

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

VILLAGE OF HOMEWOOD, HOMEWOOD)	
ILLINOIS, VILLAGE OF ORLAND PARK,)	
ORLAND PARK ILLINOIS, VILLAGE OF)	
MIDLOTHIAN, MIDLOTHIAN ILLINOIS,)	
VILLAGE OF TINLEY PARK, TINLEY PARK)	
ILLINOIS, EXXONMOBIL OIL)	
CORPORATION, VILLAGE OF WILMETTE,)	
WILMETTE ILLINOIS, CITY OF COUNTRY)	
CLUB HILLS, COUNTRY CLUB HILLS)	
ILLINOIS, NORAMCO-CHICAGO, INC.,)	
FLINT HILLS RESOURCES JOLIET LLC,)	
CITY OF EVANSTON, EVANSTON ILLINOIS,)	
VILLAGE OF SKOKIE, SKOKIE ILLINOIS,)	PCB 16-14 (Homewood)
ILLINOIS DEPARTMENT OF)	PCB 16-15 (Orland Park)
TRANSPORTATION, METROPOLITAN)	PCB 16-16 (Midlothian)
WATER RECLAMATION DISTRICT OF)	PCB 16-17 (Tinley Park)
GREATER CHICAGO, VILLAGE OF)	PCB 16-18 (ExxonMobil)
RICHTON PARK, RICHTON PARK ILLINOIS,)	PCB 16-20 (Wilmette)
VILLAGE OF LINCOLNWOOD,)	PCB 16-21 (Country Club Hills)
LINCOLNWOOD ILLINOIS, CITY OF OAK)	PCB 16-22 (Noramco-Chicago)
FOREST, OAK FOREST ILLINOIS, VILLAGE)	PCB 16-23 (Flint Hills Resources)
OF LYNWOOD, LYNWOOD ILLINOIS,)	PCB 16-25 (Evanston)
CITGO HOLDINGS, INC., VILLAGE OF NEW)	PCB 16-26 (Skokie)
LENOX, NEW LENOX ILLINOIS, CITY OF)	PCB 16-27 (IDOT)
LOCKPORT, LOCKPORT ILLINOIS,)	PCB 16-29 (MWRDGC)
CATERPILLAR, INC., CITY OF CREST HILL,)	PCB 16-30 (Richton Park)
CREST HILL ILLINOIS, CITY OF JOLIET,)	PCB 16-31 (Lincolnwood)
JOLIET ILLINOIS, MORTON SALT, INC.,)	PCB 16-33 (Oak Forest)
CITY OF PALOS HEIGHTS, PALOS HEIGHTS)	PCB 19-7 (Village of Lynwood)
ILLINOIS, VILLAGE OF ROMEOVILLE,)	PCB 19-8 (Citgo Holdings)
ROMEOVILLE ILLINOIS, IMTT ILLINOIS)	PCB 19-9 (New Lenox)
LLC, STEPAN CO., VILLAGE OF PARK)	PCB 19-10 (Lockport)
FOREST, PARK FOREST ILLINOIS, OZINGA)	PCB 19-11 (Caterpillar)
READY MIX CONCRETE, INC., OZINGA)	PCB 19-12 (Crest Hill)
MATERIALS, INC., MIDWEST MARINE)	PCB 19-13 (Joliet)
TERMINALS LLC, VILLAGE OF MOKENA,)	PCB 19-14 (Morton Salt)
MOKENA ILLINOIS, VILLAGE OF OAK)	PCB 19-15 (Palos Heights)
LAWN, OAK LAWN ILLINOIS, VILLAGE OF)	PCB 19-16 (Romeoville)
DOTON, DOTON ILLINOIS, VILLAGE OF)	PCB 19-17 (IMTT Illinois)
GLENWOOD, GLENWOOD ILLINOIS,)	PCB 19-18 (Stepan)
VILLAGE OF MORTON GROVE, MORTON)	PCB 19-19 (Park Forest)
GROVE ILLINOIS, VILLAGE OF LANSING,)	PCB 19-20 (Ozinga Ready Mix)
LANSING ILLINOIS, VILLAGE OF)	PCB 19-21 (Ozinga Materials)
FRANKFORT, FRANKFORT ILLINOIS,)	PCB 19-22 (Midwest Marine)

