

APPENDIX B – PIPING AND INSTRUMENTATION PLAN

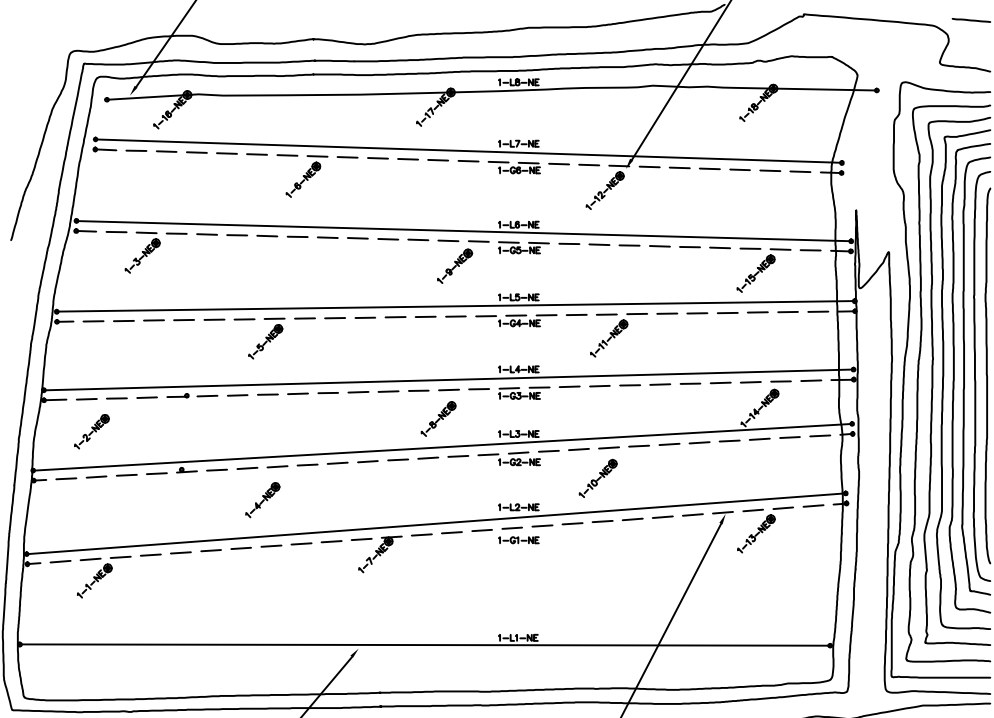
INSTALL SOIL PLUG - LAST 40'
OF PIPING, NORTH AND SOUTH SIDES (TYP)

COMBINATION TEMPERATURE, MOISTURE, SAMPLING TUBE
SENSOR LOCATION

MONITORING POINT COORDINATES			
SENSOR DESIGNATION	NORTHING	EASTING	ELEVATION (MSL)
1-1-NE	1880055	6851299	40
1-2-NE	1880057	6851333	39
1-3-NE	1880031	6851520	39.5
1-4-NE	1879972	6851399	39.5
1-5-NE	1879971	6851478	39
1-6-NE	1879952	6851588	40.5
1-7-NE	1879915	6851474	40
1-8-NE	1879915	6851474	39
1-9-NE	1879976	6851512	39.5
1-10-NE	1879939	6851411	39.5
1-11-NE	1879939	6851480	39
1-12-NE	1879901	6851554	40.5
1-13-NE	1879726	6851383	40
1-14-NE	1879724	6851446	39
1-15-NE	1879726	6851512	39.5
1-16-NE	1880016	6851584	40
1-17-NE	1879885	6851563	40
1-18-NE	1879725	6851597	40

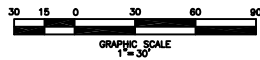
LEGEND

- HORIZONTAL LEACHATE INJECTION LINE, 1.25" ϕ , SDR 11 HDPE WITH 3/32" ϕ DRILLED HOLES @ 20' O/C
- HORIZONTAL GAS COLLECTION LINE, VARIOUS CONFIGURATIONS
- THERMISTER, QUALITY THERMISTER NTC PROBE, 10,000 OHM RESISTANCE AT 25°C, TOLERANCE $\pm 0.2^\circ\text{C}$ (0-100°C), PRESSURE SENSING TUBE, 1/4-INCH ID BY 3/8 OD LLDPE, AND PVC MOISTURE SENSOR
- 1-01-NE LEVEL 1, INSTRUMENT LOCATION 1, NORTHEAST ANAEROBIC MODULE
- 1-L1-NE LEVEL 1, LEACHATE INJECTION LINE 1, NORTHEAST ANAEROBIC MODULE
- 1-G1-NE LEVEL 1, GAS EXTRACTION LINE 1, NORTHEAST MODULE



HORIZONTAL LEACHATE INJECTION LINE
INSTALLED IN TRENCH

HORIZONTAL GAS COLLECTION
AND LEACHATE INJECTION LINE
INSTALLED AT TOE-OF-SLOPE



AS-BUILT

WARNING: THE ORIGINAL DOCUMENTS
CONTAIN A RED COLORED PROFESSIONAL
SEAL AND BLACK SIGNATURE.

NO.	REVISIONS	DATE	APPLY	
	DESCRIPTIONS			

YOLO COUNTY
DEPARTMENT OF PLANNING & PUBLIC WORKS
DIVISION OF INTEGRATED WASTE MANAGEMENT
292 WEST BEAMER ST., WOODLAND, CA 95695

