FIGURES

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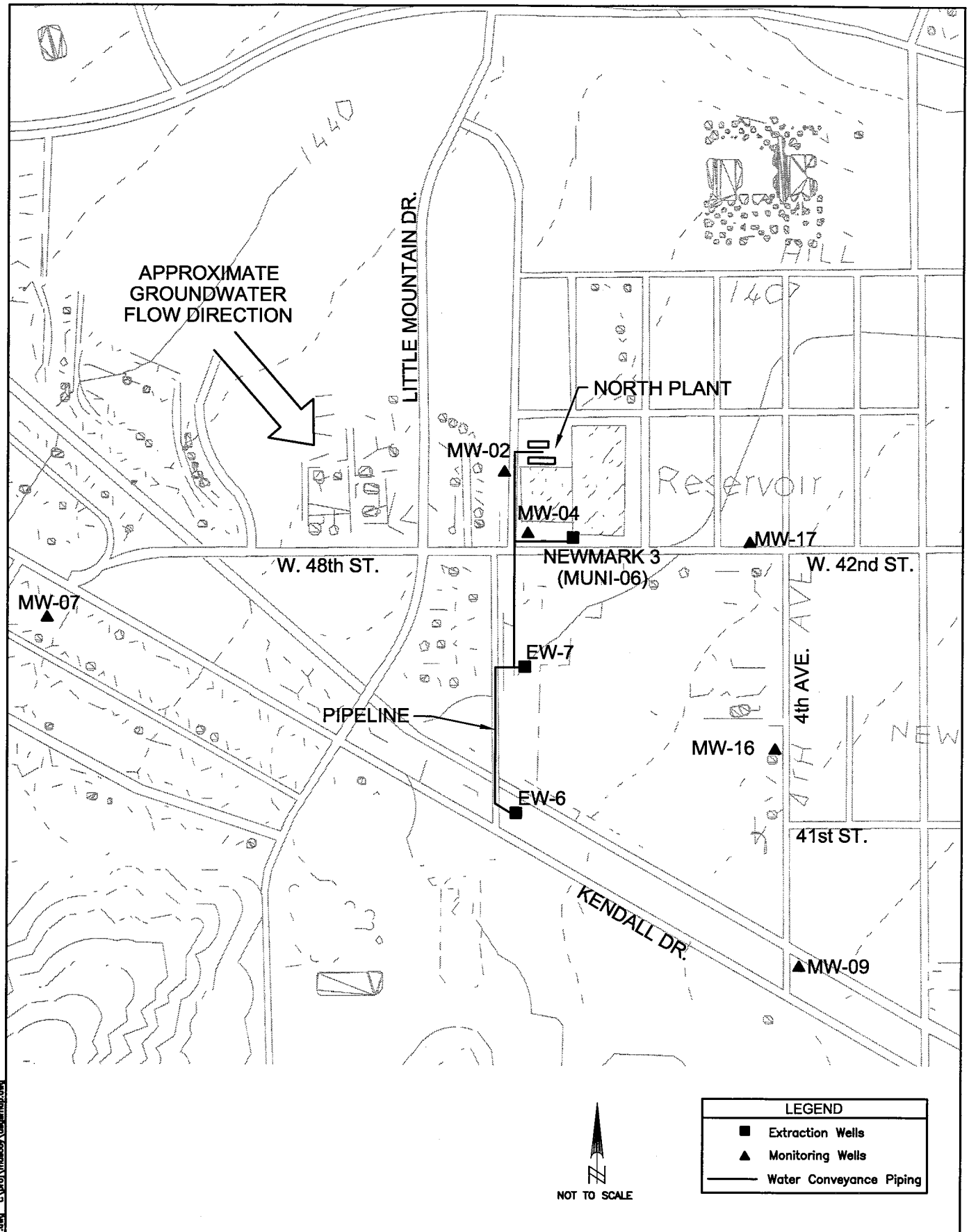
SITE LOCATION MAP

NEWMARK GROUNDWATER
CONTAMINATION SUPERFUND SITE

FIGURE 1-1



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NORTH AREA SITE PLAN
NORTH PLANT

NEWMARK GROUNDWATER
CONTAMINATION SUPERFUND SITE

FIGURE 1-2

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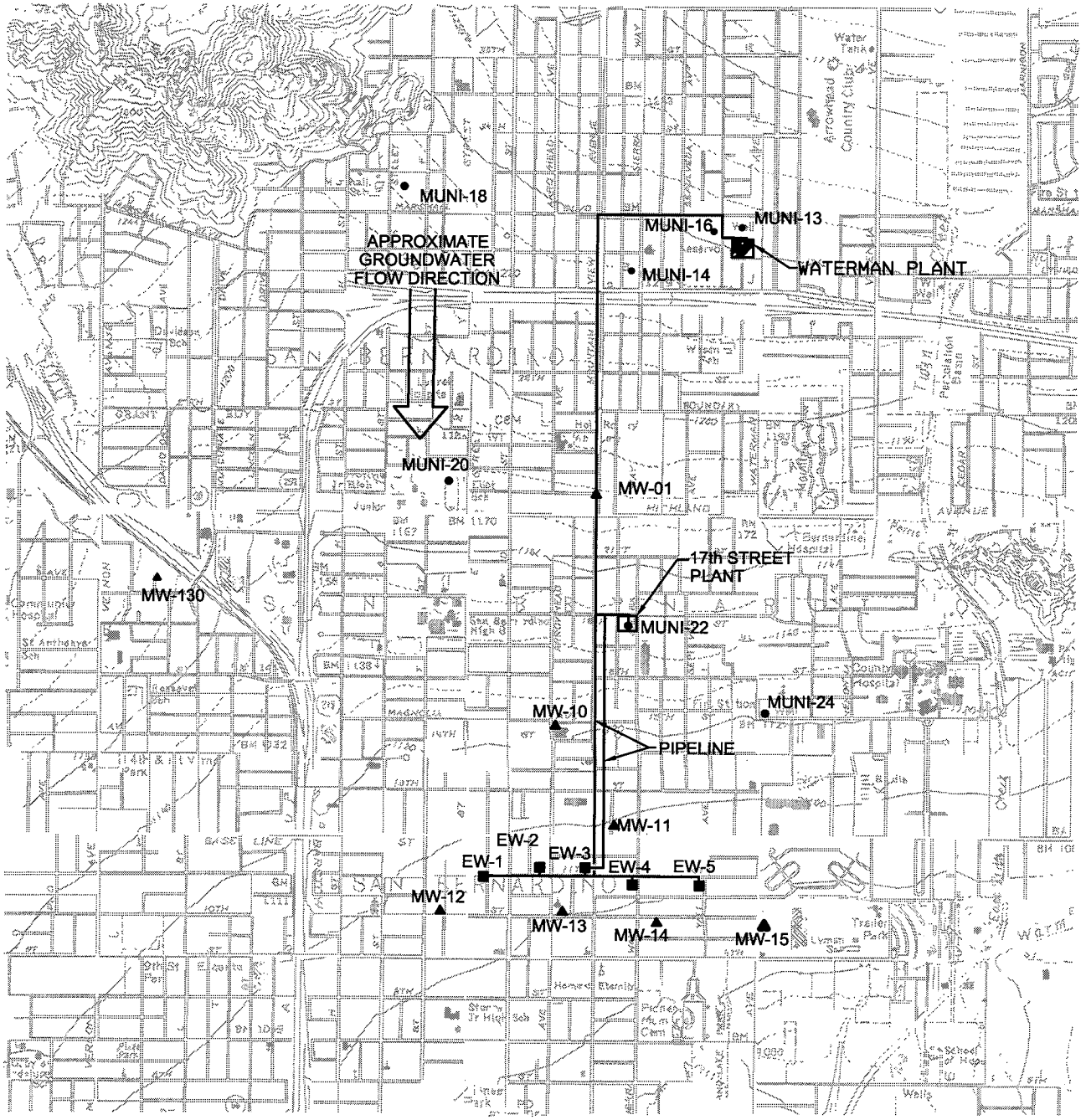
XREFS: t:\proj\muscoy\extm1-1.dwg t:\proj\muscoy\usgsmap.dwg



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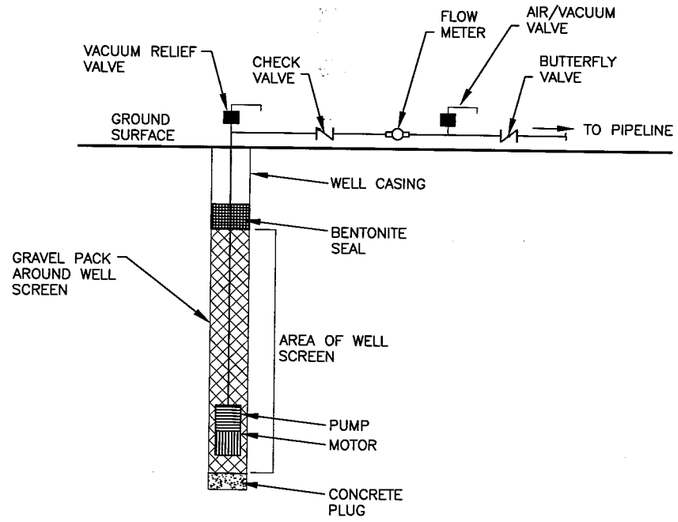
SOUTH AREA SITE PLAN
WATERMAN AND
17th STREET PLANTS

NEWMARK GROUNDWATER
CONTAMINATION SUPERFUND SITE

FIGURE 1-3

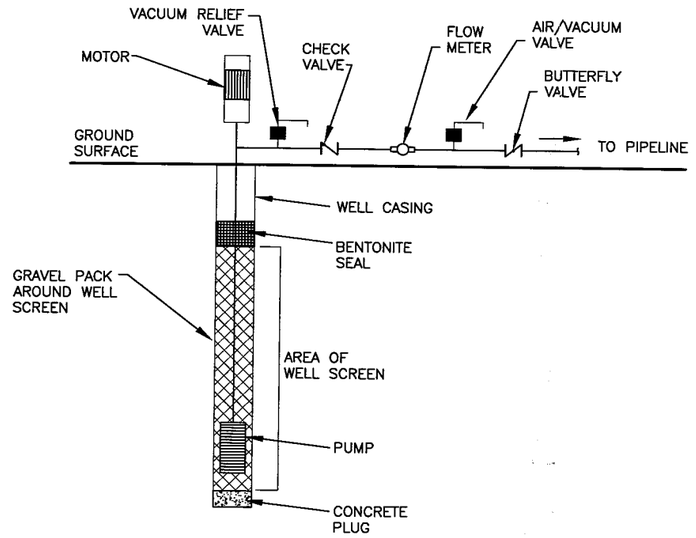
DRAWING: W:\Projects\Newmark\20030107\fig1-3.dwg

Well Name	Address	Diameter of Well (inches)	Depth (feet)	Flow Rate (gpm)	Horsepower	RPM	Discharge Head	Screened Interval(s) (feet)
North Plant Wells								
Newmark 3	48th Street, E of Little Mountain	16	495	1,600	150	1,800	275 feet @ 1,000 gpm	232-270, 283-305, 331-462
EW-6	Kendall Dr. & Western Ave.	16	340	1,000	100	1,800	245 feet @ 1,000 gpm	115-315
EW-7	1295 W. 48th Street	16	480	1,300	100	1,800	235 feet @ 1,000 gpm	200-270
South Plant Wells								
EW-1	1094 N. E Street	16	1200	2,000	350	3,500 (VFD)	449 feet @ 2,000 gpm	600-1,190
EW-2	1108 N. Arrowhead Ave.	16	1080	2,000	350	3,500 (VFD)	449 feet @ 2,000 gpm	500-1,070
EW-3	226 W. 11th Street	16	810	2,200	250	3,500 (VFD)	290 feet @ 2,200 gpm	240-280, 320-400, 500-800
EW-4	107 W. 11th Street	16	1200	2,000	350	3,500 (VFD)	449 feet @ 2,000 gpm	490-1,180
EW-5	217 E. 11th Street	16	1150	2,000	350	3,500 (VFD)	449 feet @ 2,000 gpm	400-1,130



SUBMERSIBLE PUMP WELL

TYPICAL FOR WELLS EW-1, EW-2 EW-3, EW-4, EW-5



VERTICAL TURBINE PUMP WELL

TYPICAL FOR WELLS NEWMARK 3, EW-6, EW-7

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NEWMARK GROUNDWATER CONTAMINATION SUPERFUND SITE

FIGURE 2-1
EXTRACTION WELL MECHANICAL DIAGRAM

SCALE:	DATE:	DWG. FILE:	SHEET NO.
SCALE	7/26/01	010726FIG2-1.DWG	2-1

W:\Projects\Newmark\20020801\FIG2-1.dwg Jan 05, 2004 - 7:24am

PLOT BY: LONTANGCO-BERNALDEZ - Jan 05, 2004 - 9:48:16am
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SBMWD

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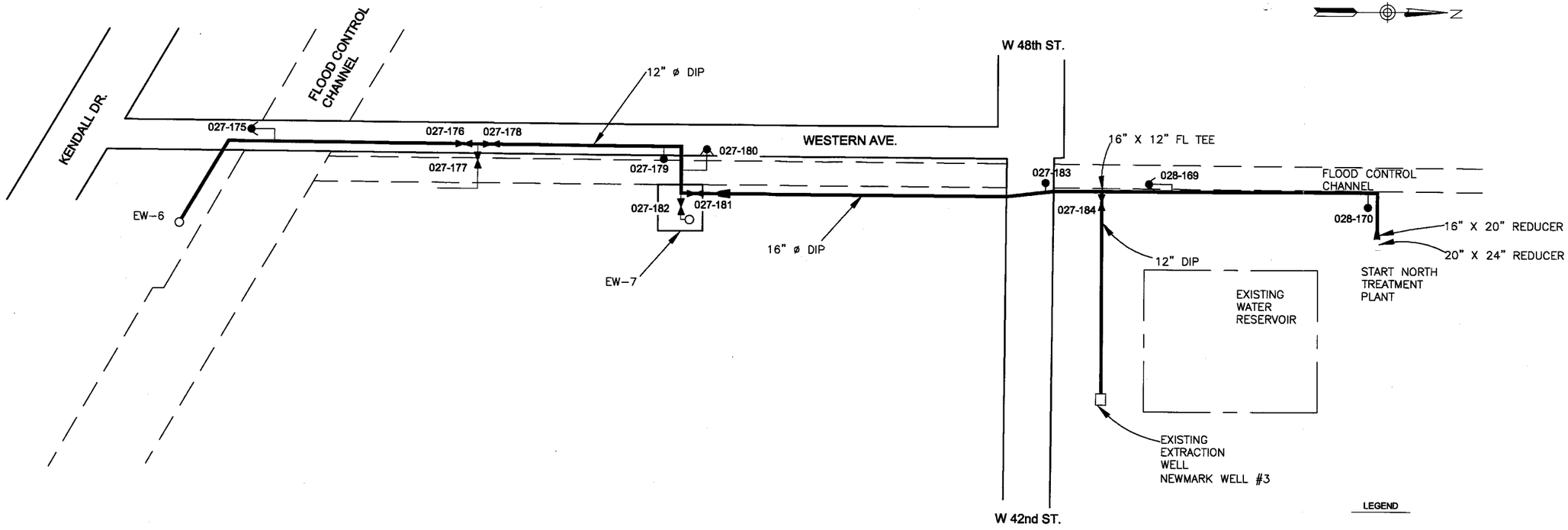
EXTRACTION WELL
ELECTRICAL DIAGRAM

