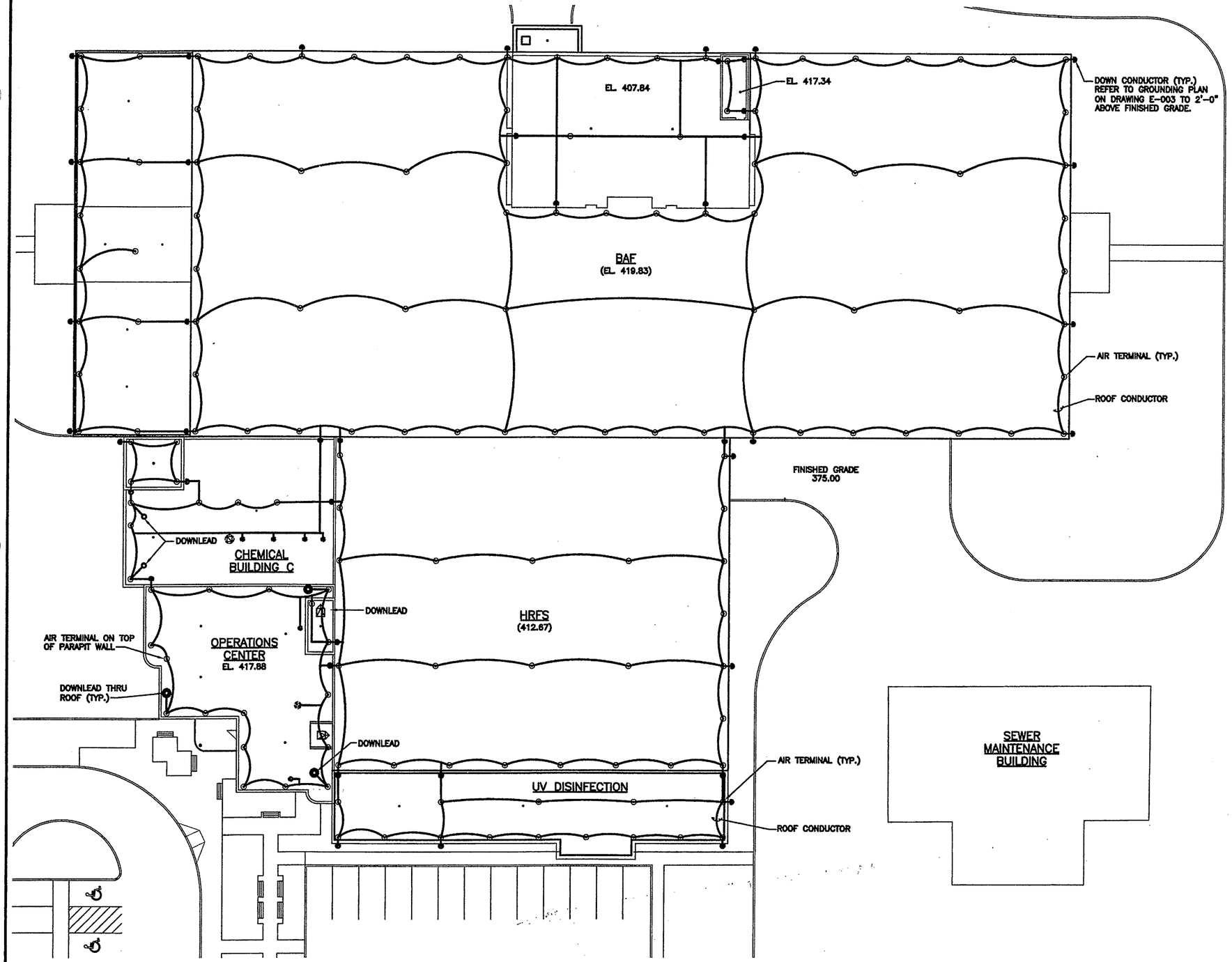
GROUNDING PLAN

ELECTRICAL

LICENSED PROFESSIONAL ENGINEER • STATE OF NEW YORK • LEONARD J. CAMPOLIETI • No. 60751

File Number 00659
Date APRIL 2001

E-003

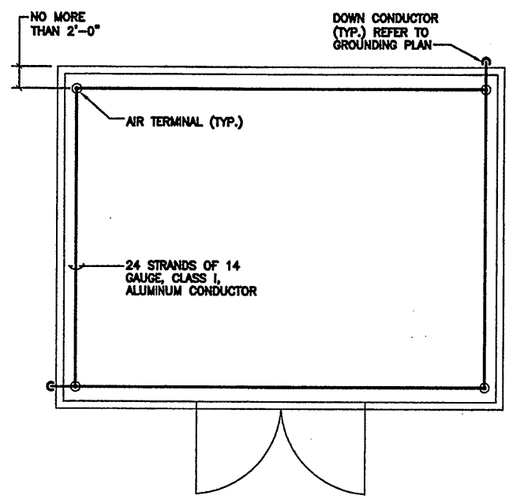


LIGHTNING PROTECTION PLAN

SCALE: 1"=20'-0"

L: ON=*, OFF=*REF*
X: 0659GX02, 0659X048.DWG
5/30/01 BBL DCC
05503000/0659E004.DWG

CALLED NORTH



BYPASS CHLORINE CONTACT TANK BUILDING LIGHTNING PROTECTION PLAN

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

NOTES:

1. SEE DRAWING E-103 FOR ADDITIONAL LIGHTNING PROTECTION.
2. BOND NEW FANS ON P.O.B. ROOF TO EXISTING LIGHTNING PROTECTION SYSTEM, SEE DRAWING E-701.
3. GROUNDING SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
4. LIGHTING PROTECTION SYSTEM SHALL BE IN CONFORMANCE WITH THE FOLLOWING CODES AND STANDARDS. WHERE CONFLICTS OCCUR, THE MOST STRINGENT REQUIREMENTS SHALL APPLY:
   - –NFPA 780 LIGHTNING PROTECTION CODE.
   - –UL96A INSTALLATION REQUIREMENTS FOR LIGHTNING PROTECTION SYSTEMS.
   - –LP1–175 LIGHTNING PROTECTION INSTITUTE
5. COMPLETED LIGHTNING PROTECTION SYSTEM SHALL BEAR THE MASTER LABEL OF UNDERWRITERS LABORATORY INCORPORATED.
6. COORDINATE INSTALLATION OF GROUNDING SYSTEM WITH ALL UNDERGROUND UTILITIES, PIPING AND STRUCTURES.
7. ALL GROUND CONDUCTORS PASSING THROUGH FLOOR SLABS OR OTHER CONCRETE SHALL BE SLEEVED IN RIGID STEEL OR PVC CONDUIT. WHERE RIGID STEEL CONDUIT IS USED, CONDUCTORS SHALL BE BONDED TO SLEEVE AT EACH END.
8. ALL GROUND CONNECTIONS SUBJECT TO PHYSICAL DAMAGE SHALL BE PROTECTED BY RIGID STEEL CONDUIT BONDED TO GROUND CONDUCTOR ON EACH END.
9. CONTRACTOR SHALL BOND ALL HANDRAILS AND EXPOSED METAL FRAMEWORK IN A CONCEALED MANNER AND PROVIDE JUMPERS WHERE REQUIRED TO PROVIDE A CONTINUOUS GROUNDED SYSTEM.
10. ALL ROOF MOUNTED EQUIPMENT, HATCHES, VENT, ETC. SHALL BE CONNECTED TO LIGHTNING PROTECTION SYSTEM CONDUCTOR.
11. BOND RADIO ANTENNA (FURNISHED & INSTALLED BY OWNER) TO LIGHTNING PROTECTION SYSTEM. SEE DRAWING E-503 FOR ANTENNA LOCATION.

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE 10/21/05 PER L.W. Campbell

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20' 0 20' 40'
1"=20'
2' 0 3' 6'
3/8"=1'-0"

NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	WFH
1		AS BID	
2	10/31/05	RECORD DRAWING	

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ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

LIGHTNING PROTECTION PLAN

ELECTRICAL

STATE OF NEW YORK • LEONARD J. CAMPBELL • No. 60766 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001

E-004

SYMBOLS

- BUSHING CURRENT TRANSFORMER
- CURRENT TRANSFORMER
- MOTOR OPERATED SWITCH
- DISCONNECT SWITCH

LEGEND

50	INSTANTANEOUS OVERCURRENT RELAY
51	AC TIME OVERCURRENT RELAY
52	POWER CIRCUIT BREAKER
67	AC DIRECTIONAL OVERCURRENT RELAY
86	LOCKOUT RELAY
87	DIFFERENTIAL PROTECTIVE RELAY
89	LINE SWITCH
A	AMMETER
AS	AMMETER SWITCH
BT	BUS TIE
G	GROUND
K	KEY INTERLOCK
LTC	LOAD TAP CHANGER
M	METER, MULTIPURPOSE INCLUDING AMPS, VOLTS WATTS, VARS, POWER FACTORS, WATTHOURS, PEAK AMPS AND PEAK WATTS
N	NEUTRAL
O	OPERATE COIL
PD	POWER DISTRIBUTION FEEDER
PF	POWER FACTOR METER
POL	POLARIZING COIL
R	RELAY, MULTIPURPOSE, WITH FUNCTIONS 50, 51, 50N AND 51N
T1	TRANSFORMER #1
T2	TRANSFORMER #2
V	VOLTS
VS	VOLT METER SWITCH
VAR	VARMETER

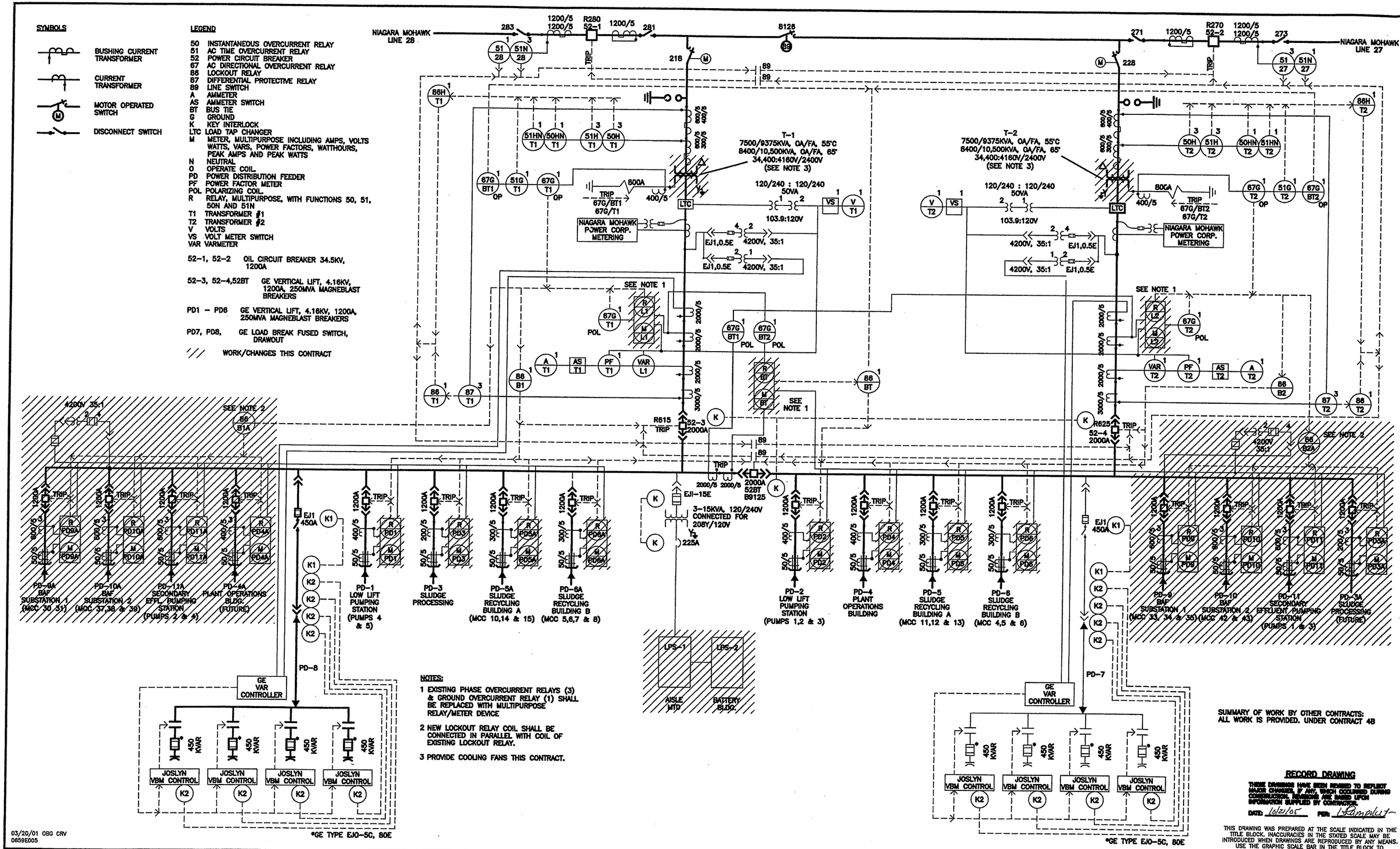
52-1, 52-2 OIL CIRCUIT BREAKER 34.5KV, 1200A

52-3, 52-4,52BT GE VERTICAL LIFT, 4.16KV, 1200A, 250MVA MAGNEBLAST BREAKERS

PD1 – PD8 GE VERTICAL LIFT, 4.16KV, 1200A, 250MVA MAGNEBLAST BREAKERS

PD7, PD8, GE LOAD BREAK FUSED SWITCH, DRAWOUT

/// WORK/CHANGES THIS CONTRACT



NOTES:

1 EXISTING PHASE OVERCURRENT RELAYS (3) & GROUND OVERCURRENT RELAY (1) SHALL BE REPLACED WITH MULTIPURPOSE RELAY/METER DEVICE

2 NEW LOCKOUT RELAY COIL SHALL BE CONNECTED IN PARALLEL WITH COIL OF EXISTING LOCKOUT RELAY.

3 PROVIDE COOLING FANS THIS CONTRACT.

*GE TYPE EJO-5C, 80E

*GE TYPE EJO-5C, 80E

SUMMARY OF WORK BY OTHER CONTRACTS:
ALL WORK IS PROVIDED. UNDER CONTRACT 4B

RECORD DRAWING

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DATED: 10/21/05 PER: [signature]

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03/20/01 OBG CRV
0659E005

NO SCALE

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No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	LG
1		AS BID	↓
2	10/31/05	RECORD DRAWING	

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

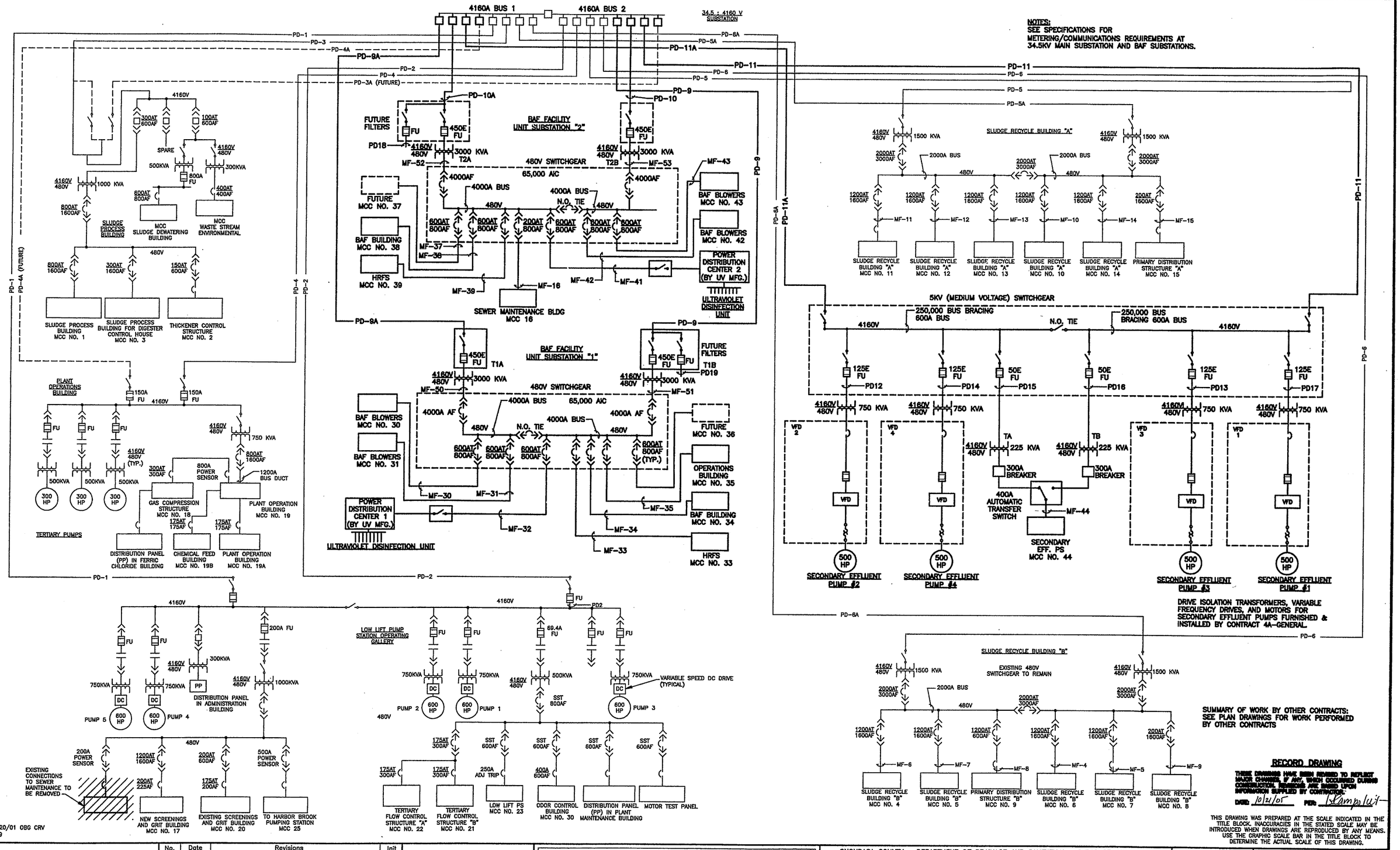
ONE-LINE MAIN SUBSTATION

ELECTRICAL

LEONARD J. CARPORETA — STATE OF NEW YORK — LICENSED PROFESSIONAL ENGINEER — No. 60765

File Number 00659E005
Date APRIL 2001

E-005



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No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	LC
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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

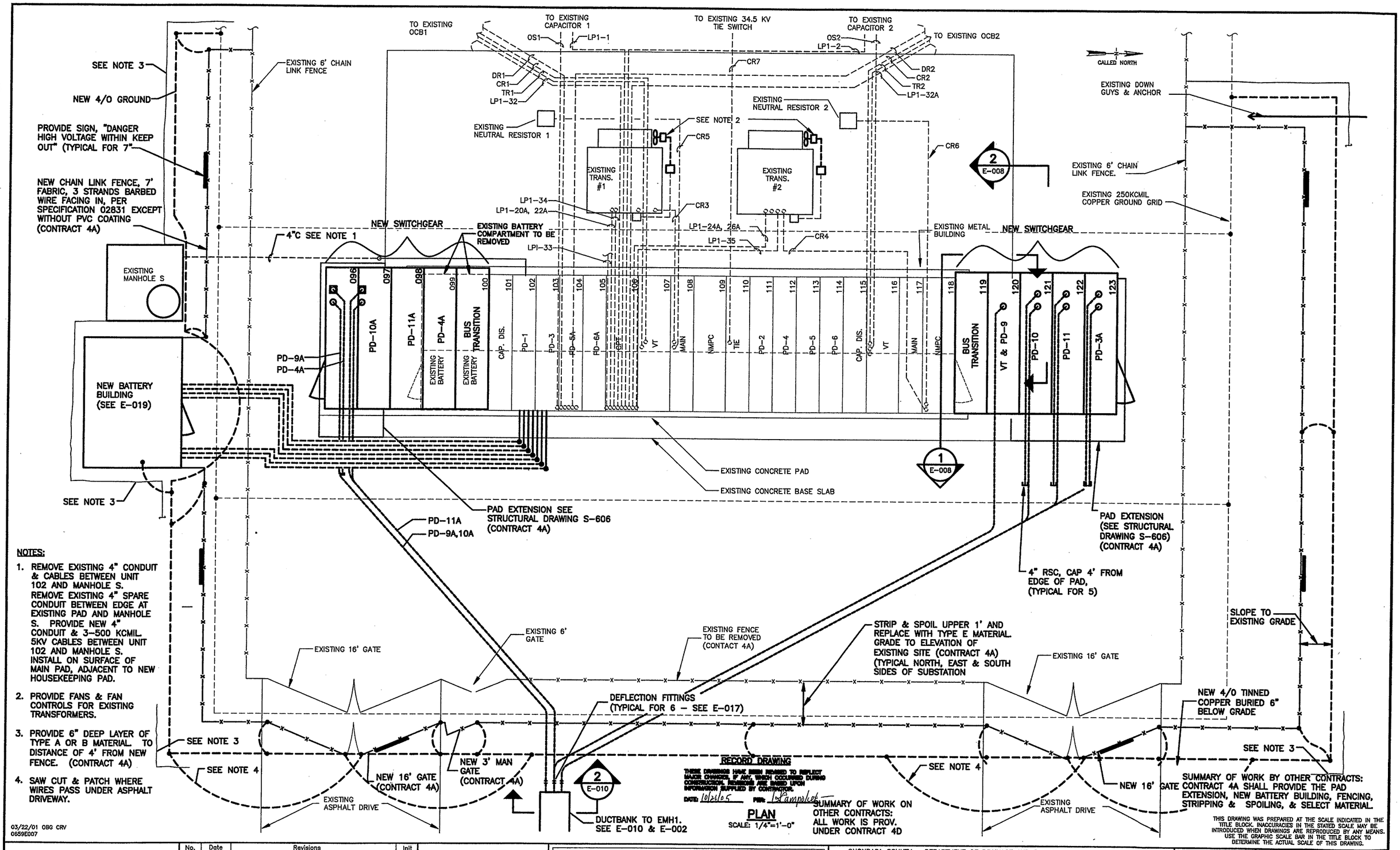
ONE-LINE 5KV DISTRIBUTION SYSTEM

ELECTRICAL

LEONARD J. CAMPOSETA LICENSED PROFESSIONAL ENGINEER No. 60755

File Number 00659E006
Date APRIL 2001

E-006



NOTES:

1. REMOVE EXISTING 4" CONDUIT & CABLES BETWEEN UNIT 102 AND MANHOLE S. REMOVE EXISTING 4" SPARE CONDUIT BETWEEN EDGE AT EXISTING PAD AND MANHOLE S. PROVIDE NEW 4" CONDUIT & 3-500 KCMIL. 5KV CABLES BETWEEN UNIT 102 AND MANHOLE S. INSTALL ON SURFACE OF MAIN PAD, ADJACENT TO NEW HOUSEKEEPING PAD.
2. PROVIDE FANS & FAN CONTROLS FOR EXISTING TRANSFORMERS.
3. PROVIDE 6" DEEP LAYER OF TYPE A OR B MATERIAL TO DISTANCE OF 4' FROM NEW FENCE. (CONTRACT 4A)
4. SAW CUT & PATCH WHERE WIRES PASS UNDER ASPHALT DRIVEWAY.

RECORD DRAWING

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DATE: 10/21/05 PER: L.A. Campitelli

PLAN

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

03/22/01 OBG CRV
0659E007

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

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	LJC
1		AS BID	
2	10/31/05	RECORD DRAWING	

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

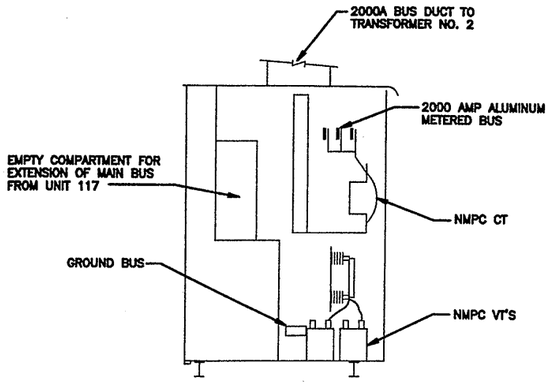
MAIN SUBSTATION PLAN

ELECTRICAL

STATE OF NEW YORK • LEONARD J. CAMPITELLI • No. 60759 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
L.A. Campitelli

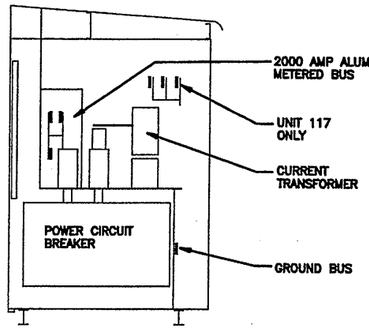
E-007



SECTION VIEW

NMPC METERING – UNIT 118

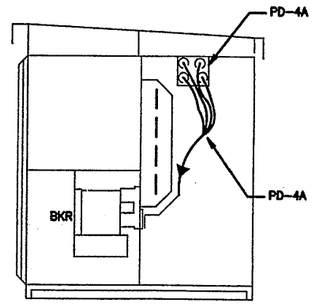
NOT TO SCALE



SECTION VIEW

EXISTING UNITS 101, 117

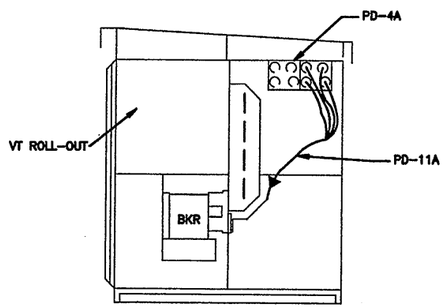
NOT TO SCALE



SECTION VIEW

NEW UNIT 099

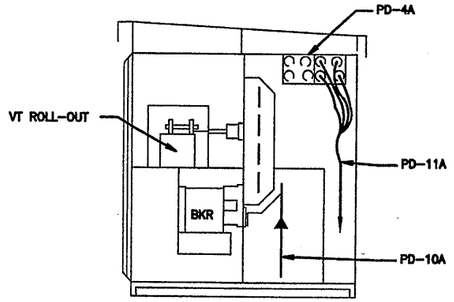
NOT TO SCALE



SECTION VIEW

NEW UNIT 098

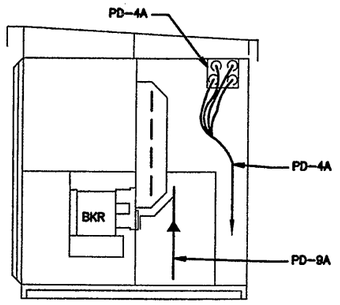
NOT TO SCALE



SECTION VIEW

UNIT 097

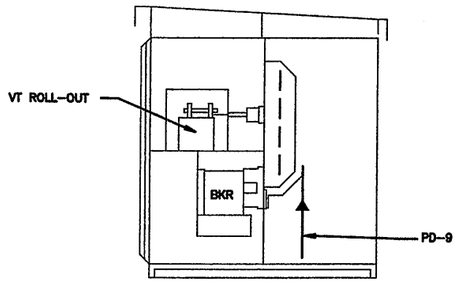
NOT TO SCALE



SECTION VIEW

UNIT 096

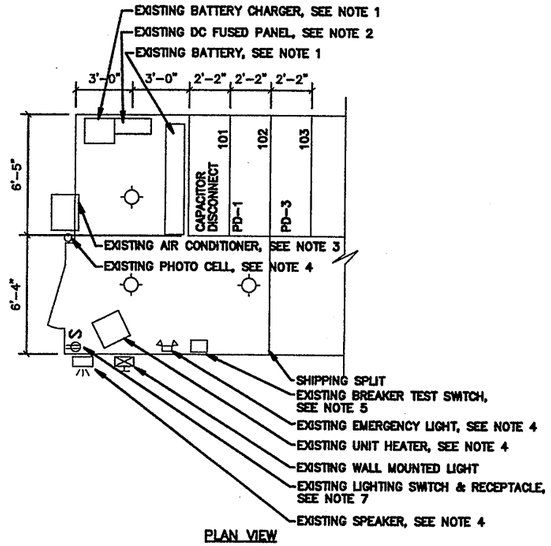
NOT TO SCALE



SECTION VIEW

UNIT 120

NOT TO SCALE



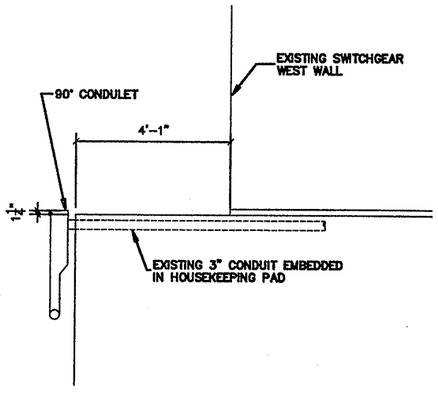
PLAN VIEW

EXISTING SWITCHGEAR BATTERY COMPT

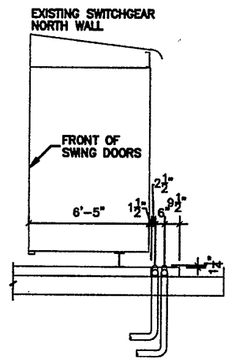
SCALE: 1/4" = 1'-0"

NOTES:

1. EXISTING EQUIPMENT SHALL BE REMOVED AND REINSTALLED IN NEW BATTERY BUILDING.
2. EXISTING DC PANEL AND FUSE BLOCKS SHALL BE REMOVED AND DISPOSED OF.
3. EXISTING AIR CONDITIONER SHALL BE REMOVED AND DELIVERED TO OWNER.
4. EXISTING EQUIPMENT SHALL BE REMOVED AND REINSTALLED IN NEW SHELTERED AISLE, AT APPROXIMATELY THE SAME LOCATION.
5. RECONNECT BREAKER TEST SWITCH 125VDC SUPPLY TO FUSED TAP IN NEW SWITCHGEAR.
6. EXISTING BATTERY COMPARTMENT, INCLUDING END PANELS, FLOOR, ROOF AND OTHER STRUCTURAL COMPONENTS SHALL BE REMOVED AND DISPOSED OF.
7. PROVIDE NEW TWO WAY SWITCHES & DUPLEX RECEPTACLES IN END PANELS OF NEW SWITCHGEAR. CONNECT NEW & EXISTING SWITCHGEAR LIGHTS TO NEW SWITCH, AND EXISTING BREAKER LPS1-33. CONNECT RECEPTACLES TO BREAKER LPS1-4.



SECTION 1 (1/2" = 1'-0") E-007



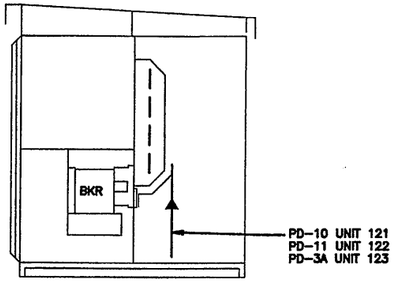
SECTION VIEW

SWITCH GEAR NORTH WALL

SECTION 2 (1/4" = 1'-0") E-007

NOTES:

1. REAR BASE CHANNEL OF NEW SWITCHGEAR SHALL BE LOCATED 6'-5" OR LESS FROM FRONT OF SWING DOORS. NEW SWITCHGEAR MAY OVERHANG CONDULET BUT SHALL NOT OTHERWISE PREVENT ACCESS TO CONDULET.



SECTION VIEW

UNITS 121, 122 & 123

NOT TO SCALE

02/20/01 OBG CRV
0659

SUMMARY OF WORK BY OTHER CONTRACTS:
ALL WORK IS PROVIDED UNDER CONTRACT 4B

RECORD DRAWING

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DATED 10/21/05 PER: L. Campbell

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1/4"=1'-0" 4' 0 4' 8'
1/2"=1'-0" 2' 0 2' 4'

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	LC
1		AS BID	
2	10/31/05	RECORD DRAWING	L

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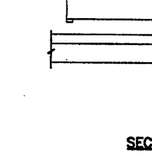
Designed by RAC
Drawn by CRV
Checked by WFH

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

MAIN SUBSTATION SWITCHGEAR DETAILS

ELECTRICAL

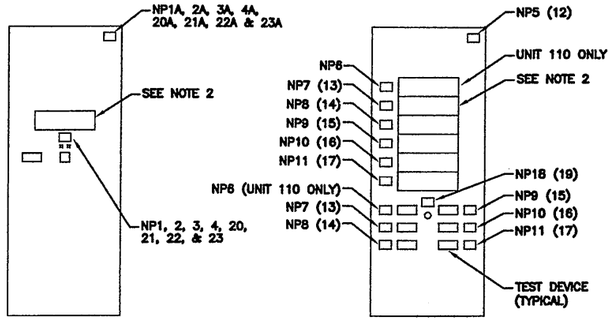


File Number 00659E008
Date APRIL 2001
L. Campbell

E-008

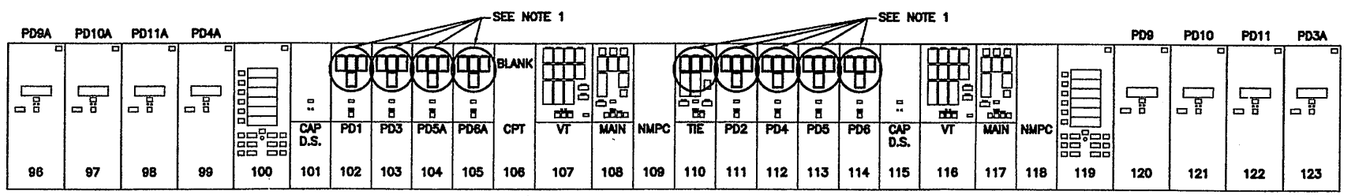
NAMEPLATE SCHEDULE

1 FEEDER PD9A/BAF SUBSTATION 1/MCC 30 & 31
1A UNIT 98
2 FEEDER PD10A/BAF SUBSTATION 2/MCC 37, 38, & 39
2A UNIT 97
3 FEEDER PD11A/SECONDARY EFFLUENT P.S./PUMPS 2 & 4
3A UNIT 98
4 FEEDER PD4A/PLANT OPERATIONS BLDG/(FUTURE)
4A UNIT 99
5 UNIT 100/BUS TRANSITION/AUXILIARY
6 BUS TIE
7 MAIN/T-1 SECONDARY
8 FEEDER PD8A/SLUDGE RECYCLING/BLDG B
9 FEEDER PD5A/SLUDGE RECYCLING/BLDG A
10 FEEDER PD3/SLUDGE PROCESSING
11 FEEDER PD1/LOW LIFT PUMPING STA/PUMPS 4 & 5
12 UNIT 119/BUS TRANSITION/AUXILIARY
13 MAIN/T-2 SECONDARY
14 FEEDER PD2/LOW LIFT PUMPING STA/ PUMPS 1, 2, & 3
15 FEEDER PD4/PLANT OPERATIONS BLDG
16 FEEDER PD5/SLUDGE RECYCLING/BLDG A
17 FEEDER PD6/SLUDGE RECYCLING/BLDG B
18 LOCKOUT RELAY/BUS OVERCURRENT/86B1A
19 LOCKOUT RELAY/BUS OVERCURRENT/86B2A
20 FEEDER PD9/BAF SUBSTATION 1/MCC 33, 34 & 35
20A UNIT 120
21 FEEDER PD10/BAF SUBSTATION 2/MCC 42 & 43
21A UNIT 21
22 FEEDER PD11/SECONDARY EFFLUENT P.S./PUMPS 1 & 3
22A UNIT 122
23 FEEDER PD3A/SLUDGE PROCESSING/(FUTURE)
23A UNIT 123



SWINGING PANEL
UNITS 96, 97, 98, 99, 120, 121, 122 & 123
SCALE: 1/2"=1'-0"

SWINGING PANEL
UNITS 100 & (119)
SCALE: 1/2"=1'-0"



NOTES:
1. REMOVE EXISTING RELAYS AND PROVIDE COVER PLATES, PAINTED TO MATCH EXISTING PANELS.
2. MULTI-PURPOSE RELAY/METER IN 19" RACK STYLE CASE

SWITCHGEAR INTERIOR ELEVATION
SCALE: 1/4"=1'-0"

MEDIUM VOLTAGE CABLE SCHEDULE

CONDUIT NUMBER	FROM	TO	CONDUCTOR QTY.-SIZE	INSULATION	CONDUIT/ CABLE TRAY	NOTES
PD3A	34.5 MAIN SUBSTATION	–	–	–	4"C	CAPPED
PD4A	34.5 MAIN SUBSTATION	–	–	–	4"C	CAPPED
PD9	34.5 KV MAIN SUBSTATION	MAIN GALLERY ACCESS HANDHOLE	3-750 1-1/0	5KV 600V	5"C	
	MAIN GALLERY ACCESS HANDHOLE	SEC GALLERY A	1-500	5KV	CABLE TRAY	METAL-CLAD CABLE
	SEC GALLERY A	BAF 5KV SWITCHGEAR	3-750 1-1/0	5KV 600V	5"C	
	BAF 5 KV SWITCHGEAR	TRANSFORMER T1B	3-750 1-1/0	5KV 600V	2-5"C	(1 SPARE CONDUIT)
PD9A	34.5 KV MAIN SUBSTATION	MAIN GALLERY ACCESS HANDHOLE	3-750 1-1/0	5KV 600V	5"C	
	MAIN GALLERY ACCESS HANDHOLE	SEC GALLERY A	1-500	5KV	CABLE TRAY	METAL-CLAD CABLE
	SEC GALLERY A	BAF 5KV SWITCHGEAR	3-750 1-1/0	5KV 600V	5"C	
	BAF 5 KV SWITCHGEAR	TRANSFORMER T1A	3-750 1-1/0	5KV 600V	2-5"C	(1 SPARE CONDUIT)
PD10	34.5 KV MAIN SUBSTATION	MAIN GALLERY ACCESS HANDHOLE	3-750 1-1/0	5KV 600V	5"C	
	MAIN GALLERY ACCESS HANDHOLE	SEC GALLERY A	1-500	5KV	CABLE TRAY	METAL-CLAD CABLE
	SEC GALLERY A	BAF 5KV SWITCHGEAR	3-750 1-1/0	5KV 600V	5"C	
	BAF 5 KV SWITCHGEAR	TRANSFORMER T2B	3-750 1-1/0	5KV 600V	2-5"C	(1 SPARE CONDUIT)
PD10A	34.5 KV MAIN SUBSTATION	MAIN GALLERY ACCESS HANDHOLE	3-750 1-1/0	5KV 600V	5"C	
	MAIN GALLERY ACCESS HANDHOLE	SEC GALLERY A	1-500	5KV	CABLE TRAY	METAL-CLAD CABLE
	SEC GALLERY A	BAF 5KV SWITCHGEAR	3-750 1-1/0	5KV 600V	5"C	
	BAF 5 KV SWITCHGEAR	TRANSFORMER T2A	3-750 1-1/0	5KV 600V	2-5"C	(1 SPARE CONDUIT)
PD11	34.5KV MAIN SUBSTATION	MAIN GALLERY ACCESS HANDHOLE	3-250 1-1/0	5KV 600V	4"C	
	MAIN GALLERY ACCESS HANDHOLE	EFFLUENT GALLERY	1-250	5KV	CABLE TRAY	METAL CLAD CABLE
	EFFLUENT GALLERY	SEC EFFLUENT P.S. 5KV SWITCHGEAR	3-250 1-1/0	5KV 600V	4"C	
PD11A	34.5KV MAIN SUBSTATION	MAIN GALLERY ACCESS HANDHOLE	3-250 1-1/0	5KV 600V	4"C	
	MAIN GALLERY ACCESS HANDHOLE	EFFLUENT GALLERY	1-250	5KV	CABLE TRAY	METAL CLAD CABLE
	EFFLUENT GALLERY	SEC EFFLUENT P.S. 5KV SWITCHGEAR	3-250 1-1/0	5KV 600V	4"C	
PD12	SEC EFFLUENT P.S. 5KV SWITCHGEAR	PUMP 2 TRANSFORMER	1#2	5KV	CABLE TRAY	METAL-CLAD CABLE
PD13	SEC EFFLUENT P.S. 5KV SWITCHGEAR	PUMP 3 TRANSFORMER	1#2	5KV	CABLE TRAY	METAL-CLAD CABLE
PD14	SEC EFFLUENT P.S. 5KV SWITCHGEAR	PUMP 4 TRANSFORMER	1#2	5KV	CABLE TRAY	METAL-CLAD CABLE
PD15	SEC EFFLUENT P.S. 5KV SWITCHGEAR	MCC 44 TRANSFORMER A	1#2	5KV	CABLE TRAY	METAL-CLAD CABLE
PD16	SEC EFFLUENT P.S. 5KV SWITCHGEAR	MCC 44 TRANSFORMER B	1#2	5KV	CABLE TRAY	METAL-CLAD CABLE
PD17	SEC EFFLUENT P.S. 5KV SWITCHGEAR	PUMP 1 TRANSFORMER	1#2	5KV	CABLE TRAY	METAL-CLAD CABLE
PD18	BAF 5KV SWITCHGEAR	EMH2	–	–	4"C	FOR FUTURE FILTER
PD19	BAF 5KV SWITCHGEAR	EMH2	–	–	4"C	FOR FUTURE FILTER
PD20	BAF ELECTRIC ROOM	EMH2	–	–	4"C	SPARE
PD21	BAF ELECTRIC ROOM	EMH2	–	–	4"C	SPARE

NOTES:
1. EACH METAL-CLAD CABLE INCLUDES 3 PHASE CONDUCTORS & 1 GROUND CONDUCTOR.

SUMMARY OF WORK BY OTHER CONTRACTS:
ALL WORK IS PROVIDED UNDER CONTRACT 4B

RECORD DRAWING
THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.
DATE: 10/21/05 PER: [signature]

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03/20/01 OBG CRV
0659

1/2"=1'-0" 2' 0 2' 4'
1/4"=1'-0" 4' 0 4' 8'

NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
1		AS BID	
2	10/31/05	RECORD DRAWING	

In charge of TEL
Designed by RAC
Drawn by CRV
Checked by WFH

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

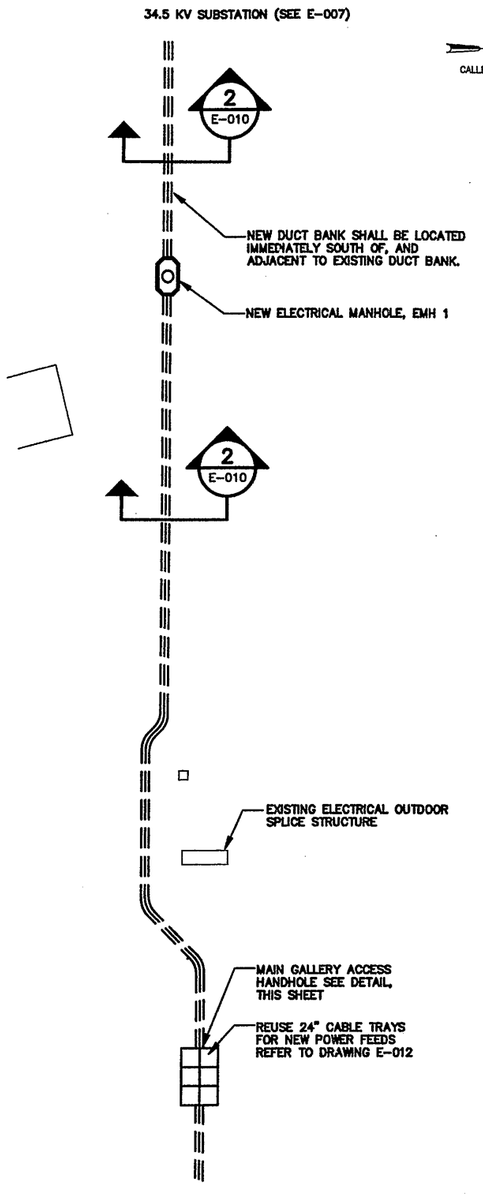
MAIN SUBSTATION MODIFICATIONS

ELECTRICAL

STATE OF NEW YORK • LEONARD J. CAMPOLIETA • LICENSED PROFESSIONAL ENGINEER • No. 60765

File Number 00659E009
Date APRIL 2001
[signature]

E-009

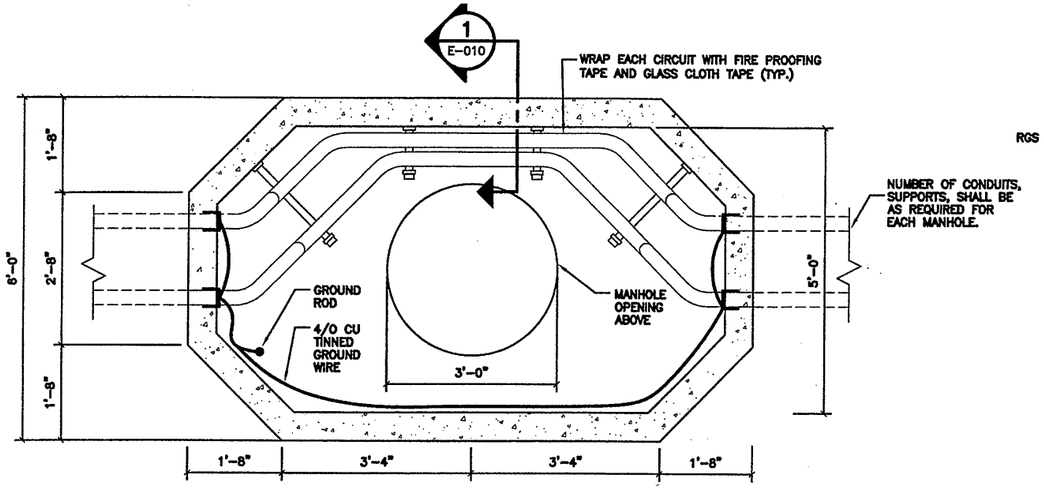


NOTES:

1. SCALE AND FEATURES APPROXIMATE ONLY, BASED ON EXISTING DRAWINGS.
2. PROVIDE 2" CONDUIT ROUTED FROM SUBSTATION TO GALLERY FOR TELEPHONE, PA AND FIBER OPTIC CABLES.
3. PROVIDE 1" SPARE CONDUIT ROUTED FROM SUBSTATION TO GALLERY.

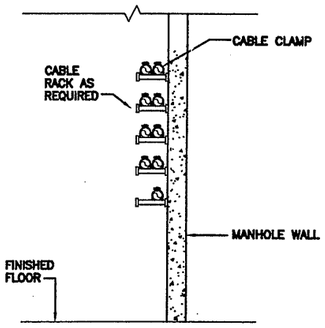
PLAN

SCALE: 1"=20'-0"

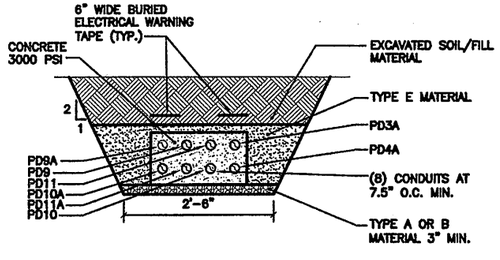


ELECTRICAL MANHOLE (TYPICAL FOR EMH1, EMH2)

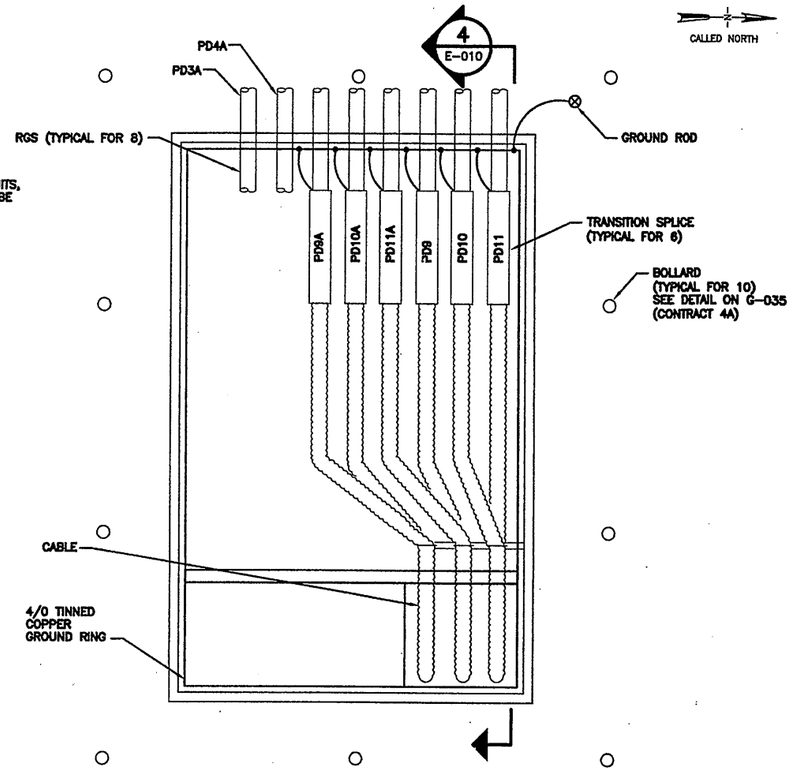
SEE ADDITIONAL INSTALLATION DETAILS ON E-017
SCALE: 3/4"=1'-0"



SECTION 1 / E-010
NOT TO SCALE

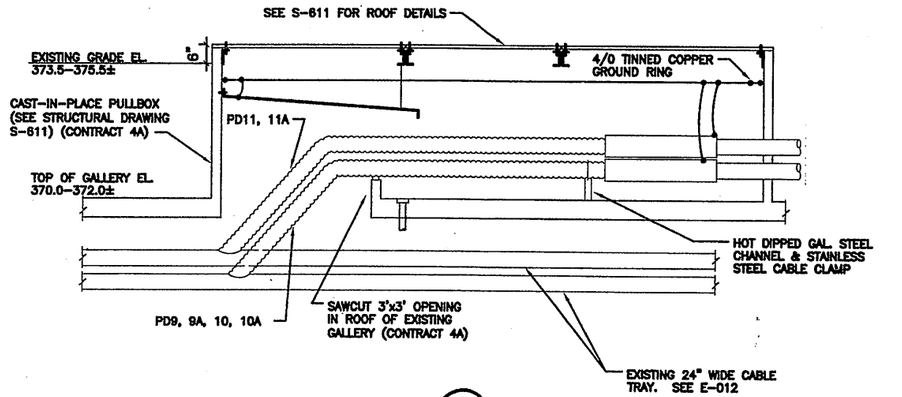


SECTION 2 / E-010 — 2 / E-007
NOT TO SCALE



MAIN GALLERY ACCESS HANDHOLE

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



SECTION 4 / E-010
1/2"=1'-0"

SUMMARY OF WORK BY OTHER CONTRACTS:
CONTRACT 4A SHALL PROVIDE MAIN GALLERY ACCESS HANDHOLE & BOLLARDS

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. ALL REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE: 10/21/05 FIRM: L.K. Comstock

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0659x001
03/22/01 OBG CRV
0659e010

1"=20' 20' 0 20' 40'
1/2"=1'-0" 2' 0 2' 4'
3/4"=1'-0" 2' 1' 0 1' 2'

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
1		AS BID	
2	10/31/05	RECORD DRAWING	

In charge of TEL
Designed by RAC
Drawn by CRV
Checked by WFH

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

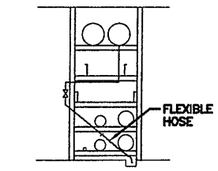
5KV DUCTBANK PLAN AND SECTIONS

ELECTRICAL

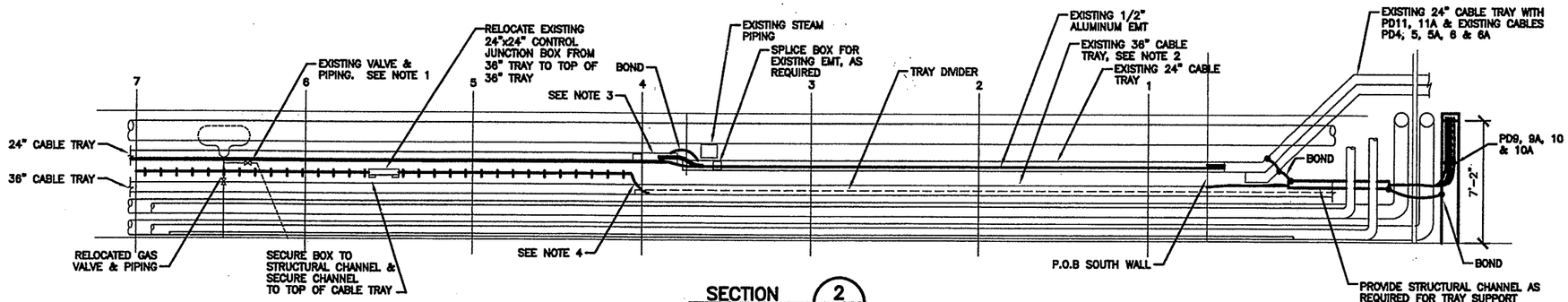
LEONARD J. CAMPOLIETI — LICENSED PROFESSIONAL ENGINEER — STATE OF NEW YORK — No. 60759

File Number 00659
Date APRIL 2001

E-010



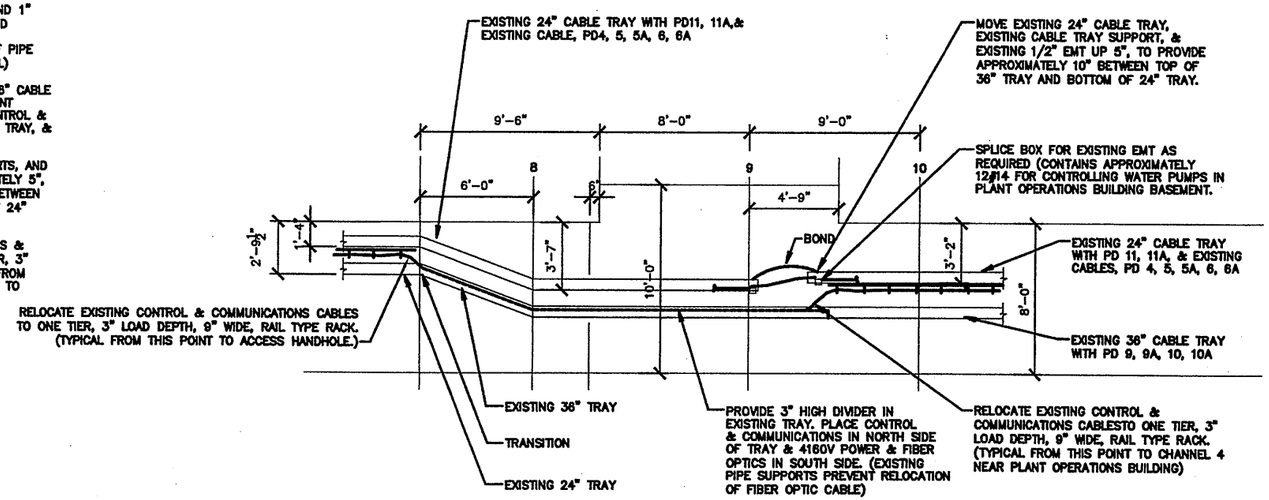
SECTION 3 (E-012)
SCALE: 1/4"=1'-0"



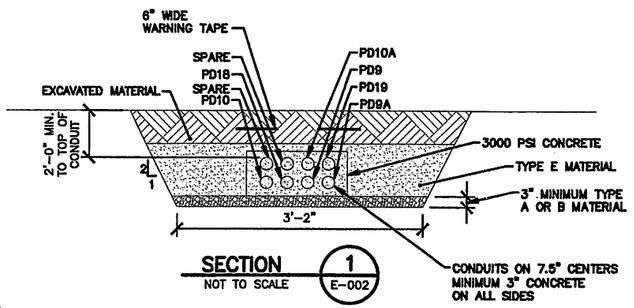
SECTION 2 (E-012)
SCALE: 1/4"=1'-0"

1. CONTRACT 4A SHALL MODIFY EXISTING GAS VALVE & PIPING
2. CONTRACT 4A SHALL PROVIDE BOLLARDS FOR ELECTRICAL EQUIPMENT IN ACCORDANCE WITH DETAIL ON THIS SHEET AND SPECIFICATION 02840

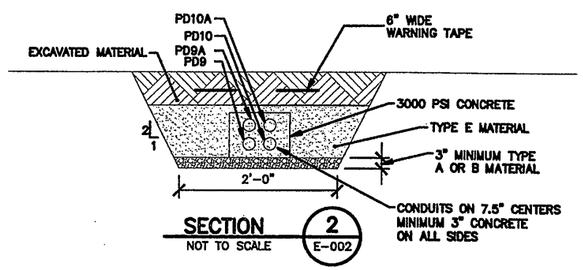
NOTES:
1. REMOVE EXISTING 1" GAS VALVE AND 1" PIPING. PROVIDE NEW 1" PIPE AND FLEXIBLE HOSE AS REQUIRED AND REINSTALL VALVE ON EAST SIDE OF PIPE RACK. (BY CONTRACT 4A-GENERAL)
2. PROVIDE 3" DIVIDER IN EXISTING 36" CABLE TRAY, BETWEEN CHANNEL 4 & PLANT OPERATIONS BUILDING. PLACE CONTROL & COMMUNICATIONS IN WEST SIDE OF TRAY, & 4160V POWER IN EAST SIDE.
3. MOVE EXISTING TRAY, TRAY SUPPORTS, AND EXISTING 1/2" EMT UP APPROXIMATELY 5", TO PROVIDE APPROXIMATELY 10" BETWEEN TOP OF 36" TRAY AND BOTTOM OF 24" TRAY.
4. RELOCATE EXISTING COMMUNICATIONS & CONTROL CABLES TO NEW ONE TIER, 3" LOAD DEPTH 9" RAIL TYPE RACK, FROM CHANNEL 4, IN CHEMICAL GALLERY, TO CHANNEL 9 IN. MAIN GALLERY.



SECTION 10 (E-012)
SCALE: 1/4"=1'-0"



SECTION 1 (E-002)
NOT TO SCALE



SECTION 2 (E-002)
NOT TO SCALE

SUMMARY OF WORK BY OTHER CONTRACTS:
1. CONTRACT 4A SHALL MODIFY EXISTING GAS VALVE & PIPING

RECORD DRAWING
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DATE: 10/21/05 PER: L.Rampolett

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03/21/01 OBG CRV
0659a011

1/4"=1'-0" 4' 0 4' 8'
1/2"=1'-0" 2' 0 2' 4'

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	LE
1		AS BID	
2	10/31/05	RECORD DRAWING	

In charge of TEL
Designed by RAC
Drawn by CRV
Checked by WFH

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

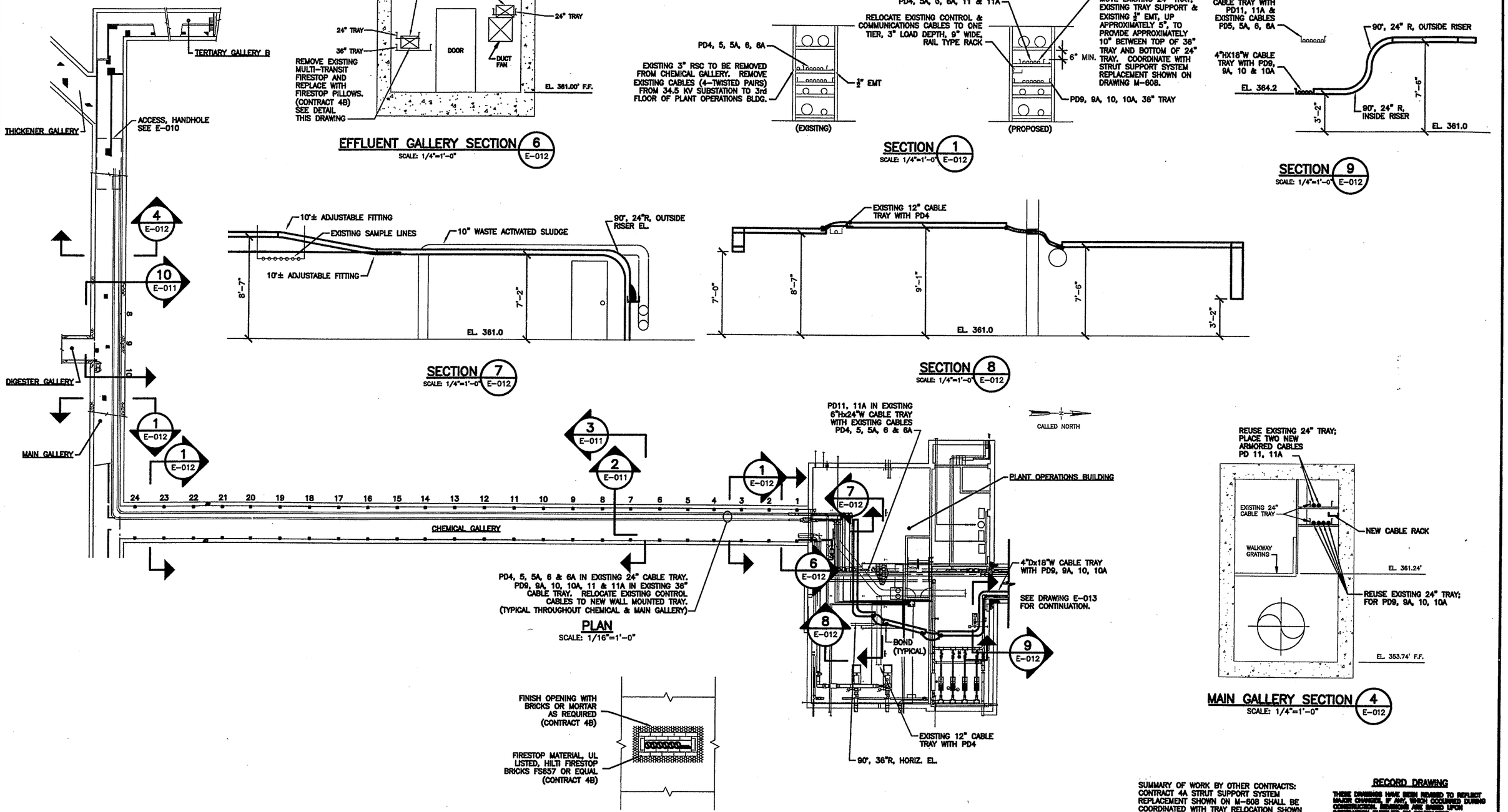
5 KV CABLE TRAY PLAN AND SECTIONS

ELECTRICAL

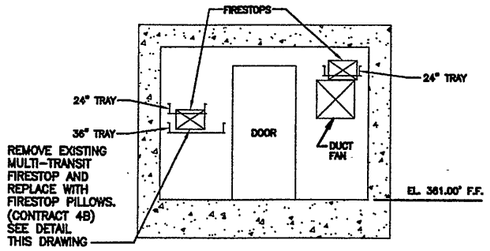
LICENSED PROFESSIONAL ENGINEER — STATE OF NEW YORK — LEONARD J. CAMPOLETTA — No. 60755

File Number 00659
Date APRIL 2001
L.Rampolett

E-011



PLAN
SCALE: 1/16"=1'-0"



EFFLUENT GALLERY SECTION 6
SCALE: 1/4"=1'-0" — E-012

SECTION 1
SCALE: 1/4"=1'-0" — E-012

SECTION 9
SCALE: 1/4"=1'-0" — E-012

SECTION 7
SCALE: 1/4"=1'-0" — E-012

SECTION 8
SCALE: 1/4"=1'-0" — E-012

MAIN GALLERY SECTION 4
SCALE: 1/4"=1'-0" — E-012

FIRESTOP DETAIL
NOT TO SCALE

SUMMARY OF WORK BY OTHER CONTRACTS: CONTRACT 4A STRUT SUPPORT SYSTEM REPLACEMENT SHOWN ON M-608 SHALL BE COORDINATED WITH TRAY RELOCATION SHOWN ON THIS SHEET.

RECORD DRAWING
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DATE 10/21/05 PER L.V.Campbell

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03/21/01 OBG CRV
0659e12

1/4"=1'-0" (4' 0 4' 8') 1/16"=1'-0" (16' 0 16' 32')

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	LVC
1		AS BID	LVC
2	10/31/05	RECORD DRAWING	LVC

In charge of TEL
Designed by RAC
Drawn by CRV
Checked by WFH

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

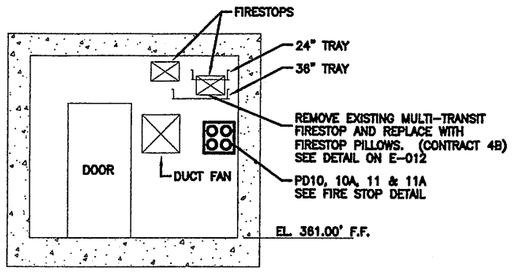
ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
ELECTRICAL

5KV CABLE TRAY PLAN & SECTIONS

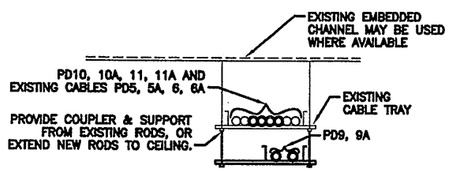
STATE OF NEW YORK • LEONARD J. CAMPBELL • LICENSED PROFESSIONAL ENGINEER • No. 60755

File Number 00659
Date APRIL 2001
L.V.Campbell

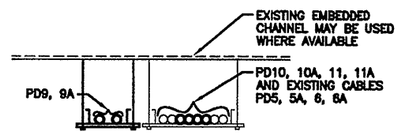
E-012



EFFLUENT GALLERY SECTION 2
SCALE: 1/4"=1'-0" — E-013



SECTION 5
SCALE: 1/2"=1'-0" — E-013



SECTION 7
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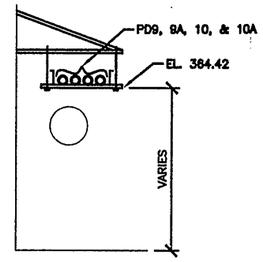
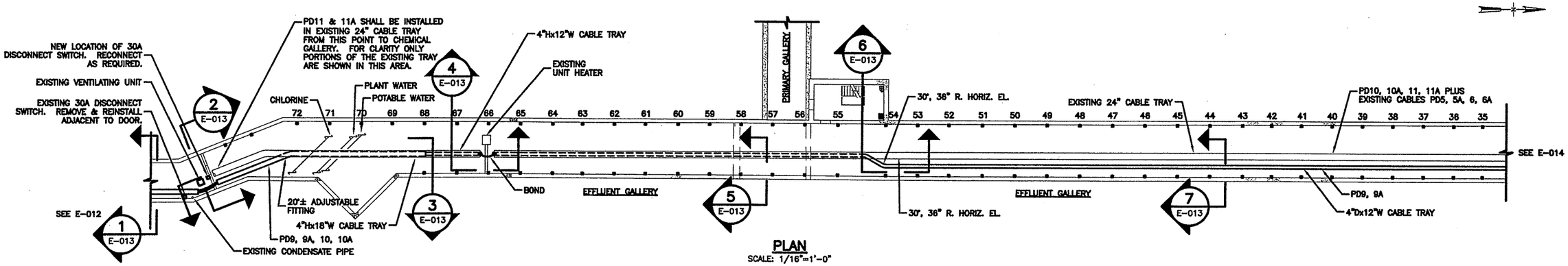
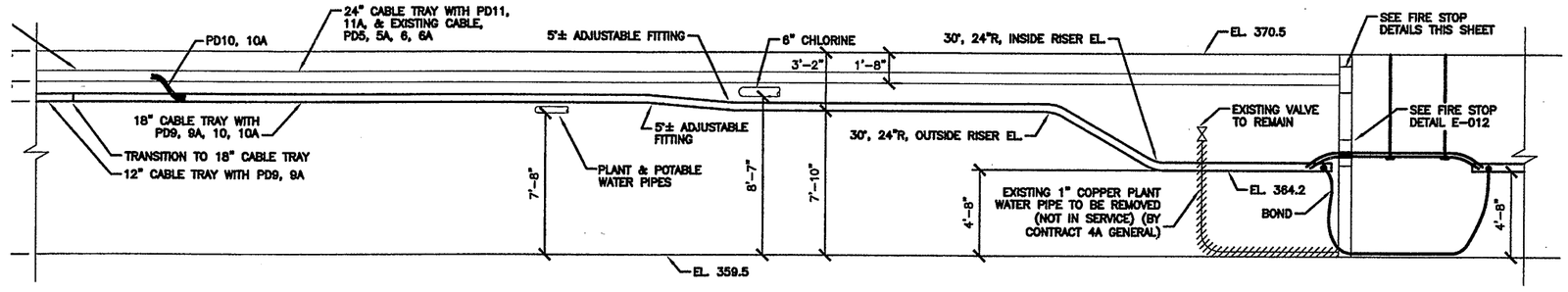


SECTION 1
SCALE: 1/2"=1'-0" — E-013



PLAN
SCALE: 1/16"=1'-0"



SECTION 3
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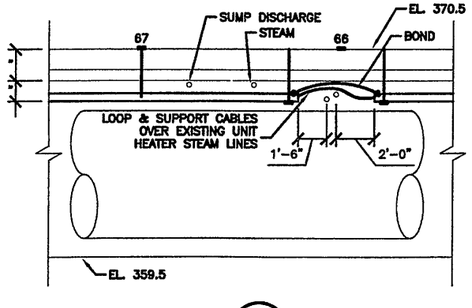

SECTION 4
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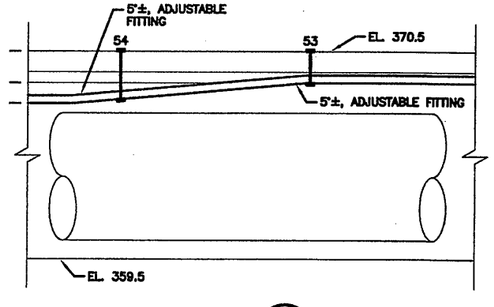

SECTION 6
SCALE: 1/4"=1'-0" — E-013

SUMMARY OF WORK BY OTHER CONTRACTS:
CONTRACT 4A SHALL REMOVE EXISTING COPPER WATER PIPE

RECORD DRAWING

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DATE: 10/21/05 PER: [signature]

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03/20/01 OBG CRV
0659

1/2"=1'-0" (2' 0 2' 4')
1/4"=1'-0" (4' 0 4' 8')
1/16"=1'-0" (16' 0 16' 32')

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
1		AS BID	
2	10/31/05	RECORD DRAWING	

In charge of TEL
Designed by RAC
Drawn by CRV
Checked by WFH

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SYRACUSE, NEW YORK

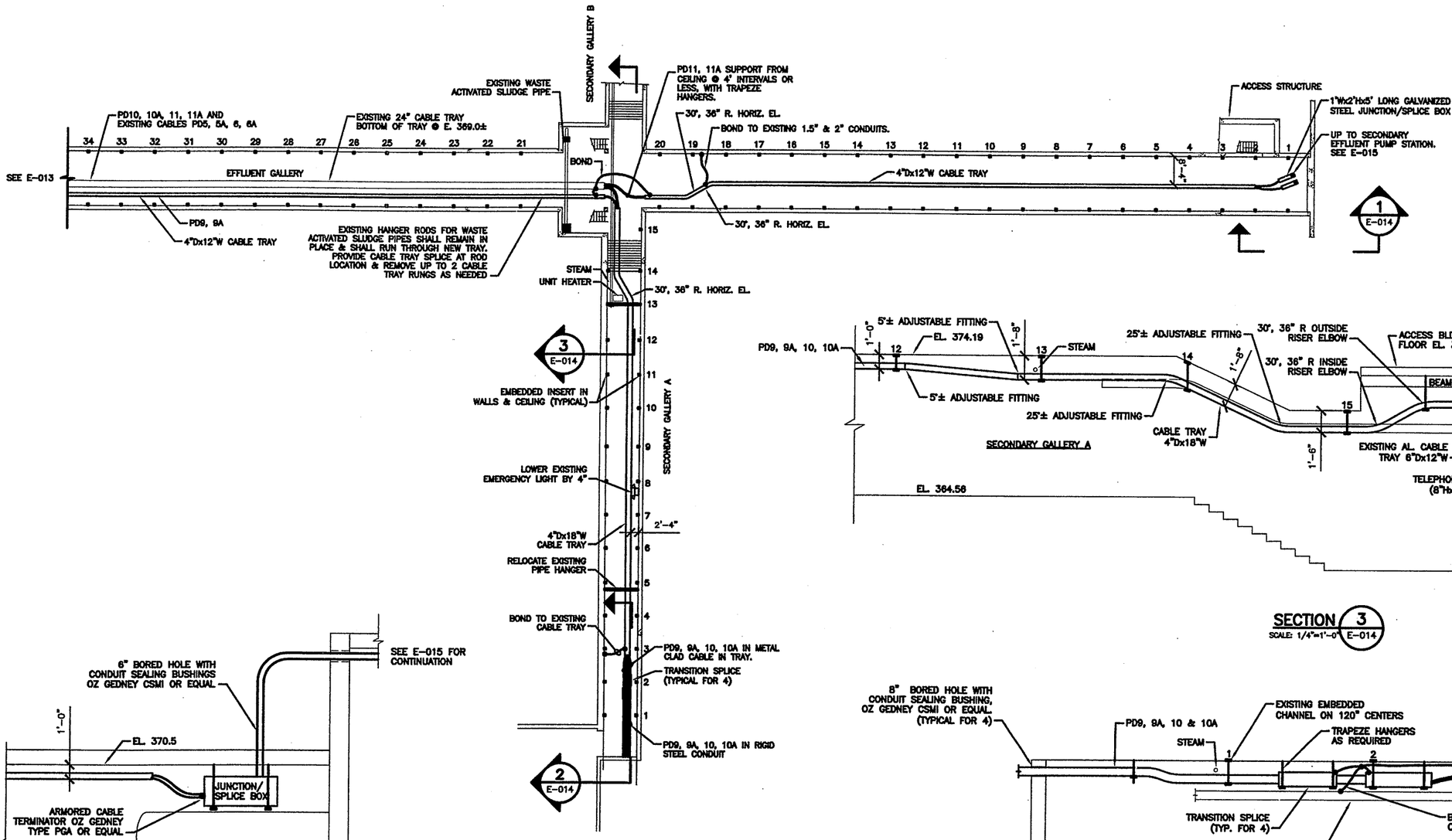
ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
ELECTRICAL

5 KV CABLE TRAY PLAN & SECTIONS

STATE OF NEW YORK · LEONARD J. CAMPOLIETA · LICENSED PROFESSIONAL ENGINEER · No. 60765

File Number 00659E013
Date APRIL 2001
[signature]

E-013



PLAN
SCALE: 1/16"=1'-0"

SECTION 1
SCALE: 1/4"=1'-0" E-014

SECTION 2
SCALE: 1/4"=1'-0" E-014

SECTION 3
SCALE: 1/4"=1'-0" E-014

RECORD DRAWING

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DATE 10/21/05 PER: [signature]

SUMMARY OF WORK BY OTHER CONTRACTS: ALL WORK IS PROVIDED UNDER CONTRACT 4B

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03/20/01 OBG CRV

1/4"=1'-0" 4' 0 4' 8'
1/16"=1'-0" 16' 0 16' 32'

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	LJC
1		AS BID	
2	10/31/05	RECORD DRAWING	

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In charge of TEL
Designed by RAC
Drawn by CRV
Checked by WFH

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

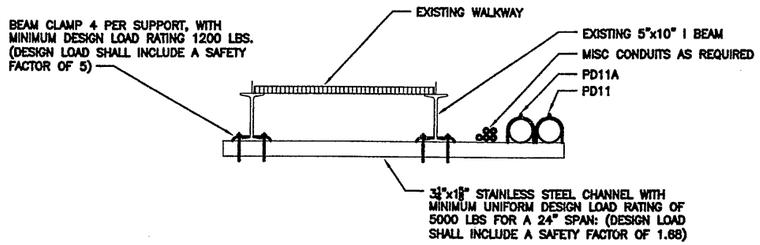
ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
ELECTRICAL

5KV CABLE TRAY PLAN & SECTIONS

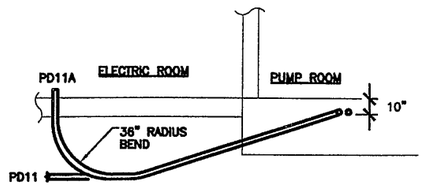
STATE OF NEW YORK · LEONARD J. CAMPOBELLO · No. 60755 · LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001

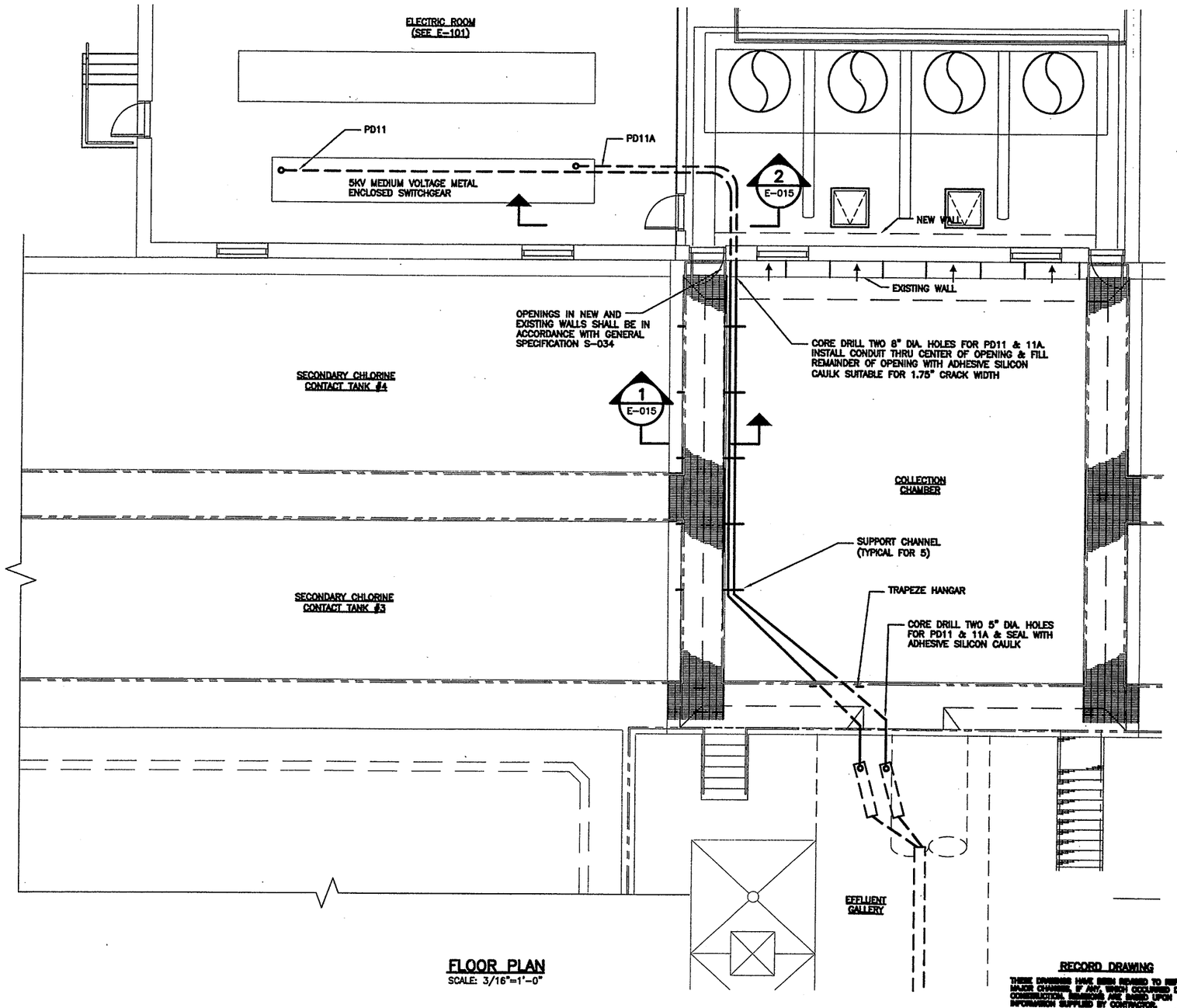
E-014



SECTION 1 / E-015
SCALE: 3/4"=1'-0"



SECTION 2 / E-015
SCALE: 1/4"=1'-0"



FLOOR PLAN
SCALE: 3/16"=1'-0"

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE: 10/21/05 FOR: L.V. Campolieti

SUMMARY OF WORK BY OTHER CONTRACTS:
ALL WORK IS PROV. UNDER CONTRACT 4B

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED IN THE TITLE BLOCK. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.

0659X101
03/20/01 OBG CRV
0659E015

3/16"=1'-0" 4' 0 6' 12'
1/4"=1'-0" 4' 0 4' 8'
3/4"=1'-0" 2' 1' 0 1' 2'

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

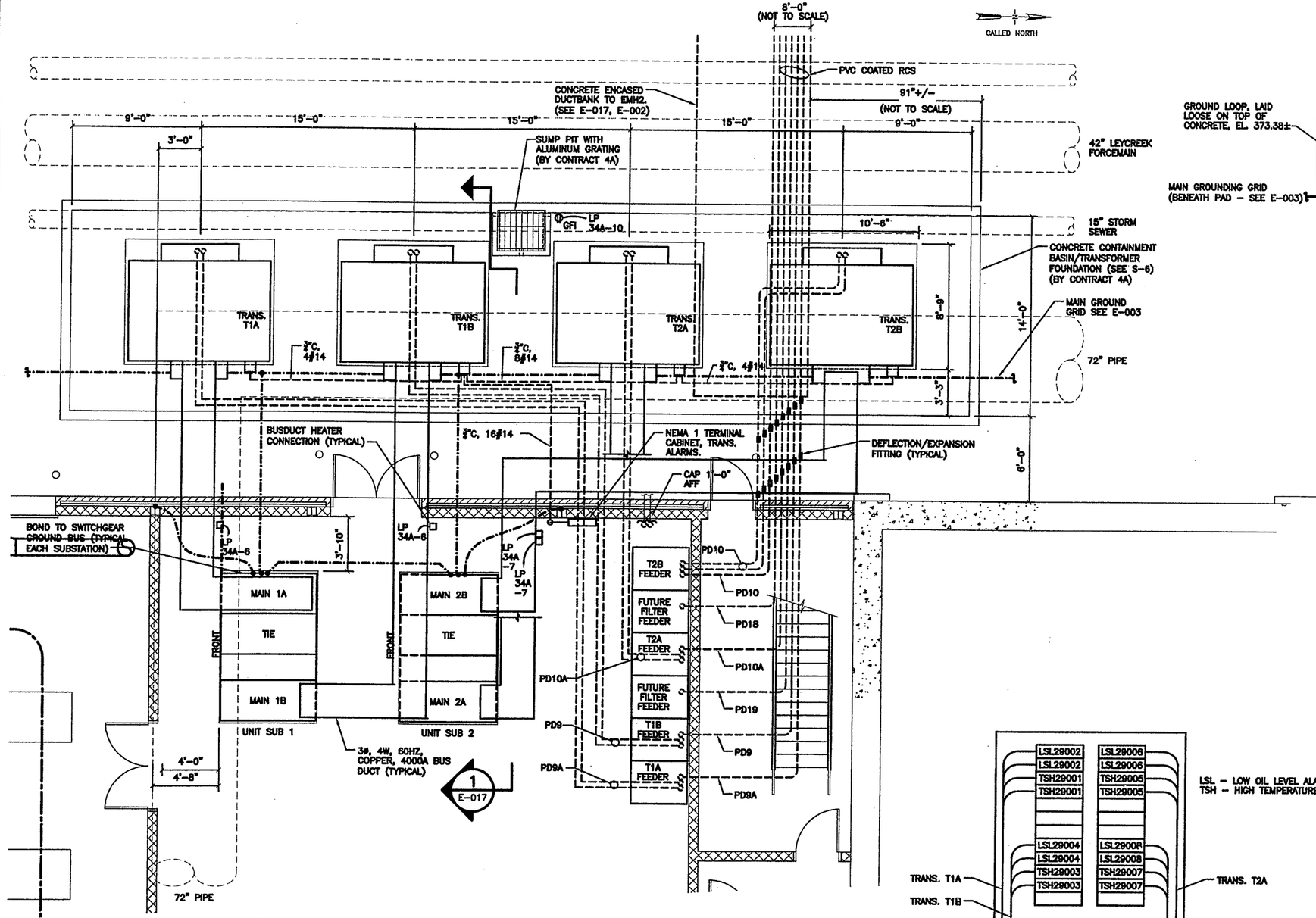
5 KV SECONDARY EFFLUENT PS PLANS & SECTIONS

ELECTRICAL

STATE OF NEW YORK • LEONARD J. CAMPOLIETI • LICENSED PROFESSIONAL ENGINEER • No. 60765

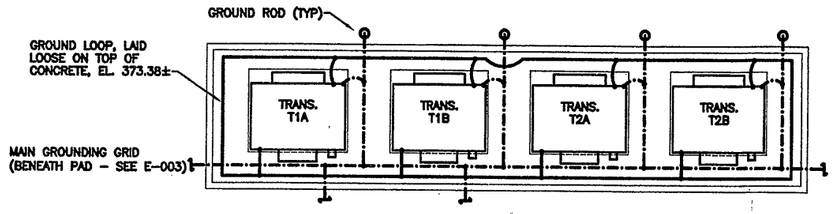
File Number 00659
Date APRIL 2001
E-015

L.V. Campolieti



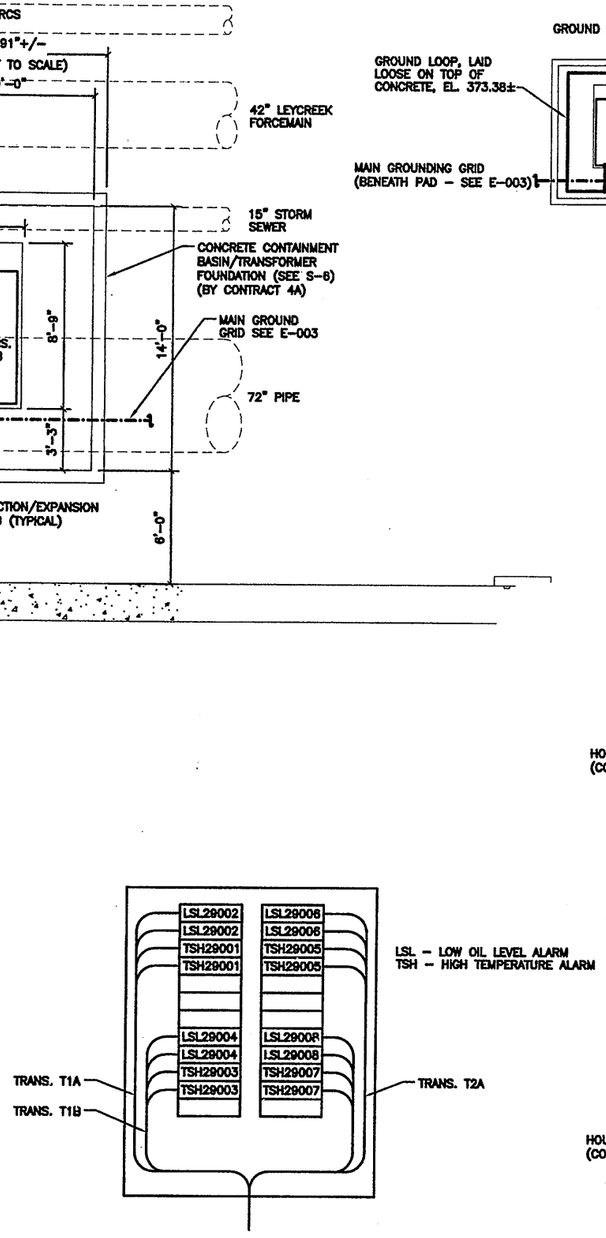
ELECTRICAL ROOM

F.F. EL. 375.38
SCALE: 1/4"=1'-0"
SEE E-202 FOR LOW VOLTAGE POWER PLAN



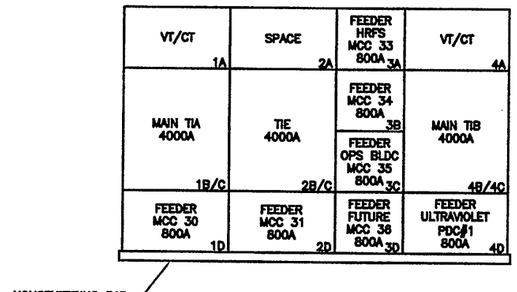
GROUNDING PLAN

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



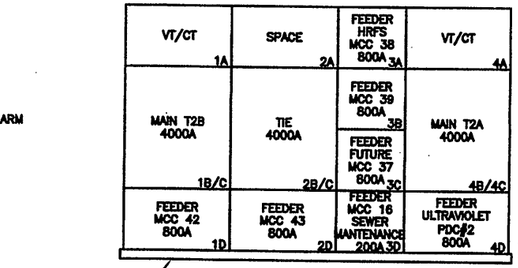
TERMINAL CABINET TRANSFORMER ALARMS

SCALE: NOT TO SCALE



UNIT SUBSTATION 1

SCALE: NOT TO SCALE



UNIT SUBSTATION 2

SCALE: NOT TO SCALE

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE: 10/2/05 PER: [signature]

SUMMARY OF WORK BY OTHER CONTRACTS:
CONTRACT 4A SHALL PROVIDE CONCRETE CONTAINMENT BASIN/TRANSFORMER FOUNDATION & HOUSE KEEPING PADS.

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED IN THE TITLE BLOCK. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.

0659x201
03/21/01 OBG CRV
0859E016

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

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

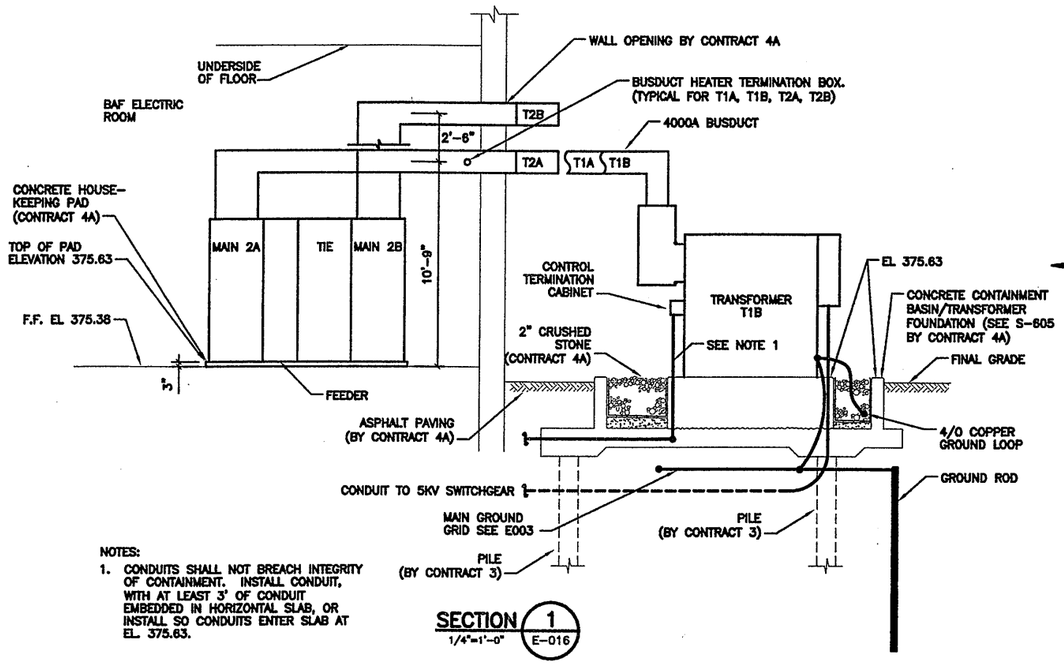
BAF FIRST FLOOR ELECTRICAL PLAN

ELECTRICAL

LICENSED PROFESSIONAL ENGINEER · STATE OF NEW YORK · EDWARD J. CAMOLESE · No. 60755

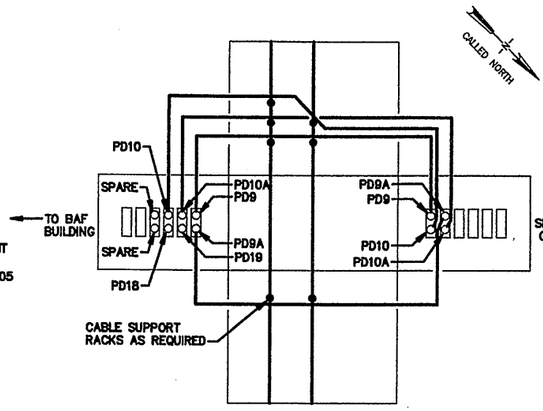
File Number 00659
Date APRIL 2001

E-016

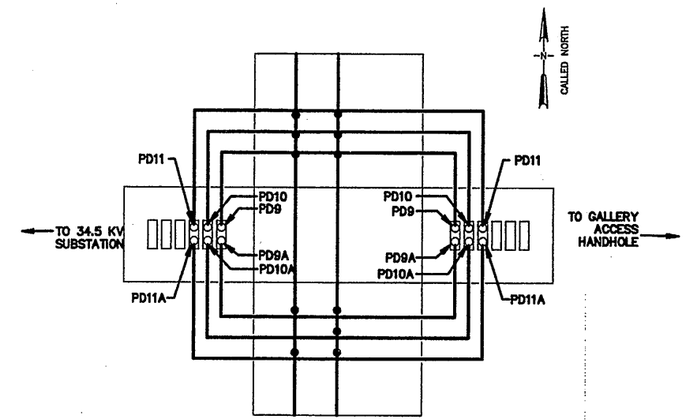


NOTES:
1. CONDUITS SHALL NOT BREACH INTEGRITY OF CONTAINMENT. INSTALL CONDUIT, WITH AT LEAST 3' OF CONDUIT EMBEDDED IN HORIZONTAL SLAB, OR INSTALL SO CONDUITS ENTER SLAB AT EL. 375.63.

SECTION 1 / E-016
1/4"=1'-0"

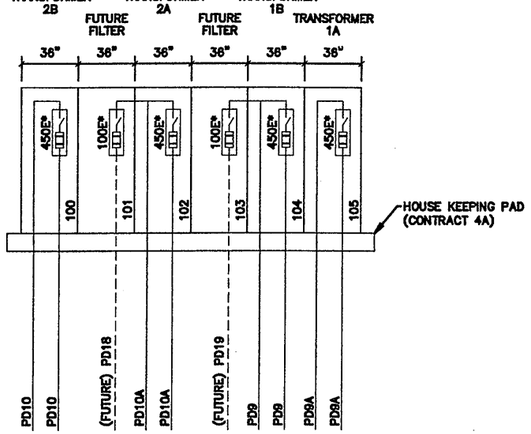


EMH2
CONDUIT & CABLE ARRANGEMENT
SCALE: 1/4"=1'-0"



EMH1
CONDUIT & CABLE ARRANGEMENT
SCALE: 1/4"=1'-0"

1. CONTRACT 4A SHALL PROVIDE CONCRETE CONTAINMENT BASIN/TRANSFORMER FOUNDATION, PAVING, AND HOUSEKEEPING PADS.
2. CONTRACT 4A SHALL PROVIDE WALL OPENING FOR BUS DUCT IN ACCORDANCE WITH CONTRACT 4B REQUIRMENTS.
3. CONTRACT 3 SHALL PROVIDE PILES.

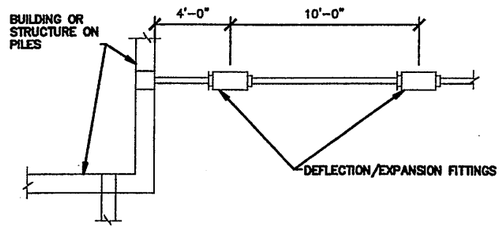


5 KV METAL-ENCLOSED SWITCHGEAR FRONT ELEVATION
NOT TO SCALE

* FUSE SIZE IS PRELIMINARY. FINAL FUSE SIZE SHALL BE AS SPECIFIED FOLLOWING RECEIPT OF FUSE & TRANSFORMER SHOP DRAWINGS.

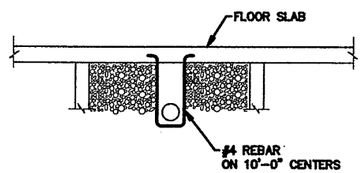
RATINGS:

RATED VOLTAGE: 4.16KV
MAXIMUM DESIGN VOLTAGE: 4.76 KV
IMPULSE WITHSTAND BIL: 60KV
CONTINUOUS CURRENT: 600 AMPERES (MAIN BUS & SWITCHES)
LOAD INTERRUPTING CURRENT: 600 AMPERES
MOMEMTARY CURRENT: 40KA ASYM.
FAULT CLOSE CURRENT: 40KA ASYM.
ENCLOSURE: INDOOR:
FUSES: GE EJ01.9F62 SERIES



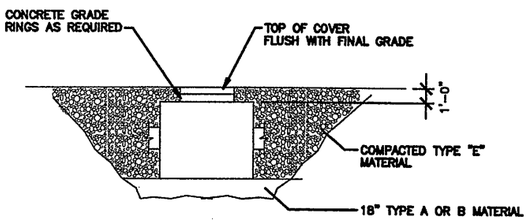
DEFLECTION FITTINGS
NTS

NOTE:
TWO FITTINGS SHALL BE PROVIDED, AT APPROXIMATE DISTANCES SHOWN, FOR EVERY ELECTRICAL CONDUIT PASSING FROM A PILED STRUCTURE TO AN UNPILED STRUCTURE, OR TO BURIAL IN EARTH. WHERE CONDUITS ARE BENEATH BUILDING SLAB, INSTALL FITTINGS AT ACCESSIBLE LOCATION OUTSIDE OF BUILDING PERIMETER.



CONDUIT SUPPORT
NTS

NOTE:
WHERE ELECTRICAL CONDUITS ORIGINATE OR TERMINATE IN PILED STRUCTURES, AND CONDUITS LEAVE THE STRUCTURE BENEATH THE STRUCTURE SLAB, SUPPORT CONDUIT FROM FLOOR SLAB AT INTERVALS OF 10' OR LESS.



MANHOLE INSTALLATION DETAIL
NTS

NOTE:
WHERE DUCTBANKS ARE CONCRETE ENCASED, PROVIDE #4 DOWELS BETWEEN DUCTBANK & MANHOLE, ON 6" CENTERS AROUND PERIMETER OF DUCT BANK.

RECORD DRAWING
THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.
DATE: 6/21/05 PER: [signature]

SUMMARY OF WORK BY OTHER CONTRACTS:
1. CONTRACT 4A SHALL PROVIDE CONCRETE CONTAINMENT BASIN/TRANSFORMER FOUNDATION, PAVING, AND HOUSEKEEPING PADS.
2. CONTRACT 4A SHALL PROVIDE WALL OPENING FOR BUS DUCT IN ACCORDANCE WITH CONTRACT 4B REQUIRMENTS.
3. CONTRACT 3 SHALL PROVIDE PILES.

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03/20/01 OBG CRV
0659e017

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

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	LJC
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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

5KV BAF SUBSTATION 1 & 2 SECTIONS, SCHEDULES
ELECTRICAL

LICENSED PROFESSIONAL ENGINEER — LEONARD J. CAMPOLIETA — No. 60765 — STATE OF NEW YORK

File Number 00659
Date APRIL 2001
[signature]

E-017

CIRCUIT BREAKER PANELBOARD – LPS–1									SCHEDULE			
LOCATION:		34.5 kV SUBSTATION M.C. SWITCHGEAR							FEED FROM		SWGR UNIT 106	
MAIN BUS RATING:		125	AMPERES						208/120 VOLTS		3 PHASE, 4 WIRE	
MINIMUM SHORTCIRCUIT:		10,000	AMPERES						FEEDER CABLE		6 #6, 1 #6 NEUTRAL	
MAIN BREAKER TRIP:		125	AMPERES						SURFACE MTD			
ESTIMATED CONNECTED LOAD:		50	KVA									
		C/B AMPS/	LOAD						LOAD	C/B AMPS/		
CKT NO.	DESCRIPTION	POLES	TYPE	KVA	PH–A	PH–B	PH–C	KVA	TYPE	POLES	DESCRIPTION	CKT NO.
1	CAPACITOR CONTROL	30/1P	MISC.	0.150	0.300			0.150	MISC.	30/1P	CAPACITOR CONTROL	2
3	COMPARTMENT HEATERS NORTH	20/1P	HEAT	1.250		3.250		2.000	LIGHTS	20/1P	AISLE LIGHTS	4
5	COMPARTMENT HEATERS SOUTH	20/1P	HEAT	1.250			1.250			30/1P	SPARE	6
7	AISLE HEATER SOUTH	30	HEAT	1.667	3.330			1.667	HEAT	30	AISLE HEATER NORTH	8
9	AISLE HEATER SOUTH		HEAT	1.667		3.330		1.667	HEAT		AISLE HEATER NORTH	10
11	AISLE HEATER SOUTH	3P	HEAT	1.667			3.330	1.667	HEAT	3P	AISLE HEATER NORTH	12
13	AISLE HEATER CENTER	20	HEAT	1.000	6.290			5.290	SUB–FD	100	BATTERY BLDG	14
15	AISLE HEATER CENTER		HEAT	1.000		6.610		5.610	SUB–FD		BATTERY BLDG	16
17	AISLE HEATER CENTER	3P	HEAT	1.000			6.410	5.410	SUB–FD	3P	BATTERY BLDG	18
19	COMPARTMENT HTRS, BANK 1	20	HEAT	1.125	2.125			1.000	MISC.	20	TRANS. 1 CABNET	20
21	COMPARTMENT HTRS, BANK 1	2P	HEAT	1.125		2.125		1.000	MISC.	2P	TRANS. 1 CABNET	22
23	COMPARTMENT HTRS, BANK 2	20	HEAT	1.125			1.125	1.000	MISC.	20	TRANS. 2 CABNET	24
25	COMPARTMENT HTRS, BANK 2	2P	HEAT	1.125	2.125			1.000	MISC.	2P	TRANS. 2 CABNET	26
27	BATTERY CHARGER/SPARE	20	MISC.	1.040		2.640		1.600	LIGHTS	30/1P	STRUCTURE LIGHTS	28
29	BATTERY CHARGER/SPARE	2P	MISC.	1.040			1.040	–	AC	30/1P	AIR CONDITIONER/SPARE	30
31	SPARE	30/1P			0.300			0.300	HEAT	20/1P	OCB1 HEATERS	32
33	LIGHTS/RECEPTACLES	20/1P	LIGHTS	0.400		0.400		0	MISC	10/1P	TRANS. 1 LTC	34
35	TRANS. 1 LTC	10/1P	MISC.	0.000			0.180	0.180	RECEPT	15/1P	RECEPTACLE	36
37												38
39												40
41												
	LOAD SUMMARY			17.63	14.47	18.36	14.34	29.54				

NOTE:

1. ALL CONDUCTORS TO BE 2 #12, 1 #12G IN 3/4 INCH CONDUIT UNLESS OTHERWISE SHOWN. SEE NOTE 7
2. THIS PANELBOARD IS EXISTING GENERAL ELECTRIC TYPE NLAB WITH BOLT–ON BREAKERS.
   - CHANGE CKT 3,5 BREAKERS FROM 30/1P TO 20/1P AND USE TO SUPPLY COMPARTMENT HEATERS IN NEW METAL–CLAD SWITCHGEAR.
   - CHANGE CKT 14/16/18 FROM 20/3P TO 100/3P AND USE TO SUPPLY BATTERY BUILDING.
   - CHANGE CKT 4 BREAKER FROM 30/1P TO 20/1P AND USE TO SUPPLY AISLE LIGHTS IN NEW AND EXISTING METAL–CLAD SWITCHGEAR.
   - DISCONNECT & REMOVE EXISTING WIRING CONNECTED TO CKT27/29 (BATTERY CHARGER) AND CKT 30 (AIR CONDITIONER).
   - RECONNECT CIRCUIT LPSI–33 TO SUPPLY ONLY EXTERIOR LIGHTS & AISLE RECEPTACLES

CIRCUIT BREAKER PANELBOARD – LPS–2									SCHEDULE			
LOCATION:		34.5 kV SUBSTATION BATTERY BUILDING							FEED FROM		LPS–1,14,16,18	
MAIN BUS RATING:		100	AMPERES						208/120 VOLTS		3 PHASE, 4 WIRE	
MINIMUM SHORTCIRCUIT:		10,000	AMPERES						FEEDER CABLE		4 #1, 1 #1 GRD	
MAIN BREAKER TRIP:		100	AMPERES						SURFACE MTD			
ESTIMATED CONNECTED LOAD:		17	KVA									
		C/B AMPS/	LOAD						LOAD	C/B AMPS/		
CKT NO.	DESCRIPTION	POLES	TYPE	KVA	PH–A	PH–B	PH–C	KVA	TYPE	POLES	DESCRIPTION	CKT NO.
1	AIR CONDITIONER	15	AC	0.400	4.570			4.170	HEAT	50	UNIT HEATER	2
3	AIR CONDITIONER	2P	AC	0.400		4.570		4.170	HEAT		UNIT HEATER	4
5	INTERIOR LIGHTS	20/1P	LIGHTS	0.200			4.370	4.170	HEAT	3P	UNIT HEATER	6
7	INTERIOR RECEPTACLES	20/1P	RECEPT	0.360	0.720			0.360	MOTOR	20/1P	FAN & LOUVER	8
9	SPARE	20/1P				1.040		1.040	MISC.	20	BATTERY CHARGER	10
11	SPARE	20/1P					1.040	1.040	MISC.	2P	BATTERY CHARGER	12
13	SPARE	20/1P			0.000					20/1P	SPARE	14
15	SPARE	20/1P				0.000				20/1P	SPARE	16
17	SPARE	20/1P					0.000			20/1P	SPARE	18
19	SPARE	20/1P			0.000					20/1P	SPARE	20
21	SPARE	20/1P				0.000				20/1P	SPARE	22
	LOAD SUMMARY			1.360	5.290	5.610	5.410	14.950				

NOTE:

1. ALL CONDUCTORS TO BE 2 #12, 1 #12G IN 3/4 INCH CONDUIT UNLESS OTHERWISE SHOWN. SEE NOTE 7

34.5 kV SUBSTATION CONDUIT SCHEDULE

CKT NO.	CONDUIT SIZE	NO. & SIZE CONDUCTORS	FROM	TO
LPS1–1	3/4" (EXISTING)	2#8 (EXISTING)	LPS1	CAPACITOR BANK NO. 1
LPS1–2	3/4" (EXISTING)	2#8 (EXISTING)	LPS1	CAPACITOR BANK NO. 2
LPS1–3	SEE NOTE 1	3#12	LPS1	SWGR. COMPT. HEATERS, NORTH
LPS1–4	3/4"	2#12, 1 #12 GRD	LPS1	LIGHTS, NEW SWGR.
LPS1–5	SEE NOTE 1	3#12	LPS1	SWGR. COMPT. HEATERS, SOUTH
LPS1–14,16,18	2"	4#1, 1 #1 GRD	LPS1	LPS2, BATTERY BLDG.
LPS1–20A,22A	3/4" (EXISTING)	2#12 (EXISTING)	LPS1 (SEE NOTE 2)	TRANSFORMER 1 CABINET
LPS1–24A,26A	3/4" (EXISTING)	2#12 (EXISTING)	LPS1 (SEE NOTE 2)	TRANSFORMER 2 CABINET
LPS1–32	3/4" (EXISTING)	2#12 (EXISTING)	LPS1	OCB1 HEATERS
LPS1–32A	3/4" (EXISTING)	2#12 (EXISTING)	LPS1	OCB2 HEATERS
LPS1–34	3/4" (EXISTING)	2#12 (EXISTING)	LPS1	TRANSFORMER 1 LTC
LPS1–35	3/4" (EXISTING)	2#12 (EXISTING)	LPS1	TRANSFORMER 2 LTC
LPS2–1,3	3/4"	2#12, 1 #12 GRD	LPS2	AIR CONDITIONER
LPS2–2,4,8	1"	3#6, 1 #6 GRD	LPS2	UNIT HEATER
LPS2–10,12	3/4"	2#12, 1 #12 GRD	LPS2	EXHAUST FAN CONTROL PANEL
LPS2–10,12A	3/4"	2#12, 1 #12 GRD	EXHAUST FAN CONTROL PANEL	BATTERY CHARGER
LPS2–6,8A,8B	3/4"	2#12, 1 #12 GRD	EXHAUST FAN CONTROL PANEL	EXHAUST FAN LOUVER OPERATOR
DR1	3" (SEE NOTE 6)	4#14, TWISTED PAIRS	SHELTERED AISLE/NMPC METERS	3rd FLOOR, PLANT OPERATIONS BLDG.
DR1	3/4" (SEE NOTE 3)	2#12 (SEE NOTE 3)	DC PANEL	OCB 1, AIR SWITCH 1
DR2	3/4" (SEE NOTE 3)	2#12 (SEE NOTE 3)	DC PANEL	OCB 2, AIR SWITCH 2
OS1	3/4" (EXISTING)	4#10 (EXISTING)	SHELTERED AISLE	CAPACITOR BANK 1
OS2	3/4" (EXISTING)	4#10 (EXISTING)	SWITCHGEAR UNIT 116	CAPACITOR BANK 2
CR1	3/4" (EXISTING)	4#12 (EXISTING)	SWITCHGEAR UNIT 107	OCB #1 CTS
CR2	3/4" (EXISTING)	4#12 (EXISTING)	SWITCHGEAR UNIT 116	OCB #2 CTS
CR3	1" (EXISTING)	12#12 (EXISTING)	SWITCHGEAR UNIT 108	TRANSFORMER 1 CABINET
CR4	1" (EXISTING)	12#12 (EXISTING)	SWITCHGEAR UNIT 117	TRANSFORMER 2 CABINET
CR5	3/4" (EXISTING)	2#12 (EXISTING)	SWITCHGEAR UNIT 108	NEUTRAL CT 1
CR6	3/4" (EXISTING)	2#12 (EXISTING)	SWITCHGEAR UNIT 117	NEUTRAL CT 2
CR7	2" (EXISTING)	32#12 (EXISTING)	SWITCHGEAR UNIT 110	34.5 kV TIE SWITCH (89)
TR1	1" (EXISTING)	12#12 (EXISTING)	SWITCHGEAR UNIT 107	OCB1 CONTROL
TR2	1" (EXISTING)	12#12 (EXISTING)	SWITCHGEAR UNIT 116	OCB2 CONTROL
DR3	1" (SEE NOTE 3)	2#2 (SEE NOTE 3)	DC PANEL	EXISTING SWITCHGEAR D.C.
DR4	1"	2#2	DC PANEL	NEW SWITCHGEAR D.C. BUS
DR5	–	2#4/0	BATTERY	BATTERY MAIN FUSE
DR6	–	2#10	BATTERY MAIN FUSE	CHARGER FUSE & CHARGER
DR7	2	2#4/0	BATTERY MAIN FUSE	DC PANEL
CR8	1"	–	SWITCHGEAR SHELTERED AISLE	BATTERY BUILDING
CR9	3/4"	2#14	SWITCHGEAR SHELTERED AISLE	BATTERY BUILDING EMERGENCY ASSIST.

NOTES:

1. WHERE FEASIBLE, CONDUCTORS MAY BE INSTALLED IN EXISTING WIREWAY. PROVIDE NEW WIREWAY OR 3"C WHERE REQUIRED.
2. WIRING FROM LPS1 TO EXISTING 208/230 VOLT AUTO TRANSFORMER, TO MAIN TRANSFORMER CABINET IS EXISTING. PROVIDE CONDUIT AND WIRE AT TRANSFORMER AS REQUIRED TO SUPPLY FANS.
3. RECONNECT EXISTING OCB AND SWITCHGEAR DC CIRCUITS TO NEW DC PANEL.
4. 120V OR 208V CIRCUITS NOT SCHEDULED SHALL CONSIST OF #12 CONDUCTORS WITH #12 GROUND IN 3" CONDUIT, UNLESS OTHERWISE SHOWN.
5. EXISTING CONDUITS AND CONDUCTORS ARE SHOWN FOR REFERENCE ONLY AND MAY NOT REFLECT AS–BUILT CONDITIONS. CONDUIT SIZES, CONDUCTOR SIZES, AND CONDUCTOR QUANTITIES SHALL BE FIELD VERIFIED BEFORE DISCONNECTING OR MODIFING ANY EXISTING CONDUITS OR CONDUCTORS.
6. EXISTING CONDUCTORS SHALL BE REMOVED FROM NMPC METER PANEL TO 3rd FLOOR OF PLANT OPERATIONS BUILDING. EXISTING 3" CONDUIT SHALL BE REMOVED FROM THE MAIN GALLERY/ CHEMICAL GALLERY INTERSECTION TO THE POINT WHERE THE CONDUIT ENTERS THE 1st FLOOR OF THE PLANT OPERATIONS BUILDING.
7. CONDUITS WITHIN METAL–CLAD SWITCHGEAR SHALL BE RIGID GALVANIZED STEEL CONDUITS. CONDUITS NOT WITHIN METAL–CLAD SWITCHGEAR SHALL BE PVC COATED RIGID GALVANIZED STEEL.

SUMMARY OF WORK BY OTHER CONTRACTS:
ALL WORK IS PROVIDED UNDER CONTRACT 4B

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATED 10/26/05 PER L.Campbell

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED IN THE TITLE BLOCK. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.

02/26/01 OBG PWW
0859e018

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	JJC
1		AS BID	
2	10/31/05	RECORD DRAWING	

In charge of TEL
Designed by RAC
Drawn by CRV
Checked by WFH

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

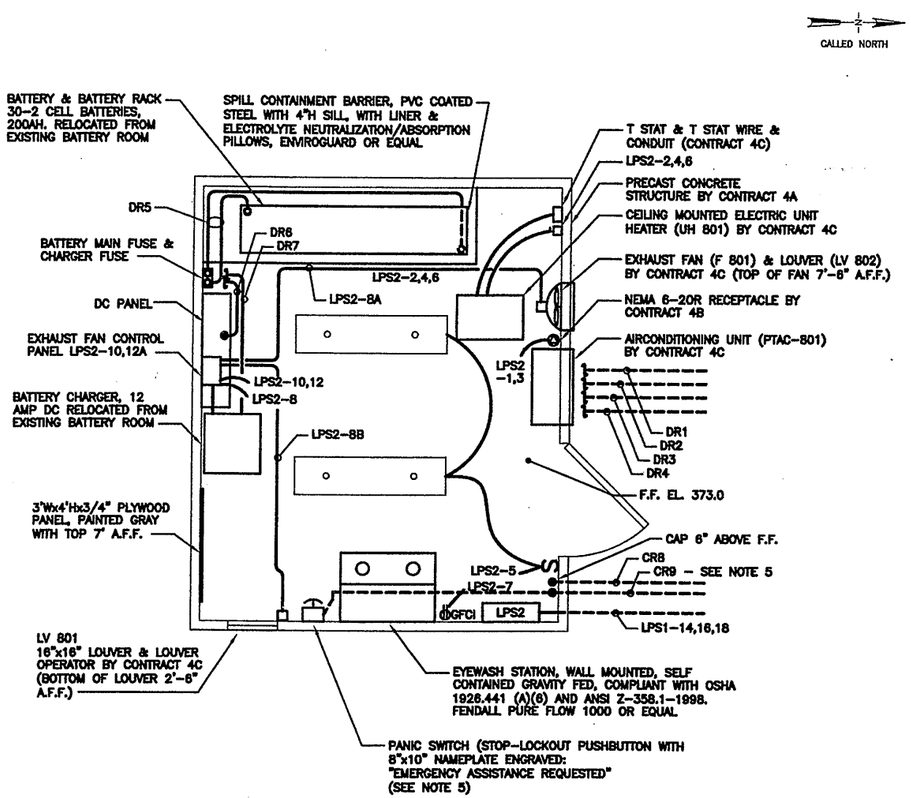
MAIN SUBSTATION SCHEDULES

ELECTRICAL

LEONARD J. CAMPBELL — STATE OF NEW YORK — LICENSED PROFESSIONAL ENGINEER — No. 60755

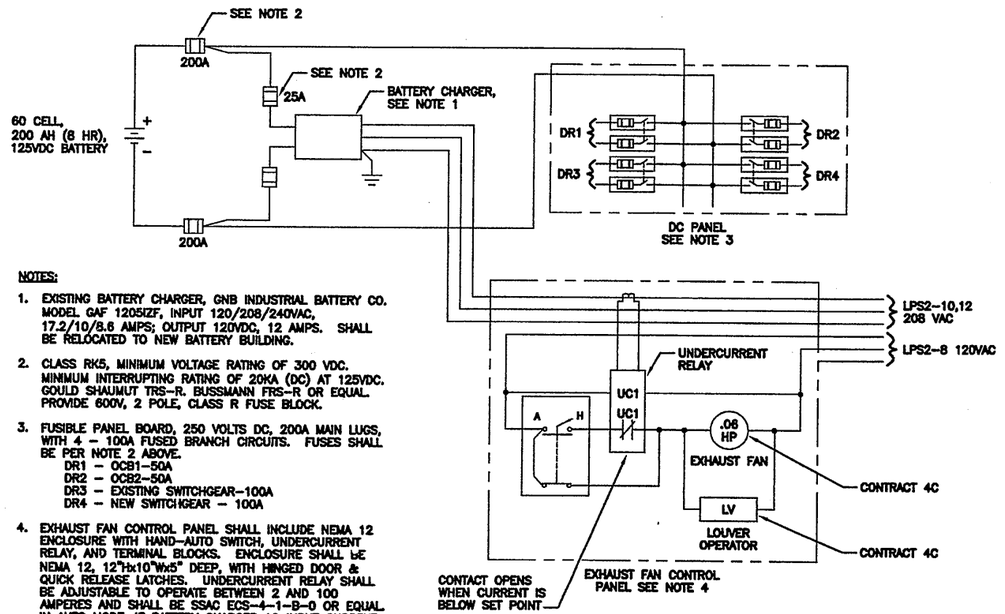
File Number 00659
Date APRIL 2001
L.Campbell

E–018



BATTERY BUILDING – 34.5KV SUBSTATION

1/2"=1'-0"



NOTES:

1. EXISTING BATTERY CHARGER, GNB INDUSTRIAL BATTERY CO. MODEL GAF 1205IZF, INPUT 120/208/240VAC, 17.2/10/8.6 AMPS; OUTPUT 120VDC, 12 AMPS. SHALL BE RELOCATED TO NEW BATTERY BUILDING.
2. CLASS RK5, MINIMUM VOLTAGE RATING OF 300 VDC. MINIMUM INTERRUPTING RATING OF 20KA (DC) AT 125VDC. GOULD SHAWMUT TRS-R. BUSSMANN FRS-R OR EQUAL. PROVIDE 600V, 2 POLE, CLASS R FUSE BLOCK.
3. FUSIBLE PANEL BOARD, 250 VOLTS DC, 200A MAIN LUGS, WITH 4 - 100A FUSED BRANCH CIRCUITS. FUSES SHALL BE PER NOTE 2 ABOVE.
   DR1 - OCB1-50A
   DR2 - OCB2-50A
   DR3 - EXISTING SWITCHGEAR-100A
   DR4 - NEW SWITCHGEAR - 100A
4. EXHAUST FAN CONTROL PANEL SHALL INCLUDE NEMA 12 ENCLOSURE WITH HAND-AUTO SWITCH, UNDERCURRENT RELAY, AND TERMINAL BLOCKS. ENCLOSURE SHALL BE NEMA 12, 12"Hx10"Wx5" DEEP, WITH HINGED DOOR & QUICK RELEASE LATCHES. UNDERCURRENT RELAY SHALL BE ADJUSTABLE TO OPERATE BETWEEN 2 AND 100 AMPERES AND SHALL BE SSAC ECS-4-1-B-0 OR EQUAL. IN AUTO MODE, IF BATTERY CHARGER AC INPUT CURRENT DECREASES BELOW SET POINT OF APPROXIMATELY 3 AMPS, UNDERCURRENT RELAY SHALL ENERGIZE AND ITS OUTPUT CONTACT SHALL OPEN, DE-ENERGIZING EXHAUST FAN. WHEN AC INPUT CURRENT INCREASES TO 3 AMPS OR MORE, RELAY SHALL DE-ENERGIZE, ITS OUTPUT CONTACT SHALL CLOSE, AND EXHAUST FAN SHALL OPERATE. FINAL RELAY SETTING SHALL BE 10% ABOVE NORMAL CHARGER AC INPUT CURRENT.
5. CONNECT TO AUXILIARY CONTACT INPUT ON TIE BREAKER DISTRIBUTION PROTECTION RELAY IN UNIT 100.

ELEMENTARY DIAGRAM DC POWER SUPPLY & VENTILATION SYSTEM

NOT TO SCALE

SUMMARY OF WORK BY OTHER CONTRACTS:
1. CONTRACT 4A SHALL PROVIDE PRECAST CONCRETE STRUCTURE, INCLUDING SITE PREPARATION FOR STRUCTURE. REFERENCE S-606.
2. CONTRACT 4C SHALL PROVIDE ELECTRIC UNIT HEATER WITH THERMOSTAT & THERMOSTAT WIRING, EXHAUST FAN WITH LOUVER, INTAKE LOUVER WITH OPERATOR, AND AIR CONDITIONING UNIT. REF H-401.

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATED 10/21/05 PER: L. Campoletta

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03/21/01 OBG CRV
0659E019

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

NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	WC
1		AS BID	
2	10/31/05	RECORD DRAWING	

In charge of TEL
Designed by RAC
Drawn by CRV
Checked by WFH

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

34.5 KV SUBSTATION BATTERY BUILDING

ELECTRICAL

STATE OF NEW YORK • LEONARD J. CAMPOLETTA • No. 60765 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001

E-019

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	LOCATION	LAMPS	BALLAST	VOLTAGE	MANUFACTURER
A	WALL MOUNTED FIXTURE WITH ALUMINUM HOUSING WHITE ENAMEL FINISH AND HIGH-IMPACT DEEP ACRYLIC DIFFUSER.	THROUGHOUT BUILDINGS	2-32 WATT T-8 FLUORESCENTS	ELECTRONIC, 0°F STARTING TEMPERATURE	120VAC	LITHONIA DMA SERIES OR EQUAL
B	UNDERCABINET FIXTURE WITH STEEL HOUSING, WHITE ENAMEL FINISH, ACRYLIC DIFFUSER AND ON/OFF ROCKER SWITCH.	OPERATIONS CENTER (I/E & LAB)	1-32 WATT T-8 FLUORESCENT	ELECTRONIC	120VAC	LITHONIA 2UC SERIES OR EQUAL
C	WALL, SURFACE OR PENDANT MOUNTED FIXTURE WITH ALUMINUM HOUSING, WHITE ENAMEL FINISH, HIGH-IMPACT DEEP ACRYLIC DIFFUSER AND WET LOCATION FITTINGS. FIXTURE SHALL BE SUITABLE FOR WET AREAS.	THROUGHOUT BUILDINGS	2-32 WATT T-8 FLUORESCENT	ELECTRONIC, 0°F STARTING TEMPERATURE	120VAC	LITHONIA DMAW SERIES OR EQUAL
D	SURFACE MOUNTED DOCK LIGHTING FIXTURE WITH 60" ARM AND WIRE GUARD.	UV DISINFECTION	1-100 WATT METAL HALIDE	HIGH REACTANCE, HIGH POWER FACTOR	120VAC	FOSTORIA MODEL DKL-60VA MH OR EQUAL
E	SURFACE MOUNTED EMERGENCY LIGHTING UNIT WITH 12 VOLT MAINTENANCE-FREE LEAD CALCIUM BATTERY, CHARGER AND TEST PUSHBUTTON. FIXTURE SHALL BE SUITABLE FOR WET AREAS.	THROUGHOUT BUILDINGS	2-12 WATT HALOGEN	-	120VAC	LITHONIAL ELU4X SERIES OR EQUAL
F	SURFACE MOUNTED FLOODLIGHT WITH WIDE BEAM DISTRIBUTION, DARK BRONZE FINISH AND WALL MOUNTING BRACKET. FIXTURE SHALL BE SUITABLE FOR WET AREAS WITH MARINE UL 595 RATING.	THROUGHOUT BUILDINGS	1-250 WATT METAL HALIDE	REGULATOR	208VAC	WIDELITE EFX SERIES OR EQUAL
G	WALL MOUNTED WRAP-AROUND FIXTURE WITH STEEL HOUSING, WHITE ENAMEL FINISH AND MATT WHITE ACRYLIC DIFFUSER.	OPERATIONS CENTER	2-32 WATT T-8 FLUORESCENTS	ELECTRONIC	120VAC	LITHONIA WC 240 SERIES OR EQUAL
H	WALL MOUNTED WRAP-AROUND FIXTURE WITH STEEL HOUSING, WHITE ENAMEL FINISH AND MATT WHITE ACRYLIC DIFFUSER.	OPERATIONS CENTER	2-17 WATT T-8 FLUORESCENTS	ELECTRONIC	120VAC	LITHONIA WC 220 SERIES OR EQUAL
I	WALL MOUNTED UPLIGHT/DOWNLIGHT WITH STEEL HOUSING, FINISH TO BE SELECTED BY ENGINEER AND WHITE, REGRESSED CROSS BAFFLES.	OPERATIONS CENTER (STAIR #2)	2-32 WATT T-8 FLUORESCENTS	ELECTRONIC	120VAC	ICE WMARII SERIES OR EQUAL
J	2'x2', RECESSED, STATIC TROFFER FIXTURE WITH STEEL HOUSING, WHITE ENAMEL FINISH, FLUSH DOOR AND ACRYLIC DIFFUSER.	OPERATIONS CENTER	4-17WATT T-8 FLUORESCENTS	ELECTRONIC, DIMMABLE	120VAC	LITHOINA 2SP SERIES OR EQUAL
K	2'x2', RECESSED STATIC TROFFER FIXTURE WITH STEEL HOUSING, WHITE ENAMEL FINISH AND 4" DEEP, 9 CELL, DIFFUSE SILVER PARABOLIC LOUVER.	OPERATIONS CENTER (SCADA ROOM & CONTROL ROOM)	4-17WATT T-8 FLUORESCENTS	ELECTRONIC, DIMMABLE	120VAC	LITHONIAL 2PM4 SERIES OR EQUAL
L1	PENDANT MOUNTED, ENCLOSED LOW BAY FIXTURE WITH ALUMNINUM CONSTRUCTION, CORROSION RESISTANT HARDWARE, ACRYLIC REFRACTOR AND AUXILIARY QUARTZ RESTRIKE. FIXTURE SHALL BE SUITABLE FOR WET AREAS.	SECONDARY EFFLUENT PUMPING STATION & CHEMICAL BLDG. "C"	1-250 WATT METAL HALIDE 1-150 WATT QUARTZ	REGULATOR, BI-LEVEL	120VAC	WIDELITE LBII SERIES OR EQUAL
L2	PENDANT MOUNTED, ENCLOSED LOW BAY FIXTURE WITH ALUMINUM CONSTRUCTION, CORROSION RESISTANT HARDWARE AND ACRYLIC REFRACTOR. FIXTURE SHALL BE SUITABLE FOR WET AREAS.	SECONDARY EFFLUENT PUMPING STATION & CHEMICAL BLDG "C"	1-250 WATT METAL HALIDE	REGULATOR	120VAC	WIDELITE LBII SERIES OR EQUAL
M	RECESSED, OPEN DOWNLIGHT WITH ALUMINUM HOUSING, WHITE FLANGE AND CLEAR 6" DIAMETER REFLECTOR.	OPERATIONS CENTER	2-26 WATT COMPACT FLUORESCENT	ELECTRONIC, DIMMABLE	120VAC	LITHONIA AF SERIES OR EQUAL
N	RECCESSED, ENCLOSED DOWNLIGHT WITH ALUMINUM HOUSING, WHITE FLANGE, CLEAR 7" DIAMETER REFLECTOR AND PRISMATIC LENS. FIXTURE SHALL BE SUITABLE FOR WET AREAS.	OPERATIONS CENTER EXTERIOR	1-50 WATT METAL HALIDE	HIGH REACTANCE	120VAC	LITHONIA LGH SERIES OR EQUAL
O	RECESSED, ENCLOSED DOWNLIGHT WITH STEEL HOUSING, FLUSH WHITE FLANGE AND 12" SQUARE PRISMATIC LENS. FIXTURE SHALL BE SUITABLE FOR WET AREAS.	OPERATIONS CENTER SHOWERS	2-26 WATT COMPACT FLUORESCENT	ELECTRONIC	120VAC	LITHONIA LAF SERIES OR EQUAL
P	PENDANT MOUNTED, OPEN FIXTURE WITH 10% UPLIGHT, STEEL REFLECTOR AND WHITE ENAMEL FINISH.	THROUGHOUT BUILDINGS	2-32 WATT T-8 FLUORESCENTS	ELECTRONIC, 0°F STARTING TEMPERATURE	120VAC	LITHONIA AF SERIES OR EQUAL
Q	SURFACE MOUNTED TRACK LIGHTING UNIT WITH 8', SINGLE CIRCUIT, 20 AMP TRACK, THREE OPEN ROUNDBACK CYLINDER FIXTURES AND ALL FITTINGS, MOUNTING HARDWARE AND ACCESSORIES AS NECESSARY. TRACK AND FIXTURES SHALL HAVE WHITE FINISH.	OPERATIONS CENTER PRESENTATION ROOM	3-250 WATT QUARTZ (10° BEAM SPREAD)	-	120VAC	LITHONIA TB SERIES TRACK & TCR SERIES FIXTURES OR EQUAL
S	TWIN POLE MOUNTED STREET LIGHTING FIXTURES WITH ALUMINUM HOUSINGS, ALZAK REFLECTORS (TYPE II DISTRIBUTION), LENSES AND MOUNTING ARMS. FIXTURES SHALL BE SUITABLE FOR WET AREAS. POLE SHALL BE 20', 4" SQUARE, NON-TAPERED STEEL. FIXTURES AND POLE SHALL HAVE DARK BRONZE FINISH.	EXTERIOR	2-250 WATT METAL HALIDE	REGULATOR	480VAC	WIDELITE XLM SERIES OR EQUAL
S1	SINGLE POLE MOUNTED STREET LIGHTING FIXTURE WITH ALUMINUM HOUSING, ALZAK REFLECTOR (TYPE II DISTRIBUTION), LENS AND MOUNTING ARM. FIXTURE SHALL BE SUITABLE FOR WET AREAS. POLE SHALL BE 20', 4" SQUARE, NON-TAPERED, STEEL. FIXTURE AND POLE SHALL HAVE DARK BRONZE FINISH.	EXTERIOR	1-250 WATT METAL HALIDE	REGULATOR	480VAC	WIDELITE XLM SERIES OR EQUAL
S2	SINGLE POLE MOUNTED WALKWAY LIGHTING FIXTURE WITH ALUMINUM HOUSING, ALZAK REFLECTOR (TYPE II DISTRIBUTION), LENS AND MOUNTING ARM. FIXTURE SHALL BE SUITABLE FOR WET AREAS. POLE SHALL BE 12', 4" SQUARE, NON-TAPERED, STEEL. FIXTURE AND POLE SHALL HAVE DARK BRONZE FINISH.	EXTERIOR	1-175 WATT METAL HALIDE	REGULATOR	480VAC	WIDELITE XLM SERIES OR EQUAL
W1	WALL MOUNTED WALL-PACK FIXTURE WITH ALUMINUM HOUSING, LEXAN REFRACTOR, MEDIUM NON-CUTOFF TYPE II DISTRIBUTION AND DARK BRONZE FINISH. FIXTURE SHALL BE SUITABLE FOR WET AREAS.	EXTERIOR	1-250 WATT METAL HALIDE	REGULATOR	120VAC	GENERAL ELECTRIC WALLIGHTER SERIES OR EQUAL
W2	WALL MOUNTED WALL-PACK FIXTURE WITH ALUMINUM HOUSING, LEXAN REFRACTOR, MEDIUM NON-CUTOFF TYPE II DISTRIBUTION AND DARK BRONZE FINISH. FIXTURE SHALL BE SUITABLE FOR WET AREAS.	EXTERIOR	1-175 WATT METAL HALIDE	REGULATOR	120VAC	GENERAL ELECTRIC WALLIGHTER SERIES OR EQUAL
W3	WALL MOUNTED WALL-PACK FIXTURE WITH ALUMINUM HOUSING, LEXAN REFRACTOR, MEDIUM NON-CUTOFF TYPE II DISTRIBUTION AND DARK BRONZE FINISH. FIXTURE SHALL BE SUITABLE FOR WET AREAS.	EXTERIOR	1-100 WATT METAL HALIDE	REGULATOR	120VAC	GENERAL ELECTRIC WALLIGHTER SERIES OR EQUAL
X	SURFACE OR CEILING MOUNTED, SINGLE FACED EXIT SIGN, SELF POWERED WITH RED LETTERS, WHITE FACE AND DIRECTION ARROWS. DOUBLE FACED EXIT SIGNS, WHERE SHOWN ON LIGHTING PLANS, SHALL CONSIST OF TWO SINGLE FACED EXIT SIGNS MOUNTED BACK-TO-BACK.	THROUGHOUT BUILDINGS	TRITIUM GAS TUBES	-	-	SRB TECHNOLOGIES BETALUX MODEL #171 OR EQUAL
-	TIME CLOCK SHALL BE ASTRONOMICAL TYPE WITH WALL MOUNTED ENCLOSURE, 16 HOUR SPRING BACKUP AND SINGLE POLE, DOUBLE THROW, 120VAC CONTACTS.	UV DISINFECTION	-	-	120VAC	INTERMATIC T50000 SERIES OR EQUAL
-	PHOTOELECTRIC CELL SHALL BE EXTERIOR, SUFACE MOUNTED TYPE WITH 120VAC CONTACT. CONTACT SHALL CLOSE AT APPROXIMATELY 3 FOOTCANDLES AND OPEN AT APPROXIMATELY 12 FOOTCANDLES.	EXTERIOR	-	-	120VAC	GENERAL ELECTRIC OR EQUAL

07/01/01 OBG CRV
0659e020

RECORD DRAWING

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DATE: 10/21/05 PER: L.Rampulla

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NOT TO SCALE

NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

No.	Date	Revisions	Init
0		AS BID	LVC
1	10/31/05	RECORD DRAWING	LJ

In charge of PLD
Designed by JJC
Drawn by CRV
Checked by PLD

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

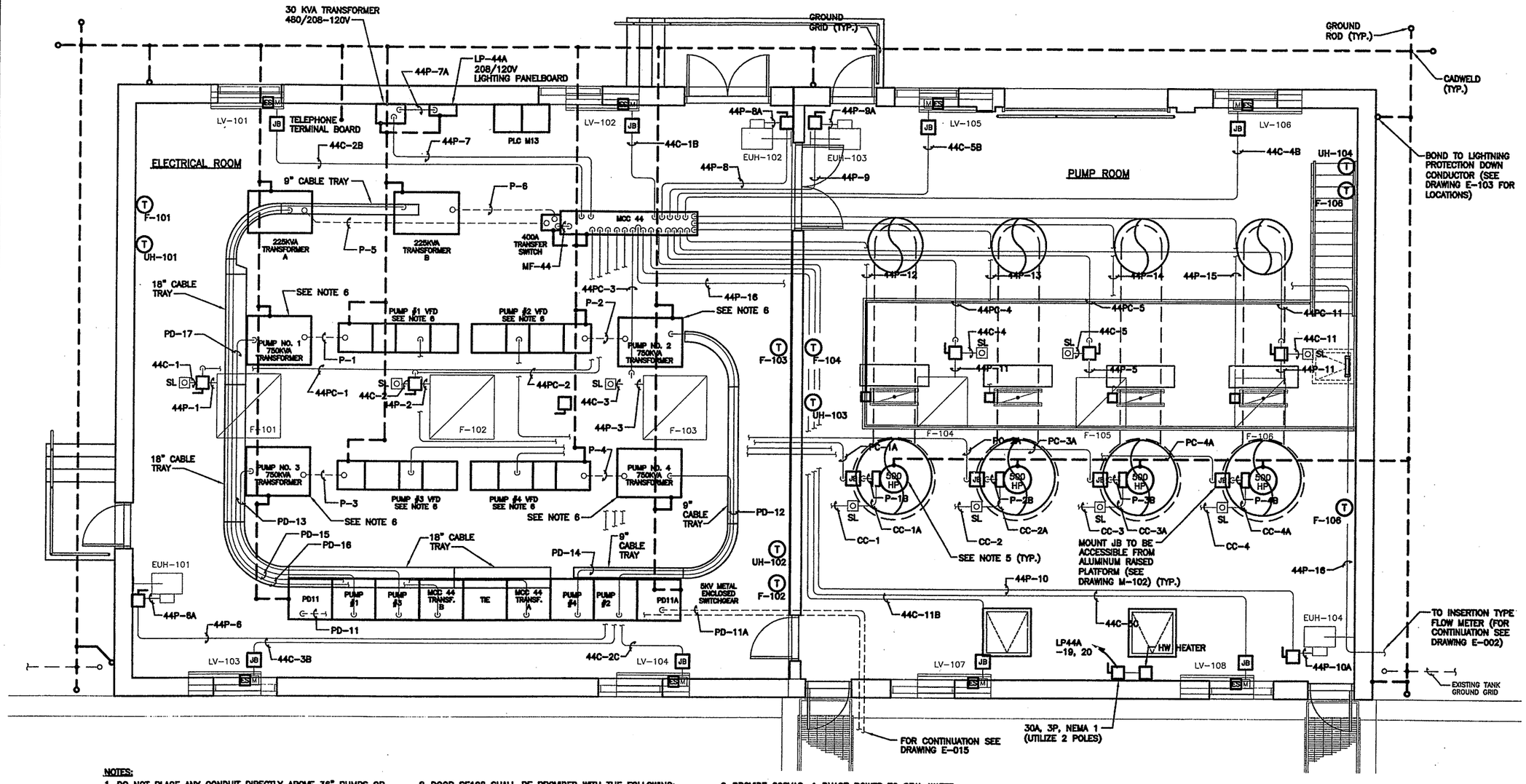
LIGHTING FIXTURE SCHEDULE

ELECTRICAL

STATE OF NEW YORK • LEONARD J. CAMPULLA • No. 60751 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date JULY 2001
L.Rampulla

E-020



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

NOTES:

1. DO NOT PLACE ANY CONDUIT DIRECTLY ABOVE 36" PUMPS OR 36" BUTTERFLY VALVES.
2. FOR PD CONDUIT SCHEDULE SEE DRAWING E-009.
3. FOR P & PC CONDUIT SCHEDULE SEE DRAWING E-107.
4. LIQUID-TITE CONDUIT SHALL BE USED FOR CONNECTIONS TO VIBRATING EQUIPMENT.
5. FOR MOTOR VIBRATION AND RTD'S SEE DRAWING I-101.
6. CONTRACT 4A SHALL PROVIDE VFD'S AND TRANSFORMERS FOR PUMPS 1-4. REFERENCE SPECIFICATION 11321
7. REFER TO HVAC DRAWINGS FOR ADDITIONAL LOUVER, DAMPER, THERMOSTAT, CONTROL VALVE, CONTROL (DDC), AND OTHER CONTROL HVAC REQUIREMENTS. CONTRACT 4B (ELECTRICAL) SHALL PROVIDE ALL CONDUIT AND CONDUCTORS FOR 120 VOLT COTNROLS, AS SHOWN OR REQUIRED (EXCEPT WIRING BETWEEN DDC SYSTEM COMPONENTS). CONTRACT 4C (HVAC) SHALL PROVIDE ALL CONDUIT AND CONDUCTORS REQUIRED FOR LOW VOLTAGE (LESS THAN 120 VOLT) CONTROLS AND FOR WIRING BETWEEN DDC SYSTEM COMPONENTS INCLUDING BUT NOT LIMITED TO DDC, LOW VOLTAGE T-STAT, VARIABLE AIR VOLUME (VAV) CONTROLS, ETC.
8. DOOR SE108 SHALL BE PROVIDED WITH THE FOLLOWING:
   a. 480VAC, 3 PHASE POWER TO DOOR OPERATOR. PROVIDE A 20AMP, 3 POLE CIRCUIT BREAKER IN MCC44 WITH 3#12, 1#12 GROUND IN 3/4" CONDUIT ROUTED FROM MCC44 TO DOOR OPERATOR. PROVIDE A 30AMP, 3 POLE NEMA 1 DISCONNECT SWITCH AT DOOR OPERATOR.
   b. 120VAC, 1 PHASE POWER TO DOOR ALARM AND LIGHTS. UTILIZE SPARE 20AMP, 1 POLE CIRCUIT BREAKER (LP44A-20) AND 2#12, 1#12 GROUND IN 3/4" CONDUIT ROUTED FROM LP44 TO ALARM BELL AND LIGHTS.
   c. 2#12 IN 3/4" CONDUIT FROM DOOR OPERATOR TO DOOR ALARM BELL AND LIGHT.
   d. 2#14 IN 3/4" CONDUIT FROM DOOR OPERATOR TO DOOR SENSING EDGE JUNCTION BOX.
   e. 2#14 IN 3/4" CONDUIT FROM DOOR OPERATOR TO DOOR GUIDE INTERLOCK SWITCHES (TYPICAL TWO).
   f. 3#14 IN 3/4" CONDUIT FROM DOOR OPERATOR TO INTERIOR MOUNTED PUSHBUTTON STATION AND 4#14 IN 3/4" CONDUIT FROM INTERIOR MOUNTED PUSHBUTTON STATION TO EXTERIOR MOUNTED PUSHBUTTON STATION.
9. PROVIDE 208VAC, 1 PHASE POWER TO SEAL WATER BOOSTER PUMP IN PUMP ROOM. POWER SHALL ORIGINATE IN LIGHTING PANELBOARD LP44A. REPLACE TWO SPARE 20AMP, 1 POLE CIRCUIT BREAKERS IN LP44A WITH ONE 20AMP, 2 POLE CIRCUIT BREAKER TO SERVE THE BOOSTER PUMP. PROVIDE 2#12, 1#12 GROUND IN 3/4" CONDUIT FROM LP44A TO BOOSTER PUMP CONTROLLER TO FACILITATE WIRING. PROVIDE A TWO POLE MANUAL STARTING SWITCH AT THE CONTROLLER TO SERVE AS THE DISCONNECTING MEANS.

