Memo

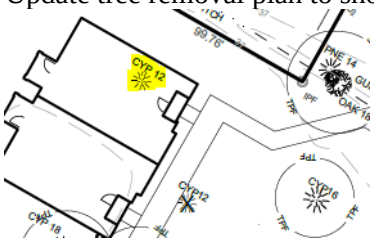
To:	Branch Smith, Paramounte Engineering
From:	Pat O'Mahony, Associate Planner; 910-341-0189
CC:	File;
Date:	10/6/2020
Re:	College Acres Apartments TRC Rev. 1

The following is a list of comments for review from planning regarding the project. Please provide your corrections as listed below. A staff summary of comments:

Staff	Department	Notes
Pat O'Mahony	Planning, Plan Review	Comments Attached
Aaron Reese	Urban Forestry	Comments Attached
Richard Christensen	Engineering	Comments Attached
Chris Walker	Fire	Comments Attached
Mitesh Baxi	Traffic Engineering	Comments Attached
Bill McDow	Transportation	Comments Attached

Pat O'Mahony- Planning – Attached

- Provide an open space diagram showing all areas included in the 35% required open space.
- Update tree removal plan to show 12" cypress being removed



- 14" Pine, 8" Gum, 18" Oak are located in the buffer yard and cannot be counted towards mitigation. Update tree credit calculations.
- Tree Credits: 1357 inches of caliper are shown, update accordingly per the above comment. Tree credit calculations are cumulative (1357 / 6 = 226 tree credits). Update accordingly.
- Add column to plant schedule showing the minimum caliper required (2" – 2.5") for canopy trees. Shrub height should be shown as a minimum of 12".
- Shrubs in buffer shall be provided at a minimum height of three (3) feet at initial planting, update plan schedule accordingly.
- Add a note stating that the buffer vegetation shall be located between the fence and the common property line.
- Show the square footage of each parking island on the landscape plan.
- Note that buildings 3 & 4 are receiving a setback reduction for the retention of protected trees per Sec. 18-457(e).

Aaron Reese – Urban Forestry

- Several trees being retained in the parking islands need additional space (remove some parking spaces), and they need to use a variety of trees instead of 50 live oaks and a few magnolias.

Engineering has reviewed the plans for the College Acres Apartments project submitted September 2, 2020 for TRC review and have the following comments:

Stormwater Management Permit Application Form

1. III. Contact Information; #1: Please provide David Despain's title.
2. III. Contact Information; #1; b: Is this just like the Cottages at College Acres project where ultimately College Acres Development, LLC is to own all the parcels within the project area? If so, just like Cottages, you can complete the application as if the purchase of the parcels has occurred and CAD, LLC is now the property owner/purchaser. The letter s of consent would not be required.
3. IV. Project information:
    a. #8: List the pervious pavement as 20,800/0.
    b. #12: The Total Offsite Newly Constructed Impervious Surface number of 5,740 does not agree with the summation of the impervious pavement (1,100) and the Impervious Sidewalks (4,460).
    c. #13: List the pervious pavement under SCM #1 as 20,800/0.

Supplement

4. Supplement Cover Page needs to be signed and sealed.
5. Drainage Areas information:
    a. #4 Entire Site BUA appears to be incorrect.
    b. Complete #7 for the entire site, the PP and wetland.
    c. Complete #9 for the entire site.
    d. Entire Site values for #10 appear to be incorrect.
    e. #10: Roof value under Perv Pavement is of by 10sf.
    f. #11: Delete 20,800 and relist under #12 for Entire Site and 1.
    g. #15: Entire Site is incorrect.
    h. #16: Add % to Entire Site. Wetland % is incorrect.
    i. #20: Explain what 'other' is for the pervious pavement.
6. Stormwater Wetland:
    a. Verify design volume.
    b. Verify Elevations and Planting Zones. I have made comments in other sections of my review letter regarding the wetland.
    c. Complete #52 – number of plants.
7. Permeable Pavement
    a. Complete #5.
    b. #19: The subgrade does not appear to be at a 0% slope. Please verify. @% is the maximum without baffles or terracing.
    c. #21: Verify the SHWT elevation.
    d. #22: Enter an elevation, not a yes/no.
    e. #26: MDC 7 – no more than 1,000sf may drain to a single point onto the PP.
    f. #31: This is a state requirement as it is part of MDC 13.
    g. #33: Verify 7 in/hr as the correct infiltration rate.
    h. #36: Verify subgrade slope.
    i. #37: '1' is incorrect.
    j. #38/39: Verify drawdown time as drawdown calculation was not provided with submittal.
    k. #42: Clarify what 0.5 is.

