WAYNE DISPOSAL, INC. SITE NO. 2
MASTER CELL VI-F&G

VAN BUREN TOWNSHIP, WAYNE COUNTY, MICHIGAN

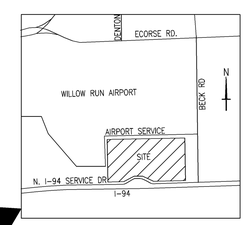
NTH PROJECT NO. 13-060921-03

FEBRUARY 2011
REVISED: SEPTEMBER 2011

OWNER:
Wayne Disposal, Inc.
49350 N. I-94 Service Drive
Belleville, Michigan 48111

ENGINEER:
NTH Consultants, LTD.
41780 Six Mile Road
Northville, Michigan 48168

MICHIGAN
APPROX. SCALE: 1"=50 MILES



LOCATION MAP- WAYNE COUNTY
NO SCALE

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NTH Consultants, Ltd.
Infrastructure Engineering and Environmental Services

Northville, MI	248.553.6300
Detroit, MI	313.237.3900
Lansing, MI	517.484.6900
Grand Rapids, MI	616.957.3690
Exton, PA	610.524.2300
Lehigh Valley, PA	484.893.1440
Cleveland, OH	216.334.4040
Indianapolis, IN	317.735.7649

REVISIONS

REV	DESCRIPTION	DATE	BY
A	PHASING DESIGNATIONS	8/10/11	DRL
B	PER MDEQ COMMENTS	9/23/11	DRL

PROJECT NAME:
MASTER CELL VI F&G

PROJECT LOCATION:
WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: 13060921-03-CV
DESIGNED BY: JHL	INCEP DATE: 11/12/08
DRAWN BY: DRL	DRAWING SCALE: NONE
CHECKED BY: ISS	SUBMITTED DATE: 9/23/11

SHEET TITLE:
TITLE SHEET

SHEET REFERENCE NUMBER:
01

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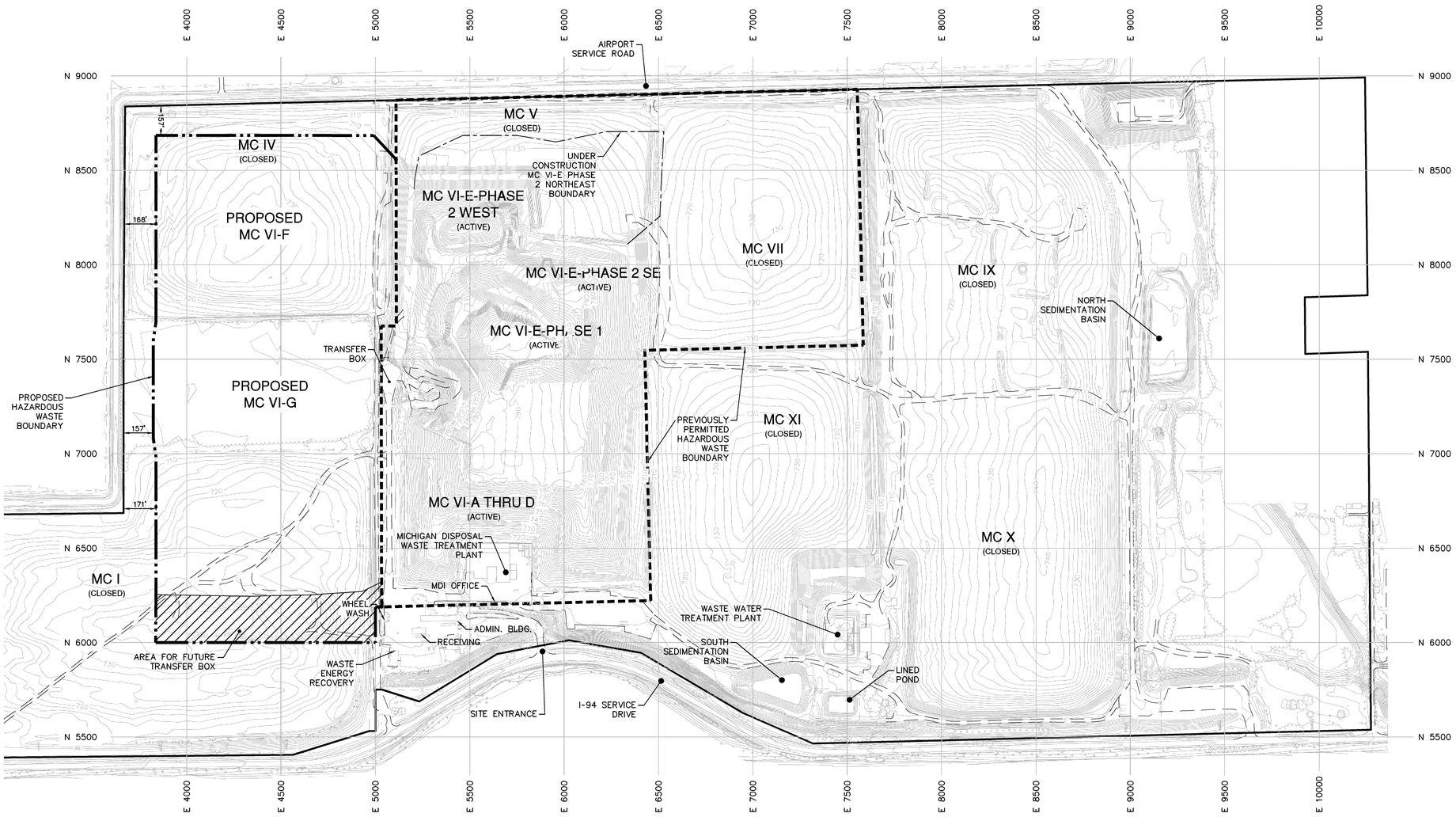

NOTE:

THE BASE MAP WAS CREATED USING AN AERIAL SURVEY TAKEN IN 2001 BY AIR-LAND SURVEY AND PROVIDED BY WDI, A SURVEY BY MCLLC IN OCTOBER 2007, AND A GROUND SURVEY BY WDI IN OCTOBER 2008.

N

0 150' 300' 600'
SCALE

LEGEND

- 710 — EXISTING CONTOUR (2 FT INTERVAL)
- PREVIOUSLY PERMITTED HAZARDOUS WASTE BOUNDARY
- EXISTING SITE ROAD
- PROPERTY BOUNDARY
- PROPOSED HAZARDOUS WASTE BOUNDARY

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Cleveland, OH	216.334.4040
Indianapolis, IN	317.735.7649

REVISIONS

REV	DESCRIPTION	DATE	BY

PROJECT NAME:
MASTER CELL VI F&G

PROJECT LOCATION:
WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: GENERAL SITE PLAN
DESIGNED BY: JHL	INCEP DATE: 11/12/08
DRAWN BY: DRL	DRAWING SCALE: AS SHOWN
CHECKED BY: ISS	SUBMITTED DATE: 9/23/11

SHEET TITLE:
GENERAL SITE PLAN

SHEET REFERENCE NUMBER:
02

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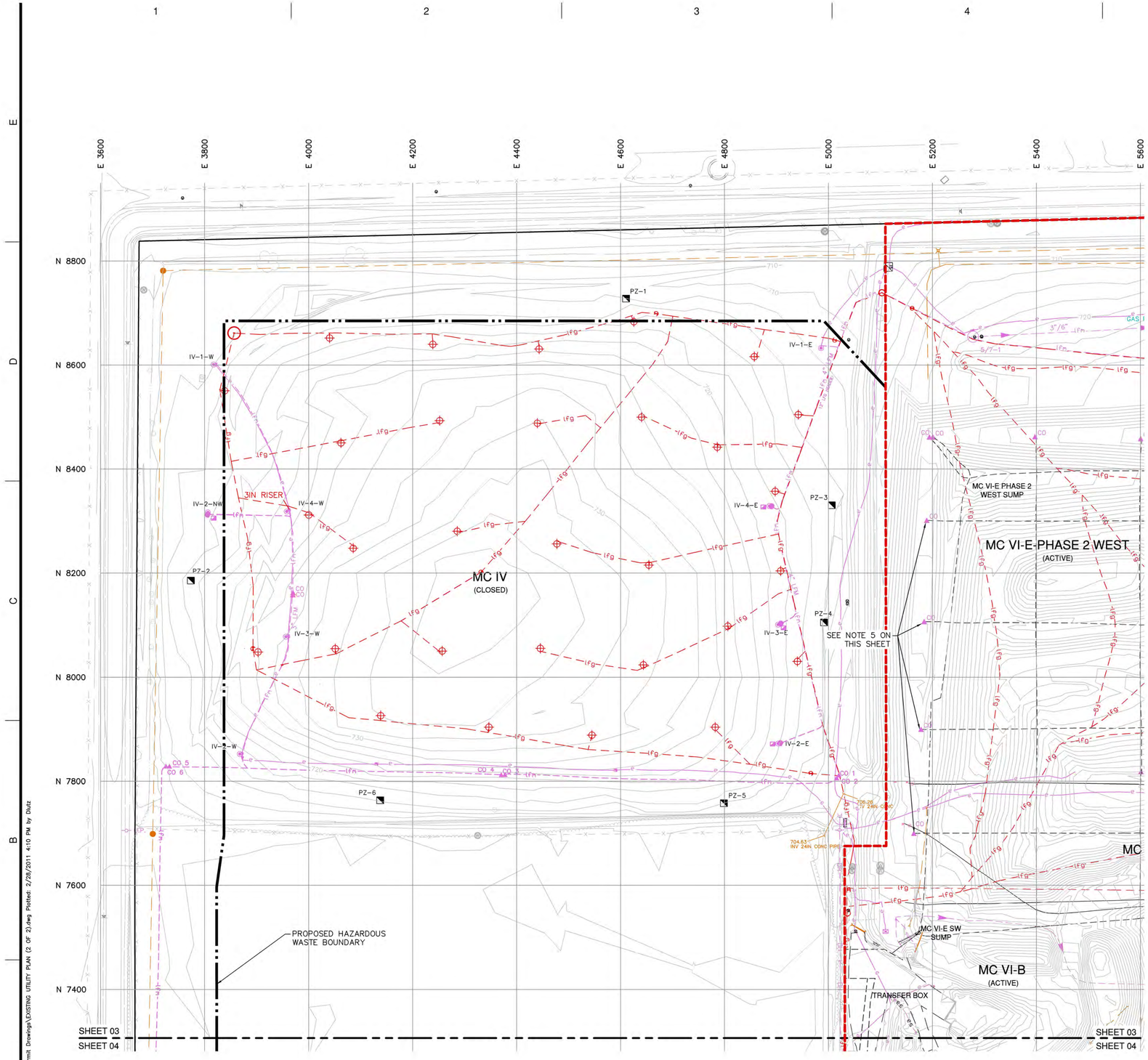

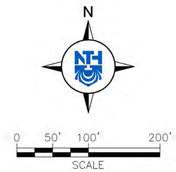

LEGEND

- EXISTING CONTOUR (2 FT INTERVAL)
- PROPERTY BOUNDARY
- LEACHATE FORCEMAIN
- STORM WATER COLLECTION SYSTEM
- CULVERT
- LANDFILL GAS PIPE
- PERIMETER EDGE DRAIN
- BURIED ELECTRICAL LINE
- SURFACE ELECTRICAL LINE
- OVERHEAD ELECTRICAL LINE
- LEACHATE COLLECTION LINE
- PROPOSED HAZARDOUS WASTE BOUNDARY
- HAZARDOUS WASTE BOUNDARY
- CLEANOUT
- LANDFILL GAS WELL
- LANDFILL GAS HEADER VALVE
- LANDFILL GAS CONDENSATE TRAP
- GAS VENT
- PIEZOMETER
- LEACHATE EXTRACTION WELL
- LEACHATE RISER
- ELECTRICAL UTILITY BOX
- UTILITY POLE
- MONITORING WELL
- TREE
- VEGETATION
- FENCE
- AIR MONITOR STATION

NOTES:

1. THE BASE MAP WAS CREATED USING AN AERIAL SURVEY TAKEN IN 2001 BY AIR–LAND SURVEY AND PROVIDED BY WDI, A SURVEY BY MCLLC IN OCTOBER 2007, AND A GROUND SURVEY BY WDI IN OCTOBER 2008.
2. THE UTILITY BASE MAP WAS PROVIDED BY MCLLC.
3. EXISTING UTILITIES (SUCH AS PIEZOMETERS, WELLS, GAS PIPING, LEACHATE FORCEMAIN, ELECTRICAL LINES, AND CLEANOUTS, ETC.) LOCATED INSIDE THE HAZARDOUS WASTE BOUNDARY ARE TO BE ABANDONED DURING CONSTRUCTION UNLESS MARKED TO REMAIN.
4. REFER TO CTI & ASSOCIATES DRAWING IN APPENDIX K OF THE BASIS OF DESIGN REPORT FOR MC I AND MC IV PROPOSED GAS MANAGEMENT SYSTEM.
5. IF CLEANOUTS ARE TO BE ABANDONED, CUT CLEANOUT FLUSH WITH SURFACE AND FUSION WELD HDPE END CAP TO END.

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REVISIONS

REV	DESCRIPTION	DATE	BY

PROJECT NAME:
MASTER CELL VI F&G

PROJECT LOCATION:
WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: EXISTING UTILITY PLAN (2 OF 2)
DESIGNED BY: DRL	INCEP DATE: 11/12/08
DRAWN BY: DRL	DRAWING SCALE: AS SHOWN
CHECKED BY: RBM	SUBMITTED DATE: 2/28/11

SHEET TITLE:
EXISTING UTILITY PLAN
(1 OF 2)

SHEET REFERENCE NUMBER:
03

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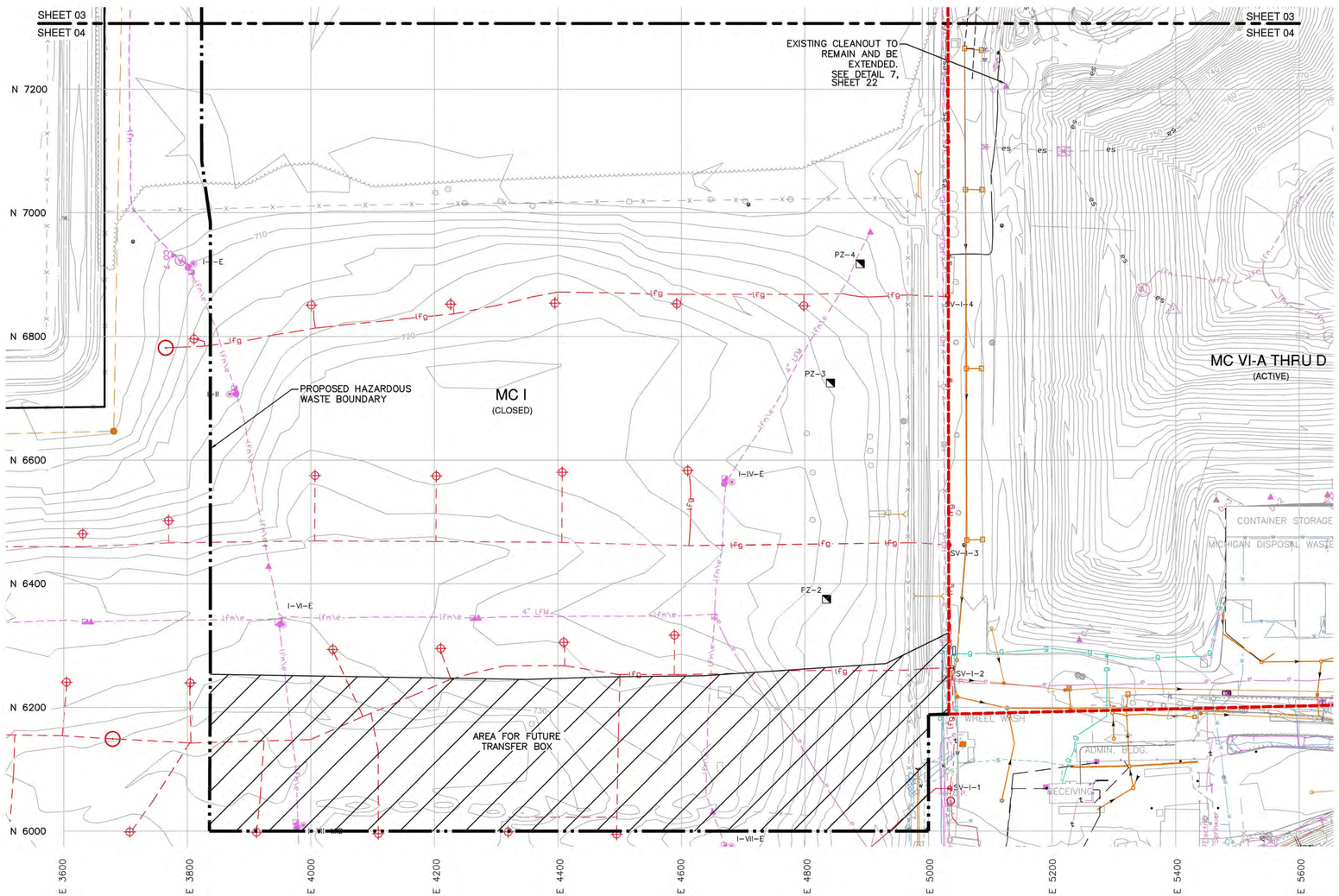

N

0 50' 100' 200'
SCALE

LEGEND

- 710 — EXISTING CONTOUR (2 FT INTERVAL)
- PROPERTY BOUNDARY
- lfm — LEACHATE FORCEMAIN
- r — STORM WATER COLLECTION SYSTEM
- r — CULVERT
- lfg — LANDFILL GAS PIPE
- PERIMETER EDGE DRAIN
- e — BURIED ELECTRICAL LINE
- es — SURFACE ELECTRICAL LINE
- OH — OVERHEAD ELECTRICAL LINE
- g — GAS LINE
- w — WATER LINE
- s — SANITARY SEWER LINE
- PROPOSED HAZARDOUS WASTE BOUNDARY
- HAZARDOUS WASTE BOUNDARY
- CO — CLEANOUT
- LANDFILL GAS WELL
- LANDFILL GAS HEADER VALVE
- LANDFILL GAS CONDENSATE TRAP
- GAS VENT
- PIEZOMETER
- STORM STRUCTURE
- LEACHATE EXTRACTION WELL
- LEACHATE RISER
- ELECTRICAL UTILITY BOX
- V — VALVE VAULT
- U.P. — UTILITY POLE
- MONITORING WELL
- TREE
- VEGETATION
- x — FENCE

NOTES:

1. THE BASE MAP WAS CREATED USING AN AERIAL SURVEY TAKEN IN 2001 BY AIR-LAND SURVEY AND PROVIDED BY WDI, A SURVEY BY MCLLC IN OCTOBER 2007, AND A GROUND SURVEY BY WDI IN OCTOBER 2008.
2. THE UTILITY BASE MAP WAS PROVIDED BY MCLLC.
3. EXISTING UTILITIES (SUCH AS PIEZOMETERS, WELLS, GAS PIPING, LEACHATE FORCEMAIN, ELECTRICAL LINES, AND CLEANOUTS, ETC.) LOCATED INSIDE THE HAZARDOUS WASTE BOUNDARY ARE TO BE ABANDONED DURING CONSTRUCTION UNLESS MARKED TO REMAIN.
4. REFER TO CTI & ASSOCIATES DRAWING IN APPENDIX K OF THE BASIS OF DESIGN REPORT FOR MC I AND MC IV PROPOSED GAS MANAGEMENT SYSTEM.

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Infrastructure Engineering and Environmental Services

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Indianapolis, IN	317.735.7649

REVISIONS

REV	DESCRIPTION	DATE	BY

PROJECT NAME:
MASTER CELL VI F&G

PROJECT LOCATION:
WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: EXISTING UTILITY PLAN (2 OF 2)
DESIGNED BY: DRL	INCEP DATE: 11/12/08
DRAWN BY: DRL	DRAWING SCALE: AS SHOWN
CHECKED BY: RBM	SUBMITTED DATE: 2/28/11

SHEET TITLE:
EXISTING UTILITY PLAN
(2 OF 2)

SHEET REFERENCE NUMBER:
04

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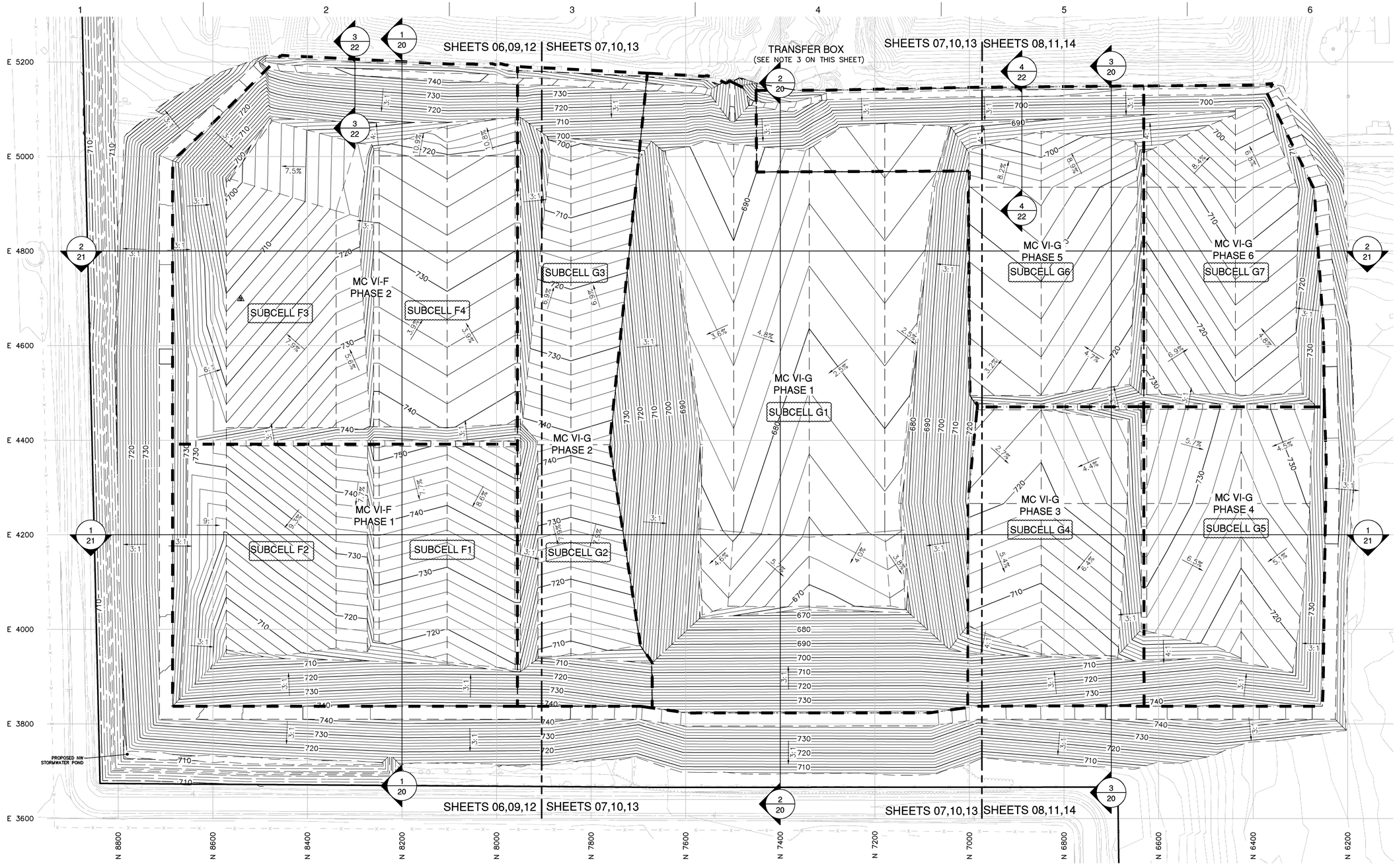

PHASE DESIGNATION	PHASE FOOTPRINT AREA (AC.)	PHASE INCREMENTAL VOLUME (C.Y.)
MC VI–F PHASE 1	9.3	812,000
MC VI–F PHASE 2	12.9	1,865,000
MC VI–G PHASE 1	19.9	2,370,000
MC VI–G PHASE 2	7.2	773,000
MC VI–G PHASE 3	5.3	700,000
MC VI–G PHASE 4	5.5	490,000
MC VI–G PHASE 5	7.4	3,600,000
MC VI–G PHASE 6	5.5	1,120,000
TOTAL	73.0	11,730,000

NOTES:

1. THE BASE MAP WAS CREATED USING AN AERIAL SURVEY TAKEN IN 2001 BY AIR–LAND SURVEY AND PROVIDED BY WDI, A SURVEY BY MCLLC IN OCTOBER 2007, AND A GROUND SURVEY BY WDI IN OCTOBER 2008.
2. PHASING SHOWN HERE IS FOR WDI PLANNING PURPOSES ONLY AND MAY CHANGE BASED ON WDI NEEDS WITHOUT MDEQ APPROVAL.
3. THE TRANSFER BOX WILL BE MOVED TO VARIOUS LOCATIONS BASED ON CELL DEVELOPMENT AND FILLING OPERATIONS. SEE TRANSFER BOX DETAIL ON SHEETS 26 AND 27.