NEWMARK GROUNDWATER
CONTAMINATION SUPERFUND SITE

FIGURE 2-2



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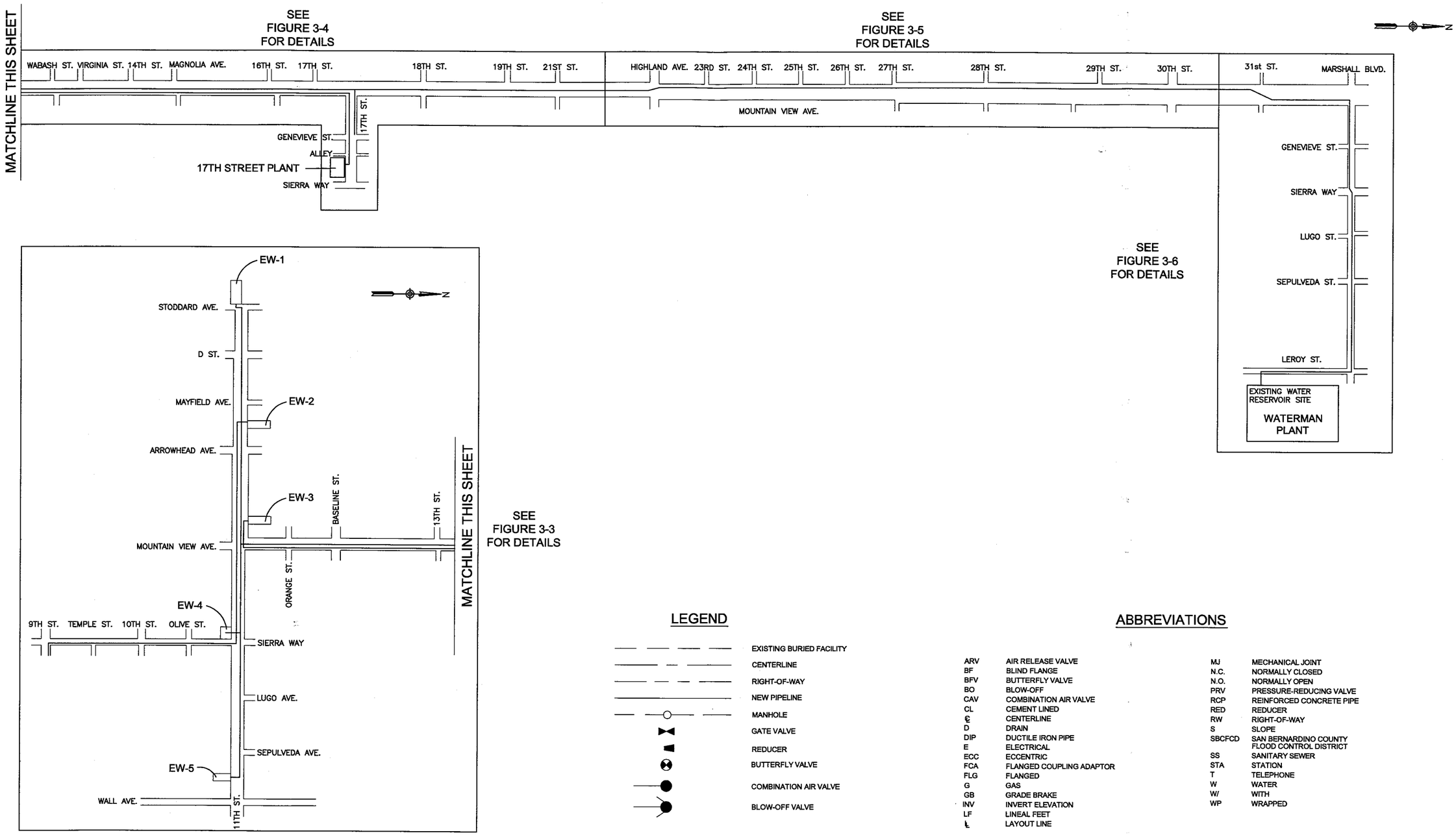
NEWMARK GROUNDWATER
CONTAMINATION SUPERFUND SITE

FIGURE 3-1
PIPELINE CONVEYANCE
NORTH PLANT

SCALE:	DATE:	DWG. FILE:	SHEET NO.
NO SCALE	7/26/01	030107FIG3-1	3-1



LEGEND

- EXISTING BURIED FACILITY
- CENTERLINE
- RIGHT-OF-WAY
- NEW PIPELINE
- MANHOLE
- GATE VALVE
- REDUCER
- BUTTERFLY VALVE
- COMBINATION AIR VALVE
- BLOW-OFF VALVE

ABBREVIATIONS

ARV	AIR RELEASE VALVE
BF	BLIND FLANGE
BFV	BUTTERFLY VALVE
BO	BLOW-OFF
CAV	COMBINATION AIR VALVE
CL	CEMENT LINED
℄	CENTERLINE
D	DRAIN
DIP	DUCTILE IRON PIPE
E	ELECTRICAL
ECC	ECCENTRIC
FCA	FLANGED COUPLING ADAPTOR
FLG	FLANGED
G	GAS
GB	GRADE BRAKE
INV	INVERT ELEVATION
LF	LINEAL FEET
℄	LAYOUT LINE
MJ	MECHANICAL JOINT
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
PRV	PRESSURE-REDUCING VALVE
RCP	REINFORCED CONCRETE PIPE
RED	REDUCER
RW	RIGHT-OF-WAY
S	SLOPE
SBCFCD	SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT
SS	SANITARY SEWER
STA	STATION
T	TELEPHONE
W	WATER
W/	WITH
WP	WRAPPED

NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION

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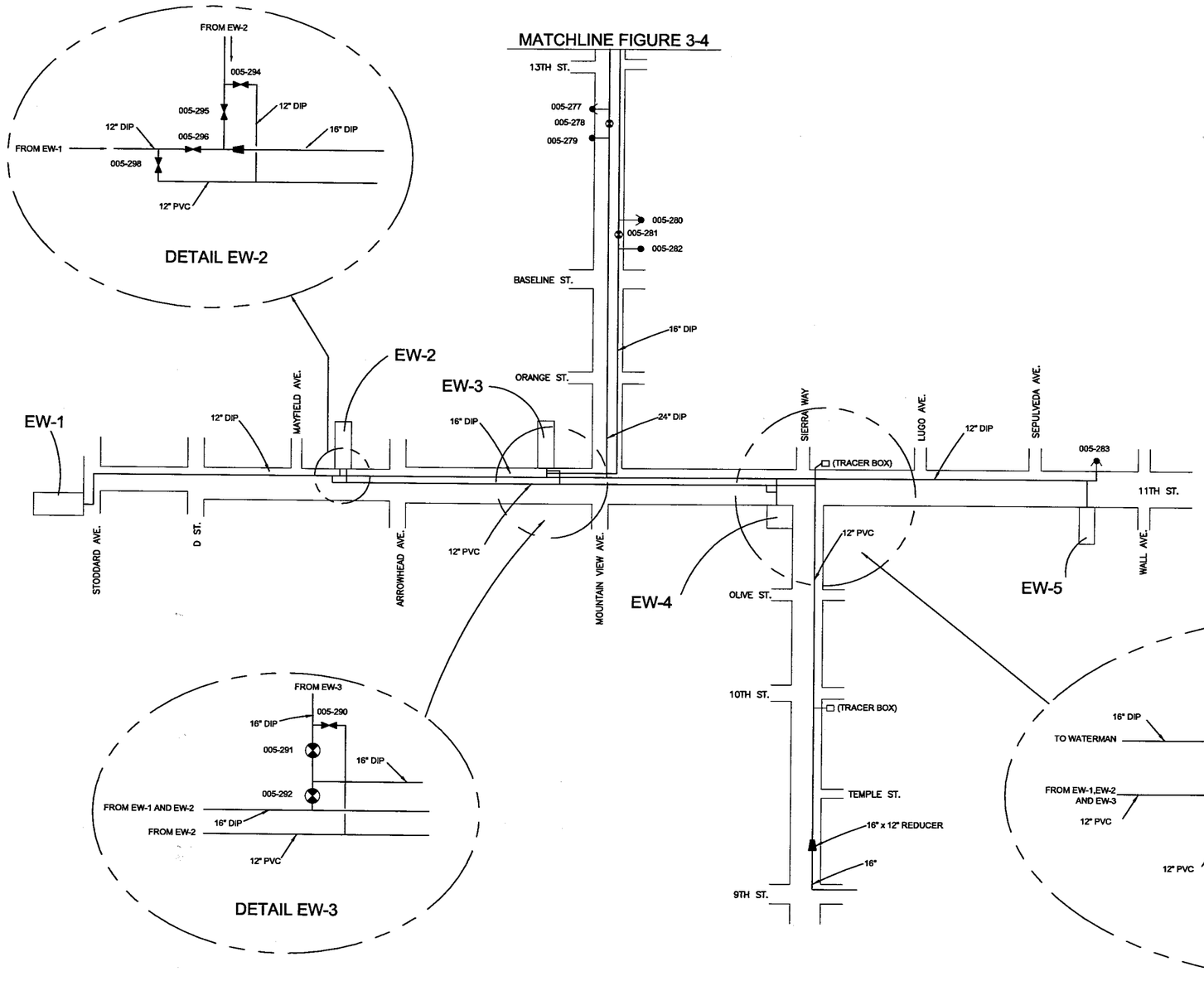
NEWMARK GROUNDWATER CONTAMINATION SUPERFUND SITE

FIGURE 3-2
PIPELINE CONVEYANCE
SOUTH PLANT-WATERMAN & 17th STREET PLANTS

SCALE:	DATE:	DWG. FILE:	SHEET NO.
NO SCALE	7/26/01	FIG3-2	3-2



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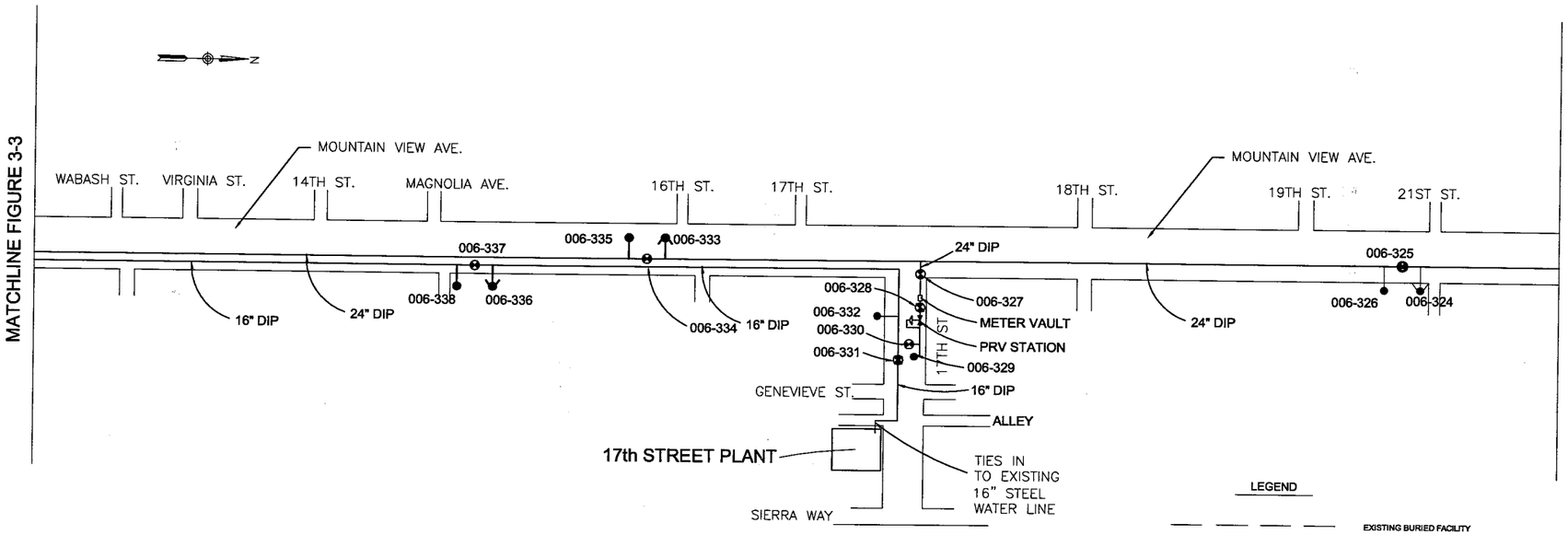
NEWMARK GROUNDWATER
CONTAMINATION SUPERFUND SITE