Stormwater and Erosion Control Narrative

8. Project Narrative (pg. 3): There appears to be an erroneous sentence in the first paragraph that references Cottages at College Acres and its acreage.
9. Pre-Dev DA Overall (Node OS): The pre-dev flows are not consistent with the routing analysis.
10. DA-1 Pervious Pavement (Node 6P and Post DA 1): Verify type A soils are the only soil type within the DA.
11. DA2-Wetland (Node 8P…):
    a. Verify type A soils in the DA.
    b. Post-Dev: It appears that the flows listed are inflows to the wetland and not outflows.
12. Impervious Tables: The off-site impervious listed under proposed impervious does not match what is listed in line item 12 (IV. Project Information) in the application.
13. Provide drawdown calculations for the permeable pavement.
14. College Acres Apartments (Wetland):
    a. The Elevation of the Permanent Pool Surface appears to be in correct at 34.50'.
    b. Minor discrepancy: Should the Storage Volume Provided be 8,564 instead of 8,654?
    c. Provide calculations showing the wetland also meets the sizing requirements for the non-forebay deep pool (5-15% of the wetland surface area), shallow water zone (35-45% of the wetland SA) and the temporary inundation zone (30-45% of the wetland SA). See Figure 1 of the Stormwater Wetland Chapter in the NCDEQ Design Manual.
15. Routing for CA Apartments:
    a. Dividing the A/D soil types 50/50 in the pre-development summary is not an accurate representation of the site when 4 out of the 5 test locations produce infiltration rates of 0.23 in/hr or less. The site appears to have undrained soils for the greater majority of the site. The test location with the highest infiltration rate is at the far western edge of the project area.
    b. The pre-development area of 218,400 is not consistent with the other calculations.
    c. It doesn't appear that there are only A soils within the pervious areas in the Post DA-1 drainage area.
    d. It does not appear that there should be any 'A' soils in the Post DA-2 drainage area when compared to the test locations results.
    e. Summary for Pond 6P: Provide written justification for the 7 in/hr infiltration rate. The PC appears to be located closer to the I-3 test location where the infiltration rate is only 0.072in/hr. Should the PC footprint be excavated and backfilled with a more suitable media to improve infiltration into the underlying soils?
    f. Summary for Pond 8P: The outlet pipe information doesn't match what's on C-6.3.
    g. Summary for Pond 8P: The inflow area of 153,100 does not appear to be correct. Should be 153,900?
16. 10/50-year HGL calculations:
    a. Verify the c-value of 0.50 for DI 102.
    b. Verify that the Total Flow is being calculated and summed correctly.

19443.PE SW DA

17. DA2 square footages don't equal what it listed in the table in the SW application. The DA on the map is 1,000sf less than what is listed in the application and the narrative.
18. Provide a Pre-development drainage area map to compare/contrast to post-development.

TRC Design Documents

19. C-2.0:
    a. Sidewalk along College Acres Dr. that is located outside of the r/w must be placed in a public pedestrian access easement.

b. The sidewalk along the northern side of the proposed amenity center is mislabeled as having curb and gutter (#1).