2. A MINIMUM OF 5 YEARS PRIOR TO CONSTRUCTING MC VI–G PHASES 3 TO 6, WDI SHALL INVESTIGATE THE DIKE LOCATIONS AND NEED FOR DEWATERING FOR THE EXISTING MC I TO CONFIRM THE ASSUMPTIONS USED IN THE DESIGN. WDI SHALL INFORM THE MDEQ OF THE RESULTS OF THIS INVESTIGATION AND REVISE THE DESIGN, IF NECESSARY. THE REVISED DESIGN SHALL BE APPROVED BY THE MDEQ PRIOR TO CONSTRUCTION OF MC VI–G PHASES 3 TO 6. B

N

0 50' 100' 200'
SCALE

LEGEND

- 710 — EXISTING CONTOUR (2 FT INTERVAL)
- PROPERTY BOUNDARY
- PROPOSED GRADE BREAK
- 710 — PROPOSED TOP OF PRIMARY LINER CONTOUR (2 FT INTERVAL)
- 710 — PROPOSED NW STORMWATER POND CONTOUR (2 FT INTERVAL)
- PROPOSED PHASE BOUNDARY

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Indianapolis, IN	317.735.7649

REVISIONS

REV	DESCRIPTION	DATE	BY
A	PHASING DESIGNATIONS	6/10/11	DRL
B	PER MDEQ COMMENTS	9/23/11	DRL

PROJECT NAME:
MASTER CELL VI F&G

PROJECT LOCATION:
WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: CONSTRUCTION PHASING PLAN
DESIGNED BY: JHL	INCEP DATE: 11/12/08
DRAWN BY: DRL	DRAWING SCALE: AS SHOWN
CHECKED BY: ISS	SUBMITTED DATE: 9/23/11

SHEET TITLE:
CONSTRUCTION PHASING PLAN

SHEET REFERENCE NUMBER:
05

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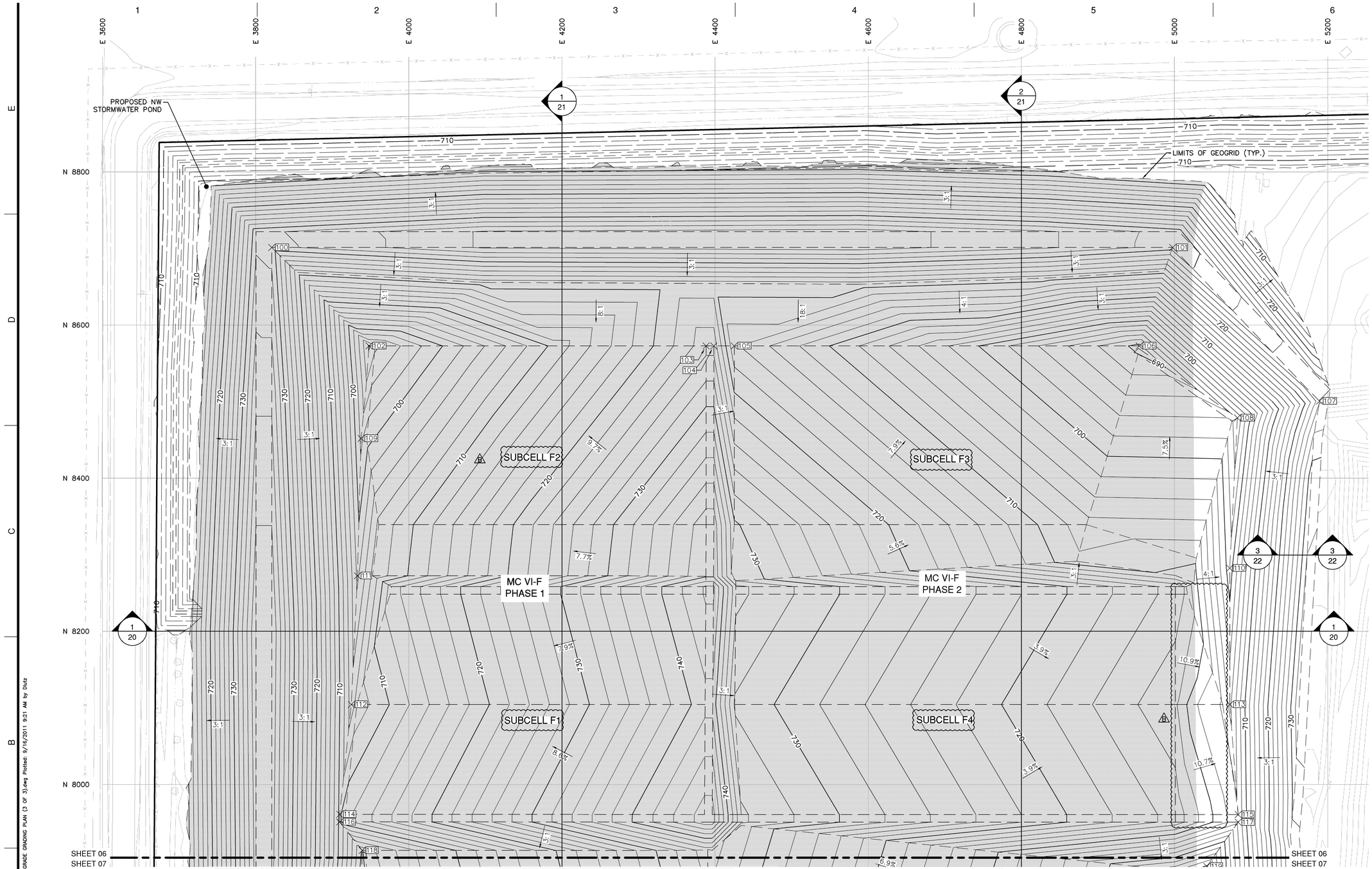

SUBGRADE PERIMETER DIKE COORDINATES

Point No.	Northing	Easting	Elevation (ft)
100	8701.30	3821.03	731.39
101	8701.30	4997.59	731.01
102	8572.66	3948.14	691.65
103	8572.66	4388.34	725.25
104	8572.66	4398.34	725.25
105	8572.66	4425.01	716.36
106	8572.66	4954.00	689.27
107	8500.75	5189.52	725.83
108	8478.81	5082.20	694.48
109	8451.97	3937.75	697.50
110	8282.53	5072.20	698.88

SUBGRADE PERIMETER DIKE COORDINATES

Point No.	Northing	Easting	Elevation (ft)
111	8272.51	3932.99	701.60
112	8104.36	3924.94	704.97
113	8104.36	5072.27	703.43
114	7961.05	3909.78	709.54
115	7960.73	5083.24	706.44
116	7951.05	3909.68	709.54
117	7950.73	5083.24	706.44
118	7913.92	3939.16	700.65
119	7893.05	5042.32	691.59
120	7842.73	3938.19	697.92
121	7842.73	5038.07	689.67

N

0 30' 60' 120'
SCALE

LEGEND

- 710 — EXISTING CONTOUR (2 FT INTERVAL)
- PROPERTY BOUNDARY
- PROPOSED GRADE BREAK
- 710 — PROPOSED TOP OF SUBGRADE CONTOUR (2 FT INTERVAL)
- 710 — PROPOSED NW STORMWATER POND CONTOUR (2 FT INTERVAL)
- AREA TO BE COVERED BY GEOGRID
- 100 — PROPOSED DIKE COORDINATE POINT NO.
- 3:1 — PROPOSED SLOPE

NOTE:

THE BASE MAP WAS CREATED USING AN AERIAL SURVEY TAKEN IN 2001 BY AIR-LAND SURVEY AND PROVIDED BY WDI, A SURVEY BY MCLLC IN OCTOBER 2007, AND A GROUND SURVEY BY WDI IN OCTOBER 2008.

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REVISIONS

REV	DESCRIPTION	DATE	BY
A	PHASING DESIGNATIONS	8/10/11	DRL
B	PER MDEQ COMMENTS	9/23/11	DRL

PROJECT NAME:
MASTER CELL VI F&G

PROJECT LOCATION:
WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: TOP OF SUBGRADE GRADING PLAN (3 OF 3)
DESIGNED BY: JHL	INCEP DATE: 11/12/08
DRAWN BY: DRL	DRAWING SCALE: AS SHOWN
CHECKED BY: ISS	SUBMITTED DATE: 9/23/11

SHEET TITLE:
TOP OF SUBGRADE GRADING PLAN (1 OF 3)

SHEET REFERENCE NUMBER:
06

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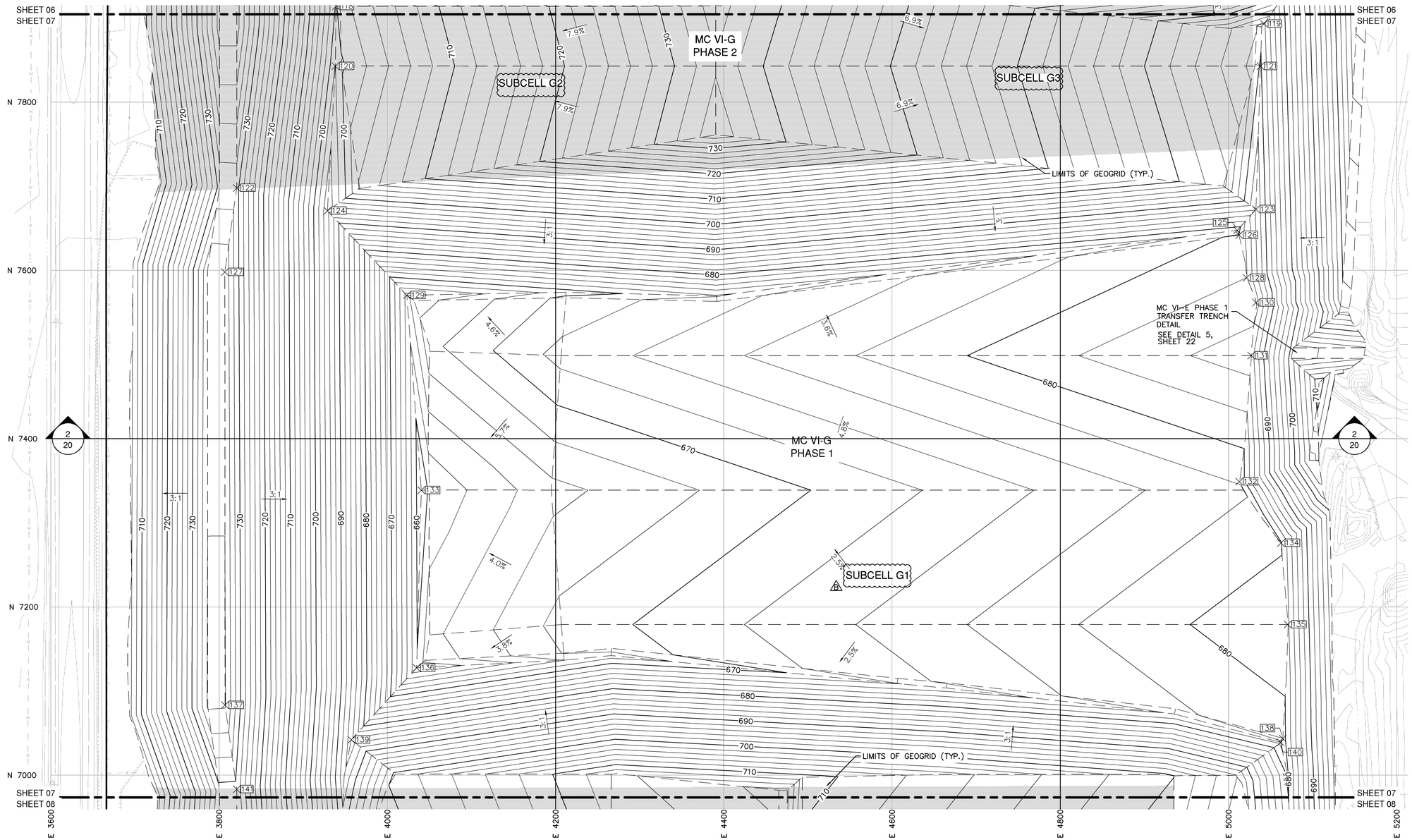

SUBGRADE PERIMETER DIKE COORDINATES			
Point No.	Northing	Easting	Elevation (ft)
122	7697.89	3821.03	730.74
123	7672.54	5032.68	686.26
124	7670.81	3928.84	694.50
125	7647.66	5010.45	678.68
126	7641.99	5012.71	680.19
127	7597.89	3806.80	735.60
128	7591.06	5021.51	682.01
129	7570.41	4023.20	663.24
130	7561.67	5032.75	683.13
131	7498.71	5027.05	685.09
132	7349.00	5012.85	678.14

SUBGRADE PERIMETER DIKE COORDINATES			
Point No.	Northing	Easting	Elevation (ft)
133	7338.74	4040.41	658.10
134	7276.06	5062.38	679.69
135	7179.18	5070.45	681.75
136	7127.70	4034.87	660.23
137	7083.24	3807.01	736.24
138	7043.49	5064.48	678.89
139	7042.16	3957.20	684.60
140	7039.03	5062.00	677.47
141	6983.25	3821.03	729.35
142	6687.01	3937.42	698.98
143	6636.63	3931.13	702.62

N

0 30' 60' 120'
SCALE

LEGEND

- 710 — EXISTING CONTOUR (2 FT INTERVAL)
- PROPERTY BOUNDARY
- PROPOSED GRADE BREAK
- 710 — PROPOSED TOP OF SUBGRADE CONTOUR (2 FT INTERVAL)
- AREA TO BE COVERED BY GEOGRID
- 100 — PROPOSED DIKE COORDINATE POINT NO.
- 3:1 — PROPOSED SLOPE

NOTE:

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REVISIONS

REV	DESCRIPTION	DATE	BY
A	PHASING DESIGNATIONS	8/10/11	DRL
B	PER MDEQ COMMENTS	9/23/11	DRL

PROJECT NAME:
MASTER CELL VI F&G

PROJECT LOCATION:
WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: TOP OF SUBGRADE GRADING PLAN (3 OF 3)
DESIGNED BY: DRL	INCEP DATE: 11/12/08
DRAWN BY: DRL	DRAWING SCALE: AS SHOWN
CHECKED BY: RBM	SUBMITTED DATE: 9/23/11

SHEET TITLE:
TOP OF SUBGRADE GRADING PLAN (2 OF 3)

SHEET REFERENCE NUMBER:
07

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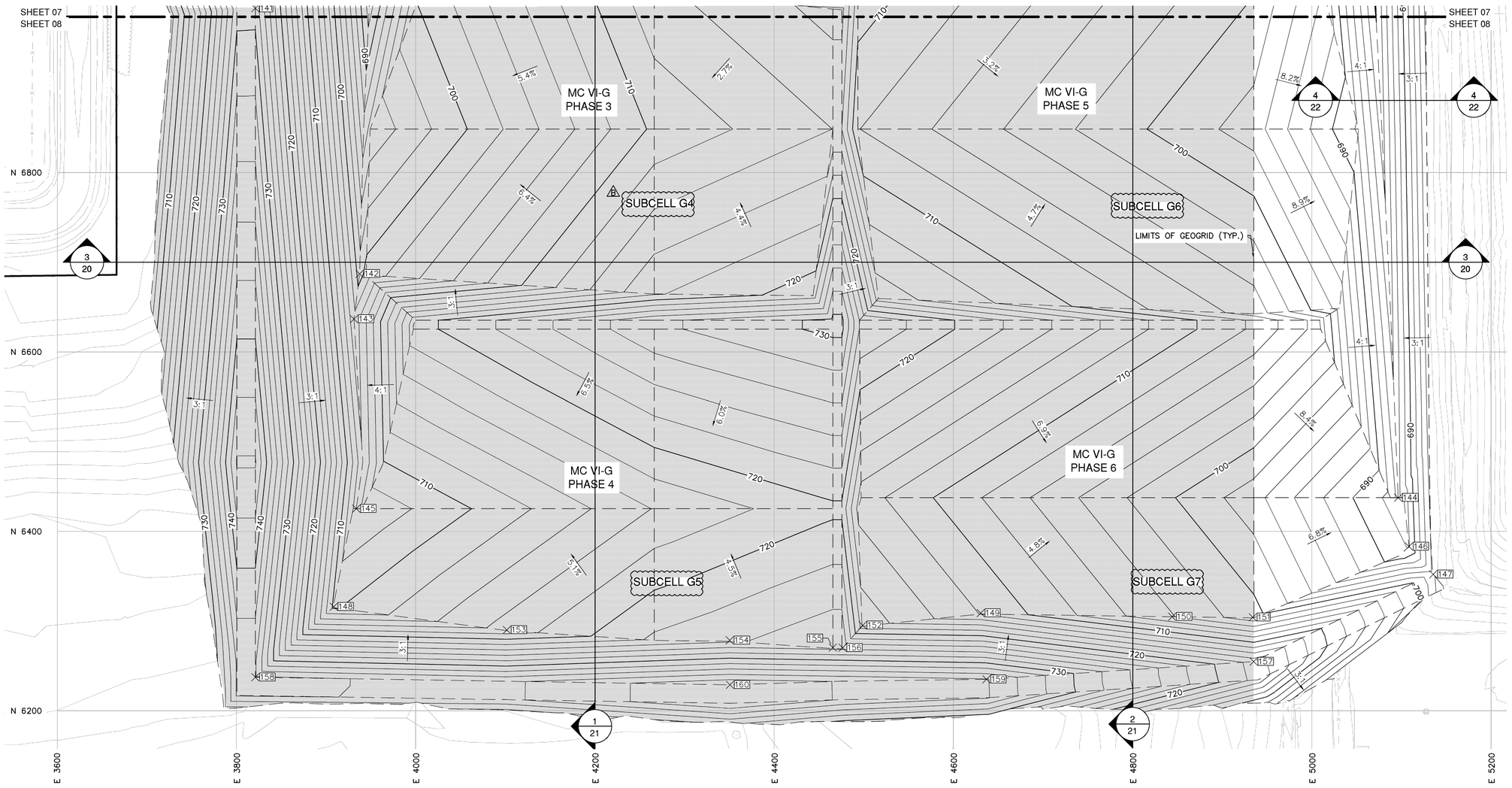

SUBGRADE PERIMETER DIKE COORDINATES			
Point No.	Northing	Easting	Elevation (ft)
144	6437.61	5096.19	685.31
145	6425.37	3933.71	704.74
146	6383.17	5108.23	687.81
147	6352.10	5135.27	696.41
148	6316.02	3908.50	709.72
149	6308.86	4630.41	711.90
150	6304.89	4844.00	704.12
151	6304.21	4934.01	700.81
152	6295.30	4498.77	717.18
153	6290.14	4101.64	716.79
154	6278.55	4350.36	723.66

SUBGRADE PERIMETER DIKE COORDINATES			
Point No.	Northing	Easting	Elevation (ft)
155	6270.50	4465.41	725.70
156	6270.26	4476.27	725.42
157	6254.80	4935.00	717.24
158	6237.41	3821.03	736.23
159	6235.06	4636.89	736.17
160	6228.94	4350.65	739.90

N

0 30' 60' 120'
SCALE

LEGEND

- 710 — EXISTING CONTOUR (2 FT INTERVAL)
- PROPERTY BOUNDARY
- PROPOSED GRADE BREAK
- 710 — PROPOSED TOP OF SUBGRADE CONTOUR (2 FT INTERVAL)
- AREA TO BE COVERED BY GEOGRID
- 100 — PROPOSED DIKE COORDINATE POINT NO.
- 3:1 — PROPOSED SLOPE

NOTES:

1. THE BASE MAP WAS CREATED USING AN AERIAL SURVEY TAKEN IN 2001 BY AIR-LAND SURVEY AND PROVIDED BY WDI, A SURVEY BY MCLLC IN OCTOBER 2007, AND A GROUND SURVEY BY WDI IN OCTOBER 2008.
2. A MINIMUM OF 5 YEARS PRIOR TO CONSTRUCTING MC VI-G PHASES 3 TO 6, WDI SHALL INVESTIGATE THE DIKE LOCATIONS AND NEED FOR DEWATERING FOR THE EXISTING MC I TO CONFIRM THE ASSUMPTIONS USED IN THE DESIGN. WDI SHALL INFORM THE MDEQ OF THE RESULTS OF THIS INVESTIGATION AND REVISE THE DESIGN, IF NECESSARY. THE REVISED DESIGN SHALL BE APPROVED BY THE MDEQ PRIOR TO CONSTRUCTION OF MC VI-G PHASES 3 TO 6.

