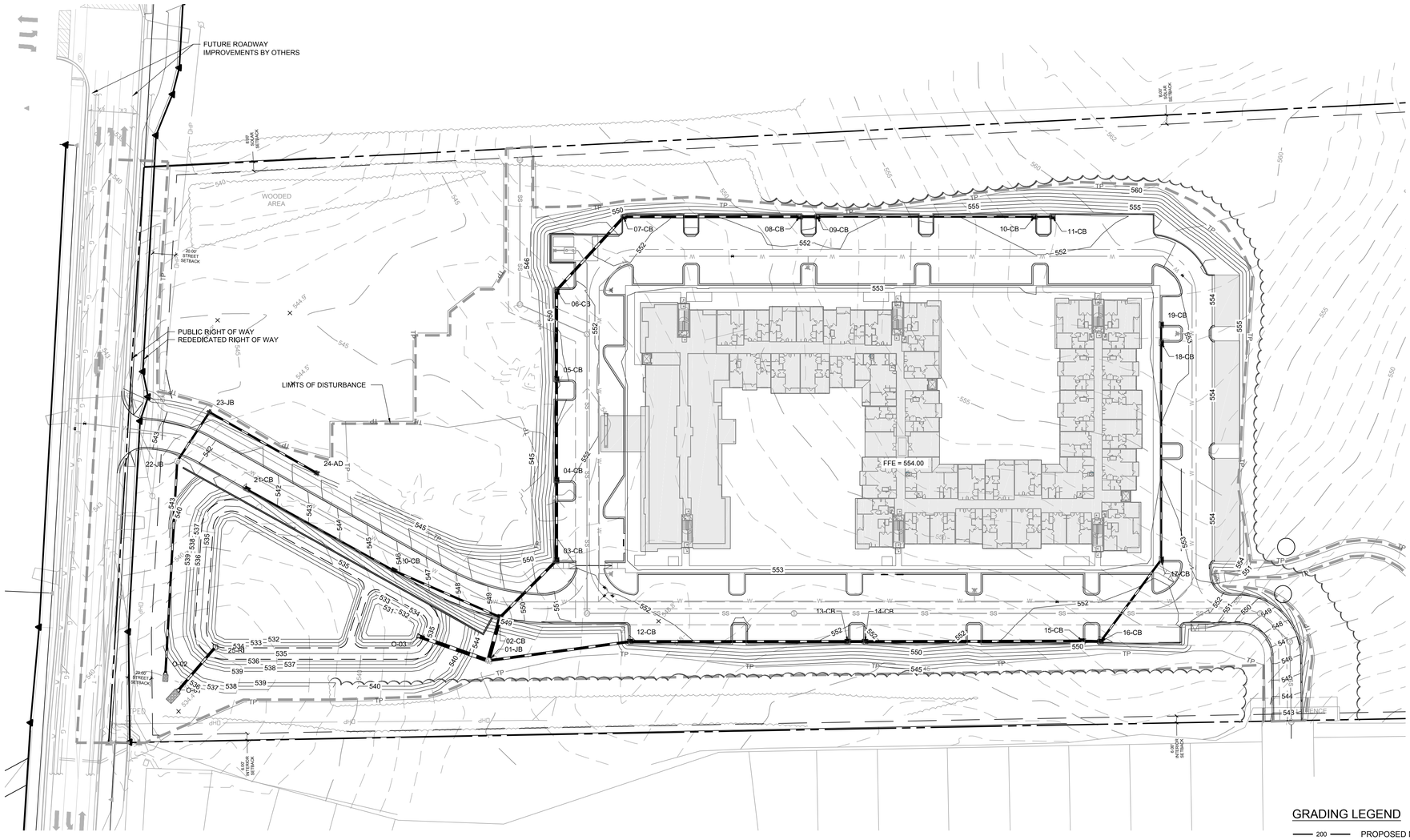


GRADING & STORM DRAINAGE NOTES:

1. REFER TO SHEET C3.00 FOR GENERAL NOTES.
2. CONTRACTOR SHALL REPORT ANY GRADE DISCREPANCIES TO THE OWNER'S REPRESENTATIVE PRIOR TO BEGINNING CONSTRUCTION OPERATIONS.
3. THE MAXIMUM SLOPE ALONG ANY HANDICAP ACCESSIBLE PATHWAY SHALL NOT EXCEED 5.0% AND SHALL NOT EXCEED A 2.0% CROSS SLOPE. HANDICAP RAMPS INDICATED ON PLANS SHALL BE A MAXIMUM OF 1/12 SLOPES WITH A MAXIMUM RISE OF 30" BETWEEN LANDINGS. NON-CURB CUT RAMPS SHALL HAVE HANDRAILS AND GUARDS PER DETAILS WITH 5' LANDINGS AT THE BOTTOM AND TOP OF RAMP.
4. ALL PROPOSED ELEVATIONS SHOWN ARE EDGE OF PAVEMENT ELEVATIONS UNLESS OTHERWISE SPECIFIED.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL NEWLY CONSTRUCTED STORM DRAINAGE IMPROVEMENTS AND RECEIVING STORM DRAINAGE SYSTEMS REMAIN CLEAN OF SEDIMENT AND DEBRIS. PRIOR TO OWNER ACCEPTANCE OF SYSTEM, THE CONTRACTOR SHALL COORDINATE AND PROVIDE A VISUAL OBSERVATION VIDEO OF ALL STORM DRAINAGE IMPROVEMENTS 12" AND LARGER. THE VISUAL OBSERVATION SHALL BE PERFORMED IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL PROVIDE TWO (2) DVD COPIES OF THE ENTIRE DRAINAGE VISUAL OBSERVATION.
6. PRIOR TO ISSUANCE OF A BUILDING CERTIFICATE OF OCCUPANCY THE CONTRACTOR SHALL PROVIDE THE OWNER WITH THE VIDEO INSPECTION OF THE STORM SEWER SYSTEM. (BOTH PUBLIC AND PRIVATE). THIS SUBMITTAL MAY NEED TO BE REVIEWED AND ACCEPTED BY THE LOCAL JURISDICTION PRIOR TO THE ISSUANCE OF THE BUILDING CO.
7. REFER TO THE EROSION CONTROL DETAILS SHEET FOR THE SEQUENCE OF CONSTRUCTION
8. INTERIM GRADING SHALL BE PROVIDED THAT ENSURES THE PROTECTION OF STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES FROM DAMAGE CAUSED BY SETTLEMENT, LATERAL MOVEMENT, UNDERMINING, AND WASHOUT.
9. INTERIM GRADING SHALL BE PROVIDED TO DIRECT WATER AWAY FROM BUILDINGS AND PREVENT PONDING.
10. TIE ROOF LEADERS WHERE POSSIBLE TO UNDERGROUND STORM SYSTEM. CONTRACTOR TO FIELD VERIFY LOCATE AND INSTALL WHERE POSSIBLE OR AS SHOWN ON PLANS. WHERE ROOF LEADERS DAYLIGHT AT GRADE A SPLASH BLOCK APPROVED BY THE OWNER'S REPRESENTATIVE SHALL BE INSTALLED.
11. MAXIMUM SLOPE ACROSS ANY HANDICAPPED PARKING SPACE AND AISLE SHALL NOT EXCEED 2% IN ANY DIRECTION.
12. PROPOSED CONTOURS ARE APPROXIMATE. SPOT ELEVATIONS AND ROADWAY PROFILES SHALL BE USED IN CASE OF DISCREPANCY.
13. PLACE BACKFILL AND FILL MATERIALS IN LAYER NOT MORE THAN 8 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HEAVY COMPACTION EQUIPMENT, AND NOT MORE THAN 4 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HAND-OPERATED TAMPERS. PLACE BACKFILL AND FILL MATERIALS EVENLY ON ALL SIDES TO REQUIRED ELEVATIONS, AND UNIFORMLY ALONG THE FULL LENGTH OF EACH STRUCTURE. COMPACT SOIL TO NOT LESS THAN 95 PERCENT OF MAXIMUM DRY UNIT WEIGHT ACCORDING TO ASTM D 698 FOR EACH LAYER OF BACKFILL OR FILL MATERIAL UP TO TWO FEET OF FINISHED GRADE. COMPACT SOIL TO NOT LESS THAN 98 PERCENT OF MAXIMUM DRY UNIT WEIGHT ACCORDING TO ASTM D 698 FOR EACH LAYER OF BACKFILL OR FILL MATERIAL FOR THE FINAL TWO FEET.
14. SITE GRADING IMMEDIATELY ADJACENT TO FOUNDATION OF BUILDING SHALL SLOPE NOT LESS THAN 1/20 AWAY FOR MINIMUM DISTANCE OF 10 FEET. ALTERNATIVE METHOD SHALL BE PROVIDED TO DIVERT WATER AWAY FROM FOUNDATION VIA SWALES SLOPED AT A MINIMUM OF 2% OR IMPERVIOUS SURFACES SLOPED AWAY A MINIMUM OF 2% AWAY FROM BUILDING.
15. CONTRACTOR SHALL ADJUST RIM ELEVATIONS OF EXISTING MANHOLES, METERS, VALVES, ETC. AS REQUIRED TO MEET NEW FINISHED GRADES.
16. CONTRACTOR SHALL SLOPE GRADES TO ASSURE POSITIVE STORMWATER FLOW TO KEEP WATER FROM POOLING ALONG CURBS AND WALLS.
17. TOP OF WALL ELEVATIONS INDICATE THE ELEVATION AT THE TOP OF THE CAP, UNLESS OTHERWISE NOTED.
18. BOTTOM OF WALL ELEVATIONS INDICATE THE ELEVATION OF THE FINISHED GRADE.

IMPERVIOUS LEGEND

EXISTING BUILDING IMPERVIOUS = 6,098 SF

EXISTING SIDEWALK IMPERVIOUS = 7,405 SF

EXISTING PARKING / DRIVEWAY IMPERVIOUS = 436 SF

EXISTING WOODED AREA TO REMAIN UNDISTURBED DRAINAGE AREA

GRADING LEGEND

- 200 — PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- 200 — EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED STORM DRAINAGE
- PROPOSED CATCH BASIN
- PROPOSED JUNCTION BOX
- PROPOSED AREA DRAIN
- 44.50 — PROPOSED ELEVATION
- TC 44.50 / BC 44.00 — TOP/BOTTOM OF CURB
- TW 46.00 / BW 44.00 — TOP/BOTTOM OF WALL
- RIPRAP DISSIPATOR
- FLOW DIRECTION
- LIMITS OF DISTURBANCE

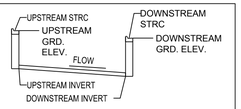
EXISTING IMPERVIOUS	
BUILDING	6,098 SF
SIDEWALK	7,045 SF
PARKING / DRIVE	436 SF

PROPOSED IMPERVIOUS	
BUILDING	67.897 SF
SIDEWALK	32,968 SF
PARKING / DRIVE	94,075 SF

STORM DRAINAGE NETWORK

TYPE CODE:
AD = AREA DRAIN
FES = FLARED END SECTION
JB = JUNCTION BOX
RI = RISER
YI = YARD INLET
CB = CATCH BASIN
CI = CURB INLET
CO = CLEANOUT
TD = TRENCH DRAIN

TYPE CODE:
L-AD = AREA DRAIN
L-JB = JUNCTION BOX
L-TD = TRENCH DRAIN
L-CO = CLEANOUT



NOTES:
1. STRUCTURES WITHIN NCDOT RIGHT-OF-WAY SHALL BE TO NCDOT STANDARDS.
2. STRUCTURES NOT WITHIN RIGHT OF WAY SHALL EITHER ALL BE TO NCDOT STANDARDS OR SHALL ALL BE TO LOCAL JURISDICTIONAL STANDARDS.
3. ALL STORM PIPES TO BE CLASS III RCP UNLESS OTHERWISE NOTED.

STRUCTURE TABLE

STRUCTURE NAME:	DETAILS:	PIPES IN:	PIPES OUT
01-JB	RIM = 541.13 INV IN = 535.12 INV IN = 534.22 INV OUT = 534.12	12-SP, 24" RCP INV IN =535.12 02-SP, 36" RCP INV IN =534.22	01-SP, 36" RCP INV OUT =534.12
02-CB	RIM = 549.73 INV IN = 536.11 INV IN = 535.61 INV OUT = 534.61	20-SP, 18" RCP INV IN =536.11 03-SP, 24" RCP INV IN =535.61	02-SP, 36" RCP INV OUT =534.61
03-CB	RIM = 551.72 INV IN = 536.86 INV OUT = 536.76	04-SP, 24" RCP INV IN =536.86	03-SP, 24" RCP INV OUT =536.76
04-CB	RIM = 551.73 INV IN = 537.66 INV OUT = 537.56	05-SP, 24" RCP INV IN =537.66	04-SP, 24" RCP INV OUT =537.56
05-CB	RIM = 550.34 INV IN = 538.64 INV OUT = 538.54	06-SP, 24" RCP INV IN =538.64	05-SP, 24" RCP INV OUT =538.54
06-CB	RIM = 551.49 INV IN = 539.52 INV OUT = 539.42	07-SP, 24" RCP INV IN =539.52	06-SP, 24" RCP INV OUT =539.42
07-CB	RIM = 551.16 INV IN = 540.49 INV OUT = 540.39	08-SP, 24" RCP INV IN =540.49	07-SP, 24" RCP INV OUT =540.39
08-CB	RIM = 551.10 INV IN = 542.12 INV OUT = 542.03	09-SP, 24" RCP INV IN =542.12	08-SP, 24" RCP INV OUT =542.03
09-CB	RIM = 551.30 INV IN = 543.03 INV OUT = 542.28	10-SP, 15" RCP INV IN =543.03	09-SP, 24" RCP INV OUT =542.28
10-CB	RIM = 551.02 INV IN = 545.02 INV OUT = 544.92	11-SP, 15" RCP INV IN =545.02	10-SP, 15" RCP INV OUT =544.92
11-CB	RIM = 551.02 INV OUT = 545.18	N/A	11-SP, 15" RCP INV OUT =545.18
12-CB	RIM = 550.88 INV IN = 539.57 INV OUT = 539.47	13-SP, 24" RCP INV IN =539.57	12-SP, 24" RCP INV OUT =539.47
13-CB	RIM = 551.60 INV IN = 541.57 INV OUT = 541.47	14-SP, 24" RCP INV IN =541.57	13-SP, 24" RCP INV OUT =541.47
14-CB	RIM = 551.67 INV IN = 541.82 INV OUT = 541.72	15-SP, 24" RCP INV IN =541.82	14-SP, 24" RCP INV OUT =541.72

STRUCTURE TABLE

STRUCTURE NAME:	DETAILS:	PIPES IN:	PIPES OUT
15-CB	RIM = 551.08 INV IN = 543.82 INV OUT = 543.72	16-SP, 24" RCP INV IN =543.82	15-SP, 24" RCP INV OUT =543.72
16-CB	RIM = 550.88 INV IN = 544.08 INV OUT = 543.97	17-SP, 18" RCP INV IN =544.08	16-SP, 24" RCP INV OUT =543.97
17-CB	RIM = 552.12 INV IN = 545.07 INV OUT = 544.97	18-SP, 15" RCP INV IN =545.07	17-SP, 18" RCP INV OUT =544.97
18-CB	RIM = 552.12 INV IN = 547.06 INV OUT = 546.96	19-SP, 15" RCP INV IN =547.06	18-SP, 15" RCP INV OUT =546.96
19-CB	RIM = 552.12 INV OUT = 547.22	N/A	19-SP, 15" RCP INV OUT =547.22
20-CB	RIM = 545.79 INV IN = 535.82 INV OUT = 537.13	21-SP, 15" RCP INV IN =535.82	20-SP, 18" RCP INV OUT =537.13
21-CB	RIM = 541.03 INV OUT = 537.28	N/A	21-SP, 15" RCP INV OUT =537.28
22-JB	RIM = 543.37 INV IN = 536.70 INV OUT = 536.60	23-SP, 18" RCP INV IN =536.70	22-SP, 18" RCP INV OUT =536.60
23-JB	RIM = 539.79 INV IN = 537.58 INV OUT = 537.48	24-SP, 18" RCP INV IN =537.58	23-SP, 18" RCP INV OUT =537.48
24-AD	RIM = 542.00 INV OUT = 538.66	N/A	24-SP, 18" RCP INV OUT =538.66
25-RI	RIM = 537.55 INV OUT = 534.80	N/A	25-SP, 24" RCP INV OUT =534.80
O-01	RIM = N/A INV IN = 533.99	25-SP, 24" RCP INV IN =533.99	N/A
O-02	RIM = N/A INV IN = 534.74	22-SP, 18" RCP INV IN =534.74	N/A
O-03	RIM = N/A INV IN = 533.50	01-SP, 36" RCP INV IN =533.50	N/A

PIPE TABLE

START STRUCTURE	END STRUCTURE	START INVERT	END INVERT	SIZE	LENGTH	SLOPE	MATERIAL
02-CB	01-JB	534.61	534.22	36"	39.37'	1.00%	RCP
12-CB	01-JB	539.47	535.12	24"	124.96'	3.48%	RCP
20-CB	02-CB	537.13	536.11	18"	101.33'	1.00%	RCP
03-CB	02-CB	536.76	535.61	24"	69.77'	1.65%	RCP
04-CB	03-CB	537.56	536.86	24"	69.98'	1.00%	RCP
05-CB	04-CB	538.54	537.66	24"	88.02'	1.00%	RCP
06-CB	05-CB	539.42	538.64	24"	77.95'	1.00%	RCP
07-CB	06-CB	540.39	539.52	24"	86.84'	1.00%	RCP
08-CB	07-CB	542.03	540.49	24"	153.50'	1.00%	RCP
09-CB	08-CB	542.28	542.12	24"	15.48'	1.00%	RCP
10-CB	09-CB	544.92	543.03	15"	189.41'	1.00%	RCP
11-CB	10-CB	545.18	545.02	15"	15.60'	1.00%	RCP
13-CB	12-CB	541.47	539.57	24"	189.91'	1.00%	RCP
14-CB	13-CB	541.72	541.57	24"	15.06'	1.00%	RCP
15-CB	14-CB	543.72	541.82	24"	189.96'	1.00%	RCP
16-CB	15-CB	543.97	543.82	24"	15.55'	1.00%	RCP
17-CB	16-CB	544.97	544.08	18"	88.89'	1.00%	RCP
18-CB	17-CB	546.96	545.07	15"	189.43'	1.00%	RCP
19-CB	18-CB	547.22	547.06	15"	15.54'	1.00%	RCP
21-CB	20-CB	537.28	535.82	15"	146.45'	1.00%	RCP
23-JB	22-JB	537.48	536.70	18"	51.30'	1.53%	RCP
24-AD	23-JB	538.66	537.58	18"	107.81'	1.00%	RCP
25-RI	O-01	534.80	533.99	24"	49.44'	1.63%	RCP
22-JB	O-02	536.60	534.74	18"	185.61'	1.00%	RCP
01-JB	O-03	534.12	533.50	36"	63.99'	0.96%	RCP

STEWART
421 FAYETTEVILLE ST., SUITE 400
RALEIGH, NC 27601
T 919.380.8750
FIRM LICENSE #: C-1051
www.stewartinc.com
PROJECT #: C17104

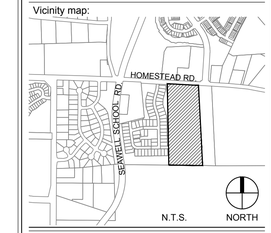
Client:

GLMH-2, LLC
121 S. ESTES DRIVE SUITE 100
CHAPEL HILL, NC 27514

Project:

INDEPENDENT SENIOR HOUSING CHAPEL HILL

Vicinity map:



Seal:

NORTH CAROLINA PROFESSIONAL SEAL 036231 ENGINEER ADAM C. PIKE

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

Issued for:

SUP SUBMITTAL

No.	Date	Description

0 25 50 100 NORTH

SCALE: 1"=50'

Title:

GRADING PLAN

Project number: C17004 Sheet:
Date: 09.27.2017
Drawn by: DCB/RS
Approved by: ACP

C5.00

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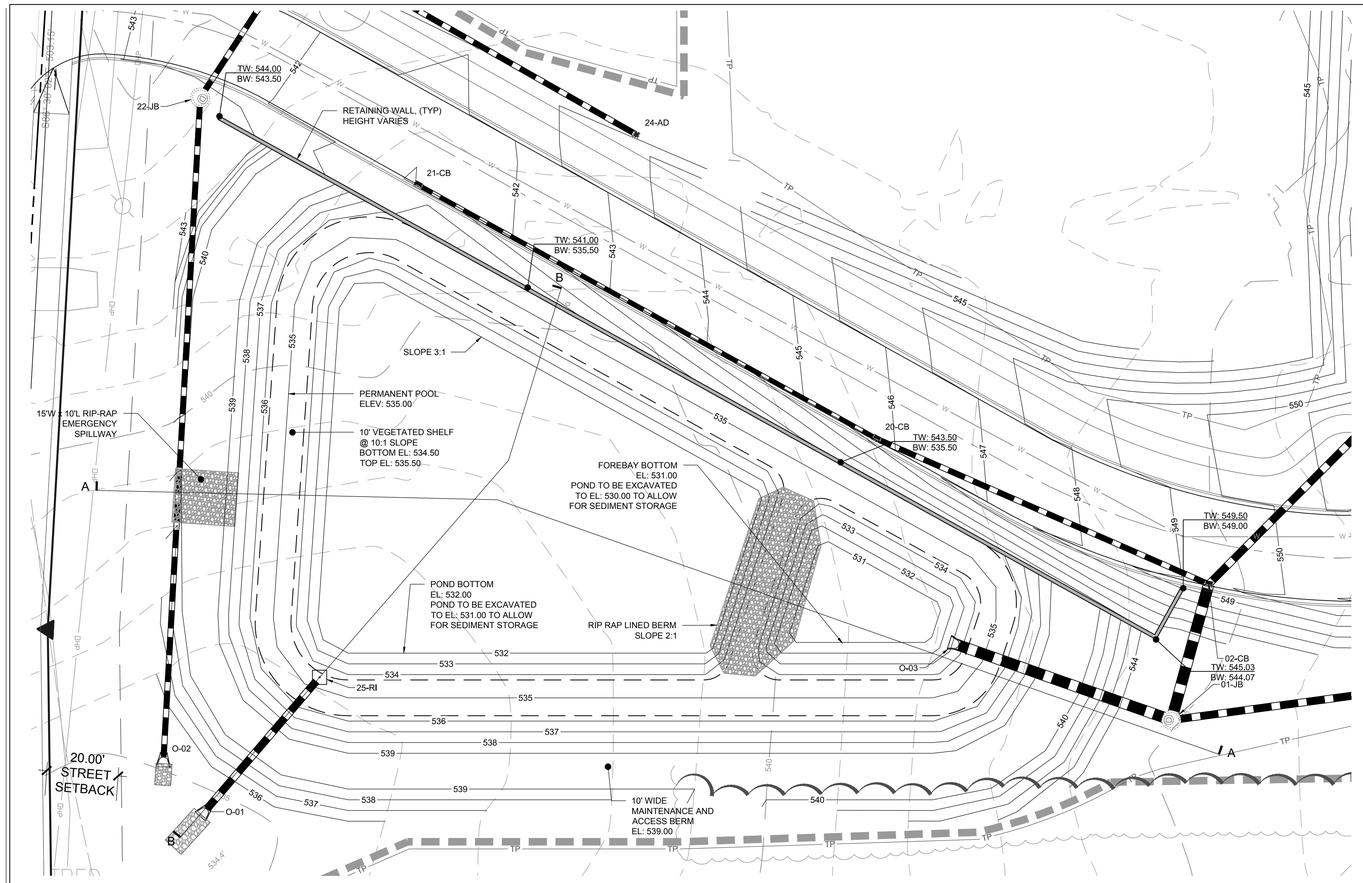
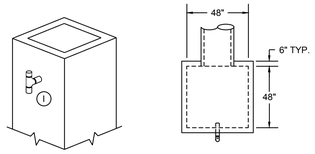


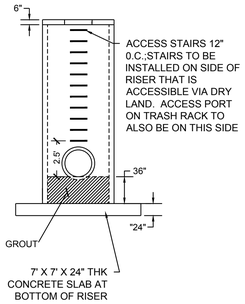
SCM-01 PLAN

SCALE: 1" = 20'

DRAWDOWN PIPE DETAIL

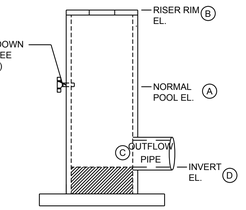
NTS





NOTES:
1. CONTRACTOR SHALL NOT CONSTRUCT FOREBAY UNITL SITE IS STABILIZED AND SEDIMENT BASIN IS CONVERTED TO WET POND.
2. PLACE A SEDIMENT STICK IN SLOPE OF BASIN TO PROVIDE 1 FEET OF SEDIMENT STORAGE AT CONCLUSION OF PROJECT, CORE DRILL THE DRAWDOWN DIP PIPE IN THE RISER SO THAT THE INVERT IS AT THE PERMANENT POOL ELEVATION.
3. RISER TO BE PRE-CAST CONCRETE STRUCTURE. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL.