ASSISTANT DIRECTOR OF PUBLIC WORKS

APPROVED _____ 19 _____ R. E. NO. _____

YOLO COUNTY CENTRAL LANDFILL
FULL-SCALE BIOREACTOR
NE ANAEROBIC
MODULE LEVEL 1
PIPING AND
INSTRUMENTATION

DRAWING NO. _____

I.O. NO. 9297
P.R. NO. 1-184-NE
DESIGN BY JJK
DRAWN BY JJK
CHECKED BY JJK
FILE NAME
DATE 8/8/02

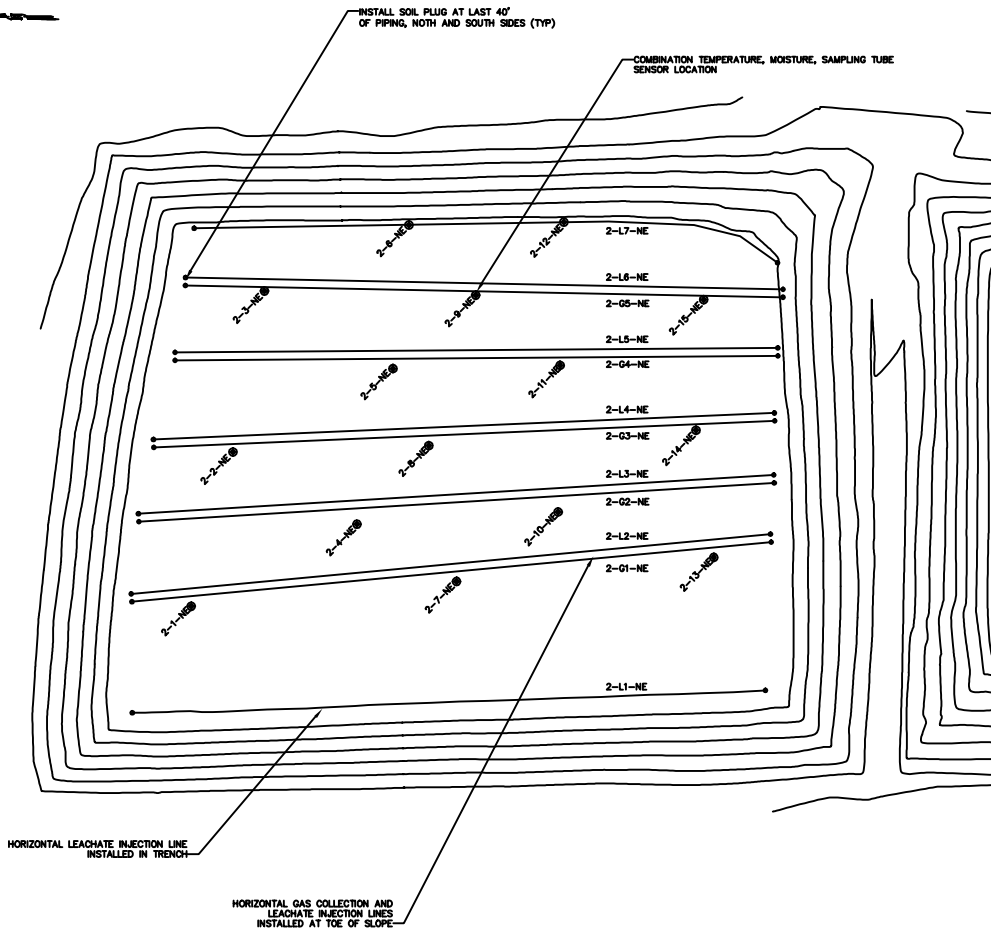
DETAIL

3-2

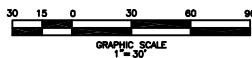
SENSOR DESIGNATION	NORTHING	EASTING	ELEVATION (MSL)
2-1-NE	1979077	6851362	44
2-2-NE	1979066	6851464	52.5
2-3-NE	1979044	6851541	49.5
2-4-NE	1979023	6851602	51
2-5-NE	1979017	6851574	49.5
2-6-NE	1978993	6851604	49.5
2-7-NE	1978907	6851463	52.5
2-8-NE	1978884	6851530	49.5
2-9-NE	1978842	6851430	53
2-10-NE	1978841	6851500	51
2-11-NE	1978836	6851500	49.5
2-12-NE	1978784	6851407	44
2-13-NE	1978777	6851471	49.5
2-14-NE	1978769	6851517	49.5

LEGEND

- HORIZONTAL LEACHATE INJECTION LINE, 1.25" Ø, SDR 11 HDPE WITH 3/32" Ø DRILLED HOLES @ 20' O/C
- HORIZONTAL GAS COLLECTION LINE, VARIOUS CONFIGURATIONS
- THERMISTERS, QUALITY THERMISTERS NTC PROBE, 10,000 OHM RESISTANCE AT 25°C, TOLERANCE ±0.2°C (0-100°C), PRESSURE SENSING TUBE, 1/4-INCH ID BY 3/8 OD LLDPE, AND PVC MOISTURE SENSOR.
- 2-01-NE LEVEL 2, INSTRUMENT LOCATION 1, NORTHEAST ANAEROBIC MODULE
- 2-L1-NE LEVEL 2, LEACHATE INJECTION LINE 1, NORTHEAST ANAEROBIC MODULE
- 2-G1-NE LEVEL 2, GAS EXTRACTION LINE 1, NORTHEAST MODULE

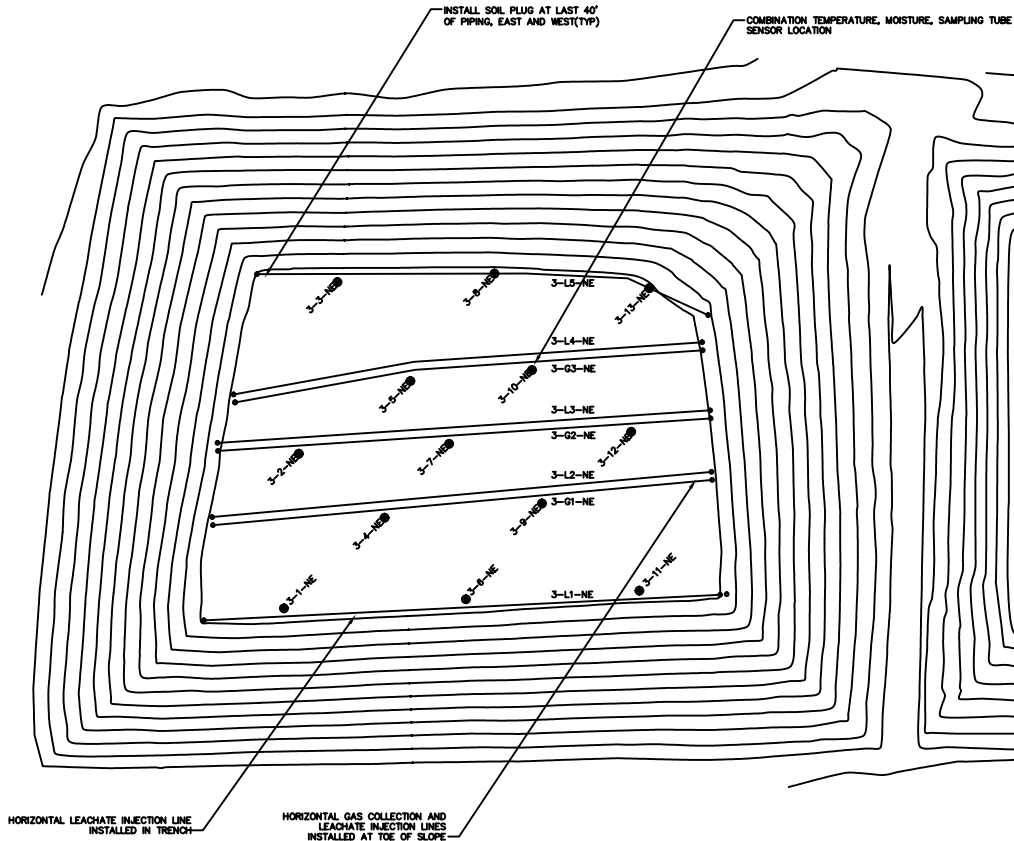


AS-BUILT



WARNING: THE ORIGINAL DOCUMENTS CONTAIN A RED COLORED PROFESSIONAL SEAL AND BLACK SIGNATURE.

