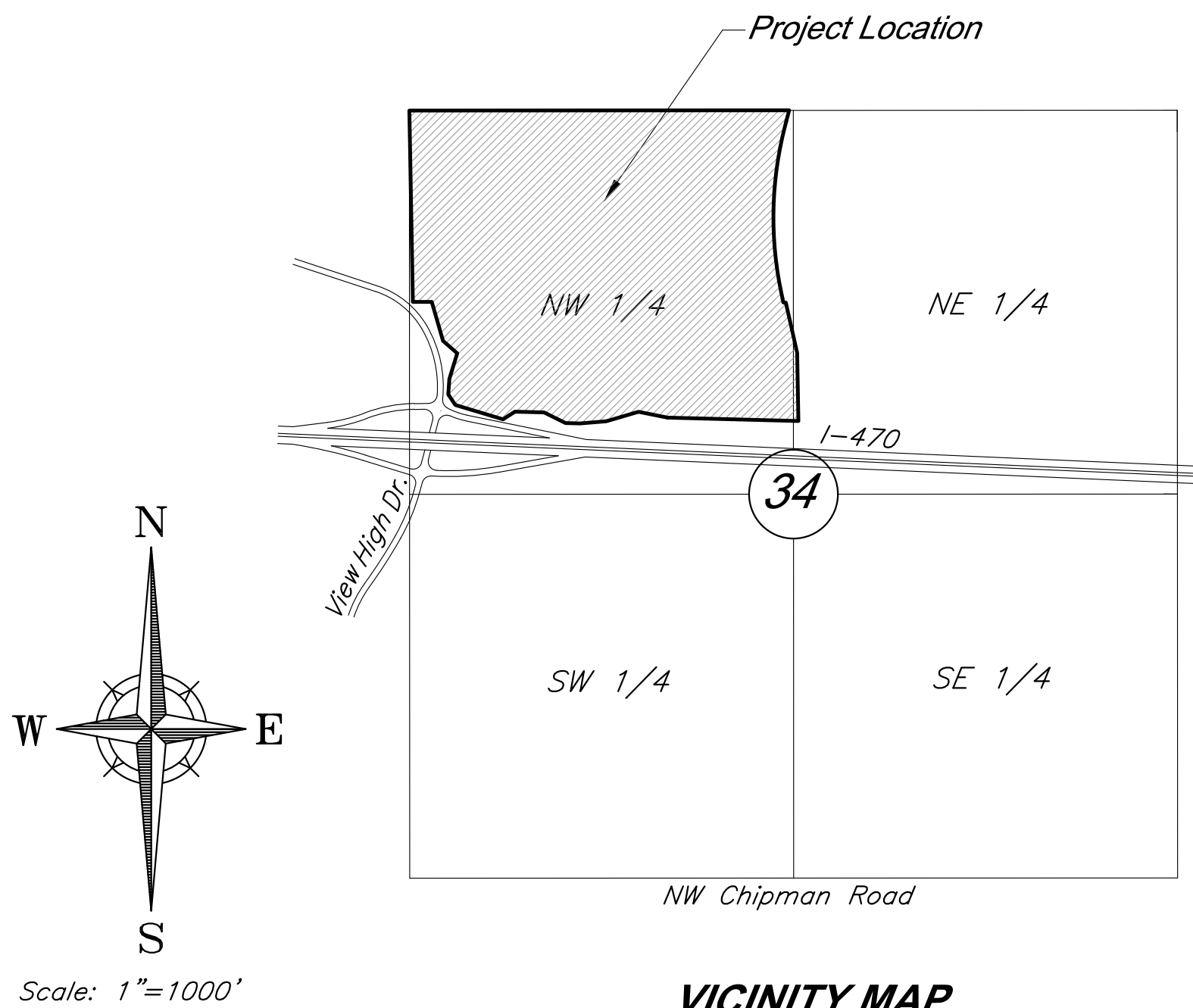


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TREE CLEARING PLANS  
 FOR  
 PARAGON STAR DEVELOPMENT  
 Sections 33 & 34–Township 48–Range 32  
 City of Lee’s Summit  
 Jackson County, Missouri



VICINITY MAP  
 Section 33 & 34-T48N-R32W

UTILITY CONTACTS

Sanitary Sewers	Mr. Jeff Thorn, PE City of Lee's Summit Water Utilities 220 SE Green Street Lee's Summit, MO 64063 (816) 969-1922 email: jeff.thorn@cityofLS.net	Gas	Mr. Donnie Richards Missouri Gas Energy 7500 E 35th Terrace Kansas City, MO 64129 (816) 472-9464 Fax (816) 472-3488 email: donnie.richards@sug.com
	Mr. Jeff Shook Little Blue Valley Sewer District 21101 East 78 Highway Independence, MO 64057 (816) 285-1522 email: jshook@lbvsd.net	Cable Television	Mr. Greg Thomas Time Warner Cable 8221 W. 119th Street Overland Park, KS 66213 (913) 643-1950 email: greg.thomas@twcable.com
Water	Mr. Jeff Thorn, PE City of Lee's Summit Water Utilities 220 SE Green Street Lee's Summit, MO 64063 (816) 969-1922 email: jeff.thorn@cityofLS.net	Telephone	Ms. Glenda Charles AT&T 1425 Oak Street Kansas City, MO 64106 (816) 365-1669 Fax (816) 275-1109 email: gc6954@att.com
Electric Service	Mr. Nathan Michael Kansas City Power & Light P.O. Box 418679 Kansas City, MO 64141 (816) 220-5210 Fax (816) 245-3623 email: Nathan.Michael@kcpl.com		

Missouri One Call System 1-800-344-7483 (DIG-RITE)

INDEX OF SHEETS

Sht. No.	Description
1	Title Sheet
2	General Layout
3-4	Pre-Construction Erosion Control Plan-Phase 1
5-6	Erosion Control Plan-Phase 2
7-8	Erosion Control Plan-Phase 3
9-10	Detail Sheets



DEVELOPED AND OWNED BY:  
 PARAGON STAR LLC  
 801 NORTHWEST COMMERCE CENTER  
 LEE'S SUMMIT, MISSOURI 64086  
 PHONE: (816) 802-6801  
 CONTACT: Mr. Flip Short  
 EMAIL: fshort@legacytouch.com