MAINTENANCE:
1. INSPECT TEMPORARY SEDIMENT TRAPS AFTER EACH PERIOD OF SIGNIFICANT RAINFALL. REMOVE SEDIMENT AND RESTORE TRAP TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO A DEPTH OF 1 FEET. PLACE THE SEDIMENT THAT IS REMOVED IN A DESIGNATED DISPOSAL AREA.
2. CLEAN PONDS TO DESIGN DIMENSIONS AS DETAILED BELOW AT A MINIMUM PRIOR TO USE AS A WET DETENTION POND.



RISER DETAIL

NTS

POND OUTLET STRUCTURE NOTES:

1. OUTLET BARREL SHALL BE CLASS IV RCP MEETING THE REQUIREMENTS OF ASTM C76. THE PIPE JOINTS SHALL BE MORTAR OR FLEXIBLE PLASTIC TYPE JOINT.
2. ALL POURED CONCRETE SHALL BE MINIMUM 3000 PSI (28 DAY) UNLESS OTHERWISE NOTED.
3. THE MANHOLE OUTLET RISER SHALL BE 4'x4' SQUARE,. MEETING ASTM C-478R & .AASHTO M-199 MONOLITHIC BASE. THE MANHOLE JOINTS SHALL BE ASTM C-443 RUBBER GASKET JOINTS. MANHOLE JOINTS SHALL BE SECURELY ANCHORED TOGETHER TO PREVENT SEPARATION.
4. OUTLET STRUCTURES SHALL BE PROVIDED WITH STEPS 1'-2" ON CENTER. STEPS SHALL BE IN ACCORDANCE WITH NCDOT STD. 840.66.
5. CONCRETE ANTI-FLOTATION BLOCK SHALL BE INTEGRALLY ATTACHED TO RISER BASE TO PREVENT RISER/BLOCK SEPERATION, OR PRECAST AS THE EXTENDED BASE OF THE MANHOLE DURING FABRICATION. IF THE CONCRETE ANTI-FLOTATION BLOCK IS CAST SEPERATE FROM THE MANHOLE ASSEMBLY THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANCHORING THE ANTI-FLOTATION BLOCK TO THE MANHOLE RISER ASSEMBLY.

POND AND DAM SAFETY STATEMENT

THE STORMWATER POND AND DAM SHOWN ON THIS PLAN SATISFIES REQUIREMENTS OF THE NORTH CAROLINA STATE DAM SAFETY LAW 1967 (AS AMENDED THROUGH 1995) AND THE RULES AND REGULATIONS AS PRESENTED IN THE NORTH CAROLINA ADMINISTRATIVE CODE TITLE 15A, SUBCHAPTER 2K - DAM SAFETY. EVEN IN THE CASE WHERE THE DAM SHOWN ON THIS PLAN IS DETERMINED BY THE STATE TO BE EXEMPT FROM THE ABOVE NOTED DAM SAFETY REQUIREMENTS, I, AS THE QUALIFIED DESIGN ENGINEER, STATE THAT THE POND AND DAM ARE DESIGNED TO BE SAFE AND ADEQUATE FOR THE PROTECTION OF PUBLIC HEALTH, SAFETY, WELFARE AND DOWNSTREAM PROPERTY. I UNDERSTAND THAT THIS STATEMENT AS THE DESIGN ENGINEER SHALL NOT RELIEVE THE OWNER OR OPERATOR OF THE POND AND DAM FROM THE LEGAL DUTIES, OBLIGATIONS, AND LIABILITIES ARISING FROM SUCH OWNERSHIP OR OPERATION.

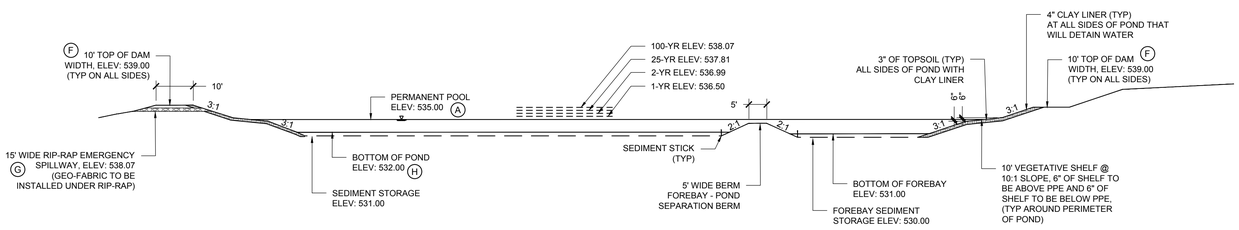
"IN ACCORDANCE WITH THE REQUIREMENTS IN ARTICLES GS 143-215.25A AND 143-215.26 OF THE NC DAM SAFETY LAW AND NC ADMINISTRATIVE CODE 15A NCAC 2K .0200, THE REGIONAL ENGINEER IN THE WINSTION-SALEM REGIONAL OFFICE OF HE NC STATE'S LAND QUALITY SECTION HAS BEEN/WILL BE CONTACTED FOR THE DETERMINATION OF WHETHER THE PROPOSED DAM IS GOVERNED BY OR EXEMPT FROM THE DAM SAFETY LAW."

BERM SOIL AND COMPACTION SPECIFICATIONS:

1. ALL FILL SOILS FOR BERM/DAM SECTION SHALL BE CLEAN, IMPERMEABLE MATERIAL AND COMPACTED TO AT LEAST 98% STANDARD PROCTOR MAXIMUM DRY DENSITY, AT OPTIMUM MOISTURE CONTENT. NO BLASTED MATERIALS SHALL BE USED IN THE EMBANKMENT CONSTRUCTION. SOILS SHALL NOT EXHIBIT SIGNIFICANT SHRINKSWELL OR DISPERSIVE CHARACTERISTICS. ON-SITE GEOTECHNICAL ENGINEER SHALL APPROVE THE SOILS FOR PLACEMENT WITHIN THE BERM/DAM SECTION. THE GEOTECHNICAL ENGINEER SHALL ALSO SPECIFY THE METHODS TO BE USED FOR PLACEMENT OF FILL.
2. IN ALL FILL AREAS OF THE BERM/DAM, A SOILS COMPACTION TEST SHALL BE CONDUCTED EACH 2500 SQUARE FEET PER VERTICAL FOOT OF FILL.
3. A KEY TRENCH IS TO BE PROVIDED IN ALL FILL AREAS. TRENCH TO EXTEND A MINIMUM OF FIVE FEET BELOW EXISTING GRADE. SOILS AND COMPACTION FOR KEY TRENCH SHALL MEET ALL REQUIREMENT OF #1 ABOVE.
4. NO WOODY VEGETATION OF ANY TYPE MAY BE LOCATED WITHIN 7' OF THE TOE OF THE BERM/DAM SLOPE.
5. FILL PLACEMENT SHALL NOT EXCEED A MAXIMUM 8" LIFT. EACH LIFT SHALL BE CONTINUOUS FOR THE ENTIRE LENGTH OF EMBANKMENT. BEFORE PLACEMENT OF FILL FOR THE BERM/DAM SECTION, ALL UNSUITABLE MATERIAL SHALL BE REMOVED AND THE SURFACE PROPERLY PREPARED FOR FILL PLACEMENT.
6. AN ADDITIONAL FIVE PERCENT (5%) OF THE DESIGN HEIGHT OF AN EARTHEN EMBANKMENT DAM SHALL BE ADDED TO THE TOP OF DAM ELEVATION DURING FILL PLACEMENT TO NEGATE FUTURE SETTLEMENT.
7. CONCRETE DAMS AND SPILLWAY STRUCTURES SHALL BE DESIGNED AND BUILT IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE'S (ACI) LATEST GUIDELINES. PARTICULAR ATTENTION SHALL BE PAID TO DESIGN AND ANALYSIS, WATER TIGHTNESS, CONCRETE QUALITY AND CONSTRUCTION PRACTICES. STRUCTURES SHALL BE DESIGNED AND CONSTRUCTED TO MAINTAIN WATER TIGHTNESS BY CONTROLLING AND LIMITING CRACKING WITH THE PROPER JOINT DESIGN AND SPACING. DOCUMENTATION IS TO BE SUBMITTED WITH POND CERTIFICATION.
8. WHEN BLASTING IS USED TO REMOVE ROCK FROM THE POOL AREA, THE BLASTED AREA SHOULD BE OVER EXCAVATED TO A SUFFICIENT DEPTH BELOW FINISH GRADE AND BROUGHT BACK TO FINISH GRADE WITH IMPERVIOUS SOIL MATERIAL COMPACTED IN PLACE OR AN ALTERNATE METHOD CAN BE SUBMITTED FOR APPROVAL. DOCUMENTATION IS TO BE SUBMITTED WITH POND CERTIFICATION.

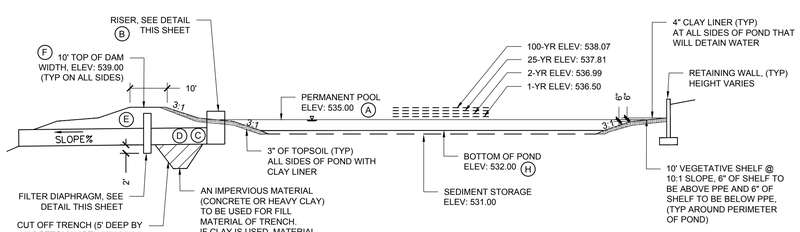
SHEET NOTES

1. ALL STORMWATER CONSTRUCTION METHODS AND MATERIALS SHALL BE IN ACCORDANCE WITH THE STANDARDS AND REQUIREMENTS OF THE LOCAL JURISDICTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS.
3. EXISTING UTILITIES AND STRUCTURES SHOWN, BOTH UNDERGROUND AND ABOVE, ARE BASED ON A FIELD SURVEY AND THE BEST AVAILABLE RECORD DRAWINGS. THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES, UNDERGROUND LINES, AND STRUCTURES AS NECESSARY TO AVOID DAMAGING OR DESTROYING EXISTING SERVICES.
4. UTILITY CONTRACTOR SHALL COORDINATE UTILITY SERVICES WITH CAMP STAFF. UTILITY CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION OF ALL UTILITY SERVICES.
5. CONTRACTOR SHALL CALL NORTH CAROLINA ONE CALL AT 1-800-632-4949 AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION OR EXCAVATION ON SITE TO HAVE EXISTING UTILITIES LOCATED.
6. CONTRACTOR TO CONTACT ANY LOCAL UTILITIES THAT PROVIDE THEIR OWN INDEPENDENT LOCATOR SERVICE. CONTRACTOR SHALL IMMEDIATELY REPORT ANY DISRUPTION.
7. CONTRACTOR SHALL MAINTAIN AN "AS BUILT" SET OF DRAWINGS TO RECORD THE ACTUAL LOCATION OF ALL PIPING PRIOR TO CONCEALMENT. DRAWINGS SHALL BE GIVEN TO THE ARCHITECT AT REGULAR INTERVALS THROUGHOUT THE PROJECT FOR RECORD KEEPING.
8. THE CONTRACTOR, AT ALL TIMES, KEEP THE PREMISES FREE FROM ACCUMULATIONS OF WASTE MATERIALS OR RUBBISH CAUSED BY HIM, HIS EMPLOYEES OR HIS WORK. ALL DEBRIS SHALL BE REMOVED FROM THE PROJECT SITE ON A DAILY BASIS.
9. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING THE ACTUAL AND EXACT LOCATION, SIZE AND MATERIAL COMPOSITION OF ANY EXISTING STORM, WATER, OR SEWER SERVICE PROPOSED FOR CONNECTION OR USE ON THIS PROJECT. THE RELOCATION OF ANY UTILITY SERVICES REQUIRED TO COMPLETE ANY PORTION OF THESE CONSTRUCTION PLANS SHALL BE FIRST AUTHORIZED BY THE ARCHITECT AND OWNER.
10. CONTRACTOR TO COORDINATE STORM, UTILITIES, POOL PLUMBING AND CONSTRUCTION SEQUENCING AND SHALL REPORT ANY CONFLICTS OR DISCREPANCIES TO THE ENGINEER.
11. QUANTITY CONTROL CERTIFICATION: THE STORMWATER CONTROL STRUCTURE SHOWN ON THIS PLAN IS (WILL BE) DESIGNED TO REDUCE THE PEAK FLOW RATES IN THE POST-DEVELOPMENT 2-YREAR 24 HOUR STORM EVENT AND THE 10-YEAR 24 HOUR STORM EVENT TO PRE DEVELOPMENT PEAK FLOW RATES.
12. A INSPECTION BY ENGINEER WILL BE REQUIRED AT THE COMPLETION OF THE PROJECT TO CERTIFY THE STORMWATER BMP FOR QUALITY CONTROL. SEE ENGINEER'S CERTIFICATION OF STORMWATER QUALITY CONTROL FOR REQUIREMENT OF INSPECTION.
13. THE ENGINEER'S CERTIFICATION OF COMPLETION WILL BE REQUIRED PRIOR TO THE FINAL PLAT OR CERTIFICATE OF OCCUPANCY. THE STORMWATER CONTROL IS TO BE INSPECTED TO ENSURE IT IS FUNCTIONING AS DESIGNED AND HAS FULL DESIGN VOLUME PRIOR TO ISSUANCE OF THE FINAL CERTIFICATE OF OCCUPANCY.
14. THE PROPERTY OWNER (OR HOMEOWNER'S ASSOCIATION) IS RESPONSIBLE FOR MAINTAINING THE STORMWATER CONTROL(S) ACCORDING TO THE APPROVED MAINTENANCE PLAN AND DIRECTION OF THE CITY OF GREENSBORO.



SCM-01 SECTION A-A

SCALE: N.T.S.



SCM-01 SECTION B-B

SCALE: 1" = 20'

KEYNOTE		SCM - 01
A	PERMANENT POOL	535.00
B	RISER RIM ELEV.	537.55
C	OUTLET PIPE SIZE	24"
D	OUTLET INVERT ELEVATION	534.80
E	OUTLET SLOPE	1.52
F	TOP OF DAM ELEVATION	539.00
G	EMERG. SPILL. WIDTH & ELEV.	15' @ 538.07
H	POND BOTTOM ELEV.	532.00
I	DRAWDOWN SIZE	2.5" @ (A)

*DRAWDOWN IS DESIGNED TO DRAIN TO PERMANENT POOL ELEVATION IN A PERIOD OF 2 - 5 DAYS.

*BOTTOM 1' OF FOREBAY(EL. 531 TO EL. 530) AND 1' OF NORMAL POND (EL. 532 TO EL. 531) AREA IS DESIGNED TO HANDLE POND SEDIMENT RUNOFF STORAGE. SEDIMENT TO BE REMOVED ONCE IT FILLS THE FOREBAY TO EL. 531.5 AND NORMAL POND TO 532.5.

POND CONSTRUCTION SEQUENCE

1. POND AREA TO BE GRADED OUT TO THE SPECIFICATIONS OF THE TEMPORARY SKIMMER SEDIMENT BASIN AS SHOWN ON C400 SHEET SERIES.
2. ONCE THE DENUDED AREA THAT DRAINS TO THE BMP HAS BEEN COMPLETELY STABILIZED, THE SKIMMER TRAP CAN BE REMOVED ALONG WITH ALL FINES THAT HAS ACCUMULATED DURING CONSTRUCTION AND WORK ON THE WET POND BMP CAN BEGIN. CONFIRMATION OF SITE STABILIZATION REQUIRED BY ENGINEER OR ENGINEER'S REPRESENTATIVE.
3. GRADE WET POND BMP AS SHOWN. INSTALL NECESSARY COMPONENTS OF POND (OUTLET PIPE, ROCKFILL BAFFLE, ETC) DURING THIS PORTION OF THE CONSTRUCTION. PLEASE NOTE ALSO THAT A 4" THICK CLAY LINER IS TO BE INSTALLED ALONG ANY SIDE THAT IS TO DETAIN WATER.
4. INSTALL OUTLET STRUCTURE AND ANTI FLOATATION SLAB AT ELEVATIONS SHOWN.
5. ONCE THE POND AND OUTLET STRUCTURE HAS BEEN INSTALLED, CONFIRM THAT THE REQUIRED VOLUMES AND CORRECT ELEVATIONS OF THE PIPES/OUTLET STRUCTURE HAVE BEEN INSTALLED. CONFIRMATION REQUIRED BY ENGINEER. AN ELECTRONIC AS BUILT SURVEY WILL BE NECESSARY FOR POND VOLUME CONFIRMATION.
6. ONCE ITEMS HAVE BEEN CONFIRMED, POND TO BE PLANTED AND SEEDED AS SPECIFIED ON LANDSCAPE PLAN. AT AREAS OF POND WHERE 4" CLAY LINER IS BE INSTALLED, CONTRACTOR TO INSTALL 3" OF TOPSOIL MATERIAL TO ENSURE PLANT GROWTH.

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121 S. ESTES DRIVE SUITE 100
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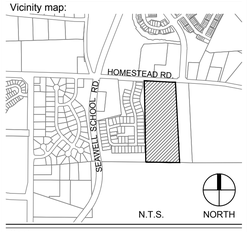
Project:

INDEPENDENT SENIOR HOUSING CHAPEL HILL

Vicinity map:



Seal:

NORTH CAROLINA PROFESSIONAL SEAL 036231 ENGINEER ADAM C. PIKE

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Issued for:

SUP SUBMITTAL

No.	Date	Description

NORTH

SCALE: AS NOTED

Title:

STORMWATER MANAGEMENT PLAN (SCM-01)

Project number: C17004
Date: 09.27.2017
Drawn by: DCB
Approved by: ACP
Sheet: C5.20

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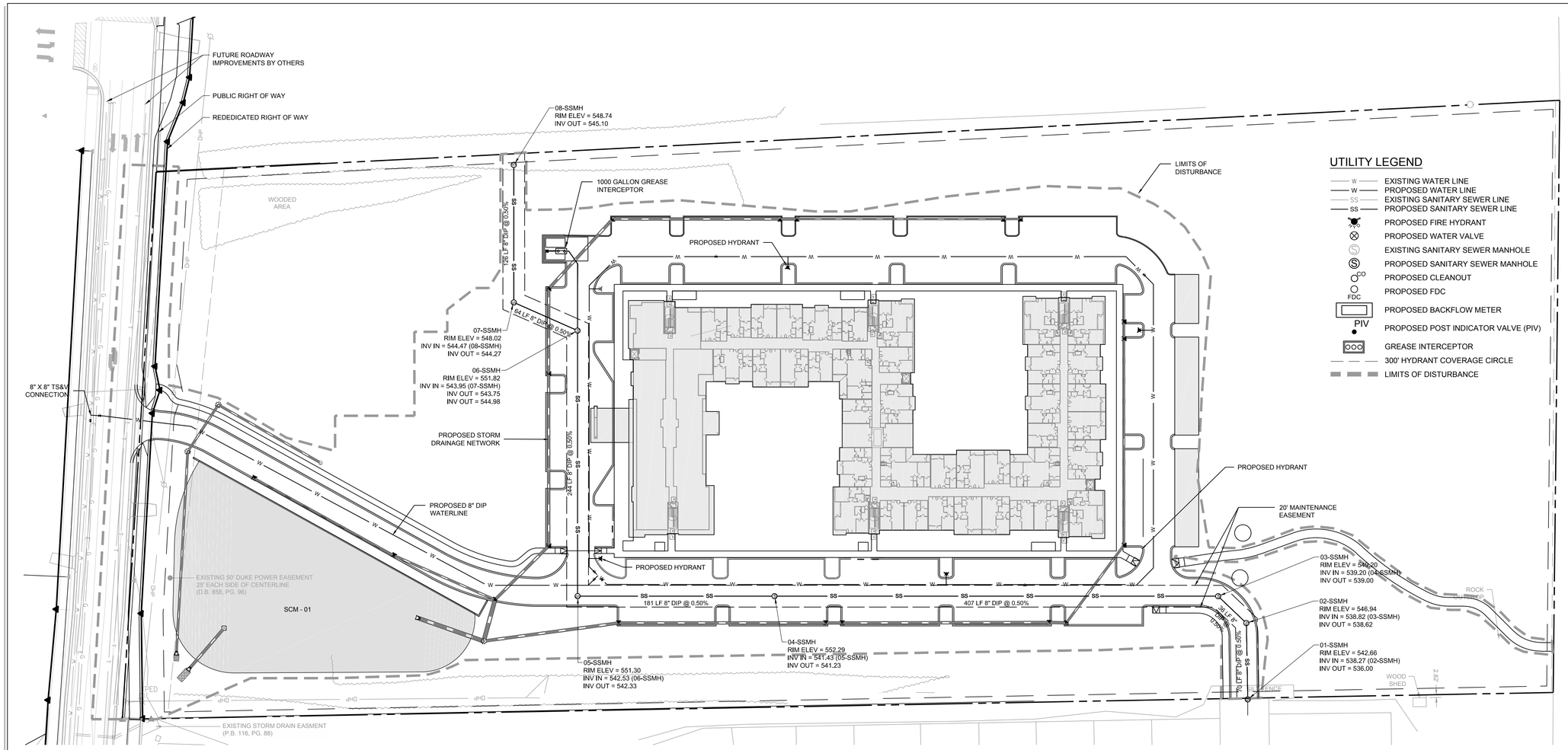

UTILITY NOTES:

1. REFER TO SHEET C3.00 FOR GENERAL NOTES.
2. UNLESS OTHERWISE NOTED, ALL MANHOLES SHALL BE PRE-CAST CONCRETE STRUCTURES.
3. THE CONTRACTOR SHALL COORDINATE THE CONSTRUCTION OF UNDERGROUND UTILITIES (WATER, SEWER, STORM, ELECTRICAL, GAS, OR OTHER) FOR THIS PROJECT WITH THE BUILDING PLANS. THE UTILITY CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE INSTALLATION OF ALL UTILITY SERVICES TO WITHIN FIVE (5) FEET OF THE BUILDING CONNECTION POINT.
4. THE CONTRACTOR SHALL COORDINATE WITH OTHER CONTRACTORS ON SITE AND UTILITY PROVIDERS DURING CONSTRUCTION TO ENSURE SMOOTH TRANSITION BETWEEN DISCIPLINES.
5. THE CONTRACTOR SHALL COORDINATE ALL PEDESTRIAN AND VEHICULAR INTERRUPTIONS WITH OWNER'S REPRESENTATIVE AT LEAST 72 HOURS PRIOR TO BEGINNING WORK.
6. THE CONTRACTOR SHALL NOT PROCEED WITH ANY WORK INSIDE THE PUBLIC RIGHT OF WAY PRIOR TO RECEIPT AND COMPLIANCE WITH ALL APPLICABLE NCDOT PERMITS. ADDITIONALLY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY FLAGGERS AND TRAFFIC CONTROL DURING ALL WORK INSIDE THE PUBLIC RIGHTS OF WAY.
7. THE CONTRACTOR SHALL NOT RE-USE ANY FIRE HYDRANT REMOVED AS PART OF THIS PROJECT. ANY FIRE HYDRANT SHOWN TO BE REMOVED OR RELOCATED SHALL BE REPLACED WITH A NEW FIRE HYDRANT MEETING THE LOCAL JURISDICTIONAL REQUIREMENTS AND STANDARDS.
8. ALL EXISTING SUB-SURFACE UTILITIES IDENTIFIED ON THE CONSTRUCTION DOCUMENTS ARE SHOWN IN THEIR APPROXIMATE LOCATION BASED ON SURVEY INFORMATION GATHERED FROM FIELD INSPECTION AND/OR ANY OTHER APPLICABLE RECORD DRAWINGS WHICH MAY BE AVAILABLE. DEPTHS OF EXISTING UTILITIES SHOWN IN PROFILE VIEWS ARE BASED ON STANDARD ASSUMPTIONS. THE CONTRACTOR SHALL FIELD VERIFY THE EXACT LOCATION, DEPTH, SIZE AND MATERIAL OF ANY AND ALL SUB-SURFACE CONDITIONS REFERENCED IN THESE PLANS PRIOR TO ANY EXCAVATION OR CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES OR CONFLICTS.
9. ELEVATIONS OF UTILITIES ARE GIVEN TO THE EXTENT OF INFORMATION AVAILABLE, WHERE ELEVATIONS ARE NOT GIVEN AT POINTS OF EXISTING UTILITY CROSSINGS, SUCH ELEVATIONS SHALL BE DETERMINED BY THE CONTRACTOR AND REPORTED TO THE ENGINEER, WHEN UNKNOWN LINES ARE EXPOSED, THEIR LOCATIONS AND ELEVATIONS SHALL ALSO BE REPORTED TO THE ENGINEER.
10. UNDERGROUND UTILITIES SHOWN ON THIS PLAN SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION OF PARKING AREA, DRIVES, CURB AND GUTTER OR CONCRETE WALKS / PADS. IF UTILITIES SHOWN ON THIS PLAN CANNOT BE INSTALLED PRIOR TO INSTALLATION OF IMPERVIOUS (ASPHALT / CONCRETE) CONDUIT SHALL BE INSTALLED FOR THE "FUTURE" UTILITY INSTALLATION.
11. AS-BUILT DOCUMENTATION REQUIREMENTS: PRIOR TO APPROVAL FROM LOCAL JURISDICTION OR ENGINEER THE CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS (IN BOTH PAPER AND ELECTRONIC FORMAT (CAD / PDF) PREPARED AND SEALED BY A PROFESSIONAL LAND SURVEYOR SHOWING ALL UTILITY INSTALLATION. HORIZONTAL AND VERTICAL INFORMATION SHALL BE PROVIDED FOR WATER, SEWER, STORM INCLUDING ALL STRUCTURES, VALVES, HYDRANTS, AND OTHER APPURTENANCES.

