Response and Development Work Plan Addendum Retail Area #3 – Project Pancake

Area B: Sub-Parcel B6-2 Tradepoint Atlantic Sparrows Point, Maryland

Prepared For:



TRADEPOINT ATLANTIC 1600 Sparrows Point Boulevard Sparrows Point, Maryland 21219

Prepared By:



ARM GROUP LLC 9175 Guilford Road Suite 310 Columbia, Maryland 21046

ARM Project No. 20010206

Respectfully Submitted,

Ryan Clancy, E.I.T. Project Engineer

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

Revision 0 – July 27, 2021

TABLE OF CONTENTS

1.0	INTRODUCTION					
	1.1.	Background				
	1.2.	Objectives	2			
2.0	RAD	WP ADDENDUM	3			
	2.1.	Requirements of the Addendum				
	2.2.	Retail Area #3				
		2.2.1. General Development Protocols	4			
		2.2.2. Proposed Layout and Capping Remedy	4			
		2.2.3. Construction Worker Ground Intrusive Work	5			
3.0	REPO	ORTING AND IMPLEMENTATION SCHEDULE	6			

FIGURES

Figure 1	Retail Area #3 – Project Pancake	Following Text
Figure 2	Retail Area #3 – Capping Areas	Following Text

APPENDICES

Appendix A	Development Drawings	Following Text
Appendix B	Geotextile Fabric Product Sheet	Following Text

1.0 INTRODUCTION

1.1. BACKGROUND

ARM Group LLC (ARM), on behalf of Tradepoint Atlantic (TPA), has prepared this Response and Development Work Plan (RADWP) Addendum to facilitate the construction of a retail/restaurant building designated as Retail Area #3. The proposed construction of Retail Area #3 has been designated as "Project Pancake". This retail lot is proposed for occupancy and use on Sub-Parcel B6-2 (the Site). The proposed layout of Retail Area #3 is shown on **Figure 1**.

Pursuant to Paragraph 3 of the First Amendment to the Administrative Consent Order (ACO), a cost comparison of the commercial environmental remediation costs against the originally budgeted industrial environmental cost estimate shall be performed. The estimated cost of the environmental oversight work to be performed by an Environmental Professional (EP) for Retail Area #3 is \$50,000. This cost is equivalent to the normal and customary cost for environmental oversight work performed on industrial parcels at Sparrows Point. The capping specifications and standards for this commercial development (building slab, concrete sidewalks, asphalts paving, clean capped landscaping) are the same as capping specifications and standards for an industrial parcel. Accordingly, there are no additional costs to the Budget based on commercial development and use; the semi-annual Budget review pursuant to Paragraph 84 of the ACO will continue to be conducted as required.

The construction and use of any retail lot at the Site must be approved by the Maryland Department of the Environment (MDE) and the United Stated Environmental Protection Agency (USEPA). The proposed major grading and utility installation tasks for the Site were covered by the agency-approved Sub-Parcel B6-2 RADWP (Revision 1 dated January 24, 2018).

The RADWP provided a Screening Level Risk Assessment (SLRA) for the entire Site to evaluate potential risks to Composite Workers and Construction Workers. The SLRA was recently updated to account for changes in the proposed boundary of the retail area, including the removal of the southern portion of the retail area originally proposed to the south of the Tin Mill Canal (TMC). The revised SLRA was presented in the Sub-Parcel B6-2 RADWP Addendum: SLRA Update dated June 28, 2021. The SLRA concluded that a capping remedy would adequately protect Composite Workers and site visitors from potential future exposures once the retail lots are occupied. The SLRA also determined the length of time that Construction Workers can perform ground intrusive work at the Site before site-specific health and safety measures may be needed for worker protection. This evaluation indicates that additional site-specific health and safety measures (beyond standard Level D protection) would be required only if an individual worker exceeded 40 exposure days of intrusive work.

