



CONCEPT PLAN APPLICATION

Parcel Identifier Number (PIN): 9798451394

Date: 04/30/2018

Section A: Project Information

Project Name: The Oaks Condominiums

Property Address: Northwest quadrant of the NC54 (Raleigh Rd)/ Burning Tree Dr. Intersection in Chapel Hill, NC Zip Code: 27517

Use Groups (A, B, and/or C): A Existing Zoning District: R-4

Project Description: Installation of storm drainage conveyance system to reduce existing flooding issues

Section B: Applicant, Owner and/or Contract Purchaser Information

Applicant Information (to whom correspondence will be mailed)

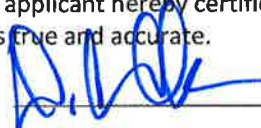
Name: Amos Clark

Address: 2905 Meridian Parkway

City: Durham State: NC Zip Code: 27713

Phone: (919) 361-5000 Email: clark@mcadamsco.com

The undersigned applicant hereby certifies that, to the best of his knowledge and belief, all information supplied with this application is true and accurate.

Signature: 

Date: 5-2-2018

Owner/Contract Purchaser Information:

Owner

Contract Purchaser

Name: Oaks Owners Association c/o Community Association Services, Inc.

Address: 5915 Farrington Road, Suite 104

City: Chapel Hill State: NC Zip Code: 27517

Phone: 919-403-1400 Email: edbedford@cas.com

The undersigned applicant hereby certifies that, to the best of his knowledge and belief, all information supplied with this application is true and accurate.

Signature: By:  Manager

Date: 5/1/18



Concept Plan Overview

Site Description	
Project Name	The Oaks Condominiums
Address	Northwest quadrant of the NC 54 (Raleigh Rd)/ Burning Tree Dr. Intersection in Chapel Hill, NC
Property Description	Installation of Storm drainage conveyance system to reduce existing flooding issues.
Existing Land Use	Multi- family residential
Proposed Land Use	
Orange County Parcel Identifier Numbers	9798451394
Existing Zoning	R-4
Proposed Zoning	
Application Process	Special Use Permit
Comprehensive Plan Elements	
Overlay Districts	

Regulatory Land Use Intensity

Design/LUMO Standards		Requirement	Proposal	Status
Sec. 3.7	Use/Density	R-4 zoning "P" – Permitted as a principal use		No Change
Sec 3.8	Net Land Area	5,500 Lot size		No Change
Sec 3.8	Gross Land Area	NA		No Change
Sec. 3.8	Dimensional Standards	Street 22' Interior 8' Solar 9'		No Change
Sec. 3.8	Floor area	1,265 sf per lot		No Change
Sec. 4.5.6	Modification to Regulations	NA		No Change
Sec. 5.5	Recreation Space	.218 of land area (max .039 floor area ratio)		No Change



Site Design

	Design/LUMO Standards		Requirement	Proposal	Status
Landscape	Sec. 5.6	East	Type "B" Buffer		No Change
	Sec. 5.6	North	Type "B" Buffer		No Change
	Sec. 5.6	South	Type "C" Buffer		No Change
	Sec. 5.6	West	none		No Change
	Sec. 5.7	Tree Canopy	30%		No Change
	Sec. 5.11	Lighting Plan (footcandles)	Per LUMO		No Change
Environment	Sec. 3.6	Resource Conservation District	NA		No Change
	Sec. 5.18	Jordan Riparian Buffer	NA		No Change
	Sec. 5.3.2	Steep Slopes	NA		No Change
	Sec. 5.4	Stormwater Management	Yes	Addition of storm drainage conveyance system to reduce existing flooding issues.	
		Land Disturbance	-	39,210 sf	
	Sec. 5.4	Impervious Surface	NA		No Change
	Sec. 5.13	Solid Waste & Recycling	NA		No Change
Housing		Affordable Housing Proposal, if applicable	None		No Change



Design/LUMO Standards		Requirement	Proposal	Status
Access & Circulation	Sec. 5.8	Street Standards	NA	No Change
	Sec. 5.8	Vehicular Access	NA	No Change
	Sec. 5.8	Bicycle Improvements	NA	No Change
	Sec. 5.8	Pedestrian Improvements	NA	No Change
	Sec. 5.8	Distance from bus stop	NA	No Change
	Sec. 5.8	Transit Improvements	NA	No Change
	Sec. 5.9	Vehicular Parking Spaces	NA	No Change
	Sec. 5.9	Bicycle Parking Spaces	NA	No Change
	Sec. 5.9	Parking Lot Standards	NA	No Change
Other		Homeowners Association	NA	No Change
	Sec. 5.5	Recreation Space	Per LUMO	No Change
	Sec. 5.12	Utilities	Needs to be approved by OWASA	Previous approval
	Sec. 5.16	School Adequate Public Facilities	NA	No Change

Symbol	Meaning	Symbol	Meaning
	Meets Standard	M	Modification necessary
NA	Not Applicable	UNK	Not known at this time



Checklist

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 and Sustainability at (919)968-2728 or at planning@townofchapelhill.org.

X	Application fee (refer to fee schedule)	Amount Paid \$	360.00
X	Pre-application meeting – with appropriate staff		
X	Digital Files - provide digital files of all plans and documents		
X	Project Fact Sheet		
NA	Statement of Compliance with Design Guidelines (2 copies)	*This is a stormwater improvement project not a new development.	
NA	Statement of Compliance with Comprehensive Plan (2 copies)		
NA	Affordable Housing Proposal, if applicable (Rezoning Policy or Inclusionary Ordinance)		
X	Mailing list of owners of property within 1,000 feet perimeter of subject property (see GIS notification tool)		
X	Mailing fee for above mailing list	Amount Paid \$	314.40
X	Developer's Program – brief written statement explaining how the existing conditions impact the site design. Including but not limited to:		
	<ul style="list-style-type: none"> • Natural features of site • Access, circulation, and mitigation of traffic impacts • Arrangement and orientation of buildings • Natural vegetation and landscaping • Impact on neighboring properties • Erosion, sedimentation, and stormwater 		
X	Resource Conservation District, Floodplain, & Jordan Buffers Determination - necessary for all submittals		
X	Reduced Site Plan Set (reduced to 8.5"x11")		

Plan Sets (10 copies to be submitted no larger than 24"x36")

Plans should be legible and clearly drawn. All plan sets 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 and buffers
- Streams, RCD Boundary, Jordan Riparian Buffer Boundary, Floodplain, and Wetlands Boundary, where applicable



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

Proposed Site Plan

- a) Existing building locations
- b) General location of proposed structures
- c) Parking areas
- d) Open spaces and landscaped areas
- e) Access points and circulation patterns for all modes of transportation
- f) Approximate locations of trails, pedestrian and bicycle connections, transit amenities, and parking areas
- g) Approximate location of major site elements including buildings, open areas, natural features including stream buffers, wetlands, tree stands, and steep slopes
- h) Proposed land uses and approximate location



PROJECT FACT SHEET
TOWN OF CHAPEL HILL
 Planning Department

Section A: Project Information

Application type: CDC Concept Plan Application Date: 04/30/2018
 Project Name: The Oaks Condominiums

Use Type: (check/list all that apply)

Office/Institutional Residential Mixed-Use Other: _____

Overlay District: (check all those that apply)

Historic District Neighborhood Conservation District Airport Hazard Zone

Section B: Land Area

Net Land Area (NLA): Area within zoning lot boundaries		NLA=		sq. ft.
Choose one, or both, of the following (a or b,) not to exceed 10% of NLA	a) Credited Street Area (total adjacent frontage) x ½ width of public right-of-way	CSA=		sq. ft.
	b) Credited Permanent Open Space (total adjacent frontage) x ½ public or dedicated open space	COS=		sq. ft.
TOTAL: NLA + CSA and/or COS = Gross Land Area (not to exceed NLA + 10%)		GLA=		sq. ft.

Section C: Special Protection Areas, Land Disturbance, and Impervious Area

Special Protection Areas: (check all those that apply)

Jordan Buffer Resource Conservation District 100 Year Floodplain Watershed Protection District

Land Disturbance	Total (sq ft)
Area of Land Disturbance (Includes: Footprint of proposed activity plus work area envelope, staging area for materials, access/equipment paths, all grading, including off-site clearing)	39,210
Area of Land Disturbance within RCD	2,677
Area of Land Disturbance within Jordan Buffer	

Impervious Areas	Existing (sq ft)	Demolition (sq ft)	Proposed (sq ft)	Total (sq ft)
Impervious Surface Area (ISA)				
Impervious Surface Ratio: Percent Impervious Surface Area of Gross Land Area (ISA/GLA) %				
If located in Watershed Protection District, % of impervious surface on 7/1/1993				



PROJECT FACT SHEET

TOWN OF CHAPEL HILL
Planning Department

Section D: Dimensions

Dimensional Unit (sq ft)	Existing (sq ft)	Demolition (sq ft)	Proposed (sq ft)	Total (sq ft)
Number of Buildings				
Number of Floors				
Recreational Space				

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					
Hotel			# of Rooms		
Industrial					
Place of Worship			# of Seats		
Other					

Dimensional Requirements		Required by Ordinance	Existing	Proposed
Setbacks (minimum)	Street			
	Interior (neighboring property lines)			
	Solar (northern property line)			
Height (maximum)	Primary			
	Secondary			
Streets	Frontages			
	Widths			



PROJECT FACT SHEET

TOWN OF CHAPEL HILL
Planning Department

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
				<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
				<input type="checkbox"/> Yes	<input type="checkbox"/> 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
			<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
			<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A

Section G: Parking Information

Parking Spaces	Minimum	Maximum	Proposed
Regular Spaces			
Handicap Spaces			
Total Spaces			
Loading Spaces			
Bicycle Spaces			
Surface Type			

Section H: Landscape Buffers

Location (North, South, Street, Etc.)	Minimum Width	Proposed Width	Alternate Buffer	Modify Buffer
			<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
			<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
			<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
			<input type="checkbox"/> Yes	<input type="checkbox"/> Yes



PROJECT FACT SHEET

TOWN OF CHAPEL HILL
Planning Department

Section I: Land Use Intensity

Existing Zoning District:

Proposed Zoning Change (if any):

Note: Refer to Table 3.8-1 (Dimensional Matrix) in the Land Use Management Ordinance for help completing this table.

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
TOTAL							
RCD Streamside		0.01					
RCD Managed		0.019					
RCD Upland							

Section J: Utility Service

Check all that apply

Water	<input type="checkbox"/> OWASA	<input type="checkbox"/> Individual Well	<input type="checkbox"/> Community Well	<input type="checkbox"/> Other
Sewer	<input type="checkbox"/> OWASA	<input type="checkbox"/> Individual Septic Tank	<input type="checkbox"/> Community Package Plant	<input type="checkbox"/> Other
Electrical	<input type="checkbox"/> Underground <input type="checkbox"/> Above Ground			
Telephone	<input type="checkbox"/> Underground <input type="checkbox"/> Above Ground			
Solid Waste	<input type="checkbox"/> Town <input type="checkbox"/> Private			

The Oaks Condominiums

Hydraulic Analysis of Existing and Proposed Storm Drainage System

Project Description and Summary

Located at the northwest quadrant of the NC 54 (Raleigh Road)/Burning Tree Drive intersection and on the western edge of the Meadowmont development in Chapel Hill, North Carolina, is the existing multi-family development currently known as The Oaks Condominiums. Recent rainfall events have resulted in flooding of Buildings 14 and 15, along Oak Tree Drive. A hydraulic analysis of the existing storm drainage system was performed to determine if the capacity of the existing system is sufficient. The study indicated that the existing storm drainage system is undersized. As a result, it is proposed that a 36" RCP of approximately 556 linear feet be placed between the upstream invert of the existing 24" culvert just north of Building 14 and Building 15 and approximately a 220 LF swale north of the upstream invert of the existing dual 30" RCP culverts that run under Burning Tree Drive. A junction box will be added on Oak Tree Drive where an existing 24" RCP will intersect the proposed 36" RCP bypass pipe. In addition, an additional 24" RCP culvert has been added under Burning Tree Drive, and outlets in a proposed junction box that intersects an existing 30" RCP just before entering the junction box located at the northeast quadrant of the NC 54 (Raleigh Road)/Burning Tree Drive intersection. This manhole is shown as DMH500 in the pipe layout diagram in the Hydraulic Analysis Calculations section of the report, located within the NCDOT right-of-way for NC 54. No adjustments to DMH500 will be made as a part of the drainage improvements in this project. \

As part of the original SUP for the site, a landscape plan must be provided and approved by the CDC. The proposed landscape plan provides the location and type of tree to be planted to meet the requirements of the CDC. The Oaks community is proposing to replace 15 of the 30 existing trees that were removed due to this project.

Design Constraints

The design and layout of the proposed system is constrained by the existing buildings and infrastructure servicing the Oaks Condominiums. The alignment of the system was selected to minimize impacts to the existing development; however, conflicts with utilities are anticipated. The route selected runs in open areas to avoid impacts to paved areas where possible.

The crossing with Burning Tree Drive is constrained vertically and horizontally. The existing 30" RCP culverts under Burning Tree Drive have minimal cover and cannot be upsized. Due to the location of the traffic signal loops and the neighborhood entrance, an additional 30" RCP cannot be laid parallel the existing culverts. The additional pipe is located north existing culvert as this is the most open area for the crossing. In order to provide adequate cover while maintaining the existing inverts, the pipe size is limited to 24" RCP.

A scenario where pipe 28 was blocked was analyzed as way to alleviate flow to CB 518, DMH 517, CB 516 to ultimately reduce the HGL in these structures. This analysis proved to adversely impact the system so pipe 28 is to be left unblocked. This scenario HGL summary is provided in this section per the request of the Town of Chapel Hill.

Discussion of Results

Drainage from The Oaks Condominiums flows generally in a southeasterly direction, through the site and to Burning Tree Drive. There are two divergent systems leaving the site, one draining down Oak Tree Drive and to Burning Tree Drive, the other flowing through the existing parking area south of Oak Tree Drive and discharging just northwest of the intersection of Burning Tree Drive and NC 54. Flow from both of these site discharges converge within the existing Burning Tree Drive drainage system before entering the drainage system for NC 54. Drainage flows across NC 54 and discharges to an existing open channel that is located at the southeastern quadrant of the intersection of NC 54, Burning Tree Drive, and Finley Golf Course Road. Significant offsite water drains through the project area to be discharged at this location, which then subsequently flows through Finley Golf Course and discharges to Morgan Creek.

This project is expected to disturb 39,210 sf of land. As part of this proposed project, a crossing of Burning Tree Drive is required to connect to proposed junction box on the east side of Burning Tree Drive. This roadway is owned and maintained by the Town of Chapel Hill, and as such approval from the Town will be required for the project.

This solution will not eliminate all potential for future flooding within this site; however, this proposed drainage improvement will significantly enhance the conveyance capability of the drainage system through the site for more frequent storm events.

Conclusion

If the storm drainage bypass system and additional storm drainage improvements are built as proposed within this report, then the requirements set forth in the Town of Chapel Hill regulations will be met.



MEMORANDUM

Date: April 30, 2018
To: Kay Pearlstein
Town of Chapel Hill Planning Department
From: D. Amos Clark, PE
Re: The Oaks Condominiums
CAS-10000

Dear Ms. Pearlstein:

The Oaks Condominiums is an existing multi-family residential community located at the intersection of NC54 and Burning Tree Drive. In order to minimize flooding on the north side of the development, a bypass pipe has been proposed to divert stormwater around the development and discharge on the upstream side of Burning Tree Drive into the existing culverts running under Burning Tree Drive.

As a result of bypass pipe addition, impacts will be made to the existing perennial stream located at the north side of the development. Thus, we are encroaching in the Resource Conservation District (RCD).

After performing the due diligence associated with the design of this project and inspection of the FEMA floodmap, no FEMA delineated floodway or floodplain is located in the vicinity of the project. Thus, floodproofing is not required.

Please feel free to contact me at (919) 361-5000 should you have any questions or need any further information.

Sincerely,

THE JOHN R. McADAMS COMPANY, INC.

A blue ink handwritten signature of D. Amos Clark, consisting of stylized initials and a surname.

D. Amos Clark, PE
Division Director, Engineering + Environmental

The John R. McAdams
Company, Inc.

