

NORTH CAROLINA STATE UNIVERSITY

Greek Village Master Plan Update



PREPARED FOR



TABLE OF CONTENTS

- 1. Introduction
- 2. Project Description
- 3. Site Information
- 4. Master Plan Concepts and Assumptions
- 5. Existing Conditions Survey
- 6. Stormwater treatment Update
- 7. Electrical / Telecom Narrative
- 8. Phase 2 selected alternatives
- 9. Final Master Plan
- 10. Meeting Minutes

APPENDIX

- A. Overall Master Plan
- B. Existing Conditions Surveys
- C. Fiber Optic Ductbank map – Pot hole locations
- D. Overall Parking Graphic
- E. Overall Stormwater Strategy
- F. Phase I Grading Plan
- G. Phase I Utility Plan
- H. Phase II Grading Plan
- I. Phase II Utility Plan
- J. Phase III Grading Plan
- K. Phase III Utility Plan
- L. Phase IV Grading Plan
- M. Phase IV Utility Plan
- N. Phase V Grading Plan
- O. Phase V Utility Plan
- P. Telecom Master Plan
- Q. Electrical Master Plans
- R. Amenities Plan

Interactive PDF provided with electronic submittal



Greek Village Master Plan - 2006

Introduction

North Carolina State University started the process to transform the existing Greek Court into a new Greek Village in 2003. NCSU has provided on campus housing for the fraternities and sororities since 1964. The existing houses and development has existed as it is currently built since 1964. In October of 2006 the Greek Court Redevelopment Task Force released their Final Report & Recommendations which finalized into the Greek Village Master Plan. The committee found that an overall redevelopment of Greek Court, including new chapter houses, is needed to create a vibrant hub of fraternity and sorority life. A new Greek Court will provide opportunities for living, learning, and social development in the heart of campus.

The task force worked with the University Architect and external consultants to create a long term redevelopment plan for Greek Court. The redevelopment (at that time) was planned to be completed in four phases, each designed to create building lots for individual houses and common amenities. The original plan includes a total of 20 building lots with two townhouse buildings for smaller organizations. The project requires installation of new infrastructure, providing new roadways, paths, utilities, and connections to campus and the City of Raleigh. The existing chapter houses will be demolished as the development occurs with new chapter houses funded by individual Greek organizations to be built on the lots.

The master plan developed in 2006 was later amended in 2008 during Design Development and is represented here. This master plan incorporated comments from the University, Greek Life, and design changes that arose from the Design Development phase. Phase one of the development was completed in 2010 with four house lots completed and two new chapter houses built and occupied as of March 2014.

This update to the master plan includes re-evaluation of the master plan assumption as completed by NC State in 2006 and by Stewart in its verification report in 2007. Part of that re-evaluation looked at the phasing and providing an updated overall master plan. The updated master plan includes the latest assumptions for schedule and house lot delivery. The proposed future phases as indicated in Appendix A were validated with minor revision completed in response to meetings with University Staff and Greek Life. The completed master plan incorporates changes to the phase II and IV layouts. These changes were in response to the fiber optic line which was located by the university and found to be in conflict with the future buildings. The master plan also updated the Phase II layout to add parking to the entire site. This new master plan increases the parking by approximately 50 spaces to 990 spaces for the Greek Village development as a whole.



Updated Greek Village Master Plan – 2008

Project Description

The Greek Village Master Plan as developed through the 2006 Greek Court Redevelopment Task Force and later amended during the design development phase in 2008 was re-evaluated for this master plan update. This update looked at lessons learned from the phase I development, other housing needs, and the need to incorporate or modify assumptions that were used to develop the original master plan. The scope of this master planning update was to verify that the currently planned 20 house lots are viable and to determine if a change in the phasing was desired by Greek Life, specifically to look at phase II and determine if additional house lots could be developed. The Master Plan and Phase II re-evaluation includes an update to the existing development assumptions including parking, storm water, utility phasing, grading, electrical, and telecom distribution. The overall master plan was modified slightly during the meetings with University staff and Greek Life and the grading and utility phasing was completed for each phase. The University and the team looked into various phase II modifications that were in the end deemed not feasible for the timeline and area(s) available.

Site Information

Greek Court is located on North Carolina State University property near the intersection of Varsity Drive and Western Boulevard. The property consists of approximately 50 acres and includes an access from Dan Allen Drive off of Western Blvd and an access drive off of Varsity Drive and south along Leadership drive to Varsity Drive. The first phase of the Greek Village redevelopment was completed in 2010 and includes 4 house lots and part of the Greek Village Dr. loop.

The proposed future phases 2 – 5 as indicated here and provided in Appendix A were validated in meetings with University Staff and Greek Life. The revisions include shifting house 11 from Phase 4 to phase 3, the additional analysis of the grading to clearly identify potential walkout basement houses, and moving the Future Community Center into it’s own 6th phase. In addition further analysis of the utilities and grading by phase was completed to provide a more clear direction in regards to temporary utility connections.

The electrical and telecommunication network was reviewed and a concept plan for both was developed through coordinated with NC State Utilities and Engineering group and the Communication Technology group. The phasing and temporary services is shown in Appendix G & H, Telecom Distribution Site Plan and Electrical Distribution Site Plan.



Master Plan Concepts and Assumptions:

The original vision for a Revitalized Greek Court to become a “Village” included creation of space for more active, dynamic interactions, increased traffic and visibility to help the University community to be aware of Greek Village and the activities held there. The Greek Village concept included amenities such as recreational fields, outdoor gathering spaces, and pedestrian connectivity with the rest of campus. The Greek Village is to become the true center of the NC State Greek Community, with housing options that are attractive to all facets of the community.

Program elements and assumptions reviewed in this master plan are indicated below and identified to the right. The 2006/2007 program elements were generated during the Design Development validation of the master plan. The table below summarizes the some of the findings behind the master plan.

Item	Summary of Program element changes
Buildings	20 individual chapter house lots 17 potential walk out basement lots
Parking	PROVIDED – 954 (including on-street parking)
Storm water	Impervious changed to 10,000 sf per individual chapter house lot AND roadways do NOT require treatment
Multi-unit Buildings	107 Apartment /144 Townhouse
Electrical	Electrical power will be provided by NC State Power
Telecom Fiber line	Fiber optic main through development location verified and shown on plan. (see Appendix C and narrative below)

Fiber Optic ductbank conflicts:

NC State engaged TWT to survey and conduct sub-surface utility exploration with test holes to verify the location of the main north – south fiber optic ductbank. The location shown in the updated master plan indicates proximity to a couple houses which may require mitigation or shifting of the actual house pad within the lot. The line is also further into the townhouse building than originally shown on the existing conditions survey. Further coordination with the university is needed during the design phase to identify a mitigation plan to avoid the major fiber optic ductbank. The design team and university will need to create clearance requirements for the future houses (both vertically and horizontally) to assist in the design of the infrastructure development and also the individual houses.

2006 / 2007 Master Plan Program Elements	2014 Master Plan update / differences
The "Front Door" will be on Varsity Drive which is aligned with Marcom Street and Entrance to Visitors Center.	No Change
Plan includes two large green spaces, the larger containing a natural amphitheatre space. Location of band shell adjusted to avoid Progress Energy ROW	No Chage
<ul style="list-style-type: none">Plan includes 20 lots for individual chapter houses.All houses are shown with 7,000sf footprints allowing for potential of 14,000sf floor area.Approximately eight lots may accommodate 3-story houses with 21,000sf and walkout basements.	<ul style="list-style-type: none">Plan continues to show 20 lotsHouse size assumptions remain the same. Total impervious for each lot increased to 10,000 sfApproximately 17 houses may accommodate 3-story, 21,000 sf house. Some may have limited floor to floor space and require special slab and framing options.
Multi-unit buildings shown on plan that could include Townhouses and common amenities such as coffee shop. The buildings shown have a total footprint of 27,000sf, so that a 2 story building could contain 54,000 total square footage. This is currently very flexible in our plan.	Current Multi-use lot shows the Clark Nexsen footprint for ____ units and ____ total square footage.
Each house fronts a common landscaped area with houses facing each other promoting sense of community. Houses are shown with front setbacks of 39' from face of curb.	No change to landscape or front setbacks.
House lots are shown on plan as 80' wide with a minimum side setback of 15 feet (30' aggregate).	No change to side setbacks or lot sizes
Houses are shown with 20' minimum setbacks from face of curb at the rear parking lots. Many other site requirements are accommodated at the backs of houses (stormwater, grade transitions, and waste enclosures). The plan will strive to provide 1 space/resident in the rear of each house plus on-street parking.	House rear setbacks remain the same. No storm water treatment will be accomplished within the house lots. Grade transitions and individual waste containers will be included in the individual house plans.
Bus travel has been accomodated via the northern route around the large green space, per discussions with the University.	No Change
Shared waste and recycling areas are currently planned between each two house grouping.	One waste and recycling enclosure is planned for every two houses. Apartments / Townhouses still need validation of size and location.
The plan will strive to provide 1 space/resident in the rear of each house with on-street parking.	40 spaces are provided per a house with 1 space per 2 beds in the multi-group housing.
<i>Electrical</i> - Over head power lines to be removed and replaced with underground power provided by Progress Energy	<i>Electrical</i> - Power main and services will continue to be serviced underground. Connection and service will be from NC State Power main.
Telecommunications –	The telecommunication fiber hub will be located in one of two locations, either the Apartment building or as part of the bus pavilion. Telecommunication network shown in Appendix G

Parking Analysis

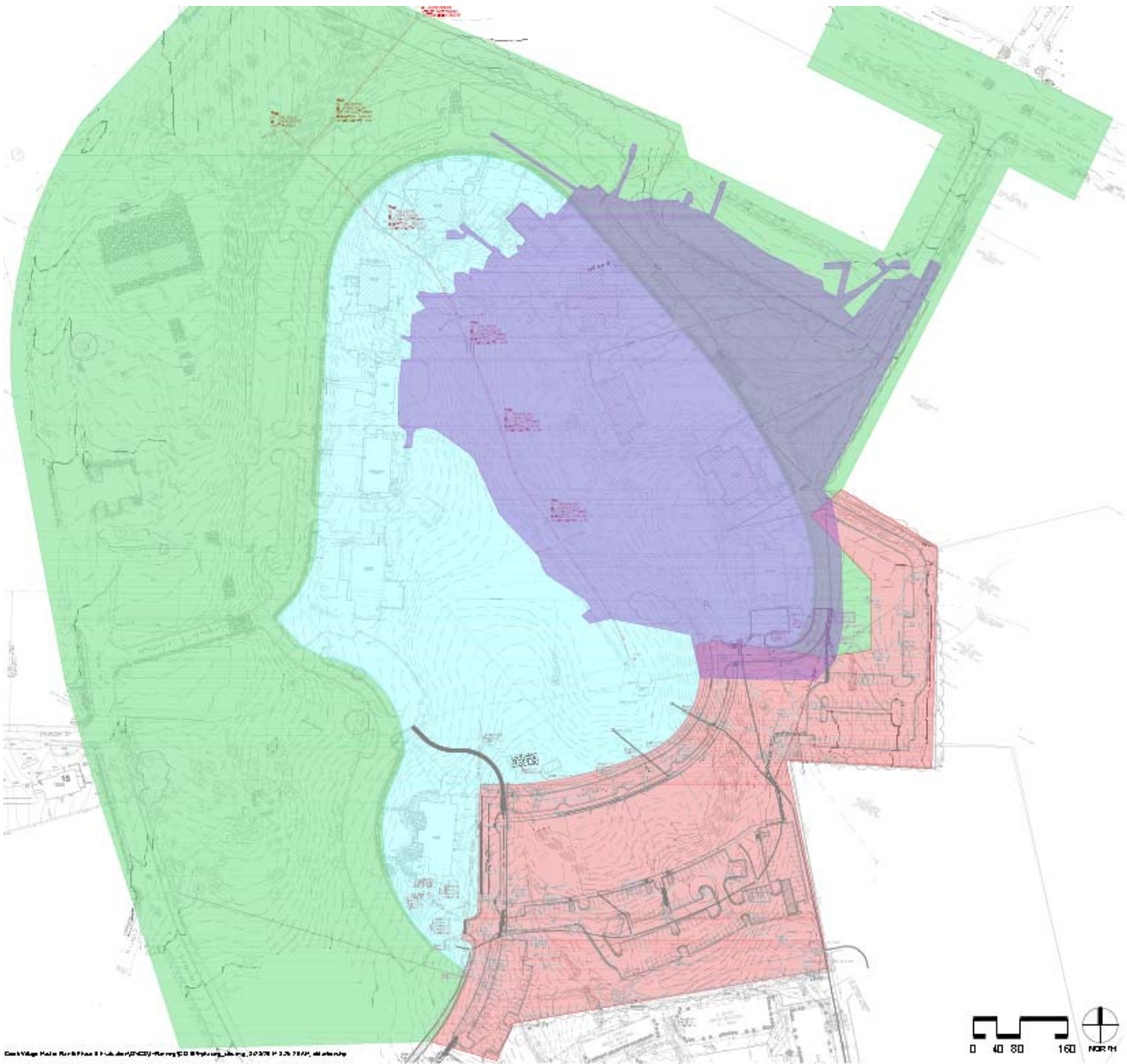
Phase	Spaces Provided	Spaces Required*	Aggregate +/-	Houses
I	258	160	+99	4
II	257	206	+149	2 houses & 251 MU beds
III	146	160	+135	4
IV	239	280	+94	7
V	90	120	+64	3
Overall**	990	926	+64	20

* Parking Requirements based on the below criteria
House (40 spaces per house)
107 Apartment /144 Townhouse - 1 space per 2 beds)
** Includes on-street parking

Existing Conditions Survey

The Existing Greek Court existing conditions survey is a compilation of multiple surveys and information gathered between 2001 and 2014. The extents of those different surveys is provided in Appendix B and is summarized below. Most of the existing survey information is at least 8 years old and the underground utilities appear to be from older files provided by NC State during the Phase I design phase. The phase I information as shown is from As-built data provided by the contractor with the utility information surveyed following construction in 2010. Most recently the main fiber ductbank that runs north-south through the development was re-surveyed and test holed along most of it's length. The results of this new survey throws doubt into the validity of the rest of the underground utility locations, especially the fiber and electrical duct bank.

The recommendation is for the high target utilities (like the main fiber ductbank) be re-surveyed and test holed to determine their exact locations. This should be done prior to continuing on with the construction document design of the individual phases. We recommend that at a minimum the boundaries of the phase under design be surveyed, including topo, utilities, trees, etc. The reason for surveying the boundary of the proposed phase is that the tie in points with the rest of the development grade and utilities will be a key component to the design.



Existing Conditions Surveys – See Appendix B

Stormwater treatment Update

As part of the master plan re-evaluation one of the major assumptions and design concepts that needed to be reviewed was storm water treatment. The three major changes that developed from this master plan was that the individual chapter house lots impervious assumption were increased from 7,000 square feet to 10,000 square feet per lot, that the transportation impervious (i.e. roadways) did not need to be treated, and that the original plan to have individual or “minor BMPs” located in select lots was not going to be followed. Stewart met with NC State Stormwater reviewers and re-ran calculations for treatment of storm water for all 5 phases, with the assumption that each phase will build on the last and be able to treat the cumulative of new impervious for the development.

On December 10, 2013 Stewart met with Duane Knudson, Mike Kapp and Carolyn Axtman to discuss stormwater master plan for Greek Village project. Stewart verified in this meeting that Transportation Impervious (i.e. roadways) would not be required to be treated in concurrence with how NCSU has handled stormwater on other parts of campus. However, any area draining to a stormwater BMP device whether transportation impervious or otherwise would need to be treated and the stormwater device sized accordingly. This means that for the Greek Village project, we will propose to treat all the impervious that drains to a BMP, which may include transportation impervious, but that the treatment will be offset by not collecting or bypassing the BMP for some areas on the fringe of the project which would be difficult to treat. The balance for each phase and the project as a whole must show adequate treatment as outlined above so that all non-transportation impervious surfaces would be accounted for in each phase and the project as a whole.

The plan on the next page and in Appendix D illustrates the BMP’s proposed by the phase color and the impervious proposed to be treated in each phase. Phase 5 shows significantly more area being treated than would be required and options are available for this final phase (see note 5 below).

