WESTON Ref. No.

01-0315

SDMS 158272

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

Transmitted Via Facsimile and Federal Express

December 3, 1999

Mr. Dean Tagliaferro
Mr. Bryan Olson
Office Site Remediation and Restoration
U.S. Environmental Protection Agency
One Congress Street
Boston, MA 02203-2211

Mr. Alan Weinberg
Bureau of Waste Site Cleanup
Department of Environmental Protection
436 Dwight Street
Springfield, MA 01103

Re: East Street Area 2 Site/USEPA Area 4
Proposal for DNAPL Collection System

Dear Mr. Olson, Mr. Tagliaferro and Mr. Weinberg:

Enclosed please find the General Electric Company's (GE's) proposal for dense nonaqueous phase liquid (DNAPL) collection system at the East Street Area 2 Site/USEPA Area 4 Site. In accordance with the letter dated November 2, 1999 from the U.S. Environmental Protection Agency, this proposal presents a design for an automated DNAPL collection system at the Site.

Upon approval of the proposed DNAPL recovery system, GE will start procurement of all necessary equipment and will begin construction after removal and restoration activities in the 64X area associated with the Upper ½ Mile Reach of the Housatonic River are completed.

Please call if you have any questions or comments.

Sincerely,

John D. Ciampa/mrn

John D. Ciampa
Remedial Project Manger

WGS/kah
Enclosures
X:\COMMON\KAH\51891662.WPD

cc: T. Conway, EPA*
S. Acree, EPA*
M. Nalipinski, EPA*
J. Bieke, Shea & Gardner*
Mayor G. Doyle
A. Thomas, GE*
M. Carroll, GE
Pittsfield Conservation Commission*
J. Bridge, HSI GeoTrans*
Pittsfield Health Department*
R. Bell, DEP*
J. Ziegler, DEP*
A. Silfer, GE*
J. Nuss, BBL*
D. Veilleux, Roy F. Weston*
Public Information Repositories ECL I-R-IV(A)(1)*

* w/enclosures

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

PROPOSAL FOR DNAPL COLLECTION SYSTEM AT EAST STREET AREA 2 SITE

I. INTRODUCTION

On October 11, 1999, the General Electric Company (GE) submitted a report entitled *DNAPL Assessment, East Street Area 2 Site, Pittsfield, Massachusetts, Addendum* (HSI Geotrans, Inc., October 1999) to the United States Environmental Agency (USEPA) and the Massachusetts Department of Environmental Protection (DEP) (collectively referred to as the "Agencies"). The report summarized the results of a dense non-aqueous phase liquid (DNAPL) field testing program conducted between August 30 and September 13, 1999, and included a proposal for the installation of an active DNAPL collection system at well RW-3(X). Subsequently, on November 2, 1999 the USEPA issued a conditional approval letter to GE requesting that GE submit the final design, monitoring procedures and schedule for implementation of the DNAPL collection system by December 3, 1999.

This proposal, which has been prepared by Blasland, Bouck & Lee, Inc. (BBL) on behalf of GE, represents the proposed final design, monitoring, and schedule for an automated DNAPL collection system for well RW-3(X).

II. DESCRIPTION OF DNAPL COLLECTION SYSTEM

This section provides a general description of an automated DNAPL collection system for well RW-3(X). Figures 1 through 4 provides the site plan, design details and specifications.

A pneumatic DNAPL recovery pump will be installed in well RW-3(X). The pump will discharge via approximately 60 feet of steel double-wall containment piping to a 55-gallon drum located within the existing Equipment Storage Building on the western end of the 64-X oil/water separator in the East Street Area 2 portion of the plant site (see figure 1). The piping will be insulated and heat traced to prevent freezing during winter operations. Additionally, the piping will be sloped back to the well to allow drainage when the pumps are not in operation.

A fiberglass enclosure (approximately 43" x 43" x 50" high) will be located at the well head to house the pneumatic pump controller and to allow access to the piping connections for maintenance. The well enclosure will have lockable access doors on the top, as well as one on the easterly side. The walls of the enclosure will be insulated with 1" thick fiberglass insulation. A 500-watt electric heater with a thermostat will also be installed to allow cold weather operation. The operation of the DNAPL recovery pump will be controlled by an automated timer located in the well enclosure that can be adjusted, as appropriate, to optimize DNAPL recovery. A float will be provided for insertion into the 55-gallon drum, which will shut down the DNAPL recovery pump when the drum is full. All piping materials, pumps, floats, etc. that will be in contact with the DNAPL have been selected based on appropriate materials compatibility considerations.