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Infrastructure Engineering and Environmental Services

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Exton, PA	610.524.2300
Lehigh Valley, PA	484.893.1440
Cleveland, OH	216.334.4040
Indianapolis, IN	317.735.7649

REVISIONS

REV	DESCRIPTION	DATE	BY
A	PHASING DESIGNATIONS	8/10/11	DRL
B	PER MDEQ COMMENTS	9/23/11	DRL

PROJECT NAME:
MASTER CELL VI F&G

PROJECT LOCATION:
WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: TOP OF SUBGRADE GRADING PLAN (3 OF 3)
DESIGNED BY: JHL	INCEP DATE: 11/12/08
DRAWN BY: DRL	DRAWING SCALE: AS SHOWN
CHECKED BY: ISS	SUBMITTED DATE: 9/23/11

SHEET TITLE:
TOP OF SUBGRADE GRADING PLAN (3 OF 3)

SHEET REFERENCE NUMBER:
08

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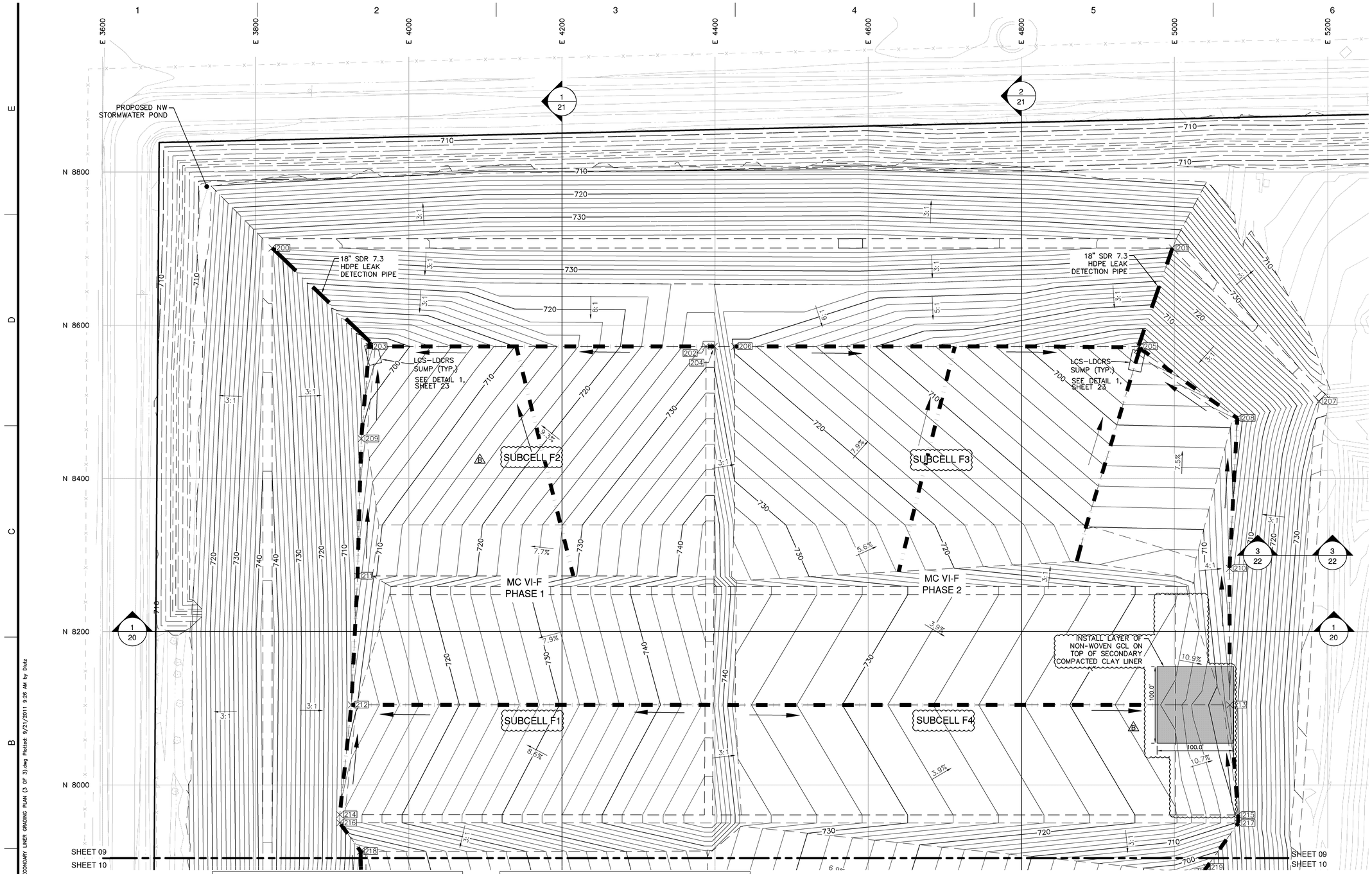

SECONDARY PERIMETER DIKE COORDINATES			
Point No.	Northing	Easting	Elevation (ft)
200	8700.81	3821.52	734.39
201	8700.81	4997.38	734.01
202	8572.25	4388.15	728.36
203	8572.25	3948.23	694.77
204	8572.25	4398.83	728.36
205	8572.25	4954.23	692.38
206	8572.25	4425.54	719.46
207	8500.61	5188.97	728.83
208	8478.75	5082.08	697.60
209	8451.96	3937.88	700.62
210	8282.62	5071.88	702.00

SECONDARY PERIMETER DIKE COORDINATES			
Point No.	Northing	Easting	Elevation (ft)
211	8272.67	3933.11	704.72
212	8104.36	3925.07	708.09
213	8104.36	5072.15	706.55
214	7961.11	3909.91	712.66
215	7960.76	5083.12	709.56
216	7950.56	3909.80	712.66
217	7950.24	5083.12	709.56
218	7913.41	3936.99	703.47
219	7892.49	5042.06	694.60
220	7842.73	3938.32	701.04
221	7842.73	5037.95	692.79

N

0 30' 60' 120'
SCALE

LEGEND

- 710 — EXISTING CONTOUR (2 FT INTERVAL)
- PROPERTY BOUNDARY
- PROPOSED GRADE BREAK
- 825 — PROPOSED TOP OF SECONDARY CONTOUR (2 FT INTERVAL)
- 710 — PROPOSED NW STORMWATER POND CONTOUR (2 FT INTERVAL)
- 200 — PROPOSED DIKE COORDINATE POINT NO.
- 3:1 — PROPOSED SLOPE
- PROPOSED 2 EXTRA LAYERS OF GEONET, 7.5' WIDE BENEATH GEOCOMPOSITE WITH FLOW DIRECTION
- PROPOSED SOLID LEAK DETECTION RISER PIPE
- PROPOSED SECONDARY COLLECTION SUMP

NOTE:

THE BASE MAP WAS CREATED USING AN AERIAL SURVEY TAKEN IN 2001 BY AIR-LAND SURVEY AND PROVIDED BY WDI, A SURVEY BY MCLLC IN OCTOBER 2007, AND A GROUND SURVEY BY WDI IN OCTOBER 2008.

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Lehigh Valley, PA	484.893.1440
Cleveland, OH	216.334.4040
Indianapolis, IN	317.735.7649

REVISIONS

REV	DESCRIPTION	DATE	BY
A	PHASING DESIGNATIONS	8/10/11	DRL
B	PER MDEQ COMMENTS	9/23/11	DRL

PROJECT NAME:
MASTER CELL VI F&G

PROJECT LOCATION:
WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: TOP OF SECONDARY LINER GRADING PLAN (3 OF 3)
DESIGNED BY: JHL	INCEP DATE: 11/12/08
DRAWN BY: DRL	DRAWING SCALE: AS SHOWN
CHECKED BY: ISS	SUBMITTED DATE: 9/23/11

SHEET TITLE:
TOP OF SECONDARY LINER GRADING PLAN (1 OF 3)

SHEET REFERENCE NUMBER:
09

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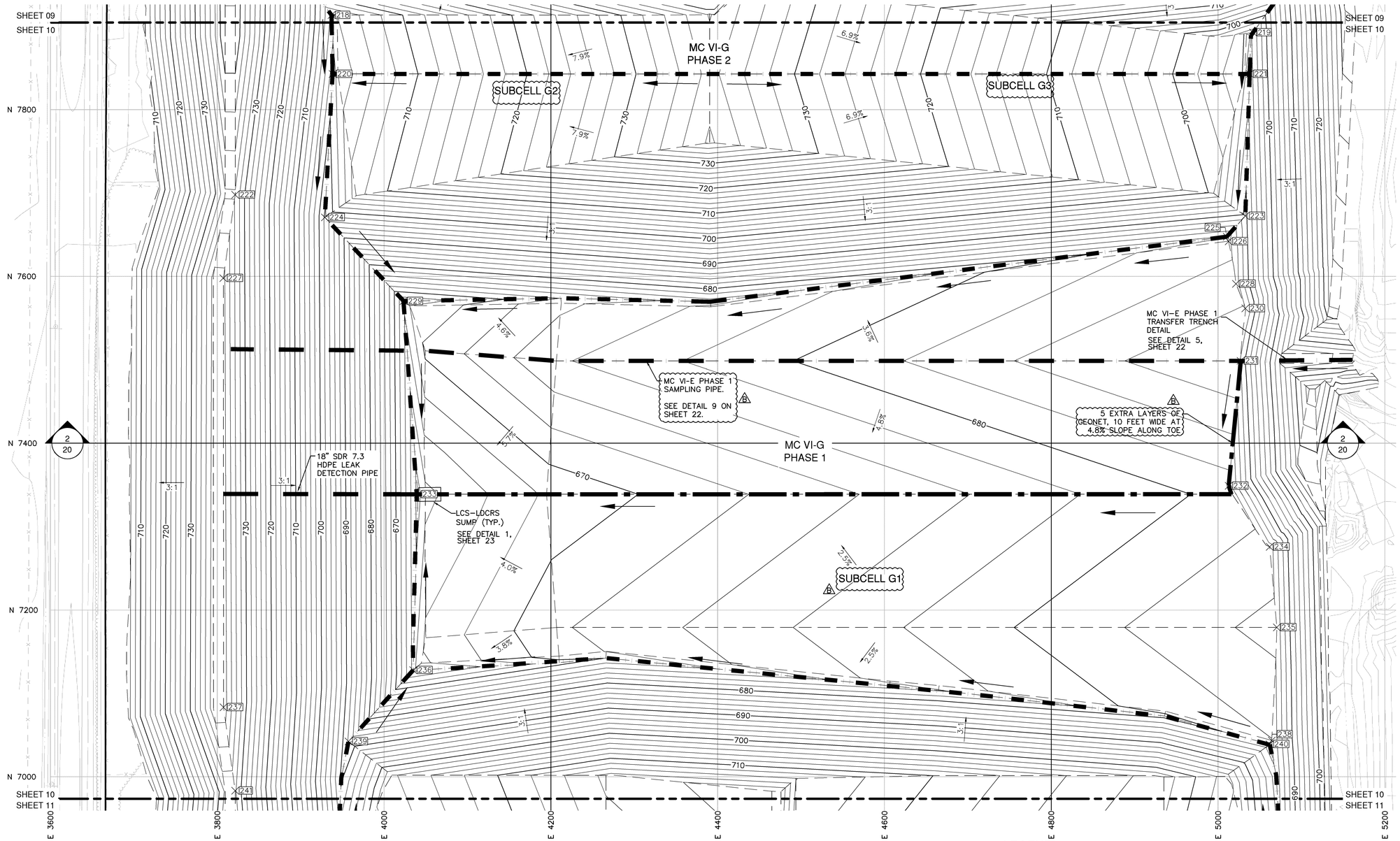

SECONDARY PERIMETER DIKE COORDINATES			
Point No.	Northing	Easting	Elevation (ft)
222	7697.85	3821.52	733.74
223	7672.42	5032.72	689.38
224	7670.78	3929.03	697.65
225	7647.54	5010.47	681.80
226	7641.99	5012.71	683.24
227	7597.85	3807.29	738.60
228	7591.06	5021.51	685.01
229	7570.29	4023.33	666.36
230	7561.67	5032.75	686.20
231	7498.71	5027.05	688.09
232	7349.00	5012.85	681.14

SECONDARY PERIMETER DIKE COORDINATES			
Point No.	Northing	Easting	Elevation (ft)
233	7338.74	4040.54	661.22
234	7275.80	5061.92	682.69
235	7179.18	5070.45	684.75
236	7127.83	4034.99	663.35
237	7083.28	3807.50	739.24
238	7043.49	5064.48	681.99
239	7042.34	3957.36	687.71
240	7039.01	5061.89	680.59
241	6983.28	3821.52	732.35
242	6687.00	3937.54	702.10
243	6636.63	3931.26	705.74

N

0 30' 60' 120'
SCALE

LEGEND

- EXISTING CONTOUR (2 FT INTERVAL)
- PROPERTY BOUNDARY
- PROPOSED GRADE BREAK
- PROPOSED TOP OF SECONDARY CONTOUR (2 FT INTERVAL)
- PROPOSED DIKE COORDINATE POINT NO.
- PROPOSED SLOPE
- PROPOSED 2 EXTRA LAYERS OF GEONET, 7.5' WIDE BENEATH GEOCOMPOSITE WITH FLOW DIRECTION
- PROPOSED 5 EXTRA LAYERS OF GEONET, 11.5' WIDE, BENEATH GEOCOMPOSITE WITH FLOW DIRECTION
- PROPOSED LEAK DETECTION RISER/ SECONDARY SAMPLING PIPE
- PROPOSED SECONDARY COLLECTION SUMP

NOTE:

THE BASE MAP WAS CREATED USING AN AERIAL SURVEY TAKEN IN 2001 BY AIR-LAND SURVEY AND PROVIDED BY WDI, A SURVEY BY MCLLC IN OCTOBER 2007, AND A GROUND SURVEY BY WDI IN OCTOBER 2008.

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REVISIONS

REV	DESCRIPTION	DATE	BY
A	PHASING DESIGNATIONS	8/10/11	DRL
B	PER MDEQ COMMENTS	9/23/11	DRL

PROJECT NAME:
MASTER CELL VI F&G

PROJECT LOCATION:
WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: TOP OF SECONDARY LINER GRADING PLAN (3 OF 3)
DESIGNED BY: JHL	INCEP DATE: 11/12/08
DRAWN BY: DRL	DRAWING SCALE: AS SHOWN
CHECKED BY: ISS	SUBMITTED DATE: 9/23/11

SHEET TITLE:
TOP OF SECONDARY LINER GRADING PLAN (2 OF 3)

SHEET REFERENCE NUMBER:
10

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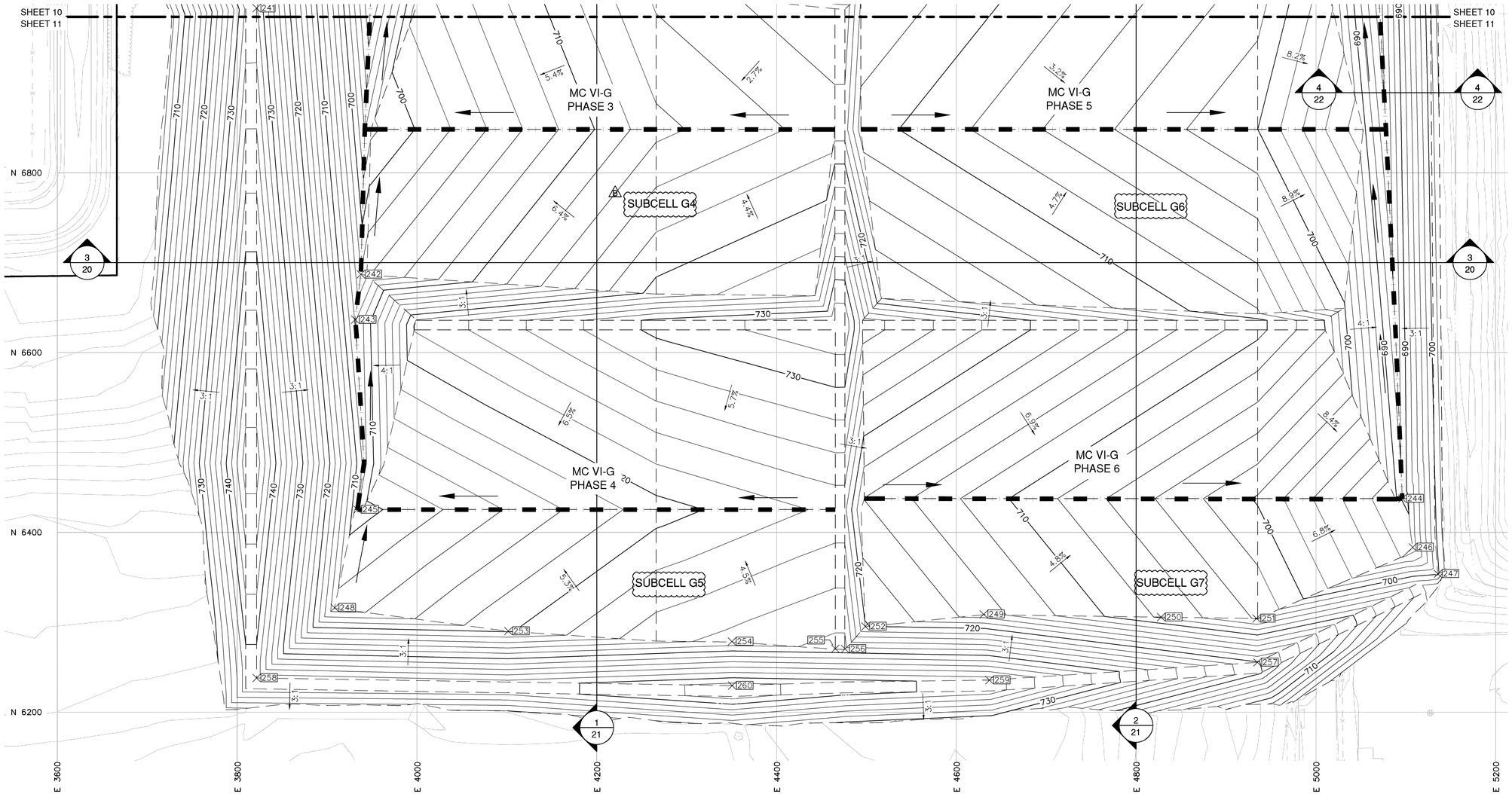

SECONDARY PERIMETER DIKE COORDINATES			
Point No.	Northing	Easting	Elevation (ft)
244	6437.59	5096.06	688.43
245	6425.35	3933.83	707.86
246	6383.34	5107.71	690.84
247	6353.82	5135.70	699.60
248	6316.02	3908.50	712.72
249	6308.86	4630.41	714.90
250	6305.63	4827.81	707.70
251	6304.21	4934.01	703.81
252	6295.30	4498.77	720.18
253	6290.14	4101.64	719.79
254	6278.55	4350.36	726.66

SECONDARY PERIMETER DIKE COORDINATES			
Point No.	Northing	Easting	Elevation (ft)
255	6270.50	4465.41	728.70
256	6270.26	4476.27	728.59
257	6255.28	4934.88	720.24
258	6237.90	3821.52	739.23
259	6235.55	4636.87	739.17
260	6229.43	4350.65	742.90

N

0 30' 60' 120'
SCALE

LEGEND

- 710 — EXISTING CONTOUR (2 FT INTERVAL)
- PROPERTY BOUNDARY
- PROPOSED GRADE BREAK
- 710 — PROPOSED TOP OF SECONDARY CONTOUR (2 FT INTERVAL)
- 200 — PROPOSED DIKE COORDINATE POINT NO.
- 3:1 — PROPOSED SLOPE
- PROPOSED 2 EXTRA LAYERS OF GEONET, 7.5' WIDE BENEATH GEOCOMPOSITE WITH FLOW DIRECTION

NOTES:

1. THE BASE MAP WAS CREATED USING AN AERIAL SURVEY TAKEN IN 2001 BY AIR-LAND SURVEY AND PROVIDED BY WDI, A SURVEY BY MCLLC IN OCTOBER 2007, AND A GROUND SURVEY BY WDI IN OCTOBER 2008.
2. A MINIMUM OF 5 YEARS PRIOR TO CONSTRUCTING MC VI-G PHASES 3 TO 6, WDI SHALL INVESTIGATE THE DIKE LOCATIONS AND NEED FOR DEWATERING FOR THE EXISTING MC I TO CONFIRM THE ASSUMPTIONS USED IN THE DESIGN. WDI SHALL INFORM THE MDEQ OF THE RESULTS OF THIS INVESTIGATION AND REVISE THE DESIGN, IF NECESSARY. THE REVISED DESIGN SHALL BE APPROVED BY THE MDEQ PRIOR TO CONSTRUCTION OF MC VI-G PHASES 3 TO 6. B

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REVISIONS

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A	PHASING DESIGNATIONS	8/10/11	DRL
B	PER MDEQ COMMENTS	9/23/11	DRL

PROJECT NAME:
MASTER CELL VI F&G

PROJECT LOCATION:
WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: TOP OF SECONDARY LINER GRADING PLAN (3 OF 3)
DESIGNED BY: JHL	INCEP DATE: 11/12/08
DRAWN BY: DRL	DRAWING SCALE: AS SHOWN
CHECKED BY: ISS	SUBMITTED DATE: 9/23/11

SHEET TITLE:
TOP OF SECONDARY LINER GRADING PLAN (3 OF 3)

SHEET REFERENCE NUMBER:
11

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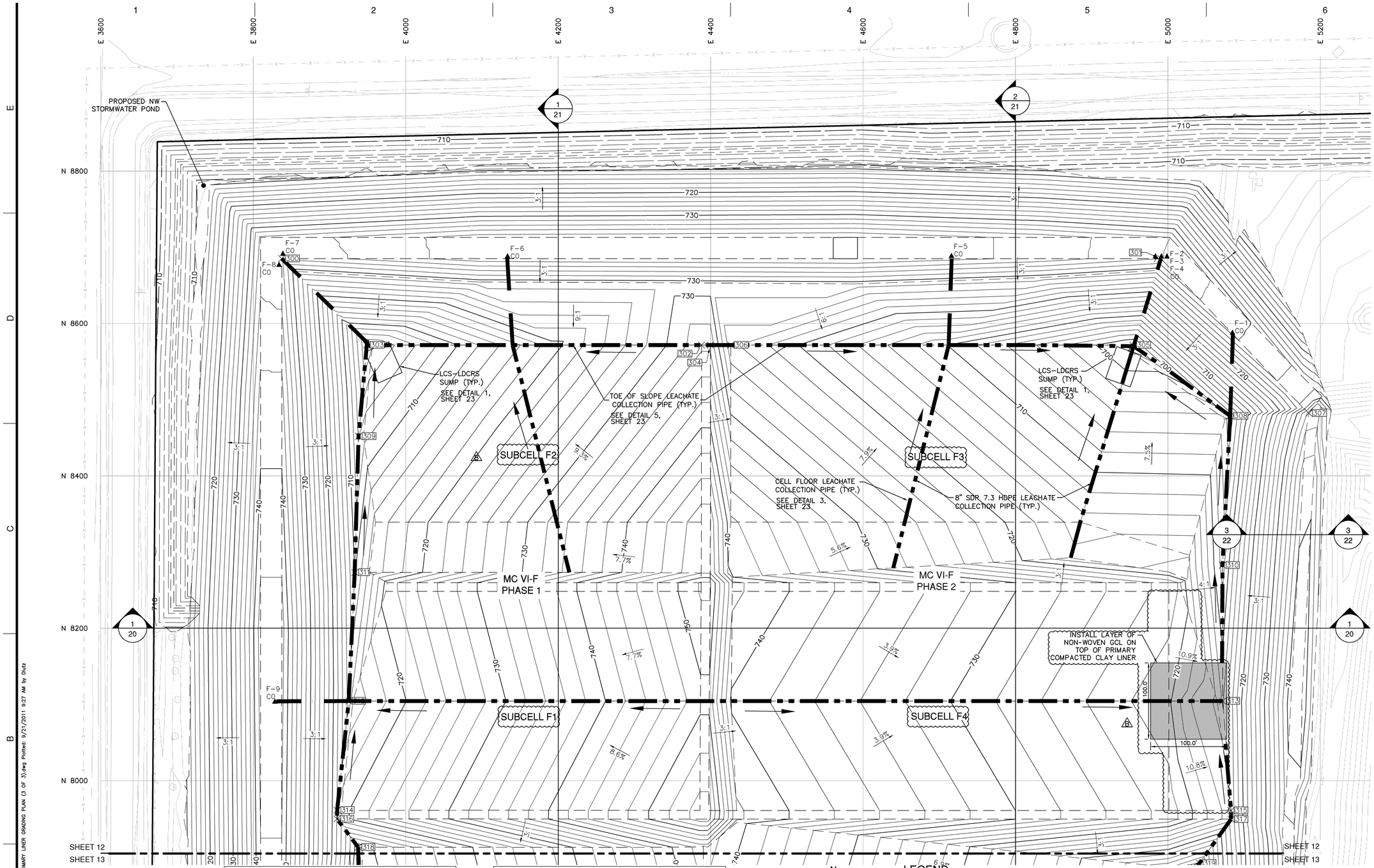

PRIMARY PERIMETER DIKE COORDINATES			
Point No.	Northing	Easting	Elevation (ft)
300	8685.01	3837.32	734.39
301	8685.01	4990.85	734.01
302	8571.54	4388.00	733.49
303	8571.54	3948.60	699.97
304	8571.54	4399.64	733.49
305	8571.54	4954.14	697.53
306	8571.54	4426.45	724.56
307	8482.21	5185.03	734.79
308	8478.59	5081.75	702.80
309	8451.95	3938.08	705.82
310	8282.69	5071.67	707.20

PRIMARY PERIMETER DIKE COORDINATES			
Point No.	Northing	Easting	Elevation (ft)
311	8273.20	3933.29	709.92
312	8104.36	3925.25	713.29
313	8104.36	5071.95	711.75
314	7961.21	3910.06	717.86
315	7960.81	5082.91	714.76
316	7949.77	3909.93	717.86
317	7949.43	5082.91	714.76
318	7912.56	3937.63	708.50
319	7891.54	5041.36	699.63
320	7842.73	3938.51	706.24
321	7842.73	5037.74	697.99