20. C-4.0:
    a. The western edge of the property has been left out. Adjust the viewport to see the entire site.
    b. All pipes in the r/w must have flared end sections or parallel end sections.
    c. There appears to be some type of structure in the swale alignment in front of the amenity building.
    d. The EX DI near the intersection of College Acres and Racine is too close to the sidewalk. Move the sidewalk away from the inlet. There should be a 12-inch shoulder between the top of the slope and the sidewalk anytime the sidewalk is close to a swale. This situation appears to occur at the western end of College Acres Drive.
    e. Provide more details for screening roof runoff and the downspout collection systems. I need to understand where the screening will occur and how and where the screened runoff enters the PP. Are the downspouts to tie into the stone base of the PP? What and where are the emitters to be used? Emitters may not be able to be used depending on their location.
    f. Show and label the header curb between the asphalt and PP.
    g. The stormwater wetland does not appear to have the proper zones as outlined in the design manual. A stormwater wetland must have a forebay, non-forebay deep pools, temporary inundation zones and a shallow water zone (See Figure 1 and 2 in the SW section of the design manual). The forebay appears to be too large. There is no non-forebay deep pools or inundation zone shown in your design.
21. C-5.0: Limit the number of structures within the footprint of the pervious concrete. Some of the SSMHs may be able to be moved out of the foot print entirely.
22. C-6.3:
    a. Pervious Concrete Options: Geotextiles are not recommended under the aggregate base in an infiltration design because they can accumulate fines and inhibit infiltration.
    b. Option 2: Why compaction of the subgrade? Compaction will inhibit infiltration on already poor draining soils.
    c. Update the Wetland Shallow and Deep Zones Typ. Section detail to be more inline with the wetland section of the design manual.
23. L-1.0: Specify trees and shrubs to be planted in landscape islands near the PP that won't produce a lot of debris that will eventually clog the PP.

Please call or email if there are any questions. Thank you.

Project Name: **College Acres Apartments**

Formal TRC Date: Oct 8, 2020

Reviewer Name: Chris Walker

Reviewer Department/Division: FIRE

Please address the following:

- A hydrant must be within 150' of the FDC (measured as the truck drives for practical use). The apartment building on the Northeast side of the project does not meet this requirement. My suggestion is to relocate the FDC for that building.

Please add the following Fire & Life Safety Note:

- Additional fire protection and/or accessibility requirements may be required due to any special circumstances concerning the project.

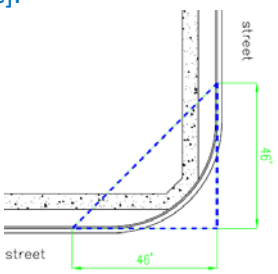
Project Name: ***COLLEGE ACRES APARTMENTS***
Formal TRC Date: ***10.08.2020***
Reviewer Name: ***Mitesh Baxi***
Reviewer Department/Division: ***PDT/Traffic Engineering***

BASE INFORMATION:

- Show the location of speed hump with the pavement markings in front of this development on College Acres Dr.
- Coordinate with Engineering division for any variance to the technical standards.
- Title sheet says Cottage Acres Apartments, but subsequent pages say College Acres Apartments in the title block. And the front elevation rendering the near end says Cottages At College Acres Phase II. Please reconcile the details.

TECHNICAL STANDARDS – ACCESS:

1. A pedestrian crossing warning sign with a diagonal downward pointing arrow plaque at the mid-block crosswalk location may be installed, if required based on Engineering studies. [MUTCD]
2. Show the stopping sight distance for the mid-block crosswalk on College Acres Dr.
3. Show and apply the City's 46'x46' sight distance triangle at each street corner intersection of College Acres Dr and Racine Dr on the site plan and landscaping plan, if any. [Sec.18-529(c) (3) CofW LDC] [Sec. 18-812 CofW LDC].