VILLAGE OF WINNETKA, WINNETKA)	PCB 19-23 (Mokena)
ILLINOIS, VILLAGE OF LA GRANGE, LA)	PCB 19-24 (Oak Lawn)
GRANGE ILLINOIS, VILLAGE OF)	PCB 19-25 (Dolton)
CHANNAHON, CHANNAHON ILLINOIS,)	PCB 19-26 (Glenwood)
COOK COUNTY DEPARTMENT OF)	PCB 19-27 (Morton Grove)
TRANSPORTATION AND HIGHWAYS,)	PCB 19-28 (Lansing)
VILLAGE OF NILES, NILES ILLINOIS,)	PCB 19-29 (Frankfort)
SKYWAY CONCESSION COMPANY LLC,)	PCB 19-30 (Winnetka)
VILLAGE OF ELWOOD, ELWOOD ILLINOIS,)	PCB 19-31 (La Grange)
CITY OF CHICAGO, CHICAGO ILLINOIS,)	PCB 19-33 (Channahon)
VILLAGE OF CRESTWOOD, CRESTWOOD)	PCB 19-34 (CCDTH)
ILLINOIS and VILLAGE OF RIVERSIDE,)	PCB 19-35 (Niles)
RIVERSIDE ILLINOIS)	PCB 19-36 (Skyway)
)	PCB 19-37 (Elwood)
Petitioners,)	PCB 19-38 (Chicago)
)	PCB 19-40 (Crestwood)
v.)	PCB 19-48 (Riverside)
))
ILLINOIS ENVIRONMENTAL PROTECTION)	(Time-Limited Water Quality
AGENCY,)	Standard)
)	(Consolidated)
Respondent.))

NOTICE OF FILING

To: (SEE PERSONS ON ATTACHED SERVICE LIST)

PLEASE TAKE NOTICE that I have today electronically filed with the Office of the Clerk of the Illinois Pollution Control Board the **PRE-FILED TESTIMONY OF ADAM JAMES ON BEHALF OF PETITIONER COOK COUNTY DEPARTMENT OF TRANSPORTATION AND HIGHWAYS**, copies of which are herewith served upon you.

Respectfully submitted,

By: /s/ Jeffrey M. Fronczak
Jeffrey M. Fronczak

Jeffrey M. Fronczak
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COOK COUNTY DEPARTMENT OF TRANSPORTATION AND HIGHWAYS
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AGENCY,)	Standard)
)	(Consolidated)
Respondent.))

**PRE-FILED TESTIMONY OF ADAM JAMES ON BEHALF OF PETITIONER
COOK COUNTY DEPARTMENT OF TRANSPORTATION AND HIGHWAYS**

NOW COMES the PETITIONER COOK COUNTY DEPARTMENT OF TRANSPORTATION AND HIGHWAYS (CCDTH), by and through its attorney, Jeffrey M. Fronczak, and submits the following PRE-FILED TESTIMONY OF ADAM JAMES for consideration in the above-referenced matter.

Pre-Filed Testimony of Adam James

I. INTRODUCTION

My name is Adam James, and I am here today to testify on behalf of Petitioner Cook County Department of Transportation and Highways (CCDTH) in the above-referenced matter.

Since 2017 I have served as the Drainage and Utilities Manager for CCDTH and am a licensed Professional Engineer and a Certified Floodplain Manager in the State of Illinois. Prior to my employment with Cook County, I spent 20 years in consulting civil engineering as a Department Manager, Project Manager, and Project Engineer working on transportation and water resources projects. I am a graduate of the University of Illinois at Chicago with both a Bachelor of

Science Degree and Master of Science Degree in Civil Engineering.

In its April 5, 2019 recommendation filed with the Illinois Pollution Control Board (the “Board”), the Illinois Environmental Protection Agency (IEPA or Agency) stated that it “believes the Board should adopt the proposed chlorides TLWQS with conditions,” including adoption of best management practices (BMPs) and pollution minimization programs by the Petitioners. One such BMP proposed by the Agency is to require “all working areas [to] be bermed and/or sloped to allow snow melt and stormwater to drain away from the area,” which “may require the discharger to channel water to a collection point such as a sump, holding tank or lined basin for collection” (BMP #16).

