

# Memorandum

## Planning & Development Services Division



**To:** Planning and Public Works Committee

**From:** Jonathan Raiche, Senior Planner

**Date:** May 5, 2016

**RE:** **Harmony Seven:** A Site Plan, Landscape Plan, Tree Preservation Plan, Tree Stand Delineation, and Architectural Elevations for a 2.75 acre tract of land zoned “R2” Residential District located on the south side of Olive Boulevard and west of its intersection with Stablestone Drive.

### Summary

The applicant has proposed a six (6) lot, single-family residential subdivision for detached single-family homes located on land that is zoned “R2” Residential District. The proposed lots all meet the minimum R-2 lot size requirement of 15,000 square feet and range from 15,015 square feet to 16,412 square feet. The proposed subdivision also includes a new cul-de-sac public roadway, referenced as Harmony Meadow Ct. on the plan, serving the proposed lots and approximately 0.2 acres of common ground. The proposed cul-de-sac is located west of Stablestone Drive and across from Paddington Hill Drive.

### Staff Analysis

As previously mentioned, the subject site is zoned “R-2” Residential District which is a conventional zoning district. The following is a comparison of the minimum requirements for the R-2 district and the current proposal for this site which indicates that all minimum requirements are met.

|                         | <b>Required</b>    | <b>Provided</b>               |
|-------------------------|--------------------|-------------------------------|
| <b>Minimum Lot Size</b> | 15,000 sf          | 15,015 sf -16,412 sf          |
| <b>Maximum Height</b>   | 3 stories or 45 ft | 2 stories + walk-out; 37.5 ft |
| <b>Minimum Setbacks</b> | Front- 25 ft       | Front- 25 ft                  |
|                         | Side – 10 ft       | Side – 10 ft                  |
|                         | Rear – 15 ft       | Rear – 15 ft                  |

### **Tree Preservation and Landscaping**

Section 04-02 of the Unified Development Code (UDC) requires that unless Special Conditions exist and are approved by the City of Chesterfield, a minimum of 30% of any wooded area shall be preserved. Accurate Tree Stand Delineation and Tree Preservation Plans were provided by the applicant. The applicant is proposing to save 30.7% of the existing wooded area which will be contained in proposed Tree Preservation Easements throughout the development as shown on the proposed Site Plan.

Section 04-02 of the UDC also requires that a 30 foot wide Landscape Buffer is provided along Olive Boulevard and a 20 foot wide Landscape Buffer is provided on all remaining boundary lines of the proposed development. The applicant has provided a Landscape Plan which includes areas of tree preservation with additional plantings that, when combined, meet the buffer requirements. Similar to the Tree Preservation areas, these buffers will also be included in easements to provide protection to these required plantings.

### **Lighting**

The applicant is proposing two decorative, Ameren-approved Post Top Lantern style lighting fixtures, denoted as the “Colonial” style, along Harmony Meadow Ct with one located at its intersection with Olive Blvd and another at the end of the proposed cul-de-sac. In addition to the two proposed decorative light-fixtures, the developer has also proposed a more utilitarian fixture, denoted as the “Enclosed” style, along Olive Boulevard at the westernmost portion of the site’s frontage. The Enclosed style of fixture is more compatible with what is provided along Olive Boulevard while the Colonial style fixtures provide a more decorative fixture suitable for those internal to the development. Each of these fixtures can be seen on the attached lighting cut-sheet provided by the applicant.

### **Pedestrian Circulation**

Although not required on streets serving fewer than 8 lots, Staff recommended that sidewalks be considered and the applicant is proposing a sidewalk on one side of the proposed Harmony Meadow Ct. Sidewalk is required and is being proposed along Olive Boulevard. The proposed sidewalks provide adequate means for pedestrian circulation for a development of this size.

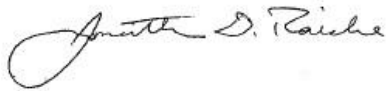
### **Architectural**

The applicant has provided Architectural Elevations for one model at this time and has informed Staff that this will serve as the base model for the development with various variations proposed as the individual homeowners become involved. The elevations proposed include a 2-story home with an optional walk-out basement. The primary exterior materials proposed include charcoal grey architectural shingles, divided-light windows, ash grey horizontal vinyl siding, light grey brick, and a grey stone brick ledge. Although there is more architectural detail on the primary façade, the applicant has designed the side and rear facades to include architectural elements and materials matching the front façade as required by the City’s Architectural Review Standards. The applicant has done this through including a brick return on both side elevations near the front façade, many divided-light windows which match those on the front façade, a white crown molding trim on all facades, and a substantial horizontal bump-out on the rear façade. Any future revisions or additional models of homes will be reviewed by Staff to ensure compliance with the City’s Architectural Review Standards.

### **Recommendation**

Staff has reviewed the Site Plan, Landscape Plan, Tree Stand Delineation, Tree Preservation Plan and Architectural Elevations and has found the proposal to be in compliance with all City Code requirements. Staff recommends approval of the proposal as submitted.

Respectfully submitted,

A handwritten signature in black ink, reading "Jonathan D. Raiche". The signature is written in a cursive style with a large, looping initial 'J'.

Jonathan Raiche, AICP  
Senior Planner

cc. Aimee Nassif, Planning and Development Services Director

Attachments: Site Plan Packet

RECEIVED  
City of Chesterfield

JAN 28 2016

Department of Public Services

# Ameren Missouri

## Dusk-To-Dawn Outdoor Lighting

### Area Lighting

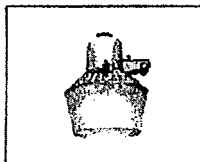
| Type of Luminaire | Lamp Wattage | Lumen Output | Monthly Rate* |
|-------------------|--------------|--------------|---------------|
| Open              | 70 H.P.S.**  | 5,800        | \$ 10.05      |
| Open              | 100 H.P.S.   | 9,500        | \$ 10.98      |
| Enclosed          | 100 H.P.S.   | 9,500        | \$ 12.41      |
| Enclosed          | 250 H.P.S.   | 25,500       | \$ 17.93      |
| Enclosed          | 400 H.P.S.   | 50,000       | \$ 31.97      |
| Directional       | 250 H.P.S.   | 25,500       | \$ 22.76      |
| Directional       | 400 H.P.S.   | 50,000       | \$ 36.00      |
| Directional       | 400 M.H.***  | 34,000       | \$ 22.76      |
| Directional       | 1000 M.H.    | 100,000      | \$ 71.96      |

\* Plus all applicable sales and municipal taxes

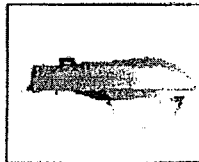
\*\* High Pressure Sodium

\*\*\* Metal Halide

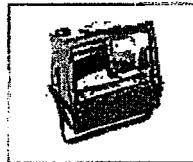
Monthly rate includes luminaire, electricity and maintenance. If wire span or pole is required, installation charges will apply.



Open



Enclosed



Directional

### Post Top Lantern

| Lamp Wattage | Lumen Output | Monthly Rate* |
|--------------|--------------|---------------|
| 100 H.P.S.   | 9,500        | \$22.99       |

Overall height is approximately 16 feet on a tapered pole.

\*Plus municipal tax where applicable

All post top luminaires require underground wiring (cost of which is not included in the above).

Monthly rate includes fiberglass pole, luminaire, lamp electricity and maintenance.



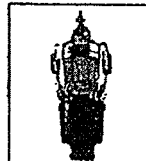
Early American



Colonial



Contemporary\*\*



Aspen\*\*

\*\*Additional initial charge applies

Rates effective May 30, 2015



SEAL:  
  
