



October 1, 2023

Walter Lewis  
The Extra Garage Self Storage  
25 Bob Horton Road  
Apex, North Carolina 27523  
P: 919-303-1855  
E: [wlewis1@nc.rr.com](mailto:wlewis1@nc.rr.com)

Subject: **Trip Generation Letter – The Extra Garage IV**

Dear Mr. Lewis,

This letter provides a discussion of the roadway capacity along Beaver Creek Road and an estimate of the trip generation and discussion of expected traffic patterns for the proposed development (The Extra Garage IV), which will be located on the west side of Beaver Creek Road, north of Tody Goodwin Road in Chatham County, North Carolina. The proposed development is anticipated to include an approximate 95,300 square foot (s.f.) mini-warehouse providing covered storage for boats, recreational vehicles, and other vehicles. A copy of the site plan is attached.

The surrounding area is primarily wooded and residential. The proposed mini-warehouse is located approximately one mile north of the entrance to a popular boat ramp on Jordan Lake along Beaver Creek Road. The proposed mini-warehouse will be located directly adjacent to a similar storage facility under the same ownership, which is located west of Beaver Creek Road and south of Tody Goodwin Road. The primary use of the existing storage facility is covered boat and RV storage. It is expected that the primary use of the proposed storage facility will also be boat and RV storage due to the proximity to the Ebenezer Church boat ramp (on Jordan Lake) and the Popular Point campground and boat ramp. The entrance to the campground is less than one mile north of the facility on Beaver Creek Road. The facility will reduce towing distances for campers and RV's due to the proximity to the campground.

It should be noted that the proposed storage facility is anticipated to provide an ethanol fueling station that will remove the need for the majority of boaters to take their boat elsewhere for fueling. The addition of a boat storage facility at this location will ultimately reduce the number of boats hitched to vehicles on the adjacent streets, in particular those turning left from US 64 onto Beaver Creek Road and those traveling along Beaver Creek Road. Additionally, the lake experiences the most boaters during warm weather months. The traffic to and from the boat storage facility and the Ebenezer Church boat ramp will be significantly lower during cold weather months.

### Capacity

Beaver Creek Road is a two-lane roadway running in a north-south direction with a speed limit of 55 miles per hour (mph) within the study area. Based on the most recent data (2021) from NCDOT, Beaver Creek Road had an average annual daily traffic (AADT) volume of approximately 4,400 vehicles per day (vpd) south of US 64.

A rural two lane undivided arterial with no turning lanes generally has a daily capacity of approximately 10,000 vehicles. Based on the most recent NCDOT AADT data, Beaver Creek Road operates well below capacity.

**Trip Generation**

To determine the trip generation for the proposed boat storage, two alternatives were considered in the analysis. Alternative 1, shown in Table 1, uses the ITE *Trip Generation Manual*, 11<sup>th</sup> Edition to determine the weekday daily, Saturday daily, weekday PM peak hour, and Saturday peak hour trips. Alternative 2 is based on the actual data collected at the existing boat storage facility adjacent to the proposed boat storage facility. The existing boat storage facility is approximately 55,000 square feet. The trip generation volumes were determined based on traffic counts conducted at the entrance of the existing boat storage, in August of 2016 by RKA during a typical weekday and Saturday.

**Table 1: ITE Trip Generation for Proposed Development (Alternative 1)**

Land Use (ITE Code)	Size	Weekday Daily	Weekday PM Peak Hour Trips			Saturday Daily	Saturday Peak Hour Trips		
			Enter	Exit	Total		Enter	Exit	Total
Mini-Warehouse (151)	95,300 s.f.	138	9	8	17	128	10	6	16

For Alternative 2, the trip generation was calculated according to the rates determined based on data collected at a similar facility (The Extra Garage II) in Chatham County. This 55,000 s.f. facility was counted during typical summer weekday and summer Saturday conditions. The data collected at this facility is provided in the attachments. The daily rate calculations applied to the proposed facility are as follows:

Weekday Calculations

$6 \text{ daily trips} / 55,000 \text{ s.f.} = 0.109 \text{ daily trips} / 1,000 \text{ s.f.}$