1.2. OBJECTIVES

The approved Sub-Parcel B6-2 RADWP specified that a brief Addendum detailing the site plan for each retail lot would be provided to the MDE and USEPA once the plans for each retail lot were finalized. The RADWP stated that the Addendum would need to include the layout of the proposed retail lot, along with an indication of the proposed final capping remedy. The objectives of this document are to allow the construction of the proposed retail development at the Site, to allow occupancy prior to full implementation of the site-wide (Sub-Parcel B6-2) capping remedy, and to demonstrate that there are no concerns related to the proposed intrusive work schedule for Construction Workers.

2.0 RADWP ADDENDUM

2.1. **REQUIREMENTS OF THE ADDENDUM**

The Sub-Parcel B6-2 RADWP provides cross sections and specifications for all types of capping remedies which may be installed during the development of each retail lot, including requirements for any paved areas, landscaped areas, and/or stormwater ponds. The RADWP is the primary guidance document for all future development activities associated with the retail area. The RADWP established the following procedure to obtain agency approval to begin the construction of each individual retail lot:

Once plans for each retail lot are finalized, the MDE and USEPA will be provided with a brief RADWP Addendum detailing the site plan for the retail lot, along with an indication of the proposed final capping remedy, and a discussion of any concerns related to the intrusive work schedule (if any) associated with the construction of the applicable retail lot. Multiple retail lots may be combined into the same addendum if the sequencing of development is conducive to a single submission. The SLRA presented herein will serve as the primary reference document for any future development associated with Sub-Parcel B6-2, and addenda will be prepared and submitted to the agencies as necessary.

In addition, the proposed retail lot may be constructed and occupied prior to full implementation of the capping remedy which is required for the entire Site. The site-wide capping remedy throughout Sub-Parcel B6-2 is proposed to be installed using a phased approach as the individual retail lots are developed. To facilitate the use of the proposed retail lot, interim measures could be required for some retail lots to protect workers and visitors, as outlined in the RADWP as follows:

Depending on occupancy opportunities prior to the completion of all retail development phases, access restrictions or other mechanisms will be used to prevent potential exposures to uncapped portions of the Composite Worker Area during the interim period to temporarily prevent potential exposures until the required capping remedy is fully implemented. With these temporary restrictions, the Composite Worker and child/youth visitors will not be exposed to potentially impacted soils while commercial activities are being conducted on (completed) capped portions of the Site. If occupancy of the Site is proposed prior to full implementation of the capping remedy for the Composite Worker Area, a detailed RADWP Addendum must be submitted to the agencies and approved prior to use. The RADWP Addendum would need to include details of the proposed interim measures including locations and protocols for the installation and maintenance of the proposed remedy. The interim measures could include temporary access restrictions (e.g., fencing) and/or temporary capping mechanisms (e.g., crushed concrete), among other possible responses.

There are no interim remedies to be installed for Retail Area #3. The development area will be fully capped by surface engineering controls as more fully described in Section 2.2.2.

2.2. RETAIL AREA #3

2.2.1. General Development Protocols

The construction of the retail lot will remain subject to all development implementation protocols outlined in the Sub-Parcel B6-2 RADWP (Revision 1 dated January 24, 2018) and RADWP Addendum: SLRA Update (dated June 28, 2021), including but not limited to the following:

- Development activities will be conducted under the property-wide Health and Safety Plan (HASP) and all ground intrusive work will be performed in accordance with the modified Level D Personal Protective Equipment (PPE) requirements outlined in the property-wide Sparrows Point Development PPE Standard Operational Procedure (SOP).
- Oversight will be provided by an EP during permanent cap installation, as well as all intrusive construction activities.
- Soil screening requirements will be implemented as required.
- Erosion and sediment controls will be installed as required.
- Dust monitoring will be implemented as required.
- If dewatering is necessary, sampling and disposal will be conducted as required.
- The NAPL Contingency Plan will be implemented as required.
- Utility backfill materials must be approved by the MDE Voluntary Cleanup Program (VCP). MDE VCP clean fill approved for commercial land use will be required at depths and alignments where the utility trench could be considered to be part of a landscaped cap (i.e., depths less than or equal to 2 feet). Slag or other approved backfill soil not meeting the MDE VCP definition of clean fill may be used in areas where the utility trench will be covered by an additional cap.