The Equipment Storage Building is currently used to house electrical equipment and recovery transfer tanks for groundwater and oil. The building is a pre-engineered steel structure (23' x 14'

x 10' high) built on top of a 28" deep, solid reinforced-concrete containment sump which provides approximately 5,350 gallons of containment. The Equipment Building is provided with heat and ventilation for year-round operation. Power supplies for 480 volts, 208 volts and 120 volts are available at the Equipment Storage Building. An air compressor to operate the DNAPL recovery pump will be located in the Equipment Storage Building. The air supply to the well controller at the well is ½" diameter steel pipe and will be insulated and heat traced. The air compressor will have an 80-gallon storage tank and a 5-horsepower, 23 cubic feet per minute capacity pump.

When the DNAPL storage drum becomes full, GE will remove and appropriately dispose of the drum. Based on results of the recovery testing program and the estimated stable yield of 5 to 10 gallons per day for well RW-3(x), the drum will initially be replaced every 5 to 10 days. It is anticipated that the overall recovery volumes/rates will decrease as the system continues to operate.

GE will continue to maintain the current DNAPL monitoring program in adjacent wells E2SC-03I and E2SC-17. This monitoring program includes weekly manual DNAPL removal. The results of the automated DNAPL recovery pumping and the manual monitoring/removal will be summarized in the monthly reports for the site and in the semi-annual reports regarding Occurrence of Oil at East Street Area 2.

III. FLOODPLAIN COMPENSATORY STORAGE EVALUATION

It has been calculated that the flood storage capacity of the floodplain between the elevations of 980.93 ft. and 985.43 ft. will be diminished by a volume of approximately 2.7 cubic yards due to the installation of the automated DNAPL collection system for well RW-3(X). This change is due primarily to the installation of the small enclosure over the well head (see table 1).

Further, it has been preliminarily calculated that an increase in flood storage volume of approximately 8.4 cubic yards will occur following the bank restoration activities associated with the sheetpile containment barrier to be installed in the riverbank area near building 64X. This estimated increase in flood storage volume will occur between the elevations of 972 ft. and 981 ft (see Table 1). Thus, these two projects combined will result in a net increase in the available flood storage volume of approximately 5.7 cubic yards. These preliminary estimates will be confirmed once the sheetpile barrier is installed and restoration is completed.

IV. SCHEDULE

The proposed schedule for the implementation of the well RW-3(X) DNAPL collection system is for construction to occur following removal activities in the 64X area associated with the Upper 1/2 Mile Reach of Housatonic River. This is due to the concern that installation of the pipeline and the enclosure may obstruct access for the river and bank work in this area and that potential damage to the enclosure and piping could occur from the construction activities associated with the removal activities. GE has already purchased the DNAPL recovery pump and controller. Upon receipt of USEPA approval of the proposed DNAPL recovery system design, GE will purchase the enclosure, piping, and other appurtenances. With the equipment available, the construction activities for the DNAPL collection system will be initiated shortly after the completion of the removal and restoration activities in the 64X area associated with the Upper 1/2 Mile Reach. It is anticipated that the automated DNAPL collection system will be operational approximately 1 month from start of its construction. In the meantime, the existing manual DNAPL removal and monitoring activities at the 64X riverbank area will continue.