WATER NOTES:

1. AS INDICATED, ALL WATERLINES SHALL BE DUCTILE IRON PIPE MEETING THE REQUIREMENTS OF ANSI-AWWA C151 PRESSURE CLASS 350 OR SOFT COPPER TYPE K PIPE PER ASTM B88. IF PVC WATERLINE IS INDICATED ON THE PLANS IT SHALL MEET THE REQUIREMENTS OF AWWA C-900; CLASS 200.
2. ALL WATERLINES SHALL HAVE A MINIMUM OF 3.5 FEET OF COVER.
3. TESTING NOTES:

   PRESSURE:
   LEAKAGE SHALL NOT EXCEED THE MAXIMUM ALLOWABLE LEAKAGE SPECIFIED IN AWWA C 600. MINIMUM TEST PRESSURE SHALL BE 150 PSI FOR DOMESTIC AND 200 PSI FOR FIRE PROTECTION.

   BACTERIOLOGICAL:
   TWO SAMPLES FOR BACTERIOLOGICAL SAMPLING SHALL BE COLLECTED AT LEAST 24 HOURS APART. IF CONTAMINATION IS INDICATED, THEN THE DISINFECTION PROCEDURE AND TESTING SHALL BE REPEATED UNTIL SATISFACTORY RESULTS ARE OBTAINED.
4. THE CHLORINE IN HEAVILY CHLORINATED WATER FLUSHED FROM MAINS NEEDS TO BE NEUTRALIZED BEFORE DISCHARGE. CONTRACTORS SHALL NEUTRALIZE HEAVILY CHLORINATED WATER FLUSHED FROM MAINS PRIOR TO DISCHARGE OR TRANSPORT ALL HEAVILY CHLORINATED WATER OFFSITE FOR PROPER DISPOSAL.
5. PAINT VALVE COVERS, FIRE HYDRANTS AND OTHER WATER APPARATUS TO MEET THE LOCAL JURISDICTIONAL REQUIREMENTS.

PROPOSED UTILITY SEPARATION:

1. WATER MAINS SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM EXISTING OR PROPOSED SEWERS, UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT A 10-FOOT HORIZONTAL SEPARATION IN WHICH CASE;
   a. THE WATER MAIN IS LAID IN A SEPARATE TRENCH, WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER; OR
   b. THE WATER MAIN IS LAID IN THE SAME TRENCH AS THE SEWER WITH THE WATER MAIN LOCATED AT ONE SIDE OF A BENCH OF UNDISTURBED EARTH, AND WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP TO THE SEWER.
2. CROSSING A WATER MAIN OVER A SEWER. WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS OVER A SEWER, THE WATER MAIN SHALL BE LAID AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER, UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT AN 18 INCH VERTICAL SEPARATION, IN WHICH CASE BOTH THE WATER MAIN AND SEWER SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS THAT ARE EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING.
3. CROSSING A WATER MAIN UNDER A SEWER. WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS UNDER A SEWER, BOTH THE WATER MAIN AND THE SEWER SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING. A SECTION OF WATER MAIN PIPE SHALL BE CENTERED AT THE POINT OF CROSSING.

SEPARATION OF SANITARY SEWERS AND STORM SEWERS:

1. A 24" VERTICAL SEPARATION SHALL BE PROVIDED BETWEEN STORM SEWER AND SANITARY SEWER LINES OR BOTH THE SANITARY AND THE STORM LINES SHALL BE CONSTRUCTED OF FERROUS MATERIALS.

FIRE DEPARTMENT ACCESS NOTES:

1. AERIALS; WHERE A BUILDING EXCEEDS 30' IN HEIGHT OR 3 STORIES ABOVE THE LOWEST LEVEL OF FIRE DEPARTMENT ACCESS, OVERHEAD POWER AND UTILITY LINES SHALL NOT BE ALLOWED WITHIN THE AERIAL APPARATUS ACCESS ROADWAY AND THE ROADWAY SHALL HAVE AN UNOBSTRUCTED WIDTH OF 26' EXCLUSIVE OF THE SHOULDERS. AT LEAST ONE OF THE APPARATUS ACCESS ROADWAYS SHALL BE LOCATED WITHIN A MINIMUM OF 15' AND MAXIMUM OF 30' FROM ONE COMPLETE SIDE OF THE BUILDING. NC FPC 2012 D105.1, D105.2, D105.3
2. FIRE APPARATUS ACCESS ROADS; ANY FIRE APPARATUS ACCESS ROADS, (ANY PUBLIC/PRIVATE STREET, PARKING LOT ACCESS, FIRE LANES AND ACCESS ROADWAYS), USED FOR FIRE DEPARTMENT ACCESS SHALL BE ALL WEATHER AND DESIGNED TO CARRY THE IMPOSED LOAD OF FIRE APPARATUS WEIGHING AT LEAST 80,000 LBS. FIRE APPARATUS ACCESS ROADS SHALL HAVE A MINIMUM WIDTH OF 20' WITH AN OVERHEAD CLEARANCE OF AT LEAST 13'-6" FOR STRUCTURES NOT EXCEEDING 30' IN HEIGHT AND SHALL PROVIDE ACCESS TO WITHIN 150' OF ALL EXTERIOR PORTIONS OF THE BUILDING. STRUCTURES EXCEEDING 30' IN HEIGHT SHALL BE PROVIDED WITH AN AERIAL APPARATUS ACCESS ROAD 26' IN WIDTH IN THE IMMEDIATE VICINITY OF THE BUILDING OR PORTION THEREOF AND SHALL PROVIDE AT LEAST ONE OF THE REQUIRED ACCESS ROADS TO BE LOCATED NOT LESS THAN 15' AND NOT MORE THAN 30' FROM THE STRUCTURE PARALLEL TO ONE ENTIRE SIDE OF THE STRUCTURE. NC FPC 2012 502.1,503.1.1, 503.2.1, D102.1

SEWER NOTES:

1. SANITARY SEWER CLEANOUTS LOCATED IN PAVEMENT AREAS SHALL BE HEAVY DUTY TRAFFIC BEARING CASTINGS.
2. UNLESS OTHERWISE NOTED, ALL SANITARY SEWER MANHOLES ARE 4' DIA.
3. MANHOLES LOCATED IN PAVEMENT, CONCRETE OR OTHER TRAFFIC AREAS SHALL BE SET AT GRADE. MANHOLES LOCATED IN OTHER AREAS (I.E. GRASS OR WOODED AREAS) SHALL HAVE THEIR RIMS RAISED SIX INCHES ABOVE THE SURROUNDING GRADE. MANHOLES SUBJECT TO POSSIBLE WATER INFILTRATION SHALL HAVE WATERTIGHT, BOLTED LIDS.
4. MINIMUM REQUIRED SLOPES FOR SEWER SERVICES:
   4" SEWER SERVICE - 2.00% SLOPE
   6" SEWER SERVICE - 1.00% SLOPE
   8" SEWER SERVICE - 0.50% SLOPE
5. UNLESS OTHERWISE NOTED, LOCATE SANITARY SERVICE CLEANOUTS AT ALL HORIZONTAL OR VERTICAL CHANGES IN DIRECTION. MAXIMUM SPACING BETWEEN CLEANOUTS SHALL BE 75 FEET.
6. SEWER LINES LESS THAN 3 FEET OF COVER SHALL BE CLASS 50 DUCTILE IRON PIPE. SEWER LINES WITH GREATER THAN 3 FEET OF COVER SHALL BE AS NOTED BELOW:
   4" SEWER SERVICE - SCH 80
   6" SEWER SERVICE - SCH 80
   8" SEWER SERVICE - SDR-35
7. SEWER LINES UNDER CONSTRUCTION SHALL BE PROTECTED FROM DIRT, DEBRIS OR OTHER CONTAMINANTS ENTERING THE NEW SYSTEM. A MECHANICAL PLUG SHALL BE UTILIZED BOTH IMMEDIATELY UPSTREAM OF THE NEW CONSTRUCTION AND AT THE FIRST MANHOLE DOWNSTREAM IN THE EXISTING SYSTEM. EXISTING STRUCTURES, PIPING AND APPURTENANCES SHALL BE PROTECTED FROM ANY INFLOW OF WATER, DIRT OR DEBRIS DUE TO NEW CONSTRUCTION CONNECTING TO OR IN THE VICINITY OF THE EXISTING SYSTEM. CONTRACTOR TO REMOVE DEBRIS AND PLUG PRIOR TO OCCUPANCY.
8. ALL MANHOLES COVERS SHALL BE PAINTED TO LOCAL JURISDICTIONAL REQUIREMENTS.

FIRE SERVICE FEATURES NOTES:

1. FIRE LANES; WHERE REQUIRED, APPROVED MARKING SIGNS INCLUDING THE WORDS, NO PARKING-FIRE LANE SIGNS SHALL BE PROVIDED FOR FIRE APPARATUS ACCESS ROADS TO IDENTIFY SUCH ROADS. NC FPC 2012, 503.3, D103.6, D103.6.1, D103.6.2
2. GATES AND BARRICADES; WHERE REQUIRED OR AUTHORIZED BY THE FIRE CODE OFFICIAL AND PERMANENT OR TEMPORARY (CONSTRUCTION), ANY GATES ACROSS FIRE APPARATUS ACCESS ROADS SHALL BE A MINIMUM WIDTH OF 20', BE OF SWINGING OR SLIDING TYPE, HAVE AN EMERGENCY MEANS OF OPERATION, SHALL BE OPENABLE BY EITHER FORCIBLE ENTRY OR KEYED, CAPABLE OF BEING OPERATED BY ONE PERSON, AND SHALL BE INSTALLED AND MAINTAINED ACCORDING TO UL 325 AND ASTM F 2200. NC FPC 2012, 503.5, 503.6, D103.5
3. GRADE AND APPROACH; FIRE APPARATUS ACCESS ROADS SHALL NOT EXCEED 10% IN GRADE UNLESS APPROVED BY THE FIRE CHIEF AND ALL APPROACH AND DEPARTURE ANGLES SHALL BE WITHIN THE LIMITS ESTABLISHED BASED ON THE DEPARTMENT'S APPARATUS. NC FPC 2012, 503.2.7, 503.2.8 AND D103.2

FIRE PROTECTION NOTES:

1. FIRE DEPARTMENT CONNECTIONS, INSTALLATION: A WORKING SPACE OF NOT LESS THAN 36" IN WIDTH AND DEPTH AND A WORKING SPACE OF 78" IN HEIGHT SHALL BE PROVIDED ON ALL SIDES WITH THE EXCEPTION OF WALL MOUNTED FDC'S UNLESS OTHERWISE APPROVED BY THE FIRE CODE OFFICIAL. THE FDC'S WHERE REQUIRED MUST BE PHYSICALLY PROTECTED BY AN APPROVED BARRIER FROM IMPACTS. NC FPC 2012, 912.1, 912.2 912.2.1, 912.3.2, 312
2. FIRE DEPARTMENT CONNECTIONS, LOCATIONS; ANY REQUIRED FDC'S FOR ANY BUILDINGS SHALL MEET THE DESIGN AND INSTALLATION REQUIREMENTS FOR THE CURRENT, APPROVED EDITION OF NFPA 13, 13D, 13R, OR 14 OF THE NC FPC 2012 AND TOWN ORDINANCES; 7-38 FOR LOCATION. FDC'S SHALL BE INSTALLED ON THE STREET/ ADDRESS SIDE OF THE BUILDING AND WITHIN 100' OF A HYDRANT OR UNLESS OTHERWISE APPROVED BY THE FIRE CODE OFFICIAL AND SHALL NOT BE OBSTRUCTED OR HINDERED BY PARKING OR LANDSCAPING.
3. SPRINKLERS: ANY BUILDING WITH MORE THAN 6000 SF OF FLOOR SPACE IS REQUIRED TO HAVE A SPRINKLER SYSTEM. TOWN ORDINANCE 7-56.
4. FIRE HYDRANTS; THE ADDITION OF ANY REQUIRED HYDRANTS TO SERVE THE SUBMITTED BUILDING MUST FLOW A MINIMUM OF 2500 GPM PER TOWN ENGINEERING STANDARDS UNLESS APPROVED BY THE FIRE CODE OFFICIAL. THE FARTHEST HYDRANT SERVING A PROPOSED STRUCTURE MUST BE NO MORE THAN 500' DISTANT. A MAXIMUM DISTANCE OF 500' SPACING BETWEEN HYDRANTS MUST BE MAINTAINED UNLESS OTHERWISE APPROVED BY THE FIRE CODE OFFICIAL. LESSER SPACING DISTANCES MAY BE REQUIRED. A MINIMUM WORKING SPACE OF 3' MUST BE MAINTAINED AROUND ALL HYDRANTS. WHERE HYDRANTS ARE SUBJECT TO PHYSICAL IMPACT, PHYSICAL PROTECTION MAY BE REQUIRED, NC FPC 2012, 507.5.6. THE MINIMUM NUMBER OF REQUIRED HYDRANTS AND THEIR SPACING MUST MEET NC FPC 2012, APPENDIX C, TABLE C105.1
5. FIRE HYDRANTS; WHERE A FIRE HYDRANT EXISTS ON AN A FIRE APPARATUS ACCESS ROAD SERVING THE BUILDING BEING SUBMITTED, THE FIRE APPARATUS ACCESS ROAD SHALL HAVE AN UNOBSTRUCTED WIDTH OF NOT LESS THAN 26'. NC FPC 2012 D103.1

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Client:

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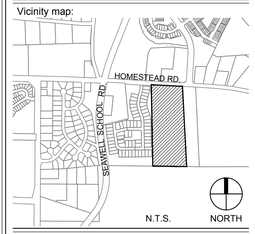
Project:

INDEPENDENT SENIOR HOUSING CHAPEL HILL

Vicinity map:



Seal:

NORTH CAROLINA PROFESSIONAL SEAL 036231 ENGINEER DAMON C. PIKE

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

Issued for:

SUP SUBMITTAL

No.	Date	Description

0 25 50 100 NORTH

SCALE: 1"=50'

Title:

UTILITIES PLAN

Project number: C17004 Sheet:
Date: 09.27.2017
Drawn by: DCB/RS
Approved by: ACP

C6.00

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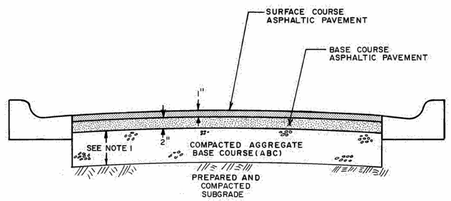


NOTE:
1. AGGREGATE BASE COURSE THICKNESS SHALL BE 8" IN TYPE I AREA; 10" IN TYPE II AREA. (SEE AREA MAP IN DESIGN MANUAL.)
2. TOWN STREETS SHALL TYPICALLY BE CONSTRUCTED USING TWO-COURSE PAVING IN ACCORDANCE WITH THE DESIGN MANUAL.

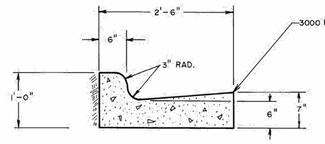
NO SCALE

TITLE: TYPICAL PAVEMENT THICKNESS FOR TYPE I AND TYPE II CONSTRUCTION AREAS

REVISIONS			DET.NO.
NO	DATE	BY	ST-1G
			SH. 8 of 8

ENGINEERING DEPARTMENT STANDARD DETAILS

1 TYPICAL PAVEMENT SECTION NTS



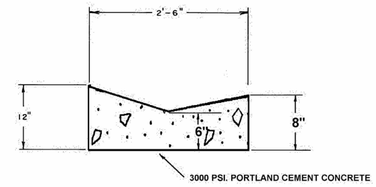
SCALE: 1"=1'-0"

TITLE: CURB & GUTTER SECTION

REVISIONS			DET.NO.
NO	DATE	BY	ST-2

ENGINEERING DEPARTMENT STANDARD DETAILS

2 CURB & GUTTER SECTION NTS



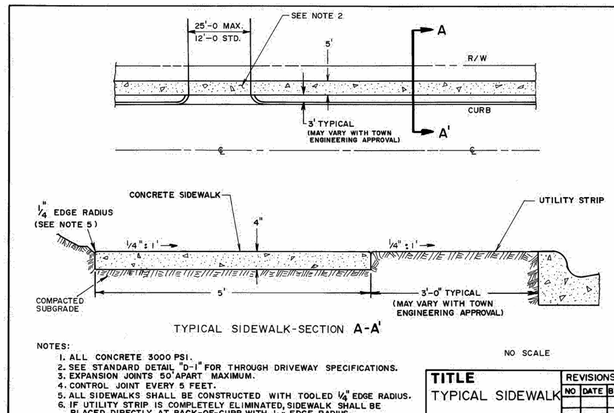
MANAGER'S PRIOR APPROVAL REQUIRED

TITLE: VALLEY CURB AND GUTTER SECTION

REVISIONS			DET.NO.
NO	DATE	BY	ST-2C

ENGINEERING DEPARTMENT STANDARD DETAILS

3 VALLEY CURB & GUTTER SECTION NTS



TYPICAL SIDEWALK-SECTION A-A'

NO SCALE

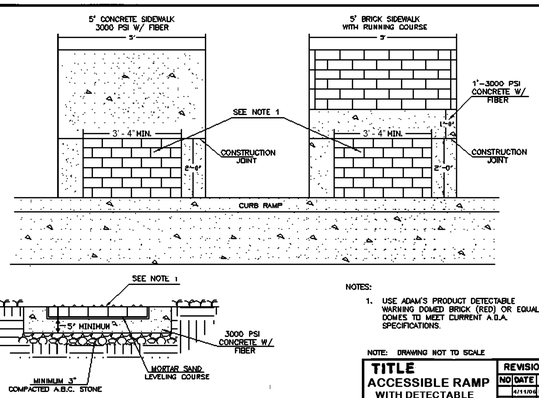
NOTES:
1. ALL CONCRETE 3000 PSI.
2. SEE STANDARD DETAIL "D-1" FOR THROUGH DRIVEWAY SPECIFICATIONS.
3. EXPANSION JOINTS 50' APART MAXIMUM.
4. CONTROL JOINT EVERY 5 FEET.
5. ALL SIDEWALKS SHALL BE CONSTRUCTED WITH TOOLED 1/4" EDGE RADIUS.
6. IF UTILITY STRIP IS COMPLETELY ELIMINATED, SIDEWALK SHALL BE PLACED DIRECTLY AT BACK-OF-CURB, WITH 1/4" EDGE RADIUS.

TITLE: TYPICAL SIDEWALK

REVISIONS			DET.NO.
NO	DATE	BY	ST-4
			SH. 1 of 3

ENGINEERING DEPARTMENT STANDARD DETAILS

4 TYPICAL SIDEWALK DETAIL NTS



NOTES:
1. USE ADAM'S PRODUCT DETECTABLE WARNING DOMED BRICK (RED) OR EQUAL. DOMES TO MEET CURRENT A.D.A. SPECIFICATIONS.