2.2.2. Proposed Layout and Capping Remedy

Development drawings for the proposed retail lot are provided in **Appendix A**. As indicated in the drawings, the proposed retail lot will include a 10,688 square-foot retail/restaurant building. The retail lot will be capped by paved driveways and parking areas, paved building slab, and landscaped areas between the paved areas. The proposed cap areas and types are shown on **Figure 2**. All of the cross sections for each type of proposed capping remedy will be required to meet the minimum thicknesses given in the Sub-Parcel B6-2 RADWP.

Driveways will be constructed to allow access to and from the retail lot. As indicated in the site plan drawing provided in **Appendix A**, paved drives and parking lots are currently proposed in several areas within the lease boundary, with primary access on the southern side of the retail lot. The paved drives and parking lots will also be subject to the minimum cap thicknesses given in

the Sub-Parcel B6-2 RADWP. Areas within the Retail Area #3 boundary not covered by asphalt, building slab, or concrete will be considered landscaped areas and will be capped with a minimum of 2 feet of clean fill (meeting VCP requirements for commercial land use) prior to being planted. Trees will be installed with a minimum of 2 feet of clean fill (meeting VCP requirements for commercial land use) around the root ball. A geotextile marker fabric will be placed between the clean backfill and underlying soils. Tradepoint Atlantic is proposing to use the Mirafi[®] 140N nonwoven geotextile (or equal) as the preferred marker fabric for this development project. This product was not originally specified as a preferred material within the Sub-Parcel B6-2 RADWP but was approved as an alternate within the Retail Area #1 (Royal Farms) development area by MDE in an email dated December 12, 2019. The product has since been specified in multiple RADWPs across the TPA property. A product sheet for this fabric is included as **Appendix B**.

The major utility trenching and installation tasks were conducted under the scope of work described in the Sub-Parcel B6-2 RADWP. However, as shown in the site plan drawing in **Appendix A**, additional utilities and tie-ins will be installed under this Addendum.

The perimeter of the proposed development area is fully surrounded by high-traffic access roads, installed as part of the Retail Area #1 (Royal Farms) development. The access roads were constructed in accordance with the minimum cap thicknesses outlined in the Sub-Parcel B6-2 RADWP. As such, none of the areas adjacent to the Retail Area #3 boundary will be uncapped.

2.2.3. Construction Worker Ground Intrusive Work

As indicated in the site plan drawings provided in **Appendix A**, additional utilities and tie-ins will be installed under this Addendum. Ground intrusive activities which could result in potential Construction Worker exposures are expected to be limited primarily to utility installation tasks performed by specific crews. The revised SLRA presented in the Sub-Parcel B6-2 RADWP Addendum: SLRA Update dated June 28, 2021 indicated that an exposure duration of 40 days did not result in any potentially unacceptable risk or hazard for Construction Workers.

As a conservatism and protective measure, during all development work on the TPA property Construction Workers performing ground intrusive work will adhere to the upgraded PPE requirements outlined in the property-wide Sparrows Point Development PPE SOP. The PPE SOP was created after the submission of the Sub-Parcel B6-2 RADWP but was attached to the Sub-Parcel B6-2 RADWP Addendum: SLRA Update dated June 28, 2021. The approved modified Level D PPE requirements, including specific PPE details, planning, tracking/supervision, enforcement, and documentation, are outlined in the PPE SOP.

3.0 REPORTING AND IMPLEMENTATION SCHEDULE

A Development Completion Report and Notice of Completion of Remedial Actions will be prepared following construction of each proposed retail lot. The Development Completion Report will summarize the completed capping activities.

The proposed implementation schedule is provided below.

Task	Proposed Completion Date
Anticipated RADWP Addendum Approval	August 15, 2021
Installation of Erosion and Sediment Controls	August 15, 2021
Utility Installation	October 1, 2021
Permanent Capping Remedy Installation	July 15, 2022
Submittal of Completion Report/ Notice of Completion of Remedial Actions*	November 15, 2022

*Notice of Completion of Remedial Actions shall be prepared by Professional Engineer registered in Maryland and submitted with the Development Completion Report to certify that the work is consistent with the requirements of this RADWP Addendum and the retail lot is suitable for occupancy.