TABLE 1

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

PROPOSAL FOR DNAPL COLLECTION SYSTEM
AT EAST STREET AREA 2

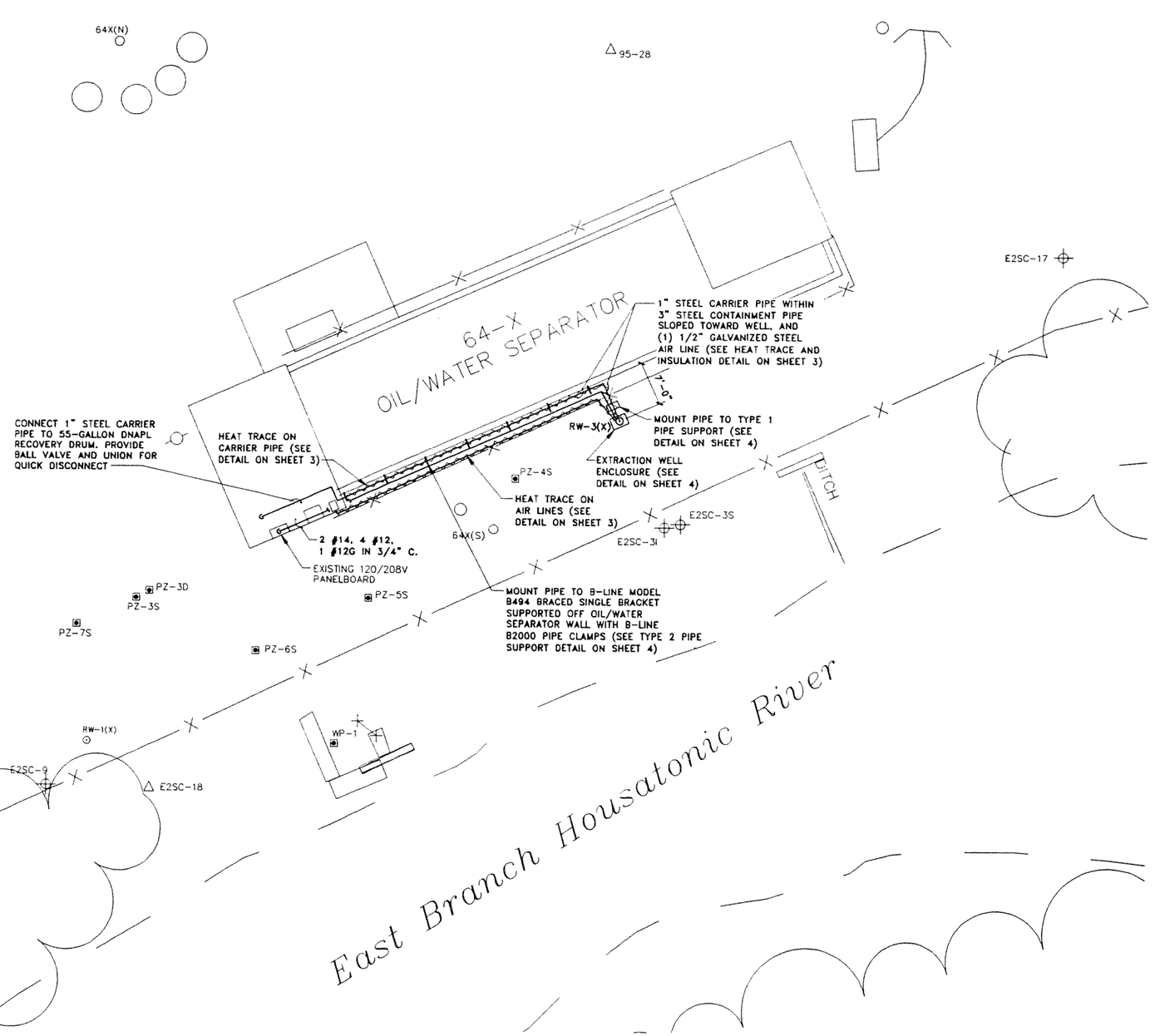
FLOODPLAIN STORAGE VOLUME
RW-3(X) DNAPL RECOVERY SYSTEM

Fill Volumes				
Elevation Range (ft.)	Well Enclosure (cf)	Piping & Conduit (cf)	Pipe Supports (cf)	Net (cf)
980-981	-0.9	0.0	-0.1	-1.0
981-982	-13.3	0.0	-0.1	-13.4
982-983	-13.3	0.0	-0.1	-13.4
983-984	-13.3	-0.8	-0.2	-14.3
984-985	-13.3	-10.2	0.0	-23.5
985-986	-5.7	-0.6	0.0	-6.3
985-986	0.0	0.0	0.0	0.0
Totals	-59.8	-11.6	-0.5	-71.9
		Total in Cubic Yards		-2.7

FLOODPLAIN STORAGE VOLUME
64X AREA SHEETPILE CONTAINMENT BARRIER (PRELIMINARY)

Total Storage Volume			
Elevation Range (ft.)	Estimated Cut Volume (cf)	Estimated Fill Volume (cf)	Estimated Net Storage Volume (cf)
972-983	35.1	-43.2	-8.1
973-974	102.6	-121.5	-18.9
974-975	183.6	-183.6	0.0
975-976	264.6	-226.8	37.8
976-977	248.4	-248.4	0.0
977-978	180.9	-45.9	135.0
978-979	59.4	0.0	59.4
979-980	18.9	0.0	18.9
980-981	2.7	0.0	2.7
981-982	0.0	0.0	0.0
Totals	1096.2	-869.4	226.8
		Total Cubic Yards	8.4

Note: Negative values indicate a loss in flood storage capacity.



