Corporate Environmental Programs
General Electric Company
100 Woodlawn Ave., Pittsfield, MA 01201

Transmitted Via Hand Delivery and Federal Express

March 23, 2000

Bryan Olson
U.S. EPA New England
Mail Code: HBT
One Congress Street
Boston, MA 02203

Re: Modifications to Leachate Collection System,
Building 71 On-Plant Consolidation Area -
GE-Pittsfield/Housatonic River Site
Pittsfield, Massachusetts

Dear Mr. Olson:

I. Introduction

This letter summarizes recent activities conducted by the General Electric Company (GE) regarding modifications to the existing leachate collection system at the Building 71 On-Plant Consolidation Area (OPCA) in Pittsfield, Massachusetts. As you know, in 1999 GE designed and constructed the first phase of the Building 71 OPCA for the consolidation of materials resulting from various removal actions within the GE-Pittsfield/Housatonic River Site. In accordance with a document entitled *Detailed Work Plan for On-Plant Consolidation Areas* [Work Plan; Blasland, Bouck & Lee, Inc. (BBL), June, 1999], an approximate 2-acre area of the Building 71 OPCA was constructed. This area included, among other items, the construction of the impermeable base liner system, the leachate collection system, and stormwater management facilities. However, remediation materials generated in 1999 were not actively consolidated within the Building 71 OPCA; instead, with approval from the United States Environmental Protection Agency (USEPA), these materials (approximately 9,000 cubic yards) were placed and secured in a temporary stockpile located immediately adjacent to the Building 71 OPCA.

In anticipation of consolidating the existing stockpile materials within the Building 71 OPCA in the next few months (and thus, initiating "active" operations of the OPCA), GE has identified certain modifications related to the existing leachate collection system. These activities are primarily related to the existing leachate collection manhole, including physical changes to the manhole and the installation of the permanent leachate pumps (and related piping, controls, and instrumentation). The remainder of this letter summarizes these construction activities and identifies the anticipated implementation schedule. Although this letter is being provided to the USEPA for informational purposes, GE would welcome and consider any timely USEPA comments concerning this letter.

II. Anticipated Construction Activities

The 1999 Building 71 OPCA construction activities included provisions to collect and convey (for subsequent transport prior to treatment/disposal) any leachate that may be generated from the materials placed in the Building 71 OPCA. The existing components of the leachate collection system include the base liner, the leachate collection/conveyance piping, and the leachate collection manhole.

As currently constructed, the existing leachate collection system is fully functional and could support, with manual attendance, "active" use of the Building 71 OPCA. However, over the last several weeks, GE has identified and designed modifications to the existing system that allow its future operation to be more automated and closer to the anticipated configuration of the final leachate collection system (once the active consolidation activities are concluded and closure activities have been completed). As described below, the majority of these modifications pertain to the existing leachate collection manhole.

Attachment 1 to this letter contains the technical drawings and specifications that Blasland, Bouck & Lee, Inc. (BBL) has prepared. The anticipated modifications to the leachate collection system are fully described within these drawings/specifications, and are summarized as follows:

- The existing leachate collection manhole will be extended in height by approximately 5 ½ feet. The new section will be consistent with the current manhole section (i.e., double-wall, high-density polyethylene construction). The existing manhole cover and access hatch will be removed and reused, and following the manhole extension, an access platform will be constructed and the surrounding area will be graded.
- Within the collection manhole, two leachate pumps (each with a design pumping rate of approximately 40 gallons per minute [gpm] when operated individually, and approximately 65 gpm when operated concurrently) will be installed. Also included within the collection manhole will be various equipment to support the pump operations, including piping and valves, level floats, explosion-proof instrumentation, and related appurtences.

- External to the leachate collection manhole, several activities will be performed, including a partial relocation of the existing, double-wall leachate conveyance forcemain, provision of electrical power from an existing source, and installation of instrumentation/control wiring between control panels located at the leachate collection manhole and the temporary leachate collection/transfer area (discussed below).

In summary, the activities described above are intended to allow future leachate collection and conveyance operations to be conducted without full-time attendance by GE personnel. As leachate is generated within the Building 71 OPCA, it will be conveyed (via gravity flow) to the leachate collection manhole. There, the level controls within the manhole will initiate pump operations. The control logic within the manhole provides for alternate operation of the two pumps (under dry- or low-flow conditions) and both pumps concurrently, if needed, under high flow conditions. The control logic also includes provisions to detect and notify GE (via an autodialer) of potential alarm conditions (e.g., high water level, pump failure, etc.).

The collection of leachate for subsequent disposition will be conducted in a manner similar to that described in the Work Plan. In general, leachate pumped from the collection manhole will be routed to a designated collection area where a temporary storage tank (e.g., a frac tank) and a remote control panel will be located. Once the final method of leachate treatment is determined, and sufficient data are collected regarding actual long-term leachate generation rates and characteristics, a final permanent storage facility can be designed, if warranted.

III. Anticipated Schedule

This letter provides a summary of the modifications identified by GE related to the leachate collection system for the Building 71 OPCA. Separate from this letter, GE has prepared detailed design drawings and technical specifications for these modifications, and is currently using these materials to solicit cost proposals from qualified contractors.

GE anticipates that contractor selection will occur within the next few days and that construction activities will commence shortly thereafter. Tentatively, construction -- and subsequent start-up testing -- of the modified leachate collection system will be completed in early May 2000, to allow "active" operation of the OPCA to commence in mid-May 2000.

Please contact me with any questions concerning this letter and scope of the leachate collection system modification.

Sincerely,

Andrew T. Silfer (via)

Andrew T. Silfer, P.E.
Senior Technical Manager

JMN/plh

Enclosure

U:\PLH00\33701543.WPD

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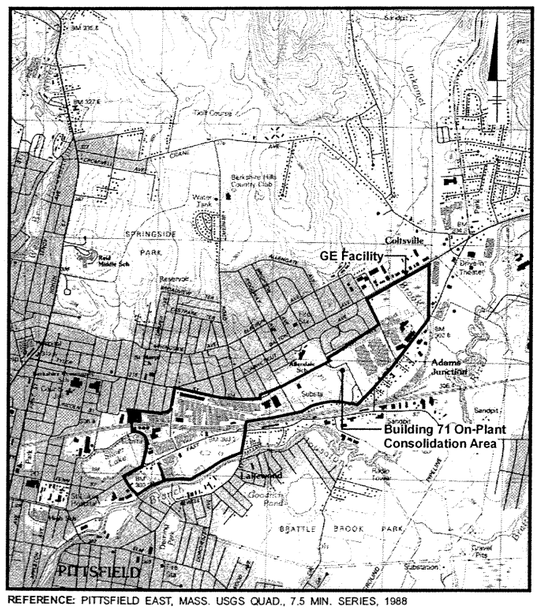
Public Repositories ECL 1-P-IV(A)(1)

Attachment 1

ATTACHMENT 1
TECHNICAL DRAWINGS

LEACHATE COLLECTION MANHOLE MODIFICATIONS

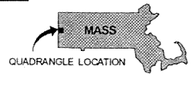
BUILDING 71 ON-PLANT CONSOLIDATION AREA



REFERENCE: PITTSFIELD EAST, MASS. USGS QUAD., 7.5 MIN. SERIES, 1988

LOCATION MAP

2000' 0 2000'



