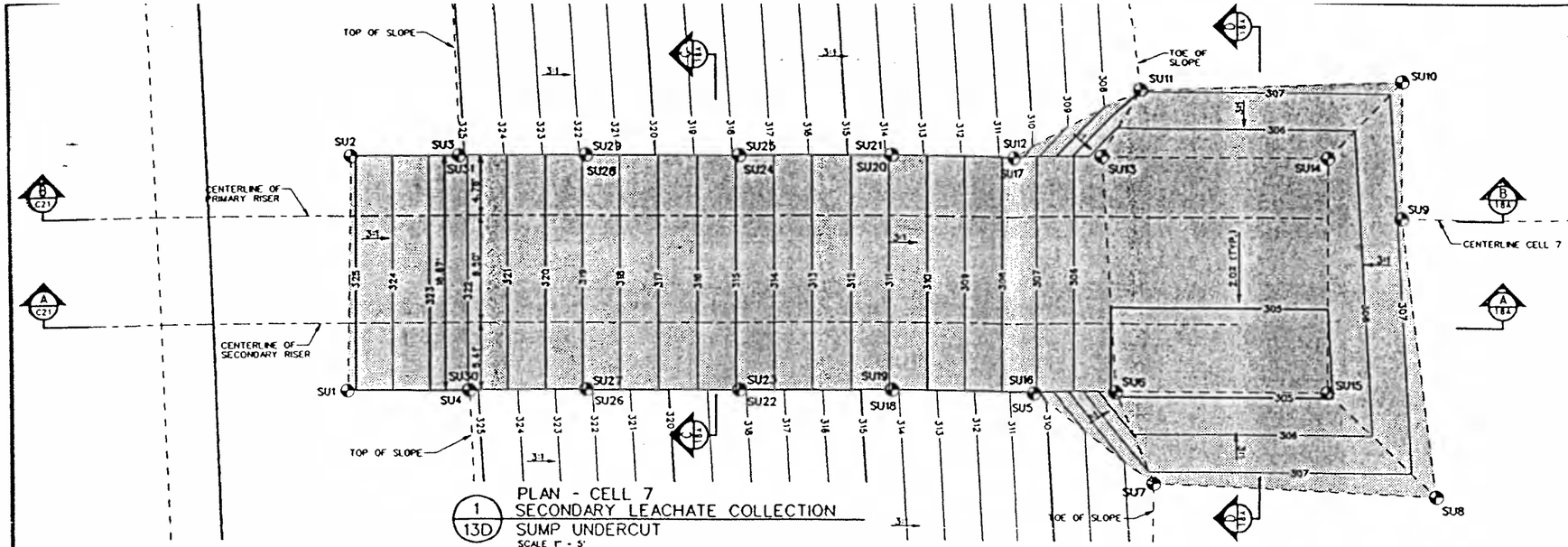
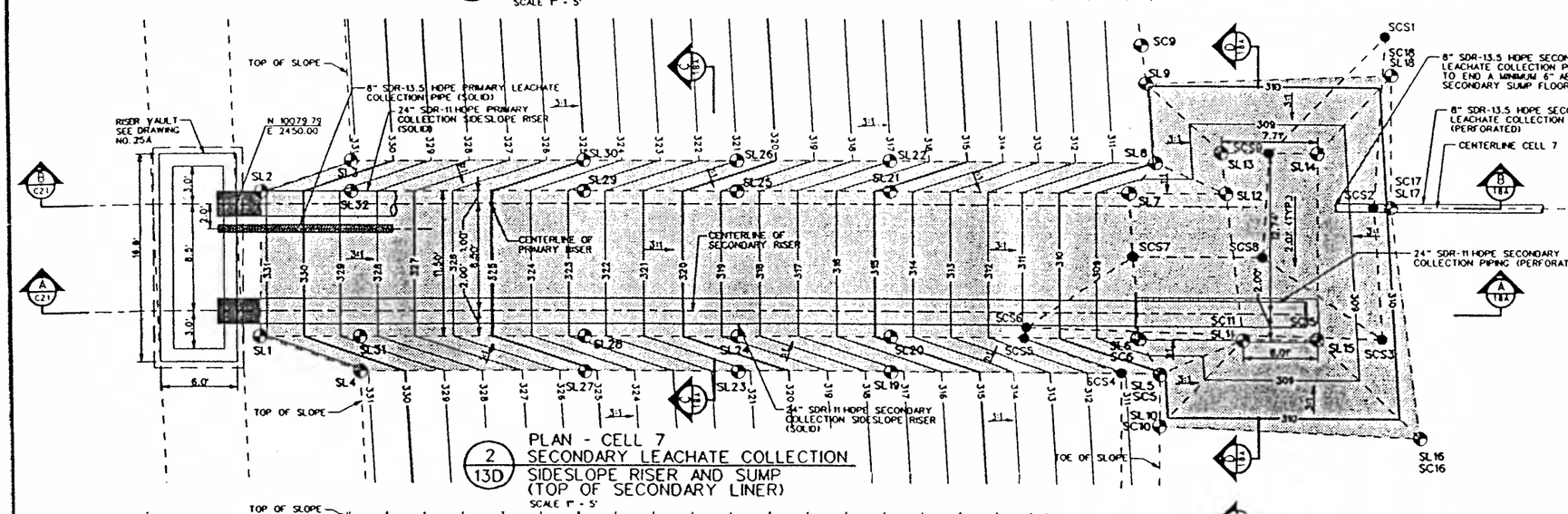
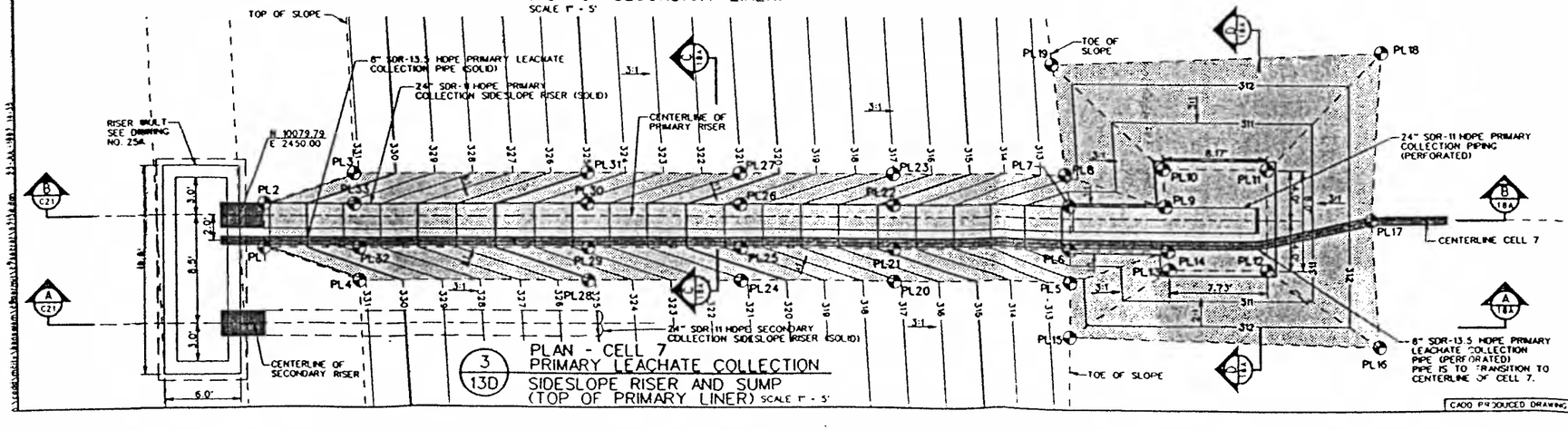


1 / 13D PLAN - CELL 7 SECONDARY LEACHATE COLLECTION SUMP UNDERCUT
SCALE 1" = 5'

CELL 7 SECONDARY SUMP UNDERCUT CONSTRUCTION CONTROL COORDINATES			
POINT	NORTHING	EASTING	EL.
SU1	10071.03	2436.09	325.22
SU2	10070.76	2454.16	325.13
SU3	10061.96	2454.17	323.13
SU4	10061.27	2436.08	323.22
SU5	10016.49	2436.08	310.33
SU6	10009.84	2436.09	304.87
SU7	10007.00	2428.17	307.31
SU8	9984.50	2427.83	307.92
SU9	9987.14	2460.00	307.19
SU10	9987.28	2461.09	307.35
SU11	10007.98	2460.23	307.06
SU12	10018.12	2454.17	310.33
SU13	10010.96	2454.16	305.24
SU14	9993.26	2454.16	305.24
SU15	9993.26	2436.09	304.87
SU16	10016.49	2436.09	307.08
SU17	10018.12	2454.16	307.82
SU18	10026.04	2436.08	314.18
SU19	10028.04	2436.92	310.32
SU20	10028.04	2445.92	310.32
SU21	10028.04	2454.77	313.84
SU22	10040.04	2436.08	316.17
SU23	10040.04	2454.76	314.91
SU24	10040.04	2454.76	314.31
SU25	10040.04	2454.77	317.83
SU26	10052.04	2436.08	322.17
SU27	10052.04	2436.09	318.90
SU28	10052.04	2445.92	318.90
SU29	10052.04	2454.77	321.83
SU30	10061.22	2436.09	321.36
SU31	10061.96	2454.76	322.20



2 / 13D PLAN - CELL 7 SECONDARY LEACHATE COLLECTION SIDESLOPE RISER AND SUMP (TOP OF SECONDARY LINER)
SCALE 1" = 5'



3 / 13D PLAN - CELL 7 PRIMARY LEACHATE COLLECTION SIDESLOPE RISER AND SUMP (TOP OF PRIMARY LINER) SCALE 1" = 5'

CADD PRODUCED DRAWING

CELL 7 SECONDARY SUMP CLAY LINER CONSTRUCTION CONTROL COORDINATES			
POINT	NORTHING	EASTING	EL.
SL1	10077.96	2439.50	331.20
SL2	10077.78	2451.00	331.14
SL3	10070.43	2453.44	331.13
SL4	10069.77	2436.76	331.22
SL5	10006.46	2436.76	310.15
SL6	10008.05	2439.50	307.94
SL7	10008.74	2451.00	308.16
SL8	10006.74	2453.44	309.94
SL9	10007.46	2458.73	310.06
SL10	10006.50	2432.60	311.27
SL11	9999.96	2439.50	307.93
SL12	10001.29	2451.00	308.16
SL13	10001.56	2454.44	308.24
SL14	9991.32	2454.44	308.24
SL15	9991.95	2439.50	307.93
SL16	9985.72	2431.74	310.52
SL17	9988.06	2450.00	310.15
SL18	9988.02	2460.54	311.37
SL19	10028.04	2436.76	317.33
SL20	10028.04	2439.50	314.29
SL21	10028.04	2451.00	314.49
SL22	10028.04	2453.44	317.03
SL23	10040.04	2436.76	321.32
SL24	10040.04	2439.50	318.58
SL25	10040.04	2451.00	318.78
SL26	10040.04	2453.44	321.32
SL27	10052.04	2436.76	325.32
SL28	10052.04	2439.50	322.28
SL29	10052.04	2451.00	322.48
SL30	10052.04	2453.44	325.01
SL31	10067.77	2439.50	328.48
SL32	10070.43	2451.00	328.76

CELL 7 PRIMARY SUMP CLAY LINER CONSTRUCTION CONTROL COORDINATES			
POINT	NORTHING	EASTING	EL.
PL1	10077.84	2447.50	331.16
PL2	10077.78	2451.00	331.14
PL3	10070.43	2451.44	331.13
PL4	10070.09	2444.31	331.18
PL5	10013.62	2444.91	312.98
PL6	10013.58	2447.50	312.97
PL7	10011.58	2451.00	309.77
PL8	10011.97	2447.44	312.94
PL9	10008.12	2447.00	309.77
PL10	10008.14	2444.00	309.77
PL11	9998.14	2447.00	309.77
PL12	9998.12	2446.00	309.77
PL13	10005.85	2449.00	309.77
PL14	10005.33	2447.50	309.77
PL15	10013.66	2440.61	312.47
PL16	9989.03	2439.34	312.81
PL17	9989.63	2439.00	312.53
PL18	9988.82	2451.31	312.78
PL19	10014.56	2442.42	312.51
PL20	10028.04	2444.91	317.18
PL21	10028.04	2447.50	314.49
PL22	10028.04	2451.00	314.59
PL23	10028.04	2453.44	317.03
PL24	10040.04	2444.91	321.18
PL25	10040.04	2447.50	318.58
PL26	10040.04	2451.00	318.78
PL27	10040.04	2453.44	321.32
PL28	10052.04	2444.91	325.17
PL29	10052.04	2447.50	322.58
PL30	10052.04	2451.00	322.68
PL31	10052.04	2453.44	325.01
PL32	10070.09	2447.50	328.28
PL33	10070.43	2451.00	328.76

CELL 7 SECONDARY SUMP COLLECTION LAYER CONSTRUCTION CONTROL COORDINATES			
POINT	NORTHING	EASTING	EL.
SC1	10006.46	2436.76	311.19
SC2	10008.05	2439.50	311.11
SC9	10007.80	2462.76	311.16
SC10	10006.50	2432.60	311.27
SC11	9999.96	2439.50	311.21
SC15	9993.95	2439.50	311.29
SC16	9985.72	2431.74	311.56
SC17	9988.06	2450.00	311.15
SC18	9988.02	2460.54	311.37

SEE NOTE 2

CELL 7 SECONDARY SUMP COLLECTION STONE CONSTRUCTION CONTROL COORDINATES			
POINT	NORTHING	EASTING	EL.
SC21	9988.55	2463.37	311.33
SC22	9989.43	2470.00	311.09
SC23	9988.75	2479.59	311.32
SC24	10009.36	2436.76	311.11
SC25	10017.12	2439.50	310.93
SC26	10015.67	2445.98	310.42
SC27	10008.43	2445.98	310.10
SC28	9998.39	2445.98	308.10
SC29	9991.88	2445.98	308.21

NOTES:

1. COORDINATES OF RISER PIPES MAY VARY IN THE FIELD. AS-BUILT LOCATIONS AND ELEVATIONS WILL BE PROVIDED WITH THE CELL CERTIFICATION REPORT.
2. SECONDARY COLLECTION POINTS (SC) ARE DIRECTLY ABOVE TOP OF SECONDARY CLAY. ONE FOOT OF DRAINAGE STONE, GEOTEXTILE AND GEOMEMBRANE (1.04 FT.).

REV.	DATE	DESCRIPTION	DRN BY	APP BY
4	7/97	ADDED SECONDARY COLLECTION POINTS	FAS	CPB
3	6/97	ELIMINATE SECONDARY CLEANOUT PIPE AND MODIFY TABLES	FAS	CPB
2	11/96	MODIFY FOR NEW BASE GRADES	FAS	CPB
1	1/96	ADD TOP OF SECONDARY COLLECTION AND AND REVISED COORDINATES, ADDED NOTE	FAS	CPB

RUST ENVIRONMENT & INFRASTRUCTURE

SIGNATURE

DATE

DATE: NOVEMBER 1995 | PROJECT NO. 34282.100 | SCALE: AS SHOWN

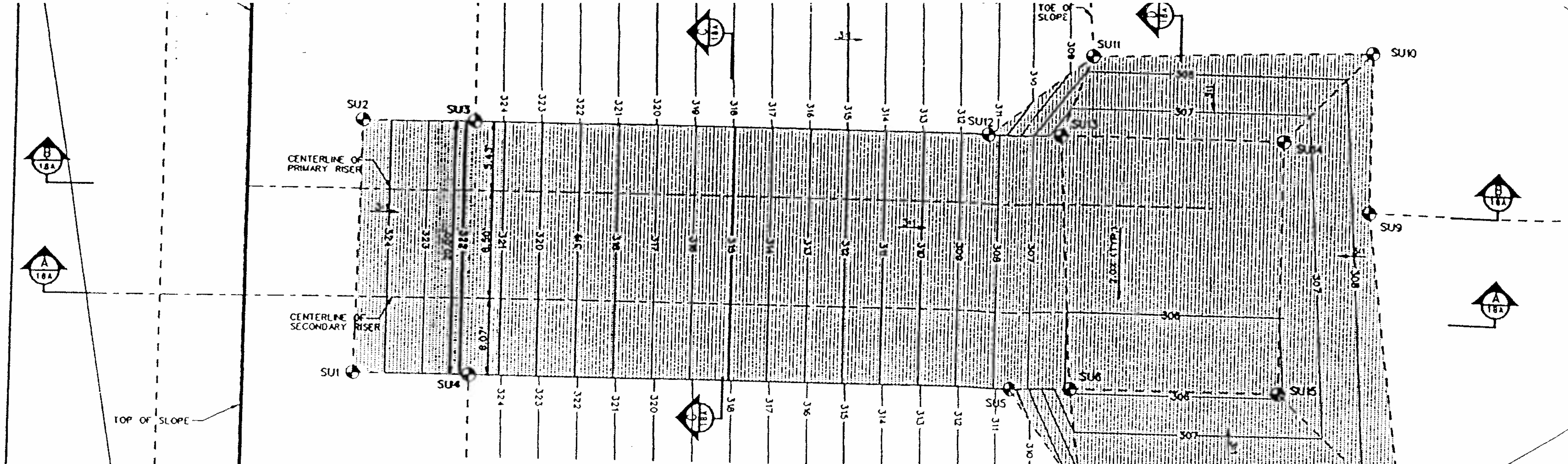
DES BY	FAS	
DRN BY	FAS	
CHK BY	CPB	
REV BY	AWE	
APP BY	CPB	

PROJECT: RESIDUALS MANAGEMENT UNIT 1

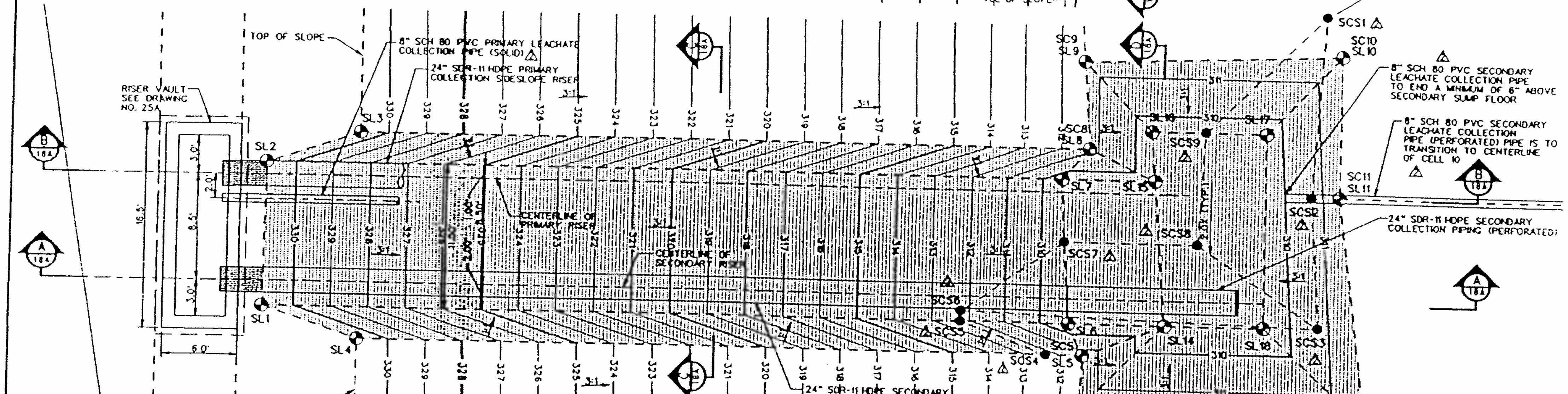
SHEET TITLE: SUMP CONSTRUCTION GRADES CELL 7

CWM Chemical Services, Inc. Model City Facility

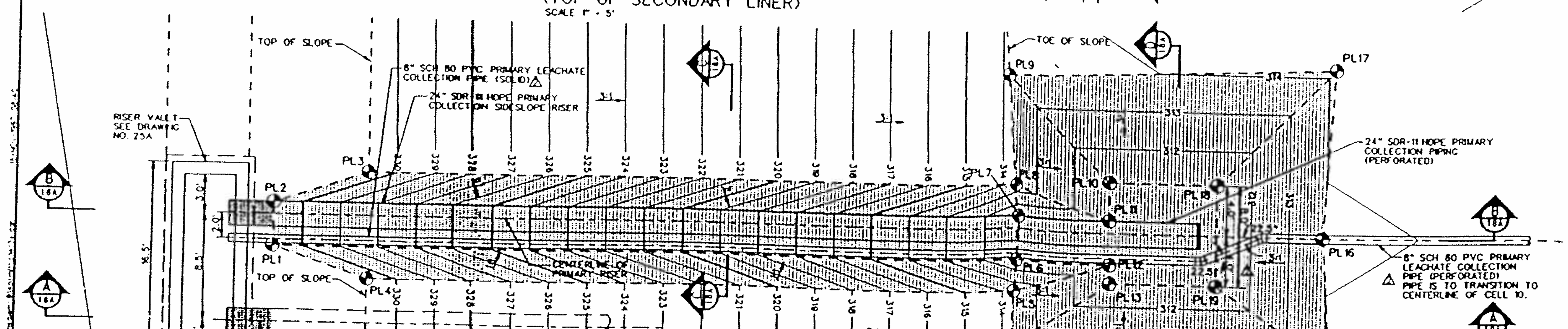
DRAWING NO. 13D



1 / 13E PLAN - CELL 10 SECONDARY LEACHATE COLLECTION SUMP UNDERCUT
SCALE 1" - 5'



2 / 13E PLAN - CELL 10 SECONDARY LEACHATE COLLECTION SIDESLOPE RISER AND SUMP (TOP OF SECONDARY LINER)
SCALE 1" - 5'



3 / 13E PLAN - CELL 10 PRIMARY LEACHATE COLLECTION SIDESLOPE RISER AND SUMP (TOP OF PRIMARY LINER) SCALE 1" - 5'

CELL 10 SECONDARY SUMP UNDERCUT CONSTRUCTION CONTROL COORDINATES

POINT	NORTHING	EASTING	EL.
SU1	9245.43	1871.29	324.86
SU2	9265.43	1871.59	324.76
SU3	9265.43	1880.51	324.76
SU4	9245.43	1880.51	324.86
SU5	9245.41	1923.26	310.61
SU6	9245.42	1928.23	305.88
SU7	9237.15	1929.30	308.63
SU8	9236.10	1954.49	308.99
SU9	9260.00	1951.43	308.44
SU10	9272.72	1951.46	308.71
SU11	9271.80	1929.46	308.41
SU12	9265.43	1920.98	311.27
SU13	9265.42	1927.03	306.28
SU14	9265.43	1944.61	306.28
SU15	9245.43	1944.61	305.88

CELL 10 SECONDARY SUMP CLAY LINER CONSTRUCTION CONTROL COORDINATES

POINT	NORTHING	EASTING	EL.
SL1	9249.50	1864.34	330.84
SL2	9261.00	1864.52	330.78
SL3	9263.48	1872.00	330.77
SL4	9246.93	1872.00	330.85
SL5	9246.93	1930.23	311.44
SL6	9249.50	1929.06	309.27
SL7	9261.00	1928.77	309.50
SL8	9263.48	1930.57	311.25
SL9	9270.42	1930.04	311.39
SL10	9271.27	1950.50	311.67
SL11	9260.00	1950.47	311.43
SL12	9241.77	1952.81	311.85
SL13	9242.71	1930.03	311.53
SL14	9249.50	1936.71	309.27
SL15	9261.00	1935.85	309.50
SL16	9265.00	1935.54	309.58
SL17	9265.00	1944.61	309.58
SL18	9249.50	1944.61	309.27

CELL 10 SECONDARY SUMP COLLECTION LAYER CONSTRUCTION CONTROL COORDINATES

POINT	NORTHING	EASTING	EL.
SC5	9246.93	1930.23	312.48
SC8	9263.48	1930.57	312.29
SC9	9270.42	1930.04	312.43
SC10	9271.27	1950.50	312.71
SC11	9260.00	1950.47	312.47
SC12	9241.77	1952.81	312.89
SC13	9242.71	1930.03	312.57

SEE NOTE 2

CELL 10 SECONDARY SUMP COLLECTION STONE CONSTRUCTION CONTROL COORDINATES

POINT	NORTHING	EASTING	EL.
SCS1	9274.42	1949.19	312.72
SCS2	9260.00	1948.25	312.40
SCS3	9249.55	1948.93	312.63
SCS4	9246.93	[illegible]	312.41
SCS5	9249.50	1920.09	312.26
SCS6	9250.33	1950.13	312.24
SCS7	9256.02	1938.67	309.40
SCS8	9256.02	[illegible]	309.40
SCS9	9265.02	1939.79	309.59

CELL 10 PRIMARY SUMP CLAY LINER CONSTRUCTION CONTROL COORDINATES

POINT	NORTHING	EASTING	EL.
PL1	9257.50	1864.46	330.80
PL2	9261.00	1864.52	330.78
PL3	9263.48	1872.00	330.77
PL4	9254.98	1872.00	330.81
PL5	9254.96	1923.27	313.69
PL6	9257.50	1923.61	311.08
PL7	9261.00	1923.61	311.08
PL8	9263.48	1923.74	313.85
PL9	9272.24	1922.68	313.83
PL10	9264.00	1931.04	311.08
PL11	9261.00	1931.09	311.08
PL12	9257.50	1931.14	311.08
PL13	9256.00	1931.16	311.08
PL14	9250.62	1923.17	313.78
PL15	9249.93	1946.65	314.12
PL16	9260.00	1947.99	313.90
PL17	9273.33	1948.87	314.19
PL18	9264.00	1939.54	311.08
PL19	9256.00	1939.54	311.08

STATE OF NEW YORK
CHARLES P. BALLOD
LICENSED PROFESSIONAL ENGINEER
53088-1

NOTES:

1. COORDINATES OF RISER PIPES MAY VARY IN THE FIELD. AS-BUILT LOCATIONS AND ELEVATIONS WILL BE PROVIDED WITH THE CELL CERTIFICATION REPORT.
2. SECONDARY COLLECTION POINTS (SC) ARE DIRECTLY ABOVE TOP OF SECONDARY CLAY. SEE DETAIL D. DWG. 18A

NOV 18 1997

RUST ENVIRONMENT & INFRASTRUCTURE

SIGNATURE

DATE

REV.	DATE	DESCRIPTION	DRN BY	APP BY
2	10/97	ADDED TABLES	FAS	CPB
1	4/97	MODIFY CELL 10 BASE GRADES	FAS	CPB

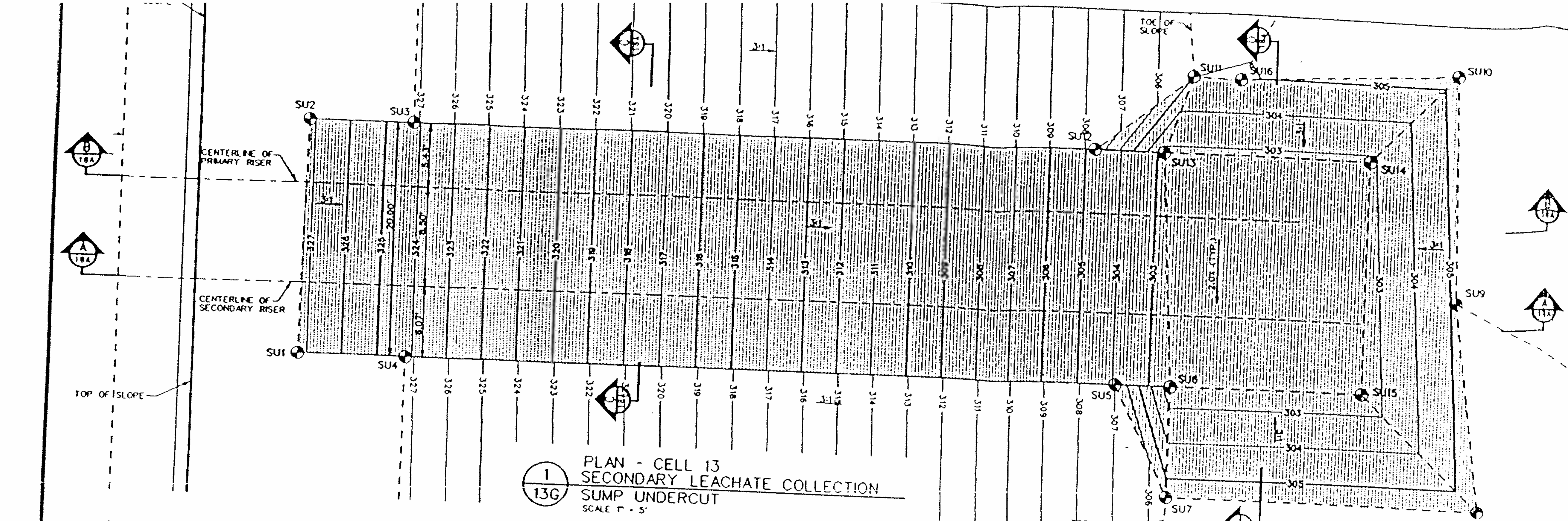
DATE: JULY 1996
DES BY: FAS
DRN BY: FAS
CHK BY: CPB
REV BY: AWE
APP BY: CPB

PROJECT NO. 37444.160 SCALE: AS SHOWN
PROJECT: RESIDUALS MANAGEMENT UNIT 1
SHEET TITLE: SUMP CONSTRUCTION GRADES CELL 10

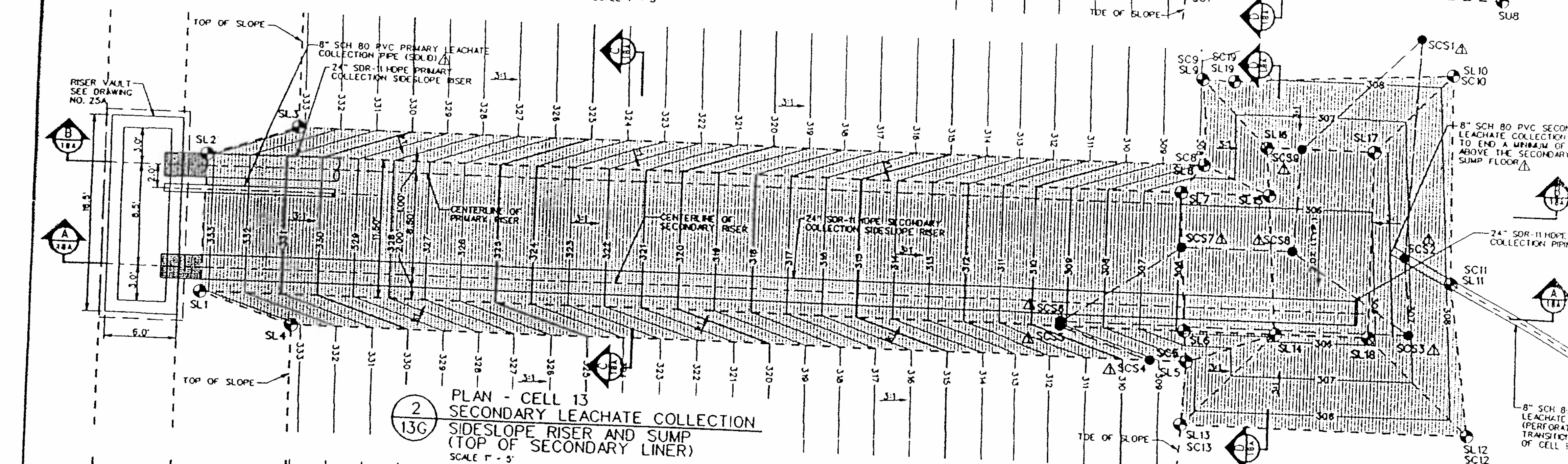
CWM Chemical Services, Inc. Model City Facility

DRAWING NO. 13E

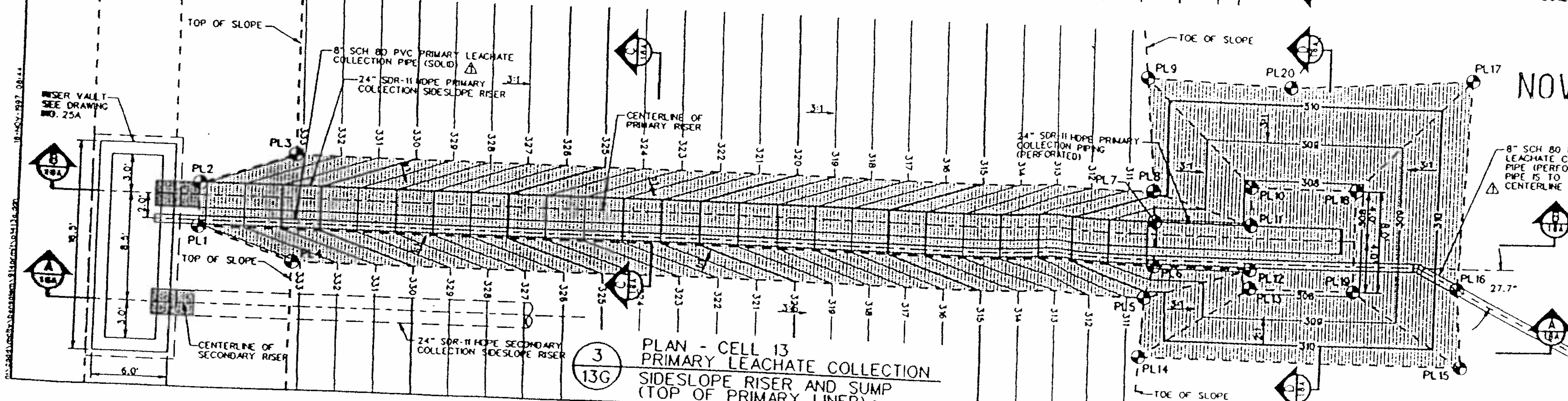
CADD PRODUCED DRAWING



PLAN - CELL 13
SECONDARY LEACHATE COLLECTION
SUMP UNDERCUT
(1/13G) SCALE 1" = 5'



PLAN - CELL 13
SECONDARY LEACHATE COLLECTION
SIDESLOPE RISER AND SUMP
(TOP OF SECONDARY LINER)
(2/13G) SCALE 1" = 5'



PLAN - CELL 13
PRIMARY LEACHATE COLLECTION
SIDESLOPE RISER AND SUMP
(TOP OF PRIMARY LINER)
(3/13G) SCALE 1" = 5'

CELL 13 SECONDARY SUMP UNDERCUT CONSTRUCTION CONTROL COORDINATES

POINT	NORTHING	EASTING	EL.
SU1	8483.64	2503.15	321.26
SU2	8480.61	2485.30	321.17
SU3	8488.51	2481.14	321.16
SU4	8491.81	2498.67	321.26
SU5	8551.61	2470.66	307.01
SU6	8555.60	2468.51	307.41
SU7	8560.02	2476.81	305.53
SU8	8583.53	2464.65	305.58
SU9	8573.14	2450.00	305.13
SU10	8563.72	2433.03	305.37
SU11	8544.26	2444.48	305.00
SU12	8540.18	2454.04	301.72
SU13	8545.33	2451.36	302.81
SU14	8560.90	2443.19	302.81
SU15	8570.18	2460.91	302.41
SU16	8547.92	2442.70	304.95

CELL 13 SECONDARY SUMP CLAY LINER CONSTRUCTION CONTROL COORDINATES

POINT	NORTHING	EASTING	EL.
SL1	8481.60	2502.77	333.24
SL2	8476.41	2492.51	333.19
SL3	8481.88	2486.93	333.17
SL4	8489.57	2501.48	333.26
SL5	8555.97	2466.66	308.26
SL6	8554.54	2464.51	305.79
SL7	8548.59	2454.65	306.02
SL8	8549.17	2451.68	307.81
SL9	8545.51	2445.46	307.96
SL10	8563.56	2434.72	308.33
SL11	8572.05	2450.01	308.12
SL12	8579.44	2460.43	308.44
SL13	8558.13	2471.45	308.39
SL14	8561.32	2460.96	305.79
SL15	8555.22	2451.17	306.02
SL16	8553.09	2447.77	306.10
SL17	8561.10	2443.57	306.10
SL18	8568.29	2457.30	305.79
SL19	8547.92	2444.29	307.93

⚠

CELL 13 SECONDARY SUMP COLLECTION LAYER CONSTRUCTION CONTROL COORDINATES

POINT	NORTHING	EASTING	EL.
SC5	8555.97	2466.66	309.40
SC8	8549.17	2451.68	308.91
SC9	8545.51	2445.46	309.00
SC10	8563.56	2434.72	308.97
SC11	8572.05	2450.01	309.16
SC12	8579.44	2460.43	309.48
SC13	8558.13	2471.45	309.43
SC19	8547.92	2444.29	308.97

SEE NOTE 2

⚠

CELL 13 SECONDARY SUMP COLLECTION STONE CONSTRUCTION CONTROL COORDINATES

POINT	NORTHING	EASTING	EL.
SCS1	8559.62	2433.36	309.33
SCS2	8567.71	2450.00	309.07
SCS3	8577.11	2455.41	309.23
SCS4	8553.33	2460.05	309.26
SCS5	8545.53	2469.74	309.16
SCS6	8545.36	2468.86	309.17
SCS7	8550.97	2450.59	305.93
SCS8	8559.29	2454.23	305.93
SCS9	8555.75	2446.30	306.10

CELL 13 PRIMARY SUMP CLAY LINER CONSTRUCTION CONTROL COORDINATES

POINT	NORTHING	EASTING	EL.
PL1	8477.99	2495.63	333.20
PL2	8476.41	2492.51	333.19
PL3	8481.88	2486.83	333.17
PL4	8485.83	2494.36	333.22
PL5	8546.05	2462.79	310.56
PL6	8545.46	2460.24	307.81
PL7	8543.84	2457.14	307.81
PL8	8542.54	2455.14	310.37
PL9	8537.73	2447.59	310.57
PL10	8549.03	2451.03	307.81
PL11	8550.46	2453.67	307.81
PL12	8552.14	2456.74	307.81
PL13	8552.85	2458.06	307.81
PL14	8547.98	2467.07	310.67
PL15	8570.70	2455.27	310.72
PL16	8567.42	2450.00	310.56
PL17	8560.32	2435.03	310.79
PL18	8556.56	2447.06	307.81
PL19	8560.27	2454.17	307.81
PL20	8547.92	2446.62	310.46

NOV 18 1997

STATE OF NEW YORK
CHARLES P. BALLOD
054588-1
LICENSED PROFESSIONAL ENGINEER

NOTES:

1. COORDINATES OF RISER PIPES MAY VARY IN THE FIELD. AS-BUILT LOCATIONS AND ELEVATIONS WILL BE PROVIDED WITH THE CELL CERTIFICATION REPORT.

⚠ 2. SECONDARY COLLECTION POINTS (SC) ARE DIRECTLY ABOVE TOP OF SECONDARY CLAY. SEE DETAIL D, DWG. 18A.

RUST ENVIRONMENT & INFRASTRUCTURE

SIGNATURE

DATE

REV.	DATE	DESCRIPTION	DRN BY	APP BY
⚠	10/97	ADDED TABLES AND NOTE	FAS	CPB

DATE: JULY 1996

DES BY	FAS
DRN BY	FAS
CHK BY	CPB
REV BY	AWE
APP BY	CPB

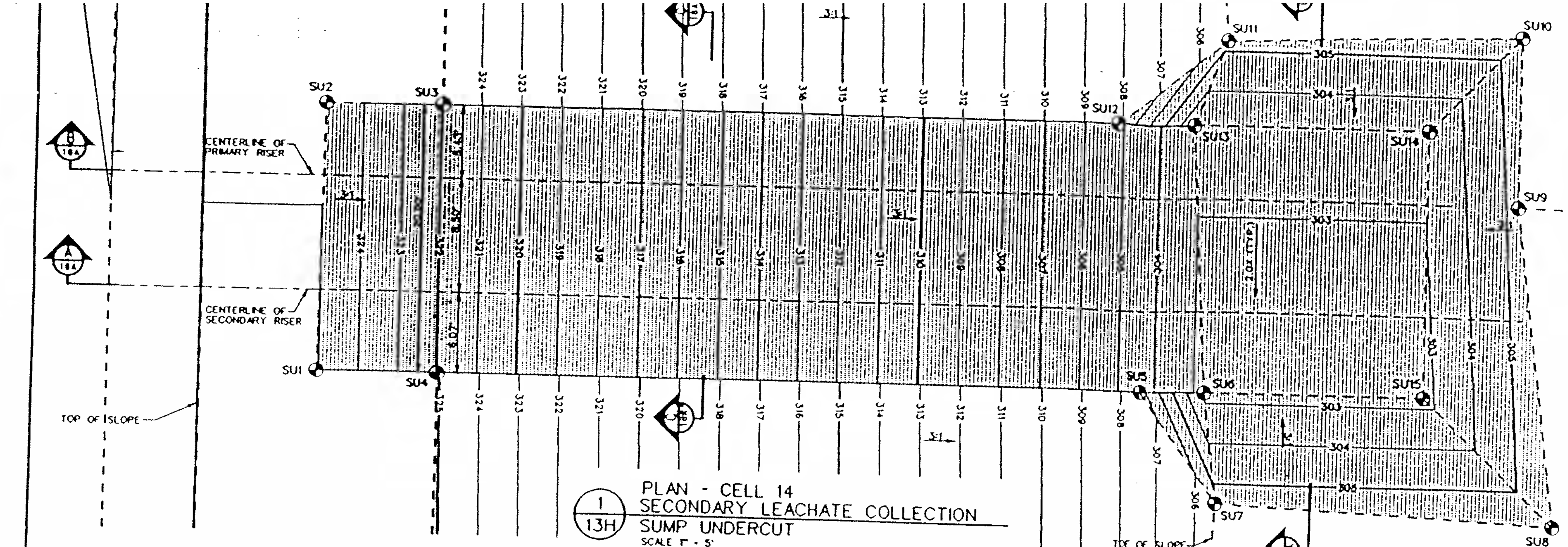
PROJECT NO. 37444.160 SCALE: AS SHOWN

PROJECT: RESIDUALS MANAGEMENT UNIT 1

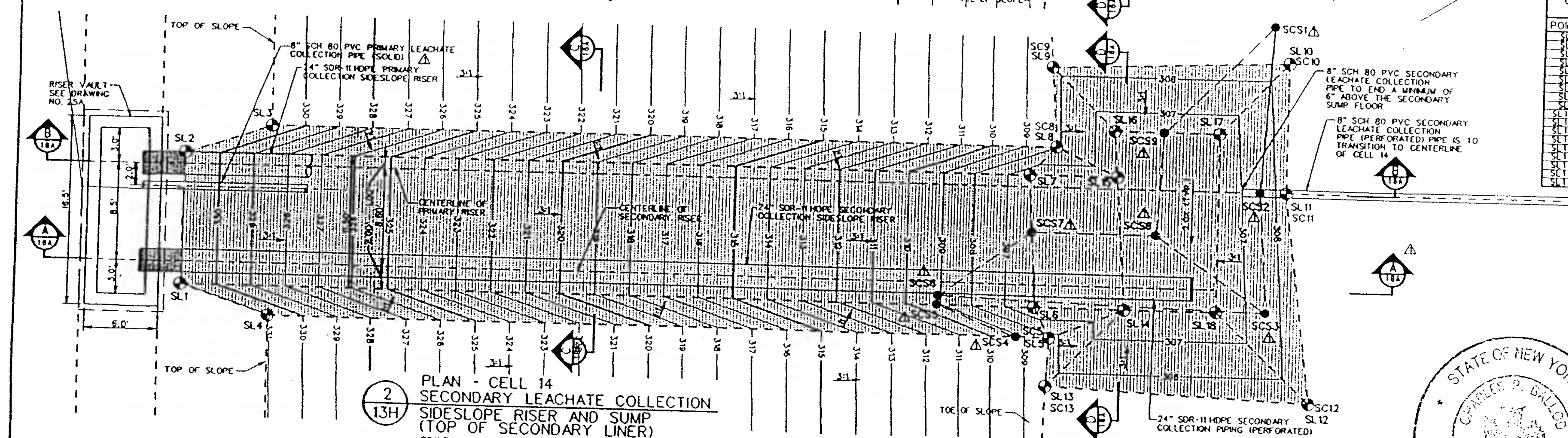
SHEET TITLE: SUMP CONSTRUCTION GRADES CELL 13

CWM Chemical Services, Inc.