	NO.	REVISIONS	DATE	APPLY	<p>YOLO COUNTY DEPARTMENT OF PLANNING & PUBLIC WORKS DIVISION OF INTEGRATED WASTE MANAGEMENT 282 WEST BEAVER ST., WOODLAND, CA 95695</p> <p>ASSISTANT DIRECTOR OF PUBLIC WORKS</p> <p>APPROVED _____ 19 _____ R. E. NO.</p>	<p>YOLO COUNTY CENTRAL LANDFILL FULL-SCALE BIOREACTOR NE ANAEROBIC MODULE LEVEL 2 PIPING AND INSTRUMENTATION</p> <p>DRAWING NO. _____</p>	<p>NO. NO. 0907 P.A. NO. T-048-03 DESIGNED BY: JAK DRAWN BY: JAK CHECKED BY: JY FILE NAME: _____ DATE: 8/10/02</p>
	DESCRIPTIONS						<p>DETAIL 3-3</p>



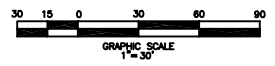
SENSOR DESIGNATION	NORTHING	EASTING	ELEVATION (MSL)
3-1-NE	1979983	8651367	85
3-2-NE	1979978	8651443	85
3-3-NE	1979977	8651508	84
3-4-NE	1979974	8651412	85.5
3-5-NE	1979971	8651379	85.5
3-6-NE	1979971	8651371	85
3-7-NE	1979962	8651448	85
3-8-NE	1979979	8651392	84
3-9-NE	1979966	8651419	85.5
3-10-NE	1979961	8651485	84.5
3-11-NE	1979961	8651373	85
3-12-NE	1979972	8651404	85
3-13-NE	1979963	8651526	84

LEGEND

- HORIZONTAL LEACHATE INJECTION LINE, 1.25" #, SDR 11 HDPE WITH 3/32" # DRILLED HOLES @ 20' O/C
- HORIZONTAL GAS COLLECTION LINE, VARIOUS CONFIGURATIONS
- THERMISTOR, QUALITY THERMISTOR NTC PROBE, 10,000 OHM RESISTANCE AT 25°C, TOLERANCE ±0.2°C (0-100°C), PRESSURE SENSING TUBE, 1/4"-HIGH ID BY 3/8" OD LLDPE, AND PVC MOISTURE SENSOR.
- 3-01-NE LEVEL 3, INSTRUMENT LOCATION 1, NORTHEAST ANAEROBIC MODULE
- 3-11-NE LEVEL 3, LEACHATE INJECTION LINE 1, NORTHEAST ANAEROBIC MODULE
- 3-01-NE LEVEL 3, GAS EXTRACTION LINE 1, NORTHEAST MODULE

AS-BUILT

WARNING: THE ORIGINAL DOCUMENTS CONTAIN A RED COLORED PROFESSIONAL SEAL AND BLACK SIGNATURE.



NO.	REVISIONS DESCRIPTIONS	DATE	BY	

YOLO COUNTY
DEPARTMENT OF PLANNING & PUBLIC WORKS
DIVISION OF INTEGRATED WASTE MANAGEMENT
292 WEST BEAVER ST., WOODLAND, CA 95665

ASSISTANT DIRECTOR OF PUBLIC WORKS _____

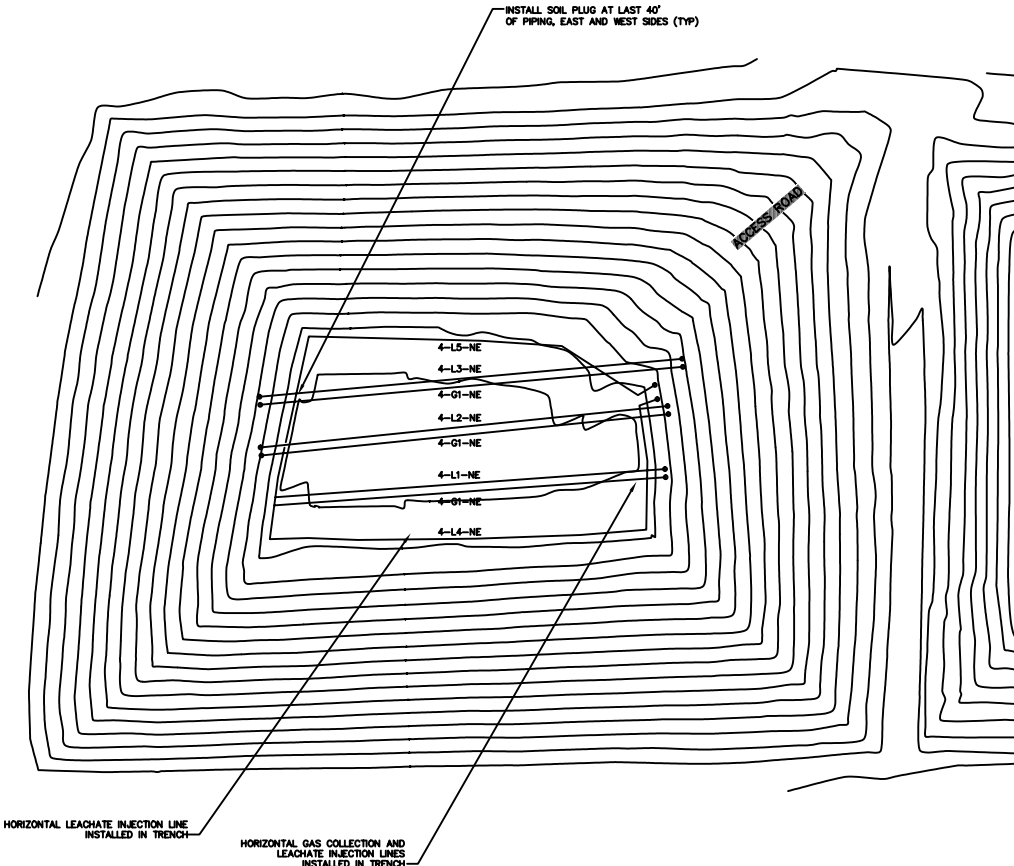
APPROVED _____ 19 _____ B. E. NO. _____

YOLO COUNTY CENTRAL LANDFILL
FULL-SCALE BIOREACTOR
**NE ANAEROBIC
MODULE LEVEL 3
PIPING AND
INSTRUMENTATION**

DRAWING NO. _____

W.D. NO. 9207
P.A. NO. 1-086-36
DRAWN BY JOK
CHECKED BY JY
FILE NAME
DATE 8/6/02

DETAIL
3-4

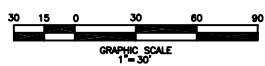


LEGEND

- HORIZONTAL LEACHATE INJECTION LINE, 1.25" Ø, SDR 11 HDPE WITH 3/32" Ø DRILLED HOLES @ 20' O/C
- HORIZONTAL GAS COLLECTION LINE, VARIOUS CONFIGURATIONS
- 4-L1-NE LEVEL 4, LEACHATE INJECTION LINE 1, NORTHEAST ANAEROBIC MODULE
- 4-G1-NE LEVEL 4, GAS EXTRACTION LINE 1, NORTHEAST MODULE

AS-BUILT

WARNING: THE ORIGINAL DOCUMENTS CONTAIN A RED COLORED PROFESSIONAL SEAL AND BLACK SIGNATURE.



