

NORTH CAROLINA  
WAKE COUNTY

DATE: JUNE 23, 2020

NORTH CAROLINA DEPARTMENT  
OF TRANSPORTATION

LICENSE AGREEMENT FOR RAILROAD RIGHT  
OF WAY ENCROACHMENT

AND

D&SC RAIL CORRIDOR, Milepost DD 16.00

TOWN OF APEX

**THIS LICENSE AGREEMENT** is made and entered on the last date executed below, by and between the NORTH CAROLINA DEPARTMENT OF TRANSPORTATION, an agency of the State of North Carolina, hereinafter referred to as the "Department and/or Licensor," and the TOWN OF APEX, a local government entity, hereinafter referred to as the "Municipality and/or Licensee," and individually hereinafter referred to as "Party," and collectively, as "Parties."

WITNESSETH:

THAT WHEREAS, the Licensor is the owner of the Rail Corridor right-of-way as described on the Exhibit A ("Premises") in Wake County as attached hereto and incorporated by reference; and, known as the D&SC Rail Corridor; and,

THAT WHEREAS, the Licensee desires to encroach on the Premises located in Wake County, North Carolina with the construction, maintenance, and use of a trail connector to the American Tobacco Trail (ATT) the D&SC Railroad Corridor, as shown on Exhibit A. The trail will consist of a 10-foot wide asphalt greenway connecting at a 90-degree angle to the ATT. Removable bollards at 39-inch maximum spacing shall also be installed at the ATT connection. Attached is a site plan showing the greenway connection to the American Tobacco Trail.

THAT WHEREAS, the Licensor is willing to grant the Licensee the privilege of making such encroachment upon the Premises subject to and in accordance with this Agreement (such privilege, the "License");

NOW, THEREFORE, IT IS AGREED that Licensor hereby grants to Licensee the privilege to make this encroachment as shown on the attached plan sheet(s), specifications, and special provisions which are incorporated by reference upon the following conditions:

1. **SCOPE OF WORK:**

This Agreement is for the construction, maintenance, and use of a trail connector to the American Tobacco Trail (ATT) the D&SC Railroad Corridor, as shown on Exhibit A. The trail will consist of a 10-foot wide asphalt greenway connecting at a 90-degree angle to the ATT. Removable bollards at 39-inch maximum spacing shall also be installed at the ATT connection. Attached is a site plan showing the greenway connection to the American Tobacco Trail.

**Prior to beginning work Licensee is to contact Andy Miller with NCDOT Rail Division (E-mail: samiller@ncdot.gov)**

2. **FEES/BILLING**

In consideration of Licensor's granting of this privilege to encroach upon Licensor's Premises, Licensee agrees to pay Licensor a make payment in the amount of \$0.00 to Licensor. The Licensee shall submit said payment to the Licensor upon execution and submittal of this License Agreement to the Licensor.

3. **LICENSE LIMITATIONS**

The License is granted solely and exclusively for the improvement, maintenance, and use of the encroachment for the purposes expressly set forth herein. This grant shall not be construed to convey to or otherwise vest in the Licensee any other greater interest to, right to enter upon, or estate in the Premises.

4. **TRANSFER OF RESPONSIBILITIES**

It is agreed between Licensor and Licensee that this license is personal to Licensee and shall not inure to the successors or assigns of Licensee, except that Licensee may, with the written consent of the Licensor and Licensee which shall not be unreasonably withheld, assign its rights and obligations hereunder to any successor developer of the real property benefitted by the encroachment upon written notice to Licensor and Licensee and as expressly provided herein. The parties understand and agree that any right or claim of Licensor created by this License Agreement shall inure to the benefit of, and be enforceable by, any successor or assignee of Licensor.

5. **CONDITION OF PREMISES**

Licensor makes no warranties or representations regarding the condition of the Premises, and this Agreement shall not be construed to make or imply any warranty. The Licensee accepts the use of the Premises "AS IS" and expressly waives any and all claims against Licensor relating to or arising from the condition of the Premises and the property surrounding the Premises, including, without limitation, any claims and costs related to environmental contamination (such as, without limitation, those claims which might arise under CERCLA, RCRA, and the North Carolina Oil Pollution and Hazardous Substances Act).

6. **COMPLIANCE WITH STANDARDS**

The installation, operation, and maintenance of the encroachment will comply with the North Carolina Department of Transportation's latest RAIL CORRIDOR PRESERVATION POLICY, POLICIES AND PROCEDURES FOR ACCOMMODATING UTILITIES ON HIGHWAY RIGHTS-OF-WAY and THE AMERICAN RAILWAY ENGINEERING AND MAINTENANCE OF WAY ASSOCIATION

MANUAL, and such revisions and amendments thereto as may be in effect at the date of this agreement, all of which are hereby incorporated as terms and conditions of this agreement and may not be waived except by written agreement of all parties. Information as to these policies and procedures may be obtained from the North Carolina Department of Transportation.

7. **SIGNAGE**

The Licensee agrees to provide during construction and any subsequent maintenance proper signs, signal lights, flagmen, and other warning devices for the protection of traffic in conformance with the latest Manual on Uniform Traffic Control Devices for Streets and Highways and amendments or supplements thereto.

8. **IMPROVEMENT/MAINTENANCE COSTS**

The Licensee shall improve and/or maintain the encroachment at Licensee's own cost and expense. The Licensor shall be exempt from any costs, charges, or assessments of any kind or character on account of or incident to the location and improvement of the encroachment within the limits of the right of way, or on account of any action or omission by the Licensee in connection therewith.

9. **MAINTENANCE OF FACILITIES**

The Licensee agrees to install and/or maintain the encroaching facilities in such safe and proper condition that they will not interfere with or endanger existing or future uses by the Licensor of said right of way for railroad, trail, or other transportation purposes, nor obstruct nor interfere with the proper operation and maintenance of said right of way or any tracks, structures, or appurtenances thereon.

10. **REIMBURSEMENT BY LICENSEE**

The Licensee will reimburse the Licensor for any costs incurred including, but not limited to costs for repairs or maintenance to the Licensor's corridor, roadways, and structures resulting from the installation and existence of Licensee's encroachment.

11. **DRAINAGE**

The Licensee agrees to install and maintain the encroachment in such a manner as not to interfere with the proper drainage of the roadbed and right of way. The Licensee will not allow or permit the diversion of any additional drainage into existing drainage facilities or upon the right of way, and, moreover, the Licensee will arrange its drainage system so as to prevent the ponding of water upon the right of way.

12. **PROPERTY OBSTRUCTIONS**

In the event Licensee deems it necessary to remove and relocate any structures or property of third persons or corporations, including, but not limited to, wire lines and poles or other supports, now located and constructed upon or near Licensor's right of way, the Licensee will remove and relocate or arrange for the removal or relocation of same without cost or expense to the Licensor, and in all respects in accordance with the requirements of the Licensor. Any utility changes must conform to specifications promulgated by the American Railroad Engineering and Maintenance of Way Association and the North Carolina Department of Transportation.

13. **INDEMNIFICATION**

To the extent authorized by law, each Party shall be responsible for its respective actions under the terms of this Agreement and indemnify and save harmless the other Party(s) for any claims for payment, damages, and/or liabilities arising as a result of such action. Except that indemnification shall be only in the manner and to the extent allowed by North Carolina law, including the Tort Claims Act, N.C. Gen. Stat. §§ 143-291 et seq., and without waiver of its sovereign immunity the Department shall defend, indemnify and hold harmless other parties for any claims for payment, damages, and or liability arising as a result of such action.

14. **CONDITION OF PROPERTY**

The Licensee agrees to restore all areas disturbed during installation or maintenance of the encroachment to the Licensor's reasonable satisfaction. The Licensee agrees to exercise every reasonable precaution during construction or maintenance to prevent eroding of soil; silting or pollution of rivers, streams, lakes, reservoirs, other water impoundments, ground surfaces, or other property; or pollution of the air. When any installation or maintenance operation disturbs the ground surface and existing ground cover, Licensee agrees to remove and replace the sod or otherwise reestablish the grass cover to the reasonable satisfaction of the Licensor.

15. **ENVIROMENTAL REGULATIONS**

Licensee shall comply with applicable rules and regulations of the North Carolina Department of Environment and Natural Resources, and ordinances and regulations of various counties, municipalities, and other official agencies relating to pollution prevention and control. Licensee agrees to comply with all federal, state and local environmental laws, rules, and regulations while subject to the terms of this agreement. None of the terms of this paragraph, or of this agreement elsewhere shall be construed as a waiver of any environmental regulations. If hazardous or any other unauthorized material is discovered, and it is determined that such material is present as a result of action by Licensee, Licensee shall be solely responsible and hold the Department harmless for all costs associated with the removal of the material and any damages caused by the existence of said material.

16. **PERIOD OF PERFORMANCE/TERMINATION OF AGREEMENT**

It is agreed by all parties that this agreement shall become void if actual construction of the work contemplated herein is not begun within one (1) year from the date of authorization by the Licensor, unless written waiver is secured from the Licensor.

17. **NOTICES**

All notices, requests, or other communications permitted or required to be given by one Party to the other and all questions about the contract from one Party to the other shall be addressed and delivered to the other Party's Contract Administrator. The name, post office address, street address, telephone number, fax number, and email address of the Parties' respective initial Contract Administrators are set out below. Either Party may change the name, post office address, street address, telephone number, fax number, or email address of its Contract Administrator by giving timely written notice to the other Party.

For the Department/Licensors:

If Delivered by US Postal Service:	If Delivered by Any Other Means:
Andy Miller Operations & Facilities Branch NCDOT Rail Division 1553 Mail Service Center Raleigh, NC 27699-1553  Telephone: 919-707-4721 Fax: 919-715-6580 Email: <a href="mailto:samiller@ncdot.gov">samiller@ncdot.gov</a>	Andy Miller Operations & Facilities Branch NCDOT Rail Division 1 S Wilmington Street, Room 549 Raleigh, NC 276601

For/Licensee:

If Delivered by US Postal Service:	If Delivered by Any Other Means:
Town of Apex Angela Reincke PO Box 250 Apex, NC 27502  Telephone: 919-372-7468 Email: <a href="mailto:angela.reincke@apexnc.org">angela.reincke@apexnc.org</a>	Town of Apex Angela Reincke PO Box 250 Apex, NC 27502

18. **NONCOMPLIANCE**

In the case of noncompliance with any of the terms of this agreement by Licensee, Licensor will give Licensee written notice of such noncompliance. If Licensee fails to comply to the reasonable satisfaction of the Licensor within sixty (60) days after receiving such written notice, unless written waiver is secured from the Licensor, the Licensor reserves the right to discontinue the use of the encroachment until it has been brought into compliance; or, alternatively, at no cost to the Licensor, Licensor may remove the encroachment from the right of way and require the Licensee to reimburse the Licensor for all expenses for said removal, or the Licensor, in its sole discretion, may require the Licensee to remove the encroachment within ninety (90) days of written notice from the Licensor, to the Licensor's satisfaction.

19. **NOTICE OF COMPLETION**

The Licensee agrees to give written notice to the Licensor within thirty (30) days of completion of all work contained herein.

20. **CHANGES TO ENCROACHMENT**

The Licensee shall make all necessary changes to the reasonable satisfaction of the Licensor, at Licensee's own cost and expense, within sixty (60) days after written notice from the Licensor, to address the safety concerns of the Licensor or to accommodate the Licensor's use of the right of way for railroad, trail, or other transportation purposes, unless written waiver is secured from

the Licensor. Such changes include, but are not limited to, the construction of a grade-separated facility for railroad, trail, or other transportation purposes; the installation, maintenance, and upgrading of any safety devices, signs, or other facilities necessary for the Licensor's use of the corridor; and any changes of location, height, depth, or design of the encroachment, or consolidation of at-grade crossings.

21. **REMOVAL OF THE ENCROACHMENT FROM LICENSOR PROPERTY**

In the event the Licensor requires the removal of the encroachment from the right of way, then the Licensor shall have the right to demand such removal, and the Licensee, at its own cost and expense, within sixty (60) days after written notice from the Licensor, unless written waiver is secured from Licensor, shall discontinue the use of the same, remove the encroachment from the right of way, and restore the same to the condition existing prior to the location of the encroachment upon the right of way.

22. **UTILITY ENCROACHMENT**

In the case of a utility encroachment, Licensee agrees to periodically monitor and verify the depth or height of the utility in relation to the Licensor's tracks and facilities, and to relocate the utility at Licensee's own cost and expense should such relocation or change be necessary to comply with the minimum clearance requirements of this agreement or any public authority.

23. **ENCROACHMENT INTERFERENCE**

If the operation, existence, or maintenance of the encroachment causes interference, physical, magnetic, or otherwise, with train control systems or facilities, or interference in any manner with the operation, maintenance, or use of the right of way, tracks, structures, pole lines, devices, other property, or any appurtenances thereto for railroad, trail, or other purposes, then in either event, Licensee, within sixty (60) days after written notice from the Licensor, at Licensee's own cost and expense, shall promptly make such changes in its encroachment as may be required in the reasonable judgment of the Licensor to eliminate all such interference, unless written waiver is secured from the Licensor.