N

0 30' 60' 120'
SCALE

LEGEND

- 710 — EXISTING CONTOUR (2 FT INTERVAL)
- PROPERTY BOUNDARY
- PROPOSED GRADE BREAK
- 710 — PROPOSED TOP OF PRIMARY CONTOUR (2 FT INTERVAL)
- 710 — PROPOSED NW STORMWATER POND CONTOUR (2 FT INTERVAL)
- 300 — PROPOSED DIKE COORDINATE POINT NO.
- 3:1 — PROPOSED SLOPE
- PROPOSED LEACHATE COLLECTION PIPE AND FLOW DIRECTION
- F-1 CO — PROPOSED LEACHATE CLEANOUT PIPE
- PROPOSED PRIMARY COLLECTION SUMP

NOTE:

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REVISIONS

REV	DESCRIPTION	DATE	BY
A	PHASING DESIGNATIONS	8/10/11	DRL
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PROJECT NAME:
MASTER CELL VI F&G

PROJECT LOCATION:
WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: TOP OF PRIMARY LINER GRADING PLAN (3 OF 3)
DESIGNED BY: JHL	INCEP DATE: 11/12/08
DRAWN BY: DRL	DRAWING SCALE: AS SHOWN
CHECKED BY: ISS	SUBMITTED DATE: 9/23/11

SHEET TITLE:
TOP OF PRIMARY LINER GRADING PLAN (1 OF 3)

SHEET REFERENCE NUMBER:
12

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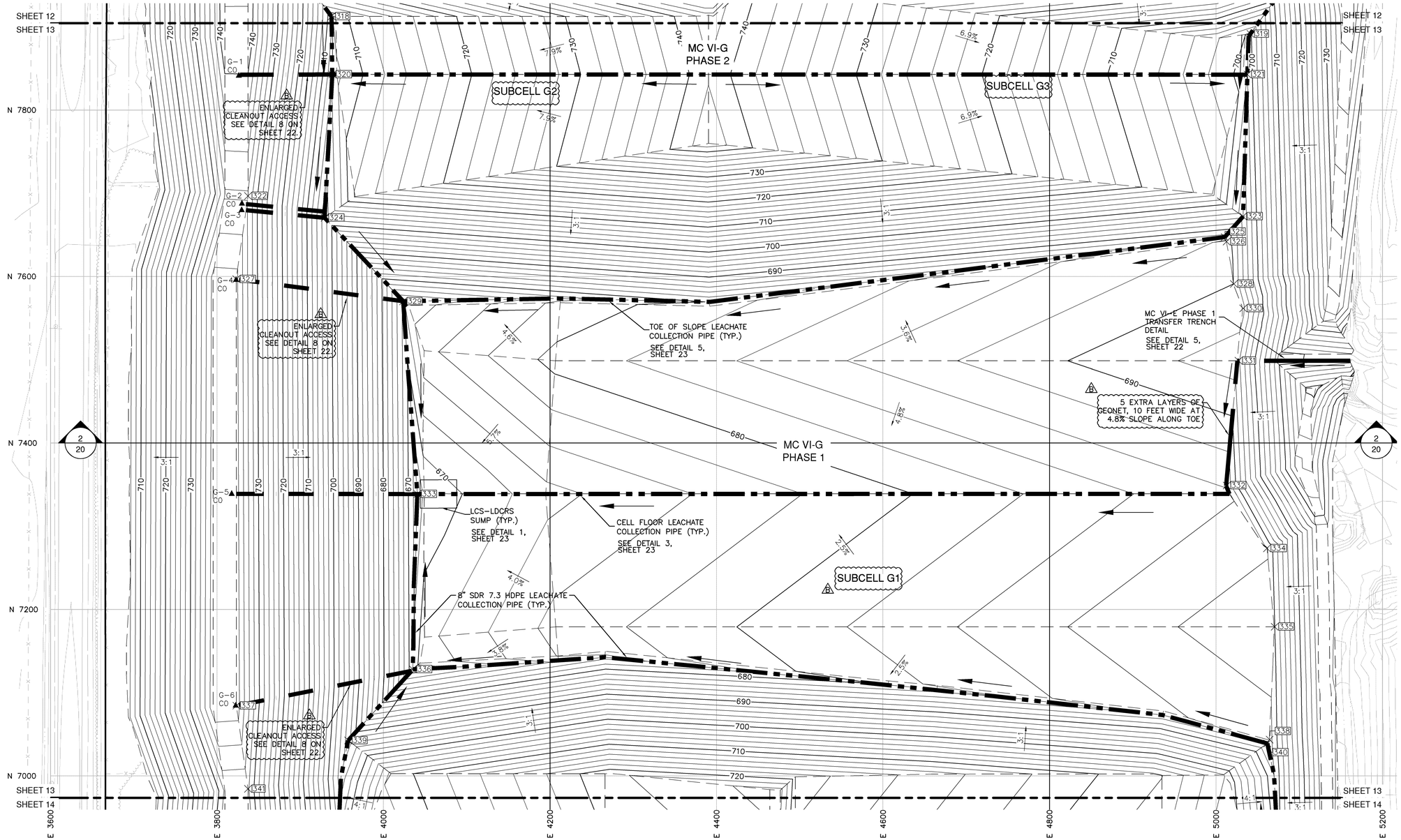

PRIMARY PERIMETER DIKE COORDINATES			
Point No.	Northing	Easting	Elevation (ft)
322	7696.73	3837.32	733.74
323	7672.20	5032.54	694.58
324	7670.57	3929.29	702.88
325	7647.35	5010.49	687.00
326	7641.99	5012.71	688.30
327	7596.74	3823.09	738.60
328	7591.06	5021.51	690.24
329	7570.10	4023.55	671.56
330	7561.67	5032.75	691.59
331	7498.71	5027.05	693.52
332	7349.00	5012.85	686.42

PRIMARY PERIMETER DIKE COORDINATES			
Point No.	Northing	Easting	Elevation (ft)
333	7338.74	4040.74	666.42
334	7273.49	5061.28	687.73
335	7179.18	5070.45	689.94
336	7128.04	4035.19	668.55
337	7084.38	3823.30	739.24
338	7043.49	5064.48	687.10
339	7042.63	3957.62	692.90
340	7038.96	5061.69	685.79
341	6984.38	3837.32	732.35
342	6686.99	3937.74	707.30
343	6636.62	3931.46	710.94

N

0 30' 60' 120'
SCALE

LEGEND

- 710 — EXISTING CONTOUR (2 FT INTERVAL)
- PROPERTY BOUNDARY
- PROPOSED GRADE BREAK
- 710 — PROPOSED TOP OF PRIMARY CONTOUR (2 FT INTERVAL)
- 300 — PROPOSED DIKE COORDINATE POINT NO.
- 3:1 — PROPOSED SLOPE
- PROPOSED 5 EXTRA LAYERS OF GEONET WITH TRANSMISSIVITY ≥ 1.3 X 10^{-3} M^2/S, 10' WIDE, BENEATH GEOCOMPOSITE WITH FLOW DIRECTION
- PROPOSED LEACHATE COLLECTION PIPE AND FLOW DIRECTION
- G-1 CO — PROPOSED LEACHATE CLEANOUT PIPE
- PROPOSED PRIMARY COLLECTION SUMP

NOTE:

THE BASE MAP WAS CREATED USING AN AERIAL SURVEY TAKEN IN 2001 BY AIR-LAND SURVEY AND PROVIDED BY WDI, A SURVEY BY MCLLC IN OCTOBER 2007, AND A GROUND SURVEY BY WDI IN OCTOBER 2008.

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REVISIONS

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PROJECT NAME:
MASTER CELL VI F&G

PROJECT LOCATION:
WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: TOP OF PRIMARY LINER GRADING PLAN (3 OF 3)
DESIGNED BY: JHL	INCEP DATE: 11/12/08
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CHECKED BY: ISS	SUBMITTED DATE: 9/23/11

SHEET TITLE:
TOP OF PRIMARY LINER GRADING PLAN (2 OF 3)

SHEET REFERENCE NUMBER:
13

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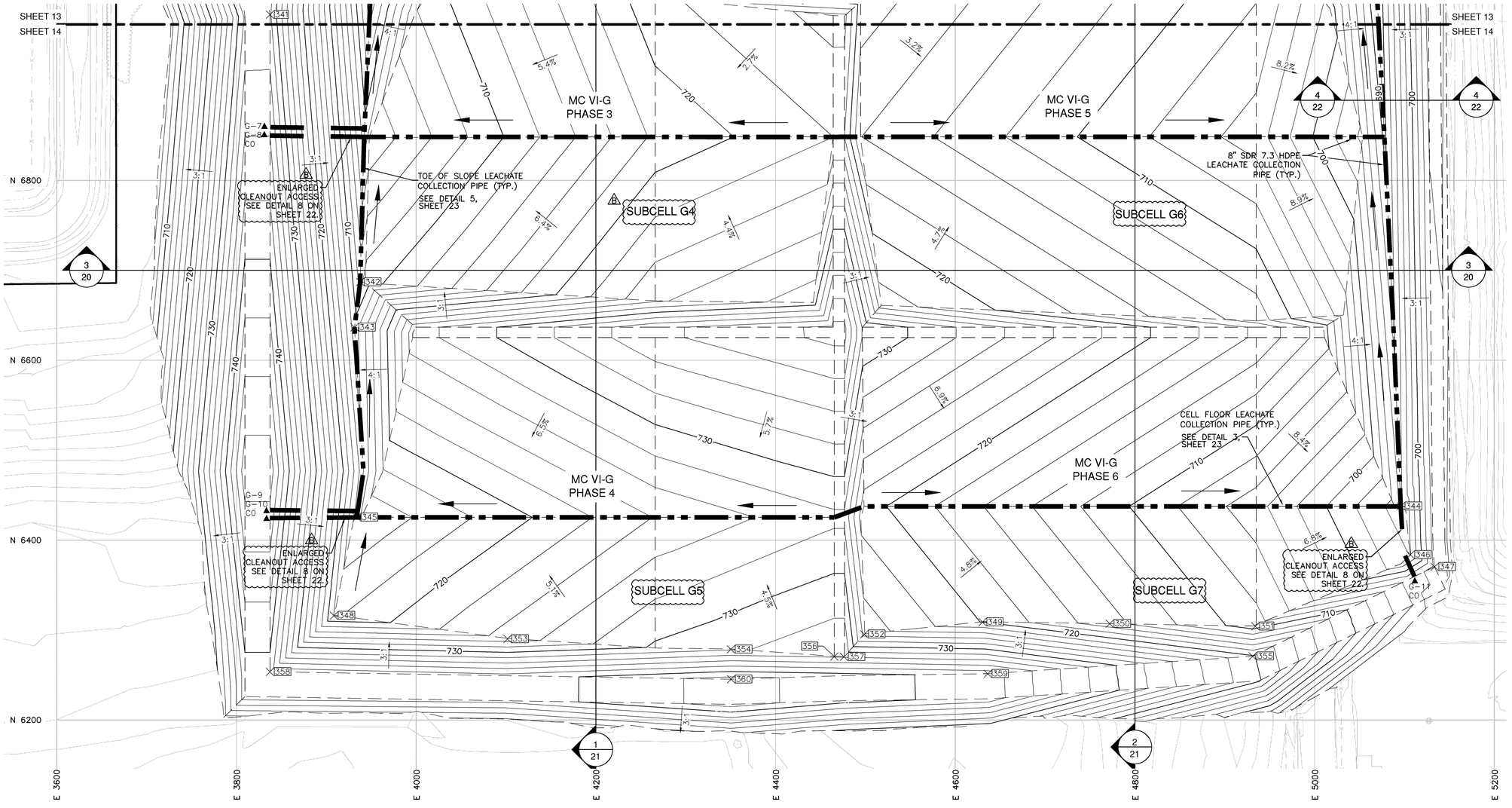

PRIMARY PERIMETER DIKE COORDINATES			
Point No.	Northing	Easting	Elevation (ft)
344	6437.60	5095.87	693.63
345	6425.32	3934.02	713.06
346	6383.71	5106.68	695.89
347	6370.28	5133.49	704.60
348	6316.02	3908.50	717.88
349	6308.86	4630.41	720.03
350	6307.07	4772.00	714.72
351	6304.21	4934.01	709.18
352	6295.30	4498.77	725.35
353	6290.14	4101.68	724.99
354	6278.55	4350.36	731.79

PRIMARY PERIMETER DIKE COORDINATES			
Point No.	Northing	Easting	Elevation (ft)
355	6270.86	4931.07	720.24
356	6270.50	4465.41	733.79
357	6270.26	4476.27	733.80
358	6253.54	3837.32	739.23
359	6251.34	4636.24	739.17
360	6245.23	4350.52	742.90

N

0 30' 60' 120'
SCALE

LEGEND

- 710 — EXISTING CONTOUR (2 FT INTERVAL)
- PROPERTY BOUNDARY
- PROPOSED GRADE BREAK
- 710 — PROPOSED TOP OF PRIMARY PRIMARY CONTOUR (2 FT INTERVAL)
- 300 — PROPOSED DIKE COORDINATE POINT NO.
- 3:1 — PROPOSED SLOPE
- PROPOSED LEACHATE COLLECTION PIPE AND FLOW DIRECTION
- G-8 CO — PROPOSED LEACHATE CLEANOUT PIPE

NOTES:

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2. A MINIMUM OF 5 YEARS PRIOR TO CONSTRUCTING MC VI-G PHASES 3 TO 6, WDI SHALL INVESTIGATE THE DIKE LOCATIONS AND NEED FOR DEWATERING FOR THE EXISTING MC I TO CONFIRM THE ASSUMPTIONS USED IN THE DESIGN. WDI SHALL INFORM THE MDEQ OF THE RESULTS OF THIS INVESTIGATION AND REVISE THE DESIGN, IF NECESSARY. THE REVISED DESIGN SHALL BE APPROVED BY THE MDEQ PRIOR TO CONSTRUCTION OF MC VI-G PHASES 3 TO 6.

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REVISIONS

REV	DESCRIPTION	DATE	BY
A	PHASING DESIGNATIONS	8/10/11	DRL
B	PER MDEQ COMMENTS	9/23/11	DRL

PROJECT NAME:
MASTER CELL VI F&G

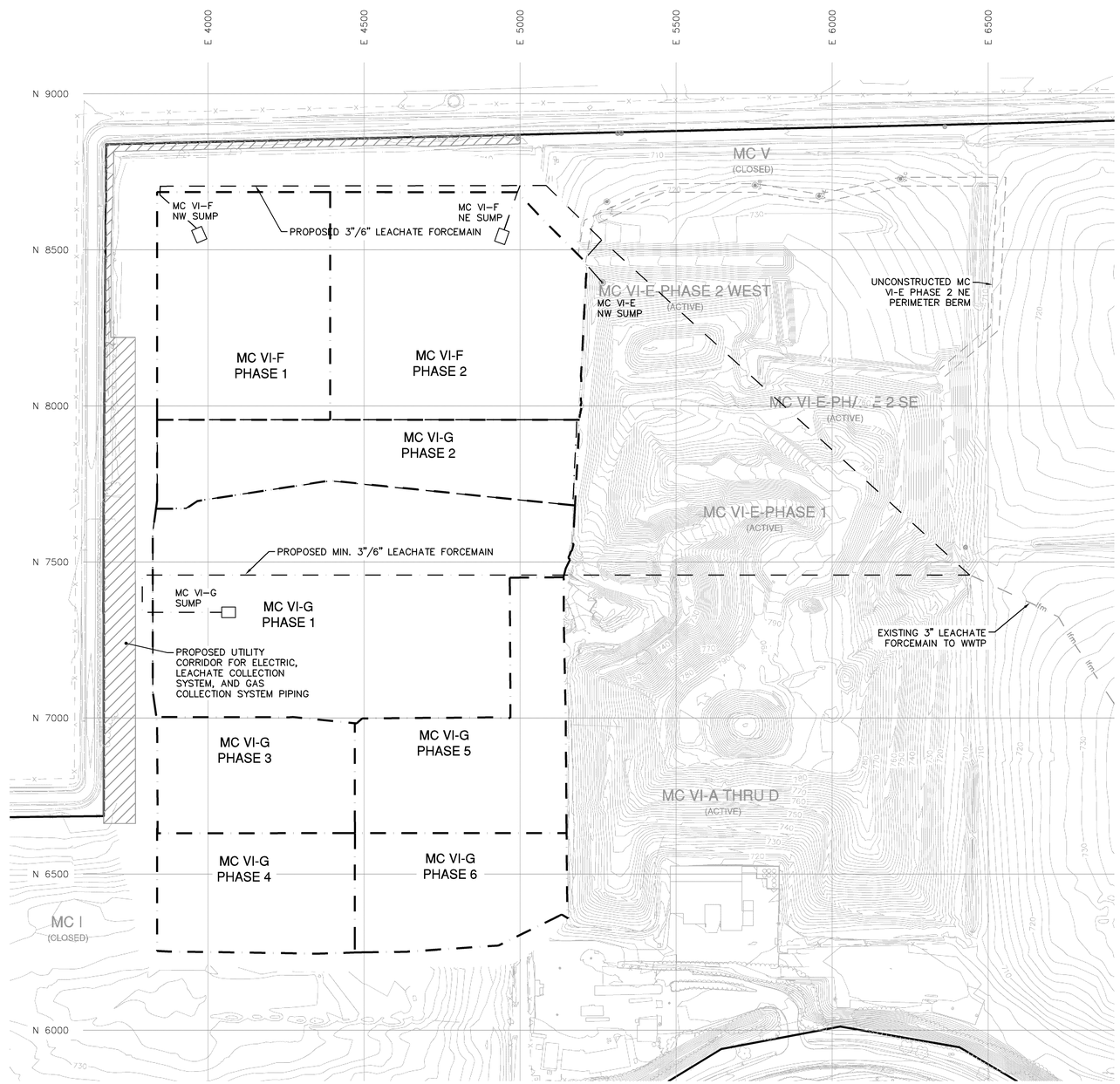
PROJECT LOCATION:
WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: TOP OF PRIMARY LINER GRADING PLAN (3 OF 3)
DESIGNED BY: JHL	INCEP DATE: 11/12/08
DRAWN BY: DRL	DRAWING SCALE: AS SHOWN
CHECKED BY: ISS	SUBMITTED DATE: 9/23/11

SHEET TITLE:
TOP OF PRIMARY LINER GRADING PLAN (3 OF 3)

SHEET REFERENCE NUMBER:
14

J:\13\13060921\Production Sets\Civil\SF-G Permit Drawings\TOP OF PRIMARY LINER GRADING PLAN (3 OF 3).dwg Plotted: 9/21/2011 3:53 PM by Diutz



N

0 100' 200' 400'

SCALE

LEGEND

- EXISTING CONTOUR (2 FT INTERVAL)
- EXISTING 3" LEACHATE FORCEMAIN
- PROPERTY BOUNDARY
- PROPOSED PHASE BOUNDARY
- PROPOSED 3"/6" DUAL CONTAINED LEACHATE FORCEMAIN
- PROPOSED UTILITY CORRIDOR

NOTE:

1. THE BASE MAP WAS CREATED USING AN AERIAL SURVEY TAKEN IN 2001 BY AIR-LAND SURVEY AND PROVIDED BY WDI, A SURVEY BY MCLLC IN OCTOBER 2007, AND A GROUND SURVEY BY WDI IN OCTOBER 2008.

NTH Consultants, Ltd.

Infrastructure Engineering and Environmental Services

Northville, MI	248.553.6300
Detroit, MI	313.237.3900
Lansing, MI	517.484.6900
Grand Rapids, MI	616.957.3690
Exton, PA	610.524.2300
Lehigh Valley, PA	484.893.1440
Cleveland, OH	216.334.4040
Indianapolis, IN	317.735.7649

REVISIONS

REV	DESCRIPTION	DATE	BY
A	PHASING DESIGNATIONS	8/10/11	DRL

PROJECT NAME:

MASTER CELL VI F&G

PROJECT LOCATION:

WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: UTILITY MODIFICATION PLAN
DESIGNED BY: DRL	INCEP DATE: 11/12/08
DRAWN BY: DRL	DRAWING SCALE: AS SHOWN
CHECKED BY: RBM	SUBMITTED DATE: 2/28/11

SHEET TITLE:

LEACHATE MANAGEMENT PLAN

SHEET REFERENCE NUMBER:

15

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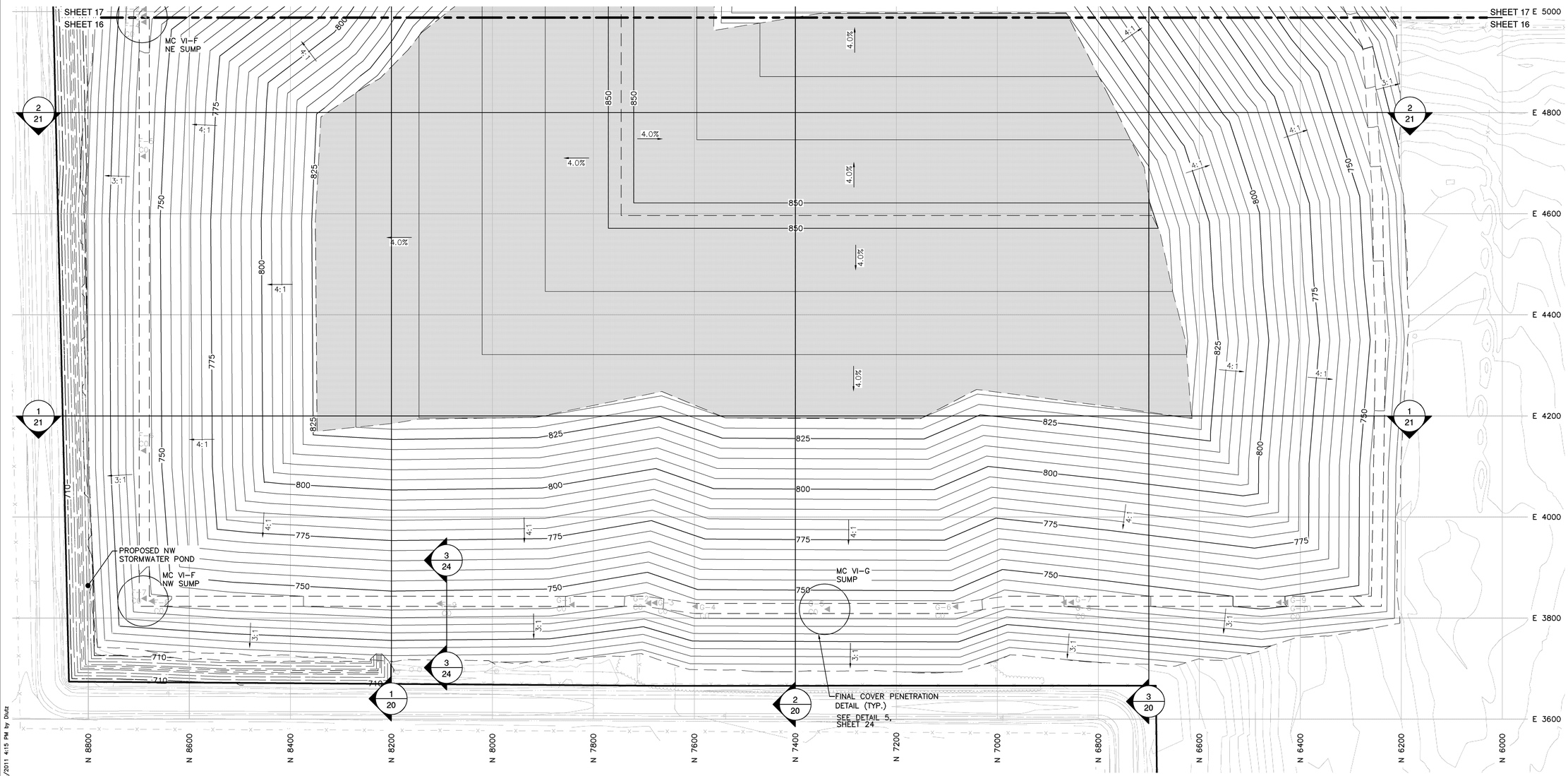

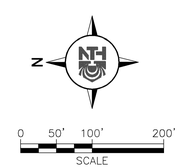

LEGEND

- 710 — EXISTING CONTOUR (2 FT INTERVAL)
- PROPERTY BOUNDARY
- PROPOSED GRADE BREAK
- 825 — PROPOSED TOP OF FINAL COVER CONTOUR (5 FT INTERVAL)
- 710 — PROPOSED NW STORMWATER POND CONTOUR (2 FT INTERVAL)
- 3:1 — PROPOSED SLOPE
- PROPOSED PASSIVE GAS VENT/TRENCH
- F-1 CO — PROPOSED LEACHATE COLLECTION SYSTEM CLEANOUTS
- PROPOSED SUMP LOCATION AND COVER PENETRATION
- PROPOSED GEOCOMPOSITE WITH TRANSMISSIVITY $\geq 5.0 \times 10^{-4}$ M^2/S (REMAINING COVER GEOCOMPOSITE TRANSMISSIVITY $\geq 7.0 \times 10^{-5}$ M^2/S)

NOTES:

1. THE BASE MAP WAS CREATED USING AN AERIAL SURVEY TAKEN IN 2001 BY AIR-LAND SURVEY AND PROVIDED BY WDI, A SURVEY BY MCLLC IN OCTOBER 2007, AND A GROUND SURVEY BY WDI IN OCTOBER 2008.
2. INSTALL GAS MANAGEMENT SYSTEM IN ACCORDANCE WITH THE APPROVED CLOSURE PLAN.

