CONDITIONAL ZONING APPLICATION

supplied with this application and accurate.

Signature:



TOWN OF CHAPEL HILL Planning Department

405 Martin Luther King Jr. Blvd. Chapel Hill, NC 27514

040 fax (919) 969-2014

phone (919) 969-5040

www.townofchapelhill.org

Date: 8 Apr 2020 Parcel Identifier Number (PIN): 9778-37-4748, 9778-37-6817 Section A: Project Information Project Name: Rosemary Street Parking Deck 27514 **Property Address:** 125 E Rosemary St Zip Code: Use Groups (A, B, and/or C): C Existing Zoning District: TC-2 Demolition of 276 space existing parking deck and construction of a 1,000 to 1,100 space deck Project Description: Section B: Applicant, Owner, and/or Contract Purchaser Information **Applicant Information** (to whom correspondence will be mailed): Name: Ballentine Associates, attn: George Retschle 221 Providence Road Address: City: Chapel Hill State: NC Zip Code: 27514 Phone: (919) 929-0481 Email: georger@bapa.eng.pro The undersigned applicant hereby certifies that, to the best of their knowledge and belief, all information supplied with this application and accurate. Signature: Date: 8 Apr 2020 **Owner/Contract Purchaser Information:** Contract Purchaser ○ Owner Name: Grubb Management, LLC c/o Grubb Properties, LLC Address: 113 Edinburgh South Drive Suite 120 NC City: Cary State: Zip Code: 27511 Phone: (919) 388-5774 Email: JDye@grubbproperties.com The undersigned applicant hereby certifies that, to the best of their knowledge and belief, all information

Click here for application submittal instructions.

Date: 8 Apr 2020

TOWN OX

CONDITIONAL ZONING

TOWN OF CHAPEL HILL Planning and Development Service

Conditional Rezoning applications are reviewed by staff, Planning Commission, and Town Council. The application is part of an open public process that enables Town Council to discuss and decide on the key issues of a rezoning proposal. If a rezoning is approved, the applicant may then submit a detailed final plan application to staff for compliance review with the technical development standards and with the Council rezoning approval.

The establishment of a Conditional Zoning District shall be consistent with the Land Use Plan in the Comprehensive Plan. A proposed Conditional Zoning District is deemed consistent if the proposed District will be located in conformance with an adopted small area plan and/or in one of the following Land Use Categories:

- Medium Residential
- High Residential
- Commercial
- Mixed Use, Office/Commercial Emphasis
- Mixed Use, Office Emphasis
- Town/Village Center
- Institutional
- Office
- University
- Development Opportunity Area
- Light Industrial Opportunity Area

If the proposed conditional zoning districts is located in a Low Residential or a Rural Residential Land Use Category, the Town Council must approve a Land Use Plan amendment prior to proceeding.

SIGNED CONDITIONS: All conditions shall be in writing, prepared by the owner of the property or an attorney and must be signed by all property owners and contract purchasers, if applicable. The Town Attorney may require additional signatures if necessary and will determine whether or not the conditions statement is legally sufficient. Within thirty (30) days after receipt of the conditions the Planning Division Manager will notify the applicant of any deficiencies in the conditions statement or if any additional information is needed. The applicant may make changes to the written conditions statement provided it is submitted at least thirty (30) prior to Planning Commission meeting or thirty (30) days prior to Town Council public hearing.

RECORDATION OF CONDITIONS: After a rezoning has been approved by the Town Council, the conditions statement shall be recorded with the Register of Deeds Office. After a rezoning has been approved by Town Council and recorded by the Register of Deeds Office, the conditions may not be amended except through a new rezoning application.



PROJECT FACT SHEET

TOWN OF CHAPEL HILL

Planning and Development Service

Section A: Project Inform	nation						
Use Type: (check/list all	that apply)						
Office/Institutional	Residential	Mixed-Use	Other:				
Overlay District: (check o	all that apply)						
Historic District	Neighborhoo	d Conservation Distri	ct Airport Haza	rd Zone			
Section B: Land Area							
Net Land Area (NLA): Area within zoning lot boundaries NLA=						73,097	sq. ft.
Choose one, or both, of	Choose one, or both, of a) Credited Street Area (total adjacent frontage) x ½ width of public right-			ublic right-	CSA=	7,310	sq. ft.
the following (a or b), not to exceed 10% of NLA b) Credited Permanent Open Space (total adjacent frontage) x ½ public or dedicated open space				½ public or	COS=		sq. ft.
TOTAL: NLA + CSA and/or COS = Gross Land Area (not to exceed NLA + 10%)						80,407	sq. ft.
Special Protection Areas Jordan Buffer	s: (check all those to Resource Conser	_	100 Year Floodplain	☐ Wate	rshed Pro	otection Dist	rict
Land Disturbance						Total (sq. ft.)	
Area of Land Disturbance (Includes: Footprint of propose		area envelope, staging a	rea for materials, access/	equipment pa	ths, and	77,000	
all grading, including off-site clearing) Area of Land Disturbance within RCD						0	
Area of Land Disturbance within Jordan Buffer						0	
Impervious Areas		Existing (sq. ft.)	Demolition (sq. ft.)	Proposed	(sq. ft.)	Total (s	q. ft.)
Impervious Surface Area (ISA	۸)	66,548	66,548	65,000		65,000	
Impervious Surface Ratio: Pe Surface Area of Gross Land A	rea (ISA/GLA)%	82.76	82.76	80.84 80.84			
If located in Watershed Prote of impervious surface on 7/1							



PROJECT FACT SHEET

TOWN OF CHAPEL HILL

Planning and Development Service

Section D: Dimensions

Dimensional Unit (sq. ft.)	Existing (sq. ft.)	Demolition (sq. ft.)	Proposed (sq. ft.)	Total (sq. ft.)
Number of Buildings	1 +/- 200 sf enclosed	all	1,415 enclosed	1,415
Number of Floors	3	3	6-7	6-7
Recreational Space	n/a	n/a	n/a	n/a

Residential Space					
Dimensional Unit (sq. ft.)	Existing (sq. ft.)	Demolition (sq. ft.)	Proposed (sq. ft.)	Total (sq. ft.)	
Floor Area (all floors – heated and unheated)					
Total Square Footage of All Units					
Total Square Footage of Affordable Units					
Total Residential Density					
Number of Dwelling Units					
Number of Affordable Dwelling Units					
Number of Single Bedroom Units					
Number of Two Bedroom Units					
Number of Three Bedroom Units					

Non-Residential Space (Gross Floor Area in Square Feet)						
Use Type	Existing	Proposed	Uses	Existing	Proposed	
Commercial						
Restaurant			# of Seats			
Government						
Institutional						
Medical						
Office		800				
Hotel			# of Rooms			
Industrial						
Place of Worship			# of Seats			
Other	200	615				

	Dimensional Requirements	Required by Ordinance	Existing	Proposed
Cathaala	Street	0	9.5	8
Setbacks (minimum)	Interior (neighboring property lines)	0	0	0
(Solar (northern property line)	0	10	20
Height	Primary	44	34	73
(maximum)	Secondary	90	40	73
Chuncha	Frontages	12	191/165	356
Streets	Widths	15	191/165	356

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PROJECT FACT SHEET

TOWN OF CHAPEL HILL

Planning and Development Services

Section F: Adjoining or Connecting Streets and Sidewalks

Note: For approval of proposed street names, contact the Engineering Department.

Street Name	Right-of-Way Width	Pavement Width	Number of Lanes	Existing Sidewalk*	Existing Curb/Gutter
Rosemary St	60	39	3		
				Yes	Yes

List Proposed Points of Access (Ex: Number, Street Name):

*If existing sidewalks do not exist and the applicant is adding sidewalks, please provide the following information:

Sidewalk Information				
Street Names	Dimensions	Surface	Handicapped Ramps	
			Yes No N/A	
			Yes No N/A	

Section G: Parking Information

Parking Spaces	Minimum	Maximum	Proposed
Regular Spaces			1,153
Handicap Spaces			26
Total Spaces			1,179
Loading Spaces			
Bicycle Spaces			24
Surface Type	conc parking deck		

Section H: Landscape Buffers

Location (North, South, Street, Etc.)	Minimum Width	Proposed Width	Alternate Buffer	Modify Buffer
North 1	15 & 20	6		☐ Yes
North 2	15	varies		☐ Yes
south, east, west	0	0	Yes	Yes
			Yes	Yes

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PROJECT FACT SHEET TOWN OF CHAPEL HILL Planning and Development Services

Section I: Land Use Intensity

Existing Zoning District: Proposed Zoning Change (if any):

Zoning – Area – Ratio		Impervious Surface Thresholds			Minimum and Maximum Limitations		
Zoning District(s)	Floor Area Ratio (FAR)	Recreation Space Ratio (RSR)	Low Density Residential (0.24)	High Density Residential (0.50)	Non- Residential (0.70)	Maximum Floor Area (MFA) = FAR x GLA	Minimum Recreation Space (MSR) = RSR x GLA
TC-2 CZ	1.97	n/a			n/a	158,402	n/a
TOTAL							
RCD Streamside		0.01					
RCD Managed		0.019					
RCD Upland							

Section J: Utility Service

Check all that apply:				
Water		☐ Individual Well	Community Well	Other
Sewer		☐ Individual Septic Tank	Community Package Plant	Other
Electrical	□ Underground	Above Ground		
Telephone	□ Underground	Above Ground		
Solid Waste	Town	☐ Private		

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TOWN OF CHAPEL HILL Planning and Development Services

The following must accompany your application. Failure to do so will result in your application being considered incomplete. For assistance with this application, please contact the Chapel Hill Planning Department (Planning) at (919) 969-5066 or at planning@townofchapelhill.org.

Х	Application fee (including Engineering Review fee) (refer to fee schedule) Amount Paid \$ 8,585						
Χ	Pre-application meeting –with appropriate staff						
Χ	Digital Files – provide digital files of all plans and documents						
Χ	Recorded Plat or Deed of Property						
Х	Project Fact Sheet						
Pend	Traffic Impact Statement – completed by Town's consultant (or exemption)						
n/a	Description of Public Art Proposal, if applicable						
Х	Statement of Justification						
n/a	Response to Community Design Commission and Town Council Concept Plan comments						
n/a	Affordable Housing Proposal, if applicable						
Х	Statement of Consistency with Comprehensive Plan or request to amend Comprehensive Plan						
Χ	Mailing list of owners of property within 1,000 feet perimeter of subject property (see GIS notification tool)						
Х	Mailing fee for above mailing list (mailing fee is double due to 2 mailings) Amount Paid \$						
Χ	Written Narrative describing the proposal, including proposed land uses						
n/a	Resource Conservation District, Floodplain, & Jordan Buffers Determination – necessary for all submittals						
n/a	Jurisdictional Wetland Determination – if applicable						
n/a	Resource Conservation District Encroachment Exemption or Variance (determined by Planning)						
n/a	Jordan Buffer Authorization Certificate or Mitigation Plan Approval (determined by Planning)						
Χ	Reduced Site Plan Set (reduced to 8.5" x 11")						

Stormwater Impact Statement (1 copy to be submitted)

- a) Written narrative describing existing & proposed conditions, anticipated stormwater impacts and management structures and strategies to mitigate impacts
- b) Description of land uses and area (in square footage)
- c) Existing and proposed impervious surface area in square feet for all subareas and project area
- d) Ground cover and uses information
- e) Soil information (classification, infiltration rates, depth to groundwater and bedrock)
- f) Time of concentration calculations and assumptions
- g) Topography (2-foot contours)
- h) Pertinent on-site and off-site drainage conditions
- i) Upstream and/or downstream volumes
- j) Discharges and velocities
- k) Backwater elevations and effects on existing drainage conveyance facilities
- I) Location of jurisdictional wetlands and regulatory FEMA Special Flood Hazard Areas
- m) Water quality volume calculations
- n) Drainage areas and sub-areas delineated
- o) Peak discharge calculations and rates (1, 2, and 25-year storms)
- p) Hydrographs for pre- & post-development without mitigation, post-development with mitigation
- q) Volume calculations and documentation of retention for 2-year storm

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TOWN OF CHAPEL HILL

Planning and Development Services

- r) 85% TSS removal for post-development stormwater runoff
- s) Nutrient loading calculations
- t) BMP sizing calculations
- u) Pipe sizing calculations and schedule (include HGL & EGL calculations and profiles)

Plan Sets (10 copies to be submitted no larger than 24" x 36")

Plans should be legible and clearly drawn. All plan set sheets should include the following:

- Project Name
- Legend
- Labels
- North Arrow (North oriented toward top of page)
- Property boundaries with bearing and distances
- Scale (Engineering), denoted graphically and numerically
- Setbacks
- Streams, RCD Boundary, Jordan Riparian Buffer Boundary, Floodplain, and Wetlands Boundary, where applicable
- Revision dates and professional seals and signatures, as applicable

Cover Sheet

a) Include Project Name, Project fact information, PIN, and Design Team

Area Map

- a) Project name, applicant, contact information, location, PIN, & legend
- b) Dedicated open space, parks, greenways
- c) Overlay Districts, if applicable
- d) Property lines, zoning district boundaries, land uses, project names of site and surrounding properties, significant buildings, corporate limit lines
- e) Existing roads (public & private), rights-of-way, sidewalks, driveways, vehicular parking areas, bicycle parking, handicapped parking, street names
- f) 1,000' notification boundary

Existing Conditions Plan

- a) Slopes, soils, environmental constraints, existing vegetation, and any existing land features
- b) Location of all existing structures and uses
- c) Existing property line and right-of-way lines
- d) Existing utilities & easements including location & sizes of water, sewer, electrical, & drainage lines
- e) Nearest fire hydrants
- f) Nearest bus shelters and transit facilities
- g) Existing topography at minimum 2-foot intervals and finished grade
- h) Natural drainage features & water bodies, floodways, floodplain, RCD, Jordan Buffers & Watershed boundaries

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TOWN OF CHAPEL HILL

Planning and Development Services

Detailed Site Plan

- a) Existing and proposed building locations
- b) Description & analysis of adjacent land uses, roads, topography, soils, drainage patterns, environmental constraints, features, existing vegetation, vistas (on and off-site)
- c) Location, arrangement, & dimension of vehicular parking, width of aisles and bays, angle of parking, number of spaces, handicapped parking, bicycle parking. Typical pavement sections & surface type.
- d) Location of existing and proposed fire hydrants
- e) Location and dimension of all vehicle entrances, exits, and drives
- f) Dimensioned street cross-sections and rights-of-way widths
- g) Pavement and curb & gutter construction details
- h) Dimensioned sidewalk and tree lawn cross sections
- i) Proposed transit improvements including bus pull-off and/or bus shelter
- j) Required landscape buffers (or proposed alternate/modified buffers)
- k) Required recreation area/space (including written statement of recreation plans)
- Refuse collection facilities (existing and proposed) or shared dumpster agreement
- m) Construction parking, staging, storage area, and construction trailer location
- n) Sight distance triangles at intersections
- o) Proposed location of street lights and underground utility lines and/or conduit lines to be installed
- p) Easements
- q) Clearing and construction limits
- r) Traffic Calming Plan detailed construction designs of devices proposed & associated sign & marking plan

Stormwater Management Plan

- a) Topography (2-foot contours)
- b) Existing drainage conditions
- c) RCD and Jordan Riparian Buffer delineation and boundary (perennial & intermittent streams; note ephemeral streams on site)
- d) Proposed drainage and stormwater conditions
- e) Drainage conveyance system (piping)
- f) Roof drains
- g) Easements
- h) BMP plans, dimensions, details, and cross-sections
- i) Planting and stabilization plans and specifications

Landscape Protection Plan

- a) Rare, specimen, and significant tree survey within 50 feet of construction area
- b) Rare and specimen tree critical root zones
- c) Rare and specimen trees proposed to be removed
- d) Certified arborist tree evaluation, if applicable
- e) Significant tree stand survey
- f) Clearing limit line
- g) Proposed tree protection/silt fence location
- h) Pre-construction/demolition conference note
- i) Landscape protection supervisor note
- j) Existing and proposed tree canopy calculations, if applicable

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TOWN OF CHAPEL HILL Planning and Development Services

Planting Plan

- a) Dimensioned and labeled perimeter buffers
- b) Off-site buffer easement, if applicable
- c) Landscape buffer and parking lot planting plan (including planting strip between parking and building, entryway planting, and 35% shading requirement

Steep Slope Plan

- a) Classify and quantify slopes 0-10%, 10-15%, 15-25%, and 25% and greater
- b) Show and quantify areas of disturbance in each slope category
- c) Provide/show specialized site design and construction techniques

Grading and Erosion Control Plan

- a) Topography (2-foot contours)
- b) Limits of Disturbance
- c) Pertinent off-site drainage features
- d) Existing and proposed impervious surface tallies

Streetscape Plan, if applicable

- a) Public right-of-way existing conditions plan
- b) Streetscape demolition plan
- c) Streetscape proposed improvement plan
- d) Streetscape proposed utility plan and details
- e) Streetscape proposed pavement/sidewalk details
- f) Streetscape proposed furnishing details
- g) Streetscape proposed lighting detail

Solid Waste Plan

- a) Preliminary Solid Waste Management Plan
- b) Existing and proposed dumpster pads
- c) Proposed dumpster pad layout design
- d) Proposed heavy duty pavement locations and pavement construction detail
- e) Preliminary shared dumpster agreement, if applicable



TOWN OF CHAPEL HILL

Planning and Development Services

Construction Management Plan

- a) Construction trailer location
- b) Location of construction personnel parking and construction equipment parking
- c) Location and size of staging and materials storage area
- d) Description of emergency vehicle access to and around project site during construction
- e) Delivery truck routes shown or noted on plan sheets

Energy Management Plan

- a) Description of how project will be 20% more energy efficient than ASHRAE standards
- b) Description of utilization of sustainable forms of energy (Solar, Wind, Hydroelectric, and Biofuels)
- c) Participation in NC GreenPower program
- d) Description of how project will ensure indoor air quality, adequate access to natural lighting, and allow for proposed utilization of sustainable energy
- e) Description of how project will maintain commitment to energy efficiency and reduced carbon footprint over time
- f) Description of how the project's Transportation Management Plan will support efforts to reduce energy consumption as it affects the community

Exterior Elevations

a) An outline of each elevation of the building, including the finished grade line along the foundation (height of building measured from mean natural grade)

Rosemary Street Parking Deck - Conditional Zoning

Project Narrative

The Rosemary Street Parking Deck will create much needed parking for visitors, businesses and workers in downtown Chapel Hill and will be an integral component of the revitalization of East Rosemary Street. This redevelopment strategy for East Rosemary Street will create space for hundreds of new technology workers and researchers in the heart of downtown. The new deck will also create an attractive new arrival experience for visitors to downtown and will improve the streetscape on the southern frontage of Rosemary Street.