FIGURE 3-3
PIPELINE CONVEYANCE
EXTRACTION WELL AREA DETAIL

SCALE	DATE	DWG. FILE	SHEET NO.
NO SCALE	1/8/03	030107FIG3-3	3-3



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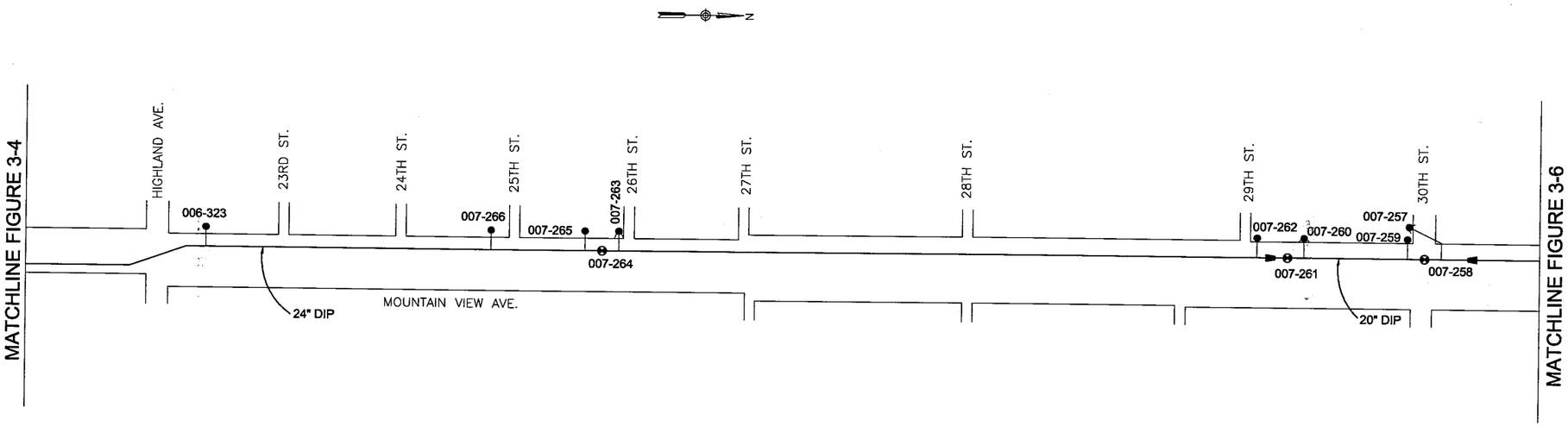
NEWMARK GROUNDWATER
CONTAMINATION SUPERFUND SITE

FIGURE 3-4
PIPELINE CONVEYANCE
17th STREET PLANT DETAIL

SCALE:	DATE:	DWG. FILE:	SHEET NO.
NO SCALE	7/26/01	030107fig3-4	3-4



LEGEND

- EXISTING BURIED FACILITY
- CENTERLINE
- RIGHT-OF-WAY
- NEW PIPELINE
- MANHOLE
- GATE VALVE
- REDUCER
- BUTTERFLY VALVE
- COMBINATION AIR VALVE
- BLOW-OFF VALVE

NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION

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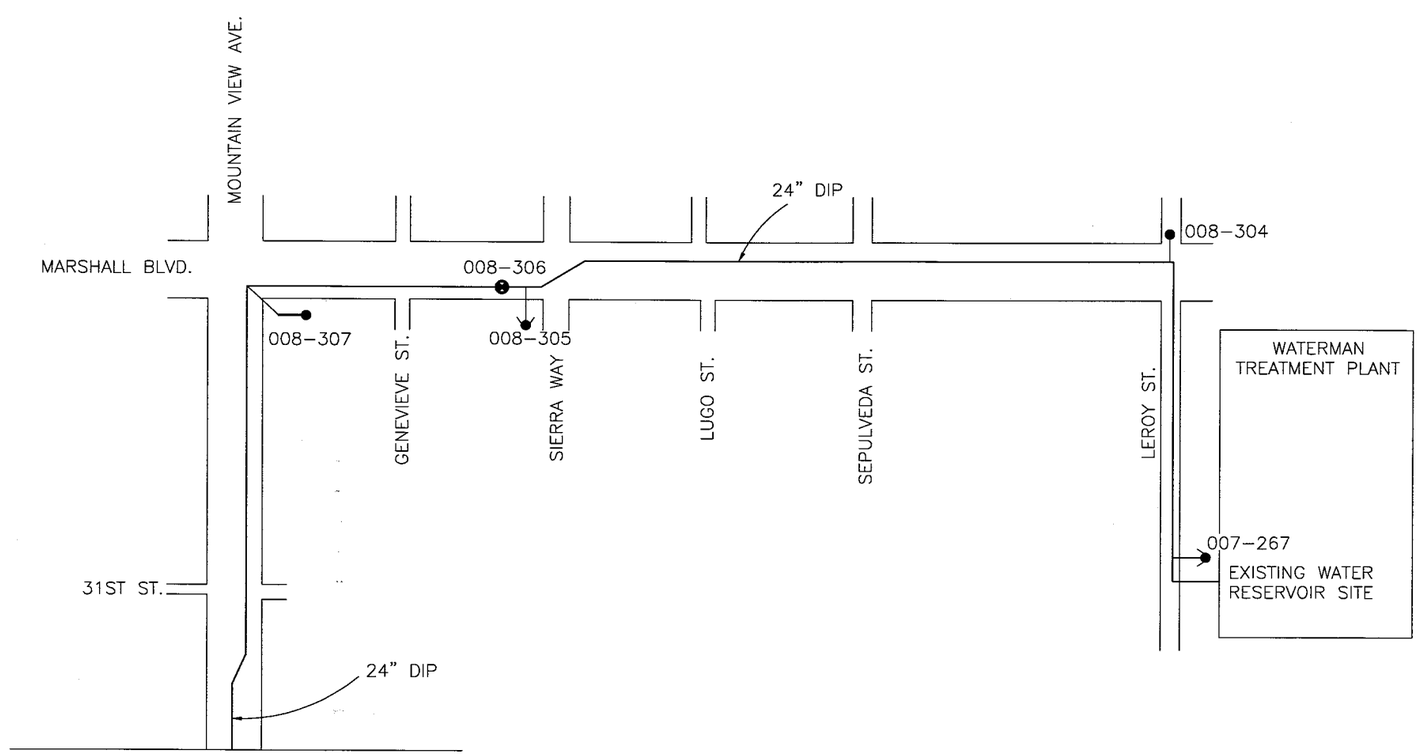
NEWMARK GROUNDWATER
CONTAMINATION SUPERFUND SITE

FIGURE 3-5
PIPELINE CONVEYANCE
MOUNTAIN VIEW AVENUE DETAIL

SCALE:	DATE:	DWG. FILE:	SHEET NO.
NO SCALE	7/26/01	030107FIG3-5	3-5



MATCHLINE FIGURE 3-5

N

LEGEND

- EXISTING BURIED FACILITY
- CENTERLINE
- RIGHT-OF-WAY
- NEW PIPELINE
- MANHOLE
- GATE VALVE
- REDUCER
- BUTTERFLY VALVE
- COMBINATION AIR VALVE
- BLOW-OFF VALVE

NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION

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NEWMARK GROUNDWATER
CONTAMINATION SUPERFUND SITE

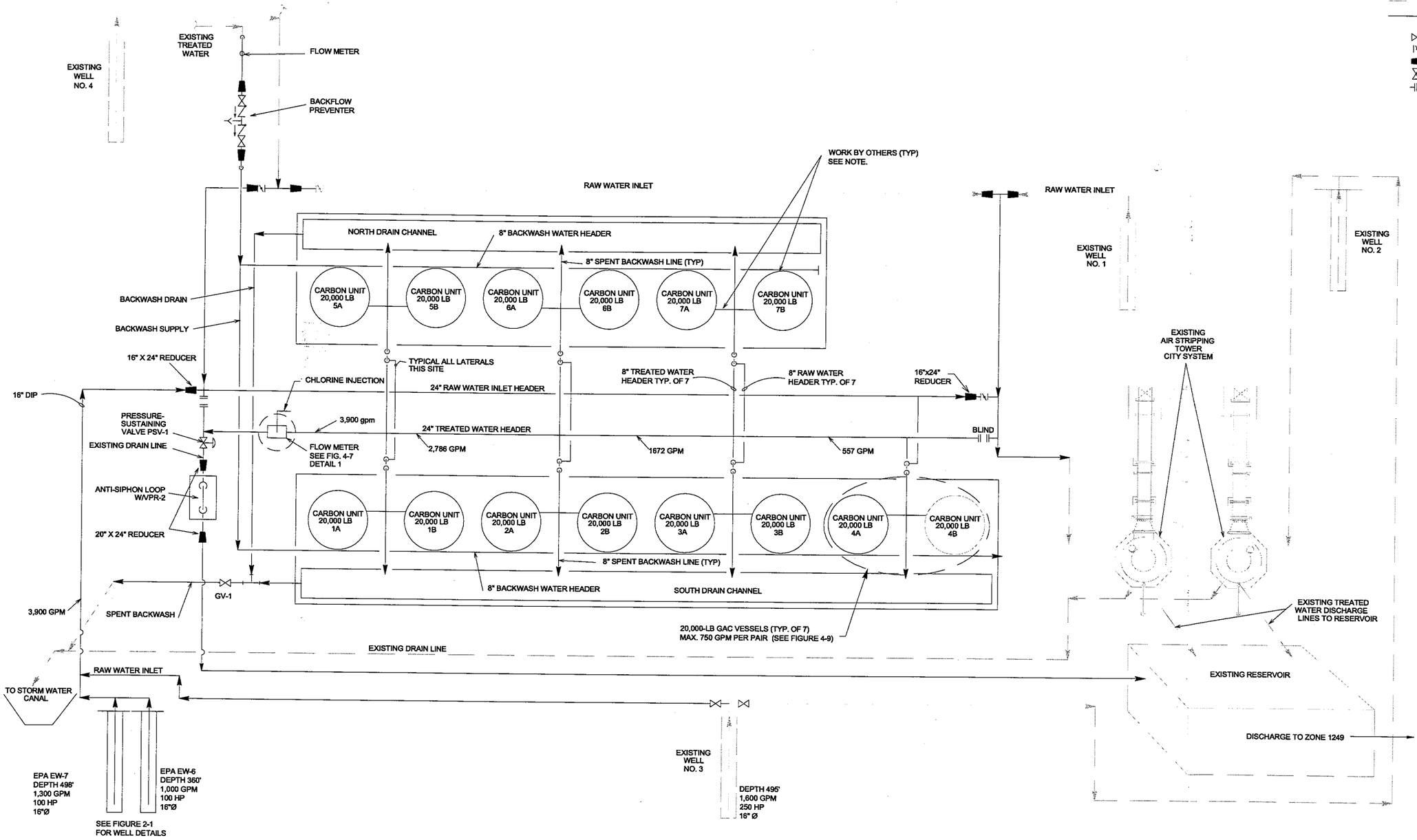
FIGURE 3-6
PIPELINE CONVEYANCE
WATERMAN PLANT DETAIL

SCALE:	DATE:	DWG. FILE:	SHEET NO.
NO SCALE	DATE	030107FIG3-6	3-6

A:\project\newmark\030107fig3-6

LEGEND :

- EXISTING
- NEW (GENERAL CONTRACTORS LIMITS OF WORK)
- GATE VALVE
- BUTTERFLY VALVE
- REDUCER
- PRESSURE-SUSTAINING VALVE
- BLIND FLANGE



NOTE

CARBON UNITS WITH ALL RELATED PIPING, VALVING, AND INSTRUMENTATION PROVIDED BY CARBON VENDOR

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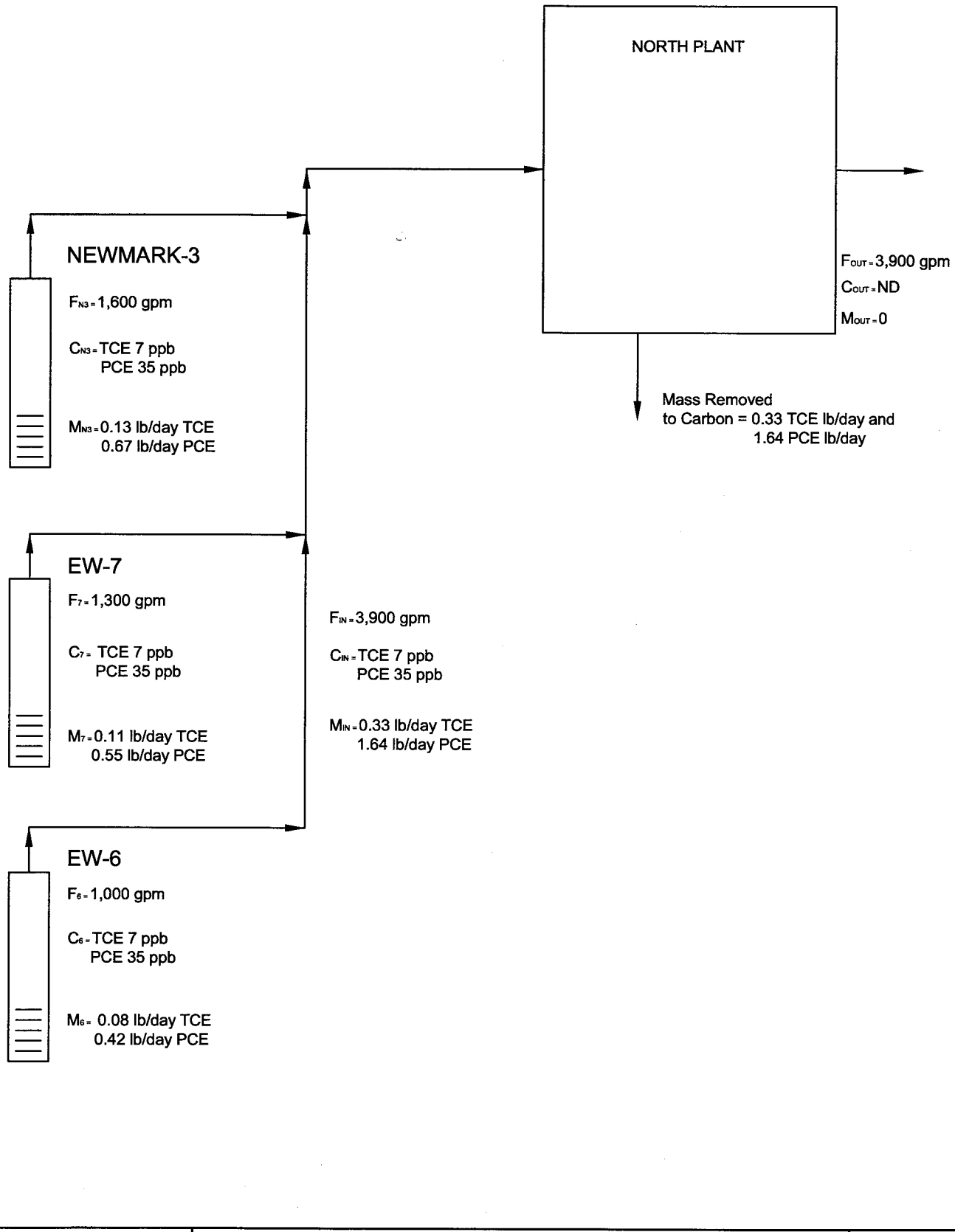
NEWMARK GROUNDWATER CONTAMINATION SUPERFUND SITE

