

LEGEND	
---	PVC SUCTION PIPE (SVE SYSTEM)
- - -	SLOTTED PVC SUCTION PIPE (SVE SYSTEM)
- - -	POLYETHYLENE WATER PIPE (GROUND WATER RECOVERY)
RW-#	RECOVERY WELL
VM-#	VAPOR MONITORING WELL
P-#	PIEZOMETER
ST	STORM SEWER
U#	OVERHEAD UTILITY LINE

SYMBOLS	
	BALL VALVE
	GATE VALVE
	BUTTERFLY VALVE
	CHECK VALVE
	GLOBE VALVE
	PRESSURE GAUGE
	VACUUM GAUGE
	DIFFERENTIAL PRESSURE GAUGE
	THERMOMETER
	UNION
	AIR SAMPLE PORT
	FLEXIBLE HOSE WITH QUICK CONNECT FITTINGS
	PUMP
	HIGH TEMPERATURE SWITCH
	PRESSURE SWITCH
	AVERAGING PITOT TUBE FLOW METER
	WATER FLOW METER/TOTALIZER
	THERMOSTAT
UH-1	UNIT HEATER
Ø	UTILITY POLE

ABBREVIATIONS	
SVE-#	SOIL VAPOR EXTRACTION WELL
VM-#	VAPOR MONITORING WELL
MW-#	MONITORING WELL
RW-#	GROUNDWATER RECOVERY WELL
DN	DOWN

RECEIVED
JUL 17 1996
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L.E. 'As Built'

PARTIAL SITE PLAN
SCALE 1"=10'-0"

NOTES:

Underground facilities, structures, and utilities have been plotted from available surveys and records, and therefore their locations must be considered approximate only. There may be others, the existence of which is presently not known.