NO.	REVISIONS	DATE	APPLY
	DESCRIPTIONS		

YOLO COUNTY
 DEPARTMENT OF PLANNING & PUBLIC WORKS
 DIVISION OF INTEGRATED WASTE MANAGEMENT
 282 WEST BEAMER ST., WOODLAND, CA 95695

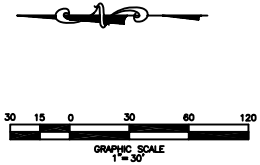
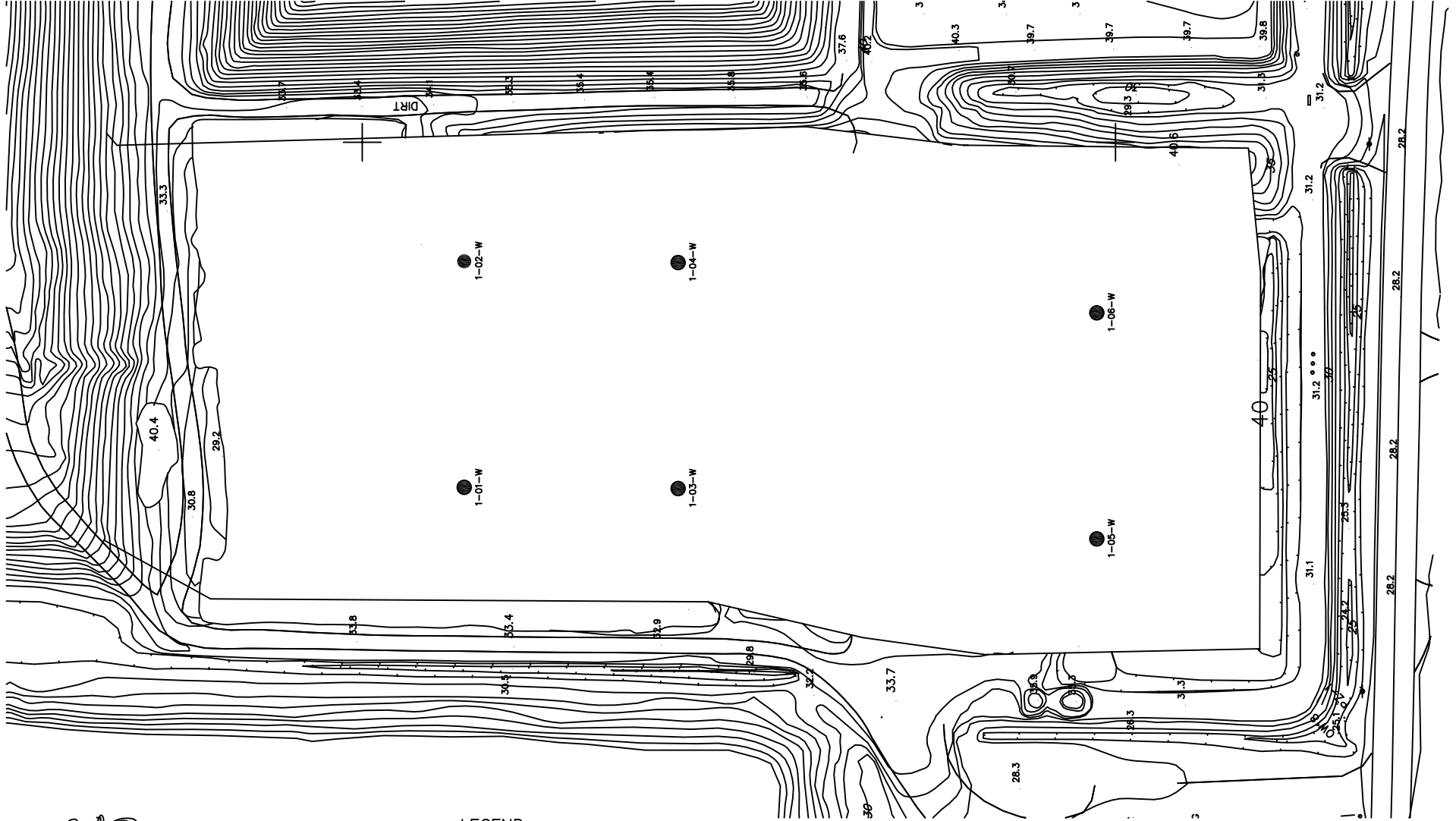
ASSISTANT DIRECTOR OF PUBLIC WORKS _____
 APPROVED _____ 19 _____ R. E. NO. _____

YOLO COUNTY CENTRAL LANDFILL
 FULL-SCALE BIOREACTOR
 NE ANAEROBIC
 MODULE LEVEL 4
 PIPING AND
 INSTRUMENTATION

DRAWING NO. _____

W.D. NO. 9207
 P.E. NO. 70916-36
 DESIGN BY JCK
 DRAWN BY JCK
 CHECKED BY JCK
 FILE NAME
 DATE 8/5/02

DETAIL
 3-5



LEGEND
 ● THERMISTOR, QUALITY THERMISTOR NTC PROBE, 10,000 OHM RESISTANCE AT 25°C, TOLERANCE ±0.2°C (0-100°C), AND PVC MOISTURE SENSOR.

1-01-W LEVEL 1, INSTRUMENT LOCATION 1, WEST ANAEROBIC MODULE

NO.	REVISIONS DESCRIPTIONS	DATE	APPR.

