Remedial Action Work Plan (RAWP)

1155 Niagara Street Site C915367
Buffalo, New York

June 2022 0550-020-001

Prepared For: Great Point Studio Management (B) QOZB, LLC

Prepared By:

BENCHMARK

In Association With:

TURNKEY ENVIRONMENTAL RESTORATION, LLC

2558 Hamburg Turnpike, Suite 300, Buffalo, New York 14218 | phone: (716) 856-0599 | fax: (716) 856-0583

REMEDIAL ACTION WORK PLAN

1155 NIAGARA STREET SITE
BUFFALO, NEW YORK
BCP SITE No. C915367

June 2022 0550-020-001

Prepared for:

Great Point Studio Management (B) QOZB, LLC

Prepared by:

BENCHMARK

In Association With:

TURNKEY ENVIRONMENTAL RESTORATION, LLC

Certification

I, Thomas H. Forbes, certify that I am currently a NYS registered professional engineer and that this June 2022 Remedial Action Work Plan (RAWP) for the 1155 Niagara Street Site (C915367) was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

7-6-22

Date

REMEDIAL ACTION WORK PLAN
1155 Niagara Street Site
Buffalo, New York

REMEDIAL ACTION WORK PLAN
1155 Niagara Street Site
Buffalo, New York

LIST OF TABLES

LIST OF FIGURES

APPENDICES

1.0 INTRODUCTION

Benchmark Civil/Environmental Engineering and Geology, PLLC (Benchmark), in association with TurnKey Environmental Restoration, LLC (TurnKey) referred to collectively as Benchmark-TurnKey, has prepared this Remedial Action (RA) Work Plan for the 1155 Niagara Street Site on behalf of Great Point Studio Management (B) QOZB, LLC (aka Great Point Opportunity Fund (A) QOZB, LLC, and referred to jointly as GPSM) has elected to pursue cleanup and redevelopment of the 1155 Niagara Street Site, located in the City of Buffalo, Erie County, New York (see Figures 1 and 2), under the New York State Brownfield Cleanup Program (BCP) and executed a Brownfield Cleanup Agreement (BCA) with the New York State Department of Environmental Conservation (NYSDEC) in April 2021 (Index No. C915367-03-21).

This document presents the scope of work and procedures for completion of the additional remedial measures beyond the Department approved Interim Remedial Measures (IRMs). The remedial activities will be completed by remedial contractors under contract to GPSM and/or Benchmark-TurnKey. The work will be completed in general accordance with 6NYCRR Part 375 and NYSDEC DER-10 guidelines.

1.1 Site Background

The BCP Site is a 3.67-acre parcel, located at the southeast corner of Niagara Street and West Ferry Street, in a highly developed mixed-use residential, commercial, and industrial neighborhood, in the City of Buffalo, Erie County, New York. The Site is currently vacant land (see Figures 1 and 2).

The Site is bound by West Avenue to the east, West Ferry to the North, Niagara Street to the West, and commercial and residential properties to the south.

Portions of the Site were also previously developed with commercial and industrial uses from at least 1925 through the 1980's, including a vehicle garage/storage, a contractor's yard, and a blacksmith, a pipe shop, a garage, and storage, and dairy and beverage manufacturing operation.

1.2 Summary of Environmental Conditions

Based on the RI and historic investigations (see Figure 3), the following environmental conditions were identified for the Site:

Geology/Hydrogeology

- Soils at the Site consists of intermingled soil and fill ranging from surface in some locations to approximately 9 fbgs, and described as clay with fine sand, fine gravel, brick, concrete, cinders, and debris, underlain by native soils described as sandy lean clay to depths of 13-14 fbgs.
- Overburden groundwater was encountered at depths ranging from 6.5 to 9.5 fbgs.
- In general, localized groundwater flow direction was estimated to flow west-northwest.
- The estimated hydraulic gradient for overburden groundwater was calculated to range from 0.007 ft/ft (MW-5 to MW-3) to 0.014 ft/ft (MW-3 to MW-1), with an calculated average hydraulic gradient of 0.0105 ft/ft.
- Bedrock was encountered at all subsurface investigation locations at depths ranging from 8 to 14 fbgs.

Contamination

Surface and Near Surface Soil

RI Results

- No VOCs, PFAS, PCBs, pesticides, or herbicides were detected above USCOs.
- No metals were detected exceeding the RRSCOs, with only lead and mercury exceeding their USCOs at RU COMP 5.
- Elevated polycyclic aromatic hydrocarbons (PAHs) were detected above USCOs, RRSCOs, CSCOs, and ISCOs at one location, RU COMP 2.

Subsurface Soil

Historic Investigation Results

- Elevated VOCs including BTEX-compounds (benzene, toluene, ethylbenzene, and xylene), 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene, were identified exceeding their respective USCOs, RRSCOs, and CSCOs at select locations.
- Elevated PAHs were identified exceeding their respective USCOs, RRSCOs, CSCOs, and ISCOs in shallow fill typically ranging from 1 – 5 feet across the Site.

RI Results

- No VOCs, herbicides, pesticides, or PFAS were detected above USCOs.

- Low level detections of mercury, lead, zinc, and PCBs were detected above their respective USCOs, but all were below CSCOs.
- Certain PAHs were detected exceeding CSCOs and ISCOs at TP-18, TP-24 (5-7 fbgs), and TP-25 (1-4 fbgs).
- Copper was detected exceeding its CSCO at TP-16 (0.5-2 fbgs).
- Total PAHs were all well below the 500 ppm guidance level for commercial use sites.

Groundwater

RI Results

- No PCBs, pesticides, or herbicides were detected above their respective GWQS.
- Elevated VOCs (Freon-11 and Freon-12) were identified in one location, and certain PAHs were detected above GWQSs across the Site.
- Dissolved metals detected above GWQS are limited to naturally occurring minerals.
- One PFAS compound was detected slightly above it guidance value at two locations.

Soil Vapor

RI Results

- Of the eight (8) compounds with NYS SVI Guidance decision matrix screening values, only methylene chloride was detected above the method detection limit, with the estimated values significantly below the associated SSV matrix value of 100 mcg/m^3.

1.3 Primary Constituents of Concern (COCs)

Based on findings of the RI and the completed IRMs, as detailed below, the site-specific Constituents of Concern (COCs) are comprised of the following:

Soil/Fill: Certain PAHs and metals.

Groundwater: VOCs (Freon-11 and Freon-12).

1.4 Remedial Action Objectives

The remedial actions for the 1155 Niagara Street Site must satisfy Remedial Action Objectives (RAOs). Remedial Action Objectives are site-specific statements that convey the goals for minimizing substantial risks to public health and the environment. RAOs remaining for the Site have been defined as:

Soil/Fill

- Prevent ingestion and/or direct contact with contaminated soil/fill.
- Prevent migration of contaminants that would result in groundwater and/or surface water contamination.

Groundwater

- Remove the source of ground or surface water contamination
- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent ingestion of and/or direct contact with groundwater containing contaminant levels exceeding SCGs.

1.5 Project Organization and Responsibilities

GPSM was accepted into the BCP as a non-responsible party (volunteer) per ECL§27-1405. Benchmark-TurnKey will manage the brownfield cleanup on behalf of GPSM. Benchmark Civil/Environmental Engineering and Geology, PLLC, will certify that the remedial measures were completed in general accordance with the Department's approved Work Plan and DER-10 guidance. .

2.0 INTERIM REMEDIAL MEASURES (IRM)

Interim Remedial Measures (IRMs) were completed on-Site in accordance with the Department-approved RI-IRM Work Plan (April 2021). Details of the completed IRMs are presented below. Figures 4A and 4B presents the approximate extents of the IRM excavation areas and post-excavation confirmatory sample locations.

2.1 Petroleum IRM Excavation Activities

Petroleum IRM excavation activities were completed between September 7th and 14th, 2021, to remove historic petroleum impacted soil/fill delineated during the RI (see Figure 4a). The petroleum IRM activities included:

- A total of 6,192 tons of non-hazardous petroleum impacted soil/fill was excavated and transported off-site by Pariso (9A-826) and TurnKey (9A-874), for disposal at Waste Management's Chaffee Landfill, located in Chaffee, New York.
- Collection of fifteen (15) confirmatory samples were collected including 14 sidewall samples and 1 bottom sample. The majority of the petroleum IRM area excavation was completed to bedrock, ranging in depths from approximately 10-12 fbgs. All post-excavation samples for VOCs plus TICs and SVOCs plus TICs are below CSCOs. Field screening of the excavation bottom and sidewalls with PID were all below 25 ppm.

2.2 PAH and Metals IRM Excavation Activities

PAH and metals IRM excavation activities were completed between September 1st and 28th, to remove impacted soil/fill (see Figure 4). Five (5) areas were planned, including TP-1, TP-2, TP-4, TP-16, and TP-18, with estimated and final excavation areas shown on Figure 4b. The PAH and metals IRM activities included:

- A total of 2,280 tons of non-hazardous PAH and metals impacted soil/fill was excavated and transported off-site by Pariso (9A-826) and TurnKey (9A-874), for disposal at Waste Management's Chaffee Landfill, located in Chaffee, New York.
- Collection of a total of 39 confirmatory samples, including 12 from the TP-1 area; 17 from the TP-2/TP-4 area; five (5) form the TP-16 area, and five (5) form the TP-18 area. The excavations were completed to depths ranging from 4-5 fbgs. All post-

excavation sample results were below the CSCO and/or the NYSDEC CP-51 Total PAHs for commercial use site of 500 ppm.

After the excavations were deemed complete, the excavations were backfilled with on-Site material as approved by NYSDEC. Documentation of the completed IRMs described above will be provided in the Final Engineering Report.

3.0 CLEANUP APPROACH

The Alternatives Analysis (AA) identified the selected remedy as a Commercial Use Track 4 cleanup approach. In addition to the completed IRMs, the remedial approach for the Site includes the following elements:

- **Supplemental groundwater assessment**
- **Excavation and offsite disposal of soil/fill,** specifically soil/fill not suitable for on-site reuse generated during DER-10 cover construction.
- **Construction of Cover System,** including demarcation layer underlying 12-inches minimum of DER-10 acceptable backfill in areas without hardscape (building, asphalt and concrete) to address remaining contamination above CSCOs;
- **Implementation of a Site Management Plan (SMP)**. The SMP will include:
    - **Institutional Controls and Engineering Controls (IC/EC)** Engineering controls include any physical barrier or method employed to actively or passively contain, stabilize, or monitor contaminants; restrict the movement of contaminants; or eliminate potential exposure pathways to contaminants. Institutional controls at the site will include groundwater use restrictions and land use restrictions of the Site to commercial use;
    - **Excavation Work Plan** to assure that future intrusive activities and soil/fill handling at the Site are completed in a safe and environmentally responsible manner;
    - **Site Monitoring Plan** that includes: provisions for a Site-wide inspection program to assure that the IC/ECs have not been altered and remain effective; and,
    - **Environmental Easement** filed with Erie County.

3.1 Supplemental Groundwater Assessment

During the RI, dichlorodifluoromethane and trichlorofluoromethane (Freons) were detected exceeding GWQS at MW-4. Freons were not detected in groundwater at any other RI well location. Additionally, no freons were detected in any on-Site soils during the RI. As such, no on-Site source of the freon groundwater contamination has been identified during the RI.

In order to confirm previous results and further assess freon contamination identified at MW-4 a supplemental groundwater assessment will be completed. The assessment will include the collection of groundwater sample from MW-4, and downgradient wells MW-1

and MW-3; and the collection of three (3) additional soil samples, including one (1) upgradient of MW-4 and two (2) downgradient of MW-4 soil samples.

Groundwater and soil samples will be collected in accordance with the procedures identified in the approved RI-IRM-AAR Work Plan (April 2021). Groundwater and soil samples will be analyzed for Target Compound List (TCL) List VOCs. All groundwater samples will be collected and analyzed in accordance with USEPA SW 846 methodology with equivalent NYSDEC Category B deliverables to allow for independent third-party data usability assessment.

If sample results indicate residual freon contamination, a supplemental groundwater remedy (e.g., injection of groundwater treatment amendment) will be prepared and submitted to the Department for review.

3.2 Cover System

Based on the results of the RI and IRMs, remaining contamination is present in on-site soil/fill above Part 375 CSCOs. The remedial evaluation conducted in the RI/IRM/AA Report concluded that a Track 2 cleanup remedy was not practicable; therefore, placement of a cover system is a feasible engineering control to protect human health and the environment. The Track 4 Commercial Use cover system will be comprised of:

- **Non-Vegetated (Hardscape) Areas:** These areas will be covered by asphalt, concrete and/or building. Subbase materials brought to the Site will be assessed in accordance with DER-10, or as otherwise approved by NYSDEC, as described below (Backfill).

  Select components of the redevelopment are also elements of the BCP cover system, including asphalt driveways and parking areas, concrete sidewalks, and building slabs and pavement areas. Therefore, those specific components of the cover system, that are also part of the redevelopment, will be constructed in general accordance with the municipally approved building details. Construction details (prepared by others) are provided electronically in Appendix A for reference.

- **Non-hardscaped (Vegetated) Areas:** In accordance with DER-10 requirements for Commercial Use cleanups, a minimum of 12 inches of approved cover material meeting the requirements of DER-10 Appendix 5 import criteria for

Commercial Sites, will be placed in areas not covered by hardscape. Prior to placement of the approved cover materials, a demarcation layer (e.g., orange plastic mesh,) will be placed to visually reference remaining in-place soil/fill.

A planned cover system layout is provided on Figure 5 with the different cover type elements. Additional construction details related to the building, asphalt, concrete, and landscaping, prepared by others, are provided electronically in Appendix A.

3.2.1 Redevelopment and Cover System Construction Oversight

Benchmark-TurnKey personnel will be present during intrusive activities of the redevelopment and construction of the BCP cover elements to verify that the different cover system elements are constructed in general accordance with the municipally approved civil details, as applicable; and/or soil cover areas are constructed in accordance with Part 375 and DER-10 requirements.

BCP cover system elements construction oversight will include:

- Material Conformance – backfill and surface soil materials will be verified to comply with import criteria per Part 375 and DER-10. The Department will be consulted to confirm import material acceptability.
- Placement of demarcation layer – Per DER-10, areas of the site not covered by hardscape are required to place a demarcation layer to visually identify remaining in-place soil/fill that may exceed the Site SCOs. Demarcation layer will be placed 12-inches below the finished surface grade, and approved cover material meeting the Site import criteria will be placed above the demarcation layer to the surface.
- Cover System Thickness – Per DER-10, Commercial cleanups are required to have a minimum of 12-inches of DEC-approved cover material meeting the DER-10, Appendix 5 Commercial Use Import Criteria in areas of the site not covered by hardscape. Benchmark-TurnKey personnel will field verify that a minimum of 12-inches of acceptable cover material is placed above the demarcation layer to achieve the final surface grade using various measuring methods, including: traditional survey equipment, GPS, laser levels, grade stakes, hand rulers, and/or any combination thereof, as deemed acceptable by the BCP Project Officer (NYS PE), to sufficiently verify that cover thickness meets the

BCP requirements and allow certification. Pre- and post- cover material placement measurements and locations, as applicable, will be recorded by field personnel in the field log; Verification measurements will be collected in accordance with general construction practices of 1 per every 50' by 50' (250 sq. ft).

Where applicable, Benchmark-TurnKey personnel will verify that hardscape cover elements of the redevelopment, subbase and cover material thicknesses are constructed in general accordance with the municipally approved civil design (e.g. asphalt parking lot and concrete sidewalk specification). Any field substitution of materials (e.g., placement of stone in lieu of soils) will be verified conformant with Part 375 and DER-10 and will be identified in the FER.

3.2.2 Off-Site Transportation and Disposal of Non-Hazardous Soil/Fill

If excavated subsurface soil/fill is deemed non-reusable, and/or unable to be reused as backfill beneath the cover system, surplus non-hazardous soil/fill will be transported off-site for disposal at a permitted commercial solid waste disposal facility by licensed haulers; and/or reused off-Site with pre-approval by the Department. If soil/fill can be reused offsite, an Import Request will be prepared and submitted of the Department for review and approval prior to any material leaving the Site for reuse.

Associated reuse and/or disposal documents will be provided in the Final Engineering Report.

3.3 Groundwater Management

Water removed from excavations during remedial activities will be handled on-site prior to discharge. In general, water removed from excavations will be stored/settled in a portable storage tank, and if deemed necessary, sampled to determine if additional pretreatment measures are necessary to discharge.

Benchmark-TurnKey or the Site owner will coordinate with the Department, and/or City of Buffalo to obtain any necessary temporary discharge permits.

3.4 Backfill

3.4.1 Acceptable Backfill Materials

In accordance with DER-10, backfill material used on-site may consist of the following materials:

- Gravel, rock, or stone, consisting of virgin material, from a permitted mine or quarry may be imported, without chemical testing, if it meets the requirements of DER-10, or as otherwise approved by NYSDEC.
- Recycled concrete or brick from a NYSDEC-registered construction and demolition debris processing facility may be imported, without chemical testing, if it meets the requirements of DER-10, or as otherwise approved by NYSDEC.
- Imported soil/fill originating from known off-site sources having no evidence of disposal or releases of hazardous substances; hazardous, toxic or radioactive wastes; or petroleum that meets the chemical criteria of Table 1. No off-site materials meeting the definition of a solid waste as defined in 6NYCRR, Part 360-1.2(a) shall be used as backfill.
- On-site reuse of soil/fill that is placed beneath the cover system demarcation layer in accordance with cover system requirements.

3.4.2 Off-site Source Backfill Characterization Requirements

In addition to the above criteria, backfill materials being imported to the Site will be subject to characterization requirements in accordance with DER-10 Table 5.4(e)10. Results will be provided to the NYSDEC PM for approval prior to material being imported to the Site.

Analytical testing will be performed by an independent NYSDOH ELAP-approved laboratory. An equivalent Category B deliverables package will be furnished with the data to allow data evaluation and preparation of a Data Usability Summary Report by an independent, third-party data validation expert.

3.5 Site Management Plan

For any BCP site not cleaned up to Part 375 Unrestricted Use, preparation of a Site Management Plan (SMP) that describes site-specific Institutional Controls and/or Engineering Controls (IC/EC) is a required component of the final remedy. Therefore, as part of the final remedy for the BCP Site, an SMP will be prepared. Consistent with NYSDEC BCP requirements, the SMP will include the following components:

- **Engineering and Institutional Controls Plan**. Engineering controls include any physical barrier or method employed to actively or passively contain, stabilize, or

monitor contaminants; restrict the movement of contaminants; or eliminate potential exposure pathways to contaminants. Institutional controls at the site will include groundwater use restrictions and use restrictions of the Site to commercial or industrial purposes.

- **Operation and Maintenance Plan** that describes the measures necessary to operate, monitor, and maintain the soil cover system.
- **Excavation Work Plan** to assure that post-remediation intrusive activities and soil/fill handling at the Property related to redevelopment, operation, and maintenance are completed in a safe and environmentally responsible manner.
- **Site Monitoring Plan** that includes: provisions for a groundwater monitoring plan and a Property-wide inspection program to assure that the IC/ECs remain effective.
- **Environmental Easement** filed with Erie County.

4.0 REMEDIAL ACTIVITIES SUPPORT DOCUMENTS

4.1 Health and Safety Protocols

Benchmark-TurnKey has prepared a Health and Safety Plan (HASP) for use by our employees in accordance with 40 CFR 300.150 of the NCP and 29 CFR 1910.120. The HASP, provided in Appendix B, includes the following site-specific information:

- A hazard assessment.
- Training requirements.
- Definition of exclusion, contaminant reduction, and other work zones.
- Monitoring procedures for Site operations.
- Safety procedures.
- Personal protective clothing and equipment requirements for various field operations.
- Disposal and decontamination procedures.

The HASP also includes a contingency plan that addresses potential site-specific emergencies, and a Community Air Monitoring Plan that describes required particulate monitoring to protect the neighboring community during intrusive site remediation activities.

Health and safety activities will be monitored throughout the remedial field activities. A member of the field team will be designated to serve as the Site Safety and Health Officer (SSHO) throughout the field program. This person will report directly to the Project Manager and the Corporate Health and Safety Coordinator. The HASP will be subject to revision as necessary, based on new information that is discovered during the field investigation and/or remedial activities.

4.1.1 Community Air Monitoring

Real-time community air monitoring will be performed during intrusive remedial activities at the Site. A CAMP is included in Appendix C and with Benchmark-TurnKey's HASP. Particulate and VOC monitoring will be performed along the downwind perimeter of the work area during excavation, grading and soil/fill handling activities in accordance with this plan. The CAMP is consistent with the requirements for community air monitoring at remediation sites as established by the NYSDOH and NYSDEC. Accordingly, it generally

follows procedures and practices outlined under NYSDEC's DER-10 (May 2010) Appendix 1A (NYSDOH's Generic Community Air Monitoring Plan) and Appendix 1B (Fugitive Dust and Particulate Monitoring).

In the event of a CAMP exceedance requiring corrective action the Department will be notified.

4.2 Citizen Participation Activities

NYSDEC will coordinate and lead community relations throughout the course of the project with support from Benchmark-TurnKey as requested. A Citizen Participation (CP) Plan has been prepared by Benchmark-TurnKey and approved by NYSDEC. A copy of the CP Plan has been placed in the Buffalo and Erie County Public Library, the designated project document repository. The NYSDEC, with input from Benchmark-TurnKey and Great Point Studio Management (B) QOZB, LLC (aka Great Point Opportunity Fund (A) QOZB, LLC, Great Point Opportunity Fund (B) QOZB, LLC), will issue project fact sheets to keep the public informed of remedial activities.

5.0 REPORTING

5.1 Remedial Activities Reporting

Benchmark-TurnKey will be on-Site during the remedial actions to document remedial activities. Monitoring and documentation of the remedial activities will include: construction stake-out; record drawings; daily reports of activities; community air monitoring results; post-excavation sampling and analysis (if necessary); and progress photographs and sketches.

In the event of a deviation from the Work Plan, the Department will be notified, and appropriate documentation will be provided for review (as necessary).

5.1.1 Field Construction Monitoring

Standard daily reporting procedures will include preparation of an Inspector's Daily Report and, when appropriate, problem identification and corrective measures reports. Appendix D contains sample project documentation forms. Information that may be included on the daily report form includes:

- Processes and locations of construction under way.
- Equipment and personnel working in the area, including subcontractors.
- Number and type of truckloads of soil/fill removed from the site.
- Approximate sampling locations (sketches) or GPS (Trimble) coordinates and sample designations for pre-excavation characterization.
- Excavation locations and depths being excavated.

The completed reports will be available on-site and submitted to the NYSDEC as part of the Final Engineering Report. The NYSDEC will be promptly notified of problems requiring modifications to this Work Plan prior to proceeding or completion of the construction item.

Photo documentation of the remedial activities will be prepared by a field representative throughout the duration of the project as necessary to convey typical work activities, changed conditions, and/or special circumstances.

5.2 Final Engineering Report

A Final Engineering Report (FER) will be prepared at the conclusion of remedial activities. The FER will include the following information and documentation, consistent with the NYSDEC's DER-10 Technical Guidance for Site Remediation:

- Introduction and background.
- A Site or area planimetric map showing the parcel(s) remediated, including significant site features.
- A Site map showing the lateral limits of any excavations.
- Tabular summaries of unit quantities including: volume of soil excavated and disposition of excavated soil.
- Documentation on the disposition of impacted soil removed from the Site.
- Documentation of the cover system, including survey elevations and licensed professional engineer stamped record drawings.
- Copies of daily inspection reports and, if applicable, problem identification and corrective measure reports.
- Photo documentation of remedial activities.
- Text describing the remedial activities performed; a description of any deviations from the Work Plan and associated corrective measures taken; and other pertinent information necessary to document that the Site activities were carried out in accordance with this Work Plan.

In addition, Benchmark-TurnKey will subcontract for third-party data review of verification data by a qualified, independent data validation expert. Specifically, a Data Usability Summary Report (DUSR) will be prepared, with appropriate data qualifiers added to the results. The DUSR format will follow the NYSDEC's September 1997 DUSR guidelines and draft DER-10 guidance. The DUSR and any necessary qualifications to the data will be appended to the FER.

5.3 Site Management Plan

A SMP will be prepared and submitted for the Department's review and approval. The SMP will include an: Engineering and Institutional Control Plan; Operation and Maintenance Plan; Excavation Plan; a Site Monitoring Plan; and, an Environmental Easement.

6.0 PROJECT SCHEDULE

The anticipated project schedule for the major tasks to be performed during implementation of the Remedial Action are planned as follows:

- June-December 2022 – Complete remedial activities and cover system construction.
- June-August 2022 – Submit draft Environmental Easement
- August 1, 2022 - Submit draft Site Management Plan (SMP)
- October 1, 2022 – Submit draft Final Engineeirng Report (FER), submit final SMP and file Environmental Easement with local municipality..
- November 15, 2022 – Submit Final FER
- December 2022 – Receive Certificate of Completion (COC)

7.0 REFERENCES

1. New York State Department of Environmental Conservation. *Sampling, Analysis, and Assessment of Per- And Polyfluoroalkyl Substances (PFAS) Under NYSDEC's Part 375 Remedial Programs*. January 2021.

2. New York State Department of Environmental Conservation. *DER-10; Technical Guidance for Site Investigation and Remediation.* May 2010.

3. NYS Department of Health. *The Guidance for Evaluating Soil Vapor Intrusion in the State of New York.* October 2006, and subsequent updates.

4. *6 NYCRR Part 375 Environmental Remediation Programs*. December 2006.

5. New York State Department of Environmental Conservation Division of Water Technical and Operation Guidance (TOGS). *1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations*. June 1998.

6. United States Department of Agriculture (USDA), Soil Conservation Service. *Soil Survey of Erie County, New York.* December 1986.

7. GHD, *Limited Phase II Investigation Results, Rich Products Corporation, 1145 Niagara Street, Buffalo New York*. November 2019.

8. TurnKey Environmental Restoration, LLC. *Limited Phase II Environmental Investigation, 1155 Niagara Street Site, Buffalo New York*. October 2020.

9. Benchmark Environmental Engineering and Science, PLLC, in association with TurnKey Environmental Restoration, LLC. *Work Plan for Remedial Investigation/Interim Remedial Measures. 1155 Niagara Street (C915367), Buffalo, New York*. Revised April 2021.

10. Benchmark Environmental Engineering and Science, PLLC, in association with TurnKey Environmental Restoration, LLC. *Remedial Investigation/Interim Remedial Measures/Alternatives Analysis Report, 1155 Niagara Street (C915367), Buffalo, New York*. Rev April 2022.

TABLES

TURNKEY BENCHMARK

TABLE 1
CRITERIA FOR USE OF OFF-SITE SOIL
REMEDIAL ACTION WORK PLAN
1155 NIAGARA STREET SITE
BUFFALO, NEW YORK

Parameter	Allowable Concentration[1] for Use of Off-Site Soil
Volatile Organic Compounds (mg/kg)	
1,1,1-Trichloroethane	0.68
1,1-Dichloroethane	0.27
1,1-Dichloroethene	0.33
1,2-Dichlorobenzene	1.1
1,2-Dichloroethane	0.02
1,2-Dichloroethene(cis)	0.25
1,2-Dichloroethene(trans)	0.19
1,3-Dichlorobenzene	2.4
1,4-Dichlorobenzene	1.8
1,4-Dioxane	0.1
Acetone	0.05
Benzene	0.06
Butylbenzene	12
Carbon tetrachloride	0.76
Chlorobenzene	1.1
Chloroform	0.37
Ethylbenzene	1
Hexachlorobenzene	3.2
Methyl ethyl ketone	0.12
Methyl tert-butyl ether	0.93
Methylene chloride	0.05
Propylbenzene-n	3.9
Sec-Butylbenzene	11
Tert-Butylbenzene	5.9
Tetrachloroethene	1.3
Toluene	0.7
Trichloroethene	0.47
Trimethylbenzene-1,2,4	3.6

TURNKEY BENCHMARK

TABLE 1
CRITERIA FOR USE OF OFF-SITE SOIL
REMEDIAL ACTION WORK PLAN
1155 NIAGARA STREET SITE
BUFFALO, NEW YORK

Parameter	Allowable Concentration[1] for Use of Off-Site Soil
Volatile Organic Compounds (mg/kg)	
Trimethylbenzene-1,3,5	8.4
Vinyl chloride	0.02
Xylene (mixed)	1.6
Semi-Volatile Organic Compounds (mg/kg)	
Acenaphthene	98
Acenaphthylene	107
Anthracene	500
Benzo(a)anthracene	1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1.7
Benzo(g,h,i)perylene	500
Benzo(k)fluoranthene	1.7
Chrysene	1
Dibenz(a,h)anthracene	0.56
Fluoranthene	500
Fluorene	386
Indeno(1,2,3-cd)pyrene	5.6
m-Cresol(s)	0.33
Naphthalene	12
o-Cresol(s)	0.33
p-Cresol(s)	0.33
Pentachlorophenol	0.8
Phenanthrene	500
Phenol	0.33
Pyrene	500

TURNKEY BENCHMARK

TABLE 1
CRITERIA FOR USE OF OFF-SITE SOIL
REMEDIAL ACTION WORK PLAN
1155 NIAGARA STREET SITE
BUFFALO, NEW YORK

Parameter	Allowable Concentration[1] for Use of Off-Site Soil
Metals (mg/kg)	
Arsenic	16
Barium	400
Beryllium	47
Cadmium	7.5
Chromium, Hexavalent[2]	19
Chromium, Trivalent[2]	1500
Copper	270
Cyanide	27
Lead	450
Manganese	2000
Mercury (total)	0.73
Nickel	130
Selenium	4
Silver	8.3
Zinc	2480
PCBs/Pesticides (mg/kg)	
2,4,5-TP Acid (Silvex)	3.8
4,4'-DDE	17
4,4'-DDT	47
4,4'-DDD	14
Aldrin	0.19
Alpha-BHC	0.02
Beta-BHC	0.09
Chlordane (alpha)	2.9
Delta-BHC	0.25
Dibenzofuran	210
Dieldrin	0.1
Endosulfan I	102
Endosulfan II	102

TABLE 1
CRITERIA FOR USE OF OFF-SITE SOIL
REMEDIAL ACTION WORK PLAN
1155 NIAGARA STREET SITE
BUFFALO, NEW YORK

Parameter	Allowable Concentration[1] for Use of Off-Site Soil
PCBs/Pesticides (mg/kg)	
Endosulfan sulfate	200
Endrin	0.06
Heptachlor	0.38
Lindane	0.1
Polychlorinated biphenyls	1

Notes:

1. The lower of Commercial SCO and Protection of Groundwater SCO per 6NYCRR Part 375-6.8(b)
2. The SCO for Hexavalent or Trivalent Chromium is considered to be met if the analysis for the total species of this contaminant is below the specific SCO for Hexavalent Chromium.

TABLE 2
SUMMARY OF PETROLEUM IRM POST-EXCAVATION SOIL ANALYTICAL RESULTS
REMEDIAL ACTION WORK PLAN
1155 NIAGARA STREET SITE
BCP SITE NO. C915367
BUFFALO, NEW YORK

Parameter [1]	Unrestricted Use SCOs[2]	Commercial Use SCOs[2]	Sample Location														
			Bottom 1	N Wall 1	N Wall 2	N Wall 3	N Wall 4	E Wall 1	E Wall 2	E Wall 3	E Wall 4	W Wall 1	W Wall 2	W Wall 3	W Wall 4	S Wall 1	S Wall 2
			9/7/2021	9/10/2021				9/7/2021	9/8/2021	9/9/2021	9/16/2021	9/7/2021	9/10/2021		9/14/2021	9/7/2021	
Volatile Organic Compounds (VOCs) - mg/kg [3]																	
Acetone	**0.05**	**500**	ND	0.012	ND	0.024	0.023	0.007 J	ND	0.013	0.014	ND	ND	0.0083 J	0.00016 J	0.02	0.01
2-Butanone (MEK)	**0.12**	**500**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0028 J	ND
Chloroform	**--**	**350**	ND	ND	ND	ND	ND	ND	ND	0.00026 J	ND	ND	ND	ND	ND	ND	ND
Cyclohexane	**--**	**--**	ND	ND	ND	0.0075 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene (Cumene)	**--**	**--**	ND	ND	ND	0.0029	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylcyclohexane	**--**	**--**	ND	ND	ND	0.036	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	**3.6**	**190**	ND	ND	ND	0.00087 J	ND	ND	ND	ND	ND	ND	ND	ND	0.00089 J	ND	ND
1,3,5-Trimethylbenzene	**8.4**	**190**	ND	ND	ND	0.00068 J	ND	ND	ND	ND	ND	ND	ND	ND	0.00037 J	ND	ND
p/m-Xylene	**0.26**	**500**	ND	ND	ND	ND	ND	ND	ND	ND	0.0012 J	ND	ND	ND	ND	ND	ND
o-Xylenes	**0.26**	**500**	ND	ND	ND	0.00038 J	ND	ND	ND	ND	0.00039 J	ND	ND	ND	ND	ND	ND
Total Xylene	**0.26**	**500**	ND	ND	ND	0.00038	ND	ND	ND	ND	0.00159 J	ND	ND	ND	ND	ND	ND
n-Propylbenzene	**3.9**	**500**	ND	ND	ND	0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-Cymene (p-isopropyltoluene)	**--**	**--**	ND	ND	ND	0.0066	ND	ND	ND	ND	ND	ND	ND	ND	0.00017 J	ND	ND
n-Butylbenzene	**12**	**500**	ND	ND	ND	0.006	ND	ND	ND	ND	ND	ND	ND	ND	0.00026 J	ND	ND
sec-Butylbenzene	**11**	**500**	ND	ND	ND	0.006	ND	ND	ND	ND	ND	ND	ND	ND	0.00027 J	ND	ND
Toluene	**0.7**	**500**	ND	ND	ND	ND	ND	ND	ND	ND	0.00062 J	ND	ND	ND	ND	ND	ND
Ethylbenzene	**1**	**390**	ND	ND	ND	0.00059 J	ND	ND	ND	ND	0.00028 J	ND	ND	ND	ND	ND	ND
Semi-Volatile Organic Compounds (SVOCs) - mg/kg [3]																	
Acenaphthene	**20**	**500**	ND	0.023 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.083 J	ND
Acetophenone	**--**	**--**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.062 J	ND
Anthracene	**100**	**500**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.18	ND
Benzo(a)anthracene	**1**	**5.6**	ND	0.074 J	ND	0.042 J	0.091 J	ND	ND	ND	ND	0.042 J	ND	0.024 J	0.059 J	0.54	0.11 J
Benzo(a)pyrene	**1**	**1**	ND	0.08 J	ND	ND	0.092 J	ND	ND	ND	ND	ND	ND	ND	0.053 J	0.49	0.1 J
Benzo(b)fluoranthene	**1**	**5.6**	ND	0.086 J	ND	0.039 J	0.11 J	ND	ND	ND	ND	0.046 J	ND	ND	0.067 J	0.63	0.12
Benzo(g,h,i)perylene	**100**	**500**	ND	0.057 J	ND	ND	0.058 J	ND	ND	ND	ND	ND	ND	ND	0.034 J	0.29	0.061 J
Benzo(k)fluoranthene	**0.8**	**56**	ND	ND	ND	ND	0.039 J	ND	ND	ND	ND	ND	ND	ND	ND	0.24	0.052 J
Bis(2-ethylhexyl) phthalate	**--**	**--**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.14 J	ND
Butyl benzyl phthalate	**--**	**--**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.14 J	ND
Carbazole	**--**	**--**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.089 J	ND
Chrysene	**1**	**56**	ND	0.068 J	ND	0.032 J	0.084 J	ND	ND	ND	ND	0.035 J	ND	ND	0.06 J	0.49	0.1 J
Dibenzo(a,h)anthracene	**0.33**	**0.56**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.076 J	ND
Dibenzofuran	**7**	**350**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.035 J	ND
Fluoranthene	**100**	**500**	ND	0.12	ND	0.084 J	0.17	ND	ND	ND	ND	0.081 J	ND	0.041 J	ND	1.3	0.25
Fluorene	**30**	**500**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.066 J	ND
Indeno(1,2,3-cd)pyrene	**0.5**	**5.6**	ND	0.062 J	ND	ND	0.061 J	ND	ND	ND	ND	ND	ND	ND	0.038 J	0.3	0.065 J
Phenanthrene	**100**	**500**	ND	0.14	ND	0.066 J	0.11 J	ND	ND	ND	ND	0.044 J	ND	0.047 J	0.044 J	0.65	0.14
Pyrene	**100**	**500**	ND	0.12	ND	0.07 J	0.14	ND	ND	ND	ND	0.063 J	ND	0.034 J	0.1 J	1.1	0.21
Total PAHs	**--**	**500**	0	0.83 J	0	0.333	0.955	0	0	0	0	0.311	0	0.146	0.455	6.435	1.208

Notes:
1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Values per 6NYCRR Part 375 Soil Cleanup Objectives (SCOs).
3. Sample results were reported by the laboratory in micograms per kilogram (ug/kg) and converted to milligram per kilogram (mg/kg) for comparison to SCOs.

Definitions:
mg/kg = milligrams per kilogram
ND = Parameter not detected above laboratory detection limit
J = Result is less than the RL but greater or equal to the MDL and the concentration is an approximate value, indicates estimated value for TICs.

BOLD	= Result exceeds Unrestricted Use SCOs.
BOLD	= Result exceeds Commercial Use SCOs.