Consultant's Signature \_\_\_\_\_ Date \_\_\_\_\_

**HARMONY SEVEN**  
CHESTERFIELD, MISSOURI 63306

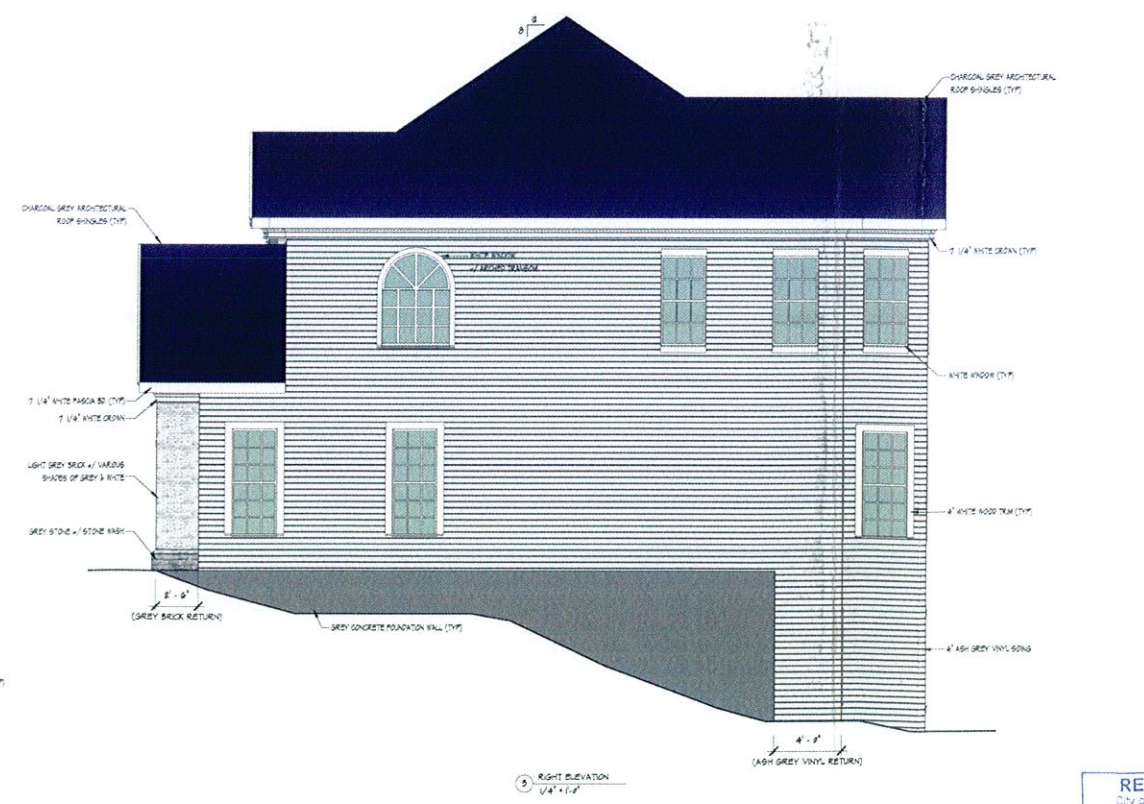
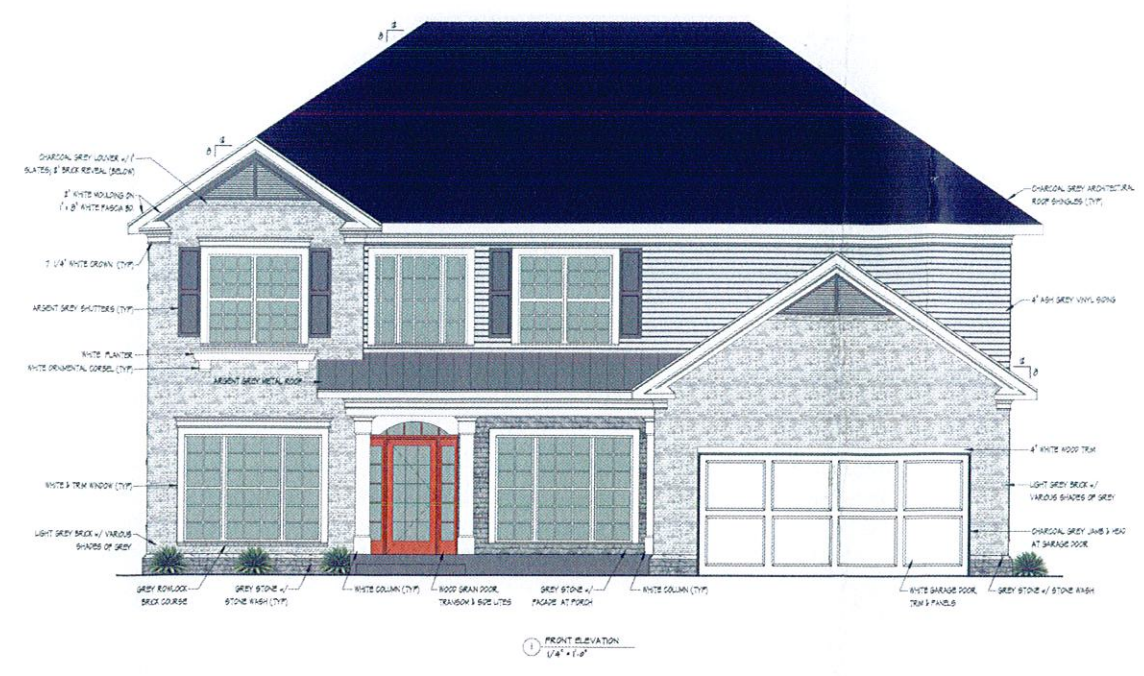
DESIGN DEVELOPMENT 100% COMPLETION (PRELIMINARY NOT FOR CONSTRUCTION)

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City of Chesterfield  
**APR 29 2016**  
Department of Public Services

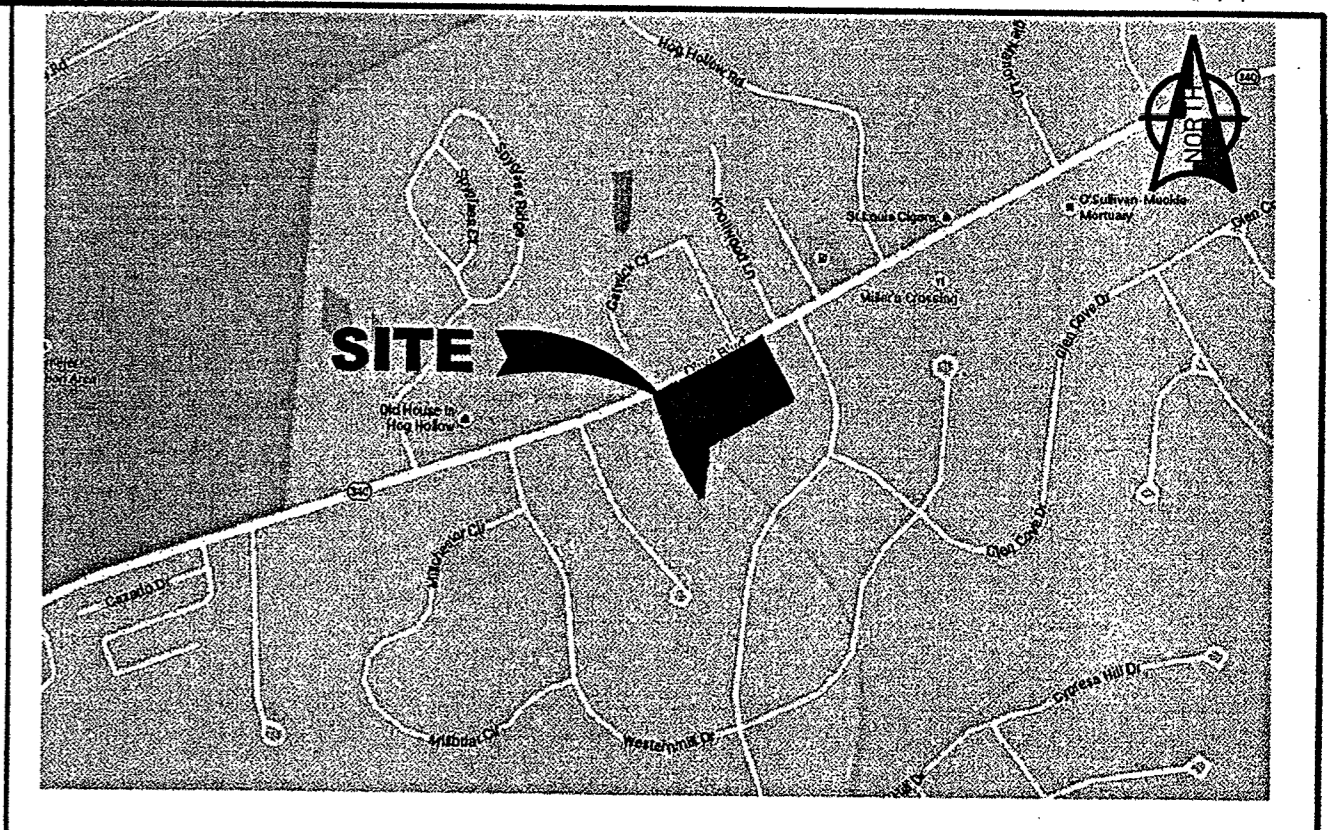
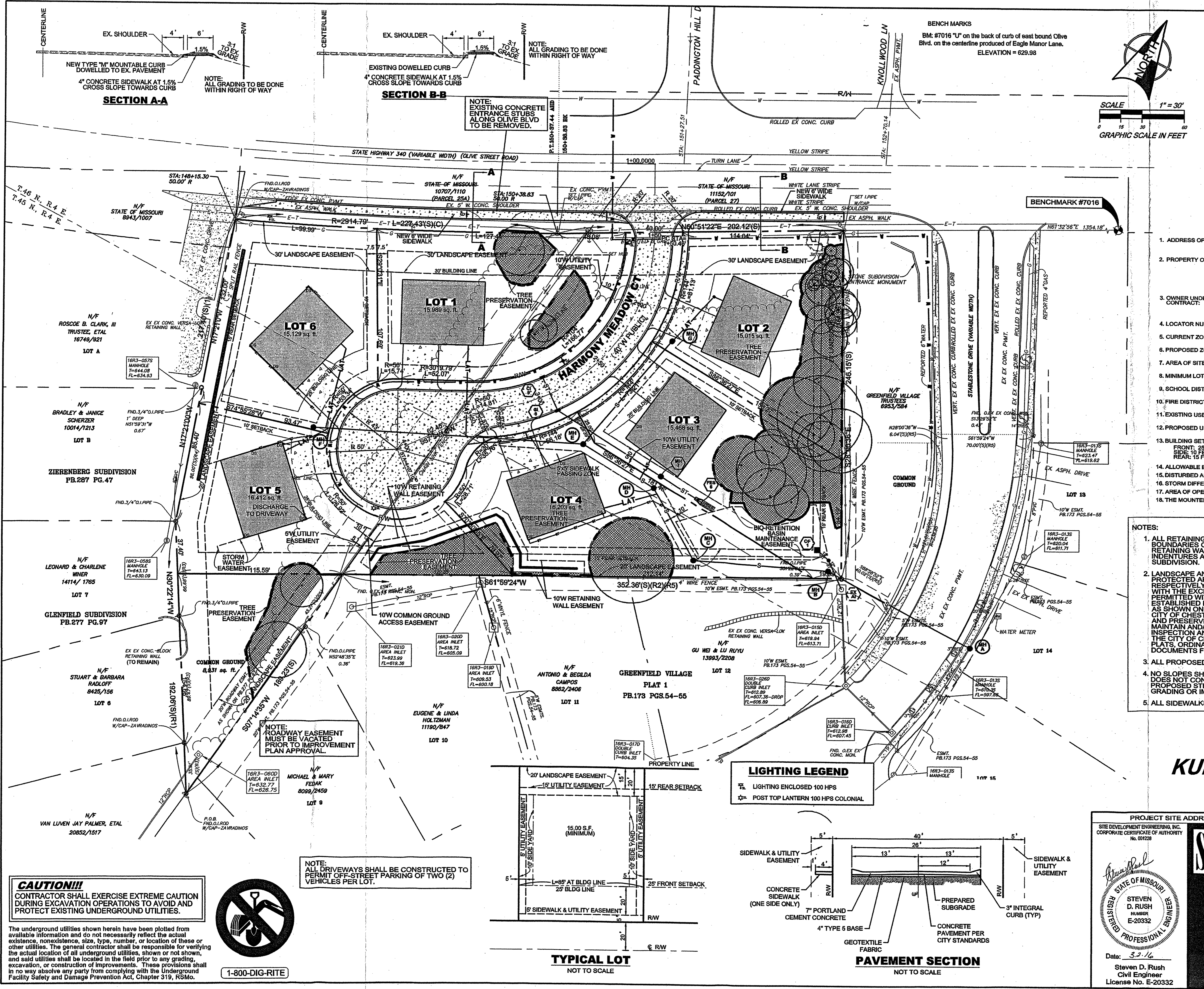
| REVISIONS |             |      |
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| NO.       | DESCRIPTION | DATE |
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City of Chesterfield  
**APR 1 2016**  
Department of Public Services