24. **CHANGE ORDERS**

If the Licensee undertakes to revise, renew, relocate, or change in any manner whatsoever all or any part of the encroachment plans, such plans shall be submitted to the Licensor for approval before any such change is made. After approval, the terms and conditions of this agreement shall apply thereto.

25. **EXHIBIT**

See drawings attached as Exhibit A (Profile Drawing) incorporated herein as reference.

26. **GOVERNING LAWS**

This Agreement shall at all times be governed by the provisions of the law of North Carolina.

27. **RELATIONSHIP BETWEEN PARTIES**

This Agreement shall not be construed to create any relationship of agency or employment between the parties hereto.

**28. ETHICS PROVISION**

N.C.G.S. § 133-32 and Executive Order 24 prohibit the offer to, or acceptance by, any State employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By signing this Agreement, the Licensee attests that the Licensee is not aware that any gift in violation of N.C.G.S. § 133-32 and Executive Order 24 has been offered, accepted, or promised by the Licensee (including the Licensee's employees, agents, and representatives).

**29. E-VERIFY**

E-Verify is the federal program operated by the United States Department of Homeland Security and other Federal agencies, or any successor or equivalent program, used to verify the work authorization of newly hired employees pursuant to federal law. The Parties warrant that they and any subcontractor performing work under this Agreement: (i) uses E-Verify if required to do so by North Carolina law; and (ii) otherwise complies with the requirements of Article 2 of Chapter 64 of the North Carolina General Statutes. A breach of this warranty by any Party will be considered a breach of this Agreement, which entitles the other Parties to terminate this Agreement, without penalty, upon notice to the breaching Party.

IN WITNESS WHEREOF, this License Agreement has been executed the day and year heretofore set out below, on the part of the Department and the Municipality by authority duly given.

N.C.G.S. § 133-32 and Executive Order 24 prohibit the offer to, or acceptance by, any State Employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of any response in this Agreement, you attest, for your entire organization and its employees or agents, that you are not aware that any gift in violation of N.C.G.S. § 133-32 and Executive Order 24 has been offered, accepted, or promised by any employees of your organization.

WITNESS

TOWN OF APEX

BY: \_\_\_\_\_

BY: \_\_\_\_\_

NAME: \_\_\_\_\_

NAME: \_\_\_\_\_

TITLE: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_

DATE: \_\_\_\_\_

MUNICIPAL SEAL

Approved by the Town of Apex governing board  
as attested to by the signature of

\_\_\_\_\_  
Clerk of the Town Council \_\_\_\_\_  
(Date)

This instrument has been pre-audited in the  
manner required by the Local Government Budget  
and Fiscal Control Act.

\_\_\_\_\_  
Municipal Finance Officer

FEDERAL IDENTIFICATION NUMBER

\_\_\_\_\_  
Town of Apex

MAILING ADDRESS  
Town of Apex  
PO Box 250  
Apex, NC 27502

Attn: Angela Reincke  
Angela.reincke@apexnc.org



IN WITNESS WHEREOF, this License Agreement has been executed the last day and year set out below, on the part of the Department and the Municipality by authority duly given.

N.C.G.S. § 133-32 and Executive Order 24 prohibit the offer to, or acceptance by, any State Employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of any response in this Agreement, you attest, for your entire organization and its employees or agents, that you are not aware that any gift in violation of N.C.G.S. § 133-32 and Executive Order 24 has been offered, accepted, or promised by any employees of your organization.

ATTEST

NORTH CAROLINA DEPARTMENT OF  
TRANSPORTATION

BY: \_\_\_\_\_

BY: \_\_\_\_\_

NAME: Elizabeth Smith

NAME: Julie White

TITLE: Processing Agent

TITLE: Deputy Secretary of Multi Modal  
Transportation

DATE: \_\_\_\_\_

DATE: \_\_\_\_\_

MAILING ADDRESS

North Carolina Department of Transportation  
Rail Division, Operations & Facilities Branch  
1553 Mail Service Center  
Raleigh, NC 27699-1556  
ATTN: Andy Miller  
[samiller@ncdot.gov](mailto:samiller@ncdot.gov)

**EXHIBIT A**

# PROJECT DATA

Name, Address, and Parcel IDs:	Name: Apex West Greenway Address: 2925 Olive Chapel Rd. Apex, NC 27502 Parcel IDs: 0711-98-6221 0721-09-5966 0721-09-7915 0721-09-4462
Project Coordinates:	Latitude: 35.728355° Longitude: -78.930904°
Preparer:	Company Name: Wetherill Engineering Contact Name: Jonathan Hefner Address: 1223 Jones Franklin Rd. Raleigh, NC 27606 Phone: 919-851-8077 Email: <a href="mailto:jhefner@wetherilleng.com">jhefner@wetherilleng.com</a>
Owner:	Town of Apex
Contract Purchaser:	Name: Town of Apex Parks & Recreation Contact Name: Andrew Havens Address: 73 Hunter St. Apex, NC 27502 Phone: 919-249-3400 Email: <a href="mailto:drew.havens@apexnc.org">drew.havens@apexnc.org</a>
Annexation Number:	N/A
Zoning:	N/A
Current 2045 Land Use:	Protected Open Space
Area of Tracts:	2 acres
Required setbacks:	N/A
Watershed Protection Overlay District:	Primary
FEMA:	Outside 100-yr floodplain for Reedy Branch
Gross Area of Buildings:	N/A
Gross Floor Area:	N/A
Building Height:	N/A
Minimum Number of Parking Spaces Required:	N/A
Maximum Number of Parking Spaces Permitted:	N/A
Parking Spaces Provided:	N/A
Number of Handicapped Spaces:	N/A
Percentage of Parking on Side and Rear:	N/A
Amount and Percentage of Built Upon Area Allowed:	N/A
Amount and Percentage of Built Upon Area Proposed:	N/A
Gross Area and Percent of RCA Required:	N/A
Gross Area and Percent of RCA Provided:	N/A
Historic Structures:	No
Two Community Amenities:	N/A
Type of Grading:	N/A
Natural Drainage Patterns Preserved:	95%

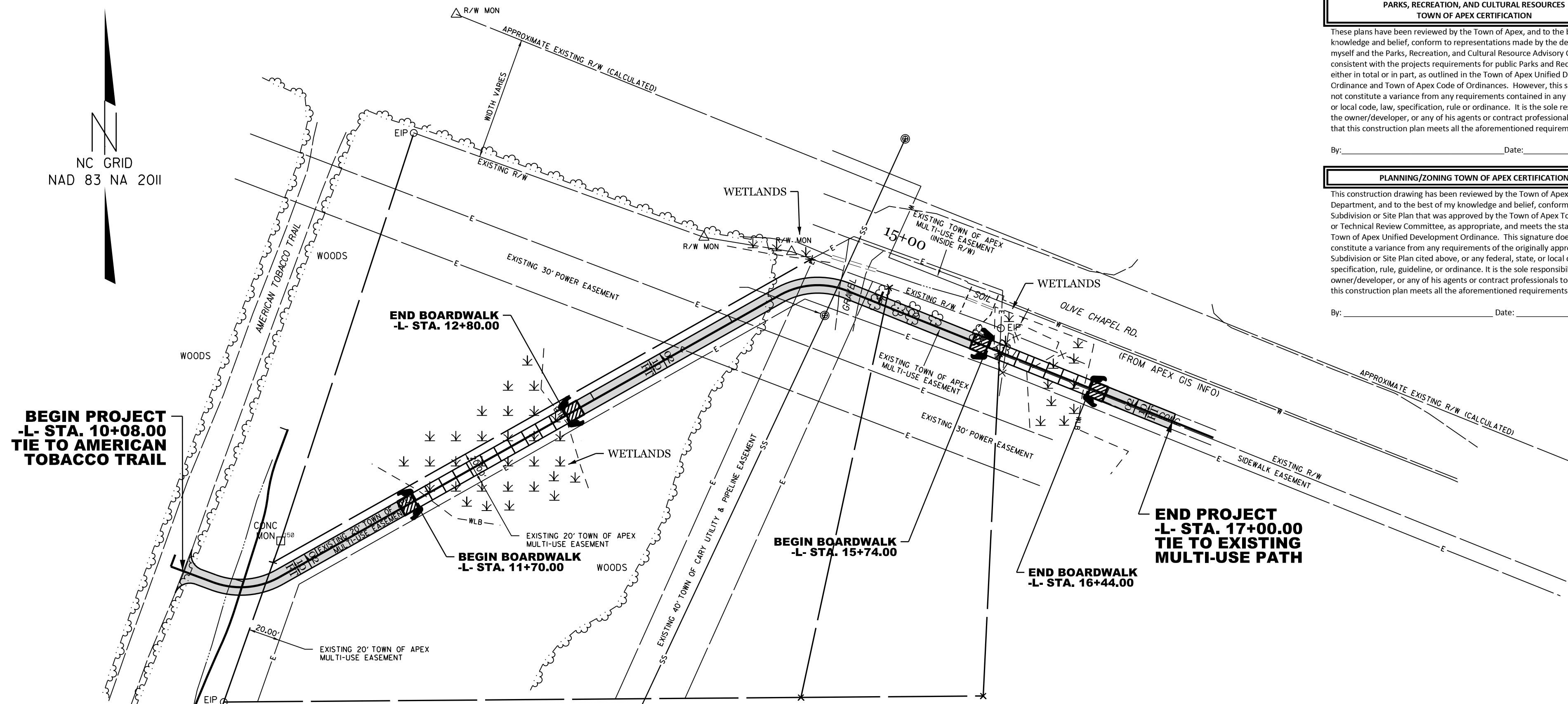
# CONSTRUCTION PLANS FOR:

## TOWN OF APEX NORTH CAROLINA

# APEX WEST GREENWAY

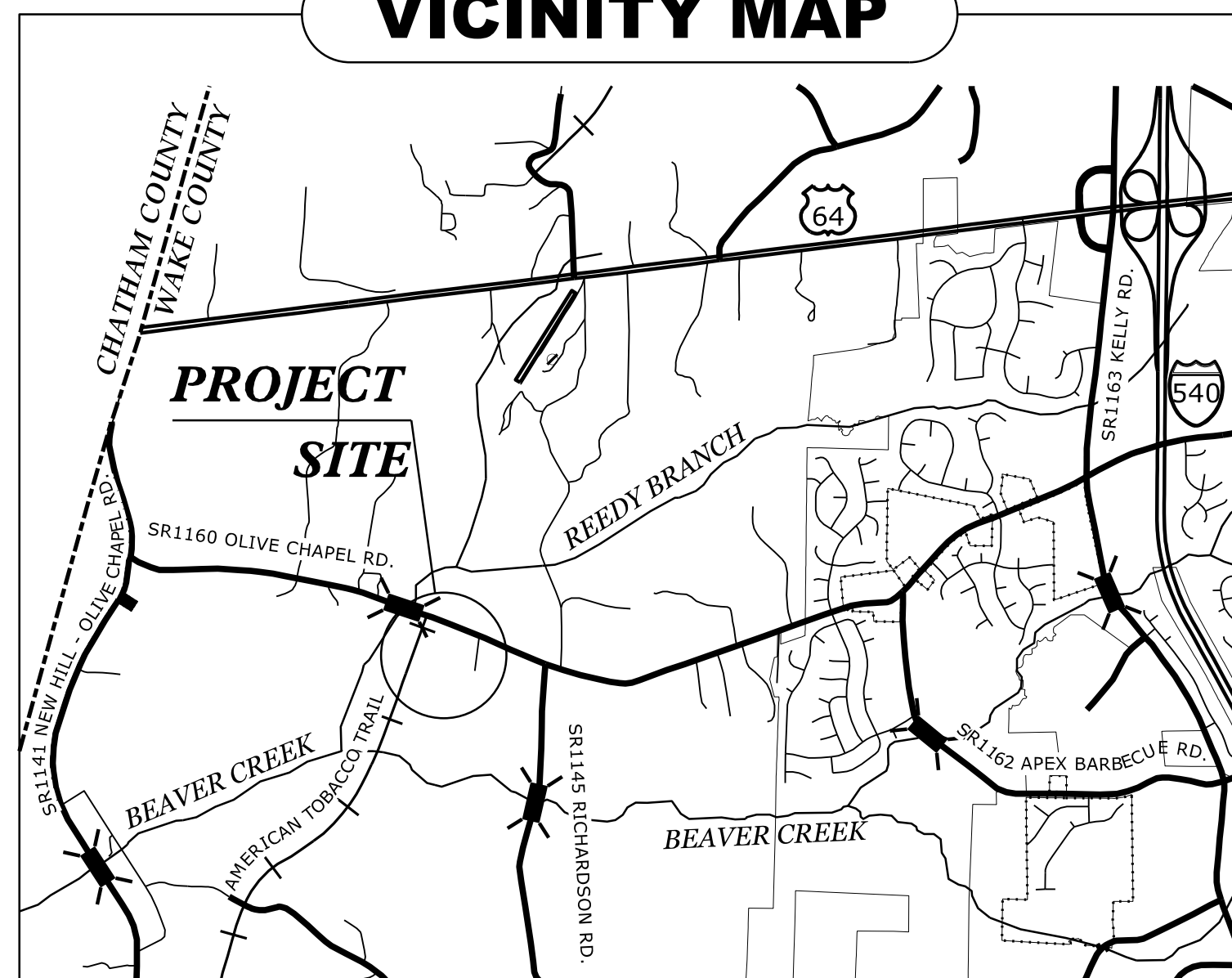
LOCATION:  
FROM OLIVE CHAPEL RD. TO AMERICAN TOBACCO TRAIL