FIGURE 4-1
MECHANICAL FLOW DIAGRAM
NORTH PLANT

SCALE:	DATE:	DWG FILE:	SHEET NO
NO SCALE	7/26/02	20020908-FIG4-1.DWG	4-1

W:\Projects\Newmark\20030107\030107 FIG4-1.dwg Jan 05, 2004 - 3:55pm



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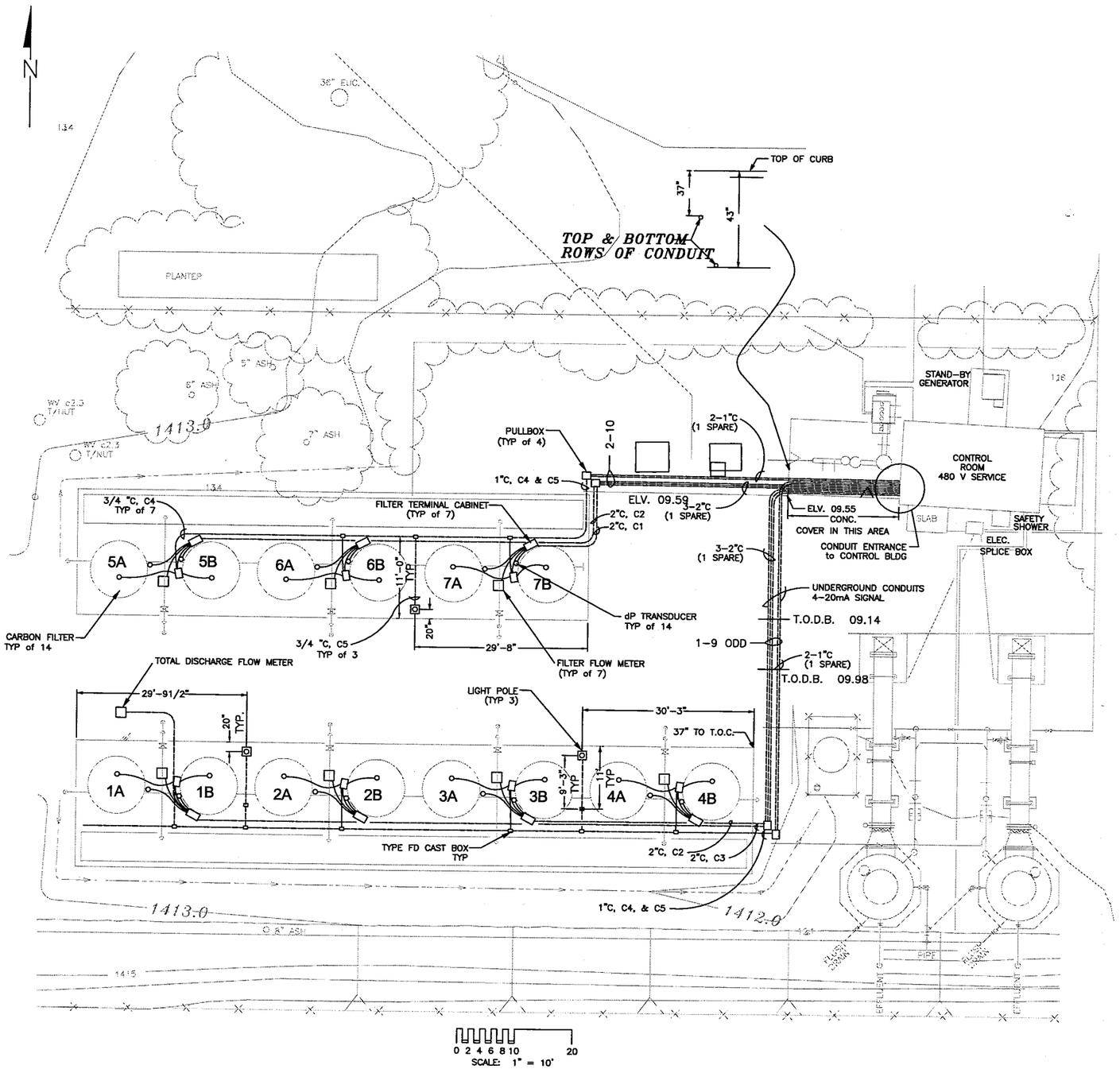
CHEMICAL FLOW DIAGRAM
NORTH PLANT

NEWMARK GROUNDWATER
CONTAMINATION SUPERFUND SITE

FIGURE 4-2



DESIGNATIONS:

C1	4–2P#20, IS/OS
C2	8–2P#20, IS/OS
C3	9–2P#20, IS/OS
C4	2#12 & #12G, THWN
C5	2#10 & #10G, THWN

2P#20 = TWO PAIR, #20AWG, STRANDED, COPPER, 300V
IS/OS = INDIVIDUALLY SHIELDED with OVERALL SHIELD
———— SURFACE ROUTED CONDUIT
– – – – – – SUBSURFACE ROUTED CONDUIT

NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION

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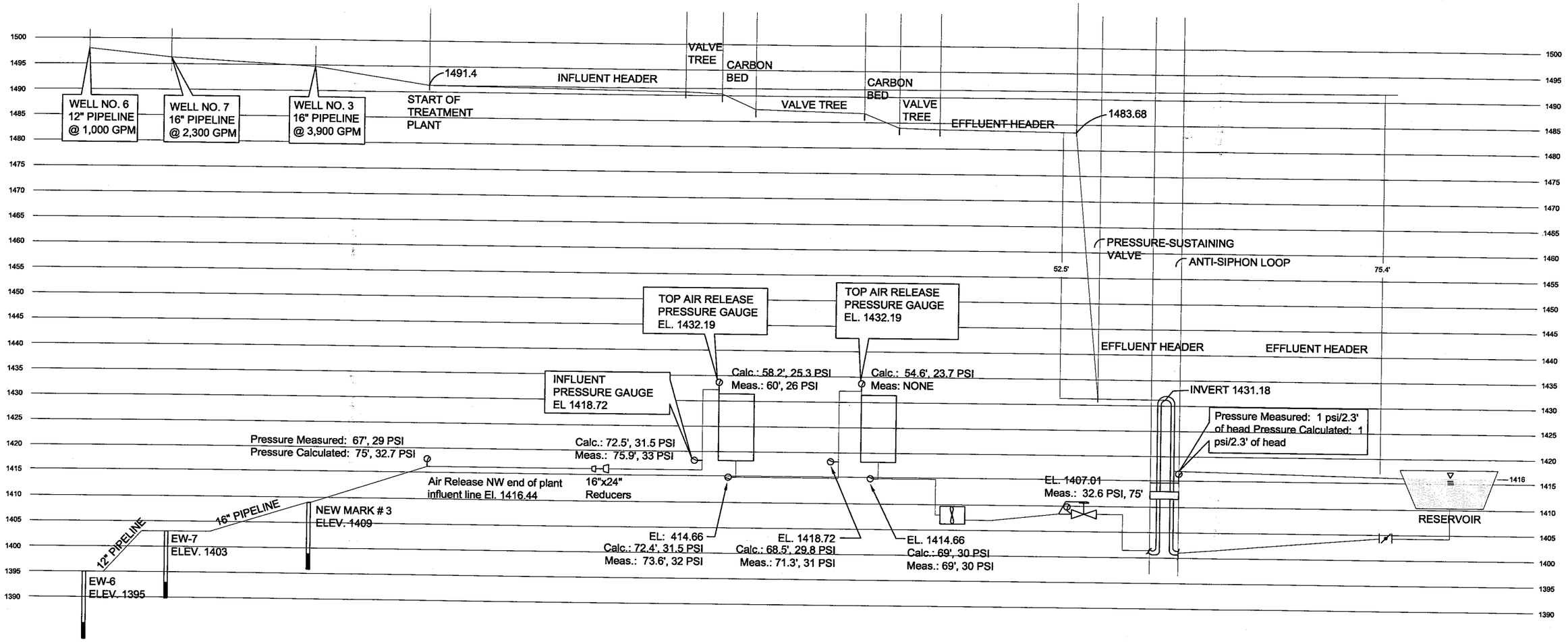
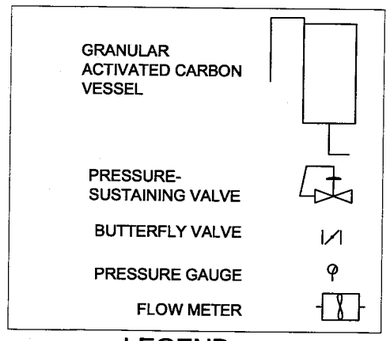
NEWMARK GROUNDWATER CONTAMINATION SUPERFUND SITE

FIGURE 4-3
ELECTRICAL SITE PLAN
NORTH PLANT

SCALE:	DATE:	DWG. FILE:	SHEET NO.
SCALE	7/26/01	010726FIG4-3.DWG	4-3





LEGEND

NOTE: Calculations performed at 2,300 GPM, measurements taken at 2,262 GPM. No new measurements could be taken at the original plant influent measurement location (Air-vac at fence). Pressure-sustaining valve accounts for a 22.7 PSI, 52.2' of pressure head increase in the treatment plant. Dissolved gases could be heard coming out of solution at the effluent flow meter.

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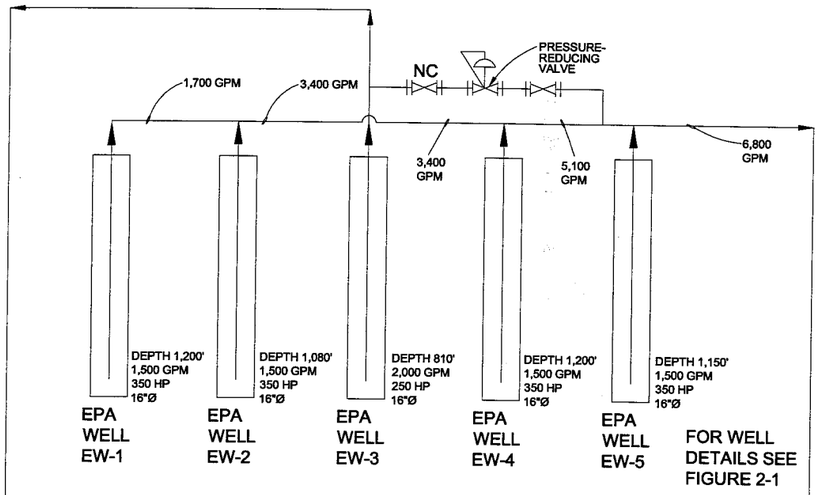
NEWMARK GROUNDWATER
CONTAMINATION SUPERFUND SITE

FIGURE 4-4
HYDRAULIC GRADELINE
NORTH PLANT

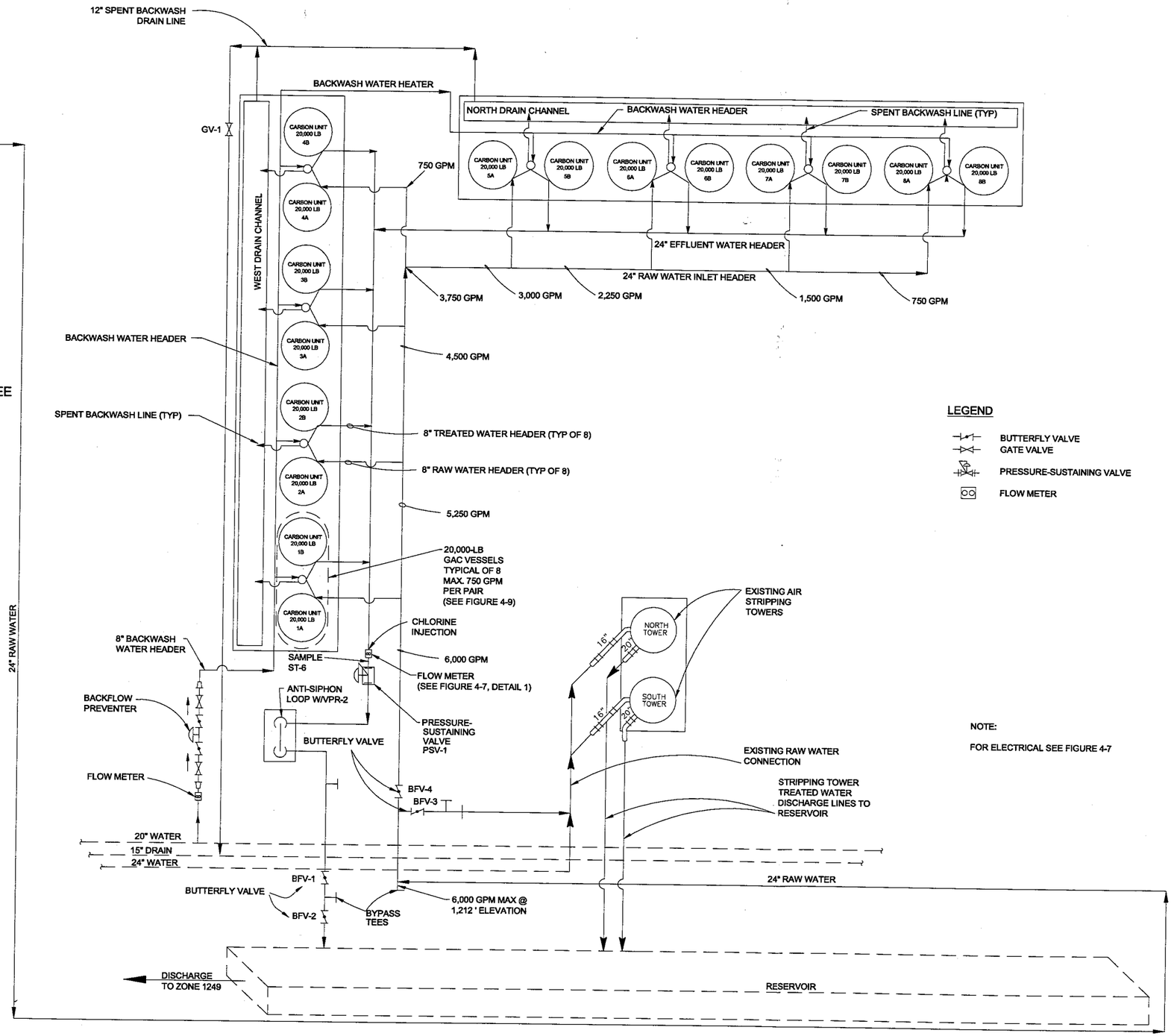
SCALE	DATE	DWG. FILE	SHEET NO.
NONE	7/26/01	010726FIG4-4.DWG	4-4