Raleigh / Durham, NC
2905 Meridian Parkway
Durham, North Carolina 27713
(919) 361-5000

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3436 Toringdon Way
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McAdamsCo.com

Designing Tomorrow's Infrastructure & Communities

THE OAKS CONDOMINIUMS

CONSTRUCTION PLANS LOCATED AT THE INTERSECTION OF BURNING TREE DRIVE & NC 54 (RALEIGH ROAD) PROJECT NUMBER: CAS-10000

DATE: FEBRUARY 10, 2017
REVISED: SEPTEMBER 13, 2017

OWNER:
CAS, INC.
5915 FARRINGTON ROAD, SUITE 104
CHAPEL HILL, NORTH CAROLINA 27517
CONTACT: ED BEDFORD
PHONE: (919) 403-1400
EMAIL: edbedford@casnc.com

SHEET INDEX

- C-1 EXISTING CONDITIONS AND DEMOLITION PLAN
- C-2 GRADING AND STORM DRAINAGE PLAN
- C-3 EROSION CONTROL PLAN
- P-1 PLAN & PROFILE - STORM OUTFALL "A"
- D-1 SITE DETAILS
- D-2 STORM DRAINAGE DETAILS
- D-3 EROSION CONTROL DETAILS
- LS-1 OVERALL LANDSCAPE PLAN
- LS-2 LANDSCAPE PLAN AREA 'A'
- LS-3 LANDSCAPE PLAN AREA 'B'



VICINITY MAP
NTS

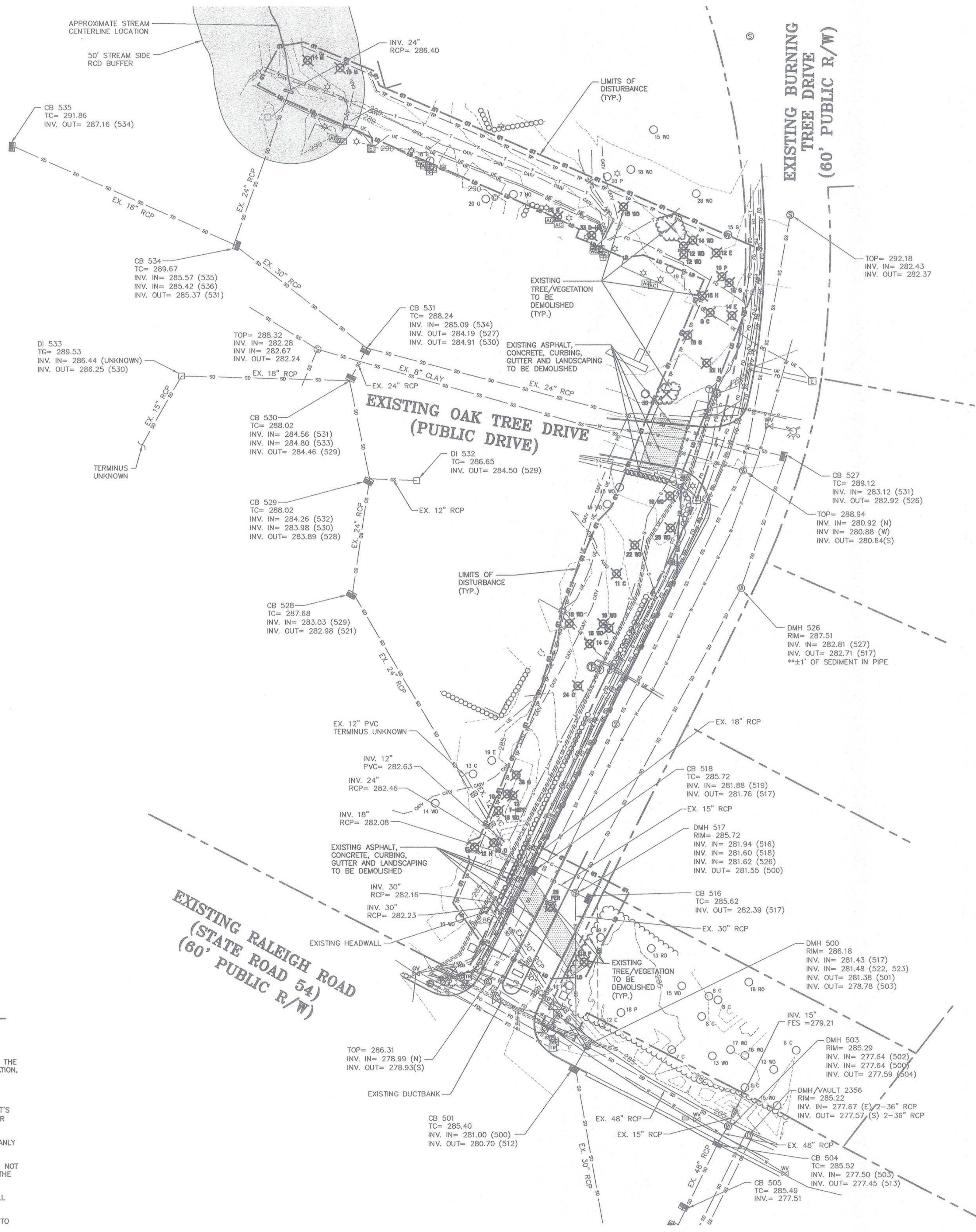


Know what's below.
Call before you dig.

CONTRACTOR SHALL NOTIFY "NC811" (811) OR (1-800-632-4949) AT LEAST 3 FULL BUSINESS DAYS PRIOR TO BEGINNING CONSTRUCTION OR EXCAVATION TO HAVE EXISTING UTILITIES LOCATED. CONTRACTOR SHALL CONTACT ANY LOCAL UTILITIES THAT PROVIDE THEIR OWN LOCATOR SERVICES INDEPENDENT OF "NC811". REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY.



THE JOHN R. McADAMS
COMPANY, INC.
2905 Meridian Parkway
Durham, North Carolina 27713
License No.: C-0293
(800) 733-5646 • McAdamsCo.com
Contact: Amos Clark, PE
clark@mcadamsco.com



GENERAL NOTES:

- EXISTING UTILITIES SHOWN ARE BASED ON FIELD SURVEYS AND THE BEST AVAILABLE RECORD DRAWINGS. THE CONTRACTOR SHALL VERIFY CONDITIONS PRIOR TO BEGINNING CONSTRUCTION. ANY DISCREPANCIES BETWEEN ACTUAL FIELD CONDITIONS AND THE PLANS SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
- THIS SITE IS NOT IN ANY SPECIAL FLOOD HAZARD AREA OR FUTURE CONDITIONS FLOOD HAZARD AREAS, AS SHOWN ON FIRM PANEL 3710979800K DATED FEBRUARY 2, 2007.
- THE SITE IS IN A PROTECTED WATERSHED OVERLAY DISTRICT.
- THERE ARE NO STEEP SLOPES ON SITE.
- THERE ARE NO WETLANDS ON SITE.
- IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO ENSURE PROPER REMOVAL, STORAGE, AND REUSE OF ANY EXISTING INFRASTRUCTURE MATERIALS ON SITE, INCLUDING BUT NOT LIMITED TO ELECTRICAL, TELECOM, AND FIBER OPTIC.
- ALL COORDINATION FOR LOCATION AND FIELD VERIFICATION OF UTILITIES, BOTH HORIZONTALLY AND VERTICALLY, IS THE RESPONSIBILITY OF THE CONTRACTOR.

LEGEND

- BOLLARD
- SANITARY SEWER MANHOLE
- SANITARY SEWER CLEANOUT
- WATER VALVE
- WATER METER
- FIRE DEPARTMENT CONNECTION
- FIRE HYDRANT
- AIR CONDITIONING UNIT
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- STEAM MANHOLE
- ELECTRIC BOX
- LIGHT POLE
- CATCH BASIN
- DROP INLET
- STORM DRAINAGE MANHOLE
- STORM DRAIN
- OVERHEAD UTILITY LINE
- UNDERGROUND ELECTRIC
- UNDERGROUND TELEPHONE
- FIBER OPTICS
- WATER LINE
- SANITARY SEWER LINE
- GAS LINE
- FENCE LINE
- LIMITS OF DISTURBANCE
- EXISTING 5' CONTOUR
- EXISTING 1' CONTOUR

DEMOLITION LEGEND

- ✕ TREE VEGETATION TO BE DEMOLISHED
- ▨ AREA TO BE DEMOLISHED

DEMOLITION NOTES

THE CONTRACTOR SHALL FIELD VERIFY AND LOCATE EXISTING UTILITIES ON SITE PRIOR TO DEMOLITION.

THE CONTRACTOR SHALL VERIFY THAT THERE ARE NO UTILITY OR OTHER CONFLICTS PRIOR TO BEGINNING CONSTRUCTION.

THE CONTRACTOR SHALL PERFORM DEMOLITION ACTIVITIES AS NOTED AND SHOWN ON THESE PLANS AND SPECIFICATIONS AND AS DIRECTED BY THE OWNER.

IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ANY PERMITS AND PAY FEES REQUIRED FOR DEMOLITION AND HAUL-OFF FROM THE APPROPRIATE AUTHORITIES. THESE FEES ARE TO BE INCLUDED WITH THE BID.

THE CONTRACTOR SHALL PREPARE ALL DOCUMENTS AND ACQUIRE APPROPRIATE PERMITS AS REQUIRED PRIOR TO THE COMMENCEMENT OF DEMOLITION.

THE DEMOLITION PLAN IS INTENDED TO DEPICT GENERAL DEMOLITION AND UTILITY WORK. IT IS NOT INTENDED TO IDENTIFY EACH ELEMENT OF DEMOLITION OR RELOCATION. CONTRACTOR SHALL COORDINATE WITH THE OWNER AND APPROPRIATE UTILITY COMPANY PRIOR TO WORK.

CONTRACTOR TO COMPLETELY DEMOLISH AND DISPOSE OF OFFSITE IN A LAWFUL MANNER EXISTING IMPROVEMENTS, INCLUDING FOUNDATIONS AND ALL APPURTENANCES LOCATED ON AND AROUND THE PROPERTY INCLUDING BUT NOT LIMITED TO SIGNS, CURBS, SIDEWALKS, ETC.

REMOVE AND DISPOSE OF ANY CONDUITS, LIGHT POLE BASES, DEBRIS AND RUBBISH REQUIRING REMOVAL FROM THE WORK AREA IN AN APPROVED LANDFILL. CONTRACTOR SHALL MAKE EVERY ATTEMPT TO RECYCLE ANY DEBRIS AND RUBBISH THAT IS RECYCLABLE.

REMOVE AND/OR PLUG EXISTING UTILITIES AS SHOWN. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING EACH UTILITY COMPANY TO COORDINATE REMOVAL OF ALL UTILITIES AND FOR DETERMINING HORIZONTAL AND VERTICAL LOCATIONS OF UTILITIES PRIOR TO COMMENCING WORK.

CONTRACTOR SHALL REMOVE, RELOCATE AND/OR INSTALL ALL EROSION AND SEDIMENT CONTROL DEVICES AND TREE PROTECTION PRIOR TO BEGINNING DEMOLITION WORK.

THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES TO REMAIN IN PLACE. ANY DAMAGE TO EXISTING UTILITIES SHALL BE REPAIRED AT NO ADDITIONAL EXPENSE TO THE OWNER.

THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS TO AVOID UNNECESSARY DAMAGE TO EXISTING ROAD AND PARKING SURFACES. ANY UNNECESSARY DAMAGE DUE TO CONSTRUCTION ACTIVITIES AND/OR CONSTRUCTION TRAFFIC SHALL BE REPAIRED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.

FINISH SURFACE TO BE REMOVED OR DEMOLISHED SHALL BE SAW CUT ALONG LINES OF JOINTS WHICH WILL PERMIT A NEAT AND SMOOTH SURFACE WHEN RESTORED, INCLUDE REPAIRS IF REQUIRED.

ALL EXISTING ITEMS TO REMAIN WHICH ARE DAMAGED DURING CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT THE SOLE EXPENSE OF THE CONTRACTOR.

THE CONTRACTOR SHALL MAINTAIN ALL UTILITY SERVICES TO THE ADJACENT BUILDINGS AND PROPERTIES THROUGHOUT CONSTRUCTION.

TREE LEGEND

- 8 A ASH
 - 10 C CEDAR
 - 6 CH CHERRY
 - 10 E ELM
 - 12 C SWEET GUM
 - 16 H HICKORY
 - 4 HO HOLLY
 - 15 M MAPLE
 - 20 RO RED OAK
 - 24 WO WHITE OAK
 - 31 O OAK
 - 7 PE PEAR
 - 18 P PINE
 - 4 MBY MULBERRY
- DOUBLE AND TRIPLE TRUNKS
- 20-D DOUBLE OAK
 - 20-T-O TRIPLE OAK
- CALIPER INCH SIZE OF TREE
- TYPE OF TREE
- D FOR DOUBLE, T FOR TRIPLE

LANDSCAPE PROTECTION NOTES:

- PLAN SHOWS RARE AND SPECIMEN TREES IN ACCORDANCE WITH THE ORDINANCE THAT WAS IN EFFECT AT THE TIME OF APPROVAL.
- A LANDSCAPE PROTECTION SUPERVISOR WHO IS REGISTERED WITH THE TOWN OF CHAPEL HILL WILL BE PRESENT ON SITE AT ALL TIMES WHEN THE FOLLOWING ACTIVITIES ARE TAKING PLACE: CLEARING, GRUBBING, EXCAVATION, GRADING, TRENCHING, MOVING OF SOIL, INSTALLATION AND REMOVAL OF TREE PROTECTION FENCING, AND THE DELIVERY, TRANSPORTING, AND PLACEMENT OF CONSTRUCTION MATERIALS AND EQUIPMENT.
- A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD WITH THE PROJECT'S LANDSCAPE PROTECTION SUPERVISOR AND THE TOWN'S URBAN FORESTER OR LANDSCAPE ARCHITECT BEFORE ANY SITE WORK BEGINS.
- ANY TREE ROOTS EXPOSED BY CONSTRUCTION SHALL BE SEVERED CLEANLY WITH A FRUING TOOL.
- THE SOIL WITHIN THE PROTECTED AREA AROUND EXISTING TREES SHALL NOT BE DRIVEN UPON ONCE TREE PROTECTION FENCING IS REMOVED, FOR THE PURPOSE OF INSTALLING LANDSCAPING.
- IT IS THE RECOMMENDATION OF THE McADAMS COMPANY TO REMOVE ALL TREES AS MARKED ON THIS PLAN. THE OWNER MAY ATTEMPT TO PRESERVE TREES MARKED AS REMOVED BUT IN DOING SO ASSUME ALL RESPONSIBILITY AND LIABILITY FOR THE TREES. ALL MEASURES TAKEN TO PRESERVE TREES MUST BE APPROVED BY THE ENGINEER.