YOLO COUNTY
 DEPARTMENT OF PLANNING & PUBLIC WORKS
 DIVISION OF INTEGRATED WASTE MANAGEMENT
 282 WEST BEAMER ST., WOODLAND, CA 95665

ASSISTANT DIRECTOR OF PUBLIC WORKS _____

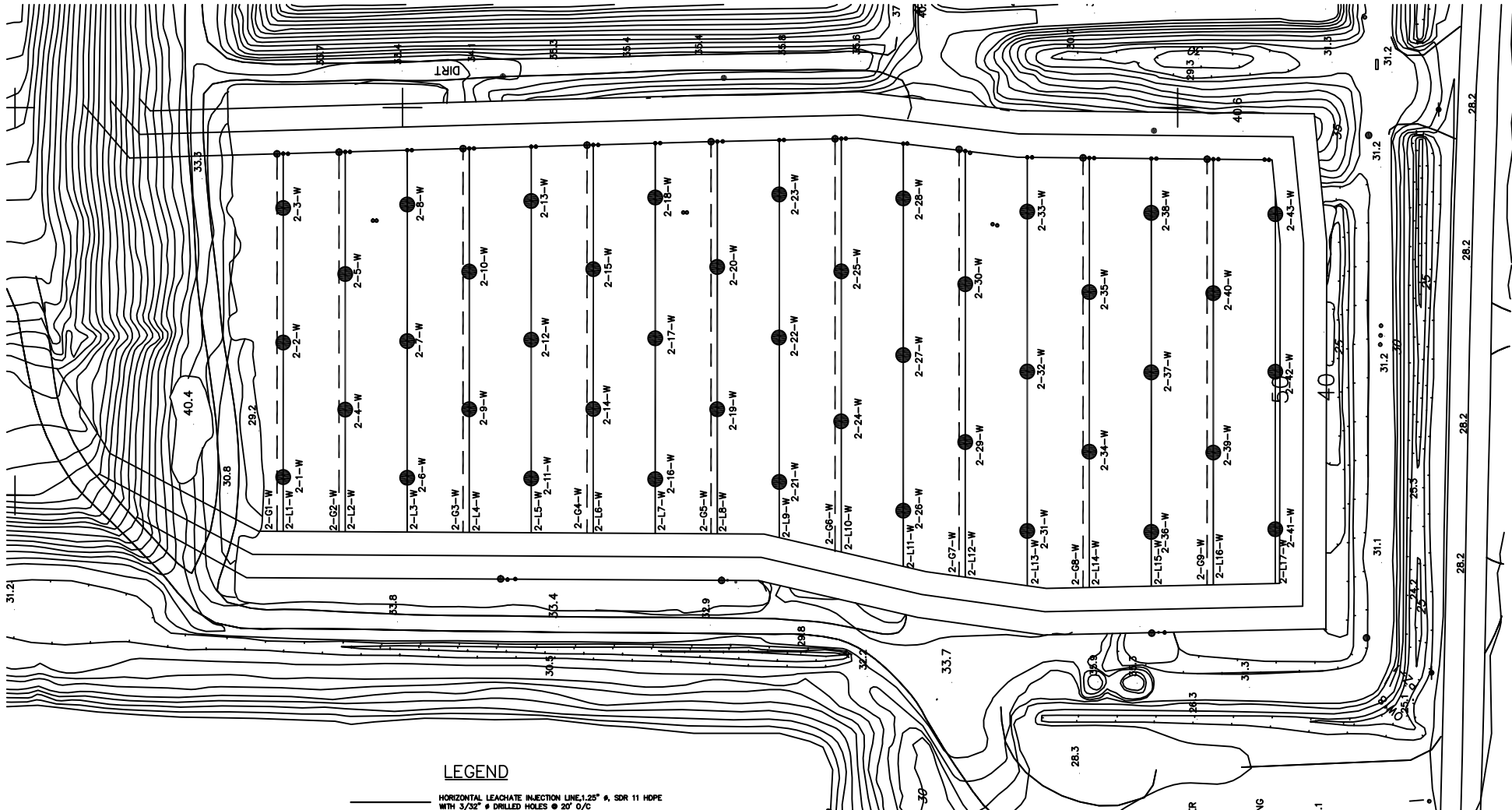
APPROVED _____ 19 ____ E. E. NO. _____

YOLO COUNTY CENTRAL LANDFILL
 FULL SCALE BIOREACTOR
 WEST SIDE, LEVEL 1
 PIPING AND
 INSTRUMENTATION PLAN

DRAWING NO. _____

PROJECT NO. 9207
 P.A. NO. 2546-A-25
 DESIGNED BY: EJK
 DRAWING BY: EJK
 CHECKED BY: ST
 FILE NAME: 001011101
 DATE: 2/27/02

DETAIL
 4-2



LEGEND

- HORIZONTAL LEACHATE INJECTION LINE 1.25" Ø, SDR 11 HDPE WITH 3/32" Ø DRILLED HOLES @ 20' O/C
- - - HORIZONTAL GAS COLLECTION LINE, VARIOUS CONFIGURATIONS
- THERMISTER, QUALITY THERMISTOR NTC PROBE, 10,000 OHM RESISTANCE AT 25°C, TOLERANCE ±0.2°C (0-100°C), AND PVC MOISTURE SENSOR.
- 2-01-W LEVEL 2, INSTRUMENT LOCATION 1, WEST ANAEROBIC MODULE
- 2-L1-W LEVEL 2, LEACHATE INJECTION LINE 1, WEST ANAEROBIC MODULE
- 2-G1-W LEVEL 2, GAS EXTRACTION LINE 1, WEST ANAEROBIC MODULE



WARNING: THE ORIGINAL DOCUMENTS CONTAIN A RED COLORED PROFESSIONAL SEAL AND BLACK SIGNATURE.

NO.	REVISIONS	DATE	APPLY

YOLO COUNTY
 DEPARTMENT OF PLANNING & PUBLIC WORKS
 DIVISION OF INTEGRATED WASTE MANAGEMENT
 282 WEST BEAVER ST., WOODLAND, CA 95695