TABLE 3a
SUMMARY OF TP-1 IRM POST-EXCAVATION SOIL ANALYTICAL RESULTS
REMEDIAL ACTION WORK PLAN
1155 NIAGARA STREET SITE
BCP SITE NO. C915367
BUFFALO, NEW YORK

Parameter [1]	Unrestricted Use SCOs[2]	Commercial Use SCOs[2]	Sample Location											
			TP-1 N Wall 9	TP-1 N Wall 11	TP-1 S Wall	TP-1 S Wall 2	TP-1 E Wall 2	TP-1 E Wall 3	TP-1 W Wall	TP-1 W Wall 2	TP-1 W Wall 3	TP-1 Bottom 1	TP-1 Bottom 2	TP-1 Bottom 3
			9/20/2021	9/27/2021	9/1/2021	9/2/2021	9/14/2021	9/17/2021	9/1/2021	9/17/2021	9/27/2021	9/2/2021		9/17/2021
Semi-Volatile Organic Compounds (SVOCs) - mg/kg [3]														
Acenaphthene	**20**	**500**	0.27	0.17	ND	ND	ND	ND	ND	0.043 J	ND	ND	ND	ND
Acenaphthylene	**100**	**500**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	**100**	**500**	0.59	0.083 J	ND	ND	ND	ND	ND	0.1 J	0.041 J	ND	ND	ND
Benzo(a)anthracene	**1**	**5.6**	**1.2**	0.21	0.063 J	0.085 J	ND	ND	ND	0.2	0.07 J	ND	0.041 J	ND
Benzo(a)pyrene	**1**	**1**	**1**	0.19	0.054 J	0.083 J	ND	ND	ND	0.17	0.055 J	ND	ND	ND
Benzo(b)fluoranthene	**1**	**5.6**	**1.3**	0.24	0.075 J	0.12	ND	ND	ND	0.23	0.072 J	ND	0.05 J	ND
Benzo(g,h,i)perylene	**100**	**500**	0.54	0.11 J	0.035 J	0.049 J	ND	ND	ND	0.089 J	0.028 J	ND	0.022 J	ND
Benzo(k)fluoranthene	**0.8**	**56**	0.46	0.068 J	ND	0.031 J	ND	ND	ND	0.072 J	ND	ND	ND	ND
Chrysene	**1**	**56**	0.98	0.21	0.06 J	0.072 J	ND	ND	ND	0.18	0.063 J	ND	0.032 J	ND
Dibenzo(a,h)anthracene	**0.33**	**0.56**	0.16	0.029 J	ND	ND	ND	ND	ND	0.028 J	ND	ND	ND	ND
Fluoranthene	**100**	**500**	2.5	0.43	0.13	0.17	ND	0.034 J	ND	0.46	0.15	ND	0.074 J	ND
Fluorene	**30**	**500**	0.27	0.089 J	ND	ND	ND	ND	ND	0.046 J	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	**0.5**	**5.6**	**0.69**	0.13 J	0.042 J	0.061 J	ND	ND	ND	0.11 J	0.038 J	ND	0.027 J	ND
Phenanthrene	**100**	**500**	2.1	0.36	0.078 J	0.12	ND	ND	ND	0.38	0.14	ND	0.059 J	ND
Pyrene	**100**	**500**	1.9	0.45	0.11	0.13	ND	0.027 J	ND	0.34	0.12	ND	0.058 J	ND
Naphthalene	**12**	**500**	0.18	1.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total PAHs	**--**	**500**	14.14	4.369	0.647 J	0.921 J	ND	0.061	ND	2.448 J	0.777 J	ND	0.363 J	ND

Notes:
1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Values per 6NYCRR Part 375 Soil Cleanup Objectives (SCOs).
3. Sample results were reported by the laboratory in micograms per kilogram (ug/kg) and converted to milligram per kilogram (mg/kg) for comparison to SCOs.

Definitions:
mg/kg = milligrams per kilogram
ND = Parameter not detected above laboratory detection limit
J = Result is less than the RL but greater or equal to the MDL and the concentration is an approximate value, indicates estimated value for TICs.

BOLD	= Result exceeds Unrestricted Use SCOs.
BOLD	= Result exceeds Commercial Use SCOs.

TABLE 3b
SUMMARY OF TP-2 AND TP-4 IRM POST-EXCAVATION SOIL ANALYTICAL RESULTS
REMEDIAL ACTION WORK PLAN
1155 NIAGARA STREET SITE
BCP SITE NO. C915367
BUFFALO, NEW YORK

Parameter [1]	Unrestricted Use SCOs[2]	Commercial Use SCOs[2]	Sample Location																
			TP-2 S Wall	TP-2 E Wall 2	TP-2 E Wall 4	TP-2 W Wall 3	TP-2 Bottom 1	TP-2 Bottom 2	TP-2 Bottom 3	TP-4 N Wall 2	TP-4 N Wall 3	TP-4 S Wall 2	TP-4 E Wall 3	TP-4 E Wall 4	TP-4 W Wall	TP-4 W Wall 2	TP-4 Bottom 1	TP-4 Bottom 2	TP-4 Bottom 3
			9/1/2021	9/14/2021	9/27/2021	9/14/2021	9/2/2021	9/20/2021	9/21/2021	9/14/2021			9/17/2021		9/1/2021	9/16/2021	9/3/2021	9/16/2021	9/21/2021
Semi-Volatile Organic Compounds (SVOCs) - mg/kg [3]																			
Acenaphthene	**20**	**500**	ND	0.1 J	0.66	0.031 J	ND	0.046 J	ND	0.11 J	ND	ND	0.18	0.049 J	ND	0.097 J	0.064 J	0.11 J	ND
Acenaphthylene	**100**	**500**	ND	ND	0.037 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.033 J	ND	ND	ND
Anthracene	**100**	**500**	ND	0.25	1.6	0.12	ND	0.12	ND	0.28	ND	ND	0.3	0.097 J	0.037 J	0.22	0.1 J	0.26	ND
Benzo(a)anthracene	**1**	**5.6**	0.064 J	0.46	**2.3**	0.25	ND	0.32	0.033 J	0.39	0.058 J	0.028 J	0.54	0.22	0.1 J	0.38	0.22	0.48	ND
Benzo(a)pyrene	**1**	**1**	ND	0.39	**2**	0.17	ND	0.28	ND	0.32	0.048 J	ND	0.46	0.21	0.098 J	0.31	0.19	0.4	ND
Benzo(b)fluoranthene	**1**	**5.6**	0.061 J	0.48	**2.5**	0.29	ND	0.37	0.034 J	0.42	0.06 J	0.035 J	0.6	0.28	0.14	0.4	0.27	0.51	ND
Benzo(g,h,i)perylene	**100**	**500**	0.022 J	0.23	0.92	0.12 J	ND	0.17	ND	0.17	0.036 J	ND	0.22	0.12 J	0.068 J	0.17	0.11 J	0.21	ND
Benzo(k)fluoranthene	**0.8**	**56**	ND	0.2	**0.89**	0.079 J	ND	0.15	ND	0.14	ND	ND	0.2	0.1 J	0.043 J	0.14	0.058 J	0.18	ND
Chrysene	**1**	**56**	0.059 J	0.44	**2**	0.29	ND	0.3	0.029 J	0.36	0.058 J	0.026 J	0.47	0.21	0.11	0.34	0.2	0.4	ND
Dibenzo(a,h)anthracene	**0.33**	**0.56**	ND	0.068 J	0.29	0.04 J	ND	0.044 J	ND	0.05 J	ND	ND	0.072 J	0.035 J	ND	0.053 J	0.032 J	0.063 J	ND
Fluoranthene	**100**	**500**	0.14	0.99 J	4.8	0.81	0.034 J	0.74	0.068 J	0.88	0.13	0.04 J	1.3	0.52	0.22	0.86	0.53	1	ND
Fluorene	**30**	**500**	ND	0.11 J	0.68	0.062 J	ND	0.042 J	ND	0.12 J	ND	ND	0.19 J	0.057 J	0.018 J	0.1 J	0.05 J	0.12 J	ND
Indeno(1,2,3-cd)pyrene	**0.5**	**5.6**	ND	0.28	**1.2**	0.15	ND	0.2	ND	0.21	0.038 J	ND	0.29	0.14 J	0.073 J	0.2	0.13 J	0.27	ND
Phenanthrene	**100**	**500**	0.12	0.9	5	0.92	0.03 J	0.49	0.055 J	0.93	0.089 J	0.027 J	1.2	0.4	0.14	0.8	0.46	0.88	ND
Pyrene	**100**	**500**	0.11	0.76	3.5	0.5	0.028 J	0.58	0.052 J	0.66	0.1 J	0.034 J	0.92	0.39	0.18	0.66	0.44	0.77	ND
Naphthalene	**12**	**500**	ND	0.075 J	0.52	0.03 J	ND	0.026 J	ND	0.085 J	ND	ND	0.22	ND	ND	0.035 J	ND	0.073 J	ND
Total PAHs	**--**	**500**	0.576 J	5.733 J	28.897	3.862 J	0.092	3.878 J	ND	5.125 J	0.617 J	0.19 J	7.162	2.828 J	1.227 J	4.798 J	2.854 J	5.726 J	ND

Notes:
1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Values per 6NYCRR Part 375 Soil Cleanup Objectives (SCOs).
3. Sample results were reported by the laboratory in micograms per kilogram (ug/kg) and converted to milligram per kilogram (mg/kg) for comparison to SCOs.

Definitions:
mg/kg = milligrams per kilogram
ND = Parameter not detected above laboratory detection limit
J = Result is less than the RL but greater or equal to the MDL and the concentration is an approximate value, indicates estimated value for TICs.

BOLD	= Result exceeds Unrestricted Use SCOs.
BOLD	= Result exceeds Commercial Use SCOs.

TABLE 3c
SUMMARY OF TP-16 IRM POST-EXCAVATION SOIL ANALYTICAL RESULTS
REMEDIAL ACTION WORK PLAN
1155 NIAGARA STREET SITE
BCP SITE NO. C915367
BUFFALO, NEW YORK

Parameter [1]	Unrestricted Use SCOs [2]	Commercial Use SCOs [2]	Sample Location				
			TP-16 N Wall	TP-16 S Wall	TP-16 E Wall 2	TP-16 W Wall	TP-16 Bottom
			9/1/2021		9/14/2021	9/1/2021	9/3/2021
Semi-Volatile Organic Compounds (SVOCs) - mg/kg [3]							
Acenaphthene	**20**	**500**	ND	ND	ND	ND	ND
Acenaphthylene	**100**	**500**	ND	ND	ND	ND	ND
Anthracene	**100**	**500**	0.04 J	0.038 J	ND	0.055 J	ND
Benzo(a)anthracene	**1**	**5.6**	0.12	0.12	ND	0.25	0.028 J
Benzo(a)pyrene	**1**	**1**	0.11 J	0.1 J	ND	0.3	ND
Benzo(b)fluoranthene	**1**	**5.6**	0.14	0.13	ND	0.39	0.032 J
Benzo(g,h,i)perylene	**100**	**500**	0.066 J	0.066 J	ND	0.2	ND
Benzo(k)fluoranthene	**0.8**	**56**	0.047 J	0.046 J	ND	0.12	ND
Chrysene	**1**	**56**	0.13	0.12	ND	0.24	0.022 J
Dibenzo(a,h)anthracene	**0.33**	**0.56**	ND	ND	ND	0.056 J	ND
Fluoranthene	**100**	**500**	0.27	0.22	ND	0.35	0.052 J
Fluorene	**30**	**500**	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	**0.5**	**5.6**	0.072 J	0.072 J	ND	0.24	ND
Phenanthrene	**100**	**500**	0.15	0.12	ND	0.16	0.042 J
Pyrene	**100**	**500**	0.22	0.18	ND	0.31	0.04 J
Naphthalene	**12**	**500**	ND	ND	ND	ND	ND
Total PAHs	**--**	**500**	1.365 J	1.212 J	ND	2.671	0.216
Metals - mg/kg							
Aluminum	**--**	**--**	7340	8650	--	2170	6860
Antimony	**--**	**--**	ND	ND	--	1.95 J	ND
Arsenic	**13**	**16**	9.33	5.76	--	6.94	2.9
Barium	**350**	**400**	128	81.8	--	31.8	58.4
Beryllium	**7.2**	**590**	0.514	0.498 J	--	0.165 J	0.314 J
Cadmium	**2.5**	**9.3**	0.193 J	ND	--	0.19 J	ND
Calcium	**--**	**--**	60000	59200	--	82600	76600
Chromium [4]	**30**	**1500**	15.6	15	--	7.27	11.7
Cobalt	**--**	**--**	5.97	6.12	--	2.18	5
Copper	**50**	**270**	47	24.1	--	33.1	14.1
Iron	**--**	**--**	18200	17700	--	8560	13800
Lead	**63**	**1000**	**174**	**76.9**	--	**137**	18.5
Magnesium	**--**	**--**	10000	14500	--	4990	18400
Manganese	**1600**	**10000**	354	426	--	200	356
Mercury	**0.18**	**2.8**	**0.184**	**0.214**	--	0.176	ND
Nickel	**30**	**310**	13.7	13.3	--	8.84	11.3
Potassium	**--**	**--**	1260	1360	--	417	1450
Silver	**2**	**1500**	**2.09**	ND	--	ND	ND
Sodium	**--**	**--**	337	232	--	220	172 J
Vanadium	**--**	**--**	20.7	21.1	--	10.1	17.4
Zinc	**109**	**10000**	**163**	84.2	--	99.9	82

Notes:
1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Values per 6NYCRR Part 375 Soil Cleanup Objectives (SCOs).
3. Sample results were reported by the laboratory in micograms per kilogram (ug/kg) and converted to milligram per kilogram (mg/kg) for comparison to SCOs.

Definitions:
-- = No SCO available, or parameter not tested for.
ND = Parameter not detected above laboratory detection limit
J = Result is less than the RL but greater or equal to the MDL and the concentration is an approximate value, indicates estimated value for TICs.

BOLD	= Result exceeds Unrestricted Use SCOs.
BOLD	= Result exceeds Commercial Use SCOs.

TURNKEY BENCHMARK

TABLE 3d
SUMMARY OF TP-18 IRM POST-EXCAVATION SOIL ANALYTICAL RESULTS
REMEDIAL ACTION WORK PLAN
1155 NIAGARA STREET SITE
BCP SITE NO. C915367
BUFFALO, NEW YORK

Parameter [1]	Unrestricted Use SCOs[2]	Commercial Use SCOs[2]	Sample Location				
			TP-18 N Wall	TP-18 S Wall	TP-18 E Wall	TP-18 W Wall	TP-18 Bottom
			9/1/2021				9/3/2021
Semi-Volatile Organic Compounds (SVOCs) - mg/kg [3]							
Acenaphthene	**20**	**500**	0.021 J	ND	ND	ND	ND
Acenaphthylene	**100**	**500**	ND	ND	0.039 J	ND	ND
Anthracene	**100**	**500**	0.045 J	ND	0.048 J	ND	ND
Benzo(a)anthracene	**1**	**5.6**	0.12	0.11 J	0.23	0.12	ND
Benzo(a)pyrene	**1**	**1**	0.11 J	0.071 J	0.22	0.11 J	ND
Benzo(b)fluoranthene	**1**	**5.6**	0.14	0.1 J	0.31	0.18	ND
Benzo(g,h,i)perylene	**100**	**500**	0.074 J	0.036 J	0.12 J	0.058 J	ND
Benzo(k)fluoranthene	**0.8**	**56**	0.051 J	0.034 J	0.11 J	0.062 J	ND
Chrysene	**1**	**56**	0.12	0.1 J	0.26	0.13	ND
Dibenzo(a,h)anthracene	**0.33**	**0.56**	ND	ND	0.033 J	ND	ND
Fluoranthene	**100**	**500**	0.25	0.22	0.44	0.18	ND
Fluorene	**30**	**500**	0.02 J	ND	0.02 J	ND	ND
Indeno(1,2,3-cd)pyrene	**0.5**	**5.6**	0.08 J	0.044 J	0.14 J	0.07 J	ND
Phenanthrene	**100**	**500**	0.16	0.17	0.23	0.1 J	ND
Pyrene	**100**	**500**	0.2	0.18	0.36	0.15	ND
Naphthalene	**12**	**500**	ND	ND	ND	ND	ND
Total PAHs	**--**	**500**	1.391 J	1.065 J	2.56 J	1.16 J	ND

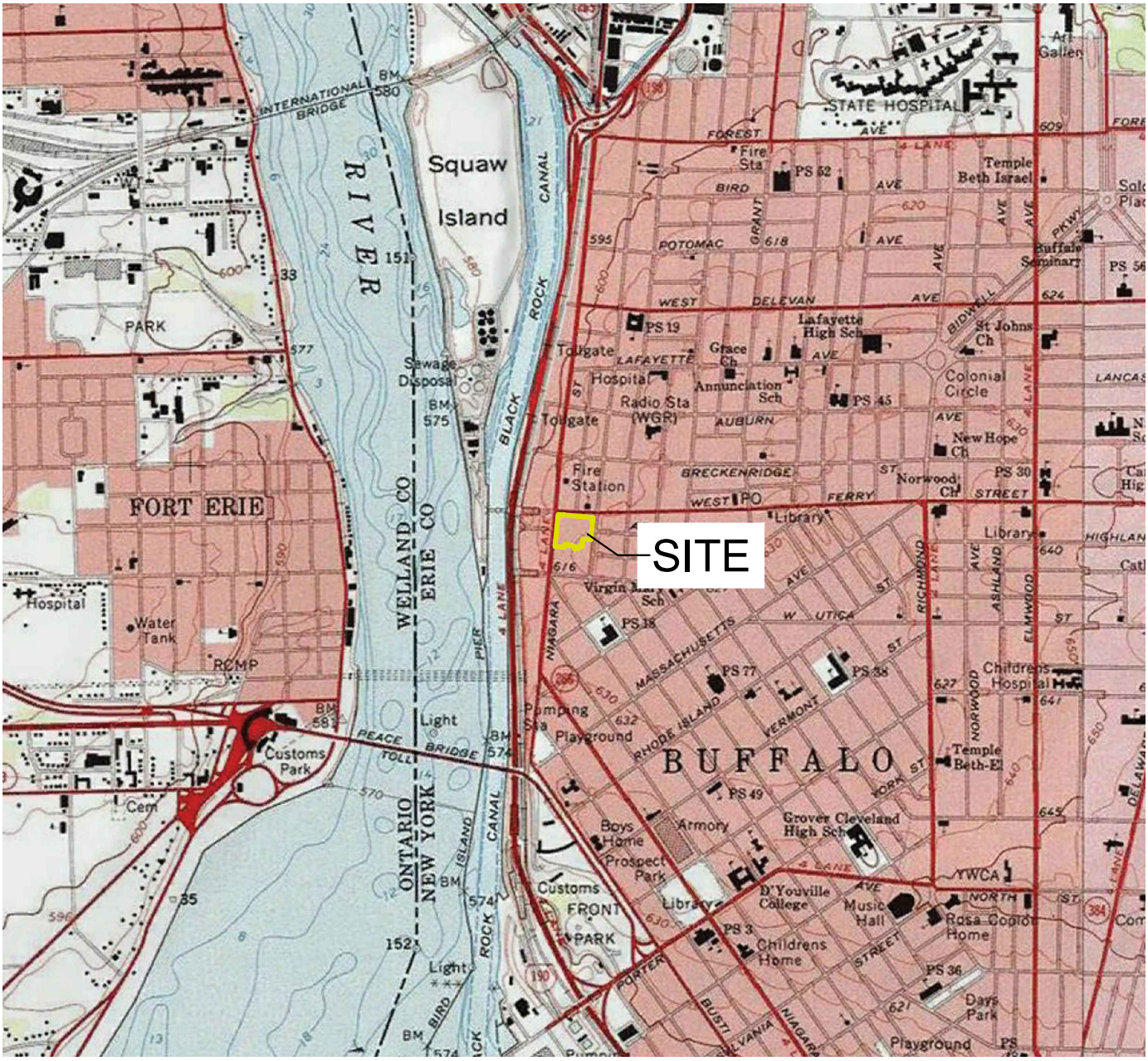
Notes:
1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Values per 6NYCRR Part 375 Soil Cleanup Objectives (SCOs).
3. Sample results were reported by the laboratory in micograms per kilogram (ug/kg) and converted to milligram per kilogram (mg/kg) for comparison to SCOs.

Definitions:
-- = No SCO available, or parameter not tested for.
ND = Parameter not detected above laboratory detection limit
J = Result is less than the RL but greater or equal to the MDL and the concentration is an approximate value, indicates estimated value for TICs.

BOLD	= Result exceeds Unrestricted Use SCOs.
BOLD	= Result exceeds Commercial Use SCOs.

FIGURES

FIGURE 1



N

2000' 0' 2000' 4000'

SCALE: 1 INCH = 2000 FEET
SCALE IN FEET
(approximate)

LEGEND:

PROPERTY BOUNDARY

BENCHMARK IN ASSOCIATION WITH TURNKEY ENVIRONMENTAL RESTORATION, LLC

2558 HAMBURG TURNPIKE, SUITE 300, BUFFALO, NY 14218, (716) 856-0599

PROJECT NO.: T0550-020-001

DATE: MARCH 2022

DRAFTED BY: CMS-CMC

SITE LOCATION AND VICINITY MAP

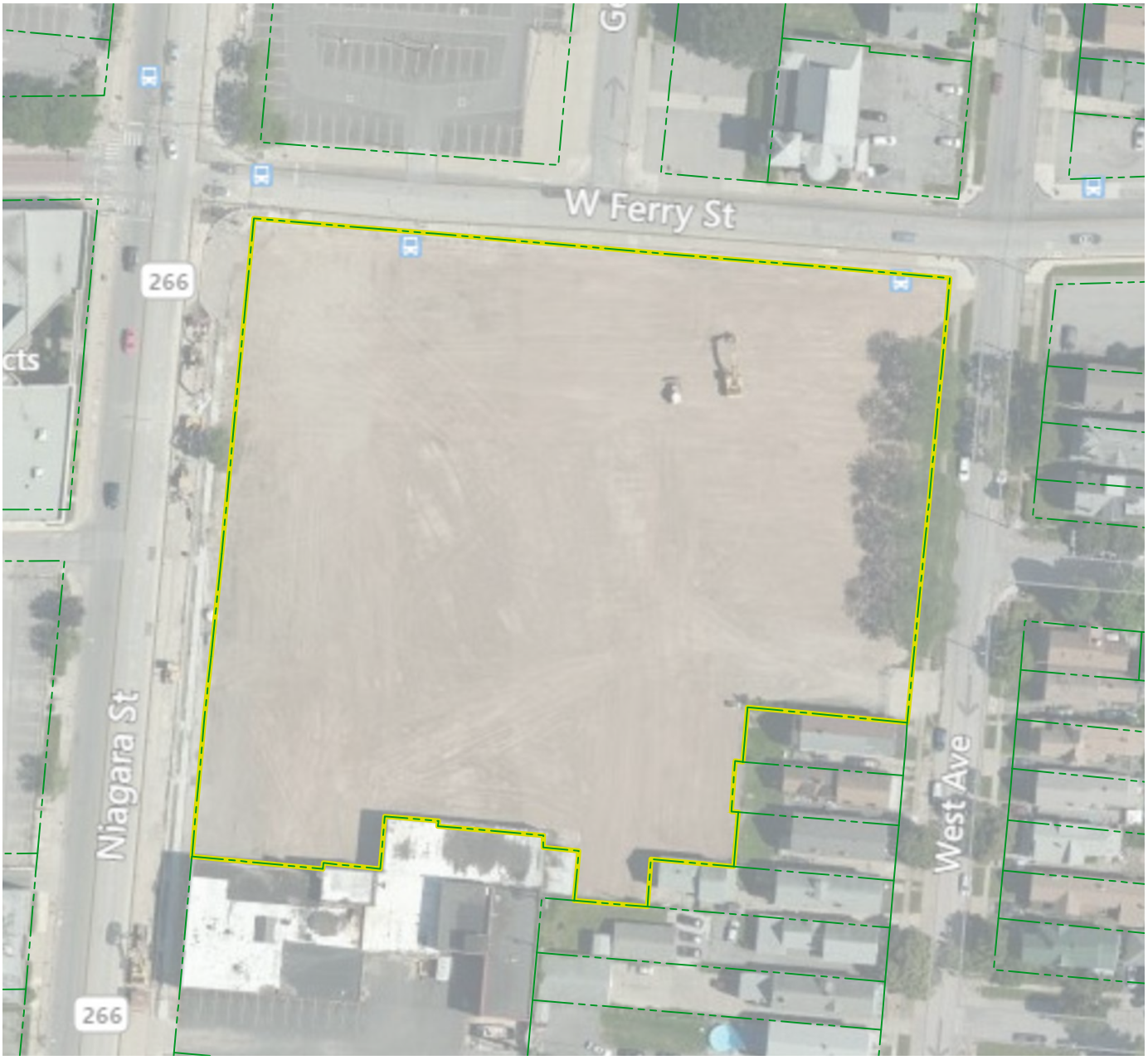
REMEDIAL ACTION WORK PLAN

1155 NIAGARA STREET SITE
BCP SITE NO. C915367
BUFFALO, NEW YORK

PREPARED FOR

GREAT POINT OPPORTUNITY FUND (A) QOZB, LLC

FIGURE 2



N

100' 0' 100' 200'

SCALE: 1 INCH = 100 FEET
SCALE IN FEET
(approximate)

LEGEND:

PROPERTY BOUNDARY

PARCEL BOUNDARY

BENCHMARK IN ASSOCIATION WITH TURNKEY ENVIRONMENTAL RESTORATION, LLC

2558 HAMBURG TURNPIKE, SUITE 300, BUFFALO, NY 14218, (716) 856-0599

PROJECT NO.: T0550-020-001

DATE: MARCH 2022

DRAFTED BY: CMS-CMC

SITE PLAN (AERIAL)

REMEDIAL ACTION WORK PLAN

1155 NIAGARA STREET SITE
BCP SITE NO. C915367
BUFFALO, NEW YORK

PREPARED FOR

GREAT POINT OPPORTUNITY FUND (A) QOZB, LLC

F:\CAD\TurnKey\Great Point Opportunity Fund\RAWP\Figure 3; Previous & Remedial Investigation Sample Locations.dwg, 3/4/2022 3:47:28 PM

LEGEND:

- PROPERTY BOUNDARY
- PARCEL BOUNDARY
- SB-05 — PHASE II MONITORING WELL (BY OTHERS)
- SB-02 — PHASE II SOIL BORING (BY OTHERS)
- TP-4 — PHASE II TEST PIT
- MW-1 — MONITORING WELL
- TP-21 — TEST TRENCH
- SV-4 — SOIL VAPOR
- OA — OUTDOOR AIR

N

60' 0' 60' 120'

SCALE: 1 INCH = 60 FEET
SCALE IN FEET
(approximate)

DATE: JUNE 2021
DRAFTED BY: CMC

TurnKey Environmental Restoration, LLC
In Association With
Benchmark

2558 HAMBURG TURNPIKE, SUITE 300, BUFFALO, NY 14218,
(716) 856-0599

JOB NO.: 0550-020-001

PREVIOUS & REMEDIAL INVESTIGATION SAMPLE LOCATIONS

REMEDIAL ACTION WORK PLAN

1155 NIAGARA STREET SITE
BCP SITE NO. C915367
BUFFALO, NEW YORK

PREPARED FOR

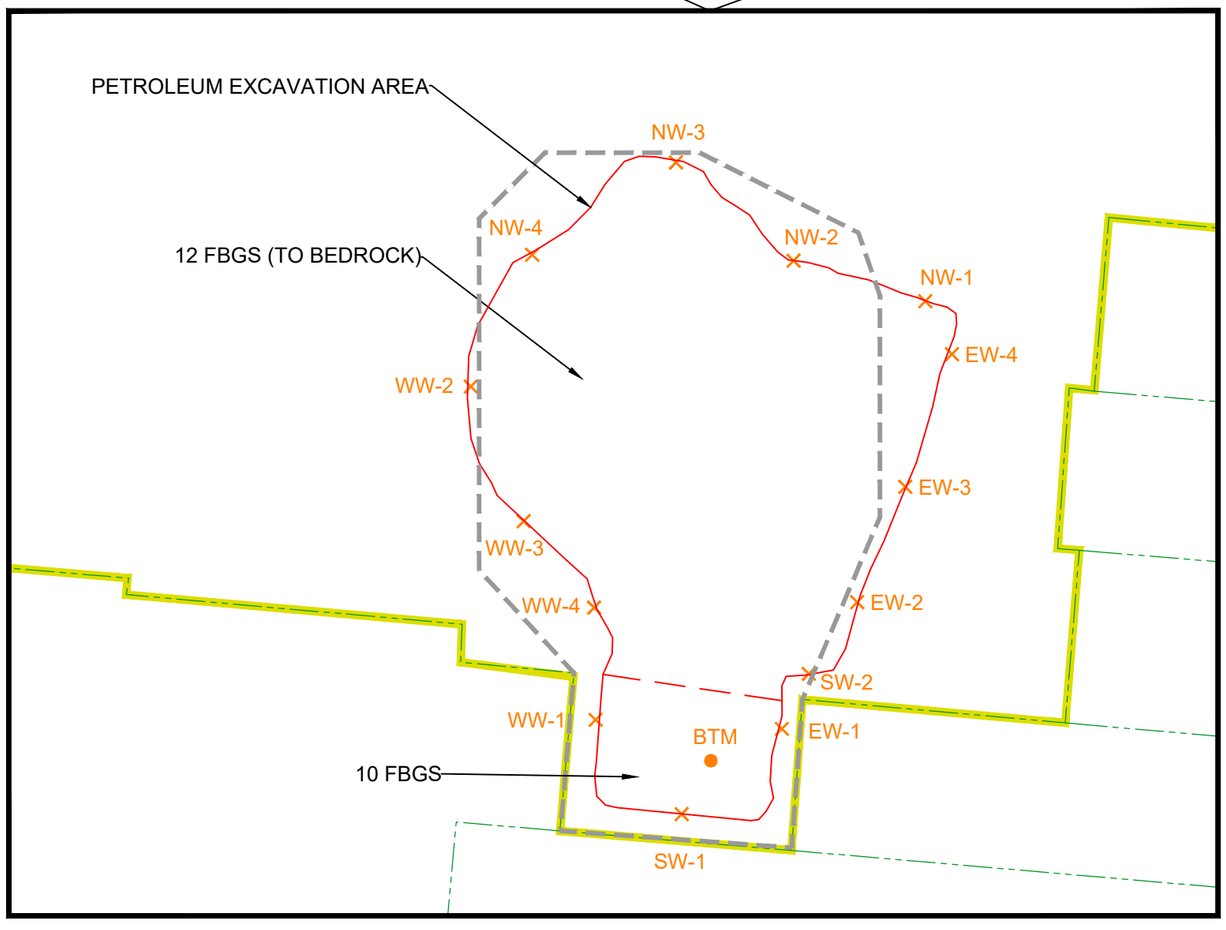
GREAT POINT OPPORTUNITY FUND (A) QOZB, LLC

FIGURE 3

F:\CAD\TurnKey\Great Point Opportunity Fund\RAWP\Figure 4B; IRM Excavation Petroleum Hotspot Location.dwg, 6/28/2022 12:35:47 PM

LEGEND:

- BCP SITE BOUNDARY
- PARCEL BOUNDARY
- ESTIMATED IRM EXCAVATION EXTENTS
- IRM EXCAVATION AREA
- TP-1 WW-3 ✕ CONFIRMATORY SOIL WALL SAMPLE
- TP-1 BTM-3 ● CONFIRMATORY SOIL BOTTOM SAMPLE



30' 0' 30' 60'

SCALE: 1 INCH = 30 FEET
SCALE IN FEET
(approximate)

DATE: JUNE 2021
DRAFTED BY: CMC

TURNKEY ENVIRONMENTAL RESTORATION, LLC
IN ASSOCIATION WITH
BENCHMARK

2558 HAMBURG TURNPIKE, SUITE 300, BUFFALO, NY 14218,
(716) 856-0599

JOB NO.: 0550-020-001

IRM EXCAVATION AREA - PETROLEUM

REMEDIAL ACTION WORK PLAN
1155 NIAGARA STREET SITE
BCP SITE NO. C915367
BUFFALO, NEW YORK
PREPARED FOR
GREAT POINT OPPORTUNITY FUND (A) QOZB, LLC

FIGURE 4a

F:\CAD\TurnKey\Great Point Opportunity Fund\RAWP\Figure 4A, IRM Excavation Test Pit Hotspot Locations.dwg, 6/28/2022 12:34:56 PM

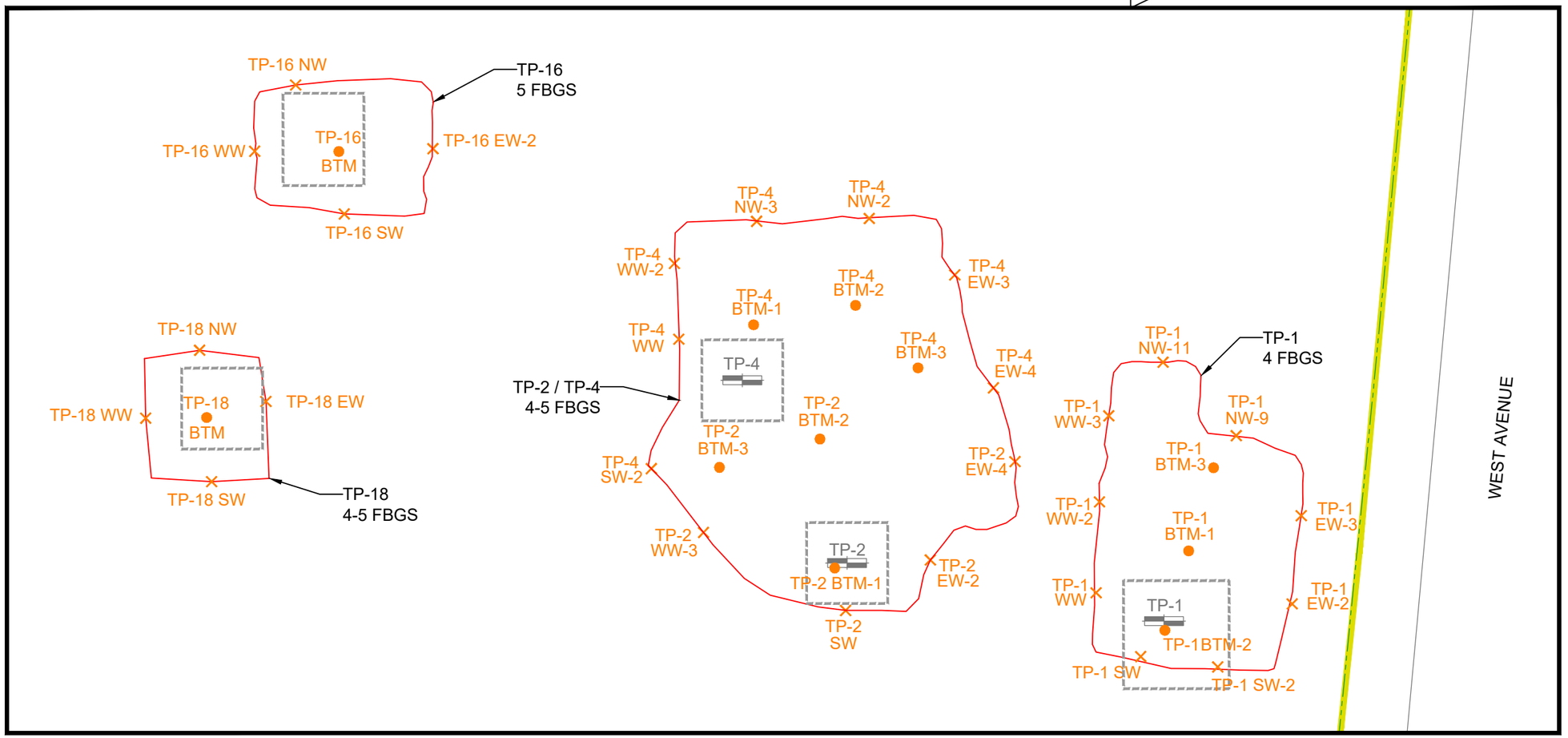
LEGEND:

- BCP SITE BOUNDARY
- PARCEL BOUNDARY
- ESTIMATED IRM EXCAVATION EXTENTS
- IRM EXCAVATION AREA
- TP-1 WW-3 ✕ CONFIRMATORY SOIL WALL SAMPLE
- TP-1 BTM-3 ● CONFIRMATORY SOIL BOTTOM SAMPLE

N

30' 0' 30' 60'

SCALE: 1 INCH = 30 FEET
SCALE IN FEET
(approximate)



DATE: JUNE 2021
DRAFTED BY: CMC

TurnKey Environmental Restoration, LLC
in association with
Benchmark

2558 HAMBURG TURNPIKE, SUITE 300, BUFFALO, NY 14218,
(716) 856-0599

JOB NO.: 0550-020-001

IRM EXCAVATION AREAS - PAH AND METALS

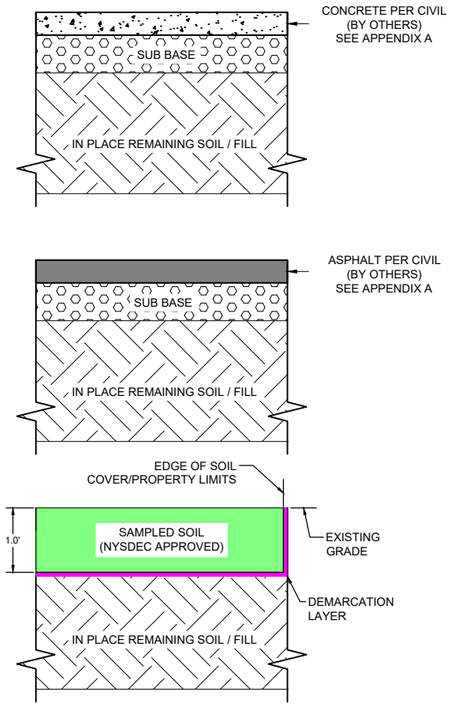
REMEDIAL ACTION WORK PLAN
1155 NIAGARA STREET SITE
BCP SITE NO. C915367
BUFFALO, NEW YORK
PREPARED FOR
GREAT POINT OPPORTUNITY FUND (A) QOZB, LLC

FIGURE 4b

F:\CAD\TurnKey\Great Point Opportunity Fund\RAWP\Figure 5; Cover System Layout & Details.dwg, 4/8/2022 4:29:43 PM

LEGEND:

- BCP SITE BOUNDARY
- PARCEL BOUNDARY
- GREENSPACE
- HARDSCAPE (BUILDING/SIDEWALK)
- ASPHALT COVER



60' 0' 60' 120'

SCALE: 1 INCH = 60 FEET
SCALE IN FEET
(approximate)

DATE: JUNE 2021
DRAFTED BY: CMC

TURNKEY ENVIRONMENTAL RESTORATION, LLC
IN ASSOCIATION WITH
BENCHMARK
2558 HAMBURG TURNPIKE, SUITE 300, BUFFALO, NY 14218,
(716) 856-0599
JOB NO.: 0550-020-001

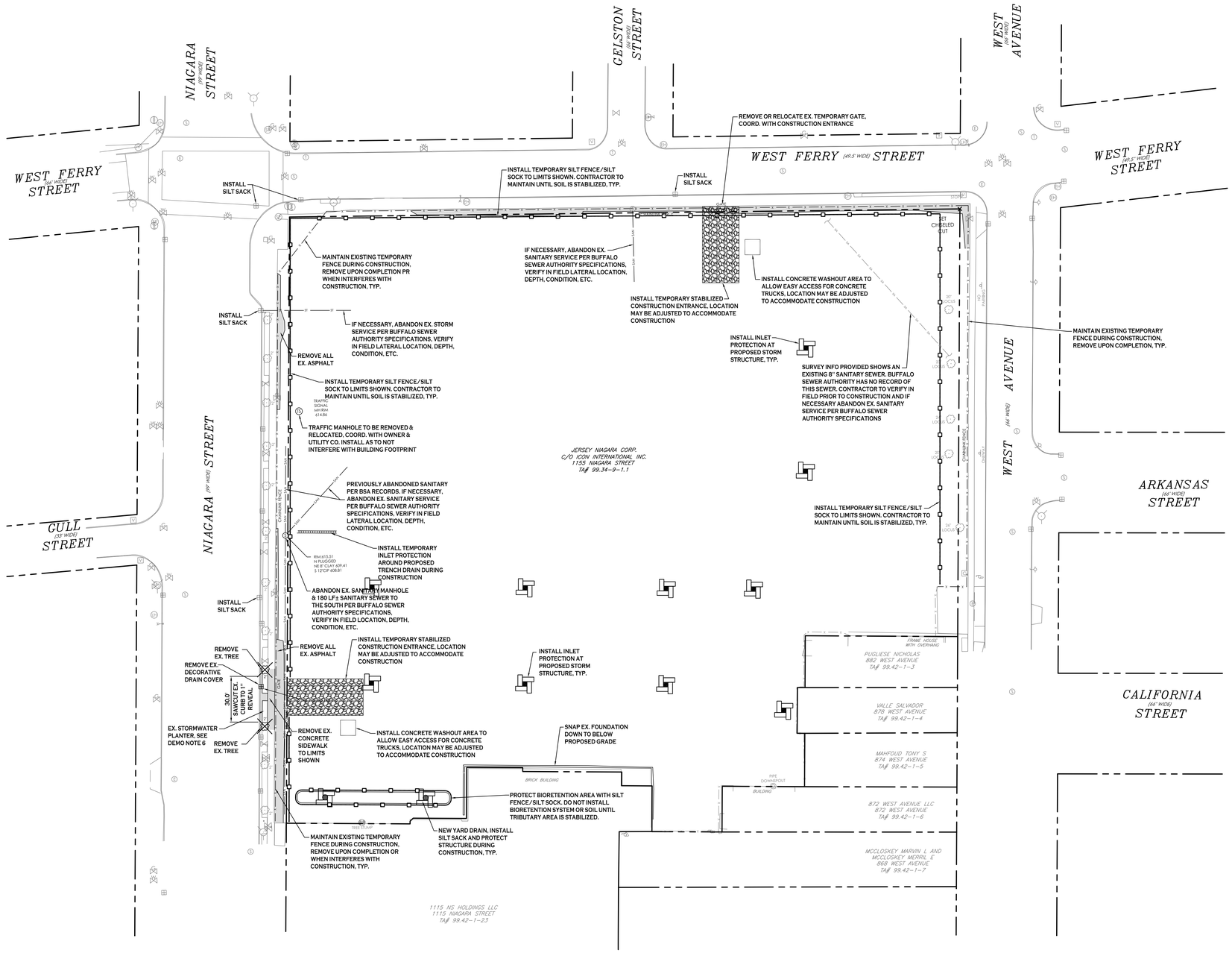
COVER SYSTEM LAYOUT & DETAILS

REMEDIAL ACTION WORK PLAN
1155 NIAGARA STREET SITE
BCP SITE NO. C915367
BUFFALO, NEW YORK
PREPARED FOR
GREAT POINT OPPORTUNITY FUND (A) QOZB, LLC

FIGURE 5

APPENDIX A

CONSTRUCTION DRAWINGS AND DETAILS



N

DEMOLITION & EROSION CONTROL PLAN

SCALE: 1"=30'

DEMOLITION NOTES:

1. CONTRACTOR SHALL TAKE PRECAUTIONS TO PROTECT THOSE ITEMS TO REMAIN, SUCH AS TREES, PROPERTY CORNER PINS, UTILITY POLES, VALVES, HYDRANTS, CURBS, MANHOLES AND CATCH BASINS.
2. CONTRACTOR SHALL INSTALL STABILIZED CONSTRUCTION ENTRANCES WHERE ACCESSING THE SITE FROM PAVED ROADWAYS. STORM DRAINAGE INLETS THAT INTERFERE WITH CONSTRUCTION ENTRANCE TO BE PROTECTED WITH SILT SACK AND OTHER PROPER TEMPORARY INLET PROTECTION MEASURES.
3. IF NECESSARY, CONTRACTOR SHALL INSTALL TEMPORARY TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH NYS M.U.T.C.D. STANDARDS PRIOR TO STARTING WORK.
4. AS NECESSARY, DUMPSTERS SHALL BE PROVIDED ONSITE AS REQUIRED FOR CONSTRUCTION WASTE.
5. EXISTING CURB AT DRIVEWAY ENTRANCE TO REMAIN AND BE SAW CUT TO 1" REVEAL.
6. EXISTING STORMWATER PLANTER MAY BE IMPACTED BY DRIVEWAY CONSTRUCTION, ANY UNDERDRAIN PIPE DAMAGED SHALL BE REPLACED IN KIND. ANY AND ALL STORMWATER PLANTER SOIL LOCATED UNDER THE DRIVEWAY LIMITS SHALL BE REMOVED AND REPLACED WITH SELECT BACKFILL AND COMPACTED AT 6" LIFTS.

EROSION CONTROL NOTES

THE FOLLOWING EROSION CONTROL PROCEDURES SHALL BE ADHERED TO BY THE CONTRACTOR:

1. INSTALL TEMPORARY SILT FENCE/SILT SOCK BARRIERS AS DIRECTED BY THE ENGINEER AND AT ALL EXISTING STORMWATER CATCH BASINS WITHIN THE WORK AREA TO PREVENT SEDIMENT MIGRATION. ALL SILT FENCE/SILT SOCK BARRIERS SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS SHOWN ON THE PLANS.
2. ALL SILT FENCE/SILT SOCK BARRIERS SHALL BE REPLACED WHEREVER THEY BECOME CLOGGED OR INOPERABLE.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE AND REMOVAL OF TEMPORARY SEDIMENTATION CONTROLS.
4. CONTRACTOR MUST CONTROL DUST DURING CONSTRUCTION. DURING EARTHWORK OPERATIONS, WATER-SPREADING EQUIPMENT SHALL BE PROVIDED BY THE CONTRACTOR, AND SPREAD WATER AS NECESSARY AND AS DIRECTED BY THE ENGINEER IN ORDER TO CONTROL DUST.
5. DIRT OR DEBRIS LEFT ON LOCAL PUBLIC ROADS AS A RESULT OF THIS CONSTRUCTION PROJECT SHALL BE REMOVED AND ROAD SURFACES CLEANED BY THE CONTRACTOR ON A DAILY BASIS.
6. CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE OF DOWNSTREAM STORM SEWERS, DITCHES, AND CULVERTS. SILT BUILDUP FOUND TO BE A RESULT OF THIS SITE CONSTRUCTION WORK SHALL BE REMOVED FROM DOWNSTREAM CULVERTS BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER OR THE CITY OF BUFFALO.
7. ALL SOIL EROSION AND SEDIMENT CONTROL DEVICES AND MATERIALS SHALL BE IN PLACE PRIOR TO BEGINNING EARTHWORK OPERATIONS AND SHALL BE MAINTAINED UNTIL THE NEW SLOPES ARE STABILIZED WITH SEEDING AND/OR SLOPE PROTECTION, AS DIRECTED BY THE ENGINEER.
8. INSTALL TEMPORARY SILT FENCE/SILT SOCK AROUND THE BASE OF STOCKPILES.
9. THE PROFESSIONAL CERTIFYING COMPLIANCE TO NYSDEC PHASE II STORMWATER REGULATION REQUIREMENTS MUST INSPECT AT A MINIMUM WEEKLY AND SHALL PROVIDE INSPECTION REPORTS WITH A WRITTEN CERTIFICATION OF CONSTRUCTION COMPLIANCE TO THE CITY OF BUFFALO WEEKLY. IF DISTURBING MORE THAN 5 ACRES, INSPECTION REPORTS SHALL BE SUBMITTED TWICE A WEEK.
10. THE ENGINEER OF RECORD FOR THIS PROJECT CERTIFIES THAT THESE DESIGN PLANS MEET THE REQUIREMENTS AND ARE IN COMPLIANCE WITH THE NEW YORK STORMWATER MANAGEMENT DESIGN MANUAL AND NYSDEC PHASE II STORMWATER REGULATION REQUIREMENTS.
11. A COMPLETE SWPPP REPORT AND COPY OF ALL WEEKLY REPORTS SHALL BE STORED ON SITE AT ALL TIMES DURING CONSTRUCTION, LOCATED IN A MAIL BOX IN AN ACCESSIBLE AREA OF THE SITE.

DEMOLITION & EROSION CONTROL LEGEND

- EXISTING PAVEMENT/SIDEWALK/CURBING TO BE SAWCUT & REMOVED
- EXISTING TREE TO BE REMOVED
- PROPOSED STORM INLET PROTECTION
- TEMPORARY SILT SOCK

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS. CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

30 0 30 60FT.
30'

Architectural Resources
505 Franklin St
Buffalo, New York 14202
303 West 13th Street
New York, New York 10014
716-883-5566 716-883-5569 fax

The Krog Group, LLC
4 Centre Drive
Orchard Park, NY 14127
Phone: 716-667-1234

Tredo Engineers
755 Seneca Street
Buffalo, NY 14210
Phone: 716-876-7147

Carmina Wood Morris, DPC
487 Main Street, Suite 500
Buffalo, NY 14203
Phone: 716-842-3165

MJ Mechanical Services, Inc.
5 Pirson Parkway
Tonawanda, NY 14150
Phone: 716-874-9200

Ellicott Engineering, PC
333 Ellicott Street
Buffalo, NY 14203
Phone: 716-852-2010

DV Brown & Associates, Inc.
562 Vickers Street, #2
Tonawanda, NY 14150
Phone: 716-695-5533

Davis Ulmer Fire Protection
1 Commerce Drive
Amherst, NY 14228
Phone: 716-691-3200

Barbara Gisel Design ltd
365 West Lancaster Avenue
Haverford, PA 19041
Phone: 610-649-1975

RCW LA STUDIO LLC
2765 Dodge Rd
East Amherst, NY 14051
Phone: 716-364-5564

Niagara Street Studio
Great Point Opportunity Fund (B) QOZB, LLC
1155 Niagara Street
Buffalo, NY 14213

Seal

N

Progress Set

9.3.2021

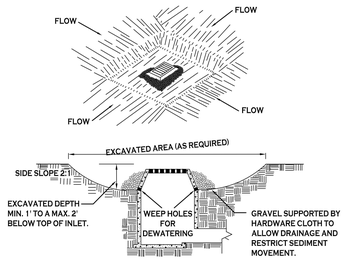
Revisions

No.	Description	Date

Demolition and Erosion Control Plan

A|r Job No: 787.01
Consultant No: 20.076
Drawn by: P. Sheedy Jr.
Sheet No:

C-001



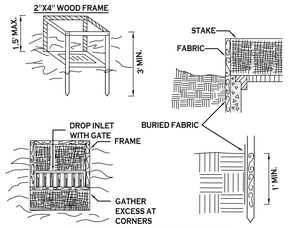
CONSTRUCTION SPECIFICATIONS

1. CLEAR THE AREA OF ALL DEBRIS THAT WILL HINDER EXCAVATION.
2. GRADE APPROACH TO THE INLET UNIFORMLY AROUND THE BASIN.
3. WEEP HOLES SHALL BE PROTECTED BY GRAVEL.
4. UPON STABILIZATION OF CONTRIBUTING DRAINAGE AREA, SEAL WEEP HOLES, FILL BASIN WITH STABLE SOIL TO FINAL GRADE, COMPACT IT PROPERLY AND STABILIZE WITH PERMANENT SEEDING.

MAXIMUM DRAINAGE AREA 1 ACRE

INLET PROTECTION DETAIL 1

NOT TO SCALE



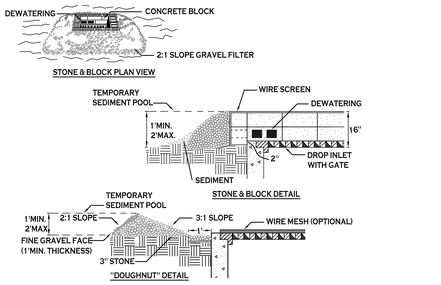
CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2" x 4" WOOD OR EQUIVALENT. METAL WITH A MINIMUM LENGTH OF 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18 INCHES DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.

MAXIMUN DRAINAGE AREA 1 ACRE

INLET PROTECTION DETAIL 2

NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

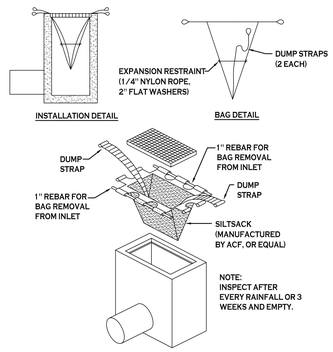
1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE FOR DEWATERING. FOUNDATION SHALL BE 2 INCHES MINIMUM BELOW REST OF INLET AND BLOCKS SHALL BE PLACED AGAINST INLET FOR SUPPORT.
2. HARDWARE CLOTH OR 1/2" WIRE MESH SHALL BE PLACED OVER BLOCK OPENINGS TO SUPPORT STONE.
3. USE CLEAN STONE OR GRAVEL 1/2-3/4 INCH IN DIAMETER PLACED 2 INCHES BELOW TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER.
4. FOR STONE STRUCTURES ONLY, A 1 FOOT THICK LAYER OF THE FILTER STONE WILL BE PLACED AGAINST THE 3 INCH STONE AS SHOWN ON THE DRAWINGS.

MAXIMUM DRAINAGE AREA 1 ACRE

INLET PROTECTION DETAIL 3

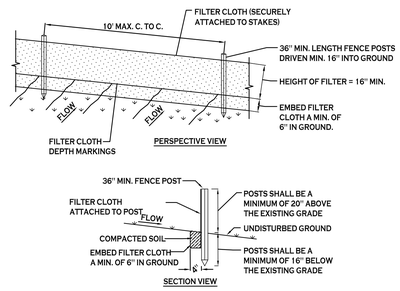
NOT TO SCALE

NOTE: INSTALL ONE OF THE INLET PROTECTION OPTIONS SHOWN PRIOR TO CONSTRUCTION



SILT SACK DETAIL

NOT TO SCALE

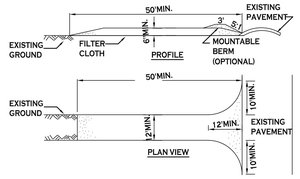


CONSTRUCTION SPECIFICATIONS

1. WOVEN FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
3. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

SILT FENCE DETAIL

NOT TO SCALE

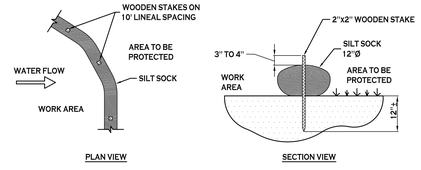


CONSTRUCTION SPECIFICATIONS

1. STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACTED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

STABILIZED CONSTRUCTION ENTRANCE DETAIL

NOT TO SCALE



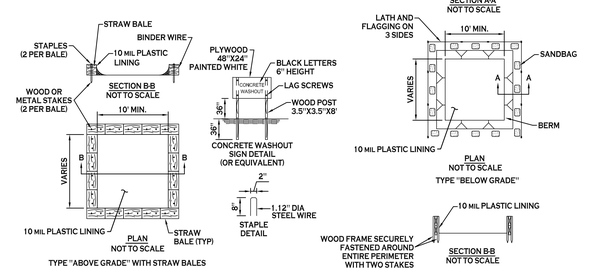
NOTES:

CONTRACTOR SHALL INSPECT AND MAINTAIN SILT SOCK AS NEEDED DURING THE DURATION OF CONSTRUCTION PROJECT.

CONTRACTOR SHALL REMOVE SEDIMENT COLLECTED AT THE BASE OF THE SILT SOCK WHEN IT HAS REACHED ½ OF THE EXPOSED HEIGHT OF THE SILT SOCK. ALTERNATIVELY, RATHER THAN CREATE A SOIL DISTURBING ACTIVITY, THE ENGINEER MAY CALL FOR ADDITIONAL SILT SOCK TO BE ADDED AT AREAS OF HIGH SEDIMENTATION, PLACED IMMEDIATELY ON TOP OF THE EXISTING SEDIMENT LADEN SILT SOCK.

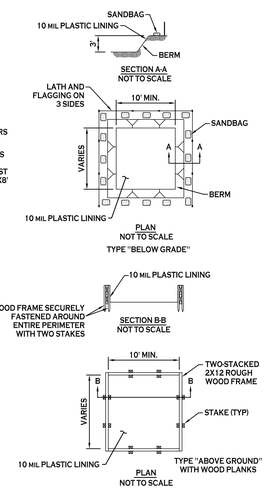
SILT SOCK DETAIL

NOT TO SCALE



NOTES

1. ACTUAL LAYOUT TO BE DETERMINED IN THE FIELD.
2. A CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF OR RECYCLED.
4. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE BACKFILLED, REPAIRED, AND STABILIZED TO PREVENT EROSION.



CONCRETE WASHOUT DETAIL

NOT TO SCALE

Architectural Resources
505 Franklin St
Buffalo, New York 14202
303 West 13th Street
New York, New York 10014
716-883-5566 716-883-5569 fax

The Krog Group, LLC
4 Centre Drive
Orchard Park, NY 14127
Phone: 716-667-1234

Tredo Engineers
755 Seneca Street
Buffalo, NY 14210
Phone: 716-876-7147

Carmina Wood Morris, DPC
487 Main Street, Suite 500
Buffalo, NY 14203
Phone: 716-842-3165

MJ Mechanical Services, Inc.
5 Pirson Parkway
Tonawanda, NY 14150
Phone: 716-874-9200

Ellicott Engineering, PC
333 Ellicott Street
Buffalo, NY 14203
Phone: 716-852-2010

DV Brown & Associates, Inc.
562 Vickers Street, #2
Tonawanda, NY 14150
Phone: 716-695-5533

Davis Ulmer Fire Protection
1 Commerce Drive
Amherst, NY 14228
Phone: 716-691-3200

Barbara Gisel Design ltd
365 West Lancaster Avenue
Haverford, PA 19041
Phone: 610-649-1975

RCW LA STUDIO LLC
2765 Dodge Rd
East Amherst, NY 14051
Phone: 716-364-5564

Niagara Street Studio

Great Point Opportunity Fund (B) QOZB, LLC
1155 Niagara Street
Buffalo, NY 14213

Seal

Progress Set

9.3.2021

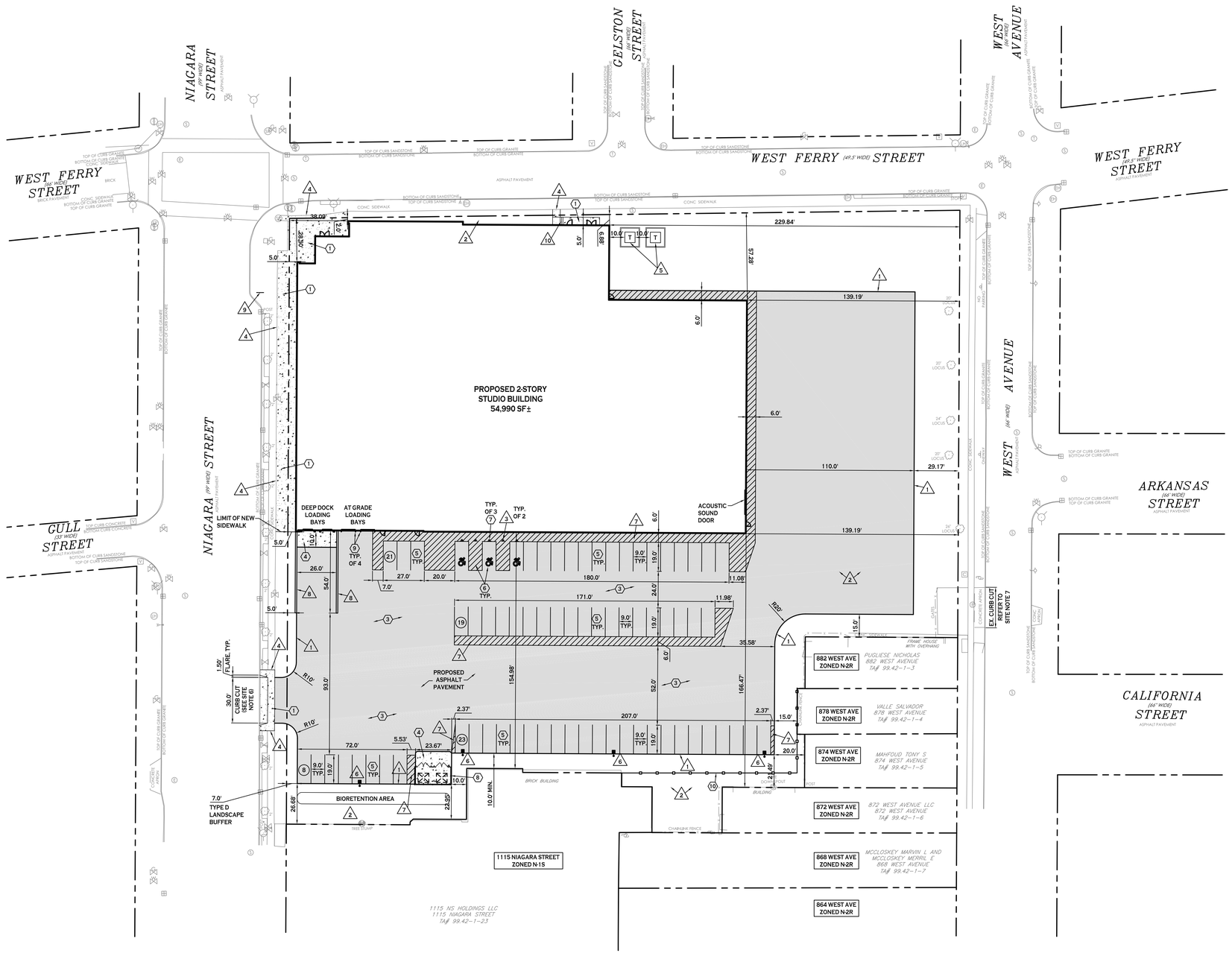
Revisions

No.	Description	Date

Demolition and Erosion Control Details

A|r Job No: 787.01
Consultant No: 20.076
Drawn by: P. Sheedy Jr.
Sheet No:

C-002



SITE PLAN

SCALE: 1"=30'

SITE DATA		
SITE AREA = 3.64 ACRES		
ZONED: N-1S (SECONDARY EMPLOYMENT CENTER), SECTION: 3.1.3		
BUILDING TYPE: FLEX BUILDING, SECTION: 3.2.7		
BUILDING AREA: 2-STORY 54,990 SF (FOOTPRINT) STUDIO BUILDING		
SETBACKS - BUILDING	REQUIRED	PROVIDED
FRONT (MIN./MAX.):	0'/5'	2' MIN.
SIDE - CORNER (MIN./MAX.):	0'/5'	N/A
SIDE - INTERIOR (MIN.):	0'	154.98' MIN.
REAR (MIN.):	0'	N/A
BUILD-TO-PERCENTAGE		
FRONT FACADE (85% MIN.):	337.98'	257.33' (64.7%)*
LOT DIMENSIONS		
LOT AREA (MIN.):	5,000 SF	158,515 SF
LOT WIDTH (MIN.):	50'	362.70 MIN.
LOT COVERAGE		
BUILDING COVERAGE (MAX.):	(158,515 SF) 100%	54,990 SF (34.7%)
IMPERVIOUS COVERAGE (MAX.):	(158,515 SF) 100%	127,380 SF (80.4%)
GREENSPACE		
INTERIOR PARKING AREA (10% MIN.):	4,763 SF	0 SF (0.0%)*
OVERALL SITE:	N/A	31,135 SF (19.6%)

* VARIANCE REQUIRED

DETAIL LEGEND SEE SITE DETAIL SHEET

1. CONCRETE SIDEWALK
2. NOT USED
3. HEAVY DUTY ASPHALT
4. EXTERIOR CONCRETE SLAB ON GRADE
5. 90° PARKING STALL
6. HANDICAPPED PAVEMENT MARKINGS
7. HANDICAPPED PARKING SIGN
8. DUMPSTER ENCLOSURE
9. PIPE BOLLARD
10. 6' BOARD ON BOARD FENCE (FINISHED SIDE TOWARDS NEIGHBORING PARCEL)

NOTE LEGEND

1. EDGE OF PAVEMENT
2. LANDSCAPED AREA - SEE LANDSCAPE PLAN
3. INSTALL "NO PARKING" SIGN, M.U.T.C.D. SIGN NO. P1-1C
4. MATCH INTO EXISTING SIDEWALK
5. ELECTRICAL TRANSFORMER, DETAILED BY UTILITY CO.
6. LIGHT POLE FOUNDATION, SEE LIGHTING PLAN BY OTHERS
7. INFILL AREA W/ 4" WIDE YELLOW PAVEMENT STRIPES @ 2' O.C. & 45°
8. 1' WIDE CONCRETE RETAINING WALL W/ RAILING, DETAILED BY OTHERS
9. BIKE RACK, COLUMBIA CASCADE CO. TIMBERFORM CYCLOOP OR APPROVED EQUAL
10. CONCRETE STAIRS, 11" RUN 6" RISE - DETAILED BY OTHERS

SITE NOTES:

1. ALL RADII SHALL BE 3'-0" UNLESS OTHERWISE NOTED.
2. ALL DISTURBED AREAS SHALL HAVE 4" MIN. OF TOPSOIL & SEED.
3. ALL DIMENSIONS FROM PROPERTY LINES SHALL BE MEASURED PERPENDICULAR TO THE PROPERTY LINE.
4. CENTER ENTRANCE SIDEWALKS ON DOOR OPENINGS.
5. BUILDING DIMENSIONS ARE APPROXIMATE, REFER TO ARCHITECTURAL DRAWINGS FOR LAYOUT DIMENSIONS.
6. EXISTING STORMWATER PLANTER MAY BE IMPACTED BY DRIVEWAY CONSTRUCTION. ANY UNDERDRAIN PIPE DAMAGED SHALL BE REPLACED IN KIND. ANY AND ALL STORMWATER PLANTER SOIL LOCATED UNDER THE DRIVEWAY LIMITS SHALL BE REMOVED AND REPLACED WITH SELECT BACKFILL AND COMPACTED AT 6" LIFTS.
7. EXISTING CURB CUT AND APRON TO TEMPORARILY REMAIN. UPON COMPLETION OF CONSTRUCTION THE EXISTING CURB CUT AND APRON SHALL BE REMOVED AND FULL DEPTH GRANITE CURBING BE INSTALLED. ALL DISTURBED AREAS SHALL HAVE 4" MIN. OF TOPSOIL & SEED.

GENERAL NOTES:

1. INSTALL ALL MATERIALS TO MANUFACTURER'S RECOMMENDATIONS AND BEST STANDARDS OF TRADE INVOLVED.
2. SUBSTITUTIONS SHALL BE MADE ONLY WITH OWNER'S APPROVAL AND BE OF EQUIVALENT QUALITY TO WHAT IS SPECIFIED.
3. WORK SHALL BE COMPLETED IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND OSHA SAFETY RULES AND REGULATIONS.
4. VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AT THE SITE. NOTIFY OWNER & ENGINEER OF DISCREPANCIES IN CONDITIONS SHOWN ON DRAWINGS PRIOR TO PROCEEDING WITH THE WORK.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ANY EXISTING STRUCTURES TO REMAIN AND ANY FINISH MATERIAL INSTALLED WHILE WORKING ON OTHER COMPONENTS.
6. CONTRACTOR SHALL KEEP JOB FREE OF DEBRIS AND MAKE FINAL CLEANUP TO SATISFACTION OF OWNER.
7. CONTRACTOR SHALL ASCERTAIN THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION SO THAT THIS WORK WILL NOT DISTURB EXISTING LINES AND/OR INSTALLATIONS. COORDINATE ALL WORK WITH THE APPLICABLE UTILITY COMPANIES.
8. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS NECESSARY TO PERFORM THE WORK.

SITE LEGEND

- PROPERTY LINE
- PROPOSED SIDEWALK / CONCRETE PAD
- NUMBER OF PARKING SPACES (27)
- PROPOSED SIGN
- PROPOSED ASPHALT PAVEMENT
- PROPOSED LIGHT POLE
- PROPOSED PAD MOUNTED TRANSFORMER (T)

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS. CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

30' 30 0 30 60FT.

Architectural Resources
505 Franklin St
Buffalo, New York 14202
303 West 13th Street
New York, New York 10014
716-883-5566 716-883-5569 fax

The Krog Group, LLC
4 Centre Drive
Orchard Park, NY 14127
Phone: 716-667-1234

Tredo Engineers
755 Seneca Street
Buffalo, NY 14210
Phone: 716-876-7147

Carmina Wood Morris, DPC
487 Main Street, Suite 500
Buffalo, NY 14203
Phone: 716-842-3165

MJ Mechanical Services, Inc.
5 Pirson Parkway
Tonawanda, NY 14150
Phone: 716-874-9200

Ellicott Engineering, PC
333 Ellicott Street
Buffalo, NY 14203
Phone: 716-852-2010

DV Brown & Associates, Inc.
562 Vickers Street, #2
Tonawanda, NY 14150
Phone: 716-695-5533

Davis Ulmer Fire Protection
1 Commerce Drive
Amherst, NY 14228
Phone: 716-691-3200

Barbara Gisel Design ltd
365 West Lancaster Avenue
Haverford, PA 19041
Phone: 610-649-1975

RCW LA STUDIO LLC
2765 Dodge Rd
East Amherst, NY 14051
Phone: 716-364-5564

Niagara Street Studio

Great Point Opportunity Fund (B) QOZB, LLC
1155 Niagara Street
Buffalo, NY 14213

Seal

Progress Set

9.3.2021

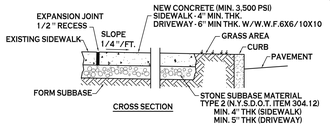
Revisions

No.	Description	Date

Site Plan

A|r Job No: 787.01
Consultant No: 20.076
Drawn by: P. Sheedy Jr.
Sheet No:

C-100



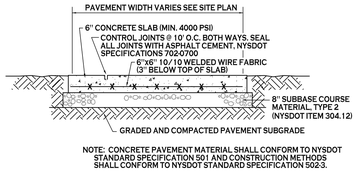
CROSS SECTION

NOTES:

1. CONTROL JOINTS TO BE AT 5'-0" O.C., BOTH WAYS WHERE APPLICABLE. SEE SPECIFICATIONS FOR FURTHER JOINT REQUIREMENTS NYSDOT 702-0700.
2. CONCRETE SIDEWALK AND DRIVEWAY MATERIAL SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 501 AND CONSTRUCTION METHODS SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 608-3.
3. SUBBASE GRADE SHALL FOLLOW THE PROPOSED GRADE OF THE SIDEWALK AND SLOPE AWAY FROM BUILDING WHERE APPLICABLE, PROVIDE CONTINUOUS STONE PATH TO CURB UNDERDRAIN WHERE PROVIDED.
4. FULL DEPTH EXPANSION JOINTS SHALL BE INSTALLED EVERY 20' O.C., BOTHWAYS WHERE APPLICABLE. SEE SPECIFICATIONS FOR FURTHER JOINT REQUIREMENTS NYSDOT 702-0700.
5. SEE CURB DETAIL FOR DOWLING REQUIREMENTS WHERE ABUTTING CURB.
6. INSTALL 6" LONG #3 DOWELS @ 12" O.C. WHERE SIDEWALK ABUTS A BUILDING WALL AT AN ENTRANCE. THICKEN SIDEWALK TO 6" AT BUILDING WALL AND INSTALL DOWEL CENTERED IN THE 6" DEPTH. DOWELS AND THICKENING OF SIDEWALK SHALL EXTEND 18" EITHER SIDE OF ENTRANCE.
7. INSTALL 1/2" PREMOLDED EXPANSION JOINT WITH BACKER ROD & SEALANT WHERE SIDEWALK ABUTS BUILDING OR OTHER STRUCTURE.

CONCRETE SIDEWALK - 1

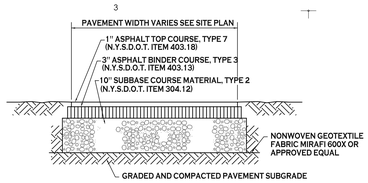
NOT TO SCALE



NOTE: CONCRETE PAVEMENT MATERIAL SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 501 AND CONSTRUCTION METHODS SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 502-3.

EXTERIOR CONCRETE SLAB-ON-GRADE SECTION - 4

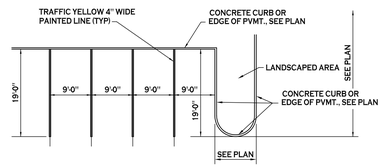
NOT TO SCALE



NOTE: CONSTRUCTION METHODS FOR ASPHALT PAVEMENT SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 401-3, WITH SUBBASE CONSTRUCTION METHODS CONFORMING TO NYSDOT STANDARD SPECIFICATION 304-3.

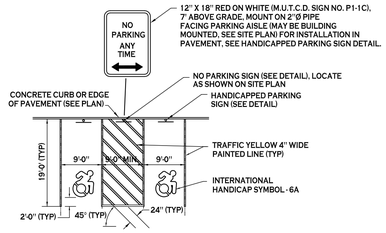
HEAVY DUTY ASPHALT SECTION - 3

NOT TO SCALE



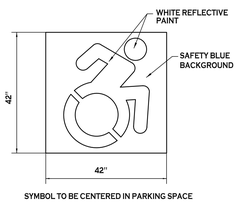
90° PARKING STALL LAYOUT - 5

NOT TO SCALE



HANDICAPPED PAVEMENT MARKINGS & SIGNAGE - 6

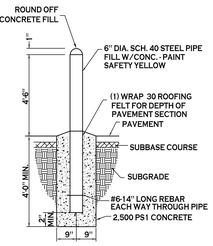
NOT TO SCALE



SYMBOL TO BE CENTERED IN PARKING SPACE

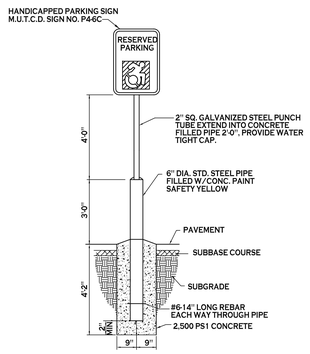
INTERNATIONAL HANDICAP SYMBOL - 6A

NOT TO SCALE



PIPE BOLLARD - 9

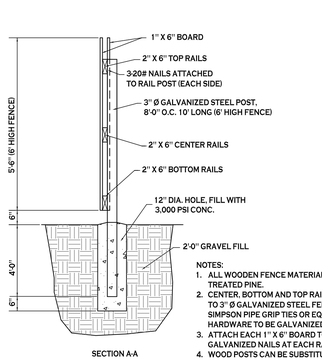
NOT TO SCALE



PAVEMENT AREA

HANDICAPPED PARKING SIGN - 7

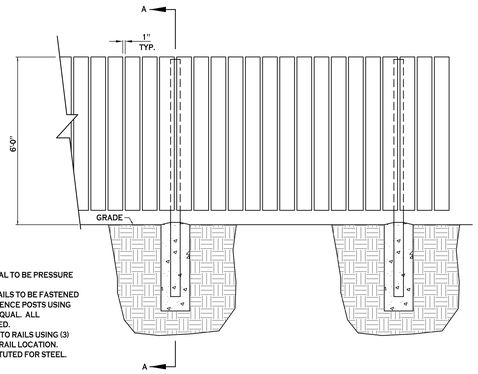
NOT TO SCALE



SECTION A-A

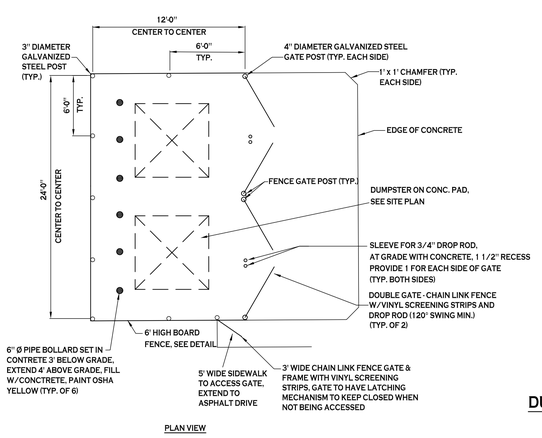
NOTES:

1. ALL WOODEN FENCE MATERIAL TO BE PRESSURE TREATED PINE.
2. CENTER, BOTTOM AND TOP RAILS TO BE FASTENED TO 3" Ø GALVANIZED STEEL FENCE POSTS USING SIMPSON PIPE GRIP TIES OR EQUAL. ALL HARDWARE TO BE GALVANIZED.
3. ATTACH EACH 1" X 6" BOARD TO RAILS USING (3) GALVANIZED NAILS AT EACH RAIL LOCATION.
4. WOOD POSTS CAN BE SUBSTITUTED FOR STEEL.

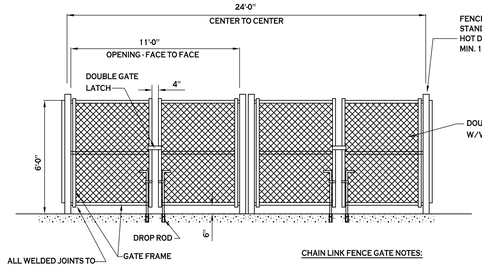


6' BOARD ON BOARD FENCE - 10

NOT TO SCALE



PLAN VIEW



FRONT VIEW

CHAIN LINK FENCE GATE NOTES:

1. GATE POST FOOTINGS TO BE MIN. 36" DEEP x (4x) POST DIAMETER, EXTEND POST TO WITHIN 6" OF BOTTOM.
2. GATE FRAMES TO BE 2" SQ. GALVANIZED STEEL, WEIGHING 2.60 LB/FT IN ACCORDANCE WITH ASTM F 900.
3. CHAIN LINK FENCE FABRIC SHALL BE 2" MESH, 9 GAUGE, ZINC COATED STEEL CORE WIRE. INSTALL MESH WITH HOOK BOLTS AND TENSION BARS ON ALL 4 SIDES, ATTACH AT 15" MAX.
4. DOUBLE GATE LATCH TO BE FORKED TYPE CAPABLE OF RETAINING GATE IN CLOSED POSITION AND HAVE PROVISION FOR PAD LOCK. LATCH SHALL BE OPERABLE FROM EITHER SIDE OF GATE.
5. ALL HARDWARE TO BE HOT DIPPED GALVANIZED STEEL TO SUIT GATE SIZE.

DUMPSTER ENCLOSURE - 8

NOT TO SCALE

Architectural Resources
505 Franklin St
Buffalo, New York 14202

303 West 13th Street
New York, New York 10014

716-883-5566 716-883-5569 fax

The Krog Group, LLC
4 Centre Drive
Orchard Park, NY 14127
Phone: 716-667-1234

Tredo Engineers
755 Seneca Street
Buffalo, NY 14210
Phone: 716-876-7147

Carmina Wood Morris, DPC
487 Main Street, Suite 500
Buffalo, NY 14203
Phone: 716-842-3165

MJ Mechanical Services, Inc.
5 Pirson Parkway
Tonawanda, NY 14150
Phone: 716-874-9200

Ellicott Engineering, PC
333 Ellicott Street
Buffalo, NY 14203
Phone: 716-852-2010

DV Brown & Associates, Inc.
562 Vickers Street, #2
Tonawanda, NY 14150
Phone: 716-695-5533

Davis Ulmer Fire Protection
1 Commerce Drive
Amherst, NY 14228
Phone: 716-691-3200

Barbara Gisel Design lld
365 West Lancaster Avenue
Haverford, PA 19041
Phone: 610-649-1975

RCW LA STUDIO LLC
2765 Dodge Rd
East Amherst, NY 14051
Phone: 716-364-5564

Niagara Street Studio

Great Point Opportunity Fund (B) QOZB, LLC
1155 Niagara Street
Buffalo, NY 14213

Seal

Progress Set

9.3.2021

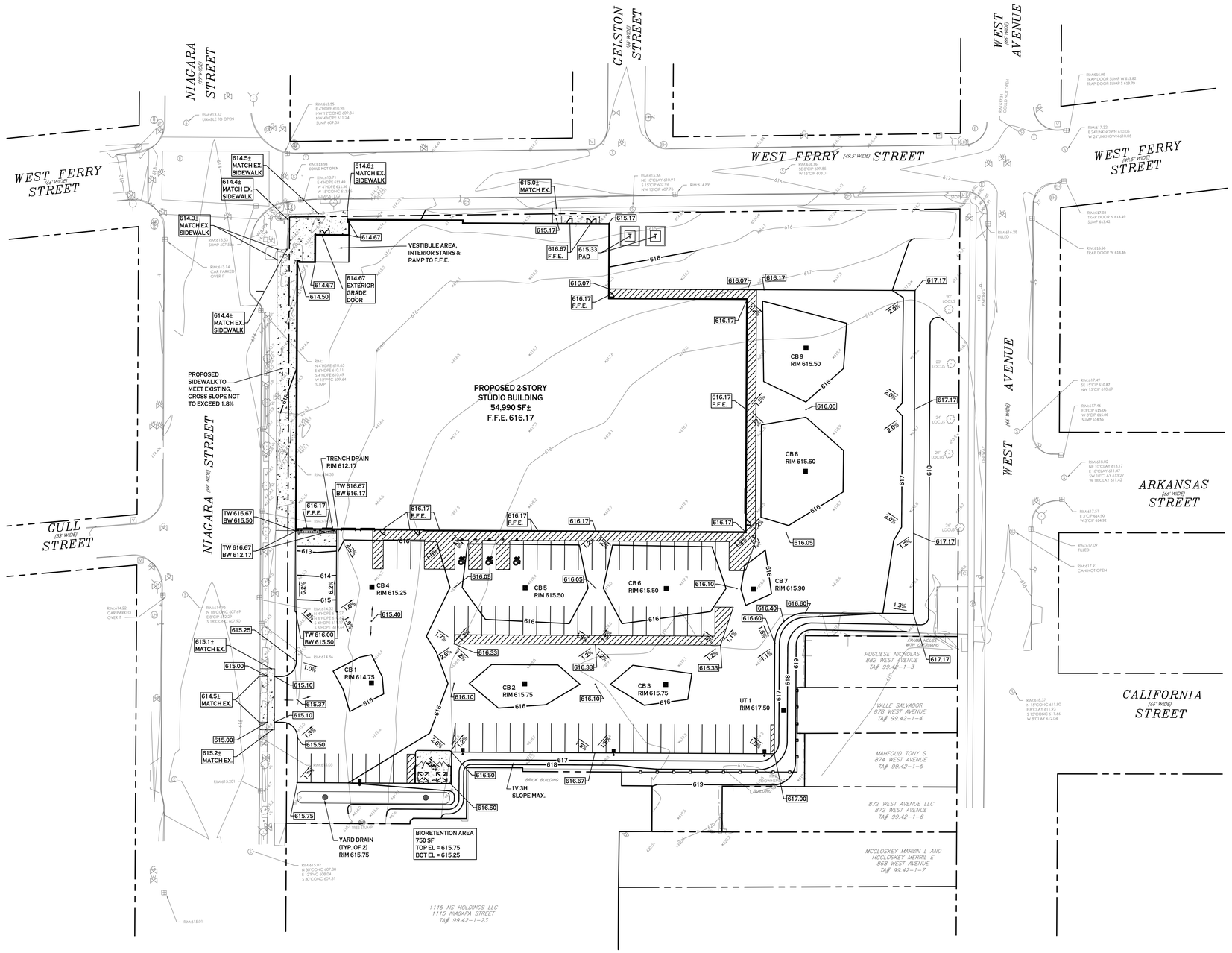
Revisions

No.	Description	Date

Site Details

A|r Job No: 787.01
Consultant No: 20.076
Drawn by: P. Sheedy Jr.
Sheet No:

C-101



GRADING PLAN

SCALE: 1"=30'

PROPOSED GRADING LEGEND

PROPOSED CONTOUR	101
PROPOSED SPOT ELEVATION	100.80
PROPOSED CATCH BASIN	■ CB
PAVEMENT/GROUND SLOPE	→
PROPOSED YARD DRAIN	YD

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

30' 30 0 30 60FT.

Architectural Resources
505 Franklin St
Buffalo, New York 14202
303 West 13th Street
New York, New York 10014
716-883-5566 716-883-5569 fax

The Krog Group, LLC
4 Centre Drive
Orchard Park, NY 14127
Phone: 716-667-1234

Tredo Engineers
755 Seneca Street
Buffalo, NY 14210
Phone: 716-876-7147

Carmina Wood Morris, DPC
487 Main Street, Suite 500
Buffalo, NY 14203
Phone: 716-842-3165

MJ Mechanical Services, Inc.
5 Pirson Parkway
Tonawanda, NY 14150
Phone: 716-874-9200

Ellicott Engineering, PC
333 Ellicott Street
Buffalo, NY 14203
Phone: 716-852-2010

DV Brown & Associates, Inc.
562 Vickers Street, #2
Tonawanda, NY 14150
Phone: 716-695-5533

Davis Ulmer Fire Protection
1 Commerce Drive
Amherst, NY 14228
Phone: 716-691-3200

Barbara Gisel Design ltd
365 West Lancaster Avenue
Haverford, PA 19041
Phone: 610-649-1975

RCW LA STUDIO LLC
2765 Dodge Rd
East Amherst, NY 14051
Phone: 716-364-5564

Niagara Street Studio
Great Point Opportunity Fund (B) QOZB, LLC
1155 Niagara Street
Buffalo, NY 14213

Seal

Progress Set

9.3.2021

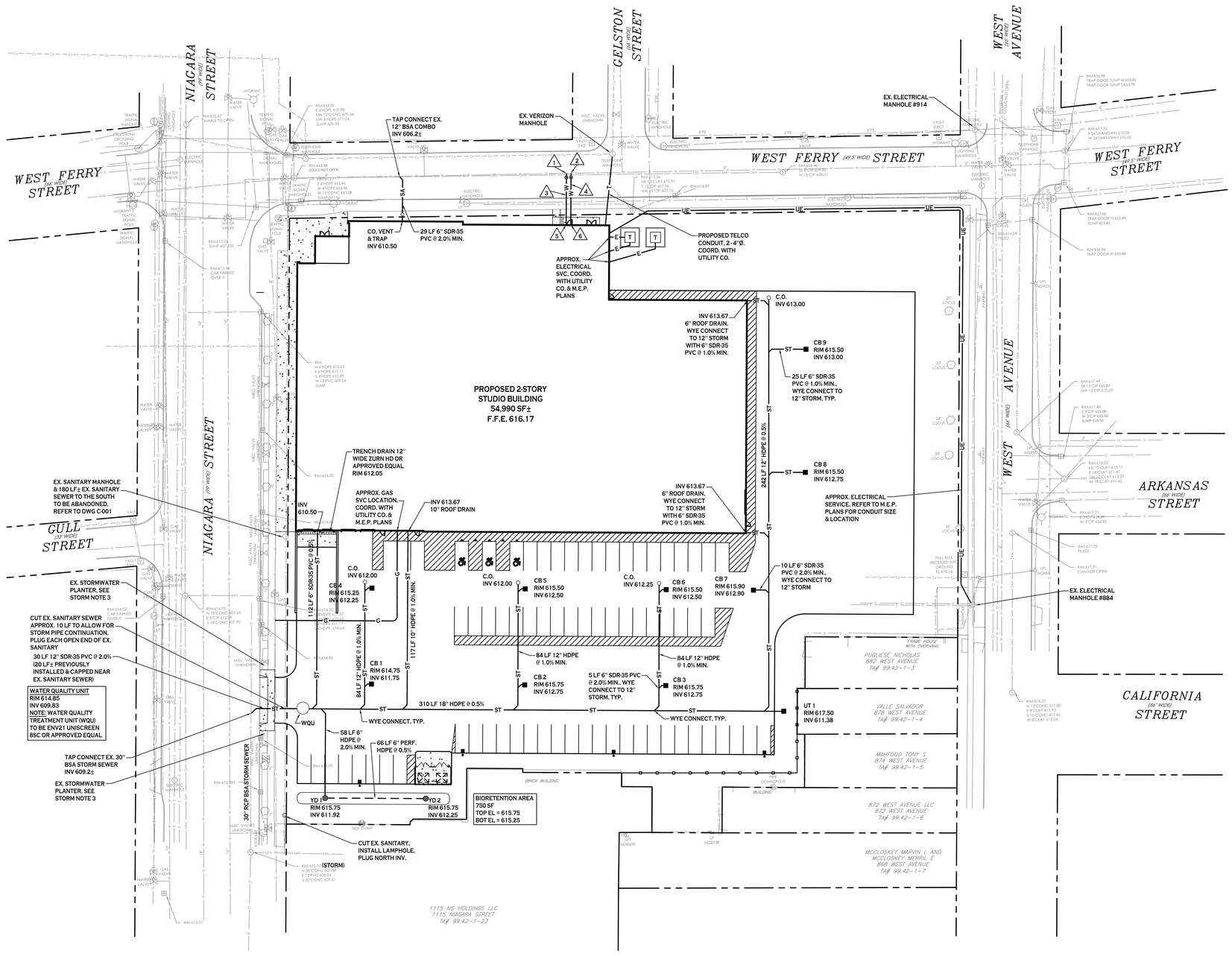
Revisions

No.	Description	Date

Grading Plan

A|r Job No: 787.01
Consultant No: 20.076
Drawn by: P. Sheedy Jr.
Sheet No:

C-200



N

STORM DRAINAGE & UTILITY PLAN

SCALE: 1"=30'

PRE DEVELOPMENT STORMWATER EVENT SUMMARIES			
EVENT	RUNOFF (CFS)	VOLUME (CUBIC-FEET)	DEPTH (INCHES)
1-YEAR	9.37	19,143	1.45
2-YEAR	11.28	23,368	1.77
5-YEAR	14.09	29,696	2.25
10-YEAR	16.66	35,543	2.69
25-YEAR	20.63	44,682	3.38
50-YEAR	24.24	53,065	4.02
100-YEAR	28.45	62,911	4.76

POST DEVELOPMENT STORMWATER EVENT SUMMARIES			
EVENT	RUNOFF (CFS)	VOLUME (CUBIC-FEET)	DEPTH (INCHES)
1-YEAR	7.99	18,720	1.54
2-YEAR	9.55	22,647	1.87
5-YEAR	11.84	28,509	2.35
10-YEAR	13.94	33,913	2.80
25-YEAR	17.19	42,341	3.49
50-YEAR	20.15	50,062	4.13
100-YEAR	23.61	59,122	4.88

STORM DRAINAGE NOTES:

1. CONTRACTOR TO FIELD VERIFY ALL EXISTING STORM AND SANITARY LOCATIONS/INVERTS PRIOR TO CONSTRUCTION. INVERTS SHOWN ARE APPROXIMATE AND BASED ON RECORD DRAWINGS PROVIDED BY BUFFALO SEWER AUTHORITY (BSA). EXISTING WATER, GAS, ELECTRIC AND SANITARY LINES SHOWN ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY LOCATION/SIZE/CONDITION BEFORE CONSTRUCTION.
2. SELECT BACKFILL IS REQUIRED FOR ALL UTILITIES (GAS, WATER, STORM, SANITARY) THAT CROSS THROUGH PAVEMENT AREAS.
3. EXISTING STORMWATER PLANTER MAY BE IMPACTED BY DRIVEWAY CONSTRUCTION, ANY UNDERDRAIN PIPE DAMAGED SHALL BE REPLACED IN KIND. ANY AND ALL STORMWATER PLANTER SOIL LOCATED UNDER THE DRIVEWAY LIMITS SHALL BE REMOVED AND REPLACED WITH SELECT BACKFILL AND COMPACTED AT 6" LIFTS.

UTILITY NOTES:

1. CONTRACTOR TO FIELD VERIFY ALL EXISTING STORM AND SANITARY LOCATIONS/INVERTS PRIOR TO CONSTRUCTION. INVERTS SHOWN ARE APPROXIMATE AND BASED ON RECORD DRAWINGS PROVIDED BY BUFFALO SEWER AUTHORITY (BSA). EXISTING WATER, GAS, ELECTRIC AND SANITARY LINES SHOWN ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY LOCATION/SIZE/CONDITION BEFORE CONSTRUCTION.
2. SELECT BACKFILL IS REQUIRED FOR ALL UTILITIES (GAS, WATER, STORM, SANITARY) THAT CROSS THROUGH PAVEMENT AREAS.
3. IF NECESSARY, PROVIDE FITTINGS AND BLOCKING AS NECESSARY AT ALL BENDS IN WATER LINES.
4. A MINIMUM OF 10 FEET HORIZONTAL AND 18 INCHES OF VERTICAL SEPARATION MUST BE MAINTAINED BETWEEN ALL SANITARY SEWER AND WATER SERVICES.
5. BUFFALO WATER IS TO BE NOTIFIED A MINIMUM OF 48 HOURS PRIOR TO STARTING THE CONNECTION FOR THE NEW WATER SERVICE.
6. ALL SANITARY SEWER CONSTRUCTION SHALL ADHERE TO BUFFALO SEWER AUTHORITY SPECIFICATIONS AND DETAILS, AND ERIE COUNTY DEPARTMENT OF HEALTH RULES AND REGULATIONS.
7. ALL OTHER REQUIRED PERMITS BY THE STATE OF NEW YORK, ERIE COUNTY, OR CITY OF BUFFALO ARE THE RESPONSIBILITY OF THE CONTRACTOR.
8. DOMESTIC AND FIRE SERVICES TO BE BROUGHT INTERIOR OF THE BUILDING TO ABOVE FINISHED FLOOR BY SITE UTILITY CONTRACTOR.
9. SITE UTILITY CONTRACTOR TO INSTALL SANITARY AND STORM SEWER SERVICES WITHIN 5 FEET OF BUILDING, PLUMBING CONTRACTOR TO MAKE CONNECTION AND CONTINUE SERVICE INTERIOR TO THE BUILDING.

WATER NOTE LEGEND

1. 8"x8"x6" T.S.&V (TAP BY BUFFALO WATER), EXCAVATION/BACKFILL & MATERIALS BY CONTRACTOR
2. 8"x8"x4" T.S.&V (TAP BY BUFFALO WATER), EXCAVATION/BACKFILL & MATERIALS BY CONTRACTOR
3. 6" CLASS 52 D.I. FIRE SERVICE
4. 4" CLASS 52 D.I. DOMESTIC SERVICE
5. INSTALL DCDA ON FIRE SERVICE IN MECH. ROOM DETAILED ON FIRE PROTECTION PLANS
6. INSTALL RPZ ON DOMESTIC SERVICE IN MECH. ROOM DETAILED ON PLUMBING PLANS

PROPOSED STORM/UTILITY LEGEND

- PROPOSED WATER LINE — W
- PROPOSED SANITARY SEWER — SA
- PROPOSED STORM SEWER (PERFORATED = DASHED LINE) — ST
- PROPOSED UTILITY CONNECTIONS (GAS, ELEC., CABLE, TEL., ETC.)
- PROPOSED GATE VALVE
- PROPOSED CLEANOUT
- PROPOSED CATCH BASIN/ UTILITY TANK
- PROPOSED YARD DRAIN

CB: CATCH BASIN
CO: CLEANOUT
UT: UTILITY TANK
WQU: WATER QUALITY UNIT
YD: YARD DRAIN

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD MORRIS, D.P.C. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

30 0 30 60Ft.

Architectural Resources
505 Franklin St
Buffalo, New York 14202
303 West 13th Street
New York, New York 10014
716-883-5566 716-883-5569 fax

The Krog Group, LLC
4 Centre Drive
Orchard Park, NY 14127
Phone: 716-667-1234

Tredo Engineers
755 Seneca Street
Buffalo, NY 14210
Phone: 716-876-7147

Carmina Wood Morris, DPC
487 Main Street, Suite 500
Buffalo, NY 14203
Phone: 716-842-3165

MJ Mechanical Services, Inc.
5 Pirson Parkway
Tonawanda, NY 14150
Phone: 716-874-9200

Ellicott Engineering, PC
333 Ellicott Street
Buffalo, NY 14203
Phone: 716-852-2010

DV Brown & Associates, Inc.
562 Vickers Street, #2
Tonawanda, NY 14150
Phone: 716-695-5533

Davis Ulmer Fire Protection
1 Commerce Drive
Amherst, NY 14228
Phone: 716-691-3200

Barbara Gisel Design ltd
365 West Lancaster Avenue
Haverford, PA 19041
Phone: 610-649-1975

RCW LA STUDIO LLC
2765 Dodge Rd
East Amherst, NY 14051
Phone: 716-364-5564

Niagara Street Studio
Great Point Opportunity Fund (B) QOZB, LLC
1155 Niagara Street
Buffalo, NY 14213

Seal

Progress Set
9.3.2021

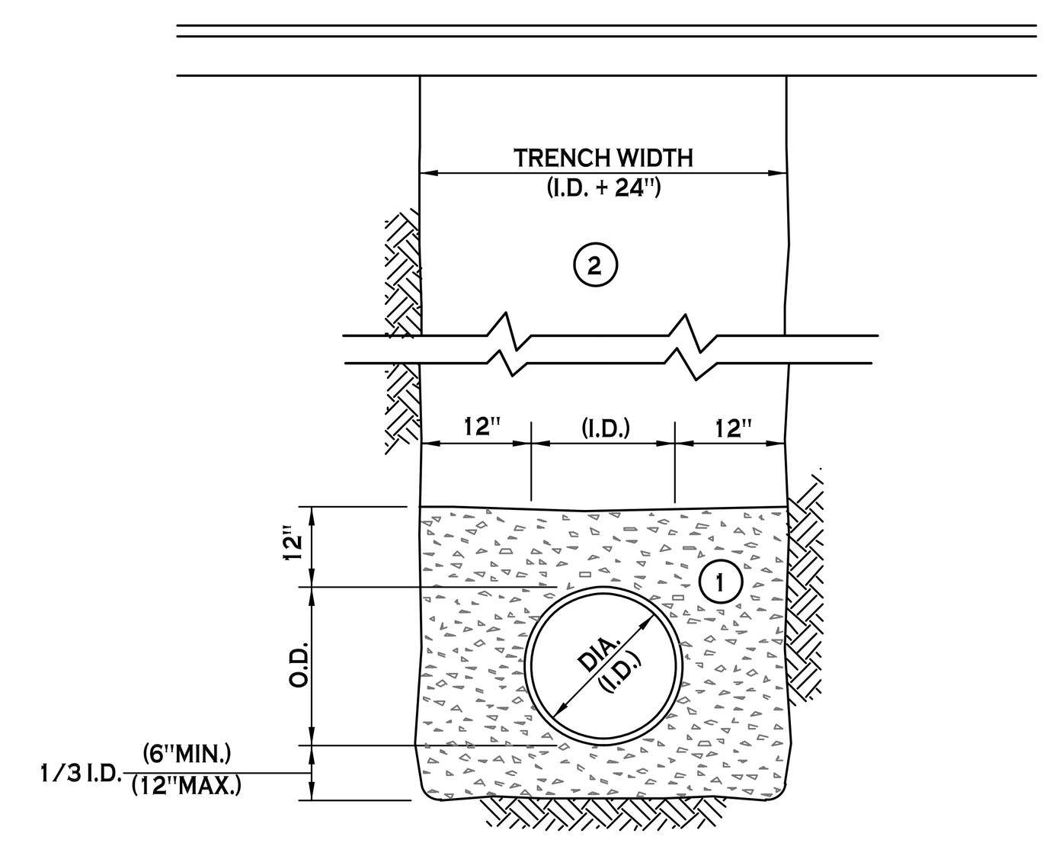
Revisions

No.	Description	Date

Storm Drainage and Utility Plan

A|r Job No: 787.01
Consultant No: 20.076
Drawn by: P. Sheedy Jr.
Sheet No:

C-300



NOTES:

A. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

B. TRENCHING OPERATIONS SHALL INCLUDE ALL NECESSARY DEWATERING.

C. TRENCH DETAILS ARE ONLY SHOWN FOR PURPOSES OF MATERIAL PLACEMENT AND MAXIMUM PAY LIMITS.

D. AN OSHA APPROVED MOVABLE PROTECTIVE TRENCH SHIELD SHALL BE USED IN ALL UNSHEETED TRENCH AREAS.

MATERIALS

PIPE BEDDING MATERIAL (NYSDOT 1985 EDITION)

(1) NO. 1 CRUSHED STONE OR CRUSHED GRAVEL WITH A GRADATION CONFORMING WITH NYSDOT SECTION 703-02. THE MATERIAL SHALL BE WELL GRADED WITH NO PARTICLES LARGER THAN ONE INCH AND HAVING A MAXIMUM GRADATION MEETING THE LIMITS DESCRIBED IN THE SPECIFICATIONS. THE BEDDING SHALL BE COMPACTED IN 6" LIFTS WITH EQUIPMENT ACCEPTABLE TO THE PIPE MANUFACTURER.

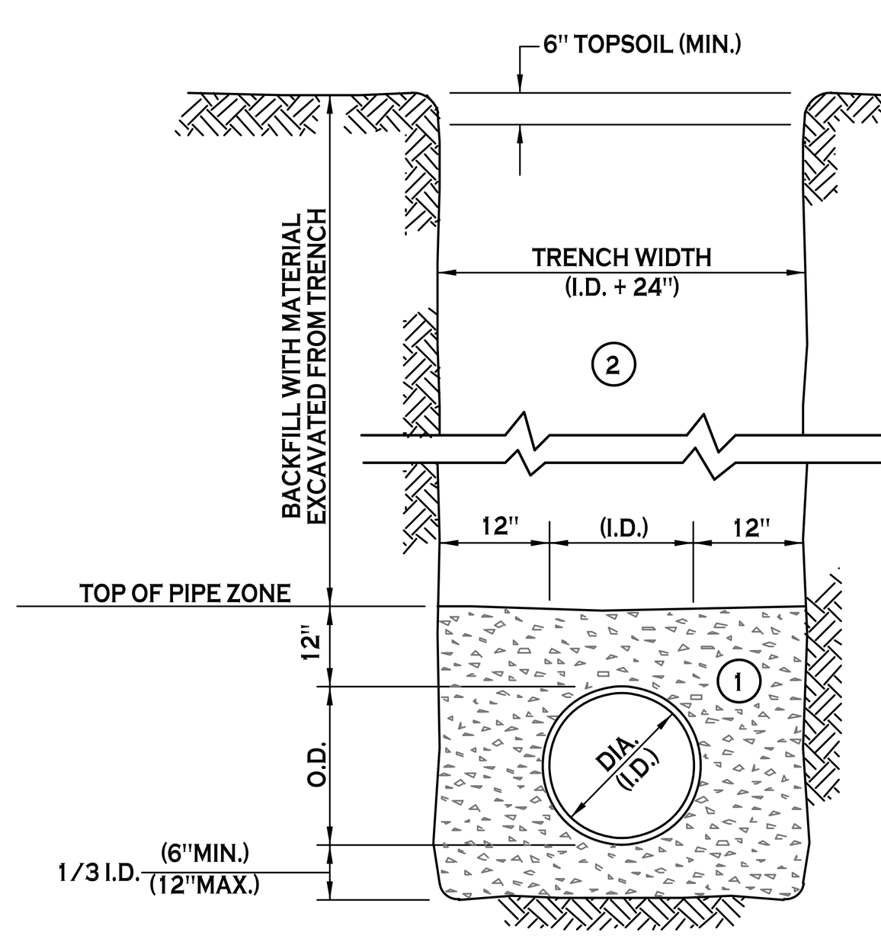
NO SLAG SHALL BE ALLOWED FOR MATERIAL (1)

(2) TYPE 2 CRUSHED STONE OR CRUSHED GRAVEL WITH A GRADATION CONFORMING WITH NYSDOT SECTION 304-2.02 TYPE 2. THE MATERIAL SHALL BE WELL GRADED WITH NO PARTICLES LARGER THAN TWO INCHES AND HAVING A MAXIMUM GRADATION MEETING THE LIMITS DESCRIBED IN THE SPECIFICATIONS. THE BEDDING SHALL BE COMPACTED IN 6" LIFTS WITH EQUIPMENT ACCEPTABLE TO THE PIPE MANUFACTURER.

NO SLAG SHALL BE ALLOWED FOR MATERIAL (2)

SEWER/WATERLINE TRENCH SECTION IN PAVED AREAS

NOT TO SCALE



NOTES:

A. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

B. TRENCHING OPERATIONS SHALL INCLUDE ALL NECESSARY DEWATERING.

C. TRENCH DETAILS ARE ONLY SHOWN FOR PURPOSES OF MATERIAL PLACEMENT AND MAXIMUM PAY LIMITS.

D. AN OSHA APPROVED MOVABLE PROTECTIVE TRENCH SHIELD SHALL BE USED IN ALL UNSHEETED TRENCH AREAS.

MATERIALS

PIPE BEDDING MATERIAL (NYSDOT 1985 EDITION)

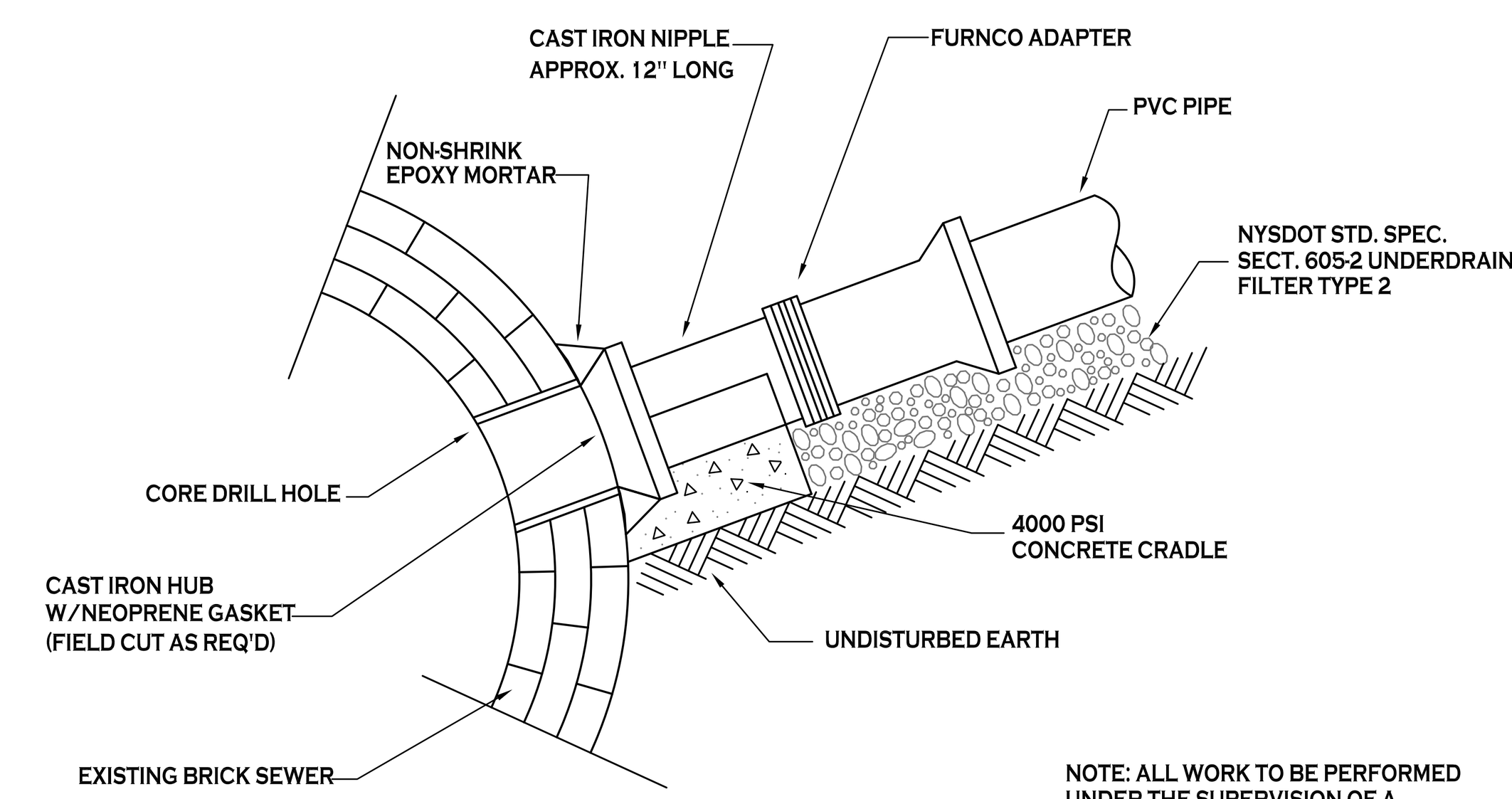
(1) NO. 1 CRUSHED STONE OR CRUSHED GRAVEL WITH A GRADATION CONFORMING WITH NYSDOT SECTION 703-02. THE MATERIAL SHALL BE WELL GRADED WITH NO PARTICLES LARGER THAN ONE INCH AND HAVING A MAXIMUM GRADATION MEETING THE LIMITS DESCRIBED IN THE SPECIFICATIONS. THE BEDDING SHALL BE COMPACTED IN 6" LIFTS WITH EQUIPMENT ACCEPTABLE TO THE PIPE MANUFACTURER.

NO SLAG SHALL BE ALLOWED FOR MATERIAL (1)

(2) BACKFILL MATERIAL SHALL BE NATIVE SOIL CONTAINING NO UNSUITABLE MATERIAL COMPACTED IN 6" LIFTS.

SEWER/WATERLINE TRENCH SECTION IN UNPAVED AREAS

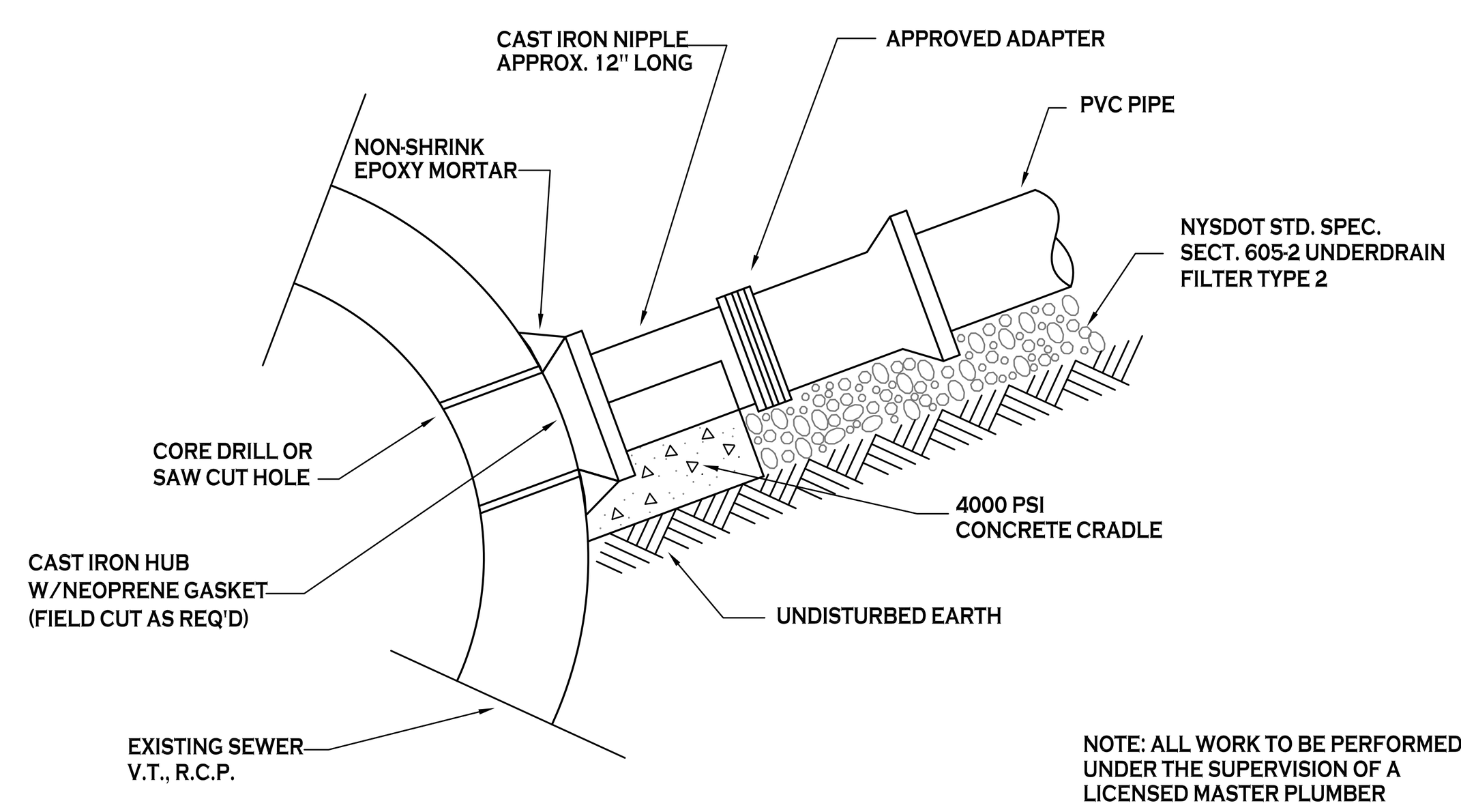
NOT TO SCALE



NOTE: ALL WORK TO BE PERFORMED UNDER THE SUPERVISION OF A LICENSED MASTER PLUMBER

TYPICAL CONNECTION TO EXISTING BRICK SEWER

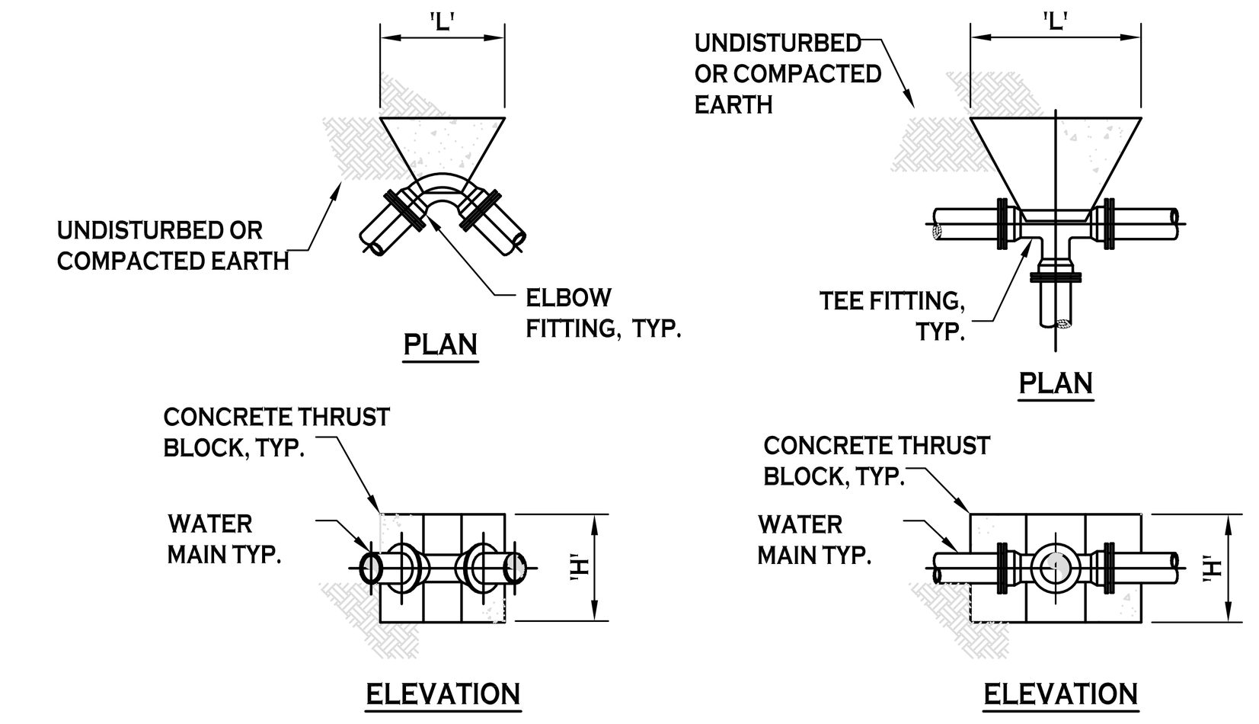
NOT TO SCALE



NOTE: ALL WORK TO BE PERFORMED UNDER THE SUPERVISION OF A LICENSED MASTER PLUMBER

TYPICAL CONNECTION TO EXISTING SEWER

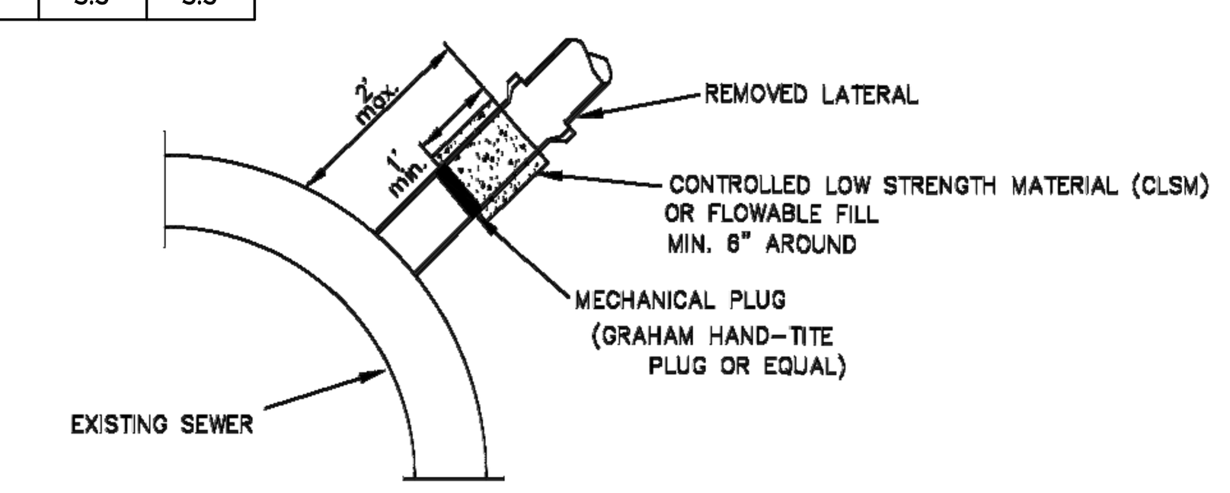
NOT TO SCALE



DIMENSION SCHEDULE								
PIPE SIZE	90° ELBOW		45° ELBOW		22.5° ELBOW		11.25° ELBOW	
	'H'	'L'	'H'	'L'	'H'	'L'	'H'	'L'
4"	1.5'	2.0'	1.0'	2.0'	1.0'	1.0'	1.0'	1.0'
6"	2.0'	2.5'	1.5'	2.0'	1.0'	1.5'	1.0'	1.5'
8"	2.5'	3.5'	2.0'	2.5'	1.5'	1.5'	1.0'	2.0'
10"	3.0'	4.5'	2.5'	3.0'	1.5'	3.0'	1.0'	2.5'
12"	3.5'	5.0'	3.0'	3.5'	2.5'	2.5'	1.5'	2.5'

DIMENSION SCHEDULE		
PIPE SIZE	TEE OR TAP SLEEVE	
—	'H'	'L'
4"	1.5'	1.0'
6"	1.5'	2.5'
8"	1.5'	3.5'
10"	2.5'	3.5'
12"	3.5'	3.5'

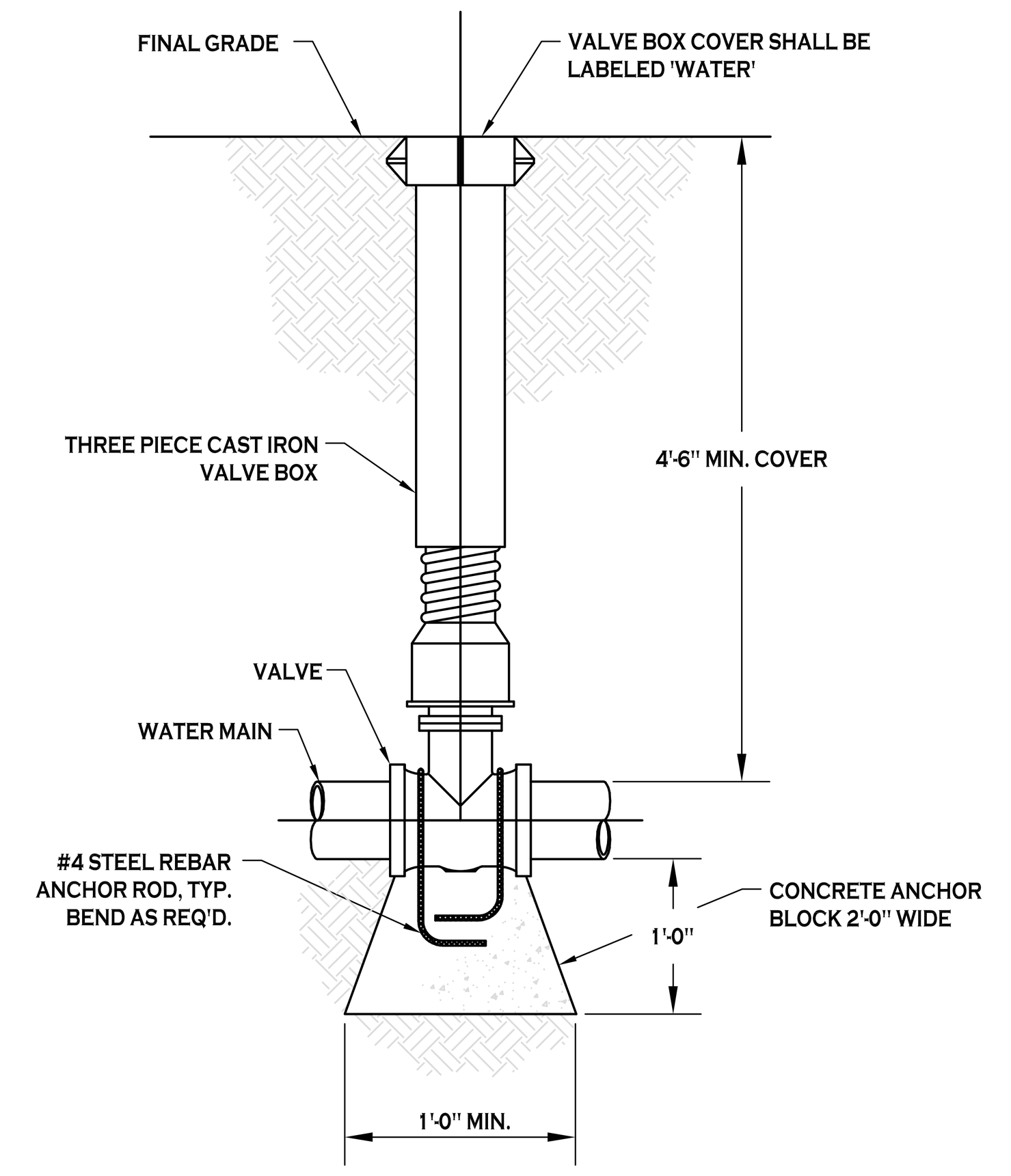
THRUST BLOCK SCHEDULE



NOTE(S):
WHEN ABANDONING SEWER LATERAL CONNECTION(S) TO THE PUBLIC SEWER, CONTRACTOR SHALL CUT AND REMOVE THE DRAINAGE PIPE TO WITHIN TWO FEET OF THE MAIN SEWER, WHERE PRACTICABALE. THE PIPE FROM THE CUT TO THE MAIN SEWER SHALL NOT BE DAMAGED IN ANY MANNER BY THE CONTRACTOR. IF THE EXISTING LATERAL IS DAMAGED BY THE CONTRACTOR, THE LATERAL MAIN SHALL BE FIXED IN A MANNER ACCEPTABLE TO THE BUFFALO SEWER AUTHORITY (BSA) AND THE ENGINEER AT NO COST TO THE BSA. ONCE THE LATERAL HAS BEEN CUT, THE LATERAL SHALL BE PLUGGED WITH A MECHANICAL PLUG (GRAHAM HAND – TITE PLUG OR EQUAL) THAT IS ACCEPTABLE TO THE BSA AND THE ENGINEER.THE PLUG IS TO BE INSTALLED A MINIMUM OF ONE (1) FOOT DEEP INTO THE LATERAL AND CONTROLLED LOW STRENGTH MATERIAL (CLSM) SHALL BE PLACED WITHIN THE ENTIRE DIAMETER OF THE PIPE FOR ONE (1) LINEAR FOOT. THE REMAINING PIPE SHALL BE REMOVED AND PROPERLY DISPOSED OF OR ABANDONED IN PLACE AND FILLED WITH CLSM (OR FLOWABLE FILL).

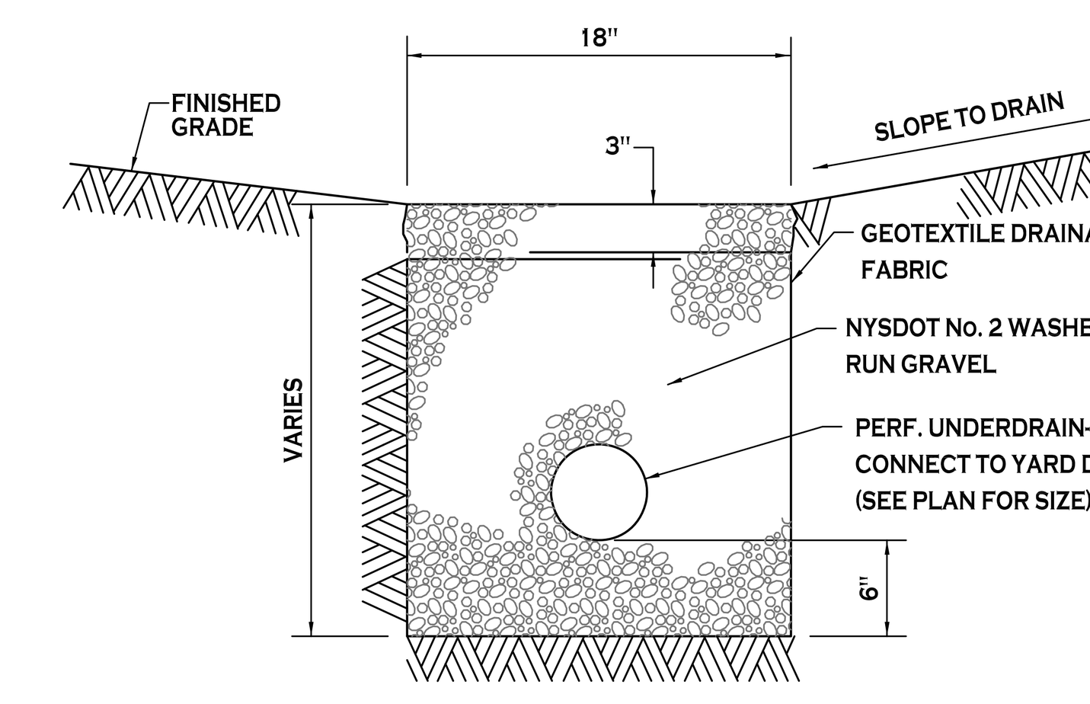
SEWER LATERAL ABANDONMENT DETAIL

NOT TO SCALE



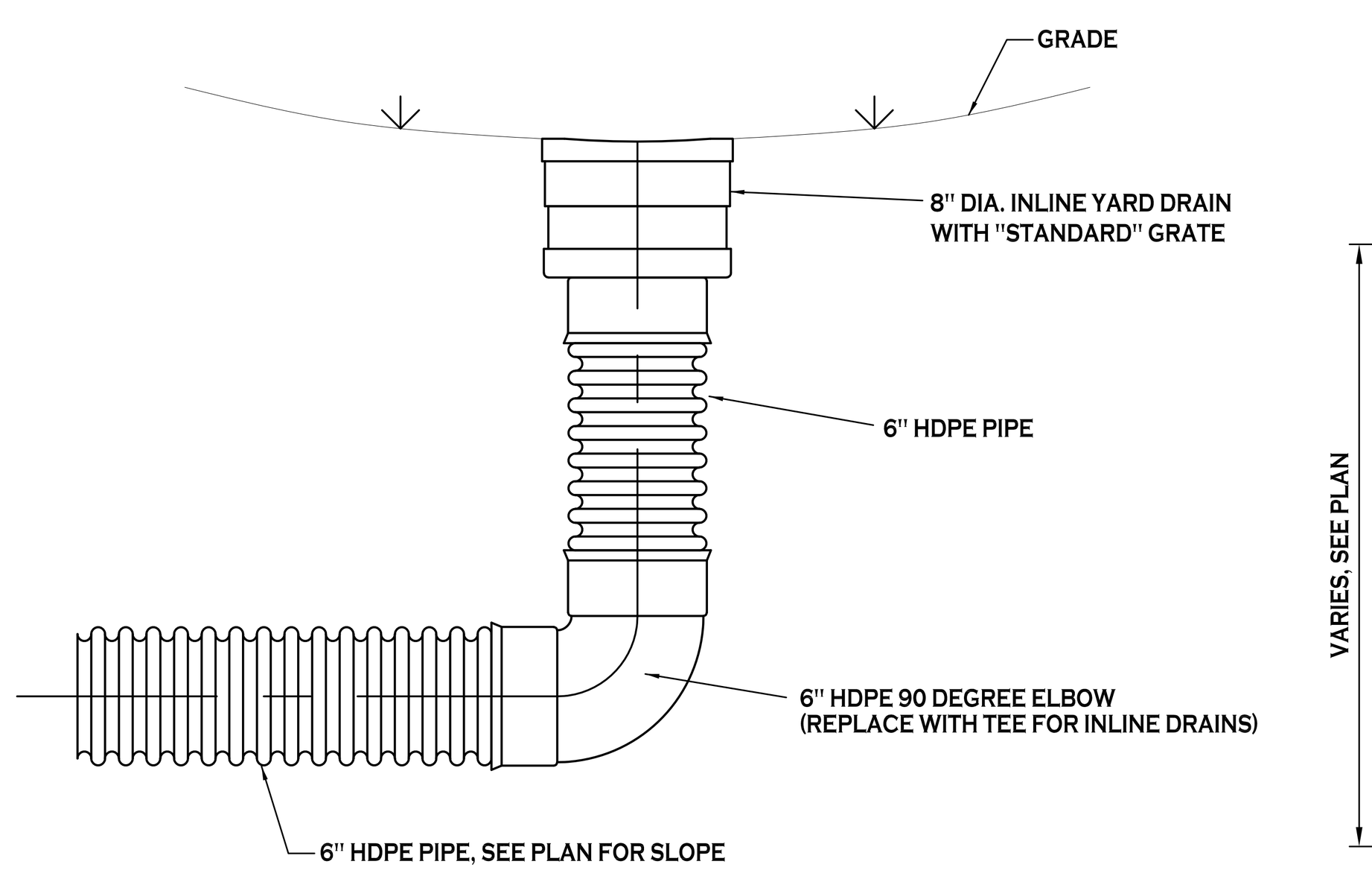
TYPICAL GATE VALVE DETAIL

NOT TO SCALE



FRENCH DRAIN DETAIL

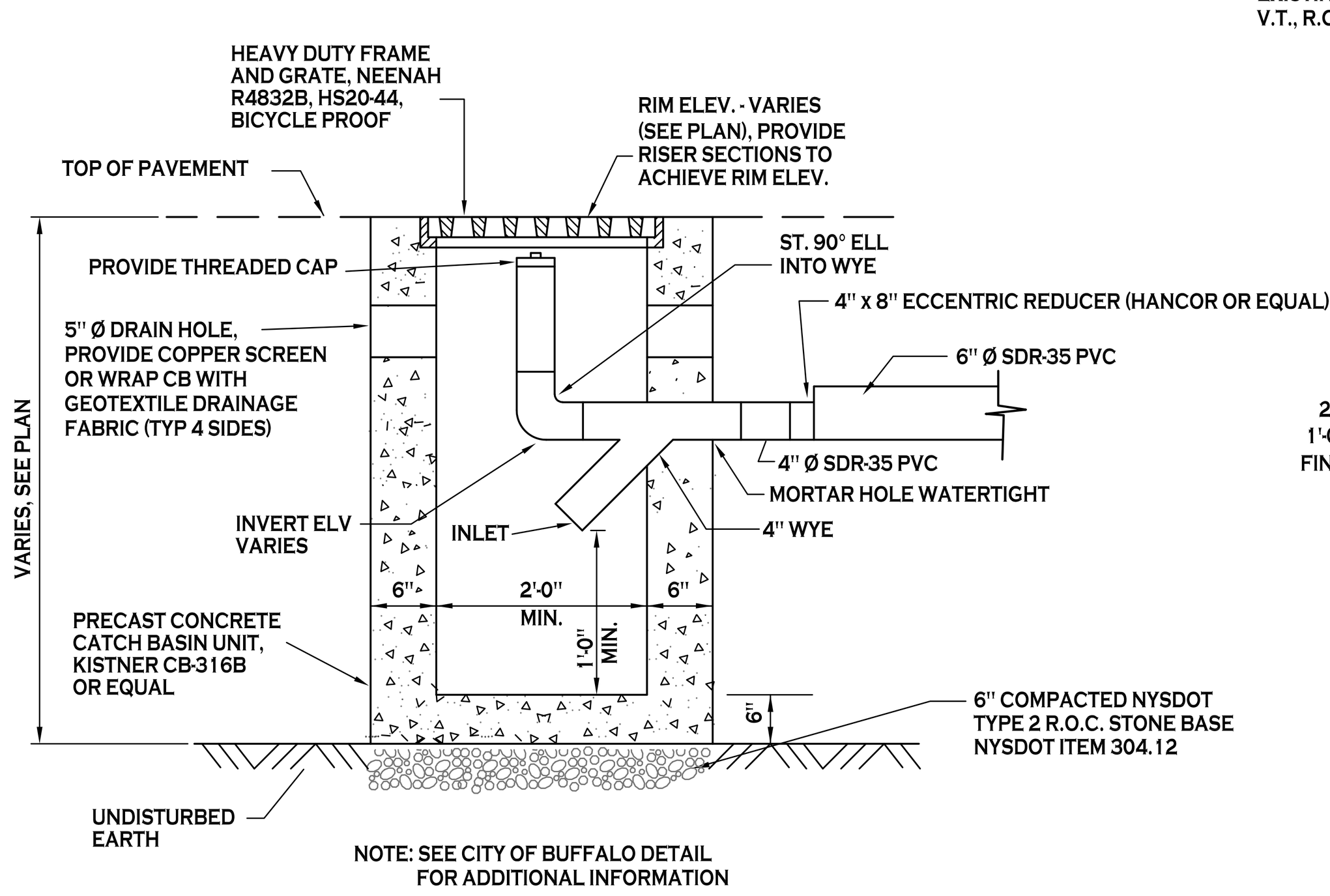
NOT TO SCALE



NOTE:
SEE TYPICAL TRENCH SECTION FOR BEDDING REQUIREMENTS

TYPICAL YARD DRAIN DETAIL

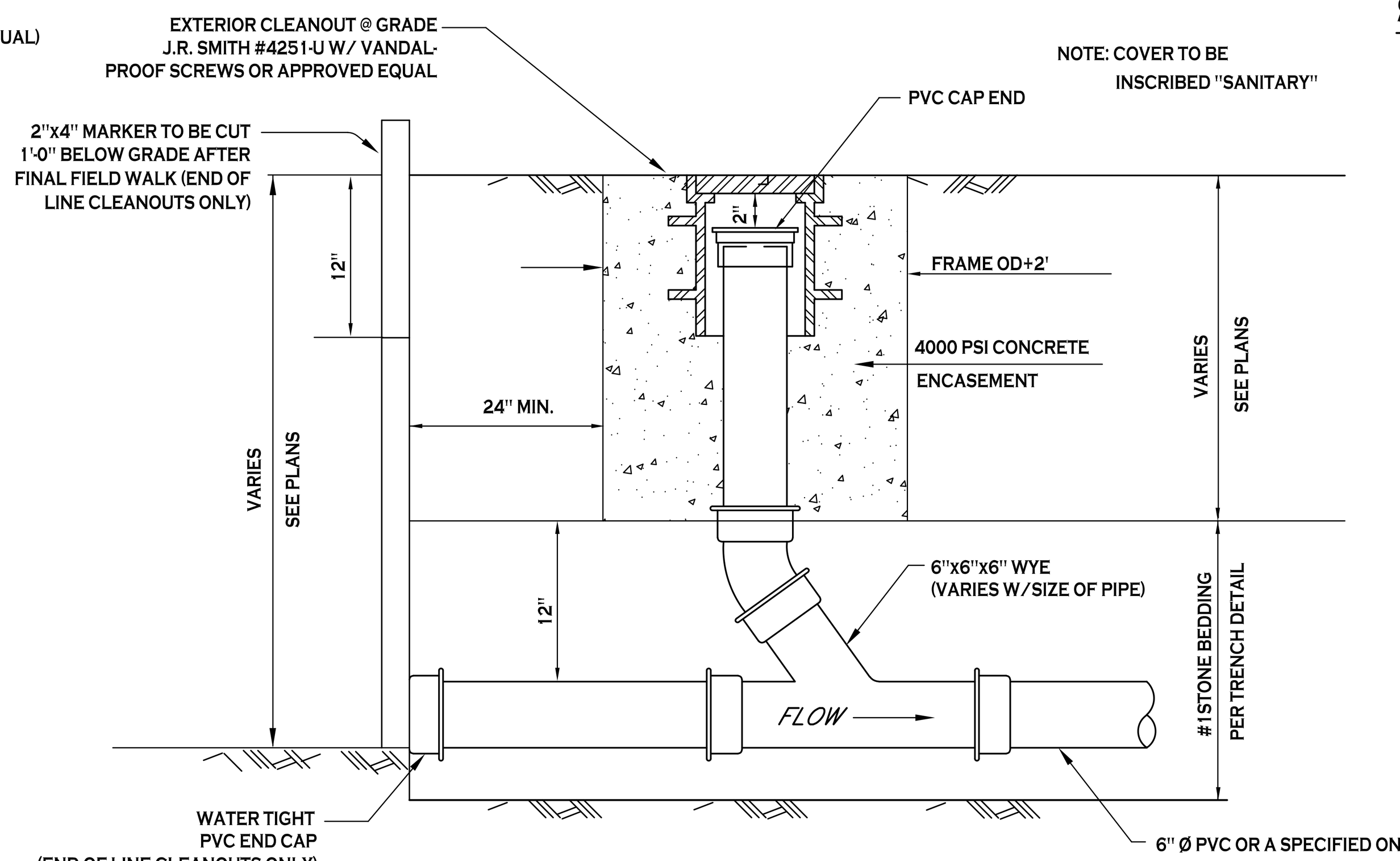
NOT TO SCALE



NOTE: SEE CITY OF BUFFALO DETAIL FOR ADDITIONAL INFORMATION

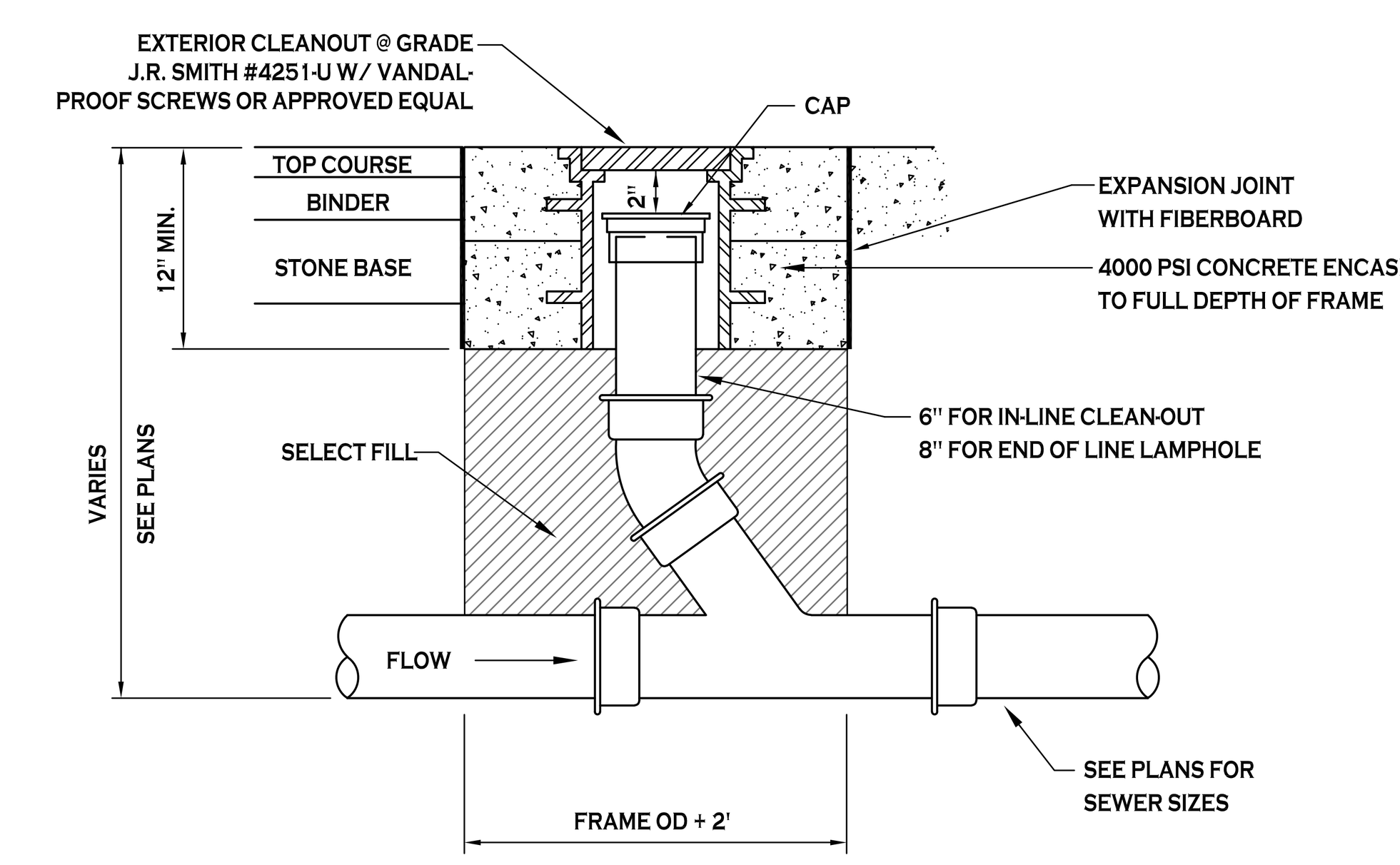
TYPICAL C.O.B. CATCH BASIN

NOT TO SCALE



LAMPHOLE/CLEANOUT IN LAWN/FIELD AREAS

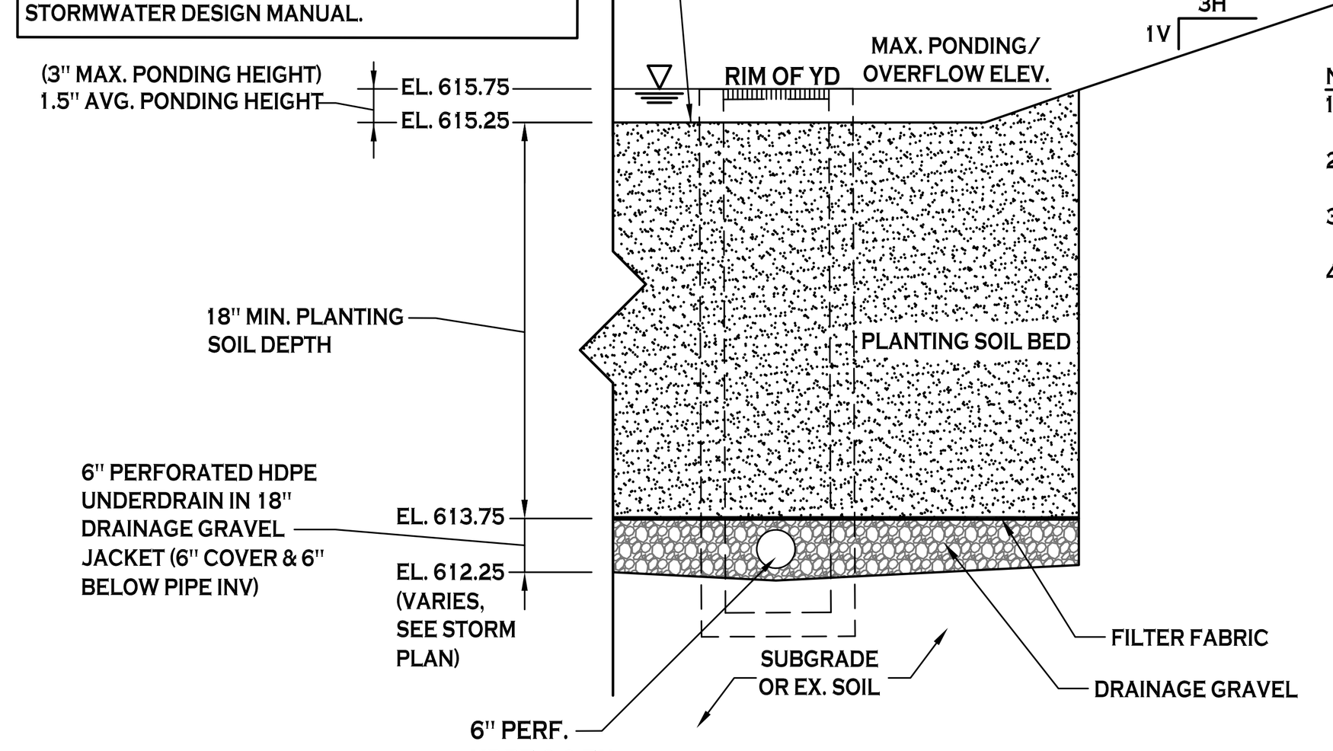
NOT TO SCALE



LAMPHOLE/CLEANOUT IN PAVEMENT/SIDEWALK

NOT TO SCALE

NOTE:
ORNAMENTAL FLOWERING PLANTS ARE TO BE PLANTED WITHIN THE BIORETENTION AREA IN ACCORDANCE WITH APPENDIX H.2 OF THE NYSDEC STORMWATER DESIGN MANUAL.



NOTES:
1. FILTER FABRIC TO BE NON-WOVEN CLASS 'C', MIRAFI 180-N OR APPROVED EQUIVALENT
2. MULCH TO BE SHREDDED HARDWOOD, AGED 12 MONTHS MIN.
3. DRAINAGE GRAVEL TO MEET AASHTO M-43. NO.67, SIZE 0.25" TO 0.75"
4. CONTRACTOR TO PROVIDE PLANTING SOIL SUBMITTAL SPECIFICATION FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

NOTE: PLANTING SOIL SHALL BE LOAM/SAND MIX CONTAINING A MINIMUM OF 35 TO 60% SAND BY VOLUME AND LESS THAN 25% CLAY. SOIL SHOULD FALL WITHIN USCS TYPES SM OR ML WITH PERMEABILITY OF AT LEAST 0.5 FEET PER DAY. SOIL SHOULD BE FREE FROM STONES, STUMPS, ROOTS OR OTHER WOODY MATERIAL OVER 1" IN DIAMETER. PLACEMENT OF THE PLANTING SOIL SHOULD BE IN LIFTS OF 12" TO 18", LOOSELY COMPACTED.

CHARACTERISTICS SHALL BE:
PH RANGE: 5.2 - 7.00
ORGANIC MATTER: 1.5 - 4.0%
MAGNESIUM: 35 LBS PER ACRE MIN.
PHOSPHORUS: 75 LBS PER ACRE MIN.
POTASSIUM: 85 LBS PER ACRE MIN.
SOLUBLE SALTS: 500 PPM
CLAY: 10 TO 25%
SILT: 30 TO 55%
SAND: 35 TO 60%

BIO-RETENTION AREA SEEDING SPEC (NORTHEAST WETLAND GRASS SEED MIX):

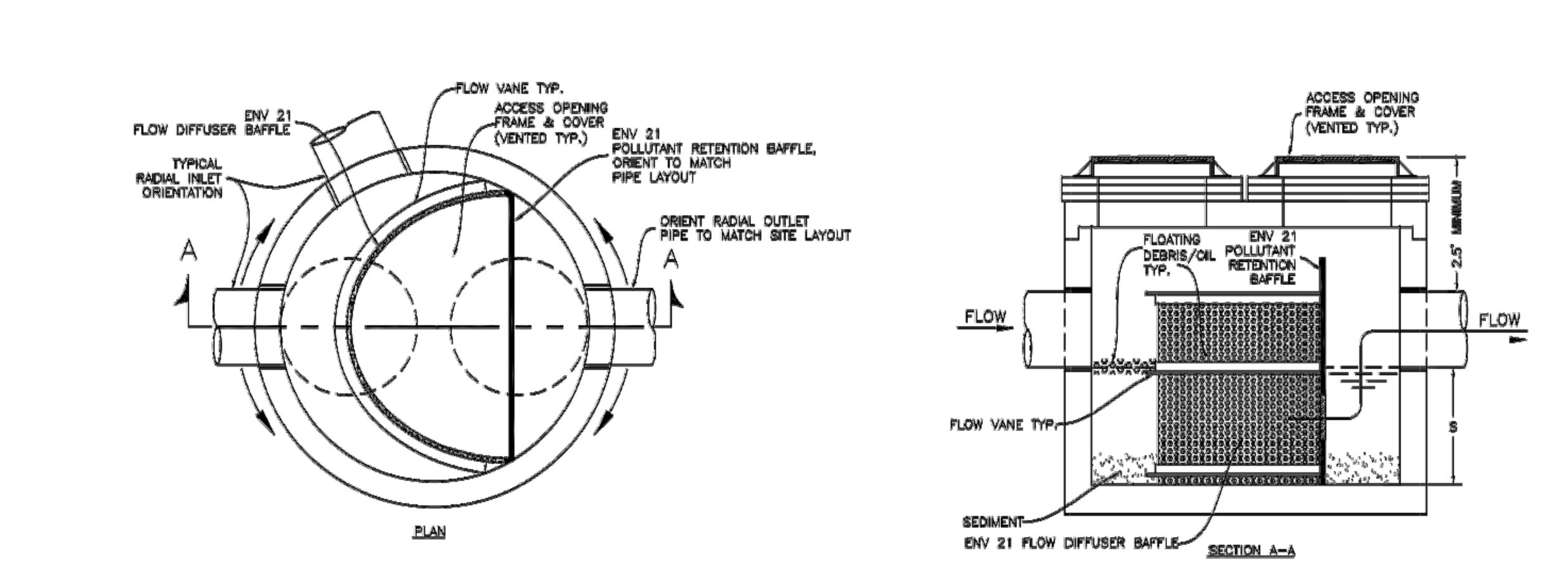
SEED MIXTURE	VARIETY	PERCENT BY NO. OF SEEDS
CREEPING BENTGRASS	AGROSTIS STOLONIFERA	63.0
ROUGH BLUEGRASS	POA TRIVIALIS	17.0
MEADOW FOXTAIL	ALOPECURUS ARUNDINACEUS	11.0
ANNUAL RYEGRASS	LOLIUM MULTIFLORUM	4.5
DEERTONGUE	PANICUM CLANDESTINUM	4.5

BIORETENTION AREA - TYPICAL SECTION

NOT TO SCALE

ENVIRONMENT21 UNISCREEN WATER QUALITY TREATMENT SYSTEM

DATE: 04/25/2018
DWG. NO.:Detail - UNISCREEN



TREATMENT NOTES:

1) CPS (CRITICAL PARTICLE SIZE) REPRESENTS AN ESTIMATE OF THE SMALLEST SEDIMENT PARTICLE THAT CAN BE REMOVED AT 80% EFFICIENCY.

2) STORMWATER FLOWING IN THE INLET PIPE CAN EXPERIENCE SEDIMENT STRATIFICATION THAT PROVIDES IMPROVED REMOVAL OF SEDIMENT.

3) STORMWATER FLOWING IN THE INLET PIPE CAN EXPERIENCE FLOATABLES STRATIFICATION THAT PROVIDES IMPROVED REMOVAL OF FLOATING POLLUTANTS (OILS ORGANIC DEBRIS).

UNISCREEN FLOW DIFFUSER AREA	
MODEL #	SCREEN AREA, S.F.
5SC	35
6SC	51
7SC	59
8SC	68
10SC	99
12SC	119

DESIGN FEATURES OF UNISCREEN STORMWATER TREATMENT CHAMBER

1) FLOW DIFFUSER OPEN AREA TYPICALLY 8-10 TIMES FLOW AREA OF OUTLET PIPE.
2) DESIGN STORM HEAD LOSS FOR FLOW DIFFUSER MODULE TYPICALLY LESS THAN 0.25 FT
3) INLET AND OUTLET PIPES CAN BE OFFSET TO MEET SITE CONDITIONS.
4) FLOW DIFFUSER OPENING DIMENSIONS SPECIFIED BY ENV 21.
5) FOR IMPROVED SCREENING, SPECIFY OPENING DIMENSION OF 1/8" (4800 MICRONS).
6) SITE-SPECIFIC PRODUCT DETAIL DRAWING PREPARED BY ENVIRONMENT 21 AVAILABLE.

UNISCREEN SIZING TABLE						
UNISCREEN MODEL #	D (ft.)	MAX. S (ft.)	IMPERVIOUS AREA (acres)	INLET PIPE (in.)	TREATMENT FLOW (cfs)	PEAK FLOW (cfs)
5SC	5	3.5±	0 - 4	12-18	0 - 3	7
6SC	6	3.5±	4 - 10	18-24	3 - 7	16
7SC	7	4.5±	10 - 12	24-30	7 - 10	25
8SC	8	4.5±	12 - 15	30-36	10 - 13	35
10SC	10	5.5±	15 - 20	36-42	13 - 18	48
12SC	12	5.5±	20 - 25	42-48	18 - 22	60

CALL: 1-800-809-2801

SITE SPECIFIC DATA REQUIREMENTS	
STRUCTURE ID:	
SITE WQFR (cfs)	
DESIGN STORM (yrs.)	
PEAK FLOW (cfs)	
RIM ELEVATION (ft.)	
INLET PIPE SIZE (in.)	
INLET PIPE ELEV. (ft.)	
OUTLET PIPE SIZE (in.)	
OUTLET PIPE ELEV. (ft.)	

NOTES:
1) RAINFALL INTENSITY USED FOR TREATMENT FLOW = 0.80-1.0 IN/HR
2) MAXIMUM OPERATING LOSS APPROXIMATELY 0.5 FT

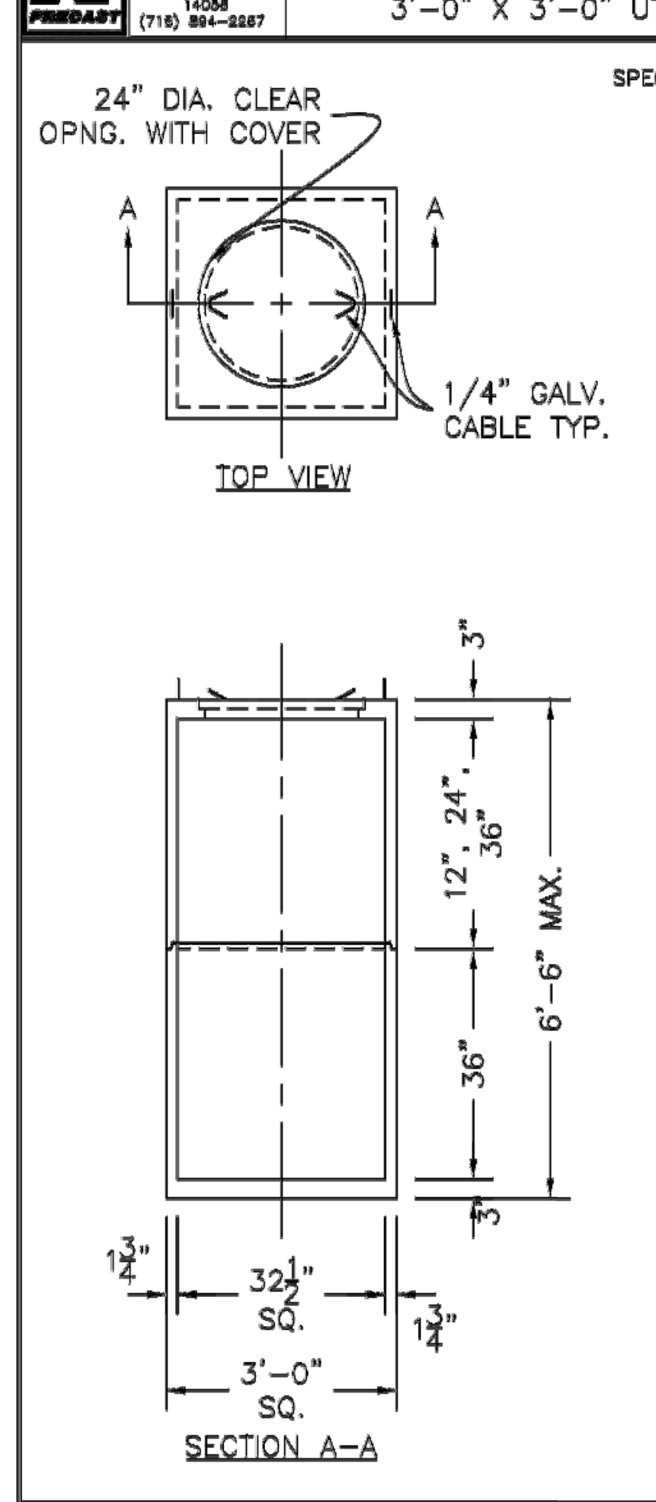
MANUFACTURING NOTES:
1) DESIGN OF INTERNAL BAFFLE WALLS PROVIDED TO LICENSED MANUFACTURER BY ENVIRONMENT 21, LLC.
2) LOCATION AND SIZE OF MANHOLE OPENINGS MAY BE ADJUSTED BY LICENSED MANUFACTURER.
3) G.C. TO GROUT INLET AND OUTLET PIPES.

GENERAL NOTES:
MANHOLE DESIGN SPECIFICATIONS CONFORM TO LATEST A.S.T.M. C478 SPEC. FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS.
DESIGN LOADING: AASHTO HS20-44

PROPRIETARY INFORMATION: PATENTS PENDING - ALL RIGHTS TO ENVIRONMENT 21, LLC.

KISTNER CONCRETE PRODUCTS INC. 8713 READ ROAD E. PEMBROKE, N.Y. 14056 (716) 894-2267

PRODUCT DESIGNATION	DWG. NO.
3'-0" X 3'-0" UTILITY TANK	ST-ST33UT © 3-14-07



SPECIFICATIONS:
CONCRETE: 4,000 P.S.I. @ 28 DAYS.
ENTRAINED AIR: 5% – 9%.
STEEL: A.S.T.M. A496-A615 GRADE 60-60 KSI.
DESIGN LOADING: A-0.3/300PSF/WALKWAYS. FLOTATION FORCES NOT ACCOUNTED FOR.
WEIGHTS:
3' X 3' UTILITY PLUG COVER: 128 LBS.
TOP SECTION: 1' – 577 LBS. 2' – 823 LBS. 3' – 1,069 LBS.
BOTTOM SECTION: 3' – 1,069 LBS.
WATER CAPACITY:
3' WATER = 22 CU. FT. = 162 GAL.
4' WATER = 30 CU. FT. = 189 GAL.
5' WATER = 37 CU. FT. = 216 GAL.
6' WATER = 44 CU. FT. = 270 GAL.
GPF – 54 GAL.

NOTE: TOP SECTIONS MAY BE STACKED FOR ADDITIONAL HEIGHT.

Architectural Resources
505 Franklin St
Buffalo, New York 14202
303 West 13th Street
New York, New York 10014
716-883-5566 716-883-5569 fax

The Krog Group, LLC
4 Centre Drive
Orchard Park, NY 14127
Phone: 716-667-1234

Tredo Engineers
755 Seneca Street
Buffalo, NY 14210
Phone: 716-876-7147

Carmina Wood Morris, DPC
487 Main Street, Suite 500
Buffalo, NY 14203
Phone: 716-842-3165

MJ Mechanical Services, Inc.
5 Pirson Parkway
Tonawanda, NY 14150
Phone: 716-874-9200

Ellicott Engineering, PC
333 Ellicott Street
Buffalo, NY 14203
Phone: 716-852-2010

DV Brown & Associates, Inc.
562 Vickers Street, #2
Tonawanda, NY 14150
Phone: 716-695-5533

Davis Ulmer Fire Protection
1 Commerce Drive
Amherst, NY 14228
Phone: 716-691-3200

Barbara Gisel Design ltd
365 West Lancaster Avenue
Haverford, PA 19041
Phone: 610-649-1975

RCW LA STUDIO LLC
2765 Dodge Rd
East Amherst, NY 14051
Phone: 716-364-5564

Niagara Street Studio

Great Point Opportunity Fund (B) QOZB, LLC
1155 Niagara Street
Buffalo, NY 14213

Seal

Progress Set

9.3.2021

Revisions

No.	Description	Date

Storm Drainage and Utility Details

A|r Job No: 787.01
Consultant No: 20.076
Drawn by: P. Sheedy Jr.
Sheet No:

C-301

APPENDIX B

HEALTH AND SAFETY PLAN

SITE HEALTH AND SAFETY PLAN
for
BROWNFIELD CLEANUP PROGRAM
REMEDIAL ACTION ACTIVITIES

1155 NIAGARA STREET SITE
BCP SITE NO. C915367
BUFFALO, NEW YORK

April 2022 0550-020-001

Prepared for:

GREAT POINT OPPORTUNITY FUND (A) QOZB, LLC

Prepared by:

BENCHMARK

In Association With:

TURNKEY ENVIRONMENTAL RESTORATION, LLC

1155 NIAGARA STREET SITE
HEALTH AND SAFETY PLAN FOR REMEDIAL ACTION ACTIVITIES

ACKNOWLEDGEMENT

Plan Reviewed by (initial):

Corporate Health and Safety Director: Thomas H. Forbes, P.E.

Project Manager: Nathan Munley

Designated Site Safety and Health Officer: Nathan Munley

Acknowledgement:
I acknowledge that I have reviewed the information contained in this site-specific Health and Safety Plan, and understand the hazards associated with performance of the field activities described herein. I agree to comply with the requirements of this plan.

NAME (PRINT)	SIGNATURE	DATE

1155 NIAGARAR STREET SITE
HEALTH AND SAFETY PLAN FOR REMEDIAL ACTION ACTIVITIES

TABLE OF CONTENTS

1155 NIAGARAR STREET SITE
HEALTH AND SAFETY PLAN FOR REMEDIAL ACTION ACTIVITIES

TABLE OF CONTENTS

1155 NIAGARAR STREET SITE
HEALTH AND SAFETY PLAN FOR REMEDIAL ACTION ACTIVITIES

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ATTACHMENTS

1.0 INTRODUCTION

1.1 General

In accordance with OSHA requirements contained in 29 CFR 1910.120, this Health and Safety Plan (HASP) describes the specific health and safety practices and procedures to be employed by and Benchmark Civil/Environmental Engineering & Geology, PLLC and TurnKey Environmental Restoration, LLC employees (referred to jointly hereafter as "Benchmark-TurnKey") during Remedial Action (RA) activities at the 1155 Niagara Street Site (Site) located in the City of Buffalo, Erie County, New York. This HASP presents procedures for Benchmark-TurnKey employees who will be involved with RA field activities; it does not cover the activities of other contractors, subcontractors or other individuals on the Site. These firms will be required to develop and enforce their own HASPs as discussed in Section 2.0. Benchmark-TurnKey accepts no responsibility for the health and safety of contractor, subcontractor or other personnel.

This HASP presents information on known Site health and safety hazards using available historical information, and identifies the equipment, materials and procedures that will be used to eliminate or control these hazards. Environmental monitoring will be performed during the course of field activities to provide real-time data for on-going assessment of potential hazards.

1.2 Background

The Site addressed at 1155 Niagara Street consists of a single ±3.67-acre parcel, located at the southeast corner of Niagara Street and West Ferry Street, in a highly developed mixed-use residential, commercial, and industrial neighborhood, in the City of Buffalo, Erie County, New York. The Site is currently vacant land. (see Figures 1 and 2).

A portion of the Site was developed with numerous residential properties from at least 1899 through at least 1981. Portions of the Site were also previously developed with commercial and industrial uses from at least 1925 through at least 1981, including a vehicle garage/storage, a contractor's yard, and a blacksmith a pipe shop, a garage, and storage. A portion of the Site was a dairy manufacturing operation from at least 1951 through at least 1981.

According to historic records, multiple underground storage tanks (USTs) have been installed on Site, including at least three (3) petroleum USTs, and one (1) refrigerant UST. Multiple NYSDEC Spills records are associated with the Site, including a currently open spill file No. 2005973.

1.3 Known and Suspected Environmental Conditions

Previous investigations have identified environmental contamination related to the former uses of the Site. Elevated photoionization detector (PID) readings greater than 15,000 ppm, odors, and visual staining were detected. Elevated volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and metals, including lead were detected exceeding regulatory guidelines. Details of the previous investigation are presented din Section 2 below. Subsurface conditions will be further assessed as part of the RI. Findings of the previous investigations are detailed below:

November 2019 – Limited Phase II Investigation

- Previous investigation identified former USTs, including refrigerant tank(s) and historic tanks, with ammonia spills identified.
- Shallow fill material was identified across the Site.
- Chlorofluorocarbons (CFCs) including Freon-11 and/or Freon-12 were reported exceeding GWQS/GV at SB-01 and SB-04.
    - Elevated metals, including arsenic, chromium and lead were identified exceeding their respective GWQS at multiple locations. Additional elevated barium, beryllium, copper, nickel, and zinc were also identified exceeding their respective GWQS/GV.

October 2020 – Limited Phase II Environmental Investigation

- Historic records indicate the presence of at least two USTs, related to a former vehicle storage area in the southern portion of the site, and a former contractor's yard in the eastern portion of the Site.
- Fill material was identified across the Site in all 12 test pit locations. Similar fill material, including brick, block, concrete, glass, and cindery-ash materials were identified. Former building foundations and/or concrete subgrade structures were encountered.

- Elevated PID readings were observed at TP-3 (>15,000 ppm) from 6 to 9 fbgs and at TP-5 (6,422 ppm) from 5 to 6 fbgs. Strong odors and black discoloration were also observed at TP-3 and TP-5.
- Based on the petroleum contamination identified during the investigation, the NYSDEC Spill hotline was notified and Spill No. 2005973 was issued for the Site.
- Elevated petroleum-related VOCs including BTEX-compounds (benzene, toluene, ethylbenzene and xylene), 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene, were identified exceeding their respective 6 NYCRR Part 375 Unrestricted Use SCOs (USCOs), Restricted Residential Use SCOs (RRSCOs), and Commercial Use SCOs (CSCOs) at select locations.
- Elevated polycyclic aromatic hydrocarbons (PAHs) were identified exceeding their respective USCOs, RRSCOs, CSCOs, and Industrial Use SCOs (ISCOs) in shallow fill across the Site.
- Elevated lead was detected in shallow fill exceeding its USCO.

December 2021 – Remedial Investigation/Interim Remedial Measures/ Alternative Analysis (RI/IRM/AA) Report

- Based on the RI soil data, the majority of the shallow surface soils in the upper 1-ft across the Site achieve the Residential Use Import Criteria, elevated PAHs and metal were identified across the Site from approximately 1.0 to at least 8 fbgs, and was generally associated with the presence of fill materials.
- Based on the RI groundwater findings, the vast majority of analytes were reported below GWQS. Freon-11 and Freon-12 (at one location) and certain PAHs, and naturally occurring metals were detected above their respective GWQS. PFOA and 1,4-dioxane were detected above the current NYS guidance values at two locations.
- The completed IRMs included removal and off-site disposal of non-hazardous petroleum impacted soil/fill and metals and PAHs impacted areas in accordance with the approved work plan. Post-excavation confirmatory soil samples and field results confirm that the completed IRMs achieved CSCOs.
- Given the nature and extent of contamination present in soil/fill and groundwater, and the intended reuse of the Site, evaluation of remedial alternatives selected a Commercial Use (Track 4) Cleanup that is fully protective of public health and the environment.

The RA will be performed in support of the BCP to address known environmental impacts related to past uses of the Site. Impacted soil will be removed and impacted groundwater (if encountered) will be extracted and treated during the RA.

1.4 Parameters of Interest

Based on the previous investigations, constituents of potential concern (COPCs) in soil and, potentially groundwater, at the Site include:

- **Inorganic Compound –** The inorganic COPCS potentially present at elevated concentrations are copper, lead, mercury, and zinc.

- **Volatile Organic Compounds (VOCs)** – VOCs present at elevated concentration include 1,2,4-trimethylbenzene, 1,3,5- trimethylbenzene, benzene, ethylbenzene, n-butylbenzene, n-propylbenzene, toluene, and xylenes. Chlorofluorocarbons (CFCs), including dichlorodifluoromethane (Freon-12) and trichlorofluoromethane (Freon-11) were identified in groundwater.

- **Semi-Volatile Organic Compounds (SVOCs) –** SVOCs present at elevated concentrations may include polycyclic aromatic hydrocarbons (PAHs), which are byproducts of incomplete combustion and impurities in petroleum products. PAHs present at elevated levels in the soil/fill samples include: are benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene.

1.5 Overview of RA Activities

Benchmark-TurnKey personnel will be on-site to observe and perform RA. The field activities to be completed as part of the RA are described below.

<u>Remedial Action Activities</u>

- **Supplemental Groundwater Assessment;**
- **Excavation and offsite disposal of soil/fill,** specifically soil/fill not suitable for on-site reuse generated during DER-10 cover construction;
- **Construction of Cover System,** including demarcation layer underlying 12-inhes minimum of DER-10 acceptable backfill in areas without hardscape (building, asphalt and concrete) to address remaining contamination above CSCOs;
- **Implementation of a Site Management Plan (SMP)**. The SMP will include:

- **Institutional Controls and Engineering Controls (IC/EC)** Engineering controls include any physical barrier or method employed to actively or passively contain, stabilize, or monitor contaminants; restrict the movement of contaminants; or eliminate potential exposure pathways to contaminants. Institutional controls at the site will include groundwater use restrictions and land use restrictions of the Site to commercial use;
- **Excavation Work Plan** to assure that future intrusive activities and soil/fill handling at the Site are completed in a safe and environmentally responsible manner;
- **Site Monitoring Plan** that includes: provisions for a Site-wide inspection program to assure that the IC/ECs have not been altered and remain effective; and,
- **Environmental Easement** filed with Erie County.

2.0 ORGANIZATIONAL STRUCTURE

This section of the HASP describes the lines of authority, responsibility and communication as they pertain to health and safety functions at the Site. The purpose of this chapter is to identify the personnel who impact the development and implementation of the HASP and to describe their roles and responsibilities. This chapter also identifies other contractors and subcontractors involved in work operations and establish the lines of communications among them for health and safety matters. The organizational structure described in this chapter is consistent with the requirements of 29 CFR 1910.120(b)(2). This section will be reviewed by the Project Manager and updated as necessary to reflect the current organizational structure at this Site.

2.1 Roles and Responsibilities

All Benchmark-TurnKey personnel on the Site must comply with the minimum requirements of this HASP. The specific responsibilities and authority of management, safety and health, and other personnel on this Site are detailed in the following paragraphs.

2.1.1 Corporate Health and Safety Director

The Benchmark-TurnKey Corporate Health and Safety Director is ***Mr. Thomas H. Forbes, P.E.*** The Corporate Health and Safety Director responsible for developing and implementing the Health and Safety program and policies for Benchmark Civil/Environmental Engineering & Geology, PLLC and TurnKey Environmental Restoration, LLC, and consulting with corporate management to ensure adequate resources are available to properly implement these programs and policies. The Corporate Health and Safety Director coordinates Benchmark-TurnKey's Health and Safety training and medical monitoring programs and assists project management and field staff in developing site-specific health and safety plans.

2.1.2 Project Manager

The Project Manager for this Site is ***Mr. Nathan Munley.*** The Project Manager has the responsibility and authority to direct all Benchmark-TurnKey work operations at the Site. The Project Manager coordinates safety and health functions with the Site Safety and Health Officer, and bears ultimate responsibility for proper implementation of this HASP.

He may delegate authority to expedite and facilitate any application of the program, including modifications to the overall project approach as necessary to circumvent unsafe work conditions. Specific duties of the Project Manager include:

- Preparing and coordinating the Site work plan.
- Providing Benchmark-TurnKey workers with work assignments and overseeing their performance.
- Coordinating health and safety efforts with the Site Safety and Health Officer (SSHO).
- Reviewing the emergency response coordination plan to assure its effectiveness.
- Serving as the primary liaison with Site contractors and the property owner.

2.1.3 Site Safety and Health Officer

The SSHO for this Site is ***Mr. Nathan Munley***. The qualified alternate SSHO is ***Mr. Christopher Boron.*** The SSHO reports to the Project Manager. The SSHO is on-site or readily accessible to the Site during all work operations and has the authority to halt Site work if unsafe conditions are detected. The specific responsibilities of the SSHO are:

- Managing the safety and health functions for Benchmark-TurnKey personnel on the Site.
- Serving as the point of contact for safety and health matters.
- Ensuring that Benchmark-TurnKey field personnel working on the Site have received proper training (per 29 CFR Part 1910.120(e)), that they have obtained medical clearance to wear respiratory protection (per 29 CFR Part 1910.134), and that they are properly trained in the selection, use and maintenance of personal protective equipment, including qualitative respirator fit testing.
- Performing or overseeing Site monitoring as required by the HASP.
- Assisting in the preparation and review of the HASP.
- Maintaining site-specific safety and health records as described in this HASP.

- Coordinating with the Project Manager, Site Workers, and Contractor's SSHO as necessary for safety and health efforts.

2.1.4 Site Workers

Site workers are responsible for: complying with this HASP or a more stringent HASP, if appropriate (i.e., Contractor and Subcontractor's HASP); using proper PPE; reporting unsafe acts and conditions to the SSHO; and following the safety and health instructions of the Project Manager and SSHO.

2.1.5 Other Site Personnel

Other Site personnel who will have health and safety responsibilities will include the Excavation Contractor, who will be responsible for developing, implementing and enforcing a Health and Safety Plan equally stringent or more stringent than Benchmark-TurnKey's HASP. Benchmark-TurnKey assumes no responsibility for the health and safety of anyone outside its direct employ. Each Contractor's HASP shall cover all non-Benchmark/TurnKey Site personnel. Each Contractor shall assign a SSHO who will coordinate with Benchmark-TurnKey's SSHO as necessary to ensure effective lines of communication and consistency between contingency plans.

In addition to Benchmark-TurnKey and Contractor personnel, other individuals who may have responsibilities in the work zone include subcontractors and governmental agencies performing Site inspection work (i.e., the New York State Department of Environmental Conservation). The Contractor shall be responsible for ensuring that these individuals have received OSHA-required training (29 CFR 1910.120(e)), including initial, refresher and site-specific training, and shall be responsible for the safety and health of these individuals while they are on-site.

3.0 HAZARD EVALUATION

Due to the presence of certain contaminants at the Site, the possibility exists that workers will be exposed to hazardous substances during field activities. The principal points of exposure would be through direct contact with and incidental ingestion of soil, and through the inhalation of contaminated particles or vapors. Other points of exposure may include direct contact with groundwater. In addition, the use of drilling and/or medium to large-sized construction equipment (e.g., excavator) will also present conditions for potential physical injury to workers. Further, since work will be performed outdoors, the potential exists for heat/cold stress to impact workers, especially those wearing protective equipment and clothing. Adherence to the medical evaluations, worker training relative to chemical hazards, safe work practices, proper personal protection, environmental monitoring, establishment work zones and Site control, appropriate decontamination procedures and contingency planning outlined herein will reduce the potential for chemical exposures and physical injuries.

3.1 Chemical Hazards

As discussed in Section 1.3, historic activities have potentially resulted in impacts to Site soils and groundwater. Visual and olfactory observations, as well as elevated PID readings, indicate a potential VOC impact to Site soil. In addition to VOCs, soil and groundwater may be impacted by SVOCs (PAHs) and metals due to historic use as an vehicle garage/storage, a contractor's yard, and a blacksmith, a pipe shop, a garage, and storage. A portion of the Site was a dairy manufacturing operation from at least 1951 through at least 1981. Table 1 lists exposure limits for airborne concentrations of the COPCs identified in Section 1.4 of this HASP. Brief descriptions of the toxicology of the prevalent COPCs and related health and safety guidance and criteria are provided below.

- **1,2,4-Trimethylbenzene (CAS #95-63-6)** is a common gasoline additive. Acute exposure predominantly results in skin irritation and inhalation causes chemical pneumonitis. Symptoms include headache, dizziness, fatigue, muscular weakness, drowsiness.
- **1,3,5-Trimethylbenzene (CAS #108-67-8)** is a colorless, odorless flammable liquid. The substance is irritating to the eyes , the skin and the respiratory tract . If this liquid is swallowed, aspiration into the lungs may result in chemical pneumonitis. The substance may cause effects on the central nervous system.

- **Benzene (CAS #71-43-2)** poisoning occurs most commonly through inhalation of the vapor, however, benzene can also penetrate the skin and poison in that way. Locally, benzene has a comparatively strong irritating effect, producing erythema and burning and, in more severe cases, edema and blistering. Exposure to high concentrations of the vapor (i.e., 3,000 ppm or higher) may result in acute poisoning characterized by the narcotic action of benzene on the central nervous system. In acute poisoning, symptoms include confusion, dizziness, tightening of the leg muscles, and pressure over the forehead. Chronic exposure to benzene (i.e., long-term exposure to concentrations of 100 ppm or less) may lead to damage of the blood-forming system. Benzene is very flammable when exposed to heat or flame and can react vigorously with oxidizing materials.

- **Ethylbenzene (CAS #100-41-4)** is a component of automobile gasoline. Over-exposure may cause kidney, skin liver and/or respiratory disease. Signs of exposure may include dermatitis, irritation of the eyes and mucus membranes, headache. Narcosis and coma may result in more severe cases.

- **N-Butylbenzene (CAS #104-51-8)** is a colorless flammable liquid. Inhalation or contact may irritate or burn skin and eyes. In the case of fire, smoke-vapor may produce irritating, corrosive and/or toxic gases. Vapors may cause dizziness or suffocation.

- **N-Propylbenzene (CAS #103-65-1)** is a colorless to pale yellow flammable liquid. Inhalation or contact may irritate or burn skin and eyes. In the case of fire, smoke-vapor may produce irritating, corrosive and/or toxic gases. Vapors may cause dizziness or suffocation.

- **Toluene (CAS #108-88-3)** is a common component of paint thinners and automobile fuel. Acute exposure predominantly results in central nervous system depression. Symptoms include headache, dizziness, fatigue, muscular weakness, drowsiness, and coordination loss. Repeated exposures may cause removal of lipids from the skin, resulting in dry, fissured dermatitis.

- **Xylenes (o, m, and p) (CAS #95-47-6, 108-38-3, and 106-42-3)** are colorless, flammable liquids present in paint thinners and fuels. Acute exposure may cause central nervous system depression, resulting in headache, dizziness, fatigue, muscular weakness, drowsiness, and coordination loss. Repeated exposures may also cause removal of lipids from the skin, producing dry, fissured dermatitis. Exposure of high concentrations of vapor may cause eye irritation and damage, as well as irritation of the mucus membranes.

- **Dichlorodifluoromethane (Freon-12) (CAS #75-71-8)** is a colorless gas with a faint ethereal odor. Inhalation of at least 10% Freon-12 in air may lead to

drowsiness or unconsciousness. Additionally, Freon-12 is heavier than air and may displace air, causing a deficiency of oxygen and possible asphyxiation. Contact may cause frostbite to the skin or eye. Freon-12 is not flammable but may release toxins in a fire.

- **Trichlorofluoromethane (Freon-11) (CAS #76-13-1)** is a colorless, nearly odorless gas. Inhalation of at least 10% Freon-11 in air may lead to drowsiness or unconsciousness. Additionally, Freon-12 is heavier than air and may displace air, causing a deficiency of oxygen and possible asphyxiation. Contact may cause frostbite to the skin or eye. Freon-12 is not flammable but may release toxins in a fire.

- **Polycyclic Aromatic Hydrocarbons (PAHs)** are formed as a result of the pyrolysis and incomplete combustion of organic matter such as fossil fuel. PAH aerosols formed during the combustion process disperse throughout the atmosphere, resulting in the deposition of PAH condensate in soil, water and on vegetation. In addition, several products formed from petroleum processing operations (e.g., roofing materials and asphalt) also contain elevated levels of PAHs. Hence, these compounds are widely dispersed in the environment. PAHs are characterized by a molecular structure containing three or more fused, unsaturated carbon rings. Seven of the PAHs are classified by USEPA as probable human carcinogens (USEPA Class B2). These are: benzo(a)pyrene; benzo(a)anthracene; benzo(b)fluoranthene; and dibenzo(a,h)anthracene. The primary route of exposure to PAHs is through incidental ingestion and inhalation of contaminated particulates. PAHs are characterized by an organic odor, and exist as oily liquids in pure form. Acute exposure symptoms may include acne-type blemishes in areas of the skin exposed to sunlight.
- **Copper (CAS #7440-50-8)** is a natural inorganic element that is essential to plants and animals at low levels. Copper is combustible in powdered form. Contact and inhalation may cause irritation to the eyes, skin, and respiratory system, cough, difficulty breathing, wheezing, and liver and kidney disease.
- **Lead (CAS #7439-92-1)** can affect almost every organ and system in our bodies. The most sensitive is the central nervous system, particularly in children. Lead also damages kidneys and the immune system. The effects are the same whether it is breathed or swallowed. Lead may decrease reaction time, cause weakness in fingers, wrists, or ankles, and possibly affect memory. Lead may cause anemia.
- **Mercury (CAS #7439-97-6)** is used in industrial applications for the production of caustic and chlorine, and in electrical control equipment and apparatus. Over exposure to mercury may cause coughing, chest pains, bronchitis, pneumonia, indecision, headaches, fatigue and salivation. Mercury is a skin and eye irritant.
- **Zinc (CAS #7440-66-6)** is a highly flammable natural inorganic element, and fire produces irritating, corrosive, and toxic gasses. Contact may cause skin irritation.

Contact with water produces corrosive solutions.

With respect to the anticipated RA activities discussed in Section 1.5, possible routes of exposure to the above-mentioned contaminants are presented in Table 2. The use of proper respiratory equipment, as outlined in Section 7.0 of this HASP, will minimize the potential for exposure to airborne contamination. Exposure to contaminants through dermal and other routes will also be minimized through the use of protective clothing (Section 7.0), safe work practices (Section 6.0), and proper decontamination procedures (Section 12.0).

3.2 Physical Hazards

RA field activities at the 1155 Niagara Street Site may present the following physical hazards:

- The potential for physical injury during heavy construction equipment use, such as backhoes, excavators and drilling equipment.
- The potential for heat/cold stress to employees during the summer/winter months (see Section 10.0).
- The potential for slip and fall injuries due to rough, uneven terrain and/or open excavations.

These hazards represent only some of the possible means of injury that may be present during RA operations and sampling activities at the Site. Since it is impossible to list all potential sources of injury, it shall be the responsibility of each individual to exercise proper care and caution during all phases of the work.

4.0 TRAINING

4.1 Site Workers

All personnel performing RA activities at the Site (such as, but not limited to, equipment operators, general laborers, and drillers) and who may be exposed to hazardous substances, health hazards, or safety hazards and their supervisors/managers responsible for the Site shall receive training in accordance with 29 CFR 1910.120(e) before they are permitted to engage in operations in the exclusion zone or contaminant reduction zone. This training includes an initial 40-hour Hazardous Waste Site Worker Protection Course, an 8-hour Annual Refresher Course subsequent to the initial 40-hour training, and 3 days of actual field experience under the direct supervision of a trained, experienced supervisor. Additional site-specific training shall also be provided by the SSHO prior to the start of field activities. A description of topics to be covered by this training is provided below.

4.1.1 Initial and Refresher Training

Initial and refresher training is conducted by a qualified instructor as specified under OSHA 29 CFR 1910.120(e)(5), and is specifically designed to meet the requirements of OSHA 29 CFR 1910.120(e)(3) and 1910.120(e)(8). The training covers, as a minimum, the following topics:

- OSHA HAZWOPER regulations.
- Site safety and hazard recognition, including chemical and physical hazards.
- Medical monitoring requirements.
- Air monitoring, permissible exposure limits, and respiratory protection level classifications.
- Appropriate use of personal protective equipment (PPE), including chemical compatibility and respiratory equipment selection and use.
- Work practices to minimize risk.
- Work zones and Site control.

- Safe use of engineering controls and equipment.
- Decontamination procedures.
- Emergency response and escape.
- Confined space entry procedures.
- Heat and cold stress monitoring.
- Elements of a Health and Safety Plan.
- Spill containment.

Initial training also incorporates workshops for PPE and respiratory equipment use (Levels A, B and C), and respirator fit testing. Records and certification received from the course instructor documenting each employee's successful completion of the training identified above are maintained on file at Benchmark-TurnKey's Buffalo, NY office. Contractors and Subcontractors are required to provide similar documentation of training for all their personnel who will be involved in on-site work activities.

Any employee who has not been certified as having received health and safety training in conformance with 29 CFR 1910.120(e) is prohibited from working in the exclusion and contamination reduction zones, or to engage in any on-site work activities that may involve exposure to hazardous substances or wastes.

4.1.2 Site Training

Site workers are given a copy of the HASP and provided a site-specific briefing prior to the commencement of work to ensure that employees are familiar with the HASP and the information and requirements it contains. The Site briefing shall be provided by the SSHO prior to initiating field activities and shall include:

- Names of personnel and alternates responsible for Site safety and health.
- Safety, health and other hazards present on the Site.
- The site lay-out including work zones and places of refuge.

- The emergency communications system and emergency evacuation procedures.
- Use of PPE.
- Work practices by which the employee can minimize risks from hazards.
- Safe use of engineering controls and equipment on the site.
- Medical surveillance, including recognition of symptoms and signs of over-exposure as described in Chapter 5 of this HASP.
- Decontamination procedures as detailed in Chapter 12 of this HASP.
- The emergency response plan as detailed in Chapter 15 of this HASP.
- Confined space entry procedures, if required, as detailed in Chapter 13 of this HASP.
- The spill containment program as detailed in Chapter 9 of this HASP.
- Site control as detailed in Chapter 11 of this HASP.

Supplemental health and safety briefings will also be conducted by the SSHO on an as-needed basis during the course of the work. Supplemental briefings are provided as necessary to notify employees of any changes to this HASP as a result of information gathered during ongoing Site characterization and analysis. Conditions for which the SSHO may schedule additional briefings include, but are not limited to: a change in Site conditions (e.g., based on monitoring results); changes in the work schedule/plan; newly discovered hazards; and safety incidents occurring during Site work.

4.2 Supervisor Training

On-site safety and health personnel who are directly responsible for or who supervise the safety and health of workers engaged in hazardous waste operations (i.e., SSHO) shall receive, in addition to the appropriate level of worker training described in Section 4.1, above, 8 additional hours of specialized supervisory training, in compliance with 29 CFR 1910.120(e)(4).

4.3 Emergency Response Training

Emergency response training is addressed in Attachment A of this HASP, Emergency Response Plan.

4.4 Site Visitors

Each Contractor's SSHO will provide a site-specific briefing to all Site visitors and other non- Benchmark/TurnKey personnel who enter the Site beyond the Site entry point. The site-specific briefing will provide information about Site hazards, the Site layout including work zones and places of refuge, the emergency communications system and emergency evacuation procedures, and other pertinent safety and health requirements as appropriate.

Site visitors will not be permitted to enter the exclusion zone or contaminant reduction zones unless they have received the level of training required for Site workers as described in Section 4.1.

5.0 MEDICAL MONITORING

Medical monitoring examinations are provided to Benchmark-TurnKey employees as stipulated under 29 CFR Part 1910.120(f). These exams include initial employment, annual and employment termination physicals for all Benchmark-TurnKey employees involved in hazardous waste site field operations. Post-exposure examinations are also provided for employees who may have been injured, received a health impairment, or developed signs or symptoms of over-exposure to hazardous substances or were accidentally exposed to substances at concentrations above the permissible exposure limits without necessary personal protective equipment. Such exams are performed as soon as possible following development of symptoms or the known exposure event.

Medical evaluations are performed by Health Works, an occupational health care provider under contract with Benchmark-TurnKey. Health Works is located in Seneca Square Plaza, 1900 Ridge Road, West Seneca, New York 14224. The facility can be reached at (716) 823-5050 to schedule routine appointments or post-exposure examinations.

Medical evaluations are conducted according to the Benchmark-TurnKey Medical Monitoring Program and include an evaluation of the workers' ability to use respiratory protective equipment. The examinations include:

- Occupational/medical history review.
- Physical exam, including vital sign measurement.
- Spirometry testing.
- Eyesight testing.
- Audio testing (minimum baseline and exit, annual for employees routinely exposed to greater than 85db).
- EKG (for employees >40 yrs age or as medical conditions dictate).
- Chest X-ray (baseline and exit, and every 5 years).
- Blood biochemistry (including blood count, white cell differential count, serum multiplastic screening).
- Medical certification of physical requirements (i.e., sight, musculoskeletal,

cardiovascular) for safe job performance and to wear respiratory protection equipment.

The purpose of the medical evaluation is to determine an employee's fitness for duty on hazardous waste sites; and to establish baseline medical data. In conformance with OSHA regulations, Benchmark-TurnKey will maintain and preserve medical records for a period of 30 years following termination of employment. Employees are provided a copy of the physician's post-exam report, and have access to their medical records and analyses.

6.0 SAFE WORK PRACTICES

All Benchmark-TurnKey employees shall conform to the following safe work practices during all on-site work activities conducted within the exclusion and contamination reduction zones:

- Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand-to-mouth contact is strictly prohibited.

- The hands and face must be thoroughly washed upon leaving the work area and prior to engaging in any activity indicated above.

- Respiratory protective equipment and clothing must be worn by all personnel entering the Site as required by the HASP or as modified by the Site safety officer. Excessive facial hair (i.e., beards, long mustaches or sideburns) that interferes with the satisfactory respirator-to-face seal is prohibited.

- Contact with surfaces/materials either suspected or known to be contaminated will be avoided to minimize the potential for transfer to personnel, cross contamination and need for decontamination.

- Medicine and alcohol can synergize the effects of exposure to toxic chemicals. Due to possible contraindications, use of prescribed drugs should be reviewed with the Benchmark-TurnKey occupational physician. Alcoholic beverage and illegal drug intake are strictly forbidden during the workday.

- All personnel shall be familiar with standard operating safety procedures and additional instructions contained in this Health and Safety Plan.

- On-site personnel shall use the "buddy" system. No one may work alone (i.e., out of earshot or visual contact with other workers) in the exclusion zone.

- Personnel and equipment in the contaminated area shall be minimized, consistent with effective Site operations.

- All employees have the obligation to immediately report and if possible, correct unsafe work conditions.

- Use of contact lenses on-site will not be permitted. Spectacle kits for insertion into full-face respirators will be provided for Benchmark-TurnKey employees, as requested and required.

The recommended specific safety practices for working around the contractor's equipment (e.g., backhoes, bulldozers, excavators, drill rigs etc.) are as follows:

- Although the Contractor and subcontractors are responsible for their equipment and safe operation of the Site, Benchmark-TurnKey personnel are also responsible for their own safety.
- Subsurface work will not be initiated without first clearing underground utility services.
- Heavy equipment should not be operated within 20 feet of overhead wires. This distance may be increased if windy conditions are anticipated or if lines carry high voltage. The Site should also be sufficiently clear to ensure the project staff can move around the heavy machinery safely.
- Care should be taken to avoid overhead wires when moving heavy-equipment from location to location.
- Hard hats, safety boots and safety glasses should be worn at all times in the vicinity of heavy equipment. Hearing protection is also recommended.
- The work Site should be kept neat. This will prevent personnel from tripping and will allow for fast emergency exit from the Site.
- Proper lighting must be provided when working at night.
- Construction activities should be discontinued during an electrical storm or severe weather conditions.
- The presence of combustible gases should be checked before igniting any open flame.
- Personnel shall stand upwind of any construction operation when not immediately involved in sampling/logging/observing activities.
- Personnel will not approach the edge of an unsecured trench/excavation closer than 2 feet.

7.0 PERSONAL PROTECTIVE EQUIPMENT

7.1 Equipment Selection

PPE will be donned when work activities may result in exposure to physical or chemical hazards beyond acceptable limits, and when such exposure can be mitigated through appropriate PPE. The selection of PPE will be based on an evaluation of the performance characteristics of the PPE relative to the requirements and limitations of the Site, the task-specific conditions and duration, and the hazards and potential hazards identified at the Site.

Equipment designed to protect the body against contact with known or suspect chemical hazards are grouped into four categories according to the degree of protection afforded. These categories designated A through D consistent with United States Environmental Protection Agency (USEPA) Level of Protection designation, are:

- **Level A:** Should be selected when the highest level of respiratory, skin and eye protection is needed.

- **Level B:** Should be selected when the highest level of respiratory protection is needed, but a lesser level of skin protection is required. Level B protection is the minimum level recommended on initial Site entries until the hazards have been further defined by on-site studies. Level B (or Level A) is also necessary for oxygen-deficient atmospheres.

- **Level C:** Should be selected when the types of airborne substances are known, the concentrations have been measured and the criteria for using air-purifying respirators are met. In atmospheres where no airborne contaminants are present, Level C provides dermal protection only.

- **Level D:** Should not be worn on any Site with elevated respiratory or skin hazards. This is generally a work uniform providing minimal protection.

OSHA requires the use of certain PPE under conditions where an immediate danger to life and health (IDLH) may be present. Specifically, OSHA 29 CFR 1910.120(g)(3)(iii) requires use of a positive pressure self-contained breathing apparatus, or positive pressure air-line respirator equipped with an escape air supply when chemical exposure levels present a substantial possibility of immediate serious injury, illness or death, or impair the ability to

escape. Similarly, OSHA 29 CFR 1910.120(g)(3)(iv) requires donning totally-encapsulating chemical protective suits (with a protection level equivalent to Level A protection) in conditions where skin absorption of a hazardous substance may result in a substantial possibility of immediate serious illness, injury or death, or impair the ability to escape.

In situations where the types of chemicals, concentrations, and possibilities of contact are unknown, the appropriate level of protection must be selected based on professional experience and judgment until the hazards can be further characterized. The individual components of clothing and equipment must be assembled into a full protective ensemble to protect the worker from site-specific hazards, while at the same time minimizing hazards and drawbacks of the personal protective gear itself. Ensemble components are detailed below for levels A/B, C, and D protection.

7.2 Protection Ensembles

7.2.1 Level A/B Protection Ensemble

Level A/B ensembles include similar respiratory protection, however Level A provides a higher degree of dermal protection than Level B. Use of Level A over Level B is determined by: comparing the concentrations of identified substances in the air with skin toxicity data, and assessing the effect of the substance (by its measured air concentrations or splash potential) on the small area of the head and neck unprotected by Level B clothing.

The recommended PPE for level A/B is:

- Pressure-demand, full-face piece self-contained breathing apparatus (MSHA/-NIOSH approved) or pressure-demand supplied-air respirator with escape self-contained breathing apparatus (SCBA).
- Chemical-resistant clothing. For Level A, clothing consists of totally-encapsulating chemical resistant suit. Level B incorporates hooded one-or two-piece chemical splash suit.
- Inner and outer chemical resistant gloves.
- Chemical-resistant safety boots/shoes.
- Hardhat.

7.2.2 Level C Protection Ensemble

Level C protection is distinguished from Level B by the equipment used to protect the respiratory system, assuming the same type of chemical-resistant clothing is used. The main selection criterion for Level C is that conditions permit wearing an air-purifying device. The device (when required) must be an air-purifying respirator (MSHA/NIOSH approved) equipped with filter cartridges. Cartridges must be able to remove the substances encountered. Respiratory protection will be used only with proper fitting, training and the approval of a qualified individual. In addition, an air-purifying respirator can be used only if: oxygen content of the atmosphere is at least 19.5% in volume; substances are identified and concentrations measured; substances have adequate warning properties; the individual passes a qualitative fit-test for the mask; and an appropriate cartridge/canister is used, and its service limit concentration is not exceeded.

Recommended PPE for Level C conditions includes:

- Full-face piece, air-purifying respirator equipped with MSHA and NIOSH approved organic vapor/acid gas/dust/mist combination cartridges or as designated by the SSHO.
- Chemical-resistant clothing (hooded, one or two-piece chemical splash suit or disposable chemical-resistant one-piece suit).
- Inner and outer chemical-resistant gloves.
- Chemical-resistant safety boots/shoes.
- Hardhat.

An air-monitoring program is part of all response operations when atmospheric contamination is known or suspected. It is particularly important that the air be monitored thoroughly when personnel are wearing air-purifying respirators. Continual surveillance using direct-reading instruments is needed to detect any changes in air quality necessitating a higher level of respiratory protection.

7.2.3 Level D Protection Ensemble

As indicated above, Level D protection is primarily a work uniform. It can be worn in areas where only boots can be contaminated, where there are no inhalable toxic substances

and where the atmospheric contains at least 19.5% oxygen.

Recommended PPE for Level D includes:

- Coveralls.
- Safety boots/shoes.
- Safety glasses or chemical splash goggles.
- Hardhat.
- Optional gloves; escape mask; face shield.

7.2.4 Recommended Level of Protection for Site Tasks

Based upon current information regarding both the contaminants suspected to be present at the Site and the various tasks that are included in the remedial activities, the minimum required levels of protection for these tasks shall be as identified in Table 3.

8.0 EXPOSURE MONITORING

8.1 General

Based on the results of historic sample analysis and the nature of the proposed work activities at the Site, the possibility exist that organic vapors and/or particulates may be released to the air during intrusive construction activities. Ambient breathing zone concentrations may at times, exceed the permissible exposure limits (PELs) established by OSHA for the individual compounds (see Table 1), in which case respiratory protection will be required. Respiratory and dermal protection may be modified (upgraded or downgraded) by the SSHO based upon real-time field monitoring data.

8.1.1 On-Site Work Zone Monitoring

Benchmark-TurnKey personnel will conduct routine, real-time air monitoring during all intrusive construction phases such as excavation, backfilling, drilling, etc. The work area will be monitored at regular intervals using a PID, combustible gas meter and a particulate meter. Observed values will be recorded and maintained as part of the permanent field record.

Additional air monitoring measurements may be made by Benchmark-TurnKey personnel to verify field conditions during subcontractor oversight activities. Monitoring instruments will be protected from surface contamination during use. Additional monitoring instruments may be added if the situations or conditions change. Monitoring instruments will be calibrated in accordance with manufacturer's instructions before use.

8.1.2 Off-Site Community Air Monitoring

In addition to on-site monitoring within the work zone(s), monitoring at the down-wind portion of the Site perimeter will be conducted. This will provide a real-time method for determination of vapor and/or particulate releases to the surrounding community as a result of ground intrusive investigation work.

Ground intrusive activities are defined in the Generic Community Air Monitoring Plan and attached as Appendix C. Ground intrusive activities include soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells. Non-intrusive activities include the collection of soil and sediment samples or the

collection of groundwater samples from existing wells. Continuous monitoring is required for ground intrusive activities and periodic monitoring is required for non-intrusive activities. Periodic monitoring consists of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring while bailing a well, and taking a reading prior to leaving a sampling location. This may be upgraded to continuous if the sampling location is in close proximity to individuals not involved in the Site activity (i.e., on a curb of a busy street). The action levels below will be used during periodic monitoring.

8.2 Monitoring Action Levels

8.2.1 On-Site Work Zone Action Levels

The PID, or other appropriate instrument(s), will be used by Benchmark-TurnKey personnel to monitor organic vapor concentrations as specified in this HASP. Combustible gas will be monitored with the "combustible gas" option on the combustible gas meter or other appropriate instrument(s). In addition, fugitive dust/particulate concentrations will be monitored during major soil intrusion (viz., well/boring installation) using a real-time particulate monitor as specified in this plan. In the absence of such monitoring, appropriate respiratory protection for particulates shall be donned. Sustained readings obtained in the breathing zone may be interpreted (with regard to other Site conditions) as follows for Benchmark-TurnKey personnel:

- Total atmospheric concentrations of unidentified vapors or gases ranging from 0 to 1 ppm above background on the PID) - Continue operations under Level D.
- Total atmospheric concentrations of unidentified vapors or gases yielding sustained readings from >1 ppm to 5 ppm above background on the PID (vapors not suspected of containing high levels of chemicals toxic to the skin) - Continue operations under Level C.
- Total atmospheric concentrations of unidentified vapors or gases yielding sustained readings of >5 ppm to 50 ppm above background on the PID - Continue operations under Level B, re-evaluate and alter (if possible) construction methods to achieve lower vapor concentrations.
- Total atmospheric concentrations of unidentified vapors or gases above 50 ppm

on the PID - Discontinue operations and exit the work zone immediately.

The particulate monitor will be used to monitor respirable dust concentrations during all intrusive activities and during handling of Site soil/fill. Action levels based on the instrument readings shall be as follows:

- Less than 50 mg/m^3 - Continue field operations.
- 50-150 mg/m^3 - Don dust/particulate mask or equivalent
- Greater than 150 mg/m^3 - Don dust/particulate mask or equivalent. Initiate engineering controls to reduce respirable dust concentration (viz., wetting of excavated soils or tools at discretion of Site Health and Safety Officer).

Readings from the field equipment will be recorded and documented on the appropriate Project Field Forms. All instruments will be calibrated before use on a daily basis and the procedure will be documented on the appropriate Project Field Forms.

8.2.2 Community Air Monitoring Action Levels

In addition to the action levels prescribed in Section 8.2.1 for Benchmark-TurnKey personnel on-site, the following criteria shall also be adhered to for the protection of downwind receptors consistent with NYSDOH requirements (Appendix C):

- **ORGANIC VAPOR PERIMETER MONITORING:**
  - If the sustained ambient air concentration of organic vapors at the downwind perimeter of the exclusion zone exceeds 5 ppm above background for the 15-minute average, work activities will be temporarily halted and monitoring continued. If the sustained organic vapor decreases below 5 ppm over background, work activities can resume with continued monitoring.
  - If the sustained ambient air concentration of organic vapors at the downwind perimeter of the exclusion zone are greater than 5 ppm over background but less than 25 ppm for the 15-minute average, activities can resume provided that: the organic vapor level 200 feet downwind of the working site or half the distance to the nearest off-site residential or commercial structure, whichever is less, but in no case less than 20 feet, is below 5 ppm over background; and

more frequent intervals of monitoring, as directed by the Site Health and Safety Officer, are conducted.

- If the sustained organic vapor level is above 25 ppm at the perimeter of the exclusion zone for the 15-minute average, the Site Health and Safety Officer must be notified and work activities shut down. The Site Health and Safety Officer will determine when re-entry of the exclusion zone is possible and will implement downwind air monitoring to ensure vapor emissions do not impact the nearest off-site residential or commercial structure at levels exceeding those specified in the ***Organic Vapor Contingency Monitoring Plan*** below. All readings will be recorded and will be available for New York State Department of Environmental Conservation (DEC) and Department of Health (DOH) personnel to review.

o **ORGANIC VAPOR CONTINGENCY MONITORING PLAN:**

- If the sustained organic vapor level is greater than 5 ppm over background 200 feet downwind from the work area or half the distance to the nearest off-site residential or commercial property, whichever is less, all work activities must be halted.

- If, following the cessation of the work activities or as the result of an emergency, sustained organic levels persist above 5 ppm above background 200 feet downwind or half the distance to the nearest off-site residential or commercial property from the work area, then the air quality must be monitored within 20 feet of the perimeter of the nearest off-site residential or commercial structure (20-foot zone).

- If efforts to abate the emission source are unsuccessful and if sustained organic vapor levels approach or exceed 5 ppm above background within the 20-foot zone for more than 30 minutes, or are sustained at levels greater than 10 ppm above background for longer than one minute, then the ***Major Vapor Emission Response Plan*** (see below) will automatically be placed into effect.

o **MAJOR VAPOR EMISSION RESPONSE PLAN:**

Upon activation, the following activities will be undertaken:

1. All Emergency Response Contacts as listed in this Health and Safety Plan and the Emergency Response Plan (Appendix A) will be advised.

2. The local police authorities will immediately be contacted by the Site Health and Safety Officer and advised of the situation.

3. Frequent air monitoring will be conducted at 30-minute intervals within the 20-foot zone. If two sustained successive readings below action levels are measured, air monitoring may be halted or modified by the Site Health and Safety Officer.

The following personnel are to be notified in the listed sequence in the event that a Major Vapor Emission Plan is activated:

Responsible Person	Contact	Phone Number
SSHO	Police	911
SSHO	State Emergency Response Hotline	(800) 457-7362

Additional emergency numbers are listed in the Emergency Response Plan included as Attachment A.

- **EXPLOSIVE VAPORS:**
  - Sustained atmospheric concentrations of greater than 10% LEL in the work area - Initiate combustible gas monitoring at the downwind portion of the Site perimeter.
  - Sustained atmospheric concentrations of greater than 10% LEL at the downwind Site perimeter – Halt work and contact local Fire Department.

- **AIRBORNE PARTICULATE COMMUNITY AIR MONITORING**

Respirable (PM-10) particulate monitoring will be performed on a continuous basis at the upwind and downwind perimeter of the exclusion zone. The monitoring will be performed using real-time monitoring equipment capable of measuring PM-10 and integrating over a period of 15-minutes for comparison to the airborne particulate action levels. The equipment will be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration will be visually assessed during all work activities. All readings will be recorded and will be available for NYSDEC and NYSDOH review. Readings will be interpreted as follows:

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (ug/m^3) greater than the background (upwind perimeter) reading for the 15-

minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression provided that the downwind PM-10 particulate levels do not exceed 150 ug/m^3 above the upwind level and that visible dust is not migrating from the work area.

- If, after implementation of dust suppression techniques downwind PM-10 levels are greater than 150 ug/m^3 above the upwind level, work activities must be stopped and dust suppression controls re-evaluated. Work can resume provided that supplemental dust suppression measures and/or other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 ug/m^3 of the upwind level and in preventing visible dust migration.

Pertinent emergency response information including the telephone number of the Fire Department is included in the Emergency Response Plan (Attachment A).

9.0 SPILL RELEASE/RESPONSE

This chapter of the HASP describes the potential for and procedures related to spills or releases of known or suspected petroleum and/or hazardous substances on the Site. The purpose of this Section of the HASP is to plan appropriate response, control, counter-measures and reporting, consistent with OSHA requirements in 29 CFR 1910.120(b)(4)(ii)(J) and (j)(1)(viii). The spill containment program addresses the following elements:

- Potential hazardous material spills and available controls.
- Initial notification and evaluation.
- Spill response.
- Post-spill evaluation.

9.1 Potential Spills and Available Controls

An evaluation was conducted to determine the potential for hazardous material and oil/petroleum spills at this Site. For the purpose of this evaluation, hazardous materials posing a significant spill potential are considered to be:

- CERCLA Hazardous Substances as identified in 40 CFR Part 302, where such materials pose the potential for release in excess of their corresponding Reportable Quantity (RQ).

- Extremely Hazardous Substances as identified in 40 CFR Part 355, Appendix A, where such materials pose the potential for release in excess of their corresponding Reportable Quantity (RQ).

- Hazardous Chemicals as defined under Section 311(e) of the Emergency Planning and Community Right-To-Know Act of 1986, where such chemicals are present or will be stored in excess of 10,000 lbs.

- Toxic Chemicals as defined in 40 CFR Part 372, where such chemicals are present or will be stored in excess of 10,000 lbs.

- Chemicals regulated under 6NYCRR Part 597, where such materials pose the potential for release in excess of their corresponding Reportable Quantity (RQ).

Oil/petroleum products are considered to pose a significant spill potential whenever the following situations occur:

- The potential for a "harmful quantity" of oil (including petroleum and non-petroleum-based fuels and lubricants) to reach navigable waters of the U.S. exists (40 CFR Part 112.4). Harmful quantities are considered by USEPA to be volumes that could form a visible sheen on the water or violate applicable water quality standards.

- The potential for any amount of petroleum to reach any waters of NY State, including groundwater, exists. Petroleum, as defined by NY State in 6NYCRR Part 612, is a petroleum-based heat source, energy source, or engine lubricant/maintenance fluid.

- The potential for any release, to soil or water, of petroleum from a bulk storage facility regulated under 6NYCRR Part 612. A regulated petroleum storage facility is defined by NY State as a site having stationary tank(s) and intra-facility piping, fixtures and related equipment with an aggregate storage volume of 1,100 gallons or greater.

The evaluation indicates that, based on Site history and decommissioning records, a hazardous material spill and/or a petroleum product spill is not likely to occur during RA efforts.

9.2 Initial Spill Notification and Evaluation

Any worker who discovers a hazardous substance or oil/petroleum spill will immediately notify the Project Manager and SSHO. The worker will, to the best of his/her ability, report the material involved, the location of the spill, the estimated quantity of material spilled, the direction/flow of the spill material, related fire/explosion incidents, if any, and any associated injuries. The Emergency Response Plan presented in Attachment A of this HASP will immediately be implemented if an emergency release has occurred.

Following initial report of a spill, the Project Manager will make an evaluation as to whether the release exceeds RQ levels. If an RQ level is exceeded, the Project Manager will notify the Site owner and NYSDEC at 1-800-457-7362 within 2 hours of spill discovery. The Project Manager will also determine what additional agencies (e.g., USEPA) are to be contacted regarding the release, and will follow-up with written reports as required by the applicable regulations.

9.3 Spill Response

For all spill situations, the following general response guidelines will apply:

- Only those personnel involved in overseeing or performing containment operations will be allowed within the spill area. If necessary, the area will be roped, ribboned, or otherwise blocked off to prevent unauthorized access.
- Appropriate PPE, as specified by the SSHO, will be donned before entering the spill area.
- Ignition points will be extinguished/removed if fire or explosion hazards exist.
- Surrounding reactive materials will be removed.
- Drains or drainage in the spill area will be blocked to prevent inflow of spilled materials or applied materials.

For minor spills, the Contractor will maintain a Spill Control and Containment Kit in the Field Office or other readily accessible storage location. The kit will consist of, at a minimum, a 50 lb. bag of "speedy dry" granular absorbent material, absorbent pads, shovels, empty 5-gallon pails and an empty open-top 55-gallon drum. Spilled materials will be absorbed, and shoveled into a 55-gallon drum for proper disposal (NYSDEC approval will be secured for on-site treatment of the impacted soils/absorbent materials, if applicable). Impacted soils will be hand-excavated to the point that no visible signs of contamination remains, and will be drummed with the absorbent.

In the event of a major release or a release that threatens surface water, a spill response contractor will be called to the Site. The response contractor may use heavy equipment (e.g., excavator, backhoe, etc.) to berm the soils surrounding the spill Site or create diversion trenching to mitigate overland migration or release to navigable waters. Where feasible, pumps will be used to transfer free liquid to storage containers. Spill control/cleanup contractors in the Western New York area that may be contacted for assistance include:

- The Environmental Service Group of NY, Inc.: (716) 695-6720
- Environmental Products and Services, Inc.: (716) 447-4700
- Op-Tech: (716) 873-7680

9.4 Post-Spill Evaluation

If a reportable quantity of hazardous material or oil/petroleum is spilled as determined by the Project Manager, a written report will be prepared as indicated in Section 9.2. The report will identify the root cause of the spill, type and amount of material released, date/time of release, response actions, agencies notified and/or involved in cleanup, and procedures to be implemented to avoid repeat incidents. In addition, all re-useable spill cleanup and containment materials will be decontaminated, and spill kit supplies/disposable items will be replenished.

10.0 HEAT/COLD STRESS MONITORING

Since some of the work activities at the Site will be scheduled for both the summer and winter months, measures will be taken to minimize heat/cold stress to Benchmark-TurnKey employees. The Site Safety and Health Officer and/or his or her designee will be responsible for monitoring Benchmark-TurnKey field personnel for symptoms of heat/cold stress.

10.1 Heat Stress Monitoring

Personal protective equipment may place an employee at risk of developing heat stress, a common and potentially serious illnesses often encountered at construction, landfill, waste disposal, industrial or other unsheltered sites. The potential for heat stress is dependent on a number of factors, including environmental conditions, clothing, workload, physical conditioning and age. Personal protective equipment may severely reduce the body's normal ability to maintain temperature equilibrium (via evaporation and convection), and require increased energy expenditure due to its bulk and weight.

Proper training and preventive measures will mitigate the potential for serious illness. Heat stress prevention is particularly important because once a person suffers from heat stroke or heat exhaustion, that person may be predisposed to additional heat related illness. To avoid heat stress, the following steps should be taken:

- Adjust work schedules.
- Modify work/rest schedules according to monitoring requirements.
- Mandate work slowdowns as needed.
- Perform work during cooler hours of the day if possible or at night if adequate lighting can be provided.
- Provide shelter (air-conditioned, if possible) or shaded areas to protect personnel during rest periods.
- Maintain worker's body fluids at normal levels. This is necessary to ensure that the cardiovascular system functions adequately. Daily fluid intake must approximately equal the amount of water lost in sweat (i.e., eight fluid ounces must be ingested for approximately every 1 lb of weight lost). The normal thirst

mechanism is not sensitive enough to ensure that enough water will be consumed to replace lost perspiration. When heavy sweating occurs, workers should be encouraged to drink more.

- Train workers to recognize the symptoms of heat related illness.

Heat-Related Illness - Symptoms:

- Heat rash may result from continuous exposure to heat or humid air.

- Heat cramps are caused by heavy sweating with inadequate electrolyte replacement. Signs and symptoms include: muscle spasms; pain in the hands, feet and abdomen.

- Heat exhaustion occurs from increased stress on various body organs including inadequate blood circulation due to cardiovascular insufficiency or dehydration. Signs and symptoms include: pale, cool, moist skin; heavy sweating; dizziness; nausea; fainting.

- Heat stroke is the most serious form of heat stress. Temperature regulation fails and the body temperature rises to critical levels. Immediate action must be taken to cool the body before serious injury and death occur. Competent medical help must be obtained. Signs and symptoms are: red, hot, usually dry skin; lack of or reduced perspiration; nausea; dizziness and confusion; strong, rapid pulse; coma.

The monitoring of personnel wearing protective clothing should commence when the ambient temperature is 70 degrees Fahrenheit or above. For monitoring the body's recuperative ability to excess heat, one or more of the following techniques should be used as a screening mechanism.

- Heart rate may be measured by the radial pulse for 30 seconds as early as possible in the resting period. The rate at the beginning of the rest period should not exceed 100 beats per minute. If the rate is higher, the next work period should be shortened by 10 minutes (or 33%), while the length of the rest periods stay the same, If the pulse rate is 100 beats per minute at the beginning of the nest rest period, the following work cycle should be further shortened by 33%.

- Body temperature may be measured orally with a clinical thermometer as early as possible in the resting period. Oral temperature at the beginning of the rest period

should not exceed 99.6 degrees Fahrenheit. If it does, the next work period should be shortened by 10 minutes (or 33%), while the length of the rest period remains the same. However, if the oral temperature exceeds 99.6 degrees Fahrenheit at the beginning of the next period, the work cycle may be further shortened by 33%. Oral temperature should be measured at the end of the rest period to make sure that it has dropped below 99.6 degrees Fahrenheit. No Benchmark-TurnKey employee will be permitted to continue wearing semi-permeable or impermeable garments when his/her oral temperature exceeds 100.6 degrees Fahrenheit.

10.2 Cold Stress Monitoring

Exposure to cold conditions may result in frostbite or hypothermia, each of which progresses in stages as shown below.

- **Frostbite** occurs when body tissue (usually on the extremities) begins to freeze. The three states of frostbite are:

  1) **Frost nip** - This is the first stage of the freezing process. It is characterized by a whitened area of skin, along with a slight burning or painful sensation. Treatment consists of removing the victim from the cold conditions, removal of boots and gloves, soaking the injured part in warm water (102 to 108 degrees Fahrenheit) and drinking a warm beverage. Do not rub skin to generate friction/ heat.

  2) **Superficial Frostbite** - This is the second stage of the freezing process. It is characterized by a whitish gray area of tissue, which will be firm to the touch but will yield little pain. The treatment is identical for Frost nip.

  3) **Deep Frostbite** - In this final stage of the freezing process the affected tissue will be cold, numb and hard and will yield little to no pain. Treatment is identical to that for Frost nip.

- **Hypothermia** is a serious cold stress condition occurring when the body loses heat at a rate faster than it is produced. If untreated, hypothermia may be fatal. The stages of hypothermia may not be clearly defined or visible at first, but generally include:

  1) Shivering
  2) Apathy (i.e., a change to an indifferent or uncaring mood)

3) Unconsciousness
4) Bodily freezing

Employees exhibiting signs of hypothermia should be treated by medical professionals. Steps that can be taken while awaiting help include:

1) Remove the victim from the cold environment and remove wet or frozen clothing. (Do this carefully as frostbite may have started.)

2) Perform active re-warming with hot liquids for drinking (Note: do not give the victim any liquid containing alcohol or caffeine) and a warm water bath (102 to 108 degrees Fahrenheit).

3) Perform passive re-warming with a blanket or jacket wrapped around the victim.

In any potential cold stress situation, it is the responsibility of the Site Health and Safety Officer to encourage the following:

- Education of workers to recognize the symptoms of frostbite and hypothermia.
- Workers should dress warmly, with more layers of thin clothing as opposed to one thick layer.
- Personnel should remain active and keep moving.
- Personnel should be allowed to take shelter in a heated area, as necessary.
- Personnel should drink warm liquids (no caffeine or alcohol if hypothermia has set in).
- For monitoring the body's recuperation from excess cold, oral temperature recordings should occur:
  - At the Site Safety Technicians discretion when suspicion is based on changes in a worker's performance or mental status.
  - At a worker's request.
  - As a screening measure, two times per shift, under unusually hazardous conditions (e.g., wind chill less than 20 degrees Fahrenheit or wind chill

less than 30 degrees Fahrenheit with precipitation).

- As a screening measure, whenever anyone worker on-site develops hypothermia.

Any person developing moderate hypothermia (a core body temperature of 92 degrees Fahrenheit) will not be allowed to return to work for 48 hours without the recommendation of a qualified medical doctor.

11.0 WORK ZONES AND SITE CONTROL

Work zones around the areas designated for construction activities will be established on a daily basis and communicated to all employees and other Site users by the SSHO. It shall be each Contractor's Site Safety and Health Officer's responsibility to ensure that all Site workers are aware of the work zone boundaries and to enforce proper procedures in each area. The zones will include:

- Exclusion Zone ("Hot Zone") - The area where contaminated materials may be exposed, excavated or handled and all areas where contaminated equipment or personnel may travel. Flagging tape will delineate the zone. All personnel entering the Exclusion Zone must wear the prescribed level of personal protective equipment identified in Section 7.

- Contamination Reduction Zone - The zone where decontamination of personnel and equipment takes place. Any potentially contaminated clothing, equipment and samples must remain in the Contamination Reduction Zone until decontaminated.

- Support Zone - The part of the site that is considered non-contaminated or "clean." Support equipment will be located in this zone, and personnel may wear normal work clothes within this zone.

In the absence of other task-specific work zone boundaries established by the SSHO, the following boundaries will apply to all investigation and construction activities involving disruption or handling of Site soils or groundwater:

- Exclusion Zone: 50-foot radius from the outer limit of the sampling/construction activity.

- Contaminant Reduction Zone: 100-foot radius from the outer limit of the sampling/construction activity.

- Support Zone: Areas outside the Contaminant Reduction Zone.

Access of non-essential personnel to the Exclusion and Contamination Reduction Zones will be strictly controlled by the SSHO. Only personnel who are essential to the

completion of the task will be allowed access to these areas and only if they are wearing the prescribed level of protection. Entrance of all personnel must be approved by the SSHO.

The SSHO will maintain a Health and Safety Logbook containing the names of Benchmark-TurnKey workers and their level of protection. The zone boundaries may be changed by the SSHO as environmental conditions warrant, and to respond to the necessary changes in work locations on-site.

12.0 DECONTAMINATION

12.1 Decontamination for Benchmark-TurnKey Employees

The degree of decontamination required is a function of a particular task and the environment within which it occurs. The following decontamination procedure will remain flexible, thereby allowing the decontamination crew to respond appropriately to the changing environmental conditions that may arise at the Site. All Benchmark-TurnKey personnel on-site shall follow the procedure below, or the Contractor's procedure (if applicable), whichever is more stringent.

Station 1 - Equipment Drop: Deposit visibly contaminated (if any) re-useable equipment used in the contamination reduction and exclusion zones (tools, containers, monitoring instruments, radios, clipboards, etc.) on plastic sheeting.

Station 2 - Boots and Gloves Wash and Rinse: Scrub outer boots and outer gloves. Deposit tape and gloves in waste disposal container.

Station 3 - Tape, Outer Boot and Glove Removal: Remove tape, outer boots and gloves. Deposit tape and gloves in waste disposal container.

Station 4 - Canister or Mask Change: If worker leaves exclusive zone to change canister (or mask), this is the last step in the decontamination procedure. Worker's canister is exchanged, new outer gloves and boot cover donned, and worker returns to duty.

Station 5 - Outer Garment/Face Piece Removal: Protective suit removed and deposited in separate container provided by Contractor. Face piece or goggles are removed if used. Avoid touching face with fingers. Face piece and/or goggles deposited on plastic sheet. Hard hat removed and placed on plastic sheet.

Station 6 - Inner Glove Removal: Inner gloves are the last personal protective equipment to be removed. Avoid touching the outside of the gloves with bare fingers. Dispose of these gloves in waste disposal container.

Following PPE removal, personnel shall wash hands, face and forearms with absorbent wipes. If field activities proceed for duration of 6 consecutive months or longer, shower facilities will be provided for worker use in accordance with OSHA 29 CFR 1910.120(n).

12.2 Decontamination for Medical Emergencies

In the event of a minor, non-life threatening injury, personnel should follow the decontamination procedures as defined, and then administer first-aid.

In the event of a major injury or other serious medical concern (e.g., heat stroke), immediate first-aid is to be administered and the victim transported to the hospital in lieu of further decontamination efforts unless exposure to a Site contaminant would be considered "Immediately Dangerous to Life or Health."

12.3 Decontamination of Field Equipment

The Contractor in accordance with his approved Health and Safety Plan in the Contamination Reduction Zone will conduct decontamination of heavy equipment. As a minimum, this will include manually removing heavy soil contamination, followed by steam cleaning on an impermeable pad.

Benchmark-TurnKey personnel will conduct decontamination of all tools used for sample collection purposes. It is expected that all tools will be constructed of nonporous, nonabsorbent materials (i.e., metal), which will aid in the decontamination effort. Any tool or part of a tool made of porous, absorbent material (i.e., wood) will be placed into suitable containers and prepared for disposal.

Decontamination of bailers, split-spoons, spatula knives, and other tools used for environmental sampling and examination shall be as follows:

- Disassemble the equipment
- Water wash to remove all visible foreign matter.
- Wash with detergent.
- Rinse all parts with distilled-deionized water.
- Allow to air dry.
- Wrap all parts in aluminum foil or polyethylene.

13.0 CONFINED SPACE ENTRY

OSHA 29 CFR 1910.146 identifies a confined space as a space that is large enough and so configured that an employee can physically enter and do assigned work, has limited or restricted means for entry and exit, and is not intended for continuous employee occupancy. Confined spaces include, but are not limited to, trenches, storage tanks, process vessels, pits, sewers, tunnels, underground utility vaults, pipelines, sumps, wells, and excavations.

Confined space entry by Benchmark-TurnKey employees is not anticipated to be necessary to complete the RA activities identified in Section 2.0. In the event that the scope of work changes or confined space entry appears necessary, the Project Manager will be consulted to determine if feasible engineering alternatives to confined space entry can be implemented. If confined space entry by Benchmark-TurnKey employees cannot be avoided through reasonable engineering measures, task-specific confined space entry procedures will be developed and a confined-space entry permit will be issued through Benchmark-TurnKey's corporate Health and Safety Director. Benchmark-TurnKey employees shall not enter a confined space without these procedures and permits in place.

14.0 FIRE PREVENTION AND PROTECTION

14.1 General Approach

Recommended practices and standards of the National Fire Protection Association (NFPA) and other applicable regulations will be followed in the development and application of Project Fire Protection Programs. When required by regulatory authorities, the project management will prepare and submit a Fire Protection Plan for the approval of the contracting officers, authorized representative or other designated official. Essential considerations for the Fire Protection Plan will include:

- Proper Site preparation and safe storage of combustible and flammable materials.
- Availability of coordination with private and public fire authorities.
- Adequate job-site fire protection and inspections for fire prevention.
- Adequate indoctrination and training of employees.

14.2 Equipment and Requirements

Fire extinguishers will be provided by each Contractor and are required on all heavy equipment and in each field trailer. Fire extinguishers will be inspected, serviced, and maintained in accordance with the manufacturer's instructions. As a minimum, all extinguishers shall be checked monthly and weighed semi-annually, and recharged if necessary. Recharge or replacement shall be mandatory immediately after each use.

14.3 Flammable and Combustible Substances

All storage, handling or use of flammable and combustible substances will be under the supervision of qualified persons. All tanks, containers and pumping equipment, whether portable or stationary, used for the storage and handling of flammable and combustible liquids, will meet the recommendations of the National Fire Protection Association.

14.4 Hot Work

If the scope of work necessitates welding or blowtorch operation, the hot work permit presented in Appendix B will be completed by the SSHO and reviewed/issued by the Project Manager.

15.0 EMERGENCY INFORMATION

In accordance with OSHA 29 CFR Part 1910, an Emergency Response Plan is attached to this HASP as Attachment A. The hospital route map is presented within Attachment A as Figure 1.

16.0 REFERENCES

1. New York State Department of Environmental Conservation. *DER-10; Technical Guidance for Site Investigation and Remediation.* May 2010.

TABLES

TABLE 1

TOXICITY DATA FOR CONSTITUENTS OF POTENTIAL CONCERN

1155 NIAGARA STREET SITE
BCP SITE NO. C915367

Parameter	Synonyms	CAS No.	Code	Concentration Limits [1]		
				PEL	TLV	IDLH
Volatile Organic Compounds (VOCs): ppm						
1,2,4-Trimethylbenzene	Pseudocumene	95-63-6	*none*	25	25	--
1,3,5-Trimethylbenzene	Mesitylene	108-67-8	*none*	25	25	--
Benzene	Benzol, Phenyl hydride	71-43-2	Ca	1	0.5	500
Ethylbenzene	Ethylbenzol, Phenylethane	100-41-4	*none*	100	100	800
N-Butylbenzene	butylbenzene	104-51-8	*none*	--	--	--
N-Propylbenzene	Isocumene	103-65-1	*none*	50	50	--
Toluene	Methyl benzene, Methyl benzol	108-88-3	C-300	200	50	500
Xylenes	o-, m-, p-isomers	1330-20-7	*none*	100	100	900
Dichlorodifluoromethane	CFC-12, Freon-12	75-71-8	*none*	1000	1000	15000
Trichlorofluoromethane	CFC-11, Freon-11	76-13-1	*none*	1000	1000	2000
Semi-volatile Organic Compounds (SVOCs) [2]: ppm						
Benzo(a)anthracene	*none*	56-55-3	*none*	--	--	--
Benzo(a)pyrene	*none*	50-32-8	*none*	--	--	--
Benzo(b)fluoranthene	*none*	205-99-2	*none*	--	--	--
Benzo(k)fluoranthene	*none*	207-08-9	*none*	--	--	--
Chrysene	*none*	218 01 9	*none*	--	--	--
Dibenzo(a,h)anthracene	*none*	53-70-3	*none*	--	--	--
Indeno(1,2,3-cd)pyrene	*none*	193-39-5	*none*	--	--	--
Inorganic Compounds: mg/m [2]						
Copper	*none*	7440-50-8	*none*	0.1	0.2	200
Lead	*none*	7439-92-1	*none*	0.05	0.15	100
Mercury	*none*	7439-97-6	C-0.1	0.1	0.05	10
Zinc	*none*	7440-66-6	*none*	--	--	--

Notes:
1. Concentration limits as reported by NIOSH Pocket Guide to Chemical Hazards, February 2004 (NIOSH Publication No. 97-140, fourth printing with chages and updates.
2. " -- " = concentration limit not available; exposure should be minimized to the extent feasible through appropriate engineering controls & PPE.

Explanation:
Ca = NIOSH considers constituent to be a potential occupational carcinogen.
IDLH = Immediately Dangerous to Life or Health.
TLV = Threshold Limit Value, established by American Conference of Industrial Hygienists (ACGIH), equals the maximum exposure concentration allowable for 8 hours/day @ 40 ho
TLVs are the amounts of chemicals in the air that almost all healthy adult workers are predicted to be able to tolerate without adverse effects. There are three types.
TLV-TWA (TLV-Time-Weighted Average) which is averaged over the normal eight-hour day/forty-hour work week. (Most TLVs.)
TLV-C or Ceiling limits are the concentration that should not be exceeded during any part of the working exposure.
Unless the initials "STEL" or "C" appear in the Code column, the TLV value should be considered to be the eight-hour TLV-TWA.
PEL = Permissible Exposure Limit, established by OSHA, equals the maximium exposure conconcentration allowable for 8 hours per day @ 40 hours per week

TABLE 2

POTENTIAL ROUTES OF EXPOSURE TO THE CONSTITUENTS OF POTENTIAL CONCERN

1155 NIAGARA STREET SITE
BCP SITE NO. C915367
BUFFALO, NEW YORK

Activity [1]	Direct Contact with Soil/Fill	Inhalation of Vapors or Dust	Direct Contact with Groundwater
Remedial Action Tasks			
1. Monitoring Well Sampling	x	x	x
2. Soil/Fill Excavation & Off-Site Disposal	x	x	
3. Soil Cover System Installation	x	x	

Notes:
1. Activity as described in Section 1.5 of the Health and Safety Plan.

TABLE 3

REQUIRED LEVELS OF PROTECTION
FOR REMEDIAL ACTION TASKS

1155 NIAGARA STREET SITE
BCP SITE NO. C915367
BUFFALO, NEW YORK

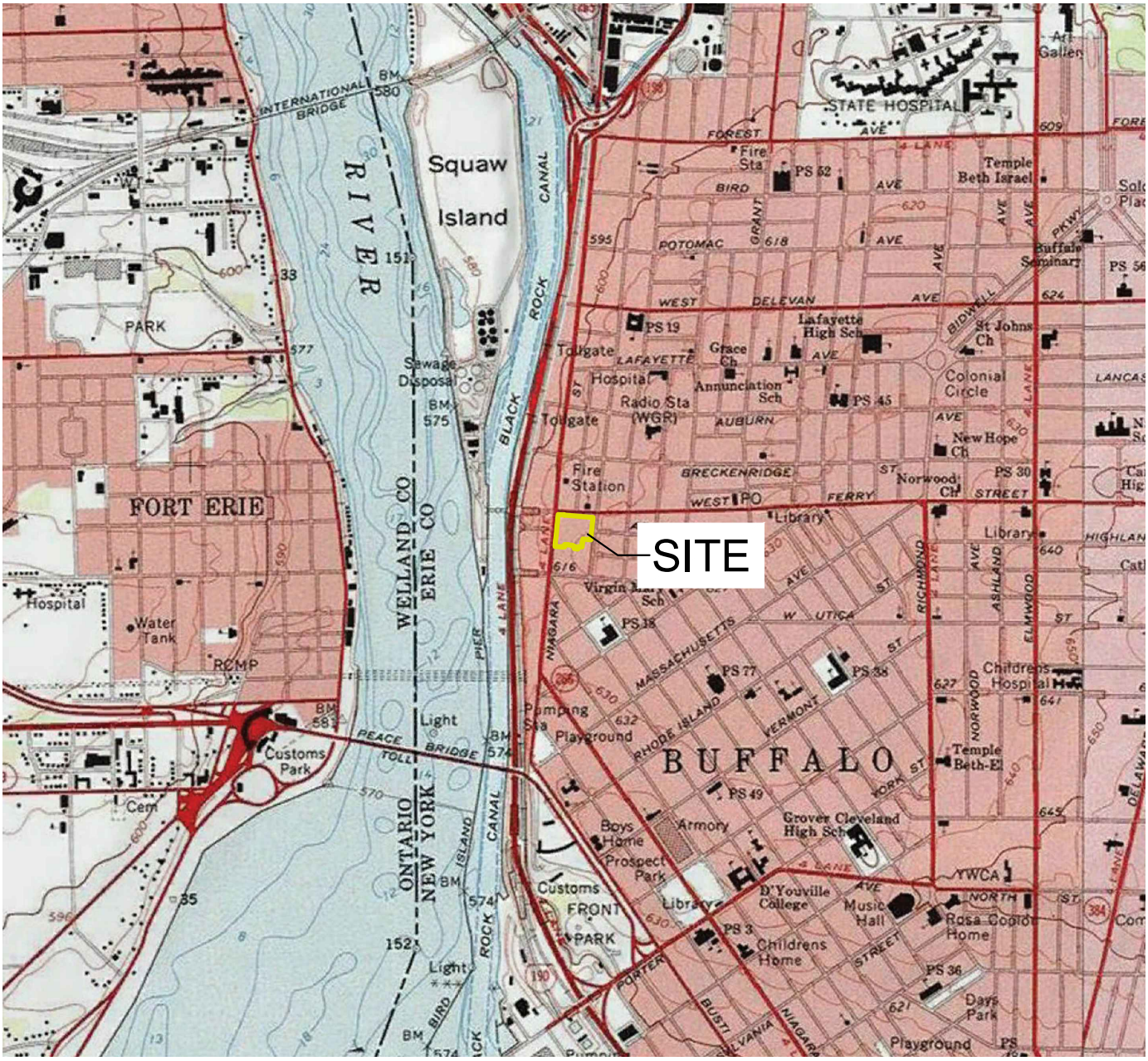
Activity	Respiratory Protection [1]	Clothing	Gloves [2]	Boots [2, 3]	Other Required PPE/Modifications [2, 4]
Remedial Action Tasks					
1. Monitoring Well Sampling	Level D (upgrade to Level C if necessary)	Work Uniform or Tyvek	L/N	outer: L inner: STSS	SGSS
2. Soil/Fill Excavation & Off-Site Disposal	Level D (upgrade to Level C if necessary)	Work Uniform or Tyvek	L/N	outer: L inner: STSS	HH SGSS
3. Soil Cover System Installation	Level D (upgrade to Level C if necessary)	Work Uniform or Tyvek	L/N	outer: L inner: STSS	HH SGSS

Notes:

1. Respiratory equipment shall conform to guidelines presented in Section 7.0 of this HASP. The Level C requirement is an air-purifying respirator equiped with organic compound/acid gas/dust cartridge.
2. HH = hardhat; L= Latex; L/N = latex inner glove, nitrile outer glove; N = Nitrile; S = Saranex; SG = safety glasses; SGSS = safety glasses with sideshields; STSS = steel toe safety shoes.
3. Latex outer boot (or approved overboot) required whenever contact with contaminated materials may occur. SSHO may downgrade to STSS (steel-toed safety shoes) if contact will be limited to cover/replacement soils.
4. Dust masks shall be donned as directed by the SSHO (site safety and health officer) or site safety technician whenever potentially contaminated airborne particulates (i.e., dust) are present in significant amounts in the breathing zone. Goggles may be substituted with safety glasses w/side-shields whenever contact with contaminated liquids is not anticipated.

FIGURES

FIGURE 1



BENCHMARK
IN ASSOCIATION WITH
TURNKEY ENVIRONMENTAL RESTORATION, LLC
2558 HAMBURG TURNPIKE, SUITE 300, BUFFALO, NY 14218, (716) 856-0599

PROJECT NO.: T0550-020-001

DATE: MARCH 2022

DRAFTED BY: CMS-CMC

SITE LOCATION AND VICINITY MAP

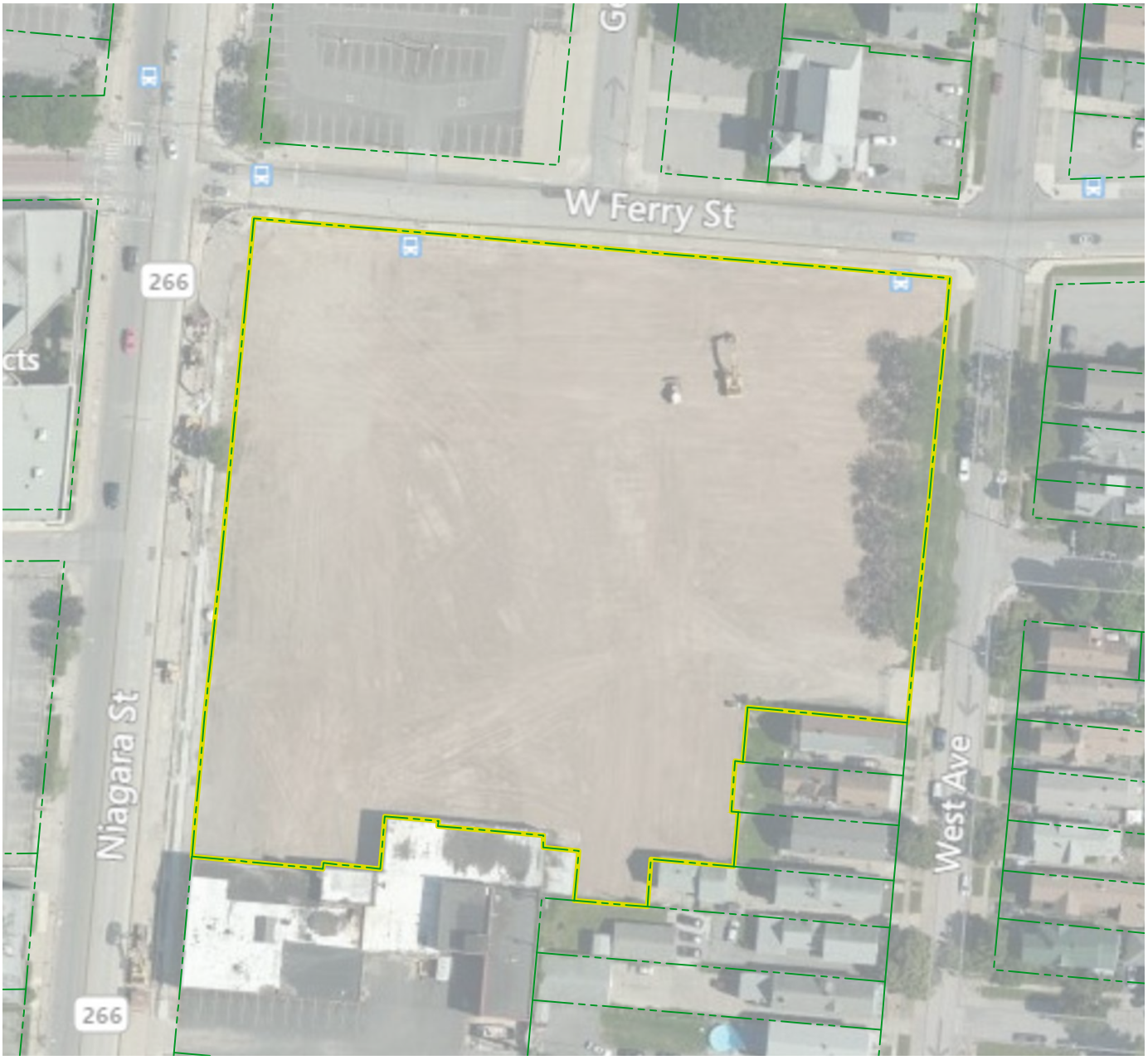
HEALTH AND SAFETY PLAN

1155 NIAGARA STREET SITE
BCP SITE NO. C915367
BUFFALO, NEW YORK

PREPARED FOR

GREAT POINT OPPORTUNITY FUND (A) QOZB, LLC

FIGURE 2



N

100' 0' 100' 200'

SCALE: 1 INCH = 100 FEET
SCALE IN FEET
(approximate)

LEGEND:

PROPERTY BOUNDARY

PARCEL BOUNDARY

BENCHMARK IN ASSOCIATION WITH TURNKEY ENVIRONMENTAL RESTORATION, LLC

2558 HAMBURG TURNPIKE, SUITE 300, BUFFALO, NY 14218, (716) 856-0599

PROJECT NO.: T0550-020-001

DATE: MARCH 2022

DRAFTED BY: CMS-CMC

SITE PLAN (AERIAL)

HEALTH AND SAFETY PLAN

1155 NIAGARA STREET SITE
BCP SITE NO. C915367
BUFFALO, NEW YORK

PREPARED FOR

GREAT POINT OPPORTUNITY FUND (A) QOZB, LLC

ATTACHMENT A

EMERGENCY RESPONSE PLAN

BENCHMARK TURNKEY

EMERGENCY RESPONSE PLAN
for
BROWNFIELD CLEANUP PROGRAM
REMEDIAL ACTION ACTIVITIES

1155 NIAGARA STREET SITE
BUFFALO, NEW YORK
BCP SITE NO. C915367

April 2022 0550-020-001

Prepared for:

GREAT POINT OPPORTUNITY FUND (A) QOZB, LLC

1155 NIAGARA STREET SITE
HEALTH AND SAFETY PLAN FOR REMEDIAL ACTION ACTIVITIES
APPENDIX A: EMERGENCY RESPONSE PLAN

TABLE OF CONTENTS

LIST OF FIGURES

1.0 GENERAL

This report presents the site-specific Emergency Response Plan (ERP) referenced in the Site Health and Safety Plan (HASP) prepared for Remedial Action (RA) Work Plan for the 1155 Niagara Street Site in Buffalo, New York. This attachment of the HASP describes potential emergencies that may occur at the Site; procedures for responding to those emergencies; roles and responsibilities during emergency response; and training all workers must receive in order to follow emergency procedures. This ERP also describes the provisions this Site has made to coordinate its emergency response planning with other contractors on-site and with off-site emergency response organizations.

This ERP is consistent with the requirements of 29 CFR 1910.120(l) and provides the following site-specific information:

- Pre-emergency planning.
- Personnel roles, lines of authority, and communication.
- Emergency recognition and prevention.
- Safe distances and places of refuge.
- Evacuation routes and procedures.
- Decontamination procedures.
- Emergency medical treatment and first aid.
- Emergency alerting and response procedures.
- Critique of response and follow-up.
- Emergency personal protective equipment (PPE) and equipment.

2.0 PRE-EMERGENCY PLANNING

This Site has been evaluated for potential emergency occurrences, based on site hazards, the required work tasks, the site topography, and prevailing weather conditions. The results of that evaluation indicate the potential for the following site emergencies to occur at the locations indicated.

Type of Emergency:

1. Medical, due to physical injury

Source of Emergency:

1. Slip/trip/fall

Location of Source:

1. Non-specific

3.0 ON-SITE EMERGENCY RESPONSE EQUIPMENT

Emergency procedures may require specialized equipment to facilitate worker rescue, contamination control and reduction, or post-emergency clean up. Emergency response equipment available on the Site is listed below. The equipment inventory and storage locations are based on the potential emergencies described above. This equipment inventory is designed to meet on-site emergency response needs and any specialized equipment needs that off-site responders might require because of the hazards at this Site but not ordinarily stocked.

Any additional personal protective equipment (PPE) required and stocked for emergency response is also listed in below. During an emergency, the Emergency Response Coordinator (ERC) is responsible for specifying the level of PPE required for emergency response. At a minimum, PPE used by emergency responders will comply with Section 7.0, Personal Protective Equipment, of this HASP. Emergency response equipment is inspected at regular intervals and maintained in good working order. The equipment inventory is replenished as necessary to maintain response capabilities.

Emergency Equipment	Quantity	Location
First Aid Kit	1	Site Vehicle
Chemical Fire Extinguisher	2 (minimum)	All heavy equipment and Site Vehicle

Emergency PPE	Quantity	Location
Full-face respirator	1 for each worker	Site Vehicle
Chemical-resistant suits	4 (minimum)	Site Vehicle

4.0 EMERGENCY PLANNING MAPS

An area-specific map of the Site will be developed on a daily basis during performance of field activities. The map will be marked to identify critical on-site emergency planning information, including: emergency evacuation routes, a place of refuge, an assembly point, and the locations of key site emergency equipment. Site zone boundaries will be shown to alert responders to known areas of contamination. There are no major topographical features, however the direction of prevailing winds/weather conditions that could affect emergency response planning are also marked on the map. The map will be posted at site-designated place of refuge and inside the TurnKey personnel field vehicle.

5.0 EMERGENCY CONTACTS

The following identifies the emergency contacts for this ERP.

Emergency Telephone Numbers:

Project Manager: ***Nathan Munley***
Work: (716) 856-0599
Mobile: (716) 289-1072

Corporate Health and Safety Director: ***Thomas H. Forbes***
Work: (716) 856-0599
Mobile: (716) 864-1730

Site Safety and Health Officer (SSHO): ***Nathan Munley***
Work: (716) 856-0599
Mobile: (716) 289-1072

Alternate SSHO: ***Christopher Boron***
Work: (716) 856-0599
Mobile: (716) 864-2726

BUFFALO GENERAL HOSPITAL (ER):	(716) 748-2100
FIRE:	911
AMBULANCE:	911
BUFFALO POLICE:	911
STATE EMERGENCY RESPONSE HOTLINE:	(800) 457-7362
NATIONAL RESPONSE HOTLINE:	(800) 424-8802
NYSDOH:	(716) 847-4385
NYSDEC:	(716) 851-7220
NYSDEC 24-HOUR SPILL HOTLINE:	(800) 457-7252

The Site location is:

1155 Niagara Street
Buffalo, New York 14213
Site Phone Number: Benchmark-TurnKey Staff Cell Phones to be used

6.0 EMERGENCY ALERTING & EVACUATION

Internal emergency communication systems are used to alert workers to danger, convey safety information, and maintain site control. Any effective system can be employed. Two-way radio headsets or field telephones are often used when work teams are far from the command post. Hand signals and air-horn blasts are also commonly used. Every system must have a backup. It shall be the responsibility of each contractor's Site Health and Safety Officer to ensure all personnel entering the site understand an adequate method of internal communication. Unless all personnel are otherwise informed, the following signals shall be used.

1) Emergency signals by portable air horn, siren, or whistle: two short blasts, personal injury; continuous blast, emergency requiring site excavation.

2) Visual signals: hand gripping throat, out of air/cannot breathe; hands on top of head, need assistance; thumbs up, affirmative/ everything is OK; thumbs down, no/negative; grip partner's wrist or waist, leave area immediately.

If evacuation notice is given, site workers leave the worksite with their respective buddies, if possible, by way of the nearest exit. Emergency decontamination procedures detailed in Section 12.0 of the HASP are followed to the extent practical without compromising the safety and health of site personnel. The evacuation routes and assembly area will be determined by conditions at the time of the evacuation based on wind direction, the location of the hazard source, and other factors as determined by rehearsals and inputs from emergency response organizations. Wind direction indicators are located so that workers can determine a safe up wind or cross wind evacuation route and assembly area if not informed by the emergency response coordinator at the time the evacuation alarm sounds. Since work conditions and work zones within the site may be changing on daily basis, it shall be the responsibility of the construction Site Health and Safety Officer to review evacuation routes and procedures as necessary and to inform all Benchmark-TurnKey workers of any changes.

Personnel exiting the site will gather at a designated assembly point. To determine that everyone has successfully exited the site, personnel will be accounted for at the assembly

site. If any worker cannot be accounted for, notification is given to the SSHO (***Nathan Munley or Christopher Boron***) so that appropriate action can be initiated. Contractors and subcontractors on this site have coordinated their emergency response plans to ensure that these plans are compatible and that source(s) of potential emergencies are recognized, alarm systems are clearly understood, and evacuation routes are accessible to all personnel relying upon them.

7.0 EXTREME WEATHER CONDITIONS

In the event of adverse weather conditions, the Site Safety and Health Officer in conjunction with the Contractor's SSHO will determine if engineering operations can continue without sacrificing the health and safety of site personnel. Items to be considered prior to determining if work should continue include but are not limited to:

- Potential for heat/cold stress.
- Weather-related construction hazards (e.g., flooding or wet conditions producing undermining of structures or sheeting, high wind threats, etc).
- Limited visibility.
- Potential for electrical storms.
- Limited site access/egress (e.g., due to heavy snow)

8.0 EMERGENCY MEDICAL TREATMENT & FIRST AID

Personnel Exposure:

The following general guidelines will be employed in instances where health impacts threaten to occur acute exposure is realized:

- Skin Contact: Use copious amounts of soap and water. Wash/rinse affected area for at least 15 minutes. Decontaminate and provide medical attention. Eyewash stations will be provided on site. If necessary, transport to Buffalo General Hospital.

- Inhalation: Move to fresh air and, if necessary, transport to Hospital.

- Ingestion: Decontaminate and transport to Hospital.

Personal Injury:

Minor first-aid will be applied on-site as deemed necessary. In the event of a life threatening injury, the individual should be transported to Hospital via ambulance. The Site Health and Safety Officer will supply available chemical specific information to appropriate medical personnel as requested.

First aid kits will conform to Red Cross and other applicable good health standards, and shall consist of a weatherproof container with individually sealed packages for each type of item. First aid kits will be fully equipped before being sent out on each job and will be checked weekly by the SSHO to ensure that the expended items are replaced.

Directions to Buffalo General Medical Center Emergency Room (see Figure 1):

The following directions describe the best route from the Site to Buffalo General Medical Center Emergency Room:

- Travel south on Niagara Street
- Turn left to stay on Niagara Street
- Turn left onto Porter Avenue
- At the traffic circle, continue straight onto North Street
- Turn right into the Emergency Room (100 High Street)
  (2.4 miles)

9.0 EMERGENCY RESPONSE CRITIQUE & RECORD KEEPING

Following an emergency, the SSHO and Project Manager shall review the effectiveness of this Emergency Response Plan (ERP) in addressing notification, control and evacuation requirements. Updates and modifications to this ERP shall be made accordingly. It shall be the responsibility of each contractor to establish and assure adequate records of the following:

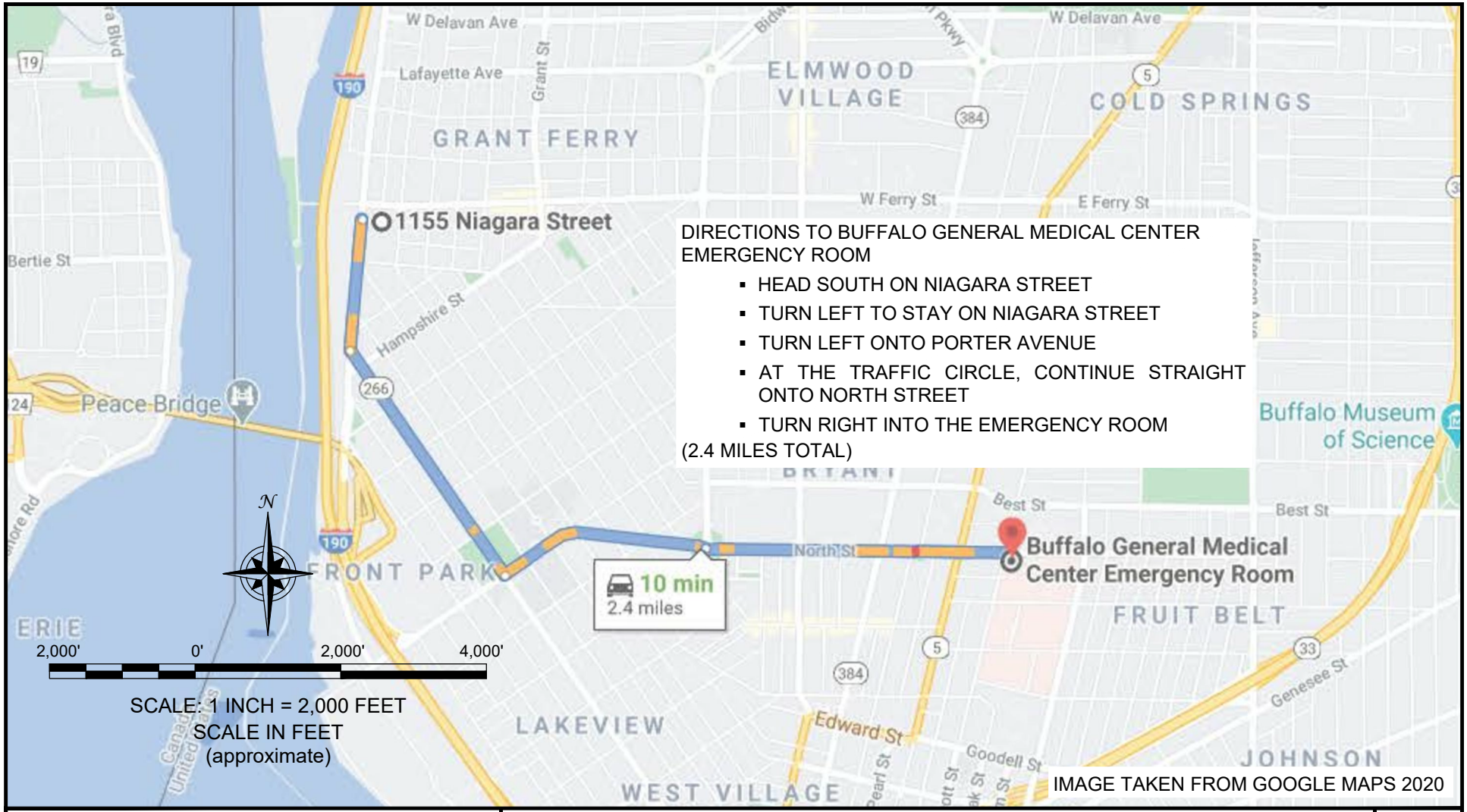
- Occupational injuries and illnesses.
- Accident investigations.
- Reports to insurance carrier or State compensation agencies.
- Reports required by the client.
- Records and reports required by local, state, federal and/or international agencies.
- Property or equipment damage.
- Third party injury or damage claims.
- Environmental testing logs.
- Explosive and hazardous substances inventories and records.
- Records of inspections and citations.
- Safety training.

10.0 EMERGENCY RESPONSE TRAINING

All persons who enter the worksite, including visitors, shall receive a site-specific briefing about anticipated emergency situations and the emergency procedures by the SSHO. Where this site relies on off-site organizations for emergency response, the training of personnel in those off-site organizations has been evaluated and is deemed adequate for response to this site.

FIGURE

F:\CAD\TurnKey\Great Point Opportunity Fund\RAWP\HASP\Figure 1 - Hospital Route Map.dwg, 3/3/2022 12:54:27 PM, DWG To PDF.pc3



HOSPITAL ROUTE MAP

EMERGENCY RESPONSE PLAN

1155 NIAGARA STREET SITE
BCP SITE NO. C915367
BUFFALO, NEW YORK

PREPARED FOR

GREAT POINT OPPORTUNITY FUND (A) QOZB, LLC

FIGURE 1

BENCHMARK IN ASSOCIATION WITH TURNKEY ENVIRONMENTAL RESTORATION, LLC

2558 HAMBURG TURNPIKE, SUITE 300, BUFFALO, NY 14218, (716) 856-0599

PROJECT NO.: T0550-020-001

DATE: MARCH 2022

DRAFTED BY: CNK

ATTACHMENT B

HOT WORK PERMIT FORM

HOT WORK PERMIT

PART 1 - INFORMATION

Issue Date:	
Date Work to be Performed: Start:	Finish (permit terminated):
Performed By:	
Work Area:	
Object to be Worked On:	

PART 2 - APPROVAL

(for 1, 2 or 3: mark Yes, No or NA)*

Will working be on or in:	Finish (permit terminated):	
1. Metal partition, wall, ceiling covered by combustible material?	yes	no
2. Pipes, in contact with combustible material?	yes	no
3. Explosive area?	yes	no

* = If any of these conditions exist (marked "yes"), a permit will not be issued without being reviewed and approved by Thomas H. Forbes (Corporate Health and Safety Director). Required Signature below.

PART 3 - REQUIRED CONDITIONS**

(Check all conditions that must be met)

	PROTECTIVE ACTION		PROTECTIVE EQUIPMENT
	Specific Risk Assessment Required		Goggles/visor/welding screen
	Fire or spark barrier		Apron/fireproof clothing
	Cover hot surfaces		Welding gloves/gauntlets/other:
	Move movable fire hazards, specifically		Wellintons/Knee pads
	Erect screen on barrier		Ear protection: Ear muffs/Ear plugs
	Restrict Access		B.A.: SCBA/Long Breather
	Wet the ground		Respirator: Type:
	Ensure adequate ventilation		Cartridge:
	Provide adequate supports		Local Exhaust Ventilation
	Cover exposed drain/floor or wall cracks		Extinguisher/Fire blanket
	Fire watch (must remain on duty during duration of permit)		Personal flammable gas monitor
	Issue additional permit(s):		

Other precautions:

** Permit will not be issued until these conditions are met.

SIGNATURES

Orginating Employee:	Date:
Project Manager:	Date:
Part 2 Approval:	Date:

ATTACHMENT C

NYSDOH GENERIC COMMUNITY AIR MONITORING PLAN

BENCHMARK TURNKEY

Appendix 1A
New York State Department of Health
Generic Community Air Monitoring Plan

Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. “Periodic” monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or

overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009

Appendix 1B
Fugitive Dust and Particulate Monitoring

A program for suppressing fugitive dust and particulate matter monitoring at hazardous waste sites is a responsibility on the remedial party performing the work. These procedures must be incorporated into appropriate intrusive work plans. The following fugitive dust suppression and particulate monitoring program should be employed at sites during construction and other intrusive activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.

2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Remedial activities may also include the excavation, grading, or placement of clean fill. These control measures should not be considered necessary for these activities.

3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM10) with the following minimum performance standards:

(a) Objects to be measured: Dust, mists or aerosols;
(b) Measurement Ranges: 0.001 to 400 mg/m3 (1 to 400,000 :ug/m3);
(c) Precision (2-sigma) at constant temperature: +/- 10 :g/m3 for one second averaging; and +/- 1.5 g/m3 for sixty second averaging;
(d) Accuracy: +/- 5% of reading +/- precision (Referred to gravimetric calibration with SAE fine test dust (mmd= 2 to 3 :m, g= 2.5, as aerosolized);
(e) Resolution: 0.1% of reading or 1g/m3, whichever is larger;
(f) Particle Size Range of Maximum Response: 0.1-10;
(g) Total Number of Data Points in Memory: 10,000;
(h) Logged Data: Each data point with average concentration, time/date and data point number
(i) Run Summary: overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date occurrence, averaging (logging) period, calibration factor, and tag number;
(j) Alarm Averaging Time (user selectable): real-time (1-60 seconds) or STEL (15 minutes), alarms required;
(k) Operating Time: 48 hours (fully charged NiCd battery); continuously with charger;
(l) Operating Temperature: -10 to 50^{o} C (14 to 122^{o} F);
(m) Particulate levels will be monitored upwind and immediately downwind at the working site and integrated over a period not to exceed 15 minutes.

4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the remedial party to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record keeping plan.

5. The action level will be established at 150 ug/m3 (15 minutes average). While conservative,

this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m3, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than 100 ug/m3 above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see paragraph 7). Should the action level of 150 ug/m3 continue to be exceeded work must stop and DER must be notified as provided in the site design or remedial work plan. The notification shall include a description of the control measures implemented to prevent further exceedances.

6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM10 at or above the action level. Since this situation has the potential to allow for the migration of contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential--such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

(a) Applying water on haul roads;
(b) Wetting equipment and excavation faces;
(c) Spraying water on buckets during excavation and dumping;
(d) Hauling materials in properly tarped or watertight containers;
(e) Restricting vehicle speeds to 10 mph;
(f) Covering excavated areas and material after excavation activity ceases; and
(g) Reducing the excavation size and/or number of excavations.

Experience has shown that the chance of exceeding the 150ug/m3 action level is remote when the above-mentioned techniques are used. When techniques involving water application are used, care must be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. The evaluation of weather conditions is necessary for proper fugitive dust control. When extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended. There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require additional monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.

APPENDIX C

COMMUNITY AIR MONITORING PROGRAM (CAMP)

Appendix 1A
New York State Department of Health
Generic Community Air Monitoring Plan

Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. “Periodic” monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or

overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009

Appendix 1B
Fugitive Dust and Particulate Monitoring

A program for suppressing fugitive dust and particulate matter monitoring at hazardous waste sites is a responsibility on the remedial party performing the work. These procedures must be incorporated into appropriate intrusive work plans. The following fugitive dust suppression and particulate monitoring program should be employed at sites during construction and other intrusive activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.

2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Remedial activities may also include the excavation, grading, or placement of clean fill. These control measures should not be considered necessary for these activities.

3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM10) with the following minimum performance standards:

(a) Objects to be measured: Dust, mists or aerosols;
(b) Measurement Ranges: 0.001 to 400 mg/m3 (1 to 400,000 :ug/m3);
(c) Precision (2-sigma) at constant temperature: +/- 10 :g/m3 for one second averaging; and +/- 1.5 g/m3 for sixty second averaging;
(d) Accuracy: +/- 5% of reading +/- precision (Referred to gravimetric calibration with SAE fine test dust (mmd= 2 to 3 :m, g= 2.5, as aerosolized);
(e) Resolution: 0.1% of reading or 1g/m3, whichever is larger;
(f) Particle Size Range of Maximum Response: 0.1-10;
(g) Total Number of Data Points in Memory: 10,000;
(h) Logged Data: Each data point with average concentration, time/date and data point number
(i) Run Summary: overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date occurrence, averaging (logging) period, calibration factor, and tag number;
(j) Alarm Averaging Time (user selectable): real-time (1-60 seconds) or STEL (15 minutes), alarms required;
(k) Operating Time: 48 hours (fully charged NiCd battery); continuously with charger;
(l) Operating Temperature: -10 to 50^{o} C (14 to 122^{o} F);
(m) Particulate levels will be monitored upwind and immediately downwind at the working site and integrated over a period not to exceed 15 minutes.

4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the remedial party to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record keeping plan.

5. The action level will be established at 150 ug/m3 (15 minutes average). While conservative,

this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m3, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than 100 ug/m3 above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see paragraph 7). Should the action level of 150 ug/m3 continue to be exceeded work must stop and DER must be notified as provided in the site design or remedial work plan. The notification shall include a description of the control measures implemented to prevent further exceedances.

6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM10 at or above the action level. Since this situation has the potential to allow for the migration of contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential--such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

(a) Applying water on haul roads;
(b) Wetting equipment and excavation faces;
(c) Spraying water on buckets during excavation and dumping;
(d) Hauling materials in properly tarped or watertight containers;
(e) Restricting vehicle speeds to 10 mph;
(f) Covering excavated areas and material after excavation activity ceases; and
(g) Reducing the excavation size and/or number of excavations.

Experience has shown that the chance of exceeding the 150ug/m3 action level is remote when the above-mentioned techniques are used. When techniques involving water application are used, care must be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. The evaluation of weather conditions is necessary for proper fugitive dust control. When extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended. There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require additional monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.

APPENDIX D

PROJECT DOCUMENTATION FORMS

TURNKEY ENVIRONMENTAL RESTORATION, LLC

DAILY LOG	DATE			
	NO.			
	SHEET		OF	

FIELD ACTIVITY DAILY LOG

PROJECT NAME:	PROJECT NO.
PROJECT LOCATION:	CLIENT:
FIELD ACTIVITY:	

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

TIME	DESCRIPTION

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS:

WEATHER CONDITIONS:	IMPORTANT TELEPHONE CALLS:
A.M.:	
P.M.:	

PERSONNEL ON SITE:

SIGNATURE DATE:

DAILY LOG	DATE			
	REPORT NO.			
	PAGE	OF		

PROBLEM IDENTIFICATION REPORT

Date:

Project:

Job No:

Location:

CQA Monitor(s):

Client:

Contractor:

Contractor's Supervisor:

WEATHER CONDITIONS:

Ambient Air Temp. - A.M.:

Ambient Air Temp. - P.M.:

Wind Direction:

Wind Speed:

Precipitation:

Problem Description:

Problem Location (reference test location, sketch on back of form as appropriate):

Problem Causes:

Suggested Corrective Measures or Variances:

Linked to Corrective Measures Report No. *or Variance Log No.*

Approvals (initial):

CQA Engineer:

Project Manager:

Signed:

CQA Representative

DAILY LOG	DATE			
	REPORT NO.			
	PAGE		OF	

CORRECTIVE MEASURES REPORT

Date:

Project:

Job No:

Location:

CQA Monitor(s):

Client:

Contractor:

Contractor's Supervisor:

WEATHER CONDITIONS:

Ambient Air Temp. - A.M.:

Ambient Air Temp. - P.M.:

Wind Direction:

Wind Speed:

Precipitation:

Corrective Measures Undertaken (reference Problem Identification Report No.)

Retesing Location:

Suggested Method of Minimizing Re-Occurrence:

Approvals (initial):

CQA Engineer:

Project Manager:

Signed:

CQA Representative

APPENDIX E

ELECTRONIC COPY