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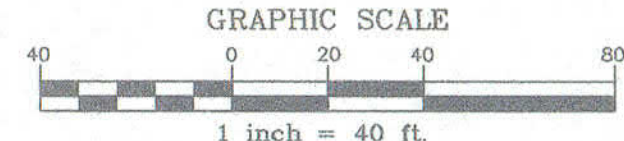
REVISIONS:

CAS, INCORPORATED
5915 FARRINGTON ROAD, SUITE 104
CHAPEL HILL, NORTH CAROLINA 27517

OWNER:

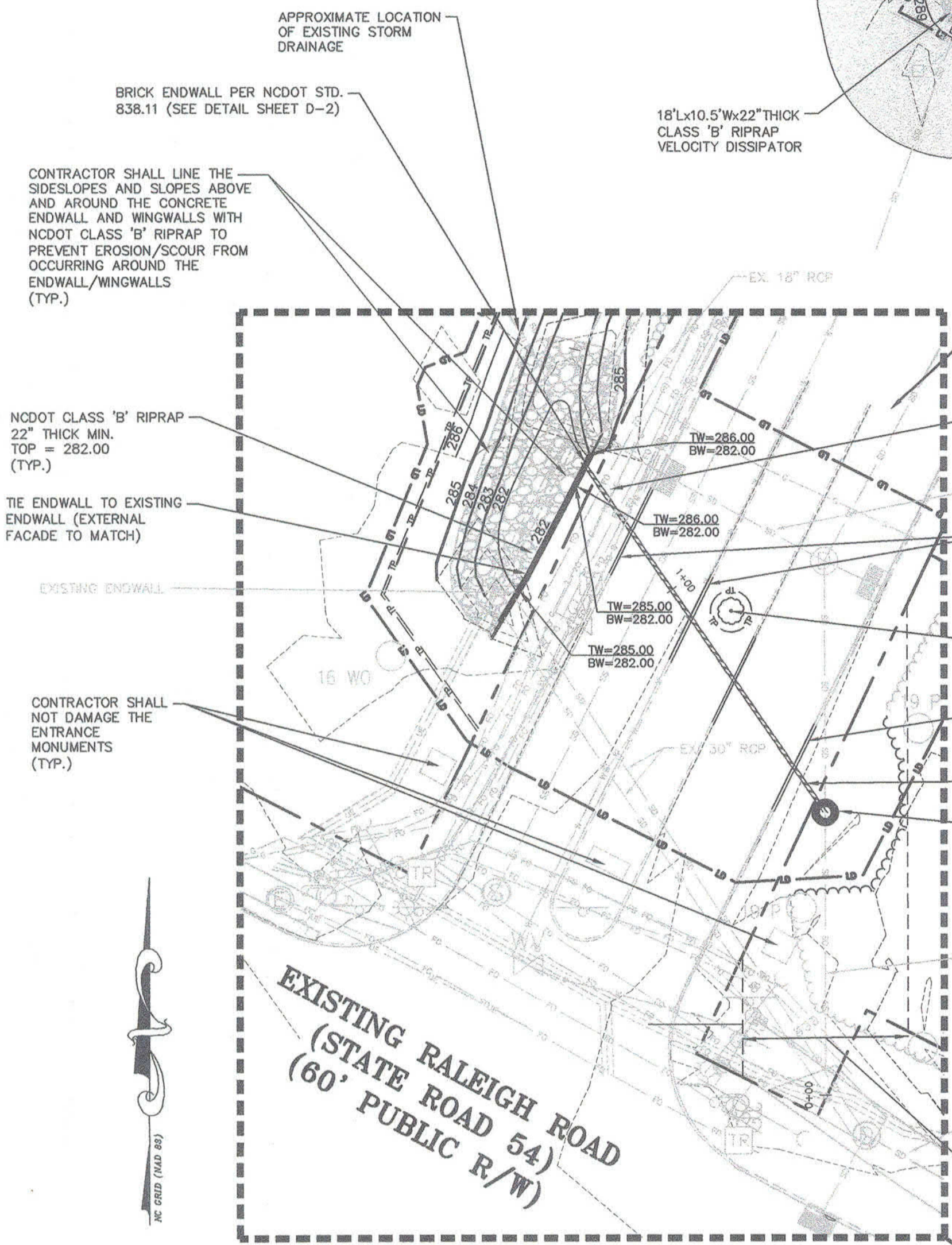
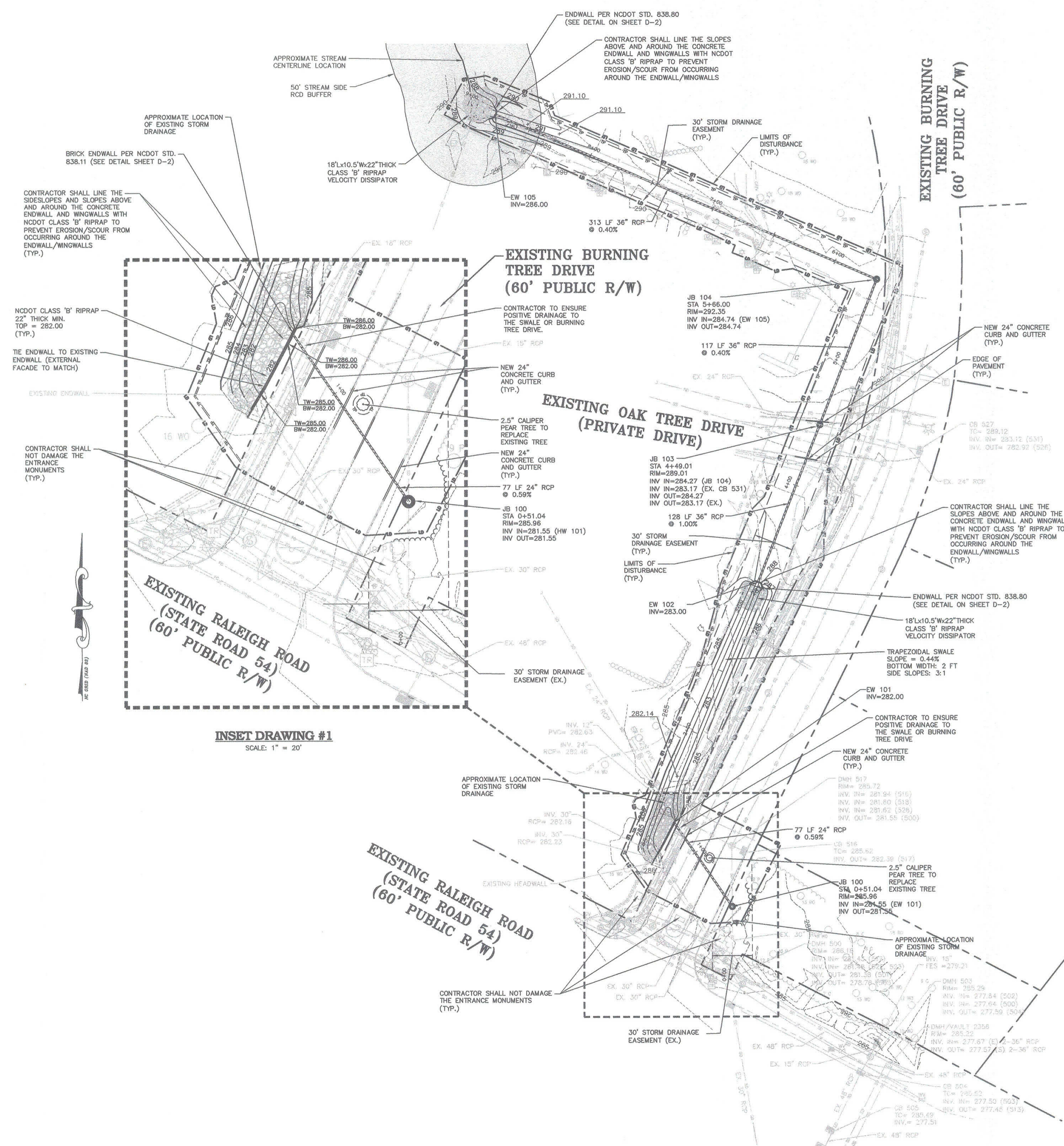
THE OAKS CONDOMINIUMS
CHAPEL HILL, NORTH CAROLINA
EXISTING CONDITIONS AND DEMOLITION PLAN

PROJECT NO: CAS-10000
FILENAME: CAS10000-XC
CHECKED BY: DAC
DRAWN BY: SMP
SCALE: 1" = 40'
DATE: 08-01-2017
SHEET NO: C-1



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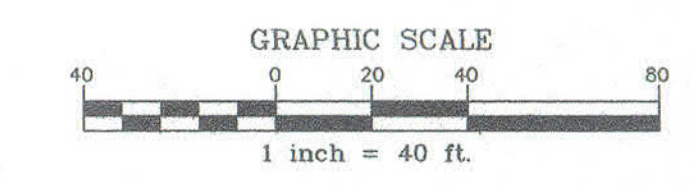
INSET DRAWING #1
SCALE: 1" = 20'

GRADING/STORM DRAINAGE NOTES:

- IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO ENSURE PROPER REMOVAL, STORAGE, AND REUSE OF ANY EXISTING INFRASTRUCTURE MATERIALS ON SITE, INCLUDING BUT NOT LIMITED TO ELECTRICAL, TELECOM, FIBER OPTIC, AND IRRIGATION.
- ALL COORDINATION FOR LOCATION AND FIELD VERIFICATION OF UTILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.
- ALL COORDINATION WITH APPLICABLE UTILITY OWNERS FOR RELOCATION (I.E. NATURAL GAS, FIBER OPTIC, ETC.), DUE TO CONFLICTS WITH PROPOSED CONSTRUCTION IS THE RESPONSIBILITY OF THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.
- CONTRACTOR IS RESPONSIBLE FOR A TRAFFIC DIVERSION AND CONTROL PLAN. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL TRAFFIC DIVERSION AND CONTROL MEASURES WITH THE HOA AND THE TOWN.
- CONTRACTOR IS RESPONSIBLE FOR ENSURING NO SEDIMENT SHALL LEAVE THE SITE WHILE PAYING STRICT ADHERENCE TO THE EROSION CONTROL PLAN. ADDITIONAL MEASURES MAY NEED TO BE PLACED TO ENSURE NO SEDIMENT LADEN RUNOFF EXITS THE SITE AT NO ADDITIONAL EXPENSE TO THE OWNER.
- THE CONTRACTOR IS RESPONSIBLE FOR HIRING AN ON-SITE GEOTECHNICAL ENGINEER AS PART OF THE PROJECT. THE ON-SITE GEOTECHNICAL ENGINEER SHALL BE A SUB TO THE CONTRACTOR AND PROVIDE FIELD TESTING REPORTS AND CERTIFICATIONS FOR ALL GEOTECHNICAL, BEDDING, COMPACTION, AND PAVEMENT ASPECTS OF THE PROJECT.
- THE ON-SITE GEOTECHNICAL ENGINEER IS RESPONSIBLE FOR ENSURING AND CERTIFYING THAT THE BEDDING AND BACKFILL CONDITIONS FOR THE PROPOSED CULVERT AND HEADWALLS ARE ADEQUATELY TESTED AT AN APPROPRIATE FREQUENCY.
- THE CONTRACTOR SHALL REPLACE ALL DISTURBED SUBGRADE AND PAVEMENT PER THE TOWN OF CHAPEL HILL DETAIL SHOWN ON SHEET D-1 UNLESS DIRECTED OTHERWISE BY THE ON-SITE GEOTECHNICAL ENGINEER.
- THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING ALL APPLICABLE OSHA REQUIREMENTS DURING THE PROJECT, INCLUDING BUT NOT LIMITED TO BARRICADES, EXCAVATIONS, TRENCH SHORING, CONFINED SPACE ENTRY, MATERIALS HANDLING, PERSONAL PROTECTIVE EQUIPMENT, AND EMERGENCY ACTION PLANS.
- ALL JUNCTION BOXES TO BE 4' DIAMETER.

STORM DRAINAGE LEGEND

	HEADWALL
	JUNCTION BOX
	STORM DRAINAGE
	LIMITS OF DISTURBANCE
	5' CONTOUR
	1' CONTOUR
	EXISTING 5' CONTOUR
	EXISTING 1' CONTOUR



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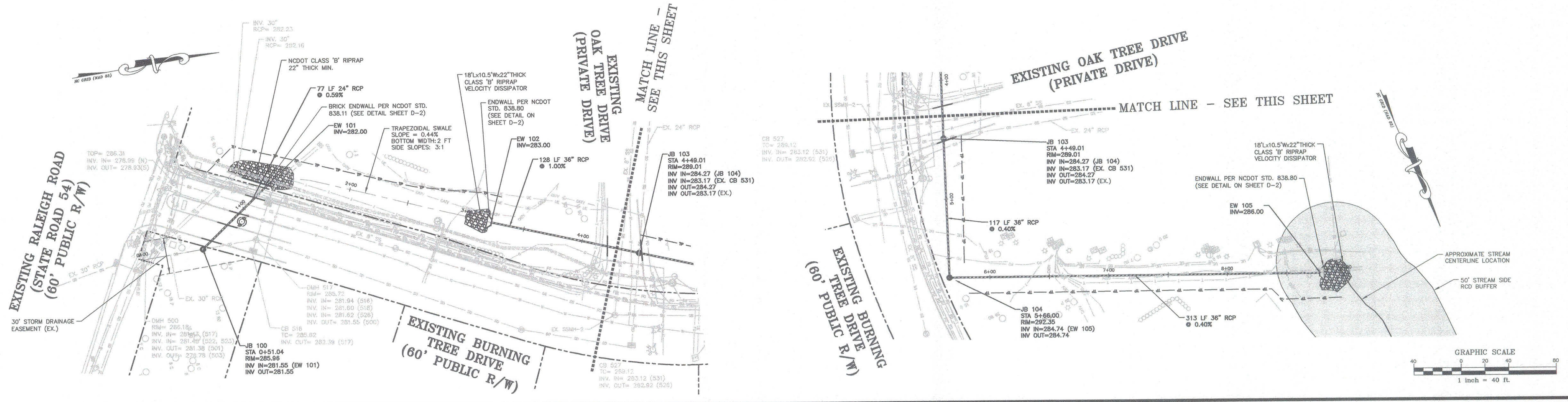
REVISIONS:

OWNER:
CAS, INCORPORATED
5915 FARRINGTON ROAD, SUITE 104
CHAPEL HILL, NORTH CAROLINA 27517

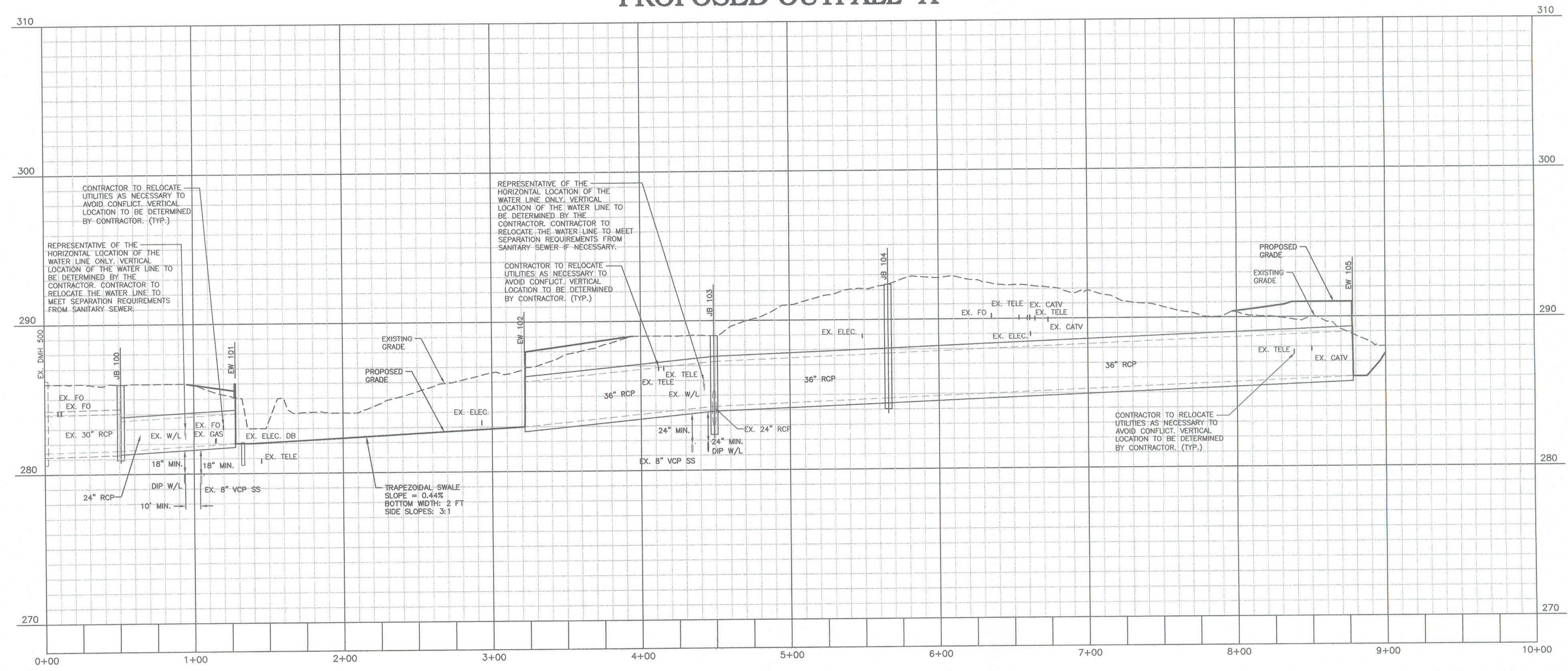
THE OAKS CONDOMINIUMS
CHAPEL HILL, NORTH CAROLINA
GRADING AND STORM DRAINAGE PLAN

PROJECT NO.	CAS-10000
FILENAME	CAS10000-G1
CHECKED BY:	DAC
DRAWN BY:	SMP
SCALE:	AS NOTED
DATE:	08-01-2017
SHEET NO.	C-2





PROPOSED OUTFALL "A"