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Exton, PA	610.524.2300
Lehigh Valley, PA	484.893.1440
Cleveland, OH	216.334.4040
Indianapolis, IN	317.735.7649

REVISIONS

REV	DESCRIPTION	DATE	BY

PROJECT NAME:
MASTER CELL VI F&G

PROJECT LOCATION:
WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: FINAL COVER GRADING PLAN (1 OF 2)
DESIGNED BY: DRL	INCEP DATE: 11/12/08
DRAWN BY: DRL	DRAWING SCALE: AS SHOWN
CHECKED BY: RBM	SUBMITTED DATE: 2/28/11

SHEET TITLE:
FINAL COVER GRADING PLAN (1 OF 2)

SHEET REFERENCE NUMBER:
16

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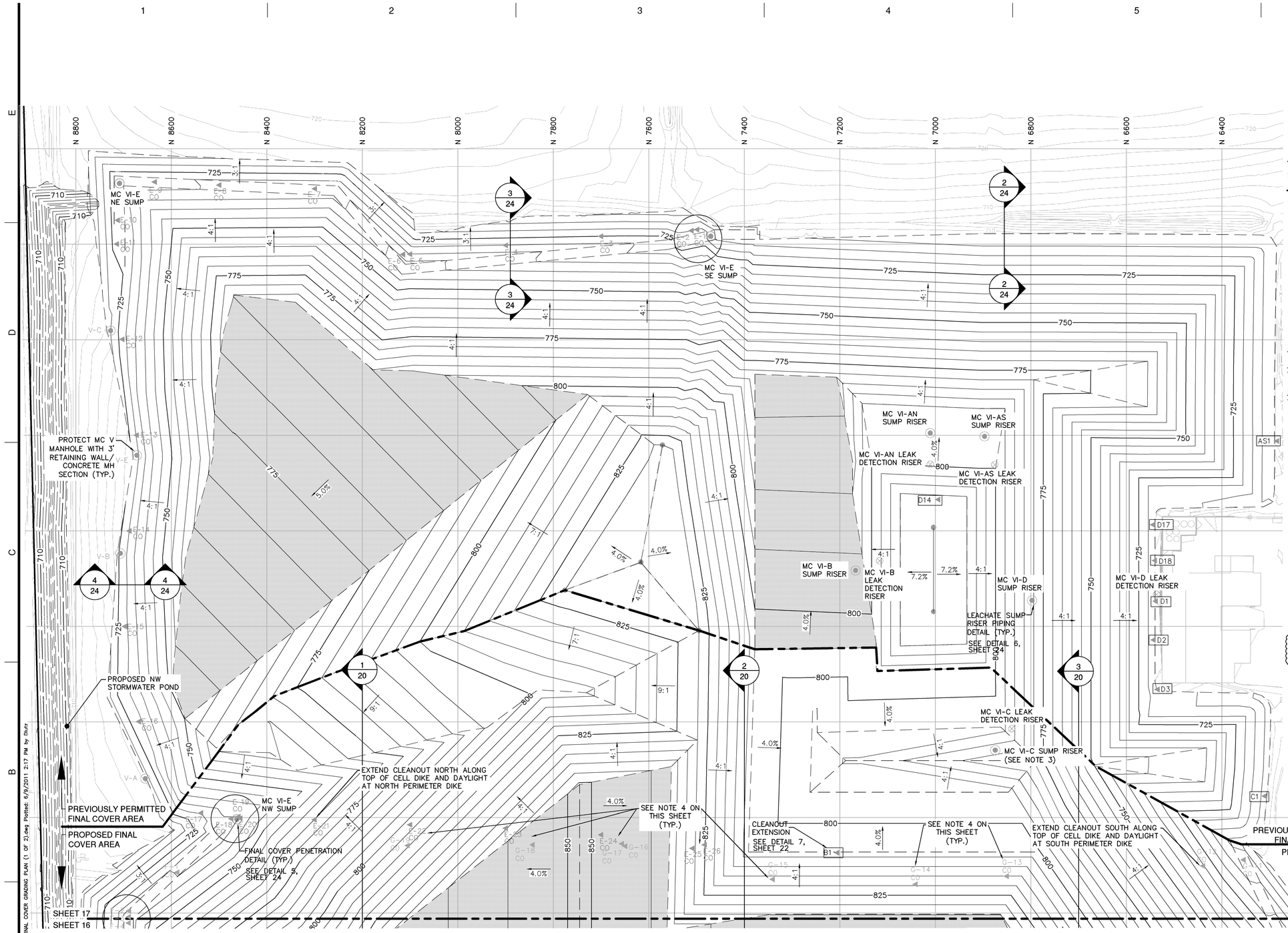

LEGEND

- EXISTING CONTOUR (2 FT INTERVAL)
- PROPERTY BOUNDARY
- EXISTING/PREVIOUSLY PERMITTED LEACHATE SUMP AND COVER PENETRATION
- EXISTING/PREVIOUSLY PERMITTED LEACHATE COLLECTION SYSTEM CLEANOUTS
- EXISTING LEAK DETECTION, COLLECTION, AND REMOVAL SYSTEM RISERS
- EXISTING APPROXIMATE LOCATION OF COVER DRAIN OUTLETS
- PREVIOUSLY PERMITTED PASSIVE GAS VENT
- PROPOSED GRADE BREAK
- PROPOSED TOP OF FINAL COVER CONTOUR (5 FT INTERVAL)
- PROPOSED NW STORMWATER POND CONTOUR (2 FT INTERVAL)
- PROPOSED SLOPE
- PROPOSED PASSIVE GAS VENT/TRENCH
- PROPOSED LEACHATE COLLECTION SYSTEM CLEANOUTS
- PROPOSED SUMP LOCATION AND COVER PENETRATION
- PROPOSED GEOCOMPOSITE WITH TRANSMISSIVITY $\geq 5.0 \times 10^{-4}$ M^2/S (REMAINING COVER GEOCOMPOSITE TRANSMISSIVITY $\geq 7.0 \times 10^{-5}$ M^2/S)

NOTES:

1. THE BASE MAP WAS CREATED USING AN AERIAL SURVEY TAKEN IN 2001 BY AIR-LAND SURVEY, AND PROVIDED BY WDI, A SURVEY BY MCLLC IN OCTOBER 2007 AND A GROUND SURVEY BY WDI IN OCTOBER 2008.
2. CLEANOUTS IN MC VI-AN, AS, B, C, AND D ARE TO BE ABANDONED, EXCEPT B1, C1, D1 THROUGH D3, D14, D17, D18 AND AS1.
3. BEFORE PLACING WASTE AROUND MC VI-C SUMP RISER, A MONITORING PROGRAM SHOULD BE IMPLEMENTED TO MONITOR ITS FUNCTIONALITY.
4. PRIOR TO PLACING WASTE AROUND CLEANOUTS E-22 THROUGH E-26 AND CLEANOUTS G-13 THROUGH G-19, THE CLEANOUTS SHOULD BE EVALUATED TO DETERMINE IF THE LEACHATE COLLECTION LINE CAN BE CLEANED BY A SINGLE ACCESS POINT. IF NOT, THE CLEANOUT SHOULD TO BE EXTENDED IN ACCORDANCE WITH DETAIL 7 ON SHEET 22 OR ALONG INTERIOR DIKE TO PERIMETER DIKE.
5. INSTALL GAS MANAGEMENT SYSTEM IN ACCORDANCE WITH THE APPROVED CLOSURE PLAN.

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Exton, PA	610.524.2300
Lehigh Valley, PA	484.893.1440
Cleveland, OH	216.334.4040
Indianapolis, IN	317.735.7649

REVISIONS

REV	DESCRIPTION	DATE	BY
A	PHASING DESIGNATIONS	8/10/11	DRL

PROJECT NAME:
MASTER CELL VI F&G

PROJECT LOCATION:
WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: FINAL COVER GRADING PLAN (1 OF 2)
DESIGNED BY: DRL	INCEP DATE: 11/12/08
DRAWN BY: DRL	DRAWING SCALE: AS SHOWN
CHECKED BY: RBM	SUBMITTED DATE: 2/28/11

SHEET TITLE:
FINAL COVER GRADING PLAN (2 OF 2)

SHEET REFERENCE NUMBER:
17

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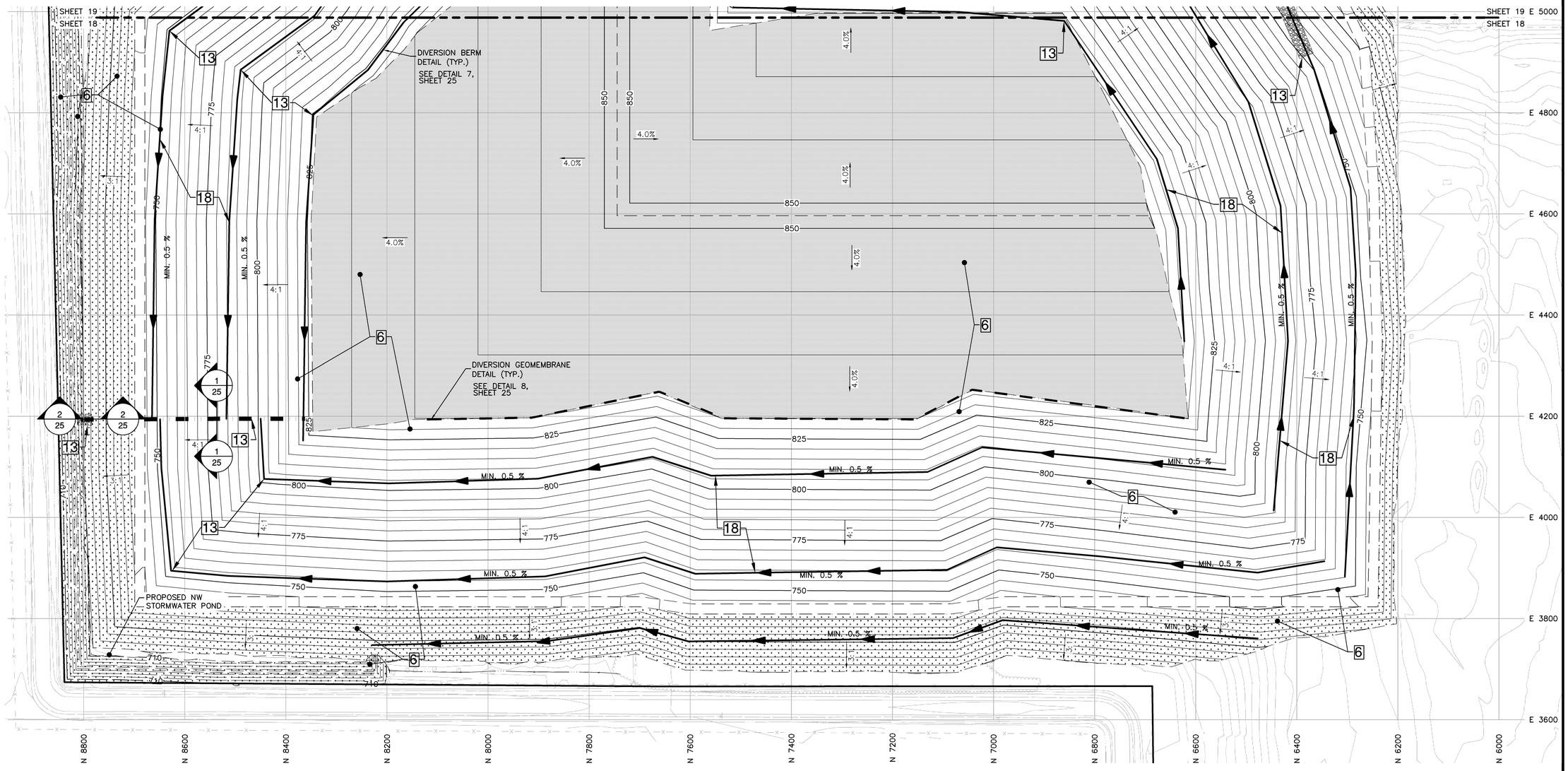
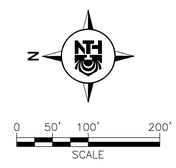
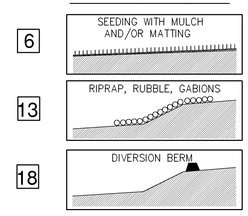




LEGEND

- 710 — EXISTING CONTOUR (2 FT INTERVAL)
- PROPERTY BOUNDARY
- PROPOSED GRADE BREAK
- 825 — PROPOSED TOP OF FINAL COVER CONTOUR (5 FT INTERVAL)
- 710 — PROPOSED NW STORMWATER POND CONTOUR (2 FT INTERVAL)
- 3:1 — PROPOSED SLOPE
- PROPOSED DIVERSION GEOMEMBRANE
- PROPOSED DIVERSION BERM
- PROPOSED DOWNSLOPE SPILLWAY
- PROPOSED OUTLET SWALE
- PROPOSED RIP-RAP
- PROPOSED PERMANENT SEEDING-AT TIME OF DIKE CONSTRUCTION
- PROPOSED GEOCOMPOSITE WITH TRANSMISSIVITY $\geq 5.0 \times 10^{-4}$ M^2/S (REMAINING COVER GEOCOMPOSITE TRANSMISSIVITY $\geq 7.0 \times 10^{-5}$ M^2/S)

SOIL EROSION AND SEDIMENTATION CONTROL LEGEND



NOTES:

1. THE BASE MAP WAS CREATED USING AN AERIAL SURVEY TAKEN IN 2001 BY AIR-LAND SURVEY AND PROVIDED BY WDI, A SURVEY BY MCLLC IN OCTOBER 2007, AND A GROUND SURVEY BY WDI IN OCTOBER 2008.
2. SILT FENCE PLACED AT TIME OF CONSTRUCTION AND MAINTAINED UNTIL VEGETATION ON OUTSIDE SLOPE OF DIKE IS ESTABLISHED. SEE STORM WATER MANAGEMENT SYSTEM DETAILS SHEET FOR DETAIL.

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Infrastructure Engineering and Environmental Services

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Lehigh Valley, PA	484.893.1440
Cleveland, OH	216.334.4040
Indianapolis, IN	317.735.7649

REVISIONS

REV	DESCRIPTION	DATE	BY

PROJECT NAME:
MASTER CELL VI F&G

PROJECT LOCATION:
WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: STORMWATER MANAGEMENT AN SEDIMENTATION PLAN (2 OF 2)
DESIGNED BY: DRL	INCEP DATE: 11/12/08
DRAWN BY: DRL	DRAWING SCALE: AS SHOWN
CHECKED BY: RBM	SUBMITTED DATE: 2/28/11

SHEET TITLE:
STORMWATER MANAGEMENT AND SEDIMENTATION PLAN (1 OF 2)

SHEET REFERENCE NUMBER:
18

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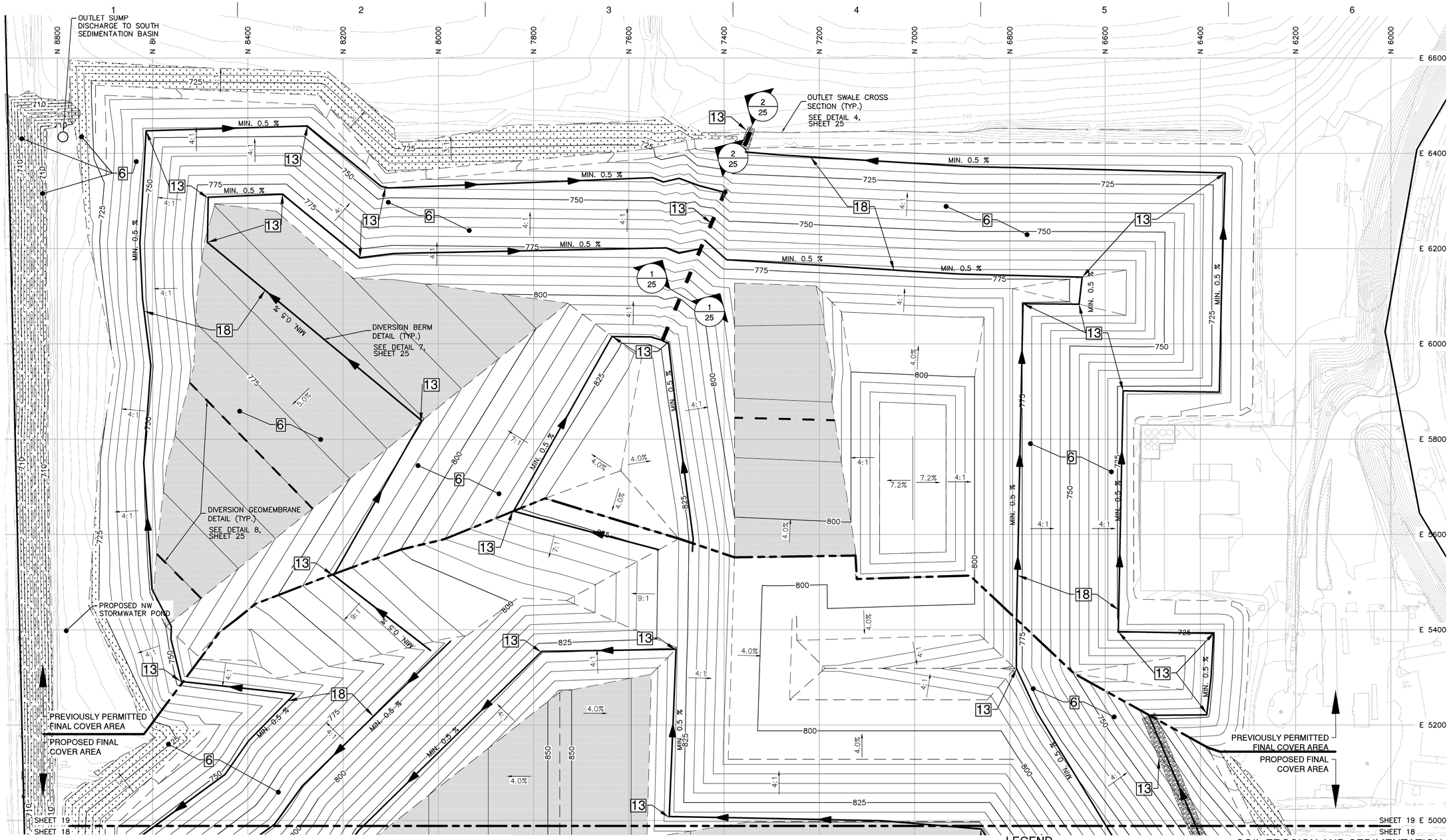

LEGEND

- EXISTING CONTOUR (2 FT INTERVAL)
- PROPERTY BOUNDARY
- PROPOSED GRADE BREAK
- PROPOSED TOP OF FINAL COVER CONTOUR (5 FT INTERVAL)
- PROPOSED NORTH POND CONTOUR (2 FT INTERVAL)
- PROPOSED SLOPE
- PROPOSED DIVERSION GEOMEMBRANE
- PROPOSED DIVERSION BERM
- PROPOSED DOWNSLOPE SPILLWAY
- PROPOSED OUTLET SWALE
- PROPOSED RIP–RAP
- PROPOSED PERMANENT SEEDING–AT TIME OF DIKE CONSTRUCTION
- PROPOSED GEOCOMPOSITE WITH TRANSMISSIVITY ≥ 5.0 X 10^{-4} M^2/S (REMAINING COVER GEOCOMPOSITE TRANSMISSIVITY ≥ 7.0 X 10^{-5} M^2/S)

0 50' 100' 200'
SCALE

SOIL EROSION AND SEDIMENTATION CONTROL LEGEND

6 — SEEDING WITH MULCH AND/OR MATTING

13 — RIPRAP, RUBBLE, GABIONS

18 — DIVERSION BERM

NOTES:

1. THE BASE MAP WAS CREATED USING AN AERIAL SURVEY TAKEN IN 2001 BY AIR–LAND SURVEY AND PROVIDED BY WDI, A SURVEY BY MCLLC IN OCTOBER 2007, AND A GROUND SURVEY BY WDI IN OCTOBER 2008.
2. SILT FENCE PLACED AT TIME OF CONSTRUCTION AND MAINTAINED UNTIL VEGETATION ON OUTSIDE SLOPE OF DIKE IS ESTABLISHED. SEE STORM WATER MANAGEMENT SYSTEM DETAILS SHEET FOR DETAIL.

