

ADDENDUM 1

ADDENDUM DATE: April 9th, 2019

PROJECT: OCSC Expansion - Phase 1, Seymour Center
2551 Homestead Rd.
Chapel Hill, NC 27516

OWNER: Orange County
131 West Margaret Lane
Hillsborough NC, 27278

ARCHITECT: Smith Sinnett Architecture, P.A.
4600 Lake Boone Trail, Suite 205
Raleigh, North Carolina 27607

BIDS DUE: **Tuesday, April 30th, 2019 at 2:00 p.m.**
Orange County Asset Management Office
131 West Margaret Lane; Third Floor Conference Rm. 302
Hillsborough NC, 27278



Please note, Project Addendums and Bidders List are available at www.smithsinnett.com under the 'Documents' icon on the navigation bar.

Among other items, this Addendum addresses issues raised in the Mandatory Pre-Bid Meeting held on March 28th, 2019 at 10:00 a.m. Pre-Bid notes and sign in sheet of those that attended are attached.

This Addendum shall be included in the contract for the above referenced project. All General, Supplementary and Special Conditions, etc., as originally specified or as modified below shall apply to these items.

General

1. Refer page 2 of this document for a list of all Addendum 1 attachments.
2. All questions and Requests for Substitution shall be submitted to the Architect prior to April 23rd.
3. **Clarification:** Per the Town of Chapel, the permit fee applicable to this project is a base fee of \$2,500 plus \$3.50/\$1,000 over \$500,001
4. **Clarification:** General Contractors will be permitted to return to the existing campus for visual survey of existing conditions. Please contact the architect to schedule an appointment.

Specifications

1. **Revision:** 00 42 00 – Bid Form – Add line item for Alternate No. E-1 Owner Preferred Manufacturer: EST Quick Start Fire Alarm Manufacturer. Modify Alternate No. 7 Owner

- Preferred Manufacturer – Door Hardware to include Corbin Locksets as described in hardware specification.
2. **Revision:** 01 23 00 – Alternates – Add item I. Alternate No. E-1: Owner Preferred Manufacturer: Fire Alarm Manufacturer. Modify Item G. Alternate No. 7 Owner Preferred Manufacturer – Door Hardware to include Corbin Locksets as described in hardware specification.
 3. **Revision:** 08 33 23 – Overhead Coiling Doors – 2.1, A, 3 – Windlocks are not required.

Substitution Requests:

1. 07 27 00 – Non Permeable Air and Vapor Barriers – TK Airmax 2102 is to be added to the list of products.

Architectural Drawings

1. **Revision:** Sheet A6-01 - Remove reference to “counter”. Refer to the requirements of 08 33 23 – Overhead Coiling Doors

End of Addendum 1

Attached:

General:

Pre-Bid Conference Agenda (5 Pages)
Pre-Bid Meeting Sign-In Sheet (2 Pages)

Specifications:

00 42 00
01 23 00
28 46 00 (See Elec. Addendum)

Civil/Landscape: 2 pages, 23 sheets

Electrical: 13 pages

Seymour Center Renovation and Addition
Project No. 2017027
Orange County
Pre-Bid Conference Agenda
March 28, 2019 at 10:00 a.m.



Owner: Orange County
131 West Margaret Lane
Hillsborough, NC 27278

Location: Seymour Center
2551 Homestead Road
Chapel Hill, NC 27516

Architect: Smith Sinnett Architecture, P.A.
4600 Lake Boone Trail, Suite 205
Raleigh, NC 27607
Phone: (919) 781-8582
Fax: (919) 781-3979

Drew Wilgus, AIA
Rhonda Angerio, AIA

On behalf of the Owner and Smith Sinnett Architecture, we would like to thank you for your interest and attendance at this Pre-Bid Conference.

I Bid:

Bids will be received until Tuesday, April 30th, 2019 by 2:00 p.m., for a Single Prime Contract at:

Orange County
131 West Margaret Lane
Hillsborough, NC 27278
3rd Floor Conference Room #302

All bids will be held until **2:00 p.m. on April 30th, 2019** at which time the bids will then be opened and read aloud.

II Bid Day Documents: Refer to Specifications

1. Proposal Form Pages 1 through 6
2. Bid Bond (5%) or Certified Check (5%)
3. Minority Business Guidelines (10% Goal)
4. Bid envelope should be sealed with the following information listed on the outside of the envelope.
 - a. Bidder's Name and Address
 - b. North Carolina Contractor's License Number
 - c. Name of Project
5. The successful bidder must provide an executed Performance Bond and Payment Bond for 100% of the Contract by a company licensed in North Carolina **within 30 days of receipt of an Intent to Award Letter**. Certificates of Insurance meeting the requirements indicated in the Specifications will also be required.
6. Any bids that have qualifying notes or comments will be rejected.



7. For mailed bids, it's the contractor's responsibility to ensure the bid arrives prior to the bid opening time. Place the bid in a double envelope with "Sealed Bid Do Not Open" written on the envelope.

III Alternates / Allowances / Unit Prices:

ALTERNATES

Alternate No. 1; Recessed Mounted Retractable Stage: State the amount to be added to the Base Bid for providing all labor and materials to construct the Recessed Mounted Retractable Stage as shown and noted in the Contract Drawings per the plans and specifications.

Alternate No. 2; Extension of Existing Entrance Canopy: State the amount to be added to the Base Bid for providing all labor and materials to construct the Extension of the Existing Entrance Canopy improvements as shown and noted in the Contract Drawings per the plans and specifications.

Alternate No. 3; Replacement of Existing Great Hall Flooring: State the amount to be added to the Base Bid for providing all labor and materials for removal of the existing flooring and to install new flooring in areas shown and noted in the Contract Drawings per the plans and specifications.

Alternate No. 4; Motorized Operable Partition: State the amount to be added to the Base Bid for providing all labor and materials to install a (Motorized) Operable Partition as shown and noted in the Contract Drawings per the plans and specifications. NOTE: A manually operable partition shall be provided in the base bid.

Alternate No. 5; Additional Storage: State the amount to be added to the base bid for providing all labor and materials to install Additional Storage as shown and noted in the Contract Drawings per the plans and specifications.

Alternate No. 6: Laticrete Adhered Stone Veneer system (preferred): (See section IV)

Alternate No. 7: Owner Preferred Manufacturer(s) – Door Hardware: (See section IV)

Alternate No. 8: Audio Visual Electrical Rough-in: State the amount to be added to the Base Bid for providing all labor and materials indicated and required to accomplish Work involved in providing the Audio Visual Electrical Rough-in for the equipment to be supplied and installed by the Owner's subcontractor.

ALLOWANCES

(Refer to Division 01 Section 01 21 00 – Allowances for amounts to be included in bid)

Allowance No. UP/A-1: Unsuitable soils removal and disposal off-site.

- Unit of measurement: cubic yard in place prior to excavation.
Quantity: 3500 cy

Allowance No. UP/A-2: Unsuitable soils removal and disposal on-site.

- Unit of measurement: cubic yard in place prior to excavation.
Quantity: 1000-cy.



Allowance No. UP/A-3: Excavation, removal of unsuitable rock for footings, trench, pits for off-site disposal.

- Unit of measurement: cubic yard in place prior to excavation.

Quantity: 1000-cy.

Allowance No. UP/A-4: Excavation, removal of bulk rock in open cut (> 10' x 30') for off-site disposal.

- Unit of measurement: cubic yard in place prior to excavation.

Quantity: 500-cy.

Allowance No. UP/A-5: Replacement of authorized excavation of unsuitable soils or rock with imported suitable soils.

- Unit of measurement: cubic yard, compacted in place

Quantity: 1000-cy.

Allowance No. UP/A-6: Replacement of authorized excavation of unsuitable soils or rock with imported structural fill.

- Unit of measurement: cubic yard, compacted in place.

Quantity: 3000-cy

Allowance No. UP/A-7: Replacement of authorized excavation of unsuitable soils or rock with Aggregate Base Course (ABC) stone material.

- Unit of measurement: cubic yard, compacted in place.

Quantity: 500-cy.

Allowance No. UP/A-8: Replacement of authorized excavation of unsuitable soils or rock with #57 Stone material wrapped in Woven Geotextile (Tenacate Mirafi 370 HP) or equivalent.

- Unit of measurement: cubic yard, compacted in place.

Quantity: 1500-cy.

Allowance No. UP/A-9: Geotextile in place

- Unit of measurement: square yard of ground surface covered. Overlap, waste or excess shall not be included in payment measurements.

Quantity: 500-sy.

Allowance No. A-10: Signage

Lump Sum: \$2,500.

Allowance No. A-11: Contingency

Lump Sum: \$350,000



IV Open Meeting for Discussion of Preferred Alternates:

Alternate No. 6: Laticrete Adhered Stone Veneer system (Preferred): State the amount to be added/deducted to the Base Bid for providing all labor and materials indicated and required to accomplish Work involved in providing an adhered Stone veneer system using Laticrete or equal as stated in the drawings and specifications. Note that equal products are allowed ONLY in the Base Bid.

Alternate No. 7: Owner Preferred Manufacturer(s) – Door Hardware: State the amount to be added to the Base Bid for providing all labor and materials indicated and required to accomplish Work involved in providing the Owner Preferred Manufacturers Listed Below:

1. List of Preferred Manufacturers- Von Duprin Exit Devices, as stated in the drawings and specifications. Note that equal products are allowed ONLY in the Base Bid.

V Schedule:

The Contract time shall commence on a date to be specified in a written Notice to Proceed from the Architect. Substantial Completion shall occur on or before the dates listed below:

- Substantial Completion shall be Three Hundred sixty five (365) calendar days from Notice to Proceed.

VI Liquidated Damages:

See Supplementary General Conditions: **\$ 500.00 each calendar day** in excess of the stated completion time.

VII Examination of Bid Documents:

All Bidders are expected to fully examine and familiarize themselves with the Drawings, Specifications and Existing Conditions. All Bidders should read the scopes of the bid package. Any questions or clarifications should be directed to the Architect. No allowances will be made after the bids are received for any oversight due to failure to examine the documents. If you are an E-Procurement Vendor, pay special attention to the Special Conditions section of the specifications.

VIII Substitutions:

Substitutions or approvals of “Equals” will only be accepted if approved by the Architect in writing at least 7 days prior to the receipt of bids: April 30th, 2019.

IX Technical Questions:

Technical questions should be submitted to Architect as soon as possible by phone or preferred email.

Drew Wilgus, AIA
dwilgus@smithsinnett.com
(919) 781-8582

X Construction Documents:

This is a formal bid and construction documents and specifications are available in PDF format upon ShareFile link request. All addenda as well as the plan holders list will also be posted to the Smith Sinnett Architecture website under the “Documents” tab. If you have any issues or cannot download any of the documents, please let us know and we will work to make sure you can get them.



XI Addenda:

Addenda will be emailed to everyone on the Architect's plan holders list.

XII Architect's brief description of the project:

This Phase 1 bid package consists of site improvements and addition and renovation to the Robert and Pearl Seymour Senior Center located at 2551 Homestead Rd. Chapel Hill, NC. Site work, aside from that directly associated with the building, includes straightening of the main driveway, walkway improvements and a 60-space parking lot expansion. The 2,100sf building addition will consist of a new fitness room with storage rooms, effectively expanding an existing multipurpose room via operable partition. The previous fitness room, on the second floor, will be renovated into additional offices for the administration suite (approx. 500sf). The addition will be constructed in the same character of the current facility. The facility will remain active during construction and phasing is anticipated.

Seymour Center Renovation and Addition, Chapel Hill, NC



Pre-Bid Meeting				
Sign In				
Date: 3/28/19 @ 10:00 am				
	Name:	Association	Email	Telephone No.:
1.	Tim Hill	Muter Construction	Thill@muterconstruction.com	919-404-8370
2.	Chris Hoover	W.C. Construction Company	christ@wccconstructionco.com	336-721-3420
3.	Brad Milne	Romeo Guest.	bmilne@romeoguest.com	719-683-1701
4.	Alan Demastri	Simcon Company	alan@simconcompany.com	356-789-4909
5.	Andy Ward	D.W. Ward Const.	andy@dwward.com	919-477-0471 x103
6.	Jeff D'Orio	Riggs-Harrod Builders	jeffd@rygsharrod.com	919-687-6111
7.	Paul Parker	Harrod & Assoc. Constructors	estimating@harrodandassoc.com	919-828-7782
8.	Ollie Jones	MTS Services	ojones@mtsservices.com	919-863-9599
9.	JOSH MORRIS	BRIDGEPOINT	JMORRIS@BRIDGEPOINTNC.COM	919-943-6180
10.	LAUREN VAN BUREN	BRIDGEPOINT	LVANBUREN@BRIDGEPOINTNC.COM	919-515-8008
11.	Caleb Pendergraph	Central Builders of Mebane	caleb@centralbuildersinc.com	336-227-4551
12.	Mark Ferris	ACH Contractors	MarkF@ACHContractors.com	919-484-9550
13.	Bon Kiser	S&S Bldg and Dev.	rkiser@sandsbuilding.com	336-808-1328
14.	Katelyn Foskey	The Christman Company	Katelyn.foskey@christmanco.com	301-518-0911
15.	JAMES SUMMERS	HM KERN	jsummers@hmkern.com	336-668-3213
16.	Bruce Guarini	BAR CONSTR. Co	LSMITH@BARCONSTRUCTION.COM	336-274-2477
17.	Myra Austin	OC Dept. on Aging	maustine@orangecountync.gov	919-245-2020
18.	Janice Tyler	OC Dept on Aging	jtyler@orangecountync.gov	919-245-4255
19.	Kyle Soffe	Resolute Building Company	Estimating@resoluteinc.com	910-670-1960

20.	Tim Stone	AMS		
21.	Cyndee Sims	Aging	CSIMS@ORANGE.COUNTY.NC.GOV	(919) 245-4250
22.	Ed Dreyer	Racconelli Const.	bids@racconelli.construction.com	910 363-3600
23.	SEAN DOLE	GROUNDFO ENGINEERS	SEAN@GROUNDFO-ENGINEERS.COM	919 621 3671
24.	Angel Barnes	OC AMS	abarnes@orangecountync.gov	919-245-2628
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SECTION 00 42 00 - PROPOSAL FORM

PROJECT: Orange County Southern Expansion
Phase 1 – Seymour Center Renovation and Addition
2551 Homestead Road
Chapel Hill, North Carolina 27516

OWNER: Orange County
200 South Cameron Street
Hillsborough, North Carolina 27278

ARCHITECT: Smith Sinnett Architecture
4600 Lake Boone Trail, Suite 205
Raleigh, North Carolina 27607

The undersigned, as bidder, hereby declares that the only person or persons interested in this proposal as principal or principals is or are named herein and that no other person than herein mentioned has any interest in this proposal or in the contract to be entered into; that this proposal is made without connection with any other person, company or parties making a bid or proposal; and that it is in all respects fair and in good faith without collusion or fraud. The bidder further declares that he has examined the site of the work and the contract documents relative thereto and has read all special provisions furnished prior to the opening of bids; that he has satisfied himself relative to the work to be performed.

The Bidder proposes and agrees if this proposal is accepted to contract with Orange County in the form of contract specified below, to furnish all necessary materials, equipment, machinery, tools, apparatus, means of transportation and labor necessary to complete the construction of

Orange County Southern Expansion Phase 1 – Renovation and Addition

in full in complete accordance with the plans, specifications and contract documents, to the full and entire satisfaction of the Orange County, and Smith Sinnett Architecture with a definite understanding that no money will be allowed for extra work except as set forth in the General Conditions and the contract documents.

The low Bidder will be determined by the total cost of the Contract with the lump sum prices of the alternates accepted being added to or deducted from the Base Bid to give the total cost of the Contract. Bidders are required to give a price for Base Bid, all Alternates, and all Unit Prices as applicable to their Contract. All Bidders are required to be licensed and in good standing with their respective North Carolina Licensing Board.

SINGLE PRIME CONTRACT:

BASE BID:

Amount: _____ Dollars (\$ _____)

ALTERNATE 1: Recessed Mounted Retractable Stage

Amount: _____ Dollars (\$ _____)

ALTERNATE 2: Extension of Existing Entrance Canopy

Amount: _____ Dollars (\$ _____)

ALTERNATE 3: Replacement of Existing Great Hall Flooring

Amount: _____ Dollars (\$ _____)

ALTERNATE 4: Motorized Operable Partition (Manual Partition in Base Bid)

Amount: _____ Dollars (\$ _____)

ALTERNATE 5: Additional Storage

Amount: _____ Dollars (\$ _____)

ALTERNATE 6: Laticrete Adhered Stone Veneer System (preferred)

Amount: _____ Dollars (\$ _____)

ALTERNATE 7: Owner Preferred Alternate: Door Hardware- Von Duprin Exit Devices/ Corbin Locksets

Amount: _____ Dollars (\$ _____)

ALTERNATE 8: Audio Visual Electrical Rough-in

Amount: _____ Dollars (\$ _____)

ALTERNATE E-1: EST Quick Start Fire Alarm Manufacturer:

Amount: _____ Dollars (\$ _____)

MAJOR SUBCONTRACTORS if any (Name, City & State)

General Subcontractor:

_____ Lic _____

Plumbing Subcontractor:

_____ Lic _____

Mechanical Subcontractor:

_____ Lic _____

Electrical Subcontractor:

_____ Lic _____

GS143-128(d) requires all single prime bidders to identify their subcontractors for the above subdivisions of work. A contractor whose bid is accepted shall not substitute any person as subcontractor in the place of the subcontractor listed in the original bid, except (i) if the listed subcontractor's bid is later determined by the contractor to be non-responsible or non-responsive or the listed subcontractor refuses to enter into a contract for the complete performance of the bid work, or (ii) with the approval of the awarding authority for good cause shown by the contractor.

ALLOWANCES - (Refer to Division 01 Section 01 21 00 – Allowances for amounts to be included in bid shall be based on the Unit Prices provided as part of Section 01 22 00) Acknowledge Allowances have been included with in the Base Bid.

UP/A-1 _____ UP/A-2 _____ UP/A-3 _____ UP/A-4 _____ UP/A-5 _____

UP/A-6 _____ UP/A-7 _____ UP/A-8 _____ UP/A-9 _____ No. A-10 _____

No. 11 _____

UNIT PRICES - (Refer to Division 01 Section 01 22 00 - Unit Prices for Quantities)

Unit prices quoted and accepted shall apply throughout the life of the contract, except as otherwise specifically noted. Unit prices shall be applied, as appropriate, to compute the total value of changes in the base bid quantity of the work and in the given Allowances all in accordance with the contract documents.

- Unit Price No. UP/A-1; Unsuitable soils removal and disposal off-site: per cy. Unit Price (\$)_____
- Unit Price No. UP/A-2; Unsuitable soils removal and disposal on-site: per cy. Unit Price (\$)_____
- Unit Price No. UP/A-3; Excavation, removal of unsuitable rock for footings, trench, pits for off-site disposal: per cy. Unit Price (\$)_____
- Unit Price No. UP/A-4; Excavation, removal of bulk rock in open (>10'x30") in footings, trench, pits for off-site disposal: per cy. Unit Price (\$)_____
- Unit Price No. UP/A-5; Replacement of authorized excavation of unsuitable soils or rock with imported suitable soils: per cy. Unit Price (\$)_____
- Unit Price No. UP/A-6; Replacement of authorized excavation of unsuitable soils or rock with imported Structural fill: per cy. Unit Price (\$)_____
- Unit Price No. UP/A-7; Replacement of authorized excavation of unsuitable soils or rock with aggregate base (ABC) stone: per cy. Unit Price (\$)_____
- Unit Price No. UP/A-8; Replacement of authorized excavation of unsuitable soils or rock with #57 washed stone: per cy. Unit Price (\$)_____
- Unit Price No. UP/A-9; Geotextile: per sy. Unit Price (\$)_____

The bidder further proposes and agrees hereby to commence work under this contract on a date to be specified in a written order of the designer and shall fully complete all work thereunder within the time specified in the Supplementary General Conditions Article 9. Applicable liquidated damages amount is also stated in the Supplementary General Conditions Article 9.

ADDENDUM

(Addendum received and used in computing bid)

- Addendum No. 1 _____ Addendum No. 3 _____ Addendum No. 5 _____
- Addendum No. 2 _____ Addendum No. 4 _____ Addendum No. 6 _____

Proposal Signature Page

The undersigned further agrees that in the case of failure on his part to execute the said contract and the bonds within ten (10) consecutive calendar days after being given written notice of the award of contract, the certified check, cash or bid bond accompanying this bid shall be paid into the funds of the owner's account set aside for the project, as liquidated damages for such failure; otherwise the certified check, cash or bid bond accompanying this proposal shall be returned to the undersigned. No proposal may be withdrawn after the scheduled closing time for the receipt of Bids for a period of ninety (60) days.

Respectfully submitted this day of _____

(Name of firm or corporation making bid)

WITNESS:

By: _____

Signature

(Proprietorship or Partnership)

Name: _____

Print or type

Title: _____

(Owner/Partner/Pres./V.Pres)

Address: _____

ATTEST:

By: _____

License No. _____

Title: _____

Federal I.D. No. _____

(Corp. Sec. or Asst. Sec. only)

(CORPORATE SEAL)

MINORITY BUSINESS PARTICIPATION REQUIREMENTS

Provide with the bid - Under GS 143-128.2(c) the undersigned bidder shall identify **on its bid** (Identification of Minority Business Participation Form) the minority businesses that it will use on the project with the total dollar value of the bids that will be performed by the minority businesses. **Also** list the good faith efforts (Affidavit A) made to solicit minority participation in the bid effort.

NOTE: A contractor that performs all of the work with its own workforce may submit an Affidavit (B) to that effect in lieu of Affidavit (A) required above. The MB Participation Form must still be submitted even if there is zero participation.

After the bid opening - The Owner will consider all bids and alternates and determine the lowest responsible, responsive bidder. Upon notification of being the apparent low bidder, the bidder shall then file within 72 hours of the notification of being the apparent lowest bidder, the following:

An Affidavit (C) that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, which is equal to or more than the 10% goal established. This affidavit shall give rise to the presumption that the bidder has made the required good faith effort and Affidavit D is not necessary;

*** OR ***

If less than the 10% goal, Affidavit (D) of its good faith effort to meet the goal shall be provided. The document must include evidence of all good faith efforts that were implemented, including any advertisements, solicitations and other specific actions demonstrating recruitment and selection of minority businesses for participation in the contract.

Note: Bidders must always submit **with their bid** the Identification of Minority Business Participation Form listing all MB contractors, vendors and suppliers that will be used. If there is no MB participation, then enter none or zero on the form. Affidavit A **or** Affidavit B, as applicable, also must be submitted with the bid. Failure to file a required affidavit or documentation with the bid or after being notified apparent low bidder is grounds for rejection of the bid.

END OF SECTION 00 42 00

SECTION 01 23 00 - ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

- A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to the Base Bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
 - 1. The cost or credit for each alternate is the net addition to the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

- A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
- B. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- C. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.
- D. Execute accepted alternates under the same conditions as other work of the Contract.
- E. Schedule: A Schedule of Alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

- A. **Alternate No. 1; Recessed Mounted Retractable Stage:** State the amount to be added to the Base Bid for providing all labor and materials to construct the Recessed Mounted Retractable Stage as shown and noted in the Contract Drawings per the plans and specifications.

- B. **Alternate No. 2; Extension of Existing Entrance Canopy:** State the amount to be added to the Base Bid for providing all labor and materials to construct the Extension of the Existing Entrance Canopy improvements as shown and noted in the Contract Drawings per the plans and specifications.
- C. **Alternate No. 3; Replacement of Existing Great Hall Flooring:** State the amount to be added to the Base Bid for providing all labor and materials for removal of the existing flooring and to install new flooring in areas shown and noted in the Contract Drawings per the plans and specifications.
- D. **Alternate No. 4; Motorized Operable Partition:** State the amount to be added to the Base Bid for providing all labor and materials to install a (Motorized) Operable Partition as shown and noted in the Contract Drawings per the plans and specifications. NOTE: A manually operable partition shall be provided in the base bid.
- E. **Alternate No. 5; Additional Storage:** State the amount to be added to the base bid for providing all labor and materials to install Additional Storage as shown and noted in the Contract Drawings per the plans and specifications.
- F. **Alternate No. 6; Laticrete Adhered Stone Veneer system (preferred):** State the amount to be added/deducted to the Base Bid for providing all labor and materials indicated and required to accomplish Work involved in providing an adhered Stone veneer system using Laticrete or equal.
- G. **Alternate No. 7; Owner Preferred Manufacturer(s) – Door Hardware:** State the amount to be added to the Base Bid for providing all labor and materials indicated and required to accomplish Work involved in providing the Owner Preferred Manufacturers Listed Below:
1. List of Preferred Manufacturers- Von Duprin Exit Devices
 2. List of Preferred Manufacturers- Corbin Russwin Locksets
- H. **Alternate No. 8; Audio Visual Electrical Rough-in:** State the amount to be added to the Base Bid for providing all labor and materials indicated and required to accomplish Work involved in providing the Audio Visual Electrical Rough-in for the equipment to be supplied and installed by the Owner's subcontractor.
- I. **Alternate No. E-1; Owner Preferred Manufacturer(s) – Fire Alarm Manufacturer:** State the amount to be added to the Base Bid for providing all labor and materials indicated and required to accomplish Work involved in providing the Owner Preferred Manufacturers Listed Below:
1. List of Preferred Manufacturers- EST Quick Start Fire Alarm

END OF SECTION 01 23 00

Addendum #1

Project: Orange County Southern Human Services Center Phase 1: Seymour Center Expansion
Smith Sinnett Architects Project #: 2017027

Issue Date: April 5, 2019

Issued By: Sean A. Dolle, Grounded Engineering



The following is a list of contractor questions received to date related to the site/civil portion of the project along with responses.

Contractor Questions:

1. Mark, see if they will consider making the light duty areas of paving 6" ABC/1.5" S9.5B/1.5" S9.5B. This would make the final paving lift the same asphalt type and thickness.
RESPONSE: The light duty pavement section can only be used in the parking spaces as indicated on the detail provided on sheet C9-01.
2. What is the depth of milling and asphalt mix type for the asphalt areas to be removed and replaced as shown on the demolition plan?
RESPONSE: The milling depth is 1.5 inches. The type of asphalt to be used in the replacement is SF9.5A.

The following is a list of changes that have been made to the plans since the issuance of bid documents. These changes are as a result of Town review comments.

Changes to Plans:

1. The new ADA accessible sidewalk on the north side of the building has been removed from the east side of the property. A new ADA sidewalk has been added from the existing plaza area to the proposed sidewalk on the west side of the project site. The contractor shall be responsible for constructing this sidewalk prior to demolishing the existing ADA sidewalk located on the northeast corner of the project area. (Refer to sheets C3-10, C3-20, C5-10, C5-20, and C5-40)
2. Sheet C0-02 has been changed to C0-03. Sheet C0-02 has now been used for required OWASA documents. (Refer to sheets C0-02 and C0-03).
3. A sand filter has been added to the north edge of the project site near the Homestead Road public right-of-way. (Refer to sheets C5-20 and C6-30)
4. Stage/Storage data has been added to sheet C6-00 to provide additional information for the required grading of the stormwater pond. (Refer to sheet C6-00)
5. Several sections of the storm drainage system on site have been revised including elevations and pipe sizes. (Refer to sheets C5-30 and C8-00)



P.O. Box 37132
Raleigh, NC 27627

www.grounded-engineering.com
919.438.3694

grounded
ENGINEERING

6. The rip-rap dissipator table on sheet C9-21 has been modified. (Refer to sheet C9-21)
7. The draw down orifice on the stormwater pond riser structure has been modified. (Refer to sheet C6-10)
8. The landscaping on the north side of the building along Homestead Road has been modified. (Refer to sheet L201)
9. The landscaping seeding schedule has been updated on sheet L202. (Refer to sheet L202)
10. A bike rack has been added to the bus loading area. (Refer to sheet C3-10)
11. Site Accessibility Notes #4-7 have been added to sheet C0-01. (Refer to sheet C0-01)
12. Town Required Construction Notes #1-7 have been added to sheet C0-01. (Refer to sheet C0-01)
13. An approximate location of a construction trailer has been shown on sheet C2-10. (Refer to C2-10)
14. The ADA signage detail height has been revised on sheet C9-01. (Refer to sheet C9-01)
15. Construction Phasing Note #1 on sheets C3-30, C3-31 and C3-32 has been modified to required that 102 parking spaces remain available. (Refer to sheets C3-30, C3-31, and C3-32)
16. "NO PARKING – FIRE LANE" pavement markings have been added on site. These markings have been shown on sheet C3-10 and a detail has been placed on sheet C9-02. (Refer to sheets C3-10 and C9-02)

Attachments:

- C0-01 (dated 03.29.2019)
- C0-02 (dated 03.29.2019)
- C0-03 (dated 03.29.2019)
- C2-10 (dated 03.29.2019)
- C3-10 (dated 03.29.2019)
- C3-20 (dated 03.29.2019)
- C3-30 (dated 03.29.2019)
- C3-31 (dated 03.29.2019)
- C3-32 (dated 03.29.2019)
- C5-10 (dated 03.29.2019)
- C5-20 (dated 03.29.2019)
- C5-30 (dated 03.29.2019)
- C5-40 (dated 03.29.2019)
- C6-00 (dated 03.29.2019)
- C6-10 (dated 03.29.2019)
- C6-30 (dated 03.29.2019)
- C8-00 (dated 03.29.2019)
- C9-01 (dated 03.29.2019)
- C9-02 (dated 03.29.2019)
- C9-21 (dated 03.29.2019)
- L200 (dated 03.29.2019)
- L201 (dated 03.29.2019)
- L202 (dated 03.29.2019)

End of Document



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CONSTRUCTION SEQUENCE

PHASE 1 (SHEETS C4-10 & C4-11)

- OBTAIN A SEDIMENTATION & EROSION CONTROL PERMIT FROM NCDCE.
- PRIOR TO BEGINNING CONSTRUCTION (INCLUDING DEMOLITION), THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING ON-SITE WITH NCDCE INSPECTOR, TOWN FORESTRY INSPECTOR (ADAM NICHOLSON 919.969.5006) AND OWNERS REPRESENTATIVES. THE CONTRACTOR SHALL PROVIDE EVERYONE WITH A MINIMUM OF 72 HOURS NOTICE FOR ALL ON-SITE MEETINGS.
- FOLLOWING THE MEETING, IF APPROVED BY NCDCE, THE CONTRACTOR SHALL PROCEED WITH INSTALLATION OF EROSION CONTROL MEASURES (TEMPORARY SILT FENCE, SILT FENCE OUTLETS, INLET PROTECTION, CONSTRUCTION ENTRANCES, ETC). CONTRACTOR SHALL ONLY DEMOLISH SITE IMPROVEMENTS AS NECESSARY TO INSTALL PROPOSED EROSION CONTROL MEASURES.
- THE CONTRACTOR SHALL SCHEDULE AN EROSION CONTROL MEASURE INSPECTION WITH NCDCE INSPECTOR. THE CONTRACTOR SHALL ALSO SCHEDULE A TREE FENCE AND SILT FENCE INSPECTION WITH THE TOWN FORESTRY DEPARTMENT (ADAM NICHOLSON 919.969.5006).
- UPON APPROVAL OF EROSION CONTROL MEASURES, THE CONTRACTOR SHALL BEGIN THE DRAW DOWN OF THE EXISTING POND USING A PUMPING SYSTEM. THE PUMPING SYSTEM SHALL RELEASE THE WATER AT A NON-EROSIVE VELOCITY INTO SEDIMENT BAGS AT LOCATION THAT IS PARALLEL TO THE RCD AREA. THE CONTRACTOR SHALL PROVIDE A TEMPORARY DISSIPATOR PAD AT THE OUTLET POINT FOR THE PUMPING OPERATIONS.
- ONCE THE POND HAS BEEN COMPLETELY DRAWN DOWN, THE CONTRACTOR SHALL PROCEED TO CONSTRUCTION SEQUENCE - PHASE 2.

PHASE 2 (SHEETS C4-20 & C4-21)

- THE CONTRACTOR SHALL BEGIN DEMOLITION OF EXISTING POND INFRASTRUCTURE. ONCE THE POND INFRASTRUCTURE IS REMOVED, THE CONTRACTOR SHALL BEGIN RE-GRADING OF THE POND AREA TO CONSTRUCT THE TEMPORARY SKIMMER BASIN. THE TEMPORARY SKIMMER BASIN SHALL BE CONSTRUCTED USING THE PROPOSED PERMANENT POND FOOTPRINT INCLUDING THE CONSTRUCTION OF THE EMBANKMENT AND SPILLWAY. THE CONTRACTOR SHALL MAT ALL SLOPES ASSOCIATED WITH THE BASIN AND PERIMETER WITH A ROLLED EROSION CONTROL PRODUCT AFTER SEEDING. AS PART OF THE SKIMMER BASIN CONSTRUCTION, THE CONTRACTOR SHALL BEGIN CONSTRUCTION OF PROPOSED RETAINING WALLS.
- ONCE THE SKIMMER BASIN HAS BEEN COMPLETED, PROCEED WITH CONSTRUCTION INCLUDING SITE DEMOLITION, GRADING, AND OTHER SITE IMPROVEMENTS. THE CONTRACTOR SHALL PERFORM ALL GRADING AND OTHER BACKFILL EFFORTS IN ACCORDANCE WITH THE RECOMMENDATION OF THE PROJECT GEOTECHNICAL ENGINEER.
- THE CONTRACTOR SHALL BEGIN RELOCATION OF ALL EXISTING UTILITIES.

PHASE 3 (SHEETS C4-30 & C4-31)

- INSTALL THE PROPOSED STORM DRAINAGE SYSTEM ON SITE INCLUDING TEMPORARY INLET PROTECTION. THE CONTRACTOR SHALL MINIMIZE IMPACTS TO THE TEMPORARY CONSTRUCTION ENTRANCE AND SHALL REPAIR IT TO GOOD WORKING CONDITION IMMEDIATELY.
- CONTINUE WITH CONSTRUCTION OF THE REMAINDER OF THE PROPOSED SITE IMPROVEMENTS.
- ADEQUATELY MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES AND/OR INCREASE MAINTENANCE FREQUENCY WHERE APPROVED MEASURES FAIL TO PREVENT ACCELERATED EROSION, OFF-SITE SEDIMENTATION, OR REPEITIVE NON-COMPLIANCE ISSUES.
- MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES IN GOOD WORKING ORDER. SILT FENCE, INLET PROTECTION, AND OTHER SIMILAR MEASURES MUST BE CLEANED OUT BEFORE THEY ARE HALF FULL. CLOGGED STONE FILTERS MUST BE REFRESHED/REPLACED. SILT FENCE CAN NOT HAVE HOLES OR TEARS.

PHASE 4 (SHEETS C440 & C4-41)

- ONCE GRADING IS COMPLETE, ALL IMPROVEMENTS HAVE BEEN INSTALLED AND THE SITE IS STABILIZED, THE CONTRACTOR SHALL CALL THE NCDCE INSPECTOR TO REQUEST AN INSPECTION AND OBTAIN APPROVAL TO REMOVE TEMPORARY MEASURES. DO NOT REMOVE ANY TEMPORARY MEASURES WITHOUT PRIOR NCDCE INSPECTOR APPROVAL.
- ONCE AUTHORIZED BY NCDCE, THE CONTRACTOR SHALL CONVERT THE TEMPORARY SKIMMER BASIN TO THE PERMANENT STORMWATER CONTROL MEASURE. DURING ANY DEWATERING OF THE SKIMMER BASIN, THE CONTRACTOR SHALL DO SO THROUGH A SILT BAG. REFER TO WET POND CONSTRUCTION NOTES AND SEQUENCE PROVIDED ON SHEET C6-10 FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
- ONCE AUTHORIZED BY NCDCE, THE CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION CONTROL MEASURES AND PROVIDE PERMANENT SEEDING WHERE TEMPORARY MEASURES HAVE BEEN REMOVED AND GROUND COVER IS NOT ADEQUATE.
- ONCE GRADING IS COMPLETE, TEMPORARY MEASURES ARE REMOVED, THE SITE IS STABILIZED, THE CONTRACTOR SHALL CALL NCDCE INSPECTOR TO SCHEDULE A FINAL INSPECTION. FULL STABILIZATION ON THE ENTIRE SITE IS REQUIRED IN ORDER TO OBTAIN A CERTIFICATE OF OCCUPANCY.
- ONCE THE FINAL INSPECTION IS APPROVED, CLOSE THE SEDIMENTATION & EROSION CONTROL PERMIT AND OBTAIN A CERTIFICATE OF COMPLETION FROM NCDCE.

THE NCDCE INSPECTOR ASSIGNED TO THIS PROJECT IS:
 NAME: TBD
 EMAIL ADDRESS: TBD
 PHONE #: 919.721.4200

EROSION CONTROL NOTES

- REFER TO GENERAL NOTES.
- THE CONTRACTOR SHALL INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE APPROVED CONSTRUCTION DOCUMENTS, BUT MAY ADJUST AS NECESSARY BASED ON FIELD CONDITIONS. HOWEVER, ANY DEVIATIONS FROM THE APPROVED EROSION CONTROL PLAN SHALL BE APPROVED BY NCDCE.
- THE CONTRACTOR SHALL MAINTAIN EROSION CONTROL MEASURES FOR THE LIFE OF THE PROJECT AND SHALL ENSURE THEY ARE CONTINUALLY IN GOOD WORKING CONDITION.
- THE CONTRACTOR SHALL ENSURE GRADING OPERATIONS ARE PERFORMED IN A MANNER THAT DO NOT ALLOW ANY SEDIMENT OUTSIDE OF THE PROJECT LIMITS OR OFF-SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROMPT REMOVAL OF ANY MUD, SOILS AND CONSTRUCTION RELATED MATERIALS DEPOSITED UPON THE SURFACES OF THE PUBLIC RIGHT-OF-WAY.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING ALL SELF-INSPECTIONS AND SELF-MONITORING IN ACCORDANCE WITH CONDITIONS OF NPDES PERMIT NO. NCG010000 AND NORTH CAROLINA GENERAL STATUTE 113A-54.1(e) AND 15A NCAAC 04B.0131 AND SHALL COMPLETE THE REQUIRED SELF-INSPECTION FORM FOUND ON THE DEMLR WEBSITE (<http://deq.nc.gov/about/divisions/energy-mineral-land-resources/erosion-sediment-control/forms>)
- SELF-INSPECTIONS FOR EROSION AND SEDIMENTATION CONTROL MEASURES ARE TO BE PERFORMED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OR EVERY RAIN EVENT GREATER THAN 0.5 INCH. ANY NECESSARY REPAIRS SHALL BE MADE IMMEDIATELY TO MAINTAIN MEASURES AS DESIGNED. ALL ESC MEASURES SHALL BE MAINTAINED AS SPECIFIED IN THE CONSTRUCTION DETAILS ON THIS PLAN. A RAIN GAUGE SHALL BE INSTALLED AT THE PROJECT SITE FOR MONITORING.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY AND ALL NECESSARY PERMITS ASSOCIATED WITH OFF-SITE BORROW SOURCES, IF NEEDED.
- THE CONTRACTOR SHALL PROVIDE AND USE A CONCRETE WASH OUT AT THE CONSTRUCTION ENTRANCE.
- THE FOLLOWING MUST BE KEPT ON SITE UNTIL THE E&S PLAN HAS BEEN CLOSED OUT BY LAND QUALITY: PREVIOUS 30 DAYS OF SELF INSPECTION REPORTS, RAIN GAUGE, APPROVAL CERTIFICATE/LETTER, APPROVED PLAN, AND NPDES PERMIT. THESE ITEMS SHOULD BE LOCATED IN AN ACCESSIBLE PERMIT BOX NEAR THE MAIN CONSTRUCTION ENTRANCE. FAILURE TO MAINTAIN THESE ON SITE VIOLATES THE NPDES PERMIT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROLLING DUST POLLUTION FROM LEAVING THE PROJECT LIMITS. CONCRETE DUST/WASTE/WASTEWATER MUST BE CLEANED OFF THE ROADWAY BY DRY SWEEPING METHODS ONLY. WATER MUST NOT BE USED TO WASH SEDIMENT OFF OF ROADS, DRIVEWAYS, OR PARKING LOTS.
- THE CONTRACTOR SHALL NOT REMOVE ANY EROSION CONTROL MEASURES IN ANY PHASE OF CONSTRUCTION PRIOR TO APPROVAL BY THE NCDCE INSPECTOR.
- NO ON-SITE FUEL STORAGE SHALL BE LOCATED WITHIN 50' OF ANY EXISTING OR PROPOSED STORM DRAINAGE INLET. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITTING, SAFETY MEASURES AND APPROVALS NEEDED FOR ON-SITE FUEL STORAGE.
- THE SEDIMENT BASIN MUST BE MAINTAINED UNTIL ALL UPGRADE DRAINAGE AREAS HAVE BEEN STABILIZED WITH THE ESTABLISHMENT OF PERMANENT VEGETATION.
- ALL DEWATERING OF SEDIMENT CONTAINMENT DEVICES FOR MAINTENANCE, REMOVAL, OR CONVERSION PURPOSES IS TO BE DONE THROUGH A SILT BAG.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR APPLYING ALL GROUND COVER PER CONDITIONS OF THE NPDES PERMIT OR IN CRITICAL AREAS, AT THE END OF THE DAY.

NOTIFICATION OF COMBINED SELF-MONITORING

THE SEDIMENTATION POLLUTION CONTROL ACT WAS AMENDED IN 2006 TO REQUIRE THAT PERSONS RESPONSIBLE FOR LAND-DISTURBING ACTIVITIES INSPECT A PROJECT AFTER EACH PHASE OF THE PROJECT TO MAKE SURE THAT THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN IS BEING FOLLOWED. RULES DETAILING THE DOCUMENTATION OF THESE INSPECTIONS TOOK EFFECT OCTOBER 1, 2010.

TO SIMPLIFY DOCUMENTATION OF SELF-INSPECTION AND NPDES SELF-MONITORING REPORTS, DWG AND DEMLR DEVELOPED A COMBINED FORM. THE SELF-INSPECTION PROGRAM IS SEPARATE FROM THE WEEKLY SELF-MONITORING PROGRAM OF THE NPDES STORMWATER PERMIT FOR CONSTRUCTION ACTIVITIES. THE FOCUS OF THE SELF-INSPECTION REPORT IS THE INSTALLATION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROL MEASURES ACCORDING TO THE APPROVED PLAN. THE INSPECTION SHOULD BE CONDUCTED AFTER EACH PHASE OF THE PROJECT, AND CONTINUED UNTIL PERMANENT GROUND COVER IS ESTABLISHED. THE FORM CAN BE ACCESSSED AT: <http://portal.ncdenr.org/web/IR/EROSION>.

IF YOU HAVE QUESTIONS OR CANNOT ACCESS THE FORM, PLEASE CONTACT THE RALEIGH REGIONAL OFFICE AT (919) 791-4200.

GROUND COVER STABILIZATION NOTES

IN COMPLIANCE WITH NPDES PERMIT NO. NCG 010000, GROUND COVER STABILIZATION MUST MEET SPECIFIC TIME FRAMES. SOIL STABILIZATION SHALL BE ACHIEVED ON ANY AREA OF A SITE WHERE LAND-DISTURBING ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED ACCORDING TO THE FOLLOWING SCHEDULE:

- ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS SOON AS PRACTICABLE BUT IN ANY EVENT WITHIN 7 CALENDAR DAYS FROM THE LAST LAND DISTURBING ACTIVITY.
- ALL OTHER DISTURBED AREAS SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS SOON AS PRACTICABLE BUT IN ANY EVENT WITHIN 15 CALENDAR DAYS FROM THE LAST LAND DISTURBING ACTIVITY.
- REFER TO PERMIT FOR ADDITIONAL CONDITIONS AND EXCEPTIONS FOR GROUND STABILIZATION REQUIREMENTS.

NPDES GROUND STABILIZATION NOTES:

GENERAL CONTRACTOR TO REFER TO SLOPE STABILIZATION NOTES BELOW WHEN SLOPES ARE GREATER THAN 3:1.

NPDES GROUND STABILIZATION NOTES:

1) GROUND STABILIZATION *		
SITE AREA DESCRIPTION	STABILIZATION TIME FRAME	STABILIZATION TIME FRAME DESCRIPTION
* PERIMETER DIKES, SWALES, DITCHES, AND SLOPES	7 DAYS	NONE
* HIGH QUALITY WATER (HGW) ZONES	7 DAYS	NONE
* SLOPES STEEPER THAN 3:1	7 DAYS	* SLOPES ARE 10 OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1. 14 DAYS ARE ALLOWED.
* SLOPES ARE 3:1 OR FLATTER	14 DAYS	7-DAYS FOR SLOPES GREATER THAN 50 FEET IN LENGTH.
* ALL OTHER SLOPES FLATTER THAN 4:1	14 DAYS	NONE EXCEPT FOR PERIMETERS AND HGW ZONES

* EXTENSIONS OF TIME MAY BE APPROVED BY THE PERMITTING AUTHORITY BASED ON WEATHER OR OTHER SPECIFIC CONDITIONS THAT MAKE COMPLIANCE IMPRACTICABLE. (SECTION 10.02(b))

PROPOSED DISTURBED AREA = 5.1 AC

NARRATIVE

THIS PROPOSED PROJECT SITE IS CURRENTLY DEVELOPED WITH AN EXISTING BUILDING, PARKING LOT AND INCLUDES SUPPORTING INFRASTRUCTURE SUCH AS UTILITIES AND STORM DRAINAGE. THE NEW IMPROVEMENTS FOR THIS SITE WILL INCLUDE A BUILDING ADDITION, EXPANDED PARKING LOT, A REALIGNED ENTRANCE DRIVEWAY, AND IMPROVED PEDESTRIAN PATHWAY AND INFRASTRUCTURE. EROSION CONTROL MEASURES INCLUDE CONSTRUCTION ENTRANCE, SILT FENCE, SILT FENCE OUTLETS, INLET PROTECTION, AND A SKIMMER BASIN.