SUMMARY OF WORK ON OTHER CONTRACTS:
CONTRACT 4A SHALL PROVIDE PUMP 1-4 VFD EQUIPMENT PER NOTE 6

RECORD DRAWING
THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. DIMENSIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.
DATED 10/11/05 PER: LVampolut

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Layer: ON=*; OFF=*REF*
X: 0559X101.DWG
4/10/01 BBL DCC
05503000/0659E101.DWG

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

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	LVC
1		AS BID	
2	10/31/05	RECORD DRAWING	

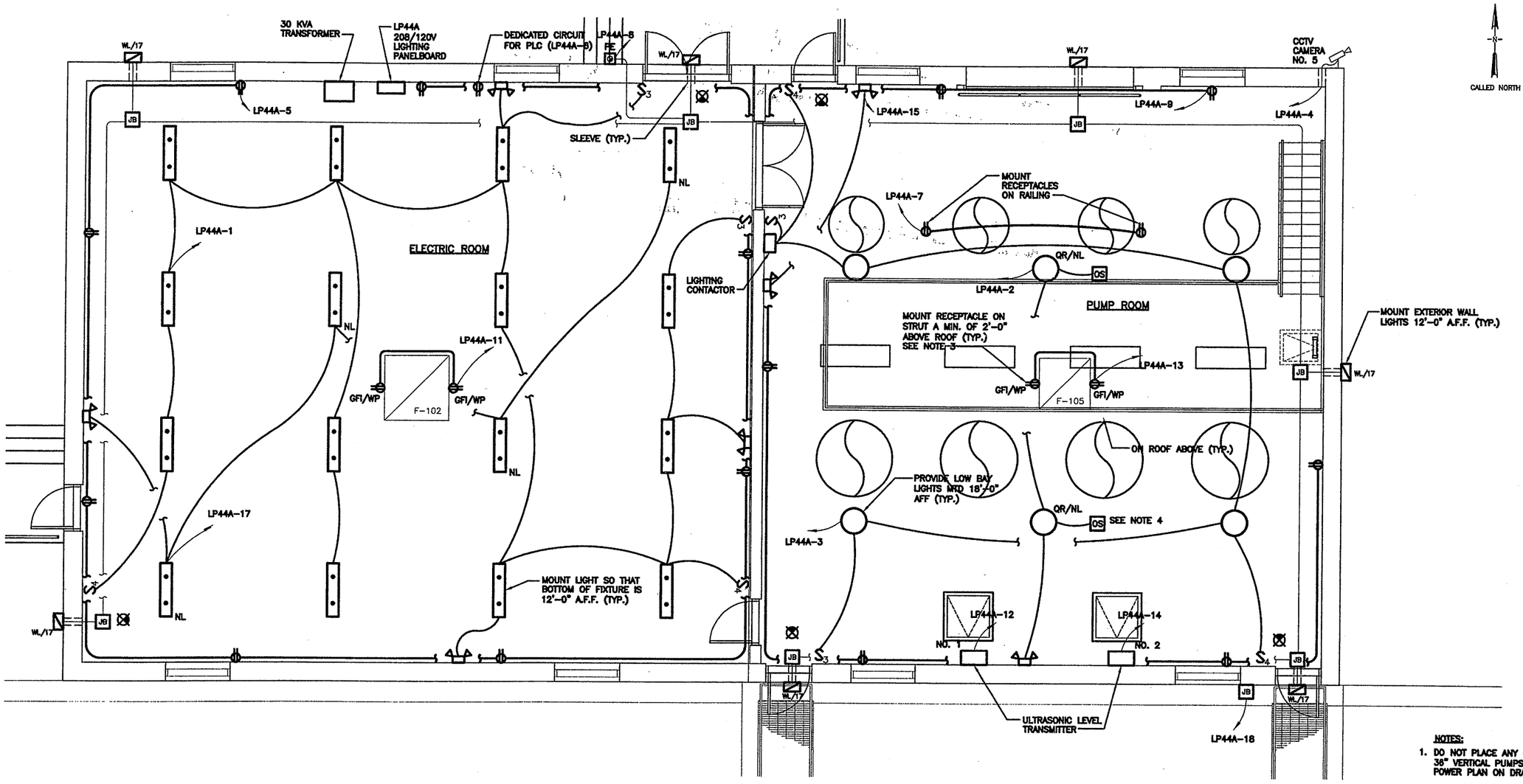
In charge of TEL
Designed by TEL, MEE
Drawn by DCC
Checked by WFH

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
SECONDARY EFFLUENT PUMPING STATION
SECONDARY EFFLUENT PUMPING STATION POWER PLAN
ELECTRICAL

STATE OF NEW YORK · LEONARD J. CAMPOLETA · LICENSED PROFESSIONAL ENGINEER · No. 60795
LVampolut

File Number 00659
Date APRIL 2001
E-101



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

NOTES:

1. DO NOT PLACE ANY CONDUIT OR LIGHT FIXTURES DIRECTLY ABOVE 36" VERTICAL PUMPS OR 36" BUTTERFLY VALVES. REFER TO POWER PLAN ON DRAWING E-101 FOR LOCATIONS.
2. REFER TO DRAWING E-107 FOR PANELBOARD SCHEDULE.
3. DO NOT ROUTE ANY CONDUIT OVER ROOF. KEEP ALL FEEDERS IN CEILING SPACE, FEEDING UP TO THE UNIT THROUGH THE UNIT CURB. ALL PENETRATIONS SHALL BE WATER TIGHT.
4. OCCUPANCY SENSOR TO SWITCH NIGHT LIGHTS FROM LOW TO HIGH BRIGHTNESS WITH START AT HIGH LEVEL AND MANUAL SWITCHING.
5. PROVIDE LIGHTING CONTACTOR FOR METAL HALIDE CIRCUITS.

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MINOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE 10/21/05 PER LKampolet

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Layer: ON=*; OFF=*REF*
X: 0659X101.DWG
5/30/01 BBL DCC
05503000/0659E101.DWG

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

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No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	LK
1		AS BID	
2	10/31/05	RECORD DRAWING	

In charge of TEL
Designed by MEE
Drawn by DCC
Checked by WFH

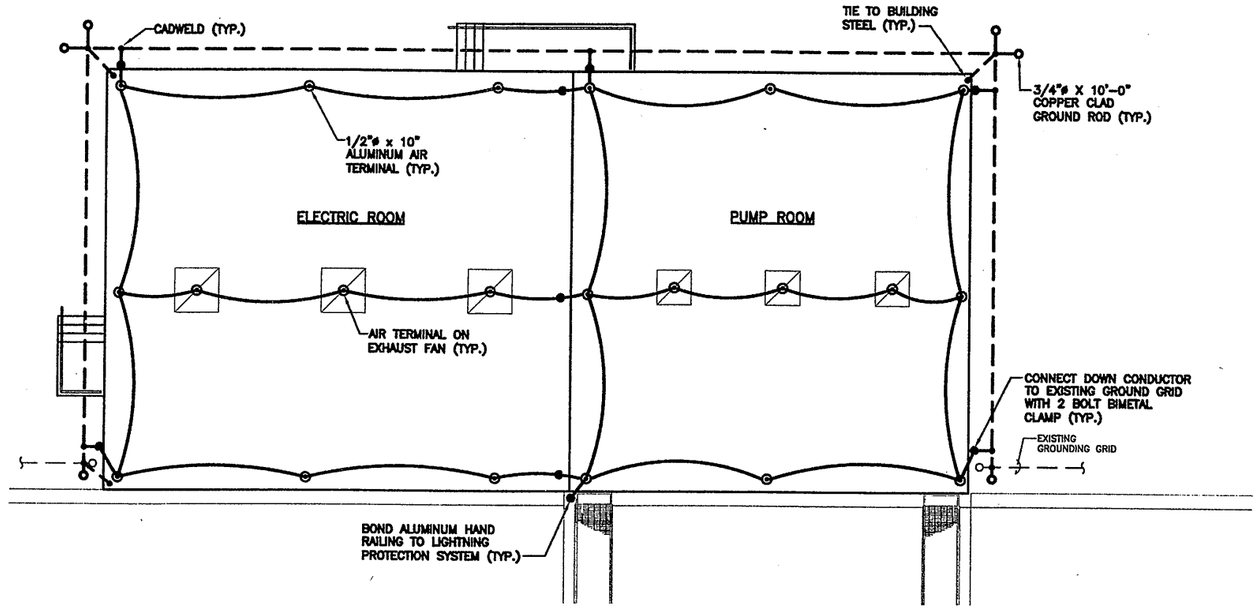
ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
SECONDARY EFFLUENT PUMPING STATION
SECONDARY EFFLUENT PUMP STATION LIGHTING PLAN
ELECTRICAL

LEONARD J. CAMPOLETA LICENSED PROFESSIONAL ENGINEER No. 60757 STATE OF NEW YORK

File Number 00659
Date APRIL 2001
LKampolet

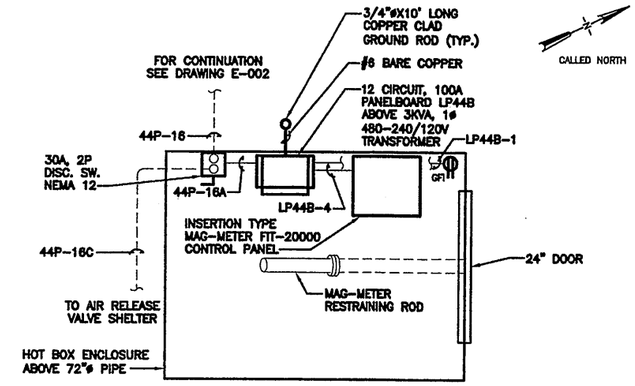
E-102



CALLED NORTH

NOTE:
REFER E-004 FOR LIGHTNING PROTECTION NOTES.

LIGHTNING PROTECTION PLAN
SCALE: 1/8"=1'-0"

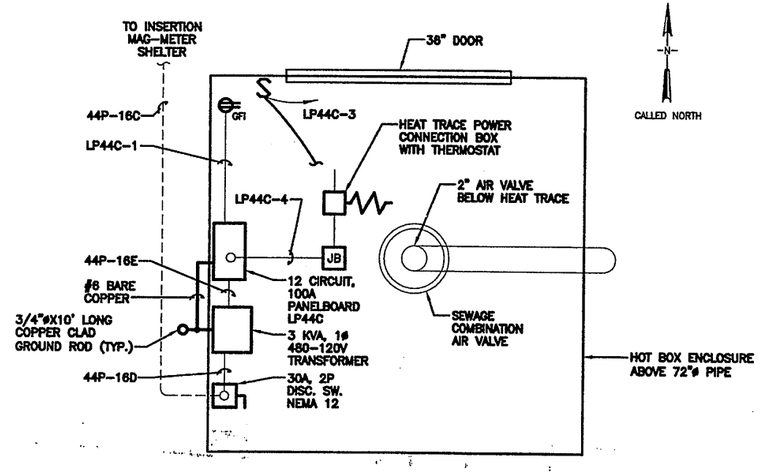


CALLED NORTH

NOTE:
MOUNT ELECTRICAL EQUIPMENT ON KINDORF AND ATTACH TO SIDE WALL.

INSERTION MAG-METER SHELTER POWER PLAN
NOT TO SCALE

NOTE:
ENCLOSURE TO BE "HOT-BOX" OR EQUAL BY CONTRACT 4A.



CALLED NORTH

NOTE:
MOUNT ELECTRICAL EQUIPMENT ON KINDORF AND ATTACH TO SIDE WALL.

AIR RELEASE VALVE SHELTER POWER PLAN
NOT TO SCALE

NOTE:
ENCLOSURE TO BE "HOT-BOX" OR EQUAL BY CONTRACT 4A.

RECORD DRAWING
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Layer: ON=*; OFF=*REF*
X: 0659X100, X101.DWG
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1/8"=1'-0" (8' 0 8' 16')

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	LE
1		AS BID	↓
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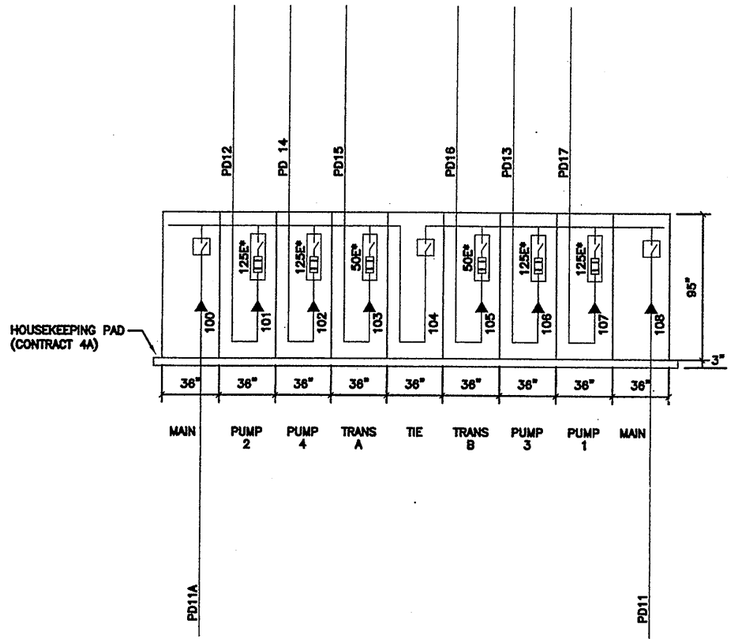
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
SECONDARY EFFLUENT PUMPING STATION
SECONDARY EFFLUENT PUMP STATION LIGHTNING PROTECTION PLAN
ELECTRICAL

STATE OF NEW YORK · LEONARD J. CAMPOLETA · No. 60765 · LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
LKampolet

E-103



5 KV METAL-ENCLOSED SWITCHGEAR FRONT ELEVATION

NOT TO SCALE

* FUSE SIZE IS PRELIMINARY.
FINAL FUSE SIZE SHALL BE AS SPECIFIED FOLLOWING
RECEIPT OF FUSE & TRANSFORMER SHOP DRAWINGS.

RATINGS:

RATED VOLTAGE: 4.16KV
MAXIMUM DESIGN VOLTAGE: 4.76 KV
IMPULSE WITHSTAND BIL: 60KV
CONTINUOUS CURRENT: 600 AMPERES (MAIN BUS & SWITCHES)
LOAD INTERRUPTING CURRENT: 600 AMPERES
MOMENTARY CURRENT: 40KA ASYM.
FAULT CLOSE CURRENT: 40KA ASYM.
ENCLOSURE: INDOOR:
FUSES: GE EJ01.9F62 SERIES

SUMMARY OF WORK BY OTHER CONTRACTS:
CONTRACT 4A SHALL PROVIDE HOUSE KEEPING PAD

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE 10/21/05 PER: [signature]

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03/21/01 OBG CRV
0659E104

NOT TO SCALE

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0	4/20/01	ISSUED FOR APPROVAL	[illegible]
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2	10/31/05	RECORD DRAWING	[illegible]

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Designed by RAC
Drawn by CRV
Checked by WFH

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

SECONDARY EFFLUENT PUMPING STATION 5KV SWITCHGEAR

ELECTRICAL

STATE OF NEW YORK • LEONARD J. CAMPOLIETA • No. 60758 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
[signature]

E-104

MCC 44 – SECONDARY EFFLUENT PUMPING STATION

PANEL NUMBER	EQUIPMENT IN MCC	CONDUIT NUMBER	EQUIPMENT REMOTE FROM MCC	CONDUIT SCHEDULE: CONDUIT NUMBER	CONDUCTOR QUANTITY \ SIZE	DIAMETER
1A	300/400 3P; SNET1; 600A BUS; 42,000 AMPS BRACING	MF-44	400A TRANSFER SWITCH; MF-44	MF-44	(3) 600kcmil, (1) 2/0G	3" C.
1B	25/100 3P; SIZE 1; CPT; CR1; HOA; SNET1-1; DEVICENET MODULE (TYPICAL)	44PC-1 44C-1B 44C-1A	44PC-1; 30A, 3P; 44C-1; 44P-1; NEMA 4; 5 HP; SL; DM ES LV-102; 44C-1B; T-STAT **EXHAUST FAN NO. F-101**	44PC-1 44P-1 44C-1 44C-1A 44C-1B	3 #12, 1 #12G 5 #14 3 #12, 1 #12G 2 #14 2 #14 2 #12, 2 #14	3/4" C. 3/4" C. 3/4" C. 3/4" C. 3/4" C.
1C	25/100 3P; SIZE 1; CPT; CR5; HOA; SNET1-2; CR101; CR104	44PC-2 44C-2B 44C-2C 44C-2A	44PC-2; 30A, 3P; 44C-2; 44P-2; NEMA 4; 5 HP; SL; DM ES LV-101; 44C-2B; 44C-2C; DM ES LV-104; T-STAT **EXHAUST FAN NO. F-102**	44PC-2 44P-2 44C-2 44C-2A 44C-2B 44C-2C	3 #12, 1 #12G 5 #14 3 #12, 1 #12G 2 #14 2 #14 2 #12, 2 #14 2 #12, 2 #14	3/4" C. 3/4" C. 3/4" C. 3/4" C. 3/4" C. 3/4" C.
2D	15/100 3P; SIZE 1; CPT; CR2; HOA; SNET1-6	44PC-3 44C-3B 44C-3A	44PC-3; 30A, 3P; 44C-3; 44P-3; NEMA 4; 5 HP; SL; DM ES LV-103; 44C-3B; T-STAT **EXHAUST FAN NO. F-103**	44PC-3 44P-3 44C-3 44C-3A 44C-3B	3 #12, 1 #12G 5 #14 3 #12, 1 #12G 2 #14 2 #14 2 #12, 2 #14	3/4" C. 3/4" C. 3/4" C. 3/4" C. 3/4" C.
2CL	45/100 3P	44P-7	44P-7; 30 KVA; 44P-7A; LP-44A; 480-208/120V **LIGHTING PANEL** (SEE SCHEDULE ON DRAWING E-107)	44P-7 44P-7A	3 #8, 1 #10G 4 #3, 1 #8G	3/4" C. 1-1/2" C.
2E	15/100 3P; SIZE 1; CPT; CR3; HOA; SNET1-5	44PC-4 44C-4B 44C-4A	44PC-4; 30A, 3P; 44C-4; 44P-4; NEMA 4; 3 HP; SL; DM ES LV-106; 44C-4B; T-STAT **EXHAUST FAN NO. F-104**	44PC-4 44P-4 44C-4 44C-4A 44C-4B	3 #12, 1 #12G 5 #14 3 #12, 1 #12G 2 #14 2 #14 2 #12, 2 #14	3/4" C. 3/4" C. 3/4" C. 3/4" C. 3/4" C.
2F	15/100 3P; SIZE 1; CPT; CR6; HOA; SNET1-4; CR105; CR108	44PC-5 44C-5B 44C-5C 44C-5A	44PC-5; 30A, 3P; 44C-5; 44P-5; NEMA 4; 3 HP; SL; DM ES LV-105; 44C-5B; 44C-5C; DM ES LV-108; T-STAT **EXHAUST FAN NO. F-105**	44PC-5 44P-5 44C-5 44C-5A 44C-5B 44C-5C	3 #12, 1 #12G 5 #14 3 #12, 1 #12G 2 #14 2 #14 2 #12, 2 #14 2 #12, 2 #14	3/4" C. 3/4" C. 3/4" C. 3/4" C. 3/4" C. 3/4" C.
2CR	15/100 3P	44P-16	44P-16A; 30A, 2P, 6A; 3 KVA 480-120V; 44P-16B; LP-44B; 44P-16; 44P-16C; 30A, 2P, 6A; 3 KVA 480-120V; 44P-16E; LP-44C; 44P-16D **INSERTION MAG-METER & AIR RELEASE SHELTERS**	44P-16 44P-16A 44P-16B 44P-16C 44P-16D 44P-16E	3 #12, 1 #12G 2 #12, 1 #12G 2 #10, 1 #10G 2 #12, 1 #12G 2 #12, 1 #12G 2 #10, 1 #10G	1-1/2" C. 3/4" C. 3/4" C. 1-1/2" C. 3/4" C. 3/4" C.

MCC 44 – SECONDARY EFFLUENT PUMPING STATION CONTINUED

PANEL NUMBER	EQUIPMENT IN MCC	CONDUIT NUMBER	EQUIPMENT REMOTE FROM MCC	CONDUIT SCHEDULE: CONDUIT NUMBER	CONDUCTOR QUANTITY \ SIZE	DIAMETER
2BL	20/100 3P	44P-6	30A, 3P; NEMA 4; 44P-6A; 10 KW; 44P-6; EUH-101 **ELECTRIC UNIT HEATER NO. EUH-101**	44P-6 44P-6A	3 #12, 1 #12G 3 #12, 1 #12G	3/4" C. 3/4" C.
2BR	20/100 3P	44P-8	30A, 3P; NEMA 4; 44P-8A; 10 KW; 44P-8; EUH-102 **ELECTRIC UNIT HEATER NO. EUH-102**	44P-8 44P-8A	3 #12, 1 #12G 3 #12, 1 #12G	3/4" C. 3/4" C.
3BL	20/100 3P	44P-9	30A, 3P; NEMA 4; 44P-9A; 10 KW; 44P-9; EUH-103 **ELECTRIC UNIT HEATER NO. EUH-103**	44P-9 44P-9A	3 #12, 1 #12G 3 #12, 1 #12G	3/4" C. 3/4" C.
3BR	20/100 3P	44P-10	30A, 3P; NEMA 4; 44P-10A; 10 KW; 44P-10; EUH-104 **ELECTRIC UNIT HEATER NO. EUH-104**	44P-10 44P-10A	3 #12, 1 #12G 3 #12, 1 #12G	3/4" C. 3/4" C.
1D	15/100 3P; SIZE 1; CPT; CR4; HOA; SNET1-3	44PC-11 44C-11B 44C-11A	44PC-11; 30A, 3P; 44C-11; 44P-11; NEMA 4; 3 HP; SL; DM ES LV-107; 44C-11B; T-STAT **EXHAUST FAN NO. F-106**	44PC-11 44P-11 44C-11 44C-11A 44C-11B	3 #12, 1 #12G 5 #14 3 #12, 1 #12G 2 #14 2 #14 2 #12, 2 #14	3/4" C. 3/4" C. 3/4" C. 3/4" C. 3/4" C.
2AL (2AR) (3AL) (3AR)	15/100 3P	44P-12 (44P-13) (44P-14) (44P-15)	3/4 HP **BUTTERFLY VALVE NO. 1** (TYPICAL FOR BUTTERFLY VALVE NO. 2, 3 & 4)	44P-12 (44P-13 (44P-14 (44P-15	3 #12, 1 #12G 3 #12, 1 #12G 3 #12, 1 #12G 3 #12, 1 #12G	3/4" C. 3/4" C.) 3/4" C.) 3/4" C.)
1E	100/250 3P		**PILOT BUILDING PANEL**			
3C 3D 3E 3F	15/100 3P; CPT; HOA		**2 – SPARE SIZE 1** **2 – SPARE SIZE 2**			

CONDUIT NUMBER DESCRIPTION

MCC # – 44P-14 – CONDUIT NUMBER

P= POWER
C= CONTROL
PC= POWER & CONTROL

RECORD DRAWING

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DATE: 10/21/05 PER: [signature]

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5/30/01 BBL DCC
05503000/08S9E105.DWG

NOTE:

FOR MCC ELEVATION SEE DRAWING E-107.

NOT TO SCALE

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Designed by AHL
Drawn by DCC
Checked by WFH

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SYRACUSE, NEW YORK

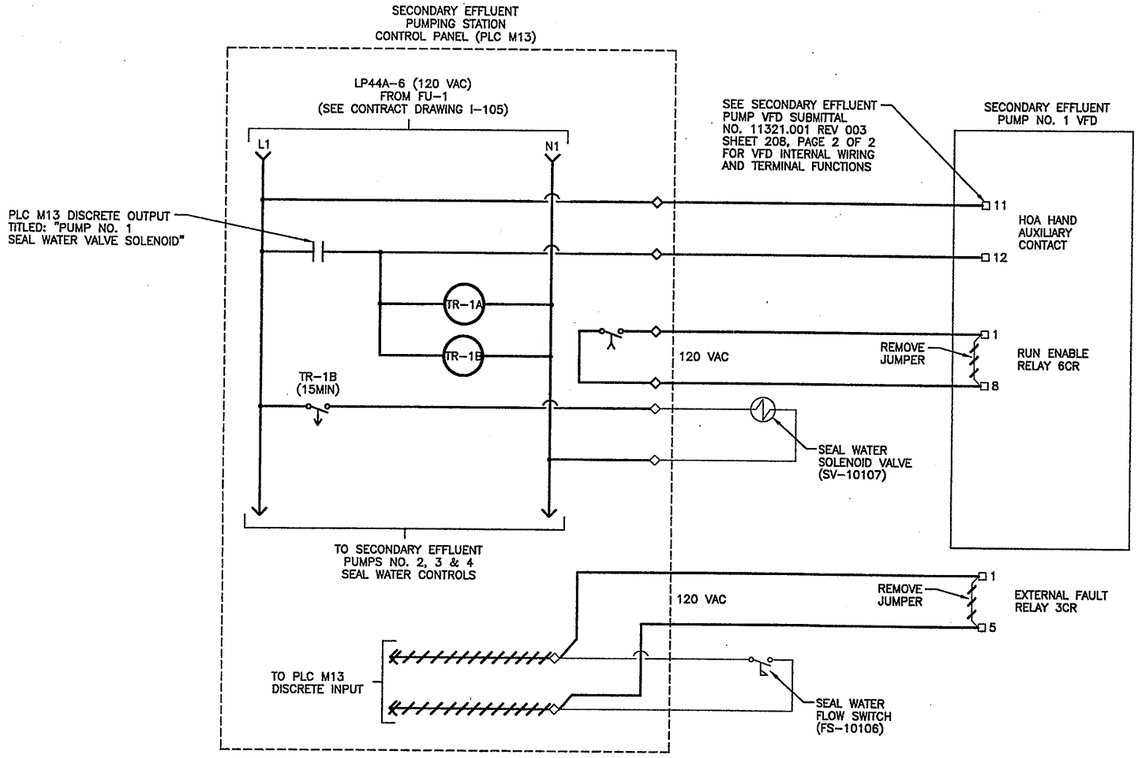
ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
SECONDARY EFFLUENT PUMPING STATION
SECONDARY EFFLUENT PUMPING STATION MCC 44 ONE-LINE DIAGRAM
ELECTRICAL

STATE OF NEW YORK • LEONARD J. CAMPBELL • No. 60765 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001

E-105

SEE MCC O&M MANUAL FOR EQUIPMENT ELEMENTARY DIAGRAMS



SECONDARY EFFLUENT PUMP NO.1 SEAL WATER ELEMENTARY DIAGRAM

NOT TO SCALE

TYPICAL: SECONDARY EFFLUENT PUMP NO.2 WITH TR-2A & TR-2B
SECONDARY EFFLUENT PUMP NO.3 WITH TR-3A & TR-3B
SECONDARY EFFLUENT PUMP NO.4 WITH TR-4A & TR-4B

NOTES:

1. TIMING RELAYS DESIGNATED TR-1A, TR-2A, TR-3A AND TR-4A SHALL BE ON DELAY, SOLID STATE TYPE.
2. TIMING RELAYS DESIGNATED TR-1B, TR-2B, TR-3B AND TR-4B SHALL BE OFF DELAY, SOLID STATE TYPE.

RECORD DRAWING

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1	7/11/01	AS BID	"
2	10/18/02	REVISED PER MODIFICATION 4B-030	"
3	10/31/05	RECORD DRAWING	

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SECONDARY EFFLUENT PUMP STATION ELEMENTARY DIAGRAMS
ELECTRICAL

STATE OF NEW YORK · LEONARD J. CAMPOFELA · No. 60755 · LICENSED PROFESSIONAL ENGINEER

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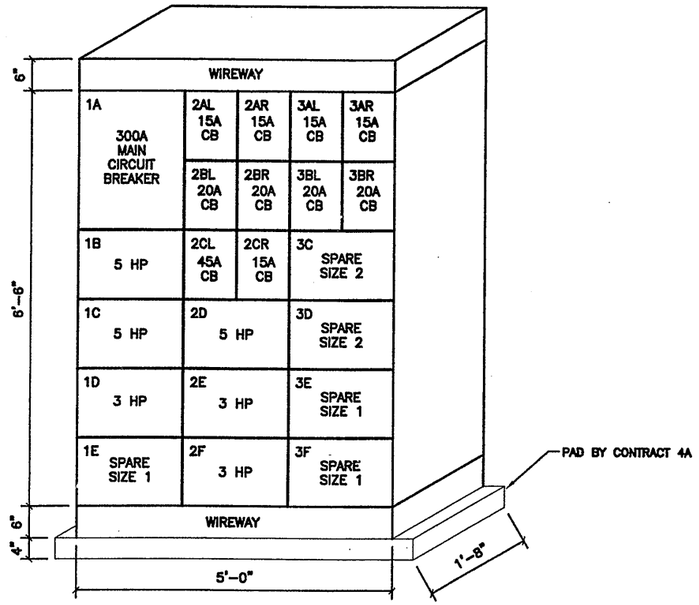
E-106



MCC 44 ELEVATION

NOT TO SCALE

(SEE DRAWING E-105)

480 VOLT CABLE SCHEDULE

CONDUIT NUMBER	FROM	TO	CONDUCTOR	INSULATION	CONDUIT/ CABLE TRAY	
P-1	PUMP 1 TRANS.	PUMP 1 VFD	4-250KCMIL/PHASE, 4-2/0G	600 V	4-2 1/2" CRGS	•
P-1A	PUMP 1 VFD	PUMP 1	3-380KCMIL/PHASE, 3-2/0G	600 V	3-2 1/2" CRGS	
P2	PUMP 2 TRANS.	PUMP 2 VFD	4-250KCMIL/PHASE, 4-2/0G	600 V	4-2 1/2" CRGS	•
P-2A	PUMP 2 VFD	PUMP 2	3-380KCMIL/PHASE, 3-2/0G	600 V	3-2 1/2" CRGS	
P3	PUMP 3 TRANS.	PUMP 3 VFD	4-250KCMIL/PHASE, 4-2/0G	600 V	4-2 1/2" CRGS	•
P-3A	PUMP 3 VFD	PUMP 3	3-380KCMIL/PHASE, 3-2/0G	600 V	3-2 1/2" CRGS	
P4	PUMP 4 TRANS.	PUMP 4 VFD	4-250KCMIL/PHASE, 4-2/0G	600 V	4-2 1/2" CRGS	•
P-4A	PUMP 4 VFD	PUMP 4	3-380KCMIL/PHASE, 3-2/0G	600 V	3-2 1/2" CRGS	
P-5	MCC TRANS.	TRANS. SW.	1-350MCM/PHASE, 1-2/ON,1-2/0G	600 V	3" CRGS	
P-6	MCC TRANS.	TRANS. SW.	1-350MCM/PHASE, 1-2/ON,1-2/0G	600 V	3" CRGS	
MF-44	TRANS. SW.	MCC 44	1-350MCM/PHASE, 1-2/ON,1-2/0G	600 V	3" CRGS	
CC-1	PUMP 1 VFD	PUMP 1 SL	4-#14	600 V	1-3/4" CRGS	
CC-1A	PUMP 1 SL	PUMP 1	2-#14	600 V	1-3/4" CRGS	
CC-2	PUMP 2 VFD	PUMP 2 SL	4-#14	600 V	1-3/4" CRGS	
CC-2A	PUMP 2 SL	PUMP 2	2-#14	600 V	1-3/4" CRGS	
CC-3	PUMP 3 VFD	PUMP 3 SL	4-#14	600 V	1-3/4" CRGS	
CC-3A	PUMP 3 SL	PUMP 3	2-#14	600 V	1-3/4" CRGS	
CC-4	PUMP 4 VFD	PUMP 4 SL	4-#14	600 V	1-3/4" CRGS	
CC-4A	PUMP 4 SL	PUMP 4	2-#14	600 V	1-3/4" CRGS	

NOTE:
FOR ADDITIONAL 480 VOLT CONDUITS, SEE DRAWING E-105

• PUMP TRANSFORMERS SHALL HAVE DELTA-WYE SECONDARY WINDINGS (6 PHASES/TRANSFORMER).

CIRCUIT BREAKER PANELBOARD - LP-44A — SCHEDULE

LOCATION:		SECONDARY EFFLUENT PUMPING STATION							FEED FROM		MCC 44, 2CL	
MAIN BUS RATING:		225	AMPERES						208/120 VOLTS		3 PHASE, 4 WIRE	
MINIMUM SHORTCIRCUIT:		10,000	AMPERES						FEEDER CABLE		4 #3, 1 #8G	
MAIN BREAKER TRIP:		100	AMPERES						SURFACE MOUNTED			
ESTIMATED CONNECTED LOAD:		14.631	KVA									
		CB								CB		
CKT		AMPS/	LOAD						LOAD	AMPS/		CKT
NO.	DESCRIPTION	POLES	TYPE	KVA	PH-A	PH-B	PH-C	KVA	TYPE	POLES	DESCRIPTION	NO.
1	LIGHTS - ELECTRIC ROOM	20/1P	LIGHTS	1.383	2.548			1.165	LIGHTS	20/1P	NIGHT LIGHTS - PUMP ROOM	2
3	LIGHTS - PUMP ROOM	20/1P	LIGHTS	1.600		1.630		0.030	CONTROL	20/1P	CLOSED CIRCUIT TV CAMERA NO.5	4
5	RECEPTACLES - ELECTRIC ROOM	20/1P	RECEPT	1.440			3.440	2.000	RECEPT	20/1P	PLC RECEPTACLE	6
7	SPARE	20/1P	RECEPT	0.360	1.673			1.313	LIGHTS	20/1P	EXTERIOR WALL LIGHTS	8
9	RECEPTACLES - PUMP ROOM LOWER	20/1P	RECEPT	1.260		1.260				20/1P	OVERHEAD DOOR BELL & LIGHT	10
11	RECEPTACLES - ROOF WEST	20/1P	RECEPT	0.360			0.375	0.015	INST	20/1P	LE/LIT-10500, LEVEL #1	12
13	RECEPTACLES - ROOF EAST	20/1P	RECEPT	0.360	0.375			0.015	INST	20/1P	LE/LIT-10501, LEVEL #2	14
15	SPARE	20/1P	LIGHTS	1.165		1.165				20/1P	SPARE	16
17	NIGHT LIGHTS - ELECTRIC ROOM	20/1P	LIGHTS	0.461			0.665	0.204	HEAT	20/1P	HEAT TRACE - HT-101	18
19	HW HEATER	20/2P	HEAT	1.500	1.500					20/1P	SPARE	20
21						1.500				20/1P	SPARE	22
23	RECEPTACLES - N. WALL PUMP RM.	20/1P					0.000			20/1P	SPARE	24
25	RECEPTACLES - UNDER LP44A	20/1P			0.000					20/1P	SPARE	26
27	SPARE	20/1P				0.000				20/1P	SPARE	28
29	SPARE	20/1P					0.000			20/1P	SPARE	30
31	SPARE	20/1P			0.000					20/1P	SPARE	32
33	SPARE	20/1P				0.000				20/1P	SPARE	34
35	SPARE	20/1P					0.000			20/1P	SPARE	36
37	SPARE	20/1P			0.000					20/1P	SPARE	38
39	SPARE	20/1P				0.000				20/1P	SPARE	40
41	SPARE	20/1P					0.000			20/1P	SPARE	42
LOAD	SUMMARY			9.889	6.096	5.555	4.480	4.742				
PANEL	TOTAL KVA:			14.631								

NOTES:
1. ALL CONDUCTORS TO BE 2 #12, 1 #12G IN 3/4-INCH PVC COATED RIGID STEEL CONDUIT, UNLESS OTHERWISE INDICATED ON POWER PLAN.
2. HEAT TRACE BRANCH CIRCUIT BREAKERS SHALL BE GFI TYPE.

CIRCUIT BREAKER PANELBOARD - LP-44B — SCHEDULE

LOCATION:		MAG-METER SHELTER							FEED FROM		MCC 44, 2CR	
MAIN BUS RATING:		100	AMPERES						208/120 VOLTS		1 PHASE, 2 WIRE	
MINIMUM SHORTCIRCUIT:		10,000	AMPERES						FEEDER CABLE		2 #10, 1 #10G	
MAIN BREAKER TRIP:		30	AMPERES						SURFACE MOUNTED			
ESTIMATED CONNECTED LOAD:		0.360	KVA									
		CB								CB		
CKT		AMPS/	LOAD						LOAD	AMPS/		CKT
NO.	DESCRIPTION	POLES	TYPE	KVA	PH-A	PH-B	KVA	TYPE	POLES	DESCRIPTION		NO.
1	GFI RECEPTACLE	20/1P	RECEPT	0.180	0.180				20/1P	SPARE		2
3	SPARE	20/1P				0.180	0.180	CONTROL	20/1P	MAG-METER CONTROL PANEL		4
5	SPARE	20/1P			0.000				20/1P	SPARE		6
7	SPARE	20/1P				0.000			20/1P	SPARE		8
9	SPARE	20/1P			0.000				20/1P	SPARE		10
11	SPARE	20/1P				0.000			20/1P	SPARE		12
LOAD	SUMMARY			0.180	0.180	0.180	0.180					
PANEL	TOTAL KVA:			0.360								

NOTES:
1. ALL CONDUCTORS TO BE 2 #12, 1 #12G IN 3/4-INCH PVC COATED RIGID STEEL CONDUIT, UNLESS OTHERWISE INDICATED ON POWER PLAN.
2. HEAT TRACE BRANCH CIRCUIT BREAKERS SHALL BE GFI TYPE.

CIRCUIT BREAKER PANELBOARD - LP-44C — SCHEDULE

LOCATION:		SECONDARY EFFLUENT PUMPING STATION							FEED FROM		MCC 44, 2CR	
MAIN BUS RATING:		100	AMPERES						208/120 VOLTS		1 PHASE, 2 WIRE	
MINIMUM SHORTCIRCUIT:		10,000	AMPERES						FEEDER CABLE		2 #10, 1 #10G	
MAIN BREAKER TRIP:		30	AMPERES						SURFACE MOUNTED			
ESTIMATED CONNECTED LOAD:		0.240	KVA									
		CB								CB		
CKT		AMPS/	LOAD						LOAD	AMPS/		CKT
NO.	DESCRIPTION	POLES	TYPE	KVA	PH-A	PH-B	KVA	TYPE	POLES	DESCRIPTION		NO.
1	GFI RECEPTACLE	20/1P	RECEPT	0.180	0.180				20/1P	SPARE		2
3	SPARE	20/1P				0.060	0.060	HEAT	20/1P	HEAT TRACING		4
5	SPARE	20/1P			0.000				20/1P	SPARE		6
7	SPARE	20/1P				0.000			20/1P	SPARE		8
9	SPARE	20/1P			0.000				20/1P	SPARE		10
11	SPARE	20/1P				0.000			20/1P	SPARE		12
LOAD	SUMMARY			0.180	0.180	0.060	0.060					
PANEL	TOTAL KVA:			0.240								

NOTES:
1. ALL CONDUCTORS TO BE 2 #12, 1 #12G IN 3/4-INCH PVC COATED RIGID STEEL CONDUIT, UNLESS OTHERWISE INDICATED ON POWER PLAN.
2. HEAT TRACE BRANCH CIRCUIT BREAKERS SHALL BE GFI TYPE.

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATED: 10/21/05 PER: L Dampsluit

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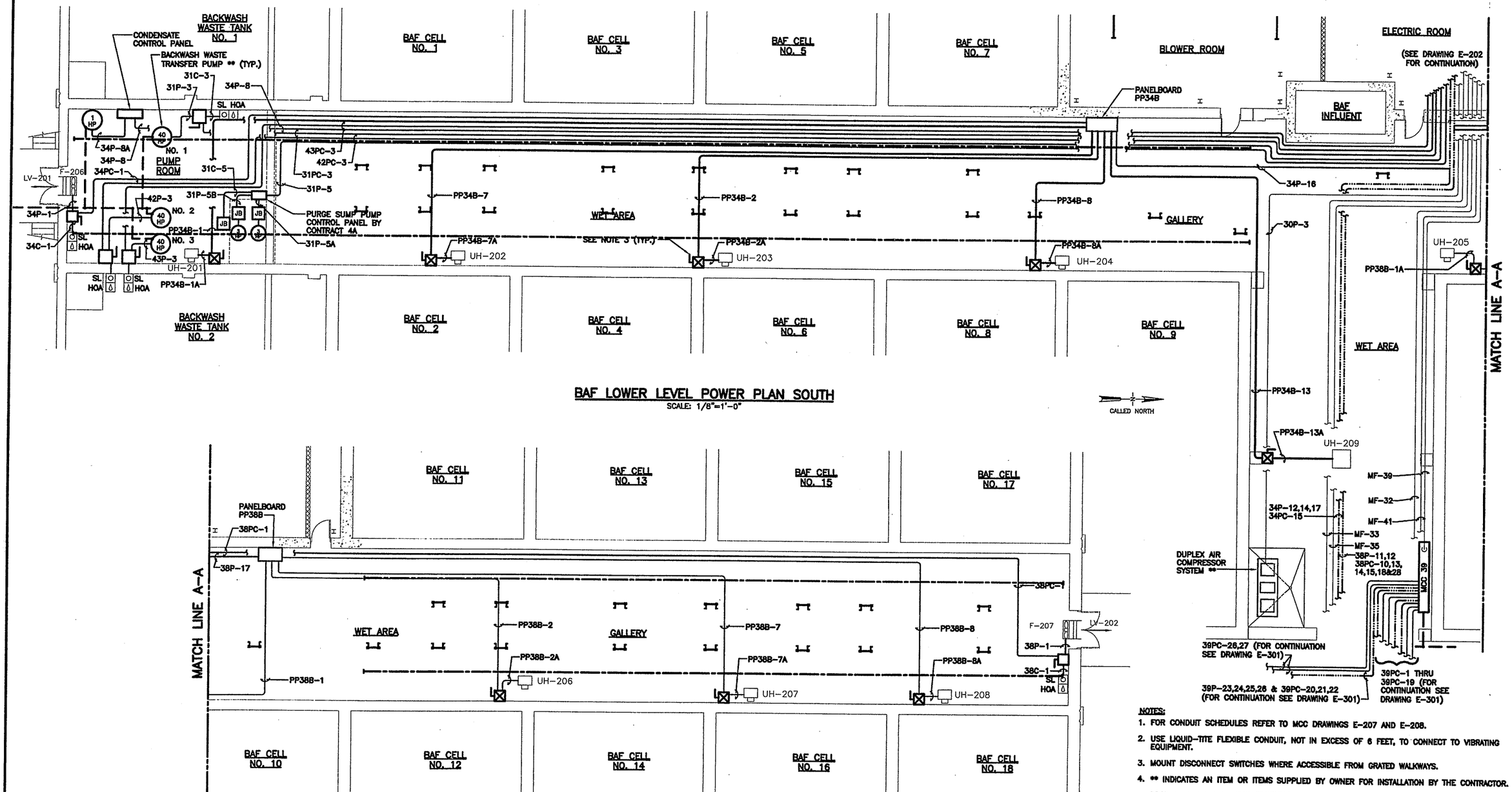
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
SECONDARY EFFLUENT PUMPING STATION
SECONDARY EFFLUENT PUMP STATION SCHEDULES AND DETAILS
ELECTRICAL

STATE OF NEW YORK · LEONARD J. CAMPOLIETI · No. 50765 · LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
L Dampsluit
E-107



NOTES:

1. FOR CONDUIT SCHEDULES REFER TO MCC DRAWINGS E-207 AND E-208.
2. USE LIQUID-TITE FLEXIBLE CONDUIT, NOT IN EXCESS OF 6 FEET, TO CONNECT TO VIBRATING EQUIPMENT.
3. MOUNT DISCONNECT SWITCHES WHERE ACCESSIBLE FROM GRATED WALKWAYS.
4. ** INDICATES AN ITEM OR ITEMS SUPPLIED BY OWNER FOR INSTALLATION BY THE CONTRACTOR.
5. PROVIDE AND INSTALL 316 STAINLESS STEEL DRIP SHIELD ABOVE MCC 39 EXTENDING OUT ONE FOOT. PLACE ABOVE CONDUITS.
6. REFER TO HVAC DRAWINGS FOR ADDITIONAL LOUVER, DAMPER, THERMOSTAT, CONTROL VALVE, DIRECT DIGITAL CONTROL (DDC), AND OTHER CONTROL HVAC REQUIREMENTS. CONTRACT 4B (ELECTRICAL) SHALL PROVIDE ALL CONDUIT AND CONDUCTORS FOR 120 VOLT CONTROLS, AS SHOWN OR REQUIRED (EXCEPT WIRING BETWEEN DDC SYSTEM COMPONENTS). CONTRACT 4C (HVAC) SHALL PROVIDE ALL CONDUIT AND CONDUCTORS REQUIRED FOR LOW VOLTAGE (LESS THAN 120 VOLT) CONTROLS AND WIRING BETWEEN DDC SYSTEM COMPONENTS INCLUDING BUT NOT LIMITED TO, LOW VOLTAGE T-STAT, VARIABLE AIR VOLUME (VAV) CONTROLS, ETC.

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. DRAWINGS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE: 10/21/05 PER: L.Campbell

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SYRACUSE, NEW YORK

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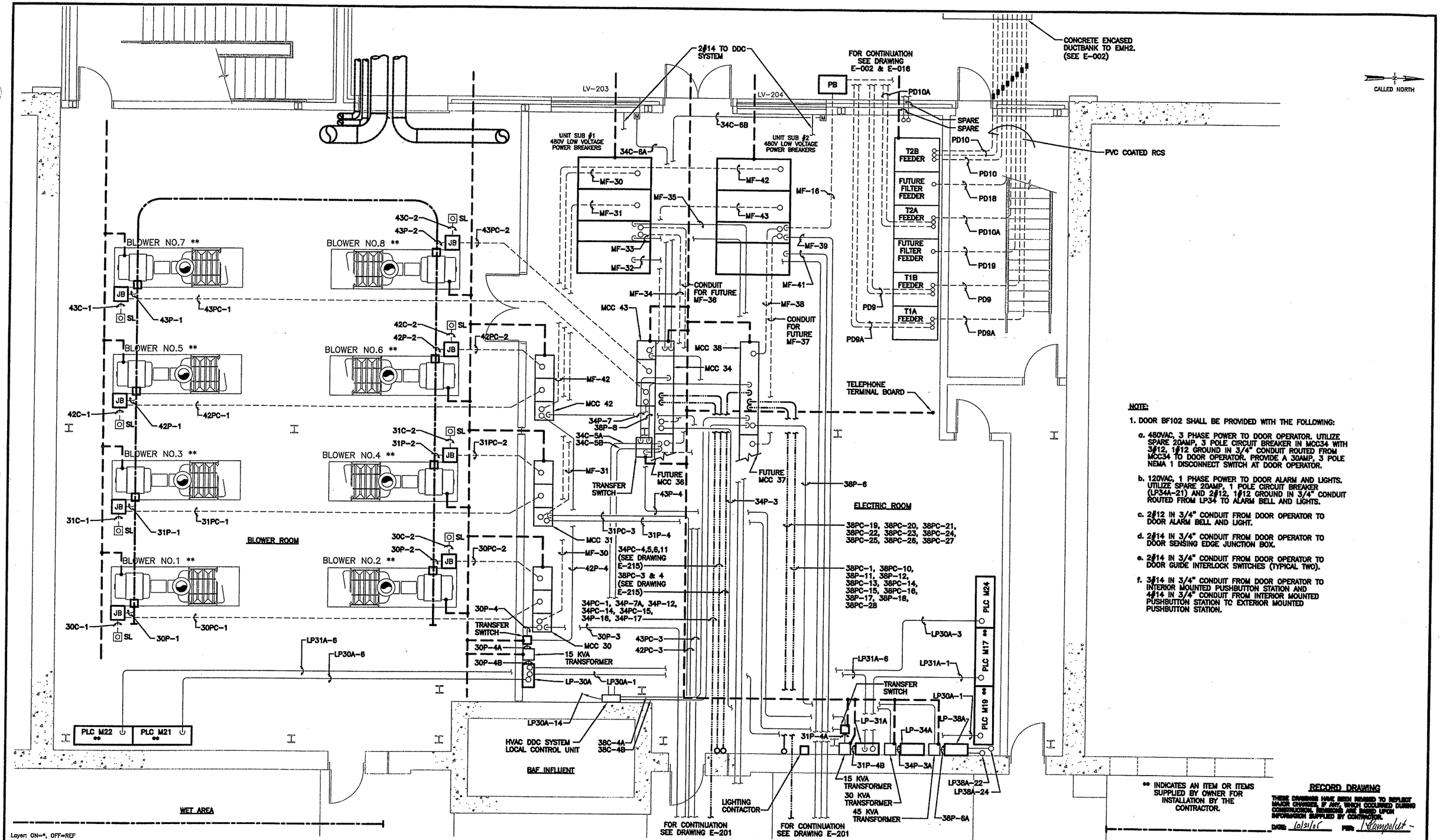
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BAF COMPLEX
BAF LOWER LEVEL POWER PLAN
ELECTRICAL

STATE OF NEW YORK • LEONARD J. CAMPBELL • LICENSED PROFESSIONAL ENGINEER • No. 60765

File Number 00659
Date APRIL 2001
L.Campbell

E-201



NOTE:

1. DOOR BF102 SHALL BE PROVIDED WITH THE FOLLOWING:
   a. 480VAC, 3 PHASE POWER TO DOOR OPERATOR. UTILIZE SPARE 20AMP, 3 POLE CIRCUIT BREAKER IN MCC34 WITH 3#12, 1#12 GROUND IN 3/4" CONDUIT ROUTED FROM MCC34 TO DOOR OPERATOR. PROVIDE A 30AMP, 3 POLE NEMA 1 DISCONNECT SWITCH AT DOOR OPERATOR.
   b. 120VAC, 1 PHASE POWER TO DOOR ALARM AND LIGHTS. UTILIZE SPARE 20AMP, 1 POLE CIRCUIT BREAKER (LP34A-21) AND 2#12, 1#12 GROUND IN 3/4" CONDUIT ROUTED FROM LP34 TO ALARM BELL AND LIGHTS.
   c. 2#12 IN 3/4" CONDUIT FROM DOOR OPERATOR TO DOOR ALARM BELL AND LIGHT.
   d. 2#14 IN 3/4" CONDUIT FROM DOOR OPERATOR TO DOOR SENSING EDGE JUNCTION BOX.
   e. 2#14 IN 3/4" CONDUIT FROM DOOR OPERATUR TO DOOR GUIDE INTERLOCK SWITCHES (TYPICAL TWO).
   f. 3#14 IN 3/4" CONDUIT FROM DOOR OPERATOR TO INTERIOR MOUNTED PUSHBUTTON STATION AND 4#14 IN 3/4" CONDUIT FROM INTERIOR MOUNTED PUSHBUTTON STATION TC EXTERIOR MOUNTED PUSHBUTTON STATION.

** INDICATES AN ITEM OR ITEMS SUPPLIED BY OWNER FOR INSTALLATION BY THE CONTRACTOR.

RECORD DRAWING

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DATED: 6/21/05 PER: L.Campbell

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BAF BLOWER AND ELECTRIC ROOM POWER PLAN

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

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

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ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BAF COMPLEX
BAF BLOWER AND ELECTRIC ROOM POWER PLAN
ELECTRICAL

EDWARD J. CARBONE — STATE OF NEW YORK — No. 60751 — LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
L.Campbell
E-202

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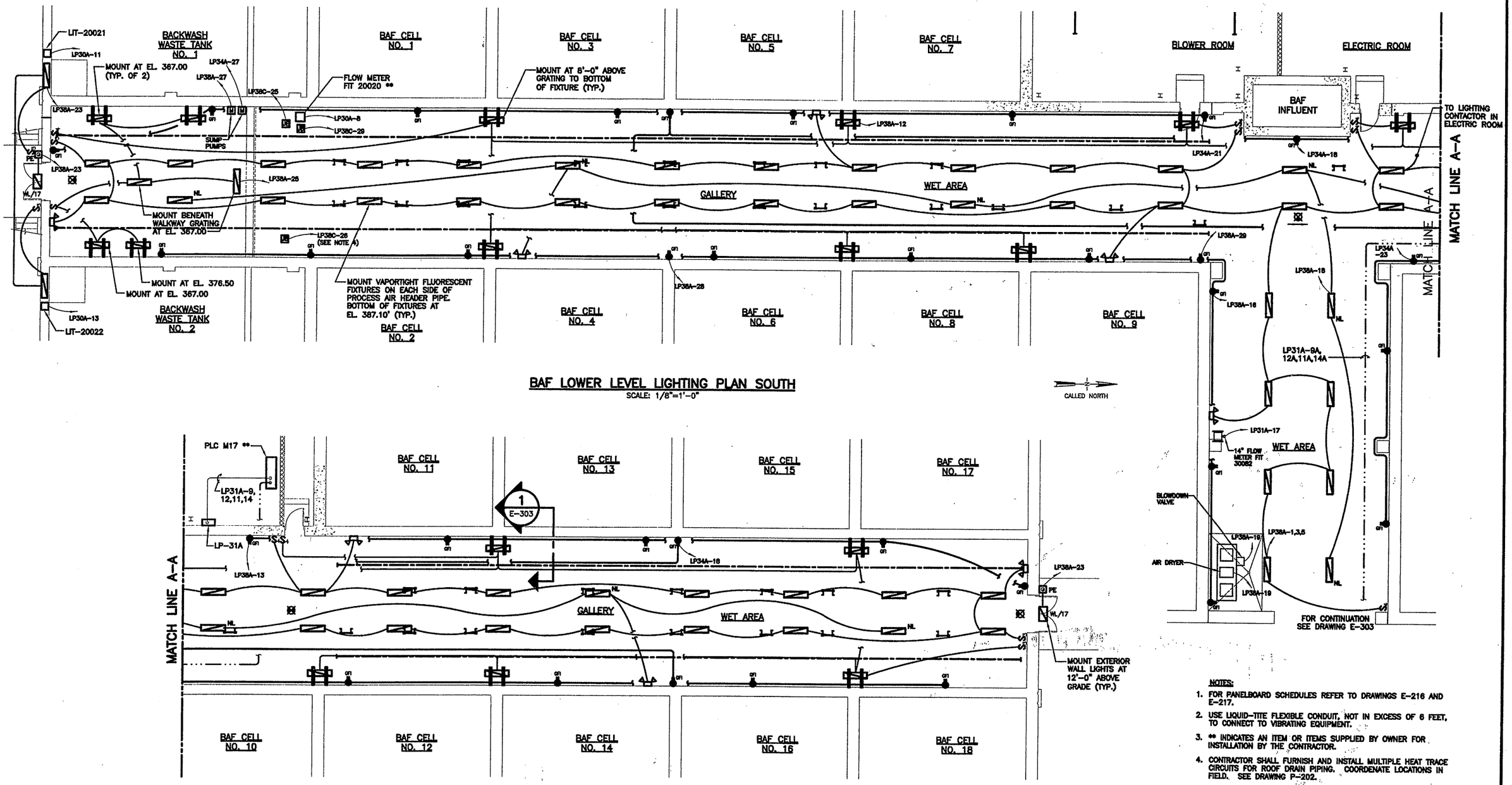

BAF LOWER LEVEL LIGHTING PLAN SOUTH

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

CALLED NORTH

BAF LOWER LEVEL LIGHTING PLAN NORTH

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

NOTES:

1. FOR PANELBOARD SCHEDULES REFER TO DRAWINGS E-216 AND E-217.
2. USE LIQUID-TITE FLEXIBLE CONDUIT, NOT IN EXCESS OF 6 FEET, TO CONNECT TO VIBRATING EQUIPMENT.
3. ** INDICATES AN ITEM OR ITEMS SUPPLIED BY OWNER FOR INSTALLATION BY THE CONTRACTOR.
4. CONTRACTOR SHALL FURNISH AND INSTALL MULTIPLE HEAT TRACE CIRCUITS FOR ROOF DRAIN PIPING. COORDENATE LOCATIONS IN FIELD. SEE DRAWING P-202.

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE 10/21/05 PER: LCampolieti

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1/8"=1'-0" 8' 0 8' 16'

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BAF COMPLEX

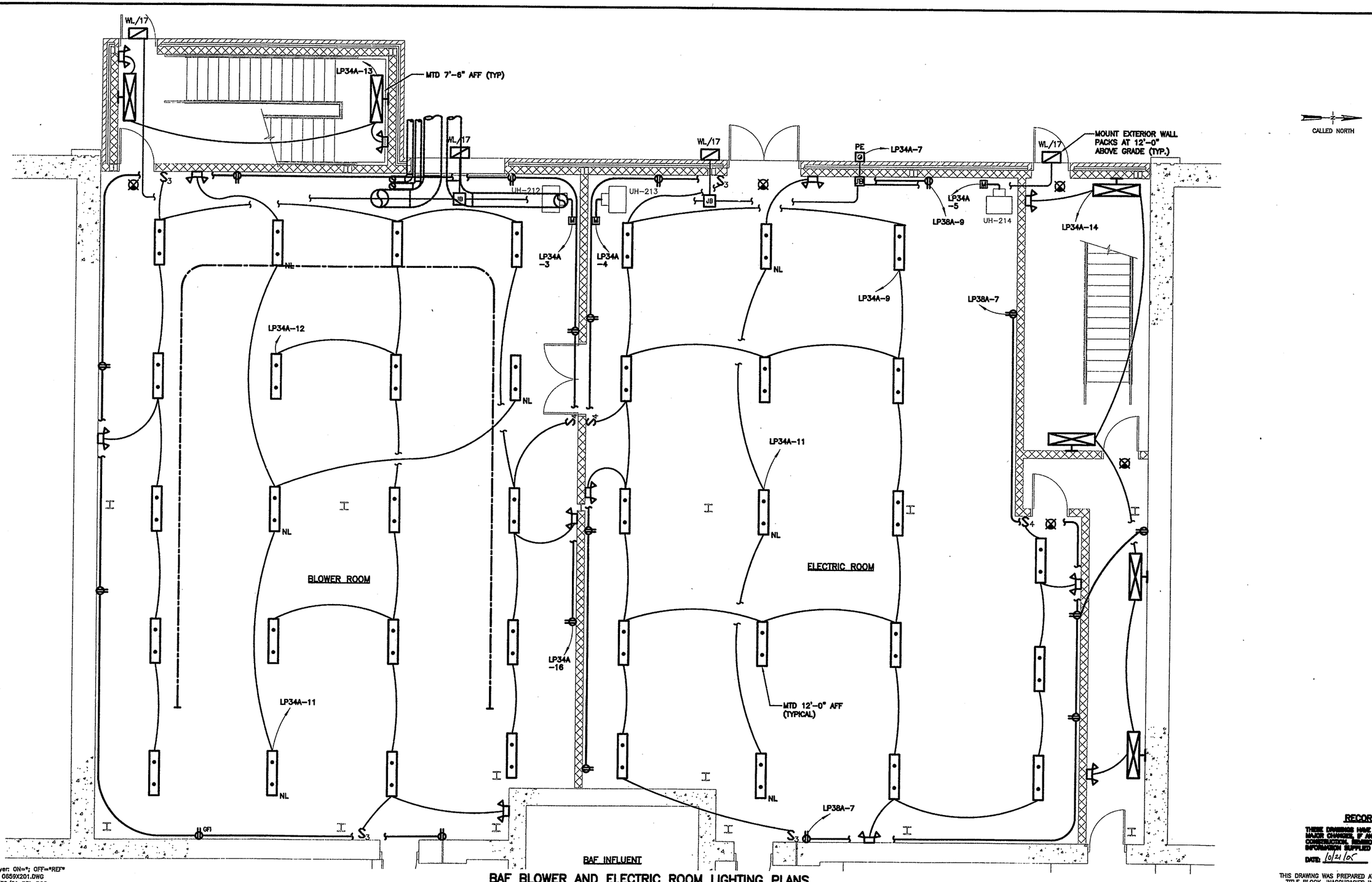
BAF LOWER LEVEL LIGHTING PLAN

ELECTRICAL

STATE OF NEW YORK · LEONARD J. CAMPOLIETI · LICENSED PROFESSIONAL ENGINEER · No. 60755

File Number 00659
Date APRIL 2001
LCampolieti

E-203



BAF BLOWER AND ELECTRIC ROOM LIGHTING PLANS

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

Layer: ON=*; OFF=*REF*
X: 0659X201.DWG
5/30/01 BBL DCC
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1/4"=1'-0" 4' 0 4' 8'

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STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BAF COMPLEX
BAF BLOWER AND ELECTRIC ROOM LIGHTING PLANS
ELECTRICAL

LEONARD J. CAMPOLIETA LICENSED PROFESSIONAL ENGINEER No. 60755 STATE OF NEW YORK

File Number 00659
Date APRIL 2001

E-204

RECORD DRAWING

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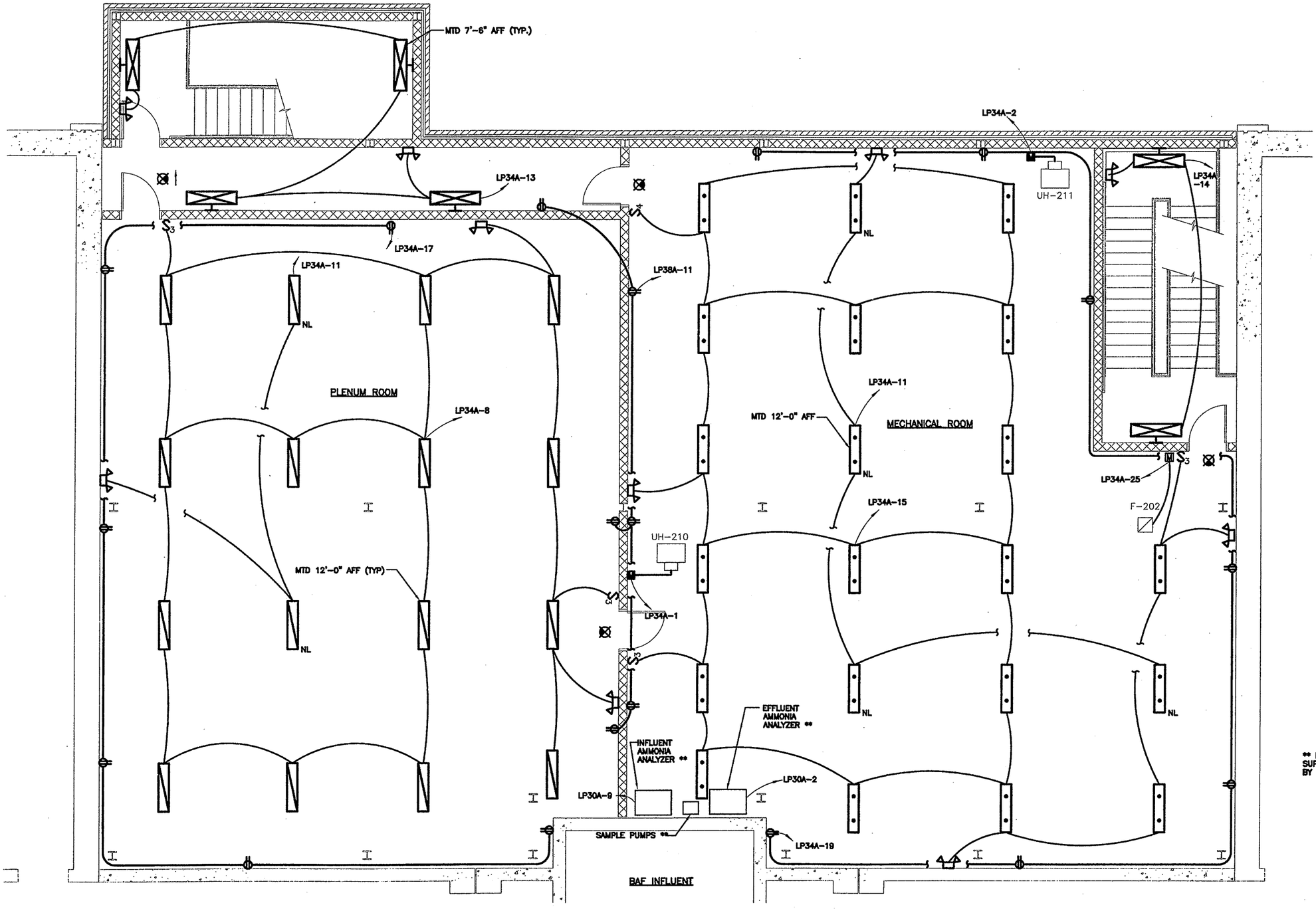

CALLED NORTH

** INDICATES AN ITEM OR ITEMS SUPPLIED BY OWNER FOR INSTALLATION BY THE CONTRACTOR.

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REMAINING ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE: 10/21/05 PER: L Campolieta

BAF MECHANICAL ROOM LIGHTING PLAN

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

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

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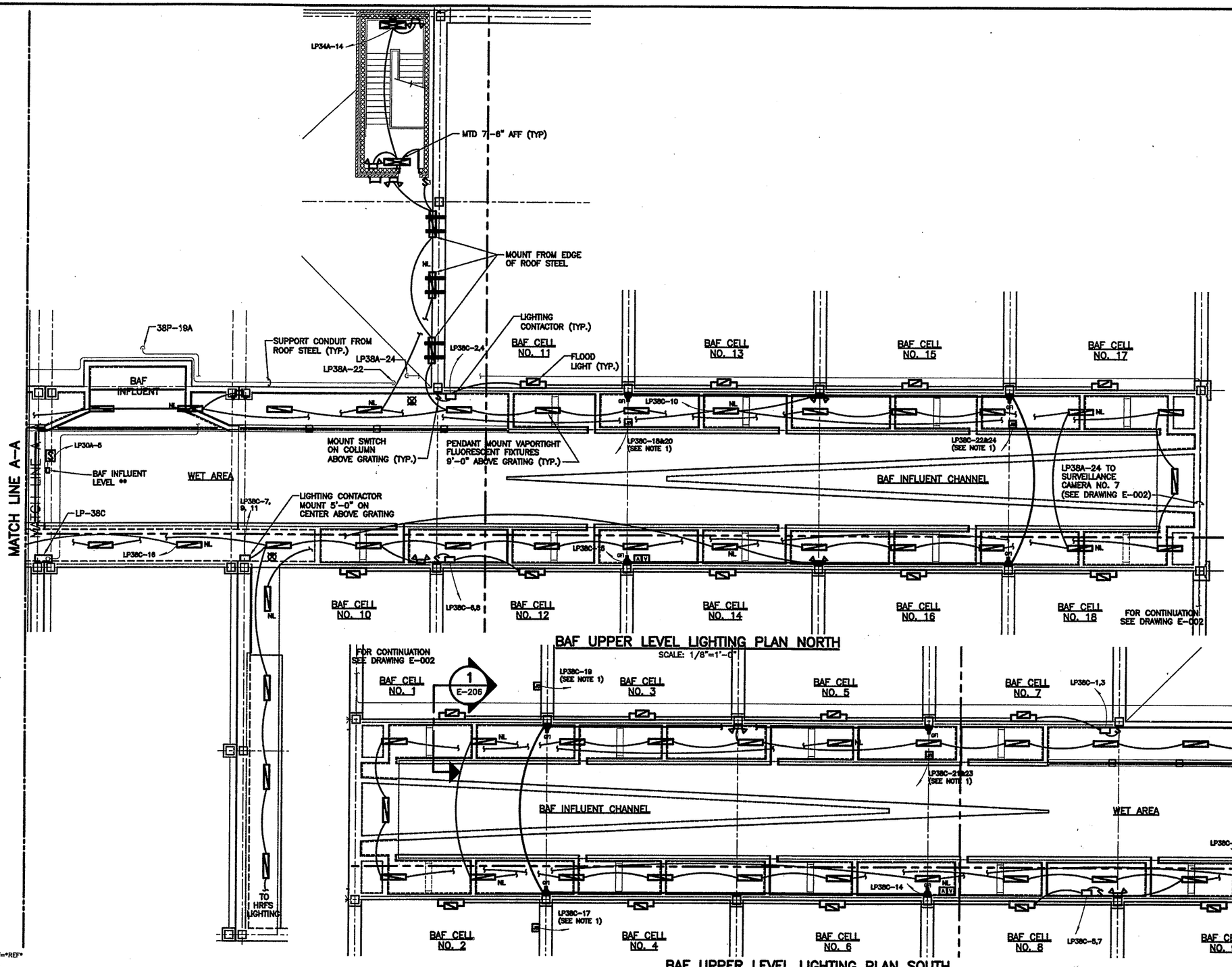
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BAF COMPLEX
BAF PLENUM AND MECHANICAL ROOM LIGHTING PLANS
ELECTRICAL

LICENSED PROFESSIONAL ENGINEER — LEONARD J. CAMPOLIETA — No. 60755 — STATE OF NEW YORK

File Number 00659
Date APRIL 2001
L Campolieta

E-205



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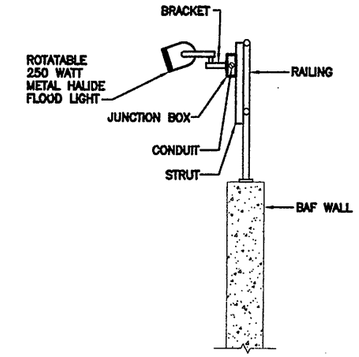

SECTION 1 / E-206
NOT TO SCALE

NOTE:

1. CONTRACTOR SHALL FURNISH AND INSTALL MULTIPLE HEAT TRACE CIRCUITS FOR THE ROOF DRAIN PIPING. COORDINATE LOCATIONS IN FIELD. SEE DRAWING P-203.
2. ** INDICATES AN ITEM OR ITEMS SUPPLIED BY OWNER FOR INSTALLATION BY THE CONTRACTOR.

RECORD DRAWING

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1/8"=1'-0" 8' 0 8' 16'

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ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BAF COMPLEX

BAF UPPER LEVEL LIGHTING PLAN

ELECTRICAL

STATE OF NEW YORK • LEONARD J. CAMPOLIETA • LICENSED PROFESSIONAL ENGINEER • No. 60755

File Number 00659
Date APRIL 2001
LKampfer

E-206

MCC 30 – BAF ELECTRIC ROOM (BLOWERS)

PANEL NUMBER	EQUIPMENT IN MCC	CONDUIT NUMBER	EQUIPMENT REMOTE FROM MCC	CONDUIT SCHEDULE: CONDUIT NUMBER	CONDUCTOR QUANTITY \ SIZE	DIAMETER
1E	BNET7; MAIN LUGS; 800A BUS; 65,000 AMPS BRACING	MF-30	MF-30; 600AT 800AF; UNIT SUB NO. 1	MF-30	(6) 350kcmil, 2 PER ϕ (2) #1G	(2) 2-1/2" C.
2A	350/400 3P; S.S.S.; CPT; R; ETM; BNET7-1; CR; DEVICENET MODULE (TYPICAL)	30PC-1	30PC-1; JB; NEMA 4; 30P-1; 200 HP; 30C-1; SL; WITH WINDING TEMPERATURE SWITCH & HEATER; PROCESS AIR BLOWER NO. 3 **	30PC-1 30P-1 30C-1	(3) 350kcmil, 1 #3G, 2 #14, 2 #14 (3) 350kcmil, 1 #3G, 2 #14 2 #14	2-1/2" C. 2-1/2" C. 3/4" C.
3A	350/400 3P; S.S.S.; CPT; R; ETM; BNET7-2; CR	30PC-2	30PC-2; JB; NEMA 4; 30P-2; 200 HP; 30C-2; SL; WITH WINDING TEMPERATURE SWITCH & HEATER; PROCESS AIR BLOWER NO. 1 **	30PC-2 30P-2 30C-2	(3) 350kcmil, 1 #3G, 2 #14, 2 #14 (3) 350kcmil, 1 #3G, 2 #14 2 #14	2-1/2" C. 2-1/2" C. 3/4" C.
1B	40/100 3P		AIR DRYER; LP38A-19			
1C 1D	30/30 3P; 30/30 3P		30A; 10 HP; 30A; 10 HP	30P-3A 30P-3B	3 #10, 1 #12G 3 #10, 1 #12G	3/4" C. 3/4" C.
1AL	25/100 3P	30P-4	30P-4; AUTO XFER SW. 30A, 3P; 30P-4A; 15 KVA; 30P-4B; LP-30A; 480-208/120V; 42P-4; SEE DRAWING E-208; LIGHTING PANEL LP-30A (SEE SCHEDULE ON DRAWING E-216)	30P-4 30P-4A 30P-4B	3 #10, 1 #10G 3 #10, 1 #10G 4 #3, 1 #8G	3/4" C. 3/4" C. 1-1/2" C.
1AR	100/225 3P		SPARE BREAKER			

MCC 31 – BAF ELECTRIC ROOM (BLOWERS)

PANEL NUMBER	EQUIPMENT IN MCC	CONDUIT NUMBER	EQUIPMENT REMOTE FROM MCC	CONDUIT SCHEDULE: CONDUIT NUMBER	CONDUCTOR QUANTITY \ SIZE	DIAMETER
1E	BNET5; BNET7; MAIN LUGS; 800A BUS; 65,000 AMPS BRACING	MF-31	MF-31; 600AT 800AF; UNIT SUB NO. 1	MF-31	(6) 350kcmil, 2 PER ϕ (2) #1G	(2) 2-1/2" C.
2A	DEVICENET MODULE (TYP); 350/400 3P; S.S.S.; CPT; R; ETM; BNET7-3; CR	31PC-1	31PC-1; JB; NEMA 4; 31P-1; 200 HP; 31C-1; SL; WITH WINDING TEMPERATURE SWITCH & HEATER; PROCESS AIR BLOWER NO. 2 **	31PC-1 31P-1 31C-1	(3) 350kcmil, 1 #3G, 6 #14, 2 #12 (3) 350kcmil, 1 #3G, 2 #12, 4 #14 2 #14	2-1/2" C. 2-1/2" C. 3/4" C.
3A	350/400 3P; S.S.S.; CPT; R; ETM; BNET7-4; CR	31PC-2	31PC-2; JB; NEMA 4; 31P-2; 200 HP; 31C-2; SL; WITH WINDING TEMPERATURE SWITCH & HEATER; PROCESS AIR BLOWER NO. 4 **	31PC-2 31P-2 31C-2	(3) 350kcmil, 1 #3G, 6 #14, 2 #12 (3) 350kcmil, 1 #3G, 2 #12, 4 #14 2 #14	2-1/2" C. 2-1/2" C. 3/4" C.
1D	90/100 3P; SIZE 3; CPT; R; BNET5-2	31PC-3	31PC-3; 100A, 3P; NEMA 4; 31P-3; 40 HP; 31C-3; SL HOA; BACKWASH WASTE TRANSFER PUMP NO. 1 **	31PC-3 31P-3 31C-3	3 #6, 1 #8G 5 #14 3 #6, 1 #8G 5 #14	1" C. 3/4" C. 3/4" C.
1C	80/100 3P; SIZE 3; CPT; R		SPARE SIZE 3			
1AL	25/100 3P	31P-4	31P-4; AUTO XFER SW. 30A, 3P; 31P-4A; 15 KVA; 31P-4B; LP-31A; 480-208/120V; 43P-4; SEE DRAWING E-208; LIGHTING PANEL LP-31A (SEE SCHEDULE ON DRAWING E-216)	31P-4 31P-4A 31P-4B	3 #10, 1 #10G 3 #10, 1 #10G 4 #3, 1 #8G	3/4" C. 3/4" C. 1-1/2" C.
1B	20/100 3P	31P-5	31P-5; CONTROL PANEL; 31P-5A; JB; 3 HP; JB; 3 HP; 31C-5; JB; 31P-5B; MFG'S CABLE, CONTROL PANEL, AND FLOATS BY CONTRACT-4A; PURGE SUMP PUMP CONTROL PANEL	31P-5 31P-5A 31P-5B 31C-5	3 #12, 1 #12G 3 #12, 1 #12G 3 #12, 1 #12G 8 #14	3/4" C. 3/4" C. 3/4" C. 3/4" C.
1AR	100/225 3P		SPARE BREAKER			

RECORD DRAWING

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DATE: 10/21/05 PER: LKampoliet

CONDUIT NUMBER DESCRIPTION

MCC # — 30P-14 — CONDUIT NUMBER

P= POWER
C= CONTROL
PC= POWER & CONTROL

** INDICATES AN ITEM OR ITEMS SUPPLIED BY OWNER FOR INSTALLATION BY THE CONTRACTOR.

Layer: ON=*; OFF=*REF*

5/30/01 BBL DCC
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No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	LJC
1		AS BID	↓
2	10/31/05	RECORD DRAWING	↓

In charge of TEL
Designed by AHL
Drawn by DCC
Checked by WFH

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BAF COMPLEX

BAF MCC 30 AND 31 ONE-LINE DIAGRAMS

ELECTRICAL

LEONARD J. CAMPOLIETA — STATE OF NEW YORK — No. 60765 — LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
LKampoliet

E-207

MCC 42 – BAF ELECTRIC ROOM (BLOWERS)

PANEL NUMBER	EQUIPMENT IN MCC	CONDUIT NUMBER	EQUIPMENT REMOTE FROM MCC	CONDUIT SCHEDULE: CONDUIT NUMBER	CONDUCTOR QUANTITY \ SIZE	DIAMETER
1E	BNET5, BNET8 — MAIN LUGS — 800A BUS — 65,000 AMPS BRACING	MF-42	MF-42 — 600AT 800AF — UNIT SUB NO. 2	MF-42	(6) 350kcmil, 2 PER ϕ (2) #1G	(2) 2-1/2" C.
2A	350/400 3P — DEVICENET MODULE (TYP) — S.S.S. — CPT — R — ETM — BNET8-1 — CR	42PC-1	42PC-1 — JB — NEMA 4 — 42P-1 — 200 HP — 42C-1 — SL — WITH WINDING TEMPERATURE SWITCH & HEATER **PROCESS AIR BLOWER NO. 5 ****	42PC-1 42P-1 42C-1	(3) 350kcmil, 1 #3G, 2 #14, 2 #14 (3) 350kcmil, 1 #3G, 2 #14 2 #14	2-1/2" C. 2-1/2" C. 3/4" C.
3A	350/400 3P — S.S.S. — CPT — R — ETM — BNET8-2 — CR	42PC-2	42PC-2 — JB — NEMA 4 — 42P-2 — 200 HP — 42C-2 — SL — WITH WINDING TEMPERATURE SWITCH & HEATER **PROCESS AIR BLOWER NO. 6 ****	42PC-2 42P-2 42C-2	(3) 350kcmil, 1 #3G, 2 #14, 2 #14 (3) 350kcmil, 1 #3G, 2 #14 2 #14	2-1/2" C. 2-1/2" C. 3/4" C.
1D	80/100 3P — SIZE 3 — CPT — R — BNET5-3	42PC-3	42PC-3 — 100A, 3P — NEMA 4 — 42P-3 — 40 HP — 42C-3 — SL HOA **BACKWASH WASTE TRANSFER PUMP NO. 2 ****	42PC-3 42P-3 42C-3	3 #6, 1 #8G 5 #14 3 #6, 1 #8G 5 #14	3/4" C. 3/4" C. 3/4" C.
1C	80/100 3P — SIZE 3 — CPT — R		**SPARE SIZE 3**			
1AL	25/100 3P	42P-4	SEE MCC 30, PANEL NO. 1AL, ON DRAWING E-207 — 42P-4 **TRANSFER SWITCH FOR LP-30A**	42P-4	3 #10, 1 #10G	3/4" C.
1B	25/100 3P — SIZE 1 — CPT — R		**SPARE SIZE 1**			
1AR	100/225 3P		**SPARE BREAKER**			

MCC 43 – BAF ELECTRIC ROOM (BLOWERS)

PANEL NUMBER	EQUIPMENT IN MCC	CONDUIT NUMBER	EQUIPMENT REMOTE FROM MCC	CONDUIT SCHEDULE: CONDUIT NUMBER	CONDUCTOR QUANTITY \ SIZE	DIAMETER
1E	BNET5, BNET8 — MAIN LUGS — 800A BUS — 65,000 AMPS BRACING	MF-43	MF-43 — 600AT 800AF — UNIT SUB NO. 2	MF-43	(6) 350kcmil, 2 PER ϕ (2) #1G	(2) 2-1/2" C.
2A	350/400 3P — DEVICENET MODULE (TYP) — S.S.S. — CPT — R — ETM — BNET8-3 — CR	43PC-1	43PC-1 — JB — 43P-1 — 200 HP — 43C-1 — SL — WITH WINDING TEMPERATURE SWITCH & HEATER **PROCESS AIR BLOWER NO. 8 ****	43PC-1 43P-1 43C-1	(3) 350kcmil, 1 #3G, 2 #14, 2 #14 (3) 350kcmil, 1 #3G, 2 #14 2 #14	2-1/2" C. 2-1/2" C. 3/4" C.
3A	350/400 3P — S.S.S. — CPT — R — ETM — BNET8-4 — CR	43PC-2	43PC-2 — JB — 43P-2 — 200 HP — 43C-2 — SL — WITH WINDING TEMPERATURE SWITCH & HEATER **PROCESS AIR BLOWER NO. 7 ****	43PC-2 43P-2 43C-2	(3) 350kcmil, 1 #3G, 2 #14, 2 #14 (3) 350kcmil, 1 #3G, 2 #14 2 #14	2-1/2" C. 2-1/2" C. 3/4" C.
1D	80/100 3P — SIZE 3 — CPT — R — BNET5-4	43PC-3	43PC-3 — 100A, 3P — NEMA 4 — 43P-3 — 40 HP — 43C-3 — SL HOA **BACKWASH WASTE TRANSFER PUMP NO. 3 ****	43PC-3 43P-3 43C-3	3 #6, 1 #8G 5 #14 3 #6, 1 #8G 5 #14	1" C. 3/4" C. 3/4" C.
1B	25/100 3P — SIZE 1 — CPT — R		**SPARE SIZE 1**			
1AL	25/100 3P	43P-4	SEE MCC 31, PANEL NO. 1AL, ON DRAWING E-207 — 43P-4 **TRANSFER SWITCH FOR LP-31A**	43P-4	3 #10, 1 #10G	3/4" C.
1C	80/100 3P — SIZE 3 — CPT — R		**SPARE SIZE 3**			
1AR	100/225 3P		**SPARE BREAKER**			

CONDUIT NUMBER DESCRIPTION

MCC # — 43P-14 — CONDUIT NUMBER

P= POWER
C= CONTROL
PC= POWER & CONTROL

** INDICATES AN ITEM OR ITEMS SUPPLIED BY OWNER FOR INSTALLATION BY THE CONTRACTOR.

RECORD DRAWING

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DATE: 10/21/05 PER: L. Campolieti

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In charge of TEL
Designed by AHL
Drawn by DCC
Checked by WFH

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BAF COMPLEX
BAF MCC 42 AND 43 ONE-LINE DIAGRAMS
ELECTRICAL

STATE OF NEW YORK • LEONARD J. CAMPOLIETI • LICENSED PROFESSIONAL ENGINEER • No. 60756

File Number 00659
Date APRIL 2001
L. Campolieti

E-208

MCC 34 – BAF ELECTRIC ROOM (HVAC SYSTEM)

PANEL NUMBER	EQUIPMENT IN MCC	CONDUIT NUMBER	EQUIPMENT REMOTE FROM MCC	CONDUIT SCHEDULE: CONDUIT NUMBER	CONDUCTOR QUANTITY \ SIZE	DIAMETER
1F	ANETI → MAIN LUGS; 600A BUS; 65,000 AMPS BRACING	MF-34	MF-34 → 600AT 800AF → UNIT SUB NO. 1	MF-34	(8) 350 kcmil 2 PER ϕ (2) #1G	(2) 2-1/2" C.
1A	DEVISENET MODULE (TYPICAL); 15/100 3P; SIZE 1; CPT; ANETI-1	34PC-1	34PC-1 → 30A, 3P → NEMA 4 → 34P-1 → 1/2 HP; 34C-1 → SL HOA **EXHAUST FAN NO. F-206** (TO BE PROVIDED BY CONTRACT 4C)	34PC-1 34P-1 34C-1	3 #12, 1 #12G, 5 #14 3 #12, 1 #12G 5 #14	3/4" C. 3/4" C. 3/4" C.
1B	45/100 3P	34P-2	34P-2 → HOT WATER SYSTEM PANEL → 34P-2A → 7.5 HP HWP-201; 34P-2C → 7.5 HP HWP-202; 34P-2B → 7.5 HP HWP-203 **HOT WATER CONTROL STATION** (TO BE PROVIDED BY CONTRACT 4C)	34P-2 34P-2A 34P-2B 34P-2C	3 #6, 1 #10G 3 #12, 1 #12G 3 #12, 1 #12G 3 #12, 1 #12G	3/4" C. 3/4" C. 3/4" C. 3/4" C.
1C	15/100 3P; SIZE 1; CPT		**SPARE SIZE 1**			
1D	2 SPEED/2 WINDING; 15/100 3P; SIZE 1; CPT; ANETI-2; TR; CRH; HTR	34PC-4	30A, 3P → NEMA 4 → 34P-4 → 1/2 HP; 34PC-4; 30A, 3P; 34C-4 → SL HOA HIGH-LOW T → DM ES LV-205; FAN DAMPER **EXHAUST FAN NO. F-201** (TO BE PROVIDED BY CONTRACT 4C)	34PC-4 34P-4 34C-4	6 #12, 1 #12G, 10 #14 6 #12, 1 #12G 10 #14	3/4" C. 3/4" C. 3/4" C.
2A	30/100 3P; VFD; CPT	34PC-5 34C-5A 34C-5B	34PC-5 → 30A, 3P → NEMA 4 → 34P-5 → 10 HP; 34C-5 → SL HOA → HVAC DDC SYSTEM LOCAL CONTROL UNIT **EXHAUST FAN NO. F-203** (TO BE PROVIDED BY CONTRACT 4C)	34PC-5 34P-5 34C-5 34C-5A 34C-5B	3 #12, 1 #12G, 5 #14 3 #12, 1 #12G 5 #14 8 #14 4 #16 TPS	3/4" C. 3/4" C. 3/4" C. 3/4" C. 1" C.
2B	15/100 3P; VFD; CPT	34PC-6	34PC-6 → 30A, 3P → NEMA 4 → 34P-6 → 3 HP; 34C-6 → SL HOA; 34C-6A → DM ES LV-203; 34C-6B → DM ES LV-204 **EXHAUST FAN NO. F-205** (TO BE PROVIDED BY CONTRACT 4C)	34PC-6 34P-6 34C-6 34C-6A 34C-6B	3 #12, 1 #12G, 5 #14 3 #12, 1 #12G 5 #14 2 #14 2 #14	3/4" C. 3/4" C. 3/4" C. 3/4" C. 3/4" C.

MCC 34 – BAF ELECTRIC ROOM (HVAC SYSTEM CONTINUED)

PANEL NUMBER	EQUIPMENT IN MCC	CONDUIT NUMBER	EQUIPMENT REMOTE FROM MCC	CONDUIT SCHEDULE: CONDUIT NUMBER	CONDUCTOR QUANTITY \ SIZE	DIAMETER
3AL	100/225 3P	34P-7	34P-7 AUTO XFER SW. 100A, 3P → 34P-7A → PP-34C → 34P-7B 45 KVA 480-208/120V → 34P-7C → LP-34B; 38P-8; SEE DRAWING E-211 **POWER PANEL PP-34C** **LIGHTING PANEL LP-34B** (SEE SCHEDULE ON DRAWING E-405)	34P-7 34P-7A 34P-7B 34P-7C	3 #3, 1 #8G 3 #3, 1 #8G 3 #4, 1 #10G 4 #2, 1 #8G	1-1/4" C. 1-1/4" C. 1-1/4" C. 1-1/2" C.
2C	25/100 3P	34P-8	34P-8 → CONDENSATE CONTROL PANEL → 34P-8A → 1 HP; 1 HP **CONDENSATE RETURN PUMP**	34P-8 34P-8A	3 #12, 1 #12G 6 #12, 1 #12G	3/4" C. 3/4" C.
3AR	45/100 3P	34P-3	34P-3 60A, 3P → 34P-3A 30 KVA 480-208/120V → 34P-3B → LP-34C **LIGHTING PANEL LP-34C** (SEE SCHEDULE ON DRAWING E-314)	34P-3 34P-3A 34P-3B	3 #6, 1 #10G 3 #6, 1 #10G 4 #3, 1 #8G	3/4" C. 3/4" C. 1-1/2" C.
2D	25/100 3P; SIZE 1; CPT					
2EL	20/100 3P		**SPARE**			
4AL	100/225 3P	34P-12	34P-12 → PP-34A **POWER PANEL PP-34A** (SEE SCHEDULE ON DRAWING E-311)	34P-12	3 #3, 1 #8G	1-1/4" C.
4AR	100/225 3P		**SPARE BREAKER**			

CONDUIT NUMBER DESCRIPTION

MCC # — 34P-14 — CONDUIT NUMBER

P= POWER
C= CONTROL
PC= POWER & CONTROL

RECORD DRAWING

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DATE: 10/31/05 PER: L.D. Campbell

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Checked by WFH

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BAF COMPLEX
BAF MCC 34 ONE-LINE DIAGRAM
ELECTRICAL

STATE OF NEW YORK · LEONARD J. CAMPBELL · No. 60755 · LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
L.D. Campbell

E-209

MCC 34 – BAF ELECTRIC ROOM (HVAC SYSTEM CONTINUED)

PANEL NUMBER	EQUIPMENT IN MCC	CONDUIT NUMBER	EQUIPMENT REMOTE FROM MCC	CONDUIT SCHEDULE: CONDUIT NUMBER	CONDUCTOR QUANTITY \ SIZE	DIAMETER
2F	15/100 3P, SIZE 1, ANET1, CPT, R, CR, ANET1-3	34PC-13	34PC-13, 30A, 3P, NEMA 4, 34P-13, 5 HP, 34C-13, SL STOP/START **INTAKE FAN NO. F-301** (TO BE PROVIDED BY CONTRACT 4C)	34PC-13 34P-13 34C-13	3 #12, 1 #12G, 2 #14 3 #12, 1 #12G 2 #14	3/4" C. 3/4" C. 3/4" C.
3B	15/100 3P, SIZE 1, CPT, R, ANET1-7	34PC-14	34PC-14, 30A, 3P, NEMA 4, 34P-14, 1 HP, 34C-14, SLHOA **EXHAUST FAN NO. F-305** (TO BE PROVIDED BY CONTRACT 4C)	34PC-14 34P-14 34C-14	3 #12, 1 #12G, 3 #14 3 #12, 1 #12G 3 #14	3/4" C. 3/4" C. 3/4" C.
3C	15/100 3P, SIZE 1, CPT, R, ANET1-8	34PC-15	34PC-15, 30A, 3P, NEMA 4, 34P-15, 1/3 HP, 34C-15, SLHOA **EXHAUST FAN NO. F-306** (TO BE PROVIDED BY CONTRACT 4C)	34PC-15 34P-15 34C-15	3 #12, 1 #12G, 3 #14 3 #12, 1 #12G 3 #14	3/4" C. 3/4" C. 3/4" C.
5AL	100/225 3P	34P-16	34P-16, PP-34B **POWER PANEL PP-34B** (SEE SCHEDULE ON DRAWING E-216)	34P-16	3 #3, 1 #8G	1-1/4" C.
5AR	70/100 3P	34P-17	34P-17, 45 KVA, 34P-17A, LP-34A, 480-208/120V **LIGHTING TRANSFORMER LP-34A** (SEE SCHEDULE ON DRAWING E-217)	34P-17 34P-17A	3 #4, 1 #8G 4 #1, 1 #8G	1-1/4" C. 2" C.
1E 3D	15/100 3P, SIZE 1, CPT, R		**SPARE SIZE 1**			
3E	15/100 3P, SIZE 1, CPT, R		**SPARE SIZE 1**			

MCC 34 – BAF ELECTRIC ROOM (HVAC SYSTEM CONTINUED)

PANEL NUMBER	EQUIPMENT IN MCC	CONDUIT NUMBER	EQUIPMENT REMOTE FROM MCC	CONDUIT SCHEDULE: CONDUIT NUMBER	CONDUCTOR QUANTITY \ SIZE	DIAMETER
3F	15/100 3P, SIZE 1, ANET1, CPT, R		**SPARE SIZE 1**			
4B	15/100 3P, SIZE 1, CPT, R		**SPARE SIZE 1**			
4C	15/100 3P, SIZE 1, CPT, R		**SPARE SIZE 1**			
4D 4E 4F	25/100 3P, SIZE 1, CPT, R		**SPARE SIZE 1**			
5B	20/100 3P, SIZE 1, CPT, R, ANET1-9	34PC-11	30A, 3P, 34P-11B, 7.5 HP, 34C-11A, SL, HOA, S **AHU-201** (TO BE PROVIDED BY CONTRACT 4C)	34Pc-11 34P-11B 34C-11A 34C-11B	3 #12, 1 #12G, 3 #14 3 #12, 1 #12G 3 #14 2 #14	3/4" C. 3/4" C. 3/4" C. 3/4" C.
5E 5F	15/100 3P, SIZE 1, CPT, R		**SPARE SIZE 1**			
2ER	20/100 3P	34P-18	**OVERHEAD DOOR BLOWER ROOM**			

CONDUIT NUMBER DESCRIPTION

MCC # — 34P-14 — CONDUIT NUMBER

P= POWER
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PC= POWER & CONTROL

RECORD DRAWING

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ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
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BAF COMPLEX
BAF MCC 34
ONE-LINE DIAGRAM (CONTINUED)
ELECTRICAL

STATE OF NEW YORK · LEONARD J. CAMPOLIETA · LICENSED PROFESSIONAL ENGINEER · No. 60765

File Number 00659
Date APRIL 2001
L. Campbell

E-210

MCC 38 – BAF ELECTRIC ROOM (HVAC SYSTEM)

PANEL NUMBER	EQUIPMENT IN MCC	CONDUIT NUMBER	EQUIPMENT REMOTE FROM MCC	CONDUIT SCHEDULE		
				CONDUIT NUMBER	CONDUCTOR QUANTITY \ SIZE	DIAMETER
1F	ANET2 — MAIN LUGS — 600A BUS — 65,000 AMPS BRACING	MF-38	MF-38 — 600AT 600AF — UNIT SUB NO. 2	MF-38	(6) 350kcmil, 2 PER ϕ (2) #1G	(2) 2-1/2" C.
1A	15/100 3P — SIZE 1 — CPT — ANET2-1 — DEVISENET MODULE (TYPICAL)	38PC-1	38PC-1 — 30A, 3P — NEMA 4 — 38P-1 — 1/2 HP — 38C-1 — SLHOA EXHAUST FAN NO. F-207 (PROVIDED BY CONTRACT 4C)	38PC-1 38P-1 38C-1	3 #12, 1 #12G 5 #14 3 #12, 1 #12G 5 #14	3/4" C. 3/4" C. 3/4" C.
1B	15/100 3P — SIZE 1 — CPT — ANET2-8	38PC-19	38PC-19 — 30A, 3P — NEMA 4 — 38P-19 — 5 HP — 38C-19 — SLHOA EXHAUST FAN F-208 (PROVIDED BY CONTRACT 4C)	38PC-19 38P-19 38C-19	3 #12, 1 #12G 5 #14 3 #12, 1 #12G 5 #14	3/4" C. 3/4" C. 3/4" C.
1C	15/100 3P — SIZE 1 — CPT — ANET2-9	38PC-20	38PC-20 — 30A, 3P — NEMA 4 — 38P-20 — 5 HP — 38C-20 — SLHOA EXHAUST FAN F-209 (PROVIDED BY CONTRACT 4C)	38PC-20 38P-20 38C-20	3 #12, 1 #12G 5 #14 3 #12, 1 #12G 5 #14	3/4" C. 3/4" C. 3/4" C.
1D	25/100 3P — VFD — CPT	38PC-4 38C-4A 38C-4B	38PC-4 — 30A, 3P — NEMA 4 — 38P-4 — 10 HP — 38C-4 — SLHOA — HVAC DDC SYSTEM LOCAL CONTROL UNIT EXHAUST FAN NO. F-204 (PROVIDED BY CONTRACT 4C)	38PC-4 38P-4 38C-4 38C-4A 38C-4B	3 #12, 1 #12G 5 #14 3 #12, 1 #12G 5 #14 4 #14 2 #16 TSP	3/4" C. 3/4" C. 3/4" C. 3/4" C. 3/4" C.
2A	15/100 3P — SIZE 1 — CPT — ANET2-10	38PC-21	38PC-21 — 30A, 3P — NEMA 4 — 38P-21 — 5 HP — 38C-21 — SLHOA EXHAUST FAN F-210 (PROVIDED BY CONTRACT 4C)	38PC-21 38P-21 38C-21	3 #12, 1 #12G 5 #14 3 #12, 1 #12G 5 #14	3/4" C. 3/4" C. 3/4" C.
3AL	70/100 3P	38P-6	38P-6 — 45 KVA — 38P-6A — LP-38A — 480-208/120V LIGHTING PANEL LP-38A (SEE SCHEDULE ON DRAWING E-217)	38P-6 38P-6A	3 #4, 1 #6G 4 #2/0, 1 #6G	1-1/4" C. 1-1/2" C.

MCC 38 – BAF ELECTRIC ROOM (HVAC SYSTEM CONTINUED)

PANEL NUMBER	EQUIPMENT IN MCC	CONDUIT NUMBER	EQUIPMENT REMOTE FROM MCC	CONDUIT SCHEDULE		
				CONDUIT NUMBER	CONDUCTOR QUANTITY \ SIZE	DIAMETER
2B	15/100 3P — SIZE 1 — CPT — ANET2-11	38PC-22	38PC-22 — 30A, 3P — NEMA 4 — 38P-22 — 5 HP — 38C-22 — SLHOA EXHAUST FAN F-211 (PROVIDED BY CONTRACT 4C)	38PC-22 38P-22 38C-22	3 #12, 1 #12G 5 #14 3 #12, 1 #12G 5 #14	3/4" C. 3/4" C. 3/4" C.
3AR	45/100 3P	38P-2	38P-2 — 30 KVA — 38P-2A — LP-38C — 480-208/120V LIGHTING PANEL LP-38C (SEE SCHEDULE ON DRAWING E-217)	38P-2 38P-2A	3 #8, 1 #10G 4 #3, 1 #8G	1-1/4" C. 1-1/2" C.
4AR	100/225 3P	38P-8	SEE MCC 34, PANEL NO. 3AL, E-209 — 38P-8 TRANSFER SWITCH	38P-8	3 #3, 1 #8G	1-1/4" C.
2C	15/100 3P — SIZE 1 — CPT — ANET2-12	38PC-23	38PC-23 — 30A, 3P — NEMA 4 — 38P-23 — 5 HP — 38C-23 — SLHOA EXHAUST FAN F-212 (PROVIDED BY CONTRACT 4C)	38PC-23 38P-23 38C-23	3 #12, 1 #12G 5 #14 3 #12, 1 #12G 5 #14	3/4" C. 3/4" C. 3/4" C.
2D	15/100 3P — SIZE 1 — CPT — ANET2-13	38PC-24	38PC-24 — 30A, 3P — NEMA 4 — 38P-24 — 5 HP — 38C-24 — SLHOA EXHAUST FAN F-213 (PROVIDED BY CONTRACT 4C)	38PC-24 38P-24 38C-24	3 #12, 1 #12G 5 #14 3 #12, 1 #12G 5 #14	3/4" C. 3/4" C. 3/4" C.
4AL	100/225 3P	38P-11	38P-11 — PP-38A POWER PANEL PP-38A (SEE SCHEDULE ON DRAWING E-311)	38P-11	3 #3, 1 #8G	1-1/4" C.
2E	20/100 3P	38P-12	38P-12 — 30A, 3P — NEMA 4 — 38P-12A — STARTER/CONTROLS (BY CONTRACT 4C) — 7.5 HP — 38C-12 — 38C-12A — HIGH/LOW — S D CHEMICAL BUILDING C AIR HANDLER UNIT NO. AHU-301 (PROVIDED BY CONTRACT 4C)	38P-12 38P-12A 38C-12 38C-12A	3 #12, 1 #12G 3 #12, 1 #12G 2 #14 4 #14	3/4" C. 3/4" C. 3/4" C. 3/4" C.

CONDUIT NUMBER DESCRIPTION

MCC # — 38P-14 — CONDUIT NUMBER

P= POWER
C= CONTROL
PC= POWER & CONTROL

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS WERE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE: 10/21/05 PER: L.Kampolet

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BAF COMPLEX
BAF MCC 38 ONE-LINE DIAGRAM
ELECTRICAL

STATE OF NEW YORK — LEONARD J. CAMPOLIETA — No. 60755 — LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
L.Kampolet

E-211

MCC – 38 BAF ELECTRIC ROOM (HVAC SYSTEM CONTINUED)

PANEL NUMBER	EQUIPMENT IN MCC	CONDUIT NUMBER	EQUIPMENT REMOTE FROM MCC	CONDUIT SCHEDULE: CONDUIT NUMBER	CONDUCTOR QUANTITY \ SIZE	DIAMETER
2F	15/100 3P, SIZE 1, ANET2, CPT, R, CR, ANET2-3	38PC-13	38PC-13, 30A 3P, NEMA 4, 38P-13, 5 HP, 38C-13, SL, STOP/START **INTAKE FAN NO. F-302** (PROVIDED BY CONTRACT 4C)	38PC-13	3 #12, 1 #12G, 2 #14	3/4" C.
				38P-13	3 #12, 1 #12G	3/4" C.
				38C-13	2 #14	3/4" C.
4B	15/100 3P, SIZE 1, CPT, ANET2-7	38PC-14	38PC-14, 30A 3P, NEMA 4, 38P-14, 1/2 HP, 38C-14, SLHOA **INTAKE FAN NO. F-303** (PROVIDED BY CONTRACT 4C)	38PC-14	3 #12, 1 #12G, 5 #14	3/4" C.
				38P-14	3 #12, 1 #12G	3/4" C.
				38C-14	5 #14	3/4" C.
3B	15/100 3P, SIZE 1, CPT, ANET2-5	38PC-15	38PC-15, 30A 3P, NEMA 4, 38P-15, 1/3 HP, 38C-15, SLHOA **EXHAUST FAN NO. F-304** (PROVIDED BY CONTRACT 4C)	38PC-15	3 #12, 1 #12G, 5 #14	3/4" C.
				38P-15	3 #12, 1 #12G	3/4" C.
				38C-15	5 #14	3/4" C.
3C	15/100 3P, SIZE 1, CPT, R, ANET2-6	38PC-16	38PC-16, 30A 3P, NEMA 4, 38P-16, 2 HP, 38C-16, SLHOA, DM, ES, LV-401, 38C-16C, DM, ES, LV-402 **SUPPLY FAN NO. F-401** (PROVIDED BY CONTRACT 4C)	38PC-16	3 #12, 1 #12G, 4 #14	3/4" C.
				38P-16	3 #12, 1 #12G	3/4" C.
				38C-16	2 #14	3/4" C.
				38C-16A	2 #14	3/4" C.
				38C-16B	2 #12, 2 #14	3/4" C.
				38C-16C	2 #12, 2 #14	3/4" C.
5AL	100/225 3P	38P-17	38P-17, PP-38B **POWER PANEL PP-38B** (SEE SCHEDULE ON DRAWING E-216)	38P-17	3 #3, 1 #8G	1-1/4" C.
5AR	100/225 3P	38P-18	38P-18, PP-38C, 30 KVA, 38P-18A, 38P-18B, LP-38B, 480-208/120V **POWER PANEL PP-38C** **LIGHTING PANEL LP-38B** (SEE SCHEDULE ON DRAWING E-314)	38P-18	3 #3, 1 #8G	1-1/4" C.
				38P-18A	3 #8, 1 #10G	3/4" C.
				38P-18B	4 #3, 1 #8G	1-1/2" C.
1E	15/100 3P, SIZE 1, CPT, R, ANET2-14	38PC-25	38PC-25, 30A 3P, NEMA 4, 38P-25, 5 HP, 38C-25, SLHOA **EXHAUST FAN F-214** (PROVIDED BY CONTRACT 4C)	38PC-25	3 #12, 1 #12G, 5 #14	3/4" C.
				38P-25	3 #12, 1 #12G	3/4" C.
				38C-25	5 #14	3/4" C.

MCC – 38 BAF ELECTRIC ROOM (HVAC SYSTEM CONTINUED)

PANEL NUMBER	EQUIPMENT IN MCC	CONDUIT NUMBER	EQUIPMENT REMOTE FROM MCC	CONDUIT SCHEDULE: CONDUIT NUMBER	CONDUCTOR QUANTITY \ SIZE	DIAMETER
3D	15/100 3P, SIZE 1, ANET2, CPT, R, ANET2-15	38PC-26	38PC-26, 30A 3P, NEMA 4, 38P-26, 5 HP, 38C-26, SLHOA **EXHAUST FAN F-215** (PROVIDED BY CONTRACT 4C)	38PC-26	3 #12, 1 #12G, 5 #14	3/4" C.
				38P-26	3 #12, 1 #12G	3/4" C.
				38C-26	5 #14	3/4" C.
3E	15/100 3P, SIZE 1, CPT, R, ANET2-16	38PC-27	38PC-27, 30A 3P, NEMA 4, 38P-27, 5 HP, 38C-27, SLHOA **EXHAUST FAN F-216** (PROVIDED BY CONTRACT 4C)	38PC-27	3 #12, 1 #12G, 5 #14	3/4" C.
				38P-27	3 #12, 1 #12G	3/4" C.
				38C-27	5 #14	3/4" C.
4C	2S2W SIZE 1, 20/100 3P, CPT, R, R, ANET2-17, TR, CRH, HTR	38PC-28	30A 3P, NEMA 4, 38P-28, 1 1/2 HP, 30A 3P, NEMA 4, 38C-28, 38C-28A, SL, 38C-28B, HOA, HIGH/LOW, AHU-301 CONTROLS **EXHAUST FAN F-310** (PROVIDED BY CONTRACT 4C)	38PC-28	6 #12, 1 #12G, 5 #14	3/4" C.
				38P-28	6 #12, 1 #12G	3/4" C.
				38C-28	5 #14	3/4" C.
				38C-28A	3 #14	3/4" C.
				38C-28B	5 #14	3/4" C.
3F, 4D, 4E	20/100 3P, SIZE 1, CPT, R		**SPARE SIZE 1**			
5B, 5C, 5D	25/100 3P, SIZE 1, CPT, R		**SPARE SIZE 1**			
5E, 5F	25/100 3P, SIZE 1, CPT, R		**SPARE SIZE 1**			
2ER	20/100 3P		**SPARE BREAKER**			

CONDUIT NUMBER DESCRIPTION

MCC # — 34P-14 — CONDUIT NUMBER

P= POWER
C= CONTROL
PC= POWER & CONTROL

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

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SYRACUSE, NEW YORK

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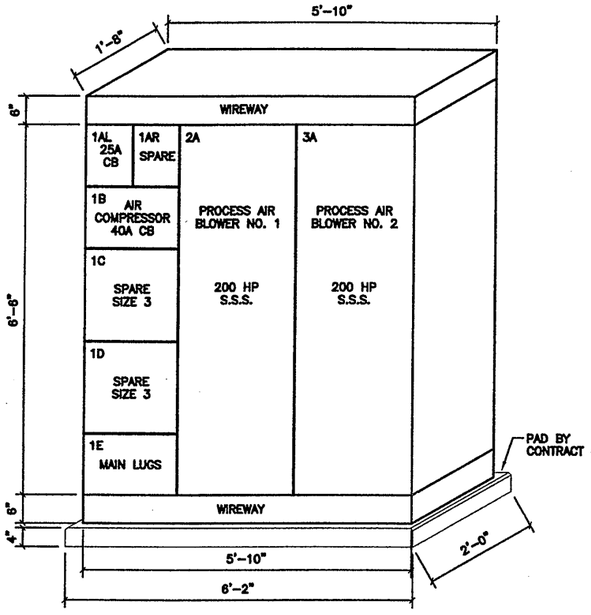
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BAF COMPLEX
BAF MCC 38
ONE-LINE DIAGRAM (CONTINUED)
ELECTRICAL

LICENSED PROFESSIONAL ENGINEER — STATE OF NEW YORK — LEONARD J. CAMPOLIER — No. 60755

File Number 00659
Date APRIL 2001
LKampoler

E-212



MCC 30 ELEVATION
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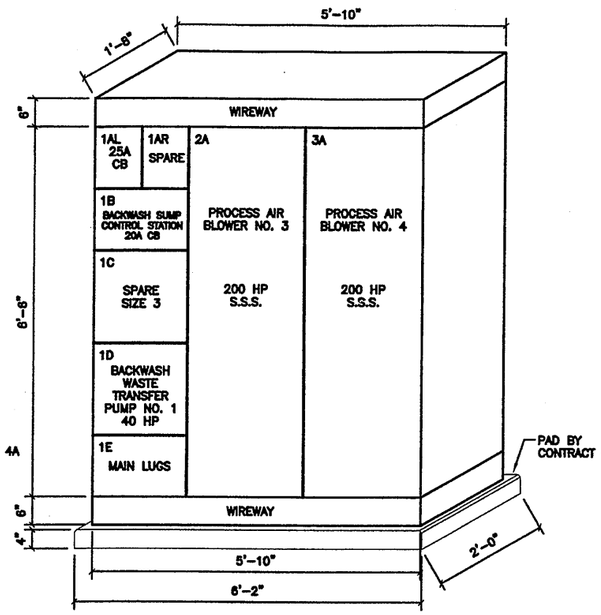
(SEE DRAWING E-207)



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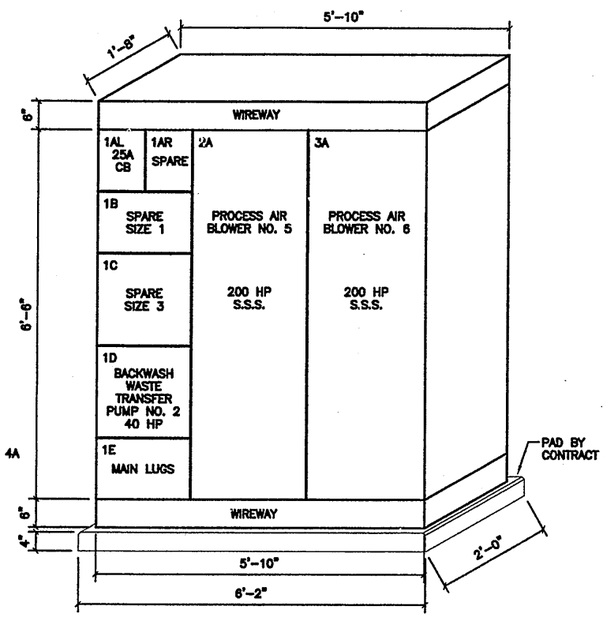

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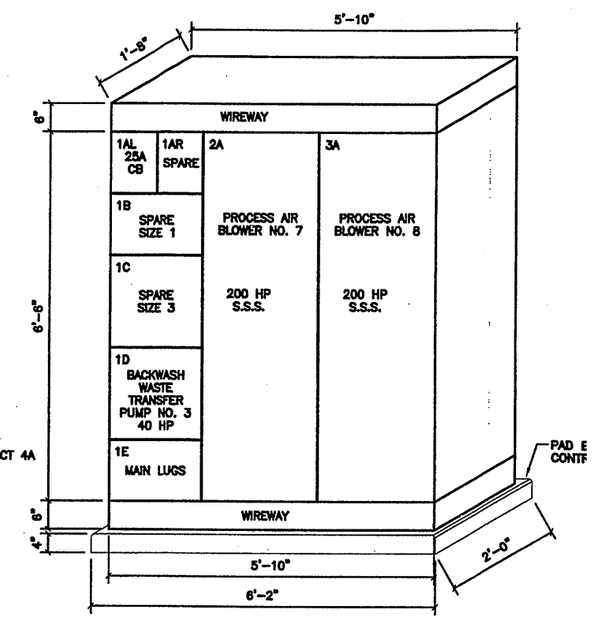

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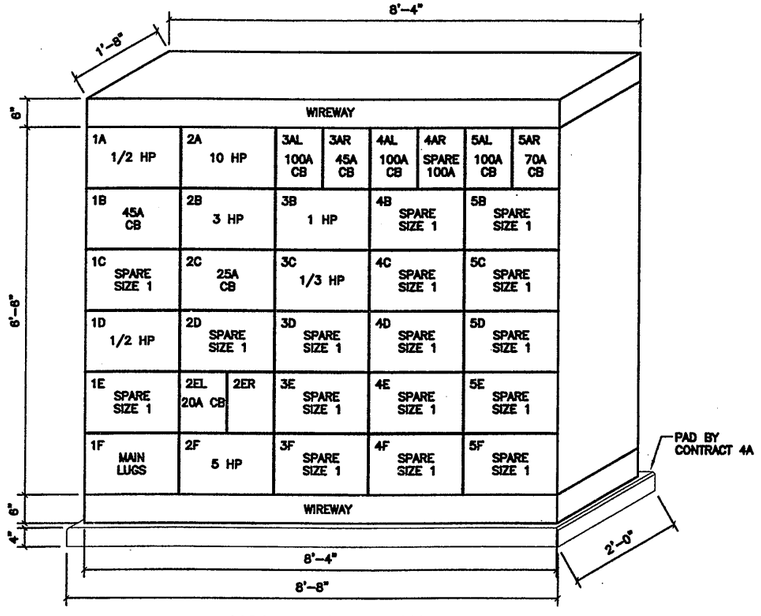
(SEE DRAWING E-208)



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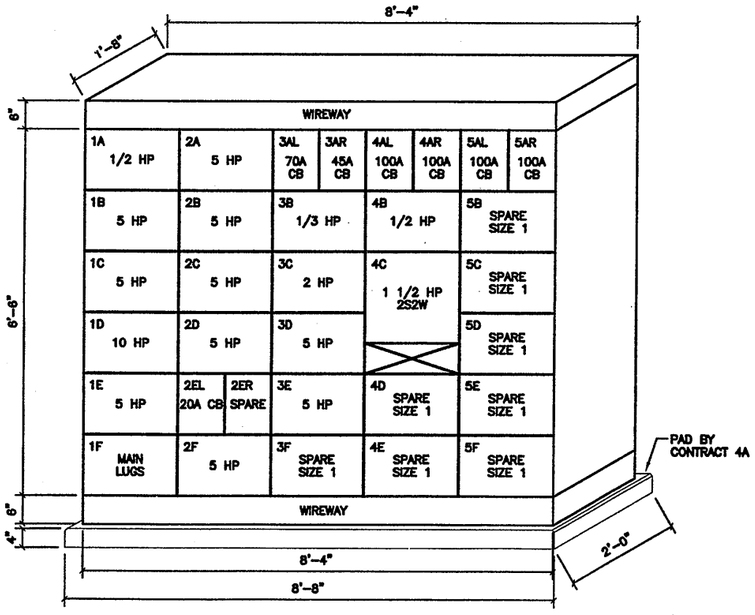
(SEE DRAWING E-209 AND E-210)



MCC 38 ELEVATION
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(SEE DRAWING E-211 AND E-212)

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DATE 10/21/05 PER [signature]

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SYRACUSE, NEW YORK

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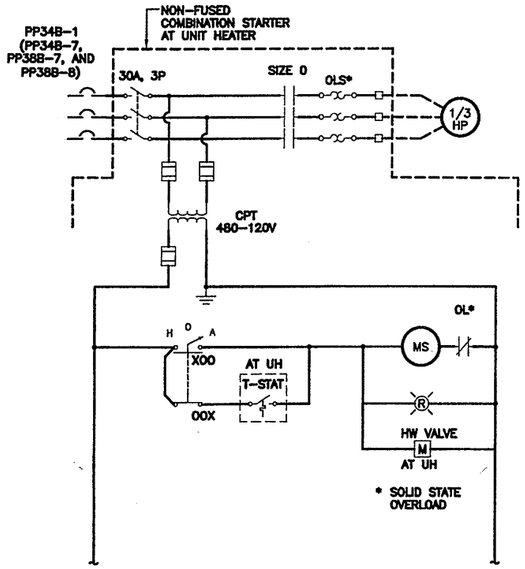
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BAF COMPLEX
BAF MCC ELEVATIONS
ELECTRICAL

LEONARD J. CAMPOLIETA — No. 60764 — LICENSED PROFESSIONAL ENGINEER — STATE OF NEW YORK

File Number 00659
Date APRIL 2001
[signature]

E-213

SEE MCC O&M MANUAL FOR
EQUIPMENT ELEMENTARY DIAGRAMS



UNIT HEATER UH-201

(TYPICAL FOR UH-202, 207, AND 208)
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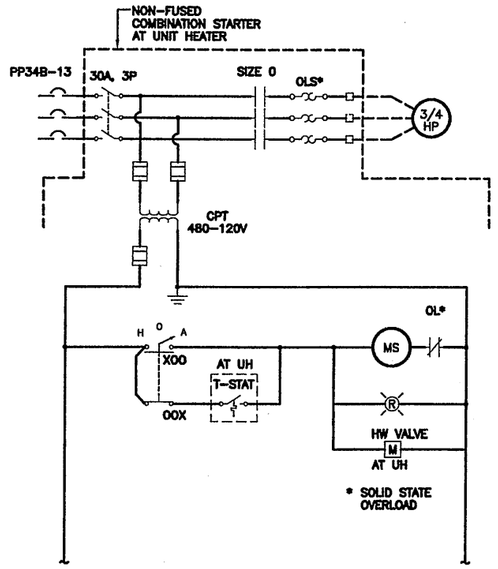

UNIT HEATER UH-209

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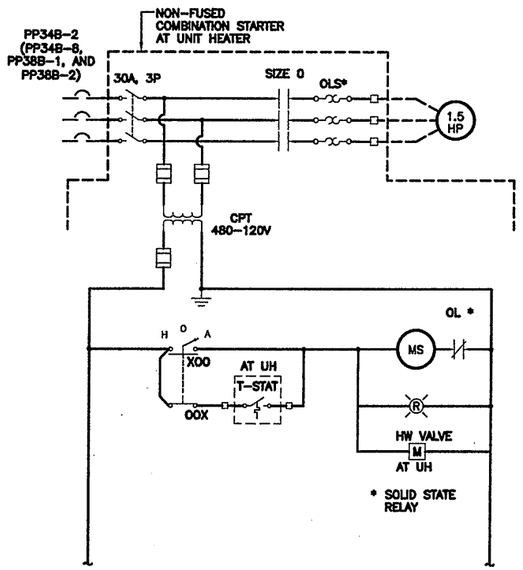

UNIT HEATER UH-203

(TYPICAL FOR UH-204 THRU UH-206)
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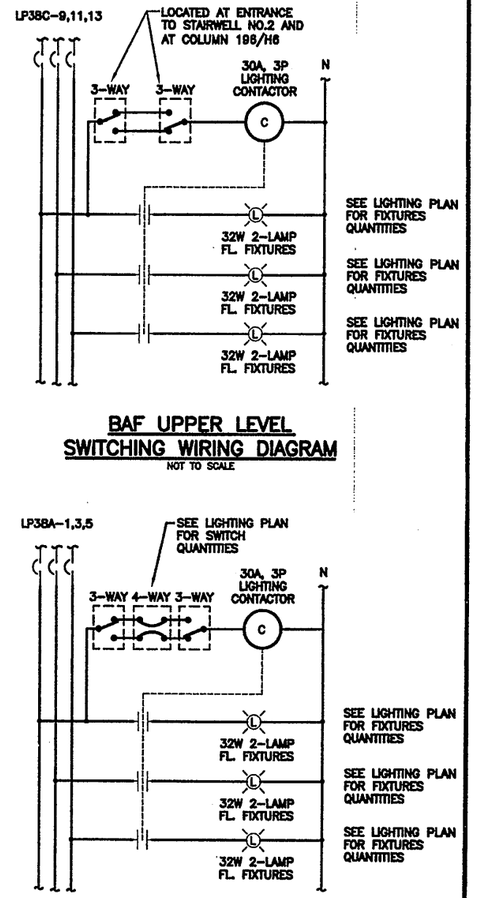
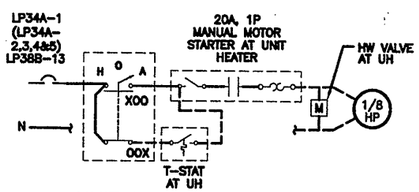


BAF UPPER LEVEL SWITCHING WIRING DIAGRAM

NOT TO SCALE

BAF LOWER LEVEL SWITCHING WIRING DIAGRAM

NOT TO SCALE



UNIT HEATER UH-210

(TYPICAL FOR UH-211 THRU UH-214, AND UH-323)
NOT TO SCALE

NOTE: SEE ONELINE DIAGRAM FOR MOTOR DISCONNECT SWITCH REQUIREMENTS.

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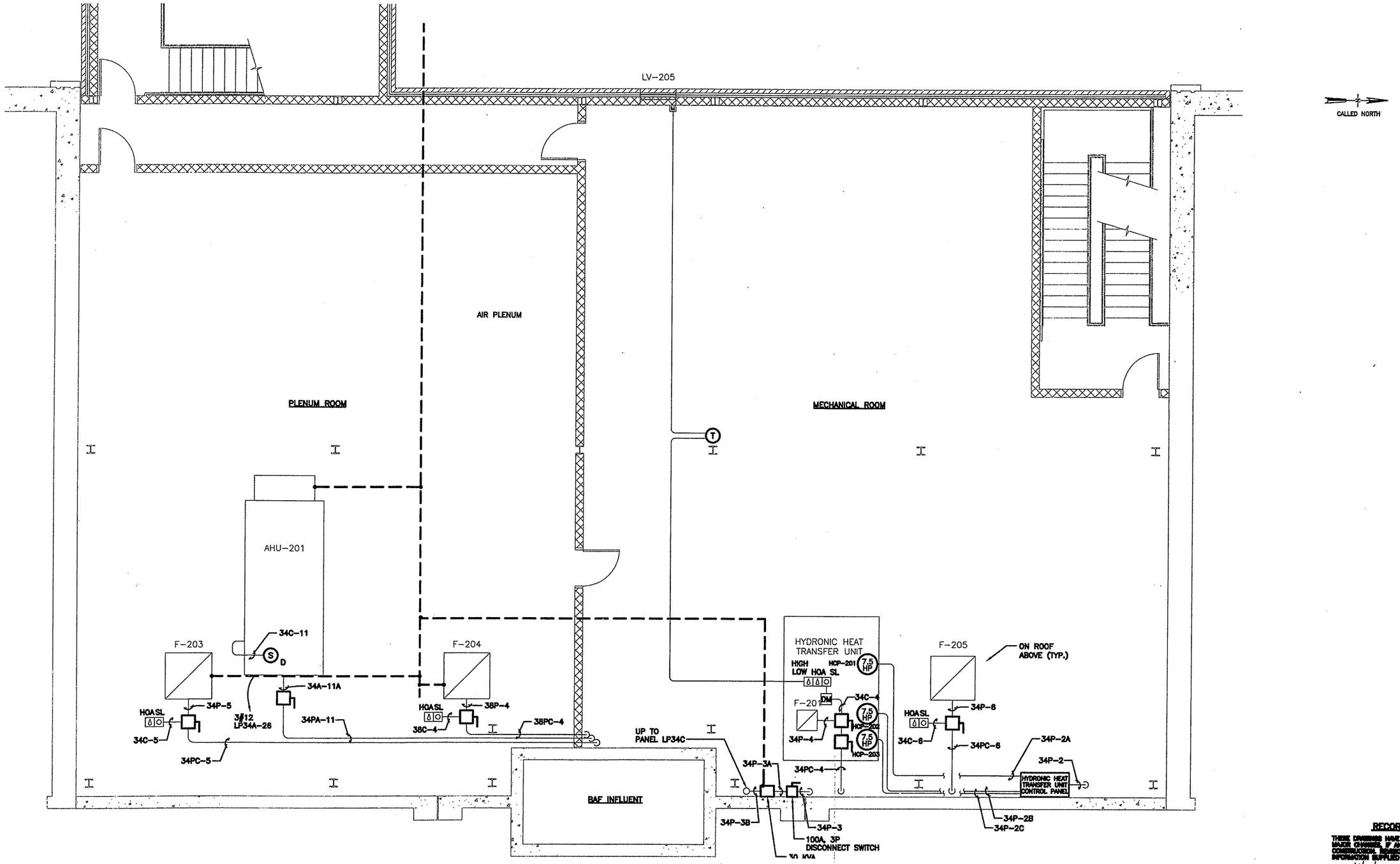
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BAF COMPLEX
BAF ELEMENTARY DIAGRAMS
ELECTRICAL

STATE OF NEW YORK · LICENSED PROFESSIONAL ENGINEER · LEONARD J. CAMPOLIETA · No. 60751

File Number 00659
Date APRIL 2001
L Rampulat

E-214



BAF PLENUM AND MECHANICAL ROOM POWER PLAN

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

Layer: ON=*; OFF=*REF*
X: 0559X202.DWG
4/13/01 BBL DCC
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1/4"=1'-0" 4' 0 4' 8'

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Designed by MEE
Drawn by DCC
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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
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BAF COMPLEX
BAF PLENUM AND MECHANICAL ROOM POWER PLAN
ELECTRICAL

STATE OF NEW YORK • LEONARD J. CAMPOLIETA • LICENSED PROFESSIONAL ENGINEER • No. 60765

File Number 00659
Date APRIL 2001
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E-215

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATED 10/21/05 PER LCampolieta

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED IN THE TITLE BLOCK. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.