1. Phase 1 has two bioretention areas and the wetpond, significant transportation area is included in this phase and treated in stormwater treatment devices.
2. Phase two proposes to remove the road behind house 8 and expand the wetpond constructed in phase 1. This pond will treat all the drainage from phase 2 which will also include transportation impervious area.
3. Phase three will construct one bioretention device that will treat existing impervious in sufficient quantities to offset the additional impervious associated with Phase 3. This bioretention device will be modified in phase 4 to treat the proposed area associated with phase 4.
4. Phase four proposes to expand/realign the existing wetpond treating varsity drive, as well as proposing two new bioretention areas that will treat area from phase 4. The more southern of these two devices is located within the northern limits of phase 2 construction.
5. Phase 5 proposes the bioretention area below the existing house 13/14. This device will treat a few houses and the parking lot proposed in phase 5. The map above also shows that the wetpond could be expanded and area from phase 3 and 4 be treated. This impervious area and expansion on the wetpond is not currently required and is not shown in the impervious treated table above. The drainage from this area could be designed to bypass all treatment devices or could be designed to drain to the wetpond expanded in phase 5. The larger expanded wetpond (as shown in the diagram) would create a more aesthetically pleasing stormwater device. If this wetpond is expanded the bioretention device currently proposed in phase 5 would not be required. This option is available due to the design criteria requirement that each phase build upon the other and meet the storm water treatment requirements as they are constructed.



Below is a measurement of the amount of transportation impervious in each phase. This was done using AutoCAD and Microsoft Excel to tabulate the values.

Transportation Impervious		
		<i>cumulative</i>
1	34,578	34,578
2	62,992	97,569
3	34,445	132,014
4	47,284	179,299
5	11,494	190,792
T	190,792	

The next step was to determine the total amount of impervious proposed including transportation impervious for each phase.

Total Impervious		
		<i>cumulative</i>
1	175,728	175,728
2	178,191	353,919
3	154,114	508,033
4	202,825	710,858
5	69,387	780,245
T	780,245	

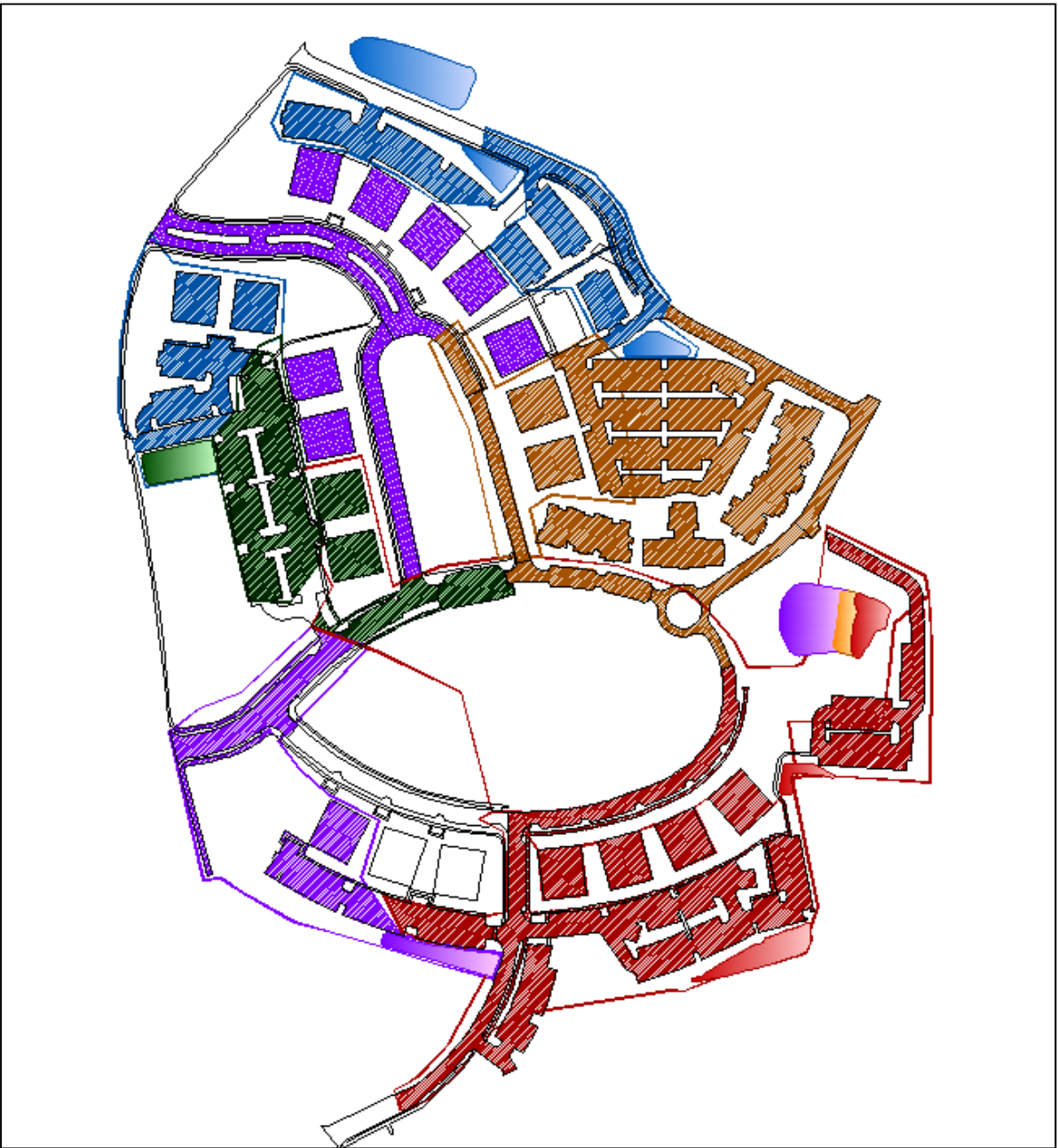
Below is the difference between the total impervious per phase and the transportation impervious by phase to determine how much impervious surface would need to be treated in each phase.

Impervious Required for Treatment		
		<i>cumulative</i>
1	141,151	141,151
2	115,199	256,350
3	119,669	376,019
4	155,541	531,559
5	57,894	589,453
T	589,453	

The last step was to look at the previous Design Development plans, and the updated Master plan to determine how much drainage was proposed to each phased stormwater device. The table below shows how much impervious would be treated in each phase by the proposed stormwater device associated with that phase. Additionally, it shows that each phase proposes more treatment than would be required. The specific details for each device have only been

reviewed on a preliminary level and will need to be further vetted during construction design phase for that phase.

Impervious Treated		
		<i>cumulative</i>
1	183,343	183,343
2	174,666	358,009
3	107,795	465,804
4	78,220	544,024
5	45,584	589,608
T	589,608	



Electrical / Telecom Narrative

1.1 Power Requirements

The North Carolina State University Greek Village consists of several university owned houses powered through Duke Progress Energy. As the site development continues, Greek Village will be converted over to the North Carolina State University power distribution system. To size the circuits RMF Engineering utilized the IEEE Grey Book, the NEC, along with load data for comparable facilities on the Universities campus. Upon analysis of these resources RMF Engineering developed the Watts/Square Foot displayed in Table 1.1. These take into account the diversity factor of the loop.

Table 1.1	
Demand Watts/Square Foot	Type of Use
4	House
6	Multi-Occupancy

Using the data developed above, RMF Engineering has projected the load increase by phase of site development. These projected loads are shown in Table 1.2 below. The loads displayed represent those of Greek Village. In this calculation no existing loads on the North Carolina State University circuit are included. All calculations preformed in this report are based on the operating voltage of 12,470V and a .9 power factor.

Table 1.2				
Phase 1				
	Estimated Square Footage	Demand Watts/ Square Feet	Demand Watts	Demand KVA @.9 PF
House 1	21000	4	84000	93.3
House 2	21000	4	84000	93.3
House 3	21000	4	84000	93.3
House 4	21000	4	84000	93.3
Connected Demand KVA			373.3 KVA	
Connected Demand Current			17.3 A	

Phase 2				
	Estimated Square Footage	Demand Watts/ Square Feet	Demand Watts	Demand KVA @.9 PF
House 18	21000	4	84000	93.3
House 19	21000	4	84000	93.3
House 20	21000	4	84000	93.3
Building A	19200	6	115200	128.0
Building B	44688	6	268128	297.9
Building C	32000	6	192000	213.3
Existing House 8	14000	4	56000	62.2
Connected Demand KVA			1354.8 KVA	
Connected Demand Current			62.7 A	

Phase 3				
	Estimated Square Footage	Demand Watts/ Square Feet	Demand Watts	Demand KVA @.9 PF
House 8	21000	4	84000	93.3
House 9	21000	4	84000	93.3
House 10	21000	4	84000	93.3
House 11	21000	4	84000	93.3
Future Community Center	18000	6	108000	120.0
Connected Demand KVA			1848.1 KVA	
Connected Demand Current			85.6 A	

Phase 4				
	Estimated Square Footage	Demand Watts/ Square Feet	Demand Watts	Demand KVA @.9 PF
House 12	21000	4	84000	93.3
House 13	21000	4	84000	93.3
House 14	21000	4	84000	93.3
House 15	21000	4	84000	93.3
House 16	21000	4	84000	93.3
House 17	21000	4	84000	93.3
Connected Demand KVA			2408.1 KVA	
Connected Demand Current			111.5 A	

Phase 5				
	Estimated Square Footage	Demand Watts/ Square Feet	Demand Watts	Demand KVA @.9 PF
House 5	21000	4	84000	93.3
House 6	21000	4	84000	93.3
House 7	21000	4	84000	93.3
Connected Demand KVA			2568.1 KVA	
Connected Demand Current			118.9 A	

The existing houses that are to remain and are effected by site development will be connected to the North Carolina State University power distribution system. As construction progresses through the phases, the houses in the area affected will be disconnected from Duke Progress Energy and either demolished or re-energized from the North Carolina State University grid.

The distribution duct bank for the entire loop will be sized by North Carolina State University standards, (9) 6" conduits for power conductors and (2) 2" conduits for communications. The proposed routing of this duct bank and approximate locations of switches and transformers is shown on Sheet E3.1.

1.2 Existing Power System

The North Carolina State University power distribution system currently extends to Greek Village through circuit “S”. This circuit feeds only the houses in Phase 1; it will be used to power Phases 1-5 in the future. The Universities point of delivery from Duke Progress Energy is with two 30 MVA transformers in the Sullivan Substation. This substation feeds the Bragaw Switching Station which ultimately feeds circuit “S”. Circuit “S” creates a loop when paired with circuit “B” at the normally open point in the PME-9 denoted as 4 MC. PME-9 4 MC is located on main campus and is the origination of the radial feed that will power Greek Village. This radial feed is protected with a 100E fuse. The radial feed has existing loads connected to it; these are detailed in Table 1.3 below along with the addition of Greek Village by phase of site development.

Table 1.3	
Existing Building	Demand KVA @.9 PF
Mckimmon Center	572.2
Don Ellis	71.11
Joyner Visitor Center	240
	Existing Connected Demand KVA 883.3 KVA
	Existing Connected Demand Current 40.9 A
	Connected Demand Current with Phase 1 58.2 A
	Connected Demand Current with Phases 1-2 103.6 A
	Connected Demand Current with Phases 1-3 126.5 A
	Connected Demand Current with Phases 1-4 152.4 A
	Connected Demand Current with Phases 1-5 165.4 A

The circuit feeding Greek Village has two overcurrent protection devices limiting the capacity of the circuit. The 100E fuse in the PME-9 and a 100A pole mounted power fuse located where the circuit goes overhead near the Mckimmon Center. The total demand current on the radial feed is estimated to be 103A after Phase 2 of the site development. Power distribution fuses have the ability to operate in overload scenarios allowing Phase 2 construction to continue with existing conditions. After Phase 3 the demand current is estimated to be 126A. This demand current paired with the existing overcurrent protection will force infrastructure upgrades between Phase 2 and 3.

RMF Engineering has developed several solutions for North Carolina State University to review. The first being upsizing the overcurrent protection in the PME-9 to a 200E and the pole mounted power fuse to 200A, this will provide the necessary capacity to feed Phases 1-5 along with the existing loads. The second option would be to connect Greek Village to the 22,860V CBC Substation via Varsity Drive as detailed in the Current Physical Master Plan (2007). This option would be the more expensive of the two but would

circumvent the cost of dual voltage transformers in Phases 3-5 as well as expand the reach of the CBC Substation. Either option would create the required capacity to complete Phases 3-5 of the Greek Village site development.

2.1 Telecom Requirements

Each new building in Greek Village will have two telecom services, one provided by Com-Tech of North Carolina State University and a second service provided by AT&T. Each service will require a 1-1/2” conduit. As a part of the site development phasing these conduits will be provided in duct bank to each house site. All cables will be pulled when the organization completes construction of the house. The current telecom hub is located in existing house 13/14. This will be relocated during Phase 2 or 3 and will require (20) 1-1/2” conduits in duct bank to the nearest telecom manhole.

2.2 Existing Telecom Conditions

Currently a main distribution telecom duct bank is running through the site. This duct bank is one of two connections from Main Campus to Centennial Campus. This site development will utilize the manholes of this distribution duct bank as starting points for the house feeder duct banks. The proposed routing of these duct banks are detailed on Sheet E3.2. Existing connections to houses will be kept until the phase where the house is demolished. New connections will only be provided for new building pads.

Phase II Re-Evaluation

In conjunction with the Master Plan Analysis and update our scope of work included a focused re-evaluation of phase 2. The goal of the re-evaluation was to determine if additional chapter house lots could be developed as part of phase II while minimizing the infrastructure, disturbance of existing houses, and cost to the University. The evaluation included the re-phasing of phase 2 to obtain 2 – 3 alternatives which will be evaluated and discussed with stakeholders. The color exhibits below summarize the three options which were prepared and presented to the university. The final determination from the University was that none of the options were viable due to cost, timing, and location constraints.

Option 2A was the existing phase 2 lot layout. The team evaluated the option to add house 18 to the phase and due to existing house 4 this was determined to not be viable.



Option 2B – Add a house lot and entrance at north west corner of the development



Option 2C – Add House 12 and 13 and associated parking lot and connect to the existing Greek Court Parking / roadway network



Option 2D – Add a house lot at the end of future phase 5 and connect to existing parking and roadway network.



Master Plan Final Layout

Following the concepts completed above the University directed Stewart to re-evaluate the entire phase II and IV layout to avoid an existing telecommunication ductbank, which connects the Central Campus with Main Campus. This plan was finalized in August, 2014 after multiple meetings and design workshops. The plan provides additional parking, flexibility in the northern green, and with approval from the University the northern loop road was pushed further north to encroach into the adjacent storage area(s) approximately 50'. This allowed more flexibility in design of the phase II main parking area. Additionally parallel parking was added to the northern loop road.

The Master Plan (see plan right) incorporates the comments and challenges with the site and phasing. Evaluation and incorporation of the amenity plan (see Appendix R) was not completed. During construction document stage, the design of each phase will need to detail walkway connection to the northern green, provide excessive pedestrian access, and enhanced landscaping. It is key that each phase remain congruent and build upon the previous phase which will lead to the success of the whole Greek Village development.