FIGURES





n n n n n n n n

"

"

"

APPENDIX A

11

- " "

GENERAL GRADING NOTES

- IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL CONSTRUCTION CONTRACT DOCUMENTS INCLUDING, BUT NOT LIMITED TO, ALL OF THE DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THE PROJECT WORK SCORE INITIATION AND COMMENCEMENT OF CONSTRUCTION. SHOULD THE CONTRACTOR FIND A CONFLICT AND/OR DISCREPANCY BETWEEN THE DOCUMENTS RELATIVE TO THE SPECIFICATIONS OR THE RELATIVE OR APPLICABLE CODE LAWS. RULES. STATUTES AND/OR ORDINANCES. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO NOTIFY THE PROJECT ENGINEER OF RECORD. IN WRITING. OF SAID CONFLICT AND/OR DISCREPANCY PRIOR TO THE START OF CONTRACTOR'S FAILURE TO NOTIFY THE PROJECT ENGINEER SHALL CONSTITUTE CONTRACTOR'S FULL AND COMPLETE ACCEPTANCE OF ALL RESPONSIBILITY TO COMPLETE THE SCOPE OF WORK AS DEFINED BY THE DRAWINGS AND IN FULL COMPLIANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS, LAWS, STATUTES, ORDINANCES AND CODES AND, FURTHER, CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH SAME
- SITE GRADING MUST BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE RECOMMENDATIONS SET FORTH IN THE GEOTECHNICAL REPORT REFERENCED IN THIS PLAN SET. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING AND REPLACING UNSUITABLE MATERIALS WITH SUITABLE MATERIALS AS SPECIFIED IN THE GEOTECHNICAL REPORT. ALL EXCAVATED OR FILLED AREAS MUST BE COMPACTED AS OUTLINED IN THE GEOTECHNICAL REPORT. MOISTURE CONTENT AT TIME OF PLACEMENT MUST BE SUBMITTED IN A COMPACTION REPORT PREPARED BY A QUALIFIED GEOTECHNICAL ENGINEER REGISTERED WITH THE STATE WHERE THE WORK IS PERFORMED. VERIFYING THAT ALL FILLED AREAS AND SUBGRADE AREAS WITHIN THE BUILDING PAD AREA AND AREAS TO BE PAVED HAVE BEEN COMPACTED IN ACCORDANCE WITH THESE PLANS, SPECIFICATIONS AND THE RECOMMENDATIONS SET FORTH IN THE GEOTECHNICAL REPORT AND ALL APPLICABLE REQUIREMENTS, RULES, STATUTES, LAWS, ORDINANCES AND CODES. SUBBASE MATERIAL FOR SIDEWALKS, CURB, OR ASPHALT MUST BE FREE OF ORGANICS AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEEMED UNSUITABLE BY OWNER/DEVELOPER, OR OWNER/DEVELOPER'S REPRESENTATIVE, SUBBASE IS TO BE REMOVED AND FILLED WITH APPROVED FILL MATERIAL COMPACTED AS DIRECTED BY THE GEOTECHNICAL REPORT. EARTHWORK ACTIVITIES INCLUDING, BUT NOT LIMITED TO, EXCAVATION, BACKFILL, AND COMPACTING MUST COMPLY WITH THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT AND ALL APPLICABLE REQUIREMENTS, RULES, STATUTES, LAWS, ORDINANCES AND
- CODES. EARTHWORK ACTIVITIES MUST COMPLY WITH THE STANDARD STATE DOT SPECIFICATIONS FOR ROADWAY CONSTRUCTION (LATEST EDITION) AND ANY AMENDMENTS OR REVISIONS THERETO. THE CONTRACTOR MUST COMPLY, TO THE FULLEST EXTENT, WITH THE LATEST OSHA STANDARDS AND REGULATIONS, AND/OR ANY OTHER AGENCY WITH JURISDICTION FOR EXCAVATION AND TRENCHING PROCEDURES. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE "MEANS AND METHODS" REQUIRED TO MEET THE INTENT AND PERFORMANCE CRITERIA OF OSHA, AS WELL AS ANY OTHER ENTITY THAT HAS JURISDICTION FOR EXCAVATION AND/OR TRENCHING PROCEDURES AND CONSULTANT SHALL HAVE NO RESPONSIBILITY FOR OR AS RELATED FOR OR AS RELATED TO EXCAVATION AND TRENCHING PROCEDURES.