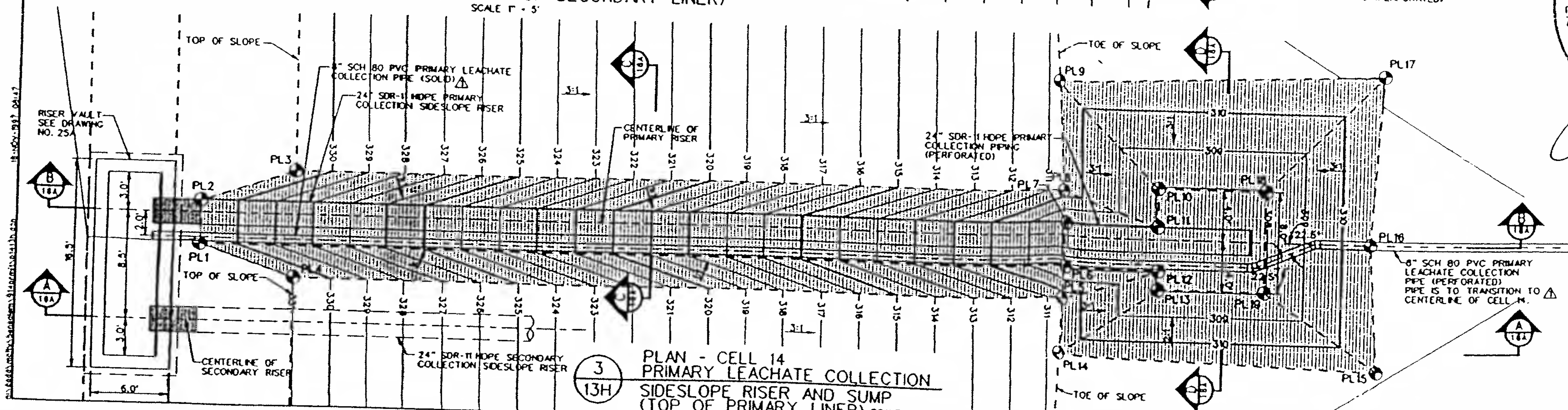
DRAWING NO. 13G



1
13H
PLAN - CELL 14
SECONDARY LEACHATE COLLECTION
SUMP UNDERCUT
SCALE 1" - 5'



2
13H
PLAN - CELL 14
SECONDARY LEACHATE COLLECTION
SIDESLOPE RISER AND SUMP
(TOP OF SECONDARY LINER)
SCALE 1" - 5'



3
13H
PLAN - CELL 14
PRIMARY LEACHATE COLLECTION
SIDESLOPE RISER AND SUMP
(TOP OF PRIMARY LINER) SCALE 1" - 5'

CELL 14 SECONDARY SUMP UNDERCUT CONSTRUCTION CONTROL COORDINATES

POINT	NORTHING	EASTING	EL.
SU1	8299.30	2102.40	325.06
SU2	8299.58	2082.40	324.96
SU3	8308.51	2082.79	324.96
SU4	8308.51	2102.41	325.06
SU5	8361.30	2102.41	307.47
SU6	8366.27	2102.40	302.74
SU7	8367.32	2110.68	305.50
SU8	8392.54	2111.74	305.85
SU9	8389.49	2081.83	305.31
SU10	8389.53	2075.09	305.58
SU11	8367.51	2076.00	305.27
SU12	8359.02	2082.59	308.13
SU13	8365.08	2082.40	303.13
SU14	8382.65	2082.40	303.13
SU15	8382.65	2102.40	302.74

CELL 14 SECONDARY SUMP CLAY LINER CONSTRUCTION CONTROL COORDINATES

POINT	NORTHING	EASTING	EL.
SL1	8292.36	2098.33	331.04
SL2	8292.52	2086.83	330.99
SL3	8300.00	2084.35	330.97
SL4	8300.00	2100.90	331.50
SL5	8368.25	2100.94	308.30
SL6	8366.97	2098.33	306.13
SL7	8366.28	2086.83	306.35
SL8	8368.60	2084.31	308.11
SL9	8368.09	2077.40	308.24
SL10	8388.56	2076.55	308.53
SL11	8388.52	2087.83	308.29
SL12	8390.85	2106.07	308.70
SL13	8368.06	2105.12	308.39
SL14	8374.75	2098.33	306.13
SL15	8373.90	2086.83	306.35
SL16	8373.60	2082.83	306.43
SL17	8382.65	2082.83	306.43
SL18	8382.65	2098.33	306.13

⚠

CELL 14 SECONDARY SUMP COLLECTION LAYER CONSTRUCTION CONTROL COORDINATES

POINT	NORTHING	EASTING	EL.
SC5	8368.25	2100.94	309.31
SC8	8368.60	2084.31	309.15
SC9	8368.09	2077.40	309.28
SC10	8388.56	2076.55	309.57
SC11	8388.52	2087.85	309.33
SC12	8390.85	2106.07	309.74
SC13	8368.06	2105.12	309.43

SEE NOTE 2

⚠

CELL 14 SECONDARY SUMP COLLECTION STONE CONSTRUCTION CONTROL COORDINATES

POINT	NORTHING	EASTING	EL.
SCS1	8387.24	2073.40	309.58
SCS2	8386.30	2087.84	309.26
SCS3	8386.98	2098.29	309.49
SCS4	8365.37	2100.94	309.76
SCS5	8358.02	2098.33	309.11
SCS6	8358.07	2097.50	309.10
SCS7	8366.58	2091.82	306.26
SCS8	8377.27	2091.82	306.26
SCS9	8377.81	2082.83	306.43

CELL 14 PRIMARY SUMP CLAY LINER CONSTRUCTION CONTROL COORDINATES

POINT	NORTHING	EASTING	EL.
PL1	8292.40	2090.33	331.00
PL2	8292.52	2086.83	330.99
PL3	8300.00	2084.35	330.97
PL4	8300.00	2092.86	331.01
PL5	8361.41	2092.90	310.54
PL6	8361.55	2090.33	307.94
PL7	8361.55	2086.83	307.94
PL8	8361.38	2084.31	310.51
PL9	8360.74	2075.60	310.69
PL10	8369.09	2083.83	307.94
PL11	8369.13	2086.83	307.94
PL12	8369.18	2090.33	307.94
PL13	8369.21	2091.83	307.94
PL14	8361.21	2097.32	310.63
PL15	8386.70	2097.81	310.98
PL16	8386.05	2087.84	310.76
PL17	8386.92	2074.51	311.05
PL18	8377.53	2083.83	307.94
PL19	8377.59	2091.83	307.94

STATE OF NEW YORK
CHARLES P. BALLOD
066983-1
LICENSED PROFESSIONAL ENGINEER

NOV 18 1997

NOTES:

1. COORDINATES OF RISER PIPES MAY VARY IN THE FIELD. AS-BUILT LOCATIONS AND ELEVATIONS WILL BE PROVIDED WITH THE CELL CERTIFICATION REPORT.

⚠ 2. SECONDARY COLLECTION POINTS (SC) ARE DIRECTLY ABOVE TOP OF SECONDARY CLAY. SEE DETAIL D, DWG. 18A.

RUST ENVIRONMENT & INFRASTRUCTURE

SIGNATURE

DATE

REV.	DATE	DESCRIPTION	DRN BY	APP BY
⚠	10/97	ADDED TABLES AND NOTE	FAS	CPB

DATE: JULY 1996
DES BY: FAS
DRN BY: FAS
CHK BY: CPB
REV BY: AWE
APP BY: CPB

PROJECT NO. 37444.160 SCALE: AS SHOWN

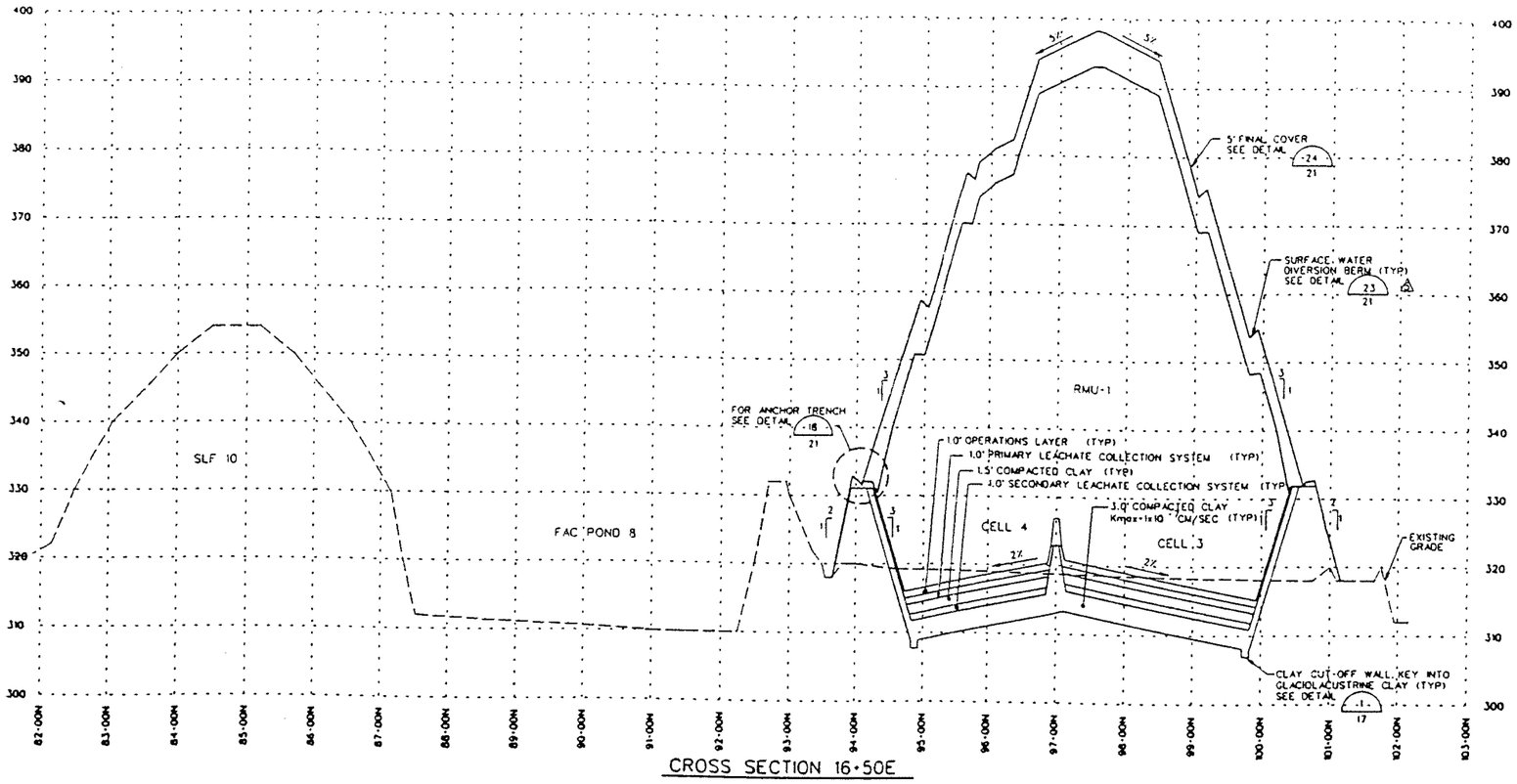
PROJECT: RESIDUALS MANAGEMENT UNIT 1

SHEET TITLE: SUMP CONSTRUCTION GRADES CELL 14

CWM Chemical Services, Inc.
Model City Facility

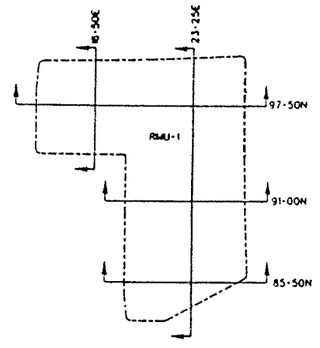
DRAWING NO. 13H

CADD PRODUCED DRAWING



CROSS SECTION 16+50E

STATE OF NEW YORK
CHARLES P. BALLOD
53688-1
LICENSED PROFESSIONAL ENGINEER
FEB 04 1999



CROSS SECTIONS LOCATION PLAN

SCALE
HORIZ 0' 50' 100' 200'
VERT 0' 5' 10' 20'

REV	DATE	DESCRIPTION	DR BY	APP BY
1	11-98	REMOVE FINAL COVER ACCESS ROAD	FAS	CPB
2	5-98	REVISED CROSS SECTION FOR AIRSPACE ENHANCEMENT	FAS	CPB
3	4-98	REVISED SURFACE WATER DIVERSION BERMS PHASE I, II AND III CAP AREAS	FAS	CPB
4	6-97	MODIFY CELLS 9 THROUGH 14	FAS	CPB
5	4-97	MODIFY CELL 9	FAS	CPB
6	11-96	MODIFY CELLS 7 AND 8	FAS	CPB
7	6-92	NOTICE OF DEFICIENCY RESPONSES	FLD	GRM

TRUST ENVIRONMENT & INFRASTRUCTURE

SIGNATURE

DATE

DES BY	BRJ/TJP
DRN BY	FLD
CHK BY	MGR
ENV BY	TJB
GRV BY	CFF
APP BY	GRM

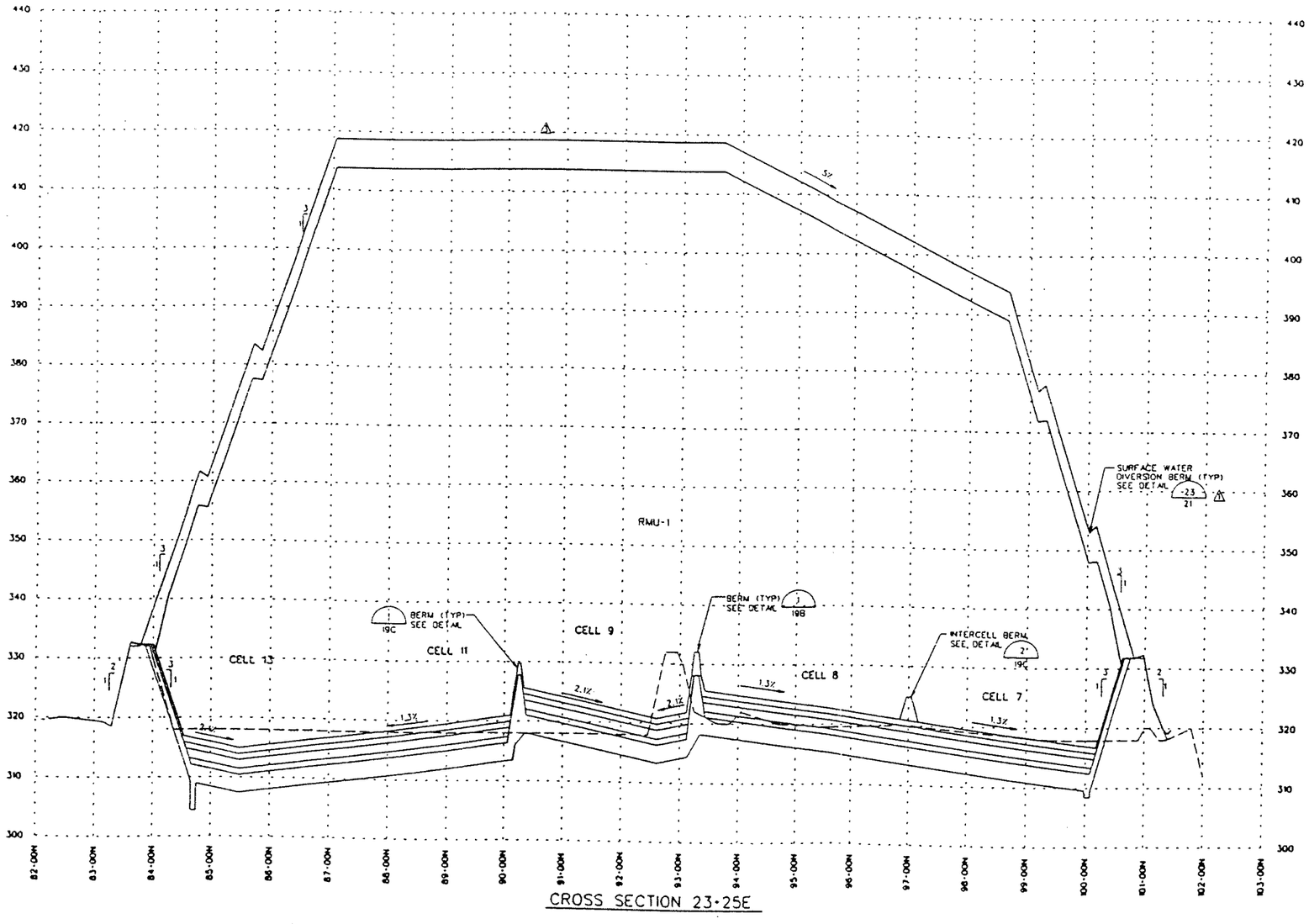
PROJECT NO. 17365 DATE FEBRUARY 1991

PROJECT
RESIDUALS MANAGEMENT UNIT 1

DRAWING TITLE
CROSS SECTIONS 16+50E

CWM CHEMICAL SERVICES, INC.
MODEL CITY, NIAGARA COUNTY, NEW YORK

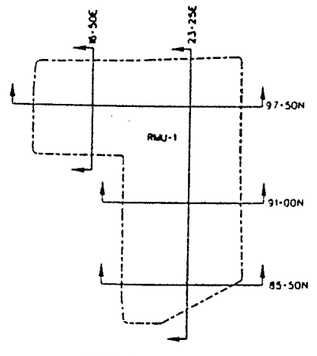
FILE NO. A-55285
DRAWING NO.
15



CROSS SECTION 23-25E

STATE OF NEW YORK
CHARLES P. BALLOD
59688-1
LICENSED PROFESSIONAL ENGINEER

FEB 04 1999



CROSS SECTIONS LOCATION PLAN

SCALE

HORIZ 0' 50' 100' 200'

VERT 0' 5' 10' 20'

RUST ENVIRONMENT & INFRASTRUCTURE

SIGNATURE

DATE

REV	DATE	DESCRIPTION	DR BY	APP BY
3	2-99	REVISED MAXIMUM ELEVATION	FAS	CPB
2	11-98	REMOVE FINAL COVER ACCESS ROAD	FAS	CPB
1	5-98	REVISED SURFACE WATER DIVERSION BERMS	FAS	CPB

DATE: AUGUST 1997 | PROJECT NO. 17365 | DATE FEBRUARY 1991

DES BY FAS

DRN BY FAS

CHK BY CPB

REV BY AWE

APP BY CPB

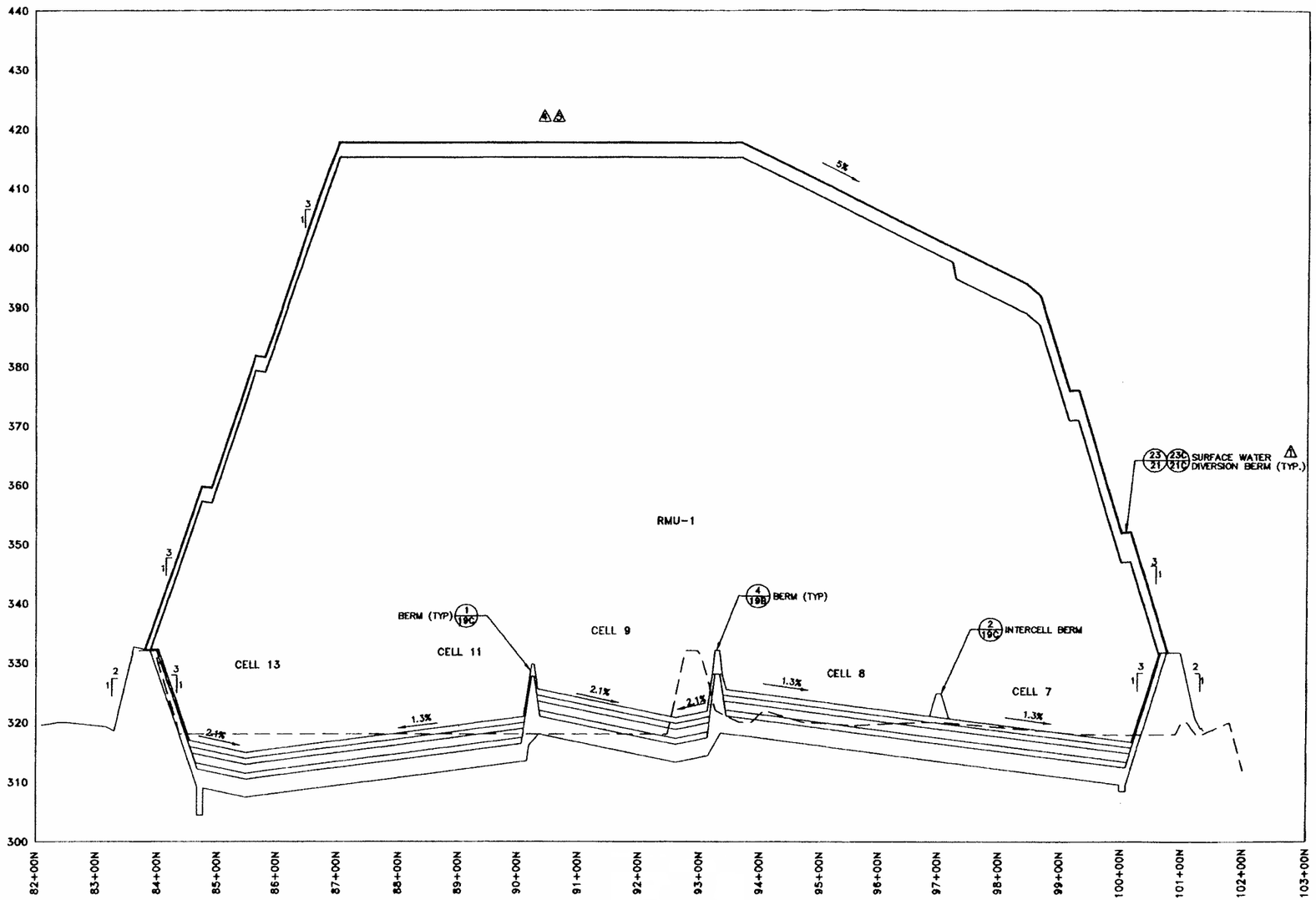
PROJECT: RESIDUALS MANAGEMENT UNIT 1

DRAWING TITLE: CROSS SECTIONS 23-25E

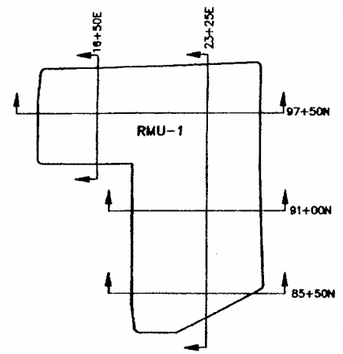
CWM CHEMICAL SERVICES, INC.
MODEL CITY, NIAGARA COUNTY, NEW YORK

FILE NO. A-55265

DRAWING NO. 15A



CROSS SECTION 23+25E



CROSS SECTIONS LOCATION PLAN

NOT FOR CONSTRUCTION
FOR REGULATORY REVIEW ONLY

GENERAL NOTES:

1. THIS DRAWING BASED ON DRAWING NUMBER 15A ENTITLED "CROSS SECTIONS 23+25E" PREPARED BY EARTHTECH, (FILE NUMBER A-55285.DWG DATED FEBRUARY 1991).
2. PRIOR REVISIONS TO DRAWING NUMBER 15A BY EARTHTECH INCLUDE THE FOLLOWING:
   1. REVISED SURFACE WATER DIVERSION BERMS (DATED 5/98, DRAWN BY FAS, APPROVED BY CPB).
   2. REMOVE FINAL COVER ACCESS ROAD (DATED 11/98, DRAWN BY FAS, APPROVED BY CPB).
   3. REVISED MAXIMUM ELEVATION (DATED 2/99, DRAWN BY FAS, APPROVED BY CPB).
3. BBL SEAL AND SIGNATURE PERTAIN ONLY TO BBL IMPLEMENTED REVISIONS AS NOTED IN THE REVISION BLOCK.

DRAWING REVISED BY BLASLAND, BOUCK & LEE, INC. THROUGH ITS PROFESSIONAL ENGINEER. WORK OF EARTHTECH NOT INDEPENDENTLY REVIEWED.

SHEET #: 05104D00

Graphic Scale
10' 0 10' 20'
HORZ
100' 0 100' 200'
VERT

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED IN THE TITLE BLOCK. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.

No.	Date	Revisions	Init
2	3/08	REVISED DRAWING FOR FINAL COVER MODIFICATIONS	
1	12/03	REVISED DRAWING FOR AIRSPACE ENHANCEMENT	
		SEE NOTE 2 FOR PRIOR REVISIONS	

Project Mgr. TJF
Designed by BMS/CAA
Drawn by SLM
Checked by PHB
Prof. Eng. JOSEPH MOLINA
PE License NY 072644

STATE OF NEW YORK JOSEPH MOLINA 072644 PROFESSIONAL ENGINEER

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

CWM CHEMICAL SERVICES, LLC. • MODEL CITY FACILITY
RESIDUALS MANAGEMENT UNIT 1

CROSS SECTIONS 23+25E

GENERAL

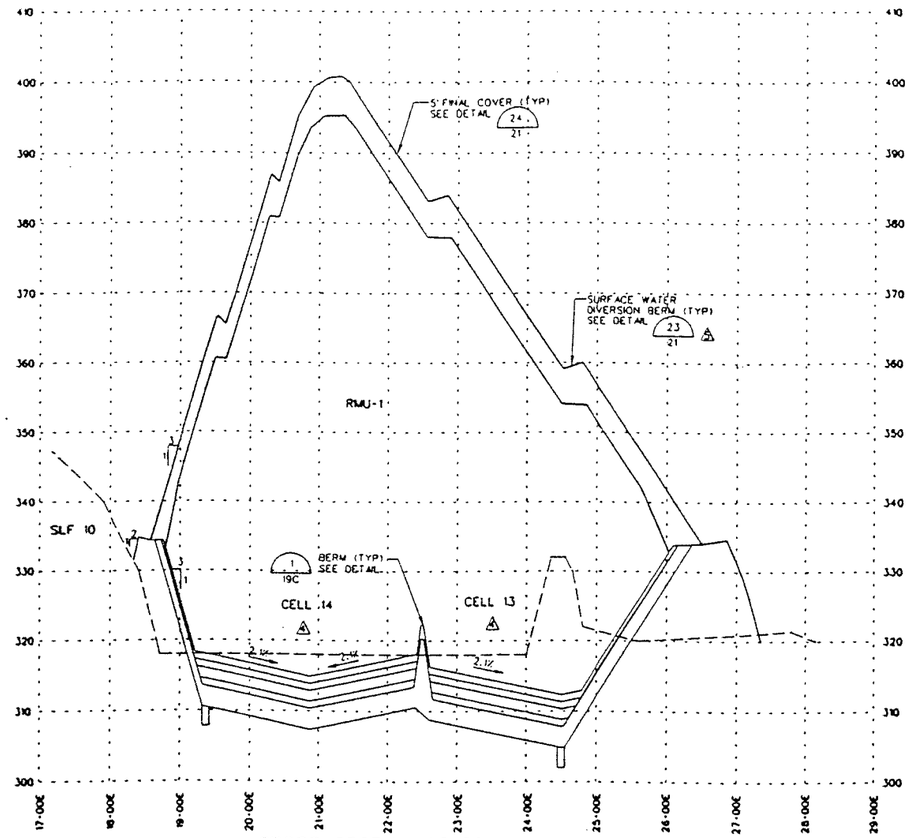
Modified: 07/09

File Number 050.42
Date DECEMBER 2003

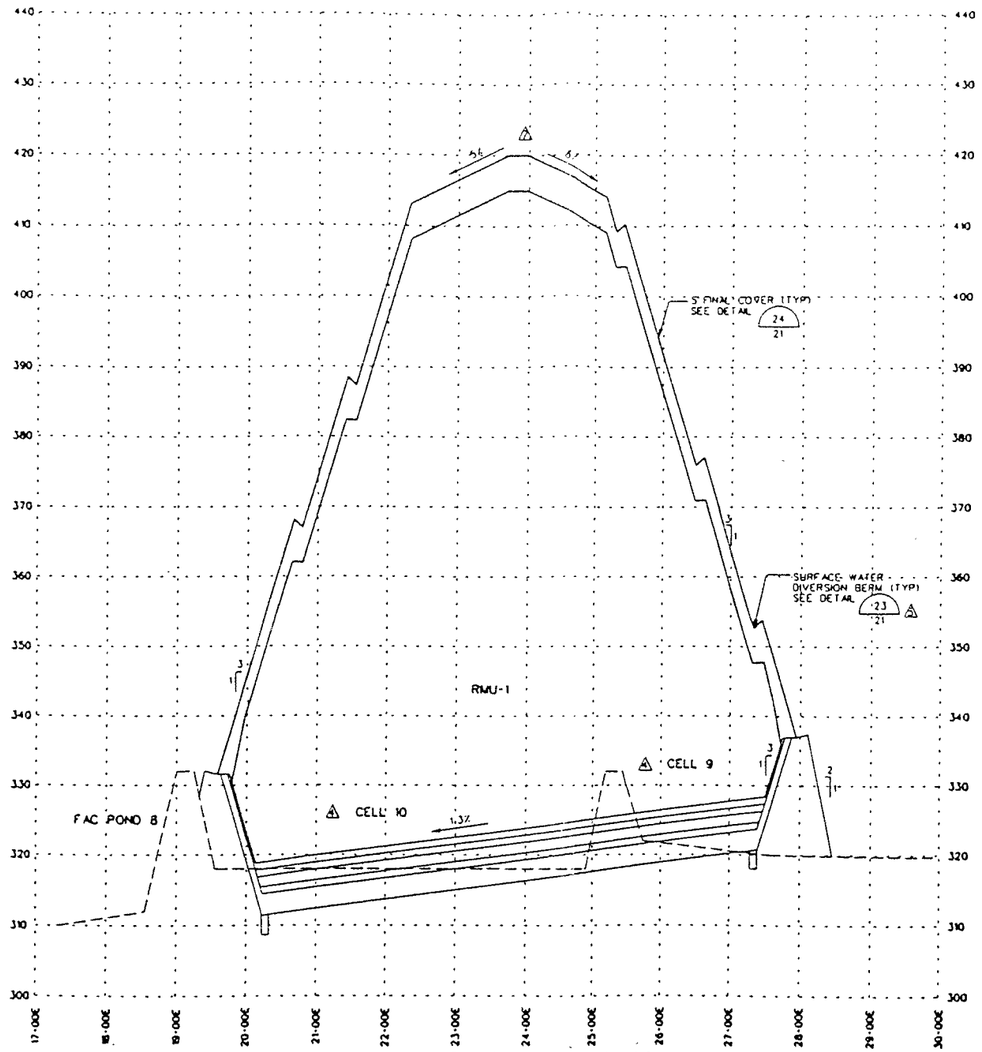
Blasland, Bouck & Lee, Inc.
Corporate Headquarters
6723 Towpath Road
Syracuse, NY 13214
315-446-9120

15A-8

CITY: SYRACUSE DIVGROUP: BS DB: SLM (ROCHESTER) LAF LD: PIC: PM: R. PARINI TM: LYR: ON=*;OFF=*REF* G:\CAD\ACTIVE\050\01\042002\001\DWG\RMU1\05104D04.DWG LAYOUT: LAYOUT1 SAVED: 3/20/2008 10:42 AM ACADVER: 17.0S (LMS TECH) PAGESETUP: — PLOTSTYLETABLE: PLTCONT1.CTB PLOTTED: 3/28/2008 8:57 AM BY: BARTORI, KATHERINE



CROSS SECTION 85+50N

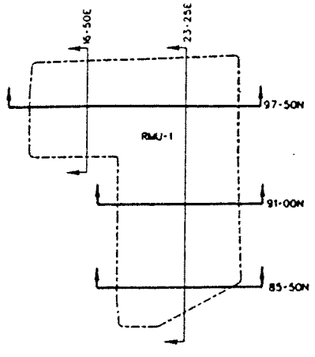


CROSS SECTION 91+00N

SCALE

HORIZ 0' 50' 100' 200'

VERT 0' 5' 10' 20'



CROSS SECTIONS LOCATION PLAN

STATE OF NEW YORK
CHARLES P. BALLOD
59688-1
LICENSED PROFESSIONAL ENGINEER

FEB 04 1999

SIGNATURE

DATE

REV	DATE	DESCRIPTION	DR BY	APP BY
7	2-99	REVISED MAXIMUM ELEVATION	FAS	CPB
6	5-98	REVISED CROSS SECTION FOR AIRSPACE ENHANCEMENT	FAS	CPB
5	4-98	REVISED SURFACE WATER DIVERSION BERMS, PHASE I, II AND III CAP AREAS	FAS	CPB
4	6-97	MODIFY CELLS 9 THROUGH 14	FAS	CPB
3	4-97	MODIFY CELL 9	FAS	CPB
2	11-96	MODIFY CELL 7	FAS	CPB
1	6-92	NOTICE OF DEFICIENCY RESPONSES	FLD	GRM

DES BY	BRJ/TJP
DRN BY	FLD
CHK BY	MGR
ENV BY	TJB
GRV BY	CFF
APP BY	GRM

PROJECT NO. 17365 DATE FEBRUARY 1991

PROJECT: RESIDUALS MANAGEMENT UNIT 1

DRAWING TITLE: CROSS SECTIONS 85+50N AND 91+00N

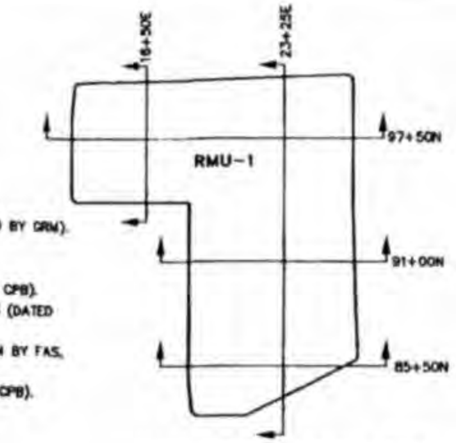
CWM CHEMICAL SERVICES, INC.
MODEL CITY, NIAGARA COUNTY, NEW YORK

FILE NO. A-55284

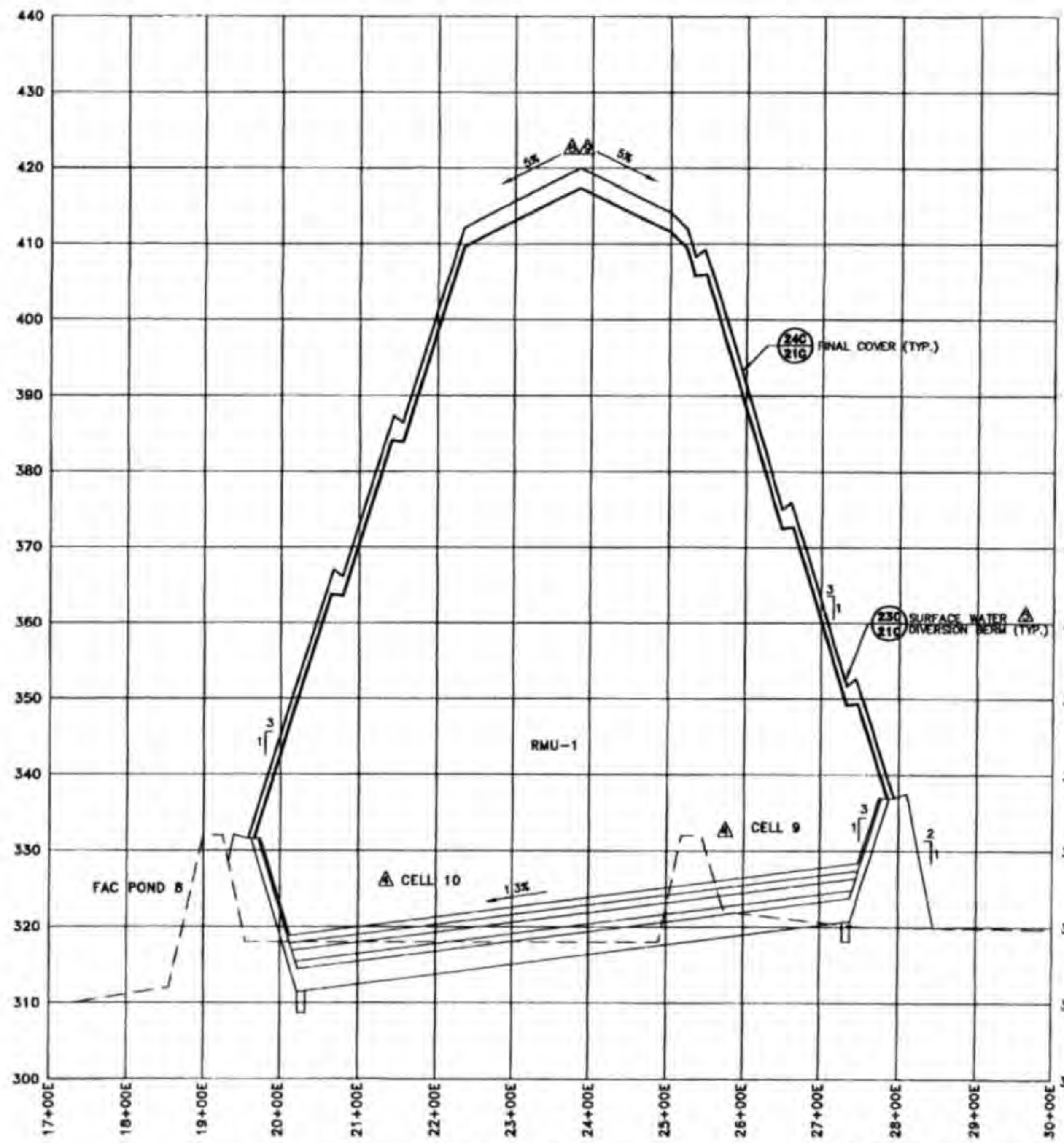
DRAWING NO. 16

GENERAL NOTES:

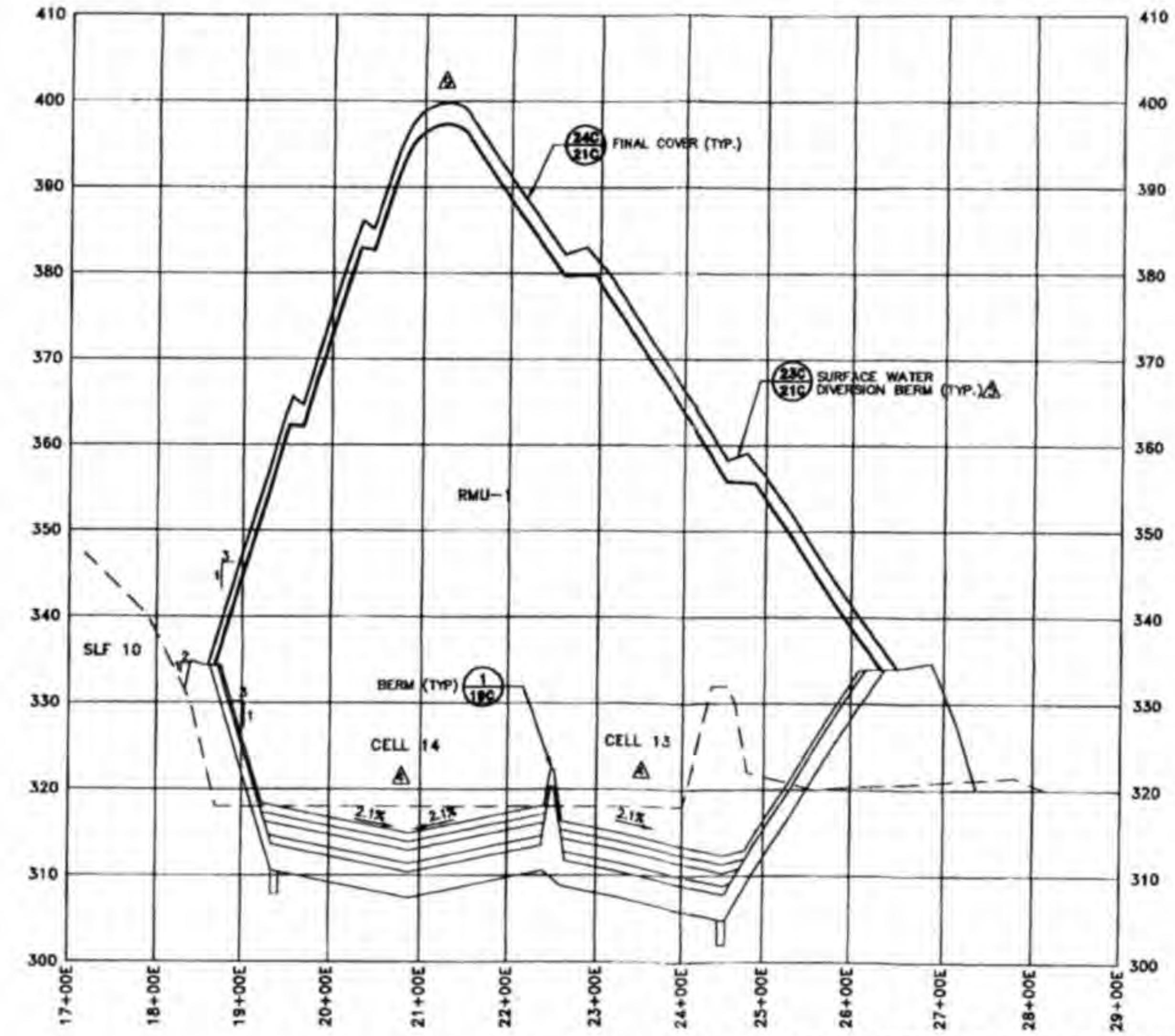
1. THIS DRAWING BASED ON DRAWING NUMBER 16 ENTITLED "CROSS SECTIONS 85+50N AND 91+00N" PREPARED BY EARTHTECH (FILE NUMBER A-55284.DWG DATED FEBRUARY 1991).
2. PRIOR REVISIONS TO DRAWING NUMBER 16 BY EARTHTECH INCLUDE THE FOLLOWING:
   1. NOTICE OF DEFICIENCY RESPONSES (DATED 6/92, DRAWN BY FLD, APPROVED BY GRM).
   2. MODIFY CELL 7 (DATED 11/96, DRAWN BY FAS, APPROVED BY CPB).
   3. MODIFY CELL 9 (DATED 4/97, DRAWN BY FAS, APPROVED BY CPB)
   4. MODIFY CELLS 9 THROUGH 14 (DATED 6/97, DRAWN BY FAS, APPROVED BY CPB).
   5. REVISED SURFACE WATER DIVERSION BERMS, PHASE I, II, AND III CAP AREAS (DATED 4/98, DRAWN BY FAS, APPROVED BY CPB).
   6. REVISED CROSS SECTION FOR AIRSPACE ENHANCEMENT (DATED 5/98, DRAWN BY FAS, APPROVED BY CPB).
   7. REVISED MAXIMUM ELEVATION (DATED 2/99, DRAWN BY FAS, APPROVED BY CPB).
3. BBL SEAL AND SIGNATURE PERTAIN ONLY TO BBL IMPLEMENTED REVISIONS AS NOTED IN THE REVISION BLOCK.