TYPE OF WORK:  
GRADING, PAVING, STRUCTURE, DRAINAGE, & EROSION CONTROL



<b>BUILDING INSPECTIONS &amp; PERMITS TOWN OF APEX CERTIFICATION</b> This drawing has been reviewed by the Town of Apex Building Inspections & Permits Department, and to the best of my knowledge and belief, conforms to the requirements established within the Town's Code of Ordinances and the North Carolina State Building Codes. However, this signature does not constitute a variance from any requirements contained in any federal, state, or local code, law, specification, rule or ordinance. It is the sole responsibility of the owner/developer, or any of his agents or contract professionals to ensure that this construction plan meets all the aforementioned requirements. By: _____ Date: _____	<b>PUBLIC WORKS &amp; TRANSPORTATION TOWN OF APEX CERTIFICATION</b> This drawing has been reviewed by the Town of Apex Public Works & Transportation Department, and to the best of my knowledge and belief, provides an acceptable transportation system with consideration for the elements contained within the Transportation Plan conforming to the requirements established in the Standard Specifications & Standard Details and the Unified Development Ordinance of the Town of Apex. However, this signature does not constitute a variance from any requirements contained in any federal, state, or local code, law, specification, rule or ordinance. It is the sole responsibility of the owner/developer, or any of his agents or contract professionals to ensure that this construction plan meets all the aforementioned requirements. By: _____ Date: _____
<b>ELECTRIC TOWN OF APEX CERTIFICATION</b> This drawing has been reviewed by the Town of Apex Electric Department, and to the best of my knowledge and belief, conforms to the requirements established in the Standard Specifications and Construction Details and the Unified Development Ordinance of the Town of Apex. However, this signature does not constitute a variance from any requirements contained in any federal, state, or local code, law, specification, rule or ordinance. It is the sole responsibility of the owner/developer, or any of his agents or contract professionals to ensure that this construction plan meets all the aforementioned requirements. By: _____ Date: _____	<b>WATER RESOURCES SOIL EROSION &amp; SEDIMENTATION CONTROL TOWN OF APEX CERTIFICATION</b> This drawing has been reviewed by the Town of Apex, and to the best of my knowledge and belief, conforms to the requirements established in the Soil Erosion and Sedimentation Control Ordinance of the Town of Apex. However, this signature does not constitute a variance from any requirements contained in any federal, state, or local code, law, specification, rule or ordinance. It is the sole responsibility of the owner/developer, or any of his agents or contract professionals to ensure that this construction plan meets all the aforementioned requirements. This signature does not constitute plan approval, only plan requirements. A separate letter of plan approval will be mailed to the financially responsible person at a later date according to the construction sequence. By: _____ Date: _____
<b>FIRE DEPARTMENT TOWN OF APEX CERTIFICATION</b> This drawing has been reviewed by the Town of Apex Fire Department, and to the best of my knowledge and belief, conforms to the requirements established within the Town's Standard Specifications, Fire Protection Ordinances, and the North Carolina International Fire Code. However, this signature does not constitute a variance from any requirements contained in any federal, state, or local code, law, specification, rule or ordinance. It is the sole responsibility of the owner/developer, or any of his agents or contract professionals to ensure that this construction plan meets all the aforementioned requirements. By: _____ Date: _____	<b>WATER RESOURCES STORMWATER ENGINEERING TOWN OF APEX CERTIFICATION</b> This drawing has been reviewed by the Town of Apex Water Resources Stormwater & Utility Engineering Division and to the best of my knowledge and belief, conforms to the requirements established in the Standard Specifications and Standard Details and the Unified Development Ordinance of the Town of Apex. However, this signature does not constitute a variance from any requirements contained in any federal, state, or local code, law, specification, rule or ordinance. It is the sole responsibility of the owner/developer, or any of his agents or contract professionals to ensure that this construction plan meets all the aforementioned requirements. This signature serves as the stormwater permit for this project. By: _____ Date: _____
<b>PARKS, RECREATION, AND CULTURAL RESOURCES TOWN OF APEX CERTIFICATION</b> These plans have been reviewed by the Town of Apex, and to the best of my knowledge and belief, conform to representations made by the developer to myself and the Parks, Recreation, and Cultural Resources Advisory Commission consistent with the project's requirements for public Parks and Recreation, either in total or in part, as outlined in the Town of Apex Unified Development Ordinance and Town of Apex Code of Ordinances. However, this signature does not constitute a variance from any requirements contained in any federal, state, or local code, law, specification, rule, guideline, or ordinance. It is the sole responsibility of the owner/developer, or any of his agents or contract professionals to ensure that this construction plan meets all the aforementioned requirements. By: _____ Date: _____	<b>WATER RESOURCES UTILITY ENGINEERING TOWN OF APEX CERTIFICATION</b> This drawing has been reviewed by the Town of Apex Water Resources Department, and to the best of my knowledge and belief, conforms to the requirements established in the Standard Specifications and Standard Details of the Town of Apex. However, this signature does not constitute a variance from any requirements contained in any federal, state, or local code, law, specification, rule or ordinance. It is the sole responsibility of the owner/developer, or any of his agents or contract professionals to ensure that this construction plan meets all the aforementioned requirements. By: _____ Date: _____
<b>PLANNING/ZONING TOWN OF APEX CERTIFICATION</b> This construction drawing has been reviewed by the Town of Apex Planning Department, and to the best of my knowledge and belief, conforms to the Subdivision or Site Plan that was approved by the Town of Apex Town Council or Technical Review Committee, as appropriate, and meets the standards of the Town of Apex Unified Development Ordinance. This signature does not constitute a variance from any requirements of the originally approved Subdivision or Site Plan cited above, or any federal, state, or local code, law, specification, rule, guideline, or ordinance. It is the sole responsibility of the owner/developer, or any of his agents or contract professionals to ensure that this construction plan meets all the aforementioned requirements. By: _____ Date: _____	

# VICINITY MAP



PUBLIC INFRASTRUCTURE TABLE	
WATER LINES	0 LF
SEWER LINES	0 LF
CURB & GUTTEER	0 LF
STORM DRAIN	0 LF
GREENWAY	692 LF @ \$1.35/LF = \$934.20
SIDEWALK	0 LF
NEW STREETS	0 LF

# INDEX OF SHEETS

1	COVER SHEET
2	SYMBOLOLOGY SHEET
3	NOTES
4	EXISTING CONDITIONS
5	PLAN, PROFILE, AND TYPICAL SECTIONS
6	CONSTRUCTION DETAILS
7	CONSTRUCTION DETAILS
EC-1	NCG01 GROUND STABILIZATION
EC-2	NCG01 SELF-INSPECTION
EC-3	EROSION CONTROL NOTES
EC-4	EROSION CONTROL DETAILS
EC-5	EROSION CONTROL CLEARING AND GRUBBING
EC-6	EROSION CONTROL FINAL
X-1	CROSS SECTIONS
X-2	CROSS SECTIONS
X-3	CROSS SECTIONS

NO.	DATE	DESCRIPTION

PLANS PREPARED FOR:

PROJECT CONTACT:  
ANGELA REINCKE  
PARKS AND GREENWAY PLANNER  
PO BOX 250  
APEX, NC 27502  
919.372.7468

TOWN OF APEX  
73 Hunter Street  
Apex, NC 27502

## APEX WEST GREENWAY

CONNECTION FROM  
OLIVE CHAPEL ROAD  
TO AMERICAN TOBACCO TRAIL

PLANS PREPARED BY:

1223 Jones Franklin Rd., Raleigh, N.C. 27606  
License No. F-0377  
Bus: 919 851 8077 Fax: 919 851 8107

ROADWAY ENGINEER

HYDRAULICS ENGINEER

**INCOMPLETE PLANS**  
DO NOT USE FOR R/W ACQUISITION

**DOCUMENT NOT CONSIDERED FINAL**  
UNLESS ALL SIGNATURES COMPLETED

DATE: MARCH 4, 2020

COVER SHEET

WEI PROJECT NO.:

20326.01

1

# CONVENTIONAL PLAN SHEET SYMBOLS

## BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EP
Computed Property Corner	-----
Property Monument	□ ECM
Parcel/Sequence Number	⑫③
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	WLB
Proposed Wetland Boundary	WLB
Existing Endangered Animal Boundary	EAB
Existing Endangered Plant Boundary	EPB
Existing Historic Property Boundary	HPB
Known Contamination Area: Soil	☠ S
Potential Contamination Area: Soil	☠ S
Known Contamination Area: Water	☠ W
Potential Contamination Area: Water	☠ W
Contaminated Site: Known or Potential	☠

## BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○
Well	○ W
Small Mine	✕
Foundation	□
Area Outline	□
Cemetery	□
Building	□
School	□
Church	□
Dam	□

## HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	□
Jurisdictional Stream	JS
Buffer Zone 1	BZ 1
Buffer Zone 2	BZ 2
Flow Arrow	←
Disappearing Stream	-----
Spring	○
Wetland	W
Proposed Lateral, Tail, Head Ditch	-----
False Sump	▽

## RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○
Switch	□
RR Abandoned	-----
RR Dismantled	-----

## RIGHT OF WAY & PROJECT CONTROL:

Secondary Horiz and Vert Control Point	◆
Primary Horiz Control Point	○
Primary Horiz and Vert Control Point	◆
Exist Permanent Easment Pin and Cap	◇
New Permanent Easement Pin and Cap	◆
Vertical Benchmark	⊠
Existing Right of Way Marker	△
Existing Right of Way Line	-----
New Right of Way Line	-----
New Right of Way Line with Pin and Cap	-----
New Right of Way Line with Concrete or Granite RW Marker	-----
New Control of Access Line with Concrete CA Marker	-----
Existing Control of Access	-----
New Control of Access	-----
Existing Easement Line	-----
New Temporary Construction Easement	-----
New Temporary Drainage Easement	-----
New Permanent Drainage Easement	-----
New Permanent Drainage / Utility Easement	-----
New Permanent Utility Easement	-----
New Temporary Utility Easement	-----
New Aerial Utility Easement	-----

## ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-----
Proposed Slope Stakes Fill	-----
Proposed Curb Ramp	-----
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	-----

## VEGETATION:

Single Tree	☼
Single Shrub	☼

Note: Not to Scale

\*S.U.E. = Subsurface Utility Engineering

Hedge	-----
Woods Line	-----
Orchard	-----
Vineyard	-----

## EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	-----
Bridge Wing Wall, Head Wall and End Wall	-----
MINOR:	
Head and End Wall	-----
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	-----
Paved Ditch Gutter	-----
Storm Sewer Manhole	-----
Storm Sewer	-----

## UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊕
Power Line Tower	⊠
Power Transformer	⊠
U/G Power Cable Hand Hole	-----
H-Frame Pole	-----
U/G Power Line LOS B (S.U.E.*)	-----
U/G Power Line LOS C (S.U.E.*)	-----
U/G Power Line LOS D (S.U.E.*)	-----

## TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊕
Telephone Pedestal	⊠
Telephone Cell Tower	⊠
U/G Telephone Cable Hand Hole	-----
U/G Telephone Cable LOS B (S.U.E.*)	-----
U/G Telephone Cable LOS C (S.U.E.*)	-----
U/G Telephone Cable LOS D (S.U.E.*)	-----
U/G Telephone Conduit LOS B (S.U.E.*)	-----
U/G Telephone Conduit LOS C (S.U.E.*)	-----
U/G Telephone Conduit LOS D (S.U.E.*)	-----
U/G Fiber Optics Cable LOS B (S.U.E.*)	-----
U/G Fiber Optics Cable LOS C (S.U.E.*)	-----
U/G Fiber Optics Cable LOS D (S.U.E.*)	-----

## WATER:

Water Manhole	⊕
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
U/G Water Line LOS B (S.U.E.*)	-----
U/G Water Line LOS C (S.U.E.*)	-----
U/G Water Line LOS D (S.U.E.*)	-----
Above Ground Water Line	-----

## TV:

TV Pedestal	⊠
TV Tower	⊗
U/G TV Cable Hand Hole	-----
U/G TV Cable LOS B (S.U.E.*)	-----
U/G TV Cable LOS C (S.U.E.*)	-----
U/G TV Cable LOS D (S.U.E.*)	-----
U/G Fiber Optic Cable LOS B (S.U.E.*)	-----
U/G Fiber Optic Cable LOS C (S.U.E.*)	-----
U/G Fiber Optic Cable LOS D (S.U.E.*)	-----

## GAS:

Gas Valve	◇
Gas Meter	⊕
U/G Gas Line LOS B (S.U.E.*)	-----
U/G Gas Line LOS C (S.U.E.*)	-----
U/G Gas Line LOS D (S.U.E.*)	-----
Above Ground Gas Line	-----