|                |            |                     |     |
|----------------|------------|---------------------|-----|
| SHEET NAME     |            | EXTERIOR ELEVATIONS |     |
| PROJECT NUMBER | 16.001     | DRAWN BY            | KTV |
| DATE           | 04/08/2016 | CHECKED BY          | JM  |
| SCALE          |            | 1/4" = 1'-0"        |     |
| SHEET NUMBER   |            | <b>A100</b>         |     |







- PROJECT INFORMATION**
1. ADDRESS OF SITE: 14304 & 14298 OLIVE BLVD, CHESTERFIELD, MO 63017
  2. PROPERTY OWNER: CHESTERFIELD PROGRESS, LLC (14304 OLIVE BLVD) 511 WEST POLO DRIVE ST. LOUIS, MO 63105 AND NINE INVESTMENT COMPANY L.P. TRUST (14298 OLIVE BLVD) 710 HANLEY RD. #8A ST. LOUIS, MO 63105
  3. OWNER UNDER CONTRACT: KUMARA S. VADIVELU OR ASSIGNS 106 LOG HILL LANE ST. LOUIS, MO 63011
  4. LOCATOR NUMBER: 16R320911 & 16R320948
  5. CURRENT ZONING: "R-2" RESIDENTIAL
  6. PROPOSED ZONING: NO CHANGE
  7. AREA OF SITE: 119,725 S.F. (2.75 AC.)
  8. MINIMUM LOT SIZE: 15,000 S.F.
  9. SCHOOL DISTRICT: PARKWAY
  10. FIRE DISTRICT: MONARCH
  11. EXISTING USE: VACANT GROUND
  12. PROPOSED USE: 6 RESIDENTIAL LOTS
  13. BUILDING SETBACKS: FRONT: 25 FEET, SIDE: 15 FEET, REAR: 15 FEET
  14. ALLOWABLE BUILDING HEIGHT: 3 STORIES OR 45' IN HEIGHT
  15. DISTURBED AREA: 1.98 AC
  16. STORM DIFFERENTIAL RUNOFF (15 YR - 20 MIN): 1.90 CFS
  17. AREA OF OPEN SPACE: 85,110 S.F.
  18. THE MOUNTED HEIGHT OF PROPOSED LIGHT FIXTURES SHALL NOT BE LESS THAN 16 FEET ABOVE GRADE.

- NOTES:**
1. ALL RETAINING WALL AND LANDSCAPE EASEMENTS WILL BE LOCATED WITHIN THE BOUNDARIES OF THE LOTS OR ON COMMON GROUND. MAINTENANCE OF THE RETAINING WALLS AND LANDSCAPING WILL BE ADDRESSED IN THE SUBDIVISION INDENTURES AND WILL BE A COMMON EXPENSE FOR ALL LOTS OF THIS SUBDIVISION.
  2. LANDSCAPE AND TREE PRESERVATION EASEMENTS ARE ESTABLISHED AS A PROTECTED AREA FOR VEGETATIVE LANDSCAPING AND EXISTING VEGETATION RESPECTIVELY. STRUCTURES OF ANY SIZE, WHETHER TEMPORARY OR PERMANENT WITH THE EXISTING RETAINING WALLS AS SHOWN ON THIS PLAN, ARE NOT PERMITTED WITHIN THESE EASEMENTS. RETAINING WALL EASEMENTS ARE ESTABLISHED FOR THE CONSTRUCTION AND MAINTENANCE OF THE RETAINING WALLS AS SHOWN ON THIS PLAN. RETAINING WALLS AND LANDSCAPING AS APPROVED BY THE CITY OF CHESTERFIELD DURING SITE PLAN REVIEW ARE REQUIRED TO BE MAINTAINED AND PRESERVED INDEFINITELY BY THE HOME OWNER'S ASSOCIATION. FAILURE TO MAINTAIN AND/OR PRESERVE LANDSCAPING AND RETAINING WALLS MAY RESULT IN INSPECTION AND ISSUANCE OF A CITATION(S) POTENTIALLY RESULTING IN FINES BY THE CITY OF CHESTERFIELD. THIS LANGUAGE SHALL BE INCLUDED ON ALL PLANS, PLATS, ORDINANCES, SUBDIVISION INDENTURES, AND OTHER APPROPRIATE (WRITTEN) DOCUMENTS FOR THIS DEVELOPMENT.
  3. ALL PROPOSED UTILITIES SHALL BE INSTALLED UNDERGROUND.
  4. NO SLOPES SHALL EXCEED 3 (HORIZONTAL) TO 1 (VERTICAL). APPROVAL OF THIS PLAN DOES NOT CONSTITUTE APPROVAL OF SLOPES IN EXCESS OF 3:1. REVIEW OF PROPOSED STEEP SLOPES WILL BE CONCURRENT WITH THE REVIEW OF THE GRADING OR IMPROVEMENT PLANS FOR THE PROJECT.
  5. ALL SIDEWALKS SHALL BE CONSTRUCTED TO ADA STANDARDS

PREPARED FOR:  
**KUMARA S. VADIVELU**  
106 LOG HILL LANE  
ST. LOUIS, MO 63011

RECEIVED  
City of Chesterfield  
MAR - 3 2016  
Department of Public Services

PROJECT SITE ADDRESS / LOCATION: 14304 OLIVE BOULEVARD, CHESTERFIELD, MO 63017

SITE DEVELOPMENT ENGINEERING, INC.  
CORPORATE CERTIFICATE OF AUTHORITY  
No. 001228

**SDE** SITE DEVELOPMENT ENGINEERING, INC.  
PLANNING • CONSULTING • CIVIL ENGINEERING

**HARMONY SEVEN**

DATE: Sept. 10, 2015  
CHECKED BY: SDR  
JOB NO.: 215-014  
DRAWN BY: DCT  
SCALE: 1" = 30'

Site, Paving & Utility Plan

REV.: 10/6/15 City Comments  
11/12/15 MSD Comments  
12/23/15 City Comments  
1/25/16 City Comments

2/12/16 City Comments  
2/25/16 MSD Comments

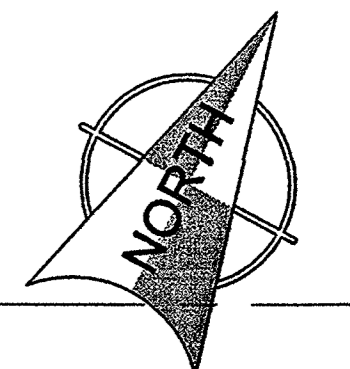
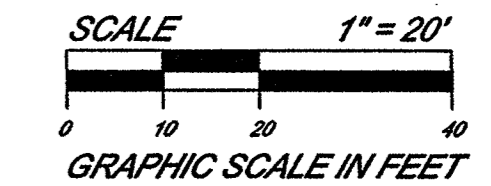
SHEET: 1 of 2

Steven D. Rush  
Civil Engineer  
License No. E-20332

Date: 3.2.16



NOTE: ALL HANDICAP RAMPS ON BOTH SIDES OF THE PROPOSED ENTRANCE SHALL BE ADA COMPLIANT.



