

Town of Apex
Standard Specifications & Standard Details
Summary of Revisions
August 12, 2025

❖ Standard Specifications

➤ Section 400|Soil Erosion & Sedimentation Control

Table of Contents

1. **ADD** section “407 Temporary Matting/Blankets”

401 General Requirements

2. **REVISE** “All S&E measures shall be installed prior to clearing operations and in no case shall an area, where work is completed, remain denuded for more than 14 calendar days.” to “Prior to logging and grading operations, all S&E measures shall be installed in order to be issued a Certificate of Compliance by the TOWN. Areas where active construction ceases, meaning no substantial or significant progress is made in any area for more than 14 calendar days, all disturbed areas must be seeded and mulched unless written approval is granted by the TOWN.” in the third paragraph.
3. **ADD** “Incidental grading shall not constitute substantial or significant progress in construction activity.” to the end of the third paragraph.
4. **REVISE** “Prior to the issuance of the Certificate of Compliance, the permanent outlet structure for all temporary sediment basins (future Stormwater Control Structures -SCM's) must be installed with the skimmer attached to the bottom drain.” to “Prior to the issuance of the Certificate of Compliance, the permanent outlet structure for all temporary sediment basins (future Stormwater Control Measures - SCM's) must be installed with the skimmer attached to the bottom drain.” in item 4.

402 Construction Sequence and Schedule

5. **REVISE** “See the Town website for a sample construction sequence.” to “See the Town’s website for the standard construction sequence.”

403 Seeding & Mulching

6. **REVISE** “(3:1 MAX.)” to “(3:1 and Flatter)” in the title of the first table.
7. **REVISE** “SLOPES” to “SHOULDERS, SIDE DITCHES, SLOPES” in the title of the second table.
8. **REVISE** the second table from:

Date	Type	Planting/Acre
Mar 1 - April 15	Sericea Lespedeza (scarified) and	50 lbs.
Mar 1 - April 15	ADD Tall Fescue and	120 lbs.
Mar 1 - June 30	ADD Weeping Love grass or	10 lbs.
Mar 1 - June 30	ADD Hulled Common Bermuda Grass	25 lbs.
June 1 - Sep 1	*** Tall Fescue and	120 lbs.
	*** Brown top Millet or	35 lbs.

	*** Sorghum-Sudan Hybrids	30 lbs.
Sep 1 - Mar 1	Sericea Lespedeza (unhulled-unscarified) and	70 lbs.
	Tall Fescue	120 lbs.
Nov 1 - Mar 1	ADD Abruzzi Rye	25 lbs.

to:

Date	Type	Planting/Acre
Mar 1 - April 15	Tall Fescue and	120 lbs.
Mar 1 - June 30	ADD German or Browntop Millet or	10 lbs.
Mar 1 - June 30	ADD Hulled Common Bermuda Grass	25 lbs.
June 1 - Sep 1	*** Tall Fescue and	120 lbs.
	*** Brown top Millet or	35 lbs.
	*** Sorghum-Sudan Hybrids	30 lbs.
Sep 1 - Mar 1	Tall Fescue	120 lbs.
Nov 1 - Mar 1	ADD Rye Grain	25 lbs.

9. **REVISE** *"Temporary - Reseed according to optimum season for desired permanent vegetation."* to *"Temporary – Re-seed according to optimum season for desired permanent vegetation."* in the second paragraph.
10. **REVISE** *"A Conservation Engineer or Soil Conservation Service shall be consulted for additional information concerning other alternatives for vegetation of denuded areas."* to *"A Conservation Engineer or Natural Resources Conservation Service (NRCS) shall be consulted for additional information concerning other alternatives for vegetation of denuded areas."* in the third paragraph.
11. **REVISE** *"Fertilizer - 1,000 lb/acre - 10-10-10"* to *"Fertilizer - 1,000 lb/acre - 10-10-10 (Fall) – 5-10-10 (Spring)"* after item 9.

405 Inlet Protection

12. **REVISE** *"The devices shall be installed across the grate and throat and must be a product approved by the Town's Stormwater Engineering Manager."* to *"The devices shall be installed across the grate and throat and must be a product approved by the TOWN Stormwater Engineering Manager or his/her designee."* in the first paragraph.

406 Computations

13. **REVISE** *"All computations and assumptions used to formulate an S&E plan shall be reviewed by the Town."* to *"All computations and assumptions used to formulate an S&E plan shall be reviewed by the TOWN."*
14. **ADD** section *"407 Temporary Matting/Blankets"*

15. **ADD** *"All temporary matting/blankets used shall be made of biodegradable materials that do not contain plastic netting."* to the new section 407.