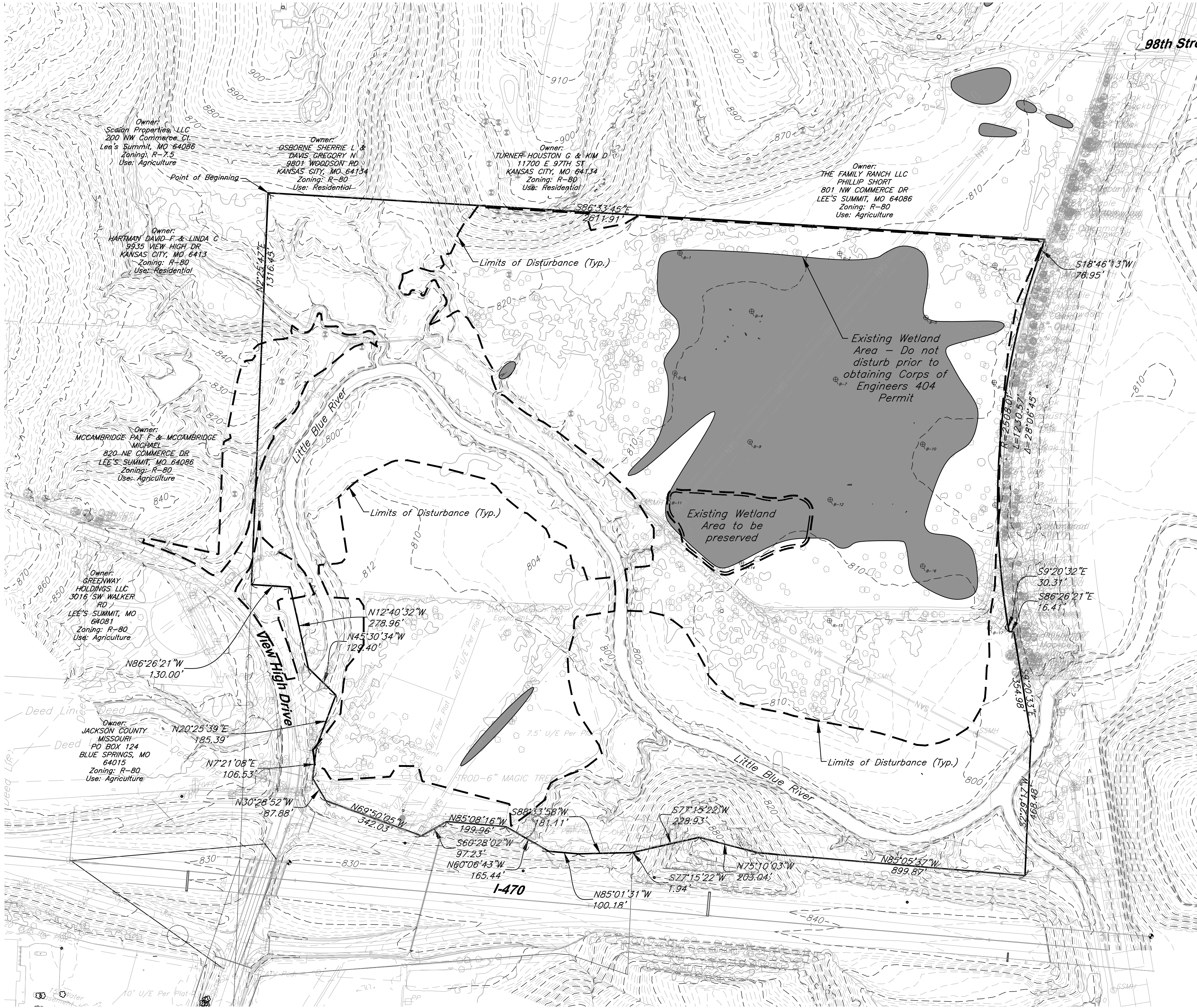
PREPARED & SUBMITTED BY:  
 GEORGE BUTLER ASSOCIATES, INC.  
 9801 RENNER BOULEVARD  
 LENEXA, KANSAS 66219  
 PHONE: 913-492-0400  
 FAX: 913-577-8312  
 CONTACT: BRAD BURTON P.E.  
 EMAIL: BBURTON@GBATEAM.COM

GBA  
 architects  
 engineers

9801 Renner Boulevard  
 Lenexa, Kansas 66219  
 913.492.0400  
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\* Permanent Stabilization will be considered stabilized when 100% of disturbed area is established with perennial vegetation with a density of 70%.

**EROSION & SEDIMENT CONTROL STAGING CHART** (See Sheets 3 thru 8)

Project Stage	BMP Plan Ref. No.	BMP Description	May Remove after Stage	Notes
A. Prior to Tree Clearing	1	Const. Entrance & Staging Area	C	
	2	Install Orange Construction Fence	C	
	3	Perimeter Silt Fence	C	
B. Tree Clearing	4	Stockpile Topsoil	C	Install silt fence a min. of 5' beyond toe of slope for all stockpile areas.
	5	Silt Fence	C	
	6	Ditch Check	C	
	7	Straw Wattles	C	Wattles to be kept on hand for perimeter control where needed.
C. Permanent Stabilization*	8	Seed & Mulch or Blanket or Sod		Erosion control blanket to be installed w/ seed. Check approved seeding dates and install temporary stabilization if out of seeding season. Install blanket according to manufacturer's instructions and stapling pattern.

**GENERAL NOTES:**

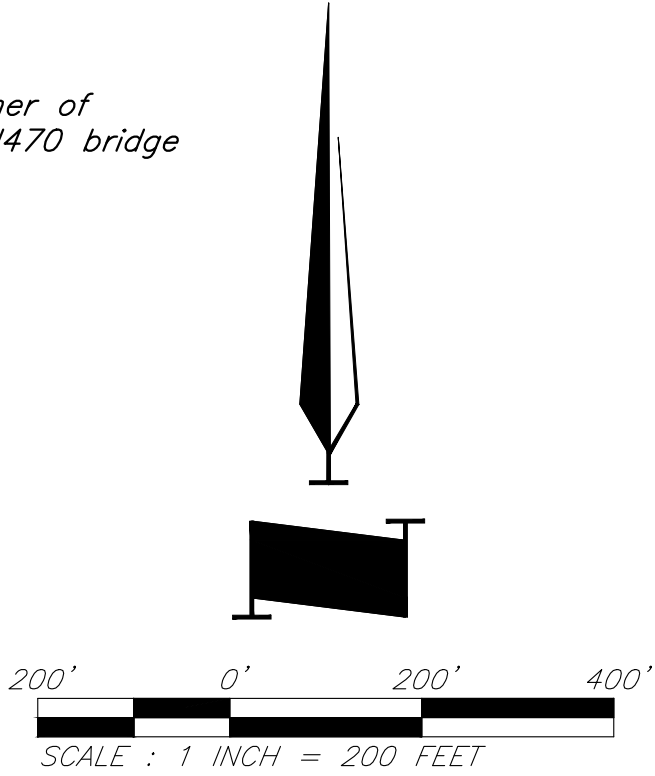
- The construction covered by these plans shall conform to the current "City Standards" and "Specifications" of the City Planning and Development and Public Works Departments, Lee's Summit, Missouri, except as noted.
- It shall be the Contractors responsibility to have one copy of these approved plans and the most current standards and specifications on the job site at all times
- The Contractor shall be responsible for obtaining all required permits, paying all fees and for otherwise complying with all applicable regulations governing the work.
- Construction Staking – Construction staking will be performed by the Engineer and paid for by the Owner, one time only. The Engineer will set those stakes necessary to control location and elevation of the items covered in these plans. It shall be the responsibility of the Contractor to arrange with the Engineer for the stakes needed to construct this project in accordance with these plans. It shall also be the responsibility of the Contractor to protect those stakes until they are no longer needed. The Contractor shall be responsible for payment to the Engineer for any necessary restaking or checking of elevations of damaged stakes. Restaking requests will be documented by the Engineer and agreed to with the Contractor prior to proceeding with the work.
- As a condition of final payment to the Contractor by the Owner, the Contractor shall furnish to the Owner a letter from the Engineer stating that all restaking and checking services have been paid for. If payment for restaking and checking has not been made to the Engineer, the Owner reserves the right to pay the Engineer from moneys payable to the Contractor.
- Prior to commencing work, the Contractor, by his own investigation, is to satisfy himself as to the surface and subsurface conditions to be encountered.
- Prior to commencement of work, the Contractor is to notify all those companies which have facilities in the vicinity of the construction to be performed.
- The Contractor is responsible for the protection of all property corners and section corners. Any property corners and/or section corners disturbed or damaged by construction activities shall be reset by a Registered Land Surveyor licensed in the State of Missouri, at the Contractor's expense.
- Demolition, clearing, and grubbing operations and disposal of all debris is to be performed by the Contractor in strict accordance with all local codes and ordinances.
- All waste material including trees and brush is to be disposed of off-site by the Contractor.
- The Contractor shall be responsible for the restoration of the right-of-way and for damaged improvements such as curbs, sidewalks, street light and traffic signal junction boxes, traffic signal loop lead ins, signal poles, etc. Damaged improvements shall be repaired in conformance with the latest City Standards and to the City's satisfaction.
- The locations of existing underground utilities are taken from utility company records. They are approximate and have not been field verified. The Contractor is to determine the exact location of all existing utilities before commencing work and agrees to be fully responsible for any and all damages which might result from his failure to do so.
- The Contractor is to coordinate the relocation of any utilities that may be encountered prior to the start of construction.
- All utility extensions and construction is to conform to the Standards and Specifications of the applicable utility companies.
- All manholes, catch basins, utility valves and meter pits are to be adjusted or rebuilt to grade as required.
- Contractor shall control downstream erosion and silting during construction.
- All traffic signage, barricades, drum, pavement markings, and other traffic control devices shall be in accordance with the latest edition of the Manual of Uniform Traffic Control Devices (M.U.T.C.D.).
- No work is allowed within the stream buffer area outside of the clearing limits shown on these drawing.

