

**ATTACHMENT 8: STORM WATER CALCULATIONS**  
**PETER F. OLESEN AND ASSOCIATES**  
**SPACECO**

# PETER F. OLESEN AND ASSOCIATES, INC.

C O N S U L T I N G   E N G I N E E R S

May 21, 2009

Ms. Joanne Kalchbrenner  
Community Development Director  
City of West Chicago

West Chicago, IL

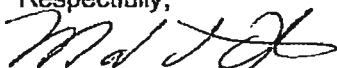
Re: Kramer Tree Services

Dear Ms. Kalchbrenner,

As requested by Pavia Marting during their review of the as-built survey that was submitted for the Kramer Tree project, we have performed an analysis of the ability of the as constructed storm sewer to convey a 10-year storm. Based on this analysis, the storm sewer system is capable of conveying the 10-year storm. Output of the Storm Cad analysis is attached.

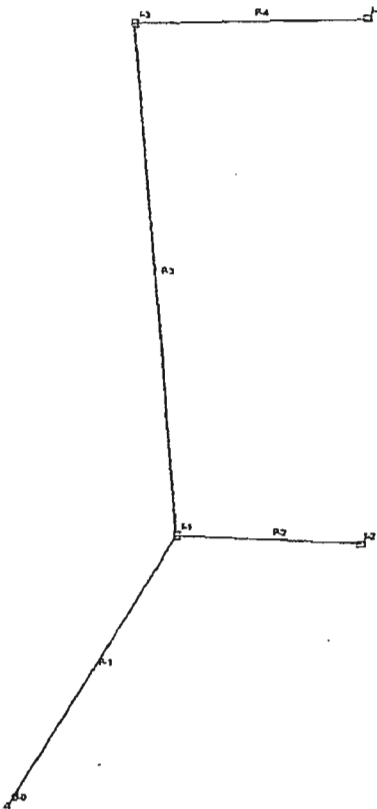
If you should have any questions or comments, please contact me at (847) 253-1515.

Respectfully,



Mark S. Olesen, P.E.  
Executive Vice President



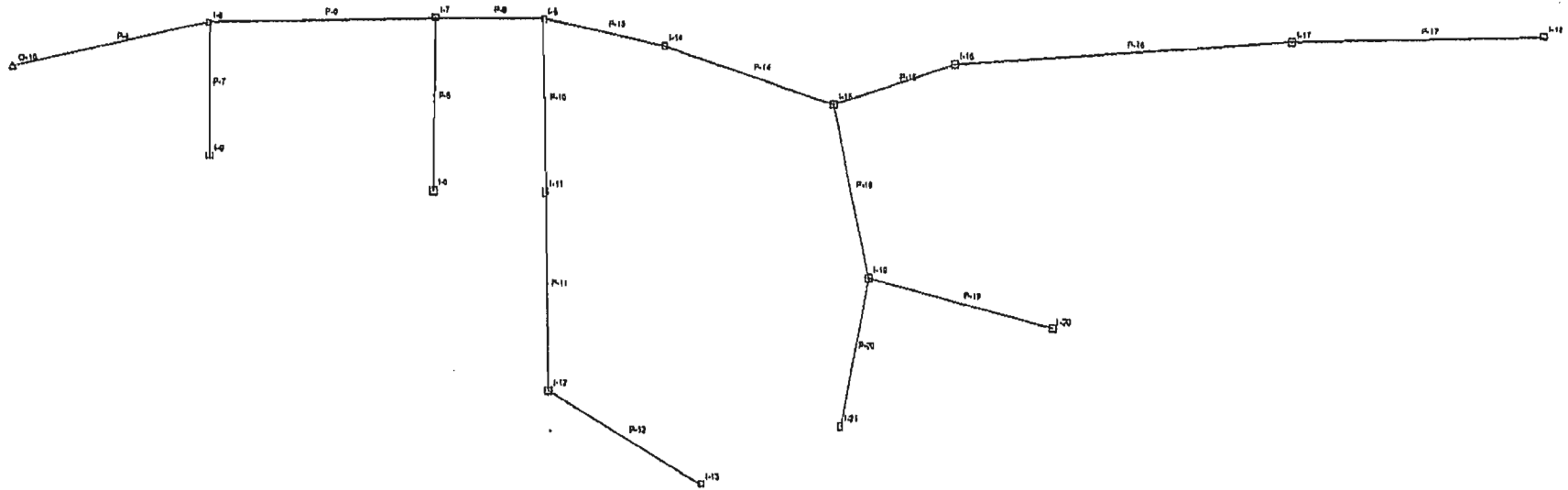


**Pipe Report**

Pipe	Upsream Node	Downstream Node	Inlet Area (acres)	Inlet C Coefficient	Inlet CA (acres)	Total CA (acres)	System Intensity (in/hr)	Discharge (cfs)	Length (ft)	Constructed Slope (ft/ft)	Section Size	Roughness	Capacity (cfs)	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)
P-4	I-4	I-3	1.23	0.94	1.16	1.16	6.84	7.98	145.00	0.005310	18 inch	0.013	7.65	749.76	748.99
P-2	I-2	I-1	1.42	0.91	1.29	1.29	6.86	8.89	114.00	0.001491	21 inch	0.013	6.12	748.31	748.14
P-3	I-3	I-1	1.00	0.98	0.98	2.14	6.78	14.61	320.00	0.001312	24 inch	0.013	8.20	748.99	748.57
P-1	I-1	O-0	0.94	0.95	0.89	4.32	6.66	29.00	198.00	0.004495	30 inch	0.013	27.50	747.45	746.56

**Node Report**

Node	Inlet Area (acres)	Inlet C Coefficient	Inlet CA (acres)	External CA (acres)	Total CA (acres)	Inlet TC (min)	External TC (min)	Upstream Flow Time (min)	System Flow Time (min)	System Intensity (in/hr)	Total Watershed (CIA) (cfs)	Additional Flow (cfs)	Carryover (cfs)	Known Flow (cfs)	Total Upstream Added (cfs)	Discharge (cfs)
I-4	1.23	0.94	1.16	0.00	1.16	1.98	0.00	0.00	1.98	6.84	7.98	0.00	0.00	0.00	0.00	7.98
I-2	1.42	0.91	1.29	0.00	1.29	1.84	0.00	0.00	1.84	6.86	8.89	0.00	0.00	0.00	0.00	8.89
I-3	1.00	0.98	0.98	0.00	2.14	1.98	0.00	2.51	2.51	6.78	14.61	0.00	0.00	0.00	0.00	14.61
I-1	0.94	0.95	0.89	0.00	4.32	1.87	0.00	3.49	3.49	6.66	29.00	0.00	0.00	0.00	0.00	29.00
O-0	N/A	N/A	N/A	N/A	4.32	N/A	0.00	3.96	3.96	6.60	28.75	N/A	N/A	N/A	0.00	N/A



### Pipe Report

Pipe	Upstream Node	Downstream Node	Inlet Area (acres)	Inlet C Coefficient	Inlet CA (acres)	Total CA (acres)	System Intensity (in/hr)	Discharge (cfs)	Length (ft)	Constructed Slope (ft/ft)	Section Size	Roughness	Capacity (cfs)	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)
P-17	I-18	I-17	0.52	0.83	0.43	0.43	6.94	3.03	154.00	0.002208	18 inch	0.013	4.94	751.59	751.25
P-16	I-17	I-16	0.44	0.90	0.39	0.83	6.76	5.64	212.00	0.001274	18 inch	0.013	3.75	751.25	750.98
P-19	I-20	I-19	0.86	0.89	0.76	0.76	6.90	5.31	118.00	0.000424	18 inch	0.013	2.16	751.10	751.05
P-20	I-21	I-19	0.22	0.69	0.15	0.15	6.98	1.07	92.00	0.000435	12 inch	0.013	0.83	751.16	751.12
P-12	I-13	I-12	0.31	0.81	0.25	0.25	6.96	1.76	112.00	0.003214	12 inch	0.013	2.25	751.80	751.44
P-15	I-16	I-15	0.58	0.89	0.52	1.34	6.63	8.97	82.00	0.006951	24 inch	0.012	20.43	751.05	750.48
P-18	I-19	I-15	0.27	0.94	0.25	1.17	6.82	8.03	110.00	0.000727	24 inch	0.013	6.10	750.82	750.74
P-11	I-12	I-11	0.19	0.70	0.13	0.38	6.86	2.65	103.00	0.001845	12 inch	0.013	1.71	751.54	751.35
P-14	I-15	I-14	0.25	0.87	0.22	2.73	6.57	18.10	111.00	0.000360	29x45 inc	0.013	13.99	750.88	750.84
P-10	I-11	I-5	0.49	0.94	0.46	0.84	6.79	5.77	129.00	0.003411	18 inch	0.013	6.13	751.35	750.91
P-13	I-14	I-5	0.62	0.88	0.54	3.28	6.51	21.49	77.00	0.000909	29x45 inc	0.013	22.22	750.91	750.84
P-9	I-5	I-7	0.00	0.00	0.00	4.12	6.48	26.89	66.00	0.001061	38x60 inc	0.013	50.28	750.38	750.31
P-5	I-6	I-7	0.17	0.98	0.17	0.17	6.86	1.15	106.00	0.006509	12 inch	0.013	3.20	751.00	750.31
P-6	I-7	I-8	0.18	0.86	0.16	4.44	6.44	28.83	141.00	0.001064	38x60 inc	0.013	50.36	750.31	750.16
P-7	I-9	I-8	0.32	0.98	0.31	0.31	6.88	2.18	83.00	0.010120	12 inch	0.013	4.00	751.00	750.16
P-8	I-8	O-10	0.23	0.89	0.20	4.96	6.37	31.85	122.00	0.001311	38x60 inc	0.013	55.91	750.16	750.00

Node Report

Node	Inlet Area (acres)	Inlet C Coefficient	Inlet CA (acres)	External CA (acres)	Total CA (acres)	Inlet TC (min)	External TC (min)	Upstream Flow Time (min)	System Flow Time (min)	System Intensity (in/hr)	Total Watershed (CIA) (cfs)	Additional Flow (cfs)	Carryover (cfs)	Known Flow (cfs)	Total Upstream Added (cfs)	Discharge (cfs)
I-18	0.52	0.83	0.43	0.00	0.43	1.19	0.00	0.00	1.19	6.94	3.03	0.00	0.00	0.00	0.00	3.03
I-17	0.44	0.90	0.39	0.00	0.83	1.54	0.00	2.68	2.68	6.76	5.64	0.00	0.00	0.00	0.00	5.64
I-20	0.86	0.89	0.76	0.00	0.76	1.54	0.00	0.00	1.54	6.90	5.31	0.00	0.00	0.00	0.00	5.31
I-21	0.22	0.69	0.15	0.00	0.15	0.80	0.00	0.00	0.80	6.98	1.07	0.00	0.00	0.00	0.00	1.07
I-13	0.31	0.81	0.25	0.00	0.25	0.96	0.00	0.00	0.96	6.96	1.76	0.00	0.00	0.00	0.00	1.76
I-16	0.58	0.89	0.52	0.00	1.34	1.17	0.00	3.79	3.79	6.63	8.97	0.00	0.00	0.00	0.00	8.97
I-19	0.27	0.94	0.25	0.00	1.17	1.33	0.00	2.20	2.20	6.82	8.03	0.00	0.00	0.00	0.00	8.03
I-12	0.19	0.70	0.13	0.00	0.38	1.39	0.00	1.86	1.86	6.86	2.65	0.00	0.00	0.00	0.00	2.65
I-15	0.25	0.87	0.22	0.00	2.73	1.17	0.00	4.22	4.22	6.57	18.10	0.00	0.00	0.00	0.00	18.10
I-11	0.49	0.94	0.46	0.00	0.84	2.13	0.00	2.41	2.41	6.79	5.77	0.00	0.00	0.00	0.00	5.77
I-14	0.62	0.88	0.54	0.00	3.28	1.48	0.00	4.76	4.76	6.51	21.49	0.00	0.00	0.00	0.00	21.49
I-5	0.00	0.00	0.00	0.00	4.12	0.00	0.00	5.03	5.03	6.48	26.89	0.00	0.00	0.00	0.00	26.89
I-6	0.17	0.98	0.17	0.00	0.17	1.80	0.00	0.00	1.80	6.86	1.15	0.00	0.00	0.00	0.00	1.15
I-7	0.18	0.86	0.16	0.00	4.44	0.67	0.00	5.32	5.32	6.44	28.83	0.00	0.00	0.00	0.00	28.83
I-9	0.32	0.98	0.31	0.00	0.31	1.66	0.00	0.00	1.66	6.88	2.18	0.00	0.00	0.00	0.00	2.18
I-8	0.23	0.89	0.20	0.00	4.96	1.12	0.00	5.89	5.89	6.37	31.85	0.00	0.00	0.00	0.00	31.85
O-10	N/A	N/A	N/A	N/A	4.96	N/A	0.00	6.28	6.28	6.33	31.61	N/A	N/A	N/A	0.00	N/A



Pipe Report

Pipe	Upstream Node	Downstream Node	Inlet Area (acres)	Inlet C Coefficient	Inlet CA (acres)	Total CA (acres)	System Intensity (in/hr)	Discharge (cfs)	Length (ft)	Constructed Slope (ft/ft)	Section Size	Roughness	Capacity (cfs)	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)
P-17	I-18	I-17	0.52	0.83	0.43	0.43	6.94	3.03	162.00	0.000309	18 inch	0.013	1.85	751.30	751.25
P-20	I-21	I-19	0.22	0.69	0.15	0.15	6.98	1.07	92.00	0.000435	12 inch	0.013	0.83	751.16	751.12
P-19	I-20	I-19	0.86	0.89	0.76	0.76	6.90	5.31	122.00	0.000410	18 inch	0.013	2.13	751.10	751.05
P-16	I-17	I-16	0.44	0.90	0.39	0.83	6.75	5.63	199.00	0.001357	18 inch	0.013	3.87	751.25	750.98
P-18	I-19	I-15	0.27	0.94	0.25	1.17	6.81	8.03	115.00	0.000696	24 inch	0.013	5.97	750.82	750.74
P-15	I-16	I-15	0.58	0.89	0.52	1.34	6.62	8.97	82.00	0.006951	24 inch	0.012	20.43	751.05	750.48
P-12	I-13	I-12	0.31	0.81	0.25	0.25	6.96	1.76	115.00	0.003130	12 inch	0.013	2.22	751.80	751.44
P-14	I-15	I-14	0.25	0.87	0.22	2.73	6.57	18.09	114.00	0.000351	29x45 inc	0.013	13.80	750.88	750.84
P-11	I-12	I-11	0.19	0.70	0.13	0.38	6.85	2.65	106.00	0.001792	12 inch	0.013	1.68	751.54	751.35
P-13	I-14	I-5	0.62	0.88	0.54	3.28	6.50	21.47	80.00	0.000875	29x45 inc	0.013	21.80	750.91	750.84
P-10	I-11	I-5	0.49	0.94	0.46	0.84	6.79	5.77	128.00	0.003438	18 inch	0.013	6.16	751.35	750.91
P-5	I-6	I-7	0.17	0.98	0.17	0.17	6.86	1.15	106.00	0.006509	12 inch	0.013	3.20	751.00	750.31
P-9	I-5	I-7	0.00	0.00	0.00	4.12	6.47	26.87	66.00	0.001061	38x60 inc	0.013	50.28	750.38	750.31
P-6	I-7	I-8	0.18	0.86	0.16	4.44	6.44	28.81	141.00	0.001064	38x60 inc	0.013	50.36	750.31	750.16
P-7	I-9	I-8	0.32	0.98	0.31	0.31	6.88	2.18	83.00	0.010120	12 inch	0.013	4.00	751.00	750.16
P-8	I-8	O-10	0.23	0.89	0.20	4.96	6.37	31.82	122.00	0.001311	38x60 inc	0.013	55.91	750.16	750.00

**Node Report**

Node	Inlet Area (acres)	Inlet C Coefficient	Inlet CA (acres)	External CA (acres)	Total CA (acres)	Inlet TC (min)	External TC (min)	Upstream Flow Time (min)	System Flow Time (min)	System Intensity (in/hr)	Total Watershed (CIA) (cfs)	Additional Flow (cfs)	Carryover (cfs)	Known Flow (cfs)	Total Upstream Added (cfs)	Discharge (cfs)
I-18	0.52	0.83	0.43	0.00	0.43	1.19	0.00	0.00	1.19	6.94	3.03	0.00	0.00	0.00	0.00	3.03
I-21	0.22	0.69	0.15	0.00	0.15	0.80	0.00	0.00	0.80	6.98	1.07	0.00	0.00	0.00	0.00	1.07
I-20	0.86	0.89	0.76	0.00	0.76	1.54	0.00	0.00	1.54	6.90	5.31	0.00	0.00	0.00	0.00	5.31
I-17	0.44	0.90	0.39	0.00	0.83	1.54	0.00	2.76	2.76	6.75	5.63	0.00	0.00	0.00	0.00	5.63
I-19	0.27	0.94	0.25	0.00	1.17	1.33	0.00	2.22	2.22	6.81	8.03	0.00	0.00	0.00	0.00	8.03
I-16	0.58	0.89	0.52	0.00	1.34	1.17	0.00	3.80	3.80	6.62	8.97	0.00	0.00	0.00	0.00	8.97
I-13	0.31	0.81	0.25	0.00	0.25	0.96	0.00	0.00	0.96	6.96	1.76	0.00	0.00	0.00	0.00	1.76
I-15	0.25	0.87	0.22	0.00	2.73	1.17	0.00	4.23	4.23	6.57	18.09	0.00	0.00	0.00	0.00	18.09
I-12	0.19	0.70	0.13	0.00	0.38	1.39	0.00	1.89	1.89	6.85	2.65	0.00	0.00	0.00	0.00	2.65
I-14	0.62	0.88	0.54	0.00	3.28	1.48	0.00	4.80	4.80	6.50	21.47	0.00	0.00	0.00	0.00	21.47
I-11	0.49	0.94	0.46	0.00	0.84	2.13	0.00	2.46	2.46	6.79	5.77	0.00	0.00	0.00	0.00	5.77
I-6	0.17	0.98	0.17	0.00	0.17	1.80	0.00	0.00	1.80	6.86	1.15	0.00	0.00	0.00	0.00	1.15
I-5	0.00	0.00	0.00	0.00	4.12	0.00	0.00	5.07	5.07	6.47	26.87	0.00	0.00	0.00	0.00	26.87
I-7	0.18	0.86	0.16	0.00	4.44	0.67	0.00	5.36	5.36	6.44	28.81	0.00	0.00	0.00	0.00	28.81
I-9	0.32	0.98	0.31	0.00	0.31	1.66	0.00	0.00	1.66	6.88	2.18	0.00	0.00	0.00	0.00	2.18
I-8	0.23	0.89	0.20	0.00	4.96	1.12	0.00	5.94	5.94	6.37	31.82	0.00	0.00	0.00	0.00	31.82
O-10	N/A	N/A	N/A	N/A	4.96	N/A	0.00	6.33	6.33	6.32	31.59	N/A	N/A	N/A	0.00	N/A

CATCH BASIN  
RIM=755.80 (755.45 PROPOSED)  
FILLED WITH WATER  
TOP OF WATER=751.35  
18" RCP EAST-WEST INV.=751.25

OK

CATCH BASIN  
RIM=755.65 (755.45 PROPOSED)  
751.59 18" RCP WEST

OK

WATER VALVE VAULT  
RIM=756.97

.OT 2

CATCH BASIN  
RIM=754.80 (754.50 PROPOSED)  
FILLED WITH WATER  
748.98 24" RCP SOUTH  
748.99 18" RCP EAST

145 LF @ 0.53 %

CATCH BASIN  
RIM=754.63 (754.55 PROPOSED)  
FILLED WITH WATER  
749.76 18" RCP WEST

.40'

POSED)  
0  
24  
7.67

UNDER

CONSTRUCTION

10' PUBLIC UTILITIES & DRAINAGE EASEMENT  
20' BUILDING SETBACK

145 LF @ 0.53 %

VT

CATCH BASIN  
RIM=752.82 (752.75 PROPOSED)  
FILLED WITH WATER  
TOP OF WATER=748.57  
24" RCP NORTH INV.=748.57  
21" RCP EAST INV.=748.14  
30" RCP SOUTHWEST=747.45

OK

CATCH BASIN  
RIM=752.86 (752.75 PROPOSED)  
FILLED WITH WATER  
TOP OF WATER=748.71  
748.31 21" RCP WEST

MODIFIED  
INVERT

188 LF @ 0.44 %

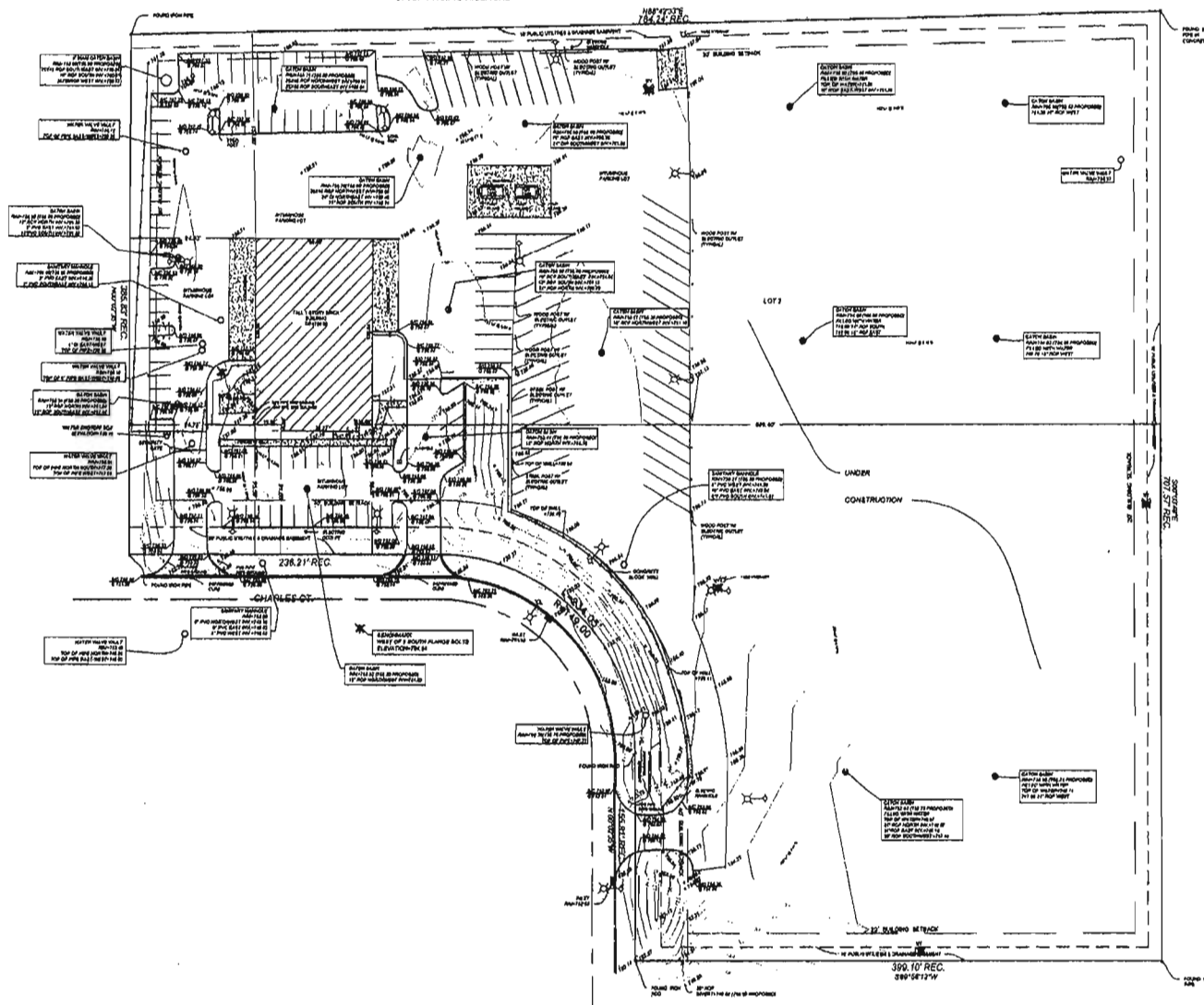
**AS-BUILT**



SCALE: 1" = 40'

UNION PACIFIC RAILROAD

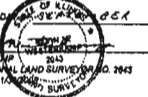
**LEGAL DESCRIPTION**  
 LOT 2, IN NORTH INDUSTRIAL PARK RECORD REBUDDOUCH, BEING A REBUDDOUCH OF LOT 2 IN NORTH INDUSTRIAL PARK, IN THE NORTHWEST 1/4 OF SECTION 6, TOWNSHIP 36 NORTH RANGH 6 EAST OF THE THIRD PRINCIPAL MERIDIAN ACCORDING TO THE PLAT THEREOF RECORDED SEPTEMBER 16, 2006, AS DOCUMENT #3768-26678, BY DUMAGE COUNTY, ILLINOIS.  
 AREA=18,000 SQUARE FEET OR 10 00 ACRES, MORE OR LESS.