$1 \text{ weekday PM trip} / 55,000 \text{ s.f.} = 0.018 \text{ weekday PM trips} / 1,000 \text{ s.f.}$

$0.109 \text{ daily trips} / 1,000 \text{ s.f.} * 95,300 \text{ s.f.} = 11 \text{ Weekday Daily Trips}$

$0.018 \text{ weekday PM trips} / 1,000 \text{ s.f.} * 95,300 \text{ s.f.} = 2 \text{ Weekday PM Peak Hour Trips}$

Saturday Calculations

$32 \text{ trips} / 55,000 \text{ s.f.} = 0.582 \text{ trips} / 1,000 \text{ s.f.}$

$6 \text{ Saturday trips} / 55,000 \text{ s.f.} = 0.109 \text{ Saturday trips} / 1,000 \text{ s.f.}$

$0.582 \text{ trips} / 1,000 \text{ s.f.} * 95,300 \text{ s.f.} = 56 \text{ Saturday Daily Trips}$

$0.109 \text{ Saturday trips} / 1,000 \text{ s.f.} * 95,300 \text{ s.f.} = 11 \text{ Saturday Peak Hour Trips}$

**Table 2: Peak Hour Traffic for Proposed Boat & RV Storage Using Counted Rates (Alternative 2)**

Land Use	Size	Weekday Daily	Weekday PM Peak Hour Trips			Saturday Daily	Saturday Peak Hour Trips		
			Enter	Exit	Total		Enter	Exit	Total
Boat Storage	95,300 s.f.	11	--*	--*	2	56	--*	--*	11

\*Directional distribution is not available for counts conducted.

Table 2, above, provides the trip generation utilizing the count data completed at The Extra Garage II and applied to the proposed facility. Based on this calculation methodology, the proposed 95,300 s.f. facility is

expected to generate 11 weekday daily trips and 56 Saturday daily trips during typical summer conditions. It is worth noting, during October through April, the facility is expected to generate fewer trips.

### **Findings and Summary**

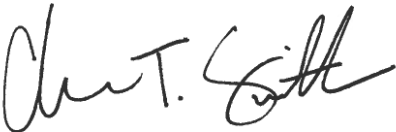
As shown in the tables above, based on the most conservative method, the proposed development is not expected to produce more than 140 weekday daily trips, with 17 total trips (9 entering and 8 exiting) during the weekday PM peak hour and no more than 130 Saturday daily trips, with 16 total trips (10 entering and 6 exiting) during the Saturday peak hour. Based on the peak hour trip generation totals, turn lanes would not be warranted at the proposed access points on Beaver Creek Road.

While the traffic added to Beaver Creek Road is not anticipated to be significant, additional safety measures on site of the proposed development have been taken into consideration to maximize the safety of both traffic visiting the development as well as through traffic on Beaver Creek Road. Proposed on-site are extra wide driveways as well as approximately 70 feet of internal protected stem (distance between the right-of-way line to the proposed gate) that should provide sufficient storage to house a vehicle towing a boat or RV that is visiting the facility and remove it fully from Beaver Creek Road.

As mentioned previously, the proposed boat and RV storage facility is anticipated to provide an ethanol fueling station that will remove the need for the majority of boaters to take their boats elsewhere for fueling, ultimately reducing the number of boats hitched to vehicles heading to/from US 64; therefore, maximizing safety of all motorists in and around the development.

Based on the results of this trip generation study, the proposed covered boat and RV storage facility is not expected to create significant traffic issues on the adjacent roadway network.