CCDTH filed a response to the Agency’s recommendation on April 19, 2019, raising a number of concerns with the proposed BMP #16. In its September 23, 2019 filing with the Board, the Agency clarified that its intent with BMP #16 “was to minimize the amount of stormwater that comes into contact with the salt that is in the working area” and that the Agency’s “proposed language does not proscribe one solution.” The Agency also stated that “[i]f this language is not sufficient, the petitioners should propose some alternate language.”

The purpose of my testimony and the accompanying exhibits is to provide a quantitative illustration of the potential impacts should the proposed BMP #16, as currently worded, be adopted by the Board. Please note that the site depicted in Exhibits 1 and 2 and the associated stormwater calculations and cost estimates provided in Exhibits 3 and 4 respectively, represent a typical CCDTH maintenance facility where salt is handled. The site is also likely representative of other transportation agencies’ and municipal public works facilities where salt is handled.

II. REGRAIDING

It is not uncommon to have ‘offsite’ areas beyond the working area that tributary to working areas, as shown on Exhibit 1. In these instances, in order to reduce the amount of snow melt and stormwater that comes into contact with the working area, it may be necessary to regrade and reconstruct the pavement around the working area to intercept runoff from these ‘offsite’ tributary areas. This is shown conceptually on Exhibit 2. Such reconstructed areas may then require additional storm sewer infrastructure to collect snow melt and stormwater from these ‘offsite’ tributary areas.

III. RUNOFF VOLUME

Please note that any type of sump, holding tank or lined basin would need to be large enough to contain stormwater runoff from storms of all durations and return frequencies. Exhibit 3 includes stormwater calculations for the conceptual site depicted on Exhibit 2. For the 2-year and 10-year critical duration storms, peak flow rates ranging from 2.6 to 4.1 cubic feet per second (cfs)

could be expected. For the 2-year and 10-year, 12-hour storm, runoff volumes ranging from 50,916 to 80,671 gallons could be expected. This amounts to 0.25 acre-feet for the 10-year event.

IV. COLLECTION (DISPOSAL)

The holding or retention of snow melt and stormwater runoff does not remove chloride. In addition, there are no commercial collection and disposal programs that would remove chloride from such water, particularly at the scale required. Finally, even if the water was collected and discharged to a sanitary sewer, wastewater treatment plans (WWTP) do not treat for chloride, so the chloride would still end up in waterways from effluent from the WWTP.

V. ESTIMATED COSTS

Exhibit 4 presents a planning level cost estimate for the conceptual civil site work depicted on Exhibit 2, with storage up to the 10-year, 12-hour storm. This cost is approximately \$550,000 per site. CCDTH has four such facilities, for a total approximate cost of \$2.2M.

While Section IV above explains why collection would not accomplish the goal of reducing the amount of chloride in waterways, nevertheless it is noted on Exhibit 4 that the estimated cost of such collection and disposal (which does not include any sort of treatment) would be \$0.25/gallon. This would be a recurring cost for every measurable precipitation event. For the single sample 10-year, 12-hour storm presented on Exhibit 3 alone, the cost would be \$20,000.