## SANITARY SEWER:

Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	-----
Above Ground Sanitary Sewer	-----
SS Forced Main Line LOS B (S.U.E.*)	-----
SS Forced Main Line LOS C (S.U.E.*)	-----
SS Forced Main Line LOS D (S.U.E.*)	-----

## MISCELLANEOUS:


Utility Pole	●
Utility Pole with Base	⊠
Utility Located Object	○
Utility Traffic Signal Box	⊠
Utility Unknown U/G Line LOS B (S.U.E.*)	-----
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	⊕
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊕
U/G Test Hole LOS A (S.U.E.*)	○
Abandoned According to Utility Records	⊕
End of Information	-----

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Building Inspections	Date	Planning	Date
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Electric	Date	Fire	Date
WR - S&E	Date	Parks, Recreation & Cultural Res.	Date

NO.	DATE	DESCRIPTION

PLANS PREPARED FOR:




PROJECT CONTACT:  
ANGELA REINCKE  
PARKS AND GREENWAY PLANNER  
PO BOX 250  
APEX, NC 27502  
919.372.7468

TOWN OF APEX  
73 Hunter Street  
Apex, NC 27502

### APEX WEST GREENWAY

CONNECTION FROM  
OLIVE CHAPEL ROAD  
TO AMERICAN TOBACCO TRAIL

PLANS PREPARED BY:



1223 Jones Franklin Rd., Raleigh, N.C. 27606  
License No. F-0377  
Bus: 919 851 8077 Fax: 919 851 8107

ROADWAY ENGINEER

HYDRAULICS ENGINEER

**INCOMPLETE PLANS**  
DO NOT USE FOR B/W ACQUISITION

**DOCUMENT NOT CONSIDERED FINAL**  
UNLESS ALL SIGNATURES COMPLETED

DATE: MARCH 4, 2020

CONVENTIONAL SYMBOLS

WEI PROJECT NO.:

20326.01

**2**

Required Site Plan Notes:

- 1) No site development activity including, but not limited to, testing, clearing, installation of S&E measures, or grading shall occur until required tree protection fencing has been installed and inspected. A Tree Protection Fencing Installation Permit may be obtained at the Planning Department or online at <http://www.apexnc.org/215/Applications- Schedules>.
- 2) Tree protection fencing must be placed:
  - a. One foot away from any saved tree for each inch of diameter at breast height,
  - b. Along the outside line of the 100-year floodplain and the outside edge of any riparian buffer, and
  - c. At least 10 feet away from any other designated RCA such as, but not limited to, historic buildings and structures, wetlands, and ponds.
- 3) Additional tree protection fencing may be required in other locations close to construction activity where it is deemed necessary by the zoning enforcement officer; such areas may include, but are not limited to, common property lines or near public areas (sidewalks, etc.).
- 4) If buildings are to be demolished, a copy of the Demolition Notification from the NC Health Hazard Control Unit and an asbestos inspection report from a NC accredited asbestos inspector must accompany the application for the demolition permit which must be obtained prior to start of the demolition.
- 5) All grading and support structures associated with any retaining structure shall not encroach into any required buffer or protected area (e.g. RCA, the critical root zones of trees, public utility easements and rights-of-way), and shall be contained entirely on site.
- 6) Site elements required to satisfy recreational requirements such as, but not limited to, play fields, greenway trails and items typically associated with them (benches, trash containers, signs, etc.) must meet any applicable standards found in the Town of Apex Standard Specifications and Standard Details and the requirements of the Town of Apex Parks and Recreation Department.
- 7) The screening of loading docks, roll-out trash containers, dumpsters, outdoor storage, mechanical and HVAC equipment, and similar facilities on the roof, ground, or building shall meet the requirements of UDO Sec. 8.2.8. Specifically, screening must be done so that:
  - a. It is incorporated into the overall design theme of the building and landscape.
  - b. Screening materials are not different from or inferior to the principal materials of the building or landscape, and are similar in materials and color.
  - c. Screened items are out of view from adjacent properties and public streets, and a totally opaque screen is achieved.
  - d. Any ground-mounted HVAC or other mechanical or utility equipment six (6) feet tall or higher must be fenced and landscaped.
  - e. Dumpster enclosures must meet the above requirements plus be eight (8) feet tall or the height of the dumpster, whichever is greater, and be built of masonry material with opaque gates. Where practicable, shrubs or other plants must be planted outside the enclosure to visually soften the appearance.
- 8) All required site elements shown within a particular phase must be installed before a final Certificate of Occupancy may be issued for any building within that phase.
- 9) Prior to scheduling a final site inspection, all site items (e.g. lighting, landscaping, mulching, screening for dumpsters, mechanical equipment, HVAC, etc., seeding & site stabilization, and parking and pavement marking) must be completed.
- 10) Individual signs are not approved as part of the site plan approval process. A separate sign permit must be obtained prior to installation of the sign. Multiple use lots, non-residential subdivisions and multiple tenant lots must submit a Master Sign Plan for approval.
- 11) Retaining systems providing a cumulative vertical relief greater than five feet in height within a horizontal distance of 50 feet or less, including retaining walls or mechanically stabilized earth walls, shall be designed and constructed under the responsible charge of a registered professional engineer and comply in all aspects with the NC Building Code Sec. 1610. Retaining systems meeting these criteria will require a separate building permit prior to the start of work. All retaining walls and other retention structures must be integrally tinted or stained a medium or dark brown or rust color or be covered with a masonry veneer that is a medium or dark brown or rust color.
- 12) A Grading Permit, when applicable, may only be issued by the Building Inspections Division after the installation and approval of tree protection fencing and S&E measures and a Certificate of Compliance has been issued by the Water Resources Department.

- 13) Prior to approval of a Final Plat or issuance of a Certificate of Occupancy for any development where a Stormwater Control Measure (SCM) is required, contact the Environmental Programs Manager at 919-249-3413 to demonstrate that the required structure is in place, is operational, and complies with all relevant portions of UDO Sec. 6.1.12 Engineered Stormwater Controls. If the SCM is used as part of a temporary erosion control measure, the inspection will occur during the appropriate phase of construction.
- 14) All water and sewer lines shall be installed with a minimum of three (3) feet of cover.
- 15) Maintain a minimum of 18 inches of vertical separation between utilities.
- 16) Verify all illustrated utility crossings prior to construction and notify the engineer if conflicts are encountered.
- 17) Contractor shall coordinate utility relocation or abandonment with local utility companies as required.
- 18) All metered connections to Town potable water shall have a Town-approved backflow prevention assembly installed.
- 19) Water and sewer shall be at least 10 feet laterally from existing or proposed sewers. Where local conditions prevent a separation of at least 10 feet, the water main may be laid closer, provided that the elevation of the bottom of the water main is at least 18 inches above the top of the sewer with a horizontal separation of at least three (3) feet.
- 20) All new public water and sewer lines contained within a Town of Apex Public Utility Easement will require a Water Distribution Extension Permit and/or a Gravity Sewer Extension Permit to the release of construction drawings. All Water Distribution Extension Permit Applications shall be accompanied by a Sealed Engineer's Report per the Town of Apex Spec Book. Please contact the Engineering Division at 919-249-3394 to obtain these permit applications.
- 21) A plumbing permit issued by the Building Inspection Division is required for all plumbing systems, including storm drainage systems, installed outside the Public Right-of-Way or a Public Utility Easement. These systems shall be inspected and approved by the plumbing inspector prior to covering. Contact the Building Inspections Director at 919-249-3381 for information including the utilization of a third-party inspection agency.
- 22) It is the responsibility of the owner or his representative(s) to locate and identify all existing and proposed utilities and to clearly identify them on the approved plans.
- 23) No private utility easements shall be allowed to be counted in the calculations for buffers, RCA, or required landscape areas.
- 24) All landscaping is required to be installed prior to a Certificate of Occupancy for the project, or in the case of phased development, for the phase of the project. If the applicant chooses to delay the installation of landscaping from April 1 through September 1, then the applicant shall provide a cash bond equal to 150% of the cost of materials and installation, based on the highest estimate received, to ensure installation of the required landscaping. Additional exceptions may be granted by the Planning Director in accordance with UDO Sec. 8.2.2.E.
- 25) Required buffers must meet the minimum opacity requirements for the particular type of buffer as described in UDO Sec. 8.2.6.
- 26) Any vegetation that is dead, substandard, unhealthy, of poor structural quality, or missing shall be replaced in conformance with Town standards.
- 27) All plant material shall be allowed to reach their mature size and maintained at their mature size. Plants shall not be cut or severely pruned so that their natural form is impaired.
- 28) All slopes equal to 2:1 shall be stabilized with permanent slope retention or a suitable combination of plantings and retention devices.
- 29) Slopes steeper than 3:1 but less than 2:1 shall be stabilized with permanent groundcover, not with turf grass.
- 30) All outdoor light fixtures shall be located a minimum of 10 feet from a property or right-of-way line, and at least two feet away from any required perimeter or streetscape buffer and tree save area.
- 31) Lamps for non-cutoff light fixtures shall not exceed 100 watts.
- 32) Wall pack light fixtures must be fully shielded, true cutoff type fixtures with a concealed lamp/light source. The lighting must be directed downward and the wattage must not exceed 100 watts.
- 33) Floodlights or other types of lighting are prohibited unless approval is given through the development review process and reflected on the approved site plan.
- 34) Awnnings and canopies used for accents over doors and windows shall not be internally lit.

- 35) Before certificates of occupancy are released, the owner/builder must supply the Town with a final letter of certification from the lighting engineer and/or lighting manufacturer verifying that all site lighting is installed according to Town standards, the approved plans, and any applicable conditions.
- 36) Architectural construction plans must adhere to the approved site plans. Any proposed changes must be submitted to the Planning Department for approval.

Town of Apex Construction Sequence

The following begins only after Construction Plans are approved, signed by Town staff and copies are received.


1. Through the Infrastructure Inspections Manager at (919) 249-3386, schedule a pre-construction meeting with inspectors and other Town staff.
2. Fill out Tree/Protection Fencing Installation Permit Application (obtain from Planning Department).
3. Have a surveyor flag property lines, easements, buffers, tree protection areas, and flag the protection limits.
4. Contact an Apex Planning Department Zoning Compliance Officer at (919)249-3426 to request approval for tree protection fencing locations.
5. Install approved tree protection fencing, signs, and/or any other protection measures that may be required. Call Planning at 249-3426 for a final inspection of protection measures. Planning will forward approval to Water Resources, Erosion Control field staff.
6. Submit the applicable S&E performance guarantee to the Development Services Supervisor at 249-3394 in Development Services. An invoice can be requested from Water Resources at (919) 362-8166. The erosion control Letter of Plan Approval will not be issued until the guarantee has been submitted.
7. Request a Letter of Plan Approval for sedimentation and erosion control measures from Water Resources staff at (919) 362-8166.
8. Complete and submit an electronic Notice of Intent (e-NOI) form with NCDEMLR requesting a Certificate of Coverage (COC) under the NCG01 Construction Stormwater General Permit. Visit the following website: <https://deq.nc.gov/about/divisions/energy-mineral-land-resources/energy-mineral-landpermits/stormwater-permits/construction-sw> The COC must be submitted to the Town prior to the commencement of any land disturbing activity.
9. Install gravel construction entrance, temporary diversions, silt fencing, sediment basins, bypass channels, and/or other measures as shown on the approved plans. Clear only as necessary to install these devices.
10. When completed, call Water Resources staff at (919) 362-8166 for an on-site inspection and to request a Certificate of Compliance. Water Resources will also forward a copy to the Building Inspections & Permitting Department.
11. Complete a Grading Permit Application, if required, from the Building Inspections & Permitting Department.
12. Once a Grading Permit is reviewed and issued by the Building Inspections & Permitting Department, arrange a pre-construction meeting with Rudy Baker at 249-3381 prior to any grading activities. This meeting is separate from any other pre-construction meetings required in the Construction Sequence.
13. Post Grading Permit prominently on site at all times.
14. Begin clearing, grubbing, and rough grade of the site in accordance with the approved grading plan.
15. Stockpile a sufficient amount of topsoil to cover 3 inches over landscaped areas at the end of the project.
16. Install storm sewer, if applicable, and protect inlets with inlet protection devices, sediment devices, and/or other approved measures as shown on plans. Maintain S&E measures as needed.
17. After completion of any phase of grading or when land-disturbing activities have temporarily ceased, establish groundcover on swales and ditches and graded slopes steeper than 3:1 within 7 calendar days; slopes that are 3:1 or flatter must establish groundcover within 14 calendar days.
18. Stabilize site as areas are brought up to finished grade with vegetation or paving.
19. Prior to plat approval, all disturbed areas both public and private, must be properly stabilized. All temporary erosion control measures must be installed, be functioning properly and be maintained for the entire area contained within the plat.
20. Flush and clean all stormwater system pipes. Clean and remove sediment from temporary sediment holding devices. Follow the SCM Construction Sequence found on the Grading and/or SCM Detail sheet on the Construction Plan set.
21. Remove all temporary diversions, silt fencing, sediment basins, etc. and provide adequate cover or pave any resulting bare areas. All permanent erosion control devices should be installed at this point.
22. When vegetation has been established, call Water Resources staff at (919) 362-8166 for a final site inspection and to request a Certificate of Completion. The S&E performance guarantee will be released with the issuance of the Certificate of Completion. Visit the State website listed above and submit an electronic Notice of Termination (e-NOT) to end coverage under the NCG01 permit.
23. The Property Owner/Home Owners Association will be responsible for permanent erosion control maintenance of the site.