**PROJECT BENCHMARK:**

BM #11 – Chiseled "L" on top Northeast corner of concrete guardrail at the Northeast corner of I470 bridge spanning View High Drive.  
EL=833.80

**Total Disturbed Area:**

76.8 Acres



**General Layout**



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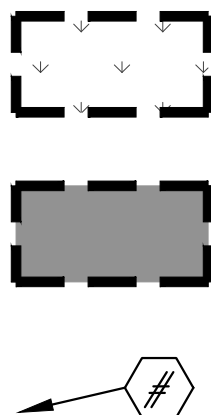
General Notes:

1. All earthwork shall conform to recommendations outlined in "Geotechnical Engineering Report" prepared by Terracon Consultants, Inc. dated July 27, 2016.
2. Trees marked for demolition shall be completely removed, including root balls.
3. Holes left by tree removal shall be filled in to maintain drainage across site.
4. Existing vegetation shall be removed, including topsoil / root zone (Depth Varies, 4.5" Typ.) as identified in the field by the Geotechnical Engineer. Topsoil shall be stockpiled at location indicated on plans. Additional borings are underway to determine average topsoil thickness across site. Total topsoil volume 46,500 CY based on 4.5" topsoil depth.

Note:

US Corps of Engineers 404 Permit has been applied for. Do not disturb ANY wetlands until Permit has been granted

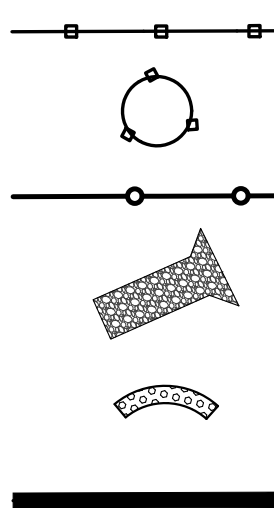
Legend



Limits of Tree Clearing

Limits of Existing Wetlands  
Do not disturb prior to obtaining US Corps of Engineers Section 404 Permit

BMP Plan Reference Number



Construction Fence for Tree Protection

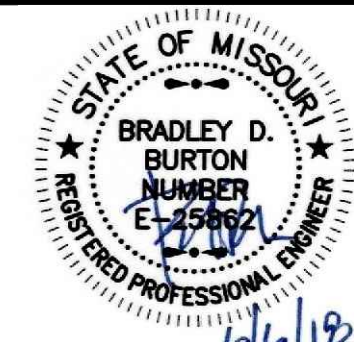
Tree to be saved

Sediment Fence

Temporary Construction Entrance

Rock Check Dam

Straw Wattles

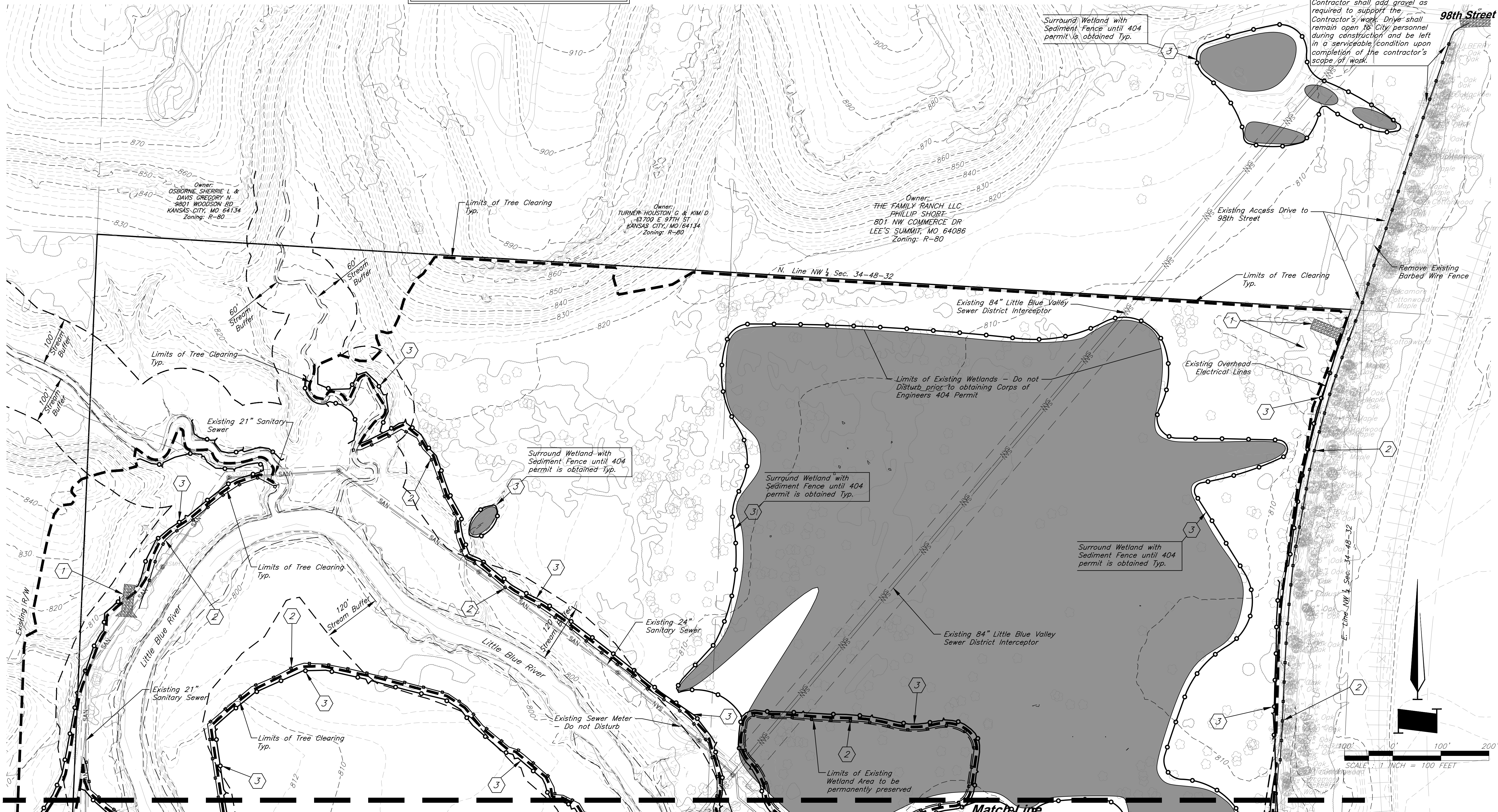


DATE:	11-1-16
DESIGN BY:	CEL
DRAWN BY:	DRV
PROJECT NO.:	12720
SHEET NO.:	3
TOTAL SHEETS:	10

Bradley D. Burton  
Professional Engineer  
License No. 25862

Tree Clearing Plans  
Paragon Star Development  
Lee's Summit, Missouri

NO.	DATE	REVISIONS	BY	APPROVED
6-6-18		City Comments		



Match-Line  
See Sht. 4

Pre-Construction Erosion Control Plan-Phase 1



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**Legend**

Limits of Tree Clearing

Limits of Existing Wetlands  
Do not disturb prior to  
obtaining US Corps of  
Engineers Section 404 Permit