Meeting Notes for the following meetings are below;

- 1. September 5, 2013
- 2. November 23, 2013
- 3. December 16, 2013
- 4. February 28, 2014
- 5. March 13, 2014

MEETING NOTES

Project: NCSU Greek Village – Pre-Proposal Meeting
Meeting Date: 9/5/13

Meeting Location: NC State Admin Building 3

Prepared by: Ryan Hambleton

Meeting Attendees: Carolyn, Lisa Johnson, Jake, Pete, Barry, Shelly

Meeting Agenda was as follows:

- Review of Master Plan and what was completed in Phase II
- Review of current plans for Townhomes and Apartmetns
- How many lots would be optimal for Phase II? **4 was the answer**
- Is there another place for townhouses to go in the future? - **not really**
- Pete’s Concern is stormwater and other assumptions made during master planning
- Scope Discussion for study

The following items were discussed in detail:

- Townhouses
 - Developers may be pulled in to do the townhouses.
 - “Charlie seemed on-board”
 - Current plan - (2 townhouses + Apartment building for 206 beds)
 - Developer builds and NC State Management
- Lots optimal for Phase II

- 4+ (3 frats/sororities on board) one ready to commit
 - Prefer to have lots that are basement ready.
- Pete’s Concern
 - Stormwater issues – assumptions on stormwater
 - Impervious per lot (10,000 SF vs. 7,000 SF as provided from NCSU during master planning
 - No real stormwater treatment can be done between lots
 - Electrical service will be changed from Duke to NCSU – how is that done and m aintaining service
 - Telecom / fiber – same concern as above.
 - Need to look at grid and how power distribution is supplied to houses from University while keeping old buildings in progress
 - How do we re-look at stormwater?
- Fiber (com net) being re-layed for Greek Village

Greek Village study Scope for STEWART

- Refresh master planning assumptions
 - Stormwater – can we build with the ponds we have?
 - Telecom availability and capacity
 - Narrative and review of phasing plan
 - Electrical availability and capacity
 - Narrative on how switch over to NCSU provided power can be done AND still maintain existing houses on Duke Power
 - Review electrical duct bank and telecom ductbank and verify impacts to site and phasing
- Phase II re-imagined
 - Get another lot out of Phase II
 - Would like basement lots if possible
 - Re-look at phasing – can we lose the 4 TH and regain one lot?
 - Pricing to get 4 more lots?
 - Grading is key – look at which lots can support 3 story / basement houses
 - Grading phase document (SD level)
 - No townhome or apartments in phase II

MEETING NOTES

Project: NCSU Greek Village Phase II Study – Kick off
Meeting Date: 11/21/2013

Meeting Location: NC State Admin Building 3

Prepared by: Ryan Hambleton

Meeting Attendees:

<input type="checkbox"/>	NCSU	Tim Luckadoo	<input type="checkbox"/>	Stewart	John Jenkins
<input type="checkbox"/>	NCSU	Barry Olson	<input type="checkbox"/>	Stewart	Ryan Hambleton
<input type="checkbox"/>	NCSU	Carolyn Axtman	<input type="checkbox"/>	Stewart	Matt Evans
<input type="checkbox"/>	NCSU	Ed Rogers (Communications)	<input type="checkbox"/>	Stewart	Joe Puckett
<input type="checkbox"/>	NCSU	Jeff Hightower (Campus	<input type="checkbox"/>		

		Utilities) JH			
<input type="checkbox"/>	NCSU	Mike Kapp	<input type="checkbox"/>		
<input type="checkbox"/>	NCSU	Shelly Brown Dobek	<input type="checkbox"/>		
<input type="checkbox"/>	NCSU	Pete Fraccaroli	<input type="checkbox"/>		
<input type="checkbox"/>	NCSU	Thomas Skolnicki	<input type="checkbox"/>		
<input type="checkbox"/>	NCSU	Pete Fraccaroli	<input type="checkbox"/>		

NOTES:

- a. JJ gave intro to project. Assess the phasing plan and re-look at the needs for phase II.
- b. RH gave intro to how to move forward
- c. MF is currently looking for private developer(s) to build. Still Looking for developer(s)... Clark Nexsen to be engaged to move forward with advanced planning.
- d. TS – discussed the investment of blue ridge corridor. The biggest thing that the state has been discussing is increasing streetscape, green space, and investing in the open space elements.
- e. The revenue from existing houses are key...
- f. Open space plan from Sam Reynolds from Shelly
- g. Building 6 is vacant and will remain vacant... This is also the HUB for the communication but
- h. Building 5, 6, 7 are on a lease that ends summer of 2015
- i. Building 8, 13, 14 MUST remain in place till the last phase.
- j. Building 4 is newly renovated and they will move over to phase II housing
- k. Siggma Kappa (house 3) would like to move into PhaseII
- l. Building 12 (delta Gamma) is moving into phase I
- m. Building 11 (pi- kappa Phi)
- n. Building 2 – KA – ready to build???
- o. Look at adding other commercial / mixed use at the bottom floor of the apartments
- p. Connection to Mission Valley with a path to allow walkaway to Shops?
- q. Parking increases will really be based on what the developer will need.
- r. C-store at Wolf Village closes in the summer but it is limited. 1,000 – 2,000 sf store will most likely be the only real store
- s. Suggestion from ER that potholing be done now to locate the Fiber Optic Line. SEND MAP to Mike with specific locations to get information.
- t.
- u. Storm water – need to discuss with Dwaine K to discuss what the current NC State regulations are. Can the roadways be removed from the calculations and each BMP would include a
- v. Wolf Village Stormwater (south and east look good). Gorman side not looking so good.
- w. Original plan included 7,000 SF for each lot... the plan was to have a stormwater BMP which each chapter would
- x. Need to hold each individual chapter house to a specific impervious, which in this case is set at 10,000 sf). Walkout basement lots could have a reduction to 9k or so of impervious.
- y. NEED to have a plan showing which lots have three story walkout basement lots.

- z. Phase 3 – can we create a walkout basement from these lots. Outline the restrictions and impacts to grading that might come from changing these phase 3 lots to a walkout basement.
- aa. Apartment building was placed and located where it is to allow for a 4 – 5 story building to be built in a hole. This will allow
- bb. City of Raleigh – discussion that the individual houses were able to pull permits / meter for each house with the back flow
- cc. Looking at the philosophy for phasing
 - a. Developer – build the amenities soon as possible.
 - i. Building a house near it...
 - b. Green space / Village experience
 - i. Build around the north amenity area.
 - c. Add Lots NOW
 - i.
- dd. Look at master plan
 - a. Can we add

Assumptions to be reviewed

Assumption	Original	Now
Buildings	20 buildings	May have room for 1 – 2 more individual building pads
Parking	925	901 (20x 32 - 40) 103 for apartments (1/2 beds) <ul style="list-style-type: none">- Meal plans kick up parking requirements which is driving the numbers.- TRUCK spaces for commercial trucks going into each house need to be planned.- Developer for the MF piece will push for more parking
Storm water	7,000 sf	10,000 sf is the goal for each pad
Grading		Two walkout basements minimum ADD BASEMENT LOTS
Existing Utilities / Fiber Optic		Phase 2 updated pushed TH to encroach onto FO line. Need to reduce TH
Preferred Housing Demolition Schedule		See above
Roadway		
Multi-family timing? Ability to move?	206 beds	May increase apartment counts and reduce townhomes.
Future Property Acquisition		

1. Confirm Deliverables and Schedule
 - o Phase II - Break ground summer 2015 for initial demolition of houses. Delivery of individual house pads and perhaps the multifamily / townhomes by summer of 2016.
 - o Break ground on Phase III summer of 2016 (demolition of houses 1, 12, 11)
2. Phase II constraints and Goal Overlays
 - a. To be discussed at next meeting
3. Design Philosophy / Strategy / Priorities
 - a. Intent for Phase II
 - b. Verify the approach;
 - i. Immediate pad(s)
 - ii. Like a developer
 - iii. Core Village Experience

- iv. Re-Excite the Greek organizations
4. Study Steps / Overlays
 - a. Constraints / Opportunities / priority overlays
 - i. Existing housing
 - ii. Fiber optic / other utilities
 - iii. Creating a Place / Identity
 - iv. Infrastructure Improvements / Constraints
 - b. Phasing Philosophy Priorities

Next Meeting;

- December 16, 2013 at 3:30pm

MEETING NOTES

Project: NCSU Greek Village Phase II Study – MTG 2
Meeting Date: 12/16/2013

Meeting Location: NC State Admin Building 3

Prepared by: Ryan Hambleton

Meeting Attendees:

<input type="checkbox"/>	NCSU	Tim Luckadoo	✓	Stewart	John Jenkins
<input type="checkbox"/>	NCSU	Barry Olson	✓	Stewart	Ryan Hambleton
✓	NCSU	Carolyn Axtman	✓	Stewart	Matt Evans
<input type="checkbox"/>	NCSU	Ed Rogers (Communications)	✓	Stewart	Joe Puckett
<input type="checkbox"/>	NCSU	Jeff Hightower (Campus Utilities) JH	✓	NCSU	Jeanette Powell (Stormwater)
✓	NCSU	Mike Kapp	✓	NCSU	Tom Kendig
✓	NCSU	Shelly Brown Dobek	✓	NCSU	Tara Lanier
✓	NCSU	Pete Fraccaroli			
✓	NCSU	Thomas Skolnicki			
✓	NCSU	Jeanette Powell			

- NOTES:
- ee. Review of Previous Meeting Notes
- ff. JJ and RH reviewed the assumptions and constraints of the project with the group.
- gg. Review of Basement Options –

- a. Stewart added a diagram that clearly shows which houses were considered basement options.
- b. Added the house pads 8-11 as options for basements. There was concern that the 3 story side would be the “front”.
 - i. TS brought up the fact that this would then create a 3 story house (which was not preferred back during the original Master Planning).
 - ii. Shelly brought up a Greek Housing development that she and Barry visited had a similar situation.
 - iii. The group agreed that basement houses are needed and that the overall height of the houses would not be that much greater with a basement unit (the original master planned grading has 6- 7 feet of fall from the pad to the sidewalk /road at the front of the building
 - iv. The group also agreed that creative architecture would be needed and enforced upon the organizations to make sure that the houses were not “over bearing” or appear to be too high.
- hh. RH reviewed option of adding house pad 18 to Phase II while maintaining existing house 4. Due to grade differences, parking issues, sewer infrastructure requirements this house could not be built without the demolition of existing house 4.
- ii. JJ and RH reviewed the 4 options for Phase II
 - a. Option A – original Phase II
 - i. Design Team heard that the original Phase II as envisioned during the 2006 /2007 master planning will remain as is.
 - ii. Multi-Family / Townhome concept is still moving forward – Clark Nexsen is engaged to do further studies with an emphasis on looking into private development options.
 - b. Option B – House Pad 14
 - i. Only one house can be added with this option along with an entrance off of Varsity due to existing houses and grading constraints.
 - ii. It was agreed that there was too much infrastructure associated with this option to make it viable.
 - 1. The infrastructure required would include a long extension of sewer, a potential storm water pond relocation, and the installation of temporary roadway / parking to service the house.
 - c. **Option C – House Pad 12/13 – Preferred option**
 - i. There are two basement houses (one of which is currently un-assigned) included in this option.
 - ii. This option possesses an opportunity to develop infrastructure and house pads without disruption to existing houses.
 - iii. However there is an existing storage building / area (MEAS) which will need to be removed if it is possible within the timeframe for phase II to begin construction (tentatively summer of 2015). *Subsequent to this meeting is was determined by the University that the MEAS storage building/area could not be relocated in time.*
 - iv. One option to build a portion of one of the main entrances off of Varsity was discussed. If preferred an

add/alternate for this roadway can be designed to price up this option. The opportunity to finish the “front door” for the houses” was a benefit with this option.

- 1. Shelly stated that if the houses were constructed without the option above it would give the residence a false sense that they have a large yard, which would then be taken away when the road was ultimately built.
- v. Challenge to this option is the MEAS building / complex and the grade changes and subsequent earthwork that would be needed to build option C.

Following the meeting NCSU informed Stewart that no additional houses will be added to Phase II. The option C discussed above required the demolition of the MEAS building and storage area, which the University stated could not be done by the summer of 2015.

- d. Option D – House Pad 6/7
 - i. This option is not preferred because of the proximity to existing house 12/13.
 - ii. The grading and elevation difference between the existing house (12/13) and the new house pads would require temporary retraining walls.
 - e. Option E – Change to the demolition plan sequence;
 - i. This option includes a revision to the demolition plan and sequence. The idea is to demo existing house 11 instead of 5 and build House Pad 8/9/10.
 - ii. The proposed building pads would be constructed in the existing parking lot for existing houses
 - iii. Not preferred due to proximity to the existing house 1 and 12 and the fact that more “temporary” infrastructure would have to be built then either options above.
 - iv. No gravel lots are allowed at any time by the University.
 - jj. Storm water – The road network does not have to be treated. Stewart will review the overall master plan to verify that swapping out the impervious associated with the road network will be sufficient to add impervious allotment for each house pad.
 - a. Jeannette Powell agreed that this is an option. The design team can propose bypass and diverter boxes along with over treatment of roadway network in lieu of house pads as options for treatment of the entire Greek Village project.
 - b. The project stormwater impact analysis will be reviewed for the entire completed village and for each individual Phase.
 - c. The design Team will need to verify treatment options and strategy for all phases and for the entire master planned project based on the new impervious numbers for each pad and the roadway exclusion from treatment requirements.
 - d. No internal or mini-BMPs at individual pads will be incorporated into the plan.
 - e. Need to hold each individual chapter house to a specific impervious area, which in this case is set at 10,000 sf). Walkout basement lots could have a reduction to 9k or so of impervious area if needed to meet calculations.
 - kk. Existing pond located at northwest corner of Greek Village will be filled in and the shape adjusted with phase 4.
 - a. Design Team will need to show this in the master plan.
 - ll. Bus Routing – During Phase II construction the Bus will have to be re-routed. May need to build temporary road / round about for bus to turn around or re-route through phase I road network. Currently bus cannot make the turn at existing house 8.
5. Assumptions to be reviewed

Assumption	Original	Now
Buildings	20 buildings	May have room for 1 – 2 more individual building pads
Parking	Provided - 925	Requirements – (20 x 40) = 800 206 beds in APT / TH (1 per 2 beds) = 103 req'd TOTAL REQUIRED – 903 Provided - 951
Storm water	7,000 sf	10,000 sf is the goal for each pad
Grading		ADD BASEMENT LOTS
Existing Utilities / Fiber Optic		Phase 2 updated pushed Town Homes to encroach onto Fiber Optic line. Need to reduce or adjust apartment / Townhome building(s)
Electrical		Service from University System
Multi-family timing? Ability to move?	206 beds	May increase apartment counts and reduce townhomes.
Future Property Acquisition		Not reviewed with this study.

6. Confirm Deliverables and Schedule

- o Phase II - Break ground summer 2015 for initial demolition of houses. Delivery of individual house pads and perhaps the multifamily / townhomes by summer of 2016.
- o Break ground on Phase III summer of 2016 (demolition of houses 1, 12, 11)

Next Steps

- Final Deliverable showing new Phasing (Shelly to set up update to Greek Organizations in February.. Stewart to Attend).
- Overall color map, phase II detail grading,
- Storm water treatment master planning for each phase and overall development.
- Electrical – New Phase II service, maintain Duke Power to existing houses, lighting, and verify master plan assumptions for transformer locations.
- Fiber – verify duct bank location and
- Next Meeting - February 28, 2014

END MEETING NOTES

MEETING NOTES

Project: NCSU Greek Village Phase II Study – MTG 3
Meeting Date: 2/28/2014

Meeting Location: NC State Admin Building 3

Prepared by: Ryan Hambleton

Meeting Attendees:

✓	NCSU	Mike Kapp	<input type="checkbox"/>	Stewart	John Jenkins
✓	NCSU	Shelly Brown Dobek	✓	Stewart	Ryan Hambleton
✓	NCSU	Pete Fraccaroli	✓	Stewart	Matt Evans
✓	NCSU	Jeanette Powell (Stormwater)	✓	Stewart	Joe Puckett
✓	NCSU	Barry Olson	✓		
✓	NCSU	Cameron Smith	<input type="checkbox"/>		
✓	NCSU	Alan Daeke	<input type="checkbox"/>		
✓	RMF	Alan Cave	<input type="checkbox"/>		
✓	RMF	Ben Stephenson	<input type="checkbox"/>		
✓			<input type="checkbox"/>		

NOTES:

- mm. Master Plan Revisions were discussed;
 - a. The team discussed including the potential of adding house 18 to phase II.
 - i. Final decision to leave house 18 in phase 4 was reached by the team due to grading, parking constraints, and undesirable situation for the existing house 4.
 - b. Master Plan revised to add house 11 to phase 3
 - i. Ryan discussed the grading constraints. This house will require temporary grading and possibly a small retaining wall on the back side due to existing slopes.
 - ii. Ryan also reminded group that there will not be adequate parking behind this house pad until phase 4 is constructed.
 - c. Community Center will be shown as Phase 5 (per direction from Shelly and team)
 - d. Show the amenities within the circle (Team was not sure when these would be built)
 - e. Pavilions/bus stop on opposite side of future community center will be shown in phase 3 (and labeled).
- nn. Stormwater Master Plan Update from Joe Puckett
 - a. The analysis was completed for the entire Greek Village project area including each phase. Per previous direction Stewart exempted all “roadways” from the analysis and increased the impervious allocation for each house pad from 7,000 square feet to 10,000 square feet.
 - b. Stewart also updated the parking lot and apartments / townhouse footprints based on the Clark Nexsen latest plan.
 - c. Review of each phased storm water is below and shown on the exhibit 1 attached with these meeting notes;

- i. Phase 1 shows an over treatment based on new criteria.
 - ii. Phase 2 will expand the existing wet pond located near house 8. This will be done with the demolition of the existing road that connects Dan Allen to Greek Court circle.
 - iii. Phase 3 was a challenge for storm water treatment because house 8 (which is where a majority of the phase 3 stormwater is proposed to be treated in the wet pond).
 - 1. Stewart initially proposed that phase 3 have a deficit in stormwater treatment with the knowledge that the overall site will meet treatment requirements after phase 5 is complete.
 - 2. Jeanette informed the design team that each phase must be able to meet the treatment requirements upon completion of that phase.
 - a. Proposal on the table during the meeting is to construct the phase 4 stormwater BMP (located near the Wake County EMS station) and the phase 5 BMP located near existing house 13/14 to over treat the existing impervious as "credit" for phase 3.
 - iv. Phase 4 proposes to install a small bio-garden in phase II for treatment, expand the bmp located at the northwest corner of Greek Village and adjust the shape / expand the stormwater pond at the north west corner of the site.
 - v. Phase 5 – final installation and adjustment of the wet pond and the bio-garden located near existing house 13/14 is proposed which will provide adequate final treatment for the entire project and phase 5.
- oo. Site Electrical discussion
- a. Alan Daeke instructed team on the existing layout of the NCSU power grid that currently feeds PH 1. Ryan marked up in the meeting where this existing power feed will come from. He also provided a basis for feeding phase 2 – 5.
 - b. Alan or Pete to verify if the lighting is on NCSU system. The initial belief is that this is the case and that the temporary feed for the lights from Western Manor has been disconnected.
 - c. PH 2 will tie to an existing crossing near house 8. Pete requested the design team and Alan D. to look into providing a service to existing house 8 since it is so "close to the main feed".
 - d. Duke Progress Energy still has feed to the existing houses. For phase II we will need to coordinate with Duke Energy to provide a "temporary feed" along the northern edge to continue electrical service to the existing houses.
 - i. The goal should be to coordinate this temporary overhead power to go along the existing fence line. Easements, installation, and service connection should be completed prior to May 2015 to prevent any delay to Phase 2.