- PAVEMENT MUST BE SAW CUT IN STRAIGHT LINES, AND EXCEPT FOR EDGE OF BUTT JOINTS, MUST EXTEND TO THE FULL DEPTH OF THE EXISTING PAVEMENT. ALL DEBRIS FROM REMOVAL OPERATIONS MUST BE REMOVED FROM THE SITE AT THE TIME OF EXCAVATION. STOCKPILING OF DEBRIS WILL NOT BE PERMITTED.
- THE TOPS OF EXISTING MANHOLES, INLET STRUCTURES, AND SANITARY CLEANOUT TOPS MUST BE ADJUSTED, AS NECESSARY, TO MATCH PROPOSED GRADES IN ACCORDANCE WITH ALL APPLICABLE STANDARDS, REQUIREMENTS, RULES, STATUTES, LAWS, ORDINANCES AND CODES.
- THE CONTRACTOR IS FULLY RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHIC INFORMATION AND UTILITY INVERTED EVATIONS PRIOR TO COMMENCING ANY CONSTRUCTION CONTRACTOR MUST CONFIRM AND ENSURE 0.75% MINIMUM SLOPE AGAINST ALL ISLANDS, GUTTERS, AND CURBS: 1.0% ON ALL CONCRETE SURFACES: AND 1.0% MINIMUM ON ASPHALT (EXCEPT WHERE ADA REQUIREMENTS LIMIT GRADES), TO PREVENT PONDING, CONTRACTOR MUST IMMEDIATELY IDENTIFY. IN WRITING TO THE ENGINEER, ANY DISCREPANCIES THAT MAY OR COULD AFFECT THE PUBLIC SAFETY, HEALTH OR GENERAL WELFARE, OR PROJECT COST. IF CONTRACTOR PROCEEDS WITH CONSTRUCTION WITHOUT PROVIDING PROPER NOTIFICATION, MUST BE AT THE CONTRACTOR'S OWN RISK AND, FURTHER, CONTRACTOR SHALL INDEMNIFY, DEFEND AND HOLD HARMLESS THE DESIGN ENGINEER FOR ANY DAMAGES, COSTS, INJURIES, ATTORNEY'S FEES AND THE LIKE WHICH RESULT FROM SAME
- PROPOSED TOP OF CURB ELEVATIONS ARE GENERALLY 6" ABOVE EXISTING LOCAL ASPHALT GRADE UNLESS OTHERWISE NOTED. FIELD ADJUST TO CREATE A MINIMUM OF 0.75% GUTTER GRADE ALONG CURB FACE. IT IS CONTRACTOR'S OBLIGATION TO ENSURE THAT DESIGN ENGINEER APPROVES FINAL CURBING CUT SHEETS PRIOR TO INSTALLATION OF SAME.
- 8. REFER TO SITE PLAN FOR ADDITIONAL NOTES.
- ANY DISCREPANCIES AND/OR CONFLICTS. 0. CONTRACTOR IS REQUIRED TO SECURE ALL NECESSARY AND/OR REQUIRED PERMITS AND APPROVALS FOR ALL OFF SITE MATERIAL SOURCES AND DISPOSAL FACILITIES. CONTRACTOR MUST SUPPLY A COPY OF APPROVALS TO ENGINEER AND
- OWNER PRIOR TO INITIATING ANY WORK.
- 1. WHERE RETAINING WALLS (WHETHER OR NOT THEY MEET THE JURISDICTIONAL DEFINITION) ARE IDENTIFIED ON PLANS. ELEVATIONS IDENTIFIED ARE FOR THE EXPOSED PORTION OF THE WALL, WALL FOOTINGS/FOUNDATION ELEVATIONS ARE NOT IDENTIFIED HEREIN AND ARE TO BE SET/DETERMINED BY THE CONTRACTOR BASED ON FINAL STRUCTURAL DESIGN SHOP DRAWINGS PREPARED BY THE APPROPRIATE PROFESSIONAL LICENSED IN THE STATE WHERE THE CONSTRUCTION OCCURS
- 2. CONSULTANT IS NEITHER LIABLE NOR RESPONSIBLE FOR ANY SUBSURFACE CONDITIONS AND FURTHER, SHALL HAVE NO LIABILITY FOR ANY HAZARDOUS MATERIALS, HAZARDOUS SUBSTANCES, OR POLLUTANTS ON, ABOUT OR UNDER THE PROPERTY



