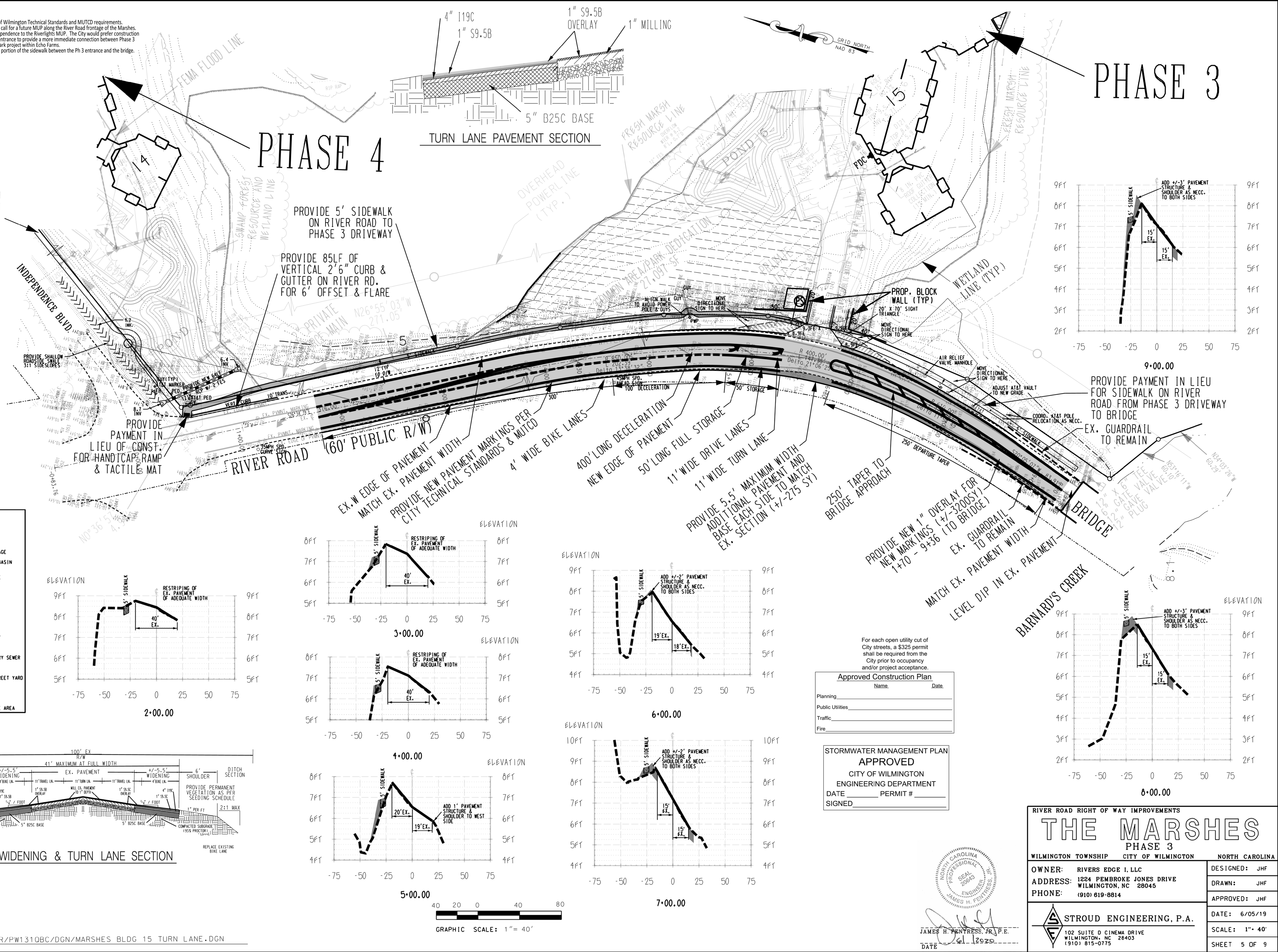
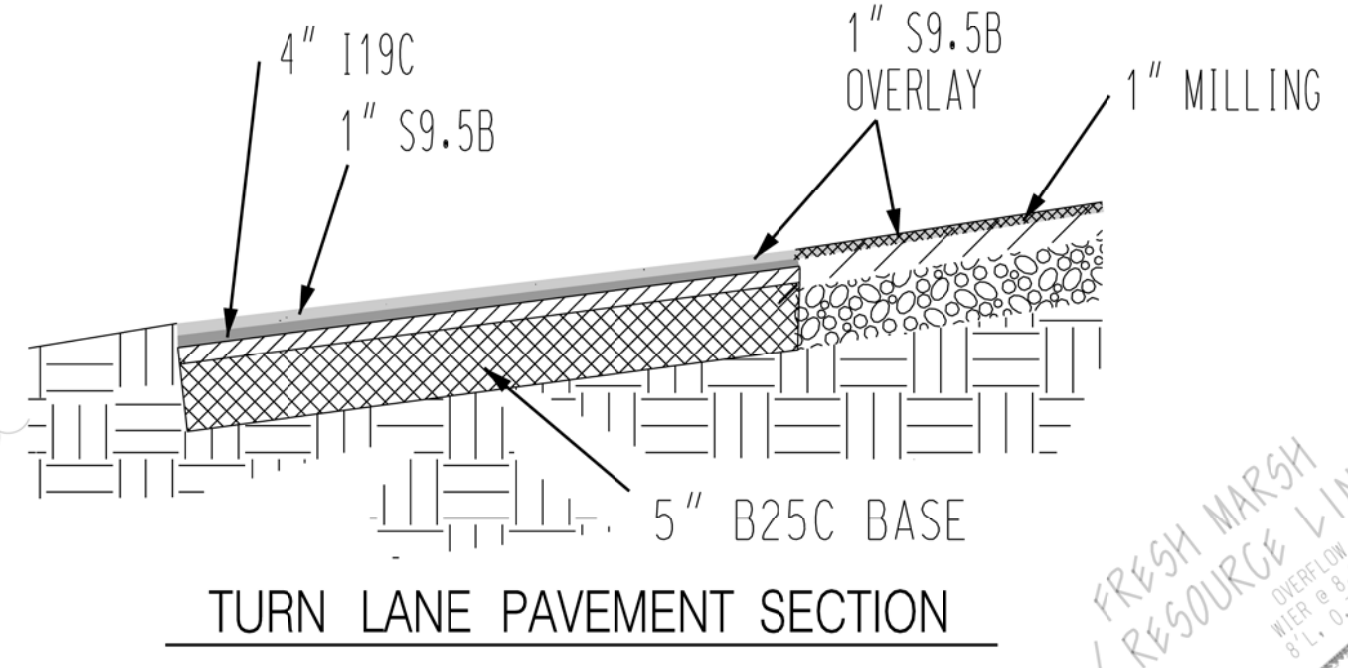