BMP Plan Reference Number

Construction Fence for Tree Protection

Tree to be saved

Sediment Fence

Temporary Construction Entrance

Rock Check Dam

Straw Wattles

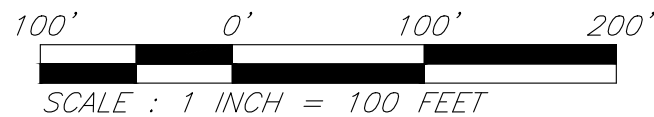
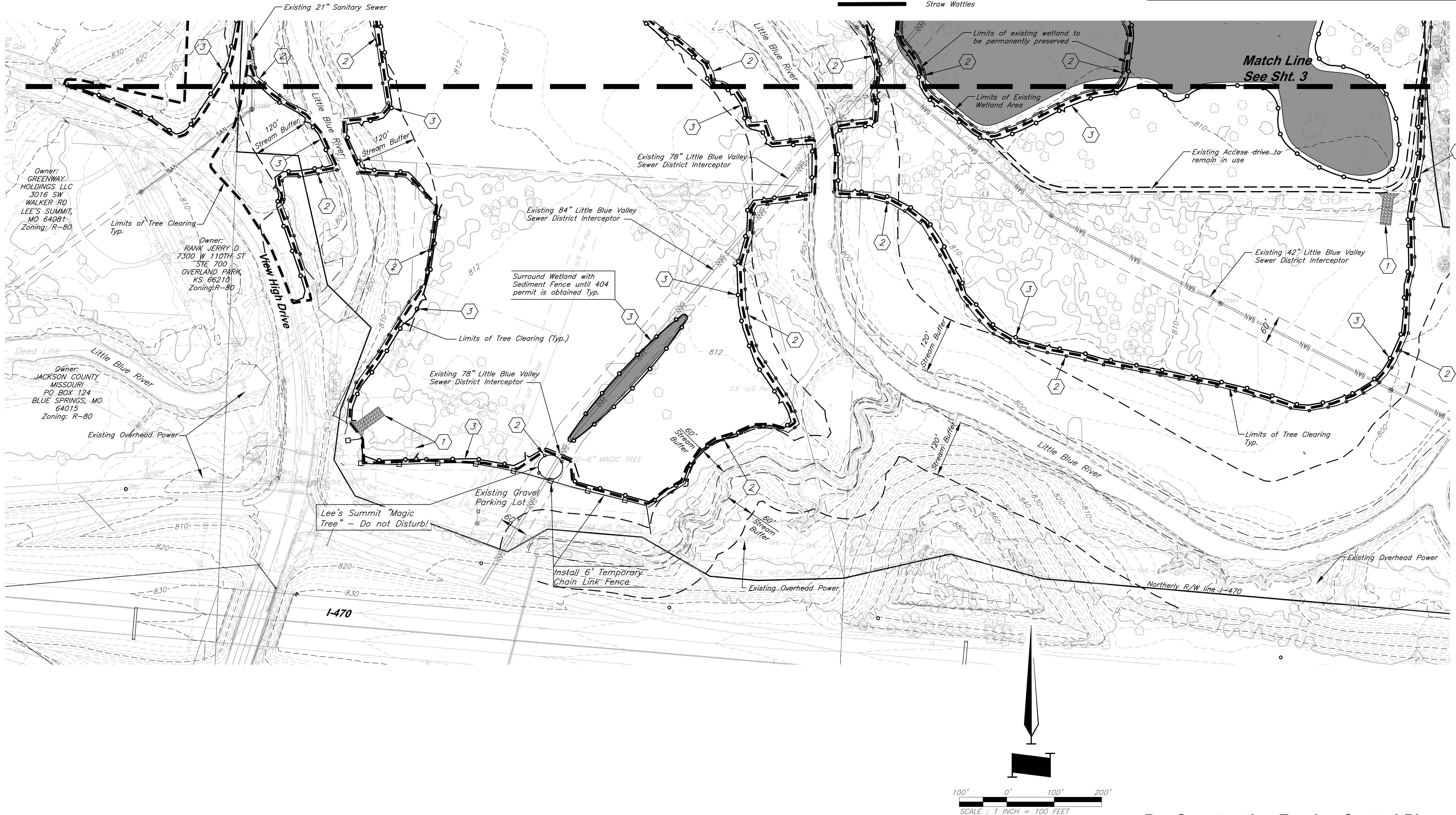
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architects  
engineers

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DATE: 11-1-16  
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DRAWN BY: DRV  
PROJECT NO.: 12720  
SHEET NO. 4  
TOTAL SHEETS 10

Tree Clearing Plans  
**Paragon Star Development**  
Lee's Summit, Missouri

NO.	DATE	REVISIONS	BY	APPROVED
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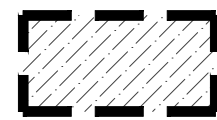


Pre-Construction Erosion Control-Phase 1




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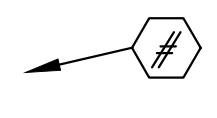
Note:  
US Corps of Engineers 404 Permit  
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granted



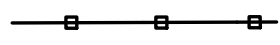
Limits of Tree Clearing




Limits of Existing Wetlands  
Do not disturb prior to  
obtaining US Corps of  
Engineers Section 404 Permit



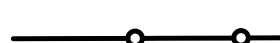
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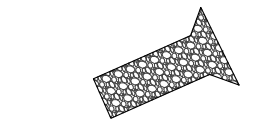
Construction Fence for Tree Protection




Tree to be saved




Sediment Fence




Temporary Construction Entrance



Rock Check Dam



Straw Wattles



BRADLEY D. BURTON  
PROFESSIONAL ENGINEER  
LICENSE NO. 25862

**GBA**  
architects  
engineers

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Lenexa, Kansas 66219  
913.492.0400  
www.gbateam.com

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DRAWN BY: DRV  
PROJECT NO.: 12720

SHEET NO.	TOTAL SHEETS
5	10

Tree Clearing Plans  
**Paragon Star Development**  
Lee's Summit, Missouri

NO.	DATE	REVISIONS	BY	APPROVED
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The plan shows a site with various features and boundaries. Key elements include:

- Stream Buffers:** 60' and 120' buffers along the Little Blue River and other streams.
- Wetlands:** Large areas of existing wetlands, some to be permanently preserved.
- Property Owners:** OSBORN, SHERIE L. & DAVIS GREGORY N.; TURNER, HOUSTON G. & KIM D.; THE FAMILY RANCH LLC.
- Infrastructure:** Existing 21" and 24" sanitary sewers, an 84" sewer district interceptor, and a sewer meter.
- Access:** Existing access drive to 98th Street.
- Boundaries:** N. Line NW 1/4 Sec. 34-48-32 and E. Line NW 1/4 Sec. 34-48-32.
- Topography:** Contour lines ranging from 810 to 910 feet.
- Vegetation:** Various tree types like Oak, Maple, Cottonwood, and Hickory are noted.
- Other Features:** A conc. marker for MCMO Transmis. Pole Sta. 166+77, and existing overhead electrical lines.

Match Line  
See Sht. 6

Erosion Control Plan-Phase 2



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Limits of Tree Clearing

Limits of Existing Wetlands  
Do not disturb prior to  
obtaining US Corps of  
Engineers Section 404 Permit

#

BMP Plan Reference Number

Construction Fence for Tree Protection

Tree to be saved

Sediment Fence

Temporary Construction Entrance

Rock Check Dam



Straw Wattles

Erosion Control-Phase 2



1. All disturbed area shall be stabilized upon completion of work. Stabilization shall consist of:

Species	Seeding Date Optimum and Acceptable											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Oats												
Cereals: Rye / Wheat												
Annual Ryegrass												

 Optimum Seeding Times  
 Acceptable Seeding Times

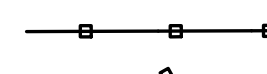
Species	Minimum Application Rates (pure live seed lbs. per acre)	Straw Mulch (tons per acre)
Oats	50	1.5 (w/ seed) - 2.25 (stand alone)
Cereals: Rye / Wheat	90/120	1.5 (w/ seed) - 2.25 (stand alone)
Annual Ryegrass	75	1.5 (w/ seed) - 2.25 (stand alone)

*See Stormwater Pollution Prevention Plan (SWPPP) for full seeding specifications*

*US Corps of Engineers 404 Permit  
has been applied for. Do not disturb  
ANY wetlands until Permit has been  
granted*



Limits of Existing Wetlands  
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 *Sediment Fence*