Compare all dimensions before building and report any discrepancies in writing. Refer to deed or plat policy for building lines and easements.

**B & G SURVEY COMPANY, INC.**  
 ILLINOIS & INDIANA PROFESSIONAL LAND SURVEYORS  
 ILLINOIS PROFESSIONAL DESIGN #RM #184,006/091  
 2681 BERNICE ROAD  
 LANSBRO, ILLINOIS 60438  
 708-474-9300 PHONE  
 708-474-9303 FAX  
 bandgsurvey@earthlink.net

DATED THIS 26<sup>TH</sup> DAY OF SEPTEMBER, A.D. 2008



LOCATION: 300 CHARLES CT. WEST CHICAGO, IL	DRAWN BY: DMW	CHECKED BY: NMF
ORDERED BY: TRIAD CONSTRUCTION SERVICES	DATE: 9/22/08	FIELD WORK BY: KSL/V
JOB NO. 107407A	FIELD DATE: 9/17/08	EXPIRATION DATE: 11/30/2011
BK. 180, P. 9	SHEET 1 OF 1	

Legend	Abbreviations
Symbol for monument	APR 1868
Symbol for bearing and distance	APR 1868
Symbol for iron pipe	APR 1868
Symbol for iron pipe (top)	APR 1868
Symbol for iron pipe (bottom)	APR 1868
Symbol for iron pipe (side)	APR 1868
Symbol for iron pipe (corner)	APR 1868
Symbol for iron pipe (end)	APR 1868
Symbol for iron pipe (middle)	APR 1868
Symbol for iron pipe (near)	APR 1868
Symbol for iron pipe (far)	APR 1868
Symbol for iron pipe (corner)	APR 1868
Symbol for iron pipe (end)	APR 1868
Symbol for iron pipe (middle)	APR 1868
Symbol for iron pipe (near)	APR 1868
Symbol for iron pipe (far)	APR 1868
Symbol for iron pipe (corner)	APR 1868
Symbol for iron pipe (end)	APR 1868
Symbol for iron pipe (middle)	APR 1868
Symbol for iron pipe (near)	APR 1868
Symbol for iron pipe (far)	APR 1868

**MEMORANDUM**

August 6, 2010

TO: Sarah Cooper, PE

FROM: Gerald L Robinson, PE, CFM 

SUBJECT: Summary of the 'As-Built' Conditions Detention Ponds  
for the North Industrial Park  
(CBBEL Project Number 99-48A)

The purpose of this memorandum is to summarize the results of the 'as-built' survey completed by SPACECO, Inc for the drainage divide determination located within the North Industrial Park as illustrated on the attached exhibit DDE. The North Industrial Park is located north of Washington Street between Charles Court and Wegner Drive. The individual elevation-storage computations and outlet structures are presented for each of the 6 ponds that were excavated as part of the construction of the industrial park and are shown on the previously supplied and accepted record drawings dated June 15, 2009.

There are 3 different points where stormwater is discharged from the North Industrial Park:

- Discharge Point 1 drains a large wetland area located in the northwest corner of the project. The flow from this wetland is discharged to the north along the railroad located along the northern boundary of the site. This discharge point drains Detention Ponds 1-3, which were all excavated adjacent to the wetland area and are controlled by the single discharge pipe out of the wetland area.
- Discharge Point 2 drains the eastern portion of the North Industrial Park and outlets into the City of West Chicago storm sewer system located within the Washington Street Right-of-Way. Ponds 4 and 6 are tributary to this discharge point.
- The third discharge point is located in the southwestern corner of the North Industrial Park and is also tributary to the Washington Street storm sewer system. Pond 5 (east and west) is located within this discharge point.

The revised drainage divides were input to the record drawing TR-20 hydrologic models. A comparison of the original calculations for the North Industrial Park and the 'as-built' volumes is presented in Table 1 and the TR-20 hydrologic input/output is included in Tab 1.



**CHRISTOPHER B. BURKE ENGINEERING, LTD.**

9575 W Higgins Road, Suite 600 Rosemont, Illinois 60018-4920 Tel (847) 823-0500 Fax (847) 823-0520

**MEMORANDUM**

Table 1

Comparison of Allowable Release Rate and Revised Drainage Divide Release Rates for the North Industrial Park

Outlet Number	Allowable 100-year recurrence interval Discharge (cfs)	Allowable High Water Elevation (Ft)	Actual Discharge (cfs)	Actual High Water Elevation (Ft)
1 (Ponds 1-3 and existing wetland storage)	3.84	751.0	3.76	751.0
2 (Ponds 4 and 6)	3.16	751.0	2.62	750.5
3 (Pond 5 east and west)	2.00	753.0	1.39	751.4
Total	9.00	N/A	7.77	N/A

As shown in Table 1, the existing drainage divides shown on the SPACECO plan labeled DDE do not need to be changed at this point. As the remainder of the industrial park develops, the ultimate drainage divides prepared by CBBEL as part of the Kramer stormwater management permit will need to be completed.

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**CHRISTOPHER B. BURKE ENGINEERING, LTD.**

9575 W Higgins Road, Suite 600 Rosemont, Illinois 60018-4920 Tel (847) 823-0500 Fax (847) 823-0520

NORTH INDUSTRIAL PARK

DRAINAGE DIVIDE EXHIBIT

CONSISTING ENGINEERS  
SITE DEVELOPMENT ENGINEERS  
LAND SURVEYORS

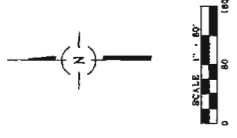


SPALLEGO INC.  
1771030001  
122, Deerpark, Ex. 600

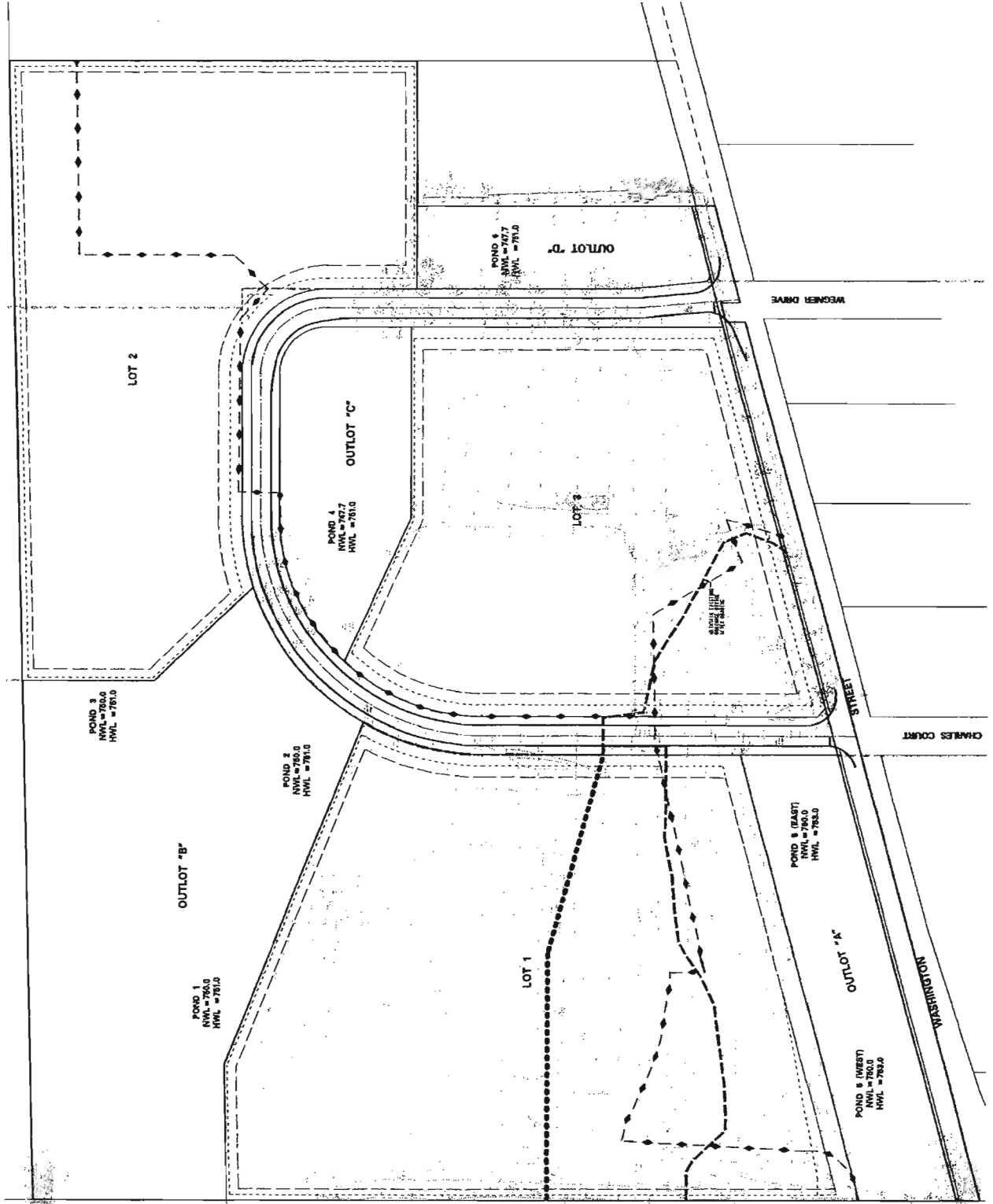
DATE: 04/05/10

PROJECT NO.: 12723

SHEET 1 OF 1  
DDE



- LEGEND
- ..... PROPOSED DRAINAGE DIVINE
  - EXISTING DRAINAGE DIVINE
  - EXISTING DRAINAGE DIVINE BASED BY PROPERTY
  - DRAINAGE DIVINE DIVINE



1

\*\*\*\*\*80-80 LIST OF INPUT DATA FOR TR-20 HYDROLOGY\*\*\*\*\*

3 TR-20 FRACRUN NOPLOTS  
 TITLE NORTH INDUSTRIAL PARK, WEST CHICAGO, ILLINOIS abuilt2.t20  
 CBBEL PROJECT NO: 99-48A, MDC 5/26/2010 PHASE 2 DIVIDES

5	RAINFL	6	.05							HUFF 1ST			
8		0.	.16	.33	.43	.52				QUARTILE			
8		.60	.66	.71	.75	.79				MEDIAN -			
8		.82	.84	.86	.88	.90				POINT			
8		.92	.94	.96	.97	.98				PAGE 14			
8		1.0	1.0	1.0	1.0	1.0				CIRC 173			
9	ENDTBL												
5	RAINFL	7	.05							HUFF 2ND			
8		0.	.03	.08	.12	.16				QUARTILE			
8		.22	.29	.39	.51	.62				MEDIAN -			
8		.70	.76	.81	.85	.88				POINT			
8		.91	.93	.95	.97	.98				PAGE 14			
8		1.0	1.0	1.0	1.0	1.0				CIRC 173			
9	ENDTBL												
5	RAINFL	8	.05							HUFF 3RD			
8		0.	.03	.06	.09	.12				QUARTILE			
8		.15	.19	.23	.27	.32				MEDIAN -			
8		.38	.45	.57	.70	.79				POINT			
8		.85	.89	.92	.95	.97				PAGE 14			
8		1.0	1.0	1.0	1.0	1.0				CIRC 173			
9	ENDTBL												
5	RAINFL	9	.05							HUFF 4TH			
8		0.	.02	.05	.08	.10				QUARTILE			
8		.13	.16	.19	.22	.25				MEDIAN -			
8		.28	.32	.35	.39	.45				POINT			
8		.91	.99	.72	.84	.92				PAGE 14			
8		1.0	1.0	1.0	1.0	1.0				CIRC 173			
9	ENDTBL												
3	STRUCT	10											
8			748.370	0.000	0.000								
8			749.300	0.001	0.100								
8			749.500	1.130	1.090								
8			750.000	2.310	3.560								
8			750.500	3.090	7.140								
8			751.000	3.730	10.72								
8			751.050	3.790	11.07								
9	ENDTBL												
6	RUNOFF	1	1	1	0.04919	84.	0.50	1	1	1	0	1	1
6	RESVOR	2	10	1	2	748.37		1	1	1	0	1	1
7	INCREM	6			0.50								
7	COMPUT	7	1	10	0.00	2.03	24.	8	2	24	1	6	MO
7	ENDCMP	1											

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)\*\*\*\*\*

7	COMPUT	7	1	10	0.00	2.51	24.	8	2	24	2	1	YR
7	ENDCMP	1											
7	COMPUT	7	1	10	0.00	3.04	24.	8	2	24	3	2	YR
7	ENDCMP	1											
7	COMPUT	7	1	10	0.00	3.80	24.	8	2	24	4	5	YR
7	ENDCMP	1											
7	COMPUT	7	1	10	0.00	4.47	24.	8	2	24	5	10	YR
7	ENDCMP	1											
7	COMPUT	7	1	10	0.00	7.58	24.	8	2	24	99	100	YR
7	ENDCMP	1											
7	ENDJOB	2											

\*\*\*\*\*END OF 80-80 LIST\*\*\*\*\*

EXECUTIVE CONTROL OPERATION INCREM MAIN TIME INCREMENT = .50 HOURS RECORD ID

EXECUTIVE CONTROL OPERATION COMPUT FROM XSECTION 1 TO STRUCTURE 10 RECORD ID 6 MO

STARTING TIME = .00 RAIN DEPTH = 2.03 RAIN DURATION= 24.00 RAIN TABLE NO.= 8 ANT. MOIST. COND= 2  
ALTERNATE NO.=24 STORM NO.= 1 MAIN TIME INCREMENT = .50 HOURS

OPERATION RUNOFF CROSS SECTION 1

\*\*\* WARNING-MAIN TIME INCREMENT MAY BE TOO LARGE.  
COMPUTED PEAK( 1.23) AT XSECTION 1 EXCEEDS MAX. ADJACENT HYDROGRAPH COORDINATE BY 8 %.

TIME (HRS)	DISCHG	FIRST HYDROGRAPH POINT =	PEAK TIME(HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)	DRAINAGE AREA =
5.00	.00	.00 HOURS <td>15.43</td> <td>3.83</td> <td>(RUNOFF)</td> <td>.05 SQ.MI.</td>	15.43	3.83	(RUNOFF)	.05 SQ.MI.
10.00	.39		23.77	1.23	(RUNOFF)	
15.00	3.53					
20.00	1.11					
25.00	.02					



--- HYDROGRAPH FOR XSECTION 1, ALTERNATE 24, STORM 1, ADDED TO OUTPUT HYDROGRAPH FILE ---

OPERATION RESVOR STRUCTURE 10

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK ELEVATION(FEET)		* FIRST POINT OF FLAT PEAK					
20.00		1.16		749.51							
TIME(HRS)	FIRST HYDROGRAPH POINT =	.00 HOURS	TIME INCREMENT =	.50 HOURS	DRAINAGE AREA = .05 SQ.MI.						
10.00	DISCHG	.00	.00	.00	.01	.05	.09	.15	.21	.31	.43
10.00	ELEV	748.37	748.37	748.37	749.30	749.31	749.32	749.33	749.34	749.35	749.38
15.00	DISCHG	.56	.70	.83	.94	1.03	1.10	1.14	1.15	1.16	1.16
15.00	ELEV	749.40	749.42	749.45	749.47	749.48	749.49	749.50	749.51	749.51	749.51
20.00	DISCHG	1.16	1.16	1.16	1.16	1.16	1.15	1.14	1.14	1.14	1.13
20.00	ELEV	749.51	749.51	749.51	749.51	749.51	749.51	749.51	749.50	749.50	749.50
25.00	DISCHG	1.08	1.03	.99	.94	.90	.86	.82	.78	.74	.71
25.00	ELEV	749.49	749.48	749.47	749.47	749.46	749.45	749.44	749.44	749.43	749.43
30.00	DISCHG	.68	.65	.62	.59	.56	.53	.51	.49	.46	.44
30.00	ELEV	749.42	749.41	749.41	749.40	749.40	749.39	749.39	749.39	749.38	749.38
35.00	DISCHG	.42	.40	.38	.37	.35	.33	.32	.30	.29	.28
35.00	ELEV	749.37	749.37	749.37	749.36	749.36	749.36	749.36	749.35	749.35	749.35
40.00	DISCHG	.26	.25	.24	.23	.22	.21	.20	.19	.18	.17
40.00	ELEV	749.35	749.34	749.34	749.34	749.34	749.34	749.34	749.33	749.33	749.33

TR20 XEQ 06-16-10 17:56 NORTH INDUSTRIAL PARK, WEST CHICAGO, ILLINOIS abuilt2.t20 JOB 1 PASS 1  
 REV PC 09/83(.2) CBBEL PROJECT NO: 99-48A, MDC 5/26/2010 PHASE 2 DIVIDES PAGE 1

45.00	DISCHG	.16	.16	.15	.14	.14	.13	.12	.12	.11	.11
45.00	ELEV	749.33	749.33	749.33	749.33	749.32	749.32	749.32	749.32	749.32	749.32
50.00	DISCHG	.10	.10	.09	.09	.09	.08	.08	.07	.07	.07
50.00	ELEV	749.32	749.32	749.32	749.32	749.31	749.31	749.31	749.31	749.31	749.31
55.00	DISCHG	.06	.06	.06	.06	.05	.05	.05	.05	.04	.04
55.00	ELEV	749.31	749.31	749.31	749.31	749.31	749.31	749.31	749.31	749.31	749.31
60.00	DISCHG	.04	.04	.04	.03	.03	.03	.03	.03	.03	.03
60.00	ELEV	749.31	749.31	749.31	749.31	749.31	749.31	749.31	749.30	749.30	749.30
65.00	DISCHG	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
65.00	ELEV	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30
70.00	DISCHG	.02	.01	.01	.01	.01	.01	.01	.01	.01	.01
70.00	ELEV	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30
75.00	DISCHG	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
75.00	ELEV	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30

--- HYDROGRAPH FOR STRUCTURE 10, ALTERNATE 24, STORM 1, ADDED TO OUTPUT HYDROGRAPH FILE ---

EXECUTIVE CONTROL OPERATION ENDCMP

COMPUTATIONS COMPLETED FOR PASS 1

RECORD ID

EXECUTIVE CONTROL OPERATION COMPUT

FROM XSECTION 1

RECORD ID 1 YR

STARTING TIME = .00 RAIN DEPTH = 2.51 RAIN DURATION= 24.00 RAIN TABLE NO.= 8 ANT. MOIST. COND= 2  
 ALTERNATE NO.=24 STORM NO.= 2 MAIN TIME INCREMENT = .50 HOURS

OPERATION RUNOFF CROSS SECTION 1

\*\*\* WARNING-MAIN TIME INCREMENT MAY BE TOO LARGE.  
 COMPUTED PEAK( 1.66) AT XSECTION 1 EXCEEDS MAX. ADJACENT HYDROGRAPH COORDINATE BY 8 %.

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK ELEVATION(FEET)		DRAINAGE AREA = .05 SQ.MI.					
15.40		5.48		749.63							
23.77		1.66		749.64							
TIME(HRS)	FIRST HYDROGRAPH POINT =	.00 HOURS	TIME INCREMENT =	.50 HOURS	DRAINAGE AREA = .05 SQ.MI.						
5.00	DISCHG	.00	.00	.00	.03	.12	.23	.33	.42	.51	.59
10.00	DISCHG	.77	.94	1.09	1.38	1.53	1.87	2.08	2.85	4.06	4.48
15.00	DISCHG	5.11	5.45	4.66	4.13	3.95	2.96	2.88	2.18	1.97	1.78
20.00	DISCHG	1.51	1.50	1.50	1.51	1.22	1.03	1.10	1.49	1.54	.39
25.00	DISCHG	.03	.00								

--- HYDROGRAPH FOR XSECTION 1, ALTERNATE 24, STORM 2, ADDED TO OUTPUT HYDROGRAPH FILE ---

OPERATION RESVOR STRUCTURE 10

TR20 XEQ 06-16-10 17:56 NORTH INDUSTRIAL PARK, WEST CHICAGO, ILLINOIS abuilt2.t20 JOB 1 PASS 2  
 REV PC 09/83(.2) CBBEL PROJECT NO: 99-48A, MDC 5/26/2010 PHASE 2 DIVIDES PAGE 2

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)		PEAK ELEVATION(FEET)		DRAINAGE AREA = .05 SQ.MI.					
23.82		1.44		749.63							
21.50		1.45		749.64							
TIME(HRS)	FIRST HYDROGRAPH POINT =	.00 HOURS	TIME INCREMENT =	.50 HOURS	DRAINAGE AREA = .05 SQ.MI.						

10.00	DISCHG	.01	.05	.09	.15	.21	.27	.35	.45	.59	.76
10.00	ELEV	749.30	749.31	749.32	749.33	749.34	749.35	749.36	749.38	749.40	749.43
15.00	DISCHG	.94	1.14	1.21	1.27	1.33	1.37	1.40	1.42	1.44	1.44
15.00	ELEV	749.47	749.50	749.53	749.56	749.58	749.60	749.61	749.62	749.63	749.63
20.00	DISCHG	1.45	1.45	1.45	1.45	1.45	1.44	1.44	1.43	1.43	1.43
20.00	ELEV	749.63	749.64	749.64	749.64	749.64	749.63	749.63	749.63	749.63	749.63
25.00	DISCHG	1.40	1.37	1.35	1.32	1.30	1.27	1.25	1.22	1.20	1.17
25.00	ELEV	749.62	749.60	749.59	749.58	749.57	749.56	749.55	749.54	749.53	749.52
30.00	DISCHG	1.15	1.13	1.07	1.02	.98	.93	.89	.85	.81	.77
30.00	ELEV	749.51	749.50	749.49	749.48	749.47	749.46	749.46	749.45	749.44	749.44
35.00	DISCHG	.74	.70	.67	.64	.61	.58	.56	.53	.51	.48
35.00	ELEV	749.43	749.42	749.42	749.41	749.41	749.40	749.40	749.39	749.39	749.39
40.00	DISCHG	.46	.44	.42	.40	.38	.36	.35	.33	.32	.30
40.00	ELEV	749.38	749.38	749.37	749.37	749.37	749.36	749.36	749.36	749.36	749.35
45.00	DISCHG	.29	.27	.26	.25	.24	.23	.22	.21	.20	.19
45.00	ELEV	749.35	749.35	749.35	749.34	749.34	749.34	749.34	749.34	749.33	749.33
50.00	DISCHG	.18	.17	.16	.16	.15	.14	.14	.13	.12	.12
50.00	ELEV	749.33	749.33	749.33	749.33	749.33	749.32	749.32	749.32	749.32	749.32
55.00	DISCHG	.11	.11	.10	.10	.09	.09	.08	.08	.08	.07
55.00	ELEV	749.32	749.32	749.32	749.32	749.32	749.32	749.31	749.31	749.31	749.31
60.00	DISCHG	.07	.07	.06	.06	.06	.06	.05	.05	.05	.05
60.00	ELEV	749.31	749.31	749.31	749.31	749.31	749.31	749.31	749.31	749.31	749.31
65.00	DISCHG	.04	.04	.04	.04	.04	.03	.03	.03	.03	.03
65.00	ELEV	749.31	749.31	749.31	749.31	749.31	749.31	749.31	749.31	749.31	749.30
70.00	DISCHG	.03	.03	.02	.02	.02	.02	.02	.02	.02	.02
70.00	ELEV	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30
75.00	DISCHG	.02	.02	.02	.01	.01	.01	.01	.01	.01	.01
75.00	ELEV	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30
80.00	DISCHG	.01	.01	.01	.01						
80.00	ELEV	749.30	749.30	749.30	749.30						

--- HYDROGRAPH FOR STRUCTURE 10, ALTERNATE 24, STORM 2, ADDED TO OUTPUT HYDROGRAPH FILE ---

EXECUTIVE CONTROL OPERATION ENDCMP

RECORD ID

COMPUTATIONS COMPLETED FOR PASS 2

EXECUTIVE CONTROL OPERATION COMPUT

RECORD ID 2 YR

FROM XSECTION 1 TO STRUCTURE 10

STARTING TIME = .00 RAIN DEPTH = 3.04 RAIN DURATION= 24.00 RAIN TABLE NO.= 8 ANT. MOIST. COND= 2  
ALTERNATE NO.=24 STORM NO.= 3 MAIN TIME INCREMENT = .50 HOURS

TR20 XEQ 06-16-10 17:56  
REV PC 09/83(.2)

NORTH INDUSTRIAL PARK, WEST CHICAGO, ILLINOIS abuilt2.t20  
CBBEL PROJECT NO: 99-48A, MDC 5/26/2010 PHASE 2 DIVIDES

JOB 1 PASS 3  
PAGE 3

OPERATION RUNOFF CROSS SECTION 1

\*\*\* WARNING-MAIN TIME INCREMENT MAY BE TOO LARGE.

COMPUTED PEAK( 2.14) AT XSECTION 1 EXCEEDS MAX. ADJACENT HYDROGRAPH COORDINATE BY 8 %.