CROSS SECTIONS LOCATION PLAN



CROSS SECTION 91+00N



CROSS SECTION 85+50N

DRAWING REVISED BY BLASLAND, BOUCK & LEE, INC. THROUGH ITS PROFESSIONAL ENGINEER. WORK OF EARTHTECH NOT INDEPENDENTLY REVIEWED.

NOT FOR CONSTRUCTION FOR REGULATORY REVIEW ONLY

Graphic Scale: VERT. 10' 0 10' 20'; HORIZ. 100' 0 100' 200'

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED IN THE TITLE BLOCK. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.

No.	Date	Revisions	Init
2	3/08	REVISED DRAWING FOR FINAL COVER MODIFICATIONS	
1	12/03	REVISED DRAWING FOR AIRSPACE ENHANCEMENT	
		SEE NOTE 2 FOR PRIOR REVISIONS	

Project Mgr. TJF
Designed by BMS/CAA
Drawn by SLM
Checked by PHB
Prof. Eng. JOSEPH MOLINA
PE License NY 072844

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

CWM CHEMICAL SERVICES, LLC. • MODEL CITY FACILITY
RESIDUALS MANAGEMENT UNIT 1

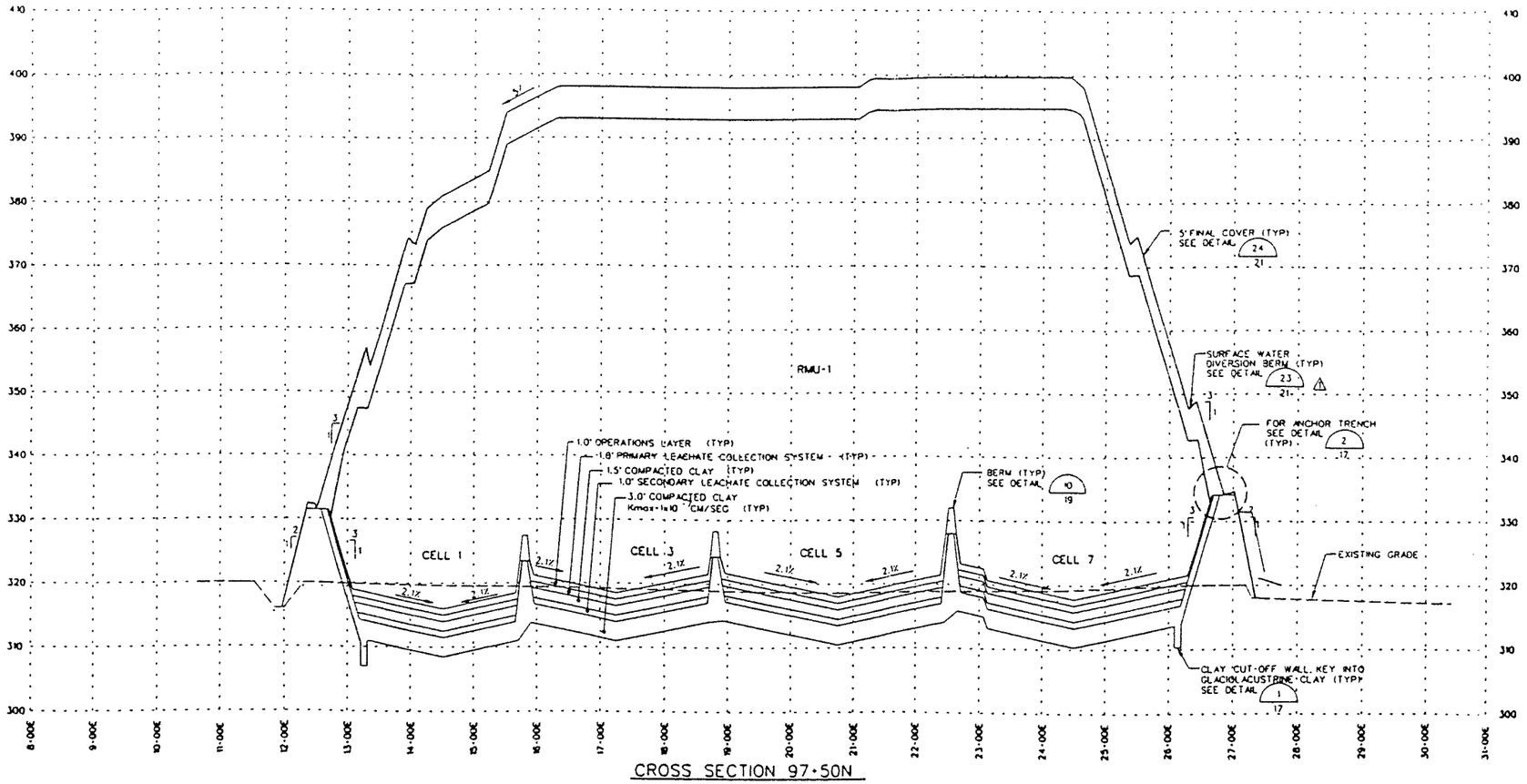
CROSS SECTIONS 85+50N AND 91+00N

GENERAL Modified: 07/09

File Number 050.42
Date DECEMBER 2003

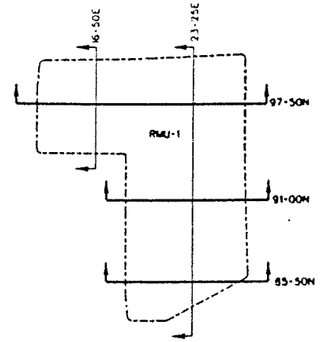
Blasland, Bouck & Lee, Inc.
Corporate Headquarters
6723 Towpath Road
Syracuse, NY 13214
315-446-9120

16-a



CROSS SECTION 97+50N

STATE OF NEW YORK
CHARLES P. BALLOD
59688-1
LICENSED PROFESSIONAL ENGINEER
FEB 04 1999



CROSS SECTIONS LOCATION PLAN

SCALE

HORIZ 0' 50' 100' 200'

VERT 0' 5' 10' 20'

RUST ENVIRONMENT & INFRASTRUCTURE

SIGNATURE

DATE

REV	DATE	DESCRIPTION	DR BY	APP BY
⚠	5-98	REVISED SURFACE WATER DIVERSION BERMS	FAS	CPB

DATE: AUGUST 1997 | PROJECT NO. 17365 | DATE FEBRUARY 1991

DES BY	FAS
DRN BY	FAS
CHK BY	CPB
REV BY	AWE
APP BY	CPB

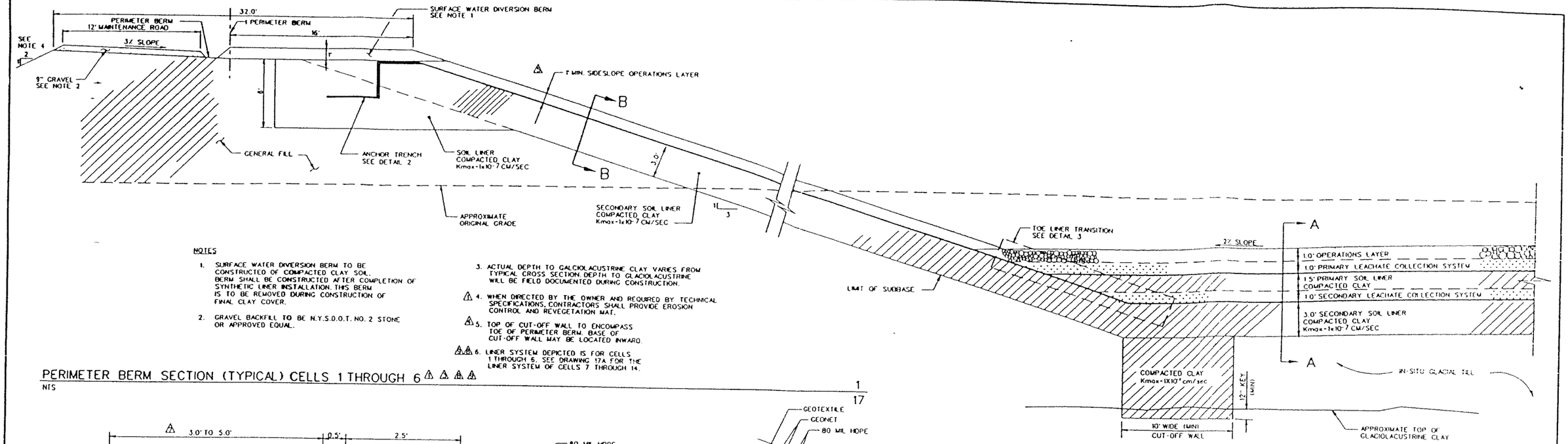
PROJECT: RESIDUALS MANAGEMENT UNIT 1

DRAWING TITLE: CROSS SECTIONS 97+50N

CWM CHEMICAL SERVICES, INC.
MODEL CITY, NIAGARA COUNTY, NEW YORK

FILE NO. A-55284

DRAWING NO. 16A



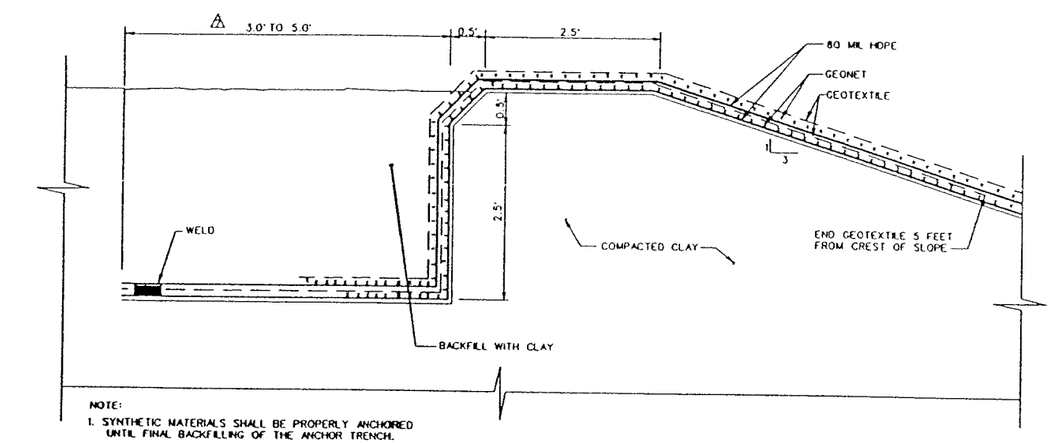
NOTES

1. SURFACE WATER DIVERSION BERM TO BE CONSTRUCTED OF COMPACTED CLAY SOIL. BERM SHALL BE CONSTRUCTED AFTER COMPLETION OF SYNTHETIC LINER INSTALLATION. THIS BERM IS TO BE REMOVED DURING CONSTRUCTION OF FINAL CLAY COVER.
2. GRAVEL BACKFILL TO BE N.Y.S.D.O.T. NO. 2 STONE OR APPROVED EQUAL.
3. ACTUAL DEPTH TO GALCIOLACUSTRINE CLAY VARIES FROM TYPICAL CROSS SECTION. DEPTH TO GLACIOLACUSTRINE WILL BE FIELD DOCUMENTED DURING CONSTRUCTION.
4. WHEN DIRECTED BY THE OWNER AND REQUIRED BY TECHNICAL SPECIFICATIONS, CONTRACTORS SHALL PROVIDE EROSION CONTROL AND REVEGETATION MAT.
5. TOP OF CUT-OFF WALL TO ENCOMPASS TOE OF PERIMETER BERM. BASE OF CUT-OFF WALL MAY BE LOCATED INWARD.
6. LINER SYSTEM DEPICTED IS FOR CELLS 1 THROUGH 6. SEE DRAWING 17A FOR THE LINER SYSTEM OF CELLS 7 THROUGH 14.

PERIMETER BERM SECTION (TYPICAL) CELLS 1 THROUGH 6 ⚠⚠⚠⚠

NTS

1/17

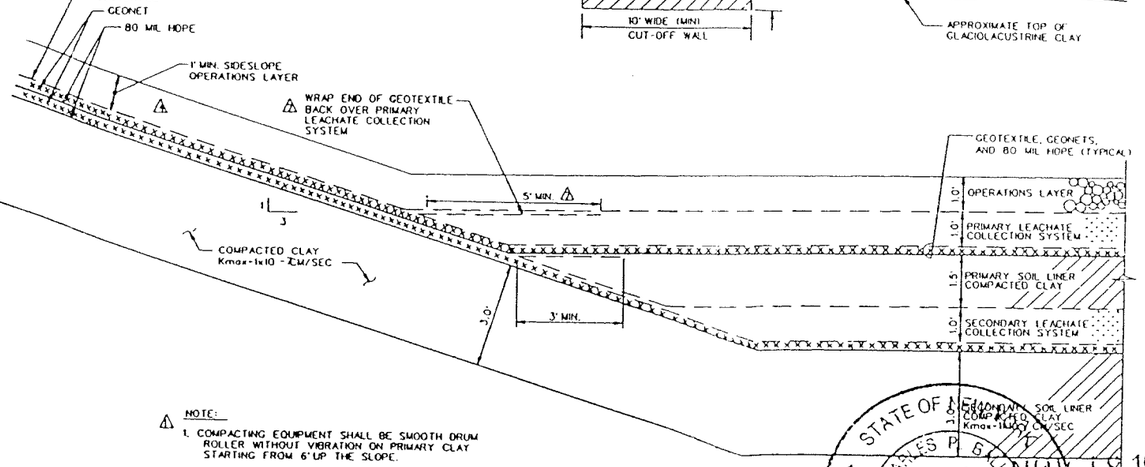


NOTE:
1. SYNTHETIC MATERIALS SHALL BE PROPERLY ANCHORED UNTIL FINAL BACKFILLING OF THE ANCHOR TRENCH.

ANCHOR TRENCH (TYPICAL) ⚠

NTS

2/17



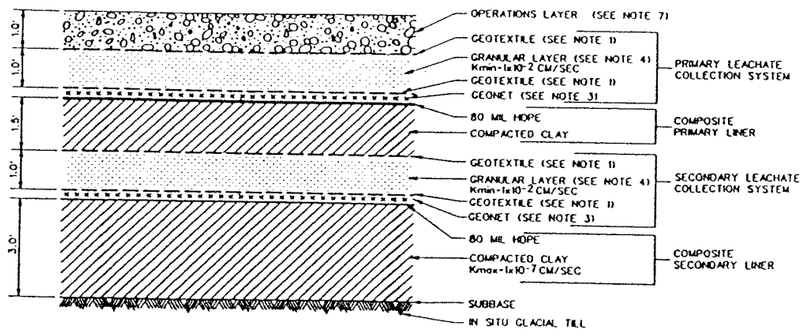
NOTE:
1. COMPACTING EQUIPMENT SHALL BE SMOOTH DRUM ROLLER WITHOUT VIBRATION ON PRIMARY CLAY STARTING FROM 6" UP THE SLOPE.

TOE LINER TRANSITION (TYPICAL) CELLS 1 THROUGH 6 ⚠⚠

NTS

3 ⚠ 17

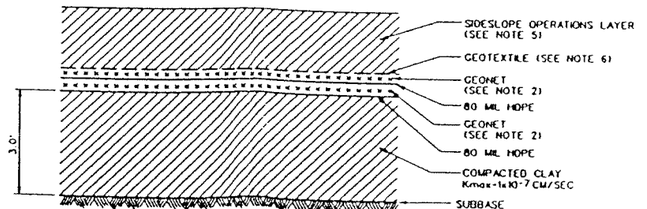
NOTES:
1. GEOTEXTILE SHALL BE TREVIRA 1145 OR EQUAL CONTINUOUS FILAMENT FABRIC, UNLESS SPECIFICALLY STATED.
2. GEONET ON SIDESLOPE SHALL BE ONE LAYER OF POLYNET 3000 OR EQUAL.
3. GEONET ON THE BASE SHALL BE ONE LAYER OF POLYNET 3000 OR EQUAL.
4. PRIMARY AND SECONDARY GRANULAR LAYERS SHALL BE NEW YORK STATE DOT 1A STONE OR APPROVED EQUAL, HAVING A MINIMUM HYDRAULIC CONDUCTIVITY OF $1x10^{-2}$ CM/SEC.
5. SIDESLOPE OPERATIONS LAYER SHALL BE A MINIMUM OF ONE FOOT SELECT FILL. ⚠
6. ⚠ SIDESLOPE GEOTEXTILE ON THE PRIMARY LEACHATE COLLECTION SYSTEM LAYER SHALL BE TREVIRA 1145 OR EQUAL CONTINUOUS FILAMENT FABRIC.
7. BASE OPERATIONS LAYER SHALL BE NOMINAL ONE FOOT RUN-OF-CRUSHER NO 2 STONE OR EQUAL.
8. ⚠ FOR ADDITIONAL LINER SYSTEM DETAILS IN SUMP AREAS SEE DRAWING NO. 18A.
9. ⚠⚠ LINER SYSTEM DEPICTED IS FOR CELLS 1 THROUGH 6. SEE DRAWING 17A FOR THE LINER SYSTEM OF CELLS 7 THROUGH 14.



SECTION A-A BASE LINER

NTS

4/17



SECTION B-B SIDESLOPE LINER

NTS

5/17

STATE OF NEW YORK
CHARLES P. GUY
059688-1
LICENSED PROFESSIONAL ENGINEER
NOV 18 1997

⚠	6-97	REMOVED CELLS 9 THROUGH 14	FAS	CPH
⚠	11-96	LINER SYSTEM CELL 1 THROUGH 6 & 9 THROUGH 14	FAS	CPH
⚠	12-95	MODIFIED GEOTEXTILE TO WRAP OVER PRIMARY COLLECTION LAYER	FAS	CPH
⚠	11-95	ADD NOTE 8	FAS	CPH
⚠	5-95	CLARIFIED OPERATIONS LAYER DEPTH, ADDED NOTE TO SECT. 2	JTH	OJK
⚠	1-95	REVISED ANCHOR TRENCH AND TOE TRANSITION	JTH	OJK
⚠	7-93	CHANGED 15' TO 16' ON DIVERSION BERM	MLJ	MRG
⚠	11-92	NOTICE OF DEFICIENCY RESPONSES	FLD	GRM
⚠	6-92	NOTICE OF DEFICIENCY RESPONSES	FLD	GRM
REV	DATE	DESCRIPTION	DR BY	APP BY

RUST ENVIRONMENT & INFRASTRUCTURE

SIGNATURE

DATE

DES BY	BRJ/TJP
DRN BY	FLD
CHK BY	MCR
ENV BY	TJB
GRV BY	CFF
APP BY	GRM

PROJECT NO. 17365 DATE FEBRUARY 1991

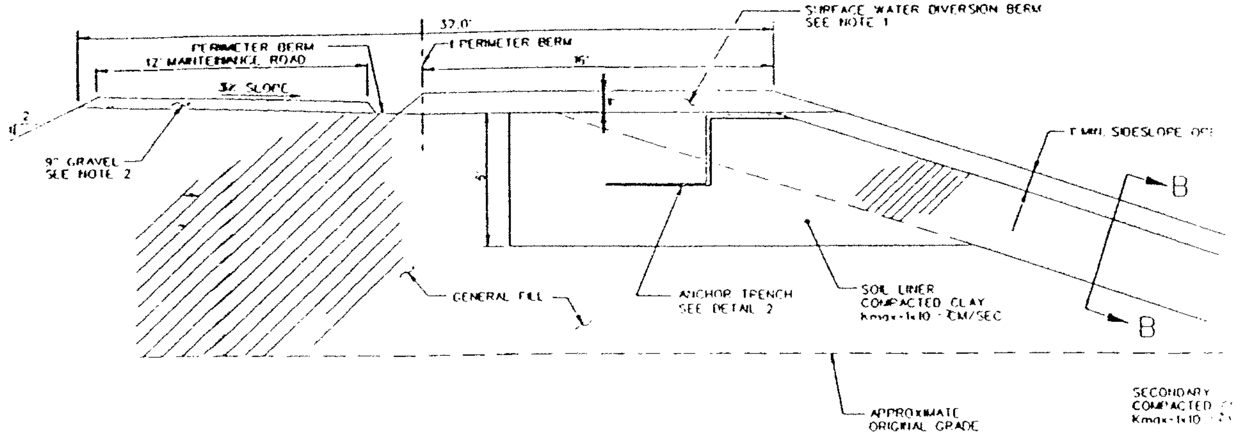
PROJECT
RESIDUALS MANAGEMENT UNIT 1

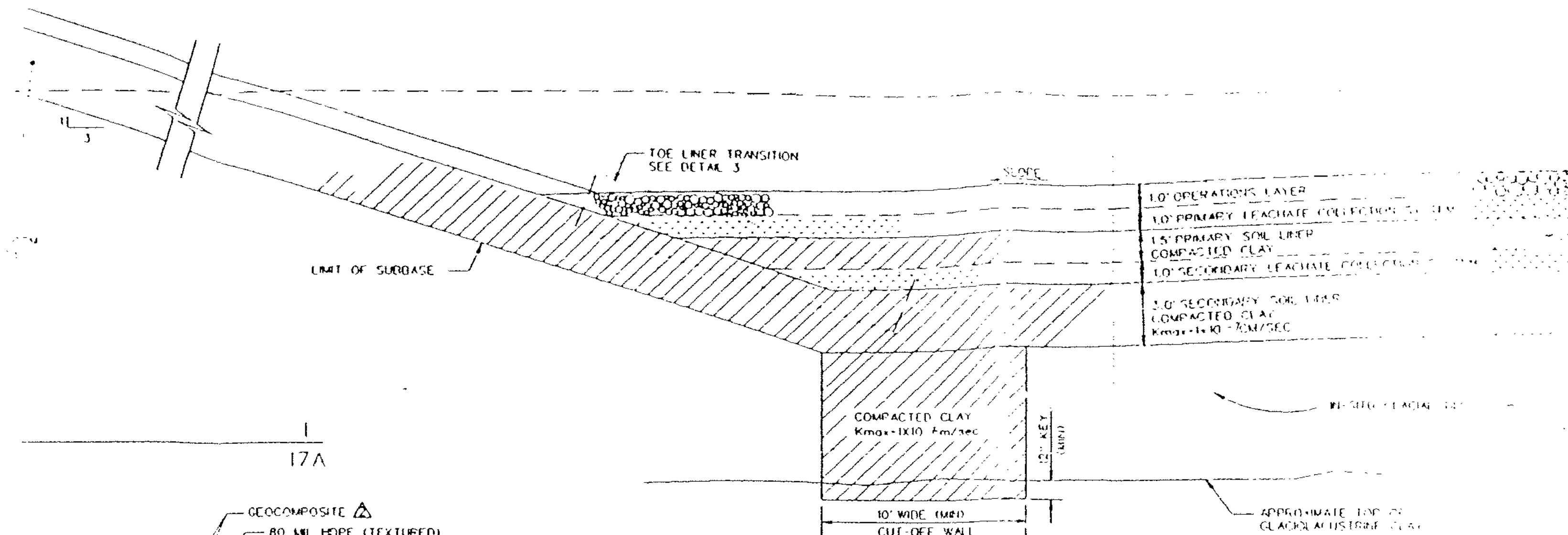
DRAWING TITLE
TYPICAL LINER SECTIONS
CELLS 1 THROUGH 6 ⚠⚠

CWM CHEMICAL SERVICES, INC.
MODEL CITY, NIAGARA COUNTY, NEW YORK

FILE NO. A-55283
DRAWING NO.

NOT FOR CONSTRUCTION
FOR REGULATORY REVIEW ONLY





NOTES

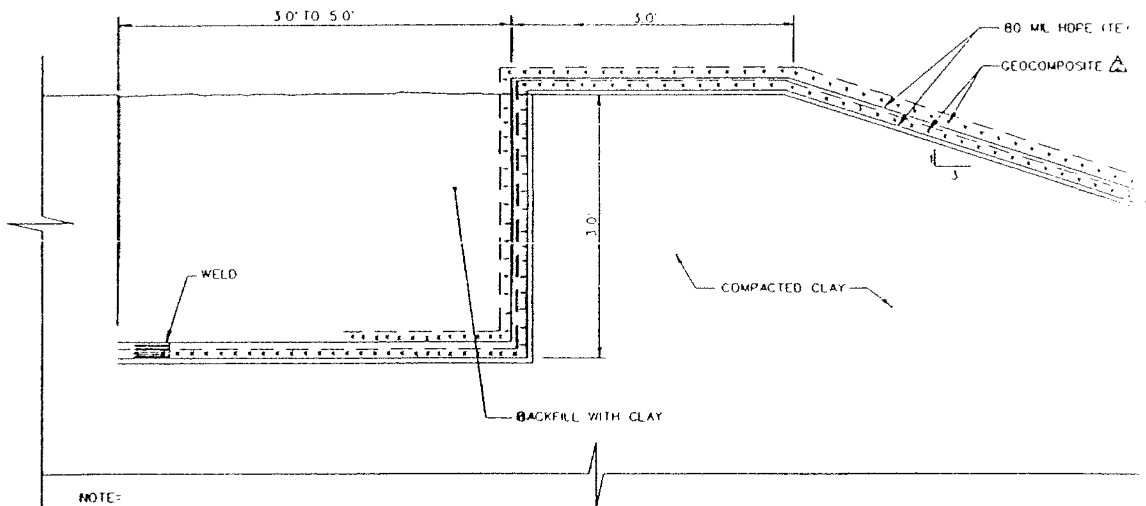
⚠ 1. SURFACE WATER DIVERSION BERM TO BE CONSTRUCTED OF COMPACTED CLAY SOIL. BERM SHALL BE CONSTRUCTED AFTER COMPLETION OF SYNTHETIC LINER INSTALLATION THIS BERM IS TO BE REMOVED DURING CONSTRUCTION OF FINAL CLAY COVER FOR CELLS 1 THROUGH 6 AND REMAIN IN PLACE FOR CELLS 7 THROUGH 14

2. GRAVEL BACKFILL TO BE N.Y.S.D.O.T NO. 2 STONE OR APPROVED EQUAL.

3. ACTUAL DEPTH TO GALCIOLACUSTRINE CLA... TYPICAL CROSS SECTION. DEPTH TO GLAC... WILL BE FIELD DOCUMENTED DURING CONS...

PERIMETER BERM SECTION (TYPICAL) FOR CELLS 7 THROUGH 14 — 1/17A

NTS

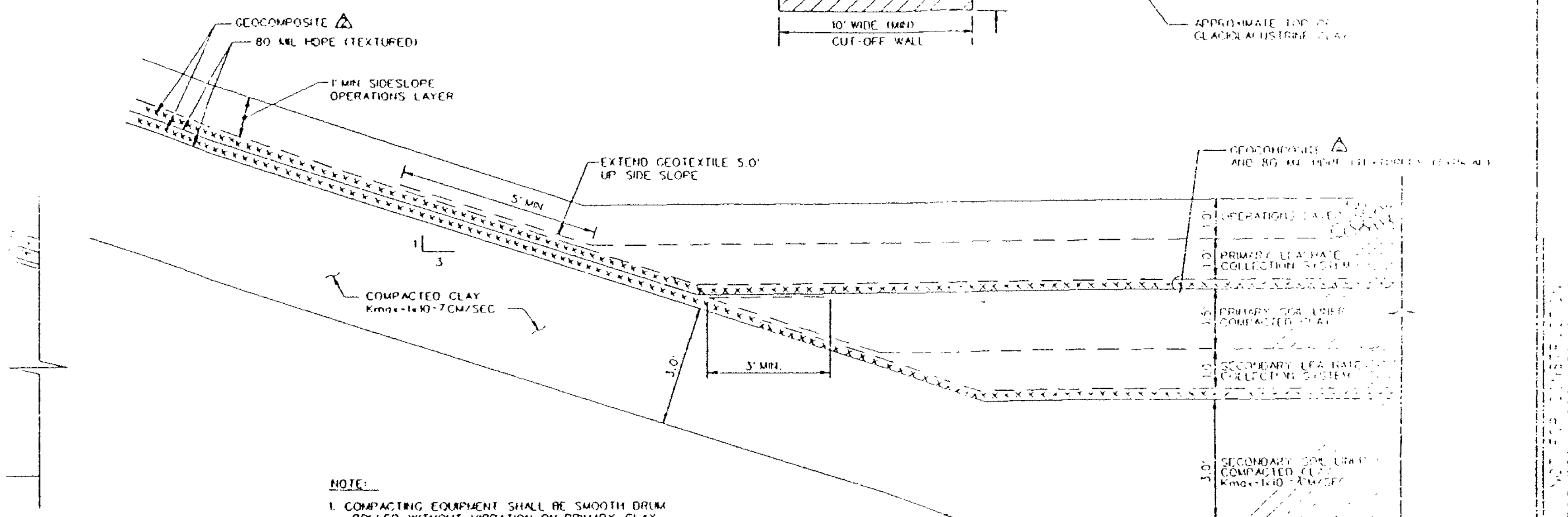


NOTE:

1. SYNTHETIC MATERIALS SHALL BE PROPERLY ANCHORED UNTIL FINAL BACKFILLING OF THE ANCHOR TRENCH.

ANCHOR TRENCH (TYPICAL) FOR CELLS 7 THROUGH 14 ⚠ — 2/17A

NTS



NOTE:

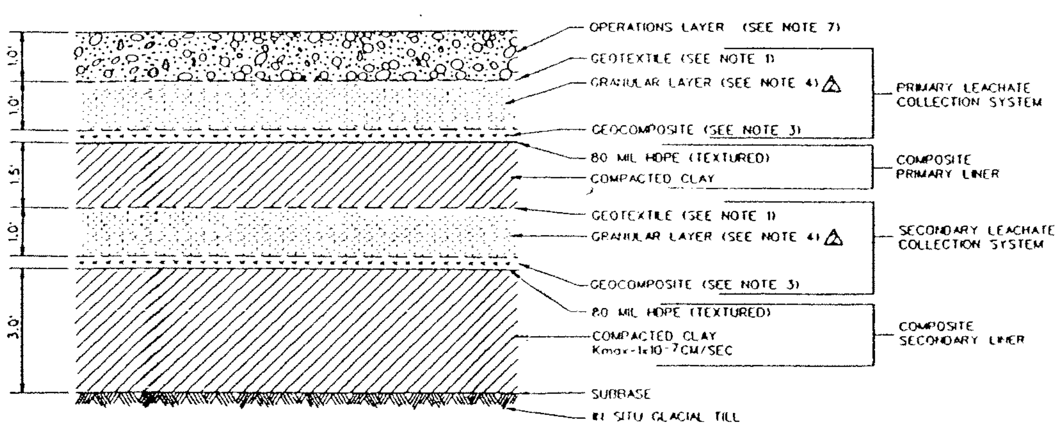
1. COMPACTING EQUIPMENT SHALL BE SMOOTH DRUM ROLLER WITHOUT VIBRATION ON PRIMARY CLAY STARTING FROM 6' UP THE SLOPE.

TOE LINER TRANSITION (TYPICAL) FOR CELLS 7 THROUGH 14 ⚠

NTS

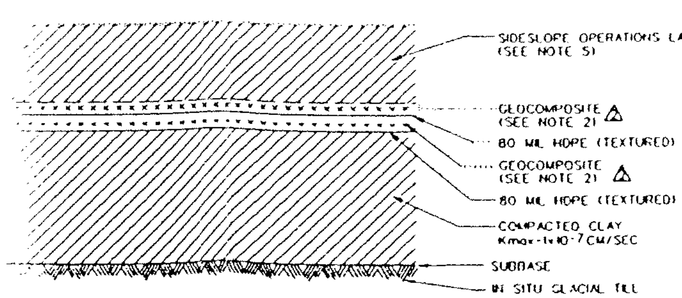
NOTES:

1. GEOTEXTILE SHALL BE TREVIRA 1145 OR EQUAL CONTINUOUS FILAMENT FABRIC, UNLESS SPECIFICALLY STATED.
2. TEXNET COMPOSITE ON SIDESLOPE SHALL BE ONE LAYER OF TEXNET 3002 OR EQUAL.
3. TEXNET GEOCOMPOSITE ON THE BASE SHALL BE ONE LAYER OF TEXNET 3002 OR EQUAL.
4. ⚠ PRIMA... ...DARY GRANULAR LAYERS SHALL BE NEW YORK STATE DO... ...APPROVED EQUAL, HAVING A MINIMUM HYDRAULIC CON... 10^{-2}CM/SEC. FOR CELLS 7 AND 8 AND 8×10^{-2}CM/SEC FOR... ...UGH 14.
5. SIDESLOPE OPERATIONS LAYER SHALL BE A MINIMUM OF ONE FOOT SELECT FILL.
6. BASE OPERATIONS LAYER SHALL BE NOMINAL ONE FOOT RUN-OF-CRUSHER NO.2 STONE OR EQUAL.
7. FOR ADDITIONAL LINER SYSTEM DETAILS IN SUMP AREAS SEE DRAWING NO. 18A.



SECTION A-A BASE LINER — 4/17A

NTS



B-B SIDESLOPE LINER — 5/17A

STATE OF NEW YORK — CHARLES P BALLOD — 59683-1 — LICENSED PROFESSIONAL ENGINEER

NOV 18 1997

RUST ENVIRONMENT & INFRASTRUCTURE

SIGNATURE

DATE

REV	DATE	DESCRIPTION	DR BY	APP BY
⚠2	10-97	MODIFY FOR CELLS 9 THROUGH 14	FAS	CPB
⚠1	8-97	REVISED NOTE 1 ON DETAIL 1	FAS	CPB

DES BY	KDM
DRN BY	FAS
CHK BY	CPB
REV BY	AWE
APP BY	CPB

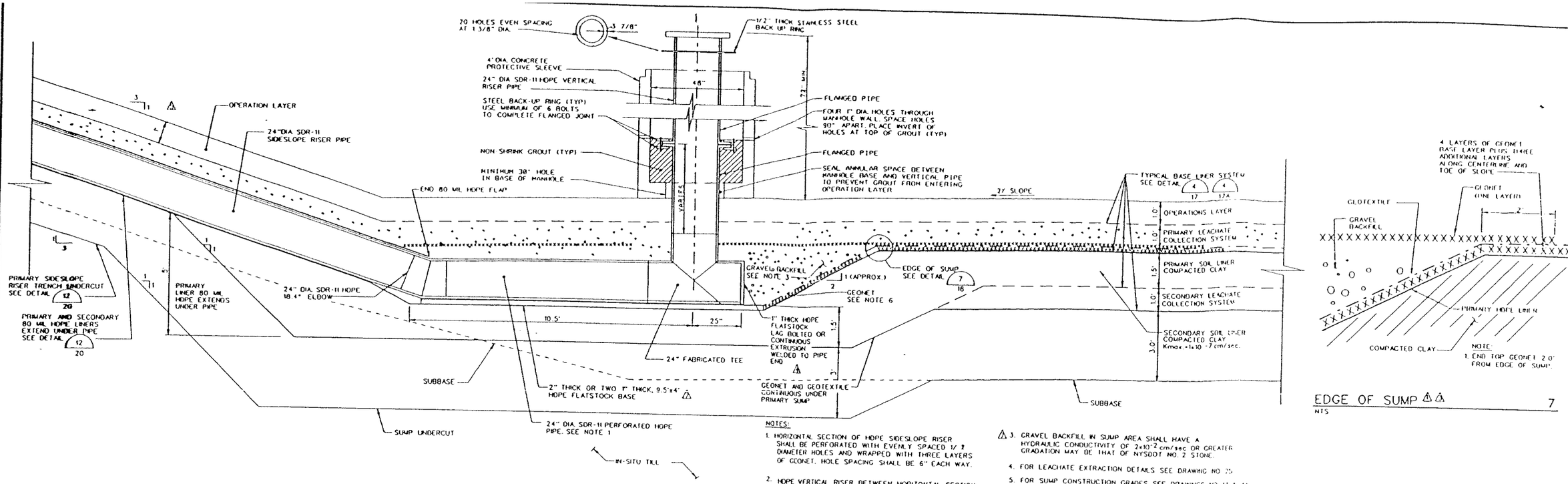
PROJECT NO — DATE NOVEMBER 1996

PROJECT: RESIDUALS MANAGEMENT UNIT 1

DRAWING TITLE: TYPICAL LINER SECTIONS FOR CELLS 7 THROUGH 14

CWM CHEMICAL SERVICES, INC
MODEL CITY, NIAGARA COUNTY, NEW YORK

DRAWING NO. 17A



PRIMARY LEACHATE COLLECTION RISER SUMP (TYPICAL) ⚠⚠⚠

NTS

NOTES:

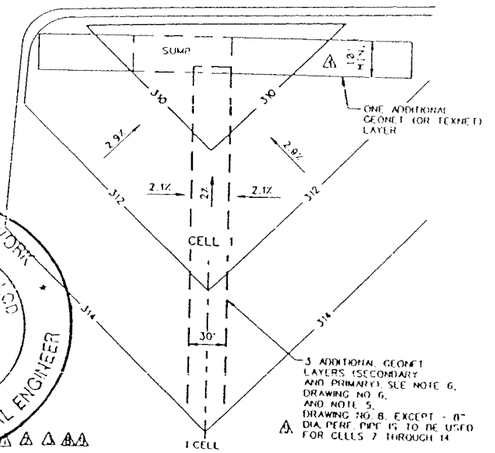
1. HORIZONTAL SECTION OF HDPE SIDESLOPE RISER SHALL BE PERFORATED WITH EVENLY SPACED 1/2" DIAMETER HOLES AND WRAPPED WITH THREE LAYERS OF GEONET. HOLE SPACING SHALL BE 6" EACH WAY.
2. HDPE VERTICAL RISER BETWEEN HORIZONTAL SECTION OF FABRICATED TEE AND BOTTOM OF MANHOLE SHALL BE PERFORATED WITH A MINIMUM OF 20 EVENLY SPACED 1/2" DIA. HOLES. PERFORATED PORTION OF RISER SHALL BE WRAPPED WITH THREE LAYERS OF GEONET.
⚠3. GRAVEL BACKFILL IN SUMP AREA SHALL HAVE A HYDRAULIC CONDUCTIVITY OF 2×10^{-2} cm/sec OR GREATER GRADATION MAY BE THAT OF NYSDOT NO. 2 STONE.
4. FOR LEACHATE EXTRACTION DETAILS SEE DRAWING NO. 25
5. FOR SUMP CONSTRUCTION GRADES SEE DRAWINGS NO. 13 & 14
⚠6. SUMP AREA SHALL HAVE 3 ADDITIONAL LAYERS OF GEONET POLYNET 3000 OR EQUAL TO BE EXTENDED A MINIMUM OF 5 FEET PAST SUMP AREA. SEE DETAIL 9/18
⚠⚠⚠7. ALSO SEE DRAWING NO. 18A FOR SUMP DETAILS OF CELLS 5, 6, 7, 10, 13 AND 14.