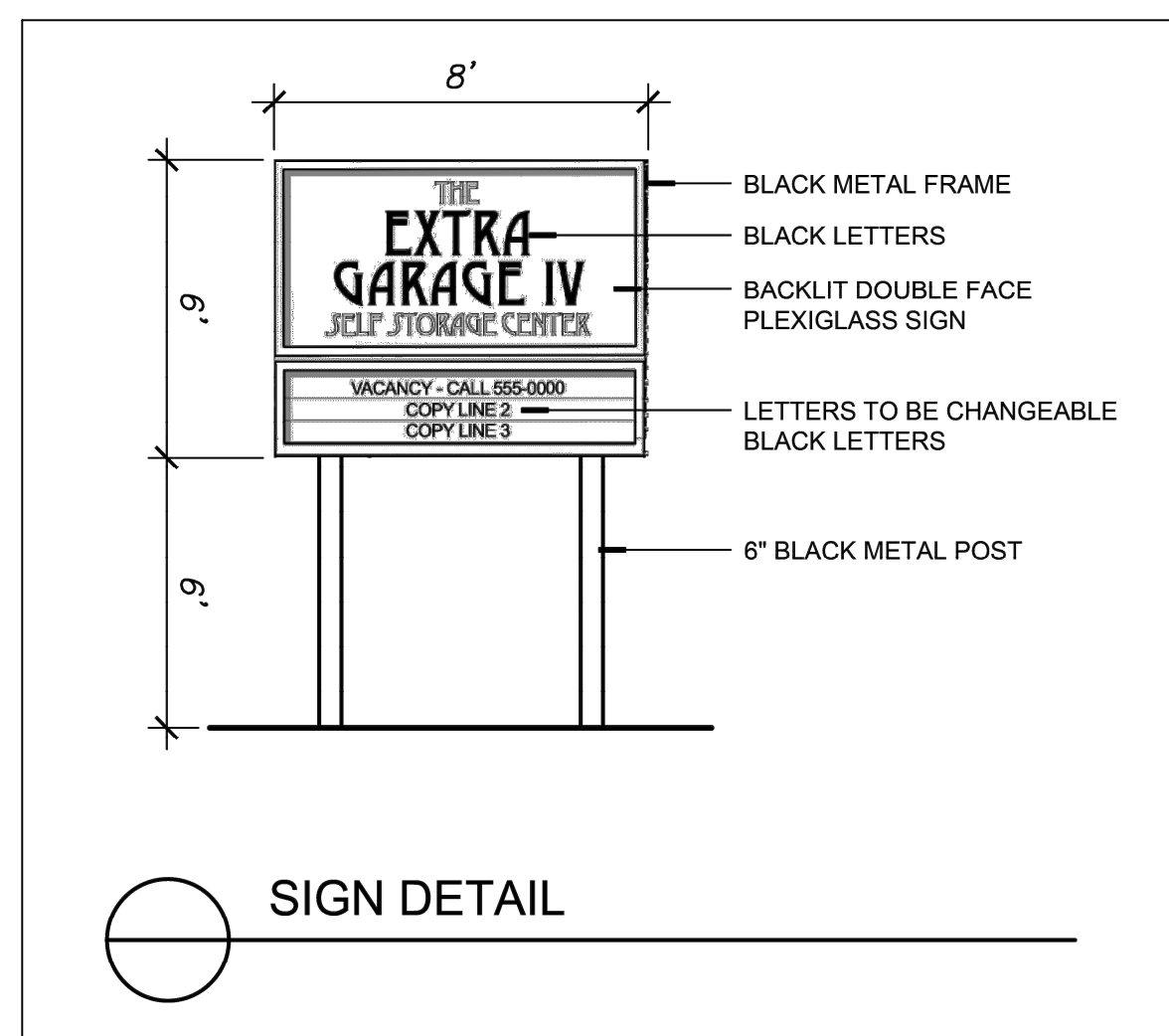
If there are any questions regarding the above information, please let me know.



Chase Smith, PE  
*Infrastructure Consulting Services, Inc.*  
*dba*

***Ramey Kemp Associates***

License #F-1489



**SITE DATA**

EXISTING ZONING	R-1
PROPOSED ZONING	CD-NB (NEIGHBORHOOD BUSINESS)
CHATHAM COUNTY PARCEL #S (AKPAR)	88772, 17696
CHATHAM COUNTY PINS	9791-78-9148, 9791-87-4664
USE: BUILDING WILL BE USED FOR STORAGE OF RECREATIONAL VEHICLES AND BOATS	
TOTAL STORAGE UNITS PROPOSED	198 UNITS
TOTAL SITE AREA	894,722 S.F. (20.54 AC.)
AREA IN EXISTING R.O.W.	62,290 S.F. (1.43 AC.)
NET SITE AREA	832,432 S.F. (19.11 AC.)
IMPERVIOUS SURFACE ALLOWED	199,783.6 S.F. (24%)
IMPERVIOUS SURFACE PROPOSED	
BUILDING AREA	93,564 S.F.
GRAVEL AREA	98,810 S.F.
PAVED DRIVEWAYS	4,136 S.F.
40x50 SPECIAL STORAGE	2,000 S.F.
TOTAL	198,510 S.F. (23.8)