TIME (HRS)	DISCHG	FIRST HYDROGRAPH POINT =	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)	TIME INCREMENT =	DRAINAGE AREA =					
5.00	DISCHG	.00	.03	.11	.26	.41	.55	.67	.79	.90	1.00
10.00	DISCHG	1.26	1.49	1.69	2.08	2.27	2.72	2.99	4.03	5.66	6.16
15.00	DISCHG	6.93	7.32	6.20	5.46	5.20	3.88	3.77	2.84	2.57	2.32
20.00	DISCHG	1.96	1.94	1.95	1.95	1.58	1.33	1.42	1.92	1.98	.50
25.00	DISCHG	.04	.00								

--- HYDROGRAPH FOR XSECTION 1, ALTERNATE 24, STORM 3, ADDED TO OUTPUT HYDROGRAPH FILE ---

OPERATION RESVOR STRUCTURE 10

TIME (HRS)	DISCHG	FIRST HYDROGRAPH POINT =	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)	TIME INCREMENT =	DRAINAGE AREA =					
5.00	DISCHG	.00	.00	.00	.00	.00	.00	.04	.08		
5.00	ELEV	748.37	748.37	748.37	748.37	748.37	748.37	748.37	748.37	749.31	749.31
10.00	DISCHG	.13	.19	.25	.33	.41	.51	.62	.75	.94	1.15
10.00	ELEV	749.32	749.33	749.34	749.36	749.37	749.39	749.41	749.43	749.47	749.51
15.00	DISCHG	1.25	1.37	1.47	1.56	1.63	1.69	1.73	1.76	1.78	1.79
15.00	ELEV	749.55	749.60	749.64	749.68	749.71	749.74	749.75	749.77	749.77	749.78
20.00	DISCHG	1.80	1.80	1.80	1.81	1.81	1.80	1.79	1.79	1.79	1.78
20.00	ELEV	749.78	749.78	749.79	749.79	749.79	749.78	749.78	749.78	749.78	749.78
25.00	DISCHG	1.75	1.72	1.68	1.65	1.62	1.59	1.56	1.53	1.50	1.47
25.00	ELEV	749.76	749.75	749.73	749.72	749.71	749.69	749.68	749.67	749.66	749.64
30.00	DISCHG	1.44	1.41	1.38	1.36	1.33	1.30	1.28	1.25	1.23	1.20
30.00	ELEV	749.63	749.62	749.61	749.60	749.58	749.57	749.56	749.55	749.54	749.53
35.00	DISCHG	1.18	1.16	1.13	1.09	1.04	.99	.95	.90	.86	.82
35.00	ELEV	749.52	749.51	749.50	749.49	749.48	749.48	749.47	749.46	749.45	749.45
40.00	DISCHG	.78	.75	.71	.68	.65	.62	.59	.56	.54	.51
40.00	ELEV	749.44	749.43	749.43	749.42	749.41	749.41	749.40	749.40	749.39	749.39
45.00	DISCHG	.49	.47	.44	.42	.40	.39	.37	.35	.34	.32

45.00	ELEV	749.39	749.38	749.38	749.37	749.37	749.37	749.37	749.36	749.36	749.36
50.00	DISCHG	.30	.29	.28	.26	.25	.24	.23	.22	.21	.20
50.00	ELEV	749.35	749.35	749.35	749.35	749.34	749.34	749.34	749.34	749.34	749.34
55.00	DISCHG	.19	.18	.17	.17	.16	.15	.14	.14	.13	.12

TR20 XEQ 06-16-10 17:56 NORTH INDUSTRIAL PARK, WEST CHICAGO, ILLINOIS abuilt2.t20 JOB 1 PASS 3  
 REV PC 09/83(.2) CBBEL PROJECT NO: 99-48A, MDC 5/26/2010 PHASE 2 DIVIDES PAGE 4

55.00	ELEV	749.33	749.33	749.33	749.33	749.33	749.33	749.33	749.32	749.32	749.32
60.00	DISCHG	.12	.11	.11	.10	.10	.09	.09	.09	.08	.08
60.00	ELEV	749.32	749.32	749.32	749.32	749.32	749.32	749.32	749.31	749.31	749.31
65.00	DISCHG	.07	.07	.07	.06	.06	.06	.06	.05	.05	.05
65.00	ELEV	749.31	749.31	749.31	749.31	749.31	749.31	749.31	749.31	749.31	749.31
70.00	DISCHG	.05	.04	.04	.04	.04	.04	.03	.03	.03	.03
70.00	ELEV	749.31	749.31	749.31	749.31	749.31	749.31	749.31	749.31	749.31	749.31
75.00	DISCHG	.03	.03	.03	.03	.02	.02	.02	.02	.02	.02
75.00	ELEV	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30
80.00	DISCHG	.02	.02	.02	.02	.01	.01	.01	.01	.01	.01
80.00	ELEV	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30
85.00	DISCHG	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
85.00	ELEV	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30

--- HYDROGRAPH FOR STRUCTURE 10, ALTERNATE 24, STORM 3, ADDED TO OUTPUT HYDROGRAPH FILE ---

EXECUTIVE CONTROL OPERATION ENDCMP RECORD ID  
 + COMPUTATIONS COMPLETED FOR PASS 3

EXECUTIVE CONTROL OPERATION COMPUT RECORD ID 5 YR  
 + FROM XSECTION 1 TO STRUCTURE 10

STARTING TIME = .00 RAIN DEPTH = 3.80 RAIN DURATION= 24.00 RAIN TABLE NO.= 8 ANT. MOIST. COND= 2  
 ALTERNATE NO.=24 STORM NO.= 4 MAIN TIME INCREMENT = .50 HOURS

OPERATION RUNOFF CROSS SECTION 1

\*\*\* WARNING-MAIN TIME INCREMENT MAY BE TOO LARGE.  
 COMPUTED PEAK( 2.83) AT XSECTION 1 EXCEEDS MAX. ADJACENT HYDROGRAPH COORDINATE BY 8 %.

TIME(HRS)	PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION (FEET)	(RUNOFF)	(RUNOFF)
	15.36	10.14			
	23.77	2.83			
TIME(HRS)	FIRST HYDROGRAPH POINT =	.00 HOURS	TIME INCREMENT =	.50 HOURS	DRAINAGE AREA =
.00	DISCHG	.00	.00	.00	.00
5.00	DISCHG	.17	.30	.43	.70
10.00	DISCHG	2.05	2.37	2.62	3.18
15.00	DISCHG	9.62	10.05	8.45	7.39
20.00	DISCHG	2.61	2.58	2.58	2.59
25.00	DISCHG	.05	.00	.00	.00

--- HYDROGRAPH FOR XSECTION 1, ALTERNATE 24, STORM 4, ADDED TO OUTPUT HYDROGRAPH FILE ---

OPERATION RESVOR STRUCTURE 10

TR20 XEQ 06-16-10 17:56 NORTH INDUSTRIAL PARK, WEST CHICAGO, ILLINOIS abuilt2.t20 JOB 1 PASS 4  
 REV PC 09/83(.2) CBBEL PROJECT NO: 99-48A, MDC 5/26/2010 PHASE 2 DIVIDES PAGE 5

TIME(HRS)	PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION (FEET)		
	23.89	2.32	750.01		
	22.00	2.33	750.01		
TIME(HRS)	FIRST HYDROGRAPH POINT =	.00 HOURS	TIME INCREMENT =	.50 HOURS	DRAINAGE AREA =
5.00	DISCHG	.00	.00	.00	.03
5.00	ELEV	748.37	748.37	748.37	749.31
10.00	DISCHG	.34	.43	.52	.63
10.00	ELEV	749.36	749.38	749.39	749.41
15.00	DISCHG	1.57	1.73	1.88	2.00
15.00	ELEV	749.69	749.76	749.82	749.87
20.00	DISCHG	2.32	2.32	2.33	2.33
20.00	ELEV	750.01	750.01	750.01	750.01
25.00	DISCHG	2.28	2.24	2.20	2.15
25.00	ELEV	749.99	749.97	749.95	749.93
30.00	DISCHG	1.88	1.84	1.80	1.77
30.00	ELEV	749.82	749.80	749.79	749.77
35.00	DISCHG	1.54	1.51	1.48	1.45
35.00	ELEV	749.67	749.66	749.65	749.64
40.00	DISCHG	1.26	1.24	1.21	1.19
40.00	ELEV	749.56	749.55	749.54	749.53
45.00	DISCHG	.92	.88	.84	.80
45.00	ELEV	749.46	749.46	749.45	749.44
50.00	DISCHG	.58	.55	.52	.50
50.00	ELEV	749.40	749.40	749.39	749.39
55.00	DISCHG	.36	.34	.33	.31

55.00	ELEV	749.36	749.36	749.36	749.36	749.35	749.35	749.35	749.35	749.34	749.34
60.00	DISCHG	.22	.21	.20	.19	.19	.18	.17	.16	.15	.15
60.00	ELEV	749.34	749.34	749.34	749.33	749.33	749.33	749.33	749.33	749.33	749.33
65.00	DISCHG	.14	.13	.13	.12	.12	.11	.11	.10	.10	.09
65.00	ELEV	749.32	749.32	749.32	749.32	749.32	749.32	749.32	749.32	749.32	749.32
70.00	DISCHG	.09	.08	.08	.08	.07	.07	.07	.06	.06	.06
70.00	ELEV	749.32	749.31	749.31	749.31	749.31	749.31	749.31	749.31	749.31	749.31
75.00	DISCHG	.05	.05	.05	.05	.05	.04	.04	.04	.04	.04
75.00	ELEV	749.31	749.31	749.31	749.31	749.31	749.31	749.31	749.31	749.31	749.31
80.00	DISCHG	.03	.03	.03	.03	.03	.03	.03	.02	.02	.02
80.00	ELEV	749.31	749.31	749.31	749.31	749.30	749.30	749.30	749.30	749.30	749.30
85.00	DISCHG	.02	.02	.02	.02	.02	.02	.02	.02	.01	.01
85.00	ELEV	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30
90.00	DISCHG	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
90.00	ELEV	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30

--- HYDROGRAPH FOR STRUCTURE 10, ALTERNATE 24, STORM 4, ADDED TO OUTPUT HYDROGRAPH FILE ---

EXECUTIVE CONTROL OPERATION ENDCMP

COMPUTATIONS COMPLETED FOR PASS 4

RECORD ID

1

TR20 XEQ 06-16-10 17:56  
REV PC 09/83(.2)

NORTH INDUSTRIAL PARK, WEST CHICAGO, ILLINOIS abuilt2.t20  
CBBEL PROJECT NO: 99-48A, MDC 5/26/2010 PHASE 2 DIVIDES

JOB 1 PASS 5  
PAGE 6

EXECUTIVE CONTROL OPERATION COMPUT

FROM XSECTION 1

RECORD ID 10YR

+

STARTING TIME = .00 RAIN DEPTH = 4.47 RAIN DURATION= 24.00 RAIN TABLE NO.= 8 ANT. MOIST. COND= 2  
ALTERNATE NO.=24 STORM NO.= 5 MAIN TIME INCREMENT = .50 HOURS

OPERATION RUNOFF CROSS SECTION 1

\*\*\* WARNING-MAIN TIME INCREMENT MAY BE TOO LARGE.

COMPUTED PEAK( 3.44) AT XSECTION 1 EXCEEDS MAX. ADJACENT HYDROGRAPH COORDINATE BY 8 %.

+

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
15.34	12.60	(RUNOFF)
21.26	3.22	(RUNOFF)
23.77	3.44	(RUNOFF)

TIME(HRS)	FIRST HYDROGRAPH POINT =	.00 HOURS	TIME INCREMENT = .50 HOURS	DRAINAGE AREA =	.05 SQ.MI.
.00	DISCHG	.00	.00	.00	.27
5.00	DISCHG	.45	1.15	1.83	2.30
10.00	DISCHG	2.80	4.21	5.63	10.88
15.00	DISCHG	12.01	9.11	6.17	3.77
20.00	DISCHG	3.18	3.14	2.28	.80
25.00	DISCHG	.06	.00		

--- HYDROGRAPH FOR XSECTION 1, ALTERNATE 24, STORM 5, ADDED TO OUTPUT HYDROGRAPH FILE ---

OPERATION RESVOR STRUCTURE 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
23.99	2.58	750.17

TIME(HRS)	FIRST HYDROGRAPH POINT =	.00 HOURS	TIME INCREMENT = .50 HOURS	DRAINAGE AREA =	.05 SQ.MI.
5.00	DISCHG	.00	.02	.22	.46
5.00	ELEV	748.37	748.37	749.34	749.38
10.00	DISCHG	.56	.79	1.27	1.69
10.00	ELEV	749.40	749.42	749.56	749.74
15.00	DISCHG	1.89	2.27	2.46	2.55
15.00	ELEV	749.82	749.91	750.10	750.16
20.00	DISCHG	2.56	2.57	2.58	2.57
20.00	ELEV	750.16	750.16	750.17	750.17
25.00	DISCHG	2.56	2.51	2.42	2.36
25.00	ELEV	750.16	750.13	750.10	750.03
30.00	DISCHG	2.34	2.28	2.19	1.98
30.00	ELEV	750.02	750.00	749.95	749.86
35.00	DISCHG	1.94	1.87	1.80	1.63
35.00	ELEV	749.84	749.83	749.78	749.71
40.00	DISCHG	1.59	1.53	1.47	1.34

1

TR20 XEQ 06-16-10 17:56  
REV PC 09/83(.2)

NORTH INDUSTRIAL PARK, WEST CHICAGO, ILLINOIS abuilt2.t20  
CBBEL PROJECT NO: 99-48A, MDC 5/26/2010 PHASE 2 DIVIDES

JOB 1 PASS 5  
PAGE 7

40.00	ELEV	749.70	749.68	749.67	749.66	749.65	749.63	749.62	749.61	749.60	749.59
45.00	DISCHG	1.31	1.28	1.26	1.23	1.21	1.19	1.16	1.14	1.10	1.05
45.00	ELEV	749.58	749.57	749.55	749.54	749.53	749.52	749.51	749.50	749.49	749.49
50.00	DISCHG	1.00	.96	.91	.87	.83	.79	.76	.72	.69	.66
50.00	ELEV	749.48	749.47	749.46	749.45	749.45	749.44	749.43	749.43	749.42	749.42
55.00	DISCHG	.63	.60	.57	.54	.52	.49	.47	.45	.43	.41
55.00	ELEV	749.41	749.41	749.40	749.40	749.39	749.39	749.38	749.38	749.38	749.37
60.00	DISCHG	.39	.37	.36	.34	.32	.31	.29	.28	.27	.26

60.00	ELEV	749.37	749.37	749.36	749.36	749.36	749.35	749.35	749.35	749.35	749.35
65.00	DISCHG	.24	.23	.22	.21	.20	.19	.18	.18	.17	.16
65.00	ELEV	749.34	749.34	749.34	749.34	749.34	749.33	749.33	749.33	749.33	749.33
70.00	DISCHG	.15	.15	.14	.13	.13	.12	.11	.11	.10	.10
70.00	ELEV	749.33	749.33	749.32	749.32	749.32	749.32	749.32	749.32	749.32	749.32
75.00	DISCHG	.09	.09	.09	.08	.08	.08	.07	.07	.07	.06
75.00	ELEV	749.32	749.32	749.32	749.31	749.31	749.31	749.31	749.31	749.31	749.31
80.00	DISCHG	.06	.06	.05	.05	.05	.04	.04	.04	.04	.04
80.00	ELEV	749.31	749.31	749.31	749.31	749.31	749.31	749.31	749.31	749.31	749.31
85.00	DISCHG	.04	.04	.03	.03	.03	.03	.03	.03	.03	.02
85.00	ELEV	749.31	749.31	749.31	749.31	749.31	749.30	749.30	749.30	749.30	749.30
90.00	DISCHG	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
90.00	ELEV	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30
95.00	DISCHG	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
95.00	ELEV	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30

--- HYDROGRAPH FOR STRUCTURE 10, ALTERNATE 24, STORM 5, ADDED TO OUTPUT HYDROGRAPH FILE ---

EXECUTIVE CONTROL OPERATION ENDCMP

COMPUTATIONS COMPLETED FOR PASS 5

RECORD ID

EXECUTIVE CONTROL OPERATION COMPUT

FROM XSECTION 1

RECORD ID 100YR

STARTING TIME = .00 RAIN DEPTH = 7.58 RAIN DURATION= 24.00 RAIN TABLE NO.= 8 ANT. MOIST. COND= 2  
 ALTERNATE NO.=24 STORM NO.=99 MAIN TIME INCREMENT = .50 HOURS

OPERATION RUNOFF CROSS SECTION 1

\*\*\* WARNING--MAIN TIME INCREMENT MAY BE TOO LARGE.  
 COMPUTED PEAK( 6.20) AT XSECTION 1 EXCEEDS MAX. ADJACENT HYDROGRAPH COORDINATE BY 8 %.

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
15.31	24.06	(RUNOFF)
21.25	5.86	(RUNOFF)
23.77	6.20	(RUNOFF)

TIME(HRS) FIRST HYDROGRAPH POINT = .00 HOURS TIME INCREMENT = .50 HOURS DRAINAGE AREA = .05 SQ.MI.  
 .00 DISCHG .00 .00 .00 .00 .00 .17 .65 1.11 1.53 1.89

TR20 XEQ 06-16-10 17:56 NORTH INDUSTRIAL PARK, WEST CHICAGO, ILLINOIS abuilt2.t20 JOB 1 PASS 6  
 REV PC 09/83(.2) CBBEL PROJECT NO: 99-48A, MDC 5/26/2010 PHASE 2 DIVIDES PAGE 8

5.00	DISCHG	2.21	2.49	2.75	3.75	4.32	4.64	4.92	5.16	5.37	5.56
10.00	DISCHG	6.59	7.35	7.86	9.24	9.60	11.05	11.66	15.12	20.38	21.31
15.00	DISCHG	23.16	23.73	19.64	16.99	15.94	11.80	11.35	8.51	7.65	6.88
20.00	DISCHG	5.80	5.71	5.71	5.72	4.60	3.88	4.13	5.56	5.73	1.45
25.00	DISCHG	.12	.00								

--- HYDROGRAPH FOR XSECTION 1, ALTERNATE 24, STORM 99, ADDED TO OUTPUT HYDROGRAPH FILE ---

OPERATION RESVOR STRUCTURE 10

PEAK TIME(HRS) 24.21 PEAK DISCHARGE(CFS) 3.76 PEAK ELEVATION(FEET) 751.02

TIME(HRS)	DISCHG	ELEV	DISCHG	ELEV	DISCHG	ELEV	DISCHG	ELEV	DISCHG	ELEV	DISCHG	ELEV
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.01	.09	
.00	ELEV	748.37	748.37	748.37	748.37	748.37	748.37	748.37	748.37	749.30	749.32	
5.00	DISCHG	.18	.28	.39	.52	.68	.86	1.04	1.17	1.25	1.33	
5.00	ELEV	749.33	749.35	749.37	749.39	749.42	749.45	749.48	749.52	749.55	749.59	
10.00	DISCHG	1.42	1.53	1.65	1.79	1.94	2.10	2.28	2.40	2.53	2.70	
10.00	ELEV	749.62	749.67	749.72	749.78	749.84	749.91	749.99	750.06	750.14	750.25	
15.00	DISCHG	2.87	3.06	3.20	3.31	3.41	3.49	3.54	3.59	3.62	3.65	
15.00	ELEV	750.36	750.48	750.59	750.67	750.75	750.81	750.86	750.89	750.92	750.94	
20.00	DISCHG	3.67	3.69	3.70	3.72	3.73	3.73	3.73	3.74	3.75	3.75	
20.00	ELEV	750.95	750.97	750.98	750.99	751.00	751.00	751.00	751.01	751.02	751.02	
25.00	DISCHG	3.73	3.70	3.68	3.65	3.62	3.60	3.57	3.54	3.52	3.49	
25.00	ELEV	751.00	750.98	750.96	750.94	750.92	750.90	750.88	750.85	750.83	750.81	
30.00	DISCHG	3.47	3.44	3.42	3.39	3.37	3.34	3.32	3.29	3.27	3.24	
30.00	ELEV	750.79	750.77	750.75	750.73	750.72	750.70	750.68	750.66	750.64	750.62	
35.00	DISCHG	3.22	3.20	3.17	3.15	3.13	3.10	3.08	3.05	3.02	3.00	
35.00	ELEV	750.60	750.58	750.56	750.55	750.53	750.51	750.49	750.47	750.46	750.44	
40.00	DISCHG	2.97	2.94	2.92	2.89	2.86	2.84	2.81	2.79	2.76	2.74	
40.00	ELEV	750.42	750.41	750.39	750.37	750.36	750.34	750.32	750.31	750.29	750.27	
45.00	DISCHG	2.71	2.69	2.67	2.64	2.62	2.59	2.57	2.55	2.52	2.50	
45.00	ELEV	750.26	750.24	750.23	750.21	750.20	750.18	750.17	750.15	750.14	750.12	
50.00	DISCHG	2.48	2.46	2.44	2.41	2.39	2.37	2.35	2.33	2.30	2.26	
50.00	ELEV	750.11	750.09	750.08	750.07	750.05	750.04	750.03	750.01	750.00	749.98	
55.00	DISCHG	2.22	2.17	2.13	2.09	2.05	2.01	1.97	1.93	1.89	1.85	
55.00	ELEV	749.96	749.94	749.92	749.91	749.89	749.87	749.86	749.84	749.82	749.81	
60.00	DISCHG	1.82	1.78	1.75	1.71	1.68	1.65	1.62	1.58	1.55	1.52	
60.00	ELEV	749.79	749.78	749.76	749.75	749.73	749.72	749.71	749.69	749.68	749.67	
65.00	DISCHG	1.49	1.46	1.43	1.41	1.38	1.35	1.33	1.30	1.27	1.25	
65.00	ELEV	749.65	749.64	749.63	749.62	749.61	749.59	749.58	749.57	749.56	749.55	
70.00	DISCHG	1.23	1.20	1.18	1.15	1.13	1.08	1.03	.99	.94	.90	
70.00	ELEV	749.54	749.53	749.52	749.51	749.50	749.49	749.48	749.47	749.47	749.46	
75.00	DISCHG	.86	.82	.78	.74	.71	.68	.64	.62	.59	.56	

75.00	ELEV	749.45	749.44	749.44	749.43	749.43	749.42	749.41	749.41	749.40	749.40
80.00	DISCHG	.53	.51	.49	.46	.44	.42	.40	.38	.37	.35
80.00	ELEV	749.39	749.39	749.39	749.38	749.38	749.37	749.37	749.37	749.36	749.36

1

R20 XEQ 06-16-10 17:56 NORTH INDUSTRIAL PARK, WEST CHICAGO, ILLINOIS abuilt2.t20 JOB 1 PASS 6  
 REV PC 09/83 (.2) CBBEL PROJECT NO: 99-48A, MDC 5/26/2010 PHASE 2 DIVIDES PAGE 9

85.00	DISCHG	.33	.32	.30	.29	.28	.26	.25	.24	.23	.22
85.00	ELEV	749.36	749.36	749.35	749.35	749.35	749.35	749.34	749.34	749.34	749.34
90.00	DISCHG	.21	.20	.19	.18	.17	.16	.16	.15	.14	.14
90.00	ELEV	749.34	749.33	749.33	749.33	749.33	749.33	749.33	749.33	749.33	749.32
95.00	DISCHG	.13	.12	.12	.11	.11	.10	.10	.09	.09	.08
95.00	ELEV	749.32	749.32	749.32	749.32	749.32	749.32	749.32	749.32	749.32	749.31
100.00	DISCHG	.08	.08	.07	.07	.07	.06	.06	.06	.06	.05
100.00	ELEV	749.31	749.31	749.31	749.31	749.31	749.31	749.31	749.31	749.31	749.31
105.00	DISCHG	.05	.05	.05	.04	.04	.04	.04	.04	.04	.03
105.00	ELEV	749.31	749.31	749.31	749.31	749.31	749.31	749.31	749.31	749.31	749.31
110.00	DISCHG	.03	.03	.03	.03	.03	.02	.02	.02	.02	.02
110.00	ELEV	749.31	749.31	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30
115.00	DISCHG	.02	.02	.02	.02	.02	.02	.01	.01	.01	.01
115.00	ELEV	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30
120.00	DISCHG	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
120.00	ELEV	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30	749.30

--- HYDROGRAPH FOR STRUCTURE 10, ALTERNATE 24, STORM 99, ADDED TO OUTPUT HYDROGRAPH FILE ---

EXECUTIVE CONTROL OPERATION ENDCMP RECORD ID  
 + COMPUTATIONS COMPLETED FOR PASS 6

EXECUTIVE CONTROL OPERATION ENDJOB RECORD ID  
 1

TR20 XEQ 06-16-10 17:56 NORTH INDUSTRIAL PARK, WEST CHICAGO, ILLINOIS abuilt2.t20 JOB 1 SUMMARY  
 REV PC 09/83 (.2) CBBEL PROJECT NO: 99-48A, MDC 5/26/2010 PHASE 2 DIVIDES PAGE 10

SUMMARY TABLE 1 - SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL INSTRUCTIONS IN THE ORDER PERFORMED  
 (A STAR (\*) AFTER THE PEAK DISCHARGE TIME AND RATE (CFS) VALUES INDICATES A FLAT TOP HYDROGRAPH  
 A QUESTION MARK (?) INDICATES A HYDROGRAPH WITH PEAK AS LAST POINT.)

SECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RAIN TABLE #	ANTEC MOIST COND	MAIN TIME INCREM (HR)	PRECIPITATION			RUNOFF AMOUNT (IN)	PEAK DISCHARGE				
						BEGIN (HR)	AMOUNT (IN)	DURATION (HR)		ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)	
ALTERNATE 24 STORM 1														
+ XSECTION	1	RUNOFF	.05	8	2	.50	.0	2.03	24.00	.76	---	15.43	3.83	77.9
STRUCTURE	10	RESVOR	.05	8	2	.50	.0	2.03	24.00	.72	749.51	20.00*	1.16*	23.6
ALTERNATE 24 STORM 2														
+ XSECTION	1	RUNOFF	.05	8	2	.50	.0	2.51	24.00	1.12	---	15.40	5.48	111.3
STRUCTURE	10	RESVOR	.05	8	2	.50	.0	2.51	24.00	1.08	749.64	21.50	1.45	29.5
ALTERNATE 24 STORM 3														
+ XSECTION	1	RUNOFF	.05	8	2	.50	.0	3.04	24.00	1.54	---	15.38	7.36	149.7
STRUCTURE	10	RESVOR	.05	8	2	.50	.0	3.04	24.00	1.50	749.79	21.50	1.81	36.7
ALTERNATE 24 STORM 4														
+ XSECTION	1	RUNOFF	.05	8	2	.50	.0	3.80	24.00	2.18	---	15.36	10.14	206.0
STRUCTURE	10	RESVOR	.05	8	2	.50	.0	3.80	24.00	2.15	750.01	22.00	2.33	47.3
ALTERNATE 24 STORM 5														
+ XSECTION	1	RUNOFF	.05	8	2	.50	.0	4.47	24.00	2.78	---	15.34	12.60	256.2
STRUCTURE	10	RESVOR	.05	8	2	.50	.0	4.47	24.00	2.74	750.17	23.99	2.58	52.4
ALTERNATE 24 STORM 99														
+ XSECTION	1	RUNOFF	.05	8	2	.50	.0	7.58	24.00	5.67	---	15.31	24.06	489.1
STRUCTURE	10	RESVOR	.05	8	2	.50	.0	7.58	24.00	5.64	751.02	24.21	3.76	76.3

1

TR20 XEQ 06-16-10 17:56 NORTH INDUSTRIAL PARK, WEST CHICAGO, ILLINOIS abuilt2.t20 JOB 1 SUMMARY  
 REV PC 09/83 (.2) CBBEL PROJECT NO: 99-48A, MDC 5/26/2010 PHASE 2 DIVIDES PAGE 11

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

SECTION/ STRUCTURE	DRAINAGE AREA	STORM NUMBERS.....
-----------------------	------------------	--------------------

ID	(SQ MI)	1	2	3	4	5	99
0 STRUCTURE 10	.05						
+ ALTERNATE 24		1.16	1.45	1.81	2.33	2.58	3.76
(SECTION 1	.05						
ALTERNATE 24		3.83	5.48	7.36	10.14	12.60	24.06
END OF 1 JOBS IN THIS RUN							

\*\*\*\*\*80-80 LIST OF INPUT DATA FOR TR-20 HYDROLOGY\*\*\*\*\*

```

JOB TR-20 FRACRUN                      NOPLOTS
TITLE  NORTH INDUSTRIAL PARK, WEST CHICAGO, ILLINOIS ACCEPTED abuilt22.t20
CBBEL PROJECT NO: 99-48A, MDC 5/26/2010 KRAMER PHASE 2 DIVIDES
5 RAINFL 6          .05                      HUFF 1ST
8          0.        .16          .33          .43          .52          QUARTILE
8          .60        .66          .71          .75          .79          MEDIAN -
8          .82        .84          .86          .88          .90          POINT
8          .92        .94          .96          .97          .98          PAGE 14
8          1.0        1.0          1.0          1.0          1.0          CIRC 173
9 ENDTBL
5 RAINFL 7          .05                      HUFF 2ND
8          0.        .03          .08          .12          .16          QUARTILE
8          .22        .29          .39          .51          .62          MEDIAN -
8          .70        .76          .81          .85          .88          POINT
8          .91        .93          .95          .97          .98          PAGE 14
8          1.0        1.0          1.0          1.0          1.0          CIRC 173
9 ENDTBL
5 RAINFL 8          .05                      HUFF 3RD
8          0.        .03          .06          .09          .12          QUARTILE
8          .15        .19          .23          .27          .32          MEDIAN -
8          .38        .45          .57          .70          .79          POINT
8          .85        .89          .92          .95          .97          PAGE 14
8          1.0        1.0          1.0          1.0          1.0          CIRC 173
9 ENDTBL
5 RAINFL 9          .05                      HUFF 4TH
8          0.        .02          .05          .08          .10          QUARTILE
8          .13        .16          .19          .22          .25          MEDIAN -
8          .28        .32          .35          .39          .45          POINT
8          .51        .59          .72          .84          .92          PAGE 14
8          1.0        1.0          1.0          1.0          1.0          CIRC 173
9 ENDTBL
3 STRUCT 10
8          747.410      0.000      0.000
8          748.000      1.21       0.50
8          749.000      1.91       2.45
8          750.000      2.42       5.21
8          751.000      2.83       8.61
9 ENDTBL
3 STRUCT 20
8          749.88       0.00       0.00
8          750.000      0.67       0.10
8          751.000      1.24       1.59
8          752.000      1.62       3.37
8          753.000      1.92       5.40
9 ENDTBL
6 RUNOFF 1 1 1 0.03094 88. 0.50 1 1 1 0 1 1

```

\*\*\*\*\*80-80 LIST OF INPUT DATA (CONTINUED)\*\*\*\*\*

```

6 RESVOR 2 10 1 2 747.41 1 1 1 0 1 1
6 RUNOFF 1 2 1 0.01363 82. 0.50 1 1 1 0 1 1
6 RESVOR 2 20 1 2 749.88 1 1 1 0 1 1
ENDATA
7 INCREM 6 0.25
7 COMPUT 7 1 20 0.00 7.58 24. 8 2 24 99 100YR
ENDCMP 1
ENDJOB 2

```

\*\*\*\*\*END OF 80-80 LIST\*\*\*\*\*

```

EXECUTIVE CONTROL OPERATION INCREM          RECORD ID
+
MAIN TIME INCREMENT = .25 HOURS

EXECUTIVE CONTROL OPERATION COMPUT          RECORD ID 100YR
+
FROM XSECTION 1
TO STRUCTURE 20
STARTING TIME = .00 RAIN DEPTH = 7.58 RAIN DURATION= 24.00 RAIN TABLE NO.= 8 ANT. MOIST. COND= 2
ALTERNATE NO.=24 STORM NO.=99 MAIN TIME INCREMENT = .25 HOURS

```

OPERATION RUNOFF CROSS SECTION 1

TIME (HRS)	DISCHG	FIRST HYDROGRAPH POINT =	PEAK TIME (HRS)	PEAK DISCHARGE (CFS)	PEAK ELEVATION (FEET)	DRAINAGE AREA =
.00	.00	.00	15.43	15.53	(RUNOFF)	.03 SQ.MI.
2.50	.61	.80	21.38	3.69	(RUNOFF)	
5.00	1.95	2.04	23.88	3.79	(RUNOFF)	
7.50	3.55	3.62				
10.00	4.70	5.05				
12.50	7.53	7.78				
15.00	15.22	15.42				
17.50	7.63	7.39				
20.00	3.74	3.69				
22.50	2.50	2.47				
25.00	.08	.02				



--- HYDROGRAPH FOR XSECTION 1, ALTERNATE 24, STORM 99, ADDED TO OUTPUT HYDROGRAPH FILE ---

OPERATION RESVOR STRUCTURE 10

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)				PEAK ELEVATION(FEET)					
24.23		2.62				750.49					
TIME(HRS)	FIRST HYDROGRAPH POINT =	.00 HOURS				TIME INCREMENT = .25 HOURS				DRAINAGE AREA =	.03 SQ.MI.
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.01	.02
.00	ELEV	747.41	747.41	747.41	747.41	747.41	747.41	747.41	747.41	747.41	747.42
2.50	DISCHG	.04	.08	.12	.16	.21	.27	.33	.39	.45	.52
2.50	ELEV	747.43	747.45	747.47	747.49	747.51	747.54	747.57	747.60	747.63	747.66
5.00	DISCHG	.59	.66	.73	.80	.87	.94	1.03	1.13	1.21	1.23
5.00	ELEV	747.70	747.73	747.76	747.80	747.83	747.87	747.91	747.96	748.01	748.03
7.50	DISCHG	1.25	1.26	1.28	1.30	1.32	1.34	1.36	1.38	1.39	1.41
7.50	ELEV	748.05	748.08	748.10	748.13	748.15	748.18	748.21	748.24	748.26	748.29
10.00	DISCHG	1.44	1.46	1.49	1.52	1.54	1.58	1.61	1.65	1.68	1.72
10.00	ELEV	748.32	748.36	748.40	748.44	748.48	748.52	748.57	748.62	748.68	748.73

TR20 XEQ 05-27-10 09:32 NORTH INDUSTRIAL PARK, WEST CHICAGO, ILLINOIS ACCEPTED abuilt22.t20 JOB 1 PASS 1  
 REV PC 09/83(.2) CBBEL PROJECT NO: 99-48A, MDC 5/26/2010 KRAMER PHASE 2 DIVIDES PAGE 1

12.50	DISCHG	1.76	1.80	1.85	1.89	1.93	1.97	2.01	2.05	2.10	2.15
12.50	ELEV	748.79	748.85	748.91	748.98	749.04	749.11	749.19	749.28	749.37	749.46
15.00	DISCHG	2.19	2.24	2.29	2.34	2.39	2.42	2.45	2.47	2.49	2.50
15.00	ELEV	749.56	749.65	749.75	749.85	749.94	750.01	750.06	750.11	750.16	750.21
17.50	DISCHG	2.52	2.53	2.54	2.55	2.56	2.57	2.58	2.58	2.59	2.59
17.50	ELEV	750.24	750.27	750.30	750.33	750.35	750.36	750.38	750.39	750.41	750.41
20.00	DISCHG	2.59	2.60	2.60	2.60	2.60	2.61	2.61	2.61	2.61	2.61
20.00	ELEV	750.42	750.43	750.44	750.44	750.45	750.46	750.46	750.47	750.47	750.47
22.50	DISCHG	2.61	2.61	2.61	2.61	2.62	2.62	2.62	2.62	2.62	2.62
22.50	ELEV	750.47	750.47	750.47	750.47	750.48	750.48	750.49	750.49	750.49	750.48
25.00	DISCHG	2.61	2.60	2.60	2.59	2.58	2.58	2.57	2.56	2.56	2.55
25.00	ELEV	750.46	750.45	750.43	750.41	750.40	750.38	750.37	750.35	750.34	750.32
27.50	DISCHG	2.55	2.54	2.53	2.53	2.52	2.51	2.51	2.50	2.50	2.49
27.50	ELEV	750.31	750.29	750.27	750.26	750.24	750.23	750.21	750.20	750.18	750.17
30.00	DISCHG	2.48	2.48	2.47	2.46	2.46	2.45	2.45	2.44	2.43	2.43
30.00	ELEV	750.15	750.14	750.12	750.11	750.09	750.08	750.06	750.05	750.03	750.02
32.50	DISCHG	2.42	2.41	2.40	2.39	2.39	2.38	2.37	2.36	2.35	2.34
32.50	ELEV	750.00	749.99	749.97	749.95	749.93	749.92	749.90	749.88	749.86	749.84
35.00	DISCHG	2.33	2.32	2.31	2.31	2.30	2.29	2.28	2.27	2.26	2.25
35.00	ELEV	749.83	749.81	749.79	749.77	749.76	749.74	749.72	749.71	749.69	749.67
37.50	DISCHG	2.24	2.24	2.23	2.22	2.21	2.20	2.19	2.19	2.18	2.17
37.50	ELEV	749.66	749.64	749.62	749.61	749.59	749.57	749.56	749.54	749.52	749.51
40.00	DISCHG	2.16	2.15	2.14	2.14	2.13	2.12	2.11	2.10	2.10	2.09
40.00	ELEV	749.49	749.47	749.46	749.44	749.43	749.41	749.39	749.38	749.36	749.35
42.50	DISCHG	2.08	2.07	2.06	2.06	2.05	2.04	2.03	2.02	2.02	2.01
42.50	ELEV	749.33	749.32	749.30	749.29	749.27	749.26	749.24	749.22	749.21	749.19
45.00	DISCHG	2.00	1.99	1.99	1.98	1.97	1.96	1.96	1.95	1.95	1.93
45.00	ELEV	749.18	749.16	749.15	749.13	749.12	749.11	749.09	749.08	749.06	749.05
47.50	DISCHG	1.93	1.92	1.91	1.90	1.89	1.87	1.86	1.84	1.83	1.82
47.50	ELEV	749.03	749.02	749.00	748.99	748.97	748.95	748.93	748.91	748.89	748.87
50.00	DISCHG	1.80	1.79	1.78	1.76	1.75	1.74	1.72	1.71	1.70	1.69
50.00	ELEV	748.85	748.83	748.81	748.79	748.77	748.75	748.74	748.72	748.70	748.68
52.50	DISCHG	1.67	1.66	1.65	1.64	1.63	1.61	1.60	1.59	1.58	1.57
52.50	ELEV	748.66	748.65	748.63	748.61	748.59	748.58	748.56	748.54	748.53	748.51
55.00	DISCHG	1.55	1.54	1.53	1.52	1.51	1.50	1.49	1.48	1.47	1.45
55.00	ELEV	748.49	748.48	748.46	748.44	748.43	748.41	748.40	748.38	748.36	748.35
57.50	DISCHG	1.44	1.43	1.42	1.41	1.40	1.39	1.38	1.37	1.36	1.35
57.50	ELEV	748.33	748.32	748.30	748.29	748.27	748.26	748.24	748.23	748.22	748.20
60.00	DISCHG	1.34	1.33	1.32	1.31	1.30	1.29	1.28	1.27	1.26	1.25
60.00	ELEV	748.19	748.17	748.16	748.14	748.13	748.12	748.10	748.09	748.08	748.06
62.50	DISCHG	1.24	1.24	1.23	1.22	1.20	1.14	1.08	1.03	.98	.93
62.50	ELEV	748.05	748.04	748.02	748.01	747.99	747.97	747.94	747.91	747.89	747.87
65.00	DISCHG	.89	.84	.80	.76	.73	.69	.66	.63	.60	.57
65.00	ELEV	747.84	747.82	747.80	747.78	747.76	747.75	747.73	747.72	747.70	747.69
67.50	DISCHG	.54	.51	.49	.46	.44	.42	.40	.38	.36	.34
67.50	ELEV	747.67	747.66	747.65	747.64	747.62	747.61	747.60	747.60	747.59	747.58
70.00	DISCHG	.33	.31	.30	.28	.27	.25	.24	.23	.22	.21
70.00	ELEV	747.57	747.56	747.55	747.55	747.54	747.53	747.53	747.52	747.52	747.51
72.50	DISCHG	.20	.19	.18	.17	.16	.15	.15	.14	.13	.13

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72.50	ELEV	747.51	747.50	747.50	747.49	747.49	747.49	747.48	747.48	747.47	747.47
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--- HYDROGRAPH FOR STRUCTURE 10, ALTERNATE 24, STORM 99, ADDED TO OUTPUT HYDROGRAPH FILE ---

OPERATION RUNOFF CROSS SECTION 2

PEAK TIME(HRS)		PEAK DISCHARGE(CFS)				PEAK ELEVATION(FEET)					
15.46		6.43				(RUNOFF)					
23.88		1.62				(RUNOFF)					
TIME(HRS)	FIRST HYDROGRAPH POINT =	.00 HOURS				TIME INCREMENT = .25 HOURS				DRAINAGE AREA =	.01 SQ.MI.
2.50	DISCHG	.00	.03	.08	.14	.20	.26	.32	.37	.41	.46
5.00	DISCHG	.50	.54	.58	.62	.65	.75	.91	1.00	1.06	1.11

7.50	DISCHG	1.16	1.20	1.24	1.27	1.31	1.34	1.37	1.40	1.43	1.49
10.00	DISCHG	1.70	1.84	1.91	1.95	2.05	2.29	2.42	2.49	2.53	2.68
12.50	DISCHG	2.92	3.04	3.10	3.16	4.03	5.07	5.46	5.62	5.73	6.02
15.00	DISCHG	6.25	6.36	6.42	6.30	5.33	4.77	4.62	4.59	4.34	3.56
17.50	DISCHG	3.21	3.12	3.09	2.82	2.32	2.14	2.09	2.07	1.88	1.66
20.00	DISCHG	1.59	1.57	1.56	1.56	1.56	1.56	1.56	1.52	1.26	1.11
22.50	DISCHG	1.06	1.05	1.13	1.40	1.52	1.56	1.57	1.16	.40	.11
25.00	DISCHG	.03	.01	.00							

--- HYDROGRAPH FOR XSECTION 2, ALTERNATE 24, STORM 99, ADDED TO OUTPUT HYDROGRAPH FILE ---

OPERATION RESVOR STRUCTURE 20

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
24.00	1.39	751.40
21.75	1.39	751.41

\* FIRST POINT OF FLAT PEAK

TIME(HRS)	FIRST HYDROGRAPH POINT = .00 HOURS	TIME INCREMENT = .25 HOURS	DRAINAGE AREA = .01 SQ.MI.
2.50	DISCHG .00 .00 .01 .02 .04 .07 .10 .13 .16 .20		
2.50	ELEV 749.88 749.88 749.88 749.88 749.89 749.89 749.90 749.90 749.91 749.92		
5.00	DISCHG .23 .27 .31 .35 .38 .43 .48 .54 .60 .67		
5.00	ELEV 749.92 749.93 749.94 749.94 749.95 749.96 749.97 749.98 749.99 750.00		
7.50	DISCHG .67 .68 .68 .69 .69 .70 .70 .71 .71 .72		
7.50	ELEV 750.01 750.01 750.02 750.03 750.04 750.05 750.05 750.06 750.07 750.08		
10.00	DISCHG .72 .73 .74 .75 .76 .77 .78 .80 .81 .83		
10.00	ELEV 750.10 750.11 750.13 750.14 750.16 750.18 750.20 750.22 750.25 750.27		
12.50	DISCHG .84 .86 .88 .89 .91 .94 .98 1.01 1.05 1.09		
12.50	ELEV 750.30 750.33 750.36 750.39 750.43 750.48 750.54 750.60 750.67 750.73		
15.00	DISCHG 1.13 1.17 1.21 1.25 1.27 1.28 1.30 1.31 1.33 1.34		
15.00	ELEV 750.80 750.87 750.95 751.01 751.07 751.11 751.15 751.19 751.23 751.26		
17.50	DISCHG 1.35 1.35 1.36 1.37 1.37 1.38 1.38 1.38 1.39 1.39		
17.50	ELEV 751.28 751.30 751.32 751.34 751.35 751.36 751.37 751.38 751.39 751.39		
20.00	DISCHG 1.39 1.39 1.39 1.39 1.39 1.39 1.39 1.39 1.39 1.39		
20.00	ELEV 751.39 751.40 751.40 751.40 751.40 751.40 751.41 751.41 751.41 751.41		

TR20 XEQ 05-27-10 09:32 NORTH INDUSTRIAL PARK, WEST CHICAGO, ILLINOIS ACCEPTED abuilt22.t20 JOB 1 PASS 1  
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22.50	DISCHG	1.39	1.39	1.39	1.39	1.39	1.39	1.39	1.39	1.39	1.38
22.50	ELEV	751.40	751.40	751.39	751.39	751.39	751.40	751.40	751.39	751.39	751.38
25.00	DISCHG	1.38	1.37	1.37	1.36	1.35	1.35	1.34	1.34	1.33	1.32
25.00	ELEV	751.36	751.35	751.33	751.31	751.30	751.28	751.27	751.25	751.24	751.22
27.50	DISCHG	1.32	1.31	1.31	1.30	1.29	1.29	1.28	1.28	1.27	1.27
27.50	ELEV	751.21	751.19	751.17	751.16	751.14	751.13	751.11	751.10	751.09	751.07
30.00	DISCHG	1.26	1.26	1.25	1.24	1.24	1.23	1.22	1.21	1.20	1.19
30.00	ELEV	751.06	751.04	751.03	751.01	751.00	750.98	750.96	750.95	750.93	750.91
32.50	DISCHG	1.18	1.17	1.16	1.15	1.14	1.14	1.13	1.12	1.11	1.10
32.50	ELEV	750.90	750.88	750.86	750.85	750.83	750.82	750.80	750.79	750.77	750.75
35.00	DISCHG	1.09	1.08	1.07	1.07	1.06	1.05	1.04	1.03	1.02	1.02
35.00	ELEV	750.74	750.72	750.71	750.69	750.68	750.66	750.65	750.64	750.62	750.61
37.50	DISCHG	1.01	1.00	.99	.98	.98	.97	.96	.95	.95	.94
37.50	ELEV	750.59	750.58	750.57	750.55	750.54	750.53	750.51	750.50	750.49	750.47
40.00	DISCHG	.93	.92	.92	.91	.90	.90	.89	.88	.87	.87
40.00	ELEV	750.46	750.45	750.43	750.42	750.41	750.40	750.38	750.37	750.36	750.35
42.50	DISCHG	.86	.85	.85	.84	.83	.83	.82	.81	.81	.80
42.50	ELEV	750.33	750.32	750.31	750.30	750.29	750.28	750.27	750.25	750.24	750.23
45.00	DISCHG	.80	.79	.78	.78	.77	.76	.76	.75	.75	.74
45.00	ELEV	750.22	750.21	750.20	750.19	750.18	750.17	750.16	750.15	750.13	750.12
47.50	DISCHG	.74	.73	.72	.72	.71	.71	.70	.70	.69	.68
47.50	ELEV	750.11	750.10	750.09	750.08	750.07	750.06	750.05	750.04	750.04	750.03
50.00	DISCHG	.68	.67	.65	.65	.64	.63	.62	.61	.60	.59
50.00	ELEV	750.02	750.01	750.00	749.98	749.97	749.96	749.95	749.94	749.93	749.92
52.50	DISCHG	.21	.19	.16	.14	.12	.11	.09	.08	.07	.06
52.50	ELEV	749.92	749.91	749.91	749.91	749.90	749.90	749.90	749.89	749.89	749.89
55.00	DISCHG	.05	.05	.04	.04	.03	.03	.02	.02	.02	.02
55.00	ELEV	749.89	749.89	749.89	749.89	749.89	749.88	749.88	749.88	749.88	749.88
57.50	DISCHG	.01	.01	.01	.01	.01					
57.50	ELEV	749.88	749.88	749.88	749.88	749.88					

--- HYDROGRAPH FOR STRUCTURE 20, ALTERNATE 24, STORM 99, ADDED TO OUTPUT HYDROGRAPH FILE ---

EXECUTIVE CONTROL OPERATION ENDCMP COMPUTATIONS COMPLETED FOR PASS 1 RECORD ID

EXECUTIVE CONTROL OPERATION ENDJOB RECORD ID

TR20 XEQ 05-27-10 09:32 NORTH INDUSTRIAL PARK, WEST CHICAGO, ILLINOIS ACCEPTED abuilt22.t20 JOB 1 SUMMARY  
 REV PC 09/83(.2) CBBEL PROJECT NO: 99-48A, MDC 5/26/2010 KRAMER PHASE 2 DIVIDES PAGE 4

SUMMARY TABLE 1 - SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL INSTRUCTIONS IN THE ORDER PERFORMED  
 (A STAR(\*) AFTER THE PEAK DISCHARGE TIME AND RATE (CFS) VALUES INDICATES A FLAT TOP HYDROGRAPH  
 A QUESTION MARK(?) INDICATES A HYDROGRAPH WITH PEAK AS LAST POINT.)