- THE SUBJECT DEVELOPMENT AREA IS LOCATED IN FLOOD ZONE 'X' (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) PER MAR ENTITLED "NATIONAL FLOOD INSURANCE PROGRAM, FIRM, FLOOD INSURANCE RATE MAP, BALTIMORE COUNTY, MARYLAND (UNINCORPORATED AREAS) PANEL 555 OF 580", MAP NUMBER 240010555G, MAP REVISED MAY 5, 2014, AND PLAN PREPARED BY PAI, DEV. PLANS REVIEW, DATED SEPTEMBER 21, 2016, PER MAP 0555F, DATED SEPTEMBER 26, 2008
- . ADDITIONAL EXISTING UTILITIES AND SITE FEATURES LOCATED WITHIN THE LIMIT OF DISTURBANCE NOT IDENTIFIED AS "TO BE REMOVED" OR "TO BE RELOCATED" MAY REQUIRE REMOVAL OR RELOCATION AS DIRECTED BY THE GEOTECHNICAL ENGINEER OR TRADEPOINT DEVELOPMENT.
- 4. EXISTING UTILITIES NOTED AS "TO REMAIN" WITHIN THE LIMIT OF DISTURBANCE MUST BE MAINTAINED TO PROVIDE SERVICE FOR THE PROPOSED DEVELOPMENT.
- SPOT ELEVATIONS NOTED AS ± HAVE BEEN INTERPOLATED FROM EXISTING TOPOGRAPHY, CONTRACTOR IS TO VERIFY THESE SPOT ELEVATIONS PRIOR TO CONSTRUCTION, AND TO NOTIFY BOHLER IN WRITING IF THE ACTUAL ELEVATIONS DIFFFR
- **GRADING PLAN NOTES**
- THE PROPOSED GRADING SHOWN ON THIS PLAN MEETS THE REQUIREMENTS SET FORTH BY BALTIMORE COUNTY DEPARTMENT ON ENVIRONMENTAL PROTECTION AND SUSTAINABILITY AND COMPLIES WITH ARTICLE 33, TITLE 5 OF THE BALTIMORE COUNTY CODE. HOWEVER, DUE TO BUILDING TYPES AND LAYOUT, SOME FIELD ADJUSTMENTS MAY BE REQUIRED. ALL CHANGES MUST COMPLY WITH THE ABOVE MENTIONED REQUIREMENTS.
- 2 ALL SWALES HAVE BEEN DESIGNED BY THE ENGINEER TO CONVEY RUNOFF ACCORDING TO BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS DESIGN STANDARDS. 3. THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF
- VEGETATION IN THE FOREST BUFFER EASEMENT OR OTHER FOREST RETENTION AREAS, EXCEPT AS PERMITTED BY THE BALTIMORE COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND SUSTAINABILITY
- 4. STORMWATER MANAGEMENT WILL BE PROVIDED BY A TIMING VARIANCE AND POSTING OF A SURETY IN THE AMOUNT OF \$104,760 FOR 1.94 ACRES OF IMPERVIOUS AREA,

PE PRIOR TO THE	
S, REGULATIONS,	
CONSTRUCTION.	