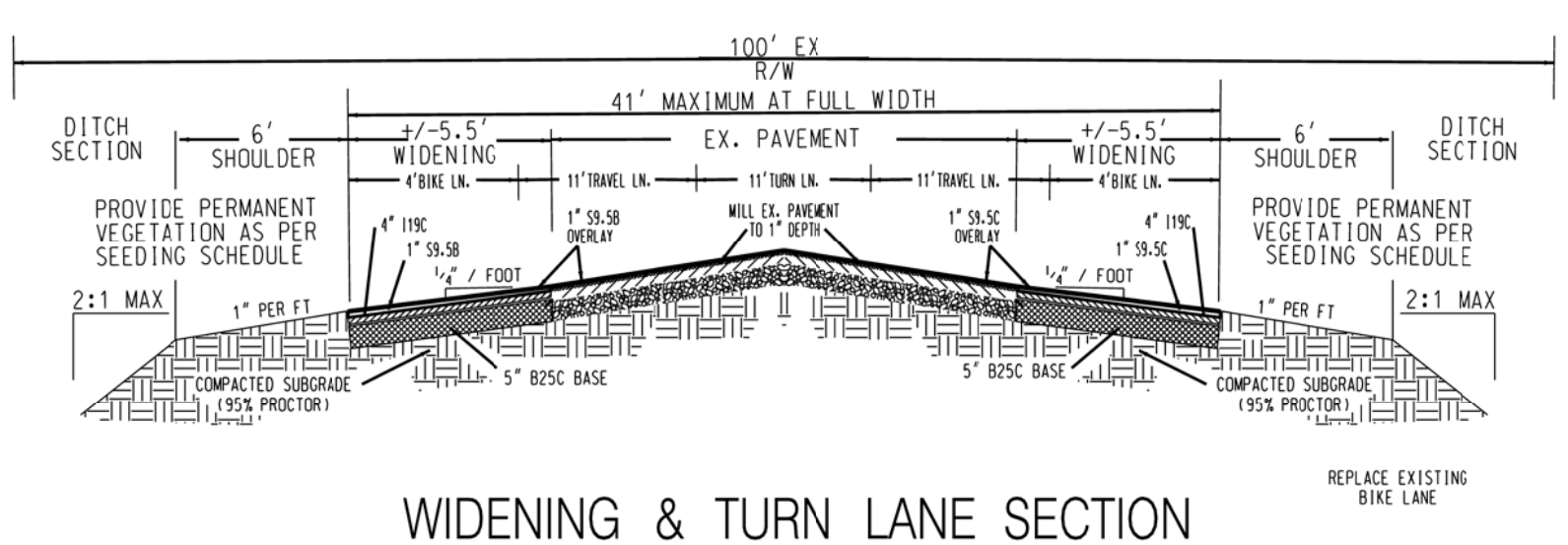
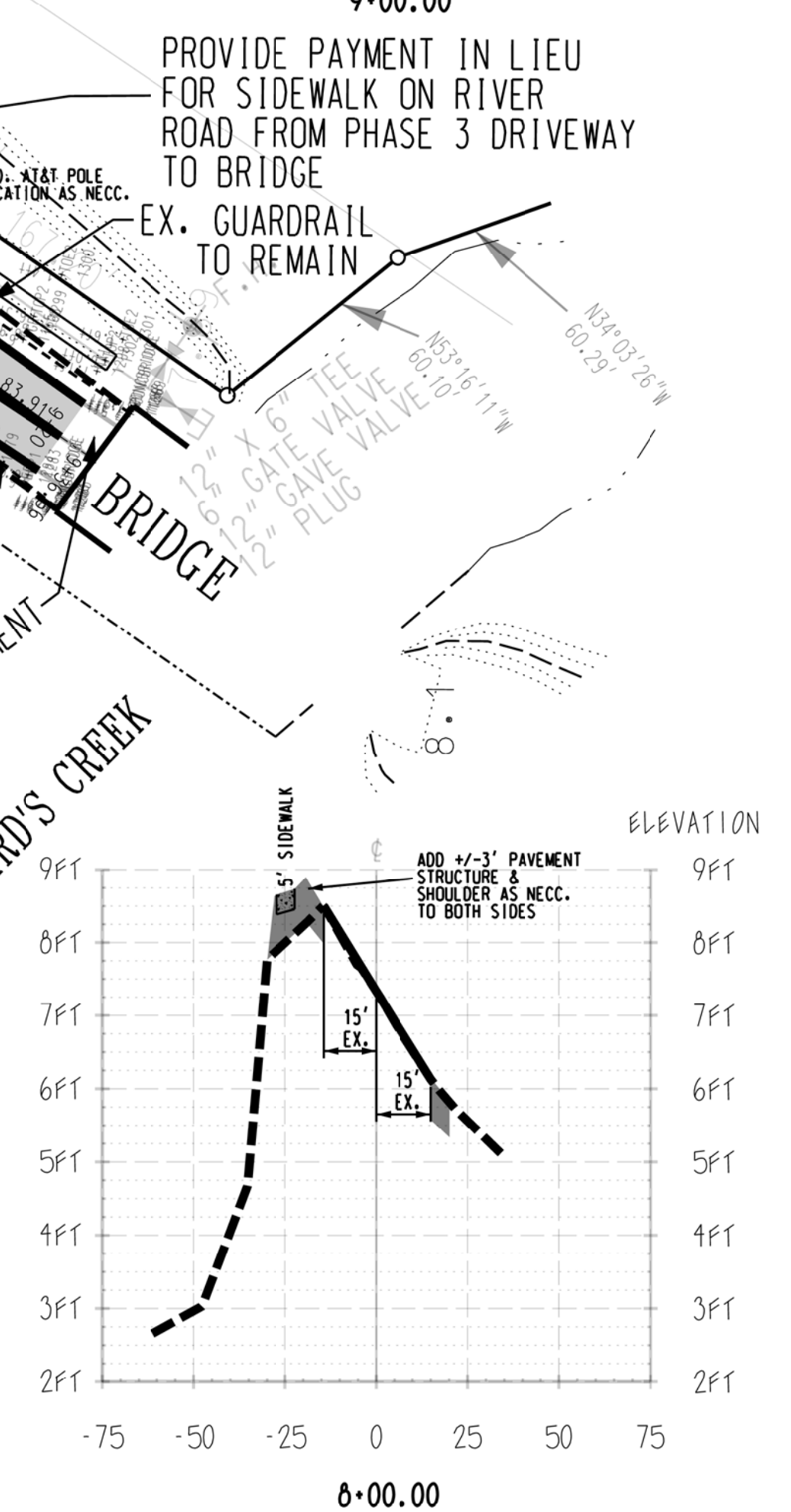