QUADRANGLE LOCATION

02/00 SYR-DS4-DJH, LBR
20185035/20185C01.CDR

MARCH 2000

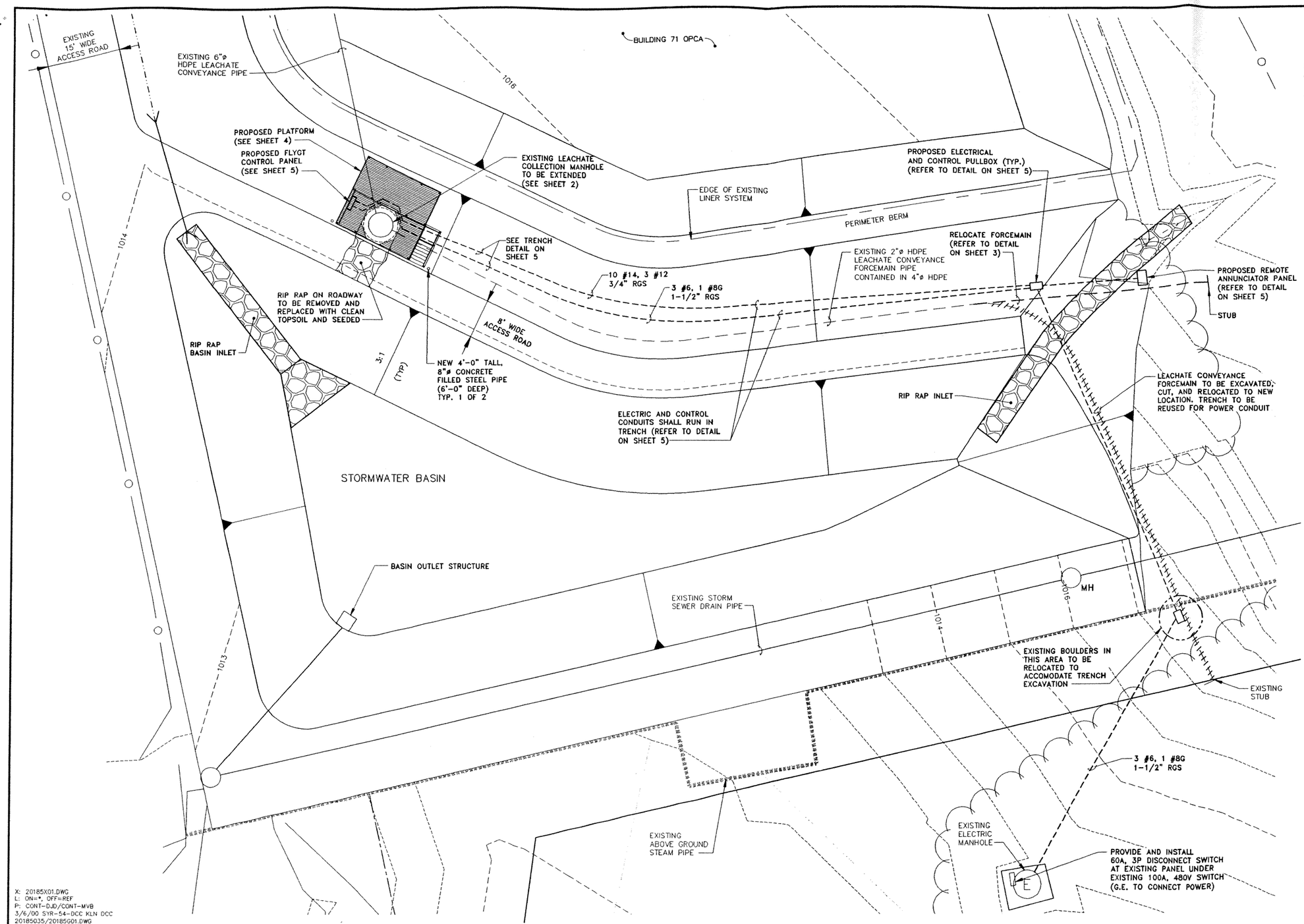
PREPARED FOR:

General Electric Company
Pittsfield, Massachusetts

PREPARED BY:

BBL
BLASLAND, BOUCK & LEE, INC.
engineers & scientists

INDEX TO DRAWINGS



X: 20185X01.DWG
L: ON=*, OFF=REF
P: CONT-DJD/CONT-MVB
3/6/00 SYR-54-DCC KLN DCC
20185035/20185G01.DWG

LEGEND

- 1019 — INDEX CONTOUR LINE
- INTERMEDIATE CONTOUR LINE
- PERIMETER DRAINAGE DITCH
- CULVERT
- CHAIN LINK FENCE
- EDGE OF BRUSH AND WOODS

NOTES:

1. ELEVATIONS SHOWN ARE REFERENCED TO NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1929.
2. HORIZONTAL DATUM IS REFERENCED TO THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM (NAD 1927).
3. CONTOUR INTERVAL EQUALS 1 FOOT.
4. DIFFERENCES NOTED BY THE CONTRACTOR BETWEEN BASE MAP INFORMATION AND ACTUAL SITE CONDITIONS, WHICH MAY AFFECT THE DESIGN CONFIGURATION, SHALL BE SUBMITTED TO GE. MODIFICATIONS MAY BE MADE TO THE DESIGN CONFIGURATION DURING PERFORMANCE OF THE SITE WORK AT THE DISCRETION OF G.E.
5. CONTRACTOR SHALL VERIFY THE PRESENCE AND LOCATION OF ALL ABOVE GROUND AND UNDER GROUND SITE FEATURES IN THE VICINITY OF PROPOSED CONSTRUCTION ACTIVITIES PRIOR TO COMMENCEMENT OF SITE WORK. ADDITIONAL SITE FEATURES MAY BE PRESENT WHICH ARE NOT SHOWN ON THIS DRAWING. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH GE TO DETERMINE THE PRESENCE AND LOCATION OF SUCH FEATURES SHOULD THEY EXIST AND THE LOCATION OF ON-SITE EASEMENTS, LEASE LINES, AND RIGHT-OF-WAYS.
6. INFORMATION REGARDING SITE SURVEY CONTROL WILL BE PROVIDED BY G.E. FOR CONTRACTOR USE PRIOR TO COMMENCEMENT OF SITE WORK. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ESTABLISH AND MAINTAIN CONSTRUCTION SURVEY CONTROL DURING PERFORMANCE OF THE CONTRACT WORK.
7. CONTRACTOR SHALL ASSUME EXISTING FENCING AT PERIMETER OF SITE IS G.E.'s PROPERTY LINE. NO WORK SHALL BE PERFORMED OUTSIDE THE PROPERTY LINE WITHOUT G.E.'s PRIOR APPROVAL. G.E. WILL OBTAIN APPROVALS FOR ANY WORK WITHIN IDENTIFIED LEASE OR EASEMENT AREAS.
8. CONTRACTOR SHALL PROVIDE ALL LOCAL (NON-ENVIRONMENTAL) PERMITS AND MAKE ARRANGEMENTS FOR LOCAL INSPECTIONS (AS NECESSARY).
9. CONTRACTOR SHALL FURNISH AND PLACE PROPER GUARDS FOR PREVENTION OF ACCIDENTS, PROVIDE ALL TRENCH SHORING, SCAFFOLDING, SHIELDING, DUST/FUME PROTECTION, SAFETY RAILINGS, BARRIERS, OR OTHER SAFETY FEATURES REQUIRED. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SUFFICIENT LIGHTS DURING NIGHT HOURS TO SECURE SUCH PROTECTION.
10. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THIS CONTRACT. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE SAFETY OF, AND SHALL PROVIDE THE NECESSARY PRECAUTION TO PREVENT DAMAGE, INJURY, OR LOSS TO ALL EMPLOYEES ON THE WORK AND ANY OTHER PERSONS WHO MAY BE AFFECTED THEREBY.
11. EXISTING SURFACES OR FEATURES NOT SPECIFIED FOR MODIFICATION THAT ARE DAMAGED OR DESTROYED AS A RESULT OF WORK PERFORMED UNDER THIS CONTRACT SHALL BE RESTORED BY THE CONTRACTOR TO THEIR PRECONSTRUCTION CONDITION IN A TIMELY MANNER.
12. ALL CONTRACTOR RELATED ACTIVITIES SHALL BE PERFORMED IN A MANNER WHICH ALLOWS FOR ALL NECESSARY OPERATING ACTIVITIES ASSOCIATED WITH THE PITTSFIELD GENERATING COMPANY AND GENERAL DYNAMIC COMPANY FACILITIES. ANY WORK DEEMED NECESSARY WHICH MAY AFFECT THOSE FACILITIES SHALL BE BROUGHT TO THE ATTENTION OF G.E. PRIOR TO COMMENCEMENT OF SUCH WORK. G.E. SHALL PROVIDE THE CONTRACTOR WITH AUTHORIZATION TO PROCEED PROVIDED G.E. AND THE AFFECTED PARTY(IES) DEEM THE ACTION NECESSARY AND ACCEPTABLE.