SECTION/	STANDARD	RAIN ANTEC	MAIN	PRECIPITATION	PEAK DISCHARGE
----------	----------	------------	------	---------------	----------------

STRUCTURE ID	CONTROL OPERATION	DRAINAGE AREA (SQ MI)	TABLE #	MOIST COND	TIME INCREM (HR)	BEGIN (HR)	AMOUNT (IN)	DURATION (HR)	RUNOFF AMOUNT (IN)	ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 24 STORM 99													
XSECTION 1	RUNOFF	.03	8	2	.25	.0	7.58	24.00	6.16	---	15.43	15.53	502.1
STRUCTURE 10	RESVOR	.03	8	2	.25	.0	7.58	24.00	6.12	750.49	24.23	2.62	84.8
XSECTION 2	RUNOFF	.01	8	2	.25	.0	7.58	24.00	5.46	---	15.46	6.43	471.5
STRUCTURE 20	RESVOR	.01	8	2	.25	.0	7.58	24.00	5.46	751.41	21.75	1.39	102.3

TR20 XEQ 05-27-10 09:32  
REV PC 09/83(.2)

NORTH INDUSTRIAL PARK, WEST CHICAGO, ILLINOIS ACCEPTED abuilt22.t20  
CBBEL PROJECT NO: 99-48A, MDC 5/26/2010 KRAMER PHASE 2 DIVIDES

JOB 1 SUMMARY  
PAGE 5

SUMMARY TABLE 3 - DISCHARGE (CFS) AT XSECTIONS AND STRUCTURES FOR ALL STORMS AND ALTERNATES

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS.....
0 STRUCTURE 20	.01	99
+		
ALTERNATE 24		1.39
0 STRUCTURE 10	.03	
+		
ALTERNATE 24		2.62
0 XSECTION 1	.03	
+		
ALTERNATE 24		15.53
0 XSECTION 2	.01	
+		
ALTERNATE 24		6.43

1END OF 1 JOBS IN THIS RUN

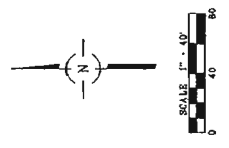
DATE	DESCRIPTION	AMOUNT
11/03/2011	RECEIVED	10.4

WETLAND AND PONDS 1, 2 AND 3  
 RECORD DRAWINGS  
 NORTH INDUSTRIAL PARK  
 CHESAPEAKE DIVISION

CONSULTING ENGINEERS  
 LAND DEVELOPMENT ENGINEERS  
 LAND SURVEYORS  
 1525 N. HARRIS ROAD, SUITE 200  
 CHESAPEAKE, VA 23041  
 PHONE: (757) 533-1100  
 FAX: (757) 533-1101  
 WWW: WWW.SPACECOINC.COM

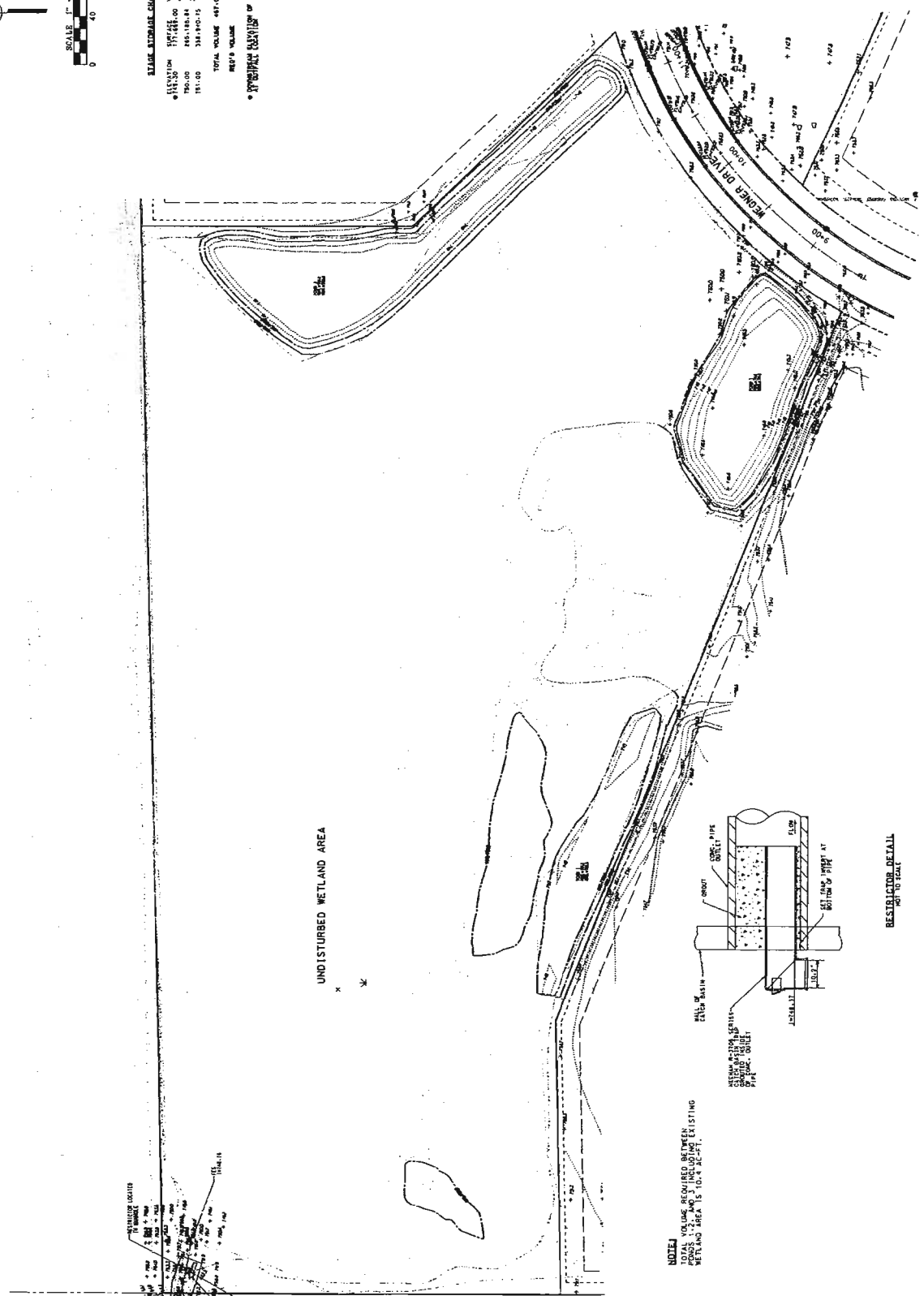
SPACECO INC.  
 11/03/2011  
 11/03/2011  
 11/03/2011  
 11/03/2011

SHEET  
 PND1  
 6 OF 9



**STAGE STORAGE CHART**

STAGE	VOLUME
10.00	197,416.00
10.50	245,182.84
11.00	318,494.04
11.50	417,000.00
TOTAL VOLUME	1,078,002.88
NET'S VOLUME	10.4 AC-FT



**NOTE:** VOLUME BETWEEN POND 1 AND POND 2 IS 10.4 AC-FT. WETLAND AREA IS 10.4 AC-FT.

RESTRICTOR DETAIL  
 NOT TO SCALE

DATE	11/03/2011
BY	CLARK'S OFFICE
PROJECT	WATER TREATMENT PLANT
NO.	1

**POND 6 RECORD DRAWING**

**NORTH INDUSTRIAL PARK**

CONSULTING ENGINEERS  
 SITE DEVELOPMENT ENGINEERS  
 LAND SURVEYORS

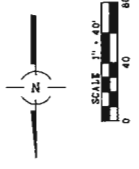
575 W. HIGHER ROAD, SUITE 200  
 WASHINGTON, MO 64785  
 PHONE: (660) 335-4000  
 FAX: (660) 335-4001  
 WWW: WWW.CEENR.COM

**PROJECT NO.**  
 2202000-0100

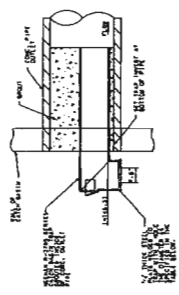
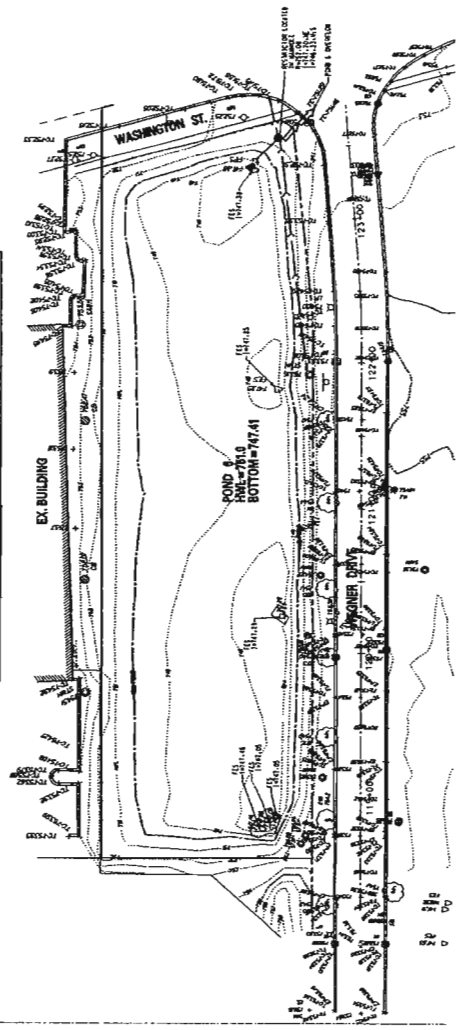
**DATE**  
 11/03/2011

**PROJECT NO.**  
 2202000-0100

**SHEET**  
 PND4  
 0 OF 0



STAGE STORAGE CHART		TOTAL VOLUME	
ELEVATION	VOLUME	FOOD 4	FOOD 5
174	2147.27	5.70 AC-FT	2.23 AC-FT
175	21047.14	2.10 AC-FT	2.23 AC-FT
176	21000.97	2.10 AC-FT	2.23 AC-FT
177	21000.97	2.10 AC-FT	2.23 AC-FT
178	21000.97	2.10 AC-FT	2.23 AC-FT
179	21000.97	2.10 AC-FT	2.23 AC-FT
180	21000.97	2.10 AC-FT	2.23 AC-FT
181	21000.97	2.10 AC-FT	2.23 AC-FT
182	21000.97	2.10 AC-FT	2.23 AC-FT
183	21000.97	2.10 AC-FT	2.23 AC-FT
184	21000.97	2.10 AC-FT	2.23 AC-FT
185	21000.97	2.10 AC-FT	2.23 AC-FT
TOTAL	185	18.45 AC-FT	2.23 AC-FT



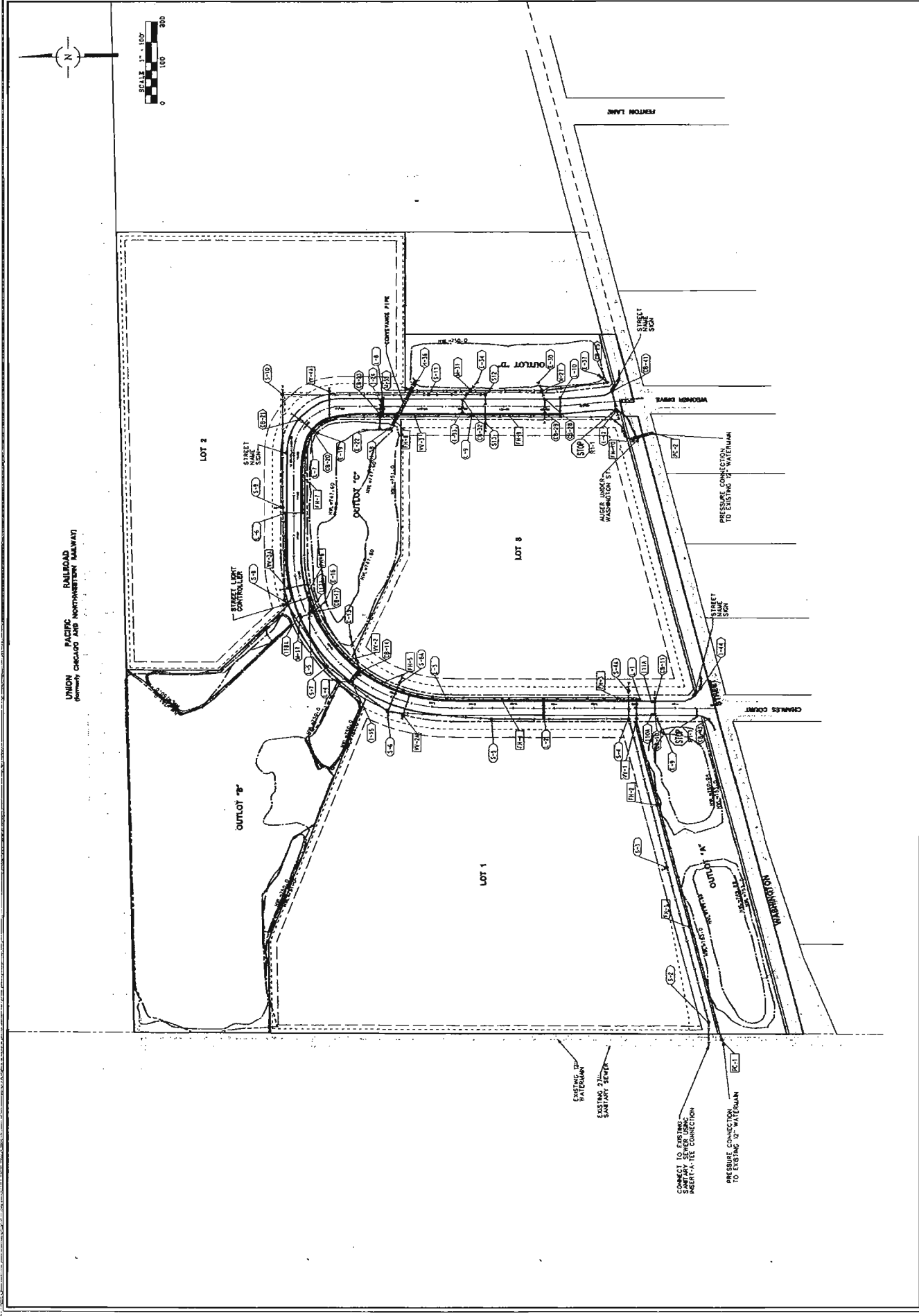
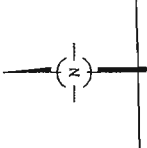
RETAINING WALL

NORTH INDUSTRIAL PARK  
OVERALL SITE & UTILITY PLAN

CONSULTING ENGINEERS  
SITE DEVELOPMENT ENGINEERS  
LAND SURVEYORS



FILE NO.	11/03/2011
DATE	11/03/2011
JOB NO.	11/03/2011
SHEET	2 OF 9

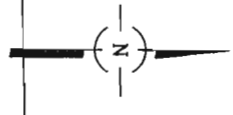
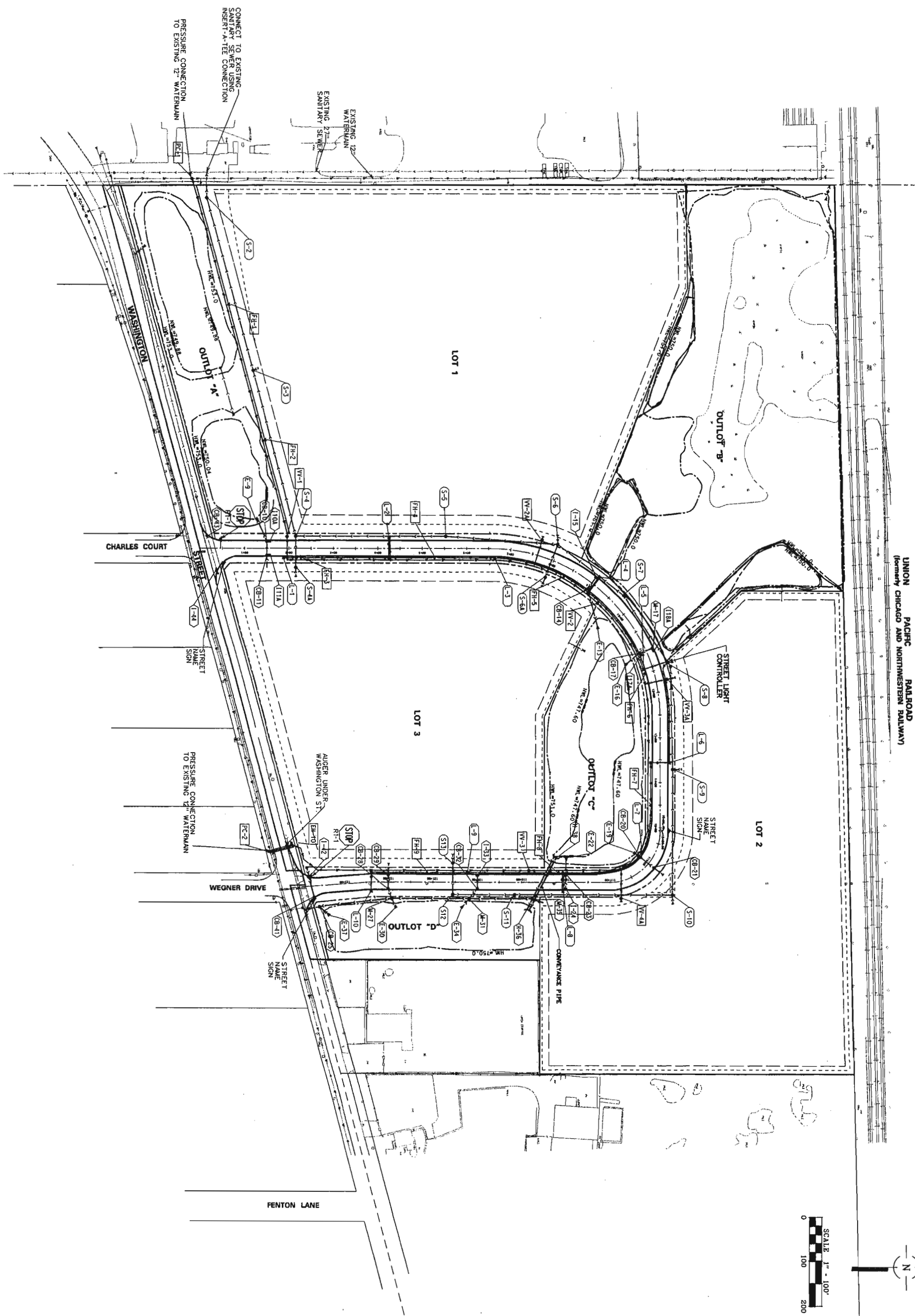


UNION PACIFIC RAILROAD  
FORMERLY CINCINNATI AND INDEPENDENT RAILWAY

EXISTING 24\"/>

CONNECT TO EXISTING  
PRESSURE CONNECTION

PRESSURE CONNECTION  
TO EXISTING 24\"/>



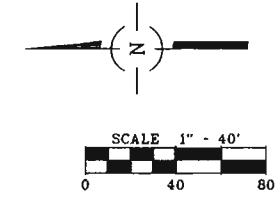
**SPACECO INC.**  
 FILE NUMBER: 22R001.DGN  
 DATE: 11/04/08  
 JOB NO. 2722  
 SHEET 2 OF 9

**CONSULTING ENGINEERS  
 SITE DEVELOPMENT ENGINEERS  
 LAND SURVEYORS**  
 9575 W. Higgins Road, Suite 700,  
 Rosemont, Illinois 60018  
 Phone: (847) 696-4060 Fax: (847) 696-4065

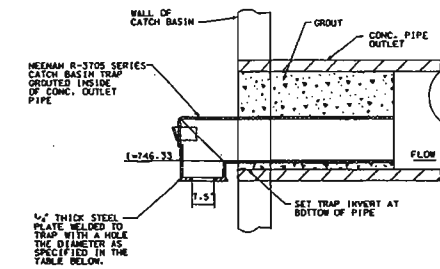
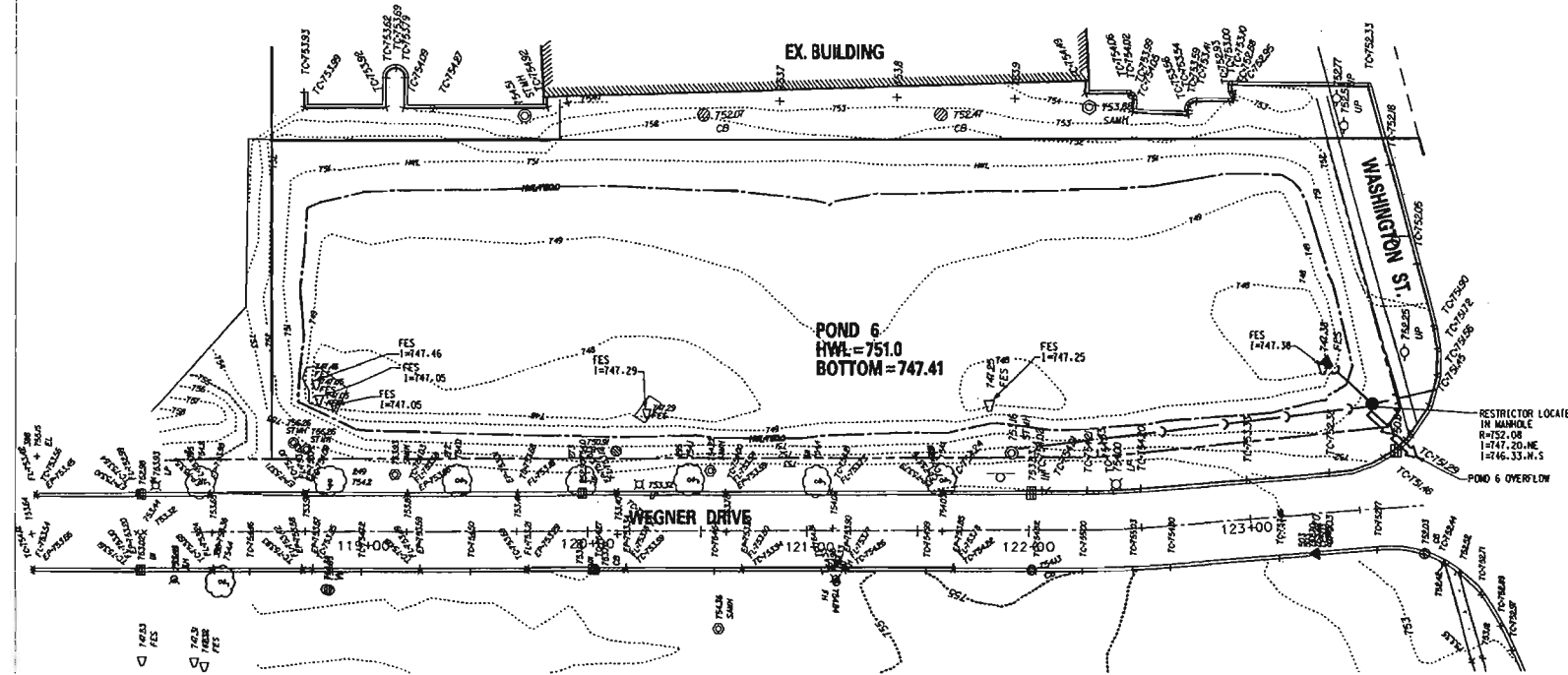
**OVERALL SITE & UTILITY PLAN**  
**NORTH INDUSTRIAL PARK**  
**WEST CHICAGO, ILLINOIS**

NO.	DATE	REMARKS

NO.	DATE	REMARKS



STAGE STORAGE CHART			POND 4 & 6	
ELEVATION	SURFACE	VOLUME	REQUIRED VOLUME:	
747.41	0	2157.71	POND 4 = 5.90 AC-FT	
748	7314.27	20700.97	POND 6 = 2.10 AC-FT	
749	34087.66	42246.88	TOTAL 8.60 AC-FT	
750	50406.09	55248.39		
751	60090.69		PROVIDED VOLUME:	
			POND 4 = 5.85 AC-FT	
			POND 6 = 2.76 AC-FT	
			TOTAL 8.61 AC-FT	
		<b>TOTAL VOLUME 120353.95 CU FT</b>		
		<b>2.76 AC-FT</b>		