CIRCUIT BREAKER PANELBOARD – PP-34B									SCHEDULE			
LOCATION:		BAF GALLERY SOUTH							FEED FROM		MCC 34, 5AL	
MAIN BUS RATING:		225	AMPERES						480 VOLT		3 PHASE, 4 WIRE	
MINIMUM SHORTCIRCUIT:		25,000	AMPERES						FEEDER CABLE		3 #3, 1 #8G	
MAIN BREAKER TRIP:		100	AMPERES						SURFACE MOUNTED			
ESTIMATED CONNECTED LOAD:		7.17	KVA									
		CB								CB		
CKT		AMPS/	LOAD						LOAD	AMPS/		CKT
NO.	DESCRIPTION	POLES	TYPE	KVA	PH-A	PH-B	PH-C	KVA	TYPE	POLES	DESCRIPTION	NO.
1	UNIT HEATER NO. UH-201	20A	MOTOR	0.143	0.973			0.830	MOTOR	20A	UNIT HEATER NO. UH-203	2
3			MOTOR	0.143		0.973		0.830	MOTOR			4
5		3P	MOTOR	0.143			0.973	0.830	MOTOR	3P		6
7	UNIT HEATER NO. UH-202	20A	MOTOR	0.143	0.973			0.830	MOTOR	20A	UNIT HEATER NO. UH-204	8
9			MOTOR	0.143		0.973		0.830	MOTOR			10
11		3P	MOTOR	0.143			0.973	0.830	MOTOR	3P		12
13	UNIT HEATER NO. UH-209	20A	MOTOR	0.443	0.443					20A	SPARE	14
15			MOTOR	0.443		0.443						16
17		3P	MOTOR	0.443			0.443			3P		18
19	SPARE	20A			0.000					20A	SPARE	20
21						0.000						22
23		3P					0.000			3P		24
25	SPARE	20A			0.000					20A	SPARE	26
27						0.000						28
29		3P					0.000			3P		30
31	SPARE	20A			0.000					20A	SPARE	32
33						0.000						34
35		3P					0.000			3P		36
37	SPARE	20A			0.000					20A	SPARE	38
39						0.000						40
41		3P					0.000			3P		42
LOAD SUMMARY				2.187	2.389	2.389	2.389	4.980				
PANEL TOTAL KVA:				7.167								

NOTE:

ALL CONDUCTORS TO BE 3 #12, 1 #12G IN 3/4-INCH PVC COATED RIGID STEEL CONDUIT, UNLESS OTHERWISE INDICATED ON POWER PLAN.

CIRCUIT BREAKER PANELBOARD – PP-38B									SCHEDULE			
LOCATION:		BAF GALLERY NORTH							FEED FROM		MCC 38, 5AL	
MAIN BUS RATING:		225	AMPERES						480 VOLT		3 PHASE, 4 WIRE	
MINIMUM SHORTCIRCUIT:		25,000	AMPERES						FEEDER CABLE		3 #3, 1 #8G	
MAIN BREAKER TRIP:		100	AMPERES						SURFACE MOUNTED			
ESTIMATED CONNECTED LOAD:		5.84	KVA									
		CB								CB		
CKT		AMPS/	LOAD						LOAD	AMPS/		CKT
NO.	DESCRIPTION	POLES	TYPE	KVA	PH-A	PH-B	PH-C	KVA	TYPE	POLES	DESCRIPTION	NO.
1	UNIT HEATER NO. UH-205	20A	MOTOR	0.830	1.660			0.830	MOTOR	20A	UNIT HEATER NO. UH-206	2
3			MOTOR	0.830		1.660		0.830	MOTOR			4
5		3P	MOTOR	0.830			1.660	0.830	MOTOR	3P		6
7	UNIT HEATER NO. UH-207	20A	MOTOR	0.143	0.286			0.143	MOTOR	20A	UNIT HEATER NO. UH-208	8
9			MOTOR	0.143		0.286		0.143	MOTOR			10
11		3P	MOTOR	0.143			0.286	0.143	MOTOR	3P		12
13	SPARE	20A			0.000					20A	SPARE	14
15						0.000						16
17		3P					0.000			3P		18
19	SPARE	20A			0.000					20A	SPARE	20
21						0.000						22
23		3P					0.000			3P		24
25	SPARE	20A			0.000					20A	SPARE	26
27						0.000						28
29		3P					0.000			3P		30
31	SPARE	20A			0.000					20A	SPARE	32
33						0.000						34
35		3P					0.000			3P		36
37	SPARE	20A			0.000					20A	SPARE	38
39						0.000						40
41		3P					0.000			3P		42
LOAD SUMMARY				2.919	1.946	1.946	1.946	2.919				
PANEL TOTAL KVA:				5.838								

NOTE:

ALL CONDUCTORS TO BE 3 #12, 1 #12G IN 3/4-INCH PVC COATED RIGID STEEL CONDUIT, UNLESS OTHERWISE INDICATED ON POWER PLAN.

CIRCUIT BREAKER PANELBOARD – LP-31A									SCHEDULE			
LOCATION:		BAF ELECTRIC ROOM							FEED FROM		MCC 31, 1AL AND MCC 43, 1AL	
MAIN BUS RATING:		225	AMPERES						208/120 VOLTS		3 PHASE, 4 WIRE	
MINIMUM SHORTCIRCUIT:		10,000	AMPERES						FEEDER CABLE		4 #3, 1 #8G	
MAIN BREAKER TRIP:		100	AMPERES						SURFACE MOUNTED			
ESTIMATED CONNECTED LOAD:		4.84	KVA									
		CB								CB		
CKT		AMPS/	LOAD						LOAD	AMPS/		CKT
NO.	DESCRIPTION	POLES	TYPE	KVA	PH-A	PH-B	PH-C	KVA	TYPE	POLES	DESCRIPTION	NO.
1	PLC M17, ACTIFLO	20/1P	CONTROL	1.500	1.500					20/1P	SPARE	2
3	AIT-30000, HRFS INF TURBIDITY	20/1P	INST	0.040		1.540		1.500	CONTROL	20/1P	PLC M16, FERRIC/POLYMER	4
5	AIT-30113, TRAIN 1 EFF TURBIDITY	20/1P	INST	0.040			1.540	1.500	CONTROL	20/1P	PLC M22, BLOWER BANK B	6
7	AIT-30313, TRAIN 3 EFF TURBIDITY	20/1P	INST	0.040	0.080			0.040	INST	20/1P	AIT-30213, TRAIN 2 EFF TURBIDITY	8
9	SV-30170, SAND FEED #1	20/1P	SOL	0.030		0.070		0.040	INST	20/1P	AIT-30413, TRAIN 4 EFF TURBIDITY	10
11	SV-30370, SAND FEED #3	20/1P	SOL	0.030			0.060	0.030	SOL	20/1P	SPARE	12
13	SPARE	20/1P			0.030			0.030	SOL	20/1P	BOOSTER PUMP HRFS	14
15	SPARE	20/1P				0.000				20/1P	BOOSTER PUMP HRFS	16
17	FIT-30082, SLUDGE DISCHARGE FLOW	20/1P	INST	0.020			0.020			20/1P	SPARE	18
19	SPARE	20/1P			0.000					20/1P	SPARE	20
21	SPARE	20/1P				0.000				20/1P	SPARE	22
23	SPARE	20/1P					0.000			20/1P	SPARE	24
25	SPARE	20/1P			0.000					20/1P	SPARE	26
27	SPARE	20/1P				0.000				20/1P	SPARE	28
29	SPARE	20/1P					0.000			20/1P	SPARE	30
31	SPARE	20/1P			0.000					20/1P	F.A.PANEL	32
33	SPARE	20/1P				0.000				20/1P	SPARE	34
35	SPARE	20/1P					0.000			20/1P	SPARE	36
37	SPARE	20/1P			0.000					20/1P	SPARE	38
39	SPARE	20/1P				0.000				20/1P	SPARE	40
41	SPARE	20/1P					0.000			20/1P	SPARE	42
LOAD SUMMARY				1.700	1.610	1.610	1.620	3.140				
PANEL TOTAL KVA:				4.840								

NOTE:

ALL CONDUCTORS TO BE 2 #12, 1 #12G IN 3/4-INCH PVC COATED RIGID STEEL CONDUIT, UNLESS OTHERWISE INDICATED ON POWER PLAN.

CIRCUIT BREAKER PANELBOARD – LP-30A									SCHEDULE			
LOCATION:		BAF ELECTRIC ROOM							FEED FROM		MCC 30, 1AL AND MCC 42, 1AL	
MAIN BUS RATING:		225	AMPERES						208/120 VOLTS		3 PHASE, 4 WIRE	
MINIMUM SHORTCIRCUIT:		10,000	AMPERES						FEEDER CABLE		4 #3, 1 #8G	
MAIN BREAKER TRIP:		100	AMPERES						SURFACE MOUNTED			
ESTIMATED CONNECTED LOAD:		5.571	KVA									
		CB								CB		
CKT		AMPS/	LOAD						LOAD	AMPS/		CKT
NO.	DESCRIPTION	POLES	TYPE	KVA	PH-A	PH-B	PH-C	KVA	TYPE	POLES	DESCRIPTION	NO.
1	PLC M19, BIOSTYR	20/1P	CONTROL	1.500	1.750			0.250	INST	20/1P	AIT-20012, BAF EFF NH3	2
3	PLC M24	20/1P	CONTROL	1.500		1.515		0.015	INST	20/1P	LIT-20012, BAF EFF LEVEL HTRS	4
5	LIT-20001, BAF INF LEVEL	20/1P	INST	0.015			1.515	1.500	CONTROL	20/1P	PLC M21, BLOWER BANK A	6
7	AIT-20002	20/1P			0.001			0.001	INST	20/1P	FIT-20020, BACKWASH FLOW	8
9	BAF INF NH3 HTRS	20/1P	INST	0.250		0.255		0.005	INST	20/1P	AIT-20014A, BAF EFF DO #1	10
11	LIT-20021, BACKWASH LEVEL #1	20/1P	INST	0.015			0.020	0.005	INST	20/1P	AIT-20014B, BAF EFF DO #2	12
13	LIT-20022, BACKWASH LEVEL #2	20/1P	INST	0.015	0.515			0.500	CONTROLS	20/1P	SPARE	14
15	SPARE	20/1P				0.000				20/1P	SPARE	16
17	SPARE	20/1P					0.000			20/1P	SPARE	18
19	SPARE	20/1P			0.000					20/1P	SPARE	20
21	SPARE	20/1P				0.000				20/1P	SPARE	22
23	SPARE	20/1P					0.000			20/1P	SPARE	24
25	SPARE	20/1P			0.000					20/1P	SPARE	26
27	SPARE	20/1P				0.000				20/1P	SPARE	28
29	SPARE	20/1P					0.000			20/1P	SPARE	30
31	SPARE	20/1P			0.000					20/1P	SPARE	32
33	SPARE	20/1P				0.000				20/1P	SPARE	34
35	SPARE	20/1P					0.000			20/1P	SPARE	36
37	SPARE	20/1P			0.000					20/1P	SPARE	38
39	SPARE	20/1P				0.000				20/1P	SPARE	40
41	SPARE	20/1P					0.000			20/1P	SPARE	42
LOAD SUMMARY				3.295	2.286	1.770	1.535	2.276				
PANEL TOTAL KVA:				5.571								

NOTE:

ALL CONDUCTORS TO BE 2 #12, 1 #12G IN 3/4-INCH PVC COATED RIGID STEEL CONDUIT, UNLESS OTHERWISE INDICATED ON POWER PLAN.

RECORD DRAWING

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DATE: 10/21/05 PER: L. Campbell

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Layer: ON=*; OFF=*REF*

4/9/01 BBL DCC
05503000/0659E216.DWG

NOT TO SCALE

NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	LC
1		AS BID	
2	10/31/05	RECORD DRAWING	L

In charge of TEL
Designed by MEE
Drawn by DCC
Checked by WFH

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BAF COMPLEX
BAF SCHEDULES
ELECTRICAL

LICENSED PROFESSIONAL ENGINEER • STATE OF NEW YORK • LEONARD J. CAMPBELL • No. 60765

File Number 00659
Date APRIL 2001
L. Campbell

E-216

CIRCUIT BREAKER PANELBOARD – LP-34A									SCHEDULE			
LOCATION:		BAF ELECTRIC ROOM							FEED FROM		MCC 34, 5AR	
MAIN BUS RATING:		225	AMPERES						208/120 VOLTS		3 PHASE, 4 WIRE	
MINIMUM SHORTCIRCUIT:		10,000	AMPERES						FEEDER CABLE		4 #1, 1 #8G	
MAIN BREAKER TRIP:		125	AMPERES						SURFACE MOUNTED			
ESTIMATED CONNECTED LOAD:		24.11	KVA									
		CB								CB		
CKT		AMPS/	LOAD						LOAD	AMPS/		CKT
NO.	DESCRIPTION	POLES	TYPE	KVA	PH-A	PH-B	PH-C	KVA	TYPE	POLES	DESCRIPTION	NO.
1	UNIT HEATER UH-212	20/1P	MOTOR	0.093	0.188			0.093	MOTOR	20/1P	UNIT HEATER UH-211	2
3	UNIT HEATER UH-213	20/1P	MOTOR	0.093		0.186		0.093	MOTOR	20/1P	UNIT HEATER UH-210	4
5	UNIT HEATER UH-214	20/1P	MOTOR	0.093			1.093	1.000	HEAT	20/1P	SPARE	6
7	SPARE	20/1P	HEAT	1.750	3.201			1.451	LIGHTS	20/1P	LIGHTS – STAIR TOWER	8
9	LIGHTS – BAF ELECTRIC ROOM	20/1P	LIGHTS	1.680		1.860		0.180	RECEPT	20/1P	RECEPT AT TRANSFORMERS	10
11	NIGHT LIGHTS – BAF UTILITY ROOMS	20/1P	LIGHTS	1.547			3.326	1.779	LIGHTS	20/1P	LIGHTS – BAF BLOWER ROOM	12
13	LIGHTS – PLENUM ROOM	20/1P	LIGHTS	0.427	2.141			1.714	LIGHTS	20/1P	LIGHTS – ELEC. ROOM STAIRS	14
15	LIGHTS – MECHANICAL ROOM	20/1P	LIGHTS	1.878		3.318		1.440	RECEPT	20/1P	RECEPT – BLOWER ROOM	16
17	RECEPT – PLENUM	20/1P	RECEPT	1.080			1.800	0.720	RECEPT	20/1P	RECEPT – BAF GALLERY SUMPS WEST	18
19	RECEPT – MECH. ROOM NORTH	20/1P	RECEPT	1.080	2.160			1.080	RECEPT	20/1P	RECEPT – HRFS NORTH	20
21	RECEPT – BAF GALLERY SW	20/1P	RECEPT	1.260		2.520		1.260	RECEPT	20/1P	RECEPT – HRFS SOUTH	22
23	RECEPT – BAF GALLERY NE	20/1P	RECEPT	1.260			1.620	0.360	RECEPT	20/1P	RECEPT – HRFS GALLERY SUMPS 2	24
25	FAN F-202	20/1P	MOTOR	0.700	0.700					20/1P	AHU-1 LIGHTS & RECEPTACLE	26
27	DUPLEX PUMP	20/1P				0.000				20/1P	SUMP PUMP CELLS 3 & 5	28
29	RECEPTACLE – BAF INF.	20/1P					0.000			20/1P	SUMP CONT. PANEL HRFS EFFLUENT	30
31	EXTERIOR LIGHTS	20/1P			0.000					20/1P	DDC PANEL AHU-201	32
33	DOOR ALARM LIGHTS OHD	20/1P				0.000				20/1P	HX-201 DDC	34
35	BLOW OFF PANEL	20/1P					0.000			20/1P	AHU-301 DDC PANEL	36
37	FAN 203, 204, 205 CONTROL	20/1P			0.000					20/1P	SPARE	38
39	SPARE	20/1P				0.000				20/1P	SPARE	40
41	SPARE	20/1P					0.000			20/1P	SPARE	42
LOAD SUMMARY				12.941	8.388	7.884	7.839	11.170				
PANEL TOTAL KVA:				24.111								

NOTE:
ALL CONDUCTORS TO BE 2 #12, 1 #12G IN 3/4-INCH PVC COATED RIGID STEEL CONDUIT, UNLESS OTHERWISE INDICATED ON POWER PLAN.

CIRCUIT BREAKER PANELBOARD – LP-38A									SCHEDULE			
LOCATION:		BAF ELECTRIC ROOM							FEED FROM		MCC 38, 3AL	
MAIN BUS RATING:		225	AMPERES						208/120 VOLTS		3 PHASE, 4 WIRE	
MINIMUM SHORTCIRCUIT:		10,000	AMPERES						FEEDER CABLE		4 #3, 1 #8G	
MAIN BREAKER TRIP:		100	AMPERES						SURFACE MOUNTED			
ESTIMATED CONNECTED LOAD:		22.89	KVA									
		CB								CB		
CKT		AMPS/	LOAD						LOAD	AMPS/		CKT
NO.	DESCRIPTION	POLES	TYPE	KVA	PH-A	PH-B	PH-C	KVA	TYPE	POLES	DESCRIPTION	NO.
1	LIGHTS – BAF GALLERY	20/1P	LIGHTS	0.896	2.596			1.700	LIGHTS	20/1P	NIGHT LIGHTS – HRFS	2
3	LIGHTS – BAF GALLERY	20/1P	LIGHTS	0.896		2.796		1.900	LIGHTS	20/1P	LIGHTS – HRFS – NORTH	4
5	LIGHTS – BAF GALLERY	20/1P	LIGHTS	0.897			2.797	1.900	LIGHTS	20/1P	LIGHTS – HRFS – SOUTH	6
7	RECEPT – BAF ELECTRIC ROOM N.	20/1P	RECEPT	0.900	1.700			0.800	LIGHTS	20/1P	SAND PUMP LIGHTS	8
9	RECEPT – BAF ELECTRIC ROOM S.	20/1P	RECEPT	0.900		2.160		1.260	RECEPT	20/1P	RECEPT – HRFS EAST	10
11	RECEPT – MECH. ROOM SOUTH	20/1P	RECEPT	1.080			2.531	1.451	LIGHTS	20/1P	LIGHTS – BAF WALL	12
13	RECEPT – BAF GALLERY NW	20/1P	RECEPT	0.900	1.500			0.600	LIGHTS	20/1P	LIGHTS – HRFS – EXTERIOR	14
15	RECEPT-HRFS GALLERY SUMPS 1	20/1P	RECEPT	0.360		1.980		1.620	RECEPT	20/1P	RECEPT – BAF GALLERY SE	16
17	SLUDGE TRANSFER PUMP LIGHTS	20/1P	LIGHTS	0.700			1.492	0.792	LIGHTS	20/1P	NIGHT LIGHTS – BAF GALLERY	18
19	INSTRUMENT AIR DRYER	20/1P	MOTOR	1.176	1.176					20/1P	SPARE	20
21	RECEPT-BAF GALLERY SUMPS EAST	20/1P	RECEPT	0.900		0.930		0.030	CONTROL	20/1P	CLOSED CIRCUIT TV CAMERA NO. 6	22
23	EXTERIOR LIGHTS – BAF	20/1P	LIGHTS	0.600			0.630	0.030	CONTROL	20/1P	CLOSED CIRCUIT TV CAMERA NO. 7	24
25	LIGHTS – BACKWASH PUMP BASEMENT	20/1P	LIGHTS	0.600	0.600					20/1P	STRAINER CONTROL PANEL	26
27	BAF PUMP ROOM SUMP CONTROL	20/1P				0.000				20/1P	SUMP CELLS 4 & 6	28
29	CROSS GALLERY SUMP CONTROL	20/1P					0.000			20/1P	SUMP HRFS EFFLUENT	30
31	SPARE	20/1P			0.000					20/1P	DOOR ALARM & LTS OH DOOR 105	32
33	RECEPTACLE AT FIBRE PANEL	20/1P				0.000				20/1P	DOOR ALARM & LTS OH DOOR 102	34
35	SPARE	20/1P					0.000			20/1P	HEAT TRACE HRFS	36
37	SPARE	20/1P			0.000					20/1P	SPARE	38
39	SPARE	20/1P				0.000				20/1P	SPARE	40
41	SPARE	20/1P					0.000			20/1P	SPARE	42
LOAD SUMMARY				10.805	7.572	7.866	7.450	12.083				
PANEL TOTAL KVA:				22.888								

NOTE:
ALL CONDUCTORS TO BE 2 #12, 1 #12G IN 3/4-INCH PVC COATED RIGID STEEL CONDUIT, UNLESS OTHERWISE INDICATED ON POWER PLAN.

CIRCUIT BREAKER PANELBOARD – LP-38C									SCHEDULE			
LOCATION:		BAF UPPER LEVEL							FEED FROM		MCC 34, 3AR	
MAIN BUS RATING:		225	AMPERES						208/120 VOLTS		3 PHASE, 4 WIRE	
MINIMUM SHORTCIRCUIT:		10,000	AMPERES						FEEDER CABLE		4 #3, 1 #8G	
MAIN BREAKER TRIP:		100	AMPERES						SURFACE MOUNTED			
ESTIMATED CONNECTED LOAD:		22.19	KVA									
		CB								CB		
CKT		AMPS/	LOAD						LOAD	AMPS/		CKT
NO.	DESCRIPTION	POLES	TYPE	KVA	PH-A	PH-B	PH-C	KVA	TYPE	POLES	DESCRIPTION	NO.
1	FLOOD LTS BAF CELLS 1,3,5,7	20/2P	LIGHTS	1.082	2.164			1.082	LIGHTS	20/2P	FLOOD LTS BAF CELLS 11,13,15,17	2
3				1.082		2.164		1.082				4
13	FLOOD LTS BAF CELLS 2,4,6,8,9	20/2P	LIGHTS	1.353			2.705	1.353	LIGHTS	20/2P	FLOOD LTS BAF CELLS 10,12,14,16,18	6
15				1.353	2.705			1.353				8
9	BAF UPPER WALKWAY LIGHTS	20/1P	LIGHTS	1.024		2.124		1.100	LIGHTS	20/1P	BAF UPPER WALKWAY N NIGHT LIGHTS	10
11	BAF UPPER WALKWAY LIGHTS	20/1P	LIGHTS	0.980			1.860	0.900	RECEPT	20/1P	BAF UPPER RECEPT SOUTH	12
7	BAF UPPER WALKWAY LIGHTS	20/1P	LIGHTS	0.980	0.980					20/1P	SPARE	14
5	BAF UPPER RECEPT NORTH	20/1P	RECEPT	0.900		2.000		1.100	LIGHTS	20/1P	BAF UPPER WALKWAY S NIGHT LIGHTS	16
17	RF DRAIN HEAT TRACE HT-201	20/1P	HEAT	0.504			1.176	0.672	HEAT	20/1P	RF DRAIN HEAT TRACE HT-202	18
19	RF DRAIN HEAT TRACE HT-203	20/1P	HEAT	0.684	1.284			0.600	HEAT	30/1P	RF DRAIN HEAT TRACE HT-204	20
21	RF DRAIN HEAT TRACE HT-205	20/1P	HEAT	0.672		1.284		0.612	HEAT	20/1P	RF DRAIN HEAT TRACE HT-213	22
23	RF DRAIN HEAT TRACE HT-207	30/1P	HEAT	0.300			0.912	0.612	HEAT	20/1P	RF DRAIN HEAT TRACE HT-208	24
25	RF DRAIN HEAT TRACE HT-209	20/1P	HEAT	0.168	0.336			0.168	HEAT	20/1P	RF DRAIN HEAT TRACE HT-210	26
27	HEAT TRACE 212	20/1P				0.000				20/1P	SPARE	28
29	RF DRAIN HEAT TRACE HT-211	20/1P	HEAT	0.516			0.516			20/2P	SPARE	30
31	SPARE	20/1P			0.000							32
33	SPARE	40/2P				0.000				20/1P	SPARE	34
35							0.000			20/1P	SPARE	36
37	SPARE	40/2P			0.000					20/1P	SPARE	38
39						0.000				20/1P	SPARE	40
41		3P					0.000			20/1P	SPARE	42
LOAD SUMMARY				11.557	7.449	7.572	7.169	10.633				
PANEL TOTAL KVA:				22.190								

NOTE:
1. ALL CONDUCTORS TO BE 2 #12, 1 #12G IN 3/4-INCH PVC COATED RIGID STEEL CONDUIT, UNLESS OTHERWISE INDICATED ON POWER PLAN.
2. HEAT TRACE BRANCH CIRCUIT BREAKERS SHALL BE GFI TYPE.

RECORD DRAWING
THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.
DATE: 10/24/01 PER: L. Rampulet

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Drawn by DCC
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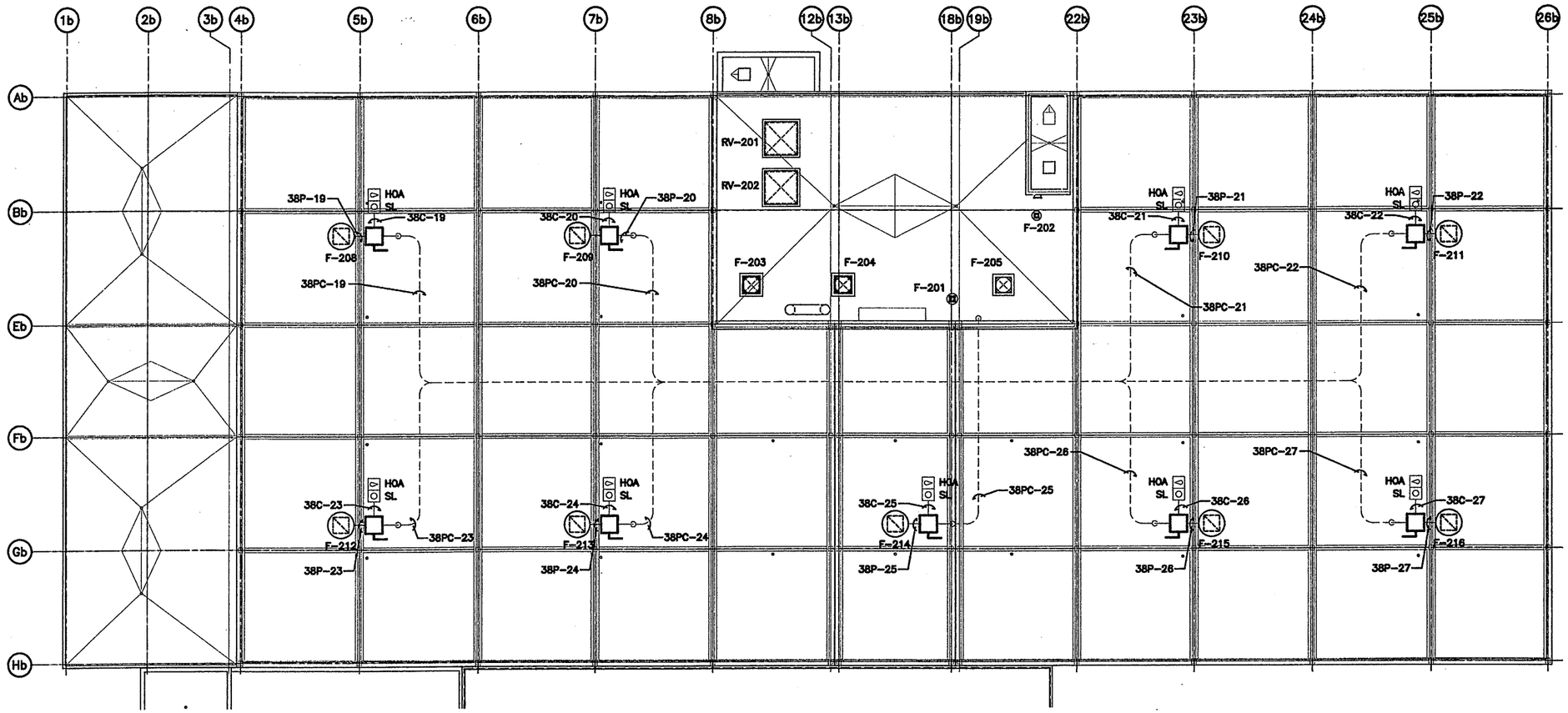
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BAF COMPLEX
BAF SCHEDULES (CONTINUED)
ELECTRICAL

STATE OF NEW YORK • LEONARD J. CAMPOLETTA • No. 60755 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
L. Rampulet
E-217



ROOF PLAN

SCALE: 1"=16'-0"

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

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0659E218

1/16"=1'-0" (18' 0 16' 32')

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Designed by_____
Drawn by_____
Checked by_____

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SYRACUSE, NEW YORK

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BAF COMPLEX
ROOF PLAN
ELECTRICAL

STATE OF NEW YORK · LICENSED PROFESSIONAL ENGINEER · EDWARD J. CAMPOLIETI · No. 60751

File Number 00659
Date JULY 2001
[signature]

E-218

SEE MCC O&M MANUAL FOR
EQUIPMENT ELEMENTARY DIAGRAMS

RECORD DRAWING

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DATED 10/21/05 PER: L Stamplat

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In charge of PLD
Designed by JJC
Drawn by CRV
Checked by PLD

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STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BAF COMPLEX

BAF ELEMENTARY DIAGRAMS

ELECTRICAL

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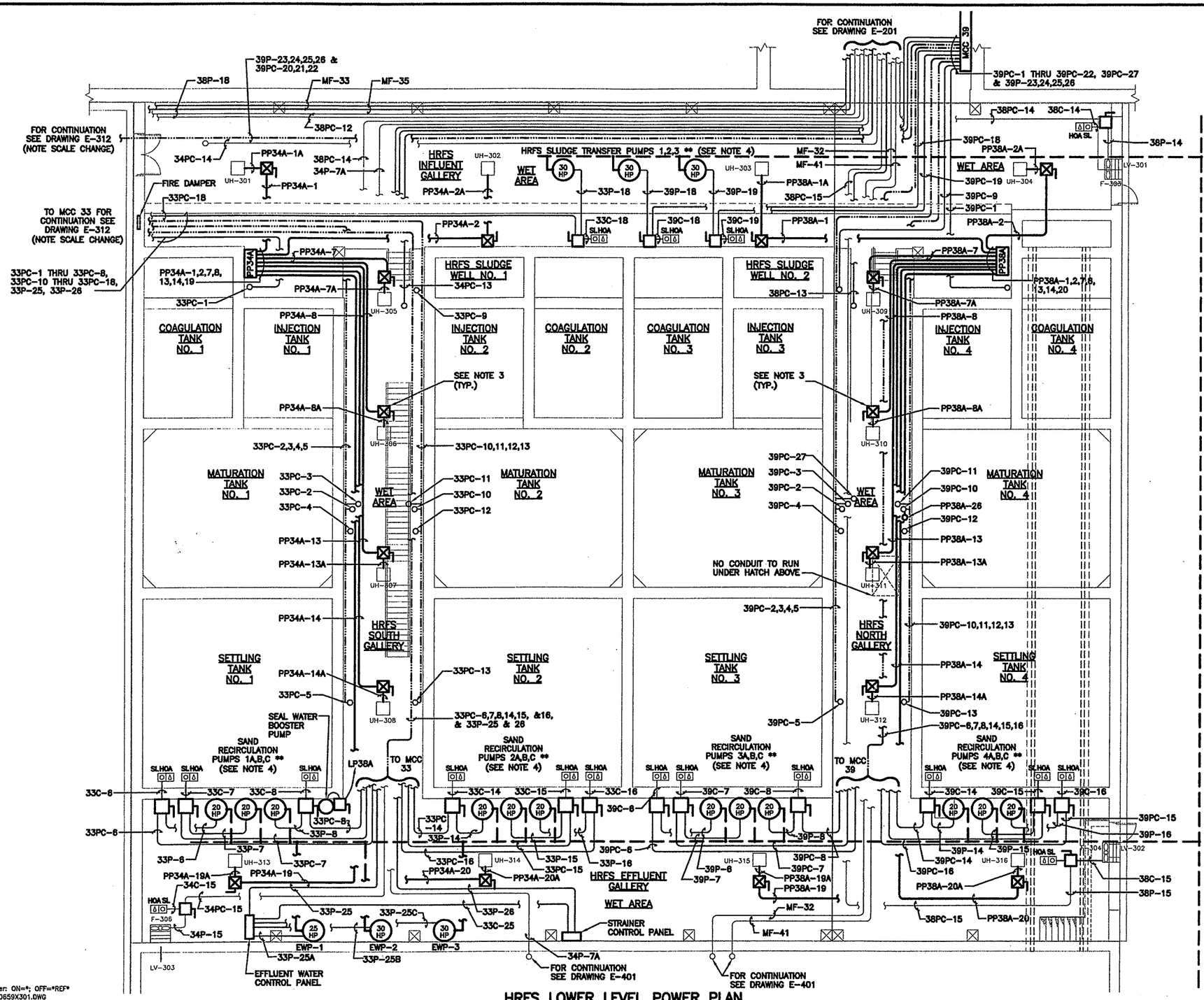
File Number 00659
Date JULY 2001
L Stamplat

E-219



HRFS LOWER LEVEL POWER PLAN

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

NOTES:

1. FOR CONDUIT SCHEDULES REFER TO MCC DRAWINGS E-305, E-306, E-307, AND E-308.
2. USE LIQUID-TITE FLEXIBLE CONDUIT, NOT IN EXCESS OF 6 FEET, TO CONNECT TO VIBRATING EQUIPMENT.
3. MOUNT COMBINATION STARTERS FOR UNIT HEATERS ON GALLERY WALL.
4. HRFS SLUDGE TRANSFER PUMPS AND SAND RECIRCULATION PUMPS SHALL HAVE A SEAL WATER SOLENOID AND FLOW SWITCH WIRED AS SHOWN ON MCC ONE-LINE DIAGRAMS
5. ** INDICATES AN ITEM OR ITEMS SUPPLIED BY OWNER FOR INSTALLATION BY THE CONTRACTOR.
6. REFER TO HVAC DRAWINGS FOR ADDITIONAL LOUVER, DAMPER, THERMOSTAT, CONTROL VALVE, DIRECT DIGITAL CONTROL (DDC), AND OTHER CONTROL HVAC REQUIREMENTS. CONTRACT 4B (ELECTRICAL) SHALL PROVIDE ALL CONDUIT AND CONDUCTORS FOR 120 VOLT CONTROLS, AS SHOWN OR REQUIRED (EXCEPT WIRING BETWEEN DDC SYSTEM COMPONENTS). CONTRACT 4C (HVAC) SHALL PROVIDE ALL CONDUIT AND CONDUCTORS REQUIRED FOR LOW VOLTAGE (LESS THAN 120 VOLT) CONTROLS AND WIRING BETWEEN DDC SYSTEM COMPONENTS INCLUDING BUT NOT LIMITED TO, LOW VOLTAGE T-STAT, VARIABLE AIR VOLUME (VAV) CONTROLS, ETC.
7. DOOR HR102 AND HR105 SHALL EACH BE PROVIDED WITH THE FOLLOWING:
   a. 480VAC, 3 PHASE POWER TO DOOR OPERATOR. UTILIZE SPARE 20AMP, 3 POLE CIRCUIT BREAKER IN POWER PANEL PP38A (CIRCUITS 31, 33, 35 AND 32, 34, 36) WITH 3#12, 1#12 GROUND IN 3/4" CONDUIT ROUTED FROM PP38A TO DOOR OPERATOR. PROVIDE A 30AMP, 3 POLE NEMA 4 DISCONNECT SWITCH AT DOOR OPERATOR.
   b. 120VAC, 1 PHASE POWER TO DOOR ALARM AND LIGHTS. UTILIZE SPARE 20AMP, 1 POLE CIRCUIT BREAKER (LP38A-31 & 32) AND 2#12, 1#12 GROUND IN 3/4" CONDUIT ROUTED FROM LP38A TO ALARM BELL AND LIGHTS.
   c. 2#12 IN 3/4" CONDUIT FROM DOOR OPERATOR TO DOOR ALARM BELL AND LIGHT.
   d. 2#14 IN 3/4" CONDUIT FROM DOOR OPERATOR TO DOOR SENSING EDGE JUNCTION BOX.
   e. 2#14 IN 3/4" CONDUIT FROM DOOR OPERATOR TO DOOR GUIDE INTERLOCK SWITCHES (TYPICAL TWO EACH DOOR).
   f. 3#14 IN 3/4" CONDUIT FROM DOOR OPERATOR TO INTERIOR MOUNTED PUSHBUTTON STATION AND 4#14 IN 3/4" CONDUIT FROM INTERIOR MOUNTED PUSHBUTTON STATION TO EXTERIOR MOUNTED PUSHBUTTON STATION.
8. PROVIDE THE FOLLOWING WORK ASSOCIATED WITH HRFS SLUDGE WET WELLS NO. 1 AND 2:
   a. COMPLETE INSTALLATION OF TWO ADDITIONAL LEVEL FLOAT SWITCHES IN HRFS SLUDGE WELL NO.1 (FURNISHED BY CONTRACT 1B). SWITCHES SHALL BE DESIGNATED LSHH-30081 AND LSL-30081. ELEVATIONS SHALL BE AS SUMMARIZED IN THE TABLE BELOW. PROVIDE CONNECTION OF EACH SWITCH TO DEVICENET INTERFACE MODULE HDN5, N3 WITH 2#14 IN 3/4" CONDUIT.
   b. COMPLETE INSTALLATION OF FOUR LEVEL FLOAT SWITCHES IN HRFS SLUDGE WELL NO. 2 (FURNISHED BY CONTRACT 1B). SWITCHES SHALL BE DESIGNATED LSHH-30084, LSH-30084, LSL-30084 AND LSLL-30084. ELEVATIONS SHALL BE AS SUMMARIZED IN THE TABLE BELOW. PROVIDE CONNECTION OF EACH SWITCH TO DEVICENET INTERFACE MODULE (ITEM C BELOW) WITH 2#14 IN 3/4" CONDUIT.
   c. COMPLETE INSTALLATION OF DEVICENET INTERFACE MODULE (FURNISHED BY CONTRACT 1B) ADJACENT TO HRFS SLUDGE WELL NO. 2 IN THE HRFS NORTH GALLERY. PROVIDE CONNECTION OF MODULE TO DEVICENET NETWORK 5 DOWNSTREAM OF MODULE HDN5, N3. PROVIDE TWO BELDEN 3083A IN 1" CONDUIT ROUTED FROM HDN5, N3 TO HRFS SLUDGE WELL NO. 2 DEVICENET INTERFACE MODULE TO FACILITATE CONNECTION.
   d. FLOAT LEVEL SWITCH ELEVATIONS;

	ELEVATION
HIGH LEVEL ALARM	391.50
PUMP ON	390.50
PUMP OFF	380.50
LOW LEVEL ALARM	379.50

RECORD DRAWING

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DATED 12/20/05 PER: [signature]

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Layer: ON=*; OFF=*REF*
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1/8"=1'-0" 8' 0 8' 16'

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Drawn by DCC
Checked by WFH

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SYRACUSE, NEW YORK

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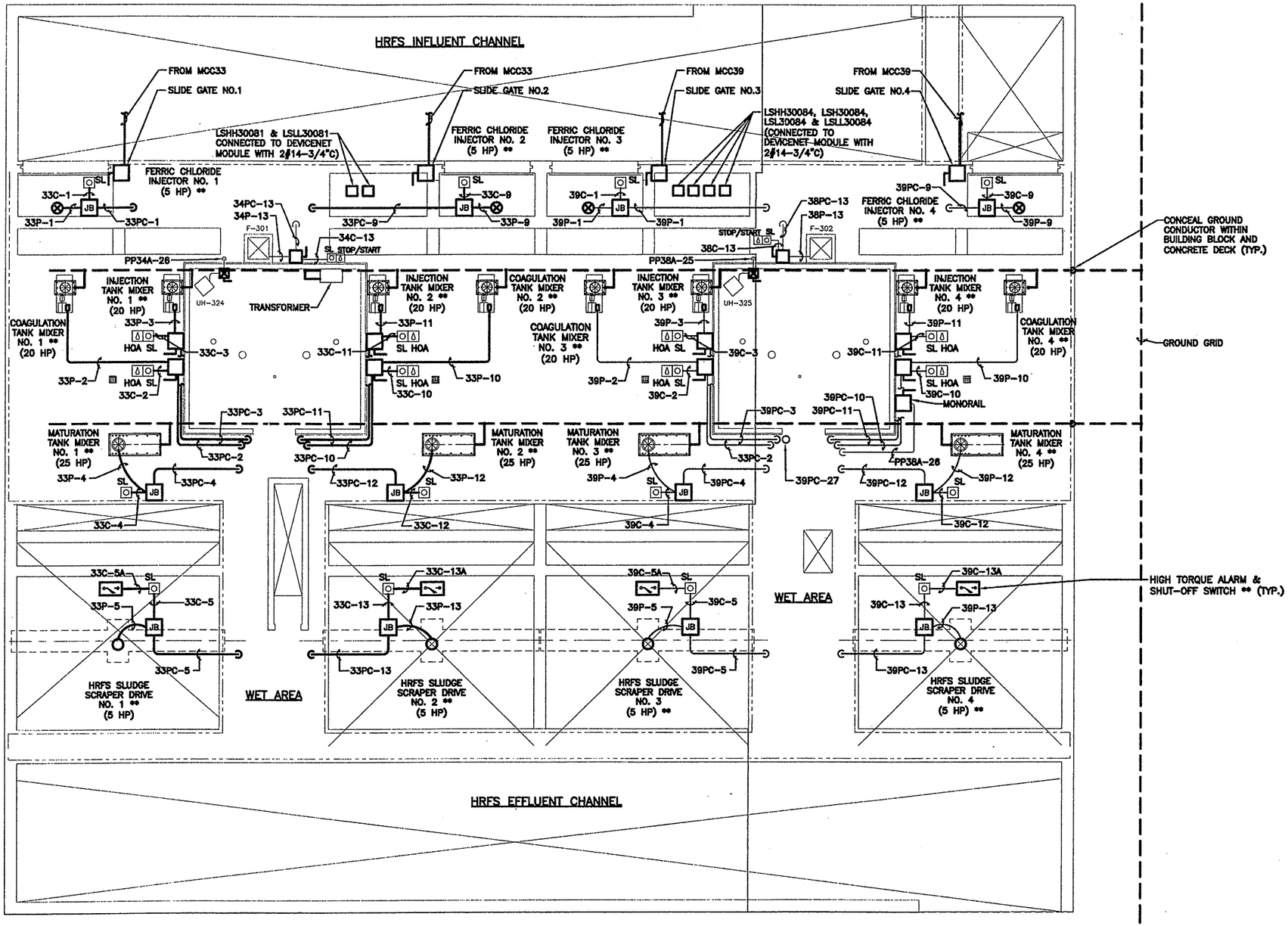
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
HRFS COMPLEX
HRFS LOWER LEVEL POWER PLAN
ELECTRICAL

STATE OF NEW YORK • EDWARD J. CAMPOLETA • LICENSED PROFESSIONAL ENGINEER • No. 80755

File Number 00659
Date APRIL 2001
[signature]

E-301



HRFS UPPER LEVEL POWER PLAN

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

NOTES:

1. FOR CONDUIT SCHEDULES REFER TO MCC DRAWINGS E-305, E-306, E-307, AND E-308.
2. USE LIQUID-TITE FLEXIBLE CONDUIT, NOT IN EXCESS OF 3 FEET, TO CONNECT TO VIBRATING EQUIPMENT.
3. ** INDICATES AN ITEM OR ITEMS SUPPLIED BY OWNER FOR INSTALLATION BY THE CONTRACTOR.

RECORD DRAWING

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DATED 10/26/05 PER L. Campobet

Layer: ON=*; OFF=*REF*
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1/8"=1'-0" (6' 0 6' 16')

No.	Date	Revisions	Init
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1		AS BID	
2	10/31/05	RECORD DRAWING	

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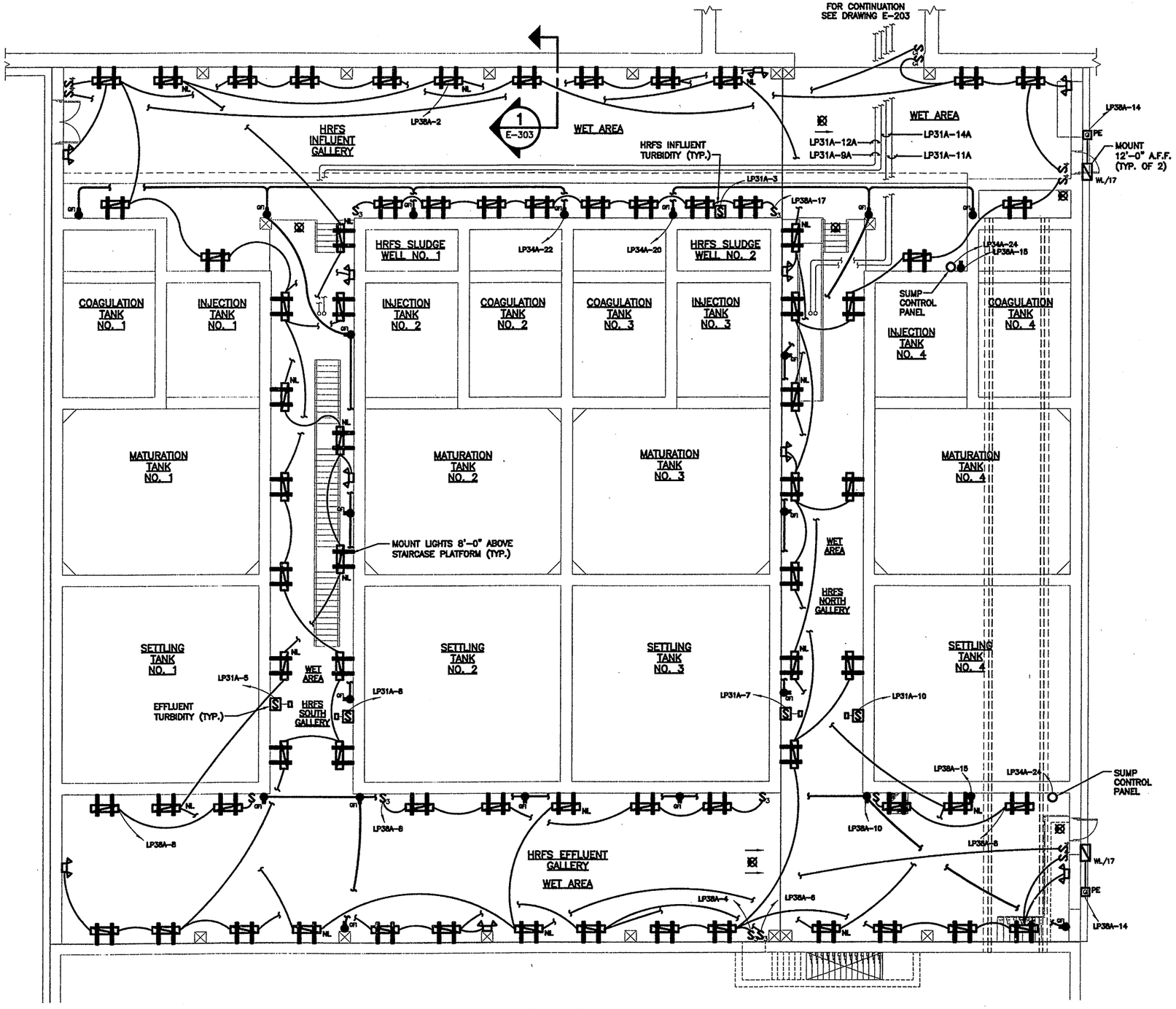
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
HRFS COMPLEX
HRFS UPPER LEVEL POWER PLAN
ELECTRICAL

STATE OF NEW YORK · LEONARD J. CAMPOBETTA · No. 60765 · LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001

E-302



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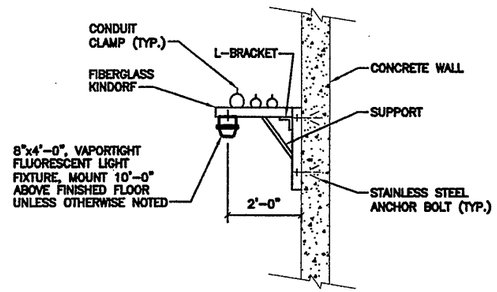

SECTION 1 / E-303
NOT TO SCALE

HRFS LOWER LEVEL LIGHTING PLAN
SCALE: 1/8"=1'-0"

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4/4/01 BBL DCC
05503000/0659E303.DWG

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1/8"=1'-0" (6' 0 8' 16')

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2	10/31/05	RECORD DRAWING	

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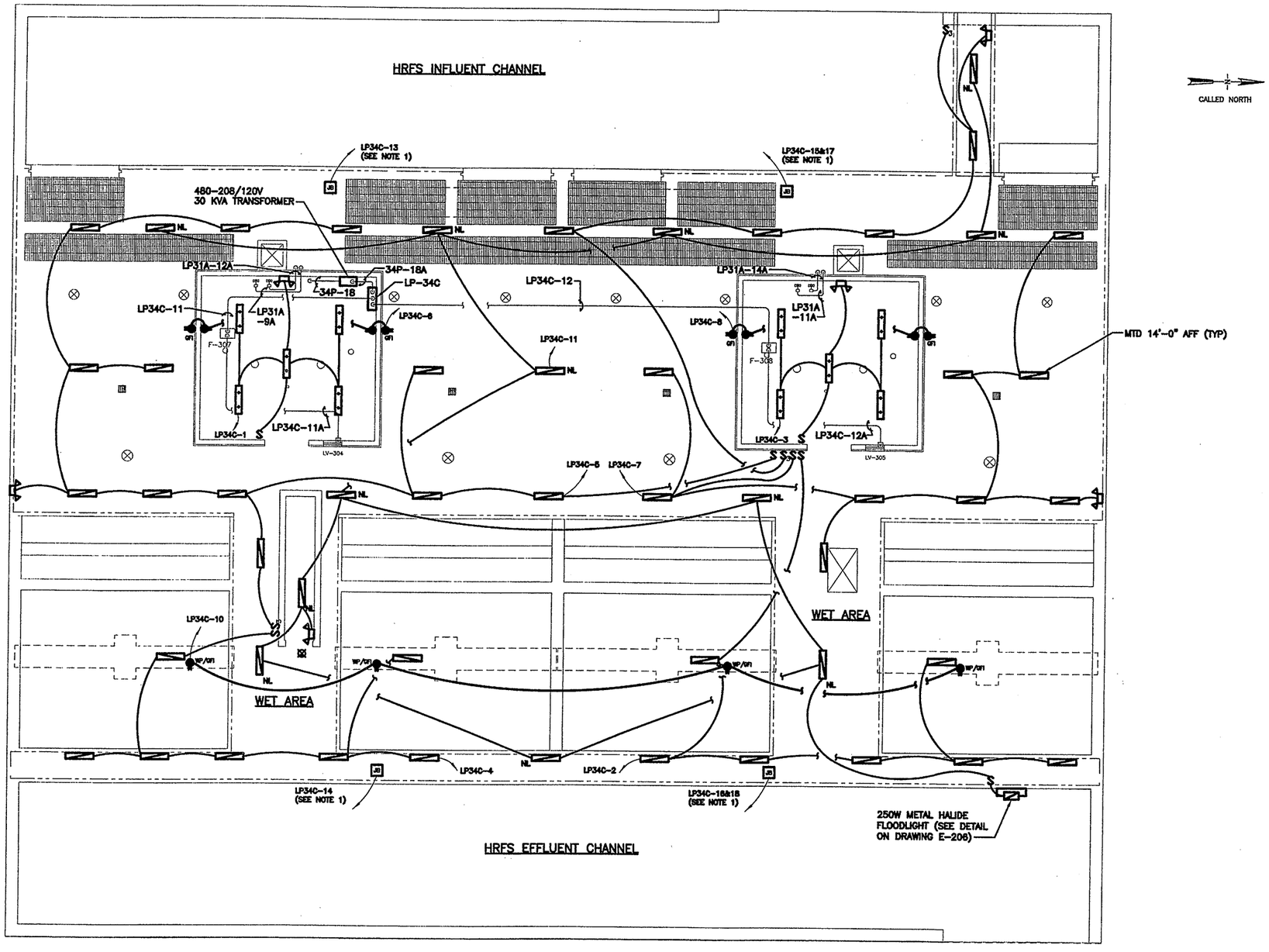
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
HRFS COMPLEX
HRFS LOWER LEVEL LIGHTING PLAN
ELECTRICAL

STATE OF NEW YORK · LEONARDO J. CAMPOLIETA · No. 60755 · LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
[signature]

E-303



HRFS UPPER LIGHTING PLAN

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

NOTE:

1. CONTRACTOR SHALL FURNISH AND INSTALL MULTIPLE HEAT TRACE CIRCUITS FOR THE ROOF DRAIN PIPING. COORDINATE LOCATIONS IN FIELD. SEE DRAWING P-302.

RECORD DRAWING

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DATE: 10/21/05 PER: L.Campbell

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1/8"=1'-0" (8' 0 8' 16')

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2	10/31/05	RECORD DRAWING	↓

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
HRFS COMPLEX
HRFS UPPER LEVEL LIGHTING PLAN
ELECTRICAL

STATE OF NEW YORK · LEONARD J. CAMPBELL · No. 60755 · LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
L.Campbell

E-304

MCC 33 – CHEMICAL BUILDING C ELECTRIC ROOM (HRFS 1 & 2)

PANEL NUMBER	EQUIPMENT IN MCC	CONDUIT NUMBER	EQUIPMENT REMOTE FROM MCC	CONDUIT SCHEDULE		
				CONDUIT NUMBER	CONDUCTOR QUANTITY \ SIZE	DIAMETER
1A	600/800 3P; HNET1, HNET2, HNET5; 600A BUS; 65,000 AMPS BRACING	MF-33	MF-33; 600AT/800AF; UNIT SUB NO. 1	MF-33	(6) 350kcmil, 2 PER ø, (2) #1G	(2) 2-1/2" C.
7C	15/100 3P; DEVICENET MODULE (TYP); VFD; CPT; HNET1-10	33PC-1	VFD FILTER; 33PC-1; JB; 33C-1; SL; 33P-1; 5 HP FERRIC CHLORIDE INJECTOR NO. 1 **	33PC-1 33P-1 33C-1	3 #12, 1 #12G, 5 #14 3 #12, 1 #12G 5 #14	3/4" C. 3/4" C. 3/4" C.
1C	60/100 3P; SIZE 2; CPT; HNET1-3	33PC-2	33PC-2; 60A, 3P; NEMA 4; SLHOA; 33C-2; 33P-2; 20 HP COAGULATION TANK MIXER NO. 1 **	33PC-2 33P-2 33C-2	3 #8, 1 #10G, 5 #14 3 #8, 1 #10G 5 #14	3/4" C. 3/4" C. 3/4" C.
1B	60/100 3P; SIZE 2; CPT; HNET1-2	33PC-3	33PC-3; 60A, 3P; NEMA 4; SLHOA; 33C-3; 33P-3; 20 HP INJECTION TANK MIXER NO. 1 **	33PC-3 33P-3 33C-3	3 #8, 1 #10G, 5 #14 3 #8, 1 #10G 5 #14	3/4" C. 3/4" C. 3/4" C.
2D	70/100 3P; VFD; CPT; HNET1-8	33PC-4	33PC-4; JB; 33C-4; SL; 33P-4; 25 HP MATURATION TANK MIXER NO. 1 **	33PC-4 33P-4 33C-4	3 #8, 1 #10G, 5 #14 3 #8, 1 #10G 5 #14	3/4" C. 3/4" C. 3/4" C.
1D	15/100 3P; VFD; CPT; HNET1-4	33PC-5	VFD FILTER; 33PC-5; JB; 33C-5; SL; 33C-5A; HIGH TORQUE ALARM & SHUT-OFF SWITCH; 33P-5; 5 HP HRFS SLUDGE SCRAPER DRIVE NO. 1 **	33PC-5 33P-5 33C-5 33C-5A	3 #12, 1 #12G, 7 #14 3 #12, 1 #12G 7 #14 4 #14	3/4" C. 3/4" C. 3/4" C. 3/4" C.
2A	60/100 3P; SIZE 2; CPT; HNET1-5	33PC-6	33PC-6; 60A, 3P; NEMA 4; SLHOA; 33C-6; 33C-6A; 33C-6B; SEAL WATER SOLENOID VALVE; SEAL WATER FLOW SWITCH; 33P-6; 20 HP SAND RECIRCULATION PUMP NO. 1A **	33PC-6 33P-6 33C-6 33C-6A 33C-6B	3 #8, 1 #10G, 8 #14 3 #8, 1 #10G 5 #14 2 #14 2 #14	3/4" C. 3/4" C. 3/4" C. 3/4" C. 3/4" C.

MCC 33 – CHEMICAL BUILDING C ELECTRIC ROOM (HRFS 1 & 2 CONTINUED)

PANEL NUMBER	EQUIPMENT IN MCC	CONDUIT NUMBER	EQUIPMENT REMOTE FROM MCC	CONDUIT SCHEDULE		
				CONDUIT NUMBER	CONDUCTOR QUANTITY \ SIZE	DIAMETER
2B	60/100 3P; SIZE 2; CPT; HNET1-6	33PC-7	33PC-7; 60A, 3P; NEMA 4; SLHOA; 33C-7; 33C-7A; 33C-7B; SEAL WATER SOLENOID VALVE; SEAL WATER FLOW SWITCH; 33P-7; 20 HP SAND RECIRCULATION PUMP NO. 1B **	33PC-7 33P-7 33C-7 33C-7A 33C-7B	3 #8, 1 #10G, 8 #14 3 #8, 1 #10G 5 #14 2 #14 2 #14	3/4" C. 3/4" C. 3/4" C. 3/4" C. 3/4" C.
2C	60/100 3P; SIZE 2; CPT; HNET1-7	33PC-8	33PC-8; 30A, 3P; NEMA 4; SLHOA; 33C-8; 33C-8A; 33C-8B; SEAL WATER SOLENOID VALVE; SEAL WATER FLOW SWITCH; 33P-8; 20 HP SAND RECIRCULATION PUMP NO. 1C **	33PC-8 33P-8 33C-8 33C-8A 33C-8B	3 #8, 1 #10G, 8 #14 3 #8, 1 #10G 5 #14 2 #14 2 #14	3/4" C. 3/4" C. 3/4" C. 3/4" C. 3/4" C.
7D	15/100 3P; VFD; CPT; HNET2-10	33PC-9	VFD FILTER; 33PC-9; JB; 33C-9; SL; 33P-9; 5 HP FERRIC CHLORIDE INJECTOR NO. 2 **	33PC-9 33P-9 33C-9	3 #12, 1 #12G, 5 #14 3 #12, 1 #12G 5 #14	3/4" C. 3/4" C. 3/4" C.
3B	60/100 3P; SIZE 2; CPT; HNET2-2	33PC-10	33PC-10; 60A, 3P; NEMA 4; SLHOA; 33C-10; 33P-10; 20 HP COAGULATION TANK MIXER NO. 2 **	33PC-10 33P-10 33C-10	3 #8, 1 #10G, 5 #14 3 #8, 1 #10G 5 #14	3/4" C. 3/4" C. 3/4" C.
3C	60/100 3P; SIZE 2; CPT; HNET2-3	33PC-11	33PC-11; 60A, 3P; NEMA 4; SLHOA; 33C-11; 33P-11; 20 HP INJECTION TANK MIXER NO. 2 **	33PC-11 33P-11 33C-11	3 #8, 1 #10G, 5 #14 3 #8, 1 #10G 5 #14	3/4" C. 3/4" C. 3/4" C.
3D	70/100 3P; VFD; CPT; HNET2-4	33PC-12	33PC-12; JB; 33C-12; SL; 33P-12; 25 HP MATURATION TANK MIXER NO. 2 **	33PC-12 33P-12 33C-12	3 #8, 1 #10G, 5 #14 3 #8, 1 #10G 5 #14	3/4" C. 3/4" C. 3/4" C.
6AL	15/100 3P	33P-24	33P-24; POLYMER VFD; 33P-24A; 5 HP POLYMER FEED PUMP NO. 4 **	33P-24 33P-24A	3 #12, 1 #12G 3 #12, 1 #12G	3/4" C. 3/4" C.

CONDUIT NUMBER DESCRIPTION

MCC # — 30P-14 — CONDUIT NUMBER

P= POWER
C= CONTROL
PC= POWER & CONTROL

** INDICATES AN ITEM OR ITEMS SUPPLIED BY OWNER OFR INSTALLATION BY THE CONTRACTOR.

RECORD DRAWING

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DATE: 10/21/05 PER: LRampulet

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2	10/31/05	RECORD DRAWING	

In charge of TEL
Designed by AHL
Drawn by DCC
Checked by WFH

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
HRFS COMPLEX
HRFS MCC 33 ONE-LINE DIAGRAM
ELECTRICAL

STATE OF NEW YORK — LEONARD J. CAMPOLIETA — No. 60755 — LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
LRampulet

E-305

MCC 33 – CHEMICAL BUILDING C ELECTRIC ROOM (HRFS 1 & 2 CONTINUED)

PANEL NUMBER	EQUIPMENT IN MCC	CONDUIT NUMBER	EQUIPMENT REMOTE FROM MCC	CONDUIT SCHEDULE: CONDUIT NUMBER	CONDUCTOR QUANTITY \ SIZE	DIAMETER
4BL	15/100 3P; HNET 1, HNET 2, HNET 5	33P-19	33P-19 → POLYMER VFD → 33P-19A → 5 HP **POLYMER FEED PUMP NO. 5 ****	33P-19	3 #12, 1 #12G	3/4" C.
				33P-19A	3 #12, 1 #12G	3/4" C.
4E	15/100 3P; VFD; CPT; ®; HNET2-5	33PC-13	VFD FILTER, 33PC-13 → JB → 33P-13 → 5 HP; 33C-13 → SL; 33C-12A → HIGH TORQUE ALARM & SHUT-OFF SWITCH **HRFS SLUDGE SCRAPER DRIVE NO. 2 ****	33PC-13	3 #12, 1 #12G, 7 #14	3/4" C.
				33P-13	3 #12, 1 #12G	3/4" C.
				33C-13	7 #14	3/4" C.
				33C-13A	4 #14	3/4" C.
6D	60/100 3P; SIZE 2; CPT; ®; HNET2-7	33PC-14	33PC-14, 60A, 3P → NEMA 4 → 33P-14 → 20 HP; 33C-14A, 33C-14B; 33C-14 → SLHOA; S → SEAL WATER SOLENOID VALVE; SEAL WATER FLOW SWITCH **SAND RECIRCULATION PUMP NO. 2A ****	33PC-14	3 #8, 1 #10G, 8 #14	3/4" C.
				33P-14	3 #8, 1 #10G	3/4" C.
				33C-14	5 #14	3/4" C.
				33C-14A	2 #14	3/4" C.
				33C-14B	2 #14	3/4" C.
6E	60/100 3P; SIZE 2; CPT; ®; HNET2-8	33PC-15	33PC-15, 60A, 3P → NEMA 4 → 33P-15 → 20 HP; 33C-15A, 33C-15B; 33C-15 → SLHOA; S → SEAL WATER SOLENOID VALVE; SEAL WATER FLOW SWITCH **SAND RECIRCULATION PUMP NO. 2B ****	33PC-15	3 #8, 1 #10G, 8 #14	3/4" C.
				33P-15	3 #8, 1 #10G	3/4" C.
				33C-15	5 #14	3/4" C.
				33C-15A	2 #14	3/4" C.
				33C-15B	2 #14	3/4" C.
6F	60/100 3P; SIZE 2; CPT; ®; HNET2-9	33PC-16	33PC-16, 60A, 3P → NEMA 4 → 33P-16 → 20 HP; 33C-16A, 33C-16B; 33C-16 → SLHOA; S → SEAL WATER SOLENOID VALVE; SEAL WATER FLOW SWITCH **SAND RECIRCULATION PUMP NO. 2C ****	33PC-16	3 #8, 1 #10G, 8 #14	3/4" C.
				33P-16	3 #8, 1 #10G	3/4" C.
				33C-16	5 #14	3/4" C.
				33C-16A	2 #14	3/4" C.
				33C-16B	2 #14	3/4" C.
4D	15/100 3P; SIZE 1; CPT; ®; HNET1-9	33PC-17	33PC-17, 30A, 3P → NEMA 4 → 33P-17 → 5 HP; 33C-17A, 33C-17B; 33C-17 → SLHOA; S → SEAL WATER SOLENOID VALVE; SEAL WATER FLOW SWITCH **SAND SLURRY FEED PUMP NO. 1 ****	33PC-17	3 #12, 1 #12G, 5 #14	3/4" C.
				33P-17	3 #12, 1 #12G	3/4" C.
				33C-17	5 #14	3/4" C.
				33C-17A	2 #14	3/4" C.
				33C-17B	2 #14	3/4" C.
5E	80/100 3P; SIZE 3; CPT; ®; HNET2-6	33PC-18	33PC-18, 100A, 3P → NEMA 4 → 33P-18 → 30 HP; 33C-18A, 33C-18B; 33C-18 → SLHOA; S → SEAL WATER SOLENOID VALVE; SEAL WATER FLOW SWITCH **HRFS SLUDGE TRANSFER PUMP NO. 1 ****	33PC-18	3 #6, 1 #8G, 5 #14	1" C.
				33P-18	3 #6, 1 #8G	3/4" C.
				33C-18	5 #14	3/4" C.
				33C-18A	2 #14	3/4" C.
				33C-18B	2 #14	3/4" C.
6AR	15/100 3P	33P-20	33P-20 → POLYMER VFD → 33P-20A → 5 HP **POLYMER FEED PUMP NO. 6 ****	33P-20	3 #12, 1 #12G	3/4" C.
				33P-20A	3 #12, 1 #12G	3/4" C.

MCC 33 – CHEMICAL BUILDING C ELECTRIC ROOM (HRFS 1 & 2 CONTINUED)

PANEL NUMBER	EQUIPMENT IN MCC	CONDUIT NUMBER	EQUIPMENT REMOTE FROM MCC	CONDUIT SCHEDULE: CONDUIT NUMBER	CONDUCTOR QUANTITY \ SIZE	DIAMETER
4CL	20/100 3P	33P-27	SLIDE GATE #1	33P-27	3 #12, 1 #12G	3/4" C.
4CR	20/100 3P	33P-28	SLIDE GATE #2	33P-28	3 #12, 1 #12G	3/4" C.
4A 5C 7A 7B	15/100 3P; SIZE 1; CPT; ®		**SPARE SIZE 1**			
4BR	15/100 3P	33P-21	33P-21 → FERRIC VFD → NEMA 4 → 33P-21A → 1 HP **FERRIC CHLORIDE PUMP NO. 1 ****	33P-21	3 #12, 1 #12G	3/4" C.
				33P-21A	3 #12, 1 #12G	3/4" C.
5BL	15/100 3P	33P-22	33PC-22 → FERRIC VFD → NEMA 4 → 33P-22A → 1 HP **FERRIC CHLORIDE PUMP NO. 2 ****	33P-22	3 #12, 1 #12G	3/4" C.
				33P-22A	3 #12, 1 #12G	3/4" C.
5BR	15/100 3P	33PC-23	33PC-23 → FERRIC VFD → NEMA 4 → 33P-23A → 1 HP **FERRIC CHLORIDE PUMP NO. 3 ****	33P-23	3 #12, 1 #12G	3/4" C.
				33P-23A	3 #12, 1 #12G	3/4" C.
3AL	200/225 3P	33P-25	33P-25 → WATER SYSTEM PANEL; 33P-25A → 25 HP EWP-1; 33P-25B → 30 HP EWP-2; 33P-25C → 30 HP EWP-3 **EFFLUENT WATER SYSTEM**	33P-25	3 #3/1, 1 #8G	1-1/2" C.
				33P-25A	3 #8, 1 #8G	3/4" C.
				33P-25B	3 #6, 1 #8G	3/4" C.
				33P-25C	3 #8, 1 #10G	3/4" C.
3AR	15/100 3P		33C-26 → STRAINER CONTROL PANEL → 1/3 HP; LP30A-26 **SPARE**	33C-26	2 #14	3/4" C.
5A 6B 6C	40/100 3P; SIZE 2; CPT; ®		**SPARE SIZE 2**			
5D	100/200 3P; SIZE 3; CPT; ®		**SPARE SIZE 3**			

CONDUIT NUMBER DESCRIPTION

MCC # — 33P-14 — CONDUIT NUMBER

P= POWER
C= CONTROL
PC= POWER & CONTROL

** INDICATES AN ITEM OR ITEMS SUPPLIED BY OWNER FOR INSTALLATION BY THE CONTRACTOR

RECORD DRAWING

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DATED 10/21/05 PER L.D. Rampolut

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2	10/31/05	RECORD DRAWING	LC

In charge of TEL
Designed by AHL
Drawn by DCC
Checked by WFH

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
HRFS COMPLEX
HRFS MCC 33
ONE-LINE DIAGRAM (CONTINUED)
ELECTRICAL

LICENSED PROFESSIONAL ENGINEER · STATE OF NEW YORK · LEONARD J. CAMPOLIETI · No. 60755

File Number 00659
Date APRIL 2001
L.D. Rampolut

E-306

MCC 39 – HRFS INFLUENT GALLERY (HRFS 3 & 4)

PANEL NUMBER	EQUIPMENT IN MCC	CONDUIT NUMBER	EQUIPMENT REMOTE FROM MCC	CONDUIT SCHEDULE		
				CONDUIT NUMBER	CONDUCTOR QUANTITY \ SIZE	DIAMETER
1A	600/800 3P; HNET3; 600A BUS; 65,000 AMPS BRACING	MF-39	MF-39; 600AT 800AF; UNIT SUB NO. 2	MF-39	(6) 350kcmil, 2 PER Ø (2) #1G	(2) 2-1/2" C.
1D	15/100 3P; DEVICENET MODULE (TYP); VFD; CPT; HNET3-4	39PC-1	VFD FILTER; 39PC-1; JB; NEMA 4; 39P-1; 5 HP; 39C-1; SL; FERRIC CHLORIDE INJECTOR NO. 3 **	39PC-1 39P-1 39C-1	3 #12, 1 #12G 5 #14 3 #12, 1 #12G 5 #14	3/4" C. 3/4" C. 3/4" C.
1C	60/100 3P; SIZE 2; CPT; HNET3-3	39PC-2	39PC-2; 60A, 3P; NEMA 4; 39P-2; 20 HP; 39C-2; SL HOA; COAGULATION TANK MIXER NO. 3 **	39PC-2 39P-2 39C-2	3 #8, 1 #10G 5 #14 3 #8, 1 #10G 5 #14	3/4" C. 3/4" C. 3/4" C.
1B	60/100 3P; SIZE 2; CPT; HNET3-2	39PC-3	39PC-3; 60A, 3P; NEMA 4; 39P-3; 20 HP; 39C-3; SL HOA; INJECTION TANK MIXER NO. 3 **	39PC-3 39P-3 39C-3	3 #8, 1 #10G 5 #14 3 #8, 1 #10G 5 #14	3/4" C. 3/4" C. 3/4" C.
2D	70/100 3P; VFD; CPT; HNET3-8	39PC-4	39PC-4; JB; NEMA 4; 39P-4; 25 HP; 39C-4; SL; MATURATION TANK MIXER NO. 3 **	39PC-4 39P-4 39C-4	3 #8, 1 #10G 5 #14 3 #8, 1 #10G 5 #14	3/4" C. 3/4" C. 3/4" C.
4E	15/100 3P; VFD; CPT; HNET3-10	39PC-5	VFD FILTER; 39PC-5; JB; NEMA 4; 39P-5; 5 HP; 39C-5; SL; 39C-5A; HIGH TORQUE ALARM & SHUT-OFF SWITCH; HRFS SLUDGE SCRAPER DRIVE NO. 3 **	39PC-5 39P-5 39C-5 39C-5A	3 #12, 1 #12G 7 #14 3 #12, 1 #12G 7 #14 4 #14	3/4" C. 3/4" C. 3/4" C. 3/4" C.
2B	60/100 3P; SIZE 2; CPT; HNET3-6	39PC-6	39PC-6; 60A, 3P; NEMA 4; 39C-6A; 39P-6; 39C-6B; 20 HP; 39C-6; SL HOA; SEAL WATER SOLENOID VALVE; SEAL WATER FLOW SWITCH; SAND RECIRCULATION PUMP NO. 3A **	39PC-6 39P-6 39C-6 39C-6A 39C-6B	3 #8, 1 #10G 8 #14 3 #8, 1 #10G 5 #14 2 #14 2 #14	3/4" C. 3/4" C. 3/4" C. 3/4" C. 3/4" C.

MCC 39 – HRFS INFLUENT GALLERY (HRFS 3 & 4 CONTINUED)

PANEL NUMBER	EQUIPMENT IN MCC	CONDUIT NUMBER	EQUIPMENT REMOTE FROM MCC	CONDUIT SCHEDULE		
				CONDUIT NUMBER	CONDUCTOR QUANTITY \ SIZE	DIAMETER
2C	60/100 3P; SIZE 2; NET4; CPT; HNET3-7	39PC-7	39PC-7; 60A, 3P; NEMA 4; 39C-7A; 39P-7; 39C-7B; 20 HP; 39C-7; SL HOA; SEAL WATER SOLENOID VALVE; SEAL WATER FLOW SWITCH; SAND RECIRCULATION PUMP NO. 3B **	39PC-7 39P-7 39C-7 39C-7A 39C-7B	3 #8, 1 #10G 8 #14 3 #8, 1 #10G 5 #14 2 #14 2 #14	3/4" C. 3/4" C. 3/4" C. 3/4" C. 3/4" C.
2A	60/100 3P; SIZE 2; CPT; HNET3-5	39PC-8	39PC-8; 60A, 3P; NEMA 4; 39C-8A; 39P-8; 39C-8B; 20 HP; 39C-8; SL HOA; SEAL WATER SOLENOID VALVE; SEAL WATER FLOW SWITCH; SAND RECIRCULATION PUMP NO. 3C **	39PC-8 39P-8 39C-8 39C-8A 39C-8B	3 #8, 1 #10G 8 #14 3 #8, 1 #10G 5 #14 2 #14 2 #14	3/4" C. 3/4" C. 3/4" C. 3/4" C. 3/4" C.
7D	15/100 3P; VFD; CPT; HNET4-11	39PC-9	VFD FILTER; 39PC-9; JB; NEMA 4; 39P-9; 5 HP; 39C-9; SL; FERRIC CHLORIDE INJECTOR NO. 4 **	39PC-9 39P-9 39C-9	3 #12, 1 #12G 5 #14 3 #12, 1 #12G 5 #14	3/4" C. 3/4" C. 3/4" C.
3B	60/100 3P; SIZE 2; CPT; HNET4-2	39PC-10	39PC-10; 60A, 3P; NEMA 4; 39P-10; 20 HP; 39C-10; SL HOA; COAGULATION TANK MIXER NO. 4 **	39PC-10 39P-10 39C-10	3 #8, 1 #10G 5 #14 3 #8, 1 #10G 5 #14	3/4" C. 3/4" C. 3/4" C.
3C	60/100 3P; SIZE 2; CPT; HNET4-3	39PC-11	39PC-11; 60A, 3P; NEMA 4; 39P-11; 20 HP; 39C-11; SL HOA; INJECTION TANK MIXER NO. 4 **	39PC-11 39P-11 39C-11	3 #8, 1 #10G 5 #14 3 #8, 1 #10G 5 #14	3/4" C. 3/4" C. 3/4" C.
3D	70/100 3P; VFD; CPT; HNET4-4	39PC-12	39PC-12; JB; NEMA 4; 39P-12; 25 HP; 39C-12; SL; MATURATION TANK MIXER NO. 4 **	39PC-12 39P-12 39C-12	3 #8, 1 #10G 5 #14 3 #8, 1 #10G 5 #14	3/4" C. 3/4" C. 3/4" C.
4BL	15/100 3P	39P-24	39P-24; POLYMER VFD; 39P-24A; 5 HP; POLYMER FEED PUMP NO. 1 **	39P-24 39P-24A	3 #12, 1 #12G 3 #12, 1 #12G	3/4" C. 3/4" C.

CONDUIT NUMBER DESCRIPTION

MCC # — 39P-14 — CONDUIT NUMBER

P= POWER
C= CONTROL
PC= POWER & CONTROL

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DATE: 10/21/05 PER: L. Campolieti

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ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
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HRFS COMPLEX
HRFS MCC 39 ONE-LINE DIAGRAM
ELECTRICAL

STATE OF NEW YORK • LEONARD J. CAMPOLIETI • No. 60765 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
L. Campolieti

E-307

MCC 39 – HRFS INFLUENT GALLERY (HRFS 3 & 4 CONTINUED)

PANEL NUMBER	EQUIPMENT IN MCC	CONDUIT NUMBER	EQUIPMENT REMOTE FROM MCC	CONDUIT SCHEDULE: CONDUIT NUMBER	CONDUCTOR QUANTITY \ SIZE	DIAMETER
7C	15 100 3P; VFD; CPT; NET4–10	39PC–13	VFD FILTER; 39PC–13; JB; NEMA 4; 39P–13; 5 HP; 39C–13; SL; 39C–13A; HIGH TORQUE ALARM & SHUT–OFF SWITCH **HRFS SLUDGE SCRAPER DRIVE NO. 4 ****	39PC–13	3 #12, 1 #12G, 7 #14	3/4" C.
				39P–13	3 #12, 1 #12G	3/4" C.
				39C–13	7 #14	3/4" C.
				39C–13A	4 #14	3/4" C.
6D	60 100 3P; SIZE 2; CPT; NET4–7	39PC–14	39PC–14; 60A, 3P; 39C–14A; 39P–14; 39C–14B; NEMA 4; 20 HP; 39C–14; SL HOA; S SEAL WATER SOLENOID VALVE; SEAL WATER FLOW SWITCH **SAND RECIRCULATION PUMP NO. 4A ****	39PC–14	3 #8, 1 #10G 8 #14	3/4" C.
				39P–14	3 #8, 1 #10G	3/4" C.
				39C–14	5 #14	3/4" C.
				39C–14A	2 #14	3/4" C.
				39C–14B	2 #14	3/4" C.
6E	60 100 3P; SIZE 2; CPT; NET4–8	39PC–15	39PC–15; 60A, 3P; 39C–15A; 39P–15; 39C–15B; NEMA 4; 20 HP; 39C–15; SL HOA; S SEAL WATER SOLENOID VALVE; SEAL WATER FLOW SWITCH **SAND RECIRCULATION PUMP NO. 4B ****	39PC–15	3 #8, 1 #10G 8 #14	3/4" C.
				39P–15	3 #8, 1 #10G	3/4" C.
				39C–15	5 #14	3/4" C.
				39C–15A	2 #14	3/4" C.
				39C–15B	2 #14	3/4" C.
6F	60 100 3P; SIZE 2; CPT; NET4–9	39PC–16	39PC–16; 60A, 3P; 39C–16A; 39P–16; 39C–16B; NEMA 4; 20 HP; 39C–16; SL HOA; S SEAL WATER SOLENOID VALVE; SEAL WATER FLOW SWITCH **SAND RECIRCULATION PUMP NO. 4C ****	39PC–16	3 #8, 1 #10G 8 #14	3/4" C.
				39P–16	3 #8, 1 #10G	3/4" C.
				39C–16	5 #14	3/4" C.
				39C–16A	2 #14	3/4" C.
				39C–16B	2 #14	3/4" C.
4D	15 100 3P; SIZE 1; CPT; NET3–9	39PC–17	39PC–17; 30A, 3P; 39C–17A; 39P–17; 39C–17B; NEMA 4; 5 HP; 39C–17; SL HOA; S SEAL WATER SOLENOID VALVE; SEAL WATER FLOW SWITCH **SAND SLURRY FEED PUMP NO. 2 ****	39PC–17	3 #12, 1 #12G 5 #14	3/4" C.
				39P–17	3 #12, 1 #12G	3/4" C.
				39C–17	5 #14	3/4" C.
				39C–17A	2 #14	3/4" C.
				39C–17B	2 #14	3/4" C.
5E	80 200 3P; SIZE 3; CPT; NET4–6	39PC–18	39PC–18; 100A, 3P; 39C–18A; 39P–18; 39C–18B; NEMA 4; 30 HP; 39C–18; SL HOA; S SEAL WATER SOLENOID VALVE; SEAL WATER FLOW SWITCH **HRFS SLUDGE TRANSFER PUMP NO. 2 ****	39PC–18	3 #6, 1 #8G 5 #14	1" C.
				39P–18	3 #6, 1 #8G	3/4" C.
				39C–18	5 #14	3/4" C.
				39C–18A	2 #14	3/4" C.
				39C–18B	2 #14	3/4" C.
5D	80 200 3P; SIZE 3; CPT; NET4–5	39PC–19	39PC–19; 100A, 3P; 39C–19A; 39P–19; 39C–19B; NEMA 4; 30 HP; 39C–19; SL HOA; S SEAL WATER SOLENOID VALVE; SEAL WATER FLOW SWITCH **HRFS SLUDGE TRANSFER PUMP NO. 3 ****	39PC–19	3 #6, 1 #8G 5 #14	1" C.
				39P–19	3 #6, 1 #8G	3/4" C.
				39C–19	5 #14	3/4" C.
				39C–19A	2 #14	3/4" C.
				39C–19B	2 #14	3/4" C.
4BR	15 100 3P	39P–20	39P–20; FERRIC VFD; 39P–20A; 1 HP **FERRIC CHLORIDE PUMP NO. 4 ****	39P–20	3 #12, 1 #12G	3/4" C.
				39P–20A	3 #12, 1 #12G	3/4" C.

MCC 39 – HRFS INFLUENT GALLERY (HRFS 3 & 4 CONTINUED)

PANEL NUMBER	EQUIPMENT IN MCC	CONDUIT NUMBER	EQUIPMENT REMOTE FROM MCC	CONDUIT SCHEDULE: CONDUIT NUMBER	CONDUCTOR QUANTITY \ SIZE	DIAMETER
5BR	15 100 3P	39P–21	39P–21; FERRIC VFD; 39P–21A; 1 HP **FERRIC CHLORIDE PUMP NO. 5 ****	39P–21	3 #12, 1 #12G	3/4" C.
				39P–21A	3 #12, 1 #12G	3/4" C.
7AR	15 100 3P	39P–22	39P–22; FERRIC VFD; 39P–22A; 1 HP **FERRIC CHLORIDE PUMP NO. 6 ****	39P–22	3 #12, 1 #12G	3/4" C.
				39P–22A	3 #12, 1 #12G	3/4" C.
7AL	60 100 3P	39PC–23	39P–23; PLC M18; 39P–23A; 2 HP; MIXING/AGING POLYMER TANK #1 MIXER; 39P–23B; 2 HP; MIXING/AGING POLYMER TANK #2 MIXER **PLC M18 **** (POLYMER/FERRIC CHLORIDE CONTROL PANEL)	39P–23	3 #6, 1 #8G	3/4" C.
				39P–23A	3 #12, 1 #12G	3/4" C.
				39P–23B	3 #12, 1 #12G	3/4" C.
5BL	15 100 3P	39P–25	39P–25; POLYMER VFD; 39P–25A; 5 HP **POLYMER FEED PUMP NO. 2 ****	39P–25	3 #12, 1 #12G	3/4" C.
				39P–25A	3 #12, 1 #12G	3/4" C.
3AL	15 100 3P	39P–26	39P–26; POLYMER VFD; 39P–26A; 5 HP **POLYMER FEED PUMP NO. 3 ****	39P–26	3 #12, 1 #12G	3/4" C.
				39P–26A	3 #12, 1 #12G	3/4" C.
44	15 100 3P; SIZE 1	39P–27	39PC–27; 30A, 3P; 39P–27; NEMA 4; 5 HP; 39C–27; SL STOP/START **EXHAUST FAN F–308**	39PC–27	3 #12, 1 #12G, 2 #14	3/4" C.
				39P–27	3 #12, 1 #12G	3/4" C.
				39C–27	2 #14	3/4" C.
4CL 4CR	20 100 3P	39P–28 (TYPICAL: 39P–29)	**SLIDE GATE NO. 3** (TYPICAL: SLIDE GATE NO. 4)	39P–28 (TYPICAL: 39P–29)	3 #12, 1 #12G	3/4" C.
4C 5C 6B 7B 5A 6A 6C	CPT		**4–SPARE SIZE 1** **3–SPARE SIZE 2**			

CONDUIT NUMBER DESCRIPTION

MCC # — 39P–14 — CONDUIT NUMBER

P= POWER
C= CONTROL
PC= POWER & CONTROL

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES IF ANY WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
HRFS COMPLEX
HRFS MCC 39
ONE–LINE DIAGRAM (CONTINUED)
ELECTRICAL

File Number 00659
Date APRIL 2001
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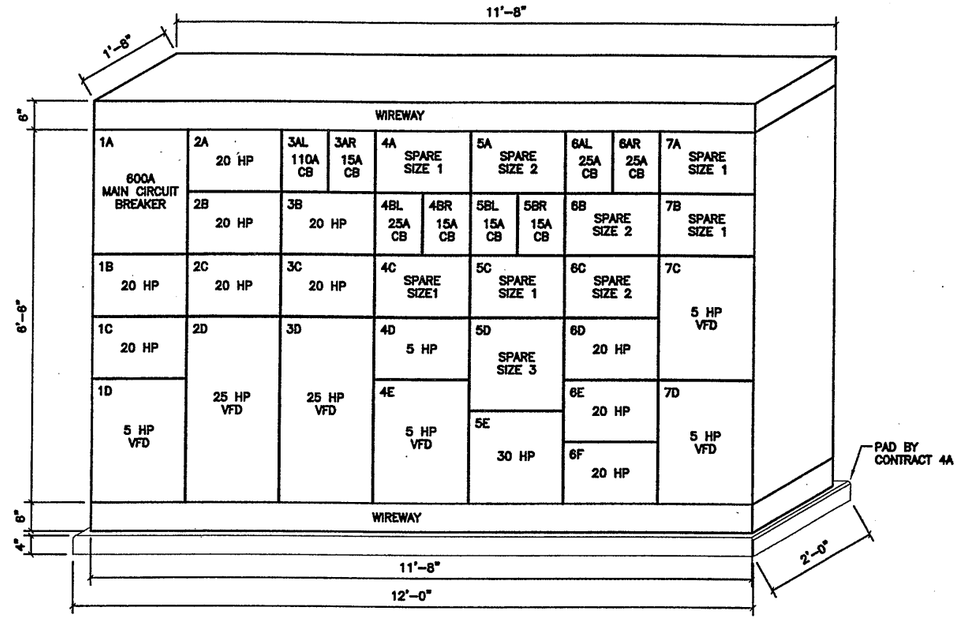
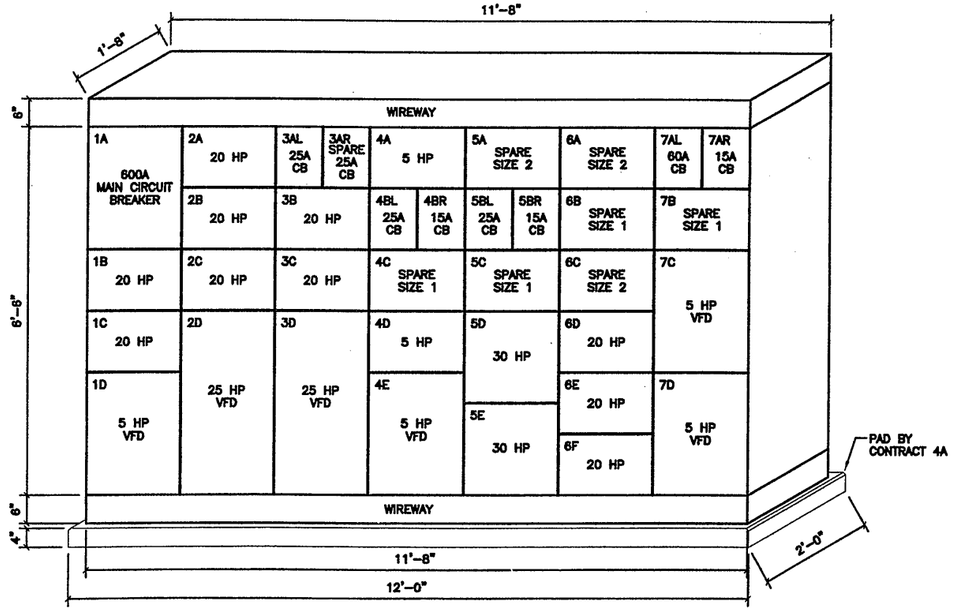
E–308



MCC 33 ELEVATION

NOT TO SCALE

(SEE DRAWING E-305 AND E-306)



MCC 39 ELEVATION

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(SEE DRAWING E-307 AND E-308)

SEE MCC O&M MANUAL FOR EQUIPMENT ELEMENTARY DIAGRAMS

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
HRFS COMPLEX
HRFS MCC ELEVATIONS
ELECTRICAL

LICENSED PROFESSIONAL ENGINEER • LEONARD J. CAMPOLIETA • No. 60755 • STATE OF NEW YORK

File Number 00659
Date APRIL 2001

E-309

SEE MCC O&M MANUAL FOR
EQUIPMENT ELEMENTARY DIAGRAMS

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
HRFS COMPLEX

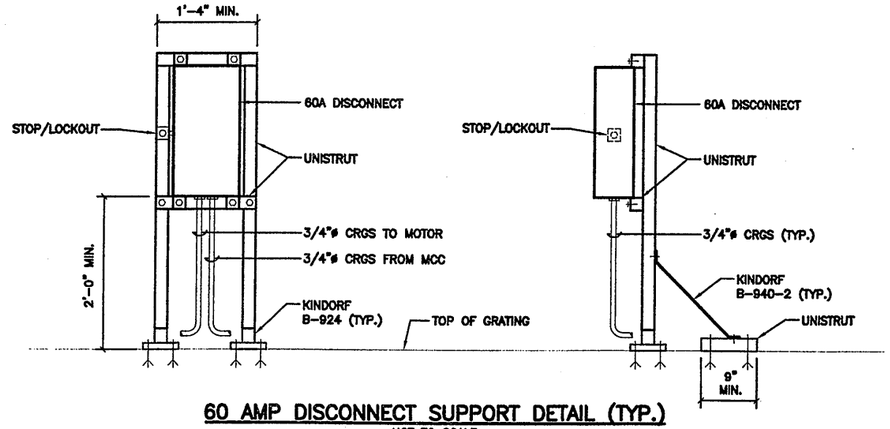
HRFS ELEMENTARY DIAGRAMS

ELECTRICAL

STATE OF NEW YORK • LEONARD J. LAMPKIN • LICENSED PROFESSIONAL ENGINEER • No. 60755

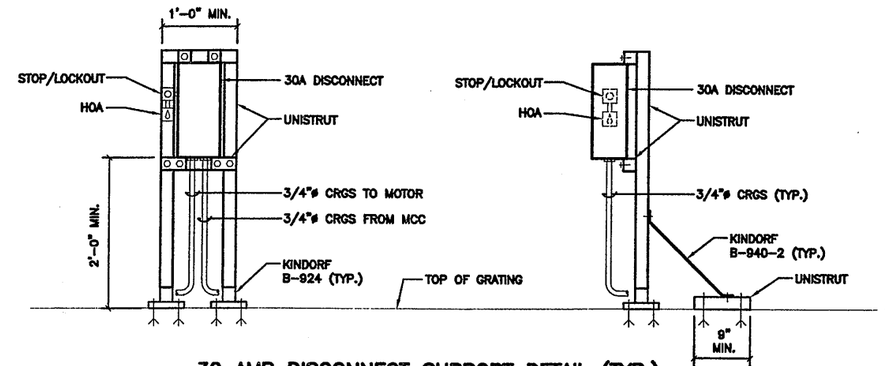
File Number 00659
Date APRIL 2001
L Lampkin

E-310



60 AMP DISCONNECT SUPPORT DETAIL (TYP.)

NOT TO SCALE



30 AMP DISCONNECT SUPPORT DETAIL (TYP.)

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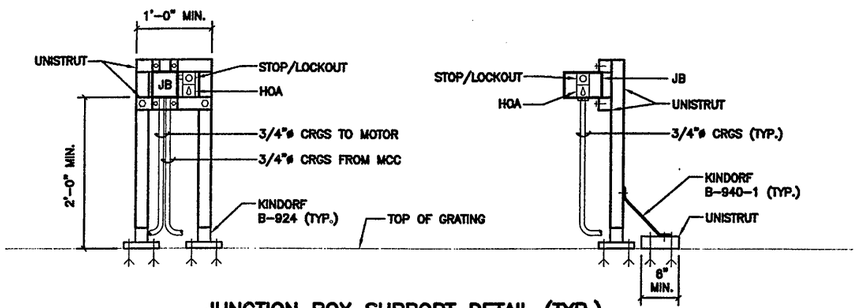

JUNCTION BOX SUPPORT DETAIL (TYP.)

NOT TO SCALE

CIRCUIT BREAKER PANELBOARD -- PP-38A									SCHEDULE			
LOCATION:		HRFS INFLUENT PIPE GALLERY NORTH							FEED FROM		MCC 38, 4AL	
MAIN BUS RATING:		225	AMPERES						480 VOLT		3 PHASE, 4 WIRE	
MINIMUM SHORTCIRCUIT:		25,000	AMPERES						FEEDER CABLE		3 #3, 1 #8G	
MAIN BREAKER TRIP:		100	AMPERES						SURFACE MOUNTED			
ESTIMATED CONNECTED LOAD:		9.70	KVA									
		C/B								C/B		
CKT		AMPS/	LOAD						LOAD	AMPS/		CKT
NO.	DESCRIPTION	POLES	TYPE	KVA	PH-A	PH-B	PH-C	KVA	TYPE	POLES	DESCRIPTION	NO.
1	UNIT HEATER NO. UH-303	20A	MOTOR	0.143	0.286			0.143	MOTOR	20A	UNIT HEATER NO. UH-304	2
3			MOTOR	0.143		0.286		0.143	MOTOR			4
5		3P	MOTOR	0.143			0.286	0.143	MOTOR	3P		6
7	UNIT HEATER NO. UH-309	20A	MOTOR	0.443	0.886			0.443	MOTOR	20A	UNIT HEATER NO. UH-310	8
9			MOTOR	0.443		0.886		0.443	MOTOR			10
11		3P	MOTOR	0.443			0.886	0.443	MOTOR	3P		12
13	UNIT HEATER NO. UH-311	20A	MOTOR	0.443	0.886			0.443	MOTOR	20A	UNIT HEATER NO. UH-312	14
15			MOTOR	0.443		0.886		0.443	MOTOR			16
17		3P	MOTOR	0.443			0.886	0.443	MOTOR	3P		18
19	UNIT HEATER NO. UH-315	20A	MOTOR	0.143	0.286			0.143	MOTOR	20A	UNIT HEATER NO. UH-316	20
21			MOTOR	0.143		0.286		0.143	MOTOR			22
23		3P	MOTOR	0.143			0.286	0.143	MOTOR	3P		24
25	UNIT HEATER NO. UH-325	20A	MOTOR	0.143	0.889			0.746	MOTOR	20A	MONORAIL CONTROL PANEL	26
27			MOTOR	0.143		0.889		0.746	MOTOR			28
29		3P	MOTOR	0.143			0.889	0.746	MOTOR	3P		30
31	O.H DOOR WEST	20A			0.000					20A	O.H. DOOR EAST	32
33						0.000						34
35		3P					0.000			3P		36
37	SPARE	20A			0.000					20A	SPARE	38
39						0.000						40
41		3P					0.000			3P		42
LOAD SUMMARY				3.945	3.233	3.233	3.233	5.754				
PANEL TOTAL KVA:				9.699								

NOTE:
ALL CONDUCTORS TO BE 3 #12, 1 #12G IN 3/4-INCH PVC COATED CONDUIT, UNLESS OTHERWISE INDICATED ON POWER PLAN.

CIRCUIT BREAKER PANELBOARD -- PP-34A									SCHEDULE			
LOCATION:		HRFS INFLUENT PIPE GALLERY SOUTH							FEED FROM		MCC 34, 4AL	
MAIN BUS RATING:		225	AMPERES						480 VOLT		3 PHASE, 4 WIRE	
MINIMUM SHORTCIRCUIT:		25,000	AMPERES						FEEDER CABLE		3 #3, 1 #8G	
MAIN BREAKER TRIP:		100	AMPERES						SURFACE MOUNTED			
ESTIMATED CONNECTED LOAD:		7.46	KVA									
		C/B								C/B		
CKT		AMPS/	LOAD						LOAD	AMPS/		CKT
NO.	DESCRIPTION	POLES	TYPE	KVA	PH-A	PH-B	PH-C	KVA	TYPE	POLES	DESCRIPTION	NO.
1	UNIT HEATER NO. UH-301	20A	MOTOR	0.143	0.286			0.143	MOTOR	20A	UNIT HEATER NO. UH-302	2
3			MOTOR	0.143		0.286		0.143	MOTOR			4
5		3P	MOTOR	0.143			0.286	0.143	MOTOR	3P		6
7	UNIT HEATER NO. UH-305	20A	MOTOR	0.443	0.886			0.443	MOTOR	20A	UNIT HEATER NO. UH-306	8
9			MOTOR	0.443		0.886		0.443	MOTOR			10
11		3P	MOTOR	0.443			0.886	0.443	MOTOR	3P		12
13	UNIT HEATER NO. UH-307	20A	MOTOR	0.443	0.886			0.443	MOTOR	20A	UNIT HEATER NO. UH-308	14
15			MOTOR	0.443		0.886		0.443	MOTOR			16
17		3P	MOTOR	0.443			0.886	0.443	MOTOR	3P		18
19	UNIT HEATER NO. UH-313	20A	MOTOR	0.143	0.286			0.143	MOTOR	20A	UNIT HEATER NO. UH-314	20
21			MOTOR	0.143		0.286		0.143	MOTOR			22
23		3P	MOTOR	0.143			0.286	0.143	MOTOR	3P		24
25	SPARE	20A			0.143			0.143	MOTOR	20A	UNIT HEATER NO. UH-324	26
27						0.143		0.143	MOTOR			28
29		3P					0.143	0.143	MOTOR	3P		30
31	SPARE	20A			0.000					20A	SPARE	32
33						0.000						34
35		3P					0.000			3P		36
37	SPARE	20A			0.000					20A	SPARE	38
39						0.000						40
41		3P					0.000			3P		42
LOAD SUMMARY				3.516	2.487	2.487	2.487	3.945				
PANEL TOTAL KVA:				7.461								

NOTE:
ALL CONDUCTORS TO BE 3 #12, 1 #12G IN 3/4-INCH PVC COATED CONDUIT, UNLESS OTHERWISE INDICATED ON POWER PLAN.

RECORD DRAWING

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DATE: 10/21/05 PER: L.D'Amplet

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
HRFS COMPLEX

HRFS SCHEDULES AND DETAILS

ELECTRICAL

LICENSED PROFESSIONAL ENGINEER • LEONARD J. D'AMPLET • No. 60765 • STATE OF NEW YORK

File Number 00659
Date APRIL 2001
L.D'Amplet

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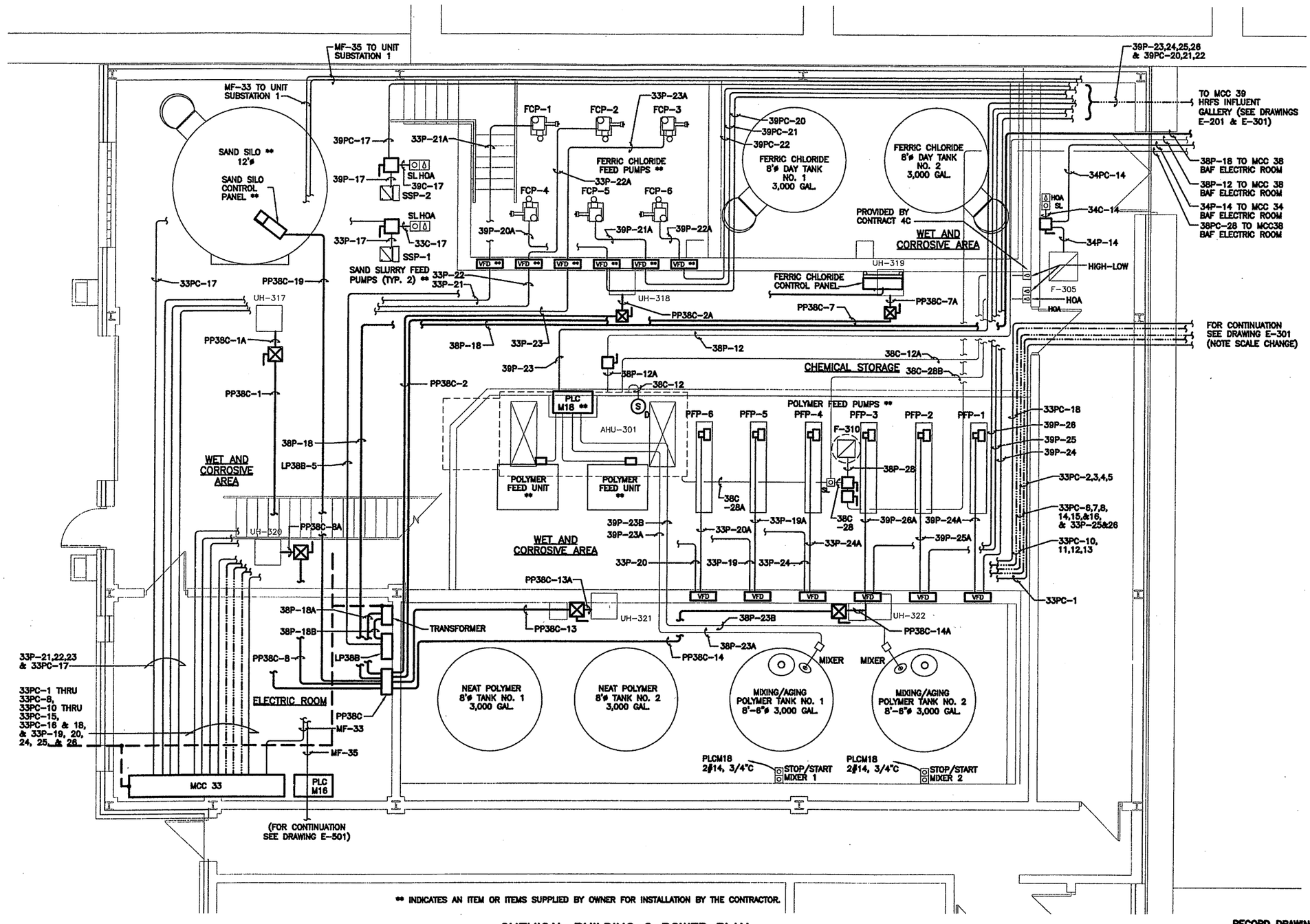

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CHEMICAL BUILDING C POWER PLAN

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

NOTES:

1. SAND SLURRY FEED PUMPS NO. 1 & 2 SHALL HAVE A SEALWATER SOLENOID AND FLOW SWITCH WIRED AS SHOWN ON MCC ONE-LINE DIAGRAMS.
2. PROVIDE THE FOLLOWING WIRING ASSOCIATED WITH EACH POLYMER FEED PUMP NOS. 1-8:
   a. 1-#16 SHIELDED TWISTED PAIR ROUTED FROM DISCHARGE PRESSURE TRANSMITTER TO PLCM18 ANALOG INPUT MODULE. PROVIDE 3/4" CONDUIT FROM TRANSMITTER TO PUMP VFD AND UTILIZE CONDUITS HCCH401B, HCCH402B, HCCH403B, HCCH404B, HCCH405B AND HCCH406B (FOR PUMPS NO. 1-8 RESPECTIVELY) FOR ROUTING.
   b. 5-#14 IN 3/4" CONDUIT ROUTED FROM PUMP VFD TO A JUNCTION BOX LOCATED AT THE PUMP. 3-#14 SHALL CONTINUE FROM JUNCTION BOX IN 3/4" CONDUIT TO THE PUMP LEAK DETECTOR. 2-#14 SHALL CONTINUE FROM THE JUNCTION BOX IN 3/4" CONDUIT TO THE PUMP STROKE LENGTH CONTROLLER.
   c. 8-#14 IN 3/4" CONDUIT FROM THE PUMP STROKE LENGTH CONTROLLER TO THE PUMP STROKE LENGTH ACTUATOR.
   d. 1-#16 SHIELDED TWISTED PAIR ROUTED FROM THE PUMP STROKE LENGTH CONTROLLER TO PLCM18. PROVIDE 3/4" CONDUIT FROM THE CONTROLLER TO PUMP VFD AND UTILIZE CONDUITS HCCH501B, HCCH502B, HCCH503B, HCCH504B, HCCH505B AND HCCH506B (FOR PUMPS NO. 1-8 RESPECTIVELY) FOR ROUTING.
   e. 4-#14 IN 3/4" CONDUIT FROM HIGH AND LOW DISCHARGE PRESSURE SWITCHES.
3. PROVIDE THE FOLLOWING WIRING FROM PLCM18 TO EACH POLYMER FEED UNIT (TYPICAL 2).
   a. 3-#12, 1#12 GROUND IN 3/4" CONDUIT TO UNIT MOUNTED MIXER MOTOR.
   b. 8-#14 IN 3/4" CONDUIT TO UNIT MOUNTED TERMINAL BOX (CONTROLS).
   c. 3-#14 IN 3/4" CONDUIT TO UNIT MOUNTED TERMINAL BOX (FLOW SENSOR).
4. PROVIDE THE FOLLOWING WIRING FROM PLCM18 TO LIT-30037 (TYPICAL LIT-30040):
   a. 6-#14, 1-#14 GROUND IN 3/4" CONDUIT (120 VAC POWER, LSH-30037, LSL-30037).
   b. 1-#16 SHIELDED TWISTED PAIR IN 3/4" CONDUIT.
5. PROVIDE THE FOLLOWING WIRING ASSOCIATED WITH NEAT POLYMER TANK NO. 1 AND 2 LEVEL TRANSMITTERS LIT-50035 AND LIT-50038:
   a. 1-#16 SHIELDED TWISTED PAIR IN CONDUITS HCCH201B AND HCCH202B IN LIEU OF RG62 A/U COAX.
   b. 4-#14 IN 3/4" CONDUIT (DESIGNATED HCCH201C AND HCCH202C) ROUTED FROM EACH LEVEL TRANSMITTER TO PLCM16.
6. PROVIDE 8-#14, 1-#14 GROUND IN 3/4" CONDUIT FROM PLCM18 TO POLYMER FEED PUMP DISCHARGE FLOW METERS FIT-30043, FIT-30044, FIT-30045 AND FIT-30046 (120 VAC POWER).
7. PROVIDE THE FOLLOWING WIRING ASSOCIATED WITH DOOR OC124:
   a. PROVIDE 480 VAC, 3 PHASE POWER TO DOOR FROM POWER PANEL PP38C. UTILIZE SPARE 20AMP, 3 POLE CIRCUIT BREAKER (CIRCUIT 25, 27, 29) AND 3-#12, 1-#12 GROUND IN 3/4" CONDUIT ROUTED FROM PP38C TO DOOR OPERATOR. PROVIDE A 30AMP, 3 POLE, NEMA 4 DISCONNECT SWITCH AT DOOR OPERATOR.
   b. PROVIDE 120 VAC, 1 PHASE POWER TO DOOR ALARM BELLS AND LIGHT. UTILIZE SPARE 20 AMP, 1 POLE CIRCUIT BREAKER IN LIGHTING PANELBOARD LP38B (CIRCUIT 27) AND 2-#12, 1-#12 GROUND IN 3/4" CONDUIT ROUTED FROM LP38B TO ALARM BELL AND LIGHT.
   c. 2-#12 IN 3/4" CONDUIT FROM DOOR OPERATOR TO DOOR ALARM BELL AND LIGHT.
   d. 2-#14 IN 3/4" CONDUIT FROM DOOR OPERATOR TO DOOR SENSING EDGE JUNCTION BOX.
   e. 2-#14 IN 3/4" CONDUIT FROM DOOR OPERATOR TO DOOR GUIDE INTERLOCK SWITCHES (TYPICAL 2).
   f. 3-#14 IN 3/4" CONDUIT FROM DOOR OPERATOR TO INTERIOR MOUNTED PUSHBUTTON STATION AND 4-#14 IN 3/4" CONDUIT FROM INTERIOR PUSHBUTTON STATION TO EXTERIOR PUSHBUTTON STATION.

RECORD DRAWING

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

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHEMICAL BUILDING C
CHEMICAL BUILDING C POWER PLAN
ELECTRICAL

LEONARD J. CANDELORO No. 60761 LICENSED PROFESSIONAL ENGINEER STATE OF NEW YORK

File Number 00659
Date APRIL 2001
LeVanplut

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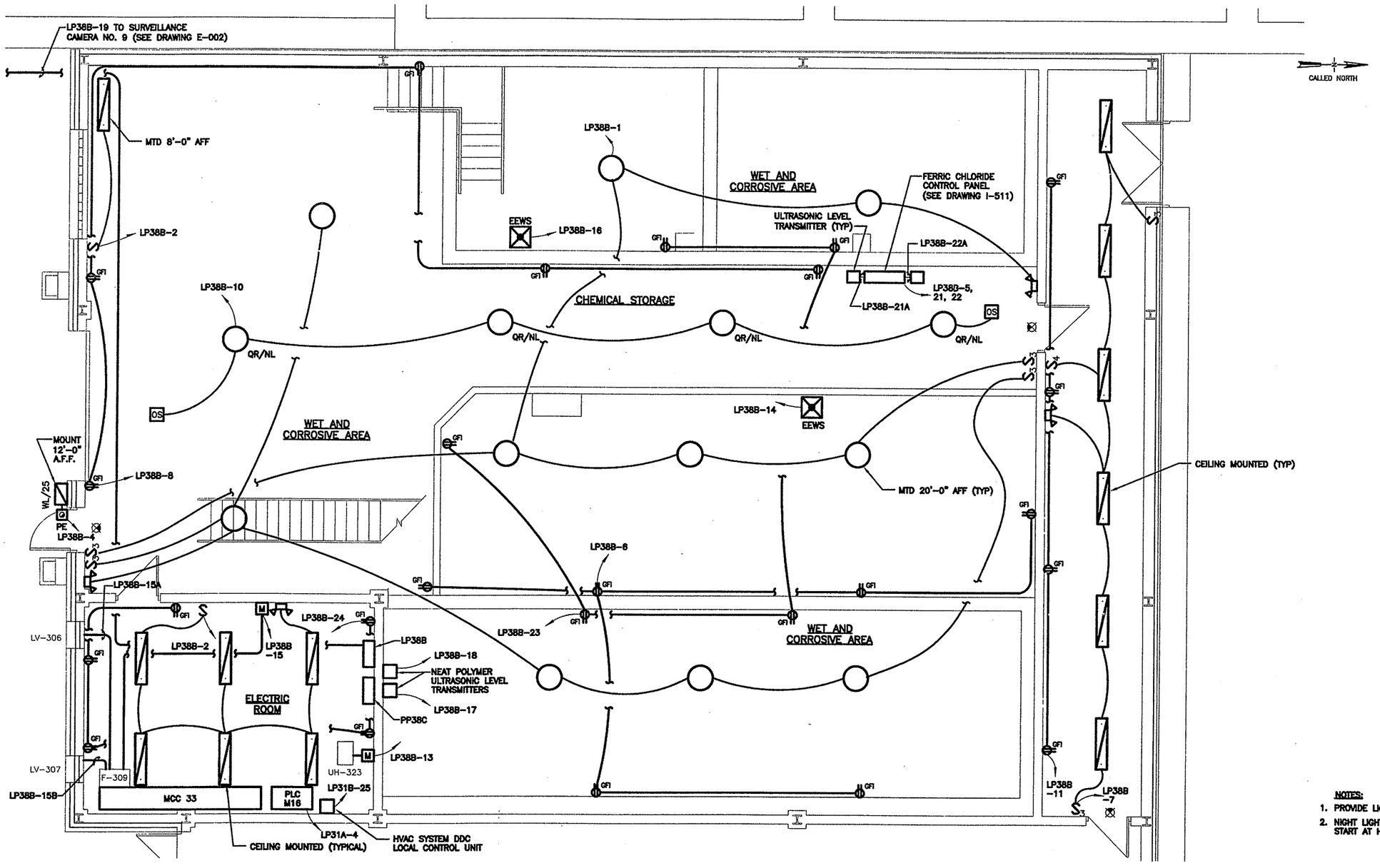

CHEMICAL BUILDING C LIGHTING PLAN

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

NOTES:

1. PROVIDE LIGHTING CONTACTOR FOR METAL HALIDE CIRCUITS.
2. NIGHT LIGHT CIRCUIT REQUIRES BI-LEVEL BALLAST CONTROL SYSTEM WITH START AT HIGH LEVEL, OCCUPANCY DETECTORS AND MANUAL SWITCHING.

RECORD DRAWING

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4/10/01 BBL DCC
05503000/0659E313.DWG

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

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	DC
1		AS BID	
2	10/31/05	RECORD DRAWING	

In charge of TEL
Designed by MEE
Drawn by DCC
Checked by WFH

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHEMICAL BUILDING C
CHEMICAL BUILDING C LIGHTING PLAN
ELECTRICAL

STATE OF NEW YORK • LEONARD J. CAMPOLETA • No. 80765 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
E-313

CIRCUIT BREAKER PANELBOARD – LP-38B									SCHEDULE			
LOCATION:		CHEMICAL BUILDING C ELECTRIC ROOM							FEED FROM		PP-38C-20	
MAIN BUS RATING:		225	AMPERES						208/120 VOLTS		3 PHASE, 4 WIRE	
MINIMUM SHORTCIRCUIT:		10,000	AMPERES						FEEDER CABLE		4 #3, 1 #8G	
MAIN BREAKER TRIP:		100	AMPERES						SURFACE MOUNTED			
ESTIMATED CONNECTED LOAD:		12.595	KVA									
		CB								CB		
CKT		AMPS/	LOAD						LOAD	AMPS/		CKT
NO.	DESCRIPTION	POLES	TYPE	KVA	PH-A	PH-B	PH-C	KVA	TYPE	POLES	DESCRIPTION	NO.
1	CHEM BLDG C INTERIOR LIGHTS	20/1P	LIGHTS	1.415	2.108			0.693	LIGHTS	20/1P	ELEC ROOM LIGHTS	2
3	CHEM. BLDG. C INTERIOR LIGHTS	20/1P	LIGHTS	1.415		1.985		0.550	LIGHTS	20/1P	EXTERIOR LIGHT	4
5	FERRIC CHLORIDE CONT. PANEL	20/1P	CONTROL	0.600			1.680	1.080	RECEPT	20/1P	RECEPTACLES – EAST	6
7	HALLWAY LIGHTS	20/1P	LIGHTS	0.659	1.559			0.900	RECEPT	20/1P	RECEPTACLES – WEST	8
9	SPARE	20/1P	CONTROL	0.200		1.280		1.080	LIGHTS	20/1P	CHEM BLDG C NIGHT LIGHTS	10
11	HALLWAY RECEPTACLES	20/1P	RECEPT	0.720			0.720			20/1P	POLYMER TRUCK PANEL	12
13	UNIT HEATER NO. UH-323	20/1P	MOTOR	0.093	0.193			0.100	HEAT	20/1P	SPARE	14
15	EXHAUST FAN F-309 AND LOUVERS	20/1P	MOTOR	0.600		0.700		0.100	HEAT	20/1P	SPARE	16
17	LIT-50035, NEAT POLYMER TK #1	20/1P	INST	0.015			0.030	0.015	INST	20/1P	LIT-50038, NEAT POLYMER TK #2	18
19	CLOSED CIRCUIT TV CAMERA NO. 9	20/1P	CONTROL	0.030	0.030					20/1P	SAND TRUCK PANEL	20
21	LIT-30061, FERRIC CHL DAY TK #1	20/1P	INST	0.015		0.030		0.015	INST	20/1P	LIT-30062, FERRIC CHL DAY TK #2	22
23	SUMP RECEPTACLES	20/1P	RECEPT	0.900			1.800	0.900	RECEPT	20/1P	ELEC ROOM RECEPTACLES	24
25	LOCAL CONTROL UNIT HVAC	20/1P	CONTROLS	0.500	0.500					20/1P	AHU-301 LIGHTS & RECEPTACLES	26
27	O.H. DOOR CONTROL	20/1P				0.000				20/1P	SPARE	28
29	SPARE	20/1P					0.000			20/1P	SPARE	30
31	SPARE	20/1P			0.000					20/1P	LIGHT AT SAND SILO S.W.	32
33	SPARE	20/1P				0.000				20/1P	SPARE	34
35	SPARE	20/1P					0.000			20/1P	SPARE	36
37	SPARE	20/1P			0.000					20/1P	SPARE	38
39	SPARE	20/1P				0.000				20/1P	SPARE	40
41	SPARE	20/1P					0.000			20/1P	SPARE	42
LOAD SUMMARY				7.162	4.390	3.975	4.230	5.433				
PANEL TOTAL KVA:				12.595								

NOTE:
ALL CONDUCTORS TO BE 2 #12, 1 #12G IN 3/4-INCH PVC COATED RIGID STEEL CONDUIT, UNLESS OTHERWISE INDICATED ON POWER PLAN.

CIRCUIT BREAKER PANELBOARD – PP-38C									SCHEDULE			
LOCATION:		CHEMICAL BUILDING C ELECTRIC ROOM							FEED FROM		MCC 38, 5AR	
MAIN BUS RATING:		225	AMPERES						480 VOLT		3 PHASE, 4 WIRE	
MINIMUM SHORTCIRCUIT:		25,000	AMPERES						FEEDER CABLE		3 #3, 1 #8G	
MAIN BREAKER TRIP:		100	AMPERES						SURFACE MOUNTED			
ESTIMATED CONNECTED LOAD:		43.58	KVA									
		CB								CB		
CKT		AMPS/	LOAD						LOAD	AMPS/		CKT
NO.	DESCRIPTION	POLES	TYPE	KVA	PH-A	PH-B	PH-C	KVA	TYPE	POLES	DESCRIPTION	NO.
1	UNIT HEATER NO. UH-317	20A	MOTOR	0.443	0.886			0.443	MOTOR	20A	UNIT HEATER NO. UH-318	2
3				0.443		0.886		0.443				4
5		3P		0.443			0.886	0.443		3P		6
7	UNIT HEATER NO. UH-319	20A	MOTOR	0.443	0.886			0.443	MOTOR	20A	UNIT HEATER NO. UH-320	8
9				0.443		0.886		0.443				10
11		3P		0.443			0.886	0.443		3P		12
13	UNIT HEATER NO. UH-321	20A	MOTOR	0.443	0.886			0.443	MOTOR	20A	UNIT HEATER NO. UH-322	14
15				0.443		0.886		0.443				16
17		3P		0.443			0.888	0.443		3P		18
19	SPARE	20A	CONTROL	7.750	13.055			5.305	SUB	45A	PANELBOARD LP-38B	20 ***
21				7.750		13.140		5.190				22
23		3P		4.100			9.410	5.310		3P		24
25	O.H. DOOR	20A			0.000					20A	SPARE	26
27						0.000						28
29		3P					0.000			3P		30
31	SPARE	20A			0.000					20A	SPARE	32
33						0.000						34
35		3P					0.000			3P		36
37	SAND SILO CONTROL PANEL	40A			0.000					20A	SPARE	38
39						0.000						40
41		3P					0.000			3P		42
LOAD SUMMARY				23.587	15.713	15.798	12.068	19.992				
PANEL TOTAL KVA:				43.579								

NOTE:
1. ALL CONDUCTORS TO BE 3 #12, 1 #12G IN 3/4-INCH PVC COATED RIGID STEEL CONDUIT, UNLESS OTHERWISE INDICATED ON POWER PLAN.
2. * CONDUTORS TO BE 3 #6, 1 #8G IN 1-INCH PVC COATED RIGID STEEL CONDUIT.
3. *** SEE 38P-18B ON DRAWING E-212 FOR CONDUIT AND WIRE SCHEDULE.

CIRCUIT BREAKER PANELBOARD – LP-34C									SCHEDULE				
LOCATION:		HRFS SOUTH HYDROCYCLONE ROOM							FEED FROM		MCC 38, 3AR		
MAIN BUS RATING:		225	AMPERES						208/120 VOLTS		3 PHASE, 4 WIRE		
MINIMUM SHORTCIRCUIT:		10,000	AMPERES						FEEDER CABLE		4 #3, 1 #8G		
MAIN BREAKER TRIP:		100	AMPERES						SURFACE MOUNTED				
ESTIMATED CONNECTED LOAD:		12.95	KVA										
		CB								CB			
CKT		AMPS/	LOAD						LOAD	AMPS/			CKT
NO.	DESCRIPTION	POLES	TYPE	KVA	PH-A	PH-B	PH-C	KVA	TYPE	POLES	DESCRIPTION		NO.
1	LIGHTS SOUTH HYDRO ROOM	20/1P	LIGHTS	0.500	1.200			0.700	LIGHTS	20/1P	LIGHTS NE. HRFS UPPER LEVEL		2
3	LIGHTS NORTH HYDRO ROOM	20/1P	LIGHTS	0.500		1.200		0.700	LIGHTS	20/1P	LIGHTS SE. HRFS UPPER LEVEL		4
5	LIGHTS SW. HRFS UPPER LEVEL	20/1P	LIGHTS	1.200			1.920	0.720	RECEPT	20/1P	RECEPTACLES S. HYDRO ROOM		6
7	LIGHTS NW. HRFS UPPER LEVEL	20/1P	LIGHTS	1.300	2.020			0.720	RECEPT	20/1P	RECEPTACLES N. HYDRO ROOM		8
9	SPARE	20/1P	LIGHTS	1.100		1.820		0.720	RECEPT	20/1P	RECEPT SCRAPPER DRIVES		10
11	NIGHT LTS, HRFS UPPER LEVEL	20/1P	MOTOR	0.600			1.200	0.800	MOTOR	20/1P	FAN F-308 AND LOUVER LV-305		12
13	ROOF DRAIN HEAT TRACE HT-301	20/1P	HEAT	0.720	1.056			0.338	HEAT	20/1P	ROOF DRAIN HEAT TRACE HT-304	14	GFI
15	ROOF DRAIN HEAT TRACE HT-302	20/1P	HEAT	0.780		1.404		0.624	HEAT	20/1P	ROOF DRAIN HEAT TRACE HT-305	16	GFI
17	ROOF DRAIN HEAT TRACE HT-303	20/1P	HEAT	0.552			1.128	0.576	HEAT	20/1P	SPARE	18	
19	SPARE	20/1P			0.000					20/1P	SPARE	20	
21	SPARE	20/1P				0.000				20/1P	SPARE	22	
23	F307 & LV304	20/1P					0.000			20/1P	SPARE	24	
25	SPARE	20/1P			0.000					20/1P	SPARE	26	
27	SPARE	20/1P				0.000				20/1P	SPARE	28	
29	SPARE	20/1P					0.000			20/1P	SPARE	30	
31	SPARE	20/1P			0.000					20/1P	SPARE	32	
33	SPARE	20/1P				0.000				20/1P	SPARE	34	
35	SPARE	20/1P					0.000			20/1P	SPARE	36	
37	SPARE	20/1P			0.000					20/1P	SPARE	38	
39	SPARE	20/1P				0.000				20/1P	SPARE	40	
41	SPARE	20/1P					0.000			20/1P	SPARE	42	
LOAD SUMMARY				7.252	4.276	4.424	4.248	5.698					
PANEL TOTAL KVA:				12.948									

NOTES:
1. ALL CONDUCTORS TO BE 2 #12, 1 #12G IN 3/4-INCH PVC COATED RIGID STEEL CONDUIT, UNLESS OTHERWISE INDICATED ON POWER PLAN.
2. HEAT TRACE BRANCH CIRCUIT BRAKERS SHALL BE GFI TYPE.

RECORD DRAWING
THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.
DATE: 10/21/05 PER: [signature]

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NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

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1		AS BID	
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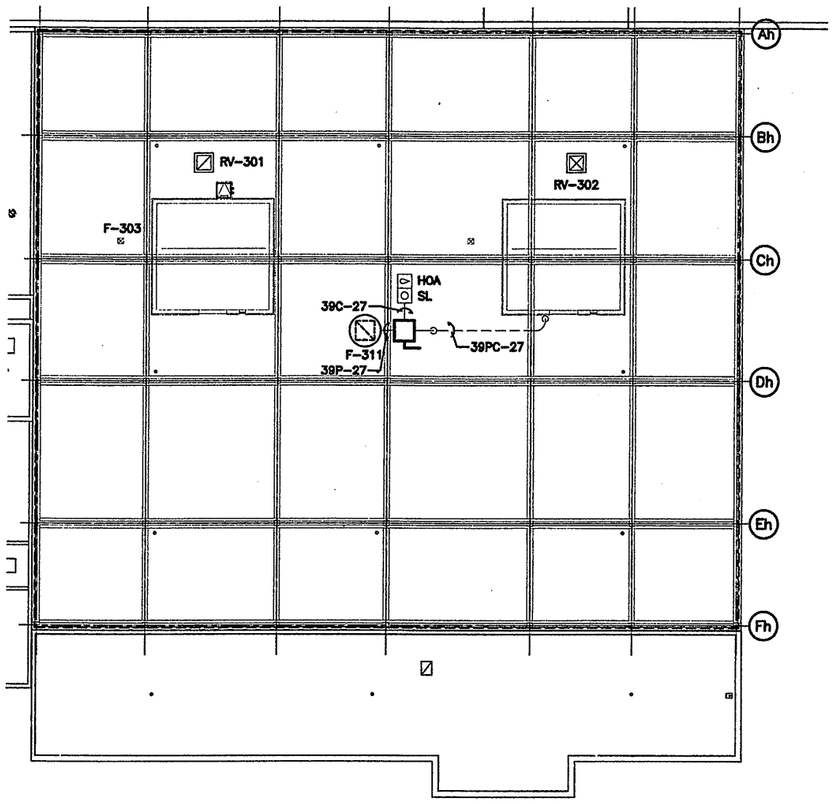
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHEMICAL BUILDING C
SCHEDULES
ELECTRICAL

STATE OF NEW YORK • LEONARD J. CAMPOLETA • No. 60755 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001

E-314



ROOF PLAN
SCALE: 1"=16'-0"

RECORD DRAWING

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DATE 10/21/05 PER Hampshire

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1/16"=1'-0" 16' 0 16' 32'

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1	10/31/05	RECORD DRAWING	↓

In charge of
Designed by
Drawn by
Checked by

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
HRFS

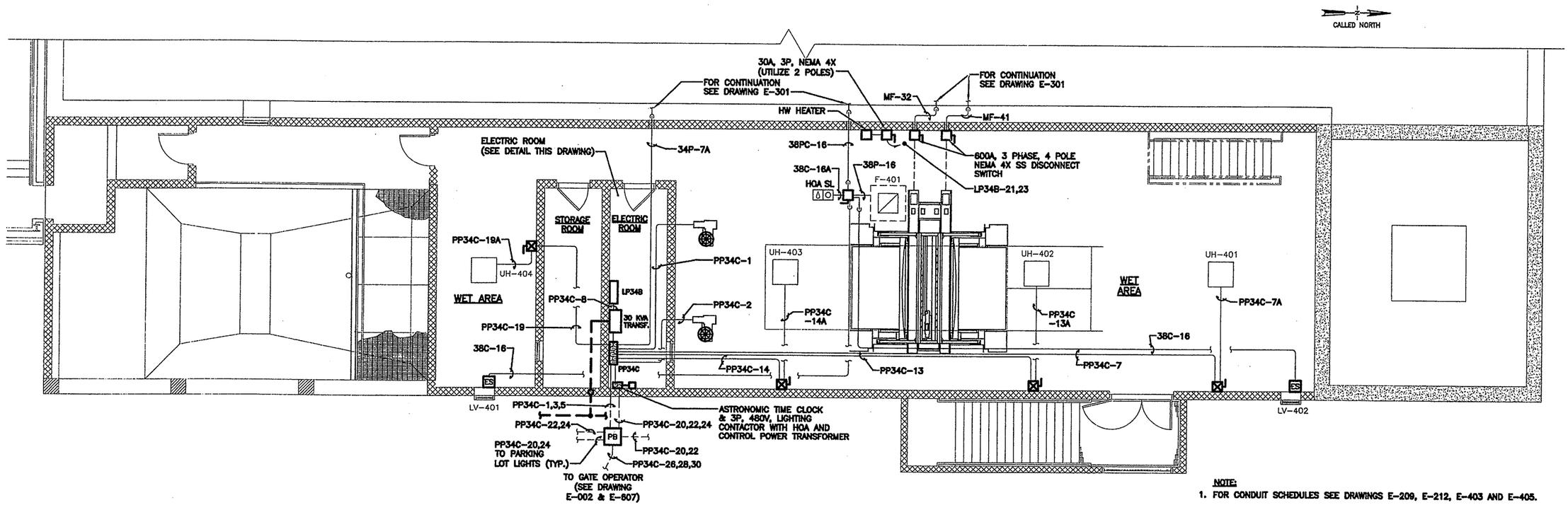
ROOF PLAN

ELECTRICAL

STATE OF NEW YORK • LEONARD J. CAMPOLIETO • LICENSED PROFESSIONAL ENGINEER • No. 60755

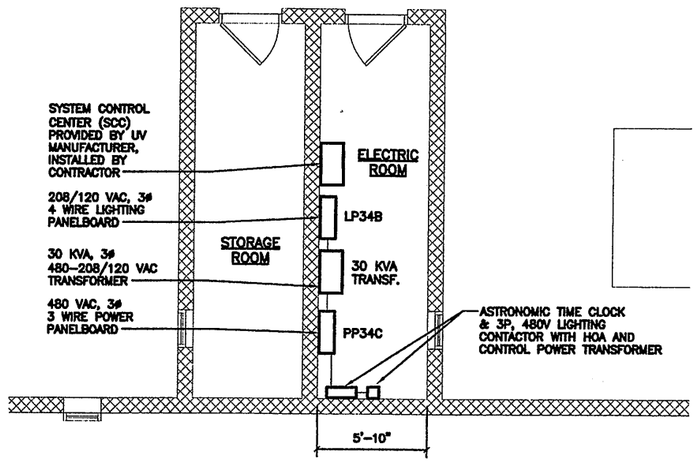
File Number 00659
Date JULY 2001

E-315



POWER PLAN

SCALE: 3/16"=1'-0"



ELECTRIC ROOM PLAN

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

NOTE:

1. FOR CONDUIT SCHEDULES SEE DRAWINGS E-209, E-212, E-403 AND E-405.
2. CIRCUIT PP34C-20,22,24 SHALL BE 3-#10, 1-#10G IN 3/4" PVC COATED RIGID STEEL CONDUIT.
3. REFER TO HVAC DRAWINGS FOR ADDITIONAL LOUVER, DAMPER, THERMOSTAT, CONTROL VALVE, DIRECT DIGITAL CONTROL (DDC), AND OTHER CONTROL HVAC REQUIREMENTS. CONTRACT 4B (ELECTRICAL) SHALL PROVIDE ALL CONDUIT AND CONDUCTORS FOR 120 VOLT CONTROLS, AS SHOWN OR REQUIRED (EXCEPT WIRING BETWEEN DDC SYSTEM COMPONENTS). CONTRACT 4C (HVAC) SHALL PROVIDE ALL CONDUIT AND CONDUCTORS REQUIRED FOR LOW VOLTAGE (LESS THAN 120 VOLT) CONTROLS AND WIRING BETWEEN DDC SYSTEM COMPONENTS INCLUDING BUT NOT LIMITED TO, LOW VOLTAGE T-STAT, VARIABLE AIR VOLUME (VAV) CONTROLS, ETC.
4. PROVIDE THE FOLLOWING ASSOCIATED WITH CONTROL OF THE ENTRANCE GATE:
   a. PROVIDE THREE CONTROL RELAYS (ALLEN-BRADLEY CATALOG NO. 700-HA33A1-1-4) WITH BASES (ALLEN-BRADLEY CATALOG NO. 700-HN101) MOUNTED ON THE FAR RIGHT VERTICAL DIN RAIL IN THE SCC. SEE TROJAN TECHNOLOGIES, INC.'S DRAWING NO. 929155, SHEET 5 OF 7 (REV. D) FOR SCC LAYOUT. RELAYS SHALL BE LABELED AND SHALL HAVE FUNCTIONS AS FOLLOWS:

      "312CR" - ENTRANCE GATE OPEN CONTROL
      "313CR" - ENTRANCE GATE CLOSE CONTROL
      "314CR" - ENTRANCE GATE STOP MOVEMENT

   b. PROVIDE CONNECTION OF THE REALY COILS TO SPARE PLCM14 DISCRETE OUTPUTS "002/08", "002/09" AND "002/10". SEE TROJAN TECHNOLOGIES, INC.'S DRAWING NO. 929155 SHEET 3 OF 7 (REV. D) FOR SPARE DISCRETE OUTPUT LOCATIONS. WIRING FROM THE DISCRETE OUTPUTS TO THE RELAY COILS SHALL BE LABELED AND ROUTED AS FOLLOWS:

      WIRE NO. "3121" FROM OUTPUT "002/08" TO "312CR"
      WIRE NO. "3131" FROM OUTPUT "002/09" TO "313CR"
      WIRE NO. "3141" FROM OUTPUT "002/10" TO "314CR"

   c. PROVIDE CONNECTION OF A NORMALLY OPEN CONTACT FROM EACH RELAY DIRECTLY TO THE WIRING IN CONDUIT CC-12 AS REQUIRED FOR GATE OPEN, CLOSE, STOP CONTROL. CC-12 IS 6-#14 IN 1 1/2" CGRS ROUTED FROM THE SCC TO THE ENTRANCE GATE.
   d. RELAY COILS SHALL BE NORMALLY DE-ENERGIZED/MOMENTARILY ENERGIZED TO PROVIDE THE OPERATOR SELECTED CONTROL.

