

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: samiller@ncdot.gov	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: angela.reincke@apexnc.org	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.

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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

EXHIBIT A

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.

- 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) Awnings 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.

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:

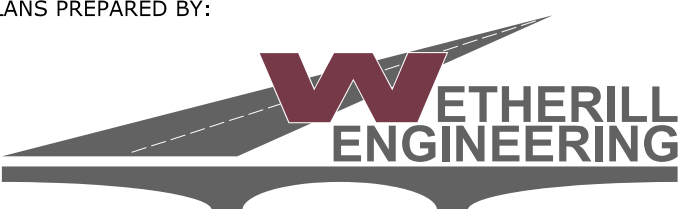


PROJECT CONTACT:
ANGELA REINCKE
PARKS AND GREENWAY PLANNER
PO BOX 250
APEX, NC 27502
919.372.7468

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

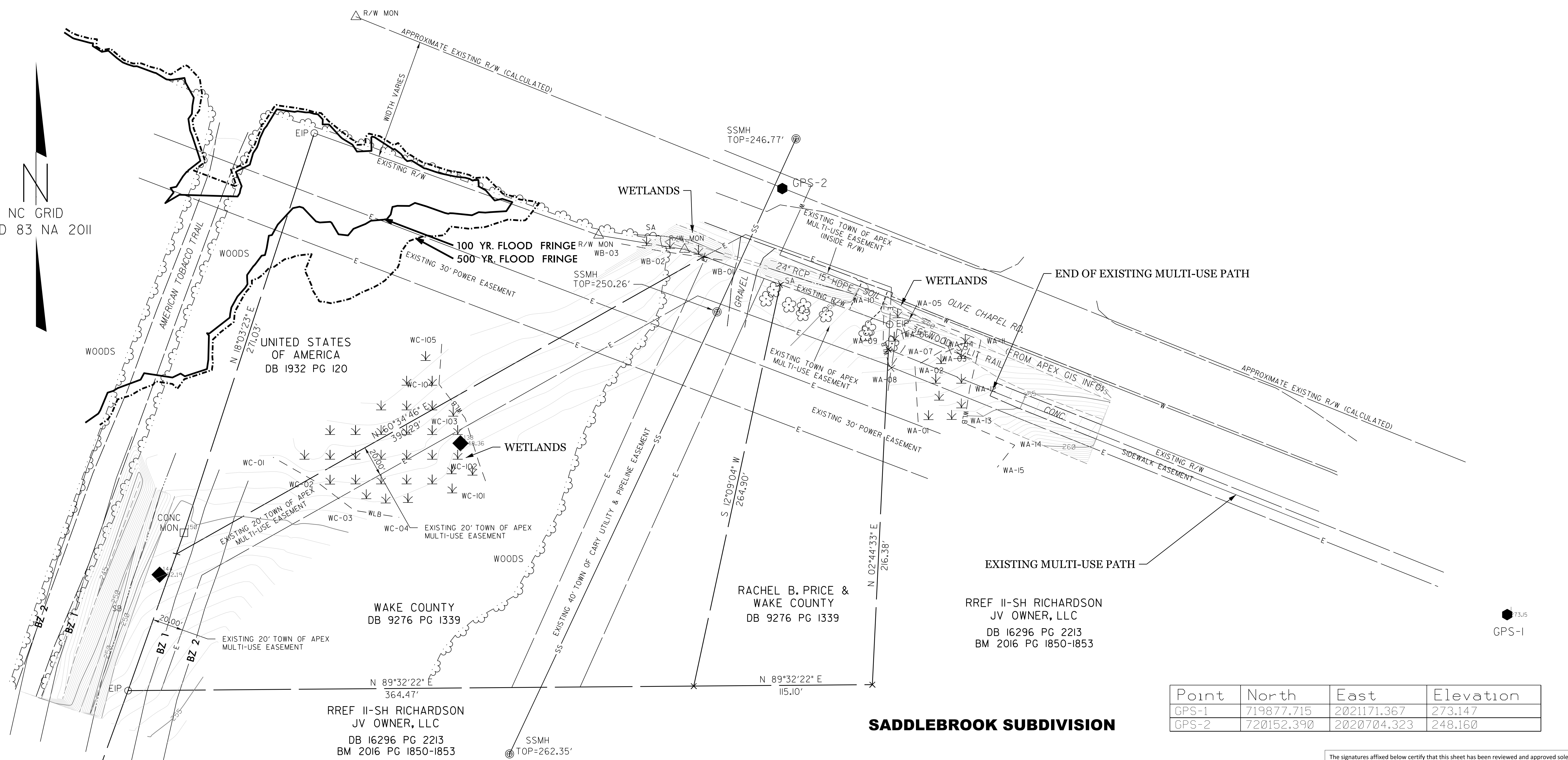
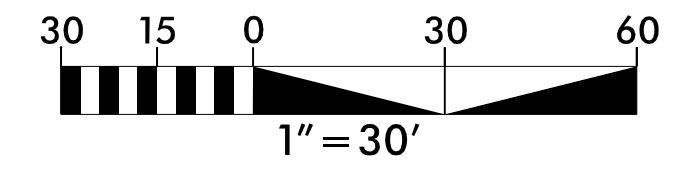
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