➤ Section 500|Storm Drainage

Table of Contents

16. **ADD** subsection *"F. Reinforced Concrete Box Culvert (RCBC)"* to 502 Materials – Storm Drainage Pipe
17. **REVISE** *"506 Stormwater Control Measures (SCMs) within the Primary and Secondary Watershed Protection Overlay Districts"* to *"506 Stormwater Control Measures (SCMs)"*

501 Design

18. **REVISE** all occurrences of *"rights-of-way"* to *"right-of-way"*
19. **ADD** *"The following Standard Specifications and associated Standard Detail Drawings shall apply to all storm drainage system development. Any deviations from this specification, or sections noting approval required by the ENGINEER, shall require submittal of an Exception Review Request for consideration."* to subsection A.
20. **REVISE** *"Storm drainage facilities shall be designed to dispose of stormwater..."* to *"Storm drainage facilities shall be designed to convey stormwater..."* in subsection A.
21. **REVISE** the Table from:

<i>Drainage Structure</i>	<i>Design Storm Event - Return Frequency</i>
Roadside Ditches	10-year storm
Curb Inlet	4 inches/hour
Storm Sewer Collector	10-year storm
Cross Street Storm Drainage	25-year storm
Greenways	25-year storm
Structures in Floodplain	100-year storm*

to:

<i>Drainage Structure</i>	<i>Design Storm Event - Return Frequency</i>
Roadside Ditches	10-year
Curb Inlet Gutter Spread	4 inches/hour

Drop Inlet Ponding (sag condition)	100-year
Storm Sewer Collector	10-year
Cross Street Storm Drainage	25-year
Greenways	25-year
Offsite Bypass System	25-year
Structures in Floodplain	100-year*

22. **REVISE** *“*Drainage structures in the floodplain should pass 100-year storm without over-topping the roadway or in the alternative, the structures may be designed to pass only the 25-year event, in which case, the downstream roadway embankment shall be fully protected from the residual flow which may overtop the roadway during a 100-year event.” to “*Drainage structures in the floodplain, and all culverts under roads located at stream crossings shall pass 100-year storm without over-topping the roadway.”*
23. **REVISE** subsection A.1. *“Runoff rates shall be calculated by the Rational Method (for drainage areas less than 2 square miles), SCS Method (for drainage areas greater than 2 square miles) or other acceptable procedures. Runoff computations shall be based on rainfall data for the last 30 years published by the National Weather Service for this area.” to “Runoff rates shall be calculated by the Rational Method (for drainage areas less than 100 acres), SCS Method or other acceptable procedures. Runoff computations shall be based on rainfall data published by the National Weather Service NOAA Atlas 14 for this area.”*
24. **REVISE** *“A Hydraulic Grade Line (HGL) study shall be performed for all public storm drainage systems.” to “A Hydraulic Grade Line (HGL) study shall be performed for all public storm drainage systems using the design storm table in 501.A.” in subsection A.6.*
25. **REVISE** *“The HGL shall be required to stay within the pipe to ensure no surcharge on the system.” to “The HGL shall be required to stay within the crown of the pipe to ensure no surcharge on the system.” in subsection A.6.*
26. **REMOVE** *“or the slope which will produce a velocity of 2.5 fps when flowing full, whichever is greater for all proposed pipes and culverts” from “The minimum allowable slope is 0.50% or the slope which will produce a velocity of 2.5 fps when flowing full, whichever is greater for all proposed pipes and culverts.” from A.6.*
27. **REMOVE** *“Maximum allowable outlet velocity will be 2.5 feet per second (refer to “Code of Ordinances, Town of Apex, North Carolina”; Chapter 5, Article X, Sec. 5-149). Exiting velocities shall be in conformance with the sedimentation and erosion guidelines and outlet protection used whenever the velocity exceeds the allowable limit. Pipe outlets, flared end sections and head walls shall be provided, with rip-rap aprons designed to reduce velocity and dissipate energy so that downstream damage from erosion does not occur.” from subsection A.*