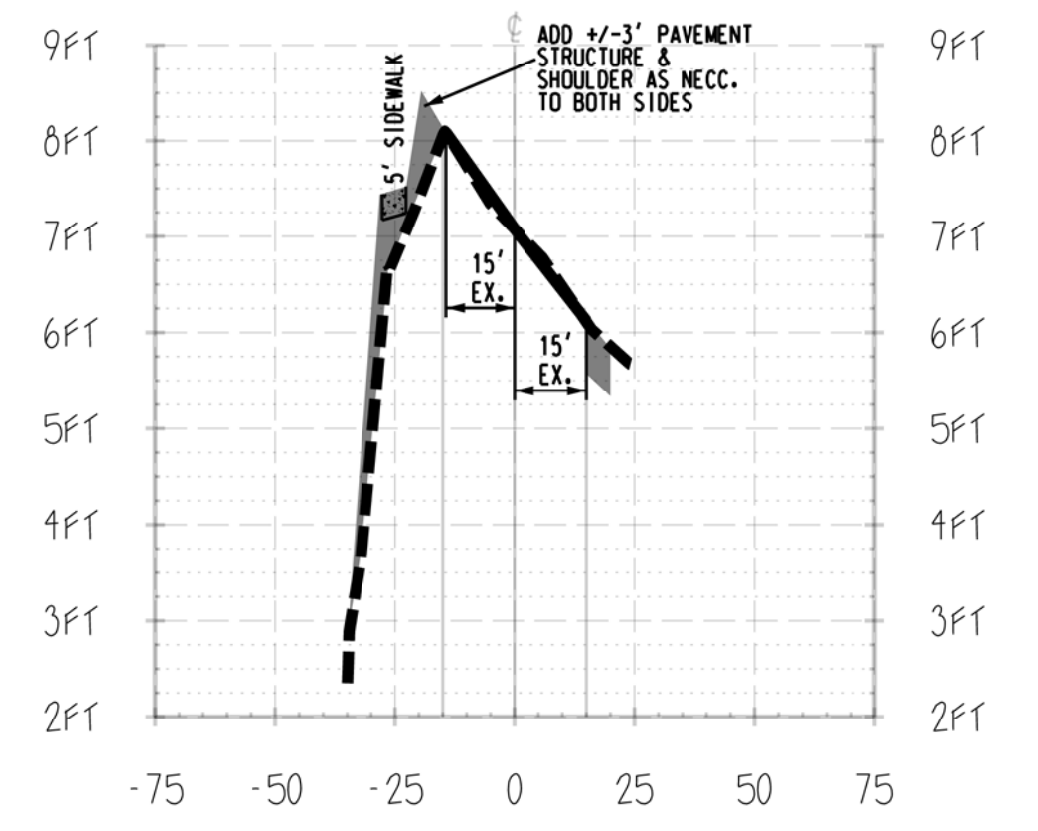
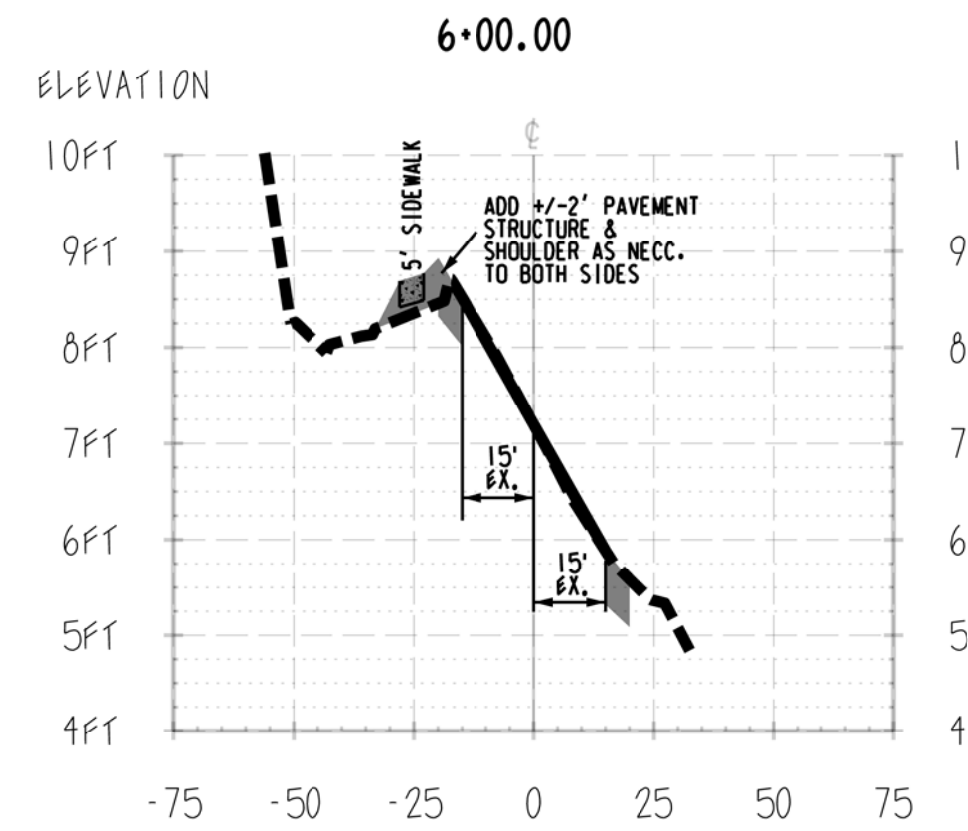
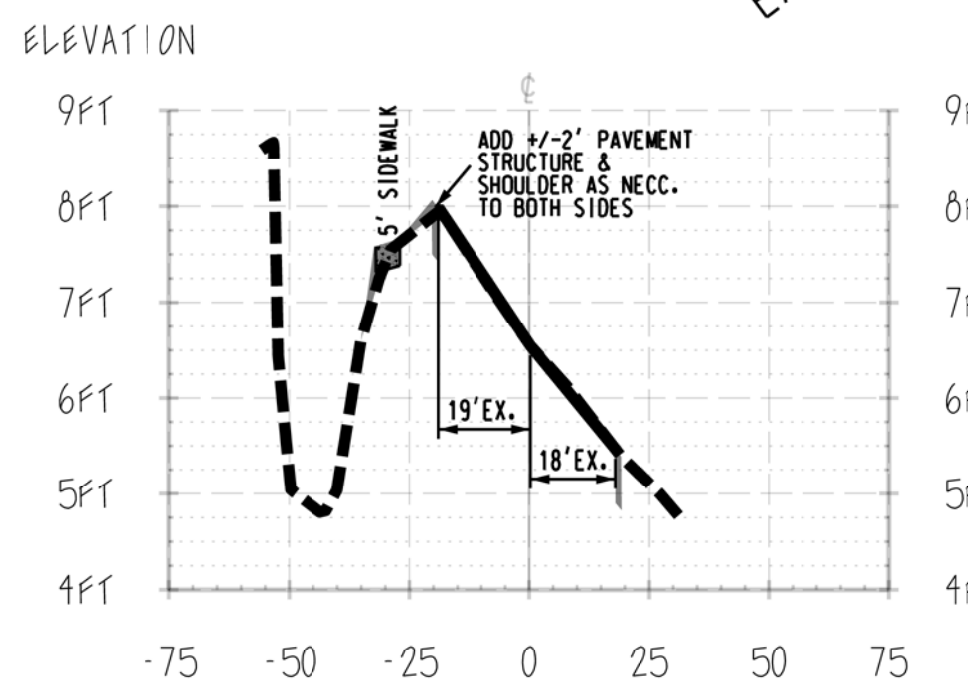