W:\PROJECT\NEWMARK\20030107\030107 FIG4-4.DWG



11th STREET EXTRACTION WELLS

TO 17th STREET TREATMENT PLANT SEE FIGURE 4-12



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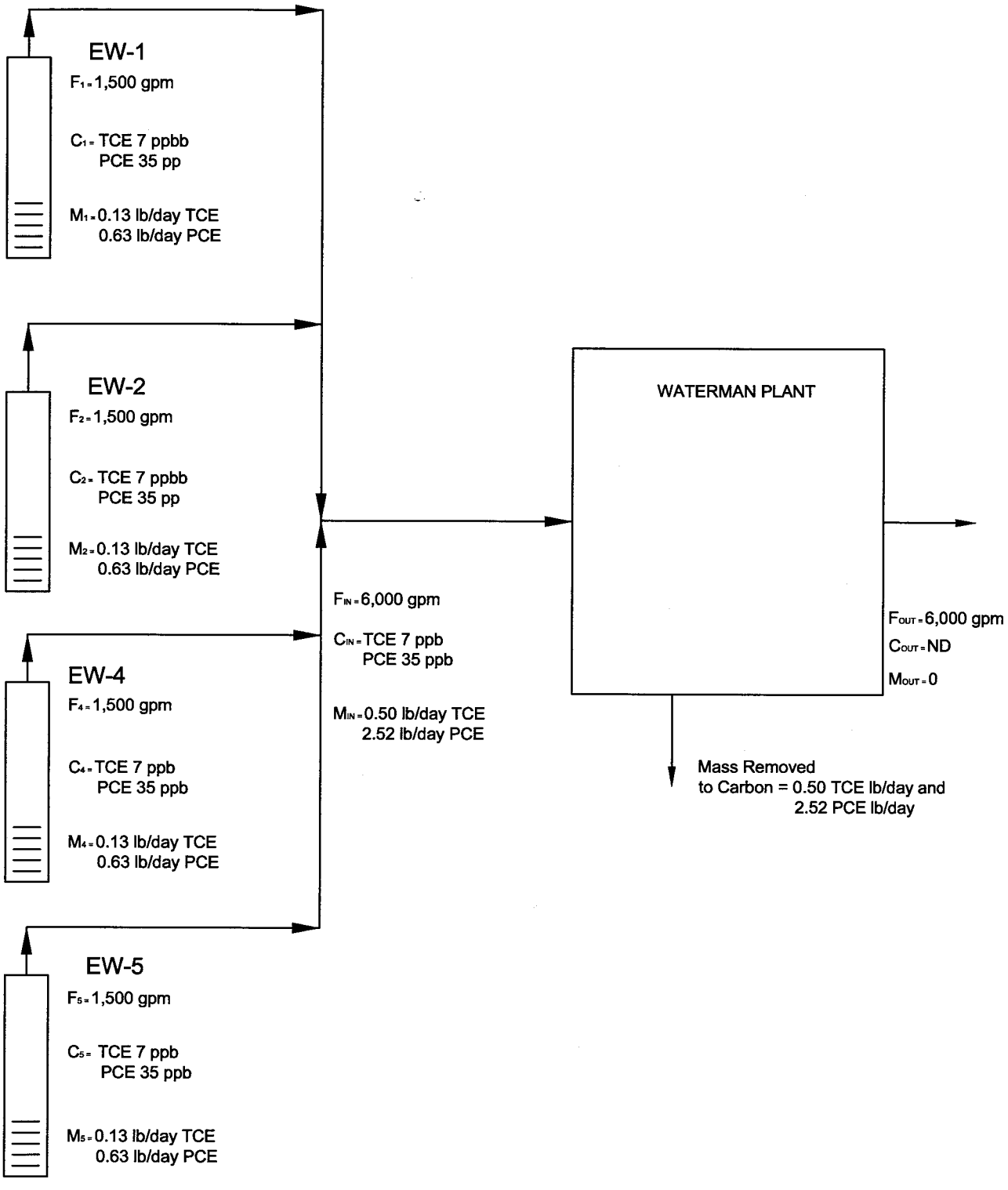
NEWMARK GROUNDWATER CONTAMINATION SUPERFUND SITE

FIGURE 4-5
MECHANICAL FLOW DIAGRAM
WATERMAN PLANT

SCALE:	DATE:	DWG. FILE:	SHEET NO.
SCALE	7/26/00	20010726\010726FIG4-5.DWG	4-5

W:\Projects\Newmark\20010726\010726FIG2-1.dwg Jan 17, 2002 - 8:44am



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DRAWING: W:\Projects\Newmark\20030107\030107 FIG4-6.dwg
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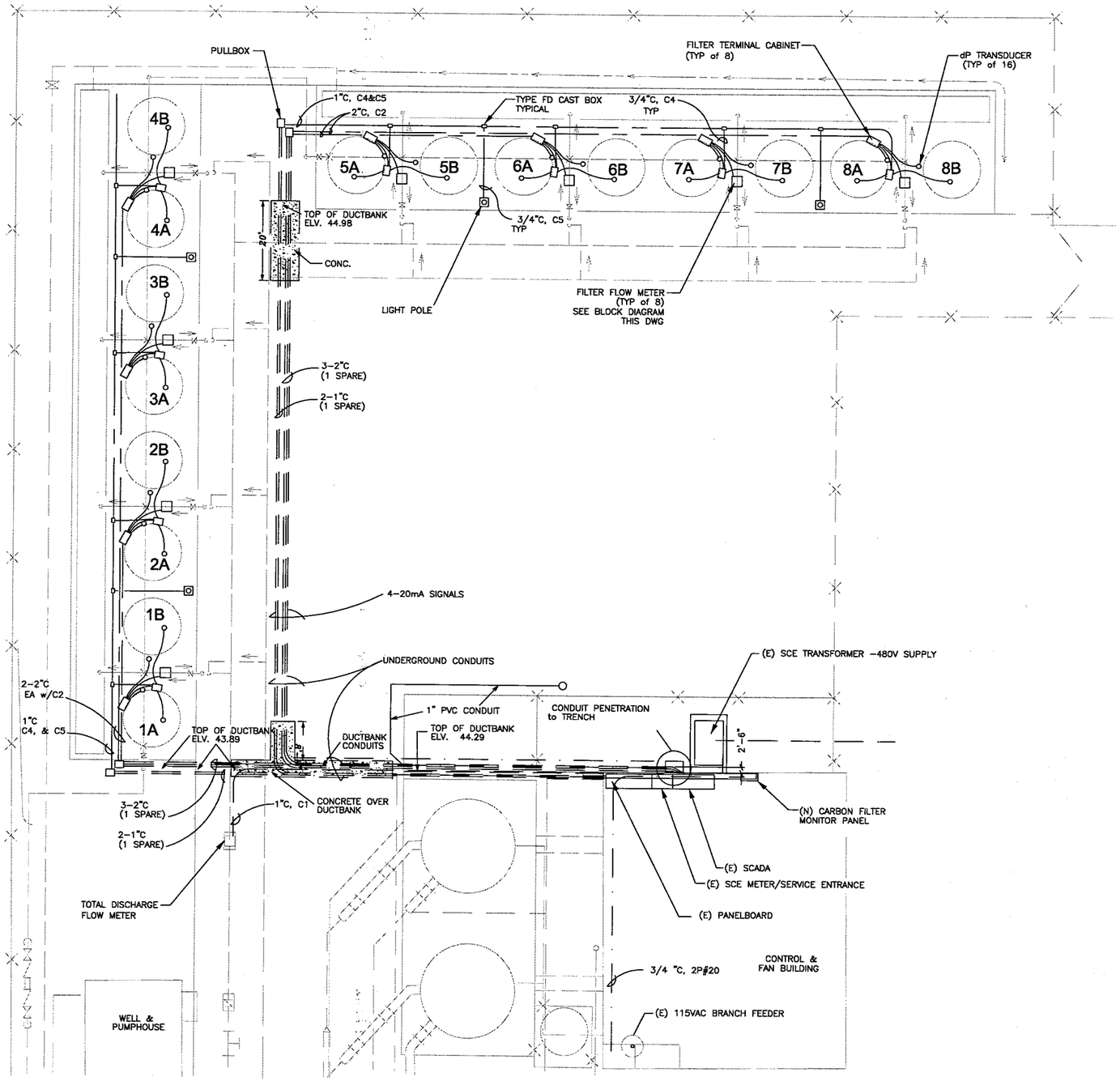
CHEMICAL FLOW DIAGRAM
WATERMAN PLANT

NEWMARK GROUNDWATER
CONTAMINATION SUPERFUND SITE

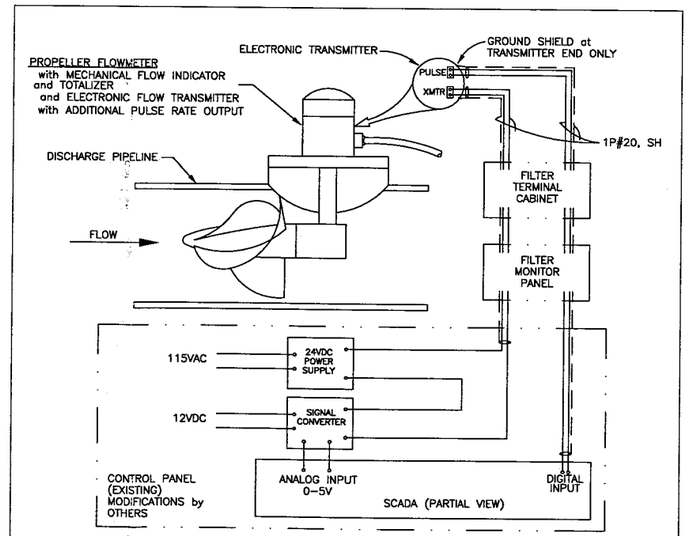
FIGURE 4-6



DESIGNATIONS:

C1	4-2P#20, IS/OS
C2	8-2P#20, IS/OS
C3	NOT USED
C4	2#12 & #12G, THWN
C5	2#10 & #10G, THWN

2P#20 = TWO PAIR, #20AWG, STRANDED, COPPER, 300V
SURFACE ROUTED CONDUIT
IS/OS = INDIVIDUALLY SHIELDED with OVERALL SHIELD
(E) EXISTING
(N) NEW



DETAIL 1
FLOW METER

NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION

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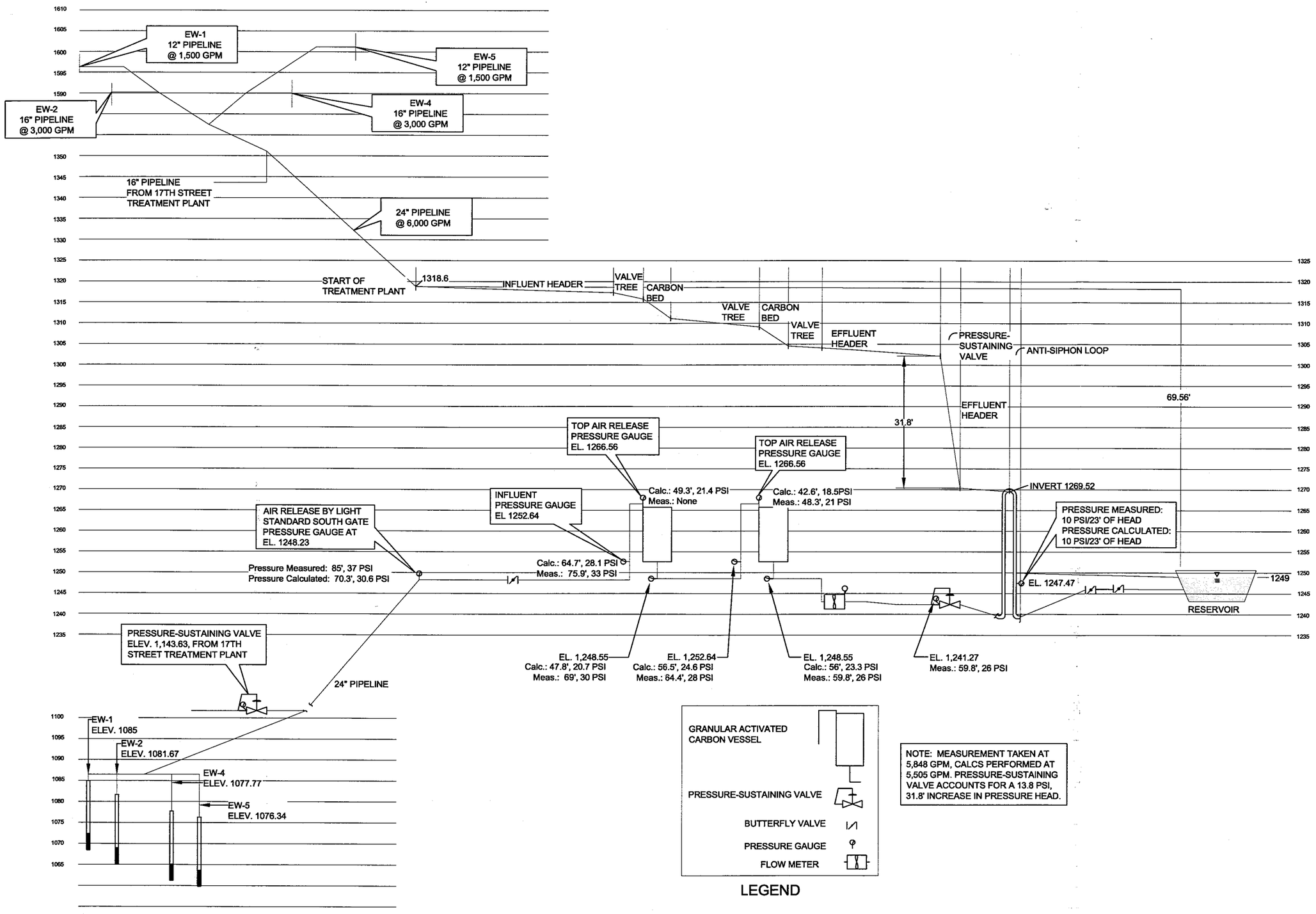
NEWMARK GROUNDWATER
CONTAMINATION SUPERFUND SITE

FIGURE 4-7
ELECTRICAL SITE PLAN
WATERMAN PLANT

SCALE:	DATE:	DWG. FILE:	SHEET NO.
SCALE	1/8/03	030108 FIG4-7	4-7

20020908 ETB Jan 08, 2004 030107 FIG4-7.dwg



GRANULAR ACTIVATED CARBON VESSEL

PRESSURE-SUSTAINING VALVE

BUTTERFLY VALVE

PRESSURE GAUGE

FLOW METER

LEGEND

NOTE: MEASUREMENT TAKEN AT 5,848 GPM, CALCS PERFORMED AT 5,505 GPM. PRESSURE-SUSTAINING VALVE ACCOUNTS FOR A 13.8 PSI, 31.8' INCREASE IN PRESSURE HEAD.

NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION

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NEWMARK GROUNDWATER
CONTAMINATION SUPERFUND SITE

FIGURE 4-8
HYDRAULIC GRADELINE
WATERMAN PLANT

SCALE	DATE	DWG. FILE	SHEET NO.
NONE	7/26/01	010726FIG4-8.DWG	4-8

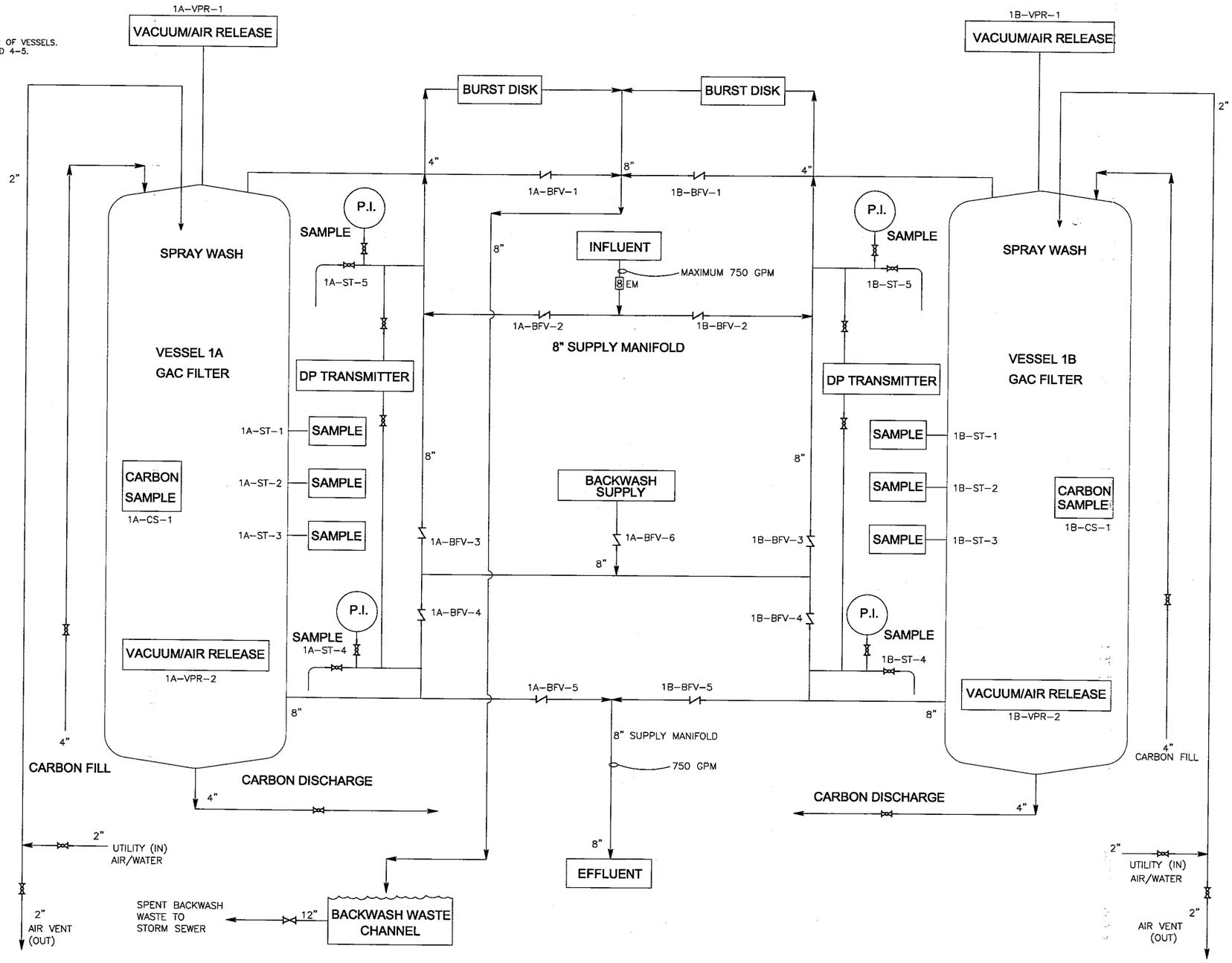
W:\PROJECTS\NEWMARK\20030107\030107 FIG4-8.DWG

NOTE:

1. THIS FIGURE DEPICTS PROCESS FLOW THROUGH ONE PAIR OF VESSELS. PLANT PROCESS FLOW IS DEPICTED IN FIGURES 4-1 AND 4-5.
2. VALVE DESIGNATIONS AND PIPING SHOWN FOR ONE PAIR OF VESSELS ONLY (VESSEL PAIR 1). VESSEL PAIRS 2 THROUGH 8 ARE DESIGNATED SIMILARLY.
3. VESSEL PAIRS ARE OPERATED IN SERIES.

DESIGN CRITERIA

-750 GPM PER VESSEL PAIR
-20,000 LB CARBON PER VESSEL
-7 PPB TCE INLET CONCENTRATION
-35 PPB PCE INLET CONCENTRATION



LEGEND

PI	PRESSURE INDICATOR
SAMPLE	SAMPLE TAPS
	GATE VALVE
DP TRANSDUCER	DIFFERENTIAL PRESSURE TRANSDUCER
ST	SAMPLE TAP
BFV	BUTTERFLY VALVE
CS	CARBON SAMPLE VALVE
	BUTTERFLY VALVE
	BALL VALVE

VESSEL 1A FLOW DIAGRAM VESSEL 1B

NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION

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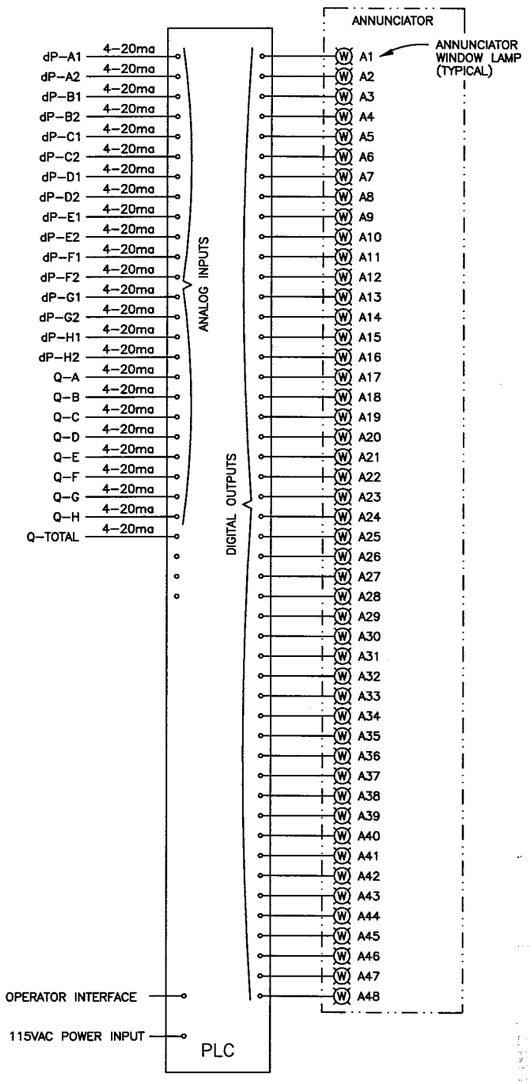
NEWMARK GROUNDWATER CONTAMINATION SUPERFUND SITE

FIGURE 4-9
FLOW DIAGRAM FOR GAC ADSORBER SYSTEMS
NORTH AND WATERMAN PLANTS

SCALE:	DATE:	DWG. FILE:	SHEET NO.
NOT TO SCALE	10/12/00	GAC FLOW DIAG.	4-9

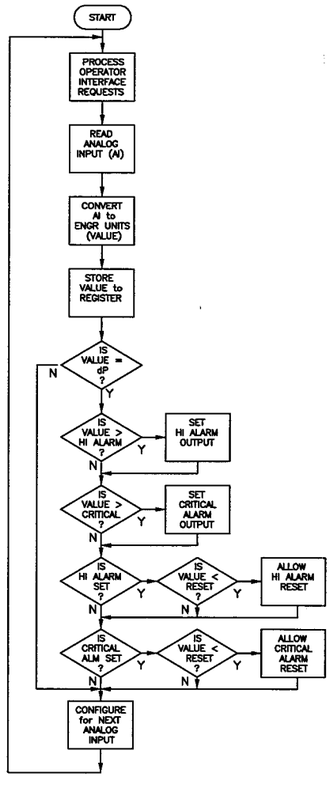
W:\Projects\Newmark\20030107\030107 FIG4-9.dwg Jan 05, 2004 - 4:25pm



PLC BLOCK DIAGRAM

dP–( ) = DIFFERENTIAL PRESSURE SIGNAL
Q–( ) = FLOW SIGNAL
A( ) = ANNUNCIATOR LAMP OUTPUT

SHOWN FOR SITE WITH EIGHT PAIRS OF FILTERS AND SIMILAR FOR ALL EXCEPT MODIFIED FOR THE NUMBER OF FILTER PAIRS.



PLC LOGIC DIAGRAM

PLC PROGRAM REQUIREMENTS:

P1. THE PROGRAM WILL INCLUDE AN AVERAGING ALGORITHM FOR THE ANALOG INPUTS. THE PARAMETERS FOR THE AVERAGING ALGORITHM WILL BE ADJUSTABLE (THROUGH PROGRAM MODIFICATIONS – NOT THROUGH OIT). AS AN ALTERNATIVE, THE AVERAGING CAN BE CONFIGURED WITH THE HARDWARE AS A PART OF THE ANALOG INPUT CARDS.

P2. THE PROGRAM WILL TEST ANALOG INPUT REASONABILITY (I.E.4ma < AI < 20ma). ANALOG INPUTS THAT FAIL REASONABILITY WILL BE ALARMED WITH A MESSAGE TO THE OIT.

OPERATOR INTERFACE REQUIREMENTS:

01. SELECTIVELY VIEW DIFFERENTIAL PRESSURE VALUES
02. SELECTIVELY VIEW FILTER FLOW VALUE
03. CHANGE DIFFERENTIAL PRESSURE HIGH ALARM SETPOINT
04. CHANGE DIFFERENTIAL PRESSURE CRITICAL ALARM SETPOINT
05. CHANGE DIFFERENTIAL PRESSURE HIGH ALARM RESET POINT
06. CHANGE DIFFERENTIAL PRESSURE CRITICAL ALARM RESET POINT
07. INITIATE ALARM AKNOWLEDGE
08. INITIATE ALARM RESET
09. INITIATE ANNUNCIATOR LAMP TEST

ANNUNCIATOR FUNCTION and SEQUENCE

A1. WHEN ALARM CONDITION EXISTS, APPROPRIATE ANNUNCIATOR WINDOW WILL FLASH AT THE RATE 1/2 SEC ON, 1/2 SEC OFF.

A2. WHEN ALARM IS ACKNOWLEDGED (OIT FUNCTION KEY), FLASHING DISPLAY WILL BE REPLACED WITH STEADY ON DISPLAY. IF ADDITIONAL ALARMS OCCUR AFTER ACKNOWLEDGE FUNCTION HAS BEEN INITIATED, THESE WILL FLASH UNTIL SUBSEQUENTLY ACKNOWLEDGED.

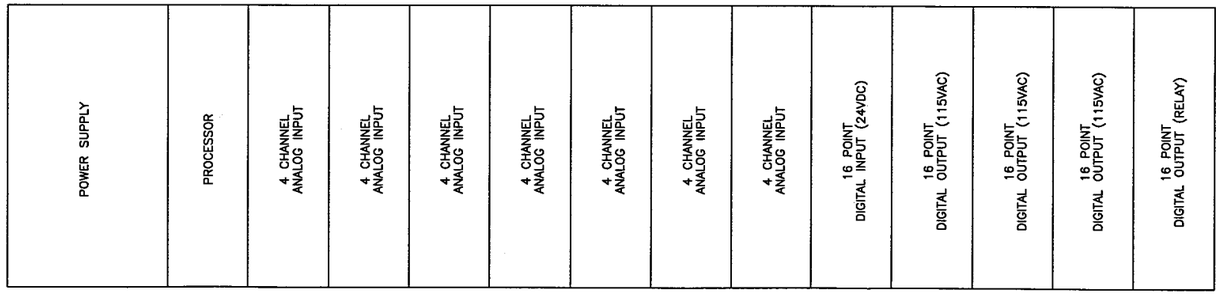
A3. WHEN ALARM IS RESET (OIT FUNCTION KEY), ALL INDICATIONS NOT CURRENTLY IN ALARM CONDITION WILL BE EXTINGUISHED. INDICATIONS REMAINING IN ALARM CONDITION WILL CONTINUE TO ILLUMINATE.

A4. WHEN LAMP TEST (OIT FUNCTION KEY) IS INITIATED, ALL LAMPS WILL ILLUMINATE FOR A 3–SECOND PERIOD.