THE CONTRACTOR SHALL FAITHFULLY MAINTAIN ALL SEDIMENTATION AND EROSION CONTROL MEASURES THROUGHOUT THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED BY NCDCE LAND QUALITY SECTION, IF WARRANTED.

GRADING & DRAINAGE NOTES

- REFER TO GENERAL NOTES.
- REFER TO BUILDING PLANS FOR LOCATIONS, SIZES AND MINIMUM SLOPES OF PROPOSED ROOF LEADER CONNECTIONS.
- COMPARISON OF PROPOSED GRADING AND EXISTING GRADING TO TOWN OF CHAPEL HILL STANDARDS AND SPECIFICATIONS AND/OR RECOMMENDATIONS OF A LICENSED GEOTECHNICAL ENGINEER.
- THE CONTRACTOR SHALL CONTACT GROUNDENGINEERING FOR ANY VARYING SITE CONDITIONS OR DISCREPANCIES AFFECTING SITE ACCESSIBILITY REQUIREMENTS.
- SLOPES THAT ARE 3:1 OR FLATTER ARE PERMITTED TO BE SEEDED. SLOPES STEEPER THAN 3:1 ARE REQUIRED TO BE SODDED. 1:1 SLOPES ARE NOT PERMITTED UNLESS ADJACENT TO A RETAINING WALL. 1:1 SLOPES ARE NOT ALLOWED WITHIN ANY PUBLIC EASEMENT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTING AND GRADING ALL PROPOSED IMPROVEMENTS IN A MANNER THAT ALLOWS FOR POSITIVE DRAINAGE AWAY FROM THE BUILDING. PONDING WATER ANYWHERE ON SITE IS PROHIBITED. THE CONTRACTOR SHALL SPILL CURB & GUTTER WHERE NECESSARY TO ENSURE PONDING DOES NOT OCCUR.
- ALL NEW GRADING SHALL MEET EXISTING GRADES WITH SMOOTH TRANSITIONS.
- EXISTING STORM DRAINAGE AND EXISTING UTILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL FIELD LOCATE ALL UTILITIES AND STORM DRAINAGE PRIOR TO MOBILIZATION AND REPORT THE RESULTS TO THE OWNER'S REPRESENTATIVE.
- ROOF LEADERS WILL DRAIN DIRECTLY TO THE DROP INLETS AND STORM STRUCTURES LOCATED ADJACENT TO THE BUILDING.
- NO STATEMENT IS MADE OR IMPLIED THAT THE ON-SITE GRADING AND EARTHWORK INDICATED ON THESE DRAWINGS IS BALANCED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING ALL EXISTING STRUCTURES WITHIN THE PROJECT LIMITS TO MATCH THE ADJACENT GRADE.
- BEFORE ANY GRADING OR CONSTRUCTION ON THE SITE, THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE TOWN OF CHAPEL HILL STORMWATER MANAGEMENT DIVISION, ENGINEERING DIVISION, AND GROUNDED ENGINEERING.

SITE ACCESSIBILITY NOTES

- ALL BUILDINGS WITHIN THE BOUNDARY OF THIS SITE, UNLESS OTHERWISE NOTED AS EXEMPT, SHALL HAVE "A" ACCESSIBLE ROUTES "AS REQUIRED TO COMPLY WITH THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT, FAIR HOUSING STANDARDS, AND GOVERNING STATE HANDICAP CODE STANDARDS. THESE STANDARDS FOR ACCESSIBILITY INCLUDE, BUT ARE NOT LIMITED TO:
 - MAXIMUM WALK SLOPE = 1:20
 - MAXIMUM RAMP SLOPE = 1:12 WITH RAILING
 - MAXIMUM CROSS SLOPE = 2.0%
 - ALL WALKS TO BE BROOM FINISHED CONCRETE UNLESS OTHERWISE SPECIFIED ON THESE DRAWINGS
 - ALL ADA DESIGNATED PARKING SPACES, INCLUDING LOADING/UNLOADING AISLES SHALL BE INSTALLED SUCH THAT THE MAXIMUM SLOPE IN ANY DIRECTION IS 2.0%.
- THE WORK TAKING PLACE RELATED TO THE CHANGES IN THIS SITE PLAN WILL BE FULLY COMPLIANT WITH THE NORTH CAROLINA ACCESSIBILITY CODES (ANSI 117.1 - 2009 AND CHAPTER 11 (E) OF THE NCAAC) UNLESS AND EXCEPT IN AREAS WHERE AN APPROVED STATEMENT FROM A SITE ENGINEER, SURVEYOR, OR ARCHITECT VERIFIES THAT SITE CONDITIONS EXIST WHERE THE TOPOGRAPHY OF THE SITE EXTENDS AND ONLY CURRENT METHODS OF CONFORMANCE ARE POSSIBLE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL ADA DESIGNATED PARKING SPACES AND DESIGN ALL HANDICAPPED PARKING SPACES, RAMPS, AND CROSSWALKS, AND ASSOCIATED INFRASTRUCTURE ACCORDING TO AMERICANS WITH DISABILITIES ACT STANDARDS, NORTH CAROLINA BUILDING CODE, AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) CODE, AND TOWN STANDARDS.
- PARKING - THE NUMBER OF SPACES SHALL COMPLY WITH NCBPC 2012 SECTION 1106.1.1 PER 6 COMPLIANT SPACES OR PORTION THEREOF MUST BE VAN ACCESSIBLE. NO SLOPE SHALL EXCEED 2.0% IN ANY DIRECTION. SIGNAGE PER NC REQUIREMENTS, MUTCD, AND ICC A117.1.
- CURB CUTS AND ACCESSIBLE ROUTES SHALL BE CONSTRUCTED PER ICC A117.1.2009 ED. CROSS SLOPE SHALL NOT EXCEED 2.0%. CONTRACTOR SHALL CALL FOR INSPECTION PRIOR TO PLACEMENT OF CONCRETE.
- SIDEWALKS GREATER THAN 5.0% ARE REQUIRED TO BE CONSTRUCTED AS A RAMP.

SITE LAYOUT NOTES

- REFER TO GENERAL NOTES.
- BUILDING SIZE, DIMENSIONS, AND LOCATION ARE APPROXIMATE. REFER TO ARCHITECTURAL PLANS FOR DETAILED INFORMATION INCLUDING DIMENSIONS AND LOCATION.
- ALL PARKING SPALL CORNER RADII ARE 3'0" UNLESS OTHERWISE INDICATED.
- ALL WALLS (RETAINING, SCREENING, AND SEATING) ARE SHOWN ON THIS PLAN FOR DIAGRAMMATIC PURPOSES ONLY. THESE PLANS DO NOT PROVIDE ANY STRUCTURAL OR OTHER DESIGN ASSOCIATED WITH THE PROPOSED WALLS. REFER TO ARCHITECTURAL AND/OR STRUCTURAL PLANS FOR DETAILS AND INFORMATION.
- THE CONTRACTOR SHALL PROVIDE CONSTRUCTION JOINTS FOR ALL CONCRETE SIDEWALK AND CONCRETE PAVING IN ACCORDANCE WITH GUIDELINES PROVIDED BY THE PORTLAND CEMENT ASSOCIATION AND THE AMERICAN CONCRETE INSTITUTE.
- ALL SIDEWALKS SHALL HAVE A MAXIMUM CROSS SLOPE OF 2.0%. ALL SIDEWALKS ADJACENT TO BUILDINGS SHALL SLOPE AWAY FROM THE BUILDING.
- ALL ON-SITE PAVEMENT SHALL BE INSTALLED IN ACCORDANCE WITH TOWN OF CHAPEL HILL STANDARDS AND THE PROJECT GEOTECHNICAL REPORT.
- THE CONTRACTOR SHALL NOT PERFORM ANY WORK INSIDE THE PUBLIC RIGHT-OF-WAY PRIOR TO RECEIPT OF ALL APPROPRIATE PERMITS. UPON RECEIPT, THE CONTRACTOR SHALL MAINTAIN A COPY OF THE PERMITS ON SITE AT ALL TIMES DURING CONSTRUCTION.
- ALL PROPOSED STOP SIGNS SHALL BE R1-1 HIGH INTENSITY PRISMATIC AND SHALL BE A MINIMUM SIZE OF 36" X 36". MOUNTING HEIGHT IS SEVEN (7) FEET TO THE BOTTOM OF THE SIGN. U-CANNEL POSTS SHALL BE USED FOR MOUNTING.
- ALL CROSSWALKS SHALL MEET THE MUTCD NCDOT STANDARD HIGHWAY DETAIL 1205.07 FOR HIGH VISIBILITY OR STANDARD CROSSWALKS USING THE 30" W11-2 AND 24" X 12" W16-7P SIGNS. THESE SIGNS AND PLACARDS MUST BE HIGH INTENSITY FLOURESCENT YELLOW-GREEN.
- ALL STOP BARS SHALL BE INSTALLED A MINIMUM OF FOUR (4) FEET BEHIND THE CROSSWALK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A TRAFFIC CONTROL PLAN TO THE TOWN OF CHAPEL HILL AND NCDOT STAFF FOR REVIEW AND APPROVAL PRIOR TO PERFORMING ANY WORK INSIDE OF THE PUBLIC RIGHT-OF-WAY. THE TRAFFIC CONTROL PLAN SHALL COMPLY WITH THE TOWN OF CHAPEL HILL AND NCDOT STANDARDS AND SPECIFICATIONS STANDARDS. PUBLIC NOTICE FOR CLOSURE OF ANY PORTION OF ROADWAY MUST BE PROVIDED A MINIMUM OF 3-5 DAYS PRIOR TO CLOSURE.

EROSION CONTROL MAINTENANCE CONTACT INFORMATION

ORANGE COUNTY
 P.O. BOX 8181
 1222 SOUTH BIRCH BLVD.
 HILLSBORO, NC 27278
 EMAIL: ABARNES@ORANGECOUNTYNC.GOV
 PHONE: 919.245.2628
 FAX: N/A

GENERAL NOTES

- ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL CONFORM WITH TOWN OF CHAPEL HILL STANDARDS AND SPECIFICATIONS. ALL CONSTRUCTION IN THE HOMESTEAD ROAD PUBLIC RIGHT-OF-WAY SHALL CONFORM WITH NCDOT STANDARDS AND SPECIFICATIONS. A WATER AND SANITARY SEWER UTILITY IMPROVEMENTS SHALL CONFORM WITH OWASA STANDARDS AND SPECIFICATIONS.
- EXISTING BOUNDARY, TOPOGRAPHY, AND EXISTING CONDITIONS TAKEN FROM SURVEY BY RILEY SURVEYING, PA. THE SURVEY WAS PROVIDED BY ORANGE COUNTY. PORTIONS OF THE EXISTING CONDITIONS INFORMATION SHOWN ARE BASED ON PREVIOUS SITE CONSTRUCTION PLANS ENTITLED SOUTHERN ORANGE COUNTY SENIOR CENTER, DATED 12.22.2005 AND PROVIDED BY CHASE JEWELL THAMES, PA. AND AS-BUILT CONSTRUCTION PLANS PROVIDED BY THE CONTRACTOR FOR THE SOUTHERN ORANGE COUNTY SENIOR CENTER PROJECT.
- PER FEMA MAP #371098800C DATED NOVEMBER 17, 2017, A FEMA MAPPED FLOODPLAIN DOES NOT EXIST ON THIS PROPERTY.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING, COORDINATING, AND PAYMENT FOR ALL NECESSARY LOCATING SERVICES INCLUDING INDEPENDENT LOCATING SERVICES. THE CONTRACTOR SHALL HAVE ALL EXISTING UTILITIES LOCATED AT LEAST 48 HOURS PRIOR TO BEGINNING DEMOLITION, EXCAVATION, OR ANY OTHER FORM OF CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNERS REPRESENTATIVES OF ANY DISCREPANCIES OR CONFLICTS.
- ALL SUB-SURFACE UTILITIES IDENTIFIED ON THESE CONSTRUCTION DOCUMENTS ARE SHOWN IN THEIR APPROXIMATE LOCATION BASED ON SURVEY INFORMATION, FIELD OBSERVATIONS, AND OTHER RECORD DRAWINGS WHICH MAY BE AVAILABLE. THESE DRAWINGS DO NOT NECESSARILY SHOW ALL EXISTING UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ALL UTILITIES.
- EXISTING IMPROVEMENTS DAMAGED OR DESTROYED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE RESTORED OR REPLACED TO ORIGINAL CONDITION AND TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND COORDINATING INSPECTIONS, CERTIFICATIONS, AND OTHER REQUIREMENTS WHICH MUST BE MET UNDER THIS CONTRACT.
- THE CONTRACTOR SHALL MAINTAIN AS-BUILT DRAWINGS TO RECORD THE ACTUAL LOCATION OF ALL PIPING PRIOR TO CONCEALMENT. DRAWINGS WILL BE PROVIDED TO THE OWNER'S REPRESENTATIVE AT REGULAR INTERVALS THROUGHOUT THE PROJECT FOR REVIEW AND RECORD OF CONSTRUCTION.
- IF DEPARTURES FROM THE PROJECT DRAWINGS OR SPECIFICATIONS ARE DEEMED NECESSARY BY THE CONTRACTOR, DETAILS OF SUCH DEPARTURES AND REASONS THERE FOR SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE FOR REVIEW. NO DEPARTURES FROM THE CONTRACT DOCUMENTS SHALL BE MADE WITHOUT THE EXPRESS WRITTEN PERMISSION OF THE OWNER'S REPRESENTATIVE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RELOCATION OF ANY EXISTING UTILITY INFRASTRUCTURE REQUIRED TO COMPLETE ANY PORTION OF CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE COORDINATION AND COSTS OF ASSOCIATED WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIALS AND RUBBISH CAUSED BY THE CONTRACTOR. ALL DEBRIS SHALL BE REMOVED FROM THE PROJECT SITE ON A DAILY BASIS.
- NO OPEN BURNING SHALL BE PERMITTED DURING THE COURSE OF THIS PROJECT.
- THIS SITE WILL REMAIN AN ACTIVE CAMPUS DURING THE CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING ALL CONSTRUCTION ACTIVITY PERFORMED DOES NOT INTERFERE WITH THE ABILITY OF THE SUBJECT PARCEL TO REMAIN ACTIVE AND SAFE AT ALL TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CONTINUOUS SERVICE AND ACCESS TO THE CAMPUS AND EACH BUILDING, INCLUDING BUT NOT LIMITED TO UTILITY, PEDESTRIAN, VEHICULAR, FIRE, AND TRANSIT.
- THE CONTRACTOR SHALL NOT INTERRUPT UTILITY SERVICES TO ANY OF THE ADJACENT PROPERTIES WITHOUT PRIOR NOTICE, COORDINATION, AND APPROVAL BY THE APPROPRIATE AUTHORITY HAVING JURISDICTION.
- THE CONTRACTOR SHALL NOT STORE VEHICLES, EQUIPMENT, AND/OR CONSTRUCTION RELATED MATERIALS WITHIN THE PUBLIC RIGHTS-OF-WAY.
- THE ENGINEER AND/OR OWNER DISCLAIM ANY ROLE IN THE CONSTRUCTION MEANS AND/OR METHODS ASSOCIATED WITH THE PROJECT AS SET FORTH IN THESE PLANS.

SITE DEMOLITION PLAN NOTES

- REFER TO GENERAL NOTES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING APPROPRIATE SIGNAGE AND MEASURES TO SECURE THE CONSTRUCTION SITE AND MAINTAIN SAFETY FOR ALL PARTIES.
- THE CONTRACTOR SHALL REMOVE CONCRETE (WHERE REQUIRED) TO THE FIRST COLD JOINT OR SAW CUT TO OBTAIN A CLEAN EDGE.
- THE CONTRACTOR SHALL SAW CUT ASPHALT (WHERE REQUIRED) TO OBTAIN A CLEAN EDGE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING EVERYTHING WITHIN THE CLEARING LIMITS INCLUDING TREES, STUMPS, TRASH, FENCING, AND BUILDING MATERIALS.
- CLEANOUTS AND WATER VALVES LOCATED IN AREAS OF DEMOLITION OR SUBSEQUENT CONSTRUCTION SHALL BE PROTECTED FROM DAMAGE AND PRESERVED TO REMAIN IN PLACE WITH NEW GRASS.
- CLEAN SOILS SHALL BE UTILIZED FOR BACKFILL. COMPACTION OF THESE SOILS SHALL BE PERFORMED IN ACCORDANCE WITH THE RECOMMENDATIONS OF A GEOTECHNICAL ENGINEER.
- ALL ITEMS DESIGNATED TO BE REMOVED SHALL BE REMOVED COMPLETELY, INCLUDING ALL SUBGRADE MATERIALS DIRECTLY ASSOCIATED WITH THEM TO BE REMOVED.
- ANY MATERIALS REMOVED AS PART OF DEMOLITION FOR THIS PROJECT SHALL BE PROPERLY DISPOSED OF OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL LAWS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS ASSOCIATED WITH A TEMPORARY CONSTRUCTION TRAILER IF ONE IS TO BE USED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY TEMPORARY SHORING AND STRUCTURAL STABILIZATION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSULTING WITH A STRUCTURAL ENGINEER PRIOR TO REMOVAL OF ANY STRUCTURAL ELEMENTS. THESE PLANS DO NOT PROVIDE ANY STRUCTURAL ENGINEERING RECOMMENDATIONS.
- THE TEMPORARY CONSTRUCTION PERIMETER CHAIN LINK FENCE SHALL BE INSTALLED AT THE ONSET OF CONSTRUCTION AND SHALL BE MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING APPROPRIATE TRAFFIC CONTROL MEASURES TO CONTROL CONSTRUCTION TRAFFIC IN AND OUT OF THE PROJECT SITE INCLUDING FLAGGERS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DISCONNECTION AND REMOVAL OF ALL INACTIVE INFRASTRUCTURE WITHIN THE AREA OF DEMOLITION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONDUCTING SITE DEMOLITION PHASING IN A MANNER THAT ENSURES ALL STORM DRAINAGE CONTINUES TO PROPERLY FUNCTION AND DRAIN AS INTENDED. THE CONTRACTOR SHALL PROVIDE TEMPORARY PIPING IF NEEDED. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR ENSURING WATER DRAINS AWAY FROM ALL BUILDINGS WITHIN THE PROJECT LIMITS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING ALL PEDESTRIAN PATHWAYS OUTSIDE OF THE PROJECT AREA REMAIN SAFE AND ACCESSIBLE FOR THE DURATION OF CONSTRUCTION.
- IF CONSTRUCTION MEANS AND METHODS REQUIRE ANY TEMPORARY PUBLIC LANE OR SIDEWALK CLOSURES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE TOWN OF CHAPEL HILL AND NCDOT.

TEMPORARY FENCING NOTES

- THE TEMPORARY CHAIN LINK SECURITY FENCING SHALL BE INSTALLED AS TO PROVIDE A MAXIMUM OF 2" GAP BETWEEN THE BOTTOM OF THE FENCING AND THE GROUND.
- THE TEMPORARY 4" HIGH CHAIN LINK CONSTRUCTION PERIMETER FENCING SHALL BE INSTALLED ON METAL SUPPORTS OR EMBEDDED IN GROUND. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT THE FENCE SYSTEM IS PROPERLY WEIGHTED DOWN WITH SANDBAGS OR OTHER WEIGHTED ITEMS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- THE CONTRACTOR SHALL PROVIDE, INSTALL, AND MAINTAIN GREEN OR BLACK POLYETHYLENE SCREENING WITH BANDING ON ALL TEMPORARY CHAIN LINK FENCING INCLUDING GATES. THE SCREENING SHALL BE INSTALLED ON THE CONSTRUCTION SIDE OF THE FENCING.
- THE CONTRACTOR SHALL PROVIDE TWO (2) SEPARATE CHAINS FOR THE TEMPORARY CHAIN LINK GATE ASSOCIATED WITH THIS PROJECT. ONE (1) CHAIN SHALL BE SECURED WITH A LOCK PROVIDED BY THE CONTRACTOR AND ONE (1) CHAIN SHALL BE SECURED IN A LOCK PROVIDED BY THE OWNER. THE CHAINS SHALL BE LOCKED IN A MANNER THAT WILL ALLOW EITHER PARTY TO ACCESS THE PROJECT SITE WITHOUT THE OTHER PARTY PRESENT TO REMOVE THEIR LOCK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TEMPORARY FENCING THROUGHOUT THE DURATION OF THE PROJECT.
- THE CONTRACTOR SHALL NOT REMOVE ANY SECTION OF FENCING WITHOUT OWNER AUTHORIZATION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIRS TO EXISTING GROUNDS IMPACTED OR DAMAGED BY THE SUPPORTS AND POSTS FOR THE TEMPORARY FENCING, INCLUDING PAVED SURFACES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF THE TEMPORARY PERIMETER FENCING AND ASSOCIATED MATERIALS AT THE CONCLUSION OF THE PROJECT.

UTILITY NOTES

- REFER TO GENERAL NOTES.
- EXISTING UTILITIES IN CONFLICT WITH PROPOSED IMPROVEMENTS SHALL BE REMOVED OR RELOCATED.
- THIS PLAN IS DIAGRAMMATIC AND REPRESENTS THE APPROXIMATE LOCATION OF UTILITIES UNLESS SPECIFICALLY DIMENSIONED. THE CONTRACTOR SHALL COORDINATE THE ACTUAL AND PROPOSED LOCATION OF UTILITIES TO AVOID CONFLICT.
- THE CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL ELECTRIC, GAS, TELEPHONE AND OTHER UTILITY SERVICES WITH THE APPROPRIATE UTILITY COMPANY PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE CONDUITS AS REQUIRED FOR THESE UTILITIES UNDER PAVED AREAS. ALL UTILITY LINES SHALL BE INSTALLED UNDERGROUND PER THE APPLICABLE LOCAL, STATE, AND FEDERAL STANDARDS AND SPECIFICATIONS.
- ALL CLEAN-OUTS OUTSIDE OF THE BUILDING LOCATED IN PAVEMENT AREAS (ASPHALT OR CONCRETE) SHALL BE CAPPED WITH A MINI-MANHOLE.
- ALL SANITARY SEWER SERVICES OUTSIDE OF THE BUILDING SHALL HAVE A MINIMUM SLOPE OF 2.0%.
- SITE LIGHTING SHALL BE PROVIDED BY DUKE ENERGY.
- ALL UTILITY SERVICE CONNECTIONS TO THE BUILDING AND UTILITY EQUIPMENT ARE SHOWN IN THEIR APPROXIMATE LOCATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE ACTUAL LOCATION WITH THE BUILDING DESIGN PLANS.
- SITE LIGHTING TO BE PROVIDED BY DUKE ENERGY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH DUKE ENERGY, PROVIDING STAKING/LAYOUT SERVICES, AND INSTALLING ALL NECESSARY CONDUITS AS REQUIRED BY DUKE ENERGY.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING ALL EXISTING UTILITY STRUCTURES (MANHOLES, VALVES, METER BOXES, ETC.) WITHIN THE PROJECT LIMITS TO MATCH THE ADJACENT GRADE.
- ALL UTILITY RELOCATIONS SHOWN ARE SCHEMATICALLY DRAWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION AND RELOCATION OF THE LINES IN A MANNER THAT CONFORMS WITH ALL APPLICABLE LOCATION, SEPARATION AND BURYING STANDARDS.
- HORIZONTAL SEPARATION OF 10 FEET AND A MINIMUM VERTICAL SEPARATION OF 18 INCHES SHALL BE PROVIDED BETWEEN SANITARY SEWER AND STORM SEWER PIPES.

ALL CONSTRUCTION SHALL CONFORM WITH TOWN OF CHAPEL HILL STANDARDS AND SPECIFICATIONS. ALL CONSTRUCTION INSIDE OF THE HOMESTEAD ROAD PUBLIC RIGHT-OF-WAY SHALL COMPLY WITH NCDOT STANDARDS AND SPECIFICATIONS. ALL PROPOSED WATER AND SANITARY SEWER CONSTRUCTION SHALL COMPLY WITH OWASA STANDARDS AND SPECIFICATIONS.

REFER TO SHEET C-001 FOR PROJECT AND SHEET RELATED NOTES.

CONTRACTOR PHASING NOTES

- THE CONTRACTOR SHALL MAINTAIN ACCESS TO AT LEAST 102 PARKING SPACES DURING THE ENTIRE DURATION OF CONSTRUCTION FOR USE BY PATRONS OF THE SEYMOUR CENTER. THESE SPACES SHALL BE LOCATED AT THE SEYMOUR CENTER. PARKING SPACES ASSOCIATED WITH THE ORANGE COUNTY HEALTH SERVICES BUILDING SHALL NOT BE UTILIZED TO MEET THIS REQUIREMENT.
- THE CONTRACTOR SHALL MAINTAIN ACCESS TO AT LEAST SIX (6) ADA PARKING SPACES DURING THE ENTIRE DURATION OF CONSTRUCTION FOR USE BY PATRONS OF THE SEYMOUR CENTER. THESE SPACES SHALL BE LOCATED AT THE SEYMOUR CENTER. PARKING SPACES ASSOCIATED WITH THE ORANGE COUNTY HEALTH SERVICES BUILDING SHALL NOT BE UTILIZED TO MEET THIS REQUIREMENT.
- THE CONTRACTOR SHALL MAINTAIN A CONTINUOUS, SAFE, AND ADA ACCESSIBLE SIDEWALK UNTIL THE SEYMOUR CENTER AT ALL TIMES.
- THE CONTRACTOR SHALL MAINTAIN A SAFE PAVED VEHICULAR PATHWAY FROM HOMESTEAD ROAD TO BOTH THE SEYMOUR CENTER AND ORANGE COUNTY HEALTH SERVICES BUILDING DURING THE ENTIRE DURATION OF CONSTRUCTION. THE VEHICULAR ACCESS SHALL MEET ALL FIRE APPARATUS AND EMERGENCY VEHICLE ACCESS REQUIREMENTS.
- THE CONTRACTOR SHALL PROVIDE THE OWNER AT LEAST 48 HOUR NOTICE OF ANY CHANGES TO TRAFFIC PATTERNS ON SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING APPROPRIATE WAY FINDING SIGNAGE TO ASSIST PATRONS (VEHICULAR AND PESTRIAN) WITH NAVIGATING THE SITE DURING CONSTRUCTION.
- THE CONTRACTOR SHALL PROVIDE SIDEWALK CLOSURE SIGNS AND BARRICADES FOR ANY SIDEWALK CLOSURES DURING CONSTRUCTION.
- THE CONTRACTOR SHALL NOT DISRUPT UTILITY SERVICE TO THE SEYMOUR CENTER OR THE ORANGE COUNTY HEALTH SERVICES BUILDING.
- THE CONTRACTOR SHALL MAINTAIN ACCESS TO THE COUNTY'S DUMPSTERS DURING THE ENTIRE DURATION OF CONSTRUCTION.
- THE CONTRACTOR SHALL NOT UTILIZE ANY OF THE PATRON PARKING SPACES ANYWHERE ON SITE FOR CONSTRUCTION RELATED PURPOSES. THE CONTRACTOR SHALL PARK ALL CONSTRUCTION-RELATED VEHICLES (INCLUDING CONTRACTOR AND SUBCONTRACTOR EMPLOYEES) WITHIN THE CONSTRUCTION LAYDOWN AREA OR WITHIN THE DESIGNATED CONTRACTOR PARKING SPACES IDENTIFIED ON THE CONSTRUCTION PLANS. THE DESIGNATED CONTRACTOR PARKING SPACES LOCATED AT THE ORANGE COUNTY HEALTH SERVICES BUILDING SHALL ONLY BE USED FOR PARKING, NOT FOR ANY MATERIAL STORAGE.

PAVEMENT MARKING & SIGN NOTES

- ALL SITE SIGNAGE SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), NCDOT, AND TOWN OF CHAPEL HILL STANDARDS.
- ALL SIGNS SHALL BE MOUNTED WITH 5-FI MINIMUM VERTICAL CLEARANCE TO THE BOTTOM OF THE SIGN ON 2 LB GALVANIZED STEEL U-CHANNEL POST SET IN 3 FT DEEP X 12 INCH DIAMETER CONCRETE FOOTING.
- ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MUTCD AND NCDOT STANDARDS AND THE PROJECT SPECIFICATIONS.
- ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC TYPE EXCEPT FOR PARKING SPACE LINES WHICH MAY BE THERMOPLASTIC OR ALKYL-RESIN TYPE PAINT.

CONSTRUCTION WASTE NOTES

- All existing structures 500 square feet and larger shall be assessed prior to the issuance of a demolition permit to ensure compliance with the County's Regulated Recyclable Materials Ordinance (RRMO) and to assess the potential for deconstruction and/or the reuse of salvageable materials.
- Pursuant to the County's RRMO, clean wood waste, scrap metal, and corrugated cardboard present in construction or demolition waste must be recycled.
- Pursuant to the County's RRMO, all haulers of mixed construction and demolition waste which includes any regulated recyclable materials shall be licensed by Orange County.
- Prior to any demolition or construction activity on the site, the applicant shall hold a pre-demolition/pre-construction conference with Solid Waste staff. This may be the same pre-construction meeting held with other development/enforcement officials.
- The presence of any asbestos containing materials (ACM) and/or other hazardous materials shall be handled in accordance with any and all local, state, and federal regulations and guidelines.

TOWN REQUIRED CONSTRUCTION NOTES

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL REQUIRED EXITS, EXISTING STRUCTURAL ELEMENTS, FIRE PROTECTION SYSTEMS AND DEVICES AND SANITARY SAFEGUARDS ARE MAINTAINED AT ALL TIMES DURING REMODELING, REPAIRS, ALTERATIONS, OR ADDITIONS TO THE BUILDING.
- ALL CONSTRUCTION AND DEMOLITION CONDUCTED SHALL BE IN COMPLIANCE WITH THE CURRENT EDITION OF THE NC FIRE CODE, 2018 NCFE CHAPTER 33.
- DURING CONSTRUCTION AND DEMOLITION WHERE HOT WORK, MATERIALS SUBJECT TO SPONTANEOUS COMBUSTION, OR OTHER HAZARDOUS CONSTRUCTION OR DEMOLITION IS OCCURRING, THE OWNER OR THEIR DESIGNEE SHALL BE RESPONSIBLE FOR MAINTAINING A FIRE WATCH. THE FIRE WATCH SHALL CONSIST OF AT LEAST ONE PERSON WITH A MEANS OF COMMUNICATING AN ALARM TO 911, SHALL HAVE A WRITTEN ADDRESS POSTED IN A CONSPICUOUS LOCATION, AND SHALL MAINTAIN CONSTANT PATROLS. 2018 NCFE SECTION 3304.5.
- WHERE ACCESS TO OR WITHIN A STRUCTURE OR AN AREA IS RESTRICTED BECAUSE OF SECURED OPENING OR WHERE IMMEDIATE ACCESS IS NECESSARY FOR LIFE-SAVING OR FIRE-FIGHTING PURPOSES, THE FIRE CODE OFFICIAL IS AUTHORIZED TO REQUIRE A KEY BOX TO BE INSTALLED IN AN APPROVED LOCATION. THE KEY BOX SHALL BE OF AN APPROVED TYPE LISTED IN ACCORDANCE WITH UL 1037, AND SHALL CONTAIN KEYS TO NECESSARY ACCESS AS REQUIRED BY THE FIRE CODE OFFICIAL. 2018 NCFE 3061.
- DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING VEHICLE ACCESS FOR FIRE-FIGHTING. TEMPORARY STREET SIGNS SHALL BE INSTALLED AT EACH STREET INTERSECTION WHEN CONSTRUCTION ALLOWS THE PASSAGE OF VEHICLES. SIGNS SHALL BE OF AN APPROVED SIZE, WEATHER RESISTANT, AND MAINTAINED UNTIL REPLACED BY PERMANENT SIGNS. 2018 NCFE SECTION 505.2.
- FENCING AROUND PROJECTS SHALL INCLUDE ACCESS GATES WITH A

ALL CONSTRUCTION SHALL CONFORM WITH TOWN OF CHAPEL HILL STANDARDS AND SPECIFICATIONS. ALL CONSTRUCTION INSIDE OF THE HOMESTEAD ROAD PUBLIC RIGHT-OF-WAY SHALL COMPLY WITH NCDOT STANDARDS AND SPECIFICATIONS. ALL PROPOSED WATER AND SANITARY SEWER CONSTRUCTION SHALL COMPLY WITH OWASA STANDARDS AND SPECIFICATIONS.

REFER TO SHEET C-001 FOR PROJECT AND SHEET RELATED NOTES.

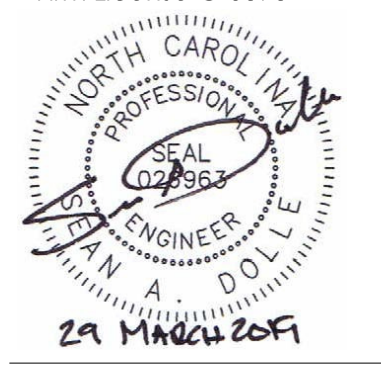


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Smith Sinnett Architecture, P.A. 2018

THIS DRAWING IS FORMATTED TO BE PRINTED ON A 24" X 36" SHEET

ORANGE COUNTY SOUTHERN HUMAN SERVICES CENTER
SEYMOUR CENTER RENOVATION AND ADDITION

2551 Homestead Rd., Chapel Hill, NC. 27516

**Orange Water and Sewer Authority
Close-out Documentation Check-list
Project: (Orange County Southern Human Services Center Seymour Center Renovation and Addition)**

In addition to a Final Inspection approved by the OWASA Construction Inspector, the following documents must be received and approved by OWASA before acceptance of the project and the setting of meters. **The following shall be submitted as a complete package to the OWASA Engineering Associate for Third Party Review. Partial submittals are considered incomplete. All incomplete submittals will be returned.**

- Engineer's Certification for NCEQ Public Water Supply Section permitted water extension – Submit original document to OWASA for submittal to NCEQ. **Receipt of the Public Water Supply Section Final Approval Letter is required before the permitted water system is placed into service. State requirement no exceptions.**
- Engineer's Certification for NCEQ Division of Water Permitting (DWP) permitted sewer extension - Engineer must use the certification form attached to the sewer permit from NCEQ. Record Drawings are required to be submitted to NCEQ along with the Certification of Completion as a part of the supporting documentation. Both documents must be sealed by Engineers from the same Organization. Submit original document to OWASA along with the supporting documentation required by the DWP. **The permitted sewer system shall not be placed into service until the Engineer's Certification and Supporting Documentation have been submitted by OWASA to DWP. State requirement no exceptions.**
- Asset Letter – Submit original document on OWASA standard form.
- Letter of Dedication – Submit original document on OWASA standard form.
- Record Drawings - Construction drawings shall be modified to reflect actual field installations. All Public Water Supply Section permitted extensions and DWP permitted extensions shall be signed and sealed by a Licensed Professional Engineer in the State of North Carolina. Submit one copy of the record drawing for review by the OWASA Engineering Staff.
- Digital Submissions - Manhole Datasheet Database (MS Access), and Record Drawing (AutoCAD .dwg format). Contact the OWASA Engineering Technicians for information concerning this submittal.

Date issued: (29 March 2019)

**Orange Water & Sewer Authority
Utility Notes for (Orange County Southern Human Services Center Seymour Center Renovation and Addition)**

- Standards and Specifications - All construction shall be in accordance with OWASA Standards and Specifications dated August, 2003, latest revised version.
- Please be advised that OWASA approval of this project is for compliance with OWASA Policies, Standards, and Specifications only. All other matters pertaining to this project are the responsibility of the Design Engineer. The issuance of this letter does not preclude the Developer, Project Engineer, Contractor, or other Agents or Parties acting on their behalf from full compliance with OWASA current Standards, Specifications, and Procedures or from complying with any and all statutes, rules, regulations, and ordinances which may be imposed by other government agencies (local, state, and federal) which may have jurisdiction. Violations will result in the OWASA Project approval being rescinded.
- Preconstruction Conference - A preconstruction conference with the OWASA Construction Inspector is required before beginning any water or sewer utility construction.
- Contact the National "Call Before You Dig" 811 to have OWASA facilities located before beginning any excavation.
- Field Changes are not considered approved by OWASA unless revised plans have been submitted to OWASA for review and approval. Contractors that proceed with construction prior to this approval do so at their own risk.
- Sewer Statement - Sewer lines under construction shall be plugged with a mechanical plug at the first manhole upstream from the point of connection. Plug shall be placed in the outlet connection and secured with steel cable. Plug shall remain in place until acceptance of lines by OWASA. Before any construction is to begin on the site, Contractor shall protect all existing OWASA Sewer Manholes with iron fence post and orange tree protection fencing. Water, stone, dirt, or any other debris shall not be allowed to enter the OWASA Sanitary Sewer System during flushing operations or at any other time. Construction taking place in the vicinity of any existing OWASA sewer lines or manholes shall not cause any inflow of surface water or debris to enter the OWASA Sanitary Sewer System. Existing OWASA manholes located in construction sites are to be kept clear and accessible to OWASA personnel at all times. The Owner and/or Contractor shall be responsible for any damages incurred to the OWASA Sanitary Sewer System and any fines imposed by the State of North Carolina Division Of Water Quality due to sewer spills or overflows."
- Water Valves - Existing valves shall be operated by OWASA personnel only. Valves that separate purify approved water and unapproved water are to remain closed at all times. Valves may be temporarily opened for loading and flushing by the OWASA Inspector only.
- Protection of Existing OWASA Facilities - Before any construction is to begin on the site, Contractor shall protect all OWASA Meter Vaults, Fire Hydrants, Valve Boxes, and Manholes with iron fence post and orange tree protection fencing. All existing OWASA facilities are to be kept clear and accessible to OWASA personnel at all times.
- Sewer Use Ordinance - Discharge from this project must be in compliance with the OWASA Sewer Use Ordinance. A grease interceptor shall be provided when in the opinion of OWASA it is necessary for the proper handling of wastewater containing excessive amounts of grease. All interception units must be of the type and capacity which is certified by the Project Engineer as meeting the requirements of OWASA.
- Sewer Services - Each building connected to the sewer system shall be served by a separate building sewer of not less than 4" in diameter. Sewer services located within public right-of-ways or OWASA sewer easements must be constructed of ductile iron pipe from the tap up to and including the first clean-out. Except for dead end manholes, all 4" inch sewer services must be tapped into the sewer main. All 6" services must be connected to a manhole.
- Existing Valves - Contractor responsible for verifying that existing valve at the point of connection to the OWASA system is adequate for performing and passing hydrostatic pressure and leakage test. Contractor, at his expense, may optionally replace valve or install a new valve for the purpose of performing a pressure test for new main installation. If Contractor elects to pressure test against existing valve, Contractor accepts responsibility for ensuring passing pressure test in accordance with OWASA requirements. In any case, no claim whatsoever shall be made against OWASA for failure of pressure test.
- Dechlorination Requirements - The Contractor shall be responsible for neutralization of chlorinated water at the point of discharge from the main being tested. This shall occur following chlorination to disinfect a main or any other time when elevated levels of chlorine could potentially be discharged into the environment by the Contractor. At the time the disinfection and purity testing procedures are discussed with the OWASA Construction Inspector, the procedure for dechlorination will be covered. Absolutely no flushing, disinfection, or purity sampling is to take place without prior approval of a sampling plan by the OWASA Inspector.
- Cross-Connection Control Ordinance - Backflow Prevention will be required in accordance with OWASA Cross-Connection Control Ordinance and Manual.
- Fire Protection Systems - Pressure testing, chlorination, and purity testing shall be completed before the installation of the RPDA unit.
- Remote Read-out Devices - RPDA devices located inside buildings must be equipped with an AMR Meter to be purchased from OWASA and installed by the Contractor. Meter purchase will include an OWASA provided box that is to be mounted on the outside of the building (see OWASA Detail 515.03). The box contains an ERT (transmitter) and a remote read-out device.

Date issued: (29 March 2019)

- Existing water and/or sewer lines encountered during construction must be supported in a manner acceptable to the OWASA Construction Inspector. The OWASA Construction Inspector under the direction of the OWASA Engineering Manager may require existing pipes to be replaced with new ductile iron pipe.
- Water outages necessary for the connection of new construction to existing pipelines must be coordinated in advance with the OWASA Construction Inspector and the affected parties in accordance with OWASA Policy. A two week notice is required.

KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
3	03.29.2019	REV. PER AHJ REVIEW
2	03.18.2019	ISSUED FOR BID
1	02.22.2019	REV. PER AHJ REVIEW

DRAWN BY: SAD
CHECKED BY: SAD

OWASA
DOCUMENTS

2017027 21 DEC 2018

C0-02





TOWN OF CHAPEL HILL
 Planning & Development Services
 405 Martin Luther King Jr. Blvd.
 Chapel Hill, NC 27514-5705
 phone (919) 968-2728
 www.townofchapelhill.org

November 16, 2018

**Certificate of Community
 Design Commission Approval**

BUILDING ELEVATIONS

This Certificate of Community Design Commission Approval for Seymour Center Modified Building Elevations, as shown on the submitted Building Elevations dated August 24, 2018, has been issued to:

Name of Applicant: Smith Sinnett Architecture (Attn. Drew Wilgus)
 Applicant's Address: 4600 Lake Boone Trail, Raleigh, NC 27607
 Name of Development: Orange County Southern Government Campus – Seymour Center Expansion, 2551 Homestead Rd
 Identified as: Project # 18-093; PIN 9880-00-8527

Conditions of Community Design Commission Approval

1. Dumpster screening must use materials compatible with the building façade.
2. That rafters of the new walkway canopy match those on the existing canopy.

Conditions Prior to Issuance of a Certificate of Occupancy

1. You will need to receive an approved Building Permit prior to beginning work.
2. That copies of the Community Design Commission approved Building Elevations be present on-site (available in the on-site construction box).
3. Any changes to the approved building elevations will require review and approval by the Community Design Commission.

October 15, 2018
 (CDC approval date)

Corey Liles, AICP
 Principal Planner



TOWN OF CHAPEL HILL
 Planning & Development Services
 405 Martin Luther King Jr. Blvd.
 Chapel Hill, NC 27514-5705
 phone (919) 968-2728
 www.townofchapelhill.org

July 11, 2018

**Certificate of Community
 Design Commission Approval
 ALTERNATIVE BUFFER**

This Certificate of Community Design Commission Approval for the Seymour Senior Center at the Southern Orange County Human Services Campus for an Alternative Buffer as shown on the submitted with the application dated February 27, 2018 and Site Lighting plan dated February 26, 2018 and cut sheets submitted with the application dated March 27, 2018 submitted with the application has been issued to:

Name of Applicant: Grounded Engineering, attn. Sean A. Dolie,
 Applicant's Address: P.O. Box 37132 Raleigh, NC 27617
 Name of Development: Seymour Senior Center at Southern Orange County Human Services Campus
 Identified as: Project # 18-055; PIN 9880-00-8527

Conditions Prior to Issuance of a Certificate of Occupancy

1. That a 6-0 foot, Alternative Buffer be planted as a mixed, evergreen hedge on the eastern property line in lieu of a wooden fence.
2. Any changes to the approved plans will require review and approval by the Community Design Commission.

June 26, 2018
 (CDC approval date)

Kay Pearlstein, AICP
 Senior Planner

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REFER TO SHEET C-001 FOR PROJECT AND SHEET RELATED NOTES.

smith
 sinnett
 ARCHITECTURE

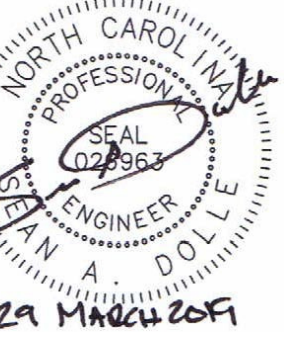
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grounded
 ENGINEERING

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ORANGE COUNTY SOUTHERN HUMAN SERVICES CENTER
 SEYMOUR CENTER RENOVATION AND ADDITION

2551 Homestead Rd., Chapel Hill, NC. 27516

KEY PLAN
 NO SCALE

3	03.29.2019	REV. PER AHJ REVIEW
2	03.19.2019	ISSUED FOR BID
1	02.22.2019	REV. PER AHJ REVIEW

ID DATE DESCRIPTION
 DRAWN BY: SAD
 CHECKED BY: SAD

CDC APPROVAL
 DOCUMENTATION

2017027

21 DEC 2018



Know what's below.
 Call before you dig.

C0-03

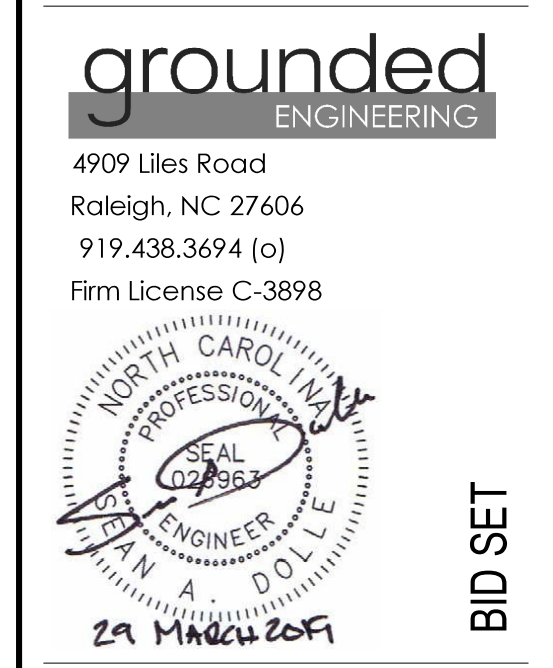


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REFER TO SHEET C-001 FOR PROJECT AND SHEET RELATED NOTES.