RECORD DRAWING
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DATE: 10/21/05 PER: [signature]

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Layer: ON=*; OFF=*REF*
X: 0659X402.DWG
4/6/01 BBL DCC
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1/4"=1'-0" (4' 0 4' 8')
3/16"=1'-0" (4' 0 6' 12')

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	LC
1		AS BID	
2	10/31/05	RECORD DRAWING	

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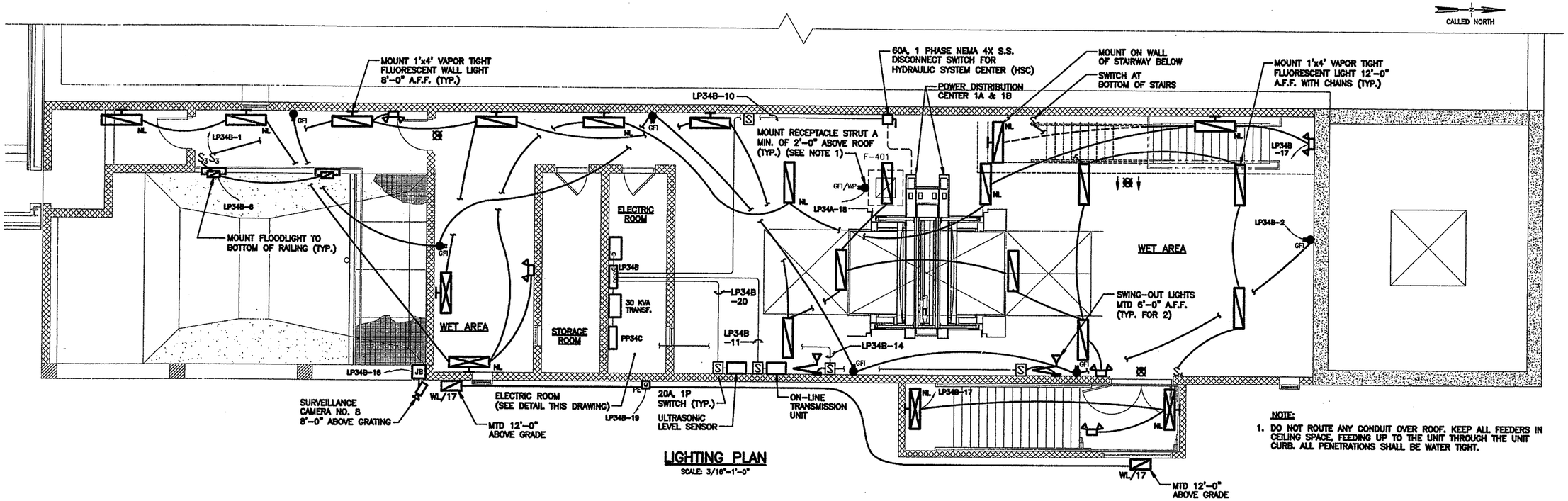
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
UV DISINFECTION
UV DISINFECTION/PARSHALL FLUME POWER PLAN AND ROOM PLAN
ELECTRICAL

STATE OF NEW YORK · LEONARD J. CAMPOLIETA · No. 60755 · LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001

E-401

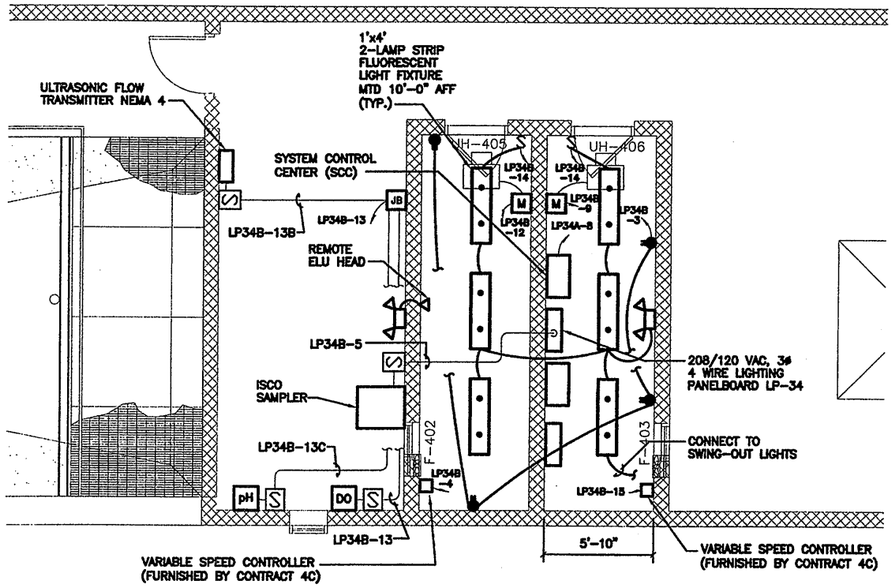


LIGHTING PLAN

SCALE: 3/16"=1'-0"

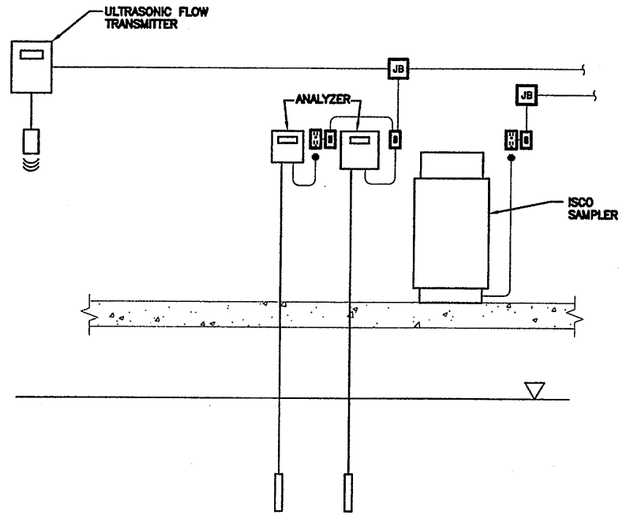
NOTE:

1. DO NOT ROUTE ANY CONDUIT OVER ROOF. KEEP ALL FEEDERS IN CEILING SPACE, FEEDING UP TO THE UNIT THROUGH THE UNIT CURB. ALL PENETRATIONS SHALL BE WATER TIGHT.



ELECTRIC ROOM PLAN

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



EFFLUENT MONITORING SYSTEM POWER DETAIL

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RECORD DRAWING

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DATED 10/26/05 FOR L Kamplitt

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4/17/01 BBL DCC
05503000/0659E402.DWG

1/4"=1'-0" 4' 0 4' 8'
3/16"=1'-0" 4' 0 6' 12'

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	DCC
1		AS BID	
2	10/31/05	RECORD DRAWING	✓

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Drawn by DCC
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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
UV DISINFECTION

UV DISINFECTION/PARSHALL FLUME LIGHTING PLANS

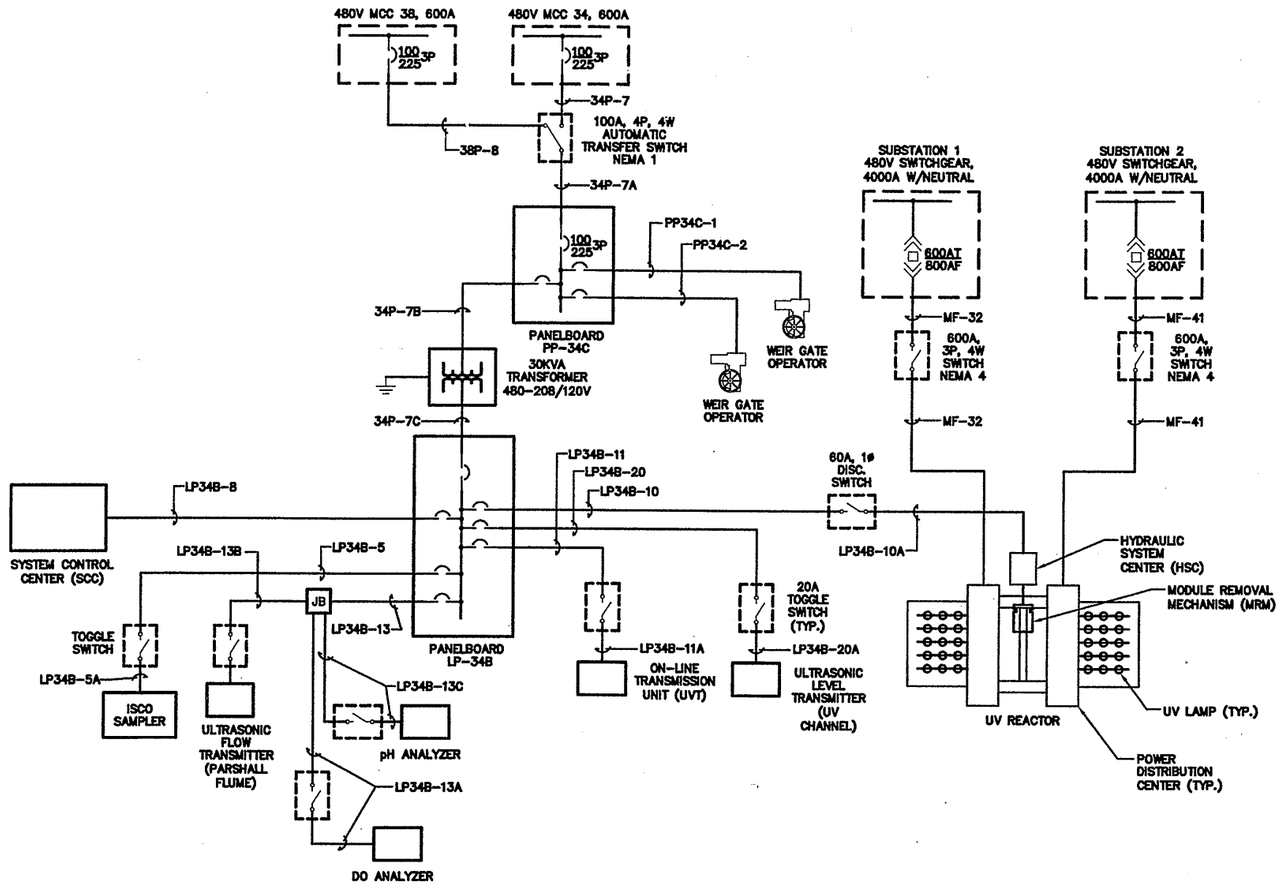
ELECTRICAL

LEONARD A. CAMPOLIETA — STATE OF NEW YORK — LICENSED PROFESSIONAL ENGINEER — No. 60765

File Number 00659
Date APRIL 2001
L Kamplitt

E-402

CONDUIT SCHEDULE		
CONDUIT NUMBER	CONDUCTORS QUANTITY \ SIZE	DIAMETER
MF-32	8 – 350 KCMIL, 1–#2 G	2-3" C
	2 PER PHASE AND NEUTRAL	
MF-41	8 – 350 KCMIL, 1–#2 G	2-3" C
	2 PER PHASE AND NEUTRAL	



UV DISINFECTION ELECTRICAL ONE-LINE DIAGRAM

NOT TO SCALE

RECORD DRAWING

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DATED 10/21/05 PER: L.Campbell

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ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

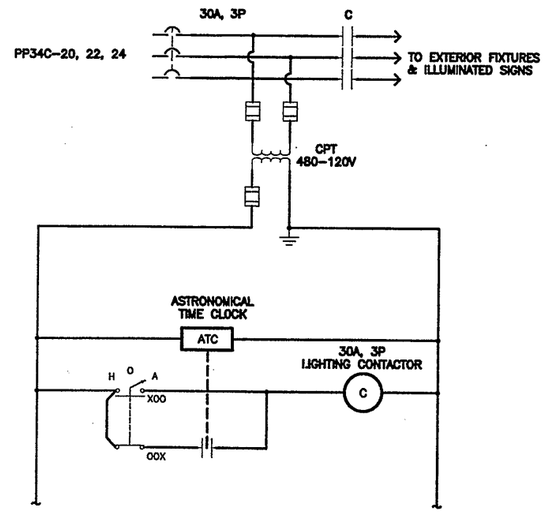
ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
UV DISINFECTION
UV DISINFECTION/PARSHALL FLUME ONE-LINE DIAGRAM
ELECTRICAL

STATE OF NEW YORK • LEONARD J. CAMPBELL • No. 60766 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
L.Campbell

E-403

SEE MCC O&M MANUAL FOR
EQUIPMENT ELEMENTARY DIAGRAMS



EXTERIOR LIGHTING WIRING DIAGRAM
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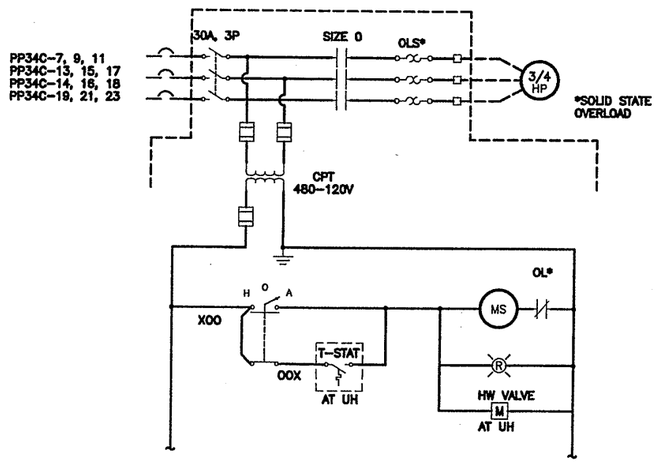
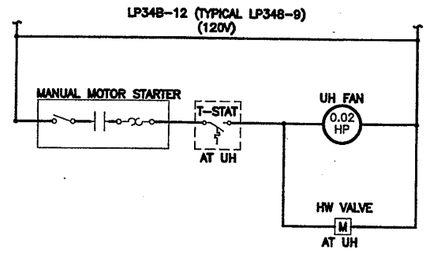


UNIT HEATER UH-401
(TYPICAL FOR UH-402, 403, 404)
NOT TO SCALE



UNIT HEATER UH-405
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SYRACUSE, NEW YORK

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
UV DISINFECTION
UV DISINFECTION/PARSHALL FLUME ELEMENTARY DIAGRAMS
ELECTRICAL

STATE OF NEW YORK • EDWARD J. CARLOMAGNO • No. 60755 • LICENSED PROFESSIONAL ENGINEER

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E-404

CIRCUIT BREAKER PANELBOARD – PP-34C									SCHEDULE			
LOCATION:		UV BUILDING ELECTRIC ROOM							FEED FROM		MCC 34, 3AL	
MAIN BUS RATING:		225	AMPERES						480 VOLT		3 PHASE, 4 WIRE	
MINIMUM SHORTCIRCUIT:		25,000	AMPERES						FEEDER CABLE		3 #2, 1 #8G	
MAIN BREAKER TRIP:		100	AMPERES						SURFACE MOUNTED			
ESTIMATED CONNECTED LOAD:		35.09	KVA									
		CB								CB		
CKT		AMPS/	LOAD						LOAD	AMPS/		CKT
NO.	DESCRIPTION	POLES	TYPE	KVA	PH-A	PH-B	PH-C	KVA	TYPE	POLES	DESCRIPTION	NO.
1	WEIR GATE OPERATOR (1 HP)	20A	MOTOR	0.581	1.162			0.581	MOTOR	20A	WEIR GATE OPERATOR (1 HP)	2
3				0.581		1.162		0.581				4
5		3P		0.581			1.162	0.581		3P		6
7	UNIT HEATER NO. UH-401	20A	MOTOR	0.443	6.291			5.848	SUB	20A	PANELBOARD LP-34B	8
9				0.443		6.272		5.829				10
11		3P		0.443			6.395	5.952		3P		12
13	UNIT HEATER NO. UH-402	20A	MOTOR	0.443	0.886			0.443	MOTOR	20A	UNIT HEATER NO. UH-403	14
15				0.443		0.886		0.443				16
17		3P		0.443			0.886	0.443		3P		18
19	UNIT HEATER NO. UH-404	20A	MOTOR	0.443	2.943			2.500	LIGHTS	30A	PARKING LOT LIGHTS	20
21				0.443		3.018		2.575				22
23		3P		0.443			2.943	2.500		3P		24
25	SPARE	20A			0.360			0.360	MOTOR	20A	ENTRANCE GATE OPERATOR (1.5 HP)	26
27						0.360		0.360				28
29		3P					0.360	0.360		3P		30
31	SPARE	20A			0.000					20A	SPARE	32
33						0.000						34
35		3P					0.000			3P		36
LOAD SUMMARY				5.730	11.642	11.698	11.748	29.356				
PANEL TOTAL KVA:				35.086								

NOTES:

1. ALL CONDUCTORS TO BE 3 #12, 1 #12G IN 3/4-INCH PVC COATED RIGID STEEL CONDUIT, UNLESS OTHERWISE INDICATED ON POWER PLAN.

CIRCUIT BREAKER PANELBOARD – LP-34B									SCHEDULE			
LOCATION:		UV ELECTRIC ROOM							FEED FROM		PP-34C, UV ELECTRIC ROOM	
MAIN BUS RATING:		225	AMPERES						208/120 VOLTS		3 PHASE, 4 WIRE	
MINIMUM SHORTCIRCUIT:		18,000	AMPERES						FEEDER CABLE		4 #2, 1 #6G	
MAIN BREAKER TRIP:		100	AMPERES						SURFACE MOUNTED			
ESTIMATED CONNECTED LOAD:		19.561	KVA									
		CB								CB		
CKT		AMPS/	LOAD						LOAD	AMPS/		CKT
NO.	DESCRIPTION	POLES	TYPE	KVA	PH-A	PH-B	PH-C	KVA	TYPE	POLES	DESCRIPTION	NO.
1	UV REACTOR AREA LIGHTS	20/1P	LIGHTS	1.584	2.664			1.080	RECPT	20/1P	BUILDING RECEPTACLES	2
3	ELECTRIC ROOM RECEPTACLES	20/1P	RECPT	0.720		0.750		0.030	MOTOR	20/1P	TRANSFER FAN F-402 (0.04HP)	4
** 5	ISCO SAMPLER	25/1P	INST	2.400			3.165	0.765	LIGHTS	20/1P	PARSHALL FLUME LIGHTS	6
7	AMMONIA & PHOSPH. ANALYZER	20/1P	INST	0.150	2.154			2.004	MANUF	20/1P	SYSTEM CONTROL CENTER (SCC)	8
9	UNIT HEATER NO. UH-406	20/1P	HEAT	0.015		5.019		5.004	MANUF	50/1P	HYDRAULIC SYS CENTER (HSC)	10
11	ON-LINE TRANS UNIT (UVT)	20/1P	INST	1.800			1.815	0.015	HEAT	20/1P	UNIT HEATER NO. UH-405	12
13	FLOW TRANS, pH & DO	20/1P	INST	0.150	0.930			0.780	LIGHTS	20/1P	ELEC RM, STRG, & SWING-OUT	14
15	TRANSFER FAN F-403 (0.04HP)	20/1P	MOTOR	0.030		0.060		0.030	CAMERA	20/1P	CLOSED CIRCUIT TV CAMERA NO. 8	16
17	UV AREA NIGHT LIGHTS	20/1P	LIGHTS	0.792			0.972	0.180	RECPT	20/1P	ROOF MAINT. RECEPTACLE	18
19	EXTERIOR LIGHTS	20/1P	LIGHTS	0.432	0.532			0.100	INST	20/1P	ULTRASONIC LEVEL TRANSMITTER	20
21	HW HEATER	20	HEAT	1.500		1.500				20/1P	RECEPTACLE UV SOUTH	22
23		2P					1.500			20/1P	SWING OUT LIGHTS	24
25	SPARE	25/1P			0.000					50/1P	SPARE	26
27	SPARE	20/1P				0.000				20/1P	SPARE	28
29	SPARE	20/1P					0.000			20/1P	SPARE	30
31	SPARE	20/1P			0.000					20/1P	SPARE	32
33	SPARE	20/1P				0.000				20/1P	SPARE	34
35	SPARE	20/1P					0.000			20/1P	SPARE	36
37	SPARE	20/1P			0.000					20/1P	SPARE	38
39	SPARE	20/1P				0.000				20/1P	SPARE	40
41	SPARE	20/1P					0.000			20/1P	SPARE	42
LOAD SUMMARY				9.573	6.280	7.329	7.452	9.988				
PANEL TOTAL KVA:				19.561								

-2#8, 1#10G *

NOTES:

1. ALL CONDUCTORS TO BE 2 #12, 1 #12G IN 3/4-INCH PVC COATED RIGID STEEL RIGID STEEL CONDUIT, UNLESS OTHERWISE INDICATED ON POWER PLAN.
2. * CONDUCTORS TO BE 2 #6, 1 #8G IN 1-INCH PVC COATED RIGID STEEL RIGID STEEL CONDUIT.
3. ** CONDUCTORS TO BE 2 #10, 1 #10G IN 3/4-INCH PVC COATED RIGID STEEL RIGID STEEL CONDUIT.

RECORD DRAWING

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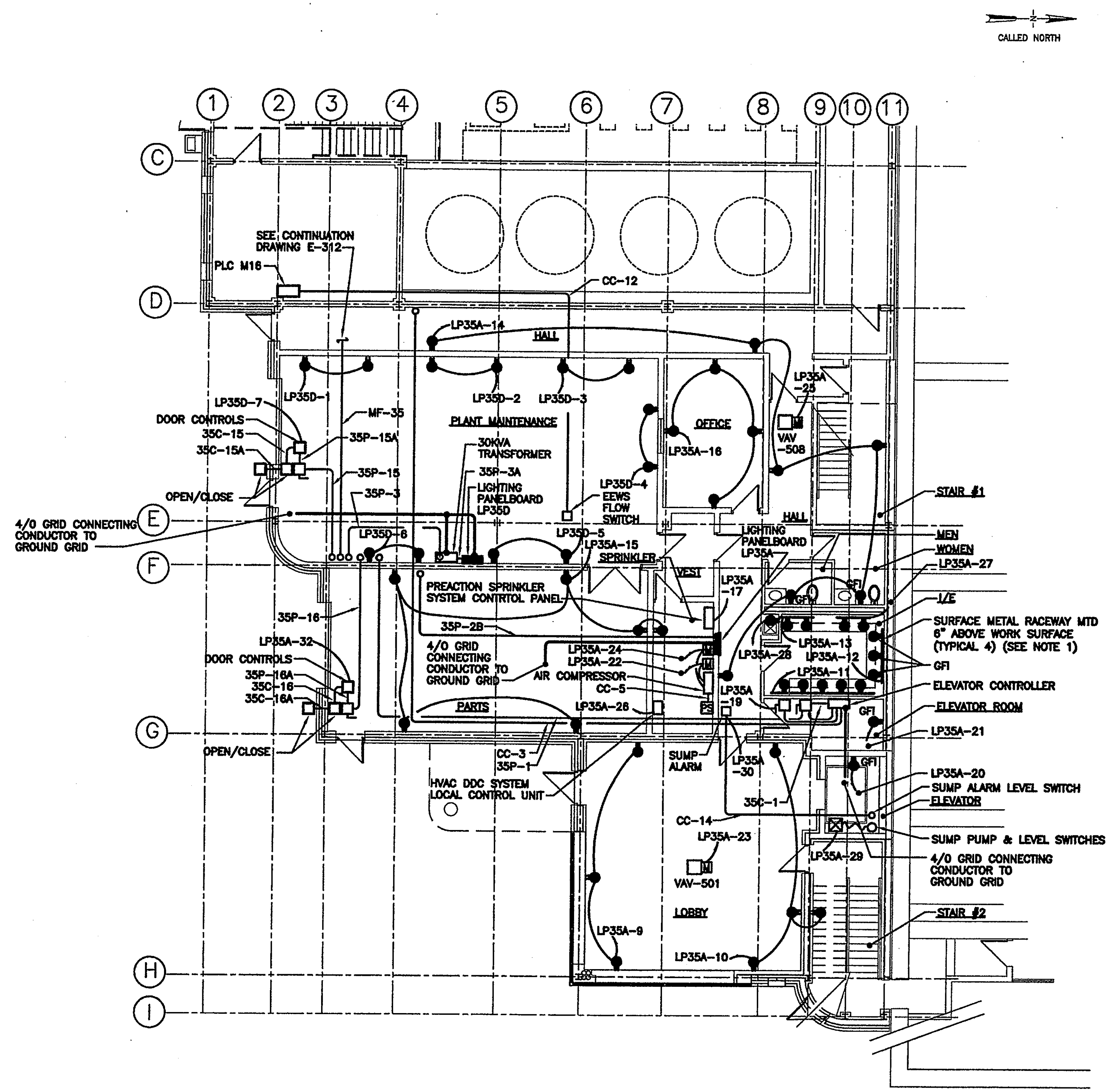
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
UV DISINFECTION
UV DISINFECTION/PARSHALL FLUME SCHEDULES
ELECTRICAL

STATE OF NEW YORK • LEONARD J. CAMPBELL • LICENSED PROFESSIONAL ENGINEER • No. 60765

File Number 00659
Date APRIL 2001
L Campbell

E-405



NOTES:

1. SURFACE METAL RACEWAY IN I/E SHALL HAVE 3'-0" SPACING BETWEEN RECEPTACLES. EVERY OTHER RECEPTACLE IN RACEWAYS SHALL BE PROVIDED WITH AN ON/OFF SNAP SWITCH.
2. REFER TO HVAC DRAWINGS FOR ADDITIONAL LOUVER, DAMPER, THERMOSTAT, CONTROL VALVE, DIRECT DIGITAL CONTROL (DDC), AND OTHER CONTROL HVAC REQUIREMENTS. CONTRACT 4B (ELECTRICAL) SHALL PROVIDE ALL CONDUIT AND CONDUCTORS FOR 120 VOLT CONTROLS, AS SHOWN OR REQUIRED (EXCEPT WIRING BETWEEN DDC SYSTEM COMPONENTS). CONTRACT 4C (HVAC) SHALL PROVIDE ALL CONDUIT AND CONDUCTORS REQUIRED FOR LOW VOLTAGE (LESS THAN 120 VOLT) CONTROLS AND WIRING BETWEEN DDC SYSTEM COMPONENTS INCLUDING BUT NOT LIMITED TO, LOW VOLTAGE T-STAT, VARIABLE AIR VOLUME (VAV) CONTROLS, ETC.

FIRST FLOOR PLAN

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

RECORD DRAWING

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03/23/01 OBG CRV
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1/8"=1'-0" 8' 0 8' 16'

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

OPERATIONS CENTER
FIRST FLOOR
POWER PLAN
ELECTRICAL

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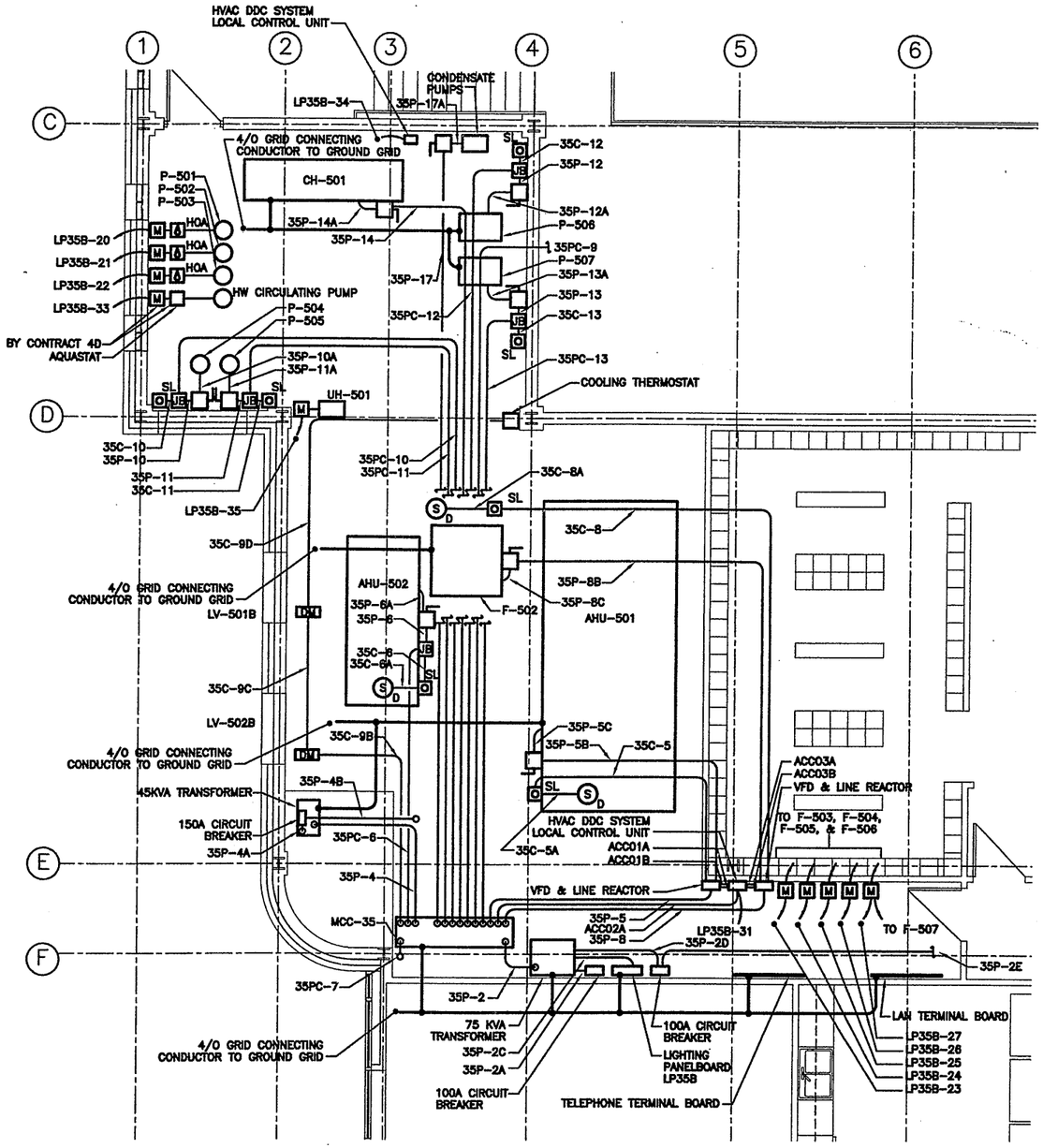
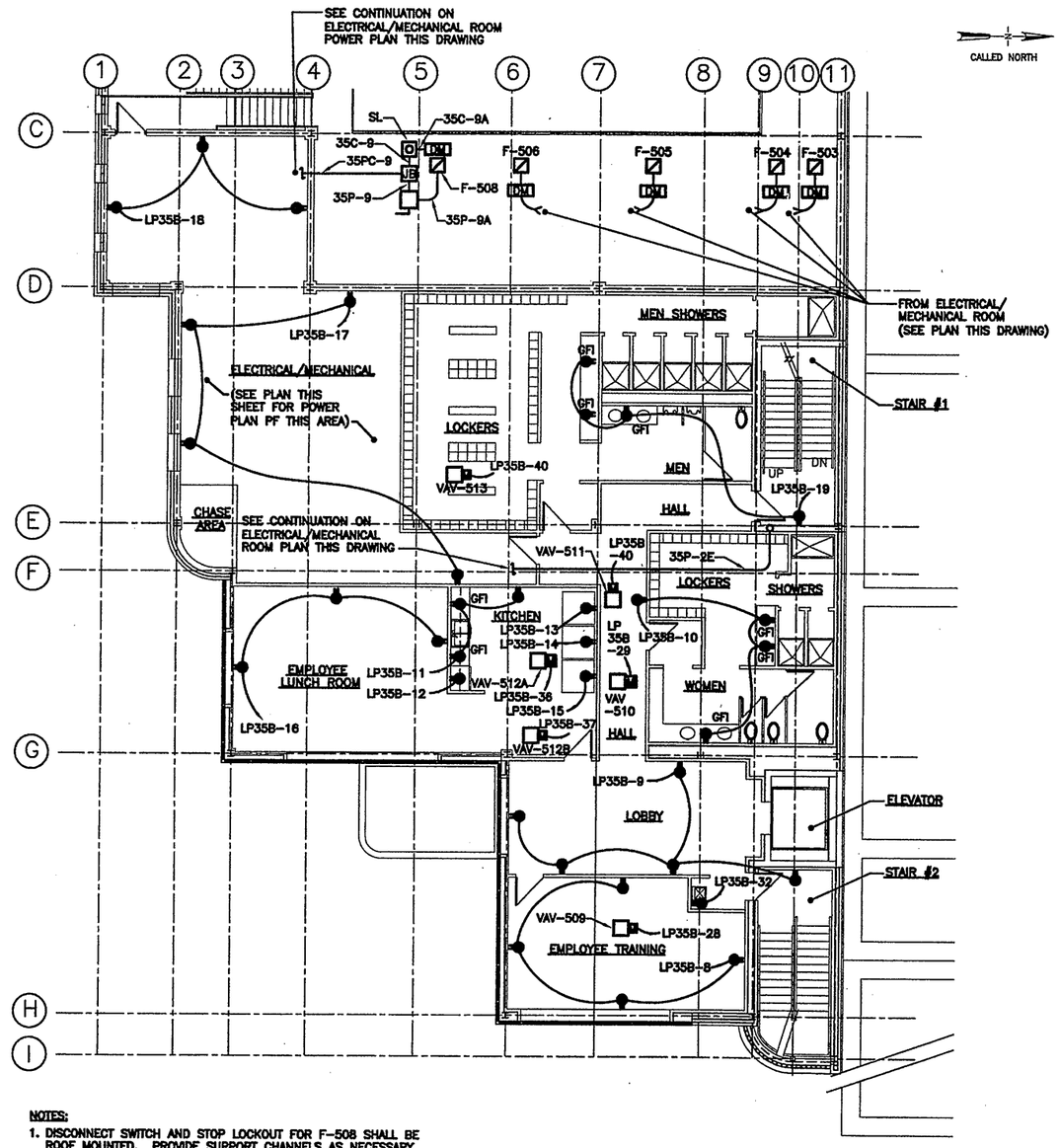
E-501



ELECTRICAL/MECHANICAL ROOM POWER PLAN

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



SECOND FLOOR POWER PLAN

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

NOTES:

1. DISCONNECT SWITCH AND STOP LOCKOUT FOR F-508 SHALL BE ROOF MOUNTED. PROVIDE SUPPORT CHANNELS AS NECESSARY FOR MOUNTING.
2. PROVIDE 3-#12 IN 3/4" CONDUIT ROUTED FROM THE WALL MOUNTED CONTROL RELAY LOCATED ADJACENT TO AHU-501'S VFD TO MCC35. PROVIDE 2-#12 IN 3/4" CONDUIT ROUTED FROM MCC35 TO RV-501 ACTUATORS. USING THIS WIRING AND LP35B-1 IN THE CONTROL RELAY AS THE ACTUATOR POWER SOURCE, PROVIDE PARALLEL CONNECTION OF A NORMALLY OPEN CONTACT ON THE CONTROL RELAY WITH A NORMALLY OPEN AUXILIARY CONTACT ON AHU-502'S MOTOR STARTER LOCATED IN MCC35. LOAD SIDE OF THE PARALLELED CONTACTS SHALL BE CONNECTED TO THE LINE SIDE OF RV-501 ACTUATORS. ACTUATORS SHALL BE CONNECTED IN PARALLEL. A COMMON NEUTRAL SHALL BE ROUTED FROM THE ACTUATORS BACK TO THE CONTROL RELAY VIA MCC35.

RECORD DRAWING

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1/8"=1'-0" 8' 0 8' 16'

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STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
OPERATIONS CENTER
SECOND FLOOR POWER PLAN
ELECTRICAL

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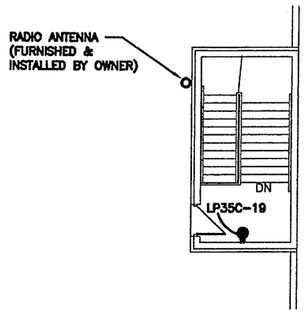

STAIR #1 ROOF PLAN

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

NOTES:

1. PROVIDE 1" CONDUIT FROM CONTROL ROOM UNDERFLOOR SPACE TO OFFICE FOR OFFICE CCTV MONITOR VIDEO CABLE. CONDUIT SHALL TERMINATE IN OFFICE 7'-0" ABOVE FINISHED FLOOR WITH OUTLET BOX, WALL PLATE AND CABLE BUSHING.
2. PROVIDE 2" CONDUIT FROM CONTROL ROOM UNDERFLOOR SPACE TO OFFICE FOR OFFICE COMPUTER WORKSTATION MONITOR CABLE AND KEYBOARD CABLE. CONDUIT SHALL TERMINATE IN OFFICE 3" ABOVE FINISHED FLOOR.
3. PROVIDE 1" CONDUIT FROM CONTROL ROOM UNDERFLOOR SPACE TO ROOF FOR RADIO EQUIPMENT ANTENNA CABLE. CABLE SHALL BE FURNISHED, INSTALLED AND CONNECTED BY OTHERS. CONDUIT SHALL TERMINATE ON EXTERIOR WALL OF STAIR #1 1'-0" ABOVE ROOF. PROVIDE PULL WIRE AND CAP ON EXTERIOR END OF CONDUIT.
4. RELOCATE EXISTING KEY BOX FROM EXISTING PLANT OPERATIONS BUILDING THIRD FLOOR CONTROL ROOM TO THE LOCATION SHOWN ON THIS DRAWING. PROVIDE POWER AND CONTROL CONNECTIONS AS SHOWN.
5. PROVIDE 2" CONDUIT FROM CONTROL ROOM UNDERFLOOR SPACE TO LAB FOR COMPUTER WORKSTATION MONITOR CABLE AND KEYBOARD CABLE. CONDUIT SHALL TERMINATE IN LAB 2" ABOVE WORK SURFACE.
6. DISCONNECT SWITCH AND STOP LOCKOUT FOR F-501 SHALL BE ROOF MOUNTED. PROVIDE SUPPORT CHANNELS AS NECESSARY FOR MOUNTING.
7. PROVIDE 208VAC, 1 PHASE POWER TO COOKTOP IN SUPPLY FILES FROM LP35B. CIRCUIT SHALL BE 40AMP/2 POLE.
8. PROVIDE 120VAC, 1 PHASE POWER TO EXHAUST HOOD IN SUPPLY FILES FROM LP35B. CIRCUIT SHALL BE 20AMP/ 1 POLE.

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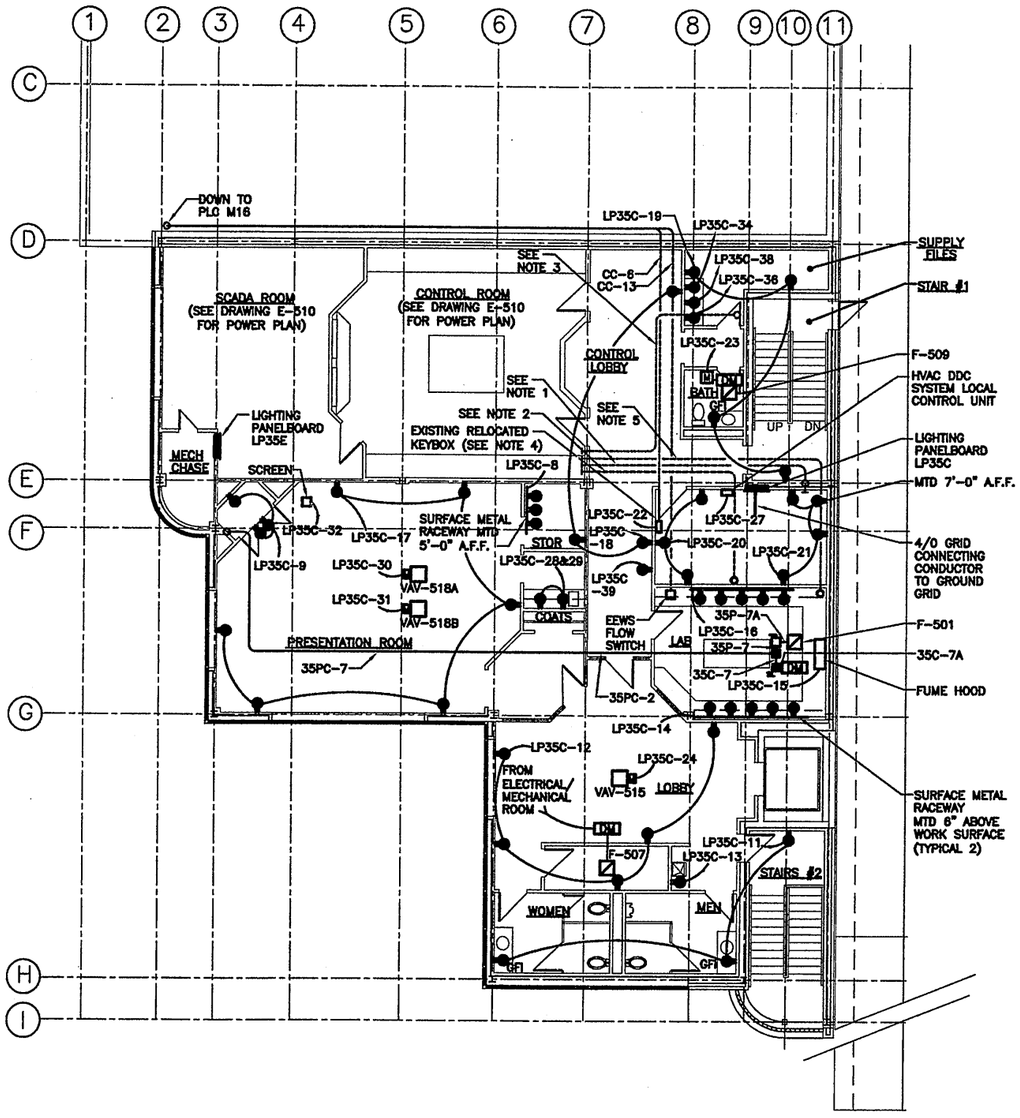

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

OPERATIONS CENTER
THIRD FLOOR POWER PLAN
ELECTRICAL

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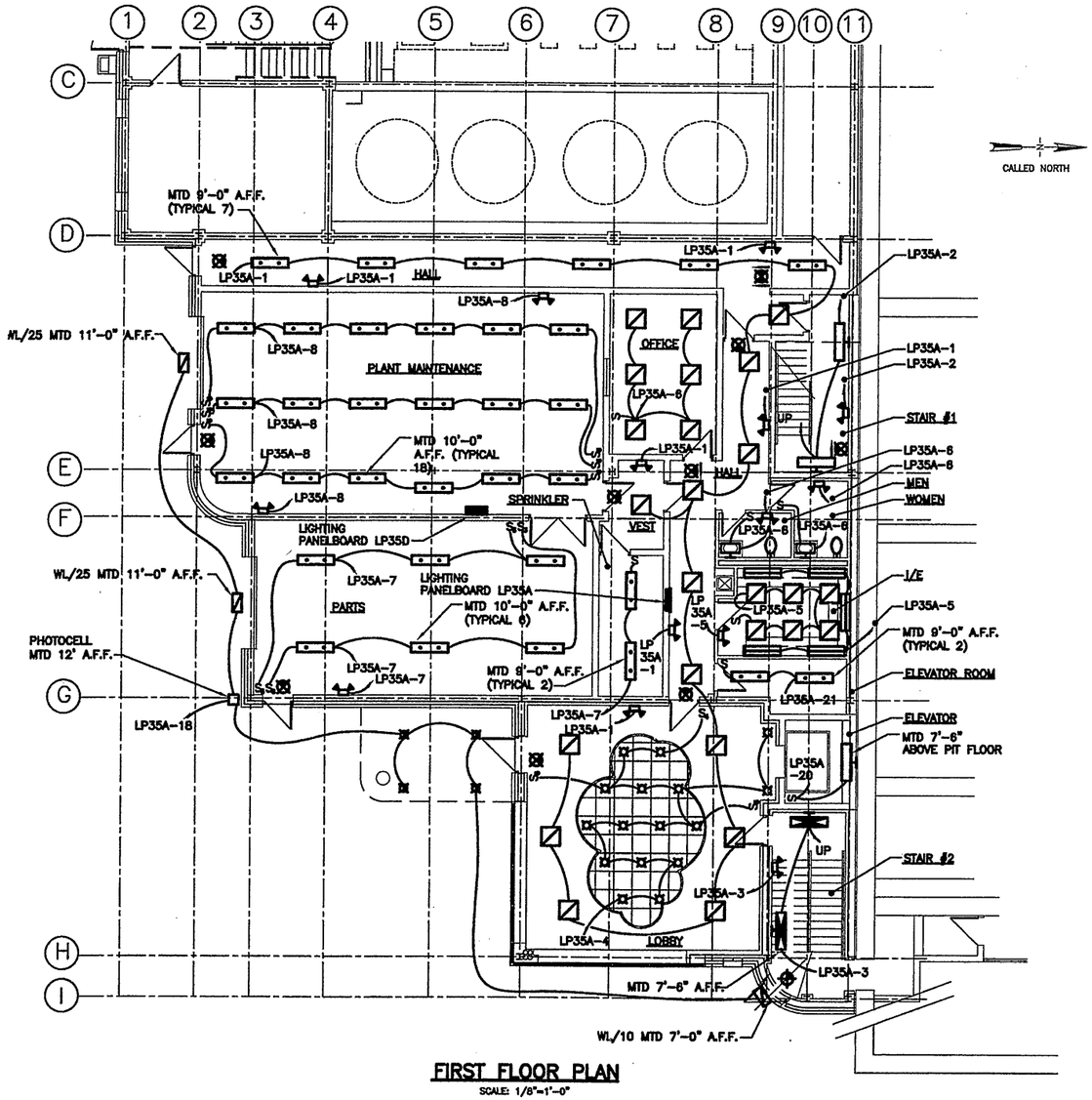

FIRST FLOOR PLAN

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

NOTES:

1. MEN AND WOMEN WALL MOUNTED FLUOURESCENT FIXTURES SHALL BE MOUNTED 6" ABOVE MIRRORS.
2. ELU'S SHALL BE MOUNTED 7'-6" ABOVE FINISHED FLOOR.
3. WALL MOUNTED EXIT SIGNS SHALL BE MOUNTED 8'-0" ABOVE FINISHED FLOOR
4. STAIR #1 & STAIR #2 WALL MOUNTED FLUORESCENT FIXTURES SHALL BE MOUNTED 7'-6" ABOVE FINISHED FLOOR.

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1/8"=1'-0" 8' 0 8' 16'

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
OPERATIONS CENTER
FIRST FLOOR LIGHTING PLAN
ELECTRICAL

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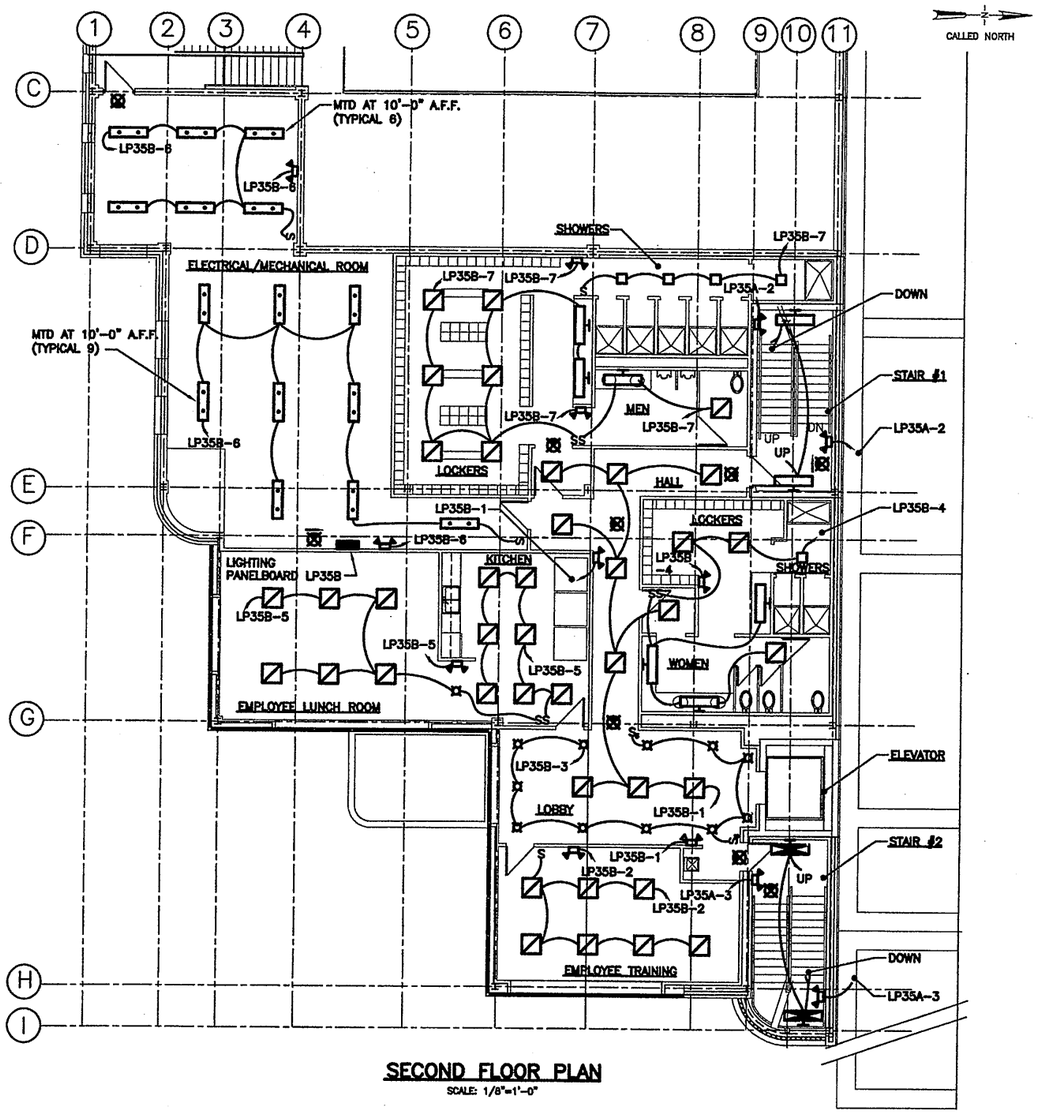
L.Campolieti

E-504



SECOND FLOOR PLAN

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

NOTES:

1. MEN AND WOMEN WALL MOUNTED FLUOURESCENT FIXTURES SHALL BE MOUNTED 6" ABOVE MIRRORS.
2. ELU'S SHALL BE MOUNTED 7'-6" ABOVE FINNISHED FLOOR.
3. WALL MOUNTED EXIT SIGNS SHALL BE MOUNTED 8'-0" ABOVE FINISHED FLOOR.
4. STAIR #1 & STAIR #2 WALL MOUNTED FLUORESCENT FIXTURES SHALL BE MOUNTED 7'-6" ABOVE FINISHED FLOOR.

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE: 10/21/05 PER: LKampbell

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0659x502
03/2/01 OBG DIV59 CRV
0659e505

1/8"=1'-0" 8' 0 8' 16'

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Designed by JJC
Drawn by CRV
Checked by WFH

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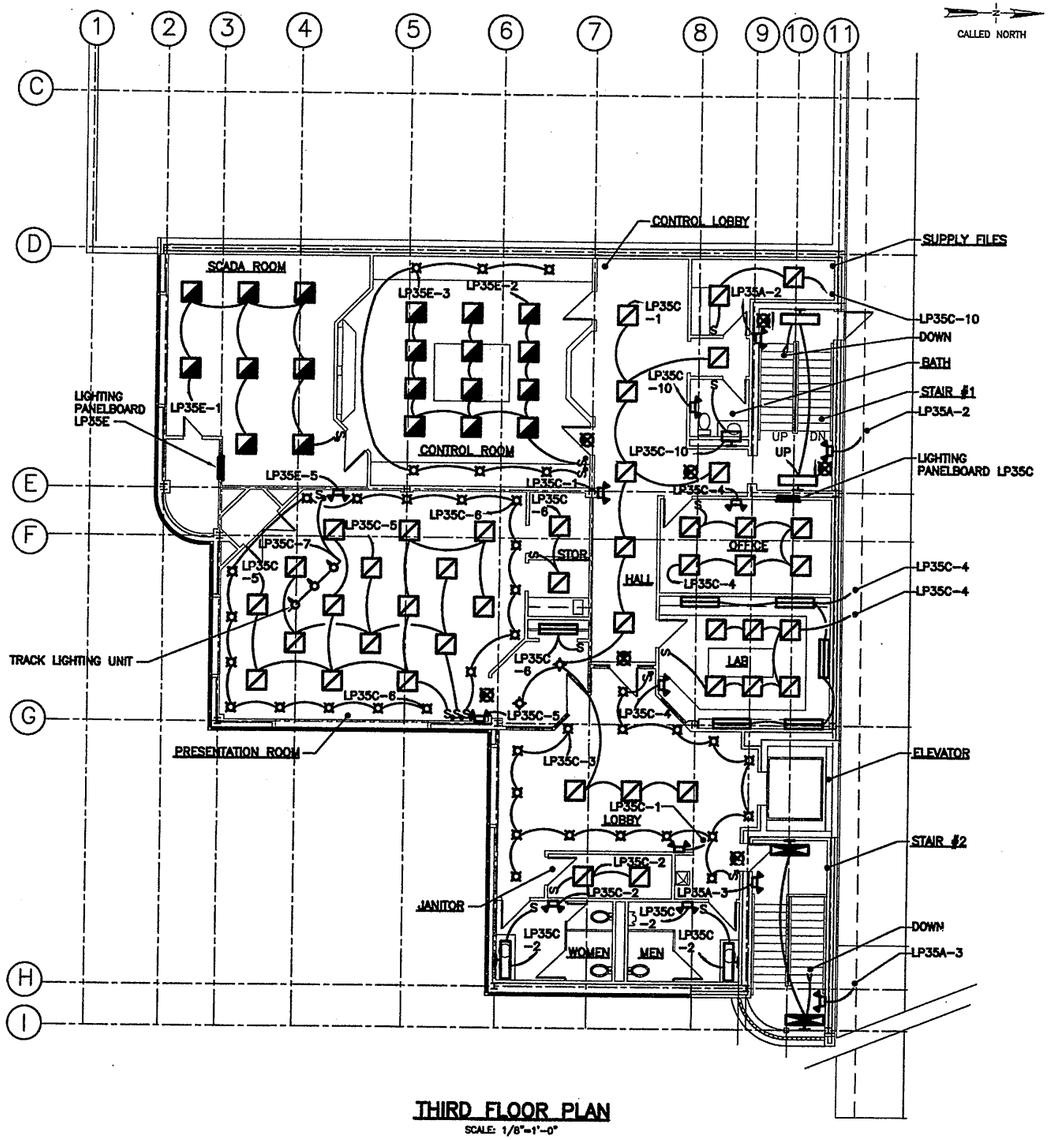
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
OPERATIONS CENTER
SECOND FLOOR LIGHTING PLAN
ELECTRICAL

STATE OF NEW YORK · LEONARD J. CAMPBELL · LICENSED PROFESSIONAL ENGINEER · No. 60756

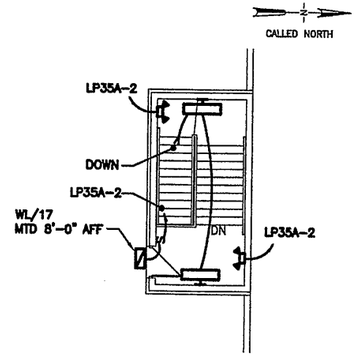
File Number 00659
Date APRIL 2001
LKampbell

E-505



THIRD FLOOR PLAN

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



STAIR #1 ROOF PLAN

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

NOTES:

1. MEN AND WOMEN WALL MOUNTED FLUOURESCENT FIXTURES SHALL BE MOUNTED 6" ABOVE MIRRORS.
2. ELU'S SHALL BE MOUNTED 7'-6" ABOVE FINNISHED FLOOR.
3. WALL MOUNTED EXIT SIGNS SHALL BE MOUNTED 8'-0" ABOVE FINISHED FLOOR
4. STAIR #1 & STAIR #2 WALL MOUNTED FLUORESCENT FIXTURES SHALL BE MOUNTED 7'-6" ABOVE FINISHED FLOOR.

RECORD DRAWING

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DATED 10/21/05 PER

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0659x503
03/23/01 OBG CRV
0659e506

1/8"=1'-0" 8' 0 8' 16'

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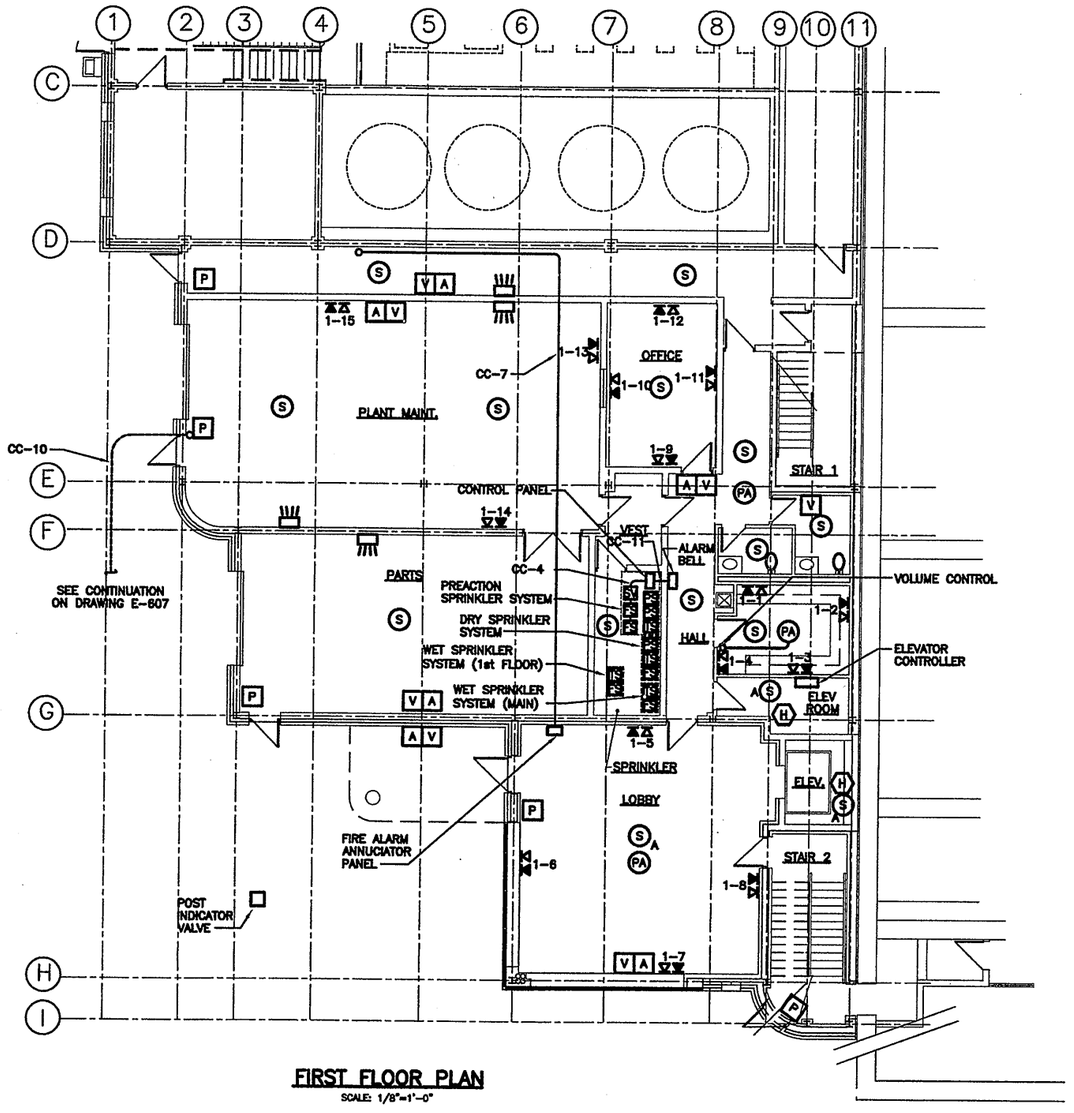
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
OPERATIONS CENTER
THIRD FLOOR
LIGHTING PLAN
ELECTRICAL

LEONARD J. CAMPOSECO — STATE OF NEW YORK — LICENSED PROFESSIONAL ENGINEER — No. 60755

File Number 00659
Date APRIL 2001

E-506

CALLED NORTH



FIRST FLOOR PLAN

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

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MINOR CHANGES IN AS-BUILT WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATED 10/31/05 PER L.D. Campbell

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0659x501
03/23/01 OBG CRV
0659e507

1/8"=1'-0" (8' 0 8' 16')

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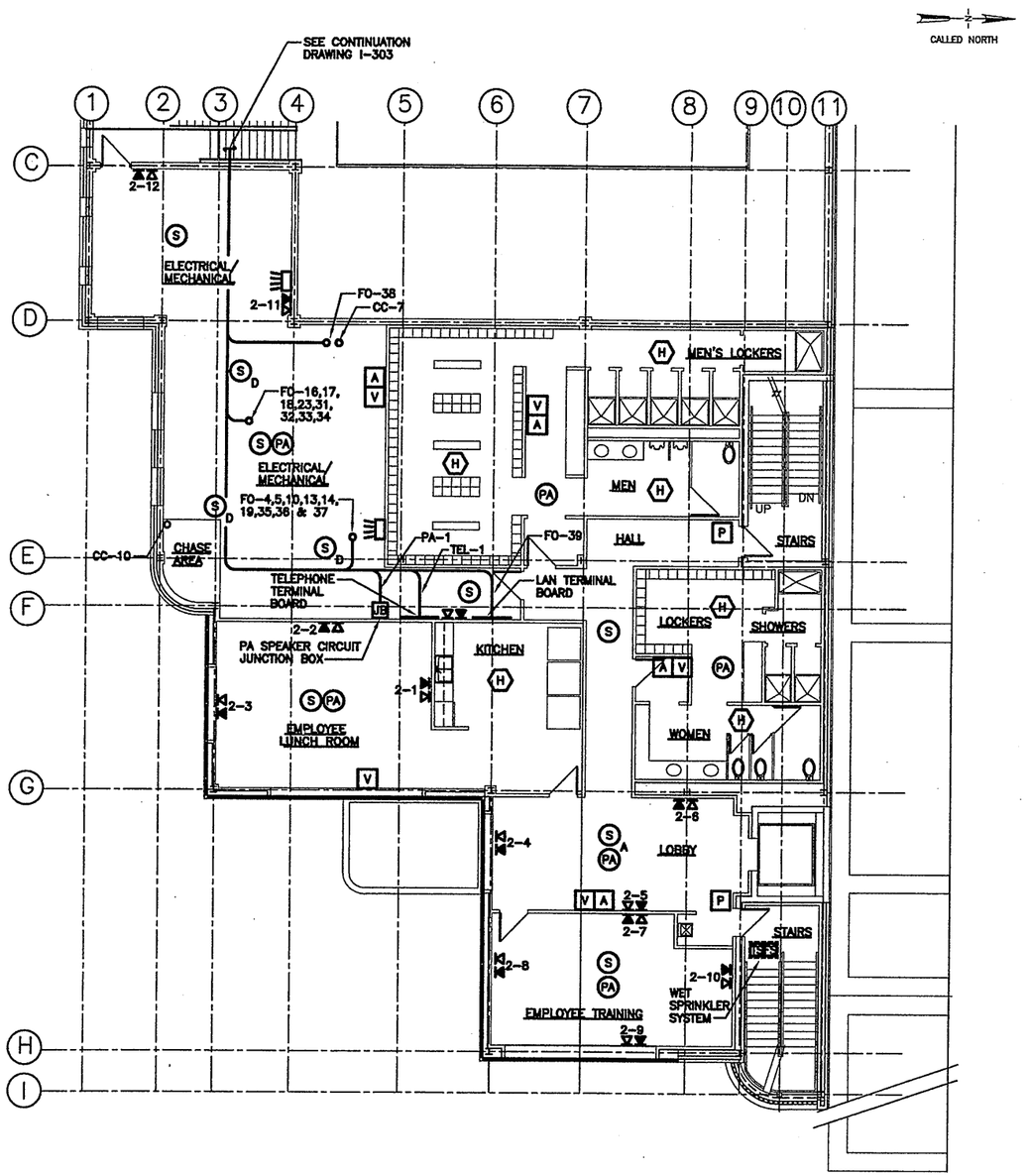
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
OPERATIONS CENTER
FIRST FLOOR MISCELLANEOUS SYSTEMS PLAN
ELECTRICAL

LICENSED PROFESSIONAL ENGINEER — STATE OF NEW YORK — LEONARD J. CAMPOLIETA — No. 60765

File Number 00659
Date APRIL 2001
L.D. Campbell

E-507



SECOND FLOOR PLAN

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

0659X502
03/23/01 OBG CRV
0659E508

1/8"=1'-0" 8' 0 8' 16'

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SYRACUSE, NEW YORK

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
OPERATIONS CENTER
SECOND FLOOR MISCELLANEOUS SYSTEMS PLAN
ELECTRICAL

RECORD DRAWING

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DATE: 10/21/05 PER: LAmpolert

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LICENSED PROFESSIONAL ENGINEER — STATE OF NEW YORK — LEONARD J. CAMPOLETA — No. 60765

File Number 00659
Date APRIL 2001
LAmpolert

E-508

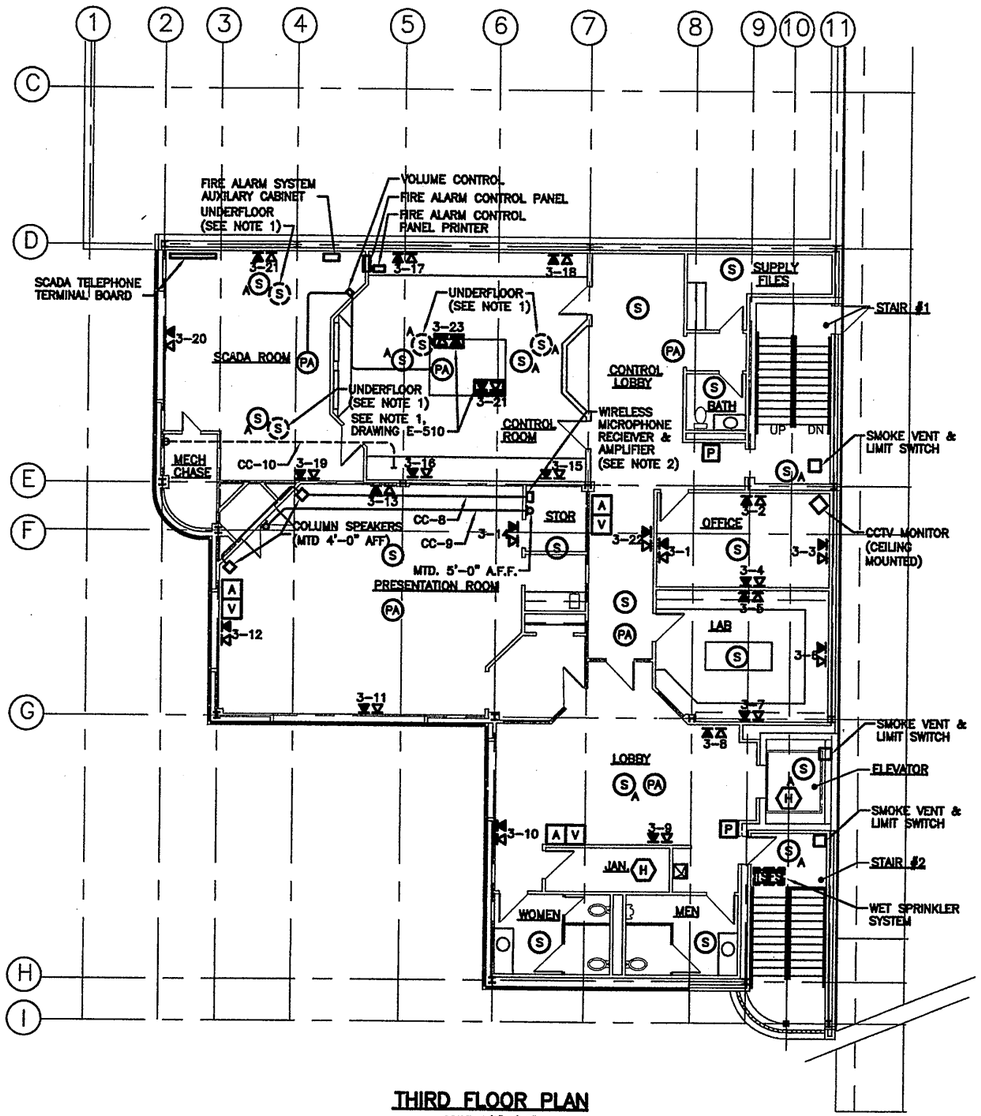
CALLED NORTH

NOTE:

1. SMOKE DETECTORS IN THE SCADA ROOM UNDERFLOOR SPACE AND CONTROL ROOM UNDERFLOOR SPACE SHALL BE MOUNTED INDEPENDENT OF THE RAISED FLOOR SYSTEM. PROVIDE MOUNTING BRACKETS AS NECESSARY TO FACILITATE INSTALLATION.

2. PROVIDE A 36" WIDE x 18" DEEP SHELF AND BRACKETS FOR MOUNTING WIRELESS MICROPHONE RECEIVER & AMPLIFIER. SHELF SHALL BE MOUNTED 5'-0" A.F.F.

3. IN THE CONTROL ROOM, PROVIDE 7 ADDITIONAL DATA OUTLETS ON THE WEST WALL AND SEVEN ADDITIONAL DATA OUTLETS ON THE EAST WALL. OUTLETS SHALL BE MOUNTED IN THE SURFACE METAL RACEWAY ON THOSE WALLS AND SHALL BE EQUALLY SPACED ON THE RACEWAY. PROVIDE HORIZONTAL CABLING FROM THE OUTLETS TO THE LAN TERMINAL BOARD LOCATED IN THE OPERATIONS CENTER ELECTRICAL/MECHANICAL ROOM.



THIRD FLOOR PLAN

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

RECORD DRAWING

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DATE 10/21/05 PER: LoRampulla

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0659x503
03/23/01 OBG CRV
0659e509

1/8"=1'-0" (8' 0 8' 16')

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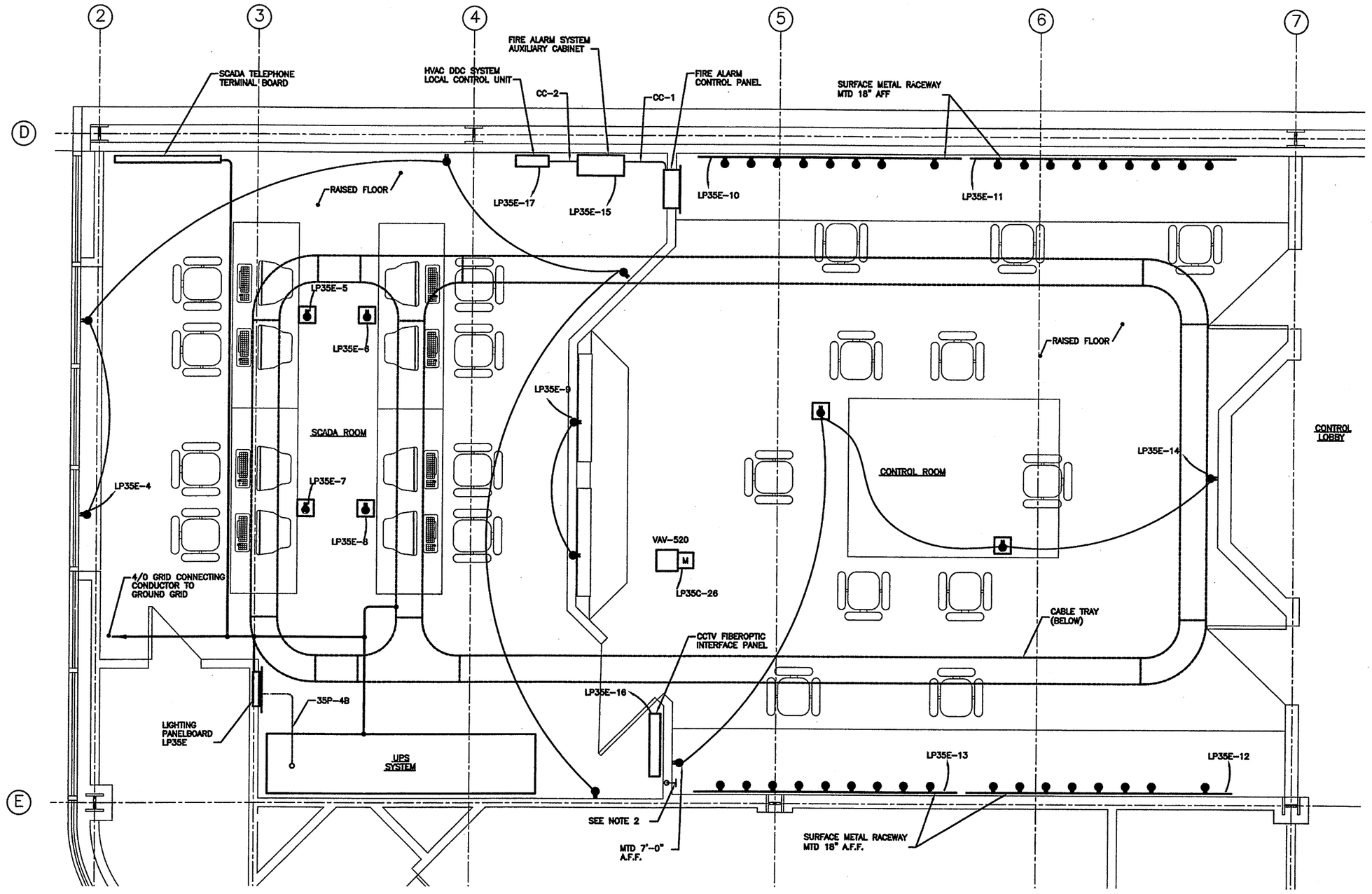
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
OPERATIONS CENTER
THIRD FLOOR MISCELLANEOUS SYSTEMS PLAN
ELECTRICAL

STATE OF NEW YORK • LEONARD J. CAMPOLETA • LICENSED PROFESSIONAL ENGINEER • No. 60755

File Number 00659
Date APRIL 2001
LoRampulla

E-509



NOTES:

1. FLOOR RECEPTACLES, FLOOR TELEPHONE OUTLETS AND FLOOR DATA OUTLETS IN THE SCADA ROOM AND CONTROL ROOM SHALL BE MOUNTED IN FLUSH MOUNTED SERVICE CENTERS FURNISHED WITH THE RAISED FLOOR SYSTEM. SEE DRAWING E-509 FOR TELEPHONE AND DATA OUTLET LOCATIONS.
2. PROVIDE 1" CONDUIT FROM UNDERFLOOR SPACE TO CONTROL ROOM WALL FOR CCTV MONITOR VIDEO CABLE. CONDUIT SHALL TERMINATE ON WALL 7'-0" ABOVE FINISHED FLOOR WITH OUTLET BOX, WALL PLATE AND CABLE BUSHING.
3. PROVIDE TWO 2" CONDUITS FROM CCTV FIBEROPTIC INTERFACE PANEL TO UNDERFLOOR SPACE (DIRECTLY BELOW PANEL) FOR ROUTING VIDEO & CONTROL CABLES.

SCADA ROOM/CONTROL ROOM PLAN

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

RECORD DRAWING

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DATE 10/21/05 PER: [signature]

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03/23/01 OBG CRV
0659e510

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

No.	Date	Revisions	Init
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1		AS BID	
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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
OPERATIONS CENTER

SCADA ROOM/CONTROL ROOM POWER PLAN

ELECTRICAL

STATE OF NEW YORK • LEONARD J. CAMPOLIETO • LICENSED PROFESSIONAL ENGINEER • No. 50795

File Number 00659
Date APRIL 2001
E-510

MCC 35 – OPERATIONS CENTER

PANEL NUMBER	EQUIPMENT IN MCC	CONDUIT NUMBER	EQUIPMENT REMOTE FROM MCC	CONDUIT SCHEDULE		
				CONDUIT NUMBER	CONDUCTOR QUANTITY \ SIZE	DIAMETER
1D	600 AT 600 AF	MF-35	MF-35 — 600AT 800AF — 480 VOLT 3 PHASE 60 HERTZ FROM UNIT SUBSTATION #1	MF-35	(6) 350 kcmil 2 PER ϕ 2-2/0 G	(2) 2½" C
1A	80 100 3P	35P-1	FURNISHED INSTALLED & CONNECTED BY CONTRACT NO. 4B; 80A, 3P (SEE NOTE 1) 35P-1 35C-1; FURNISHED INSTALLED & CONNECTED BY CONTRACT NO. 4A; 25 HP; 30A, 3P 15A (ONE POLE ONLY CONNECTED) LP35A-19; ELEVATOR CONTROLLER ELEVATOR	35P-1	3#3, 1 #8G	1"C
				35C-1	2#14	¾"C
1B	125 225 3P	35P-2	100AT 100AF — 35P-2B — LP35A; 75 KVA 480–208/120V; 35P-2C — LP35B; 100AT 100AF — 35P-2E — LP35C; 35P-2A; 35P-2D LIGHTING TRANSFORMER (ELECTRICAL/MECHANICAL)	35P-2	3#1, 1 #6G	1 ¼"C
				35P-2A	4#1, 1 #8G	1 ½"C
				35P-2B	4#1, 1 #8G	1 ½"C
				35P-2C	4#1, 1 #8G	1 ½"C
				35P-2D	4#1, 1 #8G	1 ½"C
				35P-2E	4#1, 1 #8G	1 ½"C
1AR	45 100 3P	35P-3	35P-3 — 30 KVA 480–208/120V — 35P-3A — LP-35D LIGHTING TRANSFORMER (PLANT MAINTENANCE)	35P-3	3#6, 1 #10G	¾"C
				35P-3A	4#1, 1 #8G	1 ½"C
2FL	70 100 3P	35P-4	35P-4 — 35P-4A — 150AT 225AF — 35P-4B — 30 KVA UPS — 35P-4C — LP-35E; 45 KVA 480–208/120V UPS (SCADA ROOM)	35P-4	3#4, 1 #8G	1"C
				35P-4A	4 1/0, 1 #6G	1 ½"C
				35P-4B	4 1/0, 1 #6G	1 ½"C
				35P-4C	4 #1, 1 #8G	1 ½"C

NOTES:
1. ELEVATOR 80A 3P CIRCUIT BREAKER SHALL HAVE A SHUNT TRIP.

MCC 35 – OPERATIONS CENTER (CONTINUED)

PANEL NUMBER	EQUIPMENT IN MCC	CONDUIT NUMBER	EQUIPMENT REMOTE FROM MCC	CONDUIT SCHEDULE		
				CONDUIT NUMBER	CONDUCTOR QUANTITY \ SIZE	DIAMETER
1CL	40 100 3P	35P-5	35P-5 LINE REACTOR — 35P-5A — VFD — 35P-5B 60A, 3P — 35P-5C 20 HP; ACC01A; ACC01B; 35C-5 SL; S D; 35C-5A; ACC03A; ACC03B; HVAC DDC SYSTEM LOCAL CONTROL UNIT; TO F-502 VFD (BELOW) AHU-501	35P-5	3#8, 1 #10G	¾"C
				35P-5A	3#8, 1 #10G	¾"C
				35P-5B	3#8, 1 #10G	¾"C
				35P-5C	3#8, 1 #10G	¾"C
				35C-5	4#14	¾"C
		ACC02A		35C-5A	2#14	¾"C
				ACC01A	2#14	¾"C
				ACC01B	1#16 TPS	¾"C
				ACC02A	22#14 (INCLUDES SPARES)	¾"C
2A	15 100 3P; SIZE 1; CPT; HOA	35PC-6	35PC-6 JB — 35P-6 30A, 3P — 35P-6A 1½ HP; 35C-6 SL; S D; 35C-6A AHU-502	35PC-6	3#12, 1#12G 4#14	¾"C
				35P-6	3#12, 1 #12G	¾"C
				35P-6A	3#12, 1 #12G	¾"C
				35C-6	4#14	¾"C
				35C-6A	2#14	¾"C
2B	15 100 3P; SIZE 1; CPT; HOA	35PC-7	35PC-7 JB — 35P-7 30A, 3P — 35P-7A ½ HP; 35C-7 SL; DM; 35P-7A EXHAUST FAN F-501	35PC-7	3#12, 1#12G 4#14	¾"C
				35P-7	3#12, 1 #12G	¾"C
				35P-7A	3#12, 1 #12G	¾"C
				35C-7	4#14	¾"C
				35C-7A	2#14	¾"C
1CR	30 100 3P	35P-8	35P-8 LINE REACTOR — 35P-8A — VFD — 35P-8B 60A, 3P — 35P-8C 10 HP; ACC03A; ACC03B; 35C-8 SL; S D; 35P-8A; FROM HVAC DDC SYSTEM LOCAL CONTROL UNIT (ABOVE) EXHAUST FAN F-502	35P-8	3#10, 1 #10G	¾"C
				35P-8A	3#12, 1 #12G	¾"C
				35P-8B	3#12, 1 #12G	¾"C
				35P-8C	3#12, 1 #12G	¾"C
				35C-8	4#14	¾"C
				35C-8A	2#14	¾"C
				ACC03A	2#14	¾"C
				ACC03B	1#16 TPS	¾"C
2C	15 100 3P; SIZE 1; CPT; HOA	35PC-9	35PC-9 JB — 35P-9 30A, 3P — 35PC-9A ¾ HP; 35C-9 SL; DM; 35C-9A	35PC-9	3#12, 1#12G 4#14	¾"C
				35P-9	3#12, 1 #12G	¾"C
				35P-9A	3#12, 1 #12G	¾"C
				35C-9	4#14	¾"C
				35C-9A	2#14	¾"C
		35C-9B	35C-9B — 35C-9C — 35C-9D COOLING THERMOSTAT; DM LV-501B; DM LV-502B EXHAUST FAN F-508	35C-9B	4#14	¾"C
				35C-9C	4#14	¾"C
				35C-9D	2#14	¾"C

RECORD DRAWING

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DATE: 10/31/05 PER: L.D. Campbell

03/23/01 OBG CRV
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Designed by JJC
Drawn by CRV
Checked by WFH

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
OPERATIONS CENTER
MCC 35 ONE-LINE DIAGRAM
ELECTRICAL

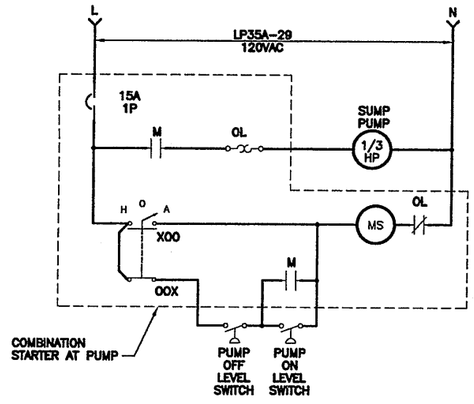
File Number 00659
Date APRIL 2001
L.D. Campbell
E-511

MCC 35 – OPERATIONS CENTER (CONTINUED)

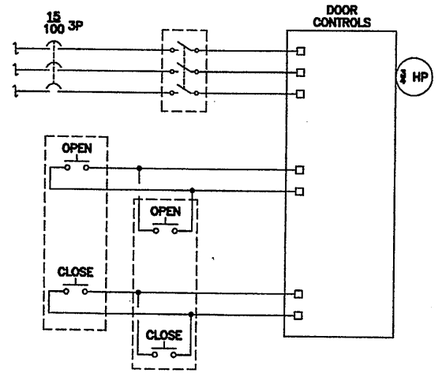
PANEL NUMBER	EQUIPMENT IN MCC	CONDUIT NUMBER	EQUIPMENT REMOTE FROM MCC	CONDUIT SCHEDULE		
				CONDUIT NUMBER	CONDUCTOR QUANTITY \ SIZE	DIAMETER
2D	15 100 3P, SIZE 1, CPT, HOA, ®	35PC-10	35PC-10, JB, 35C-10, SL, 35P-10, 30A 3P, 35P-10A, ¾ HP HOT WATER/GLYCOL PUMP P-504	35PC-10 35P-10 35P-10A 35C-10	3#12, 1#12G 2#14 3#12, 1#12G 3#12, 1#12G 2#14	¾"C ¾"C ¾"C ¾"C
2E	15 100 3P, SIZE 1, CPT, HOA, ®	35PC-11	35PC-11, JB, 35C-11, SL, 35P-11, 30A 3P, 35P-11A, ¾ HP HOT WATER/GLYCOL PUMP P-505	35PC-11 35P-11 35P-11A 35C-11	3#12, 1#12G 2#14 3#12, 1#12G 3#12, 1#12G 2#14	¾"C ¾"C ¾"C ¾"C
3A	25 100 3P, SIZE 1, CPT, HOA, ®	35PC-12	35PC-12, JB, 35C-12, SL, 35P-12, 30A 3P, 35P-12A, 10 HP CHILLED WATER/GLYCOL PUMP P-506	35PC-12 35P-12 35P-12A 35C-12	3#12, 1#12G 2#14 3#12, 1#12G 3#12, 1#12G 2#14	¾"C ¾"C ¾"C ¾"C
3B	25 100 3P, SIZE 1, CPT, HOA, ®	35PC-13	35PC-13, JB, 35C-11, SL, 35P-13, 30A 3P, 35P-13A, 10 HP CHILLED WATER/GLYCOL PUMP P-507	35PC-13 35P-13 35P-13A 35C-13	3#12, 1#12G 2#14 3#12, 1#12G 3#12, 1#12G 2#14	¾"C ¾"C ¾"C ¾"C
3C	150 225 3P	35P-14	35P-14, 100A 3P, 90A, 35P-14A, CHILLER CONTROL PANEL CHILLER CH-501	35P-14 35P-14A	3 1/0, 1#6G 3 1/0, 1#6G	1 ½"C 1 ½"C
3DL	15 100 3P	35P-15	35P-15, 30A 3P, 35P-15A, DOOR CONTROLS, ¾ HP, OPEN/CLOSE, 35C-15, 35C-15A PLANT MAINTENANCE DOOR OPERATOR	35P-15 35P-15A 35C-15 35C-15A	3#12, 1#12G 3#12, 1#12G 4#14 4#14	¾"C ¾"C ¾"C ¾"C
3E 4A 4B 4C 4D 4E	15 100 3P, SIZE 1, CPT, HOA, ®		SPARE			

MCC–35 OPERATIONS CENTER (CONTINUED)

PANEL NUMBER	EQUIPMENT IN MCC	CONDUIT NUMBER	EQUIPMENT REMOTE FROM MCC	CONDUIT SCHEDULE		
				CONDUIT NUMBER	CONDUCTOR QUANTITY \ SIZE	DIAMETER
3DR	15 100 3P	35P-16	35P-16, 30A 3P, 35P-16A, DOOR CONTROLS, ¾ HP, OPEN/CLOSE, 35C-16, 35C-16A PARTS DOOR OPERATOR	35P-16 35P-16A 35C-16 35C-16A	3#12, 1#12G 3#12, 1#12G 4#14 4#14	¾"C ¾"C ¾"C ¾"C
3FL 3FR 4FL 4FR	20 100 3P		SPARE			
2FR	20 100 3P	35P-17	35P-17, 30A 3P, 35P-17A, PUMP CONTROLS, 3, 3, CONDENSATE PUMPS	35P-17 35P-17A	3#12, 1#12G 3#12, 1#12G	¾"C ¾"C



SUMP PUMP



PLANT MAINTENANCE DOOR OPERATOR
(TYPICAL PARTS DOOR OPERATOR)

RECORD DRAWING

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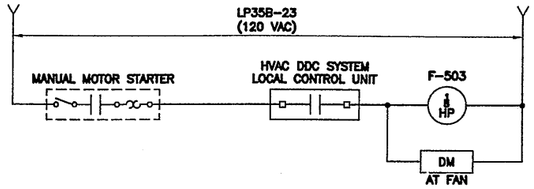
Designed by JJC
Drawn by CRV
Checked by WFH

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
OPERATIONS CENTER
MCC 35
ONE–LINE DIAGRAM
ELECTRICAL

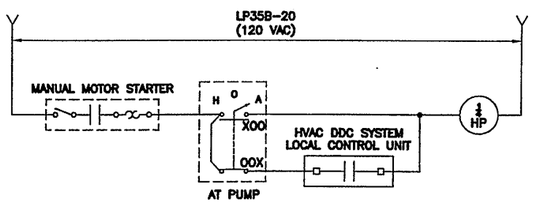
STATE OF NEW YORK · LEONARD J. CANDELORA · No. 60765 · LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
E-512



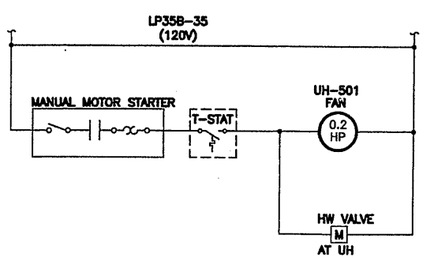
F-503
NOT TO SCALE

TYPICAL: F-504 WITH LP35B-24 AND ½ HP MOTOR
F-505 WITH LP35B-25 AND ¾ HP MOTOR
F-506 WITH LP35B-26 AND 1 HP MOTOR
F-507 WITH LP35B-27 AND 1½ HP MOTOR
F-509 WITH LP35C-23 AND 2½ HP MOTOR



P-501
NOT TO SCALE

TYPICAL: P-502 WITH LP35B-21
P-503 WITH LP35B-22



SEE MCC O&M MANUAL FOR
EQUIPMENT ELEMENTARY DIAGRAMS

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DATE: 10/26/05 PER: L.Rampolla

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
OPERATIONS CENTER
ELEMENTARY DIAGRAMS
ELECTRICAL

LICENSED PROFESSIONAL ENGINEER · LEONARD J. CAMPOLITA · No. 60765 · STATE OF NEW YORK

File Number 00659
Date APRIL 2001
L.Rampolita

E-513

CIRCUIT BREAKER PANELBOARD LP35A SCHEDULE

LOCATION:		OPERATIONS CENTER – FIRST FLOOR–HALL						FEED FROM		MCC 35, 1B		
MAIN BUS RATING:		225	AMPERES					208/120 VOLTS		3 PHASE, 4 WIRE		
MINIMUM SHORTCIRCUIT:		10,000	AMPERES					FEEDER CABLE		4 #1, 1 #8 GRD		
MAIN BREAKER TRIP:		100	AMPERES					FLUSH MTD				
ESTIMATED CONNECTED LOAD:		20.058	KVA									
		CB AMPS/	LOAD					LOAD	CB AMPS/			
CKT NO.	DESCRIPTION	POLES	TYPE	KVA	PH–A	PH–B	PH–C	KVA	TYPE	POLES	DESCRIPTION	CKT NO.
1	LOBBY, VEST, HALL LIGHTS	20/1P	LIGHTS	1.330	1.990			0.660	LIGHTS	20/1P	STAIR #1 LIGHTS	2
3	STAIR #2 LIGHTS	20/1P	LIGHTS	0.420		1.260		0.840	LIGHTS	20/1P	LOBBY LIGHTS	4
5	I/E LIGHTS	20/1P	LIGHTS	0.490			0.980	0.490	LIGHTS	20/1P	MEN,WOMEN,OFF. LIGHTS	6
7	PARTS, SPRINKLER LIGHTS	20/1P	LIGHTS	0.560	1.820			1.260	LIGHTS	20/1P	PLANT MAINT. LIGHTS	8
9	LOBBY RECPTS	20/1P	RECPTS	0.540		1.260		0.720	RECPTS	20/1P	LOBBY,STAIR #2 RECPTS	10
11	I/E RECPTS	20/1P	RECPTS	0.900			1.440	0.540	RECPTS	20/1P	I/E RECPTS	12
13	I/E RECPTS	20/1P	RECPTS	0.360	1.620			1.260	RECPTS	20/1P	HALL, MEN, WOMEN, STAIR #1 RECPT	14
15	PARTS, SPRINKLER RECPTS	20/1P	RECPTS	1.080		1.800		0.720	RECPTS	20/1P	OFFICE RECPTS	16
17	PREA. SPKR SYS. CONT. PANEL	20/1P	CONTROLS	0.100			0.950	0.850	LIGHTS	20/1P	EXTERIOR LIGHTS	18
19	ELEVATOR CONTROLLER	20/1P	CONTROLS	0.500	0.750			0.250	LT/RECPT	20/1P	ELEV. LIGHT/RECPT	20
21	ELEV. RM. LIGHTS/RECPT	20/1P	LTS/RECPT	0.320		1.496		1.176	MOTOR	20/1P		22
23	VAV–501	20/1P	MTR/CNTLS	0.864			2.040	1.176	MOTOR	20/1P	AIR COMPRESSOR	24
25	VAV–508	20/1P	MTR/CNTLS	0.300	0.800			0.500		20/1P	VAV 502	26
27	I/E RECPTS	20/1P	RECPTS	0.360		0.888		0.528	MOTOR	20/1P	WATER COOLER RECEPT	28
29	SUMP PUMP ALARM	20/1P	MOTOR	0.864			0.964	0.100	CONTROLS	20/1P	SUMP ALARM	30
31	SUMP PUMP	20/1P			0.000					20/1P	SPARE	32
33	SPARE	20/1P				0.000				20/1P	SPARE	34
35	SPARE	20/1P					0.000			20/1P	SPARE	36
37	SPARE	20/1P								20/1P	SPARE	38
39	SPARE	20/1P								20/1P	SPARE	40
41	SPARE	20/1P								20/1P	SPARE	42
	LOAD SUMMARY			8.988	6.980	6.704	6.374	11.070				

NOTE:

1. ALL CONDUCTORS TO BE 2 #12, 1 #12G IN 3/4 INCH CONDUIT UNLESS OTHERWISE INDICATED.

CIRCUIT BREAKER PANELBOARD LP35B SCHEDULE

LOCATION:		OPERATIONS CENTER – SECOND FLOOR–ELEC/MECH ROOM						FEED FROM		MCC 35, 1B		
MAIN BUS RATING:		225	AMPERES					208/120 VOLTS		3 PHASE, 4 WIRE		
MINIMUM SHORTCIRCUIT:		10,000	AMPERES					FEEDER CABLE		4 #1, 1 #8 GRD		
MAIN BREAKER TRIP:		100	AMPERES					SURFACE MTD				
ESTIMATED CONNECTED LOAD:		19.886	KVA									
		CB AMPS/	LOAD					LOAD	CB AMPS/			
CKT NO.	DESCRIPTION	POLES	TYPE	KVA	PH–A	PH–B	PH–C	KVA	TYPE	POLES	DESCRIPTION	CKT NO.
1	LOBBY, HALL LIGHTS	20/1P	LIGHTS	0.630	1.120			0.490	LIGHTS	20/1P	EMP. TRAINING LIGHTS	2
3	LOBBY LIGHTS	20/1P	LIGHTS	0.660		1.140		0.480	LIGHTS	20/1P	WOMEN LKR, SHWR. LIGHTS	4
5	EMP LUNCH RM, KIT. LIGHTS	20/1P	LIGHTS	0.870			1.920	1.050	LIGHTS	20/1P	ELEC/MECH. RM LIGHTS	6
7	MEN LKR, SHWR LIGHTS	20/1P	LIGHTS	0.940	1.660			0.720	RECPTS	20/1P	EMP. TRAINING RECEPTS	8
9	LOBBY, STAIR #2 RECPTS	20/1P	RECPTS	0.900		1.620		0.720	RECPTS	20/1P	WOMEN, HALL RECEPT	10
11	KITCHEN RECPTS	20/1P	RECPTS	0.540			0.720	0.180	RECPTS	20/1P	KIT. REFRIG. RECPT	12
13	KITCHEN VENDING RECPT	20/1P	RECPTS	0.180	0.360			0.180	RECPTS	20/1P	KIT. VENDING RECPT	14
15	KITCHEN VENDING RECPT	20/1P	RECPTS	0.180		0.900		0.720	RECPTS	20/1P	EMP. LUNCH RM. RECPTS	16
17	ELEC./MECH. RECPTS	20/1P	RECPTS	0.720			1.260	0.540	RECPTS	20/1P	ELEC/MECH RECEPTS	18
19	MEN, STAIR #1 RECPTS	20/1P	RECPTS	0.720	1.416			0.696	MOTOR	20/1P	P–501	20
21	P–502	20/1P	MOTOR	0.696		1.392		0.696	MOTOR	20/1P	P–503	22
23	F–503	20/1P	MOTOR	0.140			0.240	0.100	MOTOR	20/1P	F–504	24
25	F–505	20/1P	MOTOR	0.696	0.836			0.140	MOTOR	20/1P	F–506	26
27	F–507	20/1P	MOTOR	0.130		0.994		0.864	MTR/CONTRLS	20/1P	VAV–509	28
29	VAV–510	20/1P	MTR/CNTLS	0.300			1.956	1.656	MTR/CONTRLS	25/1P	VAV–512A	30
31	LOCAL CONTROL UNIT	20/1P	CONTROLS	0.500	1.028			0.528	MOTOR	20/1P	WATER COOLER RECEPT	32
33	HW CIRC PUMP	20/1P	MOTOR	0.528		0.628		0.100	CONTROLS	20/1P	LOCAL CONTROL UNIT	34
35	UH–501	20/1P	MOTOR	0.696			0.696			20/1P		36
37	VAV 512B	20/1P							CONTROL	20/1P	HX–501	38
39	COOKTOP	40/2P								20/1P		40
41										20/1P	SPARE	42
	LOAD SUMMARY			10.026	6.420	6.674	6.792	9.880				

NOTE:

1. ALL CONDUCTORS TO BE 2 #12, 1 #12G IN 3/4 INCH CONDUIT EXCEPT CKT. NO. 30. CKT NO. 30 SHALL BE 2#10, 1#10G IN 3/4 INCH CONDUIT.

CIRCUIT BREAKER PANELBOARD LP35C SCHEDULE

LOCATION:		OPERATIONS CENTER – THIRD FLOOR–OFFICE						FEED FROM		MCC 35, 1B		
MAIN BUS RATING:		225	AMPERES					208/120 VOLTS		3 PHASE, 4 WIRE		
MINIMUM SHORTCIRCUIT:		10,000	AMPERES					FEEDER CABLE		4 #1, 1 #8 GRD		
MAIN BREAKER TRIP:		100	AMPERES					FLUSH MTD				
ESTIMATED CONNECTED LOAD:		20.947	KVA									
		CB AMPS/	LOAD					LOAD	CB AMPS/			
CKT NO.	DESCRIPTION	POLES	TYPE	KVA	PH–A	PH–B	PH–C	KVA	TYPE	POLES	DESCRIPTION	CKT NO.
1	LOBBY,HALL,CONT. LOBBY LIGHTS	20/1P	LIGHTS	0.680	0.820			0.140	LIGHTS	20/1P	MEN, WOMEN LIGHTS	2
3	LOBBY LIGHTS	20/1P	LIGHTS	1.100		2.115		1.015	LIGHTS	20/1P	LAB, OFFICE LIGHTS	4
5	PRESENTATION RM LIGHTS	20/1P	LIGHTS	1.120			2.255	1.135	LIGHTS	20/1P	PRES. RM., STORAGE LIGHTS	6
7	PRES. RM TRACK LIGHTING	20/1P	LIGHTS	0.750	1.290			0.540	RECPTS	20/1P	STORAGE RECPTS	8
9	PRESENTATION RM RECPTS	20/1P	RECPTS	0.540		0.785		0.245	LIGHTS	20/1P	SUP. FILES, BATH LIGHTS	10
11	MEN, WOMEN, STAIR #2 RECPTS	20/1P	RECPTS	0.540			1.440	0.900	RECPTS	20/1P	LOBBY RECPTS	12
13	WATER COOLER RECPT	20/1P	RECPTS	0.528	1.428			0.900	RECPTS	20/1P	LAB RECPTS	14
15	FUME HOOD	20/1P	RECPTS	0.540		1.440		0.900	RECPTS	20/1P	LAB RECPTS	16
17	PRESENTATION RM. RECPTS	20/1P	RECPTS	1.080			1.620	0.540	RECPTS	20/1P	STOR., HALL, CONT., LOBBY RECPT	18
19	SUP. FILES, BATH, STAIR #1 RECPTS	20/1P	RECPTS	0.900	1.440			0.540	RECPTS	20/1P	OFFICE RECPTS	20
21	OFFICE RECPTS	20/1P	RECPTS	0.720		0.770		0.050	CONTROLS	20/1P	KEY BOX	22
23	F–509	20/1P	MOTOR	0.076			0.772	0.696	MTR/CONTRLS	20/1P	VAV–515	24
25	SPARE	25/1P	MTR/CNTRLS	1.656	2.352			0.696	MTR/CONTRLS	20/1P	VAV–520	26
27	VAV 514, 516, 517, 519, 521	20/1P		0.500		1.460		0.960	MISC	20/1P	UNIT KITCHEN	28
29	UNIT KITCHEN	20/1P	MISC.	0.960			0.960			20/1P	VAV 518A	30
31	VAV 518B	20/1P			0.000					20/1P	SCREEN	32
33	SPARE	20/1P				0.000				20/1P	REFRIGERATOR	34
35	SPARE	20/1P					0.000			20/1P	HOT WATER HEATER	36
37	SPARE	20/1P								20/1P	MICROWAVE	38
39	TIME CLOCK	20/1P								20/1P	SPARE	40
41	SPARE	20/1P								20/1P	SPARE	42
	LOAD SUMMARY			11.690	7.330	6.570	7.047	9.257				

NOTE:

1. ALL CONDUCTORS TO BE 2 #12, 1 #12G IN 3/4 INCH CONDUIT EXCEPT CKT. NO. 25. CKT NO. 25 SHALL BE 2#10, 1#10G IN 3/4 INCH CONDUIT.

CIRCUIT BREAKER PANELBOARD LP35D SCHEDULE

LOCATION:		OPERATIONS CENTER – FIRST FLOOR–PLANT MAINTENANCE						FEED FROM		MCC 35, 1 AR		
MAIN BUS RATING:		225	AMPERES					208/120 VOLTS		3 PHASE, 4 WIRE		
MINIMUM SHORTCIRCUIT:		10,000	AMPERES					FEEDER CABLE		4 #1, 1 #8 GRD		
MAIN BREAKER TRIP:		100	AMPERES					SURFACE MTD				
ESTIMATED CONNECTED LOAD:		2.160	KVA									
		CB AMPS/	LOAD					LOAD	CB AMPS/			
CKT NO.	DESCRIPTION	POLES	TYPE	KVA	PH–A	PH–B	PH–C	KVA	TYPE	POLES	DESCRIPTION	CKT NO.
1	RECPTS	20/1P	RECPTS	0.360	0.720			0.360	RECPTS	20/1P	RECPTS	2
3	RECPTS	20/1P	RECPTS	0.360		0.720		0.360	RECPTS	20/1P	RECPTS	4
5	RECPTS	20/1P	RECPTS	0.360			0.720	0.360	RECPTS	20/1P	RECPTS	6
7	O.H. DOOR ALARM	20/1P			0.000					20/1P	SPARE	8
9	SPARE	20/1P				0.000				20/1P	SPARE	10
11	SPARE	20/1P					0.000			20/1P	SPARE	12
13	SPACE				0.000						SPACE	14
15	SPACE					0.000					SPACE	16
17	SPACE						0.000				SPACE	18
19	SPACE				0.000						SPACE	20
21	SPACE					0.000					SPACE	22
23	SPACE						0.000				SPACE	24
25	SPACE				0.000						SPACE	26
27	SPACE					0.000					SPACE	28
29	SPACE						0.000				SPACE	30
31	SPACE				0.000						SPACE	32
33	SPACE					0.000					SPACE	34
35	SPACE						0.000				SPACE	36
37	SPACE										SPACE	38
39	SPACE										SPACE	40
41	SPACE										SPACE	42
	LOAD SUMMARY			1.080	0.720	0.720	0.720	1.080				

NOTE:

1. ALL CONDUCTORS TO BE 2 #12, 1 #12G IN 3/4 INCH CONDUIT UNLESS OTHERWISE INDICATED.

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

OPERATIONS CENTER SCHEDULES

ELECTRICAL

STATE OF NEW YORK • LEONARD J. CAMPOSETA • No. 50756 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
L.Rampsket

E–514

CIRCUIT BREAKER PANELBOARD LP35E SCHEDULE

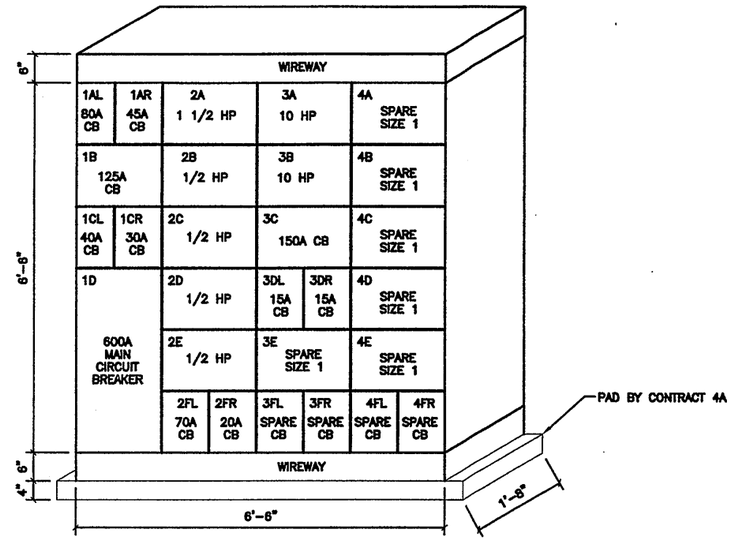
LOCATION:		OPERATIONS CENTER – THIRD FLOOR SCADA ROOM						FEED FROM		MCC 35, 2FL	
MAIN BUS RATING:		225	AMPERES					208/120 VOLTS		3 PHASE, 4 WIRE	
MINIMUM SHORTCIRCUIT:		10,000	AMPERES					FEEDER CABLE		4 #1, 1 #8 GRD	
MAIN BREAKER TRIP:		100	AMPERES					FLUSH MTD			
ESTIMATED CONNECTED LOAD:		9.380	KVA								
		CB AMPS/	LOAD					LOAD	CB AMPS/		
CKT NO.	DESCRIPTION	POLES	TYPE	KVA	PH-A	PH-B	PH-C	KVA	TYPE	POLES	DESCRIPTION	CKT NO.
1	SCADA RM LIGHTS	20/1P	LIGHTS	0.560	1.400			0.840	LIGHTS	20/1P	CONTROL RM LIGHTS	2
3	CONTROL RM LIGHTS	20/1P	LIGHTS	0.360		1.260		0.900	RECPTS	20/1P	SCADA RM RECPTS	4
5	SCADA RM FLR RECPT	20/1P	RECPT	0.180			0.360	0.180	RECPT	20/1P	SCADA RM FLR RECPT	6
7	SCADA RM FLR RECPT	20/1P	RECPT	0.180	0.360			0.180	RECPT	20/1P	SCADA RM FLR RECPT	8
9	SCADA RM RECPTS	20/1P	RECPTS	0.360		1.260		0.900	RECPTS	20/1P	CONTROL RM RECPTS	10
11	CONTROL RM RECPTS	20/1P	RECPTS	0.900			1.800	0.900	RECPTS	20/1P	CONTROL RM RECPTS	12
13	CONTROL RM RECPTS	20/1P	RECPTS	0.900	1.620			0.720	RECPTS	20/1P	CONTROL RM FLR. RECPTS	14
15	FIRE ALARM CONTROL PANEL	20/1P	CONTROLS	0.720		0.820		0.100	CONTROLS	20/1P	CCTV F.O. INTERFACE PANEL	16
17	LOCAL CONTROL UNIT	20/1P	CONTROLS	0.500			0.000			20/1P	DDC CONTROLLER	18
19	SPARE	20/1P			0.000					20/1P	SPARE	20
21	SPARE	20/1P				0.000				20/1P	SPARE	22
23	SPARE	20/1P					0.000			20/1P	SPARE	24
25	SPARE	20/1P			0.000					20/1P	SPARE	26
27	SPARE	20/1P				0.00				20/1P	SPARE	28
29	SPARE	20/1P					0.00			20/1P	SPARE	30
31	SPACE				0.00						SPACE	32
33	SPACE					0.000					SPACE	34
35	SPACE						0.000				SPACE	36
37	SPACE										SPACE	38
39	SPACE										SPACE	40
41	SPACE										SPACE	42
	LOAD SUMMARY			4.660	3.38	3.340	2.16	4.720				

NOTE:

1. ALL CONDUCTORS TO BE 2 #12, 1 #12G IN 3/4 INCH CONDUIT UNLESS OTHERWISE INDICATED.

OPERATIONS CENTER CONDUIT SCHEDULE

CKT NO.	CONDUIT SIZE	NO. & SIZE CONDUCTORS	FROM	TO
CC-1	1"	MANUFACTURER'S CABLES	FIRE ALARM CONTROL PANEL	FIRE ALARM SYSTEM AUXILARY CABINET
CC-2	3/4"	20#14	FIRE ALARM SYS. AUXILIARY CABINET	HVAC DDC SYSTEM LOCAL CONTROL UNIT
CC-3	3/4"	10#14	FIRE ALARM SYS. AUXILIARY CABINET	ELEVATOR CONTROLLER
CC-4	3/4"	6#14	PREACTION SPRINKLER SYSTEM CONTROL PANEL	PREACTION SPRINKLER SYSTEM SOLENOID VALVE, PRESSURE SW & FLOW SW
CC-5	3/4"	2#14	SPRINKLER SYS. AIR COMPRESSOR	PRESSURE SWITCH
CC-6	3/4"	4#14	EXISTING RELOCATED KEY BOX	PLC M16
CC-7	1"	MANUFACTURERS CABLES	FIRE ALARM CONTROL PANEL	FIRE ALARM ANNUNCIATOR PANEL
CC-8	3/4"	4#18	PRESENTATION ROOM WIRELESS MICROPHONE AMPLIFIER	COLUMN SPEAKERS
CC-9	3/4"	1 COAXIAL CABLE	STORAGE ROOM COAX CABLE CONNECTOR	PRESENTATION ROOM COAX CABLE CONNECTOR
CC-10	3/4"	1 3/C #18 SHIELDED	NORTH ENTRANCE GATE INTERCOM	CONTROL ROOM INTERCOM
CC-11	3/4"	2-#14	PREACTION SPRINKLER SYSTEM CONTROL PANEL	ALARM BELL
CC-12	3/4"	2-#14	PLANT MAINTENANCE EEWS	PLC M16
CC-13	3/4"	2-#14	LAB EEWS	PLC M16
CC-14	3/4"	2-#12	SUMP ALARM LEVEL SWITCH	SUMP ALARM



MCC 35 ELEVATION

NOT TO SCALE

(SEE DRAWINGS E-511 & E-512)

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE: 10/2/05 PER: LDampolet

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04/25/01 OBG CRV
0659E515

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2	10/31/05	RECORD DRAWING	"

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Designed by JJC
Drawn by CRV
Checked by WFH

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

OPERATIONS CENTER
SCHEDULES & DETAILS

ELECTRICAL

LEONARD J. CAMPOLIETI — STATE OF NEW YORK — No. 60751 — LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
LDampolieti

E-515

NOTES:

1. SEE DRAWING E-701 FOR DUCT SMOKE DETECTOR ADDITIONS TO EXISTING FIRE ALARM SYSTEMS.
2. SEE MCC #34 AND MCC#38 ONE-LINE DIAGRAMS AND ELEMENTARY DIAGRAMS FOR DUCT SMOKE DETECTOR CONNECTIONS TO AHU-201 AND AHU-301.
3. SEE FIRE ALARM SYSTEM O&M MANUAL FOR SYSTEM SCHEMATIC.

RECORD DRAWING

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DATED 10/4/05 PER: LRampduet

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4/23/01 OBG CRV
0569E601

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

FIRE ALARM SYSTEM SCHEMATIC

ELECTRICAL

STATE OF NEW YORK • LEONARD J. CAMPBELL • LICENSED PROFESSIONAL ENGINEER • No. 60755

File Number 00659
Date APRIL 2001
LRampduet

E-601

NOTES:

1. HEAT DETECTORS IN THE CONTROL ROOM, SCADA ROOM, CONTROL ROOM UNDERFLOOR SPACE AND SCADA ROOM UNDERFLOOR SPACE SHALL BE CONNECTED SUCH THAT BOTH DETECTORS IN AN AREA MUST ACTUATE TO ENABLE OPERATION OF THE PREACTION SPRINKLER SYSTEM. THE CONTROL ROOM EMERGENCY MANUAL RELEASE (EMR)SHALL ENABLE OPERATION OF THE PREACTION SPRINKLER SYSTEM INDEPENDANT OF HEAT DETECTOR OPERATION.

2. SEE FIRE PROTECTION DRAWINGS FOR ADDITIONAL DETAILS ON SPRINKLER SYSTEM/FIRE ALARM SYSTEM INTERFACES.

3. SEE MCC #35 ONE-LINE DIAGRAM AND ELEMENTARY DIAGRAMS FOR DUCT SMOKE DETECTOR CONNECTIONS TO AHU-501, AHU-502 & F-502.

4. WET SPRINKLER SYSTEM, DRY SPRINKLER SYSTEM AND PREACTION SPRINKLER SYSTEM DEVICES (INCLUDING POST INDICATOR VALVE TAMPER SWITCH, ALARM BELL, CONTROL ROOM DETECTORS, SCADA ROOM DETECTORS, CONTROL ROOM UNDERFLOOR SPACE DETECTORS, SCADA ROOM UNDERFLOOR SPACE DETECTORS, AND EMR) SHALL BE FURNISHED AND INSTALLED BY CONTRACT 4D, CONNECTED BY CONTRACT 4B.

5. SEE FIRE ALARM SYSTEM O&M MANUAL FOR SYSTEM SCHEMATIC.

RECORD DRAWING

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DATE: 10/21/05 PER: [signature]

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03/23/01 OBG CRV
0659E602

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

FIRE ALARM SYSTEM SCHEMATIC

ELECTRICAL

STATE OF NEW YORK · LEONARD J. CAMPOLIETI · No. 60755 · LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
[signature]

E-602

NOTES:

1. FIELD VERIFY EXISTING WIRING CONDUCTOR QUANTITY AND SIZE TO EXISTING 22 POINT FIRE ALARM ANNUNCIATOR PANEL.
2. UTILIZE EXISTING SOURCE PRESENTLY POWERING EXISTING 22 POINT FIRE ALARM ANNUNCIATOR PANEL TO POWER DISTRIBUTED MODULE. FIELD VERIFY EXISTING SOURCE VOLTAGE CHARACTORISTICS, CONDUCTOR QUANITY AND CONDUCTOR SIZE.
3. DISTRIBUTED MODULE SHALL BE WALL MOUNTED ADJACENT TO OR IN THE LOCATION PRESENTLY UTILIZED BY THE EXISTING 22 POINT FIRE ALARM ANNUNCIATOR PANEL.
4. SEE FIRE ALARM SYSTEM O&M MANUAL FOR SYSTEM SCHEMATIC.

RECORD DRAWING

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DATE: 10/21/05 PER: L Rampulla

4/23/01 OBG CRV
0659E603

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

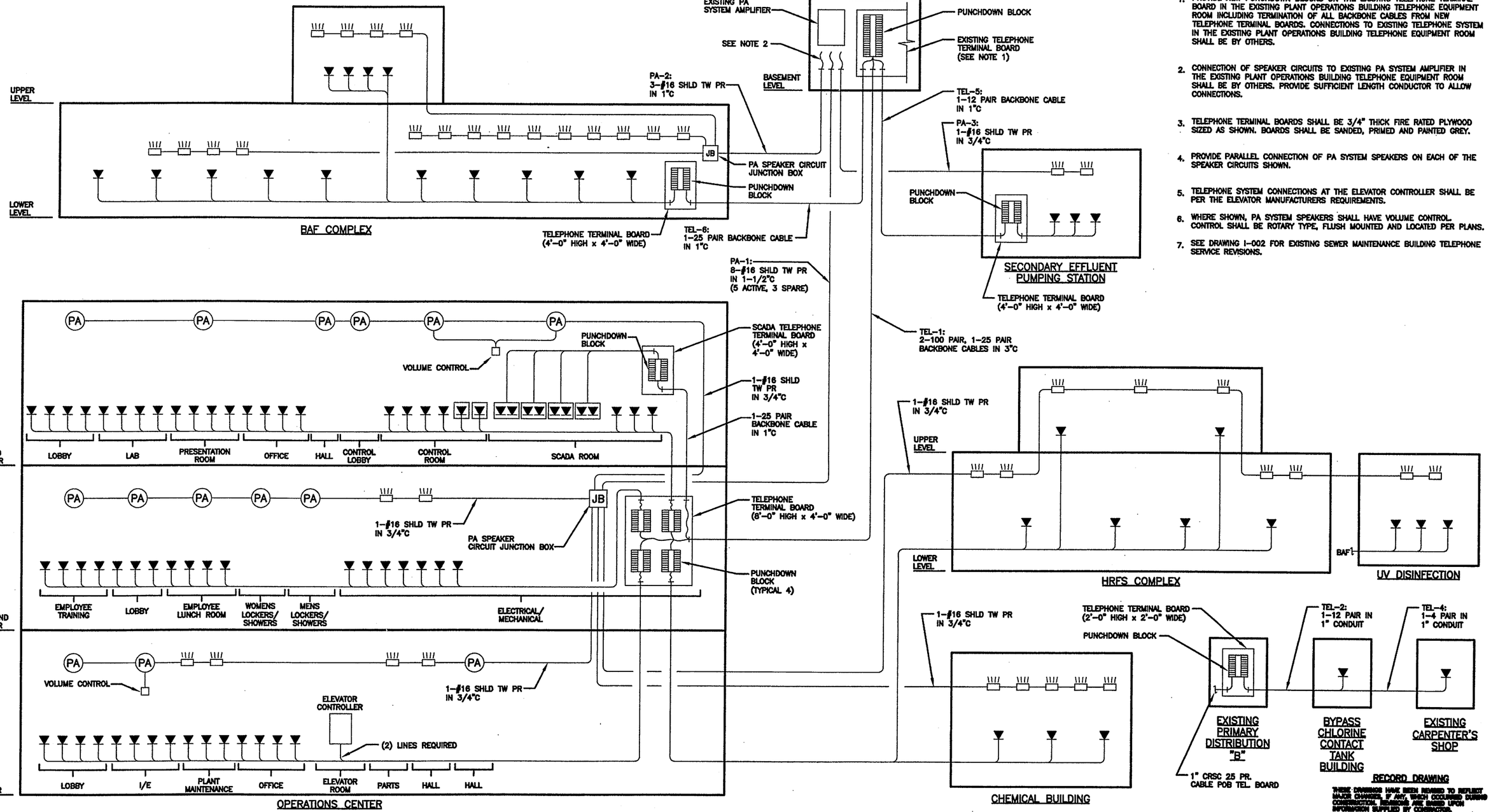
FIRE ALARM SYSTEM SCHEMATIC

ELECTRICAL

STATE OF NEW YORK · LEONARD J. CAMPOLIETA · LICENSED PROFESSIONAL ENGINEER · No. 60795

File Number 00659
Date APRIL 2001
L Rampulla

E-603



NOTES:

1. PROVIDE NEW PUNCHDOWN BLOCKS ON THE EXISTING TELEPHONE TERMINAL BOARD IN THE EXISTING PLANT OPERATIONS BUILDING TELEPHONE EQUIPMENT ROOM INCLUDING TERMINATION OF ALL BACKBONE CABLES FROM NEW TELEPHONE TERMINAL BOARDS. CONNECTIONS TO EXISTING TELEPHONE SYSTEM IN THE EXISTING PLANT OPERATIONS BUILDING TELEPHONE EQUIPMENT ROOM SHALL BE BY OTHERS.
2. CONNECTION OF SPEAKER CIRCUITS TO EXISTING PA SYSTEM AMPLIFIER IN THE EXISTING PLANT OPERATIONS BUILDING TELEPHONE EQUIPMENT ROOM SHALL BE BY OTHERS. PROVIDE SUFFICIENT LENGTH CONDUCTOR TO ALLOW CONNECTIONS.
3. TELEPHONE TERMINAL BOARDS SHALL BE 3/4" THICK FIRE RATED PLYWOOD SIZED AS SHOWN. BOARDS SHALL BE SANDED, PRIMED AND PAINTED GREY.
4. PROVIDE PARALLEL CONNECTION OF PA SYSTEM SPEAKERS ON EACH OF THE SPEAKER CIRCUITS SHOWN.
5. TELEPHONE SYSTEM CONNECTIONS AT THE ELEVATOR CONTROLLER SHALL BE PER THE ELEVATOR MANUFACTURERS REQUIREMENTS.
6. WHERE SHOWN, PA SYSTEM SPEAKERS SHALL HAVE VOLUME CONTROL. CONTROL SHALL BE ROTARY TYPE, FLUSH MOUNTED AND LOCATED PER PLANS.
7. SEE DRAWING I-002 FOR EXISTING SEWER MAINTENANCE BUILDING TELEPHONE SERVICE REVISIONS.

RECORD DRAWING

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4/23/01 OBG CRV
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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

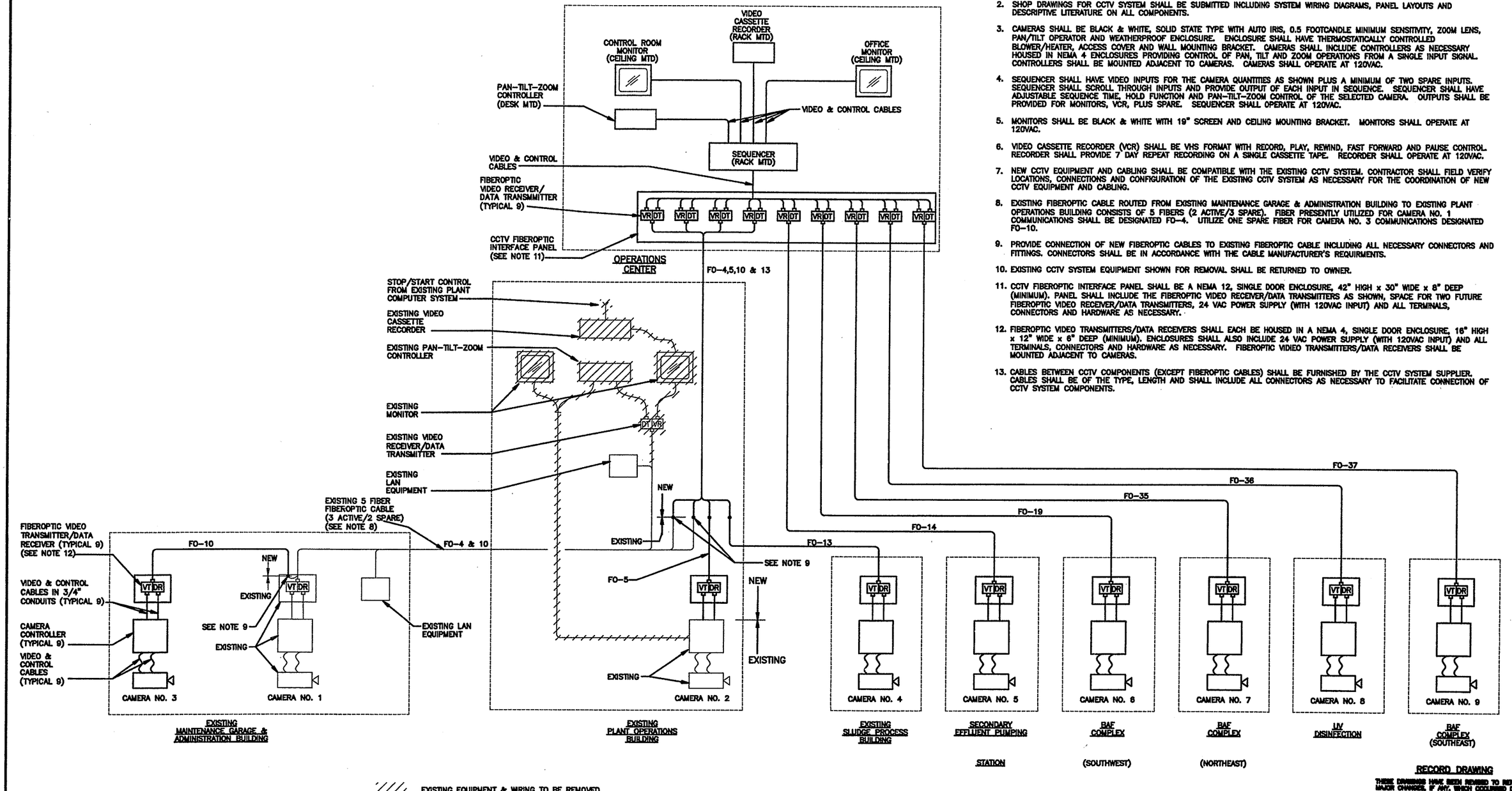
TELEPHONE/PA SYSTEM SCHEMATIC

ELECTRICAL

STATE OF NEW YORK • LEONARD J. CAMPOBELLO • No. 60765 • LICENSED PROFESSIONAL ENGINEER

File Number 0659
Date APRIL 2001

E-604



NOTES:

1. ALL CCTV SYSTEM EQUIPMENT SHALL BE FURNISHED BY A SINGLE SUPPLIER WHO SHALL COORDINATE EQUIPMENT REQUIREMENTS, CHECK SYSTEM INSTALLATION, ADJUST AND TEST ALL SYSTEM COMPONENTS. ALL COMPONENTS NECESSARY FOR A COMPLETE AND OPERATING SYSTEM SHALL BE PROVIDED. SUPPLIER SHALL ALSO PROVIDE TRAINING AS NECESSARY FOR OWNER'S PERSONEL ON THE OPERATION AND MAINTENANCE OF THE SYSTEM. MANUFACTURER SHALL BE SIMPLEX, VICON OR EQUAL.
2. SHOP DRAWINGS FOR CCTV SYSTEM SHALL BE SUBMITTED INCLUDING SYSTEM WIRING DIAGRAMS, PANEL LAYOUTS AND DESCRIPTIVE LITERATURE ON ALL COMPONENTS.
3. CAMERAS SHALL BE BLACK & WHITE, SOLID STATE TYPE WITH AUTO IRIS, 0.5 FOOTCANDLE MINIMUM SENSITIVITY, ZOOM LENS, PAN/TILT OPERATOR AND WEATHERPROOF ENCLOSURE. ENCLOSURE SHALL HAVE THERMOSTATICALLY CONTROLLED BLOWER/HEATER, ACCESS COVER AND WALL MOUNTING BRACKET. CAMERAS SHALL INCLUDE CONTROLLERS AS NECESSARY HOUSED IN NEMA 4 ENCLOSURES PROVIDING CONTROL OF PAN, TILT AND ZOOM OPERATIONS FROM A SINGLE INPUT SIGNAL. CONTROLLERS SHALL BE MOUNTED ADJACENT TO CAMERAS. CAMERAS SHALL OPERATE AT 120VAC.
4. SEQUENCER SHALL HAVE VIDEO INPUTS FOR THE CAMERA QUANTITIES AS SHOWN PLUS A MINIMUM OF TWO SPARE INPUTS. SEQUENCER SHALL SCROLL THROUGH INPUTS AND PROVIDE OUTPUT OF EACH INPUT IN SEQUENCE. SEQUENCER SHALL HAVE ADJUSTABLE SEQUENCE TIME, HOLD FUNCTION AND PAN-TILT-ZOOM CONTROL OF THE SELECTED CAMERA. OUTPUTS SHALL BE PROVIDED FOR MONITORS, VCR, PLUS SPARE. SEQUENCER SHALL OPERATE AT 120VAC.
5. MONITORS SHALL BE BLACK & WHITE WITH 19" SCREEN AND CEILING MOUNTING BRACKET. MONITORS SHALL OPERATE AT 120VAC.
6. VIDEO CASSETTE RECORDER (VCR) SHALL BE VHS FORMAT WITH RECORD, PLAY, REWIND, FAST FORWARD AND PAUSE CONTROL. RECORDER SHALL PROVIDE 7 DAY REPEAT RECORDING ON A SINGLE CASSETTE TAPE. RECORDER SHALL OPERATE AT 120VAC.
7. NEW CCTV EQUIPMENT AND CABLING SHALL BE COMPATIBLE WITH THE EXISTING CCTV SYSTEM. CONTRACTOR SHALL FIELD VERIFY LOCATIONS, CONNECTIONS AND CONFIGURATION OF THE EXISTING CCTV SYSTEM AS NECESSARY FOR THE COORDINATION OF NEW CCTV EQUIPMENT AND CABLING.
8. EXISTING FIBEROPTIC CABLE ROUTED FROM EXISTING MAINTENANCE GARAGE & ADMINISTRATION BUILDING TO EXISTING PLANT OPERATIONS BUILDING CONSISTS OF 5 FIBERS (2 ACTIVE/3 SPARE). FIBER PRESENTLY UTILIZED FOR CAMERA NO. 1 COMMUNICATIONS SHALL BE DESIGNATED FO-4. UTILIZE ONE SPARE FIBER FOR CAMERA NO. 3 COMMUNICATIONS DESIGNATED FO-10.
9. PROVIDE CONNECTION OF NEW FIBEROPTIC CABLES TO EXISTING FIBEROPTIC CABLE INCLUDING ALL NECESSARY CONNECTORS AND FITTINGS. CONNECTORS SHALL BE IN ACCORDANCE WITH THE CABLE MANUFACTURER'S REQUIRMENTS.
10. EXISTING CCTV SYSTEM EQUIPMENT SHOWN FOR REMOVAL SHALL BE RETURNED TO OWNER.
11. CCTV FIBEROPTIC INTERFACE PANEL SHALL BE A NEMA 12, SINGLE DOOR ENCLOSURE, 42" HIGH x 30" WIDE x 8" DEEP (MINIMUM). PANEL SHALL INCLUDE THE FIBEROPTIC VIDEO RECEIVER/DATA TRANSMITTERS AS SHOWN, SPACE FOR TWO FUTURE FIBEROPTIC VIDEO RECEIVER/DATA TRANSMITTERS, 24 VAC POWER SUPPLY (WITH 120VAC INPUT) AND ALL TERMINALS, CONNECTORS AND HARDWARE AS NECESSARY.
12. FIBEROPTIC VIDEO TRANSMITTERS/DATA RECEIVERS SHALL EACH BE HOUSED IN A NEMA 4, SINGLE DOOR ENCLOSURE, 16" HIGH x 12" WIDE x 6" DEEP (MINIMUM). ENCLOSURES SHALL ALSO INCLUDE 24 VAC POWER SUPPLY (WITH 120VAC INPUT) AND ALL TERMINALS, CONNECTORS AND HARDWARE AS NECESSARY. FIBEROPTIC VIDEO TRANSMITTERS/DATA RECEIVERS SHALL BE MOUNTED ADJACENT TO CAMERAS.
13. CABLES BETWEEN CCTV COMPONENTS (EXCEPT FIBEROPTIC CABLES) SHALL BE FURNISHED BY THE CCTV SYSTEM SUPPLIER. CABLES SHALL BE OF THE TYPE, LENGTH AND SHALL INCLUDE ALL CONNECTORS AS NECESSARY TO FACILITATE CONNECTION OF CCTV SYSTEM COMPONENTS.