BENCHMARK #7016

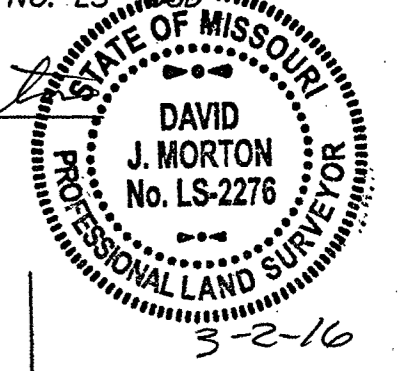
**SURVEYOR'S CERTIFICATION**

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2011 Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes Items 1, 2, 3, 4, 6(a), 7(a), 8, 9, 11(a), 13 and 16 of Table A thereof. The field work was completed on October 05, 2015.

Pursuant to the Accuracy Standards as adopted by ALTA, NSPS and ACSM and in effect on the date of this certification, the undersigned further certifies that the survey measurements were made in accordance with the Minimum Angle, Distance and Closure requirements for Survey Measurements Which Control Land Boundaries for ALTA/ACSM Land Title Surveys.

ST. LOUIS COUNTY SURVEYING & ENGINEERING, INC.  
CORPORATE REGISTRATION NO. LS-2276

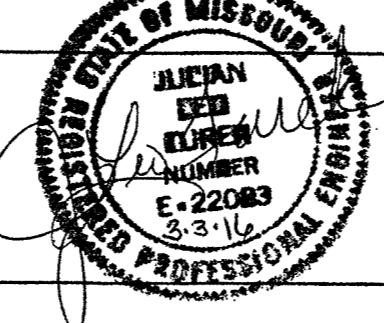
DAVID J. MORTON  
P.L.S. #2276  
STATE OF MISSOURI



**GEOTECHNICAL ENGINEER'S NOTE**

NEITHER *Pruckler Engineering* NOR THE UNDERSIGNED HAS PREPARED ANY PART OF THESE PLANS. THE SIGNATURE AND SEAL ARE INTENDED TO CONFIRM OUR REVIEW AND PROFESSIONAL OPINION THAT THESE PLANS ARE REVISIONS, THROUGH THE DATE GIVEN BELOW, COMPLY WITH THE GEOTECHNICAL REPORT DATED 10/05/15 FOR THE PROJECT, AND ARE COMPATIBLE WITH THE SOIL AND GEOLOGIC CONDITIONS AT THE SITE, AS ANTICIPATED FROM THE EXPLORATION DATA.

CONDITIONS MAY VARY FROM THOSE ENCOUNTERED DURING THE EXPLORATION OR CAN CHANGE DUE TO CONSTRUCTION ACTIVITIES, WEATHER, OR OTHER CONDITIONS. THEREFORE, *Pruckler Engineering* MUST BE INVOLVED DURING THE CONSTRUCTION OF THIS PROJECT TO OBSERVE THE ACTUAL SUBSURFACE CONDITIONS AND IMPLEMENTATION OF OUR RECOMMENDATIONS RELATIVE TO CONSTRUCTION. CONSTRUCTION METHODS AND METHODS SHALL BE LEFT TO THE CONTRACTOR.



**CAUTION!!!**  
CONTRACTOR SHALL EXERCISE EXTREME CAUTION DURING EXCAVATION OPERATIONS TO AVOID AND PROTECT EXISTING UNDERGROUND UTILITIES.

The underground utilities shown herein have been plotted from available information and do not necessarily reflect the actual existence, nonexistence, size, type, number, or location of these or other utilities. The general contractor shall be responsible for verifying the actual location of all underground utilities, shown or not shown, and said utilities shall be located in the field prior to any grading, excavation, or construction of improvements. These provisions shall in no way absolve any party from complying with the Underground Facility Safety and Damage Prevention Act, Chapter 319, RSMo.

1-800-DIG-RITE

PROJECT SITE ADDRESS / LOCATION: 14304 OLIVE BOULEVARD, CHESTERFIELD, MO 63017

SITE DEVELOPMENT ENGINEERING, INC.  
CORPORATE CERTIFICATE OF AUTHORITY  
No. 001228



**SITE DEVELOPMENT ENGINEERING, INC.**  
PLANNING • CONSULTING • CIVIL ENGINEERING

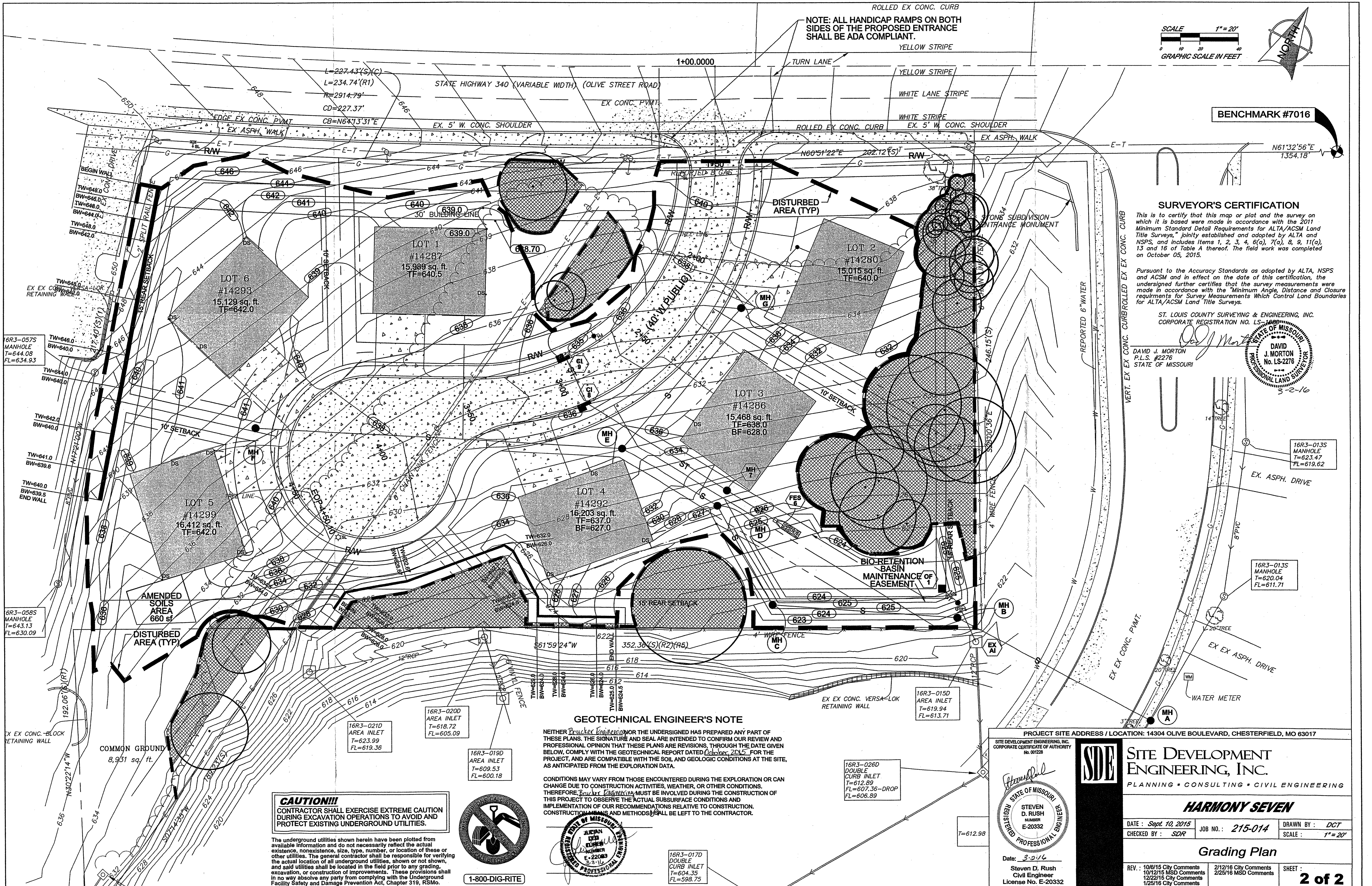
**HARMONY SEVEN**

DATE: Sept. 10, 2015  
CHECKED BY: SDR  
JOB NO.: 215-014  
DRAWN BY: DCT  
SCALE: 1" = 20'

**Grading Plan**

REV.: 10/6/15 City Comments  
10/12/15 MSD Comments  
12/23/15 City Comments  
1/25/16 City Comments  
2/12/16 City Comments  
2/25/16 MSD Comments  
SHEET: **2 of 2**

STEVEN D. RUSH  
REGISTERED PROFESSIONAL ENGINEER  
STATE OF MISSOURI  
LICENSE NUMBER E-20332  
Date: 3-2-16  
Steven D. Rush  
Civil Engineer  
License No. E-20332