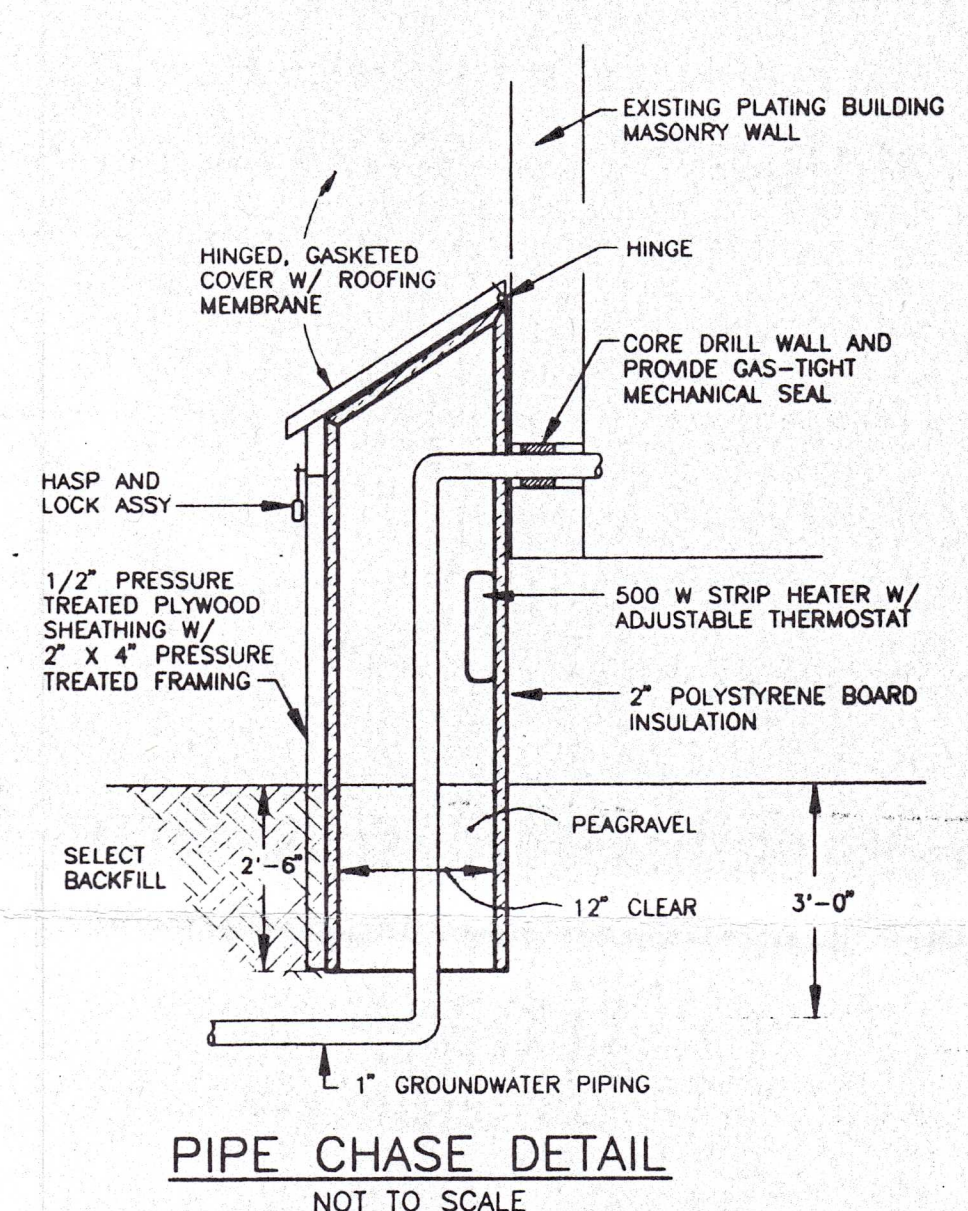
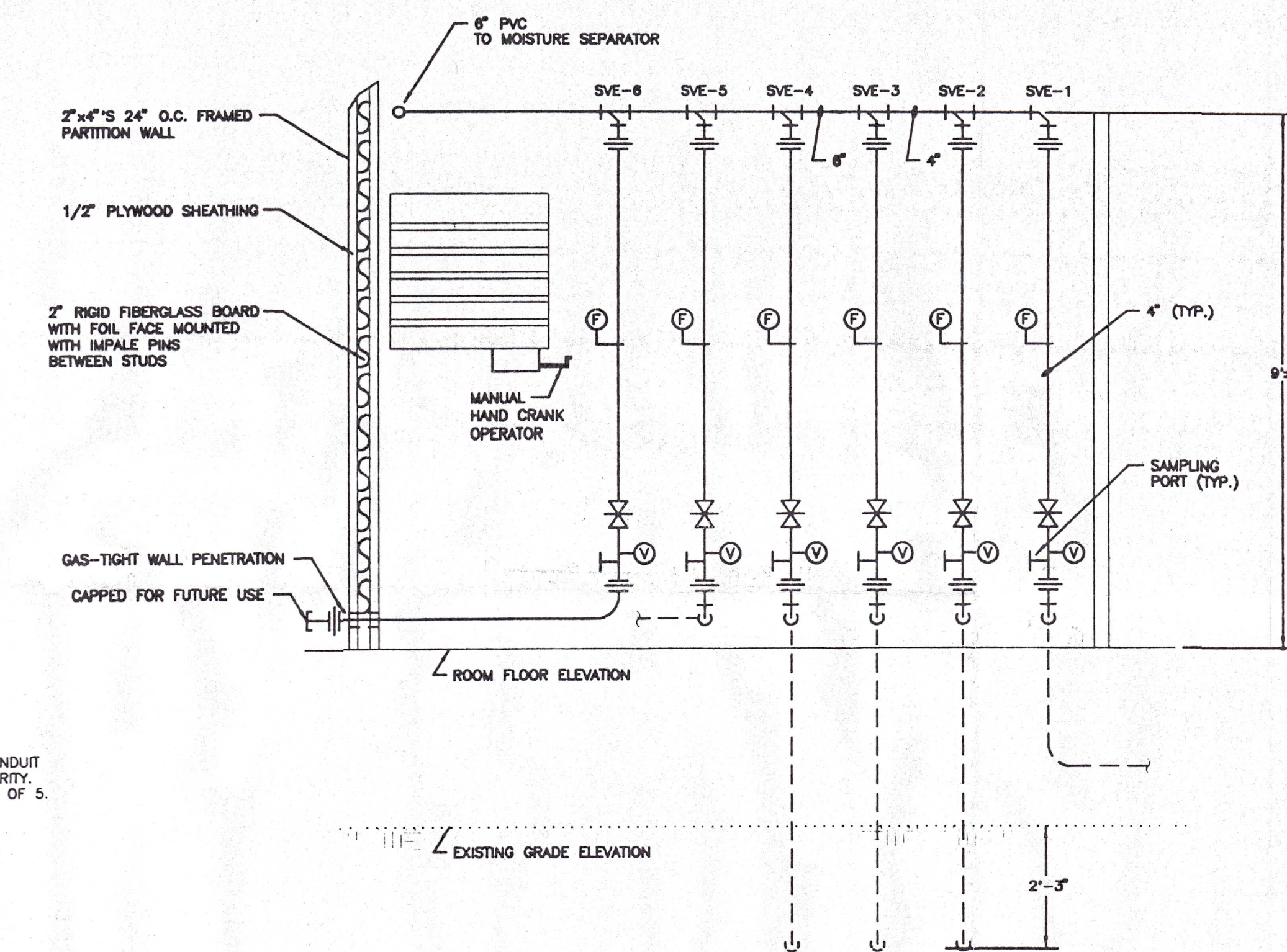
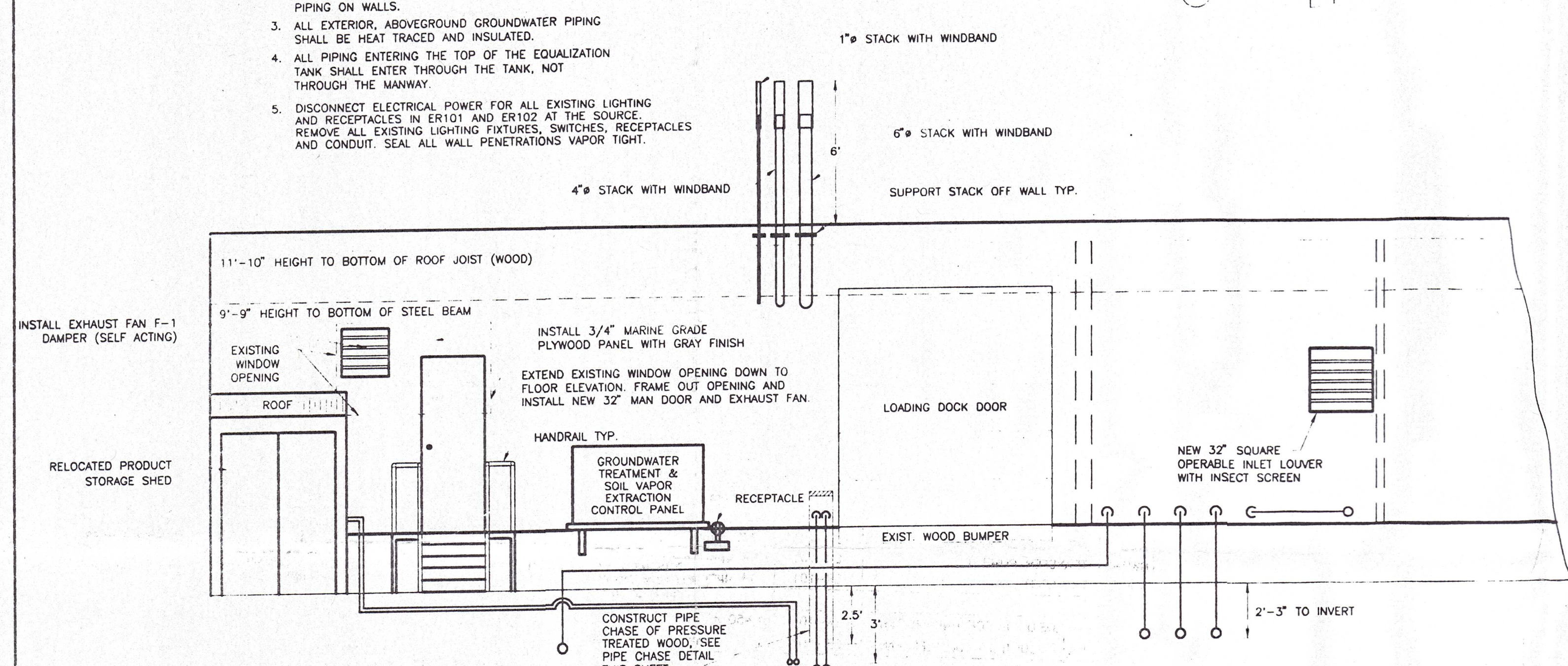
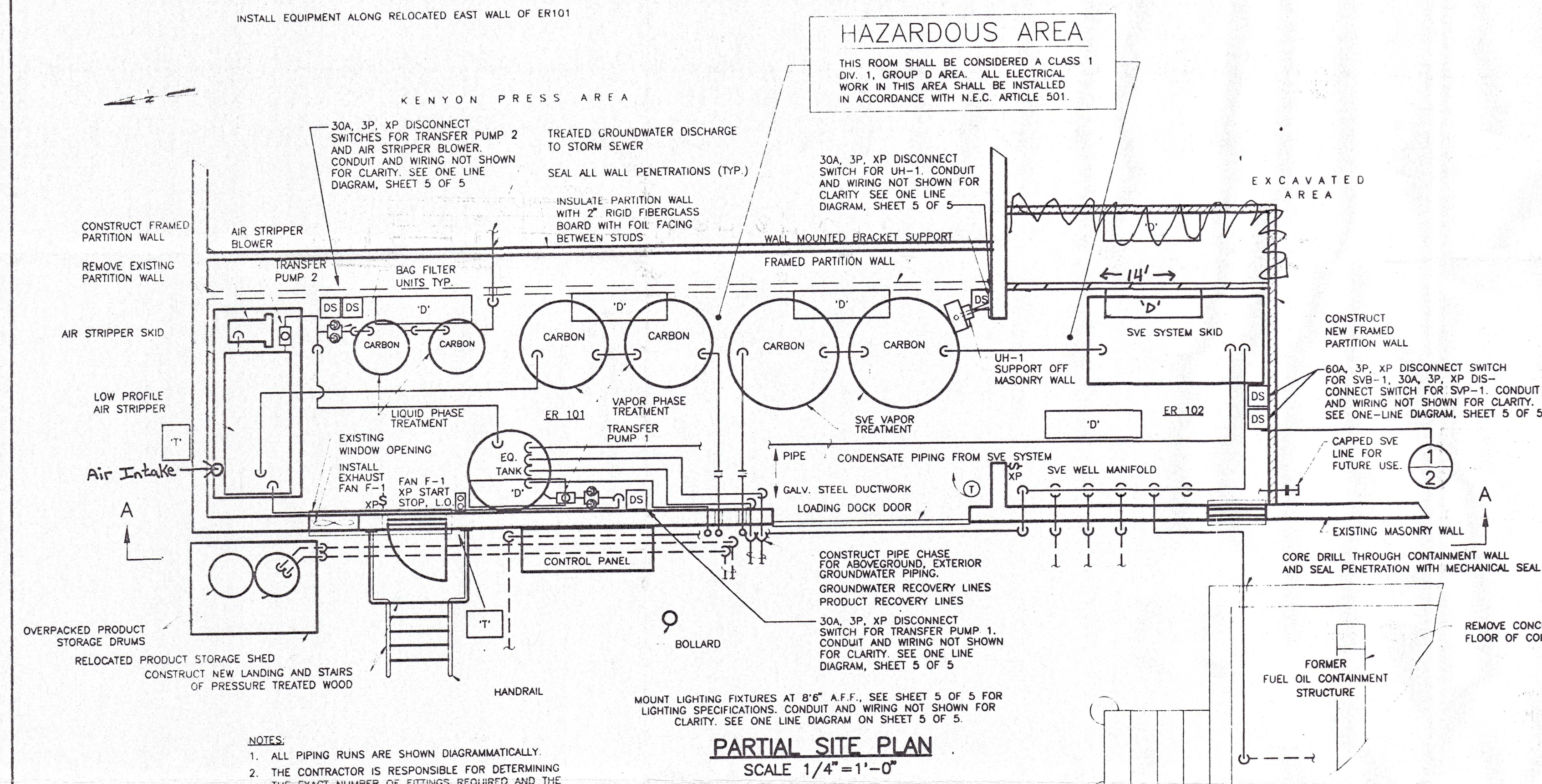
It is a violation of New York State Education Law for any person, unless acting under the direction of a licensed professional engineer, to alter an item on this drawing in any way, if an item is altered, the altering engineer shall affix to the item his/her seal and the notation "altered by" followed by his/her signature and the date of such alteration, and a specific description of the alteration.