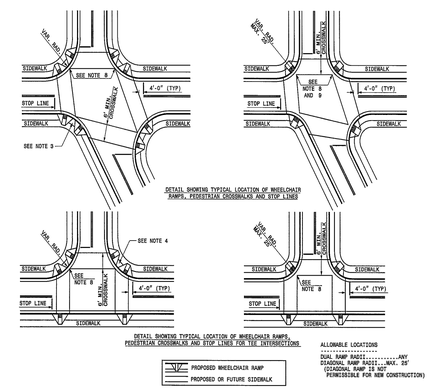
NOTE: DRAWING NOT TO SCALE

TITLE: ACCESSIBLE RAMP WITH DETECTABLE WARNING DOMES

REVISIONS			DET.NO.
NO	DATE	BY	ST-5.1
	4/11/06	MCR	
	5/9/07	LRT	

ENGINEERING DEPARTMENT STANDARD DETAILS

5 ACCESSIBLE RAMP DETAIL (PART1) NTS



DETAIL SHOWING TYPICAL LOCATION OF WHEELCHAIR RAMPS, PEDESTRIAN CROSSWALKS AND STOP LINES

DETAIL SHOWING TYPICAL LOCATION OF WHEELCHAIR RAMPS, PEDESTRIAN CROSSWALKS AND STOP LINES FOR TEE INTERSECTIONS

ALLOWABLE LOCATIONS
DUAL RAMP RADII.....ANY
DIAGONAL RAMP RADII.....MAX. 25'
(DIAGONAL RAMP IS NOT PERMISSIBLE FOR NEW CONSTRUCTION)

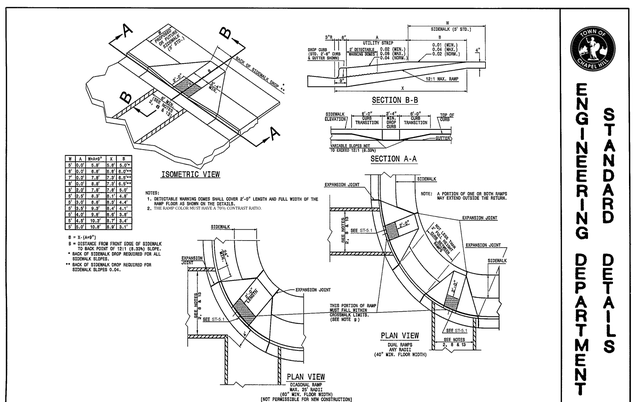
NOTE: DRAWING NOT TO SCALE
SOURCE: NCDOT STANDARD DRAWINGS

TITLE: ACCESSIBLE RAMP

REVISIONS		DET.NO.
09/03	JH	ST - 5.2

ENGINEERING DEPARTMENT STANDARD DETAILS

6 ACCESSIBLE RAMP DETAIL (PART2) NTS



NOTE: DRAWING NOT TO SCALE
SOURCE: NCDOT STANDARD DRAWINGS

TITLE: ACCESSIBLE RAMP

REVISIONS		DET.NO.
09/03	JH	ST - 5.3
02/08	ER	

ENGINEERING DEPARTMENT STANDARD DETAILS

7 ACCESSIBLE RAMP DETAIL (PART3) NTS

NOTES:

1. CONSTRUCT THE WALKING SURFACE WITH SLIP RESISTANCE AND A 70% CONTRASTING COLOR TO THE SIDEWALK.
2. CROSSWALK WIDTHS AND CONFIGURATION MAY VARY BUT MUST CONFORM TO TRAFFIC DESIGN STANDARDS.
3. PROVIDE WHEELCHAIR RAMPS AT LOCATIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. LOCATE WHEELCHAIR RAMPS AS DIRECTED BY THE ENGINEER WHERE EXISTING LIGHT POLES, FIRE HYDRANTS, DROP INLETS, ETC. AFFECT PLACEMENT. WHERE TWO RAMPS ARE INSTALLED, PLACE NOT LESS THAN TWO FEET OF FULL HEIGHT CURB BETWEEN THE RAMPS. PLACE DUAL RAMPS AS PERPENDICULAR TO THE TRAVEL LANE BEING CROSSED AS POSSIBLE .
4. DO NOT EXCEED 0.08 (12:1) SLOPE ON THE WHEELCHAIR RAMP IN RELATIONSHIP TO THE GRADE OF THE STREET.
5. CONSTRUCT WHEELCHAIR RAMPS 40" (3'-4") OR GREATER FOR DUAL RAMPS AND 60" (5'-0") OR GREATER FOR DIAGONAL RAMPS.
6. USE CONCRETE WITH A SIDEWALK FINISH IN ORDER TO OBTAIN A ROUGH NON-SKID TYPE SURFACE.
7. PLACE A 1/2" EXPANSION JOINT WHERE THE CONCRETE WHEELCHAIR RAMP JOINS THE CURB AS SHOWN ON DETAIL ST-5A.
8. PLACE THE INSIDE PEDESTRIAN CROSSWALK LINES NO CLOSER IN THE INTERSECTION BY BISECTING THE INTERSECTION RADII, WITH ALLOWANCE OF A 4' CLEAR ZONE IN THE VEHICULAR TRAVELWAY WHEN ONE RAMP IS INSTALLED. (SEE NOTE 13)
9. COORDINATE THE CURB CUT AND THE PEDESTRIAN CROSSWALK LINES SO THE FLOOR OF THE WHEELCHAIR RAMP WILL FALL WITHIN THE PEDESTRIAN CROSSWALK LINES. PLACE DIAGONAL RAMPS WITH FLARED SIDES SO 24" OF FULL HEIGHT CURB FALLS WITHIN THE CROSSWALK MARKINGS ON EACH SIDE OF THE FLARES.
10. CONSTRUCT THE PEDESTRIAN CROSSWALK A MINIMUM OF 6 FEET. A CROSSWALK WIDTH OF 8 FEET OR GREATER IS DESIRABLE.
11. USE STOP LINES, NORMALLY PERPENDICULAR TO THE LANE LINES, WHERE IT IS IMPORTANT TO INDICATE THE POINT BEHIND WHICH VEHICLES ARE REQUIRED TO STOP IN COMPLIANCE WITH A TRAFFIC SIGNAL, STOP SIGN OR OTHER LEGAL REQUIREMENT. AN UNUSUAL APPROACH SKEW MAY REQUIRE THE PLACEMENT OF THE STOP LINE TO BE PARALLEL TO THE INTERSECTION ROADWAY.
12. TERMINATE PARKING A MINIMUM OF 20 FEET BACK OF PEDESTRIAN CROSSWALK.
13. PLACE ALL PAVEMENT MARKINGS IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION AND THE NORTH CAROLINA SUPPLEMENT TO THE MUTCD.

SOURCE: NCDOT STANDARD DRAWINGS

TITLE: ACCESSIBLE RAMP

REVISIONS		DET.NO.
09/03	JH	ST - 5.4

ENGINEERING DEPARTMENT STANDARD DETAILS

8 ACCESSIBLE RAMP DETAIL (PART4) NTS

STEWART
421 FAYETTEVILLE ST., SUITE 400
RALEIGH, NC 27601
T 919.380.8750
FIRM LICENSE #: C-1051
www.stewartinc.com
PROJECT #: C17104

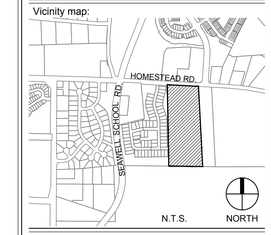
Client:

GLMH-2, LLC
121 S. ESTES DRIVE SUITE 100
CHAPEL HILL, NC 27514

Project:

INDEPENDENT SENIOR HOUSING CHAPEL HILL

Vicinity map:



Seal:

NORTH CAROLINA PROFESSIONAL SEAL 036231 ENGINEER ADAM C. PRIDE

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

Issued for:

SUP SUBMITTAL

No.	Date	Description

SCALE: N.T.S.

Title:

SITE DETAILS

Project number: C17004 Sheet:
Date: 09.27.2017
Drawn by: RS
Approved by: ACP

C9.00

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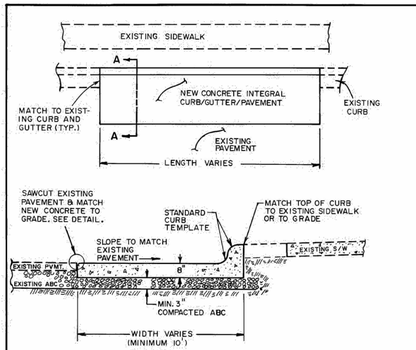


SECTION A-A

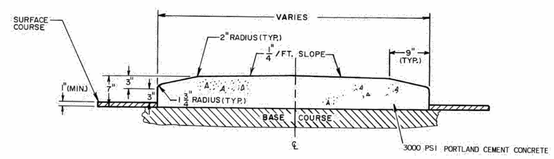
NOTES:

1. CONCRETE - 4000 PSI, 6% AIR ENTRAINMENT (±1½%), FIBER SECONDARY REINFORCEMENT, 4" SLUMP.
2. FINISH - BROOM FINISH PERPENDICULAR TO ROAD CENTER LINE
3. JOINTS - CONTRACTION (CRACK) JOINTS AT 10' SPACING, 2" DEEP (MIN.) EXPANSION JOINTS AT 40' SPACING, FULL DEPTH, MATCH ADJACENT SIDEWALK JOINTS WHERE APPLICABLE.
4. CURING - USE WHITE PIGMENTED CURING COMPOUND IF DIRECTED SO BY TOWN INSPECTOR.

ENGINEERING DEPARTMENT STANDARD DETAILS

TITLE	REVISIONS			DET.NO.
INTEGRAL CONCRETE PAVEMENT SECTION FOR BUS STOPS	NO	DATE	BY	ST-9

1 INTEGRAL CONCRETE PAVEMENT SECTION FOR BUS STOPS NTS



NOTES:

1. WHEN MONOLITHIC CONCRETE ISLAND IS ON TOP OF SURFACE COURSE, 40D SPIKES SHALL BE DRIVEN INTO SURFACE UNDER MONOLITHIC CONCRETE ISLAND. SPIKES SHALL BE STAGGERED ON 2' CENTERS EACH WAY.
2. PLACE 1/2" EXPANSION JOINTS AT 30' INTERVALS AND GROOVED JOINTS 1" DEEP AT 10' INTERVALS BETWEEN EXPANSION JOINTS. (THE JOINTS SHALL LINE UP WITH THE JOINTS IN THE CURB AND GUTTER TO THE EXTENT POSSIBLE.)
3. THE TOP 1/2" OF THE EXPANSION JOINTS AND THE ENTIRE DEPTH OF GROOVED JOINTS SHALL BE FILLED AND SEALED WITH JOINT SEALER.

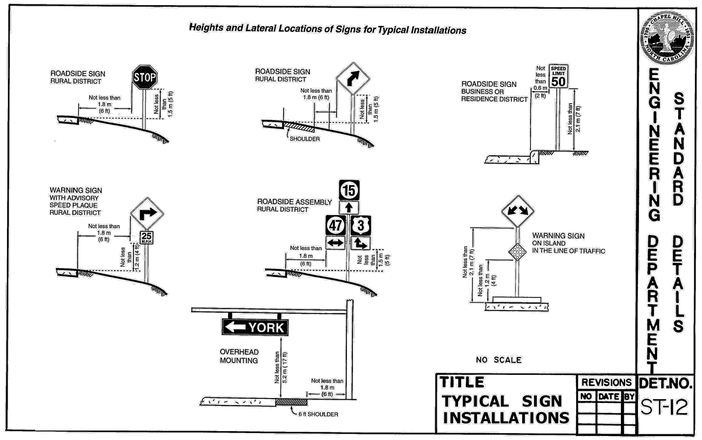
7" MONOLITHIC CONCRETE ISLAND ON BITUMINOUS PAVEMENT

SCALE: 1" = 1'

ENGINEERING DEPARTMENT STANDARD DETAILS

TITLE	REVISIONS			DET.NO.
CONCRETE ISLAND	NO	DATE	BY	ST-11

2 CONCRETE ISLAND DETAIL NTS



NO SCALE

ENGINEERING DEPARTMENT STANDARD DETAILS

TITLE	REVISIONS			DET.NO.
TYPICAL SIGN INSTALLATIONS	NO	DATE	BY	ST-12

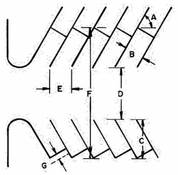
3 TYPICAL SIGN INSTALLATIONS DETAIL NTS

A. STANDARD AUTOMOBILES

A	B	C	D	D'	E	F	F'	G
0°	8.0'	N/A	12.0'	20.0'	23.0'	28.0'	36.0'	N/A
45°	8.5'	18.0'	13.0'	20.0'	12.0'	49.0'	56.0'	2.0'
60°	8.5'	19.5'	16.0'	20.0'	9.8'	55.0'	59.0'	2.5'
75°	8.5'	19.8'	20.0'	20.0'	8.8'	59.6'	59.6'	3.0'
90°	8.5'	18.5'	25.0'	25.0'	8.5'	62.0'	62.0'	3.0'

B. COMPACT AUTOMOBILES

A	B	C	D	D'	E	F	F'	G
0°	8.0'	N/A	11.0'	20.0'	19.0'	27.0'	36.0'	N/A
45°	8.0'	15.3'	11.5'	20.0'	11.3'	42.1'	50.6'	1.5'
60°	8.0'	16.3'	13.3'	20.0'	9.2'	45.9'	52.6'	1.8'
75°	8.0'	16.5'	16.0'	20.0'	8.2'	49.0'	53.0'	2.0'
90°	8.0'	15.5'	20.0'	20.0'	8.0'	51.0'	51.0'	2.0'



A) PARKING ANGLE
B) STALL WIDTH
C) STALL DEPTH
*D) AISLE WIDTH BETWEEN STALL LINES (ONE-WAY TRAFFIC)
E) STALL WIDTH PARALLEL TO AISLE
F) MODULE WIDTH (ONE-WAY TRAFFIC) WITH PARKING ON BOTH SIDES.
#G) VECHICLE OVERHANG
*D') TWO-WAY TRAFFIC
F') TWO-WAY TRAFFIC

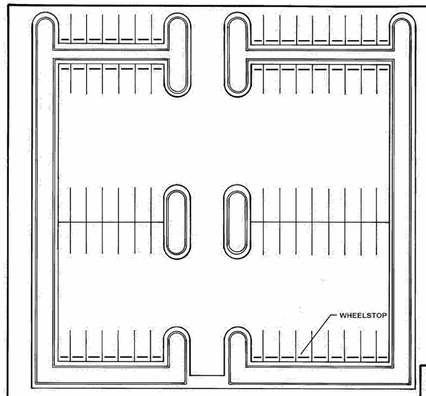
* ADDITIONAL WIDTH MAY BE REQUIRED WHERE THE AISLE SERVES AS A PRINCIPAL VEHICULAR ACCESS TO ON-SITE USES OR STRUCTURES OR SERVES TWO-WAY TRAFFIC.

PARKING STALLS ABUTTING SIDEWALK AND PLANTING STRIPS SHALL PROVIDE ADDITIONAL CLEARANCE BETWEEN THE STALL AND THE SIDEWALK OR PLANTING STRIP.

ENGINEERING DEPARTMENT STANDARD DETAILS

TITLE	REVISIONS			DET.NO
LOT LAYOUT SCHEDULE	NO	DATE	BY	P-1

4 PARKING LOT LAYOUT SCHEDULE NTS



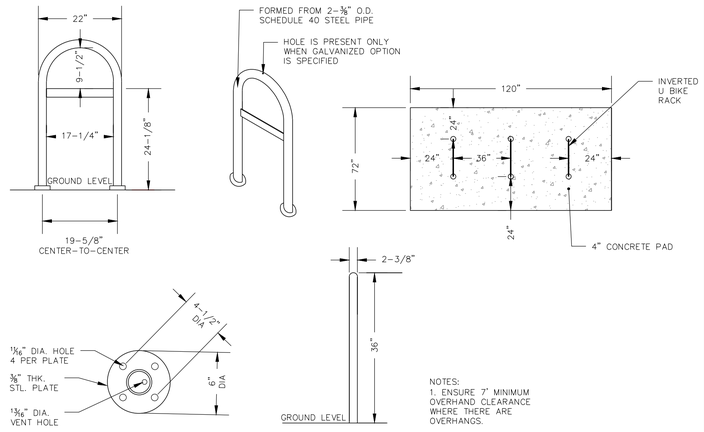
NOTE:
FOR DIMENSIONS SEE DETAIL NO. P-1 (LOT LAYOUT SCHEDULE)

NO SCALE

ENGINEERING DEPARTMENT STANDARD DETAILS

TITLE	REVISIONS			DET.NO.
TYPICAL 90° LOT LAYOUT	NO	DATE	BY	P-2

5 TYPICAL 90° PARKING LOT LAYOUT NTS



NOTES:
1. ENSURE 7' MINIMUM OVERHAND CLEARANCE WHERE THERE ARE OVERHANGS.

6 INVERTED U BIKE RACK WITH CROSS BRACE DETAIL

STEWART
421 FAYETTEVILLE ST., SUITE 400
RALEIGH, NC 27601
T 919.380.8750
FIRM LICENSE #: C-1051
www.stewartinc.com
PROJECT #: C17104

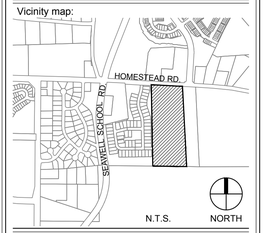
Client:

GLMH-2, LLC
121 S. ESTES DRIVE SUITE 100
CHAPEL HILL, NC 27514

Project:

INDEPENDENT SENIOR HOUSING CHAPEL HILL

Vicinity map:



Seal:

NORTH CAROLINA PROFESSIONAL SEAL 036231 ENGINEER ADAM C. PIKE

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No.	Date	Description

SCALE: N.T.S.

Title:

SITE DETAILS

Project number: C17004
Date: 09.27.2017
Drawn by: RS
Approved by: ACP
Sheet: C9.01

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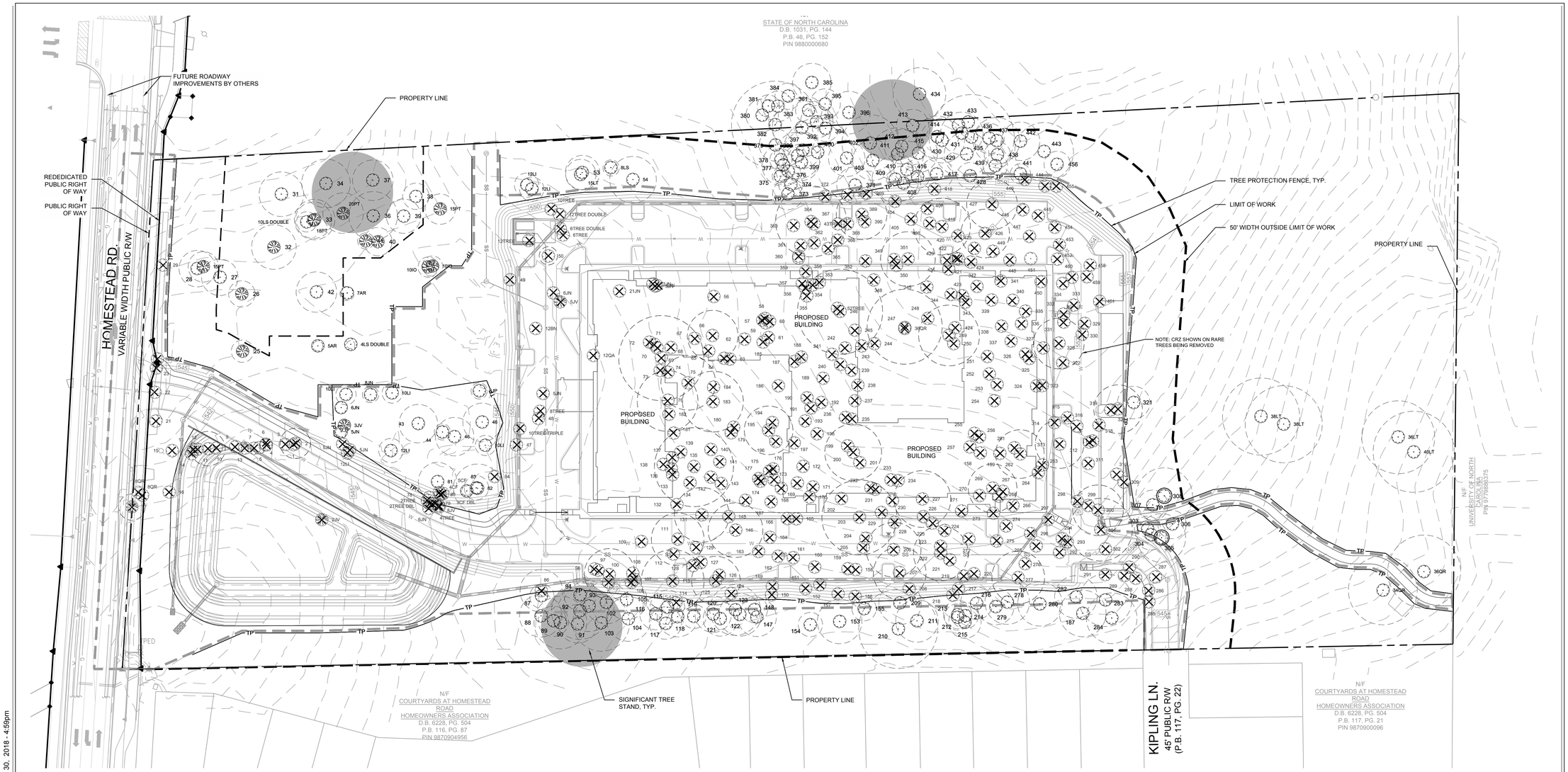


LEGEND

- RARE AND SPECIMEN TREES PROPOSED TO BE REMOVED
- RARE AND SPECIMEN TREES CRITICAL ROOT ZONES 1' OF RADIUS = 1" TRUNK DBH
- LIMIT OF WORK
- 50' WIDTH TREE PROTECTION LIMIT
- TP — TREE PROTECTION FENCE
- SIGNIFICANT TREE STAND
- ### RARE OR SPECIMEN TREE TO BE REMOVED
- ### RARE OR SPECIMEN TREE TO BE PROTECTED
- #XX NON-RARE OR SPECIMEN TREE

NOTE:
- SEE SHEET L1.01 FOR TREE SPECIES.
- CRZ SHOWN ON ALL RARE TREES BEING REMOVED.

LANDSCAPING PROTECTION NOTES:

1. PRE-CONSTRUCTION CONFERENCE. PRIOR TO THE COMMENCEMENT OF ANY ACTIVITIES REQUIRING A ZONING COMPLIANCE PERMIT, A PRE-CONSTRUCTION CONFERENCE WITH THE TOWN'S URBAN FORESTER OR LANDSCAPE ARCHITECT SHALL TAKE PLACE TO REVIEW PROCEDURES FOR PROTECTION AND MANAGEMENT OF ALL PROTECTED LANDSCAPE ELEMENTS IDENTIFIED ON THE LANDSCAPE PROTECTION PLAN.

2. ON-SITE SUPERVISION. FOR ALL DEVELOPMENT OTHER THAN THAT RELATED TO SINGLE-FAMILY AND TWO-FAMILY DWELLINGS ON INDIVIDUAL ZONING LOTS, THE FOLLOWING ON-SITE SUPERVISION IS REQUIRED:

   - THE APPLICANT SHALL DESIGNATE AS LANDSCAPE PROTECTION SUPERVISORS ONE OR MORE PERSONS WHO HAVE COMPLETED INSTRUCTION IN LANDSCAPE PROTECTION PROCEDURES WITH THE TOWN.
   - IT SHALL BE THE DUTY OF THE LANDSCAPE PROTECTION SUPERVISOR TO ENSURE THE PROTECTION OF NEW OR EXISTING LANDSCAPE ELEMENTS, AS DEFINED IN THE LANDSCAPE PROTECTION PLAN. THE APPROVED LANDSCAPE PROTECTION SUPERVISOR SHALL SUPERVISE ALL SITE WORK TO ASSURE THAT DEVELOPMENT ACTIVITY CONFORMS TO PROVISIONS OF THE APPROVED LANDSCAPE PROTECTION PLAN. AT LEAST ONE (1) IDENTIFIED LANDSCAPE PROTECTION SUPERVISOR SHALL BE PRESENT ON THE DEVELOPMENT SITE AT ALL TIMES WHEN ACTIVITY THAT COULD DAMAGE OR DISTURB SOIL AND ADJACENT LANDSCAPE ELEMENTS OCCURS SUCH AS: CLEARING AND GRUBBING; ANY EXCAVATION, GRADING, TRENCHING OR MOVING OF SOIL; REMOVAL, INSTALLATION, OR MAINTENANCE OF ALL LANDSCAPE ELEMENTS AND LANDSCAPE PROTECTION DEVICES; OR DELIVERY, TRANSPORTING, AND PLACEMENT OF CONSTRUCTION MATERIALS AND EQUIPMENT ON SITE.

3. TOWN STANDARD TREE PROTECTION NOTES:
   - A PRE-CONSTRUCTION CONFERENCE WILL BE HELD WITH THE TOWN'S URBAN FORESTER PRIOR TO BEGINNING SITE WORK.
   - ANY TREE ROOTS EXPOSED BY CONSTRUCTION WILL BE SEVERED CLEANLY WITH AN APPROPRIATE PRUNING TOOL.
   - THE SOIL WITHIN THE CRITICAL ROOT ZONES OF EXISTING TREES WILL NOT BE DRIVEN ON OR OTHERWISE DISTURBED DURING THE INSTALLATION OF LANDSCAPING.

(ON DEVELOPMENT APPLICATIONS FOR NON-RESIDENTIAL AND MULTI-FAMILY CONSTRUCTION THE FOLLOWING ADDITIONAL NOTE SHOULD ALSO BE INCLUDED ON THE PLANS.)

   - A LANDSCAPE PROTECTION SUPERVISOR WHO IS REGISTERED WITH THE TOWN OF CHAPEL HILL, WILL BE PRESENT ON SITE AT ALL TIMES WHEN THE FOLLOWING ACTIVITIES ARE TAKING PLACE: CLEARING, GRUBBING, EXCAVATION, GRADING, TRENCHING, MOVING OF SOIL, INSTALLATION AND REMOVAL OF TREE PROTECTION FENCING, AND THE DELIVERY TRANSPORTING AND PLACEMENT OF CONSTRUCTION MATERIALS AND EQUIPMENT.

