

INDEPENDENT SENIOR HOUSING CHAPEL HILL

217 HOMESTEAD ROAD
CHAPEL HILL, NC 27516

TOWN OF CHAPEL HILL
SPECIAL USE PERMIT SUBMITTAL

SUBMITTED ON SEPTEMBER 27, 2017
RESUBMITTED ON JANUARY 16, 2018
RESUBMITTED ON APRIL 24, 2018



VICINITY MAP
SCALE: 1" = 500'



UTILITIES IMPROVEMENTS QTY	
PRIVATE SEWER	
2" SEWER SERVICE	605 LF
PRIVATE WATER	
2" WATER MAIN	LF

SITE DATA	
PROJECT NAME:	INDEPENDENT SENIOR HOUSING CHAPEL HILL
SITE ADDRESS:	2217 HOMESTEAD ROAD CHAPEL HILL NC 27516
COUNTY:	ORANGE COUNTY
PARCEL PIN #:	9870907548
PARCEL OWNER:	WILLIAM BAINSTER WOOD & VIRGINIA WOOD
PARCEL AREA:	15.73 ACRES
TOTAL DISTURBED/ PROJECT AREA:	387,684 SQUARE FEET (8.90 ACRES)
CURRENT ZONING:	R2
EXISTING LAND USE:	RESIDENTIAL
PROPOSED USE:	AGE RESTRICTED RENTAL APARTMENTS
FLOODPLAIN:	NONE
JORDAN RIPARIAN BUFFER ZONE:	NO
WETLANDS:	NONE
WATER SHED:	JORDAN LAKE
RIVER BASIN:	CAPE FEAR RIVER BASIN
STREAMS:	NONE
CONSTRUCTION TYPE:	NEW CONSTRUCTION
MIN. REQUIRED STREET SETBACK	20
MIN. REQUIRED INTERIOR SET BACK (NEIGHBORING PROPERTY LINE)	6
MIN. REQUIRED SOLAR SETBACK (NORTHERN PROPERTY LINE)	8
MAX BUILDING HEIGHT:	---
PROPOSED BUILDING HEIGHT:	---
EXISTING IMPERVIOUS AREA:	13,140 S.F.
PROPOSED IMPERVIOUS AREA:	194,940 S.F.

OVERALL PARKING SUMMARY					
PROVIDED PARKING	SOUTH	NORTH	EAST	WEST	TOTAL
REGULAR 9'X20' SPACES	23	28	88	88	227
REGULAR ADA ACCESSIBLE SPACES	-	3	2	3	9
TOTAL VEHICULAR PARKING SPACES	23	31	90	91	235
BIKE PARKING	-	-	20	18	38
PARKING RATIO (1 BEDROOM): MULTI - FAMILY (PER LUMO 5.9.7) = 1 SPACES PER DWELLING UNTIL (MIN) / 1.25 SPACES PER DWELLING UNIT (MAX) - BEDROOM (109 BEDROOMS)					
PARKING RATIO (2 BEDROOM): MULTI - FAMILY (PER LUMO 5.9.7) = 1.4 SPACES PER DWELLING UNTIL (MIN) / 1.75 SPACES PER DWELLING UNIT (MAX) - BEDROOM (81 BEDROOMS)					
MIN REQUIRED (TOTAL) = 109 + 114 = 223 SPACES MAX REQUIRED (TOTAL) = 137 + 142 = 279 SPACES					

SHEET INDEX	
SHEET #	SHEET NAME
C0.00	COVER SHEET
C1.00	EXISTING CONDITIONS PLAN
C1.01	AREA MAP
C2.00	DEMOLITIONS PLAN
C3.00	SITE PLAN
C3.01	SITE PLAN ENLARGEMENT (NORTH)
C3.02	SITE PLAN ENLARGEMENT (SOUTH)
C3.03	FUTURE RECREATIONAL PLAN
C3.40	CONSTRUCTION MANAGEMENT PLAN
C4.00	EROSION CONTROL NOTES
C4.01	EROSION CONTROL PLAN (PHASE I)
C4.02	EROSION CONTROL PLAN (PHASE II)
C4.03	EROSION CONTROL PLAN (PHASE III)
C5.00	GRADING PLAN
C5.20	STORMWATER MANAGEMENT PLAN (SCM-01)
C6.00	UTILITIES PLAN
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C9.01	SITE DETAILS
C9.10	EROSION CONTROL DETAILS
L1.00	LANDSCAPE PROTECTION PLAN
L1.01	LANDSCAPE PROTECTION PLAN
L1.10	PLANTING PLAN
L1.11	PLANTING PLAN SCHEDULE
L1.20	STEEP SLOPE PLAN
L2.00	LANDSCAPE DETAILS
L2.01	LANDSCAPE DETAILS
L2.02	LANDSCAPE DETAILS

APARTMENT UNIT BREAKDOWN									
NAME	UNIT	LEVELS				TOTAL	%		
		1	2	3	4				
A1	1 BD	598	598	8	10	14	14	46	109
A2	1 BD	680	729	8	9	9	9	35	57.37%
A3	1 BD	836	893	7	7	7	7	28	
B1	2BD	1042	1102	8	9	11	11	39	81
B2a	2 BD	1250	1322	5	6	8	8	27	
B4	2 BD+ST	1373	1566	3	4	4	4	15	
TOTAL				39	45	53	53	190	100.00%

APPLICANT/OWNER

CIVIL ENGINEERING - LANDSCAPE ARCHITECTURE - GEOMATICS - GEOTECHNICAL

ARCHITECTS



STEWART

101 W. MAIN STREET
DURHAM, NC 27701
T 919.380.8752
WWW.STEWARTINC.COM
PROJECT # C17104

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

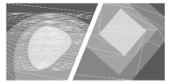
STEWART INC. - CIVIL
CONTACT: ADAM PIKE, PE
PROJECT MANAGER
919.866.4805 (T)
919.380.8752 (F)
APIKE@STEWARTINC.COM

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LANDSCAPE ARCHITECT
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DIRECTOR OF GEOMATICS
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MANAGER OF CONSTRUCTION SERVICES
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GURLITZ ARCHITECTURAL
121 S. ESTES DRIVE, SUITE 100
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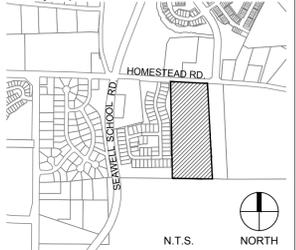
Client:

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Project:

INDEPENDENT SENIOR HOUSING CHAPEL HILL

Vicinity map:



Seal:



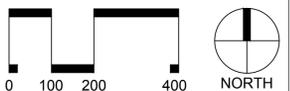
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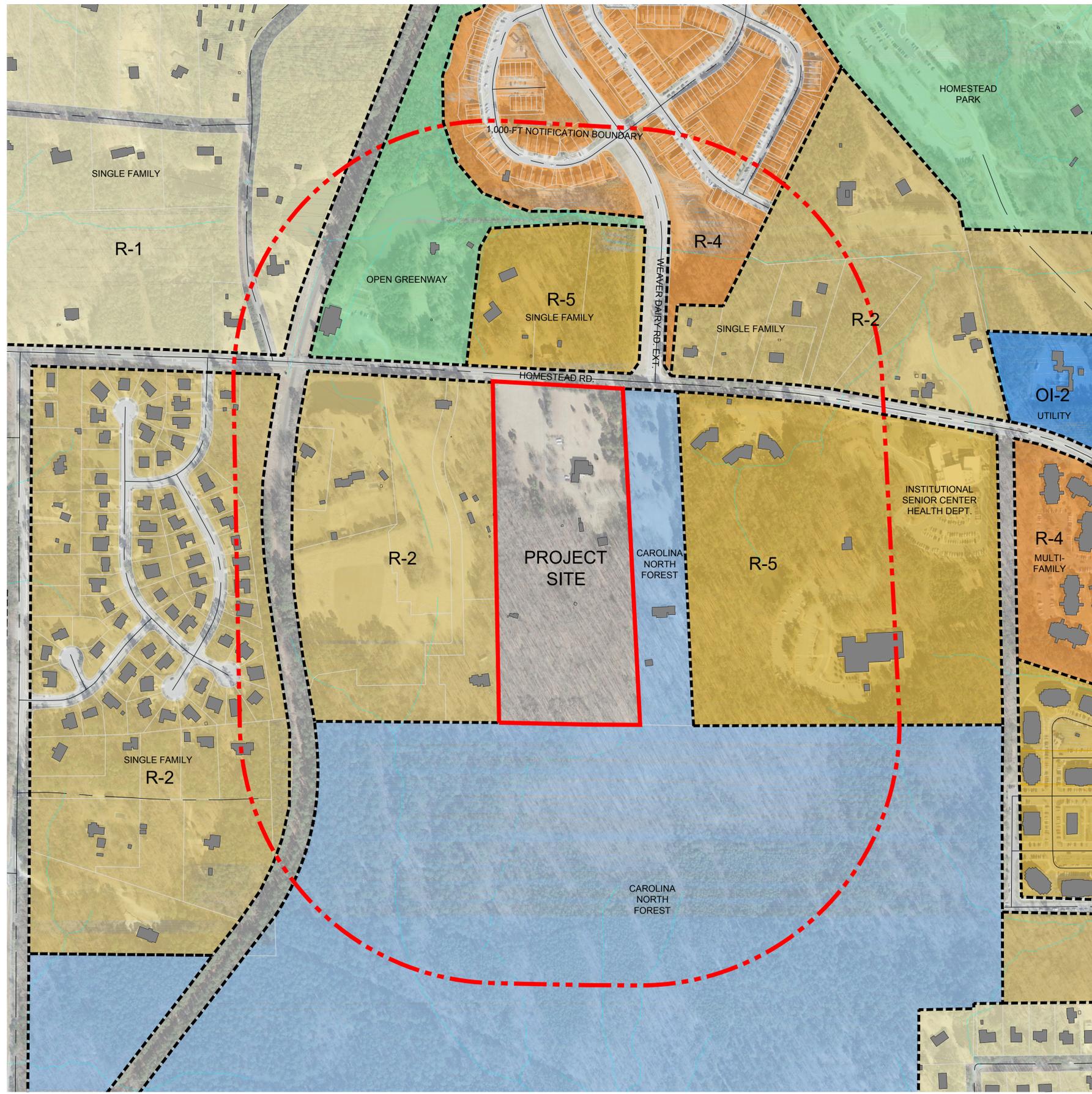