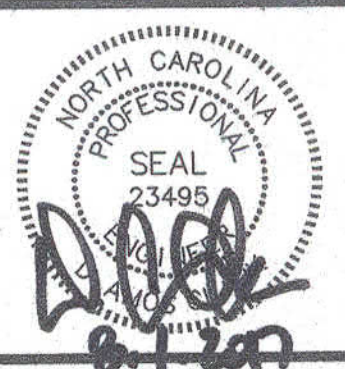
FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

REVISIONS:

OWNER:
CAS, INC.
 5915 FARRINGTON ROAD, SUITE 104
 CHAPEL HILL, NORTH CAROLINA 27517



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 Durham, North Carolina 27713
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PROJECT NO.	CAS-10000
FILENAME:	CAS10000-P1
CHECKED BY:	DAC
DRAWN BY:	SMP
HORIZ. SCALE:	1" = 40'
VERT. SCALE:	1" = 4'
DATE:	08-01-2017

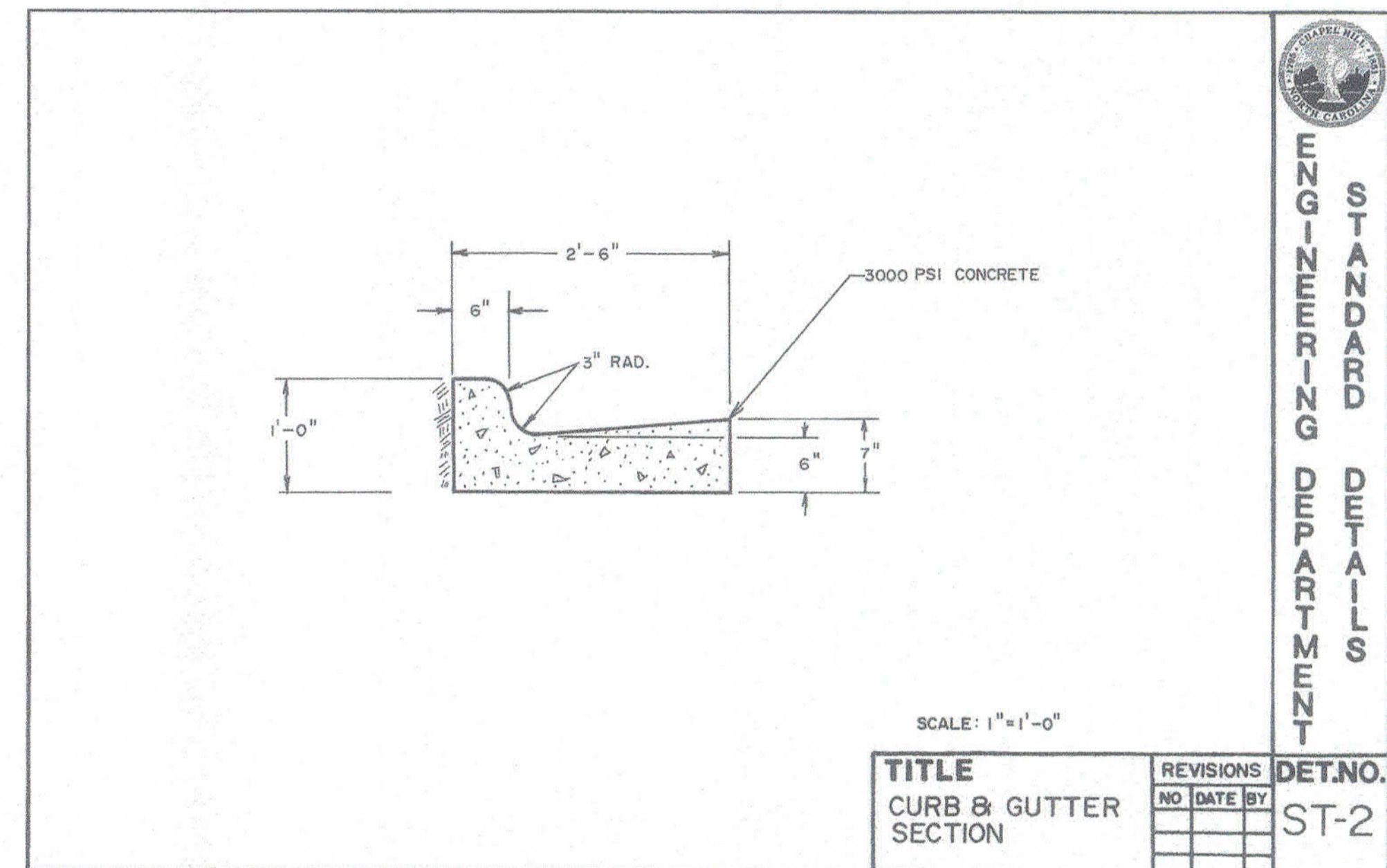
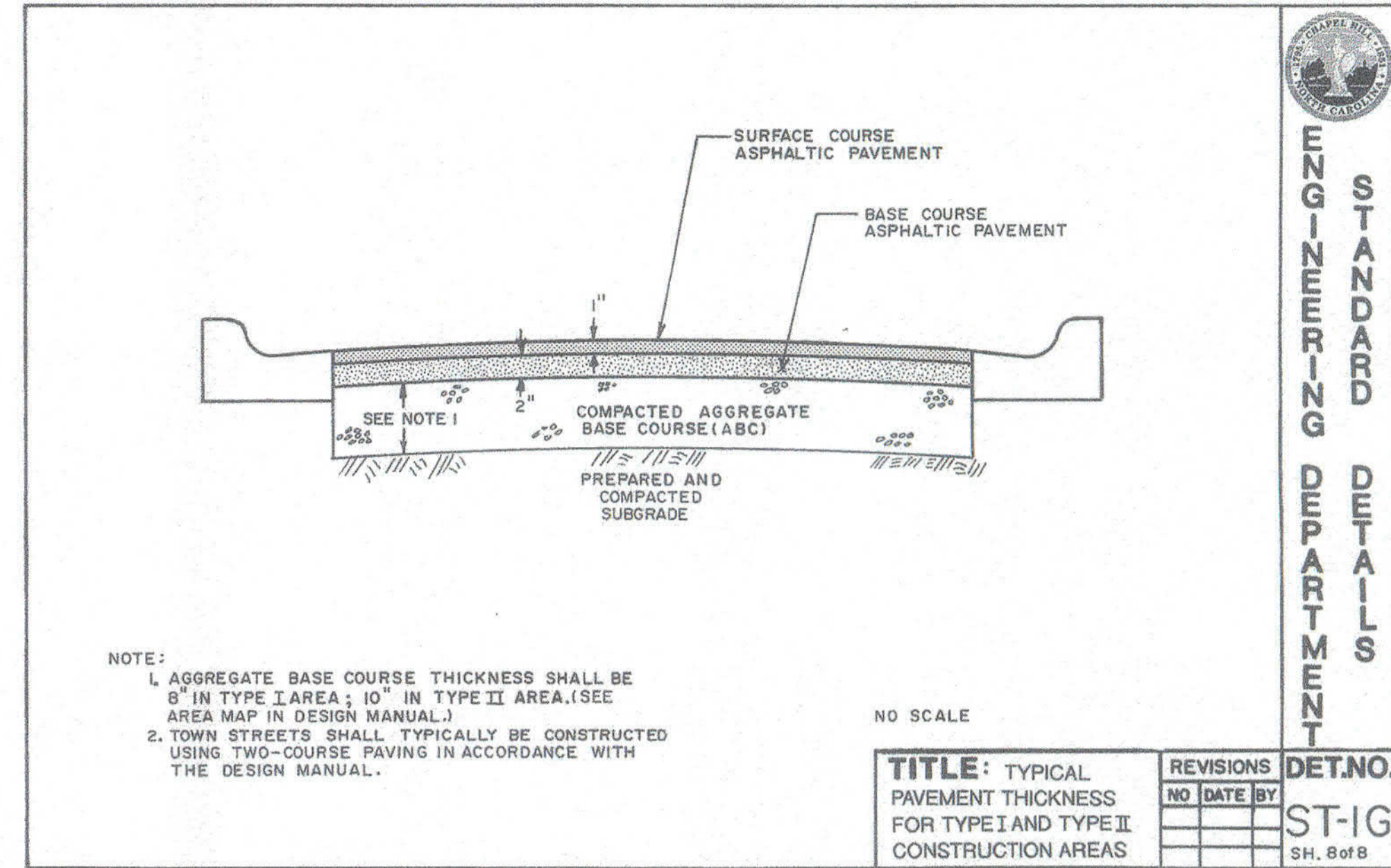
PLAN & PROFILE
STORM OUTFALL "A"

THE OAKS CONDOMINIUMS
 CHAPEL HILL, NORTH CAROLINA

SHEET NO. **P-1**
McADAMS
 PRINT DATE:

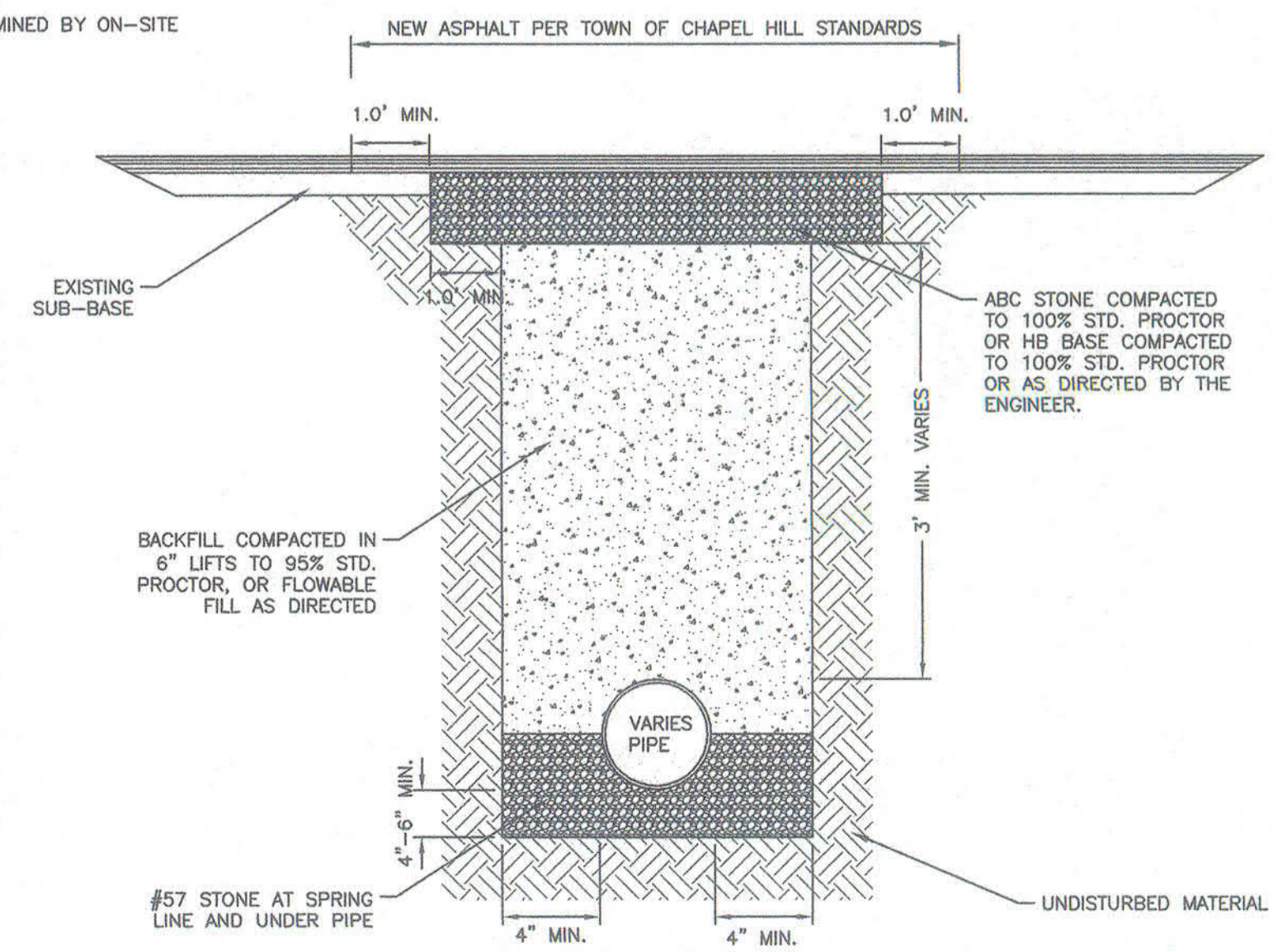
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NOTES:

- BEDDING AND BACKFILL MATERIAL TO BE DETERMINED BY ON-SITE GEOTECHNICAL ENGINEER.



TRENCH CUT INSTALLATION

N.T.S.

FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION

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REVISIONS:

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 CHAPEL HILL, NORTH CAROLINA 27517

THE OAKS CONDOMINIUMS
 CHAPEL HILL, NORTH CAROLINA
 SITE DETAILS

PROJECT NO.	CAS-10000
FILENAME	CAS10000-D1
CHECKED BY:	DAC
DRAWN BY:	SMP
SCALE:	NTS
DATE:	08-01-2017
SHEET NO.	D-1

McAdams

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR CONCRETE ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS 15" THRU 48" PIPE - 90° SKEW

TABLE 1: DOWELS IN SNOWAL WITH REINFORCED CONCRETE PIPE

LOC.	SINGLE PIPE				DOUBLE PIPE			
	15"	18"	24"	30"	18"	24"	30"	36"
BARS	2	2	3	3	4	4	4	4
QTY.	2	2	3	3	4	4	4	4
TOTAL LBS.	9	14	14	19	55	60	12	13

TABLE 2: DIMENSIONS AND CONCRETE QUANTITIES USING CONCRETE PIPE

D	H	COMMON DIMENSIONS		SINGLE PIPE		DOUBLE PIPE	
		15"	18"	18"	24"	24"	30"
18"	3'-3"	1'-8"	2'-9"	9'4"	9'4"	0.7	2'-2"
24"	3'-7"	1'-10"	3'-2"	10'	10'	1.0	2'-7"
30"	4'-2"	2'-1"	4'-0"	10'	10'	1.5	3'-5"
36"	4'-8"	2'-8"	4'-7"	11'2"	11'2"	2.3	4'-5"
42"	5'-3"	3'-1"	5'-4"	12'4"	12'4"	3.4	5'-10"
48"	5'-9"	3'-5"	6'-1"	13'6"	13'6"	4.5	6'-10"

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR CONCRETE ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS 15" THRU 48" PIPE - 90° SKEW

SHEET 1 OF 3
838.01

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR CONCRETE ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS 15" THRU 48" PIPE - 90° SKEW

GENERAL NOTES:

- CHAMFER ALL CORNERS 1" OR HAVE A RADIUS OF 1".
- PLACE 2 #6 "V" BARS IN THE TOP OF ALL ENDWALL FOR PIPE CULVERTS 42" AND OVER WITH A MINIMUM OF 3" COVER AND A LENGTH OF 6" LESS THAN ENDWALL LENGTH.
- CONSTRUCT BOTTOM SLAB WITH FORMS.
- DO NOT INTERPRET WALL THICKNESS (T) SHOWN FOR THE THICKNESS ACCEPTABLE, BUT IS USED IN COMPUTING ENDWALL QUANTITIES.
- WHEN THE CONTRACTOR ELECTS TO USE A CONSTRUCTION JOINT AT THE BOTTOM OF THE PIPE, PLACE BAR "X" DOWELS IN THE BASE AS SHOWN ON PLANS. SPACE BARS APPROXIMATELY ON 12" CENTERS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- WHEN THE CONTRACTOR ELECTS TO USE A CONSTRUCTION JOINT AT THE BOTTOM OF THE PIPE AND POUR THE BASE SEPARATELY LEAVE THE POUR ROUGH.
- USE CLASS "B" CONCRETE.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR PRECAST MANHOLE FOR 4, 5 AND 6 DIAMETER 12" THRU 48" PIPE

TABLE 1: PRECAST MANHOLE DIMENSIONS

D	W	T	A _h
4	4	8	0.12
5	5	8	0.15
6	6	8	0.18

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR PRECAST MANHOLE 4, 5 AND 6 DIAMETER 12" THRU 48" PIPE

SHEET 3 OF 3
838.01

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR BRICK ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS 15" THRU 48" PIPE - 90° SKEW

GENERAL NOTES:

- ALL JOINTS ARE 1/2" x 3/8".
- BRICKWORK WITH FULL HEADERS EVERY THREE COURSES.
- CONSTRUCT THE BASE WITH FORMS.
- USE CLASS "B" CONCRETE.
- PAY FOR CONCRETE AS BRICK MASONRY.
- CONCRETE BRICK MAY BE USED IN LIEU OF CLAY BRICK.
- JUMBO BRICK WILL BE PERMITTED.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR DRAINAGE STRUCTURE STEPS

TABLE 1: DRAINAGE STRUCTURE STEPS DIMENSIONS

D	W	T	A _h
4	4	8	0.12
5	5	8	0.15
6	6	8	0.18

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR BRICK ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS 15" THRU 48" PIPE - 90° SKEW

SHEET 1 OF 1
838.11

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR TYPE 2 RING & COVER

TYPE 2 RING & COVER
EAST JORDAN IRON WORKS V1384-1 RING WITH V1384 COVER OR APPROVED EQUAL. MINIMUM WEIGHTS: RING 190 LBS., COVER 120 LBS.