NTH Consultants, Ltd.
Infrastructure Engineering and Environmental Services

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Lansing, MI	517.484.6900
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Exton, PA	610.524.2300
Lehigh Valley, PA	484.893.1440
Cleveland, OH	216.334.4040
Indianapolis, IN	317.735.7649

REVISIONS

REV	DESCRIPTION	DATE	BY

PROJECT NAME:
MASTER CELL VI F&G

PROJECT LOCATION:
WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: STORMWATER MANAGEMENT AND SEDIMENTATION PLAN (2 OF 2)
DESIGNED BY: DRL	INCEP DATE: 11/12/08
DRAWN BY: DRL	DRAWING SCALE: AS SHOWN
CHECKED BY: RBM	SUBMITTED DATE: 2/28/11

SHEET TITLE:
STORMWATER MANAGEMENT AND SEDIMENTATION PLAN (2 OF 2)

SHEET REFERENCE NUMBER:
19

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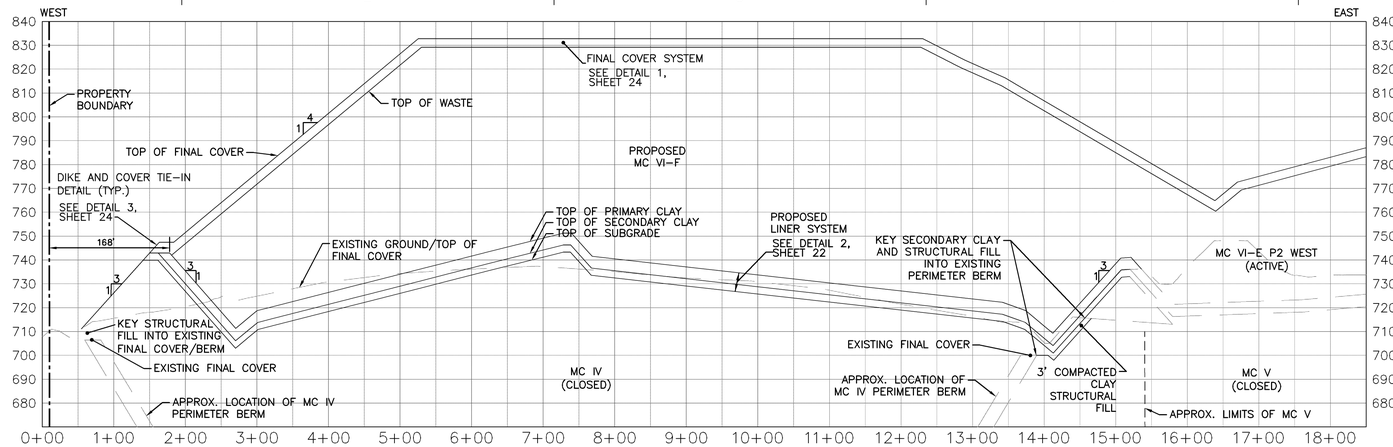
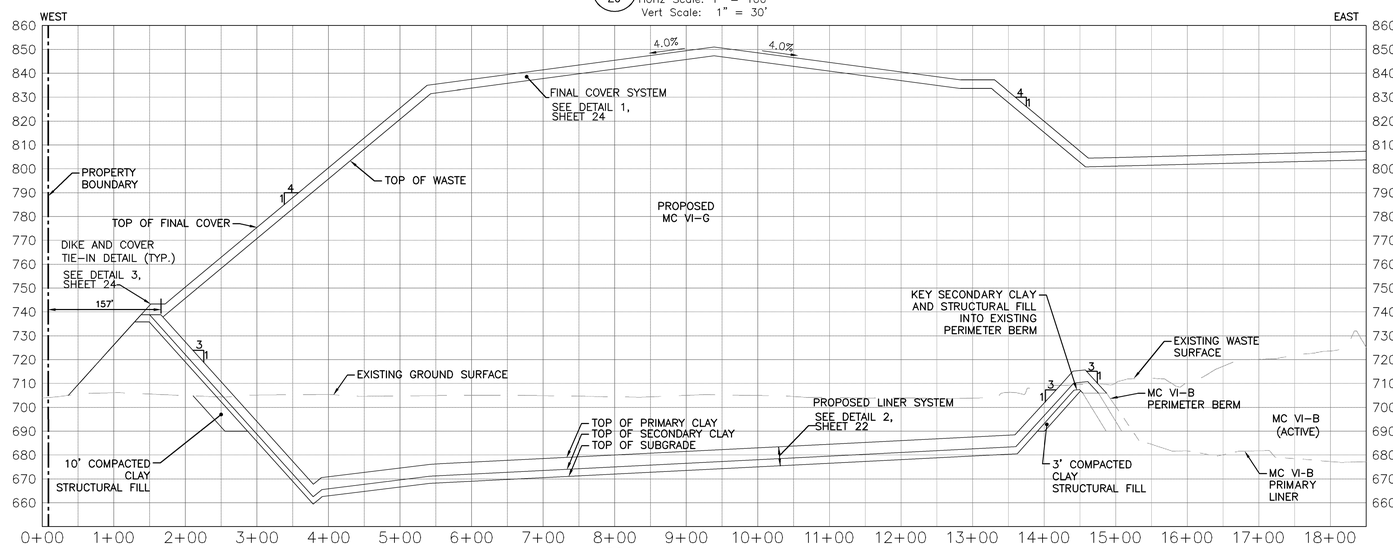


1/20 N 8200 PROFILE
Horiz Scale: 1" = 100'
Vert Scale: 1" = 30'



2/20 N 7400 PROFILE
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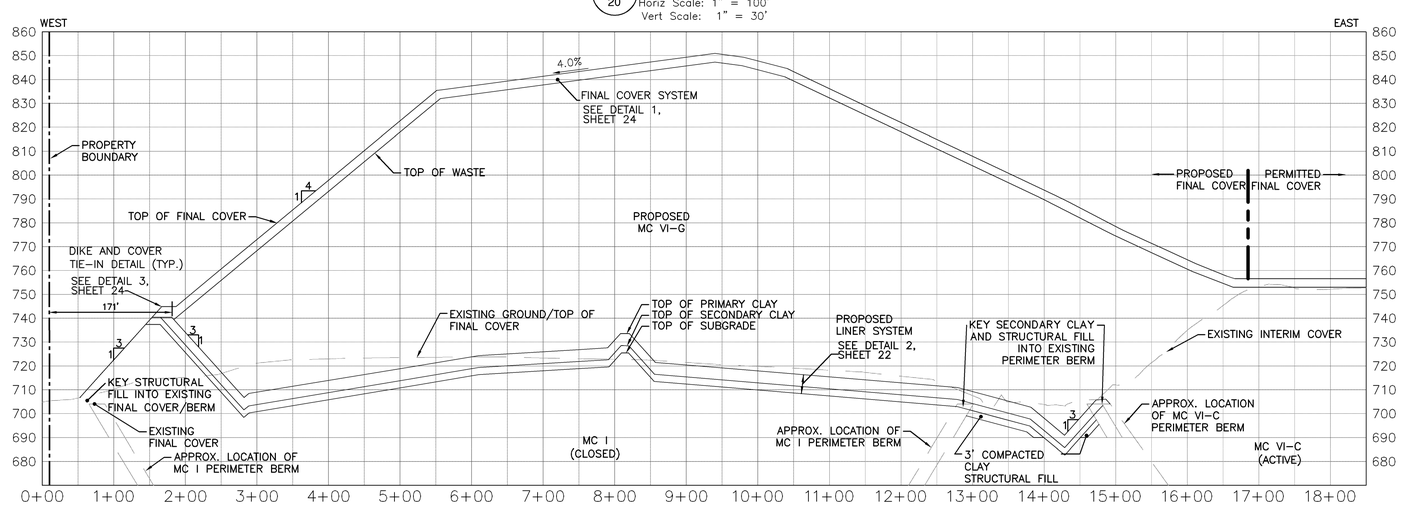

3/20 N 6700 PROFILE
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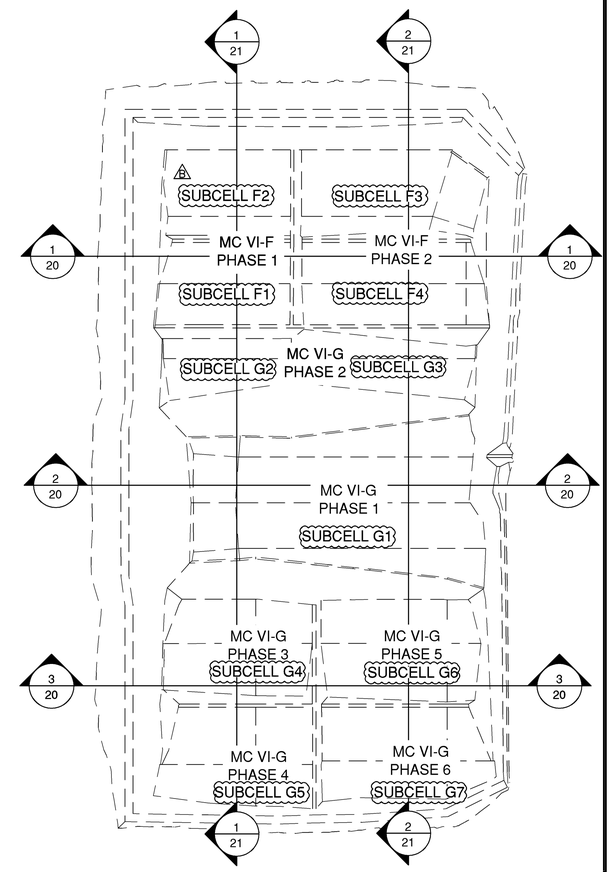

OVERVIEW OF CROSS-SECTIONS

N

NOTE:

PRIOR TO CELL CONSTRUCTION, DIG TEST PITS TO VERIFY MC I AND IV DIKE ALIGNMENTS.

NTH Consultants, Ltd.
Infrastructure Engineering and Environmental Services

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Exton, PA	610.524.2300
Lehigh Valley, PA	484.893.1440
Cleveland, OH	216.334.4040
Indianapolis, IN	317.735.7649

REVISIONS

REV	DESCRIPTION	DATE	BY
A	PHASING DESIGNATIONS	8/10/11	DRL
B	PER MDEQ COMMENTS	9/23/11	DRL

PROJECT NAME:
MASTER CELL VI F&G

PROJECT LOCATION:
WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: CROSS SECTIONS (2 OF 2)
DESIGNED BY: JHL	INCEP DATE: 11/12/08
DRAWN BY: DRL	DRAWING SCALE: AS SHOWN
CHECKED BY: ISS	SUBMITTED DATE: 9/23/11

SHEET TITLE:
CROSS SECTIONS (1 OF 2)

SHEET REFERENCE NUMBER:
20

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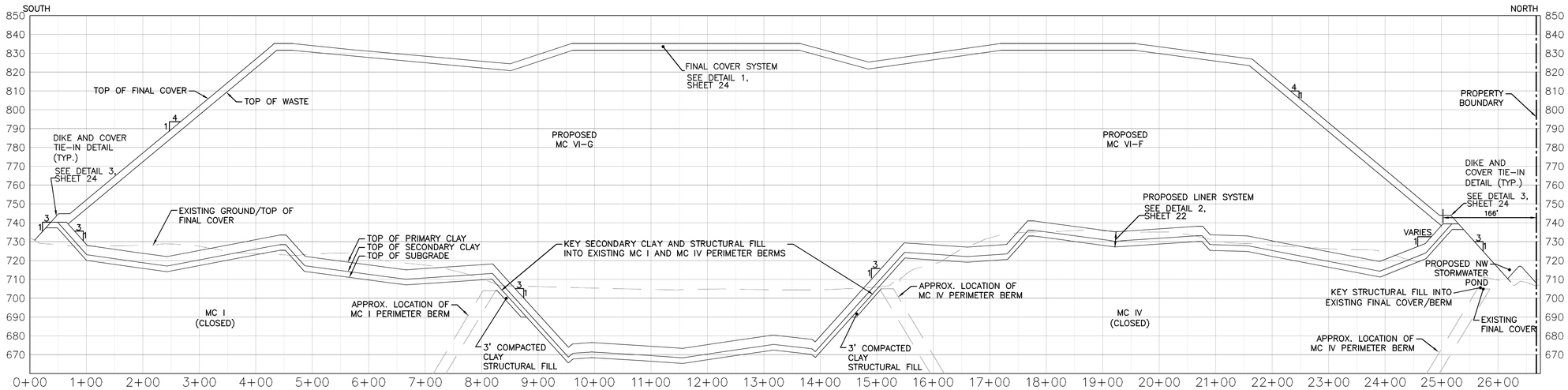
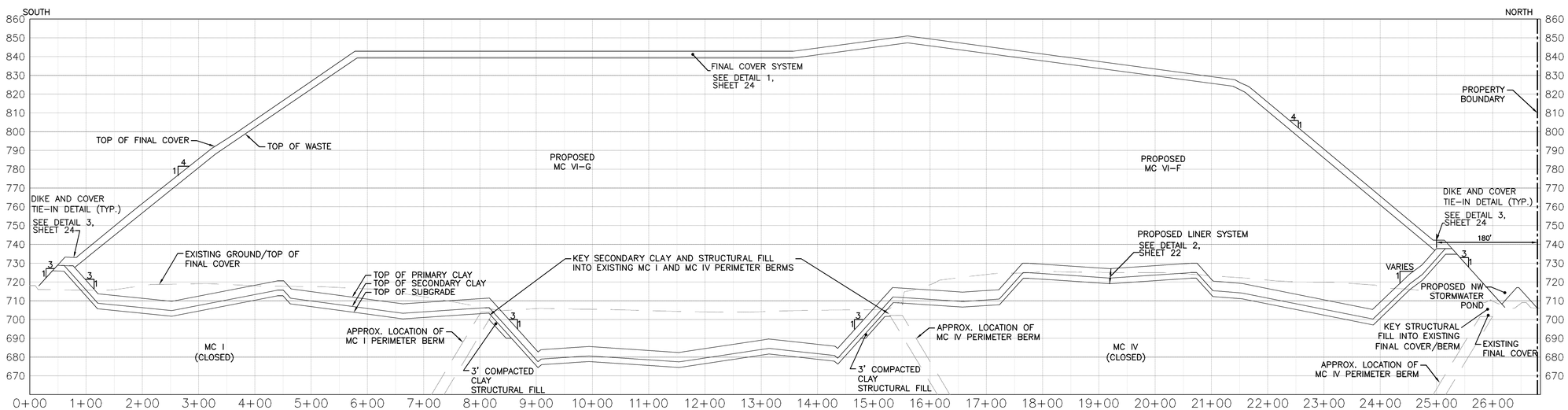


1/21 E 4200 PROFILE

Horiz Scale: 1" = 100'
Vert Scale: 1" = 30'



2/21 E 4800 PROFILE

Horiz Scale: 1" = 100'
Vert Scale: 1" = 30'

NOTE:

PRIOR TO CELL CONSTRUCTION, DIG TEST PITS TO VERIFY MC I AND IV DIKE ALIGNMENTS.

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Infrastructure Engineering and Environmental Services

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Indianapolis, IN	317.735.7649

REVISIONS

REV	DESCRIPTION	DATE	BY

PROJECT NAME:
MASTER CELL VI F&G

PROJECT LOCATION:
WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: CROSS SECTIONS (2 OF 2)
DESIGNED BY: DRL	INCEP DATE: 11/12/08
DRAWN BY: DRL	DRAWING SCALE: AS SHOWN
CHECKED BY: RBM	SUBMITTED DATE: 2/28/11

SHEET TITLE:
CROSS SECTIONS (2 OF 2)

SHEET REFERENCE NUMBER:
21

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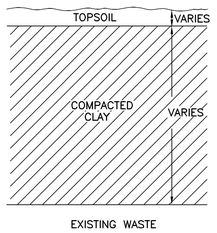
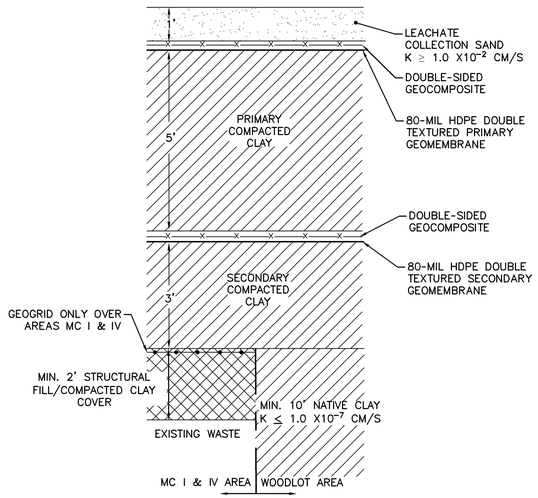
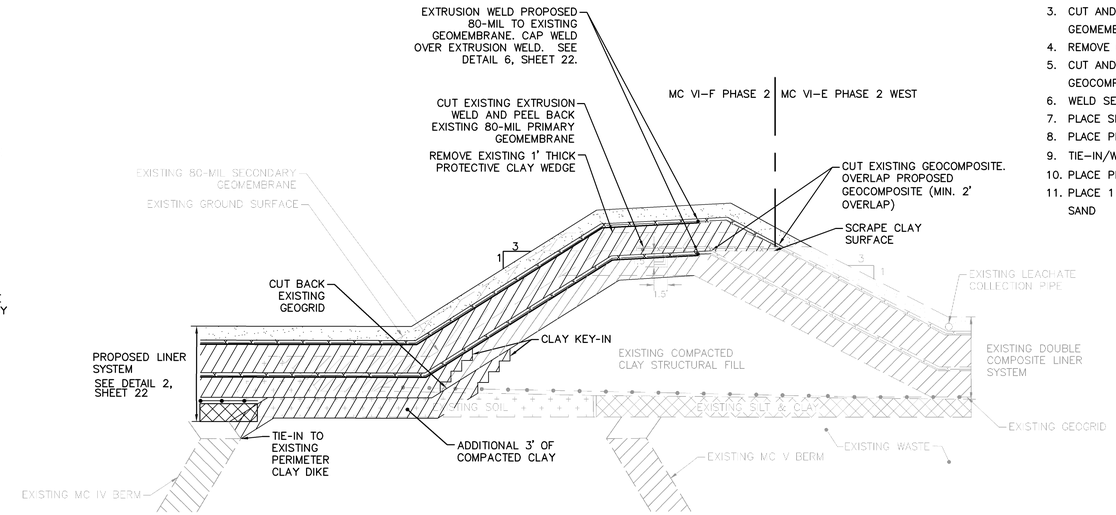


MC I & IV COVER

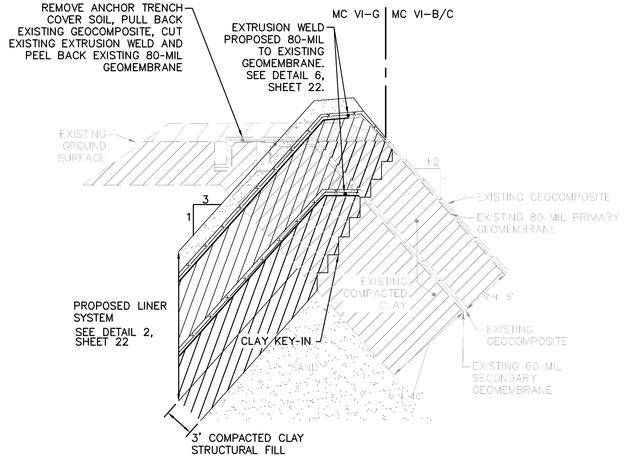
1/22 EXISTING COVER DETAIL
NOT TO SCALE



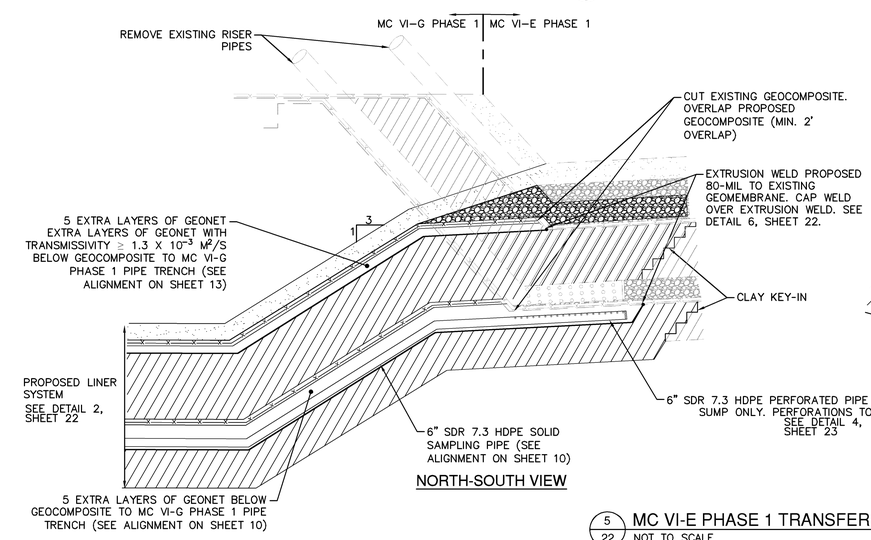
2/22 PROPOSED LINER SYSTEM
NOT TO SCALE



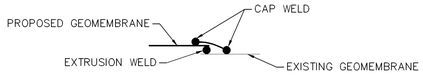
3/22 MC VI-F PHASE 2 & MC VI-E PHASE 2 WEST TIE-IN DETAIL
NOT TO SCALE



4/22 MC VI-G AND MC VI-B OR C TIE-IN DETAIL
NOT TO SCALE

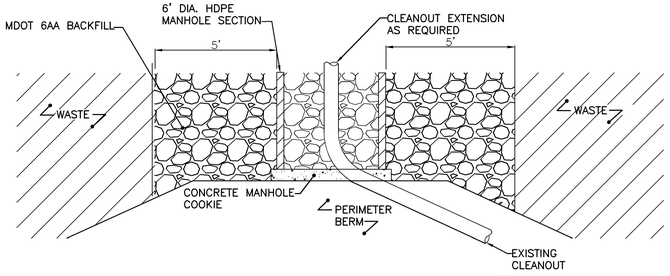


5/22 MC VI-E PHASE 1 TRANSFER TRENCH DETAIL
NOT TO SCALE



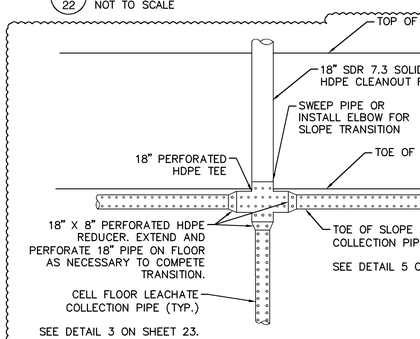
NOTE: DETAIL APPLIES AT LOCATIONS WHERE PROPOSED GEOMEMBRANE TIES INTO EXISTING GEOMEMBRANE

6/22 GEOMEMBRANE WELDING DETAIL
NOT TO SCALE

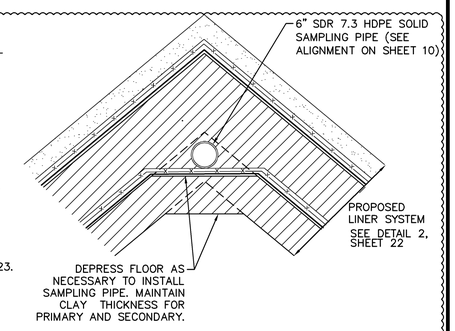


NOTE:
STONE BACKFILL TO BE PLACED AT SAME HEIGHT ON INTERIOR AND EXTERIOR OF MANHOLE.

