**RETAINING WALL LOCATION PLAN**

**PLANT NOTES:**
1. **CIVIL, AND LANDSCAPE PLANS:** FOR ALL WALL LOCATION, SHADES AND LINES.
2. **SECTION VIEW:** SHALL BE l.100 IN MODIFIED EXTERIOR LINO GRADE. LINES FOOTING WILL BE SHOWN.
3. **WALLs:** ALL WALLS WILL BE SUPPORTED ON 2000 X 2000, ALL WALLS COMPLY WITH SHADES.
4. **ENGINEERING ASPECTS:** CONSTRUCTION DETAILS ALL WALLS - SEE DETAIL SIDE NOTE 5.

**REDEVELOPMENT PHASES 2 & 3**

1. **VERTICAL JOINTS - CONCRETE WALL**

2. **TYPICAL ADDITIONAL REINFORCEMENT AT CIRCULAR WALL OPENINGS**

3. **TYPICAL STEPPED FOOTINGS**

**APPROVED:**

- Planning Board of Harford County [Date: December 17, 2019]
- Harford County Department of Planning & Zoning [Date: 2-20-20]

**PREPARED FOR:**

- Merriweather Post Pavilion & Merriweather Park at Symphony Woods
- Town Center, Section 4, Lots 13 & 23
- Address: 2000 3rd Street, Suite 200
- Catonsville, MD 21228
- Telephone: 410-725-3330

**PROJECT NO:**

- 804602

**SCALE:**

- 1/2" = 1'-0"

**SPECS:**

- 94077

**DRAWN:**

- RT Top

**DRAWN BY:**

- RT Top

**UPDATED:**

- RT Top

**APPROVED BY:**

- RT Top

**NOTES:**

- RT Top

**REFERENCES:**

- RT Top

**SKF:**

- RT Top

**SUBMITTAL:**

- RT Top
STORMWATER MANAGEMENT REQUIREMENTS

EXISTING IMPROVED AREA:
10% OF THE DEVELOPMENT

PROPOSED IMPROVED AREA:
10% OF THE DEVELOPMENT

LID AREA:
0% OF THE DEVELOPMENT

LID IMPROVED AREA:
0% OF THE DEVELOPMENT

LID IMPROVED REQUIREMENT:
0% OF THE DEVELOPMENT

STORMWATER MANAGEMENT

DRAINAGE AREAS

ELEVATION

LEGEND

EXISTING PAVEMENT

PROPOSED IMPROVED PAVEMENT

PROPOSED IMPROVED PAVEMENT (A-J)

4" CONCRETE Bases

CHANNELS FOR PIPE ELEVATION

ELEVATION BASE

ELEVATION BREAK

Porous pavement:

1. All roof drain in the vicinity of the porous pavement must be directly fed by storm drains or the underground pipe. Roof drain may not connect to porous pavement.
2. Site bottom must be flat.
3. Contractor shall install additional steps provided a 4" curb is installed at each step.
4. Site shall have alternate section (high tree roots)
5. Pipe is approved.

TABLE 1

<table>
<thead>
<tr>
<th>REDEVELOPMENT PHASES 2 &amp; 3</th>
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<tbody>
<tr>
<td>UNDERDRAIN DETAILS &amp; STORMWATER MANAGEMENT</td>
</tr>
<tr>
<td>MERRIWEATHER POST PAVILION &amp; MERRIWEATHER PARK AT SYMPHONY WOODS</td>
</tr>
<tr>
<td>TOWN CENTER, SECTION 4, LOTS 13 &amp; 25</td>
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<tr>
<td>PREPARED FOR</td>
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<tr>
<td>MERRIWEATHER POST BUSINESS TRUST</td>
</tr>
<tr>
<td>1300 MERRIWEATHER PARKWAY, 3RD FLOOR</td>
</tr>
<tr>
<td>COLUMBIA, MARYLAND 21044</td>
</tr>
<tr>
<td>1-800-333-3321</td>
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</tbody>
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PRODUCTS

2.1 TREE PROTECTION FENCING
MINIMUM SPECIFICATIONS - BLAZE ORANGE, HEAVY DUTY, PLASTIC MESH FENCE. A MINIMUM OF 4 FOOT (122 CM) HIGH, SECURELY ATTACHED TO 2 INCH (51MM) METAL POSTS 6 FEET (1.8M) HIGH. OVERTURN A MINIMUM OF 2 FEET (.6M) INTO THE GROUND. POSTS SHALL BE SET A MAXIMUM OF 8 FEET (2.4M) ON CENTER.

2.2 TREE PROTECTION SIGNS

HEAVY DUTY CARDBOARD OR METAL SIGNS 12 INCHES (30CM) BY 12 INCHES (30CM) ATTACHED TO 6 INCH (152MM) THICK EXTERIOR GRADE MDO PLYWOOD OR OTHER SUBSTRATE AS RECOMMENDED BY THE SIGN SUPPLIER. SIGN SHALL HAVE A BLAZE ORANGE BACKGROUND WITH BLACK BLOCK LETTERS. INCHES (25CM) HIGH, WITH THE INSRIPTION "NO CONSTRUCTION ACTIVITY - TREE PROTECTION ZONE.

