GTW's WAVERLY WOODS, SECTION 14
BULK PARCELS 'A' & 'B' AND OPEN SPACE LOTS 1 & 2 ZONING: PSC & PEC
TAX MAP No. 16 PARCEL Nos. 120,221 & P/O 249 GRID Nos. 3 & 4
THIRD ELECTION DISTRICT, HOWARD COUNTY, MD
34'7"x11'4" 3ga PLATE ARCH CULVERT
STRUCTURAL DESIGN

CALL "MISS UTILITY" TELEPHONE 1-800-257-7777 FOR UTILITY LOCATIONS AT LEAST 48 HOURS BEFORE CONSTRUCTION

VICINITY MAP

RATIONAL

A Division of WKR Consulting, Inc.
CONSULTING & DESIGN ENGINEERS
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SPECIALIZING IN STRUCTURAL ENGINEERING, GEOTECHNICAL ENGINEERING AND RETAINING WALL DESIGN

THESE DRAWINGS ARE THE PROPERTY OF RYAN & ASSOCIATES. UNAUTHORIZED REPRODUCTION FOR ANY PURPOSE IS AN INFRINGEMENT UPON COPYRIGHT LAWS. VIOLATORS WILL BE SUBJECT TO PROSECUTION BY THE FULL EXTENT OF THE LAW.

WRITTEN DIMENSIONS ON THE DRAWINGS SHALL HAVE PRECEDENCE OVER SCALE DIMENSIONS. CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THIS OFFICE MUST BE NOTIFIED OF ANY VARIATION FROM THE DIMENSIONS AND CONDITIONS SHOWN ON THESE DRAWINGS.

Scope: The plate arch culvert engineer's Ryan & Associates scope consists of preparing the culvert design to enable the contractor to obtain necessary permits and properly construct the arch. The design considers the internal and local stability of the arch and is in compliance with acceptable engineering practices and specifications. Services outside this scope such as responding to the owner's engineering firm (civil, structural, geotechnical or otherwise), provision of quality control testing and inspection, certification of arch construction, investigation of failed or non-comforming arches or any other services may be provided on a time & materials basis or a negotiated fee. The scope of Ryan & Associates (RA) for this project does not include any additional work or any other civil engineering services.

INSTALLATION MUST CONFORM TO THE ATTACHED "Ryan & Associates Structural Specifications and Guidelines".

PLATE ARCH MATERIALS: Structural Plate Arch to be supplied by Lane Enterprises, Inc. and to be 3 gauge thick [316L Stainless].

CONSTRUCTION REVIEW & CERTIFICATION: Construction inspection, testing and certification by a structural/geotechnical engineer qualified in the design of steel plate arch structures is a requirement of these plans. Acceptance of the use of these plans indicates agreement for professional engineering construction review and certification.

DRAWING INDEX
1  2  3  4  5  6

Sheets:
1  - Cover Sheet
2  - Head Walls, Wing Walls and Culvert Footings Plan
3  - Wall and Arch Profiles
4  - Culvert and Footing Cross-Sections
5  - Plate Arch Sections & Details
6  - Specifications

PROJECT INFORMATION
Project : Courtyards at Waverly Woods - West Stream Crossing
Location : Marriottsville Rd., North Side of I-70, Howard County, MD
Jurisdiction : Howard County, MD
Contractor : UNO KNOWN
Site Civil Engineer : Fisher, Collins & Carter, Inc.
Owner/Developer : Land Design & Development, Inc.
RA Project Manager : Chris Heyrend

Sheet 14 of 27
| SECTION | DESCRIPTION | NUMBER | CATEGORY | TOTAL | ACRE | PLAT NO. | ACRES | PLANNING ADMINISTRATION | ACRES | TOTAL ACRES | ACRE | DEDICATION | ACRES | FOREST DISTRICT RESTORATION | ACRES | FOREST DISTRICT PLANTING | ACRES | RESULTING ACRE TOTAL | ACRES | FOREST PLANTING | ACRES | TOTAL ACRE | ACRES |
|---------|-------------|--------|----------|-------|-------|---------|-------|-----------------------|-------|------------|-------|-------------|-------|-------------------|-------|--------------------|-------|----------------------|-------|---------------------|-------|------------------|-------|----------------------|-------|
| 5       | Full Size  | 1-1-004 | 2,045 AC | 2,045 AC | 2,045 AC | 1-1-002 | 2,045 AC | 1-1-003 | 2,045 AC | 2,045 AC | 2,045 AC | 2,045 AC | 2,045 AC | 2,045 AC | 2,045 AC | 2,045 AC |
| 6       | Full Size  | 1-1-004 | 2,045 AC | 2,045 AC | 2,045 AC | 1-1-002 | 2,045 AC | 1-1-003 | 2,045 AC | 2,045 AC | 2,045 AC | 2,045 AC | 2,045 AC | 2,045 AC | 2,045 AC | 2,045 AC |
| 7       | Full Size  | 1-1-004 | 2,045 AC | 2,045 AC | 2,045 AC | 1-1-002 | 2,045 AC | 1-1-003 | 2,045 AC | 2,045 AC | 2,045 AC | 2,045 AC | 2,045 AC | 2,045 AC | 2,045 AC | 2,045 AC |
| 8       | Full Size  | 1-1-004 | 2,045 AC | 2,045 AC | 2,045 AC | 1-1-002 | 2,045 AC | 1-1-003 | 2,045 AC | 2,045 AC | 2,045 AC | 2,045 AC | 2,045 AC | 2,045 AC | 2,045 AC | 2,045 AC |
| 9       | Full Size  | 1-1-004 | 2,045 AC | 2,045 AC | 2,045 AC | 1-1-002 | 2,045 AC | 1-1-003 | 2,045 AC | 2,045 AC | 2,045 AC | 2,045 AC | 2,045 AC | 2,045 AC | 2,045 AC | 2,045 AC |
| 10      | Full Size  | 1-1-004 | 2,045 AC | 2,045 AC | 2,045 AC | 1-1-002 | 2,045 AC | 1-1-003 | 2,045 AC | 2,045 AC | 2,045 AC | 2,045 AC | 2,045 AC | 2,045 AC | 2,045 AC | 2,045 AC |

**NOTES**
- The Master Overall Forest Conservation Chart is designed to ensure the conservation of natural resources and biodiversity in the area.
- The chart delineates specific sections and areas for forest conservation and planning.
- Each section is marked with unique coordinates for accurate location.
- The chart includes details on acreage, dedication, and forest district restoration and planting.

**Site Information**
- GTW's Waiverly Woods
- BULK PARCELS A, B, and
- OPEN SPACE LOT 1 & 2

**Owner:**
- CGC

**Developer:**
- CGC

**Important Notice:**
- Consult the developer for any updates or changes in the conservation plan.

**Contact Information:**
- For more details, contact the developer or refer to the project plan.

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**Approvers:**
- [Signatures]
- Date: [Date]

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**Document Control:**
- Revision Date: [Date]
NOTE: Final grades shown at cross-section sections for wetland mitigation area are for subgrade beneath 2'-0" of topsoil.