7/22 CLEANOUT EXTENSION
NOT TO SCALE



8/22 ENLARGED CLEANOUT ACCESS
NOT TO SCALE



9/22 MC VI-E PHASE 1 SAMPLING PIPE
NOT TO SCALE

SEQUENCE OF CONSTRUCTION

1. REMOVE CLAY WEDGE
2. PULL BACK PRIMARY GEOCOMPOSITE
3. CUT AND PULL BACK PRIMARY GEOMEMBRANE
4. REMOVE OUTSIDE CLAY DIKE
5. CUT AND PULL BACK SECONDARY GEOCOMPOSITE
6. WELD SECONDARY GEOMEMBRANE
7. PLACE SECONDARY GEOCOMPOSITE
8. PLACE PRIMARY CLAY
9. TIE-IN/WELD PRIMARY GEOMEMBRANE
10. PLACE PRIMARY GEOCOMPOSITE
11. PLACE 1 FOOT OF LEACHATE COLLECTION SAND

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Exton, PA	610.524.2300
Lehigh Valley, PA	484.893.1440
Cleveland, OH	216.334.4040
Indianapolis, IN	317.735.7649

REVISIONS

REV	DESCRIPTION	DATE	BY
A	PHASING DESIGNATIONS	8/10/11	DRL
B	PER MDEQ COMMENTS	9/23/11	DRL

PROJECT NAME:
MASTER CELL VI F&G

PROJECT LOCATION:
WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: LINER SYSTEM DETAILS
DESIGNED BY: JHL	INCEP DATE: 11/12/08
DRAWN BY: DRL	DRAWING SCALE: AS SHOWN
CHECKED BY: ISS	SUBMITTED DATE: 9/23/11

SHEET TITLE:
LINER SYSTEM DETAILS

SHEET REFERENCE NUMBER:
22

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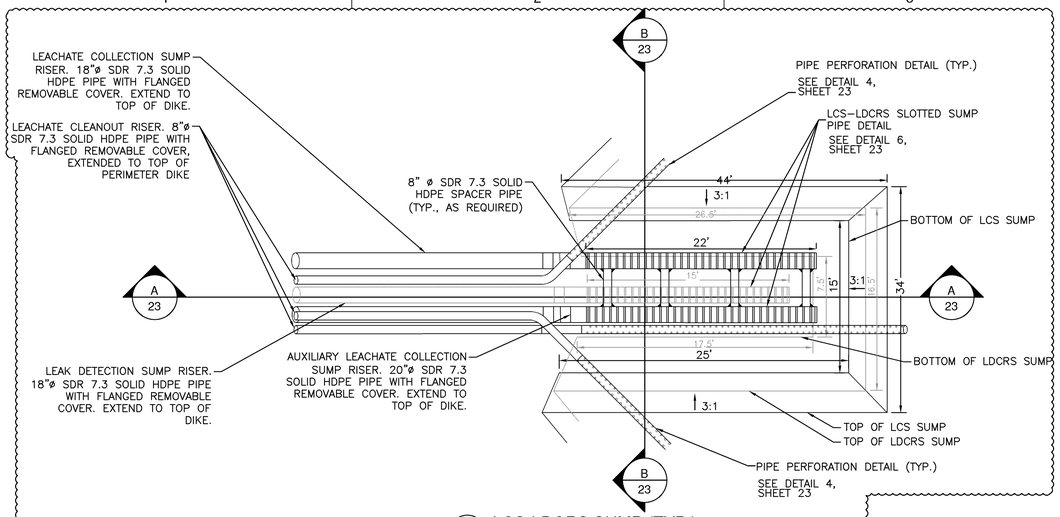
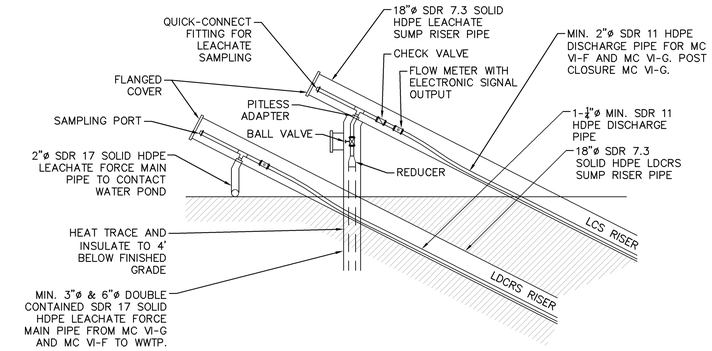
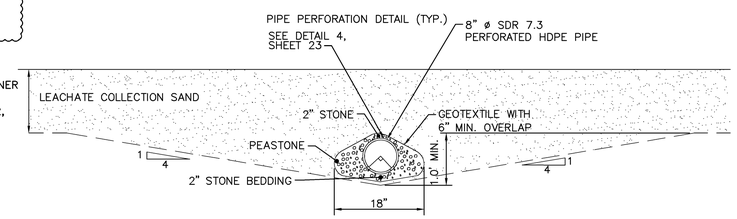


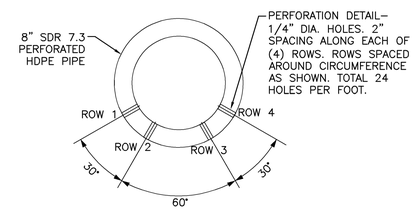
1 23 LCS-LDCRS SUMP (TYP.)
NOT TO SCALE



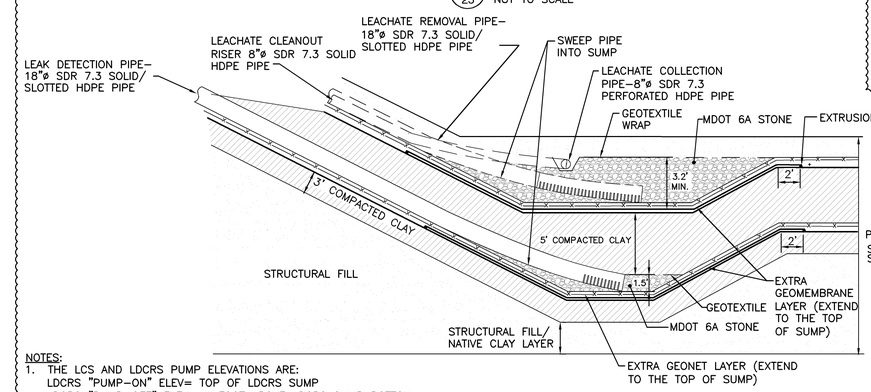
2 23 LCS AND LDCRS RISER DETAIL
NOT TO SCALE



3 23 CELL FLOOR LEACHATE COLLECTION PIPE (TYP.)
NOT TO SCALE

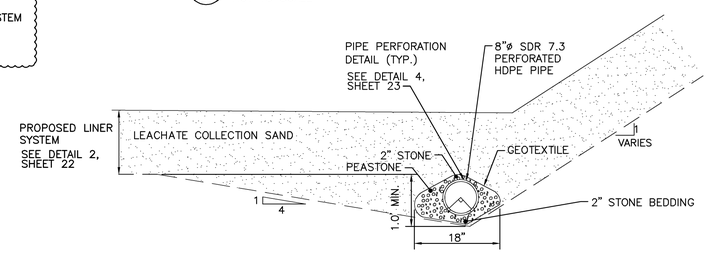


4 23 PIPE PERFORATION DETAIL (TYP.)
NOT TO SCALE

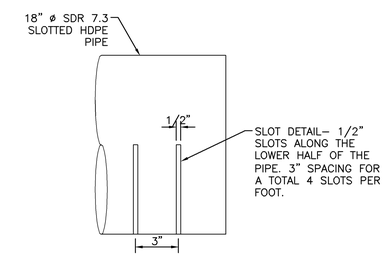


NOTES:
1. THE LCS AND LDCRS PUMP ELEVATIONS ARE:
   LDCRS "PUMP-ON" ELEV= TOP OF LDCRS SUMP
   LDCRS "PUMP-OFF" ELEV= 1 FOOT ABOVE LDCRS SUMP BOTTOM
   LCS "PUMP-ON" ELEV= AT LCS PIPE INVERT
   LCS "PUMP-OFF ELEV= 1 FOOT ABOVE LCS SUMP BOTTOM
2. OTHER "PUMP-ON"/"PUMP-OFF" CONTROLS MAY BE USED PROVIDED LESS THAN 1 FOOT OF LEACHATE HEAD ON THE LINER IS MAINTAINED.
3. THE AUXILLARY LEACHATE REMOVAL PIPE IS REQUIRED FOR THE MC VI-G PHASE 1 SUMP ONLY.

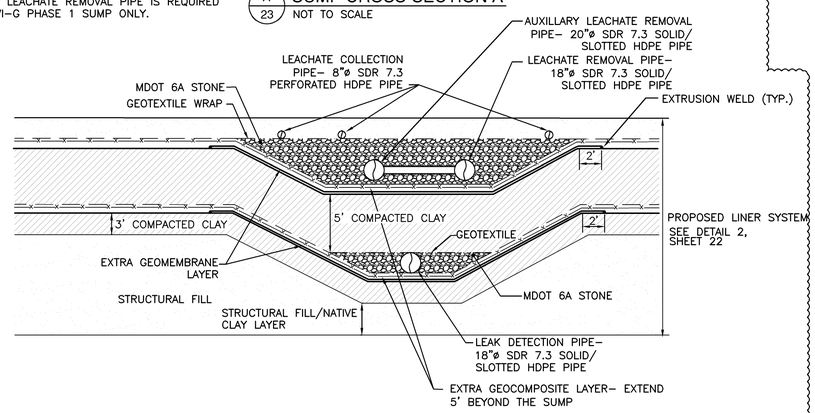
A 23 SUMP CROSS-SECTION A
NOT TO SCALE



5 23 TOE OF SLOPE LEACHATE COLLECTION PIPE (TYP.)
NOT TO SCALE



6 23 LCS-LDCRS SLOTTED SUMP PIPE DETAIL
NOT TO SCALE



B 23 SUMP CROSS-SECTION B
NOT TO SCALE

Geosynthetic Materials

Material	Location	Description	Product	Additional Requirements
80-mil Geomembrane	Primary and secondary liners	80-mil HDPE, textured both sides	GSE HD textured, or equivalent	Interface friction requirements in CQA Plan
40-mil Geomembrane	Final cover	40-mil HDPE, textured both sides	GSE HD textured, or equivalent	Interface friction requirements in CQA Plan
Geosynthetic Clay Liner	Final cover	Sodium bentonite encapsulated between two geotextiles that are needle punched or stitch bonded together	CETCO Bentomat ST, or equivalent	Internal shear strength requiremnts in CQA Plan
Geocomposite	LCS and LDCRS	200-mil HDPE, bonded top and bottom to geotextile meeting requirements below	GSE FABRINET, or equivalent	Transmissivity and interface friction requirements in CQA Plan
Cover Geocomposite	Final cover	200-mil HDPE, bonded top and bottom to geotextile meeting requirements below	GSE FABRINET, or equivalent	Transmissivity and interface friction requirements in CQA Plan
Geonet	LCS and LDCRS sumps, and LDCRS collectors	200-mil HDPE	GSE HYPERNET, or equivalent	Transmissivity requirements in CQA Plan
Geotextile	All geocomposites, gravel/geotextile envelopes for LCS, and final cover perimeter drain	Nominal 8 oz/yd2, needle-punched, nonwoven polypropylene	Amoco 4508, Synthetic Industries Geotex 801, or equivalent	AASHTO M288-96 requirements for Drainage Geotextile (Class 2)
Geogrid	Above Subgrade	Biaxial Polymeric Grid	Huesker Fortrac 80-80, or equivalent	None

LCS denotes leachate collection system
LDCRS denotes leak detection, collection, and removal system

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Lehigh Valley, PA	484.893.1440
Cleveland, OH	216.334.4040
Indianapolis, IN	317.735.7649

REVISIONS

REV	DESCRIPTION	DATE	BY
B	PER MDEQ COMMENTS	9/23/11	DRL

PROJECT NAME:
MASTER CELL VI F&G

PROJECT LOCATION:
WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: LEACHATE COLLECTION SYSTEM DETAILS
DESIGNED BY: JHL	INCEP DATE: 11/12/08
DRAWN BY: DRL	DRAWING SCALE: AS SHOWN
CHECKED BY: ISS	SUBMITTED DATE: 9/23/11

SHEET TITLE:
LEACHATE COLLECTION SYSTEM DETAILS

SHEET REFERENCE NUMBER:
23

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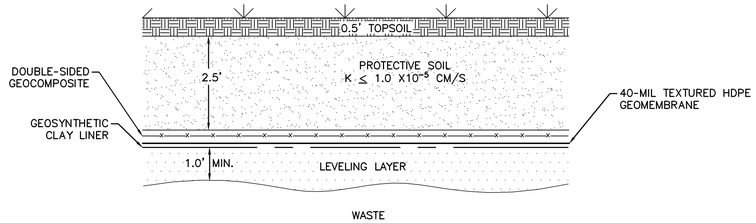
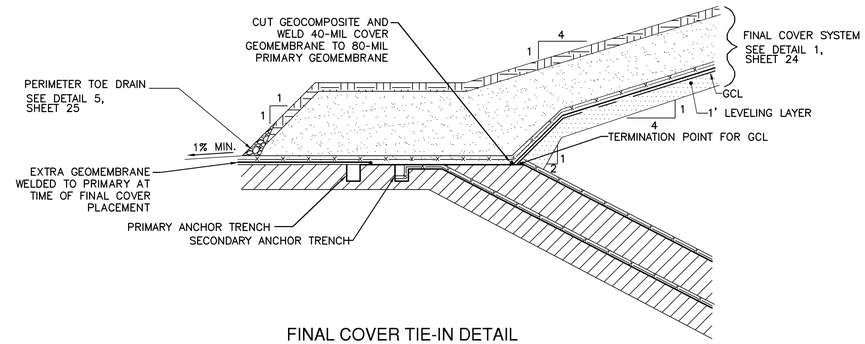
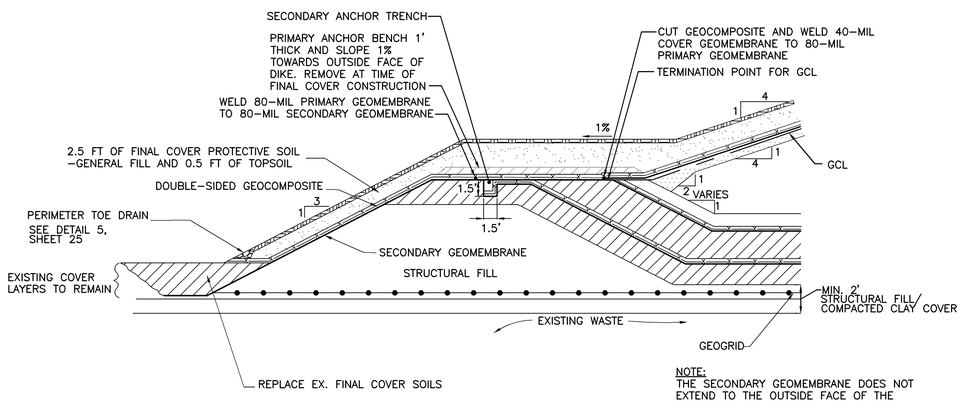


1/24 FINAL COVER SYSTEM
NOT TO SCALE

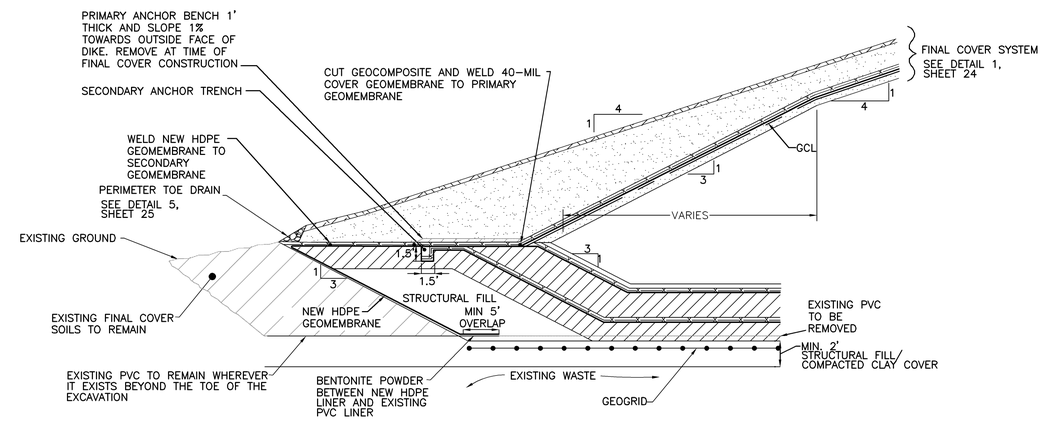


2/24 FINAL COVER TIE-IN DETAIL
MC VI-AN, AS, C & D
NOT TO SCALE

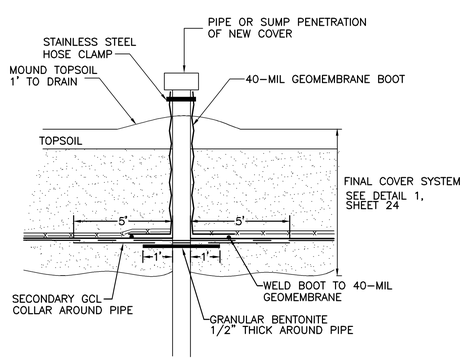


NOTE:
THE SECONDARY GEOMEMBRANE DOES NOT EXTEND TO THE OUTSIDE FACE OF THE PERIMETER DIKE WHERE IT IS LOCATED OUTSIDE OF THE MC I/IV FOOTPRINT.

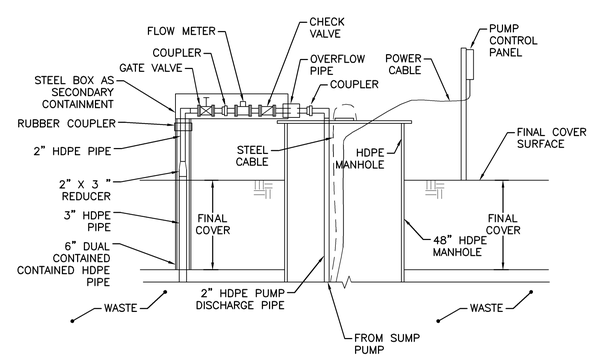
3/24 DIKE AND COVER TIE-IN DETAIL (TYP.)
MC VI-F, G & EAST SIDE OF VI-E
NOT TO SCALE



4/24 DIKE AND COVER TIE-IN DETAIL
NORTH SIDE OF MC VI-E
NOT TO SCALE



5/24 FINAL COVER PENETRATION DETAIL (TYP.)
NOT TO SCALE



6/24 LEACHATE SUMP RISER PIPING DETAIL
(VI-A, B, C, & D RISERS)
NOT TO SCALE

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Grand Rapids, MI	616.957.3690
Exton, PA	610.524.2300
Lehigh Valley, PA	484.893.1440
Cleveland, OH	216.334.4040
Indianapolis, IN	317.735.7649

REVISIONS

REV	DESCRIPTION	DATE	BY

PROJECT NAME:
MASTER CELL VI F&G

PROJECT LOCATION:
WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: FINAL COVER DETAILS
DESIGNED BY: DRL	INCEP DATE: 11/12/08
DRAWN BY: DRL	DRAWING SCALE: AS SHOWN
CHECKED BY: RBM	SUBMITTED DATE: 2/28/11

SHEET TITLE:
FINAL COVER DETAILS

SHEET REFERENCE NUMBER:
24

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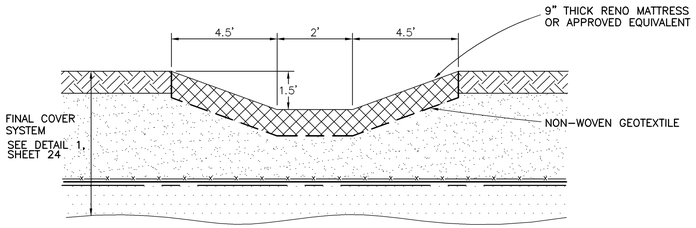

1/25 SPILLWAY CROSS-SECTION
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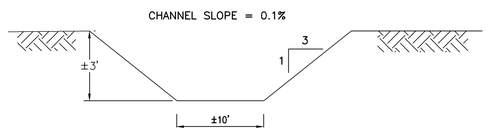
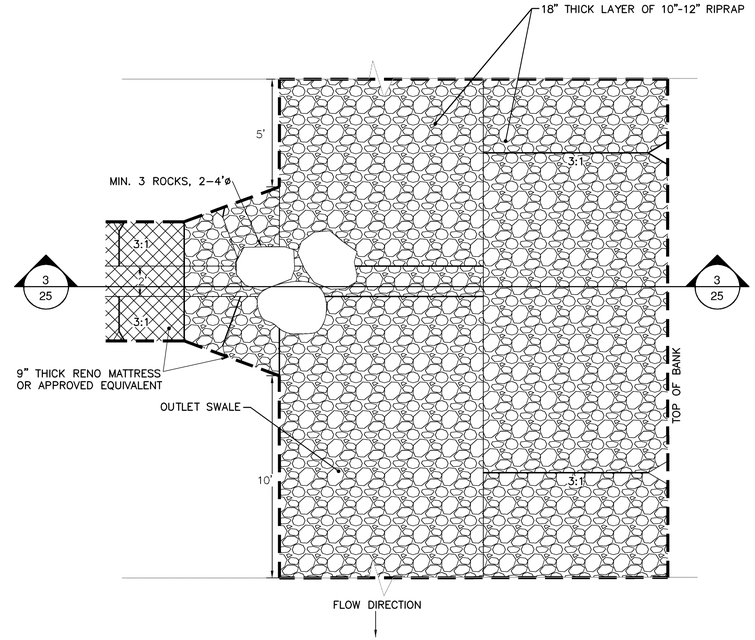
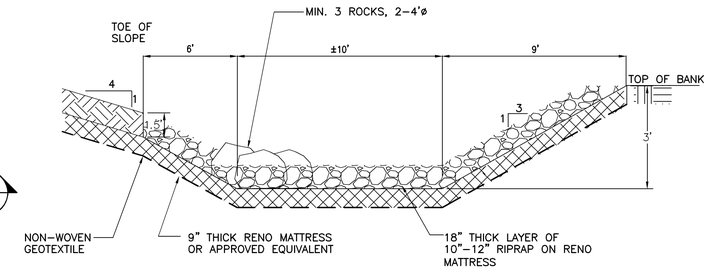


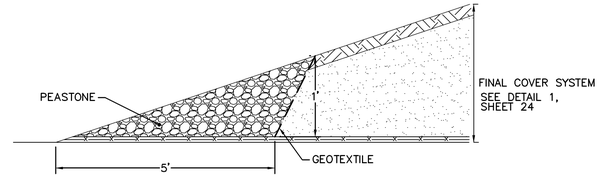
4/25 OUTLET SWALE CROSS SECTION (TYP.)
NOT TO SCALE



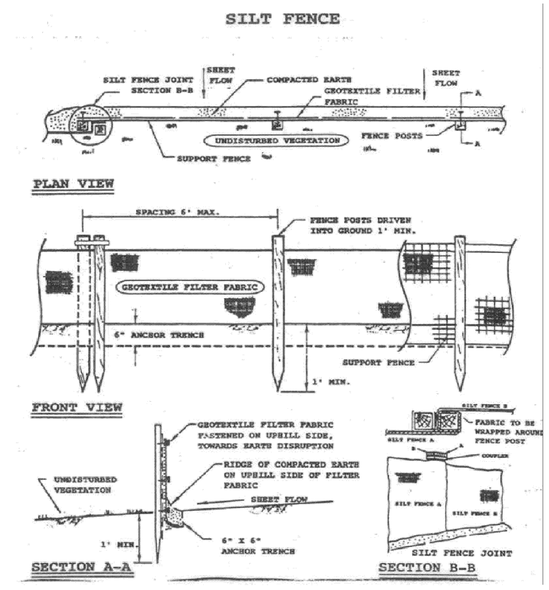
2/25 TOE OF SPILLWAY DOWNSLOPE CHANNEL
NOT TO SCALE



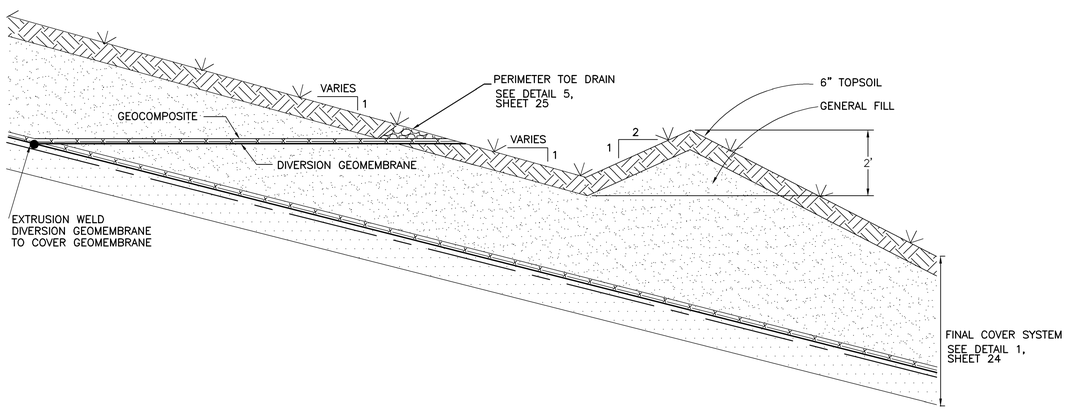
3/25 TOE OF SPILLWAY PROFILE
NOT TO SCALE



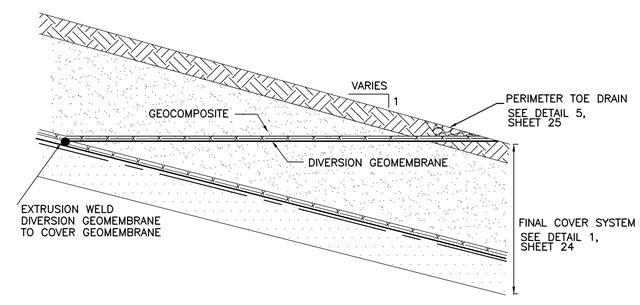
5/25 PERIMETER TOE DRAIN
NOT TO SCALE



6/25 SILT FENCE DETAIL (TYP.)
NOT TO SCALE



7/25 DIVERSION BERM DETAIL (TYP.)
NOT TO SCALE



8/25 DIVERSION GEOMEMBRANE DETAIL (TYP.)
NOT TO SCALE

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Grand Rapids, MI	616.957.3690
Exton, PA	610.524.2300
Lehigh Valley, PA	484.893.1440
Cleveland, OH	216.334.4040
Indianapolis, IN	317.735.7649

REVISIONS

REV	DESCRIPTION	DATE	BY

PROJECT NAME:
MASTER CELL VI F&G

PROJECT LOCATION:
WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: STORM WATER MANAGEMENT SYSTEM DETAILS
DESIGNED BY: DRL	INCEP DATE: 11/12/08
DRAWN BY: DRL	DRAWING SCALE: AS SHOWN
CHECKED BY: RBM	SUBMITTED DATE: 2/28/11

SHEET TITLE:
STORM WATER MANAGEMENT SYSTEM DETAILS

SHEET REFERENCE NUMBER:
25

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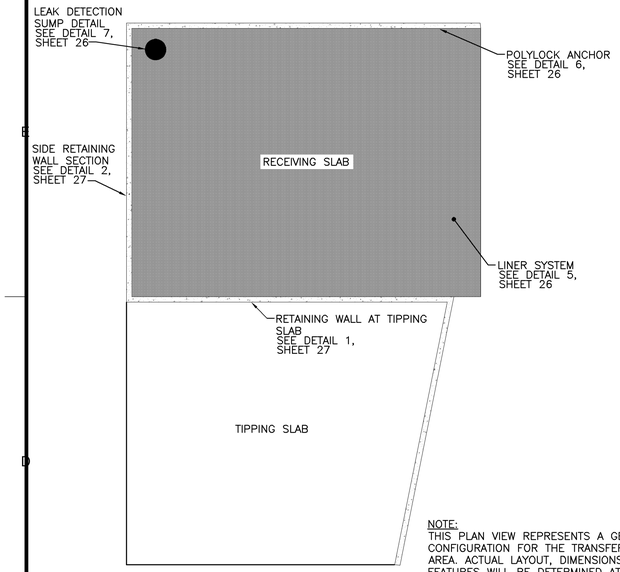
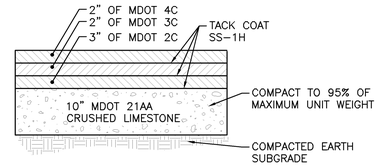
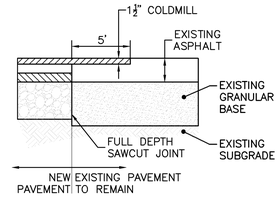


NOTE:
THIS PLAN VIEW REPRESENTS A GENERAL CONFIGURATION FOR THE TRANSFER BOX AREA. ACTUAL LAYOUT, DIMENSIONS, AND FEATURES WILL BE DETERMINED AT TIME OF TRANSFER BOX LOCACTION/RELOCATION.