TECHNICAL STANDARDS – PARKING:

4. Few vehicle spaces are shown as 8.5'x16' on the site plan. Please indicate the proposed small spaces in the site data. Small vehicle parking spaces shall be designated by proper signage alerting drivers to the limitation of space size. [Sec. 18-529(c) (4) (b) CofW LDC]. If these spaces are standard spaces label the curb to be not more than 4" high to allow 2.5' overhang for those parking spaces.
5. The minimum radius is 25' for any portion of a parking lot adjacent to a travel way (i.e. islands at the end of a parking bay) for parking that is open to the public. If the travel way will not be used for emergency service vehicles or truck traffic, you may request a tighter radius, the minimum is 15'. [Chapter VII, Detail SD 15-13 CofWTSSM]. Please contact Engineering division for this request.
6. Please show all the traffic control devices and pavement marking showing the traffic flow for this project.
7. The detectable warning domes for accessible aisles shall be installed at the flush transition before entering drive aisle/pavement surface.

GENERAL NOTES TO ADD TO THE PLAN:

A. Contact 811 prior to contacting City of Wilmington, Traffic Engineering regarding the utilities in ROW.

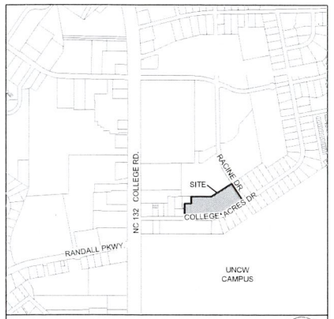
We will reserve further comments until all the standard details are received.

Project Name: **COLLEGE ACRES APARTMENTS**
TRC Date: **10.08.2020**
Reviewer Name: **BILL McDow**
Reviewer Department/Division: **PDT/Transportation Planning**

TECHNICAL STANDARDS:

1. The proposed Trip Generation Numbers show less than 100 estimated trips in the AM Peak Hours and PM peak hours, therefore, site no TIA is required.
2. The proposed 16' parking spaces adjacent to the Protected Trees, (22" Sycamore, Oak 14", Pine 28", etc.) do not have 4" curbing to allow vehicle the 2.5' vehicle overhang. Please revise the curb height or increase the length of the parking spaces to a minimum of 18' length.
3. The minimum radius is 25' for any portion of a parking lot adjacent to a travel way (i.e. islands at the end of a parking bay) for parking that is open to the public. If the travel way will not be used for emergency service vehicles or truck traffic, you may request a tighter radius, the minimum is 15'. This request must be made in writing. [Chapter VII, Detail SD 15-13 CofWTSSM]
4. Provide an Auto Turns movements for Fire Engines, Rescue Vehicles and Trash Trucks within the site.

Please let me know if you have any questions regarding the comments.



VICINITY MAP
SCALE: 1" = 1,000'

NORTH

NOTES:

1.) SITE CONTRACTOR SHALL STRIP TOPSOIL AND ANY UNSUITABLE MATERIAL AND PROVIDE STOCKPILE LOCATIONS ON SITE IF NOT SPECIFIED. SEE GENERAL NOTES SHEET FOR GRADING, DRAINAGE, AND EROSION CONTROL NOTES AND REQUIREMENTS. IN ADDITION, REFERENCE TECHNICAL SPECIFICATIONS AND DETAIL SHEETS FOR MORE INFORMATION.

2.) SEE GRADING AND DRAINAGE PLANS FOR FINISH GRADES AND STORM PIPE SCHEDULE.

3.) A GEOTECHNICAL ENGINEER OR INSPECTORS SHALL BE CONSULTED TO CONFIRM SUITABILITY OF SUBGRADE MATERIAL AND PROPER COMPACTION PER EARTHWORK SPECIFICATIONS IN FILL AREAS.

ASPHALT AREA NOTE:

1.) SITE CONTRACTOR SHALL STRIP TOPSOIL AND ANY UNSUITALBE MATERIAL AND PROVIDE CUT/FILL OPERATIONS TO PROVIDE A COMPACTED CONTROLLED SUBGRADE, IN ACCORDANCE WITH THE SUBSURFACE GEOTECHNICAL EXPLORATION AND TECHNICAL SPECIFICATIONS.

