



# ARM Group Inc.

Engineers and Scientists

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December 13, 2019

Ms. Barbara Brown  
Project Coordinator  
Maryland Department of the Environment  
1800 Washington Boulevard  
Baltimore, MD 21230

Re: RADWP Addendum  
Area A: Sub-Parcel A3-1  
Tradepoint Atlantic  
Sparrows Point, MD 21219

Dear Ms. Brown:

On behalf of EnviroAnalytics Group, LLC (EAG), ARM Group Inc. (ARM) is pleased to submit the following Response and Development Work Plan (RADWP) Addendum to the Maryland Department of the Environment (MDE) and the United States Environmental Protection Agency (USEPA). This RADWP Addendum is being submitted to document several proposed changes to the development project on Sub-Parcel A3-1 (the Site) of the Tradepoint Atlantic property located in Sparrows Point, Maryland.

## **Project Background**

An approved RADWP has already been implemented on Sub-Parcel A3-1. The previously submitted RADWP Revision 3 dated April 24, 2017 (updated June 5, 2017) was approved via email by the MDE and USEPA on April 28, 2017 and June 20, 2017, respectively. The RADWP was later modified by the Proposed Modifications to Stormwater Pond Liners Letter dated October 9, 2017, and the Northern Access Road Construction & Landscape Capping Implementation Letter dated July 18, 2018.

This RADWP Addendum requests agency approval to modify the site layout, including the demolition of existing surface engineering controls (i.e., caps) in several areas and the subsequent installation of new caps. The proposed changes include an expansion of the existing warehouse via the construction of an approximately 0.75-acre extension along the western side of the existing structure. Additional utilities will also be installed (and select utilities abandoned) outside of the original scope of work specified in the RADWP. The proposed facility changes are necessary to accommodate the needs of a prospective tenant. As described below, any disturbed caps will be repaired to meet the specifications of the approved RADWP.

## Project Description

The proposed work will include modifications to the site layout, necessitating the removal of areas of surface caps which have previously been installed. This will include the removal of existing pavement, concrete, and curbing in select areas, as well as trenching through landscaped areas (and below the removed pavement caps) to facilitate the installation of electric, gas, water, sanitary, and stormwater utilities. Select sanitary and stormwater utilities are also designated to be removed or abandoned in place.

Replacement caps (including asphalt/concrete caps and landscaped caps) will be installed to complete the new site layout. This includes the construction of the building expansion along the western side of the existing structure, which will be completed with a concrete slab matching the floor elevation and construction of the existing warehouse. When the project is complete, the Site will remain capped in its entirety by approved controls, with an increased area covered by pavement caps rather than landscaped caps.

**Appendix A** contains the project construction drawings for the proposed work. *Sheet C1.0* and *Sheet C1.1* highlight the areas where existing pavement, concrete, and curbing are to be removed, and where existing utilities are to be removed or abandoned in place. *Sheet C2.0* and *Sheet C2.1* identify the light- and heavy-duty pavement sections and concrete pavement sections that are proposed to be installed, along with the proposed storm drain plan. *Sheet C3.0* and *Sheet C3.1* provide additional details regarding the proposed water and sanitary sewer plan. The proposed building expansion is also on *Sheet C2.0* through *Sheet C3.1*.

**Figure 1** provides an overview of the proposed work, incorporating the information shown on *Sheet C1.0* through *Sheet C3.1* to indicate the areas of pavement demolition (and subsequent replacement/capping) versus pavement expansion. In several areas, new pavement sections are proposed to be installed overlying existing landscaped caps (as expansions to the current parking areas and access drives) most notably in the northwestern portion of the Site. Further, **Figure 1** shows the horizontal alignments of proposed utilities. Certain utilities are shown outside of the designated pavement areas, indicating that they will be installed below landscaped caps which will be repaired in kind. **Figure 1** is for demonstration purposes; the specific details are shown on the sheets in **Appendix A**.

## General Work Requirements

The approved RADWP specifies the acceptable cap thicknesses for installation at the Site (as shown on Figure 9b and described in Section 4.0 of the RADWP). Specifically, the approved cap thicknesses include the following:



- Floor Slabs and Pavement – a minimum of 4 inches of compacted slag subgrade and a minimum of 4 inches of overlying pavement surface (asphalt or concrete).
- Landscaping – a minimum of 6 inches of clean topsoil overlying 18 inches of clean fill (for a total landscape cap thickness of 2 feet), with an underlying geotextile marker fabric between the clean fill and the existing subgrade.

The proposed cap sections to be installed during this project are shown on *Sheet C4.0* within **Appendix A**. The proposed cap thicknesses meet the above requirements.

The construction will remain subject to the development implementation protocols outlined in the approved RADWP, including but not limited to the following:

- Development activities will be conducted under the property-wide Health and Safety Plan (provided as Appendix D of the RADWP).
- Oversight will be provided by an Environmental Professional (EP) during ground intrusive construction activities to ensure compliance with soil screening requirements, proper cap thickness and construction, and proper water management.
- Erosion and sediment controls will be installed as required.
- Dust monitoring will be implemented as required (see Section 5.2.5\* of the RADWP).
- If dewatering is necessary, sampling and disposal will be conducted as required (see Section 5.3\* of the RADWP).
- The Utility Excavation Non-Aqueous Phase Liquid (NAPL) Contingency Plan will be implemented as required (provided as Appendix H\* of the RADWP).

\*The requirements for dust control and dewatering have been subject to minor modification as coordinated with the MDE for several development projects in 2019. The new (standard) requirements will be applied. The NAPL Contingency Plan has been updated since the RADWP was approved; the revised plan dated June 19, 2017 (with revised figure attachment) should be referenced during the proposed work. The revised NAPL Contingency Plan is provided as **Appendix B**.

In accordance with the RADWP, all utility trenches will be backfilled with bedding and backfill materials approved by the MDE. During field screening by the EP, if there is no evidence of significant contamination (i.e., elevated PID readings, staining, petroleum materials, etc.) the excavated materials may be used as backfill within the utility trenches, or placed elsewhere on the Site under areas to be capped. The EP will monitor the soil excavation activities for signs of significantly contaminated material which may not be suitable for reuse. In general, all excavated materials are expected to be suitable for replacement within the utility trenches, with the exception of materials generated from the former East Pond (see “Exclusion Zones” below).



Any ground intrusive work will be performed using Modified Level D Personal Protective Equipment (PPE) in accordance with the requirements outlined in the approved PPE Standard Operational Procedure (SOP) provided as **Appendix C**. The PPE SOP had not been developed when the RADWP was previously submitted and approved. Oversight will also be required by the EP in accordance with the PPE SOP.

A pre-construction meeting shall be held to address proper operating procedures and cap reconstruction. This meeting shall consist of the EP and the construction manager.

## **Special Considerations**

### ***Selection of Marker Fabric***

In accordance with the requirements of the Sub-Parcel A3-1 RADWP, all landscaped caps are required to have a geotextile marker fabric placed between the clean fill (the cap) and the underlying soils. In addition to the modifications proposed above, Tradepoint Atlantic is proposing to use the Mirafi® 140N nonwoven geotextile as the preferred marker fabric for this project. A product sheet for this marker fabric is included as **Appendix D**. Upon authorization this marker fabric (or an equivalent variant) will be used during the proposed construction for any landscaped caps that require replacement or installation.

### ***Monitoring Well Abandonment/Retention***

Several groundwater monitoring wells in the Rod & Wire Mill (RWM) monitoring network have the potential to be impacted by the proposed work. **Figure 2** shows the northern portion of Sub-Parcel A3-1 and the monitoring wells located in the vicinity, along with a representation of the pavement demolition (with cap replacement) and expansion areas. As shown on the figure, five wells (RWN-MWS, RW04-MW(S), RW10-MW(I), RW13-MW(I), and RW14-MW(S)) are located within the work area. To ensure that the locations are not damaged/destroyed, these wells should be protected using sonotubes, flagging, and/or barriers as needed. Once the new capping surface has been placed surrounding each sonotube, the monitoring well will be completed with a well pad and manhole cover flush with the new surface. In addition, five wells (RWI-MWS, RWI-MWI, RW06R-MW(S), RW11-MW(S), and RW11-MW(I)) are located in close proximity (within 10 feet) of the work area, and should be protected by temporary measures (flagging, barriers, etc.) to ensure the locations are not damaged.

If any of the identified locations (or others) cannot be adequately protected and retained, they shall be properly abandoned in accordance with COMAR 26.04.04.34 through 36. In this case, it is understood that the agencies may require the installation of additional monitoring wells in the future following site development. Following the conclusion of the proposed construction work, EAG will coordinate with the MDE to determine if replacement wells or alternate installation locations are appropriate for any abandoned wells.



### ***Exclusion Zones***

Exclusion Zones were defined in the RADWP as the former East Pond, Sludge Bin Storage Area, and Northwest Pond. The boundaries of these Exclusion Zones are shown on **Figure 3**. As seen on the figure, the proposed utility alignments (specifically gas and electric) extend through portions of the former East Pond and Sludge Bin Storage Area. These utilities will be installed to anticipated depths of less than 5 feet below ground surface (bgs). The use of the Modified Level D PPE as outlined in the approved PPE SOP (**Appendix C**) will prevent potentially unacceptable exposures for Construction Workers performing the required work along these alignments. The EP will also provide continuous monitoring oversight during the excavation of the trenches and installation of the utilities through the Exclusion Zones.

Materials excavated from within the former East Pond during utility trenching shall be segregated for additional sampling to determine if they are a characteristic hazardous waste. After testing, such materials which are determined to be non-hazardous can be placed on-site under capped areas, but may not be used as backfill within utility trenches. The utility trenches through the former East Pond will be required to be backfilled with clean fill (or materials specifically approved by the MDE for this use).

Materials generated from the former East Pond will be placed in stockpiles not to exceed 500 cubic yards. Such materials will be stockpiled on polyethylene sheeting and covered with a polyethylene tarp to minimize potential exposures and erosion. Composite soil samples will be submitted for laboratory testing at a rate of one sample for every 500 cubic yards (i.e., one sample per stockpile) for TCLP-metals (based on known contaminants). Each composite sample will consist of 10 randomly selected grab aliquots. The resulting analytical data will be submitted to the MDE to demonstrate the suitability of the material for reuse.

Soil within the former Sludge Bin Storage Area has previously been excavated to 5 feet bgs and the excavation was backfilled with materials approved by the MDE. Therefore, based on the anticipated depth of installation for these gas and electric utilities, no additional characterization will be required for materials excavated from the Sludge Bin Storage Area. It is anticipated that these materials will be appropriate for replacement back within the utility trench. No utility alignments are proposed in the former Northwest Pond.

### ***Remediation Trenches***

Permeable Reactive Barrier (PRB) Remediation Trenches were installed in the northern portion of Sub-Parcel A3-1 at the locations shown on **Figure 3**. As seen on the figure, the same utility alignments identified above also extend through portions of the trenches. The trenches were constructed using alkaline charge material overlaid by slag backfill. The utility installations are not expected to extend to within the charge material (expected at depths greater than 5 feet bgs).



### ***NAPL & RW-003 Excavation Area***

Any notable or non-standard conditions, including but not limited to staining, strong odors, discoloration, evidence of NAPL, or other evidence of contamination which has not previously been characterized, will be reported to the MDE. If evidence of petroleum is encountered, preventive measures will be implemented to prevent the discharge to, or migration of, petroleum product along a utility conduit. The NAPL Contingency Plan (**Appendix B**) provides protocols to be followed if product is encountered during construction activities.

Special consideration will be given during the installation of the proposed gas line between the northeast corner of the existing warehouse and the main connection at Bethlehem Boulevard. The EP will provide continuous monitoring oversight during the excavation of the trench and installation of this gas line. **Figure 3** shows the proximity of utilities to the RW-003 NAPL delineation area where NAPL is known or suspected to be present. Excavation of NAPL was previously completed in a limited area surrounding RW-003. However, the excavation boundary was limited to the north by high-voltage power lines, and NAPL was confirmed to remain in place (and is subject to continued monitoring) to the north of the excavation in the area to be capped by landscaping. Given the proposed depth of the gas line (approximately 36 inches bgs) it is likely that the trench will remain above any NAPL, if present. However, if NAPL is encountered, the NAPL Contingency Plan will be implemented via 1) the use of low permeability backfill or 2) installation of trench plugs along the alignment.

### **Schedule & Reporting**

At this time, EAG is requesting approval for Tradepoint Atlantic to proceed with the proposed work. Tradepoint Atlantic intends to commence work on the Site in January 2020 with an estimated completion date of September 2020. The final development layout, incorporating the scope of work described in this RADWP Addendum, will be covered by the same Development Completion Report as the remainder of Sub-Parcel A3-1. The Development Completion Report will document the final caps installed across the Site.

If you have any questions, or if we can provide any additional information at this time, please do not hesitate to contact ARM Group Inc. at 410-290-7775.

Respectfully Submitted,  
ARM Group Inc.



Taylor R. Smith, P.E.  
Project Engineer



T. Neil Peters, P.E.  
Senior Vice President



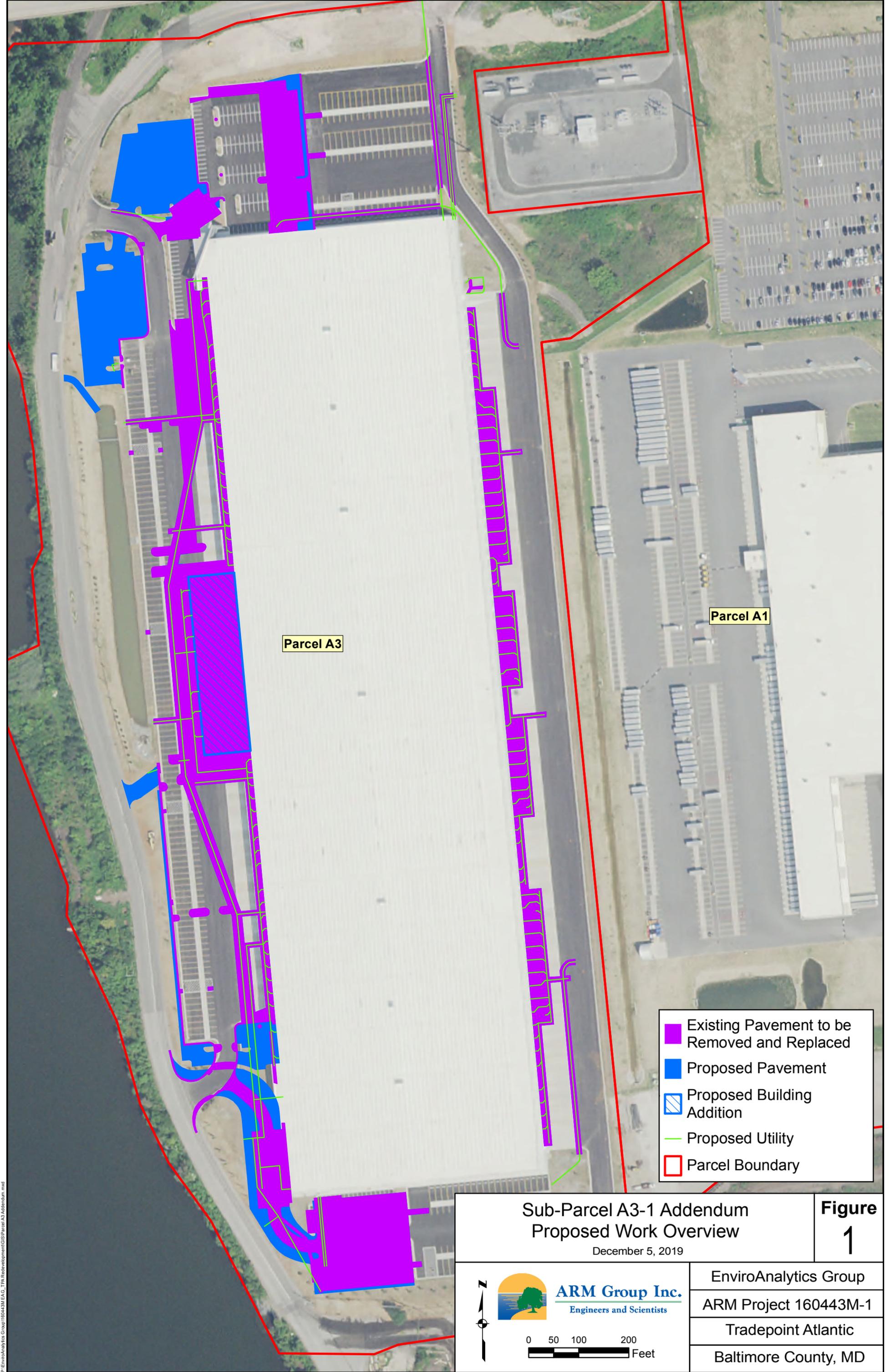
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## **FIGURES**

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- Existing Pavement to be Removed and Replaced
- Proposed Pavement
- ▨ Proposed Building Addition
- Proposed Utility
- Parcel Boundary

**Sub-Parcel A3-1 Addendum  
Proposed Work Overview**

December 5, 2019

**Figure  
1**



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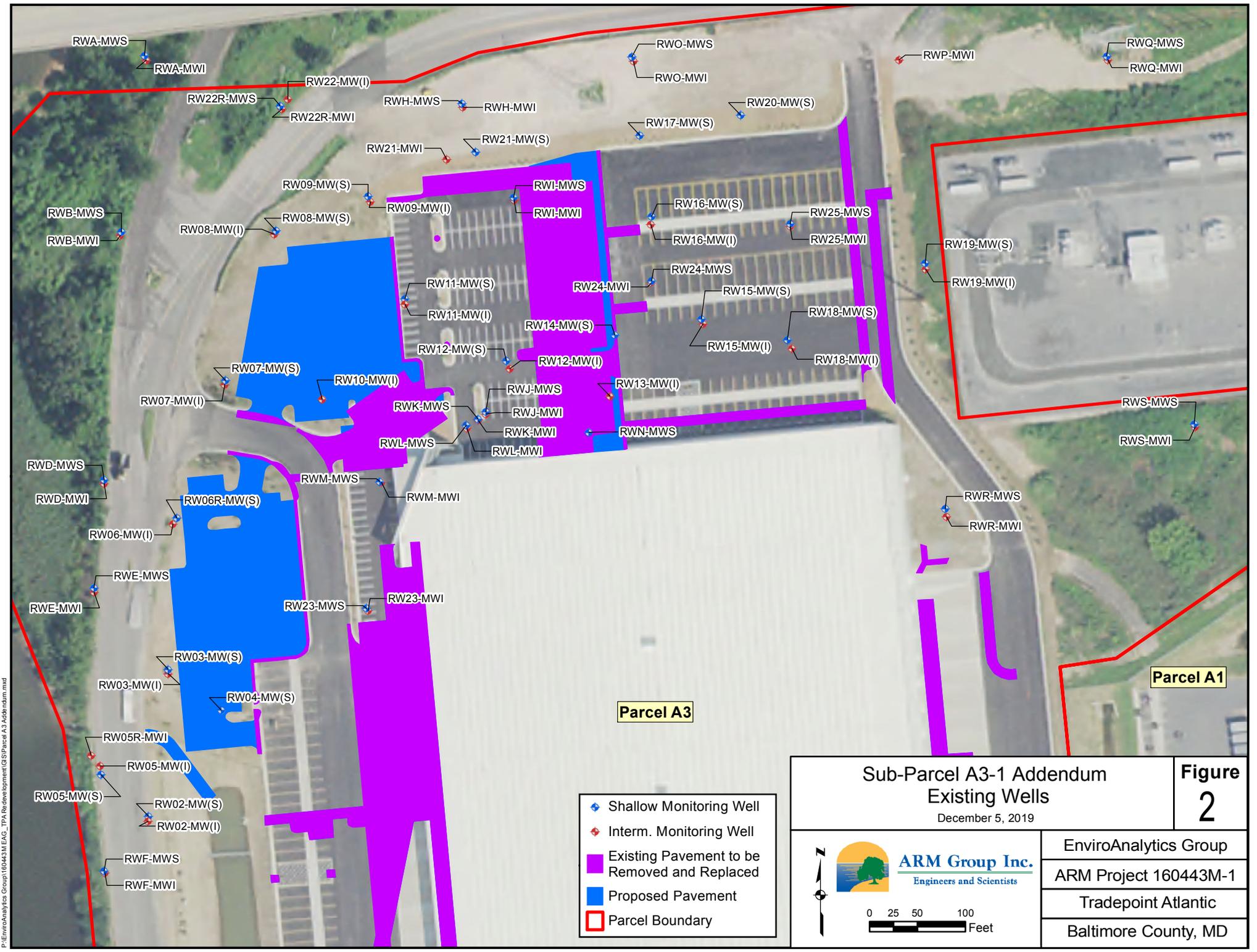
0 50 100 200  
Feet

EnviroAnalytics Group

ARM Project 160443M-1

Tradeport Atlantic

Baltimore County, MD



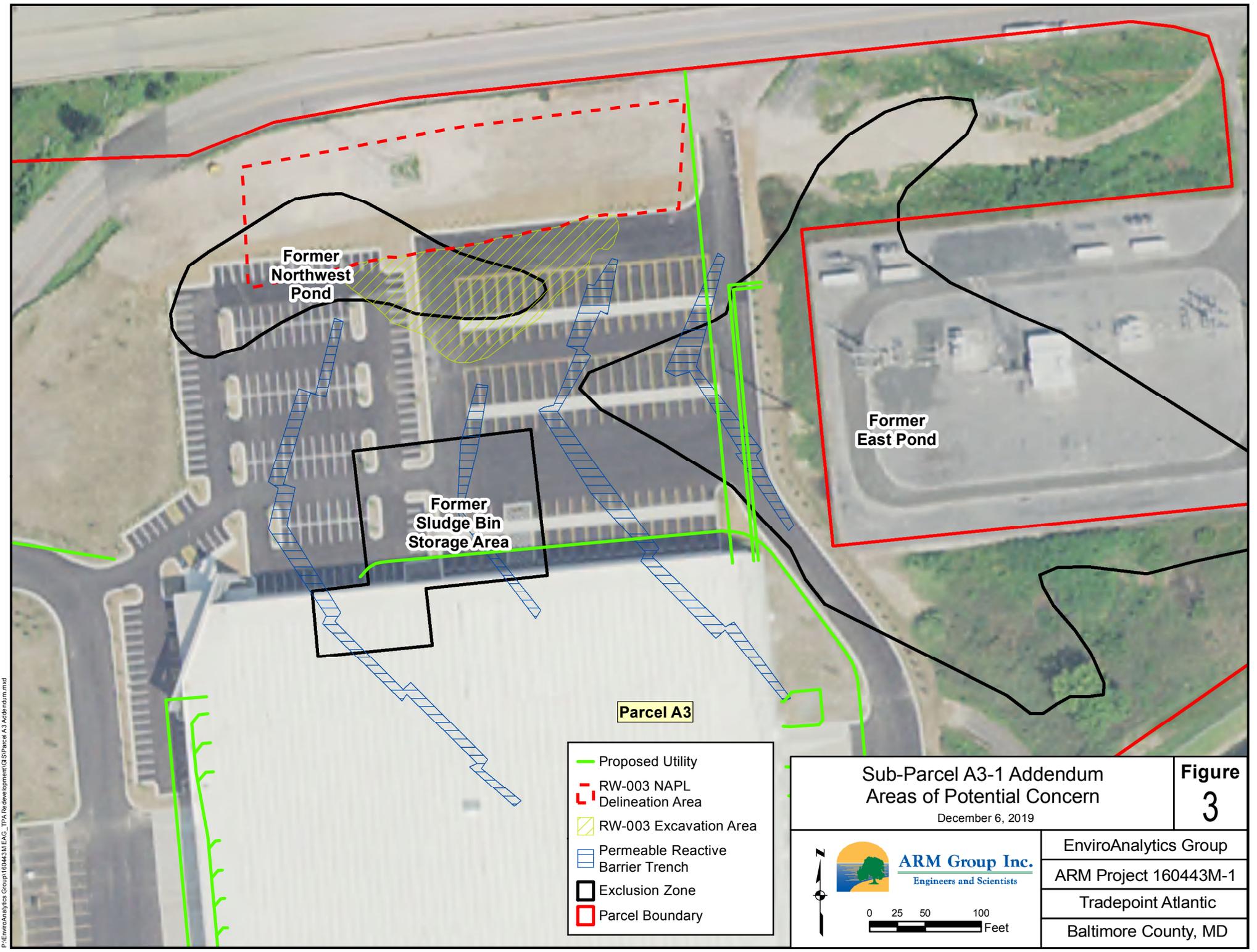
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- Shallow Monitoring Well
- Interm. Monitoring Well
- Existing Pavement to be Removed and Replaced
- Proposed Pavement
- Parcel Boundary

<b>Sub-Parcel A3-1 Addendum</b> <b>Existing Wells</b> December 5, 2019		<b>Figure</b> <span style="font-size: 2em;">2</span>
 <b>ARM Group Inc.</b> Engineers and Scientists		EnviroAnalytics Group ARM Project 160443M-1
		Tradepoint Atlantic Baltimore County, MD

Parcel A1

Parcel A3



Former Northwest Pond

Former Sludge Bin Storage Area

Former East Pond

Parcel A3

-  Proposed Utility
-  RW-003 NAPL Delineation Area
-  RW-003 Excavation Area
-  Permeable Reactive Barrier Trench
-  Exclusion Zone
-  Parcel Boundary

Sub-Parcel A3-1 Addendum  
Areas of Potential Concern

December 6, 2019

Figure  
3



**ARM Group Inc.**  
Engineers and Scientists



EnviroAnalytics Group  
ARM Project 160443M-1  
Tradepoint Atlantic  
Baltimore County, MD

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## APPENDIX A

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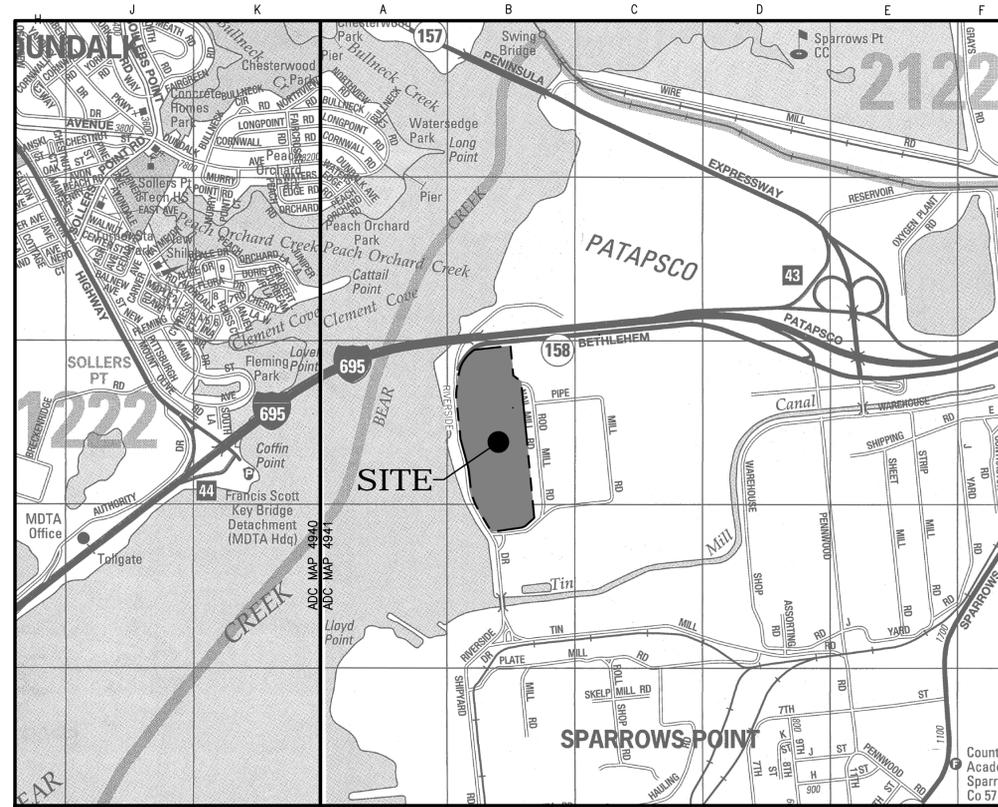
**GENERAL UTILITY NOTES**

- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" 811 OR 1-800-257-7777 A MINIMUM OF THREE (3) WORKING DAYS PRIOR TO BEGINNING LAYOUT AND CONSTRUCTION, AND AGAIN PRIOR TO THE BEGINNING OF PLANTING OPERATIONS.
- ALL WORK UNDER THIS CONTRACT SHALL BE PERFORMED BY THE CONTRACTOR IN ACCORDANCE WITH THE MARYLAND DEPARTMENT OF THE ENVIRONMENT PERMIT.
- ALL CONSTRUCTION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH BALTIMORE COUNTY STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (FEBRUARY 2000, AS AMENDED).
- EXISTING UTILITIES THAT ARE TO REMAIN SHALL BE ADJUSTED TO PROPOSED FINISH GRADE UNLESS NOTED OTHERWISE ON THE DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS AND WORK REQUIRED TO ADJUST EXISTING UTILITIES AND INSTALL PROPOSED UTILITIES TO FINISH GRADE WITHIN THE LIMIT OF DISTURBANCE, INCLUDING OFF-SITE EASEMENTS AND PUBLIC RIGHTS-OF-WAY, AS APPLICABLE.
- THE CONTRACTOR SHALL STAKE OUT THE LIMIT OF DISTURBANCE, THE LOCATION OF PROPOSED BUILDING AND RETAINING WALL LINES AND CORNERS, UTILITIES, ROAD AND DRIVEWAY CENTERLINES, AND PARKING AREAS FOR REVIEW AND APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO BEGINNING WORK. DIMENSIONS ARE TO THE FACE OF CURB, BUILDINGS, AND RETAINING WALLS UNLESS NOTED OTHERWISE ON THE DRAWINGS.
- EXISTING TREES AND PLANT MATERIAL WITHIN THE LIMIT OF DISTURBANCE SHALL BE REMOVED UNLESS NOTED OTHERWISE ON THE DRAWINGS. TREES AND PLANT MATERIAL LOCATED OUTSIDE OF THE LOD, AND THOSE DESIGNATED TO REMAIN SHALL BE PROTECTED THROUGHOUT CONSTRUCTION. PROTECTION SHALL BE IN ACCORDANCE WITH THE APPLICABLE NOTES AND DETAILS SHOWN ON THE DRAWINGS AND AS REQUIRED TO MAINTAIN A HEALTHY CONDITION.
- CONSTRUCTION SHALL BE IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, COUNTY AND LOCAL REGULATIONS, STANDARDS AND SPECIFICATIONS. CONTRACTOR SHALL COMPLY WITH APPLICABLE OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) LAWS AND REGULATIONS FOR WORK ON THIS PROJECT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS, NOT OBTAINED AND FURNISHED TO THE CONTRACTOR BY THE OWNER, AND PAYING RELATED FEES REQUIRED TO COMPLETE THE WORK ON THIS PROJECT.
- THE CONTRACTOR SHALL REPLACE AT NO ADDITIONAL COST TO THE OWNER, EXISTING CURB AND GUTTER, PAVING, SIDEWALKS, TREES, PLANT MATERIAL AND OTHER ITEMS DESIGNATED TO REMAIN ON THE SITE AND WITHIN THE PUBLIC RIGHT-OF-WAY, WHICH ARE DAMAGED DURING CONSTRUCTION. AREAS DISTURBED, BUT NOT DESIGNATED FOR PAVING OR PLANTING AREAS, SHALL BE PERMANENTLY STABILIZED BY SEEDING OR SOILING IN ACCORDANCE WITH THE VEGETATIVE STABILIZATION NOTES ON THE DRAWINGS, AND SPECIFICATIONS IN THE PROJECT MANUAL WHEN APPLICABLE.
- CURB AND GUTTER SHALL BE CONSTRUCTED WITH "REGULAR CROSS SLOPE" OR "REVERSE CROSS SLOPE" AS REQUIRED TO REFLECT THE DIRECTION OF SLOPE ON ADJACENT PAVING. REFER TO THE DRAWINGS FOR CURB AND GUTTER DETAILS. CURB AND GUTTER SHALL BE CONSTRUCTED WITH SMOOTH VERTICAL CURVE TRANSITIONS AT ALL HIGH POINTS, LOW POINTS AND INLET LOCATIONS.
- SANITARY SEWER AND STORM DRAIN PIPE ELEVATIONS ARE TO THE INVERT UNLESS NOTED OTHERWISE ON THE DRAWINGS. UTILITY MANHOLES AND STORM DRAIN STRUCTURE FRAMES, GRATES, AND INLET HEADPIECES SHALL BE ADJUSTED AND INSTALLED AT THE SAME LINE, GRADE AND CROSS SLOPE OF PROPOSED FINISH GRADE IN ADJACENT LAWN AND PAVED AREAS.
- WATER LINES SHALL BE INSTALLED WITH A MINIMUM COVER OF FOUR FEET (4'-0") ABOVE THE TOP OF PIPE EXCEPT AT CROSSINGS WHERE A MINIMUM OF 3'-0" SHALL BE MAINTAINED.
- SANITARY SEWER, ROOF DRAINS AND STORM DRAIN CLEANOUTS LOCATED WITHIN PAVED AREAS SHALL BE A "FLUSH TYPE" INSTALLED AT THE SAME ELEVATION AS THE SURROUNDING PAVEMENT. CLEANOUT LIDS SHALL BE "TRAFFIC BEARING". REFER TO THE DRAWINGS FOR ADDITIONAL INFORMATION.
- WHERE NEW CURB AND GUTTER MEETS EXISTING CURB AND GUTTER, THE EXISTING SHALL BE REMOVED TO THE NEAREST JOINT, OR SAW CUT TO PROVIDE A CLEAN, UNIFORM JOINT WITH THE NEW CURB AND GUTTER.
- PROPOSED SPOT ELEVATIONS SHOWN IN DRIVEWAYS, SERVICE AND PARKING AREAS ARE THE TOP OF PAVED SURFACES AND BOTTOM OF CURBS UNLESS NOTED OTHERWISE ON THE DRAWINGS.
- WHERE NEW CURB IS INSTALLED ADJACENT TO EXISTING PAVEMENT WHICH MAY BE REQUIRED TO RECEIVE AN OVERLAY, THE OVERLAY THICKNESS MAY VARY AS REQUIRED (MINIMUM OF 1-INCH) IN ORDER TO MAINTAIN THE SPECIFIED CURB REVEAL AS SHOWN ON THE DETAILS. IT IS ANTICIPATED THAT MINOR FIELD ADJUSTMENT TO THE TOP OF CURB ELEVATIONS NOTED ON THE DRAWINGS MAY BE NECESSARY IN ORDER TO PROVIDE A UNIFORM CURB REVEAL, PROVIDE SMOOTH TRANSITION OF THE FINISHED SURFACE AND MAINTAIN FLOW ALONG THE CURB LINE INTO DRAINAGE STRUCTURES. CONTACT THE OWNER'S REPRESENTATIVE FOR APPROVAL OF ADJUSTMENTS PRIOR TO INSTALLING NEW CURB.
- REFER TO THE CONSTRUCTION DOCUMENTS PREPARED BY THE MECHANICAL OR ELECTRICAL ENGINEER FOR DISPOSITION OF EXISTING AND CONSTRUCTION OF NEW LIGHTING, COMMUNICATION, AND ELECTRICAL SERVICES, UNLESS NOTED OTHERWISE ON THE DRAWINGS. REFER TO BGE PLANS FOR FINAL GAS AND ELECTRIC UTILITY LOCATIONS.
- PAVEMENT, EARTHWORK AND EXCAVATION:
  - ADDITIONAL FILL REQUIRED TO RAISE GRADES, WHICH MAY CONSIST OF APPROVED ON-SITE SOILS AND/OR OFF-SITE BORROW, SHALL BE FREE OF ALL DEBRIS, ORGANICS, CLUMPS AND SHALL BE ADJUSTED TO THE PROPER MOISTURE CONTENT BEFORE BEING COMPACTED. COMPACTION SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT AND THE ON-SITE GEOTECHNICAL ENGINEER.
  - SELECT FILL UNDER SLABS AND PAVEMENT AREAS SHALL BE PLACED PER THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT OR THE ON-SITE GEOTECHNICAL ENGINEER.
  - CONTRACTOR SHALL REFER TO THE FINAL GEOTECHNICAL REPORT FOR PAVING SECTIONS FOR CONCRETE AND FULL DEPTH PAVING.
  - GEOTEXTILES OR GEORIGS, IF REQUIRED, FOR SOIL STABILIZATION OR REINFORCING SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
  - ALL UNPAVED AREAS OF THE SITE SHALL BE STABILIZED AND THEN SEEDED IN ACCORDANCE WITH THE APPROVED SEDIMENT CONTROL PLAN.
- UTILITIES - USE CLEAN, GRANULAR FILL MATERIAL, FREE OF ALL ROCKS, DEBRIS, AND OTHER UNSUITABLE MATERIAL FOR BACKFILLING UTILITY EXCAVATIONS. COMPACTION OF BACKFILL SHALL BE IN ACCORDANCE WITH GEOTECHNICAL REPORT.

# PRIVATE CONSTRUCTION DRAWINGS

## FOR PROJECT LUNAR

TRADEPOINT ATLANTIC SITE A-3



MAP COPYRIGHT © ADC THE MAP PEOPLE, (800) 829-6277  
 PERMITTED USE NUMBER 21006237 MAP No. 4941 GRID A3, B3, A4 AND B4  
**LOCATION MAP**  
 SCALE: 1" = 1,200'  
 TAX MAP 111, PARCEL 318

**GENERAL NOTES**

- PROPERTY INFORMATION:
  - OWNER/DEVELOPER: TRADEPOINT ATLANTIC LLC  
 1600 SPARROWS POINT BOULEVARD  
 SUITE 250  
 BALTIMORE, MARYLAND 21211  
 ATTN: MR. JUSTIN DUNN  
 PHONE: (443) 452-1500  
 6001 RIVERSIDE DRIVE  
 BALTIMORE, MARYLAND 21211
  - PROPERTY ADDRESS: 6001 RIVERSIDE DRIVE
  - ORIGINAL TRACT AREA: 106,399.220 S.F. ±, 49.48 AC. ±
  - PROPERTY AREA: 2,155.349 S.F. ±, 49.48 AC. ±
  - ELECTION DISTRICT: 15
  - COUNCILMANIC DISTRICT: 7
  - TAX MAP: 111
  - PARCEL: 318
  - DEED REFERENCE: 3547.37
  - TAX ACCOUNT NO.: 1502024000
- ZONING: MH-M (MANUFACTURING HEAVY INDUSTRIAL MAJOR)
- ZONING MAP / GIS TILE NO.: 110C2 / 111A2
- EXISTING LAND USE: VACANT - INDUSTRIAL  
 PROPOSED USE: REGIONAL DISTRIBUTION FACILITY
- FLOOR AREA RATIO: 1,011.272 SF ±  
 PERMITTED / 2.0  
 PROVIDED: 0.47 (1,011.272 S.F. / 2,155.34 S.F.)
- HEIGHT REQUIREMENTS: PROPOSED BLDG HEIGHT: UNLIMITED  
 41'-0"
- REQUIRED CALCULATIONS: 1 P.S. PER EMPLOYEE DURING MAX SHIFT  
 PROVIDED: SEE PARKING SUMMARY
- THE SITE IS LOCATED IN THE INTENSELY DEVELOPED AREA OF THE CHESAPEAKE BAY CRITICAL AREA.
- STORMWATER MANAGEMENT SHALL BE DESIGNED UNDER 2000 MARYLAND STORMWATER MANAGEMENT PRACTICES INCLUDING WET POND (P-2).
- WATER SERVICE WILL BE PROVIDED BY BALTIMORE COUNTY. SEWER SERVICE WILL BE PROVIDED BY A PRIVATE SEWER SYSTEM.
- THE SITE NOT LOCATED WITHIN ANY FAILED BASIC SERVICES MAP AREAS.
- ALL OPEN SPACE, STORMWATER MANAGEMENT FACILITIES, ON-SITE ROADS, AND ON-SITE PRIVATE UTILITIES SHALL BE MAINTAINED BY THE OWNER.
- THERE IS NO 100-YEAR FEMA FLOODPLAIN ONSITE AS EVIDENCED BY FEMA FIRM MAP PANEL NO. 2400100555G.
- SCREENING AND LANDSCAPING SHALL COMPLY WITH THE BALTIMORE COUNTY LANDSCAPE MANUAL OR THE APPROPRIATE MODIFICATION REQUESTS WILL BE APPLIED FOR.
- ANY FIXTURE USED TO ILLUMINATE AN OFF-STREET PARKING AREA SHALL BE ARRANGED AS TO REFLECT THE LIGHT AWAY FROM ADJACENT RESIDENTIAL SITES AND PUBLIC STREETS.

**DRAWING INDEX**

- C-0.0 COVER SHEET
- C1.0 PRIVATE DEMO PLAN
- C1.1 PRIVATE DEMO PLAN
- C2.0 PRIVATE GRADING & STORM DRAIN PLAN
- C2.1 PRIVATE GRADING & STORM DRAIN PLAN
- C2.2 PRIVATE STORM DRAIN PROFILES
- C2.3 PRIVATE STORM DRAIN PROFILES
- C2.4 PRIVATE STORM DRAIN DETAILS
- C3.0 PRIVATE WATER & SEWER PLAN SHEET
- C3.1 PRIVATE WATER & SEWER PLAN SHEET
- C3.2 PRIVATE WATER & SEWER NOTES SHEET
- C3.3 PRIVATE SEWER PROFILES SHEET
- C3.4 PRIVATE WATER DETAILS SHEET
- C3.5 PRIVATE WATER & SEWER DETAILS SHEET
- C4.0 PRIVATE SITE DETAILS SHEET

**PARKING SUMMARY**

CAR PARKING SPACES (EMPLOYEE + VISITOR) 5 SPACES  
 TRAILER PARKING 142 SPACES  
 LOADING DOCK BAYS 105 SPACES

**LEGEND**

PROPOSED	EXISTING
--- PROPERTY LINE	--- PROPERTY LINE
--- LOT LINE	--- ADJOINING PROPERTY
--- RIGHT OF WAY	--- RIGHT OF WAY
--- CL OF ROAD/STATIONS	--- CL OF ROAD
--- EDGE OF PAVING	--- EDGE OF PAVING
--- CURB	--- CURB
--- BUILDING SETBACK	--- 2' CONTOURS
--- EASEMENT	--- 10' CONTOURS
--- 1' CONTOUR	--- WETLANDS
--- 2' CONTOUR	--- 25' WETLANDS BUFFER
--- 10' CONTOUR	--- WATERS OF THE U.S.
--- STORM DRAIN	--- STREAM BUFFER
--- WATER	--- STREAM
--- SANITARY SEWER	--- STORM DRAIN
--- CLEARING LIMIT	--- WATER
PR. PROPOSED	--- SANITARY SEWER
	--- WOODS
	--- FENCE
	(TR) TO REMAIN
	(TBR) TO BE REMOVED
	(TBA) TO BE ABANDONED



**Know what's below.  
 Call before you dig.**

**PROTECT YOURSELF, GIVE THREE WORKING DAYS NOTICE**  
 THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS THERE TO APPURTENANT.

**ELECTRICAL:** JORDAN / SKALA ENGINEERS, INC.  
 17 55N. F.D. RD. P.O. BOX 20  
 JORDAN, MD 21086  
 (P) 410-335-1816

**PLUMBING:** JORDAN / SKALA ENGINEERS, INC.  
 17 55N. F.D. RD. P.O. BOX 20  
 JORDAN, MD 21086  
 (P) 410-335-1816

**FIRE PROTECTION:** HARRINGTON GROUP, INC.  
 1000 W. GAITHERS RD. SUITE 505  
 GAITHERSBURG, MD 20878  
 (P) 410-335-1816

**CONSULTING ENGINEERS:** WARE MALCOLM  
 2700 E. ILL. ST. SUITE 50  
 BALTIMORE, MD 21202  
 (P) 410-929-7700

**CONTRACTOR:** ARCO MURRAY  
 3110 WOODCREEK DRIVE  
 DOWNERS GROVE, IL 60515  
 (P) 630-921-1311  
 WWW.ARCOMURRAY.COM

**CIVIL:** MIRA  
 MORRIS RITCHIE ASSOCIATES, INC.  
 1000 W. GAITHERS RD. SUITE 505  
 GAITHERSBURG, MD 20878  
 (P) 410-335-1816

**PROJECT LUNAR**  
 6001 RIVERSIDE DRIVE  
 SPARROWS POINT, MARYLAND 21211

**JOB NO: 1:2:7:03**  
**PA:**  
**DATE: 11.15.2011**

**REVISIONS**

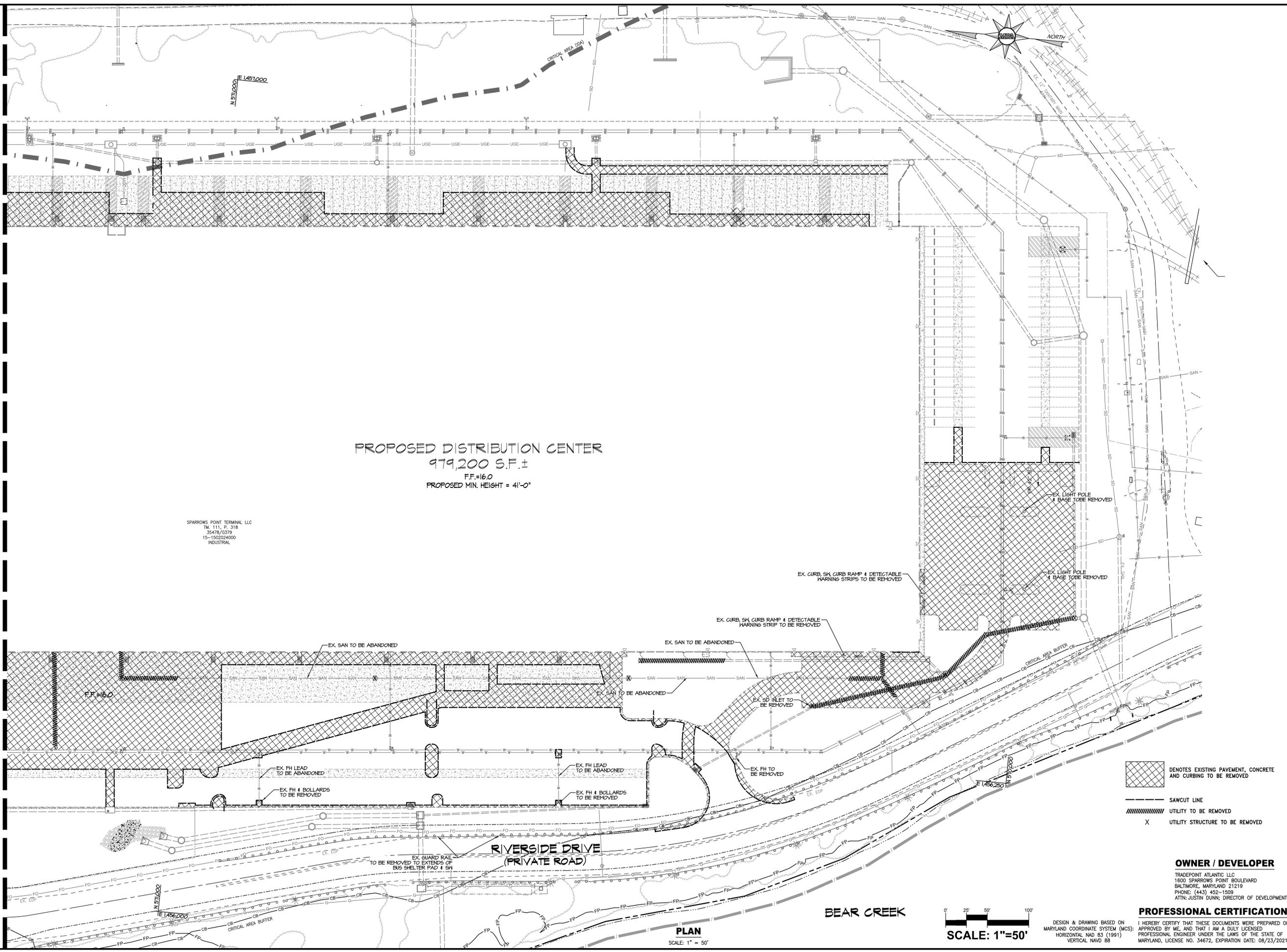
**OWNER / DEVELOPER**  
 TRADEPOINT ATLANTIC LLC  
 1600 SPARROWS POINT BOULEVARD  
 BALTIMORE, MARYLAND 21219  
 PHONE: (443) 452-1500  
 ATTN: JUSTIN DUNN, DIRECTOR OF DEVELOPMENT

**PROFESSIONAL CERTIFICATION**  
 DESIGN & DRAWING BASED ON MARYLAND COORDINATE SYSTEM (MCS): HORIZONTAL NAD 83 (1991) VERTICAL NAVD 88  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 34672, EXPIRATION DATE: 08/23/2021

**SHEET NUMBER**  
**C0.0**  
**COVER SHEET**



MATCHLINE SEE SHEET C2.0



PROPOSED DISTRIBUTION CENTER  
979,200 S.F.±  
F.F.=16.0  
PROPOSED MIN. HEIGHT = 41'-0"

SPARROWS POINT TERMINAL LLC  
TM, 111, P. 318  
35478/0379  
15-1502020400  
INDUSTRIAL

- DENOTES EXISTING PAVEMENT, CONCRETE AND CURBING TO BE REMOVED
- SAWCUT LINE
- UTILITY TO BE REMOVED
- UTILITY STRUCTURE TO BE REMOVED

**OWNER / DEVELOPER**  
TRADEPOINT ATLANTIC LLC  
1600 SPARROWS POINT BOULEVARD  
BALTIMORE, MARYLAND 21219  
PHONE: (443) 452-1509  
ATTN: JUSTIN DUNK, DIRECTOR OF DEVELOPMENT

**SCALE: 1"=50'**

**PLAN**  
SCALE: 1" = 50'

**DESIGN & DRAWING BASED ON**  
MARYLAND COORDINATE SYSTEM (MCS):  
HORIZONTAL NAD 83 (1991)  
VERTICAL NAVD 88

**PROFESSIONAL CERTIFICATION**  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 34672, EXPIRATION DATE: 08/23/2021

**CONSULTING ENGINEERS**

**ELECTRICAL:** WARE MALCOMB  
2700 E. ILLINOIS ST. S. 200  
PH: 410-428-9700

**PLUMBING:** JORDAN - SKALA ENGINEERS, INC.  
1755 N. FREDERICK ST. S. 200  
PH: 410-335-1616

**STRUCTURAL:** HSA - ASSOCIATES, INC.  
1100 W. GAITHERS RD. S. 200  
PH: 626-621-1311

**FIRE PROTECTION:** JORDAN - SKALA ENGINEERS, INC.  
1755 N. FREDERICK ST. S. 200  
PH: 410-335-1616

**MECHANICAL:** JORDAN - SKALA ENGINEERS, INC.  
1755 N. FREDERICK ST. S. 200  
PH: 410-335-1616

**CONTRACTOR**

**ARCO MURRAY**  
3110 WOODCREEK DRIVE  
DOWNERS GROVE, IL 60515  
PH: 630-419-1000  
WWW.ARCOMURRAY.COM

**CIVIL**

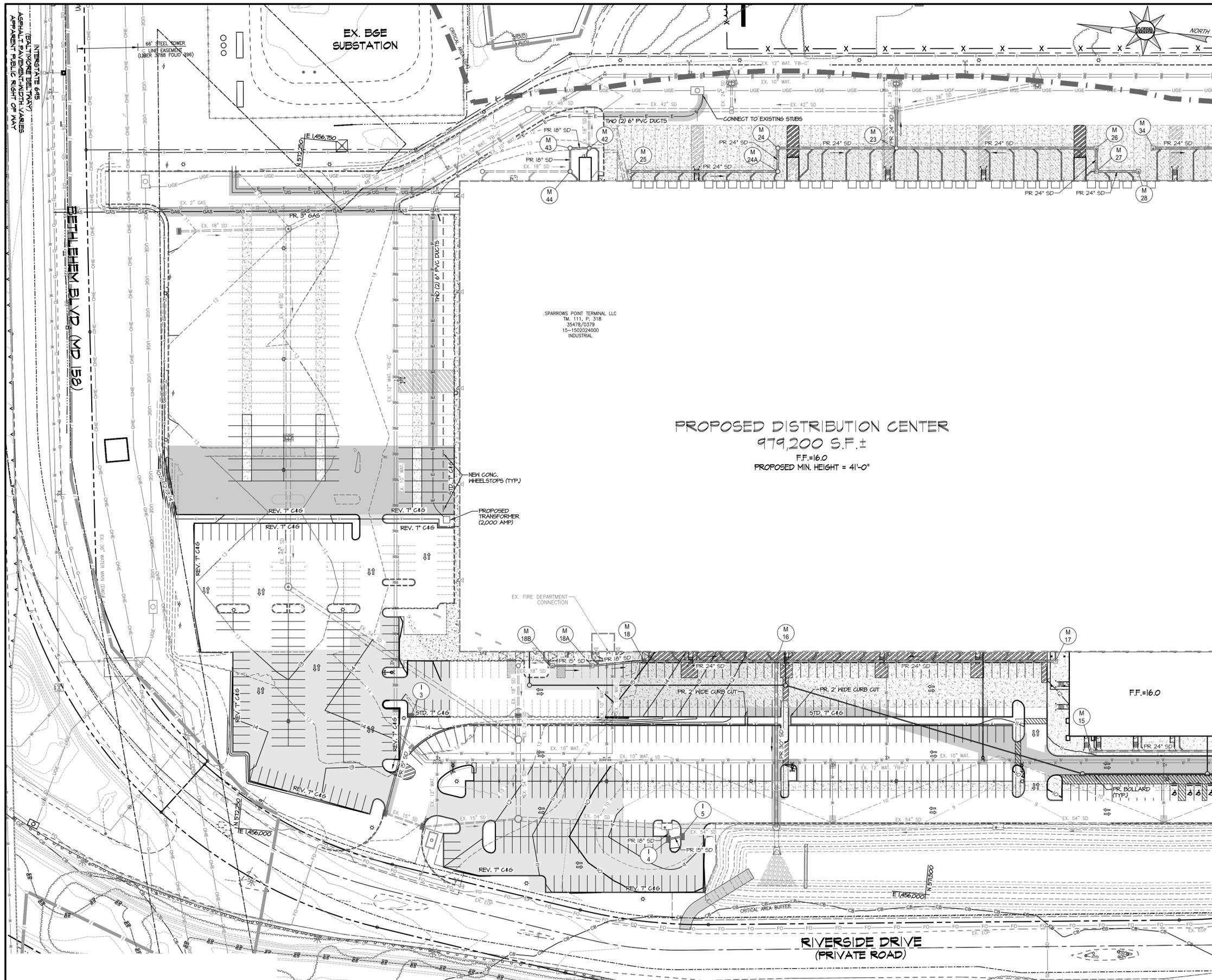
**MIRA**  
MORRIS - RITCHEY ASSOCIATES, INC.  
2000 W. WASHINGTON ST. S. 200  
ANNAPOLIS, MD 21403  
PH: 410-515-0000

**PROJECT LUNAR**  
**PRELIMINARY**  
**PRIVATE DEMO PLAN**  
6001 RIVERSIDE DRIVE  
SPARROWS POINT, MARYLAND 21214

**JOB NO:** 1:2:7:03  
**PA:**  
**DATE:** 11.15.2014

REVISIONS	DATE

**SHEET NUMBER**  
**C1.1**  
**PRIVATE DEMO PLAN**



PROPOSED DISTRIBUTION CENTER  
 979,200 S.F. ±  
 F.F.=16.0  
 PROPOSED MIN. HEIGHT = 41'-0"

SPARROWS POINT TERMINAL LLC  
 TM, 111, P. 318  
 35478/0379  
 15-1502024000  
 INDUSTRIAL

PLAN  
 SCALE: 1" = 50'



- DENOTES LIGHT-DUTY PAVEMENT SECTION
- DENOTES HEAVY-DUTY PAVEMENT SECTION
- DENOTES CONCRETE PAVEMENT SECTION

**OWNER / DEVELOPER**  
 TRADEPOINT ATLANTIC LLC  
 1600 SPARROWS POINT BOULEVARD  
 BALTIMORE, MARYLAND 21219  
 PHONE: (443) 452-1509  
 ATTN: JUSTIN DUNK, DIRECTOR OF DEVELOPMENT

**PROFESSIONAL CERTIFICATION**  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 34672, EXPIRATION DATE: 08/23/2021

SHEET NUMBER  
**C2.0**  
 PRELIMINARY GRADING & STORM DRAIN PLAN

MATCHLINE SEE SHEET C2.1

**NOTE:**  
 ALL ON-SITE ROADWAYS, STORM DRAINAGE, WATER AND SEWER SYSTEMS ARE PRIVATE AND ARE TO BE PRIVATELY MAINTAINED UNLESS OTHERWISE NOTED ON THESE PLANS.

**CONSULTING ENGINEERS**  
**ARCHITECT:** WARE MALCOMB  
 2700 E. ILLINOIS ST., SUITE 50  
 CHICAGO, IL 60640  
 (P) 773-424-9777  
**STRUCTURAL:** HSA - ASSOCIATES, INC.  
 1100 W. C. ILLINOIS ST., SUITE 200  
 CHICAGO, IL 60640  
 (P) 626-621-1311  
**MEECHANICAL:** JORDAN / SKALA ENGINEERS, INC.  
 1755 N. D. ILLINOIS ST., SUITE 200  
 CHICAGO, IL 60640  
 (P) 462-335-1616

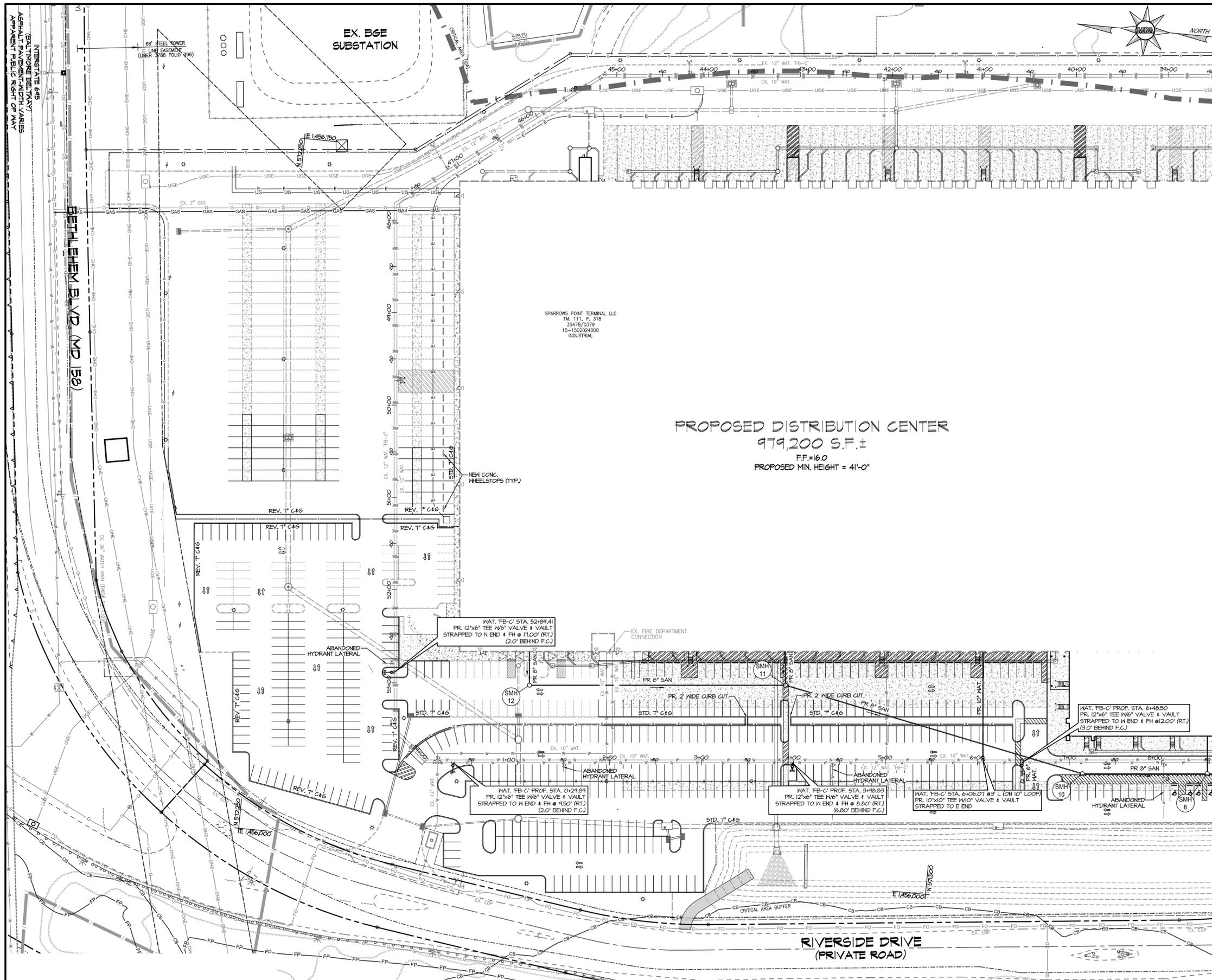
**CONTRACTOR**  
**ARCO MURRAY**  
 DESIGN BUILD  
 3110 WOODCREEK DRIVE  
 DOWNERS GROVE, IL 60515  
 (P) 630-591-1701  
 WWW.ARCOMURRAY.COM

**CIVIL**  
**MIRA**  
 MORRIS RITCHIE ASSOCIATES, INC.  
 2000 W. WISCONSIN ST., SUITE 201  
 ANNAPOLIS, MD 21403  
 (P) 410-551-0060 / (P) 410-551-0011

**PROJECT LUNAR**  
**PRELIMINARY GRADING & STORM DRAIN PLAN**  
 6001 RIVERSIDE DRIVE  
 SPARROWS POINT, MARYLAND 21214

**JOB NO:** 1:2:7:03  
**PA:** DATE: 11.15.2011  
**REVISIONS**





PROPOSED DISTRIBUTION CENTER  
 979,200 S.F. ±  
 F.F.=16.0  
 PROPOSED MIN. HEIGHT = 41'-0"

SPARROWS POINT TERMINAL LLC  
 TM, 111, P. 318  
 35478/0379  
 15-1502024000  
 INDUSTRIAL

PLAN  
 SCALE: 1" = 50'



NOTE:  
 ALL ON-SITE ROADWAYS, STORM DRAINAGE, WATER AND SEWER SYSTEMS ARE PRIVATE AND ARE TO BE PRIVATELY MAINTAINED UNLESS OTHERWISE NOTED ON THESE PLANS.

**OWNER / DEVELOPER**  
 TRADEPOINT ATLANTIC LLC  
 1600 SPARROWS POINT BOULEVARD  
 BALTIMORE, MARYLAND 21219  
 PHONE: (443) 452-1509  
 ATTN: JUSTIN DUNK, DIRECTOR OF DEVELOPMENT

**PROFESSIONAL CERTIFICATION**  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 34672, EXPIRATION DATE: 08/23/2021

SHEET NUMBER  
**C3.0**  
 PRIVATE WATER & SEWER PLAN

MATCHLINE SEE SHEET C4.1

**PROJECT LUNAR**  
**PRELIMINARY**  
**PRIVATE WATER & SEWER PLAN**  
 6001 RIVERSIDE DRIVE  
 SPARROWS POINT, MARYLAND 21214

JOB NO: 1:2:7:03  
 DATE: 11.15.2017

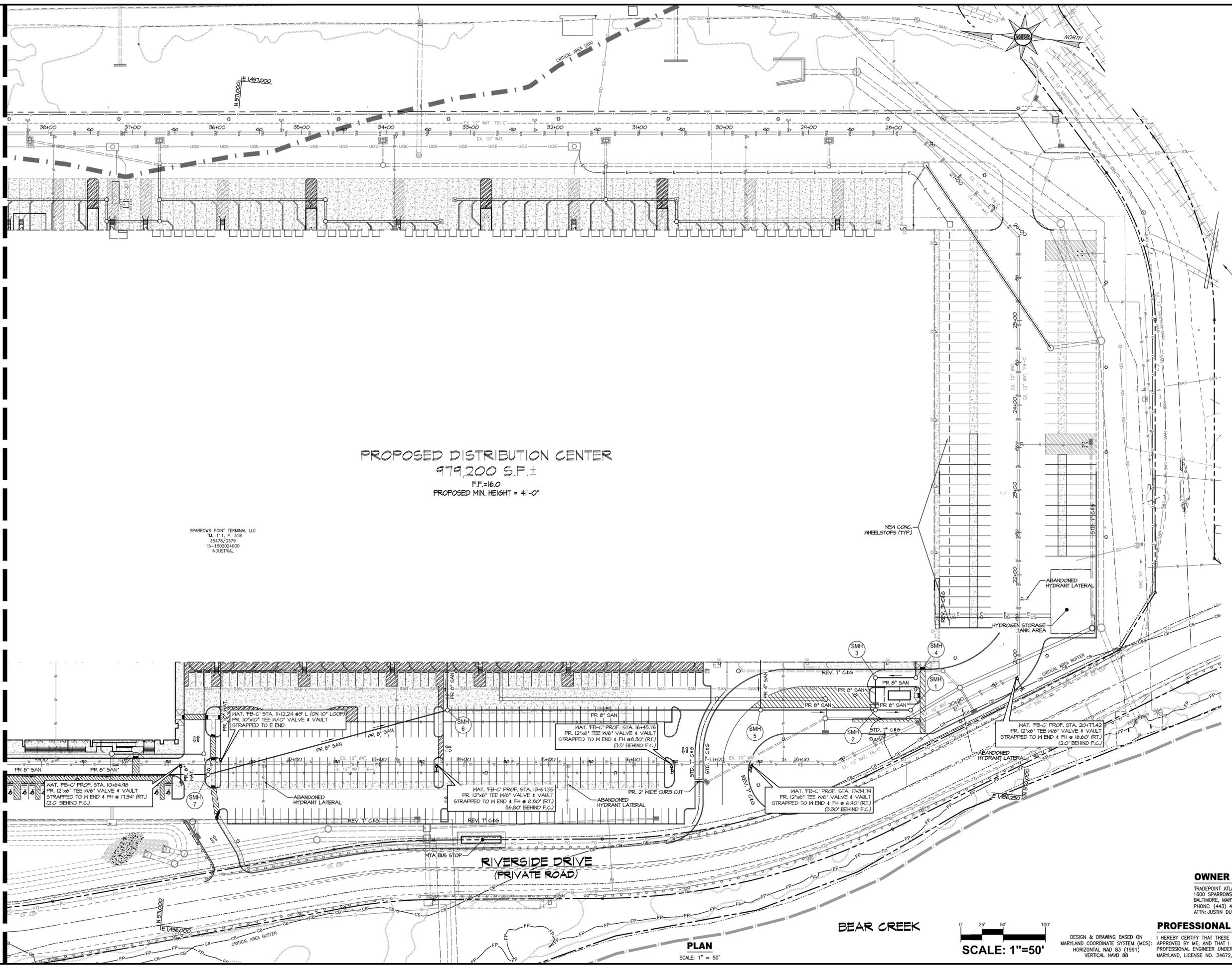
REVISIONS


**CIVIL**  
**MIRA**  
 MORRIS RITCHIE ASSOCIATES, INC.  
 3110 WOODCREEK DRIVE  
 DOWNERS GROVE, IL 60515  
 ANGELES, MD 21009 © 2017  
 (P) 410.515.0000 (F) 410.515.0001

**CONTRACTOR**  
**ARCO MURRAY**  
 DESIGN BUILD  
 3110 WOODCREEK DRIVE  
 DOWNERS GROVE, IL 60515  
 WWW.ARCOMURRAY.COM

**CONSULTING ENGINEERS**  
**ELECTRICAL:** WARE MALCOMB  
 2700 E. ILL. ST. #100, S.W.  
 (P) 478.929.3002  
**PLUMBING:** HSA ASSOCIATES, INC.  
 1100 W. G. ILL. ST. #110  
 (P) 626-921-3131  
**FIRE PROTECTION:** JORDAN SKALA ENGINEERS, INC.  
 1755 N. D. ILL. ST. #110, S.W.  
 (P) 463-35-1616  
**ARCHITECT:** WARE MALCOMB  
 2700 E. ILL. ST. #100, S.W.  
 (P) 478.929.3002  
**STRUCTURAL:** HSA ASSOCIATES, INC.  
 1100 W. G. ILL. ST. #110  
 (P) 626-921-3131  
**MECHANICAL:** JORDAN SKALA ENGINEERS, INC.  
 1755 N. D. ILL. ST. #110, S.W.  
 (P) 463-35-1616

MATCHLINE SEE SHEET C4.0



PROPOSED DISTRIBUTION CENTER  
 979,200 S.F.±  
 F.F.=16.0  
 PROPOSED MIN. HEIGHT = 41'-0"

SPARROWS POINT TERMINAL LLC  
 TM, 111, P. 318  
 35478/0379  
 15-1502020400  
 INDUSTRIAL

**OWNER / DEVELOPER**  
 TRADEPOINT ATLANTIC LLC  
 1800 SPARROWS POINT BOULEVARD  
 BALTIMORE, MARYLAND 21219  
 PHONE: (443) 452-1509  
 ATTN: JUSTIN DUNK, DIRECTOR OF DEVELOPMENT

**PROFESSIONAL CERTIFICATION**  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 34672, EXPIRATION DATE: 08/23/2021

**CONSULTING ENGINEERS**

**ELECTRICAL:** JORDAN - SKALA ENGINEERS, INC. (P) 46-33-5-1616  
 17 55N E. D. P. 111, S. 20

**PLUMBING:** JORDAN - SKALA ENGINEERS, INC. (P) 46-33-5-1616  
 17 55N E. D. P. 111, S. 20

**FIRE PROTECTION:** HARRINGTON GROUP, INC. (P) 46-33-5-1616  
 17 55N E. D. P. 111, S. 20

**ARCHITECT:** WARE WALCUMB (P) 46-33-5-1616  
 2 700 C. E. I. E. D. P. 111, S. 20

**STRUCTURAL:** HSA ASSOCIATES, INC. (P) 46-33-5-1616  
 100 W. C. I. E. D. P. 111, S. 20

**MEECHANICAL:** JORDAN - SKALA ENGINEERS, INC. (P) 46-33-5-1616  
 17 55N E. D. P. 111, S. 20

**CONTRACTOR**  
**ARCO MURRAY**  
 3110 WOODCREEK DRIVE  
 DOWNERS GROVE, IL 60515  
 (630) 221-3131  
 WWW.ARCOMURRAY.COM

**CIVIL**  
**MIRA**  
 MORRIS - RITCHIE ASSOCIATES, INC.  
 2000 WOODCREEK DRIVE  
 ANNEAPOLIS, MD 21403  
 (410) 435-1000

**PROJECT LUNAR**  
**PRELIMINARY**  
**PRIVATE WATER & SEWER PLAN**  
 6001 RIVERSIDE DRIVE  
 SPARROWS POINT, MARYLAND 21214

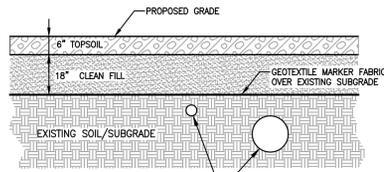
JOB NO: 1 2 7 03  
 DATE: 11.15.201

**REVISIONS**

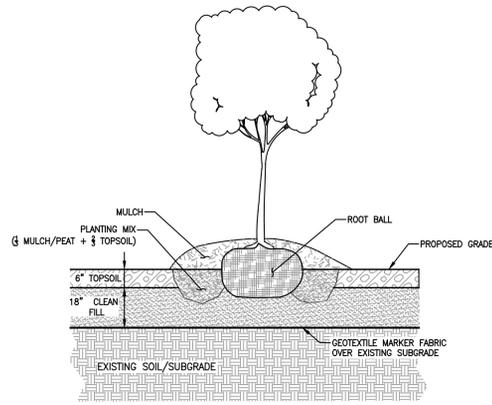

SHEET NUMBER  
**C3.1**  
 PRIVATE WATER & SEWER PLAN

**PLAN**  
 SCALE: 1" = 50'

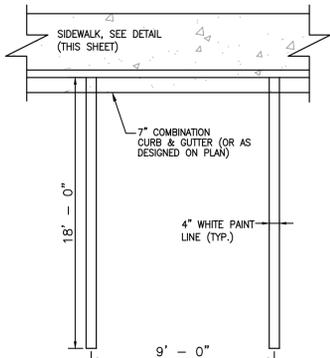
**SCALE: 1" = 50'**



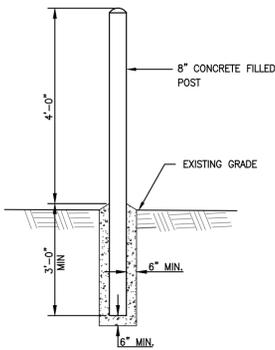
**LANDSCAPED AREA (SOIL/STONE)  
TYPICAL SECTION**  
NOT TO SCALE



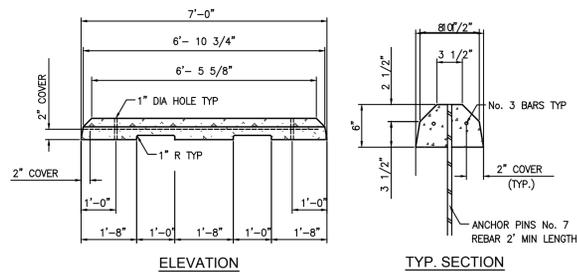
**LANDSCAPED AREA (PLANTING)  
TYPICAL SECTION**  
NOT TO SCALE  
NOTE: SHALLOW ROOTED PLANTS SHALL BE SPECIFIED FOR THIS APPLICATION



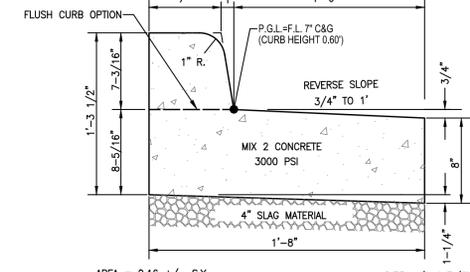
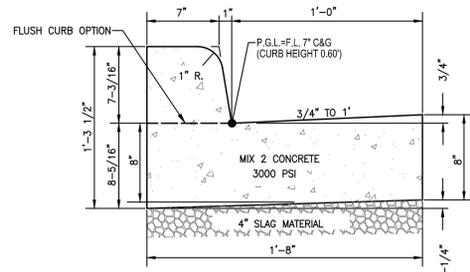
**TYPICAL PARKING SPACE DETAIL**  
NOT TO SCALE



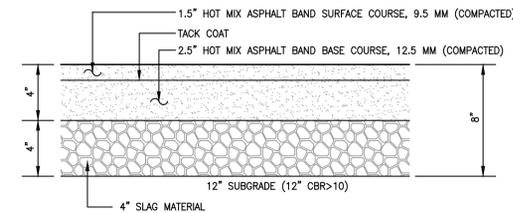
**BOLLARD DETAIL**  
NOT TO SCALE



**CONCRETE WHEELSTOP**  
NOT TO SCALE

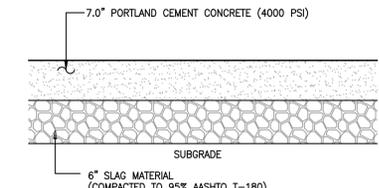


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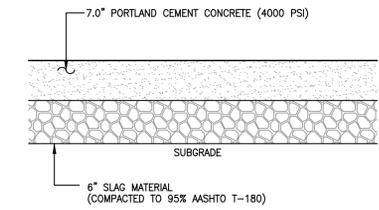


- NOTES**
- SUPERPAVE LEVEL 1 HOT MIX ASPHALT
  - SUPERPAVE PERFORMANCE GRADE ASPHALT CEMENTS SHALL BE PERFORMANCE GRADES PG64-22 AND DESIGNED AS LEVEL 1 MIXES @ 50 GYRATIONS H-DESIGN.
  - THE DIRECTOR MAY REQUIRE WETTING OF THE BASE COURSE BEFORE LAYING THE FIRST LIFT.
  - CONTRACTOR TO REVIEW GEO-TECHNICAL SITE MANUAL FOR FINAL PAVING SECTION THICKNESSES NOTES, AND DETAILS.
  - PRIOR TO BIDDING AND CONSTRUCTION, CONTRACTOR TO VERIFY PAVEMENT SECTION, DETAIL AND THICKNESS WITH ON-SITE GEO-TECHNICAL ENGINEER AND DESIGN GEO-TECHNICAL ENGINEER AND REVIEW ON-SITE GEO-TECH REPORT.

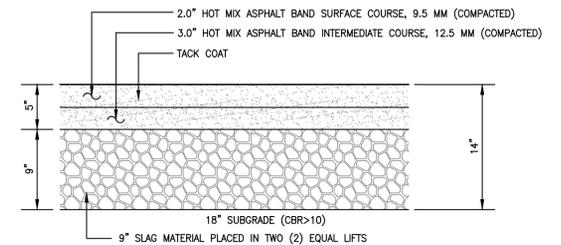
**CAR PARKING  
PAVEMENT SECTION**  
NOT TO SCALE



**EXTERIOR RIGID PAVEMENT SECTION  
FOR TRUCK DOCK**  
NOT TO SCALE

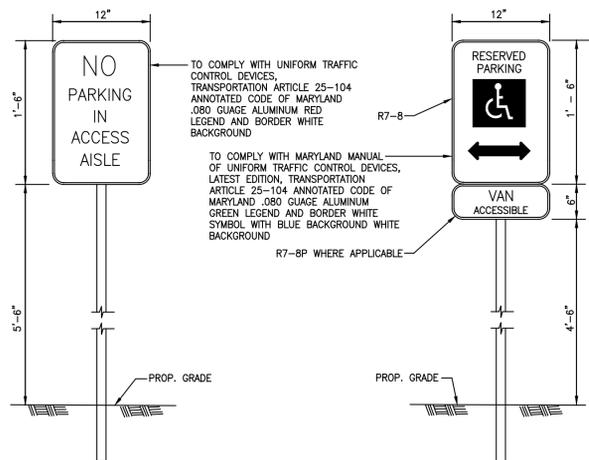


**EXTERIOR RIGID PAVEMENT SECTION  
FOR DOLLY PAD**  
NOT TO SCALE



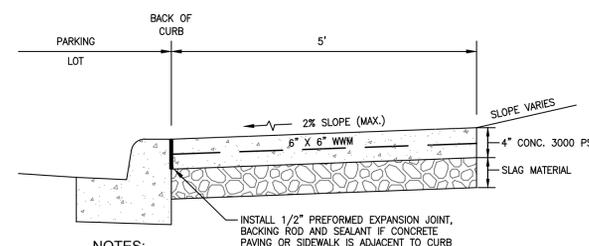
- NOTES**
- SUPERPAVE LEVEL 1 HOT MIX ASPHALT
  - SUPERPAVE PERFORMANCE GRADE ASPHALT CEMENTS SHALL BE PERFORMANCE GRADES PG64-22 AND DESIGNED AS LEVEL 1 MIXES @ 50 GYRATIONS H-DESIGN.
  - THE DIRECTOR MAY REQUIRE WETTING OF THE BASE COURSE BEFORE LAYING THE FIRST LIFT.
  - CONTRACTOR TO REVIEW GEO-TECHNICAL SITE MANUAL FOR FINAL PAVING SECTION THICKNESSES NOTES, AND DETAILS.
  - PRIOR TO BIDDING AND CONSTRUCTION, CONTRACTOR TO VERIFY PAVEMENT SECTION, DETAIL AND THICKNESS WITH ON-SITE GEO-TECHNICAL ENGINEER AND DESIGN GEO-TECHNICAL ENGINEER AND REVIEW ON-SITE GEO-TECH REPORT.

**HEAVY DUTY  
PAVEMENT SECTION**  
NOT TO SCALE



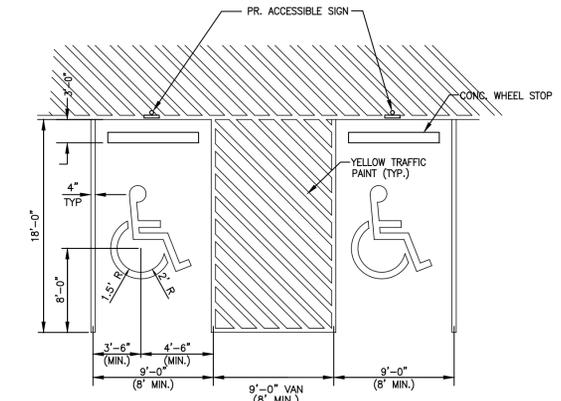
**ACCESSIBLE PARKING  
ACCESS AISLE SIGN DETAIL**  
NOT TO SCALE

**ACCESSIBLE PARKING  
SIGN DETAIL**  
NOT TO SCALE



- NOTES**
- SIDEWALK TO BE SCRIBED IN 5' SQUARES.
  - EXPANSION JOINTS ACROSS THE SIDEWALK NOT MORE THAN 10' APART.
  - 1/2\"/>

**SIDEWALK DETAIL**  
NOT TO SCALE



**ACCESSIBLE PARKING DETAIL**  
NOT TO SCALE

**OWNER / DEVELOPER**  
TRADEPOINT ATLANTIC LLC  
1600 SPARROWS POINT BOULEVARD  
BALTIMORE, MARYLAND 21219  
PHONE: (443) 452-1509  
ATTN: JUSTIN DUNN, DIRECTOR OF DEVELOPMENT

**PROFESSIONAL CERTIFICATION**  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 34672, EXPIRATION DATE: 08/23/2021

DESIGN & DRAWING BASED ON MARYLAND COORDINATE SYSTEM (MCS): HORIZONTAL NAD 83 (1991) VERTICAL NAVD 88

**ELECTRICAL**  
JORDAN - SKALA ENGINEERS, INC.  
17 55N F.D. P.O. BOX 320  
JORDAN, MD 21086  
TEL: 410-335-1818

**PLUMBING**  
JORDAN - SKALA ENGINEERS, INC.  
17 55N F.D. P.O. BOX 320  
JORDAN, MD 21086  
TEL: 410-335-1818

**CONTRACTOR**  
**ARCO MURRAY**  
3110 WOODCREEK DRIVE  
DOWNERS GROVE, IL 60515  
TEL: 630-211-1792  
WWW.ARCOMURRAY.COM

**CIVIL**  
**MIRA**  
MORRIS - RITCHIE ASSOCIATES, INC.  
3110 WOODCREEK DRIVE  
DOWNERS GROVE, IL 60515  
TEL: 630-211-1792  
WWW.MIRACIVIL.COM

**PROJECT LUNAR  
SITE DETAILS**  
6001 RIVERSIDE DRIVE  
SPARROWS POINT, MARYLAND 21211

**JOB NO: 1:2:7:03**  
**PA:**  
**DATE: 11.15.2011**

**REVISIONS**

**SHEET NUMBER**  
**C4.0**  
**SITE DETAILS**

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## APPENDIX B

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## **Utility Excavation NAPL Contingency Plan**

Revision 4 – June 19, 2017

### **Introduction:**

Proposed underground utilities and excavations necessary for the redevelopment of the Tradepoint Atlantic property may encounter areas of petroleum and/or Oil & Grease contamination in soil. The assessment of total petroleum hydrocarbons (TPH) diesel range organics (DRO), gasoline range organics (GRO), Oil & Grease, and/or non-aqueous phase liquid (NAPL) completed as part of each Phase II Investigation includes the following:

- Each soil boring with evidence of NAPL (i.e., containing a sheen or free oil in the soil core), whether located near utilities or not, is investigated via the installation of a piezometer to assess mobility to groundwater. If measureable NAPL is present in the initial piezometer, additional soil borings and shallow temporary piezometers are installed surrounding the initial detection to delineate the impacts. Each piezometer installed to delineate the presence or absence of NAPL is checked with an oil-water interface probe immediately after installation, 48 hours after installation, and at least 30 days after installation.
- TPH-DRO/GRO and Oil & Grease data, once received, are assessed in their magnitude and location respective to subsurface utilities, stormwater conveyances, and surface waters.
- Locations that exhibit elevated detections of TPH/Oil & Grease or evidence of NAPL, that are within reasonable proximity (i.e. 25 feet) to subsurface utilities or stormwater conveyances and/or within reasonable proximity (i.e. 100 feet) to surface waters, are identified for further delineation and selective removal (if warranted).

Any NAPL identified in soil borings or piezometers during the Phase II Investigation would be noted on relevant logs and identified in Response and Development Work Plans for construction planning purposes. Despite these planning efforts, unidentified pockets of contamination (including NAPL) may still be encountered during construction. This contingency plan provides the procedures to be utilized during construction work to properly address response and construction techniques if any materials impacted with NAPL are encountered.

### **Objectives:**

The purpose of this plan is to describe procedures to be followed in the event that NAPL is encountered in utility trenches or other excavations during development of the Tradepoint Atlantic property. The specific objectives of this plan and the procedures outlined herein are:

1. To ensure identification and proper management of Oil & Grease and petroleum-contaminated soils.
2. To ensure proper worker protection for working in areas of Oil & Grease and petroleum contamination.
3. To ensure that the installation of new utilities does not create new preferential flow paths for the migration of free-phase hydrocarbons (Oil & Grease, TPH-DRO/GRO, etc.) or soil vapors.

**Identification of Oil & Grease and Petroleum Contaminated Soil:**

An Environmental Professional (EP) will be on-site to determine if soils show evidence of the presence of Oil & Grease or TPH present as NAPL during installation of utility trenches or other excavation activities completed during development. Oil & Grease or petroleum-contaminated soils can be identified by the presence of free oil, oil staining, a petroleum odor, or any combination of these conditions. Free oil (NAPL) is liquid oil which could potentially be drained or otherwise extracted from the soil, and is the focus of this contingency plan, although severe staining accompanied by odors should be addressed via the same contingency measures provided herein (based on the judgement of the EP). The appearance of oil staining is not always consistent, but varies depending on the nature of the oil, the soil type, and the age of the release. Staining associated with old petroleum contamination often has a greenish hue, but may also be brown or black. The olfactory sense is the most sensitive instrument for identifying petroleum contamination in the field. Therefore, a petroleum odor may be noted although there is no visible sign of oil or staining. In some instances, decaying organic matter can produce an odor similar to petroleum, but this is rare.

If NAPL is encountered during construction, the extent of impacts shall be delineated by excavating trenches or installing four soil borings (two in each direction) perpendicular to the utility alignment or excavation to examine the soil for physical evidence of NAPL. Perpendicular transects will be investigated every 50 feet along the section of the utility trench or excavation where there is physical evidence of NAPL. Each transect will extend to a distance of 10 feet from the edge of the utility trench or excavation. This represents the maximum distance which would require mandatory excavation to mitigate potential migration risks (see below).

NAPL delineation will be guided primarily by screening observations from the perpendicular borings or trenches, and samples will be collected to test for extractable Oil & Grease or petroleum-contaminated soil using the Oil Sticks™ test kit. This test kit provides a determination of whether hydrocarbons are present in soil and extractable (i.e. could mobilize as a NAPL). Oil Sticks™ change from a pale blue to a deep blue color when they come in contact with free product. This instantaneous change in color occurs even when miniscule amounts of product come in contact with the strip. The sensitivity of Oil Sticks™ to determine the presence/absence of oil is reported by the manufacturer to be about 1,000 to 2,000 mg/kg. The

field test is performed by placing approximately 3 tablespoons of soil in a clean sample cup and adding enough water to cover the sample. After stirring the sample and waiting ~1 minute, the Oil Sticks™ test strip should be swished through the water, making sure to touch the strip to the sides of the cup where product may collect at the interface (meniscus) between the cup, water, and air. If the strip turns deep blue, or deep blue spots appear, oil or hydrocarbon is present. However, the MDE has observed that the Oil Sticks™ method may produce inconsistent results. Therefore, documentation of all screening methods is necessary during boring/trenching work. This documentation shall include an accurate record of visual and olfactory screening, along with a narrative with photographs. Field screening will be aided by photoionization detector (PID) results, and Oil Sticks™ samples should be biased to target elevated PID readings, if any. The agencies have requested that all soil samples prepared for the Oil Sticks™ field test be photographed for evidence of sheen/residue on the cup sides. Detailed records are required to be submitted with the project-specific Completion Report.

If petroleum or Oil & Grease impacts are identified in Site soils based on use of the Oil Sticks™ test kit or other field screening methods, disposal requirements will be determined using the quantitative PetroFLAG™ hydrocarbon analysis system or fixed laboratory analysis (see following section). The PetroFLAG™ hydrocarbon analysis system is a broad spectrum field test kit suitable for TPH contamination regardless of the source or state of degradation (Dexsil Corporation). PetroFLAG™ field test kits do not distinguish between aromatic and aliphatic hydrocarbons, but quantify all fuels, oils, and greases as TPH. Dilutions can be used to determine concentrations of TPH/Oil & Grease above the normal calibration range. Dexsil notes that positive results for TPH may occur if naturally occurring waxes and oils, such as vegetable oils, are present in the sample. Additional detail regarding the procedure for the PetroFLAG™ kit is given in **Attachment 1**.

### **Soil Excavation, Staging, Sampling and Disposal:**

The EP will monitor all utility trenching and excavation activities for signs of potential contamination. In particular, soils will be monitored with a hand-held PID for potential VOCs, and will also be visually inspected for the presence of staining, petroleum waste materials, or other indications of NAPL contamination that may be different than what was already characterized. Excavated material that is visibly stained or that exhibits a sustained PID reading of greater than 10 ppm will be segregated and containerized or placed in a stockpile on polyethylene or impervious surface until the material can be analyzed using the PetroFLAG™ test kit to characterize the material for appropriate disposal. If a PetroFLAG™ test kit is not available to the contractor, or if the contractor prefers to use fixed laboratory analysis, samples may be characterized via submittal to a laboratory for TPH/Oil & Grease analysis. However, any excavated material containing NAPL (i.e., containing free oil) cannot be characterized for waste disposal using the PetroFLAG™ test kit and must instead be characterized via fixed laboratory analysis, as described in the final paragraph of this section. In addition, any hydrocarbon contaminated soil discovered during construction activities that was not previously

characterized must also be analyzed for PCBs prior to removal and transport to an appropriate disposal facility. If excavated and stockpiled, such materials will be covered with a plastic tarp so that the entire stockpile is encapsulated, and anchored to prevent the elements from affecting the integrity of the containment. The MDE will be notified if such materials are encountered during utility work.

Soil exhibiting physical evidence of NAPL contamination or elevated TPH/Oil & Grease with detections in the low percentage range, which is located within 10 feet of a proposed new utility or subsurface structure (i.e., foundation, sump, electrical vault, underground tank, etc.), will be excavated and segregated for disposal at the on-site nonhazardous landfill (Greys Landfill) or an off-site facility pending the completion of any required PCB analytical testing. Impacted soil which is located greater than 10 feet away from the proposed utility or subsurface structure may be left in place and undisturbed. The extent of the excavation will be determined in the field following visual/olfactory screening supplemented by the PID and Oil Sticks™ test kit, but soil disposal requirements will be determined with the PetroFLAG™ test kit (since the Oil Sticks™ method is not quantitative) or via fixed laboratory analysis for TPH/Oil & Grease (if preferred by the contractor or if the PetroFLAG™ test kit is unavailable to the contractor).

Any recovered NAPL will be collected for off-site disposal. As required by the appropriate and MDE approved facility, samples impacted by NAPL (i.e., containing free oil) will be collected for profiling/waste characterization and submitted to a fixed laboratory, as mentioned above, for the following analyses: metals, VOCs, TPH-DRO/GRO, and/or additional analysis required by the selected disposal facility. Upon receipt of any additional characterization analytical results, the MDE will be notified of the proposed disposal facility. Non-impacted material with no evidence of NAPL (i.e. soils that may contain measureable concentrations of TPH/Oil & Grease but below percentage levels) may be placed on the Site in areas to be paved or capped as long as all other requirements specified in the Response and Development Work Plan (or similar governing document) are met.

### **Initial Reporting:**

If evidence of NAPL in soil or groundwater is encountered during excavation, it will be reported to the MDE within two hours. Information regarding the location and characteristics of any NAPL contaminated soil will be documented as follows:

- Location (exact stationing);
- Extent of contamination (horizontally and vertically – prepare a sketch including dimensions);
- Relative degree of contamination (i.e. free oil with strong odor vs. staining); and
- Visual documentation (take photographs and complete a photograph log)

**Utility Installations in Impacted Areas:**

Underground piping or conduits installed through areas of Oil & Grease or petroleum contamination shall be leak proof and water tight. All joints will be adequately sealed or gasketed, and pipes or conduits will be properly bedded and placed to prevent leakage. All trench backfill will meet the MDE definition of clean fill, or otherwise be approved by the MDE. Pipe bedding will be installed to minimize the potential for accumulation of water and concentrated infiltration. This can be achieved by using a relatively small amount of low-permeability pipe bedding; open-graded stone will be avoided or only used in thicknesses of 6 inches or less. Bedding must be properly placed and compacted below the haunches of the pipe. Clay, flowable fill, or concrete plugs will be placed every 100 feet across any permeable bedding to minimize the preferential flow and concentration of water along the bedding of such utilities.

If required, each trench plug will be constructed with a 2-foot-thick clay plug or 1-foot-thick flowable fill or concrete plug, perpendicular to the pipe, which extends at least 1 foot in all directions beyond the permeable pipe bedding. The plug acts as an anti-seep collar, and will extend above the top of the pipe. Installation of each trench plug will follow the completion of the trench excavation, installation of granular pipe bedding (because dense-graded aggregate or soil or other pipe bedding is difficult to properly compact below the haunches of the pipe), and seating of the pipe. The trench plug will then be installed by digging out a 1-foot trench below and around the pipe corridor, and placing clay, flowable fill, or concrete to construct the plug. A specification drawing for installation of the trench plug has been provided as **Figure 1**.

### **Attachment 1 - PetroFLAG™ Procedure**

PetroFLAG™ field test kits use a proprietary turbidimetric reaction to determine the TPH concentration of solvent extracted samples (USEPA). Calibration standards provided with the unit are used to perform a two-point calibration for the PetroFLAG™. A blank and a 1,000 ppm standard are run by the analyzer unit to create an internal calibration curve.

Analysis of a soil sample is performed using three simple steps: extraction, filtration, and analysis. The PetroFLAG™ analysis is performed as follows:

- Place a 10 gram soil sample in a test tube.
- Add extraction solvent to the tube.
- Shake the tube intermittently for four minutes.
- Filter the extract into a vial that contains development solution
- Allow the solution to react for 10 minutes.

The filtration step is important because the PetroFLAG™ analyzer measures the turbidity or "optical density" of the final solution. Approximately 25 samples can be analyzed per hour. The vial of developed solution is placed in the meter, and the instrument produces a quantitative reading that reveals the concentration of hydrocarbons in the soil sample. The PetroFLAG™ method quantifies all fuels, oils, and greases as TPH between 15 and 2000 ppm (Dexsil Corporation). A 10x dilution of the filtered extraction solvent will be completed to allow for quantification of soil concentrations in excess of 10,000 ppm. The specially designed PetroFLAG™ analyzer allows the user to select, in the field, the response factor that is appropriate for the suspected contaminant at each site. Vegetable-based oils have been shown to exhibit a response factor of 18% (EPA Method 9074). Using the selected response factor, the analyzer compensates for the relative response of each analyte and displays the correct concentration in parts per million (ppm).

#### References:

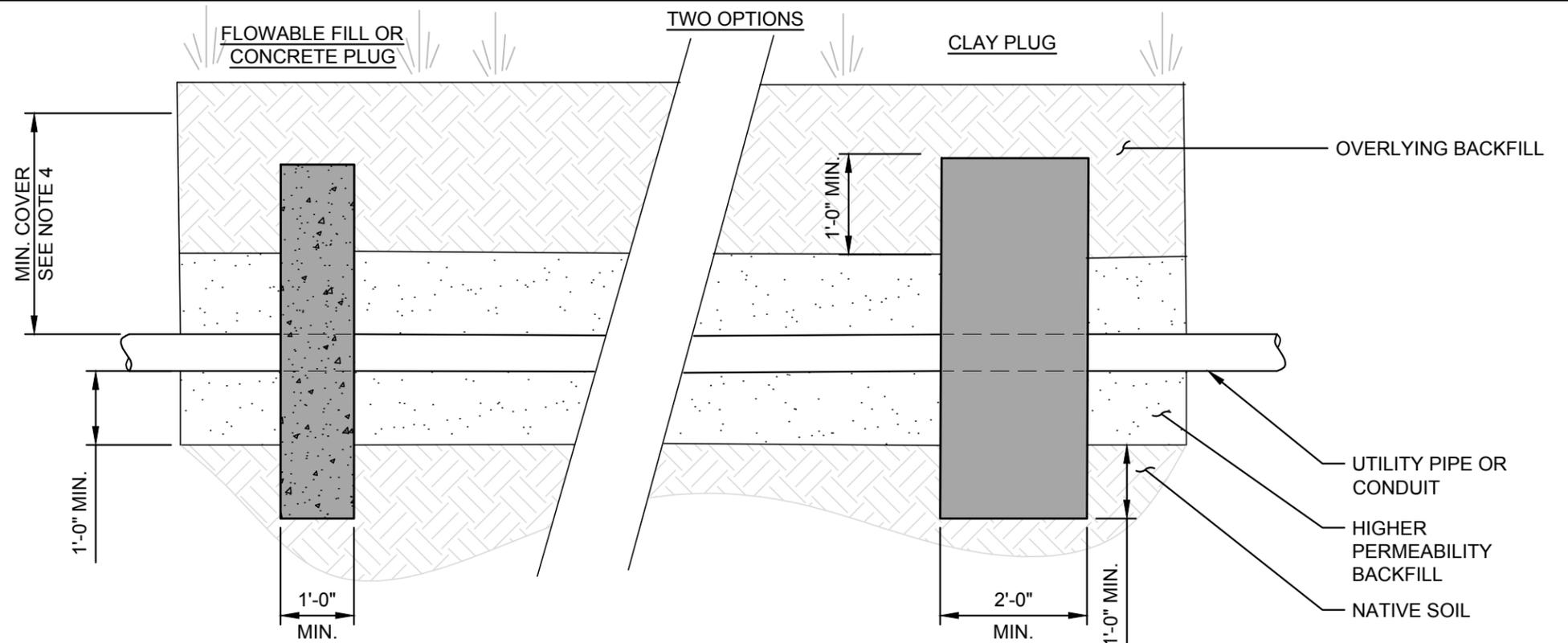
U.S. Environmental Protection Agency (EPA). Contaminated Site Clean-up Information (Clu-IN): Test Kits. Office of Superfund Remediation and Technology Innovation. <http://www.clu-in.net/characterization/technologies/color.cfm>

Dexsil Corporation. 2016. PetroFLAG Analyzer System (PF-MTR-01). [http://www.dexsil.com/products/detail.php?product\\_id=23](http://www.dexsil.com/products/detail.php?product_id=23)

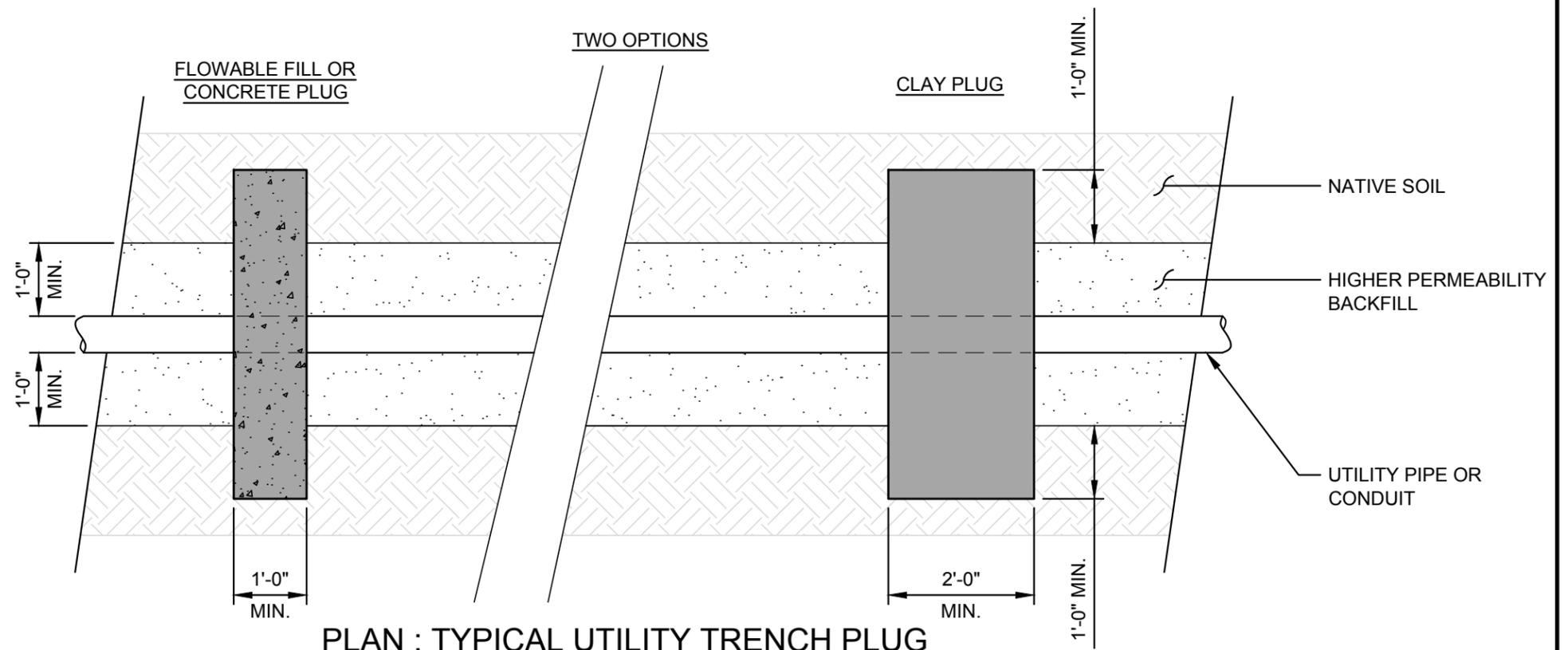
EPA SW-846 Method Number 9074 - Turbidimetric Screening Procedure for Total Recoverable Hydrocarbons in Soil

**GENERAL NOTES:**

1. ALL PIPES OR CONDUIT PASSING THROUGH AREAS OF PETROLEUM CONTAMINATION SHALL BE LEAK-PROOF AND WATERTIGHT. ALL JOINTS SHALL BE SEALED OR GASKETED.
2. ALL PIPES SHALL BE PROPERLY PLACED AND BEDDED TO PREVENT MISALIGNMENT OR LEAKAGE. PIPE BEDDING SHALL BE INSTALLED IN SUCH A MANNER AS TO MINIMIZE THE POTENTIAL FOR ACCUMULATION OF WATER AND CONCENTRATED INFILTRATION.
3. ANTI-SEEP COLLARS FROM THE PIPE MANUFACTURER, THAT ARE PRODUCED SPECIFICALLY FOR THE PURPOSE OF PREVENTING SEEPAGE AROUND THE PIPE, ARE ACCEPTABLE IF INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, AND ONLY WITH PRIOR APPROVAL BY EAG.
4. MINIMUM COVER ABOVE UTILITY SHALL BE BASED ON SPECIFIC UTILITY REQUIREMENTS.
5. TRENCHES SHALL BE BACKFILLED WITH BEDDING AND MATERIALS APPROVED BY MDE.
6. FOR ADDITIONAL REQUIREMENTS, INCLUDING THE USE OF MDE VCP CLEAN FILL FOR INDUSTRIAL LAND USE AND INSTALLATION OF GEOTEXTILE MARKER FABRIC, REFER TO NOTE 5 ON THE TYPICAL UTILITY CROSS SECTIONS.
7. ALL UTILITIES INSTALLED THROUGH AREAS CONTAINING NAPL OR ELEVATED CHEMICAL IMPACTS WITH THE POTENTIAL TO TRANSMIT VAPORS ALONG PREFERENTIAL FLOW PATHWAYS SHALL BE EITHER 1) BACKFILLED WITH LOW PERMEABILITY BACKFILL MATERIAL (LESS THAN OR EQUAL TO THE PERMEABILITY OF THE EXISTING SUBGRADE), OR 2) INSTALLED WITH TRENCH PLUGS ALONG THE ALIGNMENT IN ACCORDANCE WITH THE DETAILS SHOWN ON THIS PLAN AND THE FOLLOWING NOTES:
  - A.) UTILITY TRENCH PLUGS SHALL BE INSTALLED AT 100-FOOT (MAX.) INTERVALS THROUGH ALL AREAS OF NAPL CONTAMINATION.
  - B.) UTILITY TRENCH PLUGS SHALL EXTEND A MINIMUM OF 1-FOOT IN ALL DIRECTIONS BEYOND ANY HIGHER PERMEABILITY BACKFILL MATERIALS (I.E., MATERIALS EXCEEDING THE PERMEABILITY OF THE EXISTING SUBGRADE).



**SECTION : TYPICAL UTILITY TRENCH PLUG**



**PLAN : TYPICAL UTILITY TRENCH PLUG**

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**UTILITY TRENCH PLUG**  
Sparrows Point Site  
EnviroAnalytics Group, LLC

September 2018  
Not to Scale  
160443M

Figure  
**1**

P:\EnviroAnalytics Group\160443M EAG\_TPA Redevelopment\Drawings\NAPL\_Contingency\SK01\_Utility Trench Plug\_rev2.dwg Plotted: September 24, 2018

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## **APPENDIX C**

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# **Sparrows Point Development - PPE Standard**

## **Operational Procedure, Revision 3**

### **Planning, Tracking/Supervision, Enforcement, and Documentation**

#### **Planning**

- Response and Development Work Plan (RDWP) for each individual redevelopment sub-parcel identifies and documents site conditions.
- RDWP is reviewed and approved by regulators.
- Contractor HASP to address site-specific conditions and PPE requirements:
  - Contractor H&S professional to sign-off on PPE requirements for site workers;
  - Job Safety Analysis (JSA) to be performed for ground intrusive work.
- Project Environmental Professional (EP) assigned to each construction project – monitors project during environmentally sensitive project phases and is available to construction contractor on an as needed basis. EP responsibilities include the following:
  - Dust monitoring
  - Routine ground intrusive breathing space air monitoring
  - Soil tracking
  - Water handling oversight
  - Ground intrusive work observation
  - Notification for unexpected conditions
- Pre-construction meeting identifies EP roles and responsibilities and reviews site conditions.
- Contractor to perform job-site HazCom. HazCom to be addressed in Contractor HASP and include:
  - PPE requirements,
  - Exposure time limits,
  - Identification of chemicals of concern and potential effects of over-exposure (adverse reactions),
  - Methods and routes of potential exposure.
- All personnel that will be performing ground intrusive work within impacted soils shall sign-off on HazCom.
- If, based on a thorough review of Site conditions, it is expected that construction workers will have the potential to encounter materials considered hazardous waste under RCRA or DOT regulations, HAZWOPER-trained personnel will be utilized.

#### **Tracking/Supervision**

- Contractor to record any day that there is ground intrusive work and confirm that proper PPE is being worn.
- EP will note ground intrusive work on daily work sheets and perform at least one spot check per day.
- EP will log on daily work sheets PPE compliance for all intrusive work areas at least once per day.

- EP to take example photos of Exclusion Zones/Contamination Reduction Zones periodically.

### **Work Zones Delineation**

- Exclusion Zone – The Exclusion Zones will include the areas proposed for excavation or with active trenches, excavations, or ground intrusive work, at a minimum. Personnel working within the exclusion zone will be required to wear Modified Level D PPE as described in this SOP. EP to take example photos of Exclusion Zones/Contamination Reduction Zones periodically. The Exclusion Zones will be identified each work day.
- Contamination Reduction Zone – This work zone is located outside of the exclusion zone, but inside of the limits of development (LOD). The Contamination Reduction Zone will be located adjacent to the Exclusion Zone, and all personal decontamination including removal of all disposable PPE/removal of soil from boots will be completed in the Contamination Reduction Zone.

### **Documentation**

- Contractor HASP and HazCom.
- Contractor ground intrusive tracking record.
- HASP and HazCom sign-in sheets.
- EP pre-con memos.
- EP daily work sheets.
- Records documenting intrusive work and proper PPE use to be provided in completion report.

### **Enforcement**

- Non-compliance of PPE requirements will result in disciplinary action up to and including prohibition from working on Sparrows Point.

### **Unknown and/or Unexpected Conditions**

If unknown and/or unexpected conditions are encountered during the project that the EP determines to have a reasonable potential to significantly impact construction worker health and safety, the following will be initiated:

1. Job stoppage,
2. TPA and MDE notification,
3. Re-assessment of conditions.

Work will not continue until EP has cleared the area. If hazardous waste is identified, a HAZWOPER contractor will be brought in to address. The approved contingency plan will be implemented, where appropriate.

### **Modified Level D PPE**

Modified Level D PPE will include, at a minimum, overalls such as polyethylene-coated Tyvek or clean washable cloth overalls, latex (or similar) disposable gloves (when working in wet/chemical surroundings) or work gloves, steel-toe/steel-shank high ankle work boots with taped chemical-protective over-boots (as necessary), dust mask, hard hat, safety glasses with

side shields, and hearing protection (as necessary). If chemical-protective over-boots create increased slip/trip/fall hazardous, then standard leather or rubber work boots could be used, but visible soils from the sides and bottoms of the boots must be removed upon exiting the Exclusion Zone.

SP Development PPE Procedure 4-3-19

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## **APPENDIX D**

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# Mirafi® 140N



Mirafi® 140N is a nonwoven geotextile composed of polypropylene fibers, which are formed into a stable network such that the fibers retain their relative position. Mirafi® 140N is inert to biological degradation and resists naturally encountered chemicals, alkalis, and acids. Mirafi® 140N meets AASHTO M288 Class 3 for Elongation > 50%.

TenCate Geosynthetics Americas Laboratories are accredited by Geosynthetic Accreditation Institute – Laboratory Accreditation Program ([GAI-LAP](#)). [NTPEP Listed](#)

Mechanical Properties	Test Method	Unit	Minimum Average Roll Value	
			MD	CD
Grab Tensile Strength	ASTM D4632	lbs (N)	120 (534)	120 (534)
Grab Tensile Elongation	ASTM D4632	%	50	50
Trapezoid Tear Strength	ASTM D4533	lbs (N)	50 (223)	50 (223)
CBR Puncture Strength	ASTM D6241	lbs (N)	310 (1380)	
			Maximum Opening Size	
Apparent Opening Size (AOS)	ASTM D4751	U.S. Sieve (mm)	70 (0.212)	
			Minimum Roll Value	
Permittivity	ASTM D4491	sec <sup>-1</sup>	1.7	
Flow Rate	ASTM D4491	gal/min/ft <sup>2</sup> (l/min/m <sup>2</sup> )	135 (5500)	
			Minimum Test Value	
UV Resistance (at 500 hours)	ASTM D4355	% strength retained	70	

Physical Properties	Unit	Roll Sizes	
Roll Dimensions (width x length)	ft (m)	12.5 x 360 (3.8 x 110)	15 x 360 (4.5 x 110)
Roll Area	yd <sup>2</sup> (m <sup>2</sup> )	500 (418)	600 (502)

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