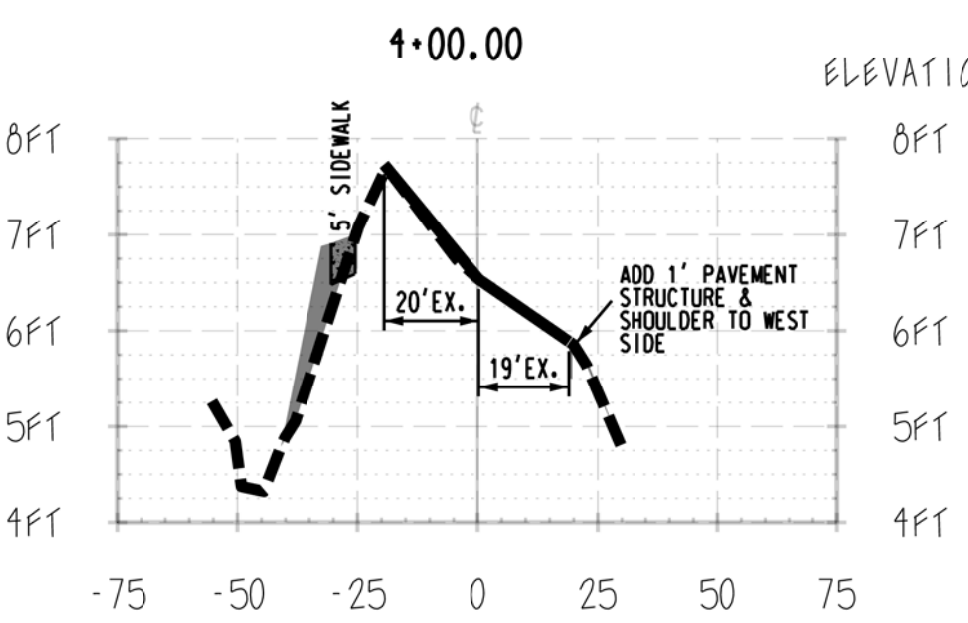
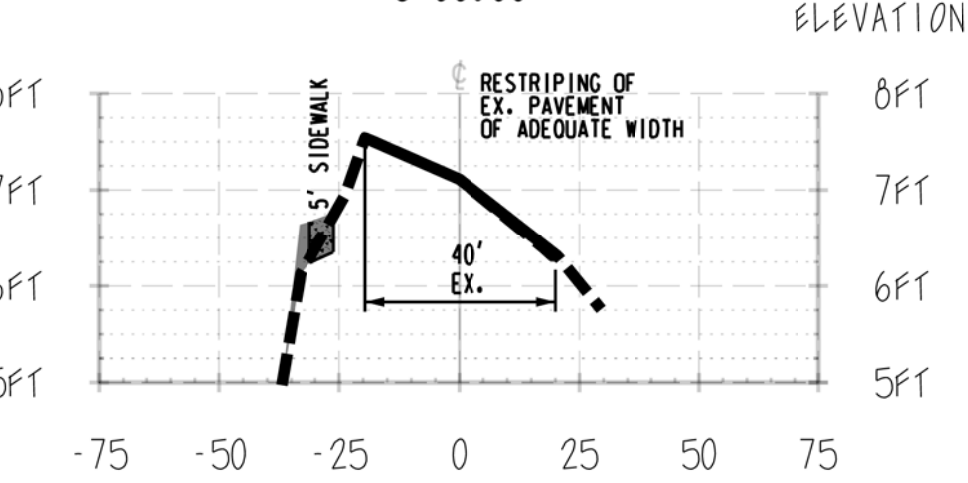