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EXISTING CONDITIONS LEGEND

+	EXISTING CONCRETE MONUMENT
△	COMPUTED POINT
□	SET FW NAIL
■	SET MASONRY NAIL
○	IRON PIPE SET
○	EXISTING IRON PIPE
○	GAS METER
○	ELECTRIC METER
○	CLEAN OUT
○	SANITARY SEWER MANHOLE
○	WATER MANHOLE
○	WATER METER
○	WATER VALVE
○	FIRE HYDRANT
○	DRAINAGE MANHOLE
○	CATCH BASIN
○	IMPROVEMENTS TO BE DEMOLISHED (TYP OF HATCHED AREA)
○	RELOCATED (REFER TO SHEET C-20 FOR ADDITIONAL INFORMATION)
○	APPROXIMATE LOCATION OF PROPOSED TEMPORARY CONSTRUCTION BARRIER
○	TELEPHONE PEDESTAL
○	CITY PEDESTAL
○	UTILITY POLE
○	GAS TEST STATION
○	HANDICAP RAMP/PARKING SPACE SIGN
○	ELECTRIC MANHOLE
○	GAS VALVE
○	FIBER OPTICS WARNING POLE
○	TELEPHONE MANHOLE
○	GREASE TRAP MANHOLE
○	BOLLARD
○	ELECTRIC BOX
○	LAMP
○	FLOODLIGHT
○	SEWER LIFT PUMP
○	WOODEN FENCE
○	CHAINLINK FENCE
○	METAL FENCE
○	UNDERGROUND GAS LINE (APPROXIMATE LOCATION)
○	OVERHEAD UTILITY LINE(S)
○	UNDERGROUND ELECTRIC
○	SANITARY SEWER PIPE
○	WATERLINE (APPROXIMATE LOCATION)
○	TREE LINE
○	TREE (SIZE AND TYPE)
○	GLY WIRE
○	FORCE MAIN (APPROXIMATE LOCATION)
○	UNDERGROUND TELEPHONE
○	MARKED TRAIL

DEMO LEGEND

---XXX---	EXISTING CONTOUR (MAJOR)
- - - - -	EXISTING CONTOUR (MINOR)
- - - - -	EXISTING STORM DRAINAGE
- - - - -	EXISTING STORM DRAINAGE TO BE REMOVED
[Hatched Box]	EXISTING IMPROVEMENTS TO BE REMOVED
[Hatched Box]	EXISTING WOODS TO BE REMOVED
[Hatched Box]	EXISTING PAVEMENT TO BE MILLED AND REPLACED
X	EXISTING TREE TO BE REMOVED

ORANGE COUNTY SOUTHERN HUMAN SERVICES CENTER SEYMOUR CENTER RENOVATION AND ADDITION

2551 Homestead Rd., Chapel Hill, NC. 27516

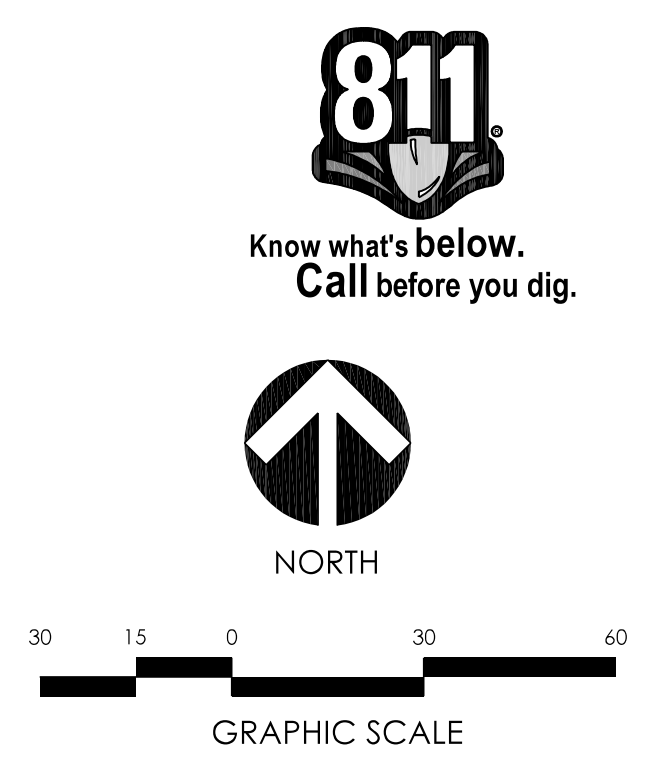
KEY PLAN
NO SCALE

3	03.29.2019	REV. PER AHJ REVIEW
2	03.18.2019	ISSUED FOR BID
1	02.22.2019	REV. PER AHJ REVIEW
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SITE DEMOLITION PLAN

2017027 21 DEC 2018

C2-10



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REFER TO SHEET C-3-20 FOR ADDITIONAL INFORMATION

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**ORANGE COUNTY SOUTHERN HUMAN SERVICES CENTER
SEYMOUR CENTER RENOVATION AND ADDITION**

2551 Homestead Rd., Chapel Hill, NC. 27516

**KEY PLAN
NO SCALE**

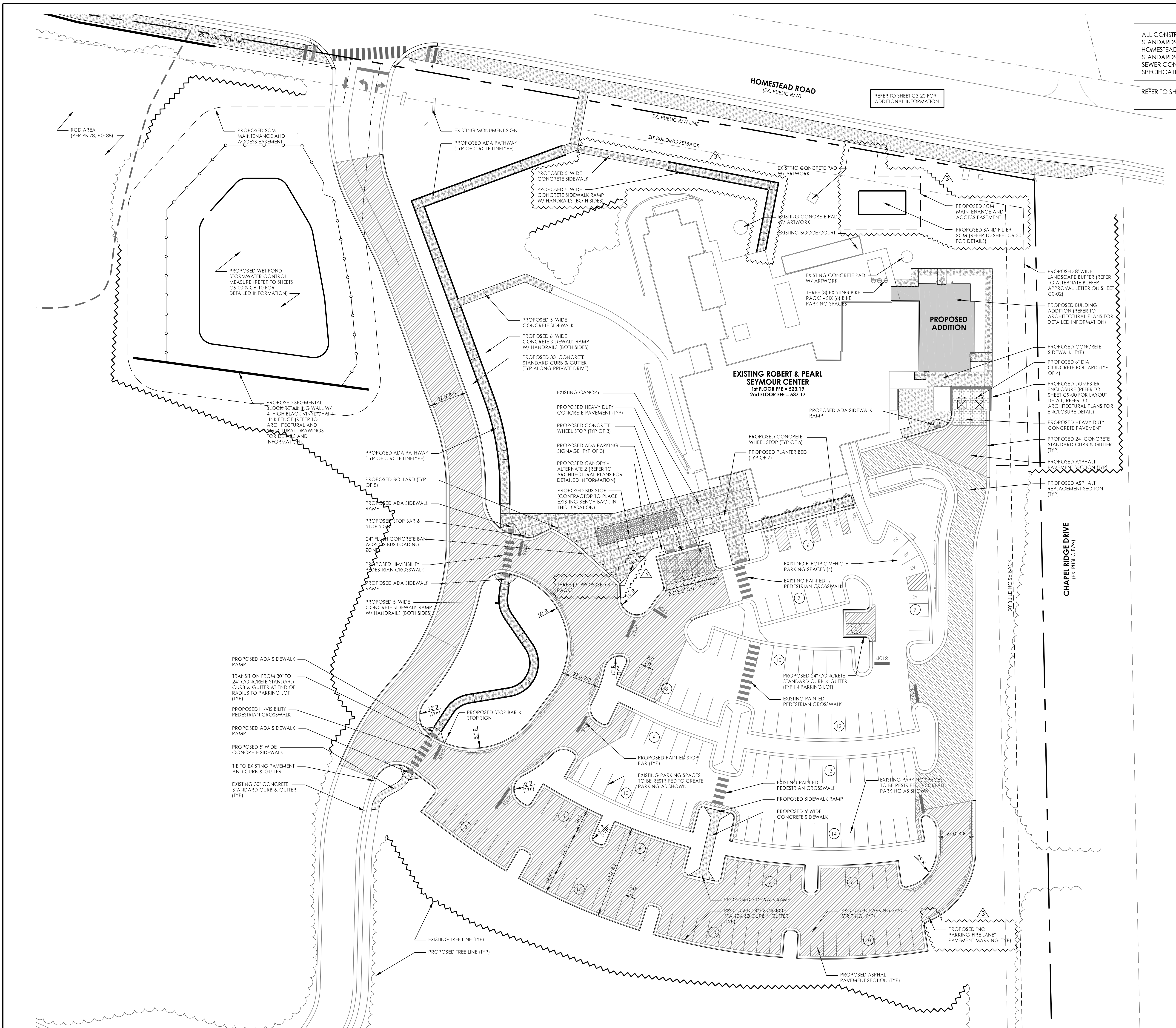
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ID	DATE	DESCRIPTION
DRAWN BY:		SAD
CHECKED BY:		SAD

**SITE LAYOUT
PLAN**

2017027

21 DEC 2018

C3-10



- EXISTING CONDITIONS LEGEND**
- ▲ EXISTING CONCRETE MONUMENT
 - △ COMPUTED POINT
 - SET MASONRY NAIL
 - IRON PIPE SET
 - EXISTING IRON PIPE
 - GAS METER
 - ELECTRIC METER
 - CLEAN OUT
 - SANITARY SEWER MANHOLE
 - WATER MANHOLE
 - WATER METER
 - WATER VAULT
 - WATER VALVE
 - FIRE HYDRANT
 - DRAINAGE MANHOLE
 - CATCH BASIN
 - CURB INLET
 - LIGHT POLE
 - TELEPHONE PEDESTAL
 - CATV PEDESTAL
 - UTILITY POLE
 - GAS TEST STATION
 - HANDICAP RAMP/PARKING SPACE SIGN
 - ELECTRIC MANHOLE
 - GAS VALVE
 - FIBER OPTICS WARNING POLE
 - TELEPHONE MANHOLE
 - GREASE TRAP MANHOLE
 - BOLLARD
 - ELECTRIC BOX
 - LAMP
 - FLOODLIGHT
 - SEWER LIFT PUMP
 - WOODEN FENCE
 - CHAINLINK FENCE
 - METAL FENCE
 - UNDERGROUND GAS LINE (APPROXIMATE LOCATION)
 - UNDERGROUND UTILITY LINE(S)
 - UNDERGROUND ELECTRIC
 - SANITARY SEWER PIPE
 - WATERLINE (APPROXIMATE LOCATION)
 - TREE LINE
 - TREE (SIZE AND TYPE)
 - GUY WIRE
 - FORCE MAIN (APPROXIMATE LOCATION)
 - UNDERGROUND TELEPHONE
 - MARKED TRAIL

- LEGEND**
- PROPOSED BUILDING
 - PROPOSED BUILDING CANOPY
 - PROPOSED CONCRETE
 - PROPOSED HEAVY DUTY CONCRETE PAVEMENT
 - PROPOSED ASPHALT PAVEMENT
 - PROPOSED ASPHALT REPLACEMENT PAVEMENT
 - PROPOSED PROPERTY LINE
 - PROPOSED CURB & GUTTER
 - EXISTING TREE LINE
 - PROPOSED TREE LINE
 - PROPOSED PROPERTY LINE
 - ↑↑↑ PROPOSED PAINTED DIRECTIONAL ARROWS
 - PROPOSED SIGN
 - PROPOSED # OF PARKING SPACES

811
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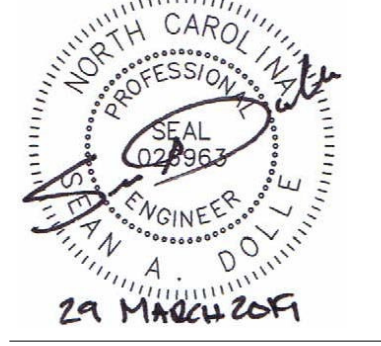
GRAPHIC SCALE

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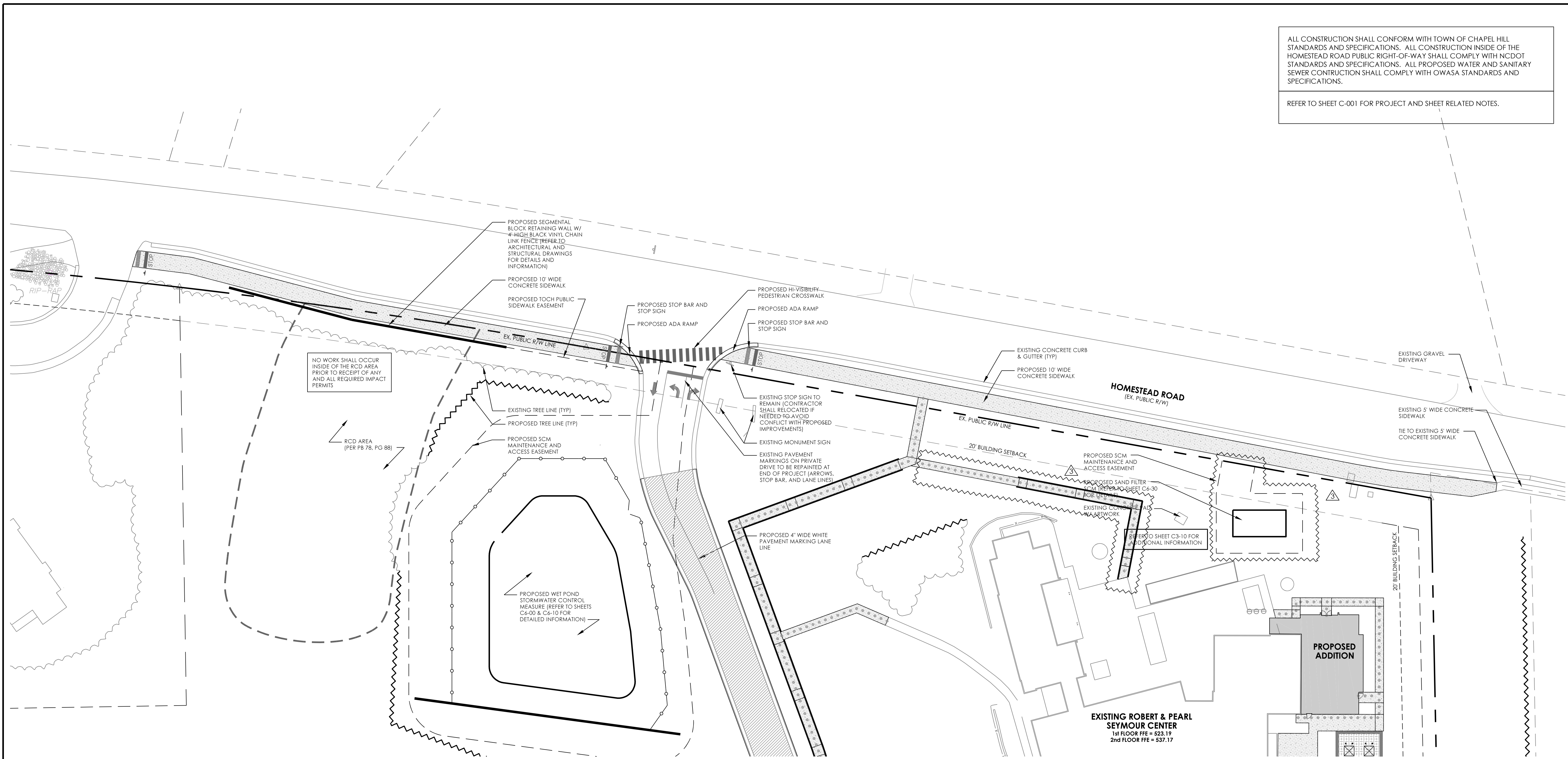
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ORANGE COUNTY SOUTHERN HUMAN SERVICES CENTER
SEYMOUR CENTER RENOVATION AND ADDITION
2551 Homestead Rd., Chapel Hill, NC. 27516

LEGEND

	PROPOSED BUILDING
	PROPOSED BUILDING CANOPY
	PROPOSED CONCRETE
	PROPOSED HEAVY DUTY CONCRETE PAVEMENT
	PROPOSED ASPHALT PAVEMENT
	PROPOSED ASPHALT REPLACEMENT PAVEMENT
	PROPOSED PROPERTY LINE
	PROPOSED CURB & GUTTER
	EXISTING TREE LINE
	PROPOSED TREE LINE
	PROPOSED PROPERTY LINE
	PROPOSED PAINTED DIRECTIONAL ARROWS
	PROPOSED SIGN
	PROPOSED # OF PARKING SPACES

EXISTING CONDITIONS LEGEND

+	EXISTING CONCRETE MONUMENT
△	COMPUTED POINT
⊕	SET P/K NAIL
⊖	SET MASONRY NAIL
⊙	IRON PIPE SET
⊗	EXISTING IRON PIPE
⊘	GAS METER
⊙	ELECTRIC METER
⊙	CLEAN OUT
⊙	SANITARY SEWER MANHOLE
⊙	WATER MANHOLE
⊙	WATER METER
⊙	WATER VALVE
⊙	WATER VALVE
⊙	FIRE HYDRANT
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⊙	CATCH BASIN
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⊙	CAVY PEDESTAL
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⊙	ELECTRIC BOX
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⊙	WATERLINE (APPROXIMATE LOCATION)
⊙	TREE LINE
⊙	TREE (SIZE AND TYPE)
⊙	GUY WIRE
⊙	FORCE MAIN (APPROXIMATE LOCATION)
⊙	UNDERGROUND TELEPHONE
⊙	MARKED TRAIL

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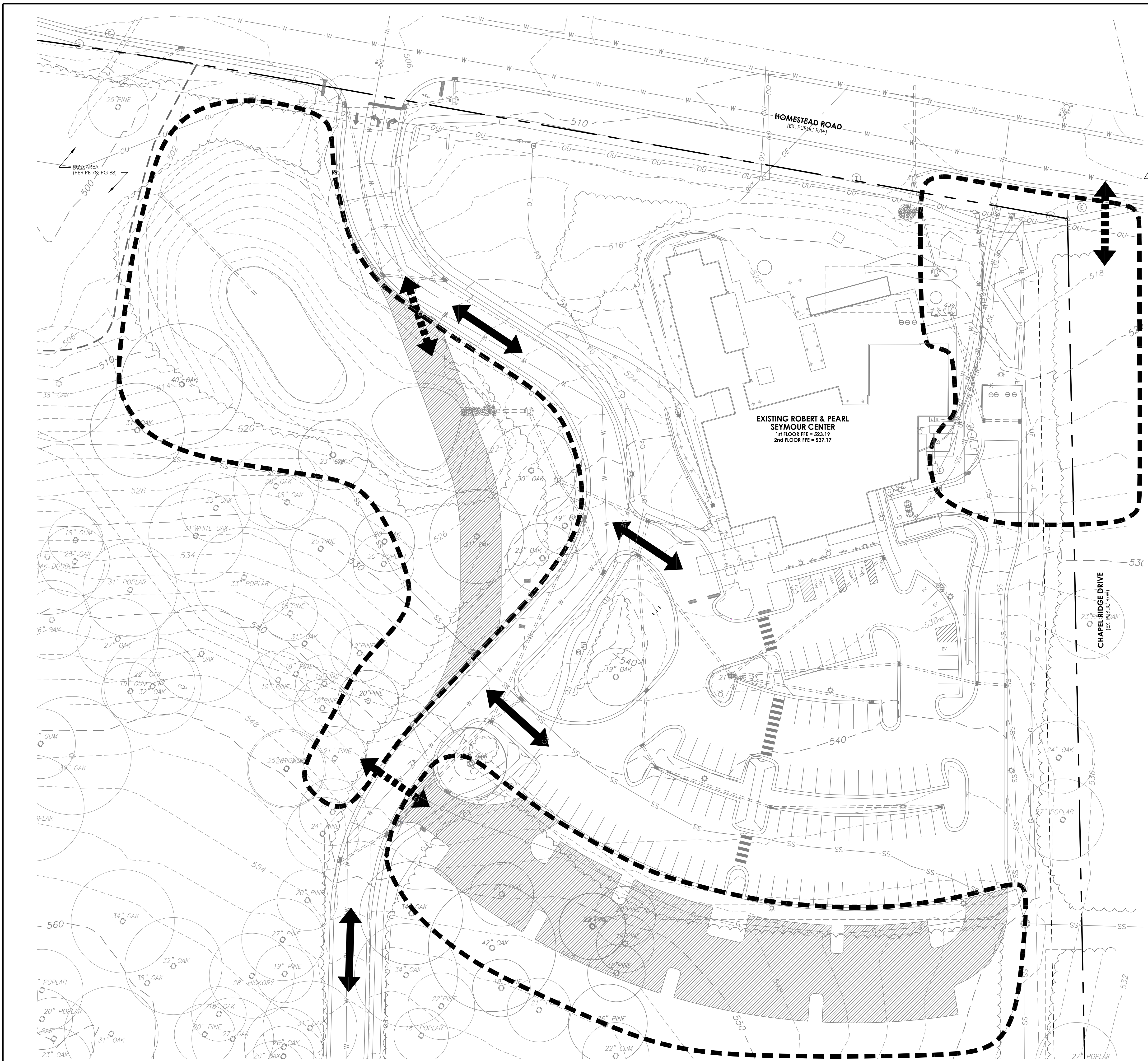
30 15 0 30 60
GRAPHIC SCALE

KEY PLAN
NO SCALE

3	03.29.2019	REV. PER AHJ REVIEW
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SITE LAYOUT
PLAN

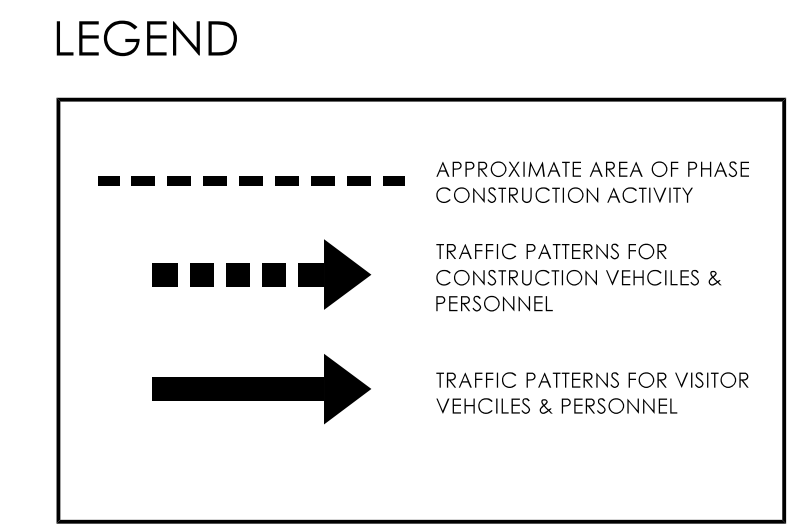
2017027 21 DEC 2018



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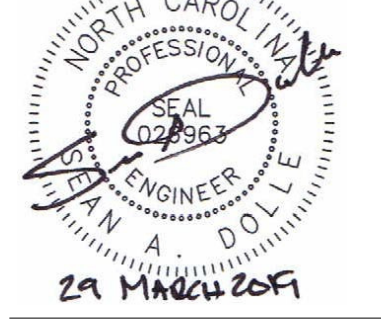
- ### CONTRACTOR PHASING NOTES
1. THE CONTRACTOR SHALL MAINTAIN ACCESS TO AT LEAST 102 PARKING SPACES DURING THE ENTIRE DURATION OF CONSTRUCTION FOR USE BY PATRONS OF THE SEYMOUR CENTER. THESE SPACES SHALL BE LOCATED AT THE SEYMOUR CENTER. PARKING SPACES ASSOCIATED WITH THE ORANGE COUNTY HEALTH SERVICES BUILDING SHALL NOT BE UTILIZED TO MEET THIS REQUIREMENT.
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**ORANGE COUNTY SOUTHERN HUMAN SERVICES CENTER
SEYMOUR CENTER RENOVATION AND ADDITION**

2551 Homestead Rd., Chapel Hill, NC. 27516

KEY PLAN
NO SCALE

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2	03.18.2019	ISSUED FOR BID
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ID	DATE	DESCRIPTION
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CHECKED BY:		SAD

**CONCEPTUAL
PHASING
PLAN 'A'**

2017027 21 DEC 2018

C3-30

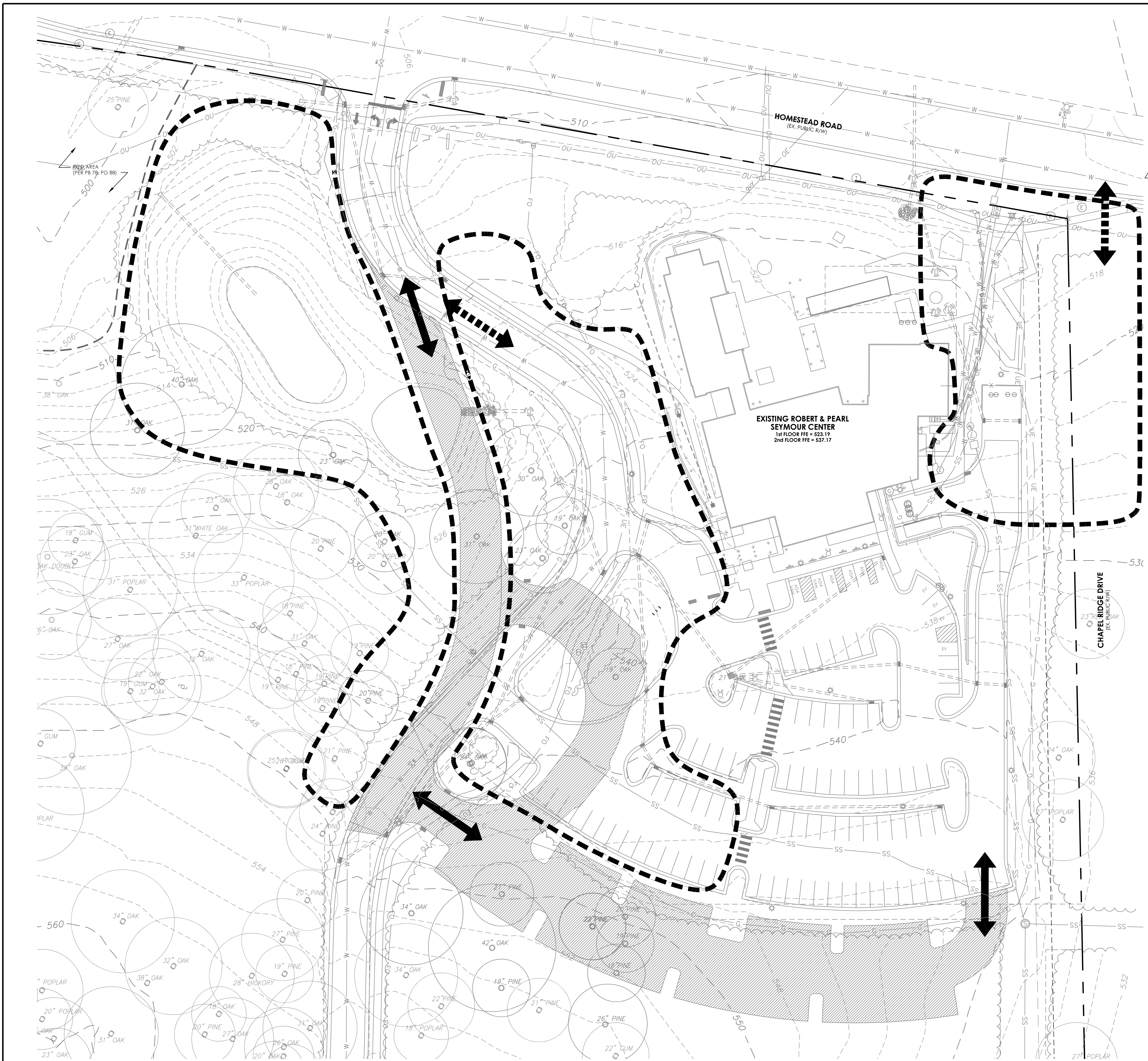


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NORTH

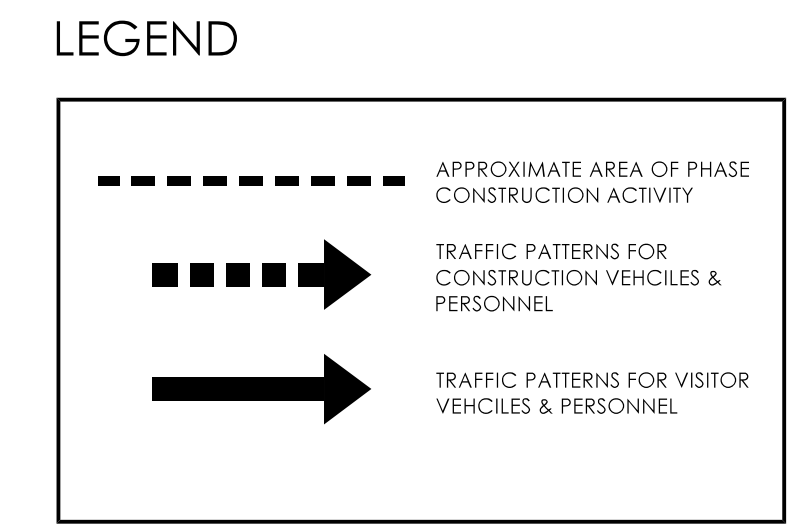




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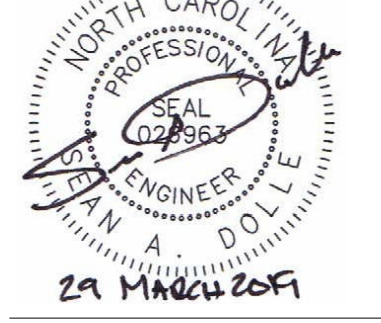
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**ORANGE COUNTY SOUTHERN HUMAN SERVICES CENTER
SEYMOUR CENTER RENOVATION AND ADDITION**

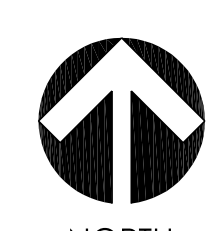
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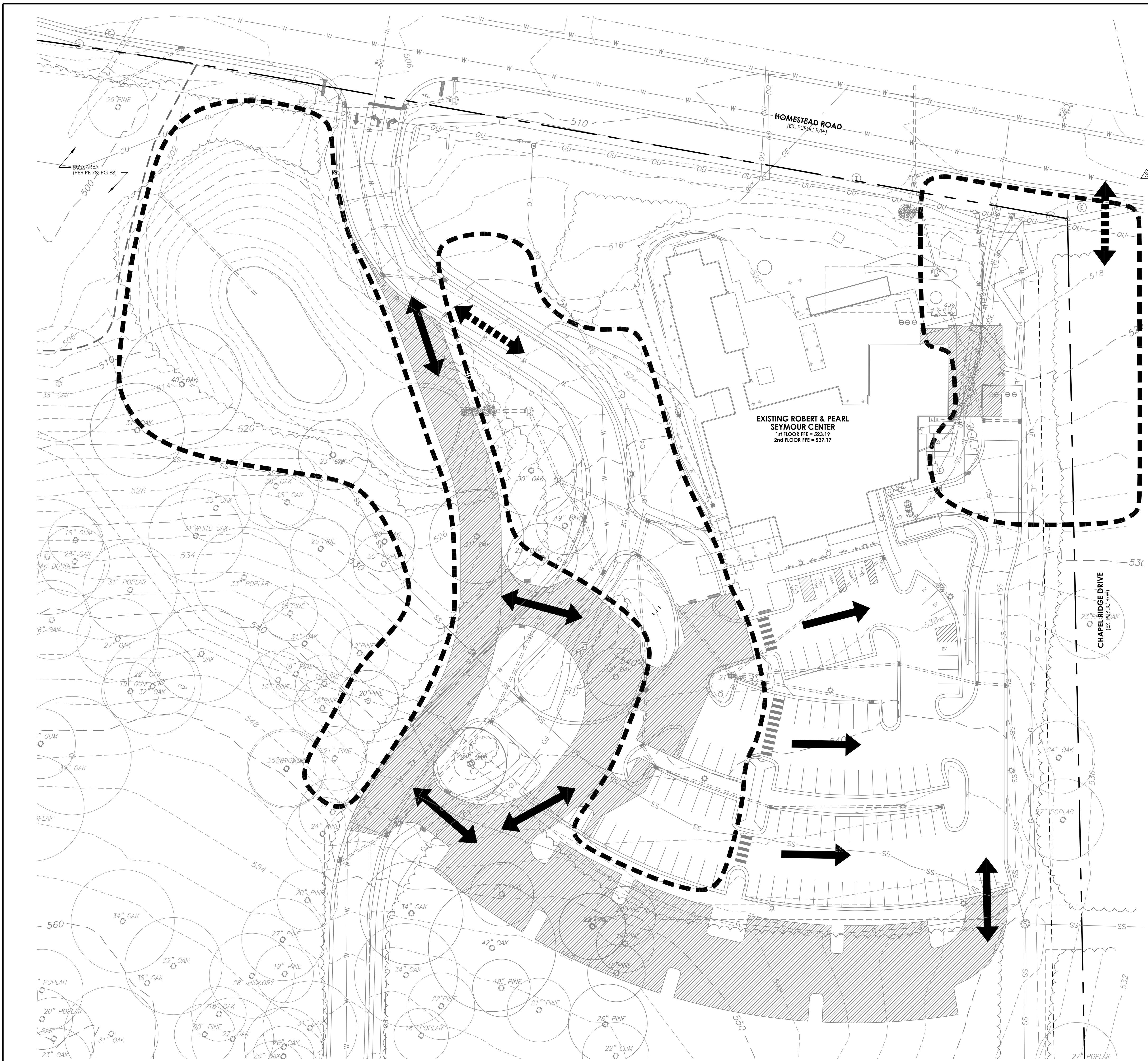
KEY PLAN
NO SCALE

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CHECKED BY:		SAD

**CONCEPTUAL
PHASING
PLAN 'B'**

2017027 21 DEC 2018

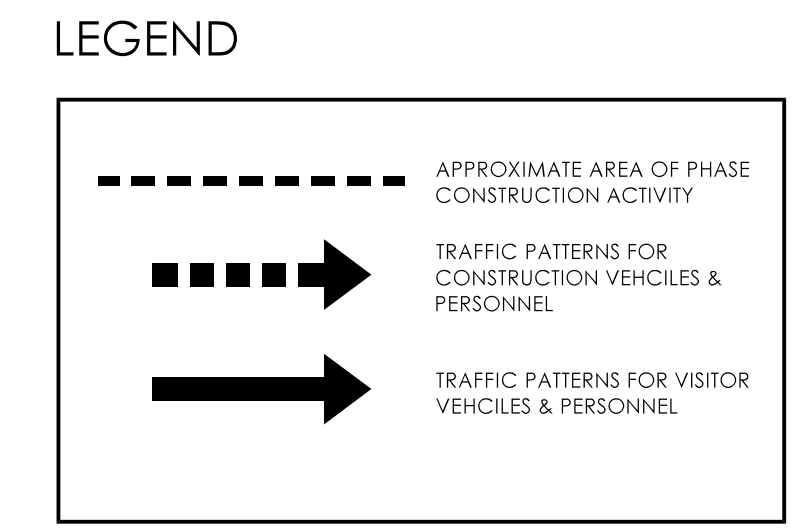




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ORANGE COUNTY SOUTHERN HUMAN SERVICES CENTER SEYMOUR CENTER RENOVATION AND ADDITION

2551 Homestead Rd., Chapel Hill, NC. 27516

KEY PLAN
NO SCALE

3	03.29.2019	REV. PER AHJ REVIEW
2	03.18.2019	ISSUED FOR BID
1	02.22.2019	REV. PER AHJ REVIEW
ID	DATE	DESCRIPTION
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CHECKED BY:		SAD

CONCEPTUAL PHASING PLAN 'C'

2017027 21 DEC 2018

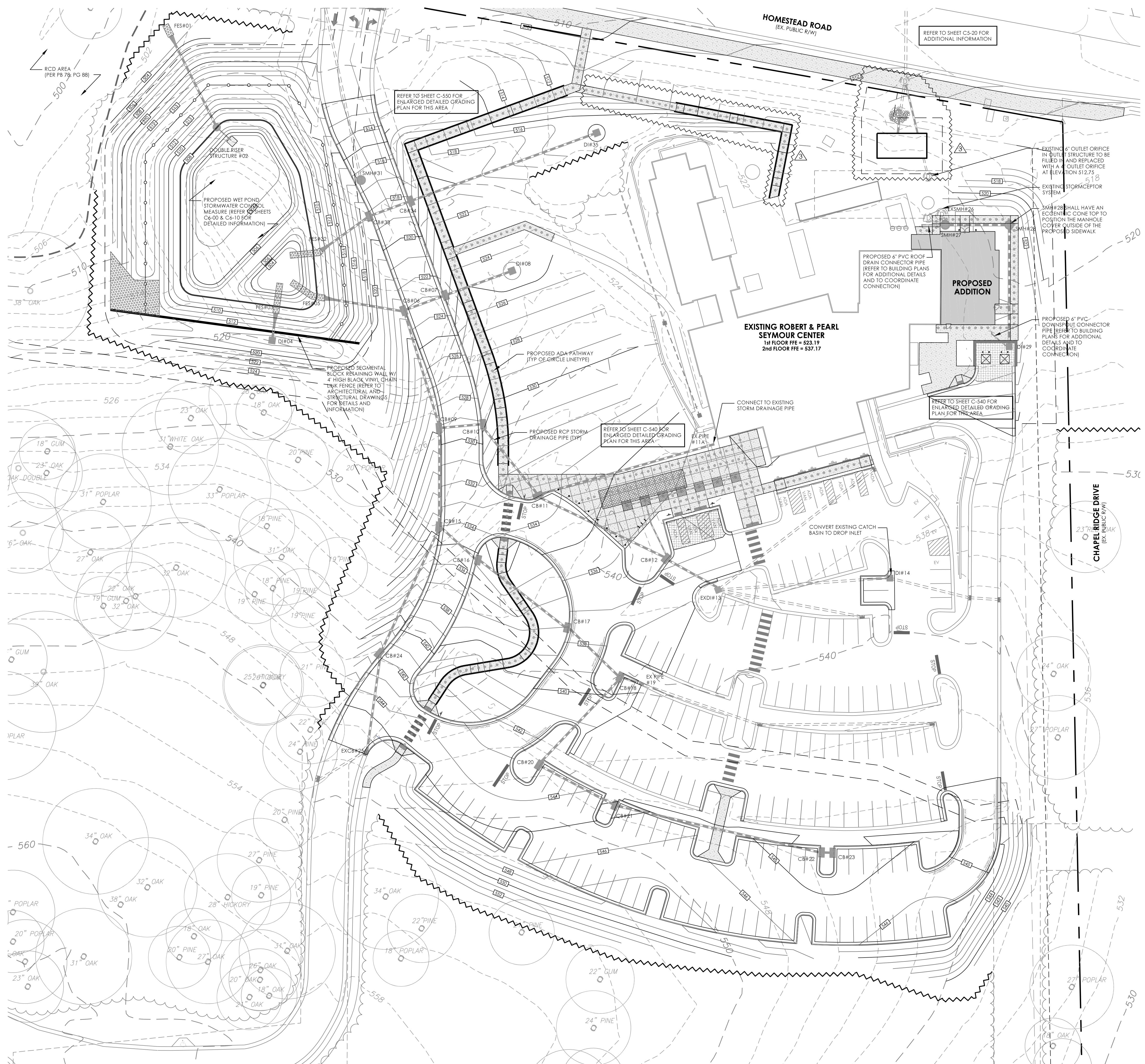


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NORTH





ALL CONSTRUCTION SHALL CONFORM WITH TOWN OF CHAPEL HILL STANDARDS AND SPECIFICATIONS. ALL CONSTRUCTION INSIDE OF THE HOMESTEAD ROAD PUBLIC RIGHT-OF-WAY SHALL COMPLY WITH NCDOT STANDARDS AND SPECIFICATIONS. ALL PROPOSED WATER AND SANITARY SEWER CONSTRUCTION SHALL COMPLY WITH OWASA STANDARDS AND SPECIFICATIONS.

REFER TO SHEET C-001 FOR PROJECT AND SHEET RELATED NOTES.

EXISTING CONDITIONS LEGEND

- ▲ EXISTING CONCRETE MONUMENT
- △ COMPUTED POINT
- ⊕ SET MASONRY NAIL
- IRON PIPE SET
- ⊖ EXISTING IRON PIPE
- ⊕ GAS METER
- ⊖ ELECTRIC METER
- ⊕ CLEAN OUT
- ⊖ SANITARY SEWER MANHOLE
- ⊕ WATER MANHOLE
- ⊖ WATER METER
- ⊕ WATER VAULT
- ⊖ WATER VALVE
- ⊕ FIRE HYDRANT
- ⊖ DRAINAGE MANHOLE
- ⊕ CATCH BASIN
- ⊖ CURB INLET
- ⊕ LIGHT POLE
- ⊖ TELEPHONE PEDESTAL
- ⊕ CATV PEDESTAL
- ⊖ UTILITY POLE
- ⊕ GAS TEST STATION
- ⊖ HANDICAP RAMP/PARKING SPACE SIGN
- ⊕ ELECTRIC MANHOLE
- ⊖ GAS VALVE
- ⊕ FIBER OPTICS WARNING POLE
- ⊖ TELEPHONE MANHOLE
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- ⊖ BOLLARD
- ⊕ ELECTRIC BOX
- ⊖ LAMP
- ⊕ FLOODLIGHT
- ⊖ SEWER LIFT PUMP
- ⊕ WOODEN FENCE
- ⊖ CHAINLINK FENCE
- ⊕ METAL FENCE
- ⊖ UNDERGROUND GAS LINE (APPROXIMATE LOCATION)
- ⊕ OVERHEAD UTILITY LINE(S)
- ⊖ UNDERGROUND ELECTRIC
- ⊕ SANITARY SEWER PIPE
- ⊖ WATERLINE (APPROXIMATE LOCATION)
- ⊕ TREE LINE
- ⊖ TREE (SIZE AND TYPE)
- ⊕ GUY WIRE
- ⊖ FORCE MAIN (APPROXIMATE LOCATION)
- ⊕ UNDERGROUND TELEPHONE
- ⊖ MARKED TRAIL

LEGEND

- ▒ PROPOSED BUILDING
- ▒ PROPOSED BUILDING CANOPY
- ▒ PROPOSED CONCRETE
- ▒ PROPOSED CONCRETE CURB & GUTTER
- ▒ PROPOSED PROPERTY LINE
- ▒ PROPOSED SIGN
- ▒ PROPOSED RCP STORM DRAIN PIPE
- ▒ PROPOSED DROP INLET
- ▒ PROPOSED CATCH BASIN
- ▒ PROPOSED STORM MANHOLE
- XXX EXISTING CONTOUR (MAJOR)
- XXX EXISTING CONTOUR (MINOR)
- XXX EXISTING STORM DRAINAGE
- XXX GRND = GROUND
- XXX PAVT = PAVEMENT
- XXX SWLK = SIDEWALK
- XXX TOC = TOP OF CURB
- EXISTING TREE LINE
- PROPOSED TREE LINE

smith sinnett ARCHITECTURE

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NORTH CAROLINA
ENGINEER
29 March 2019

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ORANGE COUNTY SOUTHERN HUMAN SERVICES CENTER SEYMOUR CENTER RENOVATION AND ADDITION

2551 Homestead Rd., Chapel Hill, NC. 27516

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KEY PLAN NO SCALE

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811 Know what's below. Call before you dig.