The new parking deck will be located on the site of the existing 'CVS' parking deck combined with the surface parking lot immediately to the east. Combining these parcels will create a combined parcel of approximately 1.6 acres. Grubb Properties controls these properties and is proposing to exchange these parcels with the Town of Chapel Hill for the land currently occupied by the Wallace Parking deck, a parcel of 1.49 acres which would be developed into a new research facility with labs and office space for business and institutional tenants.

The existing parking deck is a three-level structure and parks 276 cars. It was built over 40 years ago and has reached the end of its service life. The new parking deck will be a seven-level structure and will park approximately 1,100 cars.

In addition to new parking spaces the Rosemary Street frontage will be improved by widening the sidewalks to incorporate a 'retail porch' that will provide space for small business, artisans and food vendors to operate on an economical, short term basis.

Statement of Justification - Conditional Zoning

This is a statement of justification to support the request for Conditional Zoning for 125 East Rosemary Street and the parcel immediately to the east. Both parcels are currently within the TC-2 zoning district. The Conditional Zoning is being requested to facilitate an open dialogue with the public and negotiations between the applicant and the Town of Chapel Hill.

In order to establish and maintain sound, stable, and desirable development within the planning jurisdiction of the Town, it is intended that the Land Use Management Ordinance (as stated in Section 4.4) shall not be amended except:

- 1) To correct a manifest error in the chapter; or
- 2) Because of changed or changing conditions in a particular area or in the jurisdiction generally; or
- 3) To achieve the purposes of the Comprehensive Plan.

Below is the applicant's evaluation of this application based on these three findings.

1) Finding #1: The proposed zoning amendment is necessary to correct a manifest error.

Response: We do not believe there is error in the Town's Zoning Atlas Amendment related to the project site.

2) Finding #2: The proposed zoning amendment is necessary because of changed or changing conditions in a particular area or in the jurisdiction generally.

Response: We believe that the conditions have changed in the following respect: In recent years downtown Chapel Hill has undergone a loss of jobs and businesses which has adversely affected the economic vitality of Chapel Hill. One component of this problem is the lack of centralized public parking to support business and visitors, which this project addresses.

3) Finding #3: The proposed zoning amendment is necessary to achieve the purposes of the comprehensive plan.

Response: The proposed rezoning would contribute to the following elements of the Comprehensive Plan:

Theme 2: Community Prosperity and Engagement

- Balance and sustain finances by increasing revenues and decreasing expenses (CPE.1).
- Foster success of local businesses (CPE.2).

Theme 3: Getting Around

 A connected community that links neighborhoods, businesses and schools through the provision of greenways, sidewalks, bike facilities and public transportation (GA.2).

Theme 4: Good Places, New Spaces

- A vibrant, diverse, pedestrian-friendly, and accessible downtown with opportunities for growing office, retail, residential and cultural development and activity (GPNS.2).
- A community that welcomes and supports change and creativity (GPNS.6).

Theme 6: Town and Gown Collaboration

 Take full advantage of ideas and resources to create a thriving economy and incorporate the utilize the intellectual capital that the University and Town create (TGC.1).

Modifications of Regulations:

Building Height, Setback - LUMO Table 3.8-1 Dimensional Matrix limits the maximum building height at the setback line in the TC-2 zoning district to 44 feet. In order to provide the desired number of parking spaces, the deck will need to be 7 levels and will exceed the 44 feet maximum allowed. The applicant therefore requests that Council approve a modification approving a building height at the setback line of 73 feet.

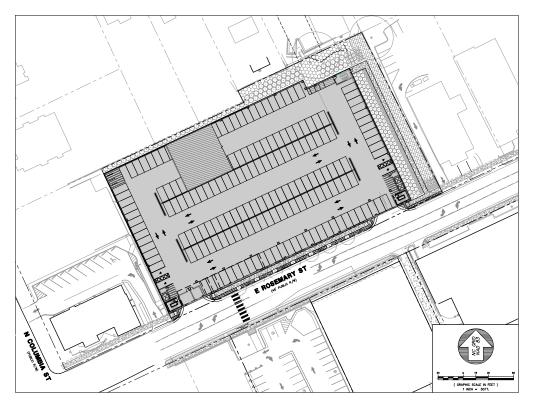
CONDITIONAL ZONING DRAWINGS ROSEMARY STREET PARKING DECK

CHAPEL HILL, ORANGE COUNTY, NORTH CAROLINA



DRAWING LIST

SHEET	DRAWING TITLE	LATEST ISSUE DAT
00001	COVER	08 APR 20
C0001	AREA MAP	08 APR 20
Ç0101	EXISTING CONDITIONS, LANDSCAPE PROTECTION & DEMOLITION PLAN	08 APR 20
C1001	SITE PLAN	08 APR 20
C1200	GRADING, UTILITY & EROSION CONTROL PLAN	08 APR 20
L01-01	LANDSCAPE PLANS	08 APR 20
L01-02	LANDSCAPE DETAILS	08 APR 20
A10-01	OVERALL FLOOR PLAN - P1 - P2	08 APR 20
A10-02	OVERALL FLOOR PLAN - P3 - P4	08 APR 20
A10-03	OVERALL FLOOR PLAN - P5 - P6	08 APR 20
A10-04	OVERALL FLOOR PLAN - P7 - ROOF	08 APR 20
A20-01	EXTERIOR ELEVATIONS	08 APR 20



SHEET	DRAWING TITLE	<u>LATEST</u> ISSUE DA
@0001	COVER	OB APR 2
C0001	AREA MAP	08 APR 2
Ç0101	EXISTING CONDITIONS, LANDSCAPE PROTECTION & DEMOLITION PLAN	08 APR 2
C1001	SITE PLAN	08 APR 2
C1200	GRADING, UTILITY & EROSION CONTROL PLAN	08 APR 2
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A10-02	OVERALL FLOOR PLAN - P3 - P4	08 APR 2
A10-03	OVERALL FLOOR PLAN - P5 - P6	08 APR 2
A10-04	OVERALL FLOOR PLAN - P7 - ROOF	OB APR 2
A20-01	EXTERIOR ELEVATIONS	OB APR 2

ARCHITECTURE:

Perkins&Will

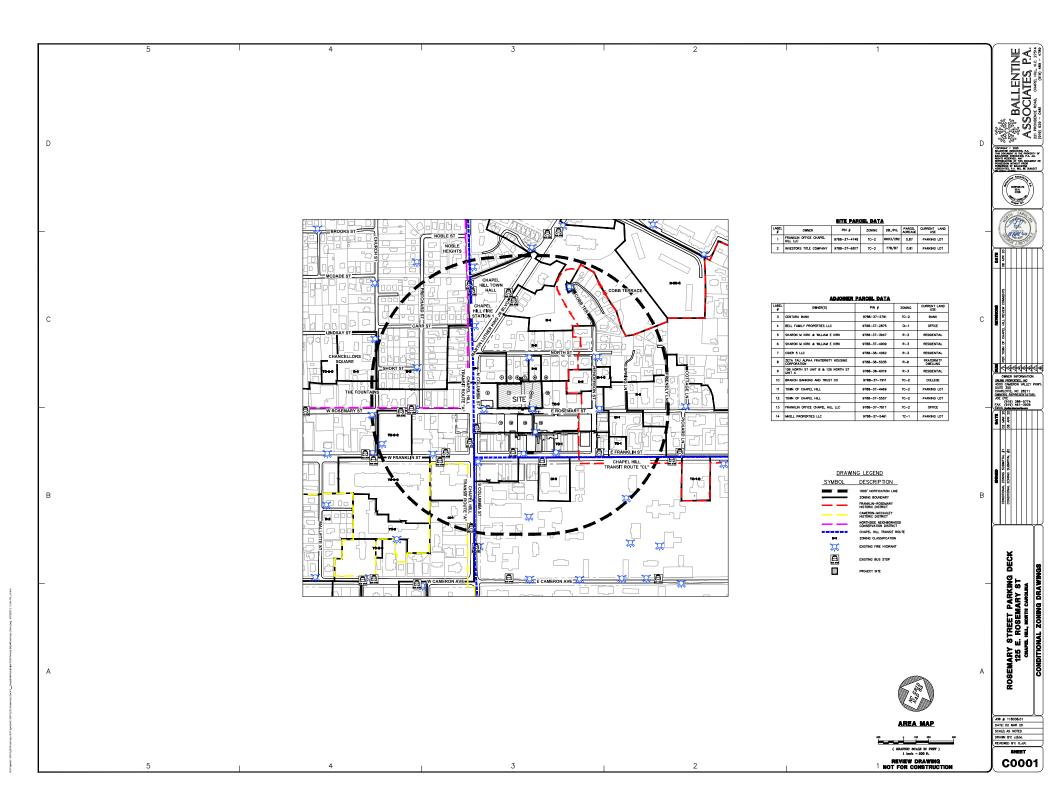


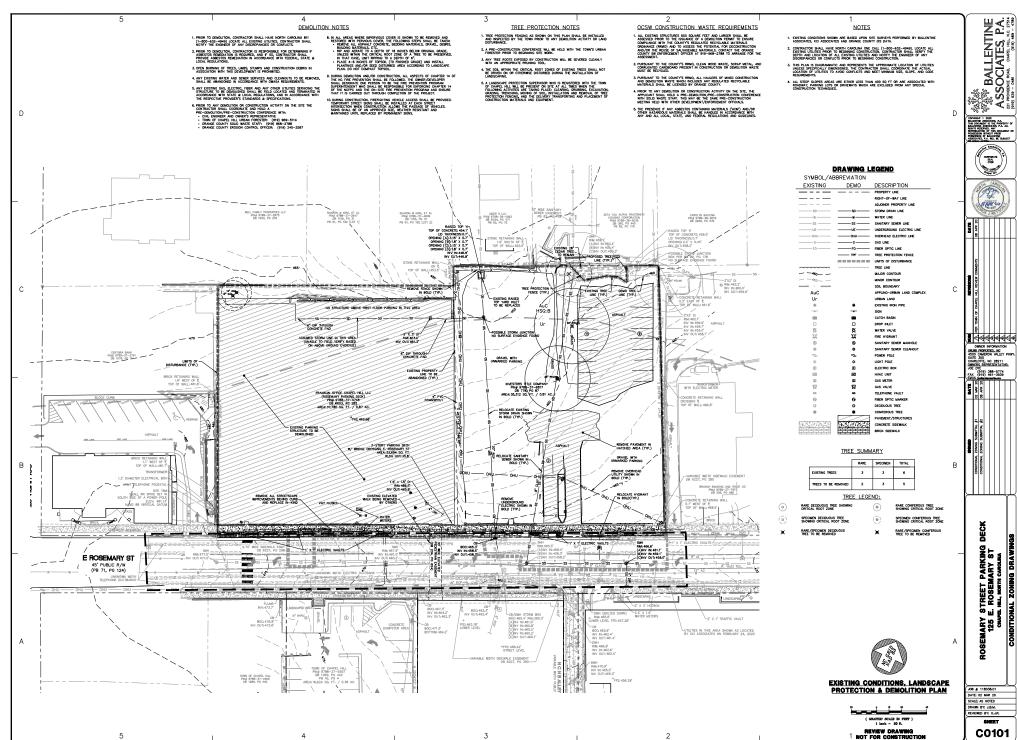




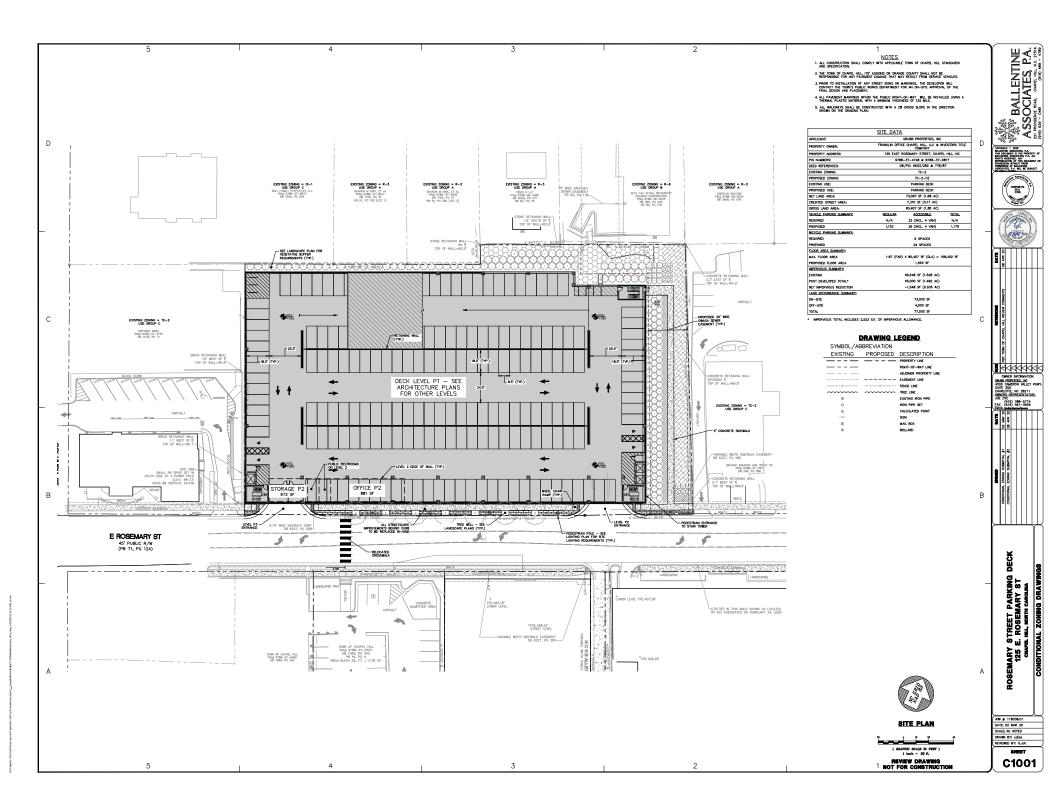


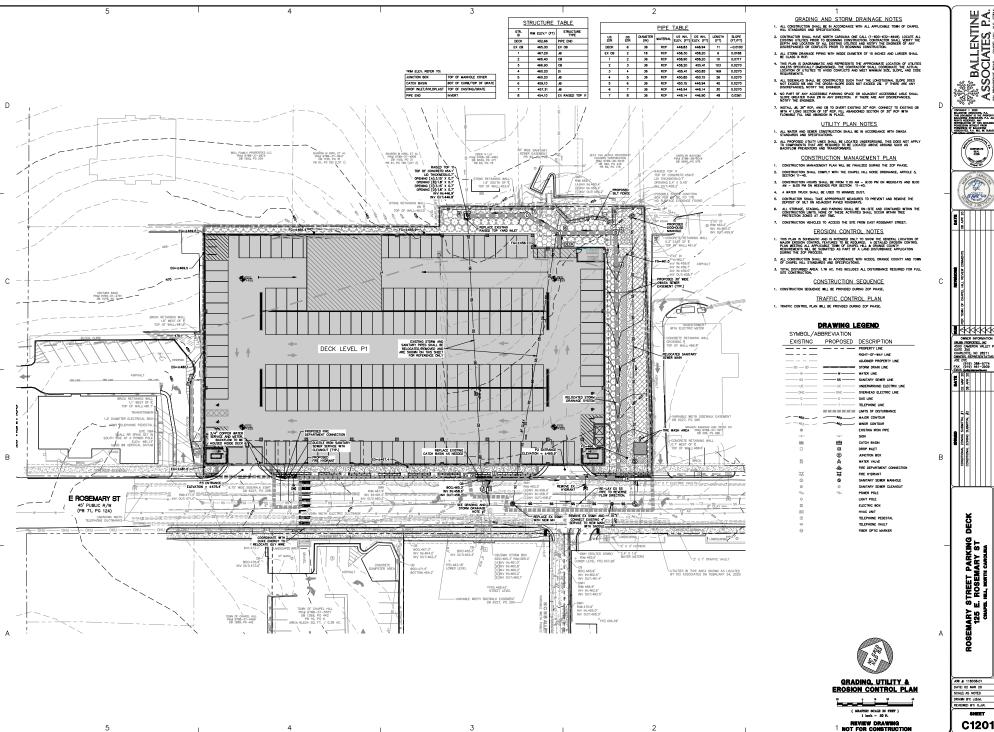
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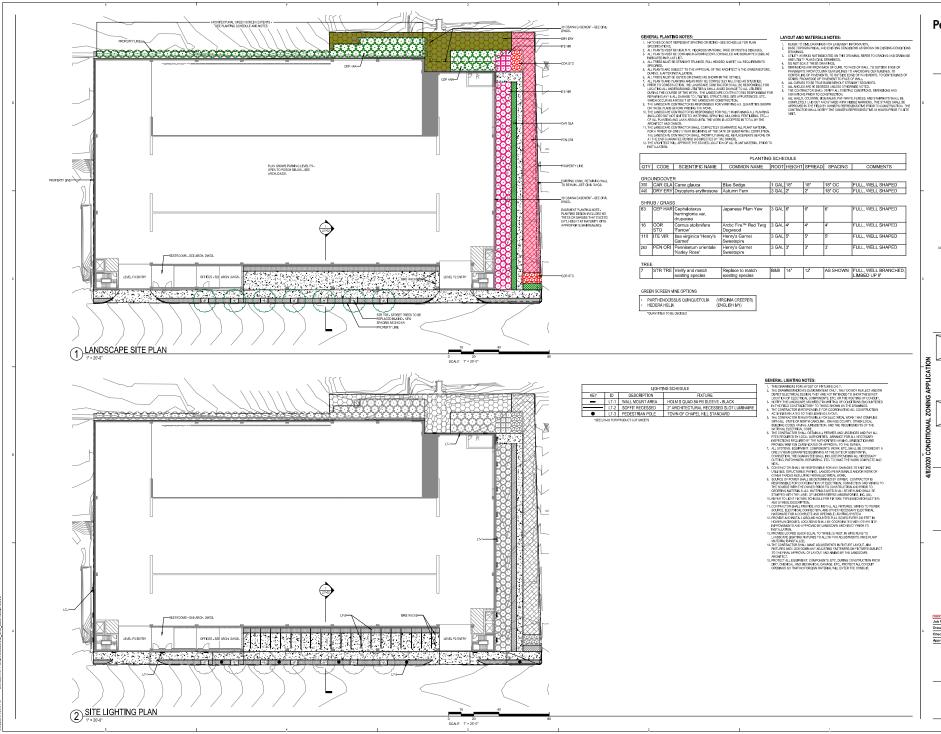




CHARLOTTE, NC 28211 OWNERS REPRESENTATIVE JOE DYF (919) 388-5774 (919) 461-3939

Y STREET PARKING [E. ROSEMARY ST NPE. HEL, NOTH CANCLEA

DATE: 02 MAR 20 SCALE: AS NOTED DRAWN BY: J.B.M. MEMED BY: GUA SHEET



Perkins&Will

CONSULTANTS

BALLENTINE ASSOCIATES, P.A. rovidence Read, Chapel HII, NC 27514

6750 Tryon Road, Cary, NC 27526

6750 Tryon Road, Cary, NC 27526

PERKINS & WILL

GRUBB PROPERTIES 4601 Park Road Suite 450, Charlotte, NC 28203

DIFAVALABLE

126 E ROSEMARY ST PARKING DECK

KEYPLAN

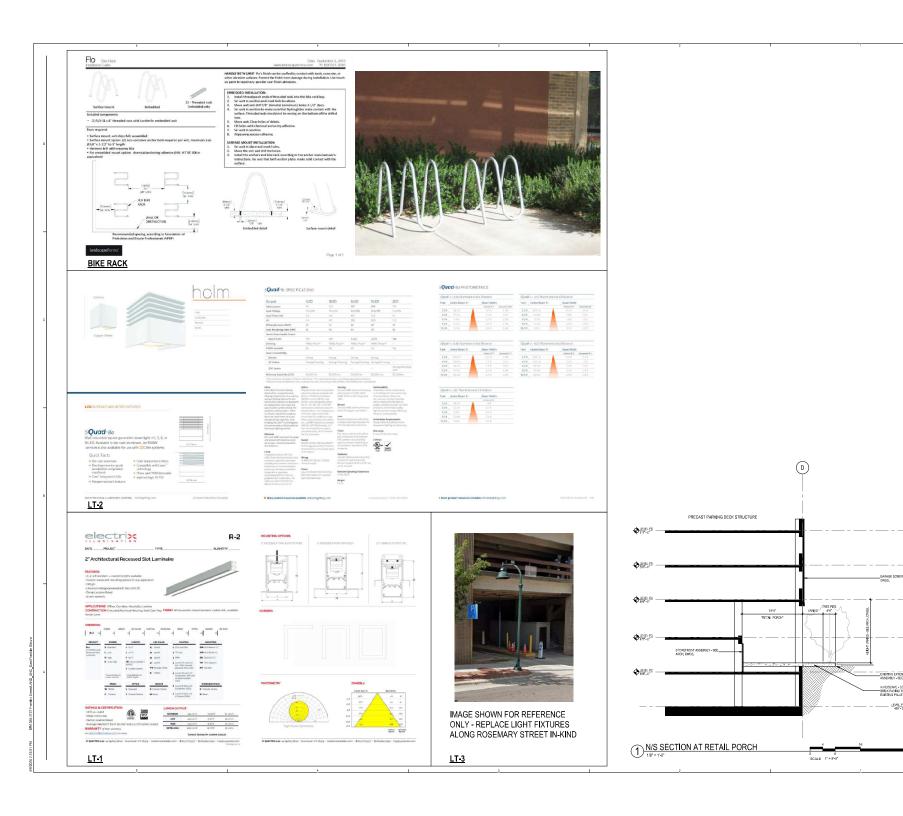
ISSUE CHART

LANDSCAPE PLANS

SHEET NUMBER

L01-01

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Perkins&Will

11 W Chapel HI Street, Suite 200 Durham, North Dard ins 27701 1919.433,5300 (919.433,5301 perkinswill.com

CONSULTANTS

BALLENTINE ASSOCIATES, P.A. Providence Road, Chapel HII, NC 27514 SPERCEMBER.

MCP NVS 6750 Tryon Road, Cary, NC 27526

LANGECRAPHIE
PERRINS & VALL
411 W Chapel Hill St Suite 200, Durbars, NC
27701

GRUBB PROPERTIES
4601 Park Road Subs 450, Charlotte, NC
2603

CONTRACTOR SAVIET Corporation 420 Wade Park Boulevard, Suite 104, Raleigh NC 2190



126 E ROSEMARY ST PARKING DECK

PARKING DECK

KEYPLAN

ISSUE CHART

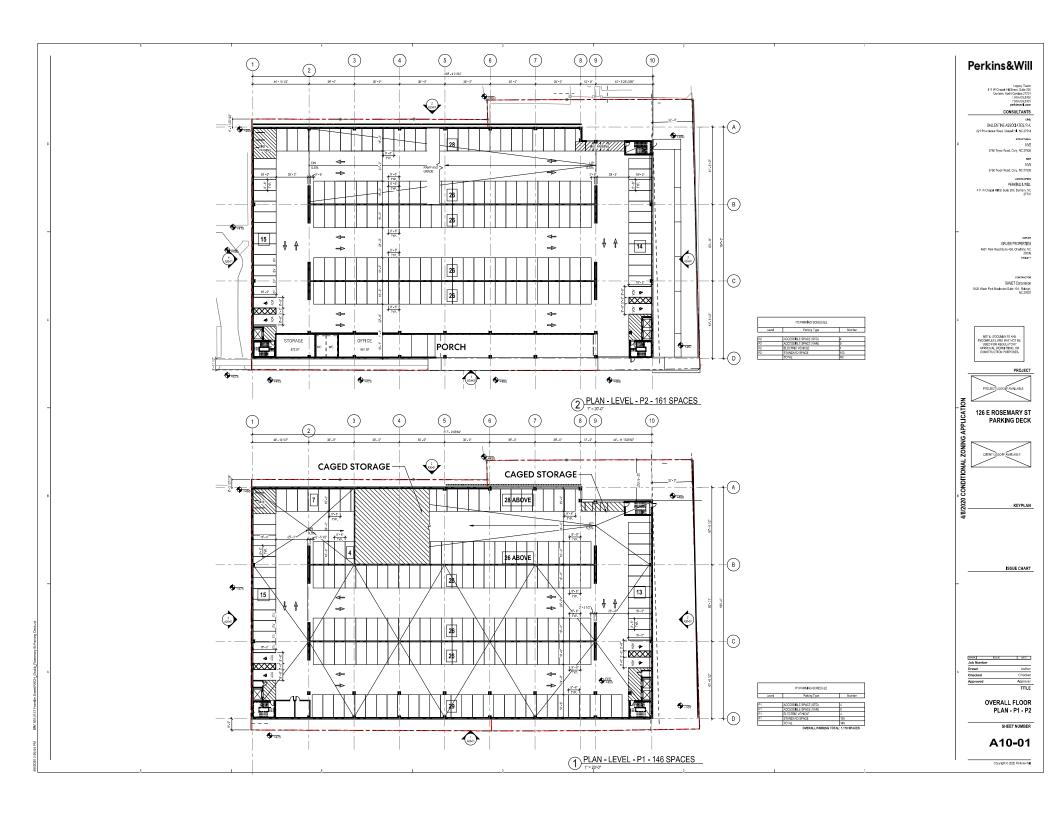
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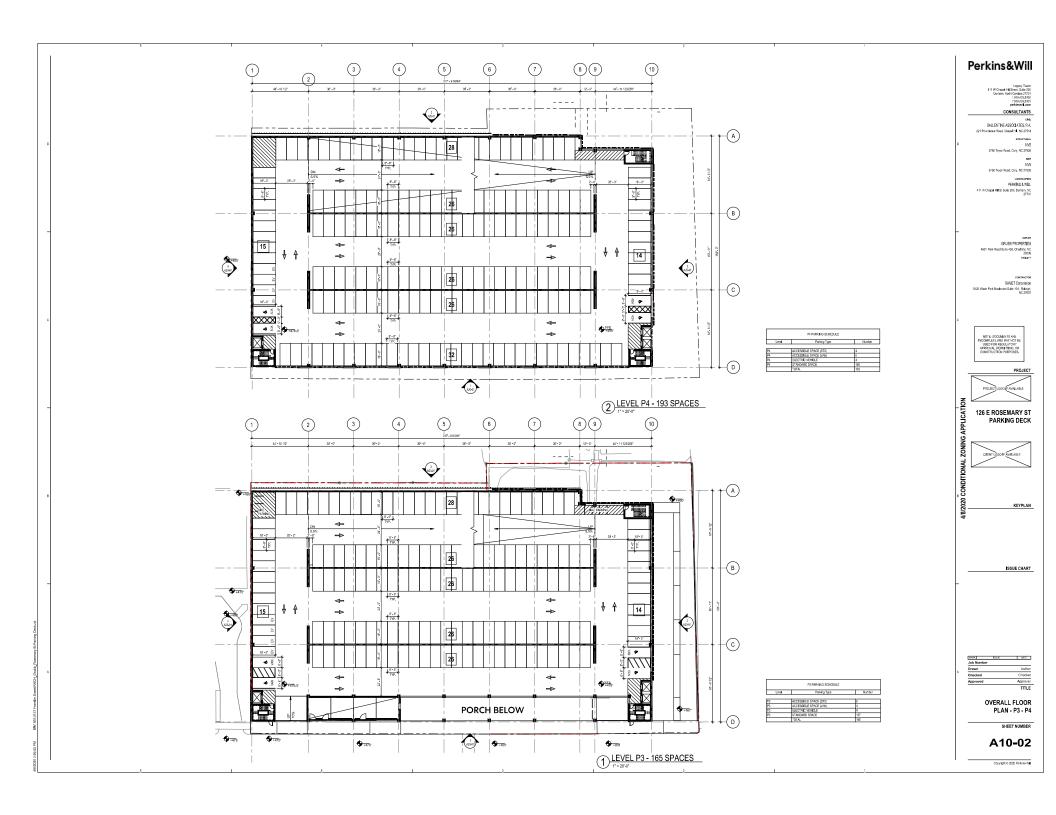
SITE DETAILS

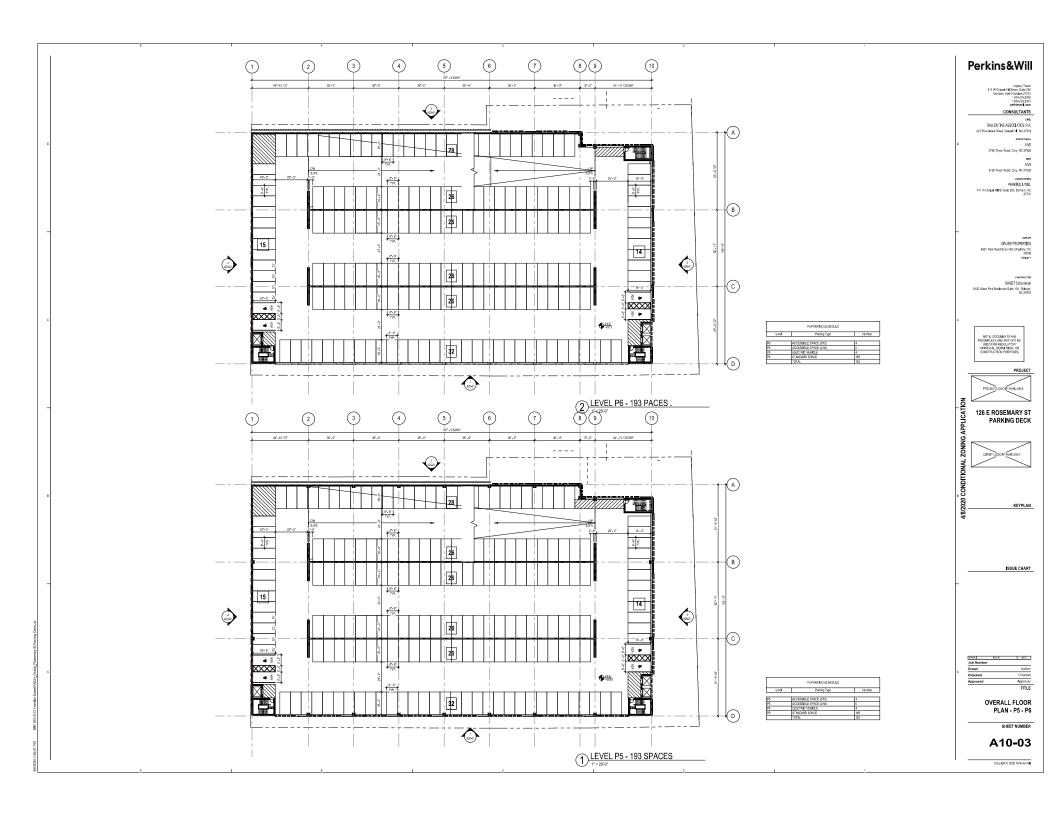
SHEET NUMBER

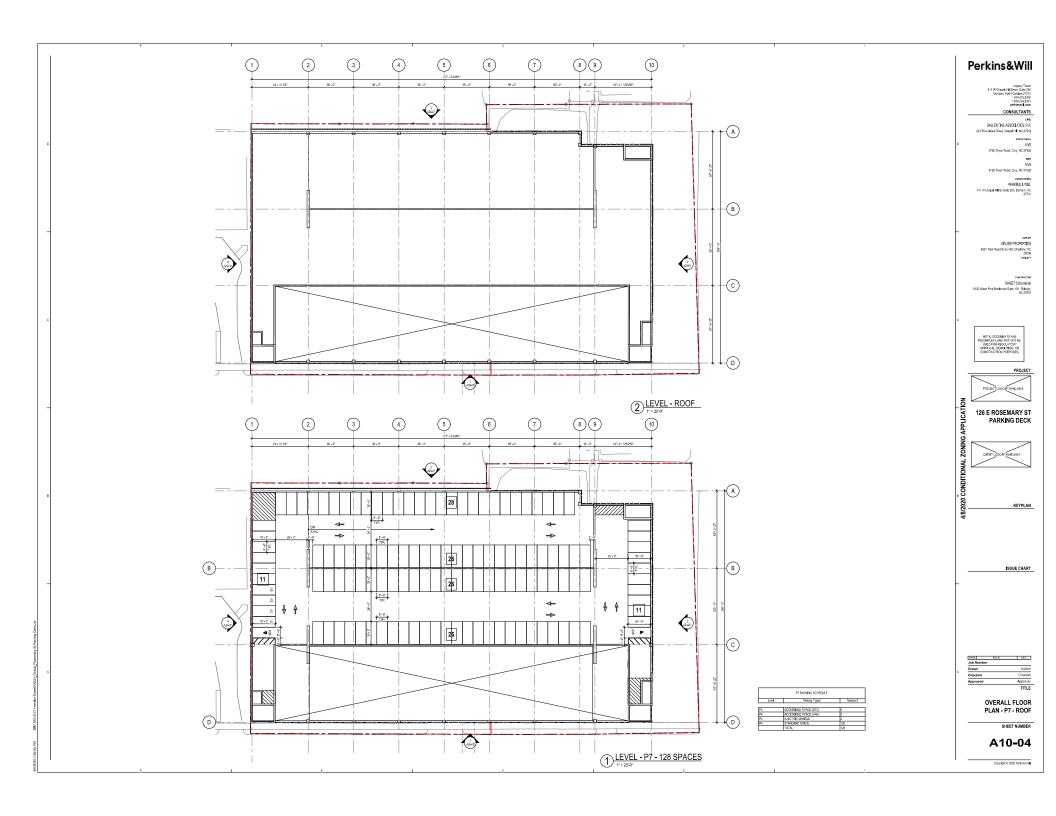
L01-02

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Storm Water Impact Analysis

For

Rosemary Street Parking Deck

125 East Rosemary Street

(PIN: 9788-37-4748 & 9788-37-6817)

Prepared by:

Ballentine Associates, P.A.