SIGNAGE SHALL BE ATTACHED TO THE TREE PROTECTION FENCE AT INTERVALS NOT TO EXCEED 25 FEET (7.5M) ON CENTER.

MULCH SHALL CONSIST OF HARDWOOD CHIP AGED 3 MINIMUM OF SIX MONTHS AND SHALL BE FREE OF LEAVES. CHIPS STOCKPILED FROM THE TREE REMOVAL OPERATIONS MAY BE USED.

IF MULCH CONSISTS OF HARDWOOD AGED LESS THAN 6 MONTHS, SPREAD NITROGEN FERTILIZER AT THE RATE OF 18 LBS. PER 1000 SQ. FT.

2.4 CONSTRUCTION MATTING
CONSTRUCTION MATTING WILL CONSIST OF LINCH PLYWOOD OR HEAVY GAUGE STEEL PLATES WITH AN UNDERLAYMENT OF A MINIMUM OF 6 INCHES OF WOOD CHIPS MULCH. THE MATTING OR STEEL TOP LAYER SHOULD ONLY BE APPLIED WHERE VEHICLE MOVEMENT IS ANTICIPATED AND SHOULD NOT BE KEPT IN PLACE FOR EXTENDED PERIODS OF TIME.

2.5 SOIL TEMPERANCE
TENEMENTER SHALL BE DESIGNED TO ACCURATELY MEASURE SOIL MOISTURE TENSIONS THROUGH THE USE OF A PORTABLE/MOISTURE HOLDING CURVE AND A VACUUM PRESSURE GAUGE. TEMPERATOR SHAL BE PLACED WITHIN THE CRITICAL ROOT ZONE OF THE TARGET TREES AND MONITORED ON A 4X4 LESS THAN WEEKLY BASIS DURING THE PERIOD OF CONSTRUCTION. MOISTURE CURVES SHALL BE REGULARLY FILLED WITH WATER AND THE MULCH CURVE ROUTINELY INSPECTED FOR CLOGGING AND/OR DRAINING.

2.6 AIR SPACE
AIR SPACE OR EQUIVALENT EXCAVATION TOOL DELIVERING A FOCUSES, HIGH EFFICIENCY, SUPERSONIC AIR JET DESIGNED TO REMOVE SOIL PARTICLES WITHOUT DAMAGING TREE ROOT STRUCTURES. NOZZLE SHALL BE PLOW RATED AT 100 CFM AND PRESSURE RATED AT 80 PSI. OPERATOR SHALL BE TRAINED AND EXPERIENCED IN PROPER USE OF EQUIPMENT.

TREE PRESERVATION APPROACH

MEIRIEWEATHER

TREE PRESERVATION DURING CONSTRUCTION REQUIRES AN INTEGRATED APPROACH THAT RECOGNIZES BOTH THE INHERENT BIOLOGICAL LIMITATIONS OF MAJOR TREES AND THE PHYSICAL DEMANDS THAT HUMAN INFRASTRUCTURE PLACES UPON THE LANDSCAPE. THE FOLLOWING DESCRIBES THE COMPREHENSIVE TREE PRETECTION METHODOLOGY THAT WILL BE UTILIZED TO ENSURE THE HIGHEST POTENTIAL FOR MAINTAINING TREE HEALTH.

THE CRITICAL ROOT ZONE (CRZ) IS THE AREA AROUND THE BASE OF THE PLANT THAT CONTAINS THE VAST MAJORITY OF SMALL-ABSORBING ROOTS. AS OPPOSED TO THE LARGE, STRUCTURAL SUPPORT ROOTS, THE ABSORBING ROOTS ARE CRUCIAL FOR THE UPTAKE OF BOTH NUTRIENTS AND WATER. THE PRIMARY COMPONENTS OF THE CRZ REQUIRE SPECIAL CONSIDERATION IN ORDER TO SURVIVE. AS SUCH, THEY ARE LOCATED CLOSE TO THE SURFACE IN THE TOP 12 TO 18" OF SOIL. THEY ARE ALSO HIGHLY SUSCEPTIBLE TO SOIL COMPACTION AND THE ACCOMPANYING REDUCTION IN OXYGEN. CONTAINING PORE SPACES BETWEEN SOIL PARTICLES, THE PRIMARY STRATEGY IS TO EMPLOY IN PRESENTING THE VALUABLE TREES IN MEIRIEWEATHER PARK WILL BE TO AVOID AND MITIGATE SOIL COMPACTION WITHIN THE CRZ. CRZ WILL BE ESTABLISHED BASED ON TREE DIAMETER, AN APPROPRIATE INDICATOR OF POTENTIAL ROOTING AREA. FIELD STUDIES HAVE SHOWN THAT, FOR EVERY INCH OF TREE DIAMETER AT BREAST HEIGHT (DBH), A CORRESPONDING RADIUS OF 1.5 FEET (STARTING FROM THE TREE STEM) WILL CAPTURE MOST OF THE CRZ. FOR EXAMPLE, A PLANT WITH A DBH OF 3 INCHES WILL HAVE A CRITICAL ROOT ZONE EDGE 18 FEET PE FST.