KEY PLAN NO SCALE

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GRADING & DRAINAGE PLAN

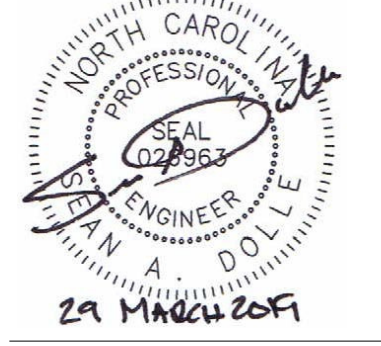
2017027 21 DEC 2018

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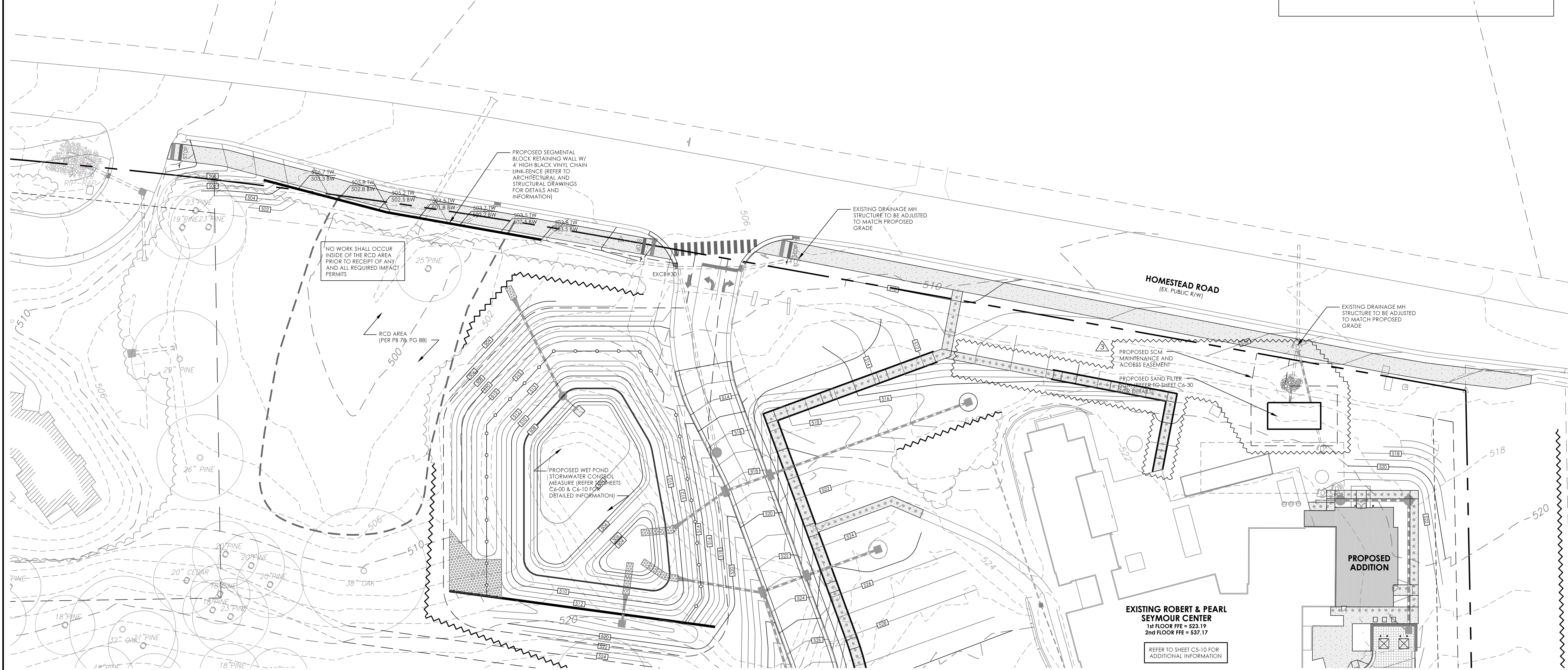
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TW = APPROXIMATE GROUND ELEVATION AT TOP OF PROPOSED WALL
BW = APPROXIMATE GROUND ELEVATION AT BOTTOM OF PROPOSED WALL
THE TW & BW ELEVATIONS PROVIDED ARE APPROXIMATE AND ARE INTENDED TO BE FOR REFERENCE ONLY. THESE GRADES DO NOT REPRESENT ELEVATIONS ASSOCIATED WITH THE ACTUAL WALL. FINAL WALL ELEVATIONS SHALL BE DETERMINED BY THE RETAINING WALL DESIGNER

LEGEND

- PROPOSED BUILDING
- PROPOSED BUILDING CANOPY
- PROPOSED CONCRETE
- PROPOSED CONCRETE CURB & GUTTER
- PROPOSED PROPERTY LINE
- PROPOSED SIGN
- PROPOSED RCP STORM DRAIN PIPE
- PROPOSED DROP INLET
- PROPOSED CATCH BASIN
- PROPOSED STORM MANHOLE
- EXISTING CONTOUR (MAJOR)
- EXISTING CONTOUR (MINOR)
- EXISTING STORM DRAINAGE
- SPOT ELEVATION
GRND = GROUND
PVMT = PAVEMENT
SWLK = SIDEWALK
TOC = TOP OF CURB
- EXISTING TREE LINE
- PROPOSED TREE LINE

EXISTING CONDITIONS LEGEND

- EXISTING CONCRETE MONUMENT
- COMPUTED POINT
- SET PK NAIL
- SET MASONRY NAIL
- IRON PIPE SET
- EXISTING IRON PIPE
- GAS METER
- ELECTRIC METER
- CLEAN OUT
- SANITARY SEWER MANHOLE
- WATER MANHOLE
- WATER METER
- WATER VAULT
- WATER VALVE
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- TREE (SIZE AND TYPE)
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- UNDERGROUND TELEPHONE
- MARKED TRAIL



ORANGE COUNTY SOUTHERN HUMAN SERVICES CENTER
SEYMOUR CENTER RENOVATION AND ADDITION

2551 Homestead Rd., Chapel Hill, NC. 27516

KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
3	03/29/2019	REV. PER AHJ REVIEW
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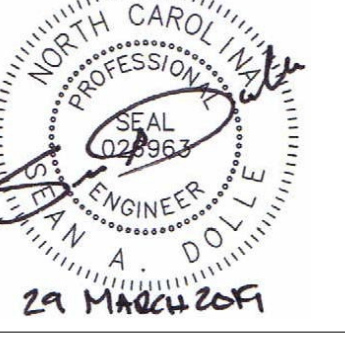
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ORANGE COUNTY SOUTHERN HUMAN SERVICES CENTER
SEYMOUR CENTER RENOVATION AND ADDITION

2551 Homestead Rd., Chapel Hill, NC. 27516

Storm Drain Pipe Schedule

Inlet Up #	Inlet Down #	Rim Up	Invert Up	Invert Down	Pipe Length (ft)	Pipe Diameter (in)	Pipe Material	Pipe Slope (%)
DI#35	CB#34	514.8	510.8	509.8	127	15	RCP	0.8%
CB#34	CB#33	518.7	509.6	509.4	28	15	RCP	0.7%
CB#33	FES#32	518.7	509.2	509.0	31	15	RCP	0.6%
SMH#31	EXCB#30	516.4	512.5	EX	EX	EX	EX	EX
DI#29	SMH#28	521.9	518.4	516.8	78	18	RCP	2.1%
SMH#28	SMH#27	522.2	516.6	515.8	41	18	RCP	2.0%
SMH#27	EXSMH#26	523.0	515.6	515.5	EX	18	RCP	EX
EXCB#25	CB#24	547.3	543.4	537.0	64	15	RCP	10.0%
CB#24	CB#15	542.3	536.8	529.0	90	18	RCP	8.7%
CB#23	CB#22	544.5	540.5	540.3	7	15	RCP	2.9%
CB#22	CB#21	544.5	540.1	539.0	136	15	RCP	0.8%
CB#21	CB#20	545.0	538.8	538.3	55	15	RCP	0.9%
CB#20	CB#18	543.5	538.1	535.3	77	15	RCP	3.6%
EX PIPE#19	CB#18	----	535.3	535.1	16	15	RCP	1.2%
CB#18	CB#17	540.2	534.9	534.0	46	18	RCP	2.0%
CB#17	CB#16	538.0	533.8	532.2	72	18	RCP	2.2%
CB#16	CB#15	536.0	532.0	530.2	33	18	RCP	5.5%
CB#15	CB#09	534.5	528.5	522.5	63	18	RCP	9.5%
EXDI#13	CB#12	537.5	527.1	526.4	39	15	RCP	1.8%
CB#12	CB#11	535.9	526.2	524.6	92	15	RCP	1.7%
EX PIPE#11A	CB#11	----	UNKNOWN	528.0	118	12	PVC	n/a
CB#11	CB#10	533.8	524.4	521.5	57	18	RCP	5.1%
CB#10	CB#09	529.6	521.0	520.3	28	24	RCP	2.5%
CB#09	CB#06	529.6	520.1	514.2	79	24	RCP	7.5%
DI#08	CB#07	523.6	519.6	516.0	46	15	RCP	7.8%
CB#07	CB#06	523.5	516.0	515.2	28	15	RCP	2.9%
CB#06	FES#05	523.5	514.0	509.0	58	24	RCP	8.6%
DI#04	FES#03	517.2	510.2	509.0	19	15	RCP	6.3%
RISER STR#02	FES#01	511.0	513.8	513.5	60	15	RCP	0.5%

REFER TO THE RIP-RAP DISSIPATOR PAD SCHEDULE PROVIDED ON SHEET C9-21 FOR ADDITIONAL INFORMATION REGARDING REQUIRED MINIMUM SIZES AND MATERIALS ASSOCIATED WITH THE DISSIPATOR PADS.



KEY PLAN
NO SCALE

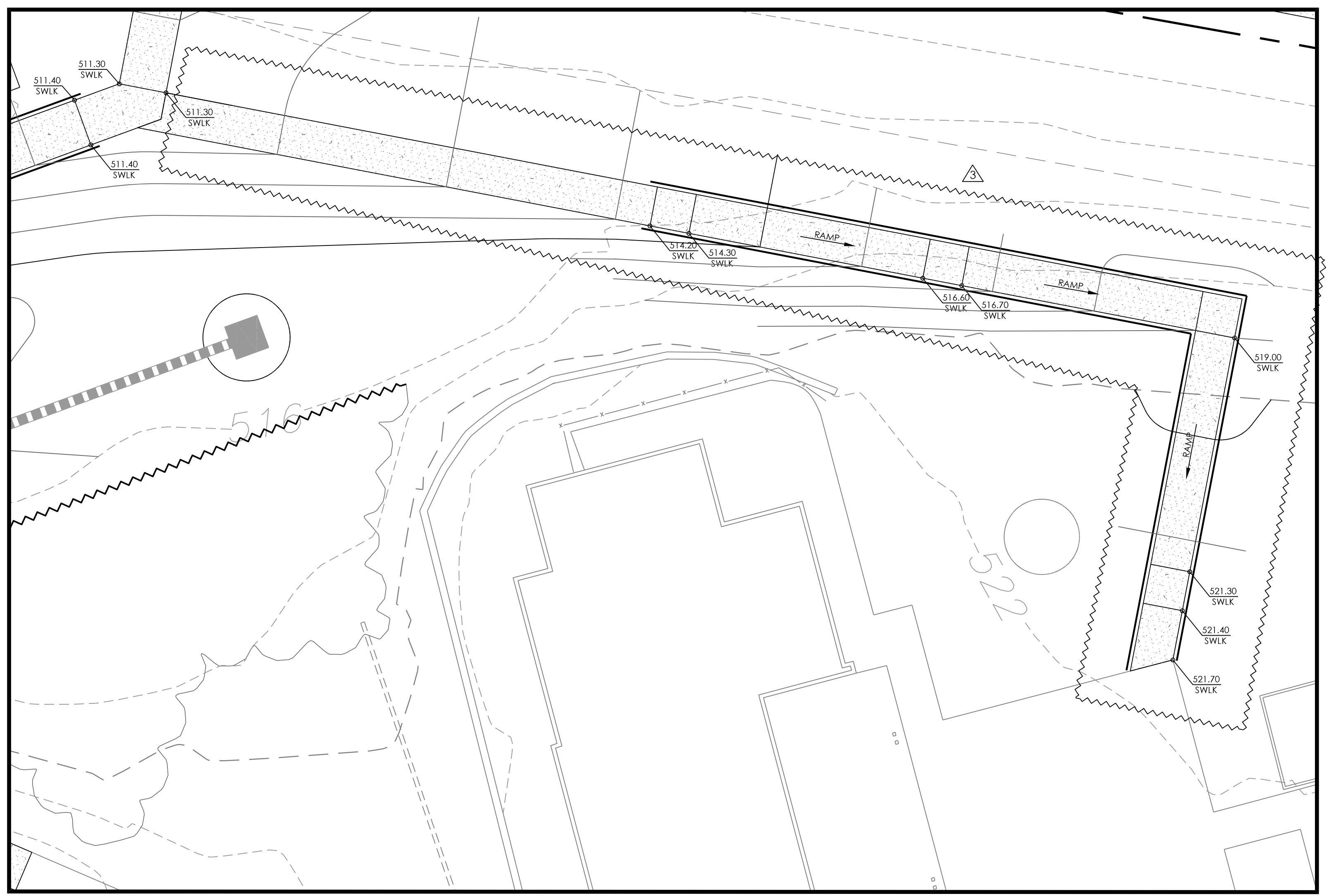
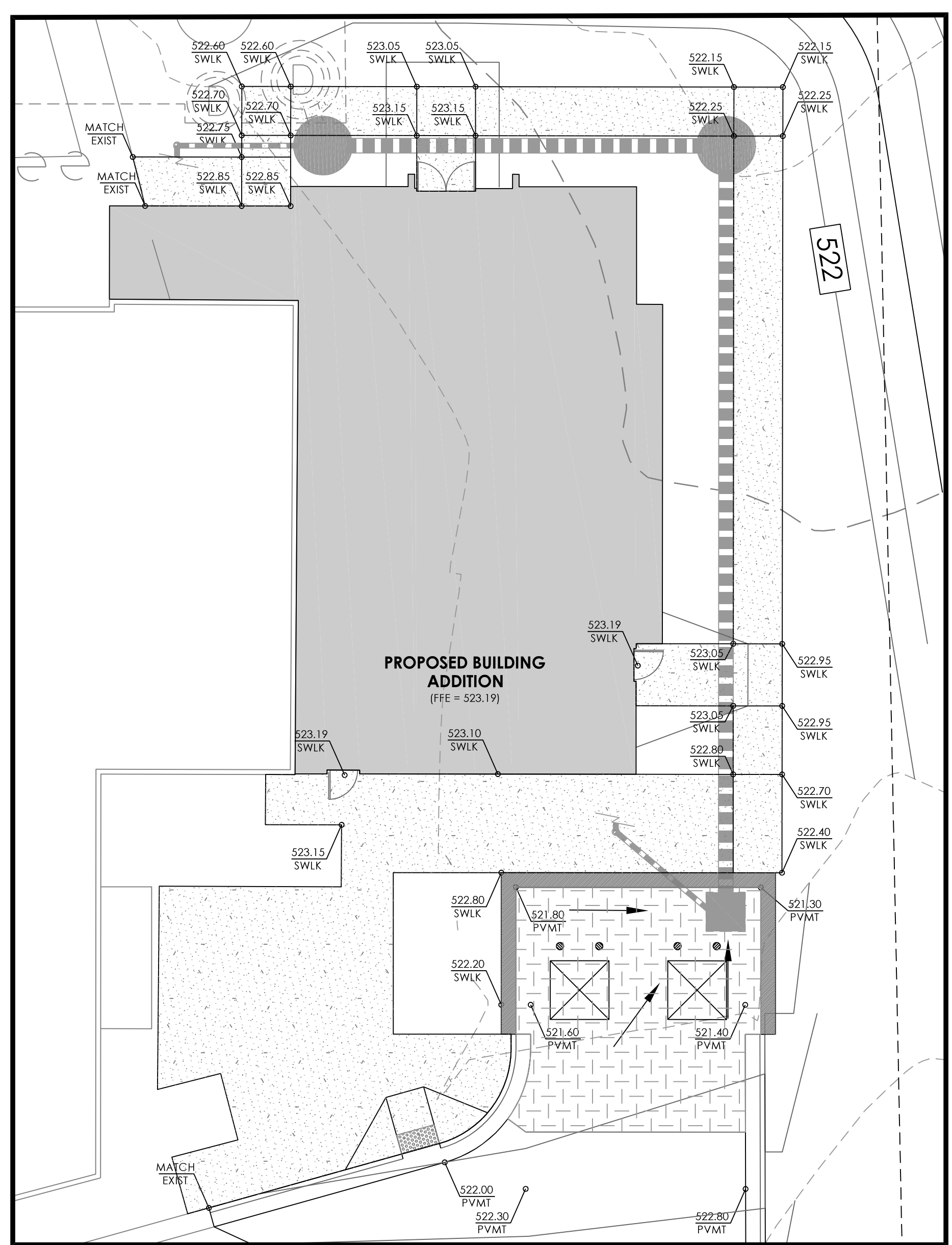
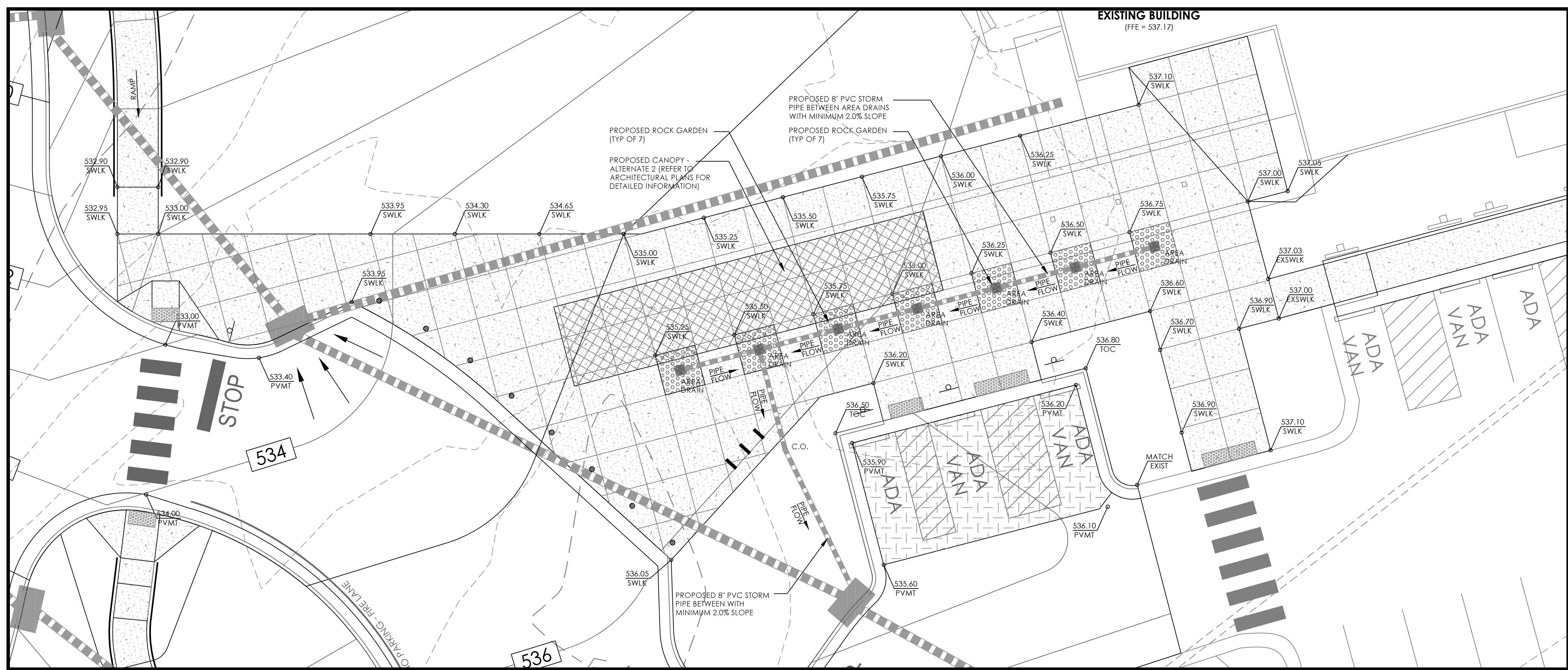
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**STORM
DRAINAGE
TABLE**

2017027 21 DEC 2018

C5-30



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EXISTING CONDITIONS LEGEND

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- SET PLY NAIL
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- ELECTRIC METER
- CLEAN OUT
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- TREE (SIZE AND TYPE)
- GUY WIRE
- FORCE MAIN (APPROXIMATE LOCATION)
- UNDERGROUND TELEPHONE
- MARKED TRAIL

LEGEND

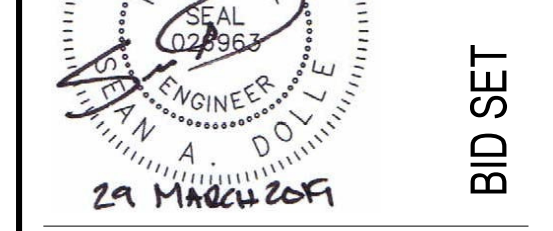
- PROPOSED BUILDING
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- XXX — EXISTING CONTOUR (MAJOR)
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ORANGE COUNTY SOUTHERN HUMAN SERVICES CENTER SEYMOUR CENTER RENOVATION AND ADDITION

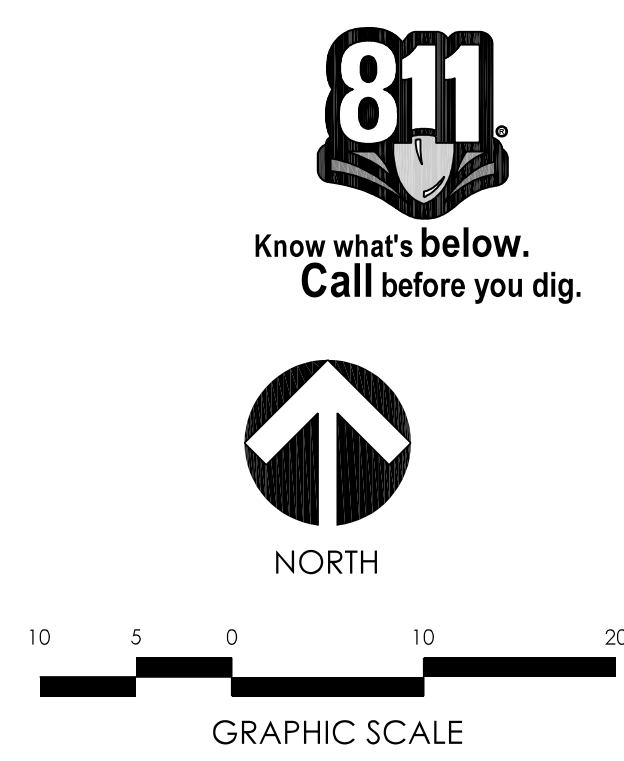
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ENLARGED GRADING PLAN

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STORMWATER
MANAGEMENT
PLAN

2017027 21 DEC 2018

C6-00

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LEGEND

PROPOSED BUILDING

PROPOSED BUILDING CANOPY

PROPOSED CONCRETE

PROPOSED CONCRETE CURB & GUTTER

PROPOSED PROPERTY LINE

PROPOSED SIGN

PROPOSED RCP STORM DRAIN PIPE

PROPOSED DROP INLET

PROPOSED CATCH BASIN

PROPOSED STORM MANHOLE

EXISTING CONTOUR (MAJOR)

EXISTING CONTOUR (MINOR)

EXISTING STORM DRAINAGE

SPOT ELEVATION
GRND = GROUND
PVMT = PAVEMENT
SWLK = SIDEWALK
TOC = TOP OF CURB

EXISTING STORM DRAINAGE

EXISTING CONDITIONS LEGEND

EXISTING CONCRETE MONUMENT

COMPUTED POINT

SET PLY NAIL

SET MASONRY NAIL

IRON PIPE SET

EXISTING IRON PIPE

GAS METER

ELECTRIC METER

CLEAN OUT

SANITARY SEWER MANHOLE

WATER MANHOLE

WATER METER

WATER VAULT

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FIRE HYDRANT

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UNDERGROUND GAS LINE (APPROXIMATE LOCATION)

OVERHEAD UTILITY LINE(S)

UNDERGROUND ELECTRIC

SANITARY SEWER PIPE

WATERLINE (APPROXIMATE LOCATION)

TREE LINE

TREE (SIZE AND TYPE)

GUY WIRE

FORCE MAIN (APPROXIMATE LOCATION)

UNDERGROUND TELEPHONE

MARKED TRAIL

OVERALL BASIN VOLUME

ELEV	AREA (sf)	AVERAGE AREA (sf)	VOLUME (cf)	ACC. VOLUME (cf) STORAGE (S)
503.00	0	0	0	0
504.00	3,070	1,535	1,535	1,535
505.00	5,120	4,095	4,095	5,630
506.00	5,940	5,530	5,530	11,160
507.00	6,840	6,390	6,390	17,550
507.50	7,660	7,250	3,625	21,175
508.00	8,730	8,195	4,098	25,273
508.50	9,880	9,305	4,653	29,925
509.00	10,480	10,180	5,090	35,015
510.00	11,720	11,100	11,100	46,115
511.00	13,020	12,370	12,370	58,485
512.00	14,380	13,700	13,700	72,185
512.30	14,840	14,610	4,383	76,568
513.00	15,770	15,305	10,714	87,282
513.30	16,250	16,010	4,803	92,084

FOREBAY VOLUME CALCULATION

ELEV	AREA (sf)	AVERAGE AREA (sf)	VOLUME (cf)	ACC. VOLUME (cf) STORAGE (S)
504.00	525	0	0	0
505.00	770	648	648	648
506.00	1,050	910	910	1,558
507.00	1,380	1,215	1,215	2,773
508.00	1,530	1,455	1,455	4,228

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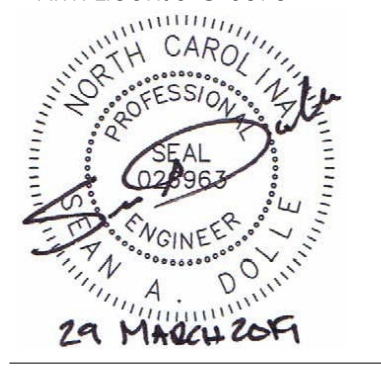
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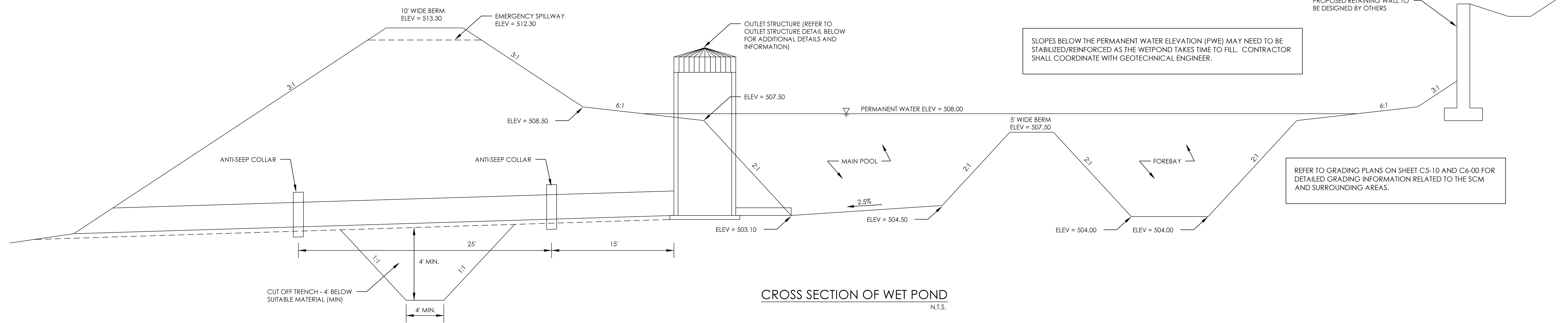
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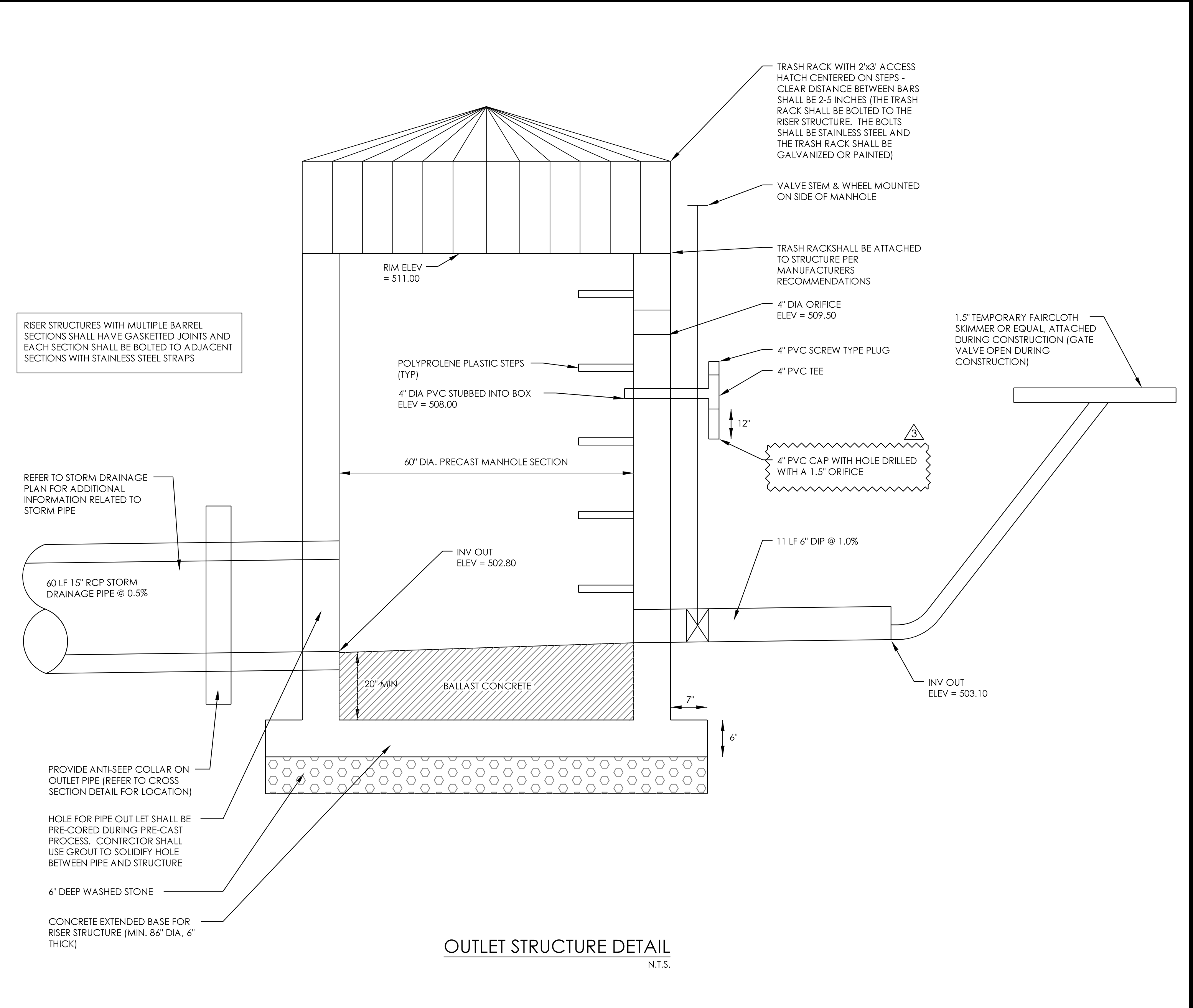
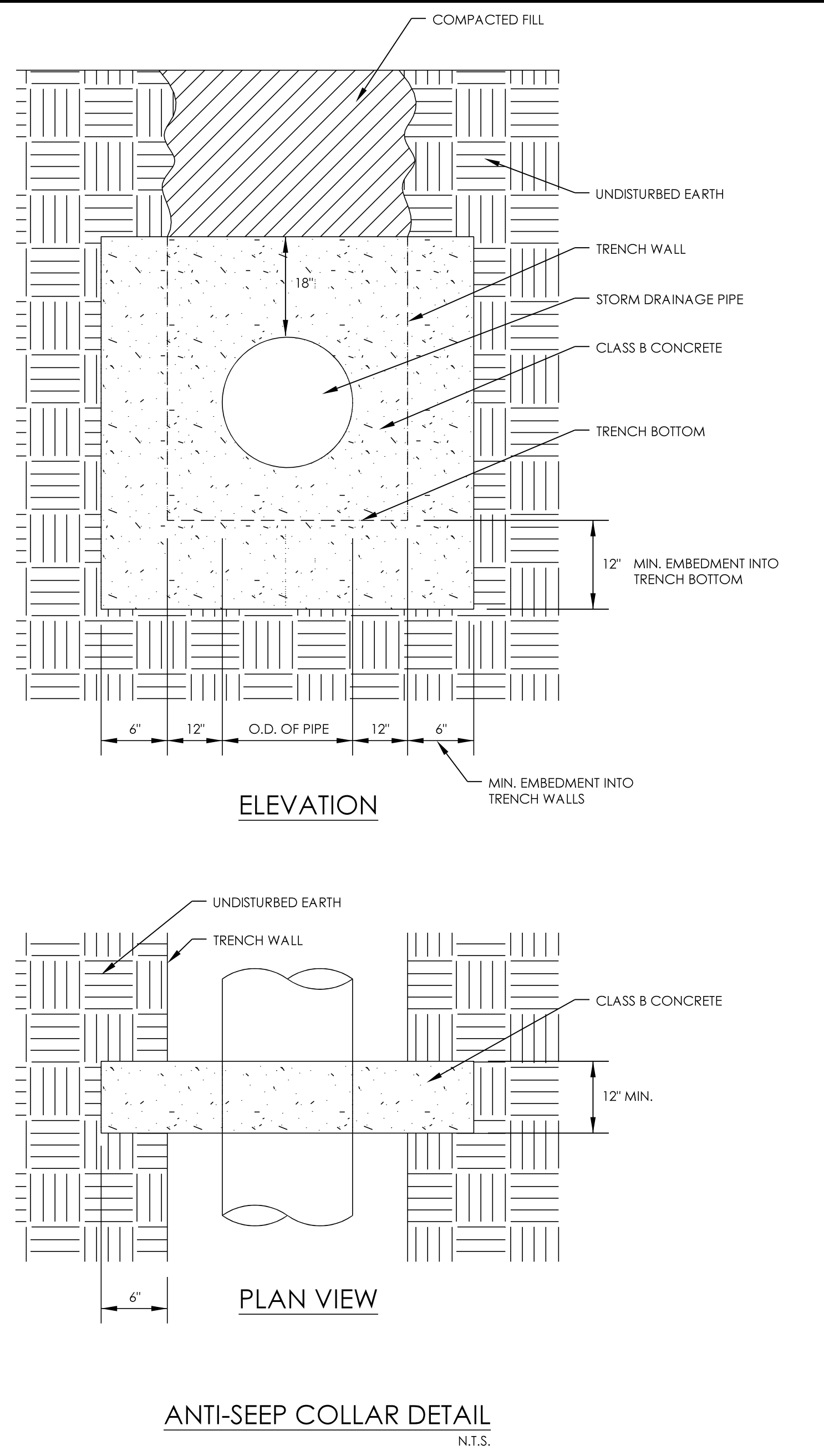


BID SET



SLOPES BELOW THE PERMANENT WATER ELEVATION (PWE) MAY NEED TO BE STABILIZED/REINFORCED AS THE WETPOND TAKES TIME TO FILL. CONTRACTOR SHALL COORDINATE WITH GEOTECHNICAL ENGINEER.

REFER TO GRADING PLANS ON SHEET C5-10 AND C6-00 FOR DETAILED GRADING INFORMATION RELATED TO THE SCM AND SURROUNDING AREAS.



WET DETENTION BASIN CONSTRUCTION SEQUENCE

1. UNDER NO CIRCUMSTANCES SHALL THE WET DETENTION BASIN BE FINALIZED AND PLANTED PRIOR TO COMPLETION OF CONSTRUCTION AND STABILIZATION OF ALL AREAS WHICH DRAIN TO IT.
2. IF WET DETENTION BASIN IS TO BE USED AS A SEDIMENT BASIN DURING CONSTRUCTION, ROUGH GRADE PER PLANS, FILL PLACEMENT AND OUTLET STRUCTURE CONSTRUCTION SHALL BE IN COMPLIANCE WITH DETAILS AND WET DETENTION BASIN CONSTRUCTION NOTES HEREON. IF THE WET DETENTION BASIN HAS BEEN PREVIOUSLY ROUGH GRADED AND/OR USED AS A SEDIMENT BASIN, REMOVE AND DISPOSE OF SEDIMENT DEPOSITS WITHIN THE BASIN AREA.
3. ROUGH GRADE WET DETENTION BASIN AS NECESSARY AFTER SEDIMENT REMOVAL AND TO FINALIZE BASIN GRADES. ALL FILL PLACEMENT SHALL BE IN COMPLIANCE WITH THE SPECIFICATION IN THE CONSTRUCTION NOTES ON THIS SHEET.
4. AFTER ROUGH GRADING WET DETENTION BASIN, BEGIN FINE GRADING TO CONSTRUCTION FOREBAY, BERMS/WALLS AND MAIN POOL AREA. GRADING TOLERANCE FOR THE WET DETENTION BASIN SHALL BE +/- 0.20 FEET FROM GRADES SHOWN ON THIS PLAN.
5. IN CONJUNCTION WITH GRADING AND FILL PLACEMENT, CONSTRUCT OUTLET STRUCTURE TO BRING IT INTO COMPLIANCE WITH THESE PLANS. IF OUTLET STRUCTURES WERE CONSTRUCTED WITH ROUGH GRADING WHEN USING THE WET DETENTION BASIN AS SEDIMENT BASIN, SKIP TO NEXT STEP.
6. WHEN THE FINE GRADING AND OUTLET STRUCTURE ARE COMPLETE, THE CONTRACTOR SHALL HAVE THEIR SURVEYOR OR THE DEVICE INCLUDING A DETAILED TOPOGRAPHIC SURVEY. THE CONTRACTOR SHALL PROVIDE THE ASBUILT SURVEY INFORMATION TO THE PROJECT ENGINEER FOR REVIEW AND EVALUATION.
7. IF THE ENGINEER DETERMINES THAT GRADING IS NOT IN COMPLIANCE WITH THESE DRAWINGS, THE CONTRACTOR SHALL MAKE CORRECTIONS AS REQUIRED BY THE ENGINEER AND REPEAT PREVIOUS STEP, OTHERWISE, PROCEED TO NEXT STEP.
8. UPON NOTIFICATION FROM THE ENGINEER THAT THE WET DETENTION BASIN IS IN COMPLIANCE WITH THESE DRAWINGS, PROVIDE LANDSCAPING IN COMPLIANCE WITH THE LANDSCAPE PLAN. IF TIMING IS SUCH THAT PLANTINGS WOULD OCCUR IN SUMMER MONTHS, COORDINATE WITH THE OWNER'S REPRESENTATIVE AND LOCAL MUNICIPALITY ABOUT DELAYING PLANTINGS UNTIL FALL OR EARLY WINTER FOR MAXIMUM SURVIVABILITY OF PLANTINGS.
9. SEED ALL DISTURBED AREAS PER THE SEEDING SCHEDULE SHOWN ON THESE PLANS.
10. CALL NCDCEQ AND THE TOWN STORMWATER INSPECTOR FOR APPROVAL OF STABILIZATION. A FINAL STORMWATER MANAGEMENT INSPECTION MUST BE SCHEDULED AT LEAST 10 DAYS IN ADVANCE OF REQUESTING THE CERTIFICATE OF OCCUPANCY.
11. CONTRACTOR SHALL WATER NEW PLANT MATERIALS PLANTED IN THE WET DETENTION BASIN UNTIL COMPLETION OF ALL OTHER SITE RELATED CONSTRUCTION. AFTER THE WORK IS COMPLETED, THE CONTRACTOR SHALL CONTINUE TO WATER AND MAINTAIN THE PLANT MATERIALS IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.

WET DETENTION BASIN CONSTRUCTION NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STATE OF NORTH CAROLINA AND TOWN OF CHAPEL HILL STANDARDS AND SPECIFICATIONS.
2. THE CONTRACTOR SHALL WARRANTY ALL PLANTED MATERIALS FOR A PERIOD OF 2 YEARS FROM THE DATE OF INSTALLATION. AT THE END OF THE FIRST YEAR AND AT THE END OF THE SECOND YEAR, THE CONTRACTOR SHALL REPLACE ALL PLANTS WHICH DO NOT SURVIVE. ANY HEALTHY PLANTS DAMAGED DURING PLANT REPLACEMENT SHALL ALSO BE REPLACED.
3. SOIL BELOW ELEVATION 510.0 SHALL BE TESTED BY THE USDA AGRICULTURAL EXTENSION OFFICE FOR pH, WHICH MUST FALL BETWEEN 5.5 AND 7.0. TESTS SHALL ALSO BE PERFORMED FOR NUTRIENTS SUCH AS NITROGEN, PHOSPHOROUS, AND POTASSIUM AND FOR MINERALS SUCH AS CHELATED IRON AND LIME. AMENDMENTS TO SOIL RECOMMENDED BY USDA SHALL BE INCORPORATED INTO SOIL TO PROMOTE VIGOROUS VEGETATION AND PLANT GROWTH. RECORDS OF TESTS AND AMENDMENTS PROVIDED BY CONTRACTOR SHALL BE PROVIDED TO THE OWNER'S REPRESENTATIVE.
4. LANDSCAPING PLANTINGS SHOWN HEREIN SHALL BE INSTALLED DURING THE FALL SEASON OR EARLY WINTER IF POSSIBLE FOR MAXIMUM SURVIVABILITY.
5. THE CONTRACTOR SHALL HAVE THE OWNER'S GEOTECHNICAL ENGINEER TEST ALL EMBANKMENTS AND FILL PLACEMENT FOR PROPER COMPACTION. PROPER COMPACTION SHALL BE PER THE GEOTECHNICAL ENGINEER'S RECOMMENDATION OR THESE PLANS, WHICHEVER IS MORE STRINGENT. ALL FILL MATERIAL USED FOR THE DAM EMBANKMENT SHALL BE TAKEN FROM BORROW AREAS APPROVED BY THE GEOTECHNICAL ENGINEER. THE FILL MATERIAL SHALL BE FREE OF ROOTS, STUMPS, WOOD, STONES GREATER THAN 6" AND OTHER OBJECTIONAL MATERIALS. EMBANKMENTS FOR BASIN SHALL BE PLACED IN 6 INCH LOOSE LAYERS AND SHALL BE COMPACTED TO A DENSITY OF NO LESS THAN 95% OF THE STANDARD PROCTOR MAXIMUM DENSITY AT A MOISTURE CONTENT OF +/- TWO (2) PERCENTAGE POINTS OF THE OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D698. THE CONTRACTOR SHALL TAKE PHOTOGRAPHS OF THE OUTLET STRUCTURE AT ALL PHASES OF INSTALLATION AND SHALL RETAIN WITH GEOTECHNICAL TESTING DATA. THE TOWN OF CHAPEL HILL WILL REQUIRE RECORDS AND SPECIFICATIONS FOR THE OUTLET STRUCTURE MATERIALS AND STRUCTURES. ALL OF THE ABOVE DATA SHALL BE PROVIDED TO THE OWNER'S REPRESENTATIVE FOR USE BY THE OWNER'S ENGINEER AS PART OF THE MUNICIPALITY AS-BUILT PROCESS.
6. THE ON-SITE GEOTECHNICAL ENGINEER WILL CERTIFY THE INSTALLATION OF THE PRIMARY SPILLWAY PIPE.
7. TOLERANCES FOR FINISH GRADES SHALL BE WITHIN +/- 0.20 FEET. THE TOWN OF CHAPEL HILL WILL REQUIRE ASBUILT SURVEY OF THE CONSTRUCTED WET DETENTION BASIN. THEREFORE, STRICT ADHERENCE TO THE GRADING ON THIS PLAN AND THE TOLERANCES SPECIFIED HEREON SHALL BE REQUIRED PRIOR TO CERTIFICATION BY THE ENGINEER THAT THE WET DETENTION BASIN HAS BEEN BUILT IN COMPLIANCE WITH THESE DRAWINGS. UPON COMPLETION OF THE FINAL GRADING (PRIOR TO PLACEMENT OF ANY PLANT MATERIAL), THE CONTRACTOR SHALL HAVE THEIR SURVEYOR PROVIDE A SURVEY OF THE AS-BUILT CONDITIONS FOR THE WET DETENTION BASIN. THE CONTRACTOR SHALL NOTIFY THE ENGINEER THAT THE CONSTRUCTED WETLAND BASIN HAS BEEN COMPLETED AND THE ENGINEER SHALL EVALUATE THE ASBUILT SURVEY INFORMATION PROVIDED BY THE CONTRACTOR FOR COMPLIANCE WITH THESE DRAWINGS. IF THE WET DETENTION BASIN IS FOUND TO BE OUT OF COMPLIANCE WITH THESE DRAWINGS, THE CONTRACTOR SHALL REGRADE THE WET DETENTION BASIN AS NECESSARY TO BRING THE WET DETENTION BASIN INTO COMPLIANCE WITH THESE DRAWINGS. THE COST OF ANY ADDITIONAL SURVEY OR ENGINEERING EVALUATION REQUIRED RESULTING FROM INCOMPLETE OR INCORRECT GRADING OF THE WET DETENTION BASIN SHALL BE THE RESPONSIBLE OF THE CONTRACTOR.

KEY PLAN NO SCALE

ID	DATE	DESCRIPTION
3	03.29.2019	REV. PER AHJ REVIEW
2	03.18.2019	ISSUED FOR BID
1	02.22.2019	REV. PER AHJ REVIEW

DRAWN BY: SAD
CHECKED BY: SAD

STORMWATER MANAGEMENT DETAILS

2017027 21 DEC 2018

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ALL CONSTRUCTION SHALL CONFORM WITH TOWN OF CHAPEL HILL STANDARDS AND SPECIFICATIONS. ALL CONSTRUCTION INSIDE OF THE HOMESTEAD ROAD PUBLIC RIGHT-OF-WAY SHALL COMPLY WITH NCDOT STANDARDS AND SPECIFICATIONS. ALL PROPOSED WATER AND SANITARY SEWER CONSTRUCTION SHALL COMPLY WITH OWASA STANDARDS AND SPECIFICATIONS.

REFER TO SHEET C-001 FOR PROJECT AND SHEET RELATED NOTES.