COA2

COA3

COA4

COA6

COA7

COA8

EXA-1

EXB-1

un

_____FP______FP______FD__________

. IN THE EVENT OF DISCREPANCIES AND/OR CONFLICTS BETWEEN PLANS OR RELATIVE TO OTHER PLANS, THE SITE PLAN WILL TAKE PRECEDENCE AND CONTROL. CONTRACTOR MUST IMMEDIATELY NOTIFY THE DESIGN ENGINEER, IN WRITING, OF

STORM STRUCTURE SCHEDULE RIM ELEV. INVERTS NAME TYPE (FT.) DOUBLE TYPE 'S' COMBO INLET INV IN = 7.36' (12") A-10 11.35' INV OUT = 7.26' (15") (BALT. CO. STD. D-2.20) DOUBLE TYPE 'S' COMBO INLET INV IN = 7.15' (18") 11.27' B-10 INV OUT = 7.05' (24") (BALT. CO. STD. D-2.20) 48" PRECAST DOGHOUSE MANHOLE INV IN = 7.90' (15") B-20 12.48' (SHA STD. MD-384.01) INV OUT = 7.70' (18") DOUBLE TYPE 'S' COMBO INLET B-30 INV OUT = 8.15' (15") 12.08' (BALT. CO. STD. D-2.20) INV IN = 8.26' (10") COA1 PROP. CLEANOUT 12.75' INV IN = 7.93' (10") INV OUT = 7.93' (12")

PROP. CLEANOUT

PROP. CLEANOUT

PROP. CLEANOUT

PROP. CLEANOUT

PROP. CLEANOUT

PROP. CLEANOUT

EX. GRATE INLET

(TO BE ADJUSTED

TO FINAL GRADE)

EX. MANHOLE

(TO BE ADJUSTED

TO FINAL GRADE)

INV IN = 8.70' (8")

INV IN = 9.90' (6"

INV OUT = 8.70' (10")

INV IN = 9.30' (6")

INV IN = 9.90' (6")

INV OUT = 9.30' (8")

INV IN = 9.90' (6")

INV OUT = 9.90' (6")

INV IN = 8.70' (8")

INV IN = 9.90' (6")

INV OUT = 8.70' (10")

INV IN = 9.30' (6")

INV IN = 9.90' (6" INV OUT = 9.30' (8") INV IN = 9.90' (6")

INV OUT = 9.90' (6")

INV IN = 6.37' (15")

INV IN = 6.92' (24")

INV OUT = 0.75' (24")

INV OUT = 5.99' (15

12.75'

12.76'

12.80'

12.75'

12.76'

12.89'

14.08'

13.32'

PRIVATE STORM SEWER PIPE SCHEDULE

FROM	FROM INV	то	TO INV	PIPE LENGTH	SLOPE (%)	DIAMETER (IN.)	MATERIA
COA1	8.26'	COA2	8.70'	19.26'	2.28%	10"	HDPE
COA2	8.70'	COA3	9.30'	40.17'	1.49%	8"	HDPE
COA3	9.30'	COA4	9.90'	23.94'	2.51%	6"	HDPE
COA1	7.93'	COA6	8.70'	34.57'	2.23%	10"	HDPE
COA6	8.70'	COA7	9.30'	40.17'	1.49%	8"	HDPE
COA7	9.30'	COA8	9.90'	21.94'	2.74%	6"	HDPE
COA4	9.90'	RCOA4	10.00'	5.00'	2.00%	6"	HDPE
COA3	9.90'	RCOA3	10.00'	5.00'	2.00%	6"	HDPE
COA2	9.90'	RCOA2	10.00'	5.00'	2.00%	6"	HDPE
COA6	9.90'	RCOA6	10.00'	5.00'	2.00%	6"	HDPE
COA7	9.90'	RCOA7	10.00'	5.00'	2.00%	6"	HDPE
COA8	9.90'	RCOA8	10.00'	5.00'	2.00%	6"	HDPE
EXA-1	6.37'	A-10	7.26'	44.10'	2.02%	15"	HDPE
A-10	7.36'	COA1	7.93'	28.04'	2.03%	12"	HDPE
EXB-1	6.92'	B-10	7.05'	24.37'	0.53%	24"	HDPE
B-10	7.15'	B-20	7.70'	109.60'	0.50%	18"	HDPE
B-20	7.90'	B-30	8.15'	50.00'	0.50%	15"	HDPE