- e. Cost from Duke Progress Energy to be incorporated into the cost estimate for PH 2 (to be provided with master plan document).
 - f. 10x10 Transformers shall be provided at the back of the house pads (assume one transformer per 2 houses).
- pp. Master Plan - Electrical documents will include an initial power estimate including;
- a. How many ducts will be needed to support future phases.
 - b. Estimated transformer locations
- qq. Site Telecom feed discussion
- a. Tele-com HUB is being moved to house 13/14. The team requested a meeting with Com-Tech to discuss their plans and to verify anything done in summer of 2014 for this work will not impede or have to be ripped out with phase 2.
 - i. i.e. ensure that the re-route plan from Com Tech is not in the grading / disturbed area of phase 2
- rr. Issue with easement for natural gas was discussed. Pete sent the agreement from PSNC along with the current "layout of the gas" associated with the "right of entry".
- a. This shows that the existing gas system will be within the demolition / grading limits and roadway construction for phase II. The re-routing of the gas line should be planned and executed prior to phase 2 construction start in summer 2015

Next Steps

- Com-Tech meeting to discuss Tele-com with RMF
- Gas as-built provided by Pete (received 2/28) – future discussion during phase II CD development will be needed.
- Pothole incorporated into plans (awaiting information from TWT)

Schedule

- | | |
|---|----------------|
| - Clark Nexsen Meeting- | March 17, 2014 |
| - Phase II Construction Document proposal - | March 18, 2014 |
| - Master Plan Draft - | March 21, 2014 |
| - Kick off meeting for Phase II CDs - | Early April |

END MEETING NOTES

MEETING NOTES

Project: NCSU Greek Village Phase II Study
Telecom Discussion

Meeting Date: March 13, 2014

Meeting Location: Conference Call

Prepared by: Ryan Hambleton

Meeting Attendees:

<input checked="" type="checkbox"/>	NCSU	Mike Kapp	<input type="checkbox"/>	Stewart	John Jenkins
<input type="checkbox"/>			<input type="checkbox"/>	Stewart	Ryan Hambleton
<input type="checkbox"/>			<input type="checkbox"/>	Stewart	Matt Evans
<input checked="" type="checkbox"/>	NCSU	Ed Rogers (Communications)	<input checked="" type="checkbox"/>	Stewart	Joe Puckett
<input type="checkbox"/>			<input checked="" type="checkbox"/>	RMF	Ben Stephensen

NOTES:

- Conference call to discuss existing telecom network;
 - Existing Telecom network and ductbank system laid out (see attached)
 - Network HUB is being moved to existing house 13/14 and associated fiber being pulled to the HUB.
- Proposed Telecom and Communication Ductbank
 - Routing of proposed system shown on master plan.
 - Propose 2x 1.5" conduits per house from the manhole.
 - Lay out runs to provide shortest run possible from the manholes to each house.
 - Provide handhole to serve 2 houses where possible and extend conduit to edge of house pad and leave with pvc marker.
- Discussed future HUB room;
 - Two options discussed (one at the future apartment building (if owned by NCSU). Other option is to provide a room at the future pavilion / restroom building.
 - Restroom building is proposed to be built with phase III.
 - If possible it would be beneficial to know which option the University will choose prior to completion of phase II. The conduit section (20 conduits) could be extended to the correct place, which goes through phase II in both options.
- Discussed Existing Main Fiber Bank which runs north / south through Greek Village
 - TWT provided potholes of ductbank with vertical and horizontal information. This information will be included in the CAD file and master plan document.

- Stewart will cut section(s) to show the horizontal and vertical distance from the Townhouse, and house pad 20 to the existing ductbank.
- Discussion of the existing main fiber bank and conflict with future roadways, future houses and townhouse building.
 - Suggestion from Ed Rogers would be to install a concrete or sheet pile protection wall near the existing duct bank and the future houses... this will hopefully prevent damage to the duct bank during the construction of the future houses. Currently the house foundation may only be 10' or less to the duct bank.
 - Temporary lines shown on attached Draft Plan are potential proposed lines serving existing houses 8, 11 & 12. The potential conflict is due to the future road construction that may interfere with existing telecom lines to these houses which runs from the existing manhole south of proposed Building A.
 - Mike Kapp to set up meeting with Pete, Fraccaroli & Alan Daeke to finalize strategy for continuous electrical service with minimal disruptions.

MEETING NOTES

Project: NCSU Greek Village Phase II Study
Electrical Discussion

Meeting Date: April 2, 2014

Meeting Location: Meeting

Prepared by: Ryan Hambleton

Meeting Attendees:

<input checked="" type="checkbox"/>	NCSU	Mike Kapp	<input type="checkbox"/>	Stewart	John Jenkins
<input checked="" type="checkbox"/>	NCSU	Jake Terrell	<input checked="" type="checkbox"/>	Stewart	Ryan Hambleton
<input checked="" type="checkbox"/>	NCSU	Carolyn Axtman	<input type="checkbox"/>	Stewart	Matt Evans
<input checked="" type="checkbox"/>	NCSU	Alan Daeke (Power)	<input checked="" type="checkbox"/>	RMF	Mark Demana
<input checked="" type="checkbox"/>	NCSU	Pete Fraccaroli			

NOTES:

- 1. Meeting to discuss electrical service and potential re-routing and temporary power for Greek Village
- 2. Temporary OHP to run along northern boundary of Phase II
- 3. OHP along Dan Allen needs to be protected... Back Feed Champion Court (which goes underground).
- 4. After Phase II the Duke power distribution will be looped
- 5. After Phase III, house 2,3,4 will be one way feed from Dan Allen
- 6. Temporary power -
 - a. Coordination with Duke Energy including plans and meetings
 - b. Plat for easement by Design Team
 - c. Council of state agenda by NCSU
 - d. Phase II power service for House 8
- 7. Temporary Gas –
 - a. Right of entry conducted for installation (by PSNC)
 - b. Ultimate Plat and easement will be needed for PSNC lines once installed.
 - c. Temporary Gas will be needed for each phase (see master plan utilities)
- 8. NCSU power from Varsity thru future phase III ... need plans from University of current location.
 - a. This will require future survey / pothole of phase III power.
 - b. Temporary NCSU power will be needed. The current feed to the Phase I houses goes through phase III and will need a temporary feed on OHP along Varsity.
- 9. Budget – Phased power and relocations / temporary will be paid for by the project.
- 10. Cost Estimates
 - a. Duct bank, manholes, and electrical infrastructure (not transformers or wiring) estimated for phase II during design.

End Meeting Notes

MEETING Notes

Project: NCSU Greek Village – Kick off Meeting

Meeting Date: 7/14/14

Meeting Location: NC State Admin Building 3

Prepared by: Ryan Hambleton

Meeting Attendees: Ed Rodgers, Carolyn Axtman, Mike Kapp, Shelly Brown Dobek, Alan Daeke, Lisa Johnson, Cameron Smith, Ryan Hambleton, Joe Puckett, Lisa Miles

- Ryan started the meeting with a review of Phase II limits and discussed status of the project.
 - Stewart has completed the survey and will send to NCSU next week.
 - Contracting for phase II is being finalized with NCSU.
 - Concepts updated with the latest locations of the fiber optic duct bank have been provided and were on display during the meeting.
- The team reviewed the original master plan and the issue with the fiber line and proximity to the proposed houses in phase 2 and 4, and to the proposed townhouse building
- NCSU through TWT had updated fiber optic pothole information which was shown on the concept plans (Test fit one and two).
 - One caveat to this is that they did not locate the duct bank closest to the pond near phase 4. This may mean that the duct bank was installed deeper than the pond, or they just could not find it.
- Ryan reminded the group that the existing fiber line will be 16’ to 24’ below grade in the finished condition near phase 4 and in parts of phase 2. The team discussed the need for possible bridging of the existing line, and Stewart requested construction photos and design documents for the duct bank.
 - Stewart to use photos and design documents to provide a recommendation to NCSU for what protection or additional bridging the duct bank may require.
- There are two fiber optic mains near house pad 14. One, which goes to the north, feeds main campus and is the main connection to Centennial Campus. The second, which goes to the west and Varsity Drive, is a minor feed to Mckimmon Center.
 - Initial Decision for the master planning and concept is that the northern fiber main will be protected, while the western feed toward Varsity will be relocated.
- There was a discussion regarding the utilities for phase 2, gas, electric, water, sewer and IT. House 8 cannot be stranded during construction, or during any phase. Also houses 1-4, 11, and 12 will need to have services re-routed and/or capacity of the system(s) verified prior to starting construction phase.
 - Shelly noted that House 8 will be reworked to have the main entry off of the proposed parking lot to the south and the services should be placed such that they are not at the front entry.
- The team will need to clarify with PSNC whether House 8, and House 1-4, 11, and 12 has to be on looped system or if a longer straight service line is acceptable.
- The Electrical feed to the existing houses will need to be rerouted along fraternity court drive for the roadway changes at Dan Allen.
- The existing water system will need to be verified for fire flow in the phase 2 construction condition which creates a dead end water line near house 4.
- We discussed the need to keep existing House 8 for income purposes. The initial estimate has the revenue at approximately \$227k/yr (per Shelly). The new services, renovation, and additional measures needed to keep the house operational should be under this revenue number.
- The question was raised as to whether plans would need to be updated with SCO for DD in order to submit for CD's on phase 2 with the changes that are currently proposed
 - Carolyn to contact SCO to determine what requirements and submittals will be needed. The current schedules is set with the assumption that CDs will be submitted directly to SCO by November.
- Phase 4 pond, to the north of the development needs to be shown on the plans (treats runoff from Varsity) and how it is rotated for phase 4 roadway.
 - It was also noted that the critical duct bank to main campus appears to go through this existing stormwater pond. Prior to phase 4 construction documents beginning this duct bank should be located.
- The discussion shifted to the two proposed layouts for the blvd into the project from Varsity and the affects that has on the lawn area, circulation, and whether having a consistent setback for the house to the roadway was a desirable change to the master plan.
- Overall parking numbers for Greek Village is still a concern and it was requested that parking be added along the blvd to maximum extent practical.

- Discussion on house 14 – Stewart to look at the angle and set back. The houses will end up with a slightly larger set back (house 14 and 15) of about 50’. The houses across the street appear to have the same set back. Stewart to look at the relationship of these houses during final concept review.
- The team seemed to prefer the parallel house and road option (Test Fit 1) versus the previous master plan with a larger green and more curves to slow down vehicles. Ryan pointed out that Stewart believes the addition of parallel parking will create the necessary “traffic calming”.
- There was a brief discussion of possible traffic calming measures along the green loop if they are deemed necessary.
- This project is funded for design and authorized to move forward in design.
- In phase 1 each lot paid 50% into infrastructure costs for construction, largely this will be the model for leasing and funding moving forward, with the exception of the apartment and townhouse lots in phase 2. It is unclear at this time how their 50% will be contributed for construction costs
- The anticipated costs for phase 2 infrastructure is 6.3 million
- There will be a significant amount of import fill required for the project as a whole, and there was a discussion as to whether some dirt could be stockpiled if available for discounted price in the near future, on previous projects NCSU has allowed export and import between sites when construction was active on both at the same otherwise stockpiling has not been the typical practice.
 - At this time the decision was that outside fill would not be worth the expense or coordination.
- Ryan discussed that the initial plan for termination of the loop road around green lawn area is to connect to the existing house 2 parking lot. This is if grades allow.
- Stewart to provide DD comments letter and approval letter to group if it can be found.
- Coordination with Clark Nexsen was discussed. Carolyn indicated that coordination or future meeting attendance by CN would not be necessary.
- Meeting closed with a brief review of the schedule and discussion of future meetings. (see below).

7. Schedule Review

8. Decisions made

- a. Review of Concept Test Fits 1 and 2
 - i. Test Fit 1 selected by group as most desirable. Stewart to input into grading and utilities and clean up for review and discussion during Work Shop

9. Next Meeting

- a. Work shop – July 30th
- b. Designated monthly meeting – last Wednesday of the month.

- c. Secondary meeting date will be 2nd Wednesday and used if necessary.

ON-GOING LIST OF ACTION ITEMS FOR THE GROUP

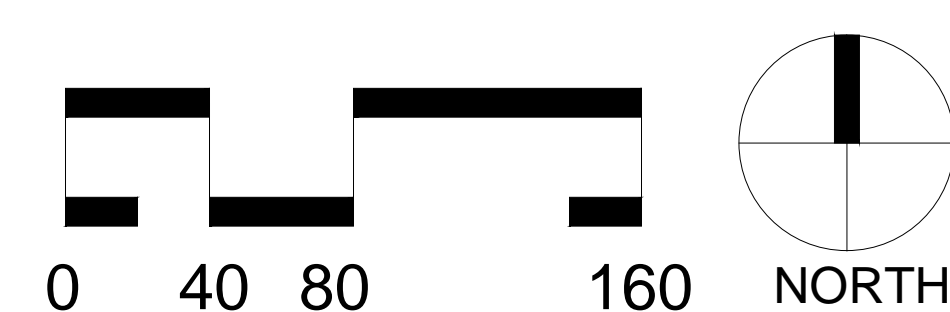
10. University Information / Action Items

- a. NCSU master plan for the northern parcel (corner of Western and Dan Allen) in PDF or JPG to incorporate into concept plan.
- b. Construction photos and design documents for the duct bank.
- c. House 8 Coordination and architectural plans for renovation.
- d. Coordination meeting with PSNC to discuss feeding existing houses and routing of new gas main to new house pads.
- e. Coordination meeting set up with Duke Power Rep to discuss “temporary power” service to the existing houses.
- f. Encroachment into adjacent property approval
- g. Coordinate with University IT for necessary fiber services / relocations to existing houses
- h. Meet with SCO to verify DD approval is still valid?
- i. Bid Alternates to be decided
- j. Geotechnical Investigation
- k. ~~Master Plan Concepts approval~~

11. Stewart Action Items

- a. Work shop Agenda / Prepare documents for work shop
 - i. Add parking along green lawn area loop
 - ii.
- b. Pond 4 rotation and grading and how the existing fiber duct is effected.
 - i. Need SUE by TWT to verify depth of duct nearest to pond.
- c. DD approval documentation (cannot locate – STEWART to contact SCO?)
- d. Review loading of the future buildings and 16 – 24’ of earth on the existing duct bank (need to have quality and thickness of concrete installed to prepare analysis).
- e. Fire flow of hydrant along with water model for the existing houses which are affected by the construction of phase II.
- f. Asbestos Testing (August)

End Meeting Notes



EXISTING HOUSES

HOUSE NUMBER	CURRENT TENANT
1.	Lambda Chi Alpha
2.	Kappa Alpha
3.	Delta Delta Delta / Sigma Kappa
4.	Delta zeta
5.	Phi Gamma Delta
6.	
7.	Sigma Phi Epsilon
8.	Alpha Delta Pi
9.	-
10.	-
11.	Pi Kappa Phi
12.	Delta Gamma
13.	Kappa Alpha Theta
14.	Pi Beta Phi
15.	Alpha Tau Omega

PROPOSED HOUSES

HOUSE NUMBER	CURRENT TENANT
1.	Sigma Nu
2.	Sigma Phi Epsilon
3.	Kappa Delta
4.	Delta Gamma
5.	Alpha Sigma Phi
6.	AVAILABLE
7.	Chi Psi
8.	Alpha Delta Pi
9.	Lambda Chi Alpha / Pi Kappa Phi
10.	Zeta Tau Alpha
11.	Kappa Alpha Theta / Kappa Kappa Gamma
12.	Chi Omega
13.	AVAILABLE
14.	Kappa Sigma
15.	AVAILABLE
16.	Kappa Alpha
17.	Alpha Xi Delta
18.	Pi Beta Phi
19.	Delta Zeta
20.	Sigma Chi / Sigma Kappa

SCHEDULE FOR DEMOLITION AND CONSTRUCTION

PHASE	ACTION	TIME TABLE		PARKING
		MOST AGGRESSIVE	NORMAL SCHEDULE	
1	Demo Houses 9, 10 + Site Prep Build Houses 1 2 3 4			258
2	Demo Houses 5, 7 + site prep Build Houses 19 20 AND TOWNHOUSES A B & C	2015	SUMMER 2015	257
3	Demo Houses 1, 11, 12 + Site Prep + Varsity Drive Widening Build Houses 8 9 10 11	2016	SUMMER 2017	146
4	Demo Houses 2, 3, 4 + Site Prep + Varsity Drive Widening + MEAS Lab Build Houses 12 13 14 15 16 17 18	2017	SUMMER 2019	239
5	Demo Houses 8, 13, 14 + Site Prep Build Houses 5 6 7	2019	SUMMER 2021	90