VI. CONCLUSION AND PROPOSED ALTERNATE LANGUAGE

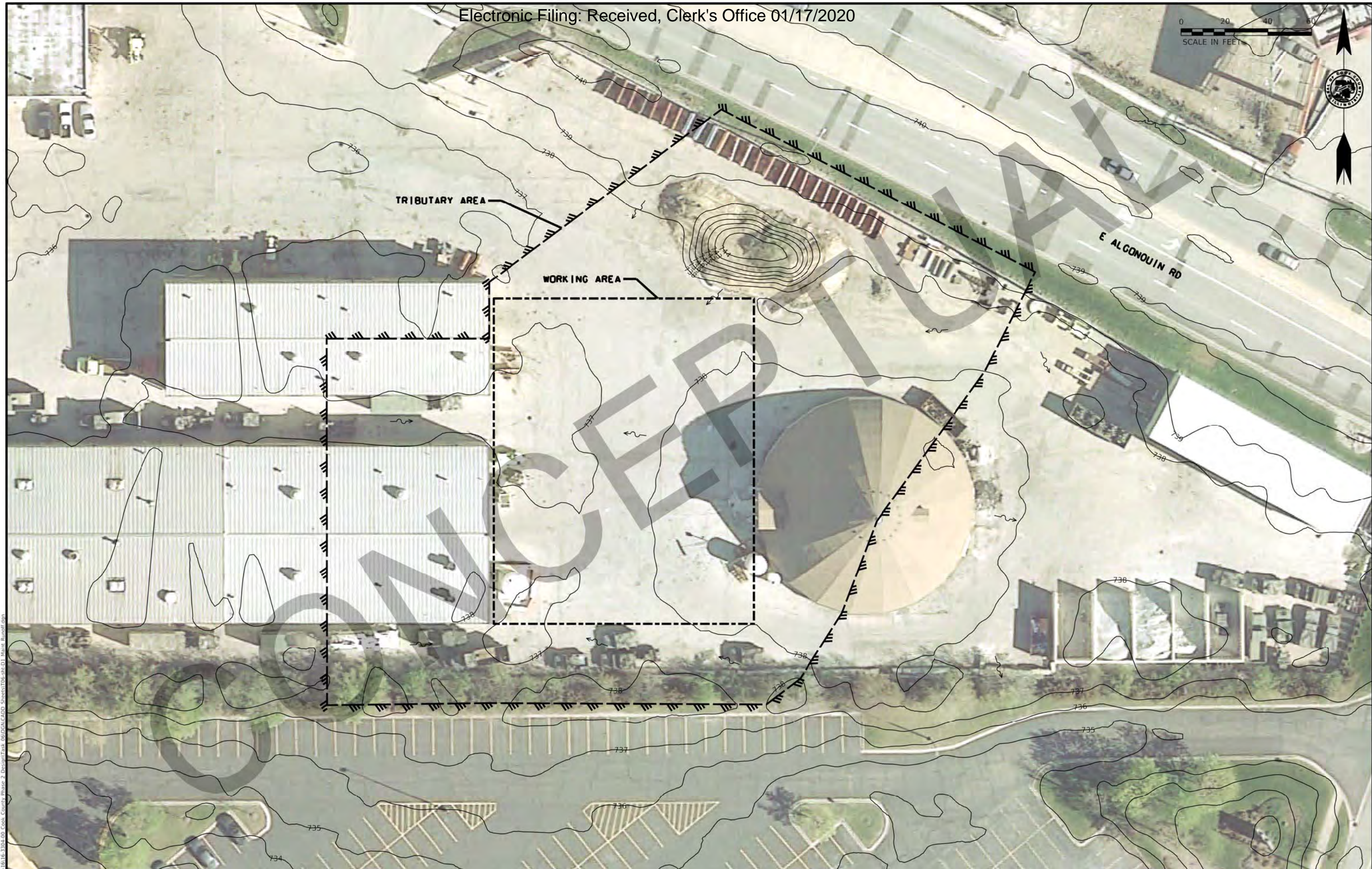
As evidenced above, channeling snow melt and stormwater from working areas for collection is technically infeasible and economically unreasonable, particularly at the scale required for typical salt handling facilities.

Due to the above concerns, and in response to the Agency's suggestion in its September 23, 2019 filing that "the petitioners should propose some alternate language," the Petitioner proposes the following alternate language for BMP #16:

"Working areas should be bermed and/or slipped to the extent practicable to minimize the amount of snow melt and stormwater that comes into contact with the working area."

Respectfully submitted,

By: /s/ Jeffrey M. Fronczak
Jeffrey M. Fronczak



MODEL: Default
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INFRASTRUCTURE ENGINEERING INCORPORATED
 1 S Wacker Dr | Suite 2650 | Chicago, IL 60606
 P 312.425.8188 | F 312.425.9584 | www.infrastructure-eng.com