6

EDGE OF SUMP ⚠⚠

NTS

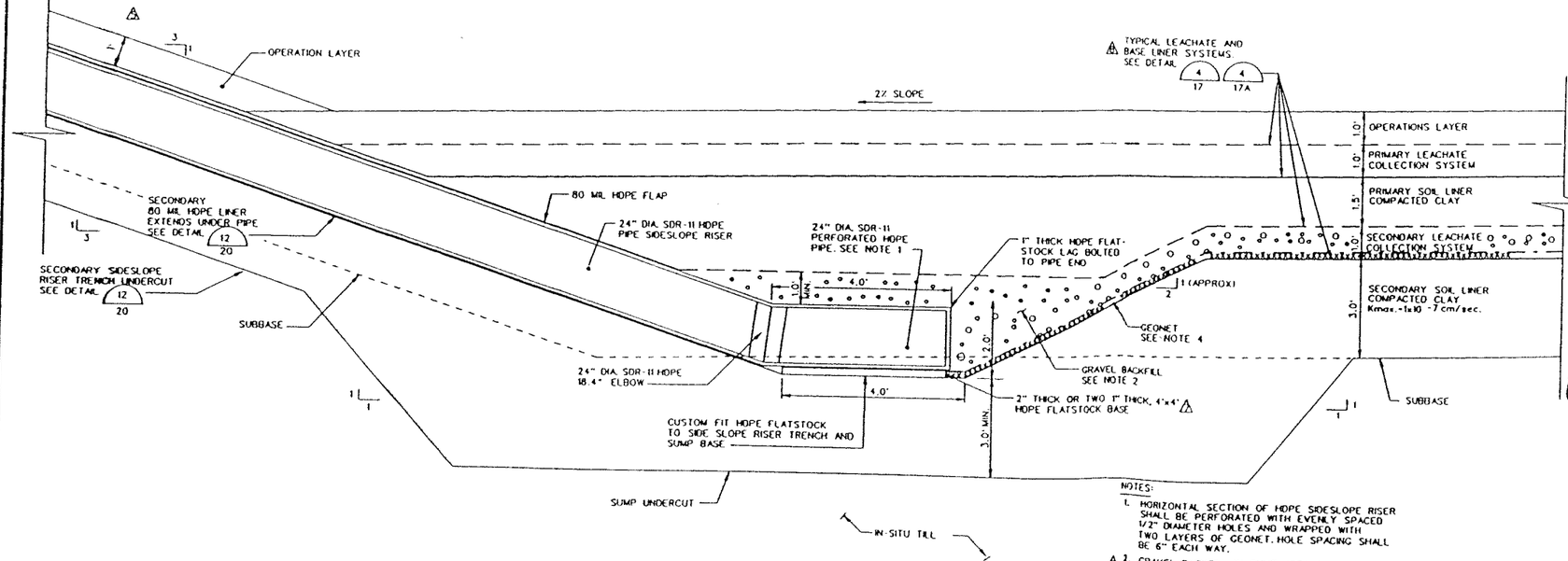
7



BASE GRADE CONFIGURATION (TYPICAL)

NTS NOTE: BASE GRADE CONFIGURATION FOR CELLS 7 THROUGH 14 ⚠ ARE SHOWN ON DRAWING NO. 7.

9



SECONDARY LEACHATE COLLECTION RISER SUMP (TYPICAL) ⚠⚠

NTS

NOTES:

1. HORIZONTAL SECTION OF HDPE SIDESLOPE RISER SHALL BE PERFORATED WITH EVENLY SPACED 1/2" DIAMETER HOLES AND WRAPPED WITH TWO LAYERS OF GEONET. HOLE SPACING SHALL BE 6" EACH WAY.
⚠2. GRAVEL BACKFILL IN SUMP AREA SHALL HAVE HYDRAULIC CONDUCTIVITY OF 2×10^{-2} CM/SEC OR GREATER. GRADATION MAY BE THAT OF NYSDOT NO. 2 STONE.
3. FOR SUMP CONSTRUCTION GRADES SEE DRAWINGS NO. 13 & 14.
4. SUMP AREA SHALL HAVE 3 ADDITIONAL LAYERS OF GEONET POLYNET 3000 OR EQUAL, AND TO BE EXTENDED A MINIMUM OF 5 FEET PAST SUMP AREA SEE DETAIL 9/18
⚠⚠⚠7. ALSO SEE DRAWING NO. 18A FOR SUMP DETAILS OF CELLS 5, 6, 7, 10, 13 AND 14.

8

STATE OF NEW YORK
CHARLES M. BALOG
LICENSED PROFESSIONAL ENGINEER
59686-1

⚠⚠⚠⚠⚠

NOV 18 1997

⚠	6-97	REVISED NOTE FOR CELLS 7 THROUGH 14	FAS	CPB
⚠	11-96	MODIFY LINER SYSTEM CELLS 7/8 REF. 18A	FAS	CPB
⚠	4-96	REVISED FLATSTOCK AND NOTES	FAS	CPB
⚠	11-95	ADDED NOTES	FAS	CPB
⚠	5-95	REVISED NOTES AND DIMENSION LINES	JWH	OJK
⚠	1-95	REVISED NOTES AND DIMENSION LINES	JWH	OJK
⚠	7-93	DETAILS 7 & 8 CLARIFIED GEONET PLACEMENT UNDERCRACK RISER WITH TEE BASE	MLJ	MGR
⚠	11-92	NOTICE OF DEFICIENCY RESPONSES	FLD	GRM
⚠	6-92	NOTICE OF DEFICIENCY RESPONSES	FLD	GRM
REV	DATE	DESCRIPTION	DR BY	APP BY

RUST ENVIRONMENT & INFRASTRUCTURE

SIGNATURE

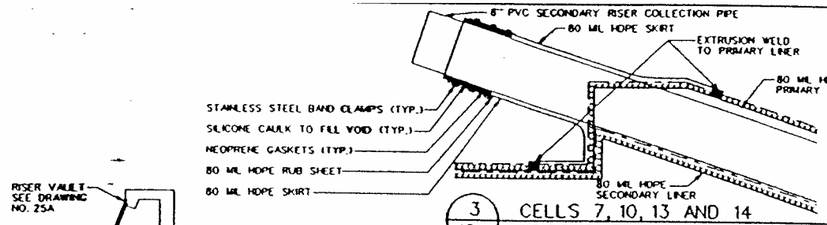
DATE

DES BY	BRJ/TJP	PROJECT NO. 17365	DATE FEBRUARY 1991
DRN BY	FLD	PROJECT	RESIDUALS MANAGEMENT UNIT 1
CHK BY	MGR	DRAWING TITLE	SUMP DETAILS
ERV BY	TJB		
QRV BY	CFF		
APP BY	GRM		

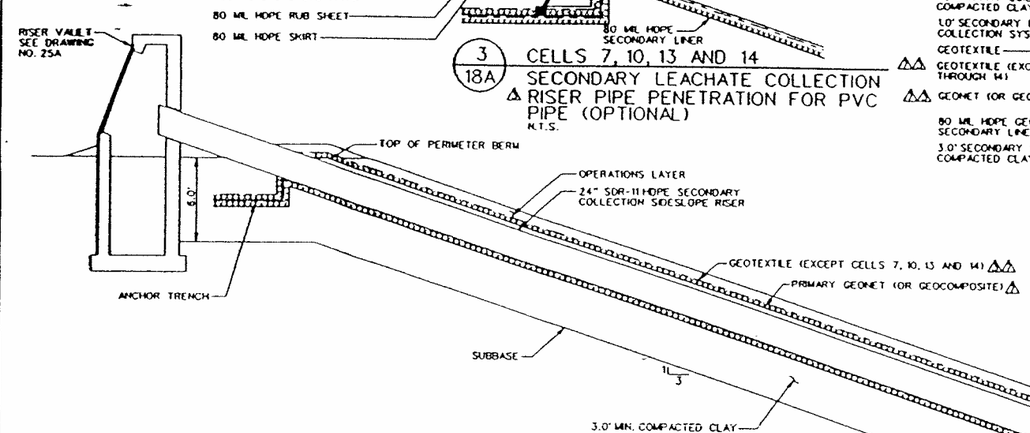
CWM CHEMICAL SERVICES, INC.
MODEL CITY, NIAGARA COUNTY, NEW YORK

FILE NO. A 55292
DRAWING NO.
18

NOT FOR CONSTRUCTION
FOR REGULATORY REVIEW ONLY



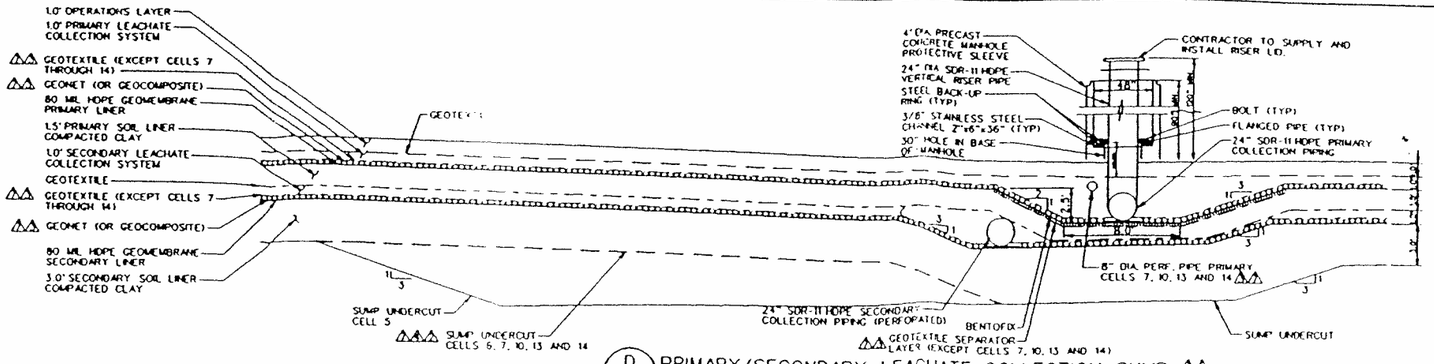
3 / 18A CELLS 7, 10, 13 AND 14 SECONDARY LEACHATE COLLECTION RISER PIPE PENETRATION FOR PVC PIPE (OPTIONAL) △ N.T.S.



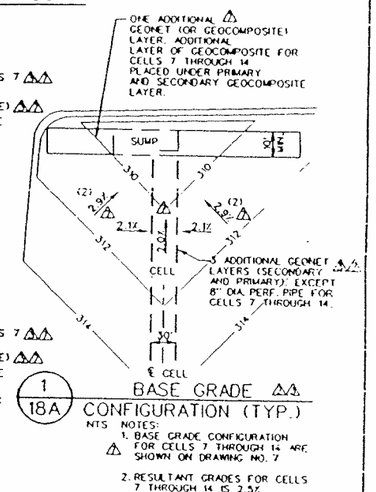
NOTES:

1. HORIZONTAL SECTION OF HDPE SIDESLOPE RISER SHALL BE PERFERATED WITH EVENLY SPACED 1/2" DIAMETER HOLES AND WRAPPED WITH TWO LAYERS OF GEONET. HOLE SPACING SHALL BE 6" EACH WAY.
2. GRAVEL BACKFILL IN SUMP AREA SHALL BE N.Y.S.D.O.T. NO. 2 STONE, HAVING A HYDRAULIC CONDUCTIVITY OF 2x10-2 CM/SEC OR GREATER.
△△ 3. ADDITIONAL LAYERS OF GEONET ALONG CENTERLINE AND TOE OF SLOPE TO EXTEND 5 FEET INTO SUMP AREA EXCEPT CELLS 7 THROUGH 14.
△△△ 4. FOR SUMP CONSTRUCTION GRADES SEE DRAWINGS NO. 13A, 13B, 13C, 13D, 13E, 13G AND 13H.
△△ 5. FOR THE LINER SYSTEM OF CELLS 7 THROUGH 14 SEE DRAWING NO. 17A.

A / 18A SECTION △△ SECONDARY LEACHATE COLLECTION SUMP AND RISER SCALE 1" = 5'

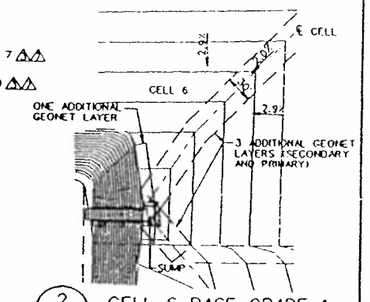


D / 18A PRIMARY/SECONDARY LEACHATE COLLECTION SUMP △△ SCALE 1" = 5'

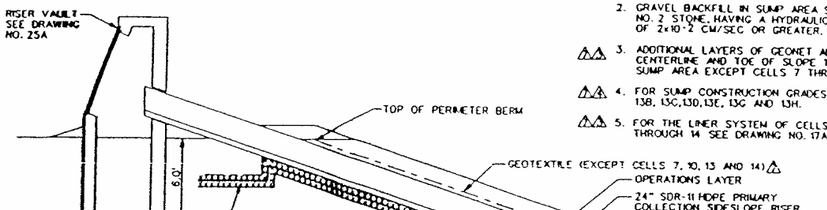


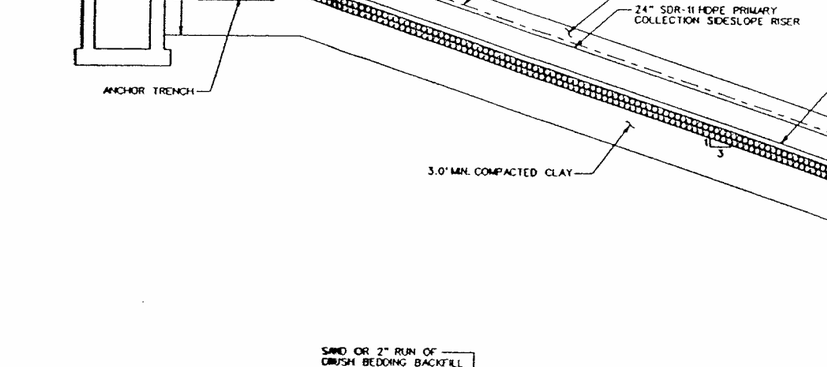
1 / 18A BASE GRADE △△ CONFIGURATION (TYP.)

NTS NOTES:
1. BASE GRADE CONFIGURATION FOR CELLS 7 THROUGH 14 ARE △ SHOWN ON DRAWING NO. 7
2. RESULTANT GRADES FOR CELLS 7 THROUGH 14 IS 2.5%.
3. CENTERLINE GRADE FOR CELLS 7 THROUGH 14 IS 1.3%.



2 / 18A CELL 6 BASE GRADE △ CONFIGURATION (TYP.) NTS





B / 18A SECTION △ PRIMARY LEACHATE COLLECTION SUMP AND RISER SCALE 1" = 5'

C / 18A PRIMARY/SECONDARY LEACHATE COLLECTION RISER TRENCH △△ SCALE 1" = 5'

NOTES:

1. HORIZONTAL SECTION OF HDPE SIDESLOPE RISER SHALL BE PERFERATED WITH EVENLY SPACED 1/2" DIAMETER HOLES AND WRAPPED WITH THREE LAYERS OF GEONET. HOLE SPACING SHALL BE 6" EACH WAY.
2. GRAVEL BACKFILL IN SUMP AREA AND BETWEEN VERTICAL RISER AND CONCRETE SLEEVE SHALL N.Y.S.D.O.T. NO. 2 STONE, HAVING A HYDRAULIC CONDUCTIVITY OF 2x10-2 CM/SEC OR GREATER.
3. HDPE VERTICAL RISER BETWEEN HORIZONTAL SECTION OF FABRICATED TEE AND BOTTOM OF MANHOLE SHALL BE PERFORATED WITH A MINIMUM OF 20 EVENLY SPACED 1/2" DIA. HOLES. PERFORATED PORTION OF RISER SHALL BE WRAPPED WITH THREE LAYERS OF GEONET.
△△ 4. ADDITIONAL LAYERS OF GEONET ALONG CENTERLINE AND TOE OF SLOPE TO EXTEND 5 FEET INTO SUMP AREA EXCEPT CELLS 7 THROUGH 14
△△ 5. FOR SUMP CONSTRUCTION GRADES SEE DRAWINGS NO. 13A, 13B, 13C, 13D, 13E, 13G AND 13H.
△△ 6. FOR THE LINER SYSTEMS OF CELLS 7 THROUGH 14 SEE DRAWING NO. 17A.

CADD PRODUCED DRAWING

STATE OF NEW YORK
CHARLES P. BALLOD
LICENSED PROFESSIONAL ENGINEER
59688-1

NOV 18 1997

REV.	DATE	DESCRIPTION	DRN BY	APP BY
△	10-97	MODIFY PIPING AND ADDED NOTES	FAS	CPB
△	7-97	ADJUSTED 8" PIPE LOCATION	FAS	CPB
△	6-97	DELETED SECONDARY RISER CLEANOUT	FAS	CPB
△	4-97	REVISED FOR CELL 8	FAS	CPB
△	11-96	MODIFY LINER SYSTEM	FAS	CPB
△	7-96	ADD NOTE DETAIL 1, REVISED TITLE FOR CELL 10	FAS	CPB
△	4-96	ADDED DETAIL CELL 6 BASE GRADE	FAS	CPB

DATE: NOVEMBER 1995 | PROJECT NO. 34282.100 | SCALE: AS SHOWN

DES BY	FAS	
DRN BY	FAS	
CHK BY	CPB	
REV BY	AWE	
APP BY	CPB	

PROJECT: RESIDUALS MANAGEMENT UNIT 1

SHEET TITLE: SUMP DETAILS CELLS 5 THROUGH 14 △△

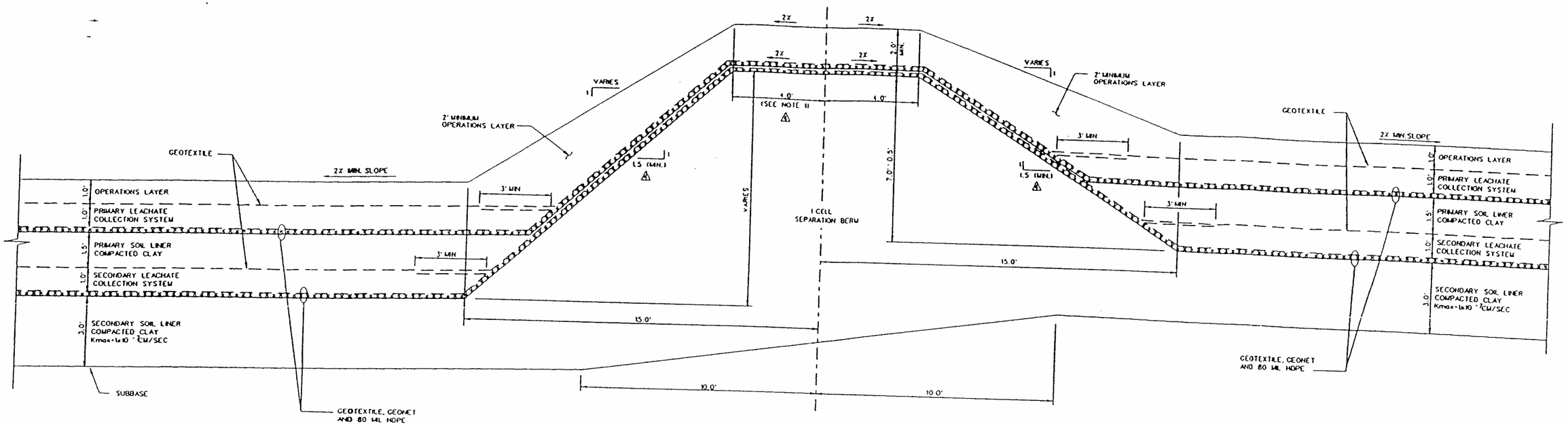
RUST ENVIRONMENT & INFRASTRUCTURE

SIGNATURE

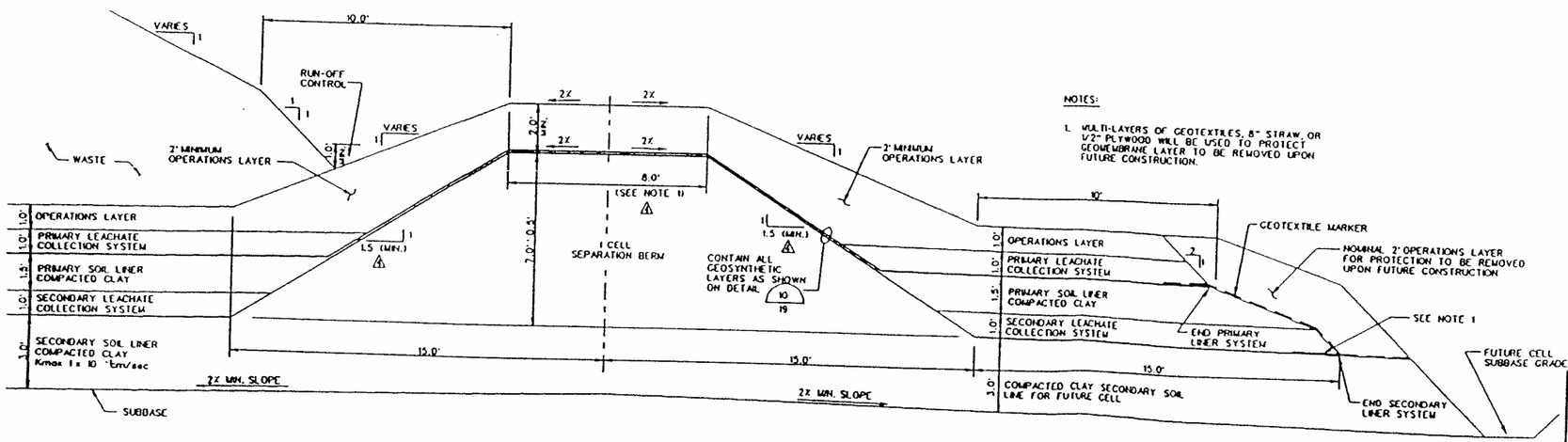
DATE

CWM Chemical Services, Inc. Model City Facility

DRAWING NO. 18A



⚠ CELL SEPARATION BERM
NTS



⚠ CELL SEPARATION BERM (BETWEEN CONSTRUCTION SEASONS) SEE NOTE 2 ⚠
NTS

NOTES:
1. MULTI-LAYERS OF GEOTEXTILES, 8" STRAW, OR 1/2" PLYWOOD WILL BE USED TO PROTECT GEOMEMBRANE LAYER TO BE REMOVED UPON FUTURE CONSTRUCTION.

NOTES:
⚠ 1. THE TOTAL TOP WIDTH OF THE BERM MAY BE REDUCED TO A MINIMUM THREE (3) FEET WIDTH.
⚠ 2. FOR CELL SEPARATION BERM DETAIL FOR CELLS 5 THROUGH 14 SEE DRAWING NO. 19A.

STATE OF NEW YORK
CHARLES P. BALLOD
LICENSED PROFESSIONAL ENGINEER
59688-1
JAN 23 1996
Charles P. Ballod

NOT FOR CONSTRUCTION
FOR REGULATORY REVIEW ONLY

REV	DATE	DESCRIPTION	DR BY	APP BY
⚠	11-95	ADDED NOTES	FAS	CPB
⚠	8-94	REVISED OPERATIONS LAYER AT BERM	FLD	MGR
⚠	11-92	NOTICE OF DEFICIENCY RESPONSES	FLD	GRM
⚠	6-92	NOTICE OF DEFICIENCY RESPONSES	FLD	GRM

RUST ENVIRONMENT & INFRASTRUCTURE

SIGNATURE

DATE

DES BY	BRJ/TJP
DRN BY	FLD
CHK BY	MGR
ENV BY	TJB
GRV BY	CFF
APP BY	GRM

PROJECT NO. 17365 DATE FEBRUARY 1991

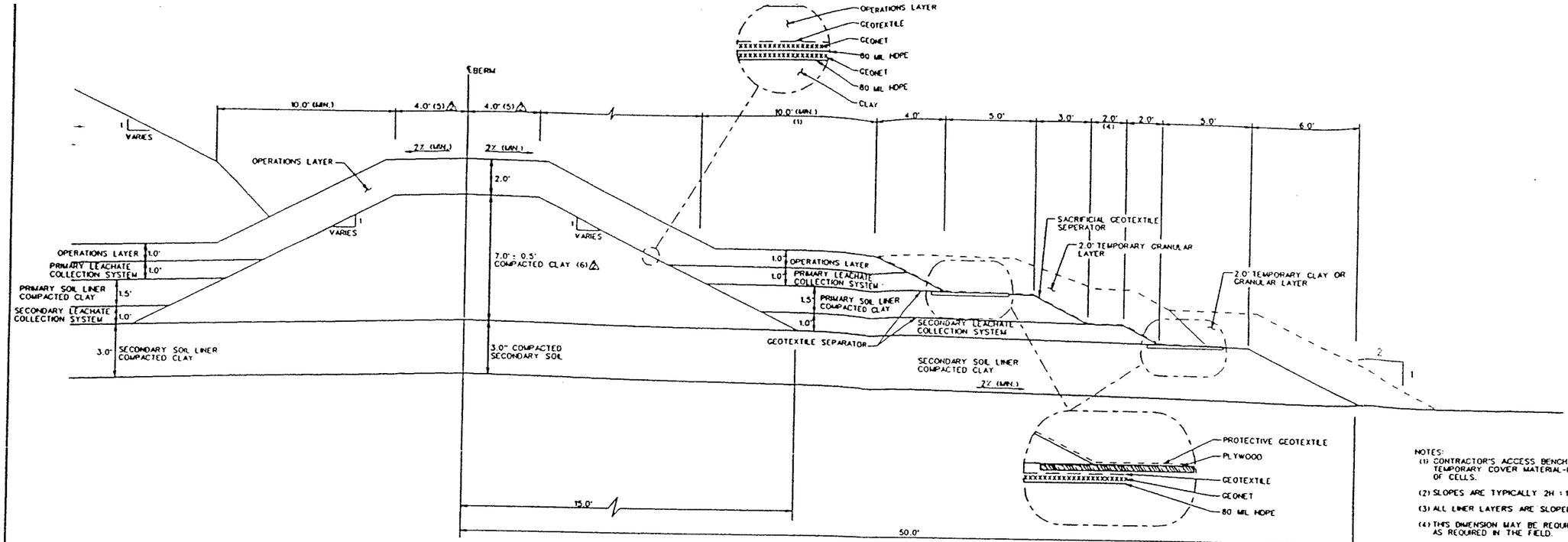
PROJECT
RESIDUALS MANAGEMENT UNIT 1

DRAWING TITLE
CELL SEPARATION BERM DETAILS

CWM CHEMICAL SERVICES, INC.
MODEL CITY, NIAGARA COUNTY, NEW YORK

FILE NO. A-55281

DRAWING NO.
19



CELL SEPARATION BERM (BETWEEN CONSTRUCTION SEASONS) CELLS 5 AND 6 1 △△△△

SCALE: 1"=3'

19B

NOTES:
(1) CONTRACTOR'S ACCESS BENCH FOR REMOVAL OF TEMPORARY COVER MATERIAL-FUTURE CONSTRUCTION OF CELLS.

(2) SLOPES ARE TYPICALLY 2H : 1V

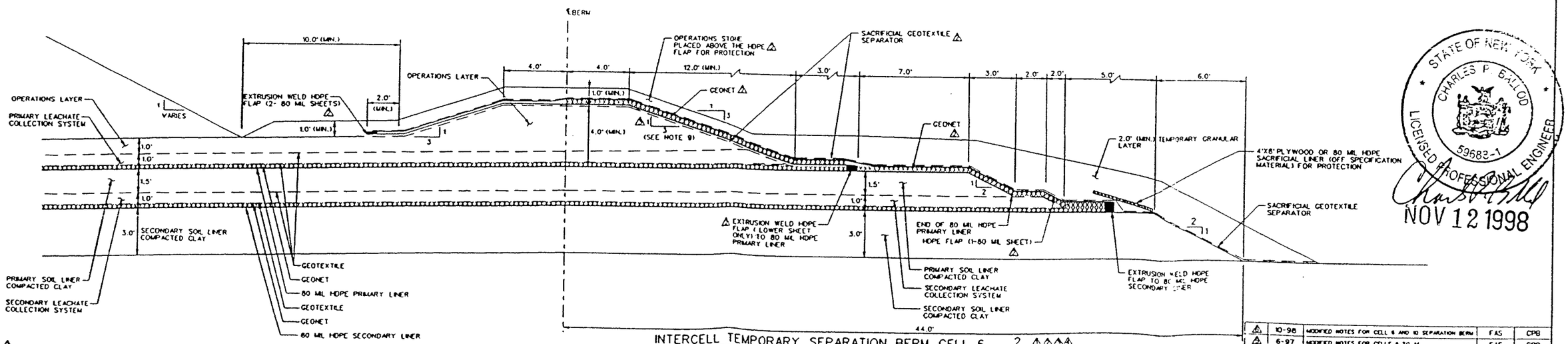
(3) ALL LINER LAYERS ARE SLOPED FOR DRAINAGE AT 2% MIN.

(4) THIS DIMENSION MAY BE REQUIRED TO BE REDUCED TO ZERO (0) AS REQUIRED IN THE FIELD.

△ (5) TOTAL TOP WIDTH OF THE CELL SEPARATION BERM WILL BE A MINIMUM OF 3 FEET.

△ (6) FOR THE CELL 6 / 8 SEPARATION BERM, THE 7.0 FEET ± 0.5 FEET OF COMPACTED CLAY WILL BE MEASURED FROM THE TOP OF THE CELL 6 SECONDARY CLAY LINER.

△△ (7) FOR BERM DETAILS OF CELLS 7 THROUGH 14 SEE DRAWING NO. 19C.



INTERCELL TEMPORARY SEPARATION BERM CELL 6 2 △△△△

SCALE: 1"=3'

19B

△ NOTES:
1. THE LOWER 80 MIL HDPE FLAP WILL BE EXTRUSION WELDED TO THE PRIMARY 80 MIL GEOMEMBRANE.
2. THE UPPER 80 MIL HDPE FLAP WILL BE EXTRUSION WELDED TO THE SECONDARY 80 MIL GEOMEMBRANE.
3. THE LOWER AND UPPER 80 MIL FLAPS WILL BE EXTRUSION WELDED TOGETHER AT THEIR TERMINATION.
4. AT THE PERIMETER BERM AND AT THE CELL 6 / 8 INTERCELL BERM THE LOWER AND UPPER 80 MIL FLAPS WILL BE EXTRUSION WELDED TO THE LINER SYSTEM PRIMARY GEOMEMBRANE.
5. THE FOLLOWING IS THE CONSTRUCTION SEQUENCING FOR THE FUTURE CELL 10 TIE-IN
   A. REMOVE THE PROTECTIVE STONE AND GEOTEXTILE, AT MINIMUM, FROM THE LOWER "SECONDARY" PORTION OF THE BERM.
   B. COMPLETE THE ENTIRE SECONDARY CLAY LINER AND SECONDARY GEOMEMBRANE OF CELL 10 AND TIE INTO THE SECONDARY CLAY AND GEOMEMBRANE LINING SYSTEM OF THE CELL 6 / 10 TRANSITION AREA.
   C. REMOVE PROTECTIVE STONE, GEOTEXTILE AND UPPER FLAP TO THE EXTENT NECESSARY TO EXPOSE THE SECONDARY LEACHATE COLLECTION SYSTEM, PRIMARY SOIL LINER AND PRIMARY 80 MIL GEOMEMBRANE. COMPLETE THE SECONDARY COLLECTION SYSTEM EXTRUSION WELD FROM UPPER FLAP TO SECONDARY GEOMEMBRANE REMAINS INTACT.
   D. PLACE THE ENTIRE PRIMARY CLAY LINER AND GEOMEMBRANE OF CELL 10 AND TIE INTO THE PRIMARY CLAY LINER AND GEOMEMBRANE OF THE CELL 6 / 10 TRANSITION AREA.
△ E. MONITOR SECONDARY VOLUMES FOR A PERIOD OF TWO (2) WEEKS. THE SECONDARY LEACHATE FLOW VOLUMES MUST BE BELOW THE RESPONSE RATE FOR TWO (2) CONSECUTIVE WEEKS. PRIOR TO THE LOWER FLAPS REMOVAL.
△ F. UPON USEPA ACCEPTANCE OF THE SECONDARY MONITORING DATA AND THE CERTIFYING ENGINEER'S INTERIM CERTIFICATION THROUGH PRIMARY GEOMEMBRANE, REMOVE THE LOWER FLAP TO THE EXTENT NECESSARY TO EXPOSE THE PRIMARY LEACHATE COLLECTION SYSTEM AND OPERATIONS LAYER. EXTRUSION WELD FROM LOWER FLAP TO PRIMARY GEOMEMBRANE REMAINS INTACT.
   G. COMPLETE THE PLACEMENT OF THE PRIMARY DRAINAGE STONE, SEPARATOR GEOTEXTILE AND OPERATION STONE IN CELL 10 AND THE CELL 6 / 10 TRANSITION AREA.
   H. ALL GEOMEMBRANE DEPLOYMENT WELDING AND TESTING WILL BE PERFORMED IN ACCORDANCE WITH THE PERMIT SPECIFICATIONS AND THE QA/QC MANUAL IN ATTACHMENT H AND H OF THE PERMIT.
   I. ONLY LOW GROUND PRESSURE EQUIPMENT SHALL BE USED TO CONSTRUCT THE CELL 6 / 10 BERM.
△ J. SACRIFICIAL GEOTEXTILE ABOVE AND BELOW THE SLOPE SHALL BE THE WRA 155 OR APPROVED ALTERNATE.
△ K. FOR CELL 6, THE HDPE FLAP SLOPE MAY BE VARIED TO A MAXIMUM 2H:1V.
△ L. FOR BERM DETAILS OF CELLS 7 THROUGH 14 SEE DRAWING NO. 19C.
△ M. PRIOR TO OPERATION OF CELL 10, REMOVE REMAINING PROTECTIVE STONE AND TEMPORARY SEPARATION BERM GEOSYNTHETICS TO THE EXTENT NECESSARY TO REMOVE THE TEMPORARY SEPARATION BERM GRANULAR MATERIAL.
△ N. REMOVE TEMPORARY SEPARATION BERM GRANULAR MATERIAL TO TOP OF OPERATIONS LAYER.

CADD PRODUCED DRAWING

RUST ENVIRONMENT & INFRASTRUCTURE

SIGNATURE

DATE

STATE OF NEW YORK
CHARLES P. BALLOD
59682-1
LICENSED PROFESSIONAL ENGINEER
NOV 12 1998

REV.	DATE	DESCRIPTION	DRN BY	APP BY
△	10-98	MODIFIED NOTES FOR CELL 6 AND 10 SEPARATION BERM	FAS	CPB
△	6-97	MODIFIED NOTES FOR CELLS 8 TO 14	FAS	CPB
△	11-96	MODIFIED TO LAST DETAILS TO CELLS 3, 6 / 8 TO 14	FAS	CPB
△	8-96	MODIFIED DETAIL 2 SLOPE	FAS	CPB
△	5-96	MODIFIED TEMPORARY BERM, ADDED NOTES	FAS	CPB
△	4-96	MODIFIED DETAIL 1 AND ADDED TEMPORARY INTERCELL BERM DETAIL	FAS	CPB

DATE: NOVEMBER 1995 | PROJECT NO. 34262.100 | SCALE: AS SHOWN

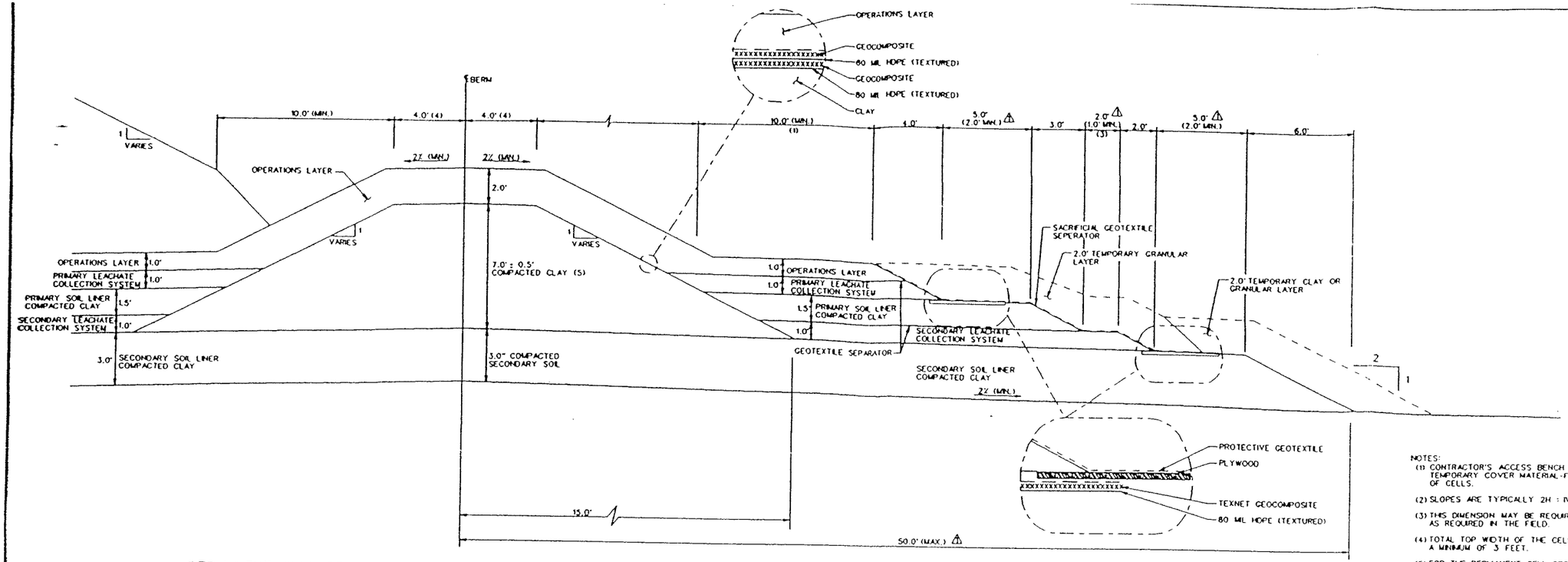
DES BY	CPB	
DRN BY	FAS	
CHK BY	CPB	
REV BY	AWE	
APP BY	CPB	

PROJECT: RESIDUALS MANAGEMENT UNIT I

SHEET TITLE: CELL SEPARATION BERM DETAILS FOR CELLS 5 AND 6 △△

CWM Chemical Services, Inc.
Model City Facility

DRAWING NO. 198



PERMANENT CELL SEPARATION BERM (BETWEEN CONSTRUCTION SEASONS) BETWEEN CELLS 8 AND 9, 10 AND 12, 9 AND 11, 12 AND 11, 13 AND 14 1 ⚠

SCALE: 1"=3'

19C

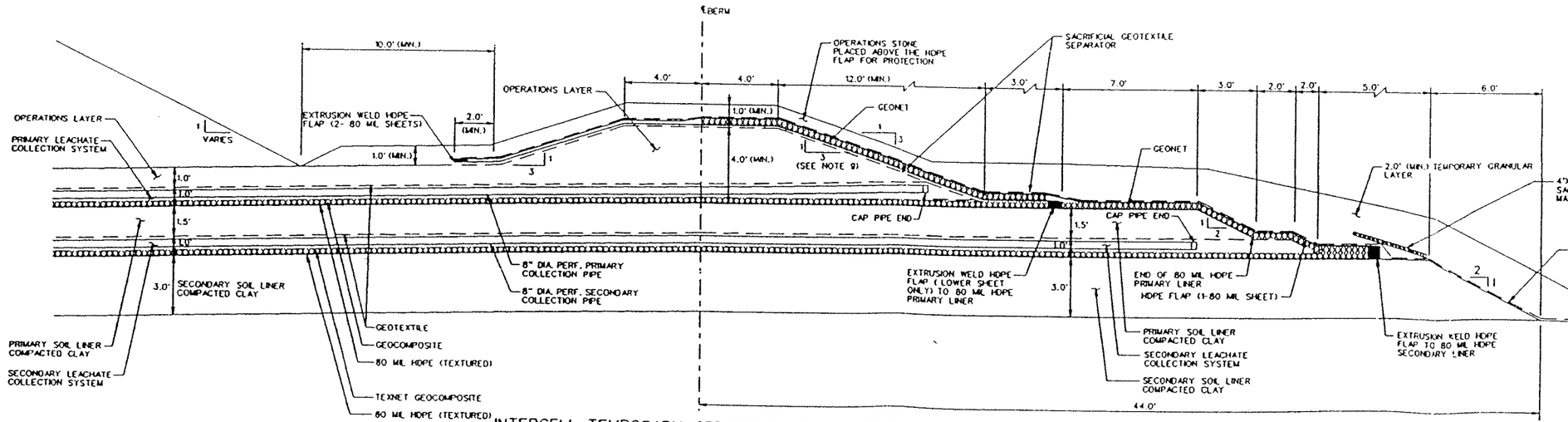
NOTES:
(1) CONTRACTOR'S ACCESS BENCH FOR REMOVAL OF TEMPORARY COVER MATERIAL-FUTURE CONSTRUCTION OF CELLS.

(2) SLOPES ARE TYPICALLY 2H : 1V

(3) THIS DIMENSION MAY BE REQUIRED TO BE REDUCED TO ZERO (0) AS REQUIRED IN THE FIELD.

(4) TOTAL TOP WIDTH OF THE CELL SEPARATION BERM WILL BE A MINIMUM OF 3 FEET.

⚠⚠ (5) FOR THE PERMANENT CELL SEPARATION BERM, THE 7.0 FEET ± 0.5 FEET OF COMPACTED CLAY WILL BE MEASURED FROM THE SECONDARY CLAY LINER OF THE CELL THAT IS CONSTRUCTED FIRST.