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ORANGE COUNTY SOUTHERN HUMAN SERVICES CENTER
SEYMOUR CENTER RENOVATION AND ADDITION
2551 Homestead Rd., Chapel Hill, NC. 27516

KEY PLAN
NO SCALE

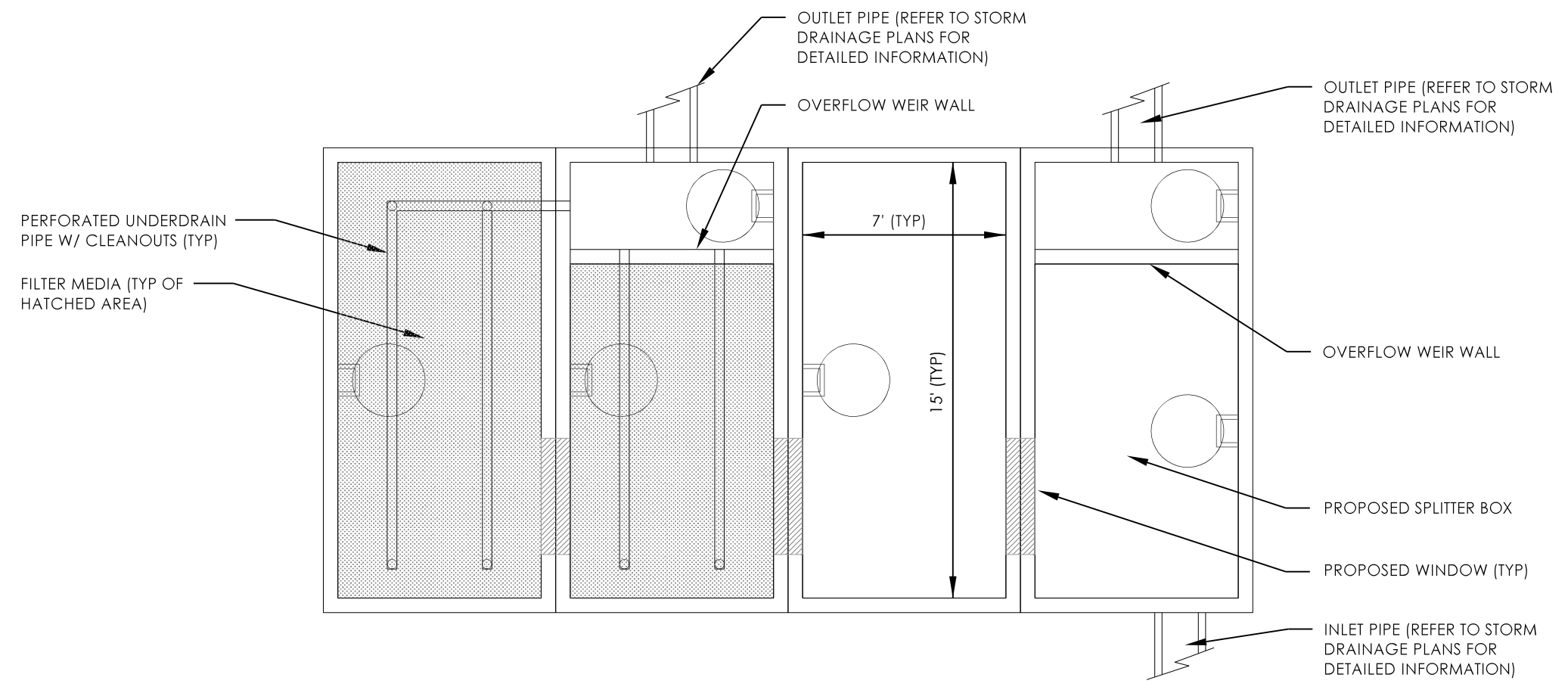
3	03.29.2019	REV. PER AHJ REVIEW
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1	02.22.2019	REV. PER AHJ REVIEW

ID DATE DESCRIPTION
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STORMWATER
MANAGEMENT
DETAILS

2017027 21 DEC 2018

C6-30

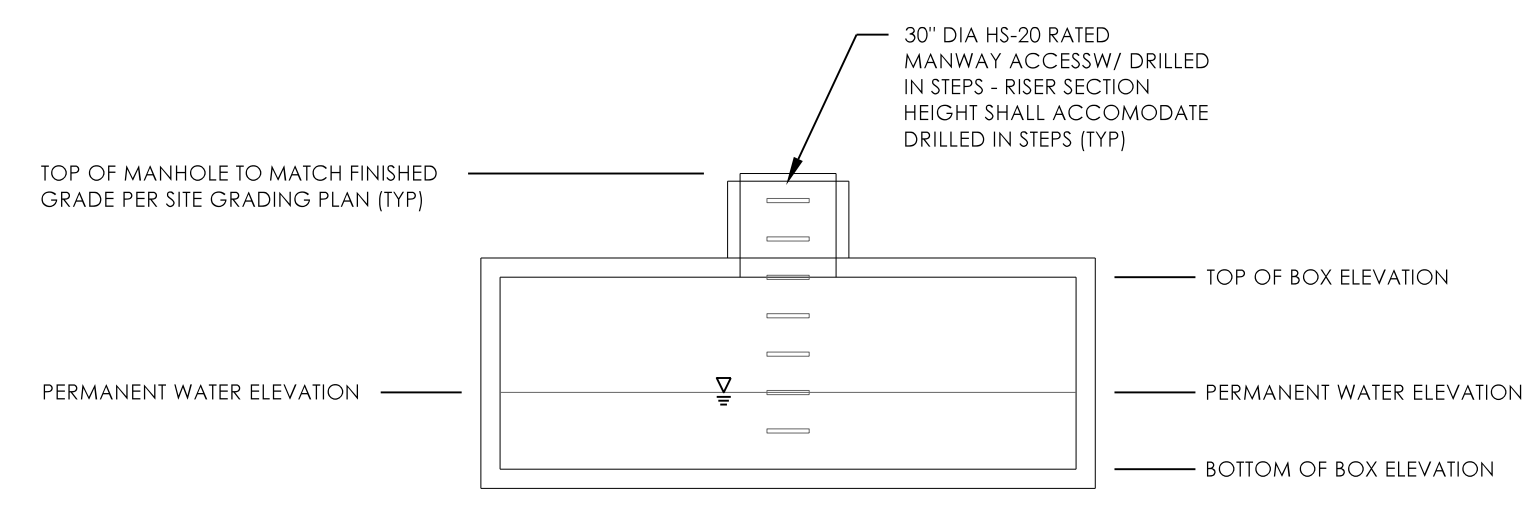


PLAN VIEW

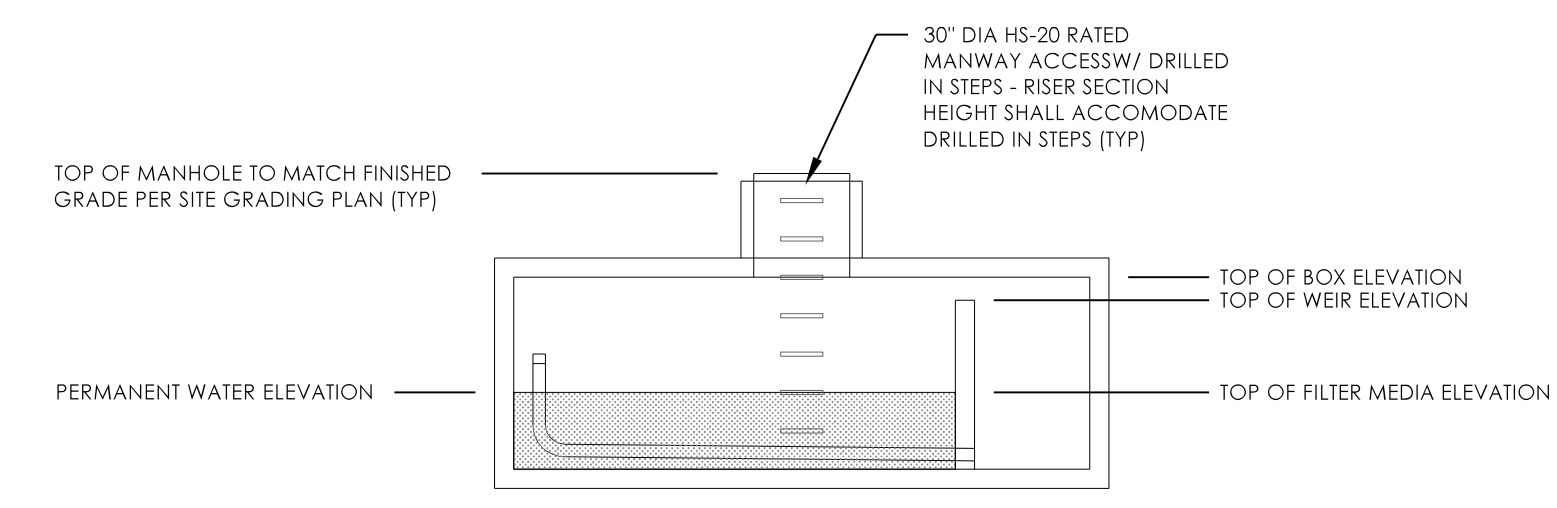
- NOTES:
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND INSTALLING A SAND FILTER SYSTEM THAT MEETS THE MINIMUM REQUIREMENTS LISTED ON THESE PLANS.
 2. THE SAND SHALL BE CLEAN, WASHED, COARSE SAND PER ASTM C637 STD. THE AVERAGE SAND PARTICLE SIZE SHALL BE LESS THAN 2 MM.
 3. ALL WALL (BOTTOM, TOP, AND INTERNAL) AND REINFORCING SHALL BE PER MANUFACTURER OR STRUCTURAL ENGINEER.
 4. THE DEVICE SHALL BE DESIGNED TO HANDLE HEAVY DUTY TRAFFIC LOADING.
 5. ALL COMPACTION AROUND AND ABOVE THE DEVICE SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION AND A GEOTECHNICAL ENGINEER.
 6. CONTRACTOR SHALL PROVIDE MANWAY ACCESS POINTS WITH DRILLED IN STEPS INTO ALL PORTIONS OF THE DEVICE.
 7. PROVIDE WATER TIGHT SEALS AT ALL JOINTS.
 8. UNDERDRAIN PIPES SHALL BE 4" PERFORATED PVC PIPES INSTALLED ALONG THE ENTIRE LENGTH OF THE SAND CHAMBER.
 9. THE SAND FILTER SCHEMATIC DETAIL IS PROVIDED FOR DIAGRAMATIC PURPOSES ONLY. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR THE PROPOSED DEVICE TO THE DESIGN TEAM FOR REVIEW PRIOR TO CONSTRUCTION.
 10. UNDER NO CIRCUMSTANCES SHALL THE SAND MEDIA BE INSTALLED IN THE DEVICE PRIOR TO COMPLETION OF CONSTRUCTION AND STABILIZATION OF ALL AREAS WHICH DRAIN TO IT. PRIOR TO INSTALLATION OF SAND MEDIA, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSING OF ANY SEDIMENT DEPOSITS WITHIN THE DEVICE.
 11. THE CONTRACTOR SHALL PROVIDE SURVEY ASBUILT DOCUMENTS TO THE OWNER'S REPRESENTATIVE FOR USE IN THE FINAL SCM CERTIFICATION.
 12. THE SAND FILTER STRUCTURE SHALL COMPLY APPLICABLE CITY, STATE, AND FEDERAL GUIDELINES.
 13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE SCM DESIGN WITH THE MANUFACTURER AND THE SITE CONSTRUCTION DRAWINGS.

DESIGN SUMMARY

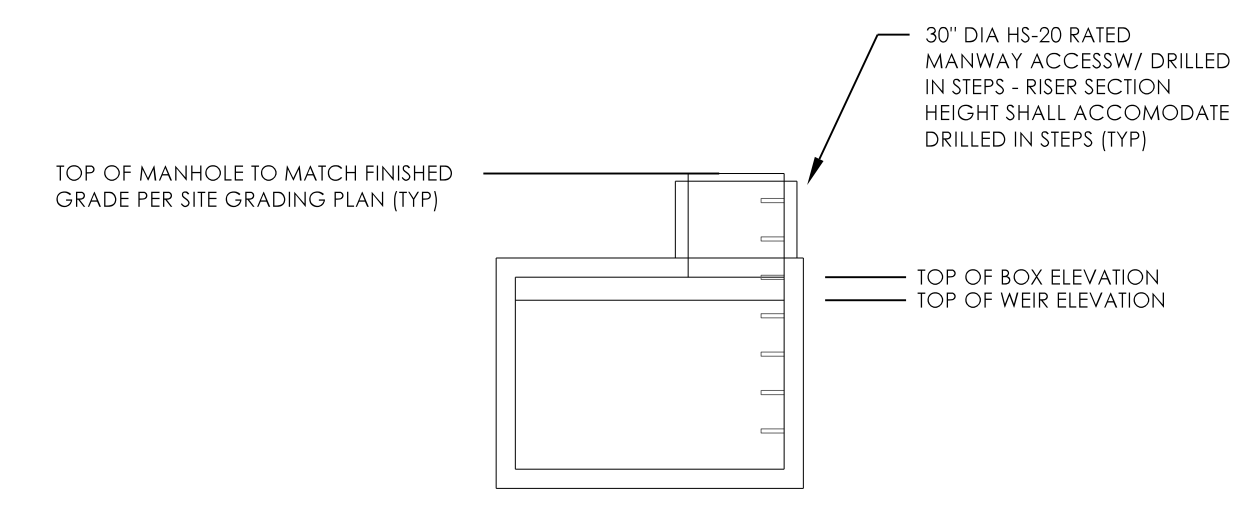
TOP OF BOX ELEVATION	312.60
BOTTOM OF BOX ELEVATION	307.60
TOP OF SAND ELEVATION	309.60
PERMANENT WATER ELEVATION	309.60
TOP OF WEIR ELEVATION	312.10
MIN. REQUIRED WATER QUALITY VOLUME	900 CF
WATER QUALITY VOLUME PROVIDED	927.5 CF
UNDERDRAIN PIPE SIZE	4"
UNDERDRAIN PIPE MIN. SLOPE	1.0%
WATER QUALITY VOLUME ELEVATION	312.10



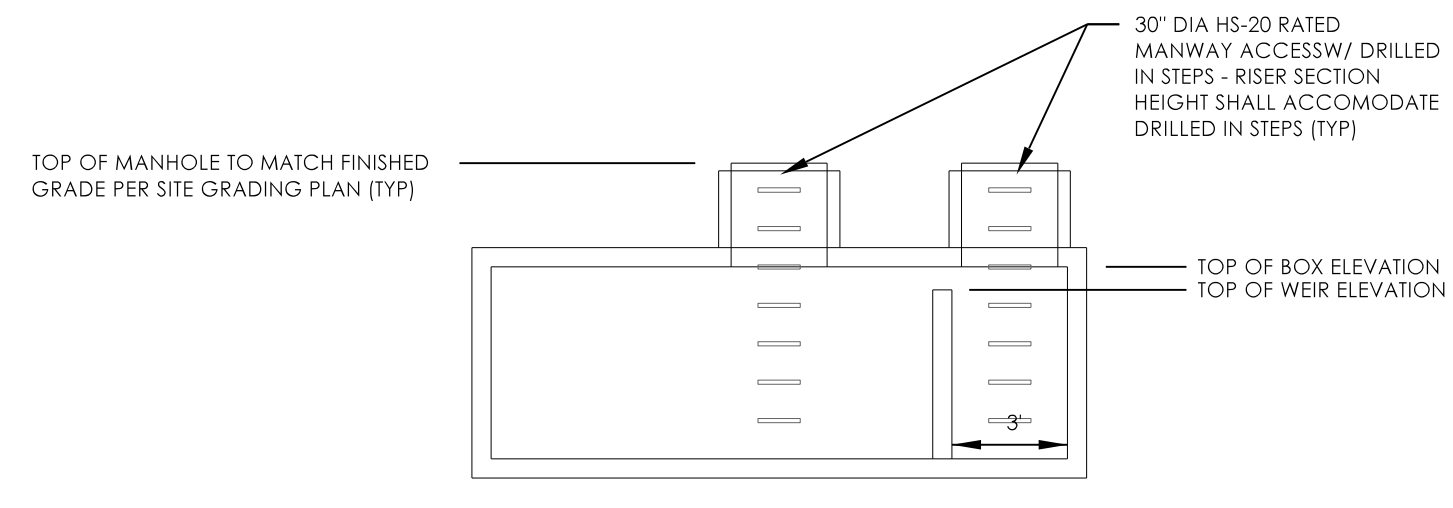
SAND FILTER SEDIMENT CHAMBER SECTION VIEW



SAND FILTER CHAMBER SECTION VIEW



SPLITTER BOX SECTION VIEW (END)



SPLITTER BOX SECTION VIEW (SIDE)

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REFER TO SHEET C-001 FOR PROJECT AND SHEET RELATED NOTES.

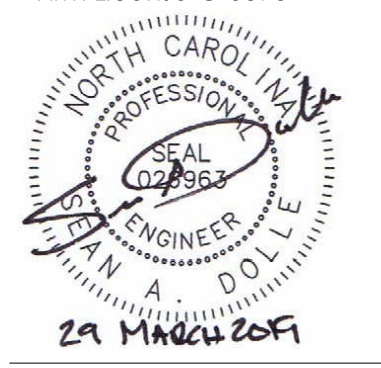
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1" = 50' (HORIZONTAL)
1" = 5' (VERTICAL)

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ORANGE COUNTY SOUTHERN HUMAN SERVICES CENTER
SEYMOUR CENTER RENOVATION AND ADDITION

2551 Homestead Rd., Chapel Hill, NC - 27516

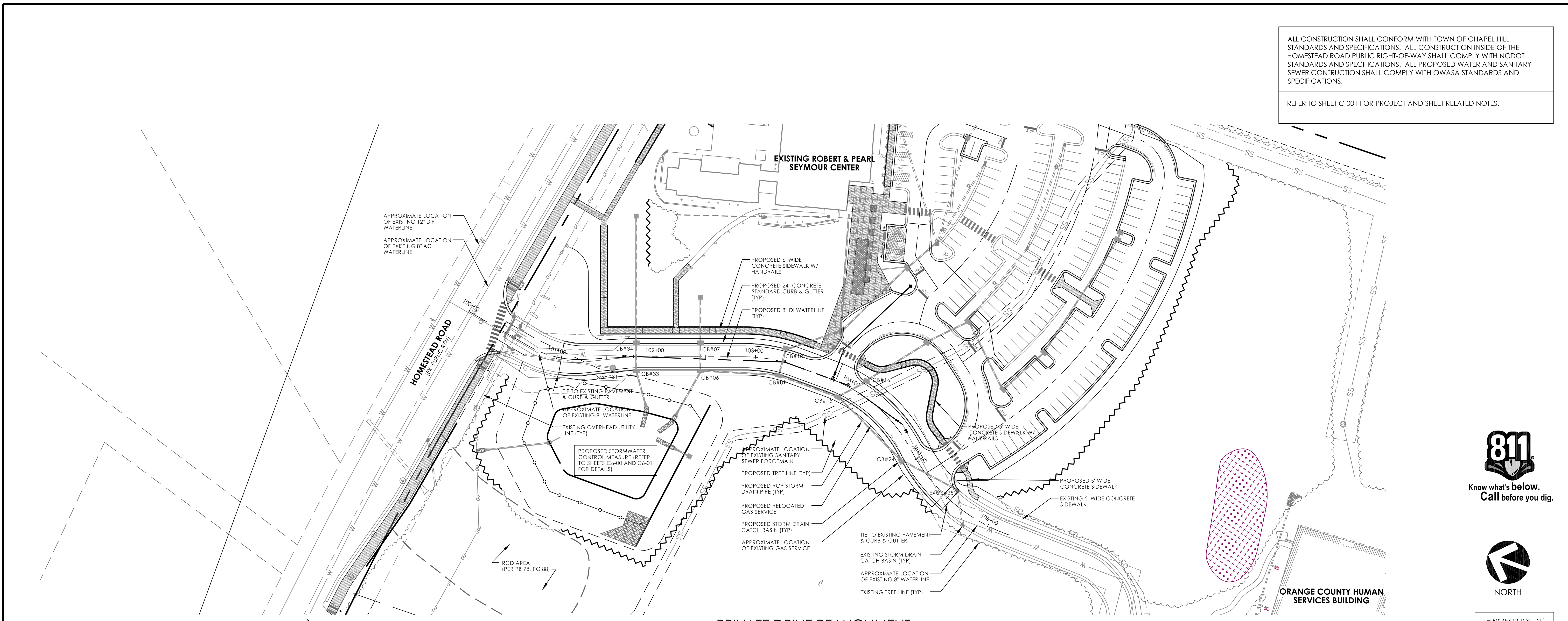
KEY PLAN
NO SCALE

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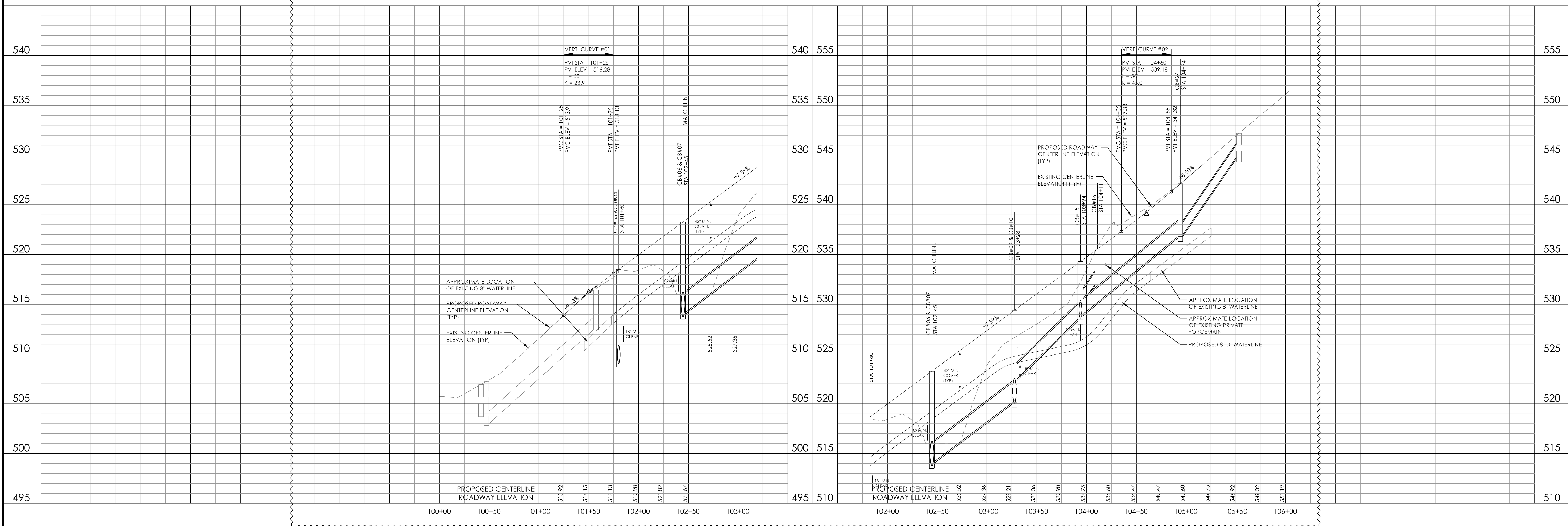
PRIVATE
DRIVE PLAN &
PROFILE

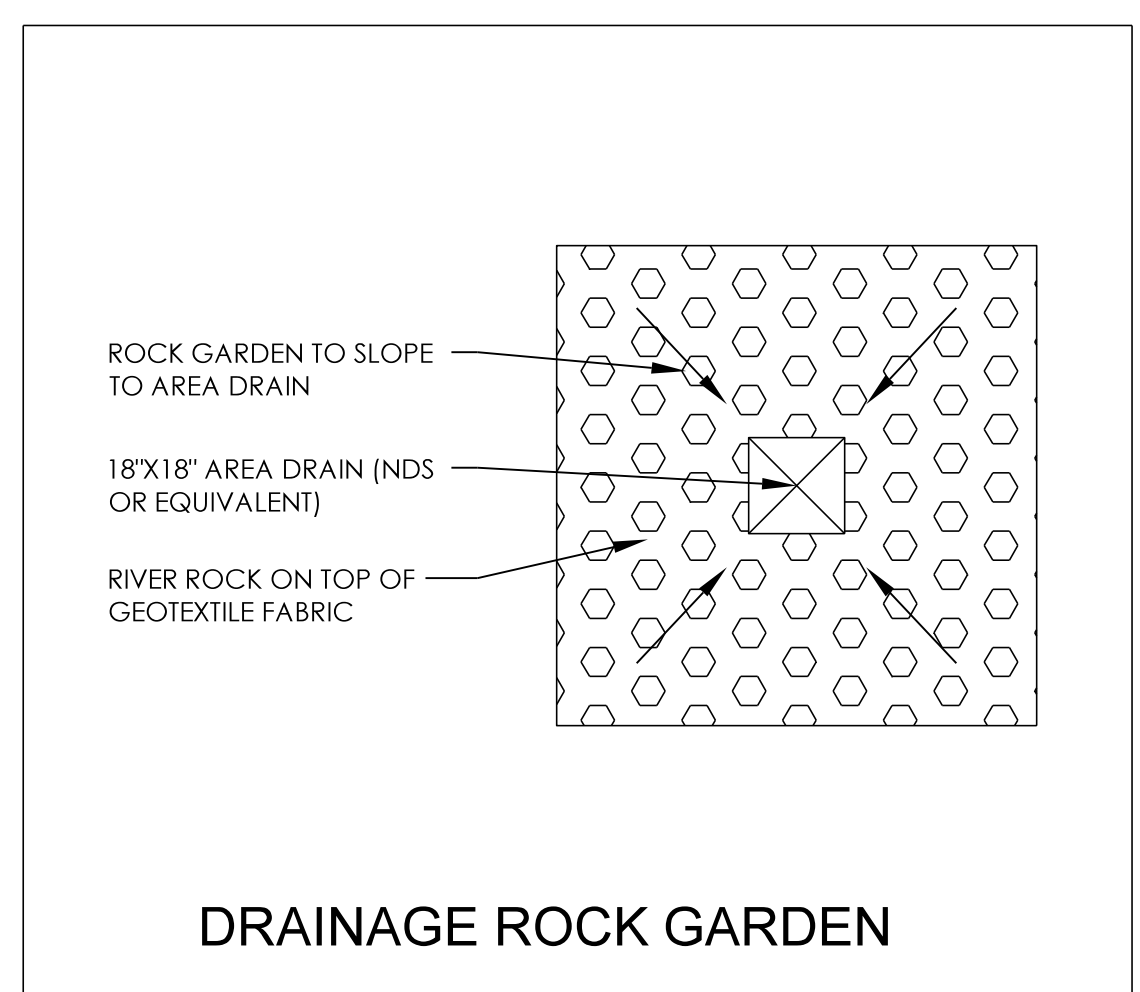
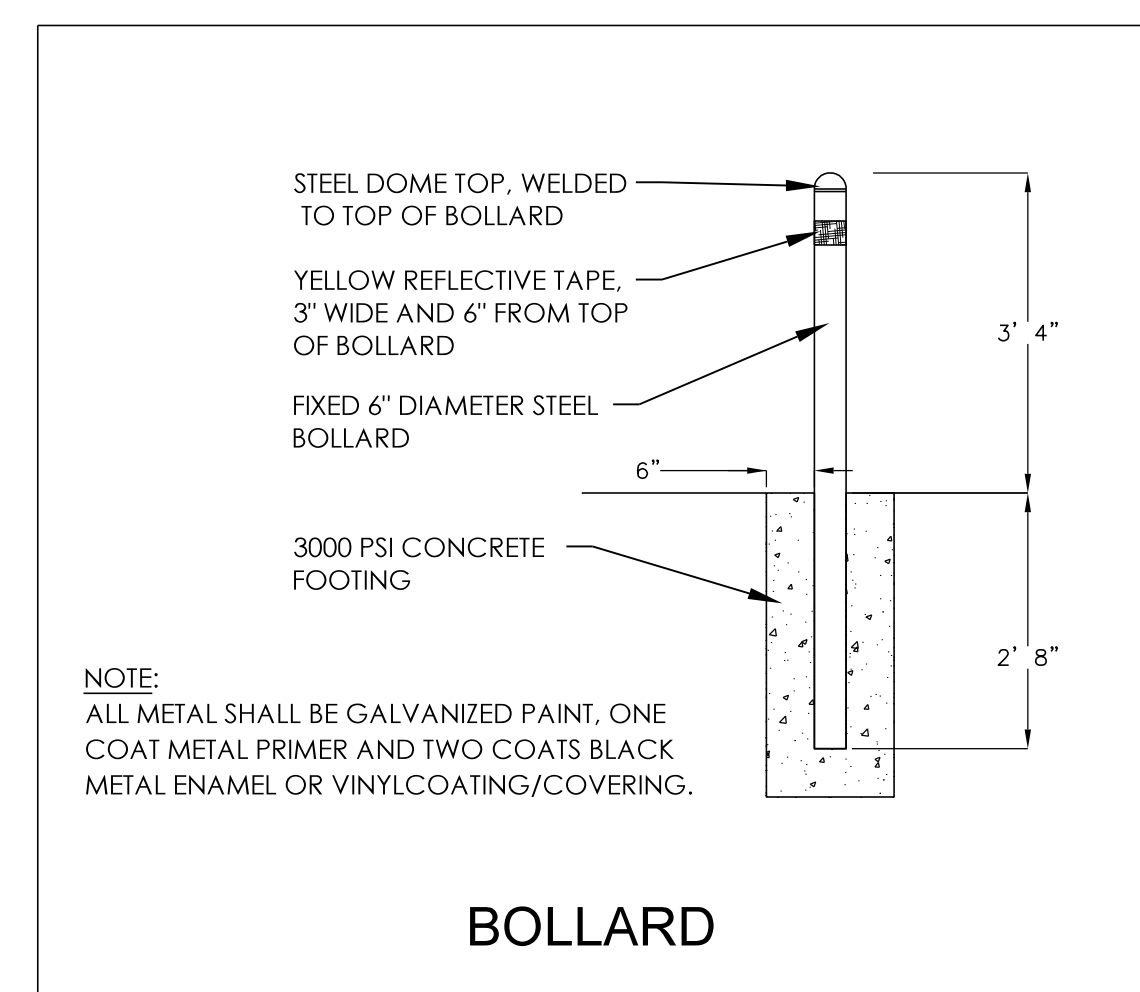
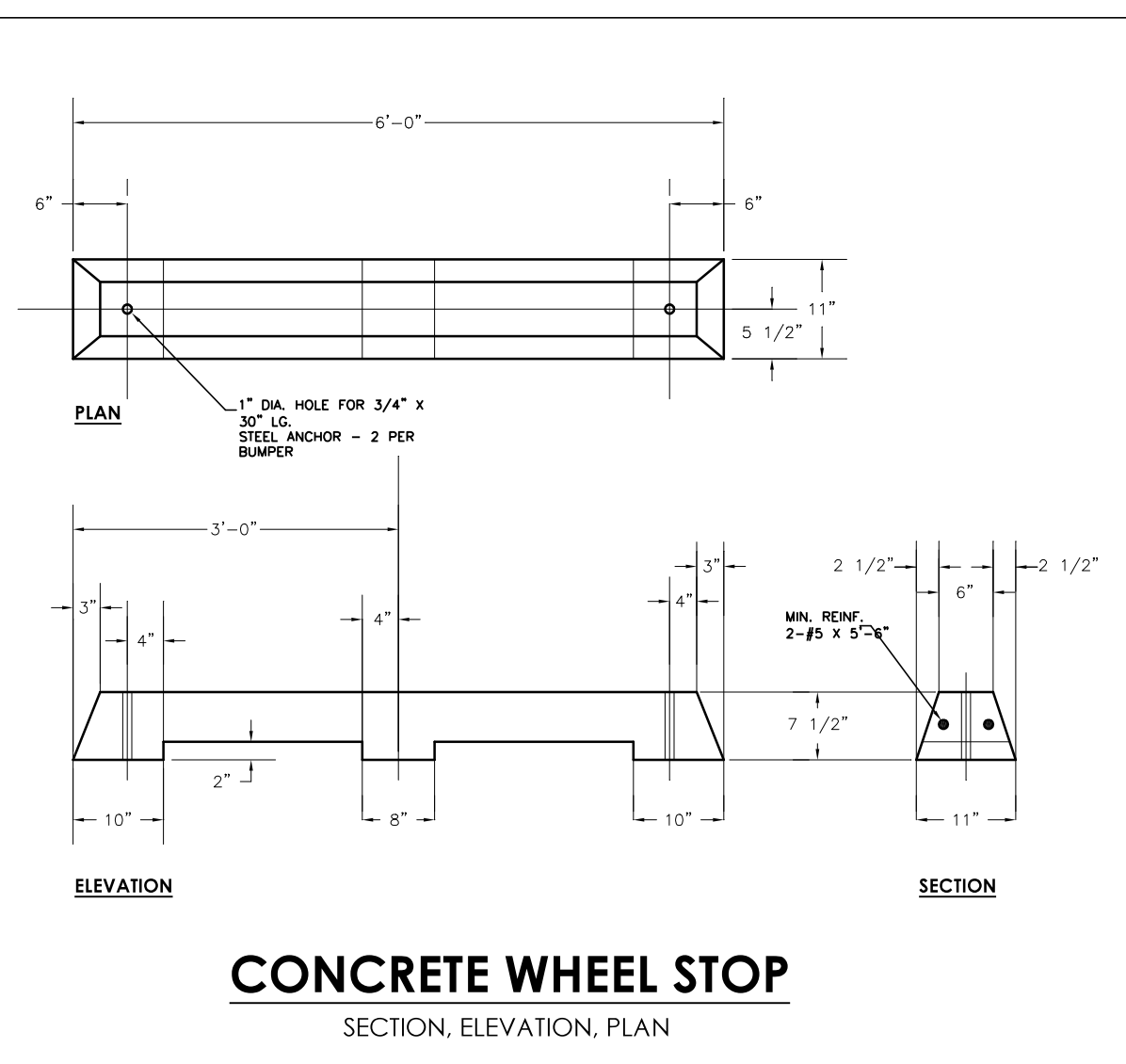
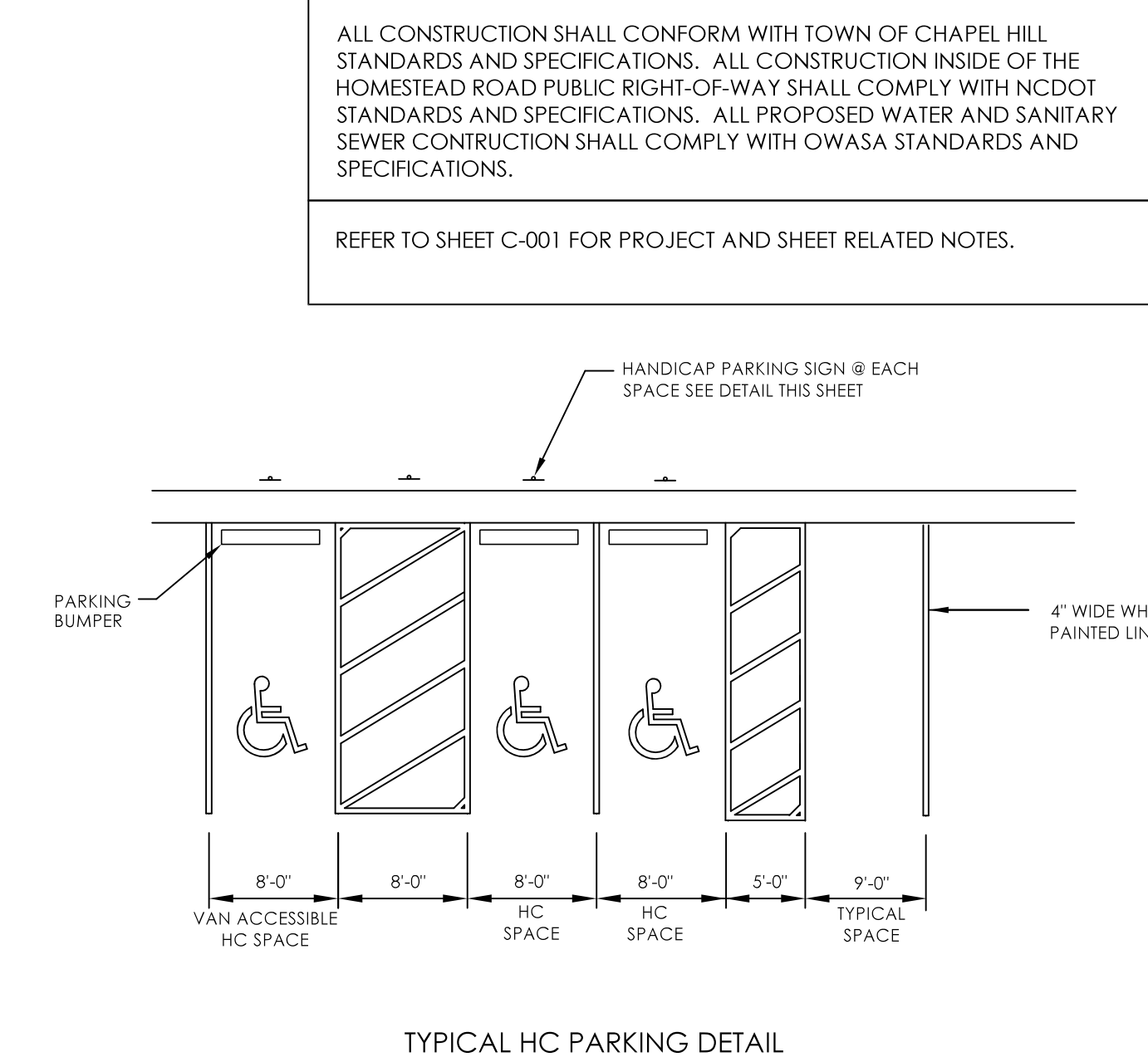
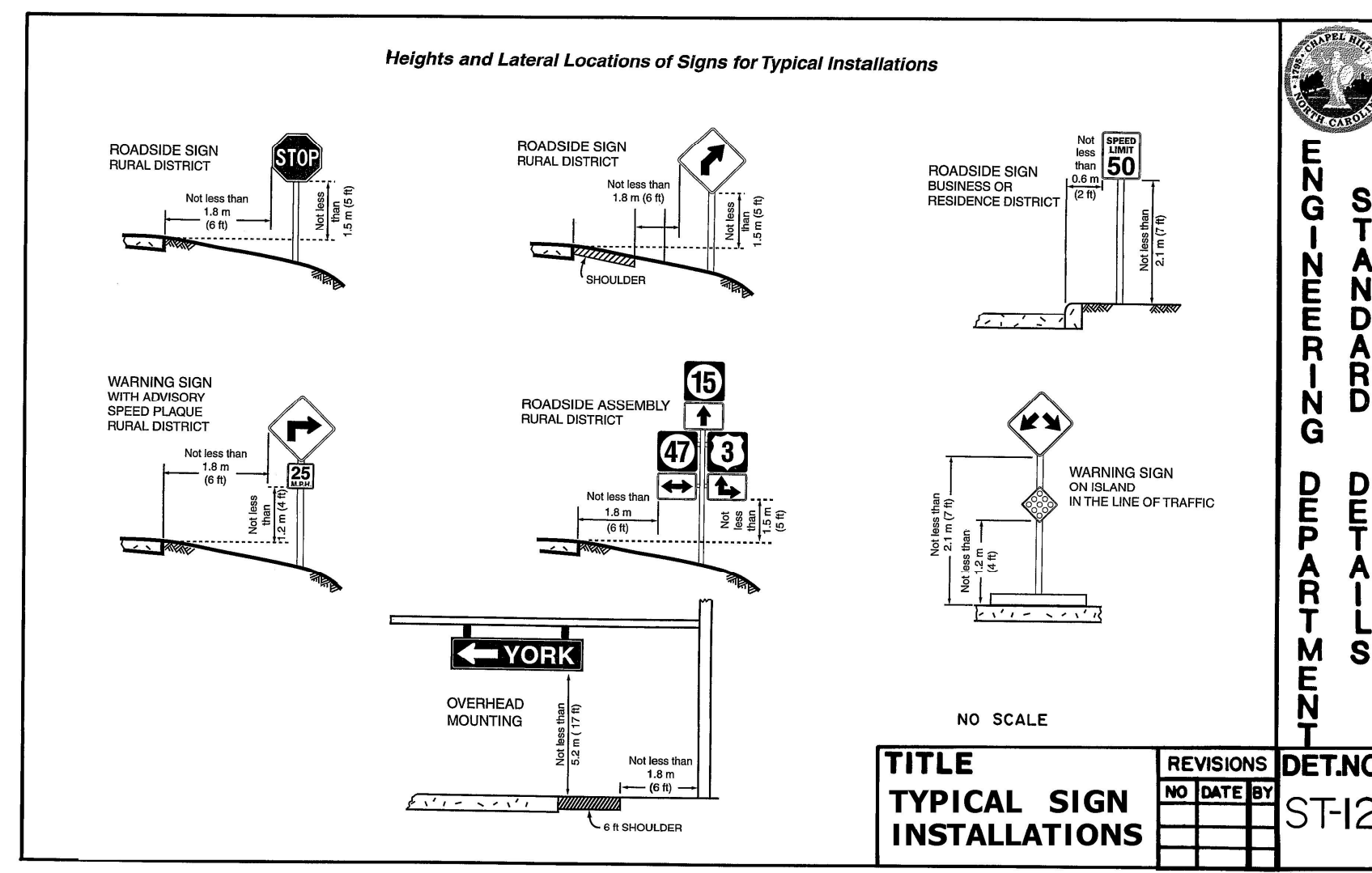
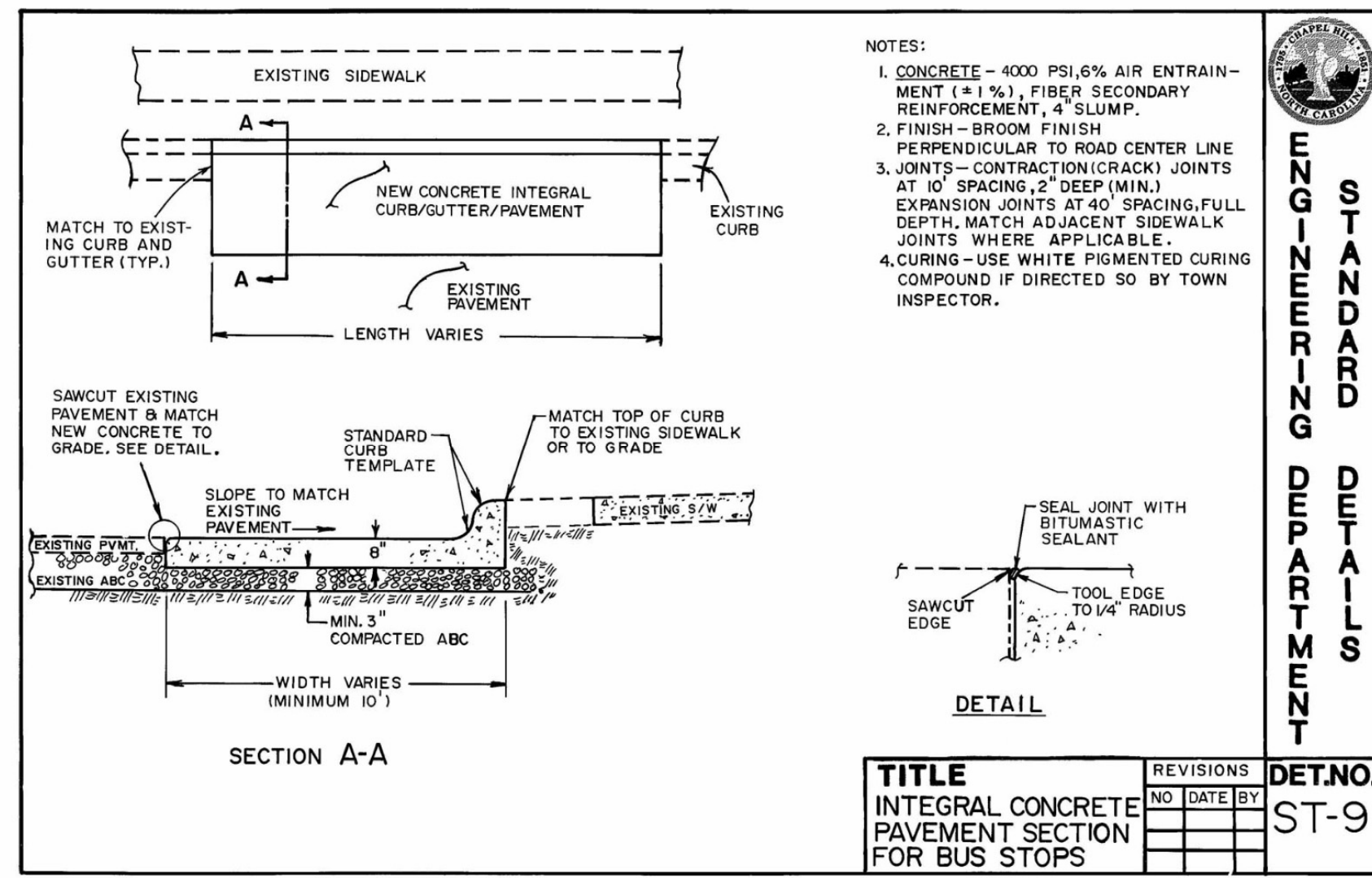
2017027 21 DEC 2018

C8-00



PRIVATE DRIVE REALIGNMENT





CONTINUOUS LINES

EDGE LINE	YELLOW OR WHITE	4" / 16"
LANE LINE	WHITE	4" / 16"
CENTER LINE	YELLOW	4" / 16"
GORE LINE	WHITE	8" / 12"
DIAGONAL LINE	YELLOW OR WHITE	12" 45 MPH OR HIGHER 8" LESS THAN 45 MPH
CROSSWALK LINE	WHITE	8" TRANSVERSE 24" LONGITUDINAL
RxR LINE	WHITE	16"
STOP OR TRANSVERSE BAR	WHITE	24"

SHEET 1 OF 3
1205.01

10'-30"/SP SKIP LINE

UNLESS OTHERWISE SHOWN, USE 10'-30"/SP SKIP LINES AND SKIP CENTER LINES.

2'-6"/SP MINI-SKIP LINE

UNLESS OTHERWISE SHOWN, USE 2'-6"/SP MINI-SKIP LINES FOR LANE LINE EXTENSIONS THROUGH INTERSECTIONS, EDGE LINE EXTENSIONS THROUGH INTERSECTIONS AND MINI-SKIPS USED FOR BIPOLE LANE LINES.

3'-3"/SP MINI-SKIP LINE

UNLESS OTHERWISE SHOWN, USE 3'-3"/SP MINI-SKIPS FOR THE WHITE EDGE LINE EXTENSIONS AT ROUNDABOUTS.

3'-9"/SP MINI-SKIP LINE

UNLESS OTHERWISE SHOWN, USE 3'-9"/SP MINI-SKIPS FOR MINI-SKIP LANE LINES AND LINE EXTENSIONS THROUGH TAPERS.

GENERAL NOTES:

1. USE 6" LANE, EDGE, AND CENTER LINES ON ALL FULL CONTROL OF ACCESS FACILITIES AND OTHER ROUTES AS DIRECTED BY THE ENGINEER.
2. LANE LINES INDICATED AS "WIDE" ON THE ROADWAY STANDARD DRAWINGS SHALL BE AT LEAST TWICE THE WIDTH OF THE NORMAL LINE.
3. GORE LINES SHALL BE TWICE THE WIDTH OF THE NORMAL LINE.