As-built Corrected - Longworth Env.		7/96 DH			
2	FOR CONSTRUCTION	SHG/KAF	7/95	DKC/DBP/JMH	
1	FOR APPROVAL	DW	3/95	DKC/DBP/JMH	
PROJECT SUPERVISOR		DATE		CHECKED	
DESIGNER		DATE		APPROVED	
DEPARTMENT SUPERVISOR		DATE		APPROVED	
ISSUE NO.	DRAWN	DATE	CHECKED	DESIGNER	APPROVED



Stearns & Wheeler
ENVIRONMENTAL ENGINEERS & SCIENTISTS

GENERAL INSTRUMENT - SHERBURNE, NEW YORK			
REMEDIAL DESIGN			
SITE PLAN			
JOB NO.	1587	CONTRACT	1
SHEET	1	OF	5

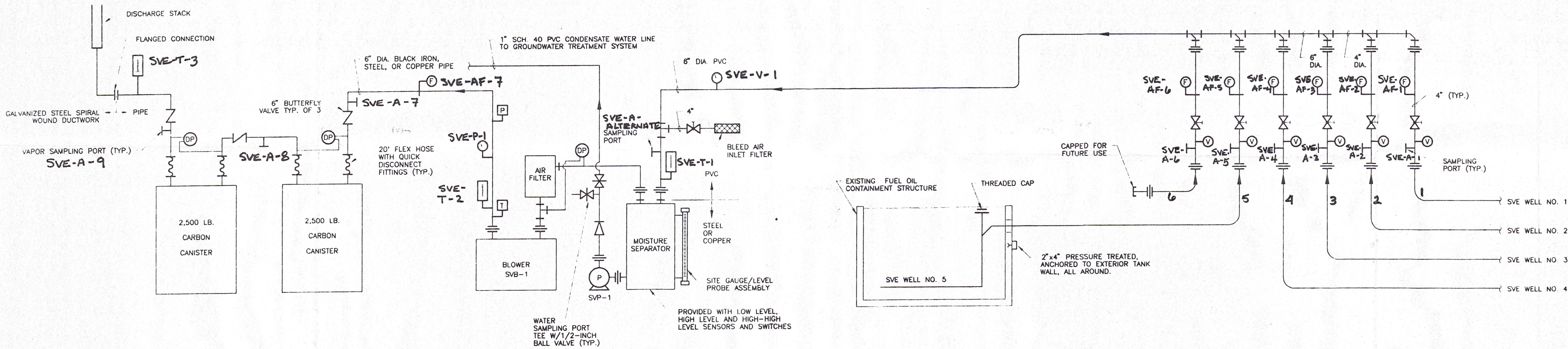


EQUIPMENT SCHEDULE									
UNIT I.D.	EQUIPMENT TYPE	LOCATION	FLOW RATE	PRESSURE	MOTOR HP OR WATTS	POWER VOLT/PH	HEATING KW	CONTROLLED BY	NOTES
SVB-1	VACUUM BLOWER	ER-102	750 cfm	97" w.g.	30 HP	480/3		CONTROL PANEL	1
SVP-1	CONDENSATE PUMP	ER-102	5 gpm	10 ft. wtr.	0.25 HP	480/3		CONTROL PANEL	1
GWP-1	GW RECOVERY PUMP	MW-18	7 gpm	40 ft. wtr.	0.5 HP	460/3		CONTROL PANEL	
GWP-2	GW RECOVERY PUMP	RW-1	7 gpm	40 ft. wtr.	0.5 HP	460/3		CONTROL PANEL	
GWP-3	PRODUCT RECOVERY PUMP	MW-18	2 gpm	70 ft. wtr.	100 WATTS	12Vdc		CONTROL PANEL	2,3
GWP-4	PRODUCT RECOVERY PUMP	RW-1	2 gpm	70 ft. wtr.	100 WATTS	12Vdc		CONTROL PANEL	2,3
GWB-1	AIR STRIPPER BLOWER	ER-101	275 cfm	55" w.g.	7.5 HP	460/3		CONTROL PANEL	1
GWP-5	TRANSFER PUMP 1	ER-101	14 gpm	80 ft. wtr.	0.75 HP	460/3		CONTROL PANEL	1
GWP-6	TRANSFER PUMP 2	ER-101	14 gpm	80 ft. wtr.	0.75 HP	460/3		CONTROL PANEL	1
UH-1	EXPLOSION PROOF UNIT HEATER	ER-101	1,450 cfm		0.17 HP	480/3	15	THERMOSTAT	1
F-1	WALL MOUNTED PROPELLER FAN	ER-101	1,800 cfm	.375" w.g.	0.25 HP	480/3		ON/OFF SWITCH	1

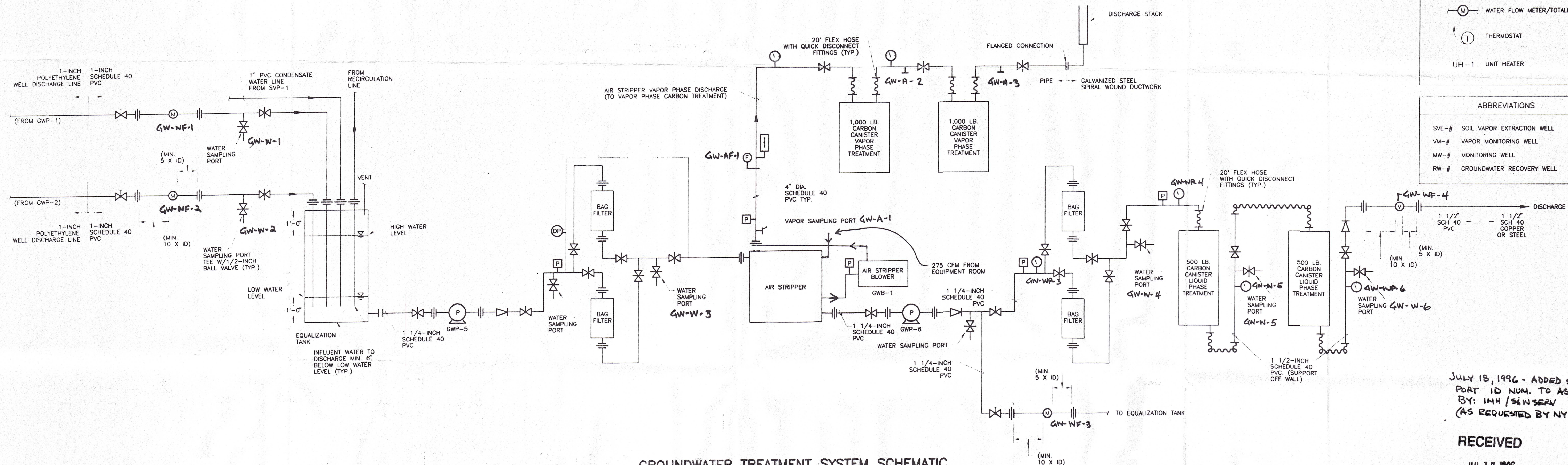
- SCHEDULE NOTES**
- UNIT SHALL BE EXPLOSIONPROOF CONSTRUCTION RATED FOR NEC CLASS I, DIVISION 1, GROUP D.
 - UNIT SHALL BE POWERED FROM THE CONTROL PANEL.
 - UNIT SHALL BE INTRINSICALLY SAFE.

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L.E. 'AS BUILTS'

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SOIL VAPOR EXTRACTION SYSTEM SCHEMATIC
NOT TO SCALE



GROUNDWATER TREATMENT SYSTEM SCHEMATIC
NOT TO SCALE

SYMBOLS	
	BALL VALVE
	GATE VALVE
	BUTTERFLY VALVE
	CHECK VALVE
	GLOBE VALVE
	PRESSURE GAUGE
	VACUUM GAUGE
	DIFFERENTIAL PRESSURE GAUGE
	THERMOMETER
	UNION
	VAPOR SAMPLE PORT
	FLEXIBLE HOSE WITH QUICK CONNECT FITTINGS
	PUMP
	HIGH TEMPERATURE SWITCH
	PRESSURE SWITCH
	AVERAGING PITOT TUBE FLOW METER
	WATER FLOW METER/TOTALIZER
	THERMOSTAT
	UH-1 UNIT HEATER

ABBREVIATIONS	
SVE-#	SOIL VAPOR EXTRACTION WELL
VM-#	VAPOR MONITORING WELL
MW-#	MONITORING WELL
RW-#	GROUNDWATER RECOVERY WELL

JULY 18, 1996 - ADDED SAMPLE
PORT ID NUM. TO AS BUILTS.
BY: IMH / S&W SERV
(AS REQUESTED BY NYSDEC)

RECEIVED

JUL 17 1996

S & W SERVICES

LE. 'AS BUILTS'

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As-Built Corrected - Longworth Env.