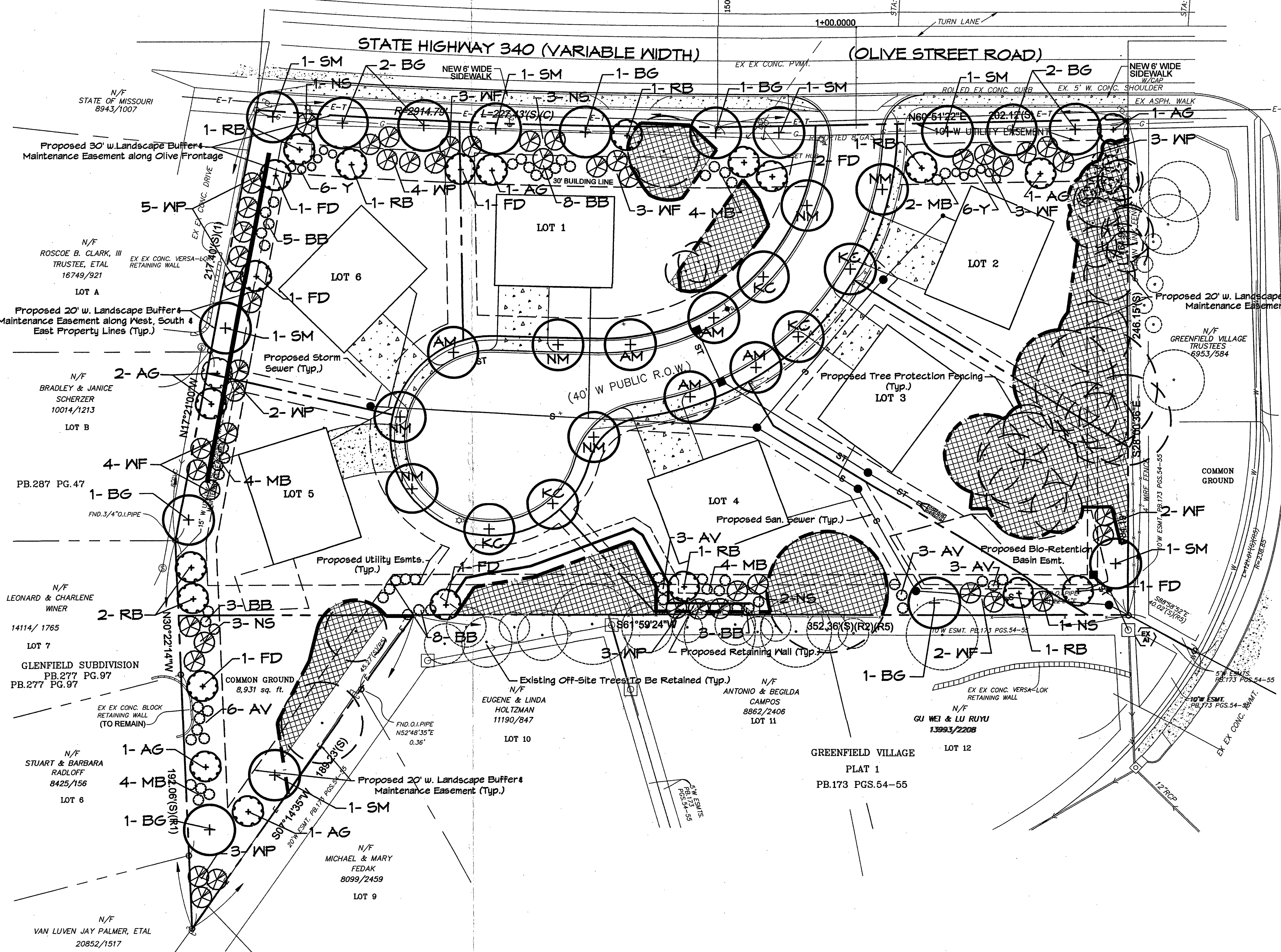


**CAUTION!!!**  
 CONTRACTOR SHALL EXERCISE EXTREME CAUTION DURING EXCAVATION OPERATIONS TO AVOID AND PROTECT EXISTING UNDERGROUND UTILITIES.



The underground utilities shown herein have been plotted from available information and do not necessarily reflect the actual existence, nonexistence, size, type, number, or location of these or other utilities. The general contractor shall be responsible for verifying the actual location of all underground utilities, shown or not shown, and said utilities shall be located in the field prior to any grading, excavation, or construction of improvements. These provisions shall in no way absolve any party from complying with the Underground Facility Safety and Damage Prevention Act, Chapter 319, RSMo.

1-800-DIG-RITE



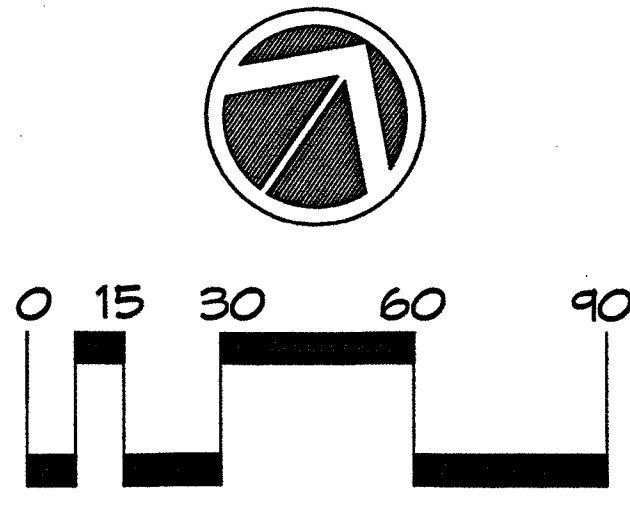
# "Harmony Seven"

## Landscape Notes:

- A maximum of twenty (20) percent of any one species shall be utilized to meet the landscape planting requirements for this subdivision.
- Location Criteria:
  - Street trees on the internal street shall be located within the proposed right-of-way, between the back of curb and the sidewalk and/or the street right-of-way line. Trees planted along Olive Street Road shall be located along & outside the public right-of-way on the adjoining lots.
  - Street trees shall not be planted closer than three (3) feet to any curb.
  - Street trees shall not be planted within ten (10) feet of curb inlets or manholes.
  - Street trees shall not be placed within twenty-five (25) feet of street lights, street signs and intersections.
  - Actual locations of plantings shown may vary based upon the final approved locations of utilities, street lights, driveways, curb inlets, etc. but shall adhere to the minimums noted above.
- All plantings shall be installed in a continuous mulch bed, a minimum of 3" deep. Individual trees shall be planted in an earth saucer with a minimum of 3" of appropriate mulching material, such as shredded hardwood bark. All beds and saucers shall be uniform in shape with smooth and continuous spade edge.
- No plantings are allowed within drainage swales or ditches and shall in no way affect or alter intended surface runoff. Plant materials shall be installed in a manner consistent with positive surface drainage. Trees planted around stormwater detention basins shall be arranged so as not to block access to the basins for maintenance.
- Open Space Calculations:
  - Typical Driveways: Approx. 5,466 sq. ft. (6 x 911 s.f. each)
  - Typical House Pad: Approx. 16,800 sq. ft. (6 x 2800 s.f. each)
  - Paved Street: Approx. 11,824 sq. ft.
- Tree Preservation Areas are based on plans provided by:
  - 34,040 sq. ft. approx. (Approx. 28.5 % of Total Tract)
  - (Based on 34,040 s.f. divided by 119,725 s.f.)
  - Loomis Associates, Inc.
  - 707 Spirit 40 Park Drive
  - Suite 135
  - Chesterfield, MO 63005-1144

## PLANT MATERIAL LIST

| Key                     | Botanical Name                     | Common Name                | Quantity | Size        | Mature Ht. | Growth Rate/Size     |
|-------------------------|------------------------------------|----------------------------|----------|-------------|------------|----------------------|
| <b>Deciduous Trees</b>  |                                    |                            |          |             |            |                      |
| NM                      | Acer plantanoides 'Crimson King'   | Crimson King Norway Maple  | 6        | 2 1/2" cal. | 45' +      | Med (Large)          |
| SM                      | Acer saccharum 'Green Mountain'    | Green Mountain Sugar Maple | 7        | 2 1/2" cal. | 45' +      | Slow/Med (Large)     |
| AM                      | Acer x freemanii 'Jeffersred'      | Autumn Blaze Maple         | 5        | 2 1/2" cal. | 45' +      | Fast (Large)         |
| KC                      | Gymnocladus dioica (seedless)      | Kentucky Coffeetree        | 5        | 2 1/2" cal. | 45' +      | Med/Fast (Large)     |
| BG                      | Nyssa sylvatica                    | Blackgum                   | 9        | 2 1/2" cal. | 30-50'     | Slow (Medium)        |
| <b>Ornamental Trees</b> |                                    |                            |          |             |            |                      |
| RB                      | Cercis canadensis                  | Eastern Redbud             | 8        | 2 1/2" cal. | 25'-30'    | Fast (Medium)        |
| FD                      | Cornus florida 'Cherokee Princess' | Flowering Dogwood          | 8        | 2 1/2" cal. | 15'-25'    | Slow/Med (Small)     |
| AG                      | Acer ginnala                       | Amur Maple                 | 7        | 2 1/2" cal. | 20'-25'    | Med (Small)          |
| <b>Evergreen Trees</b>  |                                    |                            |          |             |            |                      |
| WF                      | Abies concolor                     | White Fir                  | 17       | 6' ht.min.  | 45'+       | Slow/Med (Large)     |
| NS                      | Picea abies                        | Norway Spruce              | 10       | 6' ht.min.  | 40'-60'    | Med/Fast (Med/Large) |
| WP                      | Pinus strobus                      | Eastern White Pine         | 20       | 6' ht.min.  | 45'+       | Fast (Large)         |
| <b>Shrubs</b>           |                                    |                            |          |             |            |                      |
| BB                      | Euonymus alatus 'Compactus'        | Dwarf Burning Bush         | 27       | 18" dia.    | 5'-10'     | Deciduous            |
| AV                      | Viburnum x rhytidophyloides        | Allegheny Viburnum         | 15       | 18" dia.    | 8'-10'     | Deciduous            |
| MB                      | Berberis x mentorensis             | Mentor Barberry            | 18       | 18" dia.    | 5'-7'      | Deciduous            |
| Y                       | Taxus x media 'Densiformis'        | Densiformis Yew            | 12       | 18" dia.    | 4'-6'      | Evergreen            |



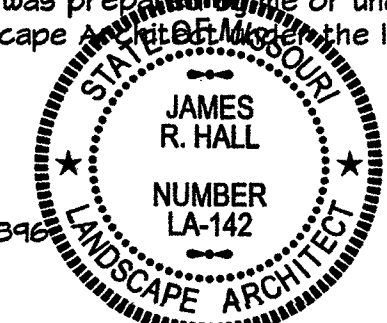
SCALE: 1" = 30'

Prepared For:  
**KSG ENTERPRISES, L.L.C.**  
 106 Log Hill Lane  
 Ballwin, Missouri 63011  
 Phone: 636-910-7122

### Architect's Landscape Certification

This is to certify that this Landscape Plan was prepared by me or under my direct supervision, and I am a duly licensed Landscape Architect in the State of Missouri.