BUILDING PAD NOTE:

1.) SITE CONTRACTOR SHALL STRIP TOPSOIL AND ANY UNSUITALBE MATERIAL AND PROVIDE CUT/FILL OPERATIONS TO PROVIDE A COMPACTED CONTROLLED BUILDING PAD, IN ACCORDANCE WITH THE SUBSURFACE GEOTECHNICAL EXPLORATION AND TECHNICAL SPECIFICATIONS.

AS-BUILT STORMWATER RULE [15A NCAC 02H.1044]:

1.) THE CONTRACTOR WILL EMPLOY A LAND SURVEYOR LICENSED IN THE STATE OF NORTH CAROLINA TO PROVIDE ACCURATE REPRODUCIBLE AS-BUILT DRAWINGS OF THE WET DETENTION BASIN, COLLECTION SYSTEM, AND IMPERVIOUS AREA ON THE SITE TO THE ENGINEER & OWNER UPON COMPLETION OF CONSTRUCTION. UPON CERTIFICATION BY THE ENGINEER AND VERIFICATION FROM THE OWNER ANY DISCREPANCIES WILL BE INDICATED, THEN THESE PLANS SHALL BE RETURNED TO THE CONTRACTOR FOR CORRECTION PRIOR TO FINAL PAYMENT AND FINAL INSPECTION.

STORM SCHEDULE:

Upstream Node	Downstream Node	Upstream Invert	Downstream Invert	Diameter (In)	Pipe Length (ft)	Slope (%)	Upstream Rim Elev
DI 101	FES 100	31.00	30.00	30	32.7	3.060%	37.17
DI 102	DI 101	31.70	31.00	30	147.2	0.480%	36.80
DI 102-1	DI 102	32.07	31.70	24	66.1	0.560%	36.80
DI 102-2	DI 102-1	32.50	32.07	18	109.3	0.390%	36.50
DI 102-3	DI 102-2	33.00	32.50	18	118.6	0.420%	36.50
DI 102-4	DI 102-3	33.50	33.00	18	170.9	0.290%	36.75
DI 103	DI 102	32.50	31.70	24	77.0	1.040%	36.50
CI 104	DI 103	32.95	32.50	24	97.5	0.460%	37.20
DI 105	CI 104	33.25	32.95	18	69.2	0.430%	36.50
DI 106	DI 105	34.15	33.25	18	174.9	0.510%	37.40
YI 107	DI 106	34.65	34.15	15	107.6	0.460%	36.90

ROOF DRAINAGE & COLLECTION NOTES:

1.) SITE CONTRACTOR SHALL COORDINATE WITH GENERAL CONTRACTOR IN PIPING OF DOWNSPOUTS TO CONNECT TO STORM DRAINAGE PIPING OR STORMWATER WETLAND DIRECTLY. UNDERGROUND CONNECTIONS CAN BE MADE WITH BOOTED PLASTIC CONNECTIONS TO HP PIPE OR OTHERWISE PIPED TO STRUCTURES.

DRAINAGE NOTES:

1.) DRAINAGE EASEMENT AND STORMWATER SYSTEM MAINTENANCE IS THE RESPONSIBILITY OF THE DEVELOPER OR HOA, INCLUDING PONDS, PIPES, AND INFILTRATION BASINS AND TRENCHES AS PERMITTED WITH THE STATE AND LOCAL MUNICIPALITY.

2.) ALL IMPERVIOUS MUST DRAIN TO THE DESIGNED STORMWATER SYSTEM UNLESS THE APPROVED PLANS SHOW OTHERWISE.

3.) NO OBSTRUCTIONS ARE ALLOWED IN DRAINAGE EASEMENTS, INCLUDING FENCES.