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. MINOR CHANGES ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE 10/16/01 PER [signature]

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

CCTV SYSTEM SCHEMATIC

ELECTRICAL

LEONARD J. CARPENTER LICENSED PROFESSIONAL ENGINEER No. 50765 STATE OF NEW YORK

File Number 00659
Date APRIL 2001
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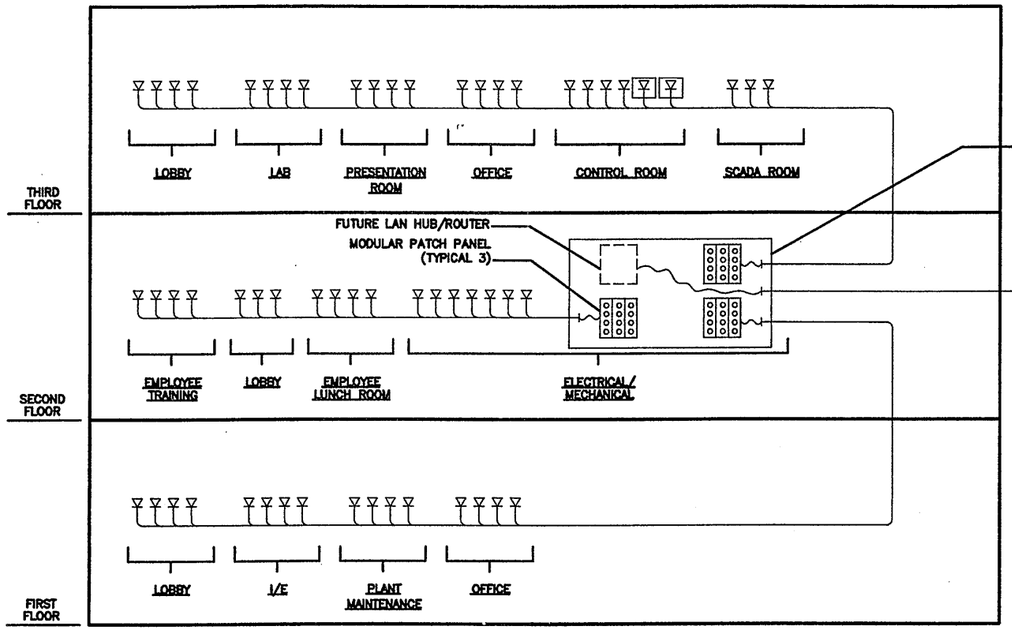
E-605



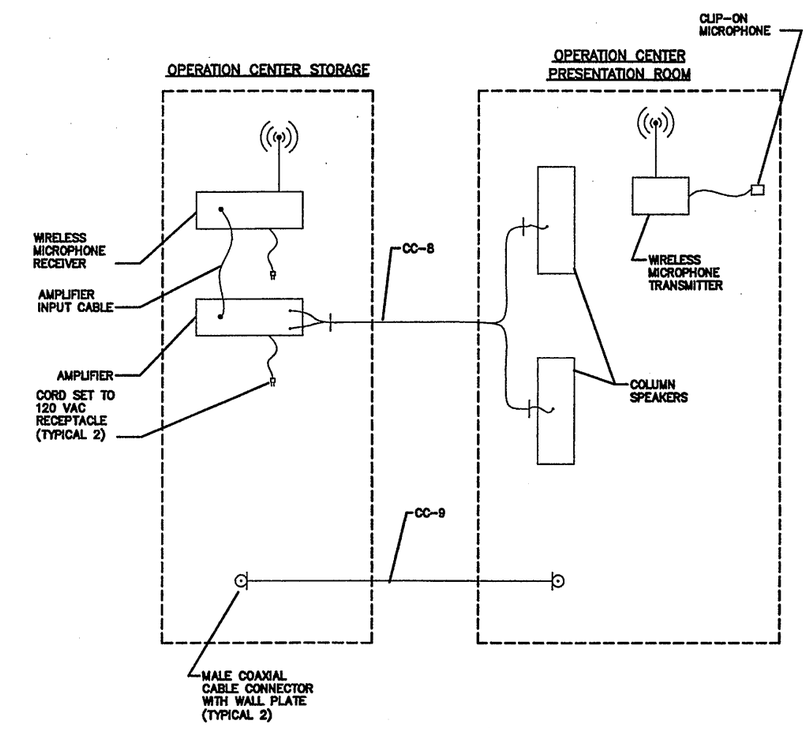
OPERATIONS CENTER

EXISTING PLANT OPERATIONS BUILDING

(TELEPHONE EQUIPMENT ROOM)

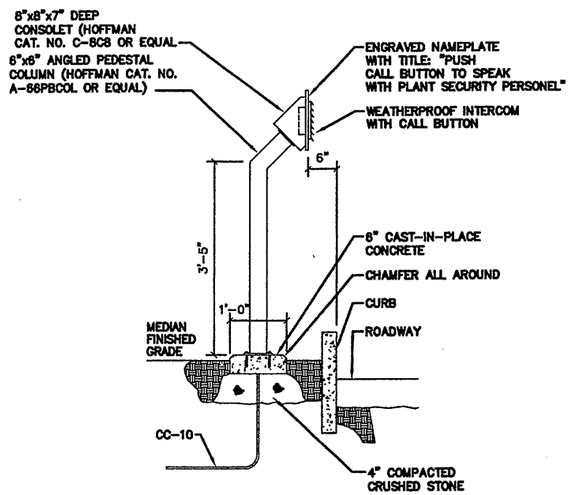
LAN SYSTEM SCHEMATIC

NOT TO SCALE



PRESENTATION ROOM AUDIO/VIDEO SYSTEMS SCHEMATIC

NOT TO SCALE

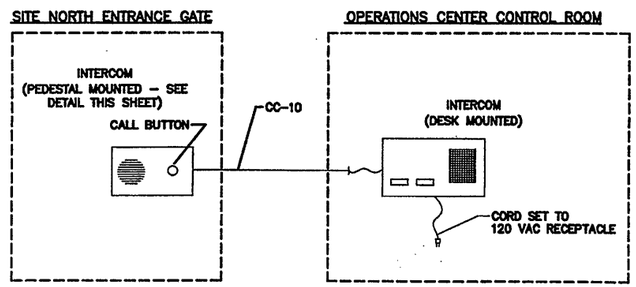


NORTH ENTRANCE GATE INTERCOM DETAIL

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

NOTES:

1. PRESENTATION ROOM AUDIO SYSTEM SHALL CONSIST OF WIRELESS MICROPHONE EQUIPMENT, AMPLIFIER AND COLUMN SPEAKERS. SYSTEM SHALL BE FURNISHED BY A SINGLE SUPPLIER WHO SHALL COORDINATE EQUIPMENT REQUIREMENTS, PROVIDE ADJUSTMENTS AND TEST ALL COMPONENTS. COMPONENTS SHALL BE AS FOLLOWS:
   - A. WIRELESS MICHROPHONE EQUIPMENT SHALL INCLUDE CLIP-ON MICROPHONE, BATTERY POWERED TRANSMITTER, RECEIVER AND AMPLIFIER INPUT CABLE. EQUIPMENT SHALL BE MANUFACTURED BY SHURE "THE PRESENTER" UHF UT 14/85 OR EQUAL.
   - B. AMPLIFIER SHALL HAVE THREE INPUTS (ONE ACTIVE/TWO SPARE) 100 WATT OUTPUT, 0.1% MAXIMUM TOTAL HARMONIC DISTORTION, VOLUME CONTROL AND TONE CONTROL. MANUFACTURER SHALL BE RAULAND, BOGEN OR EQUAL.
   - C. COLUMN SPEAKERS SHALL EACH HAVE FOUR 5 INCH CONE SPEAKERS WITH MINIMUM FREQUENCY RESPONSE OF 80 TO 14,000 Hz, 8 OHM IMPEDANCE, PARTICLE BOARD ENCLOSURE, GRILLE CLOTH AND WALL MOUNTING BRACKET. MANUFACTURER SHALL BE RAULAND, BOGEN OR EQUAL.
2. INTERCOM SYSTEM SHALL PROVIDE POINT-TO-POINT, TWO WAY VOICE COMMUNICATION, COMPONENTS SHALL BE AS FOLLOWS:
   - A. DESK MOUNTED INTERCOM SHALL HAVE SPEAKER/MICROPHONE, TOUCH PANEL SWITCHES, VOLUME CONTROL AND ALERT TONE (ACTIVATED BY REMOTE CALL BUTTON) MANUFACTURER SHALL BE 3M OR EQUAL.
   - B. PEDESTAL MOUNTED INTERCOM SHALL HAVE SPEAKER MICHROPHONE, CALL BUTTON AND WEATHERPROOF CONSTRUCTION. MANUFACTURER SHALL BE 3M OR EQUAL.
3. LAN TERMINAL BOARD SHALL BE 8'-0" HIGH x 4'-0" WIDE x 3/4" THICK FIRE RATED PLYWOOD, SANDED, PRIMED AND PAINTED GREY.



INTERCOM SYSTEM SCHEMATIC

NOT TO SCALE

RECORD DRAWING

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DATED: 10/31/05 BY: [signature]

03/23/01 OBG CRV
0659E606

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0	4/20/01	ISSUED FOR APPROVAL	JJC
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SYRACUSE, NEW YORK

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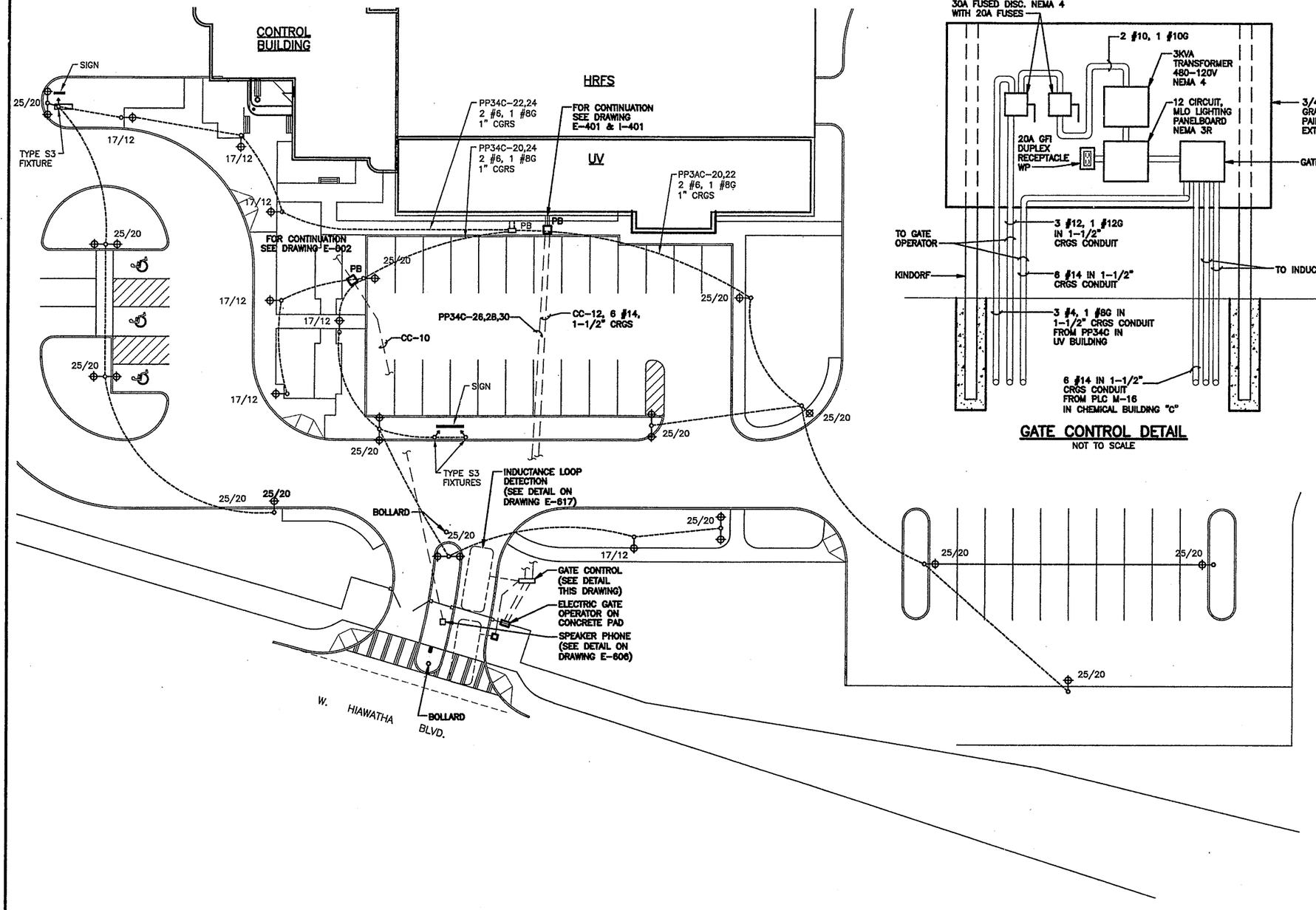
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

MISCELLANEOUS SCHEMATICS & DETAILS

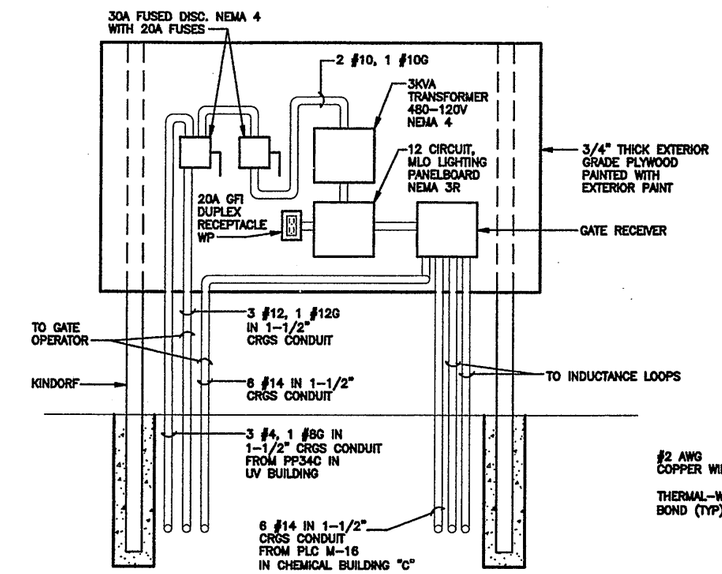
ELECTRICAL

File Number 00659
Date APRIL 2001

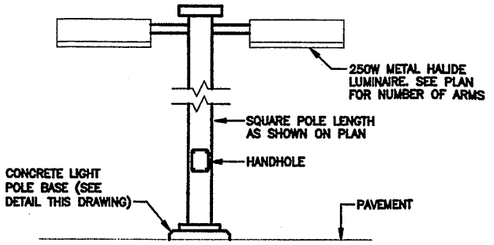
E-606



EXTERIOR LIGHTING SITE PLAN
SCALE: 1"=20'-0"

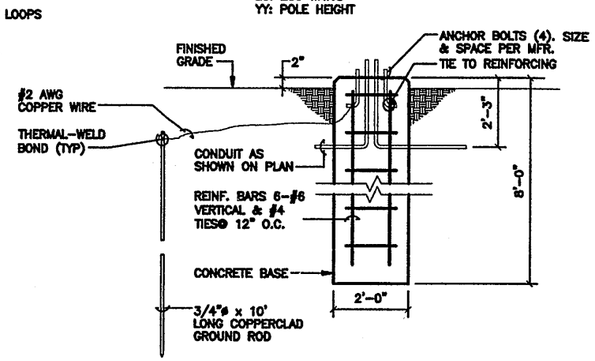


GATE CONTROL DETAIL
NOT TO SCALE

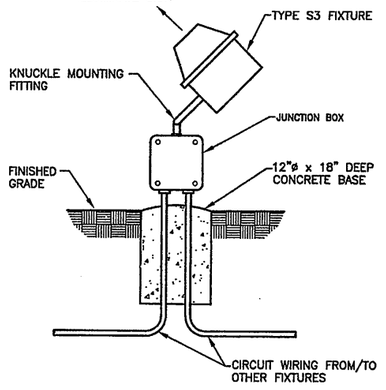


EXTERIOR PARKING LOT LIGHTS
NOT TO SCALE

XX/YY
XX: LUMINAIRE WATTAGE
17: 175 WATTS
25: 250 WATTS
YY: POLE HEIGHT



LIGHT POLE BASE DETAIL
NOT TO SCALE



TYPE S3 FIXTURE DETAIL
NOT TO SCALE

NOTES

1. TYPE S3 FIXTURES SHALL BE ENCLOSED FLOODLIGHTS WITH DIE CAST HOUSING, TEMPERED GLASS LENS, DARK BRONZE FINISH, 70 WATT METAL HALIDE LAMP, 480 VAC HIGH POWER FACTOR BALLAST AND KNUCKLE MOUNTING FITTING. FIXTURE SHALL BE SUITABLE FOR WET AREAS. MANUFACTURER SHALL BE LUMARK SERIES BF OR EQUAL.

NOTES:

1. ROUTE ILLUMINATED SIGN CONDUIT & CONDUCTOR TO 18" SQUARE PVC JUNCTION BOXES MOUNTED FLUSH WITH GRADE AT SIGNS. EXTEND WIRING TO SIGNS AS NECESSARY.

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE: 10/26/05 PER: [signature]

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X: 0659GX02, X048.DWG
4/8/01 BBL DCC
05503000/0659E607.DWG

20' 0 20' 40'
1"=20'

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No.	Date	Revisions	Init
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2	10/31/05	RECORD DRAWING	

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Designed by MEE
Drawn by DCC
Checked by WFH

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

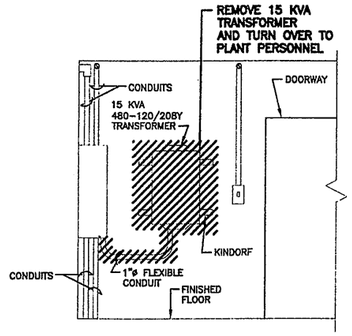
EXTERIOR LIGHTING PLAN AND DETAILS

ELECTRICAL

STATE OF NEW YORK · LEONARD J. CAPOTOSTA · LICENSED PROFESSIONAL ENGINEER · No. 60765

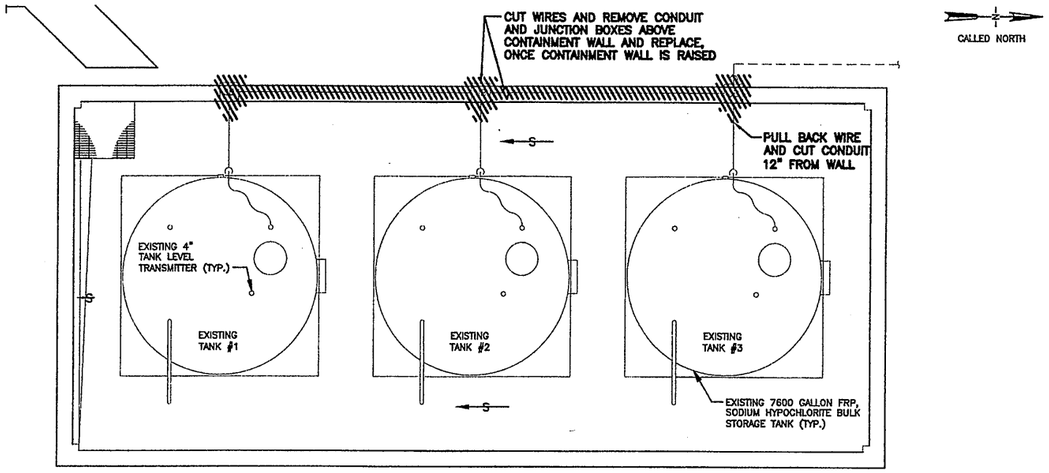
File Number 00659
Date APRIL 2001

E-607



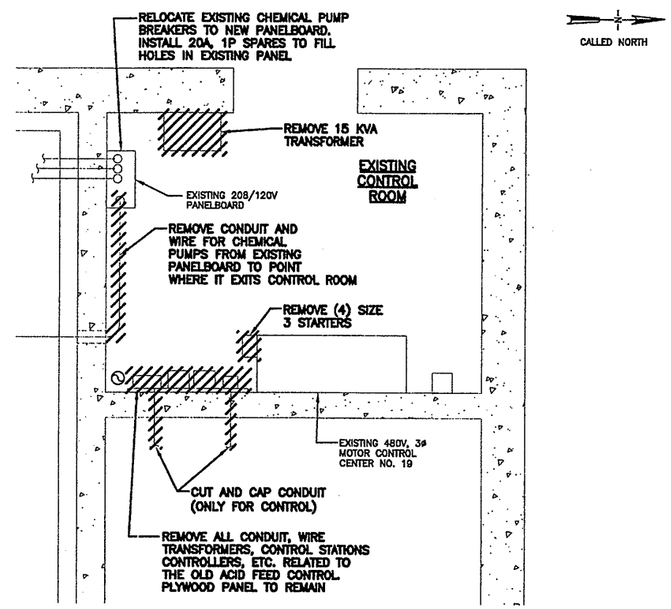
EXISTING CHEMICAL BUILDING A CONTROL ROOM DEMOLITION WEST ELEVATION

NOT TO SCALE



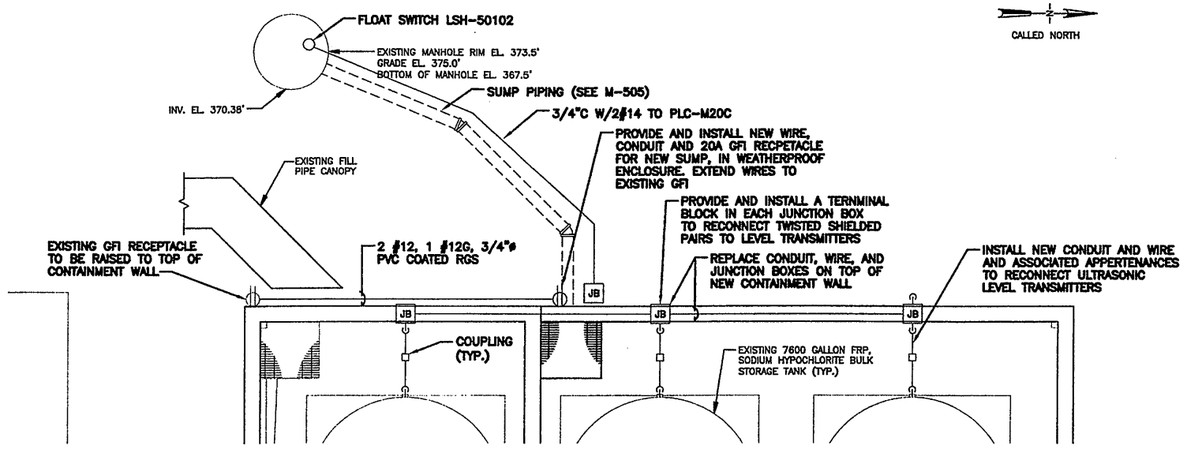
BULK STORAGE TANK AND CONTAINMENT AREA DEMOLITION PLAN

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



EXISTING CHEMICAL BUILDING A CONTROL ROOM DEMOLITION

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



CALLED NORTH

BULK STORAGE TANK AND CONTAINMENT AREA MODIFICATIONS

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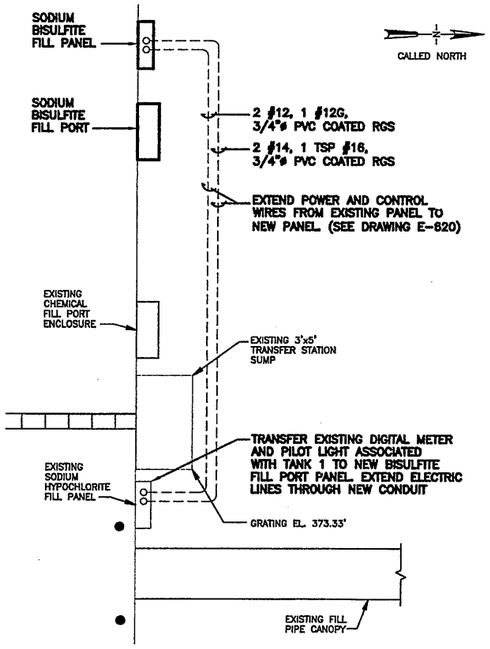

EXISTING TRANSFER STATION AREA MODIFICATIONS

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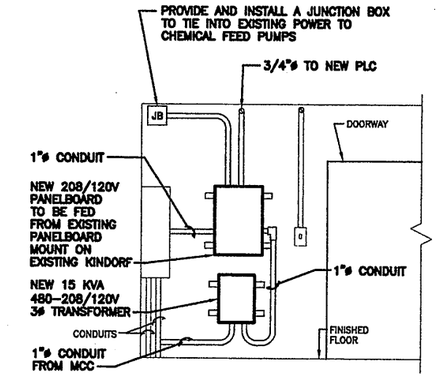

EXISTING CHEMICAL BUILDING A CONTROL ROOM MODIFICATIONS WEST ELEVATION

RECORD DRAWING

NOT TO SCALE

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DATE: 10/31/05 PER: [signature]

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05503000/0859E608.DWG

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

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0	4/20/01	ISSUED FOR APPROVAL	LJC
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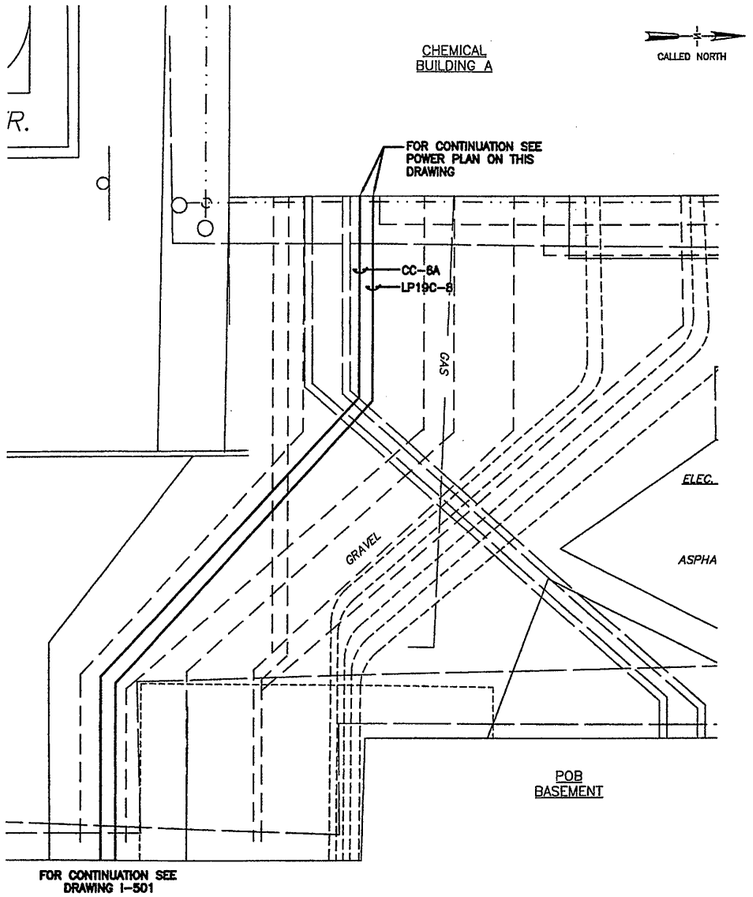
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BULK STORAGE TANK
BULK STORAGE & CONTROL ROOM DEMOLITION & MODIFICATIONS, & TRANSFER STATION MODIFICATIONS
ELECTRICAL

LICENSED PROFESSIONAL ENGINEER — LEONARD J. CAMPOLIETA — No. 60755 — STATE OF NEW YORK

File Number 00659
Date APRIL 2001
E-608

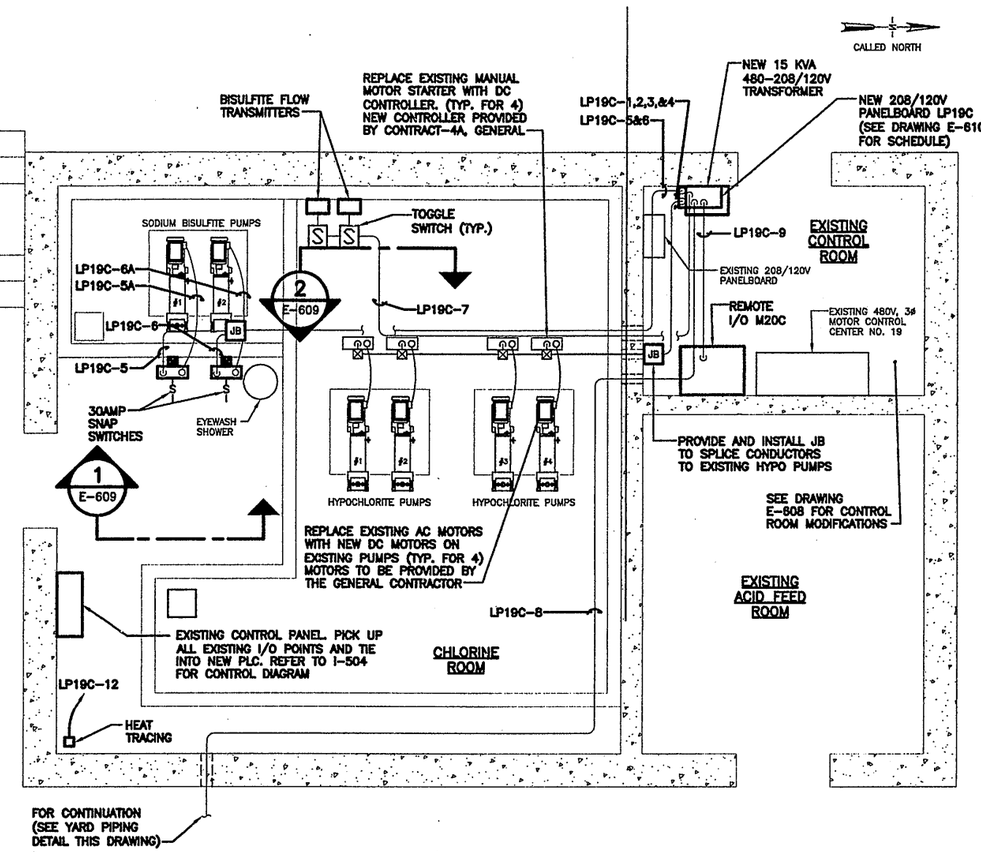


NOTE:

THE LOCATION OF UNDERGROUND UTILITIES AND OTHER UNDERGROUND STRUCTURES WERE OBTAINED BY FIELD MEASUREMENT WHERE POSSIBLE. OTHERWISE OBTAINED FROM OTHER SOURCES AND ARE APPROXIMATE ONLY. OTHER UNDERGROUND UTILITIES MAY EXIST. THE LOCATION OF WHICH ARE NOT KNOWN AT THIS TIME. THE CONTRACTOR SHALL UNDERTAKE MEASURES TO FIELD VERIFY SUCH UTILITIES.

YARD PIPING PARTIAL PLAN

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

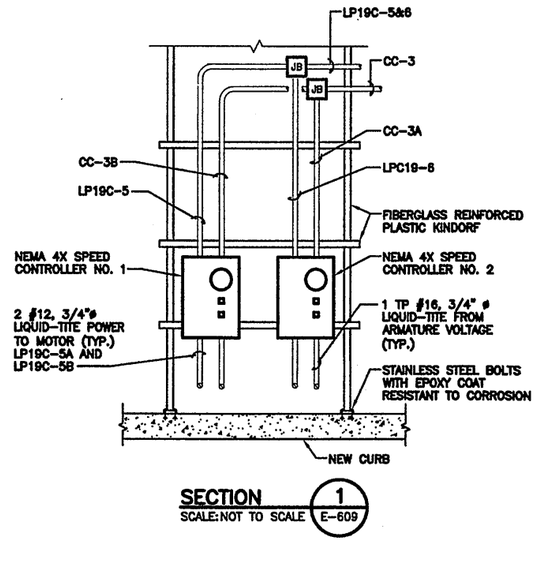


CHEMICAL BUILDING A POWER PLAN

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

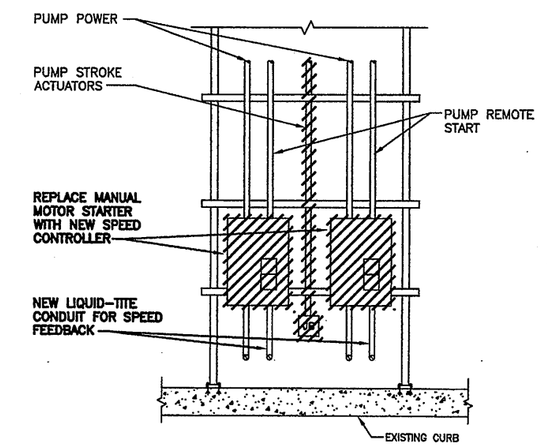
NOTE:

1. ALL CONDUITS SHALL BE 3/4"± PVC COATED RGS UNLESS INDICATED OTHERWISE.
2. UTILIZE ONE EXISTING STOP LOCKOUT AND PROVIDE THREE NEW STOP LOCKOUTS FOR CONTROL OF EACH OF THE FOUR SODIUM HYPOCHLORITE PUMPS. THE EXISTING STOP LOCKOUT IS LOCATED ON THE EXTERIOR SOUTH WALL OF CHEMICAL BUILDING A AND IS PRESENTLY UTILIZED TO CONTROL ALL FOUR EXISTING SODIUM HYPOCHLORITE PUMPS. NEW STOP LOCKOUTS SHALL BE LOCATED ON THE EXTERIOR SOUTH WALL OF CHEMICAL BUILDING A ADJACENT TO THE EXISTING STOP LOCKOUT. REMOVE EXISTING CONDUCTOR FROM EXISTING CONDUIT ROUTED FROM EXISTING STOP LOCKOUT TO EXISTING PUMP CONTROLS. UTILIZE EXISTING CONDUIT TO THE EXTENT POSSIBLE WITH NEW 3/4" CONDUIT AS NECESSARY TO CONNECT NEW/EXISTING STOP LOCKOUTS AND SODIUM HYPOCHLORITE PUMP DC CONTROLLERS. PROVIDE 8-#10 CONDUCTORS IN NEW/EXISTING CONDUIT TO FACILITATE CONNECTIONS. STOP LOCKOUTS SHALL BE CONNECTED TO DISCONNECT THE 120VAC SUPPLY TO EACH PUMP DC CONTROLLER SUCH THAT STOP LOCKOUTS ARE FUNCTIONAL IN ALL MODES OF CONTROL.
3. PROVIDE INSTALLATION AND CONNECTION OF CONTROL STATIONS FURNISHED WITH THE DC CONTROLLERS BY CONTRACT 4A-GENERAL. CONTROL STATIONS SHALL BE MOUNTED IMMEDIATELY ADJACENT TO THEIR RESPECTIVE DC CONTROLLER. WIRING FROM CONTROL STATIONS TO DC CONTROLLER SHALL BE 11 #14 IN 3/4" CONDUIT. FIELD VERIFY CONDUCTOR QUANTITY WITH EQUIPMENT AS FURNISHED.



SECTION 1 / E-609

SCALE: NOT TO SCALE



SECTION 2 / E-609

SCALE: NOT TO SCALE

RECORD DRAWING

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DATE 10/31/05 PER L.Rampelotti

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

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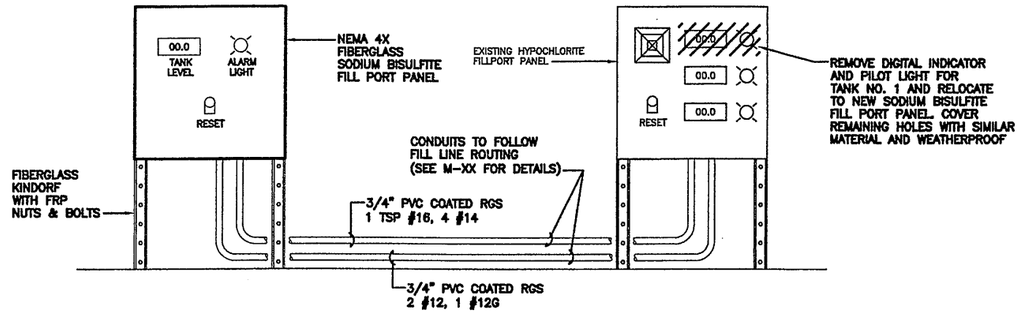
Designed by MEE
Drawn by DCC
Checked by WFH

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHEMICAL BUILDING A
CHEMICAL BUILDING A POWER PLAN
ELECTRICAL

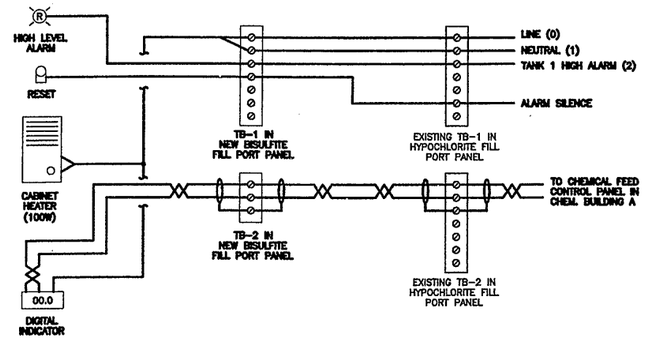
STATE OF NEW YORK · LEONARD J. CAPPOLETA · LICENSED PROFESSIONAL ENGINEER · No. 80765

File Number 00659
Date APRIL 2001
E-609



FILL PORT PANEL MODIFICATION DIAGRAM

NOT TO SCALE



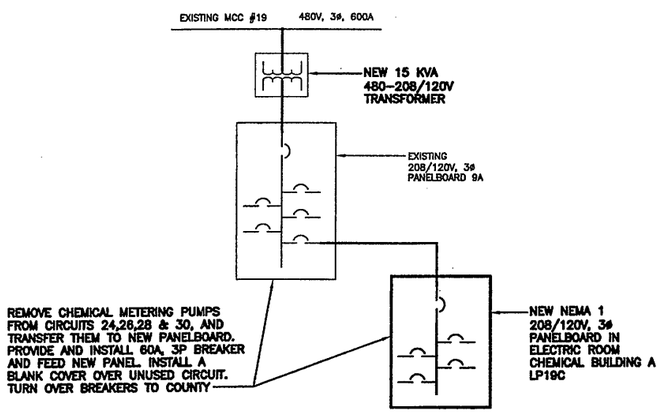
FILL PORT CONTROL WIRING MODIFICATIONS

NOT TO SCALE

CIRCUIT BREAKER PANELBOARD – LP-19C									SCHEDULE			
LOCATION:		CHEMICAL FEED BUILDING							FEED FROM		PANELBOARD PP-9A	
MAIN BUS RATING:		60	AMPERES						208/120 VOLTS		3 PHASE, 4 WIRE	
MINIMUM SHORTCIRCUIT:		10,000	AMPERES						FEEDER CABLE		3 #6, 1 #10G	
MAIN BREAKER TRIP:		100	AMPERES						SURFACE MTD			
ESTIMATED CONNECTED LOAD:		10.01	KVA									
		C/B								C/B		
CKT		AMPS/	LOAD						LOAD	AMPS/		CKT
NO.	DESCRIPTION	POLES	TYPE	KVA	PH-A	PH-B	PH-C	KVA	TYPE	POLES	DESCRIPTION	NO.
• 1	HYPOCHLORITE PUMP NO. 1 (3/4HP)	25/1P	MOTOR	1.656	3.312			1.656	MOTOR	25/1P	HYPOCHLORITE PUMP NO. 2 (3/4HP)	2 •
• 3	HYPOCHLORITE PUMP NO. 3 (3/4HP)	25/1P	MOTOR	1.656		3.312		1.656	MOTOR	25/1P	HYPOCHLORITE PUMP NO. 4 (3/4HP)	4 •
• 5	DECHLOR. PUMP NO. 1 (3/4HP)	25/1P	MOTOR	1.656			3.312	1.656	MOTOR	25/1P	DECHLOR. PUMP NO. 2 (3/4HP)	6 •
7	BISULFITE FLOW METERS	20/1P	INST	0.030	0.050			0.020	MOTOR	20/1P	CARRIER WATER PUMP VALVES	8
9	REMOTE I/O PANEL M20C	20/1P	INST	0.020		0.020				20/1P	HEAT TRACE GFI	10
11	SPARE	25/1P					0.000			20/1P	HEAT TRACE GFI	12
13	SPARE	20/1P			0.000					20/1P	HEAT TRACE GFI	14
15	SPARE	20/1P				0.000				20/1P	SPARE	16
17	SPARE	20/1P					0.000			20/1P	SPARE	18
19	SPARE	20/1P			0.000					20/1P	SPARE	20
21	SPACE					0.000					SPACE	22
23	SPACE						0.000				SPACE	24
25	SPACE				0.000						SPACE	26
27	SPACE					0.000					SPACE	28
29	SPACE						0.000				SPACE	30
LOAD SUMMARY				5.018	3.362	3.332	3.312	4.968				
PANEL TOTAL KVA:				10.008								

NOTE:

1. ALL CONDUCTORS TO BE 2 #12, 1 #12G IN 3/4-INCH PVC COATED CONDUIT, UNLESS OTHERWISE INDICATED ON POWER PLAN.
2. • CONDUCTORS TO BE 2 #10, 1 #10G IN 3/4-INCH PVC COATED CONDUIT.



ONE-LINE DIAGRAM

NOT TO SCALE

RECORD DRAWING

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DATED 10/2/06 PER Hampshire

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Drawn by DCC
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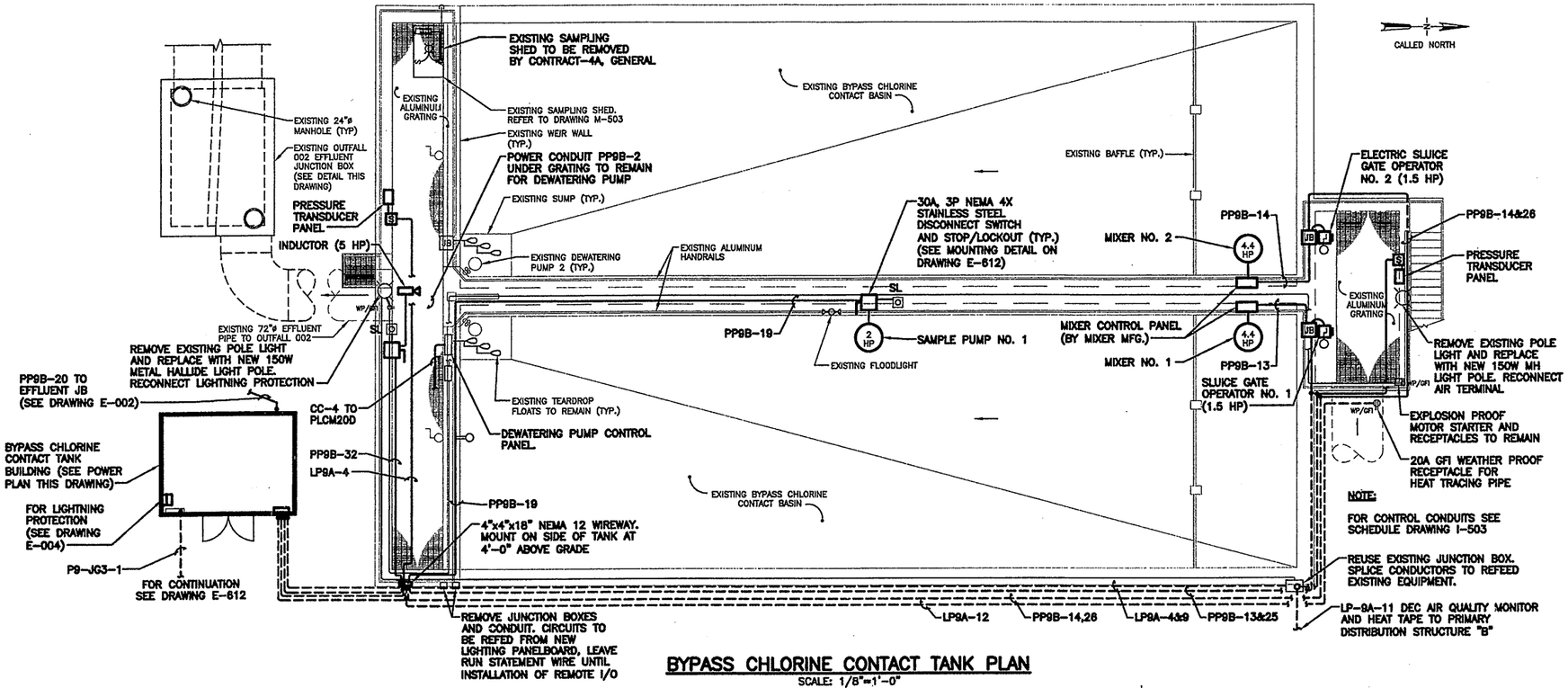
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHEMICAL BUILDING A
CHEMICAL FILL PORT MODIFICATIONS AND ONE-LINE DIAGRAMS
ELECTRICAL

LICENSED PROFESSIONAL ENGINEER • STATE OF NEW YORK • LEONARD J. CAMPBELL • No. 60751

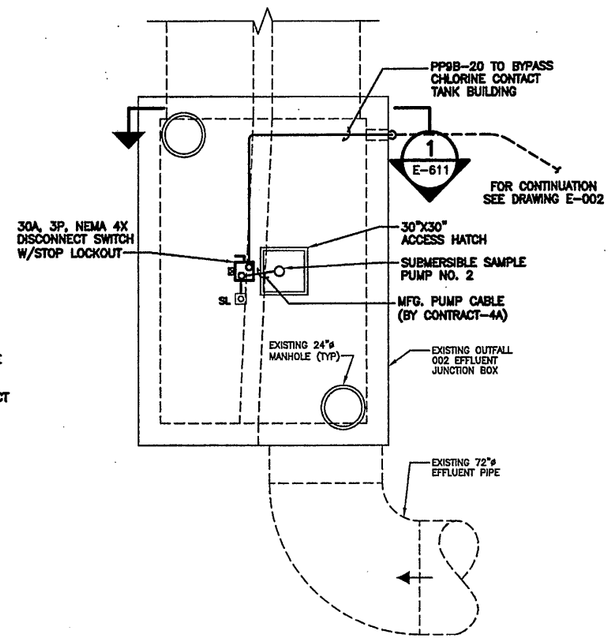
File Number 00659
Date APRIL 2001
Hampshire

E-610



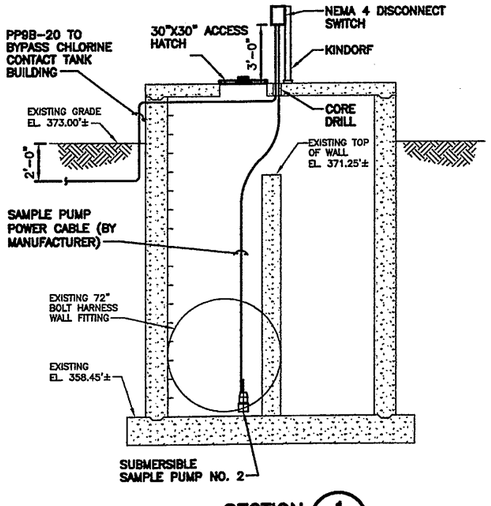
BYPASS CHLORINE CONTACT TANK PLAN

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



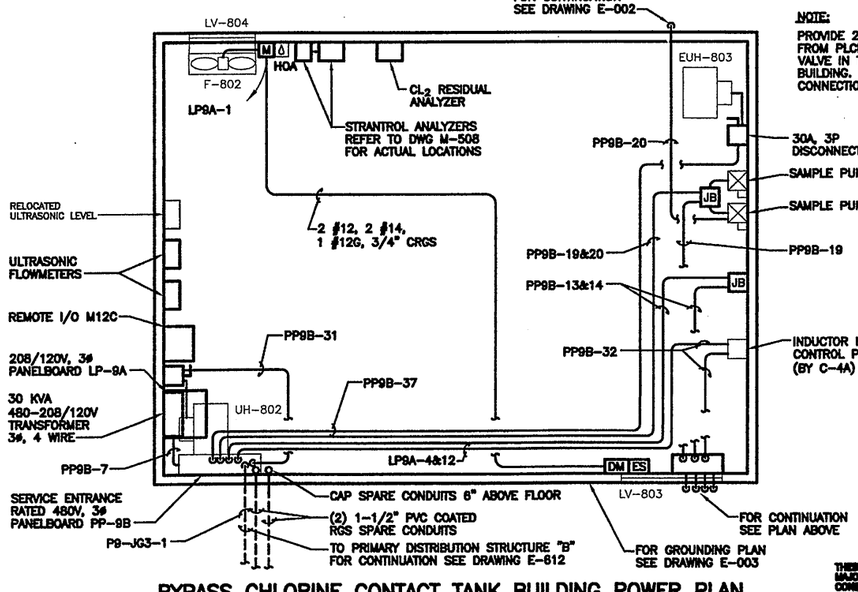
EFFLUENT JUNCTION BOX DETAIL

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



SECTION 1 / E-611

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

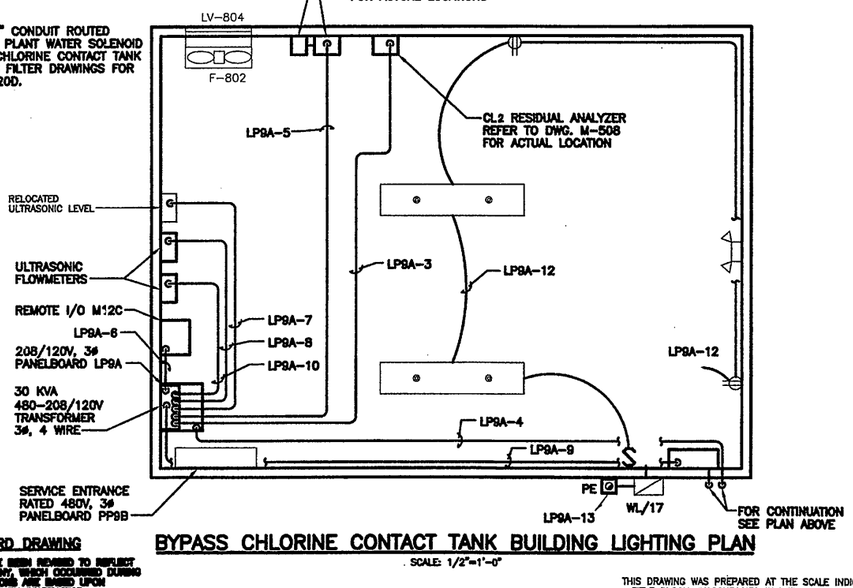


BYPASS CHLORINE CONTACT TANK BUILDING POWER PLAN

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

NOTE:

PROVIDE 2-#14 IN 3/4" CONDUIT ROUTED FROM PLCM20D TO THE PLANT WATER SOLENOID VALVE IN THE BYPASS CHLORINE CONTACT TANK BUILDING. REFER TO US FILTER DRAWINGS FOR CONNECTIONS ON PLCM20D.



BYPASS CHLORINE CONTACT TANK BUILDING LIGHTING PLAN

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

RECORD DRAWING

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DATE: 10/21/05 PER: [signature]

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1/8"=1'-0" 8' 0 8' 16'
1/4"=1'-0" 4' 0 4' 8'
1/2"=1'-0" 2' 0 2' 4'

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

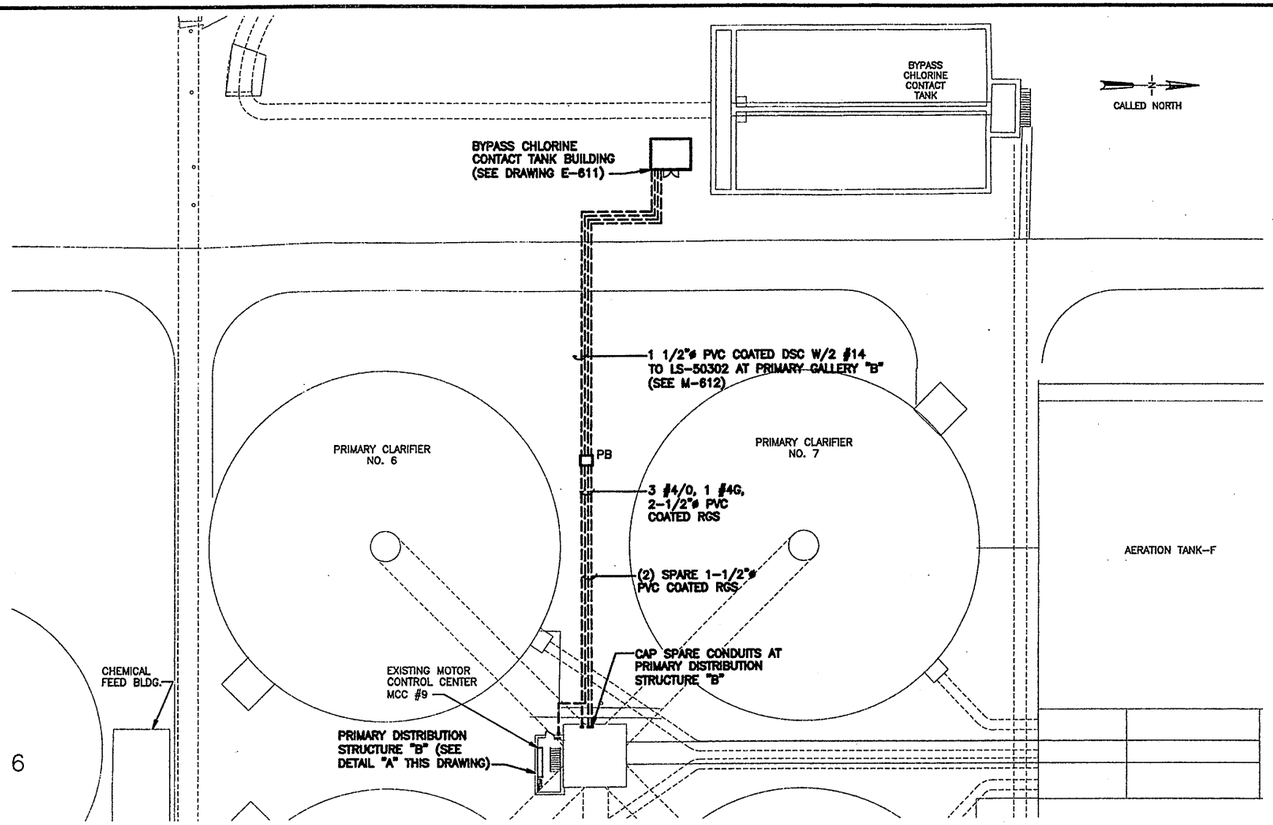
BYPASS CHLORINE CONTACT TANK BYPASS CHLORINE CONTACT TANK PLAN AND BUILDING PLANS

ELECTRICAL

LEONARD J. CAMPOLIETA — STATE OF NEW YORK — No. 60755 — LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001

E-611



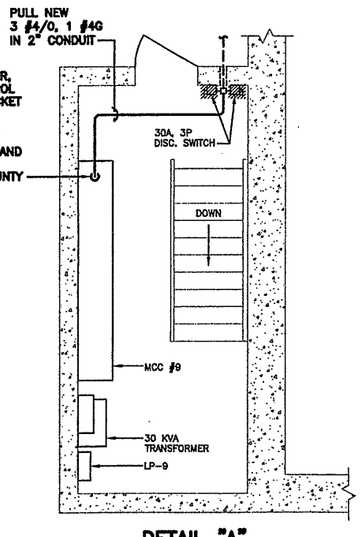
BYPASS CHLORINE CONTACT TANK POWER PLAN

SCALE: 1"=30'-0"

TYPICAL DISCONNECT SWITCH AND SL MOUNTING DETAIL

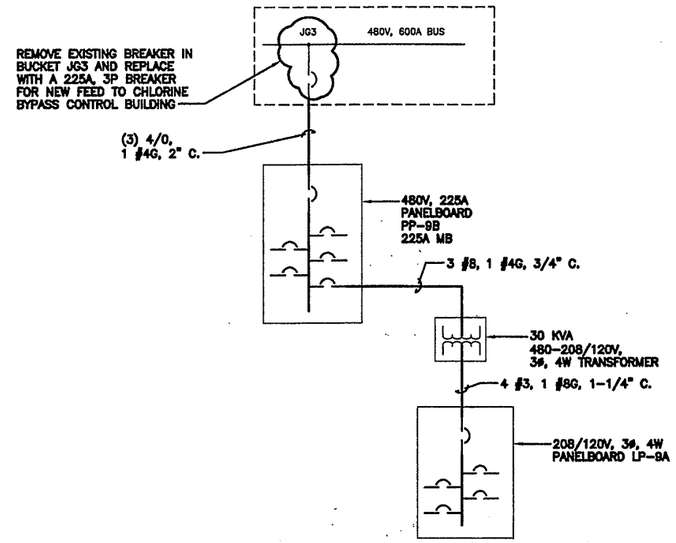
SCALE: 1/4"=1'-0"

REMOVE EXISTING SIZE 1 STARTER, DISCONNECT SWITCH, AND CONTROL POWER TRANSFORMER FROM BUCKET JG3. PROVIDE AND INSTALL NEW 225A, 3P BREAKER. REMOVE ELAPSED TIME METER AND PILOT LIGHT FROM BUCKET JG3 DOOR AND COVER HOLES. ALL EQUIPMENT SHALL BE TURNED OVER TO COUNTY



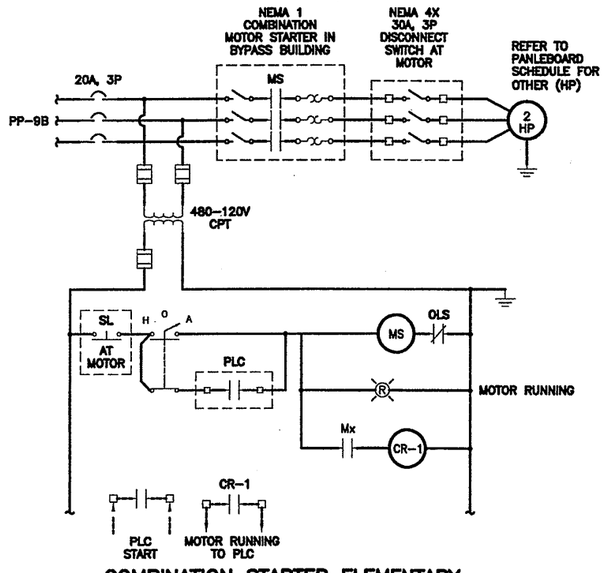
DETAIL "A"

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



ONE-LINE DIAGRAM

NOT TO SCALE



COMBINATION STARTER ELEMENTARY

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RECORD DRAWING

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DATE: 10/26/05 PER: [signature]

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4/4/01 BBL DCC
05503000/0659E612.DWG

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

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Drawn by DCC
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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BYPASS CHLORINE CONTACT TANK

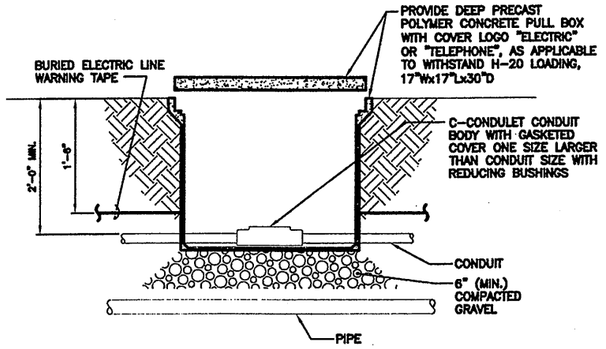
BYPASS CHLORINE CONTACT TANK POWER PLAN AND DETAILS

ELECTRICAL

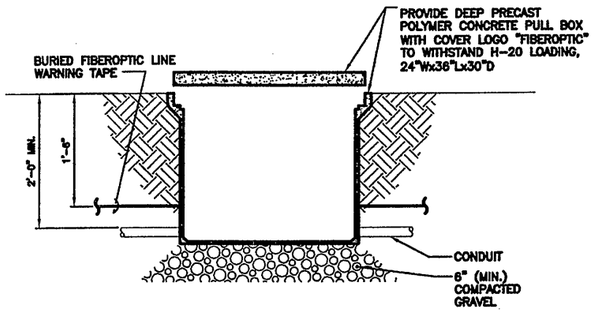
STATE OF NEW YORK · LEONARD J. CAMPOLIETI · No. 60764 · LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001

E-612



PULL BOX DETAIL (TYPICAL)



FIBEROPTIC PULL BOX DETAIL (TYP.)

NOT TO SCALE

CIRCUIT BREAKER PANELBOARD – LP-9A									SCHEDULE			
LOCATION:	BYPASS CL2 CONTACT BUILDING								FEED FROM		PANELBOARD PP-9A	
MAIN BUS RATING:	225	AMPERES							208/120 VOLTS		3 PHASE, 4 WIRE	
MINIMUM SHORTCIRCUIT:	10,000	AMPERES							FEEDER CABLE		4 #3, 1 #8G	
MAIN BREAKER TRIP:	100	AMPERES							SURFACE MTD			
ESTIMATED CONNECTED LOAD:	3.736	KVA										
	CB									CB		
CKT	AMPS/	LOAD							LOAD	AMPS/		CKT
NO. DESCRIPTION	POLES	TYPE	KVA	PH-A	PH-B	PH-C	KVA		TYPE	POLES	DESCRIPTION	NO.
1 CL2 BYPASS BLDG VENTILATING (1/4 HP)	20/1P	MOTOR	0.696	0.996			0.300		HEAT	20/1P	NAH 503 HEAT TRACE	2
3 AE/AIT-50306, CL2 RESIDUAL ANALYZER	20/1P	INST	0.150		0.180		0.030		INST	20/1P	PRESSURE TRANSDUCERS	4
5 AE/AIT-50305, ORP (STRANTROL) PANEL	20/1P	INST	0.100			0.700	0.600		INST	20/1P	REMOTE I/O M12C	6
7 CL2 BYPASS ULTRASONIC LEVEL (EXIST.)	20/1P	INST	0.100	0.200			0.100		INST	20/1P	FIT-50308, CL2 BYPASS FLOW TK 1	8
9 CL2 BYPASS TANK LIGHTS & RECPT (EXIST.)	20/1P	LT/RCPT	0.960		1.060		0.100		INST	20/1P	FIT-50309, CL2 BYPASS FLOW TK 2	10
11 SPARE	20/1P					0.600	0.600		LT/RCPT	20/1P	BYPASS CL2 BLDG LIGHTS & RECEPT	12
13 SPARE	20/1P			0.000						20/1P	SPARE	14
15 SPARE	20/1P				0.000					20/1P	SPARE	16
17 SPARE	20/1P					0.000				20/1P	SPARE	18
19 SPARE	20/1P			0.000						20/1P	SPARE	20
21 SPARE	20/1P				0.000					20/1P	SPARE	22
23 SPARE	20/1P					0.000				20/1P	SPARE	24
25 SPARE	20/1P			0.000						20/1P	SPARE	26
27 SPARE	20/1P				0.000					20/1P	SPARE	28
29 SPARE	20/1P					0.000				20/1P	SPARE	30
LOAD SUMMARY			2.006	1.196	1.240	1.300	1.730					
PANEL TOTAL KVA:			3.736									

NOTES:

1. ALL CONDUCTORS TO BE 2 #12, 1 #12G IN 3/4-INCH PVC COATED RIGID STEEL CONDUIT, UNLESS OTHERWISE INDICATED ON POWER PLAN.
2. HEAT TRACE BRANCH CIRCUIT BREAKERS SHALL BE GFI TYPE.

CIRCUIT BREAKER PANEL BOARD – PP-9B										SCHEDULE			
LOCATION:	BYPASS CL2 CONTACT BUILDING									FEED FROM:		MCC#9, JG3	
MAIN BUS RATING:	225	AMPERES								480 VOLT		3 PHASE 4WIRE	
MINIMUM SHORT CIRCUIT:	25,000	AMPERES								FEEDER CABLE SIZE:		3 #4, 1 #8G	
MAIN BREAKER TRIP:	225	AMPERES								NEMA 12			
ESTIMATED CONNECTED LOAD:	44.56	KVA								SURFACE MOUNTED			
	CB										CB		
CKT.	AMPS/	LOAD						LOAD		AMPS/			CKT.
NO. DESCRIPTION	POLES	TYPE	KVA	PH-A	PH-B	PH-C	KVA	TYPE		POLES	DESCRIPTION		NO.
1 SPARE	20			6.090						20	SPARE		2
3					6.090								4
5	3P					6.090				3P			6
7 PANEL LP-9A SUB-FEED	25	LOAD	1.196	1.196						20	SPARE		8
9		LOAD	1.240		1.240								10
11	3P	LOAD	1.300			1.300				3P			12
13 BYPASS CL2 TK MIXER NO. 1 (4.4HP)	20	MOTOR	2.104	4.208			2.104	MOTOR		20	BYPASS CL2 TK MIXER NO. 2 (4.4HP)		14
15		MOTOR	2.104		4.208		2.104	MOTOR					16
17	3P	MOTOR	2.104			4.208	2.104	MOTOR		3P			18
19 SAMPLE PUMP NO. 1 (2 HP)	20	MOTOR	0.941	1.882			0.941	MOTOR		20	SAMPLE PUMP NO. 2 (2 HP)		20
21		MOTOR	0.941		1.882		0.941	MOTOR					22
23	3P	MOTOR	0.941			1.882	0.941	MOTOR		3P			24
25 SLUICE GATE NO. 1 (1.5 HP)	20	MOTOR	0.830	1.660			0.830	MOTOR		20	SLUICE GATE NO. 2 (1.5 HP)		26
27		MOTOR	0.830		1.660		0.830	MOTOR					28
29	3P	MOTOR	0.830			1.660	0.830	MOTOR		3P			30
31 ELECTRIC UNIT HEATER NO. 802 (7.5KW)	20	HEAT	2.500	4.604			2.104	MOTOR		20	INDUCTOR (7.5 HP)		32
33		HEAT	2.500		4.604		2.104	MOTOR					34
35	3P	HEAT	2.500			4.604	2.104	MOTOR		3P			36
37 ELECTRIC UNIT HEATER NO. 803 (7.5KW)	20	HEAT	2.500	2.500						20	SPARE		38
39		HEAT	2.500		2.500								40
41	3P	HEAT	2.500			2.500				3P			42
43 SPARE	20			0.000						20	SPARE		44
45					0.000								46
47	3P					0.000				3P			48
49 SPARE	20			0.000						20	SPARE		50
51					0.000								52
53	3P					0.000				3P			54
LOAD SUMMARY			26.625	14.854	14.854	14.854	17.937						
PANEL TOTAL KVA:			44.562										

NOTE:

ALL CONDUCTORS TO BE 3 #12, 1 #12G IN 3/4-INCH PVC COATED RIGID STEEL CONDUIT, UNLESS OTHERWISE INDICATED ON POWER PLAN.

RECORD DRAWING

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DATE 10/21/05 PER L.Lamplett

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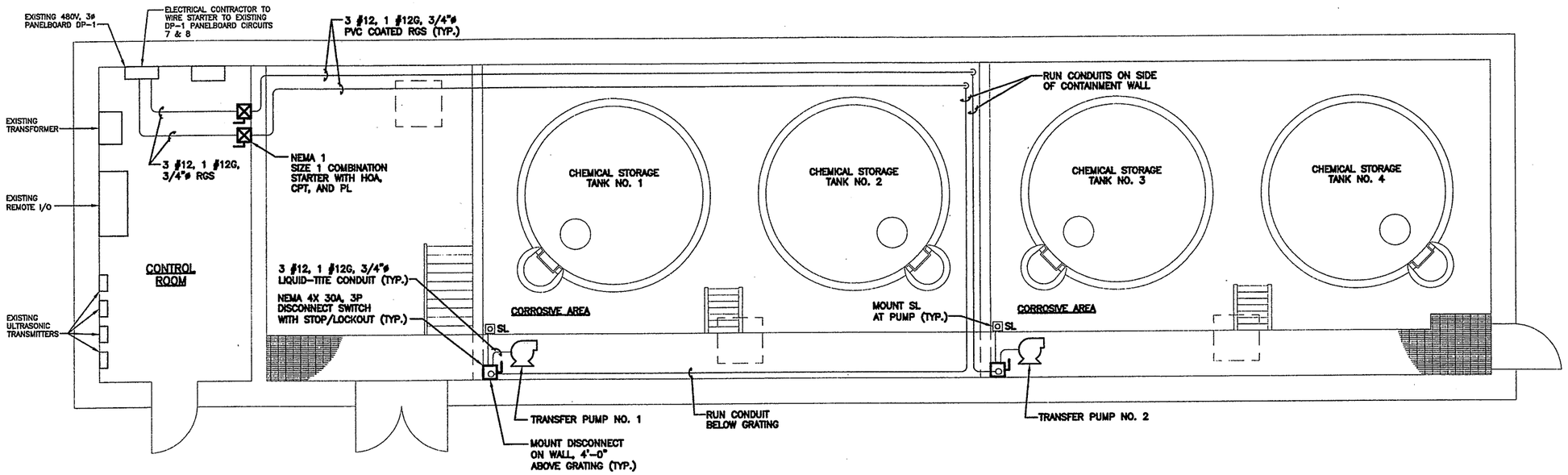
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHLORINE BYPASS BUILDING
PANEL SCHEDULES AND DETAIL
ELECTRICAL

STATE OF NEW YORK · LICENSED PROFESSIONAL ENGINEER · No. 50765

File Number 00659
Date APRIL 2001
L.Lamplett

E-613



CHEMICAL BUILDING B POWER PLAN

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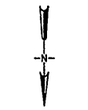

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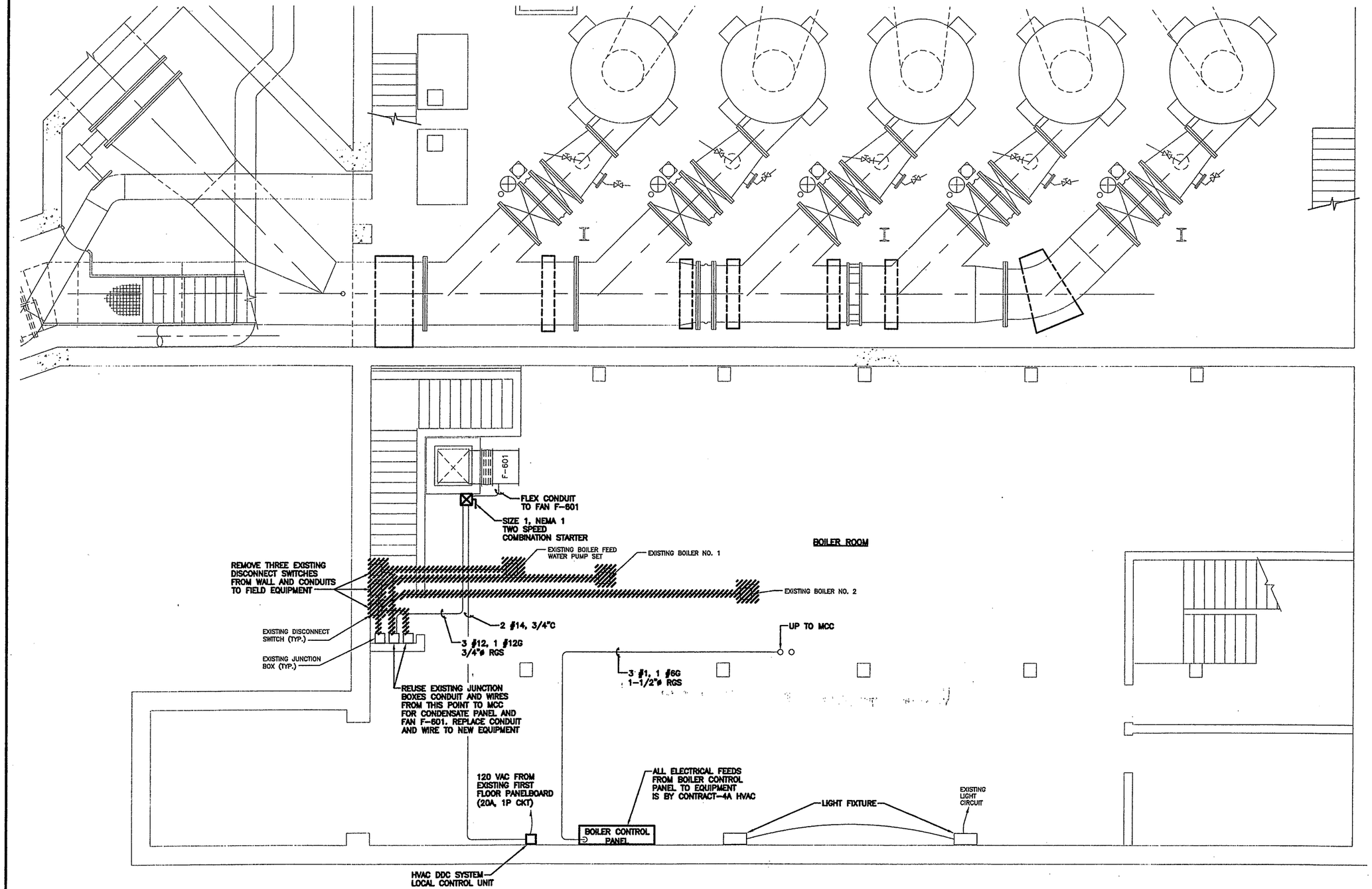
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
CHEMICAL BUILDING B
CHEMICAL BUILDING B POWER PLAN
ELECTRICAL

STATE OF NEW YORK • EDMUND J. CARBONETTA • No. 60755 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
L Dampolet

E-614



LOW LIFT PUMP STATION BASEMENT

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

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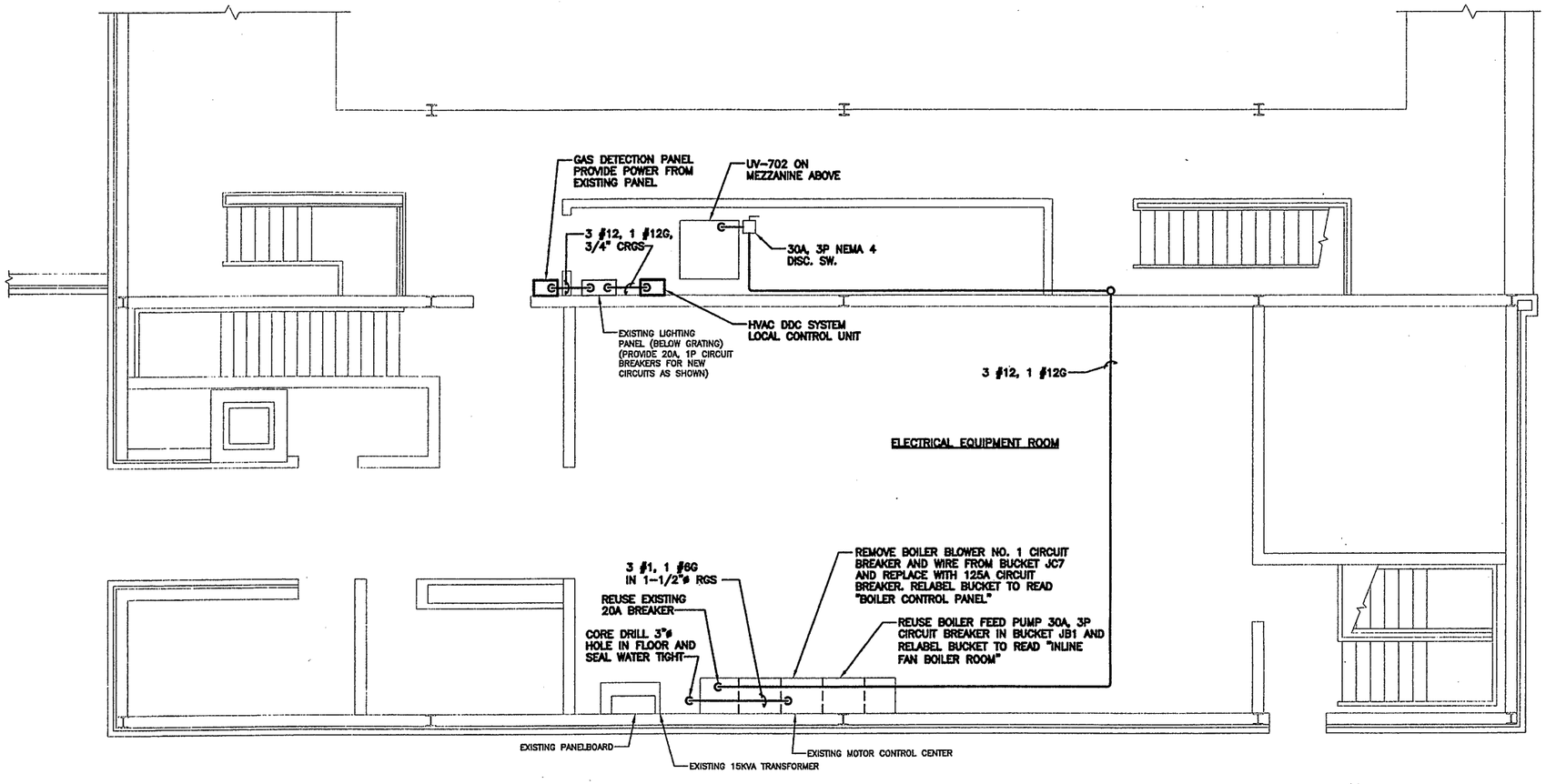
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
LOW LIFT PUMP STATION
LOW LIFT PUMP STATION BASEMENT
ELECTRICAL

LEONARD J. CAPOCEFALO LICENSED PROFESSIONAL ENGINEER No. 60765 STATE OF NEW YORK

File Number 00659
Date APRIL 2001
[signature]

E-615



LOW LIFT PUMP STATION FIRST FLOOR

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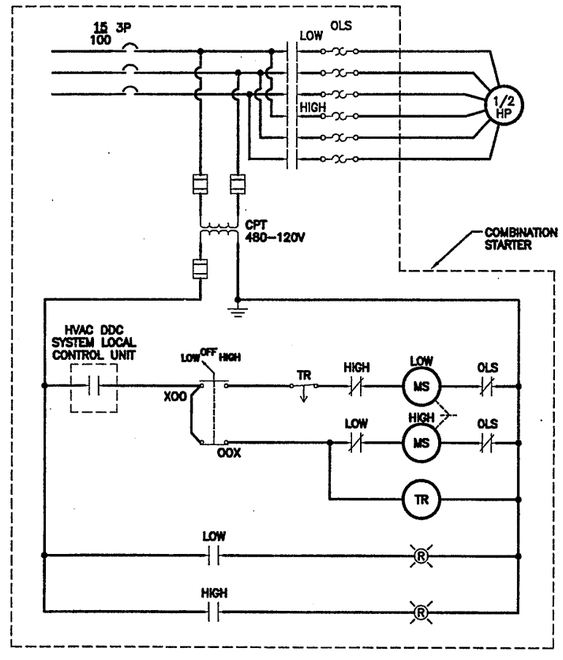

EXHAUST FAN F-601

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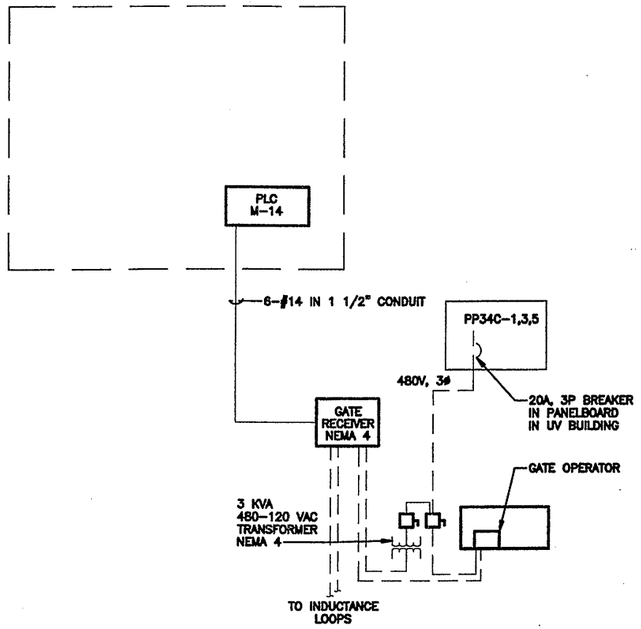
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
LOW LIFT PUMP STATION
LOW LIFT PUMP STATION FIRST FLOOR
ELECTRICAL

LICENSED PROFESSIONAL ENGINEER — STATE OF NEW YORK — LAWRENCE J. CAMPBELL — No. 60755

File Number 00659
Date APRIL 2001
L. Campbell

E-616



GATE OPERATOR SCHEMATIC

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

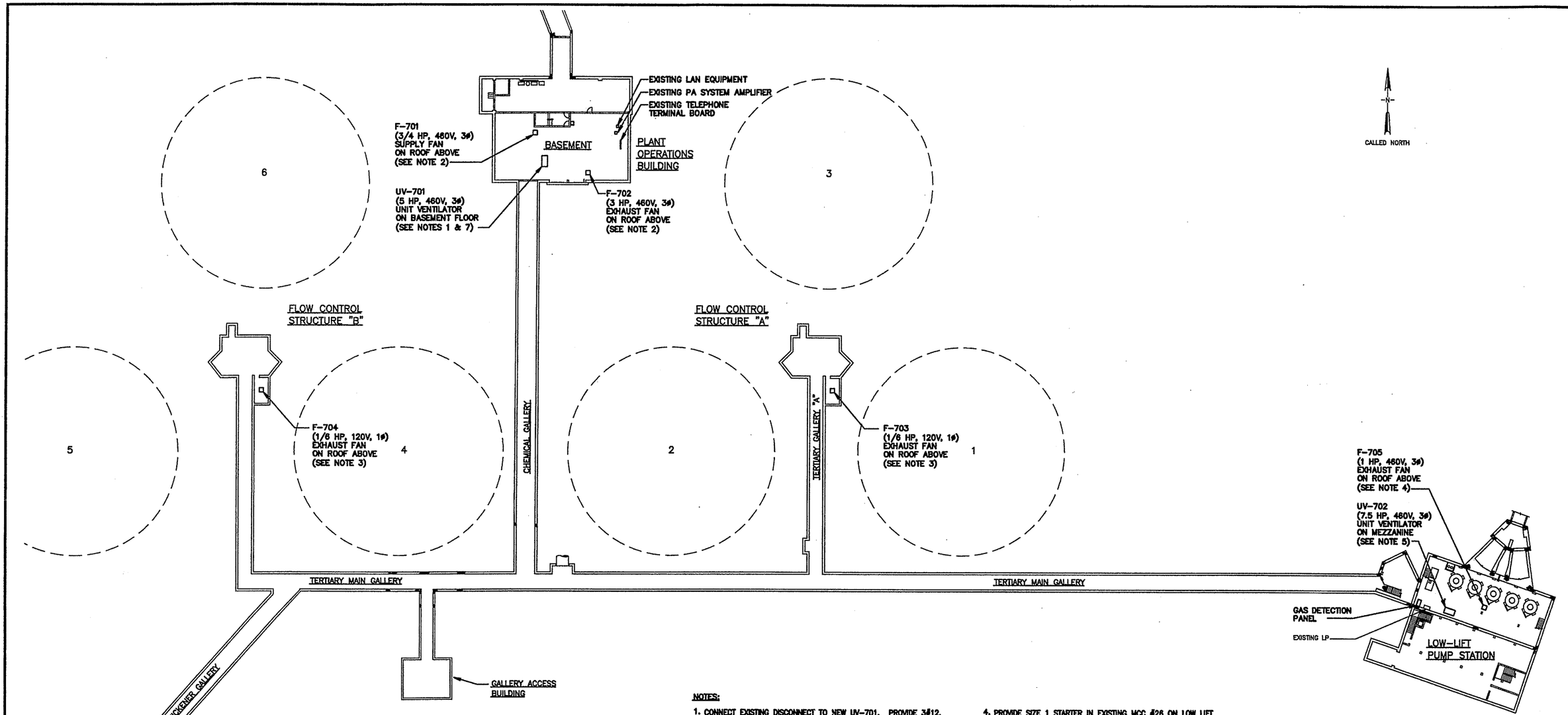
GATE OPERATOR SCHEMATIC

ELECTRICAL

STATE OF NEW YORK • LEONARD J. CAMPBELL • LICENSED PROFESSIONAL ENGINEER • No. 60755

File Number 00659
Date APRIL 2001
L.B. Campbell

E-617



NOTES:

1. CONNECT EXISTING DISCONNECT TO NEW UV-701. PROVIDE 3#12, 1#12G IN 3/4"C FROM EXISTING DISCONNECT SWITCH TO UV-701. REPLACE EXISTING MOTOR STARTER OVERLOAD HEATER ELEMENTS AS NECESSARY. UNIT VENTILATOR UV-701 SHALL BE INTERLOCKED WITH FAN F-701. PROVIDE DUCT SMOKE DETECTOR CONNECTED TO EXISTING UV-701 STARTER TO STOP UV-701 UPON DETECTION OF SMOKE. PROVIDE 4#14 IN 3/4"C FROM EXISTING UV-701 STARTER TO F-701 COMBINATION STARTER FOR INTERLOCK AND TO DUCT SMOKE DETECTOR.
2. PROVIDE NEW NEMA 4, SIZE 1 COMBINATION STARTERS FOR FANS F-701 AND F-702. STARTERS SHALL BE FED FROM EXISTING MCC #18 IN PLANT OPERATIONS BUILDING FIRST FLOOR, ELECTRICAL ROOM. FURNISH AND INSTALL TWO NEW 15A, 3P BREAKERS IN MCC COMPARTMENTS. PROVIDE 3#12, 1#12G IN 3/4"C FROM MCC #18 TO STARTERS AND FROM STARTERS TO FANS.
3. PROVIDE POWER FOR EXHAUST FANS F-703 AND F-704 IN FLOW CONTROL STRUCTURES 'A' AND 'B'. FEED POWER FROM EXISTING PANELBOARDS TO MANUAL STARTER AND WIRE TO MOTOR AND FAN DAMPER ACTUATOR ON ROOF. CIRCUITS SHALL BE 20A/1P WITH 2#12, 1#12G, IN 3/4"C
4. PROVIDE SIZE 1 STARTER IN EXISTING MCC #26 ON LOW LIFT PUMP STATION FIRST FLOOR FOR EXHAUST FAN F-705. PROVIDE 3#12, 1#12G, 4#14 IN 3/4"C FROM MCC #26 TO F-705, STOP LOCKOUT, STOP/START AND DAMPER ACTUATOR.
5. PROVIDE SIZE 1 STARTER IN EXISTING MCC #26 ON LOW LIFT PUMP STATION FIRST FLOOR FOR UNIT VENTILATOR UV-702. PROVIDE 3#12, 1#12G, 3#14 FROM MCC #26 TO UV-702, STOP LOCKOUT, HOA, DUCT SMOKE DETECTOR AND HVAC DDC SYSTEM LOCAL CONTROL UNIT.
6. PROVIDE CONNECTION OF UV-701 AND UV-702 DUCT SMOKE DETECTORS TO EXISTING FIRE ALARM SYSTEMS IN THE PLANT OPERATIONS BUILDING ADN LOW LIFT PUMP STATION RESPECTIVELY. CONDUIT AND CONDUCTOR SHALL BE PER EXISTING FIRE ALARM SYSTEM MANUFACTURER'S REQUIREMENTS. PROVIDE COORDINATION WITH EXISTING FIRE ALARM SYSTEM MANUFACTURERS.
7. PROVIDE 120VAC TO UV-701 CONTROL PANEL FROM EXISTING PANELBOARD IN PLANT OPERATIONS BUILDING BASEMENT. CIRCUIT SHALL BE 20A/1P WITH 2#12, 1#12G IN 3/4"C.

RECORD DRAWING

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DATE 10/21/05 PER [signature]

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1"=30' 30' 0 30' 60'

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SYRACUSE, NEW YORK

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

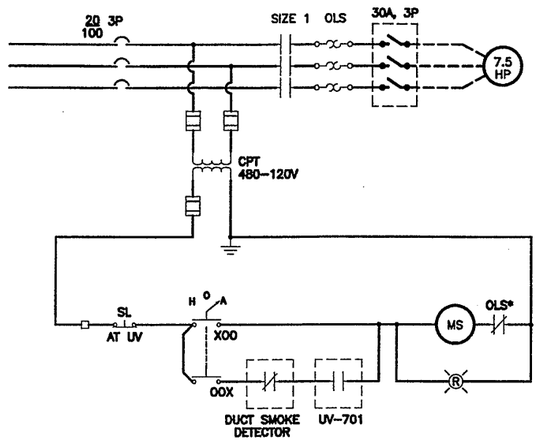
PARTIAL GALLERY PLAN

ELECTRICAL

STATE OF NEW YORK · LEONARD J. CAPOBIANCO · LICENSED PROFESSIONAL ENGINEER · No. 60785

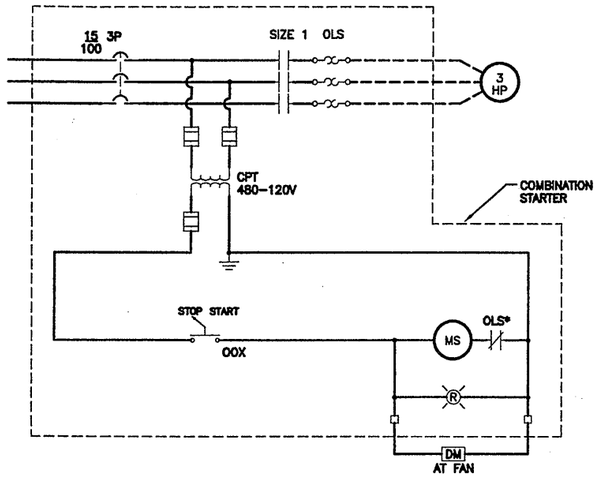
File Number 00659
Date APRIL 2001

E-701



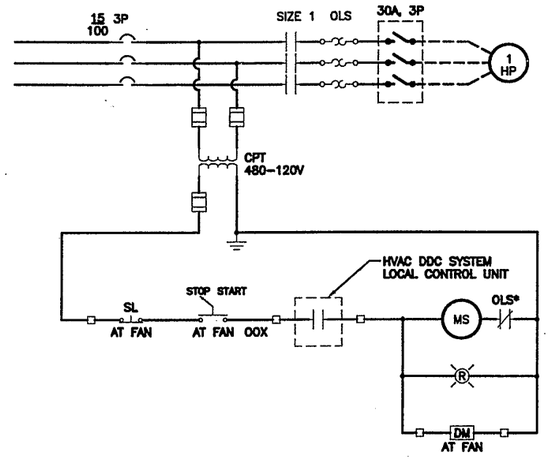
UNIT VENTILATOR UV–702

NOT TO SCALE



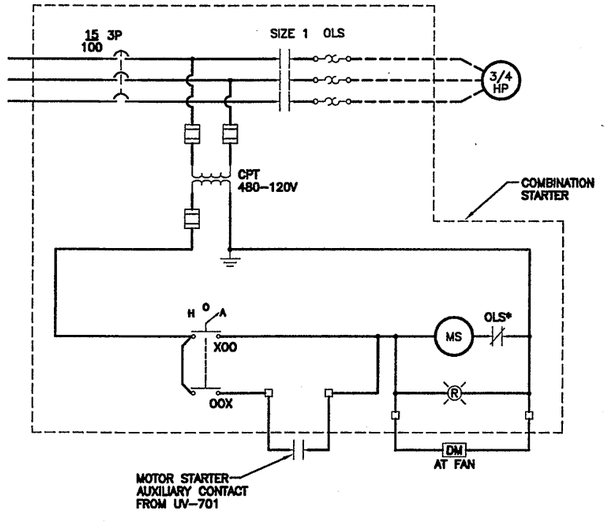
EXHAUST FAN F–702

NOT TO SCALE



EXHAUST FAN F–705

NOT TO SCALE



SUPPLY FAN F–701

NOT TO SCALE

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE: 10/26/05 PER: H Rampulet

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Layer: ON=*; OFF=*REF*

04/03/01 OBG CRV
05503000/0659E214.DWG

NOT TO SCALE

NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

No.	Date	Revisions	Init
0		AS BID	LHP
1	10/31/05	RECORD DRAWING	LHP

In charge of PLD
Designed by JJC
Drawn by CRV
Checked by PLD

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BAF COMPLEX

BAF ELEMENTARY DIAGRAMS

ELECTRICAL

LICENSED PROFESSIONAL ENGINEER • LEONARD J. CAMPOLIETA • No. 60756 • STATE OF NEW YORK

File Number 00659

Date JULY 2001

H Rampulet

E–702

SYMBOLS

- ROOF VENTILATOR, EXHAUST
- RELIEF VENT – SUPPLY
- THERMOSTAT
- MOTOR OPERATOR
- ROUND DUCT PERFORATED SUPPLY DIFFUSER
- WALL PROPELLER FAN
- DUCT SECTION – NEGATIVE PRESSURE
- DUCT SECTION – EXHAUST HIDDEN
- DUCT SECTION – POSITIVE PRESSURE
- DUCT SECTION – SUPPLY HIDDEN
- VD MANUAL VOLUME DAMPER
- M MOTOR OPERATED VOLUME DAMPER
- UH UNIT HEATER
- FIRE DAMPER
- VARIABLE AIR VOLUME BOX
- SUPPLY AIR REGISTER
- SUPPLY AIR DIFFUSER
- RETURN AIR REGISTER
- FLEX DUCT
- DIRECTION OF FLOW
- REDUCER / INCREASER
- TURNING VANE
- OPPOSED BLADE DAMPER
- LOUVER
- FLEXIBLE CONNECTION
- POINT OF CONNECTION
- BUTTERFLY VALVE
- BALANCE VALVE
- CHECK VALVE
- BALL VALVE
- GLOBE VALVE
- GATE VALVE
- 3 WAY VALVE
- TRIPLE-DUTY VALVE
- UNION
- STRAINER
- PRESSURE GAUGE

ABBREVIATIONS

AD	ACCESS DOOR
A.F.F.	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
ALUM	ALUMINUM
APD	AIR PRESSURE DROP
APPROX	ATMOSPHERIC VENT
ATV	ATMOSPHERIC VENT
B	BOILER
BAF	BIOLOGICAL AERATED FILTER
BBD	BOILER BLOWDOWN
BCCT	BYPASS CHLORINE CONTACT TANK
B.O.D.	BOTTOM OF DUCT
B.O.L.	BOTTOM OF LOUVER
B.O.P.	BOTTOM OF PIPE
BTU	BRITISH THERMAL UNIT
CAV	CONSTANT AIR VOLUME
CFM	CUBIC FEET PER MINUTE
CFW	CHEMICAL FEED WATER
CH	CHILLER
CHW	CHILLED WATER
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
℄	CENTERLINE
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
COND	CONDENSATE
CORR. RES.	CORROSION RESISTANT
ø	DIAMETER
D	DEPTH
DB	DRY BULB
dBA	DECIBELS
DCW	DOMESTIC COLD WATER
DEG	DEGREE
DG	DIGESTER GAS
DIA.	DIAMETER
DN.	DOWN
E.A.T.	ENTERING AIR TEMPERATURE
EL.	ELEVATION
ELEC	ELECTRICAL
ENCL	ENCLOSURE
EUH	ELECTRIC UNIT HEATER
E.W.T.	ENTERING WATER TEMPERATURE
EXH	EXHAUST
F	FAN
FCS	FLOW CONTROL STRUCTURE
FD	FIRE DAMPER
F.F.	FINISHED FLOOR
FPM	FEET PER MINUTE
FRP	FIBERGLASS REINFORCED PLASTIC
FSOA	FAST-SLOW-OFF-AUTO SWITCH
GA	GUAGE
GHW	GLYCOL HOT WATER
GHWR	GLYCOL/HOT WATER RETURN
GHWS	GLYCOL/HOT WATER SUPPLY
GPM	GALLONS PER MINUTE
H	HEIGHT
H2O	WATER
HCP	CIRCULATING PUMP
HP	HORSEPOWER
HOA	HAND-OFF-AUTO SWITCH
HR	HOUR
HRFS	HIGH-RATE FLOCCULATED SETTING
HS	HUMIDITY SENSOR
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
HW	HOT WATER
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
HX	HEAT EXCHANGER
I.D.	IDENTIFICATION
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LBS.	POUNDS
LLPS	LOW-LIFT PUMP STATION
LPC	LOW PRESSURE CONDENSATE
LPS	LOW PRESSURE STEAM
LWT	LEAVING WATER TEMPERATURE
LV	LOUVER
M	MOTOR
MAX.	MAXIMUM
MEZZ	MEZZANINE
MIN.	MINIMUM
MTD.	MOUNTED
MBH	THOUSAND BTUS PER HOUR
MOD	MOTOR OPERATED DAMPER
MU	MAKE-UP WATER
NG	NATURAL GAS
OA	OUTSIDE AIR
P	PUMP
PC	PUMPED CONDENSATE
POB	PLANT OPERATIONS BUILDING
PPH	POUNDS PER HOUR
PW	POTABLE WATER
PWR	POWER
RA	RETURN AIR
RPM	REVOLUTIONS PER MINUTE
RET	RETURN
REQ'D	REQUIRED
SA	SUPPLY AIR
SEPS	SECONDARY EFFLUENT PUMP STATION
S.P.	STATIC PRESSURE
SPR	SPRING
SPS	STATIC PRESSURE SENSOR
SS	STAINLESS STEEL
ST	STEAM TRAP
SW	SOFTENED WATER
SQ	SQUARE
TC	TEMPERATURE CONTROLS
TFCS	TERTIARY FLOW CONTROL STRUCTURE
TS	TEMPERATURE SENSOR
T-STAT	THERMOSTAT
TYP.	TYPICAL
UH	UNIT HEATER
VA	VENTILATION AIR
VAV	VARIABLE-AIR-VOLUME
VD	VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE
W	WIDTH
W/	WITH
WB	WET BULB
WF	WALL FIN
W.G.	WATER GAUGE
W.P.D.	WATER PRESSURE DROP

GENERAL NOTES

1. FASTENERS ON THE UNDERSIDE OF PRECAST/PRESTRESSED CONCRETE MEMBERS (PLANKS OR DOUBLE TEE'S) WHICH SERVE FOR DIRECT ATTACHMENT OR FOR HANGERS OF MECHANICAL/ELECTRICAL EQUIPMENT, PIPING, CONDUIT, ETC., MAY NOT BE DRILLED OR SHOT IN THE VICINITY OF THE PRESTRESSING TENDONS. THIS MEANS THAT FASTENERS AT CONCRETE PLANKS CAN BE PLACED ONLY AT THE JOINTS BETWEEN UNITS. ANY INTERMEDIATE SUPPORTS NEEDED TO ACCOMPLISH THIS SHALL BE PROVIDED BY THE CONTRACTOR.
2. ALL PIPE AND DUCT PENETRATIONS SHALL HAVE STEEL SLEEVES WITH WATERSTOPS AND MECHANICAL SEALS PROVIDED BY CONTRACT 4C-HVAC. THE HVAC CONTRACTOR WILL PROVIDE ALL THE STEEL SLEEVES REQUIRED FOR THEIR EQUIPMENT ALONG WITH PENETRATION LOCATIONS SO THAT THE GENERAL CONTRACTOR CAN PLACE THE SLEEVES PRIOR TO CONCRETE PLACEMENT. ALL PIPE AND DUCT PENETRATIONS PASSING THROUGH A CLASSIFIED ROOM INTO A NON-CLASSIFIED ROOM SHALL HAVE GAS-TIGHT WALL PENETRATIONS.
3. REFER TO SHEET G-004 FOR PLANT SITE PLAN.

CHILLER SCHEDULE

UNIT NO.	LOCATION	SERVICE	MOTOR			CAPACITY TONS	CHILLED WATER				CONDENSER WATER				NOTES
			KW	PHASE	VOLTS		P.D. ft hd	EWT DEG F	LWT DEG F	GPM	P.D. ft hd	EWT DEG F	LWT DEG F	GPM	
CH-501	OC214/OC215	AHU-501,502	44.3	3	460	40	28.5	55	45	135	4.0	78	100.8	60	1

NOTES:
1. BASED ON 50% PROPYLENE GLYCOL ON CHILLED WATER SIDE.

PUMP SCHEDULE

TAG NO.	SERVICE	FLUID	FLOWRATE (GPM)	HEAD LOSS (FT H_2O)	ELECTRICAL			TYPE	DUTY	NOTES
					VOLTS/PHASE	HP	RPM			
P-501	REHEATS BASEBOARD	HOT WATER	20	15	115/1	1/4	1750	INLINE	PRIMARY	
P-502	REHEATS BASEBOARD	HOT WATER	20	15	115/1	1/4	1750	INLINE	STAND-BY FOR P-501; 503	
P-503	HEAT EXCHANGER	HOT WATER	22	10	115/1	1/4	1750	INLINE	PRIMARY	
P-504	AHU PREHEAT COILS	GHW	41	20	460/3	1/2	1750	INLINE	PRIMARY	1
P-505	AHU PREHEAT COILS	GHW	41	20	460/3	1/2	1750	INLINE	STAND-BY	1
P-506	AHU COOLING COILS	CHW	135	85	460/3	10	3500	BASE MOUNTED	PRIMARY	2
P-507	AHU COOLING COILS	CHW	135	85	460/3	10	3500	BASE MOUNTED	STAND-BY	2
HCP-201	BAF MECH RM	HOT WATER	350	60	460/3	7.5	1750	BASE MOUNTED	PRIMARY	3, 4
HCP-202	BAF MECH RM	HOT WATER	350	60	460/3	7.5	1750	BASE MOUNTED	PRIMARY	3, 4
HCP-203	BAF MECH RM	HOT WATER	350	60	460/3	7.5	1750	BASE MOUNTED	STAND-BY	3, 4
BFP-601	LLPS BOILERS	FEEDWATER	16	46	460/3	1/2	3500	BASE MOUNTED	PRIMARY	3
BFP-602	LLPS BOILERS	FEEDWATER	16	46	460/3	1/2	3500	BASE MOUNTED	PRIMARY	3
BFP-603	LLPS BOILERS	FEEDWATER	16	46	460/3	1/2	3500	BASE MOUNTED	PRIMARY	3
BFP-604	LLPS BOILERS	FEEDWATER	16	46	460/3	1/2	3500	BASE MOUNTED	STAND-BY	3

NOTES:
1. GHW CONTAINS 50% PROPYLENE GLYCOL.
2. CHW CONTAINS 50% PROPYLENE GLYCOL.
3. INVERTER-DUTY MOTOR.
4. FLOW RATE AND PRESSURE TESTED IS FOR TWO PUMPS OPERATING IN PARALLEL.

HEAT EXCHANGER (HX) SCHEDULE

TAG	HEAT TRANSFER BTU/HR	SHELL SIDE					TUBE SIDE					PHYSICAL DATA		NOTES
		FLUID	FOULING FACTOR (FT^2 F° HR/BTU)	FLOW RATE (GPM/PPH)	INLET (TEMP. F°)	MAX. WPD (FT)	FLUID	FOULING FACTOR (FT^2 F° HR/BTU)	FLOW RATE (GPM)	EWT (F°)	MAX. WPD (FT)	MAXIMUM DIAMETER	MAXIMUM LENGTH	
HX-201	5,100,000	STEAM	0.00052	5279 PPH	218.5	–	HW	0.00052	349.3	170	2.0		7'-0"	2
HX-501	321,249	HW	0.00056	22 GPM	200	1.2	GHW	0.00056	35.6	140	5.9	0'-6"	7'-0"	1

NOTES:
1. GLYCOL/HOT WATER CONTAINS 50% PROPYLENE GLYCOL.
2. INLET STEAM PRESSURE VARIES FROM 2-7 PSIG.

REFER TO O & M MANUAL FOR UPDATED EQUIPMENT SCHEDULES

RECORD DRAWING

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DATE: 11/23/05 PER: GCH

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11/28/00 S&W CMS
..\CONTRACT 2-5\HVAC\0659H001.DWG

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
1		AS BID	
2	11/30/05	RECORD DRAWING	RCG

In charge of DBP
Designed by DBP
Drawn by CMS
Checked by DBP

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

ABBREVIATIONS, SYMBOLS & NOTES

HVAC

STATE OF NEW YORK • GERALD C. HOOK • No. 57504 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001

H-001

AIR HANDLING UNIT (AHU) SCHEDULE

UNIT ID. NO.	SERVES		SUPPLY AIR (CFM)	RETURN AIR (CFM)	OUTSIDE AIR (CFM)	PRESS. REQM'TS EXT ("WG)	PRESS. REQM'TS TOTAL ("WG)	SUPPLY FAN MOTOR HP	SUPPLY FAN MOTOR RPM	SUPPLY FAN MOTOR VOLTS/PHASE	RETURN FAN MOTOR HP	RETURN FAN MOTOR RPM	RETURN FAN MOTOR VOLTS/PHASE	NOTES
AHU-201	BAF GALLERIES	FLOOR MOUNTED AIR HANDLER	12,000	0-12,000	0-12,000	1.5	2.5	7.5	1275	460/3	–	–	–	1,4
AHU-301	CHEMICAL BLDG. C	ROOF MOUNTED AIR HANDLER	12,000	4,000/8,000	4,000/8,000	0.5	1.5	7.5	1275	460/3	3.00	1400	460/3	1,2,3,4

NOTES:
1. UNITS ARE VENTILATION UNITS WITHOUT COILS.
2. PROVIDE AIRSIDE CORROSION RESISTANT EPOXY FINISH.
3. CONTROLS AND STARTERS BY CONTRACT 4C, HVAC.
4. UNIT TO SHUT DOWN WITH FIRE / SMOKE ALARM.

AIR HANDLING UNIT (AHU) SCHEDULE

UNIT ID. NO.	LOCATION	MIN. COOLING CAP. SENSIBLE BTU/HR	MIN. COOLING CAP. TOTAL BTU/HR	COOLING COIL DATA MAX. FACE VEL. (FPM)	MAX. APD	MAX. WPD	EWT (F°)	TEMP RISE	PREHEAT COIL DATA NOMINAL CAP. (BTUH)	GPM	EWT (F°)	TEMP DROP	MAX. WPD	MAX. APD	OUTSIDE AIRFLOW (CFM)	FAN TOTAL AIRFLOW (CFM)	FAN EXT. SP ("WC)	FAN MOTOR HP	FAN MOTOR VOLTS/PHASE	FAN MOTOR RPM	NOTES
AHU-501	OC214/OC215	346,600	421,200	465	0.6" WG	11.4 ft. WG	45	10	265,100	30	160	20	1.52 ft. WG	0.06" WG	3000	14,000	1	15	460/3	644	1,2,4,5
AHU-502	OC214/OC215	38,600	45,000	545	0.75" WG	8.9 ft. WG	45	10	47,300	5.3	160	20	0.70 ft. WG	0.14" WG	700	1,500	1	2	460/3	1938	1,2,3,4,5

NOTES:
1. COIL DATA IS BASED ON 50% PROPYLENE GLYCOL.
2. PROVIDE INVERTER-DUTY MOTOR.
3. PROVIDE INLET GUIDE VANES.
4. PROVIDE EXTENDED BEARING LUBRICATION LINES.
5. UNIT TO SHUT DOWN WITH FIRE / SMOKE ALARM.

FAN AND EXHAUSTER SCHEDULE

UNIT I.D.	BUILDING	SERVES ROOM NO.	TYPE OF EQUIPMENT	FAN DRIVE	FAN CFM	FAN EXT. S.P. IN. W.G.	FAN RPM	ELECTRICAL dBA OR SONES	ELECTRICAL HP	ELECTRICAL RPM	ELECTRICAL VOLTS/PHASE	CONTROLS INTERLOCKED WITH	CONTROLS CONTROLLED BY	CONTROLS PROVIDED BY	NOTES
F-101	SEC. EFF. PUMP STATION	ELECTRICAL ROOM	INLINE CENTRIFUGAL UPBLAST	BELT	18000	0.375	884	70dBA	5.0	1750	460/3	LV-102, LV-104	HOA SWITCH/T-STAT	ELEC/HVAC	1, 8
F-102	SEC. EFF. PUMP STATION	ELECTRICAL ROOM	INLINE CENTRIFUGAL UPBLAST	BELT	18000	0.375	884	70dBA	5.0	1750	460/3	LV-101, LV-104	HOA SWITCH/T-STAT	ELEC/HVAC	1, 8
F-103	SEC. EFF. PUMP STATION	ELECTRICAL ROOM	INLINE CENTRIFUGAL UPBLAST	BELT	18000	0.375	884	70dBA	5.0	1750	460/3	LV-101, LV-103	HOA SWITCH/T-STAT	ELEC/HVAC	1, 8
F-104	SEC. EFF. PUMP STATION	PUMP ROOM	INLINE CENTRIFUGAL UPBLAST	BELT	10000	0.375	742	66dBA	3.0	1750	460/3	LV-106, LV-108	HOA SWITCH/T-STAT	ELEC/HVAC	1, 8
F-105	SEC. EFF. PUMP STATION	PUMP ROOM	INLINE CENTRIFUGAL UPBLAST	BELT	10000	0.375	742	66dBA	3.0	1750	460/3	LV-105, LV-108	HOA SWITCH/T-STAT	ELEC/HVAC	1, 8
F-106	SEC. EFF. PUMP STATION	PUMP ROOM	INLINE CENTRIFUGAL UPBLAST	BELT	10000	0.375	742	66dBA	3.0	1750	460/3	LV-105, LV-107	HOA SWITCH/T-STAT	ELEC/HVAC	1, 8
F-201	BAF COMPLEX	MECHANICAL ROOM	ROOFTOP CENTRIFUGAL EXHAUST	BELT	1670/2500	0.375	835	8.8	0.5	1200/1800	460/3	LV-205	FSOA SWITCH/T-STAT	ELEC/HVAC	3,5,8
F-202	BAF COMPLEX	CORRIDOR	ROOFTOP CENTRIFUGAL EXHAUST	DIRECT	500	0.375	1013	3.7	0.25	1725	120/1	–	ON/OFF SWITCH	ELEC	5
F-203	BAF COMPLEX	BLOWER ROOM	VANE AXIAL HOODED EXHAUST	BELT	30000	0.5	836	64dBA	10.0	1800	460/3	–	VFD/DDC SYSTEM	ELEC/HVAC	1,4,8
F-204	BAF COMPLEX	BLOWER ROOM	VANE AXIAL HOODED EXHAUST	BELT	30000	0.5	836	64dBA	10.0	1800	460/3	–	VFD/DDC SYSTEM	ELEC/HVAC	1,4,8
F-205	BAF COMPLEX	ELECTRICAL ROOM	VANE AXIAL HOODED EXHAUST	BELT	10000	0.5	840	58dBA	3.0	1800	460/3	LV-203, LV-204	VFD/DDC SYSTEM	ELEC/HVAC	1,4,8
F-206	BAF COMPLEX	GALLERY	WALL-MTD. PROPELLER EXHAUST	BELT	4000	0.375	1037	20.0	0.5	1725	460/3		AHU-201 INTERLOCK		8
F-207	BAF COMPLEX	GALLERY	WALL-MTD. PROPELLER EXHAUST	BELT	4000	0.375	1037	20.0	0.5	1725	460/3		AHU-201 INTERLOCK		8
F-208	BAF COMPLEX	BAF	ROOFTOP CENTRIFUGAL EXHAUST	BELT	22,500	0.125	340	18.1	5.0	1750	460/3	BAF AERATION CONTROL		ELEC	5,8
F-209	BAF COMPLEX	BAF	ROOFTOP CENTRIFUGAL EXHAUST	BELT	22,500	0.125	340	18.1	5.0	1750	460/3	BAF AERATION CONTROL		ELEC	5,8
F-210	BAF COMPLEX	BAF	ROOFTOP CENTRIFUGAL EXHAUST	BELT	22,500	0.125	340	18.1	5.0	1750	460/3	BAF AERATION CONTROL		ELEC	5,8
F-211	BAF COMPLEX	BAF	ROOFTOP CENTRIFUGAL EXHAUST	BELT	22,500	0.125	340	18.1	5.0	1750	460/3	BAF AERATION CONTROL		ELEC	5,8
F-212	BAF COMPLEX	BAF	ROOFTOP CENTRIFUGAL EXHAUST	BELT	22,500	0.125	340	18.1	5.0	1750	460/3	BAF AERATION CONTROL		ELEC	5,8
F-213	BAF COMPLEX	BAF	ROOFTOP CENTRIFUGAL EXHAUST	BELT	22,500	0.125	340	18.1	5.0	1750	460/3	BAF AERATION CONTROL		ELEC	5,8
F-214	BAF COMPLEX	BAF	ROOFTOP CENTRIFUGAL EXHAUST	BELT	22,500	0.125	340	18.1	5.0	1750	460/3	BAF AERATION CONTROL		ELEC	5,8
F-215	BAF COMPLEX	BAF	ROOFTOP CENTRIFUGAL EXHAUST	BELT	22,500	0.125	340	18.1	5.0	1750	460/3	BAF AERATION CONTROL		ELEC	5,8
F-216	BAF COMPLEX	BAF	ROOFTOP CENTRIFUGAL EXHAUST	BELT	22,500	0.125	340	18.1	5.0	1750	460/3	BAF AERATION CONTROL		ELEC	5,8
F-301	HRFS COMPLEX	GALLERY	FILTERED IN-LINE CENTRIFUGAL	BELT	6000	2.0	1088		5.0	1725	460/3		ON/OFF SWITCH	ELEC	1,6,8
F-302	HRFS COMPLEX	GALLERY	FILTERED IN-LINE CENTRIFUGAL	BELT	6000	2.0	1088		5.0	1725	460/3		ON/OFF SWITCH	ELEC	1,6,8
F-303	HRFS COMPLEX	GALLERY	WALL-MTD. PROPELLER EXHAUST	BELT	5000	0.38	878	18.6	0.5	1725	460/3	F-302	F-302 INTERLOCK	ELEC	8
F-304	HRFS COMPLEX	GALLERY	WALL-MTD. PROPELLER EXHAUST	BELT	3000	0.375	950	16.7	0.33	1725	460/3	F-302	F-302 INTERLOCK	ELEC	8
F-305	HRFS COMPLEX	GALLERY	ROOFTOP CENTRIFUGAL EXHAUST	BELT	5000	0.375	738	15.3	1.0	1725	460/3	F-301	ON/OFF SWITCH	ELEC	5,8
F-306	HRFS COMPLEX	GALLERY	WALL-MTD. PROPELLER EXHAUST	BELT	3000	0.375	950	16.7	0.33	1725	460/3	F-301	F-301 INTERLOCK	ELEC	8
F-307	HRFS COMPLEX	HYDROCYCLONE RMS	FILTERED IN-LINE CENTRIFUGAL	BELT	600	0.5	1260	8.3	0.25	1725	120/1	LV-304	ON/OFF SWITCH	ELEC	1
F-308	HRFS COMPLEX	HYDROCYCLONE RMS	FILTERED IN-LINE CENTRIFUGAL	BELT	600	0.5	1260	8.3	0.25	1725	120/1	LV-305	ON/OFF SWITCH	ELEC	1
F-309	CHEMICAL BUILDING C	ELECTRICAL ROOM	FILTERED IN-LINE CENTRIFUGAL	BELT	300	0.5	1220	8.3	0.25	1725	120/1	–	ON/OFF SWITCH	ELEC	1
F-310	CHEMICAL BUILDING C	CHEMICAL STORAGE	ROOF-TOP CENTRIF. UPBLAST EXHAUST	BELT	4200/4800	0.375	860/1725	14.8	1.50	589	460/3	AHU-301	HIGH/LOW/OFF SWITCH	HVAC	7,8
F-311	HRFS COMPLEX	HRFS	ROOFTOP CENTRIFUGAL EXHAUST	BELT	22,500	0.125	340	18.1	5.0	1750	460/3			ELEC	5,8
F-401	UV DISINFECTION	UV DISINFECTION	FILTERED CENTRIFUGAL PENTHOUSE SUP.	BELT	3600	1.50	1048	15.9	2.0	1725	460/3	–	ON/OFF SWITCH	ELEC	5,8
F-402	UV DISINFECTION	STORAGE ROOM	WALL-MTD TRANSFER FAN	DIRECT	255	0.25	1490	2.2	0.04	1490	120/1	–	VAR. SPEED CONTROL	HVAC	
F-403	UV DISINFECTION	ELECTRICAL ROOM	WALL-MTD TRANSFER FAN	DIRECT	255	0.25	1490	2.2	0.04	1490	120/1	–	VAR. SPEED CONTROL	HVAC	
F-501	OPERATIONS CENTER	FUME HOOD	FRP RADIAL FUME EXHAUST	BELT	950	0.75	1700	NA	1/2	1725	460/3		VFD	ELEC	2
F-502	OPERATIONS CENTER	AHU-501 RETURN AIR	FRP CENTRIFUGAL BLOWER	BELT	11,750	1.50	1798	NA	10	1725	480/3	AHU-501;LV-501A,502A		VFD/T/C	1,4,8
F-503	OPERATIONS CENTER	REST ROOMS	ROOFTOP CENTRIFUGAL EXHAUST	DIRECT	250	0.5	1715	7.3	1/8	1550	115/1		DDC SYSTEM	T/C	3, 5
F-504	OPERATIONS CENTER	WOMANS LOCKERS	ROOFTOP CENTRIFUGAL EXHAUST	DIRECT	400	0.5	1542	7.9	1/8	1550	115/1		DDC SYSTEM	T/C	3, 5
F-505	OPERATIONS CENTER	MENS LOCKERS	ROOFTOP CENTRIFUGAL EXHAUST	BELT	750	0.5	1686	10.1	1/4	1725	115/1		DDC SYSTEM	T/C	3, 5
F-506	OPERATIONS CENTER	KITCHEN	ROOFTOP CENTRIFUGAL EXHAUST	DIRECT	500	0.5	1509	10.1	1/8	1550	115/1		DDC SYSTEM	T/C	3, 5
F-507	OPERATIONS CENTER	REST ROOMS	ROOFTOP CENTRIFUGAL EXHAUST	DIRECT	600	0.25	1550	9	1/8	1550	115/1		DDC SYSTEM	T/C	3, 5
F-508	OPERATIONS CENTER	MECH ROOM	ROOFTOP CENTRIFUGAL- UP BLAST	BELT	3600	0.5	905	13.3	3/4	1725	460/3	LV-501B, 502B	DDC SYSTEM	T/C	8
F-509	OPERATIONS CENTER	OC308	ROOFTOP CENTRIFUGAL EXHAUST	DIRECT	50	0.25	1160	3.2	1/25	1160	115/1		DDC SYSTEM	T/C	3, 5
F-601	LOW LIFT PUMP STATION	BOILER ROOM	IN-LINE TUBE AXIAL	BELT	2650/4000	0.375	1050	19.0	0.50	1725	460/3		2-SPEED SWITCH	ELEC	1, 8
F-701	POB	GALLERIES	FILTERED CENTRIFUGAL PENTHOUSE SUP.	BELT	3,300	0.25			0.75	1750	460/3	UV-701	UV-701 INTERLOCK	ELEC	3,5,8
F-702	POB	BASEMENT	ROOFTOP CENTRIFUGAL EXHAUST	BELT	6000	1.00	1060	24.0	3.0	1750	480/3		ON/OFF SWITCH	ELEC	3,5,8
F-703	TFCS-A	GALLERIES	ROOFTOP CENTRIFUGAL EXHAUST	BELT	1,200	0.25	965	8.5	1/6	1750	120/1		ON/OFF SWITCH	ELEC	3, 5
F-704	TFCS-B	GALLERIES	ROOFTOP CENTRIFUGAL EXHAUST	BELT	1,200	0.25	965	8.5	1/6	1750	120/1		ON/OFF SWITCH	ELEC	3, 5
F-705	LOW LIFT PUMP STATION	PUMP ROOM	ROOFTOP CENTRIFUGAL EXHAUST	BELT	4600	0.25	1055	19.7	1.0	1750	460/3		ON/OFF SWITCH	ELEC	3,5,8
F-801	SUBSTA. BATTERY BLDG.	BATTERY ROOM	WALL-MTD PROPELLER EXHAUST	DIRECT	250	0.25	1650	10.3	0.04	1650	120/1	BATTERY SYS.	ON/OFF SWITCH	ELEC	
F-802	BCCT BUILDING	DECHLOR. ROOM	WALL-MTD PROPELLER EXHAUST	DIRECT	500	0.375	1160	7.5	0.17	1160	120/1	T-STAT	HOA SWITCH/T-STAT	ELEC/HVAC	

NOTES:
1. UNIT EXTERIOR FINISH TO BE LIGHT GREY EPOXY. SUBMIT COLOR CHART FOR APPROVAL.
2. FRP CONSTRUCTION.
3. MOTORIZED DAMPER.
4. INVERTER-DUTY MOTOR.
5. UNIT FINISH TO BE ALUMINUM MILL FINISH.
6. LISTED FAN STATIC PRESSURE IS TOTAL STATIC PRESSURE INCLUDING 0.75 W.G. EXTERNAL STATIC PRESSURE.
7. PROVIDE AIRSIDE CORROSION RESISTANT FINISH.
8. UNIT TO BE SHUT DOWN WITH FIRE / SMOKE ALARM.

01/07/01 S&W CMS
0659H002

UNIT VENTILATOR (UV) SCHEDULE

TAG	LOCATION	FAN SUPPLY AIR (CFM)	FAN ESP ("WC)	FAN HP	FAN VOLTS/PHASE	HEATING COIL CAPACITY (MBH)	HEATING COIL EAT (F°)	HEATING COIL LAT (F°)	HEATING COIL STEAM PRESSURE (PSIG)	NOTES
UV-701	POB	3,300		5.0	460/3	250	60	-10	5	1
UV-702	LLPS	10,000	2.0	7.5	460/3	759	60	-10	5	1

NOTES:
1. UNIT TO SHUT DOWN WITH FIRE / SMOKE ALARM.

STEAM TRAP (ST) SCHEDULE

TAG	SERVICE	INLET STEAM PRESSURE (PSIG)	DISCHARGE PRESSURE (PSIG)	CAPACITY (LB./HR)	TYPE OF TRAP
ST-201	END OF MAIN DRIP	5	2	250	F & T
ST-202	END OF MAIN DRIP	5	2	100	F & T
ST-203	HX-201	2	0.5	5,500	F & T
ST-204	HX-210 DRIP	2	0.5	100	F & T
ST-601	MAIN STEAM HEADER	7.5	2	250	F & T
ST-701	UV-701	5	2	261	F & T
ST-702	DRIP	5	2	50	TD
ST-703	DRIP	5	2	50	TD
ST-704	UV-702	5	2	791	F & T
ST-901	END OF MAIN DRIP	5	2	250	IB
ST-902	DRIP	5	2	250	F & T

NOTES:
1. F & T = FLOAT & THERMOSTATIC TRAP.
2. TD = THERMODYNAMIC TRAP.
3. IB = INVERTED BUCKET TRAP.

WALL FIN (WF) SCHEDULE

NO.	LOCATION	MINIMUM BTU/HR	HEATING ELEMENT LENGTH (FT)	HEATING ELEMENT FINS/FT	HEATING ELEMENT ROWS	HEATING ELEMENT GPM	NOTES
WF-501A	OC101 LOBBY	12,110	14	40	1	0.81	1,4
WF-501B	OC101 LOBBY	15,570	18	40	1	1.04	1,4
R-301	CHEM	3,900	6	NA	NA	1.00	2,3,4
R-302	CHEM	3,900	6	NA	NA	1.00	2,3,4
R-303	CHEM	3,900	6	NA	NA	1.00	2,3,4

NOTES:
1. ENCLOSURE PROVIDED BY C-4A.
2. CAST IRON RADIATOR.
3. UNIT TO BE CONTROLLED BY NON-ELECTRIC THERMOSTATIC CONTROL VALVE.
4. UNIT OUTPUT BASED ON 190°F ENTERING WATER TEMPERATURE.

REFER TO O & M MANUAL FOR UPDATED EQUIPMENT SCHEDULES

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.
DATE: 11/23/05 PER: GCH

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
1		AS BID	
2	1/30/05	RECORD DRAWING	RCG

In charge of DBP
Designed by DBP
Drawn by CMS
Checked by DBP

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

SCHEDULES

HVAC

STATE OF NEW YORK • GERALD C. HOOK • No. 57504 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001

H-002

LOUVER AND DAMPER SCHEDULE

UNIT I.D.	BUILDING	ROOM NAME	EQUIPMENT TYPE	DIMENSIONS (W" X H" X D")	BLADE ANGLE	OPERATOR TYPE	VOLTS/ PHASE	INTERLOCK WITH	NOTES
LV-101	SEC. EFF. PUMP STATION	ELECTRICAL ROOM	COMBINATION FIXED/OPERABLE	56" X 112" X8"	45	POWER OPEN/SPRING RETURN	120/1	F-102 & F-103	3,5
LV-102	SEC. EFF. PUMP STATION	ELECTRICAL ROOM	COMBINATION FIXED/OPERABLE	56" X 112" X8"	45	POWER OPEN/SPRING RETURN	120/1	F-101	3,5
LV-103	SEC. EFF. PUMP STATION	ELECTRICAL ROOM	COMBINATION FIXED/OPERABLE	56" X 112" X8"	45	POWER OPEN/SPRING RETURN	120/1	F-103	3,5
LV-104	SEC. EFF. PUMP STATION	ELECTRICAL ROOM	COMBINATION FIXED/OPERABLE	56" X 112" X8"	45	POWER OPEN/SPRING RETURN	120/1	F-101 & F-102	3,5
LV-105	SEC. EFF. PUMP STATION	PUMP ROOM	COMBINATION FIXED/OPERABLE	56" X 56" X8"	45	POWER OPEN/SPRING RETURN	120/1	F-105 & F-106	3,5
LV-106	SEC. EFF. PUMP STATION	PUMP ROOM	COMBINATION FIXED/OPERABLE	56" X 56" X8"	45	POWER OPEN/SPRING RETURN	120/1	F-104	3,5
LV-107	SEC. EFF. PUMP STATION	PUMP ROOM	COMBINATION FIXED/OPERABLE	56" X 56" X8"	45	POWER OPEN/SPRING RETURN	120/1	F-106	3,5
LV-108	SEC. EFF. PUMP STATION	PUMP ROOM	COMBINATION FIXED/OPERABLE	56" X 56" X8"	45	POWER OPEN/SPRING RETURN	120/1	F-104 & F-105	3,5
LV-201	BAF COMPLEX	BAF GALLERY	COMBINATION FIXED/OPERABLE	32" X 32" X 4"	45	SELF-ACTING	–	–	2,4
LV-202	BAF COMPLEX	BAF GALLERY	COMBINATION FIXED/OPERABLE	32" X 32" X 4"	45	SELF-ACTING	–	–	2,4
LV-2034LV-204	BAF COMPLEX	ELECTRICAL ROOM	COMBINATION FIXED/OPERABLE	96" X 54" X 4"	45	POWER OPEN/SPRING RETURN	120/1	F-205	3,5
LV-205	BAF COMPLEX	MECHANICAL ROOM	COMBINATION FIXED/OPERABLE	72" X 24" X 4"	45	POWER OPEN/SPRING RETURN	120/1	F-201	3
LV-3014V-303	HRFS COMPLEX	HRFS GALLERIES	COMBINATION FIXED/SELF-ACTING	32" X 32" X 4"	45	SELF-ACTING	–	–	2,4
LV-304	HRFS COMPLEX	HYDROCYCLONE ENCL.	COMBINATION FIXED/OPERABLE	16" X 16" X 4"	45	POWER OPEN/SPRING RETURN	120/1	F-307	2
LV-305	HRFS COMPLEX	HYDROCYCLONE ENCL.	COMBINATION FIXED/OPERABLE	16" X 16" X 4"	45	POWER OPEN/SPRING RETURN	120/1	F-308	2
LV-3064V-307	CHEM BUILDING C	ELECTRICAL ROOM	COMBINATION FIXED/OPERABLE	24" X 24" X 4"	45	POWER OPEN/SPRING RETURN	120/1	F-309	3
LV-4014V-402	UV DISINFECTION	UV DISINFECTION ROOM	COMBINATION FIXED/OPERABLE	24" X 24" X 4"	45	POWER OPEN/SPRING RETURN	120/1	F-401	
LV-501	OPERATIONS CENTER	MECH ROOM	COMBINATION FIXED/OPERABLE	48" X 84" X 4"	45	POWER OPEN/SPRING RETURN	120/1	F-508	1
LV-502	OPERATIONS CENTER	MECH ROOM	COMBINATION FIXED/OPERABLE	48" X 84" X 4"	45	POWER OPEN/SPRING RETURN	120/1	F-508	1
LV-503	OPERATIONS CENTER	MAINT ROOM	FIXED ONLY	24" X 24" X 4"	45				
LV-504	OPERATIONS CENTER	MECH ROOM	FIXED ONLY	78" X 96" X 4"	45				
LV-701	LOW LIFT PUMP STATION	PUMP ROOM	COMBINATION FIXED/OPERABLE	52" X 82" X 4"	45	POWER OPEN/SPRING RETURN	120/1	UV-702	6
LV-702	LOW LIFT PUMP STATION	PUMP ROOM	COMBINATION FIXED/OPERABLE	52" X 82" X 4"	45	POWER OPEN/SPRING RETURN	120/1	UV-702	6
LV-801	SUBSTA. BATTERY BLDG.	BATTERY ROOM	COMBINATION FIXED/OPERABLE	24" X 24" X 4"	45	POWER OPEN/SPRING RETURN	120/1	F-801	3
LV-802	SUBSTA. BATTERY BLDG.	BATTERY ROOM	COMBINATION FIXED/OPERABLE	16" X 16" X 4"	45	SELF-ACTING	–	–	4
LV-803	RCCT BLDG.	DECHLOR. ROOM	COMBINATION FIXED/OPERABLE	32" X 32" X 4"	45	POWER OPEN/SPRING RETURN	120/1	F-802	2,3
LV-804	RCCT BLDG.	DECHLOR. ROOM	COMBINATION FIXED/OPERABLE	21" X 21" X 4"	45	SELF-ACTING	–	–	2,4

NOTES:
1. OPERABLE DAMPER SHALL BE SPLIT HORIZONTALLY. TOP DAMPER SHALL BE 48" X 60", BOTTOM DAMPER SHALL BE 48" X 24".
2. UNIT, UNIT SUPPORTS AND ALL ASSOCIATED CONTROLS TO HAVE CORROSION RESISTANT CONSTRUCTION SUITABLE FOR ENVIRONMENTS SHOWN ON CONTRACT DRAWINGS AND AS SPECIFIED.
3. DAMPER OPERATOR SHALL BE CAPABLE OF OPENING AND CLOSING APPROVED DAMPER OR OPERABLE LOUVER.
4. VERIFY THAT ASSOCIATED WALL PROPELLER FAN IS COMPATIBLE WITH LOUVER DIMENSIONS AND SELF-ACTING DAMPER.
5. VERIFY THAT MOTOR OPERATOR TORQUE IS CAPABLE OF OPERATING LOUVER.
6. DIMENSIONS ARE APPROXIMATE. LOUVER SHALL BE INSTALLED IN PLACE OF EXISTING WINDOW PANE.

UNIT HEATER SCHEDULE

UNIT I.D.	BUILDING	ROOM	EQUIPMENT TYPE	COIL DATA (MBH)	COIL DATA (kW)	COIL DATA VOLTS/ PHASE	AIR DATA CFM	AIR DATA E.A.T. (°F)	WATER DATA GPM	WATER DATA EWT (F)	WATER DATA WPD (FT)	MOTOR DATA HP	MOTOR DATA RPM	MOTOR DATA VOLTS/ PHASE	NOTES
UH-101	SEC. EFF. PUMP STATION	ELECTRICAL ROOM	STANDARD ELECTRIC	34.1	10.0	460/3	650	–	–	–	–	0.033	1600	460/1	2
UH-102	SEC. EFF. PUMP STATION	ELECTRICAL ROOM	STANDARD ELECTRIC	34.1	10.0	460/3	650	–	–	–	–	0.033	1600	460/1	2
UH-103	SEC. EFF. PUMP STATION	PUMP ROOM	STANDARD ELECTRIC	34.1	10.0	460/3	650	–	–	–	–	0.033	1600	460/1	2
UH-104	SEC. EFF. PUMP STATION	PUMP ROOM	STANDARD ELECTRIC	34.1	10.0	460/3	650	–	–	–	–	0.033	1600	460/1	2
UH-201-UH-202	BAF COMPLEX	GALLERY	HORIZONTAL CORR. RES.	49.0	–	–	1320	60	3.2	200	0.27	0.33	1725	460/3	1
UH-203-UH-206	BAF COMPLEX	GALLERY	HORIZONTAL CORR. RES.	232.0	–	–	6000	60	15.5	200	0.62	1.5	1725	460/3	1
UH-207-UH-208	BAF COMPLEX	GALLERY	HORIZONTAL CORR. RES.	49.0	–	–	1320	60	3.2	200	0.27	0.33	1725	460/3	1
UH-209	BAF COMPLEX	GALLERY	CORR. RES. DOWNBLAST	150.0	–	–	4560	60	10	200	0.34	0.75	1725	460/3	1
UH-210-211	BAF COMPLEX	MECHANICAL ROOM	STANDARD HOT WTR	81.0	–	–	2010	60	8.4	200	3.2	0.125	1625	120/1	
UH-212-212	BAF COMPLEX	BLOWER ROOM	STANDARD HOT WTR	62.6	–	–	1340	60	6.5	200	1.4	0.125	1625	120/1	
UH-215-214	BAF COMPLEX	ELECTRICAL ROOM	STANDARD HOT WTR	44.8	–	–	1120	60	4.6	200	0.8	0.063	1625	120/1	
UH-301	HRFS COMPLEX	INFLUENT GALLERY	CORR. RES. DOWNBLAST	49.0	–	–	1320	60	3.2	200	0.27	0.33	1725	460/3	1
UH-302-UH-303	HRFS COMPLEX	INFLUENT GALLERY	CORR. RES. DOWNBLAST	34.0	–	–	700	60	2.3	200	0.13	0.33	1725	460/3	1
UH-304	HRFS COMPLEX	INFLUENT GALLERY	CORR. RES. DOWNBLAST	49.0	–	–	1320	60	3.2	200	0.27	0.33	1725	460/3	1
UH-305-UH-308	HRFS COMPLEX	SOUTH GALLERY	CORR. RES. DOWNBLAST	150.0	–	–	4560	60	10	200	0.34	0.75	1725	460/3	1
UH-309-UH-312	HRFS COMPLEX	NORTH GALLERY	CORR. RES. DOWNBLAST	150.0	–	–	4560	60	10	200	0.34	0.75	1725	460/3	1
UH-313-UH-316	HRFS COMPLEX	EFFLUENT GALLERY	CORR. RES. DOWNBLAST	34.0	–	–	700	60	2.3	200	0.13	0.33	1725	460/3	1
UH-317-UH-322	CHEMICAL BLDG C	CHEMICAL STORAGE	CORR. RES. DOWNBLAST	121.0	–	–	3900	60	8.1	200	0.26	0.75	1725	460/3	1
UH-323	CHEMICAL BLDG C	ELECTRICAL ROOM	STANDARD HOT WTR	30.8	–	–	730	60	3.2	200	0.3	0.063	1550	120/1	
UH-324-UH-325	HRFS COMPLEX	HYDROCYCLONE ENCL.	CORR. RES. HORIZONTAL	137.0	–	–	3900	60	13.7	200	0.75	0.75	1725	460/3	1
UH-401	UV DISINFECTION	UV DISINFECTION	CORR. RES. DOWNBLAST	121.0	–	–	3900	60	8.1	200	0.26	0.75	1725	460/3	1
UH-402	UV DISINFECTION	UV DISINFECTION	CORR. RES. DOWNBLAST	121.0	–	–	3900	60	8.1	200	0.26	0.75	1725	460/3	1
UH-403	UV DISINFECTION	UV DISINFECTION	CORR. RES. DOWNBLAST	121.0	–	–	3900	60	8.1	200	0.26	0.75	1725	460/3	1
UH-404	UV DISINFECTION	UV DISINFECTION	CORR. RES. DOWNBLAST	121.0	–	–	3900	60	8.1	200	0.26	0.75	1725	460/3	1
UH-405	UV DISINFECTION	STORAGE ROOM	STANDARD HOT WTR	16.6	–	–	370	60	1.7	200	0.8	0.02	1550	120/1	
UH-406	UV DISINFECTION	ELECTRIC ROOM	STANDARD HOT WTR	16.6	–	–	370	60	1.7	200	0.8	0.02	1550	120/1	
UH-501	OPERATIONS CENTER	MECH ROOM	STANDARD HOT WTR	5.0	–	–			0.5	200	1.0	0.2	1550	120/1	
UH-801	SUBSTA. BATTERY BLDG	BATTERY ROOM	STANDARD ELECTRIC	42.7	12.5	460/3	830	–	–	–	–	0.05	1600	460/1	2
UH-802-UH-803	RCCT BLDG.	DECHLOR. ROOM	STANDARD ELECTRIC	25.6	7.5	460/3	530	–	–	–	–	0.05	1600	460/1	2

NOTES:
1. UNIT, UNIT SUPPORTS AND ALL ASSOCIATED CONTROLS TO HAVE CORROSION RESISTANT CONSTRUCTION SUITABLE FOR ENVIRONMENTS SHOWN ON CONTRACT DRAWINGS AND AS SPECIFIED.
2. CONTROL POWER CONDUCTERS AND CONDUIT FROM UNIT HEATER CONTROLS TO CONTROLLING THERMOSTAT SHALL BE PROVIDED AND INSTALLED BY CONTRACT 4C.