- TYPE 2 RING & COVER TO BE USED IN STREETS.
- MATERIAL TO BE GREY IRON CONFORMING TO ASTM A48 CLASS 35 AND SHALL BE UNCOATED.
- COVER TO MEET PROOF LOAD REQUIREMENTS OF AASHTO M306-99 (40,000 LB. PROOF LOAD).
- FISH LOGO AND ALL LETTERING TO BE CLEAN, CRISP, AND CLEARLY LEGIBLE.
- CASTING MUST BE MANUFACTURED IN THE UNITED STATES. MANUFACTURER MUST BE APPROVED BY THE TOWN OF CHAPEL HILL.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR PRECAST MANHOLE 4, 5 AND 6 DIAMETER 12" THRU 48" PIPE

TABLE 1: PRECAST MANHOLE DIMENSIONS

D	W	T	A _h
4	4	8	0.12
5	5	8	0.15
6	6	8	0.18

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR PRECAST MANHOLE 4, 5 AND 6 DIAMETER 12" THRU 48" PIPE

SHEET 1 OF 1
840.52

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR PRECAST MANHOLE 4, 5 AND 6 DIAMETER 12" THRU 48" PIPE

GENERAL NOTES:

- USE 4000 PSI MINIMUM COMPRESSIVE STRENGTH CONCRETE.
- FABRICATE, ASSEMBLE AND DISINTEGRATE PRECAST MANHOLE COMPONENTS ACCORDING TO MANHOLE WEIGHTS.
- ASSEMBLE RISER AND GRADE RINGS WITH THE STEPS SPACED 12" FROM THE TOP TO THE BOTTOM OF THE MANHOLE.
- WHERE THE MANHOLE IS EXPOSED TO ROAD TRAFFIC, CONSTRUCT THE TOP OF THE MANHOLE FLUSH WITH THE GROUND AND A MINIMUM OF 8" ABOVE THE GROUND AT OTHER LOCATIONS.
- LIMIT DEPTH OF FILL TO 30'-0" FROM FINISH GRADE TO TOP OF BOTTOM SLAB.
- THE MIN. SLAB THICKNESS "T" IS THE DIMENSION OF THE THINNEST PORTION OF THE TOP/BOTTOM SLAB.
- * TOP MAT OF REINFORCEMENT MAY BE NEGLECTED IF TOP SLAB HAS A DISTINGUISHABLE TOP AND BOTTOM.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR PERMANENT GRASSED SWALE DETAIL

CONTRACTOR SHALL LINE THE CHANNEL WITH TALL FESCUE. PLEASE NOTE A TEMPORARY LINER (EAST COAST EROSION ECC-20 OR ENGINEER APPROVED EQUIVALENT) IS NEEDED UNTIL THE GRASS IS ESTABLISHED. INSTALL PER MANUFACTURER SPECIFICATIONS (SEE DETAIL ON SHEET D-3).

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR PERMANENT GRASSED SWALE DETAIL

SHEET 1 OF 1
840.52

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR DRAINAGE STRUCTURE STEPS

NOTES:

- INSTALL ALL STEPS PROTRUDING 4" FROM INSIDE FACE OF STRUCTURE WALL.
- STEPS DIFFERING IN DIMENSIONS, CONFIGURATION, OR MATERIALS FROM THOSE SHOWN MAY ALSO BE USED PROVIDED THE CONTRACTOR HAS FURNISHED THE ENGINEER WITH DETAILS OF THE PROPOSED STEPS AND HAS RECEIVED WRITTEN APPROVAL FROM THE ENGINEER FOR THE USE OF SUCH STEPS.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR DRAINAGE STRUCTURE STEPS

SHEET 1 OF 1
840.66

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR PERMANENT GRASSED SWALE DETAIL

NOTES:

- A FILTER BLANKET IS TO BE INSTALLED BETWEEN THE RIPRAP AND SOIL FOUNDATION. THE FILTER BLANKET WILL CONSIST OF A MINIMUM 4" THICK LAYER OF STONE (NO. 57) UNDERLAIN WITH MIRAP FILTER WEAVE 700 OR APPROVED EQUIVALENT.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR PERMANENT GRASSED SWALE DETAIL

SHEET 1 OF 1
840.52

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR 36" DIVERSION PIPE VELOCITY DISSIPATOR

36" DIVERSION PIPE VELOCITY DISSIPATOR
N.T.S.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR PERMANENT GRASSED SWALE DETAIL

SHEET 1 OF 1
840.52

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR PERMANENT GRASSED SWALE DETAIL

PERMANENT GRASSED SWALE DETAIL
N.T.S.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR PERMANENT GRASSED SWALE DETAIL

SHEET 1 OF 1
840.52

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REVISIONS:

OWNER:
CAS, INCORPORATED
5915 FARRINGTON ROAD, SUITE 104
CHAPEL HILL, NORTH CAROLINA 27517

PROJECT NO: CAS-10000
FILENAME: CAS10000-D1

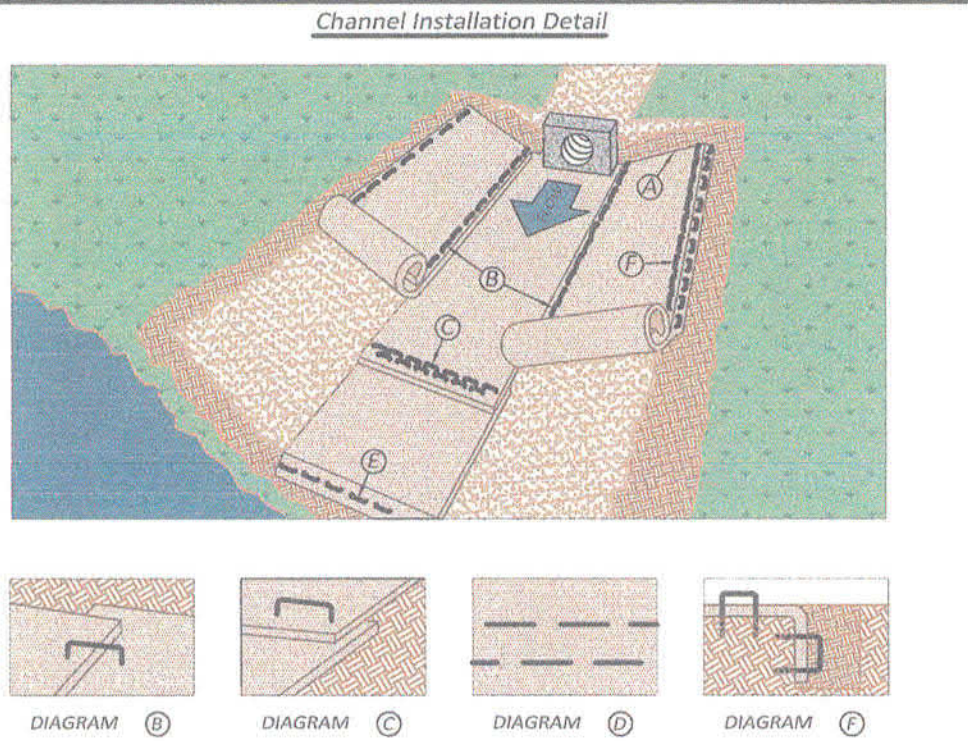
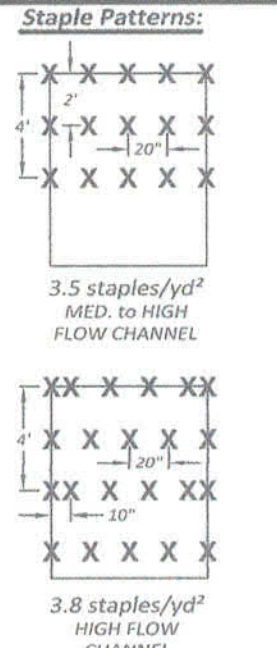
THE OAKS CONDOMINIUMS
CHAPEL HILL, NORTH CAROLINA
STORM DRAINAGE DETAILS

CHECKED BY: DAC
DRAWN BY: SMP
SCALE: NTS
DATE: 08-01-2017
SHEET NO. D-2



Channel Installation Instructions:

1. Dig a 6" by 6" trench both up-slope and down-slope, and along the top side of the channel. Prepare the slope soil surface (raking, seeding and fertilizing). Note: If used with stormwater discharge, place the up-slope trench at the face of the discharge structure footer.
2. Begin by placing the center blanket a minimum of 12" down-slope of the up-slope trench. Secure the blanket at the bottom of the trench with staples placed 12" apart. Backfill and compact the trench. Apply seed, and fold the blanket over soil, secure with a row of staples placed 12" apart across the width of the blanket (See Diagram A).
3. Roll the blanket vertically down the slope. Secure using the appropriate staple pattern below, specified by slope. (See Staple Patterns).
4. Continue placing blankets up the slopes on both sides, with a minimum 4" overlapping (Diagram B), and securing each blanket in the beginning trench (Diagram A).
5. Additional horizontal blankets can be joined using a minimum 4" overlapping or shingle style in the direction of water flow. Connect the blankets by placing staples approximately 5" apart across the width of the blankets. (Diagram C)
6. For maximum performance a check slot should be placed at 25'-40' intervals. Place a row of staples 4" apart along the entire width of the channel. A second row should be placed 4" below in a staggered pattern. (Diagram D)
7. The end of the blanket must be secured in a 6" x 6" trench by a row of staples placed at 12" intervals. (Diagram E)
8. At the top edge of the side slope, fasten the blanket in a 6" x 6" trench with staples placed at 12" intervals. Install an additional row of staples 1'-0" down slope of the trench along the width of the fabric. (Diagram F)

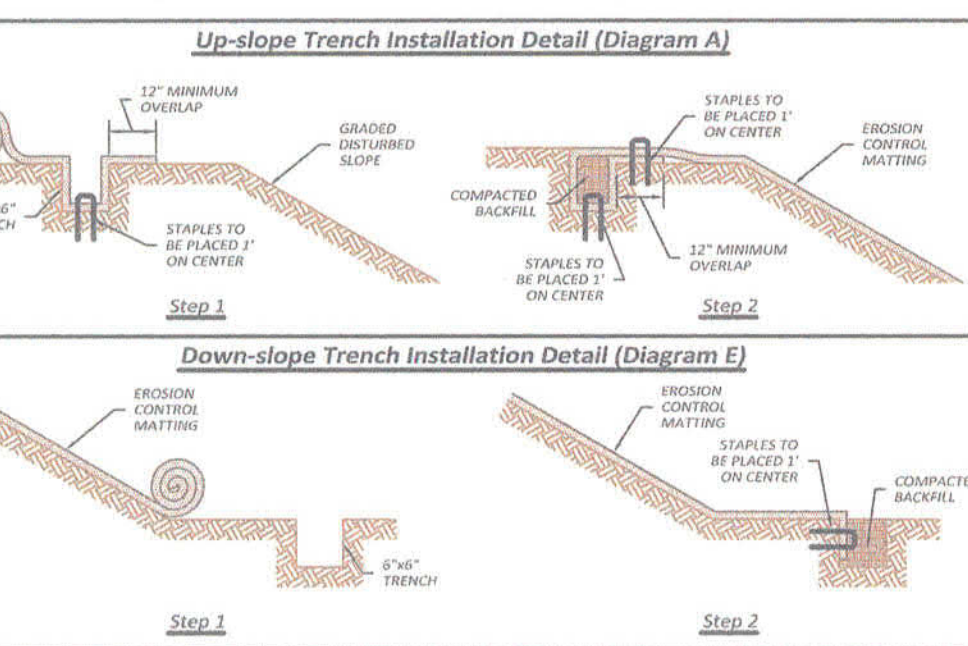


Specifications and Equivalency:

All product material and performance specifications are available from East Coast Erosion Blankets via the product specification sheet. Utilization of a 11 gauge staple, a minimum 6" long by 1" crown, is recommended. The tightly compressed blankets are wrapped and include a product label, code and installation guide.

In addition to meeting all data available on the specification sheet, equivalent products shall meet the following requirements:

- The product must be listed with the NTPP database.
- The product must meet the product specification requirements established by the Erosion Control Technology Council (ECTC).
- The product must meet the Federal Highway Administration's (FHWA) FP-03 Section 713.17 specification.



EASTCOAST
erosion control

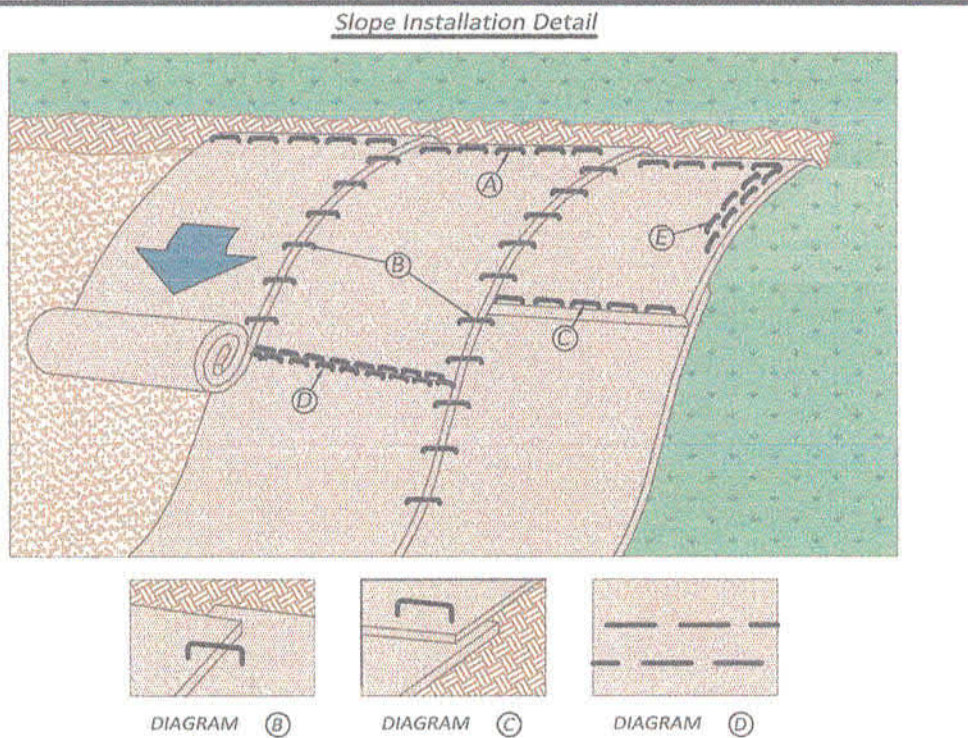
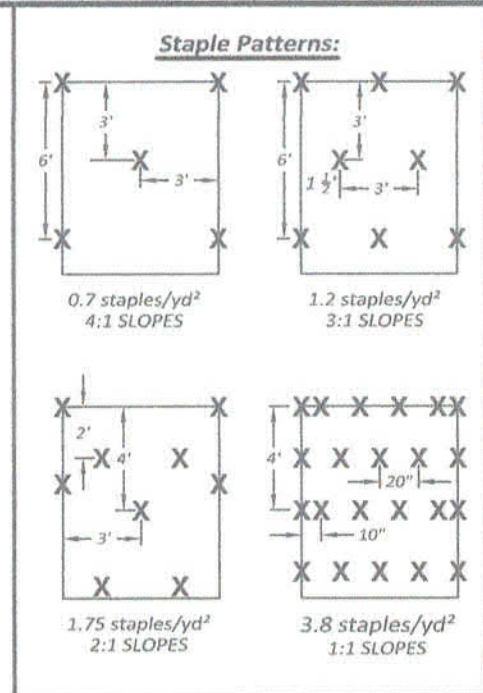
443 Bricker Road Bernville, PA 19506
Toll Free: 1-800-582-4005 * Phone: +1-610-488-8496 * Fax: +1-610-488-8494

DRAWN BY: MR DRAWING #: EC-CHANNEL REV. # 1 DATE: 1/2/09

Slope Installation Guidelines:

These guidelines are recommendations only. Any questions with the installation should be confirmed with your local distributor.

