August 7, 2017 Project Reference #16279

Ms. Pam Mylotta
Wisconsin Department of Natural Resources
2300 N. Martin Luther King Drive
Milwaukee, WI 53212

RE: Soil Management Plan
1500 – 1528 West North Avenue, Milwaukee, Wisconsin
FID #341277310
BRRTS #02-41-577925

Dear Pam,

The purpose of this letter is to present an updated Soil Management Plan for the property located at 1500 – 1528 W. North Avenue (the Site). This Soil Management Plan shall be included with Sigma's *Site Investigation Report and Remedial Action Plan Addendum (SI/RAP Addendum), dated July 31, 2017*.

If you have any questions regarding this submittal or require any additional information, please contact us at 414-643-4200.

Sincerely,

THE SIGMA GROUP, INC.

Sarah Fernholz, E.I.T.
Staff Engineer

Kristin Kurzka, P.E.
Senior Engineer

cc: Ms. Nicolette Jurgens-Tamminga – Evergreen Real Estate Group

SOIL MANAGEMENT PLAN

Evergreen Real Estate Group

1500-1528 West North Avenue, Milwaukee, WI
BRRTS #02-41-577925, FID #341277310

MILWAUKEE, WISCONSIN
AUGUST 2017

This Soil Management Plan is based upon Sigma's environmental knowledge of the site conditions and the planned redevelopment activities. Soil quality data gathered from the site and presented in **Table 1** and **Figure 4** indicate that reported select PAH concentrations exceed WDNR standards for protection of human health via direct contact and/or groundwater pathway within the area proposed for soil disturbance. The estimated extent of PAH impacted soil based on site investigation activities to date is presented in **Figure 5**.

The proposed site activities include the renovation of the existing site building for residential use and the construction of a four story, slab-on-grade building for commercial (first floor) and residential (second, third, and fourth floors) use. Proper management of disturbed soils and capping of residual impacts are required as part of the site remediation plans. It is anticipated that the majority of soil excavated from the site for construction purposes will be exported off-site for proper disposal and impacted areas (**Area A** and **Area B** as shown in **Figure 6**) capped with an engineered barrier/clean soil in accordance with the RAP. Soil within **Area A** from the ground surface to the maximum depth of excavation (approximately nine feet bgs) and soil within **Area B** from the ground surface to a depth of eight feet bgs is impacted for this site.

The following items shall be addressed and implemented for the soil handling and management activities associated with the proposed redevelopment excavation and site grading at the site:

- Prior to subsurface excavation activities, all necessary City of Milwaukee permits relating to erosion control and storm water management will be obtained. Additionally, a WDNR Storm Water Discharge Permit (NR 216) coverage will be required for site construction activities, as appropriate.

- Silt fences, storm sewer inlet protection, and other erosion control measures shall be implemented and maintained at the site in accordance with an approved Erosion Control Plan to protect storm sewers on-site or adjacent to the site. Storm sewer catch basins shall be periodically checked during the construction activities to ensure that they are not blocked with debris.

- Concrete rubble, asphalt rubble, wood, and other miscellaneous debris that may be encountered in the subsurface shall not be reused on-site unless the material meets the criteria of NR 500.08(2)(a) and is acceptable to the developer. Otherwise, this material shall be transported off-site for disposal or recycling at a licensed landfill/approved recycling facility.

Soil Management

- Although not anticipated, if soil staining, odors or other indicators of obvious impact are observed the material shall be temporarily stockpiled on-site and the Owner's representative contacted for further evaluation.

- Although not anticipated, unknown underground storage tanks (USTs) may be encountered during excavation activities. If a UST is discovered, work will be stopped in that area, access to the work area will be restricted with caution tape and/or signage, and the general contractor/earthworks contractor shall contact the Owner's representative. The earthworks contractor may continue work in another location if feasible.

- Excavated soil, excluding the designated impacted areas shown in **Figure 6** may be reused as backfill in the same excavation, pending geotechnical soil qualities and project specifications.

- Only non-impacted soil material shall be utilized within the top 24-inches of the proposed cap and landscaped areas shown in **Figure 7**. Non-impacted soil is defined as meeting the following requirements:
    - Originating from a site not likely to have been impacted by historical uses; or
    - Soil with sampling data meeting all of the following criteria:
        - Does not contain detectable concentrations of compounds that are not naturally occurring (e.g., volatile organic compounds (VOCs), polychlorinated biphenyls (PCBs), pesticides, and other contaminants of concern);
        - Contains naturally occurring compounds, at concentrations that are at or below Wisconsin background threshold values; and
        - If it contains PAHs, which may or may not be naturally occurring, they are present at concentrations below the non-industrial direct contact and groundwater protective residual contaminant levels (RCLs) calculated using default parameters as specified in ch. NR 720, Wis. Adm. Code, and DNR guidance document RR 890.

- Prior to import to the subject property the Contractor must provide the Owner with the source site location and history which must include a list of property owners, historic and current site uses as well as a physical description of the soil and the general location on-site and depths from which the soil will be excavated.

- The Owner and/or its Representative may request, at the Contractor's expense, sampling of the soil for parameters, determined by the Owner and/or its Representative.

- Soil proposed for import may not be transported to the property until written approval is provided by the Owner and/or its Representative.

- A manifest system ensuring the import of only approved soil materials, which is deemed acceptable to the Owner and/or its Representatives must be provided and implemented by the Contractor during the course of importing activities.

- If any temporary stockpiles of impacted soil are created during the earthwork activities, the stockpiles shall be placed on impervious surface (concrete, asphalt, plastic, etc.) and be covered with plastic and secured at the end of each work day to prevent water infiltration, dust, odors, and erosion. Temporary stockpiles shall be limited to less than 2,500 cubic yards of material.

- During the earthmoving and soil disturbance activities, site workers should be 40-hour OSHA trained and notified of the residual subsurface impacts.