Graphic Scale
0 10' 20'
GRAPHIC SCALE

No.	Date	Revisions	Init

Project Mgr. _____
Designed by _____
Drawn by _____
Checked by _____
Prof. Eng. _____
PE License _____

BBL
BLASLAND, BOUCK & LEE, INC.
engineers & scientists

GENERAL ELECTRIC • PITTSFIELD, MASSACHUSETTS
LEACHATE COLLECTION MANHOLE MODIFICATIONS

SITE PLAN

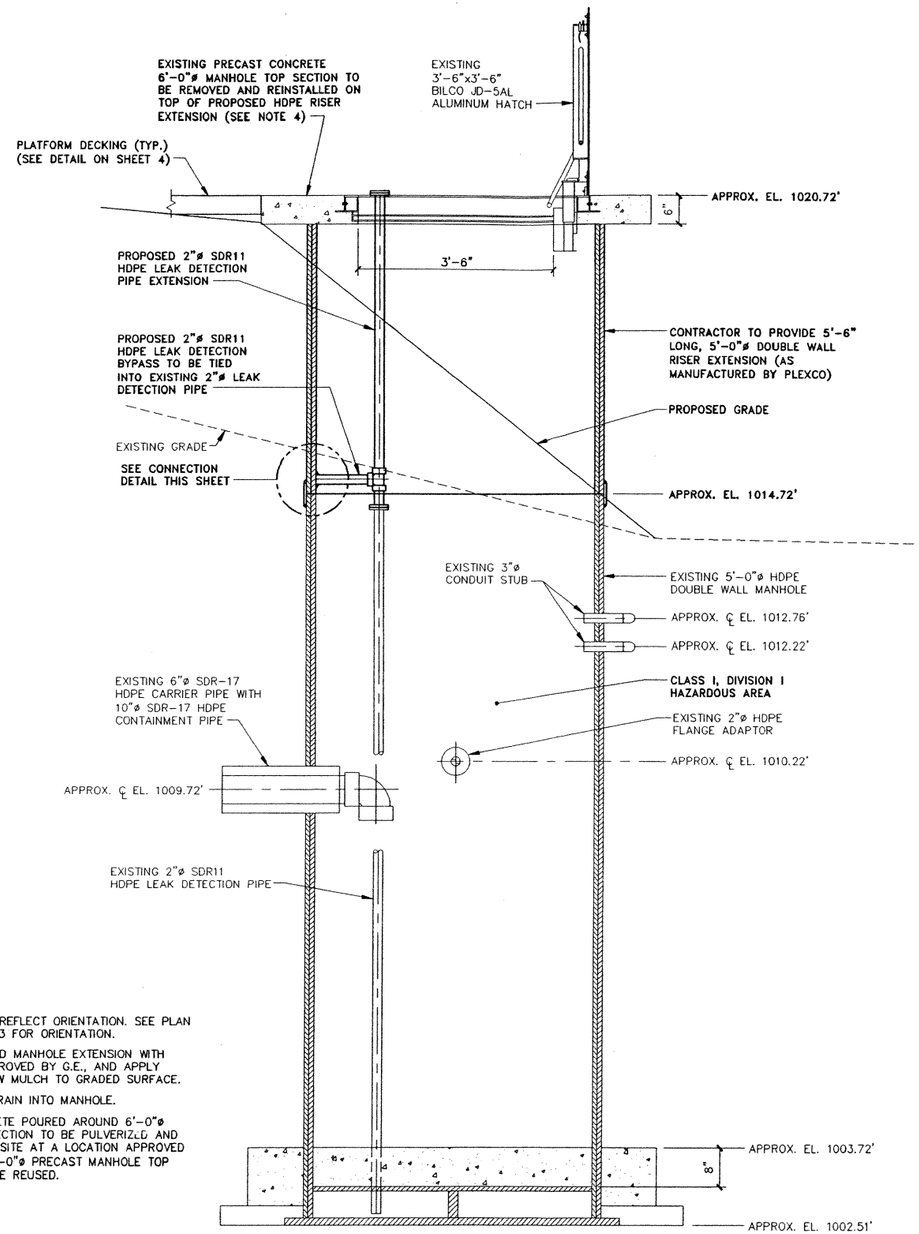
GENERAL

File Number
201.85.01F

Date
MARCH 2000

Blasland, Bouck & Lee, Inc.
Corporate Headquarters
6723 Towpath Road
Syracuse, NY 13214
315-446-9120

1



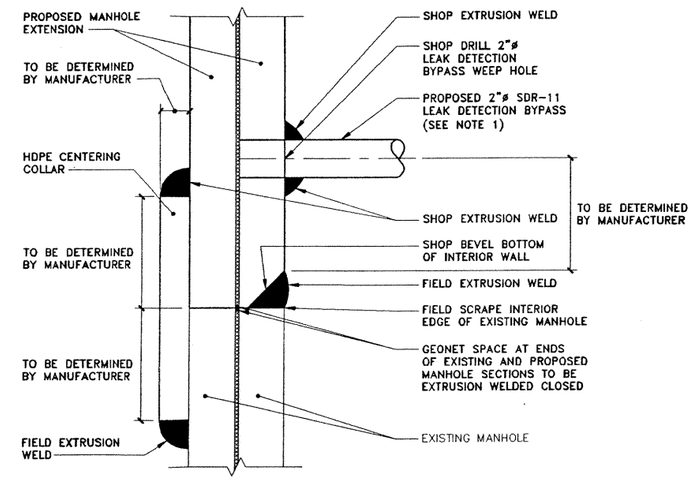
NOTES:

1. VIEW DOES NOT REFLECT ORIENTATION. SEE PLAN VIEW ON SHEET 3 FOR ORIENTATION.
2. BACKFILL AROUND MANHOLE EXTENSION WITH CLEAN SOIL APPROVED BY G.E., AND APPLY SEED AND STRAW MULCH TO GRADED SURFACE.
3. ROUTE HATCH DRAIN INTO MANHOLE.
4. EXISTING CONCRETE POURED AROUND 6'-0"ø PRECAST TOP SECTION TO BE PULVERIZED AND STOCKPILED ON-SITE AT A LOCATION APPROVED BY G.E. ONLY 6'-0"ø PRECAST MANHOLE TOP SECTION IS TO BE REUSED.