DATE: MARCH 4, 2020

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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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 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

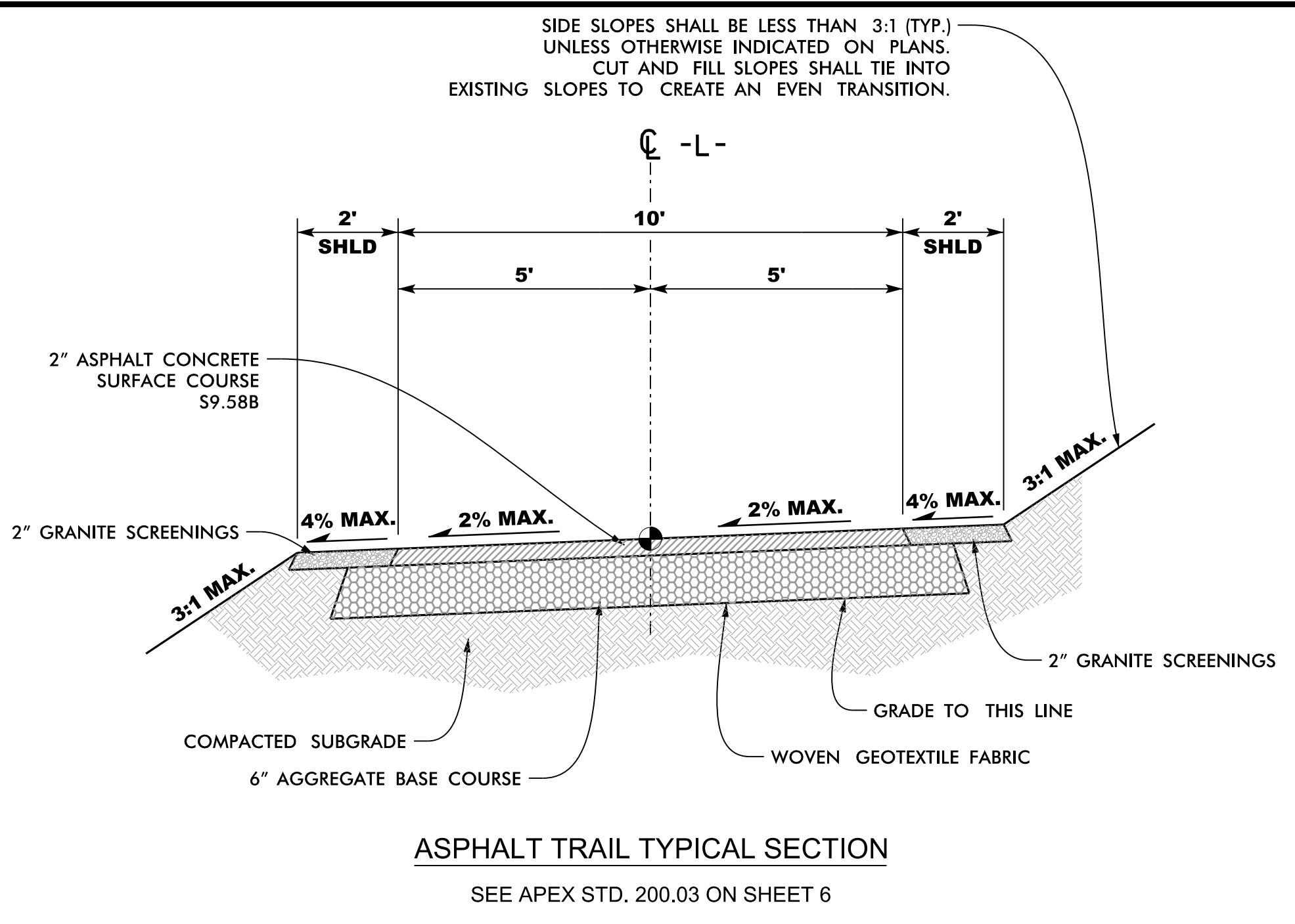
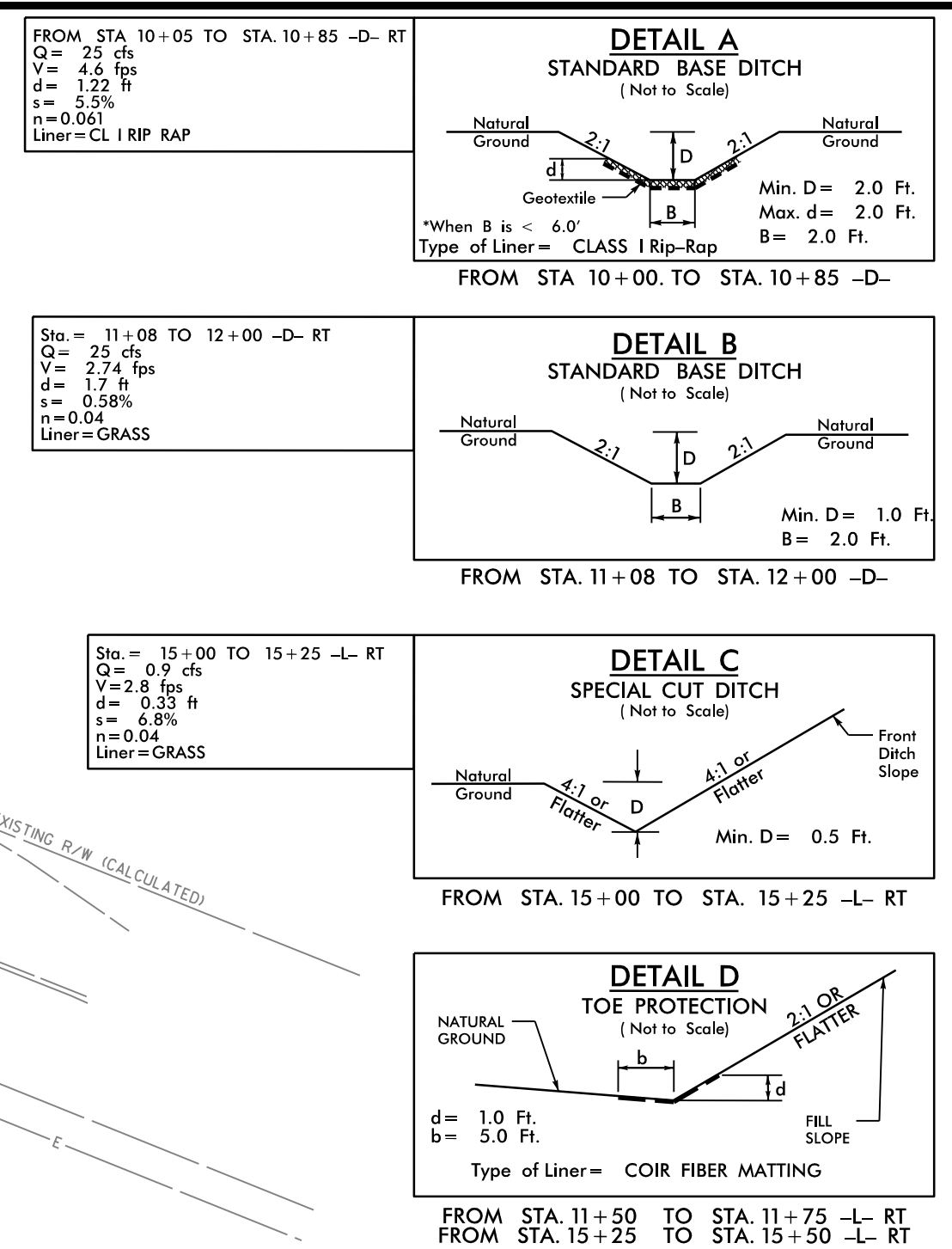
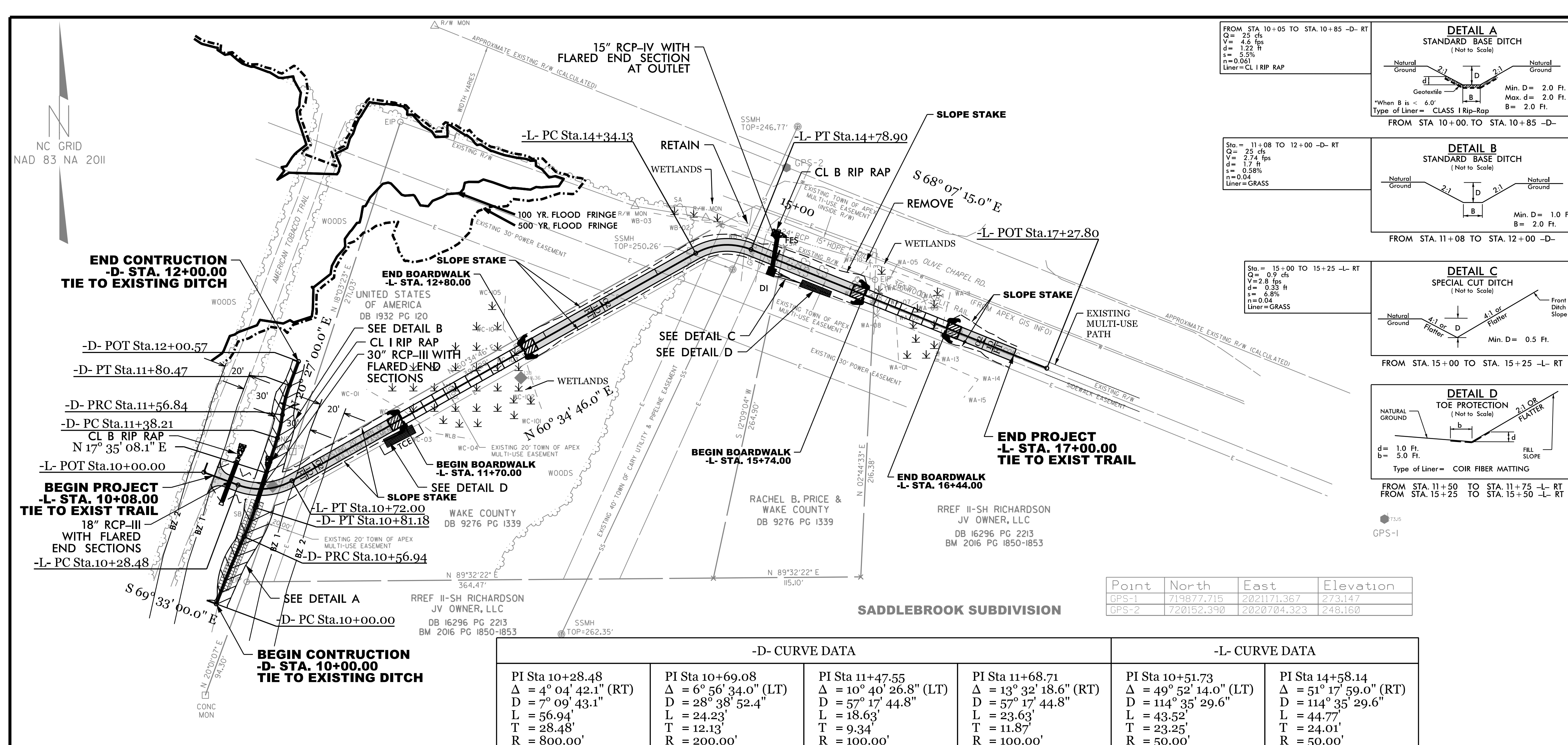
DATE: MARCH 4, 2020