28. **REVISE** *"Manholes or structures shall be installed at each deflection of line or grade." to "Accessible drainage structures shall be installed at each deflection of line, grade, and change in pipe material." in subsection B.*
29. **REVISE** *"No inaccessible junction boxes shall be permitted." to "No inaccessible drainage structures shall be permitted." in subsection B.*
30. **ADD** *"Open-throated yard inlets shall have a manhole lid incorporated into the concrete lid for accessibility." in subsection B.*
31. **REVISE** *"The maximum distance between access openings shall not exceed 400 feet, for pipes 30 inches and smaller." to "The maximum distance between structures shall not exceed 400 feet." in subsection B.*
32. **REMOVE** *"For pipes 36 inches and larger, the maximum distance between access openings shall not exceed 500 feet." in subsection B.*
33. **REVISE** *"Inlet spacing shall be sufficient to limit spread to no more than half of a through lane during a 4-inch per hour rain storm." to "Inlet spacing shall be sufficient to limit gutter spread to no more than half the width of a through lane during a 4-inch per hour rain event." in subsection B.*
34. **ADD** *"The width of the gutter may be added to the width of the lane. For curb inlets located in a sag condition, a 50% clogging factor shall be applied when calculating spread." in subsection B.*
35. **REVISE** *"No catch basin shall be installed in the radius of a curve." to "No catch basin shall be installed in an intersection corner radius or in a driveway apron." in subsection B.*
36. **ADD** *"Proposed driveway locations shall be shown on construction drawings to demonstrate they do not conflict with catch basin locations." in subsection B.*
37. **REVISE** *"Stormwater that is piped or is conveyed as open channel flow and originates within or passes through the public street rights-of-way shall be conveyed through a contiguous public drainage easement." to "Stormwater that is piped, or is conveyed as open channel flow, and originates within or passes through the public street rights-of-way shall be conveyed through a contiguous public drainage easement." in subsection B.*
38. **REVISE** *"The public drainage easement must extend from the public street rights-of-way through points downstream, to the point of open discharge." to "The public drainage easement shall extend from the public street rights-of-way the minimum needed distance needed directly from public street rights-of-way to a point of open discharge adjacent to the public street rights-of-way." in subsection B.*
39. **ADD** *"Stormwater conveyance systems that originate within or pass through the public street rights-of-way shall be designed to minimize crossing through private property for distances greater than minimal distance needed to daylight the pipe to open discharge. At the discretion of the TOWN, if the point of open discharge extends into private property greater than that minimal distance needed to daylight, a drainage structure shall be provided within 10 feet of the public*

street rights-of-way to transition the public drainage easement to a private drainage easement. Pipes shall not outfall in the front yard of a lot but should instead extend to the rear third of the lot or property line in residential subdivisions.” to subsection B.

- 40. **ADD** *“To the maximum extent practicable, the storm drainage system in these natural drainage ways shall be designed to bypass the off-site flow around the on-site SCMs, and to where the natural drainage way currently discharges.” in subsection B.*
- 41. **REVISE** *“Connection of plastic pipe to TOWN infrastructure is prohibited.” to “Connection of plastic pipe, such as HDPE or PVC, to TOWN infrastructure is prohibited.” in subsection B.*
- 42. **ADD** *“Private storm drainage systems, whether piped or open channel flow, that cross more than two lots shall be located within a private drainage easement.” in subsection B.*
- 43. **REVISE** *“No structures or equipment such as buildings, fences, playsets, pools, HVAC units, etc. shall be placed within any public easement.” to “No encroachments are allowed within any public easement, unless approved in accordance with Section 200.” in subsection C.*
- 44. **MOVE** *“Pipes shall not outfall in the front yard of a lot but should instead extend to the rear third of the lot or property line in residential subdivisions.” to subsection B from subsection C.*

502 Materials – Storm Drainage Pipe

- 45. **ADD** *“Pipe producer/supplier shall be on the NCDOT approved producer/supplier list.” to subsection A.*
- 46. **REVISE** *“All RCP installed on thoroughfare routes shall be approved and stamped by the NCDOT Materials and Tests Unit at the manufacturer’s facility prior to delivery.” to “All RCP installed on thoroughfare routes shall be approved and marked by the NCDOT Materials and Tests Unit at the manufacturer’s facility prior to delivery.” in subsection B.*
- 47. **ADD** *“Inspection, evaluation, and acceptance of RCP materials shall be guided by AASHTO R73.” in subsection B.*
- 48. **ADD** subsection F *“Reinforced Concrete Box Culvert (RCBC)”*
- 49. **ADD** *“RCBC shall conform to ASTM C1433, C1504, or C1786. Joints shall be sealed in conformance with ASTM C990 (preformed flexible sealant) and/or C877 (external sealing bands), based on manufacturer’s recommendations for the specific application. Inspection, evaluation, and acceptance of RCBC materials shall be in accordance with AASHTO R73.” to new subsection F.*