- A 40-hour OSHA trained environmental professional will be on call during soil handling activities to observe any unusual subsurface conditions or potential areas of contamination, which may be identified by (1) the presence of buried items (e.g., storage tanks, pipes, drums, sumps, etc.) and/or (2) soil staining. An environmental professional will also be on call during soil handling activities to monitor soil cut and fill areas, oversee the environmental activities and ensure proper execution of this Soil Management Plan, and ensure public safety is maintained.

Attachments

Table 1 – Soil Analytical Table
Figure 4 – Soil Quality Map
Figure 5 – Soil Impacts Map
Figure 6 – Limits of Soil Impacts and Excavation Map
Figure 7 – Soil Cap Map

TABLE

Table 1
Soil Analytical Results Table - Page 1 of 2
Former Bloomer Ice Cream Factory - 1500-1528 W. North Avenue, Milwaukee, Wisconsin
Sigma Project No. 16279

Soil Sample Location:		B-1		B-2		B-3		B-4		B-5		GP-1		GP-2	GP-3		GP-4		HA-1	Groundwater Pathway RCL [4]	Non-Industrial Direct Contact RCL [5]	Background Threshold Value [7]
Sample Depth (feet bgs):		0.5 - 2	7 - 8.5	0.5 - 2	7 - 8.5	2 - 3.5	9.5 - 11	0 - 2	7 - 8.5	0 - 2	7 - 8.5	0 - 2	4 - 6	2 - 4	2 - 4	6 - 8	2 - 4	4 - 6	0 - 1			
Sample Collection Date:		8/23/16	8/23/16	8/23/16	8/23/16	8/23/16	8/23/16	8/23/16	8/23/16	8/23/16	8/23/16	9/12/16	9/12/16	9/12/16	9/12/16	9/12/16	9/12/16	9/12/16	10/13/16			
Organic Vapor Monitor	ppm	0	0	0	0	1.6	0	0	0	0	0	0	0	0	0.7	149	0	0	0	NS	NS	NS
VOCs																						
Benzene	mg/kg	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	0.0051	1.6	NS
Bromobenzene	mg/kg	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.036	NS	342	NS
Bromodichloromethane	mg/kg	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	0.0003	0.418	NS
Bromoform	mg/kg	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023	0.0023	25.4	NS
tert-Butylbenzene	mg/kg	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	NS	183	NS
sec-Butylbenzene	mg/kg	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036	0.43	<0.036	<0.036	<0.036	NS	145	NS
n-Butylbenzene	mg/kg	<0.086	<0.086	<0.086	<0.086	<0.086	<0.086	<0.086	<0.086	<0.086	<0.086	<0.086	<0.086	<0.086	<0.086	0.52	<0.086	<0.086	<0.086	NS	108	NS
Carbon tetrachloride	mg/kg	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	0.0039	0.916	NS
Chlorobenzene	mg/kg	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	0.111 J	NS	370	NS
Chloroethane	mg/kg	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	0.2266	NS	NS
Chloroform	mg/kg	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	<0.026	0.0033	0.454	NS
Chloromethane	mg/kg	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	0.0155	159	NS
2-Chlorotoluene (,o-)	mg/kg	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	NS	907	NS
4-Chlorotoluene (,p-)	mg/kg	<0.032	<0.032	<0.032	<0.032	<0.032	<0.032	<0.032	<0.032	<0.032	<0.032	<0.032	<0.032	<0.032	<0.032	<0.032	<0.032	<0.032	<0.032	NS	253	NS
1,2-Dibromo-3-chloropropane	mg/kg	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	0.0002	0.008	NS
Dibromochloromethane	mg/kg	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	0.032	8.28	NS
1,4-Dichlorobenzene	mg/kg	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.144	3.74	NS
1,3-Dichlorobenzene	mg/kg	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	1.1528	297	NS
1,2-Dichlorobenzene	mg/kg	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039	1.168	376	NS
Dichlorodifluoromethane	mg/kg	<0.043	<0.043	<0.043	<0.043	<0.043	<0.043	<0.043	<0.043	<0.043	<0.043	<0.043	<0.043	<0.043	<0.043	<0.043	<0.043	<0.043	<0.043	3.0863	126	NS
1,2-Dichloroethane	mg/kg	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.0028	0.652	NS
1,1-Dichloroethane	mg/kg	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.4834	5.06	NS
1,1-Dichloroethene	mg/kg	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	0.005	320	NS
cis-1,2-Dichloroethene	mg/kg	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	0.0412	156	NS
trans-1,2-Dichloroethene	mg/kg	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	0.0626	1,560	NS
1,2-Dichloropropane	mg/kg	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.0033	0.406	NS
2,2-Dichloropropane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NS	191	NS
1,3-Dichloropropane	mg/kg	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	NS	1,490	NS
Di-isopropyl Ether	mg/kg	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	NS	2,260	NS
EDB (1,2-Dibromoethane)	mg/kg	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	0.0000282	0.05	NS
Ethylbenzene	mg/kg	<0.027	<0.027	<0.027	<0.027	<0.027	<0.027	<0.027	<0.027	<0.027	<0.027	<0.027	<0.027	<0.027	<0.027	0.092	<0.027	<0.027	<0.027	1.57	8.02	NS
Hexachlorobutadiene	mg/kg	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	NS	1.63	NS
Isopropylbenzene	mg/kg	<0.037	<0.037	<0.037	<0.037	<0.037	<0.037	<0.037	<0.037	<0.037	<0.037	<0.037	<0.037	<0.037	<0.037	0.124	<0.037	<0.037	<0.037	NS	NS	NS
p-Isopropyltoluene	mg/kg	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	0.37	<0.056	<0.056	<0.056	NS	162	NS