1. Dig a 6" by 6" trench both up-slope and down-slope of the area the matting is to be applied. Prepare the slope soil surface (raking, seeding and fertilizing).
2. Begin by placing the blanket a minimum of 12" down-slope of the up-slope trench. Secure the blanket at the bottom of the trench with staples placed 12" apart. Backfill and compact the trench. Apply seed, and fold the blanket over soil, secure with a row of staples placed 12" apart across the width of the blanket. (See Diagram A)
3. Roll the blanket vertically down the slope. Secure using the appropriate staple pattern below, specified by slope. (See Staple Patterns)
4. Parallel blankets must be overlapped by a minimum of 4", and secured with a row of staples placed approximately 3'-0" apart. (See Diagram B)
5. Additional vertical blankets can be joined using a minimum 4" overlapping or shingle style (See Diagram C) in the direction of water flow. Connect the blankets by placing staples approximately 12" apart across the width of the blankets.
6. For maximum performance a check slot should be placed at 25'-40' intervals. Place a row of staples 4" apart along the entire width of the slope. A second row should be placed 4" below in a staggered pattern. Then continue with general installation. (See Diagrams D)
7. The end of blanket must be secured in a 6" x 6" trench with a row of staples placed at 12" intervals. (Diagram E)

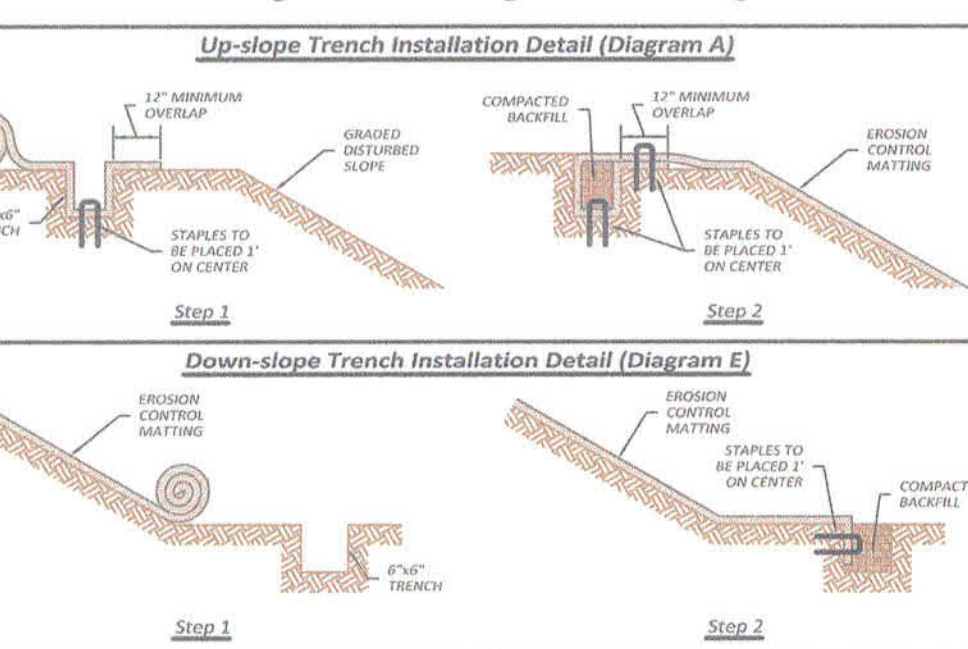


Specifications and Equivalency:

All product material and performance specifications are available from East Coast Erosion Blankets via the product specification sheet. Utilization of a 11 gauge staple, a minimum 6" long by 1" crown, is recommended. The tightly compressed blankets are wrapped and include a product label, code and installation guide.

In addition to meeting all data available on the specification sheet, equivalent products shall meet the following requirements:

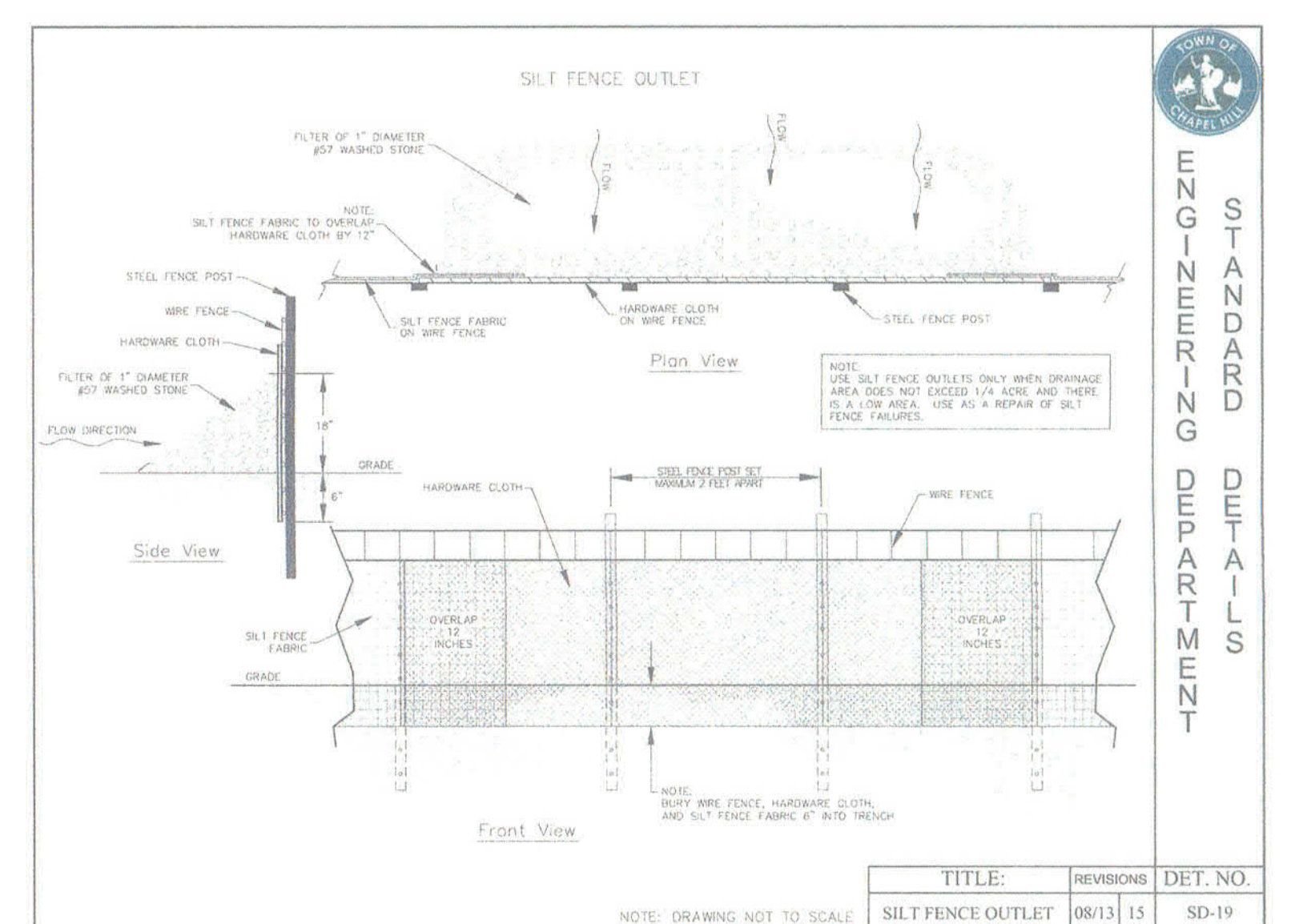
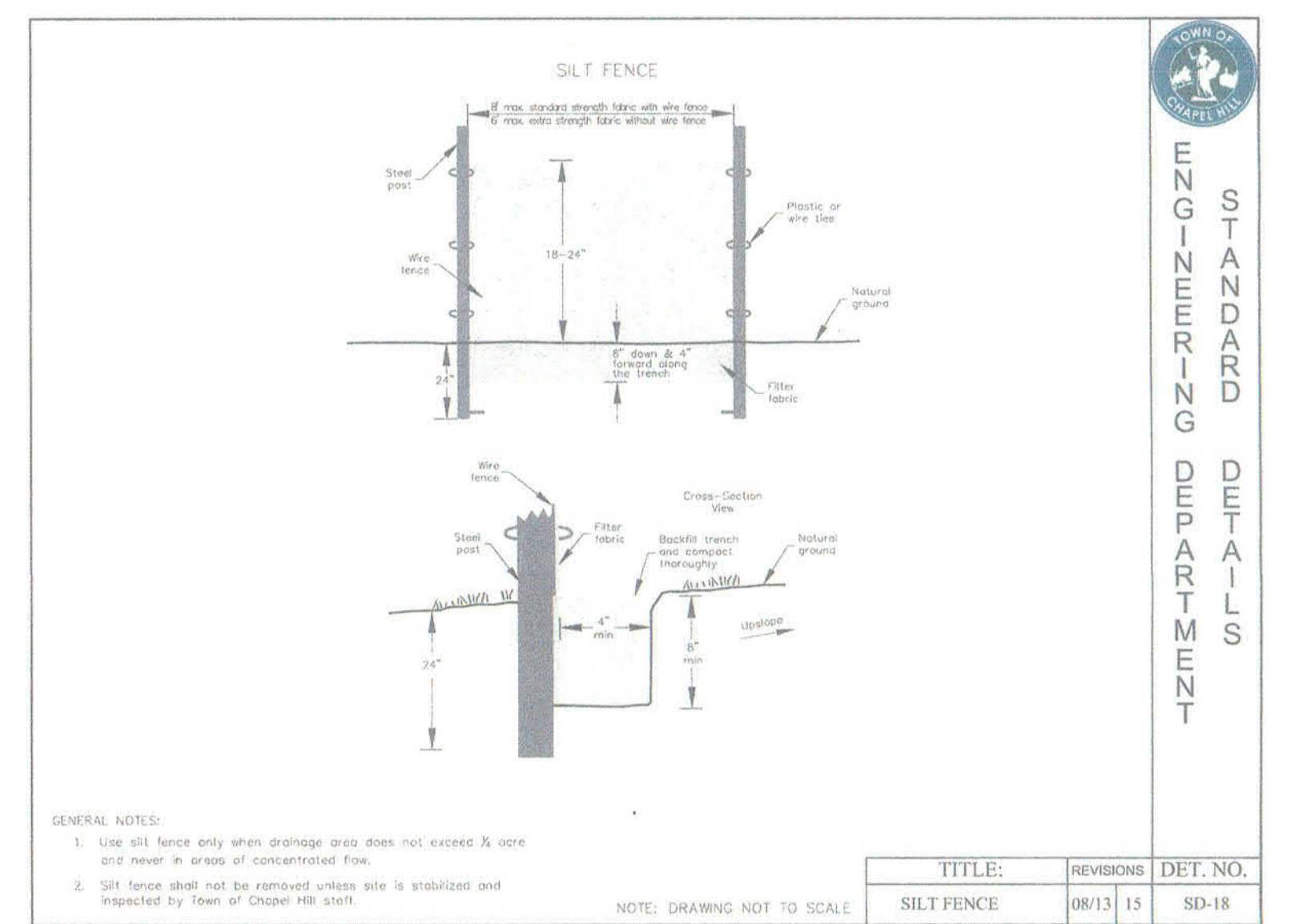
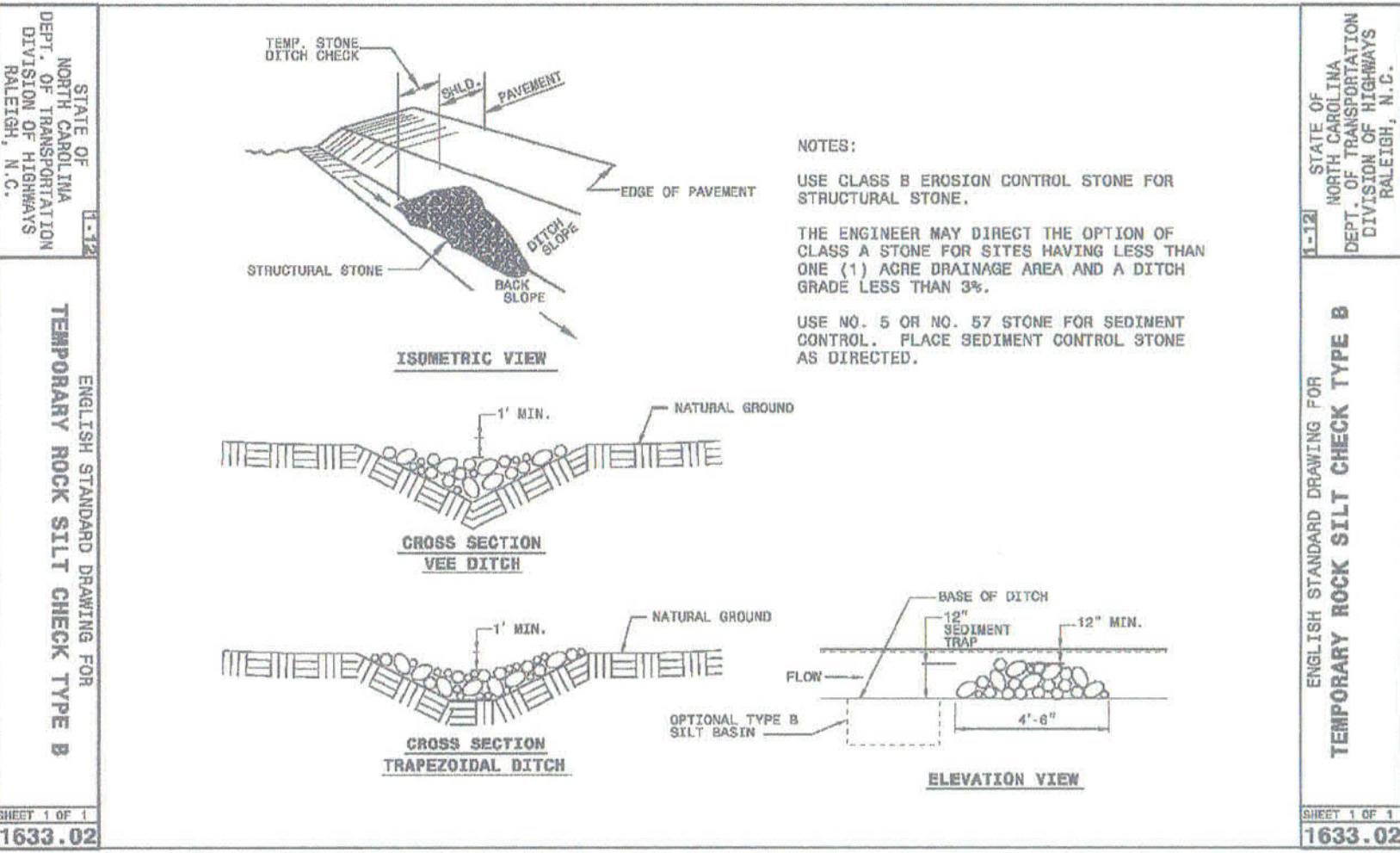
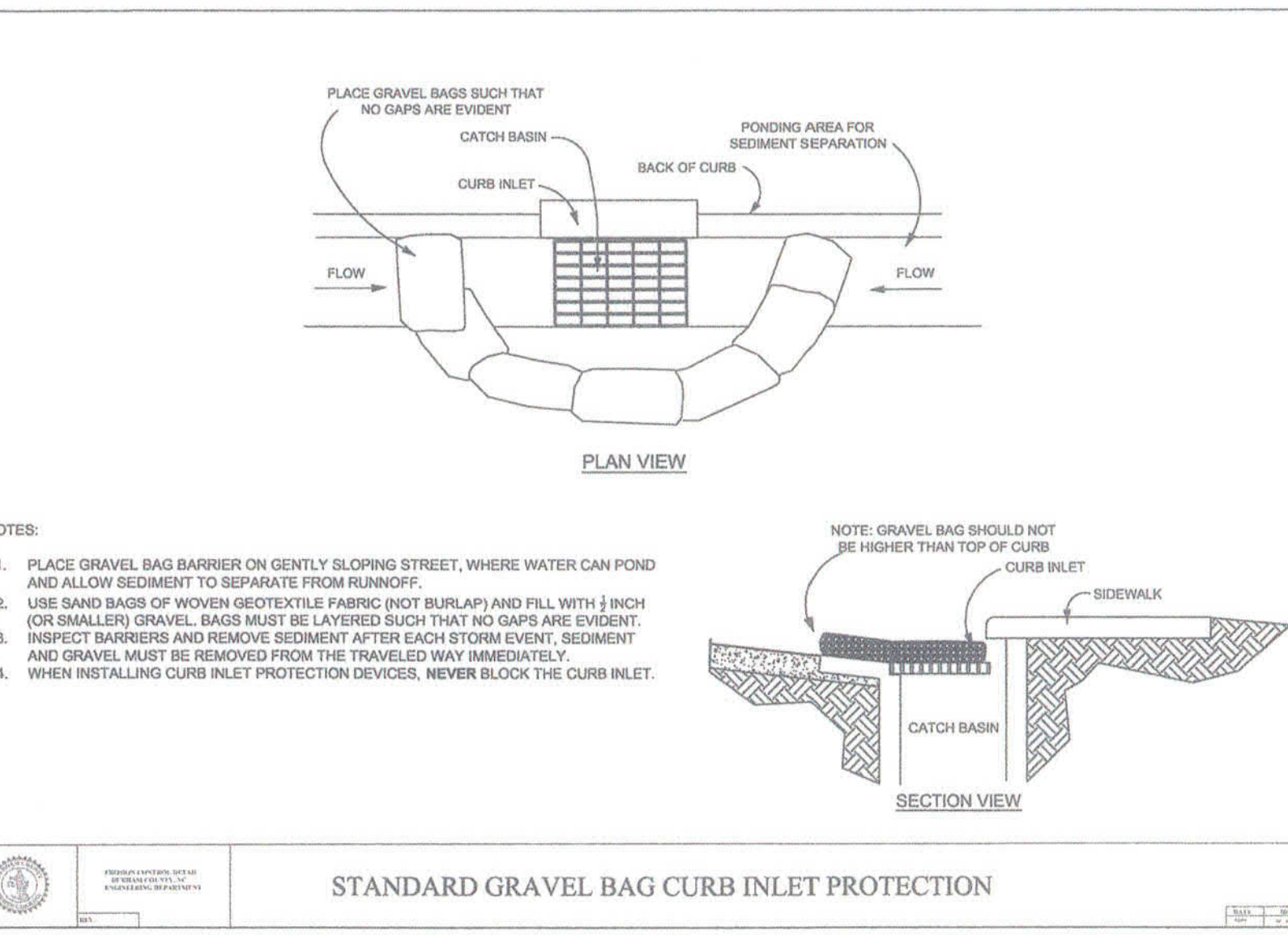
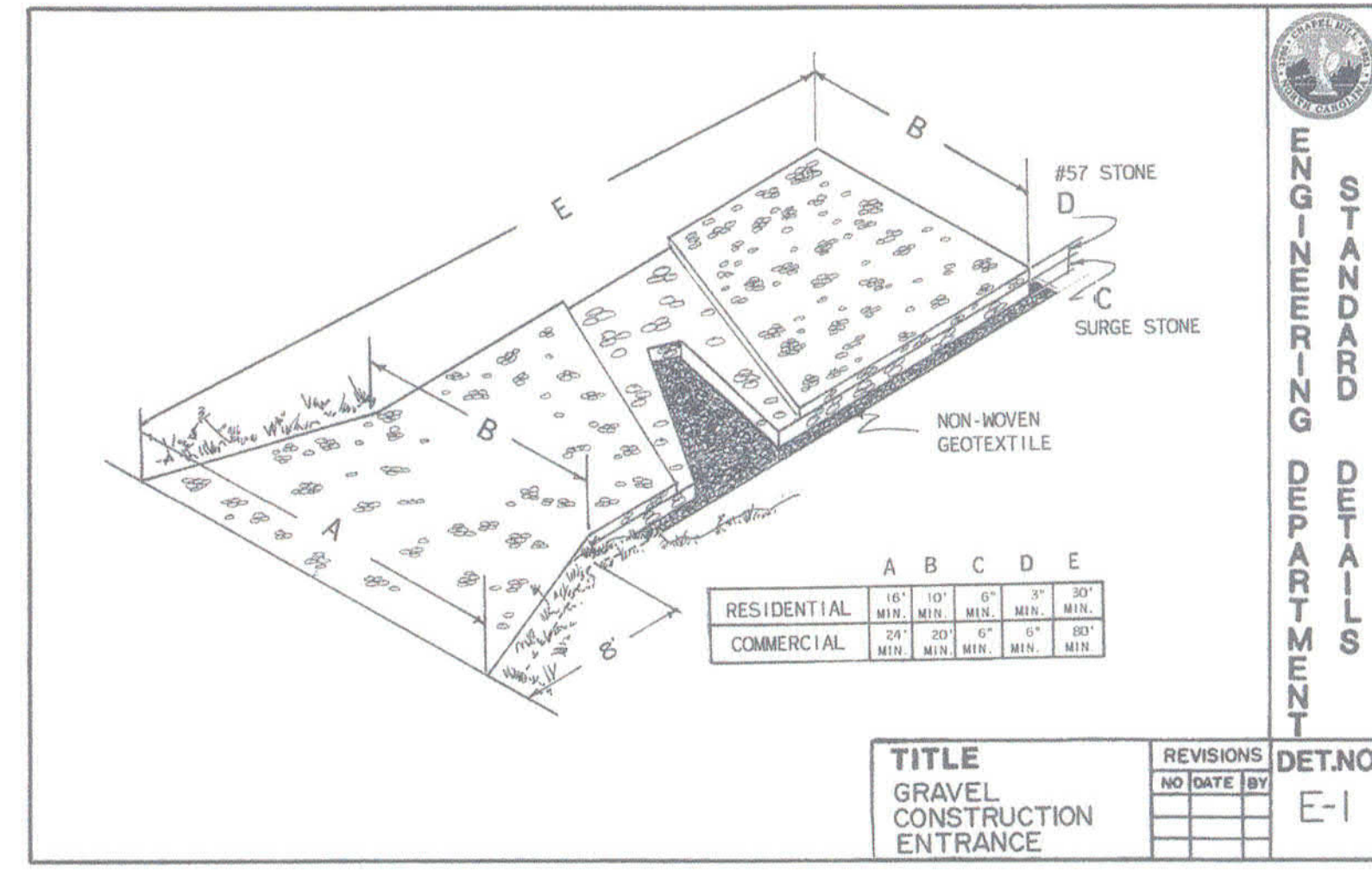
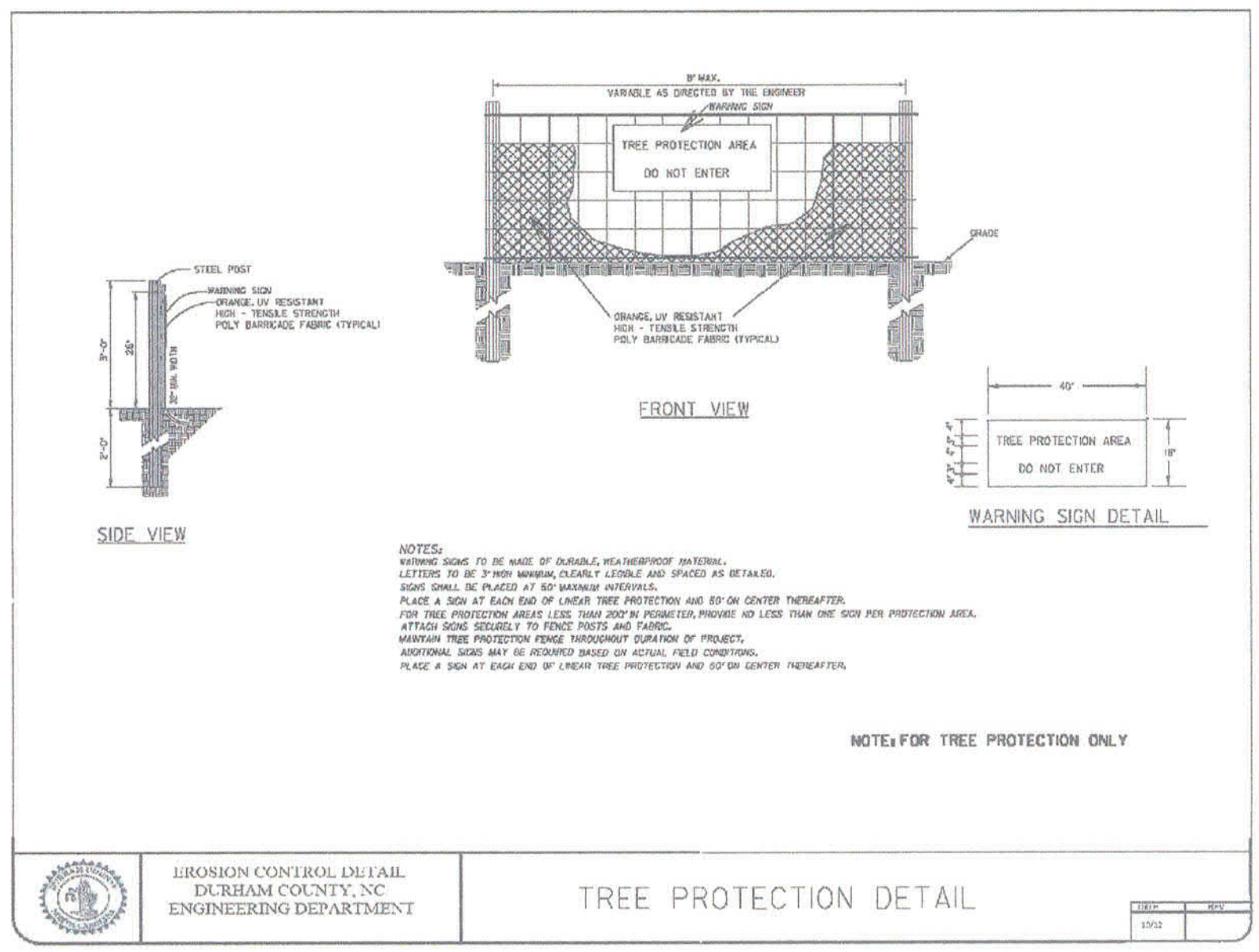
- The product must be listed with the NTPP database.
- The product must meet the Type 2.C specification requirements established by the Erosion Control Technology Council (ECTC).
- The product must meet the Federal Highway Administration's (FHWA) FP-03 Section 713.17 specification.