EXISTING CONDITIONS

WEI PROJECT NO.:

20326.01

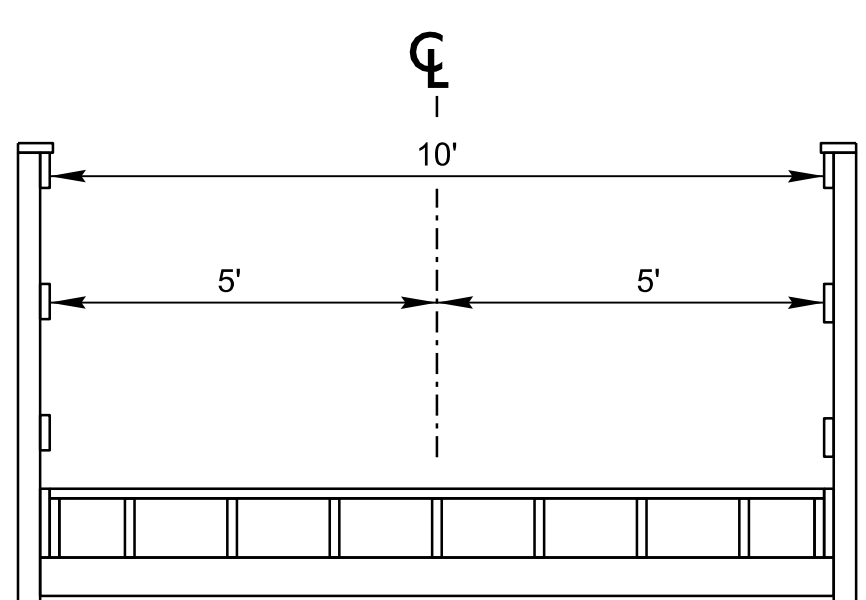
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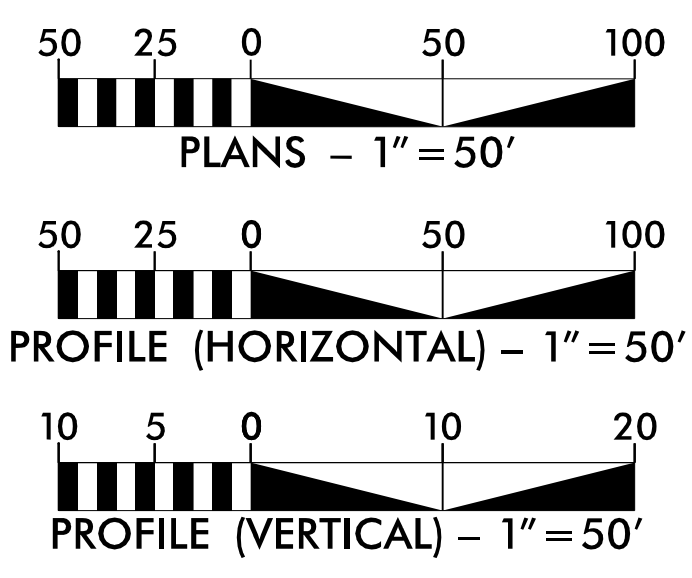
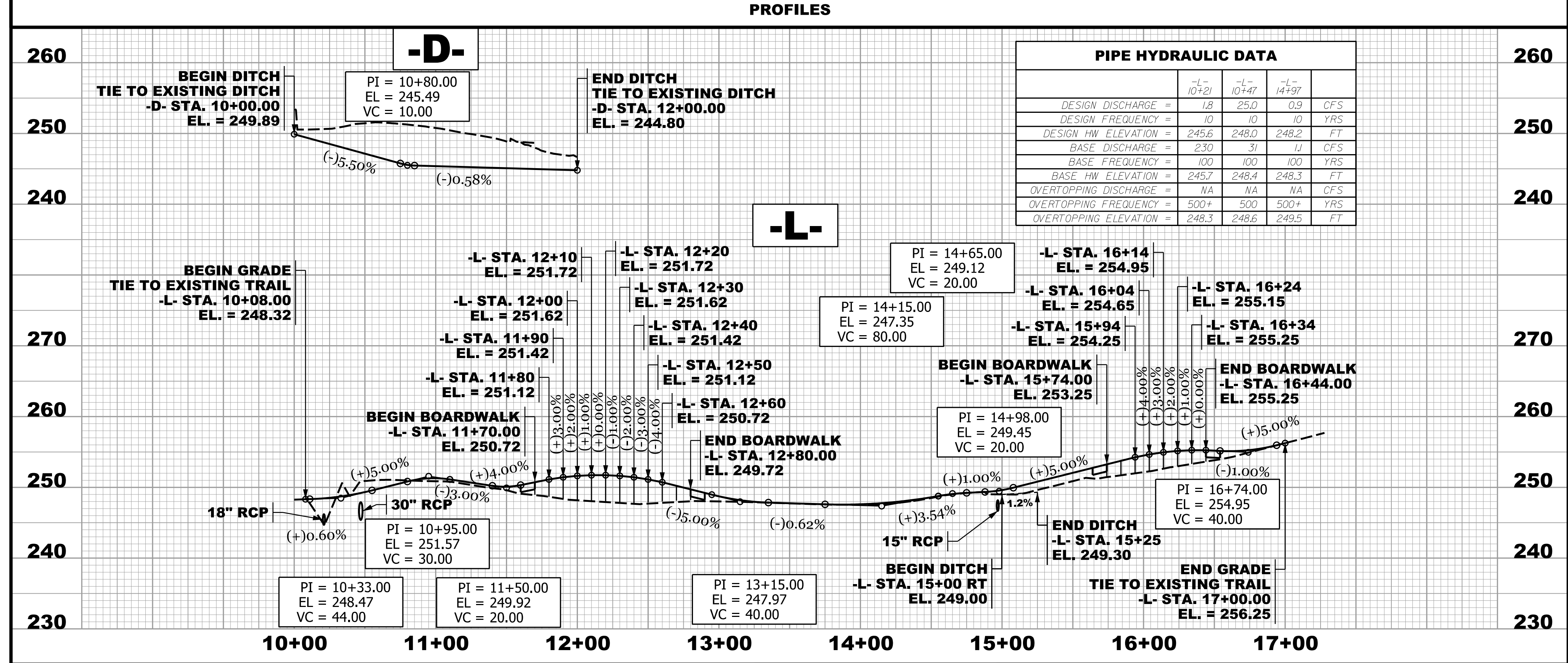
CHAIN	BEGIN STATION	END STATION
-L-	(TIE TO AMERICAN TOBACCO TRAIL) 10+08.00	11+70.00 (BEGIN BOARDWALK)
-L-	(END BOARDWALK) 12+80.00	15+74.00 (BEGIN BOARDWALK)
-L-	(END BOARDWALK) 16+44.00	17+00.00 (TIE TO EXISTING TRAIL)

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



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

PLANS PREPARED BY:

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

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

ROADWAY ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR B/W ACQUISITION

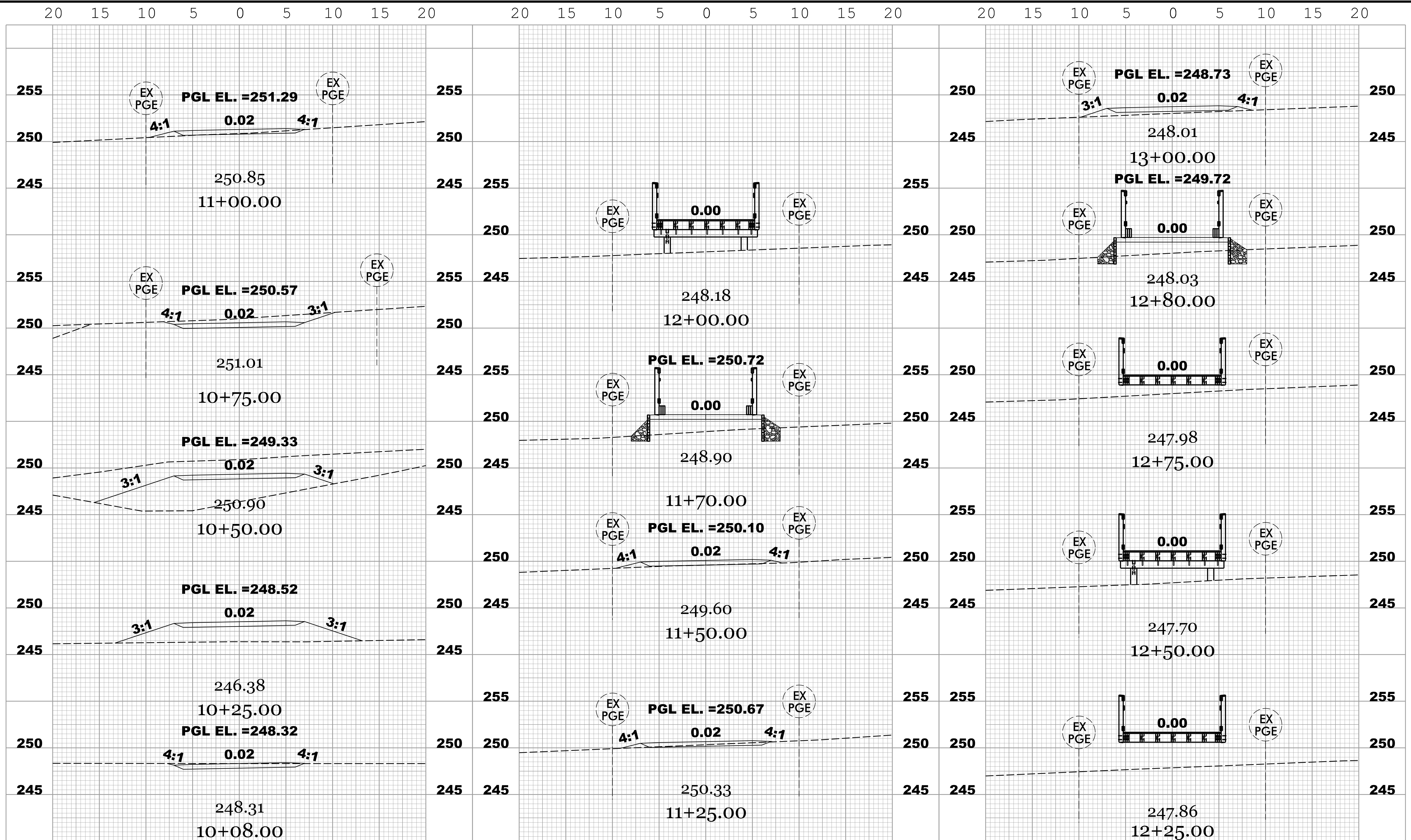
DATE: MARCH 4, 2020

WEI PROJECT NO.: 20326.01

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLAN & PROFILE SHEET

5



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

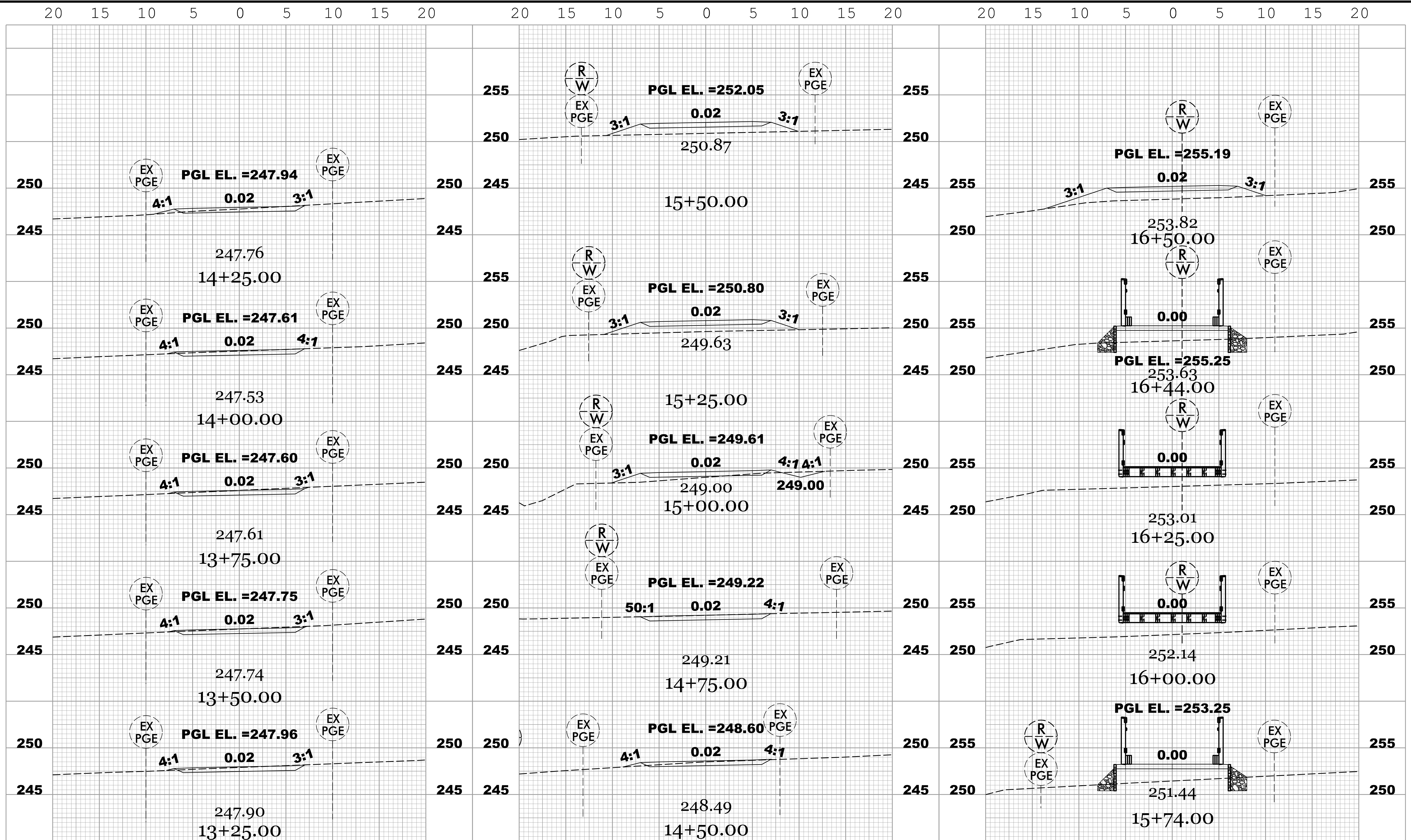
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

DATE: MARCH 4, 2020

CROSS SECTIONS

WEI PROJECT NO.:
20326.01


X-1



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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

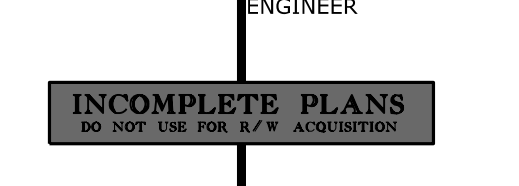
REVISIONS:	NO.	DATE	DESCRIPTION

PLANS PREPARED FOR:

 PROJECT CONTACT:
 ANGELA REINCKE
 PARKS AND GREENWAY PLANNER
 PO BOX 250
 APEX, NC 27502
 919.372.7468
 TOWN OF APEX
 73 Hunter Street, Apex, NC 27606