INTERCELL TEMPORARY SEPARATION BERM (OPTIONAL) BETWEEN CELLS 7 AND 8, 10 AND 9, 14 AND 12 , 13 AND 11 2 ⚠

SCALE: 1"=3'

19C

NOTES:
1. THE LOWER 80 MIL HDPE FLAP WILL BE EXTRUSION WELDED TO THE PRIMARY 80 MIL GEOMEMBRANE.
2. THE UPPER 80 MIL HDPE FLAP WILL BE EXTRUSION WELDED TO THE SECONDARY 80 MIL GEOMEMBRANE.
3. THE LOWER AND UPPER 80 MIL FLAPS WILL BE EXTRUSION WELDED TOGETHER AT THEIR TERMINATION.
4. AT THE PERIMETER BERM AND AT THE CELL 5 / 7, 6 / 8 AND OTHER TEMPORARY ⚠ INTERCELL BERMS THE LOWER AND UPPER 80 MIL FLAPS WILL BE EXTRUSION WELDED TO THE LINER SYSTEM PRIMARY GEOMEMBRANE.
5. ⚠ THE FOLLOWING IS THE CONSTRUCTION SEQUENCING FOR THE FUTURE CELL TIE-IN
   A. REMOVE THE PROTECTIVE STONE AND GEOTEXTILE, AT MINIMUM, FROM THE LOWER "SECONDARY" PORTION OF THE BERM.
   ⚠ B. COMPLETE THE ENTIRE SECONDARY CLAY LINER AND SECONDARY GEOMEMBRANE OF THE CELL AND TIE INTO THE SECONDARY CLAY AND GEOMEMBRANE LINING SYSTEM OF THE ADJACENT TRANSITION AREA.
   C. REMOVE THE REST OF PROTECTIVE STONE AND GEOTEXTILE AND REMOVE THE UPPER FLAP IN ITS ENTIRETY. EXTRUSION WELD FROM UPPER FLAP TO SECONDARY GEOMEMBRANE REMAINS INTACT.
   ⚠ D. PLACE THE ENTIRE PRIMARY CLAY LINER AND GEOMEMBRANE OF THE CELL AND TIE INTO THE PRIMARY CLAY LINER AND GEOMEMBRANE OF THE ADJACENT TRANSITION AREA.
   E. MONITOR SECONDARY VOLUMES FOR A PERIOD OF TWO (2) WEEKS. THE SECONDARY LEACHATE FLOW VOLUMES MUST BE BELOW THE RESPONSE RATE FOR TWO (2) CONSECUTIVE WEEKS. PRIOR TO THE LOWER FLAPS REMOVAL.
   F. UPON NYSDEC ACCEPTANCE OF THE SECONDARY MONITORING DATA AND THE CERTIFYING ENGINEER'S INTERIM CERTIFICATION THROUGH PRIMARY GEOMEMBRANE, REMOVE THE ENTIRE LOWER FLAP. EXTRUSION WELD FROM LOWER FLAP TO PRIMARY GEOMEMBRANE REMAINS INTACT.
   ⚠ G. COMPLETE THE PLACEMENT OF THE PRIMARY DRAINAGE STONE, SEPARATOR GEOTEXTILE AND OPERATION STONE IN THE CELL AND THE ADJACENT TRANSITION AREA.
6. ALL GEOMEMBRANE DEPLOYMENT WELDING AND TESTING WILL BE PERFORMED IN ACCORDANCE WITH THE PERMIT SPECIFICATIONS AND THE QA/QC MANUAL IN ATTACHMENT M AND N OF THE PERMIT.
⚠ 7. ONLY LOW GROUND PRESSURE EQUIPMENT SHALL BE USED TO CONSTRUCT THE TEMPORARY BERM.
8. SACRIFICIAL GEOTEXTILE ABOVE AND BELOW THE SLOPE SHALL BE TREVIRA 1153 OR APPROVED ALTERNATE.
⚠ 9. THE HDPE FLAP SLOPE MAY BE VARIED TO A MAXIMUM 2H:1V.
10. TEMPORARY HDPE FLAPS MAY BE SMOOTH 80 MIL HDPE OR TEXTURED 80 MIL HDPE.

CADD PRODUCED DRAWING

STATE OF NEW YORK — CHARLES P. BALLOU — 59688-1 — LICENSED PROFESSIONAL ENGINEER

NOV 18 1997

RUST ENVIRONMENT & INFRASTRUCTURE

SIGNATURE

DATE

REV.	DATE	DESCRIPTION	DRN BY	APP BY
⚠	10-97	MODIFY NOTE 3 DETAIL 1	FAS	CPB
⚠	6-97	MODIFIED FOR CELLS 9 THROUGH 14	FAS	CPB
⚠	4-97	REVISED DIMENSIONS	FAS	CPB

DATE: NOVEMBER 1996 | PROJECT NO. 34282.100 | SCALE: AS SHOWN

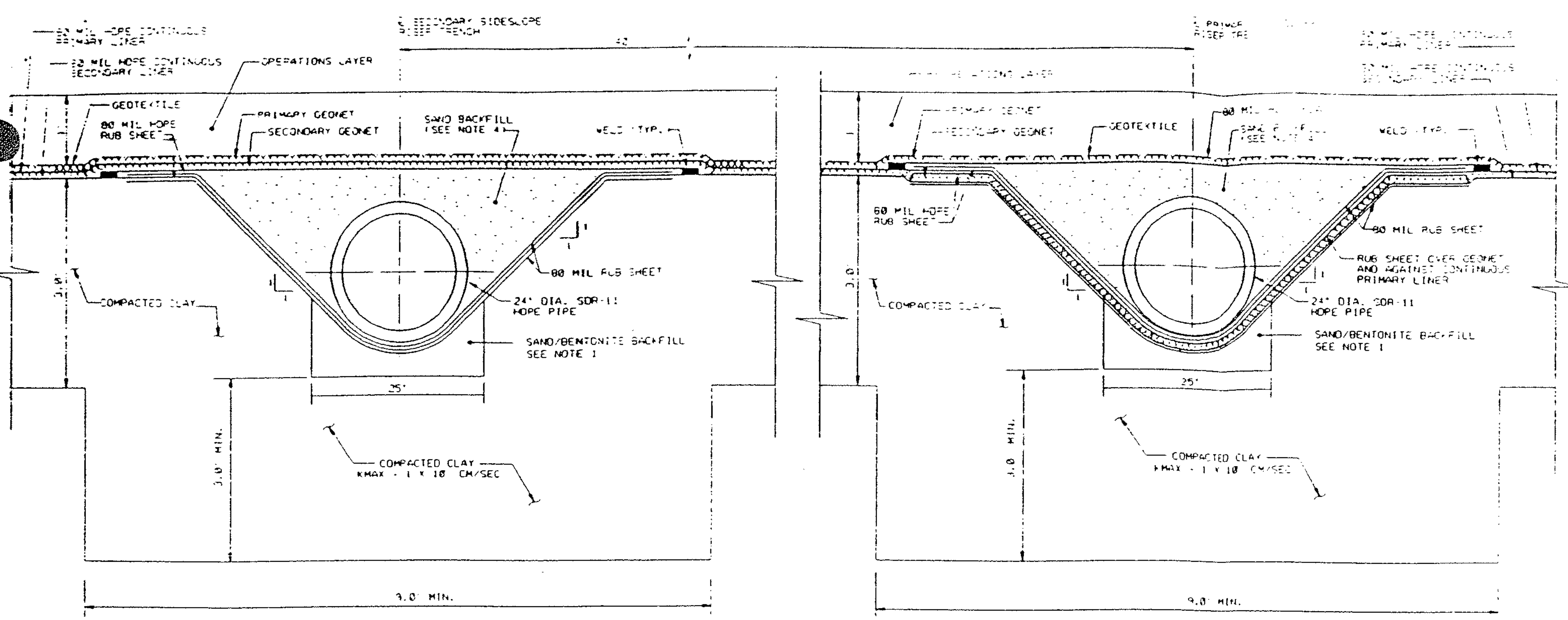
DES BY	CPB	
DRN BY	FAS	
CHK BY	CPB	
REV BY	AWE	
APP BY	CPB	

PROJECT: RESIDUALS MANAGEMENT UNIT 1

SHEET TITLE: CELL SEPARATION BERM DETAILS FOR CELLS 7 THROUGH 14

CWM Chemical Services, Inc. Model City Facility

DRAWING NO. 19C



NOTES:

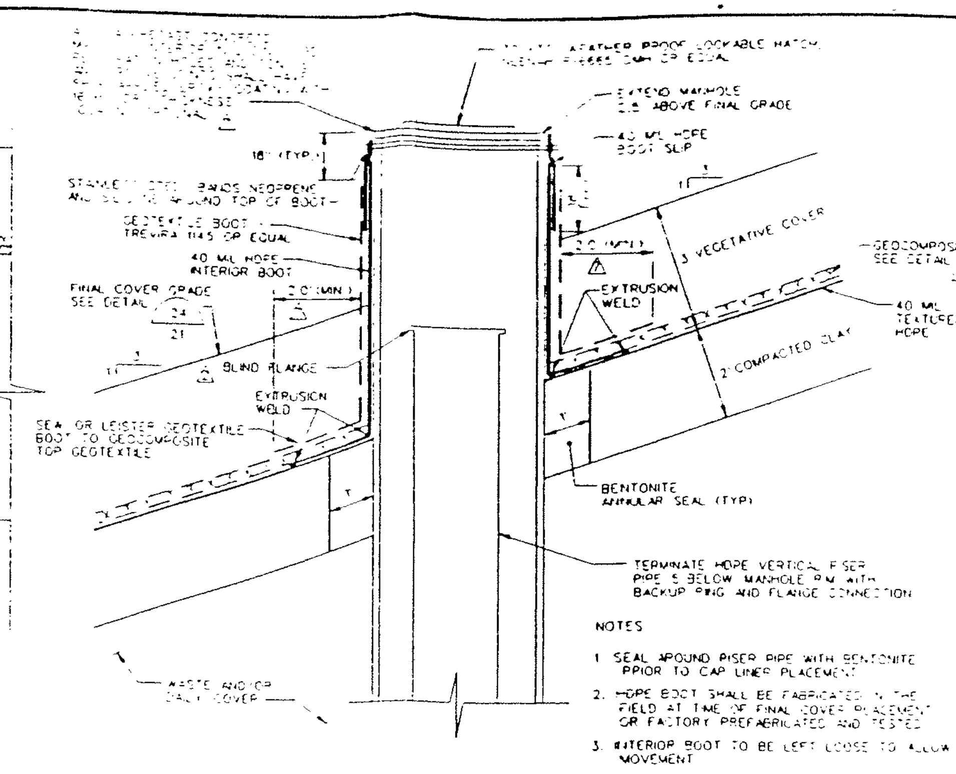
1. BACKFILL TRENCH IRREGULARITIES TO APPROXIMATE SHAPE OF PIPE WITH SAND BENTONITE MIX. SAND/BENTONITE BACKFILL SHALL CONTAIN 5% BY WEIGHT POWDERED BENTONITE.
2. PIPES SHALL BE INSTALLED FLUSH WITH ADJACENT TOP OF TRENCH.
3. SIDESLOPE RISER TRENCHES TO BE EXCAVATED WITH MECHANICAL EXCAVATING EQUIPMENT.
4. SAND BACKFILL SHALL BE IN ACCORDANCE WITH THE FOLLOWING GRADATION AND HAND TAMPED AROUND PIPE. SAND TO BE SEPARATED FROM SUMP GRAVEL WITH TREVIRA 1155 GEOTEXTILE.

SCREEN SIZE	% PASSING
3/8"	100
NO. 4	90-100
NO. 16	45-80
NO. 50	10-30
NO. 200	2-10

SEE DRAWING NO. 18A FOR PRIMARY AND SECONDARY SIDESLOPE RISER TRENCH DETAIL FOR CELLS 5, 6 AND 7.

PRIMARY AND SECONDARY SIDESLOPE RISER TRENCH DETAIL 12

NTS

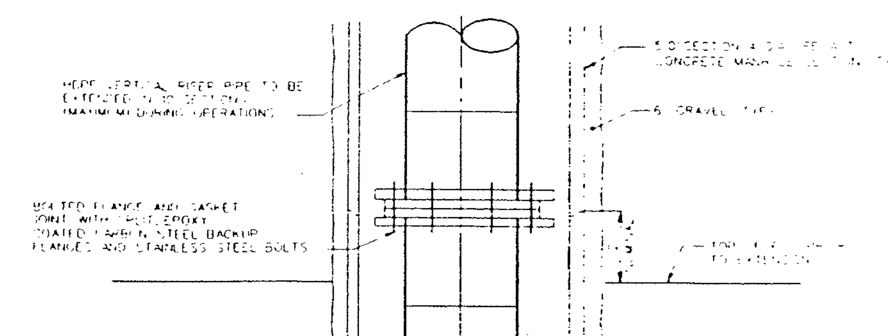


NOTES

1. SEAL AROUND RISER PIPE WITH BENTONITE PRIOR TO CAP LINER PLACEMENT.
2. HDPE BOOT SHALL BE FABRICATED IN THE FIELD AT TIME OF FINAL COVER PLACEMENT OR FACTORY PREFABRICATED AND TESTED.
3. INTERIOR BOOT TO BE LEFT LOOSE TO ALLOW MOVEMENT.

FINAL CAP VERTICAL RISER PENETRATION 15

NTS

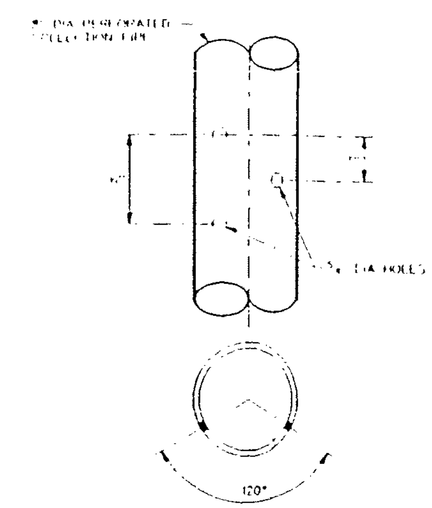


NOTES

1. TOP OF HDPE VERTICAL RISER PIPE WILL BE COVERED ALL TIMES (EXCEPT WHEN MONITORING OR PUMPING).
2. CONCRETE MANHOLE SECTIONS TO BE EXTENDED DURING OPERATIONS. TEMPORARY PROTECTIVE COVER SHALL BE IN PLACE AT ALL TIMES (EXCEPT WHEN MONITORING OR PUMPING).
3. REINFORCED CONCRETE MANHOLE SECTIONS TO BE EXTENDED FOR PROTECTION OF RISER PIPE DURING OPERATIONS. EXTEND NO MORE THAN ... ABOVE EXISTING FILL.

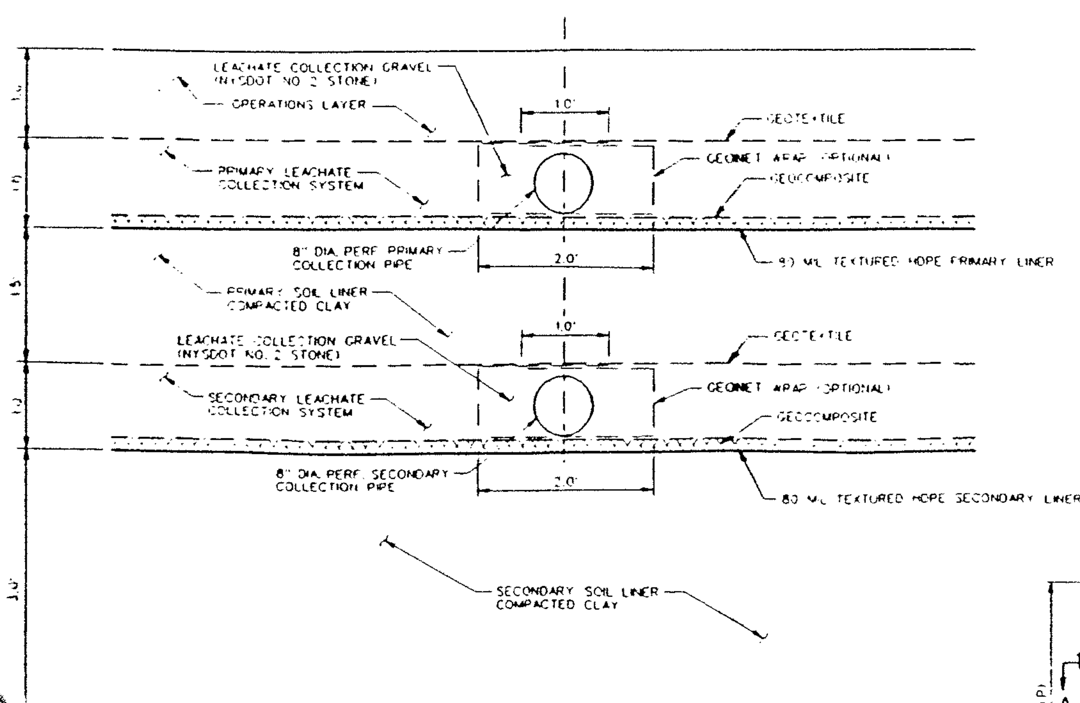
VERTICAL RISER PROTECTION AND EXTENSION DETAIL 16

NTS



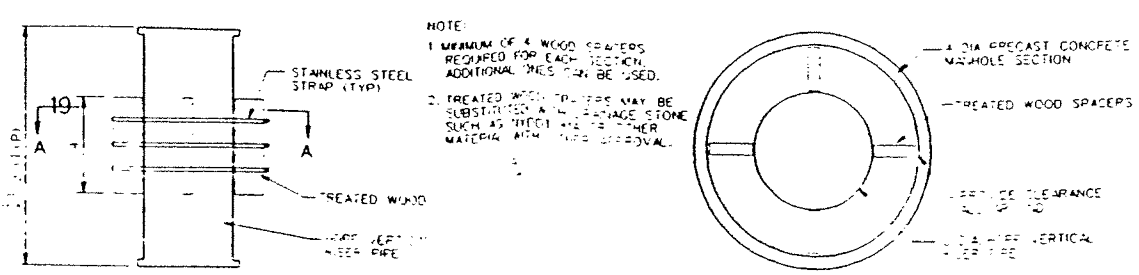
LEACHATE COLLECTION PIPING PERFORATION 19

NTS



PRIMARY LEACHATE COLLECTION PIPE WITH SECONDARY LEACHATE COLLECTION PIPE CELLS 7 THROUGH 14 18

NTS



NOTE:

1. MINIMUM OF 4 WOOD SPACERS REQUIRED FOR EACH SECTION. ADDITIONAL ONES CAN BE USED.
2. TREATED WOOD SPACERS MAY BE SUBSTITUTED WITH LEAKAGE STONE SUCH AS ... OTHER MATERIAL WITH ... APPROVAL.

VERTICAL RISER SPACER 17

NTS

STATE OF NEW YORK — CHARLES P. BALLOD — 59688-1 — LICENSED PROFESSIONAL ENGINEER

APR 13 1998

RUST ENVIRONMENT & INFRASTRUCTURE

SIGNATURE

DATE

REV	DATE	DESCRIPTION	DR BY	APP BY
7	4-98	ADDED GEOTEXTILE BOOT ON RISER PENETRATION	FAS	CPB
6	6-97	MODIFIED FOR CELLS 9 THROUGH 14	FAS	CPB
5	11-96	ADD COLLECTION PIPES CELLS 7 AND 8	FAS	CPB
4	11-95	ADD NOTES	FAS	CPB
3	1-95	DETAIL 12 AND DETAIL 17 REVISED	JWH	GJH
2	7-93	DELETED DETAILS 13 AND 14 DUE TO TEE BASE	MLJ	MGR
1	6-92	NOTICE OF DEFICIENCY RESPONSES	FLD	GRM

DES BY	BRJ/TJP
DRN BY	FLD
CHK BY	MGR
ERV BY	TJB
GRV BY	CFF
APP BY	GRM

PROJECT NO. [illegible] DATE FEBRUARY 199[illegible]

PROJECT: RESIDUALS MANAGEMENT UNIT 1

DRAWING TITLE:

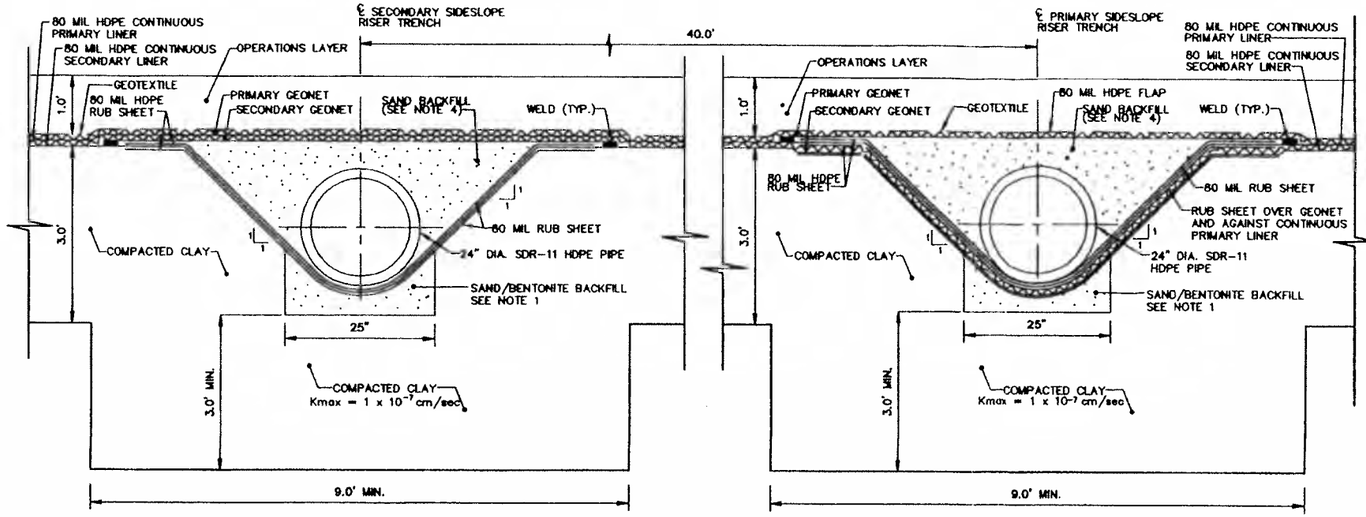
RISER DETAILS

CWM CHEMICAL SERVICES, INC. MODEL CITY, NIAGARA COUNTY, NEW YORK

FILE NO. A-55050

DRAWING NO. 20

NOT FOR CONSTRUCTION



NOTES:

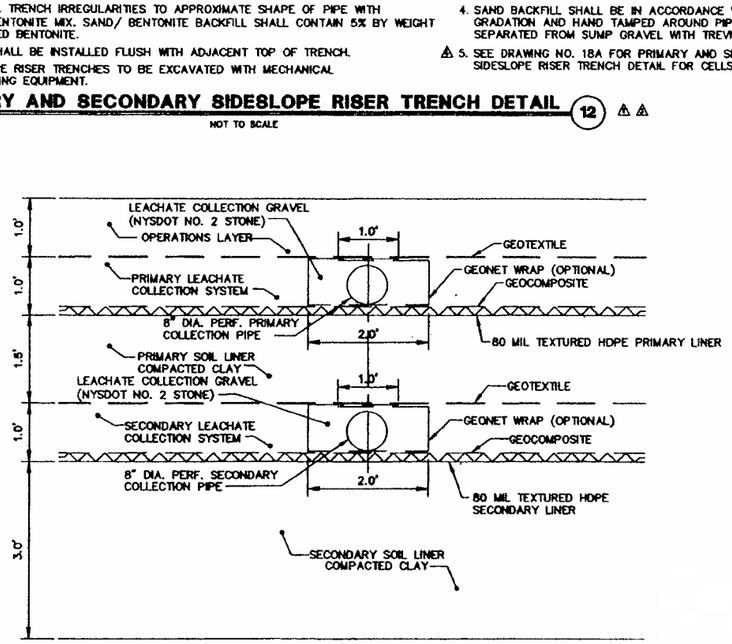
1. BACKFILL TRENCH IRREGULARITIES TO APPROXIMATE SHAPE OF PIPE WITH SAND/BENTONITE MIX. SAND/ BENTONITE BACKFILL SHALL CONTAIN 5% BY WEIGHT POWDERED BENTONITE.
2. PIPES SHALL BE INSTALLED FLUSH WITH ADJACENT TOP OF TRENCH.
3. SIDESLOPE RISER TRENCHES TO BE EXCAVATED WITH MECHANICAL EXCAVATING EQUIPMENT.
4. SAND BACKFILL SHALL BE IN ACCORDANCE WITH THE FOLLOWING GRADATION AND HAND TAMPED AROUND PIPE. SAND TO BE SEPARATED FROM SUMP GRAVEL WITH TREVIRA 1155 GEOTEXTILE.

SCREEN SIZE	% PASSING
3/8"	100
No. 4	90–100
No. 16	45–80
No. 50	10–30
No. 100	2–10

⚠ 5. SEE DRAWING NO. 18A FOR PRIMARY AND SECONDARY SIDESLOPE RISER TRENCH DETAIL FOR CELLS 5, 6 AND 7.

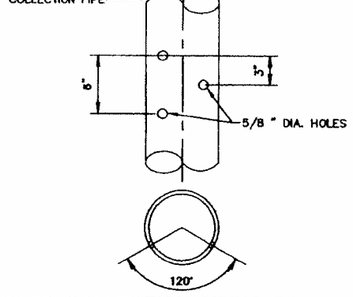
PRIMARY AND SECONDARY SIDESLOPE RISER TRENCH DETAIL (12) ⚠⚠

NOT TO SCALE



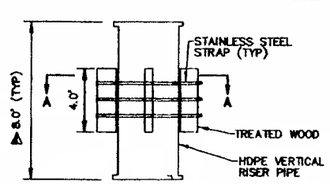
PRIMARY LEACHATE COLLECTION PIPE WITH SECONDARY LEACHATE COLLECTION PIPE CELLS 7 THROUGH 14 (18) ⚠⚠

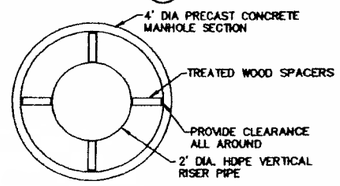
NOT TO SCALE



LEACHATE COLLECTION PIPING PERFORATION (19)

NOT TO SCALE





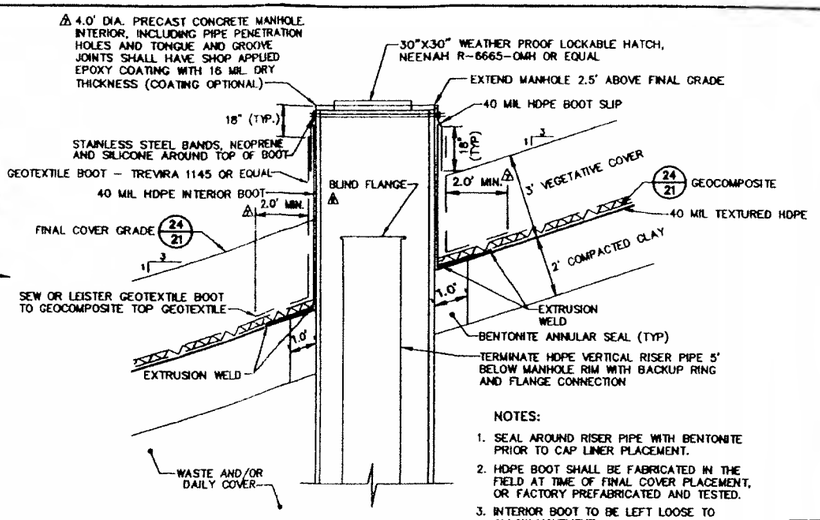
SECTION A–A

NOTES:

1. MINIMUM OF 4 WOOD SPACERS REQUIRED FOR EACH SECTION, ADDITIONAL ONES CAN BE USED.
2. TREATED WOOD SPACERS MAY BE SUBSTITUTED WITH DRAINAGE STONE SUCH ⚠ OR OTHER MATERIAL WITH OTHER APPROVAL.

⚠ VERTICAL RISER SPACER (17)

NOT TO SCALE

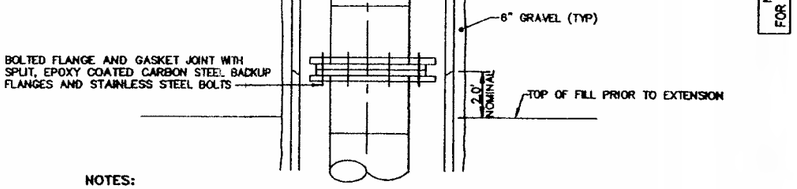


NOTES:

1. SEAL AROUND RISER PIPE WITH BENTONITE PRIOR TO CAP LINER PLACEMENT.
2. HDPE BOOT SHALL BE FABRICATED IN THE FIELD AT TIME OF FINAL COVER PLACEMENT, OR FACTORY PREFABRICATED AND TESTED.
3. INTERIOR BOOT TO BE LEFT LOOSE TO ALLOW MOVEMENT.
⚠ 4. DETAIL 15 APPLIES TO FINAL COVER WITH COMPACTED CLAY. REFER TO DRAWING 21D FOR SIMILAR DETAIL IN GCL FINAL COVER AREAS.

⚠ FINAL CAP VERTICAL RISER PENETRATION (15)

NOT TO SCALE



NOTES:

1. TOP OF HDPE VERTICAL RISER PIPE WILL BE COVERED ALL TIMES (EXCEPT WHEN MONITORING OR PUMPING).
2. CONCRETE MANHOLE SECTIONS TO BE EXTENDED DURING OPERATIONS. TEMPORARY PROTECTIVE COVER SHALL BE IN PLACE AT ALL TIMES (EXCEPT WHEN MONITORING OR PUMPING).
3. REINFORCED CONCRETE MANHOLE SECTIONS TO BE EXTENDED FOR PROTECTION OF RISER PIPE DURING OPERATION. EXTEND NO MORE THAN 12' ABOVE EXISTING FILL.

VERTICAL RISER PROTECTION AND EXTENSION DETAIL (16)

NOT TO SCALE

⚠ GENERAL NOTES:

1. THE DETAILS ON THIS DRAWING ARE BASED ON THE DETAILS SHOWN ON DRAWING NUMBER 20 ENTITLED "RISER DETAILS" PREPARED BY EARTHTECH (FILE NUMBER A-55280 DATED FEBRUARY 1991).
2. PRIOR REVISIONS TO DRAWING NUMBER 20 BY EARTHTECH INCLUDE THE FOLLOWING:
   1. NOTICE OF DEFICIENCY RESPONSES (DATE 6/92, DR BY FLD, APP BY GRM)
   2. DELETED DETAILS 13 AND 14 DUE TO TEE BASE (DATE 7/93, DR BY MLJ, APP BY MGR)
   3. DETAIL 12 AND DETAIL 17 REVISED (DATE 1/95, DR BY JMH, APP BY OJK)
   4. ADD NOTES (DATE 11/95, DR BY FAS, APP BY CPB)
   5. ADD COLLECTION PIPES CELLS 7 AND 8 (DATE 11/96, DR BY FAS, APP BY CPB)
   6. MODIFIED FOR CELLS 9 THROUGH 14 (DATE 6/97, DR BY FAS, APP BY CPB)
   7. ADDED GEOTEXTILE BOOT ON RISER PENETRATION (DATE 4/98, DR BY FAS, APP BY CPB)
3. BBL SEAL AND SIGNATURE PERTAIN ONLY TO BBL IMPLEMENTED REVISIONS AS NOTED IN THE REVISION BLOCK.

DRAWING REVISED BY BLASLAND, BOUCK & LEE, INC. THROUGH ITS PROFESSIONAL ENGINEER. WORK OF EARTHTECH NOT INDEPENDENTLY REVIEWED.

NOT FOR CONSTRUCTION FOR REGULATORY REVIEW ONLY

X: 05042006.DWG
L: ON=*; OFF=REF*
P: PAGESET/PLT-CDL
12/18/03 ROC-86-SLM SYR-KMD ROC-SLM
05042006/05042d04.DWG

Graphic Scale: AS NOTED

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED IN THE TITLE BLOCK. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.

No.	Date	Revisions	Init
⚠	12/03	ADDED NOTE 4 ON DETAIL 15, ADDED GENERAL NOTES SEE NOTE 2 FOR PRIOR REVISIONS	

Project Mgr. TJF
Designed by BMS/CAA
Drawn by SLM
Checked by PHB
Prof. Eng. JOSEPH MOLINA
PE License NY 072644

STATE OF NEW YORK JOSEPH MOLINA III 072644 LICENSED PROFESSIONAL ENGINEER

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

CWM CHEMICAL SERVICES, LLC • MODEL CITY FACILITY
RESIDUALS MANAGEMENT UNIT 1

RISER DETAILS

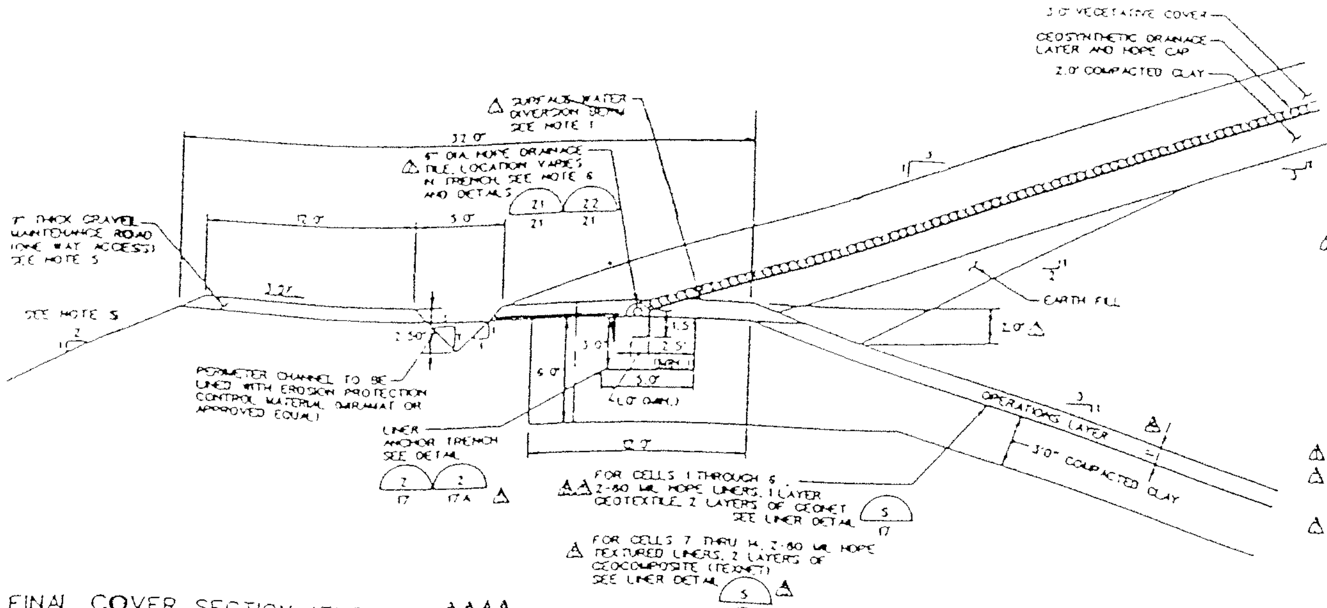
GENERAL

Modified: 07/09

File Number 050.42
Date DECEMBER 2003

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

20-a



NOTES:

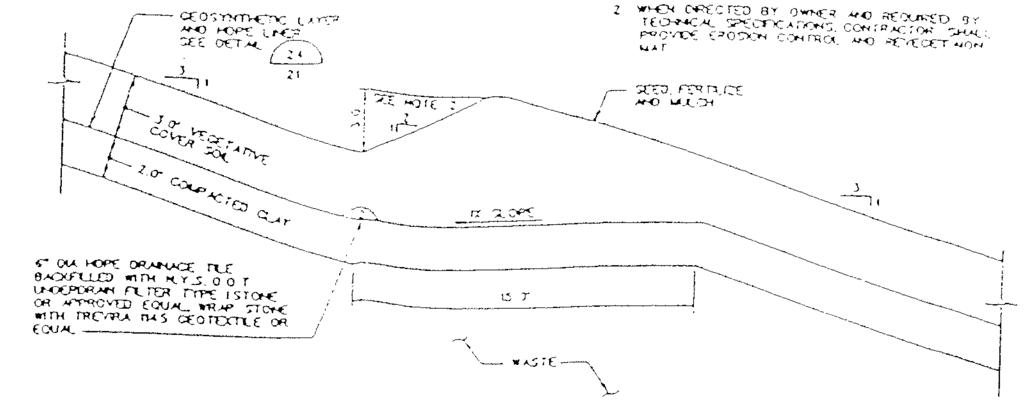
1. SURFACE WATER DIVERSION BERM TO BE CONSTRUCTED OF COMPACTED CLAY SOIL. BERM TO BE CONSTRUCTED A MINIMUM OF 1.0' HIGH. BERM IS TO BE BUILT AFTER COMPLETION OF LINER INSTALLATION. THIS BERM IS TO BE REMOVED DURING CONSTRUCTION OF FINAL CLAY COVER FOR CELLS 1 THROUGH 6 AND REMAIN IN PLACE FOR CELLS 7 THROUGH 14.
2. FINAL COVER ANCHOR TRENCH FOR HDPE CAP IS TO BE EXCAVATED AFTER PLACEMENT OF 2 FT FINAL COMPACTED CLAY COVER.
3. ANCHOR TRENCH BACKFILL COVER IS TO BE CONSTRUCTED OF COMPACTED SOIL.
4. GRAVEL BACKFILL IS N.Y.S. D.O.T. NO. 2 STONE OR APPROVED EQUAL.
5. WHEN DIRECTED BY OWNER, AND REQUIRED BY TECHNICAL SPECIFICATIONS OR FOR SLOPES GREATER THAN 3:1 CONTRACTOR SHALL PROVIDE EROSION CONTROL AND REVEGETATION MAT.
6. PERIMETER DRAINAGE TILE TO BE INSTALLED AT 0.5% ALONG TOE OF SLOPE OF CAP DRAINAGE LAYER AND DISCHARGE TO THE PERIMETER CHANNEL EVERY 300.0'. 6" DIA HDPE DRAINAGE TILE BACKFILLED WITH N.Y.S.D.O.T. UNDERDRAIN FILTER TYPE I STONE OR APPROVED EQUAL. WRAP STONE WITH TREVIRA 1145 GEOTEXTILE OR EQUAL.

FINAL COVER SECTION (TYPICAL) 18

SCALE: 1"=5.0'

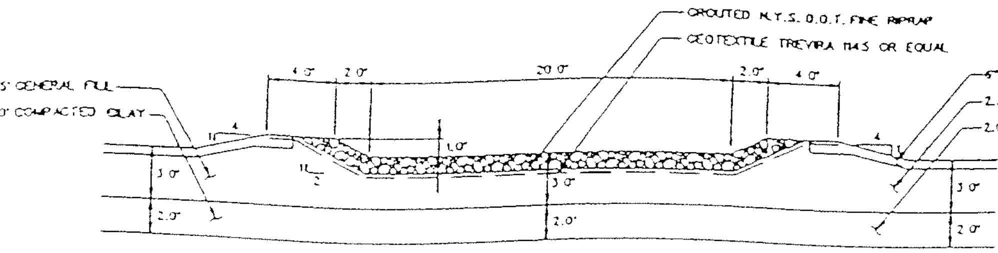
NOTES:

1. SEE DRAWING NO. 12 FOR DITCH ELEVATIONS.
2. WHEN DIRECTED BY OWNER AND REQUIRED BY TECHNICAL SPECIFICATIONS, CONTRACTOR SHALL PROVIDE EROSION CONTROL AND REVEGETATION MAT.