Methylene chloride	mg/kg	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	0.0026	61.8	NS
Methyl-tert-butyl-ether	mg/kg	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.027	63.8	NS
Naphthalene	mg/kg	<0.087	<0.087	<0.087	<0.087	<0.087	<0.087	<0.087	<0.087	<0.087	<0.087	<0.087	<0.087	<0.087	<0.087	0.6	<0.087	<0.087	**2.46**	0.6582	5.52	NS
n-Propylbenzene	mg/kg	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	0.197	<0.035	<0.035	<0.035	NS	264	NS
1,1,2,2-Tetrachloroethane	mg/kg	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	0.0002	0.81	NS
1,1,1,2-Tetrachloroethane	mg/kg	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	0.0534	2.78	NS
Tetrachloroethene (PCE)	mg/kg	<0.054	<0.054	<0.054	<0.054	<0.054	<0.054	<0.054	<0.054	<0.054	<0.054	<0.054	<0.054	<0.054	<0.054	<0.054	<0.054	<0.054	<0.054	0.0045	33	NS
Toluene	mg/kg	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	<0.031	1.1072	818	NS
1,2,4-Trichlorobenzene	mg/kg	<0.085	<0.085	<0.085	<0.085	<0.085	<0.085	<0.085	<0.085	<0.085	<0.085	<0.085	<0.085	<0.085	<0.085	<0.085	<0.085	<0.085	<0.085	0.408	24	NS
1,2,3-Trichlorobenzene	mg/kg	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	NS	62.6	NS
1,1,1-Trichloroethane	mg/kg	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.1402	640	NS
1,1,2-Trichloroethane	mg/kg	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.06	0.0032	1.59	NS
Trichloroethene (TCE)	mg/kg	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	<0.078	0.0036	1.3	NS
Trichlorofluoromethane	mg/kg	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	NS	1,230	NS
1,2,4-Trimethylbenzene	mg/kg	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	<0.078	0.42	<0.078	<0.078	<0.078	1.3821	219	NS
1,3,5-Trimethylbenzene	mg/kg	<0.089	<0.089	<0.089	<0.089	<0.089	<0.089	<0.089	<0.089	<0.089	<0.089	<0.089	<0.089	<0.089	<0.089	0.206 J	<0.089	<0.089	<0.089		182	NS
Vinyl Chloride	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0001	0.067	NS
Xylenes (total)	mg/kg	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	3.96	260	NS
PAHs																						
Acenaphthene	mg/kg	<0.0135	<0.0135	0.037 J	0.0307 J	<0.0135	<0.0135	<0.0135	<0.0135	<0.0135	<0.0135	<0.0135	<0.0135	0.0245 J	<0.0135	0.285	<0.0135	<0.0135	3.4	NS	3,590	NS
Acenaphthylene	mg/kg	<0.012	<0.012	0.0234 J	0.0121 J	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	0.039	<0.012	0.107	<0.012	<0.012	0.15 J	NS	NS	NS
Anthracene	mg/kg	<0.0124	<0.0124	0.124	0.119	<0.0124	<0.0124	<0.0124	<0.0124	<0.0124	<0.0124	<0.0124	<0.0124	0.102	<0.0124	0.075	0.0145 J	<0.0124	9.4	196.9492	17,900	NS
Benzo(a)anthracene	mg/kg	0.0175 J	<0.0116	0.56	0.33	<0.0116	<0.0116	<0.0116	<0.0116	<0.0116	<0.0116	<0.0116	<0.0116	0.56	<0.0116	0.0133 J	0.071	0.035	[11.9]	NS	1.14	NS
Benzo(a)pyrene	mg/kg	<0.0113	<0.0113	[**0.6**]	[0.34]	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	[**0.7**]	<0.0113	<0.0113	0.095	0.074	[**9.4**]	0.47	0.115	NS
Benzo(b)fluoranthene	mg/kg	0.0162 J	<0.013	**0.83**	0.46	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	**1.03**	<0.013	<0.013	0.141	0.097	[**13.6**]	0.4793	1.15	NS
Benzo(ghi)perylene	mg/kg	<0.0114	<0.0114	0.39	0.213	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	0.5	<0.0114	<0.0114	0.116	0.07	5.3	NS	NS	NS
Benzo(k)fluoranthene	mg/kg	<0.0117	<0.0117	0.289	0.172	<0.0117	<0.0117	<0.0117	<0.0117	<0.0117	<0.0117	<0.0117	<0.0117	0.37	<0.0117	<0.0117	0.066	0.057	4.2	NS	11.5	NS
Chrysene	mg/kg	<0.0138	<0.0138	**0.55**	**0.314**	<0.0138	<0.0138	<0.0138	<0.0138	<0.0138	<0.0138	<0.0138	<0.0138	**0.63**	<0.0138	0.0163 J	0.1	0.059	**11.5**	0.1446	115	NS
Dibenzo(a,h)anthracene	mg/kg	<0.0142	<0.0142	0.077	0.036 J	<0.0142	<0.0142	<0.0142	<0.0142	<0.0142	<0.0142	<0.0142	<0.0142	<0.0142	<0.0142	<0.0142	0.0204 J	0.0244	[1.31]	NS	0.115	NS
Fluoranthene	mg/kg	0.0246 J	<0.0131	0.98	0.67	<0.0131	<0.0131	<0.0131	<0.0131	<0.0131	<0.0131	<0.0131	<0.0131	1.29	<0.0131	0.051	0.182	0.094	27	88.8778	2,390	NS
Fluorene	mg/kg	<0.0135	<0.0135	0.0274 J	0.0249 J	<0.0135	<0.0135	<0.0135	<0.0135	<0.0135	<0.0135	<0.0135	<0.0135	<0.0135	<0.0135	0.59	<0.0135	<0.0135	3.4	14.8299	2,390	NS
Indeno(1,2,3-cd)pyrene	mg/kg	<0.015	<0.015	0.35	0.189	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	0.42	<0.015	<0.015	0.085	0.061	[4.9]	NS	1.15	NS
1-Methylnaphthalene	mg/kg	<0.0143	<0.0143	0.0254 J	0.0176 J	<0.0143	<0.0143	<0.0143	<0.0143	<0.0143	<0.0143	<0.0143	<0.0143	<0.0143	<0.0143	2.76	<0.0143	<0.0143	0.94	NS	17.6	NS
2-Methylnaphthalene	mg/kg	<0.0119	<0.0119	0.0135 J	<0.0119	<0.0119	<0.0119	<0.0119	<0.0119	<0.0119	<0.0119	<0.0119	<0.0119	<0.0119	<0.0119	0.95	<0.0119	<0.0119	0.94	NS	239	NS
Naphthalene	mg/kg	<0.0122	<0.0122	0.054	0.0257 J	<0.0122	<0.0122	<0.0122	<0.0122	<0.0122	<0.0122	<0.0122	<0.0122	<0.0122	<0.0122	0.3	<0.0122	<0.0122	**1.48**	0.6582	5.52	NS
Phenanthrene	mg/kg	<0.0109	<0.0109	0.307	0.305	<0.0109	<0.0109	<0.0109	<0.0109	<0.0109	<0.0109	<0.0109	<0.0109	0.282	<0.0109	1.31	0.0268 J	0.0153	29.5	NS	NS	NS
Pyrene	mg/kg	0.0208 J	<0.0126	1.01	0.63	<0.0126	<0.0126	<0.0126	<0.0126	<0.0126	<0.0126	<0.0126	<0.0126	1.09	<0.0126	0.097	0.16	0.106	22.6	54.5455	1,790	NS