SHEET 1 OF 3
1205.01

STRAIGHT ARROW

RIGHT OR LEFT TURN ARROW

COMBINATION STRAIGHT AND LEFT OR RIGHT TURN ARROW

COMBINATION LEFT AND RIGHT TURN ARROW

COMBINATION LEFT AND STRAIGHT AND RIGHT TURN ARROW

MERGE ARROW

RAMP ARROW

GENERAL NOTES:

1. USE THE COLOR WHITE FOR ALL PAVEMENT MARKING SYMBOLS.
2. DO NOT LOCATE PAVEMENT MARKING SYMBOLS AS TO ENCRANCH INTO INTERSECTION AREAS.
3. DO NOT PLACE PAVEMENT MARKING SYMBOLS ACROSS TRANSVERSE EXPANSION JOINTS ON PORTLAND CEMENT CONCRETE PAVEMENTS, UNLESS APPROVED BY THE ENGINEER.
4. CONFORM ALL SYMBOLS TO THE FHWA "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS" (REFER TO SHEETS S THRU S). SYMBOL DIMENSIONS CAN VARY AMONG MANUFACTURERS, THEREFORE SLIGHT VARIANCES ARE ACCEPTABLE; HOWEVER, ALL SYMBOLS ARE REQUIRED TO BE APPROVED BY THE DEPARTMENT.

SHEET 1 OF 7
1205.08

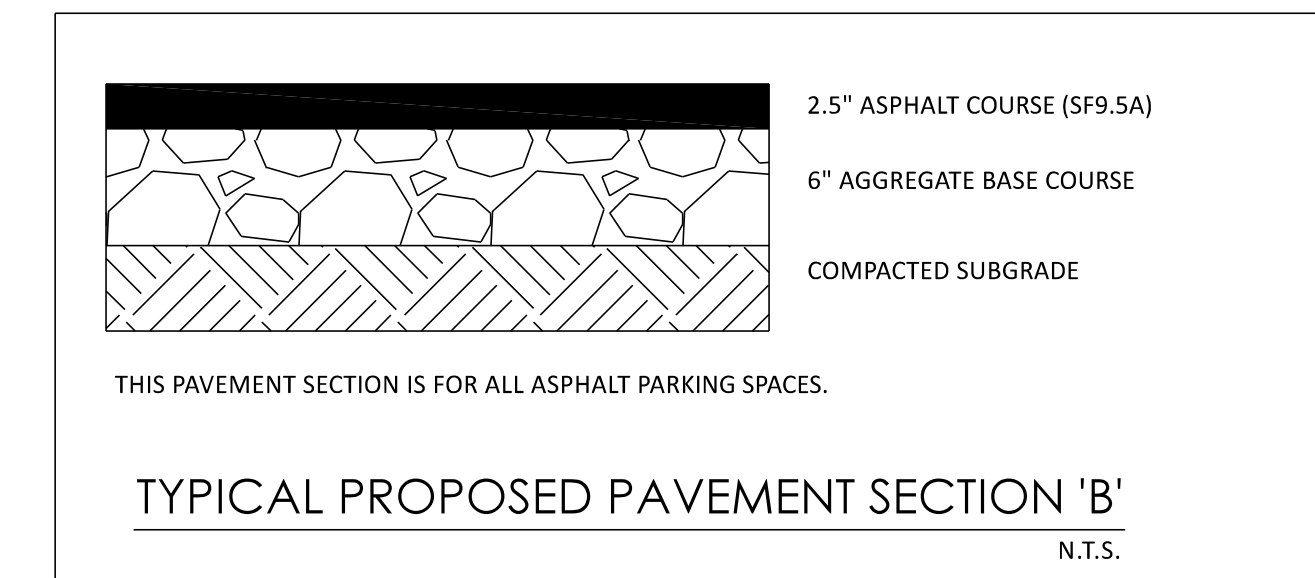
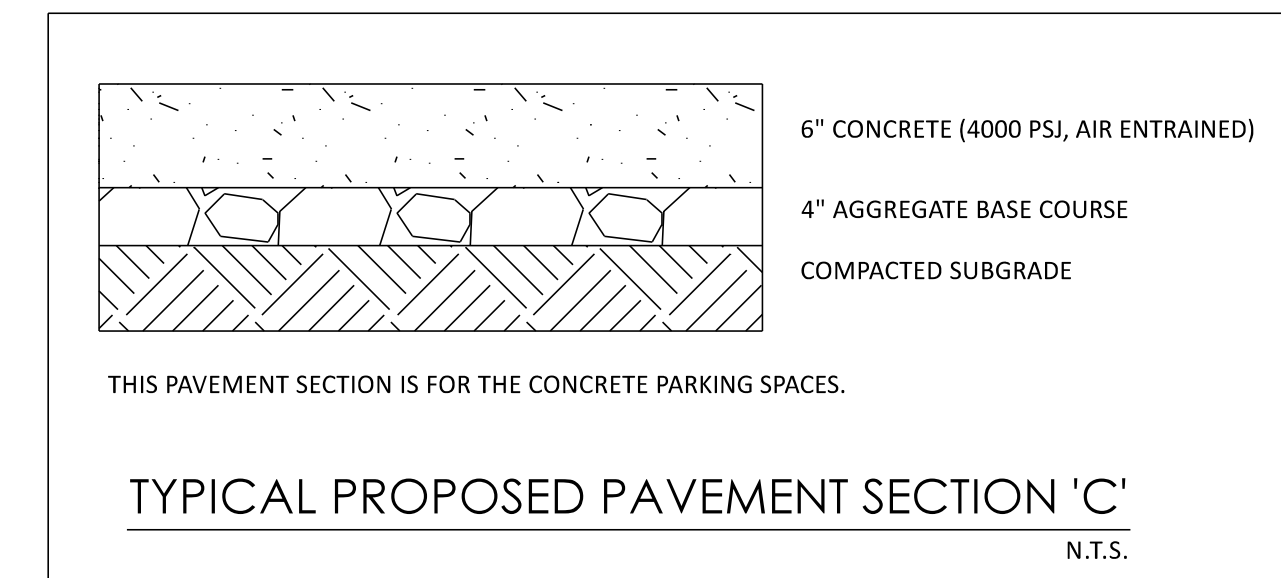
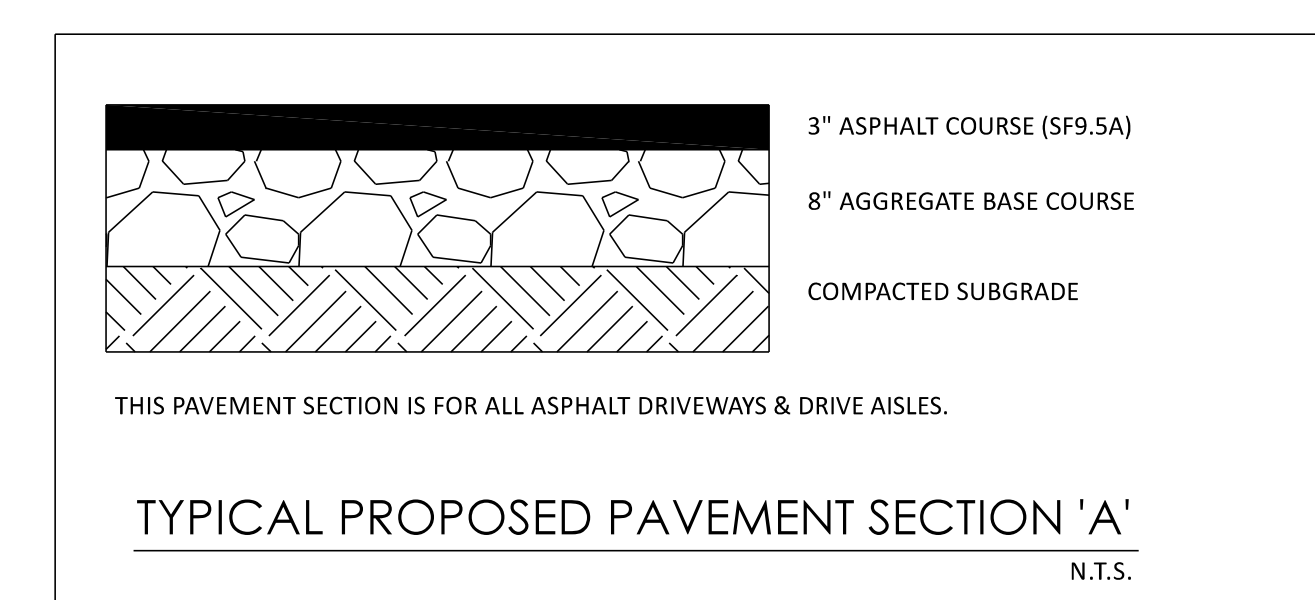
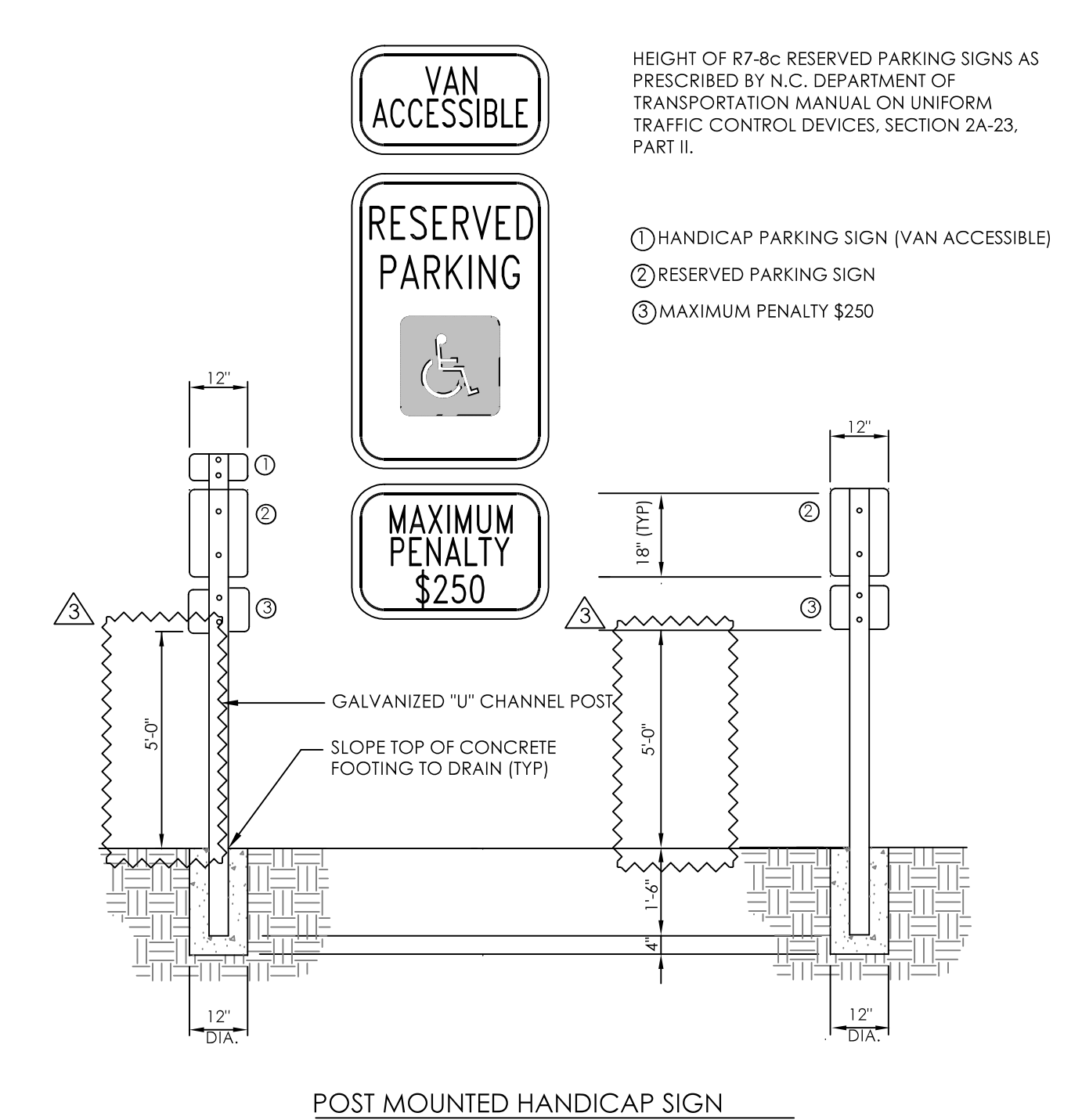
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR PAVEMENT MARKINGS LINE TYPES AND OFFSETS

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

ENGLISH STANDARD DRAWING FOR PAVEMENT MARKINGS SYMBOLS AND WORD MESSAGES

SHEET 1 OF 3
1205.08



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PROFESSIONAL SEAL
NORTH CAROLINA ENGINEER
29 March 2019

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ORANGE COUNTY SOUTHERN HUMAN SERVICES CENTER SEYMOUR CENTER RENOVATION AND ADDITION

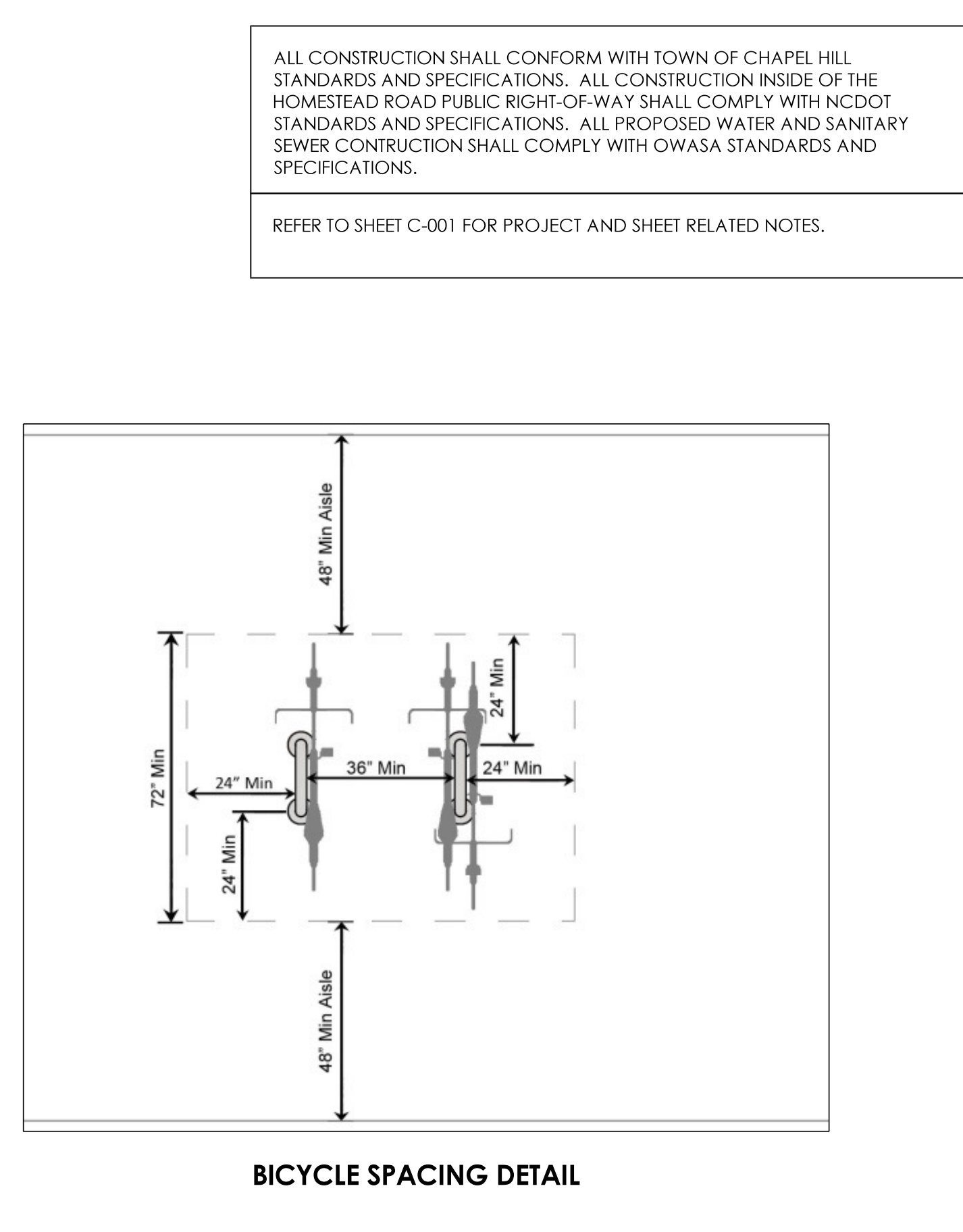
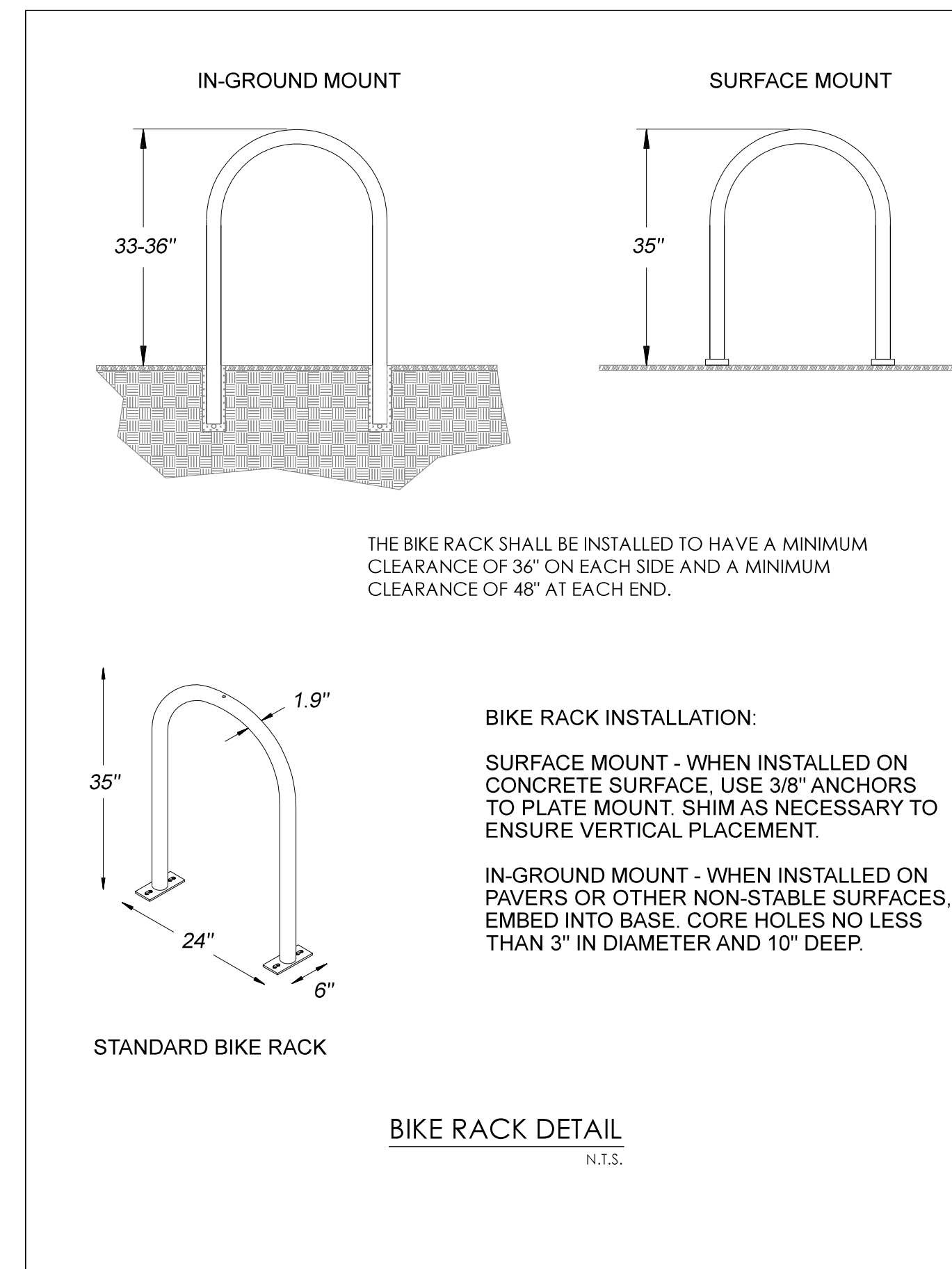
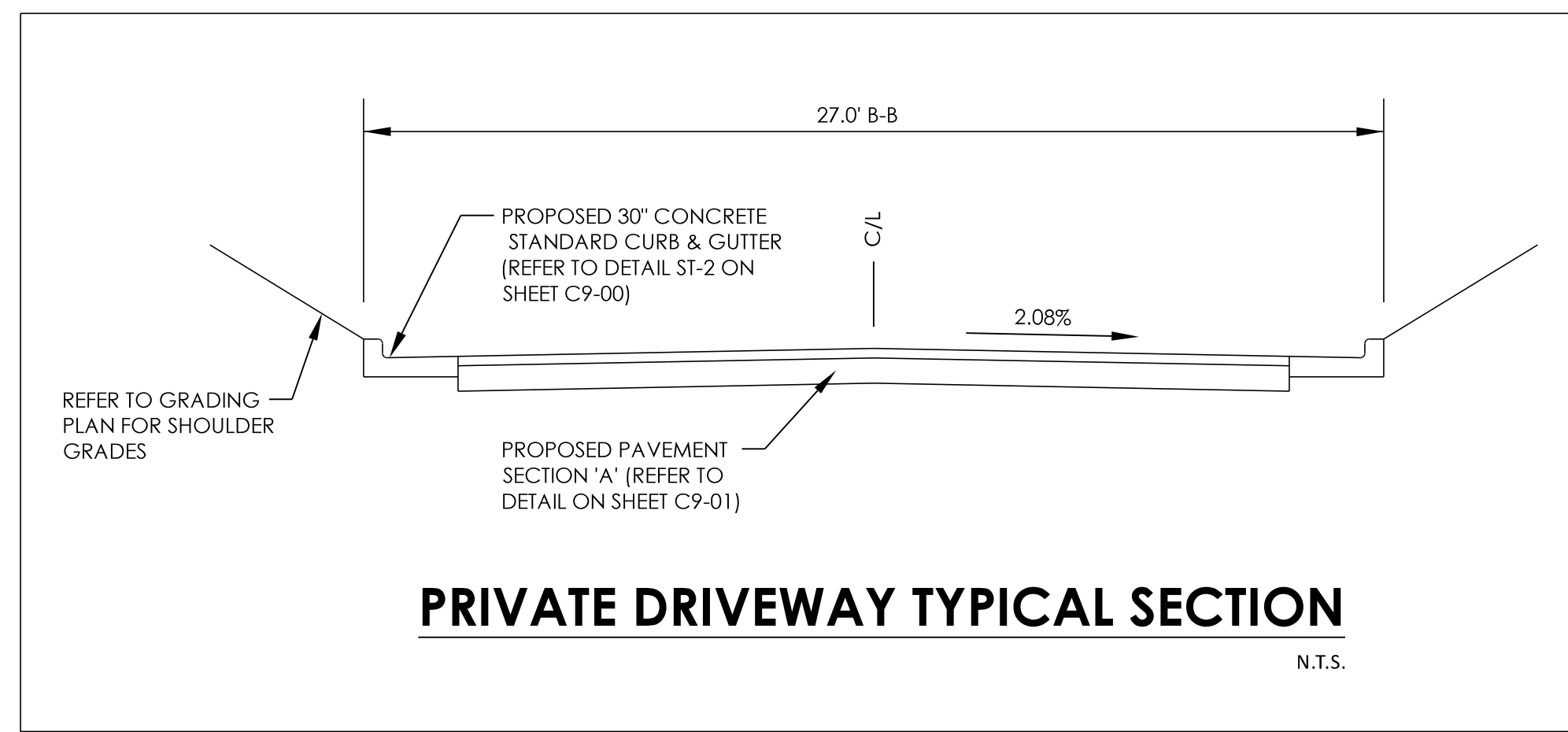
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KEY PLAN
NO SCALE

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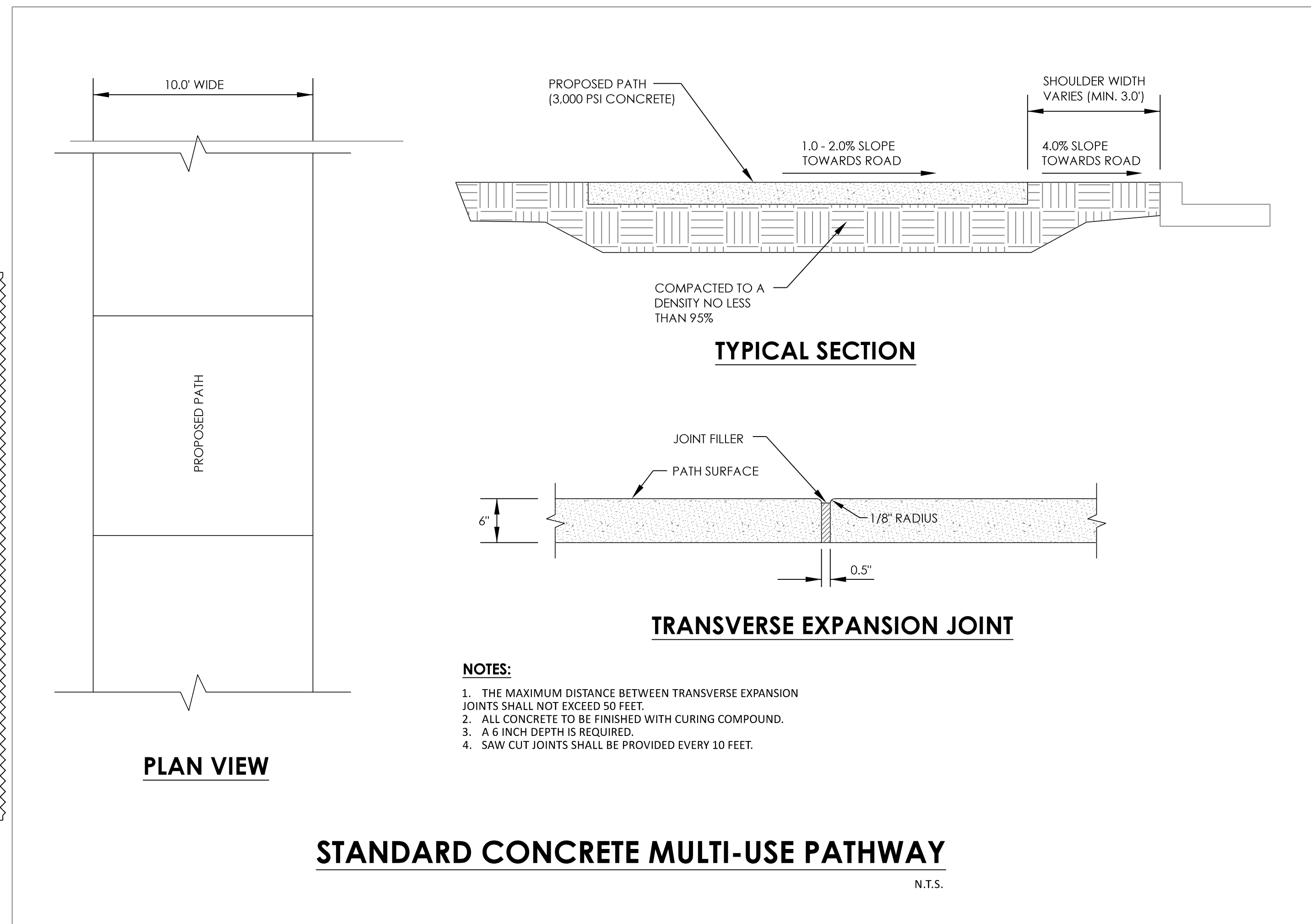
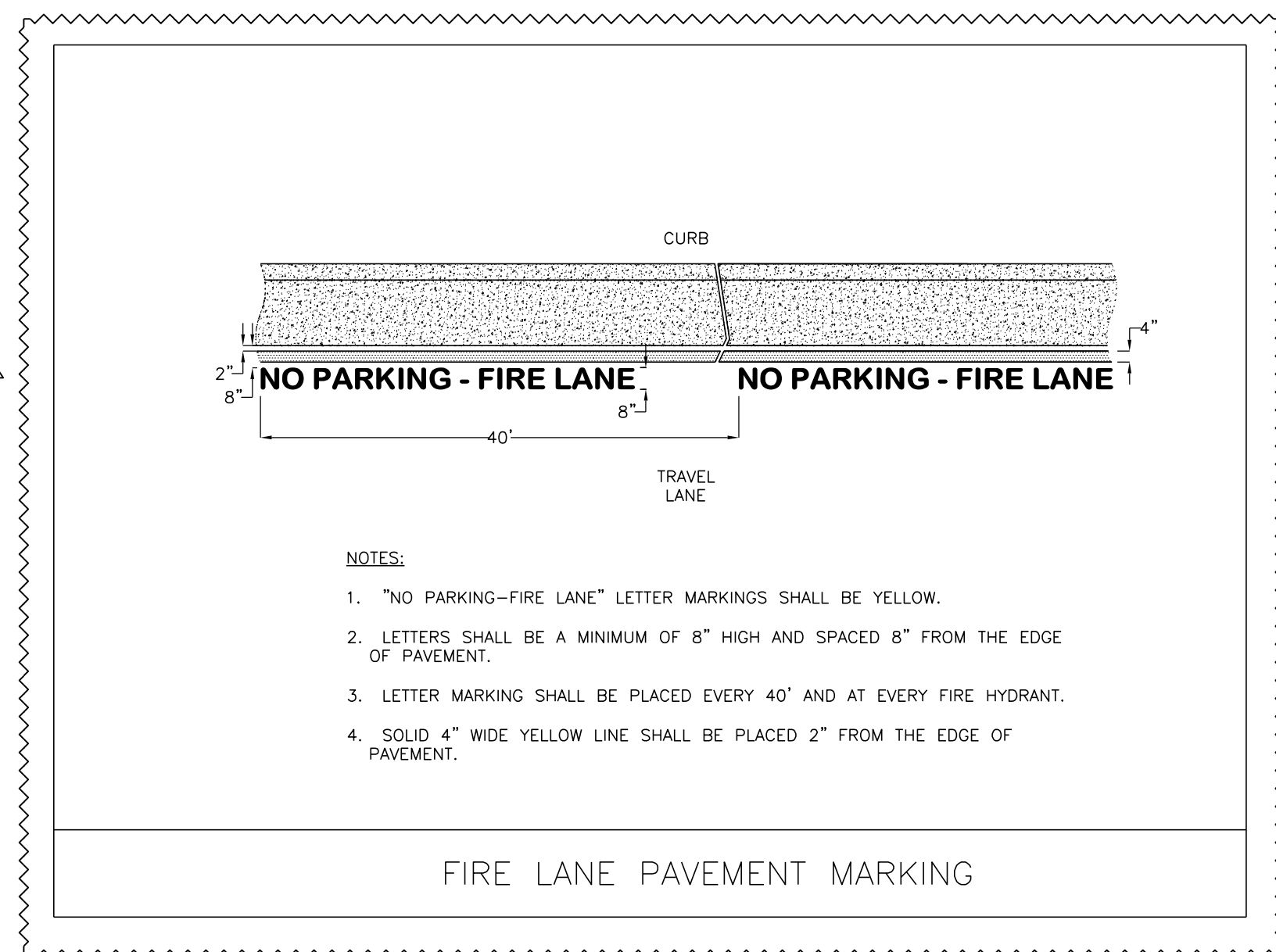
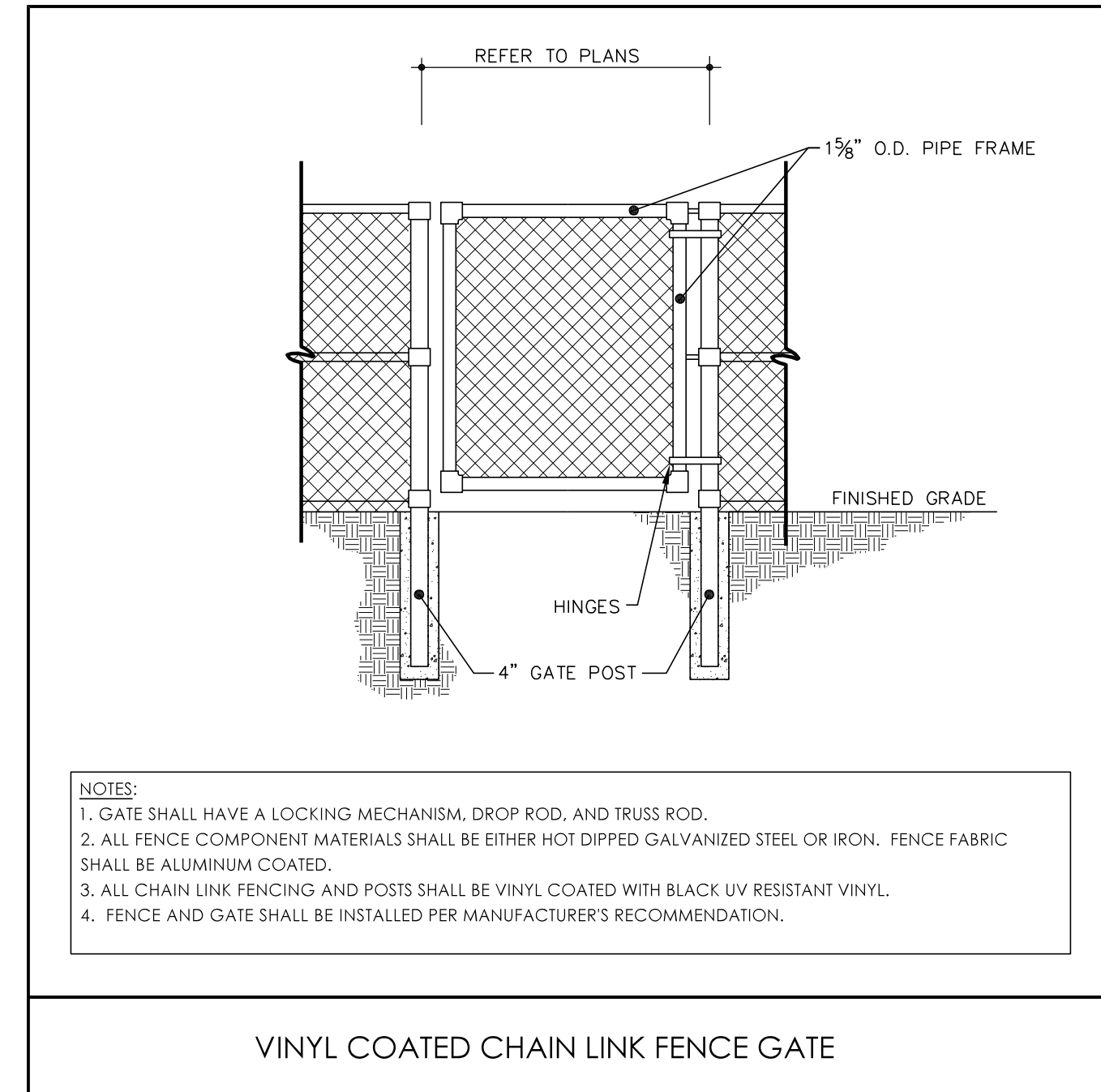
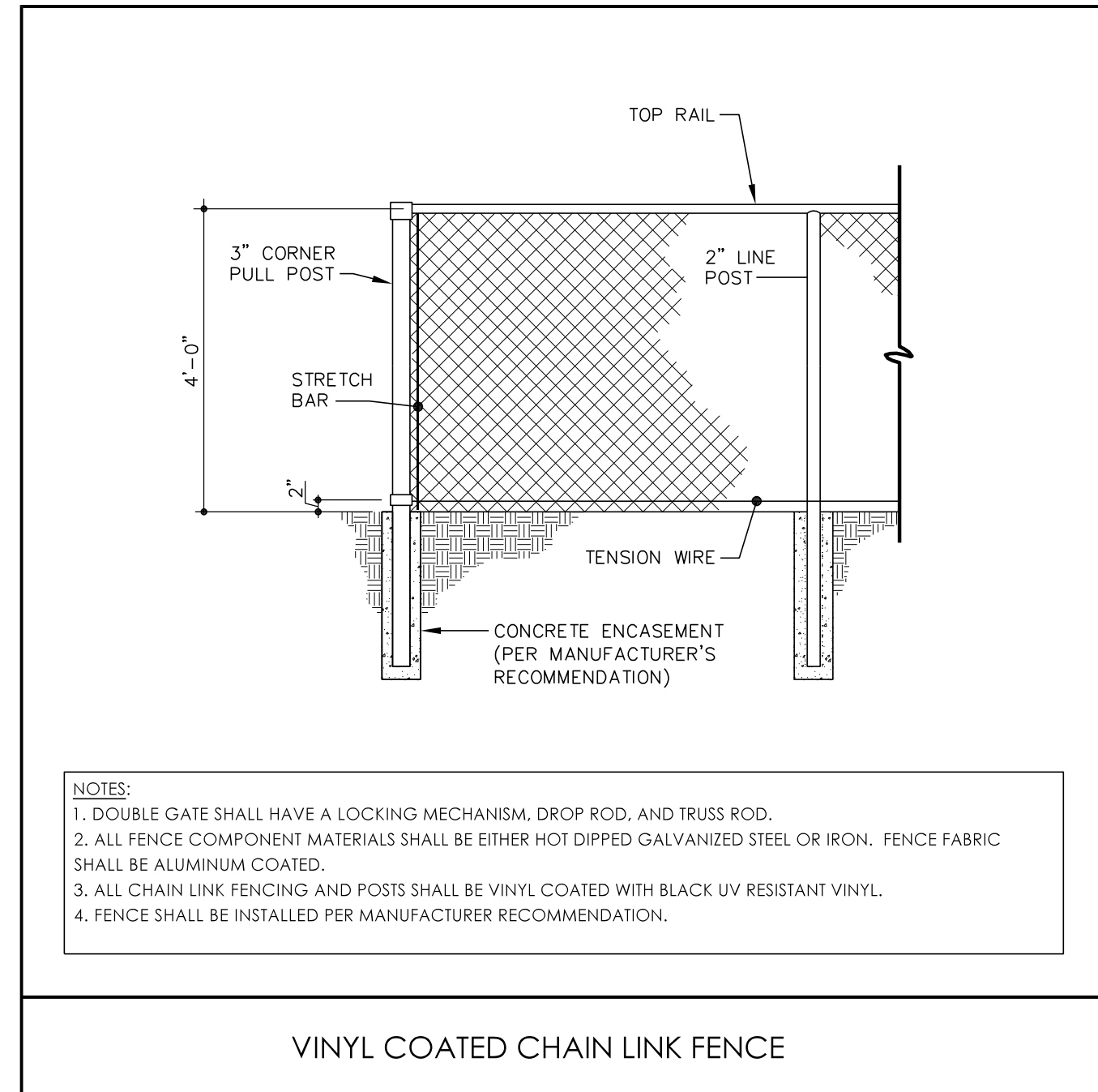
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SITE DETAILS



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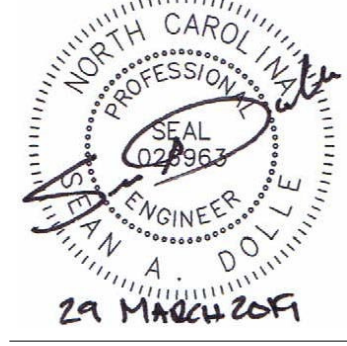
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Smith Sinnett Architecture, P.A. 2018

ORANGE COUNTY SOUTHERN HUMAN SERVICES CENTER
SEYMOUR CENTER RENOVATION AND ADDITION

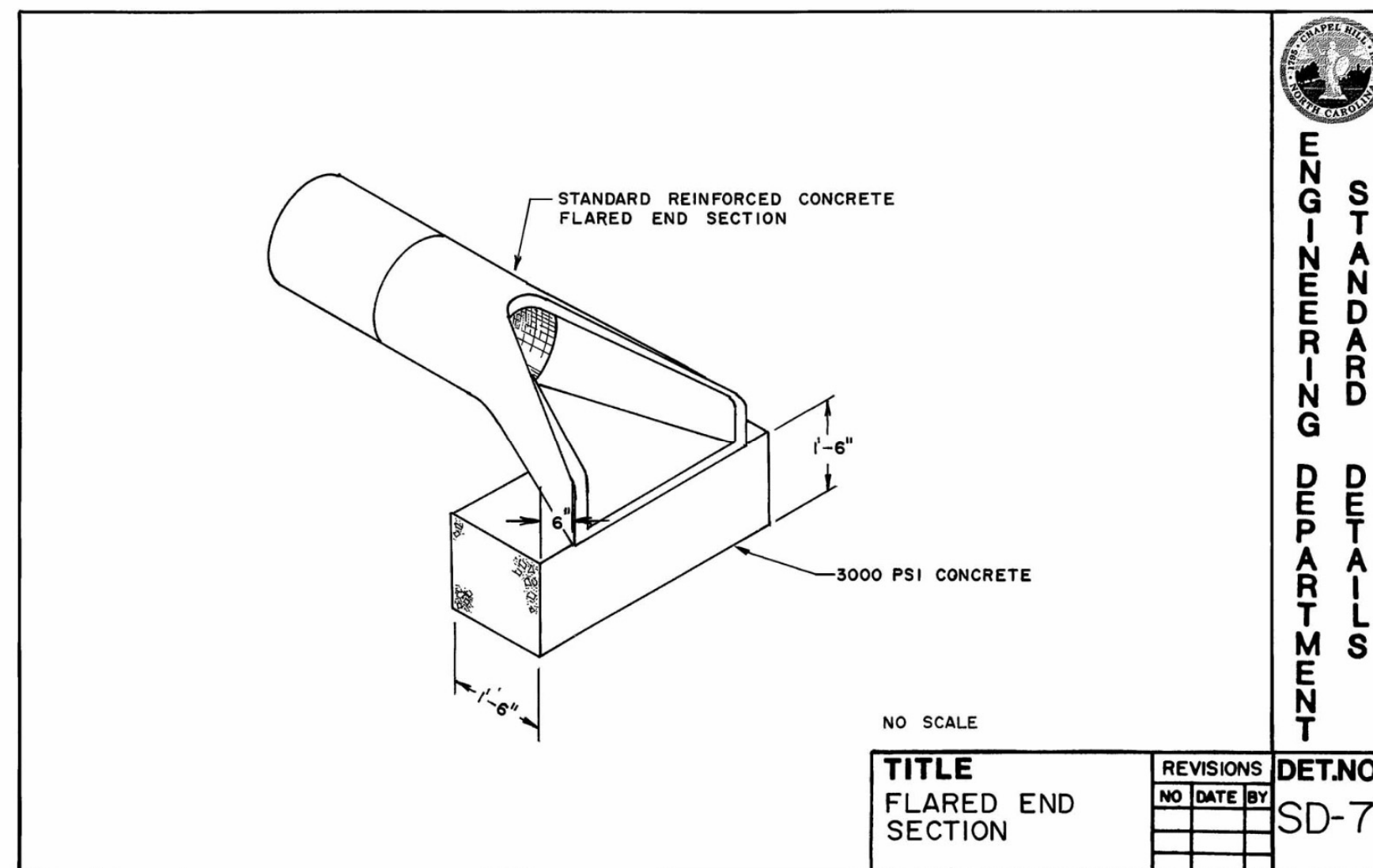
2551 Homestead Rd., Chapel Hill, NC. 27516

KEY PLAN
NO SCALE

ID	DATE	DESCRIPTION
3	03.29.2019	REV. PER AHJ REVIEW
2	03.19.2019	ISSUED FOR BID
1	02.22.2019	REV. PER AHJ REVIEW

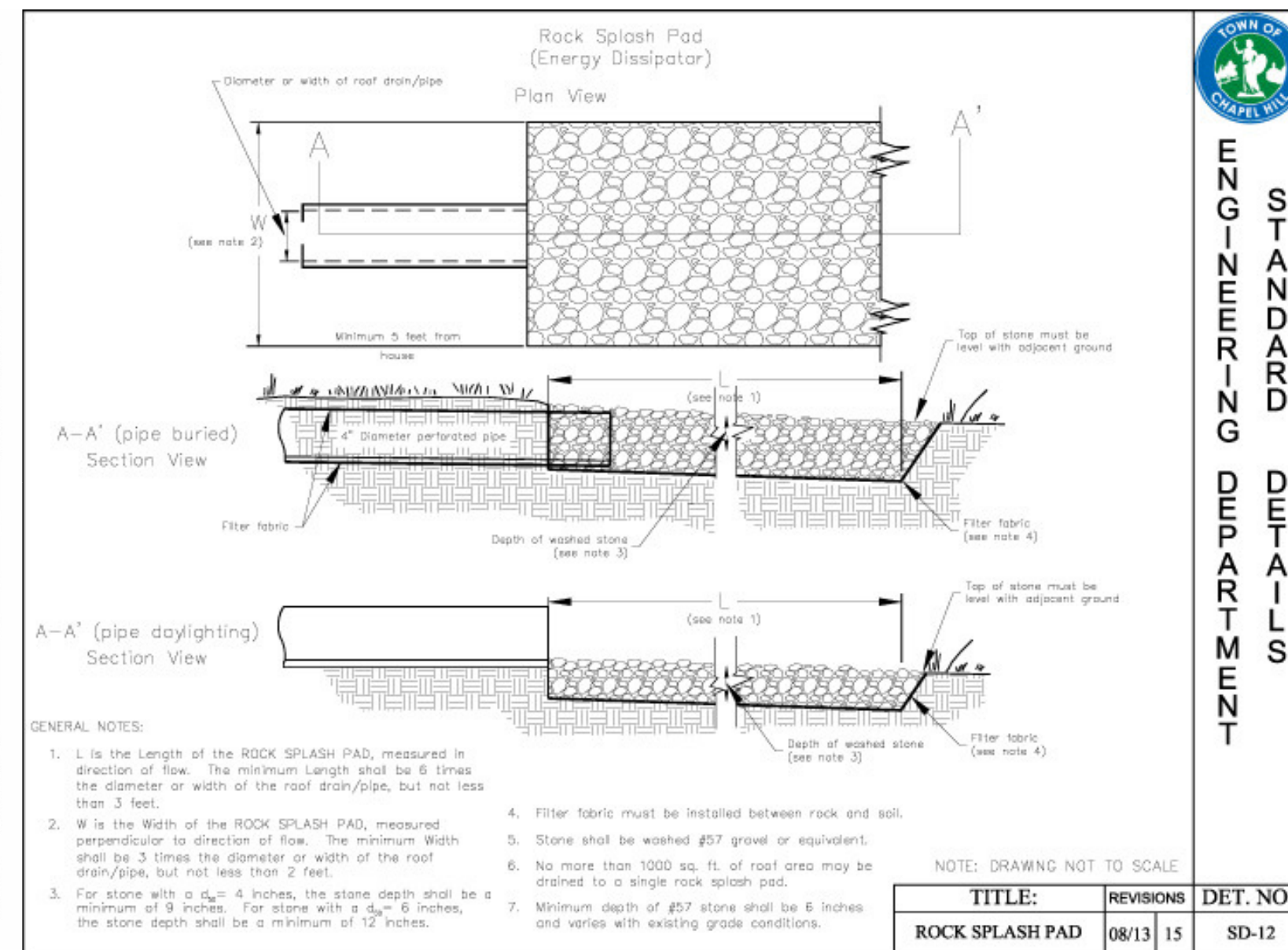
DRAWN BY: SAD
CHECKED BY: SAD

SITE DETAILS



TITLE FLARED END SECTION	REVISIONS	DET. NO. SD-7
	NO. DATE BY	

ENGINEERING DEPARTMENT
STANDARD DETAILS



GENERAL NOTES:

- L is the Length of the ROCK SPLASH PAD, measured in direction of flow. The minimum Length shall be 6 times the diameter or width of the rock drain/pipe, but not less than 3 feet.
- W is the Width of the ROCK SPLASH PAD, measured perpendicular to direction of flow. The minimum Width shall be 2 times the diameter or width of the rock drain/pipe, but not less than 2 feet.
- For stone with a d_{50} = 4 inches, the stone depth shall be a minimum of 9 inches. For stone with a d_{50} = 6 inches, the stone depth shall be a minimum of 12 inches.
- Filter fabric must be installed between rock and soil.
- Stone shall be washed #27 gravel or equivalent.
- No more than 1000 sq. ft. of roof area may be drained to a single rock splash pad.
- Minimum depth of #27 stone shall be 6 inches and varies with existing grade conditions.