VAV BOX SCHEDULE

TAG	SPACES SERVED	TYPE OF CONTROL	MINIMUM PRIMARY AIRFLOW CFM	DESIGN PRIMARY AIRFLOW CFM	UNIT AIRFLOW CFM	REHEAT COIL LOAD BTU/HR	REHEAT COIL HOT WATER FLOW GPM	REHEAT COIL HOT WATER TEMP DROP DEG F	REHEAT COIL MAX HEAD LOSS/FT	MAX NC	MOTOR HP	VOLTS/PH	NOTES
VAV-501	OC101	FAN POWERED CAV WITH HOT WATER REHEAT COIL	250	1,054	1,253	27,900	1.86	30.0	2.0	30.0	1/3	120/1	
VAV-502	OC102, OC202	CAV WITH HOT WATER REHEAT COIL	400	1,097	1,097	23,800	1.59	30.0	2.0	30.0	N/A	N/A	
VAV-503	OC104	CAV WITH HOT WATER REHEAT COIL	50	114	114	1,600	0.11	30.0	2.0	30.0	N/A	N/A	
VAV-504	OC106	VAV WITH HOT WATER REHEAT COIL	150	600	600	7,900	0.53	30.0	2.0	30.0	N/A	N/A	
VAV-505	OC107	VAV WITH HOT WATER REHEAT COIL	250	900	900	6,600	0.44	30.0	2.0	30.0	N/A	N/A	
VAV-506	OC109	VAV WITH HOT WATER REHEAT COIL	80	238	238	400	0.03	30.0	2.0	30.0	N/A	N/A	
VAV-507	OC110, OC114	VAV WITH HOT WATER REHEAT COIL	80	208	208	1,500	0.10	30.0	2.0	30.0	N/A	N/A	
VAV-508	OC113, OC210, OC309	FAN POWERED CAV WITH HOT WATER REHEAT COIL	80	14	304	6,600	0.44	30.0	2.0	30.0	1/10	120/1	
VAV-509	OC201	FAN POWERED CAV WITH HOT WATER REHEAT COIL	400	974	974	19,900	1.33	30.0	2.0	30.0	1/3	120/1	
VAV-510	OC203, OC209	FAN POWERED CAV WITH HOT WATER REHEAT COIL	80	378	378	5,300	0.35	30.0	2.0	30.0	1/10	120/1	
VAV-511	OC204, OC205, OC206	CAV WITH HOT WATER REHEAT COIL	120	400	400	1,700	0.11	30.0	2.0	30.0	N/A	N/A	
VAV-512	OC207, OC208	FAN POWERED CAV WITH HOT WATER REHEAT COIL	600	2,806	2,806	24,000	1.60	30.0	2.0	30.0	3/4	120/1	
VAV-513	OC211, OC212, OC213	CAV WITH HOT WATER REHEAT COIL	200	749	749	300	0.02	30.0	2.0	30.0	N/A	N/A	
VAV-514	OC301, OC302	CAV WITH HOT WATER REHEAT COIL	120	608	608	13,200	0.88	30.0	2.0	30.0	N/A	N/A	
VAV-515	OC303	FAN POWERED CAV WITH HOT WATER REHEAT COIL	150	528	528	9,300	0.62	30.0	2.0	30.0	1/4	120/1	
VAV-516	OC304	VAV WITH HOT WATER REHEAT COIL	200	950	950	2,400	0.18	30.0	2.0	30.0	N/A	N/A	1
VAV-517	OC305	VAV WITH HOT WATER REHEAT COIL	100	342	342	3,100	0.21	30.0	2.0	30.0	N/A	N/A	
VAV-518	OC306	FAN POWERED CAV WITH HOT WATER REHEAT COIL	980	2,070	2,070	38,200	2.55	30.0	2.0	30.0	3/4	120/1	
VAV-519	OC311, OC307	VAV WITH HOT WATER REHEAT COIL	100	307	307	3,600	0.24	30.0	2.0	30.0	N/A	N/A	
VAV-520	OC312	FAN POWERED CAV WITH HOT WATER REHEAT COIL	160	491	491	5,600	0.37	30.0	2.0	30.0	1/4	120/1	
VAV-521	OC313	VAV WITH HOT WATER REHEAT COIL	250	853	853	14,100	0.94	30.0	2.0	30.0	N/A	N/A	

NOTES:
1. VAV BOX SHALL HAVE SAME MANUFACTURER AS FUMEHOOD VAV CONTROL DAMPER.

RELIEF VENT SCHEDULE

UNIT I.D.	BUILDING	SERVES ROOM	EQUIPMENT TYPE	THROAT DIMENSIONS (W" X H")	AIR FLOW (CFM)	DAMPER OPERATOR TYPE	VOLTS/ PHASE	INTERLOCK WITH	NOTES
RV-201:RV-202	BAF COMPLEX	PLENUM ROOM	LOUVERED PENTHOUSE SUPPLY	96" X 96"	48,000	–	–	–	1
RV-301:RV-302	HRFS COMPLEX	HRFS GALLERIES	LOUVERED PENTHOUSE SUPPLY	36" X 36"	6000	–	–	–	1
RV-303:RV-304	HRFS COMPLEX	HYDROCYCLONE ENCL.	LOUVERED PENTHOUSE SUPPLY	14" X 14"	600	–	–	–	1
RV-501	OPERATIONS CENTER	MECH. ROOM	LOUVERED PENTHOUSE INTAKE	120" X 48"	15,000	PNR OPEN/PNR CLOSE	120/1	TC	1
RV-601:RV602	LOW LIFT PUMP STA	BOILER ROOM	LOUVERED PENTHOUSE SUPPLY	48" X 48"	4000	PNR OPEN/SPR RETURN	120/1	BOILERS & F-501	1, 2
RV-603	LOW LIFT PUMP STA	BOILER ROOM	LOUVERED PENTHOUSE EXH	42" X 42"	4000	–	–	–	1, 2, 3

1. UNIT FINISH TO BE CLEAR ANODIZED.
2. UNIT TO BE SUPPORTED BY MASONRY CURB BY OTHERS. COORDINATE FOR CURB CAP DIMENSIONS.
3. INTERNALLY BLANK OFF THREE SIDES OF RELIEF VENT TO ALLOW EXHAUST ON SOUTH SIDE OF UNIT ONLY.

REFER TO O & M MANUAL FOR UPDATED EQUIPMENT SCHEDULES

RECORD DRAWING

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DATE: 11/23/05 PER: GH

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No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
1		AS BID	
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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

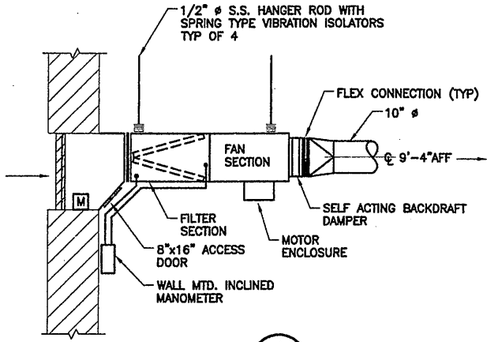
EQUIPMENT SCHEDULES

HVAC

STATE OF NEW YORK • GERALD C. HOUK • No. 67504 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001

H-003



DETAIL 1 (H-303)
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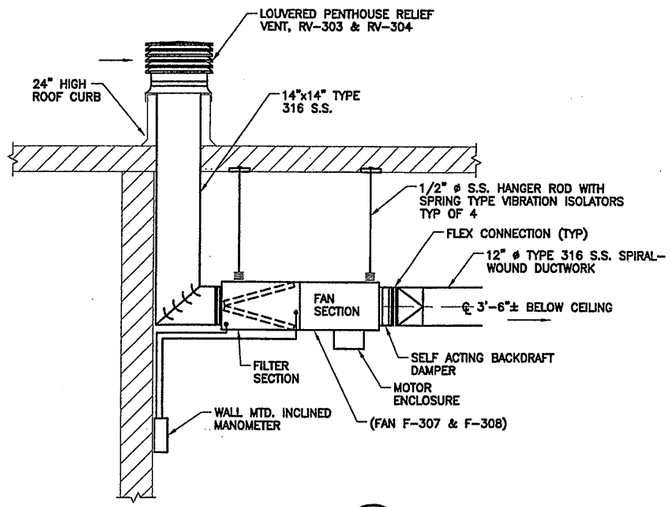

DETAIL 2 (H-302)
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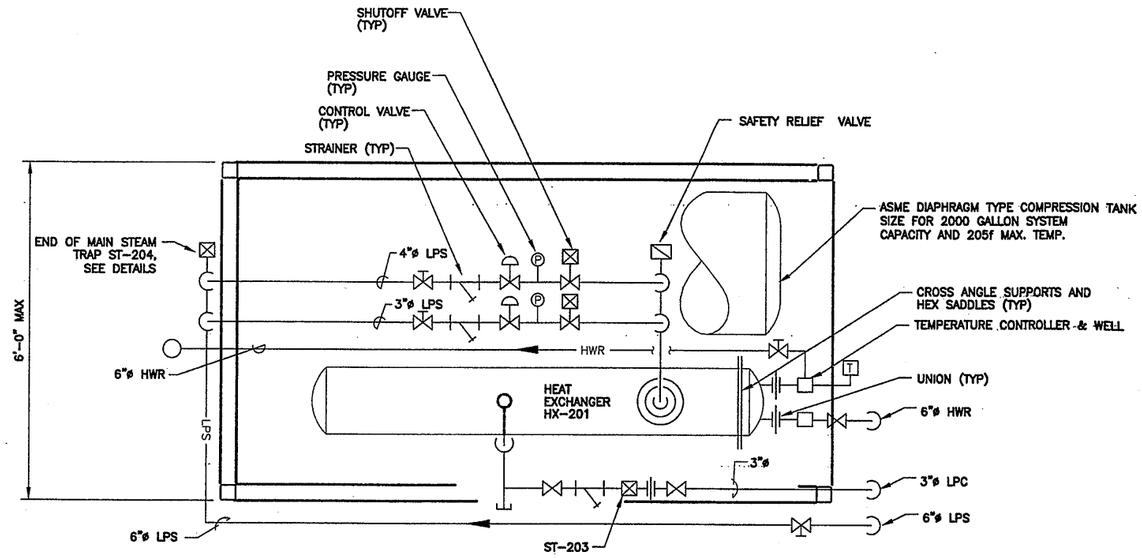
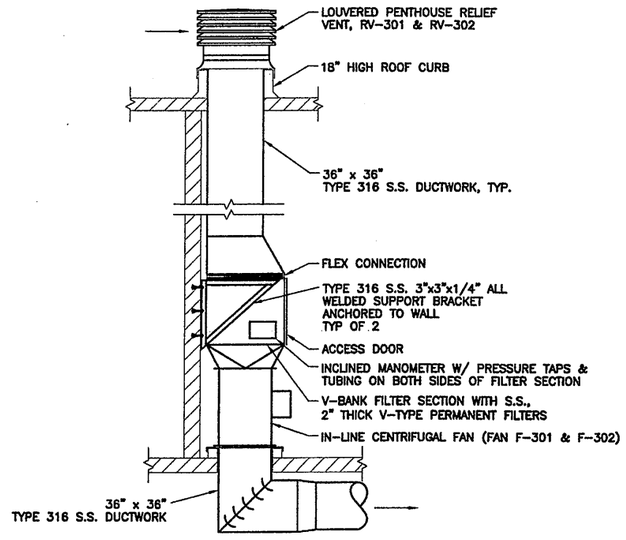
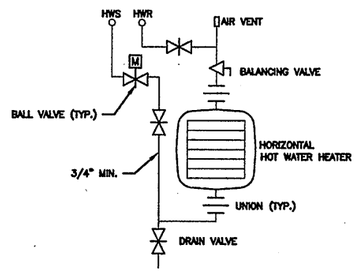


BAF MECHANICAL ROOM HYDRONIC HEAT TRANSFER UNIT UPPER LEVEL PLAN

NOT TO SCALE

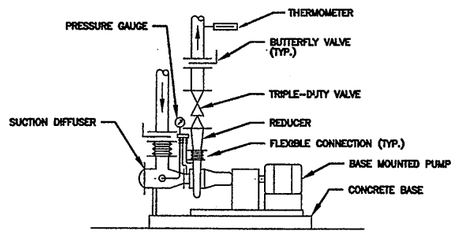


DETAIL 1 (H-301) 1 (H-302)
SCALE: 1/4"=1'-0"



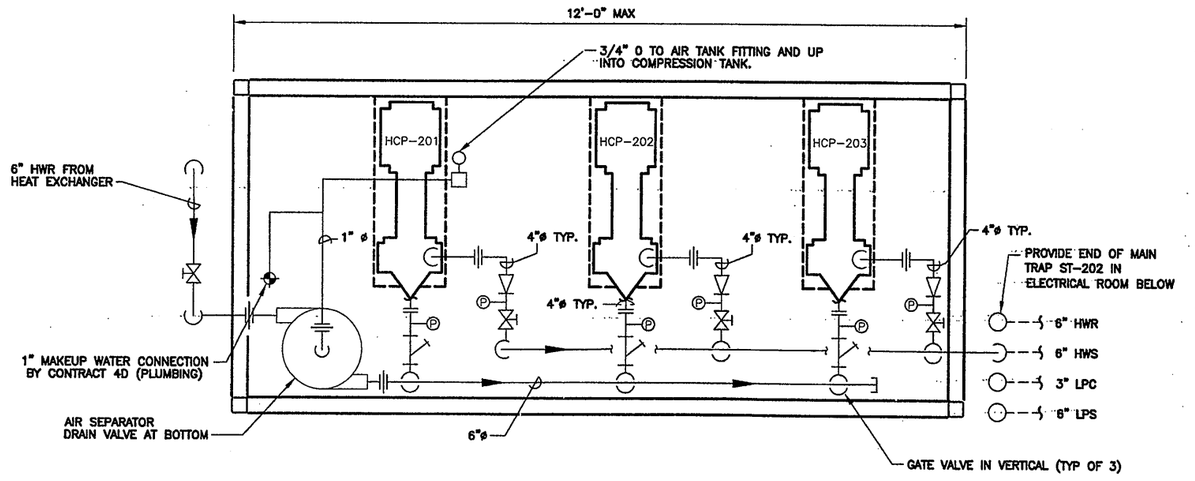
HOT WATER UNIT HEATER PIPING SCHEMATIC

NOT TO SCALE



TYPICAL END SUCTION BASE MOUNTED PUMP DETAIL

NOT TO SCALE



BAF MECHANICAL ROOM HYDRONIC HEAT TRANSFER UNIT LOWER LEVEL PLAN

NOT TO SCALE

RECORD DRAWING

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

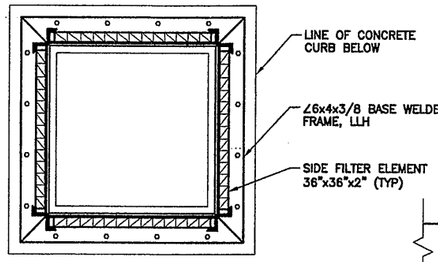
SCHEMATICS AND DETAILS

HVAC

STATE OF NEW YORK • GERALD C. HOOK • No. 57604 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001

H-004



SECTION 2 / H-003
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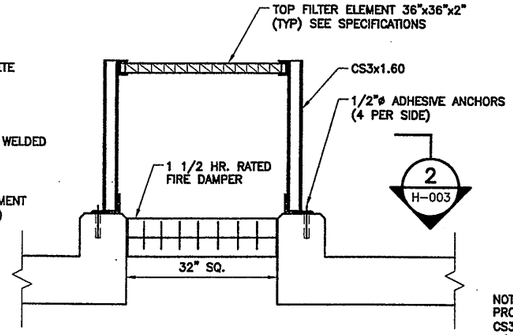

SECTION 1 / H-003
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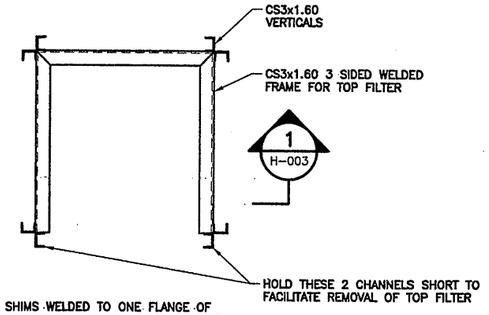
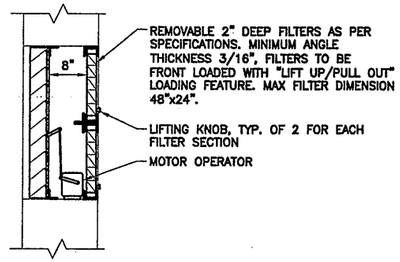
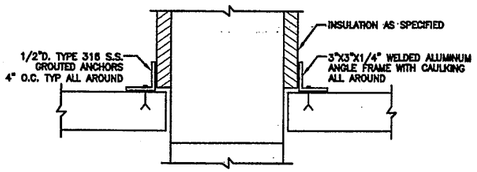


NOTE:
PROVIDE SHIMS WELDED TO ONE FLANGE OF CS3 TO ACCOMMODATE FILTER THICKNESS W/ 1/8 INCH CLEARANCE.

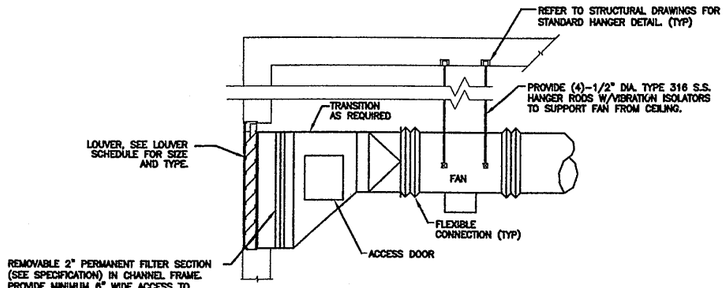
TOP VIEW-WELDED ALUM. FILTER FRAME
SCALE: 3/4"=1'-0"



TYPICAL FILTERED INLET LOUVER INSTALLATION DETAIL
N.T.S.



DUCT THROUGH FLOOR PENETRATION DETAIL
NOT TO SCALE



INLINE SUPPLY FAN MOUNTING DETAIL
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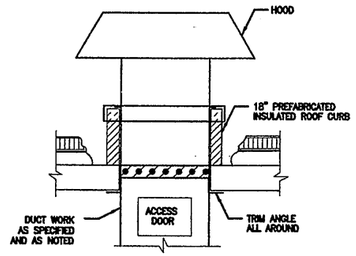
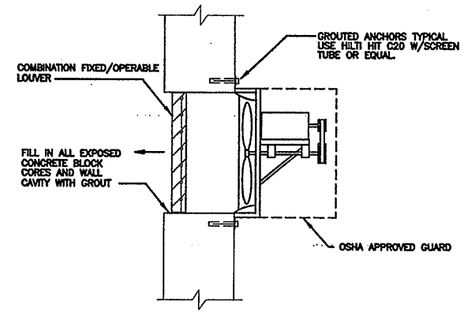
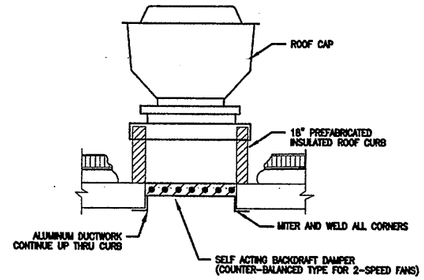


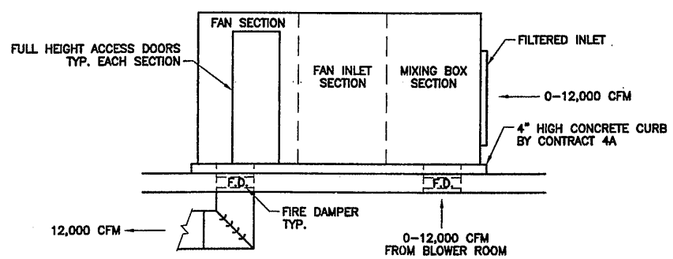
VANE AXIAL HOODED ROOFTOP EXHAUST FAN
NOT TO SCALE



WALL MOUNTED PROPELLER EXHAUST FAN MOUNTING DETAIL
NOT TO SCALE



TYPICAL ROOFTOP CENTRIFUGAL EXHAUST FAN
NOT TO SCALE



AHU-201 INSTALLATION DETAIL
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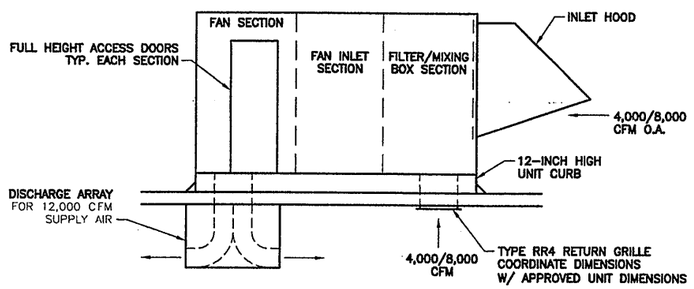

AHU-301 INSTALLATION DETAIL
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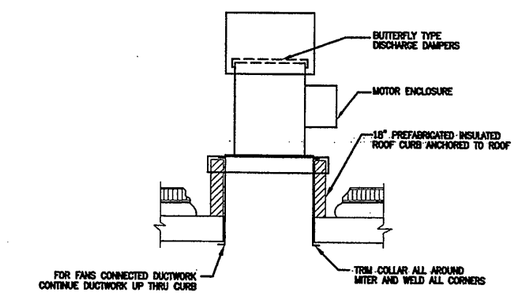

ROOFTOP INLINE CENTRIFUGAL EXHAUST FAN DETAIL
NOT TO SCALE

RECORD DRAWING

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

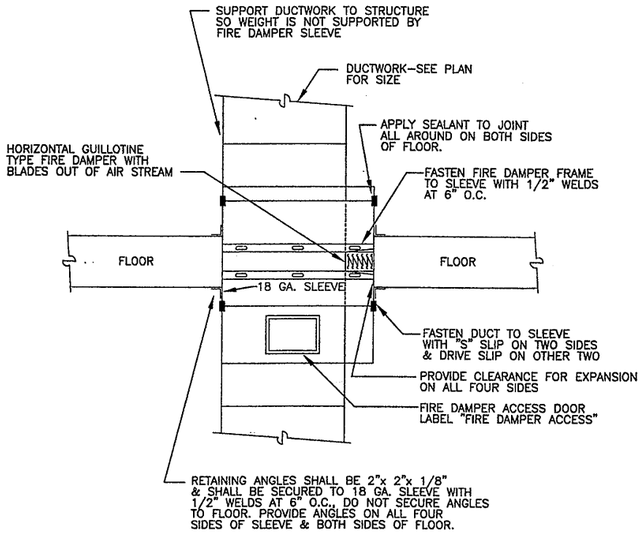
SCHEMATICS AND DETAILS

HVAC

STATE OF NEW YORK • GERALD C. HOOK • No. 67564 • LICENSED PROFESSIONAL ENGINEER

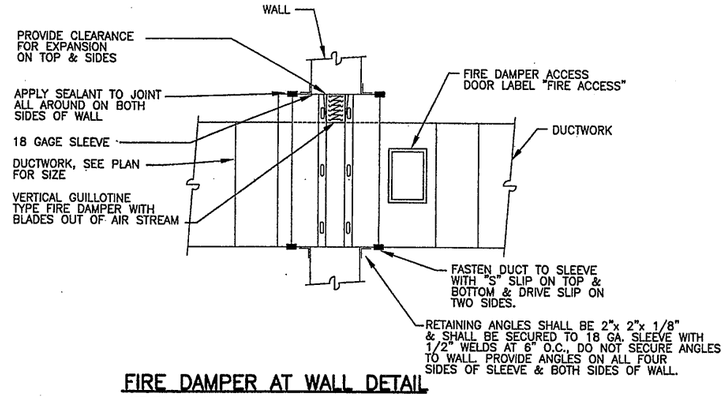
File Number 00659
Date APRIL 2001

H-005



FIRE DAMPER AT FLOOR DETAIL

NOT TO SCALE



FIRE DAMPER AT WALL DETAIL

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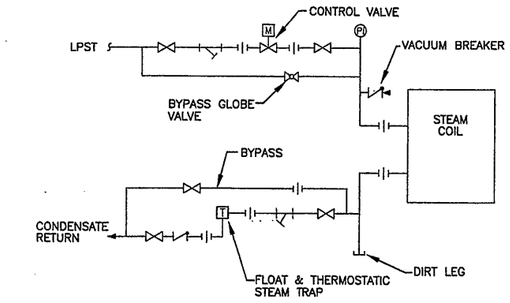

STEAM COIL PIPING DETAIL

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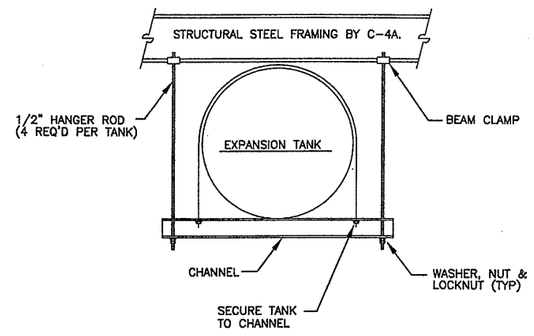

EXPANSION TANK SUPPORT DETAIL

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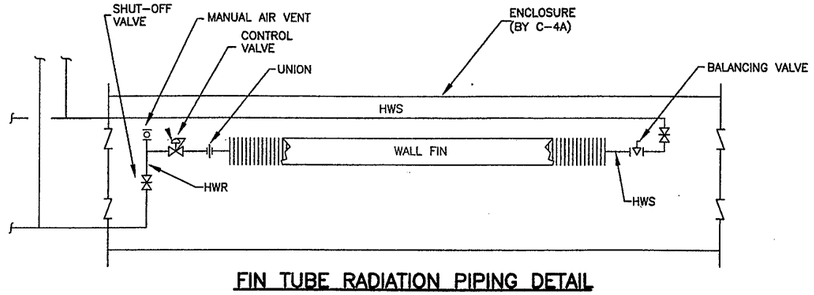

FIN TUBE RADIATION PIPING DETAIL

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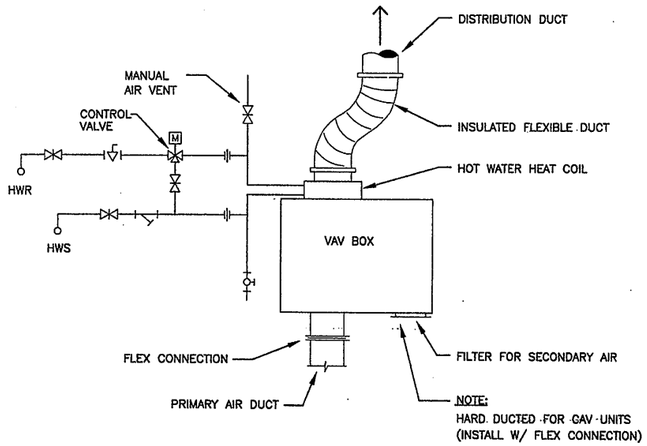
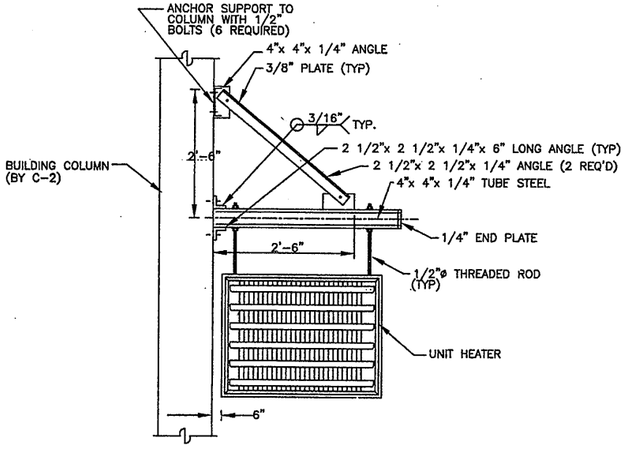


VAV BOX DETAIL

NOT TO SCALE

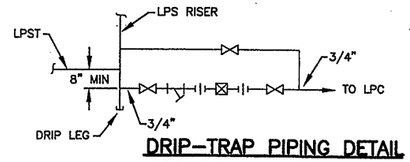
NOTES:
1. FAN–POWERED VAV BOX SHOWN. STANDARD VAV BOX AND CONSTANT–VOLUME VAV BOX DETAILS SHALL BE SIMILAR.



UNIT HEATER SUPPORT DETAIL

NOT TO SCALE

NOTES:
1. FOR UNIT HEATER IN OPERATIONS CENTER MECHANICAL ROOM.



DRIP–TRAP PIPING DETAIL

NOT TO SCALE

NOTES:
1. DRIP LEG SHALL BE FULL SIZE OF LPST LINE.

RECORD DRAWING

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Layer: ON=*; OFF=*REF*

07/17/00 OBG JAS
00659H006

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SYRACUSE, NEW YORK

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

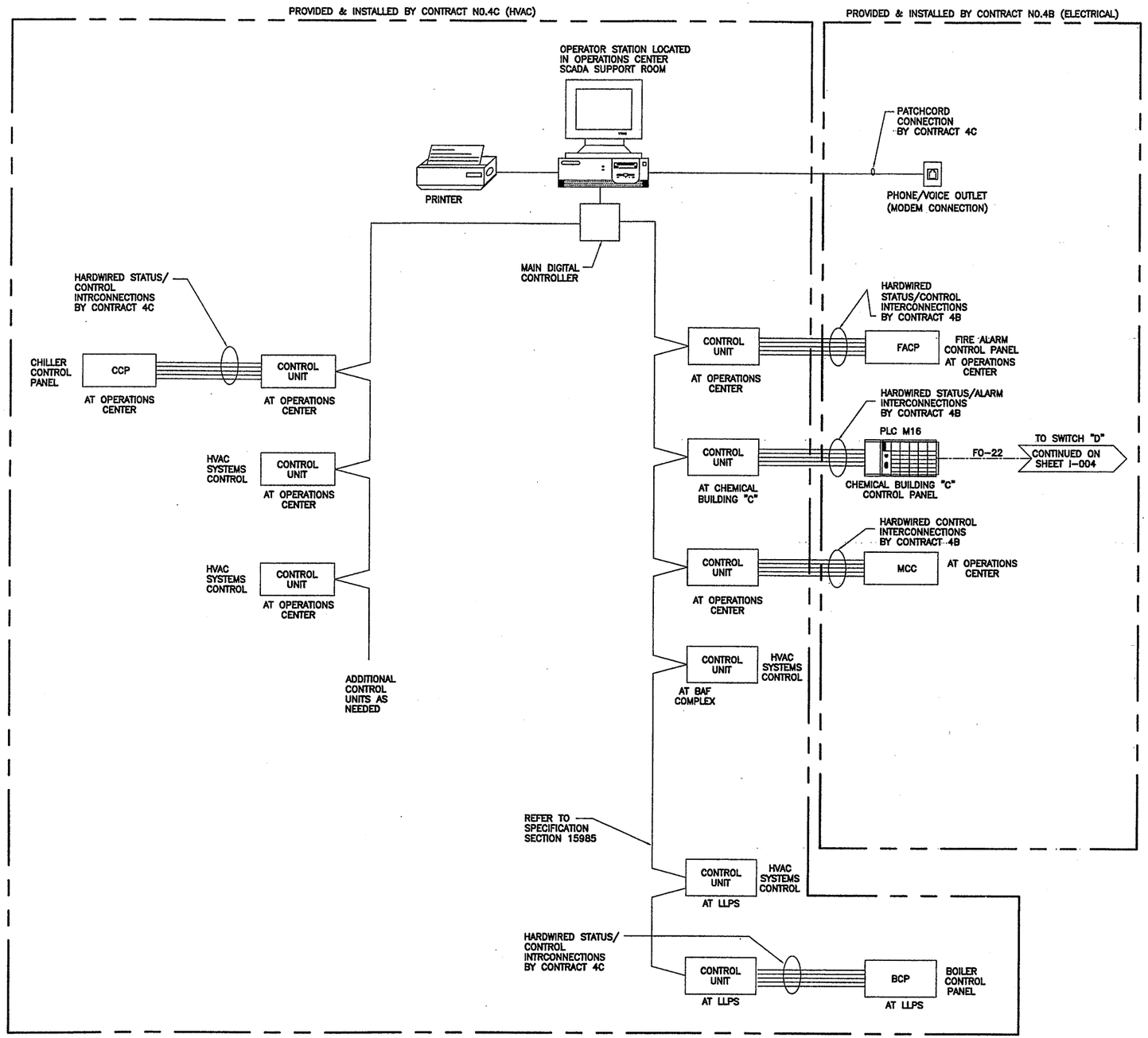
DETAILS

HVAC

STATE OF NEW YORK • GERALD C. HOOK • LICENSED PROFESSIONAL ENGINEER • No. 57504

File Number 00659
Date APRIL 2001

H–006



HVAC DIRECT CONTROL (DDC) SCADA SUBSYSTEM SCOPE OF WORK

1. THIS SCOPE OF WORK IS INTENDED TO SUMMARIZE THE REQUIREMENTS OF THE SPECIFICATION AND DRAWINGS. THE CONTRACTOR IS REQUIRED TO PROVIDE AND INSTALL ALL EQUIPMENT, SOFTWARE, AND APPURTENANCES SHOWN AND/OR REQUIRED FOR A COMPLETE OPERATING SYSTEM.

2. THE BUILDING MANAGEMENT SUPERVISORY CONTROL AND DATA ACQUISITION SYSTEM SHALL BE A SEPARATE STAND-ALONE SYSTEM PROVIDED AND INSTALLED BY CONTRACT 4C – HVAC. THE BUILDING MANAGEMENT SYSTEM SHALL INTERFACE WITH THE OVERALL PLANTWIDE SCADA SYSTEM THROUGH A HARDWIRED INTERCONNECTION TO BE PROVIDED AND INSTALLED BY CONTRACT 4B – ELECTRICAL, AS SHOWN.

3. PROVIDE HARDWIRED INTERCONNECTION BETWEEN PLC M16 AND BUILDING MANAGEMENT LOCAL CONTROL UNIT, AS SHOWN.

4. ACTUAL BUILDING MANAGEMENT SYSTEM COMPONENTS AND CONNECTIONS SHALL BE AS SPECIFIED UNDER DIVISION 15 AND SHOWN ON "H" SHEETS.

5. CIMPLICITY BASED ALARM AND STATUS SCREENS FOR MONITORED POINTS AND ALARMS SHALL BE RESIDENT ON EACH WORKSTATION WITHIN OPERATIONS CENTER CONTROL ROOM.

6. PROVIDE, INSTALL, STARTUP, TEST, AND PROVIDE TRAINING ASSOCIATED INTERCONNECTION OF PLANTWIDE SCADA SYSTEM AND DIRECT DIGITAL CONTROL SYSTEM.

7. DDC SYSTEM (HVAC) OIT IS TO BE LOCATED IN THE OPERATION CENTER SCADA SUPPORT ROOM.

8. ACTUAL HVAC DDC SYSTEM COMPONENTS AND CONNECTIONS SHALL BE AS SPECIFIED UNDER DIVISION 15 AND SHOWN ON "H" SHEETS.

9. REFER TO DRAWING G-004 FOR PLANT LAYOUT AND BUILDING LOCATIONS.

LEGEND

LLPS– LOW-LIFT PUMP STATION
MCC– MOTOR CONTROL CENTER
PLC– PROGRAMMABLE LOGIC CONTROLLER
SCADA– SUPERVISORY CONTROL AND DATA ACQUISITION

KEY:

-------- FIBER OPTIC CABLE (FO)
——— COPPER CABLE

REFER TO O & M MANUAL FOR UPDATED HVAC CONTROL SYSTEM ARCHITECTURE

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00659H007

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

HVAC CONTROL SYSTEM ARCHITECTURE

HVAC

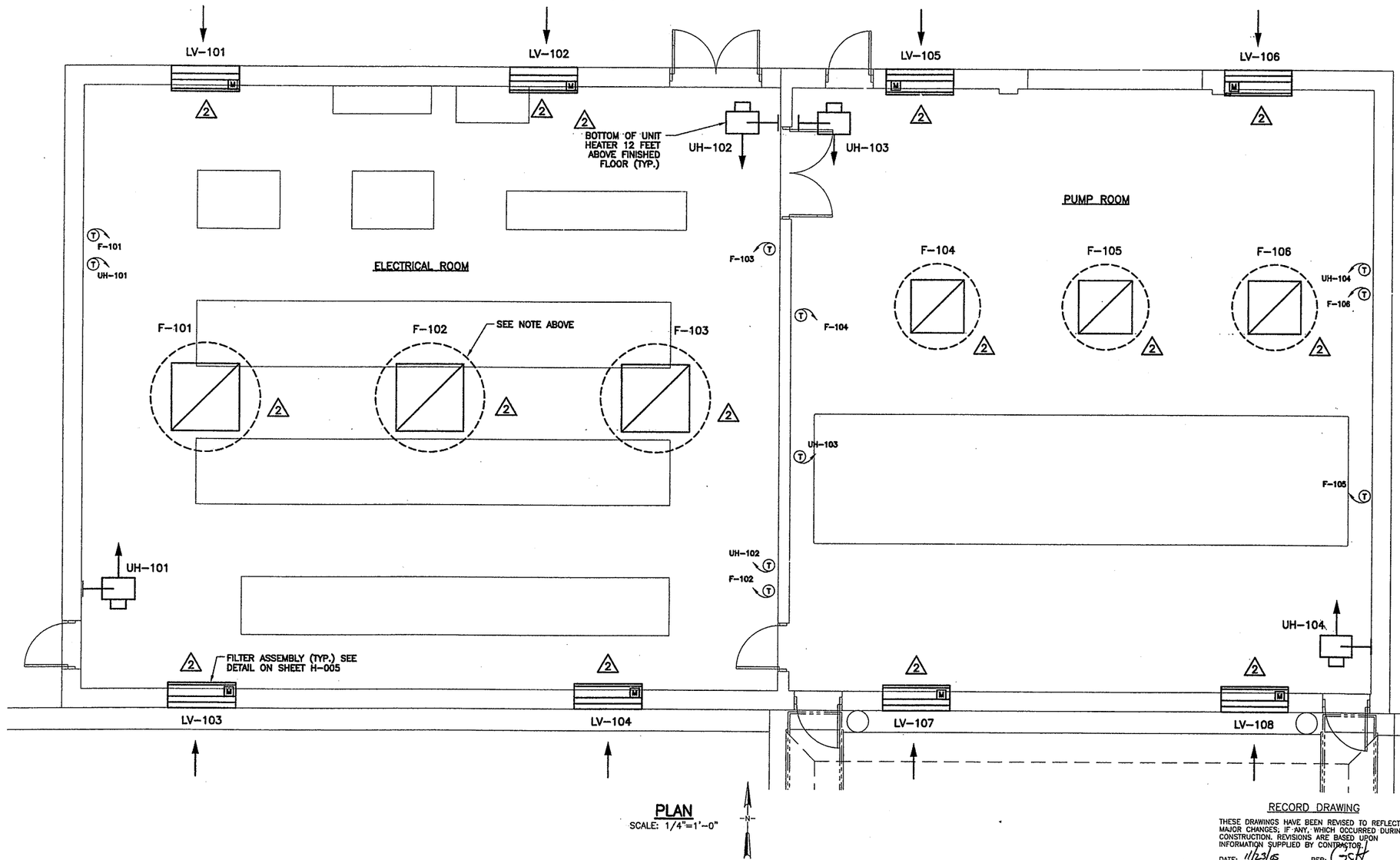
LICENSED PROFESSIONAL ENGINEER · STATE OF NEW YORK · LEONARD J. CIARDIELLO · No. C0755

File Number 00659
Date APRIL 2001

H-007

2 NOTE 1. FOR FANS F-101, 102 & 103, PROVIDE 1½" DEEP GALVANIZED STEEL DRIP PAN UNDER EACH FAN. DRIP PAN DIMENSIONS SHALL BE 8" GREATER THAN ROOF PENETRATION DIMENSION. PROVIDE 2x2x¼ STEEL ANGLE FRAME ALL AROUND. ATTACH FRAME TO BOTTOM CORD OF ROOF JOISTS. CROSS BREAK DRIP PAN BASES TO PREVENT BREATHING.

2 NOTE 2. FAN LOCATIONS HAVE CHANGED AND LOUVER DIMENSIONS HAVE CHANGED.



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

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES; IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE: 11/23/05 PER: GCH

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0659X101
11/28/00 SW CMS
..\CONTRACT 2-5\HVAC\0659H101.DWG

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

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No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
1	6/26/01	AS BID	
2	5/22/02	REVISED FOR MODIFICATION 4C-001	
3	1/30/03	RECORD DRAWING	RCG

In charge of DBP
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Drawn by CMS
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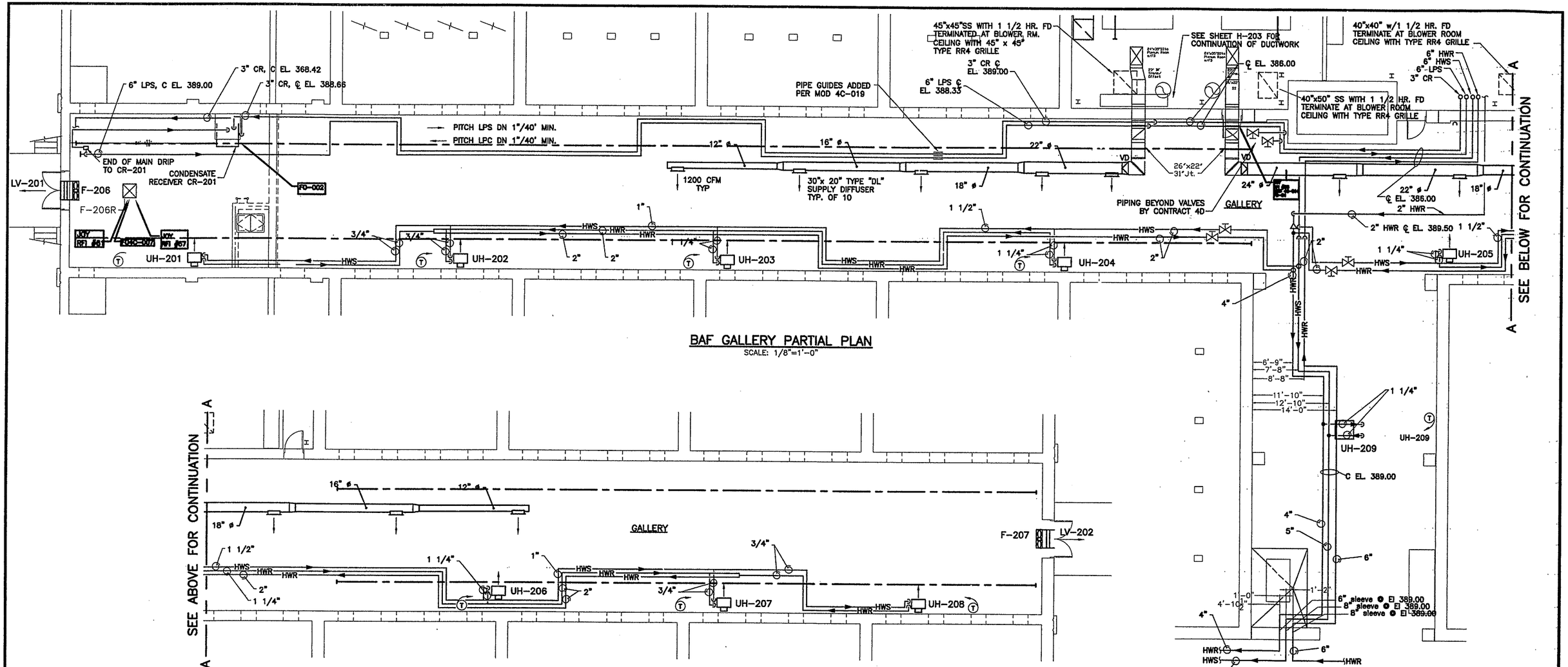
ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
SECONDARY EFFLUENT PUMP STATION
HVAC PLAN
HVAC

STATE OF NEW YORK • GERALD C. HOOK • No. 57504 • LICENSED PROFESSIONAL ENGINEER

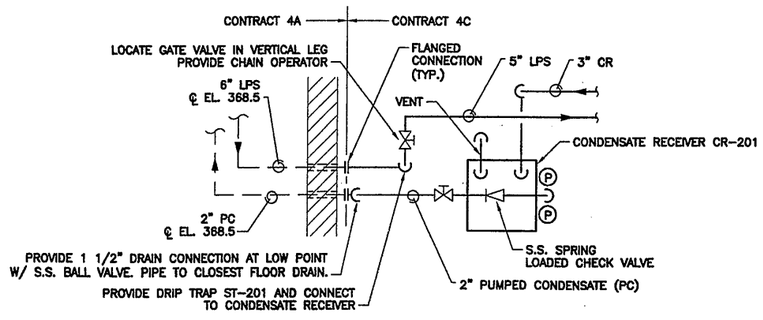
File Number 00659
Date APRIL 2001

H-101



BAF GALLERY PARTIAL PLAN
SCALE: 1/8"=1'-0"

BAF GALLERY PARTIAL PLAN
SCALE: 1/8"=1'-0"



CONDENSATE RECEIVER DETAIL
NO SCALE

RECORD DRAWING

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0659X202
11/28/00 S&W CMS
..\CONTRACT 2-5\HVAC\0659H201.DWG

1/8"=1'-0" (8' 0 8' 16')

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
1		AS BID	
2	11/30/05	RECORD DRAWING	RCG

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BIOLOGICAL AERATED FILTERS (BAF) COMPLEX

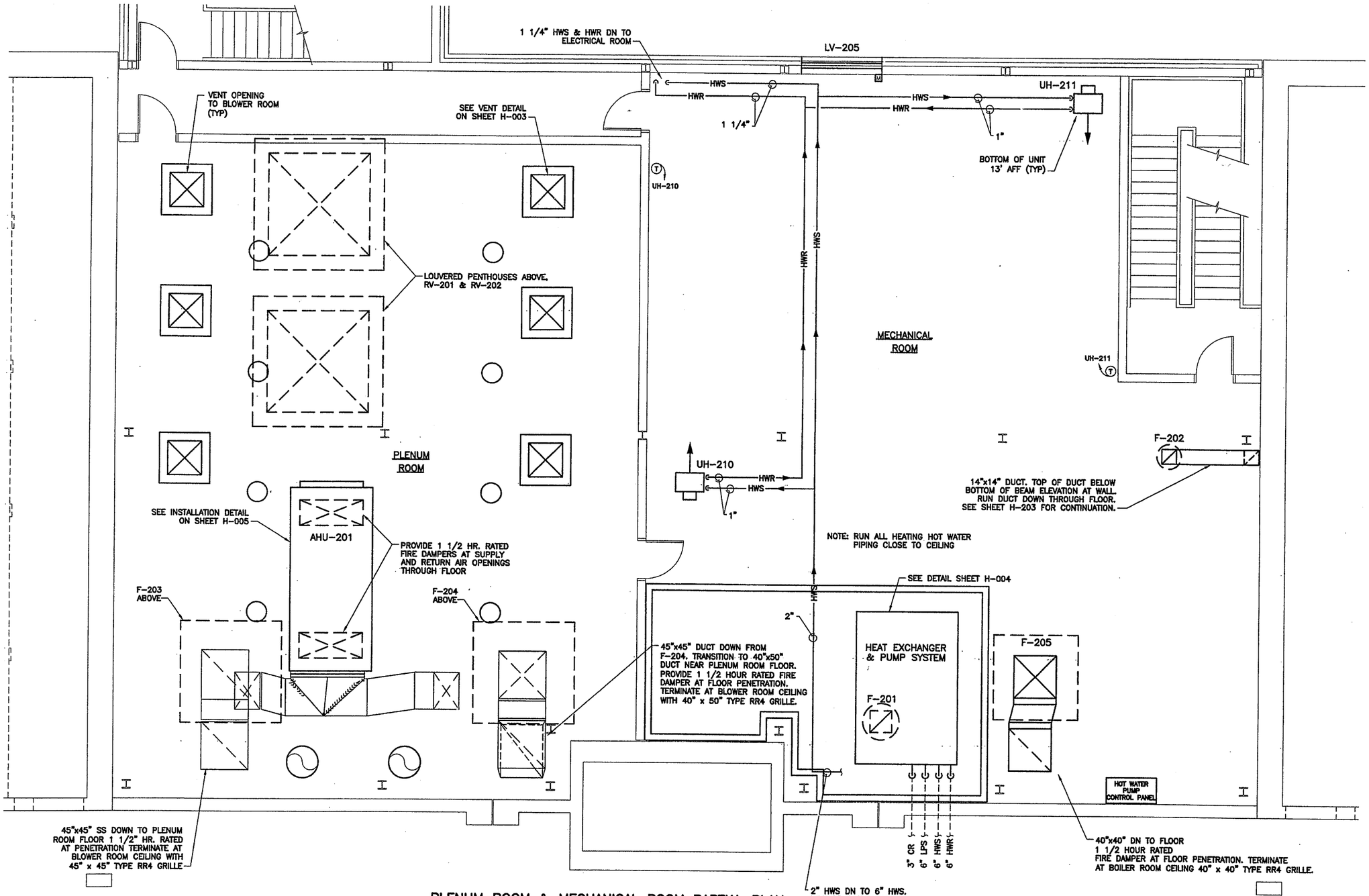
BAF GALLERY PARTIAL PLAN

HVAC

STATE OF NEW YORK • GERALD C. HOOK • No. 67564 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001

H-201



PLENUM ROOM & MECHANICAL ROOM PARTIAL PLAN

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

RECORD DRAWING

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DATE: 11/23/05 PER: GH

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0659X202
11/28/00 S&W CMS
..\CONTRACT 2-5\HVAC\0659H202.DWG

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

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
1		AS BID	
2	11/30/05	RECORD DRAWING	RCG

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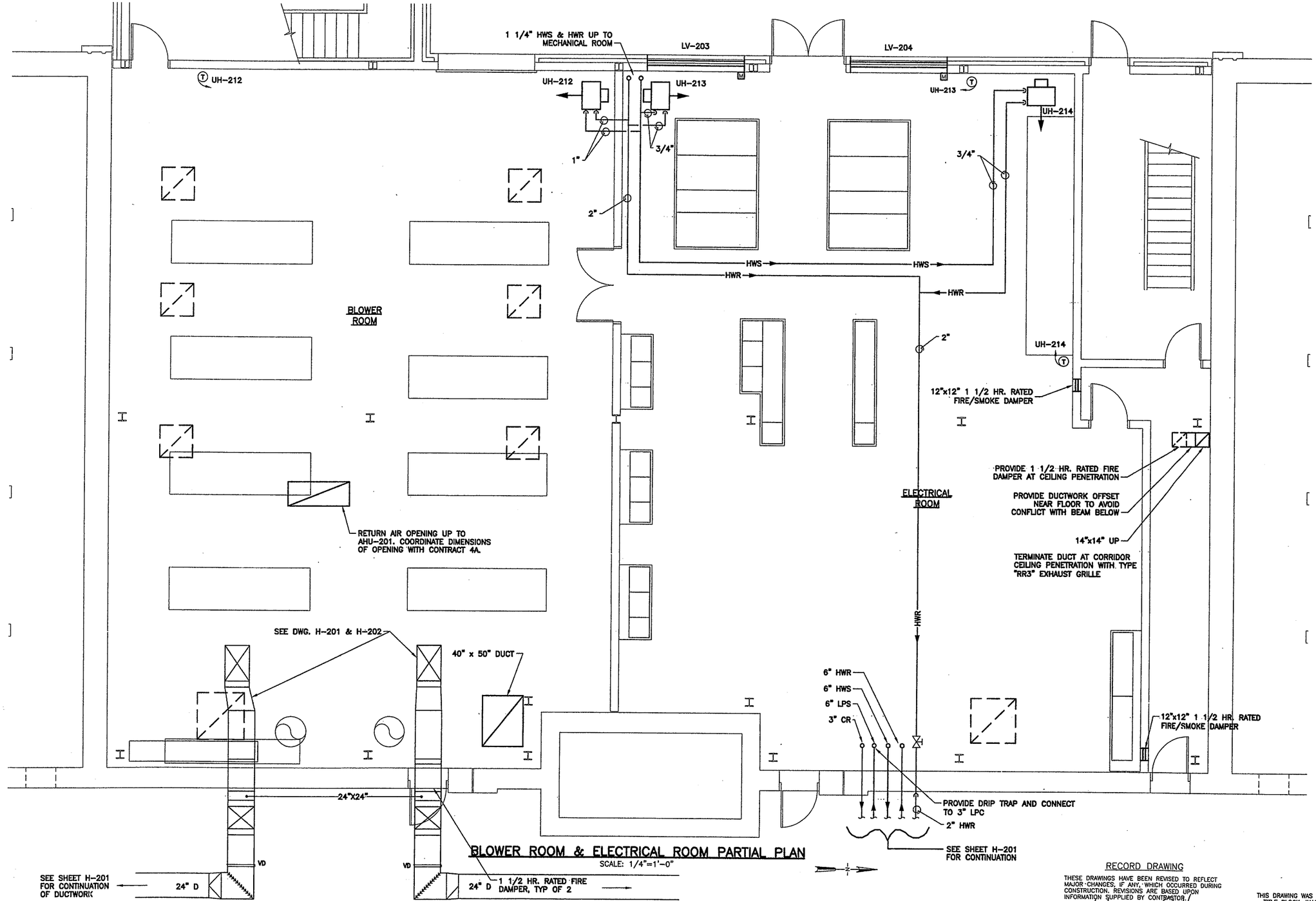
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BIOLOGICAL AERATED FILTERS (BAF) COMPLEX
PLENUM ROOM & MECHANICAL ROOM PARTIAL PLAN
HVAC

STATE OF NEW YORK · LICENSED PROFESSIONAL ENGINEER · GERALD C. HOOD · No. 57504

File Number 00659
Date APRIL 2001
H-202



BLOWER ROOM & ELECTRICAL ROOM PARTIAL PLAN

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

0659X201
11/28/00 S&W CMS
..\CONTRACT 2-5\HVAC\0659H203.DWG

RECORD DRAWING

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DATE: 11/23/05 PER: GCH

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

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No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
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2	1/30/03	RECORD DRAWING	RCG

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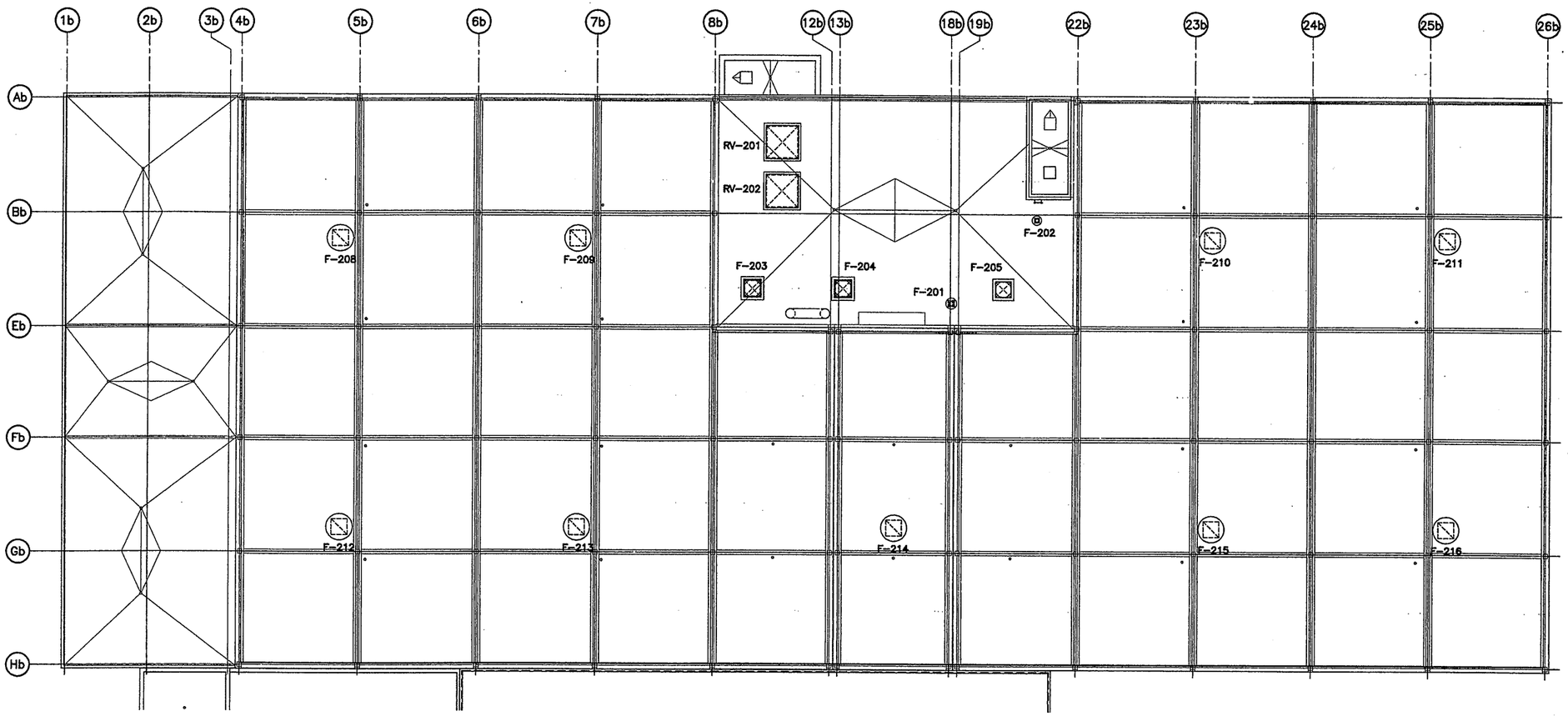
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BIOLOGICAL AERATED FILTERS (BAF) COMPLEX
BLOWER ROOM AND ELECTRICAL ROOM PARTIAL PLAN
HVAC

STATE OF NEW YORK • GERALD C. HOOK • No. 57264 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001

H-203



ROOF PLAN

SCALE: 1"=16'-0"

NOTE:

1. COORDINATE SIZE AND LOCATION OF ROOF OPENINGS WITH CONTRACT 4A.

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

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0659H204

1/16"=1'-0" 16' 0 16' 32'

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No.	Date	Revisions	Init
1		AS BID	
2	1/30/05	RECORD DRAWING	RCG

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Checked by _____

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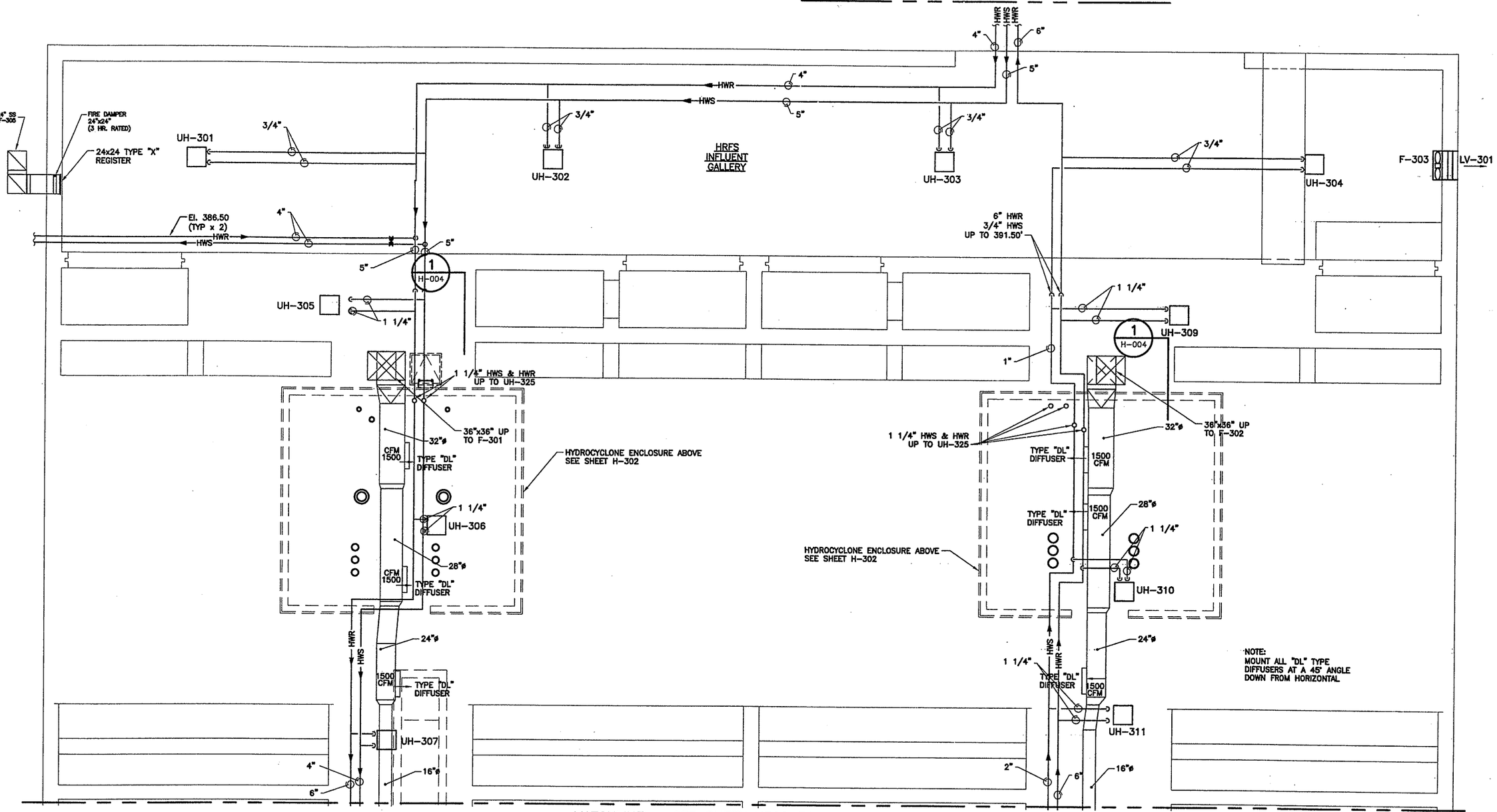
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BAF COMPLEX
ROOF PLAN
HVAC

STATE OF NEW YORK · EDWARD J. CARROLL · LICENSED PROFESSIONAL ENGINEER · No. 60751

File Number 00659
Date JUNE 2001

H-204

MATCHLINE – SEE SHEET H–201 FOR CONTINUATION



MATCHLINE – SEE SHEET H302 FOR CONTINUATION

HRFS GALLERY PARTIAL PLAN

SCALE: 3/16"=1'-0"

RECORD DRAWING

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0659X301
11/28/00 S&W CMS
..\CONTRACT 2-5\HVAC\0659H301.DWG

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

NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
1	11/30/01	AS BID	RCG

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Checked by DBP

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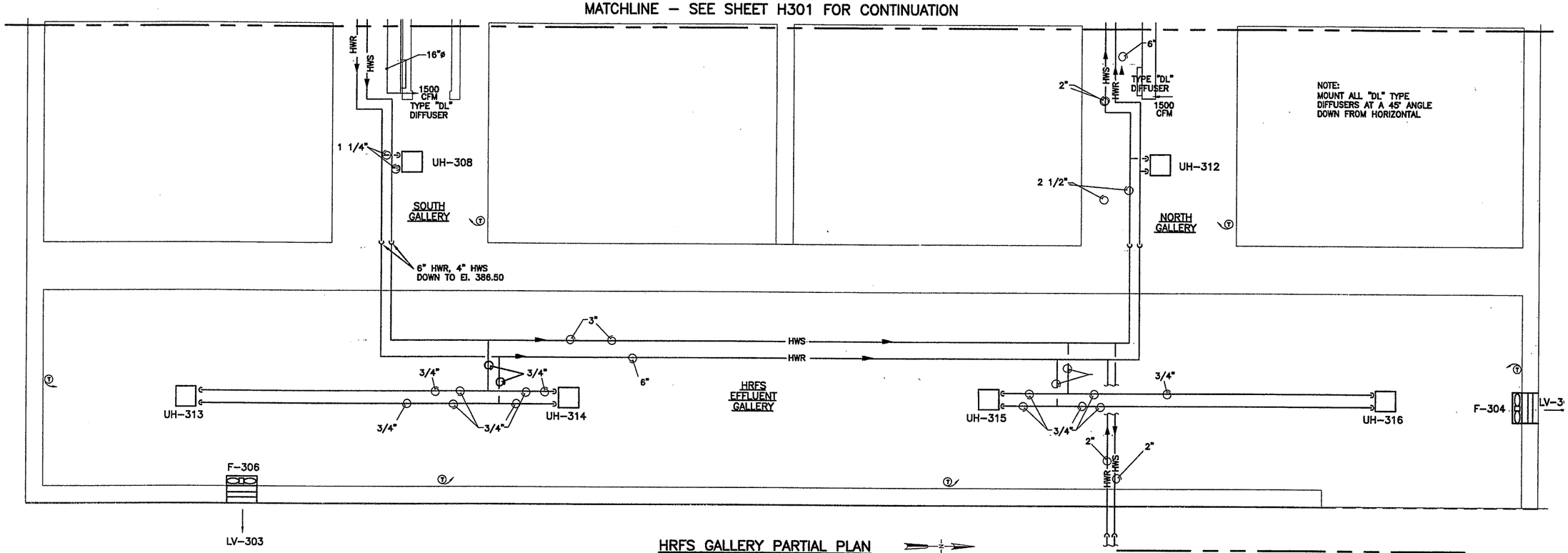
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
HIGH RATE FLOCCULATED SETTLING (HRFS) COMPLEX
HRFS GALLERY PARTIAL PLAN
HVAC

STATE OF NEW YORK • GERALD C. HOOK • No. 57601 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
H-301

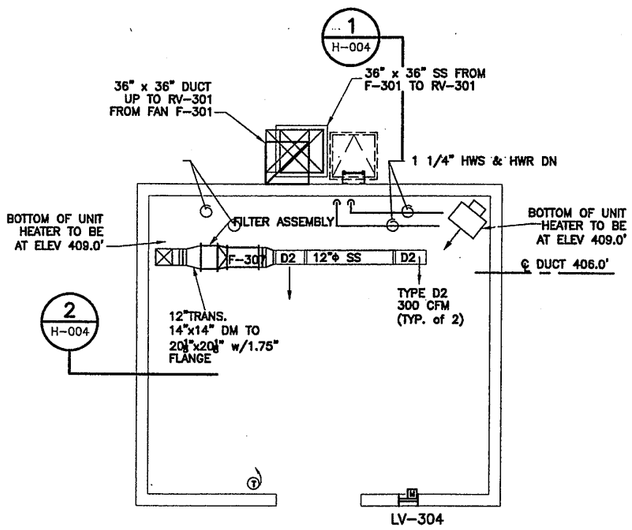
MATCHLINE – SEE SHEET H301 FOR CONTINUATION



HRFS GALLERY PARTIAL PLAN

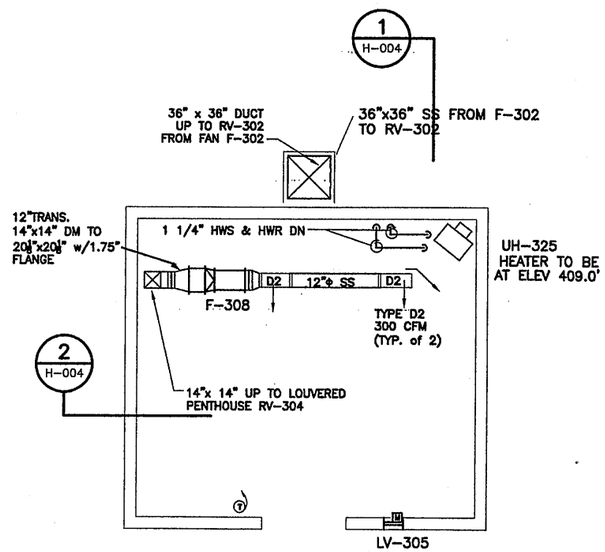
SCALE: 3/16"=1'-0"

MATCHLINE – SEE SHEET H401 FOR CONTINUATION



HYDROCYCLONE ENCLOSURE PARTIAL PLAN (SOUTH)

SCALE: 3/16"=1'-0"



HYDROCYCLONE ENCLOSURE PARTIAL PLAN (NORTH)

SCALE: 3/16"=1'-0"

RECORD DRAWING

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DATE: 11/23/05 PER: GCW

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0659H301
11/28/00 S&W CMS
..\CONTRACT 2-5\HVAC\0659H302.DWG

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

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No.	Date	Revisions	Init
0	3/30/01	ISSUED FOR APPROVAL	
1		AS BID	
2	1/30/05	RECORD DRAWING	RCG

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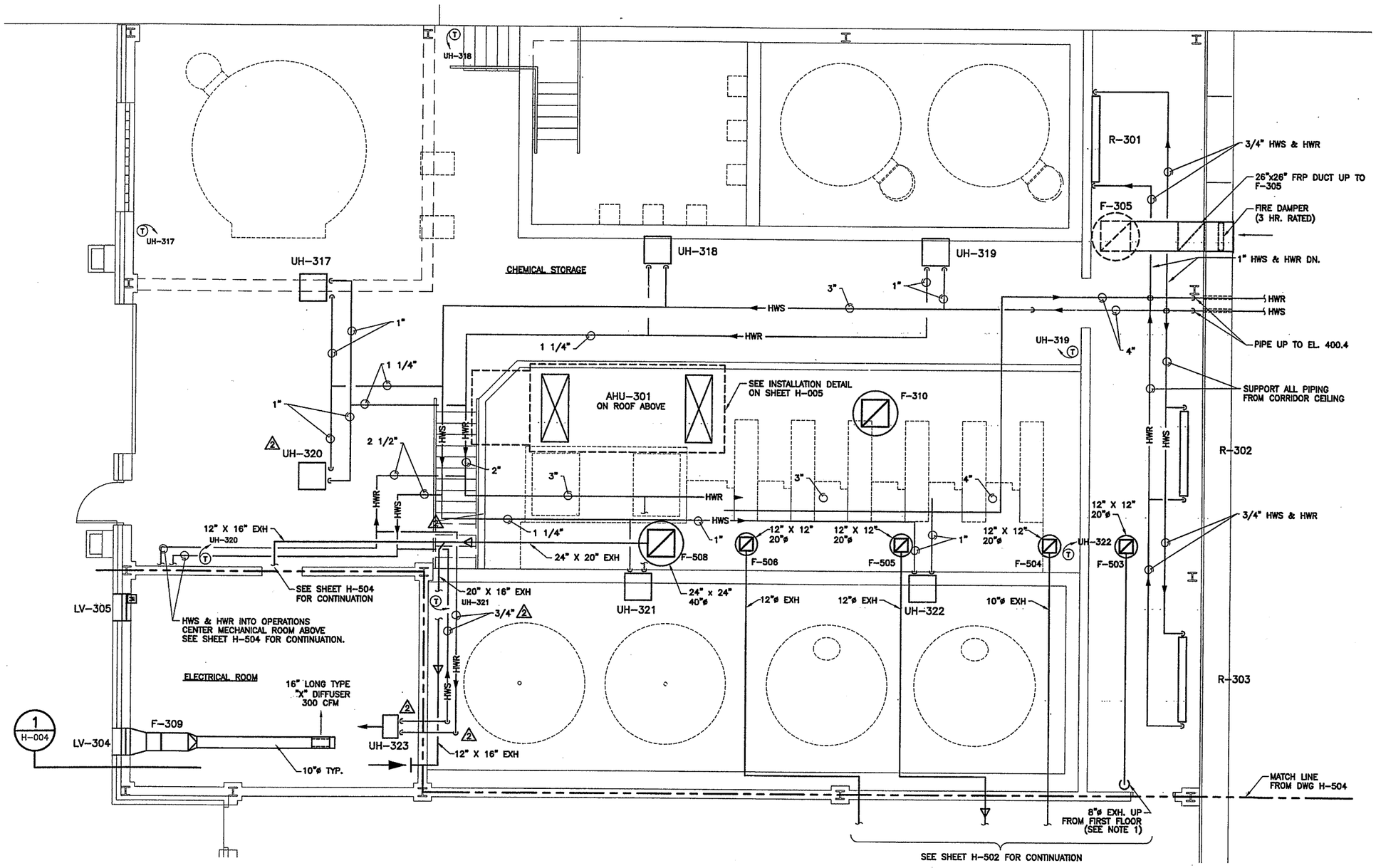
ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
HIGH RATE FLOCCULATED SETTLING (HRFS) COMPLEX
HRFS GALLERY PARTIAL PLAN
HVAC

STATE OF NEW YORK • GERALD C. HOOK • No. 67504 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
H-302



CHEMICAL BUILDING C PLAN

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

NOTE:
1. PROVIDE 3 HR FD WITH ACCESS DOOR AT PENETRATION THRU CORRIDOR CEILING.

2 REVISION INCLUDES, BUT IS NOT LIMITED TO, RELOCATION OF UNIT HEATER UH-320 AND REVISED PIPING LAYOUT TO UNIT HEATER UH-323.

RECORD DRAWING

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DATE: 11/23/05 PER: GCH

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0659X501
11/28/00 S&W CMS
..\CONTRACT 2-5\HVAC\0659H303.DWG

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

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0	4/20/01	ISSUED FOR APPROVAL	
1	6/26/01	AS BID	
2	3/22/01	REVISED FOR MODIFICATION 4C-002	RCG
3	11/30/05	RECORD DRAWING	

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Drawn by CMS/JRH
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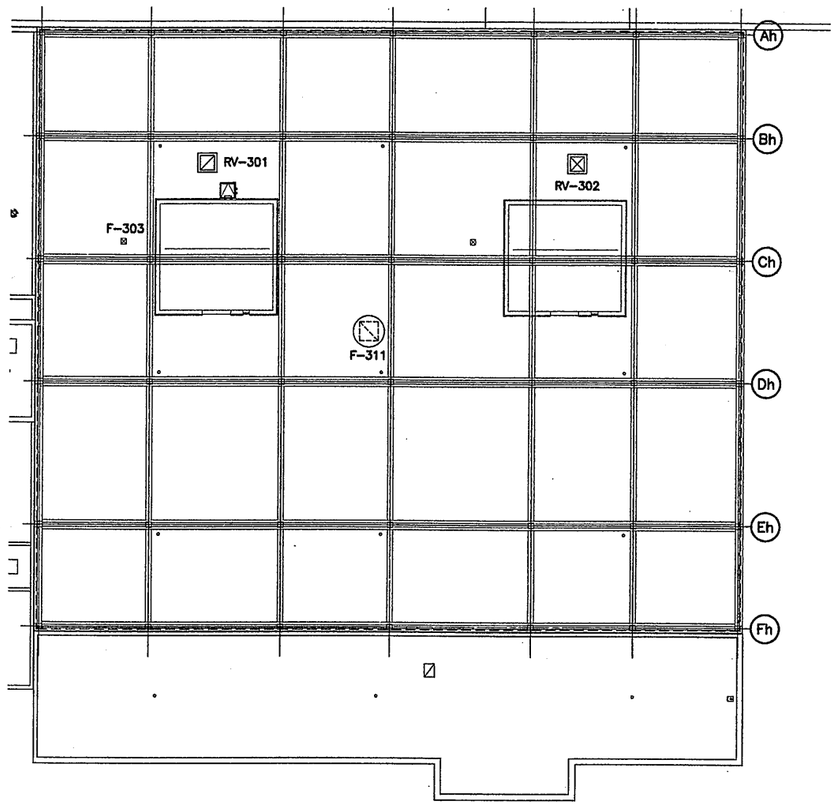
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
HIGH RATE FLOCCULATED SETTLING (HRFS) COMPLEX
CHEMICAL BUILDING C PLAN
HVAC

STATE OF NEW YORK · GERALD C. HOOD · No. 67564 · LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
H-303



ROOF PLAN
SCALE: 1"=16'-0"

NOTE:

1. COORDINATE SIZE AND LOCATION OF ROOF OPENING WITH CONTRACT 4A.

RECORD DRAWING

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0659H304

1/16"=1'-0" 16' 0 16' 32'

No.	Date	Revisions	Init
0		AS-BID	
1	1/30/05	RECORD DRAWING	RCG

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Designed by _____
Drawn by _____
Checked by _____

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SYRACUSE, NEW YORK

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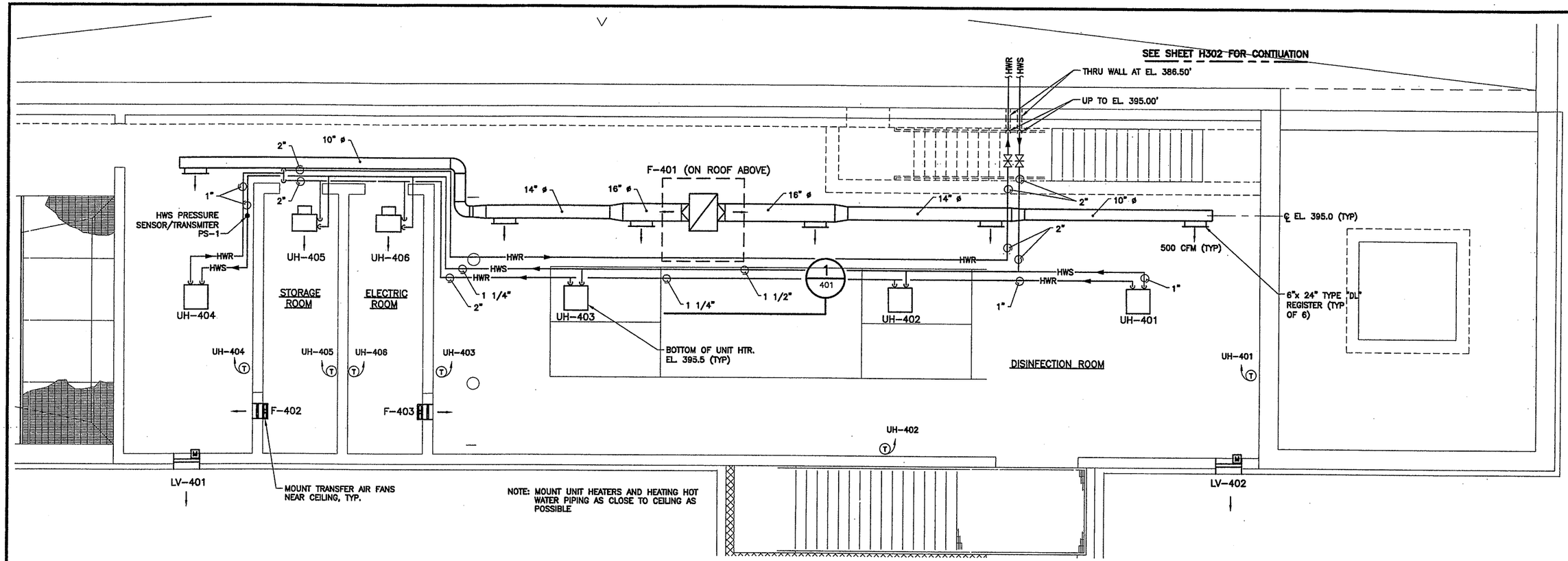
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
HRFS
ROOF PLAN
HVAC

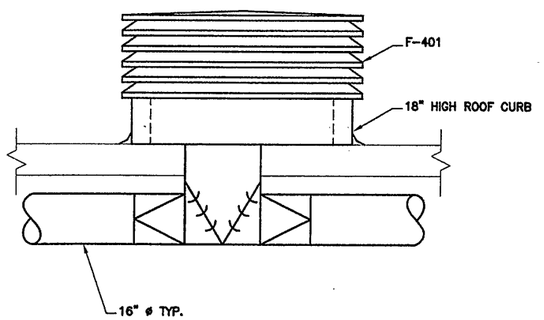
STATE OF NEW YORK • LEONARD J. CAMPOLIETO • No. 60769 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date JUNE 2001

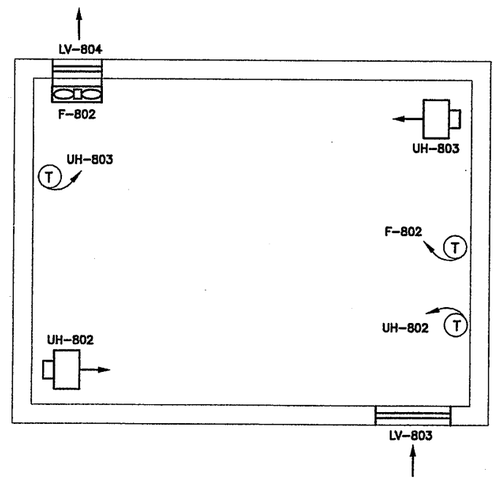
H-304



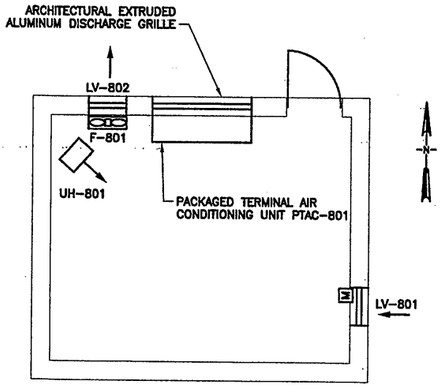
PLAN
SCALE: 1/4"=1'-0"



DETAIL 1 / H-401
N.T.S.



BYPASS CHLORINE CONTACT TANK BUILDING
SCALE: 3/8"=1'-0"



BATTERY SUBSTATION BUILDING
SCALE: 3/8"=1'-0"

RECORD DRAWING

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DATE: 11/23/05 PER: GCM

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0659X401
11/28/00 SW CMS
..\CONTRACT 2-5\HVAC\0659H401.DWG

1/4"=1'-0" 4' 0 4' 8'
3/8"=1'-0" 2' 0 3' 6'

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
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2	11/30/05	RECORD DRAWING	RCG

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Drawn by CMS/JRH
Checked by DBP

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SYRACUSE, NEW YORK

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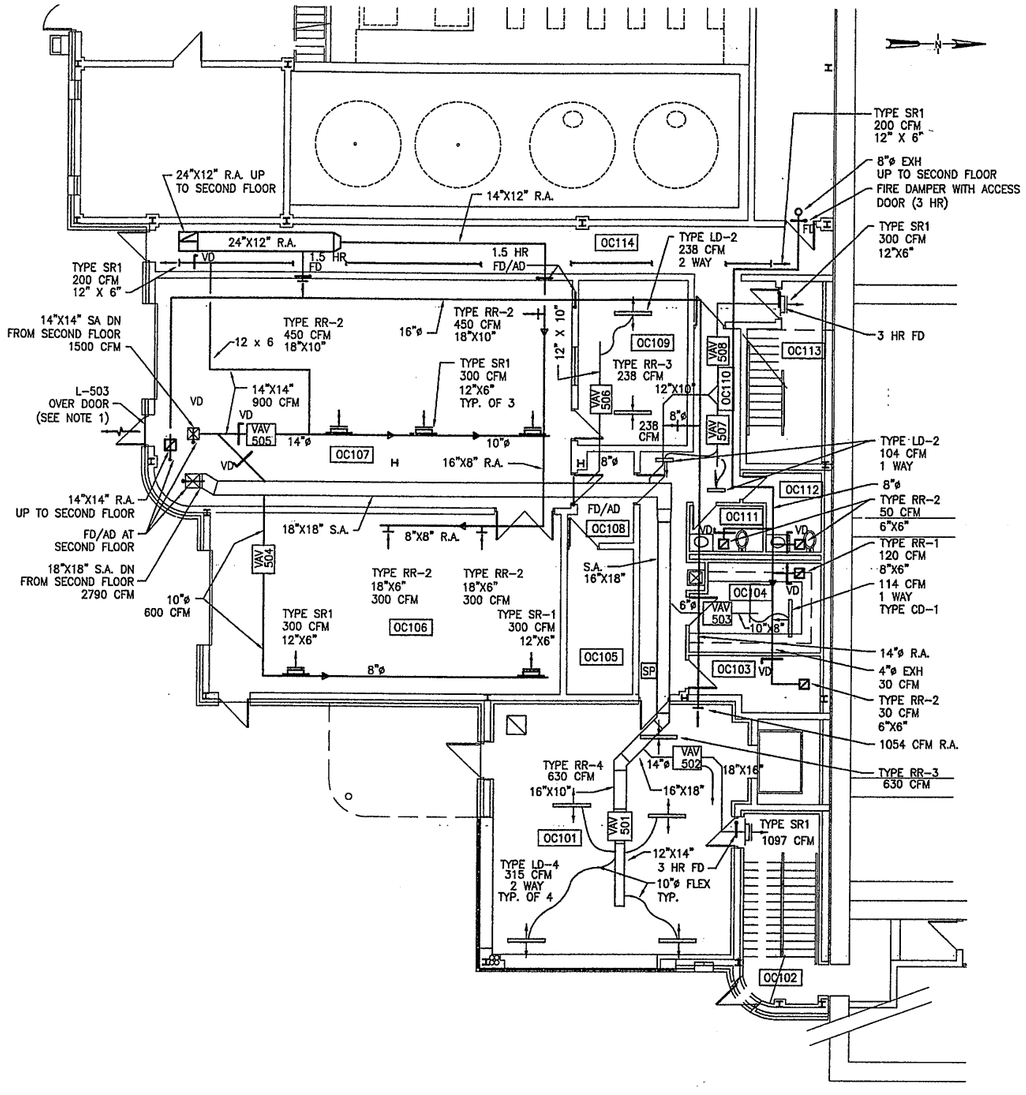
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
ULTRAVIOLET DISINFECTION/PARSHALL FLUME STRUCTURE
PLAN, SECTIONS, AND DETAILS
HVAC

STATE OF NEW YORK • GERALD C. HOOK • 075104 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001

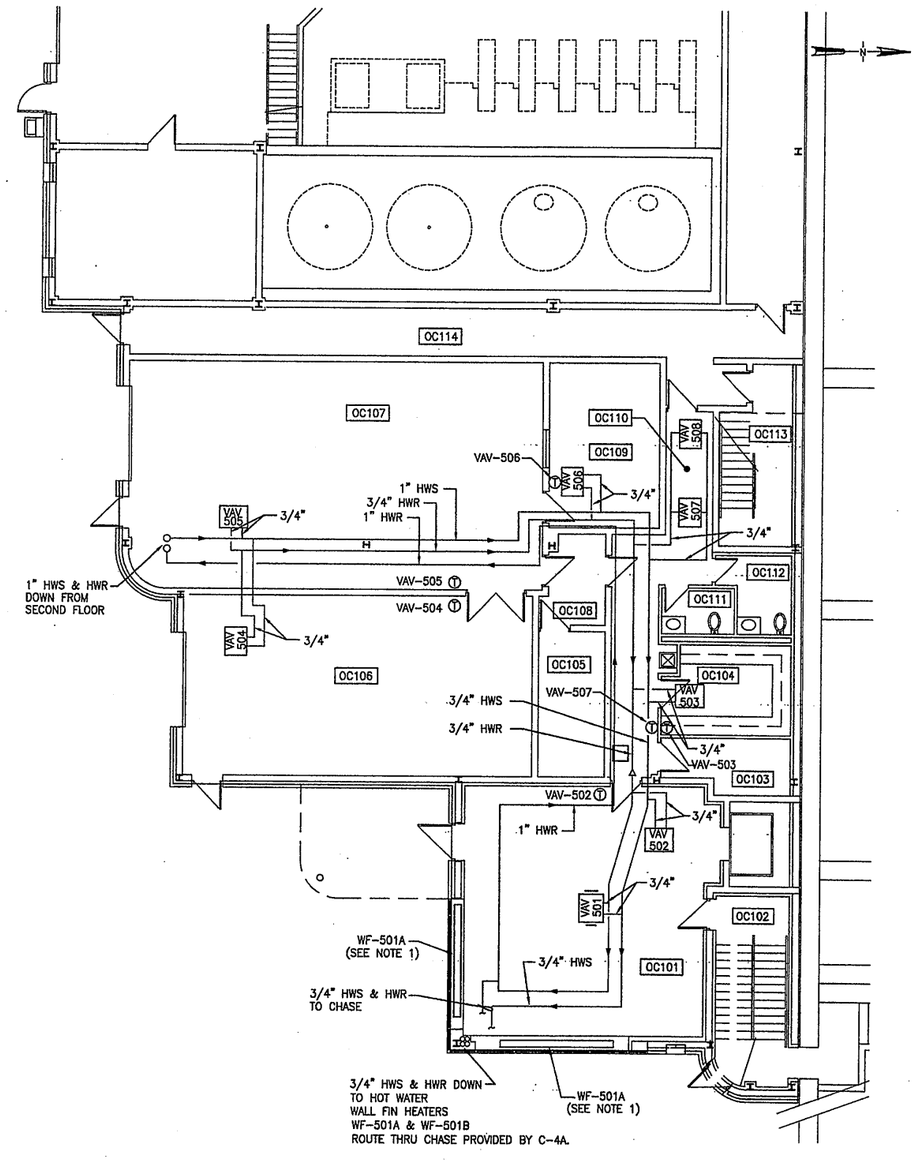
H-401



FIRST FLOOR DUCTING PLAN

1/8"=1'-0"

NOTES:
1. BLANK OFF LOUVER LV-503 WITH SHEETMETAL PAINTED BLACK. INSULATE WITH 2" THICK FIBER GLASS BOARD WITH FRK FACING.



FIRST FLOOR PIPING PLAN

1/8"=1'-0"

NOTES:
1. MOUNT WALL FIN IN ENCLOSURE PROVIDED BY C-4A.

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE: _____ PER: _____

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02/08/01 OBG KJL
00659H501

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

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
1		AS-BID	
2	11/30/05	RECORD DRAWING	RCG

In charge of DPB
Designed by CJP
Drawn by KJL
Checked by SWM

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
OPERATIONS CENTER

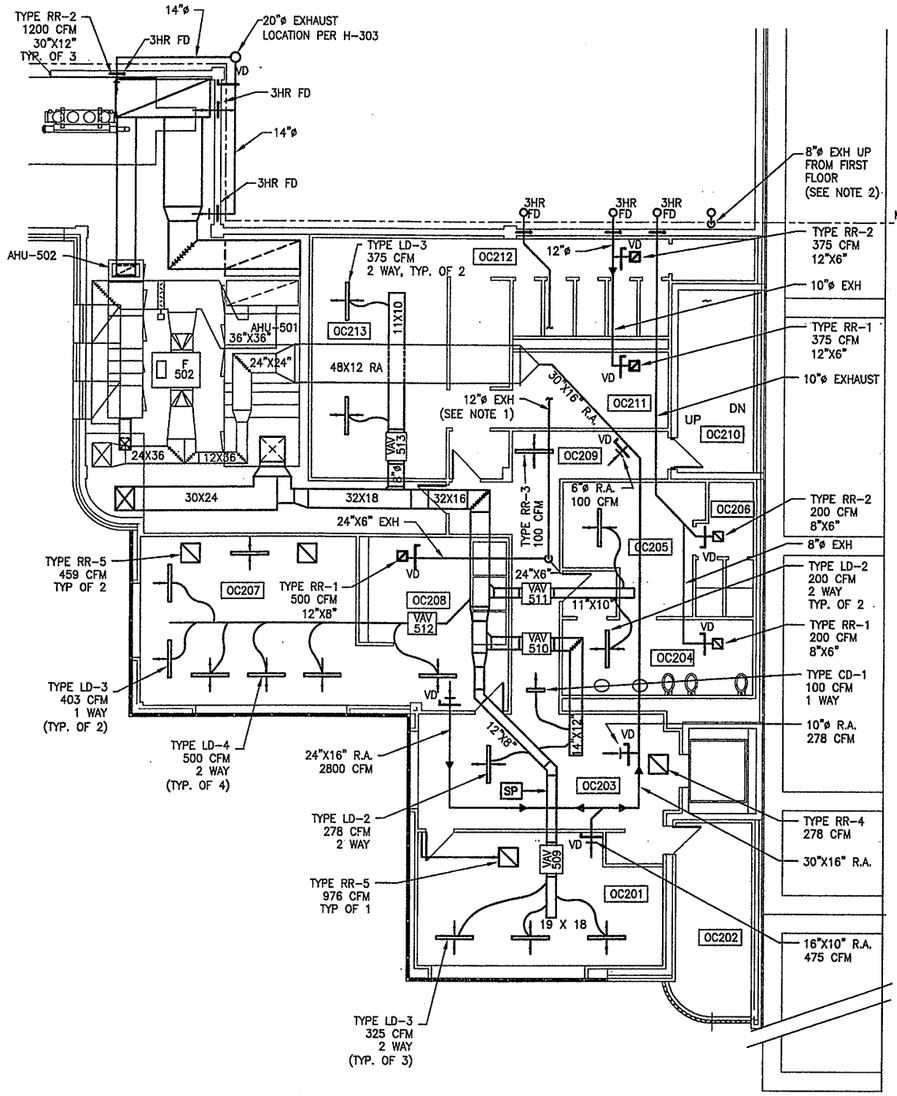
FIRST FLOOR PLANS

HEATING VENTILATING & AIR CONDITIONING

STATE OF NEW YORK • LEONARD J. CAMPOLIETI • No. 60755 • LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001

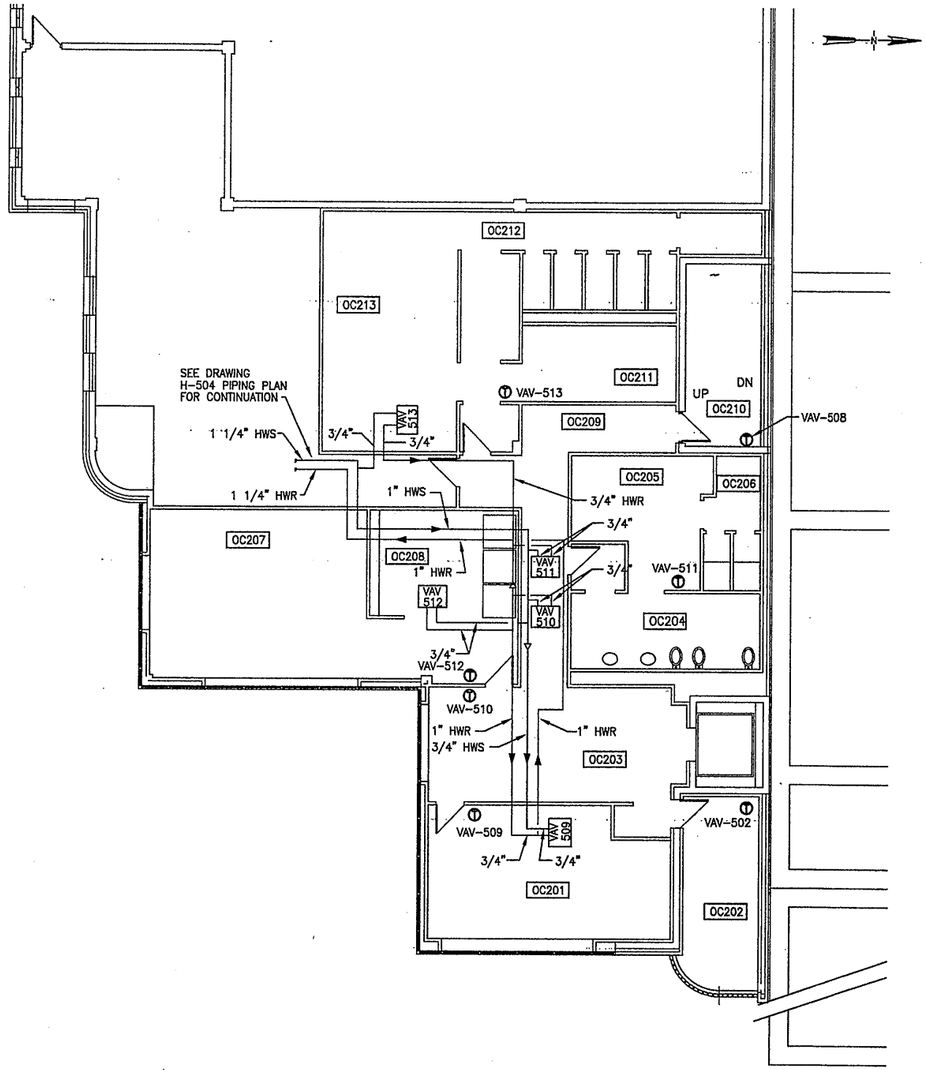
H-501



SECOND FLOOR DUCTING PLAN

1/8"=1'-0"

NOTE:
1. ROUTE EXHAUST DUCT THROUGH OPEN-WEB JOISTS.
2. PROVIDE 3 HR FD WITH ACCESS DOOR AT PENETRATION THRU CORRIDOR CEILING.



SECOND FLOOR PIPING PLAN

1/8"=1'-0"

RECORD DRAWING

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

No.	Date	Revisions	Init
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1		AS-BID	
2	XX/XX	RECORD DRAWING	RCG

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STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
OPERATIONS CENTER

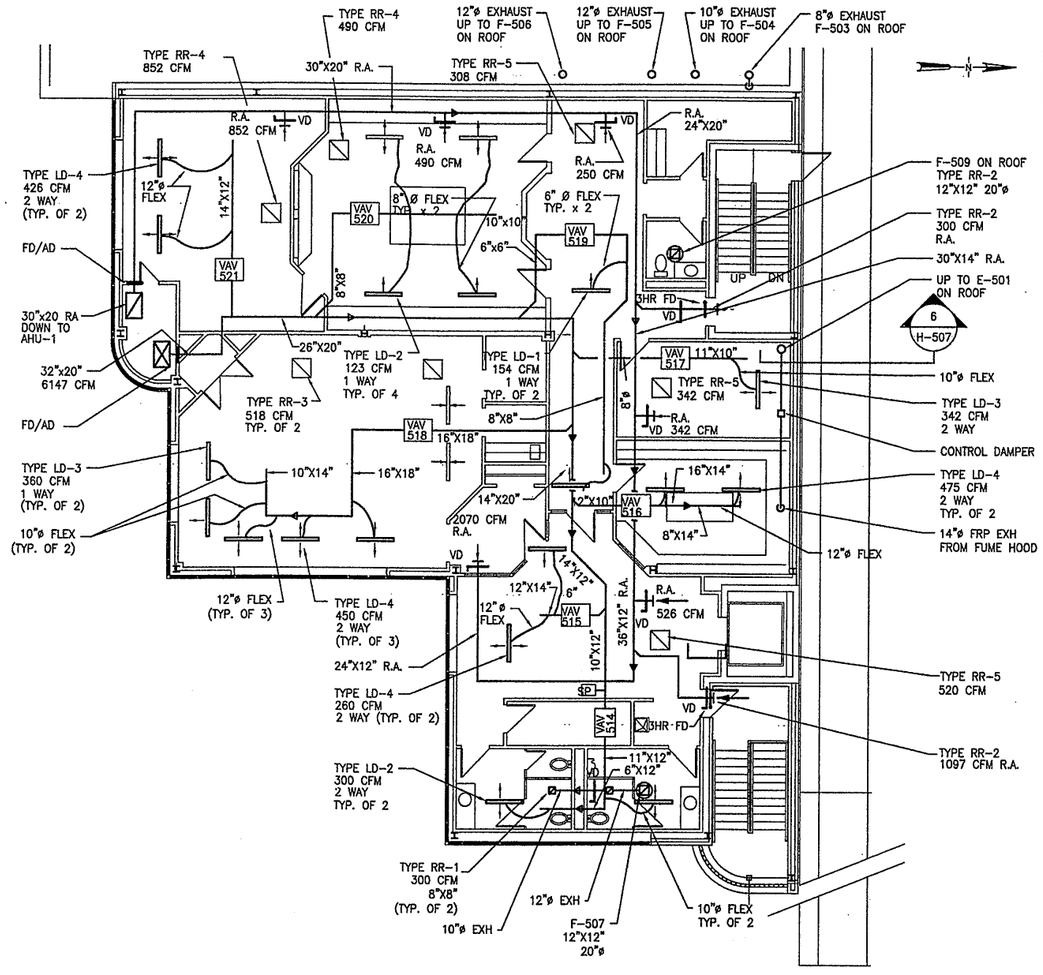
SECOND FLOOR PLANS

HEATING VENTILATING & AIR CONDITIONING

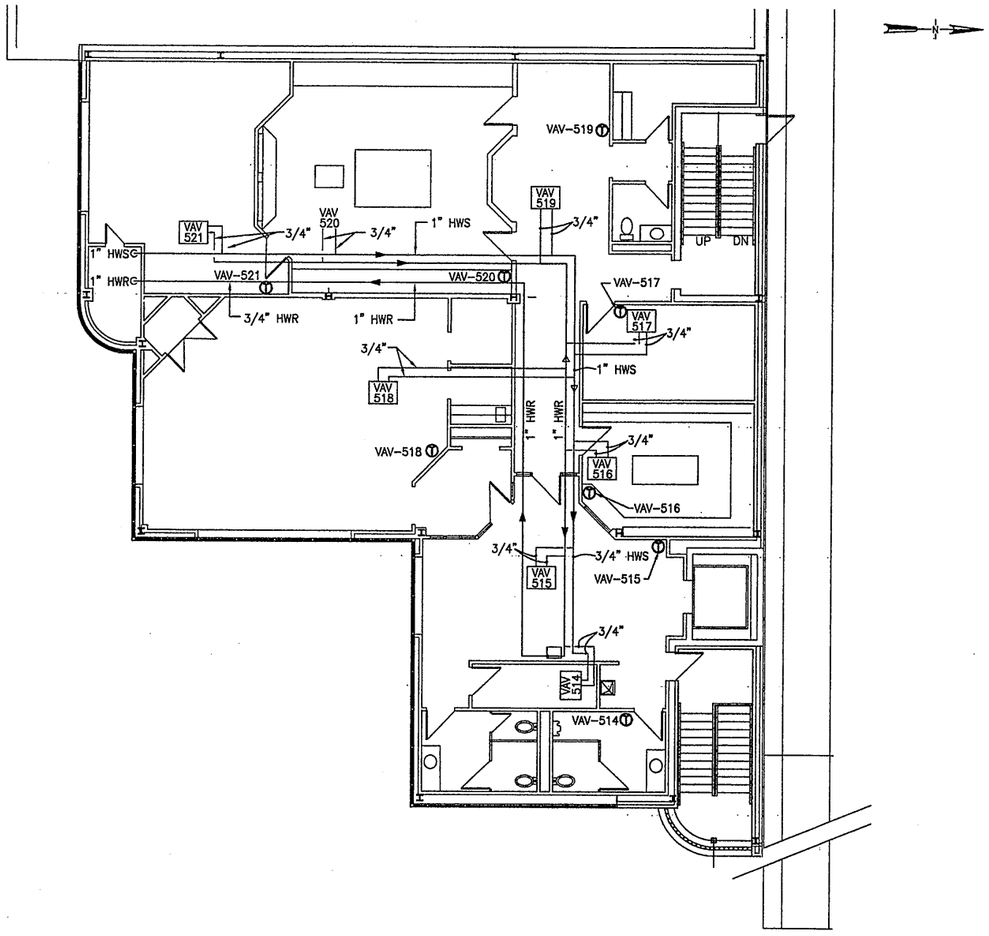
LICENSED PROFESSIONAL ENGINEER · STATE OF NEW YORK · LEONARD J. CAMPOLIETA · No. 60751

File Number 00659
Date APRIL 2001

H-502



THIRD FLOOR DUCTING PLAN
1/8"=1'-0"



THIRD FLOOR PIPING PLAN
1/8"=1'-0"

RECORD DRAWING

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00659H503

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

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No.	Date	Revisions	Init
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2	11/30/05	RECORD DRAWING	RCG

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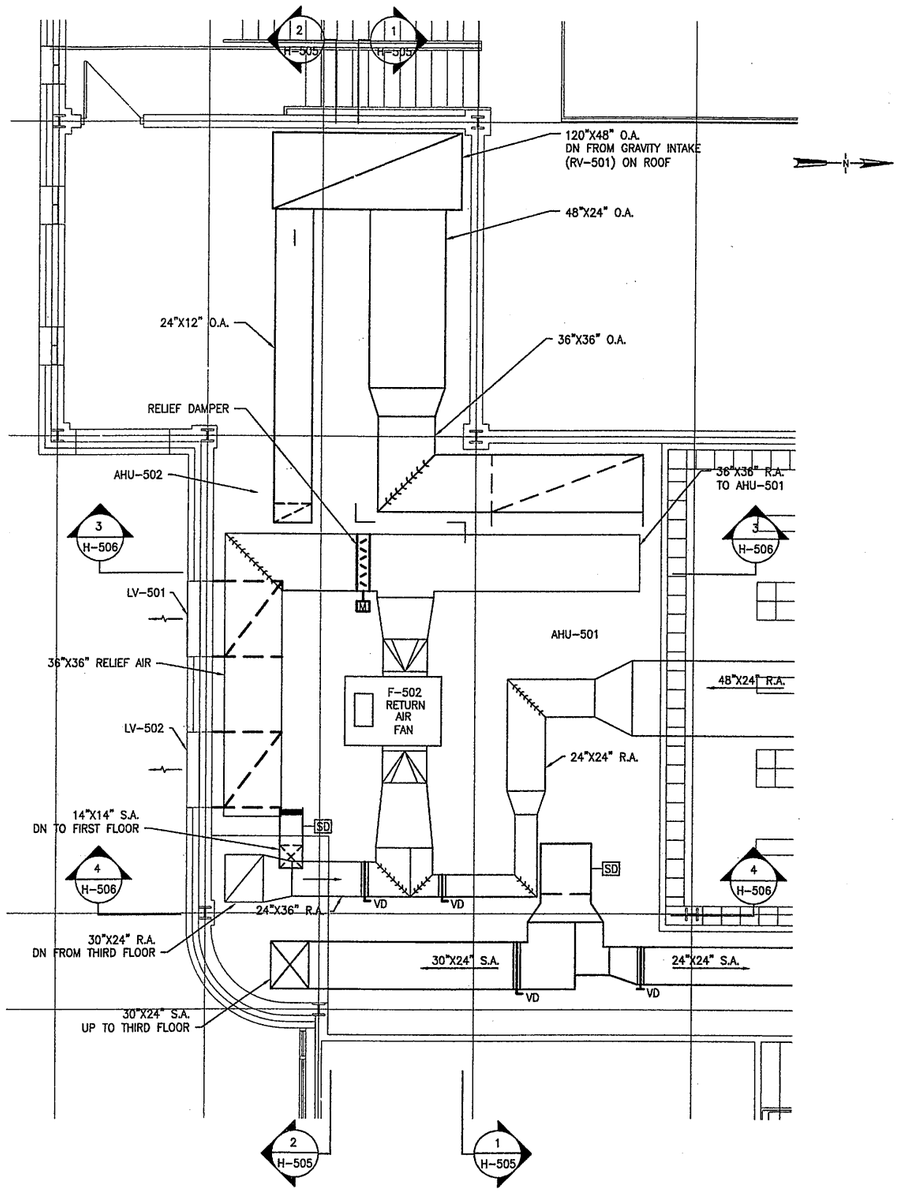
OPERATIONS CENTER
THIRD FLOOR PLANS
HEATING VENTILATING & AIR CONDITIONING

STATE OF NEW YORK · LEONARD J. CAMPOLIETI · No. 60755 · LICENSED PROFESSIONAL ENGINEER

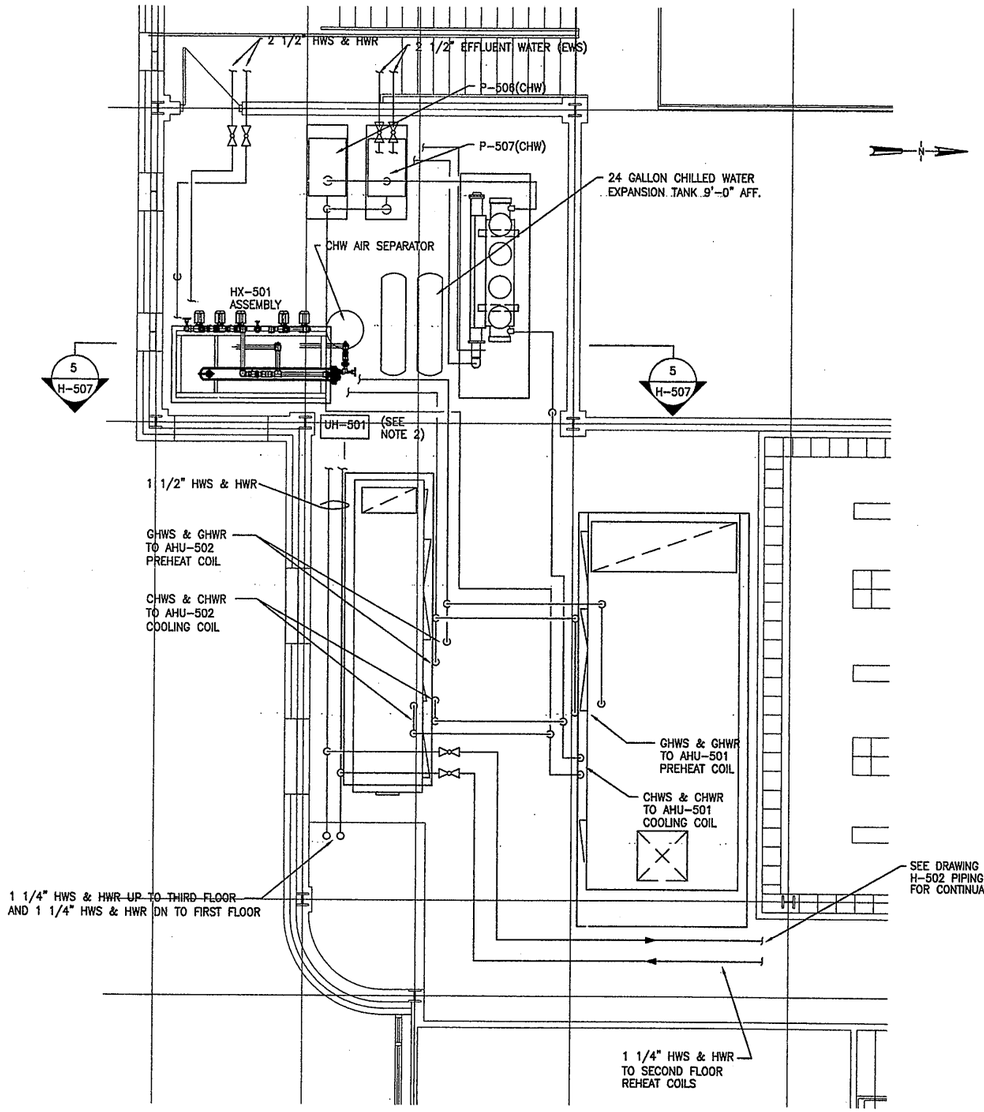
File Number 00659
Date APRIL 2001
H-503



MECHANICAL ROOM DUCTING PLAN

1/4"=1'-0"

NOTE:
1. ROUTE DUCTWORK AS HIGH AS POSSIBLE.



MECHANICAL ROOM PIPING PLAN

1/4"=1'-0"

NOTE:
1. SEE PIPING SCHEMATICS FOR DETAILED PIPIING COMPONENTS AND SIZES.
2. CONNECT HWS & HWR TO UH-501.

RECORD DRAWING

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00659H504

1/4"=1'-0" 2 0 2 4 6

No.	Date	Revisions	Init
0	4/20/01	ISSUED.FOR.APPROVAL	
1	7/11/01	AS-BID	
2	3/20/02	REVISED.FOR.MODIFICATION.4C.002	
3	11/30/05	RECORD DRAWING	RCG

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MECHANICAL ROOM PLANS
HEATING VENTILATING & AIR CONDITIONING

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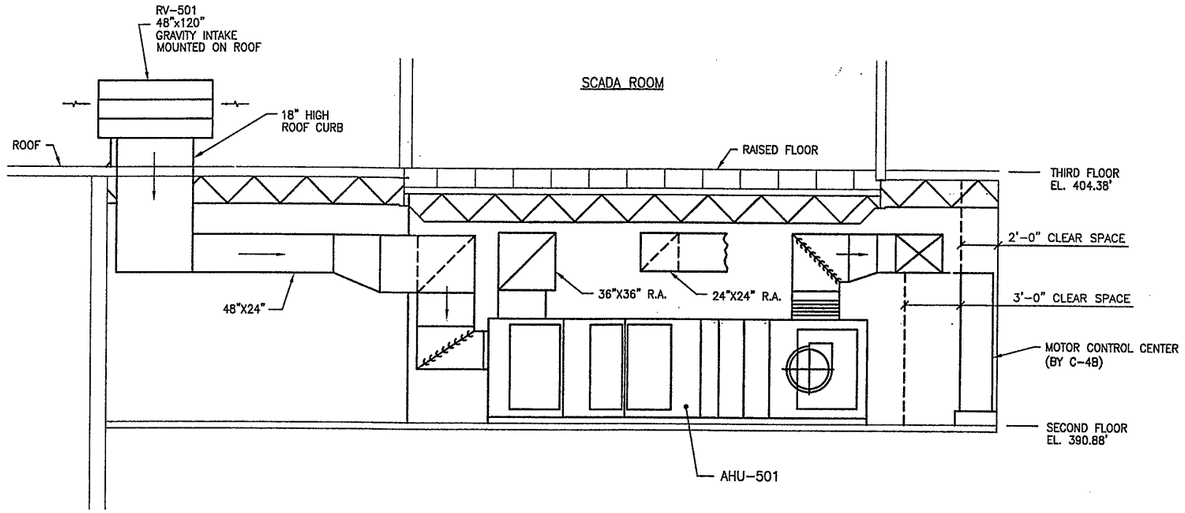
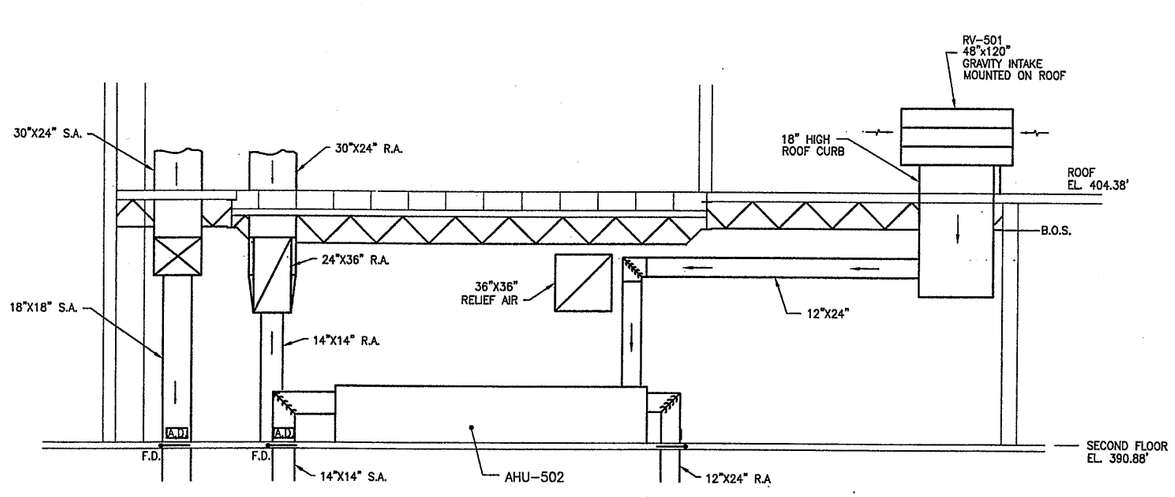
File Number 00659
Date APRIL 2001

H-504



SECTION 1/4"=1'-0" (1 / H-504)



SECTION 1/4"=1'-0" (2 / H-504)

02/13/01 OBG KJL
00659H505

RECORD DRAWING

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1/4"=1'-0" 2 0 2 4 6

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2	1/30/05	RECORD DRAWING	RCG

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Drawn by KJL
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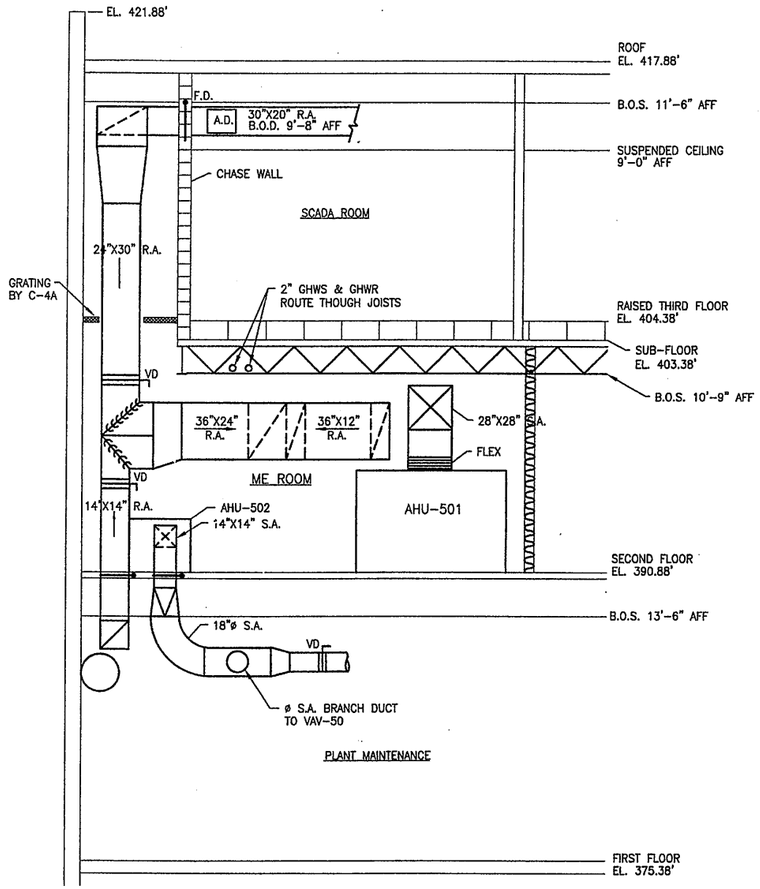
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
OPERATIONS CENTER
SECTIONS
HEATING VENTILATING & AIR CONDITIONING

STATE OF NEW YORK · LEONARD J. CAMPOLIETA · LICENSED PROFESSIONAL ENGINEER · No. 60759

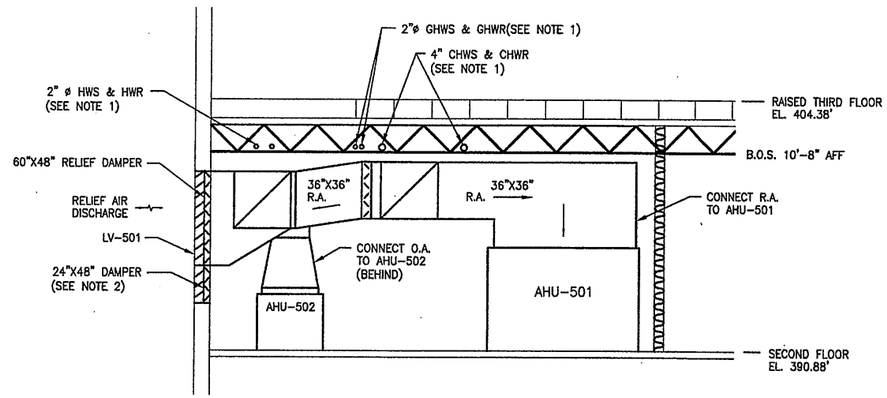
File Number 00659
Date APRIL 2001

H-505



SECTION 4 / H-504
1/4"=1'-0"

NOTE:
1. RAISED THIRD FLOOR IN SCADA ROOM AND CONTROL ROOM. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS.



SECTION 3 / H-504
1/4"=1'-0"

NOTES:
1. ROUTE PIPING THROUGH OPEN-WEB JOISTS.
2. MECH. ROOM VENTILATION DAMPER

RECORD DRAWING

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02/13/01 OBG KJL
00659H506

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1/4"=1'-0" 2 0 2 4 6

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No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
1		AS-BID	
2	1/30/05	RECORD DRAWING	RCG

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Drawn by KJL
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OPERATIONS CENTER
SECTIONS
HVAC

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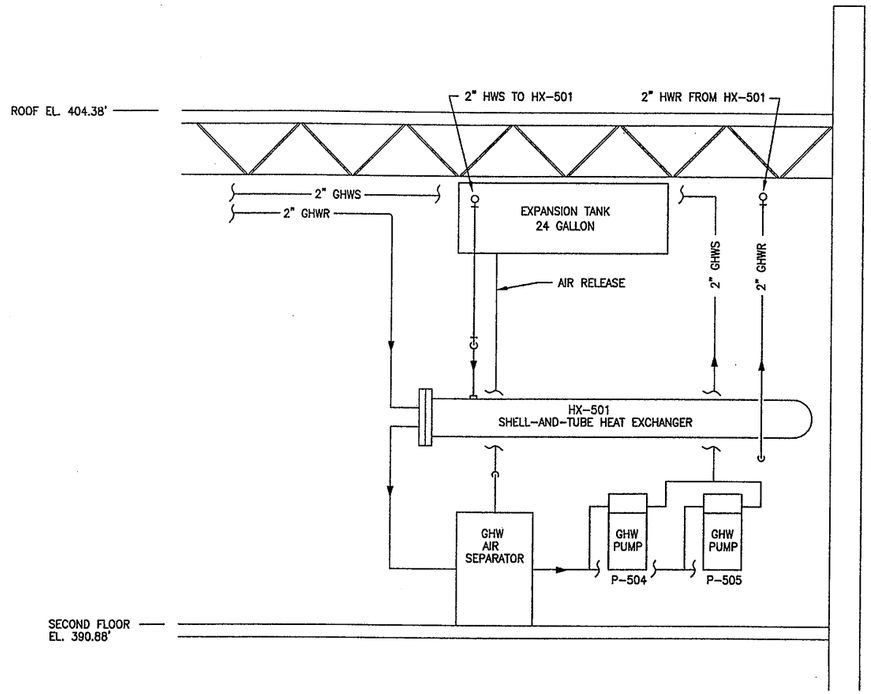
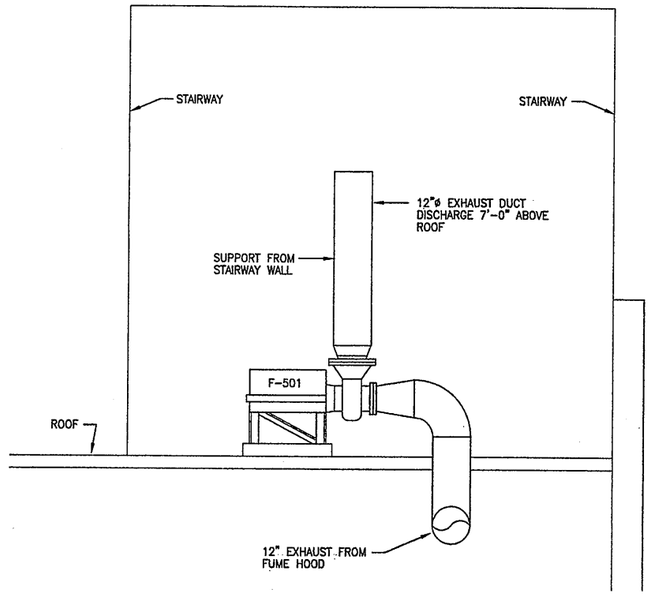
File Number 00659
Date APRIL 2001

H-506



SECTION 5 / H-504
1/2"=1'-0"



SECTION 6 / H-503
1/2"=1'-0"

NOTES:

1. SEE PIPING SCHEMATIC (DWG H-508) FOR DETAILED PIPING COMPONENTS AND SIZES.
2. PROVIDE STRUCTURAL STEEL FRAMEWORK TO SUPPORT HX-501 AT 5'-0" AFF.

RECORD DRAWING

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02/13/01 OBG KJL
00659H507

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

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2	11/30/05	RECORD DRAWING	RCG

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OPERATIONS CENTER
SECTIONS
HEATING VENTILATING & AIR CONDITIONING

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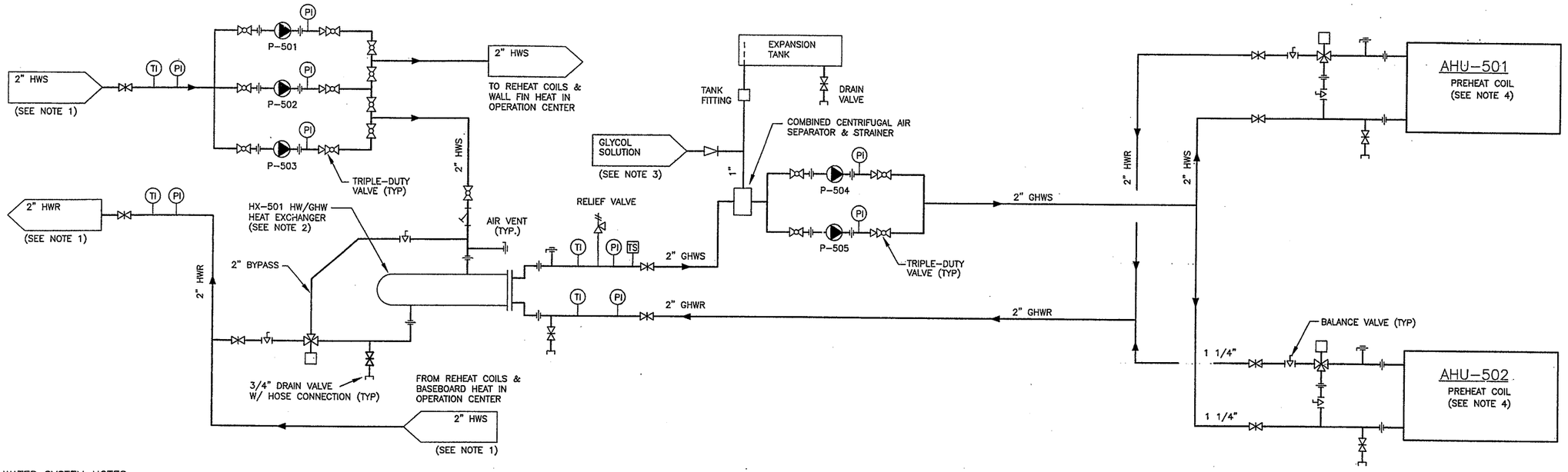
File Number 00659
Date APRIL 2001

H-507

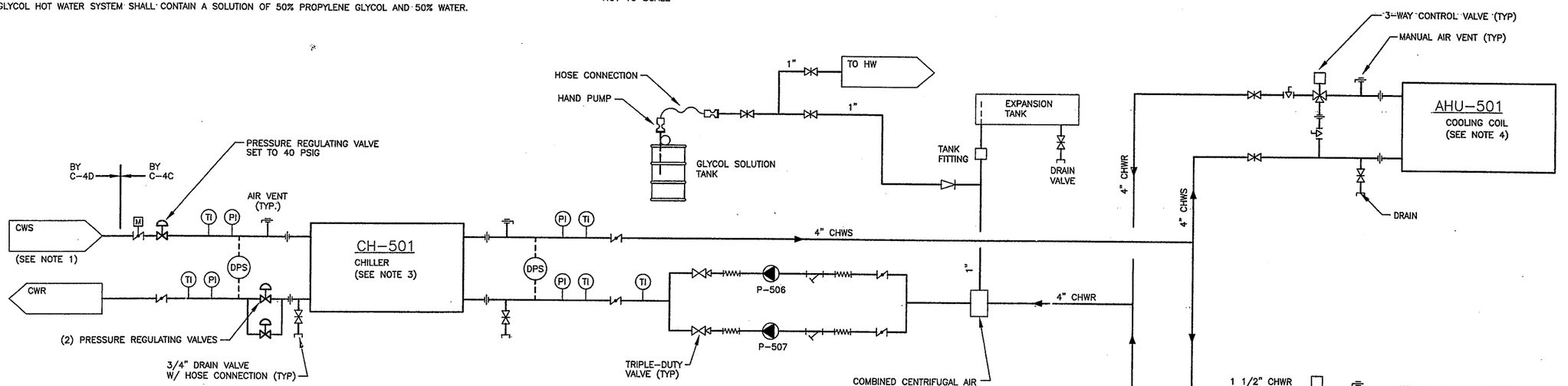


HOT WATER SYSTEM NOTES:

1. HOT WATER FROM STEAM-TO-HOT-WATER HEAT EXCHANGER LOCATED IN MECHANICAL ROOM.
2. ARRANGE HEAT EXCHANGER PIPING TO FACILITATE TUBE REMOVAL.
3. REFER TO CHILLED WATER PIPING SCHEMATIC FOR SOURCE OF GLYCOL SOLUTION.
4. ARRANGE PIPING TO FACILITATE COIL REMOVAL FROM AHU.
5. GLYCOL HOT WATER SYSTEM SHALL CONTAIN A SOLUTION OF 50% PROPYLENE GLYCOL AND 50% WATER.

OPERATIONS CENTER HOT WATER SYSTEM SCHEMATIC

NOT TO SCALE



CHILLED WATER SYSTEM NOTES:

1. CONDENSER WATER SHALL BE PLANT EFFLUENT WATER.
2. CHILLED WATER SYSTEM SHALL CONTAIN A MIXTURE OF 50% WATER & 50% PROPYLENE GLYCOL.
3. ARRANGE CHILLER PIPING TO FACILITATE CONDENSER AND EVAPORATOR TUBE REMOVAL.
4. ARRANGE COIL PIPING TO FACILITATE COIL REMOVAL FROM AHU.

CHILLED WATER SYSTEM SCHEMATIC

NOT TO SCALE

RECORD DRAWING

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DATE: _____ PER: _____

02/15/01 OBG JAS
00659H508

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0	4/20/01	ISSUED FOR APPROVAL	
1		AS-BID	
2	11/30/05	RECORD DRAWING	RCG

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Drawn by KJL
Checked by SWM

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SYRACUSE, NEW YORK

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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

OPERATIONS CENTER
PIPING SYSTEM SCHEMATICS

HVAC

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Date APRIL 2001

H-508

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CONTRACT 4A — CONTRACT 4C

FLANGED CONN. TYP. FOR BOTH CONTRACTS

CHAIN OPERATOR (TYP)

8"-LPS ℄ 368.00

2"-PC ℄ 368.25

2"-PC ℄ 368.00

8"-LPS ℄ 368.50

8"-LPS ℄ 369.67

2" GATE VALVE

ROLL 6" STEAM DOWN ONTO EXISTING STEAM LINE WITH (2) 45° ELBOWS, TAP WITH 6" WELDED TEE.

ROLL 2" PUMPED CONDENSATE DOWN ONTO EXISTING COND. LINE WITH (2) 45° ELBOWS, TAP WITH 2" WELDED TEE.

REUSE EXISTING BOILER FLUE MASONRY OPENING FOR FAN F-601 DISCHARGE

1 / H-601

SEE VENTILATION DETAIL 1 THIS SHEET

RV-603

24"

INSTALL NEW LOUVERED PENTHOUSE TYPE EXHAUST RELIEF VENT RV-603 ON TOP OF EXISTING MASONRY CHIMNEY CAP. BLANK OFF NORTH, EAST, AND WEST SIDES INTERNALLY TO ALLOW EXHAUST AIR TO EXIT ON SOUTH FACE ONLY.

F-601

SCREENED INLET

FLEX. CONNECTION

REUSE EXISTING FLUE PENETRATION FOR FAN F-601 DISCHARGE. PROVIDE TRANSITION DUCTWORK AS REQ'D.

VENTILATION DETAIL 1 — N.T.S. — H-601

FLEXIBLE CONNECTION

HB

FLEX CONNECTION

F-601

600 GAL BOILER FEED TANK

WATER SOFTENER TANKS (TYP)

BREAKGLASS BOILER SAFETY SWITCH

1" LPS TO BOILER FEED TANK PREHEATER FEED PIPING. SEE SCHEMATIC ON SHEET H-602.

ACCESS AREA FOR REMOVAL OF EXISTING BOILER AND EQUIPMENT AND INSTALLATION OF NEW. REMOVAL AND REINSTALLATION OF ACCESS AREA ROOF PLANK BY CONTRACT 4A.

CHEM FEED MIX TANK (TYP)

CF-601 CF-602 CF-603 CF-604

56"x56" ROOF OPENING AND ROOF CURB BY CONTRACT 4A, TYP.

56"x56" UP TO RV-601

36"X36" TYPE SG-1 (TYP. OF 4)

BOILER ROOM F.F. EL. 357.50

CHAIN OPERATOR

1.5"ø BLOWDOWN PIPING (TYP)

8"-LPS ℄ 369.08

8"-LPS ℄ 369.08

PILOT SHUTOFF AT BOILER (TYP.)

RAISED PLATFORM BY OTHERS (TYP)

DOOR SWING (TYP)

HIGH PRESSURE SLUDGE GAS (HPSG) SUPPLY BY CONTRACT 4A DN. TO DIGESTER GAS TRAIN, 3 TYP. SEE SHEET M-814 FOR COORDINATION

CONTROL AIR PIPING DOWN (TYP. X3)

NOTE: RECONNECT ALL EXISTING STEAM TAPS TO NEW STEAM MANIFOLD. PROVIDE NEW WELDED ELBOWS AND VERTICAL CONNECTIONS TO HEADER AND INSULATE.