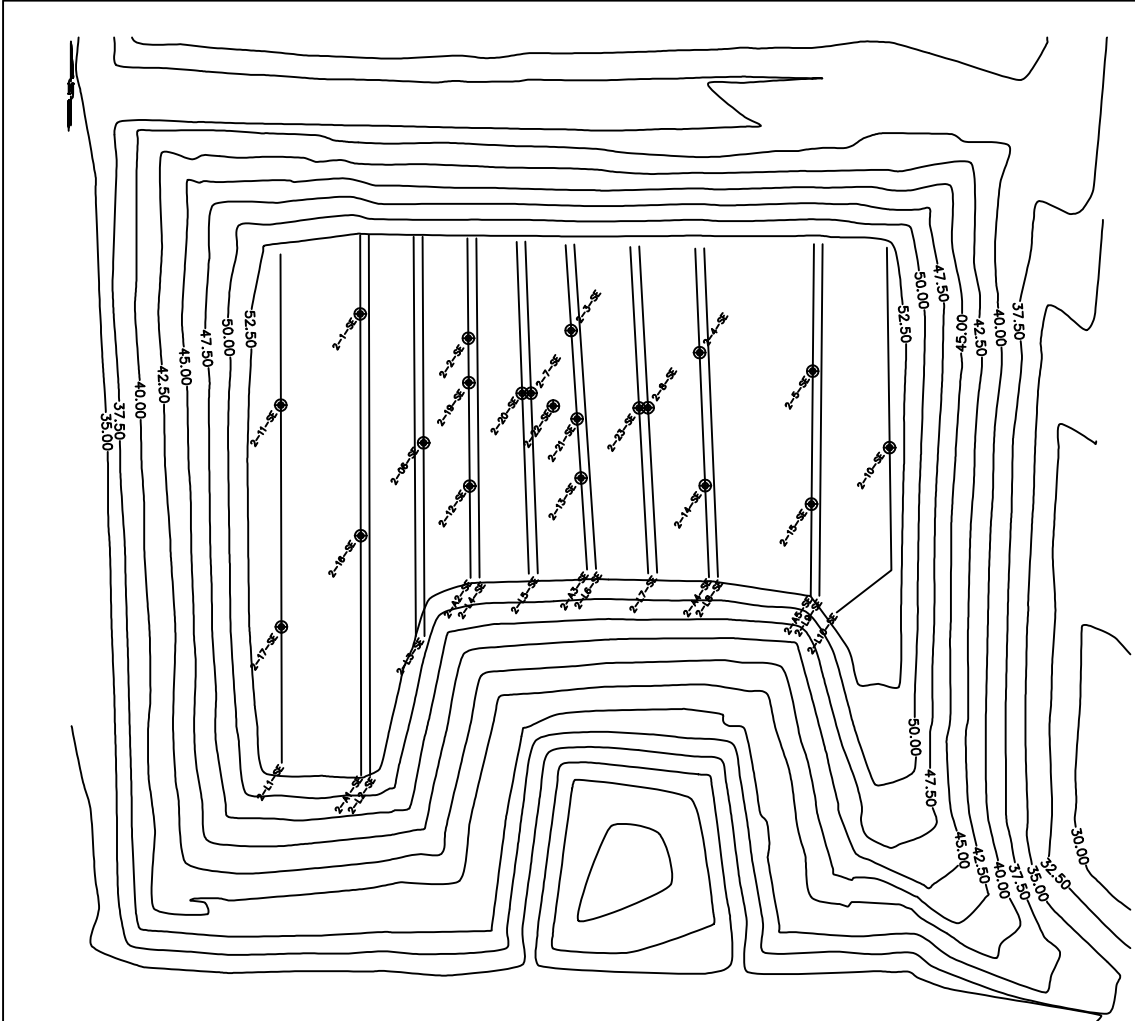
ASSISTANT DIRECTOR OF PUBLIC WORKS _____
 APPROVED: _____ 19 _____ R. E. NO. _____

YOLO COUNTY CENTRAL LANDFILL
 FULL SCALE BIOREACTOR
 WEST SIDE, LEVEL 2
 PIPING AND
 INSTRUMENTATION PLAN

DRAWING NO. _____

W.D. NO. 9907
 P.A. NO. 15424.W
 DESIGNED BY JOK
 DRAWN BY JOK
 CHECKED BY JSE
 FILE NAME: 10000001.dwg
 DATE: 2/25/02

DETAIL
 4-3



SENSOR DESIGNATION	NORTHING	EASTING	ELEVATION (MRL)
2-1-SE	1978604	8851380	51
2-1-SE	1978588	8851417	51
2-1-SE	1978599	8851452	51
2-1-SE	1978581	8851485	50.5
2-1-SE	1978585	8851533	52
2-1-SE	1978581	8851602	51
2-1-SE	1978572	8851438	51.5
2-1-SE	1978572	8851478	52
NOT INSTALLED			
2-11-SE	1978599	8851559	52
2-11-SE	1978572	8851353	51
2-11-SE	1978548	8851418	51
2-11-SE	1978548	8851450	50.5
2-11-SE	1978548	8851485	50.5
2-11-SE	1978540	8851533	52
2-11-SE	1978540	8851581	51
2-11-SE	1978548	8851354	51
2-11-SE	1978540	LOG	
2-A1-SE	1978572	8851417	51
2-A1-SE	1978572	8851435	52
2-A1-SE	1978589	8851454	52
2-A1-SE	1978572	8851448	52
2-A1-SE	1978572	8851478	52

LEGEND

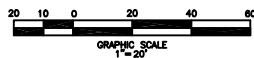
- HORIZONTAL LEACHATE INJECTION LINE, 1.25" ø, SDR 11 HDPE WITH 3/32" ø DRILLED HOLES @ 10' O/C
- HORIZONTAL LEACHATE INJECTION LINE, 1.25" ø, SCHEDULE 80 CPVC WITH 3/32" ø DRILLED HOLES @ 10' O/C
- HORIZONTAL AIR COLLECTION LINE, ALTERNATING 4 AND 6-INCH CPVC
- HORIZONTAL AIR COLLECTION LINE, ALTERNATING 6 AND 8-INCH CORRUGATED METAL PIPE WITH HDPE INJECTION LINE INSIDE.
- THERMISTER, QUALITY THERMISTER NTC PROBE, 10,000 OHM RESISTANCE AT 25°C, TOLERANCE ±0.2°C (0-100°C), PRESSURE SENSING TUBE, 1/4-INCH ID BY 3/8 OD LLDPE, AND PVC MOISTURE SENSOR.
- 2-1-SE LEVEL 2, INSTRUMENT LOCATION 1, SOUTHEAST ANAEROBIC MODULE
- 2-11-SE LEVEL 2, LEACHATE INJECTION LINE 1, SOUTHEAST ANAEROBIC MODULE
- 2-A1-SE LEVEL 2, AIR COLLECTION LINE 1, SOUTHEAST MODULE

NOTES

1. ALL PIPING AND INSTRUMENTATION INSTALLED IN 3-FOOT WIDE BY 2-FOOT DEEP TRENCH. ALL TRENCHES WERE BACKFILLED WITH TIRES.
2. SENSORS DESIGNATED 0.5 WERE INSTALLED APPROXIMATELY 4-FEET ABOVE THE AEROBIC LINER.

AS-BUILT

WARNING: THE ORIGINAL DOCUMENTS CONTAIN A RED COLORED PROFESSIONAL SEAL AND BLACK SIGNATURE.