4.) ALL PUBLIC STORM DRAINAGE STRUCTURES SHALL MEET NCDOT STANDARDS AND SPECIFICATIONS AND SHALL BE TRAFFIC RATED FOR H-20 LOADS AT A MINIMUM. PRIVATE DRAINAGE SYSTEMS SHALL BE PER APPROVED PLANS AND SPECIFICATIONS.

5.) ALL CATCH BASIN (CB) RIM ELEVATIONS ARE LISTED AS THE "GUTTER OF FLOWLINE ELEVATION" WITHIN THE CURB SECTION. THE CONTRACTOR SHALL MAINTAIN A UNIFORM EDGE OF PAVEMENT (EOP) WHEN PLACING THE STORM INLETS WITHIN THE CURB-LINE (SEE "CURB TRANSITION" DETAIL). FOR CATCH BASINS WITHIN A TRANSITION FROM 24" STANDARD CURB & GUTTER, THE RIM ELEVATION GIVEN IS 1 INCH BELOW EOP. FOR MODIFIED VALLEY, THE RIM ELEVATION GIVEN IS 1/2 INCH BELOW EOP.

6.) MANHOLE RIM ELEVATION SHOWN ABOVE IS FLUSH WITH PROPOSED GRADE. CONTRACTOR SHALL PROVIDE 6" CLEARANCE ABOVE PROPOSED GRADE WHEN PLACED IN A GRASS/PERVIOUS AREA, AND A FLUSH CONDITION WITH PROPOSED PAVEMENT OR IMPERVIOUS COVER.

7.) PROPOSED BUILDINGS SHALL DIVERT ROOF DRAINAGE TO STORMWATER COLLECTION SYSTEM. SEE CIVIL OR ARCHITECTURAL DETAILS FOR DOWNSPOUT DETAILS AND CONNECTIONS.

8.) CONTRACTOR SHALL ADJUST ALL FRAMES OF EX. UTILITY INFRASTRUCTURE TO MATCH PROPOSED GRADES.

9.) THE CONTRACTOR SHALL USE STORM PIPE PER THE SPECIFICATIONS (TYPICALLY CONCRETE OR HP PIPE). EITHER WAY THE CONTRACTOR SHALL FOLLOW THE TRENCH DETAILS AND SPECIFICATIONS, AND THE PIPE MANUFACTURER SPECIFICATIONS.

LEGEND

- 20 — PROPOSED CONTOURS
- 20 — EXISTING CONTOURS
- W W W — WATER LINE
- FM FM — FORCEMAIN LINE
- SS SS — SANITARY SEWER LINE
- SANITARY SEWER LATERAL/SERVICE
- STORM DRAIN LINE
- ROOF DRAIN LINE
- 20 — PROPOSED CONTOURS
- PROPOSED SETBACKS
- PROPOSED BUFFERS/EASEMENTS
- PROPOSED POND OUTLINE
- CO — SANITARY SEWER CLEANOUT
- S — SANITARY SEWER MANHOLE
- FIRE HYDRANT ASSEMBLY
- WM BF — WATER METERS/BACKFLOW ENCLOSURES
- VALVES/APPURTENANCES
- TC 20.50 / EP 20.00 — SPOT GRADES
- INLET PROTECTION
- BUILDING HATCH
- CONCRETE PAVEMENT
- SIDEWALK
- ASPHALT PAVEMENT
- RIP-RAP
- VEGETATION BY TYPE

WETLAND HATCH LEGEND

	SHALLOW MARSH ZONE (SM)
	DEEP MARSH ZONE (DM)

CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date _____ Permit # _____
Signed: _____

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

For each open utility cut of City streets, a $325 permit shall be required from the City prior to occupancy and/or project acceptance.