SECTION

LEACHATE COLLECTION MANHOLE

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



NOTES:

1. SHOP TO INSTALL 12" SECTION OF 2"ø BYPASS PIPE AND CONTRACTOR TO FIELD CUT TO SIZE.
2. CONTRACTOR SHALL COORDINATE MANHOLE EXTENSION WITH LOCAL SUPPLIER AND ENGINEER. TECHNICAL SUBMITTALS SHALL BE DEVELOPED BY CONTRACTOR AND REVIEWED BY G.E. AND ENGINEER PRIOR TO MATERIAL ORDERING. ALL AS-BUILT INFORMATION PERTAINING TO THE EXISTING MANHOLE WILL BE TRANSMITTED TO THE SUCCESSFUL BIDDER.

CONNECTION DETAIL

NOT TO SCALE

L: ON=*, OFF=REF
P: CONT-DJD/CONT-MVB
3/6/00 SYR-54-DCC KLN DCC
20185035/Z0185002.DWG

Graphic Scale
3/4"=1'-0" (2' 1' 0 1' 2')

No.	Date	Revisions	Init

Project Mgr. _____
Designed by _____
Drawn by _____
Checked by _____
Prof. Eng. _____
PE License _____

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LEACHATE COLLECTION MANHOLE MODIFICATIONS

LEACHATE COLLECTION MANHOLE EXTENSION

GENERAL

File Number 201.85.02F

Date MARCH 2000

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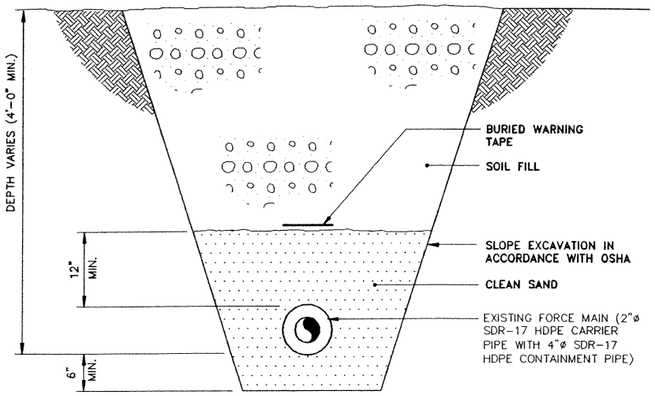
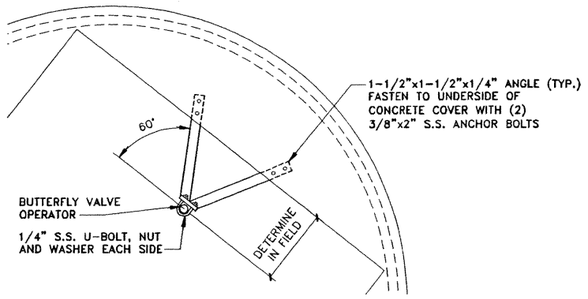
2



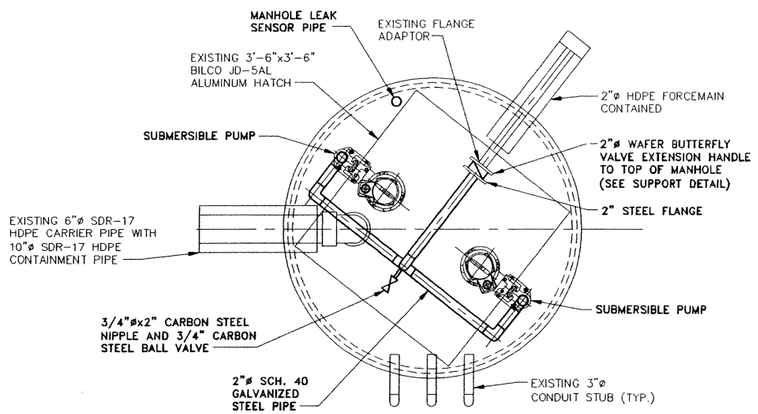
RELOCATED LEACHATE FORCEMAIN TRENCH DETAIL

NOT TO SCALE

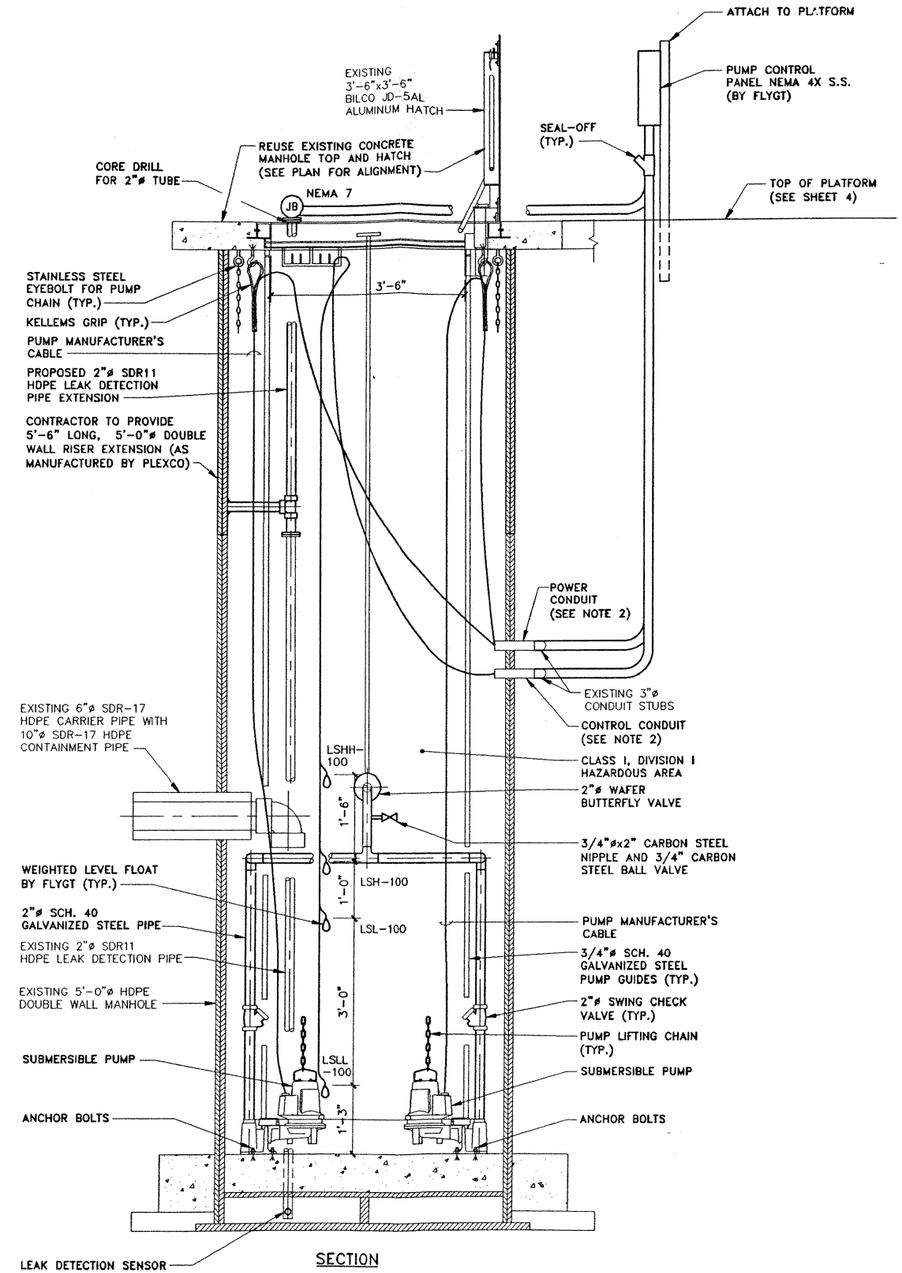


BUTTERFLY VALVE OPERATOR SUPPORT DETAIL

NOT TO SCALE



PLAN



SECTION

NOTES:

1. EXISTING HATCH MUST BE ALIGNED SO PUMP GUIDES INTERSECT WITH CONCRETE PORTION OF COVER.
2. CONTRACTOR TO REMOVE CONDUIT CAPS AND ADD COUPLINGS TO CONNECT NEW POWER AND CONTROL CONDUITS.
3. DETAILS OF MANHOLE SECTION ARE ROTATED FOR CLARITY.
4. SEE SHEET 2 FOR APPROXIMATE LENGTHS AND ELEVATIONS OF EXISTING STRUCTURES.