TOTAL - 990

NCSU GREEK VILLAGE

UPDATED MASTER PLAN

AUGUST 13, 2014



NORTH CAROLINA
STATE
UNIVERSITY

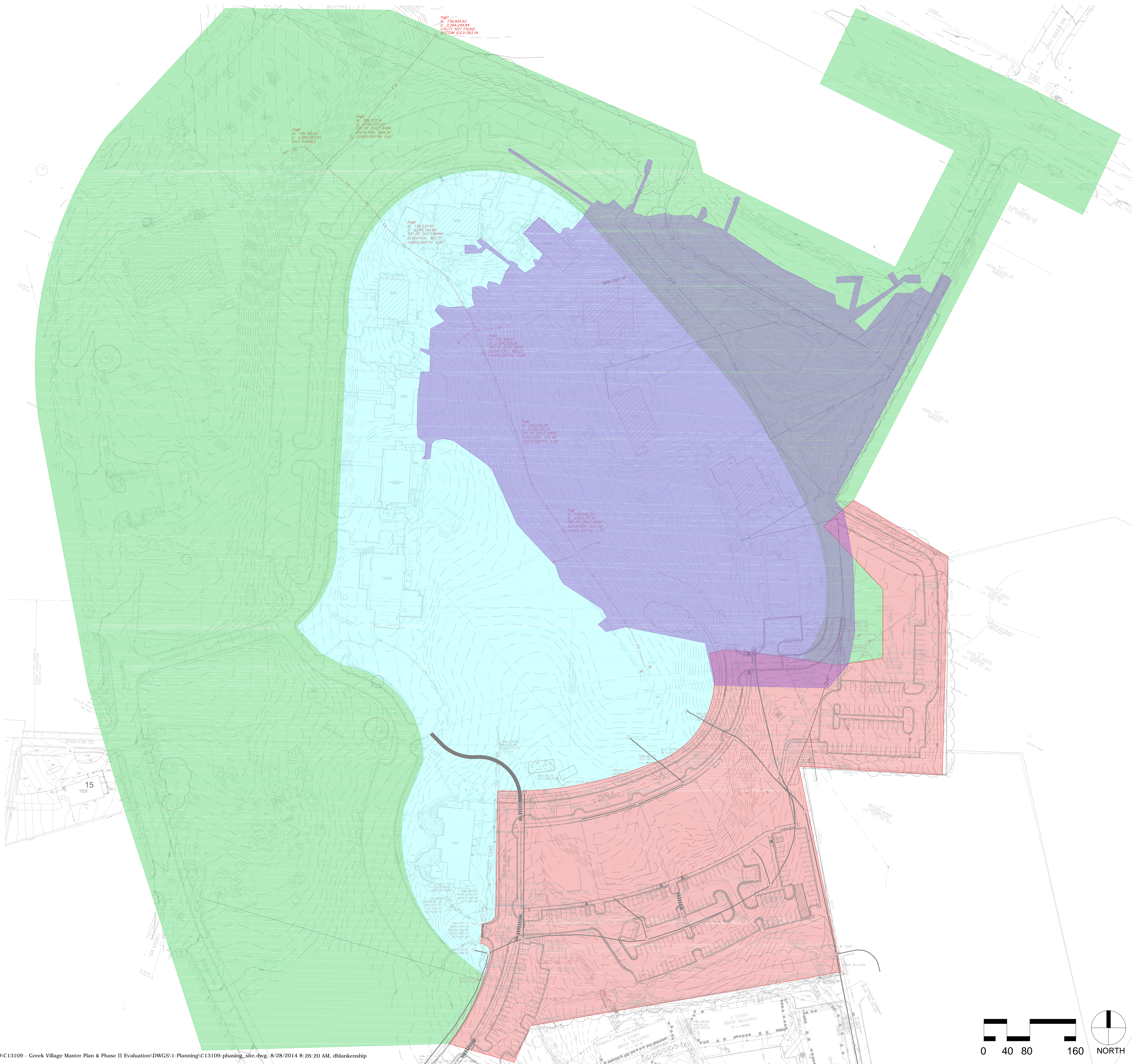
NORTH CAROLINA STATE UNIVERSITY
ADMINISTRATION SERVICE BUILDING III
2701 SULLIVAN DRIVE
RALEIGH, NC 27607
T: 919.513.7239




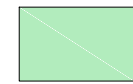


STEWART

421 FAYETTEVILLE ST., STE 400
RALEIGH, NC 27601
FIRM LICENSE #: C-1051
www.stewartinc.com
PROJ #: C13109

OVERALL MASTER PLAN



LEGEND

SURVEY	TIME TABLE
	Pre 2006 Survey Compilation from NCSU
	July 2007 Stewart Survey (Underground Utilities from NCSU)
	As-Built Files (2010)
	Stewart Survey - Phase II (SUE & Topographic Completed July 2014*) *Horizontal Datum is NAD83 (2011) and Vertical Datum is NAVD88 and based on controls provided by NCSU. All future surveys to match new datum controls.

NCSU GREEK VILLAGE
UPDATED MASTER PLAN
AUGUST 13, 2014

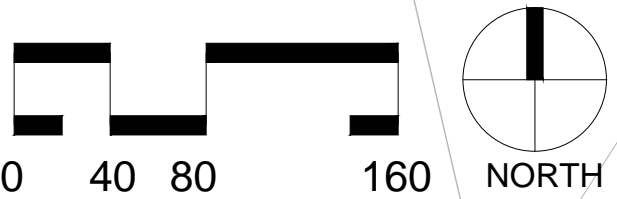


NORTH
CAROLINA
STATE
UNIVERSITY

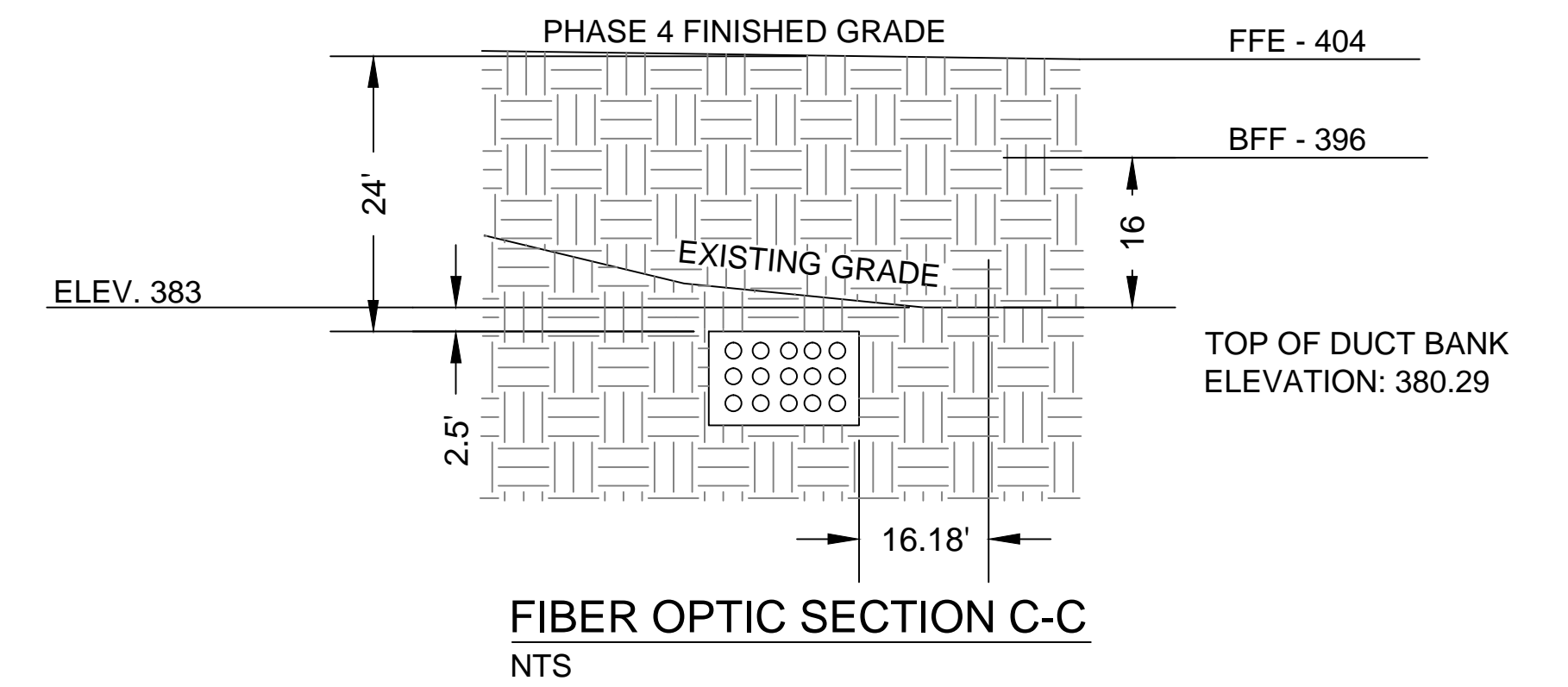
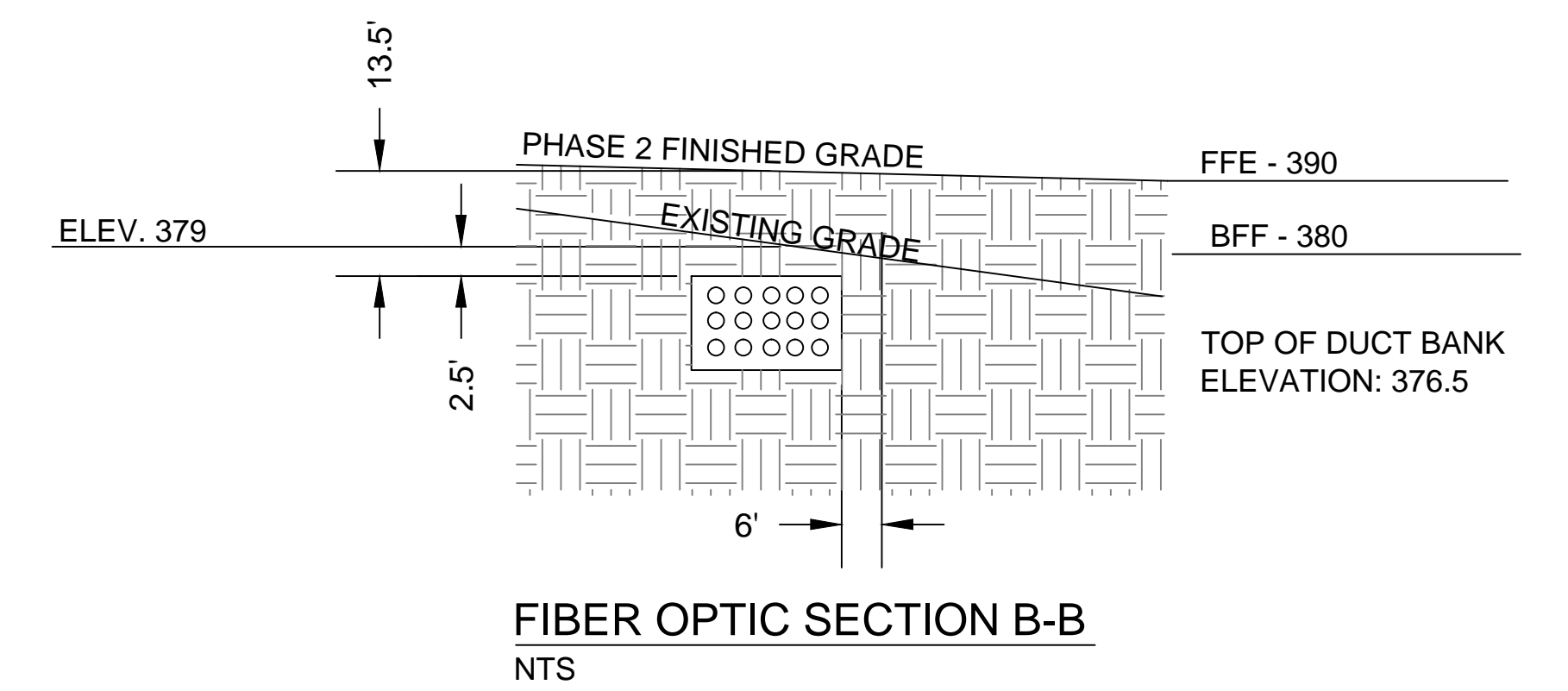
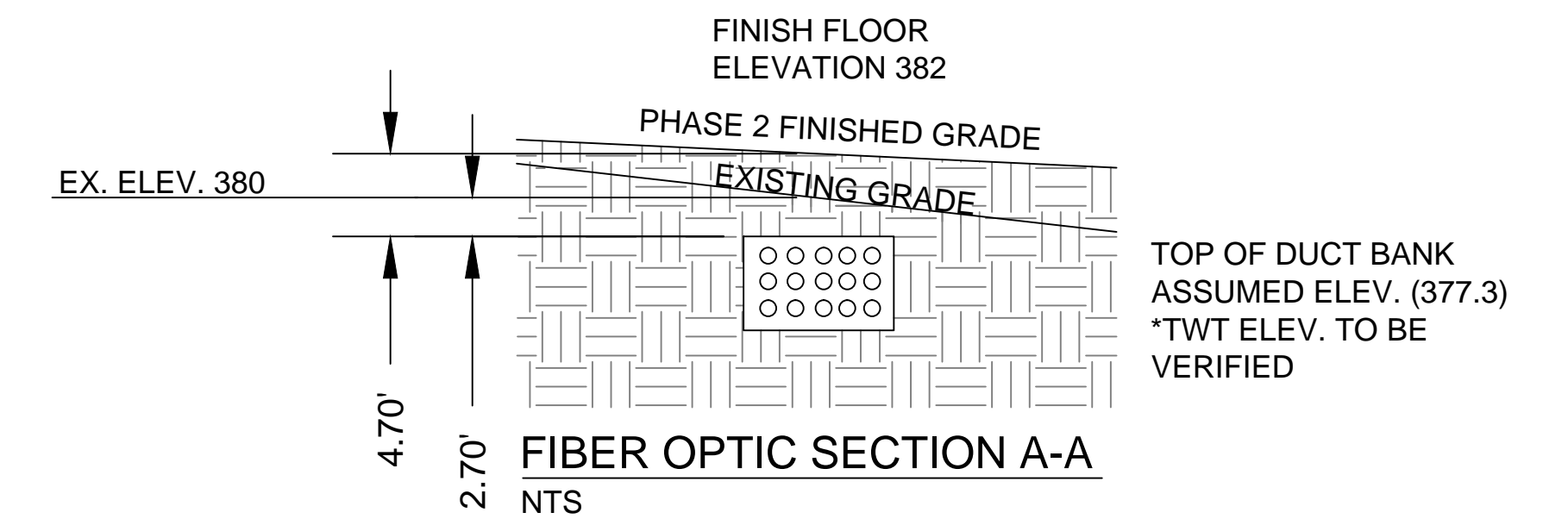
NORTH CAROLINA STATE UNIVERSITY
ADMINISTRATION SERVICE BUILDING III
2701 SULLIVAN DRIVE
RALEIGH, NC 27607
T: 919.513.7239



STEWART
421 FAYETTEVILLE ST., STE 400
RALEIGH, NC 27601
T 919.380.8750
FIRM LICENSE #: C-1051
www.stewartnc.com
PROJ #: C13109



EXISTING CONDITIONS PLAN



LEGEND

- FO ORIGINAL NCSU FIBER OPTIC LOCATION
- FO TWT SURVEY (MARCH 2014)

NCSU GREEK VILLAGE

UPDATED MASTER PLAN

MARCH 25, 2014



NORTH
CAROLINA
STATE
UNIVERSITY

NORTH CAROLINA STATE UNIVERSITY
ADMINISTRATION SERVICE BUILDING III
2701 SULLIVAN DRIVE
RALEIGH, NC 27607
T: 919.513.7239



STEWART

421 FAYETTEVILLE ST., STE. 400
RALEIGH, NC 27601
T 919.380.8750
FIRM LICENSE #: C-1051
www.stewartinc.com
PROJ #: C13109

FIBER OPTIC PLAN



Phase	Spaces Provided	Spaces Required	+/-	Houses
I	258	160	+ 99	4
II	257	206	+ 149	2 Houes & 251 MU Beds
III	146	160	+ 135	4
IV	239	280	+ 94	7
V	90	120	+ 64	3
Overall**	990	926	+ 64	20


* Parking Requirements based on the below criteria:
House (40 spaces per house)
107 Apartment/144 Townhouse -
(1 space per 2 beds)