*James R. Hall*  
 James R. Hall  
 Mo L.A. No. 142  
 HALL + ASSOCIATES, L.L.C. LA - 2008013346



### Project Engineer:

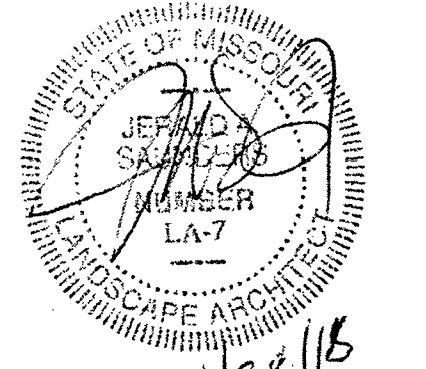
**SDE** SITE DEVELOPMENT ENGINEERING, INC.  
 PLANNING • CONSULTING • CIVIL ENGINEERING

**HARMONY SEVEN**  
 Landscape Plan

**HALL + ASSOCIATES, L.L.C.**  
 LANDSCAPE ARCHITECTURE  
 424 SOUTH CLAY AVENUE, ST. LOUIS, MO 63122 314.986.5577

|                |  |                       |                      |
|----------------|--|-----------------------|----------------------|
| Drawn by: JRH  | Checked by:                                  | Project Number: 15008 | Sheet Number: 1 of 1 |
| Date: 10-16-15 | Revisions: 11-6-15, 1-28-16, 2-12-16, 3-2-16 |                       |                      |





Jerald Saunders - Landscape Architect  
MO License # LA-007

Consultants:

Harmony Seven  
Chesterfield, Missouri

KSG Enterprises, LLC

EXISTING INDIVIDUAL TREES

| No. | Tree Name    | DBH  | Canopy Diam. | Canopy Sq Ft | Condition Rating | Comment                   |
|-----|--------------|------|--------------|--------------|------------------|---------------------------|
| 1A  | Sassafras    | 2.5  | 20           | 986          | 3                | grove                     |
| 1B  | Sassafras    | 1    | 8            | 158          | 3                | grove                     |
| 1C  | Sassafras    | 4    | 5            | 62           | 3                | grove                     |
| 1D  | Sassafras    | 2    | 12           | 355          | 3                | grove                     |
| 1E  | Sassafras    | 5    | 6            | 89           | 3                | grove                     |
| 1F  | Sassafras    | 5    | 18           | 799          | 3                | grove                     |
| 1G  | Sassafras    | 3    | 18           | 799          | 3                | grove                     |
| 1H  | Sassafras    | 1.5  | 10           | 246          | 3                | grove                     |
| 1J  | Sassafras    | 1    | 6            | 89           | 3                | grove                     |
| 1K  | Sassafras    | 1    | 5            | 62           | 3                | grove                     |
| 1L  | Sassafras    | 1    | 5            | 62           | 3                | grove                     |
| 1M  | Sassafras    | 1.5  | 5            | 62           | 3                | grove                     |
| 1N  | Sassafras    | 40   | 50           | 6162         | 0                | dead, hardware            |
| 2   | Mulberry     | 8    | 25           | 1541         | 1                |                           |
| 3   | Mulberry     | 12   | 25           | 1541         | 1                |                           |
| 4   | Mulberry     | 8    | 25           | 1541         | 1                |                           |
| 5   | Sugar Maple  | 6    | 25           | 1541         | 3                | vines                     |
| 6   | Sugar Maple  | 5    | 20           | 986          | 4                |                           |
| 7   | Sugar Maple  | 4    | 20           | 986          | 4                |                           |
| 8   | Sugar Maple  | 8    | 25           | 1541         | 4                |                           |
| 9   | Sugar Maple  | 8    | 25           | 1541         | 4                |                           |
| 10  | Black Cherry | 20   | 30           | 2218         | 3                | vines                     |
| 11  | Sugar Maple  | 36   | 60           | 8874         | 1                |                           |
| 12  | Sugar Maple  | 12   | 35           | 3020         | 2                |                           |
| 13  | Elm          | 28   | 50           | 6162         | 1                |                           |
| 14  | Elm          | 20   | 30           | 2218         | 2                |                           |
| 15  | Sugar Maple  | 12   | 35           | 3020         | 2                |                           |
| 16  | Sugar Maple  | 10   | 25           | 1541         | 2                | vines                     |
| 17  | Elm          | 18   | 45           | 4991         | 1                |                           |
| 18  | Sugar Maple  | 6    | 20           | 986          | 4                |                           |
| 19  | Boxelder     | 8    | 25           | 1541         | 3                |                           |
| 20  | Elm          | 30   | 50           | 6162         | 1                | vines                     |
| 21  | Black Cherry | 14   | 35           | 3020         | 3                |                           |
| 22  | Elm          | 14   | 35           | 3020         | 2                | deadwood                  |
| 23  | Boxelder     | 14   | 40           | 3944         | 2                |                           |
| 24  | Sugar Maple  | 6    | 25           | 1541         | 3                |                           |
| 25  | Sassafras    | 6-14 | 25           | 1541         | 2                | grove, suckers            |
| 26  | Elm          | 25   | 50           | 6162         | 2                | 2x trunk, deadwood, decay |
| 27  | Elm          | 16   | 30           | 2218         | 0                | 3x trunk                  |
| 28  | Sugar Maple  | 6    | 20           | 986          | 3                | vines                     |
| 29  | Elm          | 26   | 60           | 8874         | 3                | vines                     |
| 30  | Persimmon    | 18   | 45           | 4991         | 3                | 2x trunk                  |
| 31  | Elm          | 12   | 35           | 3020         | 2                | vines, basal decay        |
| 32  | Sugar Maple  | 24   | 60           | 8874         | 3                |                           |
| 33  | Boxelder     | 10   | 20           | 986          | 2                |                           |
| 34  | Hackberry    | 5    | 12           | 355          | 3                | vines                     |
| 35  | Sugar Maple  | 6    | 20           | 986          | 4                |                           |
| 36  | Boxelder     | 12   | 25           | 1541         | 3                | vines                     |
| 37  | Boxelder     | 5    | 10           | 246          | 2                | vines                     |
| 39  | Elm          | 14   | 40           | 3944         | 2                | decay                     |
| 40  | Elm          | 20   | 50           | 6162         | 3                | vines                     |
| 41  | Elm          | 18   | 35           | 3020         | 3                |                           |
| 42  | dead         | 18   | 0            | 0            | 0                |                           |
| 43  | Boxelder     | 22   | 60           | 8874         | 3                |                           |
| 44  | Elm          | 14   | 40           | 3944         | 3                | vines                     |
| 45  | Elm          | 14   | 40           | 3944         | 3                | 2x trunk                  |
| 46  | Sugar Maple  | 14   | 25           | 1541         | 2                | multi trunk               |
| 47  | Elm          | 18   | 50           | 6162         | 3                | vines                     |
| 48  | Elm          | 8    | 25           | 1541         | 3                |                           |
| 49  | Elm          | 8    | 30           | 2218         | 3                |                           |
| 50  | Elm          | 8    | 25           | 1541         | 3                |                           |
| 51  | Elm          | 10   | 25           | 1541         | 3                |                           |
| 52  | Boxelder     | 10   | 25           | 1541         | 3                |                           |
| 53A | Sassafras    | 12   | 30           | 2218         | 3                | grove                     |
| 53B | Sassafras    | 4    | 15           | 555          | 3                | grove                     |
| 53C | Sassafras    | 10   | 25           | 1541         | 3                | grove, fork @ 1.5'        |
| 53D | Sassafras    | 14   | 25           | 1541         | 3                | grove                     |
| 53E | Sassafras    | 14   | 30           | 2218         | 3                | grove                     |
| 53F | Sassafras    | 6    | 20           | 986          | 3                | grove                     |
| 53G | Sassafras    | 12   | 25           | 1541         | 3                | grove                     |
| 53H | Sassafras    | 14   | 30           | 2218         | 3                | grove                     |
| 53J | Sassafras    | 6    | 15           | 555          | 3                | grove                     |
| 53K | Sassafras    | 12   | 30           | 2218         | 3                | grove                     |
| 53L | Sassafras    | 8    | 20           | 986          | 3                | grove                     |
| 53M | Sassafras    | 5    | 8            | 158          | 2                | grove                     |
| 53N | Sassafras    | 10   | 15           | 555          | 2                | grove                     |
| 53P | Sassafras    | 12   | 12           | 355          | 2                | grove                     |
| 53Q | Sassafras    | 8    | 0            | 0            | 1                | grove, only trunk remains |
| 54  | Sassafras    | 10   | 25           | 1541         | 3                |                           |
| 55  | Black Cherry | 8    | 20           | 986          | 2                |                           |
| 56  | Sassafras    | 14   | 20           | 986          | 2                |                           |
| 57  | Mulberry     | 10   | 35           | 3020         | 2                |                           |
| 59  | Sassafras    | 6-10 | 30           | 2218         | 3                | (7) grove                 |
| 60  | Boxelder     | 8    | 30           | 2218         | 3                | vines                     |
| 61  | Mulberry     | 12   | 35           | 3020         | 1                | split                     |
| 62  | Boxelder     | 6    | 20           | 986          | 2                |                           |
| 63  | Hackberry    | 6    | 15           | 555          | 2                |                           |
| 64  | Boxelder     | 26   | 40           | 3944         | 3                | 3x trunk                  |
| 65  | Boxelder     | 8    | 35           | 3020         | 3                |                           |
| 66  | Boxelder     | 10   | 30           | 2218         | 3                |                           |
| 67  | Boxelder     | 14   | 40           | 3944         | 3                | 2x trunk, vines           |
| 68  | Boxelder     | 10   | 35           | 3020         | 3                | vines                     |
| 69  | Boxelder     | 5    | 20           | 986          | 3                |                           |
| 70  | Boxelder     | 10   | 30           | 2218         | 3                |                           |
| 71  | Black Cherry | 10   | 30           | 2218         | 2                |                           |
| 72  | Boxelder     | 10   | 40           | 3944         | 2                |                           |
| 73  | Boxelder     | 8    | 25           | 1541         | 3                |                           |
| 74  | Boxelder     | 6    | 20           | 986          | 3                |                           |
| 75  | Black Cherry | 10   | 25           | 1541         | 2                |                           |
| 76  | Sugar Maple  | 8    | 20           | 986          | 3                | ROW                       |
| 77  | Boxelder     | 10   | 30           | 2218         | 3                | ROW                       |
| 78  | Boxelder     | 6    | 25           | 1541         | 3                | ROW                       |
| 79  | Dead         | 10   | 0            | 0            | 0                |                           |
| 80  | Mimosa       | 10   | 25           | 1541         | 3                | clump                     |
| 81  | Mulberry     | 10   | 25           | 1541         | 2                | ROW                       |
| 82  | Black Cherry | 12   | 20           | 986          | 1                |                           |
| 83  | Mulberry     | 12   | 25           | 1541         | 3                |                           |
| 84  | Mulberry     | 12   | 25           | 1541         | 1                | 2x trunk                  |
| 85  | Mimosa       | 10   | 35           | 3020         | 3                | clump                     |
| 86  | Sassafras    | 8    | 20           | 986          | 2                |                           |
| 87  | Sassafras    | 10   | 20           | 986          | 2                |                           |
| 88  | Black Cherry | 12   | 20           | 986          | 2                |                           |
| 89  | Sassafras    | 8    | 10           | 246          | 2                | 2x trunk                  |
| 90  | Black Cherry | 14   | 25           | 1541         | 2                | ROW                       |
| 91  | Boxelder     | 22   | 40           | 3944         | 3                | 3x trunk                  |
| 92  | Boxelder     | 8    | 25           | 1541         | 2                |                           |
| 93  | Sugar Maple  | 14   | 30           | 2218         | 2                |                           |
| 94  | Black Cherry | 26   | 40           | 3944         | 2                | 2x trunk                  |
| 95  | Mulberry     | 8    | 25           | 1541         | 3                |                           |