Notes:
1. Unsaturated/smear zone versus satured soil conditions based on: (1) measured water levels in adjacent/nearby monitoring wells, or (2) soil moisture conditions recorded on soil boring logs during drilling.
2. Analytical units: mg/kg = milligrams per kilogram (equivalent to parts per million, ppm)
3. NA = not analyzed
4. Groundwater Pathway RCL = Residual Contaminant Level for protection of groundwater (dilution factor of 2) as presented on the WDNR's RCL Spreadsheet (dated March 2017) referenced in WDNR guidance document PUB-RR-890 "Soil Residual Contaminant Level Determinations Using the US EPA Regional Screening Level Web Calculator", dated June 2014
5. Non-Industrial Direct Contact RCL = Residual Contaminant Level for protection of direct contact at a non-industrial property as presented on the WDNR's RCL Spreadsheet (dated March 2017) with default input parameters as referenced in WDNR guidance document PUB-RR-890 "Soil Residual Contaminant Level Determinations Using the US EPA Regional Screening Level Web Calculator", dated June 2014
6. Industrial Direct Contact RCL = Residual Contaminant Level for protection of direct contact at an industrial property as presented on the WDNR's RCL Spreadsheet (dated March 2017) with default input parameters as referenced in WDNR guidance document PUB-RR-890 "Soil Residual Contaminant Level Determinations Using the US EPA Regional Screening Level Web Calculator", dated June 2014
7. Background Threshold Value = Non-outlier trace element maximum levels in Wisconsin surface soils from USGS report "Distribution and Variation of Arsenic in Wisconsin Surface Soils, With Data on Other Trace Elements" (revised February 2013).
8. NS = no standard established
9. Laboratory flags: "J" = Analyte detected between Limit of Detection and Limit of Quantitation
10. Exceedances: **BOLD** = Concentration exceeds Groundwater Pathway RCL
[ ] = Concentration exceeds Non-Industrial Direct Contact RCL (any depth)

Table 1
Soil Analytical Results Table - Page 2 of 2
Former Bloomer Ice Cream Factory - 1500-1528 W. North Avenue, Milwaukee, Wisconsin
Sigma Project No. 16279