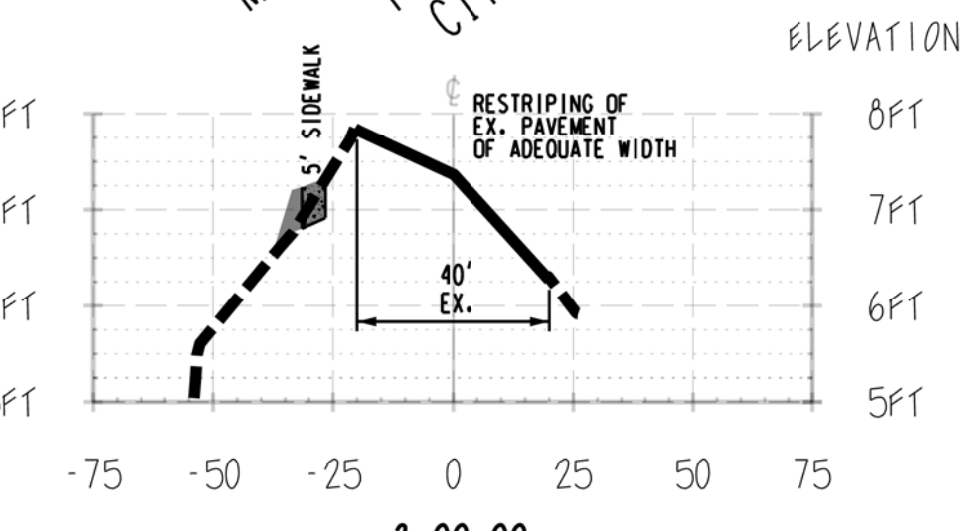
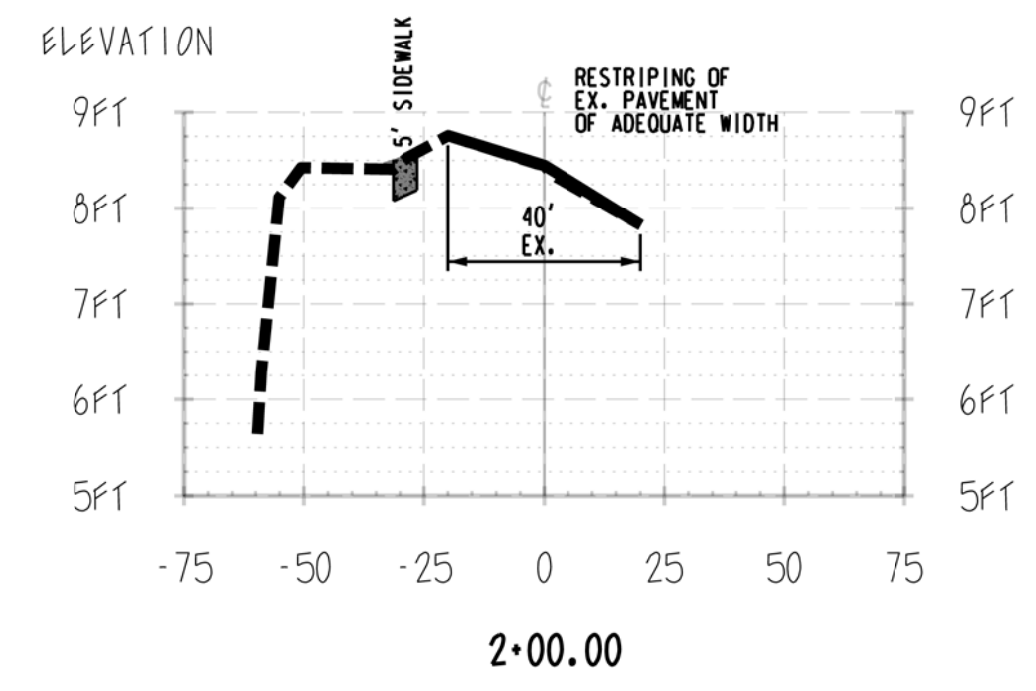