PLAN

SCALE: 1"=10'

LEGEND:

- NEW ABOVE GROUND PIPE
- DECIDUOUS TREE
- CONIFEROUS TREE
- MANHOLE
- CHAIN LINK FENCE
- POLE (NON-UTILITY)
- POLE (OVERHEAD UTILITY)
- ES2-1 — PREVIOUSLY INSTALLED MONITORING WELL
- 64X(W) — PREVIOUSLY INSTALLED OIL RECOVERY CAISSON
- RW-1(X) — PREVIOUSLY INSTALLED PUMPING WELL
- X-11 — PREVIOUSLY INSTALLED SOIL BORING
- PZ-4S — PREVIOUSLY INSTALLED PIEZOMETER
- E2SC-1 — 1998 MONITORING WELLS
- E2SC-8 — 1998 SOIL BORINGS

NOTES:

1. BASE MAP PROVIDED BY LOCKWOOD MAPPING, INC. PREPARED FROM 1990 AERIAL PHOTOGRAPHY. RIVERBANK AND RIVER BED TOPOGRAPHIC INFORMATION PROVIDED BY BBL FROM OCTOBER 12-23, 1998 FIELD SURVEY.
2. ALL MONITORING WELL, BORING, PUMPING WELL, CAISSON, FENCE, MANHOLE, AND TREE LOCATIONS ARE APPROXIMATE.

x: 20140X03, 20140X05.DWG
L: ON=*, OFF=REF
P: CONT-DJD/CONT-MVB
12/2/99 SYR-54-DCC KMD DCC
20193060/20193G01.DWG

Graphic Scale
10' 0 10' 20'
1"=10'

No.	Date	Revisions	Init

Project Mgr. WGS
Designed by TEM
Drawn by DCC
Checked by MOG
Prof. Eng. JOHN W. FRANZ JR.
PE License MA 35355