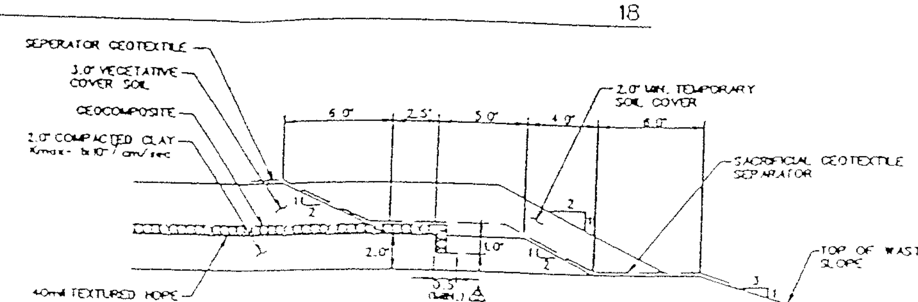
SURFACE WATER DIVERSION BERM 19

NTS



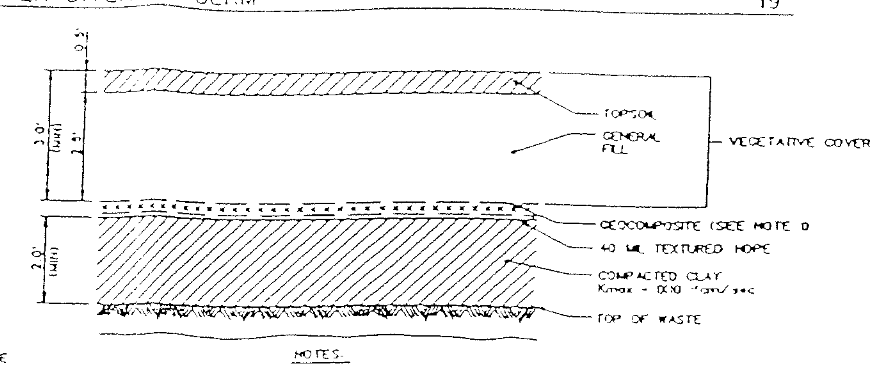
FINAL COVER SURFACE WATER DOWNFLUME 20

NTS



TEMPORARY FINAL CAP INTERCONNECTION DETAIL 25

SCALE: 1"=5.0'

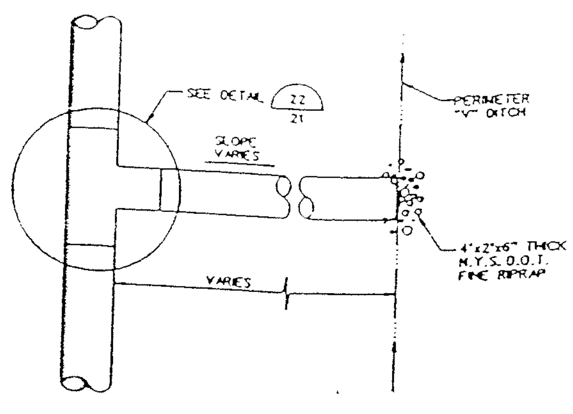


NOTES:

1. GEOCOMPOSITE SHALL BE GEOTEXTILE HEAT BONDED TO BOTH SIDES OF GEONET, OR EQUAL.

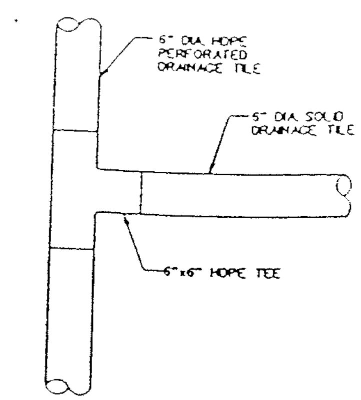
FINAL COVER 24

NTS



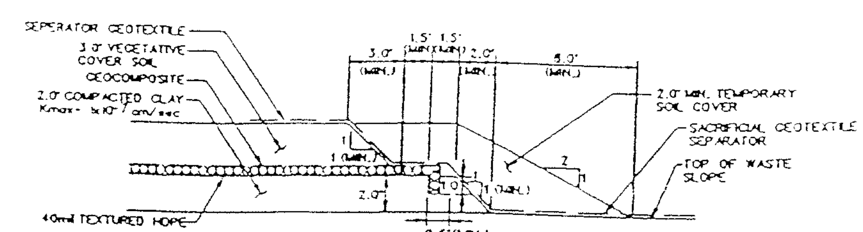
DISCHARGE OF DRAINAGE TILE 21

NTS



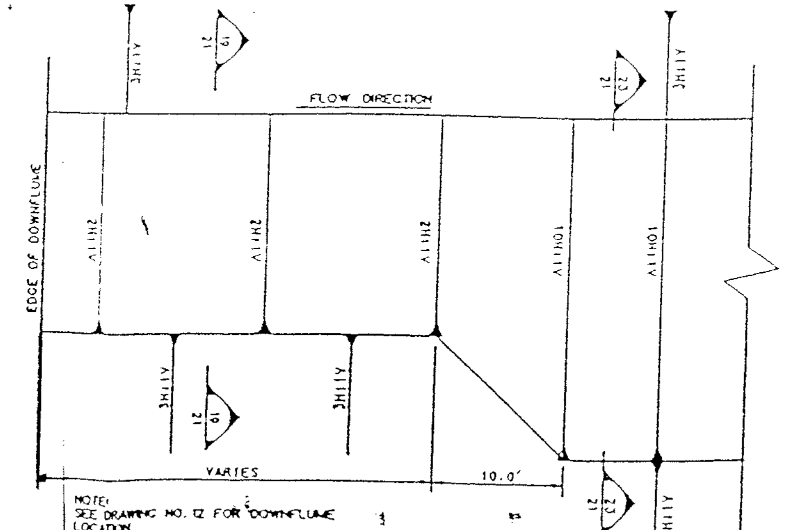
DRAINAGE TILE CONNECTION 22

NTS



TEMPORARY FINAL CAP INTERCONNECTION DETAIL (OPTIONAL) 26

SCALE: 1"=5.0'



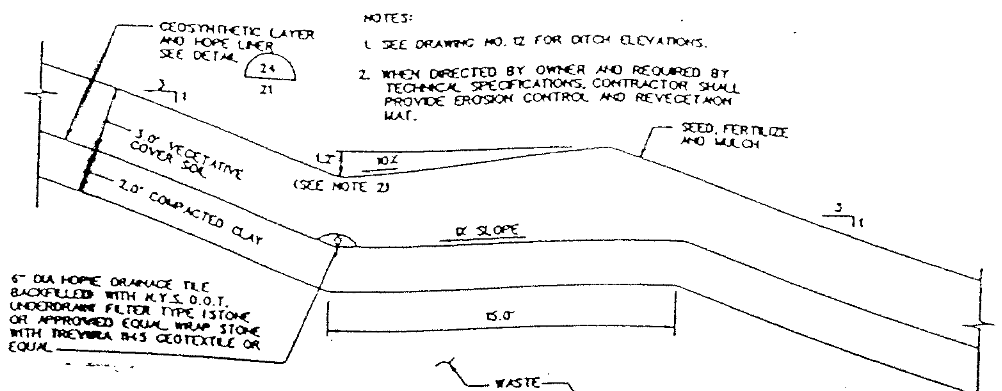
NOTE:
SEE DRAWING NO. 12 FOR DOWNFLUME LOCATION.

TRANSITION ZONE FOR DOWNFLUME APPROACH 27

NTS

NOTES:

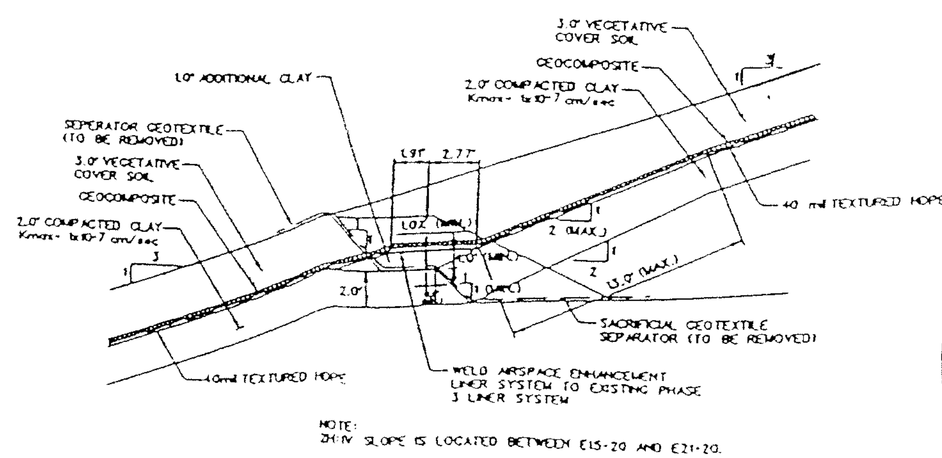
1. SEE DRAWING NO. 12 FOR DITCH ELEVATIONS.
2. WHEN DIRECTED BY OWNER AND REQUIRED BY TECHNICAL SPECIFICATIONS, CONTRACTOR SHALL PROVIDE EROSION CONTROL AND REVEGETATION MAT.



DETAIL 27, WMA

SURFACE WATER DIVERSION BERM 23

NTS



NOTE:
2H:1V SLOPE IS LOCATED BETWEEN E15-20 AND E21-20.

FINAL CAP INTERCONNECTION DETAIL AT UPPER LIMIT OF PHASE III CAP 28

SCALE: 1"=5.0'

STATE OF NEW YORK · CHARLES ... · LICENSED PROFESSIONAL ENGINEER · 59688

AUG 15 2001

REV	DATE	DESCRIPTION	DR BY	APP BY
	8-01	ADDED DETAIL 28	FAS	CPB
	4-98	MODIFY FOR PHASE I, II, AND III CAP AREAS	FAS	CPB
	10-97	MODIFY FOR CELLS 9 THROUGH 14	FAS	CPB
	8-97	ADDED 6" DRAINAGE TILE AND NOTES 1 AND 6	FAS	CPB
	6-97	MODIFY DETAILS 18 AND 20 AND ADD DETAIL 25	FAS	CPB
	11-96	MODIFY BASE LINER SYSTEM CELLS 7 AND 8	FAS	CPB
	4-95	CLARIFIED OPERATIONS LAYER DEPTH	TDM	OJK
	7-93	REVISED PER DETAIL 1 SHEET 17	MLJ	MCR
	11-92	NOTICE OF DEFICIENCY RESPONSES	FLD	GRM
	6-92	NOTICE OF DEFICIENCY RESPONSES	FLD	GRM

DES BY	BRJ/TJP	PROJECT NO. 17365 — DATE FEBRUARY 1991
DRN BY	FLD	PROJECT: RESIDUALS MANAGEMENT UNIT 1
CHK BY	MCR	
ERV BY	TJB	DRAWING TITLE
CRV BY	CFF	FINAL COVER DETAILS
APP BY	GRM	

CWM CHEMICAL SERVICES, INC.
MODEL CITY, NIAGARA COUNTY, NEW YORK

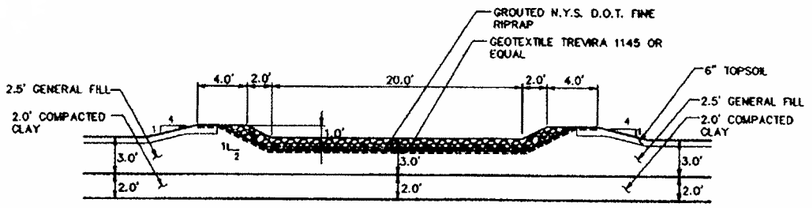
FILE NO. A-55279

DRAWING NO. 21

REFER TO: 18, 21B

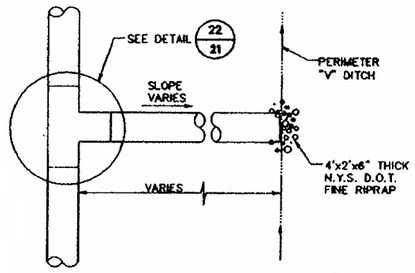
FINAL COVER SECTION (TYPICAL) 18

SCALE: 1"=50'



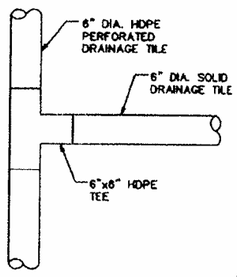
FINAL COVER SURFACE WATER DOWNFLUME 20

NOT TO SCALE



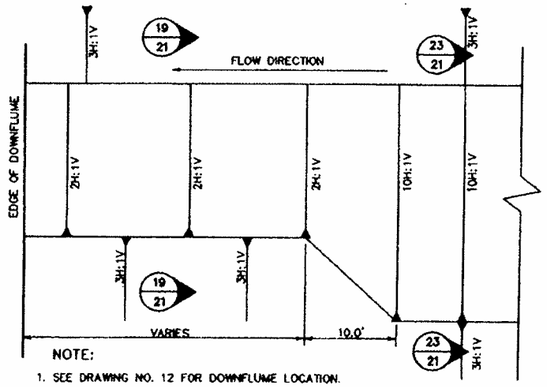
DISCHARGE OF DRAINAGE TILE 21

NOT TO SCALE



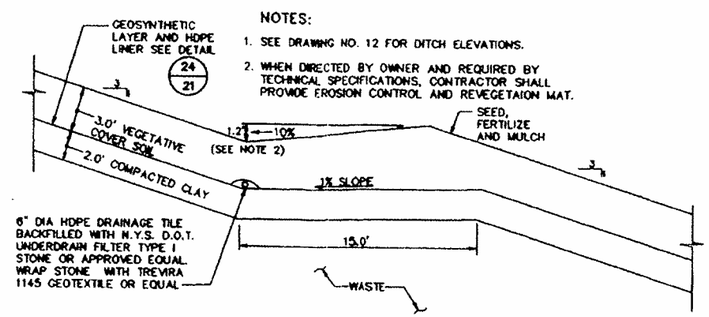
DISCHARGE TILE CONNECTION 22

NOT TO SCALE



TRANSITION ZONE DOWNFLUME APPROACH 27

NOT TO SCALE

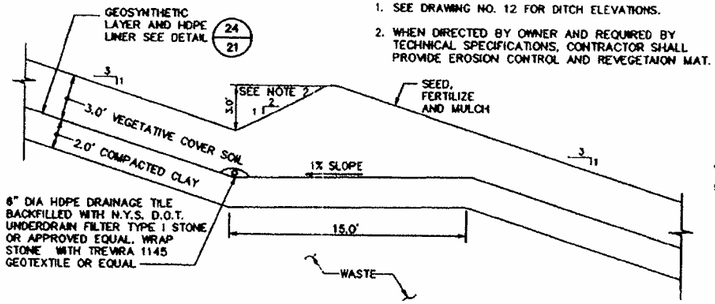


NOTES:

1. SEE DRAWING NO. 12 FOR DITCH ELEVATIONS.
2. WHEN DIRECTED BY OWNER AND REQUIRED BY TECHNICAL SPECIFICATIONS, CONTRACTOR SHALL PROVIDE EROSION CONTROL AND REVEGETAION MAT.

SURFACE WATER DIVERSION BERM 23

NOT TO SCALE

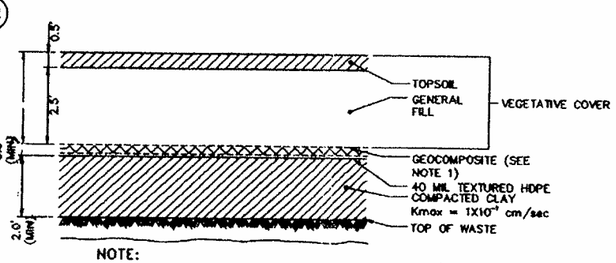


NOTES:

1. SEE DRAWING NO. 12 FOR DITCH ELEVATIONS.
2. WHEN DIRECTED BY OWNER AND REQUIRED BY TECHNICAL SPECIFICATIONS, CONTRACTOR SHALL PROVIDE EROSION CONTROL AND REVEGETAION MAT.

SURFACE WATER DIVERSION BERM 19

NOT TO SCALE

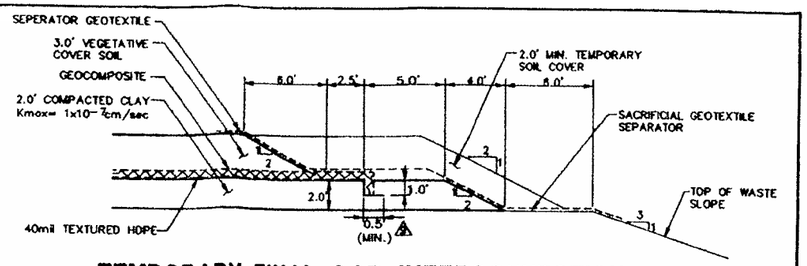


NOTE:

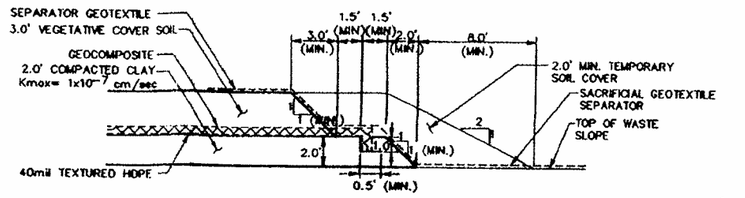
1. GEOCOMPOSITE SHALL BE GEOTEXTILE HEAT BONDED TO BOTH SIDES OF GEONET, OR EQUAL.

FINAL COVER 24

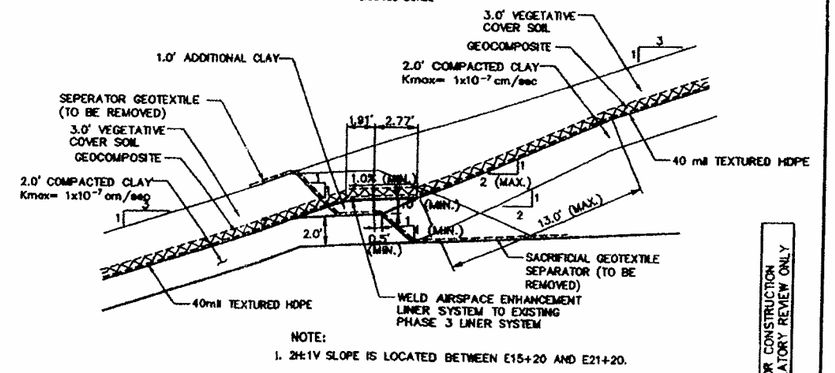
NOT TO SCALE



TEMPORARY FINAL CAP INTERCONNECTION DETAIL INTERCONNECTION DETAIL 25



TEMPORARY FINAL CAP INTERCONNECTION DETAIL (OPTIONAL) 26



NOTE:

1. 2H:1V SLOPE IS LOCATED BETWEEN E15+20 AND E21+20.

FINAL CAP INTERCONNECTION DETAIL AT UPPER LIMIT OF PHASE III CAP 28

0 5' 10'
GRAPHIC SCALE

NOT FOR CONSTRUCTION
FOR REGULATORY REVIEW ONLY

GENERAL NOTES:

1. THIS DRAWING BASED ON DRAWING NUMBER 21 ENTITLED "FINAL COVER DETAILS", PREPARED BY EARTH TECH (FILE NO. A-55279 DATED FEBRUARY 1991).
2. PRIOR REVISIONS TO DRAWING NUMBER 21 BY EARTHTECH INCLUDE THE FOLLOWING:
   1. NOTICE OF DEFICIENCY RESPONSES (DATED 6/92, DRAWN BY FLD, APPROVED BY GRM).
   2. NOTICE OF DEFICIENCY RESPONSES (DATED 11/92, DRAWN BY FLD, APPROVED BY GRM).
   3. REVISED PER DETAIL 1 SHEET 17 (DATED 7/93, DRAWN BY MLJ, APPROVED BY MGR).
   4. CLARIFIED OPERATIONS LAYER DEPTH (DATED 4/95, DRAWN BY TDM, APPROVED BY DJK).
   5. MODIFY BASE LINER SYSTEM CELLS 7 AND 8 (DATED 11/96, DRAWN BY FAS, APPROVED BY CPB).
   6. MODIFY DETAILS 18 AND 20 AND ADD DETAIL 25 (DATED 6/97, DRAWN BY FAS, APPROVED BY CPB).
   7. ADDED 6" DRAINAGE TILE AND NOTES 1 AND 6 (DATED 8/97, DRAWN BY FAS, APPROVED BY CPB).
   8. MODIFY FOR CELLS 9 THROUGH 14 (DATED 10/97, DRAWN BY FAS, APPROVED BY CPB).
   9. MODIFY FOR PHASE I, II, AND III CAP AREAS (DATED 4/98, DRAWN BY FAS, APPROVED BY CPB).
   10. ADDED DETAIL 28 (DATED 8/01, DRAWN BY FAS, APROVED BY CPB).
3. BBL SEAL AND SIGNATURE PERTAIN ONLY TO BBL IMPLEMENTED REVISIONS AS NOTED IN THE REVISION BLOCK.
4. DETAILS 19, 20, 23, 24, 25, 26, AND 28 ON THIS DRAWING APPLY TO FINAL COVER AREAS WITH COMPACTED CLAY. REFER TO DRAWING 21C FOR SIMILAR DETAILS IN GCL FINAL COVER AREAS.

DRAWING REVISED BY BLASLAND, BOUCK & LEE, INC. THROUGH ITS PROFESSIONAL ENGINEER. WORK OF EARTHTECH NOT INDEPENDENTLY REVIEWED.

X: 05042100.DWG
L: CM=*, OFF=REF*
P: PAGESET/PLT-CDL
12/18/03 ROC-BB-SLM SYR KMD ROC-SLM
05042005/05042M08.DWG

Graphic Scale: AS NOTED

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED IN THE TITLE BLOCK. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.

No.	Date	Revisions	Init
4	12/03	REVISED GENERAL NOTES AND DRAWING TITLE	
3	9/01	RELOCATED DETAIL 18 TO DRAWING 21B	
		SEE NOTE 2 FOR PRIOR REVISIONS	

Project Mgr. TJE
Designed by BMS/CAA
Drawn by SLM
Checked by PHB
Prof. Eng. JOSEPH MOLINA III
PE License NY 072644

STATE OF NEW YORK JOSEPH MOLINA III 072644 LICENSED PROFESSIONAL ENGINEER

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

CWM CHEMICAL SERVICES, LLC. • MODEL CITY FACILITY
RESIDUALS MANAGEMENT UNIT 1

FINAL COVER DETAILS (WITH COMPACTED CLAY) 4

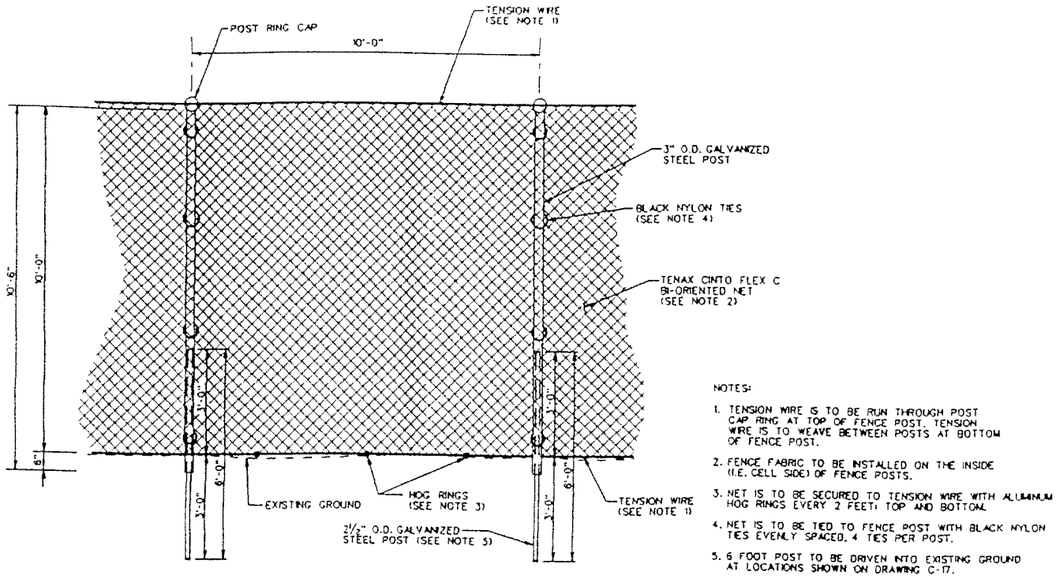
Modified: 07/09

GENERAL

File Number 050.42
Date JUNE 2003

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

21-a

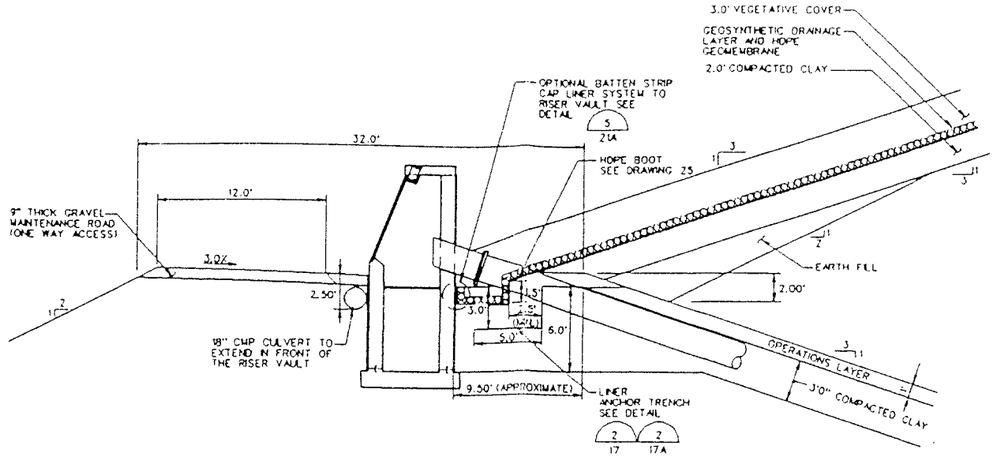


NOTES:

1. TENSION WIRE IS TO BE RUN THROUGH POST CAP RING AT TOP OF FENCE POST. TENSION WIRE IS TO WEAVE BETWEEN POSTS AT BOTTOM OF FENCE POST.
2. FENCE FABRIC TO BE INSTALLED ON THE INSIDE (I.E. CELL SIDE) OF FENCE POSTS.
3. NET IS TO BE SECURED TO TENSION WIRE WITH ALUMINUM HOG RINGS EVERY 2 FEET: TOP AND BOTTOM.
4. NET IS TO BE TIED TO FENCE POST WITH BLACK NYLON TIES EVENLY SPACED, 4 TIES PER POST.
5. 6 FOOT POST TO BE DRIVEN INTO EXISTING GROUND AT LOCATIONS SHOWN ON DRAWING C-17.

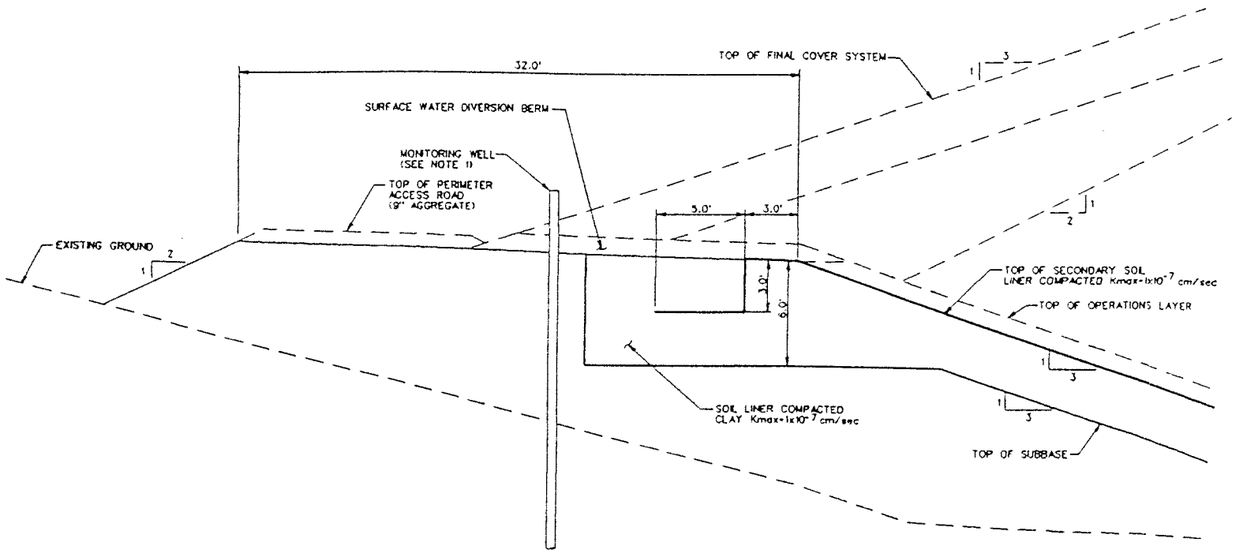
PERIMETER FENCE (ON PERIMETER BERM ONLY) 1

SCALE: 1"=2'



TYPICAL CROSS SECTION OF PERMITER BERM AND ACCESS ROAD AT LEACHATE RISER VAULT 4 ⚠

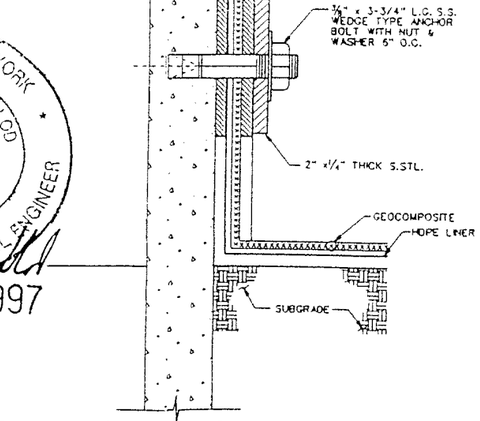
SCALE: 1"=5.0'



TYPICAL CROSS SECTION THROUGH PERIMETER BERM AT MONITORING WELLS 2

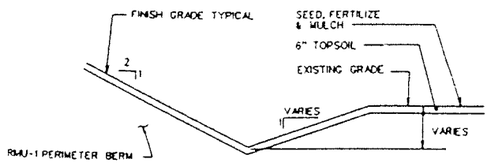
SCALE: 1"=4'

NOTE
1. RAISE MONITORING WELL AS REQUIRED.



TYPICAL BATTEN TO RISER VAULT (OPTIONAL) 5 ⚠

NTS



TYPICAL "V" DRAINAGE DITCH 3

NTS

STATE OF NEW YORK
CHARLES P. BALLOD
59688-1
LICENSED PROFESSIONAL ENGINEER
JUN 25 1997

SIGNATURE

DATE

REV.	DATE	DESCRIPTION	DRN BY	APP BY
⚠	6/97	ADDED DETAILS 4 AND 5	FAS	CPB

DATE:	APRIL 1996
DES BY	EAA
DRN BY	FAS
CHK BY	CPB
REV BY	AWE
APP BY	CPB

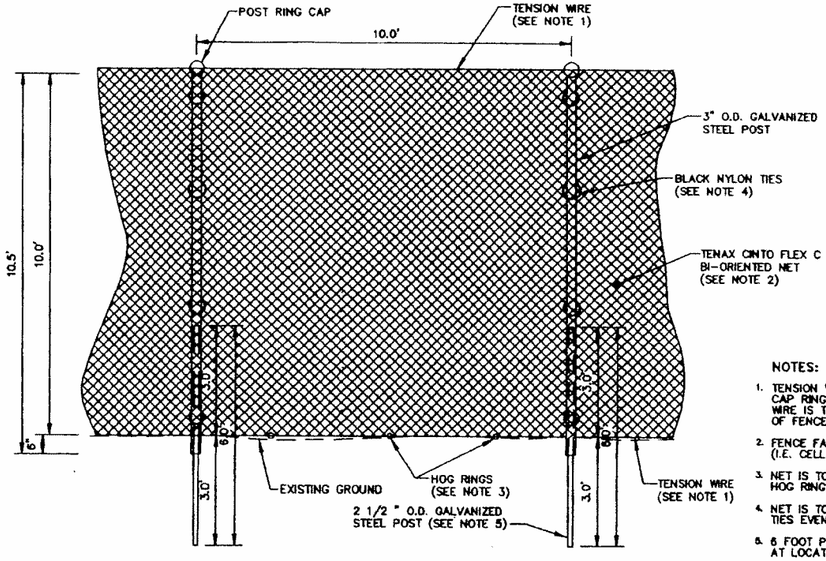
PROJECT NO. 36730.100 SCALE: AS SHOWN

PROJECT: RESIDUALS MANAGEMENT UNIT 1

SHEET TITLE: SITE DETAILS

CWM Chemical Services, Inc. Model City Facility

DRAWING NO. 21A

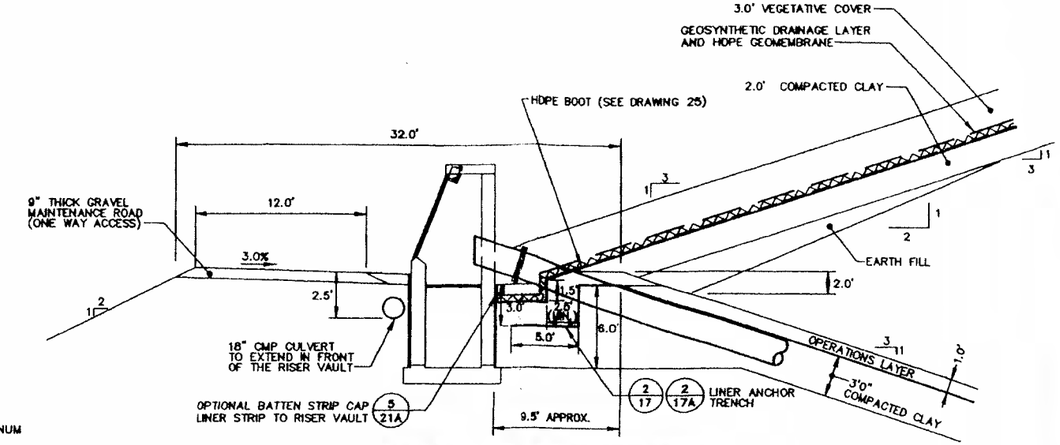


NOTES:

1. TENSION WIRE IS TO BE RUN THROUGH POST CAP RING AT TOP OF FENCE POST. TENSION WIRE IS TO WEAVE BETWEEN POSTS AT BOTTOM OF FENCE POST.
2. FENCE FABRIC TO BE INSTALLED ON THE INSIDE (I.E. CELL SIDE) OF FENCE POSTS.
3. NET IS TO BE SECURED TO TENSION WIRE WITH ALUMINUM HOG RINGS EVERY 2 FEET; TOP AND BOTTOM.
4. NET IS TO BE TIED TO FENCE POST WITH BLACK NYLON TIES EVENLY SPACED, 4 TIES PER POST.
5. 6 FOOT POST TO BE DRIVEN INTO EXISTING GROUND AT LOCATIONS SHOWN ON DRAWING C-17.

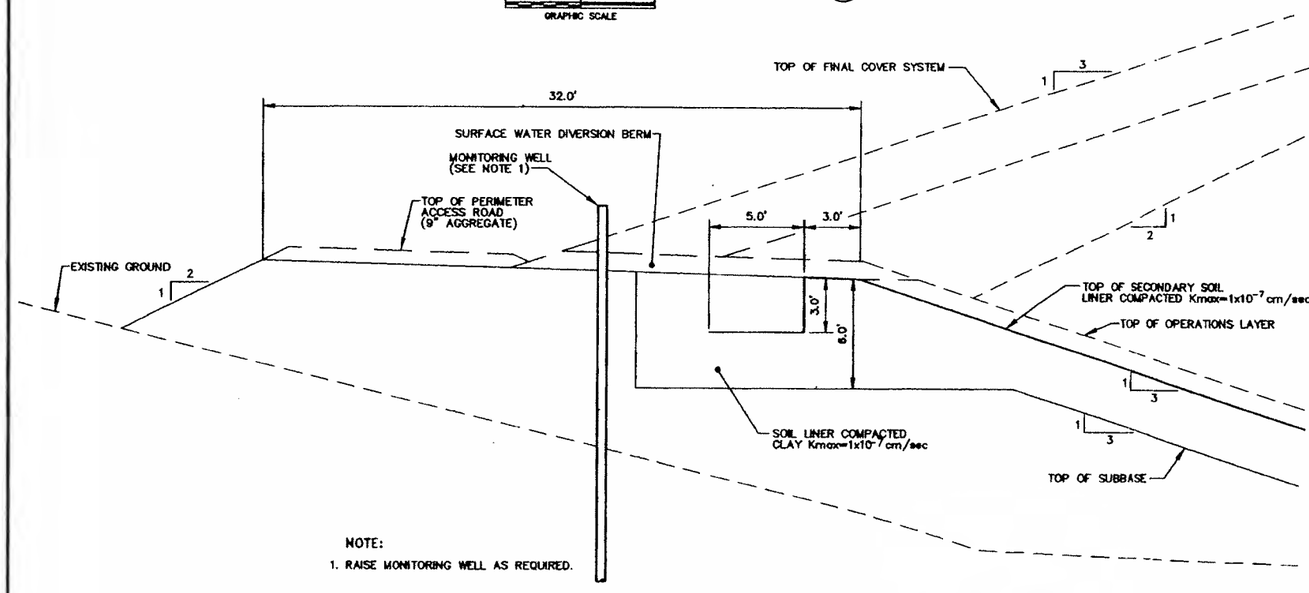
PERIMETER FENCE (ON PERIMETER BERM ONLY) (1)

GRAPHIC SCALE 0 2' 4'



TYPICAL CROSS SECTION OF PERIMETER BERM AND ACCESS ROAD AT LEACHATE RISER VAULT ⚠ (4)

GRAPHIC SCALE 0 5' 10'

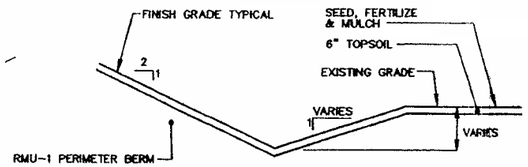


NOTE:

1. RAISE MONITORING WELL AS REQUIRED.

TYPICAL CROSS SECTION THROUGH PERIMETER BERM AT MONITORING WELLS (2)

GRAPHIC SCALE 0 4' 8'

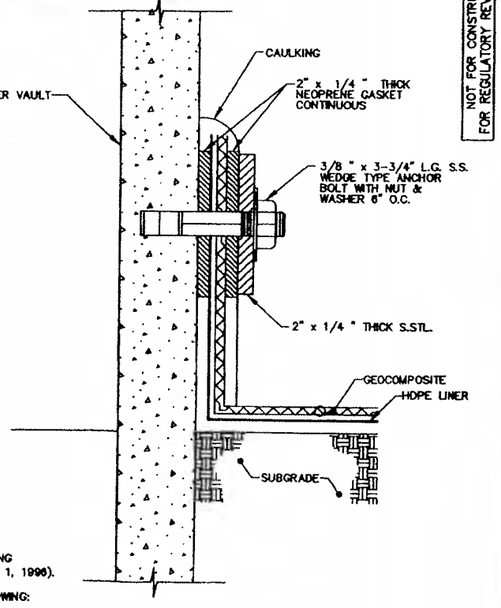


TYPICAL "V" DRAINAGE DITCH (3)

NOT TO SCALE

⚠ GENERAL NOTES:

1. THE DETAILS ON THIS DRAWING ARE BASED ON THE DETAILS SHOWN ON DRAWING NUMBER 21A ENTITLED "SITE DETAILS" PREPARED BY EARTHTECH (DATED APRIL 1, 1998).
2. PRIOR REVISIONS TO DRAWING NUMBER 21A BY EARTHTECH INCLUDE THE FOLLOWING:
   1. ADDED DETAILS 4 AND 5 (DATE 6/97, DRN BY FAS, APP BY CPB)
3. DETAILS 2 AND 4 APPLY TO FINAL COVER WITH COMPACTED CLAY. REFER TO DRAWINGS 21C AND 21D FOR SIMILAR DETAILS WITH GCL FINAL COVER.
4. BBL SEAL AND SIGNATURE PERTAIN ONLY TO BBL IMPLEMENTED REVISIONS AS NOTED IN THE REVISION BLOCK.



TYPICAL BATTEN TO RISER VAULT (OPTIONAL) ⚠ (5)

NOT TO SCALE

NOT FOR CONSTRUCTION FOR REGULATORY REVIEW ONLY

DRAWING REVISED BY BLASLAND, BOUCK & LEE, INC. THROUGH ITS PROFESSIONAL ENGINEER. WORK OF EARTHTECH NOT INDEPENDENTLY REVIEWED.

X: 05042X00.DWG
L: ON=*; OFF=*REF*
P: PAGESET/PLT-CDL
12/18/03 ROC-BS-SLM SYR XLD ROC-SLM
05042005/05042M07.DWG

Graphic Scale: AS NOTED

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED IN THE TITLE BLOCK. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.

No.	Date	Revisions	Init
⚠	12/03	ADDED GENERAL NOTES SEE NOTE 2 FOR PRIOR REVISIONS	

Project Mgr. TJF
Designed by BMS/CAA
Drawn by SLM
Checked by PHB
Prof. Eng. JOSEPH MOLINA
PE License NY 072644

STATE OF NEW YORK JOSEPH MOLINA III 072644 LICENSED PROFESSIONAL ENGINEER

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

CWM CHEMICAL SERVICES, LLC. • MODEL CITY FACILITY
RESIDUALS MANAGEMENT UNIT 1

SITE DETAILS

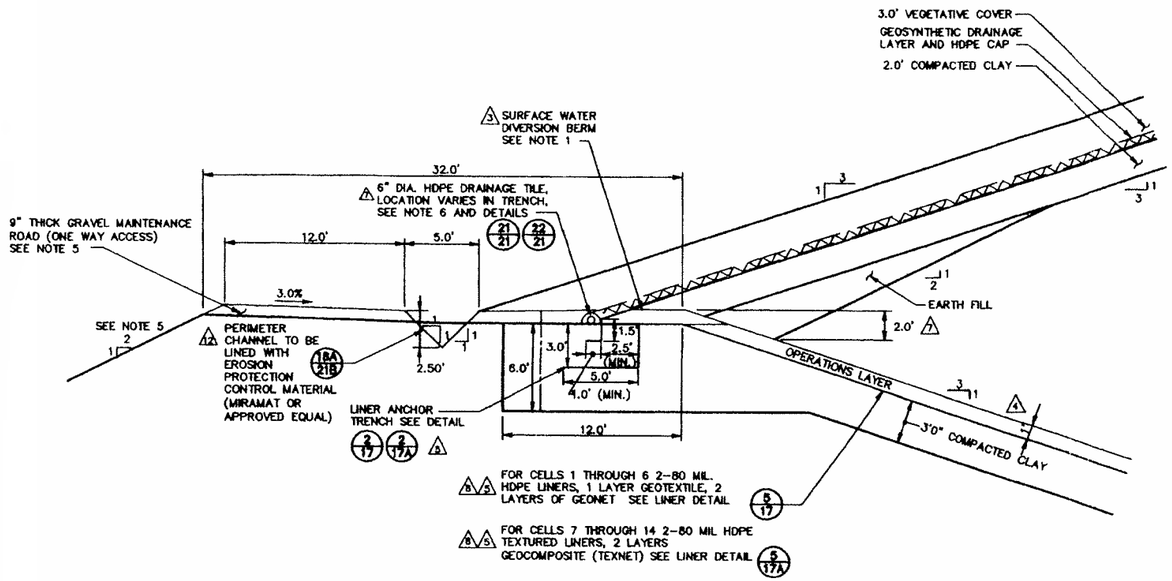
GENERAL

Modified: 07/09

File Number 050.42
Date DECEMBER 2003

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

21A-8

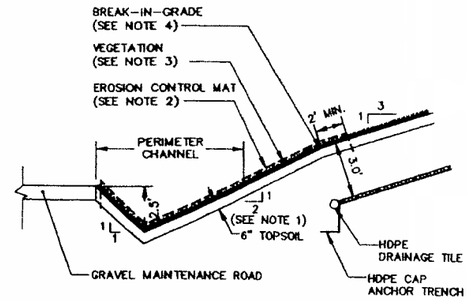


NOTES:

1. SURFACE WATER DIVERSION BERM TO BE CONSTRUCTED OF COMPACTED CLAY SOIL. BERM TO BE CONSTRUCTED A MINIMUM OF 1.0' HIGH. BERM IS TO BE BUILT AFTER COMPLETION OF LINER INSTALLATION. THIS BERM IS TO BE REMOVED DURING CONSTRUCTION OF FINAL CLAY COVER FOR CELLS 1 THROUGH 6 AND REMAIN IN PLACE FOR CELLS 7 THROUGH 14.
2. FINAL COVER ANCHOR TRENCH FOR HDPE CAP IS TO BE EXCAVATED AFTER PLACEMENT OF 2 FT FINAL COMPACTED CLAY COVER.
3. ANCHOR TRENCH BACKFILL COVER IS TO BE CONSTRUCTED OF COMPACTED SOIL.
4. GRAVEL BACKFILL IS N.Y.S. D.O.T. NO. 2 STONE OR APPROVED EQUAL.
5. WHEN DIRECTED BY OWNER, AND REQUIRED BY TECHNICAL SPECIFICATIONS OR FOR SLOPES GREATER THAN 3:1, CONTRACTOR SHALL PROVIDE EROSION CONTROL AND REVEGETATION MAT.
6. PERIMETER DRAINAGE TILE TO BE INSTALLED AT 0.5% ALONG TOE OF SLOPE OF CAP DRAINAGE LAYER AND DISCHARGE TO THE PERIMETER CHANNEL EVERY 300.0'. 6" DIA. HDPE DRAINAGE TILE BACKFILLED WITH N.Y.S.D.O.T. UNDERDRAIN FILTER TYPE I STONE OR APPROVED EQUAL. WRAP STONE WITH TREVIRA 1145 GEOTEXTILE OR EQUAL.