GENERAL NOTES:

- The proposed left turn lane is required to meet City of Wilmington Technical Standards and MUTCD requirements.
- The Walk Wilmington plan and Comp Greenway plan call for a future MUP along the River Road frontage of the Marshes. There are no funded plans for the MUP connection from Independence to the Riverlights MUP. The City would prefer construction of this required sidewalk from Independence to the Phase 3 entrance to provide a more immediate connection between Phase 3 portion of the project and the neighborhood amenities and park project within Echo Farms.
- City staff is willing to accept a payment in lieu for the portion of the sidewalk between the Ph 3 entrance and the bridge. The developer desires to submit such a payment-in-lieu (PIL).



- DENOTES PROPOSED CONTOUR
- DENOTES EX. CONTOUR
- DENOTES PROPOSED GRADE
- DENOTES PROPOSED STORM DRAINAGE
- DENOTES DROP INLET OR CATCH BASIN W/ INLET PROTECTION
- DENOTES LIMITS OF DISTURBANCE
- DENOTES SILT FENCE
- DENOTES SEDIMENT TRAP
- DENOTES DRAINAGE DIRECTION
- DENOTES WETLAND LINES
- DENOTES DRAINAGE AREA
- DENOTES PROPOSED FIRE HYDRANT
- DENOTES PROPOSED MANHOLE
- DENOTES PROPOSED 8 IN SANITARY SEWER
- DENOTES PHASE LINE
- DENOTES SQUARE FOOTAGE OF STREET YARD
- DENOTES PROPOSED WATER
- DENOTES PROPOSED GATE VALVE
- DENOTES PARKING LOT LANDSCAPE AREA