12" STEAM MANIFOLD ℄ 366.83

8" GATE VALVE W/CHAIN OPERATOR (TYP)

CHAIN OPERATOR (TYP)

BOILER NO. 601

BOILER NO. 602

BOILER NO. 603

3" NG

3" NG

5" NG

3" NG

6" NG (WELDED STEEL, TYP)

NATURAL GAS REGULATOR

TUBE PULL (TYP)

56"x28 5' JT

56"x28 5' JT

36"X36" TYPE SG-1 (TYP. OF 2)

CONTRACT 4C

CONTRACT 4A

WALL OPENING TO BE SEALED BY CONTRACT 4A

56"x56" UP TO RV-602 WITH ADD

NATURAL GAS MAIN

EXISTING POTABLE WATER MAIN

BOILER CONTROL PANEL

CORE DRILL CONCRETE SLAB UP TO MASONRY CHIMNEY BY CONTRACT 4A. PROVIDE "T" WITH DRAIN CONNECTION AND TYPE 316 S.S. DRAIN PIPING TO NEAREST TRENCH DRAIN

1 / H-602

2 / H-602

BOILER ROOM

CONTROL AIR TO PRESSURE REGULATING VALVES ON BIOGAS (TYP. X 3)

REPLACE AIR COMPRESSOR

EXISTING INTAKE LOUVER TO REMAIN

NEW MANUALLY OPERATED DAMPER W/CHAIN OPERATOR (4'x6' OPENING)

BOILER SAFETY SWITCH

EXISTING POTABLE WATER MAIN

NOTE: CONTRACTOR TO RECONNECT ALL EXISTING STEAM AND STEAM CONDENSATE CONNECTIONS FROM EXISTING STEAM AND STEAM CONDENSATE HEADERS TO NEW STEAM AND STEAM CONDENSATE HEADERS.

BASEMENT FLOOR PLAN

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

RECORD DRAWING

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0659X602
01/17/01 S&W CTM
0659H601.DWG

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

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
1		AS BID	
2	11/30/05	RECORD DRAWING	RCG

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Designed by DBP
Drawn by CTM/CMS/JRH
Checked by DBP

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STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
LOW LIFT PUMP STATION
BASEMENT FLOOR PLAN
HVAC

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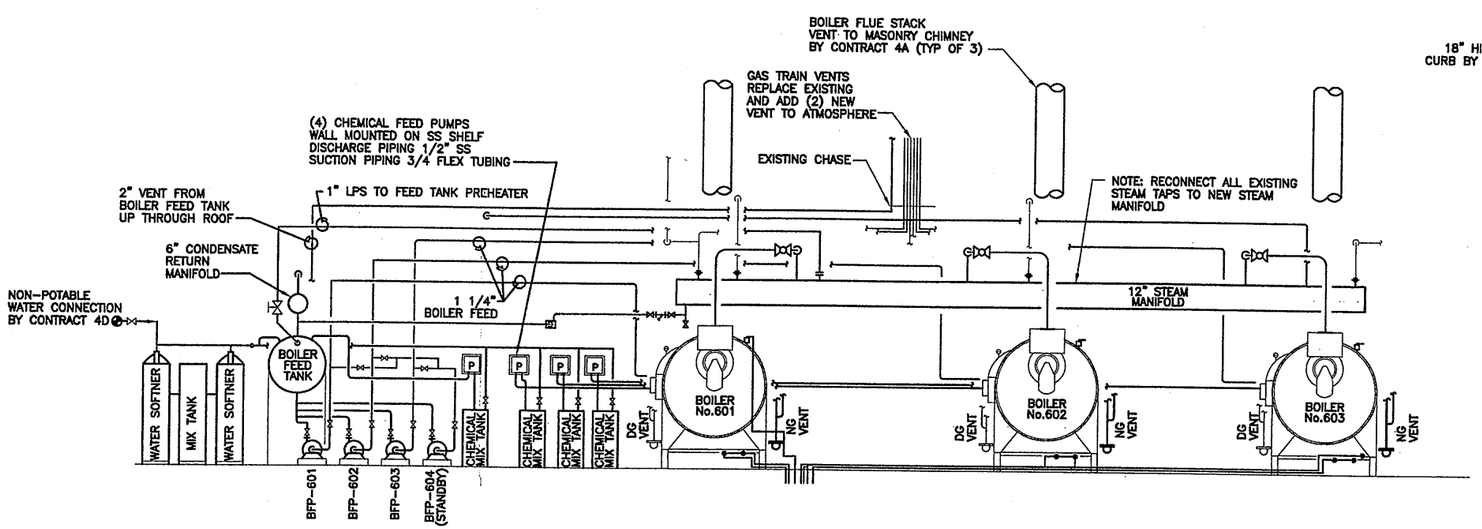
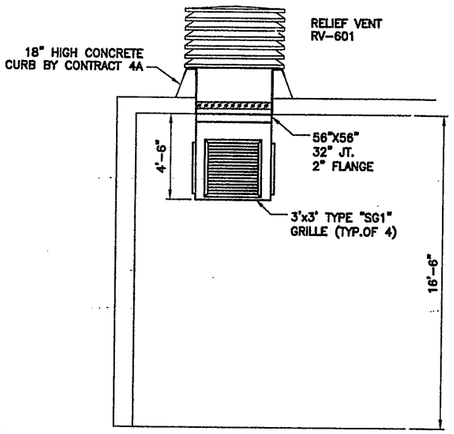
File Number 00659
Date APRIL 2001

H-601



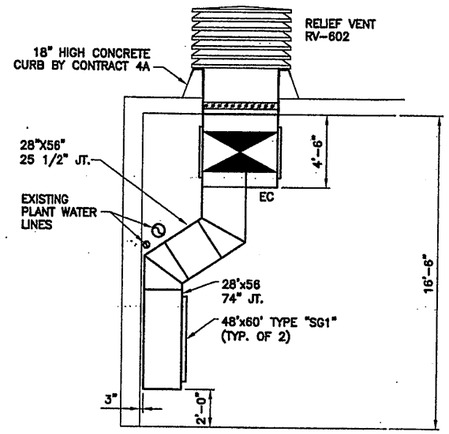
BOILER PROCESS DIAGRAM

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



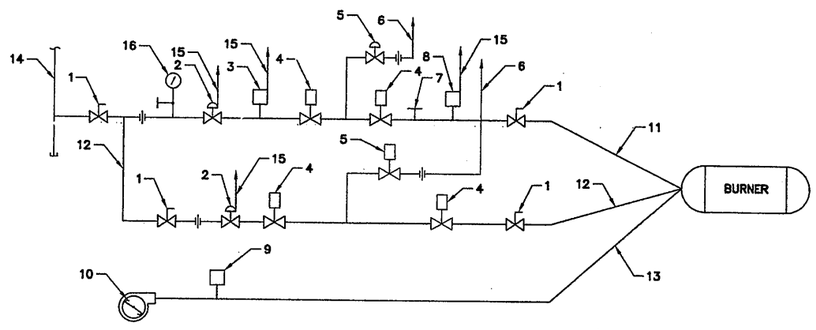
SECTION 1 / H-601

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



SECTION 2 / H-601

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

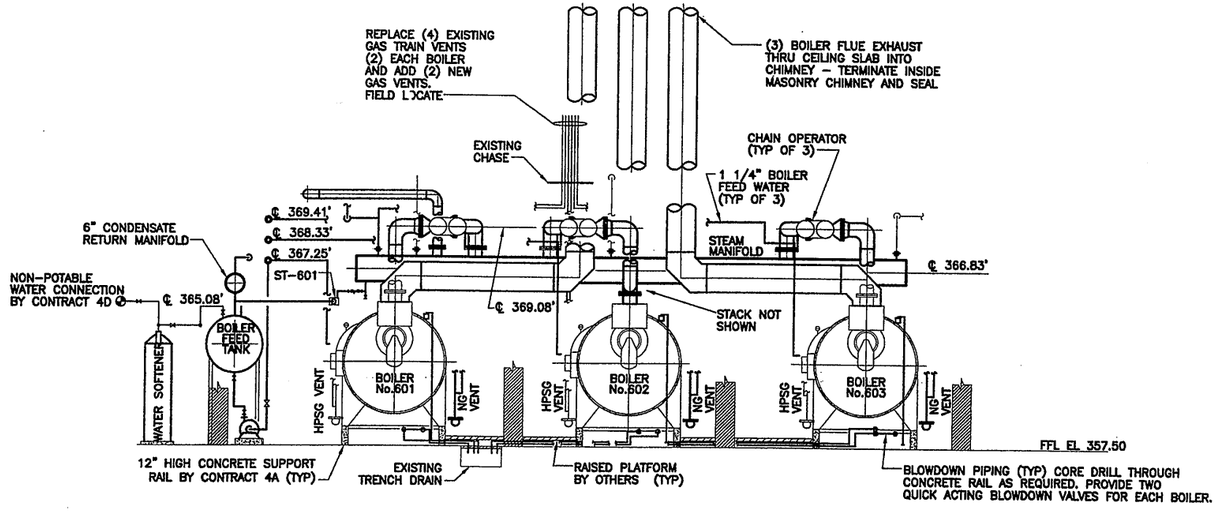


TYPICAL IRI GAS TRAIN SCHEMATIC

NO SCALE

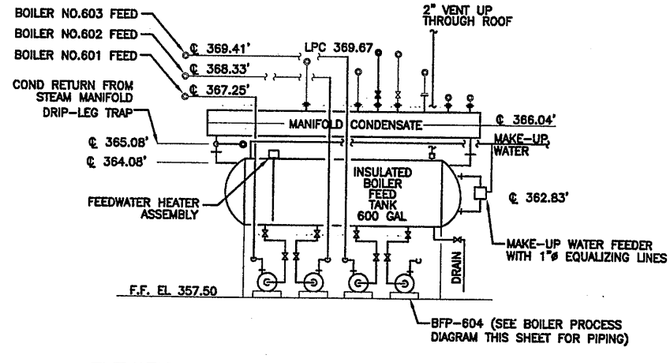
LEGEND

1. GAS COCK
2. PRESSURE REGULATOR
3. LOW GAS PRESSURE SWITCH
4. SAFETY SHUTOFF VALVE
5. NORMALLY OPEN VENT VALVE
6. VENT TO OUTSIDE
7. TEST CONNECTION
8. HIGH GAS PRESSURE SWITCH
9. COMBUSTION AIR PRESSURE SWITCH
10. COMBUSTION AIR BLOWER
11. MAIN GAS FUEL LINE
12. PILOT GAS FUEL LINE (NATURAL GAS ONLY)
13. COMBUSTION AIR
14. GAS SUPPLY
15. REGULATOR AND PRESSURE SWITCH VENTS
16. PRESSURE GAUGE WITH COCK (INCHES OF W.C.)



ELEVATION LOOKING NORTH - BOILERS STEAM MANIFOLD

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



ELEVATION LOOKING WEST - BOILER FEED TANK

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

RECORD DRAWING

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DATE: 11/23/05 PER: RCG

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0659X602
01/17/01 S&W CTM
..\CONTRACT 2-5\HVAC\0659H602.DWG

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

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0	4/20/01	ISSUED FOR APPROVAL	
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Drawn by CMS/JRH
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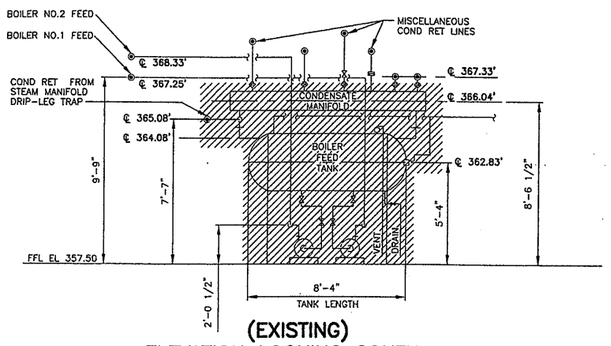
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
LOW LIFT PUMP STATION
ELEVATIONS, SCHEMATICS AND DETAILS
HVAC

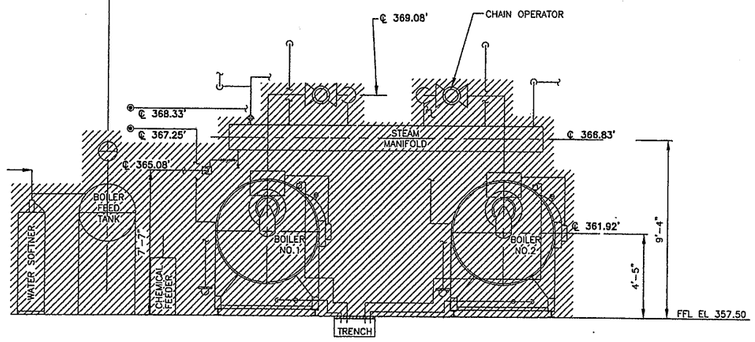
STATE OF NEW YORK · GERALD C. HOOK · No. 57504 · LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001
H-602



(EXISTING) ELEVATION LOOKING SOUTH

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



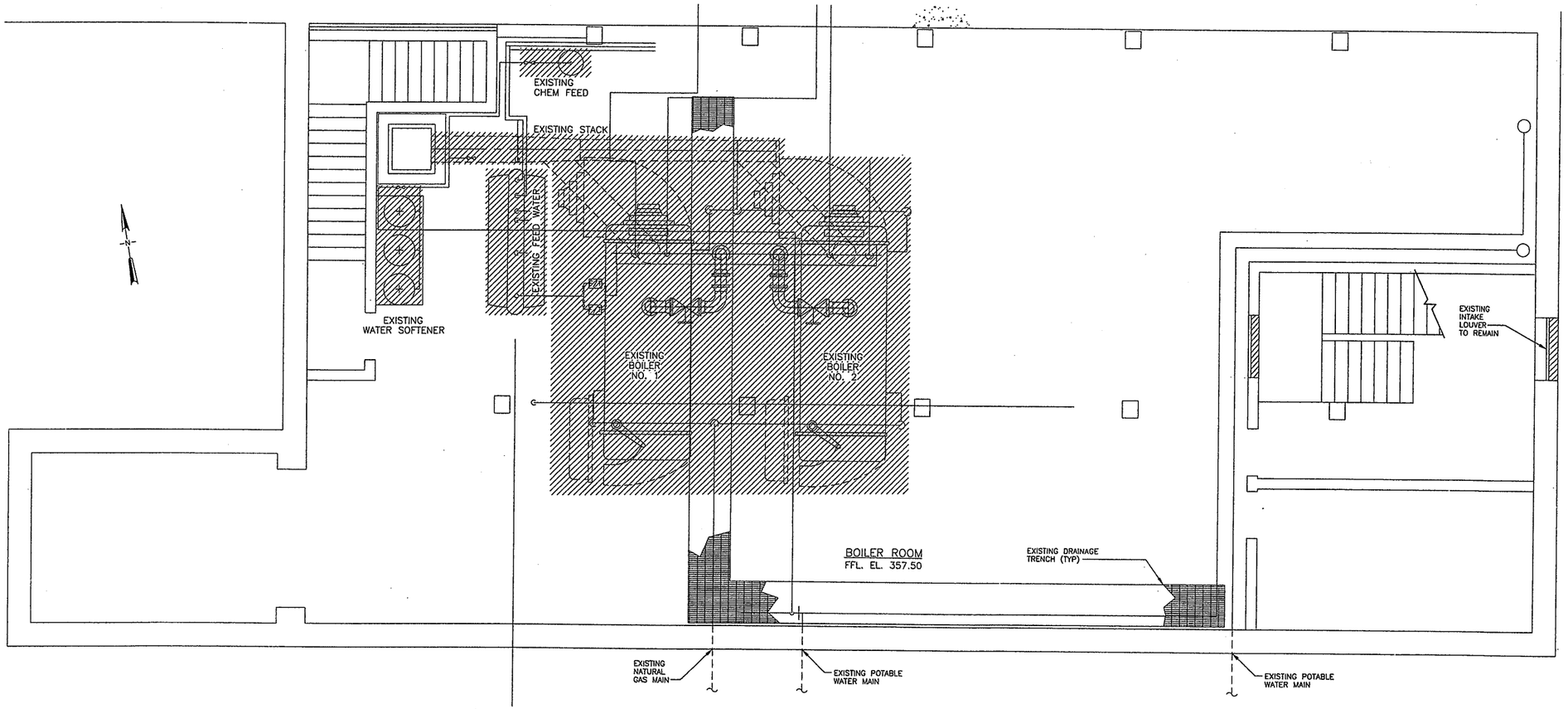
(EXISTING) ELEVATION LOOKING NORTH

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

NOTE: CONTRACTOR TO RECONNECT ALL EXISTING STEAM AND STEAM CONDENSATE CONNECTIONS FROM EXISTING STEAM AND STEAM CONDENSATE HEADERS TO NEW STEAM AND STEAM CONDENSATE HEADERS.

LEGEND

INDICATES EQUIPMENT TO BE DEMOLISHED



BASEMENT FLOOR PLAN – DEMOLITION

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

RECORD DRAWING

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01/17/01 S&W CTM
..\CONTRACT 2-5\HVAC\0659H601.DWG

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

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
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LOW LIFT PUMP STATION
BASEMENT DEMOLITION PLAN
HVAC

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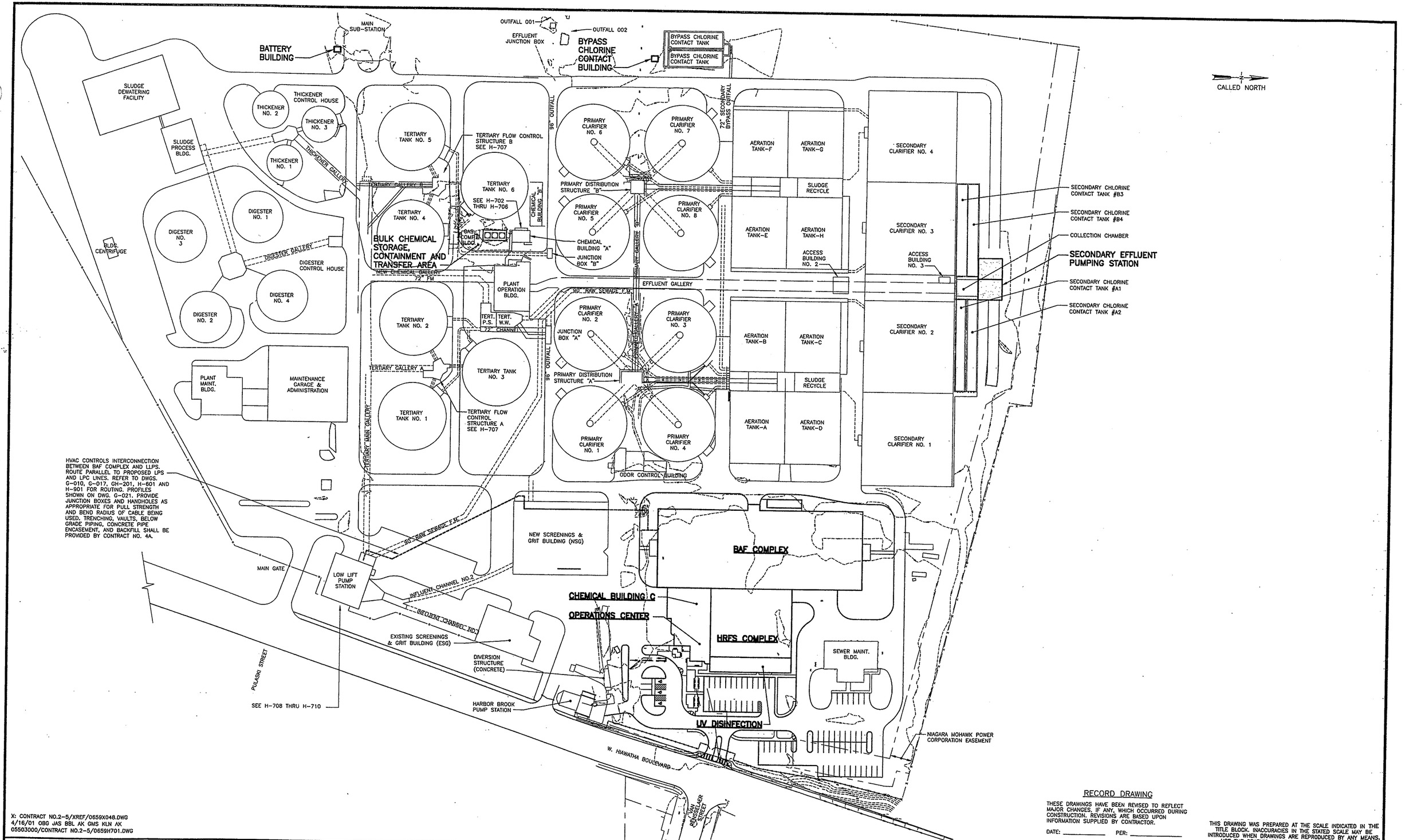
File Number 00659
Date APRIL 2001

H-603



X: CONTRACT NO.2-5/XREF/0659X048.DWG
4/16/01 OBG JAS BBL AK GMS KLN AK
05503000/CONTRACT NO.2-5/0659H701.DWG

80' 0 80' 160'
1"=80'

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Drawn by KJL
Checked by SWM

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GALLERIES VENTILATION
PLANT OPERATIONS BUILDING
PROPOSED SITE PLAN
HVAC

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File Number 00659
Date APRIL 2001
H-701

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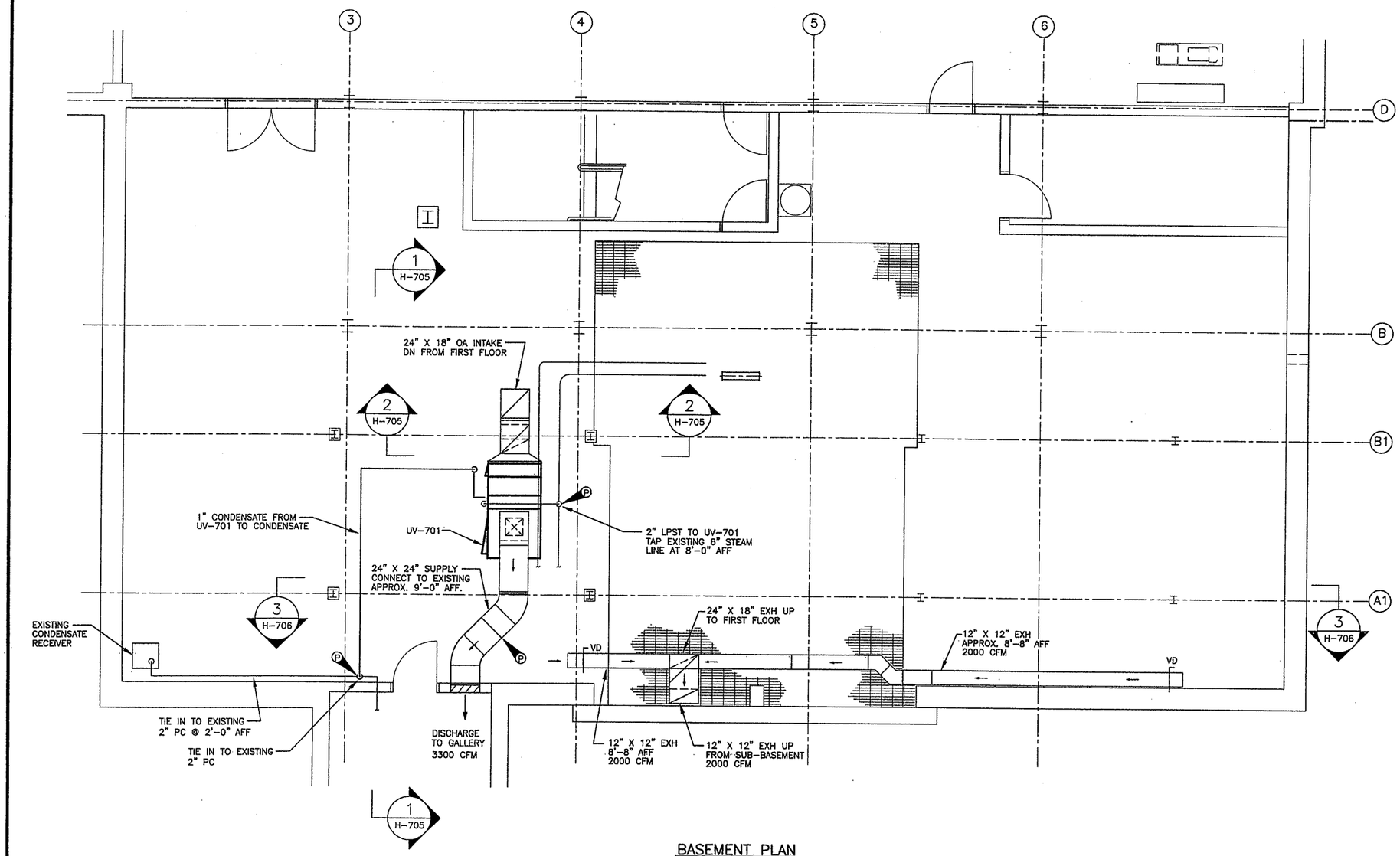
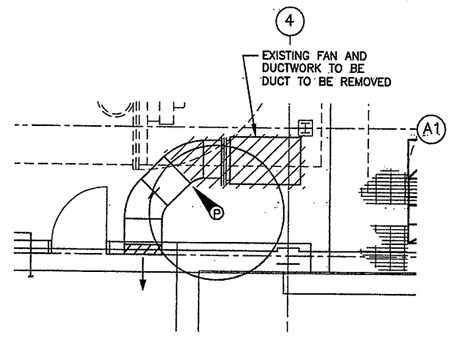


BASEMENT PLAN

1/4"=1'-0"



PARTIAL PLAN
REMOVALS

1/4"=1'-0"

RECORD DRAWING

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02/13/01 OBG KJL
00659H702

1/4"=1'-0" 2 0 2 4 6

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0	4/20/01	ISSUED FOR APPROVAL	
1		AS-BID	
2	11/30/09	RECORD DRAWING	RCG

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GALLERIES VENTILATION
PLANT OPERATIONS BUILDING
BASEMANT PLAN
HVAC

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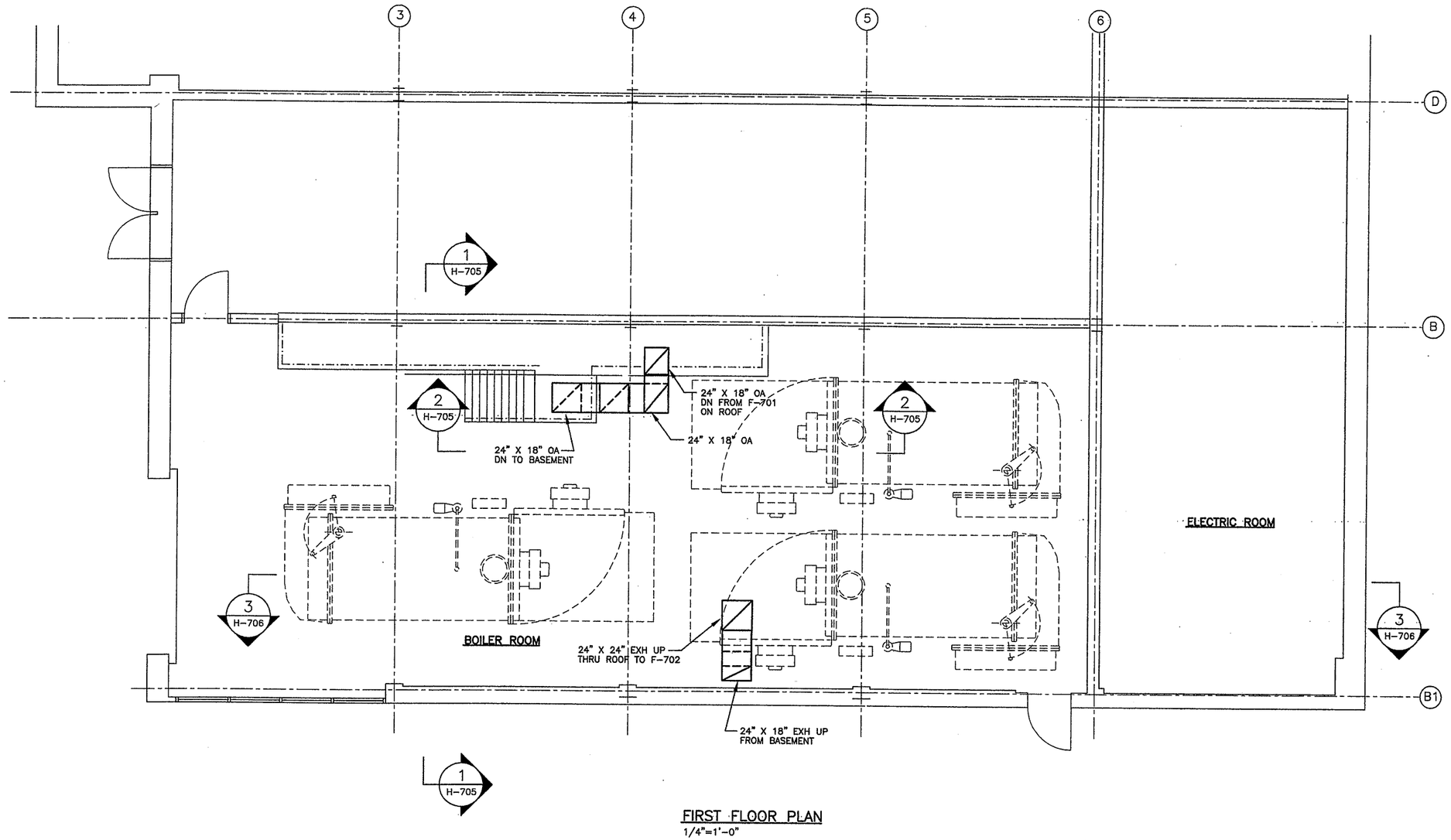
File Number 00659
Date APRIL 2001

H-702



FIRST FLOOR PLAN

1/4"=1'-0"

RECORD DRAWING

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02/13/01 OBG KJL
00659H703

1/4"=1'-0" 2 0 2 4 6

No.	Date	Revisions	Init
0	4/20/01	ISSUED.FOR.APPROVAL	
1		AS-BID	
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GALLERIES VENTILATION
PLANT OPERATIONS BUILDING
FIRST FLOOR PLAN
HVAC

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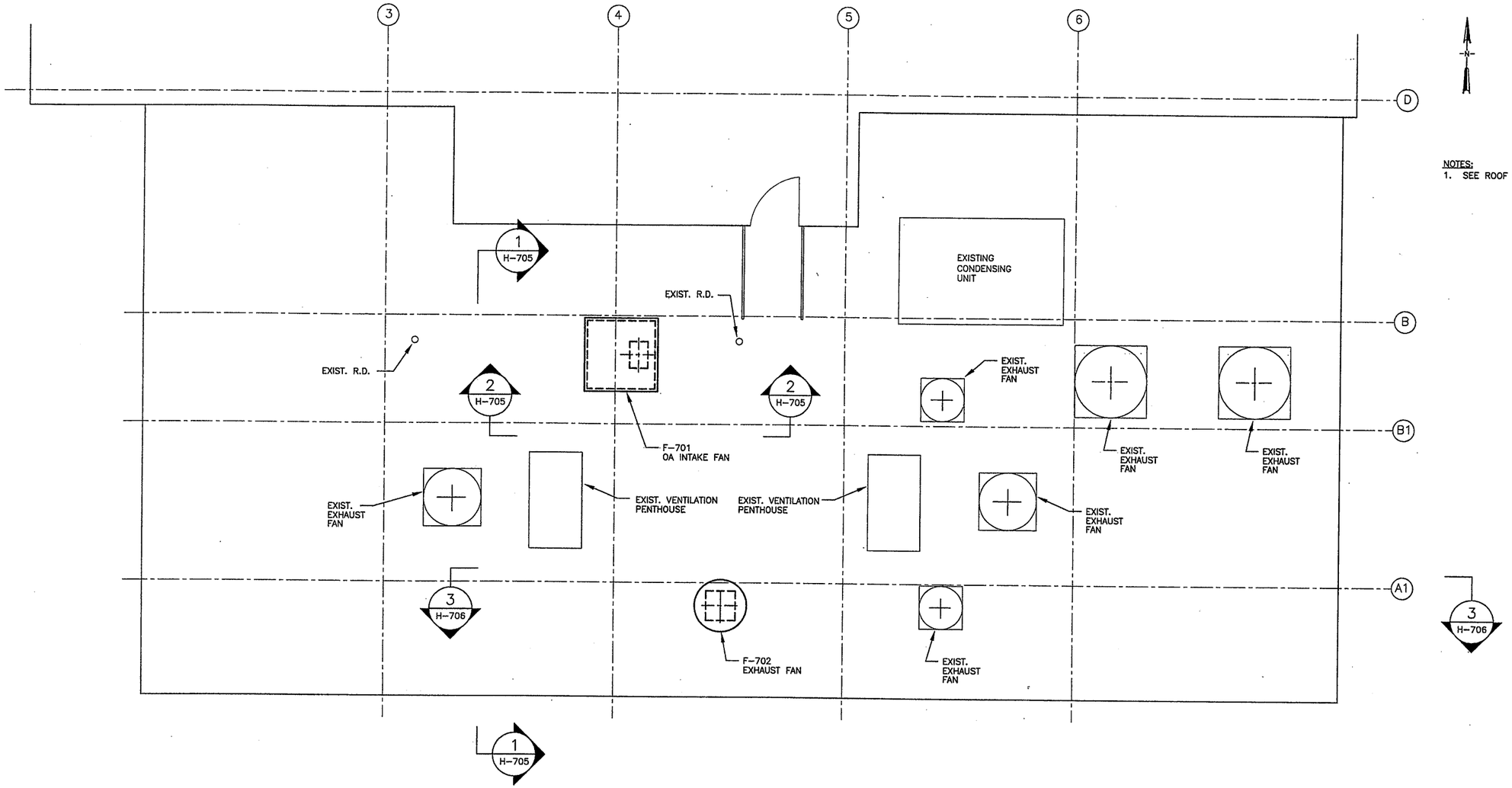
File Number 00659
Date APRIL 2001

H-703



NOTES:
1. SEE ROOF CURB DETAIL DRAWING H-005 FOR FAN MOUNTING.

ROOF PLAN
1/4"=1'-0"

RECORD DRAWING

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02/13/01 OBG KJL
00659H704

1/4"=1'-0" 2 0 2 4 6

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GALLERIES VENTILATION
PLANT OPERATIONS BUILDING
ROOF PLAN
HVAC

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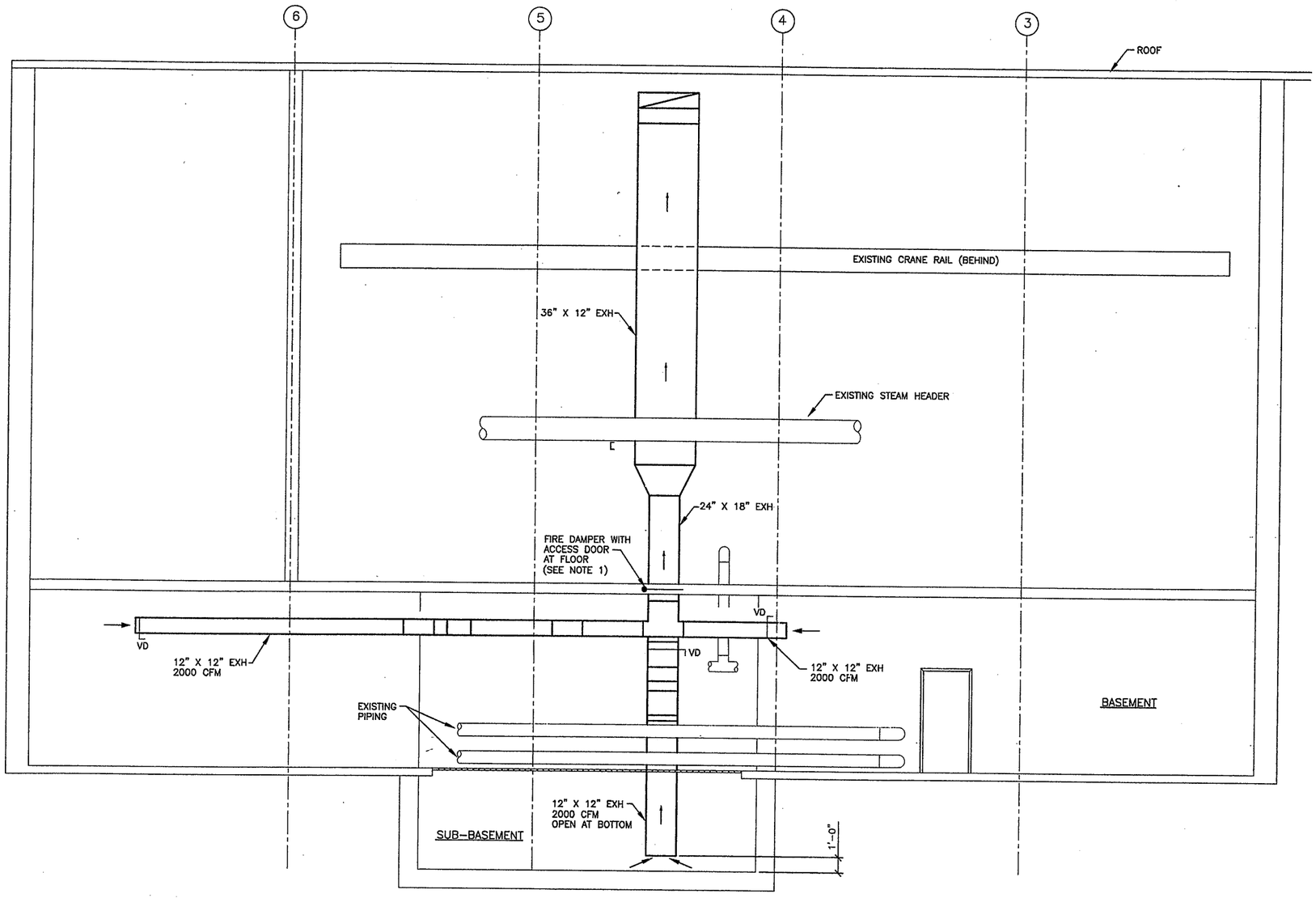
File Number 00659
Date APRIL 2001

H-704



SECTION 3/H-702 3/H-703 3/H-704
1/4"=1'-0"

NOTES:
1. COORDINATE FLOOR PENETRATION SIZE AND LOCATION WITH CONTRACT 4A.

RECORD DRAWING

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00659H706

1/4"=1'-0" 2 0 2 4 6

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STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
GALLERIES VENTILATION
PLANT OPERATIONS BUILDING
SECTION
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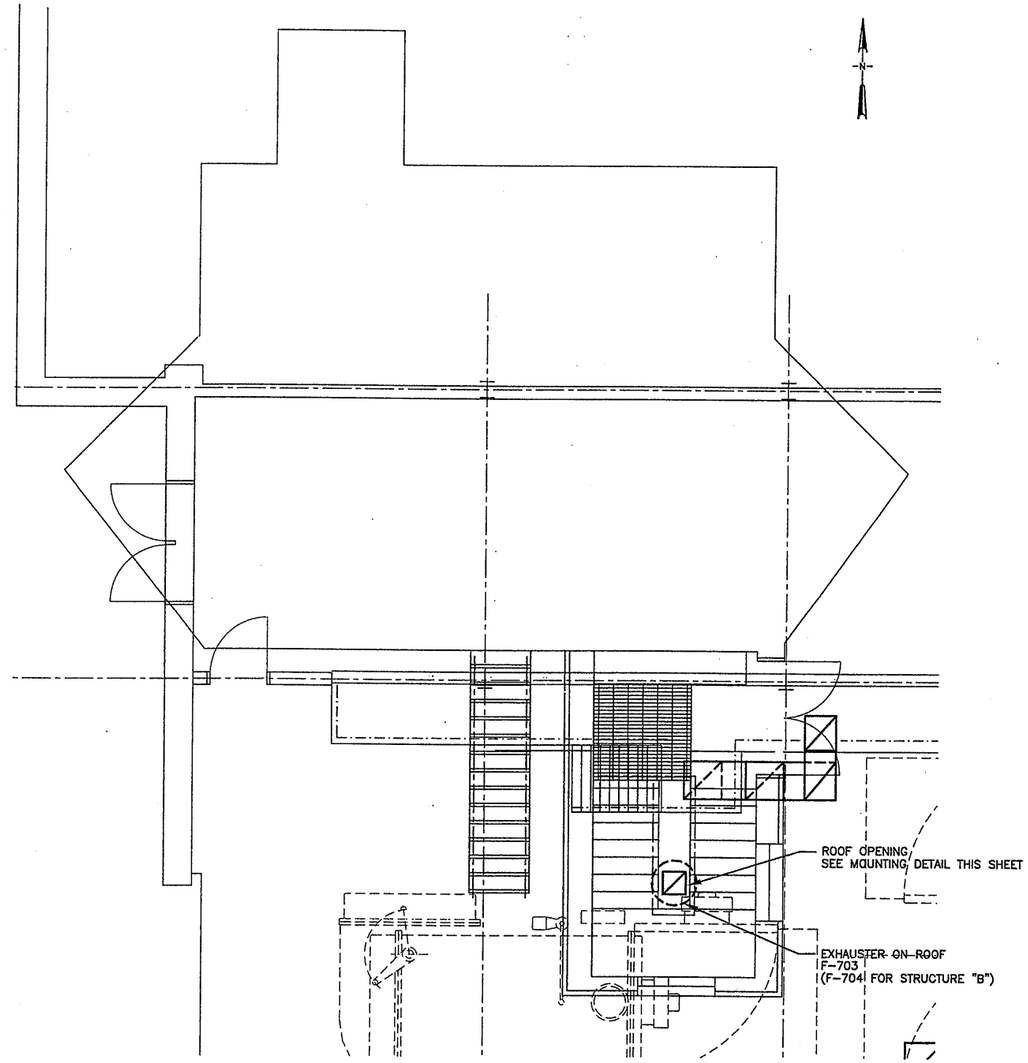
H-706

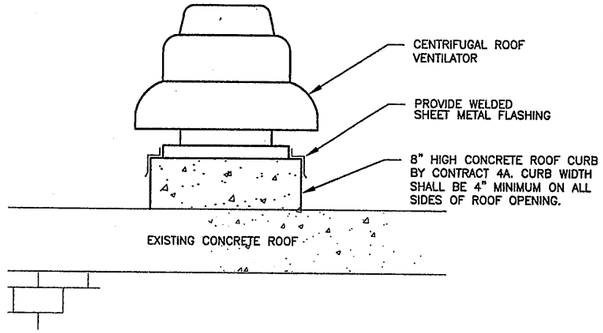


TERTIARY FLOW CONTROL STRUCTURE "A" PLAN

TERTIARY FLOW CONTROL STRUCTURE "B" PLAN (SIMILAR)

1/4"=1'-0"

NOTE: SEE KEY PLAN H-701 FOR LOCATIONS

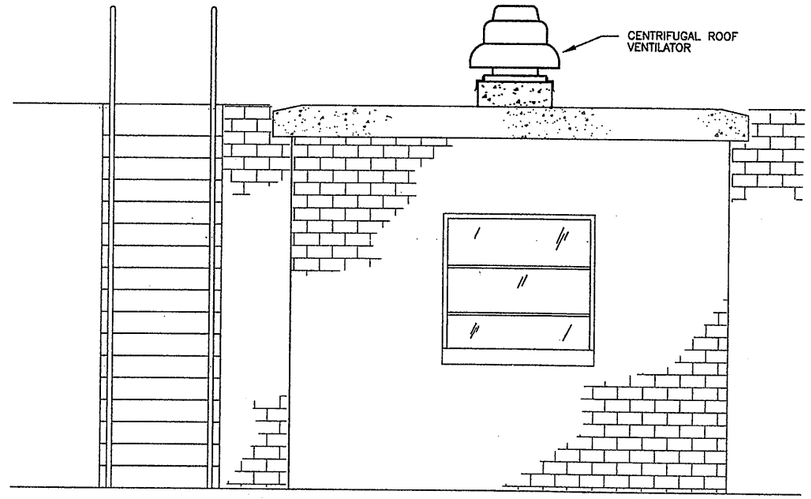


TFCS FAN MOUNTING DETAIL

1"=1'-0"

DRAWING NOTE:

1. COORDINATE FOOR OPENINGS AND CURB SIZES WITH CONTRACT NUMBER 4A.



ELEVATION LOOKING NORTH

1"=1'-0"

RECORD DRAWING

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00659H707

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STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
GALLERIES VENTILATION
TERITIARY FLOW CONTROL STRUCTURES
EQUIPMENT PLAN & DETAIL
HVAC

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File Number 00659
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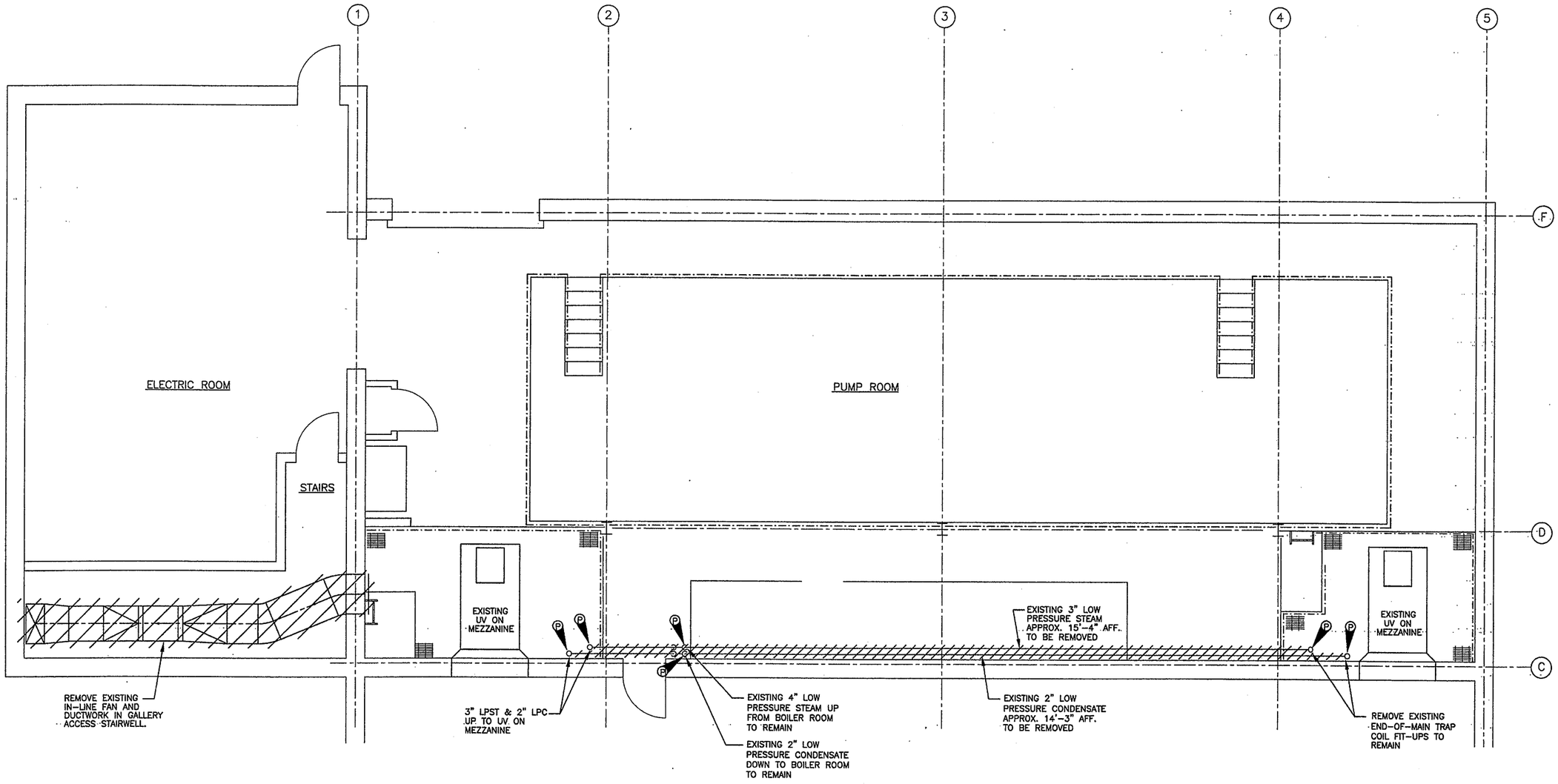
H-707



MEZZANINE LEVEL PLAN

1/4"=1'-0"

RECORD DRAWING

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07/17/00 OBG JAS
00659H708

1/4"=1'-0" 2 0 2 4 6

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STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
GALLERIES VENTILATION
LOW-LIFT PUMP STATION
REMOVALS PLAN
HVAC

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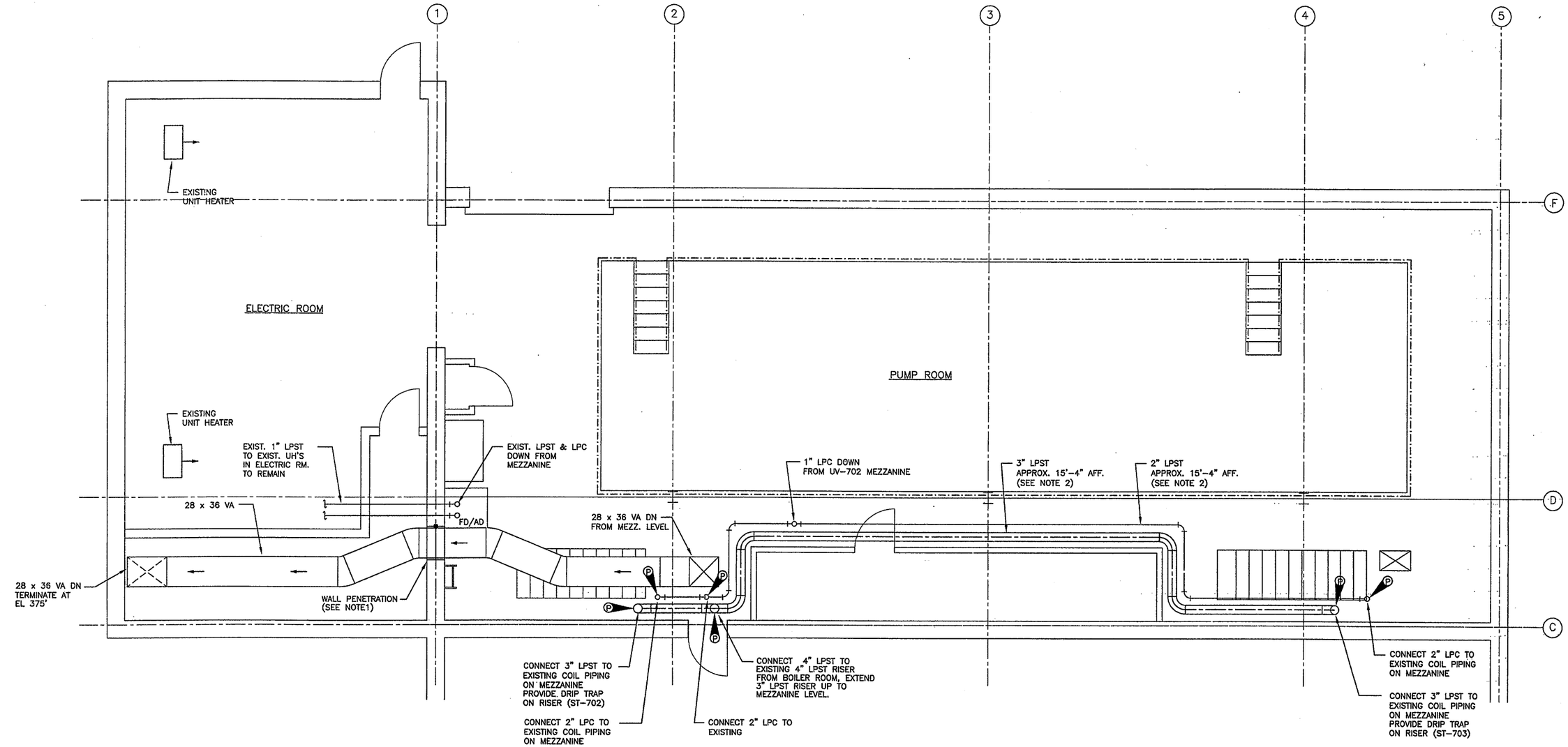
H-708



FIRST FLOOR PLAN

1/4"=1'-0"

NOTES:
1. WALL PENETRATION BY CONTRACT 4A. COORDINATE SIZE AND LOCATION.
2. SUSPEND PIPING FROM MEZZANINE FRAMING ABOVE.

RECORD DRAWING

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00659H709

1/4"=1'-0" 2 0 2 4 6

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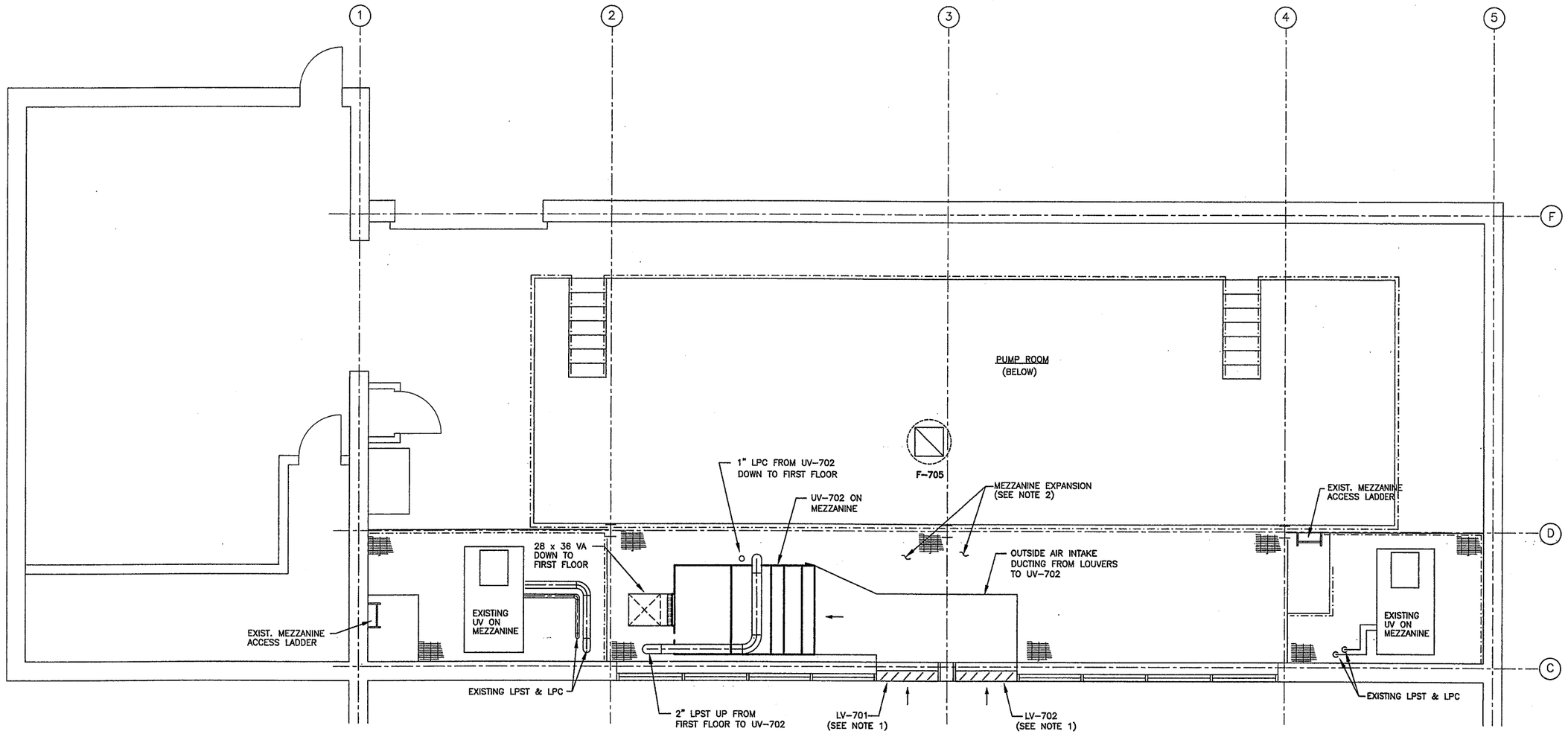
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
GALLERIES VENTILATION
LOW-LIFT PUMP STATION
FIRST FLOOR PLAN
HVAC

STATE OF NEW YORK · LEONARD J. CAMPOBELLO · No. 60756 · LICENSED PROFESSIONAL ENGINEER

File Number 00659
Date APRIL 2001

H-709



MEZZANINE LEVEL PLAN

1/4"=1'-0"

NOTES:
1. REMOVE EXISTING GLASS PANE (APPROX 53" X 82") AND INSTALL LOUVER.

2. MEZZANINE EXPANSION BY CONTRACT 4A. COORDINATE LOCATIONS AND SIZES OF EQUIPMENT SUPPORT FRAMING AND MEZZANINE PENETRATIONS.

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE: _____ PER: _____

07/17/00 OBG JAS
00659H710

1/4"=1'-0" 2 0 2 4 6

NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
1		AS-BID	
2	11/30/05	RECORD DRAWING	RCG

In charge of DPB
Designed by SWM
Drawn by KJL
Checked by SWM

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SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

LOW-LIFT PUMP STATION
MEZZANINE PLAN
HVAC

LICENSED PROFESSIONAL ENGINEER · STATE OF NEW YORK · LEONARD J. CAMPOLIETI · No. 60755

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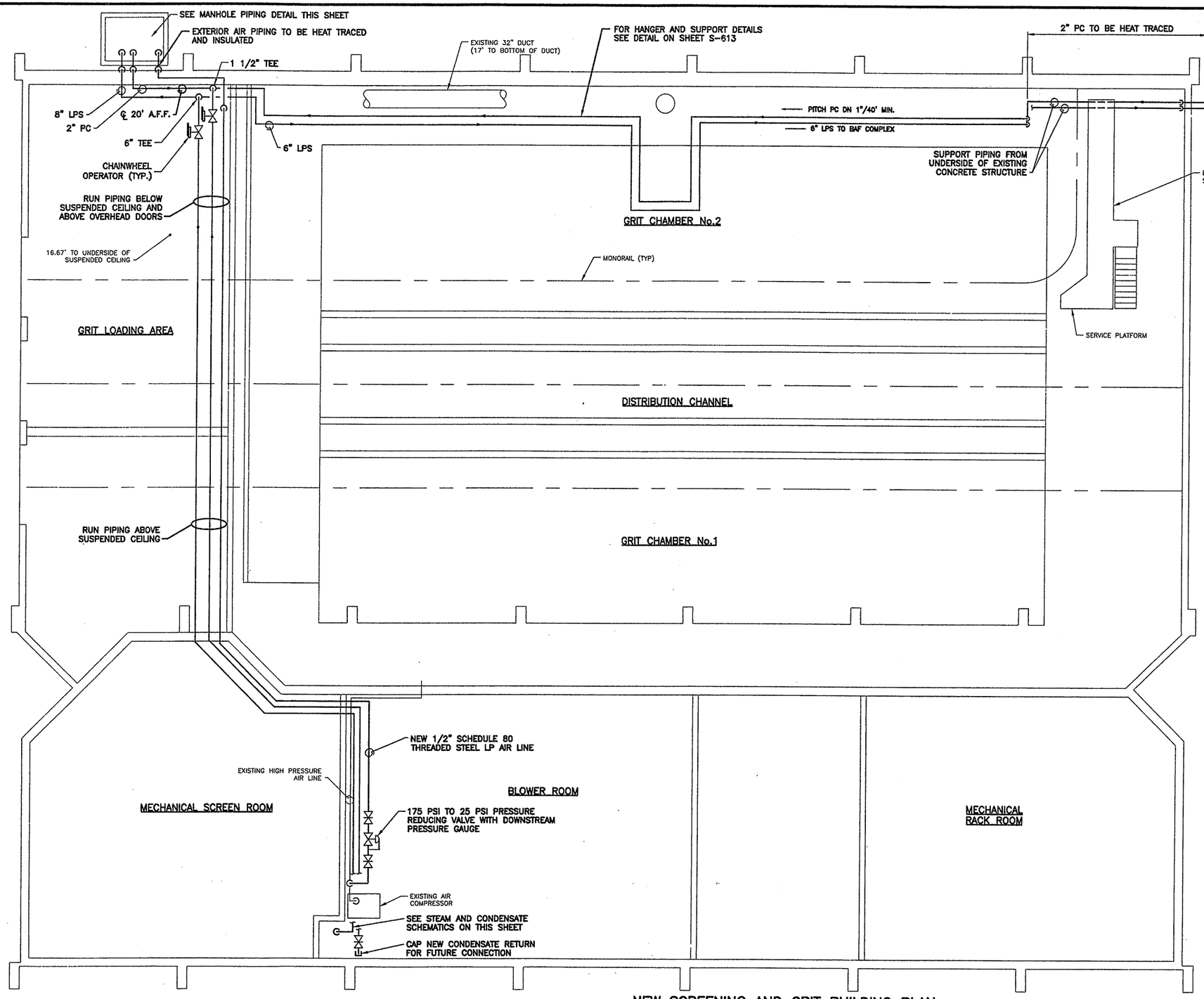
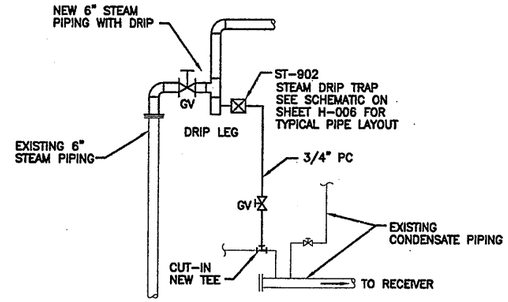
File Number 00659
Date APRIL 2001
H-710



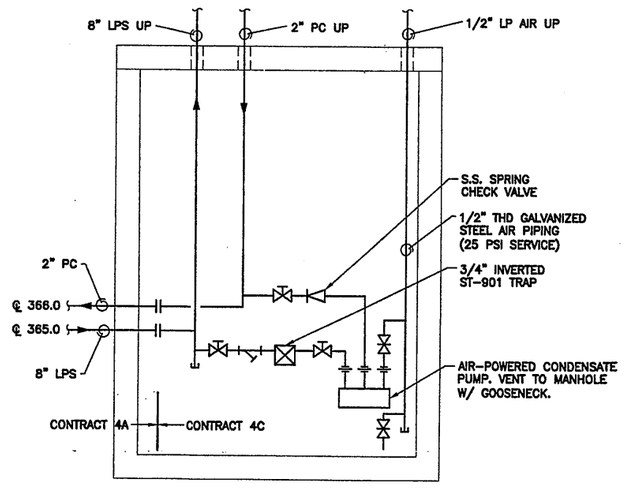
NOTE: HEAT TRACING TO BE 3 WATTS/FT., SELF REGULATING IN ACCORDANCE WITH SPECIFICATION SECTION 15770.

2" PC FROM BAF COMPLEX
6" LPS TO BAF COMPLEX
TERMINATE 2" PC AND 6" LPS 18" ABOVE GRADE WITH FLANGED CONNECTION. PIPING BEYOND FLANGED CONNECTION BY CONTRACT 4A.



STEAM CONNECTION AND CONDENSATE PIPING SCHEMATIC

NOT TO SCALE



STEAM & CONDENSATE MANHOLE PIPING SCHEMATIC

NOT TO SCALE

NEW SCREENING AND GRIT BUILDING PLAN

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

RECORD DRAWING

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DATE: 11/23/05 PER: GCH

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03/19/00 S&W CMS
..\CONTRACT 2-5\HVAC\0659H901.DWG

1/8"=1'-0" 8' 0 8' 16'

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In charge of DBP
Designed by DBP
Drawn by CMS/JRH
Checked by DBP

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
NEW SCREENING AND GRIT BUILDING
NEW SCREENING AND GRIT BUILDING PLAN
HVAC

STATE OF NEW YORK • GERALD C. HOOK • LICENSED PROFESSIONAL ENGINEER • NO. 57504

File Number 00659
Date APRIL 2001

H-901

PIPE AND FITTING SYMBOLS

- COLD WATER PIPING
- HOT WATER PIPING
- HOT WATER RECIRCULATION PIPING
- VENT PIPING
- SOIL PIPING
- STORM DRAINAGE
- SYSTEM RISER
- PIPING ANCHOR
- PIPE UP
- PIPE DOWN
- PIPE TEE DOWN
- PIPE TEE DOWN
- FC — FLUSHING CAP CONN.
- CAP CONNECTION
- CO — CLEAN OUT
- STRAINER
- WYE
- UNION
- PRESSURE GAGE
- WHA — WATER HAMMER ARRESTOR
- PIPE CROSS OVER (NO CONN.)

VALVE AND GATE SYMBOLS

- CHECK VALVE
- GATE VALVE N/O
- GATE VALVE N/C
- TS — GATE VALVE W/TAMPER SWITCH
- BALL VALVE
- AUTOMATIC 2-POSITION SUPPLY VALVE
- THERMOSTATIC CONTROLLER VALVE
- GLOBE VALVE
- PRESSURE REDUCING VALVE
- RPZ BACKFLOW VALVE
- HB — HOSE BIBB
- NFHB — NON FREEZE HOSE BIBB
- DH — DECK HYDRANT
- BALANCE VALVE
- V — ALL LINES VALVED

MISCELLANEOUS SYMBOLS

- WC- — WATER CLOSET FLUSH VALVE TYPE (NUMBER INDICATES TYPE)
- L- — LAVATORY (NUMBER INDICATES TYPE)
- SK- — SINK (NUMBER INDICATES TYPE)
- MSB- — MOP SINK BASIN (NUMBER INDICATES TYPE)
- SH- — SHOWER (NUMBER INDICATES TYPE)
- FD- — FLOOR DRAIN (LETTER INDICATES TYPE)
- RD- — ROOF DRAIN (LETTER INDICATES TYPE)
- DPCO — DECK PLATE CLEAN OUT
- FLOW DIRECTION
- EEWS — EMERGENCY EYEWASH/SHOWER UNIT
- POINT OF CONNECTION BETWEEN EXISTING WORK TO REMAIN & NEW WORK
- KEYED NOTE

ABBREVEATIONS

A.F.F.	ABOVE FINISHED FLOOR
BLDG.	BUILDING
CONN.	CONNECTION
CONT.	CONTINUED
CO	CLEAN OUT
CW	COLD WATER
DEPT.	DEPARTMENT
DH	DECK HYDRANT
DHW	DOMESTIC HOT WATER
DN	DOWN
DPCO	DECK PLATE CLEAN OUT
D/W/V	DRAIN/WASTE/VENT
ELEV.	ELEVATOR
EEWS	EMERGENCY EYE WASH AND SHOWER
EWC	ELECTRIC WATER COOLER
EWS	EFFLUENT WATER SYSTEM
FD	FLOOR DRAIN
FFE	FINISHED FLOOR ELEVATION
FLR.	FLOOR
GCO	GRADE CLEAN OUT
HB	HOSE BIBB
HW	HOT WATER
HWR	HOT WATER RETURN
I.D.	IDENTIFICATION
INV.	INVERT
LAV	LAVATORY
LPC	LOW PRESSURE CONDENSATE
LPS	LOW PRESSURE STEAM
MAINT.	MAINTENANCE
MIN.	MINIMUM REQUIREMENT
MSB	MOP SINK BASIN
MTD.	MOUNTED
N.I.C	NOT IN CONTRACT
N/O	NORMALLY OPEN
N/C	NORMALLY CLOSED
NFHB	NON FREEZING HOSE BIBB
PLPC	PUMPED LOW PRESSURE CONDENSATE
PW	POTABLE WATER
P.I.V.	POST INDICATOR VALVE
PLW	PLANT WATER
PRESS.	PRESSURE
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
RD	ROOF DRAIN
SAN	SANITARY
SH	SHOWER
SK	SINK
SS	SERVICE SINK
ST	STORM PIPE
TBD	TO BE DETERMINED
TS	TAMPER SWITCH
TYP	TYPICAL
W	WASTE
W/	WITH
WC	WATER CLOSET
WHA	WATER HAMMER ARRESTOR
VTR	VENT THROUGH ROOF
V	VENT

GENERAL NOTES

A. PROVIDE ALL CUTTING, PATCHING AND FIRESTOPPING REQUIRED TO ACCOMPLISH WORK SHOWN. PATCH AND SEAL OPENINGS TO MATCH ADJACENT WALLS, FLOORS, CEILINGS, ETC. UNLESS OTHERWISE INDICATED. CONCEAL ALL WORK IN FINISHED AREAS UNLESS OTHERWISE INDICATED OR DIRECTED BY ARCHITECT.

B. CONTRACTOR SHALL FIELD VERIFY ALL LOCATIONS, DIMENSIONS AND EXISTING CONDITIONS (PIPING, RISERS, STRUCTURAL ELEMENTS, ETC.) PRIOR TO STARTING WORK. CONTRACTOR SHALL COORDINATE INSTALLATION OF EQUIPMENT, PIPING WITH EXISTING CONDITIONS. PROVIDE FITTINGS, PIPING, OFFSETS, ELEVATION CHANGES, ETC. TO MINIMIZE CONFLICTS WITH EXISTING CONDITIONS. CONTRACTOR SHALL REROUTE PIPING THAT WILL BE IN CONFLICT WITH OTHER TRADES.

C. CONTRACTOR SHALL PROVIDE ALL SLEEVES, CORE DRILLING, WATER, SMOKE AND FIRE SEALING OF PIPING PENETRATIONS THROUGH WALLS AND FLOORS.

D. ALL VALVES W/ CENTER OF SHAFT 6 1/2 FT. OR HIGHER FROM THE OPERATING FLOOR SHALL BE EQUIPPED W/CHAIN & WHEEL OPERATORS.

RECORD DRAWING

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DATE: _____ PER: _____

06/27/01 RAB AJK/FJS
0659P001

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3	1/05	FOR RECORD	

In charge of FJS
Designed by FJS
Drawn by AJK
Checked by FJS

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

RAM-TECH ENGINEERS, P.C.
CONSULTING ENGINEERS
SYRACUSE, N'EW Y'O?RK

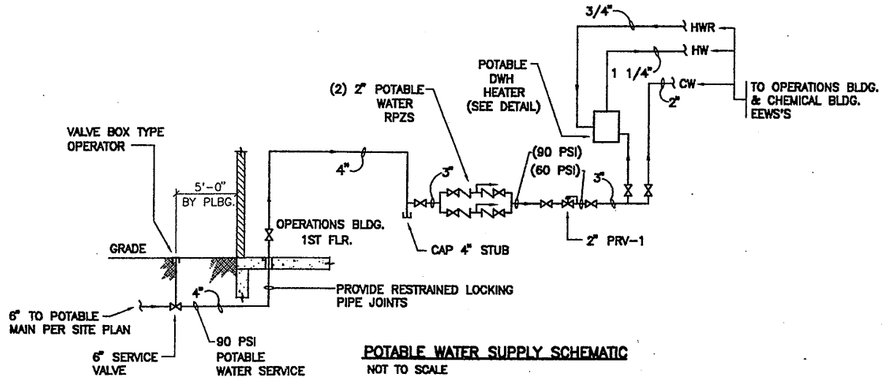
ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

SYMBOL LIST & NOTES

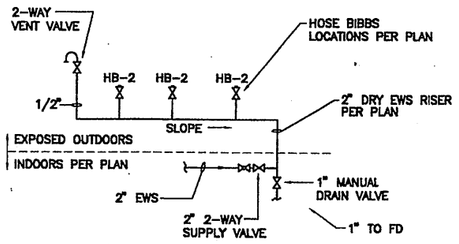
PLUMBING

File Number 00659
Date APRIL 2001

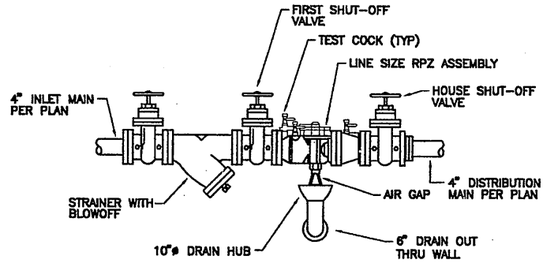
P-001



POTABLE WATER SUPPLY SCHEMATIC
NOT TO SCALE

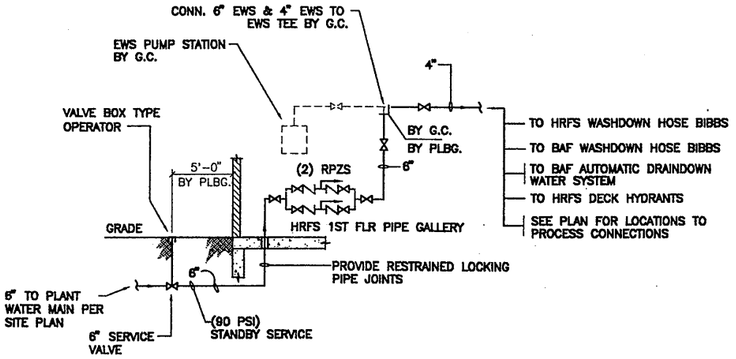


AUTOMATIC DRAINDOWN WATER SUPPLY SYSTEM
NOT TO SCALE



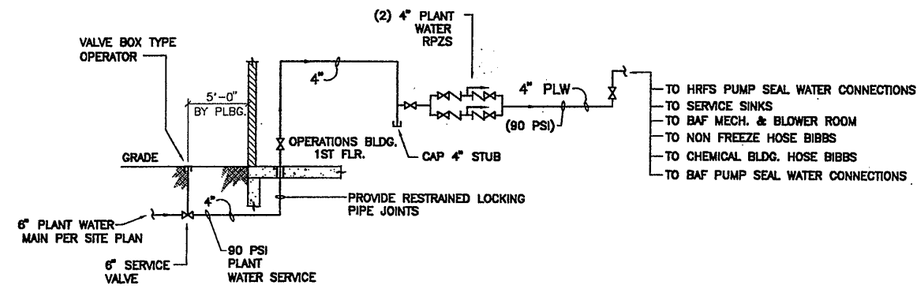
4" RPZ DETAIL
NOT TO SCALE

1. FOR 6" SIZE RPZ, PROVIDE 12" DRAIN HUB ON 8" DRAIN LINE OUT

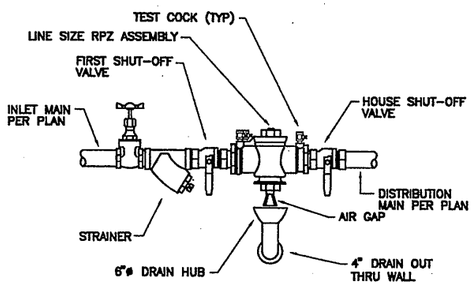


1. SEE PLAN FOR HOSE BIBB LOCATIONS. PROVIDE SHUT-OFF VALVE AT POINT OF CONNECTION.

HRFS 1ST FLR STANDBY SERVICE SCHEMATIC
NOT TO SCALE



PLANT WATER SUPPLY SCHEMATIC
NOT TO SCALE



2" RPZ DETAIL
NOT TO SCALE

PLUMBING FIXTURE CONNECTION SCHEDULE

MARK	TYPE	MATERIAL	TRIM	NOTES	CW	HW	PLW/ EWS	SAN	VENT
WC-1	Wall Hung Water Closet	Vitreous China	Flush Valve	-----	1"	--	--	4"	2"
WC-2	HCP Wall Hung Water Closet	Vitreous China	Flush Valve	Mount at HCP Height	1"	--	--	4"	2"
UR-1	Wall Hung Urinal	Vitreous China	Flush Valve	-----	3/4"	--	--	2"	1 1/2"
UR-2	HCP Wall Hung Urinal	Vitreous China	Flush Valve	Mount at HCP Height	3/4"	--	--	2"	1 1/2"
L-1	Countertop Lavatory 20" x 17" Oval	Vitreous China	Metering Faucet	-----	1/2"	1/2"	--	1 1/2"	1 1/2"
L-2	HCP Countertop Lavatory 20" x 17" Oval	Vitreous China	HCP Metering Faucet	Mount at HCP Height	1/2"	1/2"	--	1 1/2"	1 1/2"
SK-1	Single Basin Countertop Sink 25" x 22"	Stainless Steel	Mixing Faucet	-----	1/2"	1/2"	--	1 1/2"	1 1/2"
SK-2	Dual Basin Countertop Kitchen Sink 33" x 22"	Stainless Steel	Mixing Faucet w/hand spray	-----	1/2"	1/2"	--	1 1/2"	1 1/2"
SK-3	Hand Sink 15" x 15" size	Stainless Steel	Mixing Faucet	-----	1/2"	1/2"	--	1 1/2"	1 1/2"
MSB-1	Mop Basin 24" x 24" Size	Molded Stone	Service Faucet w/hose	-----	1/2"	1/2"	--	3"	1 1/2"
MSB-2	Mop Basin 24" x 36" Size	Molded Stone	Service Faucet w/hose	-----	1/2"	1/2"	--	3"	1 1/2"
EWC-1	HCP Electric Water Cooler	Stainless Steel	-	Mount at HCP Height	1/2"	--	--	1 1/2"	1 1/2"
SH-1	Shower Valve & Head	C.P. Brass	Mixing Valve	Includes floor Drain	1/2"	1/2"	--	FD-1	---
SH-2	HCP Shower Valve & Head	C.P. Brass	Mixing Valve & Hand Hose	Includes floor Drain	1/2"	1/2"	--	FD-1	---
SS-2	Wall Hung Service Sink	Cast Iron	Service Faucet	Point of use electric water heater 7" Aff.			3/4"	3"	---
EEWS	Pedestal Emergency Shower & Eye Wash	ABS Plastic	Stay Open Valve Assembly	Includes Floor Drain & Tempered Water	1"	1/2" Temp.	--	--	---
DH-1	Deck Hydrant	Bronze	Vacuum Breaker		--	--	3/4"	--	---
NFHB-1	Non Freeze Hose Bibb Wall Hydrant	Bronze Valve Stainless Steel Box Box	Vacuum Breaker	Nom. 3' Above Grade	--	--	3/4"	--	---
NFHB-2	Non Freeze Hose Bibb Wall Hydrant	Bronze Valve Stainless Steel Box Box	Vacuum Breaker	Nom. 3' Above FFE	--	--	1½	--	---
HB-1	Hose Bibb	C.P. Bronze	Vacuum Breaker	Nom. 24" Aff.	3/4"	--	--	--	---
HB-2	Plant Hose Bibb	Hose End Threaded Ball Valve	Cap & Chain	Nom. 3' Aff.	--	--	1"	--	---
FD-1	7" Diameter	Nickle Bronze	-	-	--	--	--	3" or 4"	1½ or 2"
FD-2	7" Diameter	Nickle Bronze	Funnel	For Indirect Waste	--	--	--	3" or 4"	1½ or 2"
FD-3	11" Diameter	Coated Cast Iron	-	-	--	--	--	4"	1½ or 2"
FD-4	11" Diameter	Coated Cast Iron	Funnel	For Indirect Waste	--	--	--	4"	1½ or 2"
FD-5	11" Diameter	Coated Cast Iron	Sediment Bracket	-	--	--	--	4"	1½ or 2"

RECORD DRAWING

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06/27/01 RAB AJK/FJS
0659P002

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In charge of FJS
Designed by FJS
Drawn by AJK
Checked by FJS

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SYRACUSE, NEW YORK

RAM-TECH ENGINEERS, P.C.
CONSULTING ENGINEERS
SYRACUSE, NY

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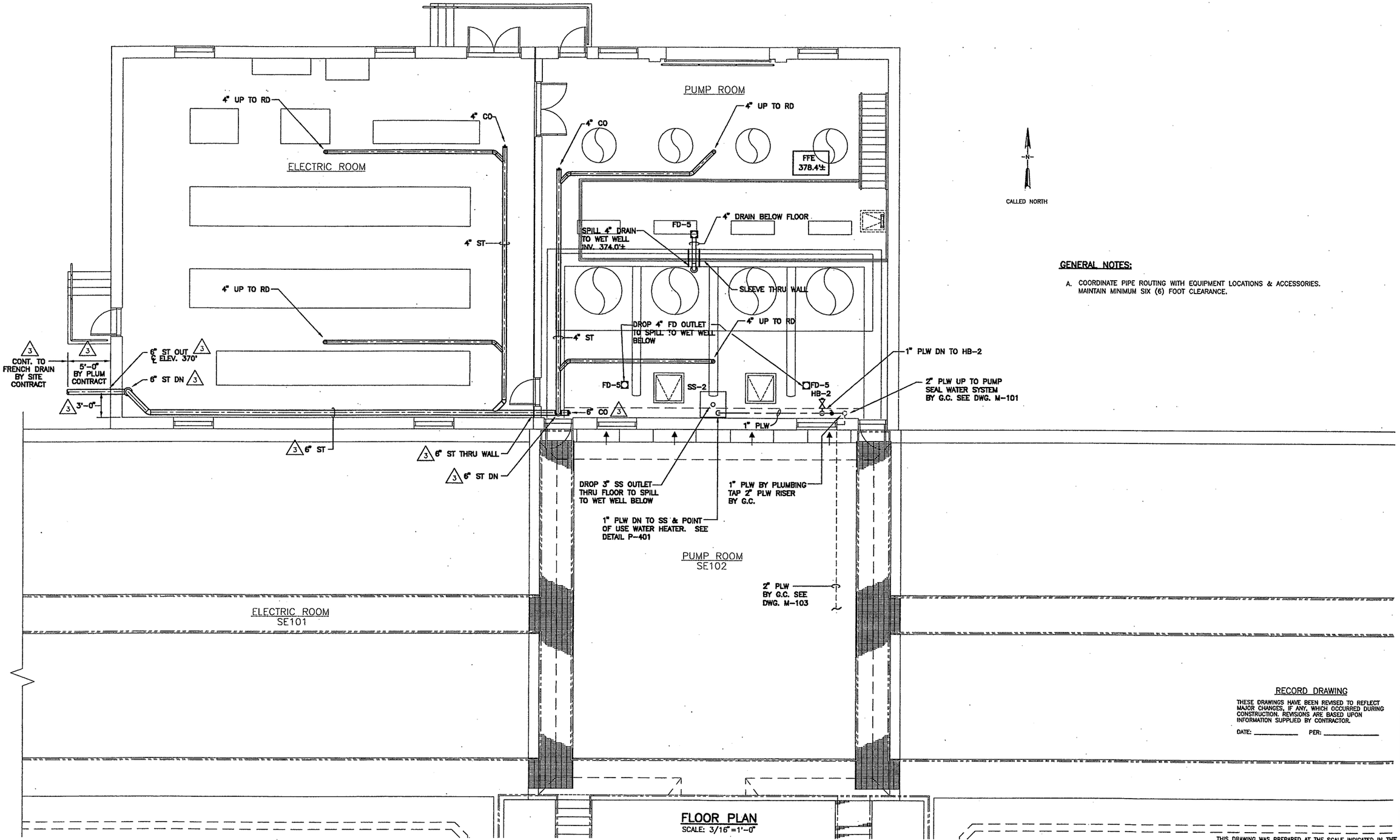
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

SCHEDULES/SCHEMATICS

PLUMBING

File Number 00659
Date APRIL 2001
P-002



GENERAL NOTES:

A. COORDINATE PIPE ROUTING WITH EQUIPMENT LOCATIONS & ACCESSORIES. MAINTAIN MINIMUM SIX (6) FOOT CLEARANCE.

FLOOR PLAN
SCALE: 3/16"=1'-0"

RECORD DRAWING

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0659X101
06/27/01 RAB AJK/FJS
0659P101

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

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0	4/20/01	ISSUED FOR APPROVAL	
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2	10/16/01	ROOF DRAINAGE	
3	3/22/02	REVISED FOR MODIFICATION 4D-001	
4	1/05	FOR RECORD	

In charge of FJS
Designed by FJS
Drawn by AJK
Checked by FJS

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

RAM-TECH ENGINEERS, P.C.
CONSULTING ENGINEERS
SYRACUSE, NYEW YYOYRK

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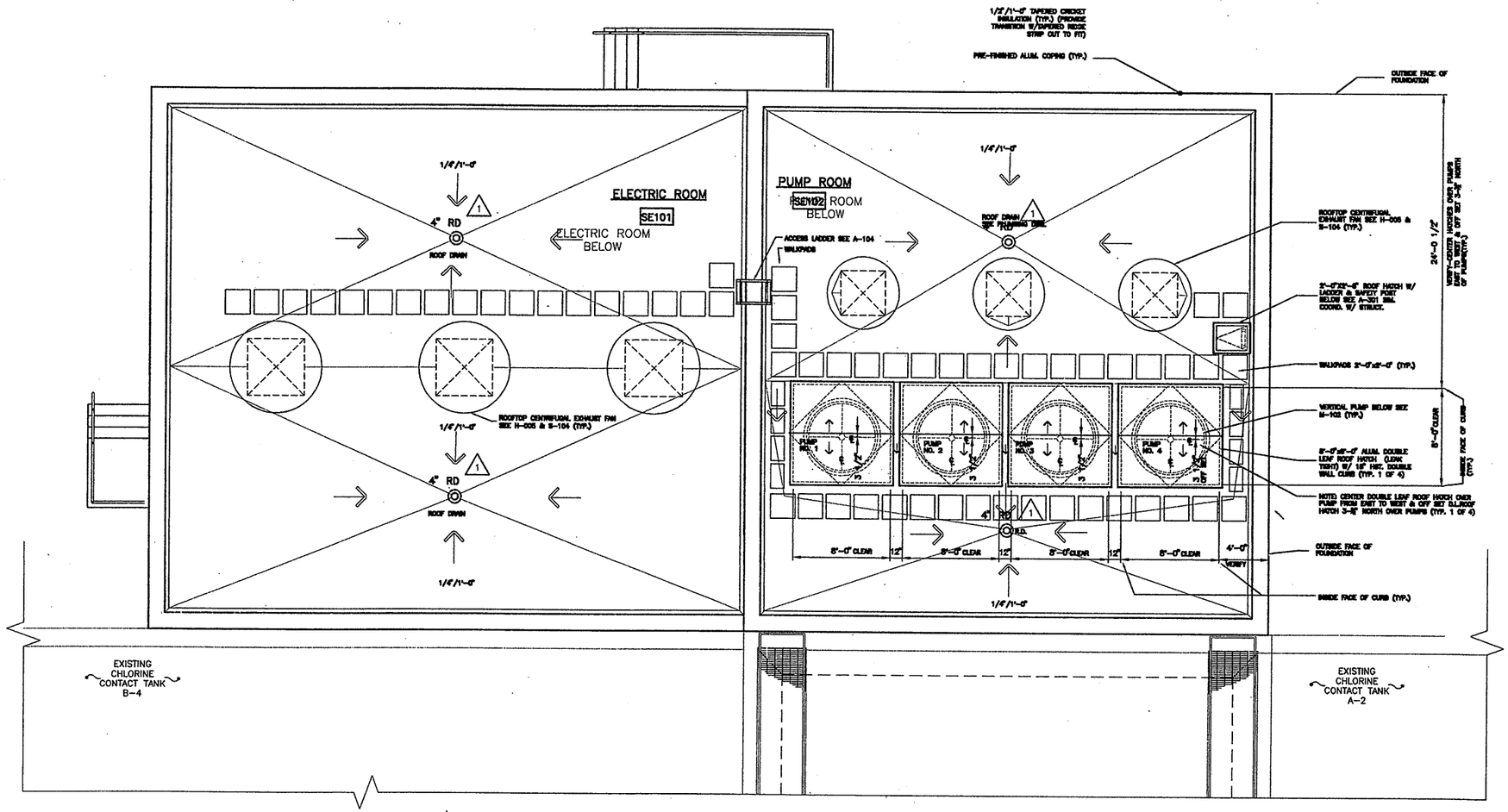
SECONDARY EFFLUENT PUMPING STATION
FLOOR PLAN
PLUMBING

File Number 00659
Date APRIL 2001

P-101

CALLED NORTH



ROOF PLAN
SCALE: 3/16"=1'-0"

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0659A103
10/16/01 FJS/AJK
0659P102

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

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Designed by FJS
Drawn by AJK
Checked by FJS

ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

RAM-TECH ENGINEERS, P.C.
CONSULTING ENGINEERS
SYRACUSE, NEW YORK

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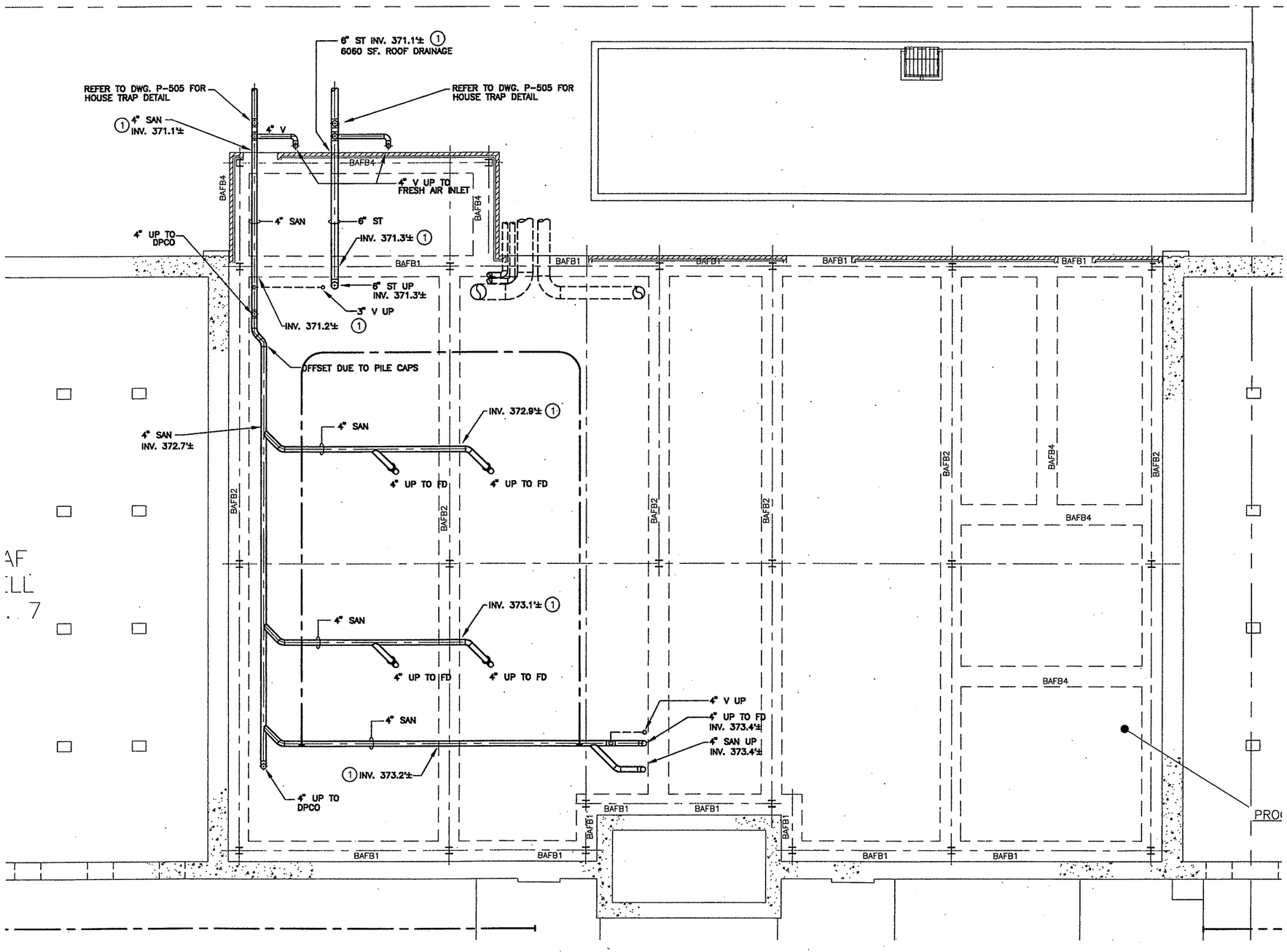

CALLED NORTH

GENERAL NOTES:

A. PIPING INVERTS ARE PER APPROXIMATELY ±1/2" NOMINAL CONSTRUCTION TOLERANCES & ARE BASED ON 1ST FLOOR ELEVATION OF 375.38'. VERIFY ALL FIELD CONDITIONS BEFORE STARTING WORK.

KEYED NOTES: (#)

1. SLEEVE ALL GRADE BEAM PENETRATIONS. PROVIDE SLEEVES ALONG CENTERLINE OF PIPING PENETRATION. SIZE SLEEVE AS FOLLOWS:
   - 4" ST; USE 8"ø SLEEVE
   - 6" ST; USE 10"ø SLEEVE

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE: _____ PER: _____

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0659X201
06/27/01 RAB AJK/FJS
0659P200

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

No.	Date	Revisions	Init
0		AS BID	
1	1/05	FOR RECORD	

In charge of FJS
Designed by FJS
Drawn by AJK
Checked by FJS

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CONSULTING ENGINEERS
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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

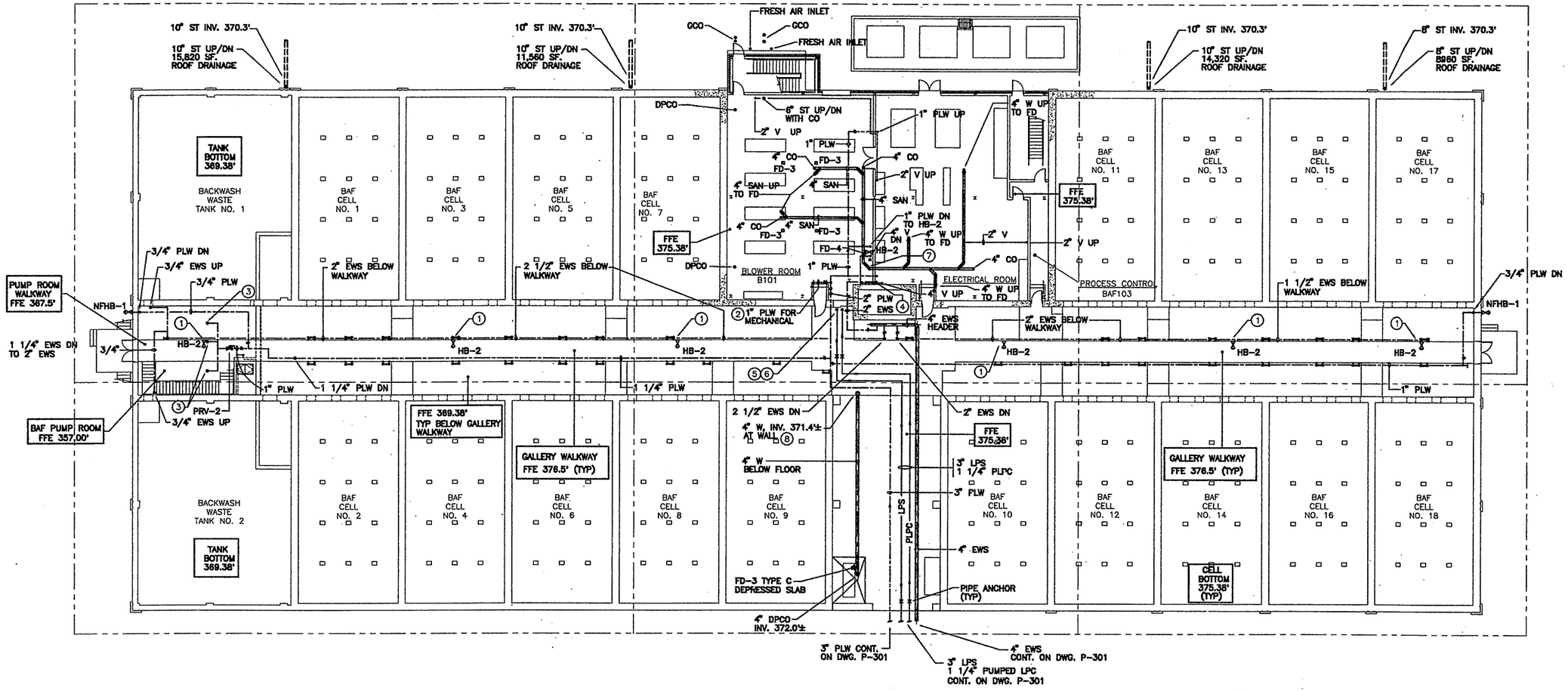
BIOLOGICAL AERATED FILTERS (BAF) COMPLEX
FOUNDATION PLAN

PLUMBING

File Number 00659
Date JULY 2001

P-200

CALLED NORTH



FIRST FLOOR PLAN

SCALE: 1/16" = 1'-0"

KEYED NOTES: (#)

1. CONNECT 1" EFFLUENT WATER (EWS) TO HB-2. LOCATE HOSE BIBB AT WALKWAY HANDRAIL. INSTALL HOSE END OUTLET OF HOSE BIBB ±6" BELOW TOP RAIL OF WALKWAY HANDRAIL.
2. CAP 1" PLW STUB FOR CONTINUATION BY OTHERS.
3. CONNECT 3/4" PLANT WATER (PLW) WITH SHUTOFF VALVE TO SEAL WATER SYSTEM CONNECTION AT BACKWASH WASTE TRANSFER PUMPS.
4. 2" EWS UP TO DRAINDOWN SYSTEM, AND 1" PLW UP TO SAMPLING AREA.
5. DROP 1 1/4" PUMPED LPC (PLPC) TO CONNECT TO LPC MAIN TAP BY HVAC, SEE DWG. H-201.
6. DROP 3" LPS TO CONNECT TO LPS MAIN TAP BY HVAC. SEE DWG. H-201.
7. 4" SAN DN, CONTINUED ON DWG. P-200.
8. SPILL 4" W WITH DOWNTURNED ELBOW TO TRENCH DRAIN AT GALLERY FLOOR. AVOID PROCESS AIR PIPING.

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE: _____ PER: _____

0659X201
06/27/01 RAB AJK/FJS
0659P201

1/16"=1'-0" 16' 0 16' 32'

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
1		AS BID	
3	1/05	FOR RECORD	

In charge of FJS
Designed by FJS
Drawn by AJK
Checked by FJS

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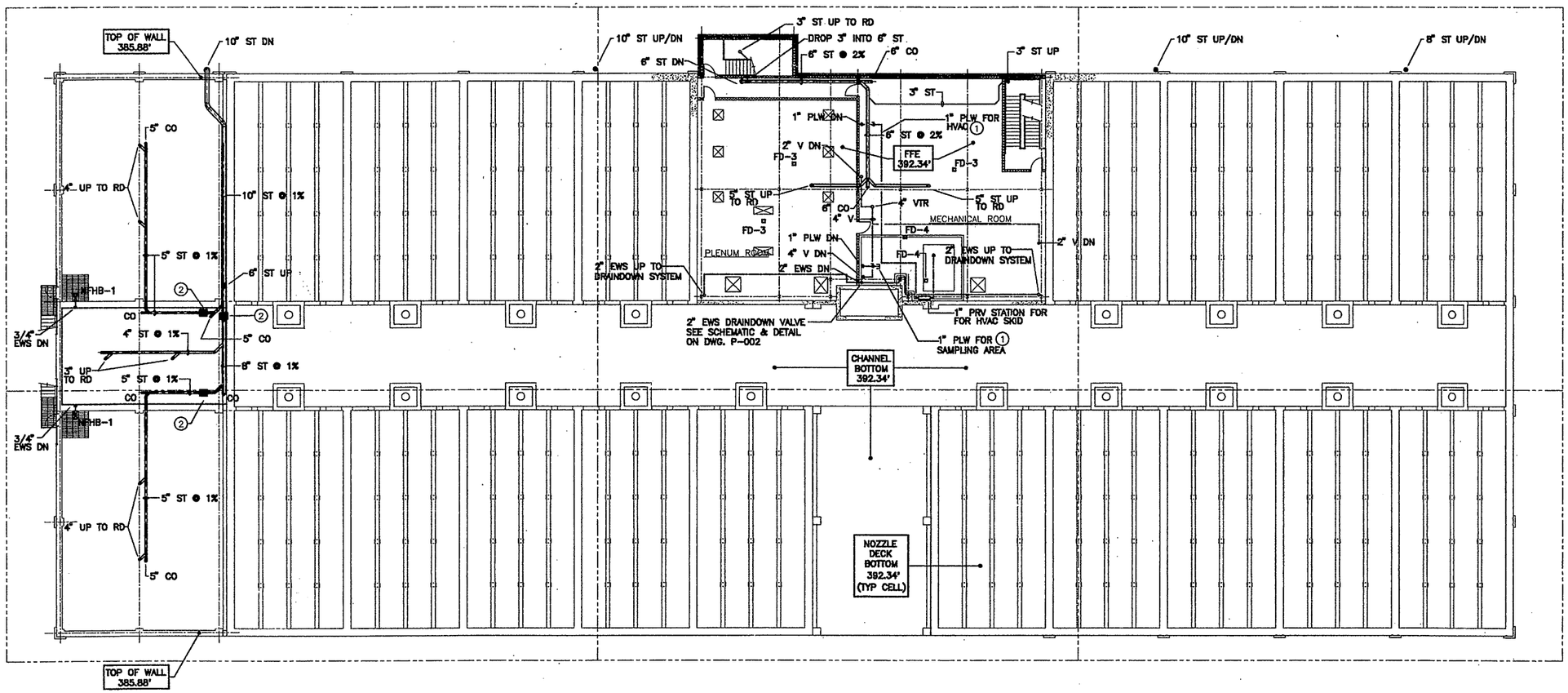
BIOLOGICAL AERATED FILTERS (BAF) COMPLEX
FIRST FLOOR PLAN
PLUMBING

File Number 00659
Date APRIL 2001

P-201

CALLED NORTH



SECOND FLOOR PLAN

SCALE:1/16"=1'-0"

KEYED NOTES: (#)

1. CAP 1" PLW STUB FOR CONTINUATION BY OTHERS.
2. HEAT TRACING SECTION ELECTRIC THERMOSTAT & ACCESORIES PER SPEC.

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE: _____ PER: _____

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0659X202
06/27/01 RAB AJK/FJS
0659P202

1/16"=1'-0" 16' 0 16' 32'

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No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
1		AS BID	
3	1/05	FOR RECORD	

In charge of FJS
Designed by FJS
Drawn by AJK
Checked by FJS

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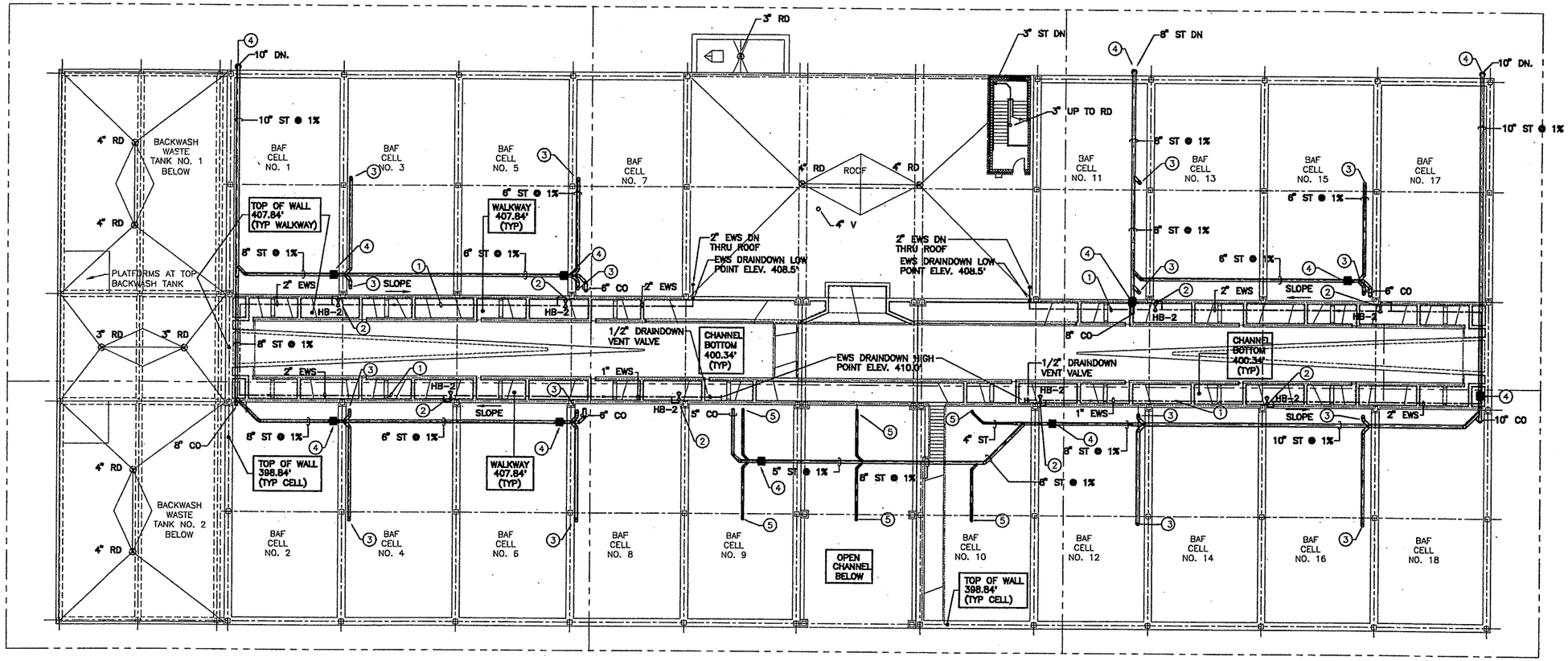
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BIOLOGICAL AERATED FILTERS (BAF) COMPLEX
SECOND FLOOR PLAN
PLUMBING

File Number 00659
Date APRIL 2001

P-202

CALLED NORTH



UPPER LEVEL PLAN
SCALE:1/16"=1'-0"

KEYED NOTES: (#)

1. RUN EXPOSED DRAINDOWN EWS PIPING AT SLOPE PER DRAWING BACK TO RISER.
2. CONNECT 1" EWS TO HB-2. LOCATE HOSE BIBB AT WALKWAY HANDRAIL, INSTALL HOSE END OUTLET OF HOSE BIBB ±6" BELOW TOP OF HANDRAIL.
3. 6" ST UP TO ROOF DRAIN.
4. HEAT TRACING SECTION ELECTRIC CIRCUIT CONNECTION WITH THERMOSTAT & ACCESSORIES PER SPEC.
5. 4" ST UP TO ROOF DRAIN.
6. 6" ST

RECORD DRAWING

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0569X203
06/27/01 RAB AJK/FJS
0569P203

1/16"=1'-0" (16' 0 16' 32')

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No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
1		AS BID	
2	3/25/03	REVISED FOR REVIEW	
3	4/9/03	RFI-17	
4	4/14/03	REVISED PER MODIFICATION 4D-009	
5	1/05	FOR RECORD	

In charge of FJS
Designed by FJS
Drawn by AJK
Checked by FJS

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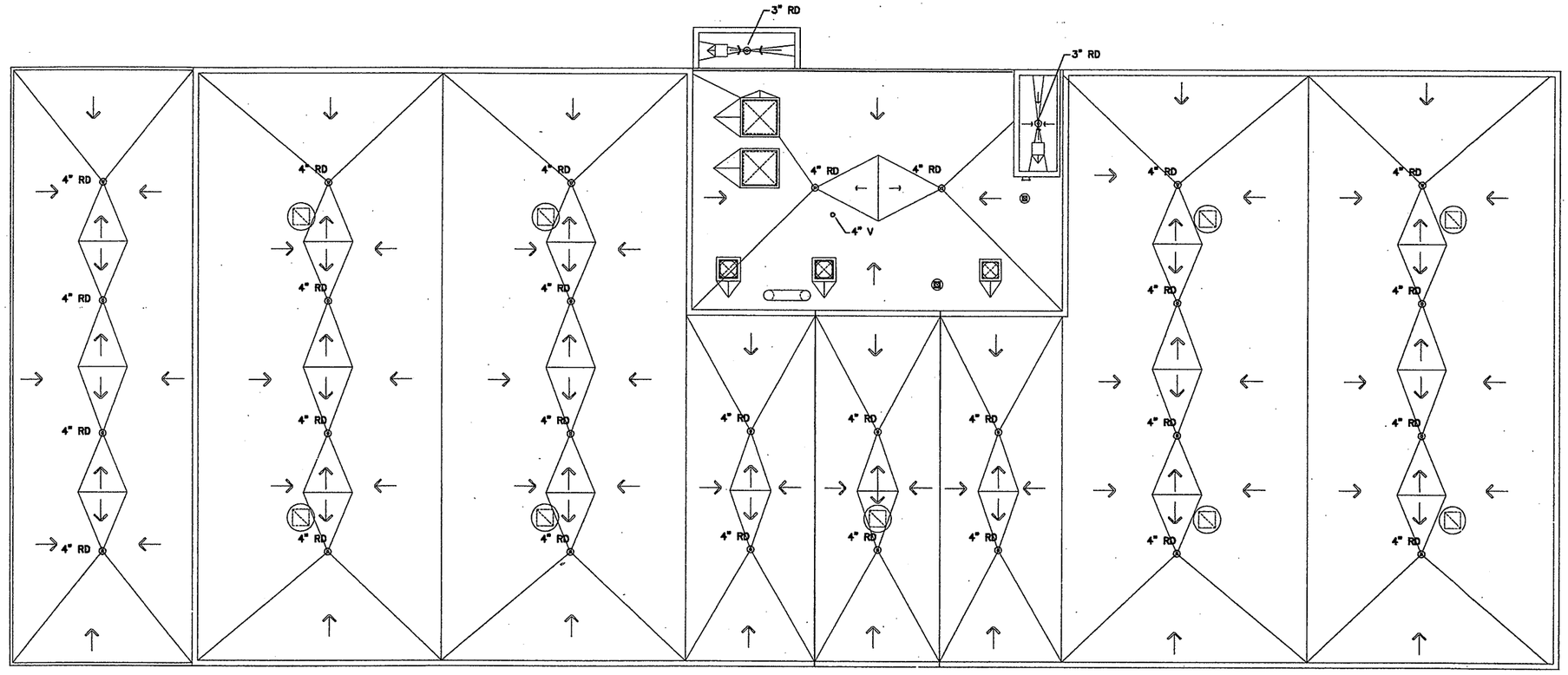
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BIOLOGICAL AREATED FILTERS (BAF) COMPLEX
UPPER LEVEL PLAN
PLUMBING

File Number 00659
Date APRIL 2001
P-203

CALLED NORTH



COMPOSITE ROOF PLAN
SCALE:1/16"=1'-0"

KEYED NOTES: (#)

1. REFER TO RESPECTIVE GENERAL CONSTRUCTION DRAWINGS FOR ROOF ELEVATIONS.

RECORD DRAWING

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06/27/01 RAB AJK/FJS
0569P204

1/16"=1'-0" (16' 0 16' 32')

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No.	Date	Revisions	Init
0		AS BID	
1	1/05	FOR RECORD	

In charge of FJS
Designed by FJS
Drawn by AJK
Checked by FJS

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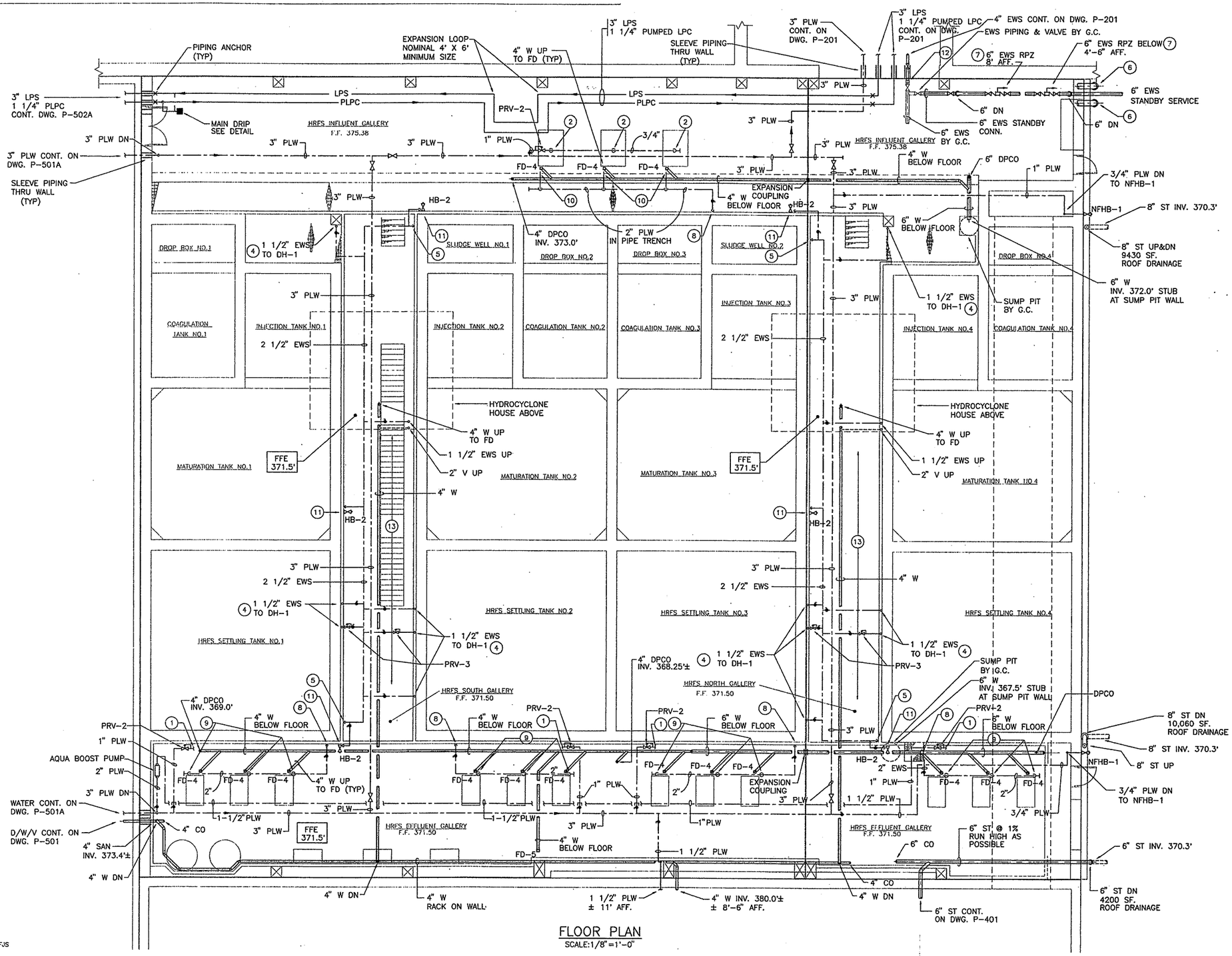
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
BIOLOGICAL AREATED FILTERS (BAF) COMPLEX
COMPOSITE ROOF PLAN
PLUMBING

File Number 00659
Date JULY 2001

P-204



FLOOR PLAN
SCALE:1/8"=1'-0"

CALLED NORTH

KEYED NOTES: (#)

1. CONNECT 3/4" PLANT WATER (PLW) WITH SHUTOFF VALVE TO SEAL WATER SYSTEM CONNECTION AT SAND RECIRCULATION PUMPS.
2. CONNECT 3/4" PLANT WATER (PLW) WITH SHUTOFF VALVE TO 2" SEAL WATER SYSTEM CONNECTION AT SLUDGE TRANSFER PUMPS.
4. CONNECT 1/2" DRAIN TO 1/8" DH-1 DRAIN OUTLET. SPILL TO 12" ABOVE GUTTER DRAIN. SEE DETAIL ON DWG. P-506.
5. 2 1/2" EWS DN. CONNECT TO 2 1/2" TAP ON EWS MAIN PIPING BY GC.
6. 10" RPZ DRAIN THRU WALL 2'-0" AFF. TO EXTERIOR WALL DOWN TURNED ELBOW.
7. RACK RPZ'S AT HEIGHT INDICATED. PROVIDE FLOOR STAND SUPPORTS.
8. 2" EWS DN. CONNECT TO 2" TAP ON EWS MAIN PIPING BY G.C.
9. CONNECT 1 1/2" EFFLUENT WATER (EWS) TO FLUSHING WATER SYSTEM CONNECTION AT SAND RECIRCULATION PUMPS.
10. CONNECT 1 1/2" EFFLUENT WATER (EWS) TO FLUSHING WATER SYSTEM CONNECTION AT SLUDGE TRANSFER PUMPS.
11. 1" EWS DN. TO HB-2 4'-0" AFF.
12. CONNECT 4" EWS TO 4" TAP ON EWS MAIN PIPING BY G.C.
13. AVOID HVAC DUCTWORK IN THIS AREA.

RECORD DRAWING

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0659X301
06/27/01 RAB AJK/FJS
0659P301

1/8"=1'-0" 8' 0 8' 16'

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2	1/05	FOR RECORD	

In charge of FJS
Designed by FJS
Drawn by AJK
Checked by FJS

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SYRACUSE, NEW YORK

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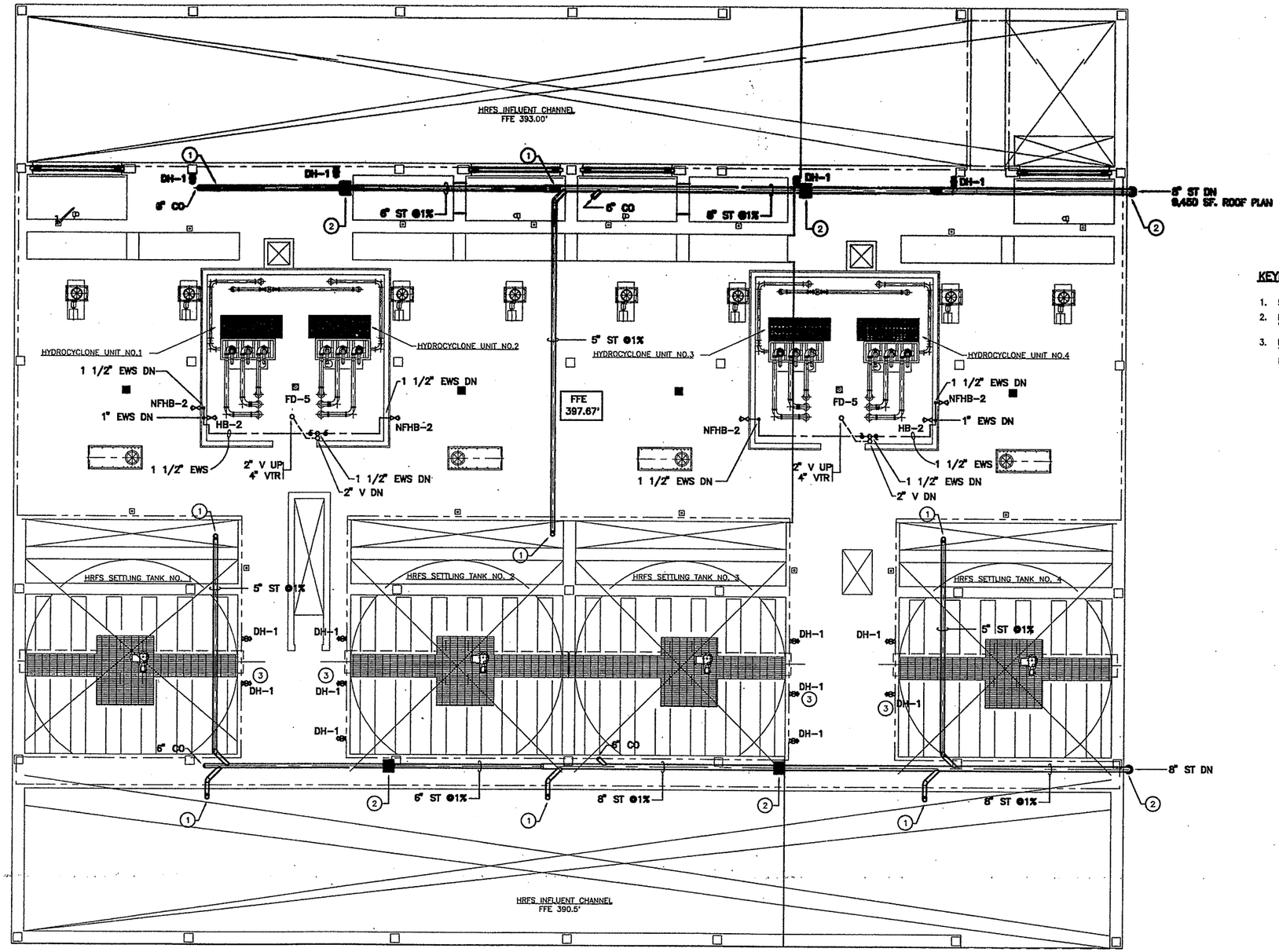
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
HIGH RATE FLOCCULATED SETTING (HRFS) COMPLEX
HRFS GALLERY – FIRST FLOOR PLAN
PLUMBING

File Number 00659
Date APRIL 2001

P-301



CALLED NORTH

KEYED NOTES: (#)

1. 5" ST UP TO ROOF DRAIN.
2. HEAT TRACING SECTION ELECTRIC CIRCUIT CONNECTION W/ THERMOSTAT & ACCESSORIES PER SPEC.
3. LOW PRESSURE (30 PSI) DECK HYDRANT DH-1. CONNECT TO 1 1/2" EWS FROM PRV-3 OUTLET AS SHOWN ON DRAWING P-301.

FLOOR PLAN

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

UV BLDG. ROOF
399.0'

RECORD DRAWING

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0659x302/0659x303/0659X071
06/27/01 RAB AJK/FJS
0659P302

1/8"=1'-0" 8' 0 8' 16'

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2	1/05	FOR RECORD	

In charge of FJS
Designed by FJS
Drawn by AJK
Checked by FJS

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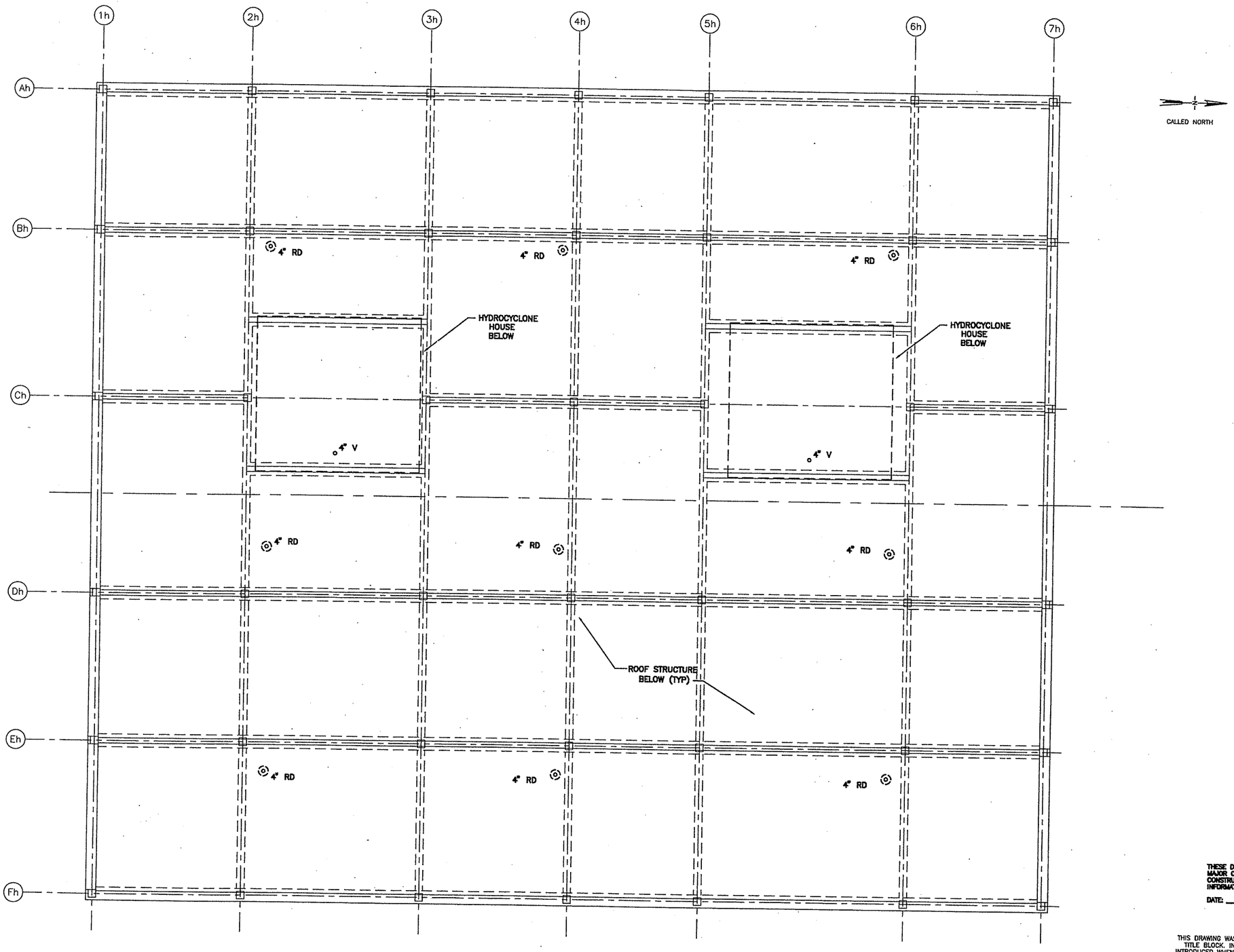
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
HIGH RATE FLOCCULATED SETTING (HRFS) COMPLEX
HRFS GALLERY – SECOND FLOOR PLAN
PLUMBING

File Number 00659
Date APRIL 2001

P-302



0659X303
06/27/01 RAB AJK/FJS
0659P303

1/8"=1'-0" (8' 0 8' 16')

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In charge of FJS
Designed by FJS
Drawn by AJK
Checked by FJS

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SYRACUSE, NEW YORK

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SYRACUSE, NY/ETH YTO/YRK

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STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

HIGH RATE FLOCCULATED SETTING (HRFS) COMPLEX
HRFS GALLERY – ROOF PLAN

PLUMBING

File Number 00659
Date APRIL 2001

P-303

RECORD DRAWING

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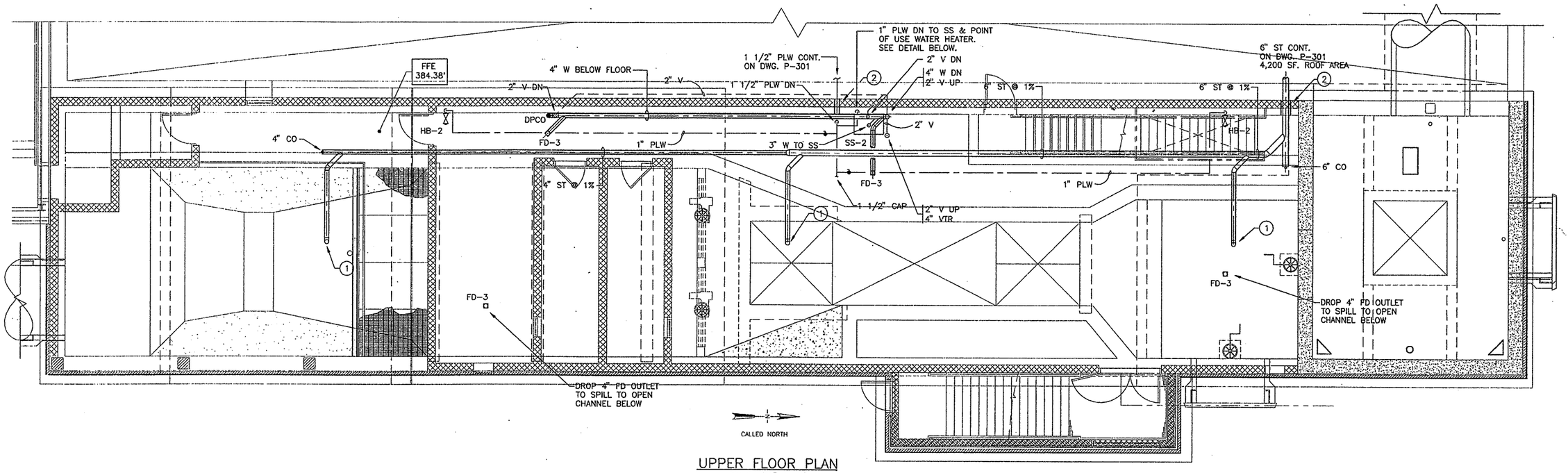
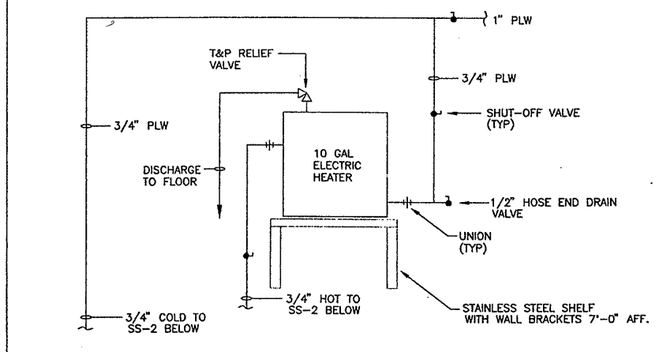


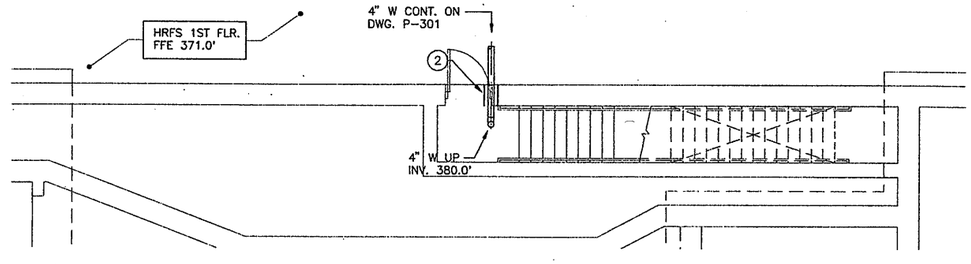
UPPER FLOOR PLAN
SCALE:3/16"=1'-0"



NOTE: HEATER SHALL BE UL CERTIFIED, INTEGRAL THERMOSTAT & HIGH LIMIT, INSULATED GLASS LINED TANK WITH METAL JACKET, 1500 WATT/208 VOLT IMMERSION ELEMENT; A.O. SMITH # ELSF-10 OR EQUAL.

NOT TO SCALE

POINT OF USE WATER HEATER DETAIL



LOWER FLOOR PLAN
SCALE:3/16"=1'-0"

KEYED NOTES: (#)

1. 4" ST UP TO ROOF DRAIN.
2. SLEEVE PIPING THRU WALL.

RECORD DRAWING

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0659X401/0659X402
06/27/01 RAB AJK/FJS
0659P401

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

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
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2	1/05	FOR RECORD	

In charge of FJS
Designed by FJS
Drawn by AJK
Checked by FJS

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CONSULTING ENGINEERS
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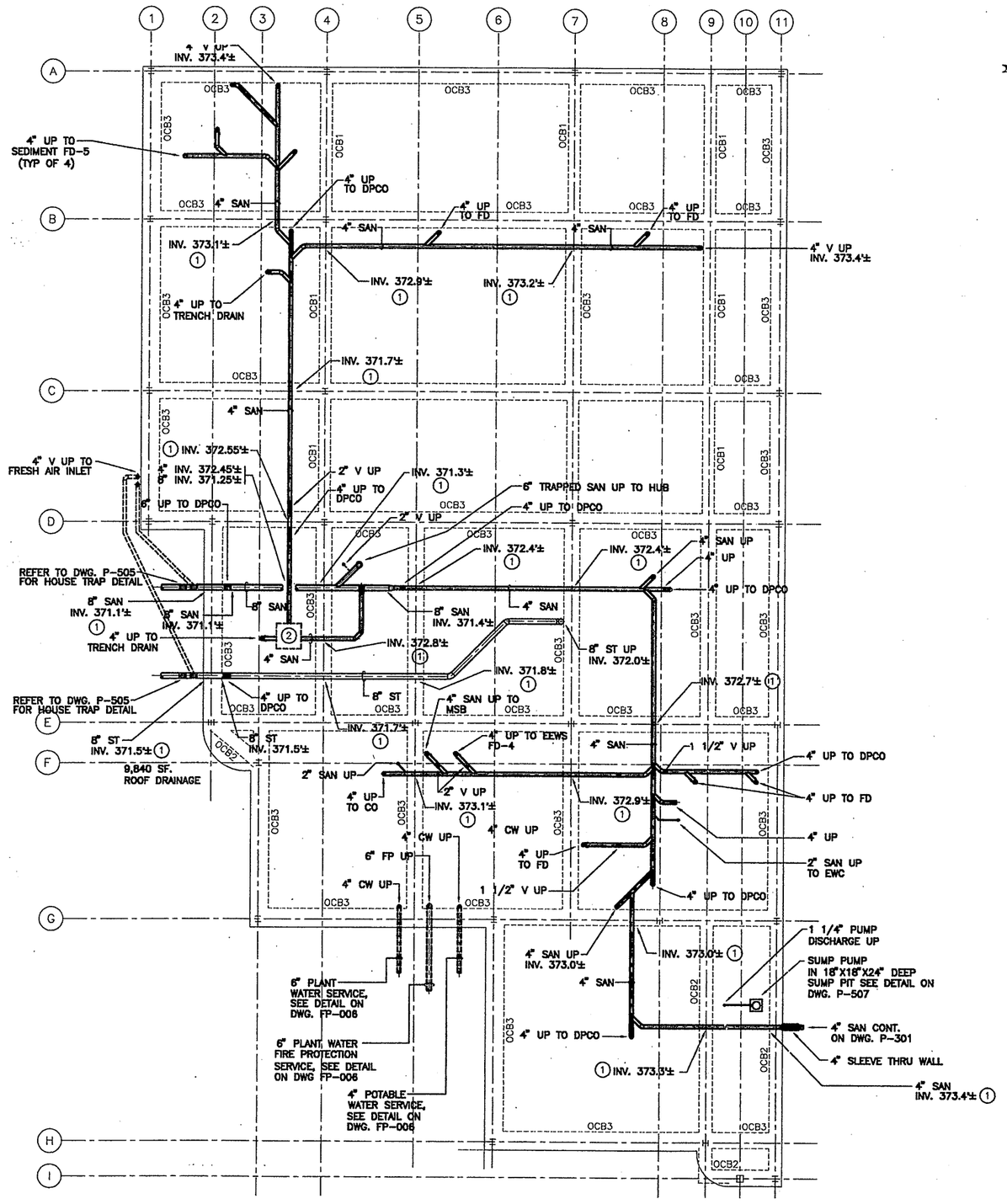
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
UV DISINFECTION

UV DISINFECTION/PARSHALL FLUME PLAN AND ROOF PLAN

PLUMBING

File Number 00659
Date APRIL 2001

P-401



CALLED NORTH

GENERAL NOTES:

A. PIPING INVERTS ARE PER APPROXIMATELY ±1/2" NOMINAL CONSTRUCTION TOLERANCES & ARE BASED ON 1ST FLOOR ELEVATION OF 375.38'. VERIFY ALL FIELD CONDITIONS BEFORE STARTING WORK.