7/9/96 DT

FOR CONSTRUCTION

DW/KAF 7/95 IMH/DBP

FOR APPROVAL

DW 3/95 IMH/DBP

PROJECT SUPERVISOR DEPARTMENT SUPERVISOR

7/9/96

ISSUE NO. DRAWN DATE CHECKED DESIGNER APPROVED DATE



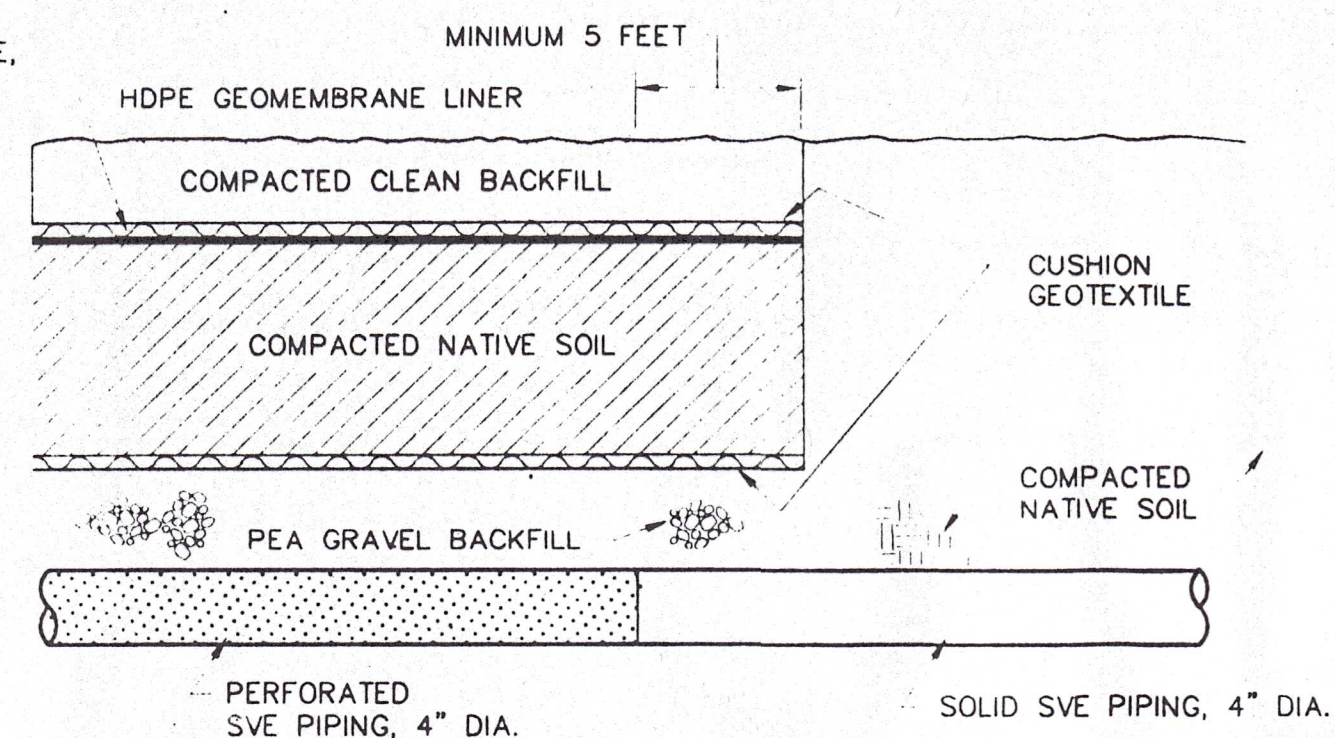
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GENERAL INSTRUMENT - SHERBURNE, NEW YORK

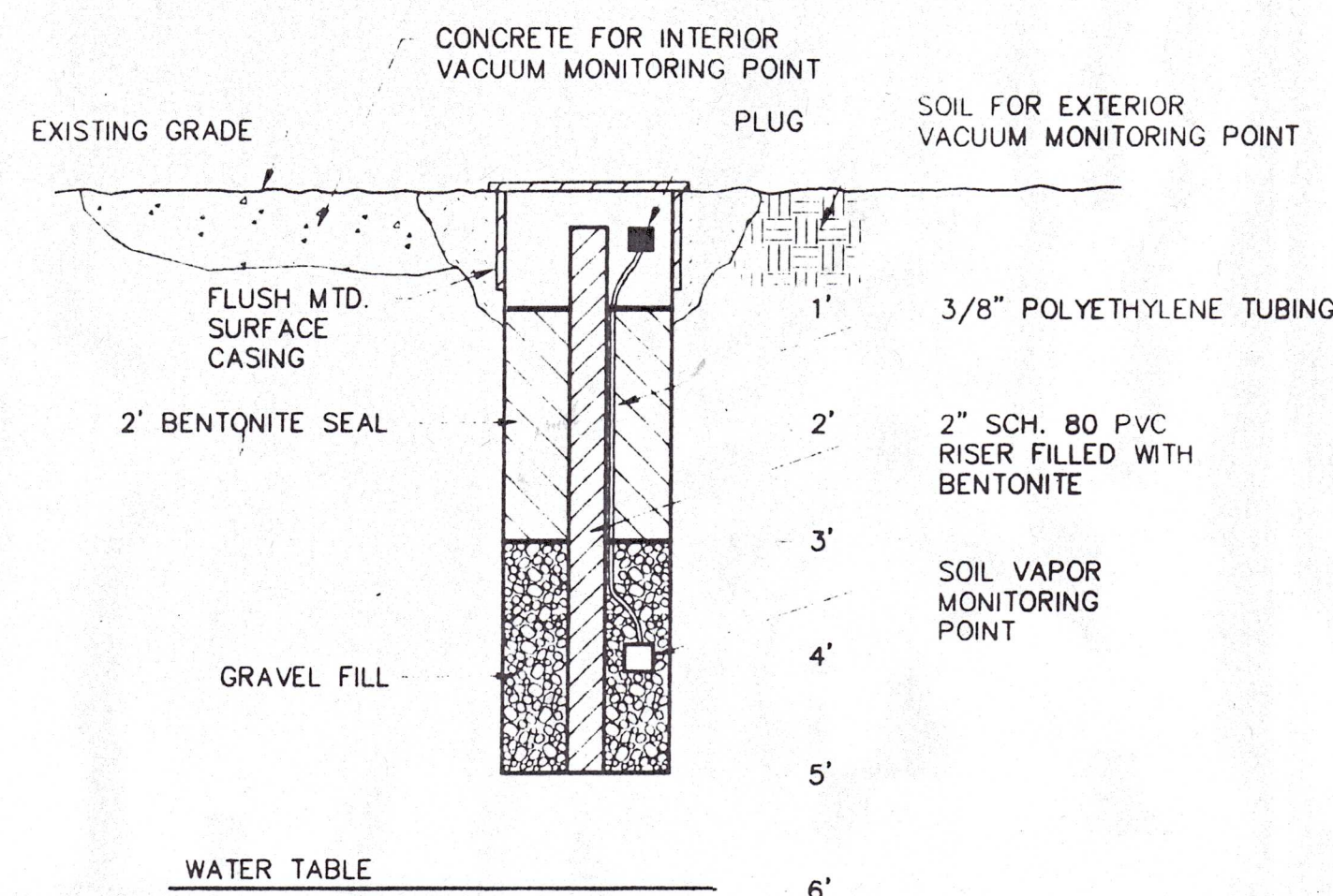
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SCHEMATICS AND DETAILS