RESTRICTOR DETAIL  
NOT TO SCALE

NO.	DATE	REMARKS

NO.	DATE	REMARKS
1	06/15/09	PER CITY REVIEW

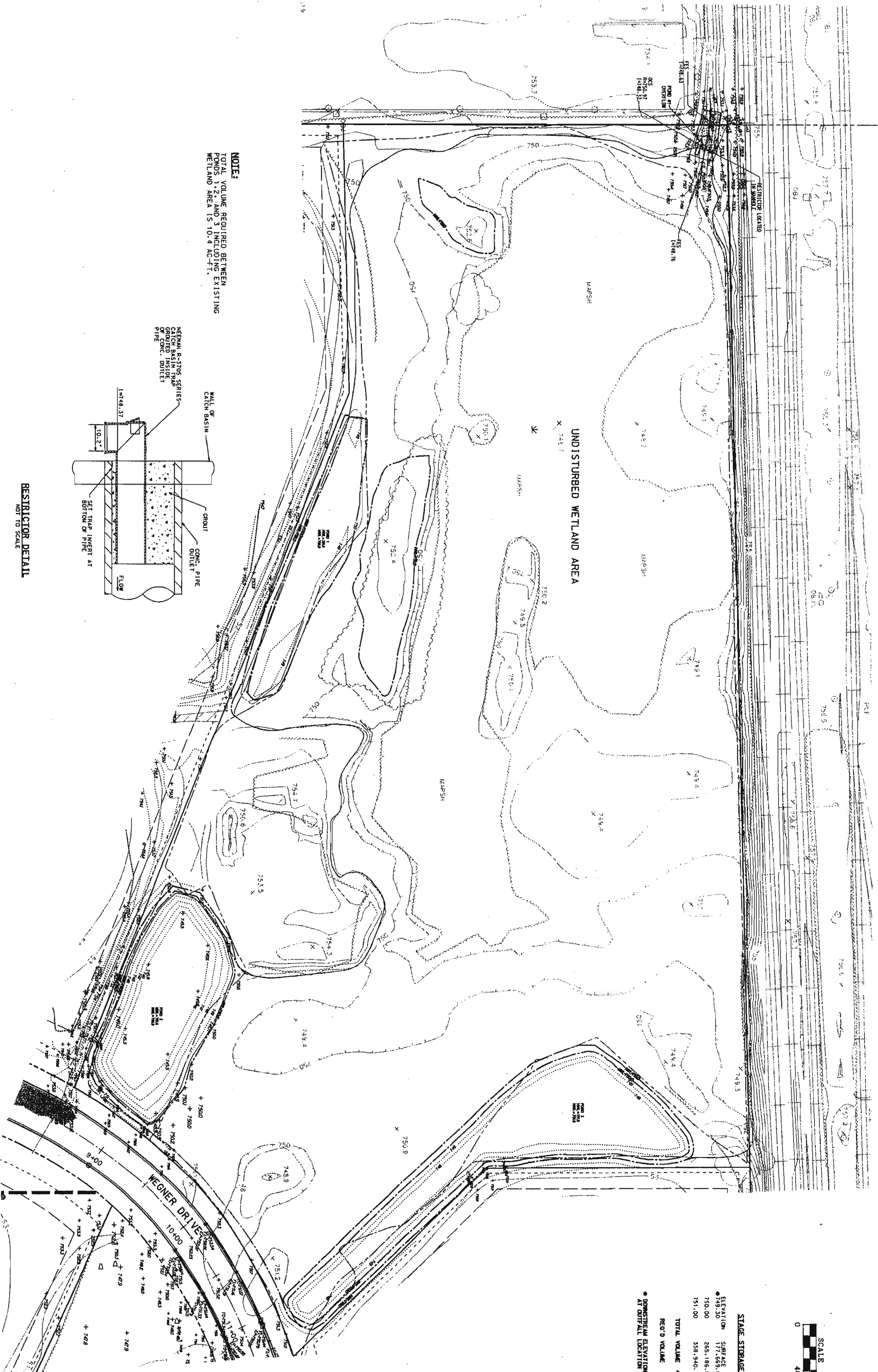
**POND 6 RECORD DRAWING**  
**NORTH INDUSTRIAL PARK**  
**WEST CHICAGO, ILLINOIS**

CONSULTING ENGINEERS  
SITE DEVELOPMENT ENGINEERS  
LAND SURVEYORS  
9575 W. Higgins Road, Suite 700,  
Rosemont, Illinois 60018  
Phone: (847) 676-4060 Fax: (847) 676-4065

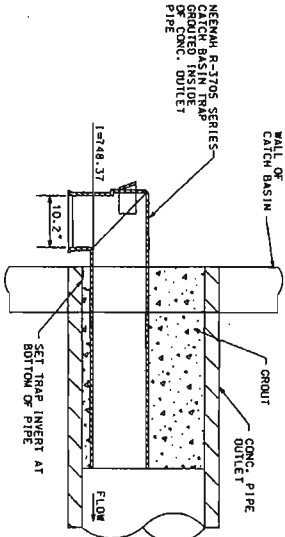


FILENAME:  
22RDPND-6.DGN  
DATE:  
11/04/08  
JOB NO.  
2722  
SHEET  
**PND4**  
9 OF 9

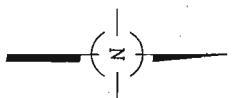
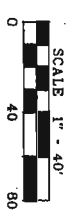




**NOTE:**  
TOTAL VOLUME REQUIRED BETWEEN PONDS 1, 2, AND 3 INCLUDING EXISTING WETLAND AREA IS 10.4 AC-FT.




**RESTRICTOR DETAIL**  
NOT TO SCALE



**STAGE STORAGE CHART**

ELEVATION	SURFACE	VOLUME
149.30	177,655.00	154,999.53
150.00	265,186.84	312,063.80
151.00	358,940.75	

TOTAL VOLUME: 467,063.33 CU FT  
 REQ'D VOLUME: 10.12 AC-FT  
 AT OFFICIAL ELEVATION OF DITCH

 <b>SPACOCO INC.</b>	CONSULTING ENGINEERS SITE DEVELOPMENT ENGINEERS LAND SURVEYORS 9575 W. Higgins Road, Suite 700, Rosemont, Illinois 60018 Phone: (847) 696-4060 Fax: (847) 696-4065	<b>WETLAND AND PONDS 1, 2 AND 3</b> <b>RECORD DRAWINGS</b>  <b>NORTH INDUSTRIAL PARK</b> <b>WEST CHICAGO, ILLINOIS</b>	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>NO.</th> <th>DATE</th> <th>REMARKS</th> </tr> <tr> <td>1</td> <td>06/15/09</td> <td>PER CITY REVIEW</td> </tr> </table>	NO.	DATE	REMARKS	1	06/15/09	PER CITY REVIEW	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>NO.</th> <th>DATE</th> <th>REMARKS</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	NO.	DATE	REMARKS			
NO.	DATE	REMARKS														
1	06/15/09	PER CITY REVIEW														
NO.	DATE	REMARKS														
FILENAME: 2200PND 1.2.3.DGN DATE: 11/04/08 JOB NO.: 2772	SHEET <b>PND1</b> 6 OF 9															

**ATTACHMENT 9: SITE SAFETY CONTINGENCY PLAN**

## CONTINGENCY PLAN (831.07)

This purpose of this contingency plan is to summarize and compile procedures to be employed in the event of a fire or unplanned release of non-hazardous material that could be a threat to human health and the environment.

The plan also includes steps taken during a medical emergency and responses to miscellaneous circumstances that create nuisance conditions at the site requiring a remedy.

### Health and Safety

In order to maintain the health and safety of employees, the following measures are planned:

- a. Provide areas where employees can wash their hands and use hand sanitizers during the work day.
- b. Make available as needed the use of safety equipment such as gloves, hearing protection, safety glasses, masks, hard hats and safety vests.
- c. Implement the in the Mulch Yard as outlined in **Appendix A** to the Contingency Plan

### Medical Emergencies:

- a. Medical first aid equipment will be kept at the equipment maintenance building.
- b. In the event of an injury the injured person shall not be moved unless there is an immediate danger.
- c. Call for emergency medical help if necessary.
- d. In case of chemical or dust exposure, rinse the effected skin or eyes with running water for at least 10 minutes.
- e. Keep the victim calm until emergency medical help arrives.

### Miscellaneous Conditions:

- a. This contingency plan has been established to addresses the contingencies set forth in Section 830.202(c):

1. Equipment Breakdowns:

Kramer Tree Specialists, Inc. maintains a fully operational tree care and mulch production business on property where the leaf mulch production facility is planned. Some equipment used for the leaf mulch production facility is also used in the tree care business and associated wood mulch production. Qualified repair

technicians are available from the manufacturer to deal with breakdown of equipment. Records are maintained on each piece of equipment to ensure it stays in service. In the event of equipment failure that impairs the ability of the site to function, additional equipment will be supplied through a rental.

## 2. Odors

When a complaint is logged, the cause of the odor will be determined and remedied by implementing procedures outlined in Section 4: Operating Standards (g). Odor is typically the result of anaerobic conditions, which rarely occurs during storage and excavation of the processed leaf piles. Use thermometers and correlate data with odor events to identify odor producing conditions before they cause a problem. Correcting the situation involves several options. These include; maintaining pile density on the outer slope surface, excavating the pile to increase air flow; and placing a blanket of high-carbon mulch material over the pile to absorb odors. Avoid excavating piles during still, humid weather conditions and have odor neutralizing agents available that can be sprayed on the piles. Also, maintain proper drainage on the mulch production pad by keeping drain inlets clear and remove loose organic material between piles.

## 3. Unacceptable Waste Delivered to the Facility

Unacceptable waste will be rejected, prior to unloading, if visibly noticeable, by the Site Yard Manager. If municipal solid waste or other non-mulching waste is dumped at the facility, it will be promptly removed and placed in a refuse container. The closest disposal facility is the DuKane Transfer Station on Powis Road operated by the Groot Industries

Often, small non-mulching materials are inadvertently accepted as "incidental" to the load (rocks, plastic bags, etc.). These materials will be removed during the unloading and stacking of leaves, and disposed of properly.

4. Groundwater Contamination

A continuous reinforced concrete mulch storage pad surface will be maintained at all times between it and the water table. Groundwater contamination from the leaf mulch production facility located on this pad is highly unlikely. Maintaining the concrete pad to allow drainage between the piles is the best method to prevent overflow on to bare ground and create the possibility of infiltration to the ground water table.

5. Accidental Release of Special Waste

Should stored materials become contaminated by antifreeze, diesel fuel or hydraulic oil from trucks and heavy equipment, the suspect material will undergo Special Waste Testing and Approval protocols as necessary by an IEPA approved sanitary landfill capable of accepting Special Waste. Once the waste is approved, it will be transported by a licensed special waste hauler and disposed of properly. The nearest facility is the DeKalb Landfill.

For small spills of 10 gallons or less, facility staff will clean the spill using absorbent materials that will be disposed of properly. During the clean up, fire extinguishers will be close by to prevent material ignition. For larger spills the Site Yard Manager will assess the threat to human health and the environment, and call for assistance from outside local contractors to contain the release.

Based on the characteristics of the released material, the Site Yard Manager will designate proper personal protective equipment to be worn. This includes gloves, hard hat and eye protection. The equipment will be cleaned after the incident.

6. Fires, Dust, Noise, Vectors, Power Outages and Unusual Traffic Conditions

Fires

Fires can occur within piles when temperatures rise above the combustion temperature of the materials. This is unlikely in properly maintained piles where temperatures average is less than 60° C. Maintain all leaf storage piles to the proper maximum height to prevent overheating. Maintain adequate pile spacing for equipment mobilization

and access to burning material. Some procedures to be implemented in case of a fire or other emergency include:

A. Depending on the magnitude of the fire incident and the amount and characteristics of the material, the following procedures are recommended:

1. The easiest means of controlling fires is to keep them from occurring. This includes constant evaluation of temperature measurements to identify abnormal high temperatures; making careful observations to identify excess steam, smoke and isolating smoldering conditions. Kramer Tree Specialists has a SOP for fire prevention and these are included in **Appendix B**.

In the event of a small contained fire that can be controlled by facility personnel, it will be extinguished using on-site fire extinguishers (located at the maintenance building and on each facility vehicle), with clean dirt to smother the fire, or with water following the Standard Operating Procedures for fire suppression located in **Appendix C**. Other methods include isolating and spreading the burning material to create a fire break in the affected pile..

2. If site personnel are unable to extinguish the fire, they will notify all personnel to leave the area and contact the West Chicago Fire Department. The Department phone number will be posted at the maintenance building.
3. The route of egress from the site is from the yard access road to Charles Court.

Water is available from a hydrant located at the concrete pad in the mulch yard and located on the property controlled by the operator.

Dust

Dust problems will be remedied by watering access roads as needed. When grinding and blending, adequate moisture to the feedstock will be maintained to prevent excess dust.

Noise

Noise is controlled through the use of mufflers on all vehicles. Maintenance of vehicles insures that excessive noise is kept to a minimum. The location of the site is in a predominately industrial area, where plant equipment is operated, such that the noise created by the mulch yard machinery should not be bothersome.

Power Outage

In the event of a power outage, the Site Yard Manager will keep the hand tickets until he is able to register the receipt of loads. The receiving hours for the site are such that daylight will be adequate for this task.

Workers on the site receive and send communications by cell phone and/or two way radios. A power outage should not affect communications.

Vectors

Rodent problems will be remedied by contracting with an extermination contractor who will visit the site and provide traps for rodents as needed. Insect populations will be controlled using good housekeeping measures and selective use of pesticides. Mosquitoes will be kept to a minimum by preventing standing water to accumulate.

Traffic

Traffic on Charles Court is very light near the facility, and if adverse weather conditions or accidents occur, the facility will close temporarily until the episode is over. Alternatively, in the case of adverse weather,

steps will be taken to slow traffic into and out of the facility to avoid accidents. Such steps might include the removal of snow, directing traffic manually in the appropriate safety clothing, and temporary repairs to roads. In the case of an accident, traffic will be re-routed or slowed to allow emergency personnel to gain access to the situation.

Traffic in the mulch yard is controlled using an SOP for driving within the yard. This SOP is included in **Appendix D** to the Operating Plan.

- b. The facility contingency plan will be available on-site and implemented as necessary. In addition, Kramer Tree Specialists holds an annual mulch production orientation meeting during the Spring of each year to review operating procedures and safety in the mulch yard. This SOP is included in **Appendix E** to the Operating Plan

Emergency Contacts:

**Site Yard Manager (Primary Emergency Coordinator):**

Tim Peters, 630-440-3912 cell; 640-231-1512 home

**Operations Director (Secondary Emergency Coordinator):**

Rick Thomas, 630-229-9142 cell; 630-466-1483 home

West Chicago Fire Protection District:      506 Lyman Street, West Chicago,  
Illinois  
(630) 520-0124

West Chicago Police Department:      Emergencies call 911 or for non-emergencies call  
(630) 293-222

Central DuPage Hospital:      25 North Winfield Road, Winfield, Illinois  
(630)933-2600

Illinois State Emergency Services and Disaster Agency: (217) 782-2860

Illinois EPA Response Center: (217)782-3637

National Emergency Response Center: (800) 424-8802



**APPENDIX A - Proximity Device Protection/ Warning System Standard  
Operating Procedure**

**KRAMER TREE SPECIALISTS**  
**STANDARD OPERATING PROCEDURES**

**Department: All Departments**

**Procedure: Proximity Devise Protection / Warning System**

**Date: July 15, 2010**

**S.O.P. Objectives:**

*To develop, update, and implement standard procedures for specific department tasks and/or functions, in order to assure consistent and accurate compliance, as well as accountability awareness for these tasks and/or functions.*

**Proximity Devise Protection / Warning Procedure**

**Proximity Devise Definition:** A devise that is attached to a persons Hard Hat that provides audio and visual warnings that are initiated from sending units mounted in yard tractors. The audio warning signals are a series of short beeps and/or a continuous beep depending on the distance you are from the tractors. The visual warnings are seen in conjunction with the audio warnings and consist of a red flashing light that appears during the duration of the warnings. Each proximity devise operates on battery power and must be charged for at least eight hours approximately every three (3) days. The proximity devises are required on all personnel working in the yard and/or visitors visiting the yard. The Mulch Yard proximity devises will be mounted on hard hats for user-friendly application.

**Proximity Devise Purpose:** To avoid bodily injury or harm to individuals working in the yard and to immediately identify and notify yard tractor drivers and yard ground workers that they are in proximity of each other and that the potential exists for physical injury.

**Notification:** Upon notification or after being alerted by the proximity devise the ground personnel should develop a serious sense of urgency and begin to visually seek out the nearby tractor. Upon notification or after being alerted by proximity devise the tractor driver should immediately stop the motion of the tractor and visually seek out the nearby personnel. The proximity devises initial warning will beep short quick beeps when the proximity distance is at 16 to 25 feet away. The proximity devises Danger Warning a continuously beep when the proximity distance is within 15 feet or less of and ground personnel.

**General Information:** The proximity devises shall be managed, monitored, and maintained by the Mulch Division Manager. Any and all personnel will be responsible for notifying the Mulch Manager in the event that you will have non-Kramer personnel visiting the yard and assuring that any visitors are fitted with the proximity devises.

**KRAMER TREE SPECIALISTS**  
**STANDARD OPERATING PROCEDURES**

**Proximity Devise Protection / Warning System Procedure Acknowledgment**

I \_\_\_\_\_ (Print) acknowledge that on this \_\_\_\_\_ day of  
\_\_\_\_\_ In the Year of \_\_\_\_\_. I was presented the Standard Operating  
Procedure training for the Proximity Devise Protection / Warning System Procedure Process.

\_\_\_\_\_  
*Employee Name (Please Print)*

\_\_\_\_\_  
*Supervisor Name (Please Print)*

\_\_\_\_\_  
*Employee Signature*

\_\_\_\_\_  
*Supervisor Signature*

**APPENDIX B – Fire Prevention Standard Operating Procedure**

**KRAMER TREE SPECIALISTS**  
**STANDARD OPERATING PROCEDURES**

**Department: Mulch Department**

**Procedure: Mulch Yard Fire Prevention**

**Date: January 5, 2011**

**S.O.P. Objectives:**

*To develop, update, and implement standard procedures for specific department tasks and/or functions, in order to assure consistent and accurate compliance, as well as accountability awareness for these tasks and/or functions.*

**Mulch Yard Fire Prevention Procedure**

**Fire Prevention Definition:**

The specific steps to be taken to prevent fire from occurring in the mulch yard.

**Tools and Equipment:**

**A. Fire Hoses:**

- Used to carry water to the fire location and for applying water to the fire area.
- Hoses are stored on a pallet to be ready for use during fire suppression.

**B. Water Supply Hydrants:**

- Used for delivery of water to the site or pile of material.

**General Procedural Information:**

- Clean all equipment on a daily basis to prevent wood build-up on equipment. It may be necessary to clean during the workday.
- Orient equipment when possible to keep the equipment up-wind not down-wind from dust.
- Suppress particle dust with water (if necessary).
- Park Machinery away from piles of material.

**Fire Suppression Procedure Acknowledgment**

I \_\_\_\_\_ *(Print)* acknowledge that on this \_\_\_\_\_ day of \_\_\_\_\_ In the Year of \_\_\_\_\_. I was presented the Standard Operating Procedure training for the Mulch Yard Fire Prevention Procedure Process.

\_\_\_\_\_  
*Employee Name (Please Print)*

\_\_\_\_\_  
*Supervisor Name (Please Print)*

\_\_\_\_\_  
*Employee Signature*

\_\_\_\_\_  
*Supervisor Signature*

**APPENDIX C – Fire Suppression Standard Operating Procedure**

**KRAMER TREE SPECIALISTS**  
**STANDARD OPERATING PROCEDURES**

**Important Note:** **Once you start the process of opening a pile you need to commit to moving the whole pile.**

**Mulch Staff**  
**Emergency Phone List**

<b><u>POSITION</u></b>	<b><u>NAME</u></b>	<b><u>PHONE NUMBER</u></b>
Manager:	Tim Peters	Cell: 630-440-3912 Home: 630-231-1512
	Matt	Cell: 630-696-5102 Personal: 630-439-6867
	Luis V.	Cell: 630-440-3915 Personal: 847-293-5026
	Onecimo	Cell: 630-440-3918

**Other Kramer Tree Management**  
**Emergency Phone List**

<b><u>POSITION</u></b>	<b><u>NAME</u></b>	<b><u>PHONE NUMBER</u></b>
Director of Operations:	Rick Thomas	Cell: 630-229-9142 Home: 630-466-1483
Director of Sales:	Jeff Kramer	Cell: 630-440-3905
President:	Joe Kramer	Cell: 630-440-3910

**Fire Suppression Procedure Acknowledgment**

I \_\_\_\_\_ (Print) acknowledge that on this \_\_\_\_\_ day of \_\_\_\_\_ In the Year of \_\_\_\_\_. I was presented the Standard Operating Procedure training for the Fire Suppression Procedure Process.

\_\_\_\_\_  
*Employee Name (Please Print)*

\_\_\_\_\_  
*Supervisor Name (Please Print)*

\_\_\_\_\_  
*Employee Signature*

\_\_\_\_\_  
*Supervisor Signature*

**KRAMER TREE SPECIALISTS**  
**STANDARD OPERATING PROCEDURES**

Department: Mulch Department  
Procedure: Fire Suppression Procedure  
Date: January 5, 2011

**S.O.P. Objectives:**

To develop, update, and implement standard procedures for specific department tasks and/or functions, in order to assure consistent and accurate compliance, as well as accountability awareness for these tasks and/or functions.

**Fire Suppression Procedure**

**Fire Suppression Definition:** Fire Suppression consists of utilizing manpower and machinery to move material for the purpose of cooling or extinguishing fire with water within organic material such as mulch until the threat of fire is abated.

**Tools and Equipment:**

**A. Wheel Loader & Excavator:**

Used to pull the piled material apart and spread it to allow for cooling and applying water to the material. (Keys in the mulch operation)  
Safety – Insure that all applicable safety procedures are followed.

**B. Water Supply / Hoses / Hydrants:**

Used for delivery of water to the site or pile of material.  
Hoses are stored on a pallet to be ready for use during fire suppression.

**C. Personnel:**

**Manager** – A Managers duty is to develop fire suppression strategic plans and to communicate the plans to the team members, assuring that all understand the objectives of the plan.

**Production Staff** – The Mulch manager will work with the Production Manager to appropriate assistance as needed from the production staff.

**Safety** – Insure that all applicable safety procedures are followed.

**Notification – Highest Ranking Personnel** – Once a fire has been detected the Mulch Manager shall be responsible for coordinating fire suppression steps. In the event that the Mulch Manager is readily unavailable the highest ranking person on scene is responsible for implementing the Fire Suppression Procedures. *not*



**KRAMER TREE SPECIALISTS**  
**STANDARD OPERATING PROCEDURES**

**General Procedural Information:** Once a fire has been reported the most important thing to do is stop the spread by following the systematic steps of the Fire Suppression Procedures. In most cases the mulch or material piles will need to be reduced in height in order to cool down the material.

**Important Note:**

**If at any time you feel that you, or any other individuals, or property is in Danger and that these individuals or property cannot be protected with our fire suppression procedures**

**\*\*\* Do Not Hesitate to call 911 – for Assistance \*\*\***

**Step#1:** Get the hose pallet out and run a 2” inch (White) hose no closer than 20’ feet or farther than 50’ feet from the fire. Try to keep the kinks out.

**Step #2:** Connect the (White) hose to the hydrant – connect the (black) hose with a red nozzle to the (White) hose and begin to apply water to the fire.

**Step #3:** Acquire more help to assist you with the suppression of the fire. Additional assistance will allow for the pile to be broken down, cooled, and extinguished.

**Step #4:** If the Mulch Manager is not on site or has not yet been notified continue effort to attempt to reach the Mulch Manager or any of the mulch personnel to assist you. If you are unable to reach any mulch personnel call the production manager / personnel to ascertain another two (2) to three (3) individuals.

**Note:** Absolutely No Equipment or Personnel shall work at or near a fire without an immediate readily available water source hooked up and available for use.

**Step #5:** After you have water on the fire move any equipment that is close to the location out of the vicinity to a safe location.

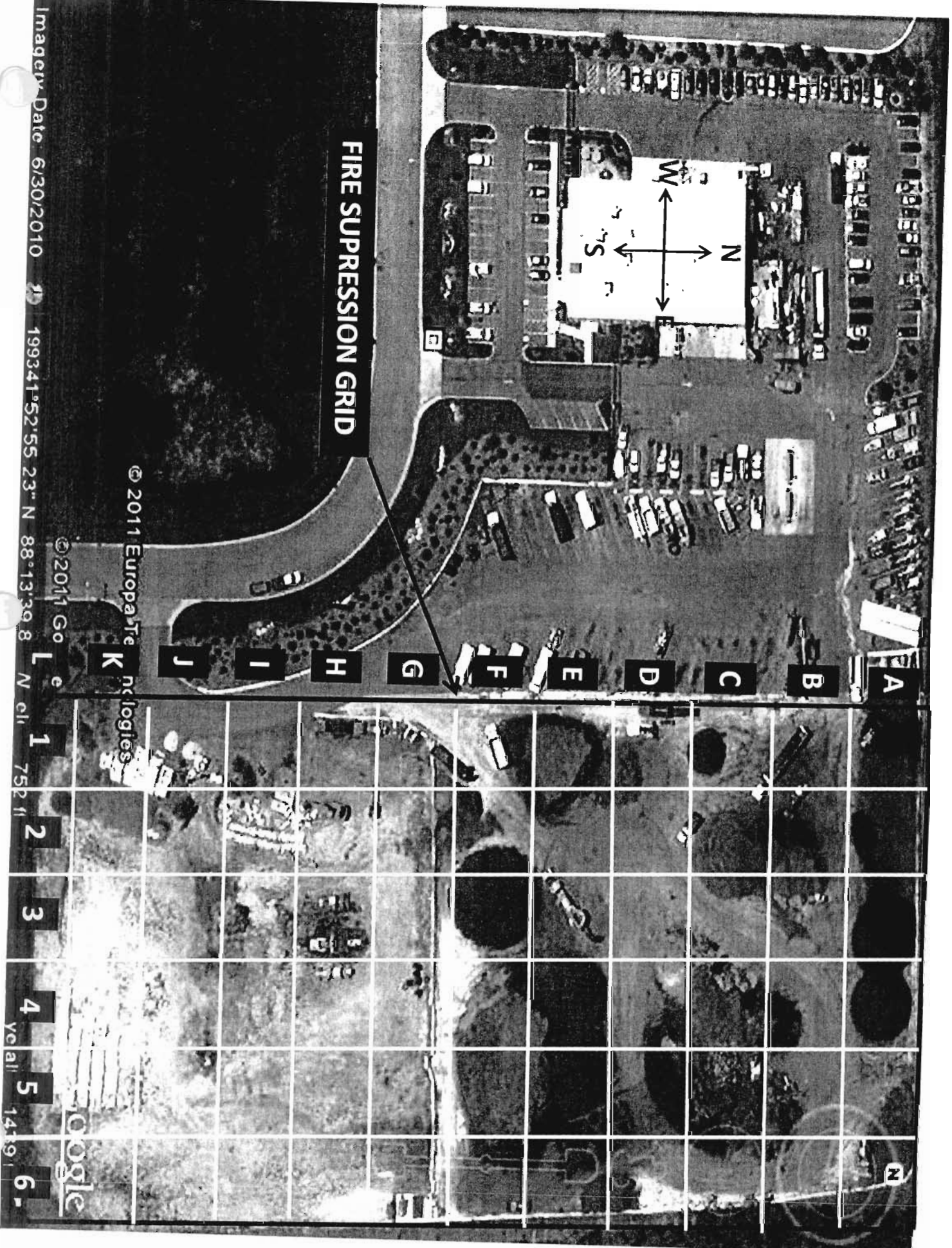
**Step #6:** It may be necessary to move additional trucks in order to ascertain enough room to spread the mulch or material out and begin the cooling down process. The mulch or material will need to be spread out with pile heights reduced in order to begin the cooling down process or to dissipate the heat.