FINAL COVER SECTION (TYPICAL) 18

0 8' 16'
GRAPHIC SCALE



NOTES:

1. SIDESLOPE TO BE CONSTRUCTED AS NECESSARY TO ALLOW FOR FULL COVER THICKNESS ABOVE HDPE DRAINAGE TILE.
2. EROSION CONTROL MAT SHALL BE NORTH AMERICAN GREEN C350 OR APPROVED EQUAL. EROSION CONTROL MAT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. CHANNEL SIDESLOPES AND ANY OTHER AREAS DISTURBED DURING DITCH REGRADING ACTIVITIES SHALL BE SEEDED IN ACCORDANCE WITH THE RMU-1 CONSTRUCTION SPECIFICATIONS.
4. BREAK IN GRADE SHALL BE GRADUAL TO MINIMIZE POTENTIAL SOIL EROSION.
5. FOR DETAILS NOT SHOWN REFER TO DETAIL 18.

ALTERNATE PERIMETER CHANNEL 18A

0 4' 8'
GRAPHIC SCALE

NOT FOR CONSTRUCTION FOR REGULATORY REVIEW ONLY

GENERAL NOTES:

1. DESCRIPTION OF REVISIONS TO DETAIL 18 ON THIS DRAWING (FORMERLY DETAIL 18 ON DRAWING 21) ARE PROVIDED ON DRAWING 21.
2. BBL SEAL AND SIGNATURE PERTAIN ONLY TO DETAIL 18A ON THIS DRAWING.
3. PHASE I, II, AND III FINAL COVER AREAS SHALL BE CONSTRUCTED USING THE PERIMETER CHANNEL GEOMETRY DEPICTED IN DETAIL 18. AT CWM'S DISCRETION, THE ALTERNATE PERIMETER CHANNEL GEOMETRY DEPICTED IN DETAIL 18A MAY BE IMPLEMENTED FOR THESE FINAL COVER AREAS. ALL SUBSEQUENT FINAL COVER AREAS SHALL USE THE ALTERNATE PERIMETER CHANNEL GEOMETRY.
4. THE DETAILS ON THIS DRAWING APPLY TO FINAL COVER AREAS WITH COMPACTED CLAY. REFER TO DRAWING 21C FOR SIMILAR DETAILS IN GCL FINAL COVER AREA.

DRAWING REVISED BY BLASLAND, BOUCK & LEE, INC. THROUGH ITS PROFESSIONAL ENGINEER. WORK OF EARTHTECH NOT INDEPENDENTLY REVIEWED.

X: 05042X00.DWG
L: ON=*, OFF=REF*
P: PAGESET/PLT-CDL
12/18/03 ROC-BS-SLM SYR-KMD ROC-SLM
05042006/06042M10.DWG

Graphic Scale: AS NOTED

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No.	Date	Revisions	Init
12	12/03	REVISED GENERAL NOTES AND DRAWING TITLE SEE NOTE 1 FOR PRIOR REVISIONS	

Project Mgr: TJF
Designed by BMS/CAA
Drawn by SLM
Checked by PHB
Prof. Eng. JOSEPH MOLINA
PE License NY 072644

STATE OF NEW YORK JOSEPH MOLINA III 072644 PROFESSIONAL ENGINEER

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

CWM CHEMICAL SERVICES, LLC. • MODEL CITY FACILITY
RESIDUALS MANAGEMENT UNIT 1

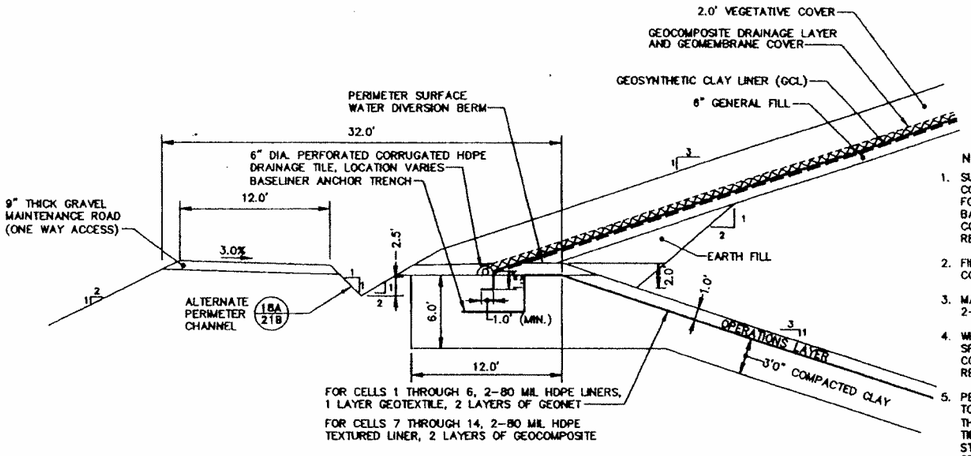
SITE DETAILS (WITH COMPACTED CLAY) 12

GENERAL Modified: 07/09

File Number 050.42
Date SEPTEMBER 2001

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

21B

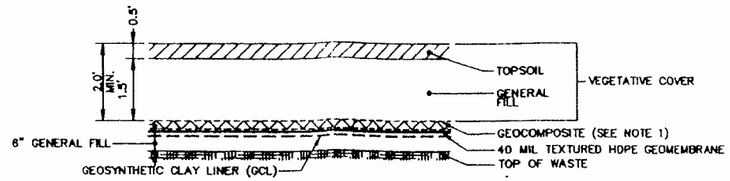


FINAL COVER SECTION (WITH GCL) 18C

NOT TO SCALE

NOTES:

1. SURFACE WATER DIVERSION BERM TO BE CONSTRUCTED OF COMPACTED CLAYEY SOIL TO A MINIMUM THICKNESS OF ONE FOOT AND IS TO BE CONSTRUCTED AFTER COMPLETION OF BASELINER SYSTEM. THIS BERM IS TO BE REMOVED DURING CONSTRUCTION OF FINAL CLAY COVER FOR CELLS 1-6 AND REMAIN IN PLACE FOR CELLS 7-14.
2. FINAL COVER PERMANENT ANCHOR TRENCH BACKFILL TO CONSIST OF COMPACTED CLAYEY SOIL.
3. MAINTENANCE ROAD GRAVEL MATERIAL TO BE N.Y.S.D.O.T. 2-INCH RUN OF CRUSHER OR APPROVED EQUAL.
4. WHEN DIRECTED BY OWNER, AND REQUIRED BY TECHNICAL SPECIFICATIONS OR FOR SLOPES GREATER THAN 3:1, CONTRACTOR SHALL PROVIDE EROSION CONTROL AND REVEGETATION MAT.
5. PERIMETER DRAINAGE TILE TO BE INSTALLED AT 0.5% ALONG TOE OF SLOPE OF CAP DRAINAGE LAYER AND DISCHARGE TO THE PERIMETER CHANNEL EVERY 300'. 6" DIA. HDPE DRAINAGE TILE BACKFILLED WITH N.Y.S.D.O.T. UNDERDRAIN FILTER TYPE I STONE OR APPROVED EQUAL. WRAP STONE WITH TREVIRA 1145 GEOTEXTILE OR APPROVED EQUAL.

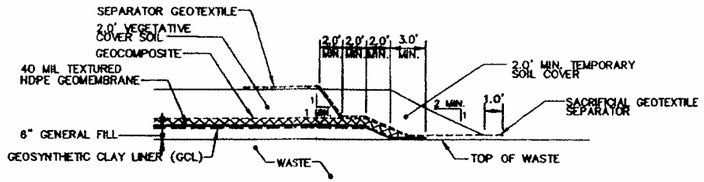


NOTE:

1. GEOCOMPOSITE MUST CONSIST OF GEOTEXTILE HEAT BONDED TO BOTH SIDES OF GEONET, OR APPROVED EQUAL.

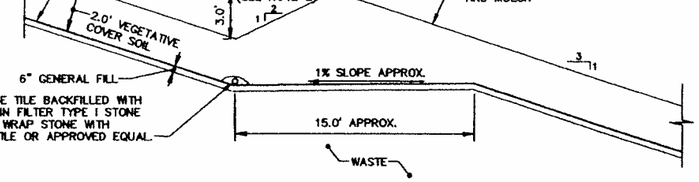
FINAL COVER 24C

NOT TO SCALE



TEMPORARY FINAL COVER INTERCONNECTION DETAIL 26C

NOT TO SCALE

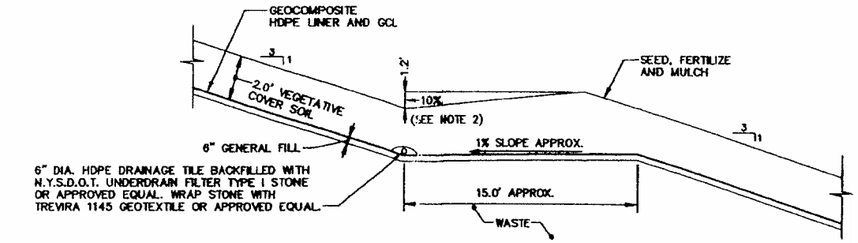


NOTES:

1. SEE DRAWING NO. 12 FOR DITCH ELEVATIONS.
2. WHEN DIRECTED BY OWNER AND REQUIRED BY TECHNICAL SPECIFICATIONS, CONTRACTOR SHALL PROVIDE EROSION CONTROL AND REVEGETATION MAT.

SURFACE WATER DIVERSION BERM 19C

NOT TO SCALE



NOTES:

1. SEE DRAWING NO. 12 FOR DITCH ELEVATIONS.
2. WHEN DIRECTED BY OWNER AND REQUIRED BY TECHNICAL SPECIFICATIONS, CONTRACTOR SHALL PROVIDE EROSION CONTROL AND REVEGETATION MAT.

SURFACE WATER DIVERSION BERM 23C

NOT TO SCALE

GENERAL NOTES:

1. THE DETAILS ON THIS DRAWING ARE BASED ON THE DETAILS SHOWN ON DRAWING NUMBER 21 ENTITLED "FINAL COVER DETAILS" PREPARED BY EARTHTECH (FILE NUMBER A-55279 DATED FEBRUARY 1991). THE DETAILS SHOWN ON THIS DRAWING ARE APPLICABLE TO GCL FINAL COVER AREAS. ASPECTS OF THE DESIGN THAT ARE UNAFFECTED BY THE SUBSTITUTION OF GCL FOR CCL HAVE BEEN RETAINED FOR THESE DETAILS.
2. BBL SEAL AND SIGNATURE PERTAIN ONLY TO BBL IMPLEMENTED REVISIONS AS NOTED IN THE REVISION BLOCK AND DISCUSSED ABOVE.

NOT FOR CONSTRUCTION
FOR REGULATORY REVIEW ONLY

DRAWING REVISED BY BLASLAND, BOUCK & LEE, INC. THROUGH ITS PROFESSIONAL ENGINEER. WORK OF EARTHTECH NOT INDEPENDENTLY REVIEWED.

X: 05042X20.DWG
L: ON=*, OFF=REF*
P: PAGESET/PLT-CDL
12/18/03 ROC-BS-SLM SYR-KMD ROC-SLM
05042006/05042M03.DWG

Graphic Scale: AS NOTED

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No.	Date	Revisions	Init

Project Mgr. TF
Designed by BMS/CAA
Drawn by SLM
Checked by PHB
Prof. Eng. JOSEPH MOLINA III
PE License NY 072644

STATE OF NEW YORK JOSEPH MOLINA III 072644 PROFESSIONAL ENGINEER

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

CWM CHEMICAL SERVICES, LLC. • MODEL CITY FACILITY
RESIDUALS MANAGEMENT UNIT 1

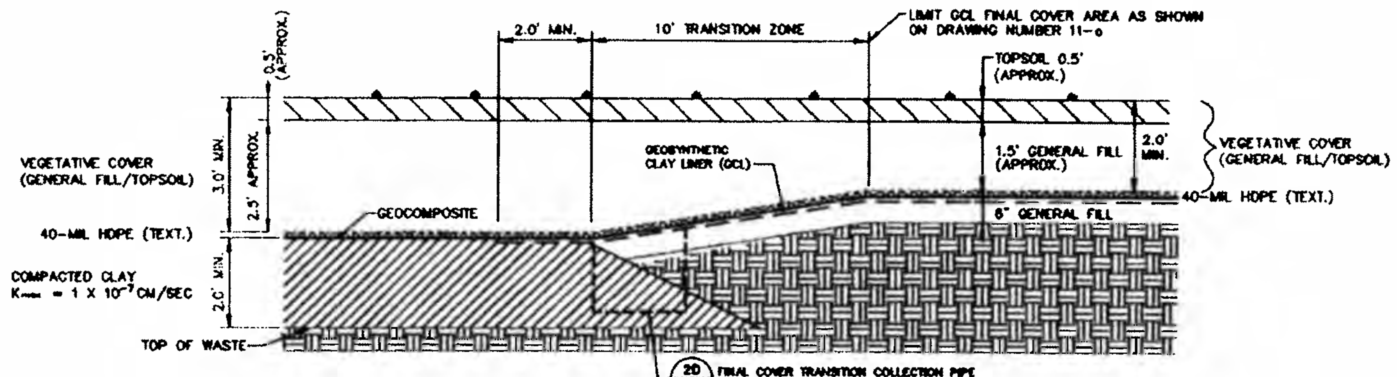
FINAL COVER DETAILS (WITH GCL)

GENERAL Modified: 07/09

File Number 050.42
Date DECEMBER 2003

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

21C

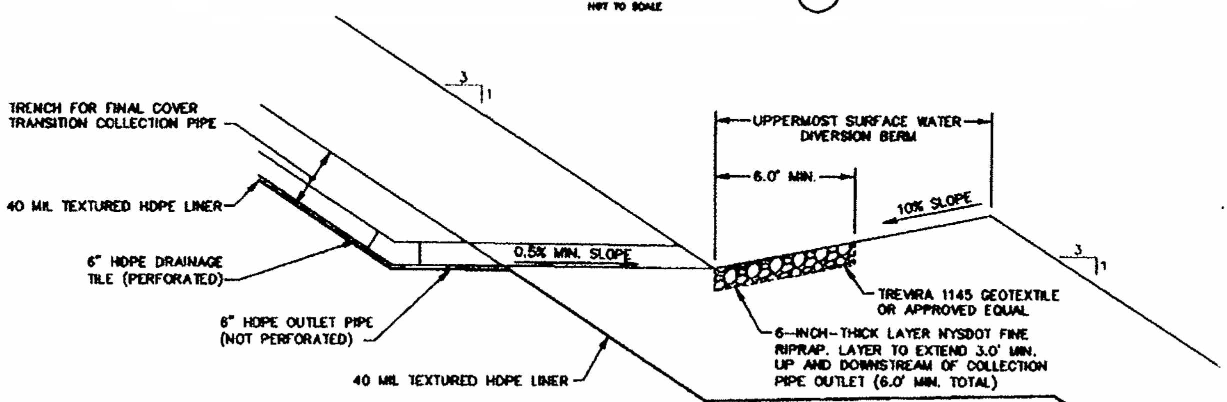


NOTE:

1. FINAL COVER TRANSITION COLLECTION PIPE REQUIRED IN LOCATIONS SHOWN ON DRAWING 11-o.

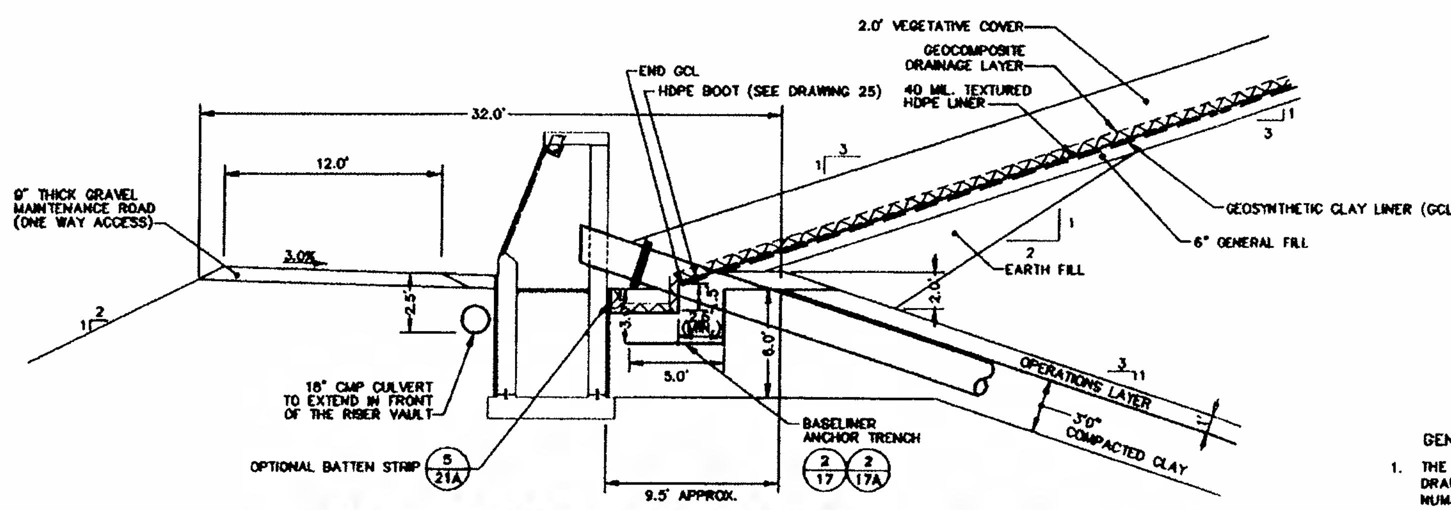
FINAL COVER TRANSITION (1D)

NOT TO SCALE



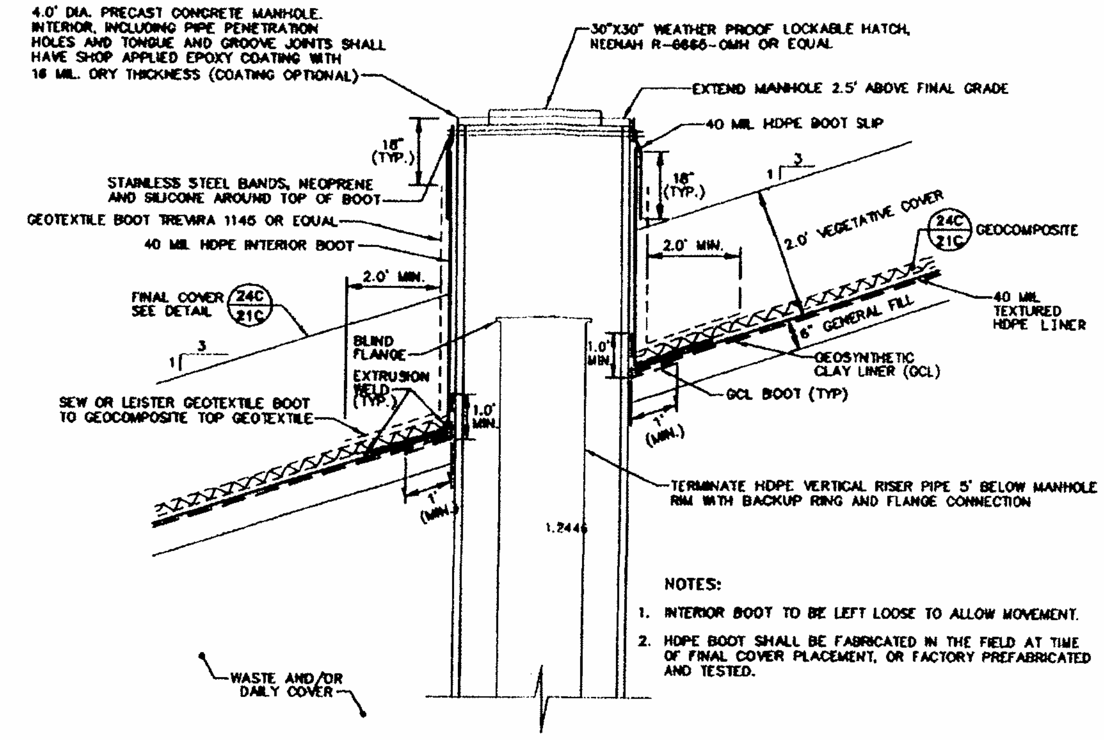
⚠ **FINAL COVER TRANSITION COLLECTION PIPE OUTLET** (3D)

NOT TO SCALE



TYPICAL CROSS SECTION OF PERIMETER BERM AND ACCESS ROAD AT LEACHATE RISER VAULT (4D)

NOT TO SCALE



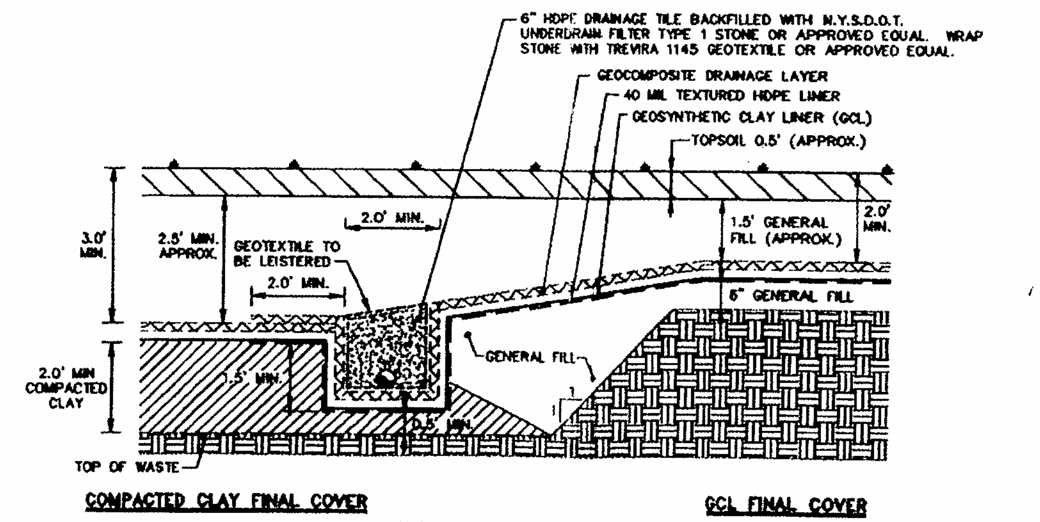
NOTES:

1. INTERIOR BOOT TO BE LEFT LOOSE TO ALLOW MOVEMENT.
2. HDPE BOOT SHALL BE FABRICATED IN THE FIELD AT TIME OF FINAL COVER PLACEMENT, OR FACTORY PREFABRICATED AND TESTED.

FINAL COVER VERTICAL RISER PENETRATION (15D)

NOT TO SCALE

NOT FOR CONSTRUCTION
FOR REGULATORY REVIEW ONLY



NOTE:

⚠ 1. SEE DRAWING NO. 11-o FOR ALIGNMENT OF PIPE AND PLANIMETRIC LOCATION OF PIPE OUTLET.
2. REFER TO DETAIL 3D ON THIS DRAWING FOR PIPE OUTLET DETAIL.

FINAL COVER TRANSITION COLLECTION PIPE (2D)

NOT TO SCALE

GENERAL NOTES:

1. THE DETAILS 15D AND 4D ON THIS DRAWING ARE BASED ON THE DETAILS SHOWN ON DRAWING NUMBER 20 ENTITLED "RISER DETAILS" PREPARED BY EARTHTECH (FILE NUMBER A-55280 DATED FEBRUARY 1991) AND DRAWING NUMBER 21A ENTITLED "SITE DETAILS" PREPARED BY EARTHTECH (DATED APRIL 1996), RESPECTIVELY. THE DETAILS ON THIS DRAWING ARE APPLICABLE TO GCL FINAL COVER AREAS. ASPECTS OF THE DESIGN THAT ARE UNAFFECTED BY THE SUBSTITUTION OF THE GCL FOR CCL HAVE BEEN RETAINED FOR THESE DETAILS.
2. BBL SEAL AND SIGNATURE PERTAIN ONLY TO BBL IMPLEMENTED REVISIONS AS NOTED IN THE REVISION BLOCK AND DISCUSSED ABOVE.

DRAWING REVISED BY BLASLAND, BOUCK & LEE, INC. THROUGH ITS PROFESSIONAL ENGINEER. WORK OF EARTHTECH NOT INDEPENDENTLY REVIEWED.

Graphic Scale	AS NOTED
Project Mgr.	TJF
Designed by	BMS/CAA
Drawn by	SLM
Checked by	PHB
Prof. Eng.	JOSEPH MOLINA
PE License	NY 072644

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No.	Date	Revisions
1	6/08	REVISED NOTES FOR DETAIL 2D & ADDED NEW DETAIL 3D

STATE OF NEW YORK · JOSEPH MOLINA III · 072644 · PROFESSIONAL ENGINEER

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

CWM CHEMICAL SERVICES, LLC. • MODEL CITY FACILITY
RESIDUALS MANAGEMENT UNIT 1

FINAL COVER DETAILS (WITH GCL)

GENERAL

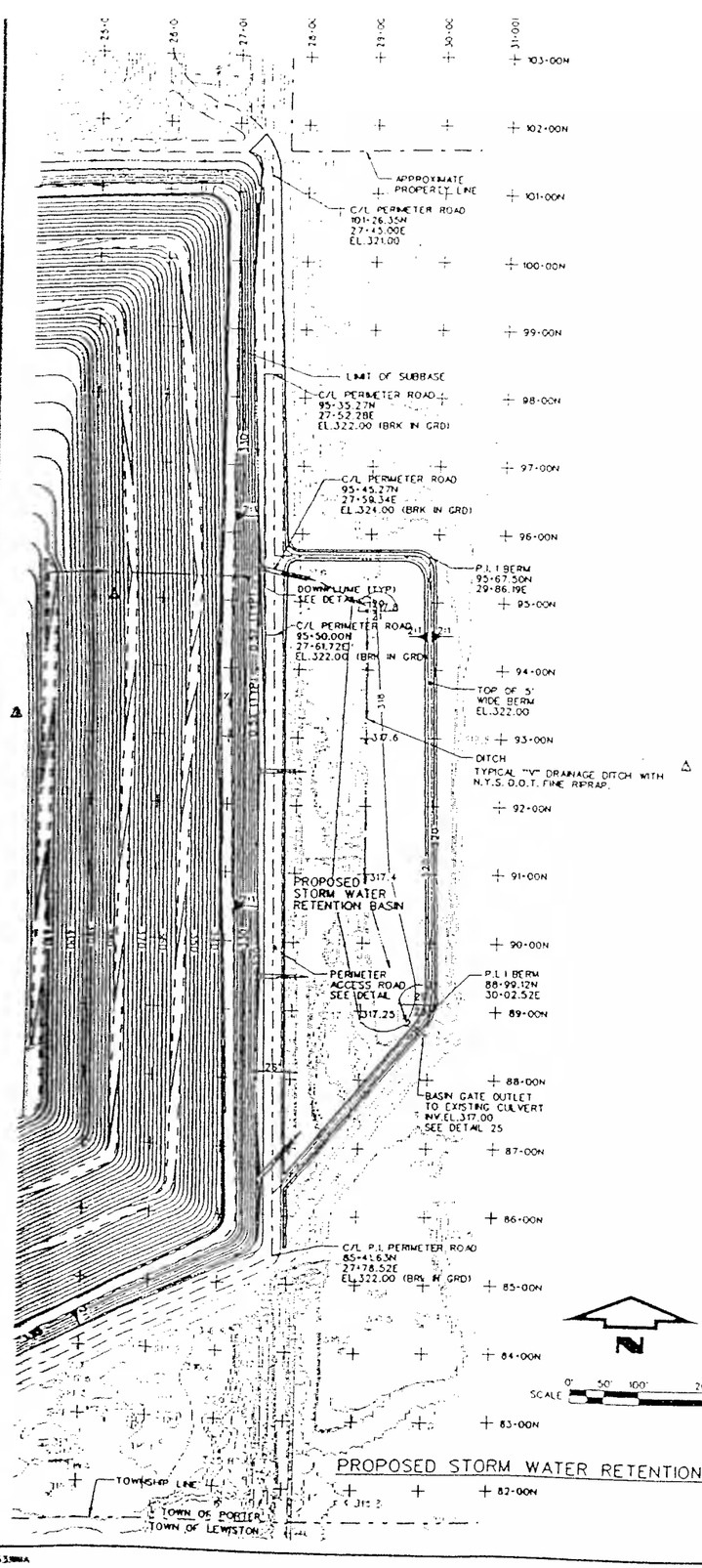
Modified: 07/09

File Number 050.42

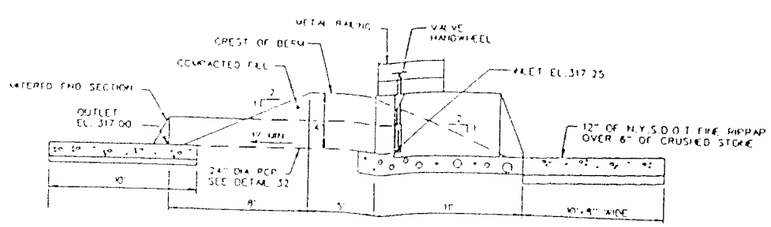
Date DECEMBER 2003

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

21D



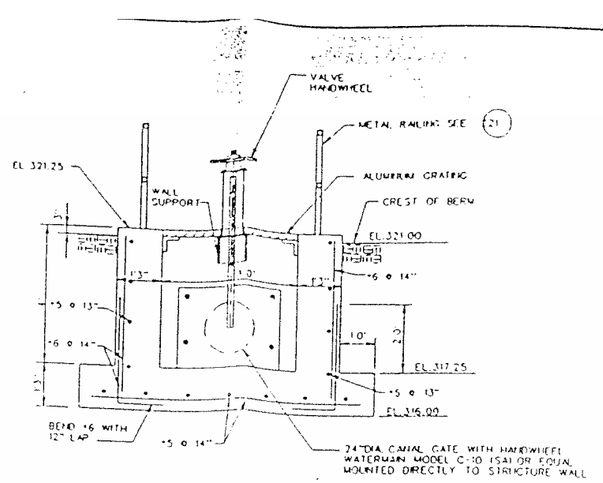
PROPOSED STORM WATER RETENTION BASIN ⚠⚠



BASIN GATE OUTLET (SMP 9) ⚠

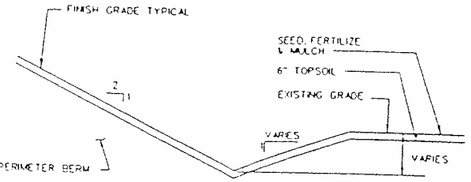
NTS

25



NOTE:

SLOPES OF OUTLET CHANNEL AND ENTIRE RETENTION BASIN SHALL BE PREPARED WITH 6" OF TOPSOIL AND SEEDED.

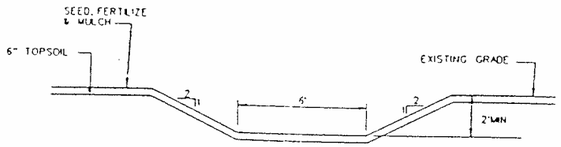


TYPICAL "V" DRAINAGE DITCH

NTS

26

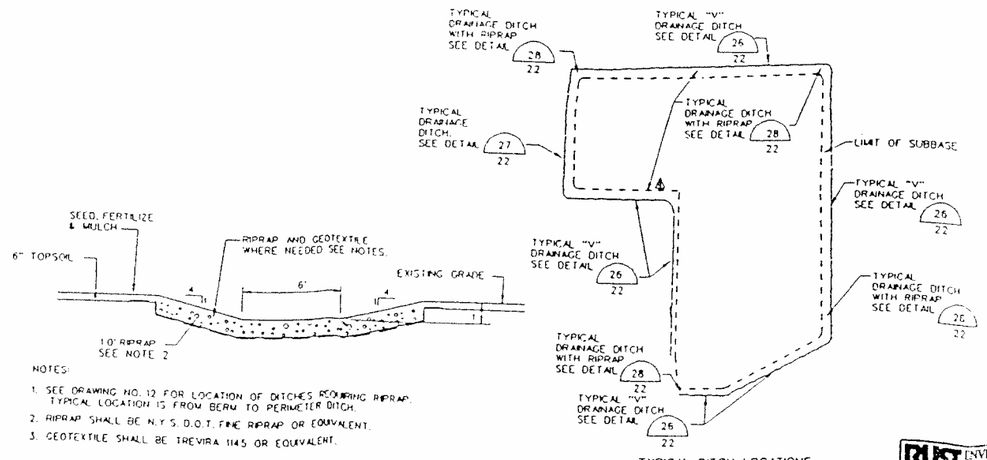
⚠ NOTE: DRAINAGE DITCH MAY BE IMPROVED WITH STORMWATER CULVERTS AND CATCH BASINS.



TYPICAL DRAINAGE DITCH

NTS

27



TYPICAL DITCH LOCATIONS

NOTES:

1. SEE DRAWING NO. 12 FOR LOCATION OF DITCHES REQUIRING RIPRAP. TYPICAL LOCATION IS FROM BERM TO PERIMETER DITCH.
2. RIPRAP SHALL BE N.Y.S. D.O.T. FINE RIPRAP OR EQUIVALENT.
3. GEOTEXTILE SHALL BE TREVIRA 1145 OR EQUIVALENT.

TYPICAL DRAINAGE DITCH WITH RIPRAP

NTS

28

STATE OF NEW YORK
CHARLES P. BALLOD
LICENSED PROFESSIONAL ENGINEER
59688-1
FEB 04 1999

NOT FOR CONSTRUCTION
FOR REGULATORY REVIEW ONLY

REV	DATE	DESCRIPTION	DR BY	APP BY
⚠	2/99	REVISED MAXIMUM ELEVATION	FAS	CPB
⚠	11/98	REVISED LANDFILL CONTOURS	FAS	CPB
⚠	8/97	REVISED LANDFILL CONTOURS	FAS	CPB
⚠	6/97	REVISED DETAIL 28	FAS	CPB
⚠	8/96	ADDED NOTE DETAIL 26	FAS	CPB
⚠	11/92	NOTICE OF DEFICIENCY RESPONSES	FAS	CPB
⚠	2/92	RETENTION BASIN REVISED	FLD	MGR

RUST ENVIRONMENT & INFRASTRUCTURE

SIGNATURE

DATE

DES BY	BRJ/TJP
DRN BY	FLD
CHK BY	MGR
ENV BY	TJB
GRV BY	CFF
APP BY	CPM

PROJECT NO. 17365 DATE FEBRUARY 1991

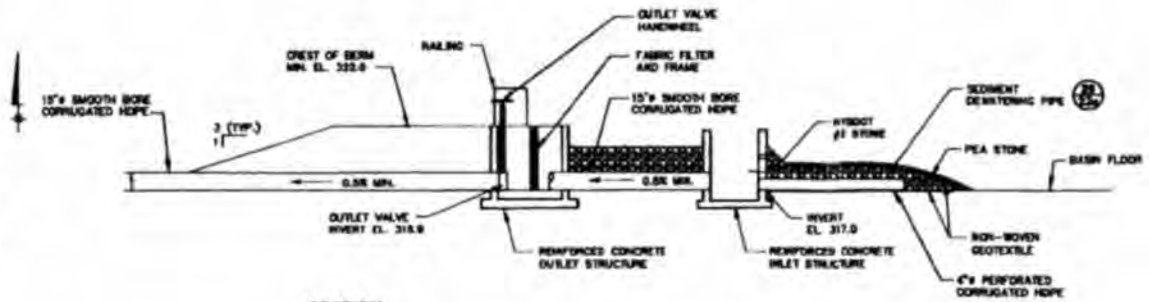
PROJECT: RESIDUALS MANAGEMENT UNIT 1

DRAWING TITLE: SITE SURFACE WATER PLAN & DETAILS

CWM CHEMICAL SERVICES, INC.
MODEL CITY, NIAGARA COUNTY, NEW YORK

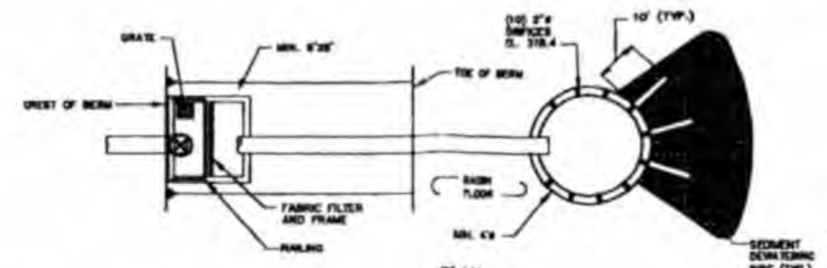
FILE NO. A-55278

DRAWING NO. 22



SECTION

NTS

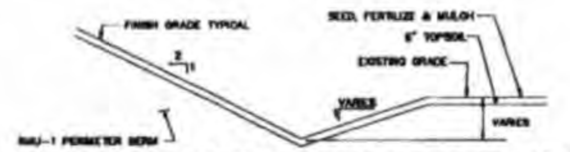


PLAN

NTS

BASIN GATE OUTLET (SMP 9) (25)

NOT TO SCALE

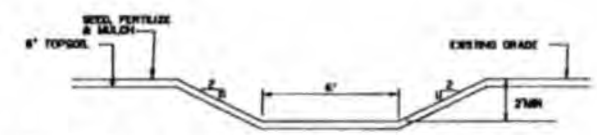


TYPICAL "V" DRAINAGE DITCH (26)

NOT TO SCALE

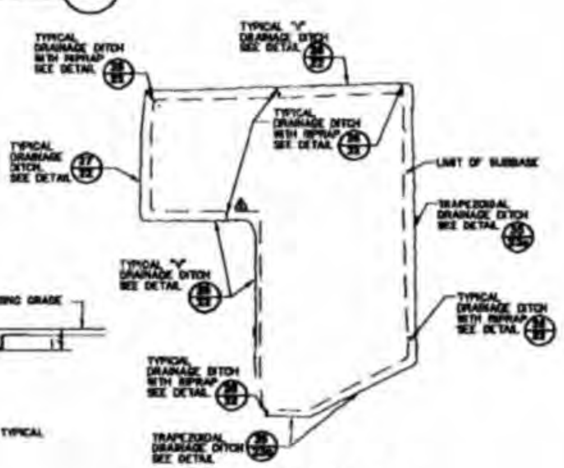
NOTES:

1. DRAINAGE DITCH MAY BE IMPROVED WITH STORMWATER CULVERTS AND CATCH BASINS.
2. REFER TO DETAIL 36 ON DRAWING NO. 23-a FOR ALTERNATE DRAINAGE DITCH GEOMETRY.

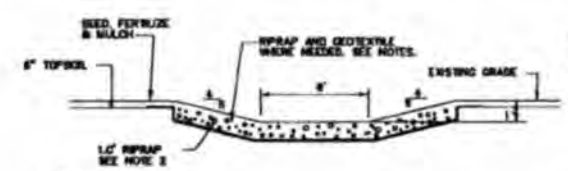


TYPICAL DRAINAGE DITCH (27)

NOT TO SCALE



TYPICAL DITCH LOCATIONS

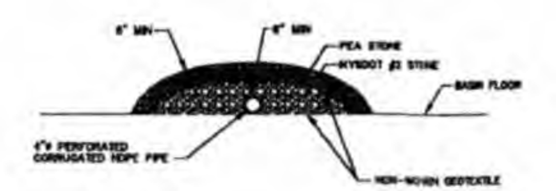


NOTES:

1. SEE DRAWING NO. 12 FOR LOCATION OF DITCHES REQUIRING RIPRAP. TYPICAL LOCATION IS FROM BERM TO PERIMETER DITCH.
2. RIPRAP SHALL BE N.Y.S. D.O.T. FINE RIPRAP OR EQUIVALENT.
3. GEOTEXTILE SHALL BE TREVIRA 1145 OR EQUIVALENT.

TYPICAL DRAINAGE DITCH WITH RIPRAP (28)

NOT TO SCALE



SEDIMENT DEWATERING PIPE (29)

NOT TO SCALE

GENERAL NOTES:

1. THIS DRAWING BASED ON DRAWING NUMBER 22 ENTITLED "SITE SURFACE WATER PLAN AND DETAILS", PREPARED BY EARTHTECH (FILE NO. A-50278 DATED FEBRUARY 1991).
2. PRIOR REVISIONS TO DRAWING NUMBER 22 BY EARTHTECH INCLUDE THE FOLLOWING:
   1) RETENTION BASIN REVISED (DATED 2/93, DRAWN BY FLD, APPROVED BY MGR).
   2) NOTICE OF DEFICIENCY RESPONSES (DATED 11/93, DRAWN BY FLD, APPROVED BY MGR).
   3) ADDED NOTE DETAIL 26 (DATED 8/96, DRAWN BY FAS, APPROVED BY CPB).
   4) REVISED DETAIL 28 (DATED 6/97, DRAWN BY FAS, APPROVED BY CPB).
   5) REVISED LANDFILL CONTOURS. (DATED 6/97, DRAWN BY FAS, APPROVED BY CPB).
   6) REVISED LANDFILL CONTOURS, (DATED 11/98, DRAWN BY FAS, APPROVED BY CPB).
   7) REVISED MAXIMUM ELEVATION (DATED 2/99, DRAWN BY FAS, APPROVED BY CPB).
3. BBL SEAL AND SIGNATURE PERTAIN ONLY TO BBL IMPLEMENTED REVISIONS AS NOTED IN THE REVISION BLOCK.