For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

Approved Construction Plan

Name _____ Date _____

Planning _____

Public Utilities _____

Traffic _____

Fire _____

STORMWATER MANAGEMENT PLAN APPROVED

CITY OF WILMINGTON

ENGINEERING DEPARTMENT

DATE _____ PERMIT # _____

SIGNED _____

JAMES H. FENTRESS, JR., P.E.

DATE 6/1/2020

RIVER ROAD RIGHT OF WAY IMPROVEMENTS

THE MARSHES

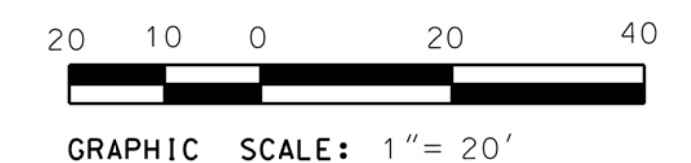
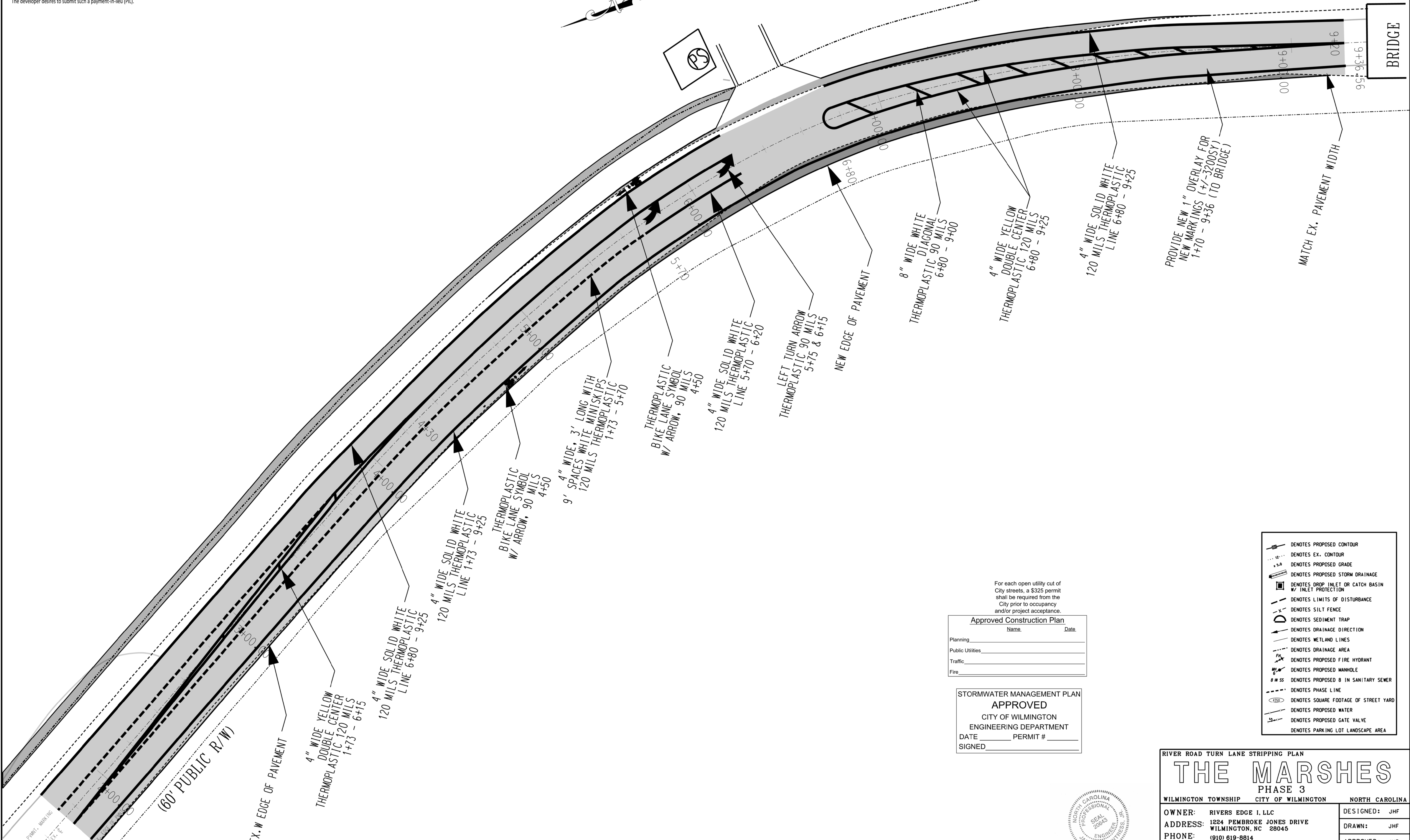
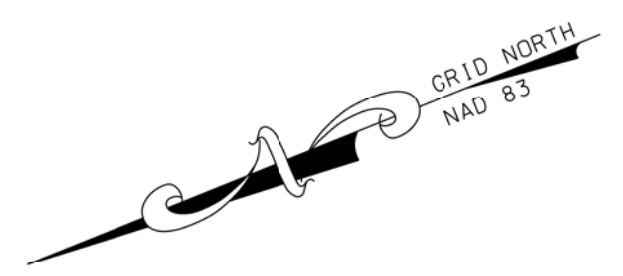
PHASE 3