FILTER GROUP No. A
FLT #1 dP: XX.X In.
FLT #2 dP: XX.X In.
FLOW: XXX.X GPM

OPERATOR INTERFACE TERMINAL (OIT) TYPICAL DISPLAY MESSAGE

SHOWN for FILTER GROUP No. A AND TYPICAL for GROUPS B THROUGH H



PLC CHASSIS LAYOUT

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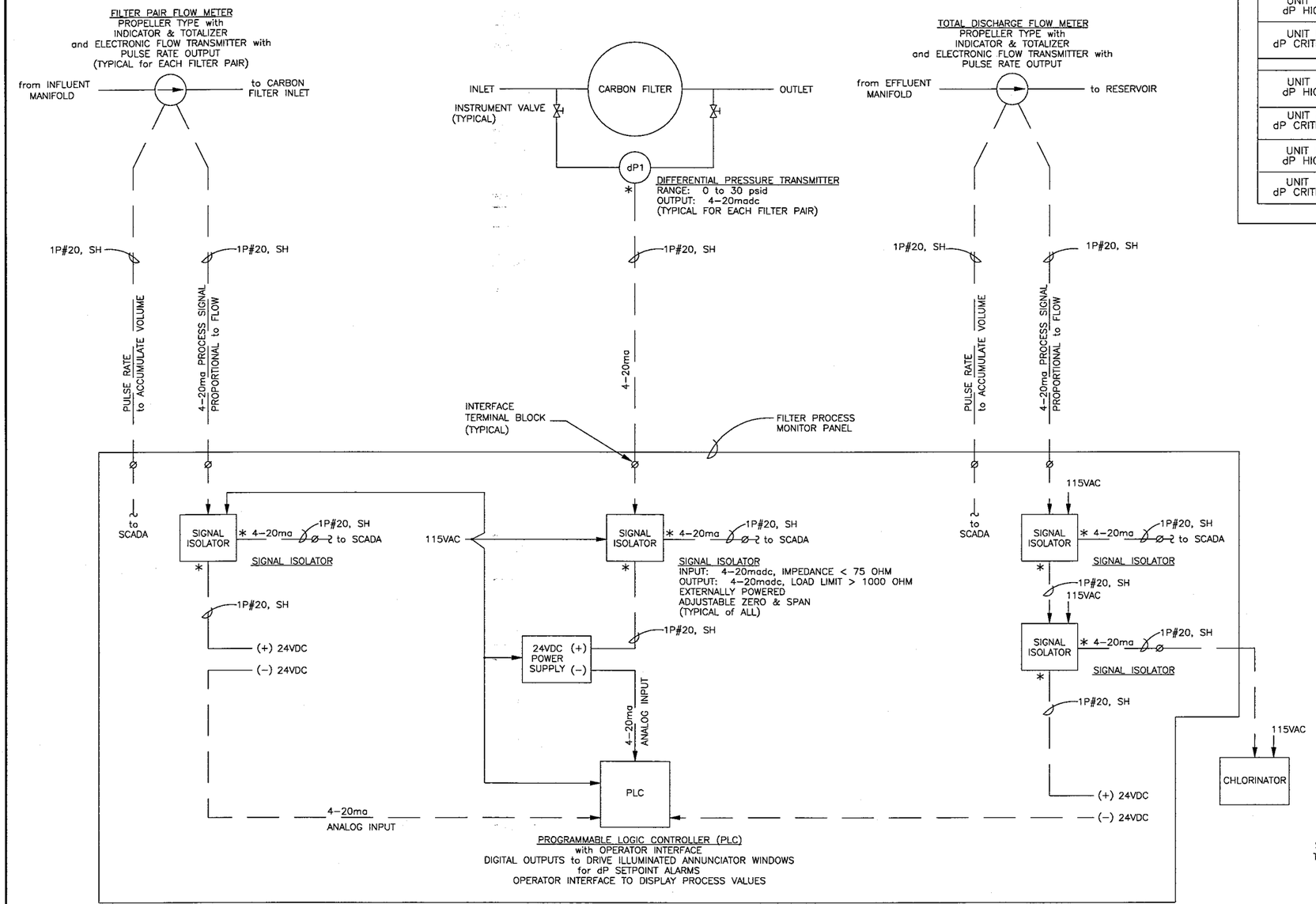
NEWMARK GROUNDWATER CONTAMINATION SUPERFUND SITE

FIGURE 4-10
CARBON FILTER PANEL PLC DIAGRAMS
NORTH AND WATERMAN PLANTS

SCALE:	DATE:	DWG. FILE:	SHEET NO.
NONE	7/25/01	010726FIG4-10.DWG	4-10

W:\Projects\Newmark\20030107\030107 FIG4-10.dwg Jan 05, 2004 - 12:54pm

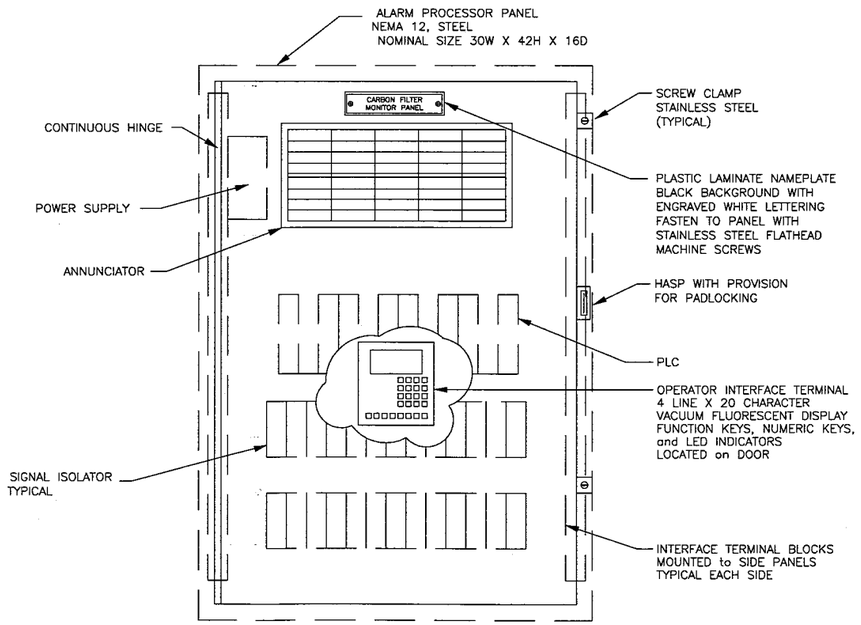
* GROUND CABLE SHIELD at ONE END ONLY, WHERE INDICATED



UNIT No. A-1 dP HIGH ALARM	UNIT No. C-1 dP HIGH ALARM	UNIT No. E-1 dP HIGH ALARM	UNIT No. G-1 dP HIGH ALARM	
UNIT No. A-1 dP CRITICAL ALARM	UNIT No. C-1 dP CRITICAL ALARM	UNIT No. E-1 dP CRITICAL ALARM	UNIT No. G-1 dP CRITICAL ALARM	
UNIT No. A-2 dP HIGH ALARM	UNIT No. C-2 dP HIGH ALARM	UNIT No. E-2 dP HIGH ALARM	UNIT No. G-2 dP HIGH ALARM	
UNIT No. A-2 dP CRITICAL ALARM	UNIT No. C-2 dP CRITICAL ALARM	UNIT No. E-2 dP CRITICAL ALARM	UNIT No. G-2 dP CRITICAL ALARM	
UNIT No. B-1 dP HIGH ALARM	UNIT No. D-1 dP HIGH ALARM	UNIT No. F-1 dP HIGH ALARM	UNIT No. H-1 dP HIGH ALARM	
UNIT No. B-1 dP CRITICAL ALARM	UNIT No. D-1 dP CRITICAL ALARM	UNIT No. F-1 dP CRITICAL ALARM	UNIT No. H-1 dP CRITICAL ALARM	
UNIT No. B-2 dP HIGH ALARM	UNIT No. D-2 dP HIGH ALARM	UNIT No. F-2 dP HIGH ALARM	UNIT No. H-2 dP HIGH ALARM	
UNIT No. B-2 dP CRITICAL ALARM	UNIT No. D-2 dP CRITICAL ALARM	UNIT No. F-2 dP CRITICAL ALARM	UNIT No. H-2 dP CRITICAL ALARM	

PLC OUTPUT ALARMS - ANNUNCIATOR WINDOWS

SHOWN FOR 8 PAIRS of FILTERS and SIMILAR FOR ALL BUT
MODIFIED FOR THE ACTUAL NUMBER OF FILTER PAIRS.



CARBON FILTER MONITOR PANEL

BLOCK DIAGRAM FILTER FLOW DATA

SHOWN FOR ONE FILTER PAIR and TYPICAL FOR EACH PAIR

FILTER dP ALARM - BLOCK DIAGRAM

SHOWN FOR ONE FILTER and TYPICAL FOR EACH

BLOCK DIAGRAM TOTAL DISCHARGE FLOW DATA

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NEWMARK GROUNDWATER CONTAMINATION SUPERFUND SITE

FIGURE 4-11
CARBON FILTER MONITOR PANEL
NORTH AND WATERMAN PLANTS

SCALE:	DATE:	DWG. FILE:	SHEET NO.
SCALE	1/8/03	010728FIG4-11.DWG	4-11

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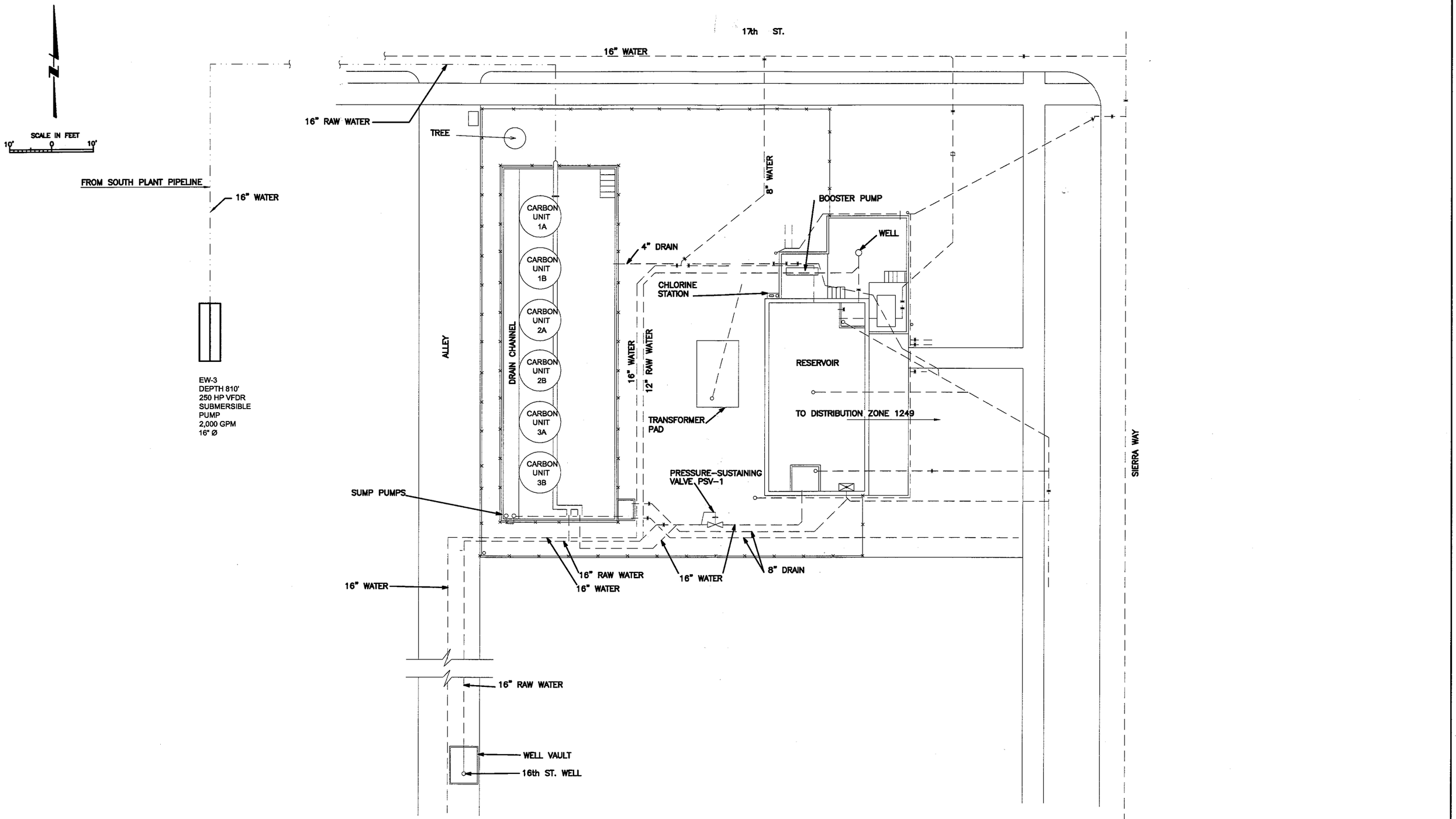

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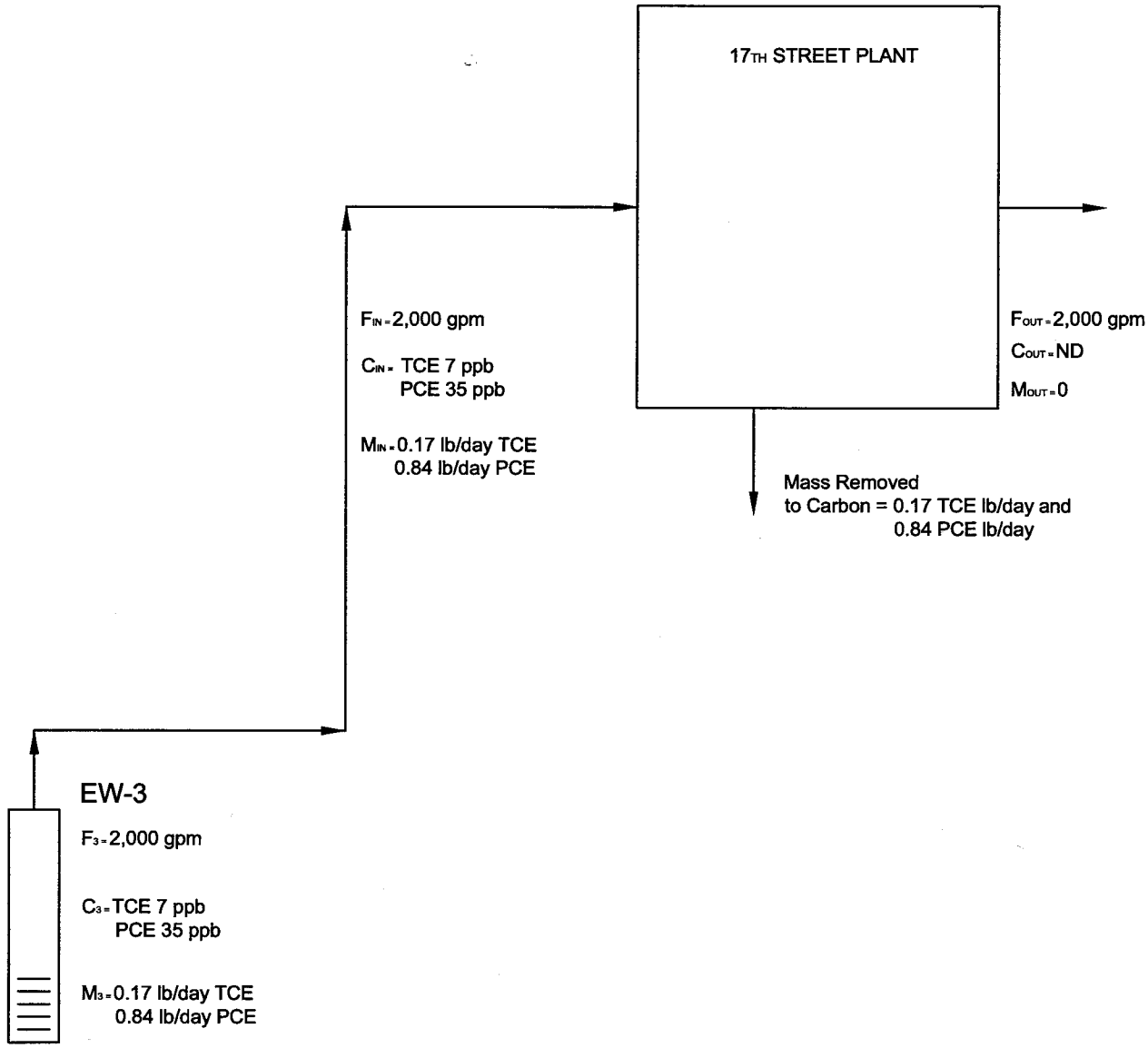
NEWMARK GROUNDWATER
CONTAMINATION SUPERFUND SITE

