APPENDIX M

JEROME BUDDIE FORD NATURE CENTER OUTFALL INTO HOLMES RUN CONCEPT DESIGN

CITY OF ALEXANDRIA, VIRGINIA

JEROME BUDDIE FORD NATURE CENTER OUTFALL
CONCEPTUAL DESIGN

Sheet Index	
Sheet Number	Sheet Title
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02	EXISTING CONDITIONS - PHOTOS
03	EXISTING CONDITIONS - PLAN AND PROFILE
04	RESTORATION CONCEPT LAYOUT
05	STREAM RESTORATION STRUCTURE DETAILS - PLUNGE POOL

SOURCE: CITY OF ALEXANDRIA 2013 IMAGERY
LOCATION: JEROME "BUDDIE" FORD NATURE CENTER
5750 SANGER AVENUE, ALEXANDRIA, VIRGINIA
(38.827955, -77.132710)

SITE VICINITY MAP

30 0 30 60 FT
1 inch = 30 feet

PROJECT DESCRIPTION:

THE PROPOSED PROJECT INCLUDES THE REMOVAL OF AN EXISTING 18 INCH REINFORCED CONCRETE PIPE (RCP) OUTFALL AND ASSOCIATED CONCRETE APRON AND THE CONSTRUCTION OF PROPOSED DROP STRUCTURE AND OUTFALL. APPROXIMATELY 30 LINEAR FEET OF CHANNEL IMPROVEMENTS ARE PROPOSED DOWNSTREAM OF THE NEW OUTFALL.

EXISTING CONDITIONS NOTES:

FLOW, EXITING THE 18" RCP HAS CUT UNDER AND AROUND THE EXISTING CONCRETE OUTFALL APRON REMOVING APPROXIMATELY 8 FEET OF SOIL DOWN TO A LAYER OF WEATHERED, FRIABLE BEDROCK. OLD SECTIONS OF 18" RCP APPEAR TO HAVE BROKEN OFF AND FALLEN INTO THE CHANNEL. STREAM CHANNEL APPEARS STABLE AT THE DOWNSTREAM BEND WHERE THE CHANNEL FLATTENS AND THE BANK HEIGHT GREATLY REDUCES. CONSTRUCTION ACCESS TO THE SITE WILL MOST LIKELY OCCUR FROM THE JEROME BUDDIE FORD NATURE CENTER PARKING LOT AND THE HOLMES RUN TRAIL. BASED ON THE PRELIMINARY CONCEPT, THE APPROXIMATE LIMITS OF DISTURBANCE (LOD) ARE 0.15± ACRES. IT SHOULD BE NOTED THIS IS APPROXIMATE AND WILL REQUIRE REVISION ONCE A SURVEY IS COMPLETED.