KEY

- Existing Individual Tree
- Existing Individual Off-site Tree
- Existing Woodland
- ~ Existing Vegetation Edge

OFF-SITE TREES

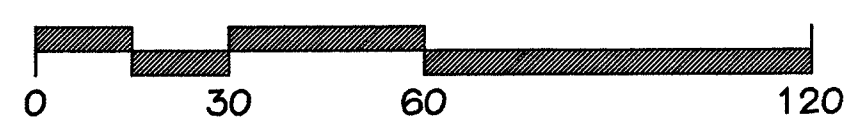
| No. | Tree Name    | DBH | Canopy Diam. | Canopy Sq Ft |
|-----|--------------|-----|--------------|--------------|
| A   | Redbud       | 16  | 25           | 1541         |
| B   | Pine         | 14  | 30           | 2218         |
| C   | Pine         | 18  | 30           | 2218         |
| D   | Pine         | 8   | 20           | 986          |
| E   | Pine         | 20  | 30           | 2218         |
| F   | Pine         | 12  | 30           | 2218         |
| G   | Pine         | 12  | 25           | 1541         |
| H   | Silver Maple | 285 | 50           | 6162         |
| I   | Pine         | 14  | 30           | 2218         |
| J   | Pine         | 14  | 30           | 2218         |
| K   | Pine         | 14  | 20           | 986          |

| No. | Tree Name    | DBH | Canopy Diam. | Canopy Sq Ft |
|-----|--------------|-----|--------------|--------------|
| W   | Elm          | 12  | 20           | 986          |
| X   | Pine         | 25  | 35           | 3020         |
| Y   | Pine         | 10  | 15           | 555          |
| Z   | Norway Maple | 14  | 25           | 1541         |
| AA  | Black Cherry | 25  | 40           | 3944         |
| BB  | Pine         | 16  | 25           | 1541         |
| CC  | Pine         | 7   | 15           | 555          |
| DD  | Pine         | 15  | 25           | 1541         |
| EE  | Pine         | 12  | 20           | 986          |
| FF  | Pine         | 14  | 20           | 986          |

| No. | Tree Name    | DBH | Canopy Diam. | Canopy Sq Ft |
|-----|--------------|-----|--------------|--------------|
| L   | Hemlock      | 2   | 5            | 62           |
| M   | Hemlock      | 2   | 5            | 62           |
| N   | Hemlock      | 2   | 5            | 62           |
| O   | Hemlock      | 2   | 5            | 62           |
| P   | Black Cherry | 30  | 40           | 3944         |
| Q   | Silver Maple | 20  | 30           | 2218         |
| R   | Pine         | 7   | 15           | 555          |
| S   | Pine         | 14  | 20           | 986          |
| T   | Pine         | 27  | 40           | 3944         |
| U   | Sassafras    | 16  | 25           | 1541         |
| V   | Pine         | 8   | 15           | 555          |

TREE STAND DELINEATION PLAN

SCALE 1" = 30'



Tree Stand Delineation Narrative  
November 17, 2015

This project site comprises a total of 2.75 Ac. and has a total of 1.31 Ac. of woodland canopy. This woodland consists primarily of poor conditioned hardwoods including Sugar Maple, Slippery Elm, Boxelder, Mulberry, and Black Cherry. There are groves of Sassafras located in the northeast, southeast, and western portions of the site. The understory is dense bush honeysuckle. The trees under or adjacent to the overhead electrical line have been severely trimmed back. The attached detailed Tree Stand Delineation map was completed by field inspection.

Tree Stand Delineation & Preservation Plan Prepared under direction of:  
Brian Bage  
Certified Arborist MW- 5033A

- RATING:
- 0 = Dead
  - 1 = In Decline
  - 2 = Poor Quality
  - 3 = Average Quality
  - 4 = Good Quality
  - 5 = Excellent Quality

There are no Monarch, State Champion or rare trees found on the site.

Total Site Area = 120,151 sq. ft. or 2.75 Ac.  
Total Existing Canopy = 57,406 sq. ft. or 1.31 Ac.

*B. Bage*

Revisions:

| Date     | Description   | No. |
|----------|---------------|-----|
| 12/23/15 | City Comments | 1   |
| 1/28/16  | City Comments | 2   |

Drawn: BB  
Checked: JB

**Ioomis Associates**  
landscape architects/planners  
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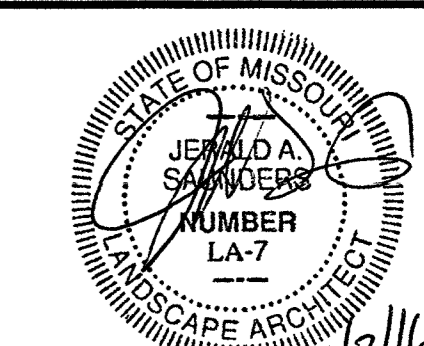
Ioomis Associates Inc.  
Missouri State Certificate of Authority #: LAC #000019

Sheet Title: Tree Stand Delineation Plan

Sheet No: TSD

Date: 11/24/15  
Job #: 972001





Jerald Saunders - Landscape Architect  
MO License # LA-007

Consultants:

# Harmony Seven Chesterfield, Missouri

KSG Enterprises, LLC



**KEY**

- Existing Individual Tree To Remain
- Proposed Canopy Preservation
- Tree protection fence
- Root pruning

**TREE PROTECTION NOTES:**

- 1) Preserved woodland canopy is delineated with shading. Trees designated to be preserved have been located by surveyor.
- 2) Pre-construction meeting to be held on-site to include a presentation of tree protection measures to operators; construction supervisors; developer's representative; and city zoning inspector.
- 3) Clearing Limits to be rough staked in order to facilitate location for installation of protection fencing. No early maintenance schedule is required. Where noted on plan, contractor to trench and root prune prior to any grading activity. Required siltation devices to be installed along limit of disturbance line.
- 4) No clearing or grading shall begin in areas where the treatment and preservation measures have not been completed including the installation of tree protection fencing along all "Limit of Disturbance" lines shown on the plan.
- 5) Tree Protection Fencing shall be 4-foot high temporary plastic construction fence. No equipment traffic/parking, concrete washout, material storage or other such construction activity shall be permitted to penetrate the protection fencing or disrupt the Protected Woodland Area. Any proposed plantings shall be subject to the review and approval of the City Arborist. All ground plane shall be mulched with hardwood bark mulch. Tree Protection Signage will be placed along the Protection Fencing as shown as the dashed line on the plan.
- 6) Tree protection measures to be maintained throughout construction sequence.
7. Within the tree protection area, all Bush Honeysuckle and any other identified invasive species shall be removed mechanically by hand, either completely or at ground level and the stump shall be treated with a stump treatment herbicide.