Consulting Engineers 221 Providence Road Chapel Hill, NC 27514 (919) 929-0481

BA Project # 119016.02



Project Overview:

The Rosemary Street Parking Deck is located along East Rosemary in Chapel Hill, NC. The property PINs are 9788-37-4748 & 9788-37-6817. The project is 1.76 acres total. The proposed project consists of approximately seven parking levels, 1,179 parking spots, bicycle parking, 881 square feet of office space, 672 square feet of heated storage and caged storage. The project will include utility relocation & removal, and relocation of an existing storm pipe. The project will decrease the stormwater impact of the existing site by decreasing the total impervious shown on the drainage area maps provided.

Existing Site Description:

The majority of the site slopes towards a yard inlet located north on the site, which collects water from E Rosemary Street. An old 30" storm pipe runs south to north through our site towards the yard inlet and then drains off the site.

There is 66,548 SF (1.53 AC) of existing impervious ground cover within the project property limits. All the existing impervious ground cover will be removed as the site is re-developed.

There are no stream features within 150 feet of the parcel boundaries, so a stream determination was not required as directed by The Town of Chapel Hill. The site lies in the Jordan Lake Watershed, which is part of the Cape Fear River Basin. A copy of FIRM panel 3710978800K is included in Appendix A, which confirms that the site is not within a special flood hazard area. The NRCS Soils Survey mapping included in Appendix A shows that the soils on the site are Appling-urban land complex "AuC" and Urban land "Ur" and the site is 26% HSG B and 74% of the site is unrated.

Proposed Project Description:

The redevelopment of the site includes the demolition of existing parking lots and the construction of a parking deck with associated features.

The project will result in a post-developed impervious cover of 65,000 SF (1.49 AC), which represents a net decrease of 1,548 SF (0.04 AC) under existing conditions in the site's net land area. Please note the total impervious cover includes an impervious allowance of 2,523 SF for future modifications to the plan.

Stormwater Management Requirements:

This project must meet the town of Chapel Hill's current stormwater requirements, which include:

Water Quality Requirements:

• All post-development stormwater runoff resulting from the first one inch of precipitation shall be treated to remove 85% of total suspended solids for all new impervious surfaces resulting from the Development. Stormwater treatment facilities will be designed according to the North Carolina Department of Environment Quality (NCDEQ) "Stormwater Design Manual" as



modified by the Town: and any future written design guidance approved by both the Town and NCDEQ.

Water Quantity Requirements:

- Post-developed peak flows cannot exceed pre-developed peak flows during the 1, 2, and 25-year storms.
- The increase in runoff volume ("Delta") for the 2-year, 24-hour storm (3.6" depth) must be managed (i.e. released over a 2-5 day period).

Proposed Stormwater Management:

The project as proposed removes 1,548 SF of impervious surface cover. Therefore there is not a net impervious increase with the redevelopment of the site and the town's water quality/quantity requirements are satisfied. Refer to appendix A for site area mapping.

Proposed Pipe East of Deck:

The old 30" storm pipe that currently runs through the site will be relocated onsite and replaced with a new RCP pipe in a location with adequate access east of the parking garage. After preliminary analysis at the outfall of the site, it is recommended to replace the existing 30-inch RCP (see sheet C0101) with a new 36-inch RCP. Appendix A (DA 3 and DA 4) shows the pre and post development drainage area maps. These show that the project decreases the peak surface flow to the existing catch basin in front the of the site, the existing raised yard inlet in the north of the site, and the offsite drainage for the site. The proposed deck and the majority of the site is directed into the relocated storm system. Hydraulic grade lines profiles (10-Yr and 25-Yr storms) for the storm network and pipe capacity calculations for the existing storm pipe coming into the site are located in Appendix B.

Conclusion:

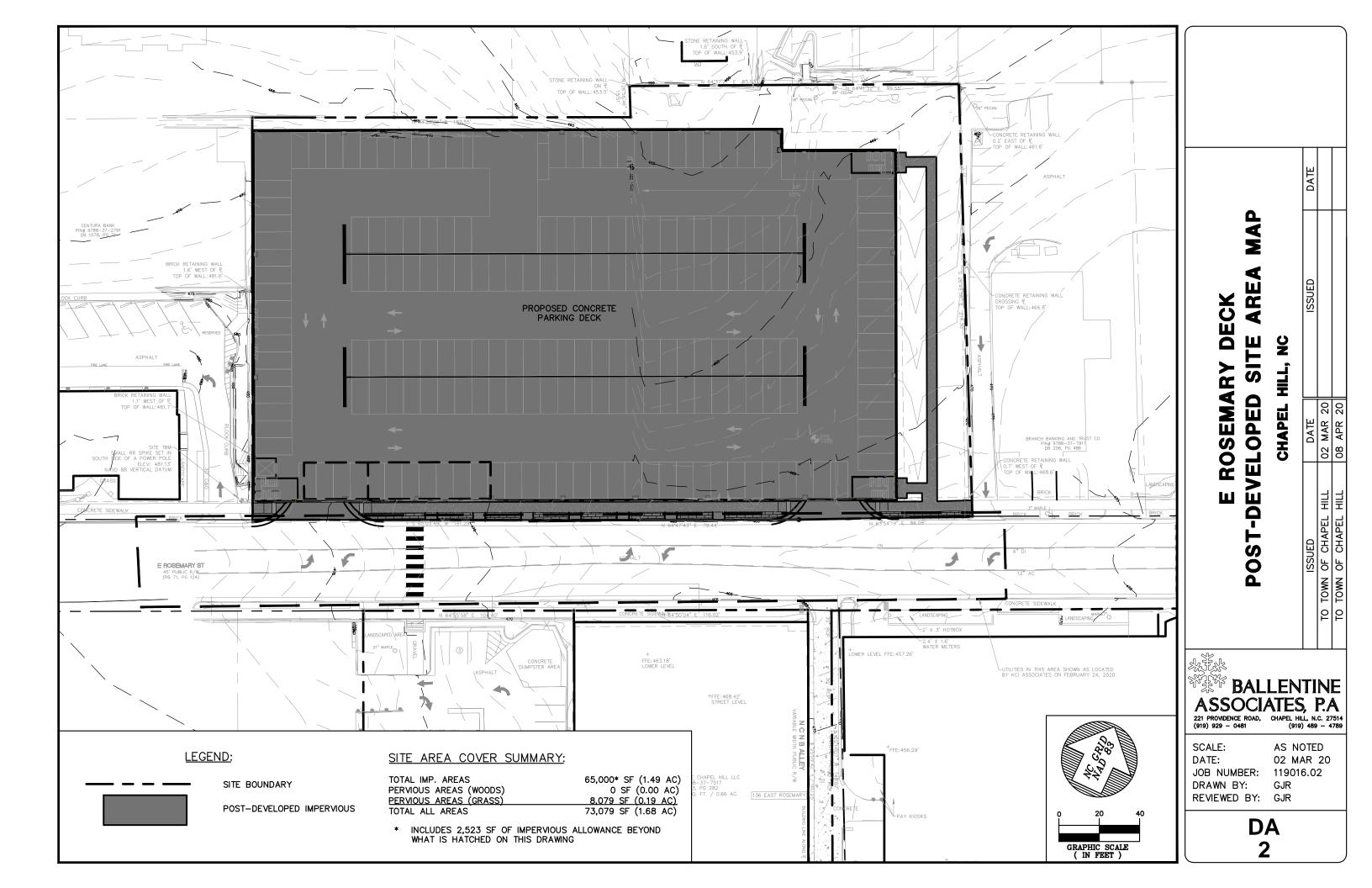
This project as proposed, will comply with the Town of Chapel Hill's current stormwater management regulations. In addition, this project will improve the existing storm drainage that currently runs through the site.

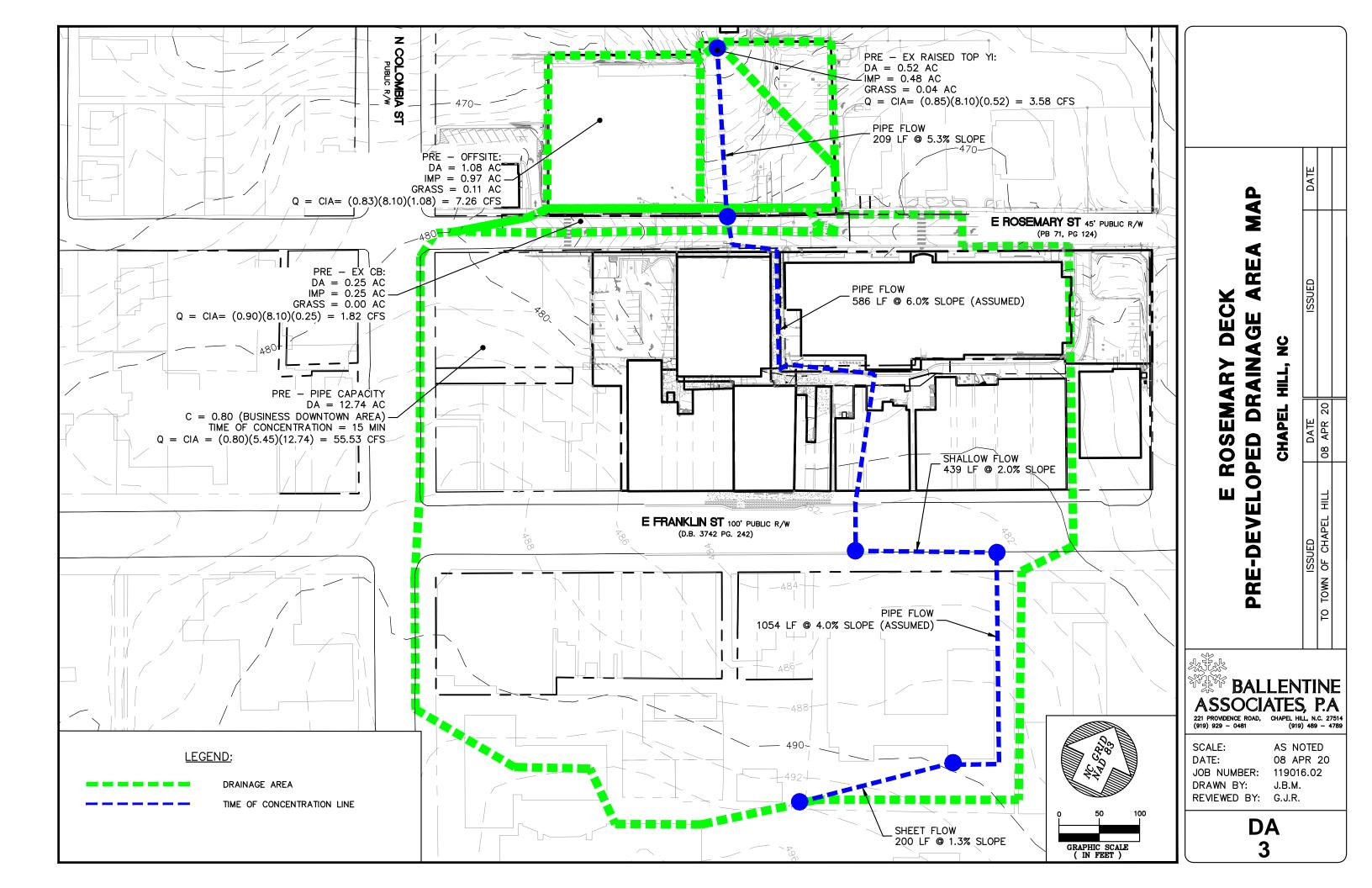
List of Appendices:

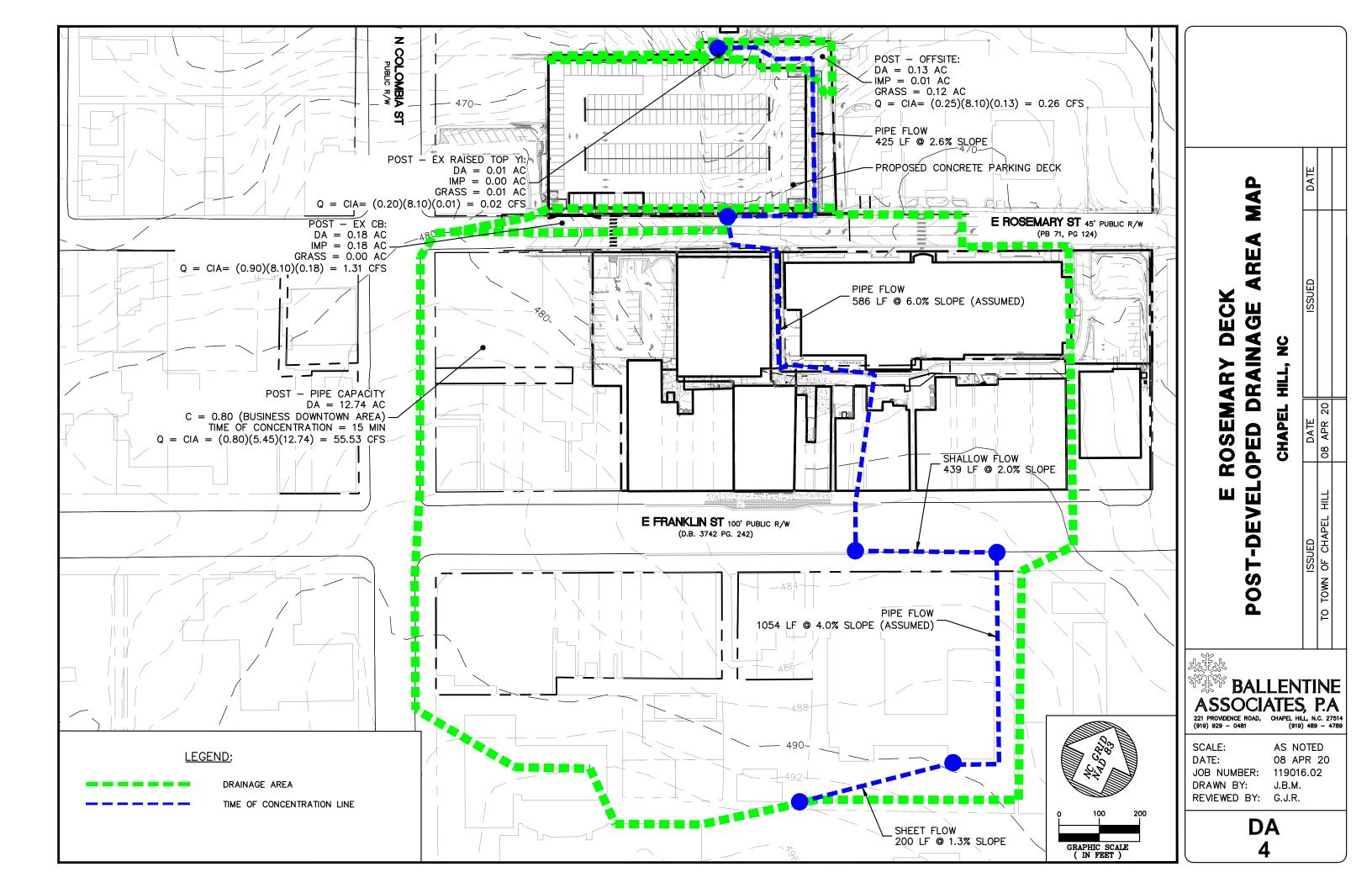
- Appendix A Maps
 - o DA-1 Pre-Developed Site Area Map
 - o DA-2 Post-Developed Site Area Map
 - o DA-3 Pre-Developed Drainage Area Map
 - o DA-4 Post-Developed Drainage Area Map
 - o DA-5 Inlet Drainage Area Map
 - o Soils Map -
 - Hardbound
 - NRCS Soils Map
 - NRCS Hydrologic Soil Groups
 - FIRM Panel 3710978800K
 - o USGS Topographic Map
 - Aerial
- Appendix B Stormwater Design Calculations
 - o NOAA Point Precipitation Frequency Estimate
 - o Pipe Capacity Calculations
 - o Storm Sewers Schematic
 - o NCDOT Conduit Pipe Table (10-Year)
 - o Hydraulic Grade Line Profiles (10-Year)
 - o NCDOT Conduit Pipe Table (25-Year)
 - o Hydraulic Grade Line Profiles (25-Year)