BASED ON PLANS DATED 02/05/2016, PREVIOUSLY PROVIDED BY:



**JERRY TURNER & ASSOCIATES, INC.**

*Landscape Architecture  
Land Planning  
Environmental Design*

905 Jones Franklin Road  
Raleigh, North Carolina 27606  
(919) 851-7150 fax (919) 851-7547

277 S.E. 5th Avenue  
Delray Beach, Florida 33483  
(561) 276-0453 fax (561) 272-7593

CHANGES MADE TO REFLECT EXISTING VEGETATIVE CONDITIONS.

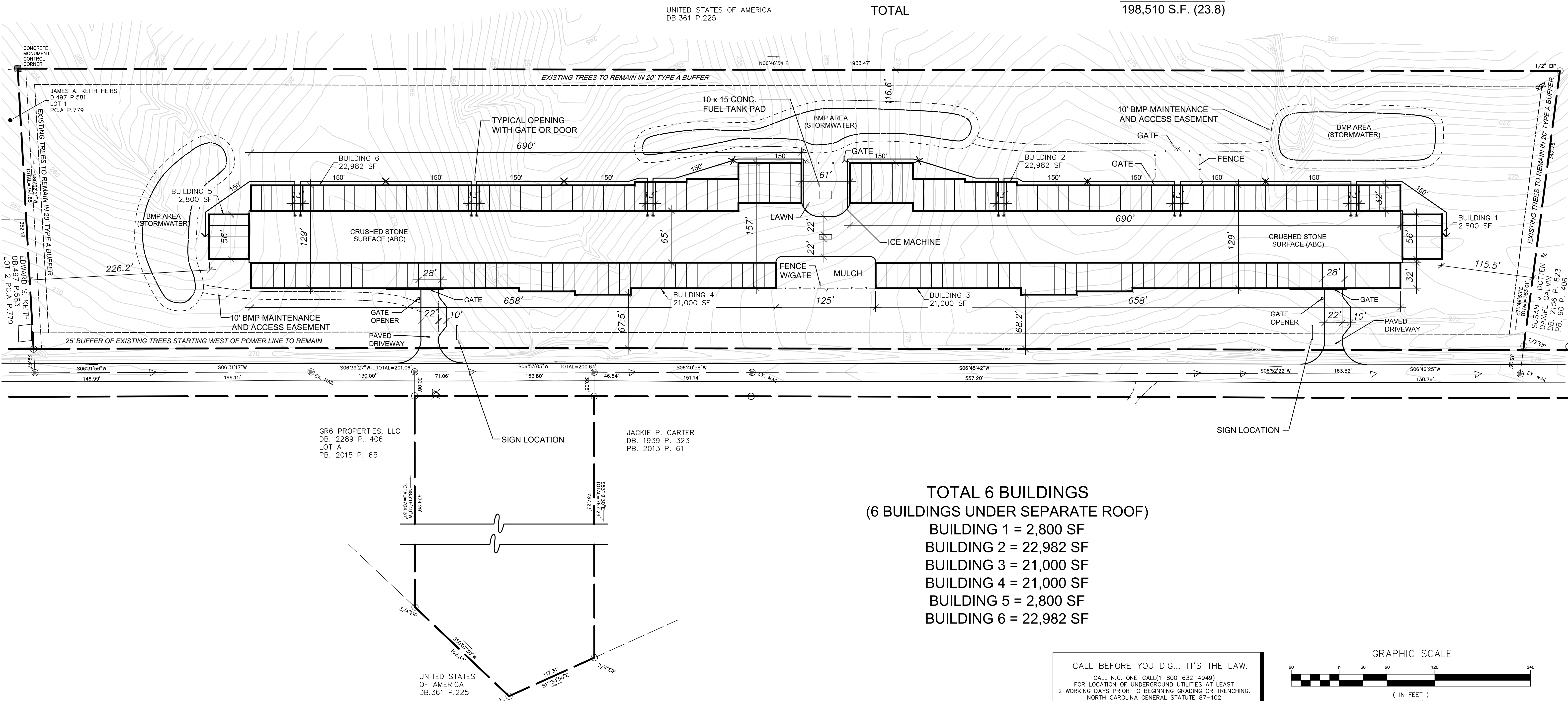
**EarthCentric Engineering, Inc.**  
Licence # C-2638