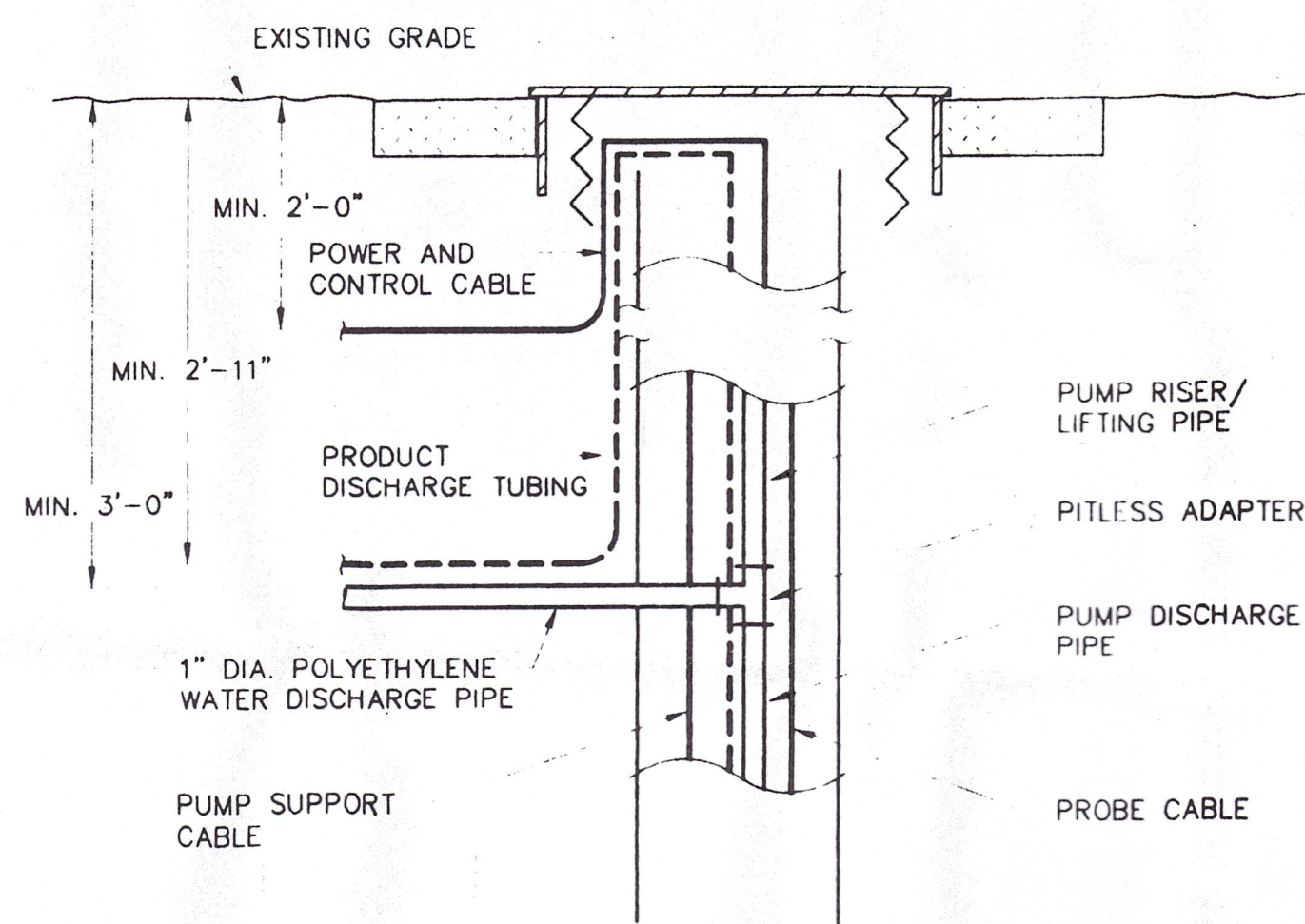
JOB NO. 1587 CONTRACT 1 SHEET 3 OF 5



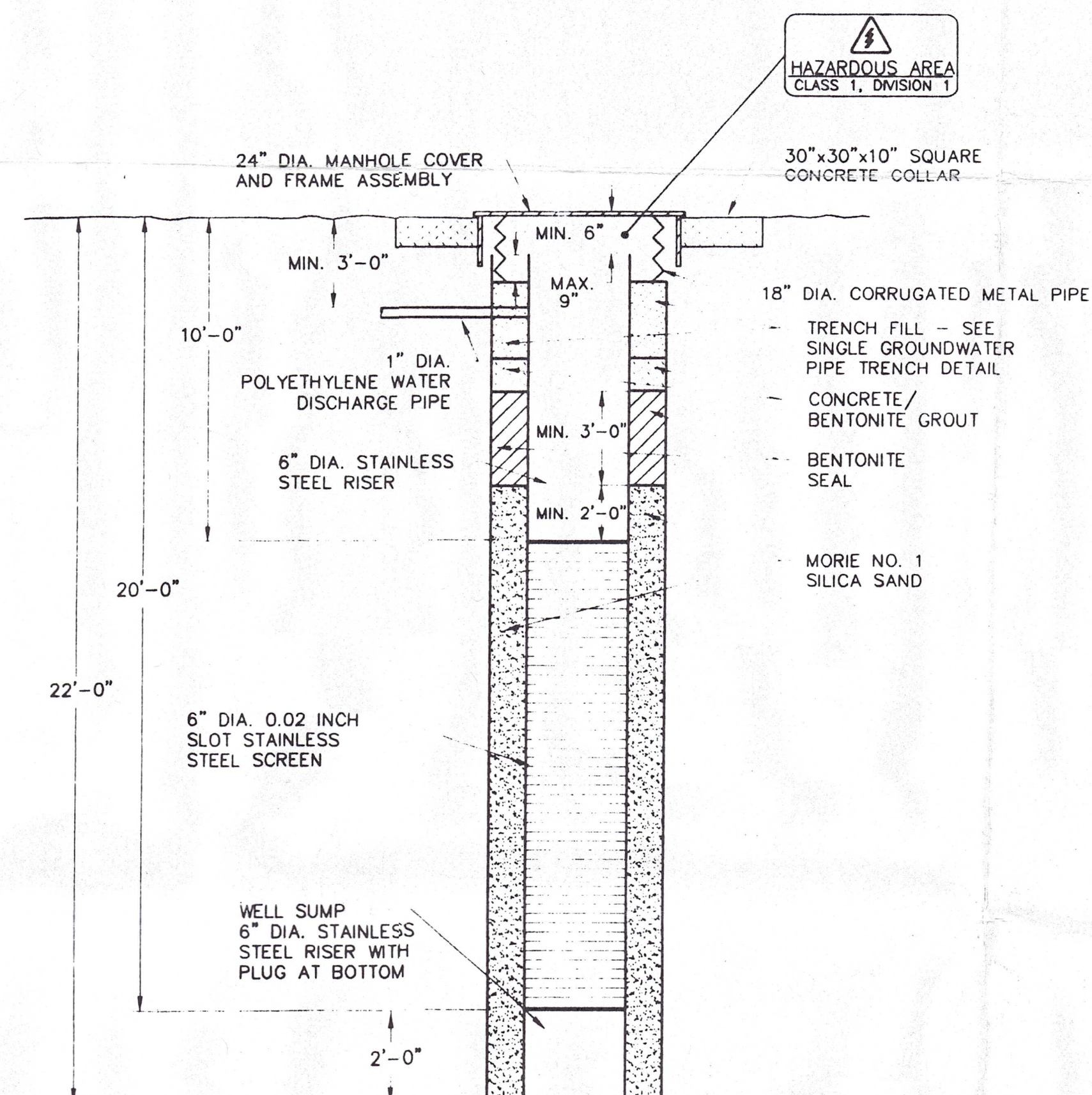
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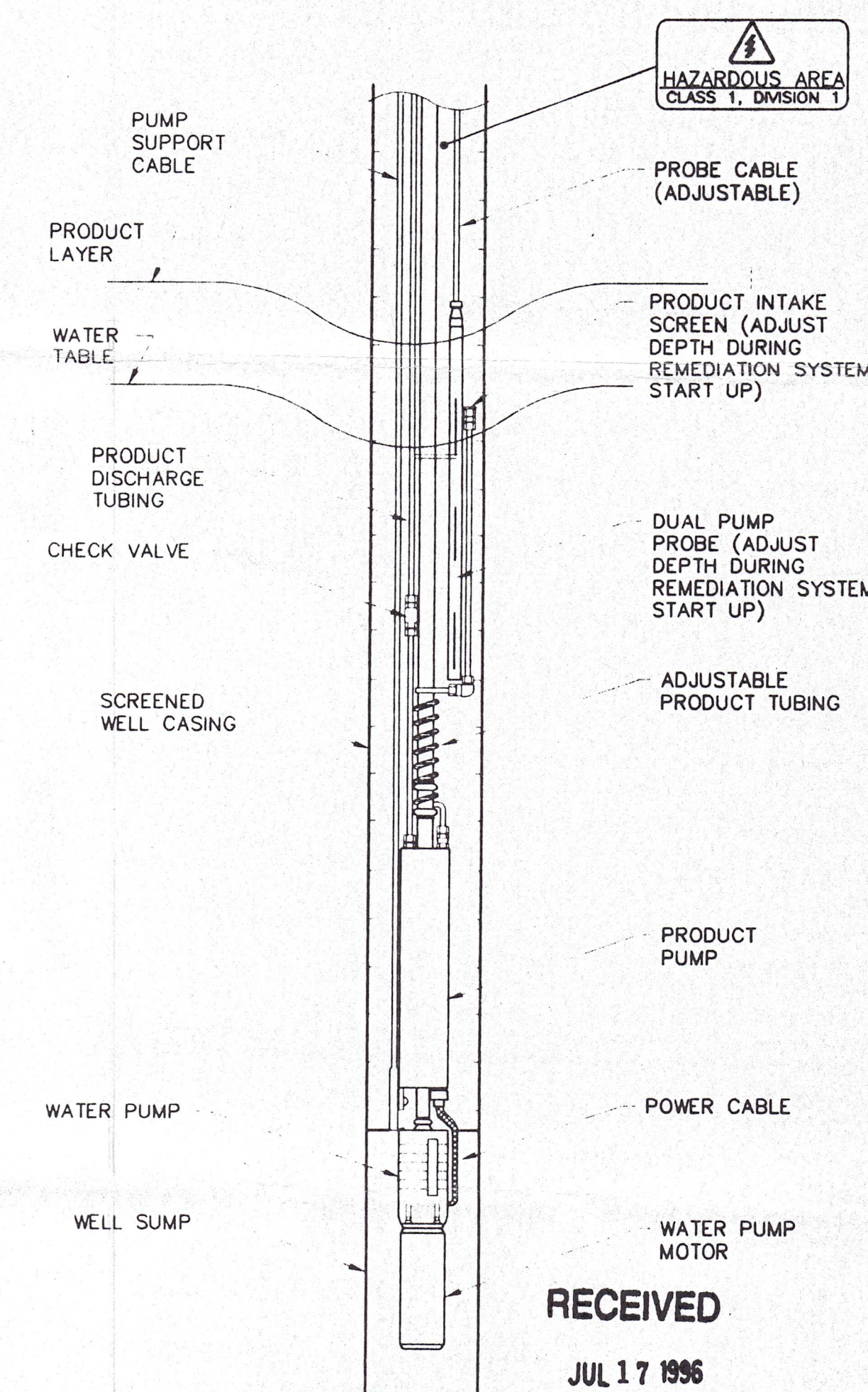
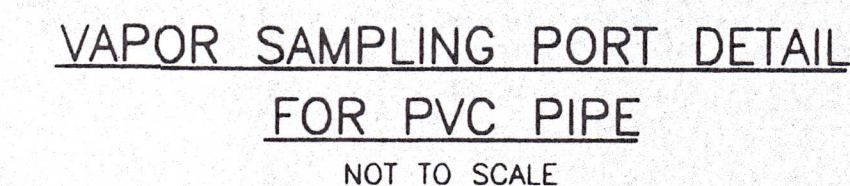
VACUUM MONITORING POINT DETAIL