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PW - Transportation	Date	WR - Stormwater	Date
Building Inspections	Date	Planning	Date
WR - Utility Engineering	Date	Planning - Transportation	Date
Electric	Date	Fire	Date
WR - S&E	Date	Parks, Recreation & Cultural Res.	Date

REVISIONS:		
NO.	DATE	DESCRIPTION

PLANS PREPARED FOR:



PROJECT CONTACT:  
ANGELA REINCKE  
PARKS AND GREENWAY PLANNER  
PO BOX 250  
APEX, NC 27502  
919.372.7468

## APEX WEST GREENWAY

CONNECTION FROM  
OLIVE CHAPEL ROAD  
TO AMERICAN TOBACCO TRAIL

PLANS PREPARED BY:



1223 Jones Franklin Rd., Raleigh, N.C. 27606  
License No. F-0377  
Bus: 919 851 8077 Fax: 919 851 8107

ROADWAY ENGINEER

**INCOMPLETE PLANS**  
DO NOT USE FOR R/W ACQUISITION

HYDRAULICS ENGINEER

**DOCUMENT NOT CONSIDERED FINAL**  
**UNLESS ALL SIGNATURES COMPLETED**

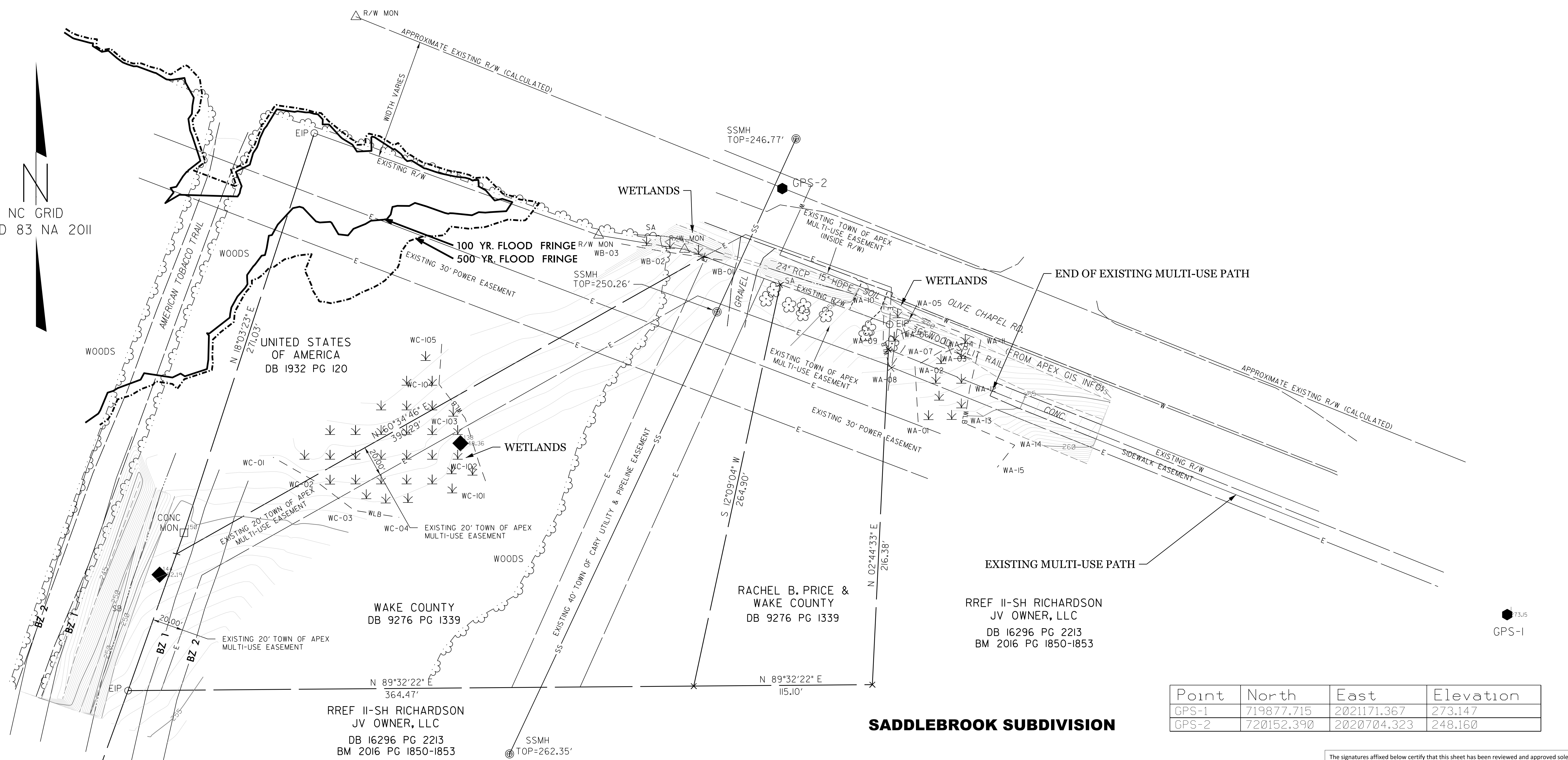
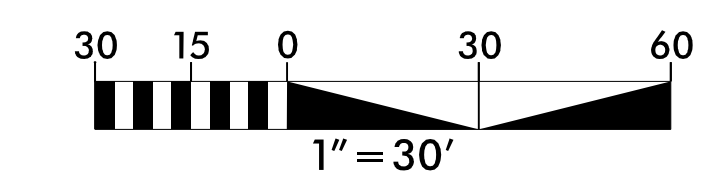
DATE: MARCH 4, 2020

NOTES

WEI PROJECT NO.:

**20326.01**

**3**



**NOTES:**

1. FIELD SURVEY COMPLETED BY WETHERILL ENGINEERING IN JANUARY 2020.
2. WETLANDS EXIST WITHIN THE GREENWAY CORRIDOR.
3. WETLANDS AND STREAMS HAVE NOT BEEN VERIFIED BY THE US ARMY CORPS OF ENGINEERS.
4. SITE IS WITHIN THE PRIMARY WATERSHED OVERLAY DISTRICT.
5. TREE SURVEY NOT COMPLETED. ALL TREES WITHIN THE EASEMENT AREA WILL BE CLEARED IN ORDER TO ACCOMMODATE THE MULTI-USE PATH.

Point	North	East	Elevation
GPS-1	719877.715	2021171.367	273.147
GPS-2	720152.390	2020704.323	248.160

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WR - S&E	Date	Parks, Recreation & Cultural Res.	Date

REVISIONS:	NO.	DATE	DESCRIPTION

PLANS PREPARED FOR:

PROJECT CONTACT:  
ANGELA REINCKE  
PARKS AND GREENWAY PLANNER  
PO BOX 250  
APEX, NC 27502  
919.372.7468

**APEX WEST GREENWAY**

CONNECTION FROM  
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PLANS PREPARED BY:

1223 Jones Franklin Rd., Raleigh, N.C. 27606  
License No. F-0377  
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ROADWAY ENGINEER

HYDRAULICS ENGINEER

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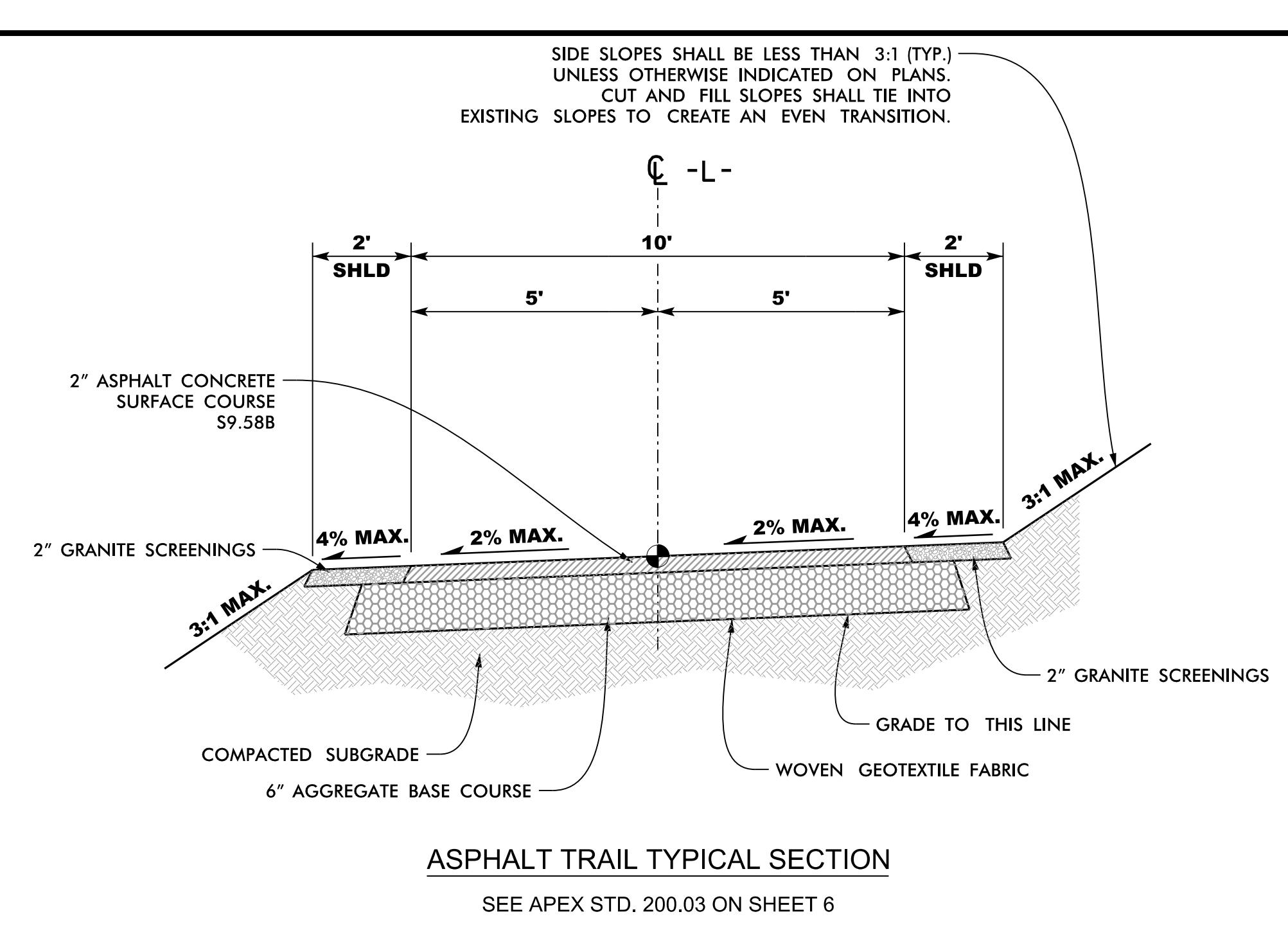
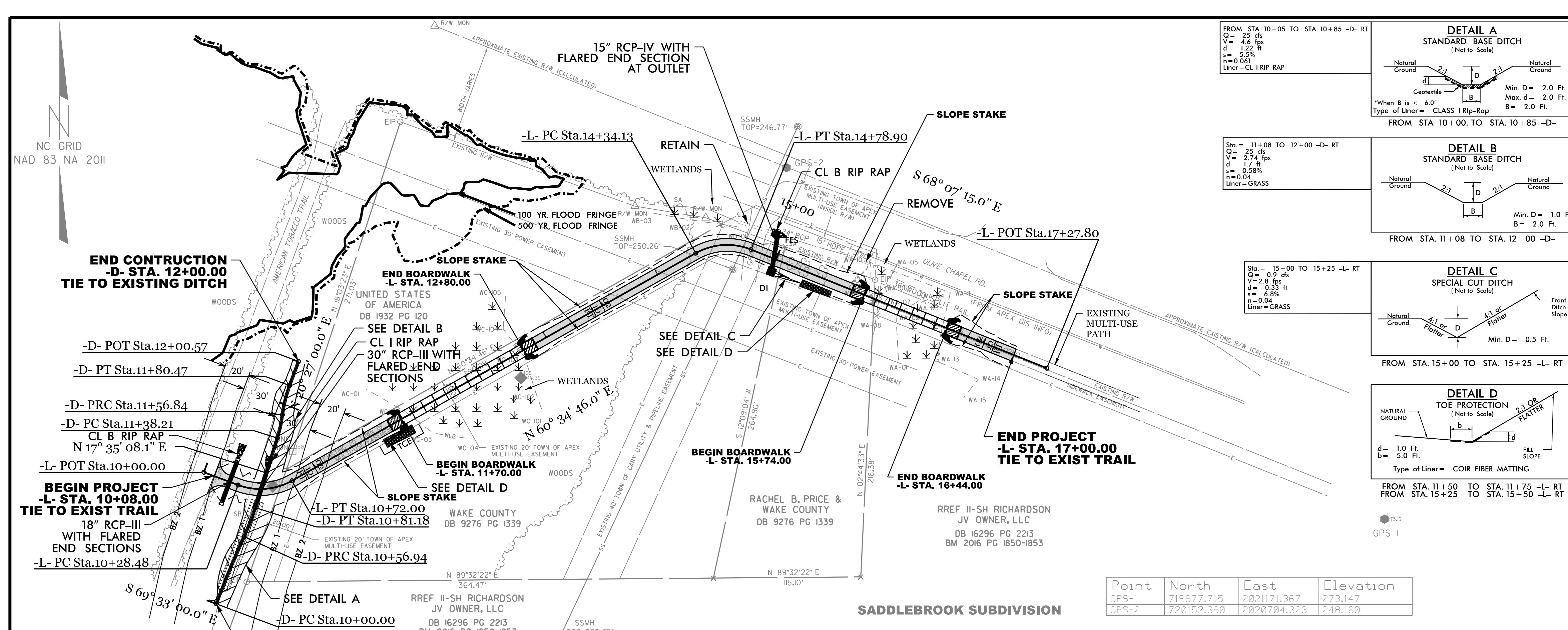
DATE: MARCH 4, 2020