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

GENERAL ELECTRIC COMPANY • PITTSFIELD, MASSACHUSETTS
EAST STREET AREA 2 WELL RW-3(X) DNAPL RECOVERY SYSTEM

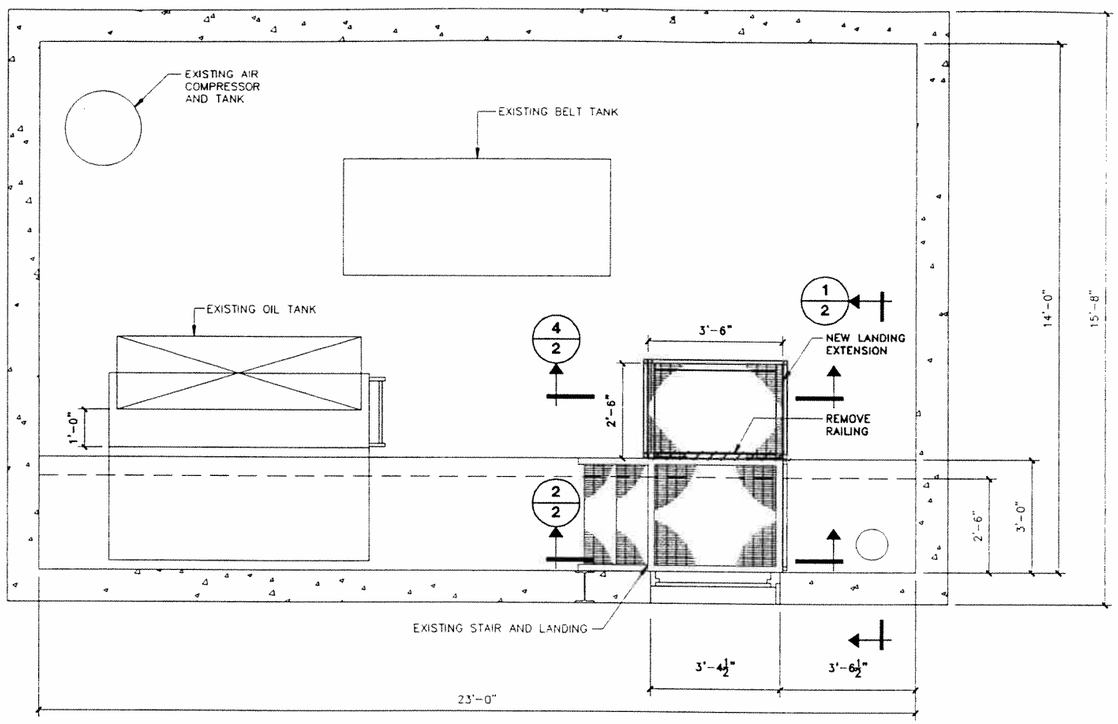
SITE PLAN

GENERAL

File Number 201.93.01F

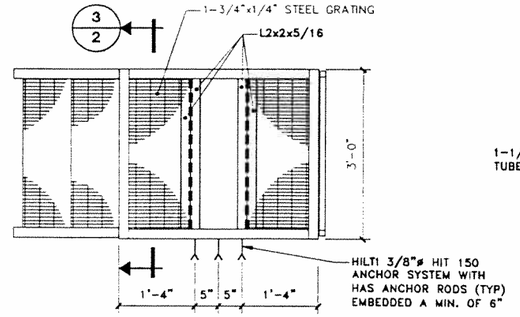
Date DECEMBER 1999

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



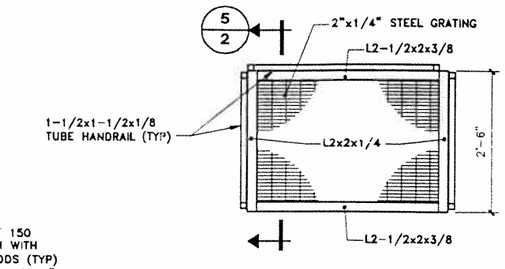
BUILDING 64X PLAN

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



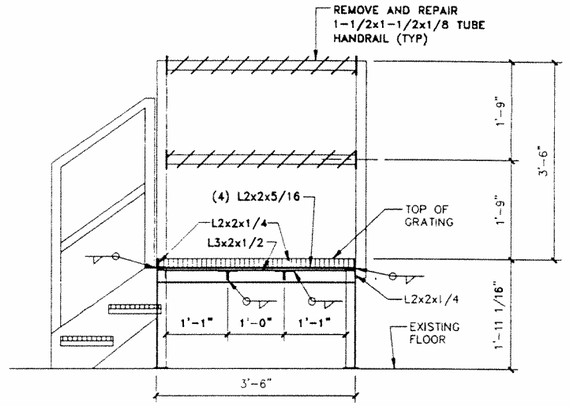
EXISTING STAIR AND LANDING PLAN

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



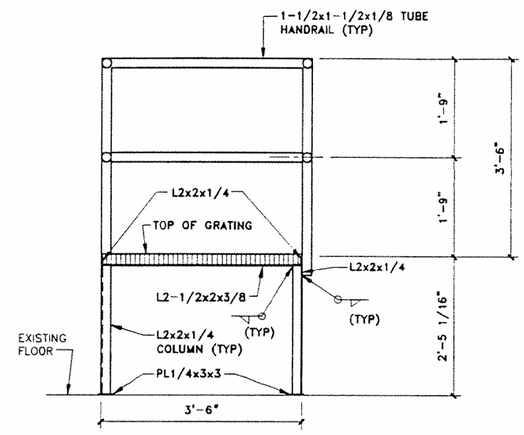
PROPOSED LANDING PLAN

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



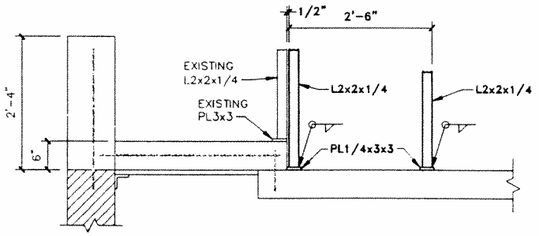
EXISTING STAIR AND LANDING SECTION 2/2

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



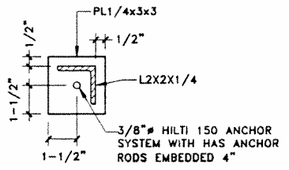
PROPOSED LANDING SECTION 4/2

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



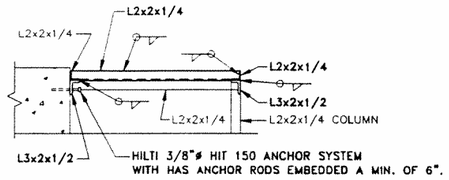
SECTION 1/2

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



COLUMN BASE PLATE DETAIL

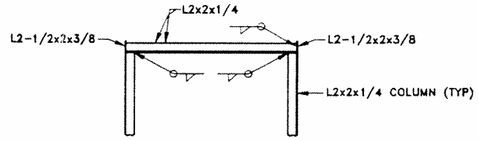
NOT TO SCALE



NOTE:
GRATING OMITTED FOR CLARITY.

EXISTING STAIR AND LANDING DETAIL 3/2

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



NOTE:
GRATING OMITTED FOR CLARITY.

PROPOSED LANDING DETAIL 5/2

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

L: ON=*, OFF=REF
P: CONT-DJD/CONT-MVB
12/2/99 SYR-54-DCC
20193060/20193G02.DWG

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

No.	Date	Revisions	Init

Project Mgr. WGS
Designed by JDS
Drawn by DCC
Checked by MOG
Prof. Eng. JOHN W. FRANZ JR.
PE License MA 35355