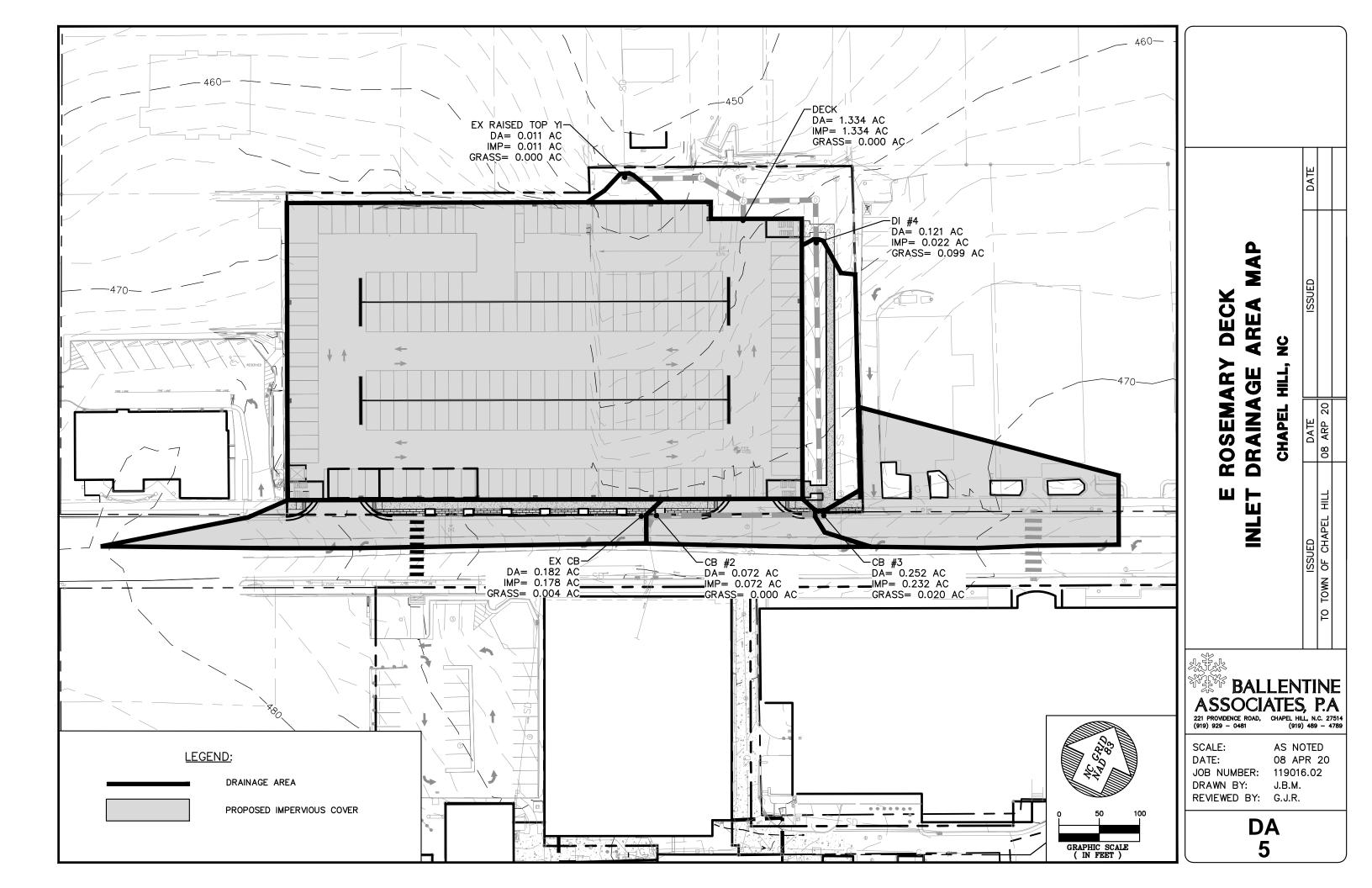
• Appendix A - Maps

- o DA-1 Pre-Developed Site Area Map
- o DA-2 Post-Developed Site Area Map
- o DA-3 Pre-Developed Drainage Area Map
- o DA-4 Post-Developed Drainage Area Map
- o DA-5 Inlet Drainage Area Map
- o Soils Map
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 - NRCS Soils Map
 - NRCS Hydrologic Soil Groups
- o FIRM Panel 3710978800K
- o USGS Topographic Map
- o Aerial











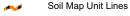
MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons



Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

+ Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

__.._

00

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

∆ Other

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20.000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Orange County, North Carolina Survey Area Data: Version 19, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50.000 or larger.

Date(s) aerial images were photographed: Apr 27, 2014—May 6, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AuC	Appling-Urban land complex, 2 to 10 percent slopes	0.5	26.0%
Ur	Urban land	1.3	74.0%
Totals for Area of Interest	·	1.8	100.0%



MAP LEGEND MAP INFORMATION The soil surveys that comprise your AOI were mapped at Area of Interest (AOI) С 1:20.000. Area of Interest (AOI) C/D Soils Warning: Soil Map may not be valid at this scale. D Soil Rating Polygons Enlargement of maps beyond the scale of mapping can cause Not rated or not available Α misunderstanding of the detail of mapping and accuracy of soil **Water Features** line placement. The maps do not show the small areas of A/D Streams and Canals contrasting soils that could have been shown at a more detailed Transportation B/D Rails ---Please rely on the bar scale on each map sheet for map measurements. Interstate Highways C/D Source of Map: Natural Resources Conservation Service **US Routes** Web Soil Survey URL: D Major Roads Coordinate System: Web Mercator (EPSG:3857) Not rated or not available -Local Roads Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts Soil Rating Lines Background distance and area. A projection that preserves area, such as the Aerial Photography Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required. This product is generated from the USDA-NRCS certified data as of the version date(s) listed below. Soil Survey Area: Orange County, North Carolina Survey Area Data: Version 19, Sep 16, 2019 Soil map units are labeled (as space allows) for map scales 1:50.000 or larger. Not rated or not available Date(s) aerial images were photographed: Apr 27, 2014—May 6. 2014 **Soil Rating Points** The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background A/D imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident. B/D

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI		
AuC	Appling-Urban land complex, 2 to 10 percent slopes	В	0.5	26.0%		
Ur	Urban land		1.3	74.0%		
Totals for Area of Interest			1.8	100.0%		

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

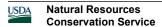
Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

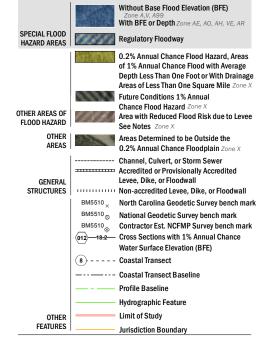


Component Percent Cutoff: None Specified

Tie-break Rule: Higher



SEE FIS REPORT FOR ZONE DESCRIPTIONS AND INDEX MAP IATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT HTTP://FRIS.NC.GOV/FRIS



Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Map Service Center at the number listed above.

For community and countywide map dates refer to the Flood Insurance Study report for this jurisdiction

To determine if flood insurance is available in the community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Flood Insurance Study (FIS) means an examination, evaluation, and determination of flood hazards, corresponding water surface elevations, flood hazard risk zones, and other flood data in a community issued by the North Carolina Floodpiain Mapping Program (NCFHP). The Flood Insurance Study (FIS) is comprised of the following products used together: the Digital Flood Hazard Database, the Water Surface Elevation Rasters, the digitally derived, adoptemented Flood Insurance Study (FIS) is comprised of the following products used together: the Digital Flood Hazard Database, the Water Surface Elevation Rasters, the digital derived, adoptemented Flood Insurance Survey (Report, A Flood Insurance Survey) is a complication and presentation of flood risk data for specific watercourses, lakes, and coastal flood hazard areas within a community. This report contains detailed flood elevation data, data batiles and FIRM indices. When a flood study is completed for the NFIP the digital information, reports and maps are assembled into an FIS. Information shown on the FIRM was provided in digital formation of the NFIPM was provided in the digital Flood Database and in the Technical Support Data Notecook (TSDN).

ACCREDITED LEVER NOTES TO USERS: If an according fever note appears on this great check with your local community to obtain more information, such as the astimated revel of protein provided (within may accord the 1-percent-annual-chance level) and Emergency Action Plan, on the lovee system(s) shown as providing protection. To mitigate floor disk in residual risk areas, properly owners and residents are encouraged to consider flood insurance and floodproofing or other protective measures. For more information on flood insurance, interested parties should visit the FEMA Websels at http://www.fema.gov/business/infpindex.xtm.

PROVISIONALLY ACCREDITED LEVEE NOTES TO USERS: If a Provisionally Accredited Levee (PAL) note appears on this panel, check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1-precent-annual-chance level) and Emergency Action Plan, on the levee system(s) shown as providing protection. To maintain accreditation, the levee owner or community is required to submit the data and documentation necessary to comply with Section 51.0 to the NFIP regulations. If the community or owner does not provide the necessary data and documentation or if the data and documentation or if the step to the necessary data and documentation or if the data and ocumentation or which the necessary data and documentation or if the data and ocumentation or other step to the provided indicates the levee system to mitigate flood or as in order to the provided indicates the levee system on the provided indicates and risk information for this sares to reflect de-accreditation of the levee system. To mitigate flood risk in or other professione massives for more information on not flood insurance, interested parties should vest the FEMA Website at http://www.fema.gov/business/nfiprindex.shtm.

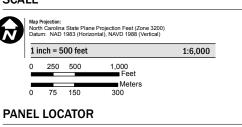
LIMIT OF MODERATE WAVE ACTION NOTES TO USERS: For some coastal flooding zones the AE Zone category has been divided by a Limit of Moderate Wave Action (LIMVA). The LIMWA represents the approximate landward limit of the 15-foot breaking wave. The effects of wave hazards between the VE Zone and the LIMWA for between the shoreline and the LIMWA for areas where VE Zones are not identified) will be similar to, but less severe than those in the VE Zone.

Limit of Moderate Wave Action (LiMWA)

COASTAL BARRIER RESOURCES SYSTEM (CBRS) NOTE

This map may include approximate boundaries of the CBRS for informational purposes only. Flood insurance is available within CBRS areas for structures that are newly built or substantially improved on or after the date(s) indicated on the map. For more information see hitp://www.fvs.gov.cbra, the FIS Report, or call the U.S. Fish and Wildlife Service Customer Service Center at 1-800-344-WILD.





9828 9895 0805 9894 0804 9893 0803 9892 0802 9759 9769 9779 9789 9767 9777 9787 9797 Wake

NORTH CAROLINA FLOOD INSURANCE PROGRAFLOOD INSURANCE RATE MAP NORTH CAROLINA PANEL 9788 Panel Contains: COMMUNITY CARRBORO, TOWN OF CHAPEL HILL, TOWN OF 370275 370180 FEMA



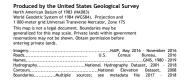
CID PANEL SUFFIX 370275 9788 K 370180 9788 K





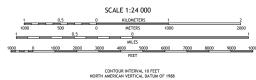
VERSION NUMBER 2.3.3.2 MAP NUMBER 3710978800K MAP REVISED November 17, 2017





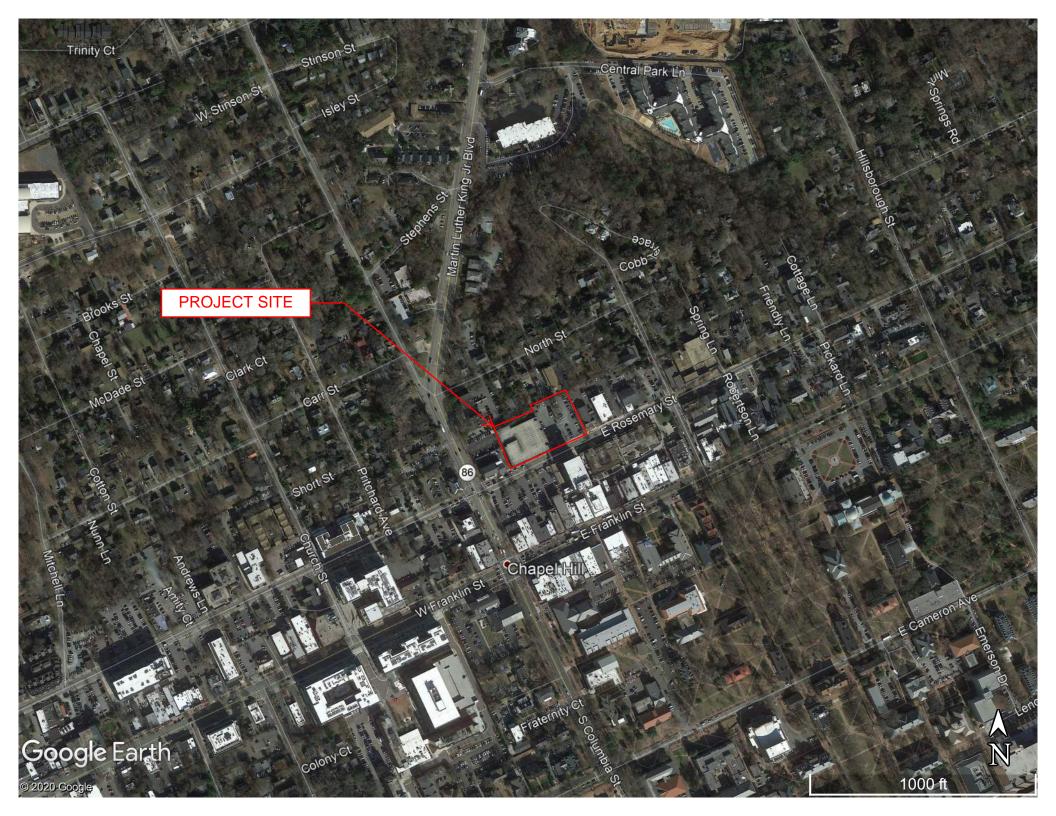
35.8750° -79.1250°





This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011. A metadata file associated with this product is draft version 0.6.18







• Appendix B – Stormwater Design Calculations

- o NOAA Point Precipitation Frequency Estimate
- o Pipe Capacity Calculations
- o Storm Sewers Schematic
- o NCDOT Conduit Pipe Table (10-year)
- o Hydraulic Grade Line Profiles (10-year)
- o NCDOT Conduit Pipe Table (25-year)
- o Hydraulic Grade Line Profiles (25-year)