** Includes on-street parking

SCHEDULE FOR DEMOLITION AND CONSTRUCTION


PHASE	ACTION	TIME TABLE		PARKING
		MOST AGGRESSIVE	NORMAL SCHEDULE	
1	Demo Houses 9, 10 + Site Prep Build Houses 1 2 3 4			258
2	Demo Houses 5, 7 + site prep Build Houses 19 20 AND TOWNHOUSES A B & C	2015	SUMMER 2015	257
3	Demo Houses 1, 11, 12 + Site Prep + Varsity Drive Widening Build Houses 8 9 10 11	2016	SUMMER 2017	146
4	Demo Houses 2, 3, 4 + Site Prep + Varsity Drive Widening + MEAS Lab Build Houses 12 13 14 15 16 17 18	2017	SUMMER 2019	239
5	Demo Houses 8, 13, 14 + Site Prep Build Houses 5 6 7	2019	SUMMER 2021	90
				TOTAL - 990

NCSU GREEK VILLAGE
UPDATED MASTER PLAN
AUGUST 13, 2014



NORTH CAROLINA STATE UNIVERSITY

NORTH CAROLINA STATE UNIVERSITY
ADMINISTRATION SERVICE BUILDING III
2701 SULLIVAN DRIVE
RALEIGH, NC 27607
T: 919.513.7239



STEWART

421 FAYETTEVILLE ST., STE 400
RALEIGH, NC 27601
T 919.360.8750

FIRM LICENSE #: C-1051
www.stewartinc.com
PROJ # C13109

MULTI-UNIT PARKING GRAPHIC



IMPERVIOUS CALCULATIONS

Transportation Impervious		
cumulative		
1	34,578	34,578
2	62,992	97,569
3	34,445	132,014
4	47,284	179,299
5	11,494	190,792
T	190,792	
Total Impervious		
cumulative		
1	175,728	175,728
2	178,191	353,919
3	154,114	508,033
4	202,825	710,858
5	69,387	780,245
T	780,245	
Impervious Required for Treatment		
cumulative		
1	141,151	141,151
2	115,199	256,350
3	119,669	376,019
4	155,541	531,559
5	57,894	589,453
T	589,453	
Impervious Treated		
cumulative		
1	183,343	183,343
2	174,666	358,009
3	107,795	465,804
4	78,220	544,024
5	45,584	589,608
T	589,608	

- NOTES:
1. PHASE 1 HAS TWO BIORETENTION AREAS AND THE WETPOND, SIGNIFICANT TRANSPORTATION AREA IS INCLUDED IN THIS PHASE AND TREATED IN STORMWATER TREATMENT DEVICES.
 2. PHASE TWO PROPOSES TO REMOVE THE ROAD BEHIND HOUSE 8 AND EXPAND THE WETPOND CONSTRUCTED IN PHASE 1. THIS POND WILL TREAT ALL THE DRAINAGE FROM PHASE 2 WHICH WILL ALSO INCLUDE TRANSPORTATION IMPERVIOUS AREA.
 3. PHASE THREE WILL CONSTRUCT ONE BIORETENTION DEVICE THAT WILL TREAT EXISTING IMPERVIOUS IN SUFFICIENT QUANTITIES TO OFFSET THE ADDITIONAL IMPERVIOUS ASSOCIATED WITH PHASE 3. THIS BIORETENTION DEVICE WILL BE MODIFIED IN PHASE 4 TO TREAT THE PROPOSED AREA ASSOCIATED WITH PHASE 4.
 4. PHASE FOUR PROPOSES TO EXPAND/REALIGN THE EXISTING WETPOND TREATING VARSITY DRIVE, AS WELL AS PROPOSING TWO NEW BIORETENTION AREAS THAT WILL TREAT AREA FROM PHASE 4. THE MORE SOUTHERN OF THESE TWO DEVICES IS LOCATED WITHIN THE NORTHERN LIMITS OF PHASE 2 CONSTRUCTION.
 5. PHASE 5 PROPOSES THE BIORETENTION AREA BELOW THE EXISTING HOUSE 13/14. THIS DEVICE WILL TREAT A FEW HOUSES AND THE PARKING LOT PROPOSED IN PHASE 5. THE MAP ABOVE ALSO SHOWS THAT THE WETPOND COULD BE EXPANDED AND AREA FROM PHASE 3 AND 4 BE TREATED. THIS IMPERVIOUS AREA AND EXPANSION ON THE WETPOND IS NOT CURRENTLY REQUIRED AND IS NOT SHOWN IN THE IMPERVIOUS TREATED TABLE ABOVE. THE DRAINAGE FROM THIS AREA COULD BE DESIGNED TO BYPASS ALL TREATMENT DEVICES OR COULD BE DESIGNED TO DRAIN TO THE WETPOND EXPANDED IN PHASE 5. THE LARGER EXPANDED WETPOND (AS SHOWN IN THE DIAGRAM) WOULD CREATE A MORE ASCETICALLY PLEASING STORMWATER DEVICE. IF THIS WETPOND IS EXPANDED THE BIORETENTION DEVICE CURRENTLY PROPOSED IN PHASE 5 WOULD NOT BE REQUIRED. THIS OPTION IS AVAILABLE DUE TO THE DESIGN CRITERIA REQUIREMENT THAT EACH PHASE BUILD UPON THE OTHER AND MEET THE STORM WATER TREATMENT REQUIREMENTS AS THEY ARE CONSTRUCTED.

NCSU GREEK VILLAGE
UPDATED MASTER PLAN
AUGUST 13, 2014



NORTH
CAROLINA
STATE
UNIVERSITY



STEWART

421 FAYETTEVILLE ST. STE 400
RALEIGH, NC 27601
T 919.360.9720

FIRM LICENSE #: C-1051
www.stewartinc.com
PROJ # C-131109



EXISTING HOUSES

HOUSE NUMBER	CURRENT TENANT
1.	Lambda Chi Alpha
2.	Kappa Alpha
3.	Delta Delta Delta / Sigma Kappa
4.	Delta zeta
5.	Phi Gamma Delta
6.	
7.	Sigma Phi Epsilon
8.	Alpha Delta Pi
9.	-
10.	-
11.	Pi Kappa Phi
12.	Delta Gamma
13.	Kappa Alpha Theta
14.	Pi Beta Phi
15.	Alpha Tau Omega

PROPOSED HOUSES

HOUSE NUMBER	CURRENT TENANT
1.	Sigma Nu
2.	Sigma Phi Epsilon
3.	Kappa Delta
4.	Delta Gamma
5.	Alpha Sigma Phi
6.	AVAILABLE
7.	Chi Psi
8.	Alpha Delta Pi
9.	Lambda Chi Alpha / Pi Kappa Phi
10.	Zeta Tau Alpha
11.	Kappa Alpha Theta / Kappa Kappa Gamma
12.	Chi Omega
13.	AVAILABLE
14.	Kappa Sigma
15.	AVAILABLE
16.	Kappa Alpha
17.	Alpha Xi Delta
18.	Pi Beta Phi
19.	Delta Zeta
20.	Sigma Chi / Sigma Kappa

SCHEDULE FOR DEMOLITION AND CONSTRUCTION

PHASE	ACTION	TIME TABLE		PARKING
		MOST AGGRESSIVE	NORMAL SCHEDULE	
1	Demo Houses 9, 10 + Site Prep Build Houses 1 2 3 4			258
2	Demo Houses 5, 7 + site prep Build Houses 19 20 AND TOWNHOUSES A B & C	2015	SUMMER 2015	257
3	Demo Houses 1, 11, 12 + Site Prep + Varsity Drive Widening Build Houses 8 9 10 11	2016	SUMMER 2017	146
4	Demo Houses 2, 3, 4 + Site Prep + Varsity Drive Widening + MEAS Lab Build Houses 12 13 14 15 16 17 18	2017	SUMMER 2019	239
5	Demo Houses 8, 13, 14 + Site Prep Build Houses 5 6 7	2019	SUMMER 2021	90

TOTAL - 990

NCSU GREEK VILLAGE

UPDATED MASTER PLAN

AUGUST 13, 2014



NORTH CAROLINA STATE UNIVERSITY

NORTH CAROLINA STATE UNIVERSITY
ADMINISTRATION SERVICE BUILDING III
2701 SULLIVAN DRIVE
RALEIGH, NC 27607
T: 919.513.7239



STEWART
421 FAYETTEVILLE ST., STE. 400
RALEIGH, NC 27601
T 919.380.8750
FIRM LICENSE #: C-1051
www.stewartinc.com
PROJ #: C13109



EXISTING HOUSES

HOUSE NUMBER	CURRENT TENANT
1.	Lambda Chi Alpha
2.	Kappa Alpha
3.	Delta Delta Delta / Sigma Kappa
4.	Delta zeta
5.	Phi Gamma Delta
6.	
7.	Sigma Phi Epsilon
8.	Alpha Delta Pi
9.	-
10.	-
11.	Pi Kappa Phi
12.	Delta Gamma
13.	Kappa Alpha Theta
14.	Pi Beta Phi
15.	Alpha Tau Omega

PROPOSED HOUSES

HOUSE NUMBER	CURRENT TENANT
1.	Sigma Nu
2.	Sigma Phi Epsilon
3.	Kappa Delta
4.	Delta Gamma
5.	Alpha Sigma Phi
6.	AVAILABLE
7.	Chi Psi
8.	Alpha Delta Pi
9.	Lambda Chi Alpha / Pi Kappa Phi
10.	Zeta Tau Alpha
11.	Kappa Alpha Theta / Kappa Kappa Gamma
12.	Chi Omega
13.	AVAILABLE
14.	Kappa Sigma
15.	AVAILABLE
16.	Kappa Alpha
17.	Alpha Xi Delta
18.	Pi Beta Phi
19.	Delta Zeta
20.	Sigma Chi / Sigma Kappa

SCHEDULE FOR DEMOLITION AND CONSTRUCTION

PHASE	ACTION	TIME TABLE		PARKING
		MOST AGGRESSIVE	NORMAL SCHEDULE	
1	Demo Houses 9, 10 + Site Prep Build Houses 1 2 3 4			258
2	Demo Houses 5, 7 + site prep Build Houses 19 20 AND TOWNHOUSES A B & C	2015	SUMMER 2015	257
3	Demo Houses 1, 11, 12 + Site Prep + Varsity Drive Widening Build Houses 8 9 10 11	2016	SUMMER 2017	146
4	Demo Houses 2, 3, 4 + Site Prep + Varsity Drive Widening + MEAS Lab Build Houses 12 13 14 15 16 17 18	2017	SUMMER 2019	239
5	Demo Houses 8, 13, 14 + Site Prep Build Houses 5 6 7	2019	SUMMER 2021	90

TOTAL - 990

NCSU GREEK VILLAGE
UPDATED MASTER PLAN
AUGUST 13, 2014

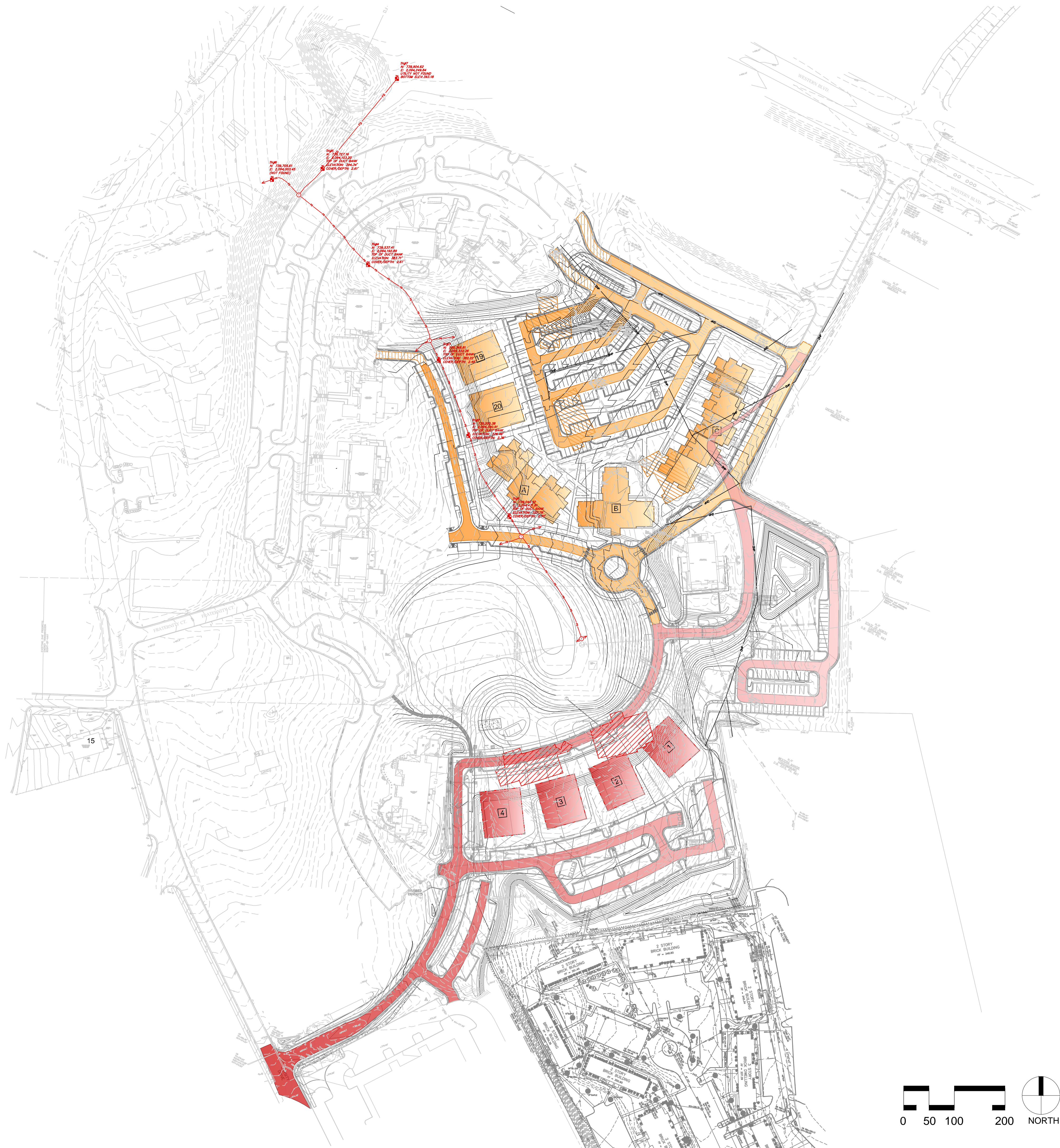


NORTH CAROLINA
STATE
UNIVERSITY

NORTH CAROLINA STATE UNIVERSITY
ADMINISTRATION SERVICE BUILDING III
2701 SULLIVAN DRIVE
RALEIGH, NC 27607
T: 919.513.7239



STEWART
421 FAYETTEVILLE ST., STE. 400
RALEIGH, NC 27601
T 919.380.8750
FIRM LICENSE #: C-1051
www.stewartinc.com
PROJ #: C13109



EXISTING HOUSES

HOUSE NUMBER	CURRENT TENANT
1.	Lambda Chi Alpha
2.	Kappa Alpha
3.	Delta Delta Delta / Sigma Kappa
4.	Delta zeta
5.	Phi Gamma Delta
6.	
7.	Sigma Phi Epsilon
8.	Alpha Delta Pi
9.	-
10.	-
11.	Pi Kappa Phi
12.	Delta Gamma
13.	Kappa Alpha Theta
14.	Pi Beta Phi
15.	Alpha Tau Omega

PROPOSED HOUSES

HOUSE NUMBER	CURRENT TENANT
1.	Sigma Nu
2.	Sigma Phi Epsilon
3.	Kappa Delta
4.	Delta Gamma
5.	Alpha Sigma Phi
6.	AVAILABLE
7.	Chi Psi
8.	Alpha Delta Pi
9.	Lambda Chi Alpha / Pi Kappa Phi
10.	Zeta Tau Alpha
11.	Kappa Alpha Theta / Kappa Kappa Gamma
12.	Chi Omega
13.	AVAILABLE
14.	Kappa Sigma
15.	AVAILABLE
16.	Kappa Alpha
17.	Alpha Xi Delta
18.	Pi Beta Phi
19.	Delta Zeta
20.	Sigma Chi / Sigma Kappa

SCHEDULE FOR DEMOLITION AND CONSTRUCTION

PHASE	ACTION	TIME TABLE		PARKING
		MOST AGGRESSIVE	NORMAL SCHEDULE	
1	Demo Houses 9, 10 + Site Prep Build Houses 1 2 3 4			258
2	Demo Houses 5, 7 + site prep Build Houses 19 20 AND TOWNHOUSES A B & C	2015	SUMMER 2015	257
3	Demo Houses 1, 11, 12 + Site Prep + Varsity Drive Widening Build Houses 8 9 10 11	2016	SUMMER 2017	146
4	Demo Houses 2, 3, 4 + Site Prep + Varsity Drive Widening + MEAS Lab Build Houses 12 13 14 15 16 17 18	2017	SUMMER 2019	239
5	Demo Houses 8, 13, 14 + Site Prep Build Houses 5 6 7	2019	SUMMER 2021	90