Soil Sample Location:		GP-5	GP-6		GP-7		GP-8		GP-9	GP-10	GP-11	GP-12	GP-13	GP-14	Groundwater Pathway RCL [4]	Non-Industrial Direct Contact RCL [5]	Background Threshold Value [7]
Sample Depth (feet bgs):		8 - 10	2 - 4	6 - 8	0 - 2	8 - 10	2 - 4	8 - 10	0 - 2	0 - 2	0 - 2	4 - 6	2 - 4	2 - 4			
Sample Collection Date:		11/22/16	11/22/16	11/22/16	11/22/16	11/22/16	11/22/16	11/22/16	5/24/17	5/24/17	5/24/17	5/24/17	5/24/17	5/24/17			
Organic Vapor Monitor	ppm	0	0.3	0.2	0.1	0	0.1	0.1	0.5	0.8	0.8	0.2	0.3	0.2	NS	NS	NS
PAHs																	
Acenaphthene	mg/kg	<0.0135	<0.0135	<0.0135	0.046	<0.0135	<0.0135	<0.0135	NA	<0.0151	<0.0151	<0.0151	<0.0151	<0.0151	NS	3,590	NS
Acenaphthylene	mg/kg	<0.012	<0.012	<0.012	0.016 J	<0.012	<0.012	<0.012	NA	0.032 J	0.0251 J	<0.0159	<0.0159	<0.0159	NS	NS	NS
Anthracene	mg/kg	0.0129 J	<0.0124	<0.0124	0.214	<0.0124	0.0208 J	0.0145 J	NA	0.054	0.089	<0.0109	<0.0109	<0.0109	196.9492	17,900	NS
Benzo(a)anthracene	mg/kg	0.0243 J	<0.0116	<0.0116	0.49	<0.0116	0.039	0.036 J	NA	0.247	0.39	<0.0116	0.0126 J	<0.0116	NS	1.14	NS
Benzo(a)pyrene	mg/kg	0.0211 J	<0.0113	<0.0113	[0.46]	<0.0113	0.0311 J	0.0307 J	NA	[0.32]	[0.44]	<0.0113	<0.0113	<0.0113	0.47	0.115	NS
Benzo(b)fluoranthene	mg/kg	0.0314 J	<0.013	<0.013	**0.72**	<0.013	0.046	0.05	NA	0.4	[0.58]	<0.013	<0.013	<0.013	0.4793	1.15	NS
Benzo(ghi)perylene	mg/kg	0.0161 J	<0.0114	<0.0114	0.4	<0.0114	0.0202 J	0.0277 J	NA	0.33	0.263	<0.0114	<0.0114	<0.0114	NS	NS	NS
Benzo(k)fluoranthene	mg/kg	0.0147 J	<0.0117	<0.0117	0.241	<0.0117	0.0163 J	0.021 J	NA	0.124	0.189	<0.0147	<0.0147	<0.0147	NS	11.5	NS
Chrysene	mg/kg	0.0242 J	<0.0138	<0.0138	**0.57**	<0.0138	0.04 J	0.041 J	NA	**0.224**	**0.38**	<0.0121	<0.0121	<0.0121	0.1446	115	NS
Dibenzo(a,h)anthracene	mg/kg	<0.0142	<0.0142	<0.0142	0.072	<0.0142	<0.0142	<0.0142	NA	0.049	0.053	<0.0078	<0.0078	<0.0078	NS	0.115	NS
Fluoranthene	mg/kg	0.05	0.0142 J	<0.131	1.32	<0.0131	0.08	0.089	NA	0.35	0.67	<0.0147	<0.0147	<0.0147	88.8778	2,390	NS
Fluorene	mg/kg	<0.0135	<0.0135	<0.0135	0.0273 J	<0.0135	<0.0135	<0.0135	NA	<0.0179	<0.0179	<0.0179	<0.0179	<0.0179	14.8299	2,390	NS
Indeno(1,2,3-cd)pyrene	mg/kg	0.0151 J	<0.015	<0.015	0.33	<0.015	0.0185 J	0.0189 J	NA	0.233	0.245	<0.0114	<0.0114	<0.0114	NS	1.15	NS
1-Methylnaphthalene	mg/kg	<0.0143	<0.0143	<0.0143	<0.0143	<0.0143	<0.0143	<0.0143	NA	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	NS	17.6	NS
2-Methylnaphthalene	mg/kg	<0.0119	<0.0119	<0.0119	<0.0119	<0.0119	<0.0119	<0.0119	NA	0.0124 J	<0.0113	<0.0113	<0.0113	<0.0113	NS	239	NS
Naphthalene	mg/kg	<0.0122	<0.0122	<0.0122	<0.0122	<0.0122	<0.0122	<0.0122	NA	0.0164 J	0.019 J	<0.0153	<0.0153	<0.0153	0.6582	5.52	NS
Phenanthrene	mg/kg	0.044	0.0137 J	<0.0109	0.99	<0.0109	0.067	0.059	NA	0.118	0.253	<0.0111	<0.0111	<0.0111	NS	NS	NS
Pyrene	mg/kg	0.038 J	<0.0126	<0.0126	1.06	<0.0126	0.067	0.07	NA	0.36	0.66	<0.0153	<0.0153	<0.0153	54.5455	1,790	NS
RCRA Metals																	
Arsenic	mg/kg	NA	NA	NA	NA	NA	NA	NA	**[5.16]** *	**[7.75]** *	**[7.16]** *	NA	NA	NA	0.584	0.677	8
Barium	mg/kg	NA	NA	NA	NA	NA	NA	NA	84	74.8	74.3	NA	NA	NA	164.8	15,300	364
Cadmium	mg/kg	NA	NA	NA	NA	NA	NA	NA	0.13 J	0.33	0.17 J	NA	NA	NA	0.752	71.1	1
Chromium	mg/kg	NA	NA	NA	NA	NA	NA	NA	23.1	21.6	19.1	NA	NA	NA	360,000	NS	44
Lead	mg/kg	NA	NA	NA	NA	NA	NA	NA	**88.2**	**141**	**81.9**	NA	NA	NA	27	400	52
Mercury	mg/kg	NA	NA	NA	NA	NA	NA	NA	**0.23**	0.2049	**0.3689**	NA	NA	NA	0.208	3.13	NS
Selenium	mg/kg	NA	NA	NA	NA	NA	NA	NA	<0.52	<0.52	<0.52	NA	NA	NA	0.52	391	NS
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA	<0.57	<0.57	<0.57	NA	NA	NA	0.8491	391	NS

Notes:

1. Unsaturated/smear zone versus satured soil conditions based on: (1) measured water levels in adjacent/nearby monitoring wells, or (2) soil moisture conditions recorded on soil boring logs during drilling.
2. Analytical units: mg/kg = milligrams per kilogram (equivalent to parts per million, ppm)
3. NA = not analyzed

4. Groundwater Pathway RCL = Residual Contaminant Level for protection of groundwater (dilution factor of 2) as presented on the WDNR's RCL Spreadsheet (dated March 2017) referenced in WDNR guidance document PUB-RR-890 "Soil Residual Contaminant Level Determinations Using the US EPA Regional Screening Level Web Calculator", dated June 2014

5. Non-Industrial Direct Contact RCL = Residual Contaminant Level for protection of direct contact at a non-industrial property as presented on the WDNR's RCL Spreadsheet (dated March 2017) with default input parameters as referenced in WDNR guidance document PUB-RR-890 "Soil Residual Contaminant Level Determinations Using the US EPA Regional Screening Level Web Calculator", dated June 2014

6. Industrial Direct Contact RCL = Residual Contaminant Level for protection of direct contact at an industrial property as presented on the WDNR's RCL Spreadsheet (dated March 2017) with default input parameters as referenced in WDNR guidance document PUB-RR-890 "Soil Residual Contaminant Level Determinations Using the US EPA Regional Screening Level Web Calculator", dated June 2014

7. Background Threshold Value = Non-outlier trace element maximum levels in Wisconsin surface soils from USGS report "Distribution and Variation of Arsenic in Wisconsin Surface Soils, With Data on Other Trace Elements" (revised February 2013).