NO.	REVISIONS	DATE	APPLY

YOLO COUNTY
DEPARTMENT OF PLANNING & PUBLIC WORKS
DIVISION OF INTEGRATED WASTE MANAGEMENT
292 WEST BEAVER ST., WOODLAND, CA 95668

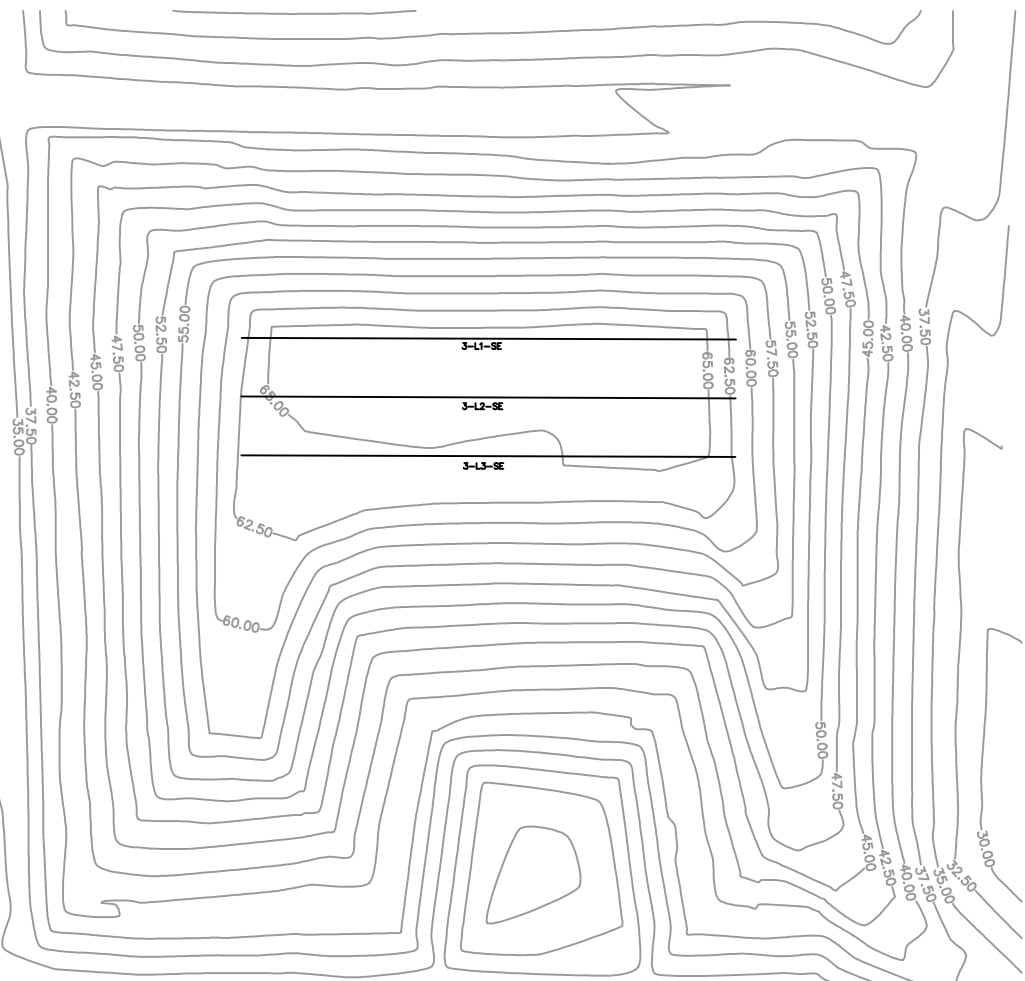
ASSISTANT DIRECTOR OF PUBLIC WORKS
APPROVED _____ 19 _____ R. E. NO.

YOLO COUNTY CENTRAL LANDFILL
FULL-SCALE BIOREACTOR
SE AEROBIC
MODULE LEVEL 2
PIPING AND
INSTRUMENTATION

DRAWING NO. _____

NO. NO.	9207
P.R. NO.	TABUL SE
DESIGN BY	JSE
DRAWN BY	JSE
CHECKED BY	RY
DATE	8/6/02

DETAIL
5-4



LEGEND

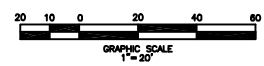
- HORIZONTAL LEACHATE INJECTION LINE, 1.25" Ø, SDR 11 HDPE WITH 3/32" Ø DRILLED HOLES @ 10' O/C
- 3-L1-SE LEVEL 3, LEACHATE INJECTION LINE 1, SOUTHEAST ANAEROBIC MODULE

NOTES

1. ALL PIPING AND INSTRUMENTATION INSTALLED IN 3-FOOT WIDE BY 2-FOOT DEEP TRENCH. ALL TRENCHES WERE BACKFILLED WITH TIES.

AS-BUILT

WARNING: THE ORIGINAL DOCUMENTS CONTAIN A RED COLORED PROFESSIONAL SEAL AND BLACK SIGNATURE.



NO.	REVISIONS	DATE	APP'D
	DESCRIPTIONS		

YOLO COUNTY
 DEPARTMENT OF PLANNING & PUBLIC WORKS
 DIVISION OF INTEGRATED WASTE MANAGEMENT
 282 WEST BEAVER ST., WOODLAND, CA 95666

ASSISTANT DIRECTOR OF PUBLIC WORKS

APPROVED _____ 18 _____ R. E. NO.