**TREE PROTECTION ACTION KEY SEQUENCE:**

- 1) Survey limit of disturbance.
- 2) Perform root pruning as shown on plan.
- 3) Install tree protection fencing.
- 4) Post tree protection signage on fence (No signs will be posted on trees).
- 5) Remove Honeysuckle and other invasive species from within the tree protection area.
- 6) Maintain tree protection area as an off-limits zone.

**CALCULATIONS:**

Total Site Area = 120,151 sq. ft. or 2.75 Ac.  
 Existing Tree Canopy = 57,406 sq. ft. or 1.31 Ac.  
 Total Canopy proposed for removal = 39,800 sq. ft. or 0.91 Ac. (69.3%)  
 Total Canopy proposed for preservation = 17,606 sq. ft. or 0.40 Ac. (30.7%)  
 57,406 sq. ft. x .30 = 17,221 sq. ft of tree canopy preservation required

Revisions:

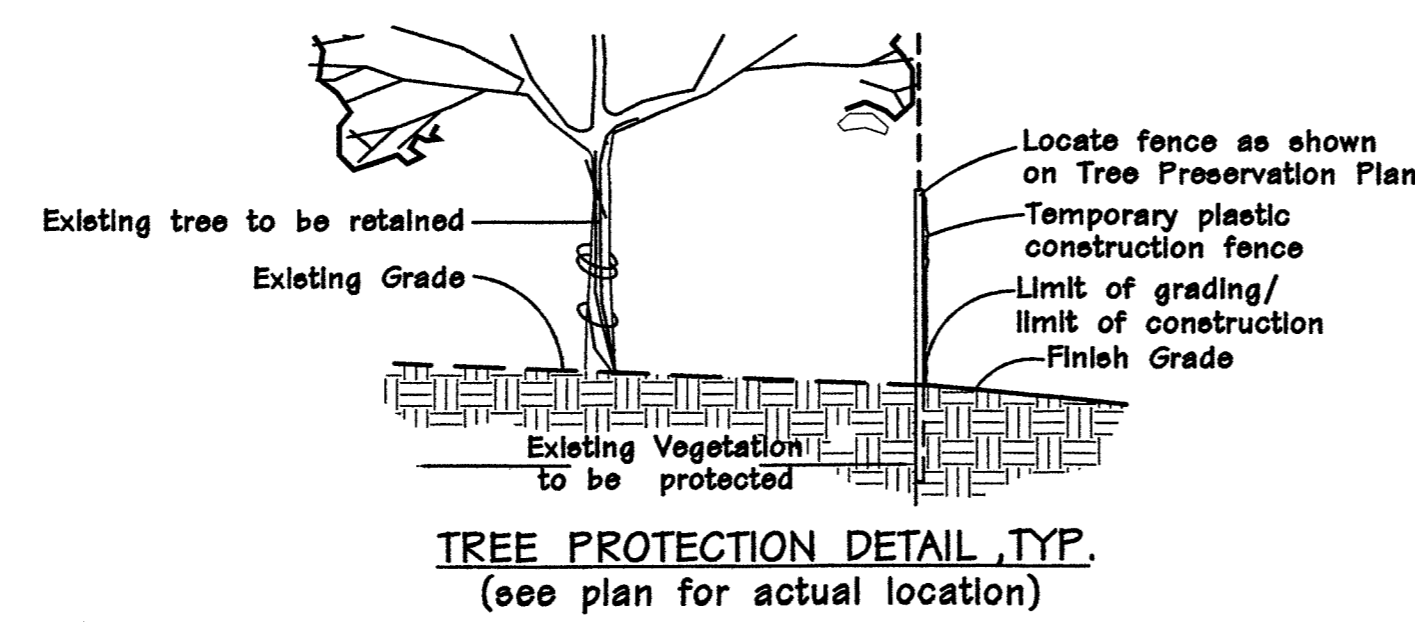
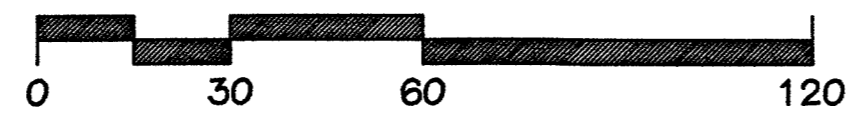
| Date     | Description   | No. |
|----------|---------------|-----|
| 12/23/15 | City Comments | 1   |
| 1/28/16  | City Comments | 2   |
| 2/12/16  | Updated Base  | 3   |
| 3/2/16   | Updated Base  | 4   |

Drawn: **BB**  
Checked: **JS**

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 Loomis Associates Inc.  
 Missouri State Certificate of Authority #: LAC #000018

Sheet Title: **Tree Preservation Plan**  
 Sheet No: **TPP**  
 Date: 11/24/15  
 Job #: 972001

**TREE PRESERVATION PLAN**  
SCALE 1" = 30'



**On-Site Trees To Be Preserved:**

| No. | Tree Name   | DBH | Canopy Diam. | Canopy Sq. Ft. | Condition Rating | Comment | Preserved |
|-----|-------------|-----|--------------|----------------|------------------|---------|-----------|
| 1A  | Sassafras   | 2.5 | 20           | 986            | 3                | grove   | Yes       |
| 1B  | Sassafras   | 1   | 8            | 158            | 3                | grove   | Yes       |
| 1C  | Sassafras   | 4   | 5            | 62             | 3                | grove   | Yes       |
| 1D  | Sassafras   | 2   | 12           | 355            | 3                | grove   | Yes       |
| 1E  | Sassafras   | 5   | 6            | 89             | 3                | grove   | Yes       |
| 1F  | Sassafras   | 5   | 18           | 799            | 3                | grove   | Yes       |
| 1G  | Sassafras   | 3   | 18           | 799            | 3                | grove   | Yes       |
| 1H  | Sassafras   | 1.5 | 10           | 246            | 3                | grove   | Yes       |
| 1J  | Sassafras   | 1   | 6            | 89             | 3                | grove   | Yes       |
| 1K  | Sassafras   | 1   | 5            | 62             | 3                | grove   | Yes       |
| 1L  | Sassafras   | 1   | 5            | 62             | 3                | grove   | Yes       |
| 1M  | Sassafras   | 1   | 5            | 62             | 3                | grove   | Yes       |
| 1N  | Sassafras   | 1.5 | 5            | 62             | 3                | grove   | Yes       |
| 3   | Mulberry    | 8   | 25           | 1541           | 1                |         | Yes       |
| 4   | Mulberry    | 12  | 25           | 1541           | 1                |         | Yes       |
| 5   | Sugar Maple | 6   | 25           | 1541           | 3                | vines   | Yes       |
| 6   | Sugar Maple | 5   | 20           | 986            | 4                |         | Yes       |
| 7   | Sugar Maple | 4   | 20           | 986            | 4                |         | Yes       |
| 8   | Sugar Maple | 8   | 25           | 1541           | 4                |         | Yes       |

|    |              |    |    |      |   |          |     |
|----|--------------|----|----|------|---|----------|-----|
| 9  | Sugar Maple  | 8  | 25 | 1541 | 4 |          | Yes |
| 10 | Black Cherry | 20 | 30 | 2218 | 3 | vines    | Yes |
| 11 | Sugar Maple  | 36 | 60 | 8874 | 1 |          | Yes |
| 12 | Sugar Maple  | 12 | 35 | 3020 | 2 |          | Yes |
| 13 | Elm          | 28 | 50 | 6162 | 1 |          | Yes |
| 14 | Elm          | 20 | 30 | 2218 | 2 |          | Yes |
| 15 | Sugar Maple  | 12 | 35 | 3020 | 2 |          | Yes |
| 16 | Sugar Maple  | 10 | 25 | 1541 | 2 | vines    | Yes |
| 17 | Elm          | 18 | 45 | 4991 | 1 |          | Yes |
| 18 | Sugar Maple  | 6  | 20 | 986  | 4 |          | Yes |
| 19 | Boxelder     | 8  | 25 | 1541 | 3 |          | Yes |
| 20 | Elm          | 30 | 50 | 6162 | 1 | vines    | Yes |
| 21 | Black Cherry | 14 | 35 | 3020 | 3 |          | Yes |
| 22 | Elm          | 14 | 35 | 3020 | 2 | deadwood | Yes |
| 23 | Boxelder     | 14 | 40 | 3944 | 2 |          | Yes |
| 32 | Sugar Maple  | 24 | 60 | 8874 | 3 |          | Yes |
| 55 | Black Cherry | 8  | 20 | 986  | 2 |          | Yes |
| 56 | Sassafras    | 14 | 20 | 986  | 2 |          | Yes |
| 80 | Mimosa       | 10 | 25 | 1541 | 3 | clump    | Yes |
| 93 | Sugar Maple  | 14 | 30 | 2218 | 2 |          | Yes |
| 94 | Black Cherry | 26 | 40 | 3944 | 2 | 2x trunk | Yes |