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

GENERAL ELECTRIC COMPANY • PITTSFIELD, MASSACHUSETTS
EAST STREET AREA 2 WELL RW-3(X) DNAPL RECOVERY SYSTEM

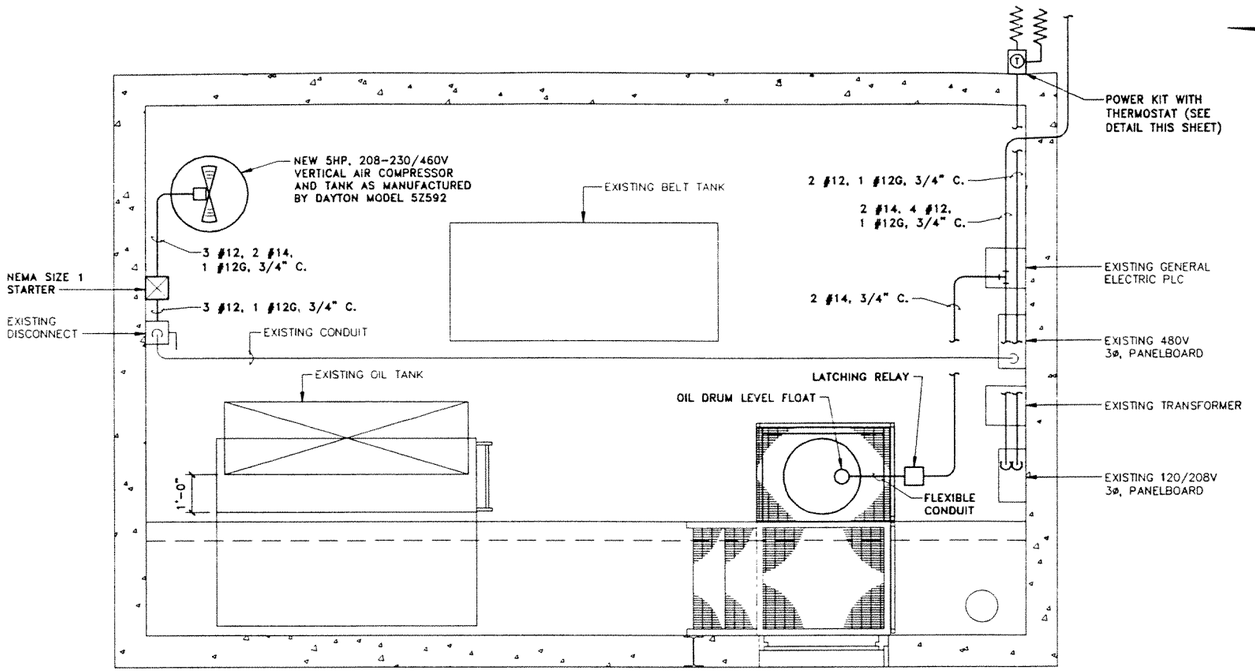
BUILDING 64X PLAN, SECTIONS, & DETAILS

GENERAL

File Number 201.93.02F
Date DECEMBER 1999

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

2

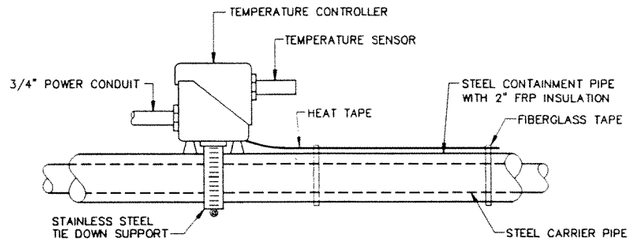


BUILDING 64X ELECTRICAL PLAN

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

ELECTRICAL SPECIFICATIONS:

1. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE LATEST REVISION OF NFPA-70, NATIONAL ELECTRICAL CODE (NEC).
2. WIRES AND CABLES: ALL CONDUCTORS, UNLESS OTHERWISE NOTED, SHALL BE STRANDED COPPER, CONSTRUCTED OF SOFT DRAWN OR ANNEALED COPPER. LOW VOLTAGE CONDUCTORS SHALL BE TYPE THHN-90C, THWN-2-90C WITH PVC INSULATION AND NYLON JACKET. SIGNAL CONDUCTORS SHALL BE 16 AWG TINNED COPPER POLYETHYLENE INSULATED TWISTED SHIELDED PAIR WITH ALUMINUM SHIELD AND COPPER DRAIN WIRE.
3. CONDUIT: RIGID GALVANIZED STEEL, 3/4" DIAMETER. THREADED COUPLINGS FOR OUTDOOR USE, THREADED CAST FITTINGS AND DEVICE/JUNCTION BOXES. WHERE CONNECTIONS ARE TO BE MADE TO VIBRATING EQUIPMENT, USE LIQUID TITE CONDUIT.
4. LEVEL FLOAT: OIL DRUM FLOAT SHALL BE GEMS MODEL LS700F SLIDING MAGNETIC SWITCH, STAINLESS STEEL WITH A MINIMUM SPECIFIC GRAVITY OF 0.98. FLOAT SHALL HAVE A 3/4" NPT. REED SWITCH ON FLOAT SHALL BE PROTECTED BY AN RC NETWORK AS SUGGESTED BY MANUFACTURER.
5. HEAT TRACE: SELF REGULATING HEATING CABLE FOR FREEZE PROTECTION OF PIPES. HEAT TRACE SHALL BE TYPE SRL AS MANUFACTURED BY CHROMALOX, 3W/FT, 120/208 VAC, TINNED COPPER BRAID. PROVIDE CONTROL THERMOSTAT, POWER KIT, SPLICE KIT, AND ALUMINUM TAPE AS NECESSARY.
6. STARTER: GENERAL ELECTRIC SERIES CR. 306, 30 AMP, SIZE 1, NON-REVERSING, MAGNETIC STARTER, DISCONNECT TYPE, 480 VAC, 3 PHASE, NEMA 1 WITH 120 VAC CONTROL POWER TRANSFORMER. UL LISTED.
7. HEATER: QMARK ELECTRIC PUMP HOUSE HEATER WITH BUILT-IN THERMOSTAT. 120/240 VOLT, 1706 BTUH, 500 WATTS.