BETHLEHEM BOULEVARD - MD. RTE. 158 N 572,050 VARIABLE WIDTH R.O.W. —*R=2034.96'* POSTED SPEED LIMIT = 40 MPH ∆=002*57'19" r=R=1927.80' L=104.96' ∆*= 007*°47′33″ CHB=N83°44'13" L=262.19' CHD=104.95' Me EX. PERMANENT SHA _ *CHB=N88°58'36"E* − EASEMENT ~\$62°14'09"E 31.80° / 2 TC 12.71 6" SDR-35 PROP. RETAIL (2,488 S.F.) / RESTAURANT (8,200 S.F.) BUILDING -PROP DRIVE THRU PICK UP WINDOV 10,688 S.F. (TOTAL) PROP. 6" W/L --PARKING: 144 SPACES HEIGHT = 21'± CONC. FLOOR FFE = 13.00' MASONRY WALL TC 12.54 MV = 5-<u>TC 12.8</u> LP - TC 10.87 TC=BC 12.33 TC=BC 12.33 HP - TC 12.87 C 11.23 TC 11.29 PRIVATE ROAD G 12.5+/-MATCH E> ·12" W/L (PRIVATE W/ WATER OTHER AREAS ZONE X ZONE-A **OWNER'S/DEVELOPER'S CERTIFICATION - GRADING** I/WE CERTIFY THAT ALL GRADING ON THIS SITE WILL BE DONE IN ACCORDANCE WITH THE CURRENT GRADING REQUIREMENTS AS SET FORTH BY THE BALTIMORE COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND SUSTAINABILITY AND WITH THE REQUIREMENTS SPECIFIED IN ARTICLE 33, TITLE 5 OF THE BALTIMORE COUNTY CODE. SIGNATURE OF OWNER/DEVELOPER DATE TITLE PRINT NAME





n n n n n n n n n

"

"

"

APPENDIX B

"

- "



Mirafi[®] 140N



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

TenCate Geosynthetics Americas Laboratories are accredited by Geosynthetic Accreditation Institute – Laboratory Accreditation Program (<u>GAI-LAP</u>). <u>NTPEP Listed</u>

Mechanical Properties	Test Method	Unit	Minimum Average Roll Value	
			MD	CD
Grab Tensile Strength	ASTM D4632	lbs (N)	120 (534)	120 (534)
Grab Tensile Elongation	ASTM D4632	%	50	50
Trapezoid Tear Strength	ASTM D4533	lbs (N)	50 (223)	50 (223)
CBR Puncture Strength	ASTM D6241	lbs (N)	310 (1380)	
			Maximum O	pening Size
Apparent Opening Size (AOS)	ASTM D4751	U.S. Sieve (mm)	70 (0.212)	
			Minimum I	Roll Value
Permittivity	ASTM D4491	sec ⁻¹	1.7	
Flow Rate	ASTM D4491	gal/min/ft ² (l/min/m ²)	135 (5500)	
			Minimum T	est Value
UV Resistance (at 500 hours)	ASTM D4355	% strength retained	7	0

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

Disclaimer: TenCate assumes no liability for the accuracy or completeness of this information or for the ultimate use by the purchaser. TenCate disclaims any and all express, implied, or statutory standards, warranties or guarantees, including without limitation any implied warranty as to merchantability or fitness for a particular purpose or arising from a course of dealing or usage of trade as to any equipment, materials, or information furnished herewith. This document should not be construed as engineering advice.

Mirafi[®] is a registered trademark of Nicolon Corporation.

Copyright $\ensuremath{\textcircled{O}}$ 2015 Nicolon Corporation. All Rights Reserved.

365 South Holland Drive Pendergrass, GA 30567

Tel 706 693 2226 Tel 888 795 0808 Fax 706 693 4400 www.tencate.com



FGS000385 ETQR77