VILLAGE OF
 SCHAUMBURG,
 SCHAUMBURG
 TOWNSHIP

COUNTY HIGHWAY:	N/A
FISCAL YEAR:	2019
SECTION:	---



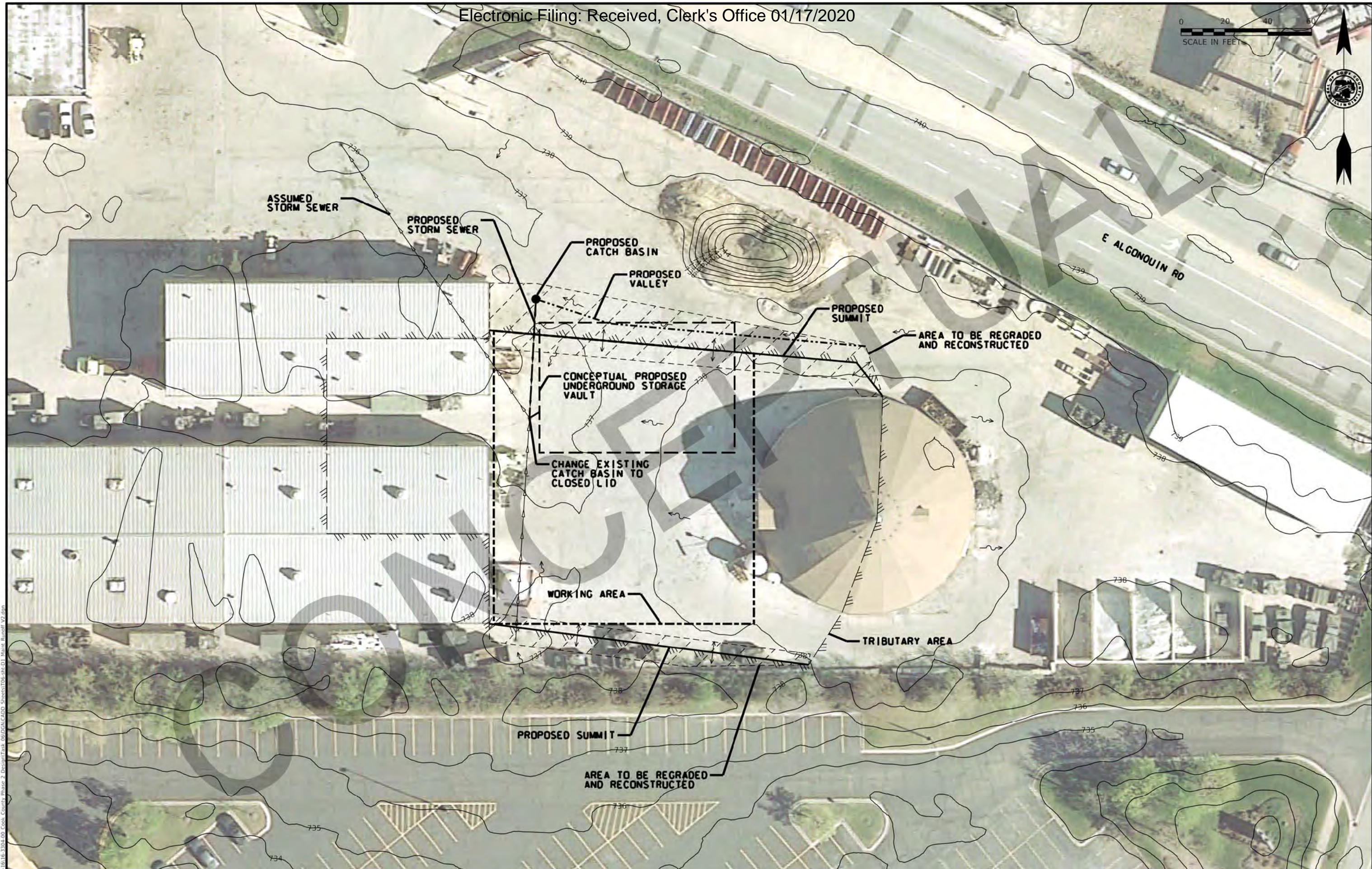
COUNTY OF COOK
 DEPARTMENT OF TRANSPORTATION AND HIGHWAYS

COMPUTED:
 DRAWN:
 CHECKED:

REVISIONS	DATE

EXISTING RUNOFF EXHIBIT
D-1 MAINTENANCE FACILITY

EXHIBIT 1
 SCALE 1" = 20' SHEET 1 OF 1



MODEL: Default
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	INFRASTRUCTURE ENGINEERING INCORPORATED 1 S Wacker Dr Suite 2650 Chicago, IL 60606 P 312.425.9188 F 312.425.9584 www.infrastructure-eng.com		VILLAGE OF SCHAUMBURG, SCHAUMBURG TOWNSHIP	COUNTY HIGHWAY:	N/A		COUNTY OF COOK DEPARTMENT OF TRANSPORTATION AND HIGHWAYS	COMPUTED:	REVISIONS	DATE	CONCEPTUAL PROPOSED RUNOFF EXHIBIT D-1 MAINTENANCE FACILITY	EXHIBIT 2 SCALE 1" = 20' SHEET 1 OF 1
				FISCAL YEAR:	2019			CHECKED:				