4. TREE PROTECTION FENCING:
   TO PROPERLY PROTECT AND ENSURE THE HEALTH OF EXISTING TREES TO REMAIN, PROTECTIVE FENCING SHOULD BE INSTALLED TO PROTECT NO LESS THAN 75% OF A TREE'S CRITICAL ROOT ZONE. WHEN ERECTING FENCING NEAR TREES THAT ARE NOT INDIVIDUALLY IDENTIFIED ON THE LANDSCAPE PROTECTION PLAN, THE FENCING LOCATION SHOULD BE SHIFTED, WHERE POSSIBLE, OR A TREE REMOVED IF ITS CRITICAL ROOT ZONE IS NOT ADEQUATELY PROTECTED. ALL LAND DISTURBING ACTIVITY, STORAGE OF EQUIPMENT, BUILDING MATERIAL, SOIL AND OTHER DEBRIS SHOULD BE KEPT WITHIN THE AREA OF DEVELOPMENT ACTIVITY AND OUTSIDE OF THE PROTECTIVE FENCING. THE TOWN'S STANDARD FOR TREE PROTECTION FENCING IS ORANGE WOVEN PLASTIC OR FABRIC WITH A HEIGHT OF FOUR FEET INSTALLED ON METAL POSTS SET A MAXIMUM OF TEN (10) FEET APART AS SHOWN IN THE FOLLOWING TYPICAL DETAIL.

5. CRITICAL ROOT ZONES IN LOCAL SOIL TYPES ARE SHOWN TO BE ONE (1) FOOT OF RADIUS (NOT DIAMETER) FOR EVER ONCE (1) INCH OF TRUCK DBH.

EXISTING TREE CANOPY CALCULATIONS:

1. TOTAL PARCEL AREA: 15.58 AC.
2. DEDICATED ROW AREA : 0.11 AC.
3. PROPOSED UTILITY EASEMENT AREA: 0.08 AC.
4. ACTIVE RECREATIONAL AREA (ACTIVE COURTYARD & PED. TRAIL): 0.45 AC.
5. NET AREA (1 - (2+3+4)): 14.94 AC.
6. EXISTING CANOPY COVERAGE: 10.22 AC. (66%)
7. EXISTING CANOPY TO BE REMOVED: 4.13 AC.
8. EXISTING CANOPY TO BE REMAIN: 6.09 AC.
9. PROPOSED CANOPY COVERAGE (8/5): 41%

LANDSCAPING NOTES:

17. VERIFY ALL QUANTITIES AND REPORT ANY DISCREPANCIES OR INACCURACIES IN THE PLANS TO THE OWNER'S REPRESENTATIVE PRIOR TO PLANTING.

18. LANDSCAPE WORK SHALL INCLUDE THE FURNISHING, INSTALLATION, AND WARRANTY OF ALL PLANTING MATERIALS WITHIN THE PROJECT AREA.

19. THE LANDSCAPE CONTRACTOR SHALL ASCERTAIN THE LOCATION OF ALL EXISTING AND NEW UNDERGROUND UTILITIES PRIOR TO EXCAVATION FOR PLANTING. DAMAGES TO UTILITIES CAUSED BY THE LANDSCAPE OPERATION SHALL BE CORRECTED BY THE LANDSCAPE CONTRACTOR AT NO COST TO THE OWNER.

20. LANDSCAPING SHALL REMAIN CLEAR FROM ANY FIRE HYDRANTS ON THE SITE.

21. ALL TREES TO BE A MINIMUM OF 2" IN CALIPER AND MUST MEET THE AMERICAN STANDARD FOR NURSERY STOCK.

22. TREE PROTECTION NOTE: TREE PROTECTION FENCING MUST BE IN PLACE PRIOR TO ANY DEMOLITION, LAND DISTURBANCE OR ISSUANCE OF A GRADING PERMIT AND SHALL INCLUDE WARNING SIGNS POSTED IN BOTH ENGLISH AND SPANISH, AS FOLLOWS: "NO TRESPASSING/TREE PROTECTION AREA/PROHIBIDO ENTRAR / ZONA PROTECTORA PARA LOS ÁRBOLES."

23. PROTECTION OF EXISTING VEGETATION: AT THE START OF GRADING INVOLVING THE LOWERING OF EXISTING GRADE AROUND A TREE OR STRIPPING OF TOPSOIL, A CLEAN, SHARP, VERTICAL CUT SHALL BE MADE AT THE EDGE OF THE TREE SAVE AREA AT THE SAME TIME AS OTHER EROSION CONTROL MEASURES ARE INSTALLED. THE TREE PROTECTION FENCING SHALL BE INSTALLED ON THE SIDE OF THE CUT FARTHEST AWAY FROM THE TREE TRUNK AND SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION IN THE VICINITY OF THE TREES IS COMPLETE. NO STORAGE OF MATERIALS, FILL, OR EQUIPMENT AND NO TRESPASSING SHALL BE ALLOWED WITHIN THE BOUNDARY OF THE PROTECTED AREA.

24. ROOT ZONE PROTECTION AREA: VARIES BASED ON LOCAL JURISDICTION HAVING AUTHORITY. CONTRACTOR SHALL COMPLY WITH LOCAL JURISDICTIONAL REQUIREMENTS. NO DISTURBANCE ALLOWED WITHIN THIS AREA. AREA MUST BE PROTECTED WITH BOTH TREE PROTECTION FENCING AND WARNING SIGNS.

25. SEED BED PREPARATION: ALL AREAS TO BE SEEDED ARE TO BE RECEIVE A MINIMUM OF 2" OF APPROVED TOPSOIL. ALL DEBRIS, ROCKS, ETC. LARGER THAN .5" ARE TO BE REMOVED. ALL LARGE CONCENTRATIONS OF GRAVEL & DEBRIS REGARDLESS OF SIZE ARE TO BE REMOVED PRIOR TO SEEDING OR PLANTING.

26. ALL PLANT BED AREAS ARE TO RECEIVE A MINIMUM OF 6" OF APPROVED TOPSOIL.

27. SOIL SHOULD BE TESTED AND AMENDED WITH LIME AND FERTILIZER FOR HARDWOOD TREES ACCORDING TO NCDA PROCEDURES. SCARIFY PLANT PIT WALLS. CONSULT LANDSCAPE ARCHITECT FOR ALTERNATE COMPLIANCE.

28. SHREDDED HARDWOOD MULCH 3" DEEP EXCEPT AT CROWN OF PLANT UNLESS OTHERWISE NOTED. FLARE AT CROWN SHOULD BE REVEALED. BACKFILL CONSISTS OF THOROUGHLY BROKEN UP NATIVE SOIL. TOTAL VOLUME OF BACKFILL SHOULD BE AMENDED WITH UP TO ONE THIRD PINE BARK MULCH. PIECES SHOULD BE NO LARGER THAN WHAT PASSES THROUGH A ONE INCH SCREEN. IF ADDITIONAL SOIL IS REQUIRED FOR BACKFILL DUE TO DETRIMENTAL SUBSOIL DRAINAGE CONDITIONS, USE SOIL SIMILAR TO EXISTING NATIVE SOIL. ADDITIONAL SOIL TO BE APPROVED BY LANDSCAPE ARCHITECT. MAXIMUM SAUCER HEIGHT IS 6 INCHES.

29. TOP OF ROOTBALL TO BE RAISED 2-3 INCHES ABOVE EXISTING GRADE.

30. FOR B&B PLANTS, NATURAL FIBER BURLAP SHOULD BE TURNED DOWN BY 1/3 TOTAL HEIGHT OF ROOT BALL. PLASTIC FIBER BURLAP AND WIRE BASKETS SHOULD BE REMOVED TO 2/3'S OF TOTAL HEIGHT OF ROOT BALL.

31. CONTRACTOR IS RESPONSIBLE FOR KEEPING THE TREE UPRIGHT AND PLUMB THROUGHOUT THE WARRANTY PERIOD. IF STABILIZATION IS NECESSARY SEE STAKING IN TREE DETAIL. ORANGE FLAGGING TAPE SHOULD BE ATTACHED TO SUPPORT WIRE. STAKING SHOULD BE REMOVED BY CONTRACTOR AT END OF ONE YEAR WARRANTY PERIOD OR AS DIRECTED BY GROUNDS MANAGEMENT.

32. USE STANDARD "GATOR" BAGS FOR WATERING TREES IN AREAS NOT UNDER IRRIGATION. INCORPORATE TERRA-SORB (OR EQUAL) AS PER MANUFACTURERS RECOMMENDATIONS, FOR AREAS NOT UNDER IRRIGATION.

33. USE "BIO-BARRIER" OR EQUIVALENT ACCORDING TO MANUFACTURER'S RECOMMENDATION FOR TREES THAT WILL BE PLANTED WITHIN 10' OF PAVEMENT

34. LANDSCAPING/C.O. STANDARDS NOTE: ALL LANDSCAPING MUST BE IN PLACE PRIOR TO REQUEST FOR A CERTIFICATE OF COMPLIANCE.

STEWART
421 FAYETTEVILLE ST., SUITE 400
RALEIGH, NC 27601
T 919.380.8750
FIRM LICENSE #: C-1051
www.stewartinc.com
PROJECT #: C17104

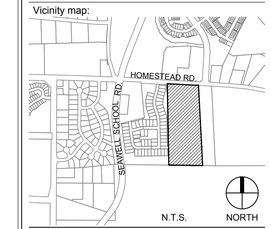
Client:

GLMH-2, LLC
121 S. ESTES DRIVE SUITE 100
CHAPEL HILL, NC 27514

Project:

INDEPENDENT SENIOR HOUSING CHAPEL HILL

Vicinity map:



Seal:

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1886 CHRISTOPHER J. MILLER

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

Issued for:

SUP SUBMITTAL

No.	Date	Description

0 25 50 100 NORTH

SCALE: 1"=50'

Title:

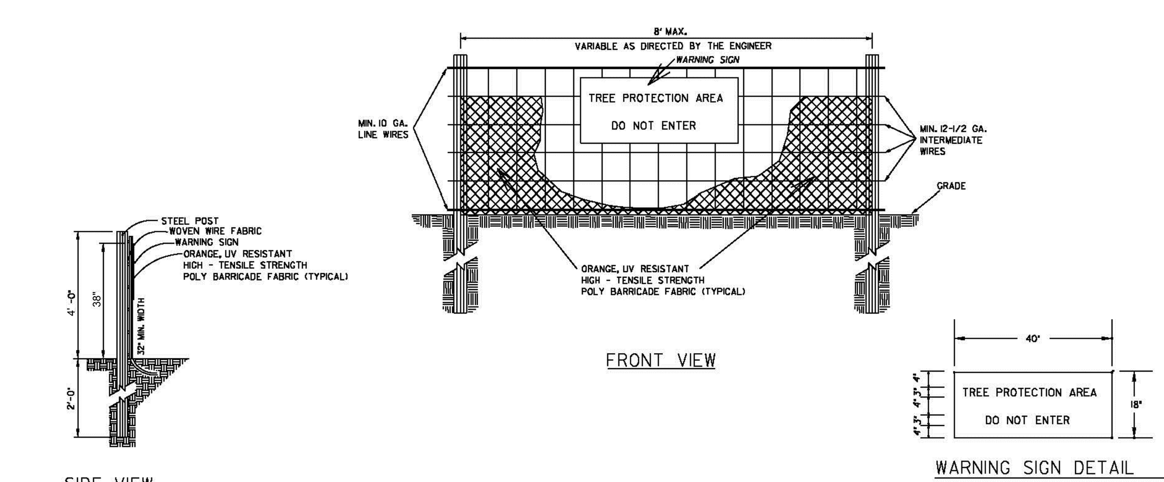
LANDSCAPE PROTECTION PLAN

Project number: C17004 Sheet:
Date: 09.27.2017
Drawn by: DG/RS
Approved by: CJM

L1.00

Q:\2017\C17104 - Greystar Overture Chapel Hill\DWGS\1 - Design\Sheets\C17104-L1.00-Landscape Protection Plan.dwg Apr 30, 2018 - 4:59pm