SPOT GRADE LEGEND:

PG = PROPOSED GRADE (GROUND)
(EG) = EXISTING GRADE
EP = EDGE OF PAVEMENT
EC = EDGE OF CONCRETE
TW = TOP OF SIDEWALK
SW = SIDEWALK ELEVATION
BC/TC = TOP OF CURB ELEVATION

RIM = CENTER OF GRATE
CB = CATCH BASIN
DI = DROP INLET
YI = YARD INLET
MH = STORM MANHOLE
CL = CENTERLINE
INV = INVERT
C/O = TOP OF CLEANOUT
DG = CENTER OF DITCH ELEVATION
HW = HEADWALL
FES = FLARED END SECTION

GRAPHIC SCALE
0 15 30 60 120
SCALE: 1"=30'

FOR PERMITTING ONLY - NOT RELEASED FOR CONSTRUCTION

REVISIONS:

CLIENT INFORMATION
COLLEGE ACRES DEVELOPMENT, LLC
5217 MARKET STREET
WILMINGTON, NC 28405

PARAMOUNTE ENGINEERING, P.C.
122 Cinema Drive
Wilmington, North Carolina 28403
(910) 791-6767 (O) (910) 791-6760 (F)
NC License #: C-2846

GRADING & DRAINAGE
PHASE II EROSION CONTROL

COLLEGE ACRES APARTMENTS
COLLEGE ACRES DRIVE
WILMINGTON, NEW HANOVER CO., NC

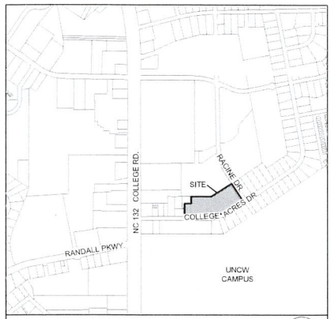
PROJECT STATUS
CONCEPTUAL LAYOUT
PRELIMINARY LAYOUT
PLAN REVIEW
RELEASED FOR CONST

DRAWING INFORMATION
DATE 07.29.19
SCALE 1" = 30'
DESIGNED CDR
DRAWN CDR
CHECKED JBR

SEAL

C-4.0

PEI JOB# 19443.PE



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2.) ALL IMPERVIOUS MUST DRAIN TO THE DESIGNED STORMWATER SYSTEM UNLESS THE APPROVED PLANS SHOW OTHERWISE.

3.) NO OBSTRUCTIONS ARE ALLOWED IN DRAINAGE EASEMENTS, INCLUDING FENCES.

4.) ALL PUBLIC STORM DRAINAGE STRUCTURES SHALL MEET NCDOT STANDARDS AND SPECIFICATIONS AND SHALL BE TRAFFIC RATED FOR H-20 LOADS AT A MINIMUM. PRIVATE DRAINAGE SYSTEMS SHALL BE PER APPROVED PLANS AND SPECIFICATIONS.

5.) ALL CATCH BASIN (CB) RIM ELEVATIONS ARE LISTED AS THE "GUTTER OF FLOWLINE ELEVATION" WITHIN THE CURB SECTION. THE CONTRACTOR SHALL MAINTAIN A UNIFORM EDGE OF PAVEMENT (EOP) WHEN PLACING THE STORM INLETS WITHIN THE CURB-LINE (SEE "CURB TRANSITION" DETAIL). FOR CATCH BASINS WITHIN A TRANSITION FROM 24" STANDARD CURB & GUTTER, THE RIM ELEVATION GIVEN IS 1 INCH BELOW EOP. FOR MODIFIED VALLEY, THE RIM ELEVATION GIVEN IS 1/2 INCH BELOW EOP.

6.) MANHOLE RIM ELEVATION SHOWN ABOVE IS FLUSH WITH PROPOSED GRADE. CONTRACTOR SHALL PROVIDE 6" CLEARANCE ABOVE PROPOSED GRADE WHEN PLACED IN A GRASS/PERVIOUS AREA, AND A FLUSH CONDITION WITH PROPOSED PAVEMENT OR IMPERVIOUS COVER.