TOTAL - 990

NCSU GREEK VILLAGE

UPDATED MASTER PLAN

AUGUST 13, 2014



NORTH CAROLINA STATE UNIVERSITY

NORTH CAROLINA STATE UNIVERSITY
ADMINISTRATION SERVICE BUILDING III
2701 SULLIVAN DRIVE
RALEIGH, NC 27607
T: 919.513.7239



STEWART
421 FAYETTEVILLE ST., STE. 400
RALEIGH, NC 27601
T: 919.380.8750
FIRM LICENSE #: C-1051
www.stewartinc.com
PROJ #: C13109

PHASE 2 - GRADING



EXISTING HOUSES		PROPOSED HOUSES	
HOUSE NUMBER	CURRENT TENANT	HOUSE NUMBER	CURRENT TENANT
1.	Lambda Chi Alpha	PHASE 1	1. Sigma Nu
2.	Kappa Alpha		2. Sigma Phi Epsilon
3.	Delta Delta Delta / Sigma Kappa		3. Kappa Delta
4.	Delta zeta		4. Delta Gamma
PHASE 2	5. Phi Gamma Delta	PHASE 5	5. Alpha Sigma Phi
	6. Sigma Phi Epsilon		6. AVAILABLE
	7. Alpha Delta Pi		7. Chi Psi
PHASE 1	9. -	PHASE 3	8. Alpha Delta Pi
	10. -		9. Lambda Chi Alpha / Pi Kappa Phi
11.	Pi Kappa Phi		10. Zeta Tau Alpha
12.	Delta Gamma		11. Kappa Alpha Theta / Kappa Kappa Gamma
13.	Kappa Alpha Theta	PHASE 4	12. Chi Omega
14.	Pi Beta Phi		13. AVAILABLE
15.	Alpha Tau Omega		14. Kappa Sigma
			15. AVAILABLE
			16. Kappa Alpha
			17. Alpha Xi Delta
		PHASE 2	18. Pi Beta Phi
			19. Delta Zeta
			20. Sigma Chi / Sigma Kappa

SCHEDULE FOR DEMOLITION AND CONSTRUCTION

PHASE	ACTION	TIME TABLE		PARKING
		MOST AGGRESSIVE	NORMAL SCHEDULE	
1	Demo Houses 9, 10 + Site Prep Build Houses 1 2 3 4			258
2	Demo Houses 5, 7 + site prep Build Houses 19 20 AND TOWNHOUSES A B & C	2015	SUMMER 2015	257
3	Demo Houses 1, 11, 12 + Site Prep + Varsity Drive Widening Build Houses 8 9 10 11	2016	SUMMER 2017	146
4	Demo Houses 2, 3, 4 + Site Prep + Varsity Drive Widening + MEAS Lab Build Houses 12 13 14 15 16 17 18	2017	SUMMER 2019	239
5	Demo Houses 8, 13, 14 + Site Prep Build Houses 5 6 7	2019	SUMMER 2021	90

TOTAL - 990

NCSU GREEK VILLAGE
UPDATED MASTER PLAN
AUGUST 13, 2014

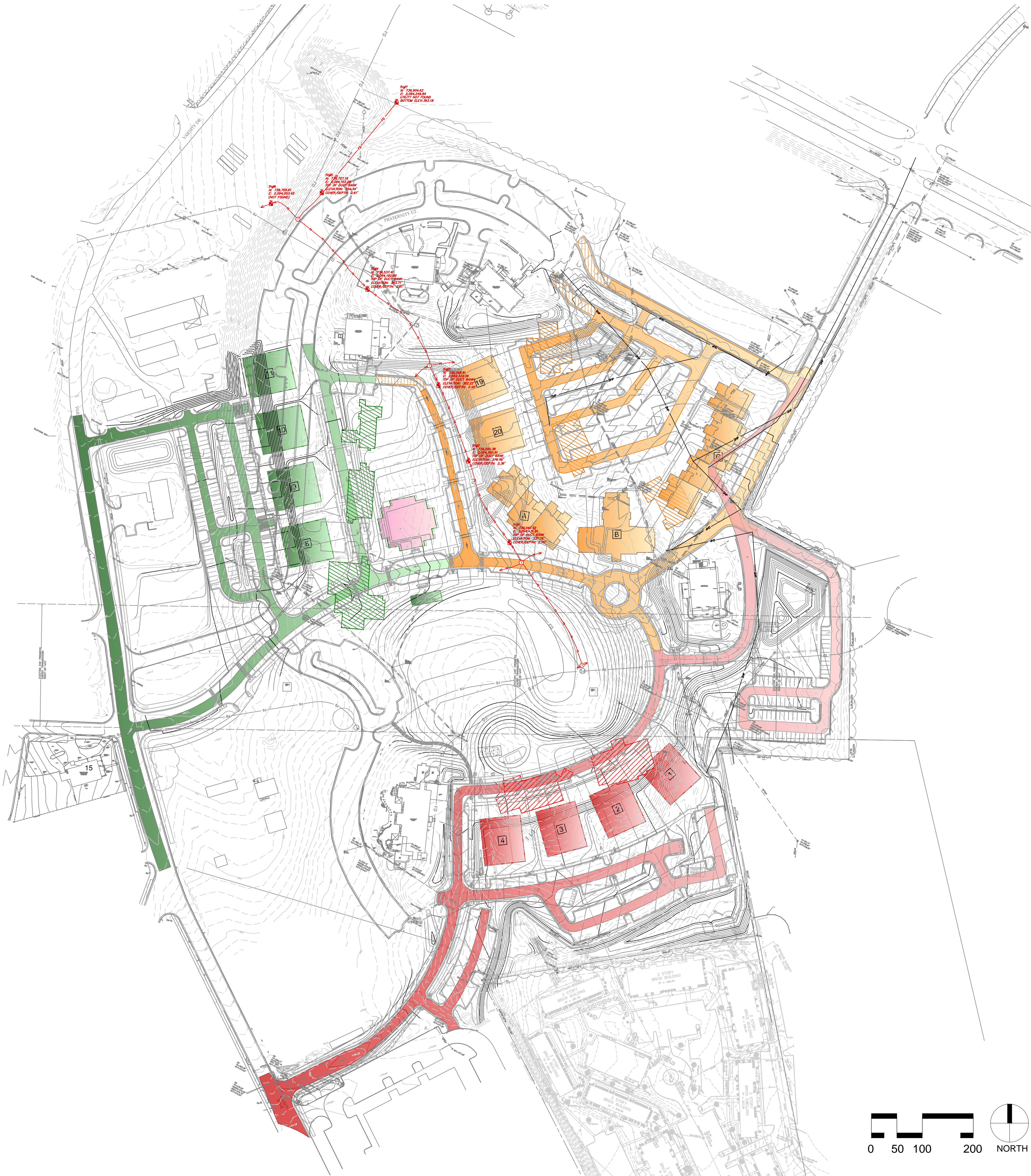


NORTH CAROLINA
STATE
UNIVERSITY

NORTH CAROLINA STATE UNIVERSITY
ADMINISTRATION SERVICE BUILDING III
2701 SULLIVAN DRIVE
RALEIGH, NC 27607
T: 919.513.7239



STEWART
421 FAYETTEVILLE ST., STE. 400
RALEIGH, NC 27601
T 919.380.8750
FIRM LICENSE #: C-1051
www.stewartinc.com
PROJ #: C13109



EXISTING HOUSES

HOUSE NUMBER	CURRENT TENANT
1.	Lambda Chi Alpha
2.	Kappa Alpha
3.	Delta Delta Delta / Sigma Kappa
4.	Delta zeta
5.	Phi Gamma Delta
6.	
7.	Sigma Phi Epsilon
8.	Alpha Delta Pi
9.	-
10.	-
11.	Pi Kappa Phi
12.	Delta Gamma
13.	Kappa Alpha Theta
14.	Pi Beta Phi
15.	Alpha Tau Omega

PROPOSED HOUSES

HOUSE NUMBER	CURRENT TENANT
1.	Sigma Nu
2.	Sigma Phi Epsilon
3.	Kappa Delta
4.	Delta Gamma
5.	Alpha Sigma Phi
6.	AVAILABLE
7.	Chi Psi
8.	Alpha Delta Pi
9.	Lambda Chi Alpha / Pi Kappa Phi
10.	Zeta Tau Alpha
11.	Kappa Alpha Theta / Kappa Kappa Gamma
12.	Chi Omega
13.	AVAILABLE
14.	Kappa Sigma
15.	AVAILABLE
16.	Kappa Alpha
17.	Alpha Xi Delta
18.	Pi Beta Phi
19.	Delta Zeta
20.	Sigma Chi / Sigma Kappa

SCHEDULE FOR DEMOLITION AND CONSTRUCTION

PHASE	ACTION	TIME TABLE		PARKING
		MOST AGGRESSIVE	NORMAL SCHEDULE	
1	Demo Houses 9, 10 + Site Prep Build Houses 1 2 3 4			258
2	Demo Houses 5, 7 + site prep Build Houses 19 20 AND TOWNHOUSES A B & C	2015	SUMMER 2015	257
3	Demo Houses 1, 11, 12 + Site Prep + Varsity Drive Widening Build Houses 8 9 10 11	2016	SUMMER 2017	146
4	Demo Houses 2, 3, 4 + Site Prep + Varsity Drive Widening + MEAS Lab Build Houses 12 13 14 15 16 17 18	2017	SUMMER 2019	239
5	Demo Houses 8, 13, 14 + Site Prep Build Houses 5 6 7	2019	SUMMER 2021	90

TOTAL - 990

NCSU GREEK VILLAGE
UPDATED MASTER PLAN
AUGUST 13, 2014



NORTH CAROLINA STATE UNIVERSITY

NORTH CAROLINA STATE UNIVERSITY
ADMINISTRATION SERVICE BUILDING III
2701 SULLIVAN DRIVE
RALEIGH, NC 27607
T: 919.513.7239



STEWART
421 FAYETTEVILLE ST., STE. 400
RALEIGH, NC 27601
T 919.380.8750
FIRM LICENSE #: C-1051
www.stewartinc.com
PROJ #: C13109



EXISTING HOUSES

HOUSE NUMBER	CURRENT TENANT
1.	Lambda Chi Alpha
2.	Kappa Alpha
3.	Delta Delta Delta / Sigma Kappa
4.	Delta zeta
5.	Phi Gamma Delta
6.	
7.	Sigma Phi Epsilon
8.	Alpha Delta Pi
9.	-
10.	-
11.	Pi Kappa Phi
12.	Delta Gamma
13.	Kappa Alpha Theta
14.	Pi Beta Phi
15.	Alpha Tau Omega

PROPOSED HOUSES

HOUSE NUMBER	CURRENT TENANT
1.	Sigma Nu
2.	Sigma Phi Epsilon
3.	Kappa Delta
4.	Delta Gamma
5.	Alpha Sigma Phi
6.	AVAILABLE
7.	Chi Psi
8.	Alpha Delta Pi
9.	Lambda Chi Alpha / Pi Kappa Phi
10.	Zeta Tau Alpha
11.	Kappa Alpha Theta / Kappa Kappa Gamma
12.	Chi Omega
13.	AVAILABLE
14.	Kappa Sigma
15.	AVAILABLE
16.	Kappa Alpha
17.	Alpha Xi Delta
18.	Pi Beta Phi
19.	Delta Zeta
20.	Sigma Chi / Sigma Kappa

SCHEDULE FOR DEMOLITION AND CONSTRUCTION

PHASE	ACTION	TIME TABLE		PARKING
		MOST AGGRESSIVE	NORMAL SCHEDULE	
1	Demo Houses 9, 10 + Site Prep Build Houses 1 2 3 4			258
2	Demo Houses 5, 7 + site prep Build Houses 19 20 AND TOWNHOUSES A B & C	2015	SUMMER 2015	257
3	Demo Houses 1, 11, 12 + Site Prep + Varsity Drive Widening Build Houses 8 9 10 11	2016	SUMMER 2017	146
4	Demo Houses 2, 3, 4 + Site Prep + Varsity Drive Widening + MEAS Lab Build Houses 12 13 14 15 16 17 18	2017	SUMMER 2019	239
5	Demo Houses 8, 13, 14 + Site Prep Build Houses 5 6 7	2019	SUMMER 2021	90

TOTAL - 990

NCSU GREEK VILLAGE
UPDATED MASTER PLAN
AUGUST 13, 2014



NORTH CAROLINA
STATE
UNIVERSITY

NORTH CAROLINA STATE UNIVERSITY
ADMINISTRATION SERVICE BUILDING III
2701 SULLIVAN DRIVE
RALEIGH, NC 27607
T: 919.513.7239



STEWART
421 FAYETTEVILLE ST., STE. 400
RALEIGH, NC 27601
T 919.380.8750
FIRM LICENSE #: C-1051
www.stewartinc.com
PROJ #: C13109



EXISTING HOUSES

HOUSE NUMBER	CURRENT TENANT
1.	Lambda Chi Alpha
2.	Kappa Alpha
3.	Delta Delta Delta / Sigma Kappa
4.	Delta zeta
5.	Phi Gamma Delta
6.	
7.	Sigma Phi Epsilon
8.	Alpha Delta Pi
9.	-
10.	-
11.	Pi Kappa Phi
12.	Delta Gamma
13.	Kappa Alpha Theta
14.	Pi Beta Phi
15.	Alpha Tau Omega

PROPOSED HOUSES

HOUSE NUMBER	CURRENT TENANT
1.	Sigma Nu
2.	Sigma Phi Epsilon
3.	Kappa Delta
4.	Delta Gamma
5.	Alpha Sigma Phi
6.	AVAILABLE
7.	Chi Psi
8.	Alpha Delta Pi
9.	Lambda Chi Alpha / Pi Kappa Phi
10.	Zeta Tau Alpha
11.	Kappa Alpha Theta / Kappa Kappa Gamma
12.	Chi Omega
13.	AVAILABLE
14.	Kappa Sigma
15.	AVAILABLE
16.	Kappa Alpha
17.	Alpha Xi Delta
18.	Pi Beta Phi
19.	Delta Zeta
20.	Sigma Chi / Sigma Kappa

SCHEDULE FOR DEMOLITION AND CONSTRUCTION

PHASE	ACTION	TIME TABLE		PARKING
		MOST AGGRESSIVE	NORMAL SCHEDULE	
1	Demo Houses 9, 10 + Site Prep Build Houses 1 2 3 4			258
2	Demo Houses 5, 7 + site prep Build Houses 19 20 AND TOWNHOUSES A B & C	2015	SUMMER 2015	257
3	Demo Houses 1, 11, 12 + Site Prep + Varsity Drive Widening Build Houses 8 9 10 11	2016	SUMMER 2017	146
4	Demo Houses 2, 3, 4 + Site Prep + Varsity Drive Widening + MEAS Lab Build Houses 12 13 14 15 16 17 18	2017	SUMMER 2019	239
5	Demo Houses 8, 13, 14 + Site Prep Build Houses 5 6 7	2019	SUMMER 2021	90

TOTAL - 990

NCSU GREEK VILLAGE

UPDATED MASTER PLAN

AUGUST 13, 2014



NORTH CAROLINA STATE UNIVERSITY

NORTH CAROLINA STATE UNIVERSITY
ADMINISTRATION SERVICE BUILDING III
2701 SULLIVAN DRIVE
RALEIGH, NC 27607
T: 919.513.7239



STEWART
421 FAYETTEVILLE ST., STE. 400
RALEIGH, NC 27601
T 919.380.8750
FIRM LICENSE #: C-1051
www.stewartinc.com
PROJ #: C13109

PHASE 4 - GRADING



EXISTING HOUSES

HOUSE NUMBER	CURRENT TENANT
1.	Lambda Chi Alpha
2.	Kappa Alpha
3.	Delta Delta Delta / Sigma Kappa
4.	Delta zeta
5.	Phi Gamma Delta
6.	Sigma Phi Epsilon
8.	Alpha Delta Pi
9.	-
10.	-
11.	Pi Kappa Phi
12.	Delta Gamma
13.	Kappa Alpha Theta
14.	Pi Beta Phi
15.	Alpha Tau Omega

PROPOSED HOUSES

HOUSE NUMBER	CURRENT TENANT
1.	Sigma Nu
2.	Sigma Phi Epsilon
3.	Kappa Delta
4.	Delta Gamma
5.	Alpha Sigma Phi
6.	AVAILABLE
7.	Chi Psi
8.	Alpha Delta Pi
9.	Lambda Chi Alpha / Pi Kappa Phi
10.	Zeta Tau Alpha
11.	Kappa Alpha Theta / Kappa Kappa Gamma
12.	Chi Omega
13.	AVAILABLE
14.	Kappa Sigma
15.	AVAILABLE
16.	Kappa Alpha
17.	Alpha Xi Delta
18.	Pi Beta Phi
19.	Delta Zeta
20.	Sigma Chi / Sigma Kappa