ID #	CODE	Common Name	Scientific Name	DBH	Rare or Spec	Multistem Number
1	LIST	Sweetgum	Liquidambar styraciflua	15	Specimen	
2	JUVI	Eastern Red Cedar	Juniperus virginiana	15	Rare	
3	PRSE	Black Cherry	Prunus serratina	16	Specimen	
4	LIST	Sweetgum	Liquidambar styraciflua	16	Specimen	
5	PITA	Loblolly Pine	Pinus taeda	19	Specimen	
6	COFL	Dogwood	Cornus florida	9	Specimen	
7	LIST	Sweetgum	Liquidambar styraciflua	12	Specimen	
8	JUVI	Eastern Red Cedar	Juniperus virginiana	13	Rare	
9	LIST	Sweetgum	Liquidambar styraciflua	17	Specimen	
10	PRSE	Black Cherry	Prunus serratina	9	NA	
11	JUVI	Eastern Red Cedar	Juniperus virginiana	17	Rare	
12	LIST	Sweetgum	Liquidambar styraciflua	12	Specimen	
13	PITA	Loblolly Pine	Pinus taeda	18	Specimen	
14	LITU	Tulip Poplar	Liriodendron tulipifera	15	Specimen	
15	PYCA	Callery Pear	Pyrus calleryana	17	NA	
16	PYCA	Callery Pear	Pyrus calleryana	17	NA	
17	JUVI	Eastern Red Cedar	Juniperus virginiana	13	Rare	
18	CECA	Eastern Redbud	Cercis canadensis	8	Specimen	
19	ILOP	American Holly	Ilex opaca	7	Specimen	
20	LITU	Tulip Poplar	Liriodendron tulipifera	15	Specimen	
21	COFL	Dogwood	Cornus florida	6	Specimen	
22	COFL	Dogwood	Cornus florida	7	Specimen	
23	LITU	Tulip Poplar	Liriodendron tulipifera	16	Specimen	
24	COFL	Dogwood	Cornus florida	8	Specimen	
25	MAGR	Southern Magnolia	Magnolia grandiflora	11	NA	
26	MAGR	Southern Magnolia	Magnolia grandiflora	13	Specimen	
27	LIST	Sweetgum	Liquidambar styraciflua	18	Specimen	
28	PITA	Loblolly Pine	Pinus taeda	18	Specimen	
29	LITU	Tulip Poplar	Liriodendron tulipifera	15	Specimen	
30	LITU	Tulip Poplar	Liriodendron tulipifera	24	Specimen	
31	LITU	Tulip Poplar	Liriodendron tulipifera	22	Specimen	
32	PITA	Loblolly Pine	Pinus taeda	22	Specimen	
33	LITU	Tulip Poplar	Liriodendron tulipifera	20	Specimen	
34	PITA	Loblolly Pine	Pinus taeda	24	Specimen	
35	LIST	Sweetgum	Liquidambar styraciflua	14	Specimen	
36	PITA	Loblolly Pine	Pinus taeda	24	Specimen	
37	PITA	Loblolly Pine	Pinus taeda	20	Specimen	
38	LIST	Sweetgum	Liquidambar styraciflua	13	Specimen	
39	LIST	Sweetgum	Liquidambar styraciflua	17	Specimen	
40	JUVI	Eastern Red Cedar	Juniperus virginiana	14	Rare	
41	JUVI	Eastern Red Cedar	Juniperus virginiana	8	Specimen	
42	ACRU	Red Maple	Acer rubrum	20	Specimen	
43	BENI	River Birch	Betula nigra	19	Specimen	
44	CRAT	Hawthorn	Crataegus species	8	Specimen	
45	LITU	Tulip Poplar	Liriodendron tulipifera	19	Specimen	
46	BENI	River Birch	Betula nigra	19	Specimen	
47	BENI	River Birch	Betula nigra	21	Specimen	
48	COFL	Dogwood	Cornus florida	9	Specimen	
49	Morris	Mulberry	Morus Sp	20	NA	
50	PYCA	Callery Pear	Pyrus calleryana	9		
51	CECA	Eastern Redbud	Cercis canadensis	16	Rare	
52	LITU	Tulip Poplar	Liriodendron tulipifera	19	Specimen	
53	LITU	Tulip Poplar	Liriodendron tulipifera	17	Specimen	
54	JUNI	Black Walnut	Juglans nigra	23	Specimen	
55	LITU	Tulip Poplar	Liriodendron tulipifera	35	Rare	
56	JUNI	Black Walnut	Juglans nigra	12	Specimen	
57	ACRU	Red Maple	Acer rubrum	12	Specimen	
58	QUAL	White Oak	Quercus alba	22	Specimen	
59	QUAL	White Oak	Quercus alba	22	Specimen	
60	LITU	Tulip Poplar	Liriodendron tulipifera	18	Specimen	
61	LITU	Tulip Poplar	Liriodendron tulipifera	21	Specimen	
62	CARYA	Hickory	Carya species	13	Specimen	
63	CARYA	Hickory	Carya species	17	Specimen	
64	ACRU	Red Maple	Acer rubrum	16	Specimen	
65	LITU	Tulip Poplar	Liriodendron tulipifera	18	Specimen	
66	LITU	Tulip Poplar	Liriodendron tulipifera	25	Rare	
67	LIST	Sweetgum	Liquidambar styraciflua	16	Specimen	
68	CARYA	Hickory	Carya species	17	Specimen	
69	QUVE	Black Oak	Quercus velutina	42	Rare	
70	ULAL	Winged Elm	Ulmus alatus	14	Specimen	
71	JUNI	Black Walnut	Juglans nigra	17	Specimen	
72	CARYA	Hickory	Carya species	13	Specimen	
73	LITU	Tulip Poplar	Liriodendron tulipifera	21	Specimen	
74	LITU	Tulip Poplar	Liriodendron tulipifera	20	Specimen	
75	LITU	Tulip Poplar	Liriodendron tulipifera	27	Rare	
76	LITU	Tulip Poplar	Liriodendron tulipifera	30	Rare	
77	LITU	Tulip Poplar	Liriodendron tulipifera	15	Specimen	
78	LITU	Tulip Poplar	Liriodendron tulipifera	19	Specimen	
79	PRSE	Black Cherry	Prunus serratina	19	Specimen	
80	DIVI	Persimmon	Diosporos virginiana	10	Specimen	
81	CAIL	Pecan	Carya illinoiensis	19	Specimen	
82	LIST	Sweetgum	Liquidambar styraciflua	12	Specimen	
83	LIST	Sweetgum	Liquidambar styraciflua	24	Rare	
84	CAIL	Pecan	Carya illinoiensis	12	Specimen	
85	CAIL	Pecan	Carya illinoiensis	13	Specimen	
86	LITU	Tulip Poplar	Liriodendron tulipifera	21	Specimen	
87	LITU	Tulip Poplar	Liriodendron tulipifera	12	Specimen	
88	LIST	Sweetgum	Liquidambar styraciflua	21	Specimen	
89	QUAL	White Oak	Quercus alba	15	Specimen	
90	QUAL	White Oak	Quercus alba	26	Rare	
91	LIST	Sweetgum	Liquidambar styraciflua	19	Specimen	
92	LIST	Sweetgum	Liquidambar styraciflua	28	Rare	
93	QUAL	White Oak	Quercus alba	25	Rare	
94	LIST	Sweetgum	Liquidambar styraciflua	16	Specimen	
95	QUPH	Willow Oak	Quercus phellos	12	Specimen	
96	LIST	Sweetgum	Liquidambar styraciflua	16	Specimen	
97	QUAL	White Oak	Quercus alba	16	Specimen	
98	PRSE	Black Cherry	Prunus serratina	8	NA	
99	PRSE	Black Cherry	Prunus serratina	6	NA	
100	LIST	Sweetgum	Liquidambar styraciflua	25	Rare	
101	LIST	Sweetgum	Liquidambar styraciflua	16	Specimen	
102	QUAL	White Oak	Quercus alba	21	Specimen	
103	QUVE	Black Oak	Quercus velutina	28	Rare	
104	QUAL	White Oak	Quercus alba	22	Specimen	
105	QUAL	White Oak	Quercus alba	20	Specimen	
106	QUAL	White Oak	Quercus alba	15	Specimen	
107	QUMA	Blackjack Oak	Quercus marilandica	23	Specimen	
108	QUAL	White Oak	Quercus alba	17	Specimen	
109	PITA	Loblolly Pine	Pinus taeda	19	Specimen	
110	PITA	Loblolly Pine	Pinus taeda	22	Specimen	
111	QUAL	White Oak	Quercus alba	26	Rare	
112	LIST	Sweetgum	Liquidambar styraciflua	17	Specimen	
113	QUAL	White Oak	Quercus alba	31	Rare	
114	LITU	Tulip Poplar	Liriodendron tulipifera	22	Specimen	
115	QUAL	White Oak	Quercus alba	17	Specimen	
116	QUAL	White Oak	Quercus alba	16	Specimen	
117	LIST	Sweetgum	Liquidambar styraciflua	16	Specimen	
118	FRAX	Ash	Fraxinus species	20	Specimen	
119	CATO	Mockernut Hickory	Carya tomentosa	12	Specimen	
120	QUAL	White Oak	Quercus alba	18	Specimen	
121	QUAL	White Oak	Quercus alba	17	Specimen	
122	LITU	Tulip Poplar	Liriodendron tulipifera	21	Specimen	
123	QUAL	White Oak	Quercus alba	25	Rare	
124	CATO	Mockernut Hickory	Carya tomentosa	13	Specimen	
125	QUAL	White Oak	Quercus alba	24	Rare	
126	LIST	Sweetgum	Liquidambar styraciflua	14	Specimen	
127	FRAX	Ash	Fraxinus species	15	Specimen	
128	NYSY	Blackgum	Nyssa sylvatica	13	Specimen	
129	NYSY	Blackgum	Nyssa sylvatica	12	Specimen	
130	ILOP	American Holly	Ilex opaca	6	Specimen	
131	NYSY	Blackgum	Nyssa sylvatica	27	Rare	
132	LIST	Sweetgum	Liquidambar styraciflua	15	Specimen	
133	LIST	Sweetgum	Liquidambar styraciflua	21	Specimen	
134	LITU	Tulip Poplar	Liriodendron tulipifera	19	Specimen	
135	LITU	Tulip Poplar	Liriodendron tulipifera	39	Rare	
136	LIST	Sweetgum	Liquidambar styraciflua	13	Specimen	
137	QUMA	Blackjack Oak	Quercus marilandica	13	Specimen	
138	OXAR	Sourwood	Oxydendron arboreum	9	Specimen	
139	QUAL	White Oak	Quercus alba	12	Specimen	
140	CATO	Mockernut Hickory	Carya tomentosa	22	Specimen	
141	NYSY	Blackgum	Nyssa sylvatica	16	Specimen	
142	QUVE	Black Oak	Quercus velutina	16	Specimen	
143	QUAL	White Oak	Quercus alba	21	Specimen	
144	QUAL	White Oak	Quercus alba	18	Specimen	
145	LIST	Sweetgum	Liquidambar styraciflua	15	Specimen	
146	LIST	Sweetgum	Liquidambar styraciflua	27	Rare	
147	QUAL	White Oak	Quercus alba	19	Specimen	
148	QUAL	White Oak	Quercus alba	13	Specimen	
149	QUAL	White Oak	Quercus alba	23	Specimen	
150	QUAL	White Oak	Quercus alba	18	Specimen	
151	LIST	Sweetgum	Liquidambar styraciflua	18	Specimen	
152	CATO	Mockernut Hickory	Carya tomentosa	13	Specimen	
153	FRAX	Ash	Fraxinus species	22	Specimen	
154	CATO	Mockernut Hickory	Carya tomentosa	12	Specimen	
155	LIST	Sweetgum	Liquidambar styraciflua	12	Specimen	
156	CAGL	Pignut Hickory	Carya glabra	16	Specimen	
157	CAGL	Pignut Hickory	Carya glabra	12	Specimen	
158	LIST	Sweetgum	Liquidambar styraciflua	13	Specimen	
159	QUAL	White Oak	Quercus alba	14	Specimen	
160	QUVE	Black Oak	Quercus velutina	16	Specimen	
161	CATO	Mockernut Hickory	Carya tomentosa	16	Specimen	
162	CAGL	Pignut Hickory	Carya glabra	16	Specimen	
163	QUAL	White Oak	Quercus alba	18	Specimen	
164	QUAL	White Oak	Quercus alba	20	Specimen	
165	CATO	Mockernut Hickory	Carya tomentosa	17	Specimen	
166	LIST	Sweetgum	Liquidambar styraciflua	15	Specimen	
167	LITU	Tulip Poplar	Liriodendron tulipifera	17	Specimen	
168	QUAL	White Oak	Quercus alba	13	Specimen	
169	LITU	Tulip Poplar	Liriodendron tulipifera	19	Specimen	
170	QUAL	White Oak	Quercus alba	18	Specimen	
171	LITU	Tulip Poplar	Liriodendron tulipifera	15	Specimen	
172	QUAL	White Oak	Quercus alba	22	Specimen	
173	LITU	Tulip Poplar	Liriodendron tulipifera	14	Specimen	
174	FRAX	Ash	Fraxinus species	17	Specimen	
175	LITU	Tulip Poplar	Liriodendron tulipifera	18	Specimen	
176	QUAL	White Oak	Quercus alba	18	Specimen	
177	QUAL	White Oak	Quercus alba	18	Specimen	
178	LITU	Tulip Poplar	Liriodendron tulipifera	17	Specimen	
179	QUAL	White Oak	Quercus alba	15	Specimen	
180	LITU	Tulip Poplar	Liriodendron tulipifera	14	Specimen	
181	LIST	Sweetgum	Liquidambar styraciflua	22	Specimen	
182	LIST	Sweetgum	Liquidambar styraciflua	12	Specimen	
183	LITU	Tulip Poplar	Liriodendron tulipifera	30	Rare	
184	LITU	Tulip Poplar	Liriodendron tulipifera	23	Specimen	
185	LITU	Tulip Poplar	Liriodendron tulipifera	22	Specimen	
186	QUAL	White Oak	Quercus alba	19	Specimen	
187	QUAL	White Oak	Quercus alba	23	Specimen	
188	QUAL	White Oak	Quercus alba	16	Specimen	
189	QUAL	White Oak	Quercus alba	20	Specimen	
190	QUMA	Blackjack Oak	Quercus marilandica	20	Specimen	
191	LITU	Tulip Poplar	Liriodendron tulipifera	18	Specimen	
192	LITU	Tulip Poplar	Liriodendron tulipifera	17	Specimen	
193	LITU	Tulip Poplar	Liriodendron tulipifera	19	Specimen	
194	QUAL	White Oak	Quercus alba	14	Specimen	
195	QUAL	White Oak	Quercus alba	24	Rare	
196	QUAL	White Oak	Quercus alba	14	Specimen	
197	QUAL	White Oak	Quercus alba	16	Specimen	
198	QUAL	White Oak	Quercus alba	22	Specimen	
199	QUAL	White Oak	Quercus alba	16	Specimen	
200	LITU	Tulip Poplar	Liriodendron tulipifera	28	Rare	
201	CARYA	Hickory	Carya species	20	Specimen	
202	CATO	Mockernut Hickory	Carya tomentosa	18	Specimen	
203	LITU	Tulip Poplar	Liriodendron tulipifera	37	Rare	
204	CARYA	Hickory	Carya species	15	Specimen	
205	QUAL	White Oak	Quercus alba	21	Specimen	
206	LITU	Tulip Poplar	Liriodendron tulipifera	27	Rare	
207	LITU	Tulip Poplar	Liriodendron tulipifera	26	Rare	
208	LITU	Tulip Poplar	Liriodendron tulipifera	20	Specimen	
209	QUAL	White Oak	Quercus alba	21	Specimen	
210	LITU	Tulip Poplar	Liriodendron tulipifera	39	Rare	
211	LITU	Tulip Poplar	Liriodendron tulipifera	21	Specimen	
212	LITU	Tulip Poplar	Liriodendron tulipifera	13	Specimen	
213	LITU	Tulip Poplar	Liriodendron tulipifera	14	Specimen	
214	LITU	Tulip Poplar	Liriodendron tulipifera	13	Specimen	
215	LITU	Tulip Poplar	Liriodendron tulipifera	16	Specimen	
216	QUAL	White Oak	Quercus alba	16	Specimen	
217	LITU	Tulip Poplar	Liriodendron tulipifera	20	Specimen	
218	LITU	Tulip Poplar	Liriodendron tulipifera	21	Specimen	
219	LITU	Tulip Poplar	Liriodendron tulipifera	20	Specimen	
220	LITU	Tulip Poplar	Liriodendron tulipifera	12	Specimen	
221	LITU	Tulip Poplar	Liriodendron tulipifera	22	Specimen	
222	LITU	Tulip Poplar	Liriodendron tulipifera	27	Rare	
223	CAGL	Pignut Hickory	Carya glabra	18	Specimen	
224	CARYA	Hickory	Carya species	13	Specimen	
225	LITU	Tulip Poplar	Liriodendron tulipifera	23	Specimen	
226	LITU	Tulip Poplar	Liriodendron tulipifera	17	Specimen	
227	QUAL	White Oak	Quercus alba	28	Rare	
228	LITU	Tulip Poplar	Liriodendron tulipifera	17	Specimen	
229	QUAL	White Oak	Quercus alba	15	Specimen	
230	QUAL	White Oak	Quercus alba	22	Specimen	
231	LITU	Tulip Poplar	Liriodendron tulipifera	23	Specimen	
232	QUAL	White Oak	Quercus alba	17	Specimen	
233	CARYA	Hickory	Carya species	12	Specimen	
234	QUAL	White Oak	Quercus alba	22	Specimen	
235	CATO	Mockernut Hickory	Carya tomentosa	17	Specimen	
236	QUAL	White Oak	Quercus alba	17	Specimen	
237	LIST	Sweetgum	Liquidambar styraciflua	13	Specimen	
238	LITU	Tulip Poplar	Liriodendron tulipifera	12	Specimen	
239	LITU	Tulip Poplar	Liriodendron tulipifera	20	Specimen	
240	LITU	Tulip Poplar	Liriodendron tulipifera	22	Specimen	
241	LITU	Tulip Poplar	Liriodendron tulipifera	21	Specimen	
242	LITU	Tulip Poplar	Liriodendron tulipifera	15	Specimen	
243	LITU	Tulip Poplar	Liriodendron tulipifera	12	Specimen	
244	LITU	Tulip Poplar	Liriodendron tulipifera	18	Specimen	
245	LITU	Tulip Poplar	Liriodendron tulipifera	15	Specimen	
246	LITU	Tulip Poplar	Liriodendron tulipifera	42	Rare	
247	LITU	Tulip Poplar	Liriodendron tulipifera	37	Rare	
248	QUAL	White Oak	Quercus alba	20	Specimen	
249	LITU	Tulip Poplar	Liriodendron tulipifera	30	Rare	
250	QURU	Northern Red Oak	Quercus rubra	16	Specimen	
251	CATO	Mockernut Hickory	Carya tomentosa	12	Specimen	
252	ACRU	Red Maple	Acer rubrum	12	Specimen	
253	QUAL	White Oak	Quercus alba	21	Specimen	
254	QUAL	White Oak	Quercus alba	21	Specimen	
255	LIST	Sweetgum	Liquidambar styraciflua	12	Specimen	
256	QUAL	White Oak	Quercus alba	22	Specimen	
257	CATO	Mockernut Hickory	Carya tomentosa	13	Specimen	
258	QUAL	White Oak	Quercus alba	16	Specimen	
259	LITU	Tulip Poplar	Liriodendron tulipifera	15	Specimen	
260	CATO	Mockernut Hickory	Carya tomentosa	12	Specimen	
261	CATO	Mockernut Hickory	Carya tomentosa	14	Specimen	
262	LIST	Sweetgum	Liquidambar styraciflua	24	Rare	
263	LIST	Sweetgum	Liquidambar styraciflua	15	Specimen	
264	CATO	Mockernut Hickory	Carya tomentosa	15	Specimen	
265	QUAL	White Oak	Quercus alba	24	Rare	
266	LIST	Sweetgum	Liquidambar styraciflua	15	Specimen	
267	LITU	Tulip Poplar	Liriodendron tulipifera	18	Specimen	
268	LITU	Tulip Poplar	Liriodendron tulipifera	18	Specimen	
269	LITU	Tulip Poplar	Liriodendron tulipifera	24	Rare	
270	CAGL	Pignut Hickory	Carya glabra	19	Specimen	
271	LIST	Sweetgum	Liquidambar styraciflua	15	Specimen	
272	LIST	Sweetgum	Liquidambar styraciflua	14	Specimen	
273	FRAX	Ash	Fraxinus species	17	Specimen	
274	LIST	Sweetgum	Liquidambar styraciflua	18	Specimen	
275	CATO	Mockernut Hickory	Carya tomentosa	12	Specimen	
276	FRAX	Ash	Fraxinus species	18	Specimen	
277	LITU	Tulip Poplar	Liriodendron tulipifera	26	Rare	
278	LITU	Tulip Poplar	Liriodendron tulipifera	22	Specimen	
279	NYSY	Blackgum	Nyssa sylvatica	18	Specimen	
280	QUAL	White Oak	Quercus alba	22	Specimen	
281	QUAL	White Oak	Quercus alba	21	Specimen	
282	QUAL	White Oak	Quercus alba	21	Specimen	
283	QUAL	White Oak	Quercus alba	26	Rare	
284	QUAL	White Oak	Quercus alba	25	Rare	
285	LITU	Tulip Poplar	Liriodendron tulipifera	15	Specimen	
286	LIST	Sweetgum	Liquidambar styraciflua	29	Rare	
287	LITU	Tulip Poplar	Liriodendron tulipifera	12	Specimen	
288	LITU	Tulip Poplar	Liriodendron tulipifera	20	Specimen	
289	QUAL	White Oak	Quercus alba	15	Specimen	
290	QUAL	White Oak	Quercus alba	21	Specimen	
291	LIST	Sweetgum	Liquidambar styraciflua	15	Specimen	
292	QUAL	White Oak	Quercus alba	18	Specimen	
293	QUVE	Black Oak	Quercus velutina	19	Specimen	
294	QUFA	Southern Red Oak	Quercus falcata	16	Specimen	
295	QUAL	White Oak	Quercus alba	17	Specimen	
296	LITU	Tulip Poplar	Liriodendron tulipifera	16	Specimen	
297	LITU	Tulip Poplar	Liriodendron tulipifera	19	Specimen	
298	QURU	Northern Red Oak	Quercus rubra	20	Specimen	
299	LITU	Tulip Poplar	Liriodendron tulipifera	19	Specimen	
300	LITU	Tulip Poplar	Liriodendron tulipifera	25	Rare	
301	QURU	Northern Red Oak	Quercus rubra	31	Rare	
302	QUAL	White Oak	Quercus alba	14	Specimen	
303	LIST	Sweetgum	Liquidambar styraciflua	13	Specimen	
304	QUAL	White Oak	Quercus alba	15	Specimen	
305	LITU	Tulip Poplar	Liriodendron tulipifera	24	Rare	
306	QUAL	White Oak	Quercus alba	14	Specimen	
307	QUVE	Black Oak	Quercus velutina	15	Specimen	
308	LITU	Tulip Poplar	Liriodendron tulipifera	28	Rare	
309	LIST	Sweetgum	Liquidambar styraciflua	12	Specimen	
310	LITU	Tulip Poplar	Liriodendron tulipifera	23	Specimen	
311	LITU	Tulip Poplar	Liriodendron tulipifera	19	Specimen	
312	LITU	Tulip Poplar	Liriodendron tulipifera	20	Specimen	
313	LITU	Tulip Poplar	Liriodendron tulipifera	24	Rare	
314	LIST	Sweetgum	Liquidambar styraciflua	17	Specimen	
315	LITU	Tulip Poplar	Liriodendron tulipifera	22	Specimen	
316	NYSY	Blackgum	Nyssa sylvatica	11	NA	
317	QUAL	White Oak	Quercus alba	15	Specimen	
318	LITU	Tulip Poplar	Liriodendron tulipifera	21	Specimen	
319	QUVE	Black Oak	Quercus velutina	16	Specimen	
320	ACRU	Red Maple	Acer rubrum	24	Rare	
321	QUAL	White Oak	Quercus alba	16	Specimen	
322	QUAL	White Oak	Quercus alba	18	Specimen	
323	QUVE	Black Oak	Quercus velutina	23	Specimen	
324	LITU	Tulip Poplar	Liriodendron tulipifera	19	Specimen	
325	PITA	Loblolly Pine	Pinus taeda	18	Specimen	
326	QUAL	White Oak	Quercus alba	12	Specimen	
327	LITU	Tulip Poplar	Liriodendron tulipifera	20	Specimen	
328	QUAL	White Oak	Quercus alba	25	Rare	
329	LITU	Tulip Poplar	Liriodendron tulipifera	25	Specimen	
330	CARYA	Hickory	Carya species	14	Specimen	
331	LITU	Tulip Poplar	Liriodendron tulipifera	17	Specimen	
332	QUAL	White Oak	Quercus alba	17	Specimen	
333	QUAL	White Oak	Quercus alba	22	Specimen	
334	QUAL	White Oak	Quercus alba	14	Specimen	
335	QUAL	White Oak	Quercus alba	14	Specimen	
336	LIST	Sweetgum	Liquidambar styraciflua	14	Specimen	
337	QUAL	White Oak	Quercus alba	20	Specimen	
338	LIST	Sweetgum	Liquidambar styraciflua	14	Specimen	
339	QUAL	White Oak	Quercus alba	18	Specimen	
340	LITU	Tulip Poplar	Liriodendron tulipifera	15	Specimen	
341	QUAL	White Oak	Quercus alba	19	Specimen	
342	QUVE	Black Oak	Quercus velutina	15	Specimen	
343	QUAL	White Oak	Quercus alba	18	Specimen	
344	QUAL	White Oak	Quercus alba	22	Specimen	
345	QUAL	White Oak	Quercus alba	18	Specimen	
346	QUAL	White Oak	Quercus alba	12	Specimen	
347	QUAL	White Oak	Quercus alba	15	Specimen	
348	CATO	Mockernut Hickory	Carya tomentosa	20	Specimen	
349	QUAL	White Oak	Quercus alba	13	Specimen	
350	QUAL	White Oak	Quercus alba	20	Specimen	
351	LITU	Tulip Poplar	Liriodendron tulipifera	27	Rare	
352	QURU	Northern Red Oak	Quercus rubra	23	Specimen	
353	QUAL	White Oak	Quercus alba	12	Specimen	
354	LITU	Tulip Poplar	Liriodendron tulipifera	16	Specimen	
355	LITU	Tulip Poplar	Liriodendron tulipifera	17	Specimen	
356	OXAR	Sourwood	Oxydendron arboreum	9	Specimen	
357	LITU	Tulip Poplar	Liriodendron tulipifera	14	Specimen	
358	CATO	Mockernut Hickory	Carya tomentosa	16	Specimen	
359	CARYA	Hickory	Carya species	11	NA	
360	LITU	Tulip Poplar	Liriodendron tulipifera	19	Specimen	
361	CARYA	Hickory	Carya species	13	Specimen	
362	QUAL	White Oak	Quercus alba	15	Specimen	
363	LITU	Tulip Poplar	Liriodendron tulipifera	13	Specimen	
364	LITU	Tulip Poplar	Liriodendron tulipifera	35	Rare	
365	LITU	Tulip Poplar	Liriodendron tulipifera	20	Specimen	
366	LITU	Tulip Poplar	Liriodendron tulipifera	15	Specimen	
367	LITU	Tulip Poplar	Liriodendron tulipifera	13	Specimen	
368	LITU	Tulip Poplar	Liriodendron tulipifera	19	Specimen	
369	QUAL	White Oak	Quercus alba	15	Specimen	
370	QUAL	White Oak	Quercus alba	20	Specimen	
371	QUAL	White Oak	Quercus alba	18	Specimen	
372	LITU	Tulip Poplar	Liriodendron tulipifera	23	Specimen	
373	LITU	Tulip Poplar	Liriodendron tulipifera	15	Specimen	
374	CAGL	Pignut Hickory	Carya glabra	12	Specimen	
375	SAAL	Sassafrass	Sassafras albidum	8	Specimen	
376	QUAL	White Oak	Quercus alba	12	Specimen	
377	LITU	Tulip Poplar	Liriodendron tulipifera	21	Specimen	
378	SAAL	Sassafrass	Sassafras albidum	11	Specimen	
379	QUMA	Blackjack Oak	Quercus marilandica	16	Specimen	
380	QUAL	White Oak	Quercus alba	16	Specimen	
381	SAAL	Sassafrass	Sassafras albidum	11	Specimen	
382	QUAL	White Oak	Quercus alba	43	Rare	
383	LITU	Tulip Poplar	Liriodendron tulipifera	15	Specimen	
384	LITU	Tulip Poplar	Liriodendron tulipifera	13	Specimen	
385	LITU	Tulip Poplar	Liriodendron tulipifera	19	Specimen	
386	LITU	Tulip Poplar	Liriodendron tulipifera	23	Specimen	
387	QUVE	Black Oak	Quercus velutina	20	Specimen	
388	QURU	Northern Red Oak	Quercus rubra	28	Rare	
389	LITU	Tulip Poplar	Liriodendron tulipifera	25	Rare	
390	LITU	Tulip Poplar	Liriodendron tulipifera	13	Specimen	
391	CATO	Mockernut Hickory	Carya tomentosa	14	Specimen	
392	LITU	Tulip Poplar	Liriodendron tulipifera	29	Rare	
393	LITU	Tulip Poplar	Liriodendron tulipifera	16	Specimen	
394	LIST	Sweetgum	Liquidambar styraciflua	13	Specimen	
395	LIST	Sweetgum	Liquidambar styraciflua	15	Specimen	
396	LITU	Tulip Poplar	Liriodendron tulipifera	21	Specimen	
397	LITU	Tulip Poplar	Liriodendron tulipifera	18	Specimen	
398	LITU	Tulip Poplar	Liriodendron tulipifera	23	Specimen	
399	LITU	Tulip Poplar	Liriodendron tulipifera	18	Specimen	
400	LITU	Tulip Poplar	Liriodendron tulipifera	34	Rare	
401	LITU	Tulip Poplar	Liriodendron tulipifera	18	Specimen	
402	LITU	Tulip Poplar	Liriodendron tulipifera	28	Rare	
403	LITU	Tulip Poplar	Liriodendron tulipifera	20	Specimen	
404	LITU	Tulip Poplar	Liriodendron tulipifera	19	Specimen	
405	QUAL	White Oak	Quercus alba	19	Specimen	
406	QUAL	White Oak	Quercus alba	12	Specimen	
407	QUAL	White Oak	Quercus alba	13	Specimen	
408	LITU	Tulip Poplar	Liriodendron tulipifera	17	Specimen	
409	LITU	Tulip Poplar	Liriodendron tulipifera	23	Specimen	
410	QUAL	White Oak	Quercus alba	13	Specimen	
411	LITU	Tulip Poplar	Liriodendron tulipifera	26	Rare	
412	LITU	Tulip Poplar	Liriodendron tulipifera	17	Specimen	
413	LIST	Sweetgum	Liquidambar styraciflua	16	Specimen	
414	LITU	Tulip Poplar	Liriodendron tulipifera	21	Specimen	
415	LITU	Tulip Poplar	Liriodendron tulipifera	19	Specimen	
416	LIST	Sweetgum	Liquidambar styraciflua	12	Specimen	
417	LITU	Tulip Poplar	Liriodendron tulipifera	16	Specimen	
418	LITU	Tulip Poplar	Liriodendron tulipifera	21	Specimen	
419	QUAL	White Oak	Quercus alba	28	Rare	
420	LITU	Tulip Poplar	Liriodendron tulipifera	16	Specimen	
421	QUAL	White Oak	Quercus alba	14	Specimen	
422	LIST	Sweetgum	Liquidambar styraciflua	12	Specimen	10 (6,4)
423	LIST	Sweetgum	Liquidambar styraciflua	12	Specimen	12 (4,8)
424	QUAL	White Oak	Quercus alba	19	Specimen	12 (6,6)
425	QUAL	White Oak	Quercus alba	14	Specimen	12 (8,4)
426	QUAL	White Oak	Quercus alba	24	Rare	13 (4,4,5)
427	QUAL	White Oak	Quercus alba	25	Rare	15 (10,5)
428	OXAR	Sourwood	Oxydendron arboreum	13	Specimen	17 (13,4)
429	QUAL	White Oak	Quercus alba	22	Specimen	18 (12,6)
430	LITU	Tulip Poplar	Liriodendron tulipifera	22	Specimen	19 (11,8)
431	LITU	Tulip Poplar	Liriodendron tulipifera	21	Specimen	20 (9,11)
432	LITU	Tulip Poplar	Liriodendron tulipifera	25	Rare	21 (10,10)
433	QUVE	Black Oak	Quercus velutina	22	Specimen	22 (12,10)
434	QUAL	White Oak	Quercus alba	26	Rare	22 (12,10)
435	LITU	Tulip Poplar	Liriodendron tulipifera	42	Rare	22 (16,6)
436	CAGL	Pignut Hickory	Carya glabra	15	Specimen	22 (9,13)
437	QURU	Northern Red Oak	Quercus rubra	23	Specimen	23 (9,14)
438	LIST	Sweetgum	Liquidambar styraciflua	13	Specimen	24 (12,12)
439	LITU	Tulip Poplar	Liriodendron tulipifera	12	Specimen	24 (12,12)
440	PITA	Loblolly Pine	Pinus taeda	15	NA	25 (12,13)
441	OXAR	Sourwood	Oxydendron arboreum	10	Specimen	26 (13,13)
442	CATO	Mockernut Hickory	Carya tomentosa	19	Specimen	26 (20,6)
443	QUAL	White Oak	Quercus alba	29	Rare	27 (14,13)
444	LIST	Sweetgum	Liquidambar styraciflua	14	Specimen	28 (13,8,7)
445	LIST	Sweetgum	Liquidambar styraciflua	13	Specimen	28 (14,14)
446	CATO	Mockernut Hickory	Carya tomentosa	23	Specimen	29 (17,12)
447	LIST	Sweetgum	Liquidambar styraciflua	12	Specimen	32 (24,8)
448	LIST	Sweetgum	Liquidambar styraciflua	12	Specimen	32 (8,12,12)
449	LIST	Sweetgum	Liquidambar styraciflua	13	Specimen	34 (28,6)
450	QUAL	White Oak	Quercus alba	12	Specimen	36 (18,18)
451	PITA	Loblolly Pine	Pinus taeda	16	NA	36 (18,18)
452	QUAL	White Oak	Quercus alba	22	Specimen	42 (21,21)
453	QUAL	White Oak	Quercus alba	22	Specimen	42 (21,21)
454	LITU	Tulip Poplar	Liriodendron tulipifera	23	Specimen	44 (10,34)
455	QUFA	Southern Red Oak	Quercus falcata	21	Specimen	45 (11,12,22)
456	QUAL	White Oak	Quercus alba	13	Specimen	45 (8,18,10,9)
457	CATO	Mockernut Hickory	Carya tomentosa	19	Specimen	46 (8,8,10,11,9)
458	CATO	Mockernut Hickory	Carya tomentosa	17	Specimen	52 (26,26)
459	QUAL	White Oak	Quercus alba	18	Specimen	59 (22,13,24)
460	CATO	Mockernut Hickory	Carya tomentosa	14	Specimen	70 (17,22,31)
461	QUAL	White Oak	Quercus alba	12	Specimen	8 (4,4)



NOTES:
WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL.
LETTERS TO BE 4' HIGH MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAILED.
SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS.
PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER.
FOR TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTION AREA.
ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC.
MAINTAIN TREE PROTECTION FENCE THROUGHOUT DURATION OF PROJECT.
ADDITIONAL SIGNS MAY BE REQUIRED BY CITY OF RALEIGH INSPECTIONS DEPARTMENT BASED ON ACTUAL FIELD CONDITIONS.
PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER.