LEACHATE COLLECTION MANHOLE

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

L: ON=*, OFF=REF
P: CONT-DJD/CONT-MVB
3/6/00 SYR-54-DCC KLN DCC
20185035/20185M01.DWG

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

No.	Date	Revisions	Init

Project Mgr. _____
Designed by _____
Drawn by _____
Checked by _____
Prof. Eng. _____
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GENERAL ELECTRIC • PITTSFIELD, MASSACHUSETTS
LEACHATE COLLECTION MANHOLE MODIFICATIONS

LEACHATE COLLECTION MANHOLE PUMPS AND PIPING

MECHANICAL

File Number 201.85.03F
Date MARCH 2000

Blasland, Bouck & Lee, Inc.
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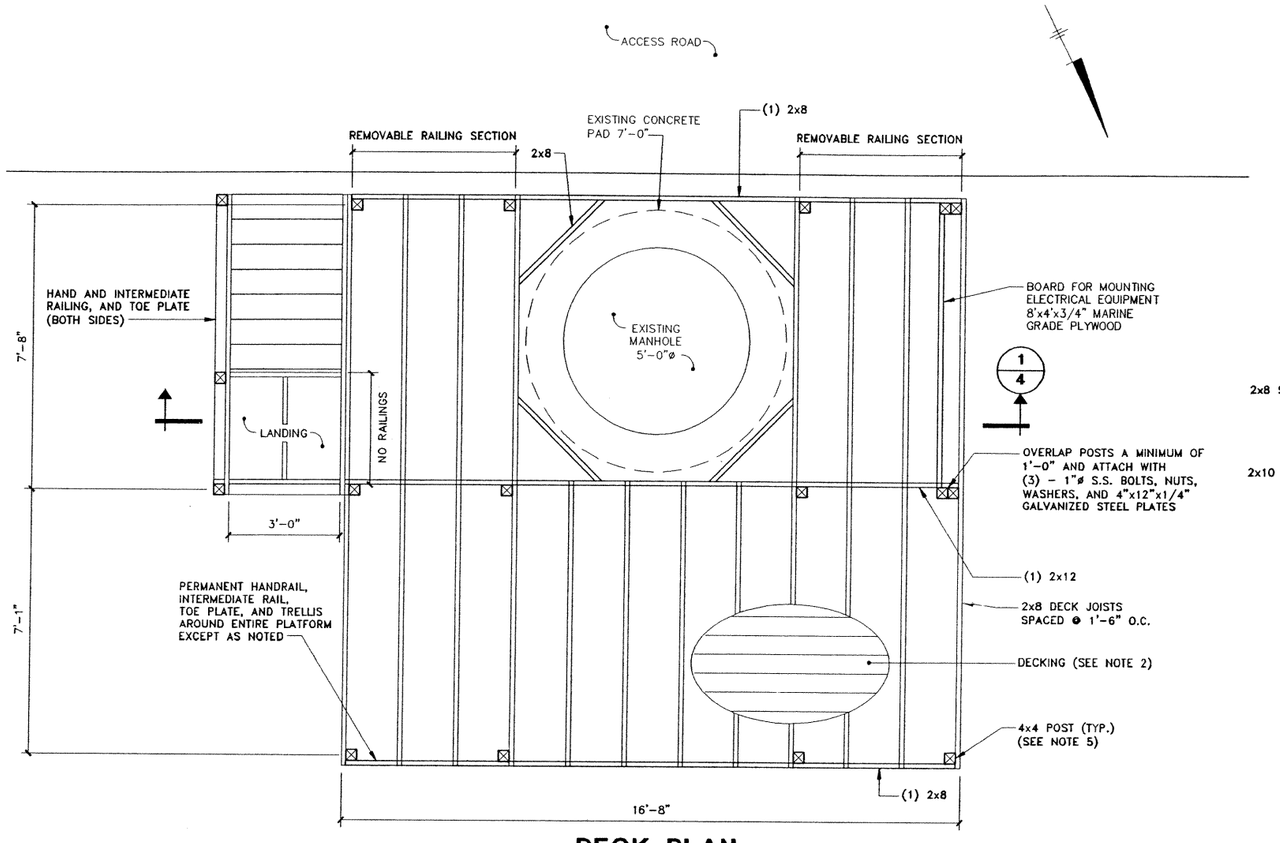
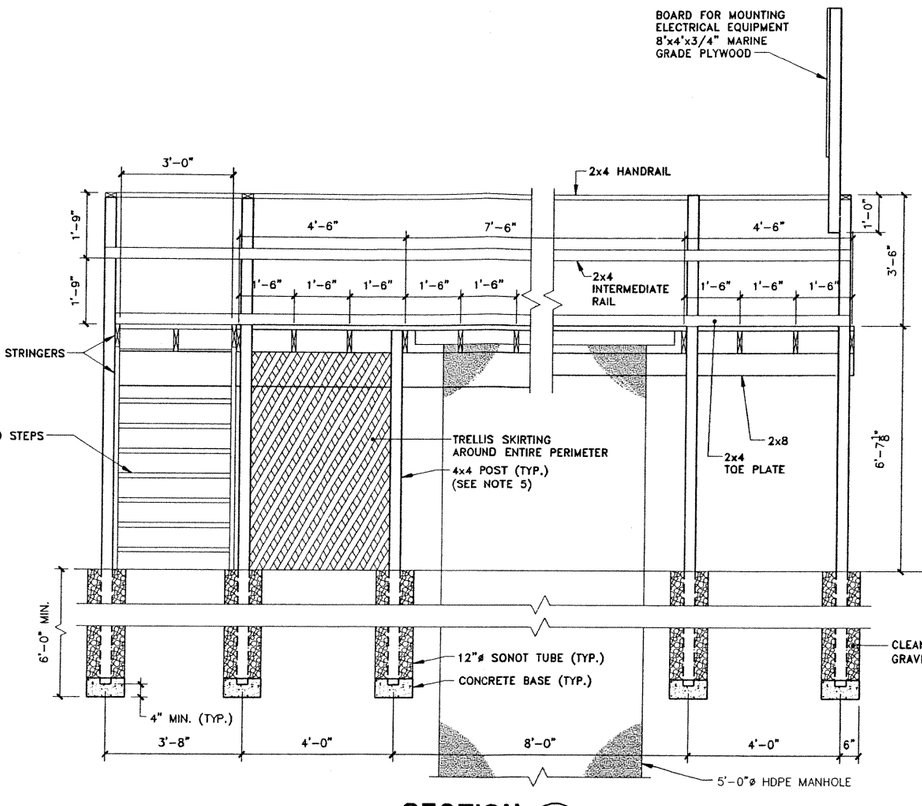
Syracuse, NY 13214
315-446-9120

3



DECK PLAN

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



SECTION 1/4

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

GENERAL NOTES:

1. ALL LUMBER SHALL BE PRESSURE-TREATED SOUTHERN YELLOW PINE WITH A MINIMUM ALLOWABLE BENDING STRESS OF 1,700 PSI, AND A MINIMUM ALLOWABLE HORIZONTAL SHEAR STRESS OF 150 PSI.
2. ALL DECKING SHALL BE 2x6 LUMBER.
3. ALL HARDWARE SHALL BE GALVANIZED.
4. ALL CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,000 PSI.
5. LENGTHS OF 4x4 POSTS SHALL BE FIELD VERIFIED FOLLOWING MANHOLE EXTENSION AND SETTING OF THE CONCRETE CAP.