EXISTING CONDITIONS

WEI PROJECT NO.:

**20326.01**

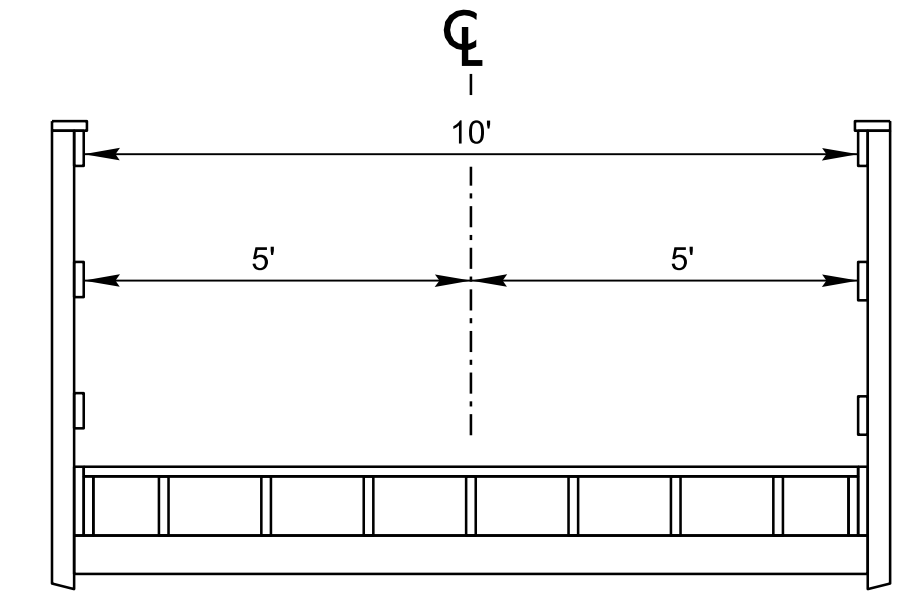
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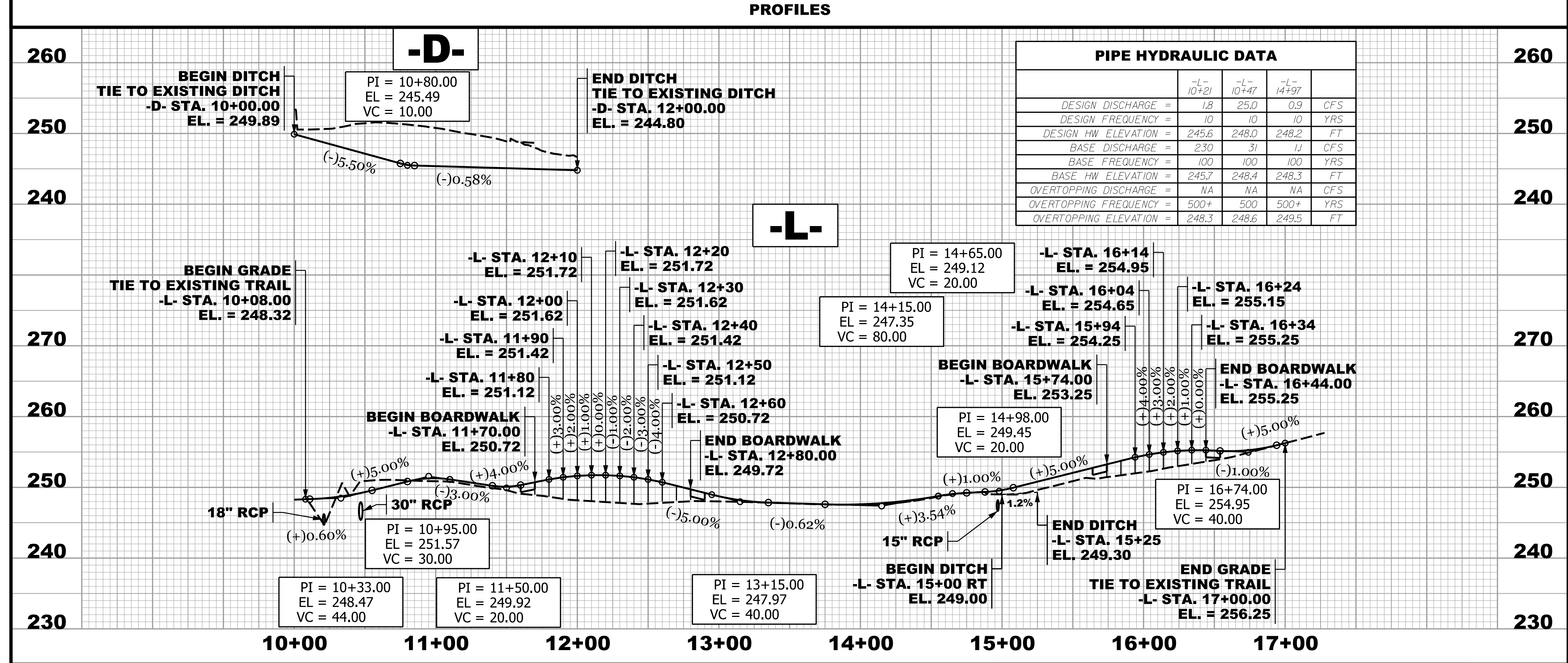
CHAIN	BEGIN STATION	END STATION
-L-	(TIE TO AMERICAN TOBACCO TRAIL) 10+08.00	11+70.00 (BEGIN BOARDWALK)
-L-	(END BOARDWALK) 12+80.00	15+74.00 (BEGIN BOARDWALK)
-L-	(END BOARDWALK) 16+44.00	17+00.00 (TIE TO EXISTING TRAIL)

Point	North	East	Elevation
GPS-1	719877.715	2821171.367	273.147
GPS-2	720152.340	2820704.323	248.160

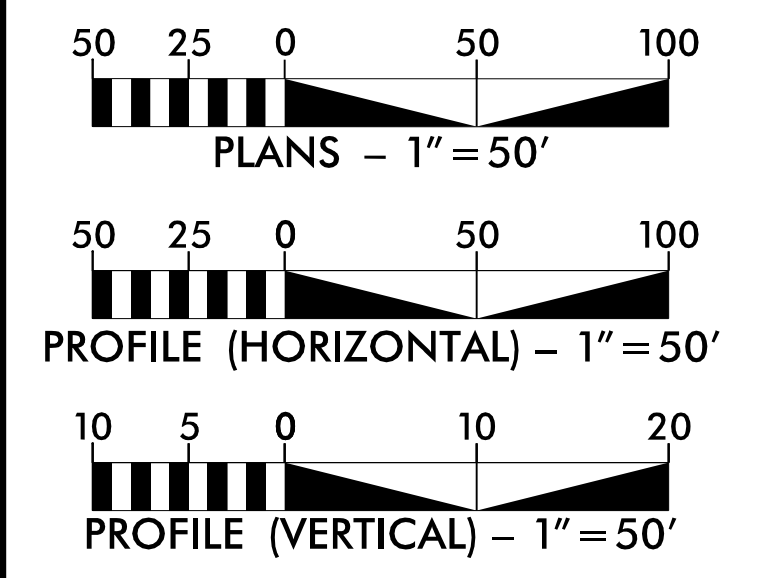
-D- CURVE DATA		-L- CURVE DATA			
PI Sta 10+28.48	PI Sta 10+69.08	PI Sta 11+47.55	PI Sta 11+68.71	PI Sta 10+51.73	PI Sta 14+58.14
$\Delta = 4^{\circ} 04' 42.1''$ (RT)	$\Delta = 6^{\circ} 56' 34.0''$ (LT)	$\Delta = 10^{\circ} 40' 26.8''$ (LT)	$\Delta = 13^{\circ} 32' 18.6''$ (RT)	$\Delta = 49^{\circ} 52' 14.0''$ (LT)	$\Delta = 51^{\circ} 17' 59.0''$ (RT)
D = 7' 09' 43.1"	D = 28' 38' 52.4"	D = 57' 17' 44.8"	D = 57' 17' 44.8"	D = 114' 35' 29.6"	D = 114' 35' 29.6"
L = 56.94'	L = 24.23'	L = 18.63'	L = 23.63'	L = 43.52'	L = 44.77'
T = 28.48'	T = 12.13'	T = 9.34'	T = 11.87'	T = 23.25'	T = 24.01'
R = 800.00'	R = 200.00'	R = 100.00'	R = 100.00'	R = 50.00'	R = 50.00'



BOARDWALK NO.	CHAIN	BEGIN STATION	END STATION
1	-L-	11+70.00	12+80.00
2	-L-	15+74.00	16+44.00



PIPE HYDRAULIC DATA			
	-L- 10+21	-L- 10+47	-L- 14+97
DESIGN DISCHARGE =	1.8	25.0	0.9 CFS
DESIGN FREQUENCY =	10	10	10 YRS
DESIGN HW ELEVATION =	245.6	248.0	248.2 FT
BASE DISCHARGE =	2.30	31	11 CFS
BASE FREQUENCY =	100	100	100 YRS
BASE HW ELEVATION =	245.7	248.4	248.3 FT
OVERTOPPING DISCHARGE =	NA	NA	NA CFS
OVERTOPPING FREQUENCY =	500+	500	500+ YRS
OVERTOPPING ELEVATION =	248.3	248.6	249.5 FT



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WR - S&E	Date	Parks, Recreation & Cultural Res.	Date

NO.	DATE	DESCRIPTION

PLANS PREPARED FOR:

PROJECT CONTACT:  
ANGELA REINCKE  
PARKS AND GREENWAY PLANNER  
PO BOX 250  
APEX, NC 27502  
919.372.7468

PLANS PREPARED BY:

1223 Jones Franklin Rd., Raleigh, N.C. 27606  
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**APEX WEST GREENWAY**  
CONNECTION FROM  
OLIVE CHAPEL ROAD  
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ROADWAY ENGINEER

HYDRAULICS ENGINEER

**INCOMPLETE PLANS**  
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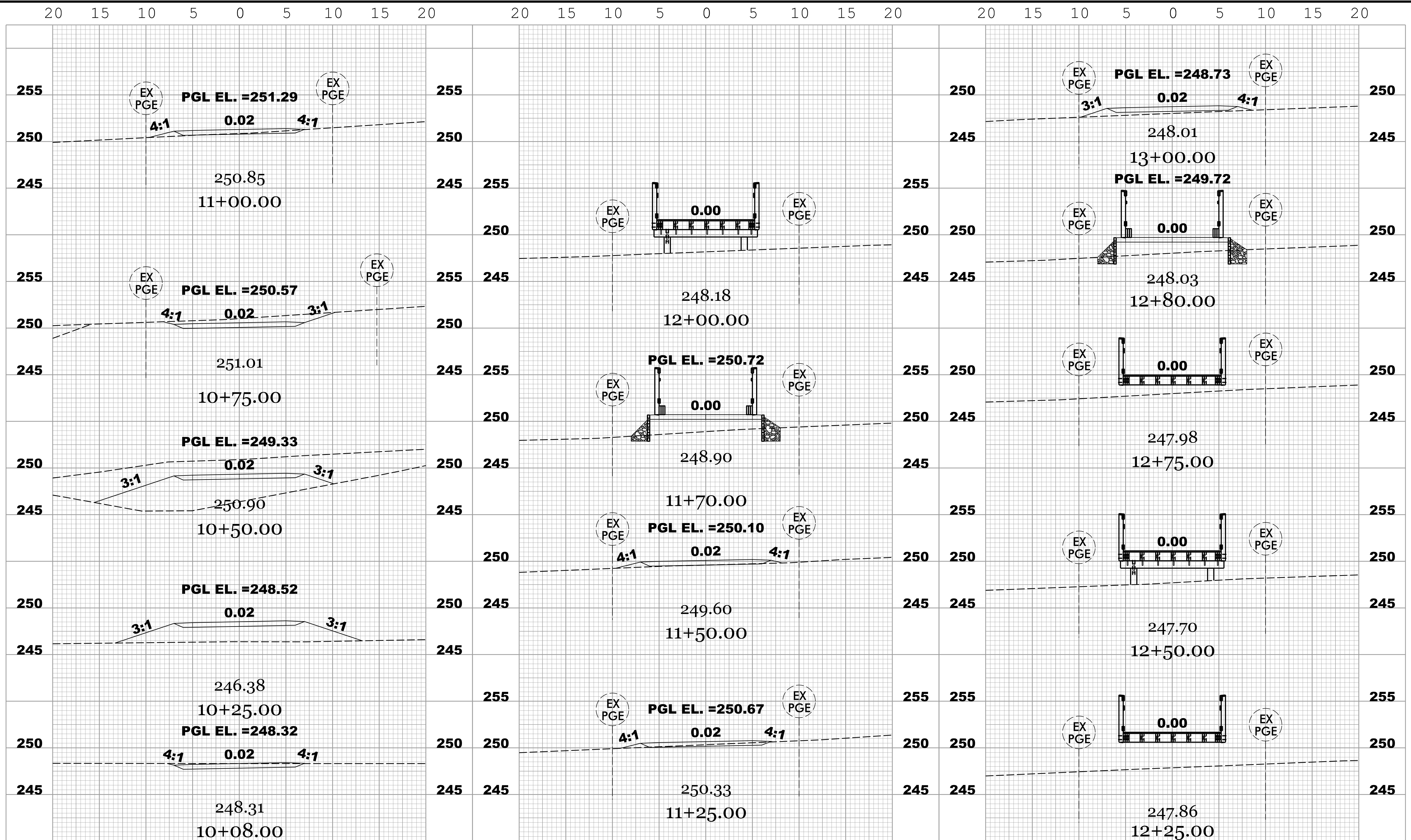
DATE: MARCH 4, 2020