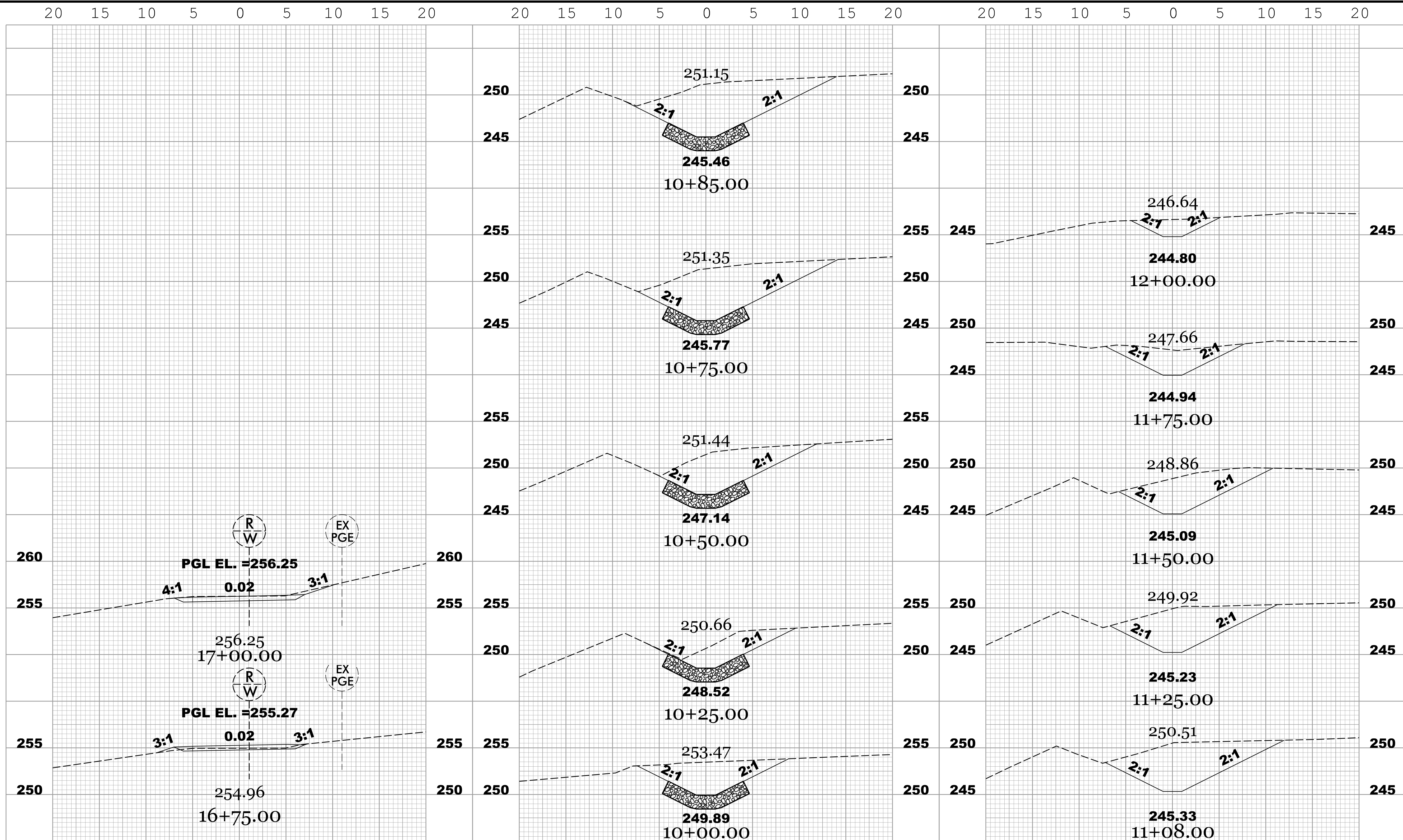
APEX WEST GREENWAY
 CONNECTION FROM
 OLIVE CHAPEL ROAD
 TO AMERICAN TOBACCO TRAIL

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

INCOMPLETE PLANS
 DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

DATE: MARCH 4, 2020
 CROSS SECTIONS
 WEI PROJECT NO.:
 20326.01
X-2



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

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-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>			
Hydrological Method: <u>Rational</u>	Inlet Invert Elev.: _____	H.W. _____	H _____
H.W. Control Elevation: <u>246.7</u>		LS ₀ _____	T.W. _____
		So= <u>1.67%</u>	Outlet Inv. Elev. <u>244.50</u> ft
		L= <u>24.0</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

Outlet channel:	Slope: 0.003	Lt. Side Slope	3
Base= 0	n= 0.04	Rt. Side Slope	3

Size & Type			TW ft	Q ft ³ /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 _c	(d _c +D)/2	h _o	H	L*S _o				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	0.48	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	0.51	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@=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.: _____		
Skew: <u>90</u>	Stream Bed El @ inlet _____		
Size/Type Pipe: <u>30"</u>			
Type Entrance: <u>Groove End Projecting</u>			
Direction of Flow: <u>Rt to Lt</u>	Inlet Invert Elev.: _____		
Hydrological Method: <u>Rational</u>			
H.W. Control Elevation: <u>248.5</u>			

Plan Summary Data		
Drainage Area:	<u>10</u>	Ac
Design Freq.:	<u>10</u>	yr
Design Disch.:	<u>25</u>	cfs
Design H.W. Elev.:	<u>248.02</u>	ft
Q100 Discharge:	<u>31</u>	cfs
Q100 Elev.:	<u>248.42</u>	ft
Overtopping Freq.:	<u>500</u> yr	yr +
Overtopping Disch.:	<u>33</u>	cfs
Overtopping Elev.:	<u>248.60</u>	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 ³ /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 _c	(d _c +D)/2	h _o	H	L*S _o				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	1.08	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	1.18	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 _C	I	Q _{D.A.}	Q _C	Q _{D.A.} + Q _C		Q _{I(max)}	Q _B		
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: _____

Mailing address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____ e-mail: _____

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

Company Name: _____

Mailing address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____ e-mail: _____

Specific Information needed for Application:

County: _____ Rail Corridor: _____ Nearest Railroad Milepost (if known): _____

Location description (attach map /sketch): _____

Permanent or Temporary installation? (check one) Permanent Temporary

Type of encroachment:

a) Driveway, Drain Pipe, etc.: _____

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.