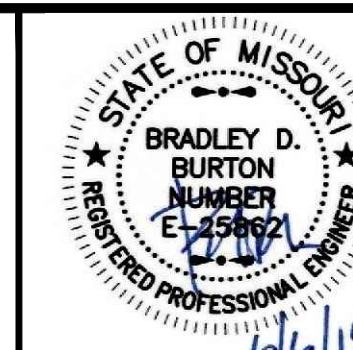
*Temporary Construction Entrance*



Rock Check Dam



### Straw Wattles



Bradley D. Burton  
Professional Engineer  
License No. 25862

NO.	DATE	
	6-6-18	

**GBA**  
architects  
engineers

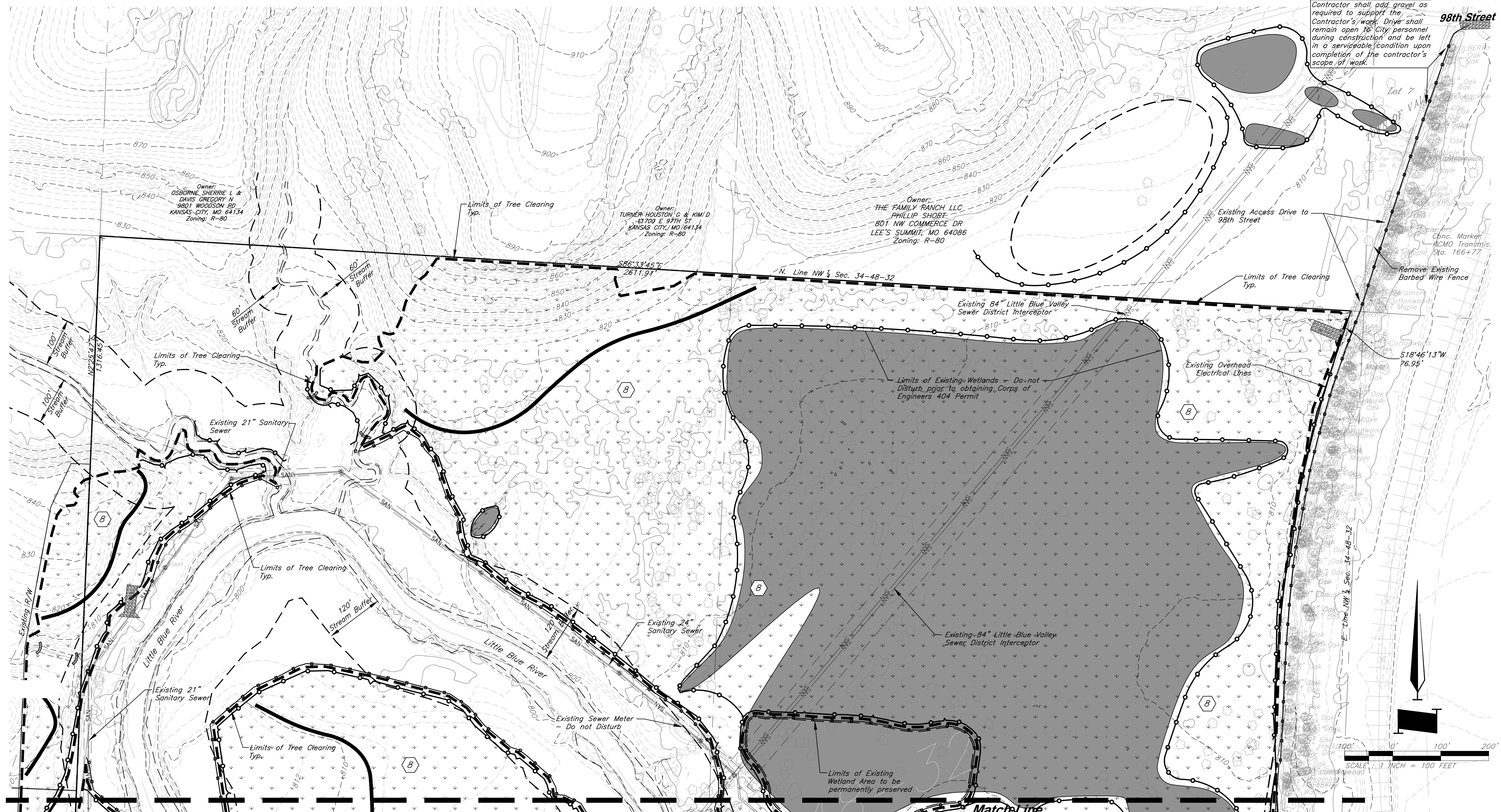
9801 Renner Boulevard  
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DESIGN BY: CEL	
DRAWN BY: DRV	
PROJECT NO.: 12720	
SHEET NO.	TOTAL SHEETS

<b>7</b>	<b>10</b>
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Tree Clearing Plans  
**Paragon Star Development**  
Lee's Summit, Missouri

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**Match-Line**  
**See Sht. 8**

### ***Erosion Control Plan-Phase 3***



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Permanent Seeding

Limits of Existing Wetlands  
Do not disturb prior to  
obtaining US Corps of  
Engineers Section 404 Permit

BMP Plan Reference Number

Construction Fence for Tree Protection

Tree to be saved

Sediment Fence

Temporary Construction Entrance

Rock Check Dam

Straw Wattles

STATE OF MISSOURI  
BRADLEY D. BURTON  
NUMBER  
E-15862  
REGISTERED PROFESSIONAL ENGINEER

6/6/18

Bradley D. Burton  
Professional Engineer  
License No. 25862

DATE: 11-1-16  
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DRAWN BY: DRV  
PROJECT NO.: 12720  
SHEET NO.: 8  
TOTAL SHEETS: 10

Tree Clearing Plans  
**Paragon Star Development**  
Lee's Summit, Missouri

NO. DATE

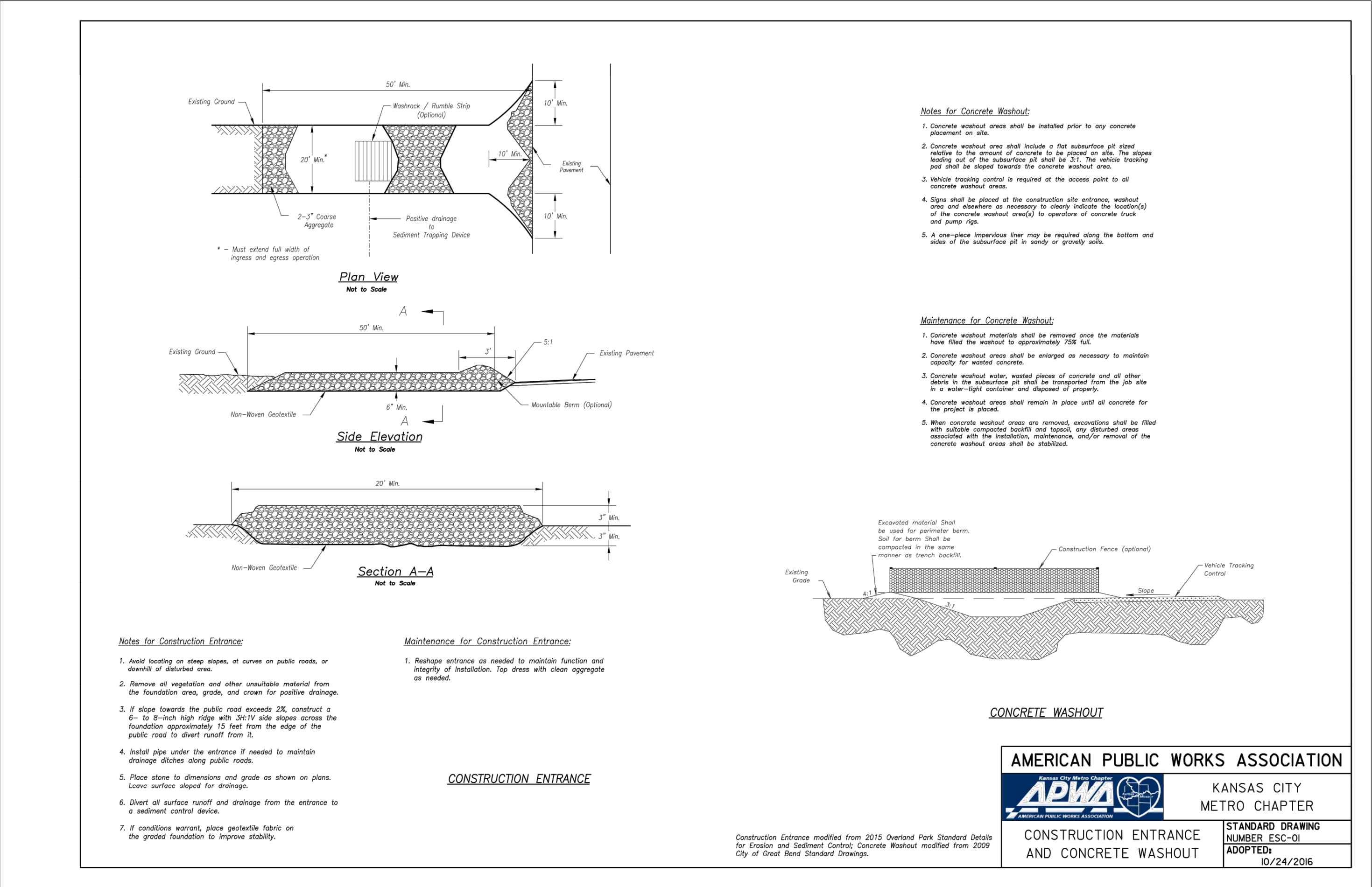
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Erosion Control-Phase 3