NOTE: FOR TREE PROTECTION ONLY

STANDARD TREE PROTECTION DETAIL

CITY OF RALEIGH
PUBLIC WORKS DEPARTMENT
REVISIONS DATE: 7/3/00 DRAWN BY: JTB
STANDARD TREE PROTECTION DETAIL
STD. # 40.04

STEWART
421 FAYETTEVILLE ST., SUITE 400
RALEIGH, NC 27601
T 919.380.8750
FIRM LICENSE #: C-1051
www.stewartinc.com
PROJECT #: C17104

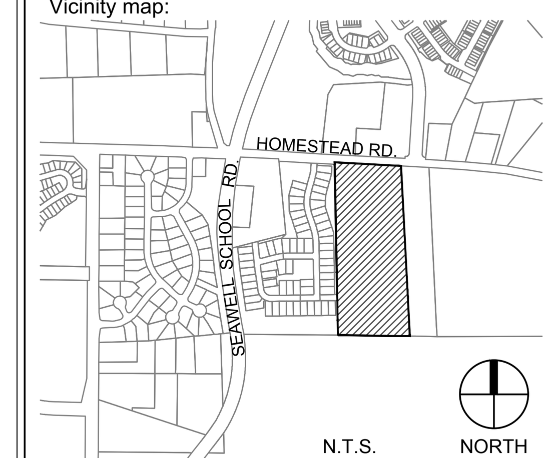
Client:

GLMH-2, LLC
121 S. ESTES DRIVE SUITE 100
CHAPEL HILL, NC 27514

Project:

INDEPENDENT SENIOR HOUSING CHAPEL HILL

Vicinity map:



Seal:

NORTH CAROLINA
REGISTERED LANDSCAPE ARCHITECT
1886
CHRISTOPHER J. MILLER

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

Issued for:

SUP SUBMITTAL

No.	Date	Description

0 25 50 100 NORTH

SCALE: 1"=50'

Title:

LANDSCAPE PROTECTION PLAN

Project number: C17004
Sheet:
Date: 09.27.2017
Drawn by: DG
Approved by: CDM
L1.01

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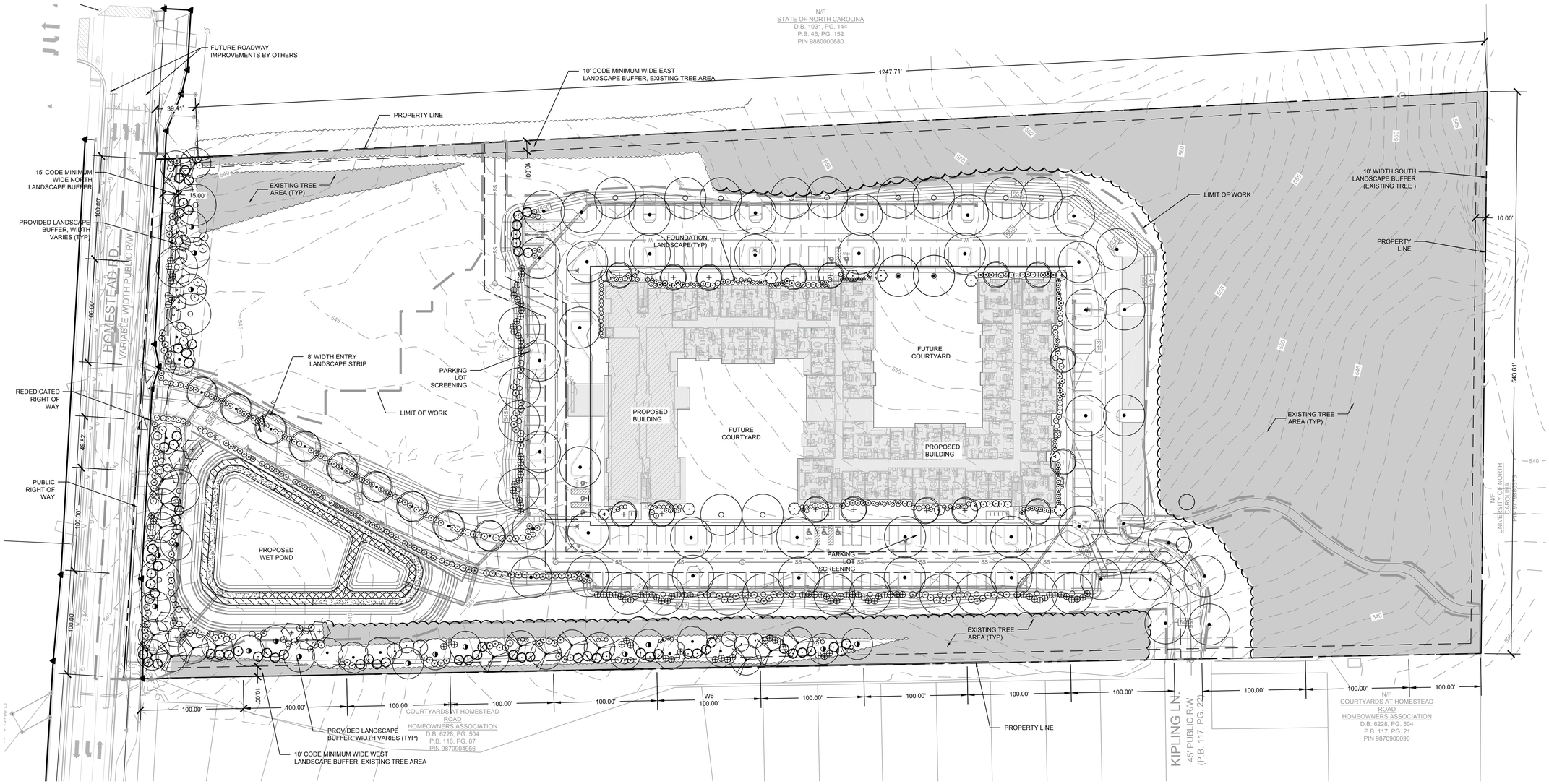

LANDSCAPE BUFFER :

REQUIRED LANDSCAPE BUFFER:

TYPE: "B"
MINIMUM WIDTH:15' (EXTERNAL), 10' (INTERNAL)
PLANTS PER 100 LINEAR FEE:
EXTERNAL: (6) LARGE TREES;
(8) SMALL TREES;
(15) SHRUBS (MINIMUM OF 50% SHOULD BE EVERGREEN)
EXTERNAL: (4) LARGE TREES;
(7)SMALL TREES;
(12) SHRUBS (MINIMUM OF 50% SHOULD BE EVERGREEN)

PROVIDED LANDSCAPE BUFFER:

NORTH BUFFER (EXTERNAL) = 450 LINEAR FEET TOTAL
(25) LARGE TREES;
(40) SMALL TREES;
(89) SHRUBS (72.5% EVERGREEN)

WEST BUFFER (INTERNAL) = 1300 LINEAR FEET TOTAL (PARTIALLY WITHIN EXISTING TREE AREA)
(28) LARGE TREES;
(52) SMALL TREES;
(90) SHRUBS (70% EVERGREEN)

EAST BUFFER (INTERNAL) = 1281 LINEAR FEET TOTAL (WITHIN EXISTING TREE AREA)

PARKING LOT LANDSCAPE SHADING REQUIREMENT:

REQUIRED: 35% CANOPY SHADING AREA
PROVIDED: 41% CANOPY SHADING AREA TYPE: "B"

BMP PLANTING CALCULATIONS:

SHALLOW WATER PLANTING
BMP MANUAL: 50HERBACEOUS PLANTS REQUIRED PER 200 SF
REQUIRED: 7457 SF = 1867 PLANTS REQUIRED
PROPOSED: 1944 PLANTS PROPOSED

LANDSCAPING NOTES:

1. VERIFY ALL QUANTITIES AND REPORT ANY DISCREPANCIES OR INACCURACIES IN THE PLANS TO THE OWNER'S REPRESENTATIVE PRIOR TO PLANTING.
2. LANDSCAPE WORK SHALL INCLUDE THE FURNISHING, INSTALLATION, AND WARRANTY OF ALL PLANTING MATERIALS WITHIN THE PROJECT AREA.
3. THE LANDSCAPE CONTRACTOR SHALL ASCERTAIN THE LOCATION OF ALL EXISTING AND NEW UNDERGROUND UTILITIES PRIOR TO EXCAVATION FOR PLANTING. DAMAGES TO UTILITIES CAUSED BY THE LANDSCAPE OPERATION SHALL BE CORRECTED BY THE LANDSCAPE CONTRACTOR AT NO COST TO THE OWNER.
4. LANDSCAPING SHALL REMAIN CLEAR FROM ANY FIRE HYDRANTS ON THE SITE.
5. ALL TREES TO BE A MINIMUM OF 2.5" IN CALIPER AND MUST MEET THE AMERICAN STANDARD FOR NURSERY STOCK.
6. TREE PROTECTION NOTE: TREE PROTECTION FENCING MUST BE IN PLACE PRIOR TO ANY DEMOLITION, LAND DISTURBANCE OR ISSUANCE OF A GRADING PERMIT AND SHALL INCLUDE WARNING SIGNS POSTED IN BOTH ENGLISH AND SPANISH, AS FOLLOWS: "NO TRESPASSING/TREE PROTECTION AREA/PROHIBIDO ENTRAR / ZONA PROTECTORA PARA LOS ÁRBOLES."
7. PROTECTION OF EXISTING VEGETATION: AT THE START OF GRADING INVOLVING THE LOWERING OF EXISTING GRADE AROUND A TREE OR STRIPPING OF TOPSOIL, A CLEAN, SHARP, VERTICAL CUT SHALL BE MADE AT THE EDGE OF THE TREE SAVE AREA AT THE SAME TIME AS OTHER EROSION CONTROL MEASURES ARE INSTALLED. THE TREE PROTECTION FENCING SHALL BE INSTALLED ON THE SIDE OF THE CUT FARTHEST AWAY FROM THE TREE TRUNK AND SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION IN THE VICINITY OF THE TREES IS COMPLETE. NO STORAGE OF MATERIALS, FILL, OR EQUIPMENT AND NO TRESPASSING SHALL BE ALLOWED WITHIN THE BOUNDARY OF THE PROTECTED AREA.
8. ROOT ZONE PROTECTION AREA: VARIES BASED ON LOCAL JURISDICTION HAVING AUTHORITY. CONTRACTOR SHALL COMPLY WITH LOCAL JURISDICTIONAL REQUIREMENTS. NO DISTURBANCE ALLOWED WITHIN THIS AREA. AREA MUST BE PROTECTED WITH BOTH TREE PROTECTION FENCING AND WARNING SIGNS.
9. SEED BED PREPARATION: ALL AREAS TO BE SEEDED ARE TO BE RECEIVE A MINIMUM OF 2" OF APPROVED TOPSOIL. ALL DEBRIS, ROCKS, ETC. LARGER THAN .5" ARE TO BE REMOVED. ALL LARGE CONCENTRATIONS OF GRAVEL & DEBRIS REGARDLESS OF SIZE ARE TO BE REMOVED PRIOR TO SEEDING OR PLANTING.
10. ALL PLANT BED AREAS ARE TO RECEIVE A MINIMUM OF 6" OF APPROVED TOPSOIL.
11. SOIL SHOULD BE TESTED AND AMENDED WITH LIME AND FERTILIZER FOR HARDWOOD TREES ACCORDING TO NCDA PROCEDURES. SCARIFY PLANT PIT WALLS. CONSULT LANDSCAPE ARCHITECT FOR ALTERNATE COMPLIANCE.
12. SHREDDED HARDWOOD MULCH 3" DEEP EXCEPT AT CROWN OF PLANT UNLESS OTHERWISE NOTED. FLARE AT CROWN SHOULD BE REVEALED. BACKFILL CONSISTS OF THOROUGHLY BROKEN UP NATIVE SOIL. TOTAL VOLUME OF BACKFILL SHOULD BE AMENDED WITH UP TO ONE THIRD PINE BARK MULCH. PIECES SHOULD BE NO LARGER THAN WHAT PASSES THROUGH A ONE INCH SCREEN. IF ADDITIONAL SOIL IS REQUIRED FOR BACKFILL DUE TO DETRIMENTAL SUBSOIL DRAINAGE CONDITIONS, USE SOIL SIMILAR TO EXISTING NATIVE SOIL. ADDITIONAL SOIL TO BE APPROVED BY LANDSCAPE ARCHITECT. MAXIMUM SAUCER HEIGHT IS 6 INCHES.
13. TOP OF ROOTBALL TO BE RAISED 2-3 INCHES ABOVE EXISTING GRADE.
14. FOR B&B PLANTS, NATURAL FIBER BURLAP SHOULD BE TURNED DOWN BY 1/3 TOTAL HEIGHT OF ROOT BALL. PLASTIC FIBER BURLAP AND WIRE BASKETS SHOULD BE REMOVED TO 2/3'S OF TOTAL HEIGHT OF ROOT BALL.
15. CONTRACTOR IS RESPONSIBLE FOR KEEPING THE TREE UPRIGHT AND PLUMB THROUGHOUT THE WARRANTY PERIOD. IF STABILIZATION IS NECESSARY SEE STAKING IN TREE DETAIL. ORANGE FLAGGING TAPE SHOULD BE ATTACHED TO SUPPORT WIRE. STAKING SHOULD BE REMOVED BY CONTRACTOR AT END OF ONE YEAR WARRANTY PERIOD OR AS DIRECTED BY GROUNDS MANAGEMENT.
16. USE STANDARD "GATOR" BAGS FOR WATERING TREES IN AREAS NOT UNDER IRRIGATION. INCORPORATE TERRA-SORB (OR EQUAL) AS PER MANUFACTURERS RECOMMENDATIONS, FOR AREAS NOT UNDER IRRIGATION.
17. USE "BIO-BARRIER" OR EQUIVALENT ACCORDING TO MANUFACTURER'S RECOMMENDATION FOR TREES THAT WILL BE PLANTED WITHIN 10' OF PAVEMENT
18. LANDSCAPING/C.O. STANDARDS NOTE: ALL LANDSCAPING MUST BE IN PLACE PRIOR TO REQUEST FOR A CERTIFICATE OF COMPLIANCE.

STEWART
421 FAYETTEVILLE ST., SUITE 400
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T 919.380.8750
FIRM LICENSE #: C-1051
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GLMH-2, LLC
121 S. ESTES DRIVE SUITE 100
CHAPEL HILL, NC 27514

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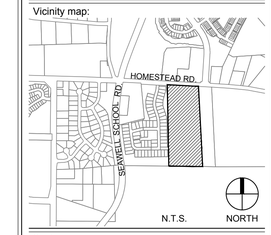
INDEPENDENT SENIOR HOUSING CHAPEL HILL

Vicinity map:



Seal:

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1886 CHRISTOPHER J. MILLER

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

Issued for:

SUP SUBMITTAL

No.	Date	Description

0 25 50 100 NORTH

SCALE: 1"=50'

Title:

PLANTING PLAN

Project number: C17004 Sheet:
Date: 09.27.2017
Drawn by: DG/RS
Approved by: CJM

L1.10

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PLANT SCHEDULE NORTH BUFFER

TREES	CODE	BOTANICAL NAME	COMMON NAME		QTY
	AP5	Aesculus pavia	Red Buckeye		3
	AA	Amelanchier Laevis	Serviceberry		4
	IV4	Ilex vomitoria	Yaupon Holly		27
	MS	Magnolia virginiana	Sweet Bay		6
	NS	Nyssa sylvatica	Sour Gum		5
	QL	Quercus laurifolia	Laurel-leaved Oak		6
	QP3	Quercus pagoda	Cherrybark Oak		3
	QP2	Quercus phellos	Willow Oak		2
	TD	Taxodium distichum	Bald Cypress		9
SHRUBS	**CODE**	**BOTANICAL NAME**	**COMMON NAME**		**QTY**
	CA3	Callicarpa americana	American Beauty Berry		12
	CS	Calycanthus floridus	Sweet Shrub		14
	IB	Ilex cornuta `Burfordii Nana`	Dwarf Burford Holly		13
	II2	Ilex glabra leucocarpa `Ivory Queen`	Gallberry		37
	IP	Illicium parviflorum	Anise Tree		13

PLANT SCHEDULE WEST BUFFFER

TREES	CODE	BOTANICAL NAME	COMMON NAME		QTY
	ILE AME	Ilex opaca	American Holly		6
	IV4	Ilex vomitoria	Yaupon Holly		40
	MS	Magnolia virginiana	Sweet Bay		6
	QL	Quercus laurifolia	Laurel-leaved Oak		10
	QP3	Quercus pagoda	Cherrybark Oak		6
	TD	Taxodium distichum	Bald Cypress		12
SHRUBS	**CODE**	**BOTANICAL NAME**	**COMMON NAME**		**QTY**
	CA3	Callicarpa americana	American Beauty Berry		11
	II2	Ilex glabra leucocarpa `Ivory Queen`	Gallberry		39
	IP	Illicium parviflorum	Anise Tree		21
	LD	Leucothoe fontanesiana	Drooping Leucothoe		19

PLANT SCHEDULE

TREES	CODE	BOTANICAL NAME	COMMON NAME		QTY	REMARKS
	AP5	Aesculus pavia	Red Buckeye		3	
	AA	Amelanchier Laevis	Serviceberry		4	
	HC2	Halesia carolina	Snowdrop Tree		16	
	ILE AME	Ilex opaca	American Holly		6	
	IV4	Ilex vomitoria	Yaupon Holly		71	
	ML	Magnolia grandiflora `Little Gem`	Dwarf Southern Magnolia		8	
	MS	Magnolia virginiana	Sweet Bay		9	
	NS	Nyssa sylvatica	Sour Gum		32	
	QL	Quercus laurifolia	Laurel-leaved Oak		16	
	QP3	Quercus pagoda	Cherrybark Oak		9	
	QP2	Quercus phellos	Willow Oak		9	
	QS2	Quercus shumardii	Shumard Red Oak		107	
	TD	Taxodium distichum	Bald Cypress		19	
SHRUBS	**CODE**	**BOTANICAL NAME**	**COMMON NAME**		**QTY**	**REMARKS**
	AG2	Abelia grandiflora	Glossy Abelia		29	
	CA3	Callicarpa americana	American Beauty Berry		40	
	CS	Calycanthus floridus	Sweet Shrub		14	
	GM	Gardenia jasminoides `Radicans`	Miniature Or Trailing Jasmine		10	
	HA2	Hydrangea arborescens `Annabelle`	Annabelle Smooth Hydrangea		24	
	IB	Ilex cornuta `Burfordii Nana`	Dwarf Burford Holly		141	
	II2	Ilex glabra leucocarpa `Ivory Queen`	Gallberry		138	PARKING LOT SCREENING, PLANTING AT 3 FEET IN HEIGHT
	IW	Ilex verticillata	Winterberry		44	
	IP	Illicium parviflorum	Anise Tree		113	PARKING LOT SCREENING, PLANTING AT 3 FEET IN HEIGHT
	IV5	Itea virginica `Henry`s Garnet`	Henry`s Garnet Sweetspire		21	
	LD	Leucothoe fontanesiana	Drooping Leucothoe		34	
	OF	Osmanthus fragrans	Sweet Olive, Tea Olive		5	
	RO	Rosa shrub `RADrazz` TM	Knock Out		70	
BIORETENTION POND	**CODE**	**BOTANICAL NAME**	**COMMON NAME**	**SPACING**	**QTY**	**REMARKS**
	AI	Asclepias incarnata	Swamp Milkweed	24" o.c.	718	
	CT2	Carex tenera	Quill Sedge	24" o.c.	555	
	SB4	Saccharum baldwinii	Narrow Plumegrass	24" o.c.	671	

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PROJECT #: C17104

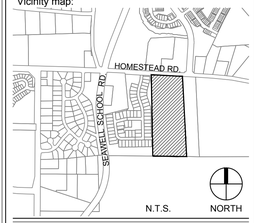
Client:

GLMH-2, LLC
121 S. ESTES DRIVE SUITE 100
CHAPEL HILL, NC 27514

Project:

INDEPENDENT SENIOR HOUSING CHAPEL HILL

Vicinity map:



Seal:

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No.	Date	Description

0 25 50 100 NORTH

SCALE: 1"=50'

Title:

PLANTING PLAN SCHEDULE

Project number: C17004
Date: 09.27.2017
Drawn by: DG
Approved by: CDM

Sheet: L1.11

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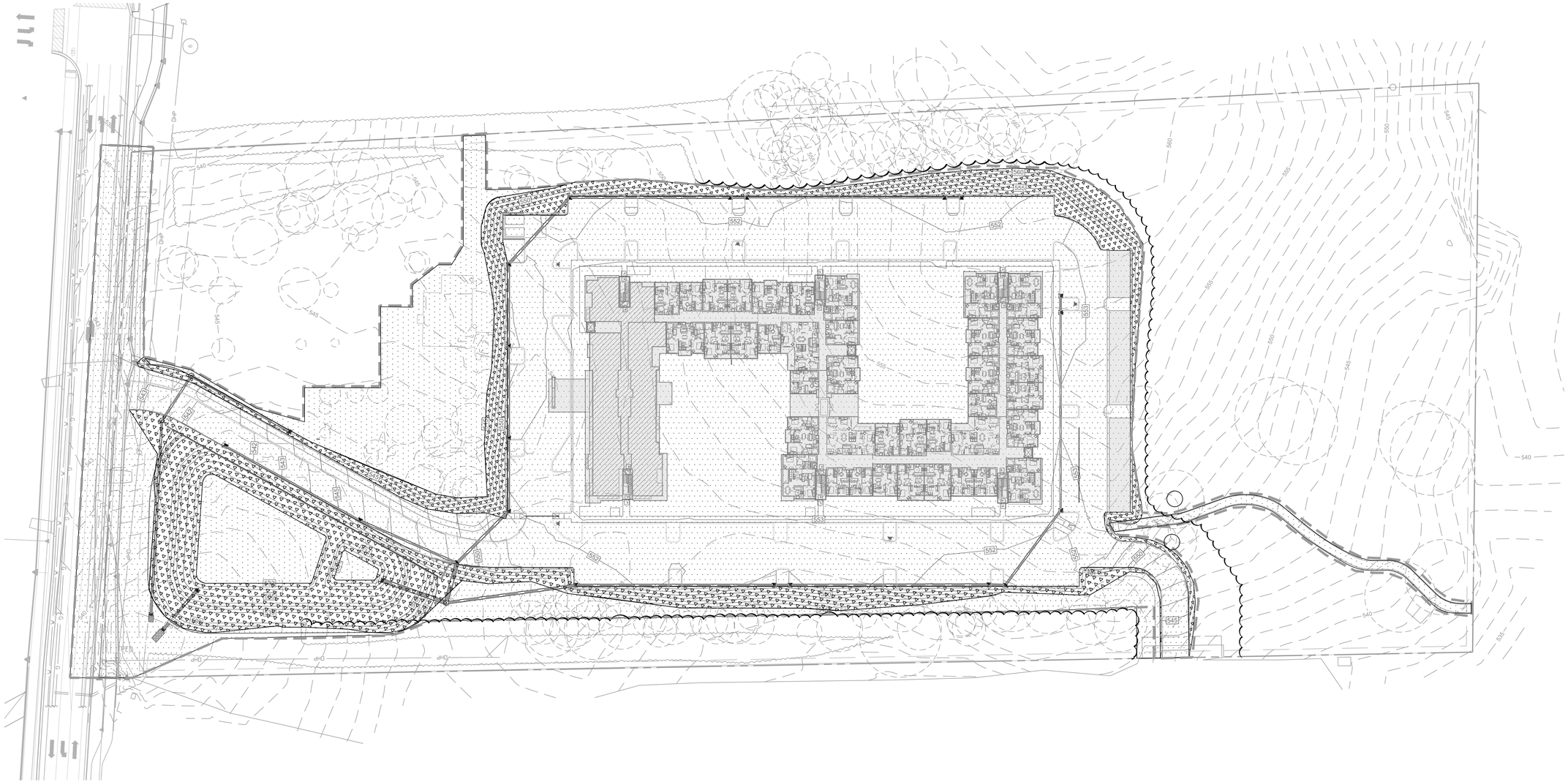

SLOPE LEGEND

- 0% - 10% SLOPES (323,480 SQFT)
- 10% - 15% SLOPES (0 SQFT)
- 15%-25% SLOPES (0 SQFT)
- 25% AND GREATER (61,723 SQFT)

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121 S. ESTES DRIVE SUITE 100
CHAPEL HILL, NC 27514

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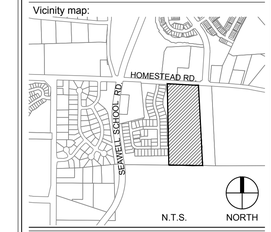
INDEPENDENT SENIOR HOUSING CHAPEL HILL

Vicinity map:



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No.	Date	Description

0 25 50 100 NORTH

SCALE: 1"=50'

Title:

STEEP SLOPE PLAN

Project number: C17004
Date: 09.27.2017
Drawn by: DG/RS
Approved by: CJM

Sheet: L1.20

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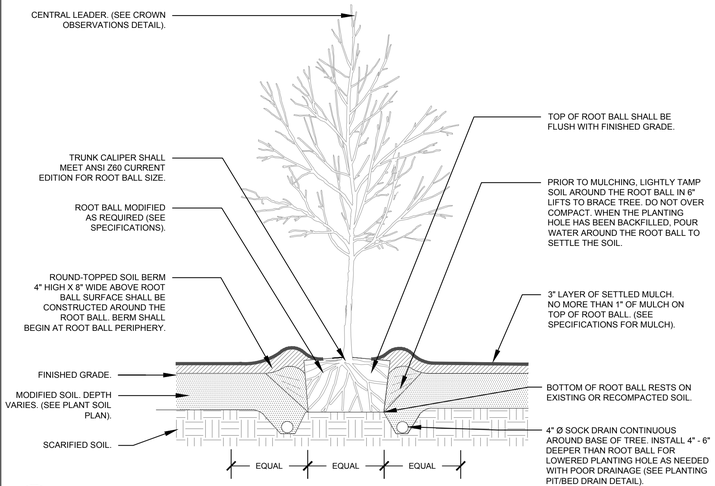
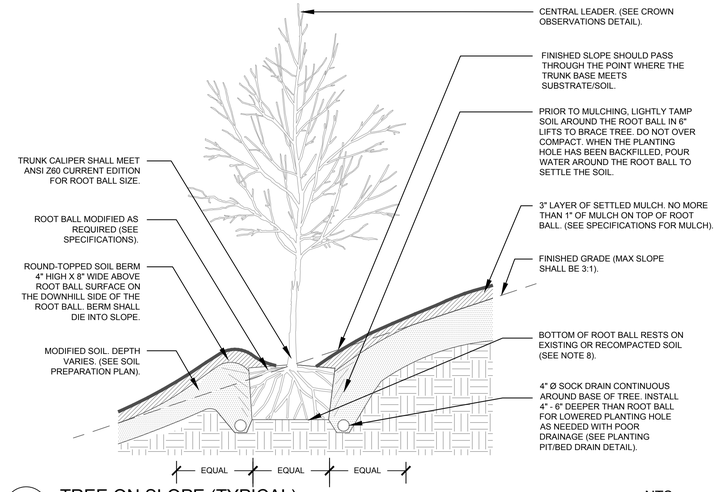
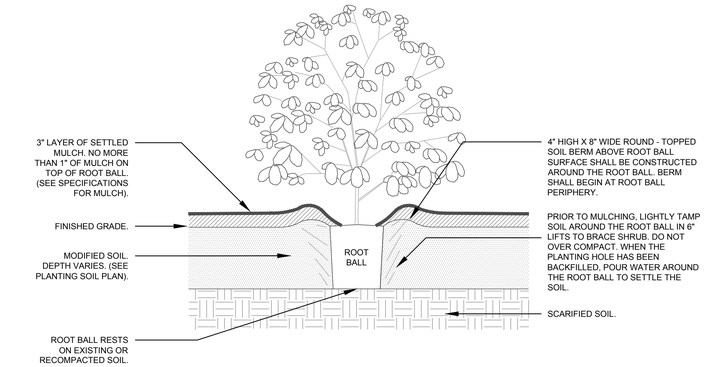


1 TREE (TYPICAL)
SECTION — NTS



2 TREE ON SLOPE (TYPICAL)
SECTION — NTS



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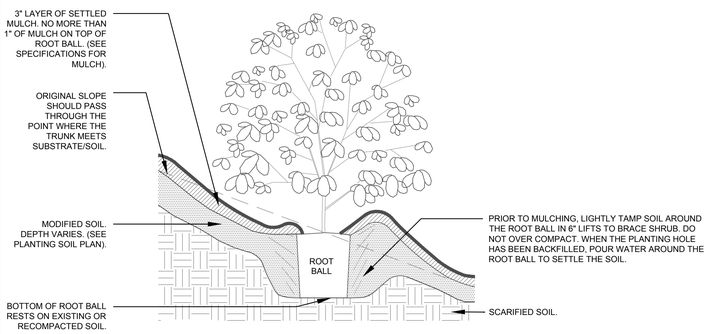
SECTION — NTS



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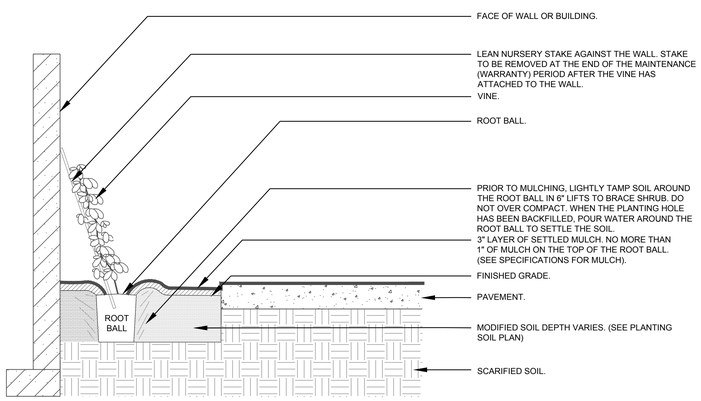
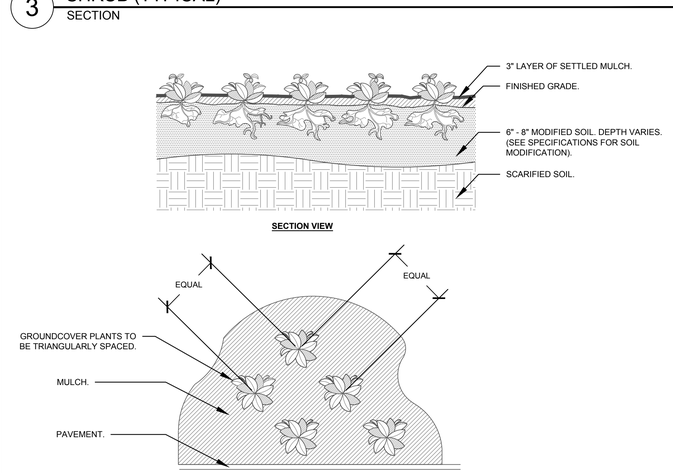
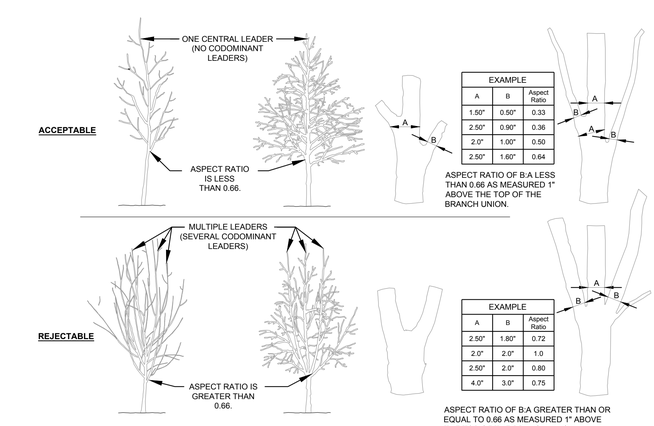
SECTION — NTS



5 VINE (TYPICAL)
SECTION — NTS



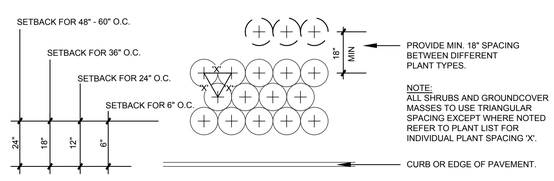
6 GROUNDCOVER PLANTING (TYPICAL)
PLAN — NTS



7 CROWN OBSERVATIONS - HIGH BRANCHED
SECTION — NTS

NOTES:

1. SEE PLANTING LEGEND FOR GROUNDCOVER SPECIES, SIZE AND SPACING DIMENSION.
2. SMALL ROOTS (¼" OR LESS) THAT GROW AROUND, UP OR DOWN THE ROOT BALL PERIPHERY ARE CONSIDERED A NORMAL CONDITION IN CONTAINER PRODUCTION AND ARE ACCEPTABLE, HOWEVER THEY SHOULD BE ELIMINATED AT THE TIME OF PLANTING. ROOTS ON THE PERIPHERY CAN BE REMOVED AT THE TIME OF PLANTING (SEE ROOT BALL SHAVING DETAIL).
3. SETTLE SOIL AROUND ROOT BALL OF EACH GROUNCOVER PRIOR TO MULCHING.
4. WHEN GROUNDCOVER PLANTINGS ARE USED IN MASSES, ENTIRE BED SHALL BE EXCAVATED AND TILLED WITH SOIL AMENDMENTS PER SPECIFICATIONS.
5. CONTRACTORS SHALL ASSURE PERCOLATION OF A ALL PLANTING PITS PRIOR TO INSTALLATION.



8 SHRUB AND GROUNDCOVER SPACING
PLAN — NTS

PLANTING NOTES:

1. DO NOT STAKE TREES EXCEPT WHERE SPECIFIED BY LANDSCAPE ARCHITECT. STAKING IS REQUIRED FOR TREES PLANTED ON SLOPES.
2. WHERE SEVERAL TREES WILL BE PLANTED CLOSE TOGETHER SUCH THAT THEY WILL LIKELY SHARE ROOT SPACE, TILL IN SOIL AMENDMENTS TO A DEPTH OF 4-6" OVER THE ENTIRE AREA.
3. FOR CONTAINER GROWN TREES, USE FINGERS OR SMALL HAND TOOLS TO PULL THE ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL; THEN CUT OR PULL APART ANY ROOTS CIRCLING THE PERIMETER OF THE CONTAINER.
4. FOR FIELD GROWN TREES, CUT BURLAP, ROPE AND WIRE BASKET AWAY FROM TOP AND SIDES OF ROOT BALL.
5. THOROUGHLY SOAK THE TREE ROOT BALL AND ADJACENT PREPARED SOIL SEVERAL TIMES DURING THE FIRST MONTH AFTER PLANTING AND REGULARLY THROUGHOUT THE FOLLOWING TWO SUMMERS.
6. THE PLANTING PROCESS IS SIMILAR FOR DECIDUOUS AND EVERGREEN TREES.
7. DO NOT WRAP TRUNK; MARK NORTH SIDE OF TREE IN THE NURSERY AND LOCATE TO THE NORTH IN THE FIELD.
8. WIDTH OF PLANTING HOLE IS 3X ROOT BALL AT THE SURFACE, SLOPING TO 2X THE ROOT BALL DIAMETER AT THE DEPTH OF THE ROOT BALL.
9. BEFORE PLANTING, ADD 3-4" OF WELL COMPOSTED LEAVES, RECYCLED YARD WASTE OR OTHER COMPOST AND TILL INTO TOP 6" OF PREPARED SOIL. ADD COMPOST AT 20-35% BY VOLUME TO BACKFILL.
10. PERFORM PERCOLATION TEST FOR EACH TREE PIT TO CONFIRM THAT WATER DRAINS OUT OF THE SOIL. PROVIDE GRAVEL SUMP FILTER FABRIC & VENT PIPE IF DRAINAGE DOES NOT OCCUR WITHIN 24 HOURS. INCLUDE ALL SUMPS IN BASE BID. SHOULD SUMPS NOT BE NECESSARY AFTER PERCOLATION TEST, PROVIDE CHANGE ORDER DEDUCT TO OWNER.
11. IF PLANTING HOLES ARE DUG WITH A LARGE AUGER BREAKING DOWN THE SIDES WITH A SHOVEL CAN ELIMINATE GLAZING AND CREATE THE PREFERRED SLOPING SIDE.
12. TREES SHALL HAVE SINGLE LEADERS. TREES WITH 2 LEADERS WILL BE REJECTED.
13. DO NOT PLACE MULCH IN CONTACT WITH TRUNK.
14. PROVIDE GATOR BAGS FOR ALL TREES WHERE IRRIGATION IS NOT PROVIDED.

9 PLANTING NOTES

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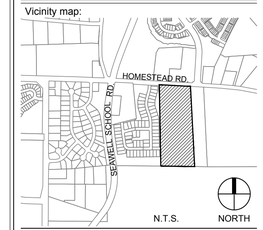
Client:

GLMH-2, LLC
121 S. ESTES DRIVE SUITE 100
CHAPEL HILL, NC 27514

Project:

INDEPENDENT SENIOR HOUSING CHAPEL HILL

Vicinity map:



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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1886 CHRISTOPHER J. MILLER

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Title:

LANDSCAPE DETAILS

Project number: C17004
Date: 09.27.2017
Drawn by: DG/RS
Approved by: CJM
Sheet: L2.00

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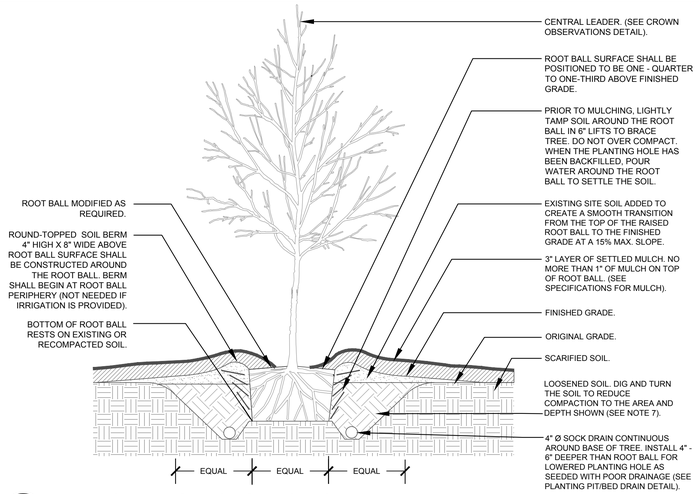
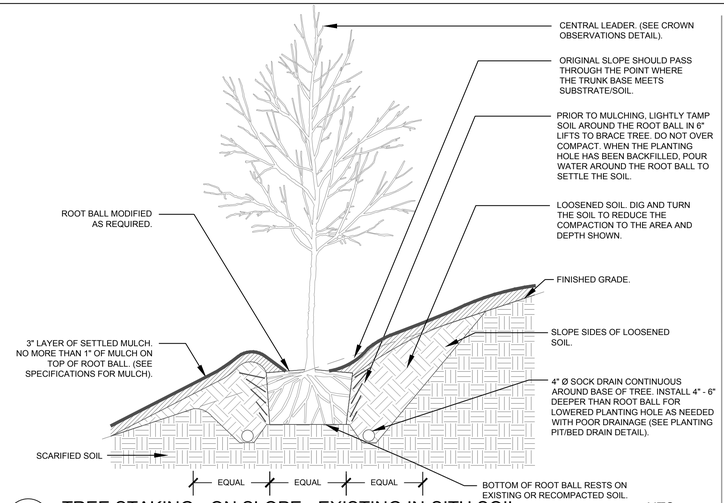


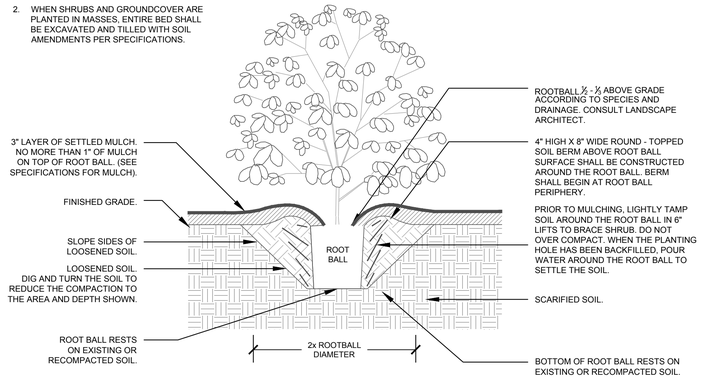
1 TREE STAKING - LODGE POLES
SECTION — NTS



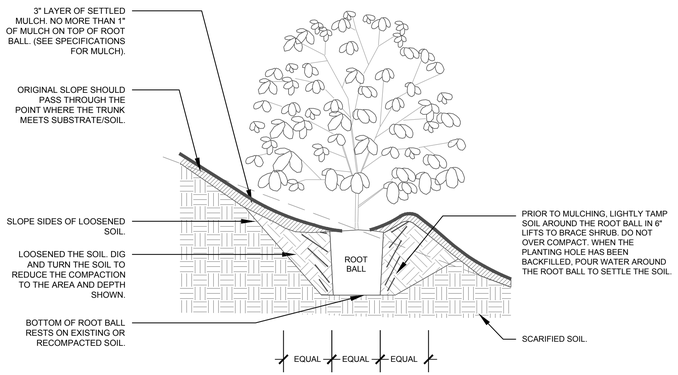
2 TREE STAKING - ON SLOPE - EXISTING IN-SITU SOIL
SECTION — NTS

NOTES:

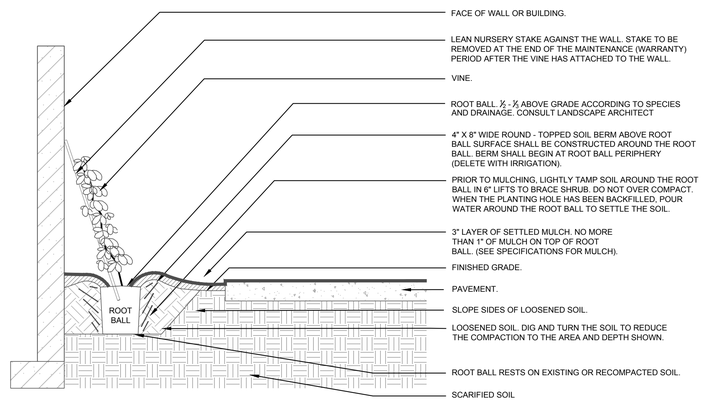
1. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.
2. WHEN SHRUBS AND GROUNDCOVER ARE PLANTED IN MASSES, ENTIRE BED SHALL BE EXCAVATED AND TILLED WITH SOIL AMENDMENTS PER SPECIFICATIONS.



3 SHRUB - EXISTING IN-SITU SOIL
SECTION — NTS



4 SHRUB ON SLOPE - EXISTING IN-SITU SOIL
SECTION — NTS



5 VINE - EXISTING IN-SITU SOIL
SECTION — NTS

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421 FAYETTEVILLE ST., SUITE 400
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FIRM LICENSE #: C-1051
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PROJECT #: C17104

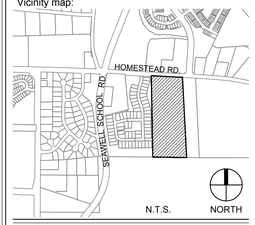
Client:

GLMH-2, LLC
121 S. ESTES DRIVE SUITE 100
CHAPEL HILL, NC 27514

Project:

INDEPENDENT SENIOR HOUSING CHAPEL HILL

Vicinity map:



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LANDSCAPE DETAILS

Project number: C17004
Date: 09.27.2017
Drawn by: DI/RS
Approved by: CJM

Sheet: L2.01

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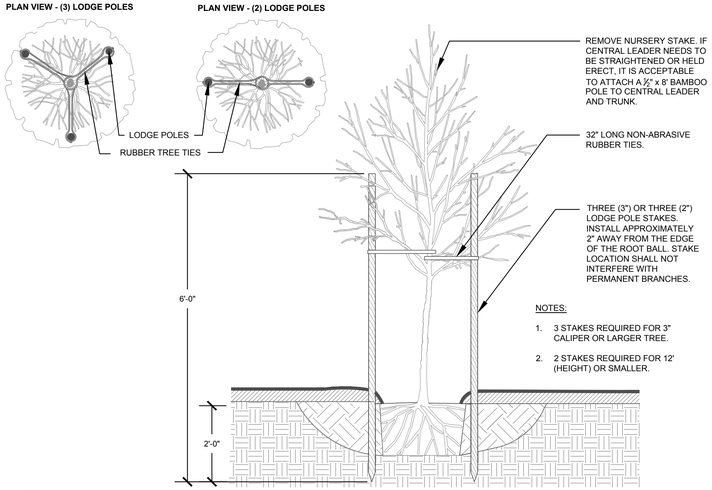
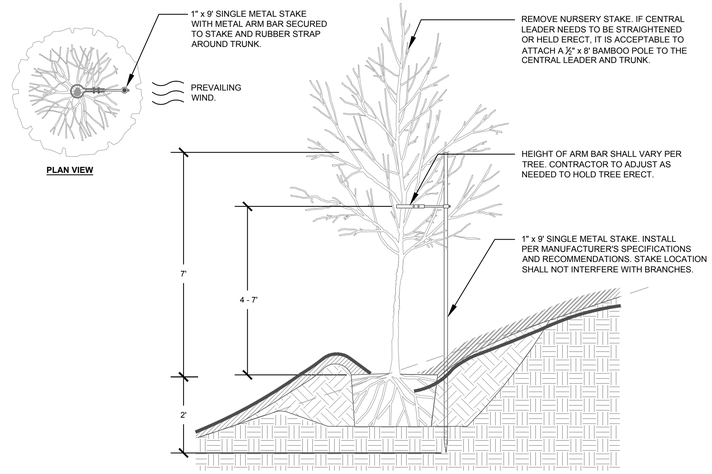
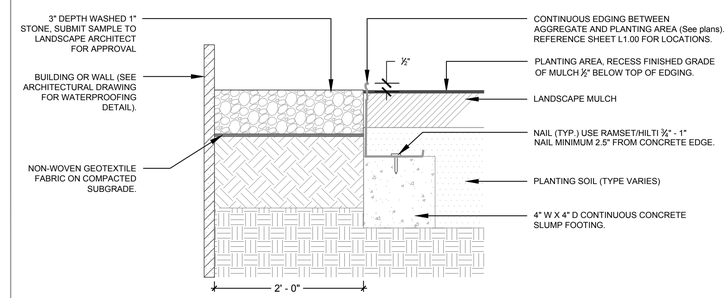


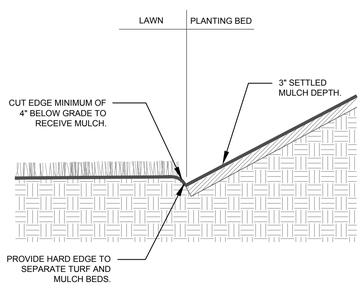
1 TREE STAKING - LODGE POLES
SECTION — NTS



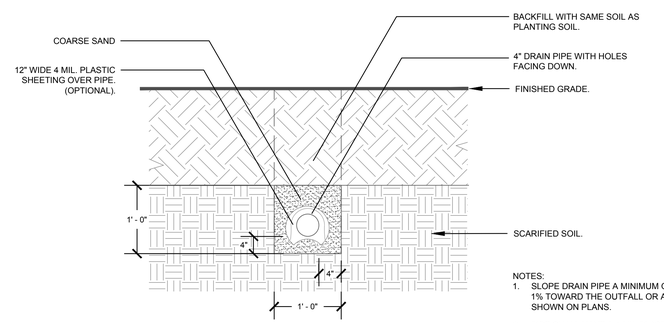
2 TREE STAKING - ON SLOPE
SECTION — NTS



3 GRAVEL BAND WITH STEEL EDGING
SECTION — NTS



4 LAWN / PLANT BED TRENCH EDGING
SECTION — NTS



NOTES:
1. SLOPE DRAIN PIPE A MINIMUM OF 1% TOWARD THE OUTFALL OR AS SHOWN ON PLANS.
2. PIPE SHALL HAVE A 4 MIL PLASTIC SHEETING PLACED ON TOP OF IT PRIOR TO ADDING SAND IF PIPE HAS HOLES ON ALL SIDES.

5 PLANTING PIT / BED DRAIN DETAIL
SECTION — NTS

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121 S. ESTES DRIVE SUITE 100
CHAPEL HILL, NC 27514

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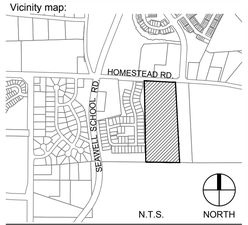

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LANDSCAPE DETAILS

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Date: 09.27.2017
Drawn by: DG/RS
Approved by: CJM
Sheet: L2.02

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