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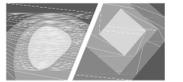
AREA MAP

Project number: C17004 Sheet:
Date: 09.27.2017
Drawn by: RS
Approved by: ACP **C1.01**



LEGEND

- 1000' NOTIFICATION
- PROPERTY LINES
- PERENNIAL STREAM
- EPHEMERAL STREAM
- ZONING BOUNDARY



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Vicinity map:



Seal:



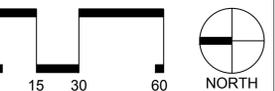
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SCALE: 1"=30'

Title:

SITE PLAN ENLARGEMENT (NORTH)

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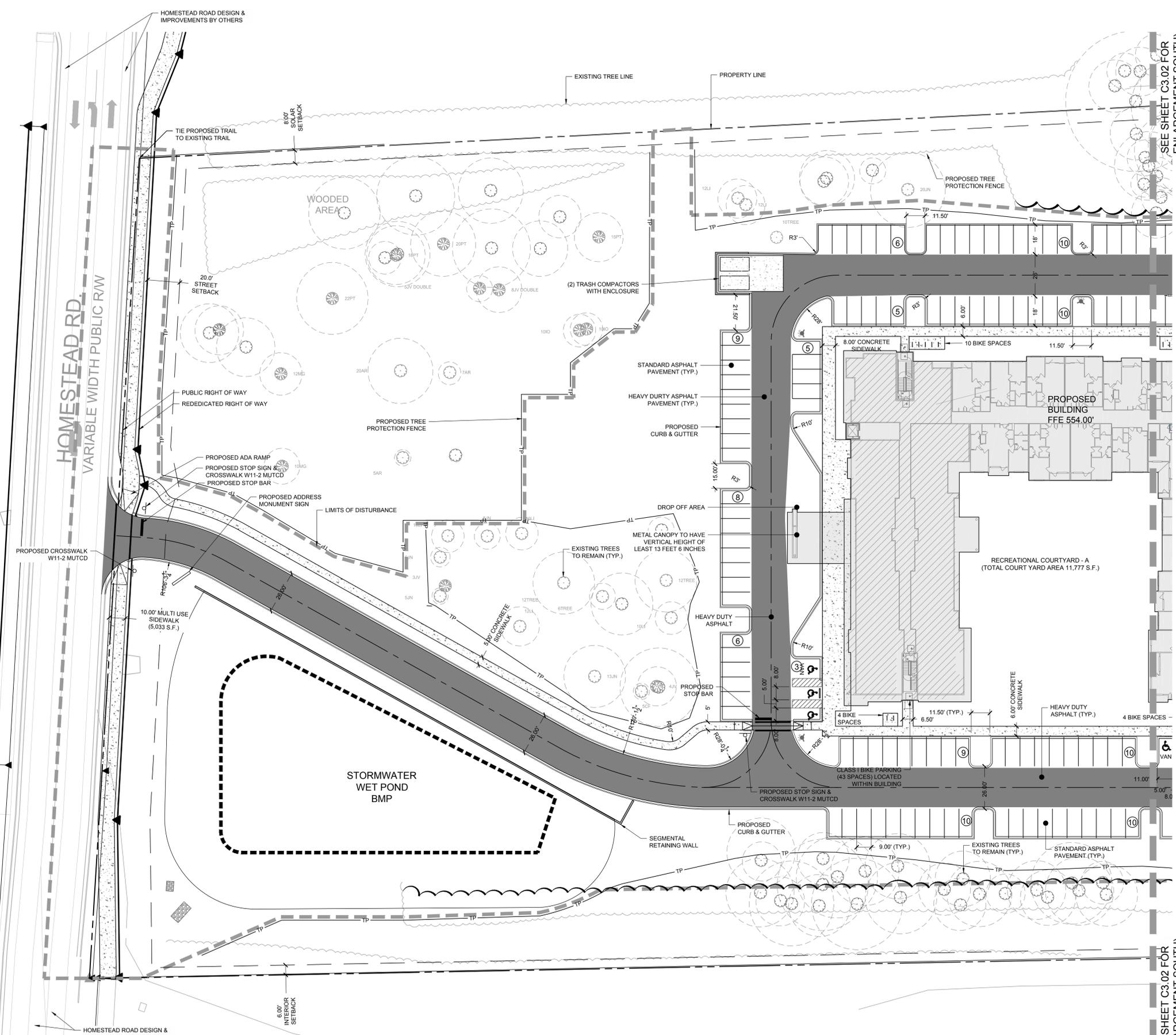
Date: 09.27.2017

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Approved by: ACP

C3.01

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SITE LEGEND

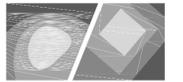
- PROPOSED BUILDING
- PROPOSED CONCRETE SIDEWALK
- PROPOSED HEAVY DUTY PAVEMENT
- PROPOSED CURB & GUTTER
- PROPOSED STOP BAR
- PROPOSED 6' WIDE STANDARD CROSSWALK
- PROPOSED ADA
- PROPOSED ADA PARKING SPACE
- PROPOSED CIP WALL
- PROPOSED WHEEL STOP
- PROPOSED ASPHALT TRAIL
- PROPOSED LIGHT
- PROPOSED BIKE RACK
- LIMITS OF DISTURBANCE
- FUTURE ROADWAY IMPROVEMENTS (BY OTHERS)

NOTES:
1. SEE SHEET C3.00 FOR GENERAL AND SITE NOTES.

SEE SHEET C3.02 FOR ENLARGEMENT SOUTH

HOMESTEAD RD
VARIABLE WIDTH PUBLIC R/W

HOMESTEAD ROAD DESIGN & IMPROVEMENTS BY OTHERS



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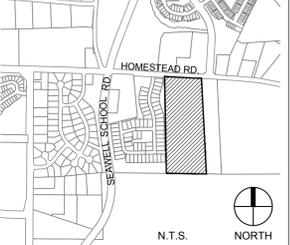
Client:

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

Project:

INDEPENDENT SENIOR HOUSING CHAPEL HILL

Vicinity map:



Seal:

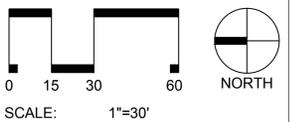


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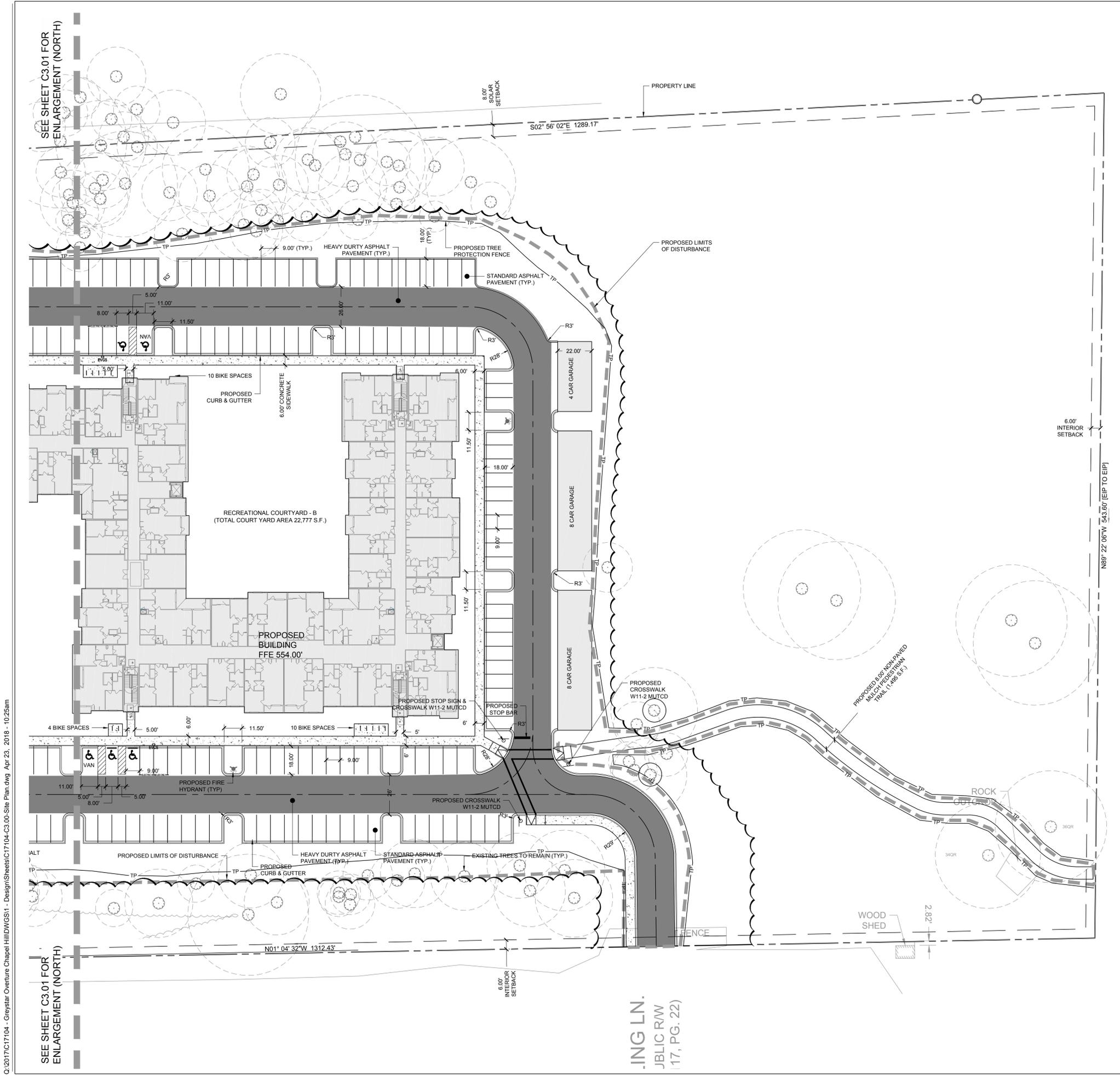
No.	Date	Description