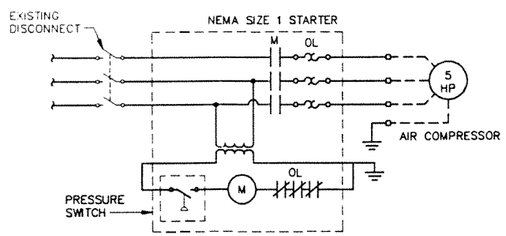


NOTE:

1. CONTRACTOR TO FOLLOW HEAT TRACING MANUFACTURER RECOMMENDATIONS FOR INSTALLATION OF HEAT TRACING SYSTEM.

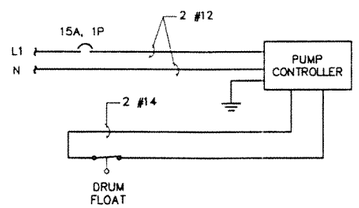
PIPE HEAT TRACE AND POWER KIT DETAIL

NOT TO SCALE



AIR COMPRESSOR WIRING DETAIL

NOT TO SCALE



PUMP CONTROL WIRING DETAIL

NOT TO SCALE

L: ON=*, OFF=REF
P: CONT-DJD/CONT-MVB
12/2/99 SYR-S4-DCC
20193060/20193E01.DWG

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

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EAST STREET AREA 2 WELL RW-3(X) DNAPL RECOVERY SYSTEM

BUILDING 64X ELECTRICAL PLAN AND DETAILS

ELECTRICAL

File Number 201.93.03F
Date DECEMBER 1999

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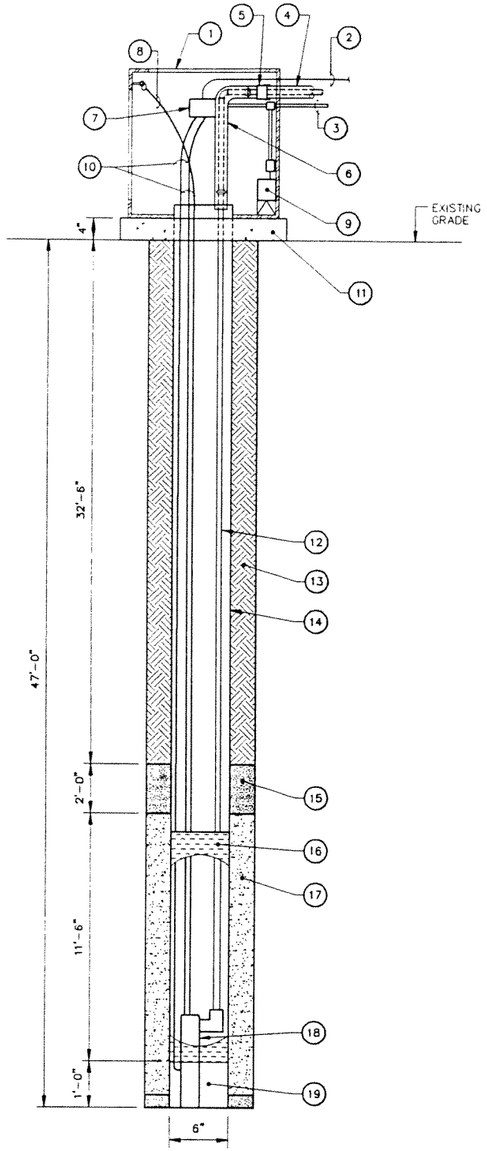
315-446-9120