YOLO COUNTY CENTRAL LANDFILL
 FULL-SCALE BIOREACTOR
 SE AEROBIC
 MODULE LEVEL 3
 PIPING AND
 INSTRUMENTATION

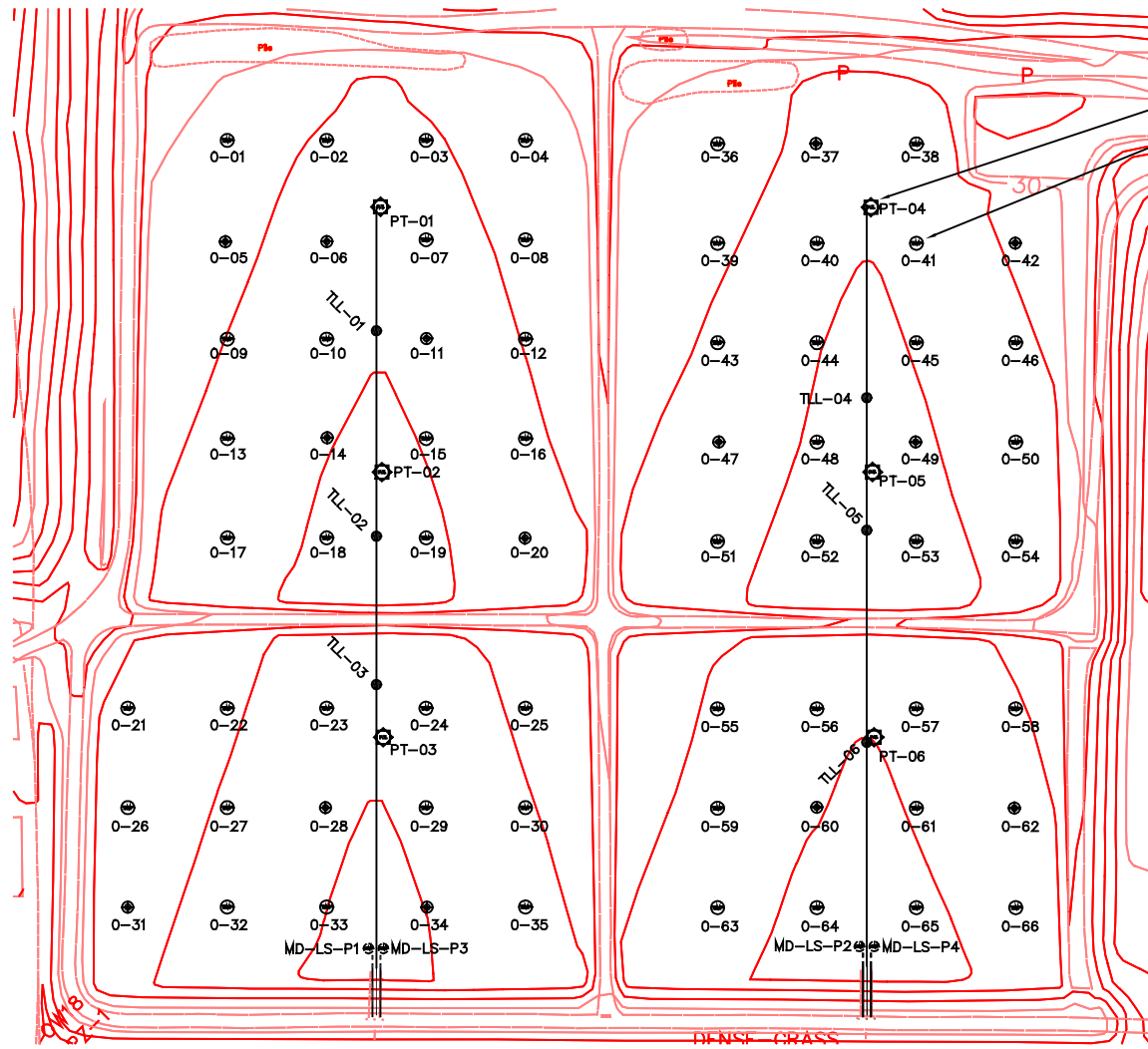
DRAWING NO. _____

SEA. NO.	9907
D.P. NO.	7/18/02
DESIGN BY	JSC
CHECKED BY	JSC
DATE	8/2/02

DETAIL

5-5

MONITORING POINT COORDINATES			
SENSOR DESIGNATION	NORTHING	EASTING	ELEVATION (MSL)
0-01	1980033	6650992	29
0-02	1980033	6651067	28
0-03	1980033	6651142	28
0-04	1980033	6651217	29
0-05	1979958	6650992	29
0-06	1979958	6651067	27.5
0-07	1979958	6651142	27.5
0-08	1979958	6651217	29
0-09	1979883	6650992	28
0-10	1979883	6651067	27
0-11	1979883	6651142	27
0-12	1979883	6651217	28.5
0-13	1979808	6650992	28
0-14	1979808	6651067	26.5
0-15	1979808	6651142	26.5
0-16	1979808	6651217	28
0-17	1979733	6650992	27.5
0-18	1979733	6651067	26
0-19	1979733	6651142	26
0-20	1979733	6651217	27.5
0-21	1980030	6651362	27.5
0-22	1980030	6651437	27.5
0-23	1980030	6651512	27.5
0-24	1979955	6651362	28
0-25	1979955	6651437	27
0-26	1979955	6651512	27
0-27	1979955	6651587	28.5
0-28	1979880	6651362	28
0-29	1979880	6651437	26.5
0-30	1979880	6651512	26.5
0-31	1979880	6651587	28
0-32	1979805	6651362	27.5
0-33	1979805	6651437	26
0-34	1979805	6651512	26
0-35	1979805	6651587	27.5
0-36	1979730	6651362	27
0-37	1979730	6651437	25.5
0-38	1979730	6651512	25.5
0-39	1979730	6651587	27
0-40	1979604	6650917	28
0-41	1979604	6650992	26
0-42	1979604	6651067	25
0-43	1979604	6651142	25
0-44	1979604	6651217	26.5
0-45	1979529	6650917	27
0-46	1979529	6650992	26
0-47	1979529	6651067	24.5
0-48	1979529	6651142	24.5
0-49	1979529	6651217	26
0-50	1979454	6650917	27
0-51	1979454	6650992	25.5
0-52	1979454	6651067	24
0-53	1979454	6651142	24
0-54	1979454	6651217	25.5
0-55	1979604	6651362	26
0-56	1979604	6651437	24.5
0-57	1979604	6651512	24.5
0-58	1979604	6651587	26
0-59	1979529	6651362	25.5
0-60	1979529	6651437	24
0-61	1979529	6651512	24
0-62	1979529	6651587	25.5
0-63	1979454	6651362	25
0-64	1979454	6651437	24
0-65	1979454	6651512	23.5
0-66	1979454	6651587	25



PRESSURE TRANSDUCER AND PRESSURE SENSING TUBE INSTALLED ON SS CABLE
THERMISTER AND PRESSURE SENSING TUBE

INSTRUMENT DESIGNATION

- 0-02 THERMISTER, MOISTURE SENSOR, AND PRESSURE SENSING TUBE DESIGNATION. 0-02 DESIGNATES LEVEL 0, INSTRUMENT NUMBER 2
- PT-01 PRESSURE TRANSDUCER AND PRESSURE SENSING TUBE. PT-01 DESIGNATES PRESSURE TRANSDUCER NUMBER 1
- TLL-01 TRENCH LIQUID LEVEL, LOCATION 1

LEGEND

- PRESSURE TRANSDUCER, DRUCK MODEL PTX 1830, 0-1 PSIG
- THERMISTER, QUALITY THERMISTER NTC PROBE, 10,000 OHM RESISTANCE AT 25°C, TOLERANCE ±0.2°C (0-100°C), AND PRESSURE SENSING TUBE, 1/4-INCH ID BY 3/8 OD LLDFE.
- THERMISTER, QUALITY THERMISTER NTC PROBE, 10,000 OHM RESISTANCE AT 25°C, TOLERANCE ±0.2°C (0-100°C), PRESSURE SENSING TUBE, 1/4-INCH ID BY 3/8 OD LLDFE, AND PVC MOISTURE SENSOR.
- PRESSURE SENSING TUBE, 1/4-INCH ID BY 3/8 OD LLDFE.

WARNING: THE ORIGINAL DOCUMENTS CONTAIN A RED COLORED PROFESSIONAL SEAL AND BLACK SIGNATURE.

NO.	REVISIONS	DATE	APPLY
	DESCRIPTIONS		
YOLO COUNTY DEPARTMENT OF PLANNING & PUBLIC WORKS DIVISION OF INTEGRATED WASTE MANAGEMENT 282 WEST BEAVER ST., WOODLAND, CA 95695			
ASSISTANT DIRECTOR OF PUBLIC WORKS			
APPROVED _____ 20____ D. E. NO. _____			
YOLO COUNTY CENTRAL LANDFILL FULL SCALE BIOREACTOR BASE LINER INSTRUMENTATION PLAN			I.C.D. NO. 0209 I.C.D. NO. 7 I.C.D. NO. 202 I.C.D. NO. 202 I.C.D. NO. 202 DATE 8/14/00
DRAWING NO. _____			DETAIL 6-3