7.) PROPOSED BUILDINGS SHALL DIVERT ROOF DRAINAGE TO STORMWATER COLLECTION SYSTEM. SEE CIVIL OR ARCHITECTURAL DETAILS FOR DOWNSPOUT DETAILS AND CONNECTIONS.

8.) CONTRACTOR SHALL ADJUST ALL FRAMES OF EX. UTILITY INFRASTRUCTURE TO MATCH PROPOSED GRADES.

9.) THE CONTRACTOR SHALL USE STORM PIPE PER THE SPECIFICATIONS (TYPICALLY CONCRETE OR HP PIPE). EITHER WAY THE CONTRACTOR SHALL FOLLOW THE TRENCH DETAILS AND SPECIFICATIONS, AND THE PIPE MANUFACTURER SPECIFICATIONS.

LEGEND

- 20 — PROPOSED CONTOURS
- EXISTING CONTOURS
- W — W — W — WATER LINE
- FM — FM — FORCEMAIN LINE
- SS — SS — SANITARY SEWER LINE
- SANITARY SEWER LATERAL/SERVICE
- STORM DRAIN LINE
- ROOF DRAIN LINE
- 20 — PROPOSED CONTOURS
- PROPOSED SETBACKS
- PROPOSED BUFFERS/EASEMENTS
- PROPOSED POND OUTLINE
- CO — SANITARY SEWER CLEANOUT
- S — SANITARY SEWER MANHOLE
- FIRE HYDRANT ASSEMBLY
- WATER METERS/BACKFLOW ENCLOSURES
- VALVES/APPURTENANCES
- TC 20.50 / EP 20.00 — SPOT GRADES
- INLET PROTECTION
- BUILDING HATCH
- CONCRETE PAVEMENT
- SIDEWALK
- ASPHALT PAVEMENT
- RIP-RAP
- VEGETATION BY TYPE

WETLAND HATCH LEGEND

	SHALLOW MARSH ZONE (SM)
	DEEP MARSH ZONE (DM)

SPOT GRADE LEGEND

PG = PROPOSED GRADE (GROUND)
(EG) = EXISTING GRADE
EP = EDGE OF PAVEMENT
EC = EDGE OF CONCRETE
TW = TOP OF SIDEWALK
SW = SIDEWALK ELEVATION
BC/TC = TOP OF CURB ELEVATION

RIM = CENTER OF GRATE
CB = CATCH BASIN
DI = DROP INLET
YI = YARD INLET
MH = STORM MANHOLE
CL = CENTERLINE
INV = INVERT
C/O = TOP OF CLEANOUT
DG = CENTER OF DITCH ELEVATION
HW = HEADWALL
FES = FLARED END SECTION

GRAPHIC SCALE
0 15 30 60 120
SCALE: 1"=30'

CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date _____ Permit # _____
Signed: _____

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

For each open utility cut of City streets, a $325 permit shall be required from the City prior to occupancy and/or project acceptance.

FOR PERMITTING ONLY - NOT RELEASED FOR CONSTRUCTION

REVISIONS:

CLIENT INFORMATION
COLLEGE ACRES DEVELOPMENT, LLC
5217 MARKET STREET
WILMINGTON, NC 28405

PARAMOUNTE ENGINEERING, PLLC
122 Cinema Drive
Wilmington, North Carolina 28403
(910) 791-6707 (O) (910) 791-6760 (F)
NC License #: C-2846

GRADING & DRAINAGE
PHASE II EROSION CONTROL

COLLEGE ACRES APARTMENTS
COLLEGE ACRES DRIVE
WILMINGTON, NEW HANOVER CO., NC

PROJECT STATUS
CONCEPTUAL LAYOUT
PRELIMINARY LAYOUT
PLANS FOR PERMIT
RELEASED FOR CONST

DRAWING INFORMATION

DATE	07.29.19
SCALE	1" = 30'
DESIGNED	CDR
DRAWN	CDR
CHECKED	JRK

SEAL

C-4.0

PEI JOB# 19443.PE