8. NS = no standard established
9. Laboratory flags: "J" = Analyte detected between Limit of Detection and Limit of Quantitation
10. Exceedances: **BOLD** = Concentration exceeds Groundwater Pathway RCL
[ ] = Concentration exceeds Non-Industrial Direct Contact RCL (any depth)
* = Concentration less than Background Threshold Value; therefore not an RCL exceedance

FIGURES

Soil Sample Location:	B-1	
Sample Depth (feet bgs):	0.5 - 2	7 - 8.5
Sample Collection Date:	8/23/16	8/23/16
PAHs	NE	ND

Soil Sample Location:	B-5	
Sample Depth (feet bgs):	0 - 2	7 - 8.5
Sample Collection Date:	8/23/16	8/23/16
PAHs	ND	ND

Soil Sample Location:	GP-7	
Sample Depth (feet bgs):	0 - 2	8 - 10
Sample Collection Date:	11/22/16	11/22/16
PAHs		
Benzo(a)pyrene	[0.46]	ND
Benzo(b)fluoranthene	0.72	
Chrysene	0.57	

Soil Sample Location:	GP-11
Sample Depth (feet bgs):	0 - 2
Sample Collection Date:	5/24/17
PAHs	
Benzo(a)pyrene	[0.44]
Benzo(b)fluoranthene	[0.58]
Chrysene	0.38

Soil Sample Location:	GP-6	
Sample Depth (feet bgs):	2 - 4	6 - 8
Sample Collection Date:	11/22/16	11/22/16
PAHs	NE	ND

Soil Sample Location:	GP-1	
Sample Depth (feet bgs):	0 - 2	4 - 6
Sample Collection Date:	9/12/16	9/12/16
PAHs	ND	ND

Soil Sample Location:	HA-1
Sample Depth (feet bgs):	0 - 1
Sample Collection Date:	10/13/16
PAHs	
Benzo(a)anthracene	[11.9]
Benzo(a)pyrene	[9.4]
Benzo(b)fluoranthene	[13.6]
Chrysene	11.5
Dibenzo(a,h)anthracene	[1.31]
Indeno(1,2,3-cd)pyrene	[4.9]
Naphthalene	1.48

Soil Sample Location:	GP-2
Sample Depth (feet bgs):	2 - 4
Sample Collection Date:	9/12/16
PAHs	
Benzo(a)pyrene	[0.7]
Benzo(b)fluoranthene	1.03
Chrysene	0.63

Soil Sample Location:	GP-3	
Sample Depth (feet bgs):	2 - 4	6 - 8
Sample Collection Date:	9/12/16	9/12/16
PAHs	ND	NE

Soil Sample Location:	GP-9
Sample Depth (feet bgs):	0 - 2
Sample Collection Date:	5/24/17
PAHs	NA

Soil Sample Location:	GP-13
Sample Depth (feet bgs):	2 - 4
Sample Collection Date:	5/24/17
PAHs	ND

Soil Sample Location:	GP-10
Sample Depth (feet bgs):	0 - 2
Sample Collection Date:	5/24/17
PAHs	
Benzo(a)pyrene	[0.32]
Chrysene	0.224

Soil Sample Location:	GP-5
Sample Depth (feet bgs):	8 - 10
Sample Collection Date:	11/22/16
PAHs	NE

Soil Sample Location:	GP-8	
Sample Depth (feet bgs):	2 - 4	8 - 10
Sample Collection Date:	11/22/16	11/22/16
PAHs	NE	NE

Soil Sample Location:	GP-14
Sample Depth (feet bgs):	2 - 4
Sample Collection Date:	5/24/17
PAHs	ND

Soil Sample Location:	GP-12
Sample Depth (feet bgs):	4 - 6
Sample Collection Date:	5/24/17
PAHs	ND

Soil Sample Location:	B-3	
Sample Depth (feet bgs):	2 - 3.5	9.5 - 11
Sample Collection Date:	8/23/16	8/23/16
PAHs	ND	ND

Soil Sample Location:	B-4	
Sample Depth (feet bgs):	0 - 2	7 - 8.5
Sample Collection Date:	8/23/16	8/23/16
PAHs	ND	ND

Soil Sample Location:	B-2	
Sample Depth (feet bgs):	0.5 - 2	7 - 8.5
Sample Collection Date:	8/23/16	8/23/16
PAHs		
Benzo(a)pyrene	[0.6]	[0.34]
Benzo(b)fluoranthene	0.83	0.46
Chrysene	0.55	0.314

Soil Sample Location:	GP-4	
Sample Depth (feet bgs):	2 - 4	4 - 6
Sample Collection Date:	9/12/16	9/12/16
PAHs	NE	NE

ANALYTICAL KEY

All units in mg/kg (milligrams per kilogram)

"J" = Analyte detected between Limit of Detection and Limit of Quantitation

BOLD = Concentration exceeds Groundwater Pathway RCL

| | = Concentration exceeds Non-Industrial Direct Contact RCL

ND = Not Detected

NE = No RCL Exceedances

NA = Not Analyzed

N

0 30 ft. 60 ft.

GRAPHIC SCALE

THE SIGMA GROUP
Single Source. Sound Solutions.

SOIL QUALITY MAP - PAHs

1500-1528 WEST NORTH AVENUE MILWAUKEE, WISCONSIN

FIGURE 4

Project: 16279 | Directory: CAD | Filename: 16279_SQM updated | Created By: SEF | Date: 07/26/2017

ESTIMATED EXTENT OF PAH IMPACTS GREATER THAN GROUNDWATER PATHWAY AND NON-INDUSTRIAL DIRECT CONTACT RCLs

B-1
B-5
GP-11
GP-9
GP-6
GP-7
HA-1
VP-1
GP-10
GP-8
GP-5
GP-1
GP-3
MW-1
B-2
GP-13
GP-2
GP-4
GP-12
B-3
GP-14
B-4

ALLEY
LOT 11
S89°20'52"E
N89°20'52"W
N00°29'15"E
S00°39'06"E
270.37'
270.00'
126.00'
16TH STREET
15TH STREET
NORTH AVENUE
PROJECT LIMITS
7 PARKING STALLS
8 PARKING STALLS
ASPHALT PARKING LOT
EXISTING BUILDING
(RESIDENTIAL)
PROPOSED BUILDING
APPROXIMATE HEIGHT 49'-6"
(RESIDENTIAL & 1ST FLOOR COMMERCIAL)
ACCESSIBLE PARKING
LAMP POST WITH CUTOFF
DUMPSTER ENCLOSURE
TOWNHOME ENTRY
ACCESSIBLE TOWNHOME ENTRY
ACCESSIBLE BUILDING ENTRY
COMMERCIAL SPACE ENTRY
CANOPY ENTRY LIGHT
WALL PACK LIGHT
BICYCLE PARKING
SECURITY GATE & FENCE
RESTORED ORIGINAL WALL LIGHTING
REESTABLISHED HISTORICAL BUILDING ENTRY
CONCRETE PAVEMENT
ASPHALT PAVEMENT
STAIRS, TYP.
RAILING, TYP.
WHEEL STOP, TYP.
CURB AND GUTTER - MATCH EXISTING
COMPACT
RAMP