THE PLAN WILL INVOLVE TWO COMPLEMENTARY TECHNIQUES TO AVOID UNINTENDED TREE LOSS DURING THE CONSTRUCTION PROCESS:
A) AVOID THE CRITICAL ROOT ZONE OF TREES SELECTED FOR PRESERVATION;

B) MODIFY CONSTRUCTION ACTIVITIES WHEN IT IS NECESSARY TO OPERATE WITHIN THE CRITICAL ROOT ZONE.

AVOIDING THE CRITICAL ROOT ZONE

IN ORDER TO MANAGE THE LEVEL OF TREE CANOPY AND FOREST INTEGRITY THAT IS PROTECTED AT THE PARK, IT IS IMPORTANT TO FIRST FIELD DETERMINE WHICH TREES ARE COMPATIBLE WITH THE PLANNED INFRASTRUCTURE EXPANSION AND THEN TO DELINEATE THE CRITICAL ROOT ZONES FOR THESE TREES:

1. IDENTIFY TREES FOR RETENTION
A TREE INVENTORY WAS PERFORMED IN 2015. DOMINANT, CANOPY-LEVEL TREES WITHIN THE TARGETED CONSTRUCTION ZONE WILL BE RTISED WITHIN THE CONTEXT OF PLANNED ACTIVITIES AND ASSIGNED AS TO SPECIES, DBH, AND CONDITION. DETERMINATION OF WHICH PLANTS ARE COMATIBLE WITH CONSTRUCTION, TREES IN POOR CONDITION, OR THAT ARE OF SPECIES LIKELY TO BE INTOLERANT OF DISTURBANCE AND PROBABLE TO GENERATION, SHOULD BE REMOVED FROM CONSIDERATION FOR RETENTION.

2. CRS LOCATIONS
BASE ON EVALUATION, CRS LOCATIONS WILL BE REFINED FROM PREVIOUS TREE INVENTORY.

3. INTEGRATE TREE DATA INTO DESIGN PROCESS
TO DATE, THE DESIGN HAS GONE TO GREAT LENGTHS TO AVOID CRS OF EXISTING TREES. BASED ON REFINED INFORMATION COLLECTED ABOVE, MINOR MODIFICATIONS MAY BE TAKEN TO RETAIN TREES AND TO MAXIMIZE THE OPPORTUNITY FOR PRESERVING THE TREE CANOPY AND FOREST INTEGRITY. ALL DESIGN SUBMISSIONS WILL INCLUDE A REVIEW AND COMMENTARY BY A QUALIFIED ARBOCULTURAL PROFESSIONAL EXPERIENCED IN TREE PRESERVATION TECHNIQUES.

MOODIFY CONSTRUCTION ACTIVITIES WITHIN THE CRS

TREE PRESERVATION TECHNIQUES WILL BE IMPLEMENTED TO REDUCE SOIL COMPACTION AND THE SUBSEQUENT LOSS OF TREE COVER. THE FOLLOWING MEASURES WILL BE CONSIDERED TO AVOID IMPACTS TO TREES DESIGNATED FOR RETENTION:

4. FIELD DELINEATE INDIVIDUAL CRS LOCATIONS
PRIOR TO CONSTRUCTION ACTIVITIES, INDIVIDUAL TREE CRS ZONES WITHIN DISTURBANCE ZONES WILL BE MARKED WITH PLACING AND/OR GROUND PAPER BY AN ARBOCULTURAL PROFESSIONAL LICENSED BY THE STATE OF MARYLAND AND QUALIFIED IN THE FIELD OF TREE PRESERVATION.

5. DEVELOP INDIVIDUAL TREE PROTECTION PLANS
INDIVIDUAL TREE PROTECTION PLANS WILL BE CREATED TO ADDRESS ARBOCULTURAL INTERVENTIONS AND CONSTRUCTION PRACTICES REQUIRED FOR THE TARGETED TREES. THESE MAY INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

A) TREE PROTECTION FENCING;

B) TREE PROTECTION SIGNS;

C) MULCH SPECIFICATIONS;

D) CONSTRUCTION MATTING SPECIFICATIONS;

E) SOIL MOISTURE MONITORING STANDARDS;

F) SUPPLEMENTAL IRRIGATION STANDARDS;

G) SOIL MODIFICATION (FORTIFICATION, AIR SPACING) RECOMMENDATIONS;

H) TRENDING, DIRECTIONAL, DRAINAGE RECOMMENDATIONS;

I) ROOT MOVING RECOMMENDATIONS;

J) ACCESS PIT LOCATIONS;

K) TREE REMOVAL, AND STUMP REMOVAL SPECIFICATIONS;

L) TREE HAZARD REDUCTION RECOMMENDATIONS;

M) CONSTRUCTION MONITORING.

A TRAINED AND QUALIFIED ARBOCULTURAL PROFESSIONAL, DURING CONSTRUCTION, CONSTRUCTION PHASES WILL BE PRESENT ON SITE TO ENSURE TREE PRESERVATION PLAN IS ADHERED.