EXHIBIT 3

Conceptual Proposed Condition - Drainage Calculations

Peak Runoff Calculations

The conceptual proposed condition represents the revised tributary area due to regrading of the site in order to collect stormwater that passes through the working area

$$Rational\ Method, Q = C \times I \times A$$

Total Tributary Area, A	0.7 Acres
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Surface Type	Area (ac)	C
Impervious (asphalt parking lot)	0.7	0.90 ^[1]
Pervious (landscaped/grass)	0	0.45 ^[1]
Composite Runoff Coefficient, C	0.90	

Time-of-Concentration, T_c (min)

$$T_t = \frac{0.007(nL)^{0.8}}{(P_2)^{0.5}S^{0.4}} \left(\frac{60\ min}{hr} \right)$$

Sheet Flow

Manning's roughness coeff, n	0.068	<i>Aggregate of Smooth & Grass</i> ^[2]
Flow length, L (≤100 ft)	100.00	
Land Slope, s (ft/ft)	0.005	
2-year, 24-hr rainfall, P ₂	3.34 ^[3]	
Travel time, T _t (min)	8.89	

Shallow Concentrated

$$T_t = \frac{L}{60V}$$

Flow length, L (ft)	98.00	
Watercourse slope, s (ft/ft)	0.010	
Average velocity, V (ft/s)	2.053	<i>Paved</i>
Travel time, T _t (min)	0.795	

Time-of-Concentration, T_c (min)	9.69 ≈ 10 min Storm Duration
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Intensity of Precip, I (in/hr)	4.2 (2-year, 10-min) ^[4]
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Peak Rate of Flow, Q (cubic feet/sec)	2.6
--	------------

Intensity of Precip, I (in/hr)	6.48 (10-year, 10-min) ^[4]
---------------------------------------	--

Peak Rate of Flow, Q (cubic feet/sec)	4.1
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EXHIBIT 3

Conceptual Proposed Condition - Drainage Calculations

Runoff Volume

NRCS Methodology (SCS runoff curve number method)

$$V_R = \frac{(P-0.2S)^2}{(P+0.8S)} (A) \left(\frac{1}{12 \frac{\text{in}}{\text{ft}}} \right)$$

Total Tributary Area, A 0.7 Acres

Surface Type	Area	CN
Impervious (asphalt parking lot)	0.7	98 ^[5]
Pervious (landscaped/grass)	0	80 ^[5]
Composite Runoff Curve Number, CN	98.00	
Potential Max Retention, S (in)	0.204	

Rainfall Depth, P

Design Storm Duration	1 hour	2 hour	3 hour	6 hour	12 hour
2-year rainfall depth (in)	1.57	1.94	2.14	2.51	2.91 ^[3]
2-yr Volume (acre-feet)	0.08	0.10	0.11	0.13	0.16
2-yr Volume (cubic-feet)	3,428	4,358	4,861	5,795	6,806
2-yr Volume (gallon)	25,644	32,597	36,366	43,351	50,916
5-year rainfall depth (in)	2.02	2.49	2.75	3.23	3.74 ^[3]
5-yr Volume (acre-feet)	0.10	0.13	0.15	0.17	0.20
5-yr Volume (cubic-feet)	4,559	5,745	6,402	7,616	8,908
5-yr Volume (gallon)	34,104	42,973	47,889	56,974	66,638
10-year rainfall depth (in)	2.42	2.99	3.3	3.86	4.48 ^[3]
10-yr Volume (acre-feet)	0.13	0.16	0.18	0.21	0.25
10-yr Volume (cubic-feet)	5,568	7,009	7,794	9,212	10,784
10-yr Volume (gallon)	41,651	52,430	58,300	68,913	80,671

Data Sources

^[1] Table 5.13 Runoff Coefficients, MWRD TGM

^[2] Table 5.9 Manning's Roughness Coefficients for Sheet Flow (Table 3-1 from NRCS TR-55)

^[3] Table 5.17 Bulletin 70 (2019) Northeast Sectional Rainfall Depth, MWRD TGM

^[4] Table 5.18 Bulletin 70 (2019) Northeast Sectional Rainfall Intensities, MWRD TGM