204 W. Clay Street  
Mebane, NC 27302  
Phone: (919) 563-9041  
Fax: (919) 304-3234  
E-Mail: Phil.Koeh@EarthCentric.com

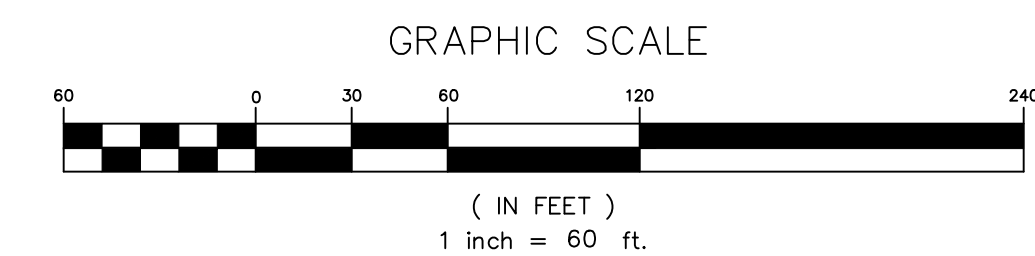
PRINCIPAL ENGINEER  
PHIL KOEH - NCPE #22634

**EXTRA GARAGE IV**  
CHATHAM COUNTY, NORTH CAROLINA  
SITE PLAN



**TOTAL 6 BUILDINGS**  
(6 BUILDINGS UNDER SEPARATE ROOF)  
BUILDING 1 = 2,800 SF  
BUILDING 2 = 22,982 SF  
BUILDING 3 = 21,000 SF  
BUILDING 4 = 21,000 SF  
BUILDING 5 = 2,800 SF  
BUILDING 6 = 22,982 SF

CALL BEFORE YOU DIG... IT'S THE LAW.  
CALL N.C. ONE-CALL(1-800-632-4949)  
FOR LOCATION OF UNDERGROUND UTILITIES AT LEAST  
2 WORKING DAYS PRIOR TO BEGINNING GRADING OR TRENCHING.  
NORTH CAROLINA GENERAL STATUTE 87-102



REV.	DATE	DESCRIPTION	BY
1	02/28/16	PER INITIAL REVIEW	SCS
2	12/06/22	LANDSCAPE PLAN MOD.	SCS
3	12/19/22	LANDSCAPE PLAN MOD.	SCS
4	10/01/23	SITE PLAN RE-SUBMITTAL	SCS

DATE:	FEBRUARY 4, 2016
HORIZONTAL SCALE:	1"=60'
VERTICAL SCALE:	N/A
PROJECT MANAGER:	CPK
DRAWN BY:	SCS
PROJECT NO.:	15-022
DRAWING NAME:	15-022 WORKING

THIS DRAWING AND THE DESIGN HEREON ARE THE PROPERTY OF EarthCentric Engineering, Inc. THE INFORMATION ON THIS DRAWING IS NOT FOR USE ON ANY OTHER SITE OR PROJECT. THE REPRODUCTION OR OTHER USE OF THIS DRAWING IN WHOLE OR IN PART, WITHOUT WRITTEN CONSENT OF EarthCentric Engineering, Inc. IS PROHIBITED.

COPYRIGHT 2023 EarthCentric Engineering, Inc.

SHEET NO.

**S1**