EASTCOAST
erosion control

443 Bricker Road Bernville, PA 19506
Toll Free: 1-800-582-4005 * Phone: +1-610-488-8496 * Fax: +1-610-488-8494

DRAWN BY: MR DRAWING #: EC-SLOPE REV. # 1 DATE: 1/2/09



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2905 Meridian Parkway
Durham, North Carolina 27713
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REVISIONS:

OWNER:
CAS, INCORPORATED
5915 FARRINGTON ROAD, SUITE 104
CHAPEL HILL, NORTH CAROLINA 27517

THE OAKS CONDOMINIUMS
CHAPEL HILL, NORTH CAROLINA
EROSION CONTROL DETAILS

PROJECT NO. CAS-10000
FILESNAME: CAS10000-E1
CHECKED BY: DAC
DRAWN BY: SMP
SCALE: NTS
DATE: 08-01-2017
SHEET NO. D-3



THE OAKS CONDOMINIUMS – TREE REPLACEMENT LIST

BOTANICAL NAME	COMMON NAME	VARIETY	SIZE	QTY.	SPACING
ACER RUBRUM	RED MAPLE	OCTOBER GLORY	2.5"	2	35'–40'
ACER RUBRUM	RED MAPLE	AUTUMN BLAZE	3.5"	2	35'–40'
ACER SACCHARUM	SUGAR MAPLE	LEGACY	5"	2	35'–40'
CERCIS CANADENSIS	REDBUD	FOREST PANSY	2"	3	25'–30'
QUERCUS LYRATA	OVERCUP OAK		2.5"	3	40'–45'
QUERCUS PHELLOS	WILLOW OAK		4"	3	40'–45'
			TOTAL	15	

TREE LEGEND

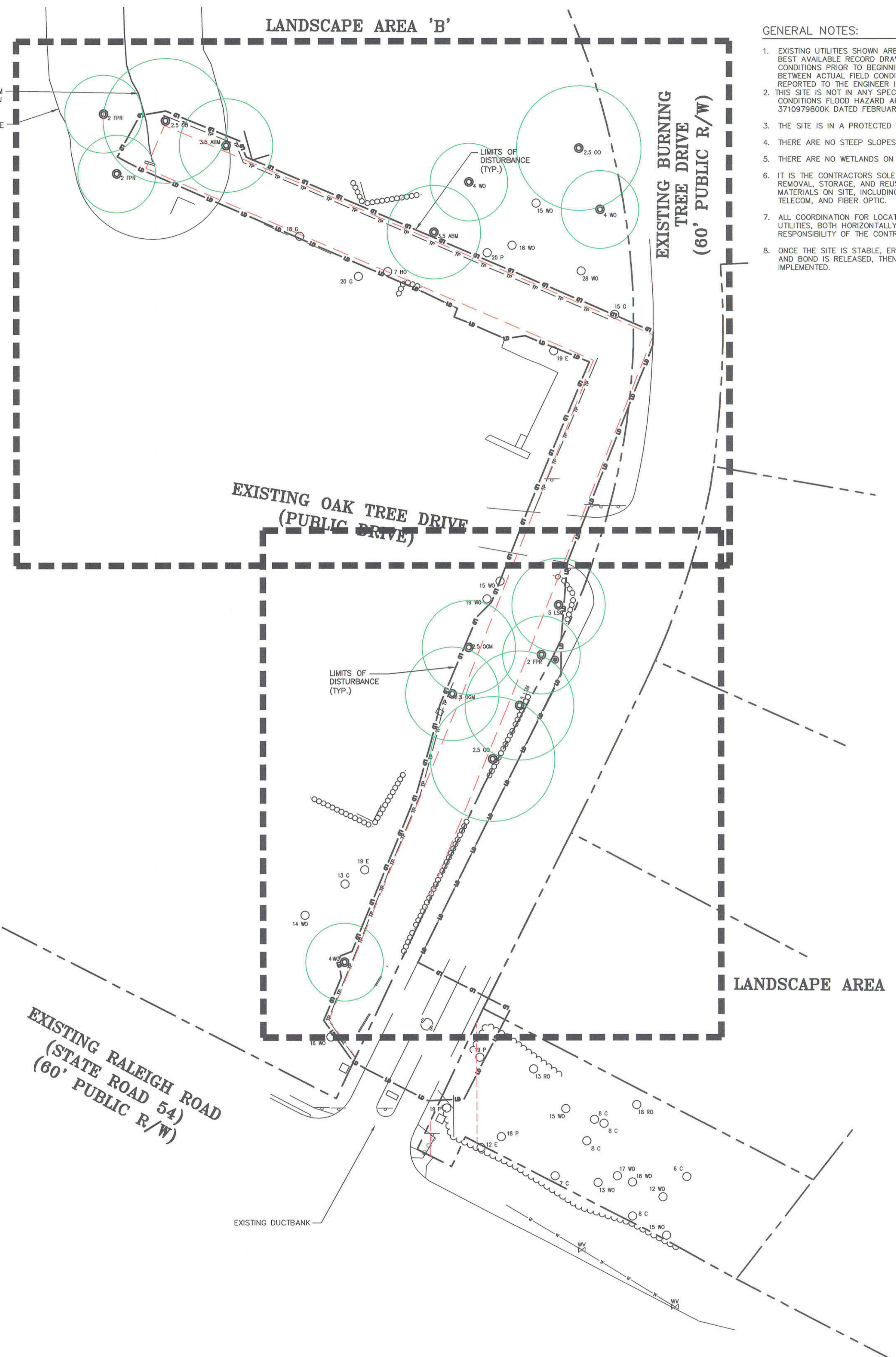
- 8 A ASH
- 10 C CEDAR
- 6 CH CHERRY
- 10 E ELM
- 12 G SWEET GUM
- 16 H HICKORY
- 4 HO HOLLY
- 15 M MAPLE
- 20 RO RED OAK
- 24 WO WHITE OAK
- 31 O OAK
- 7 PER PEAR
- 18 P PINE
- 4 MB MULBERRY
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- 2.5 OO OVERCUP OAK
- 4 WO WILLOW OAK

- DOUBLE AND TRIPLE TRUNKS
- 20 D-O DOUBLE OAK
 - 20 T-O TRIPLE OAK

- 20 T-O CALIPER INCH SIZE OF TREE
- 20 T-O TYPE OF TREE
- D FOR DOUBLE, T FOR TRIPLE

LANDSCAPE PROTECTION NOTES:

- PLAN SHOWS RARE AND SPECIMEN TREES IN ACCORDANCE WITH THE ORDINANCE THAT WAS IN EFFECT AT THE TIME OF APPROVAL.
- A LANDSCAPE PROTECTION SUPERVISOR WHO IS REGISTERED WITH THE TOWN OF CHAPEL HILL WILL BE PRESENT ON SITE AT ALL TIMES WHEN THE FOLLOWING ACTIVITIES ARE TAKING PLACE: CLEARING, GRUBBING, EXCAVATION, GRADING, TRENCHING, MOVING OF SOIL, INSTALLATION AND REMOVAL OF TREE PROTECTION FENCING, AND THE DELIVERY, TRANSPORTING, AND PLACEMENT OF CONSTRUCTION MATERIALS AND EQUIPMENT.
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- IT IS THE RECOMMENDATION OF THE MCADAMS COMPANY TO REMOVE ALL TREES AS MARKED ON THIS PLAN. THE OWNER MAY ATTEMPT TO PRESERVE TREES MARKED AS REMOVED BUT IN DOING SO ASSUME ALL RESPONSIBILITY AND LIABILITY FOR THE TREES. ALL MEASURES TAKEN TO PRESERVE TREES MUST BE APPROVED BY THE ENGINEER.