L: ON=*, OFF=REF
P: CONT-DJD/CONT-MVB
3/6/00 SYR-54-DCC
20185035/20185501.DWG

Graphic Scale
1/2"=1'-0" (2' 0 2' 4')

No.	Date	Revisions	Init

Project Mgr. _____
Designed by _____
Drawn by _____
Checked by _____
Prof. Eng. _____
PE License _____

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GENERAL ELECTRIC • PITTSFIELD, MASSACHUSETTS
LEACHATE COLLECTION MANHOLE MODIFICATIONS

LEACHATE COLLECTION MANHOLE PLATFORM PLAN AND SECTION

STRUCTURAL

File Number
201.85.04F

Date
MARCH 2000

Blasland, Bouck & Lee, Inc.
Corporate Headquarters
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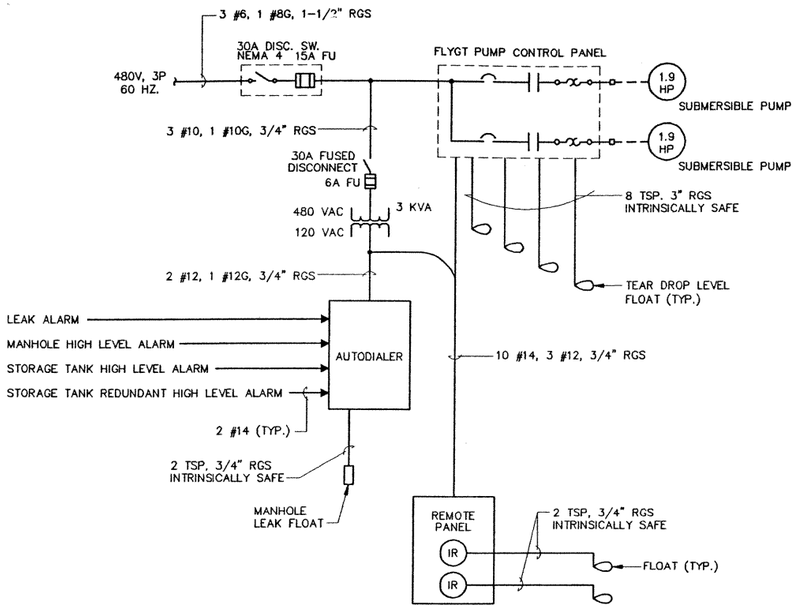
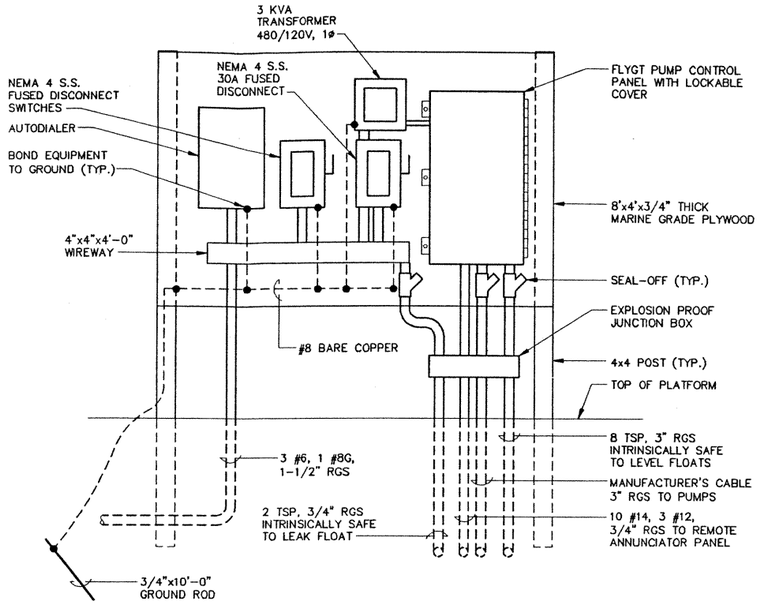
315-446-9120

4



ELECTRICAL ONE-LINE DIAGRAM

NOT TO SCALE

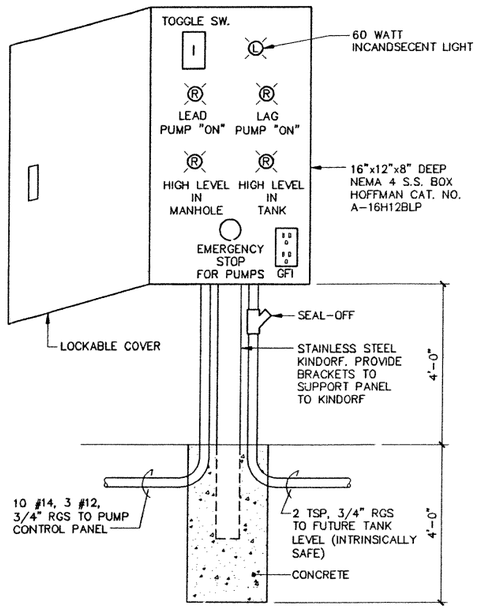


ELECTRICAL RISER DIAGRAM

NOT TO SCALE

ELECTRICAL LEGEND:

OLS	MOTOR OVERLOAD
Mx	AUXILIARY CONTACT ON MOTOR STARTER
	NORMALLY OPEN CONTACT (N.O.)
	NORMALLY CLOSED CONTACT (N.C.)
	GROUND
	TRANSFORMER
	MOTOR OVERLOAD HEATER
	FUSE
	CIRCUIT BREAKER (C.B.)
(R)	INDICATING LIGHT (R)ED, (Y)ELLOW, (G)REEN, (W)HITE
JB	JUNCTION BOX
HP	MOTOR
	GROUND FAULT INTERRUPT RECEPTACLE
	FLOAT SWITCH

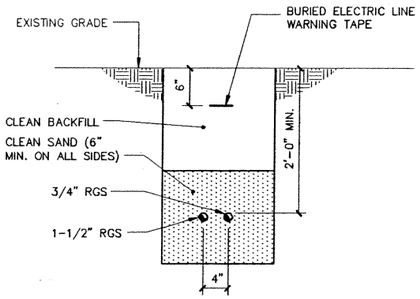


NOTE:

CONTRACTOR TO PROVIDE INTRINSIC RELAYS FOR BOTH TANK LEVEL FLOATS.