GROUNDWATER WELL DISCHARGE DETAIL



GROUNDWATER RECOVERY WELL RW-1 DETAIL



NOT TO SCALE
INSTALL AS REQUIRED BY MANUFACTURER
LE 'AS BUILTS'

1.25.5



Stearns & Wheeler
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GENERAL INSTRUMENT - SHERBURNE, NEW YORK

REMEDIAL DESIGN

SECTIONS AND DETAILS

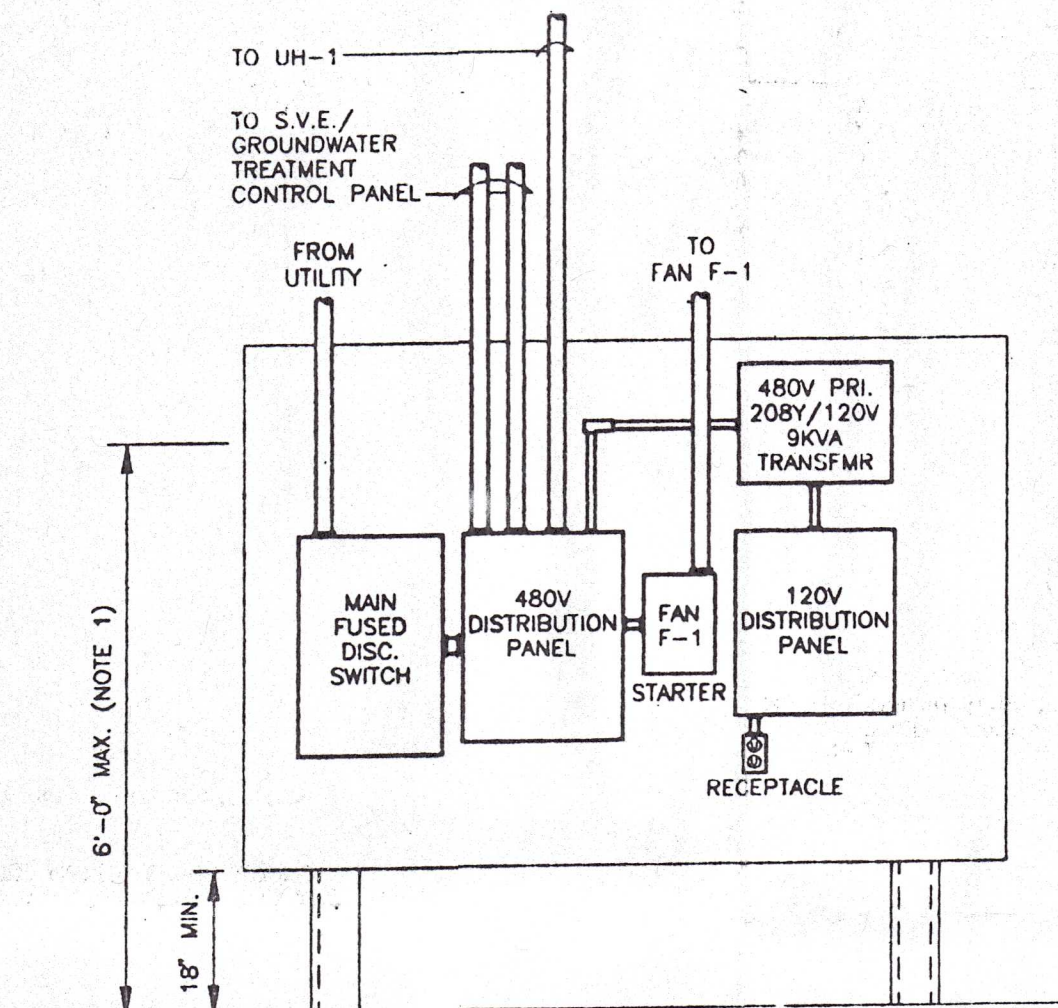
JOB NO.	1587	CONTRACT	1	SHEET	4 OF 5
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NOTES:

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST REVISION OF THE NATIONAL ELECTRIC CODE, THESE CONTRACT DOCUMENTS, AND ALL LOCAL AUTHORITIES HAVING JURISDICTION.
- THE CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIALS, LABOR, EQUIPMENT, SUPPLIES, TOGETHER WITH ALL RELATED AND REQUIRED APPURTENANCES TO PROVIDE A COMPLETE AND OPERATING ELECTRICAL SYSTEM. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE AMOUNT OF MATERIALS REQUIRED.
- THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, INSPECTIONS, AND APPROVALS REQUIRED FOR THE ELECTRICAL WORK. THE OWNER SHALL BE PROVIDED A FINAL INSPECTION CERTIFICATE FROM AN OWNER APPROVED TESTING ORGANIZATION UPON COMPLETION OF WORK.
- HAZARDOUS LOCATIONS SHALL BE AS DEFINED BY THE N.E.C. ALL ELECTRICAL WORK IN THESE AREAS SHALL BE IN ACCORDANCE TO THESE ARTICLES.
- ALL THREADED CONDUIT SHALL BE JOINED USING KOPR-SHIELD CONDUCTIVE SEALING COMPOUND BY THOMAS & BETTS. ALL EXTERIOR CONDUIT SHALL BE MADE WATER TIGHT. CLEAN OUTER CONDUIT SURFACES BEFORE SEALING.
- ALL CONDUIT RUNS ARE SHOWN DIAGRAMMATICALLY. THE ELECTRICAL INSTALLER IS RESPONSIBLE FOR DETERMINING THE EXACT NUMBER OF FITTINGS REQUIRED AND THE LOCATION OF THE RUNS.
- THE CONTRACTOR SHALL FURNISH AND INSTALL ALL SUPPORTS, HANGERS, BRACKETS, ETC. FOR THE PROPER INSTALLATION OF THE ELECTRICAL SYSTEM.
- ALL WIRE SHALL BE STRANDED COPPER WITH THIN/TWIN GAS AND OIL RESISTANT INSULATION UNLESS OTHERWISE NOTED. COLOR CODE ALL WIRING.
- ALL CONDUIT SHALL BE RIGID STEEL CONDUIT, UNLESS STATED OTHERWISE.
- PROVIDE HAZARDOUS AREA SEAL OFFS IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE. PROVIDE A UNION AT EACH SEAL OFF.
- CONDUIT SIZES SHALL BE AS SHOWN ON THE DRAWINGS.
- CONDUITS SHALL BE LABELED AS TO DESTINATION. ALSO, LABEL INTRINSICALLY SAFE CIRCUITS.
- NO TERMINATIONS SHALL BE MADE IN WIREWAYS OR PULL BOXES. PROVIDE TERMINAL STRIPS IN ALL JUNCTION BOXES 100 CUBIC INCHES OR LARGER. SIZE BOXES AS REQUIRED.
- PROVIDE WEATHER PROOF JUNCTION BOXES AND SEAL OFFS PER MANUFACTURER'S RECOMMENDATIONS.
- CONTRACTOR SHALL PROVIDE FULLY LABELED RECORD DRAWINGS. DRAWINGS SHALL SHOW CONDUIT RUNS AND DESTINATION, WIRE TERMINAL NUMBERS, WIRE NUMBERS, AND GENERAL ROUTING. DIMENSION BURIED CONDUIT OFF BUILDINGS.
- THE CONTROL PANEL SHALL HOUSE CONTROLS FOR BOTH THE SOIL VAPOR EXTRACTION SUB-SYSTEM AND THE GROUNDWATER AND PRODUCT RECOVERY AND TREATMENT SUB-SYSTEM. THE CONTROL PANEL SHALL BE EQUIPPED WITH TERMINAL STRIPS, SUITABLY LABELED FOR CONNECTIONS TO MAIN POWER AND SYSTEM COMPONENTS. LAY-OUT CONTROL PANEL SUCH THAT THE TWO SUB-SYSTEMS ARE PHYSICALLY AND ELECTRICALLY ISOLATED. CONTROL PANEL SHALL REQUIRE TWO MAIN POWER FEEDS, ONE FOR THE SOIL VAPOR EXTRACTION SUB-SYSTEM, AND ONE FOR THE GROUNDWATER AND PRODUCT RECOVERY AND TREATMENT SUB-SYSTEM. ISOLATE ALL INTRINSICALLY SAFE COMPONENTS. PROVIDE A MEANS OF DISCONNECTING POWER TO BOTH SUB-SYSTEMS. PROVIDE INTERCONNECTIONS BETWEEN THE CONTROLS OF EACH SYSTEM TO AUTOMATICALLY STOP AND START EQUIPMENT AS DESCRIBED IN THE SPECIFICATIONS. PROVIDE OVERCURRENT PROTECTION AND MOTOR STARTERS WITH THERMAL OVERLOAD PROTECTION FOR EACH MOTOR CONTROLLED BY THE PANEL. PROVIDE FULL COMPLEMENT OF RELAYS, PUSH BUTTONS, INDICATING LIGHTS AND ANY OTHER MISCELLANEOUS CONTROL DEVICE AS REQUIRED FOR A COMPLETE OPERATING CONTROL PANEL AS DESCRIBED IN THE SPECIFICATIONS. THE CONTROL PANEL ENCLOSURE SHALL BE A NEMA 4 ENCLOSURE WITH DEAD FRONT CONSTRUCTION. THE OUTER DOOR SHALL BE EQUIPPED WITH A GLASS WINDOW TO ALLOW VIEWING OF THE INDICATING LIGHTS.

ABBREVIATIONS

I.S.	INTRINSICALLY SAFE
XP	EXPLOSION PROOF, NEMA 7
DISC.	DISCONNECT
SW.	SWITCH
A	AMPERE
P	POLE, PHASE
MANUF.	MANUFACTURER
HP	HORSE POWER
S.V.E.	SOIL VAPOR EXTRACTION
Cw/	CONDUIT WITH
PS	PRESSURE SWITCH
LS	LEVEL SWITCH
HLS	HIGH LEVEL SWITCH
TS	TEMPERATURE SWITCH
JB	JUNCTION BOX
WP	WEATHER PROOF
GFCI	GROUND FAULT INTERRUPTING CIRCUIT
G	GROUND
N	NEUTRAL
V.F.D.	VARIABLE FREQUENCY DRIVE

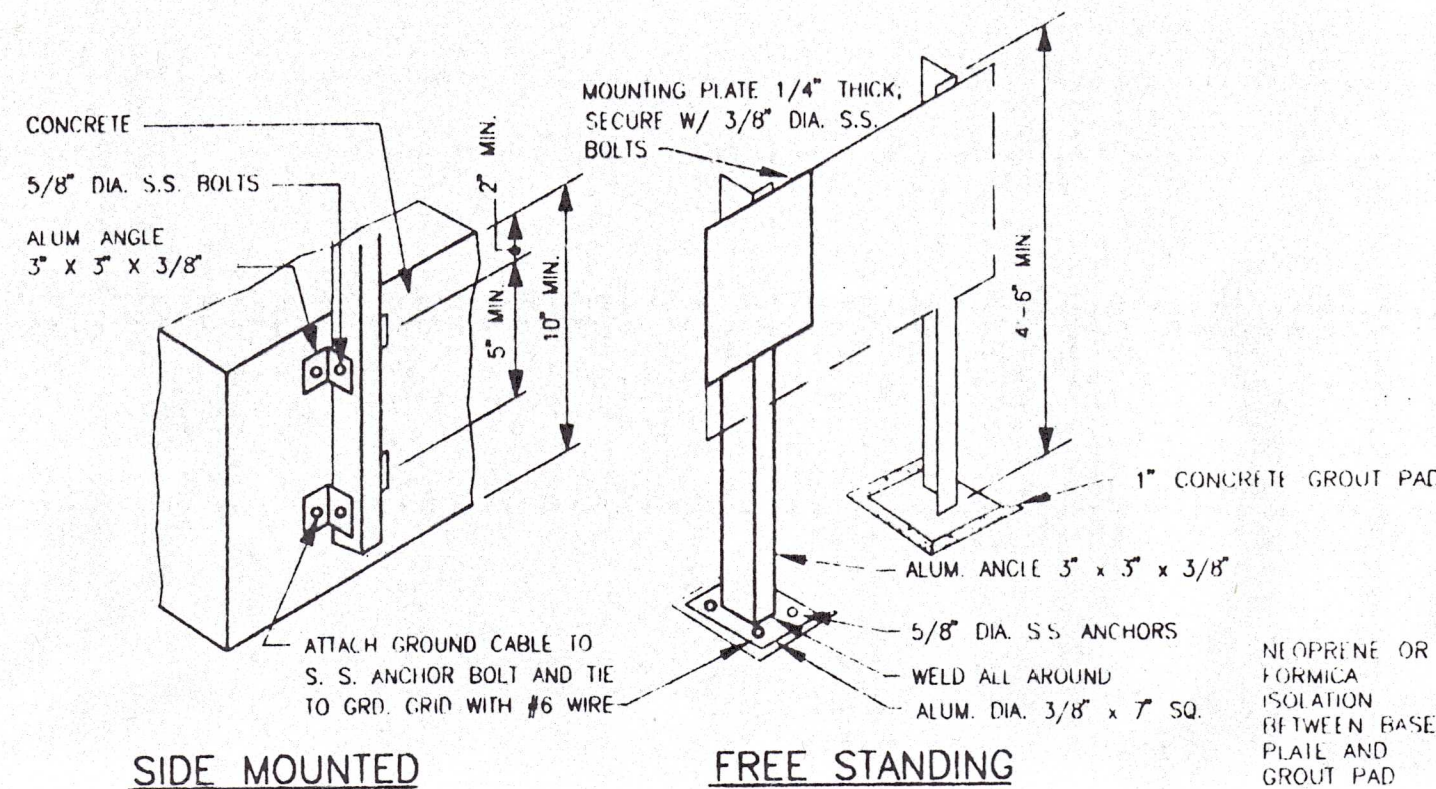


NOTES:

- MOUNT PANELS SO THAT NO OPERATING SWITCHES OR PUSH BUTTONS ARE HIGHER THAN 6'-0" ABOVE GRADE.
- SEE MOUNTING DETAIL THIS SHEET.
- CONDUIT AND SEAL OFFS TO REMOTE EQUIPMENT NOT SHOWN FOR CLARITY.
- SIZES SHOWN ARE APPROXIMATE. SIZE MOUNTING PANEL FOR ACTUAL EQUIPMENT SIZES.