SURFACE COVER LEGEND
- PLANTING AREAS
- CONCRETE
- ASPHALT
- BUILDING

LEGEND
- ASPHALT
- CONCRETE
- PLANTING AREAS (SEE LANDSCAPE PLAN)
- LIGHT

NOTES:
1. ALL WRITTEN DIMENSIONS SUPERSEDE SCALED DIMENSIONS. DIMENSIONS ARE REFERENCED PARALLEL OR PERPENDICULAR TO THE PROPOSED ENTITIES. FIELD ADJUST AS NECESSARY.
2. CONTRACTOR SHALL INSTALL EXPANSION JOINTS BETWEEN PLAIN CONCRETE, EXISTING CONCRETE, CURBS, OR STRUCTURES IN ADDITION TO AREAS AS NEEDED. PROVIDE JOINTING PLAN TO PROJECT ARCHITECT PRIOR TO INSTALLATION.
3. THE CONTRACTOR IS RESPONSIBLE FOR SITE STAKING. ALL PROPOSED SITE FEATURES SHALL BE STAKED IN FIELD PRIOR TO CONSTRUCTION. ALL CURVES SHALL BE SMOOTH AND CONTINUOUS WITH CAREFULLY MATCHED TANGENTS. CAD FILE TO BE PROVIDED UPON REQUEST.
4. SEPARATE CONCRETE POURS MUST BE DOWELED UNLESS OTHERWISE PROPOSED BY CONTRACTOR IN WRITING.

LEGEND
- APPROXIMATE SOIL BORING LOCATION
- APPROXIMATE VAPOR POINT LOCATION
- APPROXIMATE SOIL BORING LOCATION (May 2017)
- APPROXIMATE GROUNDWATER MONITORING WELL LOCATION

0 30 ft. 60 ft.
GRAPHIC SCALE

414.220.96
414.220.95
P.O. Box 510
Milwaukee, WI
53203

CONSULTANTS:
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SHEET TITLE: PROPOSED SITE PLAN
15TH & NORTH HOUSING DEVELOPMENT
NORTH AVENUE BETWEEN 16TH AND 16TH STREETS

REVISIONS:
1. DPD – 08-23-20

SCALE: VARIES
PROJECT NUMBER: 150303
SET TYPE: DPD SUBMIT
DATE ISSUED: 07/29/2016: R
SHEET NUMBER: DPD

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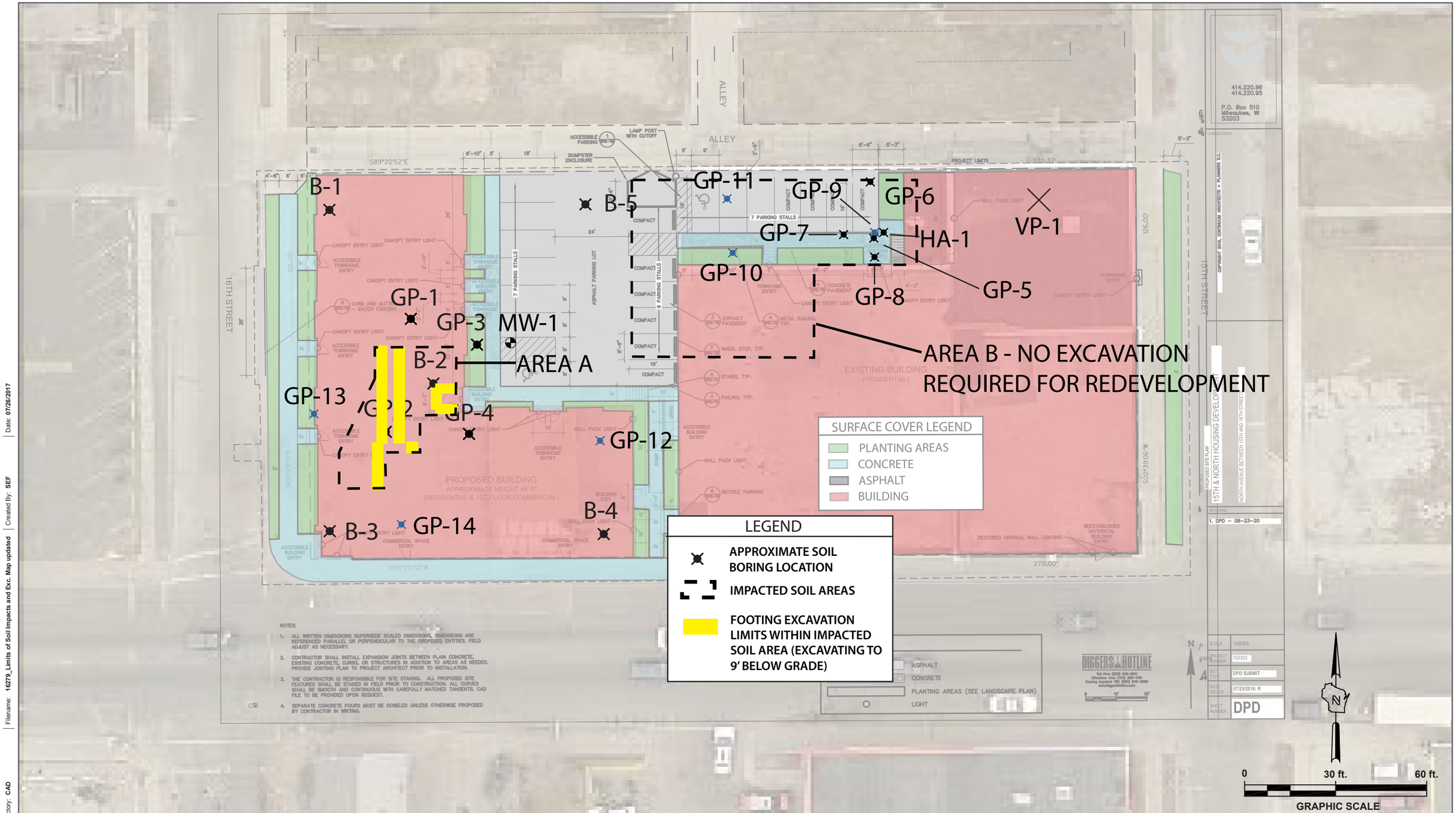
SOIL IMPACTS MAP
1500-1528 WEST NORTH AVENUE MILWAUKEE, WISCONSIN

FIGURE 5

Created By: SEF | Date: 07/26/2017
Filename: 16279_Soil Impacts Map updated
Directory: CAD
Project: 16279



Project: 16279 | Directory: CAD | Filename: 16279_Limits of Soil Impacts and Exc. Map updated | Created By: SEF | Date: 07/26/2017

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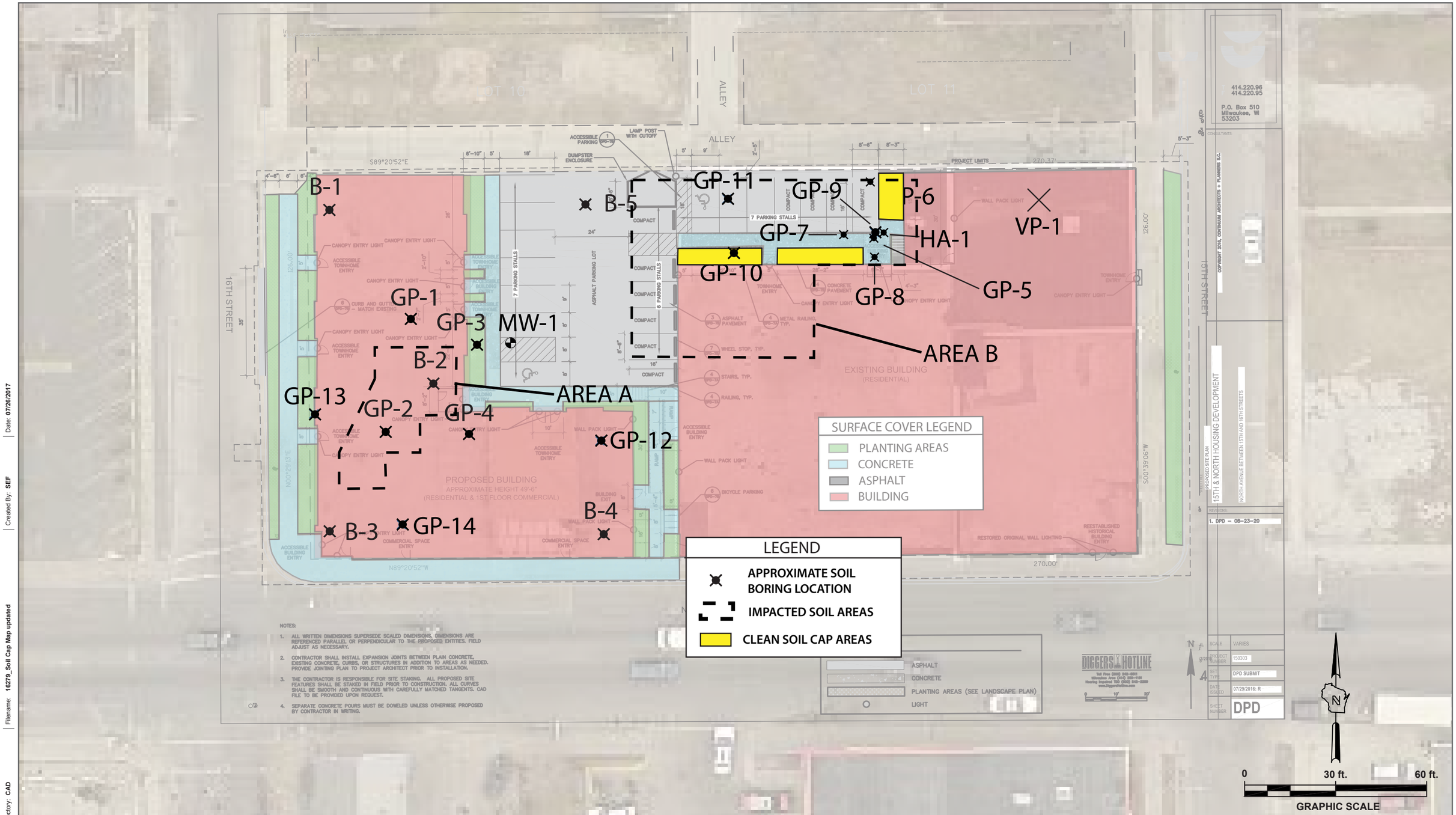
LIMITS OF SOIL IMPACTS AND EXCAVATION MAP
1500-1528 WEST NORTH AVENUE
MILWAUKEE, WISCONSIN

FIGURE
6



Project: 16279 | Directory: CAD | Filename: 16279_Soil Cap Map updated | Created By: SEF | Date: 07/26/2017

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SOIL CAP MAP

1500-1528 WEST NORTH AVENUE MILWAUKEE, WISCONSIN

FIGURE 7