NOT FOR CONSTRUCTION
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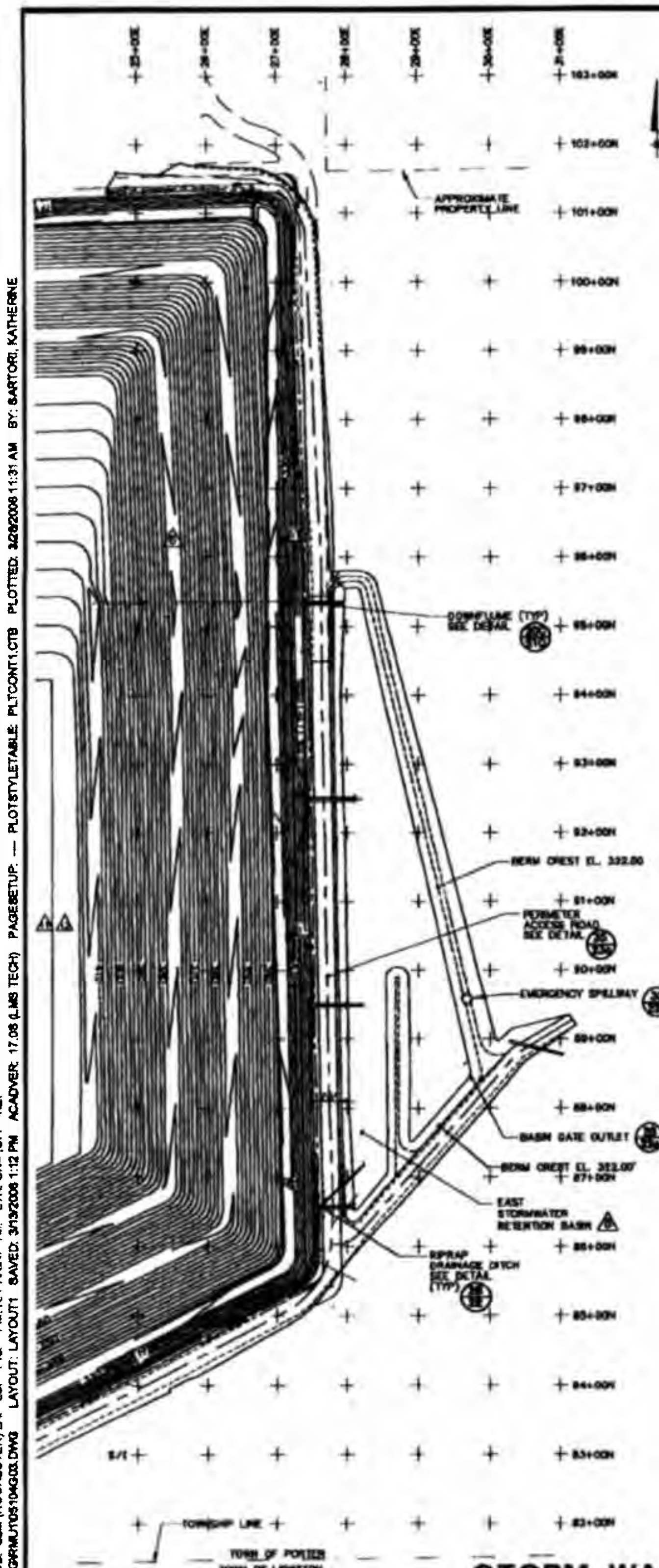

STORM WATER RETENTION BASIN

GRAPHIC SCALE

DRAWING REVISED BY BLASLAND, BOUCK & LEE, INC. THROUGH ITS PROFESSIONAL ENGINEER. WORK OF EARTHTECH NOT INDEPENDENTLY REVIEWED.

Graphic Scale: AS NOTED

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No.	Date	Revisions	Init.
10	3/08	REVISED LANDFILL CONTOURS	
9	12/03	REVISED LANDFILL CONTOURS, NOTES, AND REFERENCES	
8	6/03	REVISIONS TO EMERGENCY SPILLWAY & BASIN GATE OUTLET	
7	8/02	REVISIONS TO PERIMETER DITCH, ACCESS ROAD & CULVERTS	
6	6/01	REVISIONS TO STORMWATER RETENTION BASIN	
		SEE NOTE 2 FOR PRIOR REVISIONS	

Project Mgr. TJF
Designed by BMS/CAA
Drawn by SLM
Checked by PHB
Prof. Eng. JOSEPH MOLINA
PE License NY 072644

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

CWM CHEMICAL SERVICES, LLC. • MODEL CITY FACILITY
RESIDUALS MANAGEMENT UNIT 1

SITE SURFACE WATER PLAN AND DETAILS

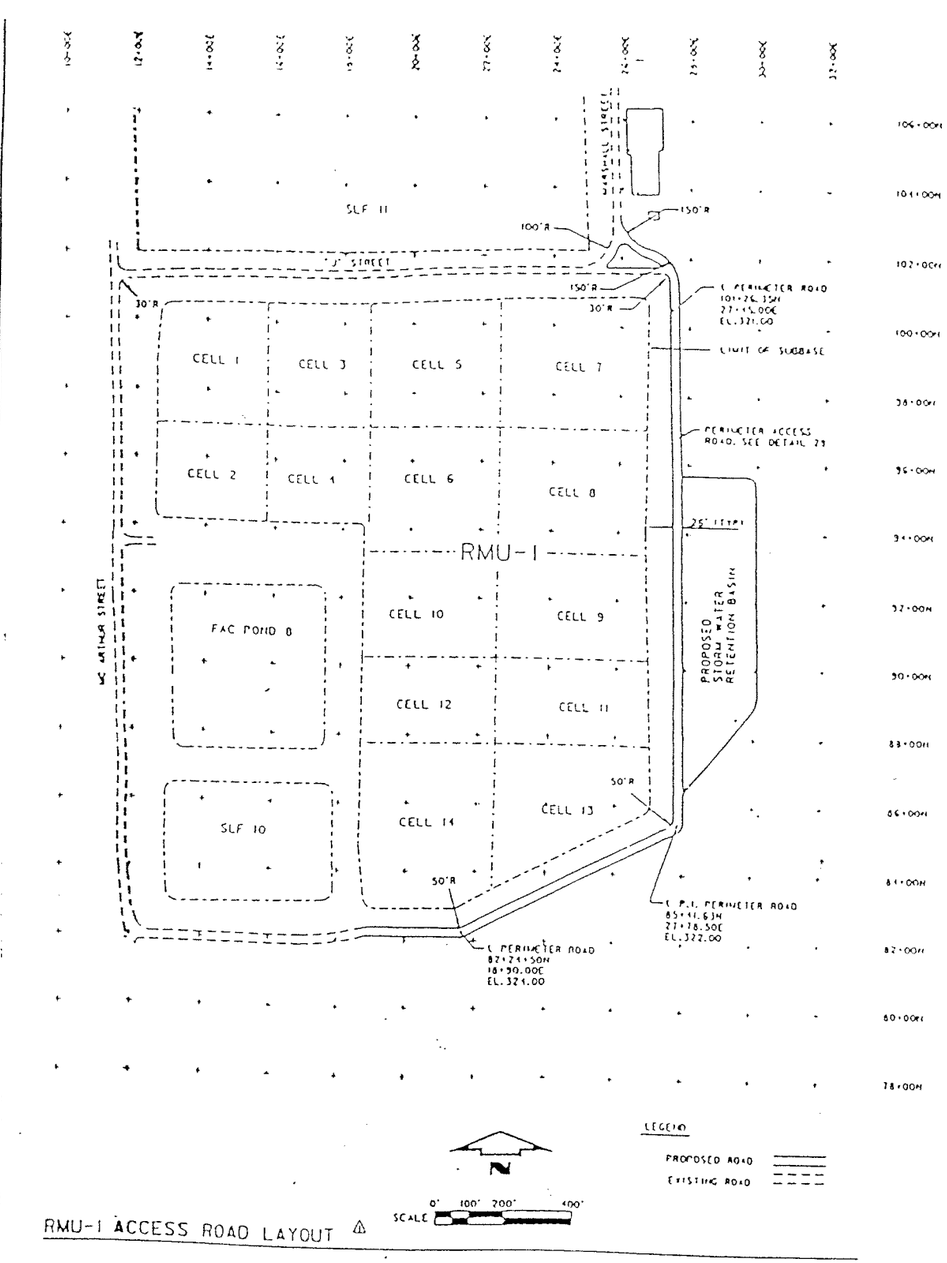
GENERAL Modified: 07/09

File Number 050.42

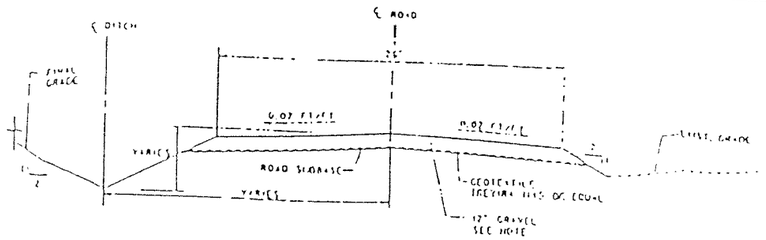
Date JUNE 2003

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

22-a

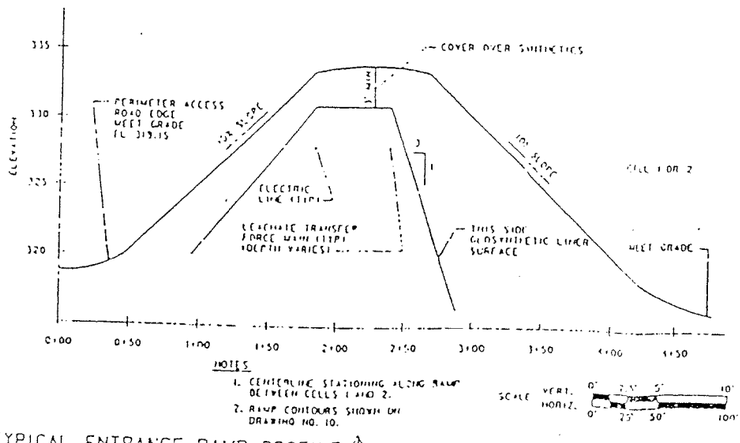


RMU-1 ACCESS ROAD LAYOUT ⚠



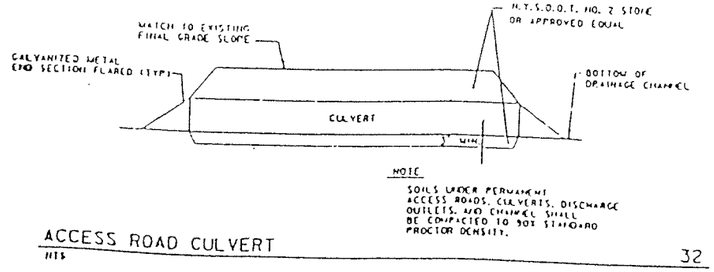
TYPICAL PERIMETER ACCESS ROAD ⚠

29



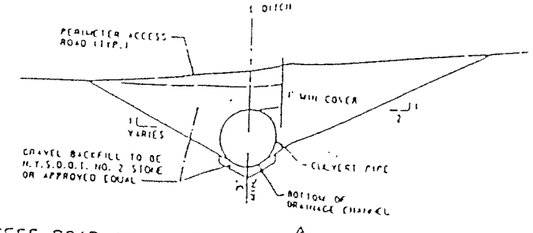
TYPICAL ENTRANCE RAMP PROFILE ⚠

31



ACCESS ROAD CULVERT

32



ACCESS ROAD CULVERT SECTION ⚠

33

STATE OF NEW YORK
CHARLES P. BALLOD
59688-1
LICENSED PROFESSIONAL ENGINEER
FEB 04 1999

NOT FOR CONSTRUCTION
FOR REGULATORY REVIEW ONLY

RUST ENVIRONMENT & INFRASTRUCTURE

SIGNATURE

DATE

⚠	11/98	REMOVE DETAIL 30 - FINAL COVER ACCESS ROAD	FAS	CPD
⚠	6/98	NOTICE OF DEFICIENCY RESPONSES		
REV	DATE	DESCRIPTION	FLD	MGR
			DR BY	APP BY

DES BY	BRJ/T.JP	
DRN BY	FLD	
CHK BY	MGR	
ENV BY	TJD	
GEO BY	CFF	
APP BY	GRM	

PROJECT NO. 37365 DATE FEBRUARY 1998

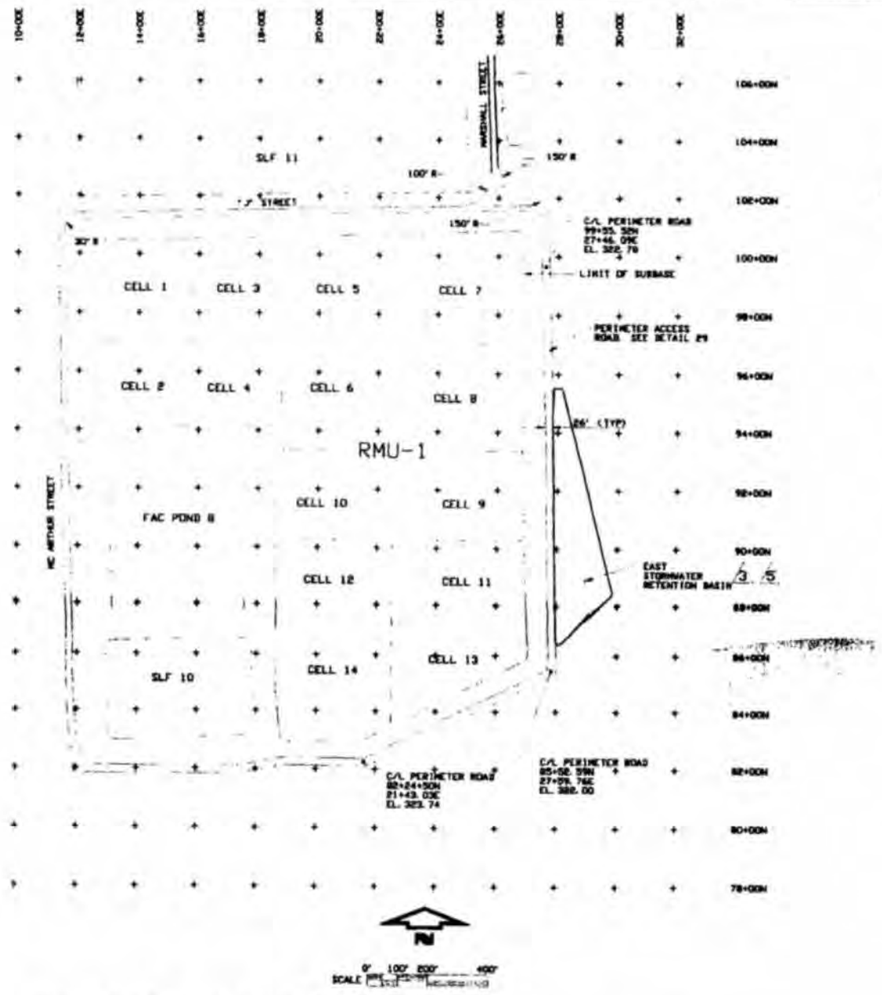
PROJECT
RESIDUALS MANAGEMENT UNIT 1

DRAWING TITLE
ACCESS ROAD LAYOUT AND DETAILS

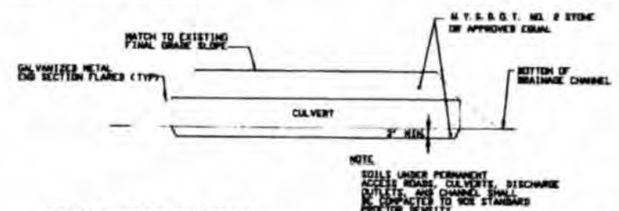
OMN CHEMICAL SERVICES, INC.
MODEL CITY, NIAGARA COUNTY, NEW YORK

FILE NO. A-55277

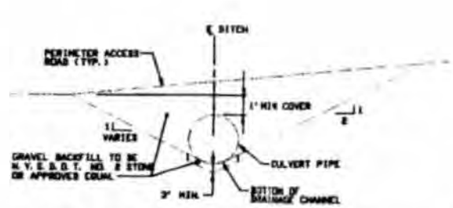
DRAWING NO.
23



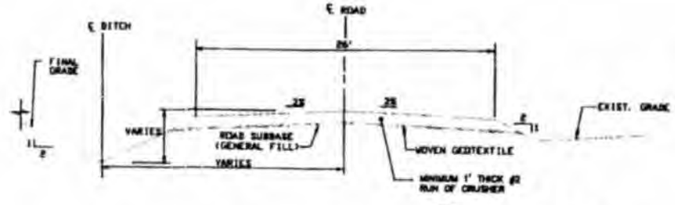
RMU-1 ACCESS ROAD LAYOUT 1,2,5



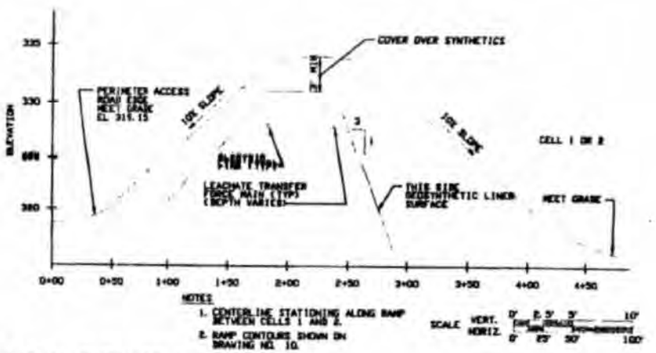
ACCESS ROAD CULVERT 32
NTS



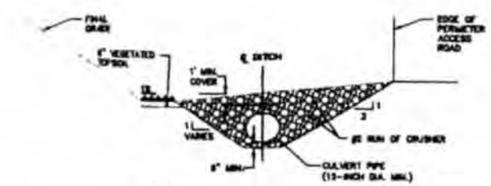
ACCESS ROAD CULVERT SECTION 1,3 33
NTS



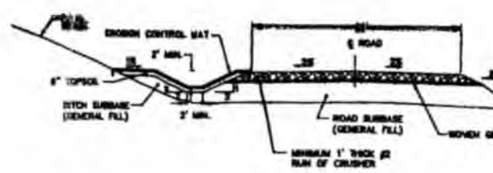
TYPICAL PERIMETER ACCESS ROAD 4 1
NTS 29



TYPICAL ENTRANCE RAMP PROFILE 1,3 31



BYPASS CULVERT (34) 4
NOT TO SCALE



TYPICAL PERIMETER ACCESS ROAD WITH TRAPEZOIDAL PERIMETER DITCH (35) 4
NOT TO SCALE

NOT FOR CONSTRUCTION FOR REGULATORY REVIEW ONLY

⚠ NOTES:

1. THIS DRAWING IS BASED ON A DRAWING ENTITLED "ACCESS ROAD LAYOUT AND DETAILS", PREPARED BY EARTH TECH (FILE NO. A-58277 DATED FEBRUARY 1991).
2. PRIOR REVISIONS BY EARTH TECH INCLUDE THE FOLLOWING:
   1) NOTICE OF DEFICIENCY RESPONSES (DATED 6/92, DRAWN BY FLD, APPROVED BY GRM).
   2) REMOVE DETAIL 30 – FINAL COVER ACCESS ROAD (DATED 11/98, DRAWN BY FAS, APPROVED BY CPB).
3. BBL SEAL AND SIGNATURE PERTAIN ONLY TO BBL IMPLEMENTED REVISIONS AS NOTED IN THE REVISION BLOCK.

DRAWING REVISED BY BLASLAND, BOUCK & LEE, INC. THROUGH ITS PROFESSIONAL ENGINEER. WORK OF EARTHTECH NOT INDEPENDENTLY REVIEWED.

X: 05004X00.DWG
LI: ON=*, OFF=REF
PI: PAGESET/PLT-COL
12/8/04 BD-SYR JER LAF GMS
05042005/05043012.DWG

Graphic Scale
AS NOTED

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED IN THE TITLE BLOCK. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.

No.	Date	Revisions	Init
⚠	12/04	DELETED "PROPOSED"	
⚠	8/02	REVISIONS TO PERIMETER DITCH, ACCESS ROAD, AND CULVERTS	
⚠	8/01	REVISIONS TO STORMWATER RETENTION BASIN SEE NOTE 2 FOR PRIOR REVISIONS	

Project Mgr. TJF
Designed by BMS/CAA
Drawn by SLM
Checked by PHB
Prof. Eng. JOSEPH MOLNAR
PE License NY. 072844

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

CWM CHEMICAL SERVICES, LLC. • MODEL CITY FACILITY
RESIDUALS MANAGEMENT UNIT 1

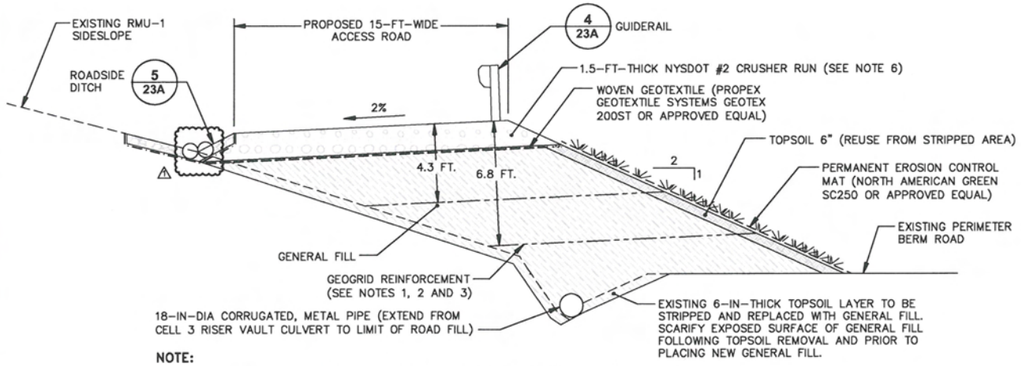
ACCESS ROAD LAYOUT AND DETAILS

GENERAL Modified: 07/09

File Number 050.42
Date JUNE 2003

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

23-a

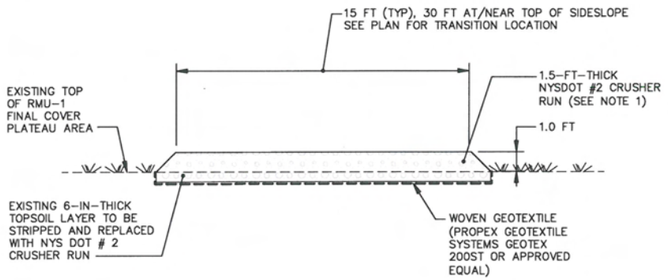


NOTE:

1. GEOGRID SHALL HAVE A LONG TERM STATIC TENSILE CAPACITY OF 800 LB./LF. GEOGRID SHALL BE DEPLOYED WITH THE MACHINE DIRECTION PERPENDICULAR TO THE PROTECTIVE COVER SLOPE UNLESS BIAXIAL GEOGRID IS UTILIZED. IF BIAXIAL GEOGRID IS USED AND DEPLOYED WITH THE MACHINE DIRECTION ALONG THE ROAD ALIGNMENT, THE CROSS MACHINE DIRECTION STRENGTH SHALL MEET THE INDICATED MINIMUM TENSILE CAPACITY AND ANY OVERLAP OF ADJACENT PANELS IN THE CROSS ROAD DIRECTION SHALL BE SUFFICIENT TO FULLY DEVELOP GRID STRENGTH.
2. GEOGRID SHALL EXTEND 17 FT. INTO ROAD GENERAL FILL FROM SIDESLOPE FACE OR 6 INCHES INTO EXISTING GENERAL FILL OF COVER SYSTEM, WHICHEVER IS LESS.
3. GEOGRID SHALL BE INSTALLED IN ACCORDANCE WITH SPECIFICATIONS CONTAINED IN APPENDIX D-11 OF THE RMU-1 ENGINEERING REPORT.
4. GENERAL FILL SHALL MEET THE REQUIREMENTS OF ITEM 2.04 OF SECTION 02210 OF THE RMU-1 TECHNICAL SPECIFICATIONS.
5. GENERAL FILL INSTALLATION SHALL BE IN ACCORDANCE WITH SECTION 02210 OF THE RMU-1 TECHNICAL SPECIFICATIONS EXCEPT THAT ONLY THE UPPER 2 FT. OF THE GENERAL FILL SHALL BE COMPACTED TO THE SPECIFIED MINIMUM DENSITY. DEEPER LIFTS SHALL ONLY BE COMPACTED BY TRACKING WITH A DOZER AND NO COMPACTION TESTING SHALL BE REQUIRED.
6. CRUSHER RUN SHALL BE PLACED, COMPACTED, AND TESTED IN ACCORDANCE WITH SECTION 02220 OF THE RMU-1 TECHNICAL SPECIFICATIONS. TESTING FREQUENCY SHALL BE ONE TEST PER 1,500 SQUARE FEET PER LIFT.

TYPICAL ROADWAY SECTION - PERIMETER BERM (1)

SCALE: 1"=4'

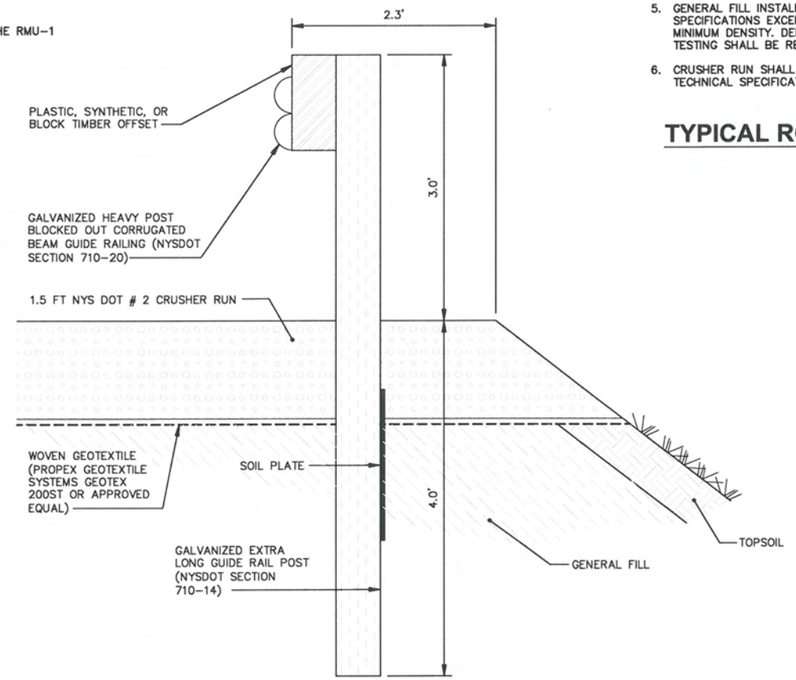


NOTE:

1. CRUSHER RUN SHALL BE PLACED, COMPACTED, AND TESTED IN ACCORDANCE WITH SECTION 02220 OF THE RMU-1 TECHNICAL SPECIFICATIONS. TESTING FREQUENCY SHALL BE ONE TEST PER 1,500 SQUARE FEET PER LIFT.

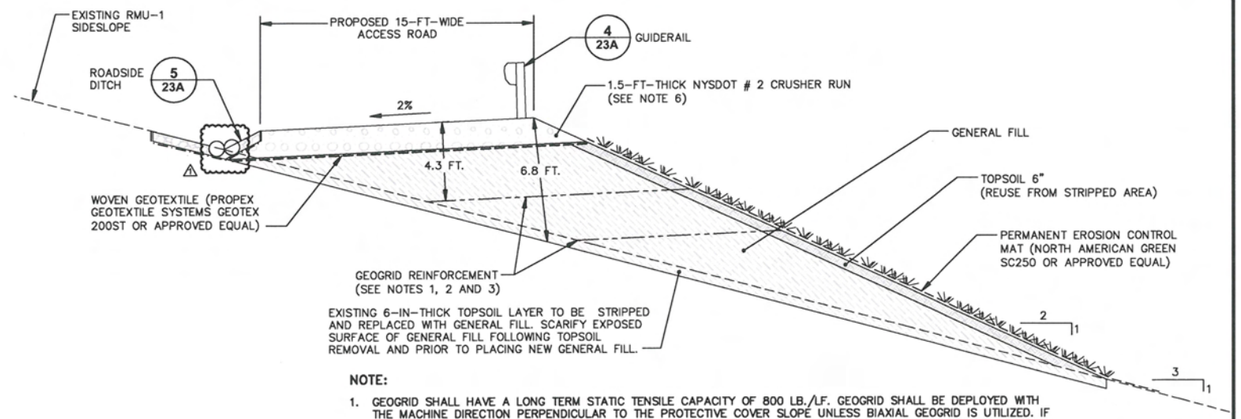
TYPICAL ROADWAY SECTION - PLATEAU AREAS (3)

NOT TO SCALE



TYPICAL GUIDERAIL DETAIL (4)

NOT TO SCALE



NOTE:

1. GEOGRID SHALL HAVE A LONG TERM STATIC TENSILE CAPACITY OF 800 LB./LF. GEOGRID SHALL BE DEPLOYED WITH THE MACHINE DIRECTION PERPENDICULAR TO THE PROTECTIVE COVER SLOPE UNLESS BIAXIAL GEOGRID IS UTILIZED. IF BIAXIAL GEOGRID IS USED AND DEPLOYED WITH THE MACHINE DIRECTION ALONG THE ROAD ALIGNMENT, THE CROSS MACHINE DIRECTION STRENGTH SHALL MEET THE INDICATED MINIMUM TENSILE CAPACITY AND ANY OVERLAP OF ADJACENT PANELS IN THE CROSS ROAD DIRECTION SHALL BE SUFFICIENT TO FULLY DEVELOP GRID STRENGTH.
2. GEOGRID SHALL EXTEND 17 FT. INTO ROAD GENERAL FILL FROM SIDESLOPE FACE OR 6 INCHES INTO EXISTING GENERAL FILL OF COVER SYSTEM, WHICHEVER IS LESS.
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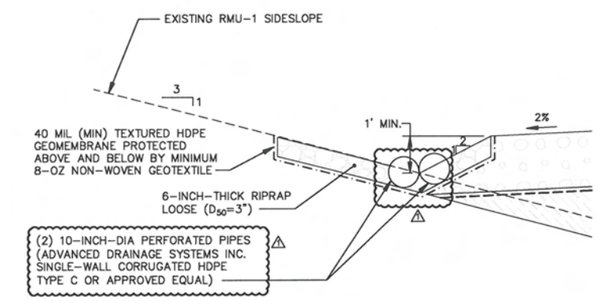
6. CRUSHER RUN SHALL BE PLACED, COMPACTED, AND TESTED IN ACCORDANCE WITH SECTION 02220 OF THE RMU-1 TECHNICAL SPECIFICATIONS. TESTING FREQUENCY SHALL BE ONE TEST PER 1,500 SQUARE FEET PER LIFT.

TYPICAL ROADWAY SECTION - SIDESLOPE AREA (2)

SCALE: 1"=4'



ROADSIDE DITCH DETAIL (5)

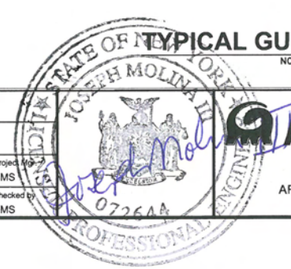
SCALE: 1"=2'

SCALE(S) AS INDICATED

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING: USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd
1	8/2012	REVISED PERFORATED PIPE DIAMETER	NWF	BMS

Professional Engineer's Name: JOSEPH MOLINA III
Professional Engineer's No.: 072644
State: NY
Date Signed: 8/29/12
Project Mgr: BMS
Designed by: BMS/PTO
Drawn by: SLM/KLS
Checked by: BMS



ARCADIS
ARCADIS U.S., INC.

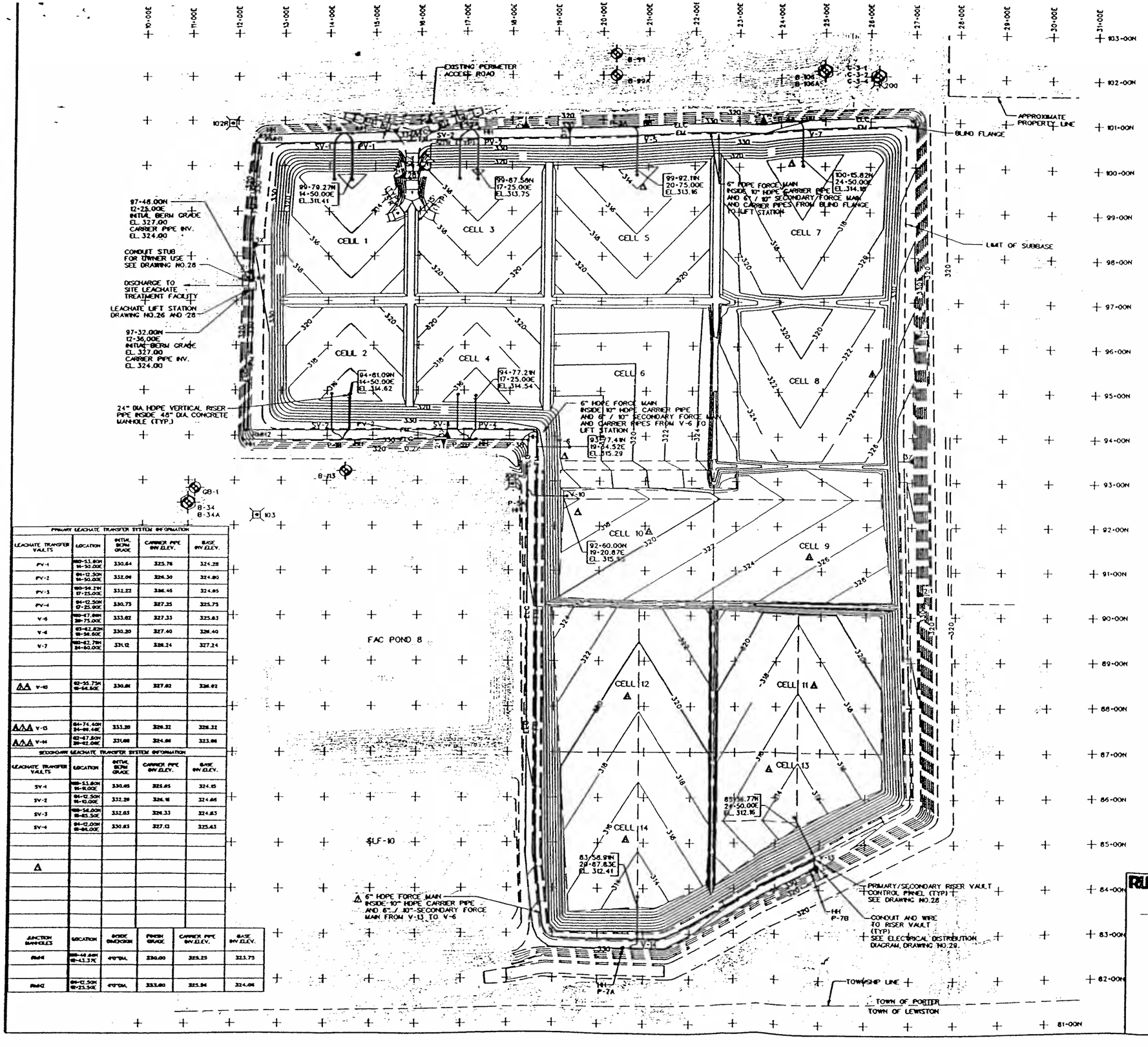
CWM CHEMICAL SERVICES, LLC • MODEL CITY FACILITY
RESIDUALS MANAGEMENT UNIT 1

LANDFILL PLATEAU ACCESS ROAD DETAILS

ARCADIS Project No.: B0023729.2012.00002
Date: AUGUST 2012

ARCADIS
6723 TOWPATH ROAD
SYRACUSE, NY 13214.0066
TEL: 315.446.9120

23A



PRIMARY LEACHATE TRANSFER SYSTEM INFORMATION

LEACHATE TRANSFER VAULTS	LOCATION	INITIAL BERM GRADE	CARRIER PIPE INV.ELEV.	BASE INV.ELEV.
PV-1	100+53.80N 16+50.00E	330.64	325.78	324.28
PV-2	94+12.50N 16+50.00E	332.09	326.30	324.80
PV-3	100+38.23N 17+25.00E	332.22	326.45	324.85
PV-4	94+12.50N 17+25.00E	330.73	327.25	325.75
V-6	100+47.88N 28+75.00E	333.02	327.33	325.83
V-4	93+62.82N 18+36.00E	330.20	327.40	326.40
V-7	100+42.73N 24+50.00E	331.12	328.24	327.24
ΔΔ V-12	82+55.75N 29+64.66E	330.84	327.82	326.82
ΔΔΔ V-13	84+74.40N 29+99.48E	333.20	328.32	326.32
ΔΔΔ V-14	82+67.80N 29+82.08E	331.88	329.88	323.88

SECONDARY LEACHATE TRANSFER SYSTEM INFORMATION

LEACHATE TRANSFER VAULTS	LOCATION	INITIAL BERM GRADE	CARRIER PIPE INV.ELEV.	BASE INV.ELEV.
SV-1	100+53.80N 16+81.00E	330.65	325.65	324.15
SV-2	94+12.50N 16+81.00E	332.29	326.18	324.68
SV-3	100+38.23N 16+83.50E	332.83	326.33	324.83
SV-4	94+12.00N 16+84.00E	330.83	327.13	325.63
Δ				

JUNCTION MANHOLES	LOCATION	INSIDE DIAMETER	FINISH GRADE	CARRIER PIPE INV.ELEV.	BASE INV.ELEV.
MH1	100+48.66N 19+43.37E	4'0"DIA.	330.00	325.25	323.75
MH2	94+12.50N 19+23.50E	4'0"DIA.	333.80	325.94	324.06

LEGEND:

- EXISTING GRADE
- 320 PROPOSED GRADE
- LIMIT OF SUBBASE
- 3:1 SLOPE INDICATOR
- DRAINAGE DITCH
- ACCESS ROAD
- TOP OF BERM
- APPROXIMATE PROPERTY LINE
- APPROXIMATE TOWNSHIP LINE
- GROUNDWATER MONITORING WELL
- GROUNDWATER MONITORING WELL NEST
- SOIL BORING
- PERMANENT CONTROL MONUMENT
- CULVERT
- 24"DIA. VERTICAL RISER
- HH MANHOLE
- PV-1 PRIMARY VAULT
- SV-1 SECONDARY VAULT
- V-5 COMBINED PRIMARY / SECONDARY VAULT
- P-1 PRIMARY/SECONDARY VAULT EQUIPMENT RACK
- ELC ELECTRICAL CONDUIT
- FM FORCE MAIN

NOTES:

1. THE TOPOGRAPHIC BASE MAP WAS PROVIDED BY AERO-METRIC ENGINEERING, SHEBOYGAN, WISCONSIN, DATED DECEMBER 1986. GROUND CONTROL BY FRANK T. TRIPLAND ASSOC., P.C.
2. THE GRID SYSTEM INDICATED HAS BEEN ESTABLISHED IN THE FIELD. THE MONUMENTS ARE AS INDICATED ON THE DRAWING AND ACCORDING TO THE TABLE ON DRAWING NO. 2. THE GRID COORDINATES ARE CWM PLANT SITE GRID ONLY, NOT RELATED TO ANY LOCAL DATUM OR NEW YORK STATE PLANE COORDINATE SYSTEM. VERTICAL CONTROL IS ALSO CWM PLANT SITE DATUM.
3. EAST RMU-1 GRID COORDINATES LABELED ON THESE PLANS ARE SIMPLIFIED PLANT GRID NUMBERS. SUBTRACTING 10,000 FROM THE EAST PLANT GRID COORDINATES WILL GIVE THE RMU-1 EAST GRID COORDINATES. NO CORRECTIONS ARE REQUIRED TO NORTH COORDINATES.
4. GRADES INDICATED ARE TOP OF OPERATION LAYER.

STATE OF NEW YORK
CHARLES P. BALLOD
LICENSED PROFESSIONAL ENGINEER
59688-1
JUN 05 2000

N

SCALE 0' 50' 100' 200'

REV	DATE	DESCRIPTION	DR BY	APP BY
Δ	6-00	MODIFY FORCEMAIN	FAS	CPB
Δ	10-97	MODIFY FORCEMAIN	FAS	CPB
Δ	6-97	MODIFY AND RELOCATE SUMPS CELLS 13 AND 14	FAS	CPB
Δ	4-97	MODIFY AND RELOCATE SUMP CELL 9	FAS	CPB
Δ	11-96	ELIMINATE SUMP CELL 8	FAS	CPB
Δ	11-95	MODIFY SUMPS CELLS 5, 6 AND 7	FAS	CPB
Δ	7-93	REVISED TO INCLUDE SECONDARY FORCEMAIN	FLD	MGR
Δ	6-92	NOTICE OF DEFICIENCY RESPONSES	FLD	MGR

RUST ENVIRONMENT & INFRASTRUCTURE

SIGNATURE

DATE

DES BY	BRJ/TJP	PROJECT NO. 17365	DATE FEBRUARY 1991
DRN BY	FLD	PROJECT: RESIDUALS MANAGEMENT UNIT 1	
CHK BY	MGR		
ERV BY	TJB	DRAWING TITLE: LEACHATE TRANSFER SYSTEM AND ELECTRICAL SITE PLAN	
QRV BY	CFF		
APP BY	GRM		

CWM CHEMICAL SERVICES, INC.
MODEL CITY, NIAGARA COUNTY, NEW YORK

FILE NO. A-55276
DRAWING NO. 24