PANEL MOUNTING ELEVATION

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

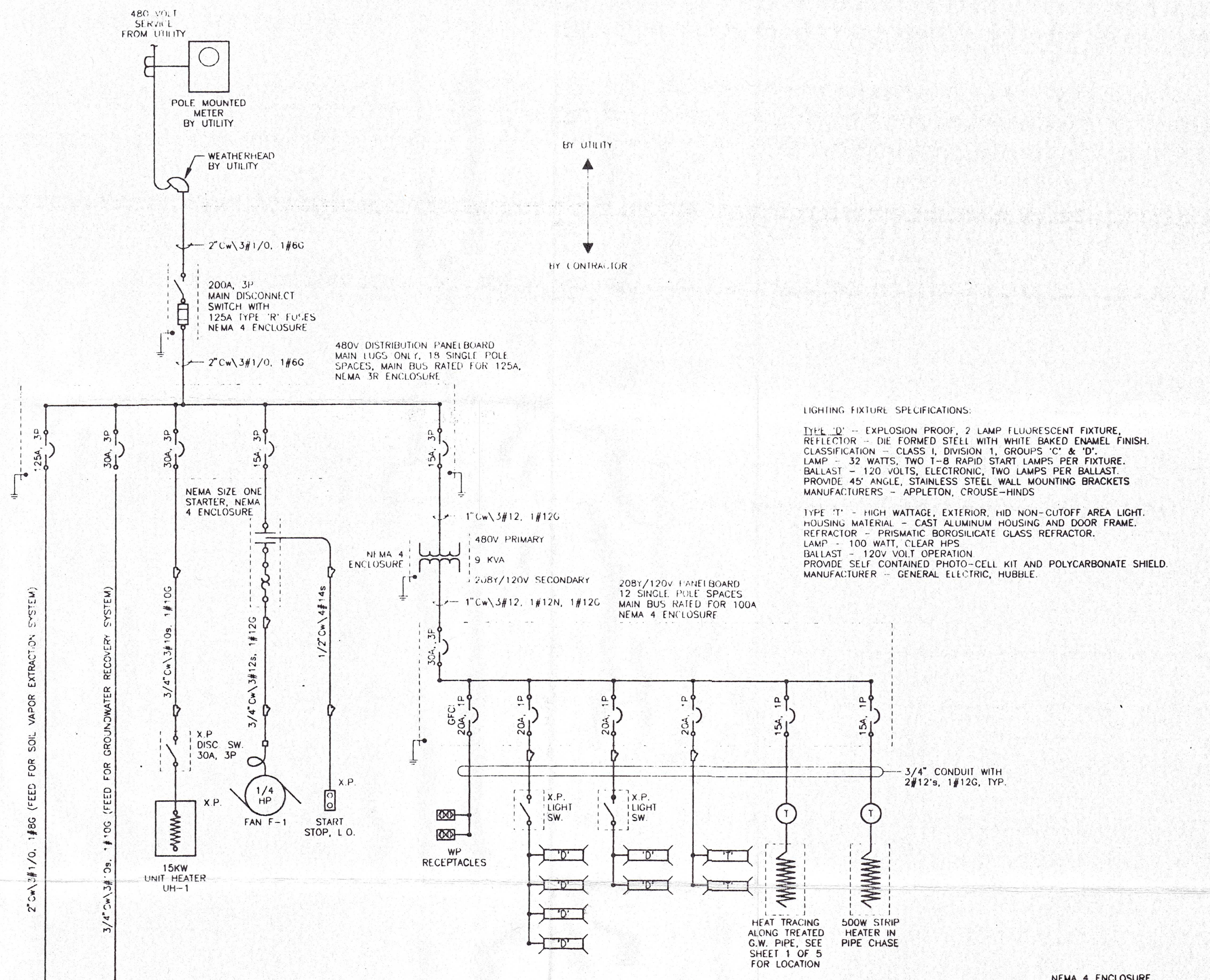
SIDE MOUNTED
ON EQUIPMENT PAD

FREE STANDING

ITEMS LARGER THAN 4" X 4" SHALL BE INSTALLED ON MOUNTING PLATE. TWO POSTS ARE REQUIRED FOR ENCLOSURES WIDER THAN 12". MOUNTING PLATES SHALL BE 1/4" TH ALUM PL. GREATER ON EACH SIDE THAN DIMENSION OF ENCLOSURE(S). ROUND ALL CORNERS AND EDGES. EQUIPMENT MOUNTING SHALL BE WITH S. S. FASTENERS.

TYPICAL MOUNTING PANELS

NO SCALE

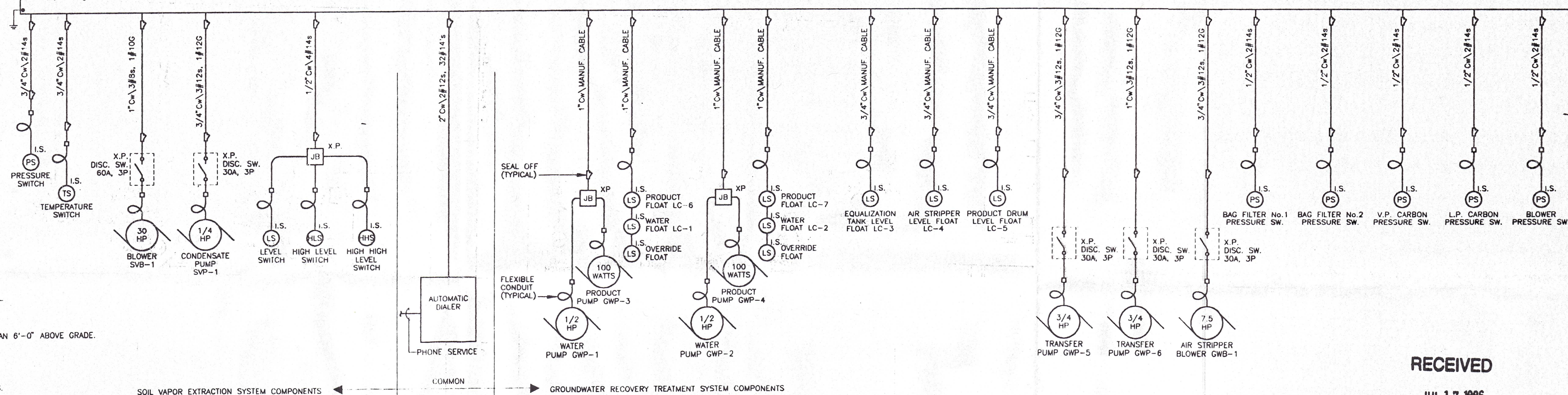


LIGHTING FIXTURE SPECIFICATIONS:

TYPE 'D' - EXPLOSION PROOF, 2 LAMP FLUORESCENT FIXTURE, REFLECTOR - DIE FORMED STEEL WITH WHITE BAKED ENAMEL FINISH. CLASSIFICATION - CLASS I, DIVISION 1, GROUPS 'C' & 'D'. LAMP - 32 WATTS, TWO T-8 RAPID START LAMPS PER FIXTURE. BALLAST - 120 VOLTS, ELECTRONIC, TWO LAMPS PER BALLAST. PROVIDE 45° ANGLE, STAINLESS STEEL WALL MOUNTING BRACKETS. MANUFACTURERS - APPLETON, CROUSE-HINDS.

TYPE 'T' - HIGH WATTAGE, EXTERIOR, HID NON-CUTOFF AREA LIGHT. HOUSING MATERIAL - CAST ALUMINUM HOUSING AND DOOR FRAME. REFRACTOR - PRISMATIC BOROSILICATE GLASS REFRACTOR. LAMP - 100 WATT, CLEAR HPS. BALLAST - 120V VOLT OPERATION. PROVIDE SELF-CONTAINED PHOTO-CELL KIT AND POLYCARBONATE SHIELD. MANUFACTURER - GENERAL ELECTRIC, HUBBELL.

SOIL VAPOR EXTRACTION / GROUNDWATER RECOVERY TREATMENT CONTROL PANEL (SEE NOTE 16)



INSTALL ALL PANELS AND SEAL OFFS A MINIMUM OF 18 INCHES ABOVE GRADE.

ONE LINE DIAGRAM

NOT TO SCALE

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LE 'AS BUILTS'

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As-built Checked - Longworth EHV		7/16/96		DW	
2	FOR CONSTRUCTION	TWD/KAF	7/95	TWO	11/11/95
1	FOR APPROVAL	TWD	3/95	TWO	
ISSUE NO.	DRAWN	DATE	CHECKED	DESIGNER	APPROVED
PROJECT SUPERVISOR	DEPARTMENT SUPERVISOR				ISSUE NO.
DRAWN	DATE	CHECKED	DESIGNER	APPROVED	DATE



Stearns & Wheler
ENVIRONMENTAL ENGINEERS & SCIENTISTS

GENERAL INSTRUMENT - SHERBURNE, NEW YORK

REMEDIAL DESIGN

ELECTRICAL ONE LINE
DIAGRAM

JOB NO. 1587 CONTRACT 1 SHEET 5 OF 5