NOAA Atlas 14, Volume 2, Version 3 Location name: Chapel Hill, North Carolina, USA* Latitude: 35.9142°, Longitude: -79.056° Elevation: 480.2 ft**



source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M.Yekta, and D. Riley

NOAA, National Weather Service, Silver Spring, Maryland

PF tabular | PF graphical | Maps & aerials

PF tabular

	Average recurrence interval (years)									
Duration	1	2	5	10	25	50	100	200	500	1000
5-min	4.92 (4.51-5.39)	5.80 (5.32-6.34)	6.67 (6.11-7.28)	7.37 (6.74-8.04)	8.10 (7.37-8.82)	8.62 (7.81-9.38)	9.07 (8.18-9.89)	9.46 (8.48-10.3)	9.88 (8.78-10.8)	10.2 (8.99-11.2)
10-min	3.94 (3.60-4.30)	4.64 (4.25-5.07)	5.34 (4.90-5.83)	5.89 (5.39-6.43)	6.45 (5.87-7.03)	6.86 (6.22-7.47)	7.21 (6.50-7.85)	7.49 (6.73-8.18)	7.81 (6.94-8.53)	8.04 (7.08-8.79)
15-min	3.28 (3.00-3.58)	3.89 (3.56-4.25)	4.50 (4.13-4.92)	4.97 (4.55-5.42)	5.45 (4.96-5.94)	5.79 (5.25-6.31)	6.07 (5.48-6.62)	6.30 (5.66-6.88)	6.55 (5.82-7.16)	6.72 (5.92-7.36
30-min	2.25 (2.06-2.46)	2.68 (2.46-2.93)	3.20 (2.93-3.49)	3.60 (3.29-3.93)	4.04 (3.68-4.40)	4.36 (3.95-4.75)	4.65 (4.19-5.07)	4.91 (4.40-5.36)	5.21 (4.64-5.70)	5.45 (4.80-5.96
60-min	1.40 (1.28-1.53)	1.68 (1.54-1.84)	2.05 (1.88-2.24)	2.34 (2.15-2.56)	2.69 (2.45-2.93)	2.95 (2.68-3.22)	3.20 (2.89-3.49)	3.44 (3.09-3.76)	3.74 (3.33-4.09)	3.98 (3.50-4.35
2-hr	0.838 (0.764-0.920)	1.01 (0.924-1.11)	1.24 (1.13-1.36)	1.43 (1.30-1.57)	1.66 (1.50-1.82)	1.85 (1.66-2.02)	2.03 (1.81-2.22)	2.20 (1.96-2.41)	2.43 (2.14-2.67)	2.62 (2.29-2.88
3-hr	0.594 (0.544-0.652)	0.717 (0.658-0.786)	0.884 (0.809-0.970)	1.02 (0.935-1.12)	1.20 (1.09-1.31)	1.34 (1.21-1.47)	1.49 (1.33-1.62)	1.63 (1.45-1.78)	1.82 (1.60-1.99)	1.99 (1.72-2.17
6-hr	0.358 (0.329-0.392)	0.432 (0.397-0.472)	0.533 (0.489-0.582)	0.618 (0.566-0.675)	0.729 (0.663-0.793)	0.821 (0.741-0.893)	0.913 (0.818-0.993)	1.01 (0.893-1.10)	1.14 (0.993-1.24)	1.25 (1.08-1.36
12-hr	0.211 (0.194-0.230)	0.254 (0.234-0.277)	0.315 (0.289-0.343)	0.368 (0.337-0.400)	0.438 (0.398-0.474)	0.497 (0.448-0.537)	0.557 (0.497-0.601)	0.621 (0.547-0.669)	0.709 (0.614-0.765)	0.785 (0.669-0.84
24-hr	0.123 (0.116-0.132)	0.149 (0.140-0.159)	0.186 (0.174-0.199)	0.215 (0.201-0.230)	0.255 (0.237-0.272)	0.286 (0.266-0.306)	0.318 (0.294-0.340)	0.350 (0.324-0.376)	0.396 (0.363-0.425)	0.431 (0.394-0.46
2-day	0.072 (0.068-0.077)	0.087 (0.081-0.093)	0.108 (0.101-0.115)	0.124 (0.116-0.132)	0.145 (0.135-0.155)	0.162 (0.151-0.174)	0.180 (0.166-0.193)	0.198 (0.182-0.212)	0.222 (0.204-0.239)	0.241 (0.220-0.26
3-day	0.051 (0.048-0.054)	0.061 (0.057-0.065)	0.075 (0.071-0.081)	0.087 (0.081-0.093)	0.102 (0.095-0.109)	0.114 (0.105-0.122)	0.126 (0.116-0.135)	0.138 (0.127-0.148)	0.155 (0.142-0.167)	0.169 (0.154-0.18
4-day	0.040 (0.038-0.043)	0.048 (0.045-0.052)	0.059 (0.056-0.063)	0.068 (0.064-0.073)	0.080 (0.074-0.086)	0.089 (0.083-0.096)	0.099 (0.091-0.106)	0.109 (0.100-0.117)	0.122 (0.112-0.132)	0.133 (0.121-0.14
7-day	0.026 (0.025-0.028)	0.032 (0.030-0.034)	0.038 (0.036-0.041)	0.044 (0.041-0.046)	0.051 (0.048-0.054)	0.057 (0.053-0.061)	0.063 (0.058-0.067)	0.069 (0.064-0.074)	0.077 (0.071-0.083)	0.084 (0.077-0.09
10-day	0.021 (0.020-0.022)	0.025 (0.024-0.027)	0.030 (0.028-0.032)	0.034 (0.032-0.036)	0.039 (0.037-0.042)	0.043 (0.041-0.046)	0.048 (0.044-0.051)	0.052 (0.048-0.055)	0.058 (0.053-0.062)	0.062 (0.057-0.06
20-day	0.014 (0.013-0.015)	0.017 (0.016-0.018)	0.020 (0.019-0.021)	0.022 (0.021-0.023)	0.025 (0.024-0.027)	0.028 (0.026-0.029)	0.030 (0.028-0.032)	0.033 (0.031-0.035)	0.037 (0.034-0.039)	0.039 (0.036-0.04
30-day	0.012 (0.011-0.012)	0.014 (0.013-0.014)	0.016 (0.015-0.017)	0.018 (0.017-0.019)	0.020 (0.019-0.021)	0.022 (0.020-0.023)	0.023 (0.022-0.025)	0.025 (0.023-0.027)	0.027 (0.026-0.029)	0.029 (0.027-0.03
45-day	0.010 (0.009-0.010)	0.012 (0.011-0.012)	0.013 (0.013-0.014)	0.015 (0.014-0.015)	0.016 (0.015-0.017)	0.018 (0.017-0.018)	0.019 (0.018-0.020)	0.020 (0.019-0.021)	0.022 (0.020-0.023)	0.023 (0.021-0.02
60-day	0.009	0.010	0.012	0.013	0.014	0.015	0.016	0.017	0.018 (0.017-0.019)	0.019

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

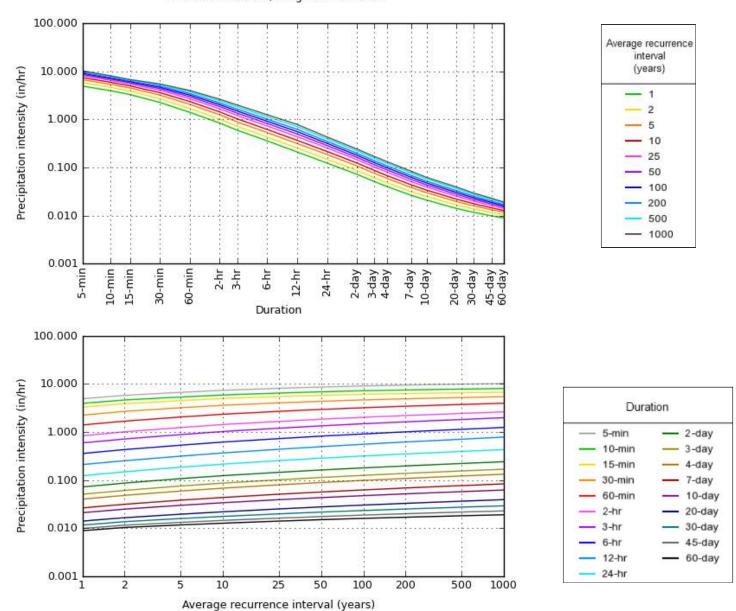
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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PF graphical

PDS-based intensity-duration-frequency (IDF) curves Latitude: 35.9142°, Longitude: -79.0560°



NOAA Atlas 14, Volume 2, Version 3

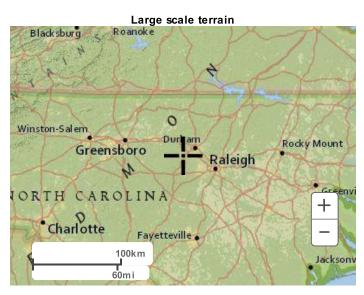
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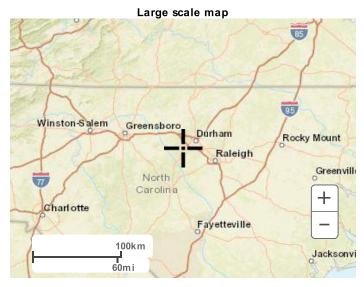
Back to Top

Maps & aerials

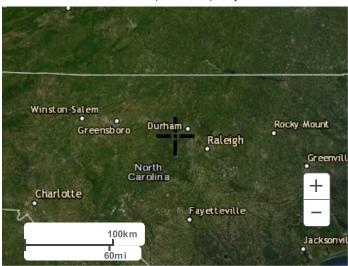
Small scale terrain







Large scale aerial



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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

Pipe Capacity Calcs Rational Method

Rosemary Deck 119006.02 Project: Proj. Number: Client: **Grubb Properties**

3/3/2020 4/8/2020 Date: Revised:

554834.61 sf 12.74 ac Total Drainage Area

Pre-Development Pipe Capacity

		Water Shed area (acres)	Total
Business Downtown area	0.80	12.74	0.80
		12.74	0.80

		25 yr	
Drainage area	Α	12.74	acres
Runoff Coefficient	С	0.80	
Time of Concentration	t	15.00	mins
Rainfall Intensity	I	5.45	in/hr
Peak discharge	Q	55.53	cfs

		0.007(nL) ^{0.8}	n	0.10	Grass + Pavement
	Tc=	P ₂ ^{0.5} s ^{0.4}	Length	200.00	
Sheet flow		. 2	Start Inv	500.50	
Sheet now			End inv	498.00	
	Tc=	0.23 hours	Slope	0.013	
		14.07 minutes	Р	3.58	
	Tc=	L	Length	439.00	ft
	10	3600V	Start Inv	498.00	ft
			End inv	491.00	
Shallow concentrated flow			Slope	0.02	ft/ft
			Cover	Bare	
	Tc=	0.10 hours	V constant	9.97	Table 15-3
		5.81 minutes	V	1.26	ft/s
			Longth	586.00	f4
	Tc=		Length Start Inv	491.00	
		00 V	End inv	458.50	
Pipe flow (assumed)	Tc=	0.98 minutes	Slope	0.06	
. ipo non (accamea)		0.07. 0.5			
	V=	1.49A ^{0.67} S ^{0.5}			
	V –	nP ^{0.67}	V	10.00	ft/sec (assumed)
		1	Length	209.00	ft
	Tc=	60V	Start Inv	458.50	
			End inv	446.80	
Pipe flow	Tc=	0.35 minutes	Slope	0.06	
		1.49A ^{0.67} S ^{0.5}			

Time of Concentration	21.21 minutes
Use:	15.00 minutes



Chapel Hill, NC 27514 (919) 929-0481 fax 489-2803

Pipe Capacity Calcs Rational Method

Rosemary Deck 119006.02 Project: Proj. Number: Client: Grubb Properties 3/3/2020 4/8/2020

Date: Revised:

Post Development Pipe Capacity

Total Drainage Area	554834.61	sf
	12.74	ac

	Runoff	Water Shed	
	Coefficient	area (acres)	Total
Business Downtown area	0.80	12.74	0.80
		12.74	0.80
•			

		25 yr	
Drainage area	Α	12.74	acres
Runoff Coefficient	С	0.80	
Time of Concentration	t	15.00	mins
Rainfall Intensity	ı	5.45	in/hr
Peak discharge	Q	55.53	cfs

	Tc=	0.007(nL) ^{0.}	8	n	0.10	Grass + Pavement
	10-	$P_2^{0.5} s^{0.4}$	_	Length	200.00	ft
Sheet flow				Start Inv	500.50	ft
Chicat new				End inv	498.00	ft
	Tc=	0.23	hours	Slope	0.013	ft/ft
		14.07	minutes	Р	3.58	in
	Tc=	L	<u> </u>	Length	439.00	
		3600V		Start Inv	498.00	ft
				End inv	491.00	ft
Shallow concentrated flow				Slope	0.02	ft/ft
				Cover	Bare	}
	Tc=	0.10	hours	V constant	9.97	Table 15-3
		5.81	minutes	V	1.26	ft/s
	To=	L		Length	586.00	ft
	Tc=	60V		Start Inv	491.00	ft
				End inv	458 50	ft

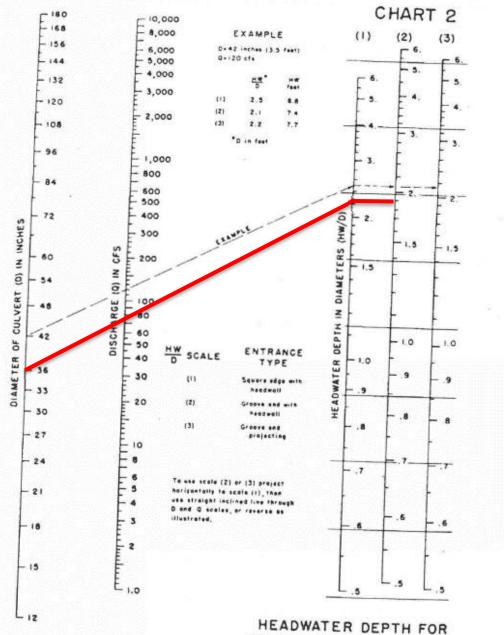
Pipe flow (assumed)	Tc=	0.98 minutes	Slope	458.50 π 0.06 ft/ft
	V=	$\frac{1.49A^{0.67}S^{0.5}}{nP^{0.67}}$	V	10.00 ft/sec (assumed)
	Tc=	L 60V	Length Start Inv	425.00 ft 458.50 ft

	10-	60V	Start Inv End inv	458.50 ft 446.80 ft
Pipe flow	Tc=	0.71 minutes	Slope	0.03 ft/ft
	V=	$\frac{1.49A^{0.67}S^{0.5}}{nP^{0.67}}$	V	10.00 ft/sec (assumed)

Time of Concentration	21.57 minutes
Use:	15.00 minutes



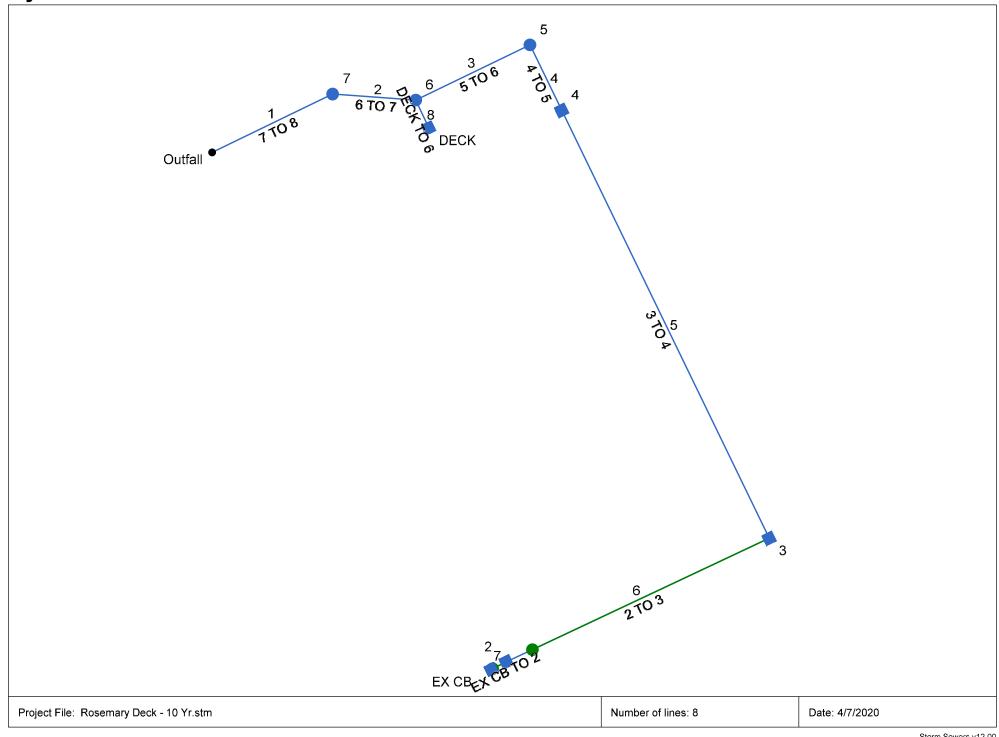
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HEADWATER SCALES 283
BUREAU OF PUBLIC ROADS JAM 1963 REVISED MAY 1964