**Step #7:** Apply as much water as is required to put out the fire.

**Important Note:** **Applying to much water will have a reverse effect on the pile as water build heat.**

**Step #8:** As the heat dissipates – Begin to restack the mulch only to a height of ten (10’) feet to twelve (12’) feet in – NO MORE!! Monitor and track the heat in the piles after restacking (Post Fire) so that you know that the Fire Suppression Plan was effective and the risk of continued fire is eliminated.





**FIRE SUPPRESSION GRID**

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Imageix Date: 6/30/2010 199341°52'55.23" N 88°13'39.8

1 2 3 4 5 6  
752 ft  
14.19'

Google

**APPENDIX D – Driver / Yard Rules Standard Operating Procedures**

**KRAMER TREE SPECIALISTS**  
**STANDARD OPERATING PROCEDURES**

**Department:** All Departments  
**Procedure:** Driver / Yard Rules  
**Date:** October 29, 2010

**S.O.P. Objectives:**

*To develop, update, and implement standard procedures for specific department tasks and/or functions, in order to assure consistent and accurate compliance, as well as accountability awareness for these tasks and/or functions.*

**Driver / Yard Rules - Procedure**

**Yard Speed:** Any and all vehicles and equipment must travel at 5mph or less when driving in the yard. All Managers are empowered to assure compliance of this rule and will incorporate Progressive Discipline Procedures to enforce this rule.

**Ground Material / Obstacles:** To avoid bodily injury or harm to individuals working in the yard and/or damage to equipment / vehicles working in the yard it is absolutely forbidden to drive over material on the ground. If at any time when maneuvering through the yard there is a potential for hitting or running over material – move it and/or get it moved. All Managers are empowered to assure compliance of this rule and will incorporate Progressive Discipline Procedures to enforce this rule.

**Dumping:** Make sure that when dumping material in the yard, that you are dumping in the proper location. If you are not absolutely sure of the correct dump location **ASK BEFORE DUMPING!!**

**Secure Yard Locations:** Do not enter into or dump in coned off areas unless directed to do so by a management member.

**Proximity Devises:** Yard Tractor Operators, Yard Personnel, and Operators are equipped with proximity devises that indicate locations of workers and equipment operating within the yard. All personnel equipped with these devises are expected to adhere to the established standard operating procedures for these devises. The proximity devises shall be managed, monitored, and maintained by the Mulch Division Manager. Any and all personnel will be responsible for notifying the Mulch Manager in the event that you will have non-Kramer personnel visiting the yard and assuring that any visitors are fitted with the proximity devises.

**KRAMER TREE SPECIALISTS**  
**STANDARD OPERATING PROCEDURES**

**Driver Yard Rules Procedure Acknowledgment**

I \_\_\_\_\_ (Print) acknowledge that on this \_\_\_\_\_ day of \_\_\_\_\_ In the Year of \_\_\_\_\_. I was presented the Standard Operating Procedure training for the Mulch Yard Rules Procedure Process.

\_\_\_\_\_  
*Employee Name (Please Print)*

\_\_\_\_\_  
*Supervisor Name (Please Print)*

\_\_\_\_\_  
*Employee Signature*

\_\_\_\_\_  
*Supervisor Signature*

**APPENDIX E – Annual Spring Mulch Production Orientation Standard  
Operating Procedure**

**KRAMER TREE SPECIALISTS**  
**STANDARD OPERATING PROCEDURES**

Department: Mulch Department  
Procedure: Annual Spring Mulch Production Orientation  
Date: January 5, 2011

**S.O.P. Objectives:**

*To develop, update, and implement standard procedures for specific department tasks and/or functions, in order to assure consistent and accurate compliance, as well as accountability awareness for these tasks and/or functions.*

**Annual Spring Mulch Production Orientation Procedure**

**Annual Spring Orientation Definition:** A meeting involving current and new department employees that is held during the month of February each year. The purpose of this orientation is to review the company strategic goals, discuss and develop department goals and objectives for the year, review the department standard operating procedures, and review the general policies and guidelines of the company and the department.

**Tools and Resources:**

**A. Annual Spring Mulch Production Orientation Agenda:**

Utilized to prepare and organize for the presentation of the Orientation Meeting. This agenda will identify topics to be discussed and specific resources required such as handouts etc.

**B. Standard Operating Procedures (Handouts):**

Utilized as a reference to for reviewing specific Standard Operating Procedures and also as a Sign-off form for verification that the procedure was reviewed with each individual and that each individual fully understood the procedure.

**C. Personnel and Responsibilities:**

**Manager** – A Managers duty is to organize and facilitate the Orientation Meeting. Assuring that that Agenda is developed and that all hand-outs and references are available. The Manager will also determine who will participate in the presentation and facilitation of the meeting.

**Production Staff** – The Mulch Production Staff is responsible for participating in discussions related to the topics covered and to assure that they fully comprehend the information being discussed.



**KRAMER TREE SPECIALISTS**  
**STANDARD OPERATING PROCEDURES**

**General Procedural Information:**

**Orientation Topics of Discussion:**

**The following topics shall be distributed and discussed during the Orientation Meeting. Be sure to highlight any changes of past procedures or policies for returning employees.**

1. **Company Goals:** Review the company strategic goals for the fiscal year.
  - a. How will our department goals relate to the company goals?
  - b. How will our department goals help to accomplish the company goals?
  - c. Discuss and develop department goals that relate to company goals.
  - d. Develop and distribute department action plans for our strategic department goals.
  
2. **Department Organizational Structure:** Discuss supervisor structure.
  - a. Supervisor responsibilities – review Job description – (Handout)
  - b. Expectations
  
3. **Job Descriptions:** Distribute and review department job descriptions and responsibilities.
  - a. Mulch Department Manager – (Handout)
  - b. Mulch Foreman – (Handout)
  - c. Mulch Driver – (Handout)
  - d. Yard Pickers – (Handout)
  - e. Mulch Yard Operators – (Handout)
  
4. **Yard Policies / Procedures / Guidelines:** Review the yard policies and procedures.
  - a. Yard Driving - standard operating procedures – (Handout)
  - b. Mulch Material Temperature Check – standard operating procedures – (Handout)
  - c. Fire Prevention - standard operating procedures – (Handout)
  - d. Fire Suppression - standard operating procedures – (Handout)
  - e. Yard Organization / Traffic Flow - standard operating procedures – (Handout)
  - f. Incident Reporting / Investigation – standard operating procedures – (Handout)
  - g. Debris Picking – standard operating procedures – (Handout)
  - h. Proximity Devise – standard operating procedures – (Handout)
  - i. Employee Handbook – Distribution – (Handout)
  - j. Pre – Post Vehicle Inspection (VCR) – standard operating procedures – (Handout)
    - Provide Training – Demonstrating the process for all drivers.

**ATTACHMENT 10: ODOR COMPLAINT FORM**

KRAMER TREE SPECIALISTS INC. LEAF MULCH PRODUCTION FACILITY  
ODOR COMPLAINT LOG

DATE OF COMPLAINT \_\_\_\_\_  
TIME OF COMPLAINT \_\_\_\_\_

WIND DIRECTION: \_\_\_\_\_  
WEATHER CONDITIONS: \_\_\_\_\_

COMPLAINANT'S NAME: \_\_\_\_\_  
COMPLAINANT'S PHONE #: \_\_\_\_\_  
COMPLAINANT'S EMAIL ADDRESS: \_\_\_\_\_

PERSON FILLING OUT COMPLAINT LOG: \_\_\_\_\_

DESCRIPTION OF COMPLAINT:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DESCRIPTION OF SITE ACTIVITIES DURING THE TIME SPECIFIED IN THE COMPLAINT:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

ACTIONS TAKEN:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**ATTACHMENT 11:    PILE TEMPERATURE MONITORING FORM  
                          PILE EXCAVATION COOLING FORM  
                          CONTINGENCY IMPLEMENTATION FORM**

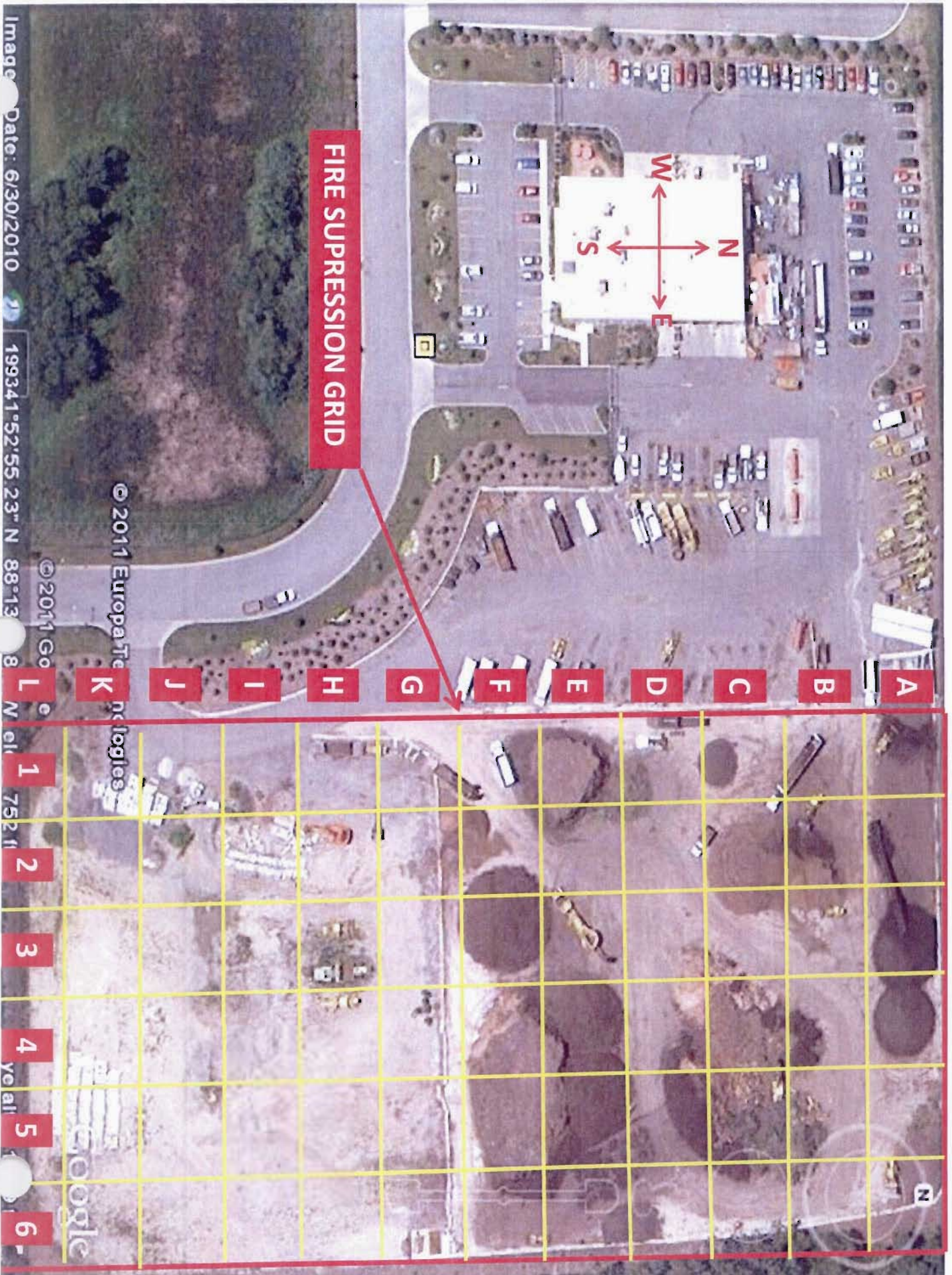


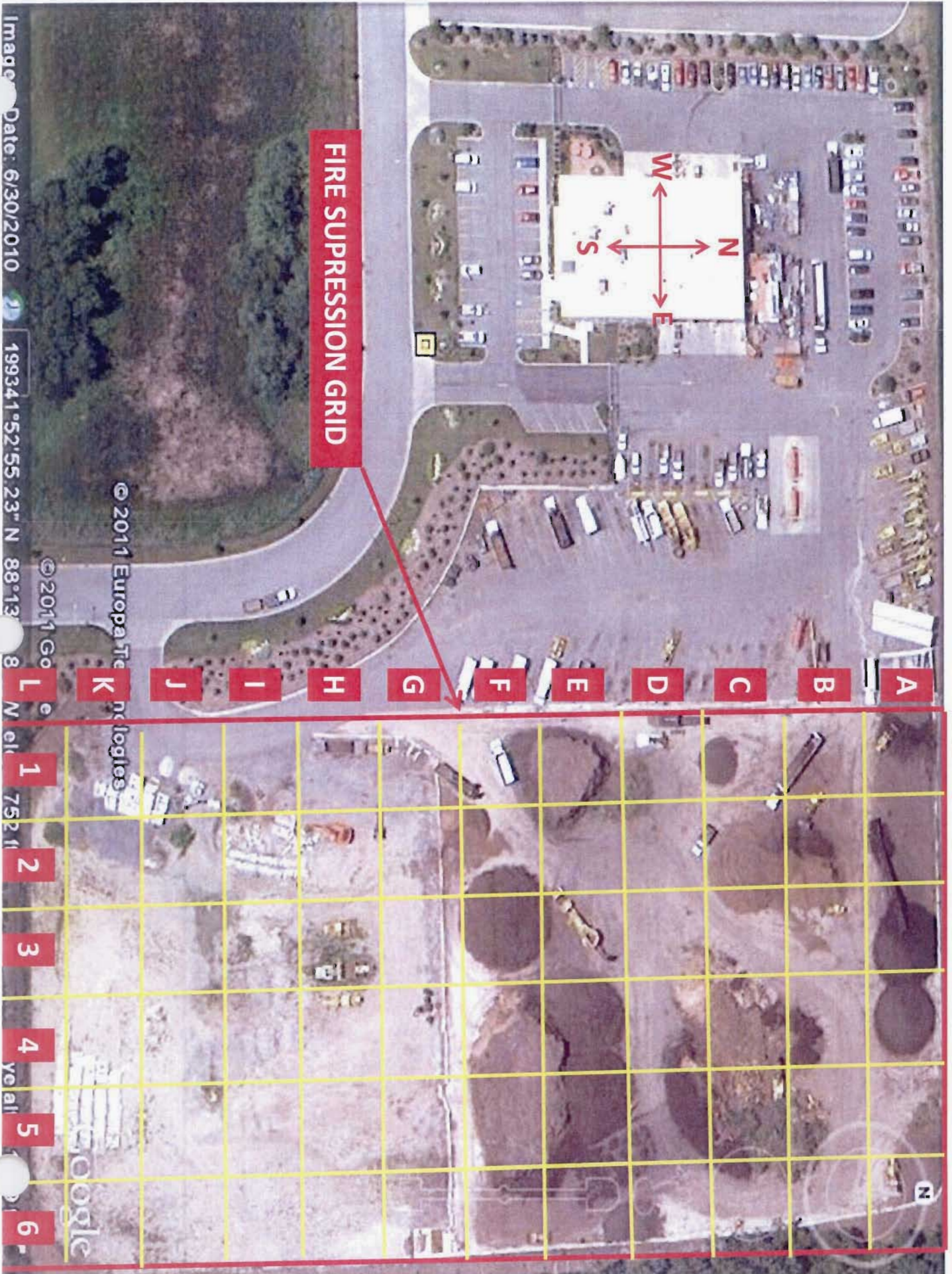
Image Date: 6/30/2010

199341°52'55.23" N 88°13'

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# Yard Material Temperature Readings

**NOTE\*** Supply completed form to Mulch Manager

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Material Type:**

Temp	Temp	Temp	Temp
Temp	Temp	Temp	Temp



**Material Type:**

Temp	Temp	Temp	Temp
Temp	Temp	Temp	Temp



**Material Type:**

Temp	Temp	Temp	Temp
Temp	Temp	Temp	Temp



**Material Type:**

Temp	Temp	Temp	Temp
Temp	Temp	Temp	Temp



KRAMER TREE SPECIALISTS, INC. LEAF MULCH PRODUCTION FACILITY  
FIRE SUPPRESSION – PILE EXCAVATION DATES LOG

EXCAVATION DATES

EXCAVATION GRID LOCATION

Lined area for recording excavation dates, consisting of 28 horizontal lines.

Lined area for recording excavation grid location, consisting of 28 horizontal lines.



**KRAMER TREE SPECIALISTS, INC. LEAF MULCH PRODUCTION FACILITY  
FIRE SUPPRESSION – PILE EXCAVATION DATES LOG**

**EXCAVATION DATES**

**EXCAVATION GRID LOCATION**

Lined area for recording excavation dates, consisting of 25 horizontal lines.

Lined area for recording excavation grid location, consisting of 25 horizontal lines.











KRAMER TREE SERVICE INC. LEAF MULCH PRODUCTION FACILITY  
PILE EXCAVATION DATES LOG

EXCAVATION DATE

[Lined area for recording excavation dates]

KRAMER TREE SPECIALISTS INC. LEAF MULCH PRODUCTION FACILITY  
CONTINGENCY PLAN ACTIVATION

DATE: \_\_\_\_\_

REASON FOR CONTINGENCY PLAN ACTIVATION:

- \_\_\_\_\_ EQUIPMENT FAILURE
- \_\_\_\_\_ ODOR
- \_\_\_\_\_ UNACCEPTABLE WASETE DELIVERY
- \_\_\_\_\_ SPECIAL WASTE RELEASE
- \_\_\_\_\_ FIRES, NOISE, DUST, POWER OUTAGE
- \_\_\_\_\_ NOISE COMPLAINT
- \_\_\_\_\_ DUST
- \_\_\_\_\_ POWER OUTAGE
- \_\_\_\_\_ OTHER

DESCRIBE \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

EMERGENCY COORDINATORS NAME: \_\_\_\_\_

PERSON FILLING OUT CONTINGENCY PLAN ACTIVATION SHEET: \_\_\_\_\_

COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**ATTACHMENT 12: MULCH PRODUCT RECORD FORM**

**KRAMER TREE SPECIALISTS**  
**STANDARD OPERATING PROCEDURES**

**Department: All Departments**

**Procedure: Leaf Material / Landscape Material Tracking**

**Document Designation: KTS-MUL-108**

**Date: July 15, 2011**

**S.O.P. Objectives:**

*To develop, update, and implement standard procedures for specific department tasks and/or functions, in order to assure consistent and accurate compliance, as well as accountability awareness for these tasks and/or functions.*

**Leaf Material / Landscape Material Tracking Procedure**

**Leaf Material Definition:** Leaves that are collected and brought to the facility by Kramer Tree Specialists crews and leaves that are accepted at the gate from outside vendors / customers etc.

**Landscape Material Definition:** Landscape materials consisting of woody branches, brush, trunks, etc. that are collected and brought to the facility by Kramer Tree Specialists crews and landscape materials that are accepted at the gate from outside vendors / customers etc.

**Mulch Material Estimator Tracker System Definition:** A tracking spreadsheet that is maintained on our computer software data base system for the purpose of logging and tracking mulch, wood materials, leaves, and acceptable landscape materials received into the Kramer Tree Specialists, Inc. yard for the processing mulch products.

**General Information:** Any and all Leaf Material and Landscape Material coming into the Kramer Tree Specialists facility yard must be tracked in accordance with IEPA regulations. This would include Gate Acceptance of leaves or landscape materials and any Kramer Tree Service or Leaf Collection Service materials brought into the Kramer Tree facility yard.

**Mulch Material Estimator Tracker System:** The Mulch Material Estimator tracker system can be found in the (Q) docs shared drive within the Mulch Sales Folder. This tracking form will be utilized as the tool to track the total amount of leaves and landscape materials accepted at the Kramer Tree facility yard on a weekly, monthly, and annual basis... The Mulch Material Estimator Tracker System was designed to keep a running Year to Date (Y.T.D.) total of mulch sold and leaves / landscape materials received into the facility yard.

**Gate Material Acceptance Procedure:** Fran, Betsy, or Bunny shall be the designated Gate-Keepers responsible for receiving, monitoring, tracking, and logging materials coming into the facility yard from clients via gate sales. All Gate Invoice Tickets shall be documented with the type of material received and the approximate cubic yards of material accepted. At the end of each day the gate accepted material quantities shall be totaled by type and then input into the Mulch Material Estimator Tracker spreadsheet.

**KRAMER TREE SPECIALISTS**  
**STANDARD OPERATING PROCEDURES**

**Kramer Tree & Leaf Collection Material Acceptance Procedure:** All Kramer Tree Specialists Drivers hauling leaves, landscape Materials, brush, or Tree Service Materials into the Kramer Tree Facility Yard shall log on their load tickets the type of materials hauled and quantities hauled for each load that is hauled back to the Kramer Tree Specialists facility yard. At the end of each day load tickets will be forwarded to the Mulch Manager and/or assigned Gate-Keeper to be totaled and documented in the appropriate location on the Mulch Material Estimator tracking form. All materials shall be tracked by week and logged into the Mulch Materials Estimator Spreadsheet for record keeping purposes. The Mulch Material Estimator tracking process shall maintain a Y.T.D. total of materials received into the Kramer Tree Facility.

**Procedure Acknowledgment**

**Reference Document: KTS-MUL-108**

I hereby acknowledge that on \_\_\_\_ / \_\_\_\_ / \_\_\_\_ (Date) I have read, fully understand, and will comply with the above procedure information. I understand this procedure is mandatory and must be adhered to by all Kramer Tree Specialists, Inc.