Title:

SITE PLAN ENLARGEMENT (SOUTH)

Project number: C17004 Sheet:
Date: 09.27.2017
Drawn by: RS
Approved by: ACP **C3.02**



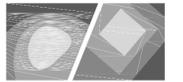
- SITE LEGEND**
- PROPOSED BUILDING
 - PROPOSED CONCRETE SIDEWALK
 - PROPOSED HEAVY DUTY PAVEMENT
 - PROPOSED CURB & GUTTER
 - PROPOSED STOP BAR
 - PROPOSED 6' WIDE STANDARD CROSSWALK
 - PROPOSED SIGN
 - PROPOSED ADA PARKING SPACE
 - PROPOSED CIP WALL
 - PROPOSED WHEEL STOP
 - PROPOSED ASPHALT TRAIL
 - PROPOSED LIGHT
 - PROPOSED BIKE RACK
 - LIMITS OF DISTURBANCE
 - FUTURE ROADWAY IMPROVEMENTS (BY OTHERS)

NOTES:

- SEE SHEET C3.00 FOR GENERAL AND SITE NOTES.

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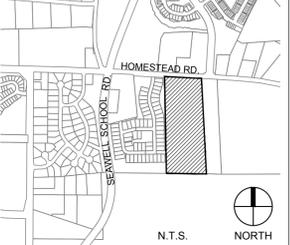
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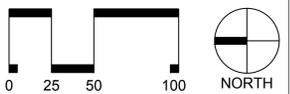
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SCALE: 1"=50'

Title:

FUTURE RECREATIONAL PLAN

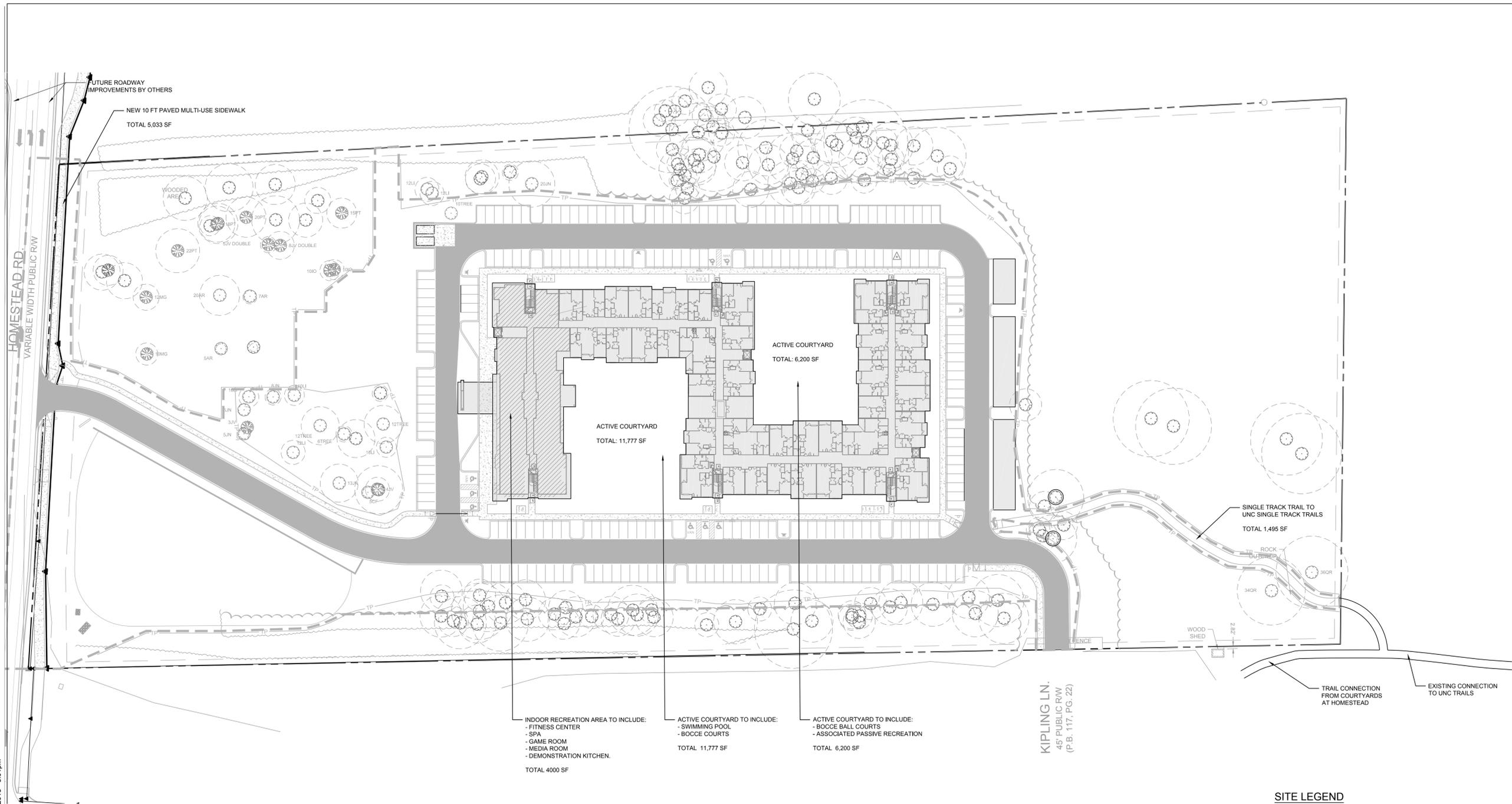
Project number: C17004 Sheet:

Date: 09.27.2017

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Approved by: ACP

C3.03

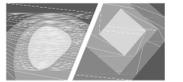


- INDOOR RECREATION AREA TO INCLUDE:
- FITNESS CENTER
- SPA
- GAME ROOM
- MEDIA ROOM
- DEMONSTRATION KITCHEN.
TOTAL 4000 SF
- ACTIVE COURTYARD TO INCLUDE:
- SWIMMING POOL
- BOCCO COURTS
TOTAL 11,777 SF
- ACTIVE COURTYARD TO INCLUDE:
- BOCCO BALL COURTS
- ASSOCIATED PASSIVE RECREATION
TOTAL 6,200 SF

Recreational Areas Talley	
Total Recreation Area Required	37,336 SF
Payment In Lieu = 25%	9,334 SF
Indoor Recreation Area	4,000 SF
Swimming Pool Courtyard with Pool and associated passive recreation	11,777 SF
Bocce Ball Courts and associated passive recreation Area	6,200 SF
Single Track Trail	1,495 SF
Multi-Use Sidewalk	5,033 SF
TOTAL RECREATION PROVIDED	37,839 SF

- #### SITE LEGEND
- PROPOSED BUILDING
 - PROPOSED CONCRETE SIDEWALK
 - PROPOSED HEAVY DUTY PAVEMENT
 - PROPOSED CURB & GUTTER
 - PROPOSED STOP BAR
 - PROPOSED 6' WIDE STANDARD CROSSWALK
 - PROPOSED SIGN
 - PROPOSED ADA PARKING SPACE
 - PROPOSED CIP WALL
 - PROPOSED WHEEL STOP
 - PROPOSED ASPHALT TRAIL
 - PROPOSED LIGHT
 - PROPOSED BIKE RACK
 - LIMITS OF DISTURBANCE
 - FUTURE ROADWAY IMPROVEMENTS (BY OTHERS)

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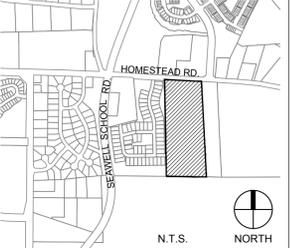
Client:

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

Project:

**INDEPENDENT
SENIOR
HOUSING
CHAPEL HILL**

Vicinity map:



Seal:



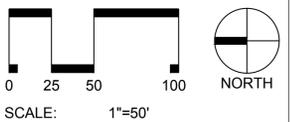
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Title:

**EROSION CONTROL
PLAN (PHASE I)**

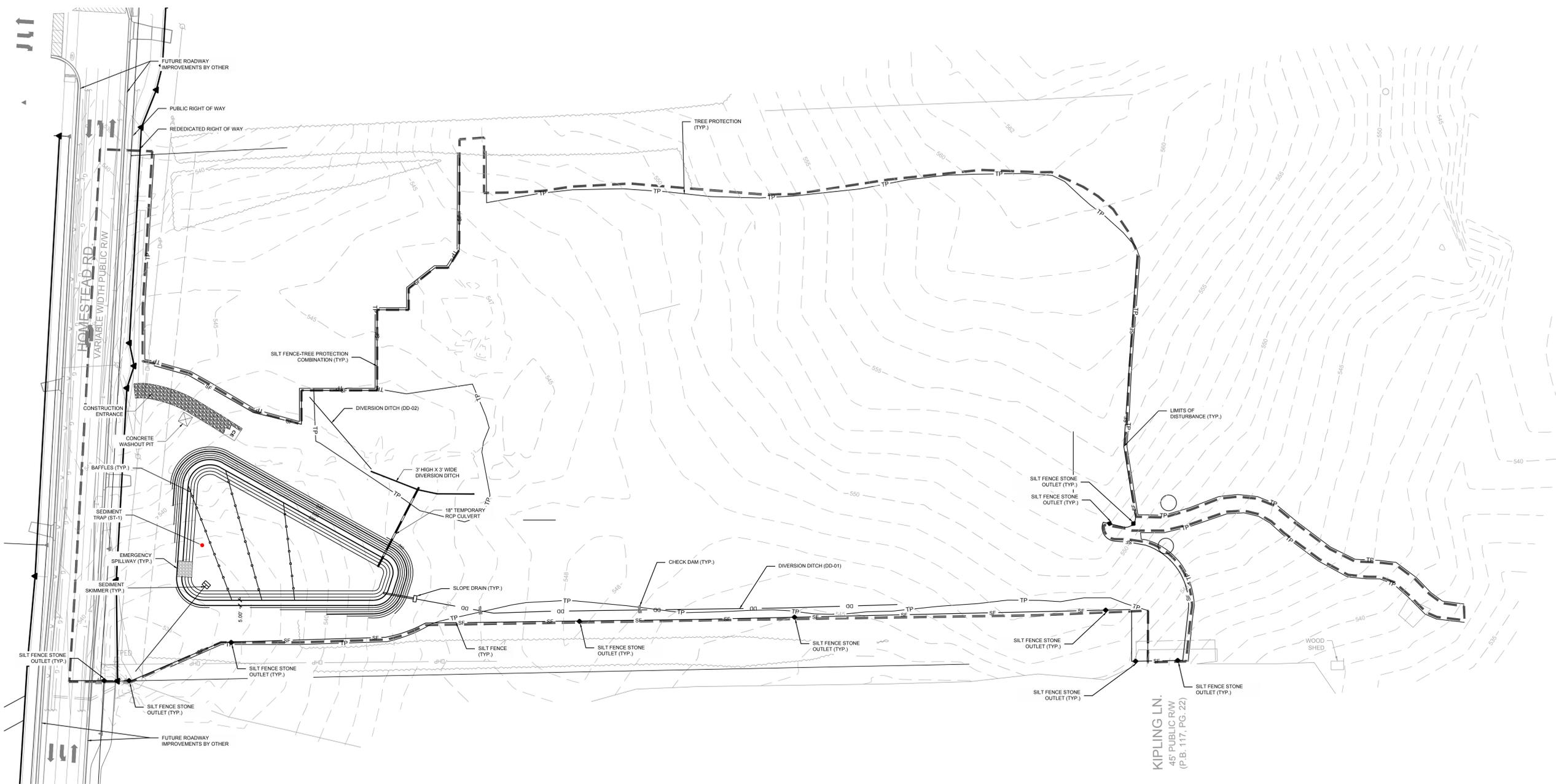
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Date: 09.27.2017

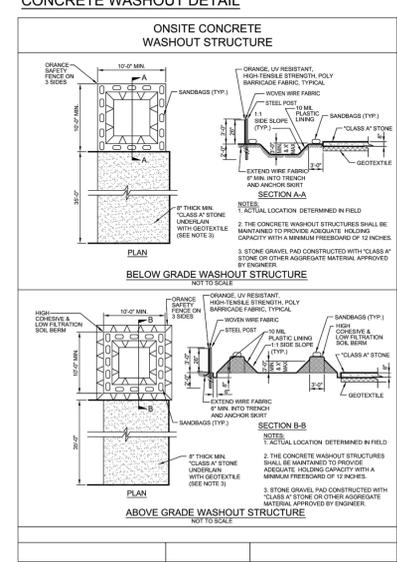
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C4.01



CONCRETE WASHOUT DETAIL

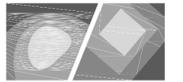


EROSION CONTROL LEGEND

- SF SILT FENCE
- TP TREE PROTECTION
- DD DIVERSION DITCH
- LIMITS OF DISTURBANCE
- BLOCK & GRAVEL INLET PROTECTION
- SILT FENCE AND WIRE INLET PROTECTION
- HORSE SHOE INLET PROTECTION
- SILT FENCE OUTLET
- CHECK DAM
- FLARED END SECTION (FES)
- SEDIMENT TRAP
- RIPRAP DISSIPATER
- 100 YR FLOOD ELEV.

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH NORTH CAROLINA EROSION CONTROL SPECIFICATIONS

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Client:

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

Project:

INDEPENDENT SENIOR HOUSING CHAPEL HILL

Vicinity map:



Seal:

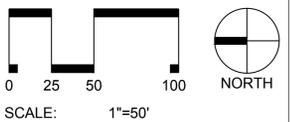


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Title:

EROSION CONTROL PLAN (PHASE III)

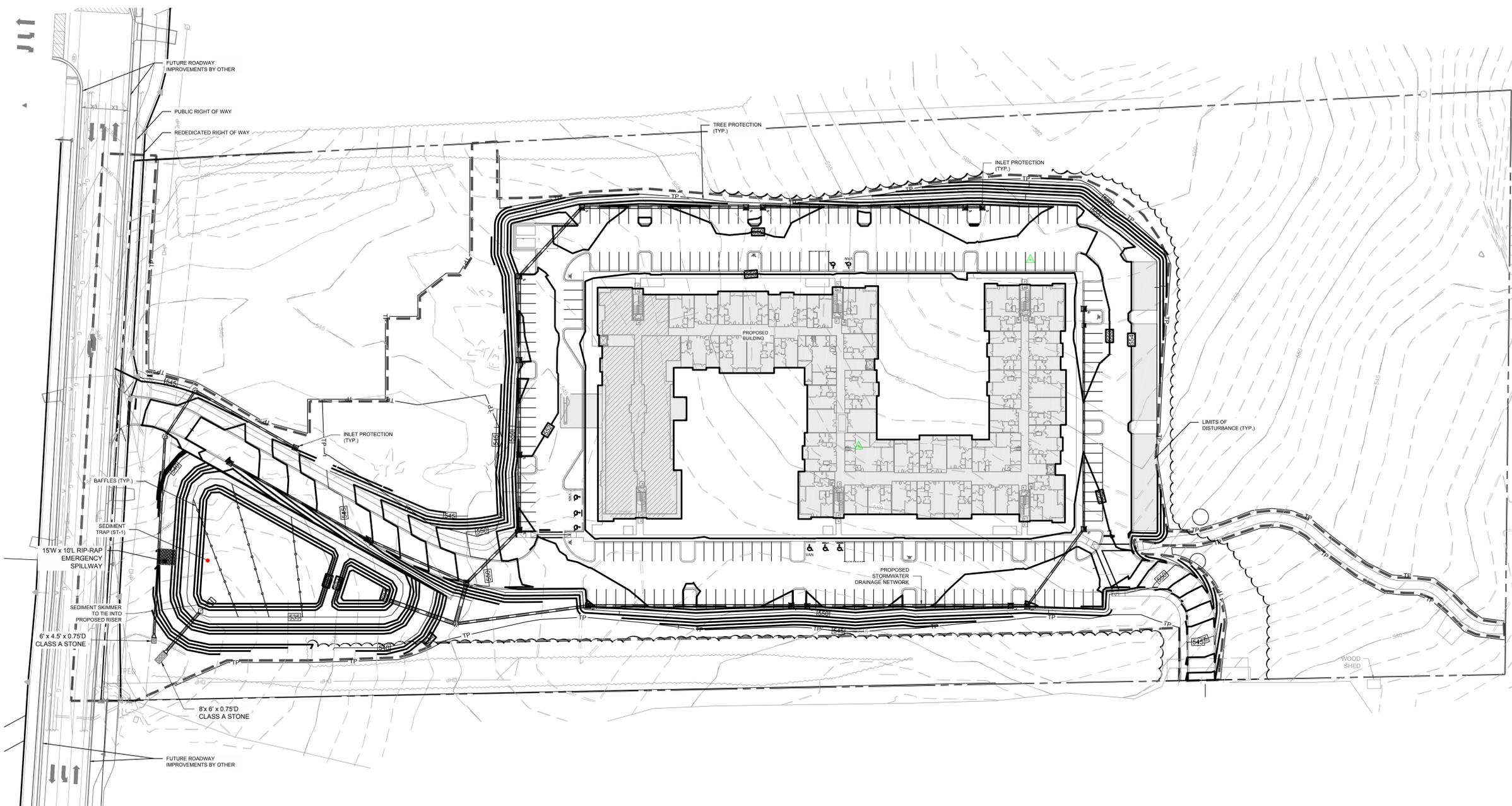
Project number: C17004 Sheet:

Date: 09.27.2017

Drawn by: RS/DCB

Approved by: ACP

C4.03

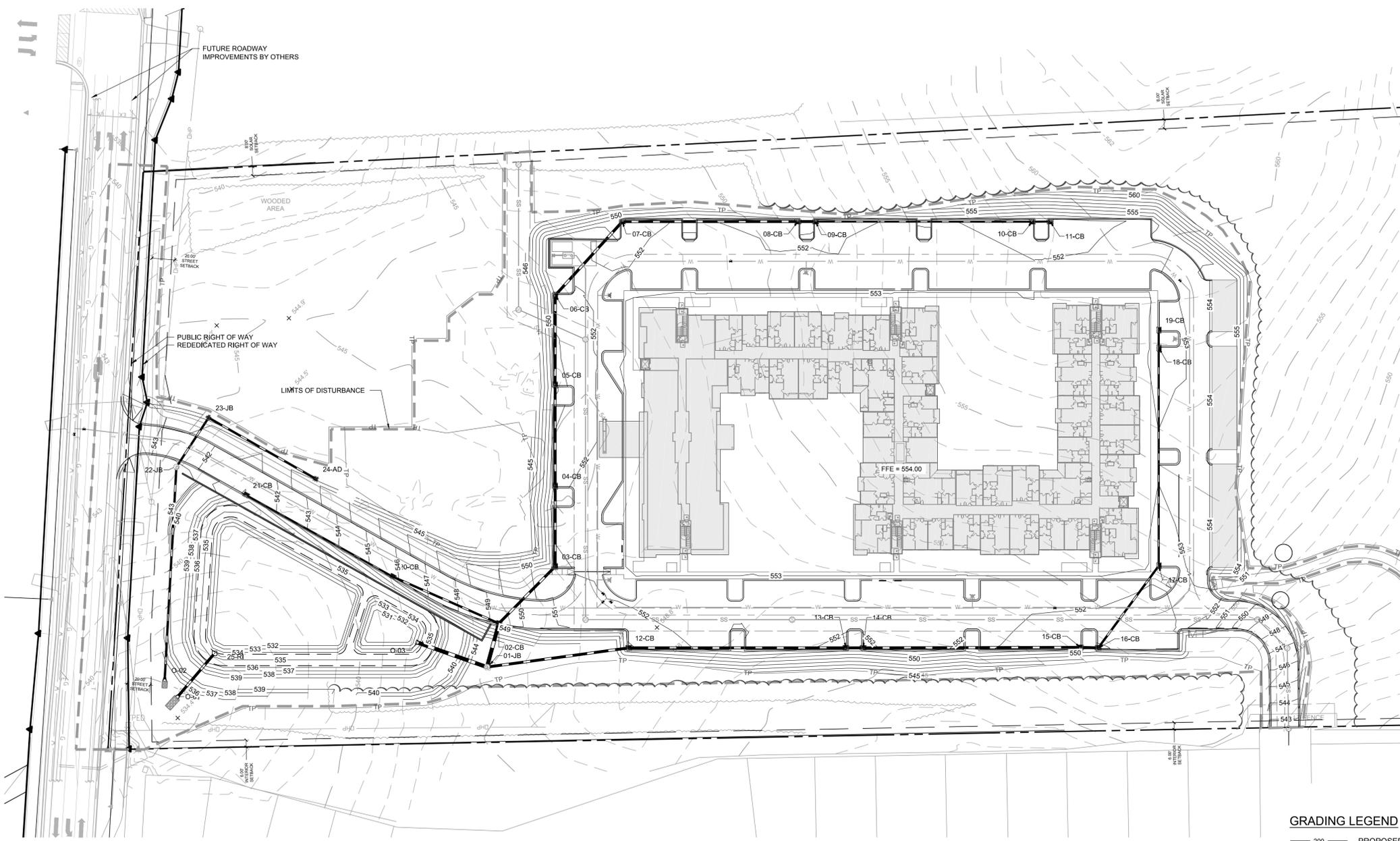


EROSION CONTROL LEGEND

- SILT FENCE
- TREE PROTECTION
- DIVERSION DITCH
- LIMITS OF DISTURBANCE
- BLOCK & GRAVEL INLET PROTECTION
- SILT FENCE AND WIRE INLET PROTECTION
- HORSE SHOE INLET PROTECTION
- SILT FENCE OUTLET
- CHECK DAM
- FLARED END SECTION (FES)
- SEDIMENT TRAP
- RIPRAP DISSIPATER
- TEMPORARY CONSTRUCTION ENTRANCE
- 100 YR FLOOD ELEV.

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH NORTH CAROLINA EROSION CONTROL SPECIFICATIONS

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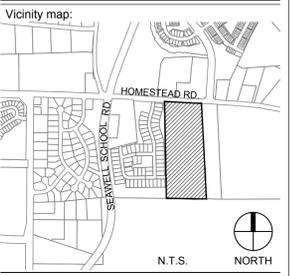


- GRADING & STORM DRAINAGE NOTES:**
- REFER TO SHEET C3.00 FOR GENERAL NOTES.
 - CONTRACTOR SHALL REPORT ANY GRADE DISCREPANCIES TO THE OWNER'S REPRESENTATIVE PRIOR TO BEGINNING CONSTRUCTION OPERATIONS.
 - THE MAXIMUM SLOPE ALONG ANY HANDICAP ACCESSIBLE PATHWAY SHALL NOT EXCEED 5.0% AND SHALL NOT EXCEED 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.
 - ALL PROPOSED ELEVATIONS SHOWN ARE EDGE OF PAVEMENT ELEVATIONS UNLESS OTHERWISE SPECIFIED.
 - 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.
 - 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.
 - REFER TO THE EROSION CONTROL DETAILS SHEET FOR THE SEQUENCE OF CONSTRUCTION
 - 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.
 - INTERIM GRADING SHALL BE PROVIDED TO DIRECT WATER AWAY FROM BUILDINGS AND PREVENT PONDING.
 - 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.
 - MAXIMUM SLOPE ACROSS ANY HANDICAPPED PARKING SPACE AND AISLE SHALL NOT EXCEED 2% IN ANY DIRECTION.
 - PROPOSED CONTOURS ARE APPROXIMATE. SPOT ELEVATIONS AND ROADWAY PROFILES SHALL BE USED IN CASE OF DISCREPANCY.
 - 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.
 - 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.
 - CONTRACTOR SHALL ADJUST RIM ELEVATIONS OF EXISTING MANHOLES, METERS, VALVES, ETC. AS REQUIRED TO MEET NEW FINISHED GRADES.
 - CONTRACTOR SHALL SLOPE GRADES TO ASSURE POSITIVE STORMWATER FLOW TO KEEP WATER FROM POOLING ALONG CURBS AND WALLS.
 - TOP OF WALL ELEVATIONS INDICATE THE ELEVATION AT THE TOP OF THE CAP, UNLESS OTHERWISE NOTED.
 - BOTTOM OF WALL ELEVATIONS INDICATE THE ELEVATION OF THE FINISHED GRADE.



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

Project:
INDEPENDENT SENIOR HOUSING CHAPEL HILL



IMPERVIOUS LEGEND

- EXISTING BUILDING IMPERVIOUS = 6,098 SF
- EXISTING SIDEWALK IMPERVIOUS = 7,045 SF
- EXISTING PARKING / DRIVEWAY IMPERVIOUS = 436 SF
- EXISTING WOODED AREA TO REMAIN UNDISTURBED DRAINAGE AREA

GRADING LEGEND

- 200 PROPOSED MAJOR CONTOUR
- 200 PROPOSED MINOR CONTOUR
- 200 EXISTING MAJOR CONTOUR
- 200 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

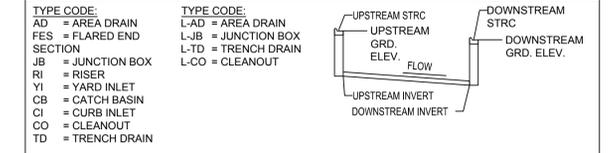
EXISTING IMPERVIOUS

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



- 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 = 537.86 INV OUT = 537.56	05-SP, 24" RCP INV IN = 537.86	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 IN = 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

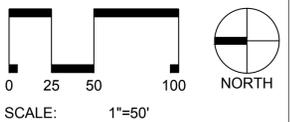
STRUCTURE NAME:	DETAILS:	PIPES IN:	PIPES OUT:
15-CB	RIM = 551.08 INV IN = 544.08 INV OUT = 543.72	16-SP, 24" RCP INV IN = 544.08	15-SP, 24" RCP INV OUT = 543.72
16-CB	RIM = 550.88 INV IN = 544.08 INV OUT = 543.97	17-SP, 18" RCP INV IN = 544.08	16-SP, 24" RCP INV OUT = 543.97
17-CB	RIM = 552.12 INV IN = 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 IN = 547.22	N/A	19-SP, 15" RCP INV OUT = 547.22
20-CB	RIM = 552.12 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 IN = 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 IN = 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	537.86	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

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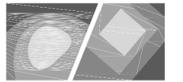
No. Date Description



Title:

GRADING PLAN

Project number: C17004 Sheet:
Date: 09.27.2017
Drawn by: DCB/RS
Approved by: ACP **C5.00**



STEWART

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

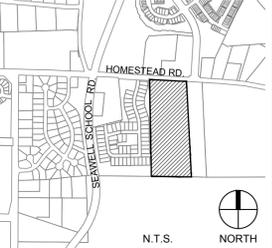
Client:

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

Project:

INDEPENDENT SENIOR HOUSING CHAPEL HILL

Vicinity map:



Seal:

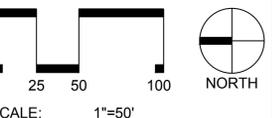


PRELIMINARY - DO NOT USE FOR CONSTRUCTION

Issued for:

SUP SUBMITTAL

No.	Date	Description



Title:

UTILITIES PLAN

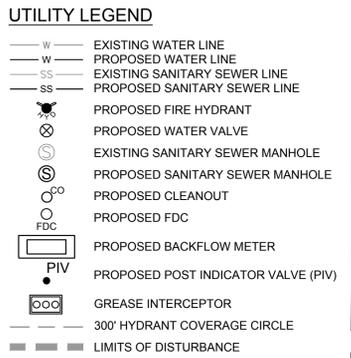
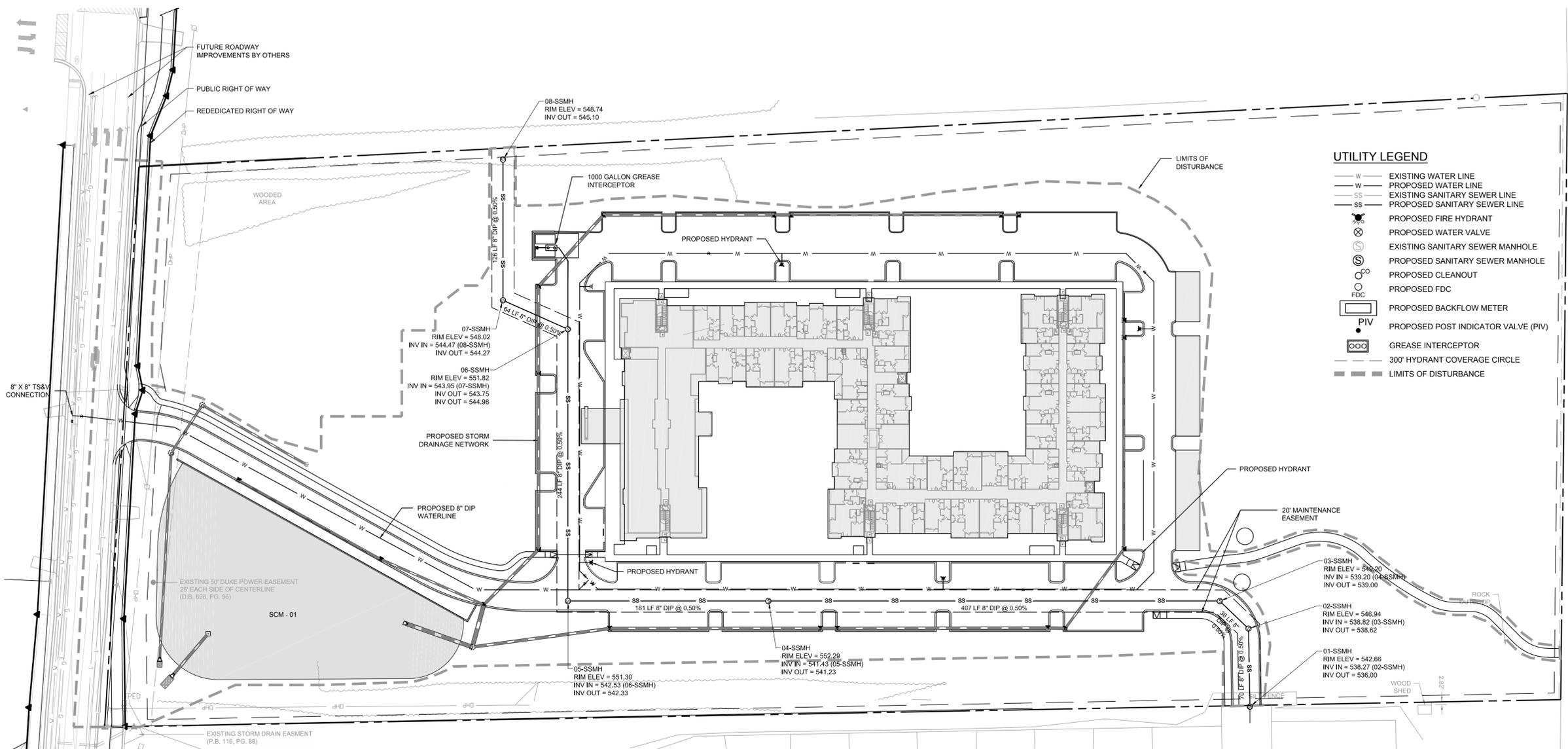
Project number: C17004 Sheet:

Date: 09.27.2017

Drawn by: DCB/RS

Approved by: ACP

C6.00



- UTILITY NOTES:**
- REFER TO SHEET C3.00 FOR GENERAL NOTES.
 - UNLESS OTHERWISE NOTED, ALL MANHOLES SHALL BE PRE-CAST CONCRETE STRUCTURES.
 - 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.
 - THE CONTRACTOR SHALL COORDINATE WITH OTHER CONTRACTORS ON SITE AND UTILITY PROVIDERS DURING CONSTRUCTION TO ENSURE SMOOTH TRANSITION BETWEEN DISCIPLINES.
 - THE CONTRACTOR SHALL COORDINATE ALL PEDESTRIAN AND VEHICULAR INTERRUPTIONS WITH OWNER'S REPRESENTATIVE AT LEAST 72 HOURS PRIOR TO BEGINNING WORK.
 - 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.
 - 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.
 - 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.

- 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.
- UNDERGROUND UTILITIES SHOWN ON THIS PLAN SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION OF PARKING AREA, DRIVES, CURBS 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.
- 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:**
- 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.
 - ALL WATERLINES SHALL HAVE A MINIMUM OF 3.5 FEET OF COVER.
 - TESTING NOTES:
PRESSURE: LEAKAGE SHALL NOT EXCEED THE MAXIMUM ALLOWABLE LEAKAGE SPECIFIED IN AWWA C 900. 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.
 - 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.
 - PAINT VALVE COVERS, FIRE HYDRANTS AND OTHER WATER APPARATUS TO MEET THE LOCAL JURISDICTIONAL REQUIREMENTS.

- PROPOSED UTILITY SEPARATION:**
- 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 OF THE SEWER.
 - 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.
 - 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:**
- 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:**
- 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
 - 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:**
- SANITARY SEWER CLEANOUTS LOCATED IN PAVEMENT AREAS SHALL BE HEAVY DUTY TRAFFIC BEARING CASTINGS.
 - UNLESS OTHERWISE NOTED, ALL SANITARY SEWER MANHOLES ARE 4' DIA.
 - 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.
 - MINIMUM REQUIRED SLOPES FOR SEWER SERVICES:
4" SEWER SERVICE - 2.00% SLOPE
6" SEWER SERVICE - 1.00% SLOPE
8" SEWER SERVICE - 0.50% SLOPE
 - UNLESS OTHERWISE NOTED, LOCATE SANITARY SERVICE CLEANOUTS AT ALL HORIZONTAL OR VERTICAL CHANGES IN DIRECTION. MAXIMUM SPACING BETWEEN CLEANOUTS SHALL BE 75 FEET.
 - 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
 - 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.
 - ALL MANHOLES COVERS SHALL BE PAINTED TO LOCAL JURISDICTIONAL REQUIREMENTS.

- FIRE SERVICE FEATURES NOTES:**
- 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
 - 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 KEYS, 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
 - 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