NOTE: DRAWING NOT TO SCALE

TITLE:	REVISIONS	DET. NO.
ROCK SPLASH PAD	08/13 15	SD-12

ENGINEERING DEPARTMENT
STANDARD DETAILS

△ RIP-RAP DISSIPATOR PAD SCHEDULE

Structure	d_0 (ft)	Velocity (fps)	Length (ft)	Width (ft)	Depth (in)	Type	d_{50}
FES#01	1.25	7.00	5	4	9	Class 'A'	3" - 6"
FES#03	1.25	6.87	5	4	9	Class 'A'	3" - 6"
FES#05	2.00	9.96	12	6	22	Class 'B'	6" - 13"
FES#32	1.25	1.38	5	4	9	Class 'A'	3" - 6"

*Per NYDoT Dissipator Schedule Fig.1

DISSIPATOR PADS FOR FES#03, #05 AND #32 SHALL BE EXTENDED TO BE A MINIMUM OF 5' BEYOND THE TOE OF SLOPE AS SHOWN ON CONSTRUCTION PLANS.

ALL CONSTRUCTION SHALL CONFORM WITH TOWN OF CHAPEL HILL STANDARDS AND SPECIFICATIONS. ALL CONSTRUCTION INSIDE OF THE HOMESTEAD ROAD PUBLIC RIGHT-OF-WAY SHALL COMPLY WITH NCDOT STANDARDS AND SPECIFICATIONS. ALL PROPOSED WATER AND SANITARY SEWER CONSTRUCTION SHALL COMPLY WITH OWASA STANDARDS AND SPECIFICATIONS.

REFER TO SHEET C-001 FOR PROJECT AND SHEET RELATED NOTES.



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ORANGE COUNTY SOUTHERN HUMAN SERVICES CENTER
SEYMOUR CENTER RENOVATION AND ADDITION

2551 Homestead Rd., Chapel Hill, NC - 27516

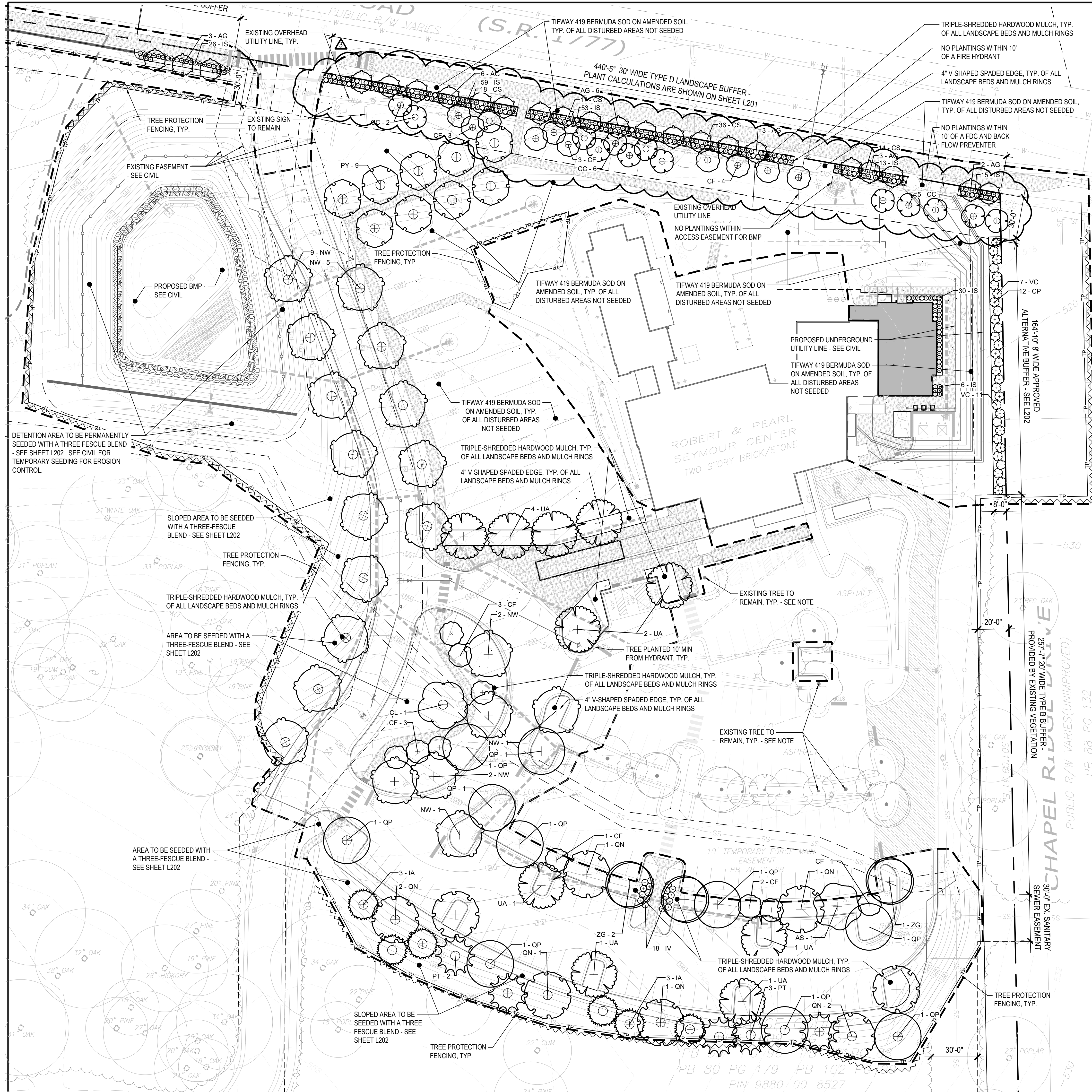
KEY PLAN
NO SCALE

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ID	DATE	DESCRIPTION
DRAWN BY:		SAD
CHECKED BY:		SAD

STORM
DRAINAGE
DETAILS

2017027 21 DEC 2018

C9-21



PLANT SCHEDULE SITE

TREES	QTY	BOTANICAL NAME	COMMON NAME	HEIGHT	CALIPER
AS	1	Acer rubrum 'Red Sunset'	Red Sunset Maple	10' - 12' HT.	2" CAL.
CF	11	Cercis canadensis 'Forest Pansy' TM	Forest Pansy Redbud	10' HT	---
CL	1	Cladrastis lutea	American Yellowwood	10' - 12' HT.	2" CAL.
IA	6	Ilex opaca	American Holly	8' - 10' HT.	2" CAL.
NW	20	Nyssa sylvatica 'Wildfire'	Black Gum	8' - 10' HT.	2" CAL.
PT	5	Pinus taeda	Loblolly Pine	8' - 10' HT.	2" CAL.
PY	9	Prunus x yedoensis	Yoshino Cherry	8' - 10' HT.	2" CAL.
QN	8	Quercus nuttallii	Nuttall Oak	10' - 12' HT.	2" CAL.
QP	10	Quercus phellos	Willow Oak	10' - 12' HT.	2" CAL.
UA	10	Ulmus parvifolia 'Allee'	Allee Lacebark Elm	10' - 12' HT.	2" CAL.
ZG	3	Zelkova serrata 'Green Vase'	Sawleaf Zelkova	10' - 12' HT.	2" CAL.

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	HEIGHT	SPREAD
CP	12	Camellia japonica 'Pink Perfection'	Pink Perfection Camellia	36" MIN.	36" MIN.
IS	36	Ilex glabra 'Shamrock'	Inkberry	18" MIN.	18" MIN.
IV	18	Ilex vomitoria 'Schillings'	Schillings Holly	18" MIN.	18" MIN.
VC	18	Viburnum awabuki 'Chindo'	Chindo Viburnum	36" MIN.	36" MIN.

BMP PLANT SCHEDULE

	BMP SHALLOW LAND PLANTINGS	1,146 sf		
	Asclepias incarnata / Swamp Milkweed	100	6" HT.	33% @ 24" oc
	Full, Dense			
	Eupatoriadelphus fistulosus / Trumpetweed	100	6" HT.	33% @ 24" oc
	Full, dense			
	Hibiscus coccineus / Scarlet Rosemallow	100	6" HT.	33% @ 24" oc
	Full, dense			
	BMP SHALLOW WATER PLANTINGS	1,078 sf		
	Pontederia cordata / Pickerel Weed	94	6" HT.	33% @ 24" oc
	Full, dense			
	Saururus cernuus / Lizard's Tail	94	6" HT.	33% @ 24" oc
	Full, Dense			
	Scirpus acutus / Hardstem Bulrush	94	6" HT.	33% @ 24" oc
	Full, dense			

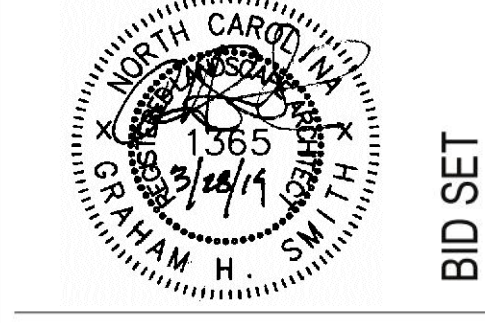
- NOTE:**
- THE VEGETATIVE SHELF SHALL BE PLANTED WITH A MINIMUM OF THREE DIVERSE SPECIES OF HERBACEOUS, NATIVE VEGETATION AT A MINIMUM DENSITY OF 50 PLANTS PER 200 SQUARE FEET OF SHELF AREA
 - EXISTING TREES SHOWN AS SYMBOLS ON THE PLAN ARE TAKEN FROM PREVIOUS PLANTING PLANS AND MAY NOT REFLECT ACTUAL LOCATIONS, TYPE, AND QUANTITY ON SITE. THESE TREES SHOULD BE USED AS REFERENCE ONLY WHEN SITING ADDITIONAL TREES AND SHRUBS NEARBY. CONTRACTOR TO FIELD VERIFY PRIOR TO PLANTING.
 - ADDITIONAL PLANT INFORMATION CAN BE FOUND ON SHEET L202



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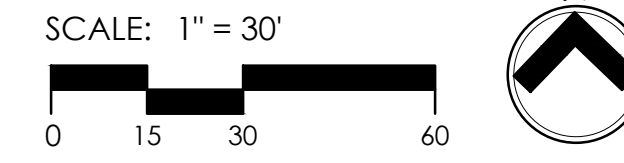
ORANGE COUNTY SOUTHERN HUMAN SERVICES CENTER SEYMOUR CENTER RENOVATION AND ADDITION
 2551 Homestead Rd, Chapel Hill, NC. 27516

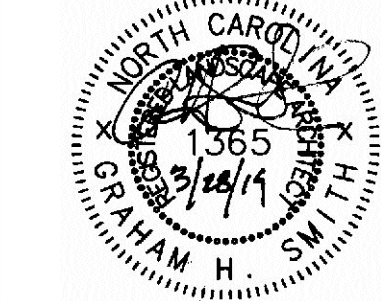
KEY PLAN
 NO SCALE

3	03.29.2019	REV. PER AHJ REVIEW
2	03.18.2019	ISSUED FOR BID
1	02.22.2019	REV. PER AHJ REVIEW

ID DATE DESCRIPTION
 DRAWN BY: JEA
 CHECKED BY: GHS

PLANTING PLAN (SITE)
 2017027 21 DEC 2018
 L200





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ORANGE COUNTY SOUTHERN HUMAN SERVICES CENTER
SEYMOUR CENTER RENOVATION AND ADDITION
2551 Homestead Rd, Chapel Hill, NC. 27516

KEY PLAN
NO SCALE

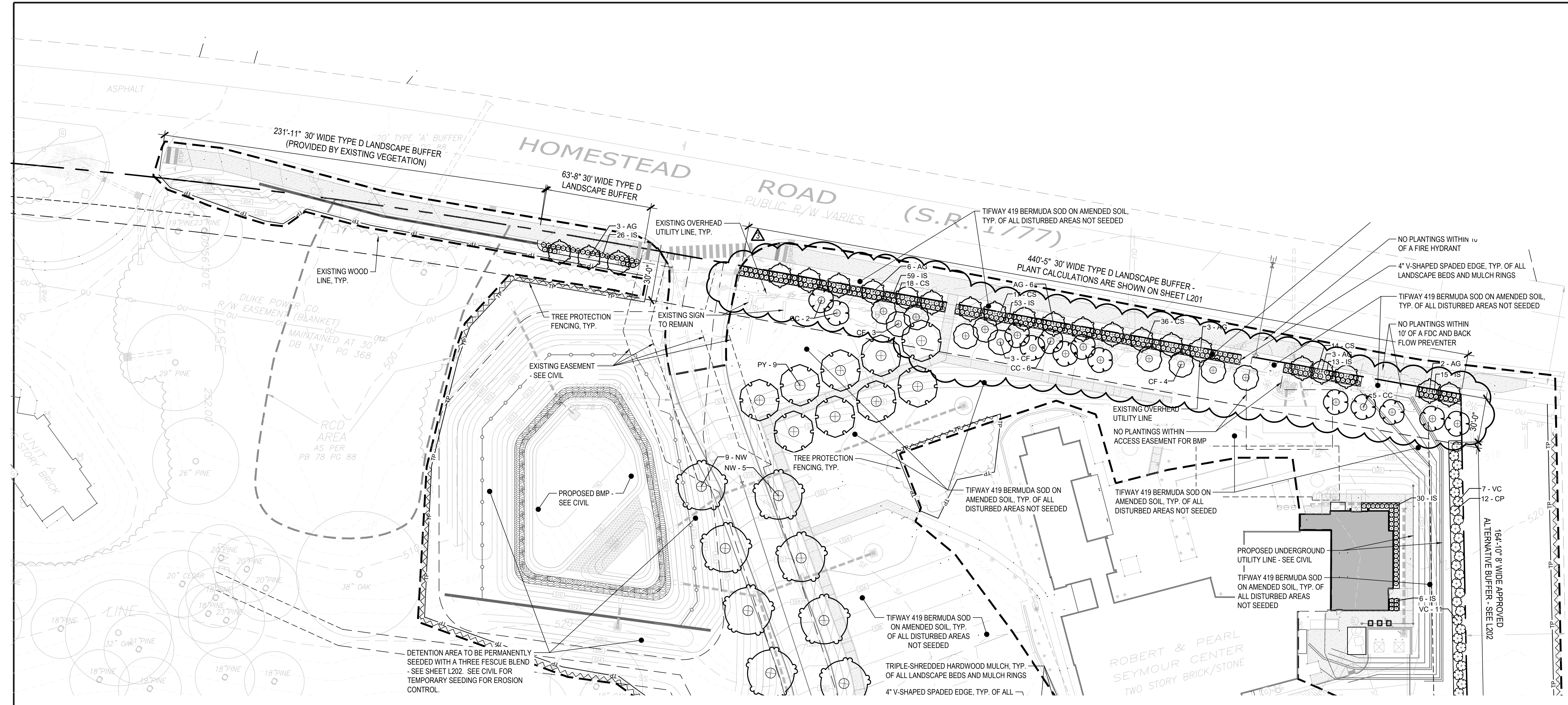
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3	03.29.2019	REV. PER AHJ REVIEW
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DRAWN BY: JEA
CHECKED BY: GHS

PLANTING PLAN
(STREET)

2017027 21 DEC 2018

L201



PLANT SCHEDULE STREET

TREES	QTY	BOTANICAL NAME	COMMON NAME	HEIGHT	CALIPER AT DBH	B&B OR CONT.	REMARKS
AG	23	Amelanchier x grandiflora 'Autumn Brilliance'	'Autumn Brilliance' Serviceberry	10' HT	---	B & B	Strong, central leader; Single trunk
CF	10	Cercis canadensis 'Forest Pansy'™	Forest Pansy Redbud	10' HT	---	B & B	Strong, central leader
CC	13	Cornus florida 'Cherokee Sunset'	Eastern Dogwood	10' HT	---	B & B	Strong central leader
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	HEIGHT	SPREAD	B&B OR CONT.	REMARKS
CS	85	Clethra alnifolia 'Sixteen Candles'	Summersweet Clethra	18" MIN	18" MIN.	CONTAINER	Full, Dense
IS	166	Ilex glabra 'Shamrock'	Inkberry	18" MIN.	18" MIN.	CONTAINER	Full, Dense

NOTE:
1. EXISTING TREES SHOWN AS SYMBOLS ON THE PLAN ARE TAKEN FROM PREVIOUS PLANTING PLANS AND MAY NOT REFLECT ACTUAL LOCATIONS, TYPE, AND QUANTITY ON SITE. THESE TREES SHOULD BE USED AS REFERENCE ONLY WHEN SITING ADDITIONAL TREES AND SHRUBS NEARBY. CONTRACTOR TO FIELD VERIFY PRIOR TO PLANTING.

LANDSCAPE REQUIREMENTS

BUFFERS:
Northern Property Line (Homestead Rd.)
Required: 30' Type D 504' of combined frontage (232' of frontage provided by wall and existing vegetation)
6 Large Trees @ 2' Cal. / 100 LF = 30 Trees*
12 Small Trees @ 5' HT / 100 LF = 60 Trees
40 Shrubs @ 18" HT / 100 LF = 202 Shrubs
Provided: 46 Small Trees @ 10' HT + 251 Shrubs @ 18" HT
Note: Minimum 50% of shrubs are evergreen

Eastern Property Line
Required: 20' Type B**
Provided: 30 Large Evergreen Shrubs

Southern Property Line
Required: 20' Type C
Provided: Buffer provided by existing vegetation

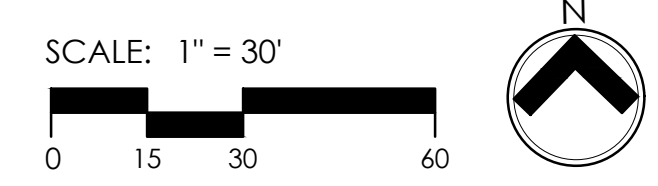
Western Property Line
Required: 20' Type B
Provided: Buffer provided by existing vegetation

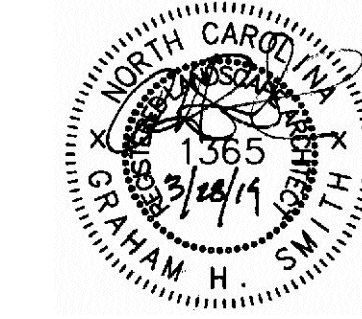
* Due to overhead utility line, the small canopy trees are substituted for large canopy trees

** The noted portion of the Eastern buffer on the plan is an 8' wide 6' high Alternative Buffer approved by the Community Design Commission (CDC) on June 26, 2018

CANOPY COVERAGE:
Total Lot Acreage = 33.2 acres
Net Lot Acreage = 31.0 acres
Required Canopy Coverage (40%) = 12.4 acres
Existing Canopy to be Protected = 16.9 acres
Trees Required = N/A
Proposed Trees = N/A

PARKING LOT SHADING:
Total Parking Area = 71,290 sf
Trees Required: 1 Tree / 2000 sf = 36 trees
Trees Provided: 41 (31 proposed + 10 existing)





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SEYMOUR CENTER RENOVATION AND ADDITION
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NO SCALE

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CHECKED BY:		GHS

PLANTING NOTES &
DETAILS

PLANTING NOTES

- ROUGH GRADING TO BE COMPLETED PRIOR TO THE START OF PLANT INSTALLATION. SUBSTANTIAL COMPLETION SIGN-OFF BY LANDSCAPE ARCHITECT CONTRACTOR TO ENSURE NO CHANNELIZED FLOWS AROUND THE SITE.
- CONTRACTOR RESPONSIBLE FOR LOCATING ALL UTILITIES AND UNDERGROUND IMPEDIMENTS PRIOR TO BEGINNING PLANTING.
- ALL WEEDS, NON-NATIVE INVASIVE SPECIES, AND EXOTIC SPECIES LOCATED WITHIN THE PROJECT CONTRACTOR LIMITS SHALL BE ELIMINATED PRIOR TO PLANTING BED CREATION, PLANTING, AND SEEDING/SODDING OPERATIONS.
- PLANTING SHOULD OCCUR IMMEDIATELY AFTER CONSTRUCTION TO STABILIZE AREAS OF BARE SOIL.
- IT SHALL BE NOTED THAT ALL SECTIONS OF THE SITE THAT ARE SLOPED 3:1 OR HIGHER WILL BE COVERED WITH EROSION CONTROL STABILIZATION COIR FABRIC (WITH 1" SQUARE OPENINGS) PRIOR TO PLANTING TO ENSURE IMMEDIATE STABILIZATION. LANDSCAPE CONTRACTOR SHALL CUT FABRIC AT EACH PLANT LOCATION AND PLACE PLANTS ACCORDING TO PLAN. ALL FABRIC SHALL BE RE-STAKED PER ENGINEERS ORIGINAL DRAWINGS IMMEDIATELY AFTER PLANTING.
- PLANTS ARE TO BE PURCHASED BY SCIENTIFIC NAMES. THEY SHALL BE REPRESENTATIVE OF THEIR SPECIES. MEET ALL NOTED CONDITIONS OF SPECIFICATIONS, AND SHALL BE IN VIGOROUS GROWING CONDITION MEETING ANSI STANDARD Z60.
- LANDSCAPE ARCHITECT OR OWNER MAINTAINS RIGHT TO REJECT ANY PLANT DUE TO AESTHETICS OR STRUCTURAL DEFICIENCY AT ANY TIME.
- CONTRACTOR RESPONSIBLE FOR FURNISHING AND INSTALLING ALL PLANTS SHOWN ON PLANS IN LOCATIONS SHOWN. QUANTITIES GIVEN ON THE PLANT LEGEND ARE FOR CONTRACTOR'S CONVENIENCE ONLY. IF DISCREPANCIES OCCUR, THE PLANS SHALL OVERRULE THE PLANT LEGEND. CONTRACTOR SHALL LOCATE ALL PLANTS AWAY FROM KNOWN PERMANENT FIXTURES. IF CONFLICT ARISES WITH PLAN, CONTRACTOR SHALL NOTIFY PROJECT MANAGER OR DESIGNEE PRIOR TO PROCEEDING.
- ALL PLANT MATERIAL SHALL CONFORM TO OR EXCEED THE AMERICAN STANDARD FOR NURSERY STOCK (LATEST EDITION) AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
- ALL PLANT MATERIAL SHALL BE FREE OF ALL PESTS, DISEASES, AND CANKERS, IN HEALTHY CONDITION, AND FREE OF MECHANICAL DAMAGE AT THE TIME OF PLANTING.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE A HEALTHY AND VIABLE PLANT AND THE PLANT SHALL BE REJECTED IF DEEMED UNHEALTHY OR UNFIT AT ANY TIME DURING THE CONTRACT OR WARRANTY DURATION.
- IF ANY PLANT/MATERIAL SUBSTITUTIONS ARE REQUESTED BY CONTRACTOR, THEN NOTICE SHALL BE GIVEN TO PROJECT MANAGER OR DESIGNEE AT MINIMUM SEVENTY-TWO (72) HOURS (NOT INCLUDING WEEKENDS) PRIOR TO DESIRED ORDERING DATE/TIME. WHEN SUBSTITUTIONS ARE REQUESTED BY CONTRACTOR, SUGGESTED ACCEPTABLE REPLACEMENTS SHALL ALSO BE PRESENTED AT TIME FOR FULL AND COMPLETE REVIEW BY LANDSCAPE ARCHITECT OR OWNER.
- BALLED AND BURLAPPED PLANTS/TREES TO BE PLANTED PRIOR TO CONTAINER OR BEDDING PLANTS.
- BALLED AND BURLAPPED MATERIAL SHALL COMPLY WITH THE FOLLOWING GUIDELINES:
 - TREES DESIGNATED B&B SHALL BE PROPERLY DUG WITH FIRM, NATURAL BALLS OF SOIL RETAINING AS MANY FIBROUS ROOTS AS POSSIBLE, IN SIZES AND SHAPES AS SPECIFIED IN THE AMERICAN STANDARD FOR NURSERY STOCK ANSI Z60.1.
 - ROOT BALLS SHALL BE FIRMLY WRAPPED WITH NONSYNTHETIC, ROTTABLE BURLAP AND SECURED WITH NAILS AND HEAVY, NONSYNTHETIC TWINE.
 - ROOT COLLAR SHALL BE APPARENT AT SURFACE OF BALL, OR THE CONTRACTOR WILL BE RESPONSIBLE FOR REMOVING EXCESS SOIL FROM THE TOP OF THE ROOTBALL.
 - REMOVE ALL BURLAP, LACING, AND WIRE BASKET FROM AT LEAST THE TOP 1/2 OF THE ROOTBALL AND DISCARD FROM PLANTING HOLE.
 - DO NOT MANUEVER BY TRUNK. HANDLE BY ROOT BALL ONLY.
- CONTAINERIZED PLANTS SHALL COMPLY WITH THE FOLLOWING GUIDELINES:
 - MATERIAL SHALL HAVE FIRM, NATURAL BALLS OF SOIL RETAINING AS MANY FIBROUS ROOTS AS POSSIBLE, IN SIZES AND SHAPES AS SPECIFIED IN THE AMERICAN STANDARD FOR NURSERY STOCK ANSI Z60.1.
 - ROOT COLLAR SHALL BE APPARENT AT SURFACE OF BALL, OR THE CONTRACTOR WILL BE RESPONSIBLE FOR REMOVING EXCESS SOIL FROM THE TOP OF THE ROOTBALL.
 - REMOVE CONTAINER PRIOR TO PLANTING.
- TREES TO BE STAKED WILL BE DESIGNATED BY THE LANDSCAPE ARCHITECT. TREE STAKING FOR CANOPY AND LARGE EVERGREEN TREES SHALL NOT EXCEED 90 DAYS.
- PLANT BED PREPARATION:
 - ALL PLANT BEDS ARE TO RECEIVE A MINIMUM OF 4" OF APPROVED TOPSOIL FILLED IN TO A DEPTH OF 8" TO ENSURE INTEGRATION WITH EXISTING SOIL.
 - APPROVED TOPSOIL IS TO BE PREFERABLY FROM ON-SITE STOCKPILE FROM STRIPPING OPERATIONS - SEE EROSION AND SEDIMENT CONTROL PLANS.
 - IF ON-SITE TOPSOIL IS NOT AVAILABLE, CONTRACTOR SHALL PROVIDE TO SITE ACCORDINGLY.
 - ALL MULCH TO BE CERTIFIED TO BE FREE OF WEEDS, NON-NATIVE INVASIVE SPECIES AND THEIR LARVAE. MULCH SAMPLE SUBMITTAL SHALL BE PROVIDED TO LANDSCAPE ARCHITECT BEFORE SITE DELIVERY.

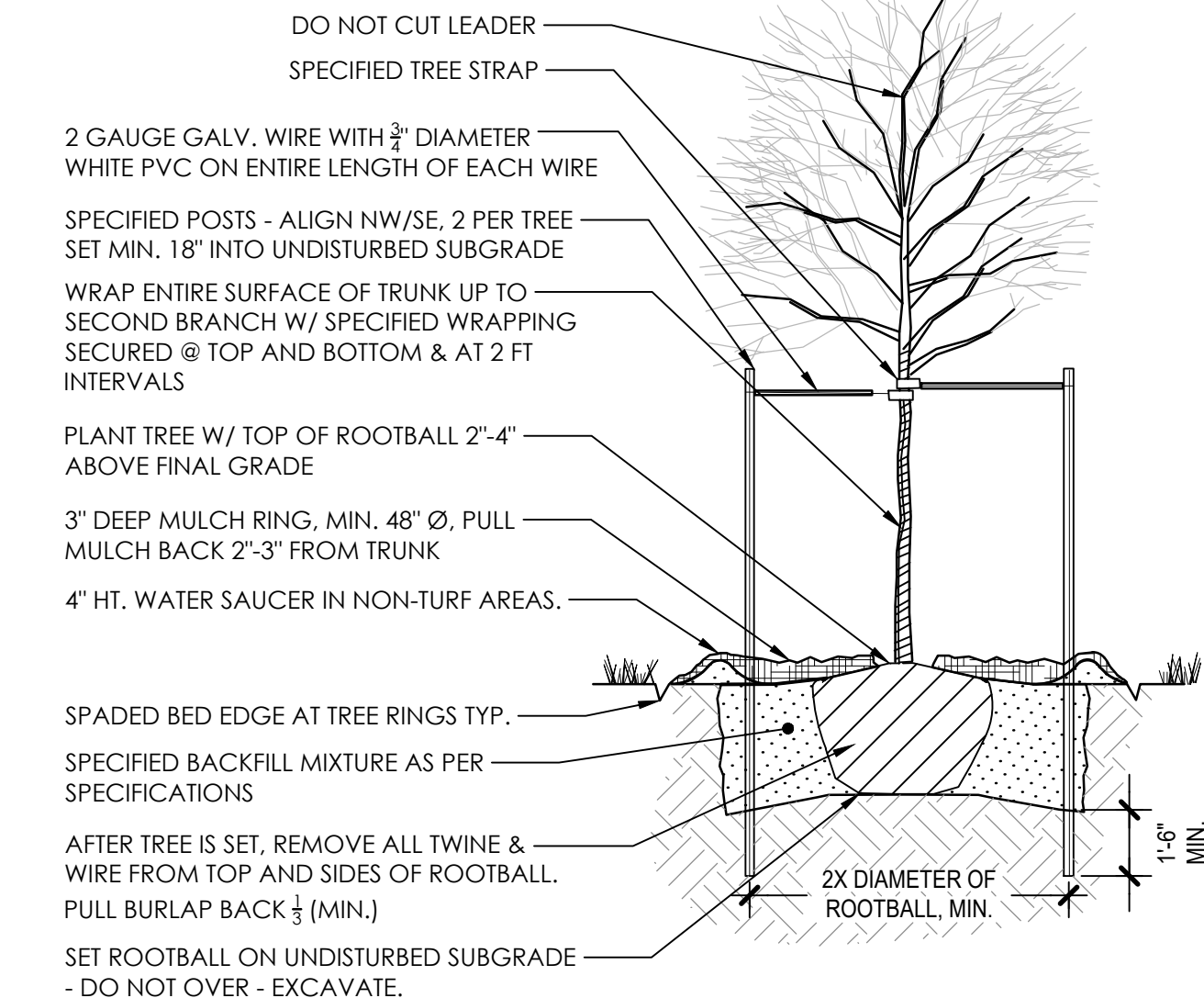
SEEDING/SODDING NOTES

- ROUGH GRADING TO BE COMPLETED PRIOR TO THE START OF PLANT INSTALLATION. SUBSTANTIAL COMPLETION SIGN-OFF BY LANDSCAPE ARCHITECT CONTRACTOR TO ENSURE NO CHANNELIZED FLOWS AROUND THE SITE.
- ALL SEEDED/SODDED AREAS SHALL BE FINISHED GRADE AT THE THICKNESS OF THE SOD.
- NO SEEDED/SODDED AREAS SHALL BE SODDED UNTIL ALL OTHER CONSTRUCTION ACTIVITIES, INCLUDING PLANTING AND MULCHING HAVE OCCURRED AND LANDSCAPE ARCHITECT HAVE REVIEWED THE FINAL GRADING.
- SOD AREAS WILL BE ACCEPTED WHEN IN COMPLIANCE WITH ALL THE FOLLOWING CONDITIONS:
 - ROOTS ARE THOROUGHLY KNIT TO THE SOIL
 - ABSENCE OF VISIBLE JOINTS
 - ALL AREAS SHOW A UNIFORM STAND OF SPECIFIED GRASS IN HEALTHY CONDITION
 - AT LEAST 30 DAYS HAVE ELAPSED SINCE THE COMPLETION OF WORK UNDER THIS SECTION.
- QUALITY GUARANTEE:
 - SOD SHALL BE UNIFORM IN COLOR, LEAF TEXTURE, LEAF AND ROOD DENSITY, AND FREE FROM WEED, DISEASES, AND OTHER VISIBLE IMPERFECTIONS AT TIME OF FINAL ACCEPTANCE. GUARANTEE DOES NOT COVER DAMAGE AS A RESULT OF FERTILIZERS, PESTICIDES, OR OTHER APPLICATIONS NOT SUPERVISED BY THE CONTRACTOR OR AS A RESULT OF ACTS OF GOD OR VANDALISM.
 - SEED SHALL BE UNIFORM IN COLOR, LEAF TEXTURE, LEAF AND ROOD DENSITY, AND FREE FROM WEED, DISEASES, AND OTHER VISIBLE IMPERFECTIONS AT TIME OF FINAL ACCEPTANCE. GUARANTEE DOES NOT COVER DAMAGE AS A RESULT OF FERTILIZERS, PESTICIDES, OR OTHER APPLICATIONS NOT SUPERVISED BY THE CONTRACTOR OR AS A RESULT OF ACTS OF GOD OR VANDALISM.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT THE SEED/SOD IS PROPERLY IRRIGATED DURING THE GROW-IN PERIOD AND SHALL BE RESPONSIBLE IF THE SOD SUFFERS IRREPARABLE HARM.
- SEED/SOD IS SUBJECT TO INSPECTION AND ACCEPTANCE. LANDSCAPE ARCHITECT AND/OR CLIENT RESERVES THE RIGHT TO REJECT AT ANY TIME OR PLACE PRIOR TO ACCEPTANCE, ANY WORK AND SOD WHICH IN THE LANDSCAPE ARCHITECTS OPINION FAILS TO MEET THESE SPECIFICATIONS REQUIREMENTS.
- SOD STANDARDS:
 - GENERAL: HEALTHY, THICK TURF HAVING UNDERGONE A PROGRAM OF REGULAR FERTILIZATION, MOWING AND WEED CONTROL; FREE OF OBJECTABLE WEEDS; UNIFORM IN GREEN COLOR, LEAF TEXTURE AND DENSITY; HEALTHY, VIGOROUS ROOT SYSTEM; INSPECTED AND FOUND FREE OF DISEASE, NEMATODES, PEST AND PEST LARVAE BY THE ENTOMOLOGIST OF THE STATE DEPARTMENT OF AGRICULTURE.
 - EACH PIECE OF SOD: SANDY-LOAM SOIL BASE THAT WILL NOT BREAK, CRUMBLE OR TEAR DURING SOD INSTALLATION.
 - THICKNESS: MINIMUM 3/4" THICK, EXCLUDING THE TOP GROWTH THATCH.
 - THATCH: NOT TO EXCEED 1/2" UNCOMPRESSED.
 - SIZE: CUT IN STRIPS 18" WIDE NO MORE THAN 24 HOURS PRIOR TO DELIVERY.
- SOD DELIVERY, STORAGE AND HANDLING GUIDELINES ARE AS FOLLOWS:
 - SOD SHALL BE DELIVERED ON PALLETS PROPERLY LOADED ON VEHICLES AND WITH ROOT SYSTEM PROTECTED FROM EXPOSURE TO SUN, WIND, AND HEAT IN ACCORDANCE WITH STANDARD PRACTICE AND LABELED WITH BOTANICAL AND COMMON NAME OF EACH GRASS SPECIES IN ACCORDANCE WITH FEDERAL SEED ACT. SOD THAT HAS BEEN DAMAGED BY POOR HANDLING OR IMPROPER STORAGE IS SUBJECT TO REJECTION BY THE LANDSCAPE ARCHITECT OR OWNER.
 - PROTECT FROM DEHYDRATION, CONTAMINATION, FREEZING AND HEATING AT ALL TIMES. KEEP STORED SOD MOIST AND UNDER SHADE OR COVERED WITH MOISTENED BURLAP.
 - DO NOT DROP SOD ROLLS FROM CARTS, TRUCKS OR PALLETS.
 - DO NOT DELIVER MORE SOD THAN CAN BE INSTALLED WITHIN 36 HOURS.
 - DO NOT STACK SOD MORE THAN 2 FEET DEEP.
- SEED/SODDED BED PREPARATION:
 - ALL DEBRIS, ROCKS, ETC. LARGER THAN 5" ARE TO BE REMOVED PRIOR TO SEEDING/SODDING OR PLANTING.
 - ALL AREAS TO BE SEEDED/SODDED ARE TO RECEIVE A MINIMUM OF 2" OF APPROVED TOPSOIL FILLED INTO A DEPTH OF 4" TO ENSURE INTEGRATION WITH EXISTING SOIL.
 - APPROVED TOPSOIL IS TO BE PREFERABLY FROM ON-SITE STOCKPILE FROM STRIPPING OPERATIONS - SEE EROSION AND SEDIMENT CONTROL PLANS.
 - IF ON-SITE TOPSOIL IS NOT AVAILABLE, CONTRACTOR SHALL PROVIDE TO SITE ACCORDINGLY.

1

TREE PLANTING

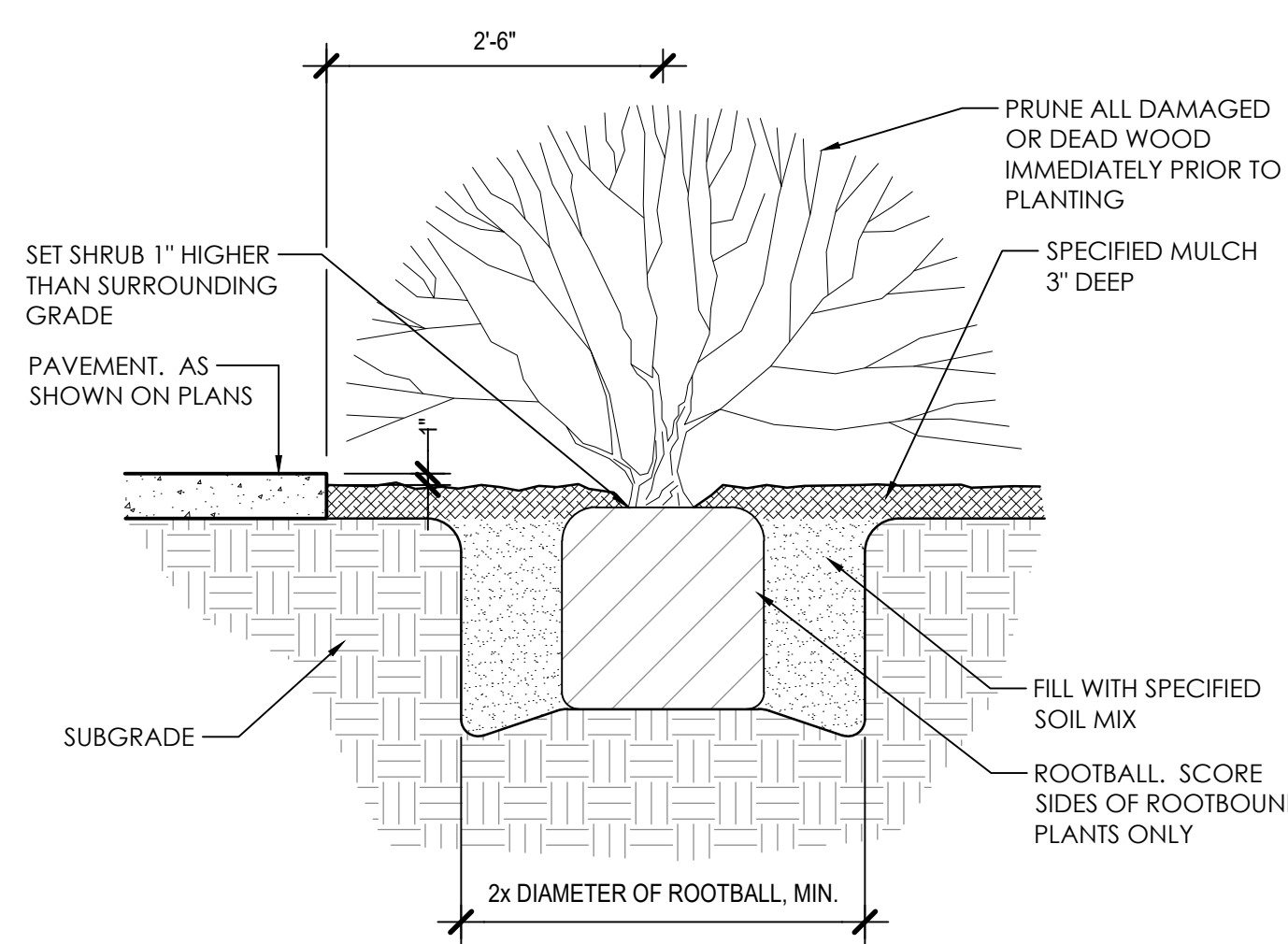
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2

SHRUB PLANTING

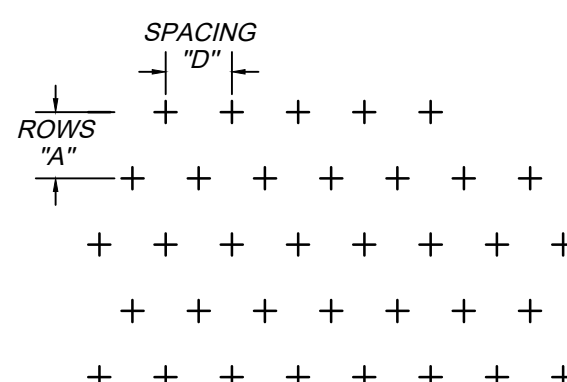
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3

TRIANGULAR SPACING FOR GROUNDCOVERS

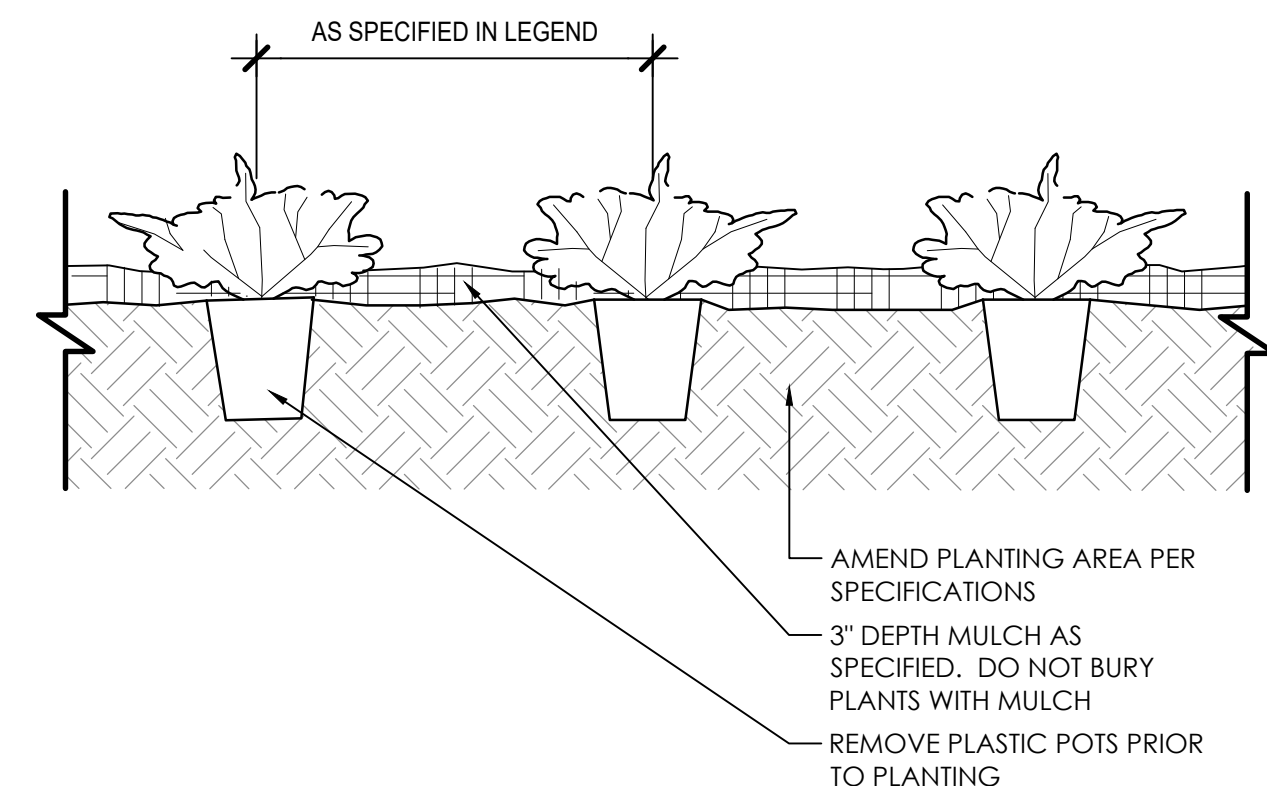
SCALE: NTS



4

PERENNIAL GROUNDCOVERS

SCALE: 1" = 1'-0"