HEADWATER DEPTH FOR CONCRETE PIPE CULVERTS WITH INLET CONTROL

Hydraflow Storm Sewers Extension for Autodesk® AutoCAD® Civil 3D® Plan



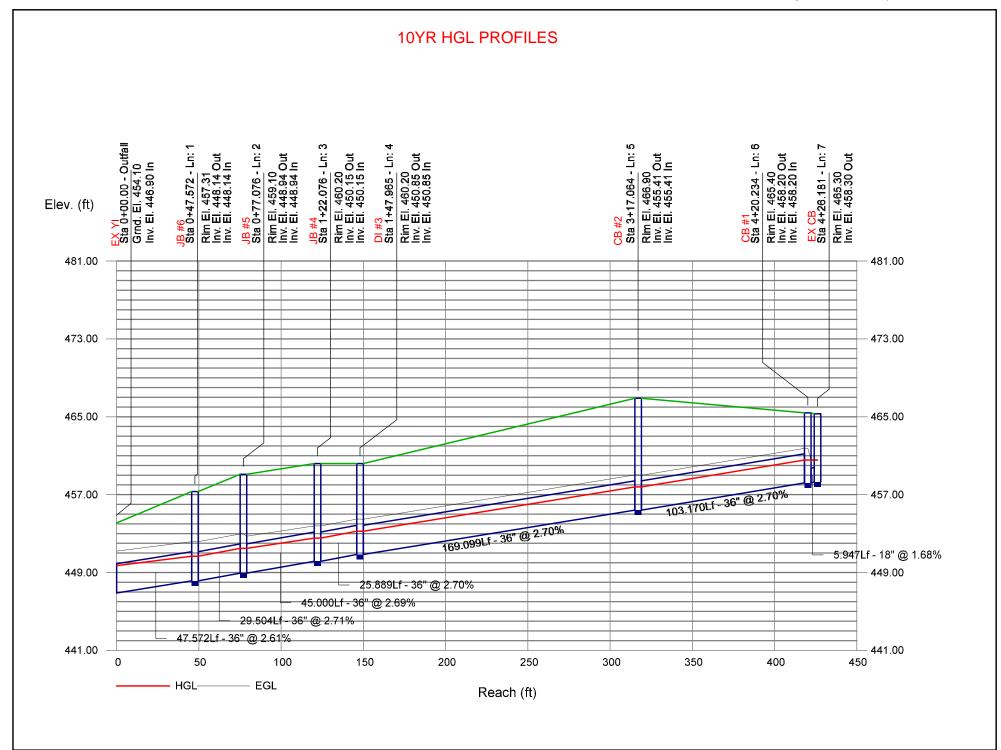
Line	To Line	Line Length	Incr. Area	Total Area	Runoff Coeff.	Incr C x A	Total C x A	Inlet Time	Time Conc	Rnfal Int	Total Runoff	Adnl Flow	Total Flow	Capac Full	Veloc	Pipe Size	Pipe Slope	Inv Elev Dn	Inv Elev Up	HGL Dn	HGL Up	Grnd/Rim Dn
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)
1	Outfall	47.572	0.00	1.95	0.00	0.00	1.67	0.0	6.0	7.1	11.76	0.00	62.40	116.65	9.42	36	2.61	446.90	448.14	449.71	450.68	454.10
2	1	29.504	0.00	1.95	0.00	0.00	1.67	0.0	5.9	7.1	11.79	0.00	62.43	118.97	9.78	36	2.71	448.14	448.94	450.68	451.48	457.31
3	2	45.000	0.00	0.62	0.00	0.00	0.47	0.0	5.8	7.1	3.34	0.00	53.98	118.48	8.71	36	2.69	448.94	450.15	451.48	452.53	459.10
4	3	25.889	0.12	0.62	0.33	0.04	0.47	5.0	5.8	7.1	3.35	0.00	53.99	118.81	8.96	36	2.70	450.15	450.85	452.53	453.23	460.20
5	4	169.099	0.25	0.50	0.84	0.21	0.43	5.0	5.4	7.2	3.12	0.00	53.76	118.65	8.93	36	2.70	450.85	455.41	453.23	457.79	460.20
6	5	103.170	0.07	0.25	0.90	0.06	0.22	5.0	5.2	7.3	1.62	50.64	52.26	118.82	8.75	36	2.70	455.41	458.20	457.79	460.55	466.90
7	6	5.947	0.18	0.18	0.88	0.16	0.16	5.0	5.0	7.4	1.17	0.00	1.17	14.75	0.66	18	1.68	458.20	458.30	460.55	460.55	465.40
8	2	10.971	1.33	1.33	0.90	1.20	1.20	5.0	5.0	7.4	8.81	0.00	8.81	72.35	3.01	36	1.00	448.83	448.94	451.48	449.88	459.10

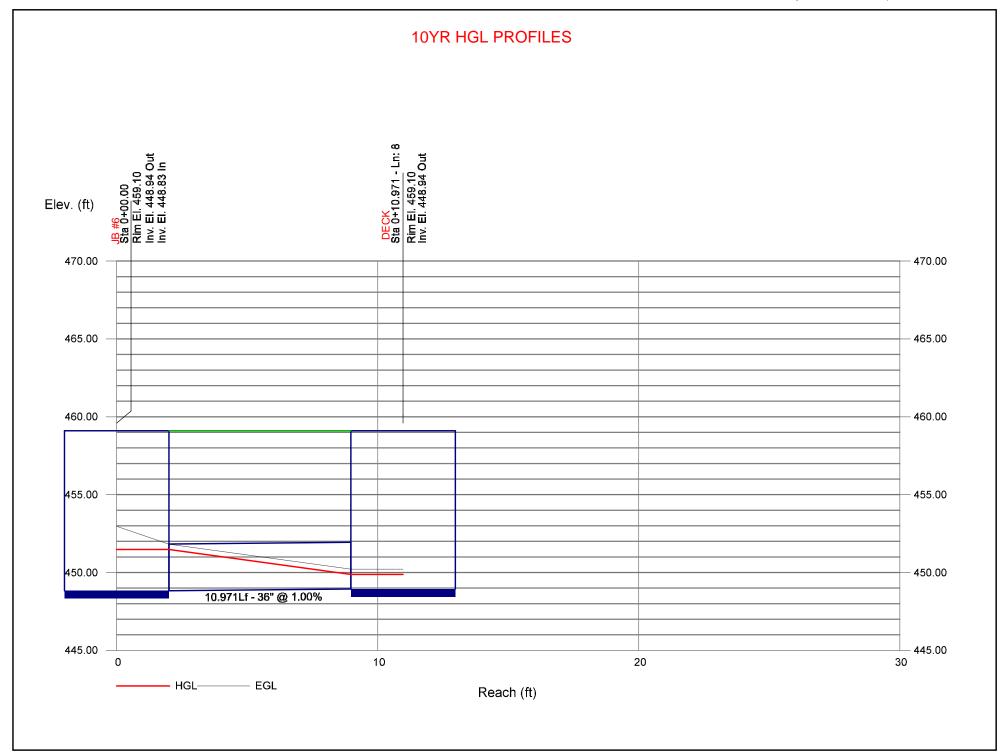
Hydraflow DOT Report 1

Line	Grnd/Rim Up	Line ID
	(ft)	
1	457.31	7 TO 8
2	459.10	6 TO 7
3	460.20	5 TO 6
4	460.20	4 TO 5
5	466.90	3 TO 4
6	465.40	2 TO 3
7	465.30	EX CB TO 2
8	459.10	DECK TO 6

Hydraflow DOT Report

2



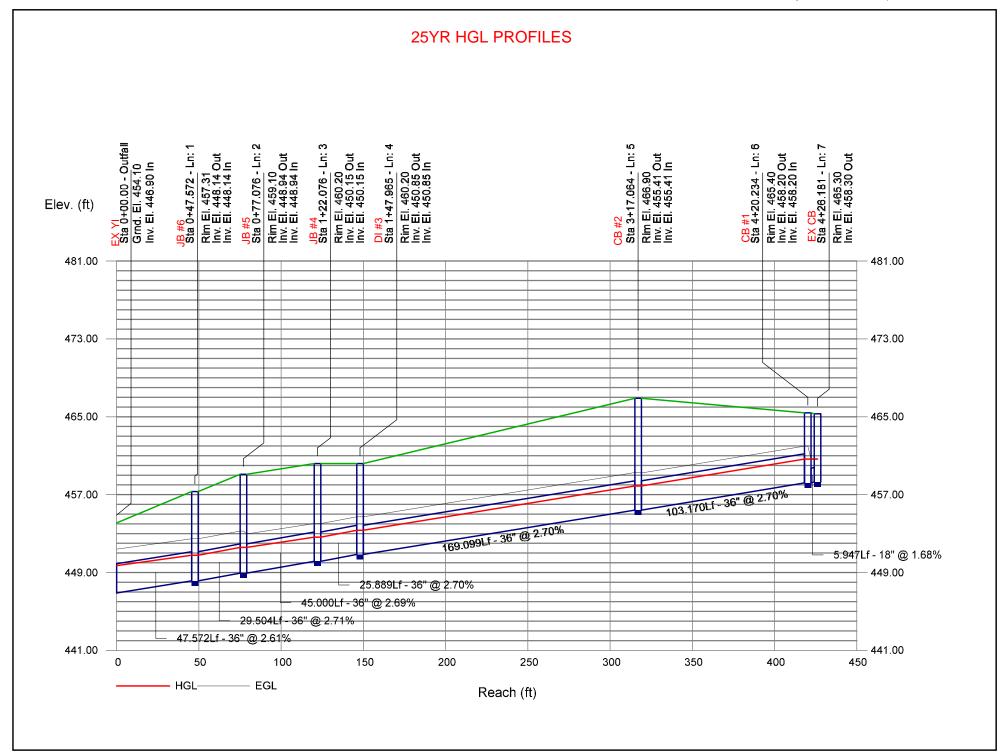


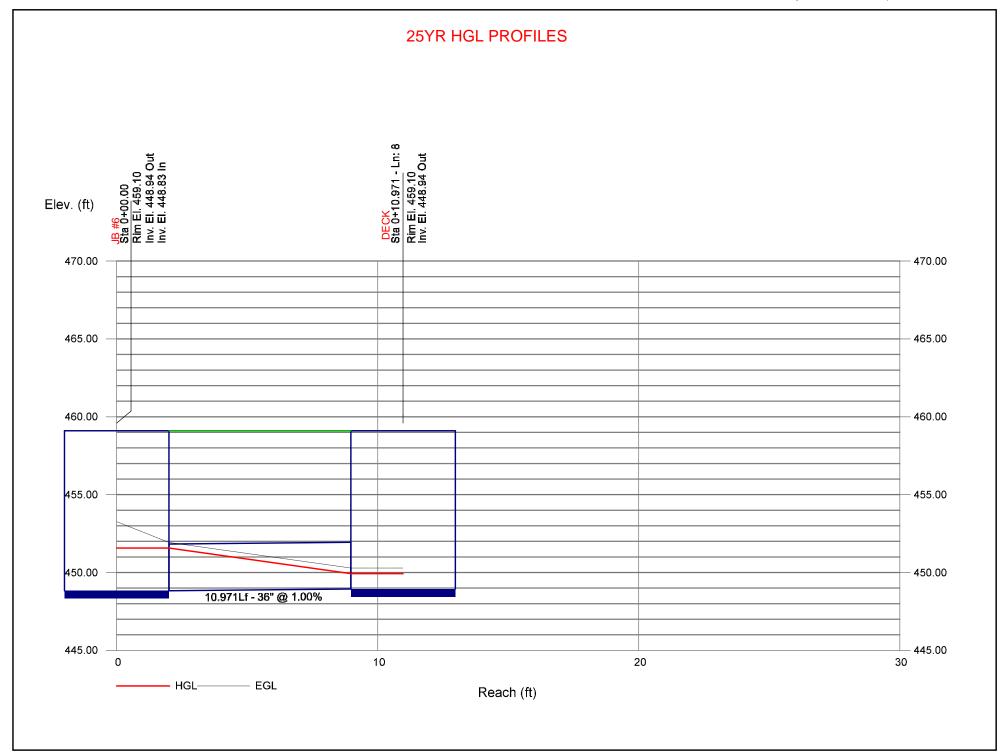
Line	To Line	Line Length	Incr. Area	Total Area	Runoff Coeff.	Incr C x A	Total C x A	Inlet Time	Time Conc	Rnfal Int	Total Runoff	Adnl Flow	Total Flow	Capac Full	Veloc	Pipe Size	Pipe Slope	Inv Elev Dn	Inv Elev Up	HGL Dn	HGL Up	Grnd/Rim Dn
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)
1	Outfall	47.572	0.00	1.95	0.00	0.00	1.67	0.0	5.9	7.8	12.99	0.00	68.52	116.65	10.19	36	2.61	446.90	448.14	449.71	450.78	454.10
2	1	29.504	0.00	1.95	0.00	0.00	1.67	0.0	5.8	7.8	13.01	0.00	68.54	118.97	10.42	36	2.71	448.14	448.94	450.78	451.58	457.31
3	2	45.000	0.00	0.62	0.00	0.00	0.47	0.0	5.7	7.8	3.69	0.00	59.22	118.48	9.23	36	2.69	448.94	450.15	451.58	452.64	459.10
4	3	25.889	0.12	0.62	0.33	0.04	0.47	5.0	5.7	7.9	3.70	0.00	59.23	118.81	9.46	36	2.70	450.15	450.85	452.64	453.34	460.20
5	4	169.099	0.25	0.50	0.84	0.21	0.43	5.0	5.3	8.0	3.44	0.00	58.97	118.65	9.43	36	2.70	450.85	455.41	453.34	457.89	460.20
6	5	103.170	0.07	0.25	0.90	0.06	0.22	5.0	5.1	8.0	1.78	55.53	57.31	118.82	9.22	36	2.70	455.41	458.20	457.89	460.65	466.90
7	6	5.947	0.18	0.18	0.88	0.16	0.16	5.0	5.0	8.1	1.28	0.00	1.28	14.75	0.73	18	1.68	458.20	458.30	460.65	460.65	465.40
8	2	10.971	1.33	1.33	0.90	1.20	1.20	5.0	5.0	8.1	9.69	0.00	9.69	72.35	3.12	36	1.00	448.83	448.94	451.58	449.92	459.10

Hydraflow DOT Report 1

Line	Grnd/Rim Up	Line ID
	(ft)	
1	457.31	7 TO 8
2	459.10	6 TO 7
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5	466.90	3 TO 4
6	465.40	2 TO 3
7	465.30	EX CB TO 2
8	459.10	DECK TO 6

Hydraflow DOT Report 2





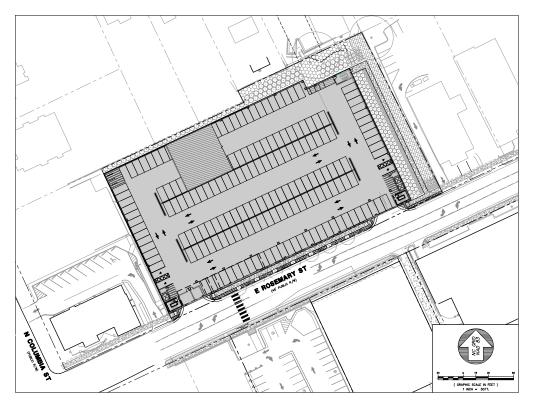
CONDITIONAL ZONING DRAWINGS ROSEMARY STREET PARKING DECK

CHAPEL HILL, ORANGE COUNTY, NORTH CAROLINA



DRAWING LIST

SHEET	DRAWING TITLE	LATEST ISSUE DAT
00001	COVER	08 APR 20
C0001	AREA MAP	08 APR 20
Ç0101	EXISTING CONDITIONS, LANDSCAPE PROTECTION & DEMOLITION PLAN	08 APR 20
C1001	SITE PLAN	08 APR 20
C1200	GRADING, UTILITY & EROSION CONTROL PLAN	08 APR 20
L01-01	LANDSCAPE PLANS	08 APR 20
L01-02	LANDSCAPE DETAILS	08 APR 20
A10-01	OVERALL FLOOR PLAN - P1 - P2	08 APR 20
A10-02	OVERALL FLOOR PLAN - P3 - P4	08 APR 20
A10-03	OVERALL FLOOR PLAN - P5 - P6	08 APR 20
A10-04	OVERALL FLOOR PLAN - P7 - ROOF	08 APR 20
A20-01	EXTERIOR ELEVATIONS	08 APR 20