KEYED NOTES: (#)

1. SLEEVE ALL GRADE BEAM PENETRATIONS. PROVIDE SLEEVES ALONG CENTERLINE OF PIPING PENETRATION. SIZE SLEEVE AS FOLLOWS:
   - 4" SAN; USE 8"ø SLEEVE
   - 6" SAN; USE 10"ø SLEEVE
   - 8" SAN & ST; USE 12"ø SLEEVE
2. PROVIDE SEDIMENT INTERCEPTOR 3'-0" X 3'-0" X 5'-0" DEEP W/ GRATED OPEN COVER, SEE DETAIL ON DWG. P-507.

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

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0659x501
06/27/01 RAB AJK/FJS
0659P500

1/8"=1'-0" (6' 0 8' 16')

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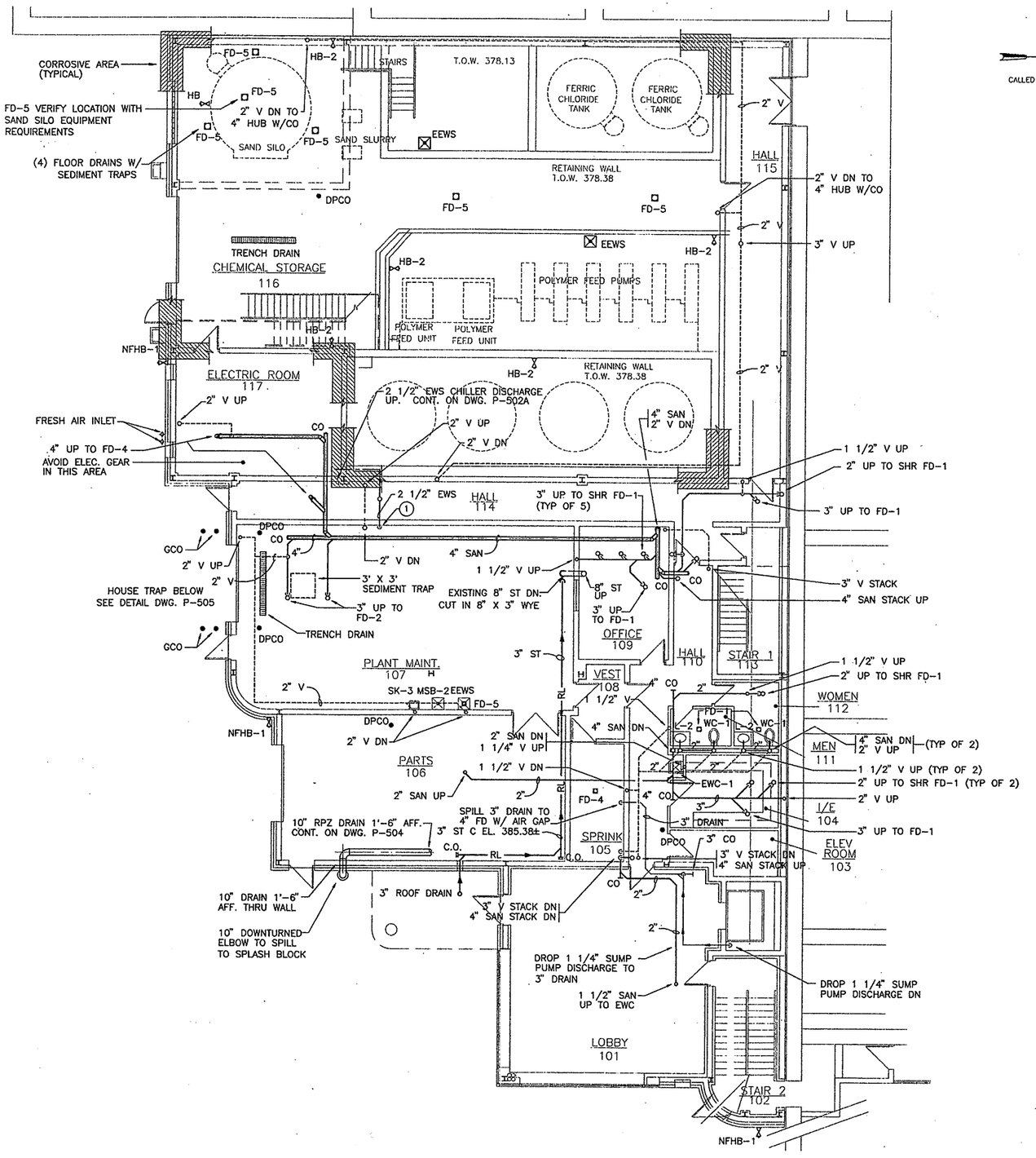
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
OPERATIONS CENTER – FOUNDATION PLAN
PLUMBING PLAN – DRAIN/WASTE/VENT
PLUMBING

File Number 00659
Date APRIL 2001

P-500



CALLED NORTH

KEYED NOTES: (#)

1. DROP 2 1/2" EWS CHILLER DISCHARGE TO 6" TRAPPED SAN HUB WITH AIR GAP. PROVIDE MINIMUM 12" HIGH PERFORATED STAINLESS STEEL SPLASH GUARD ALL AROUND HUB.

RECORD DRAWING

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0659x501
06/27/01 RAB AJK/FJS
0659P501

1/8"=1'-0" 8' 0 8' 16'

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0	4/20/01	ISSUED FOR APPROVAL	
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2	1/05	FOR RECORD	

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Drawn by AJK
Checked by FJS

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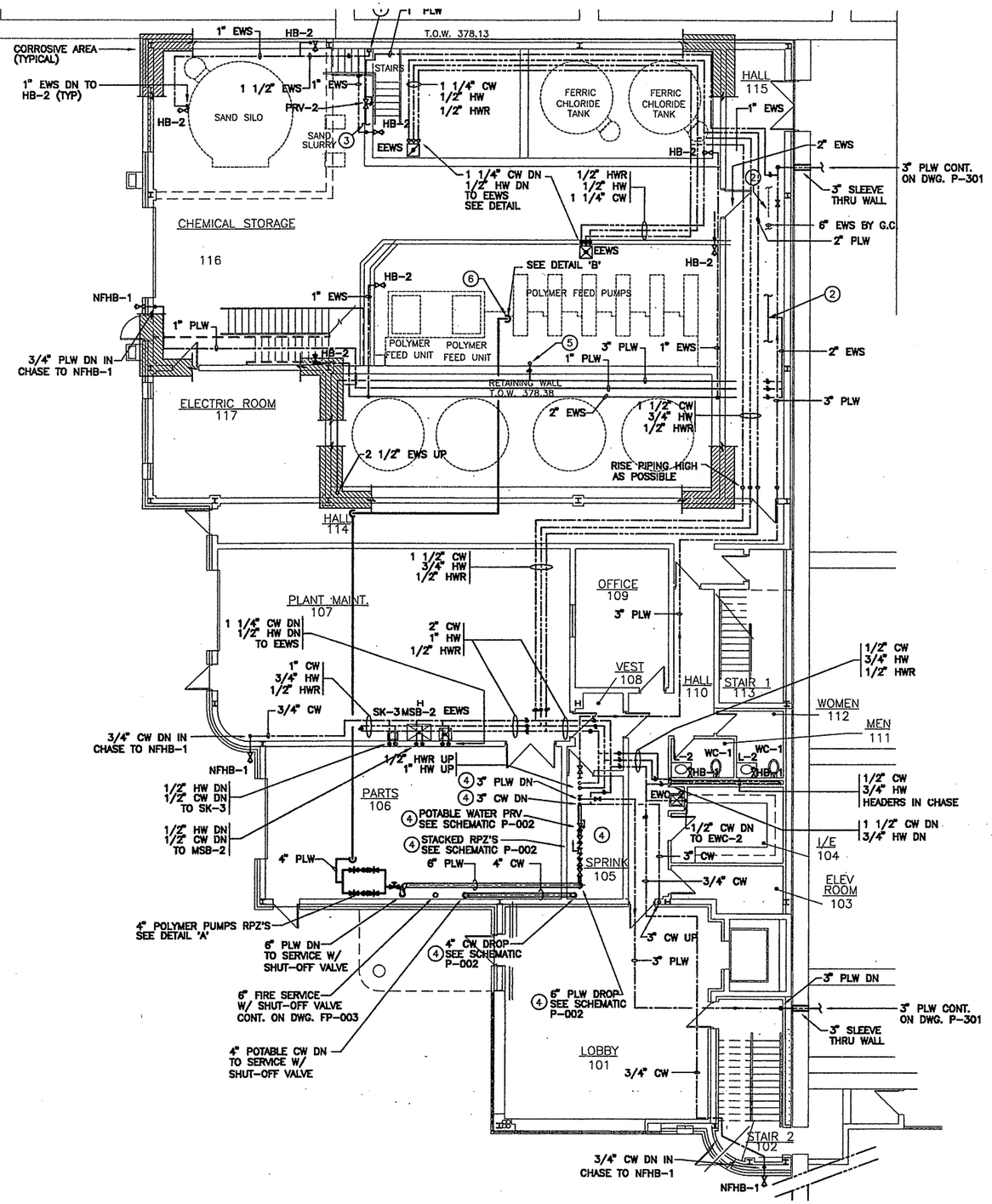
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
OPERATIONS CENTER – FIRST FLOOR
PLUMBING PLAN – DRAIN/WASTE/VENT
PLUMBING

File Number 00659
Date APRIL 2001

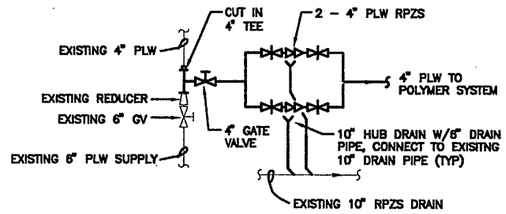
P-501



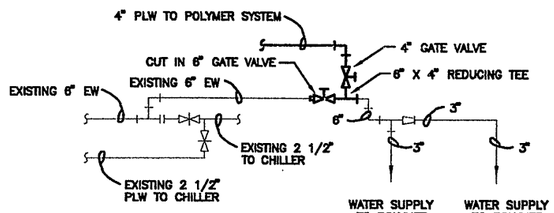
CALLED NORTH

KEYED NOTES: (#)

1. 2" EWS DN. CONNECT TO 2" TAP ON EWS MAIN PIPING BY G.C.
2. 2" EWS, CONNECT TO 2" TAP ON EWS MAIN PIPING BY G.C.
3. CONNECT 3/4" PLANT WATER (PLW) WITH SHUTOFF VALVE TO SEAL WATER SYSTEM CONNECTION AT SAND SLURRY PUMPS.
4. SEE DRAWING P-504 FOR ENLARGED SPRINKLER ROOM PLAN.
5. 2 1/2" EWS DN. CONNECT TO 2 1/2" TAP ON EWS MAIN PIPING BY G.C.
6. 4" PLW TIE TO 6" EWE PIPING BY G.C.



DETAIL-A
NOT TO SCALE



DETAIL-B
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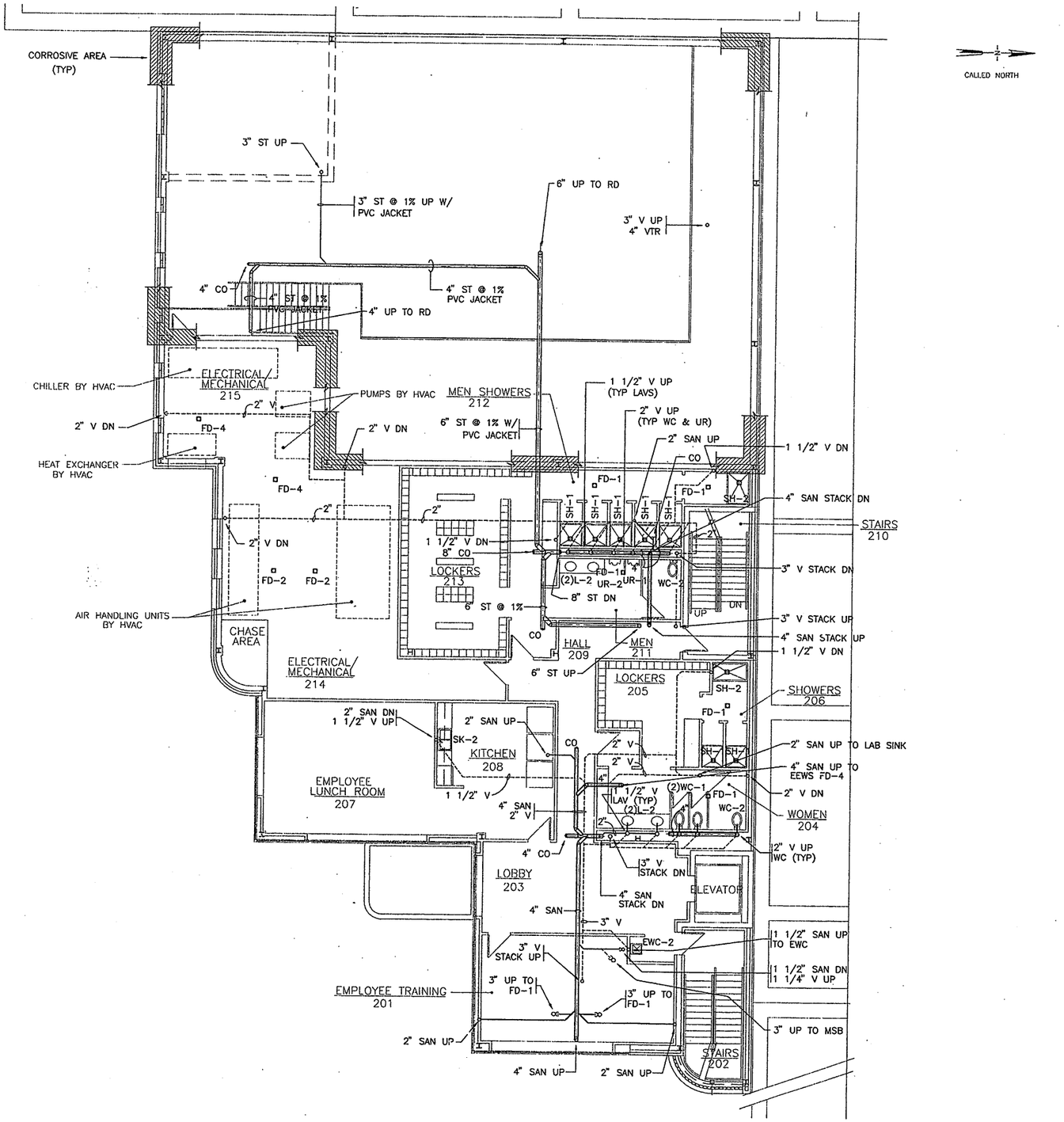
OPERATIONS CENTER – FIRST FLOOR
PLUMBING PLAN – WATER

PLUMBING

File Number 00659
Date APRIL 2001

P-501A



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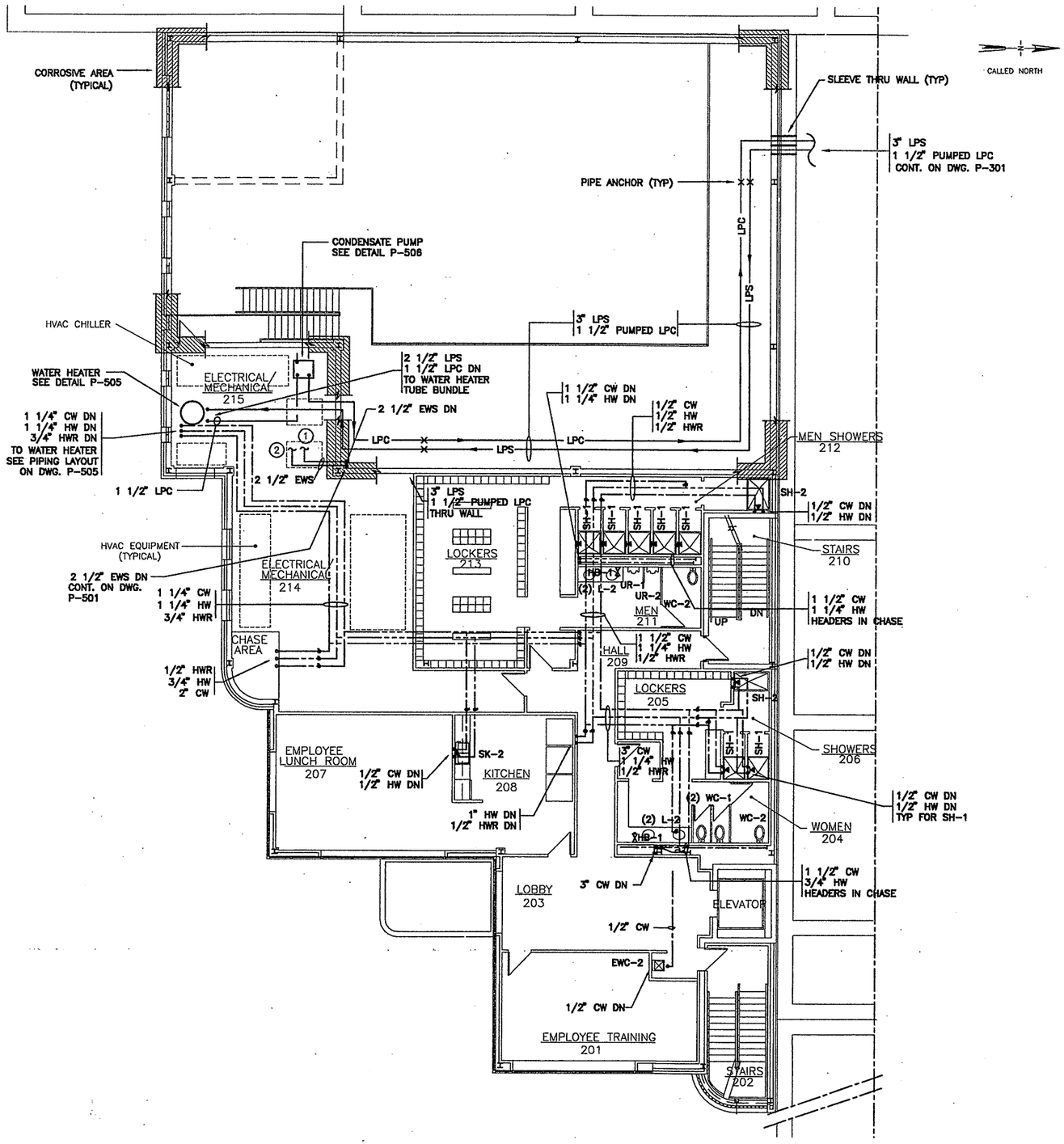
OPERATIONS CENTER –SECOND FLOOR
PLUMBING PLAN – DRAIN/WASTE/VENT

PLUMBING

File Number 00659
Date APRIL 2001

P–502



KEYED NOTES: (#)

1. CONNECT 2 1/2" EWS WITH SHUT-OFF VALVE TO 4" HVAC PIPING AT CHILLER CONDENSER INLET. SEE DWG. H-504.
2. CONNECT 2 1/2" EWS WITH SHUT-OFF VALVE TO 4" HVAC PIPING AT CHILLER CONDENSER OUTLET. SEE DWG. H-504.

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0659P502A

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OPERATIONS CENTER -SECOND FLOOR
PLUMBING PLAN - WATER

PLUMBING

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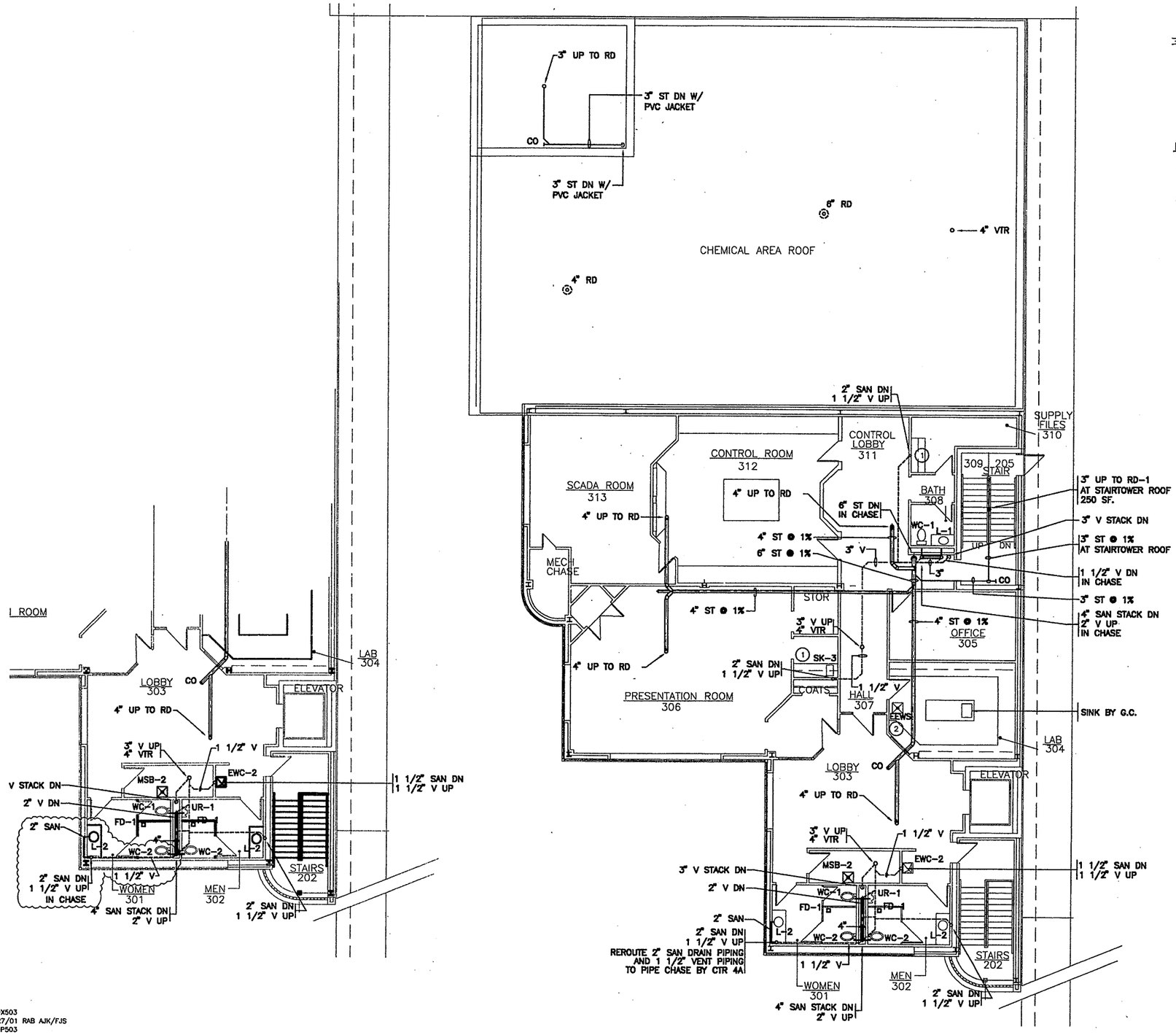
P-502A



CALLED NORTH

KEYED NOTES: (#)

1. CONNECT 2" SAN W/ P-TRAP, TO KITCHENETTE FURNISHED BY G.C.
2. VERIFY FIXTURE WITH OWNER.

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0569X503
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0659P503

1/8"=1'-0" 8' 0 8' 16'

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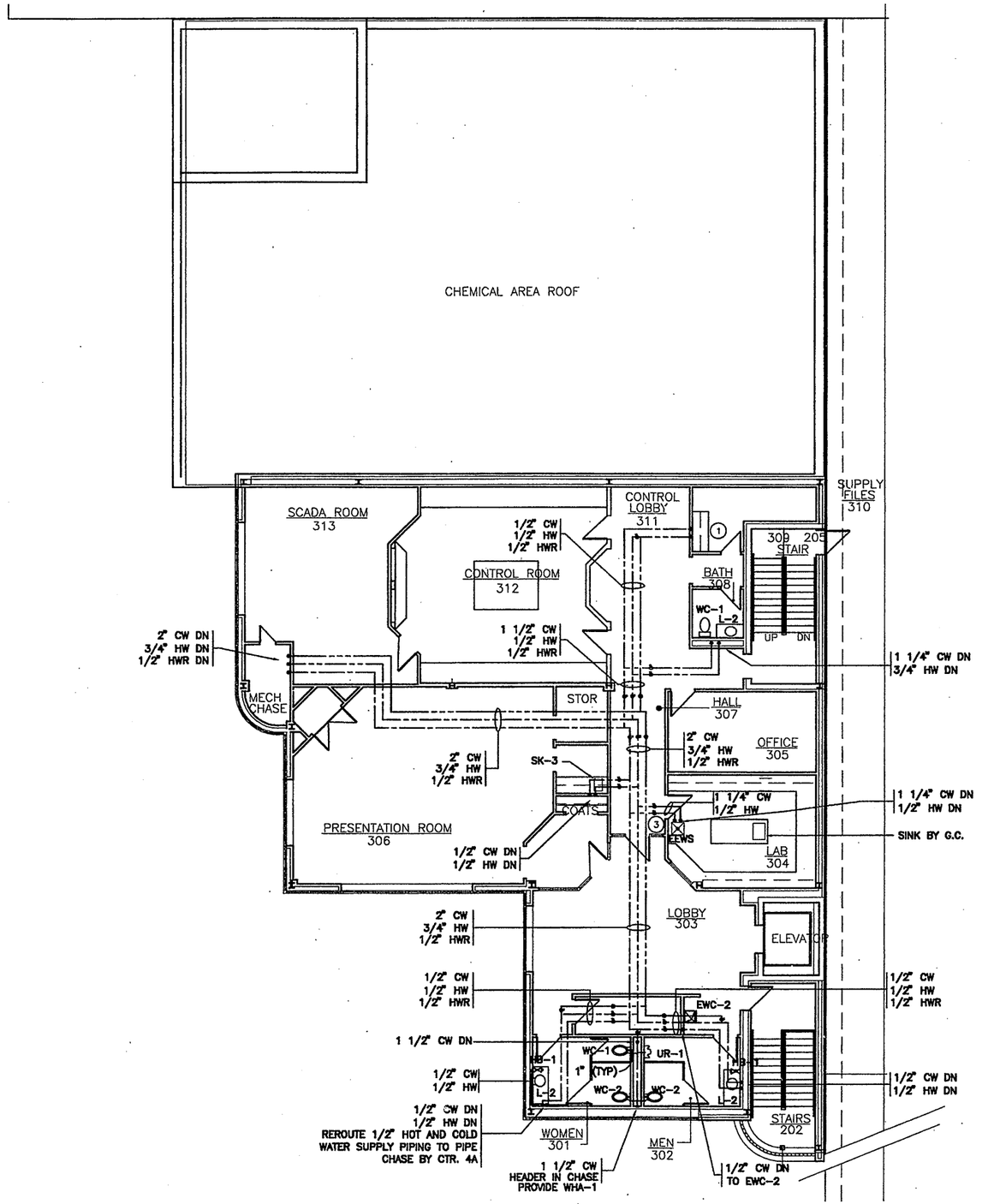
OPERATIONS CENTER – THIRD FLOOR
PLUMBING PLAN – DRAIN/WASTE/VENT

PLUMBING

File Number 00659
Date APRIL 2001

P-503



CALLED NORTH

KEYED NOTES: (#)

1. CONNECT 1/2" CW & HW TO KITCHENETTE
2. VERIFY FIXTURE LOCATION WITH OWNER.

RECORD DRAWING

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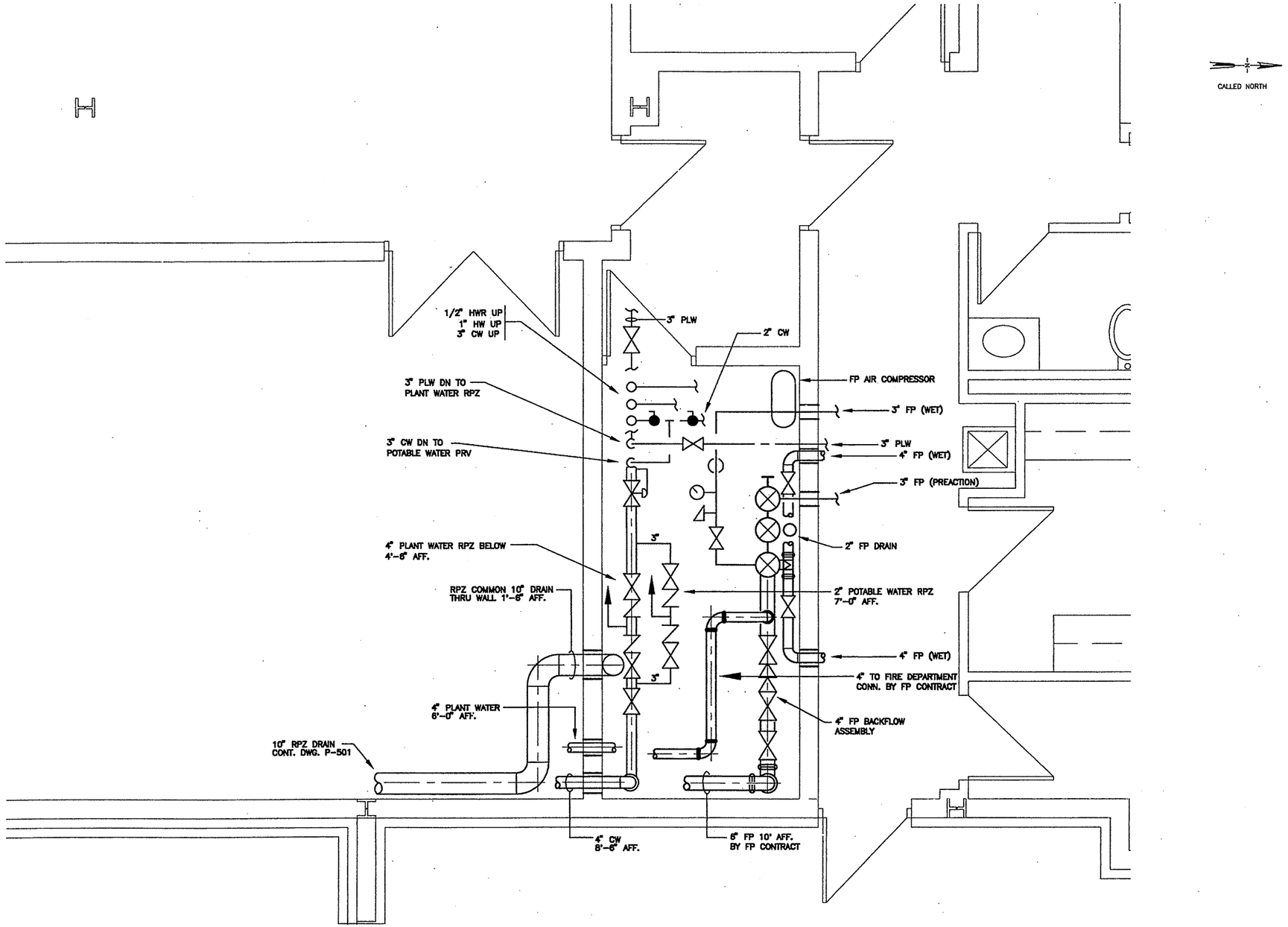
OPERATIONS CENTER – THIRD FLOOR
PLUMBING PLAN – WATER

PLUMBING

File Number 00659
Date APRIL 2001

P-503A



SPRINKLER ROOM PLAN – OPERATIONS CENTER

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

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0659X501
06/27/01 RAB AJK/FJS
0659P504

16' 0 16' 32'
1/16"=1'-0"

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STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
OPERATIONS CENTER
SPRINKLER ROOM PLAN
PLUMBING

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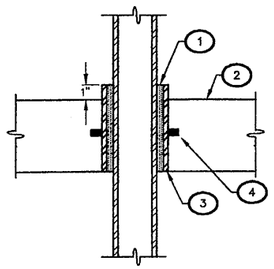
P-504



FLOOR

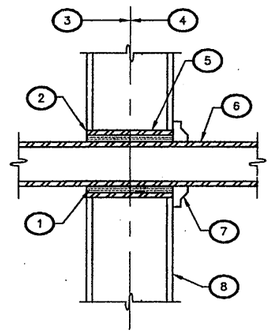
NOT TO SCALE

MARK	DESCRIPTION
1	FIRESTOP SEAL WITH DOW CORNING SILICONE RTV FOAM.
2	FLOOR.
3	PIPE SLEEVE.
4	SUPPORT FLANGE

UL LISTED

NOTE: FIRE STOPPING SHALL COMPLY WITH UL OR FM APPROVED FIRE STOPPING ASSEMBLY.

FLOOR SLEEVE DETAIL



INTERIOR WALLS

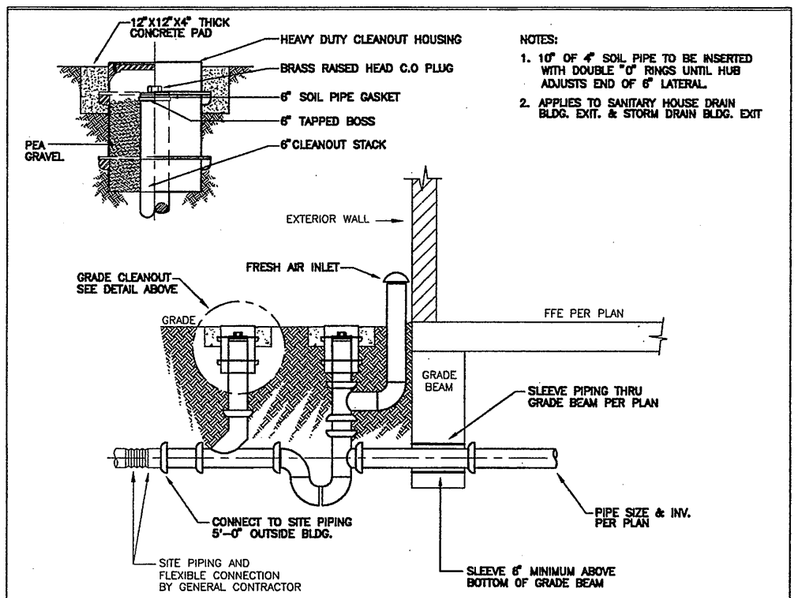
NOT TO SCALE

MARK	DESCRIPTION
1	SEAL OR CAULK SLEEVES THRU FIRE WALLS WITH DOW CORNING SILCONE RTV FOAM.
2	TERMINATE SLEEVE FLUSH WITH FINISHED WALL SURFACES.
3	CONCEALED PIPING.
4	PIPE EXPOSED TO VIEW.
5	PIPE SLEEVE OF SIZE TO ALLOW FOR INSULATION TO PASS THRU.
6	PIPE TO BE CENTERED IN SLEEVE – DO NOT SUPPORT PIPE FROM SLEEVE.
7	FINISHED ESCUTCHEON PLATE FLUSH AGAINST WALL AND OF SIZE TO COMPLETELY. COVER OPENING.
8	FINISHED WALL SURFACE.

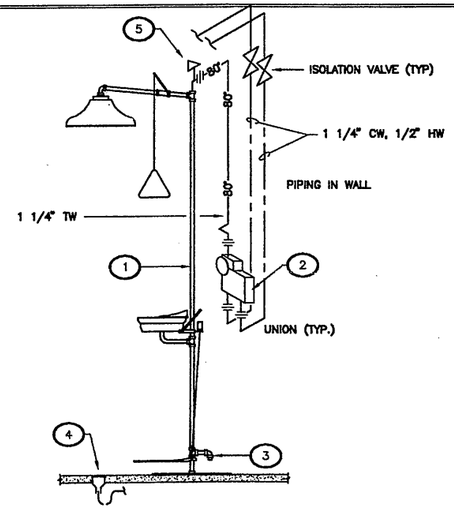
UL LISTED

NOTE: FIRE STOPPING SHALL COMPLY WITH UL OR FM APPROVED FIRE STOPPING ASSEMBLY.

INTERIOR WALL SLEEVE DETAIL



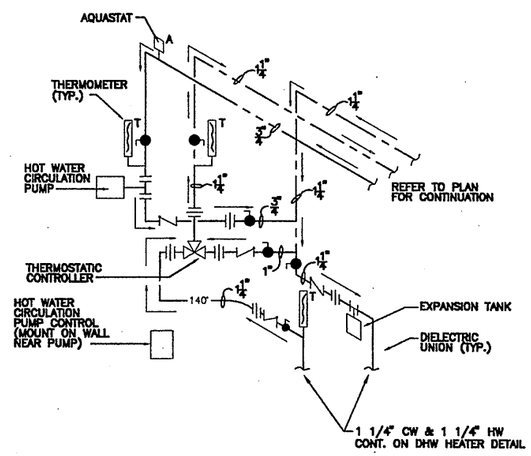
STORM DRAIN/HOUSE TRAP DETAIL



NOT TO SCALE

MARK	DESCRIPTION
1.	EMERGENCY EYEWASH SHOWER. ANCHOR TO FLOOR AND PROVIDE ADDITIONAL RIGID SUPPORT FROM WALL.
2.	TEMPERING MIXING VALVE
3.	1 1/4" DRAIN TO FLOOR.
4.	FLOOR DRAIN
5.	WATER FLOW ALARM SWITCH

EMERGENCY EYEWASH / SHOWER PIPING SCHEMATIC

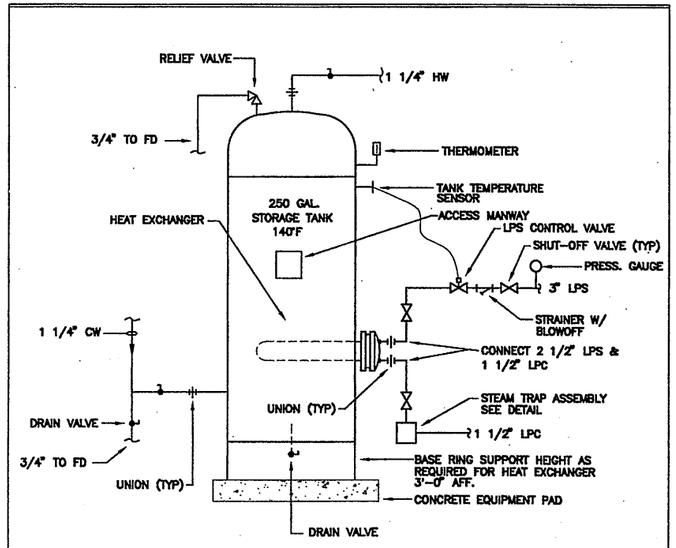


NOT TO SCALE

NOTES

A. MOUNT CONTROL SWITCH ON WALL IN A READILY ACCESSIBLE LOCATION.
B. INSTALL PIPING AND EQUIPMENT SUPPORTS TO ALLOW FOR SERVICING WITHOUT REMOVAL.
C. SET WATER HEATER FOR 140°F DELIVERY TEMPERATURE.
D. SET THERMOSTATIC CONTROLLER FOR 110°F DELIVERY TEMPERATURE
E. SET AQUASTAT TO START H.W. CIRCULATION PUMP AT 105°F
F. PROVIDE OVERSIZE FITTINGS AT IMMERSION WELLS FOR THERMOSTAT AND AQUASTAT.

WATER HEATER PIPING LAYOUT



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DOMESTIC HOT WATER STORAGE TANK DETAIL

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MISCELLANEOUS DETAILS

PLUMBING

File Number 00659
Date APRIL 2001

P–505

CONDENSATE PUMP SCHEDULE

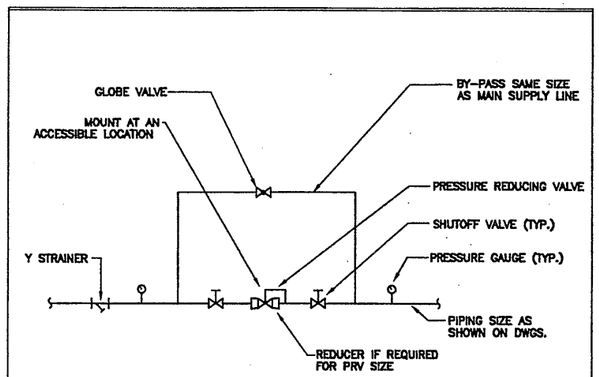
UNIT ID	LOCATION	#/HR	PUMP						NO. OF PUMPS	RECEIVER SIZE	DESIGN MAKE	NOTES
			GPM	HEAD	HP	RPM	VOLTS	PH				
CP-1	OP. CENTER MECH. ROOM	500	6	65psi	3	3500	460	3	2	23 GALLONS	DOMESTIC 97.5 CC	1, 2

NOTES:

1. PROVIDE UNIT MOUNTED DUPLEX CONTROL PANEL WITH MECHANICAL PUMP ALTERNATION
2. PROVIDE HIGH WATER LEVEL ALARM

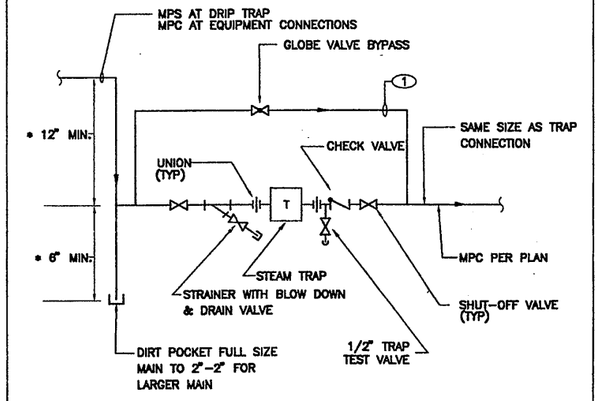
PRESSURE REDUCING VALVE SCHEDULE

MARK	SERVICE	GPM	PSIG IN	PSIG OUT	SIZE	NOTES
PRV-1	POTABLE WATER SERVICE	80	90	60	2"	--
PRV-2	PUMP SEAL WATER	25	90	30	3/4"	--
PRV-3	DECK HYDRANTS	60	90	30	1 1/4"	--



NOT TO SCALE

WATER PRESSURE REDUCING VALVE DETAIL



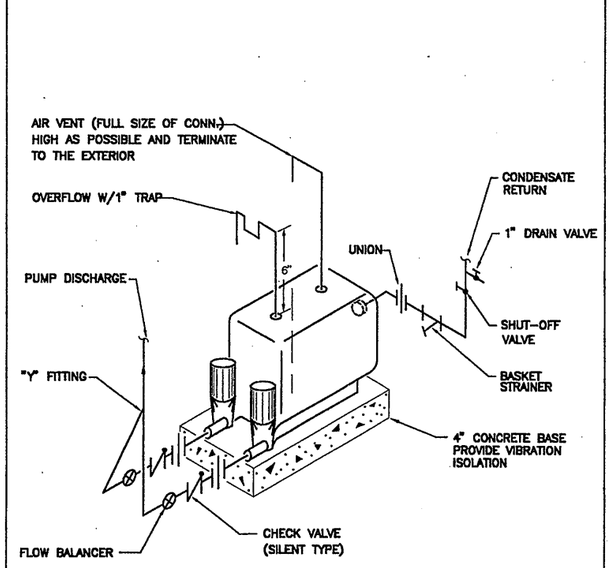
• WHERE SPACE PERMITS

KEY NOTE:

(1) BYPASS HORIZONTAL RUN AT SAME ELEVATION AS STEAM TRAP ASSEMBLY

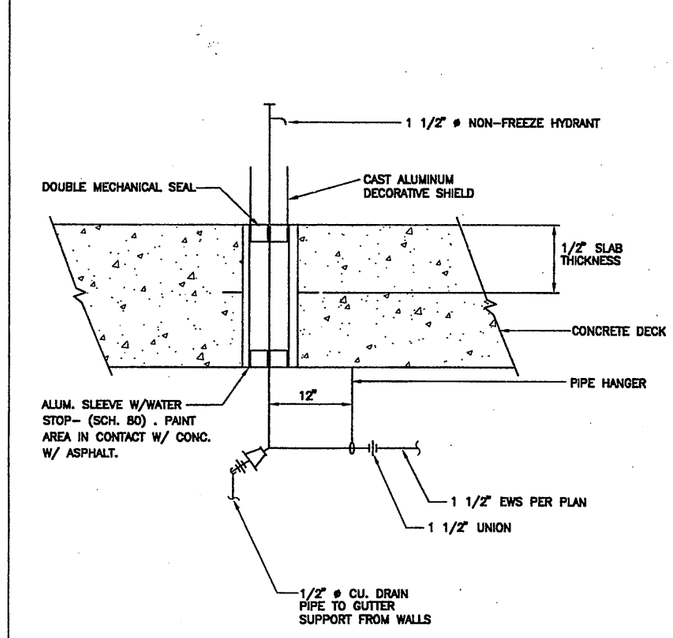
NOT TO SCALE

STEAM TRAP ASSEMBLY DETAIL



NOT TO SCALE

CONDENSATE PUMP DETAIL



NOT TO SCALE

DECK HYDRANT DETAIL

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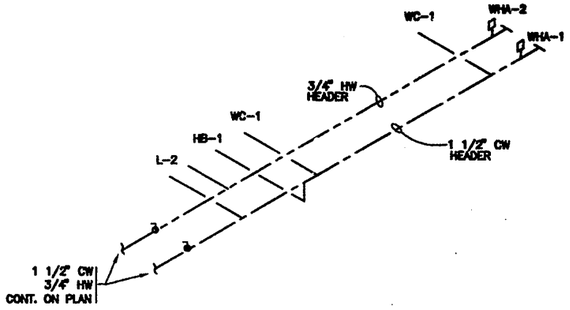
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

MISCELLANEOUS DETAILS & SCHEDULE

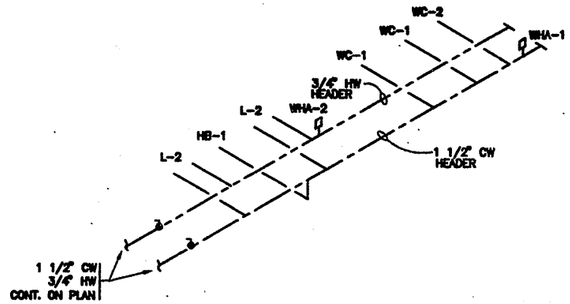
PLUMBING

File Number 00659
Date APRIL 2001

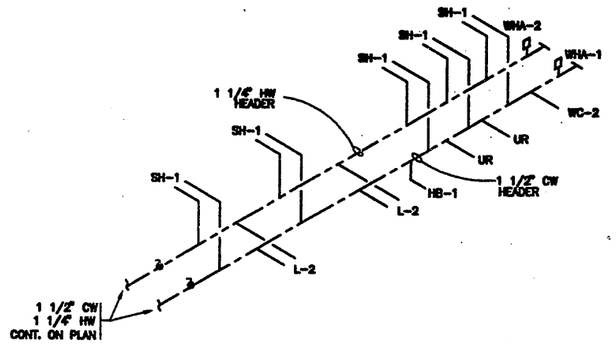
P-506



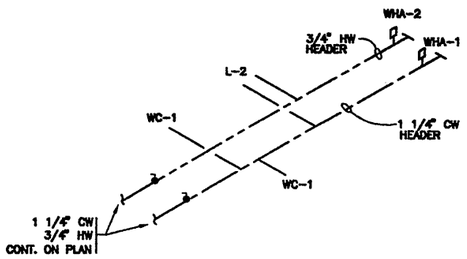
TOILET #111 & #112 WATER SUPPLY SCHEMATIC
NOT TO SCALE



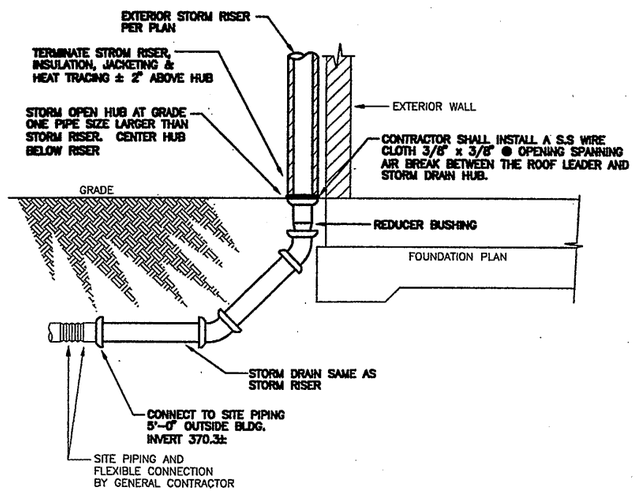
TOILET #204 WATER SUPPLY SCHEMATIC
NOT TO SCALE



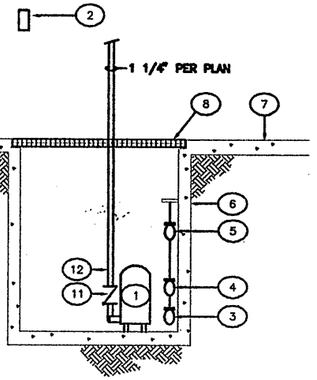
TOILET #211 WATER SUPPLY SCHEMATIC
NOT TO SCALE



TOILET #308 WATER SUPPLY SCHEMATIC
NOT TO SCALE



EXTERIOR STORM DRAIN DETAIL
NOT TO SCALE



Mark Description

1 SUMP PUMP
2 REMOTE HIGH WATER ALARM
3 PUMP OFF
4 LEAD PUMP ON
5 HIGH WATER ALARM
6 18"x 18" SQUARE CONCRETE PIT BY GC
7 FINISHED FLOOR ELEVATOR
8 HEAVY DUTY OPEN GRID STEEL COVER BY GC
9 NOT USED
10 NOT USED
11 1 1/2" BACKWATER CHECK VALVE
12 1 1/4" PUMPED DISCHARGED

SUMP PUMP DETAIL
NOT TO SCALE

Mark Description

1 4" OUTLET
2 4" INLET FROM CHEMICAL BLDG.
3 4" INLET FROM TRENCH DRAIN
4 OUTLET INV. 4" BELOW STATIC WATER LINE
5 TOP OF INLET MIN. 24" ABOVE BOTTOM
6 36"x 36" X 5'-0" DEEP SQUARE CONCRETE PIT BY GC
7 FINISHED FLOOR ELEVATOR
8 HEAVY DUTY OPEN GRID STEEL COVER BY GC

SEDIMENT INTERCEPTER DETAIL
NOT TO SCALE

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE: _____ PER: _____

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06/27/01 RAB AJK/FJS
0659P507

NO SCALE

NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
1		AS BID	
2	1/05	FOR RECORD	

In charge of FJS
Designed by FJS
Drawn by AJK
Checked by FJS

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SYRACUSE, NEW YORK

RAM-TECH ENGINEERS, P.C.
CONSULTING ENGINEERS
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METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

SCHEMATICS

PLUMBING

File Number 00659
Date APRIL 2001

P-507

PIPE AND FITTING SYMBOLS

- UNDERGROUND PIPING
- SPRINKLER BRANCH PIPING
- WET — WET PIPE FIRE MAIN
- DRY — DRY PIPE FIRE MAIN
- PREAC. — PREACTION FIRE MAIN
- BLDG. FIRE ALARM SYSTEM LOOP
- SYSTEM RISER
- PIPE UP
- PIPE DOWN
- FC — FLUSHING CAP CONN.
- CAP CONNECTION
- FIRESTOP
- FIRE DEPARTMENT CONN.
- WATER MOTOR GONG
- STRAINER
- UNION
- PIPE CROSS OVER (NO CONN.)
- CONNECTING PIPING

VALVE AND GATE SYMBOLS

- WET PIPE ALARM VALVE
- DRY PIPE ALARM VALVE
- PREACTION ALARM VALVE
- TS — POST INDICATOR VALVE W/ TAMPER SWITCH
- CHECK VALVE
- GATE VALVE N/O
- GATE VALVE N/C
- TS — GATE VALVE W/TAMPER SWITCH
- S — SOLENOID VALVE
- BACKFLOW VALVE
- TEST AND DRAIN VALVE
- 2 1/2" HOSE VALVE CONN.

MISCELLANEOUS SYMBOLS

- QUICK RESPONSE RECESSED PENDENT SPRINKLER 155°
- STANDARD RESPONSE UPRIGHT SPRINKLER 212°
- STANDARD RESPONSE SIDEWALL SPRINKLER
- STANDARD DRY SIDEWALL SPRINKLER
- FLOW SWITCH
- PRESSURE GAGE
- PRESSURE SWITCH
- S — PREACTION SMOKE DETECTOR
- H — HEAT DETECTOR 190°F
- MM — MONITOR MODULE
- EMR — PREACTION EMERGENCY MANUAL RELEASE
- RETARD CHAMBER
- FLOW DIRECTION
- WIRING
- POINT OF CONNECTION BETWEEN EXISTING WORK TO REMAIN & NEW WORK

ABBREVEATIONS

A.F.F.	ABOVE FINISHED FLOOR
BLDG.	BUILDING
CONN.	CONNECTION
DEPT.	DEPARTMENT
DN	DOWN
ELEV.	ELEVATOR
EMR	EMERGENCY MANUAL RELEASE
FLR.	FLOOR
FP	FIRE PROTECTION
I.D.	IDENTIFICATION
LH	LIGHT HAZARD
MAINT.	MAINTENANCE
MIN.	MINIMUM REQUIREMENT
MM	MONITOR MODULE
N.I.C	NOT IN CONTRACT
N/O	NORMALLY OPEN
N/C	NORMALLY CLOSED
OH	ORDINARY HAZARD
P.I.V.	POST INDICATOR VALVE
PREAC.	PREACTION
PRESS.	PRESSURE
SD1	SMOKE DETECTOR IONIZATION
SD2	SMOKE DETECTOR PHOTO-ELECTRIC
TS	TAMPER SWITCH
TYP	TYPICAL
W/	WITH

GENERAL NOTES

A. PROVIDE ALL CUTTING, PATCHING AND FIRESTOPPING REQUIRED TO ACCOMPLISH WORK SHOWN. PATCH AND SEAL OPENINGS TO MATCH ADJACENT WALLS, FLOORS, CEILINGS, ETC. UNLESS OTHERWISE INDICATED. CONCEAL ALL WORK IN FINISHED AREAS UNLESS OTHERWISE INDICATED OR DIRECTED BY ARCHITECT.

B. CONTRACTOR SHALL FIELD VERIFY ALL LOCATIONS, DIMENSIONS (PIPING, SPRINKLER HEADS, RISERS, STRUCTURAL ELEMENTS, ETC.) PRIOR TO STARTING WORK. CONTRACTOR SHALL COORDINATE INSTALLATION OF EQUIPMENT, PIPING AND SPRINKLERS. PROVIDE FITTINGS, PIPING, OFFSETS, ELEVATION CHANGES, ETC. TO MINIMIZE CONFLICTS. CONTRACTOR SHALL REROUTE PIPING THAT WILL BE IN CONFLICT WITH OTHER TRADES.

C. CONTRACTOR SHALL PROVIDE ALL SLEEVES, CORE DRILLING, WATER, SMOKE AND FIRE SEALING OF PIPING PENETRATIONS THROUGH WALLS AND FLOORS.

D. LOCATE SPRINKLER HEADS IN THE CENTER OF CEILING TILES UNLESS OTHERWISE NOTED.

E. CONTRACTOR SHALL PROVIDE ORDINARY HAZARD GROUPS 1&2 HYDRAULIC CALCULATIONS AT THE MOST REMOTE AREA FOR WET, DRY, AND PREACTION SYSTEMS. MINIMUM OPERATING PRESSURE PER SPRINKLER SHALL BE 7.12 PSI OR MINIMUM DISCHARGE OF 15 GPM. PROVIDE 20 FPS MAX. VELOCITY.

F. IN CASE OF LOW POINTS, CONTRACTOR SHALL PROVIDE AUXILIARY DRAIN, IDENTIFICATION & ACCESS.

G. PAINT ALL EXPOSED PIPING OSHA RED AND IDENTIFY WITH PIPE I.D. MARKINGS.

H. ALL SINGLE SPRINKLER BRANCH LINES ARE 1" UNLESS OTHERWISE NOTED.

I. PROVIDE COORDINATION WITH OTHER TRADES. IN CASE OF OBSTRUCTIONS TO SPRINKLERS, PROVIDE ADDITIONAL SPRINKLER(S) TO OBTAIN ADEQUATE COVERAGE AS REQUIRED BY NFPA 13.

J. DESIGN, MATERIALS, INSTALLATION AND TESTING SHALL BE IN ACCORDANCE WITH NATIONAL, STATE AND LOCAL CODES, NFPA REQUIREMENTS, AND MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS, SPECIFICATIONS.

K. PLEASE NOTE THAT THE 2 1/2" HOSE CONNECTION IS PER NFPA 13 AND NOT IN ACCORDANCE WITH NFPA 14.

M. CONTRACTOR SHALL PROVIDE TAMPER SWITCHES FOR ALL CONTROL VALVES.

HYDRAULIC CALCULATIONS: PRELIMINARY

- WATER DEMAND @ 3RD FLR: ± .227 GPM + .50 HOSE @ 45 PSI.

FLOW TEST - 6/13/01

- OCWA STATIC PRESSURE AFTER RPZ #2 @ 50 PSI.
- SYRACUSE WATER STATIC PRESSURE AFTER RPZ #2 @ 74 PSI.

NOTE:

REFER TO ATTACHED DAVIS ULMER RECORD DRAWINGS (FP-1, FP-2, FP-3 AND FP-1AB) FOR FIRE PROTECTION RECORD DRAWING INFORMATION.

RECORD DRAWING

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DATE: 12/13/05 PER: RCG

06/27/01 RAB AJK/ERH
0659FP001

NOT TO SCALE

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0	4/20/01	ISSUED FOR APPROVAL	
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In charge of FJS
Designed by ERH
Drawn by AJK
Checked by ERH

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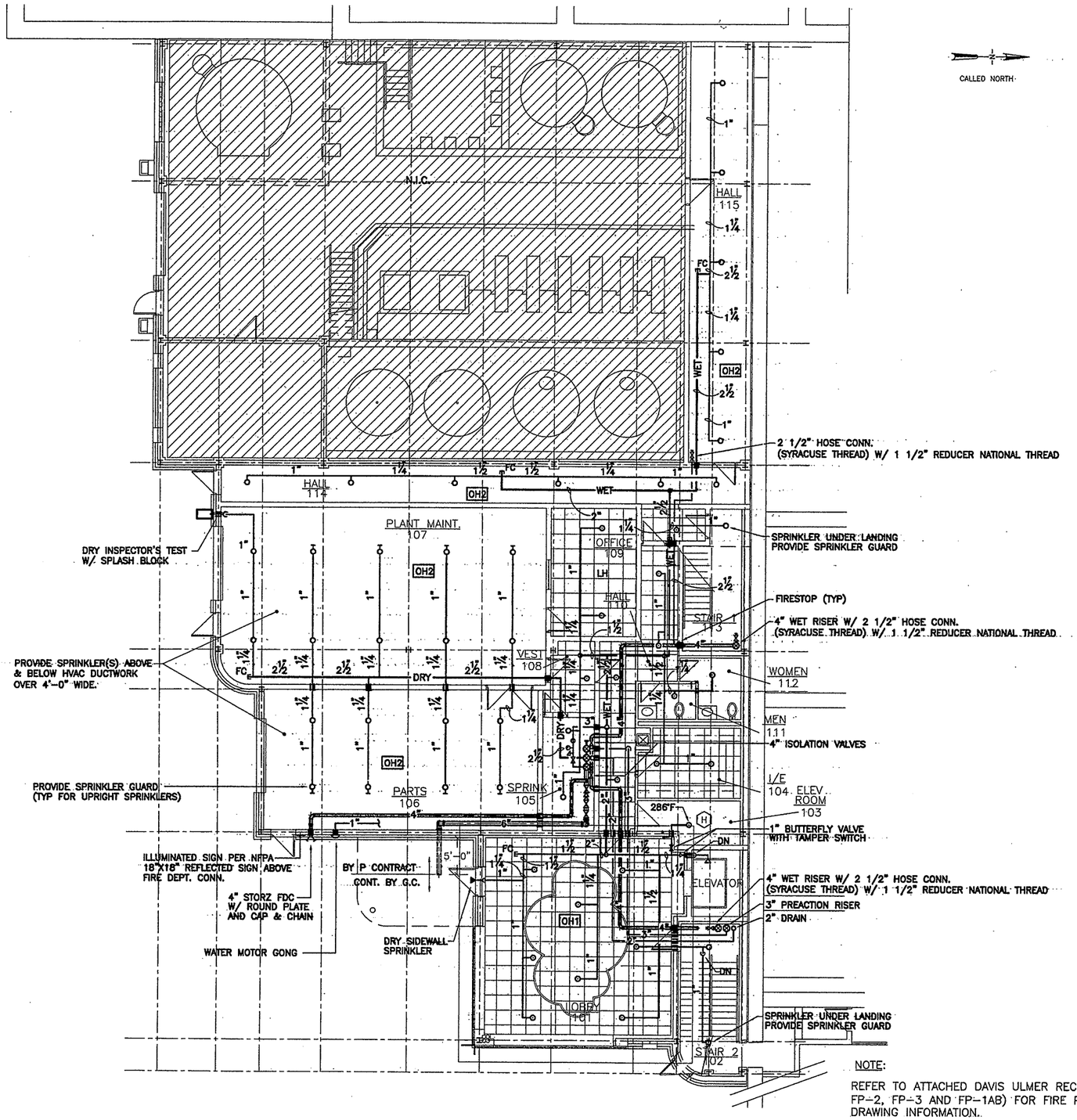
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
OPREATIONS CENTER

SYMBOL LIST & NOTES

FIRE PROTECTION

File Number 00659
Date APRIL 2001
FP-001



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0659X501/0659X520
06/27/01 RAB AJK/ERH
0659FP002

1/8"=1'-0" 8' 0 8' 16'

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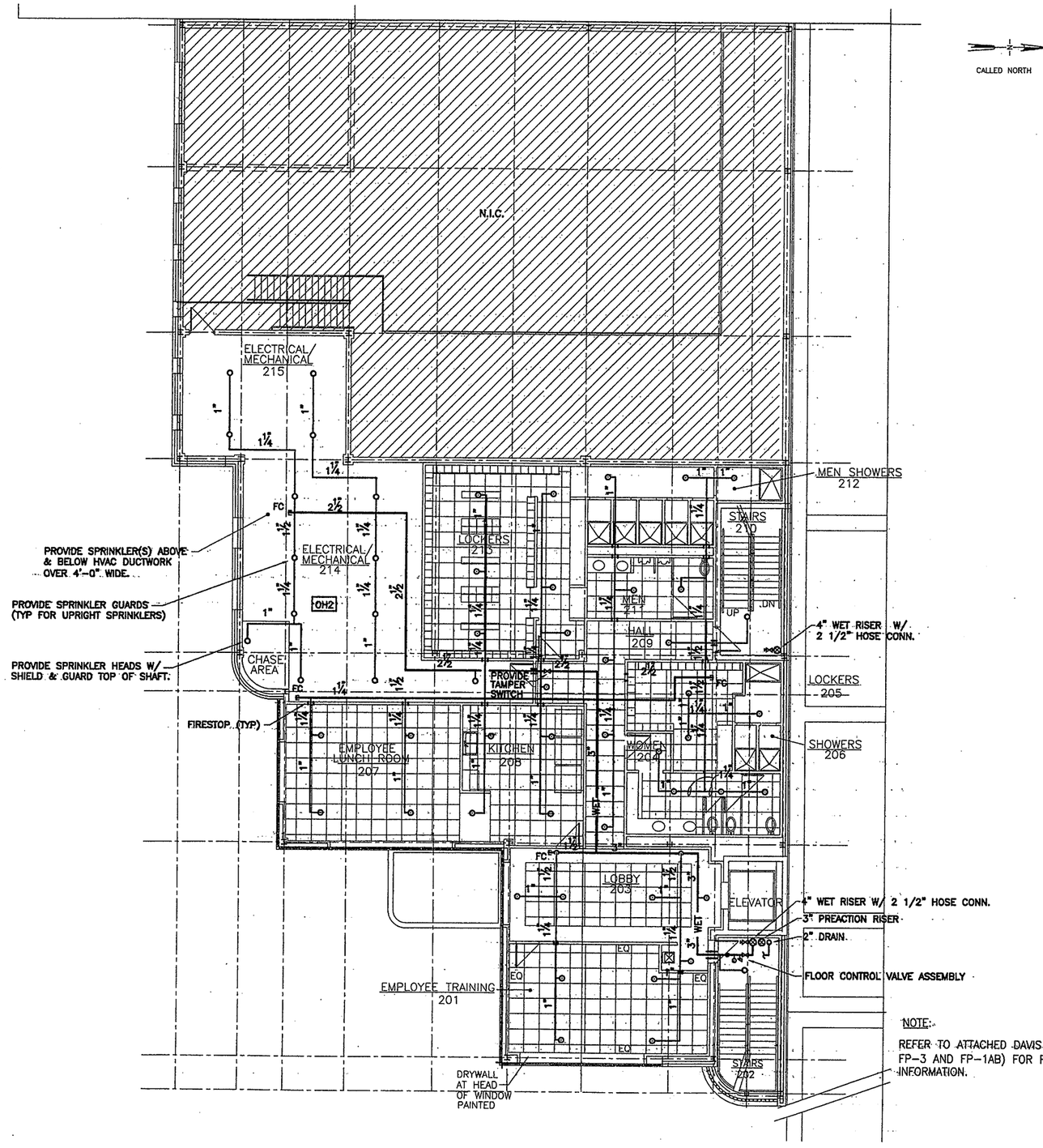
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

OPERATIONS CENTER — FIRST FLOOR
SPRINKLER PLAN

FIRE PROTECTION

File Number 00659
Date APRIL 2001
FP-002



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0659X502/0659X520
06/27/01 RAB AJK/ERH
0659FP003

1/8"=1'-0" 8' 0 8' 16'

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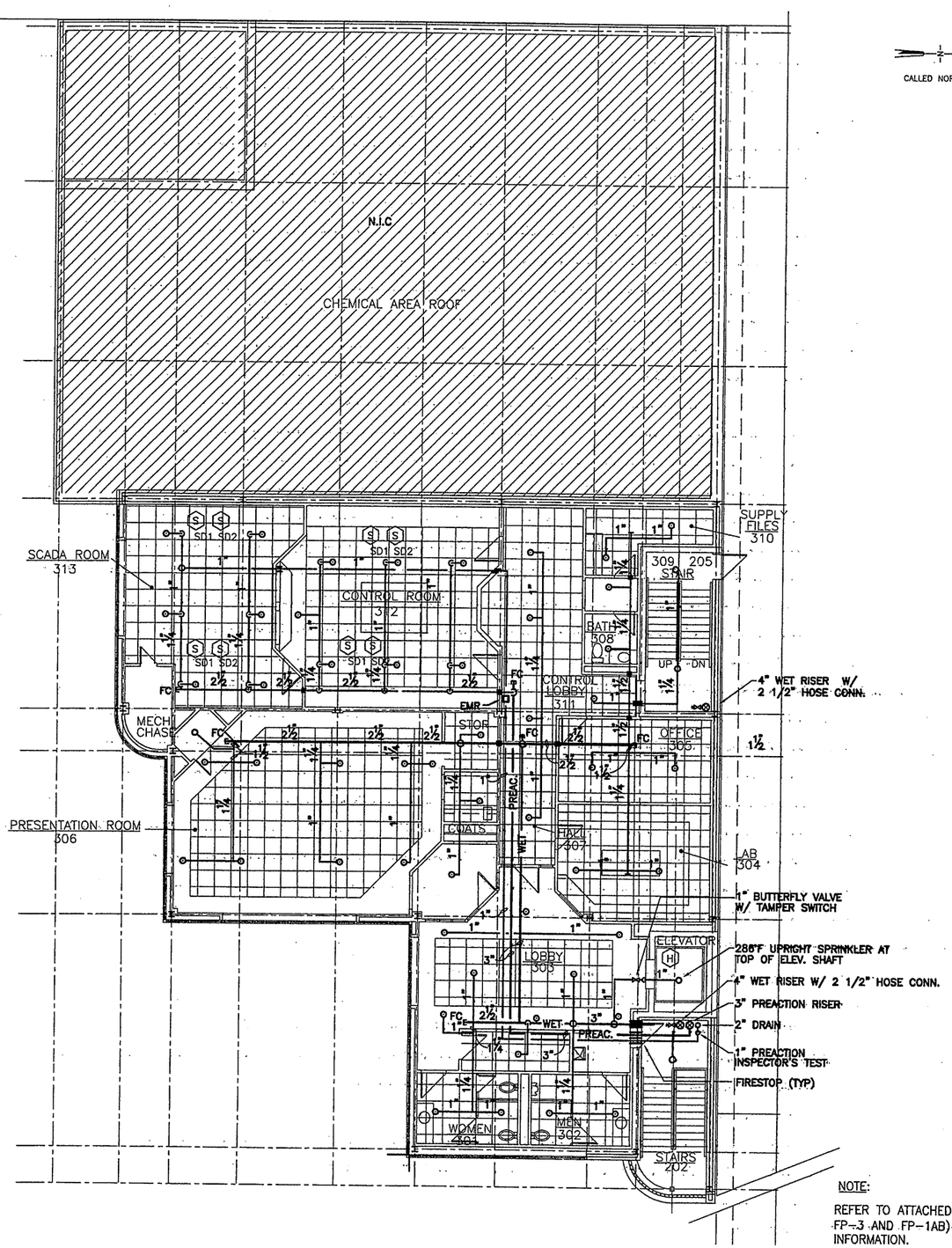
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT

OPERATIONS CENTER - SECOND FLOOR
SPRINKLER PLAN

FIRE PROTECTION

File Number 00659
Date APRIL 2001

FP-003



NOTE:

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0659X503/0659X521
06/27/01 RAB AJK/ERH
0659P004

1/8"=1'-0" (8' 0 8' 16')

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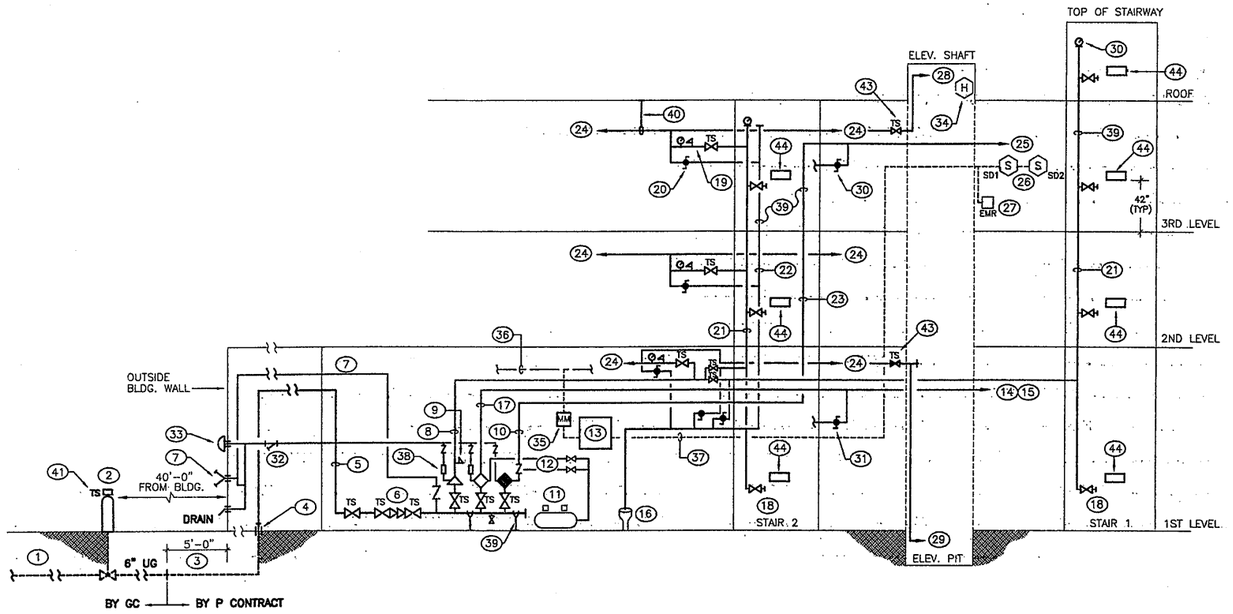
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
OPERATIONS CENTER — THIRD FLOOR
SPRINKLER PLAN
FIRE PROTECTION

File Number 00659
Date APRIL 2001

FP-004



SCHEMATIC RISER DIAGRAM

NOT TO SCALE

Mark	Description
1	6" U.G FIRE MAIN (BY GENERAL CONTRACTOR)
2	P.I.V. WITH TAMPER SWITCH (BY GENERAL CONTRACTOR)
3	5'-0" TO BLDG. (BY P CONTRACT)
4	SUPPORT ENCASEMENT
5	6" MAIN WITH HEAT TRACING
6	4" BACKFLOW VALVE ASSEMBLY
7	4" FIRE DEPT. CONN. WITH CHECK VALVE AND BALL DRIP
8	4" WET SPRINKLER RISER W/EASY SWING CHECK VALVE
9	WATER FLOW SWITCH – CONN. TO THE FIRE ALARM SYSTEM (BY E–CONTRACT)
10	3" PREACTION SYSTEM RISER W/ELECTRIC PNEUMATIC RELEASE
11	DUAL AIR COMPRESSOR WITH ASME TANK (POWER BY E–CONTRACT)
12	AIR SUPPLY SYSTEM
13	PREACTION PANEL (REFER TO NOTE BELOW FOR CONNECTION).
14	DRY SYSTEM PIPING TO PLANT MAINT. ROOM
15	DRY SYSTEM PIPING TO PARTS ROOM
16	STANDPIPE DRAIN 18" A.F.F.
17	2 1/2" DRY PIPE SYSTEM RISER
18	2 1/2" HOSE VALVE CONN. (TYP) PER NFPA 13
19	FLOOR CONTROL VALVE ASSEMBLY (TYP OF 3)
20	WET INSPECTOR'S TEST AND DRAIN (TYP OF 3)
21	4" WET SYSTEM RISER PIPING
22	2" DRAIN PIPING
23	PREACTION PIPING
24	WET PIPE SPRINKLER SYSTEM

Mark	Description
25	PREACTION SYSTEM TO CONTROL ROOM
26	SMOKE DETECTORS ON THIRD FLOOR (BY FP CONTRACT)
27	ELECTRIC EMERGENCY MANUAL RELEASE
28	PIPING TO UPRIGHT SPRINKLER AT TOP OF ELEVATOR SHAFT
29	PIPING TO SIDEWALL SPRINKLER AT BOTTOM OF ELEVATOR SHAFT
30	PREACTION SYSTEM INSPECTOR'S TEST AND DRAIN
31	DRY SYSTEM INSPECTOR'S TEST AND DRAIN
32	STRAINER
33	WATER MOTOR ALARM GONG
34	HEAT DETECTOR 190°F. ASME A17.1, REQUIRES THE SHUTDOWN OF POWER TO THE ELEVATOR UPON OR PRIOR TO THE ACTIVATION OF WATER IN ELEVATOR MACHINE ROOMS OR HOISTWAYS. COORDINATE "SHUNT TRIP" WITH E–CONTRACT. SHUTDOWN PROCESS (BY E–CONTRACT)
35	MONITOR MODULE (TYP) (BY E–CONTRACT)
36	BUILDING FIRE ALARM SYSTEMS (BY E–CONTRACT)
37	WIRING (BY E–CONTRACT)
38	RETARD CHAMBER
39	ANCHOR SUPPORT (TYP)
40	HANGER SUPPORT (TYP)
41	TAMPER SWITCH – CONN. TO THE FIRE ALARM SYSTEM (BY E–CONTRACT)
42	PRESSURE GAUGE
43	BUTTERFLY VALVE W/ TAMPER SWITCH
44	COLOR CODED SIGN FOR EVERY LEVEL (COLOR BY LOCAL AUTHORITY)

NOTES:
1. POWER, WIRING AND CONNECTION TO THE FIRE ALARM SYSTEM SHALL BE BY E–CONTRACT. COORDINATE ALL ALARM FUNCTIONS WITH E–CONTRACT.
2. PROVIDE IDENTIFICATION AND LABELING ON THE CEILING FOR ALL SHUT–OFF VALVES ABOVE THE CEILING. PROVIDE ACCESS PANELS IF REQUIRED.

NOTE:

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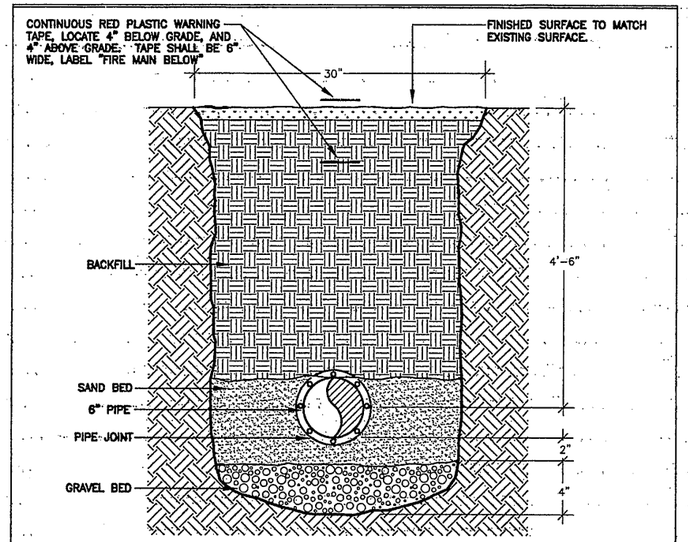
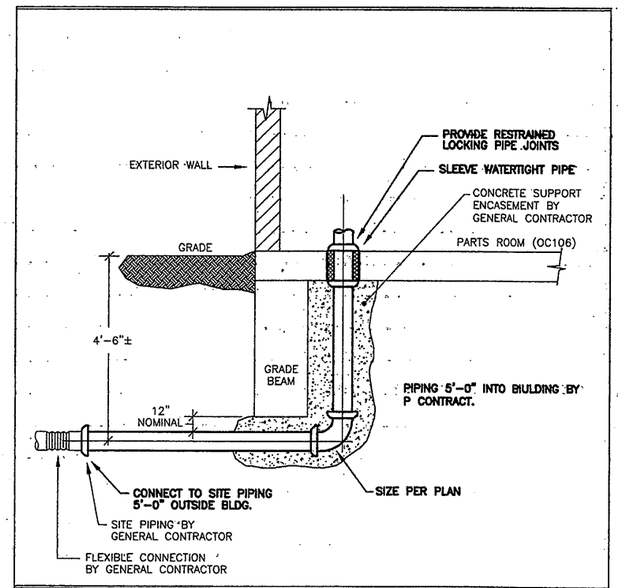


NOT TO SCALE

NOTES:
A. HYDROSTATIC TESTS SHALL BE MADE BEFORE THE JOINTS ARE COVERED SO THAT ANY LEAKS MAY BE READILY DETECTED.
B. TRENCHING, BACKFILLING PER AWWA C600
C. LAYING CONDITIONS PER AWWA C150
D. PIPE LAYING, ENTRENCHING BY P TRADE.

LAYING CONDITIONS FOR DUCTILE–IRON PIPE



FIRE MAIN ENTRANCE DETAIL

RECORD DRAWING

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DATE: 12/13/05 PER: REG

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06/27/01 RAB AJK/ERH
0659FP005

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Checked by ERH

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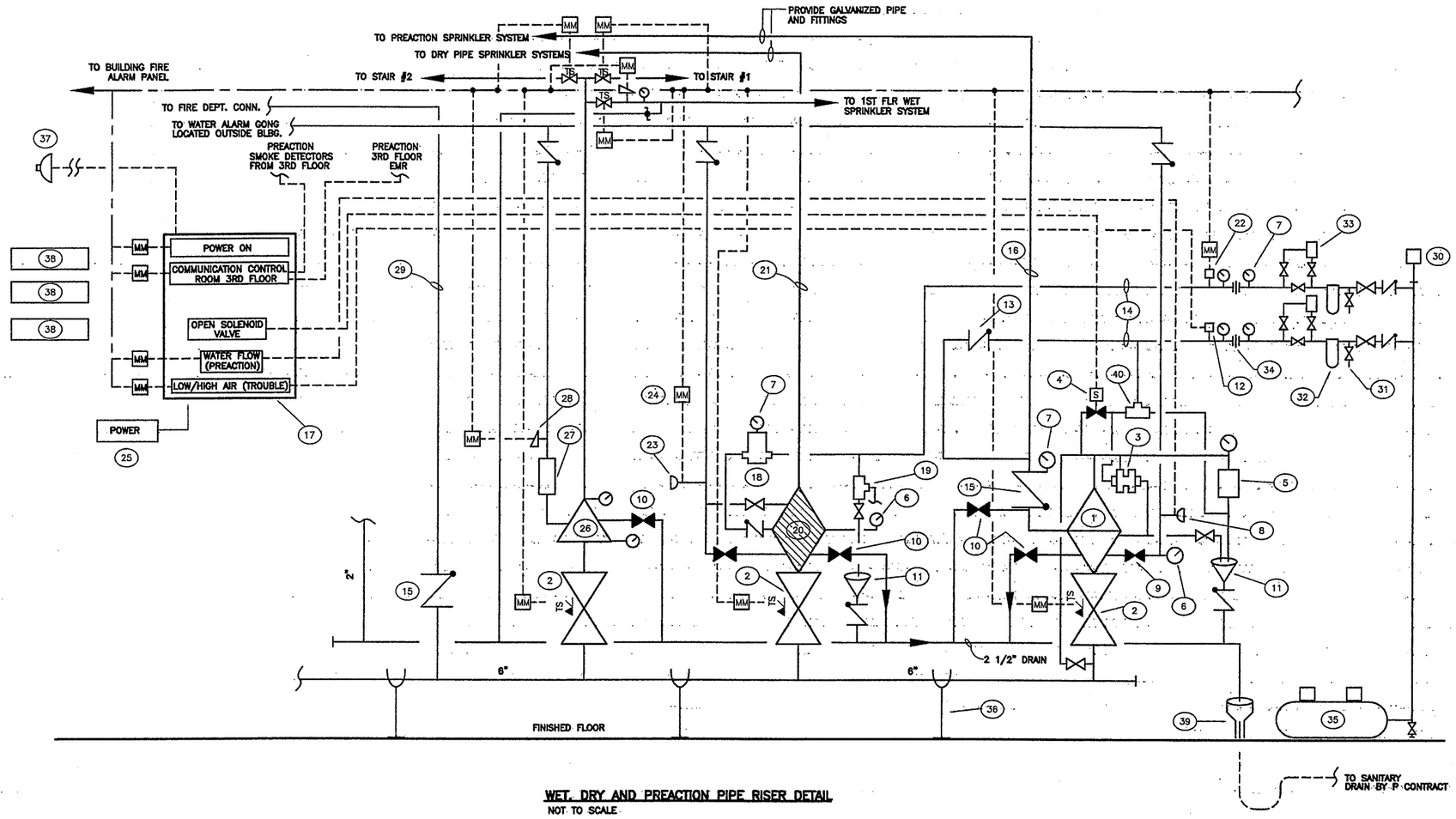
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
OPERATIONS CENTER
SCHEMATICS AND DETAILS
FIRE PROTECTION

File Number 00659
Date APRIL 2001

FP–005

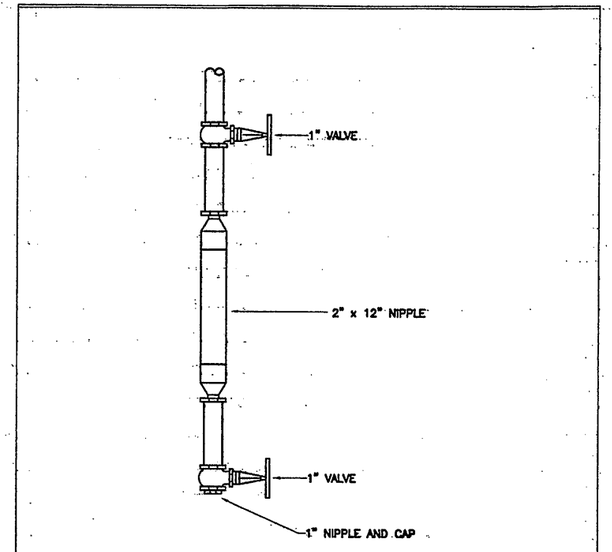


WET, DRY AND PREACTION PIPE RISER DETAIL

NOT TO SCALE

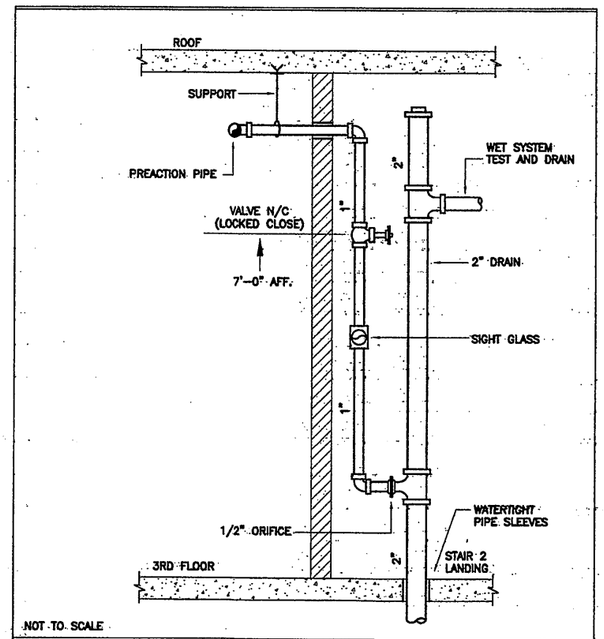
Mark	Description
1	DELUGE VALVE AND TRIM
2	OS&Y WITH TAMPER SWITCH
3	PREACTION PRESSURE OPERATED RELIEF VALVE
4	SOLENOID VALVE (FM APPROVED)
5	EMERGENCY MANUAL RELEASE
6	PRESSURE GAUGE
7	PRESSURE GAUGE (AIR)
8	PREACTION FLOW ALARM PRESSURE SWITCH
9	TEST VALVE (N/C)
10	1 1/2" ANGLE VALVE DRAIN (N/C)
11	DRIP CUP
12	PREACTION AIR SUPERVISORY SWITCH
13	CHECK VALVE
14	AIR SUPPLY LINES
15	CHECK VALVE (PREACTION)
16	3" PREACTION RISER (GALVANIZED)
17	PREACTION CONTROL PANEL
18	MOD. E-1 ACCELERATOR
19	MOD. B-1 ANTI-FLOOD DEVICE
20	DRY PIPE ALARM VALVE AND TRIM
21	3" DRY PIPE SYSTEM RISER (GALVANIZED)
22	DRY SYSTEM AIR SUPERVISORY SWITCH
23	DRY SYSTEM FLOW ALARM PRESSURE SWITCH
24	MONITOR MODULE (BY E-CONTRACT)
25	PREACTION PANEL POWER, WIRING AND CONN. TO FIRE ALARM SYSTEM (BY E-CONTRACT)
26	4" WET PIPE ALARM VALVE AND TRIM
27	RETARD CHAMBER
28	WET FLOW ALARM PRESS. SWITCH
29	4" FIRE DEPARTMENT CONNECTION
30	AIR SUPERVISORY SWITCH (COMPRESSOR ON/OFF CONTROL SWITCH
31	DRAIN
32	DEHYDRATOR
33	AIR MAINTENANCE DEVICE
34	ORIFICE
35	COMPRESSOR/TANK (POWER BY E-CONTRACT)
36	FLOOR SUPPORT
37	ELECTRIC ALARM BELL (LOCATE OUTSIDE SPRINKLER VALVE ROOM)
38	SPARER SPRINKLER CABINET
39	4" STANDPIPE DRAIN
40	PNEUMATIC RELEASE

NOTES:
- ALL MATERIALS SHALL BE UL AND FM APPROVED.
- INSTALL PER NFPA AND MANUFACTURER'S RECOMMENDATIONS.
- POWER, WIRING AND CONNECTION TO FIRE ALARM SYSTEM BY E-CONTRACT.
- ALL VALVES SHALL BE PROVIDED WITH SEAL AND LOCKS.
- PROVIDE IDENTIFICATION LABEL ON THE CEILING FOR ALL SHUT-OFF VALVES ABOVE THE CEILING.



NOT TO SCALE

DRY-PIPE SYSTEM AUXILIARY DRAIN



NOT TO SCALE

PREACTION INSPECTOR'S TEST DETAIL

NOTE:

REFER TO ATTACHED DAVIS ULMER RECORD DRAWINGS (FP-1, FP-2, FP-3 AND FP-1AB) FOR FIRE PROTECTION RECORD DRAWING INFORMATION.

RECORD DRAWING

THESE DRAWINGS HAVE BEEN REVISED TO REFLECT MAJOR CHANGES, IF ANY, WHICH OCCURRED DURING CONSTRUCTION. REVISIONS ARE BASED UPON INFORMATION SUPPLIED BY CONTRACTOR.

DATE: 12/13/05 PER: RCG

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED IN THE TITLE BLOCK. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.

06/27/01 RAB AJK/ERH
0659FP006

NOT TO SCALE

NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
1		AS BID	
2	11/30/05	RECORD DRAWING	RCG

In charge of FJS
Designed by ERH
Drawn by AJK
Checked by ERH

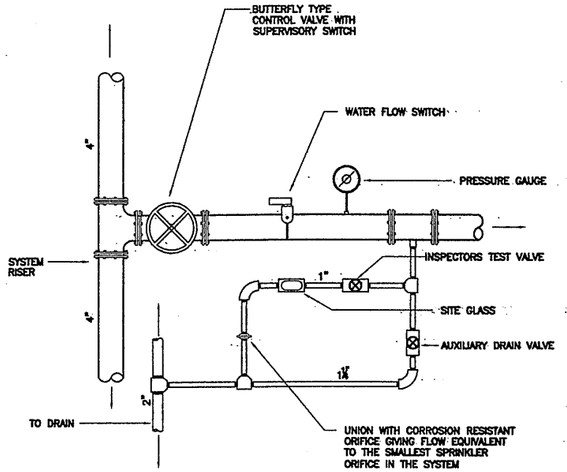
ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

RAM-TECH ENGINEERS, P.C.
CONSULTING ENGINEERS
SYRACUSE, NEW YORK

ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
OPERATIONS CENTER
SCHEMATICS AND DETAILS
FIRE PROTECTION

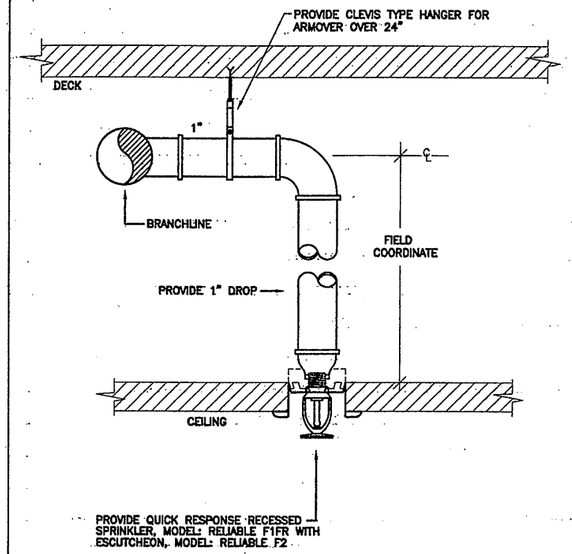
File Number 00659
Date APRIL 2001

FP-006



NOT TO SCALE

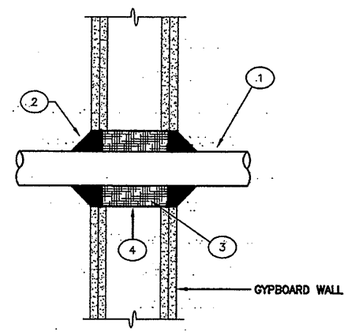
TYPICAL FIRE SPRINKLER FLOOR CONTROL VALVE ASSEMBLY



NOTE: BOTTOM CONNECTION IS NOT PERMITTED.

NOT TO SCALE

(TYP) SPRINKLER (BELOW THE CEILING) CONNECTION



USE UL OR FM DESIGN
UL DESIGN #: W-L-1024 (2 HOUR RATING)

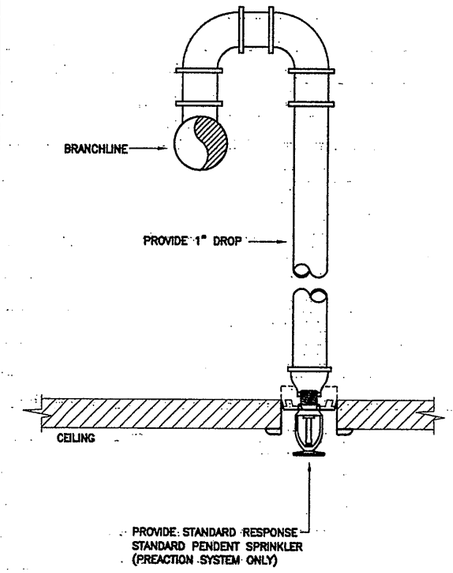
NOT TO SCALE

MARK	DESCRIPTION
1	SPRINKLER PIPE
2	FIRE SEALANT (METACAULK OR APPROVED EQUAL)
3	MINERAL WOOL INSULATION
4	STEEL SLEEVE

GENERAL NOTES:

1. FOR CONCRETE/BLOCKWALL USE UL DESIGN # CL-AJ-1076

FIRE STOP DETAIL



NOT TO SCALE

PREACTION SPRINKLER GOOSENECK CONNECTION

NOTE:

REFER TO ATTACHED DAVIS ULMER RECORD DRAWINGS (FP-1, FP-2, FP-3 AND FP-1AB) FOR FIRE PROTECTION RECORD DRAWING INFORMATION.

RECORD DRAWING

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DATE: 12/13/05 PER: RCG

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06/27/01 RAB AJK/ERH
0659FP007

NOT TO SCALE

NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

No.	Date	Revisions	Init
0	4/20/01	ISSUED FOR APPROVAL	
1		AS BID	
2	11/30/05	RECORD DRAWING	RCG

In charge of FJS
Designed by ERH
Drawn by AJK
Checked by FJS

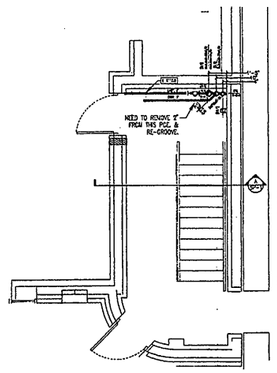
ENVIRONMENTAL ENGINEERING ASSOCIATES, LLP
SYRACUSE, NEW YORK

RAM-TECH ENGINEERS, P.C.
CONSULTING ENGINEERS
SYRACUSE, NEW YORK

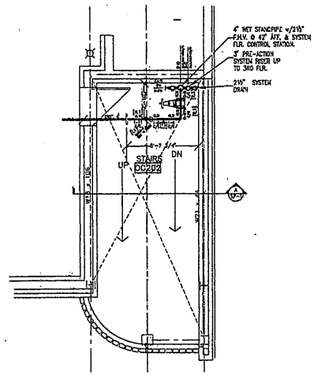
ONONDAGA COUNTY • DEPARTMENT OF DRAINAGE AND SANITATION • SYRACUSE, NEW YORK
METROPOLITAN SYRACUSE WASTEWATER TREATMENT PLANT
STAGE III AMMONIA AND STAGE II PHOSPHORUS REMOVAL PROJECT
OPERATIONS CENTER
DETAILS
FIRE PROTECTION

File Number 00659
Date APRIL 2001

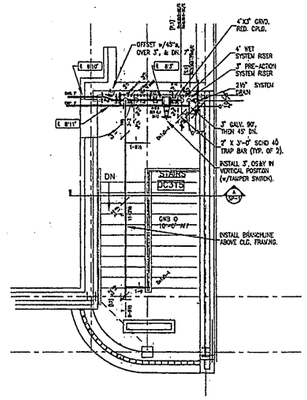
FP-007



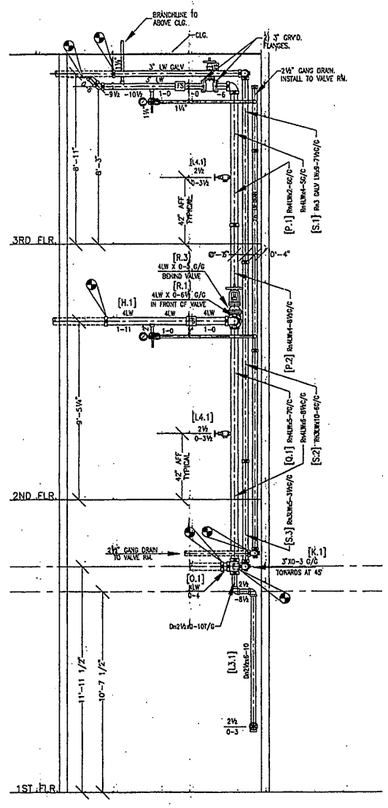
STAIR #1 - 1ST FLR.
SCALE: 1/4" = 1'-0"



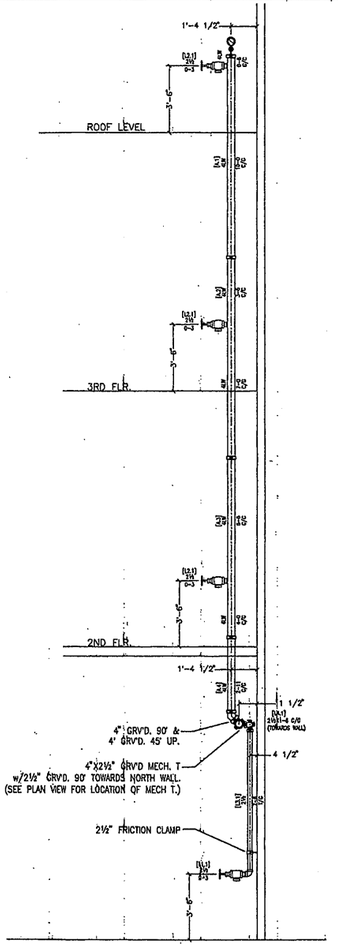
STAIR #1 - 2ND FLR.
SCALE: 1/4" = 1'-0"



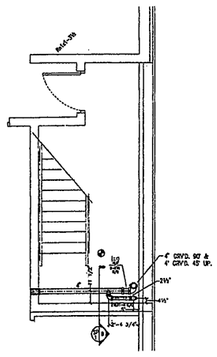
STAIR #1 - 3RD FLR.
SCALE: 1/4" = 1'-0"



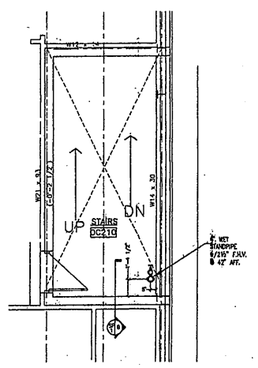
A STAIR #1 - ELEVATION
SCALE: 3/16" = 1'-0"



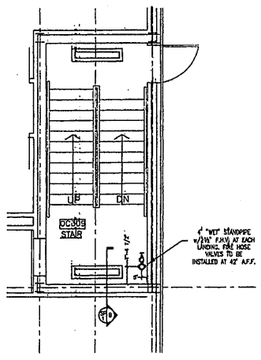
B STAIR #2 - ELEVATION
SCALE: 3/8" = 1'-0" (LOOKING NORTH)



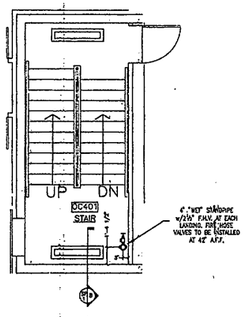
STAIR #2 (BACK) - 1ST FLR.
SCALE: 1/4" = 1'-0"



STAIR #2 (BACK) - 2ND FLR.
SCALE: 1/4" = 1'-0"



STAIR #2 (BACK) - 3RD FLR.
SCALE: 1/4" = 1'-0"



STAIR #2 (BACK) - ROOFLEVEL
SCALE: 1/4" = 1'-0"

"AS BUILT" DRAWING
DATE: 8/19/04

FP SYMBOL LEGEND:

= UPRIGHT SPRINKLER	= HYDRAULIC REF. POINT
= HANGER	= CLG/DECK ELEVATION
= RISE/DROP FROM TEE	= PIPE @ AFF
= RISE/DROP FROM 90°	= CONNECT TO EXISTING
= GROOVED COUPLING	

HYDRAULIC DESIGN DATA

	CALCULATION # 1	CALCULATION # 2	CALCULATION # 3
Hazard Class.			
Hazard Class.			
System Type			
Density	GPM/s	GPM/s	GPM/s
Calculated Area	s.f.	s.f.	s.f.
Area per Sprinkler	s.f.	s.f.	s.f.
Demand	GPMs Psi	GPMs Psi	GPMs Psi

FLOW TEST INFO: Firepump: GPMs Psi Date: Time: Test By:
Location:

Orifice Size	No. of Outlet	Pitot Press Psi	Static Psi	Residual Psi	Flow GPM	W/D Pipe
1						@ ft
2						ft
3						SAFETY PSI 10

CONTRACTOR: DAVIS-ULMER SPRINKLER CO., INC.
"Since 1946"
ADDRESS: Liverpool, NY

REVISION

DATE	DESCRIPTION	BY

IMPORTANT
TO PREVENT FREEZING OF WATER IN WET PIPE SPRINKLER PIPING, OWNERS TO PROVIDE SUFFICIENT HEAT THROUGHOUT AREAS WHERE SPRINKLER PIPES ARE INSTALLED, UNLESS AN ANTI-FREEZE SYSTEM.

SPRINKLER SCHEDULE & LEGEND

SYMBOL	SPRINKLER DESCRIPTION	K-	ORIFICE	TEMP.	FINISH	QTY.

HEAD CAST & WRENCH(ES) PROVIDED — TOTAL COUNT THIS SHEET =
Finished Design Software

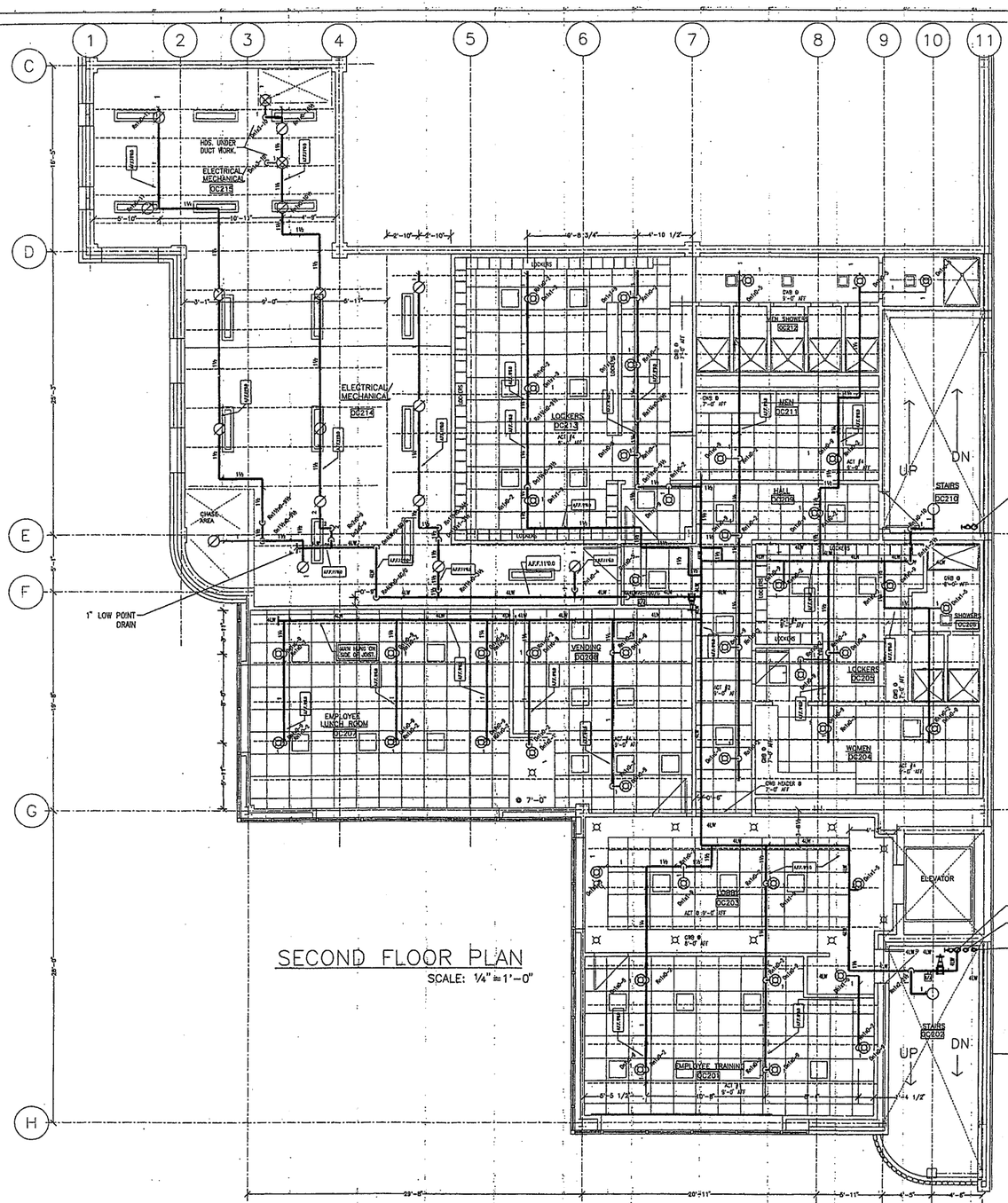
DAVIS-ULMER "SINCE 1946"

SYRACUSE METRO WATER TREATMENT PLANT
Hiawatha Blvd., Syracuse, NY
Fire Protection - Stair #1 & 2

DAVIS-ULMER SPRINKLER CO., INC.
"Serving New York State Since 1946"
7037 Edgecomb Dr., Liverpool, NY
PHONE (315) 451-0971 FAX (315) 451-3890

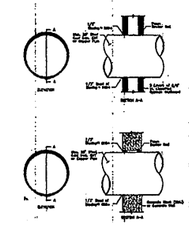
NORTH

DESIGNER	KTB
SCALE	AS NOTED
CHECK BY	
FILE NUMBER	02321
APPROVAL	AHJ
DATE	5/28/04
DWG. NO.	SP-1



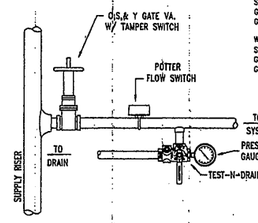
SECOND FLOOR PLAN

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



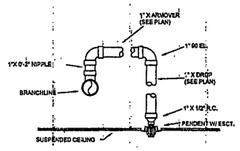
FIRE STOP DETAILS

NOT TO SCALE



FLR. CONTROL ASSEMBLY

NOT TO SCALE



TYP. RETURN BEND ASSEMBLY

SYSTEM DESIGN NOTES

Dry system designed LAW. NFPA-13 for Ordinary GP. 2 Hazard, Calculated at a Density of .20GPM/1950 SQ. FT.) with a maximum Hedd Spacing of 130 SQ. FT. w/250 GPM Hose Allowance.

Pre-Action system designed LAW. NFPA-13 for Ordinary GP. 1 Hazard, Calculated at a Density of .15GPM/1950 SQ. FT.A. with a maximum Hedd Spacing of 130 SQ. FT. w/250 GPM Hose Allowance. *(Actual area of operation is 1018 SQ. FT.)

Wet system designed LAW. NFPA-13 for Ordinary GP. 1 Hazard, Calculated at a Density of .15GPM/1500 SQ. FT.A. with a maximum Hedd Spacing of 130 SQ. FT. w/250 GPM Hose Allowance. *(Area of operation reduced to 950 SQ. FT. through the use of Quick Response sprinklers as per NFPA-13 ('99 Edit.), Section #7-2.3.2.4)

NFPA NOTE:

4-14.3.3 In dry pipe systems and portions of preaction systems subject to freezing, branch lines shall be pitched at least 1/2 in per 10 ft and mains shall be pitched at least 1/4 in per 10 ft

HANGERS

Pipe hangers shall be installed as required by NFPA for supporting sprinkler piping. No other piping and/or devices are to be attached to the sprinkler pipe hanger system unless the hanger has been specifically designed for the additional loading.

HANGER MATERIALS

All Thread Rod – Black Carbon Steel
Misc. Hanger Material (eg. Top Beam Clehp) – Black

PIPE MATERIALS

All Pipe for dry & pre-action system to be galvalized steel.
Pipe shall be as per the following schedule- (Unless Noted Otherwise)

Lind Piping	–	Galvanized Schedule. 40
X-Main Piping	–	Galvanized Schedule. 10
Bulk Main Piping	–	Galvanized Schedule. 10
Riser Piping	–	Galvanized Schedule. 10

All pipe for wet system &; standpipes to be black steel.
Pipe shall be as per the following schedule- (Unless Noted Otherwise)

Lind Piping	–	Black Schedule 40
X-Main Piping	–	Black Schedule 10
Bulk Main Piping	–	Black Schedule 10
Riser Piping	–	Black Schedule 10

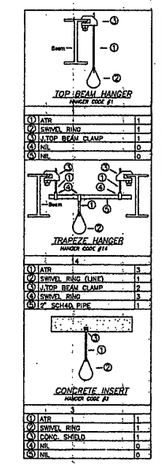
FITTINGS

Dry & Pre-Action System:

Screwed Fittings	–	Galvanized
Grooved Fittings	–	Galvanized
Grooved Couplings	–	Galvanized

Wet System:

Screwed Fittings	–	Black
Grooved Fittings	–	Black
Grooved Couplings	–	Black



HANGER DETAILS

NOT TO SCALE

FP SYMBOL LEGEND:

- = UPRIGHT SPRINKLER
- = HANGER
- = RISE/DROP FROM TEE
- = RISE/DROP FROM 90°
- = GROOVED COUPLING
- (X) = HYDRAULIC REF. POINT
- [6'-0"] = CLG/DECK ELEVATION
- [AFF] = PIPE @ AFF
- = CONNECT TO EXISTING

"AS BUILT" DRAWING
DATE: 8/15/04

HYDRAULIC DESIGN DATA

	CALCULATION # 1	CALCULATION # 2	CALCULATION # 3
Hazard Class.			
Hazard Class.			
System Type			
Density	GPM/S	GPM/S	GPM/S
Calculated Area	S	S	S
Area per Sprinkler	S	S	S
Demand	GPMØ PSI	GPMØ PSI	GPMØ PSI

FLOW TEST INFO: Firepump#: GPMØ Psi | Date: Time: Test By:
Location:

Orifice Size	No. of Outlet	Pitot Press Psi	Static Psi	Residual Psi	Flow GPM	U/G Flow:
1						GPM
2						FT.
3						SAFETY PSI 10

CONTRACTOR: DAVIS-ULMER SPRINKLER CO., INC.
ADDRESS: Liverpool, NY.

REVISION

DATE	DESCRIPTION	BY

IMPORTANT
TO PREVENT FREEZING OF WATER IN WET PIPE SPRINKLER PIPING, OWNERS TO PROVIDE SUFFICIENT HEAT THROUGHOUT AREAS WHERE SPRINKLER PIPES ARE INSTALLED, UNLESS AN ANTI-FREEZE SYSTEM.

SPRINKLER SCHEDULE & LEGEND

SYMBOL	SPRINKLER DESCRIPTION	ORIFICE	TEMP.	FINISH	QUANTITY
⊕	RELIABLE MOD. F1FR REC. PEN.	½"	155°	CH	51
○	RELIABLE MOD. F1 SSU	½"	139°	BR	2
⊗	RELIABLE MOD. F1 SSU (w/SHIELD)	½"	212°	BR	2
⊘	RELIABLE MOD. G SSU	1/2"	212°	BR	10

HEAD CART & WRENCH(ES) PROVIDED — TOTAL COUNT THIS SHEET = 65
Firecad® Design Software

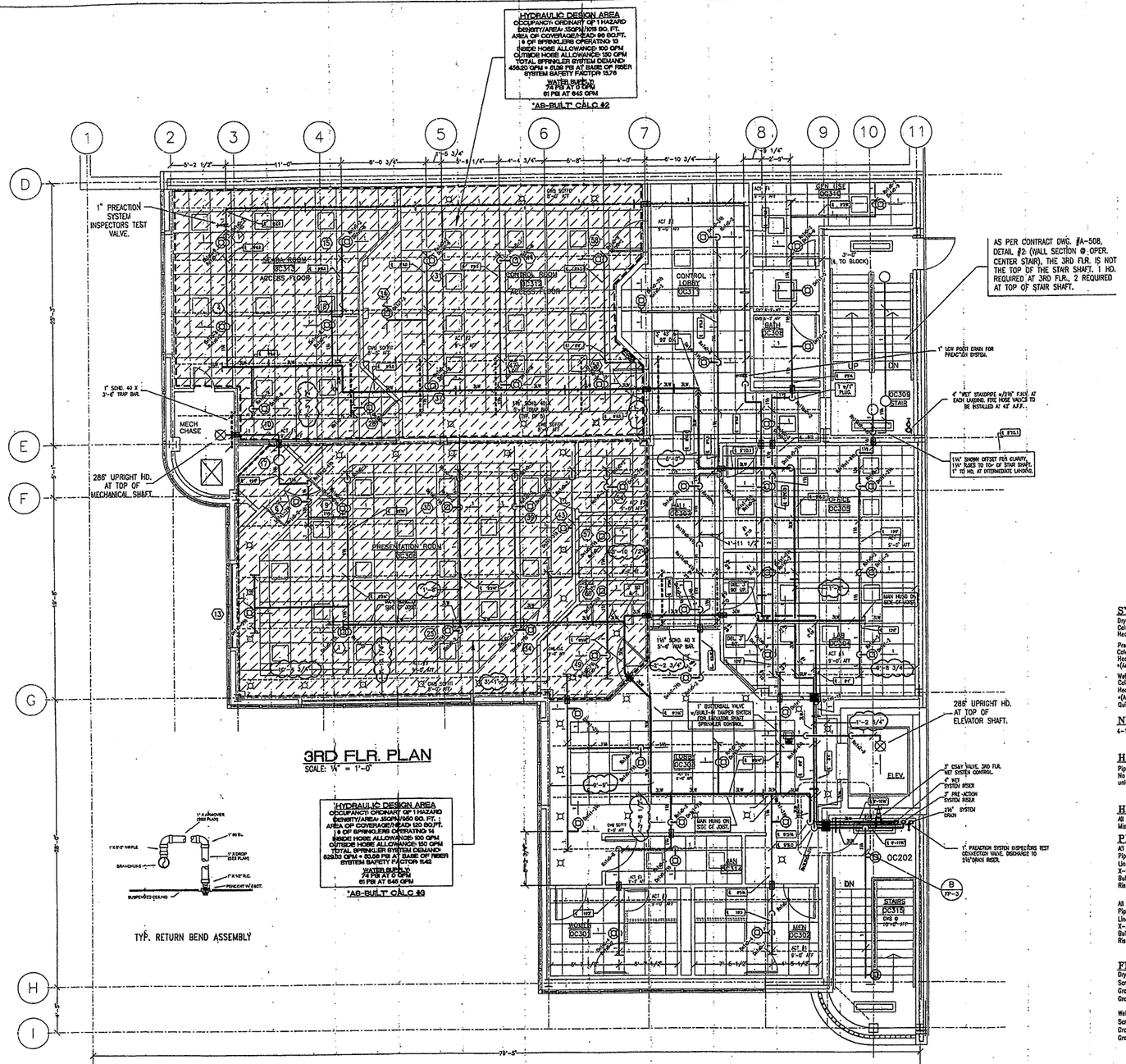
DAVIS-ULMER "SINCE 1946"

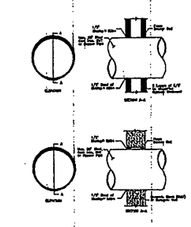
Syracuse Metro. Water Treatment Plant
Stage 3 Ammonia & Stage 2 Phosphorus Removal Project
Fire Protection

DAVIS-ULMER SPRINKLER CO., INC.
"Serving New York State Since 1946"
7637 Edgecomb Dr. Liverpool, NY
PHONE (315) 451-0971 FAX (315) 451-3800

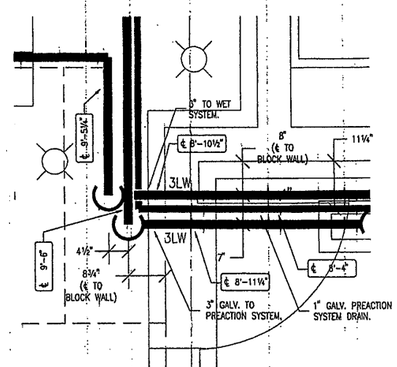
NORTH

DESIGNER	KEB
SCALE	AS NOTED
CHECK BY.	MK
FILE NUMBER	02321
APPROVAL:	AHJ
DATE	5/14/04
DRAWING NO.	FP-2

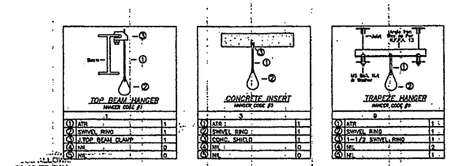




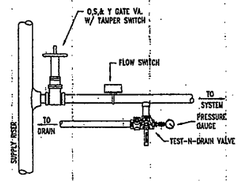
FIRE STOP DETAILS
NOT TO SCALE



B STAIR DETAIL
SCALE: 1"=1'-0"



HANGER DETAILS
NOT TO SCALE



FLR. CONTROL ASSEMBLY
NOT TO SCALE

SYSTEM DESIGN NOTES
Dry System designed I.A.W. NFPA-13 for Ordinary GP. 2 Hazard, Calculated at a Density of .20GPM/1950 SQ. FT., with a maximum Head Spacing of 130 SQ. FT. w/250 GPM Hose Allowance.

Pre-Action system designed I.A.W. NFPA-13 for Ordinary GP. 1 Hazard, Calculated at a Density of .15GPM/1950 SQ. FT.+, with a maximum Head Spacing of 130 SQ. FT. w/250 GPM Hose Allowance. +(Actual area of operation is 1018 SQ. FT.)

Wet System designed I.A.W. NFPA-13 for Ordinary GP. 1 Hazard, Calculated at a Density of .15GPM/1500 SQ. FT.+, with a maximum Head Spacing of 130 SQ. FT. w/250 GPM Hose Allowance. +(Area of operation reduced to 850 SQ. FT. through the use of Quick Response sprinklers as per NFPA-13 ('99 Edit.), Section #7-2.3.2.4)

NFPA NOTE:
4-14.3.3 In dry pipe systems and portions of preaction systems subject to freezing, branch lines shall be pitched at least 1/2 in per 10 ft and mains shall be pitched at least 1/4 in per 10 ft.

HANGERS
Pipe hangers, shall be installed as required by NFPA for supporting sprinkler piping. No other piping and/or devices are to be attached to the sprinkler pipe hanger system unless the hanger has been specifically designed for the additional loading.

HANGER MATERIALS
All Thread Rod = Black Carbon Steel
Misc. Hanger Material (eg. Top Beam Clamp) = Black

PIPE MATERIALS
All pipe for dry & pre-action system to be galvanized steel.
Pipe shall be as per the following schedule- (Unless Noted Otherwise)

Line Piping	- Galvanized Schedule 40
X-Main Piping	- Galvanized Schedule 10
Bulk Main Piping	- Galvanized Schedule 10
Riser Piping	- Galvanized Schedule 10

All pipe for wet system & standpipes to be black steel.
Pipe shall be as per the following schedule- (Unless Noted Otherwise)

Line Piping	- Black Schedule 40
X-Main Piping	- Black Schedule 10
Bulk Main Piping	- Black Schedule 10
Riser Piping	- Black Schedule 10

FITTINGS
Dry & Pre-Action System:

Screwed Fittings	- Galvanized
Grooved Fittings	- Galvanized
Grooved Couplings	- Galvanized

Wet System:

Screwed Fittings	- Black
Grooved Fittings	- Black
Grooved Couplings	- Black

FP SYMBOL LEGEND:
- = UPRIGHT SPRINKLER
- = HANGER
- = RISE/DROP FROM TEE
- = RISE/DROP FROM 90°
- = GROOVED COUPLING
- (X) = HYDRAULIC REF. POINT
- E-2" = CLG/DECK ELEVATION
- 8'-10" = PIPE ℄ AFF
- = CONNECT TO EXISTING

'AS BUILT' DRAWING
DATE: 8/15/04

HYDRAULIC DESIGN DATA

	CALCULATION # 1	CALCULATION # 2	CALCULATION # 3
Hazard Class			ORDINARY GP 1
Hazard Class.			WET
System Type			
Density	GPM/ft	GPM/ft	.15 GPM/ft
Calculated Area	ft	ft	950 ft
Area per Sprinkler	ft	ft	120 ft
Demand	GPM@ Psi	GPM@ Psi	GPM@ Psi

FLOW TEST INFO: Firepumps: GPM@ Psi Date: Time: Test By:
Ladstion:

	Orifice Size	No. of Outlet	Pitot Press Psi	Static Psi	Residual Psi	Flow GPM	U/G Pipe
1				74	61	645	6"
2							6"
3							SAFETY PSI 0

CONTRACTOR: DAVIS-ULMER SPRINKLER CO., INC.
ADDRESS: Liverpool, NY

REVISION

DATE	DESCRIPTION	BY

IMPORTANT
TO PREVENT FREEZING OF WATER IN WET PIPE SPRINKLER PIPING, OWNERS TO PROVIDE SUFFICIENT HEAT THROUGHOUT AREAS WHERE SPRINKLER PIPES ARE INSTALLED, UNLESS AN ANTI-FREEZE SYSTEM.

SPRINKLER SCHEDULE & LEGEND

SYMBOL	SPRINKLER DESCRIPTION	ORIFICE	TEMP.	FINISH	QUANTITY
⊕	RELIABLE MOD. FIRE REC. PEN.	½"	155°	CH	53
○	RELIABLE MOD. FI SSU	½"	155°	BR	4
⊗	RELIABLE MOD. FI SSU	½"	286°	BR	1

HEAD CAST & WRENCH(ES) PROVIDED — TOTAL COUNT THIS SHEET = 58
Hydraulic Design Software

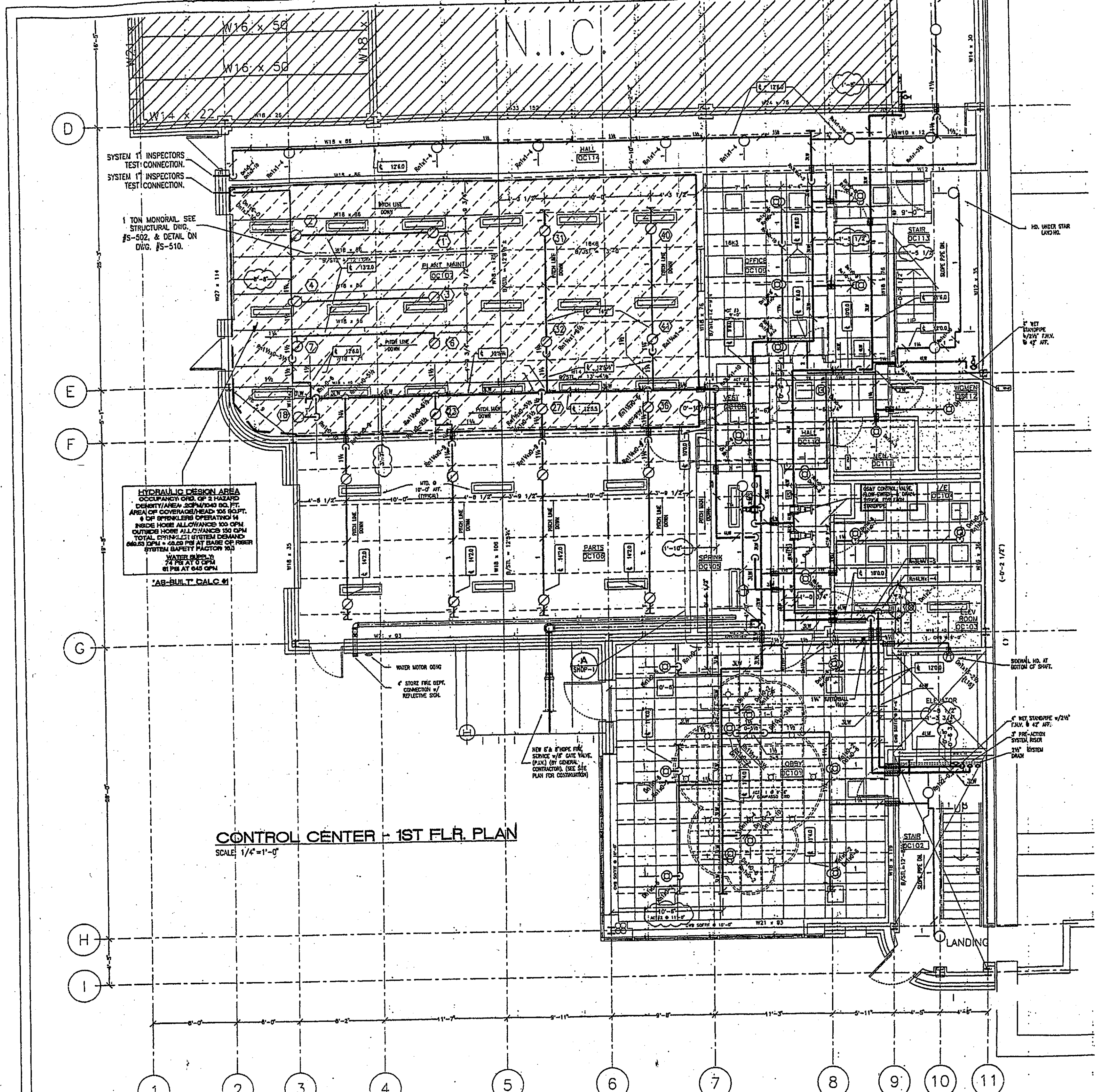
DAVIS-ULMER "SINCE 1946"

SYRACUSE METRO. WATER TREATMENT PLANT
Stage 3 Ammonia & Stage 2 Phosphorus Removal Project
Fire Protection — 3rd Flr.

DAVIS-ULMER SPRINKLER CO., INC.
"Serving New York State Since 1946"
7637 Edgecomb Dr., Liverpool, NY
PHONE (315) 451-0971 FAX (315) 451-3895

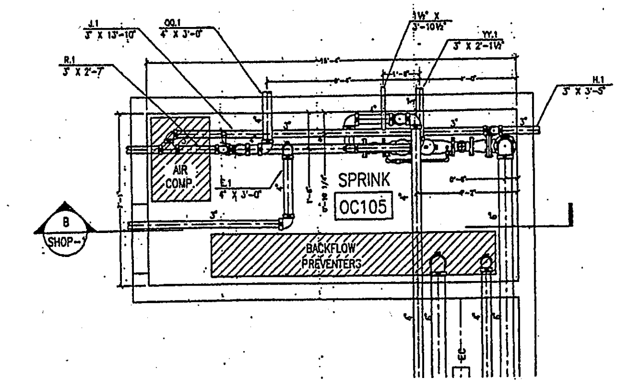
NORTH

DESIGNER	KEB
SCALE	AS NOTED
CHECK. BY	MH
FILE NUMBER	02321
APPROVAL	AHJ
DATE	9/15/03
DRAWING NO.	FP-3



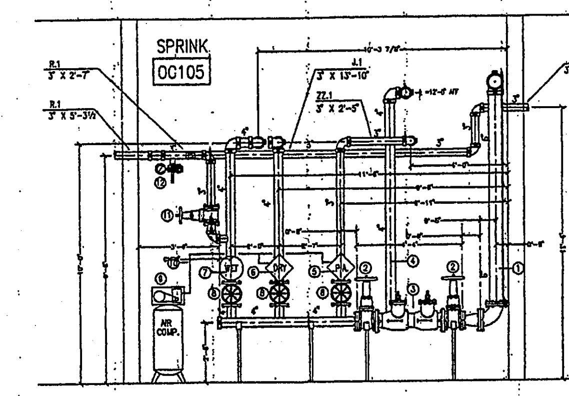
CONTROL CENTER - 1ST FLR. PLAN

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



DETAIL A - RISER RM. PLAN

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



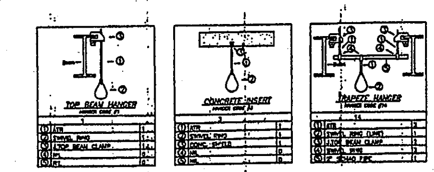
SECTION B - RISER ELEVATION

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

1. 6" FIRE PROTECTION SUPPLY
2. 6" OS&Y VALVE w/TAMPER SWITCH
3. 6" WATTS #709 DOUBLE CHECK ASSEMBLY
4. 4" TO STORZ FDC
5. 4" DELUGE VALVE (PREACTION SYSTEM)
6. 4" DRY PIPE VALVE
7. 4" ALARM CHECK VALVE
8. 4" OS&Y VALVE w/TAMPER SWITCH
9. AIR COMPRESSOR
10. ¾" GALVANIZED AIR LINE
11. 3" OS&Y VALVE w/TAMPER SWITCH
12. 1¼" TEST 'N DRAIN VALVE

SLEEVE SCHEDULE

PIPE⌀	SLEEVE⌀	CORE⌀	TYPE	QTY.
1"	2"	2½"	S40	
1¼"	2"	2½"	S40	
1½"	2½"	3"	S40	
2"	3"	4"	S40	
3"	4"	5"	S40	
4"	6"	6"	16 G	
6"	8"	8"	16 G	



HANGER DETAILS

NOT TO SCALE

"AS BUILT" DRAWING
DATE: 8/15/04

PIPING NOTES:

1. ALL EXPOSED PIPING TO BE PRIMED & PAINTED.
2. ALL WALL PENETRATIONS TO BE SLEEVED & FIRE CAULKED.
3. ALL DRY SYSTEM PIPING TO BE GALVANIZED (PRIMED & PAINTED).
4. ALL DRY SYSTEM MAINS TO BE PITCHED MIN. 1/4" PER 10'.
5. ALL DRY SYSTEM BRANCHLINES TO BE PITCHED MIN. 1/2" PER 10'.

HYDRAULIC DESIGN DATA

	CALCULATION # 1	CALCULATION # 2	CALCULATION # 3
Hazard Class.	ORDINARY GP 2		
Hazard Class.			
System Type	DRY		
Density	.20 GPM/sf	GPM/sf	GPM/sf
Calculated Area	1043 sf	sf	
Area per Sprinkler	105 sf	sf	
Demand	GPM@ Psi	GPM@ Psi	GPM@ Psi

FLOW TEST INFO:	Firepump: GPM@ Psi	Date:	Time:	Test By:	
	Location:				
Orifice Size	No. of Outlet	Pitot Press Psi	Static Psi	Residual Psi	Flow GPM	U/G Pipe:
1			74	61	845	
2						
3						SAFETY (PSI) 0

CONTRACTOR: DAVIS-ULMER SPRINKLER CO., INC.
"Since 1946"
ADDRESS: Liverpool, NY

REVISION		
DATE	DESCRIPTION	BY

IMPORTANT
TO PREVENT FREEZING OF WATER IN WET PIPE SPRINKLER PIPING, OWNERS TO PROVIDE SUFFICIENT HEAT THROUGHOUT AREAS WHERE SPRINKLER PIPES ARE INSTALLED, UNLESS AN ANTI-FREEZE SYSTEM.

SPRINKLER SCHEDULE & LEGEND

SYMBOL	SPRINKLER DESCRIPTION	K	ORIFICE	TEMP.	FINISH	QTY.
Ø	RELIABLE F1 SSU	5.62	1/2"	200'	BR	21
O	RELIABLE F1 SSU	5.62	1/2"	155'	BR	17
⊕	RELIABLE F1FR QR REC PEN	5.62	1/2"	155'	CH	23
HEAD CAB'T & WRENCH(ES) PROVIDED	TOTAL COUNT THIS SHEET =					60

Firelcad Design Software

DAVIS-ULMER "SINCE 1946"

Syracuse Metro Water Treatment Plant

Stage 3 Ammonia & Stage 2 Phosphorus Removal Project

Fire Protection – 1st Flr. – AS BUILT

DAVIS-ULMER SPRINKLER CO., INC.
"Serving New York State Since 1946"
7637 Edgecomb Dr., Liverpool, NY
PHONE (315) 451-0071 FAX (315) 451-3890

NORTH

DESIGNER	KEB
SCALE	AS NOTED
CHECK BY	
FILE NUMBER	02321
APPROVAL	AHJ
DATE	3/05/04
DWG. NO.	FP-1AB