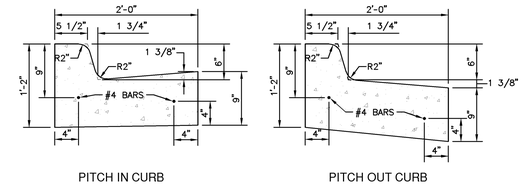
1 / 26 TRANSFER BOX PLAN VIEW
NOT TO SCALE



2 / 26 TYPICAL PAVEMENT DETAIL
NOT TO SCALE

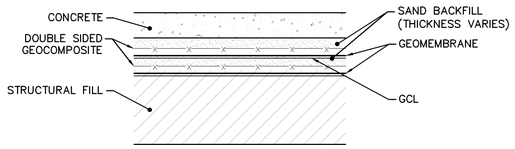


3 / 26 BUTT JOINT
NOT TO SCALE

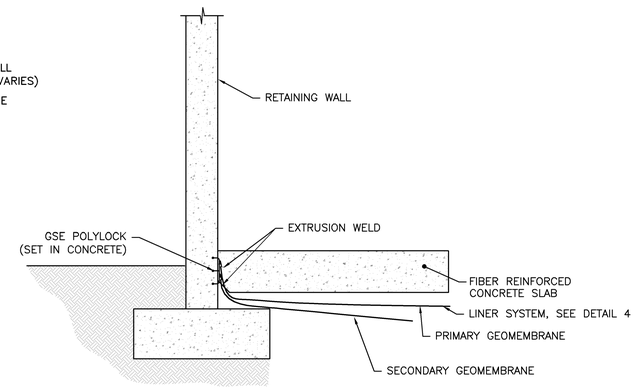


NOTE:
BASE AND SUBBASE AGGREGATES TO EXTEND MINIMUM 1'-0" BEHIND BACK OF CURB.

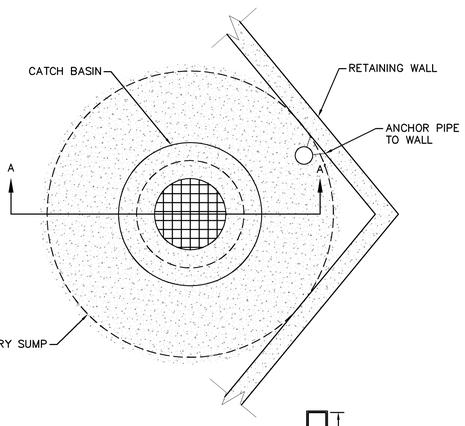
4 / 26 F4 CURB DETAIL
NOT TO SCALE



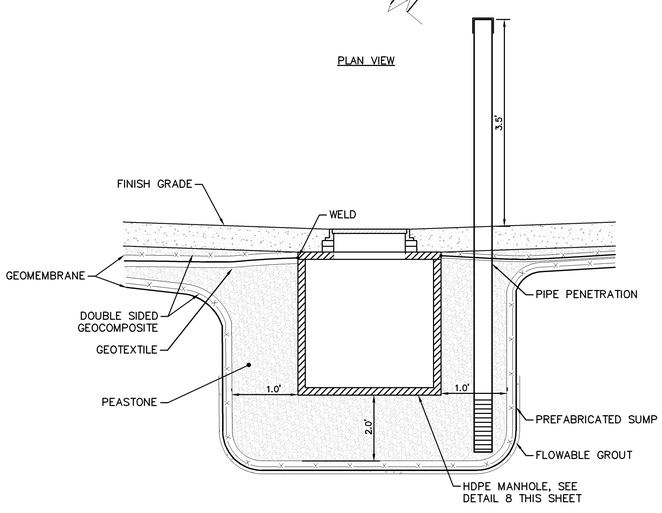
5 / 26 LINER SYSTEM
NOT TO SCALE



6 / 26 POLYLOCK ANCHOR
NOT TO SCALE

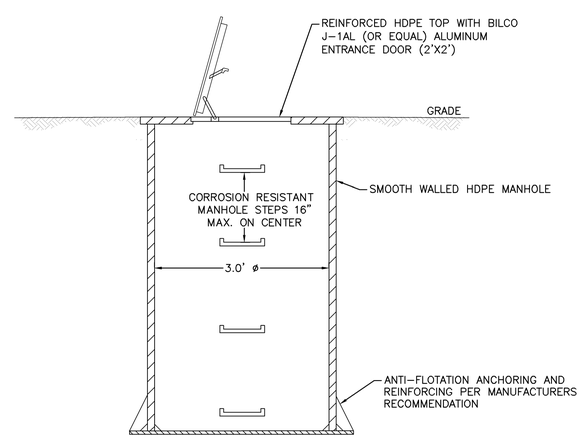


PLAN VIEW



SECTION A–A' VIEW

7 / 26 LEAK DETECTION SUMP DETAIL
NOT TO SCALE



8 / 26 HDPE CATCH BASIN
NOT TO SCALE

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Infrastructure Engineering and Environmental Services

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Lansing, MI	517.484.6900
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Exton, PA	610.524.2300
Lehigh Valley, PA	484.893.1440
Cleveland, OH	216.334.4040
Indianapolis, IN	317.735.7649

REVISIONS

REV	DESCRIPTION	DATE	BY

PROJECT NAME:
MASTER CELL VI F&G

PROJECT LOCATION:
WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: TRANSFER BOX DETAILS
DESIGNED BY: KRO	INCEP DATE: 11/12/08
DRAWN BY: KRO	DRAWING SCALE: NONE
CHECKED BY: RBM	SUBMITTED DATE: 2/28/11

SHEET TITLE:
TRANSFER BOX DETAILS (1 OF 2)

SHEET REFERENCE NUMBER:
26

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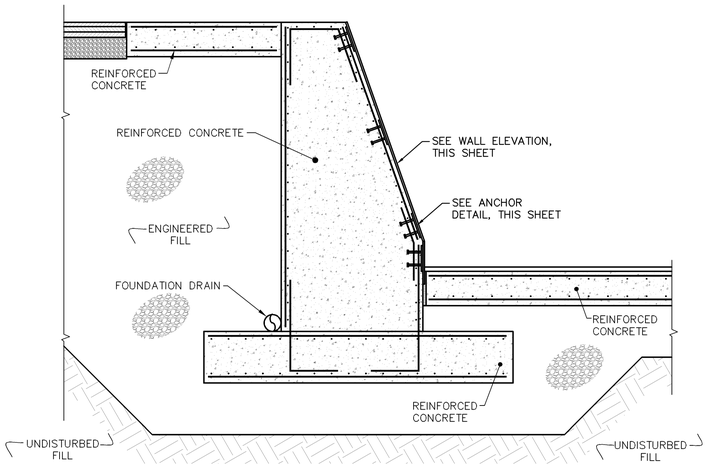
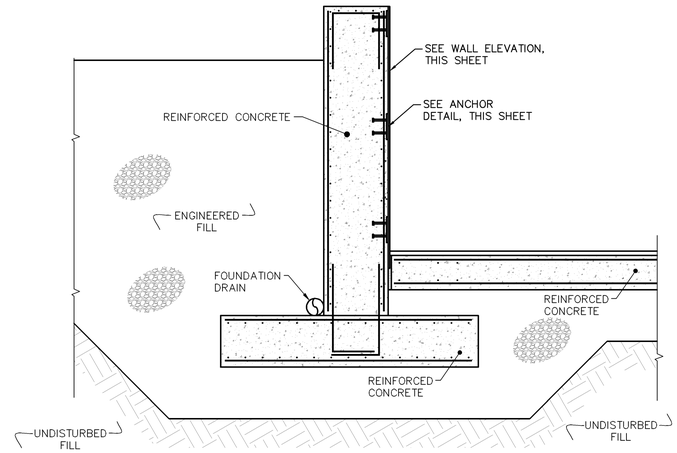
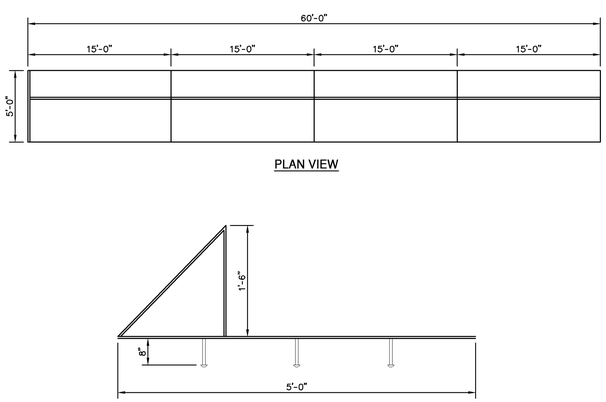


1/27 RETAINING WALL AT TIPPING SLAB
NOT TO SCALE



2/27 SIDE RETAINING WALL SECTION
NOT TO SCALE



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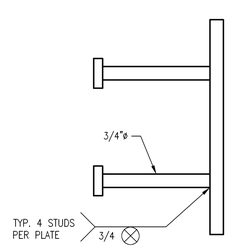

4/27 ANCHOR DETAIL
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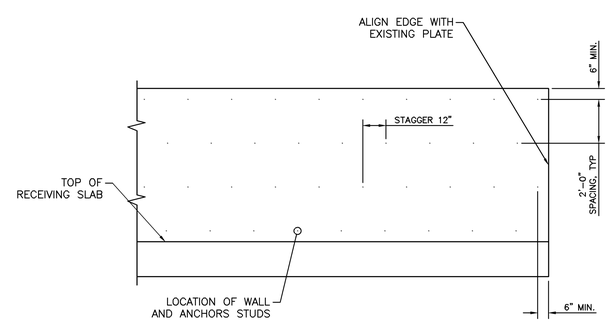

5/27 WALL ELEVATION
NOT TO SCALE

NTH Consultants, Ltd.
Infrastructure Engineering and Environmental Services

Northville, MI	248.553.6300
Detroit, MI	313.237.3900
Lansing, MI	517.484.6900
Grand Rapids, MI	616.957.3690
Exton, PA	610.524.2300
Lehigh Valley, PA	484.893.1440
Cleveland, OH	216.334.4040
Indianapolis, IN	317.735.7649

REVISIONS

REV	DESCRIPTION	DATE	BY

PROJECT NAME:
MASTER CELL VI F&G

PROJECT LOCATION:
WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: TRANSFER BOX DETAILS
DESIGNED BY: KRO	INCEP DATE: 11/12/08
DRAWN BY: KRO	DRAWING SCALE: NONE
CHECKED BY: RBM	SUBMITTED DATE: 2/28/11

SHEET TITLE:
TRANSFER BOX DETAILS
(2 OF 2)

SHEET REFERENCE NUMBER:
27

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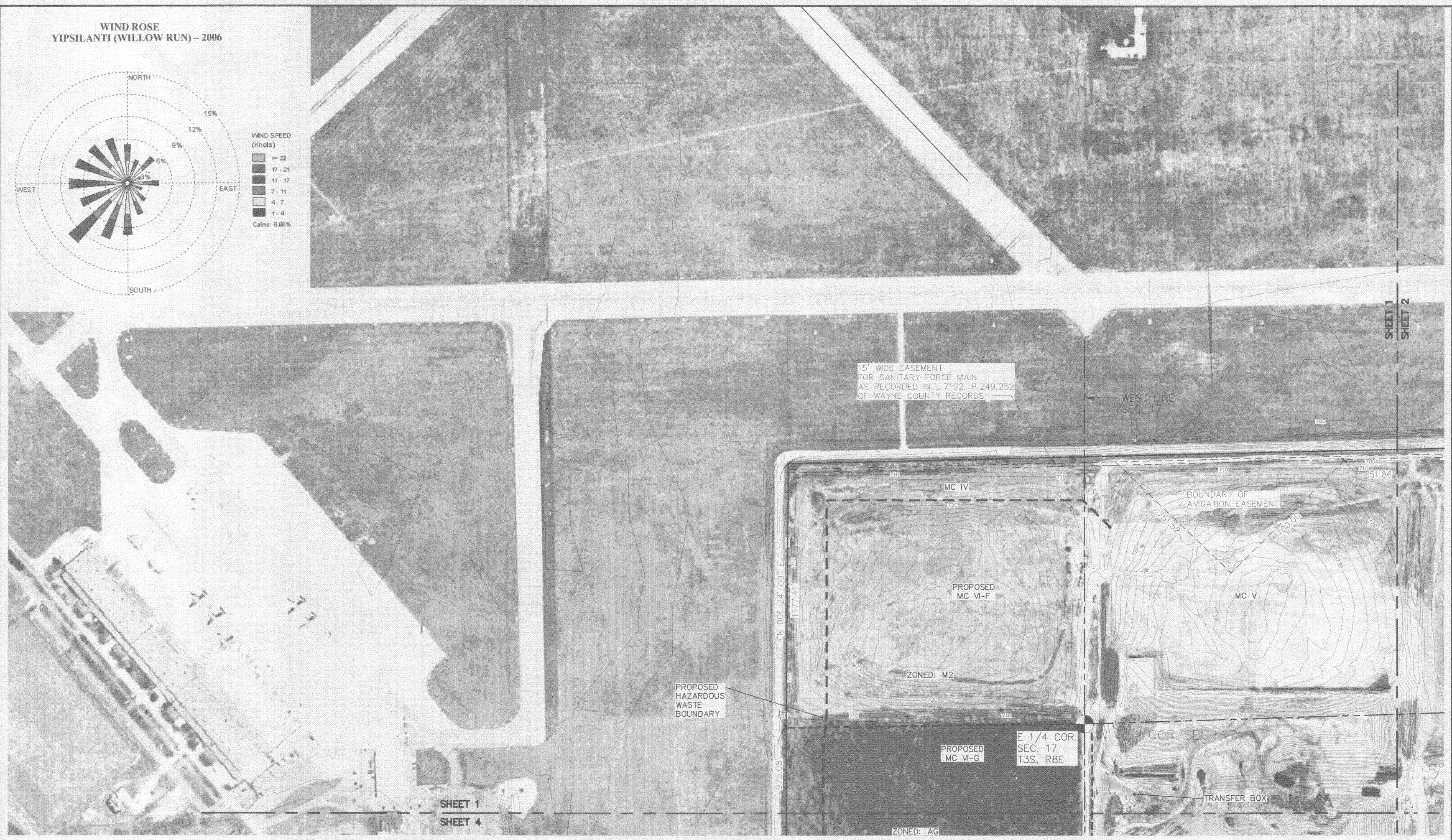

ZONING DISTRICTS

AG	AGRICULTURAL AND ESTATES
R-1B	SINGLE FAMILY REDIDENTIAL
RM	MULTIPLE FAMILY RESIDENTIAL
C-1	GENERAL BUSINESS
M-2	GENERAL INDUSTRIAL
AP	AIRPORT
M1	LIGHT INDUSTRIAL

LEGEND

838	EXIST. CONTOUR
	℄ OF DITCH OR EDGE OF WATER
	EXIST. ZONING BOUNDARY

SCALE: 1" = 200'

0 200 400 600

NOTES

1. TOPOGRAPHIC INFORMATION OUTSIDE OF PROPERTY WAS OBTAINED FROM WAYNE COUNTY GIS.
2. 100 YEAR FLOOD PLAIN IS UNMAPPED, COMMUNITY ID: 260546, VAN BUREN TOWNSHIP.
3. ZONING BOUNDARIES ARE DERIVED FROM VAN BUREN CHARTER: ZONING MAP, 1/24/2007. IN MANY CASES COINCIDE WITH PROPERTY BOUNDARY AND ARE DIFFICULT TO SEE ON DRAWING.

NTH SHEET 28 OF 31

MIDWESTERN CONSULTING
Civil, Environmental and Transportation Engineers
Planners, Surveyors
Landscape Architects
3815 Plaza Drive
Ann Arbor, Michigan 48108
Phone: 734.995.0200
Fax: 734.995.0599

CLIENT
ENVIRONMENTAL QUALITY COMPANY
36255 MICHIGAN AVENUE
WAYNE, MI 48184

WAYNE DISPOSAL, INC.

SITE NO. 2
MASTER CELL VI – F & G
AREA PLAN

1

DATE: 8/13/09
SHEET 1 OF 4
CADD:
ENG:
PM:
TECH: M.V.V.
SURVEY: 07174sv01
FB#:

JOB No. 07174
REVISIONS:
REV. DATE

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ZONING DISTRICTS

AG	AGRICULTURAL AND ESTATES
R-1B	SINGLE FAMILY REDIDENTIAL
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38235 MICHIGAN AVENUE
WAYNE, MI 48184

WAYNE DISPOSAL, INC.

SITE NO. 2
MASTER CELL VI – F & G
AREA PLAN

2

JOB No.	07174
REVISIONS:	
REV.	DATE
DATE: 8/13/09	
SHEET 2 OF 4	
CADD:	
ENG:	
PM:	
TECH: M.V.	
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ZONING DISTRICTS

AG	AGRICULTURAL AND ESTATES
R-1B	SINGLE FAMILY REDIDENTIAL
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LEGEND

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NTH SHEET 30 OF 31

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36255 MICHIGAN AVENUE
WAYNE, MI 48184

WAYNE DISPOSAL, INC.

SITE NO. 2
MASTER CELL VI - F & G
AREA PLAN

3

DATE: 8/13/09
SHEET 3 OF 4
CADD:
ENG:
PM:
TECH: M.V.V.
SURVEY: 07174av01
FB#:

JOB No. 07174
REVISIONS:
REV. DATE

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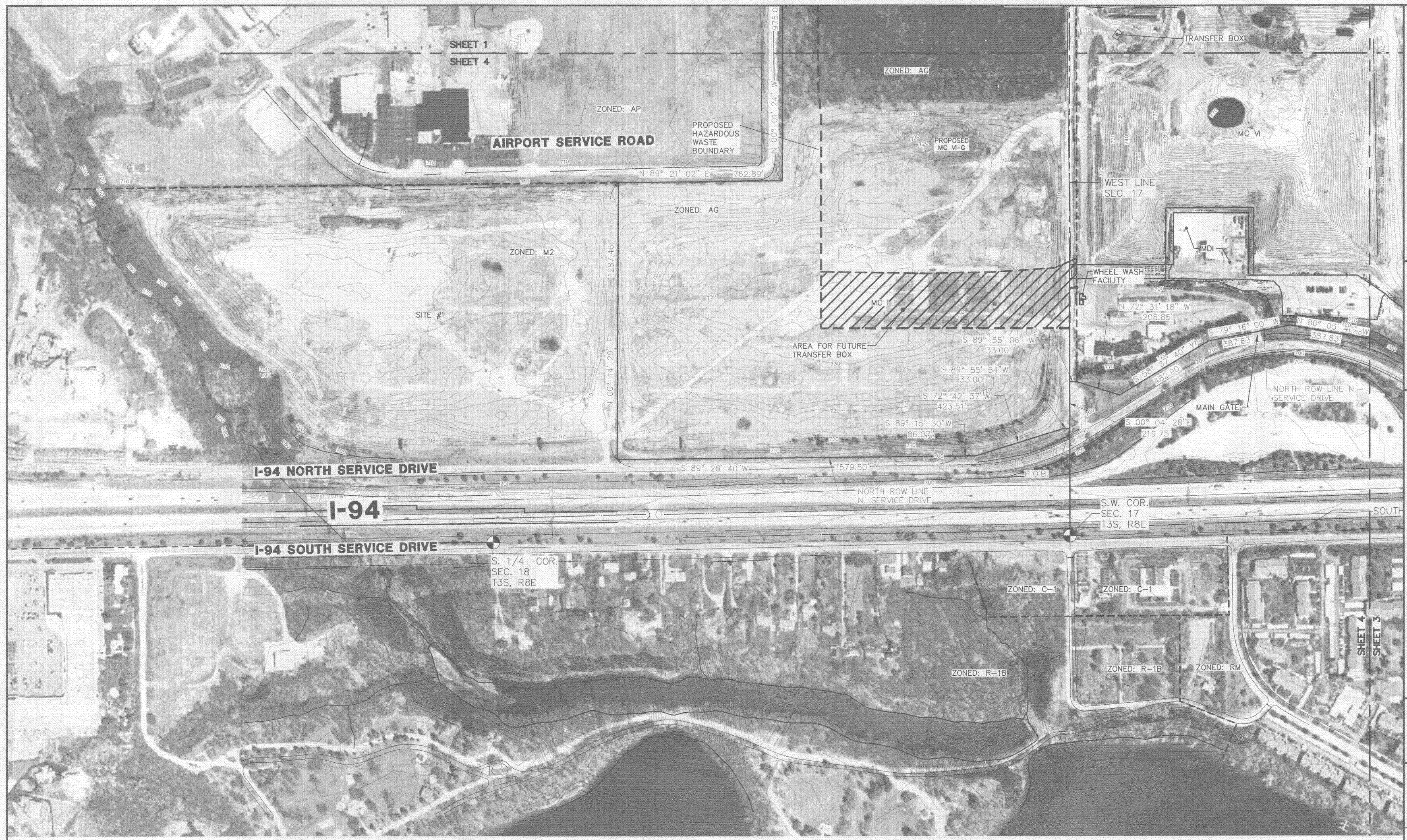

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WAYNE, MI 48184

WAYNE DISPOSAL, INC.

SITE NO. 2
MASTER CELL VI - F & G
AREA PLAN

4

DATE: 8/13/09
SHEET 4 OF 4
CADD:
ENG:
PM:
TECH: M.V.V.
SURVEY: 07174av01
FB#:

JOB No. 07174
REVISIONS:
REV. DATE

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