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CLIENT: CITY OF ALEXANDRIA
301 KING STREET
ALEXANDRIA, VA 22314

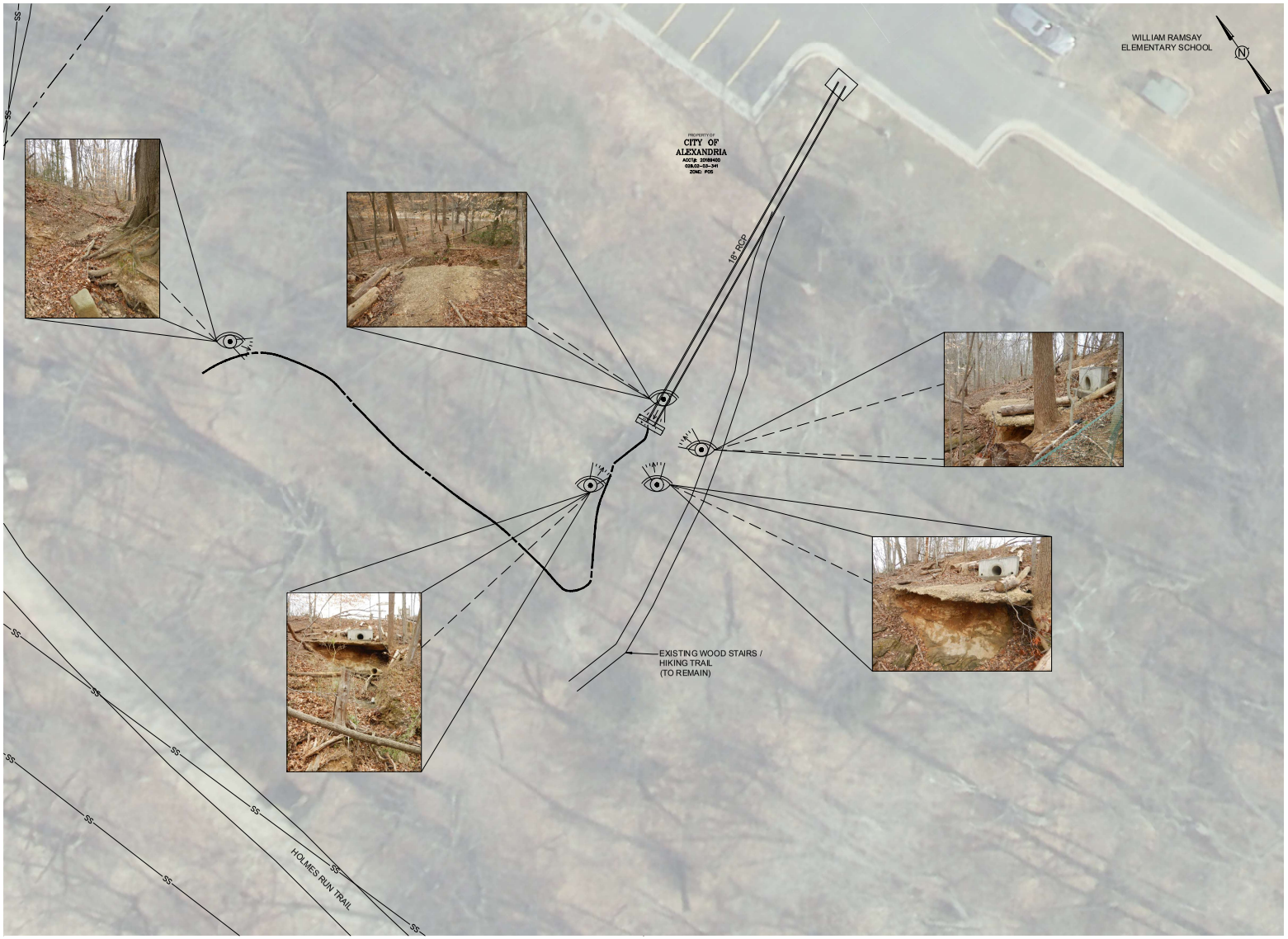
ENGINEER: Wood Environment & Infrastructure Solutions
4795 Meadow Wood Lane, Suite 310 East
Chantilly, VA 20151-1678
Tel. (703) 488-3700
www.woodplc.com

DRAWN BY: CAL
CHECKED BY: MJH
APPROVED BY: MTB
SCALE: 1" = 30'

PROJECT: PHASE III ASSESMENTS
CONCEPTUAL OUTFALL RESTORATION
JEROME BUDDIE FORD NATURE CENTER OUTFALL

SHEET TITLE: COVER SHEET

PROJECT NO.: 7526173001
DATE: 31 JANUARY 2019
DWG. SIZE: ARCH D
SHEET NUMBER: 01 OF 05



EXISTING CONDITIONS - PHOTO LOCATION MAP

10 0 10 20 FT
1 inch = 10 feet

LEGEND

- LOCATION AND PHOTO DIRECTION
- EXISTING STREAM CENTERLINE
- PROPERTY LINE
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER

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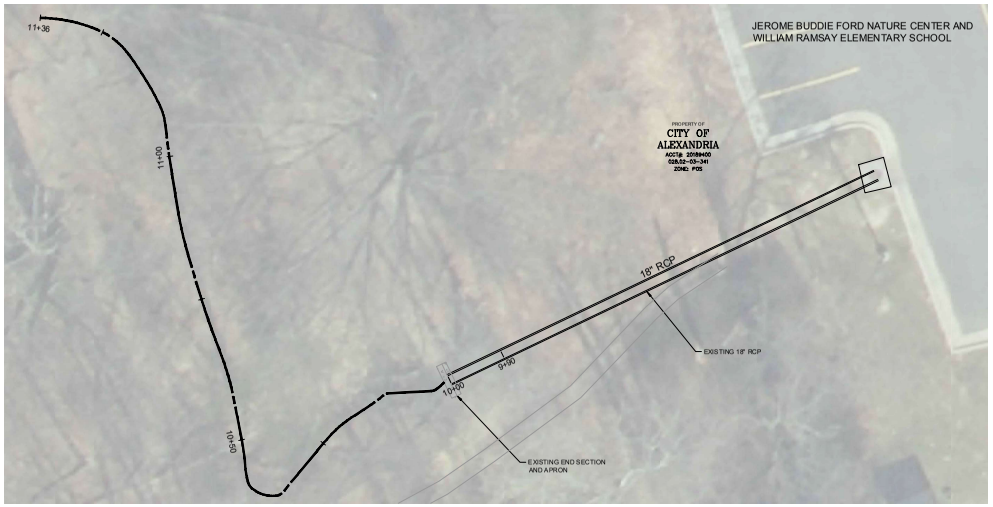
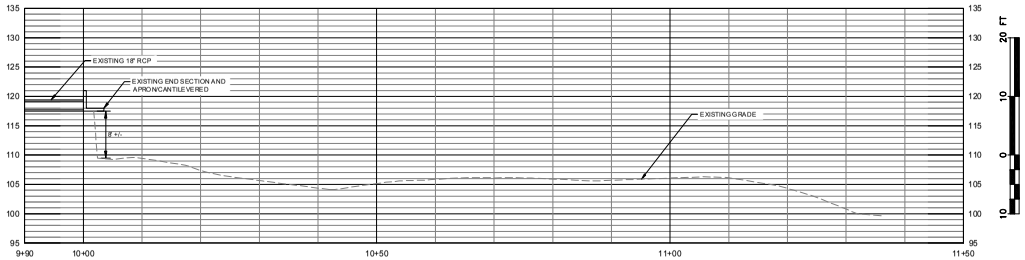
SHEET TITLE:
EXISTING CONDITIONS - PHOTOS

PROJECT NO.: 7526173001
DATE: 31 JANUARY 2019
DWG. SIZE: ARCH D
SHEET NUMBER: 02 OF 05



EXISTING OUTFALL CHANNEL ALIGNMENT

10 0 10 20 FT
1 inch = 10 feet



NOTE:
EXISTING STREAM CENTERLINE AND TOPOGRAPHIC DATA IS BASED ON THE CITY OF ALEXANDRIA'S GIS DATA AND FIELD OBSERVATIONS

EXISTING OUTFALL CHANNEL PROFILE

10 0 10 20 FT
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PHASE III ASSESMENTS
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SHEET TITLE:
EXISTING CONDITIONS - PLAN AND PROFILE

PROJECT NO.: 7526173001
DATE: 31 JANUARY 2019
DWG. SIZE: ARCH D
SHEET NUMBER: 03 OF 05

NOTE:
CONCEPT LAYOUT IS PRELIMINARY AND BASED ON FIELD RECONNAISSANCE AND THE CITY OF ALEXANDRIA'S GIS TOPOGRAPHIC DATA. AS SUCH, THE NUMBER OF STRUCTURES AND PLANIMETRIC LAYOUT IS SUBJECT TO CHANGE AND WILL BE REFINED UPON COMPLETION OF A FIELD SURVEY.

LEGEND

- EXISTING STORM PIPE
- PROPOSED STORM PIPE
- BANK GRADING & VEGETATIVE STABILIZATION
- LOG ROLLER
- CONSTRUCTED PLUNGE POOL/STILLING BASIN
- (D) PROPOSED MANHOLE
- EXISTING STREAM CENTERLINE
- PROPOSED STREAM CENTERLINE

CONCEPTUAL OUTFALL RESTORATION PLAN

10 0 10 20 FT
1 inch = 10 feet

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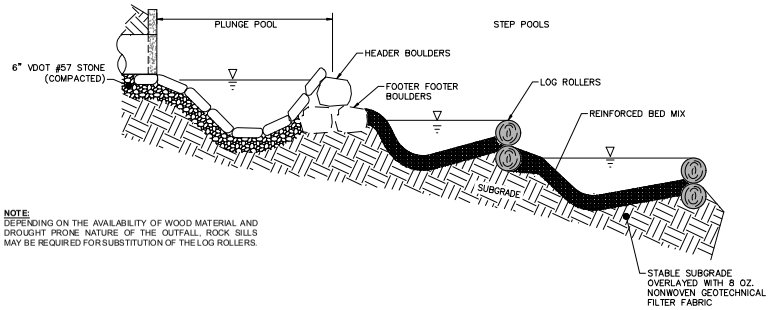
SCALE: 1" = 10'