503 Materials – Storm Drainage Structures

- 50. **REVISE** *“All precast manholes installed on thoroughfare routes shall be approved and stamped by the NCDOT Materials and Tests Unit at the manufacturer’s facility prior to delivery.” to “All precast manholes installed on thoroughfare routes shall be approved and marked by the NCDOT Materials and Tests Unit at the manufacturer’s facility prior to delivery.” in subsection C.*

506 Stormwater Control Measures (SCMs) within the Primary and Secondary Watershed Protection Overlay Districts

51. **REVISE** *"Stormwater Control Measures (SCMs) within the Primary and Secondary Watershed Protection Overlay Districts"* to *"Stormwater Control Measures (SCMs)"*

507 Construction Methods

52. **ADD** *"When backfilling around corrugated pipe, the maximum stone diameter of the fill shall be less than the width of the pipe corrugations."* to subsection C.

508 Inspection Prior to Acceptance

53. **REVISE** *"When inspection indicates possible excessive deflection in PP, CSP, or CAP, the contractor shall complete a deflection test by mandrel using a rigid device approved by the INSPECTOR."* to *"When inspection indicates possible excessive deflection in PP, CSP, or CAP, the contractor shall complete a deflection test using a laser profiler device, or by mandrel using a rigid device approved by the INSPECTOR."*
54. **ADD** *"Cracks and gaps shall be measured during video inspections using a laser micrometer, or similar with prior approval by the INSPECTOR."*

509 Maintenance of Municipal Separate Storm Sewer System (MS4)

55. **REVISE** *"The TOWN shall maintain all piping and structures within TOWN identified easements."* to *"The TOWN shall maintain all piping and structures within TOWN street rights-of-way and Town of Apex Public Drainage easements."*
56. **REMOVE** *"Town of Apex Public Utility Easement"* from the second sentence.

➤ Section 900|Greenway Trails

903 Greenway Trails

57. **REVISE** *"After asphalt surface course is installed, the top 2 inches of granite screenings shall be placed. All granite screenings shall be compacted to at least 95 percent of their standard Proctor maximum dry density. Crushed Granite Screenings shall meet the following minimum gradation criteria:"* to *"After asphalt surface course is installed, the edge of pavement shall be backfilled with 2 inches of aggregate base course and seeded using an approved seed mix. All aggregate base course as part of the 2-foot shoulder shall be compacted to at least 95 percent of standard Proctor maximum dry density."*

909 Greenway Structures

58. **REVISE** *"Railings and Accessories"* to *"Bridge Railings and Accessories"*.
59. **ADD** *"12) Pedestrian Rail"*

Wherever the top grade of the boardwalk decking exceeds 30 inches from finished ground level or any other hazardous drop-off exists, pedestrian rails shall be provided. Where boardwalk decking height is 30 inches or less from finished ground level, a toe-rail may be installed per Standard Detail. Design considerations should be made to avoid multiple transitions between pedestrian rail and toe-rail.” In subsection A.

❖ Standard Details

➤ Section 200|General Provisions

1. 200.05 Handrail: Deleted sleeves from footings; added handrail diameter label.

➤ Section 300|Streets

2. 300.09 (13 of 14) Curb Ramp (Detectable Warning - Cast-In-Place): Deleted “retrofit only” label (not applicable).
3. 300.34 Crosswalk Lighting Guidance: Added context specific lighting recommendations based on roadway designation and crosswalk type; added wattage input per Electric Utilities Department.

➤ Section 500|Storm Drainage

4. 500.01 Yard Inlet w/ Concrete Slab: Revised to include manhole frame & cover and standard steps.
5. 500.09 Storm Drain Pipe Bedding & Backfilling: Revised to clarify stone bedding requirement and add temporary surface water diversion.

➤ Section 900|Greenway Trails

6. 900.01 Greenway Sections: Replaced 2-inch granite screening shoulder with aggregate base course shoulder with seeding.
7. 900.02 Timber Boardwalk (2 of 3): Added additional elements, views, and requirements to include a toe-rail detail.
8. 900.02 Timber Boardwalk (3 of 3): Modified approach rail.
9. 900.03 Greenway Signage (1 of 2): Revised wording on the directional sign and ID sign.
10. 900.03 Greenway Signage (2 of 2): Added Future Trail Extension sign.
11. 900.05 Bench, Trash, Recycling, Dog Station: Added requirement to bolt down trash and recycling receptacles; revised model number of Dog Station.
12. 900.06 Bollard: Added note indicating removeable bollards should be mounted using lidded ground sleeve; added note indicating the use of NCDOT approved paint for pavement striping when applied to concrete.