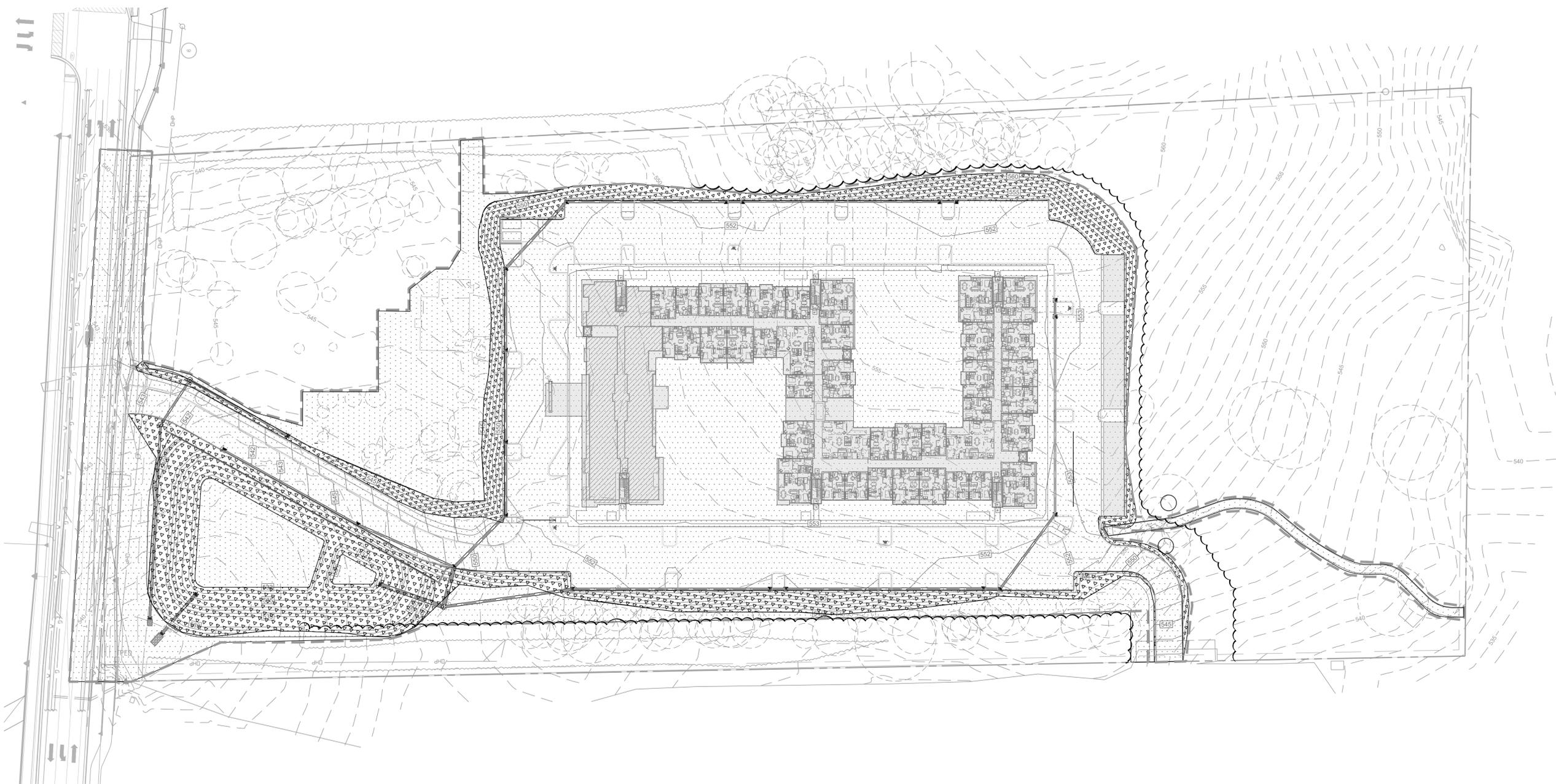
- FIRE PROTECTION NOTES:**
- FIRE DEPARTMENT CONNECTIONS, INSTALLATION: A WORKING SPACE OF NOT LESS THAN 36" IN WIDTH AND DEPTH AND A WORKING SPACE OF 78" IN HEIGHT SHALL BE PROVIDED ON ALL SIDES WITH THE EXCEPTION OF WALL MOUNTED FDC'S UNLESS OTHERWISE APPROVED BY THE FIRE CODE OFFICIAL. THE FDC'S WHERE 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
 - 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.
 - SPRINKLERS: ANY BUILDING WITH MORE THAN 6000 SF OF FLOOR SPACE IS REQUIRED TO HAVE A SPRINKLER SYSTEM. TOWN ORDINANCE 7-56.
 - 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
 - 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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ID #	CODE	Common Name	Scientific Name	DBH	Rare or Spec	Multistem Number
1	LIST	Sw eetlum	Liquidambar styraciflua	15	Specimen	
2	JUVI	Eastern Red Cedar	Juniperus virginiana	15	Rare	
3	FRSE	Black Cherry	Prunus serrata	16	Specimen	
4	LIST	Sw eetlum	Liquidambar styraciflua	16	Specimen	
5	RTA	Lobloly Phe	Pinus taeda	19	Specimen	
6	COFL	Dogwood	Cornus florida	9	Specimen	
7	LIST	Sw eetlum	Liquidambar styraciflua	12	Specimen	
8	JUVI	Eastern Red Cedar	Juniperus virginiana	13	Rare	
9	LIST	Sw eetlum	Liquidambar styraciflua	17	Specimen	
10	FRSE	Black Cherry	Prunus serrata	9	NA	
11	JUVI	Eastern Red Cedar	Juniperus virginiana	17	Rare	
12	LIST	Sw eetlum	Liquidambar styraciflua	12	Specimen	
13	RTA	Lobloly Phe	Pinus taeda	18	Specimen	
14	LITU	Tulp 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	Tulp Poplar	Liriodendron tulipifera	15	Specimen	
21	COFL	Dogwood	Cornus florida	6	Specimen	
22	COFL	Dogwood	Cornus florida	7	Specimen	
23	LITU	Tulp 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	Sw eetlum	Liquidambar styraciflua	18	Specimen	
28	RTA	Lobloly Phe	Pinus taeda	18	Specimen	
29	LITU	Tulp Poplar	Liriodendron tulipifera	15	Specimen	
30	LITU	Tulp Poplar	Liriodendron tulipifera	24	Specimen	
31	LITU	Tulp Poplar	Liriodendron tulipifera	22	Specimen	
32	RTA	Lobloly Phe	Pinus taeda	22	Specimen	
33	LITU	Tulp Poplar	Liriodendron tulipifera	20	Specimen	
34	RTA	Lobloly Phe	Pinus taeda	24	Specimen	
35	LIST	Sw eetlum	Liquidambar styraciflua	14	Specimen	
36	RTA	Lobloly Phe	Pinus taeda	24	Specimen	
37	RTA	Lobloly Phe	Pinus taeda	20	Specimen	
38	LIST	Sw eetlum	Liquidambar styraciflua	13	Specimen	
39	LIST	Sw eetlum	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	BBN	River Birch	Betula nigra	19	Specimen	
44	CRAT	Hawthorn	Crataegus species	8	Specimen	
45	LITU	Tulp Poplar	Liriodendron tulipifera	19	Specimen	
46	BBN	River Birch	Betula nigra	19	Specimen	
47	BBN	River Birch	Betula nigra	21	Specimen	
48	COFL	Dogwood	Cornus florida	9	Specimen	
49	MORR	Mulberry	Morus sp	20	NA	
50	PYCA	Callery Pear	Pyrus calleryana	9	NA	
51	CECA	Eastern Redbud	Cercis canadensis	16	Rare	
52	LITU	Tulp Poplar	Liriodendron tulipifera	19	Specimen	
53	LITU	Tulp Poplar	Liriodendron tulipifera	17	Specimen	
54	JUNI	Black Walnut	Juglans nigra	23	Specimen	
55	LITU	Tulp 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	Tulp Poplar	Liriodendron tulipifera	18	Specimen	
61	LITU	Tulp 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	Tulp Poplar	Liriodendron tulipifera	18	Specimen	
66	LITU	Tulp Poplar	Liriodendron tulipifera	25	Rare	
67	LIST	Sw eetlum	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	Tulp Poplar	Liriodendron tulipifera	21	Specimen	
74	LITU	Tulp Poplar	Liriodendron tulipifera	20	Specimen	
75	LITU	Tulp Poplar	Liriodendron tulipifera	27	Rare	
76	LITU	Tulp Poplar	Liriodendron tulipifera	30	Rare	
77	LITU	Tulp Poplar	Liriodendron tulipifera	15	Specimen	
78	LITU	Tulp Poplar	Liriodendron tulipifera	19	Specimen	
79	FRSE	Black Cherry	Prunus serrata	19	Specimen	
80	DVI	Persimmon	Diospyros virginiana	10	Specimen	
81	CALC	Pecan	Carya illinoensis	19	Specimen	
82	LIST	Sw eetlum	Liquidambar styraciflua	12	Specimen	
83	LIST	Sw eetlum	Liquidambar styraciflua	24	Rare	
84	CALC	Pecan	Carya illinoensis	12	Specimen	
85	CALC	Pecan	Carya illinoensis	13	Specimen	
86	LITU	Tulp Poplar	Liriodendron tulipifera	21	Specimen	
87	LITU	Tulp Poplar	Liriodendron tulipifera	12	Specimen	
88	LIST	Sw eetlum	Liquidambar styraciflua	21	Specimen	
89	QUAL	White Oak	Quercus alba	15	Specimen	
90	QUAL	White Oak	Quercus alba	26	Rare	
91	LIST	Sw eetlum	Liquidambar styraciflua	19	Specimen	
92	LIST	Sw eetlum	Liquidambar styraciflua	28	Rare	
93	QUAL	White Oak	Quercus alba	25	Rare	
94	LIST	Sw eetlum	Liquidambar styraciflua	16	Specimen	
95	QUVE	Black Oak	Quercus velutina	12	Specimen	
96	LIST	Sw eetlum	Liquidambar styraciflua	16	Specimen	
97	QUAL	White Oak	Quercus alba	16	Specimen	
98	FRSE	Black Cherry	Prunus serrata	8	NA	
99	FRSE	Black Cherry	Prunus serrata	6	NA	
100	LIST	Sw eetlum	Liquidambar styraciflua	25	Rare	
101	LIST	Sw eetlum	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	QUAM	Blackjack Oak	Quercus marilandica	23	Specimen	
108	QUAL	White Oak	Quercus alba	17	Specimen	
109	RTA	Lobloly Phe	Pinus taeda	19	Specimen	
110	RTA	Lobloly Phe	Pinus taeda	22	Specimen	
111	QUAL	White Oak	Quercus alba	26	Rare	
112	LIST	Sw eetlum	Liquidambar styraciflua	17	Specimen	
113	QUAL	White Oak	Quercus alba	31	Rare	
114	LITU	Tulp Poplar	Liriodendron tulipifera	22	Specimen	
115	QUAL	White Oak	Quercus alba	17	Specimen	
116	QUAL	White Oak	Quercus alba	16	Specimen	
117	LIST	Sw eetlum	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	Tulp 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	

ID #	CODE	Common Name	Scientific Name	DBH	Rare or Spec	Multistem Number
126	LIST	Sw eetlum	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	Sw eetlum	Liquidambar styraciflua	15	Specimen	
133	LIST	Sw eetlum	Liquidambar styraciflua	21	Specimen	
134	LITU	Tulp Poplar	Liriodendron tulipifera	19	Specimen	
135	LITU	Tulp Poplar	Liriodendron tulipifera	39	Rare	
136	LIST	Sw eetlum	Liquidambar styraciflua	13	Specimen	
137	QUAM	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	Sw eetlum	Liquidambar styraciflua	15	Specimen	
146	LIST	Sw eetlum	Liquidambar styraciflua	27	Rare	
147	QUAL	White Oak	Quercus alba	19	Specimen	
148	QUAL	White Oak	Quercus alba	23	Specimen	
149	QUAL	White Oak	Quercus alba	18	Specimen	
150	QUAL	White Oak	Quercus alba	18	Specimen	
151	LIST	Sw eetlum	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	Sw eetlum	Liquidambar styraciflua	12	Specimen	
156	CAGL	Pignut Hickory	Carya glabra	16	Specimen	
157	CAGL	Pignut Hickory	Carya glabra	12	Specimen	
158	LIST	Sw eetlum	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	Sw eetlum	Liquidambar styraciflua	15	Specimen	
167	LITU	Tulp Poplar	Liriodendron tulipifera	17	Specimen	
168	QUAL	White Oak	Quercus alba	13	Specimen	
169	LITU	Tulp Poplar	Liriodendron tulipifera	19	Specimen	
170	QUAL	White Oak	Quercus alba	18	Specimen	
171	LITU	Tulp Poplar	Liriodendron tulipifera	15	Specimen	
172	QUAL	White Oak	Quercus alba	22	Specimen	
173	LITU	Tulp Poplar	Liriodendron tulipifera	14	Specimen	
174	FRAX	Ash	Fraxinus species	17	Specimen	
175	LITU	Tulp Poplar	Liriodendron tulipifera	18	Specimen	
176	QUAL	White Oak	Quercus alba	18	Specimen	
177	QUAL	White Oak	Quercus alba	18	Specimen	
178	LITU	Tulp Poplar	Liriodendron tulipifera	17	Specimen	
179	QUAL	White Oak	Quercus alba	15	Specimen	
180	LITU	Tulp Poplar	Liriodendron tulipifera	14	Specimen	
181	LIST	Sw eetlum	Liquidambar styraciflua	22	Specimen	
182	LIST	Sw eetlum	Liquidambar styraciflua	12	Specimen	
183	LITU	Tulp Poplar	Liriodendron tulipifera	30	Rare	
184	LITU	Tulp Poplar	Liriodendron tulipifera	23	Specimen	
185	LITU	Tulp 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	QUAM	Blackjack Oak	Quercus marilandica	20	Specimen	
191	LITU	Tulp Poplar	Liriodendron tulipifera	18	Specimen	
192	LITU	Tulp Poplar	Liriodendron tulipifera	17	Specimen	
193	LITU	Tulp 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	Tulp Poplar	Liriodendron tulipifera	28	Rare	
201	CARYA	Hickory	Carya species	20	Specimen	
202	CATO	Mockernut Hickory	Carya tomentosa	18	Specimen	
203	LITU	Tulp Poplar	Liriodendron tulipifera	37	Rare	
204	CARYA	Hickory	Carya species	15	Specimen	
205	QUAL	White Oak	Quercus alba	21	Specimen	
206	LITU	Tulp Poplar	Liriodendron tulipifera	27	Rare	
207	LITU	Tulp Poplar	Liriodendron tulipifera	26	Rare	
208	LITU	Tulp Poplar	Liriodendron tulipifera	20	Specimen	
209	QUAL	White Oak	Quercus alba	21	Specimen	
210	LITU	Tulp Poplar	Liriodendron tulipifera	39	Rare	
211	LITU	Tulp Poplar	Liriodendron tulipifera	21	Specimen	
212	LITU	Tulp Poplar	Liriodendron tulipifera	13	Specimen	
213	LITU	Tulp Poplar	Liriodendron tulipifera	14	Specimen	
214	LITU	Tulp Poplar	Liriodendron tulipifera	13	Specimen	
215	LITU	Tulp Poplar	Liriodendron tulipifera	16	Specimen	
216	QUAL	White Oak	Quercus alba	16	Specimen	
217	LITU	Tulp Poplar	Liriodendron tulipifera	20	Specimen	
218	LITU	Tulp Poplar	Liriodendron tulipifera	21	Specimen	
219	LITU	Tulp Poplar	Liriodendron tulipifera	20	Specimen	
220	LITU	Tulp Poplar	Liriodendron tulipifera	12	Specimen	
221	LITU	Tulp Poplar				