WEI PROJECT NO.: 20326.01

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PLAN & PROFILE SHEET


5




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NO.	DATE	DESCRIPTION

PLANS PREPARED FOR:  
  
 PROJECT CONTACT:  
 ANGELA REINCKE  
 PARKS AND GREENWAY PLANNER  
 PO BOX 250  
 APEX, NC 27502  
 919.372.7468

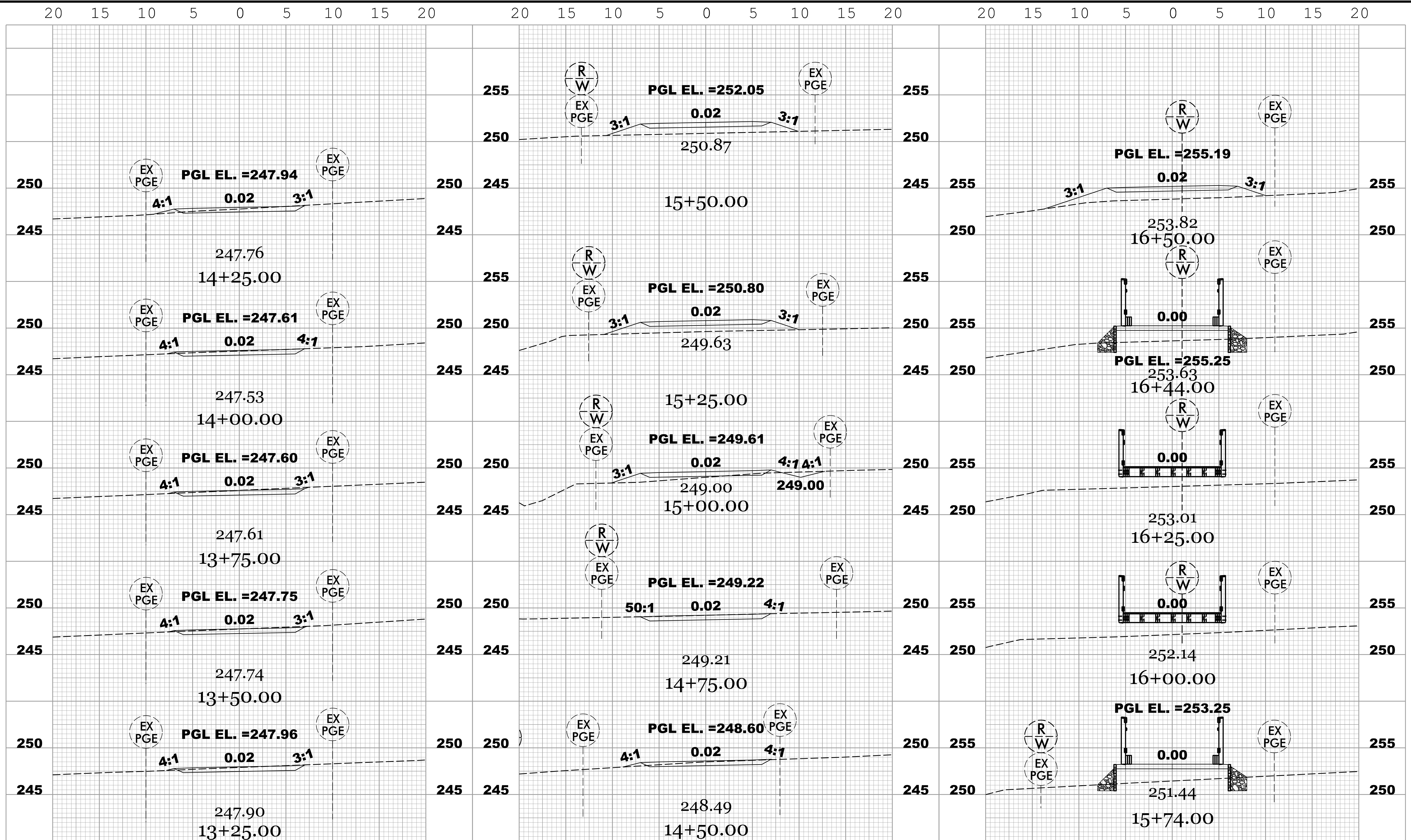
**APEX WEST GREENWAY**  
 CONNECTION FROM  
 OLIVE CHAPEL ROAD  
 TO AMERICAN TOBACCO TRAIL

PLANS PREPARED BY:  
  
 1223 Jones Franklin Rd., Raleigh, N.C. 27606  
 License No. F-0377  
 Bus: 919 851 8077 Fax: 919 851 8107

ROADWAY ENGINEER  
 HYDRAULICS ENGINEER  
**INCOMPLETE PLANS**  
 DO NOT USE FOR B/W ACQUISITION  
**DOCUMENT NOT CONSIDERED FINAL**  
**UNLESS ALL SIGNATURES COMPLETED**

DATE: MARCH 4, 2020  
 CROSS SECTIONS  
 WEI PROJECT NO.:  
 20326.01  
**X-1**






The signatures affixed below certify that this sheet has been reviewed and approved solely per the certifications signed on the cover sheet of these construction plans.

PW - Transportation	Date	WR - Stormwater	Date
Building Inspections	Date	Planning	Date
WR - Utility Engineering	Date	Planning - Transportation	Date
Electric	Date	Fire	Date
WR - S&E	Date	Parks, Recreation & Cultural Res.	Date

REVISIONS:	NO.	DATE	DESCRIPTION

PLANS PREPARED FOR:



PROJECT CONTACT:  
ANGELA REINCKE  
PARKS AND GREENWAY PLANNER  
PO BOX 250  
APEX, NC 27502  
919.372.7468

TOWN OF APEX  
73 Hunter Street, Apex, NC 27606

## APEX WEST GREENWAY

CONNECTION FROM  
OLIVE CHAPEL ROAD  
TO AMERICAN TOBACCO TRAIL

PLANS PREPARED BY:



1223 Jones Franklin Rd., Raleigh, N.C. 27606  
License No. F-0377  
Bus: 919 851 8077 Fax: 919 851 8107

ROADWAY ENGINEER

HYDRAULICS ENGINEER

**INCOMPLETE PLANS**  
DO NOT USE FOR B/W ACQUISITION

**DOCUMENT NOT CONSIDERED FINAL**  
UNLESS ALL SIGNATURES COMPLETED

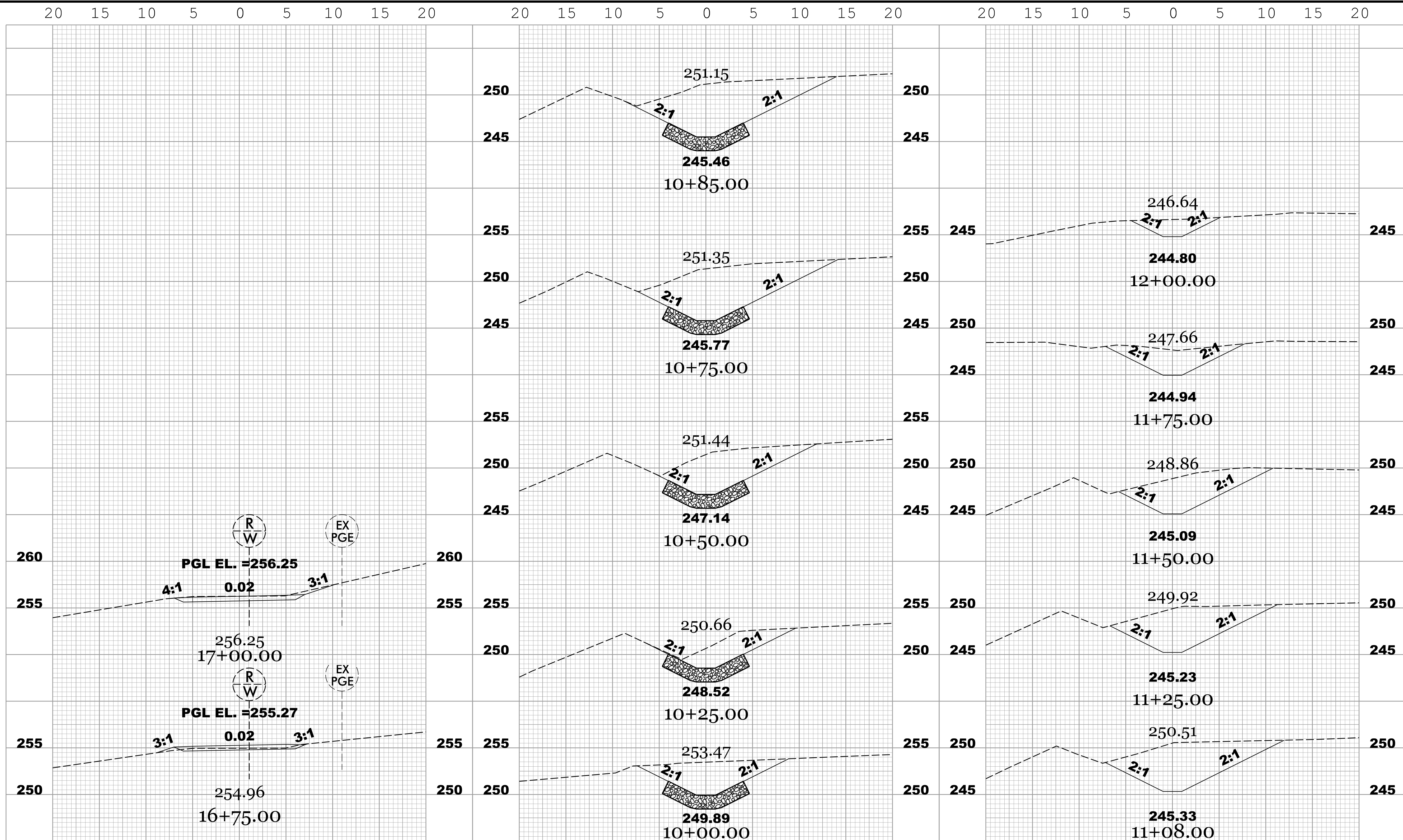
DATE: MARCH 4, 2020

CROSS SECTIONS

WEI PROJECT NO.:

**X-2**

**20326.01**



**-L-**

**-D-**

**-D-**

The signatures affixed below certify that this sheet has been reviewed and approved solely per the certifications signed on the cover sheet of these construction plans.