STATE OF MISSOURI  
BRADLEY D. BURTON  
NUMBER  
E-15862  
REGISTERED PROFESSIONAL ENGINEER

6418

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DATE: 11-1-16  
DESIGN BY: CEL  
DRAWN BY: DRV  
PROJECT NO.: 12720  
SHEET NO. 9  
TOTAL SHEETS 10

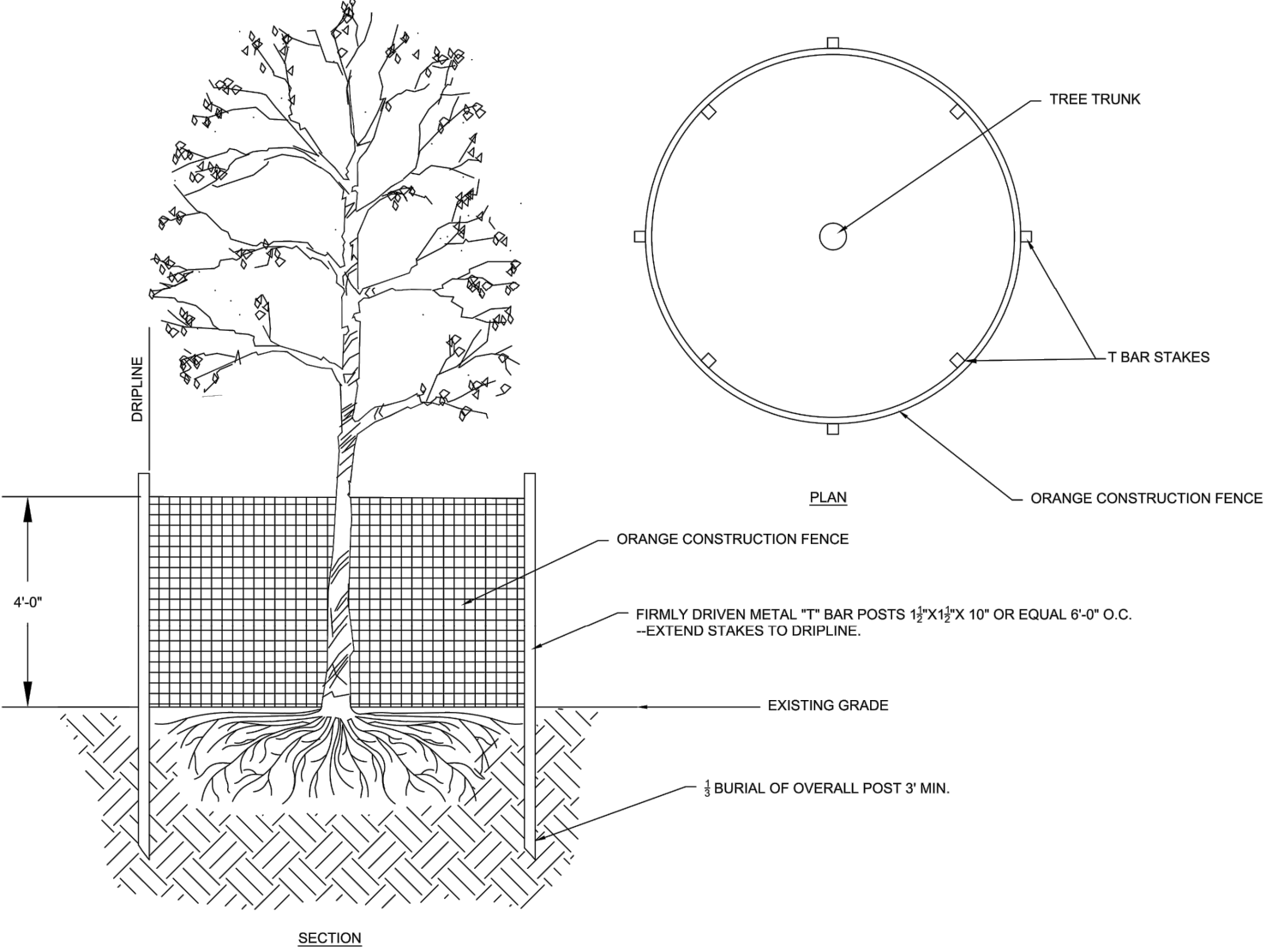
Bradley D. Burton  
Professional Engineer  
License No. 25862

Tree Clearing Plans  
**Paragon Star Development**  
Lee's Summit, Missouri

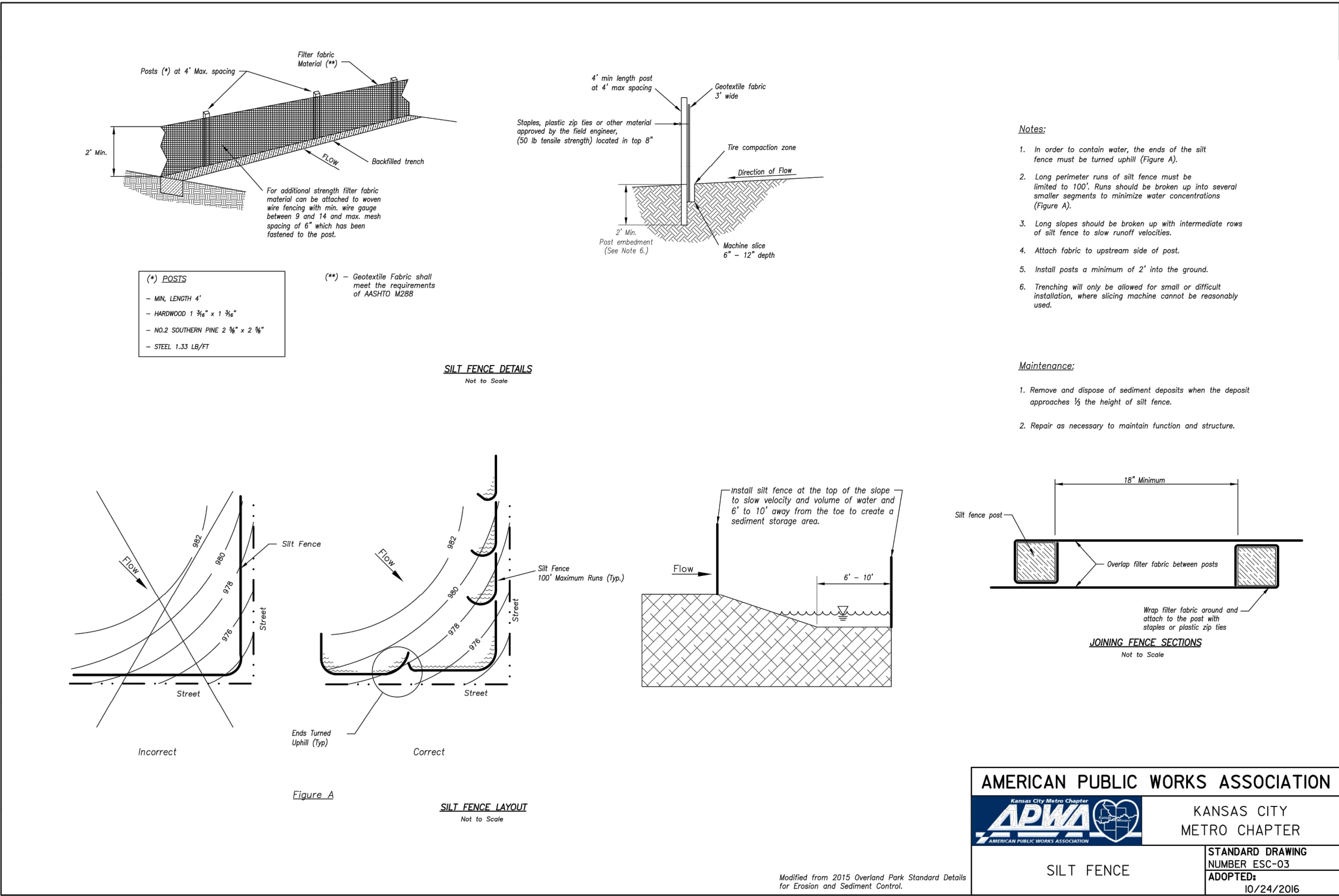
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6-6-18