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SLOPE LEGEND

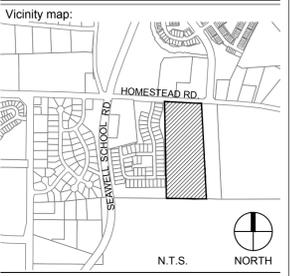
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	10% - 15% SLOPES (0 SQFT)
	15% - 25% SLOPES (0 SQFT)
	25% AND GREATER (61,723 SQFT)



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

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

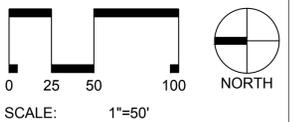
Project:
INDEPENDENT SENIOR HOUSING CHAPEL HILL



PRELIMINARY - DO NOT USE FOR CONSTRUCTION

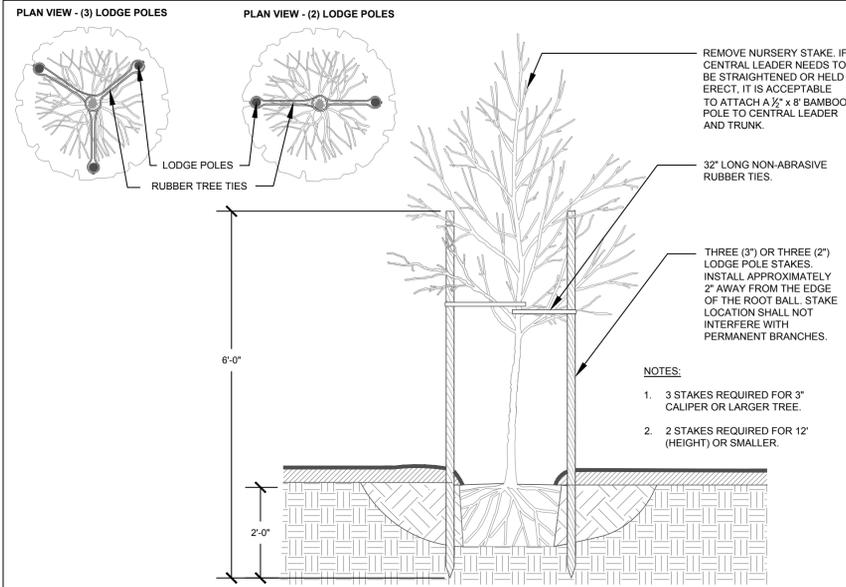
Issued for:
SUP SUBMITTAL

No.	Date	Description

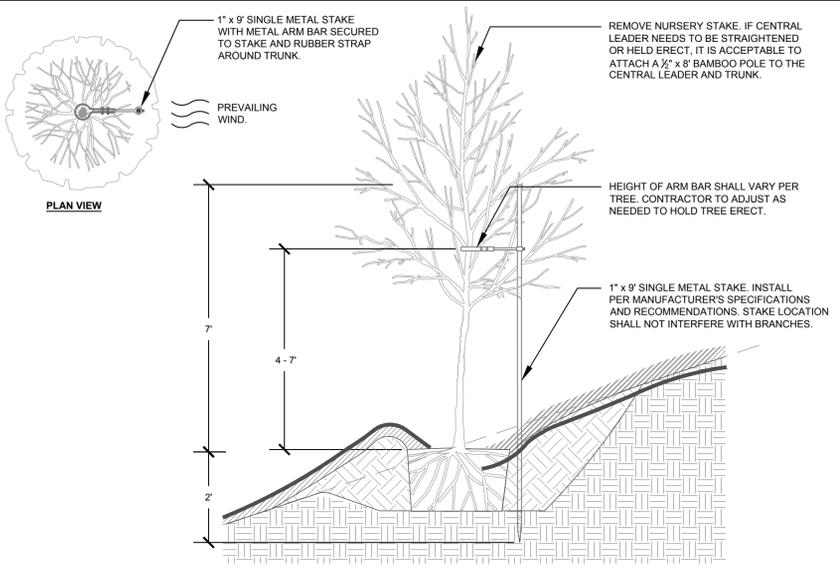


Title:
STEEP SLOPE PLAN

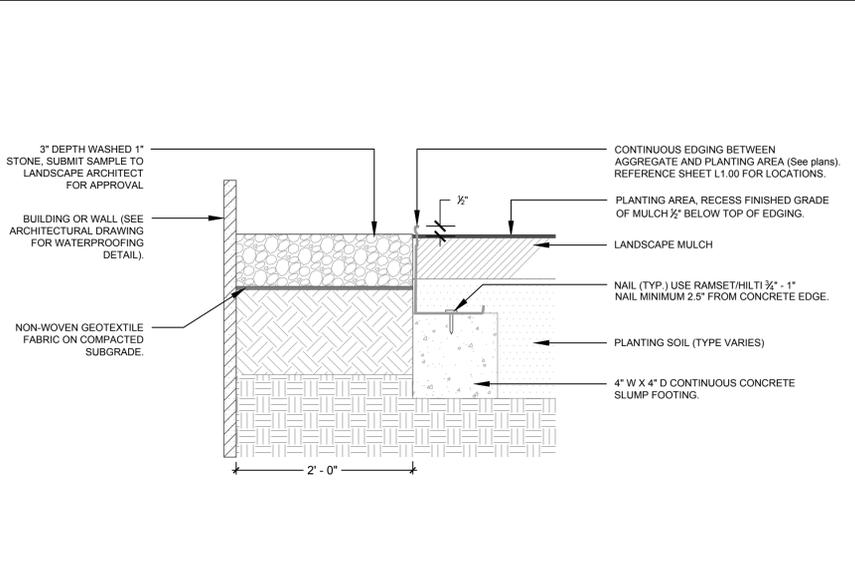
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 Date: 09.27.2017
 Drawn by: DG/RS
 Approved by: CJM **L1.20**



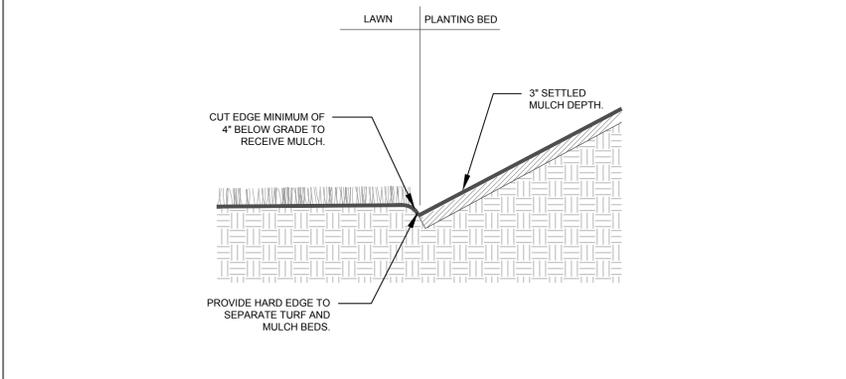
1 TREE STAKING - LODGE POLES SECTION NTS



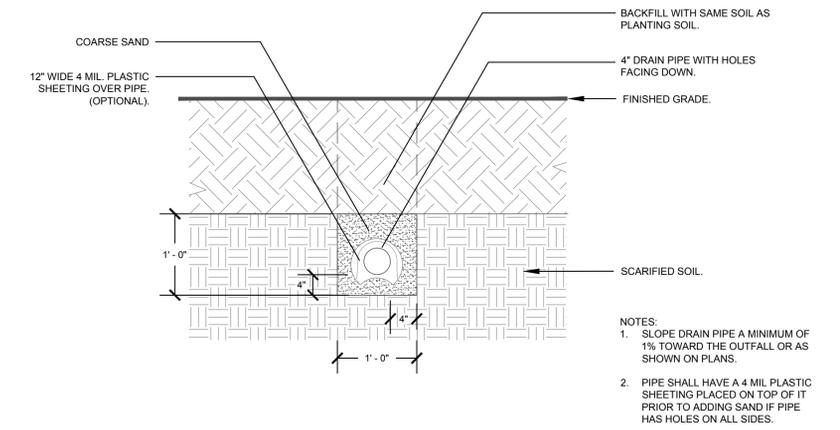
2 TREE STAKING - ON SLOPE SECTION NTS



3 GRAVEL BAND WITH STEEL EDGING SECTION NTS



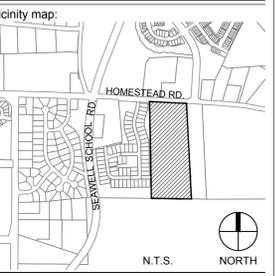
4 LAWN / PLANT BED TRENCH EDGING SECTION NTS



5 PLANTING PIT / BED DRAIN DETAIL SECTION NTS

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

Project:
INDEPENDENT SENIOR HOUSING CHAPEL HILL



Seal:

 PRELIMINARY - DO NOT USE FOR CONSTRUCTION

Issued for:
SUP SUBMITTAL

No.	Date	Description

SCALE: N.T.S.

Title:
LANDSCAPE DETAILS

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