SHEET	DRAWING TITLE	<u>LATEST</u> ISSUE DA
@0001	COVER	OB APR 2
C0001	AREA MAP	08 APR 2
Ç0101	EXISTING CONDITIONS, LANDSCAPE PROTECTION & DEMOLITION PLAN	08 APR 2
C1001	SITE PLAN	08 APR 2
C1200	GRADING, UTILITY & EROSION CONTROL PLAN	08 APR 2
L01-01	LANDSCAPE PLANS	08 APR 2
L01-02	LANDSCAPE DETAILS	08 APR 2
A10-01	OVERALL FLOOR PLAN - P1 - P2	08 APR 2
A10-02	OVERALL FLOOR PLAN - P3 - P4	08 APR 2
A10-03	OVERALL FLOOR PLAN - P5 - P6	08 APR 2
A10-04	OVERALL FLOOR PLAN - P7 - ROOF	OB APR 2
A20-01	EXTERIOR ELEVATIONS	OB APR 2

ARCHITECTURE:

Perkins&Will

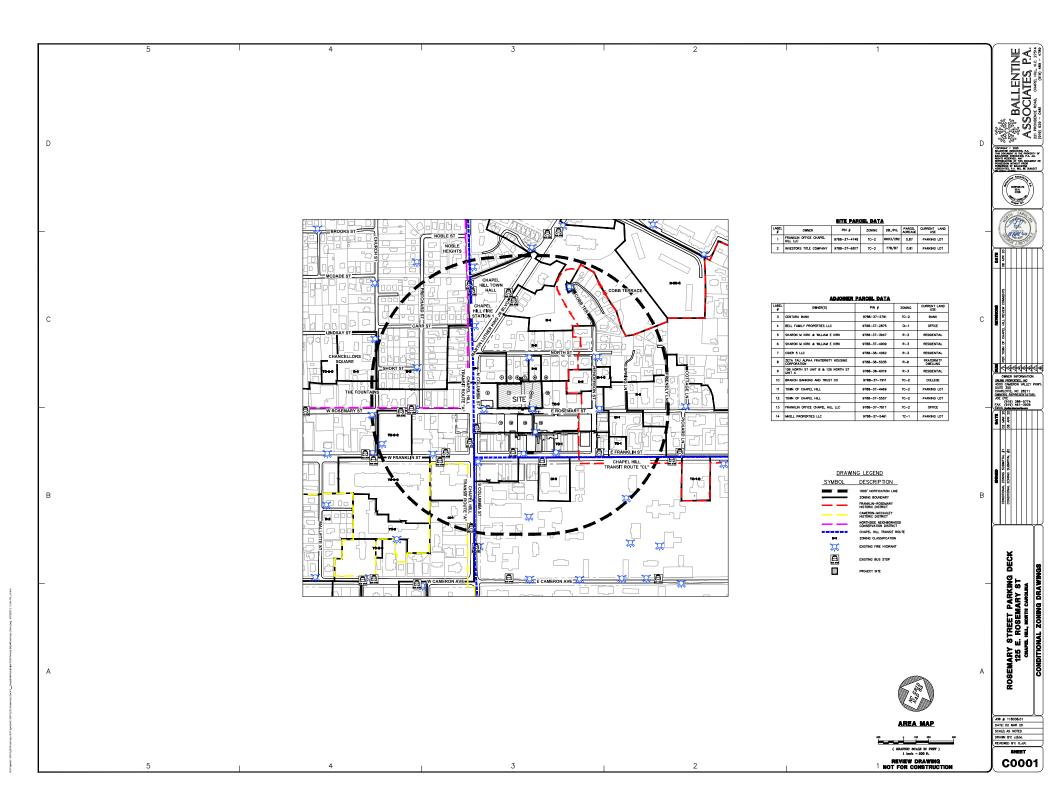


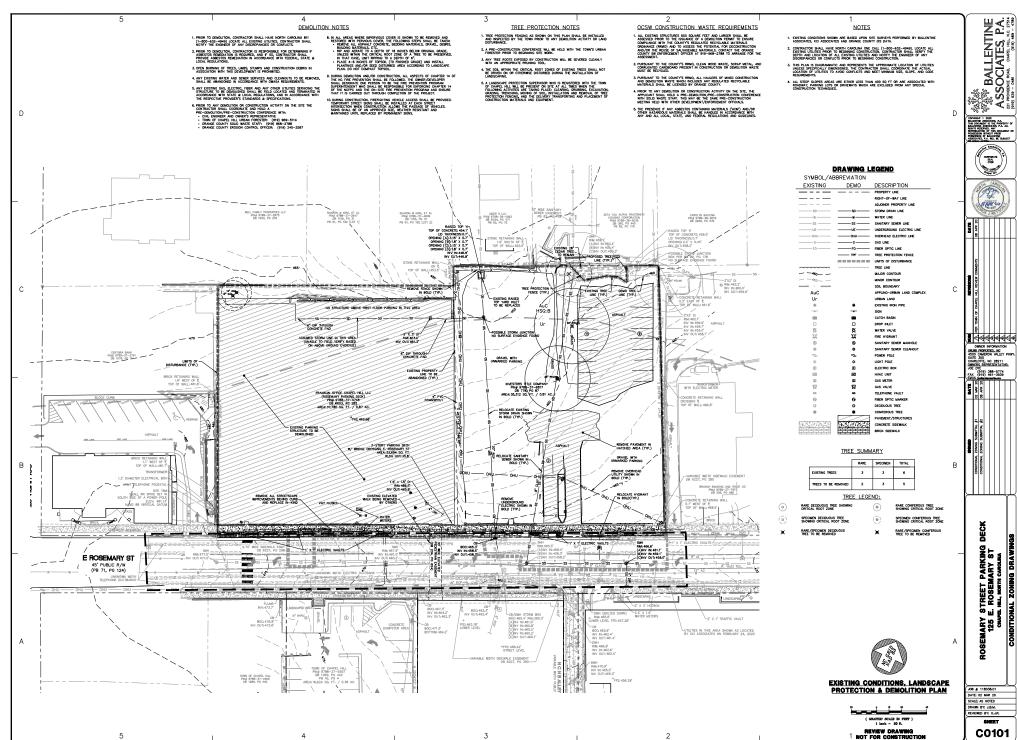




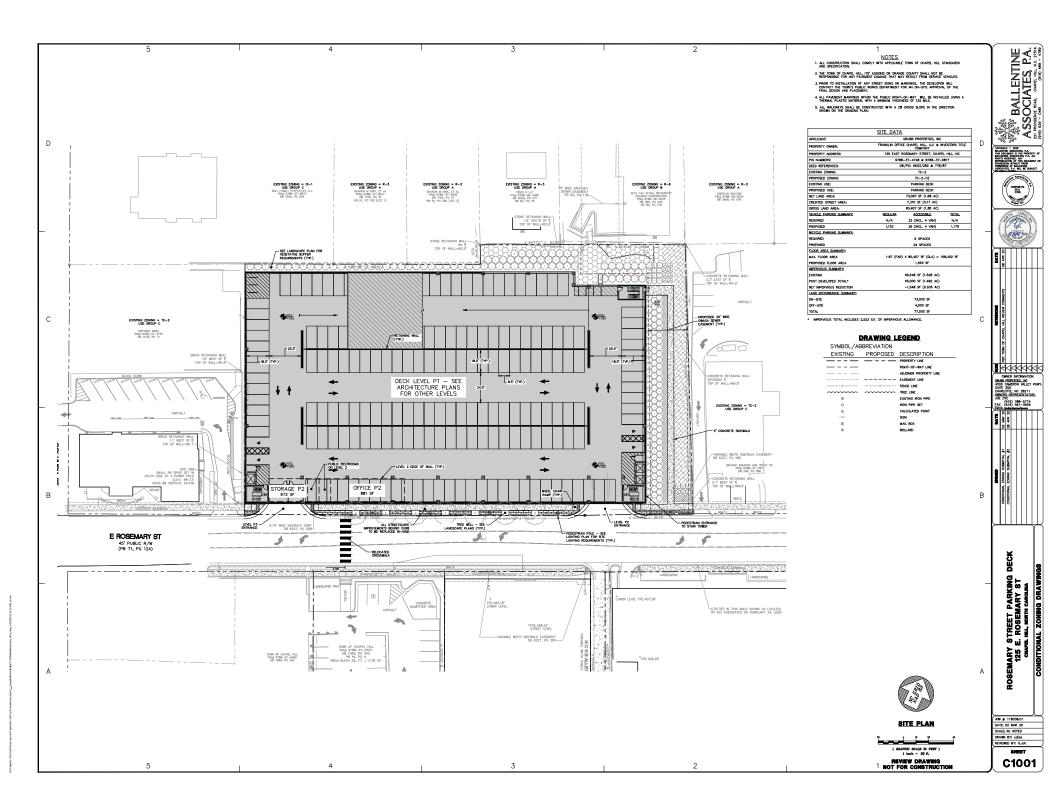


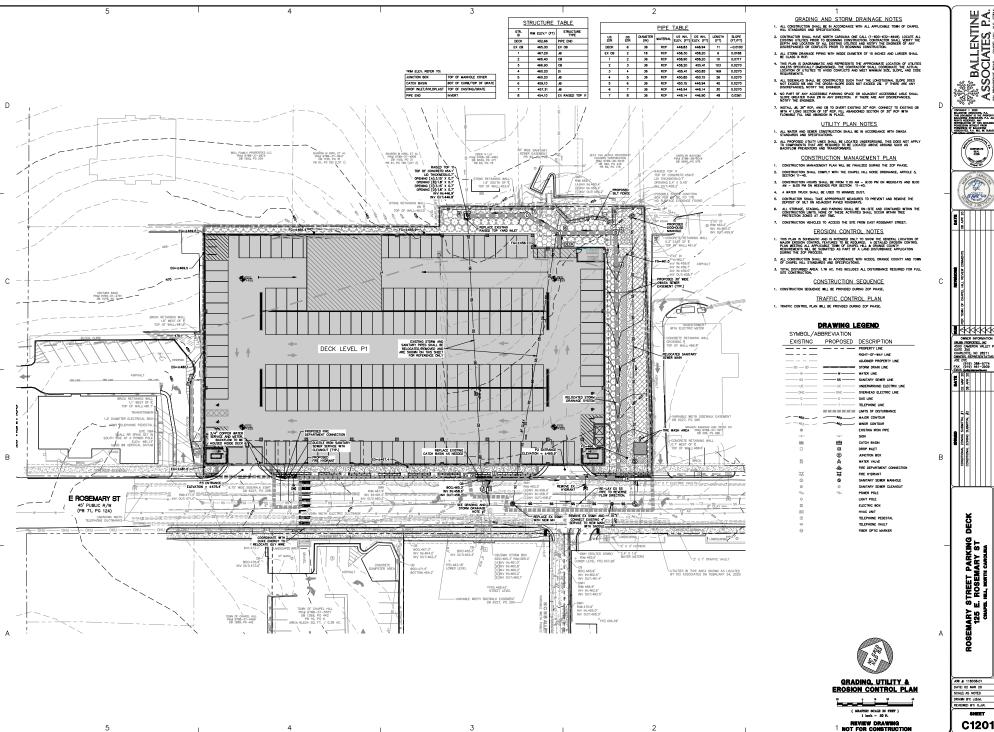
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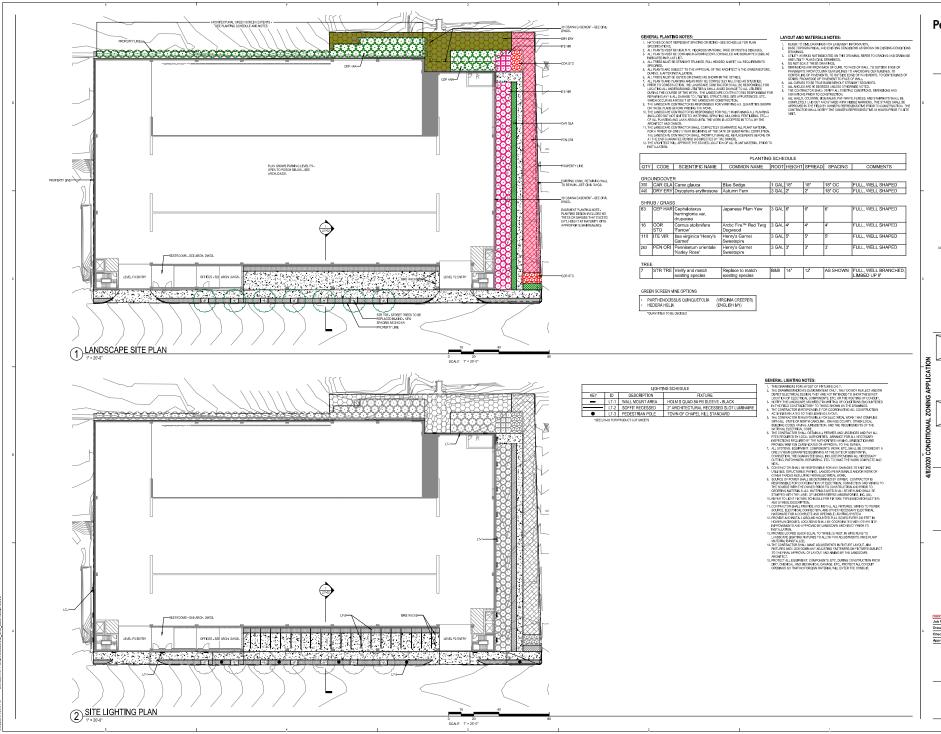




CHARLOTTE, NC 28211 OWNERS REPRESENTATIVE JOE DYF (919) 388-5774 (919) 461-3939

Y STREET PARKING [E. ROSEMARY ST NPE. HEL, NOTH CANCLEA

DATE: 02 MAR 20 SCALE: AS NOTED DRAWN BY: J.B.M. MEMED BY: GUA SHEET



Perkins&Will

CONSULTANTS

BALLENTINE ASSOCIATES, P.A. rovidence Read, Chapel HII, NC 27514

6750 Tryon Road, Cary, NC 27526

6750 Tryon Road, Cary, NC 27526

PERKINS & WILL

GRUBB PROPERTIES 4601 Park Road Suite 450, Charlotte, NC 28203

DIFAVALABLE

126 E ROSEMARY ST PARKING DECK

KEYPLAN

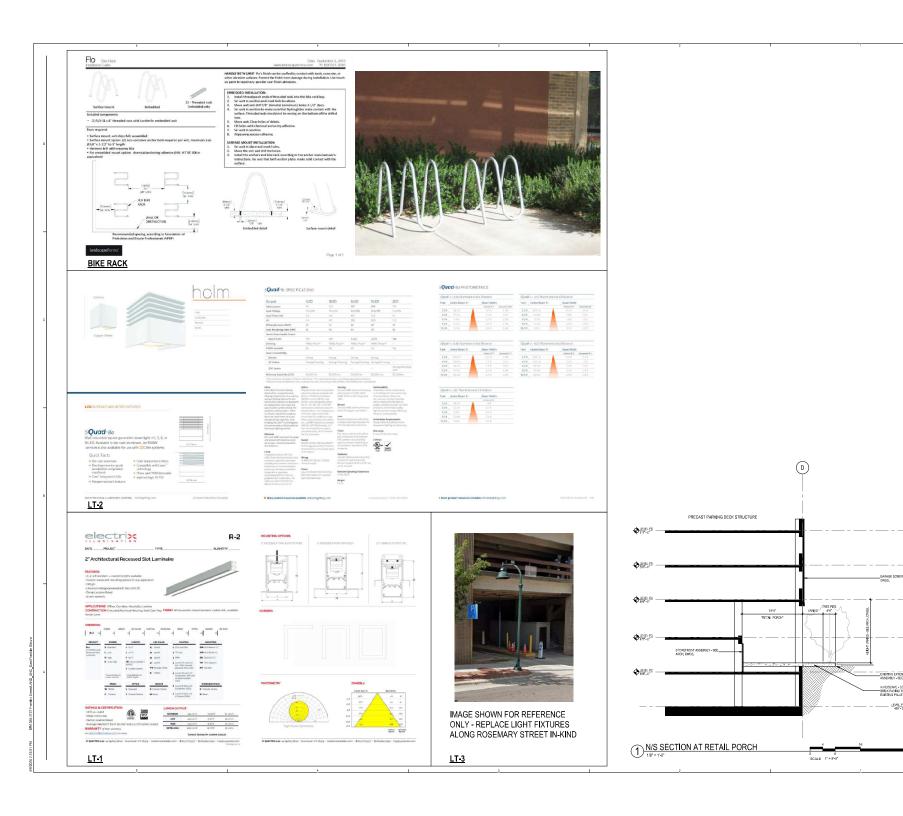
ISSUE CHART

LANDSCAPE PLANS

SHEET NUMBER

L01-01

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411 W Chapel Hill St Suite 200, Durbars, NC
27701

GRUBB PROPERTIES
4601 Park Road Subs 450, Charlotte, NC
2603

CONTRACTOR SAVIET Corporation 420 Wade Park Boulevard, Suite 104, Raleigh NC 2190



126 E ROSEMARY ST PARKING DECK

PARKING DECK

KEYPLAN

ISSUE CHART

Number
wn Author
sched Checker
proved Approver

SITE DETAILS

SHEET NUMBER

L01-02

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