GENERAL NOTES:

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- THIS SITE IS NOT IN ANY SPECIAL FLOOD HAZARD AREAS OR FUTURE CONDITIONS FLOOD HAZARD AREAS, AS SHOWN ON FIRM PANEL 3710979B00K DATED FEBRUARY 2, 2007.
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- THERE ARE NO STEEP SLOPES ON SITE.
- THERE ARE NO WETLANDS ON SITE.
- IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO ENSURE PROPER REMOVAL, STORAGE, AND REUSE OF ANY EXISTING INFRASTRUCTURE MATERIALS ON SITE, INCLUDING BUT NOT LIMITED TO ELECTRICAL, TELECOM, AND FIBER OPTIC.
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LEGEND

- BOLLARD
- SANITARY SEWER MANHOLE
- SANITARY SEWER CLEANOUT
- WATER VALVE
- WATER METER
- FIRE DEPARTMENT CONNECTION
- FIRE HYDRANT
- AIR CONDITIONING UNIT
- TELEPHONE PEDESTAL
- TELEPHONE MANHOLE
- STEAM MANHOLE
- ELECTRIC BOX
- LIGHT POLE
- CATCH BASIN
- DROP INLET
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- G — GAS LINE
- X — FENCE LINE
- LD — LIMITS OF DISTURBANCE
- 250 — EXISTING 5' CONTOUR
- 252 — EXISTING 1' CONTOUR

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OWNER:
CAS, INCORPORATED
5915 FARRINGTON ROAD, SUITE 104
CHAPEL HILL, NORTH CAROLINA 27517

THE OAKS CONDOMINIUMS
CHAPEL HILL, NORTH CAROLINA
OVERALL LANDSCAPE PLAN

PROJECT NO. CAS-10000
FILENAME: CAS10000-LS
CHECKED BY: DAC/DAP
DRAWN BY: SMP/NB
SCALE: 1" = 40'
DATE: 09-06-2017
SHEET NO. LS-1



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TREE LEGEND

- 8 A ASH
- 10 C CEDAR
- 6 CH CHERRY
- 10 E ELM
- 12 G SWEET GUM
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LANDSCAPE PROTECTION NOTES:

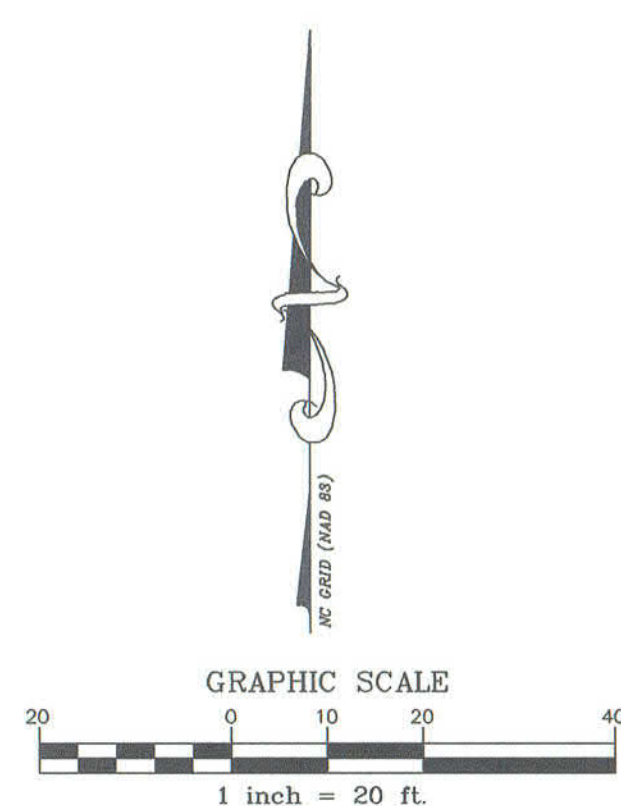
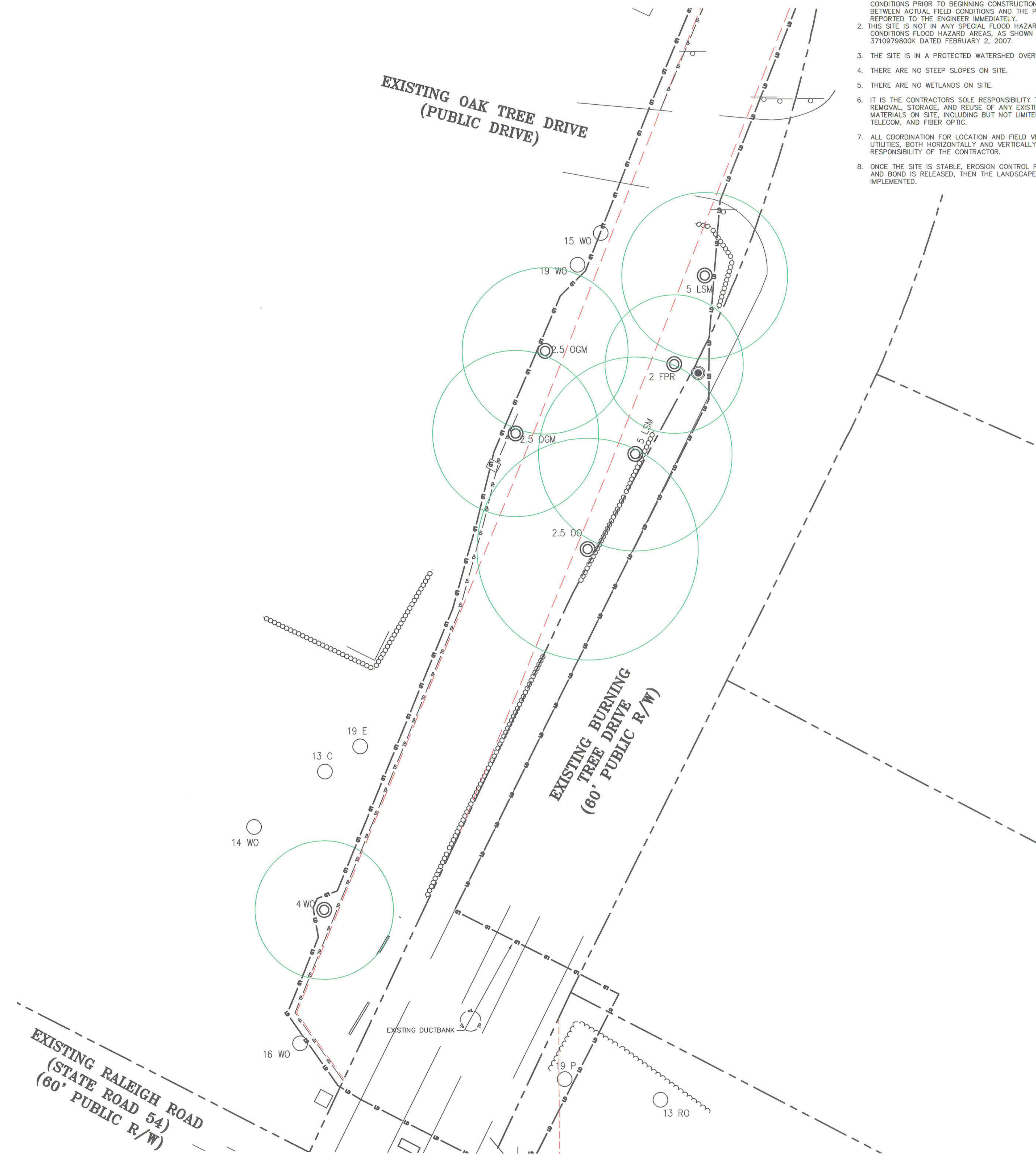
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- SANITARY SEWER CLEANOUT
- ⊗ WATER VALVE
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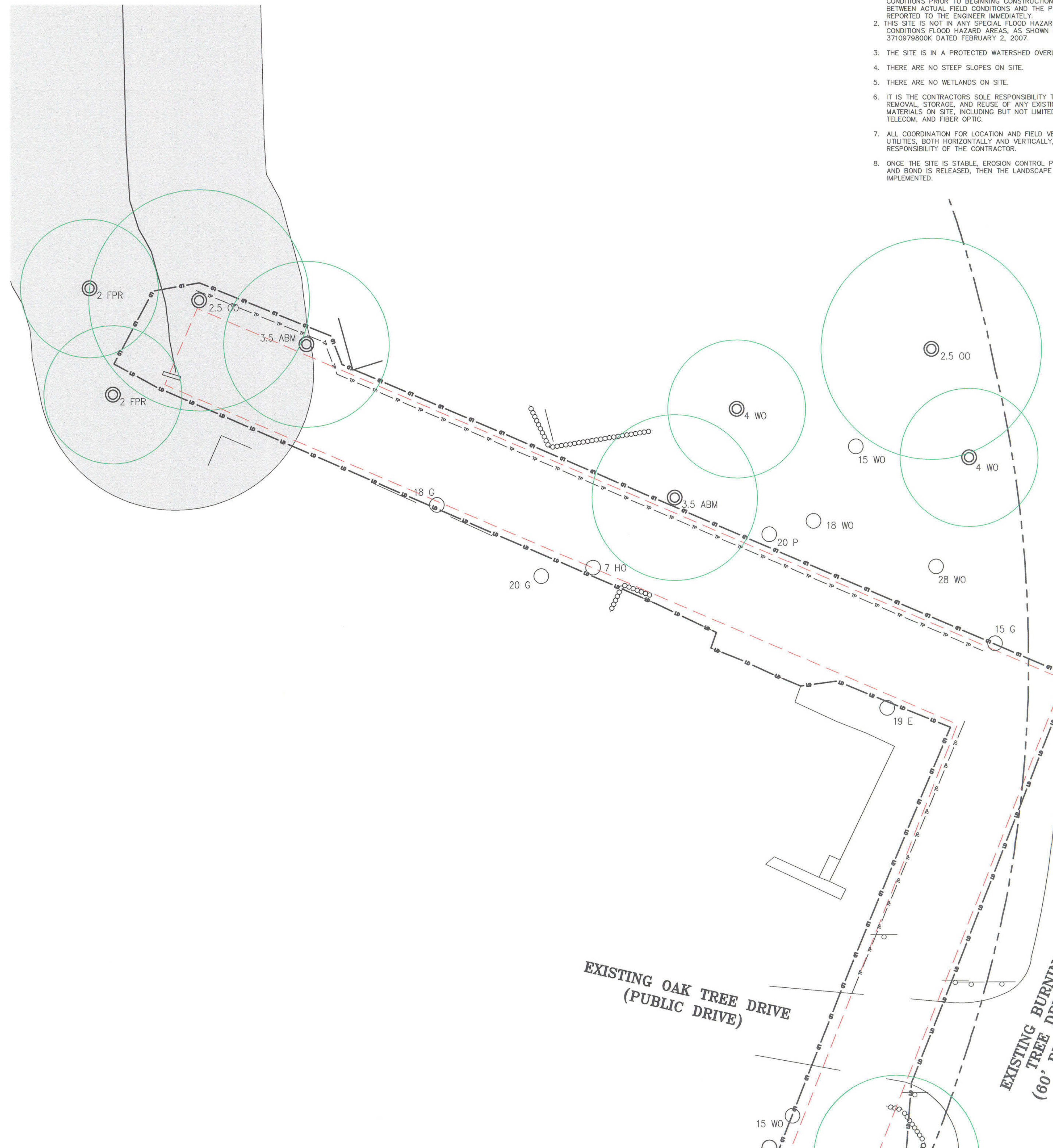
OWNER:
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5915 FARRINGTON ROAD, SUITE 104
CHAPEL HILL, NORTH CAROLINA 27517

THE OAKS CONDOMINIUMS
CHAPEL HILL, NORTH CAROLINA
LANDSCAPE AREA 'A'

PROJECT NO. CAS-10000
FILENAME: CAS10000-LS
CHECKED BY: DAC/DAP
DRAWN BY: SMP/NB
SCALE: 1" = 20'
DATE: 09-06-2017
SHEET NO. **LS-2**

McAdams

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TREE LEGEND

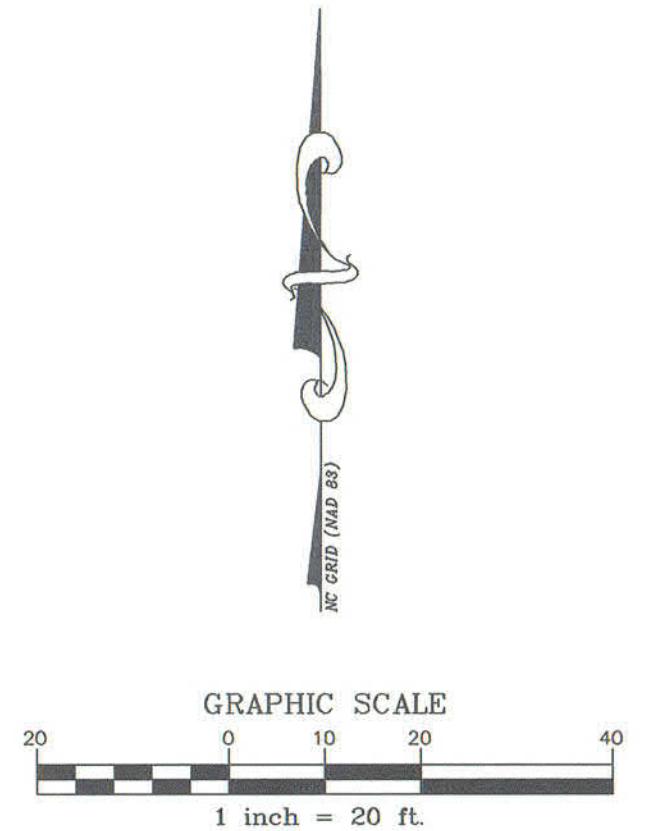
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- CALIPER INCH SIZE OF TREE
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CHAPEL HILL, NORTH CAROLINA 27517

THE OAKS CONDOMINIUMS
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LANDSCAPE AREA 'B'

PROJECT No. CAS-10000
FILENAME: CAS10000-LS
CHECKED BY: DAC/DAP
DRAWN BY: SMP/NB
SCALE: 1" = 20'
DATE: 09-06-2017
SHEET No. **LS-3**