REVISIONS  
City Comments

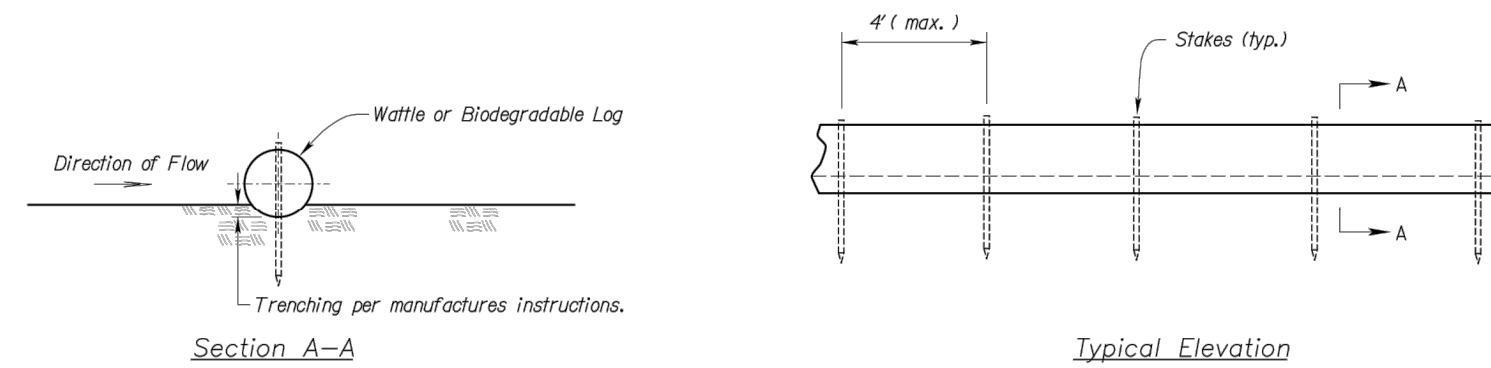
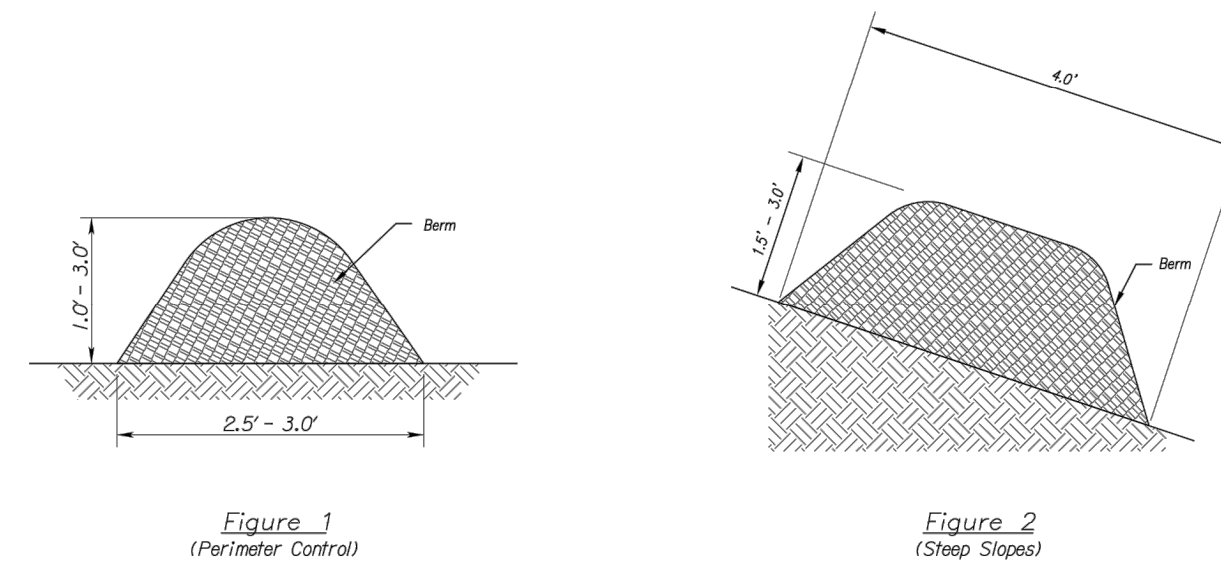
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Tree Protection Fencing Detail  
Not to Scale





WATTLES AND BIODEGRADABLE LOG

MULCH OR COMPOST FILTER BERMS

*NOTE:  
Mulch berm may be interchanged  
with silt fence.*

Modified from 2015 Overland Park Standard Details  
for Erosion and Sediment Control.

Notes for Wattles and Biodegradable Log Slope Protection:


1. The Slope barriers shall be placed along contour lines, with a connection turn at each end of the barrier. The maximum length of the slope barrier shall not exceed 250 feet, and the barrier ends need to be staggered.
2. Install wattles and biodegradable logs per manufacturer's instructions.
3. Spacing of stakes per manufacturer's instructions with 4' max. spacing. Length of stakes shall be a minimum of 2 times the diameter of the log with minimum of 24".

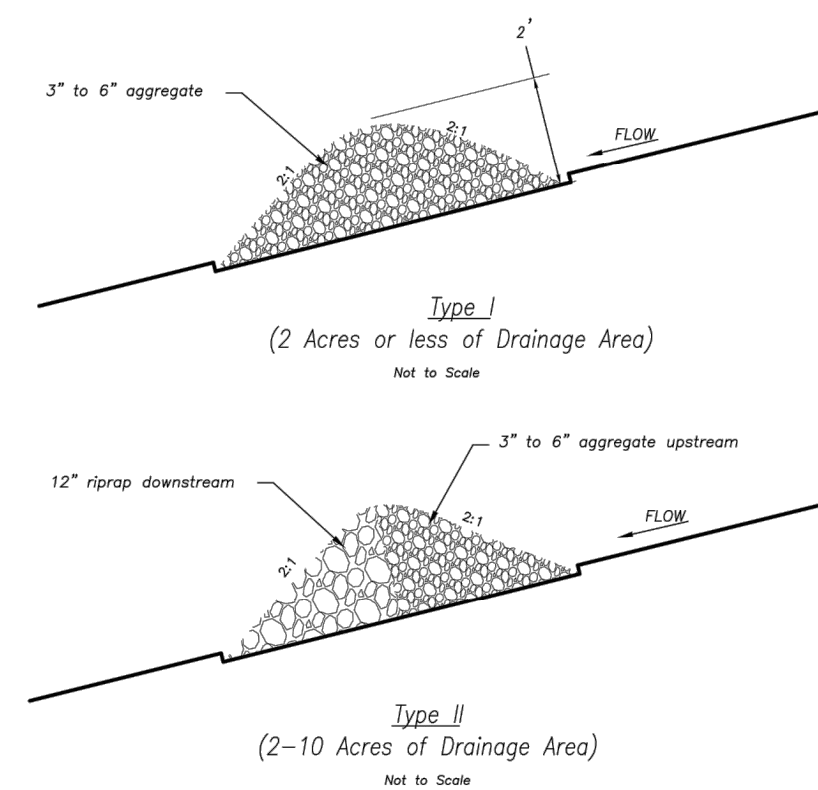
Notes for Mulch and Compost Filter Beam:

1. The sediment control berm shall be placed unimpacted in a window of locations shown on the plans or as directed by the engineer.
2. Parallel to the base of the slope, or around the perimeter of other affected areas, construct a 1 to 3 foot wide berm of compacted earth (see Figure 1).
3. For maximum water treatment ability, for steep slopes, construct a 1.5 to a 3 foot high trapezoidal berm that is a minimum of 1 foot wide at the top (see Figure 2).
4. In extreme conditions, or where specified by the engineer, the berm shall be planted with vegetation.
5. The engineer will specify berm requirements.
6. If the berm is to be left as permanent or part of the natural landscape, the compacted berm may be seeded with native grasses for permanent stabilization.
7. Do not use compost or wood mulch berms in any runoff channels or concentrated flow areas.
8. Wood mulch shall consist of tree and shrub debris and be applied to areas of erosion control.
9. Seed shall include grading and shall be ground or screened material meeting the following criteria:
  - a. Seed shall be applied at a minimum of 10 lbs. per bushel or greater.
  - b. Seed shall be applied with a minimum width of 2" and a maximum length of 10".

Maintenance for Mulch and Compost Filter Beam:

1. Berm shall be reshaped and material added as necessary to maintain function and dimensions.
2. Breaches in the berm shall be repaired promptly.

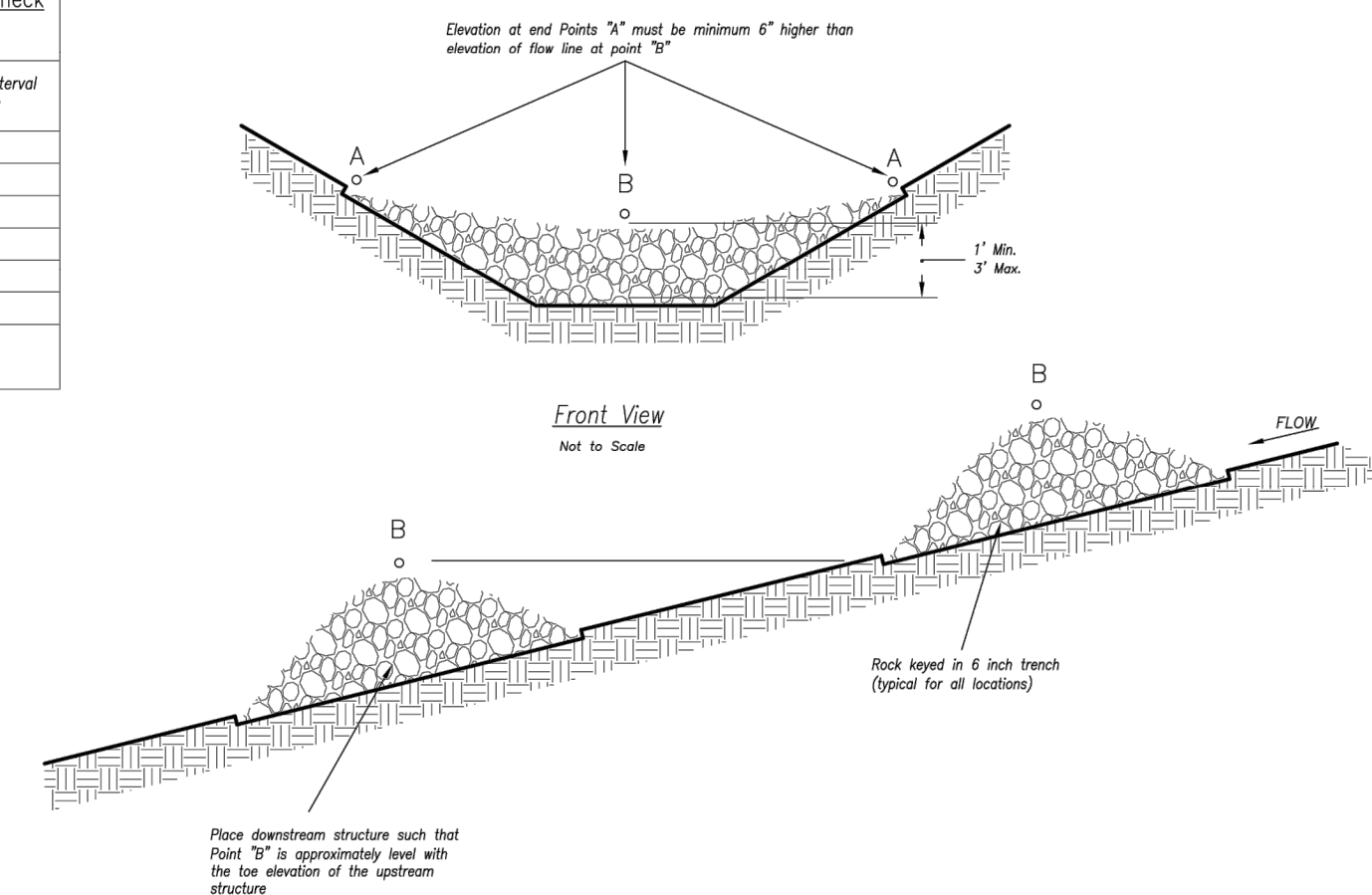
<b>AMERICAN PUBLIC WORKS ASSOCIATION</b> 		<b>KANSAS CITY METRO CHAPTER</b>
<b>WATTLE/Biodegradable LOG AND MULCH/COMPOST FILTER BERM</b>		<b>STANDARD DRAWING NUMBER ESC-04 ADOPTED:</b> 10/24/2016

ROCK DITCH CHECK

Temporary Rock Ditch Checks Spacing	
Ditch Centerline Slope ( % )	Spacing Interval (Feet)
5.0	60
6.0	50
7.0	43
8.0	36
9.0	33
10.0	29

*Note: Use this spacing only for Rock Ditch Checks.*

Note: Use this spacing on  
Rock Ditch Checks.



Spacing Between Check Dams (all types)

Not to Scale


Notes:



1. Rock check dams shall be used only for drainage areas less than 10 acres unless approved by the City Engineer.
2. Use rock checks only in situations where the ditch slope exceeds 6%.

Maintenance:

1. Remove and dispose of sediment deposits when the deposit approaches  $\frac{1}{2}$  the height of the ditch check.
2. Replace and reshape as necessary to maintain function and integrity of installation.

Modified from 2015 Overland Park Standard Details  
for Erosion and Sediment Control.

<b>AMERICAN PUBLIC WORKS ASSOCIATION</b> 		<b>KANSAS CITY METRO CHAPTER</b>
<b>ROCK DITCH CHECKS</b>		<b>STANDARD DRAWING NUMBER ESC-10 ADOPTED: 10/24/2016</b>

	 <p>9801 Renner Boulevard Lenexa, Kansas 66219 913-492-0400 www.gbateam.com</p>	DATE: 11-1-16	
		DESIGN BY: CEL	
		DRAWN BY: DRV	
Bradley D. Burton Professional Engineer License No. 25862	<i>Tree Clearing Plans</i> <b>Paragon Star Development</b> <i>Lee's Summit, Missouri</i>	PROJECT NO.: 12720	
		SHEET NO. <div style="font-size: 2em; font-weight: bold;">10</div>	TOTAL SHEETS <div style="font-size: 2em; font-weight: bold;">10</div>
NO. DATE	REVISIONS	BY APPROVED	
6-6-18	City Comments		