PLANT SCHEDULE SITE

TREES	QTY	BOTANICAL NAME	COMMON NAME	HEIGHT	CALIPER AT DBH	B&B OR CONT.	REMARKS
AS	1	Acer rubrum 'Red Sunset'	Red Sunset Maple	10' - 12' HT.	2" CAL.	B & B	Strong, central leader
CF	11	Cercis canadensis 'Forest Pansy' TM	Forest Pansy Redbud	10' HT	---	B & B	Strong, central leader
CL	1	Cladrastis lutea	American Yellowwood	10' - 12' HT.	2" CAL.	B & B	Strong, central leader
IA	6	Ilex opaca	American Holly	8' - 10' HT.	2" CAL.	B & B	Full, Dense
NW	20	Nyssa sylvatica 'Wildfire'	Black Gum	8' - 10' HT.	2" CAL.	B & B	Strong, central leader
PT	5	Pinus taeda	Loblolly Pine	8' - 10' HT.	2" CAL.	CONTAINER	Straight, central trunk
PY	9	Prunus x yedoensis	Yoshino Cherry	8' - 10' HT.	2" CAL.	CONTAINER	Good crotch angles, wide spreading habit
QN	8	Quercus nuttallii	Nuttall Oak	10' - 12' HT.	2" CAL.	B & B	Strong, central leader
QP	10	Quercus phellos	Willow Oak	10' - 12' HT.	2" CAL.	B & B	Strong, central leader
UA	10	Ulmus parvifolia 'Allee'	Allee Lacebark Elm	10' - 12' HT.	2" CAL.	B & B	Strong, central leader
ZG	3	Zelkova serrata 'Green Vase'	Sawleaf Zelkova	10' - 12' HT.	2" CAL.	B & B	No split branches; good crotch angles
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	HEIGHT	SPREAD	B&B OR CONT.	REMARKS
CP	12	Camellia japonica 'Pink Perfection'	Pink Perfection Camellia	36" MIN.	36" MIN.	CONTAINER	Full, Dense
IS	36	Ilex glabra 'Shamrock'	Inkberry	18" MIN.	18" MIN.	CONTAINER	Full, Dense
IV	18	Ilex vomitoria 'Schillings'	Schillings Holly	18" MIN.	18" MIN.	CONTAINER	Full, Dense
VC	18	Viburnum awabuki 'Chindo'	Chindo Viburnum	36" MIN.	36" MIN.	CONTAINER	Full, Dense

PLANT SCHEDULE STREET

TREES	QTY	BOTANICAL NAME	COMMON NAME	HEIGHT	CALIPER AT DBH	B&B OR CONT.	REMARKS
AG	23	Amelanchier x grandiflora 'Autumn Brilliance'	'Autumn Brilliance' Serviceberry	10' HT	---	B & B	Strong, central leader; Single trunk
CF	10	Cercis canadensis 'Forest Pansy' TM	Forest Pansy Redbud	10' HT	---	B & B	Strong, central leader
CC	13	Cornus florida 'Cherokee Sunset'	Eastern Dogwood	10' HT	---	B & B	Strong central leader
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	HEIGHT	SPREAD	B&B OR CONT.	REMARKS
CS	85	Clethra alnifolia 'Sixteen Candles'	Summersweet Clethra	18" MIN.	18" MIN.	CONTAINER	Full, Dense
IS	166	Ilex glabra 'Shamrock'	Inkberry	18" MIN.	18" MIN.	CONTAINER	Full, Dense

NOTE:

- THE VEGETATIVE SHELF SHALL BE PLANTED WITH A MINIMUM OF THREE DIVERSE SPECIES OF HERBACEOUS, NATIVE VEGETATION AT A MINIMUM DENSITY OF 50 PLANTS PER 200 SQUARE FEET OF SHELF AREA

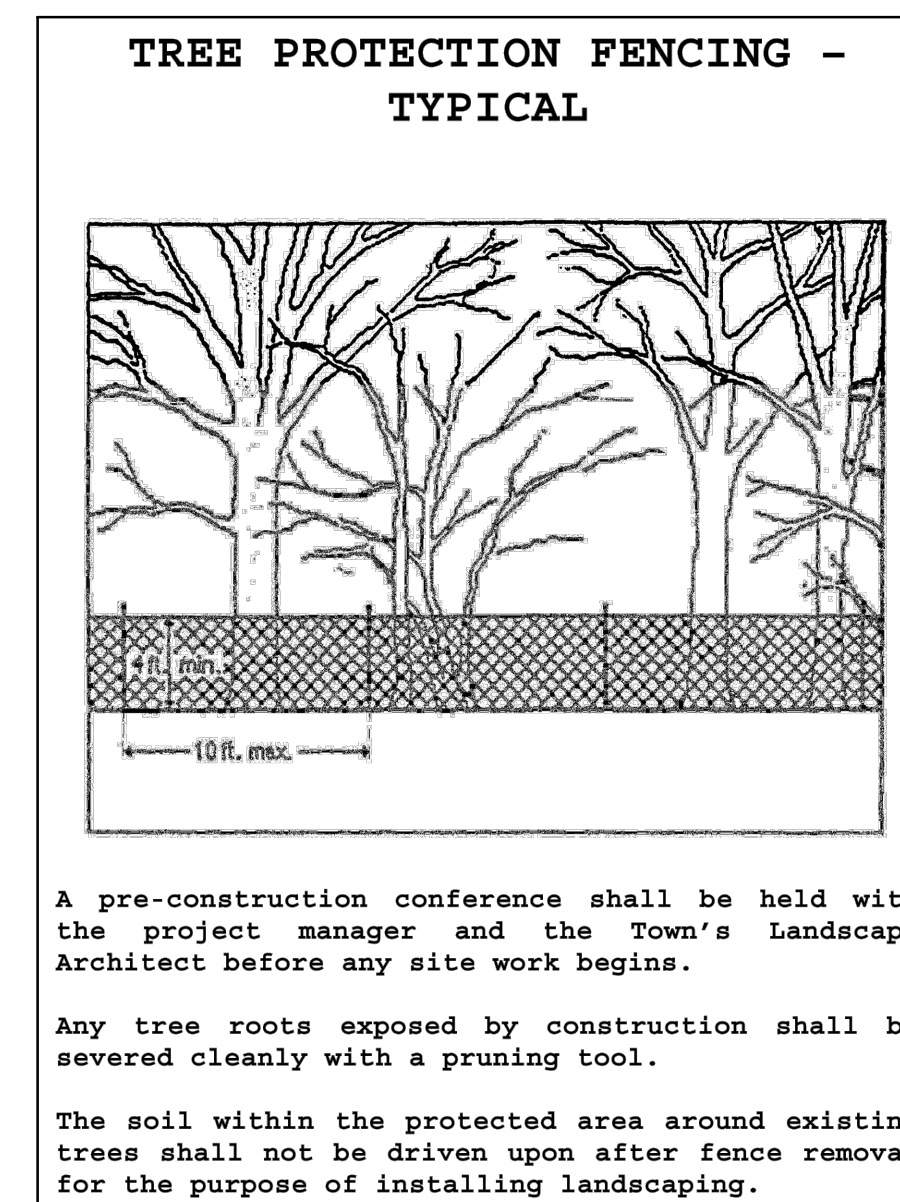
THREE-FESCUE SEED MIX
(ERNST SEED MIX #136 OR APPROVED EQUAL)

Application Rate: 7-10 lbs / 1,000 sf		
SCIENTIFIC NAME	COMMON NAME	% OF MIX
Festuca arundinacea 'Slingray'	Tall Fescue	34
Festuca arundinacea 'Ninja III'	Tall Fescue	33
Festuca arundinacea 'Raptor III'	Tall Fescue	33
***NOTE: SEED MIX MUST BE INSTALLED BETWEEN SEPTEMBER 15- APRIL 1 UNLESS OTHERWISE ALLOWED BY LANDSCAPE ARCHITECT.		
***NOTE: SEED MIX MAY ONLY BE APPLIED ONCE FINE GRADING IS COMPLETED.		

5

TREE PROTECTION FENCING & NOTES

SCALE: NTS





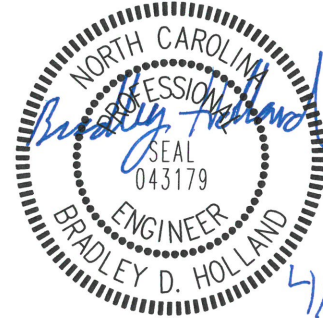
**Progressive Design Collaborative,
Ltd**

**3101 Poplarwood Court, Suite 320
Raleigh, North Carolina 27604
919-790-9989**

ADDENDUM 01

DATE: April 5, 2019

PROJECT: Orange County Southern Human Services Center
Seymour Center Renovation and Addition
PDC Project # 17100



This Addendum, applicable to the work designed below, shall be understood to be and is a change to the bid documents and shall be part of and included in the contract for the above referenced project. All General, Supplementary and Special Conditions, etc., as originally specified or as modified below shall apply to these items.

Changes to Specifications:

Changes to 28 46 00 Fire Detection and Alarm. Specification modified to show EST QuickStart as the existing Fire Alarm Panel manufacturer and require additional equipment be the same as installed

END OF ADDENDUM 01

Attachments:

Specification 28 46 00 Fire Detection and Alarm



pdcengineers.com

SECTION 28 46 00
FIRE DETECTION AND ALARM

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fire alarm system design and installation, including all components, wiring, and conduit.
- B. Replacement and removal of existing fire alarm system components, wiring, and conduit indicated.

1.02 REFERENCE STANDARDS

- A. NFPA 70 - National Electrical Code; National Fire Protection Association, Including All Applicable Amendments and Supplements; 2017.
- B. NFPA 72 - National Fire Alarm and Signaling Code; 2013
- C. NFPA 101 - Life Safety Code; 2015.

1.03 SCOPE

- A. Provide new devices and NAC panel to existing fire alarm system and verify system complete and fully functional. Contractor shall provide all parts and pieces required to achieve a fully functional system.

1.04 SUBMITTALS

- A. Proposal Documents: Submit the following with cost/time proposal:
 - 1. NFPA 72 "Record of Completion", filled out to the extent known at the time.
 - 2. Manufacturer's detailed data sheet for each control unit, initiating device, and notification appliance.
 - 3. Certification by Contractor that the system design will comply with the contract documents.
- B. Drawings must be prepared using the latest release of ACAD.
- C. Evidence of designer qualifications.
- D. Design Documents: Submit all information required for plan review and permitting by authorities having jurisdiction, including but not limited to floor plans, riser diagrams, and description of operation:
 - 1. NFPA 72 "Record of Completion", filled out to the extent known at the time.
 - 2. Clear and concise description of operation, with input/output matrix similar to that shown in NFPA 72 Appendix A-7-5-2.2(9), and complete listing of software required.
 - 3. System zone boundaries and interfaces to fire safety systems.
 - 4. Location of all components, circuits, and raceways; mark components with identifiers used in control unit programming.
 - 5. Circuit layouts; number, size, and type of raceways and conductors; conduit fill calculations; spare capacity calculations; notification appliance circuit voltage drop calculations.
 - 6. System response matrix.
 - 7. System riser diagram
 - 8. Battery calculations showing voltage drop after required standby time.
 - 9. List of all devices on each signaling line circuit, with spare capacity indicated.
 - 10. Manufacturer's detailed data sheet for each component, including wiring diagrams, installation instructions, and circuit length limitations.
 - 11. Description of power supplies; if secondary power is by battery include calculations demonstrating adequate battery power.
 - 12. Certification by either the manufacturer of the control unit or by the manufacturer of each other component that the components are compatible with the control unit.
 - 13. Certification by the manufacturer of the control unit that the system design complies with the contract documents.
 - 14. Certification by Contractor that the system design complies with the contract documents.
 - 15. Do not show existing components to be removed.
- E. Evidence of installer qualifications.
- F. Evidence of instructor qualifications; training lesson plan outline.

- G. Evidence of maintenance contractor qualifications, if different from installer.
- H. Inspection and Test Reports:
 - 1. Submit inspection and test plan prior to closeout demonstration.
 - 2. Submit documentation of satisfactory inspections and tests.
 - 3. Submit NFPA 72 "Inspection and Test Form," filled out.
- I. Operating and Maintenance Data: have one set available during closeout demonstration:
 - 1. Original copy of NFPA 72 with portions that are not relevant to this project neatly crossed out by hand; label with project name and date.
 - 2. Complete set of specified design documents, as approved by authority having jurisdiction.
 - 3. Additional printed set of project record documents and closeout documents, bound or filed in same manuals.
 - 4. List of recommended spare parts, tools, and instruments for testing.
 - 5. Replacement parts list with current prices, and source of supply.
 - 6. Detailed troubleshooting guide and large scale input/output matrix.
 - 7. Preventive maintenance, inspection, and testing schedule complying with NFPA 72; provide printed copy and computer format acceptable to Owner.
 - 8. Detailed but easy to read explanation of procedures to be taken by non-technical administrative personnel in the event of system trouble, when routine testing is being conducted, for fire drills, and when entering into contracts for remodeling.
- J. Project Record Documents: Have one set available during closeout demonstration:
 - 1. Complete set of floor plans showing actual installed locations of components, conduit, and zones.
 - 2. "As installed" wiring and schematic diagrams, with final terminal identifications.
 - 3. "As programmed" operating sequences, including control events by device, updated input/output chart, and voice messages by event.
 - 4. Graphic Chart mounted behind plexiglass and secured to wall at FACP and remote annunciator(s). Graphic chart shall indicate all fire alarm devices including the programmed addresses for each device. Frame shall not be removable with standard philips or flat head screw drivers.
 - 5. A copy of the floor plans with device numbers shall be provided in the control panel. Provide a separate sheet for each floor scaled to be on 11 x17 sheets. All devices shall be clearly labeled and a legend provided on the drawings. Indicate locations of cabinets, modules, and end of line devices. Plans shall be bound and sheets laminated. Provide plan holder in panel or in locked box adjacent to panel keyed to match panel.
 - 6. Provide CD copy of complete configuration data (site specific programming) for the system submitted to the engineer for distribution to the owner.
 - 7. Contractor shall provide the following to the owner
 - a. All software required, both for the installed fire alarm system and personal computer necessary to access the fire alarm system for trouble shooting, programming, modifications, monitoring, de-bugging, or similar functions.
 - b. Complete documentation for all software for both the installed fire alarm system and for any interface PC software necessary for the functions described above.
 - c. Interconnection cable where such is required to connect the fire alarm system to a PC.
- K. Closeout Documents:
 - 1. Certification by manufacturer that the system has been installed in compliance with manufacturer's installation requirements, is complete, and is in satisfactory operating condition.
 - 2. NFPA 72 "Record of Completion", filled out completely and signed by installer and authorized representative of authority having jurisdiction.
 - 3. Certificate of Occupancy.
 - 4. System Report: Provide Engineer two bound copies of the following for transfer to the owner.
 - a. As-built wiring diagram showing all loop numbers and device addresses, plus terminal numbers and where they connect to control equipment.
 - b. As-built wiring and conduit layout diagrams, including wire color code and/or label numbers, and showing interconnections in the system.

- c. Electronic circuit diagrams of all control panels, modules, annunciators, communications panels, etc.
 - d. Manufacturer's detailed maintenance requirements.
 - e. Product data on all devices.
 - f. As-built calculation sheets showing system capacity and voltage drops.
- L. Maintenance Contract: The contractor shall submit a quote for a maintenance contract to provide all maintenance, test, and repair described in this specification and/or in accordance with NFPA 72. Include also a quote for unscheduled maintenance/repair, including hourly rates for technicians trained on this equipment, and response travel costs. Submittals that do not identify all post contract maintenance costs will not be accepted. Rates and costs shall be valid for a period of (5) years after expiration of the guaranty. Maintenance and testing shall be on a semiannual basis or as required whichever is most restrictive. A preventative maintenance schedule shall be provided by the Contractor that shall describe the protocol for preventative maintenance. The schedule shall include:
- 1. Semiannual systematic examination, adjustment and cleaning of all detectors, manual fire alarm stations, control panels, power supplies, relays, water flow switches and all accessories of the fire alarm system.
 - 2. Semiannual testing of each circuit in the fire alarm system.
 - 3. Semi annual testing of each smoke detector in accordance with the requirements of NFPA 72.
- M. Maintenance Materials, Tools, and Software: Furnish the following for Owner's use in maintenance of project.
- 1. Furnish spare parts of same manufacturer and model as those installed; deliver in original packaging, labeled in same manner as in operating and maintenance data.
 - 2. In addition to the items in quantities indicated in PART 2, furnish the following:
 - a. All tools, software, and documentation necessary to modify the fire alarm system using Owner's personnel; minimum modification capability to include addition and deletion of devices, circuits, and zones, and changes to system description, operation, and evacuation and instructional messages.
 - b. One copy, on CD-ROM, of all software not resident in read-only-memory.
 - c. Extra Fuses: Two for each installed fuse; store inside applicable control cabinet.

1.05 QUALITY ASSURANCE

- A. Designer Qualifications: NICET Level III or IV (3 or 4) certified fire alarm technician or registered fire protection engineer, employed by fire alarm control panel manufacturer, Contractor, or installer, with experience designing fire alarm systems in the jurisdictional area of the authorities having jurisdiction.
- B. Installer Qualifications: Firm with minimum 5 years documented experience installing fire alarm systems of the specified type and providing contract maintenance service as a regular part of their business.
 - 1. Authorized representative of control unit manufacturer; submit manufacturer's certification that installer is authorized; include name and title of manufacturer's representative making certification.
 - 2. Installer Personnel: At least 2 years of experience installing fire alarm systems.
 - 3. Supervisor: NICET level III or IV (3 or 4) certified fire alarm technician; furnish name and address.
 - 4. Technician must be trained and individually certified by the manufacturer, for the Master Control Unit installed. Training must have occurred within the most recent 24 month. If NICET level III certification shall extend to 36 months.
 - 5. Contract maintenance office located within 50 miles of project site.
 - 6. Certified in the State in which the Project is located as fire alarm installer.
 - 7. Only the installer may make programming changes and must be present at the 100% test, Designer's pre-final review and Owner's final inspection.
- C. Maintenance Contractor Qualifications: Same entity as installer or different entity with specified qualifications.

- D. Instructor Qualifications: Experienced in technical instruction, understanding fire alarm theory, and able to provide the required training; trained by fire alarm control unit manufacturer.
- E. Product Listing Organization Qualifications: Third party agencies shall be amongst those accredited by the NCBC (North Carolina Building Code Council) to label Electrical and Mechanical Equipment.

1.06 WARRANTY

- A. Provide control panel manufacturer's warranty that system components other than wire and conduit are free from defects and will remain so for 1 year after Owner's acceptance.
- B. Provide installer's warranty that the installation is free from defects and will remain so for 1 year after date of Owner's acceptance.
- C. Warranty shall cover all parts and labor required to correct any deficient parts.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Fire Alarm Control Units and Accessories - Existing Fire Alarm System is an EST QuickStart (See Architect's preferred alternates):
 - 1. EST.
 - 2. Notifier.
 - 3. Simplex.

2.02 FIRE ALARM SYSTEM

- A. Fire Alarm System: Provide modifications and extensions to the existing automatic fire detection and alarm system:
 - 1. Provide all components necessary, regardless of whether shown in the contract documents or not.
 - 2. Comply with the following; where requirements conflict, order of precedence of requirements is as listed:
 - a. ADA Standards.
 - b. The requirements of the local authority having jurisdiction.
 - c. Applicable local codes.
 - d. The contract documents (drawings and specifications).
 - e. NFPA 72; where the word "should" is used consider that provision mandatory; where conflicts between requirements require deviation from NFPA 72, identify deviations clearly on design documents.
 - 3. Evacuation Alarm: Multiple smoke zones; allow for evacuation notification of any individual zone or combination of zones, in addition to general evacuation of entire premises.
 - 4. General Evacuation Zones: Each smoke zone is considered a general evacuation zone unless otherwise indicated, with alarm notification in all zones on the same floor, on the floor above, and the floor below.
 - 5. Hearing Impaired Occupants: Provide visible notification devices in all public areas.
- B. Circuits:
 - 1. Initiating Device Circuits (IDC): Class A.
 - 2. Signaling Line Circuits (SLC): Class A with no T taps.
 - 3. Notification Appliance Circuits (NAC): Class B.
- C. Power Sources:
 - 1. Primary: Dedicated branch circuits of the facility power distribution system.
 - 2. Secondary: Storage batteries.
 - 3. Capacity: Sufficient to operate entire system for period 60 hours in standby with 15 minutes of full alarm at the end of the 60 hours..

2.03 EXISTING COMPONENTS

- A. Existing Fire Alarm System: Remove existing components indicated; do not take existing portions of system out of service until new portions are fully operational, tested, and connected to existing system.

- B. Clearly label components that are "Not In Service."
- C. Remove unused existing components and materials from site and dispose of properly.

2.04 COMPONENTS

- A. General:
 - 1. Provide flush mounted units where installed in finish areas; in unfinished areas, surface mounted unit are acceptable.
 - 2. Provide legible, permanent labels for each control device, using identification used in operation and maintenance data.
 - 3. Consult with facility manager and local fire official prior to locating Master Control Unit, remote annunciator, or system printer.
 - 4. System Capacity and General Operation: The system shall have the following capacities and general operation modes:
 - a. All programming or editing of the existing program in the system shall be achieved without special equipment and without interrupting the alarm monitoring functions of the fire alarm control panel.
- B. Fire Alarm Control Units: Analog, addressable type; listed, classified, and labeled as suitable for the purpose intended.
- C. Notification Appliances:
 - 1. Programmable Electronic Sounders (Horns): Sounders located outdoors or in damp or wet locations shall be listed for use in wet locations. Electric sounders shall operate with synchronized audible output and have the following specifications: .
 - a. Voltage: Programmable electronic sounders shall operate on 24 VDC nominal.
 - b. Programming: Electronic Sounders shall provide the ANSI 53.41 three-pulse temporal pattern audible evacuation signal, described in NFPA 72, with an output sound level of at least 90 dBA measured at 10 feet from the device. Output sound level shall be 120 dB maximum. Electronic Sounders shall be field programmable without the use of special tools.
 - 2. Strobes: shall be located as shown on the Drawings and provided per the requirements of the NCSBC chapter #11 and ICC A117.1-2009. Strobe lights indicated for use exterior to the building shall be mounted at the indicated elevation and listed for use in wet locations. Strobe lights shall operate with synchronized flash output and have the following specifications:
 - a. Voltage: Strobe lights shall operate on 24 VDC nominal.
 - b. Maximum pulse duration: 2/10ths of one second.
 - c. Strobe intensity and flash rate: Must meet minimum requirements of UL 1971. Provide strobe lights with minimum intensity Candela (Cd) rating of 15/75 Cd, or greater if shown otherwise on drawings.
 - 3. Audible/Visual Combination Devices shall comply with all applicable requirements for both Programmable Electronic Sounders and Strobe Lights.
- D. Miscellaneous System Items
 - 1. Addressable Dry Contact Monitor Module: Addressable Monitor Modules shall be provided to connect one supervised zone of non-addressable Alarm Initiating Devices (any Normally Open [N.O.] dry contact device) to one of the Fire Alarm Control Panel Signaling Line Circuit Loops. Monitor modules shall be installed as required by the system configuration. All required monitor modules may not be shown on the Drawings.
 - a. Indication of Operation: An LED shall be provided that shall flash under normal conditions, indicating that the Monitor Module is operational and in regular communication with the control panel.
 - b. Supervision: Unless specifically noted otherwise on the drawings provide one monitor module for each sprinkler switch.
 - 2. Two Wire Detector Monitor Module: Addressable Monitor Modules shall be provided to connect one supervised IDC zone, Class A or alarm initiating devices (any N.O. dry contact device) to one of the Fire Alarm Control Panel Signaling Line Circuit Loops. Monitor modules shall be installed as required by the system configuration. All required monitor modules may not be shown on the Drawings. Indication of Operation: Unless otherwise indicated on the

- Drawings an LED shall be provided that shall flash under normal conditions, indicating that the Monitor Module is operational and in regular communication with the control panel.
3. Addressable Control Module: Addressable Control Modules shall be provided to supervise and control the operation of one conventional Notification Appliance Circuit (NAC) of compatible, 24 VDC powered, polarized Audio/Visual (A/V) Notification Appliances. For fan shutdown and other auxiliary control functions, the control module may be set to operate as a dry contract relay. The control module shall provide address-setting means using DIP switches and shall also store an internal identifying code that the control panel shall use to identify the type of device. An LED shall be provided that shall flash under normal conditions, indicating that the control module is operational and is in regular communication with the control panel.
 - a. Configuration: The control module NAC circuit may be wired for Class B with up to 1 Amp of inductive A/V signal, or 2 Amps of resistive A/V signal operation, or as a dry contact (Form C) relay. The control module shall be suitable for pilot duty applications and rated for a minimum of 0.6 amps at 30 VDC. The relay coil shall be magnetically latched to reduce wiring connection requirements, and to insure that 100% of all auxiliary relay or NACs may be energized at the same time on the same pair of wires.
 - b. Power Source: Audio/visual power shall be provided by a separate supervised power loop from the main fire alarm control panel or from a supervised, 3rd party listed remote power supply. AN power sources and connections are not shown on the Drawings
 - c. Test Switch: A magnetic test switch shall be provided to test the module without opening or shorting its NAC wiring.
 4. Isolator Module: Isolator Modules shall be provided to automatically isolate wire-to-wire short circuits on an SLC loop. The Isolator Module shall limit the number of modules or detectors that may be rendered inoperative by a short circuit fault on the SLC Loop. Modules must be readily accessible (not above ceiling) and clearly labeled.
 - a. Operation: Isolator Modules shall operate such that if a wire-to-wire short occurs, the Isolator module shall automatically open-circuit (disconnect) the SLC loop. When the short circuit condition is corrected, the Isolator Module shall automatically reconnect the isolated section. The Isolator Module shall not require any address-setting, and its operations shall be totally automatic. It shall not be necessary to replace or reset an Isolator Module after its normal operation.
 - b. The Isolator Modules shall provide a single LED that shall flash to indicate that the Isolator is operational and shall illuminate steadily to indicate that a short circuit condition has been detected and isolated.
 - c. Isolation modules must be provided in the following locations as a minimum.
 - 1) Immediately adjacent to the Main Fire Alarm Control Unit, at each end of the addressable loop. These two isolators must be within 15 feet of the Main Fire Alarm Control Unit.
 - 2) After each 20 initiating devices and control points on the addressable loop.
 - 3) For loops with 20 or less control points install isolation module in approximately the middle of the loop.
 - 4) Near the point where any addressable loop extends outside the building envelope.
 - 5) For loops covering more than one floor where addressable loop crosses between floors.
 - d. Each isolation module must be clearly labeled, readily accessible for convenient inspection.
 5. Water Flow Switch: Flow switches shall be integral, mechanical, non-coded, non-accumulative retard type. Flow switches shall have an alarm transmission delay time that is conveniently adjustable from 0 to 60 seconds. Initial settings shall be 30-45 seconds. Flow switches shall be located a minimum of one (1) foot from a fitting that changes the direction of the flow and a minimum of three (3) feet from a valve as required per NFPA 13. Installation: Water Flow Switches shall be connected by the Division 26 (Electrical) Contractor but furnished and installed by the Division 23 (Mechanical) Contractor.
 6. Sprinkler and Standpipe Valve Supervisory Switch: Supervisory switch mechanisms shall be contained in a weatherproof housing that shall provide a 3/4 inch tapped conduit entrance and shall incorporate the necessary facilities for attachment to the valves. Switch housing shall be

- finished in red baked enamel. Mounting: Mount switch so as not to interfere with the normal operation of the valve and adjust to operate within two revolutions toward the closed position of the valve control, or when the stem has moved no more than one-fifth of the distance from its normal position.
7. Remote Annunciator Indicator Lights (RAIL): RAILs shall be provided with a key type switch for testing of the annunciated device. In addition, RAILs shall have the following features:
Voltage: RAILs shall operate on 24 VDC nominal.
 8. Door Hold-Open magnets:
 - a. Door hold open magnets shall be suitable for mounting in a single gang electrical device box.
 - b. Door hold open magnets shall be furnished with keepers, door chains, and other accessories as required to properly hold open doors as indicated on the Drawings.
 - c. Wall mounted magnetic door holders and separate heavy duty closers shall be used instead of combination door control units.
 - d. Holding force of the magnet shall be appropriate for the door to be held open. Door hold open magnets shall operate in a fail safe manner, i.e., the door shall release in event of a failure of voltage to the device.
 - e. Power Source: Door hold open magnets shall be configured to operate from a nominal 24 VDC system as supplied by the FACP or other power supply listed for the purpose.
 - f. All hold open magnet supply sources, whether a part of the FACP or whether derived from a separate power supply, shall be supervised.
 - g. Door hold open magnet circuits which use step-down transformers, 120 VAC, or local relays are not permitted.
 - h. Door shall close after 60 seconds of the power loss.
 9. Battery Power Supply (BPS) &/or Supplementary Notification Appliance Circuit (SNAC): These types of panels shall be completely maintenance free, shall not require liquids, fluid level checks or refilling, and shall not be capable of producing spills and/or leaks. Batteries shall be sealed gel-cell type with expected life of 10 years. Battery voltage shall be as required by the FACP and related equipment. Battery shall have sufficient capacity to power the fire alarm system for not less than 60 hours plus 15 minutes of alarm upon a normal AC power failure. Battery cabinet shall be twice the size of the batteries it will contain. NAC circuits shall not exceed 75% of maximum current load allowed.
 - a. The voltage drop at EOL must not exceed 14% of the expected battery voltage after the required standby and alarm times. Determine worst case voltage at far end of each NAC circuit. The results must not be than the minimum listed rating on the device.
 - b. Where voltage drop or capacity limits are exceeded provide additional NAC panels as required for a fully functional system.
 - c. All power supplies shall be capable of withstanding prolonged short circuits in the field wiring, either line-to-line or line-to-ground, without damage.
 - d. All power supplies shall be equipped with battery charging using dual-rate charging techniques for fast battery recharge.
 10. Enclosure: All equipment enclosures shall be third party listed suitable for surface or semi-flush mounting. Cabinet and front shall be corrosion resistant, given a rust-resistant prime coat, and manufacturer's standard finish. The door shall provide a key lock and a glass opening for viewing indicators. Door hinge shall be field selectable (left or right).

E. Wiring

1. Addressable loop (signaling line) circuits shall be wired with type FPL/FPLR/FPLP fire alarm cable, AWG 18 minimum, low capacitance, twisted shielded copper pair. Cable shield drain wires are to be connected at each device on the loop to maintain continuity, taped to insulate from ground, and terminated at the FACP. Acceptable cables include Atlas 228-18-1-1STP, BSCC S1802s19 (same as EEC 7806LC), West Penn D975, D991 (AWG 16), D995 (AWG 14), or equal wire having capacitance of 30pf/ft. maximum between conductors. Belden 5320FJ acceptable if only FPL rating needed.
 - a. Unshielded cable, otherwise equal to the above, is permitted to be used if the manufacturer's installation manual requires, or states preference for, unshielded cable.

- b. In underground conduit, use Type TC or PLTC cable (PE insulated) to avoid problems from moisture.
 - c. The following conductor color coding shall be maintained throughout the system:
 - 1) Initiating Circuits: Red (+)/White (-)
 - 2) Initiating Circuits, Smoke Only: Violet (+)/Grey (-)
 - 3) Signal Line Circuits: Red jacket with Red (+)/Black(-)
 - 4) Alarm Indicating Appliance Circuits: Blue (+)/Black(-)
 - 5) AHU Shutdown Circuits: Yellow (+)/Brown (-)
 - 6) Door Control Circuits: Orange
 - 7) Elevator Capture Circuits: Brown
 - 2. Supervision must be provided between individual addressable modules and their associated contact type initiating devices.
- F. Surge Protection: In accordance with IEEE C62.41.2 category B combination waveform and NFPA 70; except for optical fiber conductors.
- 1. For each AC power circuit that interfaces with fire alarm equipment install an AC suppressor in a listed enclosure near the electrical panelboard, and trim excess lead lengths. Wind small coil in the branch circuit conductor just downstream of the suppressor connection. Coil to be 5 to 10 turns, about 1" diameter, and securely tie-wrapped. This series impedance will improve the effectiveness of the suppressor in clipping fast rise time voltage transients.
 - 2. Equipment Connected to Alternating Current Circuits: Maximum let through voltage of 350 V(ac), line-to-neutral, and 350 V(ac), line-to-line; do not use fuses.
 - 3. Initiating Device Circuits, Notification Appliance Circuits, and Communications Circuits: Provide surge protection at each point where circuit exits or enters a building; rated to protect applicable equipment; for 24 V(dc) maximum dc clamping voltage of 36 V(dc), line-to-ground, and 72 V(dc), line-to-line.
 - 4. On DC circuits extending outside the building: Provide surge protection at each point where circuit exits or enters a building, rated to protect applicable equipment.
- G. Locks and Keys: Deliver keys to Owner.
- 1. Provide the same standard lock and key for each key operated switch and lockable panel and cabinet; provide 5 keys of each type
- H. Instruction Charts: Printed instruction chart for operators, showing steps to be taken when a signal is received (normal, alarm, supervisory, and trouble); easily readable from normal operator's station.
- 1. Frame: Stainless steel or aluminum with polycarbonate or glass cover.
 - 2. Provide one for each control unit where operations are to be performed.
 - 3. Obtain approval of Owner prior to mounting; mount in location acceptable to Owner.
 - 4. Provide extra copy with operation and maintenance data submittal.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with applicable codes, NFPA 72, NFPA 70, and the contract documents.
- B. Conceal all wiring, conduit, boxes, and supports where installed in finished areas.
- C. All equipment supplied must be specifically listed for its intended use and shall be installed in accordance with the manufactures recommendations. The contractor shall consult the manufacturer's installation manuals for all wiring diagrams, schematics, physical equipment sizes, etc., before beginning system installation. Contractor shall refer to the Riser/Connection diagram for all specific system installation/termination/wiring data.
- D. All system components shall be attached to walls and ceiling/floor assemblies and shall be held firmly in place (e.g., detectors shall not be supported solely by suspended ceilings). Fasteners and supports shall be adequate to support the required load. Adhesives are not permitted to mount fire alarm system components to building surfaces or structure.
- E. The system shall be electrically supervised for open or ground fault conditions in SLC, alarm and control circuits. Removal of any detection device, alarm appliance, plug-in relay, system module, or standby battery connection shall also result in a trouble signal.

- F. When programming the system, activate the automatic drift compensation feature for all spot-type smoke detectors. Systems with alarm verification are not to have this feature activated without written direction from the owner's representative or the AHJ. Alarm verification must not be used with multi-sensor/multi-criteria detectors under any circumstances, as inadequate system response may result. Most applications of analog addressable smoke detectors do not require alarm verification to reduce nuisance alarms, as they are better able to discriminate between fire and common non-fire ambient events. A short operational test with normal occupancy can determine if transient ambient events are a problem
- G. Provide photoelectric smoke detector within 15 feet of every Fire Alarm Control Panel, NAC Panel or other fire alarm control equipment. These detectors shall be provided weather shown on plans or not.
- H. Set spot-type smoke detector sensitivities to normal/medium, unless directed otherwise by the design engineer/owner's rep. High sensitivity may be appropriate in relatively benign, clean environments such as art museums and libraries, to improve system response time without causing nuisance alarms.
- I. Unless suitably protected against dust and other debris, spot type smoke detectors shall not be installed until final construction clean-up has been completed. In the event that detectors are damaged during construction due to failure to adequately protect devices, they shall be replaced by the contractor at no expense to the owner.
- J. Print a complete System Status and Programming Report after the above steps have been done. This must include the program settings for each alarm initiating device and the current sensitivity of each analog addressable smoke detector.
- K. Install instruction cards and labels.
- L. Basic operating instructions shall be framed and permanently mounted at the Main Control Unit. The NFPA 72 record of completion must either be kept at the Main Control Unit or an alternate location may be permanently engraved at the Main Control Unit.
- M. Provide engraved label at the Main Control Unit and secondary power supplies identifying the 120V power source including panelboard location, panelboard identifier, and branch circuit number.
- N. Breaker serving fire alarm power supplies shall be protected with a fire alarm handle lock, Space Age Electronics ELOCK series or approved equal. Additionally the breaker handle shall be labeled with 1/4" permanent red dot.
- O. Identification of individual initiating devices is required. Assign each initiating device a unique number as follows, sequence starting from the FACP: (Addressable Loop # -- Device #). Show device numbers on as built plans and permanently mark each detector base so that it is readable on the floor below without having to remove detector. Labels must be typewritten with black lettering and clear background.

3.02 CONDUIT AND WIRING

- A. All fire alarm system wiring shall be in metal conduit, minimum 3/4", or surface metal raceway. All fire alarm system raceway, couplers, and connectors must meet performance and installation requirements as identified in other sections of this specification manual.
- B. Detection or alarm circuits must not be included in raceways containing AC power or AC control wiring. Within the Fire Alarm Control Panels, and 120V control wiring or other circuits must with an externally supplied voltage above 24 V must be properly separated from other circuits and have the appropriate warning label to alert service personnel to the potential hazard.
- C. There shall be no splices in the system other than at device terminal blocks, or on terminal blocks in cabinets.
- D. Permanent wire markers shall be used to identify all connections in the Main Fire Alarm Control Unit and other control equipment, at power supplies and terminal cabinets.
- E. In multistory buildings, all circuits leaving the riser on each floor shall feed through a labeled terminal block in a hinged enclosure accessible from the floor.

- F. All wiring terminal block screws shall have pressure wire connectors of the self-lifting or box lug type.
- G. All wiring shall be checked for grounds, opens, and shorts, prior to termination at panels and installation of detector heads. The minimum allowed resistance to ground between any two conductors shall be 10 megohms, as verified with an insulation resistance test. Provide Engineer with the results of these tests.
- H. The exterior of all junction boxes, including both sides of covers, containing fire alarm conductors shall be painted red. Box interior shall not be painted.
- I. Box covers shall be labeled to indicate the circuit(s) or function of the conductors contained within. Labels shall be neatly applied black lettering on clear background. Handwritten labels or embossed tape labels are not allowed.
- J. All conduits penetrating exterior walls must have internal sealing to prevent condensation from infiltrating humid air.

3.03 INSPECTION AND TESTING FOR COMPLETION

- A. Notify Owner 7 days prior to beginning completion inspections and tests.
- B. Provide the services of the installer's supervisor or person with equivalent qualifications to supervise inspection and testing, correction, and adjustments.
- C. Prepare for testing by ensuring that all work is complete and correct; perform preliminary tests as required.
- D. Provide all tools, software, and supplies required to accomplish inspection and testing.
- E. Upon completion of the installation the Contractor and the Manufacturer's authorized installer together shall conduct a 100% performance test of each and every alarm initiating device for proper response. The system shall operate for 48 hours prior to start of test. The Contractor shall be present for the full 100% test.
- F. The A/E and owner must be given 7 days advance notice of the tests. All Audio Visual Device Testing shall be scheduled with the owner.
- G. 100% Test: The manufacturer or authorized distributor (by definition, "installer") must 100% test all site-specific software functions for the system and then provide a detailed report or check list showing the system's operational matrix. This documentation must be part of the "System Status and Programming Report".
 - 1. Upon completion of the installation and its programming, the installer's technician shall test every alarm initiating device for proper response and indication, and all alarm notification appliances for effectiveness. Also, in coordination with the other building system contractors, all other system functions shall be verified, including (where applicable) elevator capture and the control of HVAC systems, door locks, pressurization fans, fire or smoke doors/dampers/shutters, etc. The engineer must be notified in advance of these 100% tests, to permit witnessing them if desired.
 - 2. If AHU shutdown occurs for any alarm, then the matrix would indicate the specific control relay(s) for that function being commanded to operate for alarm from any initiating device. If a rolling steel fire door is to drop only upon waterflow alarm from its sprinkler zone, or upon any two spot smoke detectors in adjacent spaces being simultaneously in alarm, the matrix would show the door's control relay activating upon alarm from the applicable waterflow switch(es), or from any two smoke detectors in the selected spaces (AND gate).
 - 3. The digital communicator shall be on-line and tested for proper communication to the receiving station.
 - 4. All supervised circuits must also be tested to verify proper supervision. (Control circuits and remote annunciation lines are among those required to be supervised.)
 - 5. All testing described above shall be repeated in the event that subsequent software or wiring modifications are determined necessary to meet the requirements of the contract documents. Such re-testing shall be included as part of the base bid and provided at no additional cost to the Owner.

- H. Test Documentation: The installer must fill out and submit the following documentation to the owner, through the engineer, prior to the AHJ's system acceptance inspection:
1. Written verification that this 100% system test was done with copy of print out generated during test.
 2. The NFPA 72, "Record of Completion" Form. Use this form (no substitutes) to detail the system installation and also to certify that: (a.) It was done per Code, and (b.) The Code-required 100% test was performed. The fire alarm installer (manufacturer or authorized distributor's technician) must sign this form. If a representative of the AHJ, owner, or engineer witnesses the tests, in whole or in part, they must also sign the form to signify that fact only (annotating the form as needed to clarify their limited role).
 3. For buildings with a smoke control or smoke purge system, an HVAC balance report, in the smoke control / smoke purge mode.
 4. The System Status and Programming Report described in NFPA 72. This must be generated on the day of the system acceptance inspection and shall include the measured sensitivity of each smoke detector.
 5. The purpose of doing Item above on the day of the inspection is to assure detector sensitivity has not been affected by construction dust. Prudent contractors will have taken measures to prevent detector contamination during construction, and will also have had the system do a detector sensitivity test and printout prior to the day of the inspection, to make certain all devices are properly programmed and operating within their limits.
- I. After completion of the 100% system test and submission of documentation as described above the installer is to request the engineer to set up an inspection. The system must operate for at least two days prior to this inspection. The responding Fire Department shall be notified of this, for pre-fire planning purposes. On local government projects, local fire authorities may also want to participate in system acceptance inspections. However, for State-owned property they have no inspection jurisdiction and, if present, are only to observe.
- J. PRE-FINAL INSPECTION: At the Owner's request and after passing the Designer's pre-final inspection, the Contractor and Manufacturer's authorized installer will conduct system test in the presence of the Owner and the Designer.
- K. FINAL INSPECTION: The fire alarm system will be inspected, with portions of it functionally tested. This will normally include the use of appropriate means to simulate smoke for testing detectors, as well as functionally testing the system interface with building controls, fire extinguishing systems and any off-premises supervising station. Operation of any smoke removal system will be checked as instructed by the AHJ. This statistical (sampling) inspection is intended to assure that the contractor has properly installed the system and performed the 100% operational test as required by NFPA 72. The electrical contractor shall provide two-way radios, ladders, and any other materials needed for testing the system, including a suitable smoke source.
1. Smoke control and smoke management systems are normally tested by measuring air flow rates and pressure differentials, plus observing any effect the system has on the operation of exit, elevator, and stairway doors. Testing with smoke "bombs" (smoke candles) is NOT appropriate because they produce cold chemical smoke that lacks buoyancy and, therefore, does not rise like the smoke from a fire.
 2. The test will be conducted entirely by the Contractor. A copy of the final database software must be presented to the Owner before this test. The software shall be loaded from these disks into the system in the presence of the Owner. The review will then be conducted using this software. Any deficiencies shall be recorded and corrected. After the items have been corrected, the system shall be tested again.
 - a. In the event of malfunctions or excessive nuisance alarms, the Contractor must take prompt corrective action. The Owner may require a repeat of the Contractor's 100% system test, or other inspections.
 - b. Test Report: Upon successful completion of the Inspection and after the correction of all efficiencies, the manufacturer's authorized representative shall issue a test report to the Engineer and Owner, detailing and certifying the test.
 - c. System Acceptance: After successful completion of the Final Inspection and recommendation of the Engineer and concurrence of the State Construction Office that

all criteria for Final Acceptance have been achieved, the system will be accepted by the Owner. At this time the warranty period begins.

3.04 CLOSEOUT

- A. Closeout Demonstration: Demonstrate proper operation of all functions to Owner.
 - 1. Be prepared to conduct any of the required tests.
 - 2. Have at least one copy of operation and maintenance data, preliminary copy of project record drawings, input/output matrix, and operator instruction chart(s) available during demonstration.
 - 3. Have authorized technical representative of control unit manufacturer present during demonstration.
 - 4. Demonstration may be combined with inspection and testing required by authority having jurisdiction; notify authority having jurisdiction in time to schedule demonstration.
 - 5. Repeat demonstration until successful.
- B. Occupancy of the project will not occur prior to Project Acceptance.
- C. Project Acceptance of the project cannot be achieved until inspection and testing is successful and:
 - 1. Approved operating and maintenance data has been delivered.
 - 2. Spare parts, extra materials, and tools have been delivered.
 - 3. All aspects of operation have been demonstrated to Owner.
 - 4. Final acceptance of the fire alarm system has been given by authorities having jurisdiction.
 - 5. Occupancy permit has been granted.
 - 6. Specified pre-closeout instruction is complete.

END OF SECTION 28 46 00