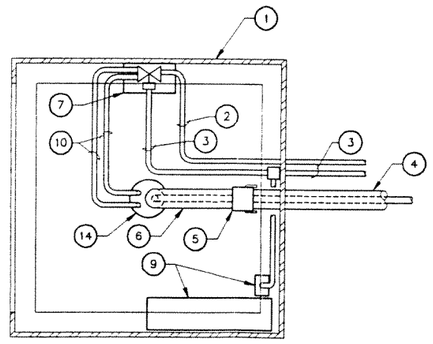
DNAPL EXTRACTION WELL RW-3(X) DETAIL

NOT TO SCALE

DESCRIPTION – WELL RW-3(X)	
ITEM	
1	43"x43"x50" FIBERGLASS ENCLOSURE WITH (2) 3'x3' DOORS
2	1/2" GALVANIZED STEEL AIR LINE
3	3/4" CONDUIT FOR HEATING CIRCUIT/PUMP CONTROLLER
4	1" STEEL CARRIER/3" STEEL CONTAINMENT PIPE
5	3" FEMALE COUPLER x 3" FEMALE NPT CONNECTOR
6	3" TIGERFLEX PVC HOSE
7	PUMP CONTROLLER/SOLENOID
8	POLYPROPYLENE WELL ROPE
9	500 KW HEATER WITH 20A, 2# TOGGLE SWITCH
10	1/2" POLYETHYLENE AIR TUBING
11	4" THICK CONCRETE WITH WWF – 6x6 – W10xW10
12	PUMP DISCHARGE HOSE
13	PORTLAND/VOLCLAY GROUT
14	6"ø SCH. 80 PVC RISER
15	BENTONITE SEAL
16	6"ø ID .080 SLOTTED STAINLESS STEEL SCREEN
17	5 MM GRAVEL PACK
18	WELL PUMP
19	SUMP

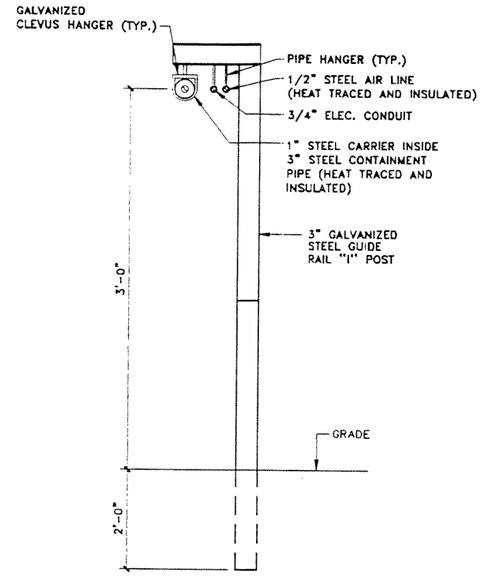
NOTE:

ALL PIPE PENETRATIONS AND CONCRETE JOINTS SHALL BE SEALED WITH NON-SHRINK GROUT.



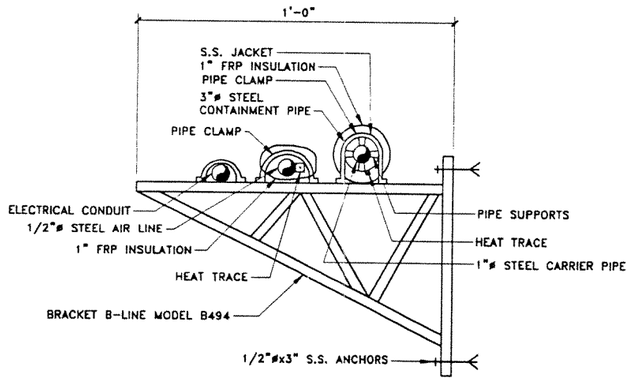
DNAPL EXTRACTION WELL RW-3(X) PLAN VIEW

NOT TO SCALE



TYPE 1 PIPE SUPPORT DETAIL

NOT TO SCALE



TYPE 2 PIPE SUPPORT DETAIL

NOT TO SCALE
(PROVIDE ONE EVERY 7 FEET)

LT ON=*, OFF=REF
P CONT-DUD/CONT-MVB
12/2/99 SYR-54-DCC
20193060/20193G03.DWG

Graphic Scale	No.	Date	Revisions	Init

Project Mgr.	WGS
Designed by	TEM
Drawn by	DCC
Checked by	MOG
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EAST STREET AREA 2 WELL RW-3(X) DNAPL RECOVERY SYSTEM

MISCELLANEOUS DETAILS

GENERAL

File Number
201.93.04F

Date
DECEMBER 1999

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