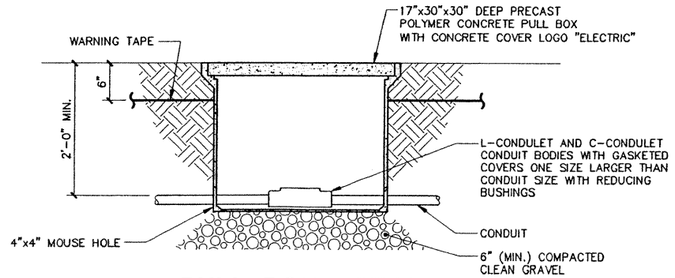
REMOTE ANNUNCIATOR PANEL RISER DIAGRAM

NOT TO SCALE



TRENCH DETAIL

NOT TO SCALE



PULL BOX DETAIL

NOT TO SCALE

L: ON=*, OFF=REF
P: CONT-DJD/CONT-MVB
3/2/00 SYR-54-DCC
20185035/20185E01.DWG

Graphic Scale	No.	Date	Revisions	Init

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Prof. Eng. _____
PE License _____

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GENERAL ELECTRIC • PITTSFIELD, MASSACHUSETTS
LEACHATE COLLECTION MANHOLE MODIFICATIONS

ONE-LINE DIAGRAM, RISER DIAGRAMS, AND DETAILS

ELECTRICAL

File Number 201.85.05F

Date MARCH 2000

Blasland, Bouck & Lee, Inc.
Corporate Headquarters
6723 Towpath Road
Syracuse, NY 13214
315-446-9120

MECHANICAL SPECIFICATIONS:

1. GALVANIZED STEEL PIPE SHALL BE SCHEDULE 40, MEETING THE REQUIREMENTS OF ASTM A53. ALL THREADED JOINTS WILL BE TEFLON TAPE SEALED. GALVANIZED STEEL PIPE SHALL BE PRESSURE TESTED PER MANUFACTURER'S SPECIFICATIONS. ZERO LEAKAGE IS REQUIRED FOR ALL PIPE JOINTS. GALVANIZED STEEL PIPE SHALL TRANSITION WITH A 2"ø STEEL THREADED PIPE FLANGE AT THE BUTTERFLY VALVE.
2. CHECK VALVES SHALL BE BRONZE OR CAST IRON 2"ø SWING CHECK VALVES WITH FEMALE THREADED CONNECTIONS BRONZE SEAT, AND A MINIMUM WORKING PRESSURE OF 200 PSIG.
3. BUTTERFLY VALVE SHALL BE CAST OR DUCTILE IRON 2"ø WAFER-STYLE BUTTERFLY VALVE WITH TEFLON SEATS, AN EXTENSION HANDLE TO THE TOP OF THE MANHOLE, AND A MINIMUM WORKING PRESSURE OF 200 PSIG.
4. SUBMERSIBLE PUMP SHALL BE ITT FLYGT SUBMERSIBLE PUMP MODEL MP3067-211 WITH 1.9-HORSEPOWER, 460 VOLT, 60 HERTZ, 3 PHASE, EXPLOSION-PROOF MOTOR; GUIDE RAIL KIT; AND 128-MILLIMETER DIAMETER IMPELLER. PUMP CAPACITY SHALL BE 36 GALLONS PER MINUTE AT 46 FEET TOTAL DYNAMIC HEAD.

STRUCTURAL/CIVIL SPECIFICATIONS:

1. ALL LUMBER SHALL BE PRESSURE-TREATED SOUTHERN YELLOW PINE WITH A MINIMUM ALLOWABLE BENDING STRESS OF 1,700 PSI, AND A MINUMUM ALLOWABLE HORIZONTAL SHEAR STRESS OF 150 PSI.
2. ALL CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,000 PSI.

ABBREVIATIONS:

A	AMP
ø	DIAMETER
℄	CENTERLINE
DISC	DISCONNECT
EL	ELEVATION
FU	FUSE
GFI	GROUND FAULT INTERRUPT
GPM	GALLONS PER MINUTE
HDPE	HIGH DENSITY POLYETHYLENE
HP	HORSEPOWER
JB	JUNCTION BOX
IR	INTRINSIC RELAY
KVA	KILOVOLT AMPERE
MAX.	MAXIMUM
MIN.	MINIMUM
MH	MANHOLE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
OPCA	ON-PLANT CONSOLIDATION AREA
OSHA	OCCUPATIONAL SAFETY AND HEALTH ASSOCIATION
P	PHASE
PSI	POUNDS PER SQUARE INCH
RGS	RIGID GALVANIZED STEEL
SDR	STANDARD DIMENSIONAL RATIO
SS	STAINLESS STEEL
SW	SWITCH
TSP	TWISTED SHIELDED PAIR
TYP	TYPICAL
V	VOLTAGE
VAC	VOLTAGE ALTERNATING CURRENT

ELECTRICAL SPECIFICATIONS:

GENERAL

1. CONTRACTOR SHALL USE GENERAL ELECTRIC EQUIPMENT WHENEVER POSSIBLE.
2. ALL ELECTRICAL EQUIPMENT SHALL BE U.L. LISTED AND LABELED.
3. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE LATEST REVISION OF NFPA-70, NATIONAL ELECTRIC CODE (NEC).

CONDUITS

RIGID METAL CONDUIT (RGS)

1. GALVANIZED STEEL, HOT DIPPED ZINC, ANSI STANDARD C80.1 AND C80.4.
2. MANUFACTURERS SHALL BE ALLIED TUBE & CONDUIT CORPORATION; TRIANGLE WIRE & CABLE INC.; OR EQUAL.
3. JUNCTION BOXES AND FITTINGS SHALL BE OF GALVANIZED CAST IRON OR COPPER FREE ALUMINUM.

JUNCTION BOXES

1. JUNCTION BOXES IN AREAS CLASSIFIED AS HAZARDOUS OR WHERE INDICATED ON DRAWINGS. MANUFACTURER SHALL BE CROUSE-HINDS SERIES EJB, OR KILLARK SERIES XB.

WIRES AND CABLES

A. GENERAL

1. ALL CONDUCTORS, UNLESS OTHERWISE NOTED, SHALL BE STRANDED COPPER, CONSTRUCTED OF SOFT DRAWN OR ANNEALED COPPER.
2. CONDUCTORS INSULATION SHALL BE COLOR CODED, WITH COLOR OF INSULATION ONE COLOR THROUGHOUT THE ENTIRE RUN.

   A. 480 VAC, 3 PHASE, 3 WIRE
      PHASE A - BROWN
      PHASE B - ORANGE
      PHASE C - YELLOW
      GROUND - GREEN

   B. 120/240 VAC, SINGLE PHASE, 3 WIRE
      CONDUCTOR 1 - BLACK
      CONDUCTOR 2 - RED
      NEUTRAL - WHITE
      GROUND - GREEN

B. LOW VOLTAGE CONDUCTORS

1. ALL CONDUCTORS FOR POWER, LIGHTING AND 120 VAC CONTROL SHALL BE RATED A MINIMUM 600 VAC.
2. CONDUCTORS SHALL BE CONSTRUCTED OF UNCOATED CLASS C COPPER CONCENTRIC-LAY-STRANDED WIRES.
3. POWER AND LIGHTING CONDUCTORS SHALL BE TYPE THHN-90C, THWN-2-90C WITH PVC INSULATION AND NYLON JACKET.