PW - Transportation	Date	WR - Stormwater	Date
Building Inspections	Date	Planning	Date
WR - Utility Engineering	Date	Planning - Transportation	Date
Electric	Date	Fire	Date
WR - S&E	Date	Parks, Recreation & Cultural Res.	Date

NO.	DATE	DESCRIPTION

PLANS PREPARED FOR:

PROJECT CONTACT:  
ANGELA REINCKE  
PARKS AND GREENWAY PLANNER  
PO BOX 250  
APEX, NC 27502  
919.372.7468

TOWN OF APEX  
73 Hunter Street, Apex, NC 27606

**APEX WEST GREENWAY**

CONNECTION FROM  
OLIVE CHAPEL ROAD  
TO AMERICAN TOBACCO TRAIL

PLANS PREPARED BY:

**WETHERILL ENGINEERING**

1223 Jones Franklin Rd., Raleigh, N.C. 27606  
License No. F-0377  
Bus: 919 851 8077 Fax: 919 851 8107

ROADWAY ENGINEER

HYDRAULICS ENGINEER

**INCOMPLETE PLANS**  
DO NOT USE FOR B/W ACQUISITION

**DOCUMENT NOT CONSIDERED FINAL**  
UNLESS ALL SIGNATURES COMPLETED

DATE: MARCH 4, 2020

CROSS SECTIONS

WEI PROJECT NO.:

20326.01

**X-3**

# PROPOSED

# PIPE DATA SHEET

Date: 2/25/2020 Revised: \_\_\_\_\_ By: WHE

I.D. No.: Apex Greenway

Sheet 1 of 3

Project Desc. Apex Greenway Olive Chapel Road

County: Wake

Designed By: WHE Checked By: \_\_\_\_\_

		GRADE PT. EL.: <u>248.40</u> ft	OT Elev.= <u>248.30</u> ft.
Station: <u>10+21 -L-</u>	Shoulder Elev.: _____		
Skew: <u>90</u>	Stream Bed El @ inlet _____		
Size/Type Pipe: <u>18" RCP</u>			
Type Entrance: <u>Groove End Projecting</u>			
Direction of Flow: <u>Rt to Lt</u>	Inlet Invert Elev.: _____	H.W.	H
Hydrological Method: <u>Rational</u>		LS <sub>o</sub>	T.W
H.W. Control Elevation: <u>246.7</u>		<u>244.90</u> ft	<u>244.50</u> ft

Plan Summary Data		
Drainage Area:	0.43	Ac
Design Freq.:	10	yr
Design Disch.:	1.8	cfs
Design H.W. Elev.:	245.58	ft
Q100 Discharge:	2.2	cfs
Q100 Elev.:	245.66	ft
Overtopping Freq.:	500 yr+	yr +
Overtopping Disch.:	15	cfs
Overtopping Elev.:	248.30	ft

**PIPE CULVERT ANALYSIS (English)** rcp= .012, cmp=0.024

n= 0.012

<b>Outlet channel:</b>	Slope: 0.003	Lt. Side Slope	3
Base= 0	n= 0.04	Rt. Side Slope	3

Size & Type			TW ft	Q ft <sup>3</sup> /s	Nat. H.W.	Allow. H.W.	Inlet Control		Outlet Control						HW ELEV.	HW/D	Remarks	
SIZE	# pipes	FREQ					HW/D	HW (ft)	Ke	d <sub>c</sub>	(d <sub>c</sub> +D)/2	h <sub>o</sub>	H	L*S <sub>o</sub>				HW
18	1	10	0.8	1.80			0.45	0.68	0.2	0.49	1.00	1.00	0.025	0.40	0.62	245.58	0.45	INLET CONTROL
18	1	25	0.8	2.00			0.48	0.72	0.2	0.52	1.01	1.01	0.031	0.40	0.64	245.62	<b>0.48</b>	INLET CONTROL
18	1	50	0.8	2.10			0.49	0.74	0.2	0.53	1.02	1.02	0.034	0.40	0.65	245.64	0.49	INLET CONTROL
18	1	100	0.8	2.20			0.51	0.76	0.2	0.54	1.02	1.02	0.038	0.40	0.66	245.66	<b>0.51</b>	INLET CONTROL
18	1	Overtopping		15.0			2.27	3.40	0.2	1.50	1.50	1.50	1.756	0.40	2.86	248.30	2.27	INLET CONTROL
18	1	200	0.8	2.30			0.52	0.78	0.2	0.56	1.03	1.03	0.041	0.40	0.67	245.68	0.52	INLET CONTROL
18	1	500	0.8	2.40			0.53	0.80	0.2	0.57	1.03	1.03	0.045	0.40	0.68	245.70	0.53	INLET CONTROL

**Notes:**

**3** HW Control is HW/D=1.2 ft. = 246.7 ft.  
 Overtopping occurs at Sta. 10+00 -L- Elev. = 248.30 ft. which is existing elevation of the American Tobacco centerline

**Recommendation:** Use **18" RCP** HW Control = 1.2\*1.5=1.8'+244.9=246.7  
**V(10) partial= 5.7 fps** T<sub>©</sub>=10 min l(10)= 5.9 "/hr C=0.7

# PROPOSED

# PIPE DATA SHEET

Date: 2/25/2020 Revised: WHE By: \_\_\_\_\_

I.D. No.: Apex Greenway

Sheet 2 of 3

Project Desc. Apex Greenway Olive Chapel Road

County: Wake

Designed By: WHE

Checked By: \_\_\_\_\_

		GRADE PT. EL.: <u>249.20</u> ft	OT Elev.= <u>248.60</u> ft.
Station: <u>10+47 -L-</u>	Shoulder Elev.: _____	<u>249.30</u> ft	
Skew: <u>90</u>	Stream Bed El @ inlet _____	H.W.	
Size/Type Pipe: <u>30"</u>	El @ inlet _____	LS <sub>o</sub>	
Type Entrance: <u>Groove End Projecting</u>		So= <u>0.58%</u>	
Direction of Flow: <u>Rt to Lt</u>	Inlet Invert Elev.: _____	L= <u>24.0</u> ft	
Hydrological Method: <u>Rational</u>		Outlet Inv. Elev. <u>245.32</u> ft	
H.W. Control Elevation: <u>248.5</u>			

Plan Summary Data		
Drainage Area:	10	Ac
Design Freq.:	10	yr
Design Disch.:	25	cfs
Design H.W. Elev.:	248.02	ft
Q100 Discharge:	31	cfs
Q100 Elev.:	248.42	ft
Overtopping Freq.:	500 yr	yr +
Overtopping Disch.:	33	cfs
Overtopping Elev.:	248.60	ft

**PIPE CULVERT ANALYSIS (English)** rcp= .012, cmp=0.024

n= 0.012

**Outlet channel:** Slope: \_\_\_\_\_ Lt. Side Slope \_\_\_\_\_  
Base= \_\_\_\_\_ n= \_\_\_\_\_ Rt. Side Slope \_\_\_\_\_

Size & Type			TW ft	Q ft <sup>3</sup> /s	Nat. H.W.	Allow. H.W.	Inlet Control		Outlet Control						HW ELEV.	HW/D	Remarks	
SIZE	# pipes	FREQ					HW/D	HW (ft)	Ke	d <sub>c</sub>	(d <sub>c</sub> +D)/2	h <sub>o</sub>	H	L*S <sub>o</sub>				HW
30	1	10	1.7	25.00			1.02	2.56	0.2	1.72	2.11	2.11	0.559	0.14	2.53	248.02	1.02	INLET CONTROL
30	1	25	1.8	27.00			1.08	2.70	0.2	1.80	2.15	2.15	0.652	0.14	2.66	248.16	<b>1.08</b>	INLET CONTROL
30	1	50	1.9	29.00			1.14	2.84	0.2	1.87	2.19	2.19	0.752	0.14	2.80	248.30	1.14	INLET CONTROL
30	1	100	1.9	31.00			1.18	2.96	0.2	1.95	2.23	2.23	0.859	0.14	2.94	248.42	<b>1.18</b>	INLET CONTROL
30	1	Overtopping	2.0	33.0			1.25	3.13	0.2	2.02	2.26	2.26	0.974	0.14	3.10	248.59	1.25	INLET CONTROL
30	1	200	1.9	32.00			1.22	3.05	0.2	1.99	2.24	2.24	0.915	0.14	3.02	248.51	1.22	INLET CONTROL
30	1	500	2.0	33.00			1.25	3.13	0.2	2.02	2.26	2.26	0.974	0.14	3.10	248.59	1.25	INLET CONTROL

**Notes:**

3

HW Control is HW/D=1.2 ft. = 248.5 ft.  
 Overtopping occurs at Sta. 10+30-L- Elev. = 248.60 ft. which is proposed elevation of -L- centerline

**Recommendation:** Use 30" pipe. HW Control is HW/D=1.2\*2.5=3' 245.46+3=248.46  
 V(10) partial=7.5 fps T@ = 15 I=4.9 in/hr C=0.5

CREATE DATE: 3/30/2020

### INLET COMPUTATION SHEET

REV. DATE: \_\_\_\_\_

I.D. NO.: \_\_\_\_\_

PROJ. NO.: \_\_\_\_\_

COUNTY: Wake

DESIGNED BY: WHE

DESCRIPTION: Olive Chapel Road Apex Greenway

REVD BY: \_\_\_\_\_

LOCATION							ROADWAY		RUNOFF							INLET				REMARKS
SYSTEM	STRUCTURE NUMBER	ALIGNMENT	STATION	OFFSET	DESCRIPTION	ELEVATION (ft)	GRADE (ft/ft)	CROSS SLOPE (ft/ft)	DRAINAGE AREA (acres)	RUNOFF COEFF.	TIME OF CONC. (min)	RAINFALL INT. (in/hr)	DISCHARGE FROM D.A. (cfs)	DISCHARGE CARRYOVR (cfs)	TOTAL DISCHARGE (cfs)	SPREAD (ft)	INTERCEPT (MAX) (cfs)	BYPASS (cfs)	BYPASS TO INLET	
									D.A.	C	T <sub>C</sub>	I	Q <sub>D.A.</sub>	Q <sub>C</sub>	Q <sub>D.A.</sub> + Q <sub>C</sub>		Q <sub>I(max)</sub>	Q <sub>B</sub>		
403	0402	L	15+00	10 Rt	DI	249.00	SAG	0.250	0.30	0.50	5.0	4.0	0.6	0.0	0.6	1.1	N/A	N/A		

CREATE DATE: 3/30/2020

**STORM DRAIN DESIGN COMPUTATIONS**

REV. DATE: \_\_\_\_\_

I.D. NO.: \_\_\_\_\_ PROJ. NO.: \_\_\_\_\_

COUNTY: Wake

DESIGNED BY: WHE

DESCRIPTION: Olive Chapel Road Apex Greenway

REVD BY: \_\_\_\_\_

LOCATION				RUNOFF								PIPE DESIGN										REMARKS		
SYSTEM	LINK	STRUCTURE NUMBER		CUM. D.A. (acres)	SUM (C x A) CA	PIPE LENGTH (ft)	TIME OF CONCENTRATION (min)			INTENSITY (in/hr)	DISCHG. (cfs)	INLET ELEV. (ft)	OUTLET ELEV. (ft)	SLOPE (ft/ft)	MINIMUM REQ'D SLOPE (ft/ft)	DIA. (in)	MATERIAL	EXISTING / ALT	LESSER of INLET vs PIPE CAP. (cfs)	VEL. (ft/s)	UPSTREAM BOX DEPTH (ft)		HGL ELEV. (ft)	FREEBOARD
		FROM	TO				INLET	FLOW	DES															
403	402	0402	0403	0.30	0.15	29	5	5	10	5.9	0.9	249.00 246.75	0.00 245.50	0.041		15	C		9.0	6.3	2.25	247.25		



# Railroad Encroachment Application Form

Operations & Facilities Branch, 1553 Mail Service Center, Raleigh, NC 27699-1553

**Instructions:** Complete all applicable information below and return this form with two sets of preliminary plans, sketches, specifications, calculations, etc. to **NCDOT, Rail Division, Operations & Facilities Branch, 1553 Mail Service Center, Raleigh, NC 27699-1553**. Sketches and drawings should include north arrow, scale, vicinity map, landmarks and reference points. **If you need additional information, please contact** Andy Miller, Facilities & Properties Manager, **by phone at (919) 707-4721 or by email at samiller@ncdot.gov.**

Owner's (or Company's) Name: Town of Apex

Mailing address: PO Box 250

City: Apex State: NC Zip: 27502

Phone: 919.372.7468 Fax: 919.249.3368 e-mail: angela.reincke@apexnc.org

Contact Name (e.g.-Engineer in charge, if different from above): Jonathan Hefner

Company Name: Wetherill Engineering

Mailing address: 1223 Jones Franklin Rd.

City: Raleigh State: NC Zip: 27606

Phone: 984.242.0576 Fax: 919.851.8107 e-mail: jhefner@wetherilleng.com

## **Specific Information needed for Application:**

County: Wake Rail Corridor: D&SC(ATT) Nearest Railroad Milepost (if known): DD16.00 +/-

Location description (attach map /sketch): See plans

Permanent or Temporary installation? (check one)  Permanent  Temporary

Type of encroachment:

a) Driveway, Drain Pipe, etc.: 10' wide asphalt multi-use path connection to American Tobacco Trail.

b) If underground–Type: (fiber optic, electric, water, gas, etc.) \_\_\_\_\_

Dimension(s)/Size(s): \_\_\_\_\_

c) If aerial–Type: (overhead utility, conveyor belt, etc) \_\_\_\_\_

Clearance above track: \_\_\_\_\_

d) Other: \_\_\_\_\_ Dimensions: \_\_\_\_\_

**Note:** From information furnished on application, NCDOT will complete a more detailed specification sheet which will specify how the installation is to be made. AREMA and NCDOT Standard Specifications will be part of the encroachment agreement, and NCDOT will require signature of applicant, agreeing to the terms set forth in the specifications.

## **Other Information:**

1. An applicable annual fee may be included in the encroachment agreement executed with NCDOT.
2. Where appropriate, additional engineered plans (or other information) may be required of applicant.