FIGURE 4-12
MECHANICAL DIAGRAM
17th STREET PLANT

SCALE:	DATE:	DWG. FILE:	SHEET NO.
NONE	7/26/01	010726FIG4-12.DWG	4-12

W:\Projects\Newmark\20030107\030107 FIG4-12.DWG Jan 12, 2004 - 9:58am

PLOT BY: LONTANGCO-BERNALDEZ - Jan 05, 2004 - 14:30:2pm
IMAGES:



DRAWING: W:\Projects\Newmark\20030107\030107 FIG4-13.dwg
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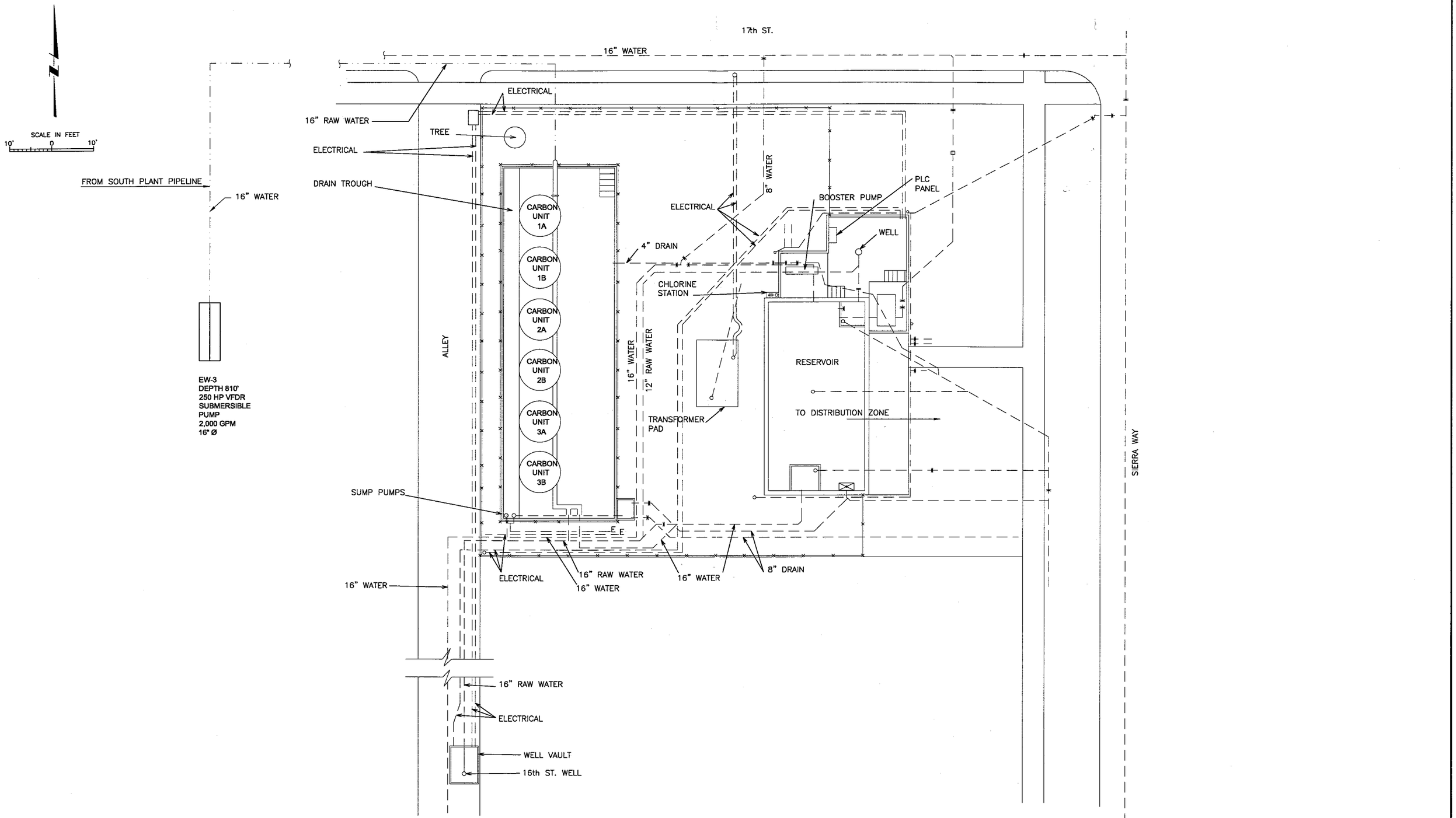
CHEMICAL FLOW DIAGRAM
17TH STREET PLANT

NEWMARK GROUNDWATER
CONTAMINATION SUPERFUND SITE

FIGURE 4-13



NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION

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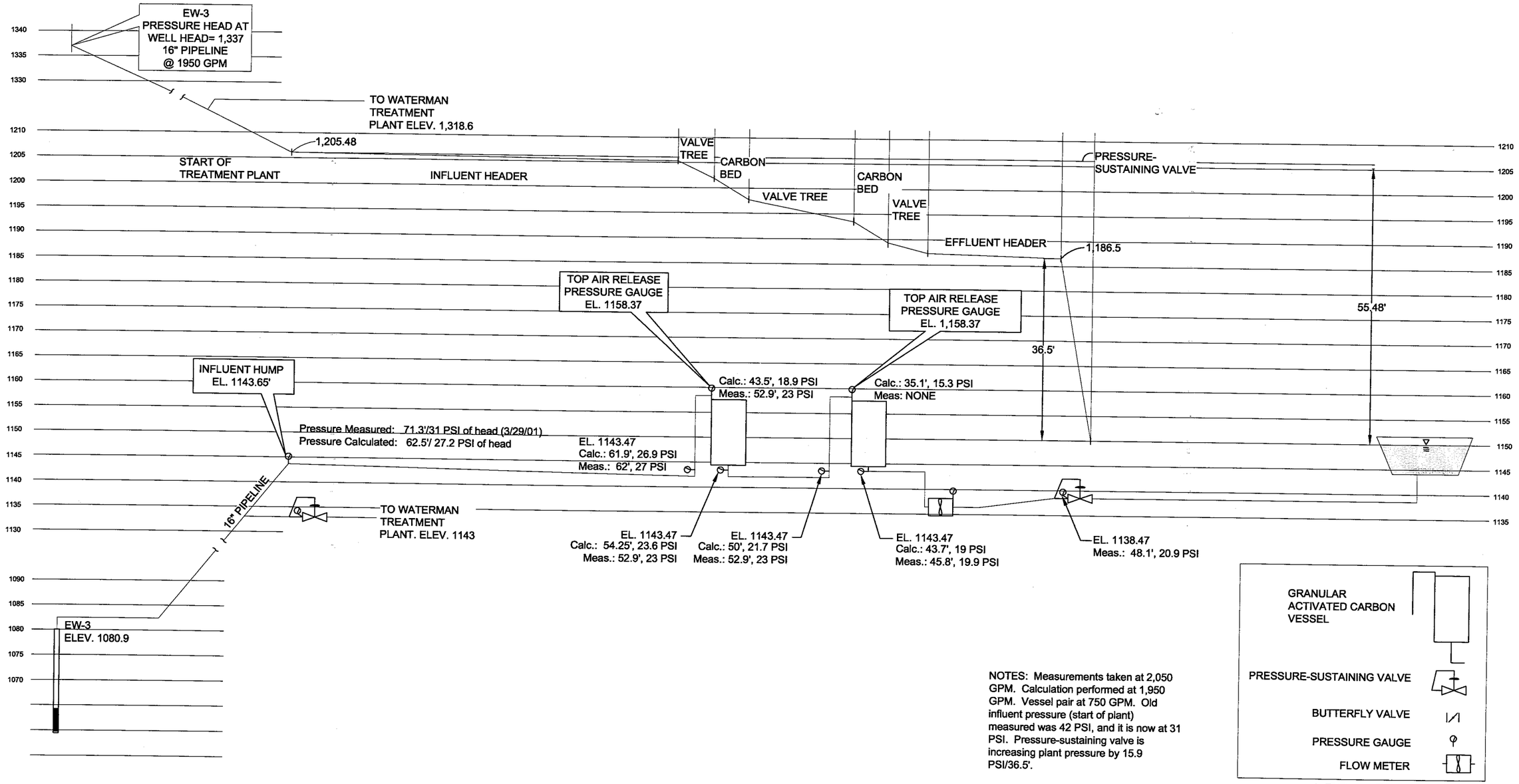
NEWMARK GROUNDWATER
CONTAMINATION SUPERFUND SITE

FIGURE 4-14
ELECTRICAL DIAGRAM
17th STREET PLANT

SCALE:	DATE:	DWG. FILE:	SHEET NO.
NONE	7/26/01	010726FIG4-14.DWG	4-14

W:\Projects\Newmark\20030107\030107 FIG4-14.dwg Jan 05, 2004 - 4:30pm



NOTES: Measurements taken at 2,050 GPM. Calculation performed at 1,950 GPM. Vessel pair at 750 GPM. Old influent pressure (start of plant) measured was 42 PSI, and it is now at 31 PSI. Pressure-sustaining valve is increasing plant pressure by 15.9 PSI/36.5'.

LEGEND

NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION

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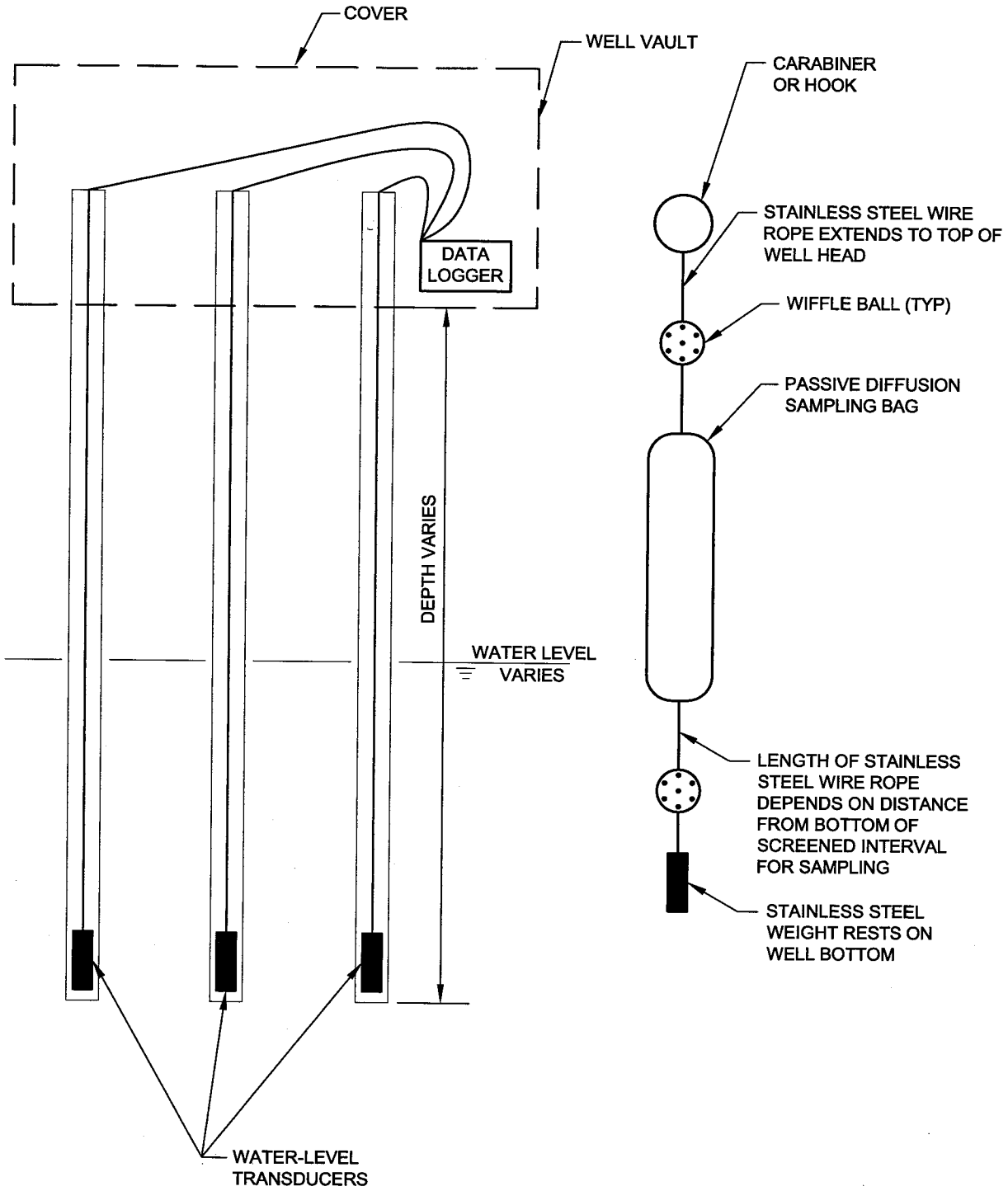
NEWMARK GROUNDWATER CONTAMINATION SUPERFUND SITE

FIGURE 4-15
HYDRAULIC GRADELINE
17TH STREET PLANT

SCALE	DATE	DWG. FILE	SHEET NO.
NONE	7/26/01	0107261FIG4-14.DWG	4-15

W:\PROJECTS\NEWMARK\20010726\New Figures\W3-17HGLFIG4-15.DWG



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MONITORING WELL
MECHANICAL DETAILS

NEWMARK GROUNDWATER
CONTAMINATION SUPERFUND SITE

FIGURE 5-1

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IMAGES:
DRAWING: W:\Projects\Newmark\20020908\FIG5-1.dwg
XREFS: