DEVELOPMENT COMPLETION REPORT

AREA B: SUB-PARCEL B4-1
TRADEPOINT ATLANTIC
SPARROWS POINT, MARYLAND

Prepared For:

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ARM Project No. 20010204

Respectfully Submitted,

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Project Engineer

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

Revision 1 – July 15, 2020

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1.0 INTRODUCTION

ARM Group LLC (ARM), on behalf of EnviroAnalytics Group (EAG), has prepared this Development Completion Report for a portion of the Tradepoint Atlantic property (formerly Sparrows Point Terminal, LLC) that has been designated as Area B: Sub-Parcel B4-1 (the Site).

For scheduling purposes, this parcel was divided into Sub-Parcels B4-1 and B4-2 to facilitate the expedited investigation and development of Sub-Parcel B4-1. A Phase II Investigation was conducted on Sub-Parcel B4-1 in accordance with the Phase II Investigation Work Plan – Area B: Parcel B4, Sub-Parcel B4-1 (Expedited Area), Revision 0, dated January 27, 2016. A Phase II Investigation was subsequently conducted on the entire Parcel B4 area in accordance with the Phase II Investigation Work Plan – Area B: Parcel B4, Sub-Parcel B4-1 and Sub-Parcel B4-2, Revision 1 dated July 8, 2016. Sub-Parcel B4-1 has undergone recent industrial redevelopment as was specified in the agency approved Response and Development Work Plan (RADWP) for Area B: Sub-Parcel B4-1 (Automotive and RO-RO Distribution Center), Revision 2 dated August 10, 2016. This Development Completion Report describes the completed construction and development activities conducted on Sub-Parcel B4-1.

The RADWP for Sub-Parcel B4-1 (Revision 2) was submitted to the Maryland Department of the Environment (MDE) and United States Environmental Protection Agency (USEPA) on August 10, 2016, prior to the submission of the Phase II Investigation Report for the entire Parcel B4. The submission of the Sub-Parcel B4-1 RADWP was advanced due to Tradepoint Atlantic's desire to expedite development of an Automotive Roll On – Roll Off (RO-RO) Distribution Center on Sub-Parcel B4-1. Also included in this development were improvements on approximately 1 acre of land (the Fender Area) in Parcel B5 for a stern dock facility, and a paved access road to connect the two areas. The proposed use of the Site is Tier 3B – Restricted Industrial. Relevant Phase II Investigation results from within the development area were included in the Sub-Parcel B4-1 RADWP. The Sub-Parcel B4-1 RADWP was approved by the MDE via email on June 1, 2016. The Phase II Investigation Report for the entirety of Parcel B4 (Revision 0) was provided to the agencies on March 3, 2017.

1.1. REPORT PURPOSE

The purpose of this Response and Development Completion Report is to document response action and development activities undertaken in order to secure a No Further Action (NFA) Letter and Certificate of Completion (COC) for the Site. In addition, this report is being submitted in accordance with the requirements outlined in the following agreements:

- Administrative Consent Order (ACO) between Tradepoint Atlantic (formerly Sparrows Point Terminal, LLC) and the MDE, effective September 12, 2014; and

- Settlement Agreement and Covenant Not to Sue (SA) between Tradepoint Atlantic (formerly Sparrows Point Terminal, LLC) and the USEPA, effective November 25, 2014.

The following section (Section 1.2) provides the project background. The response actions performed are described in Section 2 and conclusions are provided in Section 3.

1.2. SITE DESCRIPTION AND HISTORY

From the late 1800s until 2012, the production and manufacturing of steel was conducted at Sparrows Point. Iron and steel production operations and processes at Sparrows Point included raw material handling, coke production, sinter production, iron production, steel production, and semi-finished and finished product preparation. In 1970, Sparrows Point was the largest steel facility in the United States, producing hot and cold rolled sheets, coated materials, pipes, plates, and rod and wire. The steel making operations at Sparrows Point ceased in fall 2012.

The Maintenance Repair Shop located in the southwestern area of Sub-Parcel B4-1 was formerly occupied by the Phoenix Aggregate and Industrial Minerals Company. Based on historic aerial images available through Google Earth Pro, the building was constructed between August 2006 and September 2007. The company was active while the steel facility was operational, and primarily served to process slag into aggregate for resale. The building was used for the maintenance of company equipment, and processing operations took place elsewhere on the property. There were no aggregate stockpiles observed nearby the building in the historic aerial images. More recently, the building has been occupied by MCM Management Corporation (MCM) as an equipment maintenance and repair facility.

Parcel B4 was formerly occupied by part of the Former Steel Making Area. Several iron and steel work processes were completed within the boundary of Parcel B4 (and are partially included within the Sub-Parcel B4-1 area). Detailed descriptions of the main facilities and processes are provided in the Sub-Parcel B4-1 RADWP.

The Site consists of approximately 21 acres of land located within Parcel B4 shown on **Figure 1**. The Site was vacant prior to recent development with the exception of an approximately 5,750 square foot former Maintenance Repair Shop that has been retained for future use. The development of Sub-Parcel B4-1 also included improvements on approximately 1 acre of land (the Fender Area) in Parcel B5 for a stern dock facility, and a paved access road to connect the two areas (**Figure 2**). The full extent of Parcel B4 is comprised of approximately 72 acres of the approximately 3,100-acre former steel mill property located in Sparrows Point, Maryland.

2.0 RESPONSE AND DEVELOPMENT ACTIVITIES

The development and construction activities on Sub-Parcel B4-1 included asphalt paving of the entire area (approximately 21 acres) and 30-foot wide access roads (totaling approximately 2,000 linear feet) connecting the new paved area to the existing Shipyard Road and to the turning basin. The asphalt paving serves as a suitable parking and storage area for automobiles. In addition, a 36,640 square foot paved area incorporating a foot stern ramp was built at the turning basin (Fender Area). Drawings for the proposed parcel development were provided in *Appendix D* and *Appendix E* of the Sub-Parcel B4-1 RADWP. The access road alignments provided in *Appendix D* of the RADWP are outdated. Grading and Paving Red-Line As-Built drawings for the grading and paving development activities completed at the Site, with updated access road alignments, are included in **Appendix A** of this Completion Report. Electrical As-Built drawings are included as **Appendix B** of this Completion Report. Periodic site inspections were performed by Geo-Technology Associates (GTA). Site photos are provided in **Appendix C**.

The process of constructing the parking area, access road, and stern dock involved the following tasks:

2.1. SEDIMENT AND EROSION CONTROL INSTALLATION

Installation of erosion and sediment controls was completed prior to any construction at the Site, and these controls were removed following the completion of site development as shown on the Grading and Paving Red-Line As-Built drawings (**Appendix A**).

2.2. MONITORING WELL ABANDONMENT

One groundwater monitoring well (SW-064-MWS) was located on Sub-Parcel B4-1. The location of this existing well is provided on **Figure 3**. Per the RADWP, this well was converted to a flush mount prior to paving.

2.3. DEMOLITION, GRADING AND SITE PREPARATION.

The demolition and backfilling of subgrade structures was performed under the oversight of Century Engineering. Pit closure documentation is provided in the Clearance Checklist-Closure Report for 20 Acre RoRo Automotive Yard prepared by Jenkins Environmental, Inc. (*Appendix C* of the Sub-Parcel B4-1 RADWP and reproduced in this Development Completion Report in **Appendix D**). Figures showing the locations of the pits are included with the pit closure reports.

Site grading was performed to the grades shown in the Grading and Paving As-Built drawings (**Appendix A**). All fill brought to the site consisted of processed slag from elsewhere on the Tradepoint Atlantic property.

2.4. LIGHT STANDARD PIER INSTALLATION.

Lighting piers were installed at the Site as shown in the Electrical As-Built drawings (**Appendix B**).

2.5. INSTALLATION OF ELECTRICAL CONDUIT, STORMWATER PIPING AND STRUCTURES.

Stormwater piping was installed at the grades and lines shown on the Grading and Paving Red-Line As-Built drawings (**Appendix A**). Installation of the electrical conduit occurred following the installation of the stormwater piping. The electrical utilities were installed as shown on the Electrical As-Built drawings (**Appendix B**). Utility trenches were backfilled with processed slag.

2.6. PLACEMENT OF SUBBASE

Following the installation of stormwater and electrical utilities, the Site was fine-graded and placement of subbase commenced. The parking areas and access roads, approximately 981,800 square feet in total, received a layer of subbase material at least 3 inches thick, which consisted of graded aggregate base (GAB) processed slag material, as shown on the Grading and Paving As-Built drawings (**Appendix A**).

2.7. SITE CAPPING

The Parcel B4 Phase II Investigation Report presented the human health Screening Level Risk Analysis (SLRA) performed for the entire parcel. One of the exposure units (EUs) evaluated in the SLRA corresponded to the 21-acre parking area developed as Sub-Parcel B4-1. The RADWP specified capping over the entire Sub-Parcel B4-1 area to mitigate a potential unacceptable risk to the Composite Worker if subsurface soils were relocated to the surface during development.

The Site, approximately 870,400 square feet including the access roadways, received light-duty paving, with 3 inches of asphalt. The 40,000 square foot truck loading area, the Berth Apron at the stern ramp, and additional areas as marked on the Grading and Paving Red-Line As-Built drawings (**Appendix A**) received heavy duty paving, with asphalt thickness of 4 inches. Therefore, the full thickness of the pavement section (i.e., asphalt cap) placed over the existing soils consisted of a minimum of 6 inches (at least 3 inches of GAB subbase and 3 inches of asphalt) in the light duty areas and a minimum of 7 inches (at least 3 inches of GAB subbase and 4 inches of asphalt) in the heavy duty areas. Although the applied thicknesses of the pavement in some areas, including the Berth Apron area, were less than the thicknesses specified in the approved Work Plan, the Civil Engineer, Johnson, Mirmiran & Thompson (JMT), determined that the installed pavement thicknesses would provide sufficient bearing capacity to support the intended uses of the pavement. The subbase layer was placed above the existing site materials

and graded as shown on the Grading and Paving Red-Line As-Built drawings (**Appendix A**) with an average elevation increase of 0.5 to 1.5 feet above the original grade.

The asphalt paving placed at the Site serves as suitable parking and a storage area for automobiles and acts as a physical barrier to prevent direct contact with the underlying soils. The completed pavement capping installed during development provides the necessary protective barrier overlying the existing site materials. This barrier is protective of potential exposures to Composite Workers performing duties at the Site, in conjunction with institutional controls (described below).

Although the access road and Fender area were not evaluated as a separate EU, cap maintenance will be required for the entire Sub-Parcel B4-1 development area because processed slag was used as subbase beneath the entire Site.

2.8. SECURITY AND LIGHTING

Following the completion of paving, the contractor installed site security fencing, light masts and final electrical connections as shown on the Grading and Paving Red-Line As-Built drawings (**Appendix A)** and Electrical As-Built drawings (**Appendix B**).

2.9. CONSTRUCTION OF STRUCTURES

A prefabricated guard house was installed in the northwest portion of the Site. As-built drawings provided by Porta-King have been included in **Appendix E**.

2.10. EXCAVATED MATERIAL MANAGEMENT

Soil regrading and minor excavations for utilities, light post foundations, inlet/manhole installations, sediment trap and swale construction took place during the development of Sub-Parcel B4-1. The majority of soil removed during these activities was reused beneath paved areas on Sub-Parcel B4-1. Any soil determined to be unsuitable for compaction was managed by MCM Management Corporation (MCM) under in accordance with their Materials Management Plan. No excavated soils were taken from the 3,100-acre Tradepoint Atlantic property. All fill brought to the site consisted of processed slag from elsewhere on the Tradepoint Atlantic property.

2.11. WATER MANAGEMENT

The development received a variance from the requirement to install new stormwater management facilities on Sub-Parcel B4-1 (included in *Appendix F* of the Sub-Parcel B4-1 RADWP). New and field modified stormwater structures are shown on the Grading and Paving Red-Line As-Built Drawings (**Appendix A**).

All dewatering discharges were pumped into a frac tank on site and subsequently trucked to the Humphreys Creek Wastewater Treatment Plant (HCWWTP).

2.12. INSTITUTIONAL CONTROLS (FUTURE LAND USE CONTROLS)

Long-term conditions related to future use of the Site will be placed on the NFA and COC. These conditions are anticipated to include the following:

- A restriction that limits the use of the property to industrial land use.
- A restriction prohibiting the use of groundwater for any purpose at the Site and a requirement to characterize, containerize, and properly dispose of groundwater in the event of deep excavations encountering groundwater.
- Notice to MDE prior to any future soil disturbance activities at the Site. This written notice will be required at least 30 days prior to any planned excavation activities.
- Requirement for a HASP in the event of any future excavations at the Site.
- Complete appropriate characterization and disposal of any future material excavated at the Site in accordance with applicable local, state, and federal requirements.
- Implementation of inspection procedures and maintenance of the engineering controls (containment remedies) as outlined the following section.

The responsible party will file the above deed restrictions as defined by the MDE VCP in the NFA and COC. The soil disturbance and maintenance requirements will apply to the capped areas shown in **Figure 3**. The entire Site will be subject to the industrial use groundwater use restrictions.

2.13. POST REMEDIATION REQUIREMENTS

Post remediation requirements will include compliance with the conditions specified in the NFA, COC, and the deed restrictions recorded for the Site. Deed restrictions will be recorded within 30 days after receipt of the final NFA.

Maintenance requirements will include maintenance of the capped areas shown on **Figure 4** to minimize degradation of the cap which could lead to exposures to the underlying soil. Because processed slag was used as subbase across the entire Site, the full Sub-Parcel B4-1 development area, including the access road and Fender area, will be subject to inspection and maintenance requirements.

An updated Operations and Maintenance Plan (O&M Plan) for the cap is included as **Appendix F**. (A previous version of the O&M Plan was included as *Appendix I* of the Sub-Parcel B4-1

RADWP, but pavement thicknesses and the Pavement Inspection Form have been updated). The O&M Plan includes the inspection protocols and a maintenance schedule.

The responsible party will perform cap maintenance inspections, perform maintenance of the cap, and retain cap inspection records. Areas of the cap in Sub-Parcel B4-1 that have degraded to a Pavement Condition Index (PCI) of 4.0 will be repaired within 30 days of discovery. The MDE shall be notified within 10 business days of any repairs that are the result of a PCI of 4.0 or greater. The notification will include documentation of the conditions being repaired and the location of the repair.

In addition, the MDE will be provided with a written notice at least 30 days prior to any future planned excavation activities at the Site. Written notice of planned excavation activities will include the proposed date(s) for the excavation, location of the excavation, health and safety protocols (as required), clean fill source (as required), and proposed characterization and disposal procedures.

3.0 CONCLUSION

Response and development actions were conducted as part of the redevelopment of the Site identified as Sub-Parcel B4-1. The primary response and development actions included grading, paving, and security improvements.

As a result of the information contained herein, it has been demonstrated that the response and development actions have been completed in accordance with the recommendations for remediation specified in the Sub-Parcel B4-1 RADWP. The As-Built drawings provided in **Appendix A** and **Appendix B** verify that the response actions have been completed in accordance with the recommendations specified in the Phase II Investigation Report and that the Site is suitable for occupancy and use.

With construction of the engineering controls (caps) in conjunction with redevelopment of the Site, the applicable requirements for obtaining a NFA Letter and COC for this Site have been fulfilled. Therefore, Tradepoint Atlantic is respectfully requesting issuance of a NFA Letter for the Site at this time. The NFA Letter and the deed restrictions identified in the RADWP are intended to be recorded within 30 days after receipt of the final NFA Letter. Proof of recordation will be submitted to MDE upon receipt from Baltimore County.

FIGURES

Site Boundary

Parcel Boundaries

Private Property

Parcel A9
Parcel A5
Parcel A13
Parcel A7
Parcel A14
Parcel A11
Parcel A8
Parcel A12
Parcel A2
Parcel A15
Parcel A17
Parcel A18
Parcel A16
Parcel A6
Parcel A4
Parcel A10
Parcel A3
Parcel A1
Parcel B6
Parcel B8
Parcel B14
Parcel B22
Parcel B16
Parcel B21
Parcel B15
Parcel B24
Parcel B23
Parcel B25
Parcel B7
Parcel B1
Parcel B2
Parcel B3
Parcel B17
Parcel B19
Parcel B4
Parcel B5
Parcel B9
Parcel B18
Parcel B10
Parcel B13
Parcel B20
Parcel B11
Parcel B12

Tradepoint Atlantic
Area A and Area B Parcels

July 1, 2020

Figure 1

N

ARM Group LLC
Engineers and Scientists

0 500 1,000 2,000 Feet

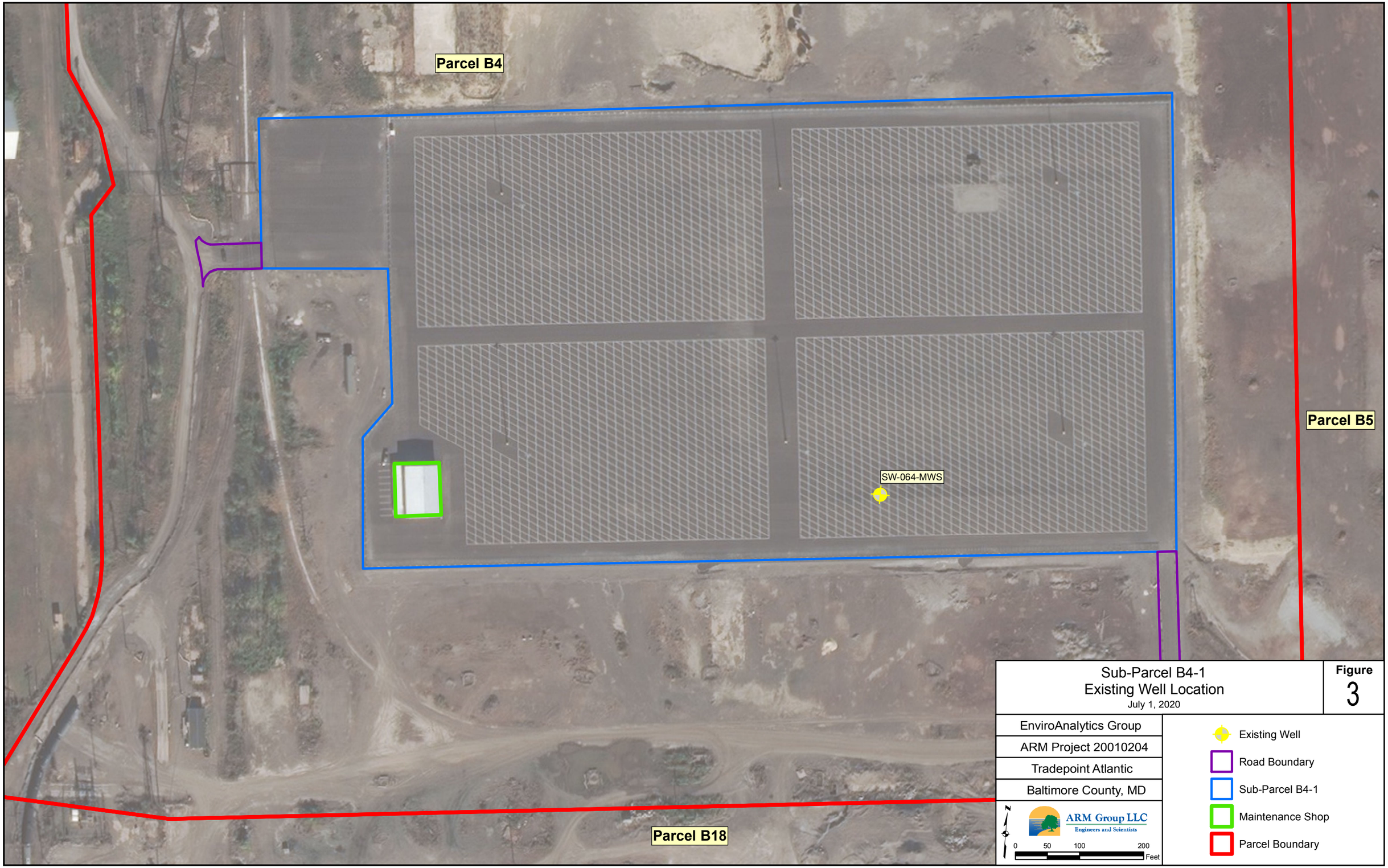
Tradepoint Atlantic

Baltimore County, MD

EnviroAnalytics Group

ARM Project 20010204


Parcel B4
Parcel B5
Parcel B18
Parcel B10
SHIPYARD ROAD
CONTRACTOR SHALL NOT INTERRUPT EXISTING UTILITY SERVICE TO BUILDING
Sub-Parcel B4-1
Completed Site Development
July 1, 2020
Figure
2
EnviroAnalytics Group
ARM Project 20010204
Tradepoint Atlantic
Baltimore County, MD
ARM Group LLC
Engineers and Scientists
0 100 200 400
Feet
Road Boundary
Sub-Parcel B4-1
Maintenance Shop
Parcel Boundary



Sub-Parcel B4-1
Existing Well Location
July 1, 2020

Figure
3

EnviroAnalytics Group
ARM Project 20010204
Tradepoint Atlantic
Baltimore County, MD

ARM Group LLC
Engineers and Scientists

0 50 100 200
Feet

Existing Well
Road Boundary
Sub-Parcel B4-1
Maintenance Shop
Parcel Boundary

Sub-Parcel B4-1
Capping Remedy
July 1, 2020

Figure
4

EnviroAnalytics Group
ARM Project 20010204
Tradepoint Atlantic
Baltimore County, MD

ARM Group LLC
Engineers and Scientists

0 100 200 400
Feet

Road Boundary
Sub-Parcel B4-1
Maintenance Shop
Capping Remedy
Parcel Boundary

Sub-Parcel B4-1
Capping Remedy
July 1, 2020

Figure
4

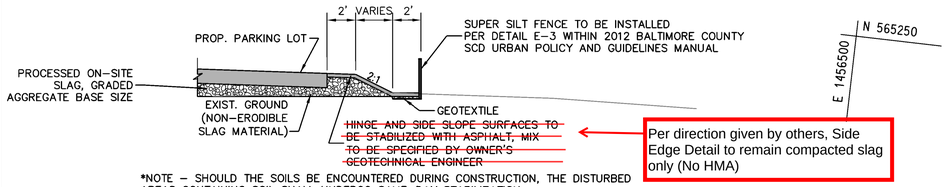
EnviroAnalytics Group
ARM Project 20010204
Tradepoint Atlantic
Baltimore County, MD

ARM Group LLC
Engineers and Scientists

0 100 200 400
Feet

Road Boundary
Sub-Parcel B4-1
Maintenance Shop
Capping Remedy
Parcel Boundary

APPENDIX A



*NOTE – SHOULD THE SOILS BE ENCOUNTERED DURING CONSTRUCTION, THE DISTURBED AREAS CONTAINING SOIL SHALL UNDERGO SAME-DAY STABILIZATION.

TIE-IN DETAIL - PARKING LOT PERIMETER - SHEET FLOW AWAY FROM SITE

NOT TO SCALE

Per direction given by others, Side Edge Detail to remain compacted slag only (No HMA)

GRADING NOTE:
ENTIRE LOT GRADED TO MODIFIED 1% GRADE PLAN PROVIDED BY OTHERS.

SEE ATTACHED EXHIBIT A FOR FINAL LOT GRADES.

SHEET C-002

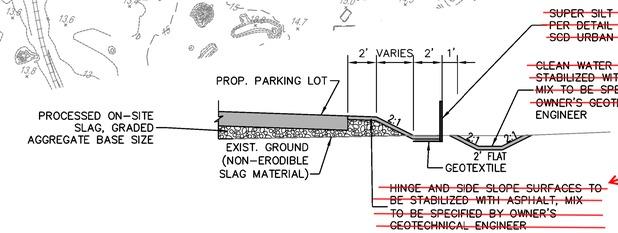
SHEET C-003

Service road Location See Exhibit B for existing Location

SHIPYARD ROAD

CONTRACTOR SHALL NOT INTERRUPT EXISTING UTILITY SERVICE TO BUILDING

Super Silt Fence per detail has been removed and is not included in the final site built condition.



Per direction given by others, Swale and Side Edge Detail to remain compacted slag only (No HMA)

100 0 100 200'

SCALE: 1" = 100'

*NOTE – SHOULD THE SOILS BE ENCOUNTERED DURING CONSTRUCTION, THE DISTURBED AREAS CONTAINING SOIL SHALL UNDERGO SAME-DAY STABILIZATION.

TIE-IN DETAIL - PARKING LOT PERIMETER - OFFSITE DRAINAGE TO LOT

NOT TO SCALE

SITE INFORMATION

TOTAL SITE AREA 3,100.00 ACRES
TOTAL DISTURBED AREA 23.26 ACRES (1,013,121 SF)

NOT FOR CONSTRUCTION
FIELD MODIFICATIONS
CONTRACTOR REVIEW SET

VERSION		
NO.	DATE	NOTES

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®
72 Loveton Circle Baltimore, Maryland 21152-0949

TRADEPOINT ATLANTIC

PASHA

PROJECT	
FILE	
CTB	
DESIGNER	
EDIT DATE	
SAVE TIME	
PLOT DATE	
PLOT TIME	

OVERALL GRADING AND DRAINAGE PLAN

AUTOMOTIVE AND RO-RO DISTRIBUTION CENTER

SPARROWS POINT, MARYLAND

C-001

NOTES:

1. THE EXISTING CONTOURING SHOWN ON THIS PLAN WITHIN THE MAJORITY OF OUR WORKING AREA IS FROM 2016 TOPOGRAPHICAL SURVEY. ADDITIONAL EXISTING CONTOURING IS TAKEN FROM PREVIOUSLY FLOWN LIDAR SURVEY.

GRADING NOTE:
ENTIRE LOT GRADED TO MODIFIED 1% GRADE PLAN PROVIDED BY OTHERS.

SEE ATTACHED EXHIBIT A FOR FINAL LOT GRADES.

HIGHLIGHTED AREA = Heavy Duty Paving Section = 4" HMA

Remainder of Lot = 3" HMA

See Exhibit B for Location

I-2 Actual Location (At Corners)
564914.39 N / 1457129.51 E
564914.56 N / 1457132.25 E
564922.98 N / 1457128.83 E
564923.25 N / 1457131.53 E

I-6 Actual Location (At Corners)
564557.25 N / 1457160.62 E
564557.04 N / 1457169.26 E
564554.43 N / 1457160.48 E
564554.25 N / 1457169.17 E

FIELD MODIFIED EXISTING STRUCTURE AND RAISED TO GRADE IN LIEU OF REMOVAL AND REPLACEMENT WITH NEW

Per Note 1 on Dwg PP-01

M-1 Actual Location
564556.24 N / 1457144.37 E

I-10 Actual Location (At Corners)
564190.72 N / 1457188.44 E
564189.62 N / 1457179.96 E
564192.24 N / 1457179.56 E
564193.43 N / 1457188.16 E

INVERT CONFLUENCE OF 36" BRICK AND 48"x36" CONCRETE BOX 3.39
TOP OF STRUCTURE 13.6

TOP OF STRUCTURE 14.4

TEST PIT TOP OF 48" RCP 6.99

TEST PIT TOP OF 36" BRICK 5.39

TEST PIT TOP OF 36" BRICK 4.84

INVERT 36" BRICK 1.98

SHIPYARD ROAD

FIRE HYDRANT

UNKNOWN VAULT TOP OF STRUCTURE 14.6

INVERT 12" RCP 9.40
INVERT 24"x36" BRICK BOX 9.16

TOP OF STRUCTURE 14.0

TOP OF STRUCTURE 14.2
POSSIBLE OLD FOOTING

YARD HYDRANT

SSMH TOP OF STRUCTURE 13.9

WELL CAPS?

TEST PIT TOP OF 48" RCP 7.24

STOCK PILE

EX. 42" SD

EX. 12" SD

EX. 8" SD

EX. 3'x5' SD

EX. 18" SD

EX. 24" SD

EX. 36" SD

EX. 48" SD

PROPERTY OF
SPARROWS POINT TERMINAL, LLC
TAX MAP 111, P. 318
L. 35478, F. 379

EX. BUILDING
FF. GAR.=16.19'

ASSUMED EXISTING STORM DRAIN ALIGNMENT

UNKNOWN VAULT TOP OF STRUCTURE 13.7

MONITOR WELL

CONC PAD W/ FORMER HYDRANT (CAPPED VERTICAL WL) TOP OF STRUCTURE 14.3

TEST PIT TOP OF 48" RCP 6.84

CONTRACTOR SHALL NOT INTERRUPT EXISTING UTILITY SERVICE TO BUILDING

INVERT 48" RCP 2.30
INVERT 48" RCP 2.28

TOP OF STRUCTURE 12.7

UNKNOWN VAULT TOP OF STRUCTURE 12.7

WATER VAU
TOP OF STR

VERIFIED THAT UPSTREAM INVERT IS LOWER IN THIS AREA

INVERT 72" RCP -0.76

INVERT 72" RCP -1.05

INVERT 72" RCP -0.40

INVERT 72" RCP 0.24

E 1456450

N 564050

MATCH LINE – SEE SHEET C–003

50' 0 50' 100'
SCALE: 1" = 50'

NOT FOR CONSTRUCTION
FIELD MODIFICATIONS
CONTRACTOR REVIEW SET

VERSION		
NO.	DATE	NOTES

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®
72 Loveton Circle Baltimore, Maryland 21152-0949

TRADEPOINT ATLANTIC

PASHA

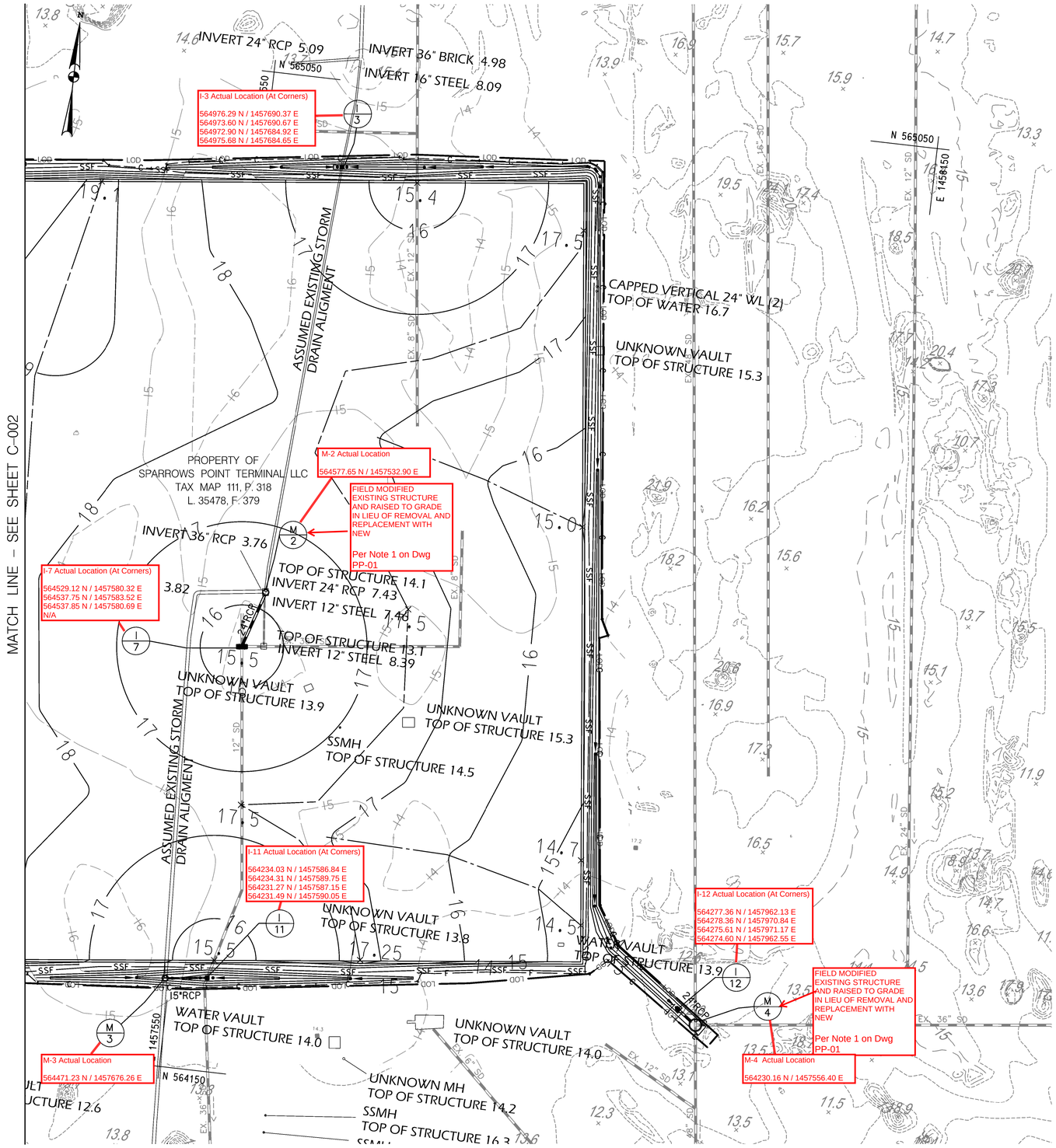
PROJECT	
FILE	
CTB	
DESIGNER	
EDIT DATE	
SAVE TIME	
PLOT DATE	
PLOT TIME	

GRADING PLAN

AUTOMOTIVE AND RO–RO DISTRIBUTION CENTER

SPARROWS POINT, MARYLAND

C–002



NOTES:

1. THE EXISTING CONTOURING SHOWN ON THIS PLAN WITHIN THE MAJORITY OF OUR WORKING AREA IS FROM 2016 TOPOGRAPHICAL SURVEY. ADDITIONAL EXISTING CONTOURING IS TAKEN FROM PREVIOUSLY FLOWN LIDAR SURVEY.

GRADING NOTE:
ENTIRE LOT GRADED TO MODIFIED 1% GRADE PLAN PROVIDED BY OTHERS.

SEE ATTACHED EXHIBIT A FOR FINAL LOT GRADES.

50' 0 50' 100'
SCALE: 1" = 50'

NOT FOR CONSTRUCTION
FIELD MODIFICATIONS
CONTRACTOR REVIEW SET

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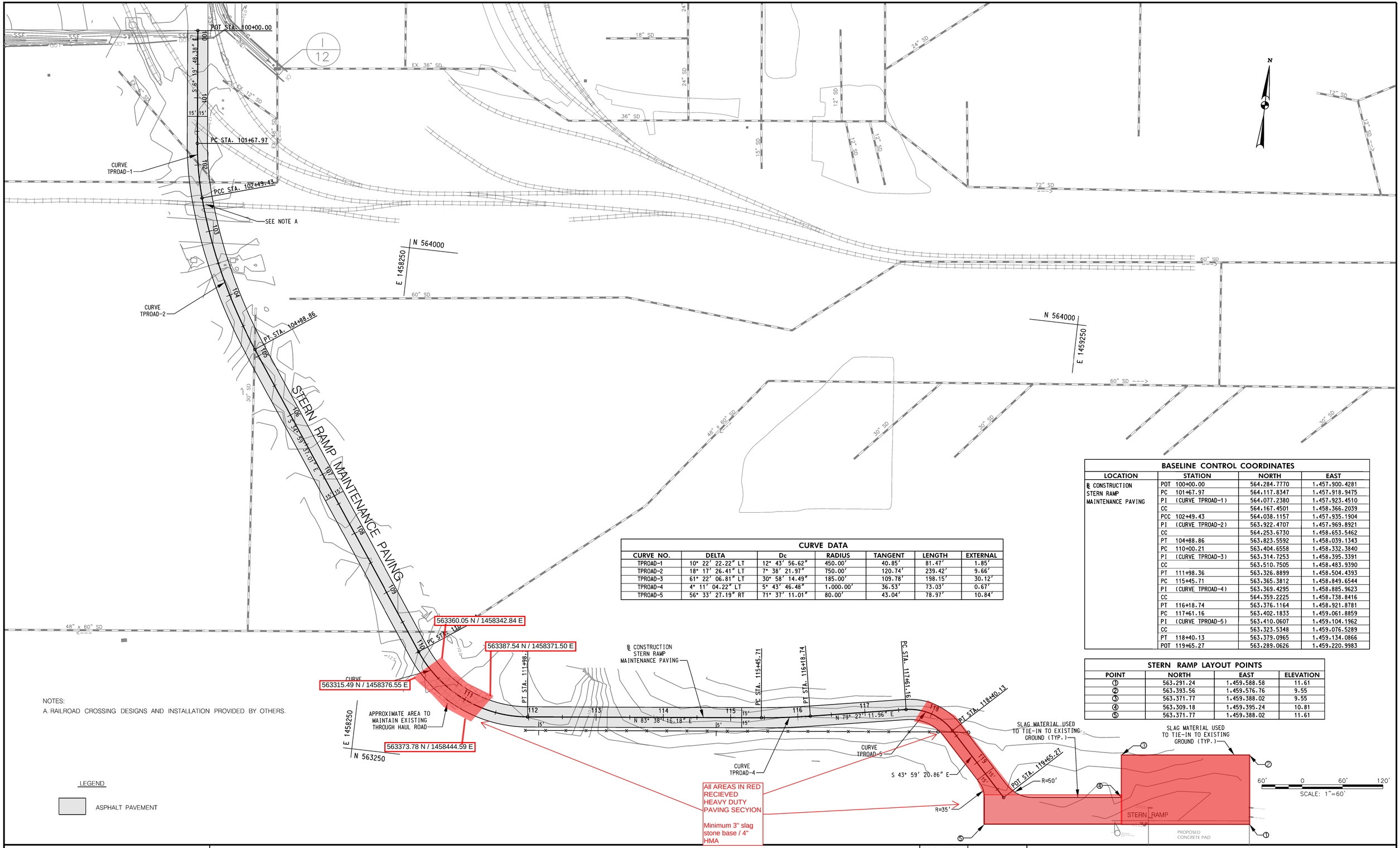
SAVE TIME	
PLOT DATE	
PLOT TIME	

GRADING PLAN

AUTOMOTIVE AND RO–RO DISTRIBUTION CENTER

SPARROWS POINT, MARYLAND | C–003



NOTES:

A. RAILROAD CROSSING DESIGNS AND INSTALLATION PROVIDED BY OTHERS.

LEGEND

ASPHALT PAVEMENT

CURVE DATA

CURVE NO.	DELTA	Dc	RADIUS	TANGENT	LENGTH	EXTERNAL
TPROAD-1	10° 22' 22.22" LT	12° 43' 56.62"	450.00'	40.85'	81.47'	1.85'
TPROAD-2	18° 17' 26.41" LT	7° 38' 21.97"	750.00'	120.74'	239.42'	9.66'
TPROAD-3	61° 22' 06.81" LT	30° 58' 14.49"	185.00'	109.78'	198.15'	30.12'
TPROAD-4	4° 11' 04.22" LT	5° 43' 46.48"	1,000.00'	36.53'	73.03'	0.67'
TPROAD-5	56° 33' 27.19" RT	71° 37' 11.01"	80.00'	43.04'	78.97'	10.84'

BASELINE CONTROL COORDINATES

LOCATION	STATION	NORTH	EAST
℄ CONSTRUCTION STERN RAMP MAINTENANCE PAVING	POT 100+00.00	564,284.7770	1,457,900.4281
	PC 101+67.97	564,117.8347	1,457,918.9475
	PI (CURVE TPROAD-1)	564,077.2380	1,457,923.4510
	CC	564,167.4501	1,458,366.2039
	PCC 102+49.43	564,038.1157	1,457,935.1904
	PI (CURVE TPROAD-2)	563,922.4707	1,457,969.8921
	CC	564,253.6730	1,458,653.5462
	PT 104+88.86	563,823.5592	1,458,039.1343
	PC 110+00.21	563,404.6558	1,458,332.3840
	PI (CURVE TPROAD-3)	563,314.7253	1,458,395.3391
	CC	563,510.7505	1,458,483.9390
	PT 111+98.36	563,326.8899	1,458,504.4393
	PC 115+45.71	563,365.3812	1,458,849.6544
	PI (CURVE TPROAD-4)	563,369.4295	1,458,885.9623
	CC	564,359.2225	1,458,738.8416
	PT 116+18.74	563,376.1164	1,458,921.8781
	PC 117+61.16	563,402.1833	1,459,061.8859
	PI (CURVE TPROAD-5)	563,410.0607	1,459,104.1962
	CC	563,323.5348	1,459,076.5289
	PT 118+40.13	563,379.0965	1,459,134.0866
	POT 119+65.27	563,289.0626	1,459,220.9983

STERN RAMP LAYOUT POINTS

POINT	NORTH	EAST	ELEVATION
①	563,291.24	1,459,588.58	11.61
②	563,393.56	1,459,576.76	9.55
③	563,371.77	1,459,388.02	9.55
④	563,309.18	1,459,395.24	10.81
⑤	563,371.77	1,459,388.02	11.61

VERSION		
NO.	DATE	NOTES

JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®
72 Loveton Circle Baltimore, Maryland 21152-0949

TRADEPOINT ATLANTIC

PASHA

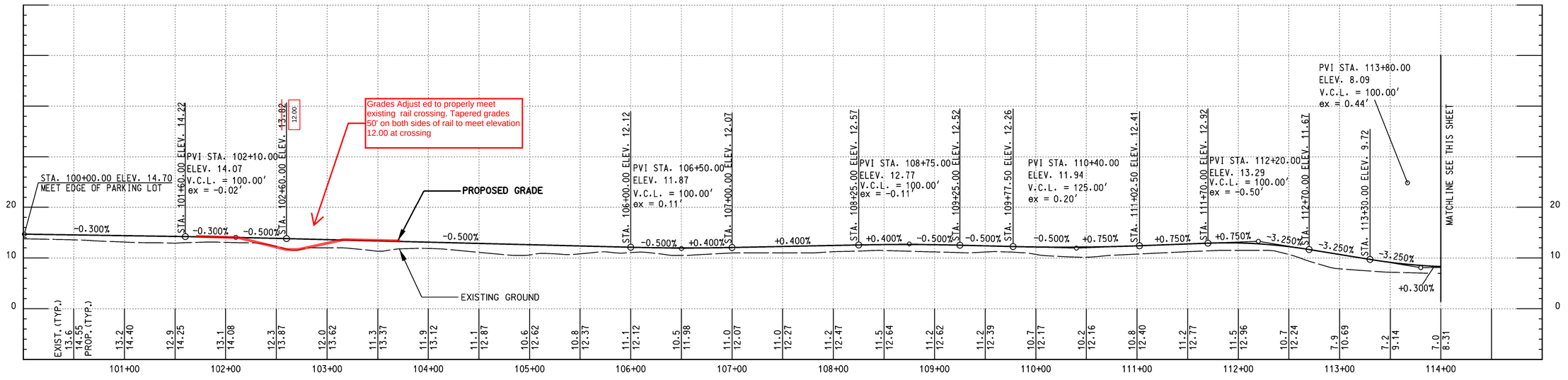
PROJECT	
FILE	
CTB	
DESIGNER	
EDIT DATE	
SAVE TIME	
PLOT DATE	
PLOT TIME	

MAINTENANCE PAVING PLAN

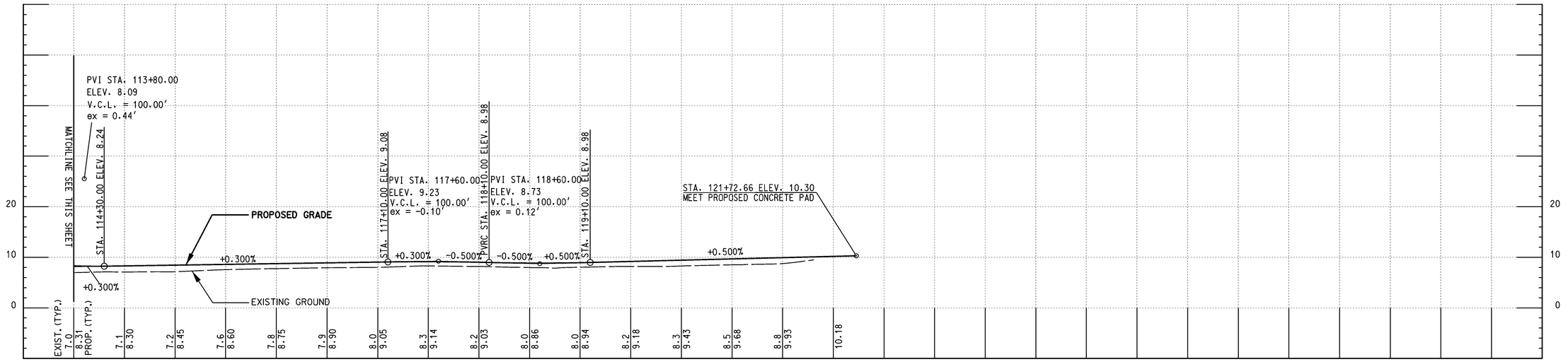
PARKING LOT TO STERN RAMP MAINTENANCE PAVING

SPARROWS POINT, MARYLAND

C-001



MAINTENANCE PAVING PROFILE – STA. 100+00.00 TO 114+00.00



MAINTENANCE PAVING PROFILE – STA. 114+00.00 TO 121+72.66

25' 0 25' 50'
HORIZONTAL SCALE : 1" = 50'-0"
5' 0 5' 10'
VERTICAL SCALE : 1" = 10'-0"

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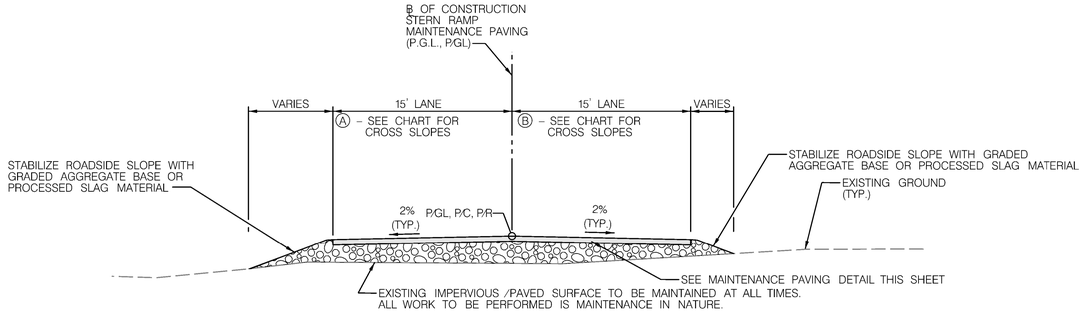
PLOT DATE	
PLOT TIME	

MAINTENANCE PAVING PROFILE

PARKING LOT TO STERN RAMP MAINTENANCE PAVING

SPARROWS POINT, MARYLAND | PR–001



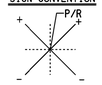
STERN RAMP MAINTENANCE PAVING TYPICAL SECTION

STA. 100+00.00 TO STA. 121+72.66

NOT TO SCALE

APPROX. MAINTENANCE PAVING CROSS SLOPES		
STATION	Ⓐ	Ⓑ
100+00.00	-2.00	-2.00
101+00.00	-2.00	2.00
102+00.00	-2.00	2.00
103+00.00	-2.00	-2.00
104+00.00	-2.00	-2.00
105+00.00	2.00	-2.00
106+00.00	2.00	-2.00
107+00.00	-2.00	-2.00
113+00.00	-2.00	-2.00
114+00.00	-2.00	2.00
121+00.00	-2.00	2.00
121+72.65	-2.00	-2.00

SUPERELEVATION SIGN CONVENTION

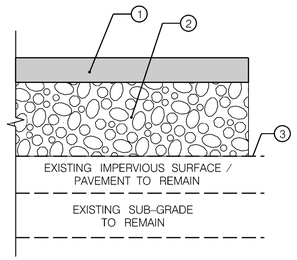


NOTE: ALL CROSS SLOPES ARE IN %

All Service on Stern road is 3" with the exception of highlighted areas on shet C001, which are a heavy duty section with 4" of HMA

LEGEND

1. 3" ASPHALT FOR SURFACE
2. 8" GRADED AGGREGATE BASE OR 8" PROCESSED SLAG MATERIAL
3. TOP OF EXISTING IMPERVIOUS /PAVEMENT SURFACE



MAINTENANCE PAVING DETAIL

NOT TO SCALE

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PASHA

PROJECT	
FILE	
CTB	
DESIGNER	
EDIT DATE	
SAVE TIME	
PLOT DATE	
PLOT TIME	

MAINTENANCE PAVING DETAILS

PARKING LOT TO STERN RAMP MAINTENANCE PAVING

SPARROWS POINT, MARYLAND

DE-001

SITE PLAN 2 DO NOT MOVE VIEWPORT

SITE PLAN 2

1218'
1116'
1'
30'
20'
EOP
FENCE
22'
542'
31'
296'
47'
42'
200'
217'
74'
122'
40'
149'
201'
82'
30'
311'
310'
640'
700'
29'
46'
69'
473'
542'

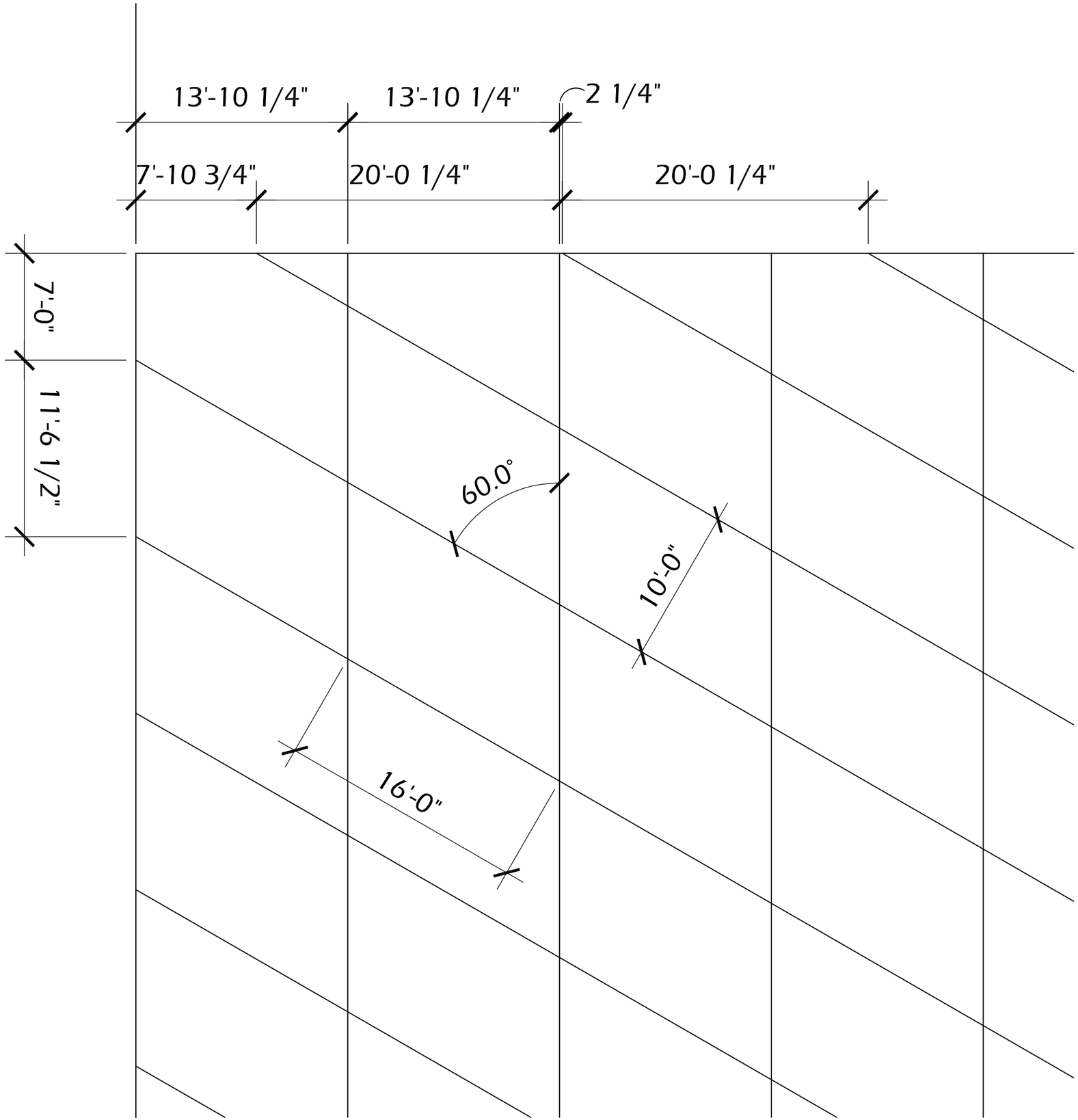
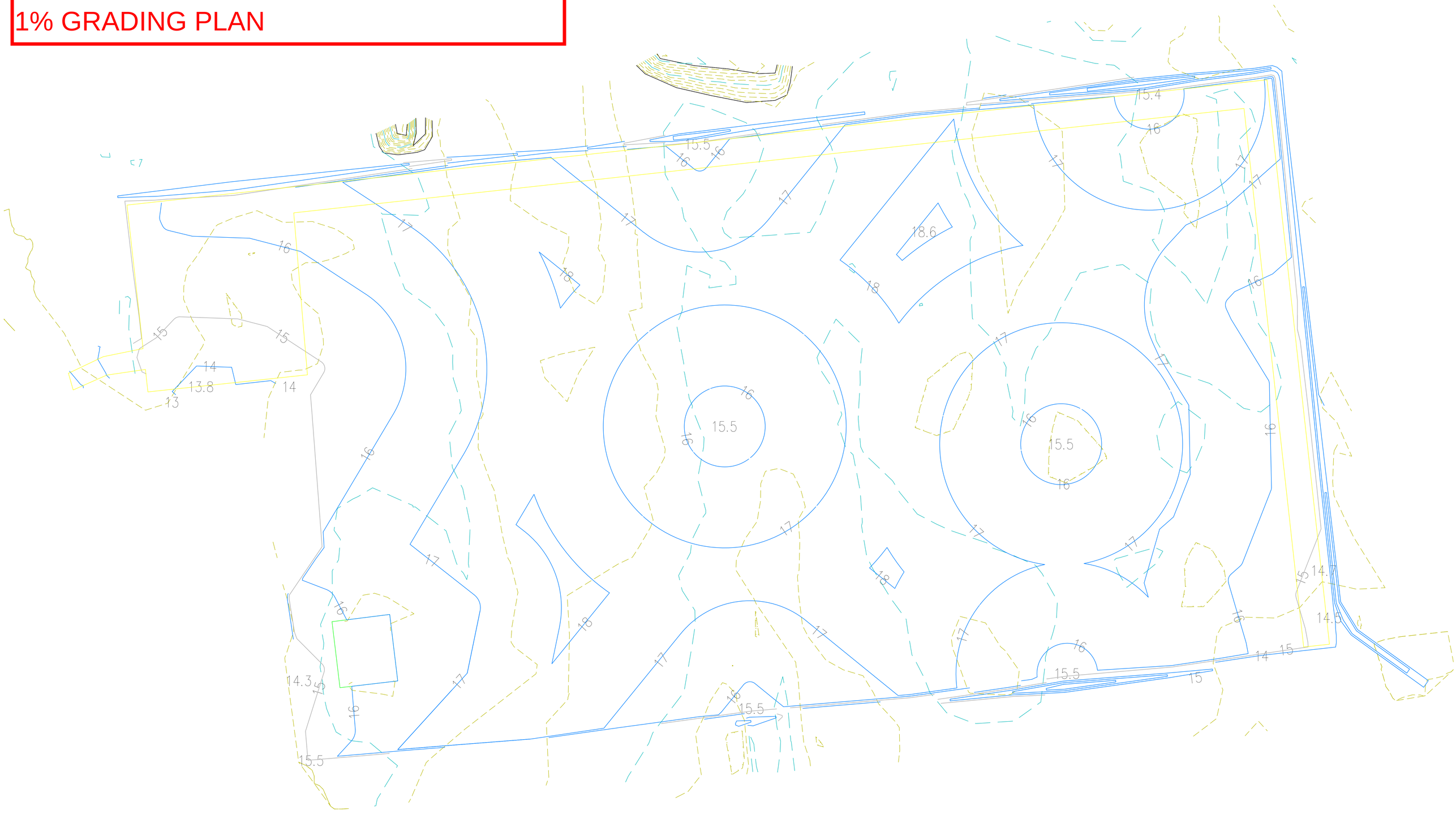

13'-10 1/4"
13'-10 1/4"
2 1/4"
7'-10 3/4"
20'-0 1/4"
20'-0 1/4"
7'-0"
11'-6 1/2"
60.0°
10'-0"
16'-0"

EXHIBIT A

1% GRADING PLAN

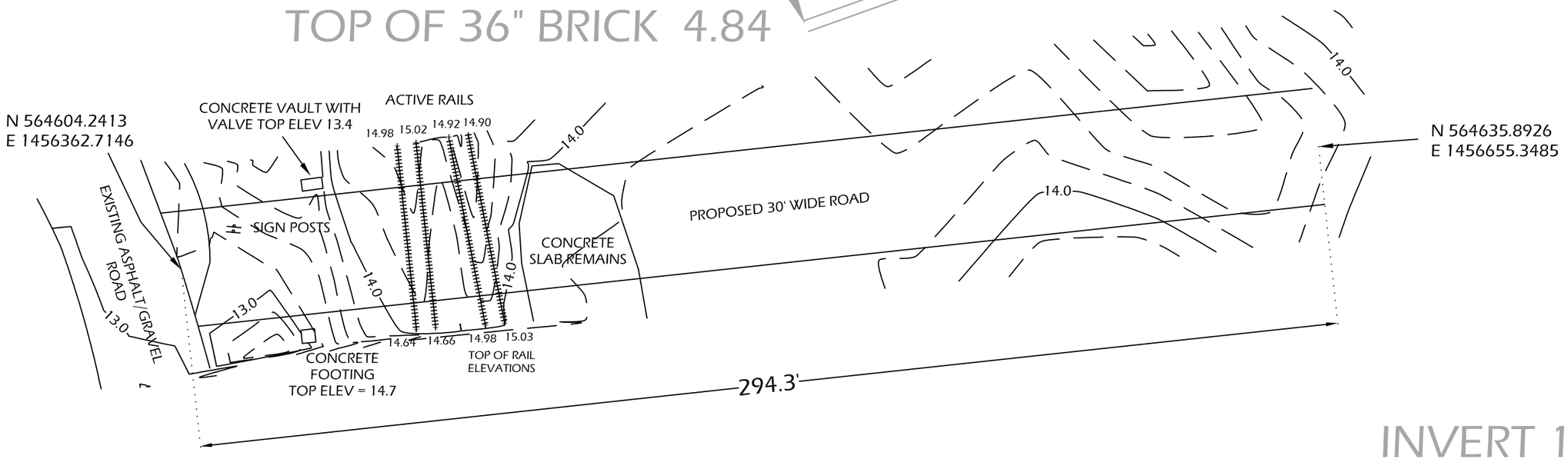


B

TEST PIT
TOP OF 36" BRICK 5.39

TEST PIT
TOP OF 36" BRICK 4.84

INVERT 36" BRICK 1.98



FIRE HYDRANT

UNKNOWN VAULT
TOP OF STRUCTURE 14.6

INVERT 12" RC
INVERT 24"x36
BOX 9.16

KCI TECHNOLOGIES
Engineers
Planners
Scientists
Construction Managers

RORO at Sparrows Point

Relocated West Entrance Drive Topo

JMS/NAR 07June2016
291601179 1"=30' 1 of 1

APPENDIX B

TRADEPOINT ATLANTIC

AUTOMOTIVE & RO-RO DISTRIBUTION FACILITY
SPARROWS POINT
BALTIMORE, MARYLAND

- SYMBOL SCHEDULE -

THIS IS A GENERIC SYMBOL SCHEDULE
NOT ALL SYMBOLS SHOWN ARE USED ON THE DRAWINGS

LIGHTING:

**SEE INDIVIDUAL FIXTURE SCHEDULE FOR SPECS

- = POLE LIGHTS
- = WALL MOUNTED LIGHTING FIXTURE
- = DOCKLIGHT
- = TRACK LIGHT - QUANTITY OF HEADS AS INDICATED ON DRAWING
- = RECESSED / SURFACE DOWNLIGHT
- = 2'x2' LAY-IN / SURFACE MOUNTED FLUORESCENT FIXTURE
- = 2'x4' LAY-IN / SURFACE MOUNTED FLUORESCENT FIXTURE
- = 2'x2' LAY-IN / SURFACE MOUNTED DIRECT / INDIRECT FLUORESCENT FIXTURE
- = 2'x4' LAY-IN / SURFACE MOUNTED DIRECT / INDIRECT FLUORESCENT FIXTURE
- = 2'x2' LAY-IN / SURFACE MOUNTED PARABOLIC FLUORESCENT FIXTURE
- = 2'x4' LAY-IN / SURFACE MOUNTED PARABOLIC FLUORESCENT FIXTURE
- = 2'x2' LAY-IN / SURFACE MOUNTED EMERGENCY, UNSWITCHED FLUORESCENT FIXTURE
- = 2'x4' LAY-IN / SURFACE MOUNTED EMERGENCY, UNSWITCHED FLUORESCENT FIXTURE
- = 8' INDUSTRIAL / STRIP FLUORESCENT FIXTURE
- = 4' INDUSTRIAL / STRIP FLUORESCENT FIXTURE
- = 8' SURFACE WALL MOUNT FLUORESCENT FIXTURE
- = 4' SURFACE WALL MOUNT FLUORESCENT FIXTURE
- = HID LIGHTING FIXTURE, HI-BAY
- = HID LIGHTING FIXTURE, HI-BAY W/QUARTZ RESTRIKE
- = ILLUMINATED EXIT SIGN
- = ILLUMINATED DOUBLE SIDED EXIT SIGN
- = ILLUMINATED EXIT SIGN, DIRECTIONAL ARROWS AS INDICATED
- = EMERGENCY BATTERY UNIT/EXIT SIGN COMBINATION PACK
- = EMERGENCY BATTERY UNIT
- = EMERGENCY REMOTE HEAD
- = EMERGENCY REMOTE HEADS
- = PHOTO CELL
- = FAN/LIGHT COMBINATION

CIRCUITING:

- = CONDUIT / WIRING CONCEALED IN WALL OR CEILING
- EXP = CONDUIT / WIRING RUN EXPOSED
- UN = CONDUIT / WIRING CONCEALED IN FLOOR OR UNDERGROUND
- OH = CONDUIT / WIRING OVERHEAD
- = BRANCH CIRCUIT HOMERUN TO PANELBOARD OR MCC
- = BRANCH CIRCUIT HOMERUN(S) TO PANELBOARD OR MCC QUANTITY OF ARROWS INDICATES CIRCUIT QUANTITY NUMERALS INDICATE UNIT OR CIRCUIT NUMBER
- = HATCH MARKS INDICATE UNSWITCHED CIRCUIT
- G = GROUND ROD, 3/4""x10'-0" LONG, COPPERCLAD STEEL U.N.O. (ALL CONNECTIONS EXOTHERMIC ALLY WELDED)
- = CONDUIT SEAL- OFF FITTING
- E = EMERGENCY CIRCUIT WIRING, 2 #12 AWG, C. (U.N.O.)
- N/E = NORMAL EMERGENCY CIRCUIT WIRING, 2 #12 AWG, C. (U.N.O.)
- N/L = NIGHT LIGHTING CIRCUIT WIRING, 2 #12 AWG, C. (U.N.O.)
- SR-1 = SURFACE RACEWAY, NUMBER INDICATES SPECIFICATION NUMBER
- = CONNECT TO EXISTING
- CT-2/12 = CABLE TRAY 6" ABOVE ACCESSIBLE CEILING UNLESS OTHERWISE NOTED '#/#' INDICATES TRAY HEIGHT / WIDTH

DISTRIBUTION & MOTOR CONTROL:

- T = POWER TRANSFORMER
- = PANELBOARD 120/208V (SEE PANEL SCHEDULE)
- = PANELBOARD 277/480V (SEE PANEL SCHEDULE)
- S_T = MANUAL MOTOR STARTER, SINGLE POLE WITH OVERLOADS
  P = PILOT LIGHT
  HOA = HOA SELECTOR SWITCH
- S_{T2} = MANUAL MOTOR STARTER, TWO POLE WITH OVERLOADS
  P = PILOT LIGHT
  HOA = HOA SELECTOR SWITCH
- S_{T3} = MANUAL MOTOR STARTER, THREE POLE WITH OVERLOADS
  PILOT LIGHT
  HOA = HOA SELECTOR SWITCH
- S_{M3} = MANUAL MOTOR STARTER, THREE POLE WITHOUT OVERLOADS
- = DISCONNECT, SEE DISCONNECT SCHEDULE FOR SPECS
- C# = CONTACTOR, ELECTRICALLY HELD
- TC = TIME CLOCK
- = PUSHBUTTON CONTROL STATION
  ST = START
  SP = STOP
  P = PILOT
  SS = SELECTOR (ON/OFF)
  LOS = STOP W/LOCKOUT DEVICE
  ROL = REMOTE OFF LOCAL
  HOA = HAND OFF AUTO
  EM = EMERGENCY OFF/STOP
- FS = CONTROL SWITCH DEVICE
  LS = FLOAT/LEVEL SWITCH
  QS = TIME SWITCH
  PE = PNEUMATIC / ELECTRIC SWITCH
  PT = PRESSURE TRANSMITTER (ON/OFF)
  TS = TEMPERATURE SWITCH
  MS = MOTION DETECTION SWITCH
  ZS = LIMIT SWITCH
  PS = PRESSURE SWITCH
  EP = ELECTRIC / PNEUMATIC SWITCH
  FS = FLOW SWITCH
  OS = TORQUE SWITCH
- = FIELD INSTRUMENT
- = ELECTRIC MOTOR
  F = FRACTIONAL HORSEPOWER
- = ELECTRIC UNIT HEATER
- DM = DAMPER MOTOR
- T = THERMOSTAT
- M = UTILITY METER
- = UTILITY POLE
- J = JUNCTION BOX, SIZE AS REQUIRED, FOR CONNECTION OF DEVICE IF NOTED.
- = JUNCTION BOX, WALL MOUNTED, RECESSED. FOR CONNECTION OF DEVICE IF NOTED.
- = JUNCTION BOX, FLOOR MOUNTED, RECESSED. FOR CONNECTION OF DEVICE IF NOTED.
- GH = GASKET HEATER
- SV = SOLENOID VALVE
- MH = MANHOLE
- HH = HANDHOLE
- MOV = ELECTRIC MOTOR OPERATED VALVE

WIRING DEVICES:

- S = SINGLE POLE SWITCH
- S_{LV} = LOW VOLTAGE WALL STATION
- S_{LV2} = LOW VOLTAGE WALL STATION, # INDICATES THE NUMBER OF BUTTONS
- S_{+C} = SINGLE POLE SWITCH W/ 0-10V CONTROLS
- S_{D+C} = DIMMER SWITCH W/ 0-10V CONTROLS
- S_2 = DOUBLE POLE SWITCH
- S_3 = THREE-WAY SWITCH
- S_4 = FOUR-WAY SWITCH
- S_{WP} = WEATHER PROOF SWITCH
- S_K = KEY OPERATED SWITCH, SINGLE POLE U.N.O.
- S_P = SWITCH WITH PILOT LIGHT
- S_D = DIMMER SWITCH
- S_{MC} = MOMENTARY CONTACT SWITCH
- S_A = SINGLE POLE SWITCH CONTROLS FIXTURES WITH SAME LETTER DESIGNATION (TYP. FOR ALL SWITCHES ABOVE)
- S_O = MOTION SENSOR WALL SWITCH (OCCUPANCY SENSOR)
- OS = MOTION SENSOR SWITCH CEILING MTD (OCCUPANCY SENSOR)
- = MOTION SENSOR CORNER MTD (OCCUPANCY SENSOR)
- J = JUNCTION BOX W/ POWER PACK FOR CEILING MTD MOTION SENSOR(S)
- DL = DAY LIGHT SENSOR
- = SIMPLEX RECEPTACLE
- = DUPLEX RECEPTACLE
  GFI = GROUND FAULT INTERRUPTER
  TL = TWIST LOCKING
  WP = WEATHERPROOF, USE IN USE TYPE COVERS
  48" = MOUNTING HEIGHT A.F.F.
  CR = CORROSION RESISTANT
  T = TABLETOP MOUNTED RECEPTACLE
  C = MOUNT DEVICE ABOVE COUNTER
  TR = TAMPER RESISTANT
  IG = ISOLATED GROUNDT
  HG = HOSPITAL GRADE
- = QUAD RECEPTACLE
- = DUPLEX RECEPTACLE, CONNECTED TO THE EMERGENCY SYSTEM
- = SPECIAL RECEPTACLE, TO MATCH EQUIPMENT
- = DUPLEX RECEPTACLE, SPLIT WIRED
- = DUPLEX SPECIAL PURPOSE RECEPTACLE
- USB = RECEPTACLE W/ USB CHARGING PORT
- = RECEPTACLE/CLOCK HANGER OR CLOCK/SPEAKER
- = FLOOR OUTLET SIMPLEX RECEPTACLE
- = FLOOR OUTLET DUPLEX RECEPTACLE SPECIAL PURPOSE CONNECTION OR PROVISION FOR CONNECTION
- = COMBINATION RECEPTACLE AND TELEPHONE / DATA FLOOR BOX FLUSH MOUNTED UNLESS OTHERWISE NOTED
- = DUPLEX RECEPTACLE, CEILING MOUNTED
- PP = POWER / TELEPHONE / DATA POWER POLE
- ADO = AUTOMATIC POWERED DOOR OPERATOR
- DP = AUTOMATIC POWERED DOOR OPERATOR PUSH PLATE, WALL MOUNTED

BURG., ACCESS, & CCTV LEGEND:

- C = DOOR CONTACTS
- M_X = MOTION DETECTORS
  R = REQUEST TO EXIT
  LR = LONG RANGE
- K = BURGLAR ALARM KEYPADS
- S = SIREN
- DS = DOOR STRIKE
- RM = READER INTERFACE MODULE
- C = CAMERAS (1-EXTERIOR, 3-INTERIOR)
- R = CARD READERS
- G = GLASS BREAK DETECTOR
- ACC = BURGLAR ACCESS WIRING
- LX = BURGLAR LX BUS WIRING
- KEY = BURGLAR KEY WIRING
- CCTV = CCTV WIRING
- CX = COAX WIRING
- FO = FIBER OPTIC WIRING
- CAT 5E = CAT 5E WIRING
- CAT 6 = CAT 6 WIRING

FIRE ALARM / SECURITY SYMBOLS:

- FACP = FIRE ALARM CONTROL PANEL
- AVPS = AUDIO VISUAL POWER SUPPLY
- FAAP = FIRE ALARM ANNUNCIATOR PANEL
- AMP = VOICE EVAC. AMPLIFIER
- PS = PULL STATION
- W = WATER FLOW CONNECTION
- T = VALVE TAMPER CONNECTION
- F = FARMOSTAT (LOW TEMP)
- A = LOW AIR CONNECTION
- H = HEAT DETECTOR
- S = SMOKE DETECTOR W/ AUDIBLE BASE
- S = SMOKE DETECTOR
- CO = CARBON MONOXIDE DETECTOR
- D = DUCT SMOKE DETECTOR
- I = INPUT MODULE
- I_2 = 2 INPUT MODULE
- I_{10} = 10 INPUT MODULE
- N = NOTIFICATION (Control) MODULE
- R = RELAY MODULE
- R_6 = 6 RELAY MODULE
- HS = HORN / SPEAKER STROBE (CEILING MOUNTED)
- = STROBE (CEILING MOUNTED)
- = WALL MOUNTED STROBE
- F = WALL MOUNTED HORN
- F = WALL MOUNTED HORN/STROBE
- DH = DOOR HOLDER
- SLC = SIGNAL LINE CIRCUIT
- NC = NOTIFICATION CIRCUIT
- SBUS = SBUS CIRCUIT

DATA DEVICES:

- = SINGLE DATA
- 2 = DATA - NUMBER INDICATES NUMBER OF TERMINATIONS
- = SINGLE VOICE
- 2 = VOICE - NUMBER INDICATES NUMBER OF TERMINATIONS
- = SINGLE DATA / SINGLE VOICE
- V2 D2 = DATA / VOICE
  LETTER INDICATES DATA OR VOICE
  NUMBER INDICATES NUMBER OF TERMINATIONS
- W = WALL PHONE
- = SURFACE MOUNT SPEAKER
- = FLOOR BOX SINGLE DATA
- = FLOOR BOX SINGLE VOICE
- = FLOOR BOX DATA / VOICE
- P = CEILING PROJECTOR
- WAP = CEILING WIRELESS ACCESS POINT
- = CROSS-CONNECT
- = ANTENNA
- V = VOLUME CONTROL
- TV = CATV
- = CEILING SPEAKER
- XXX = CROSS CONNECT FIELDS
- PPNL = PATCH PANEL
- MC = MAIN CROSS CONNECT
- IC = INTERMEDIATE CROSS CONNECT
- TR = TELECOMMUNICATIONS ROOM
- ER = EQUIPMENT ROOM
- EF = ENTRANCE FACILITY
- TC = TELECOMMUNICATIONS CABINET
- TE = TELECOMMUNICATIONS ENCLOSURE
- CP = CONSOLIDATION POINT
- = SLEEVE (SIZE)
- = GROUND
- J = JUNCTION BOX

DRAWING LIST

10/05/2016 - AS-BUILT

DWG. NO.	DRAWING NAME	REV. NO.	DATE
	ELECTRICAL		
E001	COVER SHEET - ELECTRICAL		10/05/2016
E002	GENERAL NOTES - ELECTRICAL		10/05/2016
E011	SITE PLAN - ELECTRICAL	1	10/05/2016
E011F	SITE PLAN - FOOT-CANDLE LEVELS	1	10/05/2016
E501	ONE LINE DIAGRAM AND SCHEDULES - ELECTRICAL		10/05/2016

Gettle
ELECTRICAL
AUTOMATION
INFRASTRUCTURE
DATACOM
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Giving business the power to grow®
ph. 325 Busser Road, PO Box 337, Emigsville, PA 17318-0337 main: 717-843-1231
144 Lakefront Drive, Hunt Valley, MD 21030 main: 410-329-2084
Gettle.com

TRADEPOINT ATLANTIC
AUTOMOTIVE & RO-RO DISTRIBUTION FACILITY
SPARROWS POINT
BALTIMORE, MARYLAND
COVER SHEET - ELECTRICAL

		BY
	AS-BUILT	TLM
10-05-2016	DATE	
No.	REVISION	

DRAWN BY: TLM	CHECKED BY: GAM	JOB NUMBER: 163722-11	-
SCALE: AS NOTED	DATE: 7/21/15	FILE:	

E001
SHEET NUMBER

TRUE SHEET SIZE 30"x42"

10/5/2016 11:55 AM J:\2016 Jobs and Bids – Electrical\163722-11 RoRO ARCO,tradepoint RORO areas lighting,03-10-16\Drawings\E001 COVER SHEET - ELECTRICAL.dwg
TMUNDIS

GENERAL PROJECT NOTES:

1. THE ELECTRICAL CONTRACTOR SHALL FURNISH ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY FOR THE INSTALLATION OF THE COMPLETE ELECTRICAL SYSTEM AS SHOWN ON THE DRAWINGS. ELECTRICAL CONTRACTOR SHALL VISIT AND BECOME ACQUAINTED WITH ALL EXISTING CONDITIONS.

2. THE ELECTRICAL INSTALLATION FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR SHALL COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE (NEC) AND OF THE CODE OF THE LOCAL AUTHORITY HAVING JURISDICTION.

3. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS INSPECTIONS, AND/OR LICENSES REQUIRED FOR THE EXECUTION OF THE WORK SHOWN ON THESE DRAWINGS.

4. THE DRAWINGS ARE DIAGRAMMATIC, INTENDING TO SHOW GENERAL RUNS AND LOCATIONS OF EQUIPMENT AND SPECIALITIES, AND DO NOT NECESSARILY SHOW ALL REQUIRED OFFSETS, SPACING REQUIREMENTS, ETC. ADJUSTMENTS IN EXACT PANELBOARD, TRANSFORMER, DISCONNECT, SWITCHES, CONDUIT, ETC. LOCATIONS MAY BE NECESSARY TO AVOID CONFLICT WITH OTHER TRADES AND COMPLY WITH ALL WORKING CLEARANCES AS REQUIRED BY THE NATIONAL ELECTRIC CODE AND MANUFACTURER'S EQUIPMENT REQUIREMENTS. WORK THAT IS NOT EXPLICITLY DETAILED ON THE DRAWINGS OR THAT WHICH APPEARS BELOW ANY AND ALL CODE COMPLIANCE REQUIREMENTS SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR EVALUATION.

5. ALL WORK SHALL BE PERFORMED IN A NEAT, WORKMANLIKE, AND SAFE MANNER. ALL WORK MUST BE IN STRICT ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REQUIREMENTS.

6. ALL FABRICATED ASSEMBLIES AND MANUFACTURED ITEMS OF ELECTRICALLY OPERATED EQUIPMENT SHALL BE UL LISTED AND CONFORM TO FACTORY MUTUAL STANDARDS IF APPLICABLE.

7. ELECTRICAL CONTRACTOR SHALL PROVIDE NAMEPLATES ON ALL SWITCHGEAR, SWITCHBOARDS, PANELBOARDS, DISCONNECTS, ATS SWITCHES, TRANSFORMERS, INDICATING EQUIPMENT NAME, VOLTAGE, POWER SOURCE, EQUIPMENT BEING FED, ETC.

SAFETY SWITCHES:

1. SAFETY SWITCHES SHALL BE OF SIZE SHOWN ON DRAWINGS, FUSIBLE AS REQUIRED, AND CONTAINED IN A GENERAL PURPOSE ENCLOSURE. ALL SWITCHES SHALL NE NEMA HEAVY DUTY TYPE HD AND QUICK-MAKE, QUICK-BREAK OPERATING.

2. ALL SAFETY SWITCHES SHALL BE OF PROPER RATING AND HAVE DUAL INTERLOCKS DESIGNED TO INTERLOCK SWITCH DOOR WITH OPERATING MECHANISM. AN ARRANGEMENT SHALL BE PROVIDED FOR LOCKING SWITCH HANDLE IN "ON" OR "OFF" POSITION.

3. WHERE USED OUTDOORS, SWITCHES SHALL BE NEMA 3R, RAINTIGHT CONSTRUCTION.

CONVENIENCE RECEPTACLES:

1. CONVENIENCE RECEPTACLES SHALL BE SPECIFICATION GRADE, NEMA STANDARD DUPLEX, RATED 20 AMPS, 120 VOLT, 3 WIRE, GROUNDING TYPE FOR PARALLEL-BLADE 2 AND 3 PRONG ATTACHMENT CAPS. ALL RECEPTACLES SHALL BE ENCLOSED IN A HIGH HEAT, NON-FLAMMABLE, NON-HYDROSCOPE MOLDED COMPOUND CAST PROVIDED WITH WIDE PLASTER EARS. EACH TERMINAL SHALL BE PROVIDED WITH THE BINDING SCREWS LOCATED ON THE RECEPTACLE SIDE AND SO ARRANGED THAT BACK OF SIDE WIRING IS POSSIBLE.

2. WEATHERPROOF RECEPTACLES SHALL BE STANDARD UNITS WITH WEATHERPROOF COVER. OUTDOOR RECEPTACLES SHALL BE GFI DUPLEX RECEPTACLES.

3. GFI RECEPTACLES SHALL BE USED IN ALL LOCATIONS REQUIRED BY THE NEC.

GROUNDING:

1. ALL EQUIPMENT AND SYSTEMS SHALL BE BONDED AND GROUNDED IN ACCORDANCE WITH THE NEC, UTILITY REQUIREMENTS, AND ANY LOCAL REQUIREMENTS.

2. ALL CONNECTIONS TO APPARATUS AND CONDUITS SHALL BE MADE WITH SOLDERLESS CONNECTORS. CONNECTORS SHALL BE SECURELY BOLTED OR CLAMPED TO THE EQUIPMENT. ALL CONTACT SURFACES SHALL BE THOROUGHLY CLEANED BEFORE CONNECTIONS ARE MADE TO ENSURE A GOOD METAL TO METAL CONTACT.

SWITCHGEAR, SWITCHBOARDS, PANELBOARDS, MOTOR CONTROL CENTERS

1. ALL SWITCHGEAR, SWITCHBOARDS, AND PANELBOARDS SHALL BE THE SIZE AND CONTAIN THE NUMBER OF CIRCUIT BREAKERS AS INDICATED ON THE DRAWINGS. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE MECHANICAL CONTRACTOR AND ALL OTHER EQUIPMENT SUPPLIERS TO ENSURE THE SIZES OF THE CIRCUIT BREAKERS SHOWN ON THE ONE-LINE DIAGRAM AND PANEL SCHEDULES ARE CORRECT PRIOR TO ORDERING.

2. THE AIC OR SCCR RATINGS OF ALL EQUIPMENT SUPPLIED BY THE ELECTRICAL CONTRACTOR WHICH INCLUDES SWITCHGEAR, SWITCHBOARDS, PANELBOARDS, ATS SWITCHES, MOTOR CONTROL CENTERS, ETC., AS CALLED OUT ON THE ONE LINE DIAGRAM IS PRELIMINARY AND SHALL BE VERIFIED BY A SHORT CIRCUIT STUDY CONDUCTED OR SUPPLIED BY THE ELECTRICAL CONTRACTOR. THE ELECTRICAL CONTRACTOR SHALL SUPPLY EQUIPMENT WITH AN AIC OR SCCR RATING THAT IS ADEQUATE BASED ON THE RESULTS OF THE SHORT CIRCUIT STUDY. THE SHORT CIRCUIT STUDY SHALL BE CONDUCTED BASED ON AVAILABLE FAULT CURRENT PROVIDED BY THE LOCAL UTILITY.

3. ALL PANELBOARDS SHALL BE SUPPLIED WITH A FULLY RATED AIC RATING UNLESS NOTED OTHERWISE ON THE DRAWINGS. ALL SERIES RATED PANELBOARDS AND DEVICES SHALL BE LABELED PER NEC 110.22 (A),(B),(C).

4. ALL PANELBOARDS FED FROM K-RATED TRANSFORMERS SHALL BE SUPPLIED WITH 200% RATED NEUTRAL KITS.

5. CONTRACTOR SHALL LABEL THE SERVICE EQUIPMENT WITH THE MAXIMUM AVAILABLE FAULT CURRENT PER NEC 110.24.

6. ALL PANELBOARDS SHALL BE SUPPLIED WITH AN ENCLOSURE SUITABLE FOR THE ENVIRONMENT.

7. ALL PANELBOARDS CIRCUITS FOR POWER AND LIGHTING SHALL SHALL BE CONNECTED IN SUCH MANNER THAT THE CONNECTED LOADS WILL BALANCE AS CLOSELY AS PRACTICAL, THE ELECTRICAL CONTRACTOR SHALL CORRECT ANY UNFAVORABLE LOAD CONDITION IN ANY PART OF THE ELECTRICAL SYSTEM.

8. IN GENERAL, ALL CABINETS SHALL BE INSTALLED SO THAT THE OPERATING HANDLE OF THE TOP CIRCUIT BREAKER WILL NOT EXCEED 78" ABOVE FINISHED FLOOR AND THE CABINET SHALL NOT BE LESS THAN 12" ABOVE FINISHED FLOOR.

9. ALL PANELBOARDS SHALL BE MOUNTED IN A SHEET STEEL ENCLOSING CABINET DESIGNED FOR SURFACE OR FLUSH MOUNTING AS CALLED OUT OR SHOWN ON THE DRAWINGS.

10. MOTOR CONTROLLERS FURNISHED SHALL CONFORM TO THE LATEST APPLICABLE NEMA STANDARDS FOR TYPE, SIZE, AND DUTY AS SPECIFICALLY APPLIED. MAGNETIC CONTROLLERS SHALL PROVIDE THERMAL OVERLOAD PROTECTION IN EACH LINE.

11. ANY MOTOR OUT OF SITE OF ITS CONTROLLER AND ANY CONTROLLER OUT OF SIGHT OF ITS BRANCH BRANCH CIRCUIT BREAKER SHALL BE PROVIDED WITH A DISCONNECTING SWITCH IN ACCORDANCE WITH ARTICLE 430 OF THE NEC.

JUNCTION AND PULL BOXES

1. JUNCTION AND PULL BOXES SHALL NOT BE PLACED IN LOCATIONS MADE INACCESSIBLE BY PIPING, DUCTS, CONDUITS, OR OTHER EQUIPMENT.

2. JUNCTION AND PULL BOXES SHALL HAVE A UL LABEL, MANUFACTURER'S LABEL, AND A LABEL THAT SPECIFIES THE GAUGE THICKNESS.

3. JUNCTION AND PULL BOXES SHALL BE OF RIVETED OR WELDED STEEL CONSTRUCTION AND HAVE PLAIN SHEET METAL SCREW-ATTACHED COVERS. FLUSH MOUNTED BOXES SHALL BE FITTED WITH A COVER THAT OVERLAPS THE BOX 1" ALL AROUND.

OUTLET BOXES

1. OUTLET BOXES SHALL BE SHEET STEEL, ZINC COATED, AND BE OF A CLASS TO SATISFY THE INTENDED REQUIREMENT.

2. CONCEALED OUTLET BOXES SHALL BE NOT LESS THAN FOUR INCHES SQUARE OR RECTANGULAR AND PROVIDED WITH THE PROPER SIZE KNOCKOUTS FOR THE CONDUITS USED. ALL UNUSED KNOCKOUTS REMAIN CLOSED. BOXES IN PLASTER CONSTRUCTION SHALL BE PROVIDED WITH APPROVED COVERS OR PLASTER RINGS.

3. BOXES SHALL BE OF UNIT CONSTRUCTION AND OF SIZE REQUIRED FOR THE NUMBER OF DEVICES SHOWN. THE SHAPE OF THE BOX SHALL BE SUCH AS TO PERMIT SURFACING MATERIAL TO BE CUT IN STRAIGHT LINES AND TO FIT CLOSELY AROUND THE BOX. THE BOX SHALL BE SO PLACED THAT THE COVER PLATE WILL BE FLUSH WITH THE FINISHED WALL SURFACE.

4. ALL BOXES FOR LIGHTING OUTLETS SHALL BE ROUND OR OCTAGONAL AND PROVIDED WITH FIXTURE STUDS OF A SIZE SUITABLE FOR THE WEIGHT OF THE FIXTURE TO BE SUPPORTED. IN NO CASE SHALL THE FIXTURE STUD BE LESS THAN 3/8 INCH. THE STUD SHALL BE INTEGRAL WITH THE BOX.

5. OUTLET BOXES USED FOR EXTERIOR OUTLETS OR FOR EXPOSED INTERIOR CONDUIT RUNS SHALL BE OF CAST RUST RESISTING METAL. GASKET COVERS SHALL BE PROVIDED WHERE THE OUTLET IS EXPOSED TO WEATHER OR MOISTURE.

TRANSFORMERS:

1. UNLESS OTHERWISE NOTED, TRANSFORMERS SHALL BE GENERAL PURPOSE, DRY TYPE, 150-DEGREE CELSIUS RISE, VENTILATED, OR IN THE APPROPRIATE ENCLOSURE FOR THE AREA.

2. FOR TRANSFORMERS WITH A K-RATING, ELECTRICAL CONTRACTOR TO SUPPLY A TRANSFORMER FROM A MANUFACTURER WITH A K-RATING TO WITHSTAND NON-LINEAR LOADS THAT MEET OR EXCEED THE K-RATING AS CALLED OUT ON THE DRAWINGS.

3. TRANSFORMERS INSTALLATION TO COMPLY WITH ALL REQUIREMENTS OF NEC ARTICLE 450 AND THE REQUIREMENTS OF THE TRANSFORMER MANUFACTURER. ONLY TRANSFORMERS 45 KVA AND AND SMALLER SHALL BE INSTALLED IN HOLLOW SPACES ABOVE CEILINGS PROVIDED PROPER VENTILATION REQUIREMENTS ARE MET PER NEC 450,13 (B).

WIRING, CABLE, AND CONDUIT SYSTEMS:

1. ALL BRANCH CIRCUIT WIRING SHALL BE TYPE THHN/THWN-2 600 VOLT COPPER CONDUCTORS COLOR CODED PER NEC REQUIREMENTS. MINIMUM SIZE CONDUCTOR FOR BRANCH CIRCUITS SHALL BE #12. ALL #10 AND SMALLER WIRE SHALL BE SOLID, ALL #8 AND LARGER WIRE SHALL BE STRANDED. ALL FEEDER CIRCUIT WIRING SHALL BE TYPE THHN/THWN-2 600 VOLT COPPER 600 VOLT COPPER CONDUCTORS COLOR CODED PER NEC REQUIREMENTS. ALUMINUM TYPE XHHW-2 WIRE SHALL BE PERMITTED FOR FEEDERS IS SHOWN ON THE ONE LINE DRAWING PROVIDED IT IS ACCEPTABLE PER EQUIPMENT MANUFACTURER'S INSTRUCTIONS AND PROVIDED AN ANTIOXIDANT COMPOUND THAT IS LISTED AND APPROVED FOR THE SPECIFIC USE IS APPLIED TO ALL ALUMINUM FEEDER TERMINATION POINTS.

2. CONDUCTOR SIZES INDICATED ON DRAWINGS ARE BASED ON USING THE 75-DEGREE CELSIUS COLUMN OF NEC AMPACITY TABLES AND ARE BASED ON EQUIPMENT USED IN 100 AMP AND LESS CIRCUITS BEING BEING SUPPLIED FROM THE MANUFACTURER WITH TERMINATION LUGS MARKED AND RATED 75-DEGREE CELSIUS. IF 100 AMP OR LESS EQUIPMENT OR CIRCUITS ARE NOT SUPPLIED WITH 75-DEGREE CELSIUS MARKED AND RATED LUGS, THE CONTRACTOR SHALL SUPPLY WIRE FROM THE 60-DEGREE CELSIUS COLUMN ON THE NEC AMPACITY TABLES AND MODIFY THE CONDUIT SIZE TO MEET NEC REQUIRED CONDUIT FILL. LIGHTING AND RECEPTACLE POWER CIRCUITS CAN BE COMBINED AND RUN IN A SINGLE 3/4" CONDUIT.

3. AT ELECTRICAL CONTRACTOR'S DISCRETION, A MAXIMUM NUMBER OF FOUR (4) SINGLE POLE 20 AMP BRANCH LIGHTING AND RECEPTACLE POWER CIRCUITS CAN BE RUN IN A SINGLE, PROPERLY SIZED CONDUIT. FEEDER CIRCUITS SHALL NOT BE COMBINED INTO A SINGLE CONDUIT UNLESS WRITTEN PERMISSION IS PROVIDED BY THE ENGINEER.

4. ALL CONDUITS SHALL MEET INSTALLATION REQUIREMENTS OF THE NEC. BURIED OR CONCRETE ENCASED CONDUITS SHALL BE PVC. EMT SHALL BE BE USED ON ABOVE GROUND CIRCUITS WHERE IT IS NOT SUBJECT TO DAMAGE. WHERE CONDUIT IS SUBJECT TO DAMAGE, GALVANIZED RIGID CONDUIT SHALL BE USED. BUSHED ARMORED MC CABLE MAY BE USED IN CONCEALED AREAS FOR LIGHTING AND POWER WHERE WHERE AS PERMISSIBLE BY CODE. GENERALLY, CONDUITS SHALL BE INSTALLED CONCEALED IN THE BUILDING CONSTRUCTION AS STRAIGHT AND DIRECT AS POSSIBLE. CONDUITS INSTALLED AND EXPOSED SHALL BE INSTALLED AT RIGHT ANGLES TO, AND OR PARALLEL WITH BUILDING LINES.

5. ALL CONDUITS SHALL BE SECURELY SUPPORTED FROM BUILDING STRUCTURE IN PROPER INTERVALS WITH STRAPS AND HANGERS APPROVED FOR USE AND AS REQUIRED BY THE NEC.

6. ALL CONDUIT FITTINGS SHALL BE APPROVED TYPE. COUPLINGS AND CONNECTIONS SHALL BE COMPRESSED TYPE FOR EMT AND THREADED TYPE FOR RIGID CONDUIT.

7. A SEPARATION OF AT LEAST 6" SHALL BE MAINTAINED BETWEEN CONDUITS AND HOT WATER/ STEAM LINES.

8. CONDUITS TERMINATING IN STEEL BOXES SHALL BE PROVIDED WITH APPROVED SLIP JOINT FITTINGS WHERE THEY PASS THROUGH EXPANSION JOINTS.

9. FOR MOTORS AND EQUIPMENT REQUIRING FLEXIBLE CONDUIT (NOT INCLUDING LIGHTING FIXTURES), CONDUIT SHALL BE LIQUID TYPE, AND NOT SHALL NOT EXCEED 18".

10. SEALING FITTINGS AND APPROVED SEALING COMPOUND SHALL BE INSTALLED IN ACCORDANCE WITH THE NEC. SEAL ALL CONDUIT PENETRATIONS OF FIRE-RATED WALLS WITH AN APPROVED COMPOUND. PROVIDE RUBBER BOOT, FLASHING, CAULKING, ETC., TO PROVIDE A WEATHERPROOF INSTALLATION. ELECTRICAL CONTRACTOR SHALL NOT CUT, MODIFY, BURN, OR DAMAGE ANY REINFORCING ROOFING STEEL UNLESS PRIOR AUTHORIZATION HAS BEEN GIVEN BY THE STRUCTURAL ENGINEER.

11. THE CONDUCTOR SIZES TO ROOF MOUNTED EQUIPMENT ARE BASED ON THE LENGTH OF ANY EXPOSED CONDUITS NOT EXCEEDING 10' OR 10% OF THE TOTAL CONDUIT RUN TO A SPECIFIC PIECE OF EQUIPMENT. IF THIS LENGTH IS EXCEEDED, ELECTRICAL CONTRACTOR SHALL CONTACT THE ENGINEER FOR PROPER CONDUCTOR DERATING DUE TO POTENTIAL HIGH ROOF TEMPERATURES WHICH MAY REQUIRE CONDUCTOR AND/OR CONDUIT SIZE CHANGES. HORIZONTAL CONDUCTOR RUNS ON A ROOF SHALL BE 6" MINIMUM ABOVE THE ROOF AT ALL POINTS.

12. ALL CONDUCTOR SPLICING SHALL BE DONE IN OUTLET BOXES OR JUNCTION BOXES, AND NOT IN CONDUITS. SPLICES OF #10 WIRE AND SMALLER SHALL BE MADE WITH AN APPROVED PRESSURE CONNECTOR AND INSULATOR CAP. CONDUCTOR SPLICING OF #8 AND LARGER SHALL BE MADE OF COMPRESSION TYPE SLEEVES, INSTALLED WITH PROPER TOOLS, AND INSULATED TO THE SAME AS THE ORIGINAL INSULATION WITH AN APPROVED TYPE TAPE HAVING HIGH DIELECTRIC STRENGTH.

13. IN GENERAL, ALL FEEDER CONDUCTORS SHALL BE SELECTED BASED ON A VOLTAGE DROP NOT TO EXCEED 2%, IN GENERAL, ALL BRANCH CONDUCTORS SHALL BE SELECTED BASED ON A VOLTAGE DROP NOT TO EXCEED 3%. GENERAL PURPOSE 120 VOLT RECEPTACLE CIRCUITS SHALL UTILIZE #12 CONDUCTORS FOR EACH BRANCH UP TO A LENGTH OF 75', #10 CONDUCTORS FOR A EACH BRANCH CIRCUIT OVER 75' UP TO A LENGTH OF 160', AND #8 CONDUCTORS FOR EACH BRANCH CIRCUIT OVER 160' UP TO A LENGTH OF 230'. REFER TO NOTES ON DRAWINGS FOR VARIATIONS OF THESE CONDUCTOR SIZES BASED ON AMPERAGES OF EACH CIRCUIT.

LIGHTING:

1. INSTALL EMERGENCY AND EXIT LIGHTING AS SHOWN ON THE DRAWINGS THAT MEET ALL REQUIRED CODES. EMERGENCY LIGHTING AND EXIT SIGN FIXTURES SHALL BE INSTALLED PER MANUFACTURERS INSTRUCTIONS.

2. LIGHTING FIXTURES LOCATED ON EXTERIOR OF BUILDING SHALL BE OF WEATHERPROOF CONSTRUCTION, GASKETED, AND INSTALLED WITH NON-FERROUS METAL SCREWS FINISHED TO MATCH THE FIXTURE.

3. FLUSH MOUNTED RECESSED FIXTURES SHALL BE INSTALLED SO AS TO COMPLETELY ELIMINATE LIGHT LEAKAGE BETWEEN THE FRAME.

4. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL NECESSARY ADDITIONAL AUXILIARY SUPPORTING STEEL FOR FIXTURES NOT MOUNTED ON BUILDING FRAMEWORK, AND WHERE NECESSARY TO SPAN THE CEILING SUPPORT MEMBERS.

5. WHERE FIXTURES ARE EQUIPPED WITH ADDITIONAL SOCKETS FOR EMERGENCY LAMPS, THE SOCKETS SHALL BE WIRED WITH SEPARATE WIREWAYS, IN ACCORDANCE WITH THE REQUIREMENTS OF THE NEC. FIXTURES SHALL BE APPROVED FOR THE PURPOSE.

LOCAL SWITCHES:

1. LOCAL WALL SWITCHES SHALL BE HEAVY DUTY, SPECIFICATION GRADE, NEMA STANDARD, FLUSH, QUIET-OPERATING TUMBLER TYPE RATED 20 AMPS, 120/277 VOLTS, ALL WALL SWITCHES SHALL HAVE PLANTER EARS AND BE SINGLE OR MULTIPLE POLE AS REQUIRED OR INDICATED ON DRAWINGS.

FIRE ALARM SYSTEM:

1. NOT PART OF THIS SCOPE OF WORK.

MOUNTING HEIGHTS - U.N.O.

- SWITCH = 42"
- RECEPTACLE (OFFICE) = 18"
- RECEPTACLE (MANUFACTURING/WAREHOUSE) = 48"
- FIRE ALARM PULL STATION = 42"
  HORN STROBE = 80"
  STROBE = 80"
- WALL SCONCE = 66"
- COMMUNICATION OUTLETS (OFFICE) = 18"
- COMMUNICATION OUTLETS (MANUFACTURING/WAREHOUSE) = 48"
- DISCONNECT SWITCH - 66" TO TOP OF HANDLE
- PANEL - 66" TO TOP OF PANEL
- DOCKLIGHT - 72"
- LIGHT FIXTURE - SEE FIXTURE SCHEDULE

CODE REFERENCES

PENNSYLVANIA

- NEC 2008
- IECC 2009
- NFPA 72 2016

MARYLAND

- NEC 2014
- IECC 2015
- NFPA 72 2016

ABBREVIATIONS

AIC = AMPERE INTERRUPTING CAPACITY
AFF = ABOVE FINISHED FLOOR
AFG = ABOVE FINISHED GRADE
AHJ = AUTHORITY HAVING JURISDICTION
ATS = AUTOMATIC TRANSFER SWITCH
BFF = BELOW FINISHED FLOOR
BFG = BELOW FINISHED GRADE
CB = CIRCUIT BREAKER
CR = CORROSION RESISTANT
C&T = COMPUTER AND TELEPHONE PARTITION CONNECTION
DC = DOOR CONTACTS (CONDUIT & PULL WIRE ONLY)
DH = DUCT HEATER
DL = DOCK LEVELER
DM = DAMPER MOTOR
EC = ELECTRICAL CONTRACTOR
EXP = EXPLOSION PROOF
GC = GENERAL CONTRACTOR
GEC = GROUNDING ELECTRODE CONDUCTOR
GFI = GROUND FAULT INTERRUPTER
GRC = GALVANIZED RIDGED CONDUIT
HP = HEAT PUMP
MBJ = MAIN BONDING JUMPER
MC = MECHANICAL CONTRACTOR
MCC = MOTOR CONTROL CENTER
MCP = MOTOR CIRCUIT PROTECTOR
MDP = MAIN DISTRIBUTION PANELBOARD
MDS = MAIN DISTRIBUTION SWITCHBOARD
MH = MOUNTING HEIGHT
MOD = MOTOR OPERATED DAMPER
NEC = NATIONAL ELECTRICAL CODE
NL = NIGHT LIGHT
OD = OVERHEAD DOOR
OE = OVERHEAD ELECTRIC
OT = OVERHEAD TELEPHONE
P = PARTITION POWER CONNECTION
PC = PLUMBING CONTRACTOR
SBJ = SYSTEM BONDING JUMPER
SCCR = SHORT CIRCUIT CURRENT RATING
SDS = SEPERATELY DERIVED SYSTEM
SSBJ = SUPPLY SIDE BONDING JUMPER
SSRVS = SOLID STATE REDUCED VOLTAGE STARTER
STP = SHIELDED TWISTED PAIR, #16 AWG
TL = TWIST LOCK
UE = UNDERGROUND ELECTRIC
UH = UNIT HEATER
UNO = UNLESS NOTED OTHERWISE
VFD = VARIABLE FREQUENCY DRIVE
VR = VEHICLE RESTRAINT
WC = WATER COOLER (ELECTRIC)
WCH = WALL CONVECTION HEATER
WH = WATER HEATER
WP = WEATHERPROOF
WPB = WEATHER-PROOF & CORROSION RESISTANT

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BALTIMORE, MARYLAND
GENERAL NOTES - ELECTRICAL

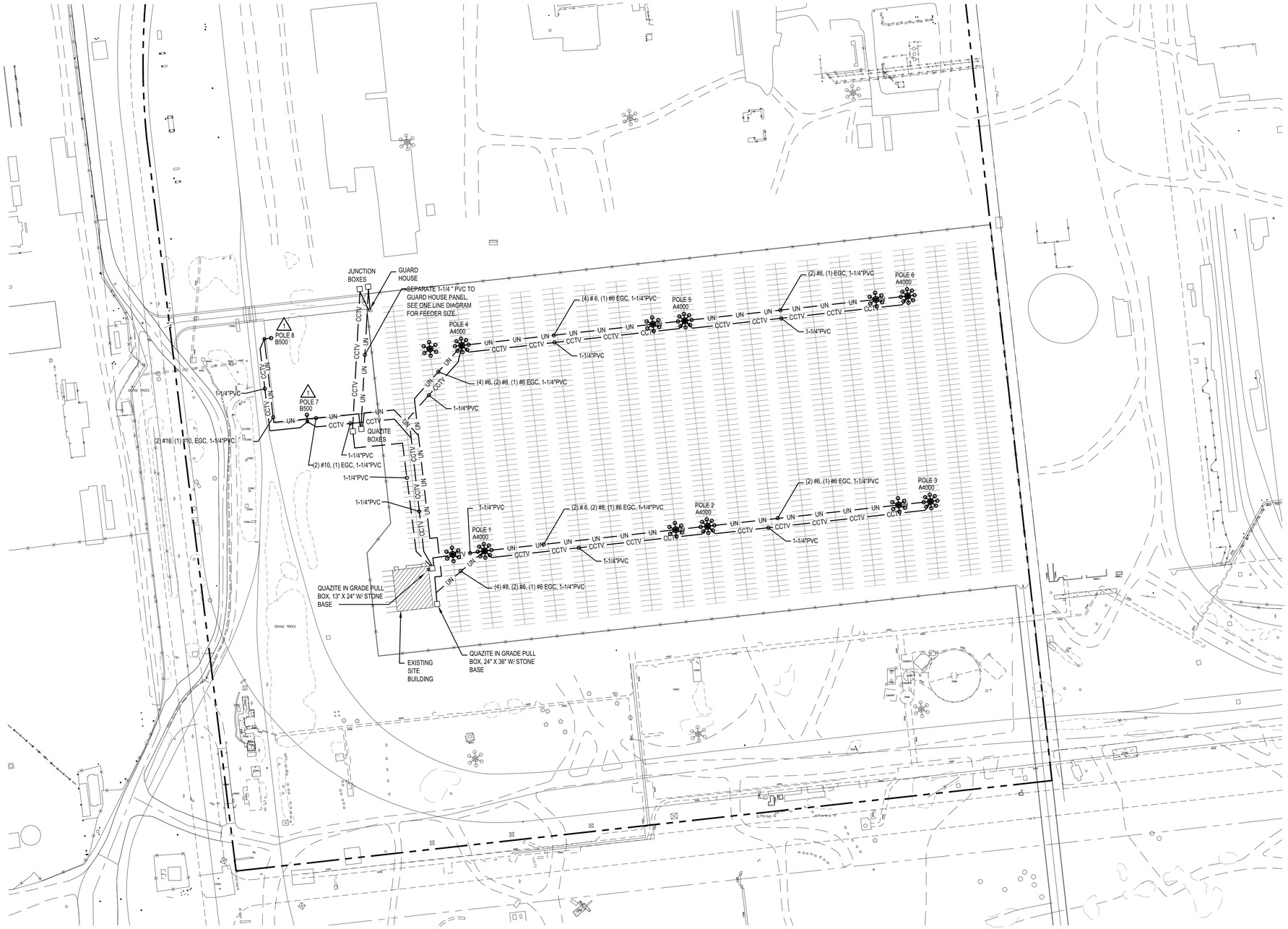
No.	DATE	REVISION	BY
	10-05-2016	AS-BUILT	TLM

DRAWN BY: TLM
CHECKED BY: GAM
SCALE: AS NOTED
DATE: 7/23/19
JOB NUMBER: 163722-11
FILE: -

E002
SHEET NUMBER

TRUE SHEET SIZE 30"x42"

10/5/2016 11:55 AM TIMUNDS
J:\2016 Jobs and Bids – Electrical\163722-11 RJD ARCO\tradepoint\RORO area lighting (03-10-16)\Drawings\E002 GENERAL NOTES - ELECTRICAL.dwg



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1 / E011 SITE PLAN - ELECTRICAL

1" = 100'

NOTES

1. REFER TO TRANSDEVELOPMENT GROUP DRAWING SK-5 DATED 1/29/2016 FOR FURTHER INFORMATION ON FOUNDATION DESIGN FOR 100' POLES. FOUNDATION DESIGN IS PRELIMINARY FOR REFERENCE ONLY. CONTRACTOR SHALL OBTAIN A WRITTEN VERIFICATION OF DESIGN OF FOUNDATION FROM A MARYLAND REGISTERED STRUCTURAL ENGINEER PRIOR TO INSTALLATION.

2. FOR CONDUIT RUNS EXCEEDING 200', GRC ELBOWS SHALL BE USED IN LIEU OF PVC.

3. CONDUITS SHALL BE INSTALLED PER ARTICLE 300, TABLE 300.5 MINIMUM COVER REQUIREMENTS.

4. FOUNDATION DESIGN IS PRELIMINARY FOR REFERENCE ONLY. CONTRACTOR SHALL OBTAIN A WRITTEN VERIFICATION OF DESIGN OF FOUNDATION FROM A MARYLAND REGISTERED STRUCTURAL ENGINEER PRIOR TO INSTALLATION.

5. REFER TO DRAWING E501 FOR SITE DETAILS

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SITE PLAN - ELECTRICAL

No.	DATE	REVISION	BY
1	07-06-2016	MOVED LIGHT POLES AS INDICATED	TLM
	10-05-2016	AS-BUILT	TLM

DRAWN BY	TLM
CHECKED BY	GAM
SCALE	AS NOTED
DATE	7/21/15
JOB NUMBER	163722-11
FILE	-

E011
SHEET NUMBER

TRUE SHEET SIZE 30"x42"

10/5/2016 11:55 AM TIMUNDIS
J:\2016 Jobs and Bids – Electrical\163722-11.RJD.ARCO.tradepoint.RORO area lighting 03-10-16\Drawings\E011 SITE PLAN – ELECTRICAL.dwg

N

E011F 1" = 100'

SITE PLAN - FOOT-CANDLE LEVELS

CALCULATION SUMMARY

AREA NAME	DIMENSIONS	SPACING TYPE	# PTS	AVG	MAX	MIN
PARKING	2241.00 X 888.00 FT	Mixed (EW) HH	3300	1.31	5.33	0.00

ARCO RORO (1000) LUMINAIRE SCHEDULE

TYP	SYMBOL	DESCRIPTION	LAMP	LUMENS	MOUNTING/BALLAST	LLF	QTY.
P1		Holophane GLT1E51E4D (1) 850W HMLD2 12.5X XX X F	(1) 12 LED	56000		1.00	2
P2		Holophane GLT1E51E4D (8) 740W HMLE2 12.5X XX X AW	(8) 12 LED	56028		1.00	8

AREA SUMMARY SCHEDULE

AREA NAME	QTY	DIMENSIONS	LUMS/<ASIS>	WATTS/SQ FT	QTY
PARKING	1	2241.00 X 888.00 FT	2		1

DRAWN BY	CHECKED BY
TLM	GAM
SCALE	
AS NOTED	
DATE	JOB NUMBER
7/21/10	163722-11
FILE	
-	

No.	DATE	REVISION	BY
	10-05-2016	AS-BUILT	TLM
1	07-06-2016	MOVED LIGHT POLES AS INDICATED	TLM

TRADEPOINT ATLANTIC

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SITE PLAN - FOOT-CANDLE LEVELS

E011F
SHEET NUMBER

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MD 1641 Lakefront Drive, Hunt Valley, MD 21030 PHONE 410-329-2084
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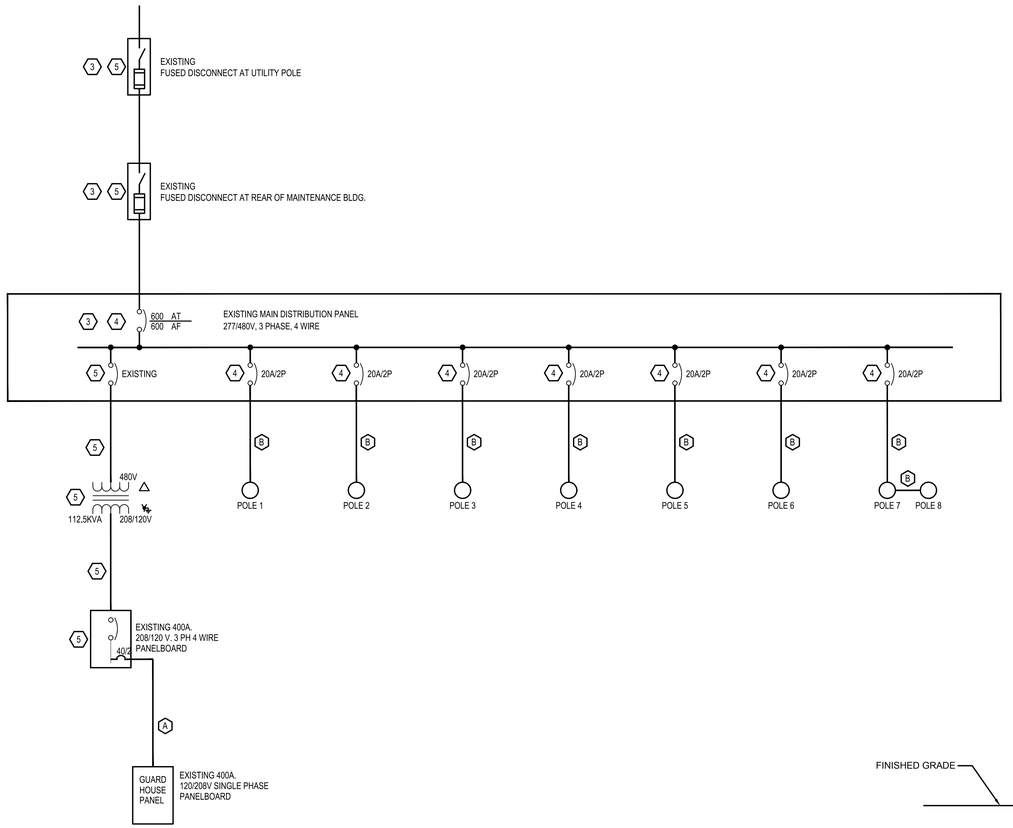
TRUE SHEET SIZE 30"x42"



ONE LINE DIAGRAM

LIGHTING FIXTURE SCHEDULE

SCHEDULE ABBREVIATIONS:
LAMP TYPES: CFL = COMPACT FLUORESCENT: FL = FLUORESCENT: HA = HALOGEN: HPS = HIGH PRESSURE SODIUM: IN = INCANDESCENT: LED = LIGHT EMITTING DIODE: MH = METAL HALIDE: MHPS = METAL HALIDE PULSE START: Q = QUARTZ:
BALLAST: DM = DIMMING: EL = ELECTRONIC: HPF = HIGH POWER FACTOR: IS-HBF =IS-HBF- INSTANT START HIGH BALLAST FACTOR ED-DRV = LED DRIVER: LOW = LOW TEMPERATURE DEGREE RATING AS INDICATED: MV = MULTIPLE VOLTAGE BALLAST; SD = 50% STEP-DIMMING; DM 10 = 0-10V LED DIMMING DRIVER
ENVIRONMENT: CR = CORROSIVE: DL = DAMP LOCATION: IN = INDOOR: HD = HOSE DOWN (HIGH PRESSURE): HZ = HAZARDOUS LOCATION: WL = WET LOCATION
MOUNTING: AHAP = AS HIGH AS POSSIBLE: CLG. HGT. = CEILING HEIGHT: IG = IN-GRADE: P = PENDANT: PL = POLE: R = RECESSED: SC = SURFACE CEILING: SW = SURFACE WALL: SR = SEMI-RECESSED: T = TRACK: UC = UNDER CABINET: UV = UNIVERSAL; W = WALL

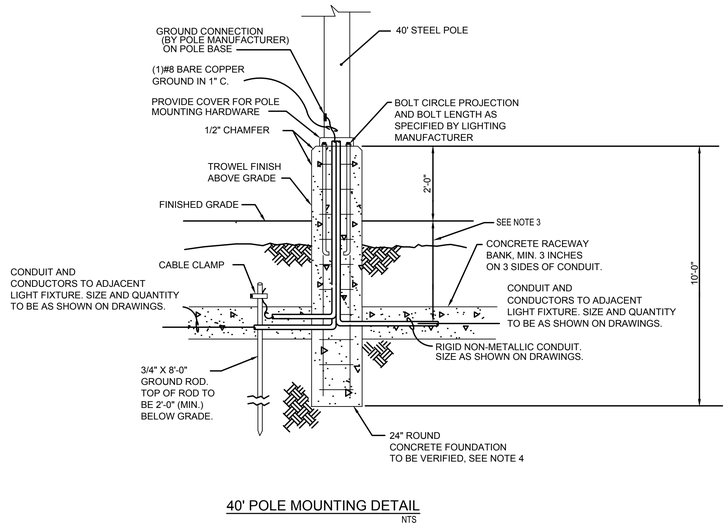
SYMBOL/ WATTS	FIXTURE COUNT	MANUFACTURER/CATALOG NUMBER	FIXTURE DESCRIPTION	LENS/ LOUVER	LAMPS				BALLAST		ENVIR.	MOUNTING		VOLTS	REMARKS
					NO.	WATTS	TYPE	MODEL NUMBER OR CONFIGURATION	NO.	TYPE		TYPE	HEIGHT AFF		
A4000	6	HOLOPHANE HMLED2 12 5K AH * AW PCL4 (8 HEADS ON 100' POLE W/ LOWERING DEVICE)	HIGH MAST LED, WIDE DISTRIBUTION, * COLOR, PHOTOCONTROL	-	-	500	LED	5000K	-	-	WT	PL	100	480	-
B500	2	HOLOPHANE HMLED2 12 5K AH * F PCL4 (1 HEADS ON 40' POLE)	HIGH MAST LED, FORWARD DISTRIBUTION, * COLOR, PHOTOCONTROL	-	-	500	LED	5000K	-	-	WT	PL	40	480	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

FEEDER SCHEDULE

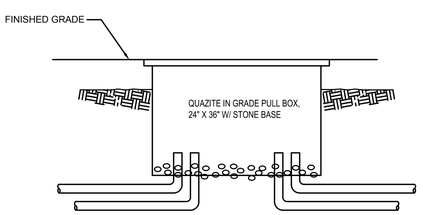
DES.	CONDUCTORS
A	3 - #4/0, #2/0 EGC,ALUMINUM TYPE XHHW-2 2-1/2"C.
B	REFER TO DRAWING E011 SITE PLAN FOR WIRE AND CONDUIT SIZES

NOTES:

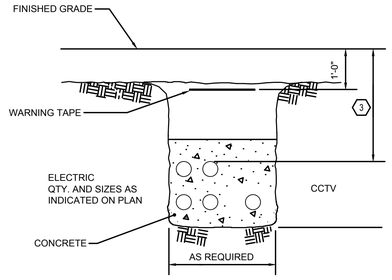
1. DISCONNECT SHALL BE LOCATED WITHIN SIGHT OF TRANSFORMER.
2. PROVIDE OUT DOOR ENCLOSURE.
3. VERIFY AND CORRECT AS REQUIRED THAT ALL NEC GROUNDING AND BONDING MEETS THE REQUIREMENT OF NEC 2014.
4. OBTAIN FAULT CURRENT AT EXISTING MDP FROM UTILITY TO DETERMINE REQUIRED AIC RATING OF NEW CIRCUIT BREAKERS THAT WILL BE ADDED TO FOR THE NEW LIGHT POLES AND NEW POWER FEED TO THE GUARD HOUSE. ADVISE OWNER IN WRITING WITH RECOMMENDATIONS SHOULD ANY EXISTING OVERCURRENT PROTECTION DEVICES WITHIN THE EXISTING MDP ARE INADEQUATELY RATED.
5. INSPECT EXISTING EQUIPMENT TO BE REUSED TO VERIFY COMPLIANCE WITH NEC 2014 EDITION. PROVIDE OWNER WRITTEN RECOMMENDATIONS TO CORRECT NEC VIOLATION ISSUES.



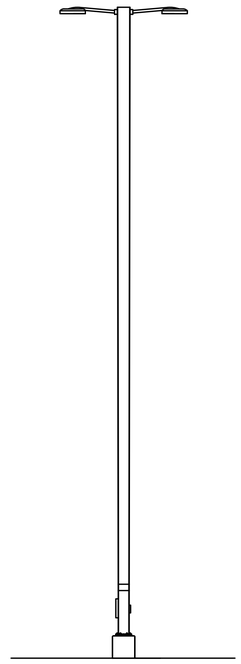
40' POLE MOUNTING DETAIL
NTS



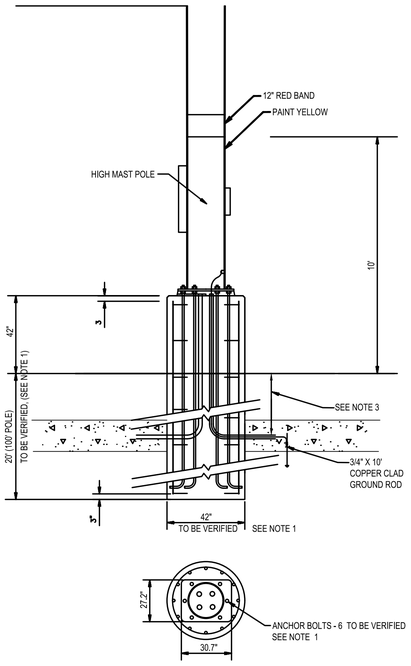
QUAZITE PULL BOX
NTS



TYPICAL CONDUIT BANK
NTS



HIGH MAST LIGHT POLE ELEVATION
NTS



HIGH MAST LIGHT POLE BASE
NTS

Gettle
ELECTRICAL
AUTOMATION
INFRASTRUCTURE
DATACOM
ENGINEERING/DESIGN
Giving business the power to grow®
ph. 325 Busser Road, PO Box 337, Emigsville, PA 17318-0337 main 717-843-1231
ao 144 Lakefront Drive, Hunt Valley, MD 21030 main 410-329-2084
Gettle.com

TRADEPOINT ATLANTIC
AUTOMOTIVE & RO-RO DISTRIBUTION FACILITY
SPARROWS POINT
BALTIMORE, MARYLAND
ONE LINE DIAGRAM AND SCHEDULES - ELECTRICAL

No.	DATE	REVISION	BY
	10-05-2016	AS-BUILT	TLM

DRAWN BY: TLM
CHECKED BY: GAM
SCALE: AS NOTED
DATE: 7/23/19
JOB NUMBER: 163722-11
FILE: -

E501
SHEET NUMBER

TRUE SHEET SIZE 30"x42"

10/5/2016 11:55 AM TIMUNDIS
J:\2016 Jobs and Bids – Electrical\163722-11 RJD\ARCO\tradepoint\RORO area lighting\03-10-16\Drawings\E501 ONE LINE DIAGRAM AND SCHEDULES – ELECTRICAL.dwg

APPENDIX C

Attachment A – Progress Photos

Figure 1: site conditions week of 5/16.

Figure 2: Crushing operation staging at Pile "H".

Figure 3: Mobilizing the crushing operation.

Figure 4:

Figure 5:

Figure 6:

Attachment A – Progress Photos

Figure 1: MCM moving dirt pile off of the RORO parking lot limit of disturbance.

Figure 2: Crushing operation at Pile "H".

Figure 3: TPA installing water truck access pipe.

Figure 4: Installing temporary power for the trailer.

Figure 5: Silt fence installations began this week.

Figure 6: Silt fence progress.

Attachment A – Progress Photos

Figure 1: Processing slag at pile H

Figure 2: Silt Fence installation progress along the south side of the site.

Figure 3: Silt Fence installation (and demolition) progress.

Figure 4: G&S placing slag for fills.

Figure 5: Main valve tie in for domestic water installation.

Figure 6: Installation of temporary electric to the construction trailer.

Attachment A – Progress Photos

Figure 1: Processing slag at pile H

Figure 2: Installing the plumbing line to the trailer.

Figure 3: Steel slag staged on the RORO site.

Figure 4: Slag installation progress facing W.

Figure 5: Slag installation progress facing S towards the Phoenix Building.

Figure 6: Compacting slag base.

Attachment A – Progress Photos

Figure 1: Installing underground electrical conduits for light poles.

Figure 2: Concrete encasement and tracer tape over electrical trench.

Figure 3: Watering slag for dust control.

Figure 4: Placing slag.

Figure 5: Grading steel slag.

Figure 6: Installing GAB subbase for paving.

Attachment A – Progress Photos

Figure 1: Continued installation of GAB subbase for paving.

Figure 2: Rainfall on Tuesday June 21, 2016 accumulating approximately 1½”.

Figure 3: Drilling pole bases for 100’ light poles.

Figure 4: Began placing asphalt on Friday June 24, 2016.

Figure 5: Asphalt paving progress.

Figure 6: Continued asphalt placement.

Attachment A – Progress Photos

Figure 1: Asphalt paving along the east side of the lot.

Figure 2: Demolished concrete (unforeseen) in the swale. Concrete removed for storm structure installation.

Figure 3: Storm structure installation and backfilled.

Figure 4: Asphalt paving along the northern half of the stern road. Awaiting final design to complete tie-in.

Figure 5: Excavation along storm swales on east side.

Figure 6: Paving tie-in at railroad crossing.

Attachment A – Progress Photos

Figure 1: Unforeseen concrete and rebar during excavation.

Figure 2: Guard shack concrete pad at entrance.

Figure 3: Concrete foundation obstructions found during excavation of swales.

Figure 4: Removal of unforeseen concrete and rebar during excavation.

Figure 5: Misc. concrete and debris found during swale excavations.

Figure 6: Grading of storm swales. Concrete obstructions in foreground.

Attachment A – Progress Photos

Figure 1: Continued grading of storm swales around the site.

Figure 2: Guard shack installation.

Figure 3: Installation of storm structures in swales.

Figure 4: Backfilling and compacting around storm structure installations.

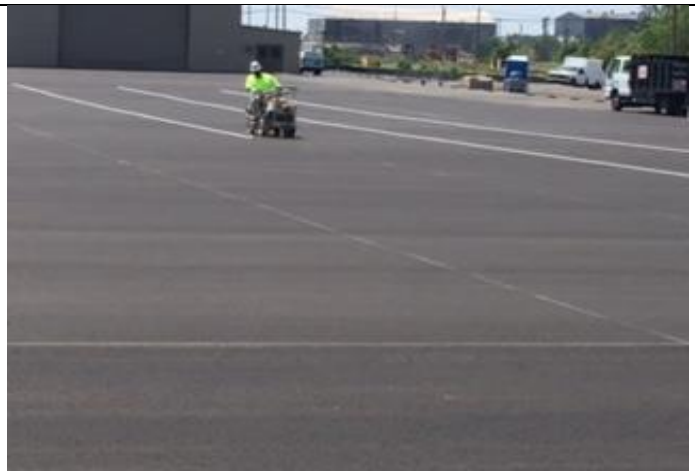


Figure 5: Striping and layout of the parking lot as approved by Pasha's layout.

Figure 6: Striping progress at the parking lot.

Attachment A – Progress Photos

Figure 1: Continued paving for the stern road.

Figure 2: Cutting asphalt for fence post installations.

Figure 3: Completing the last portion of the stern road.

Figure 4: Paving the "drop lot" at the NW corner of the property.

Figure 5: Backfilling the last inlet.

Figure 6: Completed striping at the parking area.

APPENDIX D

Clearance Checklist-Closure Report

20 Acre RoRo Automotive Yard

Prepared for:

MCM Management Corporation
1430 Sparrows Point Blvd
Sparrows Point, MD 21219

Prepared by:

Jenkins Environmental, Inc.
8600 LaSalle Rd Suite 509
Towson, MD 21286

April 15, 2016

JEI No.: 016-028

8600 LaSalle Road • Suite 509 • Towson, MD • 410-828-9888

Table of Contents

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Section 2.0	Pumping & Backfill Authorizations
Section 3.0	Site Map Exhibits
Section 4.0	Photographs
Section 5.0	Laboratory Certificates of Analysis
Section 6.0	Backfill Specifications, Inspection & Closure Reports (Century Engineering)

Section 1.0

Clearance Checklist & Certification

Sub-Grade Structure Clearance Checklist

Sparrows Point Facility – Demolition and Backfill

Sub-Grade Structure ID#: SGS 52-56 & 61 Checklist Completed By **M. Cirri**

Building Location: **See BOF/CSC EXHIBITS 2 & 5**

GPS Coordinates: **SGS-52 : N 39° 12.965; W076° 29.236**

SGS-53 : N 39° 12.974; W076° 29.232

SGS-54 : N 39° 12.956; W076° 29.242

SGS-55 : N 39° 12.963; W076° 29.179

SGS-56 : N 39° 12.965; W076° 29.236

SGS-61 : N 39° 12.964; W076° 29.213

Sub-Grade Structure Dimensions:

SGS #	Description	Approximate Dimensions
SGS-52	Emergency Reladling Track Scale Pit (CEI-127)	28' x 19' x 9' deep
	Emergency Reladling Pit (CEI-128)	20' x 24' x 17' deep
SGS-53	Reladling Track Scale Pit (CEI-125)	49' x 28' x 2.3' deep
	Reladling Pit (CEI-126)	39' x 25' x 26' deep
SGS-54	Freight Elevator Pit (CEI-129)	20' x 19' x 9.5' deep
	Passenger Elevator Pit (CEI-130)	9' x 10' x 5.5' deep
SGS-55	Track Hopper Conveyor Tunnel (CEI-115)	62' x 8' x 7.5' deep
	Track Hopper Pit (CEI-116)	27' x 19' x 18' deep
SGS-56	Track Yard Scale Pit (CEI-117)	40' x 11' x 9.3'
	Stack #1 Sump Pit (CEI-124)	5.5' x 2.5' x 7' deep
	Scrubber Pit (CEI-212)	73' x 35' x 11'
SGS-61	Misc. Pits	10' x 32' x 8' deep 7' x 7' x 8' deep
Other	Electrical Vault	8' x 10' x 11.5' deep
	Misc. Small Pit	4' x 4' x 4' deep
	South Side Trench	1' x 185' x 4' deep
	Sanitary Pump Station Pad	15' x 13' x 2' deep

Pumping Dates: _____**3/15/16 - 3/16/16**_____

Date Sub-Grade Structure Cleared for Inspection: **3/17/16**

Sub-Grade Structure Clearance Checklist

Sparrows Point Facility – Demolition and Backfill

Sub-Grade Structure Inspection by JEI

Sub-Grade Structure Inspection Date(s): **2/18; 2/19; 2/29; 3/7; 3/15; 3/17; 3/30; 3/31**

Condition of Groundwater in SGS: **Generally murky and opaque; no surface sheen observed.**

Visual Inspection Observations (attach photos): **The equipment located in these buildings was removed for either resale or salvage. The condition of the SGS's was the result of the equipment removal and not caused by the MCM demolition of the building. Miscellaneous metal and debris were observed in the SGSs. Metal was removed from the sub grade structure and went to scrap recycling and any non-recyclable debris went to Greys Landfill in accordance with Greys Landfill Operations Manual. Concrete walls in SGS 52, 53, 54 and 55 were observed to be generally in good condition and not in need of any significant cleaning prior to backfill. Water from the SGS 52 - 55 was pumped to through a temporary pipe conveyance to the Caster pit which in turn was pumped to the existing waste water sewer system which discharges into the Tin Mill Canal and continues to the HCWWTP. SGS 56 was primarily compromised of the former BOF Scrubber Pit which had been filled in during previous site demolition work. The pit was excavated and material taken to Grey's Landfill in accordance with Pre-Approval for Disposal under Mill Operations (i.e. scrubber pit material in the past was routinely hauled to Grey's Landfill during active Mill operations). There was no water or any other contaminant of concern in SGS 56 that required testing. On 3/31/16 a utility/electrical vault (SGS 61) discovered during SGS backfill prep work. There was a small amount of water was present in the bottom of the structure, no environmental issues were observed and as a matter of site safety and precaution the structure was backfilled immediately under the supervision of Century Engineering's engineer.**

Backfilling of the SGS 52 -56 began on 3/21/16 and was completed on 4/1/16.

Sub-Grade Structure Sampling

Date Sampled: **2/18/16**

Chain of Custody #: **16021902** Sample #: **0165-028-335 to 338** Turnaround: **Standard**

No. of Samples: **Four (4)**

Media Sampled: **Combination of rainwater and groundwater infiltrating structure**

Date Results Received: **2/26/16**

Result Evaluated and QC checked by: **M. Cirri** _____

Approval for Submission to MDE by (MCM or JEI): **B. Bonnano/M. Cirri**

Sample Collection**: Grab water samples from several locations within the SGSs were collected and composited for analysis. Water in the SGS was observed to be a heterogeneous quiescent oil- water mixture. Oil was present as a combination of surface film, emulsion and solution. Disposable Teflon bailers and/or 40 oz. wide mouth Amber Packer bottles were used to collect samples.**

Sub-Grade Structure Clearance Checklist

Sparrows Point Facility – Demolition and Backfill

Samples to be analyzed for volatile organic compounds (VOCs) were placed in 40-ml septum vials with screw caps with a Teflon7-lined silicone disk (septum) in the cap to prevent contamination of the sample by the cap. Samples were preserved with HCL. Triplicate samples were prepared from the SGS. 40 ml vials are placed on ice for transport to the laboratory. Oil & Grease and Semi-Volatiles samples were contained each in separate one (1) Liter Amber bottles and placed on ice for transport to the laboratory. PCBs and metals samples were placed in separate unpreserved 250 ml Nalgene HDPE bottles.

MDE Review for Sub-Grade Structure Clearance

Date Analytical Results submitted to MDE: **3/17/16**

MDE Review by: **_Barbara Brown, MDE-LRP-VCP Section Head**__Response date: **__3/17/16**

MDE Approval Date: ____**3/17/16 (See Attached Email Dated 3/17/16)**___

Sub-Grade Structure Backfilling

Date Sub-Grade Structure Backfill Started: **3/21/16**_____

Date Sub-Grade Structure Backfill Completed: **4/1/16** _____

Stockpile ID(s) for Material Used for Backfilling: **See Century Engineering Geo-Technical Reports - Attached.**

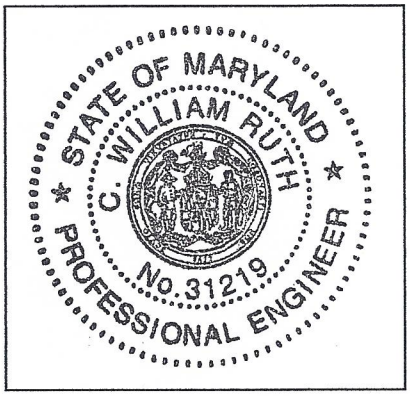
Certification Statement

I hereby affirm that I am familiar with the Sparrows Point Terminal Property and that I or my agents, (M.J. Cirri/J.C. Cirri) have visited and examined Sub-grade Structures (SGS) closure sites at the Sparrows Point Terminal facility located in Baltimore County, Maryland. I affirm this Closure Report has been prepared in accordance with good practices, including consideration of applicable standards and that information provided by MCM Management Corporation in relation to matters of waste disposal is reliable. Furthermore, I affirm that procedures for required inspections and testing have been established by MCM and that the Sub grade Structure Backfill Closure Report observations indicate general conformance with the terms of the Enhanced Scope of Work (9/09/14) and work was done in a sound professional manner.

By: _____
C. William Ruth, P.E.
Jenkins Environmental, Inc.
Date: 4/14/16

By: _____
Michael J. Cirri, President
Jenkins Environmental, Inc.

Date: 4/14/16



Section 2.0

Pumping & Backfilling Authorizations

Authorization Certificate
for
Sub Grade Structure (SGS) Pumping

On 3/04 (Month/Day) 2016, Mike Vogler, Sr. VP Operations (Name/Print), an authorized representative of TPA (Company Name) reviewed laboratory Certificates of Analysis for Samples 016-028-335 thru 338 collected from SGS(s) No.(s) **52-55** and conducted a visual inspection of the referenced structures. The laboratory test results and associated inspection find the water acceptable for pumping to the Humphrey's Creek Waste Water Treatment Plant.

Pumping Authorization Granted by:

M. Vogler (Signature) | SVP Site Ops. (Title) | 3/4/16 (Date)

Witnessed by:

Michael J. Cini (Signature) | **Jenkins Env. Inc.** (Company) | **3/04/16** (Date)

JENKINS ENVIRONMENTAL, INC.

8600 LaSalle Road • Suite 509 • Towson, MD 21286

Michael Cirri

From: Barbara Brown -MDE- [barbara.brown1@maryland.gov]
Sent: Thursday, March 17, 2016 4:36 PM
To: Michael Cirri
Cc: Jennifer Sohns -MDE-; Brandon Bonanno; George Perdikakis
Subject: Re:

Hello Mike

Based on a review of the inspection and testing documents for SGS 52-56 you may proceed with the backfilling operation with approved clean fill material.

If you have any questions please contact me.

Barbara Brown

On Thu, Mar 17, 2016 at 3:32 PM, Michael Cirri <mcirri@jeinc.org> wrote:

Barbara:

Attached are inspection and testing documents for SGS 52 – 56 located in Parcel 7-1 (new Automotive Yard). We are seeking the Department's approval to proceed with backfilling. I conducted a final inspection today and found the structures to be adequately cleaned. Removal of debris from pit bottoms has been completed. Following backfill the structures will be capped with by an asphalt automobile storage lot.

We are seeking approval to backfill as soon as possible. In order to maintain the current schedule backfilling must be completed on or before 4/1/16.

Let me know if you have any questions.

Regards,

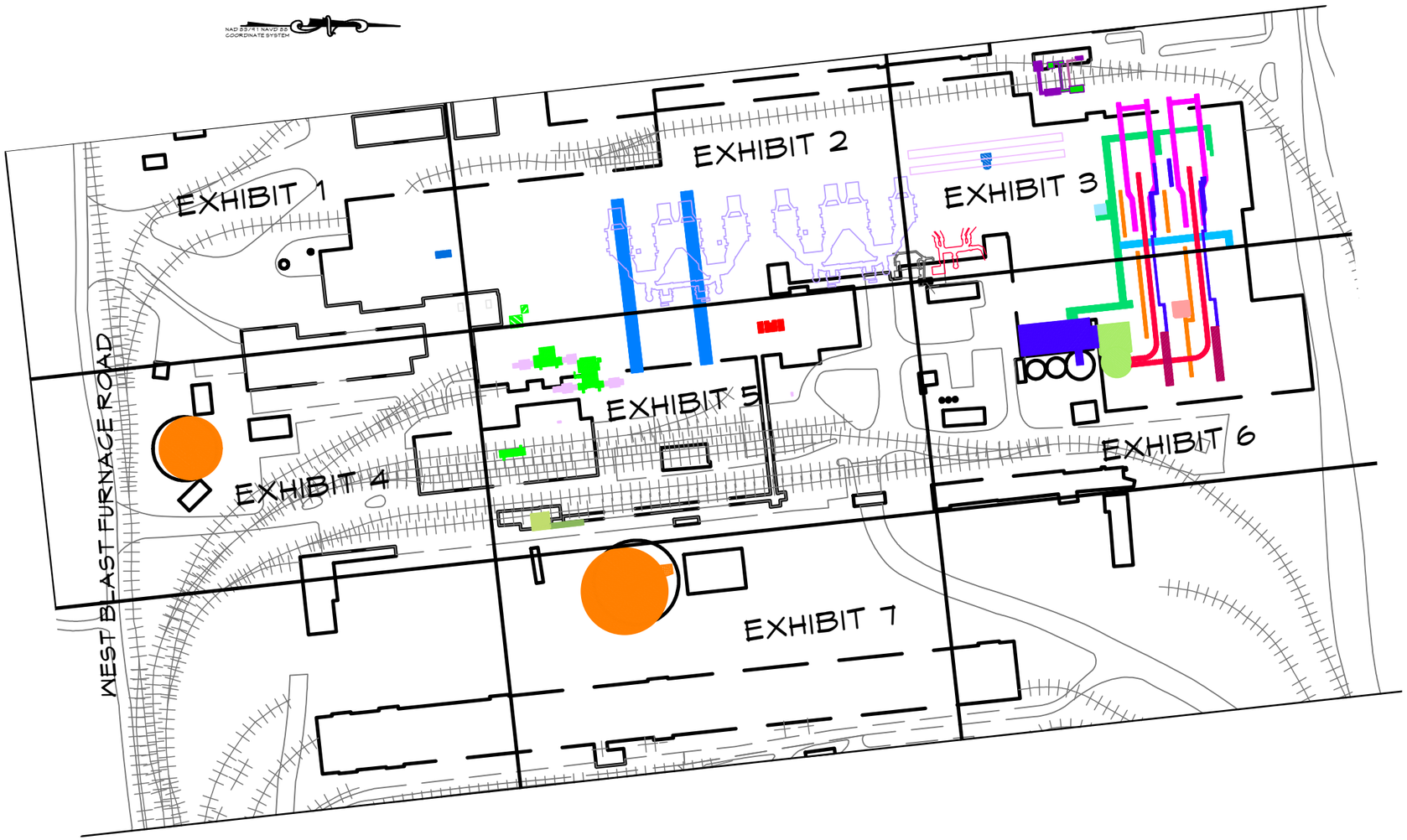
Mike

Michael J. Cirri

President/Chief Financial Officer

Section 3.0

Site Map Exhibits



SPARROWS POINT FACILITY

BASIC OXYGEN FURNACE & CONTINUOUS SLAB CASTER
SUBGRADE STRUCTURE LOCATION EXHIBIT KEY

Job No. 1511117.01	Scale: 1" = 200'	Date: 2-17-16	Drawn By: R.A.L.	Checked By: R.G.B.	Sheet:

MCM

JENKINS ENVIRONMENTAL, INC.

CENTURY ENGINEERING

PLAN

SCALE: 1" = 200'

0 200' 400'

PROGRESS PRINT

FROM REVIEW OF RECORD DRAWINGS
NOT YET FIELD VERIFIED

NAD 83/91 NAVD 88
COORDINATE SYSTEM

MATCH LINE EXHIBIT 1

MATCH LINE EXHIBIT 3

MATCH LINE EXHIBIT 5

NO 1 FURNACE
RUBBLE PIT (CEI-122A)

WASTE HEATER
TUNNELS (CEI-111)
(CIRCA 1917)

NO 2 FURNACE
RUBBLE PIT (CEI-122B)

WASTE HEATER
TUNNELS (CEI-110)
(CIRCA 1917)

DUST COLLECTION
TUNNELS (CEI-109)

SGS-54

PASSENGER ELEVATOR
PIT (CEI-130)

FREIGHT ELEVATOR
PIT (CEI-129)

PLAN

SCALE: 1" = 50'

0 50' 100'

SUBGRADE STRUCTURE

SUBGRADE STRUCTURE
REMOVED
(POSSIBLE FILLED BY OTHERS)

SPARROWS POINT FACILITY

BASIC OXYGEN FURNACE & CONTINUOUS SLAB CASTER
SUBGRADE STRUCTURE LOCATION EXHIBIT 2

Job No. 1511117.01	Scale: 1" = 50'	Date: 2-17-16	Drawn By: R.A.L.	Checked By: R.G.B.	Sheet:

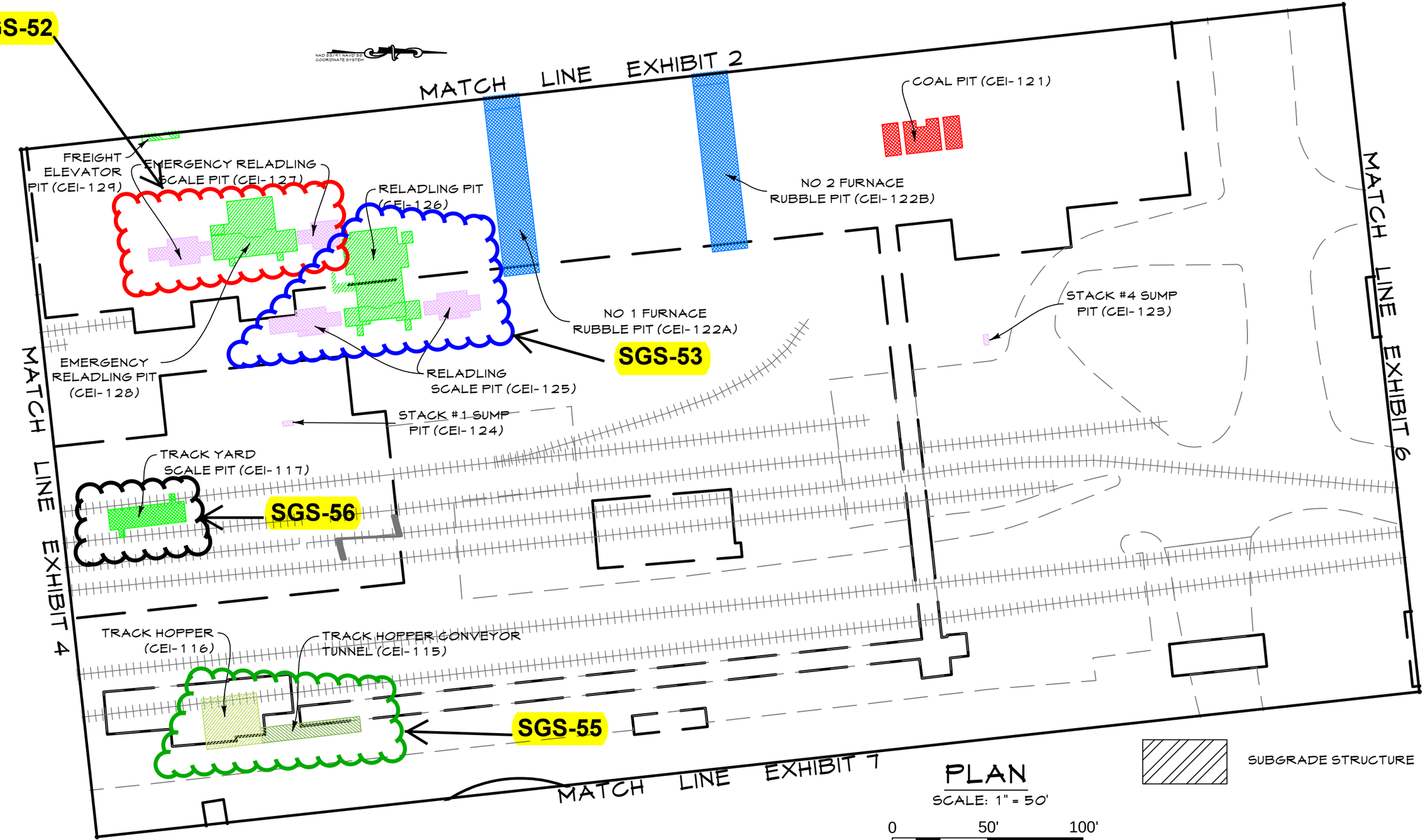
MCM

JENKINS ENVIRONMENTAL, INC.

CENTURY ENGINEERING

PROGRESS PRINT

FROM REVIEW OF RECORD DRAWINGS
NOT YET FIELD VERIFIED



PLAN

SCALE: 1" = 50'

0 50' 100'

SPARROWS POINT FACILITY

BASIC OXYGEN FURNACE & CONTINUOUS SLAB CASTER
SUBGRADE STRUCTURE LOCATION EXHIBIT 5

Job No. 1511117.01	Scale: 1" = 50'	Date: 2-17-16	Drawn By: R.A.L.	Checked By: R.G.B.	Sheet:

MCM

JENKINS ENVIRONMENTAL, INC.

CENTURY ENGINEERING

PROGRESS PRINT

FROM REVIEW OF RECORD DRAWINGS
NOT YET FIELD VERIFIED

Section 4.0
Photographs

BASIC OXYGEN FURNACE
SGS 52 – 56 & 61

SGS-52 (CEI 127/128): N 39° 12.965
W076° 29.236

SGS-53 (CEI 125/126): N 39° 12.974
W076° 29.232

SGS-54 (CEI 129/130): N 39° 12.956
W076° 29.242

SGS-55 (CEI 115/116): N 39° 12.963
W076° 29.179

SGS-56 (CEI 117/124/212): N 39° 12.964
W076° 29.213

SGS-61: N 39° 12.964
W076° 29.213

SGS-52 Emergency Relading Pit & Track Scale

SGS-52 Emergency Relading Pit & Track Scale

SGS-52 Emergency Relading Pit & Track Scale

SGS-53 Relading Pit & Track Scale

SGS-53 Relading Pit & Track Scale

SGS-53 Relading Pit & Track Scale

SGS-54 Freight & Passenger Elevator Pits

SGS-54 Freight & Passenger Elevator Pits

SGS-54 Freight & Passenger Elevator Pits

SGS-55 Track Hopper Pit & Conveyor

SGS-55 Track Hopper Pit & Conveyor

SGS-55 Track Hopper Pit & Conveyor

SGS-56 Track Yard Scale Pit/BOF Pit

SGS-56 Track Yard Scale Pit/BOF Pit

SGS-56 Storm Water Inlet

SGS-61 Utility Vault

SGS 61 Minimal GW Infiltration

SGS 61

SGS 61 Cleanout Work

SGS 61 - Backfilling

Section 5.0

Laboratory Certificates of Analysis

CALIBER ANALYTICAL SERVICES

Certificate of Analysis

Jenkins Environmental, Inc.
8600 LaSalle Road
York Building, Suite 509
Towson, MD 21286

Date Sampled: 02/18/16 10:05
Date Received: 02/19/16 13:05
Date Issued: 02/26/16

Project: BOF Ladle Pits
Site Location: Sparrows Point, MD
Project Number: 2016-028

SDG Number: 16021902

Field Sample ID: 016-028-335 **Matrix: Water** **Lab ID: 16021902-01**

	Result	Unit	LLQ	Method	Prepared	Analyzed	Init.
Oil & Grease, total recoverable (HEM)							
Oil & Grease	ND	mg/L	5	EPA 1664	02/20/16	02/22/16 10:12	LMJ
Polychlorinated Biphenyls							
Aroclor 1016	ND	ug/L	2	EPA 8082	02/22/16	02/24/16 11:56	AC
Aroclor 1221	ND	ug/L	2	EPA 8082	02/22/16	02/24/16 11:56	AC
Aroclor 1232	ND	ug/L	2	EPA 8082	02/22/16	02/24/16 11:56	AC
Aroclor 1242	ND	ug/L	2	EPA 8082	02/22/16	02/24/16 11:56	AC
Aroclor 1248	ND	ug/L	2	EPA 8082	02/22/16	02/24/16 11:56	AC
Aroclor 1254	ND	ug/L	2	EPA 8082	02/22/16	02/24/16 11:56	AC
Aroclor 1260	ND	ug/L	2	EPA 8082	02/22/16	02/24/16 11:56	AC
Target Compound List - SEMIVOLATILES							
Phenol	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Bis (2-chloroethyl) ether	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
2-Chlorophenol	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
2-Methylphenol	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Bis (2-chloroisopropyl) ether	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Acetophenone	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
4-Methylphenol	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
N-Nitroso-di-n-propylamine	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Hexachloroethane	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Nitrobenzene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Isophorone	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
2-Nitrophenol	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
2,4-Dimethylphenol	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Bis (2-chloroethoxy) methane	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
2,4-Dichlorophenol	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Naphthalene`	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
4-Chloroaniline	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Hexachlorobutadiene`	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Caprolactam	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
4-Chloro-3-methylphenol	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
2-Methylnaphthalene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Hexachlorocyclopentadiene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
2,4,6-Trichlorophenol	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
2,4,5-Trichlorophenol	ND	ug/L	29	EPA 8270C	02/24/16	02/25/16 11:45	GFH
1,1-Biphenyl	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
2-Chloronaphthalene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
2-Nitroaniline	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Dimethyl phthalate	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
2,6-Dinitrotoluene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH

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Date Sampled: 02/18/16 10:05
Date Received: 02/19/16 13:05
Date Issued: 02/26/16

Project: BOF Ladle Pits
Site Location: Sparrows Point, MD
Project Number: 2016-028

SDG Number: 16021902

Field Sample ID: 016-028-335 **Matrix: Water** **Lab ID: 16021902-01**

	Result	Unit	LLQ	Method	Prepared	Analyzed	Init.
Target Compound List - SEMIVOLATILES							
Acenaphthylene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
3-Nitroaniline	ND	ug/L	29	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Acenaphthene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
2,4-Dinitrophenol	ND	ug/L	29	EPA 8270C	02/24/16	02/25/16 11:45	GFH
4-Nitrophenol	ND	ug/L	29	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Dibenzofuran	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
2,4-Dinitrotoluene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Diethyl phthalate	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Fluorene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
4-Chlorophenyl phenyl ether	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
4-Nitroaniline	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
4,6-Dinitro-2-methylphenol	ND	ug/L	29	EPA 8270C	02/24/16	02/25/16 11:45	GFH
N-Nitrosodiphenylamine	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
4-Bromophenyl phenyl ether	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Hexachlorobenzene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Atrazine	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Pentachlorophenol	ND	ug/L	29	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Phenanthrene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Anthracene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Carbazole	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Di-n-butyl phthalate	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Fluoranthene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Pyrene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Butyl benzyl phthalate	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
3,3-Dichlorobenzidine	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Benzo[a]anthracene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Chrysene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Bis (2-ethylhexyl) phthalate	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Di-n-octyl phthalate	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Benzo[b]fluoranthene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Benzo[k]fluoranthene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Benzo[a]pyrene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Indeno[1,2,3-cd]pyrene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Dibenz[a,h]anthracene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Benzo[g,h,i]perylene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 11:45	GFH
Target Compound List - VOLATILES							
Dichlorodifluoromethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
Chloromethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
Vinyl chloride	ND	ug/L	1	EPA 8260B	02/26/16	02/26/16 12:13	GFH

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Date Issued: 02/26/16

Project: BOF Ladle Pits
Site Location: Sparrows Point, MD
Project Number: 2016-028

SDG Number: 16021902

Field Sample ID: 016-028-335 **Matrix: Water** **Lab ID: 16021902-01**

	Result	Unit	LLQ	Method	Prepared	Analyzed	Init.
Target Compound List - VOLATILES							
Bromomethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
Chloroethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
Trichlorofluoromethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
1,1-Dichloroethene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
1,1,2-Trichlorotrifluoroethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
Acetone	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 12:13	GFH
Carbon disulfide	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
Methyl acetate	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
Methylene chloride	ND	ug/L	10	EPA 8260B	02/26/16	02/26/16 12:13	GFH
trans-1,2-Dichloroethene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
Methyl t-butyl ether (MTBE)	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
1,1-Dichloroethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
cis-1,2-Dichloroethene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
2-Butanone (MEK)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 12:13	GFH
Chloroform	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
1,1,1-Trichloroethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
Cyclohexane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
Carbon tetrachloride	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
Benzene	ND	ug/L	1	EPA 8260B	02/26/16	02/26/16 12:13	GFH
1,2-Dichloroethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
Trichloroethene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
Methylcyclohexane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
1,2-Dichloropropane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
Bromodichloromethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
cis-1,3-Dichloropropene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
4-Methyl-2-pentanone (MIBK)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 12:13	GFH
Toluene	ND	ug/L	1	EPA 8260B	02/26/16	02/26/16 12:13	GFH
trans-1,3-Dichloropropene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
1,1,2-Trichloroethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
Tetrachloroethene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
2-Hexanone (MBK)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 12:13	GFH
Dibromochloromethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
1,2-Dibromoethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
Chlorobenzene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
Ethylbenzene	ND	ug/L	1	EPA 8260B	02/26/16	02/26/16 12:13	GFH
m&p-Xylene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
o-Xylene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
Styrene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
Bromoform	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH

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Date Issued: 02/26/16

Project: BOF Ladle Pits
Site Location: Sparrows Point, MD
Project Number: 2016-028

SDG Number: 16021902

Field Sample ID: 016-028-335 **Matrix: Water** **Lab ID: 16021902-01**

	Result	Unit	LLQ	Method	Prepared	Analyzed	Init.
Target Compound List - VOLATILES							
Isopropylbenzene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
1,1,2,2-Tetrachloroethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
1,3-Dichlorobenzene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
1,4-Dichlorobenzene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
1,2-Dichlorobenzene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
1,2-Dibromo-3-chloropropane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
1,2,4-Trichlorobenzene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:13	GFH
Naphthalene	ND	ug/L	10	EPA 8260B	02/26/16	02/26/16 12:13	GFH
Ethyl t-butyl ether (ETBE)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 12:13	GFH
tert-Butanol (TBA)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 12:13	GFH
Diisopropyl ether (DIPE)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 12:13	GFH
tert-Amyl methyl ether (TAME)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 12:13	GFH
tert-Amyl alcohol (TAA)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 12:13	GFH
tert-Amyl ethyl ether (TAEE)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 12:13	GFH
Total Metals							
Aluminum	**270**	ug/L	50	EPA 6020A	02/22/16	02/22/16 13:11	MEL
Antimony	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:11	MEL
Arsenic	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:11	MEL
Barium	**12**	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:11	MEL
Beryllium	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:11	MEL
Cadmium	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:11	MEL
Calcium	**27,000**	ug/L	10000	EPA 6020A	02/22/16	02/22/16 12:46	MEL
Chromium	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:11	MEL
Cobalt	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:11	MEL
Copper	**8.5**	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:11	MEL
Iron	**2,100**	ug/L	100	EPA 6020A	02/22/16	02/22/16 13:11	MEL
Lead	**28**	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:11	MEL
Magnesium	**11,000**	ug/L	10000	EPA 6020A	02/22/16	02/22/16 12:46	MEL
Manganese	**290**	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:11	MEL
Mercury	ND	ug/L	1	EPA 6020A	02/22/16	02/22/16 13:11	MEL
Nickel	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:11	MEL
Potassium	**66,000**	ug/L	10000	EPA 6020A	02/22/16	02/22/16 12:46	MEL
Selenium	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:11	MEL
Silver	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:11	MEL
Sodium	**84,000**	ug/L	100	EPA 6020A	02/22/16	02/23/16 11:04	MEL
Thallium	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:11	MEL
Vanadium	**6.1**	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:11	MEL
Zinc	**2,500**	ug/L	500	EPA 6020A	02/22/16	02/22/16 12:46	MEL

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Date Sampled: 02/18/16 10:05
Date Received: 02/19/16 13:05
Date Issued: 02/26/16

Project: BOF Ladle Pits
Site Location: Sparrows Point, MD
Project Number: 2016-028

SDG Number: 16021902

Field Sample ID: 016-028-335 **Matrix: Water** **Lab ID: 16021902-01**

	Result	Unit	LLQ	Method	Prepared	Analyzed	Init.
Total Petroleum Hydrocarbons - (C10-C28) DRO							
Diesel Range Organics	ND	mg/L	0.48	EPA 8015C	02/22/16	02/24/16 11:36	AC

Notes/Qualifiers:
LLQ- Lowest Level of Quantitation
ND - Not Detected at a concentration greater than or equal to the LLQ.

Approved by:

QC Chemist

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Date Sampled: 02/18/16 10:09
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Project: BOF Ladle Pits
Site Location: Sparrows Point, MD
Project Number: 2016-028

SDG Number: 16021902

Field Sample ID: 016-028-336 **Matrix: Water** **Lab ID: 16021902-02**

	Result	Unit	LLQ	Method	Prepared	Analyzed	Init.
Oil & Grease, total recoverable (HEM)							
Oil & Grease	ND	mg/L	5	EPA 1664	02/20/16	02/22/16 10:12	LMJ
Polychlorinated Biphenyls							
Aroclor 1016	ND	ug/L	2	EPA 8082	02/22/16	02/24/16 12:25	AC
Aroclor 1221	ND	ug/L	2	EPA 8082	02/22/16	02/24/16 12:25	AC
Aroclor 1232	ND	ug/L	2	EPA 8082	02/22/16	02/24/16 12:25	AC
Aroclor 1242	ND	ug/L	2	EPA 8082	02/22/16	02/24/16 12:25	AC
Aroclor 1248	ND	ug/L	2	EPA 8082	02/22/16	02/24/16 12:25	AC
Aroclor 1254	ND	ug/L	2	EPA 8082	02/22/16	02/24/16 12:25	AC
Aroclor 1260	ND	ug/L	2	EPA 8082	02/22/16	02/24/16 12:25	AC
Target Compound List - SEMIVOLATILES							
Phenol	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Bis (2-chloroethyl) ether	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
2-Chlorophenol	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
2-Methylphenol	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Bis (2-chloroisopropyl) ether	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Acetophenone	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
4-Methylphenol	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
N-Nitroso-di-n-propylamine	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Hexachloroethane	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Nitrobenzene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Isophorone	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
2-Nitrophenol	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
2,4-Dimethylphenol	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Bis (2-chloroethoxy) methane	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
2,4-Dichlorophenol	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Naphthalene`	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
4-Chloroaniline	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Hexachlorobutadiene`	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Caprolactam	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
4-Chloro-3-methylphenol	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
2-Methylnaphthalene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Hexachlorocyclopentadiene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
2,4,6-Trichlorophenol	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
2,4,5-Trichlorophenol	ND	ug/L	26	EPA 8270C	02/24/16	02/25/16 12:23	GFH
1,1-Biphenyl	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
2-Chloronaphthalene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
2-Nitroaniline	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Dimethyl phthalate	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
2,6-Dinitrotoluene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH

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Project: BOF Ladle Pits
Site Location: Sparrows Point, MD
Project Number: 2016-028

SDG Number: 16021902

Field Sample ID: 016-028-336 **Matrix: Water** **Lab ID: 16021902-02**

	Result	Unit	LLQ	Method	Prepared	Analyzed	Init.
Target Compound List - SEMIVOLATILES							
Acenaphthylene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
3-Nitroaniline	ND	ug/L	26	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Acenaphthene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
2,4-Dinitrophenol	ND	ug/L	26	EPA 8270C	02/24/16	02/25/16 12:23	GFH
4-Nitrophenol	ND	ug/L	26	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Dibenzofuran	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
2,4-Dinitrotoluene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Diethyl phthalate	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Fluorene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
4-Chlorophenyl phenyl ether	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
4-Nitroaniline	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
4,6-Dinitro-2-methylphenol	ND	ug/L	26	EPA 8270C	02/24/16	02/25/16 12:23	GFH
N-Nitrosodiphenylamine	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
4-Bromophenyl phenyl ether	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Hexachlorobenzene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Atrazine	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Pentachlorophenol	ND	ug/L	26	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Phenanthrene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Anthracene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Carbazole	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Di-n-butyl phthalate	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Fluoranthene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Pyrene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Butyl benzyl phthalate	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
3,3-Dichlorobenzidine	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Benzo[a]anthracene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Chrysene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Bis (2-ethylhexyl) phthalate	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Di-n-octyl phthalate	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Benzo[b]fluoranthene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Benzo[k]fluoranthene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Benzo[a]pyrene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Indeno[1,2,3-cd]pyrene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Dibenz[a,h]anthracene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Benzo[g,h,i]perylene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 12:23	GFH
Target Compound List - VOLATILES							
Dichlorodifluoromethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
Chloromethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
Vinyl chloride	ND	ug/L	1	EPA 8260B	02/26/16	02/26/16 12:42	GFH

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Towson, MD 21286

Date Sampled: 02/18/16 10:09
Date Received: 02/19/16 13:05
Date Issued: 02/26/16

Project: BOF Ladle Pits
Site Location: Sparrows Point, MD
Project Number: 2016-028

SDG Number: 16021902

Field Sample ID: 016-028-336 **Matrix: Water** **Lab ID: 16021902-02**

	Result	Unit	LLQ	Method	Prepared	Analyzed	Init.
Target Compound List - VOLATILES							
Bromomethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
Chloroethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
Trichlorofluoromethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
1,1-Dichloroethene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
1,1,2-Trichlorotrifluoroethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
Acetone	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 12:42	GFH
Carbon disulfide	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
Methyl acetate	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
Methylene chloride	ND	ug/L	10	EPA 8260B	02/26/16	02/26/16 12:42	GFH
trans-1,2-Dichloroethene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
Methyl t-butyl ether (MTBE)	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
1,1-Dichloroethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
cis-1,2-Dichloroethene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
2-Butanone (MEK)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 12:42	GFH
Chloroform	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
1,1,1-Trichloroethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
Cyclohexane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
Carbon tetrachloride	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
Benzene	ND	ug/L	1	EPA 8260B	02/26/16	02/26/16 12:42	GFH
1,2-Dichloroethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
Trichloroethene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
Methylcyclohexane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
1,2-Dichloropropane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
Bromodichloromethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
cis-1,3-Dichloropropene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
4-Methyl-2-pentanone (MIBK)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 12:42	GFH
Toluene	ND	ug/L	1	EPA 8260B	02/26/16	02/26/16 12:42	GFH
trans-1,3-Dichloropropene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
1,1,2-Trichloroethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
Tetrachloroethene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
2-Hexanone (MBK)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 12:42	GFH
Dibromochloromethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
1,2-Dibromoethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
Chlorobenzene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
Ethylbenzene	ND	ug/L	1	EPA 8260B	02/26/16	02/26/16 12:42	GFH
m&p-Xylene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
o-Xylene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
Styrene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
Bromoform	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH

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Project: BOF Ladle Pits
Site Location: Sparrows Point, MD
Project Number: 2016-028

SDG Number: 16021902

Field Sample ID: 016-028-336 **Matrix: Water** **Lab ID: 16021902-02**

	Result	Unit	LLQ	Method	Prepared	Analyzed	Init.
Target Compound List - VOLATILES							
Isopropylbenzene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
1,1,2,2-Tetrachloroethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
1,3-Dichlorobenzene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
1,4-Dichlorobenzene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
1,2-Dichlorobenzene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
1,2-Dibromo-3-chloropropane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
1,2,4-Trichlorobenzene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 12:42	GFH
Naphthalene	ND	ug/L	10	EPA 8260B	02/26/16	02/26/16 12:42	GFH
Ethyl t-butyl ether (ETBE)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 12:42	GFH
tert-Butanol (TBA)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 12:42	GFH
Diisopropyl ether (DIPE)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 12:42	GFH
tert-Amyl methyl ether (TAME)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 12:42	GFH
tert-Amyl alcohol (TAA)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 12:42	GFH
tert-Amyl ethyl ether (TAEE)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 12:42	GFH
Total Metals							
Aluminum	ND	ug/L	50	EPA 6020A	02/22/16	02/22/16 13:42	MEL
Antimony	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:42	MEL
Arsenic	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:42	MEL
Barium	**11**	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:42	MEL
Beryllium	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:42	MEL
Cadmium	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:42	MEL
Calcium	**24,000**	ug/L	10000	EPA 6020A	02/22/16	02/22/16 12:51	MEL
Chromium	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:42	MEL
Cobalt	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:42	MEL
Copper	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:42	MEL
Iron	**180**	ug/L	100	EPA 6020A	02/22/16	02/22/16 13:42	MEL
Lead	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:42	MEL
Magnesium	**38,000**	ug/L	10000	EPA 6020A	02/22/16	02/22/16 12:51	MEL
Manganese	**13**	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:42	MEL
Mercury	ND	ug/L	1	EPA 6020A	02/22/16	02/22/16 13:42	MEL
Nickel	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:42	MEL
Potassium	**60,000**	ug/L	10000	EPA 6020A	02/22/16	02/22/16 12:51	MEL
Selenium	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:42	MEL
Silver	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:42	MEL
Sodium	**110,000**	ug/L	100	EPA 6020A	02/22/16	02/23/16 11:24	MEL
Thallium	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:42	MEL
Vanadium	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:42	MEL
Zinc	**180**	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:42	MEL

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Date Sampled: 02/18/16 10:09
Date Received: 02/19/16 13:05
Date Issued: 02/26/16

Project: BOF Ladle Pits
Site Location: Sparrows Point, MD
Project Number: 2016-028

SDG Number: 16021902

Field Sample ID: 016-028-336 **Matrix: Water** **Lab ID: 16021902-02**

	Result	Unit	LLQ	Method	Prepared	Analyzed	Init.
Total Petroleum Hydrocarbons - (C10-C28) DRO							
Diesel Range Organics	ND	mg/L	0.39	EPA 8015C	02/22/16	02/24/16 12:11	AC

Notes/Qualifiers:
LLQ- Lowest Level of Quantitation
ND - Not Detected at a concentration greater than or equal to the LLQ.

Approved by:

QC Chemist

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Project: BOF Ladle Pits
Site Location: Sparrows Point, MD
Project Number: 2016-028

SDG Number: 16021902

Field Sample ID: 016-028-337 **Matrix: Water** **Lab ID: 16021902-03**

	Result	Unit	LLQ	Method	Prepared	Analyzed	Init.
Oil & Grease, total recoverable (HEM)							
Oil & Grease	ND	mg/L	5	EPA 1664	02/20/16	02/22/16 10:13	LMJ
Polychlorinated Biphenyls							
Aroclor 1016	ND	ug/L	2	EPA 8082	02/22/16	02/24/16 12:53	AC
Aroclor 1221	ND	ug/L	2	EPA 8082	02/22/16	02/24/16 12:53	AC
Aroclor 1232	ND	ug/L	2	EPA 8082	02/22/16	02/24/16 12:53	AC
Aroclor 1242	ND	ug/L	2	EPA 8082	02/22/16	02/24/16 12:53	AC
Aroclor 1248	ND	ug/L	2	EPA 8082	02/22/16	02/24/16 12:53	AC
Aroclor 1254	ND	ug/L	2	EPA 8082	02/22/16	02/24/16 12:53	AC
Aroclor 1260	ND	ug/L	2	EPA 8082	02/22/16	02/24/16 12:53	AC
Target Compound List - SEMIVOLATILES							
Phenol	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Bis (2-chloroethyl) ether	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
2-Chlorophenol	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
2-Methylphenol	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Bis (2-chloroisopropyl) ether	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Acetophenone	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
4-Methylphenol	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
N-Nitroso-di-n-propylamine	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Hexachloroethane	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Nitrobenzene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Isophorone	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
2-Nitrophenol	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
2,4-Dimethylphenol	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Bis (2-chloroethoxy) methane	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
2,4-Dichlorophenol	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Naphthalene`	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
4-Chloroaniline	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Hexachlorobutadiene`	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Caprolactam	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
4-Chloro-3-methylphenol	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
2-Methylnaphthalene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Hexachlorocyclopentadiene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
2,4,6-Trichlorophenol	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
2,4,5-Trichlorophenol	ND	ug/L	26	EPA 8270C	02/24/16	02/25/16 13:01	GFH
1,1-Biphenyl	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
2-Chloronaphthalene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
2-Nitroaniline	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Dimethyl phthalate	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
2,6-Dinitrotoluene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH

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Project: BOF Ladle Pits
Site Location: Sparrows Point, MD
Project Number: 2016-028

SDG Number: 16021902

Field Sample ID: 016-028-337 **Matrix: Water** **Lab ID: 16021902-03**

	Result	Unit	LLQ	Method	Prepared	Analyzed	Init.
Target Compound List - SEMIVOLATILES							
Acenaphthylene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
3-Nitroaniline	ND	ug/L	26	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Acenaphthene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
2,4-Dinitrophenol	ND	ug/L	26	EPA 8270C	02/24/16	02/25/16 13:01	GFH
4-Nitrophenol	ND	ug/L	26	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Dibenzofuran	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
2,4-Dinitrotoluene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Diethyl phthalate	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Fluorene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
4-Chlorophenyl phenyl ether	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
4-Nitroaniline	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
4,6-Dinitro-2-methylphenol	ND	ug/L	26	EPA 8270C	02/24/16	02/25/16 13:01	GFH
N-Nitrosodiphenylamine	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
4-Bromophenyl phenyl ether	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Hexachlorobenzene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Atrazine	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Pentachlorophenol	ND	ug/L	26	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Phenanthrene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Anthracene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Carbazole	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Di-n-butyl phthalate	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Fluoranthene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Pyrene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Butyl benzyl phthalate	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
3,3-Dichlorobenzidine	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Benzo[a]anthracene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Chrysene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Bis (2-ethylhexyl) phthalate	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Di-n-octyl phthalate	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Benzo[b]fluoranthene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Benzo[k]fluoranthene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Benzo[a]pyrene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Indeno[1,2,3-cd]pyrene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Dibenz[a,h]anthracene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Benzo[g,h,i]perylene	ND	ug/L	11	EPA 8270C	02/24/16	02/25/16 13:01	GFH
Target Compound List - VOLATILES							
Dichlorodifluoromethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
Chloromethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
Vinyl chloride	ND	ug/L	1	EPA 8260B	02/26/16	02/26/16 13:12	GFH

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Towson, MD 21286

Date Sampled: 02/18/16 10:17
Date Received: 02/19/16 13:05
Date Issued: 02/26/16

Project: BOF Ladle Pits
Site Location: Sparrows Point, MD
Project Number: 2016-028

SDG Number: 16021902

Field Sample ID: 016-028-337 **Matrix: Water** **Lab ID: 16021902-03**

	Result	Unit	LLQ	Method	Prepared	Analyzed	Init.
Target Compound List - VOLATILES							
Bromomethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
Chloroethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
Trichlorofluoromethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
1,1-Dichloroethene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
1,1,2-Trichlorotrifluoroethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
Acetone	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 13:12	GFH
Carbon disulfide	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
Methyl acetate	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
Methylene chloride	ND	ug/L	10	EPA 8260B	02/26/16	02/26/16 13:12	GFH
trans-1,2-Dichloroethene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
Methyl t-butyl ether (MTBE)	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
1,1-Dichloroethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
cis-1,2-Dichloroethene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
2-Butanone (MEK)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 13:12	GFH
Chloroform	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
1,1,1-Trichloroethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
Cyclohexane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
Carbon tetrachloride	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
Benzene	ND	ug/L	1	EPA 8260B	02/26/16	02/26/16 13:12	GFH
1,2-Dichloroethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
Trichloroethene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
Methylcyclohexane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
1,2-Dichloropropane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
Bromodichloromethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
cis-1,3-Dichloropropene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
4-Methyl-2-pentanone (MIBK)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 13:12	GFH
Toluene	ND	ug/L	1	EPA 8260B	02/26/16	02/26/16 13:12	GFH
trans-1,3-Dichloropropene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
1,1,2-Trichloroethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
Tetrachloroethene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
2-Hexanone (MBK)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 13:12	GFH
Dibromochloromethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
1,2-Dibromoethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
Chlorobenzene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
Ethylbenzene	ND	ug/L	1	EPA 8260B	02/26/16	02/26/16 13:12	GFH
m&p-Xylene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
o-Xylene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
Styrene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
Bromoform	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH

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Project: BOF Ladle Pits
Site Location: Sparrows Point, MD
Project Number: 2016-028

SDG Number: 16021902

Field Sample ID: 016-028-337 **Matrix: Water** **Lab ID: 16021902-03**

	Result	Unit	LLQ	Method	Prepared	Analyzed	Init.
Target Compound List - VOLATILES							
Isopropylbenzene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
1,1,2,2-Tetrachloroethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
1,3-Dichlorobenzene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
1,4-Dichlorobenzene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
1,2-Dichlorobenzene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
1,2-Dibromo-3-chloropropane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
1,2,4-Trichlorobenzene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:12	GFH
Naphthalene	ND	ug/L	10	EPA 8260B	02/26/16	02/26/16 13:12	GFH
Ethyl t-butyl ether (ETBE)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 13:12	GFH
tert-Butanol (TBA)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 13:12	GFH
Diisopropyl ether (DIPE)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 13:12	GFH
tert-Amyl methyl ether (TAME)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 13:12	GFH
tert-Amyl alcohol (TAA)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 13:12	GFH
tert-Amyl ethyl ether (TAEE)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 13:12	GFH
Total Metals							
Aluminum	ND	ug/L	50	EPA 6020A	02/22/16	02/22/16 13:48	MEL
Antimony	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:48	MEL
Arsenic	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:48	MEL
Barium	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:48	MEL
Beryllium	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:48	MEL
Cadmium	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:48	MEL
Calcium	ND	ug/L	10000	EPA 6020A	02/22/16	02/22/16 12:57	MEL
Chromium	**150**	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:48	MEL
Cobalt	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:48	MEL
Copper	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:48	MEL
Iron	ND	ug/L	100	EPA 6020A	02/22/16	02/22/16 13:48	MEL
Lead	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:48	MEL
Magnesium	**26,000**	ug/L	10000	EPA 6020A	02/22/16	02/22/16 12:57	MEL
Manganese	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:48	MEL
Mercury	ND	ug/L	1	EPA 6020A	02/22/16	02/22/16 13:48	MEL
Nickel	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:48	MEL
Potassium	**83,000**	ug/L	10000	EPA 6020A	02/22/16	02/22/16 12:57	MEL
Selenium	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:48	MEL
Silver	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:48	MEL
Sodium	**46,000**	ug/L	100	EPA 6020A	02/22/16	02/23/16 11:28	MEL
Thallium	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:48	MEL
Vanadium	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:48	MEL
Zinc	**6.4**	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:48	MEL

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Date Received: 02/19/16 13:05
Date Issued: 02/26/16

Project: BOF Ladle Pits
Site Location: Sparrows Point, MD
Project Number: 2016-028

SDG Number: 16021902

Field Sample ID: 016-028-337 **Matrix: Water** **Lab ID: 16021902-03**

	Result	Unit	LLQ	Method	Prepared	Analyzed	Init.
Total Petroleum Hydrocarbons - (C10-C28) DRO							
Diesel Range Organics	ND	mg/L	0.48	EPA 8015C	02/22/16	02/24/16 12:11	AC

Notes/Qualifiers:
LLQ- Lowest Level of Quantitation
ND - Not Detected at a concentration greater than or equal to the LLQ.

Approved by:

QC Chemist

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Project: BOF Ladle Pits
Site Location: Sparrows Point, MD
Project Number: 2016-028

SDG Number: 16021902

Field Sample ID: 016-028-338 **Matrix: Water** **Lab ID: 16021902-04**

	Result	Unit	LLQ	Method	Prepared	Analyzed	Init.
Oil & Grease, total recoverable (HEM)							
Oil & Grease	ND	mg/L	5	EPA 1664	02/20/16	02/22/16 10:13	LMJ
Polychlorinated Biphenyls							
Aroclor 1016	ND	ug/L	2	EPA 8082	02/22/16	02/24/16 13:22	AC
Aroclor 1221	ND	ug/L	2	EPA 8082	02/22/16	02/24/16 13:22	AC
Aroclor 1232	ND	ug/L	2	EPA 8082	02/22/16	02/24/16 13:22	AC
Aroclor 1242	ND	ug/L	2	EPA 8082	02/22/16	02/24/16 13:22	AC
Aroclor 1248	ND	ug/L	2	EPA 8082	02/22/16	02/24/16 13:22	AC
Aroclor 1254	ND	ug/L	2	EPA 8082	02/22/16	02/24/16 13:22	AC
Aroclor 1260	ND	ug/L	2	EPA 8082	02/22/16	02/24/16 13:22	AC
Target Compound List - SEMIVOLATILES							
Phenol	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Bis (2-chloroethyl) ether	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
2-Chlorophenol	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
2-Methylphenol	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Bis (2-chloroisopropyl) ether	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Acetophenone	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
4-Methylphenol	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
N-Nitroso-di-n-propylamine	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Hexachloroethane	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Nitrobenzene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Isophorone	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
2-Nitrophenol	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
2,4-Dimethylphenol	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Bis (2-chloroethoxy) methane	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
2,4-Dichlorophenol	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Naphthalene`	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
4-Chloroaniline	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Hexachlorobutadiene`	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Caprolactam	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
4-Chloro-3-methylphenol	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
2-Methylnaphthalene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Hexachlorocyclopentadiene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
2,4,6-Trichlorophenol	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
2,4,5-Trichlorophenol	ND	ug/L	26	EPA 8270C	02/24/16	02/25/16 13:39	GFH
1,1-Biphenyl	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
2-Chloronaphthalene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
2-Nitroaniline	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Dimethyl phthalate	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
2,6-Dinitrotoluene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH

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Project: BOF Ladle Pits
Site Location: Sparrows Point, MD
Project Number: 2016-028

SDG Number: 16021902

Field Sample ID: 016-028-338 **Matrix: Water** **Lab ID: 16021902-04**

	Result	Unit	LLQ	Method	Prepared	Analyzed	Init.
Target Compound List - SEMIVOLATILES							
Acenaphthylene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
3-Nitroaniline	ND	ug/L	26	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Acenaphthene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
2,4-Dinitrophenol	ND	ug/L	26	EPA 8270C	02/24/16	02/25/16 13:39	GFH
4-Nitrophenol	ND	ug/L	26	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Dibenzofuran	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
2,4-Dinitrotoluene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Diethyl phthalate	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Fluorene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
4-Chlorophenyl phenyl ether	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
4-Nitroaniline	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
4,6-Dinitro-2-methylphenol	ND	ug/L	26	EPA 8270C	02/24/16	02/25/16 13:39	GFH
N-Nitrosodiphenylamine	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
4-Bromophenyl phenyl ether	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Hexachlorobenzene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Atrazine	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Pentachlorophenol	ND	ug/L	26	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Phenanthrene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Anthracene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Carbazole	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Di-n-butyl phthalate	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Fluoranthene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Pyrene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Butyl benzyl phthalate	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
3,3-Dichlorobenzidine	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Benzo[a]anthracene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Chrysene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Bis (2-ethylhexyl) phthalate	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Di-n-octyl phthalate	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Benzo[b]fluoranthene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Benzo[k]fluoranthene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Benzo[a]pyrene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Indeno[1,2,3-cd]pyrene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Dibenz[a,h]anthracene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Benzo[g,h,i]perylene	ND	ug/L	10	EPA 8270C	02/24/16	02/25/16 13:39	GFH
Target Compound List - VOLATILES							
Dichlorodifluoromethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
Chloromethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
Vinyl chloride	ND	ug/L	1	EPA 8260B	02/26/16	02/26/16 13:43	GFH

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Project: BOF Ladle Pits
Site Location: Sparrows Point, MD
Project Number: 2016-028

SDG Number: 16021902

Field Sample ID: 016-028-338 **Matrix: Water** **Lab ID: 16021902-04**

	Result	Unit	LLQ	Method	Prepared	Analyzed	Init.
Target Compound List - VOLATILES							
Bromomethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
Chloroethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
Trichlorofluoromethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
1,1-Dichloroethene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
1,1,2-Trichlorotrifluoroethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
Acetone	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 13:43	GFH
Carbon disulfide	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
Methyl acetate	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
Methylene chloride	ND	ug/L	10	EPA 8260B	02/26/16	02/26/16 13:43	GFH
trans-1,2-Dichloroethene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
Methyl t-butyl ether (MTBE)	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
1,1-Dichloroethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
cis-1,2-Dichloroethene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
2-Butanone (MEK)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 13:43	GFH
Chloroform	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
1,1,1-Trichloroethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
Cyclohexane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
Carbon tetrachloride	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
Benzene	ND	ug/L	1	EPA 8260B	02/26/16	02/26/16 13:43	GFH
1,2-Dichloroethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
Trichloroethene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
Methylcyclohexane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
1,2-Dichloropropane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
Bromodichloromethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
cis-1,3-Dichloropropene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
4-Methyl-2-pentanone (MIBK)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 13:43	GFH
Toluene	ND	ug/L	1	EPA 8260B	02/26/16	02/26/16 13:43	GFH
trans-1,3-Dichloropropene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
1,1,2-Trichloroethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
Tetrachloroethene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
2-Hexanone (MBK)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 13:43	GFH
Dibromochloromethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
1,2-Dibromoethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
Chlorobenzene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
Ethylbenzene	ND	ug/L	1	EPA 8260B	02/26/16	02/26/16 13:43	GFH
m&p-Xylene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
o-Xylene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
Styrene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
Bromoform	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH

8851 Orchard Tree Lane Towson, Maryland 21286
tel: 410.825.1151 fax: 410.825.2126 www.caslabs.net

Certificate of Analysis

Jenkins Environmental, Inc.
8600 LaSalle Road
York Building, Suite 509
Towson, MD 21286

Date Sampled: 02/18/16 10:31
Date Received: 02/19/16 13:05
Date Issued: 02/26/16

Project: BOF Ladle Pits
Site Location: Sparrows Point, MD
Project Number: 2016-028

SDG Number: 16021902

Field Sample ID: 016-028-338 **Matrix: Water** **Lab ID: 16021902-04**

	Result	Unit	LLQ	Method	Prepared	Analyzed	Init.
Target Compound List - VOLATILES							
Isopropylbenzene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
1,1,2,2-Tetrachloroethane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
1,3-Dichlorobenzene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
1,4-Dichlorobenzene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
1,2-Dichlorobenzene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
1,2-Dibromo-3-chloropropane	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
1,2,4-Trichlorobenzene	ND	ug/L	5	EPA 8260B	02/26/16	02/26/16 13:43	GFH
Naphthalene	ND	ug/L	10	EPA 8260B	02/26/16	02/26/16 13:43	GFH
Ethyl t-butyl ether (ETBE)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 13:43	GFH
tert-Butanol (TBA)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 13:43	GFH
Diisopropyl ether (DIPE)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 13:43	GFH
tert-Amyl methyl ether (TAME)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 13:43	GFH
tert-Amyl alcohol (TAA)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 13:43	GFH
tert-Amyl ethyl ether (TAEE)	ND	ug/L	25	EPA 8260B	02/26/16	02/26/16 13:43	GFH
Total Metals							
Aluminum	ND	ug/L	50	EPA 6020A	02/22/16	02/22/16 13:55	MEL
Antimony	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:55	MEL
Arsenic	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:55	MEL
Barium	**6.9**	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:55	MEL
Beryllium	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:55	MEL
Cadmium	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:55	MEL
Calcium	**13,000**	ug/L	10000	EPA 6020A	02/22/16	02/22/16 13:04	MEL
Chromium	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:55	MEL
Cobalt	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:55	MEL
Copper	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:55	MEL
Iron	**430**	ug/L	100	EPA 6020A	02/22/16	02/22/16 13:55	MEL
Lead	**5.4**	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:55	MEL
Magnesium	**13,000**	ug/L	10000	EPA 6020A	02/22/16	02/22/16 13:04	MEL
Manganese	**15**	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:55	MEL
Mercury	ND	ug/L	1	EPA 6020A	02/22/16	02/22/16 13:55	MEL
Nickel	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:55	MEL
Potassium	**58,000**	ug/L	10000	EPA 6020A	02/22/16	02/22/16 13:04	MEL
Selenium	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:55	MEL
Silver	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:55	MEL
Sodium	**140,000**	ug/L	100	EPA 6020A	02/22/16	02/23/16 11:32	MEL
Thallium	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:55	MEL
Vanadium	ND	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:55	MEL
Zinc	**150**	ug/L	5	EPA 6020A	02/22/16	02/22/16 13:55	MEL

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tel: 410.825.1151 fax: 410.825.2126 www.caslabs.net

CALIBER ANALYTICAL SERVICES

Certificate of Analysis

Jenkins Environmental, Inc.
8600 LaSalle Road
York Building, Suite 509
Towson, MD 21286

Date Sampled: 02/18/16 10:31
Date Received: 02/19/16 13:05
Date Issued: 02/26/16

Project: BOF Ladle Pits
Site Location: Sparrows Point, MD
Project Number: 2016-028

SDG Number: 16021902

Field Sample ID: 016-028-338 **Matrix: Water** **Lab ID: 16021902-04**

	Result	Unit	LLQ	Method	Prepared	Analyzed	Init.
Total Petroleum Hydrocarbons - (C10-C28) DRO							
Diesel Range Organics	ND	mg/L	0.42	EPA 8015C	02/22/16	02/24/16 12:46	AC

Notes/Qualifiers:
LLQ- Lowest Level of Quantitation
ND - Not Detected at a concentration greater than or equal to the LLQ.

Approved by:

QC Chemist

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tel: 410.825.1151 fax: 410.825.2126 www.caslabs.net

CALIBER ANALYTICAL SERVICES

8851 Orchard Tree Lane Towson, MD 21286
Phone: 410.825.1151
Fax: 410.825.2126
www.caslabs.net

Chain of Custody Record

Customer:	JENKINS ENVIRONMENTAL
Contact/Report to:	M. CIRRI
Phone:	410-828-9888
Fax:	410-828-9899

E-mail address:	MCIRRI@JEINC.ORG
Project Name:	BOF LADLE PITS
Project Number:	2016-028
Location:	SPARROWS POINT

SDG Number:	16021902

Sampled by:	MJC
PO Number:	

Analysis Requested

Lab Number	Field Sample ID	Date Sampled	Time Sampled	No. of Bottles	Matrix	Preservative	TAL METALS 6020A	PCB's 8082	SVOC's 8270C	VOC's 8260B	TPH-DRO 8015B	TPH-OIL & GREASE 9071B					Sampling Remarks/ Comments
										HCL							
	016-028-335	2/18/16	1005	7	WATER		✓	✓	✓	✓	✓	✓					SGS-52 (CEI 127/128)
	016-028-336	2/18/16	1009	7	WATER		✓	✓	✓	✓	✓	✓					SGS-53 (CEI 125/126)
	016-028-337	2/18/16	1017	7	WATER		✓	✓	✓	✓	✓	✓					SGS-54 (CEI 129/130)
	016-028-338	2/18/16	1031	7	WATER		✓	✓	✓	✓	✓	✓					SGS-55 (CEI 116)

Relinquished by:	M. Cirri	Date/Time:	2/19/16 1305	Deliverables:	Receipt Temperature: / Turnaround Time:
Received by:	M. Cirri	Date/Time:	2/19/16 1305	I II III CLP EDD	Temp: ____ On Ice / STD Next Day 2-Day Other
Relinquished by:		Date/Time:		Custody Seals:	Comments/Special Instructions:
Received by:		Date/Time:		Sample Cooler	RESULTS BY 2/26/16
Relinquished by:		Date/Time:		Delivered by client	
Received by:		Date/Time:			

Section 6.0

Backfill Specifications, Inspection & Closure Reports (Century Engineering)

20 Acre Automotive Yard (RoRo Site)

Demolition & Backfill Plan for Subgrade Structures

Subgrade Structures:

Open Pits (Less than 10' Deep)

SGS-52 CEI-127 - Emergency Reladling Track Scale Pit: Open Pit 28' x 19' x 9' depth (174 CY)
SGS-53 CEI-125 – Reladling Track Scale Pit: Open Pit 49' x 28' x 2.3' depth (117 CY)
SGS-54 CEI-129 – Freight Elevator Pit: Open Pit 20' x 19' x 9.5' depth (131 CY)
CEI-130 – Passenger Elevator Pit: Open Pit 9' x 10' x 5.5' (19 CY)
SGS-55 CEI-115 – Track Hopper Conveyor Tunnel: Sloping open pit with open end to surface 62' x 8' x 7.5' depth (137 CY)
SGS-56 CEI-117 - Track Yard Scale Pit: Open Pit 40' x 11' x 9.3' (147 CY)
Other CEI-124 – Stack #1 Sump Pit: Open Pit 5.5' x 4' x 2.5' depth (4 CY)

Open Pits (Deeper Pits)

SGS-52 CEI-128 – Emergency Reladling Pit: Open Pit 20' x 24' x 17' depth (303 CY)
SGS-53 CEI-126 – Reladling Pit: Open Pit 39' x 25' x 26' depth (926 CY)
SGS-55 CEI-116 – Track Hopper Pit: Open Pit 27' x 19' x 18' Depth (344 CY)

Demolition:

1. Make 1 hole in bottom slab (approx.. 4' x 4') in bottom slab near center for each open pit having a depth less than 10 feet. Hole in slab is not needed for the Track Hopper Conveyor Tunnel, since it slopes down and connects to the Track Hopper Pit.
2. The very small Stack #1 Sump Pit should be completely demolished and removed rather than backfilled.
3. The deeper pits will not have hole made in bottom slab (too deep and confined for hoe-ram to access).
4. Demolition where required to make in notch in sidewall of subgrade structure for equipment access by constructing ramp from outside the subgrade structure. The notch in the sidewall should be made sufficiently wide for equipment access and to sufficient depth for equipment to spread and compact the backfill (see "Backfilling").
5. Perform any additional demolition for obstructions inside the pits that will interfere with the placement and compaction of the backfill.

Dewatering:

1. Dewater pits to allow for demolition of holes in bottom slab in the shallow pits, any additional demolition that is required, and for placement and compaction of the backfill.

Backfilling:

Open Pits (Less than 10' Deep)

1. Place #57 Slag Aggregate in holes made in bottom slab.
2. Place 12" of #57 Slag Aggregate over complete area of bottom slab
3. Place 12" filter course over #57 Aggregate. Use either #8 slag aggregate (spread and uncompacted) or CR-6 Slag Aggregate (compacted to 95% of Modified Proctor max. dry density).
4. Place and compact Conventional Backfill in 8" layers to final grade. Except for the top 12", the Conventional Backfill could consist of either Select Granular Backfill (Slag Tailings) or Miscellaneous Backfill (Back River Stockpiles). Compact to 95% of Modified Proctor max. dry density.
5. Top 12" should consist of Select Granular Backfill (Slag Tailings) compacted to 95 percent.
6. Backfill ramp areas outside pits using and same backfill materials and methods used for inside the pits.

Open Pits (Deeper Pits)

1. Place #3 Slag Aggregate in the pits to a depth of 10 feet below the surface grade. Place the aggregate by dumping from a bucket of an excavator.
2. Access equipment into the pit to spread and level the surface of the #3 Aggregate.
3. Place 12” of #57 Slag Aggregate over the #3 Slag Aggregate.
4. Place 12” filter course over #57 Aggregate. Use either #8 slag aggregate (spread and uncompacted) or CR-6 Slag Aggregate (compacted to 95% of Modified Proctor max. dry density).
5. Place and compact Conventional Backfill in 8” layers to final grade. Except for the top 12”, the Conventional Backfill could consist of either Select Granular Backfill (Slag Tailings) or Miscellaneous Backfill (Back River Stockpiles). Compact to 95% of Modified Proctor max. dry density.
6. Top 12” should consist of Select Granular Backfill (Slag Tailings) compacted to 95 percent.
7. Backfill ramp areas outside pits using and same backfill materials and methods used for inside the pits.

CENTURY ENGINEERING

DAILY REPORT

REPORT NO: 1

PROJECT: Sparrows Point Terminals - 20 Acre RoRo Site (SGS-54) DATE: 3/21/2016

WORK SHIFT: FROM: 8:15 am TO: 2:45 pm WEATHER: Partly Cloudy

FROM: _____ TO: _____ TEMP. 8 A.M. 45° 12 P.M. 55° 4 P.M. °

WORK IN PROGRESS: (Location and Description, Equipment in Use)

- Arrived at site at 8:45 and met Brandon and Contractor at office. Had brief meeting to review the backfill plan for the subgrade structures within the 20 acre RoRo Automotive Yard.
- The contractor to start working on the Elevator Pits (SGS-54). There is one 20'x 20' x 10' deep pit and one 10.5' x 9.5' x 5.5' deep pit.
- A 4' x 4' hole was made in the bottom of the larger pit. There was rebar protruding into the hole that was cut off.
- MCM made similar hole in floor of small pit. The protruding rebar was removed.
- The holes in the floors were filled with #57 Blast Furnace Slag aggregate. The #57 slag was then spread over the floor of the larger pit (24" thickness) and the smaller pit (12" thickness).
- No other work performed today.

COMMENTS:

INSPECTOR: **Chris Jacobs**

CENTURY CONTRACT NO: **151117.00**

CENTURY ENGINEERING

DAILY REPORT

REPORT NO: 2

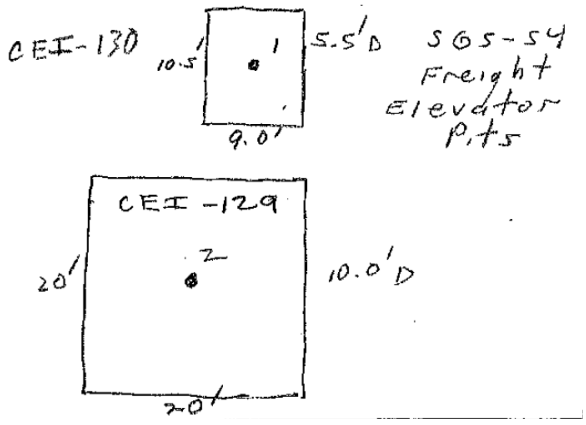
PROJECT: Sparrows Point Terminals - 20 Acre RoRo Site (SGS-54) DATE: 3/22/2016

WORK SHIFT: FROM: 8:15 am TO: 4:45 pm WEATHER: Partly Cloudy

FROM: _____ TO: _____ TEMP. 8 A.M. 50° 12 P.M. 60° 4 P.M. °

WORK IN PROGRESS: (Location and Description, Equipment in Use)

- Arrived at site at 8:30 for backfill inspection of Subgrade Structures within the 20 acre RoRo Automotive Yard. The Contractor is in the process of backfilling the 2 elevator pits of SGS-54.
- The groundwater had risen in the 10' deep pit overnight to 7' below ground level. To get the fill above the mater so that conventional backfill could be placed and compacted, an additional 1 foot layer of open graded #8 slag aggregate was placed over the #57 stone layer.
- An attempt was made to use the Back River stockpiles (Clayey Sand) to backfill the pits. The soil was too moist and could not achieve compaction. The first lift was removed from the smaller pit. Slag Tailings will be used as material is drier and moisture is not a problem.
- Slag aggregate (BOF Steel Slag) tailings were used to backfill the remaining depth of both elevator pits. Compaction testing of the conventional backfill was performed as the pits were backfilled. See attached compaction test results. Backfill was placed in approx. 8" lifts and each lift was compacted. At minimum, density testing was performed on every other lift.
- MCM also did minor backfilling of 2 shallow pits at SGS-52, which is the Emergency Reladling Track Scale Pit and the Emergency Reladling Pit. Two 2' x 2' x 2' deep depressions at the east end were backfilled with compacted Slag Tailings.
- No other work performed today.



COMMENTS:

INSPECTOR: Chris Jacobs

CENTURY CONTRACT NO: 151117.00

CENTURY ENGINEERING, INC.

NUCLEAR DENSITY TEST DATA SHEET

PROJECT: Sparrows Point Terminals - 20 acre RoRo Auto Yard (SGS-54) (Elevator Pits CEI-129 & CEI-130) DATE: 3/22/2016

CLIENT: MCM

CEI PROJECT NO.: 151117.00

GAUGE SERIAL NO.: 24148

DENSITY: 1924

MOISTURE: 604

TEST NO		1-A	1-B	1-C	2-A	2-B	2-C	2-D	2-E
LOCATION OR STATION	Small Pit CEI-130	→	→	→	Large Pit CEI-129	→	→	→	→
OFFSET									
ELEVATION	-3.0	-2.3	-0.8	Grade	-5.3	-4.5	-3.8	-2.0	Grade
SOURCE DEPTH	6"	6"	6"	6"	6"	6"	6"	6"	6"
DENSITY COUNT	1397	872	859	837	770	832	758	829	824
WET DENSITY PCF	130.4	151.6	152.3	153.5	157.1	153.7	157.8	153.9	154.1
MOISTURE COUNT	216	152	138	133	14	149	149	143	146
MOISTURE CONTENT %	18.1	9.8	8.6	8.1	8.7	9.4	9.1	8.9	9.1
DRY DENSITY PCF	110.5	138.1	140.3	142.0	144.6	140.5	144.6	141.3	141.3
MAX DRY DENSITY PCF	123.2	145.0	145.0	145.0	145.0	145.0	145.0	145.0	145.0
OPT MOISTURE CONT. %	11.6	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
% COMPACTION REQ'D	95	95	95	95	95	95	95	95	95
% COMPACTION OBTAINED	89.7 Fail	95.3 Pass	96.7 Pass	97.9 Pass	99.7 Pass	96.9 Pass	99.8 Pass	97.5 Pass	97.4 Pass

REMARKS: First test in small pit was made using Back River stockpiles. The soil was too moist and pumped. It was decided to remove the first lift and use the Steel Slag tailings to backfill both pits.

TECHNICIAN: C.Jacobs

CLIENT'S REPRESENTATIVE:

CENTURY ENGINEERING

DAILY REPORT

REPORT NO: 3

PROJECT: Sparrows Point Terminals - 20 Acre RoRo Site (SGS-52) DATE: 3/23/2016

WORK SHIFT: FROM: 8:15 am TO: 4:45 pm WEATHER: Partly Cloudy

FROM: _____ TO: _____ TEMP. 8 A.M. 55° 12 P.M. 67° 4 P.M. °

WORK IN PROGRESS: (Location and Description, Equipment in Use)

- Arrived at site at 8:30 for backfill inspection of Subgrade Structures within the 20 acre RoRo Automotive Yard. The Contractor will begin work on backfilling the Emergency Reladling Pit and the Emergency Reladling Track Scale Pit of SGS-52.
- The Emergency Reladling Pits is approximately 20 feet deep. No hole was made in bottom slab. The pit is too deep and confined for spreading in lifts and compacting with roller. It will be filled with open graded #3 Slag to a depth of 10' below the surface, then 2' of #57 slag, topped by 1 foot of #8 slag. The open graded slag will be placed in layers without compaction. The remaining depth will be backfilled with Steel Slag Tailings placed in lifts and compacted.
- The Emergency Reladling Track Scale has 2 pits that are 9 feet deep. A 4' x 4' hole was made in the bottom of the each pit. The holes were filled with #57 Slag, which was then placed over the bottom to a depth of 7.5 feet below the surface. A layer of #8 slag was then placed to a depth of 6.5 feet. The backfilling will be completed using the Slag tailings placed in lifts and compacted.
- Compaction testing was performed for all of the Slag Tailings backfill. See Nuclear Density Test Sheet attached. Backfill was placed in approx.. 8" lifts and each lift compacted. Density testing was performed on every other lift.
- All of the pits of SGS-52 were backfilled.
- The contractor began work on the SGS-53 Reladling Pit. This pit is 26 feet deep. Open graded slag will be used for the initial backfill because the pit is too deep and confined for spreading in lifts and compacting with roller. The #3 Slag was in short supply, so #57 slag will be used to a depth of 10 feet below the surface. This work will be started tomorrow.
- No other work performed today.

COMMENTS:

INSPECTOR: Chris Jacobs

CENTURY CONTRACT NO: 151117.00

CENTURY ENGINEERING

DAILY REPORT

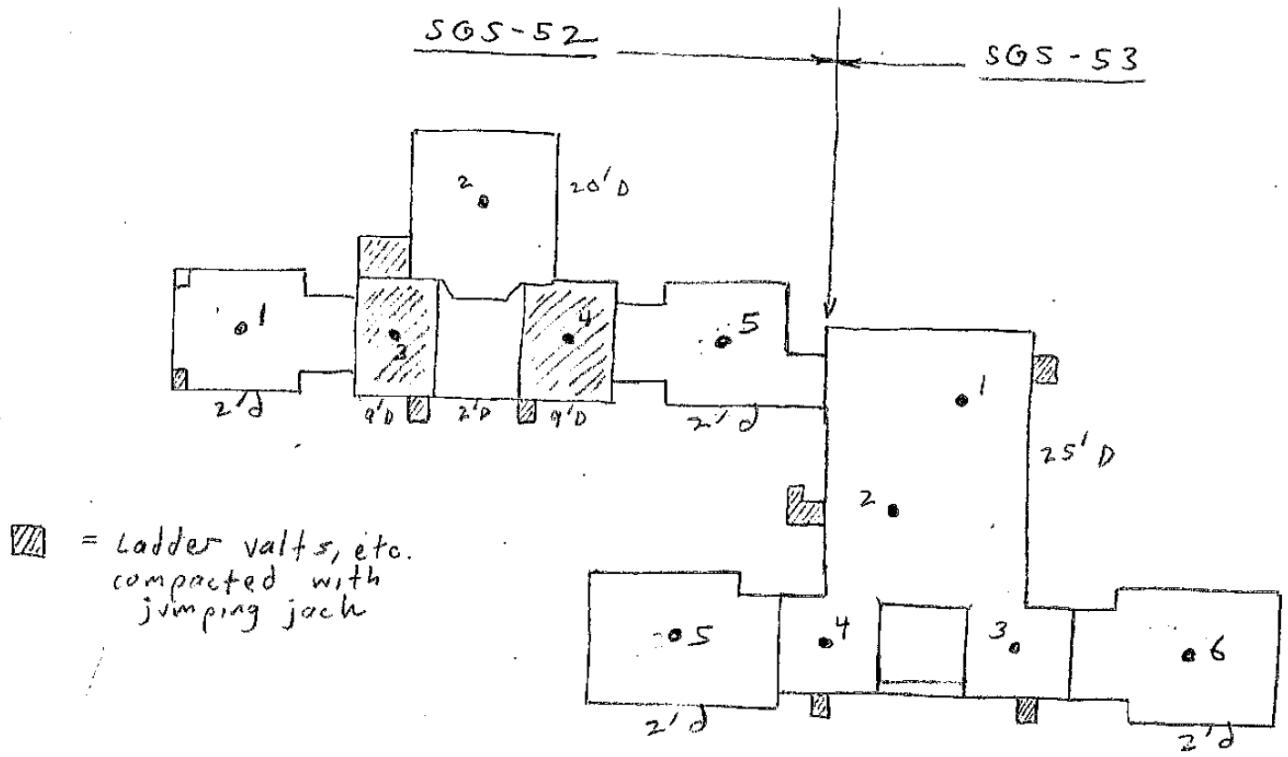
REPORT NO: 3

PROJECT: Sparrows Point Terminals - 20 Acre RoRo Site (SGS-52) DATE: 3/23/2016

WORK SHIFT: FROM: 8:15 am TO: 4:45 pm WEATHER: Partly Cloudy

FROM: TO: TEMP. 8 A.M. 55° 12 P.M. 67° 4 P.M. °

WORK IN PROGRESS: (Location and Description, Equipment in Use)



COMMENTS:

INSPECTOR: Chris Jacobs

CENTURY CONTRACT NO: 151117.00

CENTURY ENGINEERING, INC.

NUCLEAR DENSITY TEST DATA SHEET

PROJECT: Sparrows Point Terminals - 20 acre RoRo Auto Yard (SGS-52) (Emergency Reladling Pit and Emergency Reladling Track Scale Pit)

DATE: 3/23/2016

CLIENT: MCM

CEI PROJECT NO.: 151117.00

GAUGE SERIAL NO.: 24148

DENSITY: 1924

MOISTURE: 604

TEST NO	1	2-A	2-B	2-C	2-E	2-F	2-G		
LOCATION OR STATION	SGS-52 CEI-127	(See Sketch) CEI-128							→
OFFSET									
ELEVATION	-1.0	-5.3	-4.5	-3.7	-3.0	-1.5	Grade		
SOURCE DEPTH	6"	6"	6"	6"	6"	6"	6"		
DENSITY COUNT	530	823	636	647	604	626	626		
WET DENSITY PCF	151.7	154.2	165.4	164.8	167.6	166.2	166.2		
MOISTURE COUNT	141	136	179	144	198	164	168		
MOISTURE CONTENT %	8.9	8.3	10.9	8.3	12.1	9.7	10.0		
DRY DENSITY PCF	139.4	142.4	149.2	152.2	149.5	151.5	151.1		
MAX DRY DENSITY PCF	145.0	145.0	150.0	150.0	150.0	150.0	150.0		
OPT MOISTURE CONT. %	11.6	9.5	9.0	9.0	9.0	9.0	9.0		
% COMPACTION REQ'D	95	95	95	95	95	95	95		
% COMPACTION OBTAINED	96.1 Pass	98.2 Pass	99.5 Pass	101.5 Pass	99.7 Pass	101.0 Pass	100.7 Pass		

REMARKS: The measured dry density for the slag tailings was above the Proctor maximum Dry Density. No visual chang in material, but difference could be due to variation in residual ore content. Took Bag Sample to lab to perform new Proctor Test. Result was 150.0 pcf @ 9.5% optimum moisture. Test values were still high.

TECHNICIAN: C.Jacobs

CLIENT'S REPRESENTATIVE:

CENTURY ENGINEERING, INC.

NUCLEAR DENSITY TEST DATA SHEET

PROJECT: Sparrows Point Terminals - 20 acre RoRo Auto Yard (SGS-52) (Emergency Reladling Pit and Emergency Reladling Track Scale Pit)

DATE: 3/23/2016

CLIENT: MCM

CEI PROJECT NO.: 151117.00

GAUGE SERIAL NO.: 24148

DENSITY: 1924

MOISTURE: 604

TEST NO	3-A	3-B	3-C	3-D	3-E	4-A	4-B	4-C	4-D
LOCATION OR STATION	SGS-52 CEI-128	(See Sketch)							
OFFSET									
ELEVATION	-5.5	-4.7	-3.2	-1.7	Grade	-5.5	-4.7	-3.2	-1.7
SOURCE DEPTH	6"	6"	6"	6"	6"	6"	6"	8"	6"
DENSITY COUNT	584	632	604	574	732	591	565	376	618
WET DENSITY PCF	169.3	165.8	167.7	169.9	159.6	168.7	170.7	165.0	166.7
MOISTURE COUNT	103	149	178	180	134	168	164	171	178
MOISTURE CONTENT %	9.4	8.6	10.6	10.6	7.8	9.8	9.4	10.3	10.7
DRY DENSITY PCF	154.7	152.7	151.6	153.6	148.0	153.6	156.0	149.6	150.6
MAX DRY DENSITY PCF	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
OPT MOISTURE CONT. %	9.5	9.5	9.0	9.0	9.0	9.0	9.0	9.0	9.0
% COMPACTION REQ'D	95	95	95	95	95	95	95	95	95
% COMPACTION OBTAINED	103.1 Pass	101.8 Pass	101.1 Pass	102.4 Pass	98.7 Pass	102.4 Pass	104.0 Pass	99.7 Pass	100.4 Pass

REMARKS: The measured dry density for the slag tailings was above the Proctor maximum Dry Density. No visual chang in material, but difference could be due to variation in residual ore content. Took Bag Sample to lab to perform new Proctor Test. Result was 150.0 pcf @ 9.5% optimum moisture. Test values were still high.

TECHNICIAN: C.Jacobs

CLIENT'S REPRESENTATIVE:

CENTURY ENGINEERING, INC.

NUCLEAR DENSITY TEST DATA SHEET

PROJECT: Sparrows Point Terminals - 20 acre RoRo Auto Yard (SGS-52) (Emergency Reladling Pit and Emergency Reladling Track Scale Pit) DATE: 3/23/2016

CLIENT: MCM

CEI PROJECT NO.: 151117.00

GAUGE SERIAL NO.: 24148

DENSITY: 1924

MOISTURE: 604

TEST NO	4-E		5						
LOCATION OR STATION	SGS-52 CEI-128		SGS-52 CEI-127						
OFFSET									
ELEVATION	Grade		Grade						
SOURCE DEPTH	6"		6"						
DENSITY COUNT	751		694						
WET DENSITY PCF	158.5		162.1						
MOISTURE COUNT	128		165						
MOISTURE CONTENT %	7.5		9.5						
DRY DENSITY PCF	147.5		148.0						
MAX DRY DENSITY PCF	150.0		150.0						
OPT MOISTURE CONT. %	9.5		9.0						
% COMPACTION REQ'D	95		95						
% COMPACTION OBTAINED	98.3 Pass		98.7 Pass						

REMARKS: The measured dry density for the slag tailings was above the Proctor maximum Dry Density. No visual chang in material, but difference could be due to variation in residual ore content. Took Bag Sample to lab to perform new Proctor Test. Result was 150.0 pcf @ 9.5% optimum moisture. Test values were still high.

TECHNICIAN: C.Jacobs

CLIENT'S REPRESENTATIVE:

CENTURY ENGINEERING

DAILY REPORT

REPORT NO: 4

PROJECT: Sparrows Point Terminals - 20 Acre RoRo Site (SGS-53) DATE: 3/24/2016

WORK SHIFT: FROM: 8:30 am TO: 4:30 pm WEATHER: Partly Cloudy

FROM: _____ TO: _____ TEMP. 8 A.M. 57° 12 P.M. 72° 4 P.M. °

WORK IN PROGRESS: (Location and Description, Equipment in Use)

- Contractor is working on backfilling SGS-53 Reladling Pit (CEI-126) and Reladling Pit Track Scale (CEI-125)
- #57 Slag aggregate was used to fill the 22 foot deep pit to 10 feet below the surface. The surface of the stone was tamped with the bucket of the excavator. A layer (1.5 ft. thick) of #8 Slag Aggregate was placed on the #57 stone as a filter course.
- Steel Slag tailings will be used as compacted backfill from -8.5 feet to the surface. A Ramex drum roller was used to compact the backfill within the pit. There are some small ladder vaults that are too small for the drum roller where the lifts were compacted using a jumping jack.
- Compaction testing was performed on the slag tailings using a nuclear moisture-density gauge (see sheets attached). Backfill was placed in approx. 8" lifts and each lift compacted. Density testing was performed on every other lift.
- MCM also began placement of the open graded backfill material in the Scrubber Tank System (CEI-212) beginning with the east section. Both sides are 16.5 feet deep as measured from the north wall. The east section received #3 slag backfill from -16.5 to -14.5 feet below grade, #57 slag from -14.5' to -11.0', and #8 slag from -11.0' to -10.0' below grade.
- No other work performed today.
- MCM is not working tomorrow – Good Friday.

COMMENTS:

INSPECTOR: Chris Jacobs

CENTURY CONTRACT NO: 151117.00

CENTURY ENGINEERING

DAILY REPORT

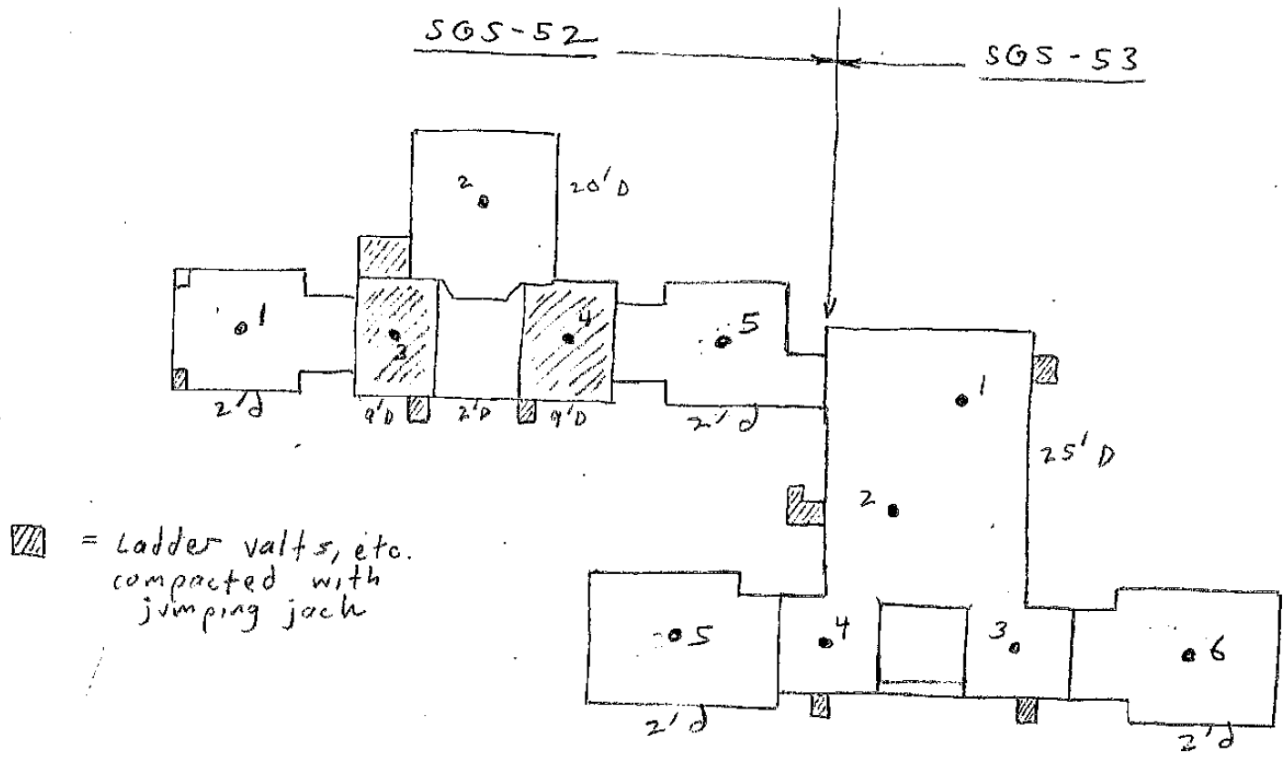
REPORT NO: 4

PROJECT: Sparrows Point Terminals - 20 Acre RoRo Site (SGS-52) DATE: 3/24/2016

WORK SHIFT: FROM: 8:15 am TO: 4:45 pm WEATHER: Partly Cloudy

FROM: TO: TEMP. 8 A.M. 55° 12 P.M. 67° 4 P.M. °

WORK IN PROGRESS: (Location and Description, Equipment in Use)



COMMENTS:

INSPECTOR: **Chris Jacobs**

CENTURY CONTRACT NO: **151117.00**

CENTURY ENGINEERING, INC.

NUCLEAR DENSITY TEST DATA SHEET

PROJECT: Sparrows Point Terminals - 20 acre RoRo Auto Yard (SGS-53) (Emergency Reladling Pit and Emergency Reladling Track Scale Pit)

DATE: 3/24/2016

CLIENT: MCM

CEI PROJECT NO.: 151117.00

GAUGE SERIAL NO.: 24148

DENSITY: 1924

MOISTURE: 604

TEST NO	1-A	1-B	1-C	1-D	2-A	2-B	2-C	2-D	3-A
LOCATION OR STATION	SGS-53 CEI-126	(See Sketch)	→						
OFFSET									
ELEVATION	-7.3	-4.3	-1.3	Grade	-7.3	-4.3	-1.3	Grade	-6.0
SOURCE DEPTH	6"	6"	8"	8"	6"	6"	8"	8"	6"
DENSITY COUNT	876	791	462	517	839	768	473	563	876
WET DENSITY PCF	151.4	156.0	157.1	153.0	153.4	157.2	156.2	149.6	151.4
MOISTURE COUNT	156	141	148	132	133	147	147	128	156
MOISTURE CONTENT %	10.1	8.6	9.1	8.1	8.1	9.0	9.1	7.9	10.1
DRY DENSITY PCF	137.5	143.6	144.0	141.5	141.8	144.3	143.2	138.6	137.5
MAX DRY DENSITY PCF	145.0	145.0	145.0	145.0	145.0	145.0	145.0	145.0	145.0
OPT MOISTURE CONT. %	11.6	9.5	9.5	9.5	9.5	9.5	9.5	9.5	11.6
% COMPACTION REQ'D	95	95	95	95	95	95	95	95	95
% COMPACTION OBTAINED	94.8 Pass	99.0 Pass	99.3 Pass	97.6 Pass	97.8 Pass	99.5 Pass	98.7 Pass	95.6 Pass	94.8 Pass

REMARKS:

TECHNICIAN: C.Jacobs

CLIENT'S REPRESENTATIVE:

CENTURY ENGINEERING, INC.

NUCLEAR DENSITY TEST DATA SHEET

PROJECT: Sparrows Point Terminals - 20 acre RoRo Auto Yard (SGS-53) (Reladling Pit CEI-126 & Track Scale CEI-125) DATE: 3/24/2016

CLIENT: MCM

CEI PROJECT NO.: 151117.00

GAUGE SERIAL NO.: 24148

DENSITY: 1924

MOISTURE: 604

TEST NO	3-B	3-C	3-D	4-A	4-B	4-C	4-D	5	6
LOCATION OR STATION	SGS-53 CEI-126	(See Sketch)	→					SGS-53 CEI-125	See Sketch
OFFSET	Reladling Pit							Track Scale	
ELEVATION	-3.3	-1.8	Grade	-6.0	-3.3	-1.8	Grade	-0.8	-0.8
SOURCE DEPTH	6"	8"	6"	6"	6"	8"	6"	6"	6"
DENSITY COUNT	791	462	869	839	768	473	938	802	836
WET DENSITY PCF	156.0	157.1	152.0	153.4	157.2	156.2	148.7	155.4	153.5
MOISTURE COUNT	141	148	130	133	147	147	124	144	143
MOISTURE CONTENT %	8.6	9.1	8.0	8.1	9.0	9.1	7.7	8.9	8.8
DRY DENSITY PCF	143.6	144.0	140.8	141.8	144.3	143.2	138.1	142.7	141.1
MAX DRY DENSITY PCF	145.0	145.0	145.0	145.0	145.0	145.0	145.0	145.0	145.0
OPT MOISTURE CONT. %	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
% COMPACTION REQ'D	95	95	95	95	95	95	95	95	95
% COMPACTION OBTAINED	99.0 Pass	99.3 Pass	97.1 Pass	97.8 Pass	99.5 Pass	97.0 Pass	95.2 Pass	98.4 Pass	97.3 Pass

REMARKS:

TECHNICIAN: C.Jacobs

CLIENT'S REPRESENTATIVE:

CENTURY ENGINEERING

DAILY REPORT

REPORT NO: 5

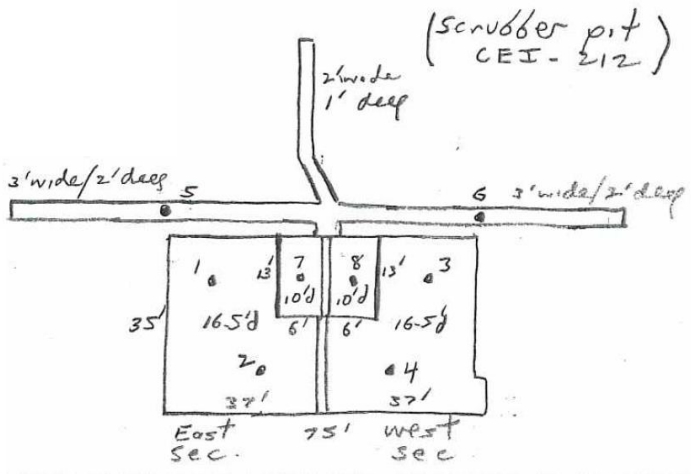
PROJECT: Sparrows Point Terminals - 20 Acre RoRo Site (SGS-56) DATE: 3/28/2016

WORK SHIFT: FROM: 8:30 am TO: 4:30 pm WEATHER: Partly Cloudy

FROM: 5:30 pm TO: 6:30 pm TEMP. 8 A.M. 45° 12 P.M. 55° 4 P.M. °

WORK IN PROGRESS: (Location and Description, Equipment in Use)

- Contractor is working on backfilling SGS-56 Scrubber Pit (CEI-212) with the steel slag tailings starting at the east end.
- Open graded slag was placed in the west section as follows: #3 slag from -16.5' to -12.0', #57 slag from -12.0' to -9.5', and #8 slag from -9.5' to -8.5'. The compacted tailings will be placed from -8.5' to grade.
- Ran one-point proctor test on material where the percent compaction was above 100 percent. The one point indicated a dry density of 149.8 pcf, which is the same as the most recent Proctor test done in the lab.
- Compaction testing of the slag tailings was performed using a nuclear density gauge (see test sheet attached). Backfill was placed in approx. 8" lifts and each lift was compacted. Density testing was performed on every other lift.
- MCM also began clean-up of the Hopper Pit and Tunnel (SGS-55) and started placement of the #3 Slag.
- No other work performed today.



COMMENTS:

INSPECTOR: Chris Jacobs

CENTURY CONTRACT NO: 151117.00

CENTURY ENGINEERING, INC.

NUCLEAR DENSITY TEST DATA SHEET

PROJECT: Sparrows Point Terminals - 20 acre RoRo Auto Yard (SGS-56) (Scrubber Pit CEI-212) DATE: 3/28/2016

CLIENT: MCM

CEI PROJECT NO.: 151117.00

DENSITY: 1911

GAUGE SERIAL NO.: 24148 MOISTURE: 600

TEST NO	1-A	1-B	1-B(1)	1-C	1-D	2-A	2-B	2-C	2-D
LOCATION OR STATION	SGS-56 CEI-212	(See Sketch)	→	→	→	→	→	→	→
OFFSET	East Side (South)	→	→	→	→	East Side (North)	→	→	→
ELEVATION	-9.0	-7.0	-7.0	-5.5	-3.8	-9.0	-7.0	-5.5	-3.8
SOURCE DEPTH	6"	6"	6"	6"	6"	6"	6"	6"	6"
DENSITY COUNT	751	970	873	657	713	900	872	579	750
WET DENSITY PCF	158.2	145.4	151.5	163.9	160.5	150.3	152.6	159.6	158.2
MOISTURE COUNT	145	136	146	160	133	136	135	148	135
MOISTURE CONTENT %	8.8	9.8	10.0	11.1	9.0	8.6	9.7	9.9	9.3
DRY DENSITY PCF	145.5	132.5	137.7	147.6	147.2	138.4	139.1	145.5	144.7
MAX DRY DENSITY PCF	145.0	145.0	145.0	150.0	150.0	150.0	150.0	150.0	150.0
OPT MOISTURE CONT. %	11.6	9.5	9.5	9.0	9.0	9.0	9.0	9.0	9.0
% COMPACTION REQ'D	95	95	95	95	95	95	95	95	95
% COMPACTION OBTAINED	100.3 Pass	91.4 Fail	95.0 Pass	98.4 Pass	98.1 Pass	95.5 Pass	95.9 Pass	97.0 Pass	96.5 Pass

REMARKS:

TECHNICIAN: C.Jacobs

CLIENT'S REPRESENTATIVE:

CENTURY ENGINEERING, INC.

NUCLEAR DENSITY TEST DATA SHEET

PROJECT: Sparrows Point Terminals - 20 acre RoRo Auto Yard (SGS-56) (Scrubber Pit CEI-212) DATE: 3/28/2016

CLIENT: MCM

CEI PROJECT NO.: 151117.00

DENSITY: 1911

GAUGE SERIAL NO.: 24148 MOISTURE: 600

TEST NO	3-A	3-B	3-C	3-D	4-A	4-B	4-C	4-D	
LOCATION OR STATION	SGS-56 CEI-212	(See Sketch)	→	→	→	→	→	→	→
OFFSET	West Side (South)	→	→	→	West Side (North)	→	→	→	
ELEVATION	-7.5	-6.0	-4.5	-1.5	-7.5	-6.0	-4.5	-1.5	
SOURCE DEPTH	6"	6"	6"	6"	6"	6"	6"	6"	
DENSITY COUNT	757	609	597	687	573	645	691	692	
WET DENSITY PCF	157.8	167.4	168.1	162.5	170.0	164.8	161.7	161.6	
MOISTURE COUNT	145	157	168	138	155	100	161	140	
MOISTURE CONTENT %	10.2	10.8	11.5	8.2	10.2	11.0	11.3	8.3	
DRY DENSITY PCF	143.1	151.1	150.9	150.2	154.2	148.4	145.2	149.2	
MAX DRY DENSITY PCF	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	
OPT MOISTURE CONT. %	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	
% COMPACTION REQ'D	95	95	95	95	95	95	95	95	
% COMPACTION OBTAINED	95.4 Pass	100.7 Fail	100.6 Pass	100.0 Pass	102.8 Pass	98.9 Pass	96.8 Pass	99.5 Pass	

REMARKS: Ran one-point on test 3-C sample - result matched Sample #2 Proctor.

Contractor filled only up to -1.0 fet below the higher west wall.

TECHNICIAN: C.Jacobs

CLIENT'S REPRESENTATIVE:

CENTURY ENGINEERING

DAILY REPORT

REPORT NO: 6

PROJECT: Sparrows Point Terminals - 20 Acre RoRo Site (SGS-56) DATE: 3/29/2016

WORK SHIFT: FROM: 7:30 am TO: 4:30 pm WEATHER: Partly Cloudy

FROM: _____ TO: _____ TEMP. 8 A.M. 45° 12 P.M. 55° 4 P.M. °

WORK IN PROGRESS: (Location and Description, Equipment in Use)

- Contractor completed the backfill of the two large sections of the Scrubber Pit (CEI-212) to -1.0 feet below the top of the North Wall. Started backfilling the 2 smaller pits on the south side of yje main scrubber pit.
- Waterway trenches just outside the south wall were also cleaned out of all rubble and debris.
- Small pit dimensions are 13' x 6' x 10' deep.
- Making holes in the bottom slab for each were attempted, but the slab was too thick to break through. Placed #57 Slag to -8.5' and #8 slag from -8.5' to -7.5'.
- The trenched on the south side were backfilled with compacted steel slag tailings (see attached test sheet). Backfill was placed in approx. 8" lifts and each lift compacted.
- MCM also continued placement of open graded slag aggregate in the SGS-55 Hopper Pit and Ramp, which received #3 slag from -28' to -11.5', #57 slag from -11.5' to -10', and #8 slag from -10.0' to -9.1'.
- No other work performed today.

COMMENTS:

INSPECTOR: Chris Jacobs

CENTURY CONTRACT NO: 151117.00

CENTURY ENGINEERING, INC.

NUCLEAR DENSITY TEST DATA SHEET

PROJECT: Sparrows Point Terminals - 20 acre RoRo Auto Yard (SGS-56) (Scrubber Pit CEI-212) DATE: 3/29/2016

CLIENT: MCM

CEI PROJECT NO.: 151117.00

GAUGE SERIAL NO.: 24148

DENSITY: 1911

MOISTURE: 600

TEST NO	1-E	2-E		5	6				
LOCATION OR STATION	SGS-56 CEI-212	(See Sketch)		3' Trench	3' Trench				
OFFSET	East Side (South)	East Side (North)		East Side	West Side				
ELEVATION	-1.5	-1.5		-1.0	-1.0				
SOURCE DEPTH	6"	6"		6"	6"				
DENSITY COUNT	587	655		729	756				
WET DENSITY PCF	168.8	165.2		159.4	157.7				
MOISTURE COUNT	175	158		149	148				
MOISTURE CONTENT %	12.0	10.5		10.5	10.2				
DRY DENSITY PCF	150.8	149.5		144.3	143.1				
MAX DRY DENSITY PCF	150.0	150.0		150.0	150.0				
OPT MOISTURE CONT. %	9.0	9.0		9.0	9.0				
% COMPACTION REQ'D	95	95		95	95				
% COMPACTION OBTAINED	100.5 Pass	99.7 Pass		99.5 Pass	98.7 Pass				

REMARKS:

TECHNICIAN: C.Jacobs

CLIENT'S REPRESENTATIVE:

CENTURY ENGINEERING, INC.

NUCLEAR DENSITY TEST DATA SHEET

PROJECT: Sparrows Point Terminals - 20 acre RoRo Auto Yard (SGS-56) (Scrubber Pit CEI-212) DATE: 3/29/2016

CLIENT: MCM

CEI PROJECT NO.: 151117.00

GAUGE SERIAL NO.: 24148

DENSITY: 1911

MOISTURE: 600

TEST NO	7-A	7-B	7-C	8-A	8-B	8-C			
LOCATION OR STATION	SGS-56 CEI-212	(See Sketch)	→	3' Trench	3' Trench	→			→
OFFSET	Small Tank (East)	→	→	Small Tank (west)	→	→			
ELEVATION	-4.5	-3.0	-1.0	-4.5	-3.0	-1.0			
SOURCE DEPTH	6"	6"	6"	6"	6"	6"			
DENSITY COUNT	654	748	749	598	738	771			
WET DENSITY PCF	164.2	158.4	158.1	168.1	158.9	156.8			
MOISTURE COUNT	156	133	141	165	148	138			
MOISTURE CONTENT %	10.7	9.2	8.6	11.2	10.4	8.4			
DRY DENSITY PCF	148.3	145.1	145.6	151.1	143.9	144.7			
MAX DRY DENSITY PCF	150.0	150.0	150.0	150.0	150.0	150.0			
OPT MOISTURE CONT. %	9.0	9.0	9.0	9.0	9.0	9.0			
% COMPACTION REQ'D	95	95	95	95	95	95			
% COMPACTION OBTAINED	102.0 Pass	100.1 Pass	97.1 Pass	100.7 Pass	95.9 Pass	96.5 Pass			

REMARKS:

TECHNICIAN: C.Jacobs

CLIENT'S REPRESENTATIVE:

CENTURY ENGINEERING

DAILY REPORT

REPORT NO: 7

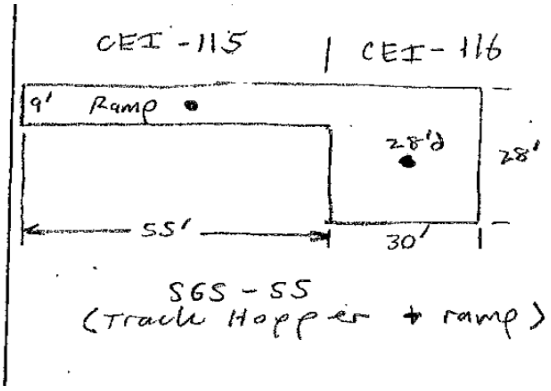
PROJECT: Sparrows Point Terminals - 20 Acre RoRo Site (SGS-55) DATE: 3/30/2016

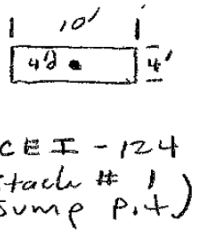
WORK SHIFT: FROM: 7:30 am TO: 4:30 pm WEATHER: Partly Cloudy

FROM: _____ TO: _____ TEMP. 8 A.M. 45° 12 P.M. 55° 4 P.M. °

WORK IN PROGRESS: (Location and Description, Equipment in Use)

- MCM started and completed backfill on the Hopper Pit and Ramp (SGS-55) using the compacted Slag tailings.
- Also worked on preparing an electrical vault not shown on the plans.
- Noted that CEI-117 Track Yard Scale Pit that is shown on plans is no longer present.
- Another small vault (4' x 4' x 4' deep) was noted just south of the electrical vault.
- After discussion with Mike Cerri (environmental), permission was given to backfill the 2 small vaults.
- The electrical vault received #57 slag from -11.5' to -9.5' and #8 Slag from -9.5' to -8.5'. The small pit had #57 slag from -4.0 to -3.0' (No hole made in bottom) due to small size.
- Compaction testing performed on the Slag Tailings backfill (see attached test sheets). Backfill was placed in approx.. 8" layers and each lift compacted. Density testing was performed on every other lift.
- No other work performed today.





COMMENTS:

INSPECTOR: **Chris Jacobs**

CENTURY CONTRACT NO: **151117.00**

CENTURY ENGINEERING

DAILY REPORT

REPORT NO: 7

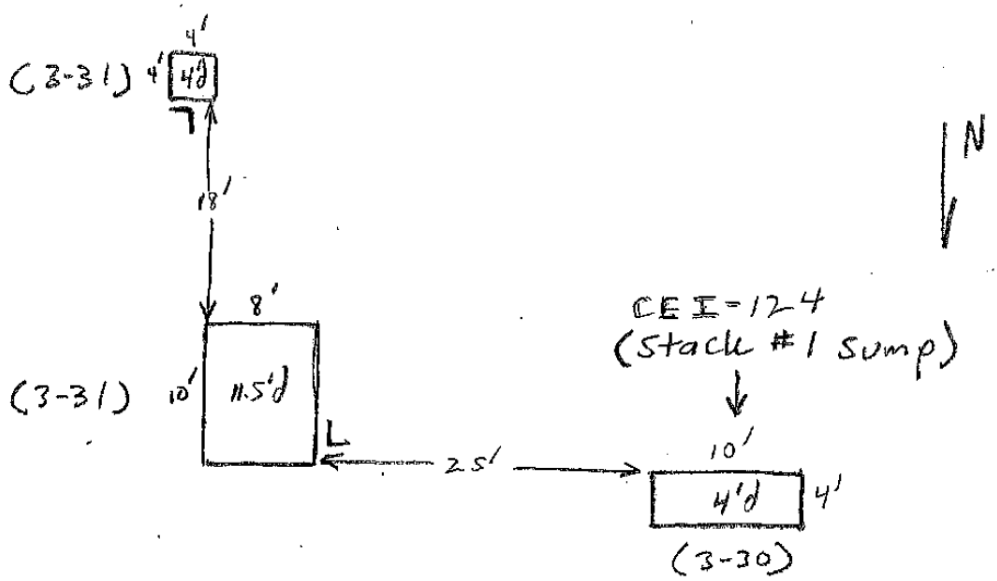
PROJECT: Sparrows Point Terminals - 20 Acre RoRo Site (SGS-55) DATE: 3/30/2016

WORK SHIFT: FROM: 7:30 am TO: 4:30 pm WEATHER: Partly Cloudy

FROM: TO: TEMP. 8 A.M. 45° 12 P.M. 55° 4 P.M. °

WORK IN PROGRESS: (Location and Description, Equipment in Use)

Location of Electric vault pit and 4'x4'x4' pit relative to CEI-124 & Backfilled (3-30/31-16)



COMMENTS:

INSPECTOR: Chris Jacobs

CENTURY CONTRACT NO: 151117.00

CENTURY ENGINEERING, INC.

NUCLEAR DENSITY TEST DATA SHEET

PROJECT: Sparrows Point Terminals - 20 acre RoRo Auto Yard (SGS-56) (Scrubber Pit CEI-212) DATE: 3/30/2016

CLIENT: MCM

CEI PROJECT NO.: 151117.00

GAUGE SERIAL NO.: 24148

DENSITY: 1911

MOISTURE: 600

TEST NO	1-A	1-B	1-C	1-D	1-E	1-F			
LOCATION OR STATION	SGS-55 CEI-116	(See Sketch)	→						
OFFSET									
ELEVATION	-7.2	-5.8	-4.5	-3.0	-1.5	Grade			
SOURCE DEPTH	6"	6"	6"	6"	6"	6"			
DENSITY COUNT	665	679	704	786	726	719			
WET DENSITY PCF	163.4	162.6	160.9	156.1	159.7	160.3			
MOISTURE COUNT	171	148	158	134	139	149			
MOISTURE CONTENT %	12.1	10.2	11.1	9.5	9.6	8.9			
DRY DENSITY PCF	145.7	147.6	144.8	142.6	145.7	147.2			
MAX DRY DENSITY PCF	150.0	150.0	150.0	150.0	150.0	150.0			
OPT MOISTURE CONT. %	9.0	9.0	9.0	9.0	9.0	9.0			
% COMPACTION REQ'D	95	95	95	95	95	95			
% COMPACTION OBTAINED	97.1 Pass	98.4 Pass	96.5 Pass	95.1 Pass	97.1 Pass	98.1 Pass			

REMARKS:

TECHNICIAN: C.Jacobs

CLIENT'S REPRESENTATIVE:

CENTURY ENGINEERING, INC.

NUCLEAR DENSITY TEST DATA SHEET

PROJECT: Sparrows Point Terminals - 20 acre RoRo Auto Yard (SGS-56) (Scrubber Pit CEI-212)

DATE: 3/30/2016

CLIENT: MCM

CEI PROJECT NO.: 151117.00

GAUGE SERIAL NO.: 24148

DENSITY: 1911

MOISTURE: 600

TEST NO	2-A	2-B	2-C	2-D	2-F				
LOCATION OR STATION	Ramp CEI-115	(See Sketch)	→	→	→				
OFFSET									
ELEVATION	-6.0	-4.5	-2.5	-1.3	Grade				
SOURCE DEPTH	6"	6"	6"	6"	6"				
DENSITY COUNT	602	692	754	733	701				
WET DENSITY PCF	163.6	161.7	157.9	159.2	161.5				
MOISTURE COUNT	157	149	152	155	133				
MOISTURE CONTENT %	10.1	10.3	10.9	10.8	7.7				
DRY DENSITY PCF	147.6	146.6	142.5	143.7	150.0				
MAX DRY DENSITY PCF	150.0	150.0	150.0	150.0	150.0				
OPT MOISTURE CONT. %	9.0	9.0	9.0	9.0	9.0				
% COMPACTION REQ'D	95	95	95	95	95				
% COMPACTION OBTAINED	98.4 Pass	97.7 Pass	95.0 Pass	95.8 Pass	100.0 Pass				

REMARKS:

TECHNICIAN: C.Jacobs

CLIENT'S REPRESENTATIVE:

CENTURY ENGINEERING

DAILY REPORT

REPORT NO: 8

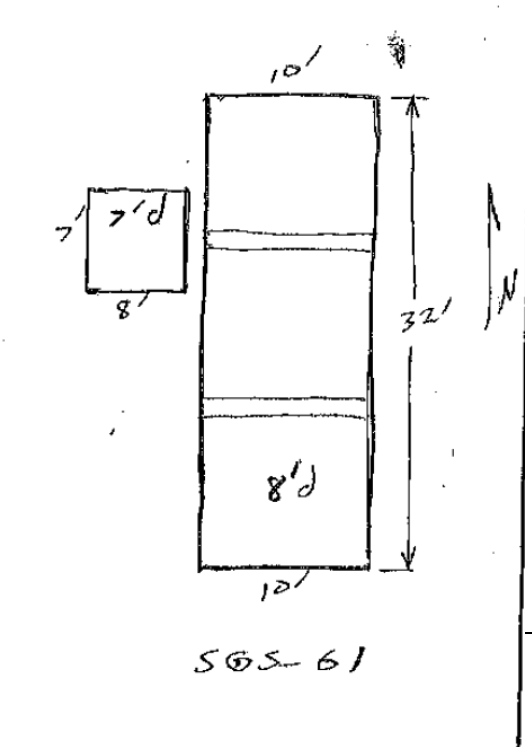
PROJECT: Sparrows Point Terminals - 20 Acre RoRo Site (SGS-56) DATE: 3/31/2016

WORK SHIFT: FROM: 7:30 am TO: 4:30 pm WEATHER: Partly Cloudy

FROM: _____ TO: _____ TEMP. 8 A.M. 62° 12 P.M. 70° 4 P.M. °

WORK IN PROGRESS: (Location and Description, Equipment in Use)

- MCM backfilled the CEI-124 Stack #1 Sump Pit, Electrical Vault and small pit with the compacted Slag tailings.
- Compaction testing was performed using a nuclear gauge (see attached test sheet). Backfill was placed in approx. 8" lifts and each lift compacted. Density testing was performed on every other lift.
- MCM began clean-out of SGS-61 located at or beyond the eastern boundary of the 20 acre parcel. Groundwater entered the pit to -6.5 feet below grade. Due to the presence of groundwater, #3 Slag was placed to -6.0', and #57 Slag from-6.0' to -5.0'. 1 foot of CR-6 was placed and compacted as a substitute filter layer for the #8 Slag. No backfilling today with the slag tailings.
- No other work performed today.



COMMENTS:

INSPECTOR: Chris Jacobs

CENTURY CONTRACT NO: 151117.00

CENTURY ENGINEERING, INC.

NUCLEAR DENSITY TEST DATA SHEET

PROJECT: Sparrows Point Terminals - 20 acre RoRo Auto Yard (SGS-56) (CEI 124 Sump Pit and Vaults) DATE: 3/31/2016

CLIENT: MCM

CEI PROJECT NO.: 151117.00

GAUGE SERIAL NO.: 24148

DENSITY: 1911

MOISTURE: 600

TEST NO	1-A	1-B							
LOCATION OR STATION	SGS-56 CEI-124	(See Sketch)		Electric Vault	→	→	4'x4'x4' Pit	→	
OFFSET									
ELEVATION	-1.5'	Grade		-5.0	-3.5	-1.7	-2.0	Grade	
SOURCE DEPTH	6"	6"		8"	6"	6"	6"	6"	
DENSITY COUNT	626	592		446	761	680	778	567	
WET DENSITY PCF	166.7	164.6		158.2	157.3	162.3	156.4	165.5	
MOISTURE COUNT	169	163		141	156	151	142	162	
MOISTURE CONTENT %	11.5	11.3		8.5	9.8	9.1	8.7	10.8	
DRY DENSITY PCF	149.5	147.9		145.8	143.3	148.8	143.8	149.4	
MAX DRY DENSITY PCF	150.0	150.0		150.0	150.0	150.0	150.0	150.0	
OPT MOISTURE CONT. %	9.0	9.0		9.0	9.0	9.0	9.0	9.0	
% COMPACTION REQ'D	95	95		95	95	95	95	95	
% COMPACTION OBTAINED	99.7 Pass	98.6 Pass		97.2 Pass	95.5 Pass	99.2 Pass	95.9 Pass	99.6 Pass	

REMARKS: Each structure had 1 density test at center

TECHNICIAN: C.Jacobs

CLIENT'S REPRESENTATIVE:

CENTURY ENGINEERING

DAILY REPORT

REPORT NO: 9

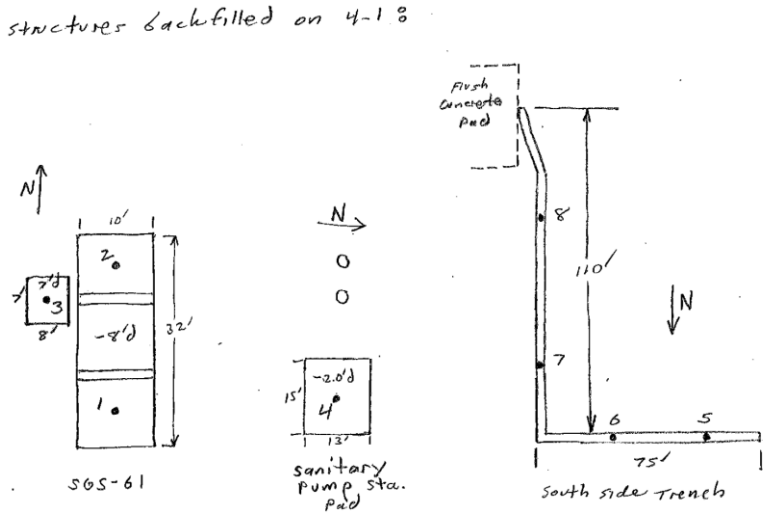
PROJECT: Sparrows Point Terminals - 20 Acre RoRo Site (SGS-61) DATE: 4/1/2016

WORK SHIFT: FROM: 7:30 am TO: 4:30 pm WEATHER: Partly Cloudy

FROM: TO: TEMP. 8 A.M. 58° 12 P.M. 72° 4 P.M. °

WORK IN PROGRESS: (Location and Description, Equipment in Use)

- MCM completed the backfill of SGS-61 with the compacted Steel Slag Tailings.
- Also worked on backfilling a shallow pit at the Sanitary Sewer Pump Station. The pit is 15' x 13' x 2' deep with the bottom removed to slag subgrade material. The pit was also backfilled with compacted slag tailings.
- Also backfilled a 1' x 4' deep concrete trench located about 200' south of the 20 acre parcel. The 110' long trench was cleaned out and a 75' long section that was previously backfilled with CR-6 slag that was hard was left in place. The trench was backfilled with the steel slag tailings. Backfill was placed in approx. 8" lifts and each lift compacted. Density testing was performed on every other lift.
- No other work performed today.



COMMENTS:

INSPECTOR: **Chris Jacobs**

CENTURY CONTRACT NO: **151117.00**

CENTURY ENGINEERING, INC.

NUCLEAR DENSITY TEST DATA SHEET

PROJECT: Sparrows Point Terminals - 20 acre RoRo Auto Yard (SGS-61) (CEI 124 Sump Pit and Vaults) DATE: 4/1/2016

CLIENT: MCM

CEI PROJECT NO.: 151117.00

GAUGE SERIAL NO.: 24148

DENSITY: 1911

MOISTURE: 600

TEST NO	1-A	1-B	1-C	2-A	2-B	2-C	3-A	3-B	3-C
LOCATION OR STATION	SGS-61 See Sketch								
OFFSET									
ELEVATION	-3.3	-1.7	Grade	-3.3	-1.7	Grdae	-3.3	-1.7	Grade
SOURCE DEPTH	6"	6"	6"	6"	8"	6"	6"	6"	6"
DENSITY COUNT	723	647	695	686	379	722	752	684	714
WET DENSITY PCF	159.6	164.5	161.9	161.9	164.4	160.2	157.9	162.0	160.7
MOISTURE COUNT	158	154	138	149	161	131	144	185	147
MOISTURE CONTENT %	9.8	9.1	8.0	8.9	9.7	7.6	8.8	9.4	8.7
DRY DENSITY PCF	145.4	150.7	149.9	148.6	149.9	148.9	145.1	148.1	147.7
MAX DRY DENSITY PCF	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
OPT MOISTURE CONT. %	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
% COMPACTION REQ'D	95	95	95	95	95	95	95	95	95
% COMPACTION OBTAINED	96.9 Pass	100.5 Pass	99.9 Pass	99.1 Pass	100.0 Pass	99.3 Pass	96.7 Pass	98.8 Pass	98.5 Pass

REMARKS: Each structure had 1 density test at center

TECHNICIAN: C.Jacobs

CLIENT'S REPRESENTATIVE:

CENTURY ENGINEERING, INC.

NUCLEAR DENSITY TEST DATA SHEET

PROJECT: Sparrows Point Terminals - 20 acre RoRo Auto Yard (SGS-61) (CEI 124 Sump Pit and Vaults) DATE: 4/1/2016

CLIENT: MCM

CEI PROJECT NO.: 151117.00

GAUGE SERIAL NO.: 24148

DENSITY: 1911

MOISTURE: 600

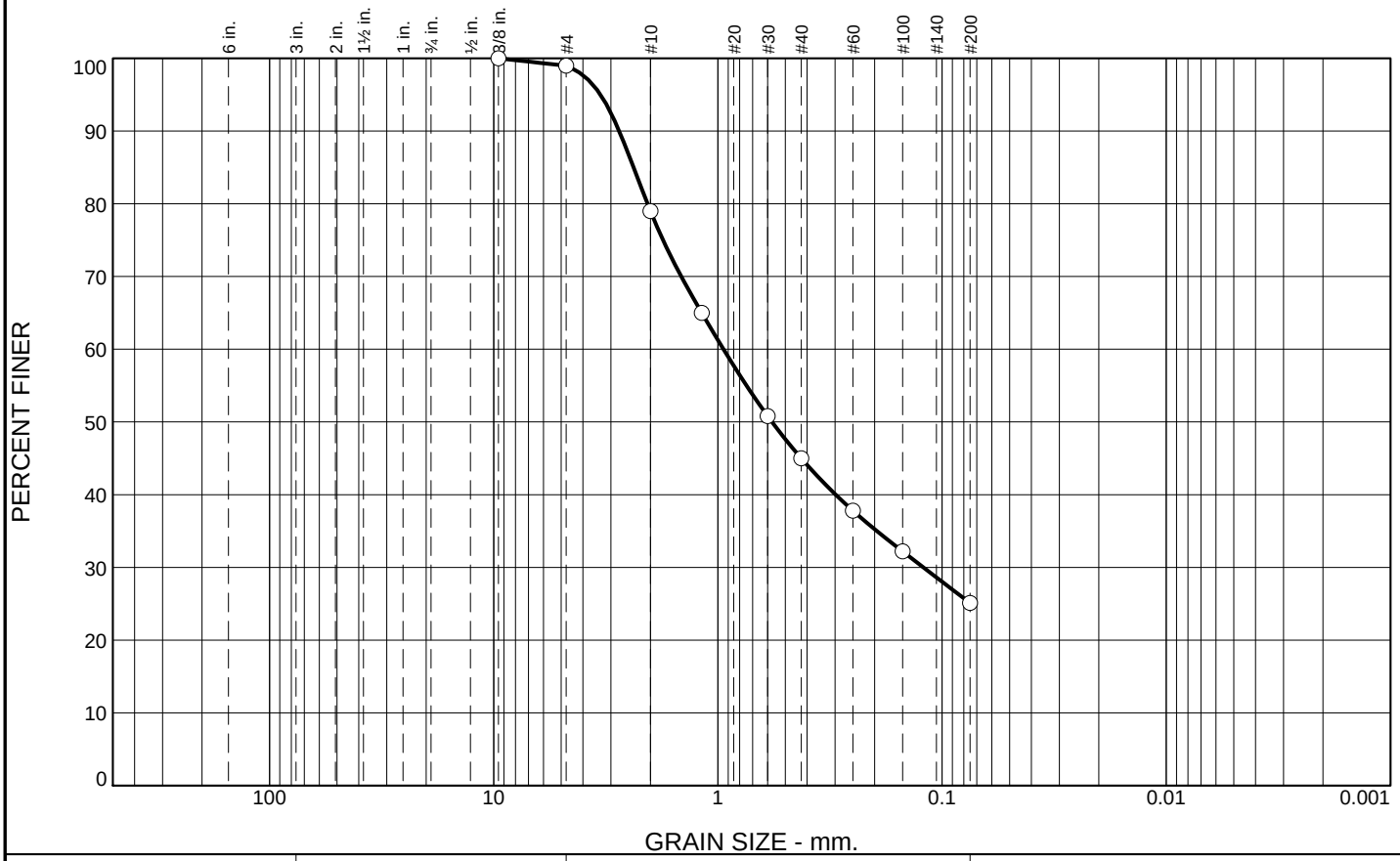
TEST NO	4-A	4-B		5	6	7-A	7-B	8-B	8-B
LOCATION OR STATION	SGS-61 See Sketch	→		1.0' Wide Trench	See Sketch	→			→
OFFSET									
ELEVATION	-1.0	Grade		Grade	Grade	-2.0	Grade	-2.0 Grade	Grade
SOURCE DEPTH	10"	8"		8"	8"	8"	6"	8"	6"
DENSITY COUNT	208	355		394	445	413	711	456	726
WET DENSITY PCF	164.5	166.9		163.0	158.2	161.2	160.3	157.3	159.4
MOISTURE COUNT	183	178		156	152	149	152	142	157
MOISTURE CONTENT %	11.3	10.8		9.4	9.4	9.0	146.7	8.7	9.7
DRY DENSITY PCF	147.8	150.7		149.0	144.7	147.9		144.8	145.3
MAX DRY DENSITY PCF	150.0	150.0		150.0	150.0	150.0	150.0	150.0	150.0
OPT MOISTURE CONT. %	9.0	9.0		9.0	9.0	9.0	9.0	9.0	9.0
% COMPACTION REQ'D	95	95		95	95	95	95	95	95
% COMPACTION OBTAINED	98.5 Pass	100.4 Pass		99.3 Pass	96.4 Pass	98.6 Pass	97.8 Pass	96.5 Pass	96.9 Pass

REMARKS:

TECHNICIAN: C.Jacobs

CLIENT'S REPRESENTATIVE:

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.0	20.0	34.0	19.9	25.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.0		
#10	79.0		
#16	65.0		
#30	50.8		
#40	45.0		
#60	37.8		
#100	32.2		
#200	25.1		

* (no specification provided)

Soil Description

Steel Slag Tailings (Samples 1/13/16)

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 2.7578 D_{85}= 2.3788 D_{60}= 0.9443
D_{50}= 0.5742 D_{30}= 0.1212 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-1-b

Remarks

Sampled 1/13/17 from SGS-43b backfill material

Source of Sample: Steel Slag Tailings
Sample Number: 1

Date: 1/17/16

Century Engineering, Inc.

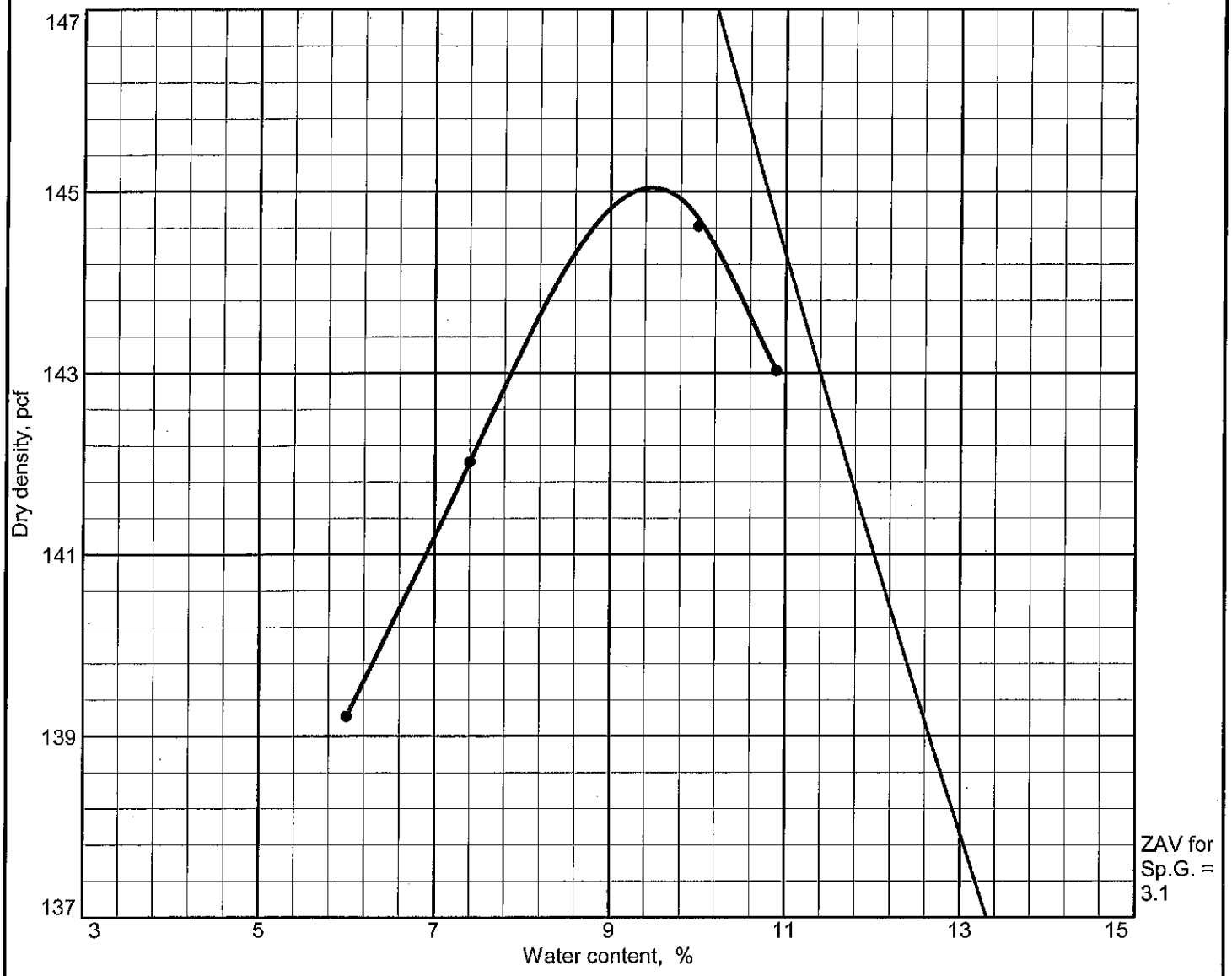
Hunt Valley, MD

Client: MCM Management Corp.
Project: Sparrows Point Terminals-Subgrade Structures

Project No: 151117.00 **Figure**

Tested By: United Eng. **Checked By:** PAD

COMPACTION TEST REPORT



Test specification: ASTM D 1557-00 Method A Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No.4	% < No.200
	USCS	AASHTO						
	SM	A-1-b			NV	NP	1.0	25.1

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 145.0 pcf Optimum moisture = 9.5 %	Steel Slag Tailings (Samples 1/13/16)

Project No. 151117.00 **Client:** MCM Management Corp.
Project: Sparrows Point Terminals-Subgrade Structures

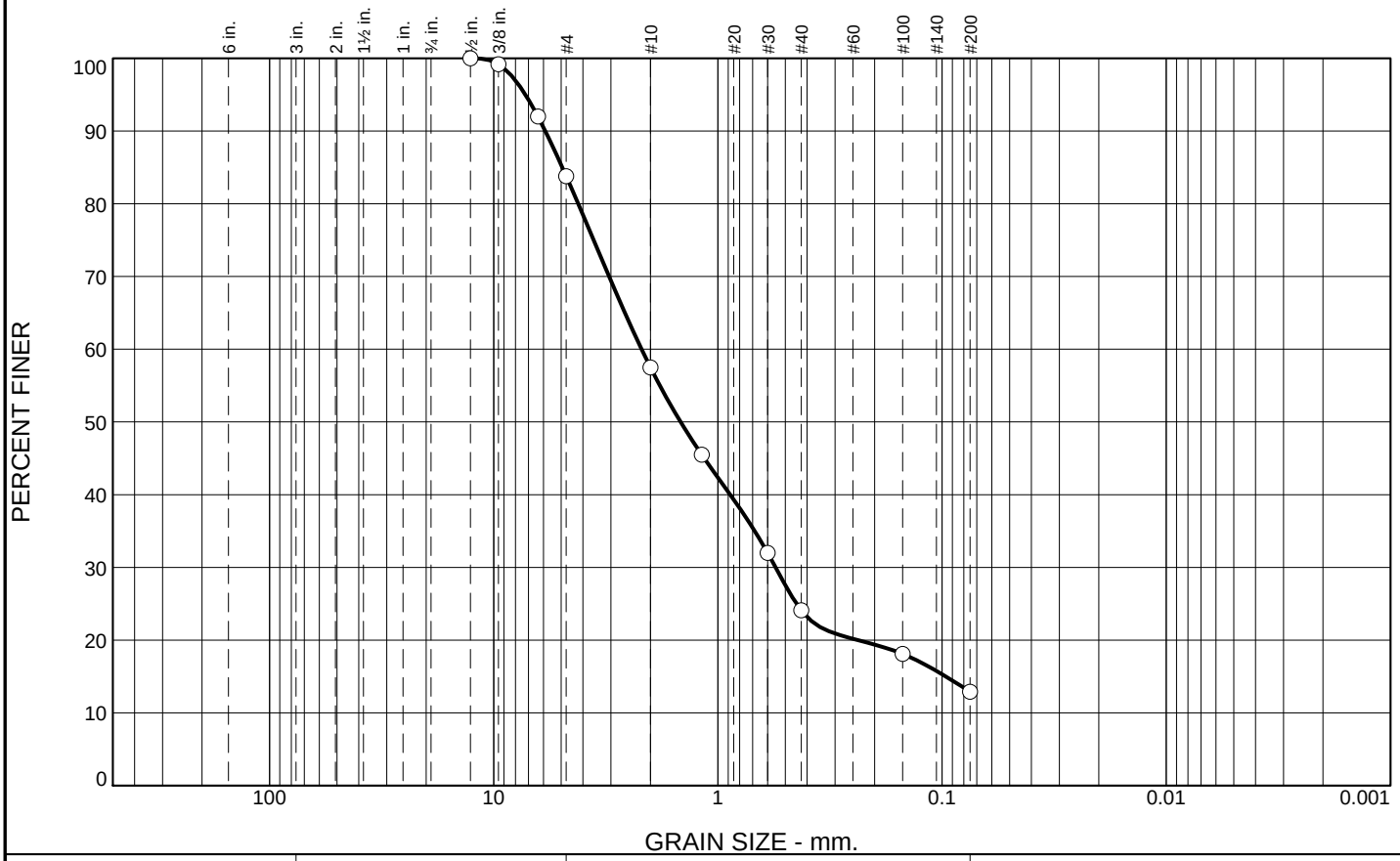
● **Source:** Steel Slag Tailings **Sample No.:** 1

Remarks:

Century Engineering, Inc.
Hunt Valley, MD

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	16.2	26.3	33.4	11.2	12.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
0.5	100.0		
.375	99.2		
.25	92.0		
#4	83.8		
#10	57.5		
#16	45.5		
#30	32.0		
#40	24.1		
#100	18.1		
#200	12.9		

* (no specification provided)

Soil Description

Gray Steel Slag #10 Tailings (Sampled 3/23/16)

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 5.8832 D_{85}= 4.9425 D_{60}= 2.1911
D_{50}= 1.4666 D_{30}= 0.5531 D_{15}= 0.0963
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-1-b

Remarks

Natural Moisture =8.8%

Source of Sample: Steel Slag Tailings (SGS-52 Backfill)
Sample Number: Bag

Date: 4/5/16

Century Engineering, Inc.

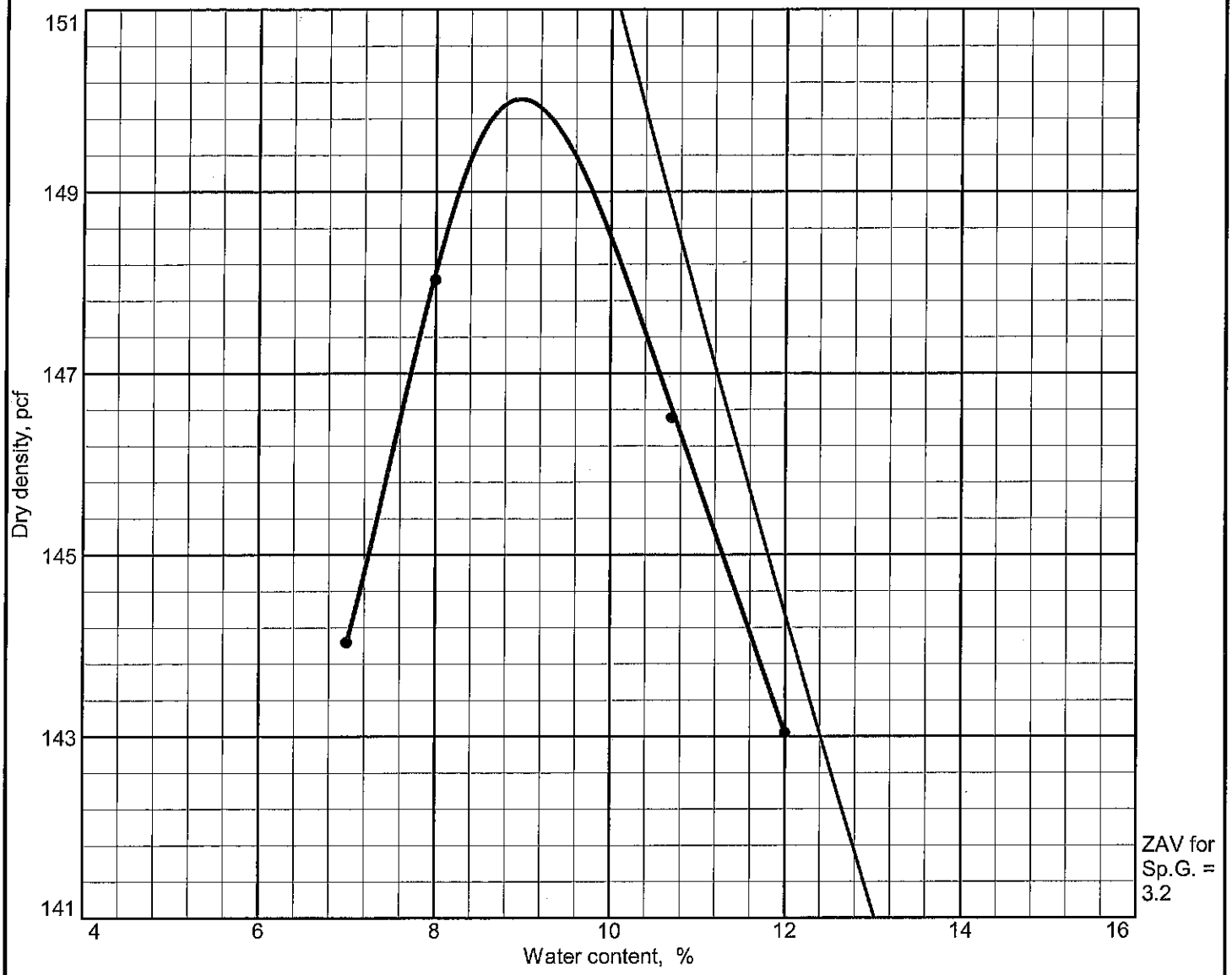
Hunt Valley, MD

Client: MCM Management Corp.
Project: Sparrows Point Terminals-Subgrade Structures

Project No: 151117.00 **Figure**

Tested By: United **Checked By:** PAD

COMPACTION TEST REPORT



Test specification: AASHTO T 180 Method A Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No.4	% < No.200
	USCS	AASHTO						
	SM	A-1-b			NV	NP	16.2	12.9

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 150.0 pcf Optimum moisture = 9.0 %	Gray Steel Slag #10 Tailings (Sampled 3/23/16)

Project No. 151117.00 **Client:** MCM Management Corp.
Project: Sparrows Point Terminals-Subgrade Structures

● **Source:** Steel Slag Tailings (SGS-52 **Sample No.:** Bag

Century Engineering, Inc.
Hunt Valley, MD

Remarks:

Figure

April 12, 2016

MCM Management Corp.
1430 Sparrows Point Blvd.
Truck Dock 341A
Sparrows Point, Maryland 21219

Attn: Mr. Brandon Bonanno
Vice President Operations

Re: Sparrows Point Facility
Backfill Certification for 20 Acre RoRo Automotive Yard
Sparrows Point, Maryland
CEI Project No. 151117.00

Dear Mr. Bonanno:

Century Engineering, Inc. has performed inspections and testing for the backfilling of the subgrade structures that are within the 20 acre RoRo (Roll-on Roll-off) Automotive Yard. The following subgrade structures were backfilled:

SGS #	Description	Approximate Dimensions
SGS-52	Emergency Reladling Track Scale Pit (CEI-127)	28' x 19' x 9' deep
	Emergency Reladling Pit (CEI-128)	20' x 24' x 17' deep
SGS-53	Reladling Track Scale Pit (CEI-125)	49' x 28' x 2.3' deep
	Reladling Pit (CEI-126)	39' x 25' x 26' deep
SGS-54	Freight Elevator Pit (CEI-129)	20' x 19' x 9.5' deep
	Passenger Elevator Pit (CEI-130)	9' x 10' x 5.5' deep
SGS-55	Track Hopper Conveyor Tunnel (CEI-115)	62' x 8' x 7.5' deep
	Track Hopper Pit (CEI-116)	27' x 19' x 18' deep
SGS-56	Track Yard Scale Pit (CEI-117)	40' x 11' x 9.3'
	Stack #1 Sump Pit (CEI-124)	5.5' x 2.5' x 7' deep
	Scrubber Pit (CEI-212)	73' x 35' x 11'
SGS-61	Misc. Pits	10' x 32' x 8' deep 7' x 7' x 8' deep
Other	Electrical Vault	8' x 10' x 11.5' deep
	Misc. Small Pit	4' x 4' x 4' deep
	South Side Trench	1' x 185' x 4' deep
	Sanitary Pump Station Pad	15' x 13' x 2' deep

The inspections and testing were performed to verify that the backfilling was accomplished in accordance with the "Backfill Plan" described in Addendum No. 2 of the Sparrow Point Enhanced Scope of Work Document dated September 9, 2014.

The inspections and testing were performed during March 21, 2016 to April 1, 2016 and consisted of the following:

- Performing laboratory testing on the Structural Backfill materials to verify compliance with the Backfill Plan.
- Visual inspection of placement of the Miscellaneous Backfill to verify that such materials were of the proper type and were placed below the minimum depth.
- Visually inspecting the preparation and any required demolition (holes in bottom slabs) of the subgrade structures and placement of open-graded filter courses prior to the placement of the dense graded and compacted Structural Backfill.
- Inspecting the placement of the Structural Backfill and performing compaction testing using a nuclear moisture-density gauge.

Based on our inspections and testing, we certify that the backfilling of the above referenced Subgrade Structures was accomplished in a sound and professional manner and in general accordance with the requirements of the Backfill Plan.

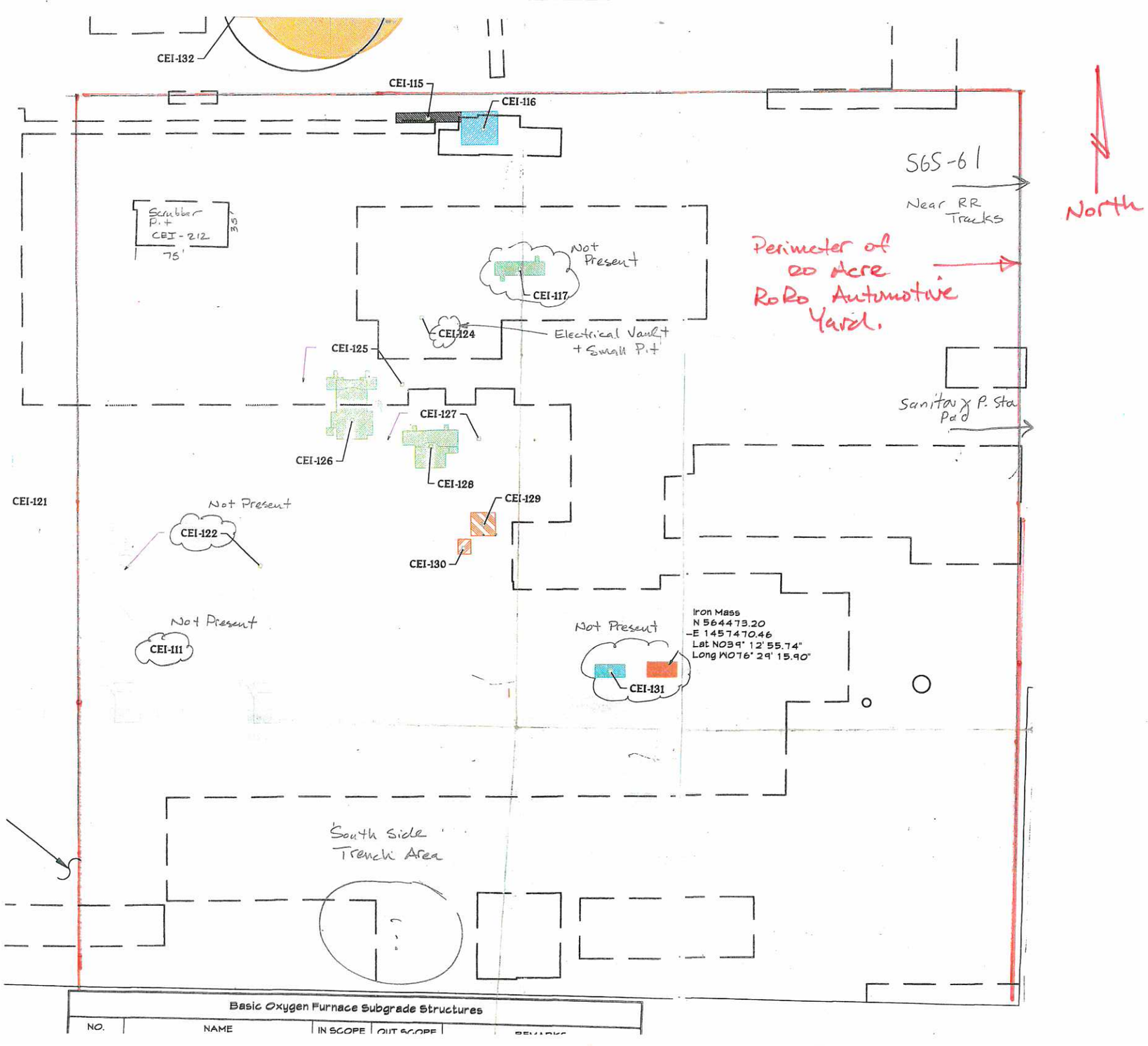
Our field inspection and lab testing reports are attached. Please contact us if you have any questions or need additional information.

Very truly yours,

CENTURY ENGINEERING, INC.

Paul A. D'Amato, P.E.
Sr. Geotechnical Engineer

Personal 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. 12018, Expiration 6/21/16.


CEI-132
CEI-115
CEI-116
SGS-61
Near RR Tracks
North
Scrubber P.+ CEI-212
35'
75'
Not Present
CEI-117
Perimeter of 20 Acre RoRo Automotive Yard.
CEI-124
Electrical Vault + Small P.+
CEI-125
CEI-127
CEI-126
CEI-128
Sanitary P. Sta Pad
CEI-121
Not Present
CEI-122
CEI-129
CEI-130
Not Present
CEI-111
Not Present
CEI-131
Iron Mass
N 564473.20
E 1457470.46
Lat N039° 12' 55.74"
Long W076° 29' 15.90"
South Side Trench Area
Basic Oxygen Furnace Subgrade Structures
NO.
NAME
IN SCOPE
OUT SCOPE
REMARKS

CENTURY ENGINEERING

DAILY REPORT

REPORT NO: 1

PROJECT: Sparrows Point Terminals - 20 Acre RoRo Site (SGS-54) DATE: 3/21/2016

WORK SHIFT: FROM: 8:15 am TO: 2:45 pm WEATHER: Partly Cloudy

FROM: _____ TO: _____ TEMP. 8 A.M. 45° 12 P.M. 55° 4 P.M. °

WORK IN PROGRESS: (Location and Description, Equipment in Use)

- Arrived at site at 8:45 and met Brandon and Contractor at office. Had brief meeting to review the backfill plan for the subgrade structures within the 20 acre RoRo Automotive Yard.
- The contractor to start working on the Elevator Pits (SGS-54). There is one 20'x 20' x 10' deep pit and one 10.5' x 9.5' x 5.5' deep pit.
- A 4' x 4' hole was made in the bottom of the larger pit. There was rebar protruding into the hole that was cut off.
- MCM made similar hole in floor of small pit. The protruding rebar was removed.
- The holes in the floors were filled with #57 Blast Furnace Slag aggregate. The #57 slag was then spread over the floor of the larger pit (24" thickness) and the smaller pit (12" thickness).
- No other work performed today.

COMMENTS:

INSPECTOR: **Chris Jacobs**

CENTURY CONTRACT NO: **151117.00**

CENTURY ENGINEERING

DAILY REPORT

REPORT NO: 2

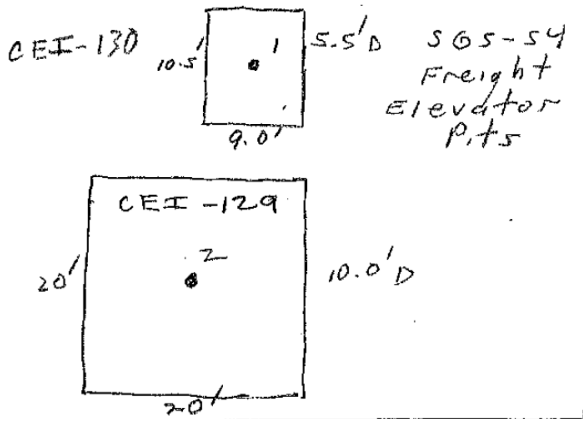
PROJECT: Sparrows Point Terminals - 20 Acre RoRo Site (SGS-54) DATE: 3/22/2016

WORK SHIFT: FROM: 8:15 am TO: 4:45 pm WEATHER: Partly Cloudy

FROM: _____ TO: _____ TEMP. 8 A.M. 50° 12 P.M. 60° 4 P.M. °

WORK IN PROGRESS: (Location and Description, Equipment in Use)

- Arrived at site at 8:30 for backfill inspection of Subgrade Structures within the 20 acre RoRo Automotive Yard. The Contractor is in the process of backfilling the 2 elevator pits of SGS-54.
- The groundwater had risen in the 10' deep pit overnight to 7' below ground level. To get the fill above the mater so that conventional backfill could be placed and compacted, an additional 1 foot layer of open graded #8 slag aggregate was placed over the #57 stone layer.
- An attempt was made to use the Back River stockpiles (Clayey Sand) to backfill the pits. The soil was too moist and could not achieve compaction. The first lift was removed from the smaller pit. Slag Tailings will be used as material is drier and moisture is not a problem.
- Slag aggregate (BOF Steel Slag) tailings were used to backfill the remaining depth of both elevator pits. Compaction testing of the conventional backfill was performed as the pits were backfilled. See attached compaction test results. Backfill was placed in approx. 8" lifts and each lift was compacted. At minimum, density testing was performed on every other lift.
- MCM also did minor backfilling of 2 shallow pits at SGS-52, which is the Emergency Reladling Track Scale Pit and the Emergency Reladling Pit. Two 2' x 2' x 2' deep depressions at the east end were backfilled with compacted Slag Tailings.
- No other work performed today.



COMMENTS:

INSPECTOR: Chris Jacobs

CENTURY CONTRACT NO: 151117.00

CENTURY ENGINEERING, INC.

NUCLEAR DENSITY TEST DATA SHEET

PROJECT: Sparrows Point Terminals - 20 acre RoRo Auto Yard (SGS-54) (Elevator Pits CEI-129 & CEI-130) DATE: 3/22/2016

CLIENT: MCM

CEI PROJECT NO.: 151117.00

GAUGE SERIAL NO.: 24148

DENSITY: 1924

MOISTURE: 604

TEST NO		1-A	1-B	1-C	2-A	2-B	2-C	2-D	2-E
LOCATION OR STATION	Small Pit CEI-130	→	→	→	Large Pit CEI-129	→	→	→	→
OFFSET									
ELEVATION	-3.0	-2.3	-0.8	Grade	-5.3	-4.5	-3.8	-2.0	Grade
SOURCE DEPTH	6"	6"	6"	6"	6"	6"	6"	6"	6"
DENSITY COUNT	1397	872	859	837	770	832	758	829	824
WET DENSITY PCF	130.4	151.6	152.3	153.5	157.1	153.7	157.8	153.9	154.1
MOISTURE COUNT	216	152	138	133	14	149	149	143	146
MOISTURE CONTENT %	18.1	9.8	8.6	8.1	8.7	9.4	9.1	8.9	9.1
DRY DENSITY PCF	110.5	138.1	140.3	142.0	144.6	140.5	144.6	141.3	141.3
MAX DRY DENSITY PCF	123.2	145.0	145.0	145.0	145.0	145.0	145.0	145.0	145.0
OPT MOISTURE CONT. %	11.6	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
% COMPACTION REQ'D	95	95	95	95	95	95	95	95	95
% COMPACTION OBTAINED	89.7 Fail	95.3 Pass	96.7 Pass	97.9 Pass	99.7 Pass	96.9 Pass	99.8 Pass	97.5 Pass	97.4 Pass

REMARKS: First test in small pit was made using Back River stockpiles. The soil was too moist and pumped. It was decided to remove the first lift and use the Steel Slag tailings to backfill both pits.

TECHNICIAN: C.Jacobs

CLIENT'S REPRESENTATIVE:

CENTURY ENGINEERING

DAILY REPORT

REPORT NO: 3

PROJECT: Sparrows Point Terminals - 20 Acre RoRo Site (SGS-52) DATE: 3/23/2016

WORK SHIFT: FROM: 8:15 am TO: 4:45 pm WEATHER: Partly Cloudy

FROM: _____ TO: _____ TEMP. 8 A.M. 55° 12 P.M. 67° 4 P.M. °

WORK IN PROGRESS: (Location and Description, Equipment in Use)

- Arrived at site at 8:30 for backfill inspection of Subgrade Structures within the 20 acre RoRo Automotive Yard. The Contractor will begin work on backfilling the Emergency Reladling Pit and the Emergency Reladling Track Scale Pit of SGS-52.
- The Emergency Reladling Pits is approximately 20 feet deep. No hole was made in bottom slab. The pit is too deep and confined for spreading in lifts and compacting with roller. It will be filled with open graded #3 Slag to a depth of 10' below the surface, then 2' of #57 slag, topped by 1 foot of #8 slag. The open graded slag will be placed in layers without compaction. The remaining depth will be backfilled with Steel Slag Tailings placed in lifts and compacted.
- The Emergency Reladling Track Scale has 2 pits that are 9 feet deep. A 4' x 4' hole was made in the bottom of the each pit. The holes were filled with #57 Slag, which was then placed over the bottom to a depth of 7.5 feet below the surface. A layer of #8 slag was then placed to a depth of 6.5 feet. The backfilling will be completed using the Slag tailings placed in lifts and compacted.
- Compaction testing was performed for all of the Slag Tailings backfill. See Nuclear Density Test Sheet attached. Backfill was placed in approx.. 8" lifts and each lift compacted. Density testing was performed on every other lift.
- All of the pits of SGS-52 were backfilled.
- The contractor began work on the SGS-53 Reladling Pit. This pit is 26 feet deep. Open graded slag will be used for the initial backfill because the pit is too deep and confined for spreading in lifts and compacting with roller. The #3 Slag was in short supply, so #57 slag will be used to a depth of 10 feet below the surface. This work will be started tomorrow.
- No other work performed today.

COMMENTS:

INSPECTOR: Chris Jacobs

CENTURY CONTRACT NO: 151117.00

CENTURY ENGINEERING

DAILY REPORT

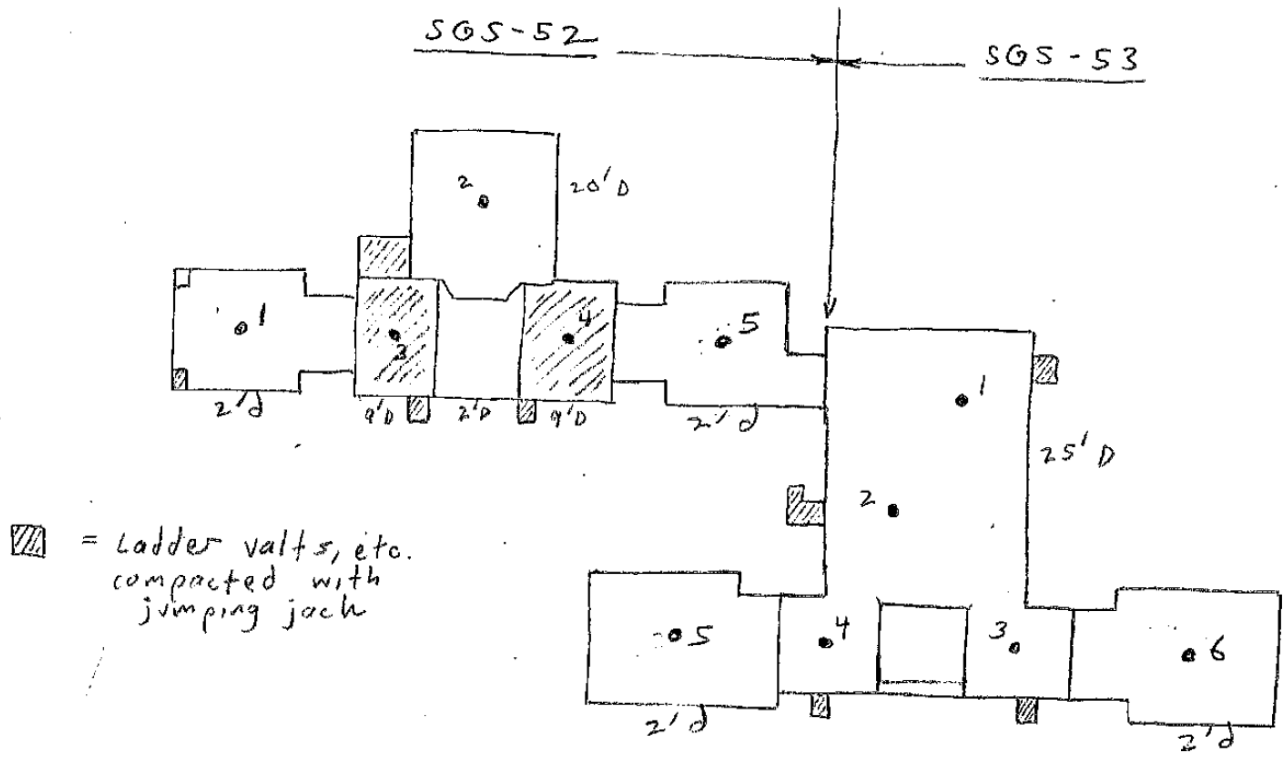
REPORT NO: 3

PROJECT: Sparrows Point Terminals - 20 Acre RoRo Site (SGS-52) DATE: 3/23/2016

WORK SHIFT: FROM: 8:15 am TO: 4:45 pm WEATHER: Partly Cloudy

FROM: TO: TEMP. 8 A.M. 55° 12 P.M. 67° 4 P.M. °

WORK IN PROGRESS: (Location and Description, Equipment in Use)



COMMENTS:

INSPECTOR: Chris Jacobs

CENTURY CONTRACT NO: 151117.00

CENTURY ENGINEERING, INC.

NUCLEAR DENSITY TEST DATA SHEET

PROJECT: Sparrows Point Terminals - 20 acre RoRo Auto Yard (SGS-52) (Emergency Reladling Pit and Emergency Reladling Track Scale Pit)

DATE: 3/23/2016

CLIENT: MCM

CEI PROJECT NO.: 151117.00

GAUGE SERIAL NO.: 24148

DENSITY: 1924

MOISTURE: 604

TEST NO	1	2-A	2-B	2-C	2-E	2-F	2-G		
LOCATION OR STATION	SGS-52 CEI-127	(See Sketch) CEI-128							→
OFFSET									
ELEVATION	-1.0	-5.3	-4.5	-3.7	-3.0	-1.5	Grade		
SOURCE DEPTH	6"	6"	6"	6"	6"	6"	6"		
DENSITY COUNT	530	823	636	647	604	626	626		
WET DENSITY PCF	151.7	154.2	165.4	164.8	167.6	166.2	166.2		
MOISTURE COUNT	141	136	179	144	198	164	168		
MOISTURE CONTENT %	8.9	8.3	10.9	8.3	12.1	9.7	10.0		
DRY DENSITY PCF	139.4	142.4	149.2	152.2	149.5	151.5	151.1		
MAX DRY DENSITY PCF	145.0	145.0	150.0	150.0	150.0	150.0	150.0		
OPT MOISTURE CONT. %	11.6	9.5	9.0	9.0	9.0	9.0	9.0		
% COMPACTION REQ'D	95	95	95	95	95	95	95		
% COMPACTION OBTAINED	96.1 Pass	98.2 Pass	99.5 Pass	101.5 Pass	99.7 Pass	101.0 Pass	100.7 Pass		

REMARKS: The measured dry density for the slag tailings was above the Proctor maximum Dry Density. No visual chang in material, but difference could be due to variation in residual ore content. Took Bag Sample to lab to perform new Proctor Test. Result was 150.0 pcf @ 9.5% optimum moisture. Test values were still high.

TECHNICIAN: C.Jacobs

CLIENT'S REPRESENTATIVE:

CENTURY ENGINEERING, INC.

NUCLEAR DENSITY TEST DATA SHEET

PROJECT: Sparrows Point Terminals - 20 acre RoRo Auto Yard (SGS-52) (Emergency Reladling Pit and Emergency Reladling Track Scale Pit)

DATE: 3/23/2016

CLIENT: MCM

CEI PROJECT NO.: 151117.00

GAUGE SERIAL NO.: 24148

DENSITY: 1924

MOISTURE: 604

TEST NO	3-A	3-B	3-C	3-D	3-E	4-A	4-B	4-C	4-D
LOCATION OR STATION	SGS-52 CEI-128	(See Sketch)							
OFFSET									
ELEVATION	-5.5	-4.7	-3.2	-1.7	Grade	-5.5	-4.7	-3.2	-1.7
SOURCE DEPTH	6"	6"	6"	6"	6"	6"	6"	8"	6"
DENSITY COUNT	584	632	604	574	732	591	565	376	618
WET DENSITY PCF	169.3	165.8	167.7	169.9	159.6	168.7	170.7	165.0	166.7
MOISTURE COUNT	103	149	178	180	134	168	164	171	178
MOISTURE CONTENT %	9.4	8.6	10.6	10.6	7.8	9.8	9.4	10.3	10.7
DRY DENSITY PCF	154.7	152.7	151.6	153.6	148.0	153.6	156.0	149.6	150.6
MAX DRY DENSITY PCF	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
OPT MOISTURE CONT. %	9.5	9.5	9.0	9.0	9.0	9.0	9.0	9.0	9.0
% COMPACTION REQ'D	95	95	95	95	95	95	95	95	95
% COMPACTION OBTAINED	103.1 Pass	101.8 Pass	101.1 Pass	102.4 Pass	98.7 Pass	102.4 Pass	104.0 Pass	99.7 Pass	100.4 Pass

REMARKS: The measured dry density for the slag tailings was above the Proctor maximum Dry Density. No visual chang in material, but difference could be due to variation in residual ore content. Took Bag Sample to lab to perform new Proctor Test. Result was 150.0 pcf @ 9.5% optimum moisture. Test values were still high.

TECHNICIAN: C.Jacobs

CLIENT'S REPRESENTATIVE:

CENTURY ENGINEERING, INC.

NUCLEAR DENSITY TEST DATA SHEET

PROJECT: Sparrows Point Terminals - 20 acre RoRo Auto Yard (SGS-52) (Emergency Reladling Pit and Emergency Reladling Track Scale Pit) DATE: 3/23/2016

CLIENT: MCM

CEI PROJECT NO.: 151117.00

GAUGE SERIAL NO.: 24148

DENSITY: 1924

MOISTURE: 604

TEST NO	4-E		5						
LOCATION OR STATION	SGS-52 CEI-128		SGS-52 CEI-127						
OFFSET									
ELEVATION	Grade		Grade						
SOURCE DEPTH	6"		6"						
DENSITY COUNT	751		694						
WET DENSITY PCF	158.5		162.1						
MOISTURE COUNT	128		165						
MOISTURE CONTENT %	7.5		9.5						
DRY DENSITY PCF	147.5		148.0						
MAX DRY DENSITY PCF	150.0		150.0						
OPT MOISTURE CONT. %	9.5		9.0						
% COMPACTION REQ'D	95		95						
% COMPACTION OBTAINED	98.3 Pass		98.7 Pass						

REMARKS: The measured dry density for the slag tailings was above the Proctor maximum Dry Density. No visual chang in material, but difference could be due to variation in residual ore content. Took Bag Sample to lab to perform new Proctor Test. Result was 150.0 pcf @ 9.5% optimum moisture. Test values were still high.

TECHNICIAN: C.Jacobs

CLIENT'S REPRESENTATIVE:

CENTURY ENGINEERING

DAILY REPORT

REPORT NO: 4

PROJECT: Sparrows Point Terminals - 20 Acre RoRo Site (SGS-53) DATE: 3/24/2016

WORK SHIFT: FROM: 8:30 am TO: 4:30 pm WEATHER: Partly Cloudy

FROM: _____ TO: _____ TEMP. 8 A.M. 57° 12 P.M. 72° 4 P.M. °

WORK IN PROGRESS: (Location and Description, Equipment in Use)

- Contractor is working on backfilling SGS-53 Reladling Pit (CEI-126) and Reladling Pit Track Scale (CEI-125)
- #57 Slag aggregate was used to fill the 22 foot deep pit to 10 feet below the surface. The surface of the stone was tamped with the bucket of the excavator. A layer (1.5 ft. thick) of #8 Slag Aggregate was placed on the #57 stone as a filter course.
- Steel Slag tailings will be used as compacted backfill from -8.5 feet to the surface. A Ramex drum roller was used to compact the backfill within the pit. There are some small ladder vaults that are too small for the drum roller where the lifts were compacted using a jumping jack.
- Compaction testing was performed on the slag tailings using a nuclear moisture-density gauge (see sheets attached). Backfill was placed in approx. 8" lifts and each lift compacted. Density testing was performed on every other lift.
- MCM also began placement of the open graded backfill material in the Scrubber Tank System (CEI-212) beginning with the east section. Both sides are 16.5 feet deep as measured from the north wall. The east section received #3 slag backfill from -16.5 to -14.5 feet below grade, #57 slag from -14.5' to -11.0', and #8 slag from -11.0' to -10.0' below grade.
- No other work performed today.
- MCM is not working tomorrow – Good Friday.

COMMENTS:

INSPECTOR: Chris Jacobs

CENTURY CONTRACT NO: 151117.00

CENTURY ENGINEERING

DAILY REPORT

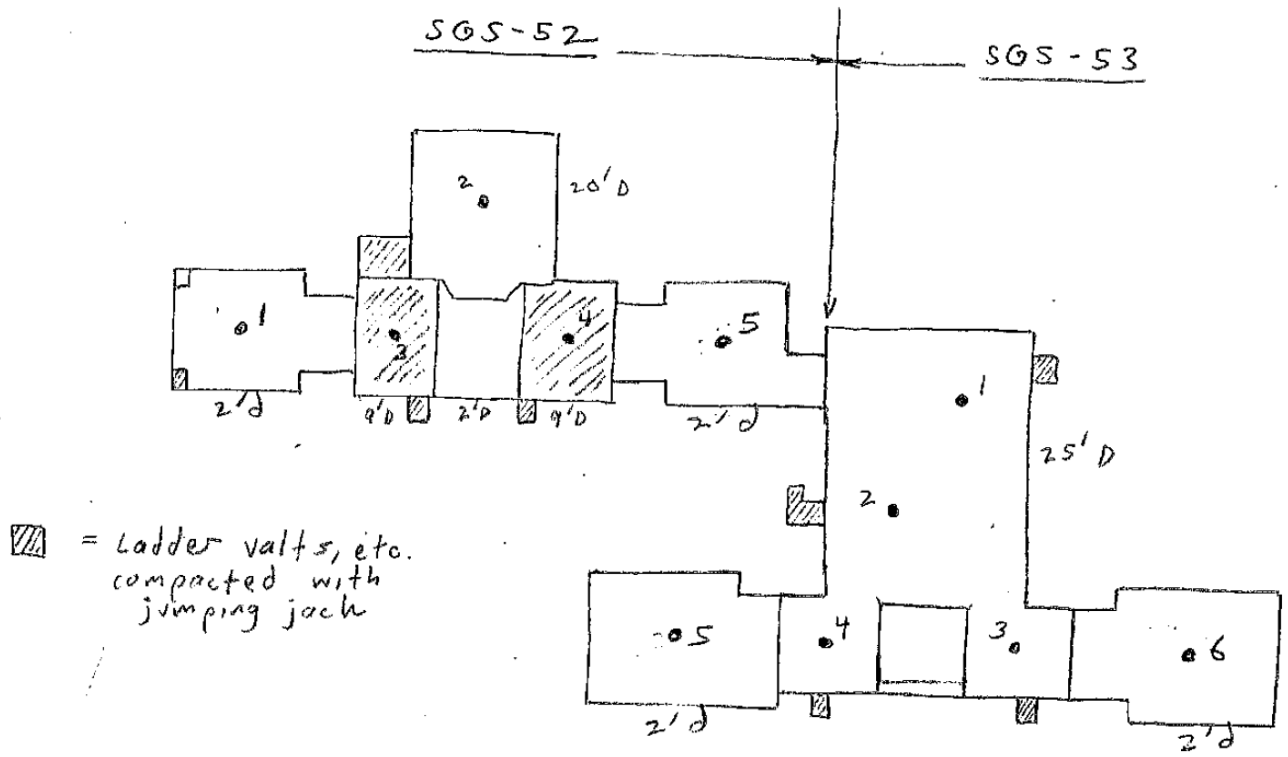
REPORT NO: 4

PROJECT: Sparrows Point Terminals - 20 Acre RoRo Site (SGS-52) DATE: 3/24/2016

WORK SHIFT: FROM: 8:15 am TO: 4:45 pm WEATHER: Partly Cloudy

FROM: TO: TEMP. 8 A.M. 55° 12 P.M. 67° 4 P.M. °

WORK IN PROGRESS: (Location and Description, Equipment in Use)



COMMENTS:

INSPECTOR: **Chris Jacobs**

CENTURY CONTRACT NO: **151117.00**

CENTURY ENGINEERING, INC.

NUCLEAR DENSITY TEST DATA SHEET

PROJECT: Sparrows Point Terminals - 20 acre RoRo Auto Yard (SGS-53) (Emergency Reladling Pit and Emergency Reladling Track Scale Pit)

DATE: 3/24/2016

CLIENT: MCM

CEI PROJECT NO.: 151117.00

GAUGE SERIAL NO.: 24148

DENSITY: 1924

MOISTURE: 604

TEST NO	1-A	1-B	1-C	1-D	2-A	2-B	2-C	2-D	3-A
LOCATION OR STATION	SGS-53 CEI-126	(See Sketch)	→						
OFFSET									
ELEVATION	-7.3	-4.3	-1.3	Grade	-7.3	-4.3	-1.3	Grade	-6.0
SOURCE DEPTH	6"	6"	8"	8"	6"	6"	8"	8"	6"
DENSITY COUNT	876	791	462	517	839	768	473	563	876
WET DENSITY PCF	151.4	156.0	157.1	153.0	153.4	157.2	156.2	149.6	151.4
MOISTURE COUNT	156	141	148	132	133	147	147	128	156
MOISTURE CONTENT %	10.1	8.6	9.1	8.1	8.1	9.0	9.1	7.9	10.1
DRY DENSITY PCF	137.5	143.6	144.0	141.5	141.8	144.3	143.2	138.6	137.5
MAX DRY DENSITY PCF	145.0	145.0	145.0	145.0	145.0	145.0	145.0	145.0	145.0
OPT MOISTURE CONT. %	11.6	9.5	9.5	9.5	9.5	9.5	9.5	9.5	11.6
% COMPACTION REQ'D	95	95	95	95	95	95	95	95	95
% COMPACTION OBTAINED	94.8 Pass	99.0 Pass	99.3 Pass	97.6 Pass	97.8 Pass	99.5 Pass	98.7 Pass	95.6 Pass	94.8 Pass

REMARKS:

TECHNICIAN: C.Jacobs

CLIENT'S REPRESENTATIVE:

CENTURY ENGINEERING, INC.

NUCLEAR DENSITY TEST DATA SHEET

PROJECT: Sparrows Point Terminals - 20 acre RoRo Auto Yard (SGS-53) (Reladling Pit CEI-126 & Track Scale CEI-125) DATE: 3/24/2016

CLIENT: MCM

CEI PROJECT NO.: 151117.00

GAUGE SERIAL NO.: 24148

DENSITY: 1924

MOISTURE: 604

TEST NO	3-B	3-C	3-D	4-A	4-B	4-C	4-D	5	6
LOCATION OR STATION	SGS-53 CEI-126	(See Sketch)	→					SGS-53 CEI-125	See Sketch
OFFSET	Reladling Pit							Track Scale	
ELEVATION	-3.3	-1.8	Grade	-6.0	-3.3	-1.8	Grade	-0.8	-0.8
SOURCE DEPTH	6"	8"	6"	6"	6"	8"	6"	6"	6"
DENSITY COUNT	791	462	869	839	768	473	938	802	836
WET DENSITY PCF	156.0	157.1	152.0	153.4	157.2	156.2	148.7	155.4	153.5
MOISTURE COUNT	141	148	130	133	147	147	124	144	143
MOISTURE CONTENT %	8.6	9.1	8.0	8.1	9.0	9.1	7.7	8.9	8.8
DRY DENSITY PCF	143.6	144.0	140.8	141.8	144.3	143.2	138.1	142.7	141.1
MAX DRY DENSITY PCF	145.0	145.0	145.0	145.0	145.0	145.0	145.0	145.0	145.0
OPT MOISTURE CONT. %	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
% COMPACTION REQ'D	95	95	95	95	95	95	95	95	95
% COMPACTION OBTAINED	99.0 Pass	99.3 Pass	97.1 Pass	97.8 Pass	99.5 Pass	97.0 Pass	95.2 Pass	98.4 Pass	97.3 Pass

REMARKS:

TECHNICIAN: C.Jacobs

CLIENT'S REPRESENTATIVE:

CENTURY ENGINEERING

DAILY REPORT

REPORT NO: 5

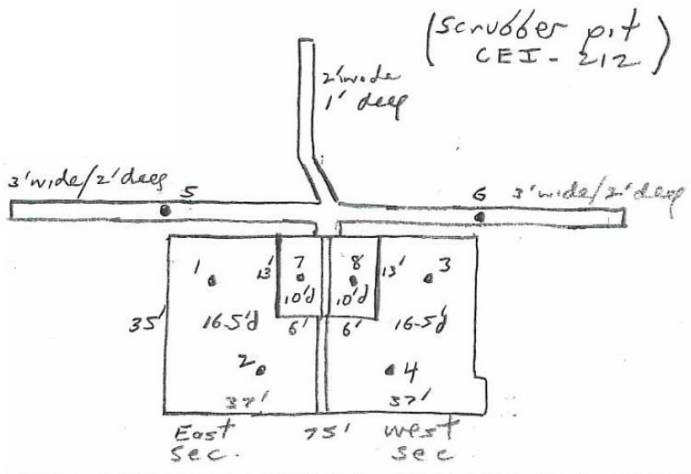
PROJECT: Sparrows Point Terminals - 20 Acre RoRo Site (SGS-56) DATE: 3/28/2016

WORK SHIFT: FROM: 8:30 am TO: 4:30 pm WEATHER: Partly Cloudy

FROM: 5:30 pm TO: 6:30 pm TEMP. 8 A.M. 45° 12 P.M. 55° 4 P.M. °

WORK IN PROGRESS: (Location and Description, Equipment in Use)

- Contractor is working on backfilling SGS-56 Scrubber Pit (CEI-212) with the steel slag tailings starting at the east end.
- Open graded slag was placed in the west section as follows: #3 slag from -16.5' to -12.0', #57 slag from -12.0' to -9.5', and #8 slag from -9.5' to -8.5'. The compacted tailings will be placed from -8.5' to grade.
- Ran one-point proctor test on material where the percent compaction was above 100 percent. The one point indicated a dry density of 149.8 pcf, which is the same as the most recent Proctor test done in the lab.
- Compaction testing of the slag tailings was performed using a nuclear density gauge (see test sheet attached). Backfill was placed in approx. 8" lifts and each lift was compacted. Density testing was performed on every other lift.
- MCM also began clean-up of the Hopper Pit and Tunnel (SGS-55) and started placement of the #3 Slag.
- No other work performed today.



COMMENTS:

INSPECTOR: Chris Jacobs

CENTURY CONTRACT NO: 151117.00

CENTURY ENGINEERING, INC.

NUCLEAR DENSITY TEST DATA SHEET

PROJECT: Sparrows Point Terminals - 20 acre RoRo Auto Yard (SGS-56) (Scrubber Pit CEI-212) DATE: 3/28/2016

CLIENT: MCM

CEI PROJECT NO.: 151117.00

DENSITY: 1911

GAUGE SERIAL NO.: 24148 MOISTURE: 600

TEST NO	1-A	1-B	1-B(1)	1-C	1-D	2-A	2-B	2-C	2-D
LOCATION OR STATION	SGS-56 CEI-212	(See Sketch)	→	→	→	→	→	→	→
OFFSET	East Side (South)	→	→	→	→	East Side (North)	→	→	→
ELEVATION	-9.0	-7.0	-7.0	-5.5	-3.8	-9.0	-7.0	-5.5	-3.8
SOURCE DEPTH	6"	6"	6"	6"	6"	6"	6"	6"	6"
DENSITY COUNT	751	970	873	657	713	900	872	579	750
WET DENSITY PCF	158.2	145.4	151.5	163.9	160.5	150.3	152.6	159.6	158.2
MOISTURE COUNT	145	136	146	160	133	136	135	148	135
MOISTURE CONTENT %	8.8	9.8	10.0	11.1	9.0	8.6	9.7	9.9	9.3
DRY DENSITY PCF	145.5	132.5	137.7	147.6	147.2	138.4	139.1	145.5	144.7
MAX DRY DENSITY PCF	145.0	145.0	145.0	150.0	150.0	150.0	150.0	150.0	150.0
OPT MOISTURE CONT. %	11.6	9.5	9.5	9.0	9.0	9.0	9.0	9.0	9.0
% COMPACTION REQ'D	95	95	95	95	95	95	95	95	95
% COMPACTION OBTAINED	100.3 Pass	91.4 Fail	95.0 Pass	98.4 Pass	98.1 Pass	95.5 Pass	95.9 Pass	97.0 Pass	96.5 Pass

REMARKS:

TECHNICIAN: C.Jacobs

CLIENT'S REPRESENTATIVE:

CENTURY ENGINEERING, INC.

NUCLEAR DENSITY TEST DATA SHEET

PROJECT: Sparrows Point Terminals - 20 acre RoRo Auto Yard (SGS-56) (Scrubber Pit CEI-212) DATE: 3/28/2016

CLIENT: MCM

CEI PROJECT NO.: 151117.00

DENSITY: 1911

GAUGE SERIAL NO.: 24148 MOISTURE: 600

TEST NO	3-A	3-B	3-C	3-D	4-A	4-B	4-C	4-D	
LOCATION OR STATION	SGS-56 CEI-212	(See Sketch)	→	→	→	→	→	→	→
OFFSET	West Side (South)	→	→	→	West Side (North)	→	→	→	
ELEVATION	-7.5	-6.0	-4.5	-1.5	-7.5	-6.0	-4.5	-1.5	
SOURCE DEPTH	6"	6"	6"	6"	6"	6"	6"	6"	
DENSITY COUNT	757	609	597	687	573	645	691	692	
WET DENSITY PCF	157.8	167.4	168.1	162.5	170.0	164.8	161.7	161.6	
MOISTURE COUNT	145	157	168	138	155	100	161	140	
MOISTURE CONTENT %	10.2	10.8	11.5	8.2	10.2	11.0	11.3	8.3	
DRY DENSITY PCF	143.1	151.1	150.9	150.2	154.2	148.4	145.2	149.2	
MAX DRY DENSITY PCF	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	
OPT MOISTURE CONT. %	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	
% COMPACTION REQ'D	95	95	95	95	95	95	95	95	
% COMPACTION OBTAINED	95.4 Pass	100.7 Fail	100.6 Pass	100.0 Pass	102.8 Pass	98.9 Pass	96.8 Pass	99.5 Pass	

REMARKS: Ran one-point on test 3-C sample - result matched Sample #2 Proctor.

Contractor filled only up to -1.0 fet below the higher west wall.

TECHNICIAN: C.Jacobs

CLIENT'S REPRESENTATIVE:

CENTURY ENGINEERING

DAILY REPORT

REPORT NO: 6

PROJECT: Sparrows Point Terminals - 20 Acre RoRo Site (SGS-56) DATE: 3/29/2016

WORK SHIFT: FROM: 7:30 am TO: 4:30 pm WEATHER: Partly Cloudy

FROM: _____ TO: _____ TEMP. 8 A.M. 45° 12 P.M. 55° 4 P.M. °

WORK IN PROGRESS: (Location and Description, Equipment in Use)

- Contractor completed the backfill of the two large sections of the Scrubber Pit (CEI-212) to -1.0 feet below the top of the North Wall. Started backfilling the 2 smaller pits on the south side of yje main scrubber pit.
- Waterway trenches just outside the south wall were also cleaned out of all rubble and debris.
- Small pit dimensions are 13' x 6' x 10' deep.
- Making holes in the bottom slab for each were attempted, but the slab was too thick to break through. Placed #57 Slag to -8.5' and #8 slag from -8.5' to -7.5'.
- The trenched on the south side were backfilled with compacted steel slag tailings (see attached test sheet). Backfill was placed in approx. 8" lifts and each lift compacted.
- MCM also continued placement of open graded slag aggregate in the SGS-55 Hopper Pit and Ramp, which received #3 slag from -28' to -11.5', #57 slag from -11.5' to -10', and #8 slag from -10.0' to -9.1'.
- No other work performed today.

COMMENTS:

INSPECTOR: Chris Jacobs

CENTURY CONTRACT NO: 151117.00

CENTURY ENGINEERING, INC.

NUCLEAR DENSITY TEST DATA SHEET

PROJECT: Sparrows Point Terminals - 20 acre RoRo Auto Yard (SGS-56) (Scrubber Pit CEI-212) DATE: 3/29/2016

CLIENT: MCM

CEI PROJECT NO.: 151117.00

GAUGE SERIAL NO.: 24148

DENSITY: 1911

MOISTURE: 600

TEST NO	1-E	2-E		5	6				
LOCATION OR STATION	SGS-56 CEI-212	(See Sketch)		3' Trench	3' Trench				
OFFSET	East Side (South)	East Side (North)		East Side	West Side				
ELEVATION	-1.5	-1.5		-1.0	-1.0				
SOURCE DEPTH	6"	6"		6"	6"				
DENSITY COUNT	587	655		729	756				
WET DENSITY PCF	168.8	165.2		159.4	157.7				
MOISTURE COUNT	175	158		149	148				
MOISTURE CONTENT %	12.0	10.5		10.5	10.2				
DRY DENSITY PCF	150.8	149.5		144.3	143.1				
MAX DRY DENSITY PCF	150.0	150.0		150.0	150.0				
OPT MOISTURE CONT. %	9.0	9.0		9.0	9.0				
% COMPACTION REQ'D	95	95		95	95				
% COMPACTION OBTAINED	100.5 Pass	99.7 Pass		99.5 Pass	98.7 Pass				

REMARKS:

TECHNICIAN: C.Jacobs

CLIENT'S REPRESENTATIVE:

CENTURY ENGINEERING, INC.

NUCLEAR DENSITY TEST DATA SHEET

PROJECT: Sparrows Point Terminals - 20 acre RoRo Auto Yard (SGS-56) (Scrubber Pit CEI-212) DATE: 3/29/2016

CLIENT: MCM

CEI PROJECT NO.: 151117.00

GAUGE SERIAL NO.: 24148

DENSITY: 1911

MOISTURE: 600

TEST NO	7-A	7-B	7-C	8-A	8-B	8-C			
LOCATION OR STATION	SGS-56 CEI-212	(See Sketch)	→	3' Trench	3' Trench	→			→
OFFSET	Small Tank (East)	→	→	Small Tank (west)	→	→			
ELEVATION	-4.5	-3.0	-1.0	-4.5	-3.0	-1.0			
SOURCE DEPTH	6"	6"	6"	6"	6"	6"			
DENSITY COUNT	654	748	749	598	738	771			
WET DENSITY PCF	164.2	158.4	158.1	168.1	158.9	156.8			
MOISTURE COUNT	156	133	141	165	148	138			
MOISTURE CONTENT %	10.7	9.2	8.6	11.2	10.4	8.4			
DRY DENSITY PCF	148.3	145.1	145.6	151.1	143.9	144.7			
MAX DRY DENSITY PCF	150.0	150.0	150.0	150.0	150.0	150.0			
OPT MOISTURE CONT. %	9.0	9.0	9.0	9.0	9.0	9.0			
% COMPACTION REQ'D	95	95	95	95	95	95			
% COMPACTION OBTAINED	102.0 Pass	100.1 Pass	97.1 Pass	100.7 Pass	95.9 Pass	96.5 Pass			

REMARKS:

TECHNICIAN: C.Jacobs

CLIENT'S REPRESENTATIVE:

CENTURY ENGINEERING

DAILY REPORT

REPORT NO: 7

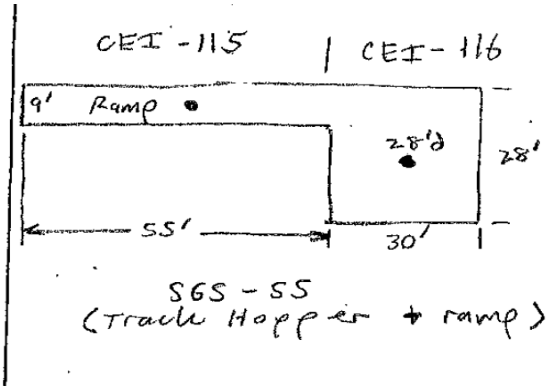
PROJECT: Sparrows Point Terminals - 20 Acre RoRo Site (SGS-55) DATE: 3/30/2016

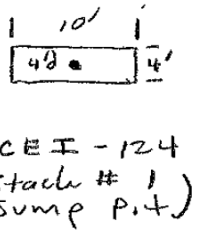
WORK SHIFT: FROM: 7:30 am TO: 4:30 pm WEATHER: Partly Cloudy

FROM: _____ TO: _____ TEMP. 8 A.M. 45° 12 P.M. 55° 4 P.M. °

WORK IN PROGRESS: (Location and Description, Equipment in Use)

- MCM started and completed backfill on the Hopper Pit and Ramp (SGS-55) using the compacted Slag tailings.
- Also worked on preparing an electrical vault not shown on the plans.
- Noted that CEI-117 Track Yard Scale Pit that is shown on plans is no longer present.
- Another small vault (4' x 4' x 4' deep) was noted just south of the electrical vault.
- After discussion with Mike Cerri (environmental), permission was given to backfill the 2 small vaults.
- The electrical vault received #57 slag from -11.5' to -9.5' and #8 Slag from -9.5' to -8.5'. The small pit had #57 slag from -4.0 to -3.0' (No hole made in bottom) due to small size.
- Compaction testing performed on the Slag Tailings backfill (see attached test sheets). Backfill was placed in approx.. 8" layers and each lift compacted. Density testing was performed on every other lift.
- No other work performed today.





COMMENTS:

INSPECTOR: **Chris Jacobs**

CENTURY CONTRACT NO: **151117.00**

CENTURY ENGINEERING

DAILY REPORT

REPORT NO: 7

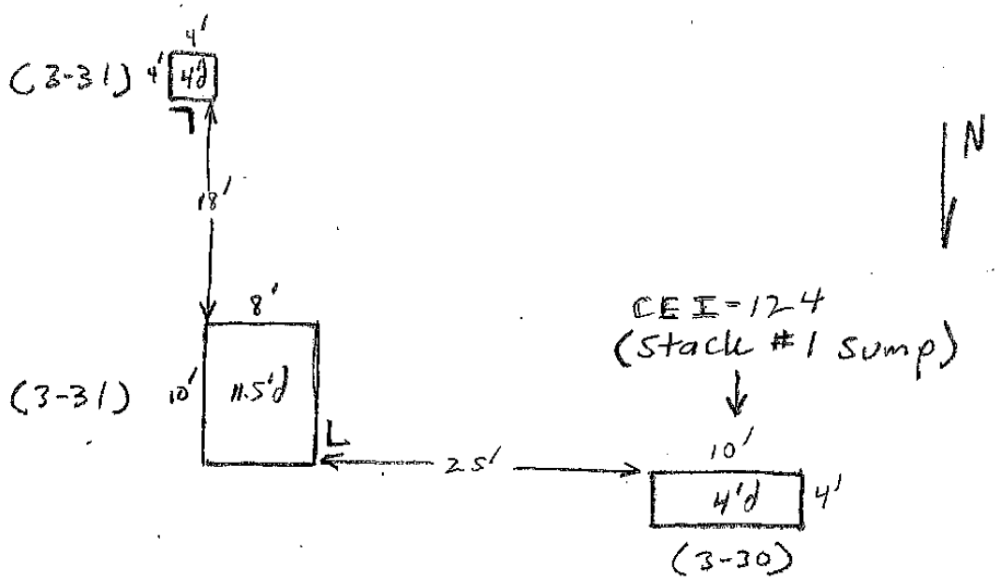
PROJECT: Sparrows Point Terminals - 20 Acre RoRo Site (SGS-55) DATE: 3/30/2016

WORK SHIFT: FROM: 7:30 am TO: 4:30 pm WEATHER: Partly Cloudy

FROM: TO: TEMP. 8 A.M. 45° 12 P.M. 55° 4 P.M. °

WORK IN PROGRESS: (Location and Description, Equipment in Use)

Location of Electric vault pit and 4'x4'x4' pit relative to CEI-124 & Backfilled (3-30/31-16)



COMMENTS:

INSPECTOR: Chris Jacobs

CENTURY CONTRACT NO: 151117.00

CENTURY ENGINEERING, INC.

NUCLEAR DENSITY TEST DATA SHEET

PROJECT: Sparrows Point Terminals - 20 acre RoRo Auto Yard (SGS-56) (Scrubber Pit CEI-212) DATE: 3/30/2016

CLIENT: MCM

CEI PROJECT NO.: 151117.00

GAUGE SERIAL NO.: 24148

DENSITY: 1911

MOISTURE: 600

TEST NO	1-A	1-B	1-C	1-D	1-E	1-F			
LOCATION OR STATION	SGS-55 CEI-116	(See Sketch)	→						
OFFSET									
ELEVATION	-7.2	-5.8	-4.5	-3.0	-1.5	Grade			
SOURCE DEPTH	6"	6"	6"	6"	6"	6"			
DENSITY COUNT	665	679	704	786	726	719			
WET DENSITY PCF	163.4	162.6	160.9	156.1	159.7	160.3			
MOISTURE COUNT	171	148	158	134	139	149			
MOISTURE CONTENT %	12.1	10.2	11.1	9.5	9.6	8.9			
DRY DENSITY PCF	145.7	147.6	144.8	142.6	145.7	147.2			
MAX DRY DENSITY PCF	150.0	150.0	150.0	150.0	150.0	150.0			
OPT MOISTURE CONT. %	9.0	9.0	9.0	9.0	9.0	9.0			
% COMPACTION REQ'D	95	95	95	95	95	95			
% COMPACTION OBTAINED	97.1 Pass	98.4 Pass	96.5 Pass	95.1 Pass	97.1 Pass	98.1 Pass			

REMARKS:

TECHNICIAN: C.Jacobs

CLIENT'S REPRESENTATIVE:

CENTURY ENGINEERING, INC.

NUCLEAR DENSITY TEST DATA SHEET

PROJECT: Sparrows Point Terminals - 20 acre RoRo Auto Yard (SGS-56) (Scrubber Pit CEI-212)

DATE: 3/30/2016

CLIENT: MCM

CEI PROJECT NO.: 151117.00

GAUGE SERIAL NO.: 24148

DENSITY: 1911

MOISTURE: 600

TEST NO	2-A	2-B	2-C	2-D	2-F				
LOCATION OR STATION	Ramp CEI-115	(See Sketch)	→	→	→				
OFFSET									
ELEVATION	-6.0	-4.5	-2.5	-1.3	Grade				
SOURCE DEPTH	6"	6"	6"	6"	6"				
DENSITY COUNT	602	692	754	733	701				
WET DENSITY PCF	163.6	161.7	157.9	159.2	161.5				
MOISTURE COUNT	157	149	152	155	133				
MOISTURE CONTENT %	10.1	10.3	10.9	10.8	7.7				
DRY DENSITY PCF	147.6	146.6	142.5	143.7	150.0				
MAX DRY DENSITY PCF	150.0	150.0	150.0	150.0	150.0				
OPT MOISTURE CONT. %	9.0	9.0	9.0	9.0	9.0				
% COMPACTION REQ'D	95	95	95	95	95				
% COMPACTION OBTAINED	98.4 Pass	97.7 Pass	95.0 Pass	95.8 Pass	100.0 Pass				

REMARKS:

TECHNICIAN: C.Jacobs

CLIENT'S REPRESENTATIVE:

CENTURY ENGINEERING

DAILY REPORT

REPORT NO: 8

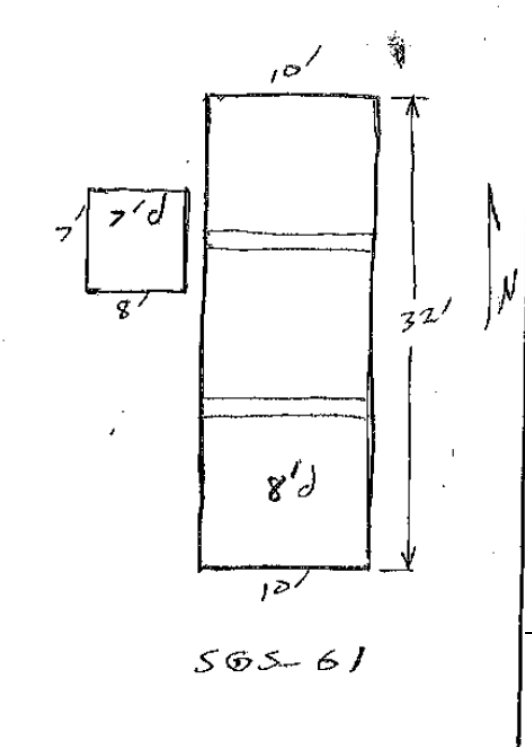
PROJECT: Sparrows Point Terminals - 20 Acre RoRo Site (SGS-56) DATE: 3/31/2016

WORK SHIFT: FROM: 7:30 am TO: 4:30 pm WEATHER: Partly Cloudy

FROM: _____ TO: _____ TEMP. 8 A.M. 62° 12 P.M. 70° 4 P.M. °

WORK IN PROGRESS: (Location and Description, Equipment in Use)

- MCM backfilled the CEI-124 Stack #1 Sump Pit, Electrical Vault and small pit with the compacted Slag tailings.
- Compaction testing was performed using a nuclear gauge (see attached test sheet). Backfill was placed in approx. 8" lifts and each lift compacted. Density testing was performed on every other lift.
- MCM began clean-out of SGS-61 located at or beyond the eastern boundary of the 20 acre parcel. Groundwater entered the pit to -6.5 feet below grade. Due to the presence of groundwater, #3 Slag was placed to -6.0', and #57 Slag from-6.0' to -5.0'. 1 foot of CR-6 was placed and compacted as a substitute filter layer for the #8 Slag. No backfilling today with the slag tailings.
- No other work performed today.



COMMENTS:

INSPECTOR: Chris Jacobs

CENTURY CONTRACT NO: 151117.00

CENTURY ENGINEERING, INC.

NUCLEAR DENSITY TEST DATA SHEET

PROJECT: Sparrows Point Terminals - 20 acre RoRo Auto Yard (SGS-56) (CEI 124 Sump Pit and Vaults) DATE: 3/31/2016

CLIENT: MCM

CEI PROJECT NO.: 151117.00

GAUGE SERIAL NO.: 24148

DENSITY: 1911

MOISTURE: 600

TEST NO	1-A	1-B							
LOCATION OR STATION	SGS-56 CEI-124	(See Sketch)		Electric Vault	→	→	4'x4'x4' Pit	→	
OFFSET									
ELEVATION	-1.5'	Grade		-5.0	-3.5	-1.7	-2.0	Grade	
SOURCE DEPTH	6"	6"		8"	6"	6"	6"	6"	
DENSITY COUNT	626	592		446	761	680	778	567	
WET DENSITY PCF	166.7	164.6		158.2	157.3	162.3	156.4	165.5	
MOISTURE COUNT	169	163		141	156	151	142	162	
MOISTURE CONTENT %	11.5	11.3		8.5	9.8	9.1	8.7	10.8	
DRY DENSITY PCF	149.5	147.9		145.8	143.3	148.8	143.8	149.4	
MAX DRY DENSITY PCF	150.0	150.0		150.0	150.0	150.0	150.0	150.0	
OPT MOISTURE CONT. %	9.0	9.0		9.0	9.0	9.0	9.0	9.0	
% COMPACTION REQ'D	95	95		95	95	95	95	95	
% COMPACTION OBTAINED	99.7 Pass	98.6 Pass		97.2 Pass	95.5 Pass	99.2 Pass	95.9 Pass	99.6 Pass	

REMARKS: Each structure had 1 density test at center

TECHNICIAN: C.Jacobs

CLIENT'S REPRESENTATIVE:

CENTURY ENGINEERING

DAILY REPORT

REPORT NO: 9

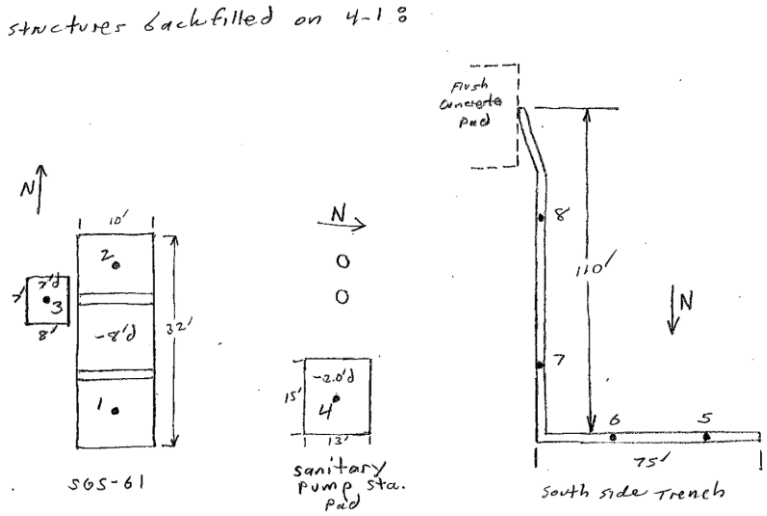
PROJECT: Sparrows Point Terminals - 20 Acre RoRo Site (SGS-61) DATE: 4/1/2016

WORK SHIFT: FROM: 7:30 am TO: 4:30 pm WEATHER: Partly Cloudy

FROM: TO: TEMP. 8 A.M. 58° 12 P.M. 72° 4 P.M. °

WORK IN PROGRESS: (Location and Description, Equipment in Use)

- MCM completed the backfill of SGS-61 with the compacted Steel Slag Tailings.
- Also worked on backfilling a shallow pit at the Sanitary Sewer Pump Station. The pit is 15' x 13' x 2' deep with the bottom removed to slag subgrade material. The pit was also backfilled with compacted slag tailings.
- Also backfilled a 1' x 4' deep concrete trench located about 200' south of the 20 acre parcel. The 110' long trench was cleaned out and a 75' long section that was previously backfilled with CR-6 slag that was hard was left in place. The trench was backfilled with the steel slag tailings. Backfill was placed in approx. 8" lifts and each lift compacted. Density testing was performed on every other lift.
- No other work performed today.



COMMENTS:

INSPECTOR: **Chris Jacobs**

CENTURY CONTRACT NO: **151117.00**

CENTURY ENGINEERING, INC.

NUCLEAR DENSITY TEST DATA SHEET

PROJECT: Sparrows Point Terminals - 20 acre RoRo Auto Yard (SGS-61) (CEI 124 Sump Pit and Vaults) DATE: 4/1/2016

CLIENT: MCM

CEI PROJECT NO.: 151117.00

GAUGE SERIAL NO.: 24148

DENSITY: 1911

MOISTURE: 600

TEST NO	1-A	1-B	1-C	2-A	2-B	2-C	3-A	3-B	3-C
LOCATION OR STATION	SGS-61 See Sketch								
OFFSET									
ELEVATION	-3.3	-1.7	Grade	-3.3	-1.7	Grdae	-3.3	-1.7	Grade
SOURCE DEPTH	6"	6"	6"	6"	8"	6"	6"	6"	6"
DENSITY COUNT	723	647	695	686	379	722	752	684	714
WET DENSITY PCF	159.6	164.5	161.9	161.9	164.4	160.2	157.9	162.0	160.7
MOISTURE COUNT	158	154	138	149	161	131	144	185	147
MOISTURE CONTENT %	9.8	9.1	8.0	8.9	9.7	7.6	8.8	9.4	8.7
DRY DENSITY PCF	145.4	150.7	149.9	148.6	149.9	148.9	145.1	148.1	147.7
MAX DRY DENSITY PCF	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
OPT MOISTURE CONT. %	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
% COMPACTION REQ'D	95	95	95	95	95	95	95	95	95
% COMPACTION OBTAINED	96.9 Pass	100.5 Pass	99.9 Pass	99.1 Pass	100.0 Pass	99.3 Pass	96.7 Pass	98.8 Pass	98.5 Pass

REMARKS: Each structure had 1 density test at center

TECHNICIAN: C.Jacobs

CLIENT'S REPRESENTATIVE:

CENTURY ENGINEERING, INC.

NUCLEAR DENSITY TEST DATA SHEET

PROJECT: Sparrows Point Terminals - 20 acre RoRo Auto Yard (SGS-61) (CEI 124 Sump Pit and Vaults) DATE: 4/1/2016

CLIENT: MCM

CEI PROJECT NO.: 151117.00

GAUGE SERIAL NO.: 24148

DENSITY: 1911

MOISTURE: 600

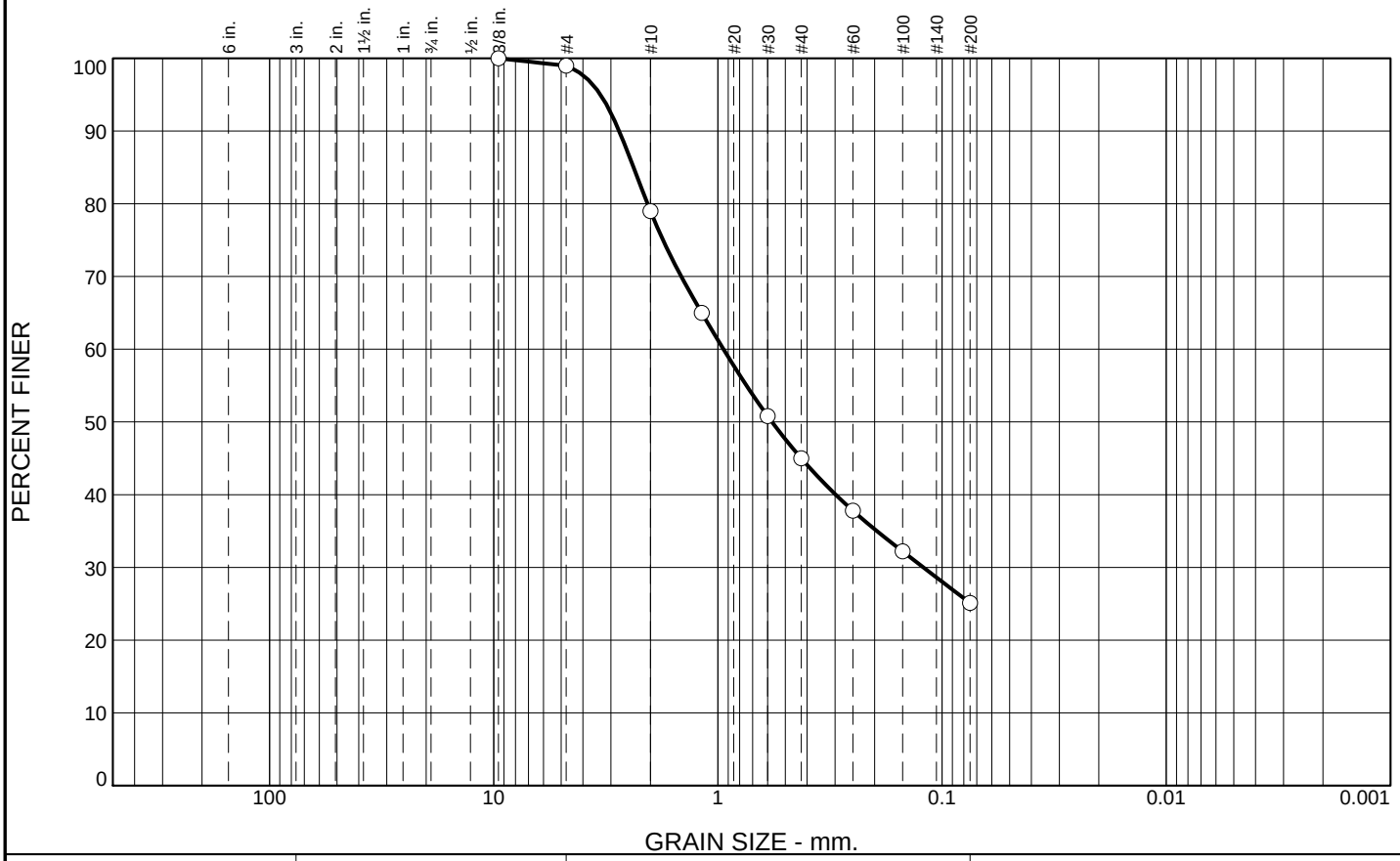
TEST NO	4-A	4-B		5	6	7-A	7-B	8-B	8-B
LOCATION OR STATION	SGS-61 See Sketch	→		1.0' Wide Trench	See Sketch	→			→
OFFSET									
ELEVATION	-1.0	Grade		Grade	Grade	-2.0	Grade	-2.0 Grade	Grade
SOURCE DEPTH	10"	8"		8"	8"	8"	6"	8"	6"
DENSITY COUNT	208	355		394	445	413	711	456	726
WET DENSITY PCF	164.5	166.9		163.0	158.2	161.2	160.3	157.3	159.4
MOISTURE COUNT	183	178		156	152	149	152	142	157
MOISTURE CONTENT %	11.3	10.8		9.4	9.4	9.0	146.7	8.7	9.7
DRY DENSITY PCF	147.8	150.7		149.0	144.7	147.9		144.8	145.3
MAX DRY DENSITY PCF	150.0	150.0		150.0	150.0	150.0	150.0	150.0	150.0
OPT MOISTURE CONT. %	9.0	9.0		9.0	9.0	9.0	9.0	9.0	9.0
% COMPACTION REQ'D	95	95		95	95	95	95	95	95
% COMPACTION OBTAINED	98.5 Pass	100.4 Pass		99.3 Pass	96.4 Pass	98.6 Pass	97.8 Pass	96.5 Pass	96.9 Pass

REMARKS:

TECHNICIAN: C.Jacobs

CLIENT'S REPRESENTATIVE:

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	1.0	20.0	34.0	19.9	25.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.0		
#10	79.0		
#16	65.0		
#30	50.8		
#40	45.0		
#60	37.8		
#100	32.2		
#200	25.1		

* (no specification provided)

Soil Description

Steel Slag Tailings (Samples 1/13/16)

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 2.7578 D_{85}= 2.3788 D_{60}= 0.9443
D_{50}= 0.5742 D_{30}= 0.1212 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-1-b

Remarks

Sampled 1/13/17 from SGS-43b backfill material

Source of Sample: Steel Slag Tailings
Sample Number: 1

Date: 1/17/16

Century Engineering, Inc.

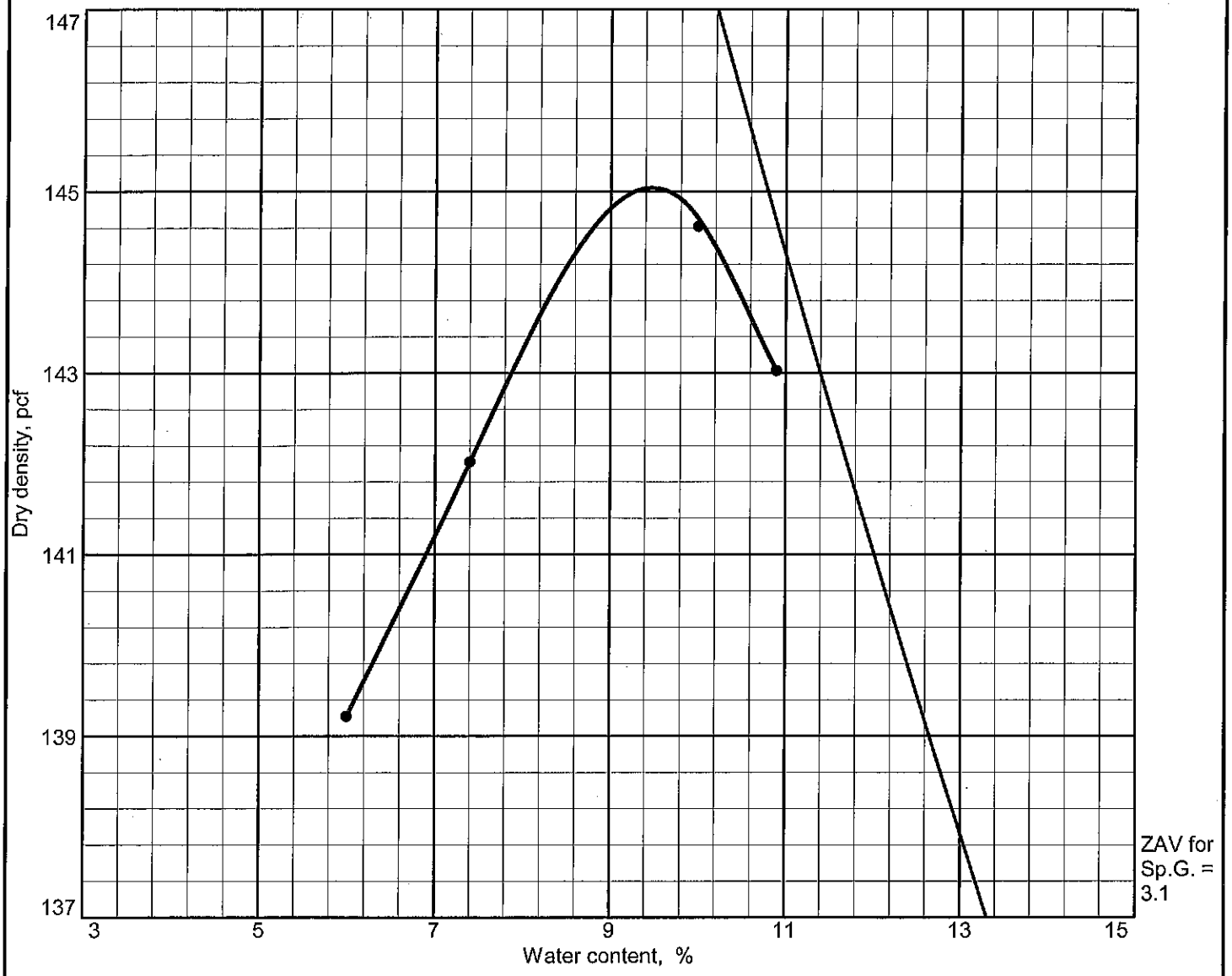
Hunt Valley, MD

Client: MCM Management Corp.
Project: Sparrows Point Terminals-Subgrade Structures

Project No: 151117.00 **Figure**

Tested By: United Eng. **Checked By:** PAD

COMPACTION TEST REPORT



Test specification: ASTM D 1557-00 Method A Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No.4	% < No.200
	USCS	AASHTO						
	SM	A-1-b			NV	NP	1.0	25.1

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 145.0 pcf Optimum moisture = 9.5 %	Steel Slag Tailings (Samples 1/13/16)

Project No. 151117.00 **Client:** MCM Management Corp.
Project: Sparrows Point Terminals-Subgrade Structures

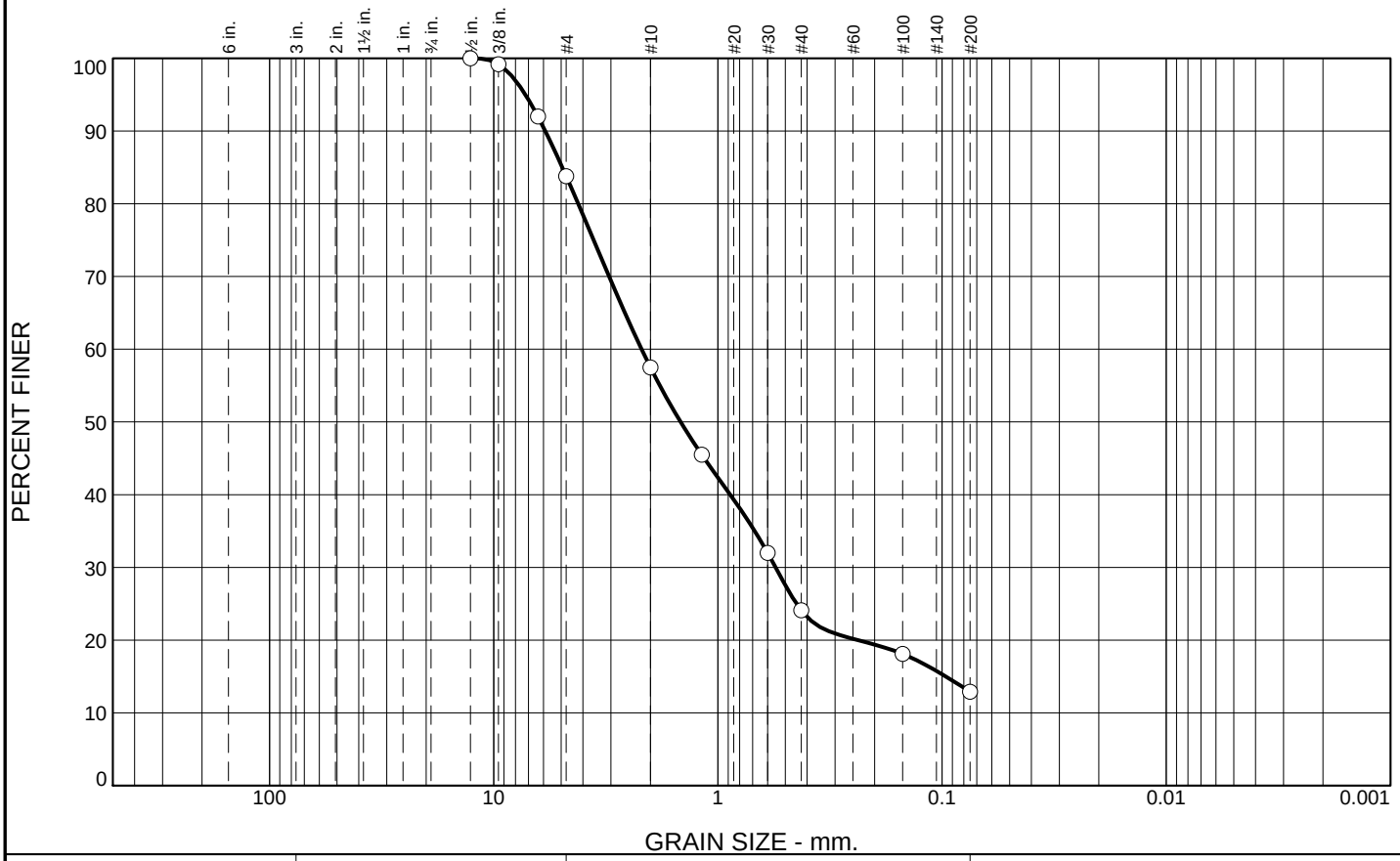
● **Source:** Steel Slag Tailings **Sample No.:** 1

Remarks:

Century Engineering, Inc.
Hunt Valley, MD

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	16.2	26.3	33.4	11.2	12.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
0.5	100.0		
.375	99.2		
.25	92.0		
#4	83.8		
#10	57.5		
#16	45.5		
#30	32.0		
#40	24.1		
#100	18.1		
#200	12.9		

* (no specification provided)

Soil Description

Gray Steel Slag #10 Tailings (Sampled 3/23/16)

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 5.8832 D_{85}= 4.9425 D_{60}= 2.1911
D_{50}= 1.4666 D_{30}= 0.5531 D_{15}= 0.0963
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-1-b

Remarks

Natural Moisture =8.8%

Source of Sample: Steel Slag Tailings (SGS-52 Backfill)
Sample Number: Bag

Date: 4/5/16

Century Engineering, Inc.

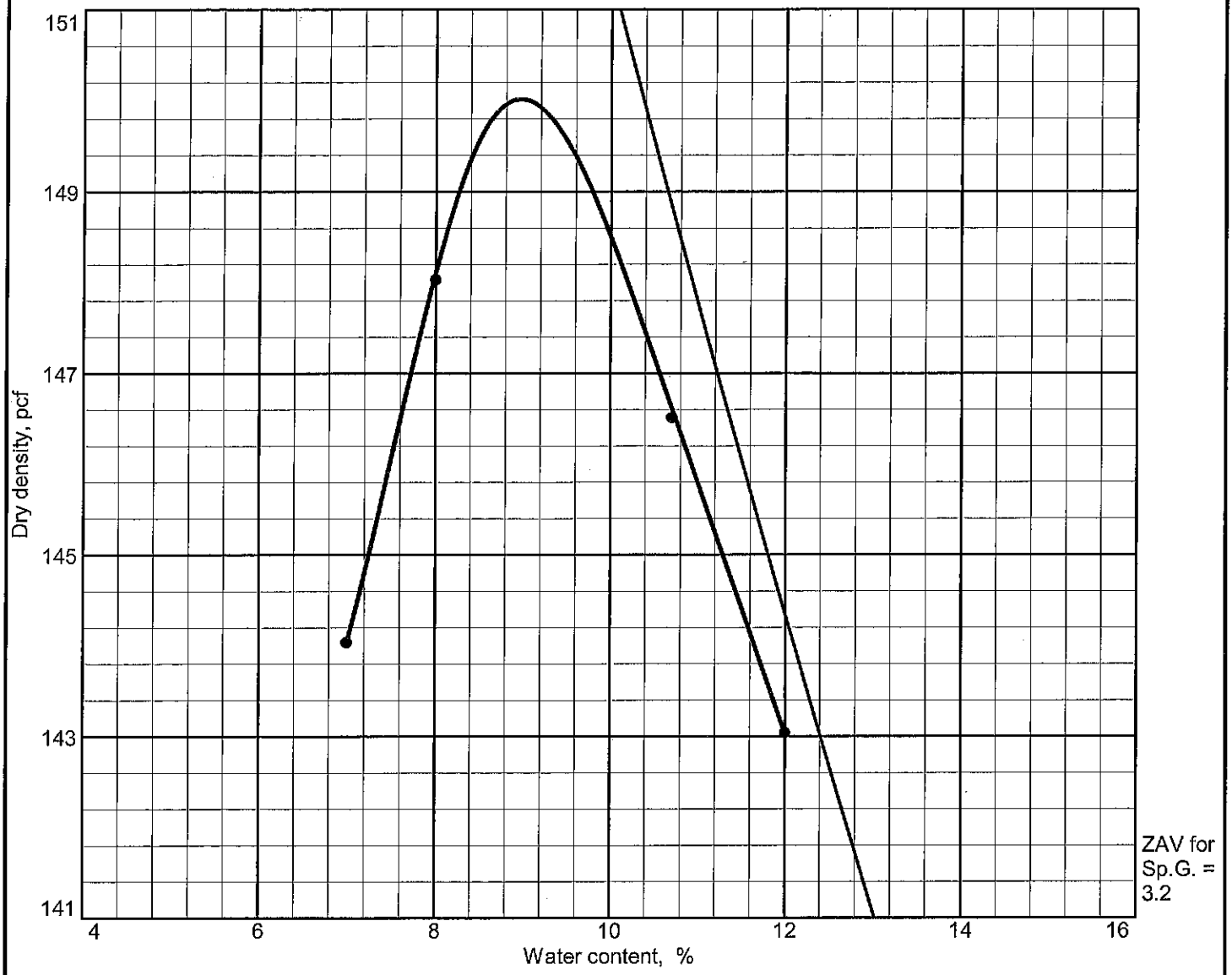
Hunt Valley, MD

Client: MCM Management Corp.
Project: Sparrows Point Terminals-Subgrade Structures

Project No: 151117.00 **Figure**

Tested By: United **Checked By:** PAD

COMPACTION TEST REPORT



Test specification: AASHTO T 180 Method A Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No.4	% < No.200
	USCS	AASHTO						
	SM	A-1-b			NV	NP	16.2	12.9

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 150.0 pcf Optimum moisture = 9.0 %	Gray Steel Slag #10 Tailings (Sampled 3/23/16)

Project No. 151117.00 **Client:** MCM Management Corp.
Project: Sparrows Point Terminals-Subgrade Structures

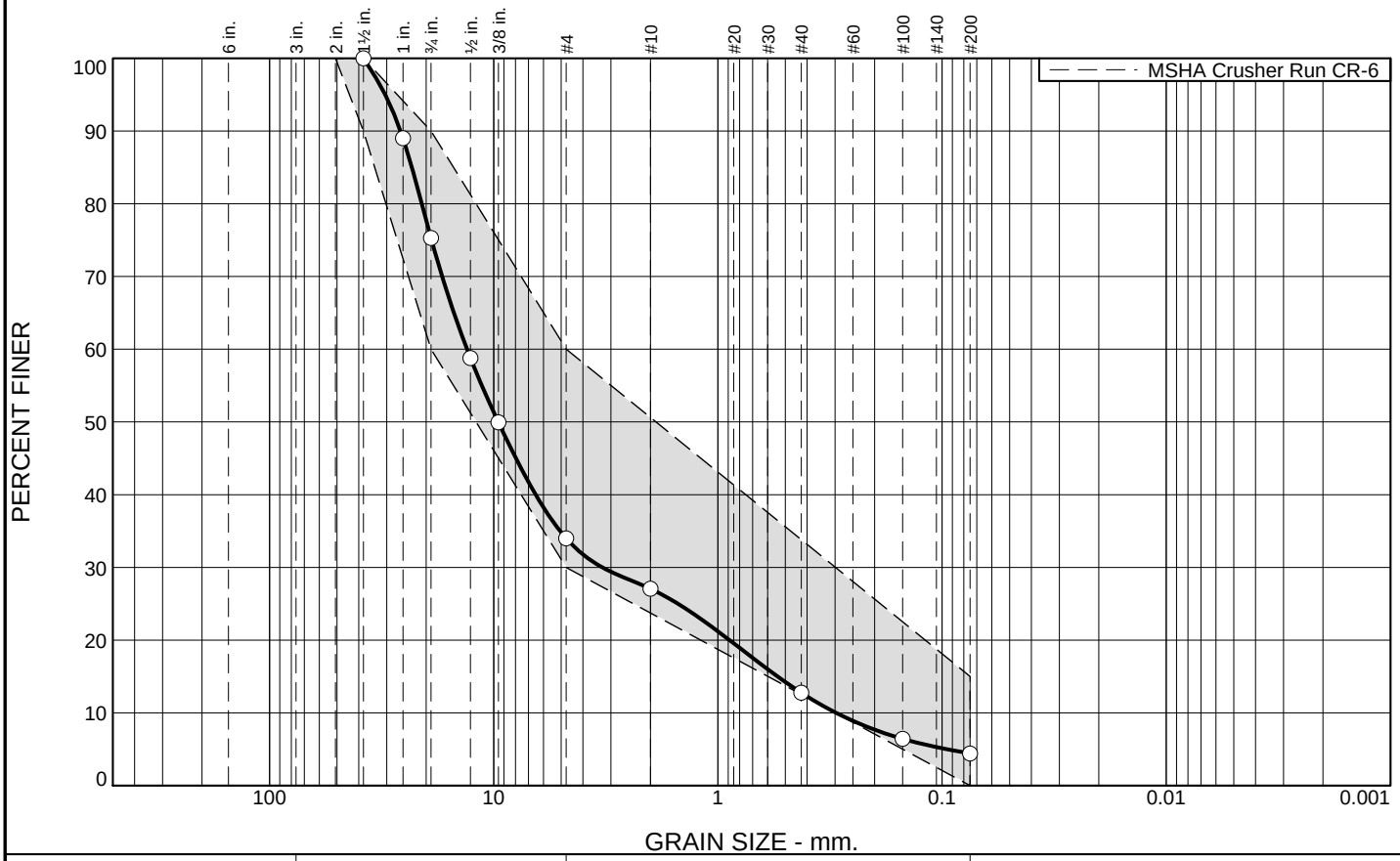
● **Source:** Steel Slag Tailings (SGS-52 **Sample No.:** Bag

Century Engineering, Inc.
Hunt Valley, MD

Remarks:

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	24.7	41.3	6.9	14.3	8.4	4.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5	100.0	90.0 - 100.0	
1	89.0		
.75	75.3	60.0 - 90.0	
.50	58.8		
.375	50.0		
#4	34.0	30.0 - 60.0	
#10	27.1		
#40	12.8		
#100	6.4		
#200	4.4	0.0 - 15.0	

* MSHA Crusher Run CR-6

Soil Description

Brown/Gray f-c GRAVEL, some f-c Sand, trace Silt (Slag Aggregate)

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 26.0374 D_{85}= 23.1836 D_{60}= 13.1538
D_{50}= 9.5417 D_{30}= 3.2811 D_{15}= 0.5420
D_{10}= 0.2970 C_u= 44.29 C_c= 2.76

Classification

USCS= GW AASHTO= A-1-a

Remarks

Sampled 8/3/15

Source of Sample: CR-6 Blast Furnace Slag
Sample Number: 1

Date: 8-25-15

Century Engineering, Inc.

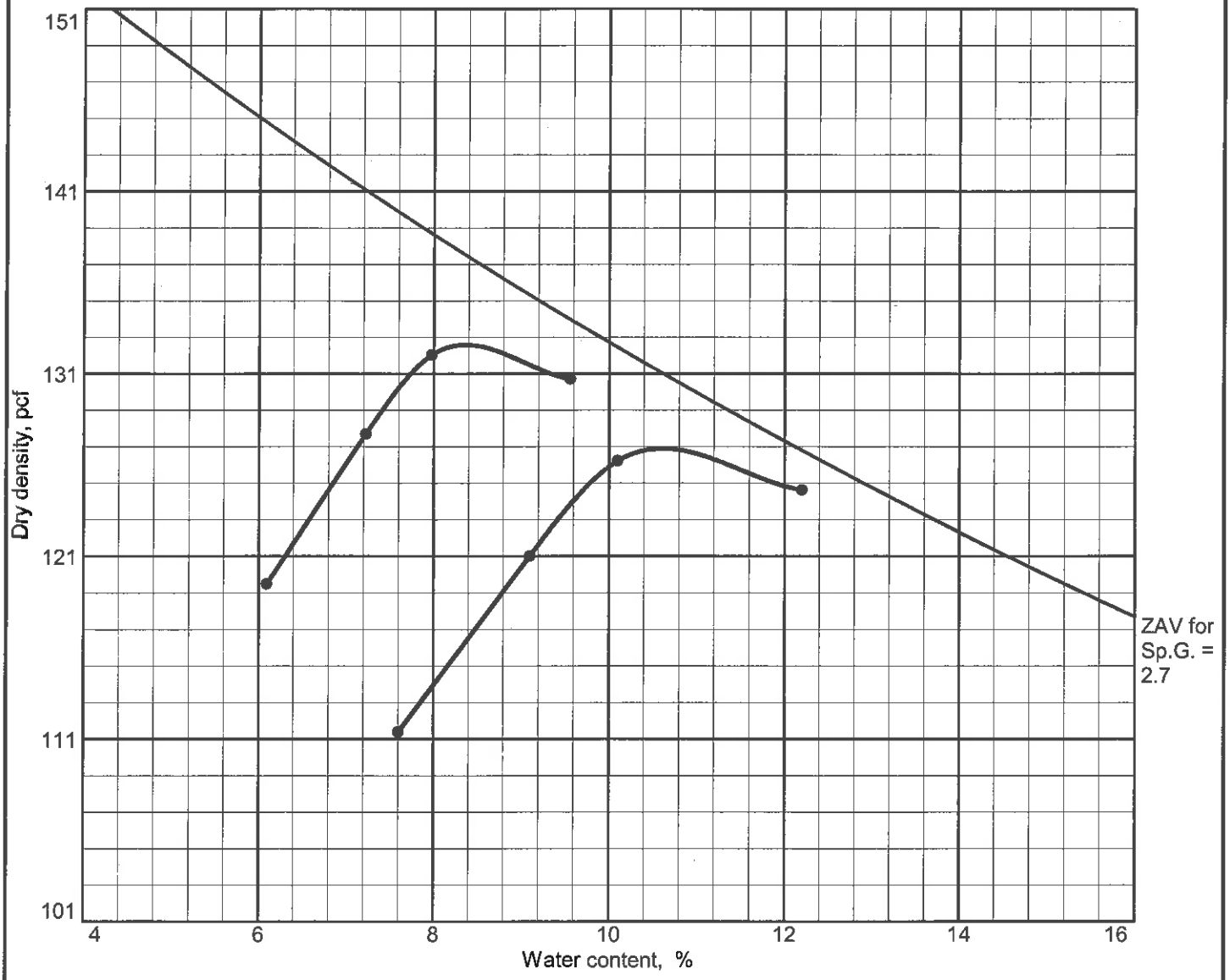
Hunt Valley, MD

Client: MCM Management Corp.
Project: Sparrows Point Terminals-Subgrade Structures

Project No: 151117.00 **Figure**

Tested By: CJ **Checked By:** PAD

COMPACTION TEST REPORT



Test specification: ASTM D 1557-00 Method C Modified
Oversize correction applied to each point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
	GW	A-1-a			NV	NP	24.7	4.4

ROCK CORRECTED TEST RESULTS	UNCORRECTED
Maximum dry density = 132.6 pcf	126.9 pcf
Optimum moisture = 8.4 %	10.6 %

MATERIAL DESCRIPTION

Brown/Gray f-c GRAVEL, some f-c Sand, trace Silt
(CR-6 Blast Furnace Slag)

Project No. 151117.00 **Client:** MCM Management Corp.
Project: Sparrows Point Terminals-Subgrade Structures

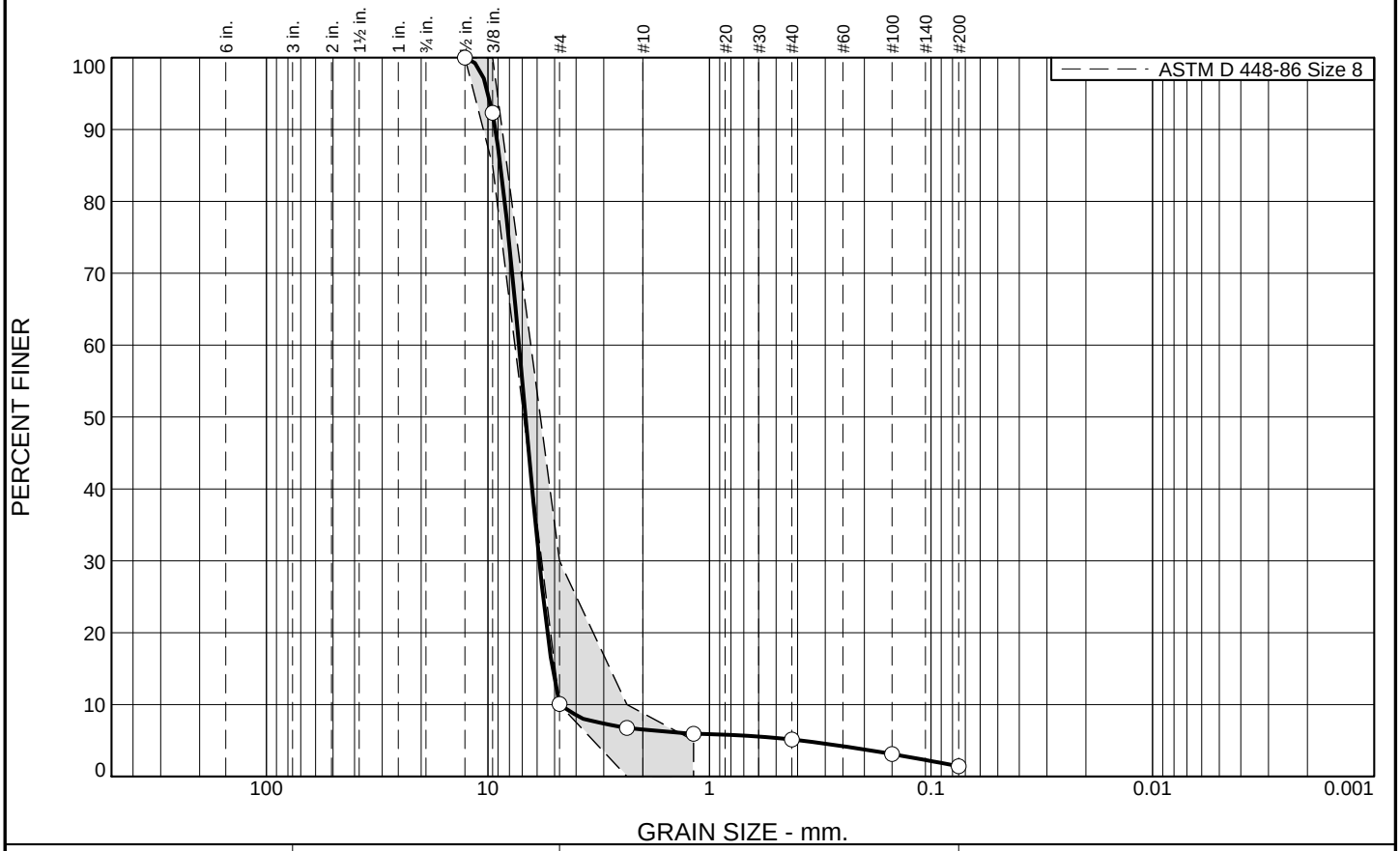
● **Source:** CR-6 Blast Furnace Slag **Sample No.:** 1

Remarks:
Curve corrected for 24.7% material larger than 3/4"

Century Engineering, Inc.
Hunt Valley, MD

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	89.9	3.6	1.4	3.7	1.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.50	100.0	100.0 - 100.0	
.375	92.3	85.0 - 100.0	
#4	10.1	10.0 - 30.0	
#8	6.8	0.0 - 10.0	
#16	5.9	0.0 - 5.0	X
#40	5.1		
#100	3.1		
#200	1.4		

* ASTM D 448-86 Size 8

Soil Description

Gray Fine GRAVEL, trace of f-c Sand (#8 Blast Furnace Slag)

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 9.2456 D_{85}= 8.7729 D_{60}= 7.2366
D_{50}= 6.7610 D_{30}= 5.8654 D_{15}= 5.1110
D_{10}= 4.7132 C_u= 1.54 C_c= 1.01

Classification

USCS= GP AASHTO= A-1-a

Remarks

Sample Taken 8/3/15 from on-site stockpile

Source of Sample: #8 Blast Furnace Slag
Sample Number: 1 (Bag)

Date: 8-27-15

Century Engineering, Inc.

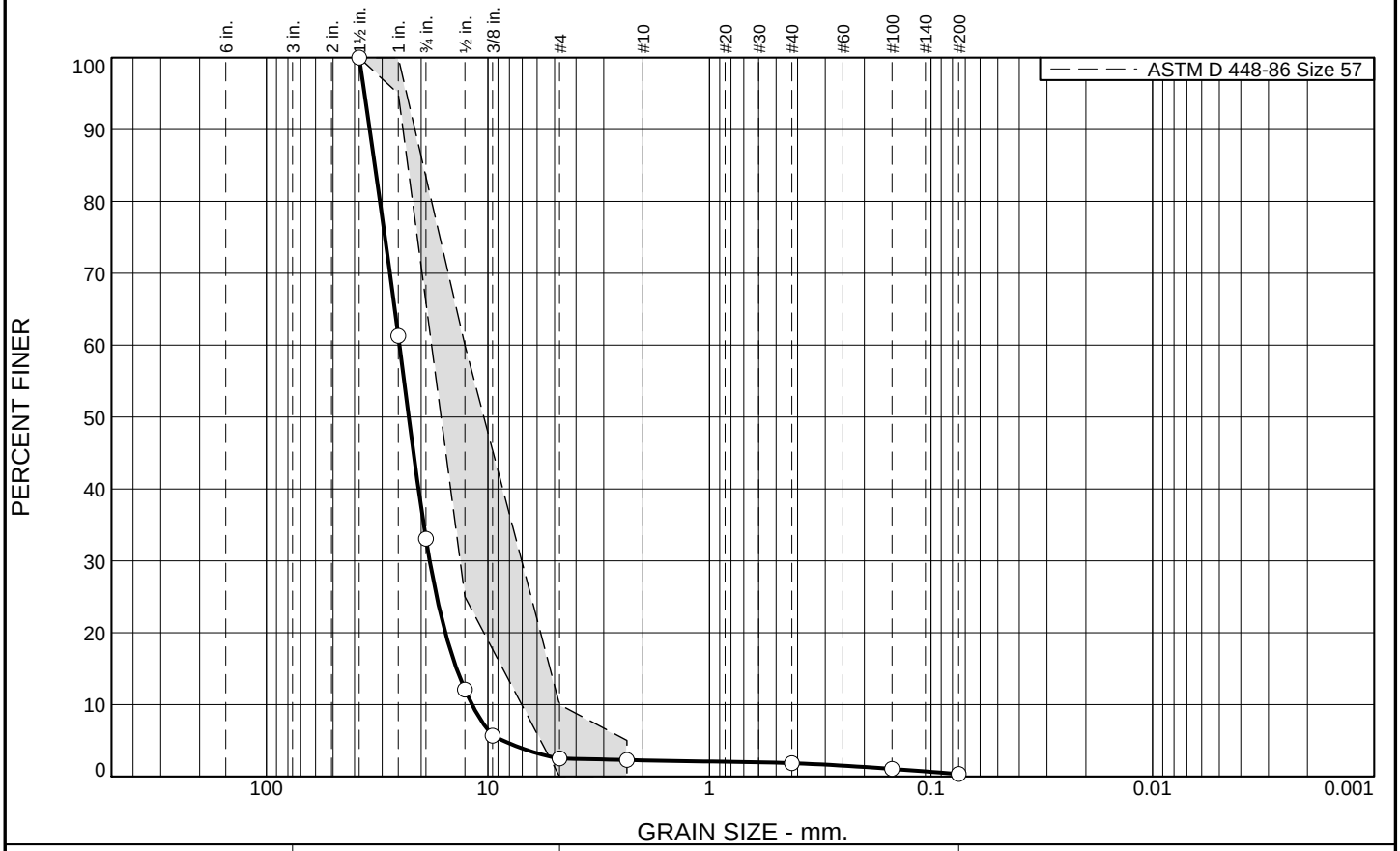
Hunt Valley, MD

Client: MCM Management Corp.
Project: Sparrows Point Terminals-Subgrade Structures

Project No: 151117.00 **Figure**

Tested By: CJ **Checked By:** PAD

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	66.9	30.6	0.3	0.4	1.5	0.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5	100.0	100.0 - 100.0	
1	61.3	95.0 - 100.0	X
.75	33.1		
.50	12.1	25.0 - 60.0	X
.375	5.7		
#4	2.5	0.0 - 10.0	
#8	2.3	0.0 - 5.0	
#40	1.8		
#100	1.0		
#200	0.3		

* ASTM D 448-86 Size 57

Soil Description

Brown/Gray f-c GRAVEL, trace of Fine Sand (#57 Blast Furnace Slag)

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 34.1822 D_{85}= 32.3948 D_{60}= 25.0782
D_{50}= 22.7730 D_{30}= 18.3185 D_{15}= 13.8613
D_{10}= 11.7995 C_u= 2.13 C_c= 1.13

Classification

USCS= GP AASHTO= A-1-a

Remarks

Sample taken 8/3/15 from on-site stockpile

Source of Sample: #57 Blast Furnace Slag
Sample Number: 1 (Bag)

Date: 8-27-15

Century Engineering, Inc.

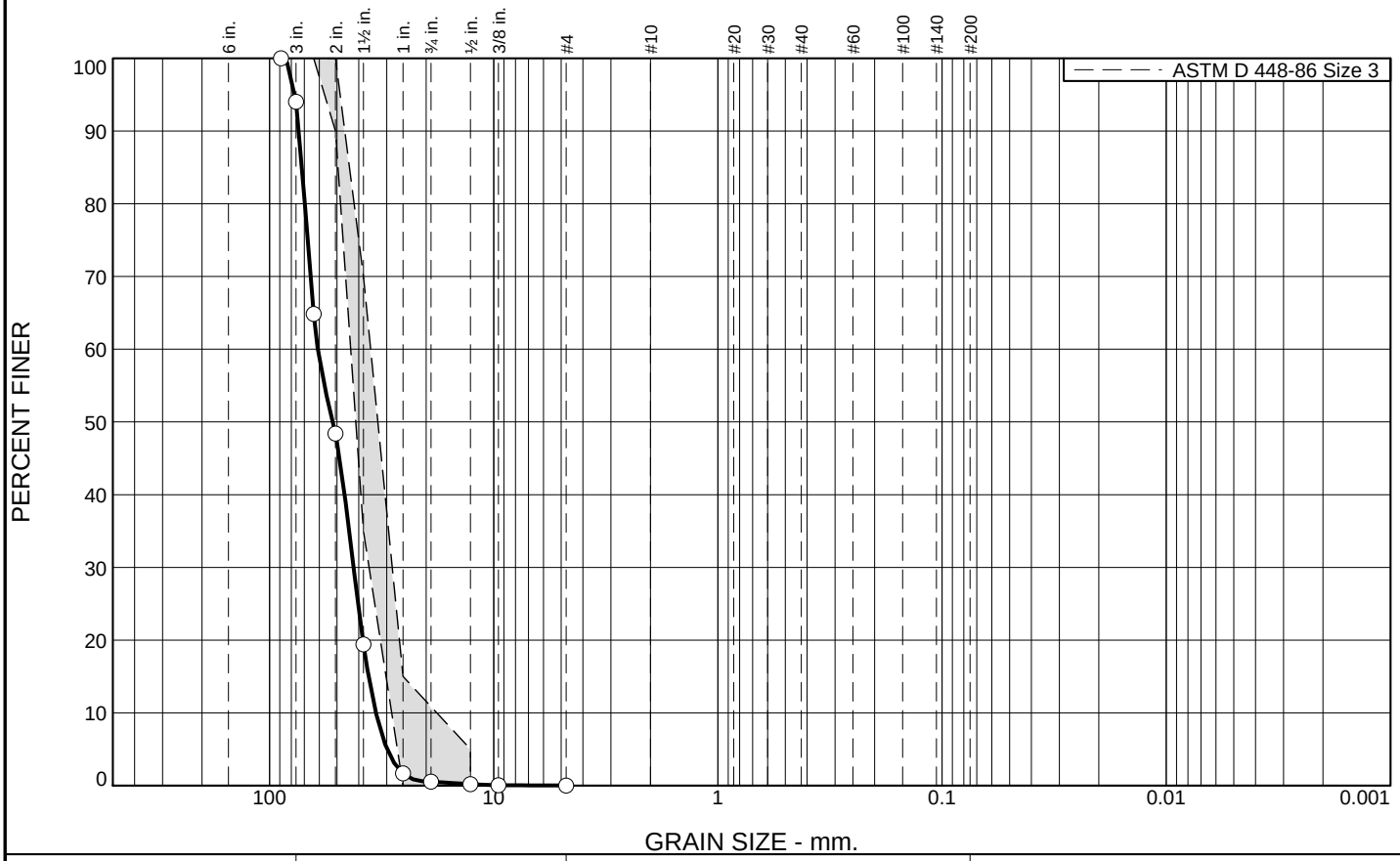
Hunt Valley, MD

Client: MCM Management Corp.
Project: Sparrows Point Terminals-Subgrade Structures

Project No: 151117.00 **Figure**

Tested By: CJ **Checked By:** PAD

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
6.0	93.5	0.5	0.0	0.0	0.0	0.0	0.0

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3.5	100.0		
3.0	94.0		
2.5	64.8	100.0 - 100.0	X
2	48.4	90.0 - 100.0	X
1.5	19.4	35.0 - 70.0	X
1	1.7	0.0 - 15.0	
.75	0.5		
.5	0.2	0.0 - 5.0	
.375	0.0		
#4	0.0		

* ASTM D 448-86 Size 3

Soil Description

Brownish Gray, Coarse SLAG AGGREGATE

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 73.8543 D_{85}= 71.5618 D_{60}= 60.8885
D_{50}= 52.0772 D_{30}= 42.1627 D_{15}= 36.1733
D_{10}= 33.5500 C_u= 1.81 C_c= 0.87

Classification

USCS= GP AASHTO= A-1-a

Remarks

Sample contains 6.0% +3.0 in.

Sample Taken 8/3/15 from on-site stockpile

Source of Sample: #3 Blast Furnace Slag
Sample Number: Bag

Date: 8-7-15

Century Engineering, Inc.

Hunt Valley, MD

Client: MCM Management Corp.
Project: Sparrows Point Terminals-Subgrade Structures

Project No: 151117.00 **Figure**

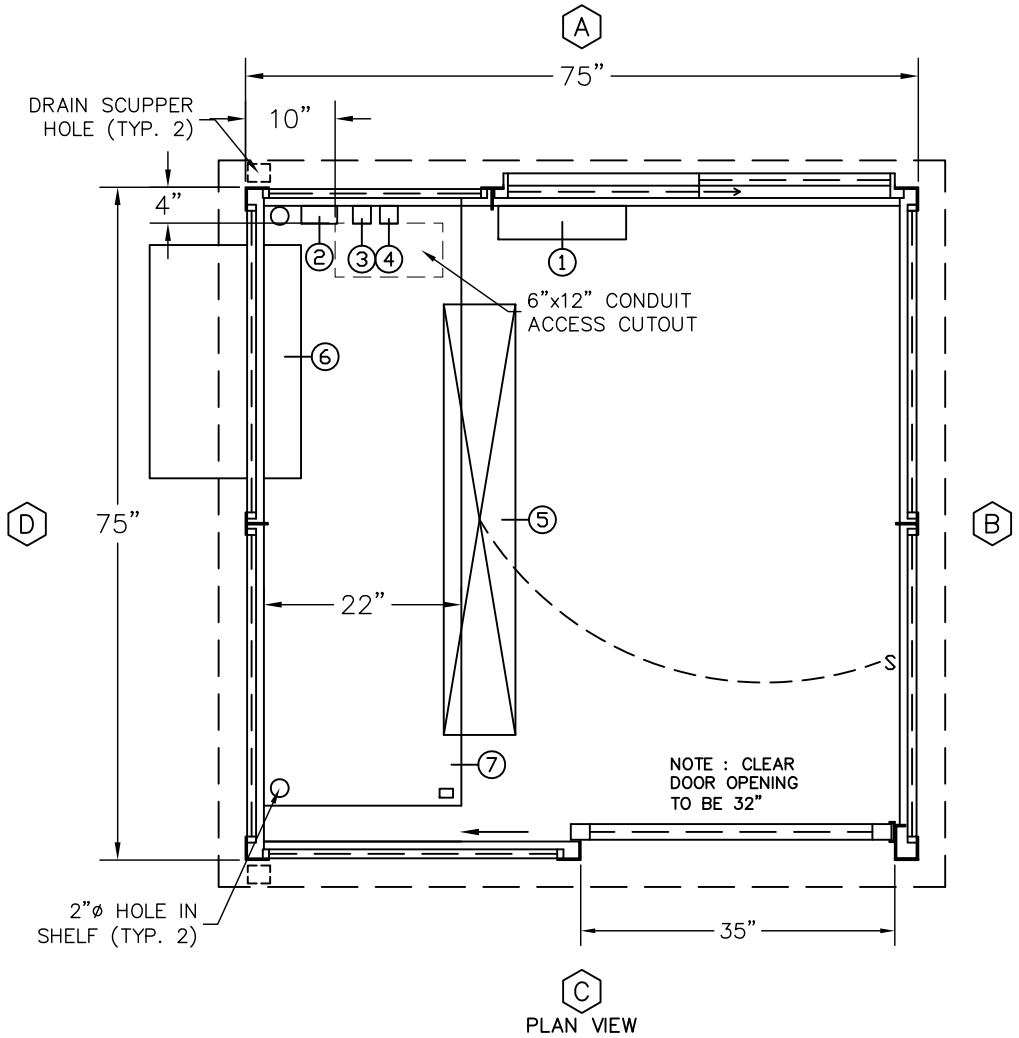
Tested By: CJ **Checked By:** PAD

APPENDIX E

THESE DRAWINGS AND SPECIFICATIONS HAVE BEEN PRODUCED IN ACCORDANCE WITH PORTA–KING'S PROPOSAL AND THE PROJECT DESIGN. THE PROJECT WILL BE MANUFACTURED IN ACCORDANCE TO THIS INFORMATION AS SUBMITTED. THE SECURING OF BUILDING PERMITS AND COMPLIANCE WITH APPROPRIATE BUILDING CODES IS NOT THE RESPONSIBILITY OF PORTA–KING, BUT IS THE RESPONSIBILITY OF THE PURCHASER OF THE BUILDING.

☐ APPROVED AS SUBMITTED, RELEASE FOR MANUFACTURING
☐ APPROVED AS NOTED, RELEASE FOR MANUFACTURING
☐ REVISE AND RESUBMIT

SIGN : _____ DATE : _____



PLAN VIEW

DURALUMINUM MODEL 7676SL BUILDING NOTES :

① 100 AMP SINGLE PHASE 12 CIRCUIT LOAD CENTER w/ MAIN BKR.
② 115V DUPLEX, 230V OUTLET
③ 115V DUPLEX OUTLET
④ DATA JACK w/ CONDUIT RUN & PULL WIRE (TERM. @ CUTOUT)
⑤ 64 WATT SURFACE MTD. FLUORESCENT LIGHT w/ SWITCH
⑥ 230V 11.8/11.2 BTU THRU WALL HVAC
⑦ 22" DEEP WALNUT WOODGRAIN SHELF

* EXTERIOR ROOF w/ 3" OVERHANG
* 1– 3066 HEAVY DUTY ALUMINUM SLIDING DOOR w/ HALF GLASS & ADA HANDLES
* GLAZING– CLEAR TEMPERED GLASS
* ALUMINUM TREAD PLATE FLOOR
* STANDARD FLOOR ACCESS CUTOUT
* FACTORY INSTALLED ELECTRIC

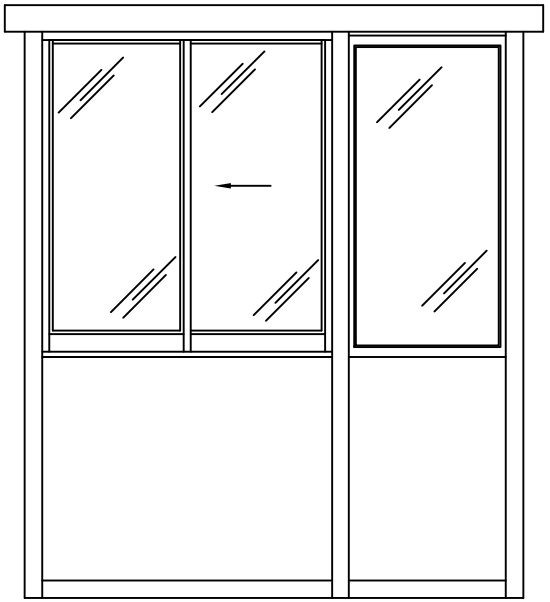
PORTA–KING BUILDING SYSTEMS
4133 SHORELINE DRIVE EARTH CITY, MISSOURI 63045
1–800–BUILDING 314–291–4200 FAX 314–291–2857

TITLE: ARCO SPARROWS POINT, MD	MODEL 7676SL	
JOB NO. DS00446	DRAWN BY AYW	SHEET 1 OF 3
SCALE NTS	DATE 6–21–16 REVISED ————	

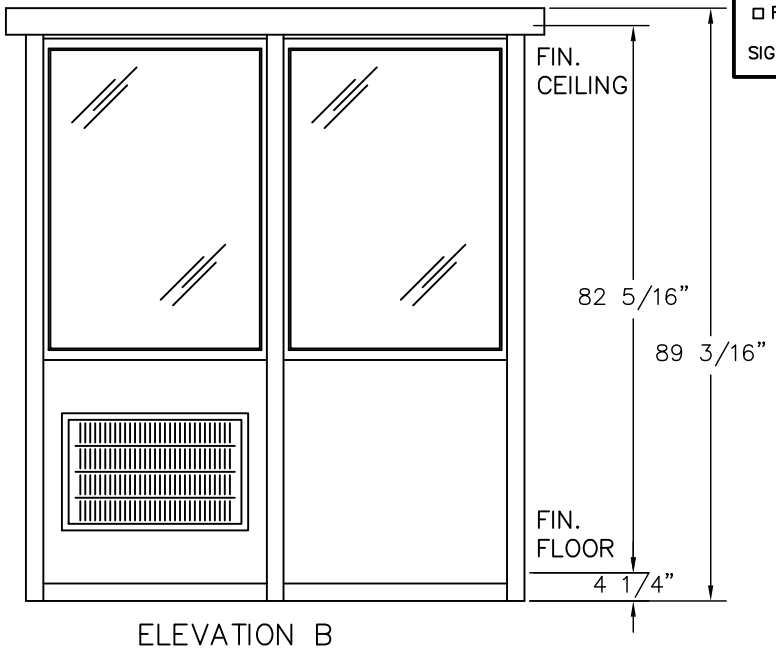
THESE DRAWINGS AND SPECIFICATIONS HAVE BEEN PRODUCED IN ACCORDANCE WITH PORTA-KING'S PROPOSAL AND THE PROJECT DESIGN. THE PROJECT WILL BE MANUFACTURED IN ACCORDANCE TO THIS INFORMATION AS SUBMITTED. THE SECURING OF BUILDING PERMITS AND COMPLIANCE WITH APPROPRIATE BUILDING CODES IS NOT THE RESPONSIBILITY OF PORTA-KING, BUT IS THE RESPONSIBILITY OF THE PURCHASER OF THE BUILDING.

☐ APPROVED AS SUBMITTED, RELEASE FOR MANUFACTURING
☐ APPROVED AS NOTED, RELEASE FOR MANUFACTURING
☐ REVISE AND RESUBMIT

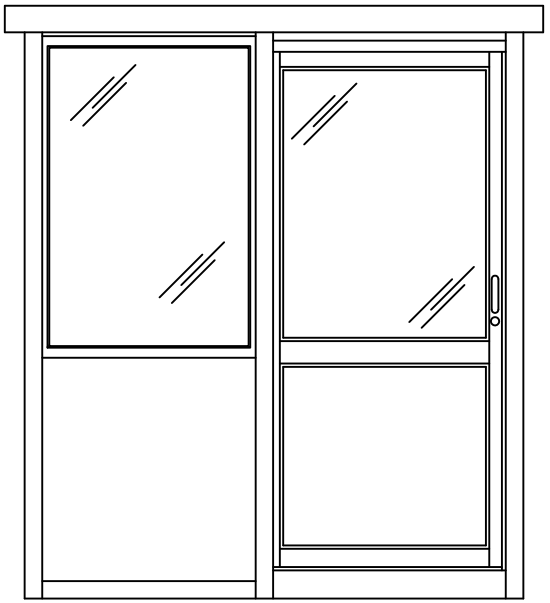
SIGN : _____ DATE : _____



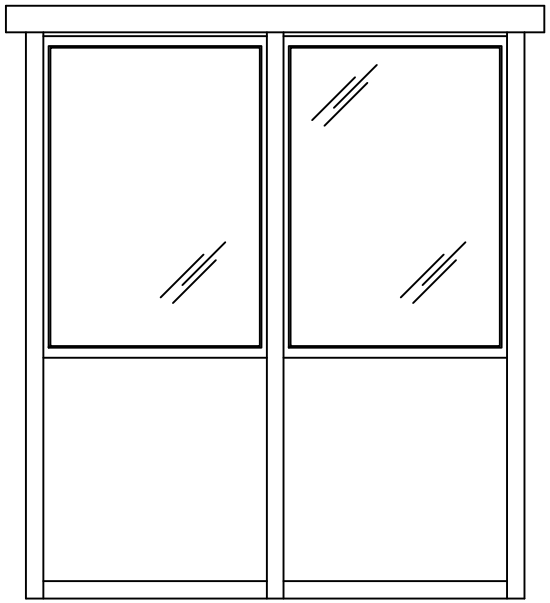
ELEVATION A



ELEVATION B



ELEVATION C

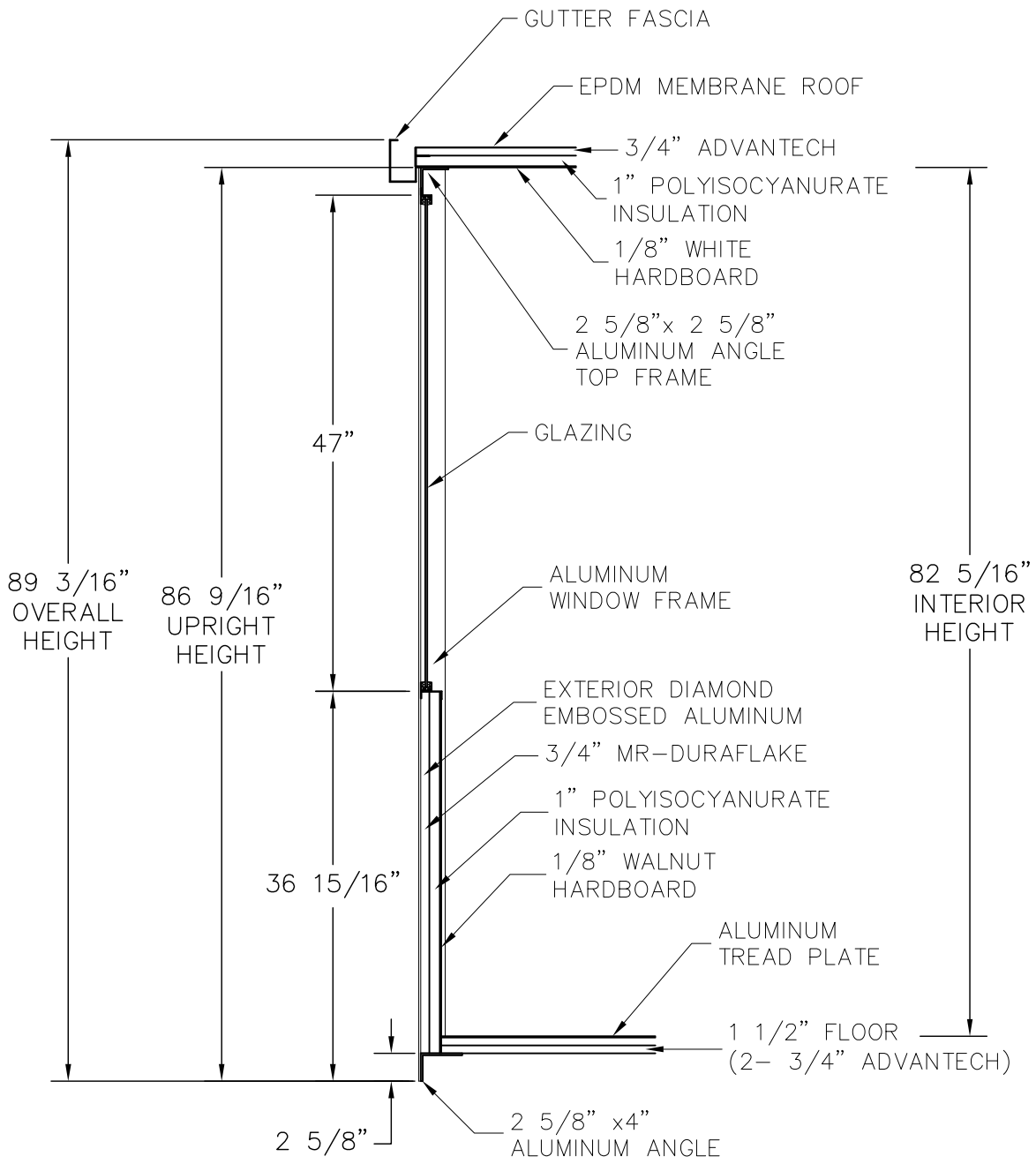


ELEVATION D

PORTA-KING BUILDING SYSTEMS

4133 SHORELINE DRIVE EARTH CITY, MISSOURI 63045
1-800-BUILDING 314-291-4200 FAX 314-291-2857

TITLE: ARCO SPARROWS POINT, MD	MODEL 7676SL	
JOB NO. DS00446	DRAWN BY AYW	SHEET 2 OF 3
SCALE NTS	DATE 6-21-16 REVISED ----	



WALL SECTION DETAIL

THESE DRAWINGS AND SPECIFICATIONS HAVE BEEN PRODUCED IN ACCORDANCE WITH PORTA-KING'S PROPOSAL AND THE PROJECT DESIGN. THE PROJECT WILL BE MANUFACTURED IN ACCORDANCE TO THIS INFORMATION AS SUBMITTED. THE SECURING OF BUILDING PERMITS AND COMPLIANCE WITH APPROPRIATE BUILDING CODES IS NOT THE RESPONSIBILITY OF PORTA-KING, BUT IS THE RESPONSIBILITY OF THE PURCHASER OF THE BUILDING.

- ☐ APPROVED AS SUBMITTED, RELEASE FOR MANUFACTURING
- ☐ APPROVED AS NOTED, RELEASE FOR MANUFACTURING
- ☐ REVISE AND RESUBMIT

SIGN : _____ DATE : _____

PORTA-KING BUILDING SYSTEMS
4133 SHORELINE DRIVE EARTH CITY, MISSOURI 63045
1-800-BUILDING 314-291-4200 FAX 314-291-2857

TITLE: ARCO SPARROWS POINT, MD	MODEL 7676SL	
JOB NO. DS00446	DRAWN BY AYW	SHEET 3 OF 3
SCALE NTS	DATE 6-21-16 REVISED ----	

APPENDIX F

CONTAINMENT REMEDY OPERATIONS AND MAINTENANCE PLAN
SUB-PARCEL B4-1 FORMER SPARROWS POINT STEEL MILL

Containment Remedy Operations and Maintenance Overview

In accordance with the Sub-Parcel B4-1 Development Completion Report for development on a designated portion of the Sparrows Point Peninsula in Sparrows Point, MD (the Site), post remediation care requirements include compliance with the conditions placed on the No Further Action Letter, Certificate of Completion, and deed restrictions recorded for the Site. In addition, maintenance will be performed on the capped areas to control degradation and exposure to the underlying soil. Inspections of the capped areas will be conducted annually. The responsible party will perform cap inspections, maintenance of the cap, and retain cap inspection records. Maintenance records will include the date of the inspection, name of the inspector, any noted issues, and subsequent resolution of the issues. Maintenance records will be maintained in a designated area at the Site for Maryland Department of the Environment (MDE) inspection and review, if requested.

The containment remedy (cap) has been constructed as described in the Parcel B4-1 Development Completion Report. The following sections provide details of the Operations and Maintenance Plan (O&M Plan) procedures to be followed at the Site to assess when maintenance of the capped areas is necessary.

Designated Pavement Area Inspections

The designated paved areas, as identified in the Development Completion Report, will be maintained to ensure integrity of the cap. Paved areas subject to this O&M Plan include both exterior pavements (parking lots and roads) and interior pavements (building slabs).

Pavement area inspections will be conducted on an annual basis to ensure that the capped areas are maintained as needed. During the inspection, the capped surfaces will be inspected to check for the following potential conditions:

- Differential settlement and significant surface-water ponding;
- Erosion or cracking of the cap materials; and
- Obstruction or blocking of drainage facilities.

When inspections indicate that cap repair is necessary, repairs will be completed as soon as practically possible in compliance with any recorded deed restrictions. The work will be documented on a form similar to the attached example Pavement Inspection Form. The inspection documentation will include the results of each inspection, recommended maintenance actions, and the actual maintenance/repair implemented. The responsible party will maintain inspection forms and any resulting repair records.

Tradepoint Atlantic
Sub-Parcel 4-1
Inspection Form

Inspector: _____ Date/Time of Inspection: _____

Title: _____ Date of Last Inspection: _____

Organization: _____ Weather: _____

Area	Cap Material	Item	Observation	Action(s) Taken	Date Completed	Comments/Additional Observations
Parking Areas	Asphalt	**Alligator Cracking -** If present, include estimate of area, location via description and photographs (attach to Inspection Form).				
		Cracks less than 0.5" wide - If pressent, include number of cracks, location via description and photographs (attach to Inspection Form).				
		Cracks greater than 0.5" wide - If pressent, include number of cracks, location via description and photographs (attach to Inspection Form).				
		Holes - If present, include number of holes, width and depth of each hole, location via description and photographs (attach to Inspection Form).				
		Ponding water or signs of ponding water - If present, include location via description and photographs (attach to Inspection Form).				
		Signs of settlement - If present include via description and photographs (attach to Inspection Form).				
		Other observations related to the condition of the cap and potential for cap damage - If present, include location via description and photographs (attach to Inspection Form).				
		General Condition - Include photographs of capped area (attach to Inspection Form).				

Tradepoint Atlantic
Sub-Parcel 4-1
Inspection Form

Inspector: _____ Date/Time of Inspection: _____

Title: _____ Date of Last Inspection: _____

Organization: _____ Weather: _____

Area	Cap Material	Item	Observation	Action(s) Taken	Date Completed	Comments/Additional Observations
Sidewalks	Concrete	**Alligator Cracking -** If present, include estimate of area, location via description and photographs (attach to Inspection Form).				
		Cracks less than 0.5" wide - If pressent, include number of cracks, location via description and photographs (attach to Inspection Form).				
		Cracks greater than 0.5" wide - If pressent, include number of cracks, location via description and photographs (attach to Inspection Form).				
		Holes - If present, include number of holes, width and depth of each hole, location via description and photographs (attach to Inspection Form).				
		Ponding water or signs of ponding water - If present, include location via description and photographs (attach to Inspection Form).				
		Signs of settlement - If present include via description and photographs (attach to Inspection Form).				
		Other observations related to the condition of the cap and potential for cap damage - If present, include location via description and photographs (attach to Inspection Form).				
		General Condition - Include photographs of capped area (attach to Inspection Form).				

Tradepoint Atlantic
Sub-Parcel 4-1
Inspection Form

Inspector: _____ Date/Time of Inspection: _____

Title: _____ Date of Last Inspection: _____

Organization: _____ Weather: _____

Area	Cap Material	Item	Observation	Action(s) Taken	Date Completed	Comments/Additional Observations
Building Slab	Concrete	**Alligator Cracking -** If present, include estimate of area, location via description and photographs (attach to Inspection Form).				
		Cracks less than 0.5" wide - If pressent, include number of cracks, location via description and photographs (attach to Inspection Form).				
		Cracks greater than 0.5" wide - If pressent, include number of cracks, location via description and photographs (attach to Inspection Form).				
		Holes - If present, include number of holes, width and depth of each hole, location via description and photographs (attach to Inspection Form).				
		Ponding water or signs of ponding water - If present, include location via description and photographs (attach to Inspection Form).				
		Signs of settlement - If present include via description and photographs (attach to Inspection Form).				
		Other observations related to the condition of the cap and potential for cap damage - If present, include location via description and photographs (attach to Inspection Form).				
		General Condition - Include photographs of capped area (attach to Inspection Form).				