\_\_\_\_\_  
*Employee Name (Please Print)*

\_\_\_\_\_  
*Supervisor Name (Please Print)*

\_\_\_\_\_  
*Employee Signature*

\_\_\_\_\_  
*Supervisor Signature*

**KRAMER TREE SPECIALISTS**  
**STANDARD OPERATING PROCEDURES**

**Revision Tracking**

Rev 1	XX/XX/XXXX
Writer	TBD
Approver(s)	TBD
Reason For Change	TBD

Rev 2	XX/XX/XXXX
Writer	TBD
Approver(s)	TBD
Reason For Change	TBD

Rev 3	XX/XX/XXXX
Writer	TBD
Approver(s)	TBD
Reason For Change	TBD

Rev 4	XX/XX/XXXX
Writer	TBD
Approver(s)	TBD
Reason For Change	TBD

Rev 5	XX/XX/XXXX
Writer	TBD
Approver(s)	TBD
Reason For Change	TBD

Rev 6	XX/XX/XXXX
Writer	TBD
Approver(s)	TBD
Reason For Change	TBD

WEEK OF:	07/04/11	07/11/11	07/18/11	07/25/11	08/01/11	Y.T.D.
MULCH / MATERIAL ESTIMATOR	WEEKLY MATERIAL INVENTORY	WEEKLY MATERIAL INVENTORY	WEEKLY MATERIAL INVENTORY	WEEKLY MATERIAL INVENTORY	WEEKLY MATERIAL INVENTORY	MATERIAL INVENTORY
<b>EXISTING USABLE MATERIAL</b>						
HOVING						
IST GRIND						
<b>TOTAL EXISTING MATERIAL</b>	<b>39,653</b>	<b>38,947</b>	<b>36,811</b>	<b>36,313</b>	<b>36,333</b>	
<b>WEEKLY INCOMING MATERIAL</b>						
						<b>YTD</b>
LOGS	50	50	0	100	50	1,180
(GATE) LOGS						0
MUNICIPAL BRUSH	200	200	200	200	200	5,300
(GATE) BRUSH						0
LANDSCAPE BRUSH	500	500	750	750	750	9,750
HOVING	120	0	120	120	160	18,900
LEAVES						0
(GATE) LEAVES						0
<b>TOTAL INCOMING MATERIAL</b>	<b>870</b>	<b>750</b>	<b>1,070</b>	<b>1,170</b>	<b>1,160</b>	<b>35,130</b>
CURRENT OUTGOING MATERIAL	1,576	2,886	1,568	1,150	1,098	58,403
<b>WEEKLY VARIANCE</b>	<b>(706)</b>	<b>(2,136)</b>	<b>(498)</b>	<b>20</b>	<b>62</b>	<b>(23,273)</b>





		JUNE 2011						TOTALS	TOTALS	2008	2009	2010
PRODUCT TYPE	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	WEEK #1	Y.T.D.	TOTALS	TOTALS	TOTALS
SPECIAL BLEND	29	30	31	1	2	3	4	2,128.5	27,147.0			
LEAF MULCH		C	921.0	387.5	305.5	372.5	142.0	100.0	1,204.5			
MULCH FINES		O		40.0	60.0			0.0	0.0			460.0
RED DYED		S	9.0	50.0	5.0	61.0	46.0	0.0	171.0			
BROWN DYED		E	25.0	61.0	94.5	208.0	174.5	563.0	6,234.0			
BLOND MULCH		D		1.5		15.0	45.0	61.5	288.5			
LEAVES								0.0	0.0			
LANDSCAPE MATERIAL								0.0	0.0			
DAILY MULCH SALES	0.0	0.0	955.0	540.0	465.0	656.5	407.5	3,024.0	36,504.0	2,013.0	2,774.0	2,675.5
DAILY LEAVE SALES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
DAILY LANDSCAPE SALES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
PRODUCT TYPE	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	TOTALS	TOTALS	2008	2009	2010
SPECIAL BLEND	5	6	7	8	9	10	11	2,888.0	30,015.0			
LEAF MULCH		644.0	464.0	405.0	323.0	657.0	375.0	8.0	1,212.5			
MULCH FINES					8.0			0.0	0.0			290.0
RED DYED		8.5		61.5	36.0	1.0	1.0	108.0	1,738.0			
BROWN DYED		15.0	105.0	112.0		17.0	108.0	357.0	6,591.0			
BLOND MULCH		1.5		8.0			12.0	21.5	310.0			
LEAVES								0.0	0.0			
LANDSCAPE MATERIAL								0.0	0.0			
DAILY MULCH SALES	0.0	669.0	569.0	586.5	367.0	675.0	496.0	3,362.5	39,866.5	2,180.5	2,570.0	2,970.5
DAILY LEAVE SALES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
DAILY LANDSCAPE SALES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
PRODUCT TYPE	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	TOTALS	TOTALS	2008	2009	2010
SPECIAL BLEND	12	13	14	15	16	17	18	3,125.5	33,140.5			
LEAF MULCH		569.0	627.0	656.0	466.0	416.5	391.0	34.0	1,246.5			
MULCH FINES						34.0		0.0	0.0			140.0
RED DYED		15.0	90.0		4.0	28.0		137.0	1,875.0			
BROWN DYED		122.5	22.0	2.0	151.0		178.5	476.0	7,067.0			
BLOND MULCH			72.0		2.0		2.0	76.0	386.0			
LEAVES								0.0	0.0			
LANDSCAPE MATERIAL								0.0	0.0			
DAILY MULCH SALES	0.0	706.5	811.0	658.0	623.0	476.5	571.5	3,848.5	43,715.0	1,955.5	2,574.0	3,238.5
DAILY LEAVE SALES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
DAILY LANDSCAPE SALES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
PRODUCT TYPE	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	TOTALS	TOTALS	2008	2009	2010
SPECIAL BLEND	19	20	21	22	23	24	25	3,289.5	36,430.0			
LEAF MULCH		817.0	623.0	719.0	407.5	323.0	400.0	0.0	1,246.5			
MULCH FINES								0.0	0.0			
RED DYED		33.0	5.0	2.0	3.0	51.5		94.5	1,969.5			
BROWN DYED			82.0	85.0	190.0	75.0	43.0	475.0	7,542.0			
BLOND MULCH								0.0	386.0			
LEAVES								0.0	0.0			
LANDSCAPE MATERIAL								0.0	0.0			
DAILY MULCH SALES	0.0	850.0	710.0	806.0	600.5	449.5	443.0	3,859.0	47,574.0	2,157.5	1,474.0	2,062.0
DAILY LEAVE SALES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
DAILY LANDSCAPE SALES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
PRODUCT TYPE	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	TOTALS	TOTALS	2008	2009	2010
SPECIAL BLEND	26	27	28	29	30	1	2	2,007.5	38,437.5			
LEAF MULCH		428.0	306.5	397.0	438.0	291.0	147.0	21.5	1,268.0			
MULCH FINES			21.5					0.0	0.0			190.0
RED DYED			25.0	50.0	1.0	195.0	13.0	284.0	2,253.5			
BROWN DYED		81.0	85.0	75.0	85.0	22.5	1.5	350.0	7,892.0			
BLOND MULCH				60.0	3.5	1.0	1.0	65.5	451.5			
LEAVES								0.0	0.0			
LANDSCAPE MATERIAL								0.0	0.0			
DAILY MULCH SALES	0.0	509.0	438.0	582.0	527.5	508.5	162.5	2,728.5	50,302.5	1,419.0	1,203.0	2,629.0
DAILY LEAVE SALES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
DAILY LANDSCAPE SALES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
MULCH DAILY MTD TOTAL	0.0	2,734.5	3,483.0	3,172.5	2,583.0	2,769.0	2,080.5	16,822.5	MONTH TOTAL			
LEAVES DAILY MTD TOTAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	MONTH TOTAL			
LANDSCAPE DAILY MTD TOTAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	MONTH TOTAL			
YEAR TO DATE	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	TOTALS	TOTALS	2008	2009	2010
DAILY TOTAL SALES	YTD	YTD	YTD	YTD	YTD	YTD	YTD	YTD	YTD			
ALL MULCH SALES	0.0	8,293.0	9,908.5	8,537.0	9,011.0	8,894.0	5,659.0	50,302.5				

		MAY 2011										
	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	TOTALS	TOTALS	2008	2009	2010
MULCH TYPE	1	2	3	4	5	6	7	WEEK #1	Y.T.D.	TOTALS	TOTALS	TOTALS
SPECIAL BLEND		294.0	449.0	561.0	1,041.0	894.0	408.0	3,647.0	13,291.0			
LEAF MULCH			2.0		2.0		160.0	164.0	918.0			
MULCH FINES								0.0	0.0			
RED DYED		13.0	116.5	25.0	12.0	4.0	16.5	187.0	856.5			
BROWN DYED		32.0	16.0	18.0	119.0	75.0		260.0	3,042.5			
BLOND MULCH		16.0	7.0		4.0	16.0	13.0	56.0	171.0			
<b>ALL MULCH</b>	<b>0.0</b>	<b>355.0</b>	<b>590.5</b>	<b>604.0</b>	<b>1,178.0</b>	<b>989.0</b>	<b>597.5</b>	<b>4,314.0</b>	<b>18,279.0</b>			
	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	TOTALS	TOTALS	2008	2009	2010
MULCH TYPE	8	9	10	11	12	13	14	WEEK #2	Y.T.D.	TOTALS	TOTALS	TOTALS
SPECIAL BLEND								0.0	13,291.0		1.0	
LEAF MULCH								0.0	918.0		615.0	
MULCH FINES								0.0	0.0			
RED DYED								0.0	856.5		m.f.	
BROWN DYED								0.0	3,042.5		175.0	
BLOND MULCH								0.0	171.0			
<b>ALL MULCH</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>18,279.0</b>	<b>2,691.5</b>	<b>3,613.0</b>	<b>4,201.0</b>
	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	TOTALS	TOTALS	2008	2009	2010
MULCH TYPE	15	16	17	18	19	20	21	WEEK #3	Y.T.D.	TOTALS	TOTALS	TOTALS
SPECIAL BLEND								0.0	13,291.0		1.0	
LEAF MULCH								0.0	918.0		570.0	
MULCH FINES								0.0	0.0			
RED DYED								0.0	856.5		m.f.	
BROWN DYED								0.0	3,042.5		374.0	
BLOND MULCH								0.0	171.0			
<b>ALL MULCH</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>18,279.0</b>	<b>2,664.5</b>	<b>1,869.0</b>	<b>3,885.0</b>
	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	TOTALS	TOTALS	2008	2009	2010
MULCH TYPE	22	23	24	25	26	27	28	WEEK #4	Y.T.D.	TOTALS	TOTALS	TOTALS
SPECIAL BLEND								0.0	13,291.0		1.0	
LEAF MULCH								0.0	918.0		83.0	
MULCH FINES								0.0	0.0			
RED DYED								0.0	856.5		m.f.	
BROWN DYED								0.0	3,042.5		268.0	
BLOND MULCH								0.0	171.0		2,179.5	
<b>ALL MULCH</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>18,279.0</b>	<b>2,780.5</b>	<b>2,179.5</b>	<b>5,627.5</b>
	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	TOTALS	TOTALS	2008	2009	2010
MULCH TYPE								WEEK #5	Y.T.D.	TOTALS	TOTALS	TOTALS
SPECIAL BLEND								0.0	13,291.0		1.0	
LEAF MULCH								0.0	918.0		280.0	
MULCH FINES								0.0	0.0			
RED DYED								0.0	856.5		m.f.	
BROWN DYED								0.0	3,042.5		70.0	
BLOND MULCH								0.0	171.0			
<b>ALL MULCH</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>18,279.0</b>	<b>1,643.5</b>	<b>2,653.5</b>	<b>4,953.5</b>
<b>DAILY TOTAL</b>	<b>0.0</b>	<b>355.0</b>	<b>590.5</b>	<b>604.0</b>	<b>1,178.0</b>	<b>989.0</b>	<b>597.5</b>	<b>4,314.0</b>	<b>MONTH TOTAL</b>			
YEAR TO DATE TOTALS	SUNDAY YTD	MONDAY YTD	TUESDAY YTD	WEDNESDAY YTD	THURSDAY YTD	FRIDAY YTD	SATURDAY YTD	TOTALS YTD				
	0.0	2,571.5	3,195.0	3,083.0	4,229.5	3,704.5	1,495.5	18,279.0				

**ATTACHMENT 13: PLAT OF SURVEY & LEGAL DESCRIPTION**

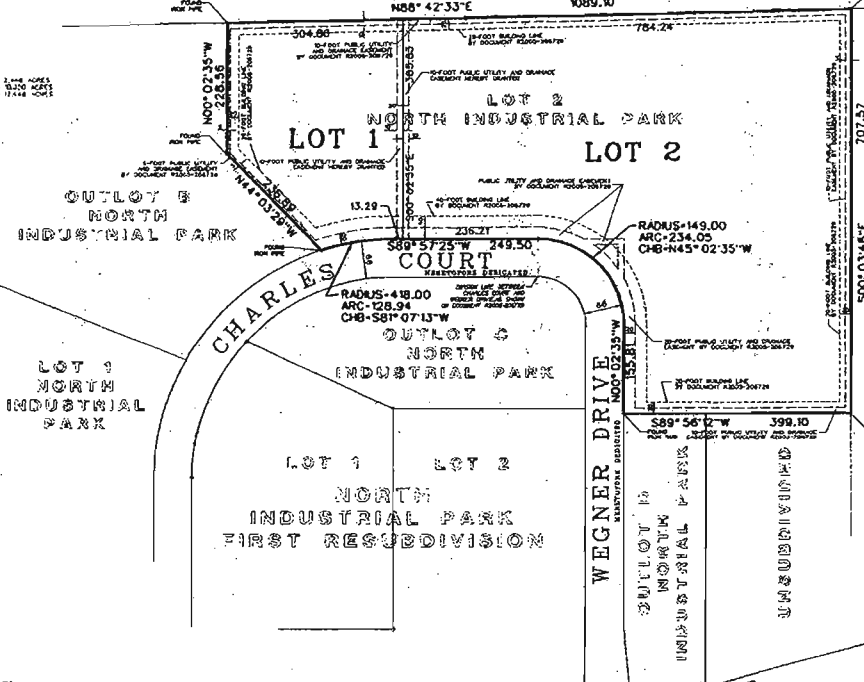
NORTH INDUSTRIAL PARK SECOND RESUBDIVISION

A RESUBDIVISION OF LOT 2 IN NORTH INDUSTRIAL PARK, IN THE NORTHEAST QUARTER OF SECTION 8, TOWNSHIP 39 NORTH, RANGE 9 EAST OF THE THIRD PRINCIPAL MERIDIAN, ACCORDING TO THE PLAT THEREOF RECORDED SEPTEMBER 19, 2005, AS DOCUMENT R2005-206729, IN DUPAGE COUNTY, ILLINOIS.

PLAT R2007-123803 JUL 03 2007 3:46 PM

UNION PACIFIC RAILROAD

LAND AREA LOT 1 144,818 SQUARE FEET = 3.28 ACRES LOT 2 144,818 SQUARE FEET = 3.28 ACRES TOTAL 289,636 SQUARE FEET = 6.56 ACRES



OWNER'S CERTIFICATE

STATE OF ILLINOIS COUNTY OF DUPAGE THIS IS TO CERTIFY THAT Charles J. Smith as owner of the property described in the attached plat...

COUNTY CLERK'S CERTIFICATE

STATE OF ILLINOIS COUNTY OF DUPAGE I, County Clerk, do hereby certify that there are no unrecorded taxes and unpaid current charges...

NOTARY'S CERTIFICATE

STATE OF ILLINOIS COUNTY OF DUPAGE I, Gregory E. Deibel, a Notary Public in and for said County in the State of Illinois, do hereby certify that...

MAYOR AND CITY COUNCIL CERTIFICATE

STATE OF ILLINOIS COUNTY OF DUPAGE WE, Mayor and City Council of the City of West Chicago, County of DuPage, State of Illinois, do hereby certify that the attached plat...

PLAN COMMISSIONER CERTIFICATE

STATE OF ILLINOIS COUNTY OF DUPAGE I, John Warby, Chairman of the Plan Commission of the City of West Chicago, County of DuPage, State of Illinois, do hereby certify that...

CITY COLLECTOR CERTIFICATE

STATE OF ILLINOIS COUNTY OF DUPAGE I, Michael J. Gorman, Collector for the City of West Chicago, do hereby certify that there are no delinquent taxes...

SURVEYOR'S CERTIFICATE

STATE OF ILLINOIS COUNTY OF DUPAGE I, I am a duly licensed Professional Land Surveyor in the State of Illinois, and I do hereby certify that...

SURFACE WATER STATEMENT

STATE OF ILLINOIS COUNTY OF DUPAGE TO THE BEST OF OUR KNOWLEDGE AND BELIEF, THE DRAINAGE OF THE SURFACE WATERS WILL NOT BE CHANGED BY THE CONSTRUCTION OF SAID SUBDIVISION...

CITY ENGINEER CERTIFICATE

STATE OF ILLINOIS COUNTY OF DUPAGE I, [Name], City Engineer, do hereby certify that the required letter of credit is posted for the completion of the storm water management and public improvements...

PUBLIC UTILITY AND DRAINAGE EASEMENT PROVISIONS

EASEMENTS ARE HEREBY GRANTED TO THE CITY OF WEST CHICAGO, COUNTY OF DUPAGE, ILLINOIS, AND TO THE PUBLIC UTILITY COMPANIES OPERATING LAINE PROVISIONS FROM THE CITY OF WEST CHICAGO...

COUNTY RECORDER'S CERTIFICATE

STATE OF ILLINOIS COUNTY OF DUPAGE I, [Name], County Recorder, do hereby certify that the attached plat was recorded in my office on the 03rd day of July, 2007...

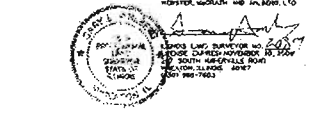


Table with columns: No., Description, PLAT OF SUBDIVISION, and other details. Includes information about the plat and recording details.

**ATTACHMENT 14: OWNERSHIP DOCUMENTATION**

UNOFFICIAL COPY

**QUIT CLAIM DEED**



**FRED BUCHOLZ**

DUPAGE COUNTY RECORDER

AUG.01,2007

RHSP 3:10 PM

DEED

04-08-201-027

002 PAGES

R2007-143691

Prepared by:

Victor J. Sawko  
465 W. Dominion Dr. #909  
Wood Dale, IL. 60191

*184*  
*7848451*  
**TICOR TITLE**

THE GRANTOR, R.C. Coil Spring Manufacturing Co. Inc., an Illinois Corporation, of the City of Glendale Heights, County of DuPage, State of Illinois, for and in consideration of Ten .....(\$10.00) DOLLARS and other good and valuable considerations in hand paid **CONVEYS** and **QUIT CLAIMS** to Kramer Land Development, LLC, 701 Church, West Chicago, Illinois, the following described Real Estate situated in the County of DuPage, in the State of Illinois to wit:

Lot 2 in North Industrial Park Second Resubdivision, being a resubdivision of North Industrial Park Subdivision, being part of the Northeast ¼ of Section 8, Township 39 North, Range 9, East of the Third Principal Meridian, according to the Plat of said resubdivision recorded July 3, 2007 as Document No. R2007-123803, In DuPage County, Illinois.

Permanent Index Number: 04-08-201-027 (Affects this land and other property)

Property Address: <sup>Duplicate</sup> North side of Charles Court, West Chicago, Illinois 60185

Subject to: North Industrial Park Declaration of Protective Covenants, Conditions, Restrictions and Easements dated the 6<sup>th</sup> day of January, 2006, and recorded in DuPage County on January 13, 2006, as Document No. R2006-009089; The grantee by accepting this deed agrees to be bound by the provisions thereof.

Dated this 30<sup>th</sup> day of July, 2007.

R.C. Coil Spring Manufacturing Co. Inc.

By: *Chester S. Sawko*  
Chester S. Sawko, President



**CITY OF WEST CHICAGO  
DEED CERTIFICATION**

Date

7-27-07

Initials

*VS*

\$

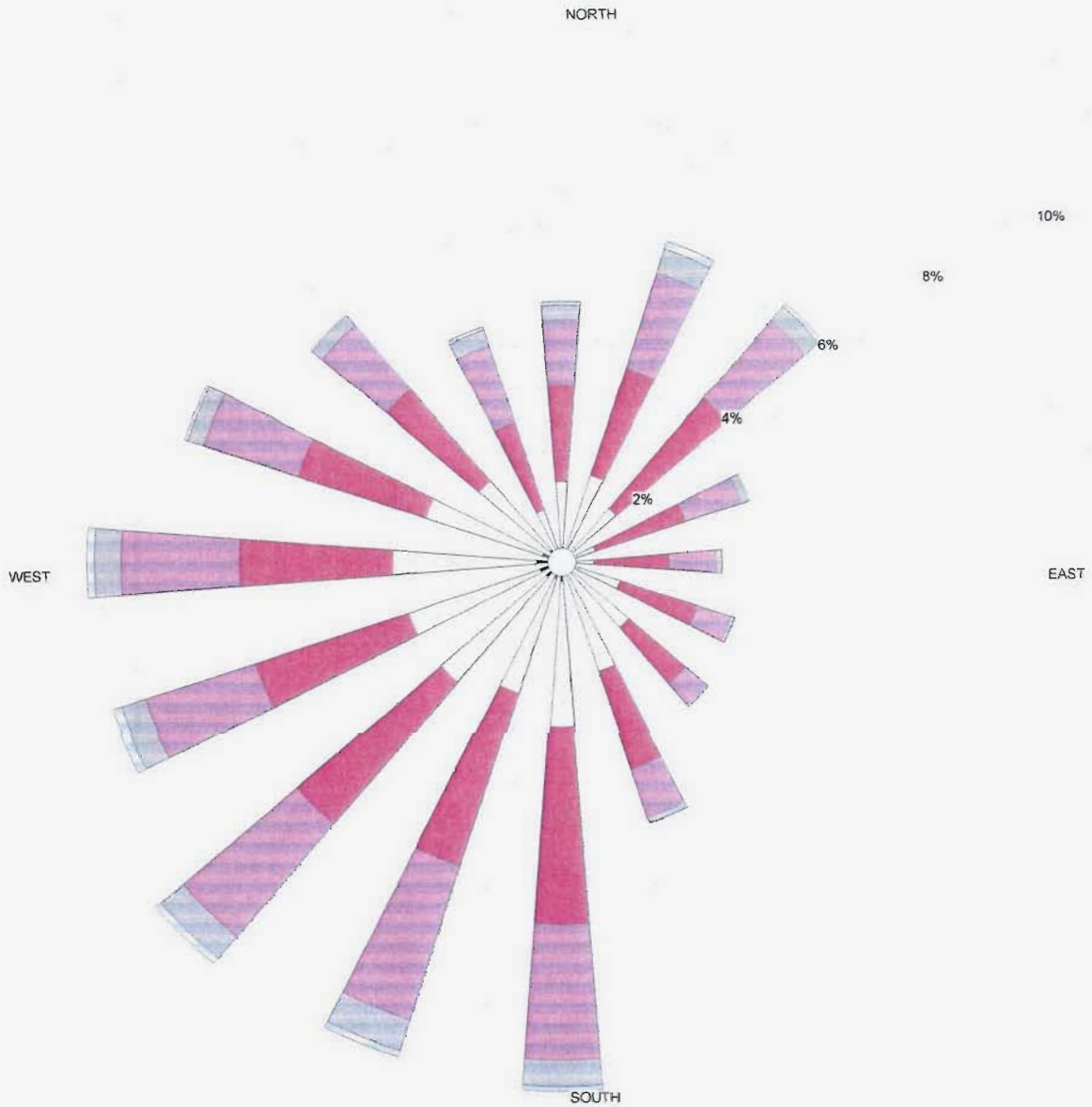
10.00

Cert. No.  
11184



WIND ROSE PLOT

Station #94846 - CHICAGO/O'HARE INT'L ARPT, IL



Wind Speed (Knots)



MODELER	DATE	COMPANY NAME
	10/7/2004	Illinois State Climatologist Office
DISPLAY	UNIT	COMMENTS
Wind Speed	Knots	1961-1990 Annual Average
AVG. WIND SPEED	CALM WINDS	
9.25 Knots	3.10%	
ORIENTATION	PLOT YEAR-DATE-TIME	PROJECT/PLOT NO.
Direction (blowing from)	Jan 1 - Dec 31 Midnight - 11 PM	



**ATTACHMENT 15: WIND ROSE**

Station ID: 94846

RUN ID: CHICAGO/O'HARE INT'L ARPT

Year: 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 198

Date Range: Jan 1 - Dec 31

Time Range: Midnight - 11 PM

Frequency Distribution  
(Count)

Wind Direction (Blowing From) / Wind Speed (Knots)

	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	> 21	Total
N	430	2884	3932	2653	614	157	10670
NNE	365	3392	4626	4042	1017	321	13763
NE	211	2676	5925	4180	743	161	13896
ENE	109	1321	3835	2353	278	66	7962
E	115	1174	3047	1880	241	24	6481
ESE	223	2237	3291	1425	155	14	7345
SE	410	3132	3048	1112	100	6	7808
SSE	536	4157	4274	2089	220	22	11298
S	817	5934	8121	5583	1071	200	21726
SSW	720	4908	7497	6650	1339	267	21381
SW	834	5622	7702	6110	1161	272	21701
WSW	914	5647	6590	4651	1038	359	19199
W	991	5888	6245	4782	1095	307	19308
WNW	832	4951	5477	4066	687	122	16135
NW	670	3731	4972	3447	505	61	13386
NNW	309	1947	3771	3313	687	130	10157
Total	8486	59601	82353	58336	10951	2489	

Frequency of Calm Winds : 7104

Average Wind Speed : 9.25 Knots

Station ID: 94846

RUN ID: CHICAGO/O'HARE INT'L ARPT

Year: 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 198

Date Range: Jan 1 - Dec 31

Time Range: Midnight - 11 PM

Frequency Distribution  
(Normalized)

Wind Direction (Blowing From) / Wind Speed (Knots)

	1 - 3	4 - 6	7 - 10	11 - 16	17 - 21	> 21	Total
N	0.001875	0.012576	0.017146	0.011569	0.002677	0.000685	0.046529
NNE	0.001592	0.014792	0.020173	0.017626	0.004435	0.001400	0.060017
NE	0.000920	0.011669	0.025837	0.018228	0.003240	0.000702	0.060597
ENE	0.000475	0.005761	0.016723	0.010261	0.001212	0.000288	0.034720
E	0.000501	0.005119	0.013287	0.008198	0.001051	0.000105	0.028262
ESE	0.000972	0.009755	0.014351	0.006214	0.000676	0.000061	0.032029
SE	0.001788	0.013658	0.013291	0.004849	0.000436	0.000026	0.034048
SSE	0.002337	0.018128	0.018638	0.009110	0.000959	0.000096	0.049267
S	0.003563	0.025877	0.035413	0.024346	0.004670	0.000872	0.094741
SSW	0.003140	0.021402	0.032692	0.028999	0.005839	0.001164	0.093237
SW	0.003637	0.024516	0.033586	0.026644	0.005063	0.001186	0.094632
WSW	0.003986	0.024625	0.028737	0.020282	0.004526	0.001565	0.083721
W	0.004321	0.025676	0.027233	0.020853	0.004775	0.001339	0.084197
WNW	0.003628	0.021590	0.023884	0.017731	0.002996	0.000532	0.070360
NW	0.002922	0.016270	0.021681	0.015031	0.002202	0.000266	0.058373
NNW	0.001347	0.008490	0.016444	0.014447	0.002996	0.000567	0.044292
Total	0.037005	0.259903	0.359118	0.254387	0.047754	0.010854	

Frequency of Calm Winds : 3.10%

Average Wind Speed : 9.25 Knots