SCHEDULE FOR DEMOLITION AND CONSTRUCTION

PHASE	ACTION	TIME TABLE		PARKING
		MOST AGGRESSIVE	NORMAL SCHEDULE	
1	Demo Houses 9, 10 + Site Prep Build Houses 1 2 3 4			258
2	Demo Houses 5, 7 + site prep Build Houses 19 20 AND TOWNHOUSES A B & C	2015	SUMMER 2015	257
3	Demo Houses 1, 11, 12 + Site Prep + Varsity Drive Widening Build Houses 8 9 10 11	2016	SUMMER 2017	146
4	Demo Houses 2, 3, 4 + Site Prep + Varsity Drive Widening + MEAS Lab Build Houses 12 13 14 15 16 17 18	2017	SUMMER 2019	239
5	Demo Houses 8, 13, 14 + Site Prep Build Houses 5 6 7	2019	SUMMER 2021	90

TOTAL - 990

NCSU GREEK VILLAGE

UPDATED MASTER PLAN

AUGUST 13, 2014



NORTH CAROLINA STATE UNIVERSITY

NORTH CAROLINA STATE UNIVERSITY
ADMINISTRATION SERVICE BUILDING III
2701 SULLIVAN DRIVE
RALEIGH, NC 27607
T: 919.513.7239



STEWART

421 FAYETTEVILLE ST., STE. 400
RALEIGH, NC 27601
T 919.380.8750
FIRM LICENSE #: C-1051
www.stewartinc.com
PROJ #: C13109

PHASE 4 - UTILITIES



EXISTING HOUSES

HOUSE NUMBER	CURRENT TENANT
1.	Lambda Chi Alpha
2.	Kappa Alpha
3.	Delta Delta Delta / Sigma Kappa
4.	Delta zeta
5.	Phi Gamma Delta
6.	
7.	Sigma Phi Epsilon
8.	Alpha Delta Pi
9.	-
10.	-
11.	Pi Kappa Phi
12.	Delta Gamma
13.	Kappa Alpha Theta
14.	Pi Beta Phi
15.	Alpha Tau Omega

PROPOSED HOUSES

HOUSE NUMBER	CURRENT TENANT
1.	Sigma Nu
2.	Sigma Phi Epsilon
3.	Kappa Delta
4.	Delta Gamma
5.	Alpha Sigma Phi
6.	AVAILABLE
7.	Chi Psi
8.	Alpha Delta Pi
9.	Lambda Chi Alpha / Pi Kappa Phi
10.	Zeta Tau Alpha
11.	Kappa Alpha Theta / Kappa Kappa Gamma
12.	Chi Omega
13.	AVAILABLE
14.	Kappa Sigma
15.	AVAILABLE
16.	Kappa Alpha
17.	Alpha Xi Delta
18.	Pi Beta Phi
19.	Delta Zeta
20.	Sigma Chi / Sigma Kappa

SCHEDULE FOR DEMOLITION AND CONSTRUCTION

PHASE	ACTION	TIME TABLE		PARKING
		MOST AGGRESSIVE	NORMAL SCHEDULE	
1	Demo Houses 9, 10 + Site Prep Build Houses 1 2 3 4			258
2	Demo Houses 5, 7 + site prep Build Houses 19 20 AND TOWNHOUSES A B & C	2015	SUMMER 2015	257
3	Demo Houses 1, 11, 12 + Site Prep + Varsity Drive Widening Build Houses 8 9 10 11	2016	SUMMER 2017	146
4	Demo Houses 2, 3, 4 + Site Prep + Varsity Drive Widening + MEAS Lab Build Houses 12 13 14 15 16 17 18	2017	SUMMER 2019	239
5	Demo Houses 8, 13, 14 + Site Prep Build Houses 5 6 7	2019	SUMMER 2021	90

TOTAL - 990

NCSU GREEK VILLAGE
UPDATED MASTER PLAN
AUGUST 13, 2014



NORTH CAROLINA STATE UNIVERSITY

NORTH CAROLINA STATE UNIVERSITY
ADMINISTRATION SERVICE BUILDING III
2701 SULLIVAN DRIVE
RALEIGH, NC 27607
T: 919.513.7239



STEWART
421 FAYETTEVILLE ST., STE. 400
RALEIGH, NC 27601
T 919.380.8750
FIRM LICENSE #: C-1051
www.stewartinc.com
PROJ #: C13109



EXISTING HOUSES

HOUSE NUMBER	CURRENT TENANT
1.	Lambda Chi Alpha
2.	Kappa Alpha
3.	Delta Delta Delta / Sigma Kappa
4.	Delta zeta
5.	Phi Gamma Delta
6.	
7.	Sigma Phi Epsilon
8.	Alpha Delta Pi
9.	-
10.	-
11.	Pi Kappa Phi
12.	Delta Gamma
13.	Kappa Alpha Theta
14.	Pi Beta Phi
15.	Alpha Tau Omega

PROPOSED HOUSES

HOUSE NUMBER	CURRENT TENANT
1.	Sigma Nu
2.	Sigma Phi Epsilon
3.	Kappa Delta
4.	Delta Gamma
5.	Alpha Sigma Phi
6.	AVAILABLE
7.	Chi Psi
8.	Alpha Delta Pi
9.	Lambda Chi Alpha / Pi Kappa Phi
10.	Zeta Tau Alpha
11.	Kappa Alpha Theta / Kappa Kappa Gamma
12.	Chi Omega
13.	AVAILABLE
14.	Kappa Sigma
15.	AVAILABLE
16.	Kappa Alpha
17.	Alpha Xi Delta
18.	Pi Beta Phi
19.	Delta Zeta
20.	Sigma Chi / Sigma Kappa

SCHEDULE FOR DEMOLITION AND CONSTRUCTION

PHASE	ACTION	TIME TABLE		PARKING
		MOST AGGRESSIVE	NORMAL SCHEDULE	
1	Demo Houses 9, 10 + Site Prep Build Houses 1 2 3 4			258
2	Demo Houses 5, 7 + site prep Build Houses 19 20 AND TOWNHOUSES A B & C	2015	SUMMER 2015	257
3	Demo Houses 1, 11, 12 + Site Prep + Varsity Drive Widening Build Houses 8 9 10 11	2016	SUMMER 2017	146
4	Demo Houses 2, 3, 4 + Site Prep + Varsity Drive Widening + MEAS Lab Build Houses 12 13 14 15 16 17 18	2017	SUMMER 2019	239
5	Demo Houses 8, 13, 14 + Site Prep Build Houses 5 6 7	2019	SUMMER 2021	90

TOTAL - 990

NCSU GREEK VILLAGE

UPDATED MASTER PLAN

AUGUST 13, 2014



NORTH CAROLINA STATE UNIVERSITY

NORTH CAROLINA STATE UNIVERSITY
ADMINISTRATION SERVICE BUILDING III
2701 SULLIVAN DRIVE
RALEIGH, NC 27607
T: 919.513.7239



STEWART
421 FAYETTEVILLE ST., STE. 400
RALEIGH, NC 27601
T 919.380.8750
FIRM LICENSE #: C-1051
www.stewartinc.com
PROJ #: C13109

PHASE 5 - UTILITIES

KEY:

GREEK VILLAGE MAIN
TELECOM HUB DUCT BANK

: —FO—

GREEK VILLAGE HOUSE
FEEDER DUCT BANK PHASE 1

: - - - - -

GREEK VILLAGE HOUSE
FEEDER DUCT BANK PHASE 2

: - - - - -

GREEK VILLAGE HOUSE
FEEDER DUCT BANK PHASE 3

: - - - - -

GREEK VILLAGE HOUSE
FEEDER DUCT BANK PHASE 4

: - - - - -

GREEK VILLAGE HOUSE
FEEDER DUCT BANK PHASE 5

: - - - - -

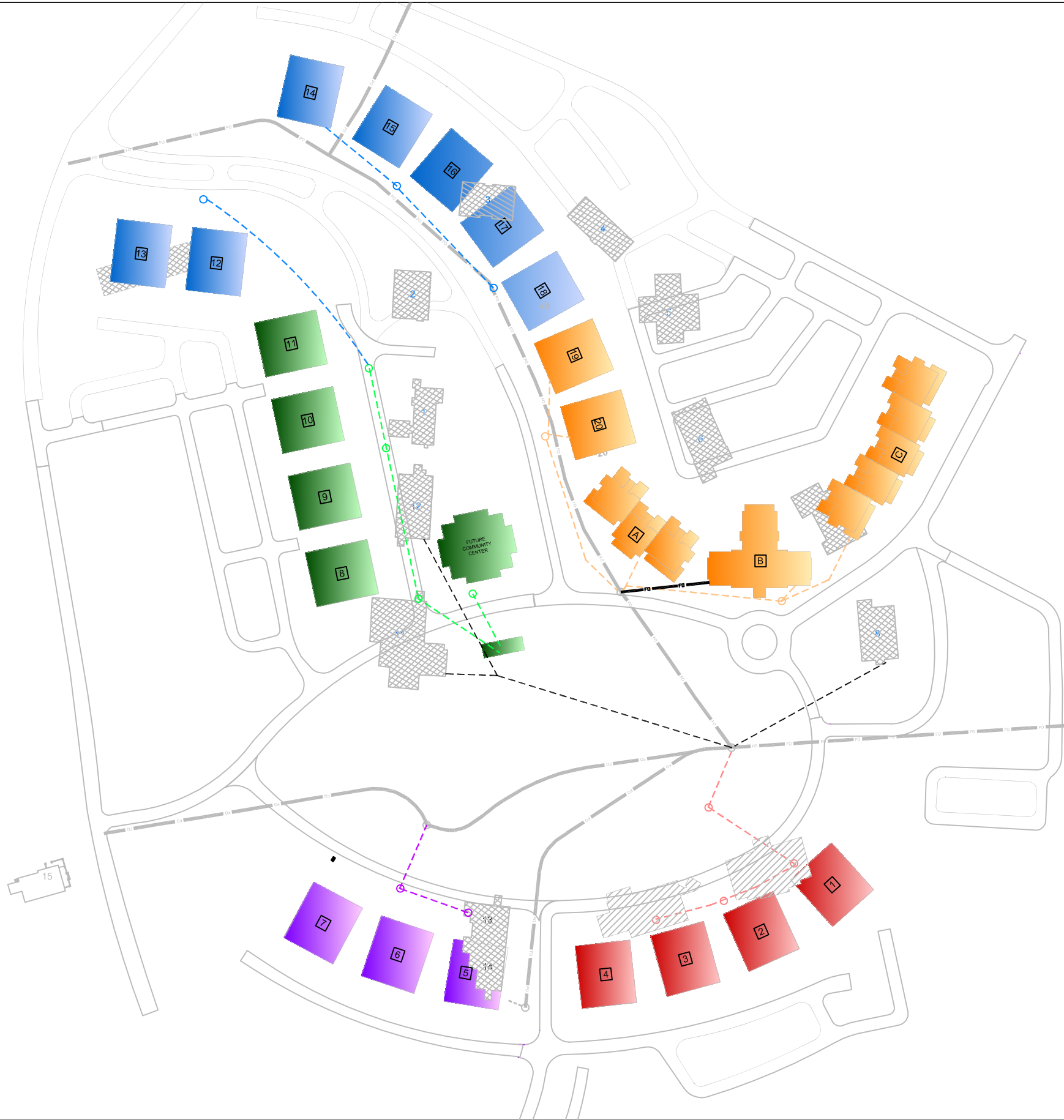
EXISITING TELECOM DUCT
BANK

: —FO—

TEMPORARY TELECOM SERVICE
FOR EXISTING HOUSES

: - - - - -

- GENERAL NOTE:
1. MAIN TELECOM HUB ROUTE TO BUILDING A WILL BE DEFINED IN CONJUNCTION WITH BUILDING DESIGN.
 2. TEMPORARY BUILDING ROUTES TO BE COORDINATED WITH NCSU OIT.

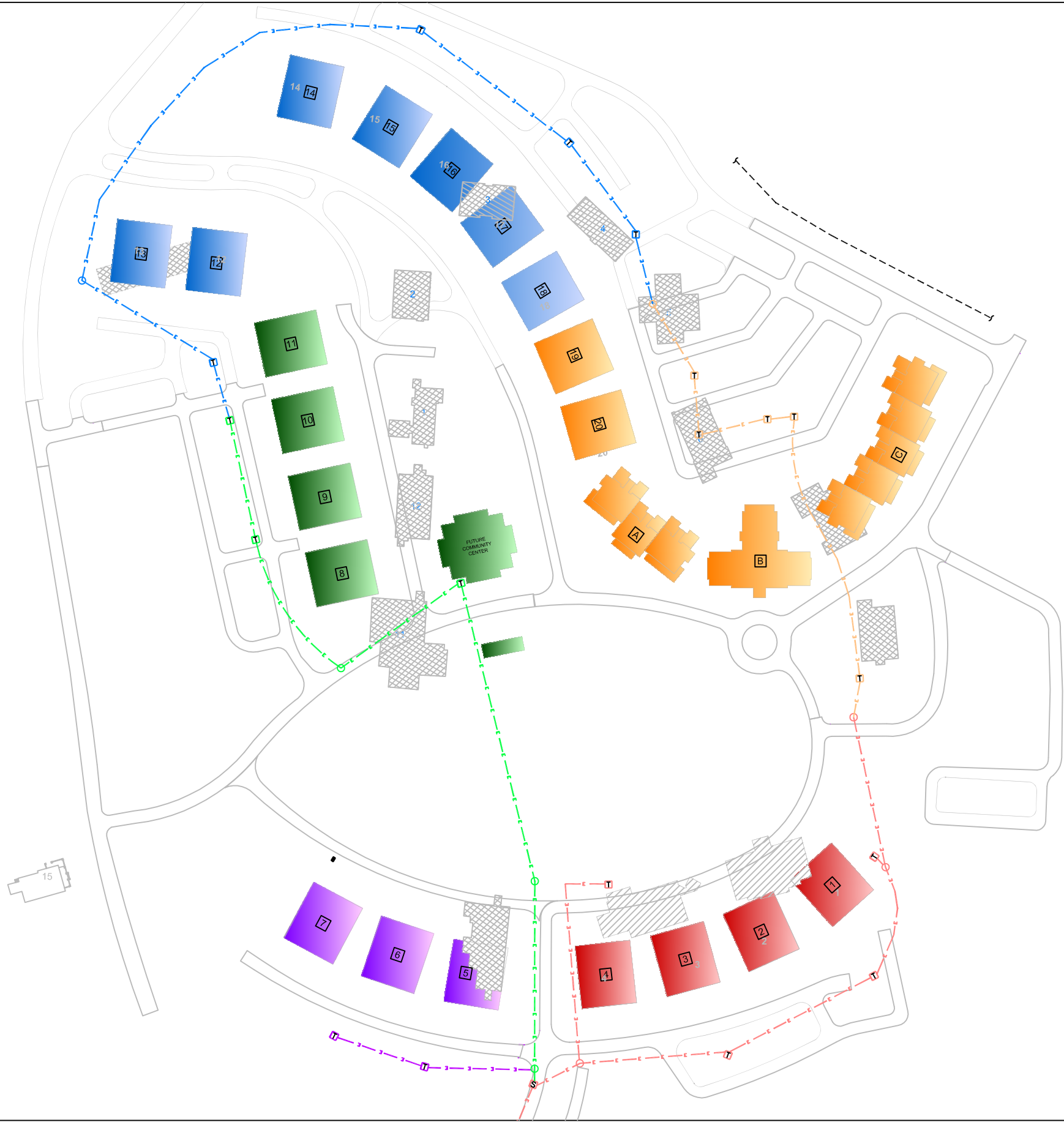


KEY:

- SWITCH : S
- TRANSFORMER : T
- MANHOLE : O
- GREEK VILLAGE HOUSE
FEEDER DUCT BANK PHASE 1 : -E-E-
- GREEK VILLAGE HOUSE
FEEDER DUCT BANK PHASE 2 : -E-E-
- GREEK VILLAGE HOUSE
FEEDER DUCT BANK PHASE 3 : -E-E-
- GREEK VILLAGE HOUSE
FEEDER DUCT BANK PHASE 4 : -E-E-
- GREEK VILLAGE HOUSE
FEEDER DUCT BANK PHASE 5 : -E-E-
- TEMPORARY RE ROUTE OF
OVERHEAD DUKE ENERGY
PROGRESS LINE (PHASE 2) : - - - -

GENERAL NOTE:

1. FINAL TRANSFORMER LOCATIONS TO BE DETERMINED IN CONJUNCTION WITH BUILDING DESIGNS.



H:\Pro\214385A0\Draws\Electrical Distribution Masterplan.dwg



ENTRANCE & AMENITY DEVELOPMENT
GREEK VILLAGE, NC STATE UNIVERSITY
Pittsburgh, NC
Dunsmuir & Powell - landscape architecture
November 2000