^[5] Table 5.11 Runoff Curve Numbers, MWRD TGM

**EXHIBIT 4
PLANNING LEVEL COST ESTIMATES***

CONCEPTUAL CIVIL SITE WORK (SEE EXHIBIT 2)*				
DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
STORAGE SYSTEM*	EACH	1	\$ 220,000.00	\$ 220,000.00
TRENCH BACKFILL	CU YD	50	\$ 40.00	\$ 2,000.00
INLET FILTERS	EACH	2	\$ 130.00	\$ 260.00
AGGREGATE BASE COURSE, TYPE A 4"	SQ YD	1,110	\$ 15.00	\$ 16,650.00
CONCRETE PAVEMENT REMOVAL	SQ YD	1,110	\$ 20.00	\$ 22,200.00
PORTLAND CEMENT CONCRETE PAVEMENT 10"	SQ YD	1,110	\$ 80.00	\$ 88,800.00
CATCH BASINS, TYPE A, 4'-DIAMETER, TYPE 1 FRAME, OPEN LID	EACH	1	\$ 2,500.00	\$ 2,500.00
CATCH BASINS TO BE ADJUSTED WITH NEW TYPE 1 FRAME, CLOSED LID	EACH	1	\$ 600.00	\$ 600.00
FRAMES AND LIDS TO BE ADJUSTED	EACH	1	\$ 350.00	\$ 350.00
STORM SEWERS, CLASS A, TYPE 2 12"	FOOT	60	\$ 66.00	\$ 3,960.00
PROPOSED STORM SEWER CONNECTION TO EXISTING MANHOLE	EACH	2	\$ 500.00	\$ 1,000.00
MOBILIZATION	L SUM	1	\$ 20,000.00	\$ 20,000.00
			SUB-TOTAL	\$ 378,320.00
			Contingency 25%	\$ 94,580.00
			Engineering Design 15%	\$ 70,935.00
			TOTAL (Rounded)	\$ 550,000.00

COLLECTION (DISPOSAL)*				
DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
COLLECTION AND DISPOSAL*	GAL	80,671	\$ 0.25	\$ 20,167.83
			TOTAL (Rounded)	\$ 20,000.00

*10-YEAR, 12-HOUR STORM

CERTIFICATE OF SERVICE

I, Jeffrey M. Fronczak, the undersigned, hereby certify that I have served the attached **PRE-FILED TESTIMONY OF ADAM JAMES ON BEHALF OF PETITIONER COOK COUNTY DEPARTMENT OF TRANSPORTATION AND HIGHWAYS** upon the parties on the attached service list via electronic mail on January 17, 2020.

Respectfully submitted,

By: /s/ Jeffrey M. Fronczak
Jeffrey M. Fronczak

SERVICE LIST

<p>Bradley P. Halloran, Hearing Officer Illinois Pollution Control Board James R. Thompson Center, Suite 11-500 100 W. Randolph Street Chicago, IL 60601</p>	<p>Don Brown, Clerk of the Board Illinois Pollution Control Board James R. Thompson Center, Suite 11-500 100 W. Randolph Street Chicago, IL 60601</p>
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<p>PCB 2016-014 Albert Ettinger Law Firm of Albert Ettinger 53 W. Jackson Suite 1664 Chicago, IL 60604</p>	<p>PCB 2016-015 Dennis Walsh E. Kenneth Friker Klein, Thorpe & Jenkins 15010 S. Ravinia Avenue Suite 17 Orland Park, IL 60477</p>
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<p>PCB 2016-017 Dennis Walsh Klein, Thorpe & Jenkins 15010 S. Ravinia Avenue Suite 17 Orland Park, IL 60477</p>	<p>PCB 2016-018 Michael P. Murphy Heplerbroom, LLC 4340 Acer Grove Drive Springfield, IL 62711</p>
<p>PCB 2016-020 Dennis Walsh Erin K. Lavery Klein, Thorpe & Jenkins 15010 S. Ravinia Avenue Suite 17 Orland Park, IL 60477</p>	<p>PCB 2016-021 Amber M. Samuelson Peter D. Coblentz Rosenthal, Murphey, Coblentz & Donahue 30 N. LaSalle Street, Suite 1624 Chicago, IL 60602</p>

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