C. CONNECTORS

1. PIGTAIL SPLICING #10 AND SMALLER, USE TAPERED SPRING WIRE NUTS: IDEAL WING NUT; BUCHANAN B-CAP; T&B PIGGIES, OR EQUAL.
2. FOR TERMINATION OF #14 CONTROL WIRES TO TERMINALS, USE INSULATED COMPRESSION SPADE TYPE CONNECTORS: BURNDY HYDENT; T&B STA-KON OR EQUAL.
3. SPLICES AND TERMINALS FOR #8 AND LARGER SHALL BE COPPER COMPRESSION TYPE: BURNDY HYDENT OR HYLUG; T&B, STA-CON OR EQUAL
4. FIXTURE CONNECTIONS SHALL BE: T&B STA-KON SERIES PT-66M; IDEAL CRIMP SLEEVE NO. 410 WITH LONG BARREL OR EQUAL.

GROUNDING

1. GROUNDING OF ELECTRICAL SYSTEMS AND EQUIPMENT SHALL, AS A MINIMUM, MEET THE REQUIREMENTS OF THE NEC ARTICLE 250 OR SHALL EXCEED ARTICLE 250 AS HEREIN SPECIFIED.
2. ALL CONDUITS SHALL HAVE AN INTERNAL GROUND CONDUCTOR. THIS GROUND CONDUCTOR SHALL BE PROVIDED ALTHOUGH IT MAY NOT BE SHOWN OR SCHEDULED ON THE PLANS.
3. GROUNDING ELECTRODE CONDUCTORS SHALL BE A MINIMUM OF 8 AWG BARE STRANDED COPPER.
4. GROUND RODS SHALL BE 3/4" IN DIAMETER, 10 FEET LONG, STEEL CORE WITH COPPER MOLTEN WELDED OR ELECTROLYTICALLY BONDED TO EXTERIOR.
5. ALL CONNECTIONS SHALL BE MADE WITH COMPRESSION OR MECHANICAL CONNECTORS.

AUTODIALER

1. 120 VAC AUTODIALER SHALL HAVE THE ABILITY TO MONITOR FOUR INPUT CHANNELS, AND RECORD FIVE USER MESSAGES, FOUR CHANNEL ALARMS AND STATION ID.
2. UPON ALARM CONDITION, AUTODIALER SHALL AUTOMATICALLY CALL A LIST OF UP TO 8 PRE-PROGRAMMED NUMBERS OVER A CELLULAR PHONE CHANNEL.
3. THE AUTODIALER SHALL HAVE 20 HOUR BATTERY BACKUP.
4. AUTODIALER SHALL HAVE INTEGRAL SURGE PROTECTION ON POWER AND SIGNAL LINES.
5. MANUFACTURER: RACO GUARD-IT WITH OPTION GAC-GBB-GCELL-AC.

ENCLOSURES

ENCLOSURES SHALL BE NEMA RATED FOR LOCATION UNLESS OTHERWISE NOTED.

1. WET LOCATIONS OR OUTDOORS, ENCLOSURES SHALL BE NEMA TYPE 4, STAINLESS STEEL.
2. ENCLOSURES SHALL HAVE NAMEPLATE ON THE EXTERIOR IDENTIFYING THE APPLICATION FUNCTION OF THE EQUIPMENT ENCLOSED.

WIRING DEVICES

PROVIDE AS INDICATED.

CIRCUIT PROTECTION DEVICES

GENERAL

1. CIRCUIT BREAKERS SHALL BE OF THE PLUG-ON TYPE. UNLESS OTHERWISE SHOWN, BREAKERS SHALL BE RATED AT 20 AMPERES.
2. CIRCUIT BREAKERS SHALL HAVE A MINIMUM INTERRUPTING RATING OF 10,000 AMPERES RMS SYMMETRICAL AT 240 VAC OR 14,000 AMPERES AT 480 VAC UNLESS OTHERWISE SHOWN.

DISCONNECT SWITCHES

1. HEAVY DUTY SAFETY SWITCH, FUSED OR NON-FUSED AS SHOWN OR NOTED.
2. DISCONNECT SWITCHES SHALL BE G.E. HEAVY DUTY SAFETY SWITCH.

PULL BOXES

1. PULL BOXES SHALL BE USED IN OUTDOOR LOCATIONS ONLY FOR PULLING. NO SPLICES SHALL BE ALLOWED.
2. PULL BOX SHALL BE CONSTRUCTED OF PRECAST CONCRETE AND SCREWED GASKETED COVER WITH STAINLESS STEEL BOLTS.

TRANSFORMERS

1. SINGLE PHASE TRANSFORMERS SHALL BE 480V PRIMARY AND 120/240V SECONDARY.
2. TRANSFORMERS SHALL BE SUITABLE FOR USE OUTDOORS.
3. TRANSFORMER COILS SHALL BE OF THE CONTINUOUS WOUND CONSTRUCTION, U.L. LISTED.
4. MANUFACTURER SHALL BE GENERAL ELECTRIC.

RELAYS

1. INTRINSIC RELAYS (IR) SHALL BE SUITABLE FOR USE ON CIRCUITS THAT SERVE HAZARDOUS LOCATIONS AND SHALL BE APPROVED BY FACTORY MUTUAL (FM) FOR USE IN CLASS I, DIV. I AREAS. OUTPUT CONTACTS SHALL BE RATED 5 AMPS AT 120 VAC. MANUFACTURER SHALL BE GEMS SAFE-PAK.

LIGHTS

1. 60 WATT INCANDESCENT, ENCLOSED AND GASKETED SUITABLE FOR WET LOCATIONS. PROVIDE GUARD. MANUFACTURER SHALL BE GENERAL ELECTRIC MODEL H7-1-15F-3C-DD.

FLOATS

1. MECHANICAL TILTING SWITCH ENCAPSULATED IN PVC. CABLE LENGTH TO BE DETERMINED IN FIELD. MANUFACTURER: FLYGT ENM-10.
2. LEAK DETECTION SENSOR SHALL BE A COMPACT SIZE WITH SLOSH SHIELD AND WEIGHTED COLLAR SUITABLE FOR LEAK DETECTION IN STAND PIPES. FLOAT SHALL BE CONSTRUCTED OF BUNA N WITH PVC WETTED PARTS AND PVC CABLE JACKET. MANUFACTURER: GEMS LS-750 SERIES.

FLYGT DUPLEX SUBMERSIBLE PUMP CONTROL PANEL

1. 480 VOLT, 3 PHASE, 60 HZ.
2. INDIVIDUAL PUMP CIRCUIT BREAKERS.
3. PUMP ALTERNATOR.
4. LEAD-LAG PUMP LOGIC.
5. (4) INTRINSICALLY SAFE FLOATS: OFF, LEAD, LAG, AND HIGH.
6. INDIVIDUAL H-O-A AND RUN LIGHT.
7. MINICAS SUBMERSIBLE PUMP MODULES FOR EACH PUMP.
8. INDICATING LIGHT FOR EACH FLOAT.
9. CONTROL POWER TRANSFORMERS.
10. THERMOSTAT AND PANEL HEATER.
11. CONTACTS FOR REMOTE CIRCUITS FOR ALARM CONDITION.

L: ON=*, OFF=REF
P: CONT-DJD/CONT-MVB
3/3/00 SYR-54-DCC
20185035/20185003.DWG

Graphic Scale

No.	Date	Revisions	Init

Project Mgr. _____
Designed by _____
Drawn by _____
Checked by _____
Prof. Eng. _____
PE License _____

BBL
BLASLAND, BOUCK & LEE, INC.
engineers & scientists

GENERAL ELECTRIC • PITTSFIELD, MASSACHUSETTS
LEACHATE COLLECTION MANHOLE MODIFICATIONS

TECHNICAL SPECIFICATIONS AND ABBREVIATIONS

GENERAL

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