PROJECT:
PHASE III ASSESMENTS
CONCEPTUAL OUTFALL RESTORATION
JEROME BUDDIE FORD NATURE CENTER OUTFALL

SHEET TITLE:
RESTORATION CONCEPT LAYOUT

PROJECT NO.: 7526173001
DATE: 31 JANUARY 2019
DWG. SIZE: ARCH D
SHEET NUMBER: 04 OF 05

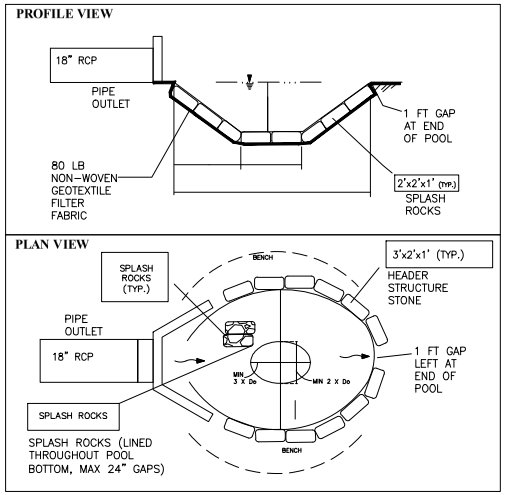


NOTE:
DEPENDING ON THE AVAILABILITY OF WOOD MATERIAL AND DROUGHT PRONE NATURE OF THE OUTFALL, ROCK SILLS MAY BE REQUIRED FOR SUBSTITUTION OF THE LOG ROLLERS.

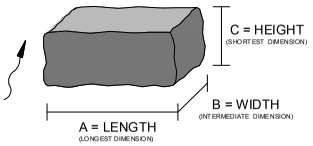
PLUNGE POOL (FIRST POOL BELOW PIPE OUTFALL)

NTS

CONSTRUCTED PLUNGE POOL
(SHOWN FOR INFORMATION ONLY)



PLUNGE POOL TYPICAL DETAIL
N.T.S.



NOTE: MINIMUM A AND B DIMENSIONS FOR ALL BOULDERS SHALL BE 1.5 FT. BACKFILL COMPACTED TO 90% MAXIMUM STANDARD PER STANDARD PROCTOR AASHTO T-99 OR ASTMD 698 SHALL BE PLACED AS CHANNEL BACKFILL IN 8" LOOSE LIFTS. BEFORE PLACEMENT OF BACKFILL, CHANNEL SHALL BE EXCAVATED TO A STABLE SUBGRADE (APPROVED BY CITY OF AUSTIN ON-SITE ENGINEER). FOOTER BOULDERS MUST HAVE ATLEAST ONE CONTACT POINT WITH HEADER BOULDERS, AND MAY BE MORE ROUNDED THAN HEADER. FOR VANE ARMS, MULTIPLE FOOTERS MAY BE REQUIRED FOR HEADER STONE DEPENDING UPON HEADER BOULDER SIZE AND DEPTH TO STABLE SUBGRADE.

STRUCTURE DIMENSIONS

STRUCTURE SIZE TABLE		A	B	C
STRUCTURES	HEADER BOULDER/ VANE ARMS	4'	3'	2'
	FOOTER BOULDER	4'	3'	2'
	SPLASH ROCKS	3'	2'	1'
CHANNEL BED MATERIAL SPECS				
REINFORCED BED MIX	SPLASH BOULDERS (TYP. 3' X 2' X 1') VOID SPACES AND 2.5 FT DEPTH FILLED WITH MIX OF #57 (2 PARTS), GABION STONE (1 PART), AND COA CLASS IV RIPRAP (1 PART). EXISTING ON-SITE RIPRAP HARVESTED FROM EXISTING CHANNEL MAY BE USED TO SUPPLEMENT THE BED MIX.			
SELECT BACKFILL	COMPACTED TO 90% PER MAXIMUM STANDARD PROCTOR DENSITY AASHTO T-99 OR ASTMD 698			

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JEROME BUDDIE FORD NATURE CENTER OUTFALL

SHEET TITLE: STREAM RESTORATION STRUCTURE DETAILS - PLUNGE POOL

PROJECT NO.: 7526173001
DATE: 31 JANUARY 2019
DWG. SIZE: ARCH D
SHEET NUMBER: 05 OF 05