WILMINGTON TOWNSHIP	CITY OF WILMINGTON	NORTH CAROLINA
OWNER: RIVERS EDGE I, LLC	ADDRESS: 1224 PEMBROKE JONES DRIVE WILMINGTON, NC 28045	PHONE: (910) 619-8814
DESIGNED: JHF	DRAWN: JHF	APPROVED: JHF
DATE: 6/05/19	SCALE: 1" = 40'	SHEET 5 OF 9

STROUD ENGINEERING, P.A.
102 SUITE D CINEMA DRIVE WILMINGTON, NC 28403 (910) 815-0775

GENERAL NOTES:

1. The proposed left turn lane is required to meet City of Wilmington Technical Standards and MUTCD requirements.
2. The Walk Wilmington plan and Comp Greenway plan call for a future MUP along the River Road frontage of the Marshes. There are no funded plans for the MUP connection from Independence to the Riverlights MUP. The City would prefer construction of this required sidewalk from Independence to the Phase 3 entrance to provide a more immediate connection between Phase 3 portion of the project and the neighborhood amenities and park project within Echo Farms.
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PROJECT NO.: PW-1310BC
 DRAWING NAME: W:/MASTER/PW1310BC/DGN/MARSHES BLDG 15 TURN LANE.DGN

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

Approved Construction Plan
 Name _____ Date _____

Planning _____
 Public Utilities _____
 Traffic _____
 Fire _____

STORMWATER MANAGEMENT PLAN APPROVED
 CITY OF WILMINGTON
 ENGINEERING DEPARTMENT
 DATE _____ PERMIT # _____
 SIGNED _____

- DENOTES PROPOSED CONTOUR
- DENOTES EX. CONTOUR
- DENOTES PROPOSED GRADE
- DENOTES PROPOSED STORM DRAINAGE
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- DENOTES PROPOSED GATE VALVE
- DENOTES PARKING LOT LANDSCAPE AREA

RIVER ROAD TURN LANE STRIPPING PLAN

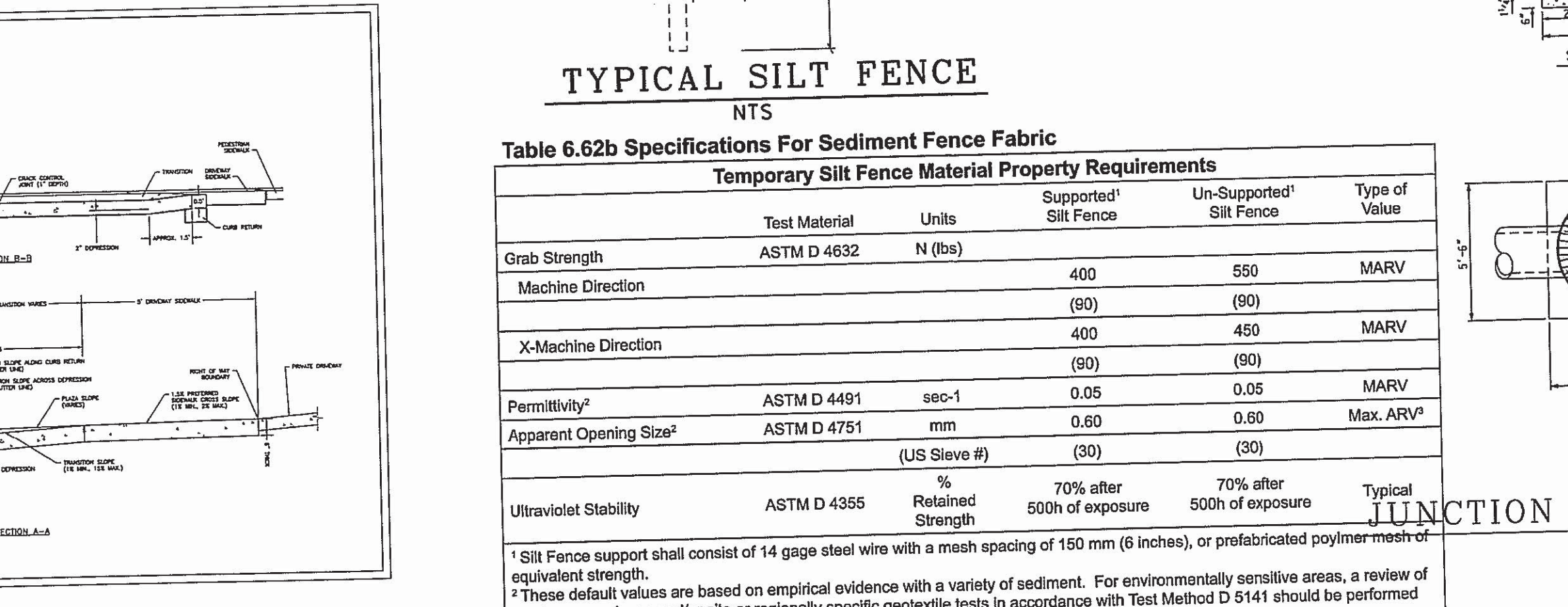
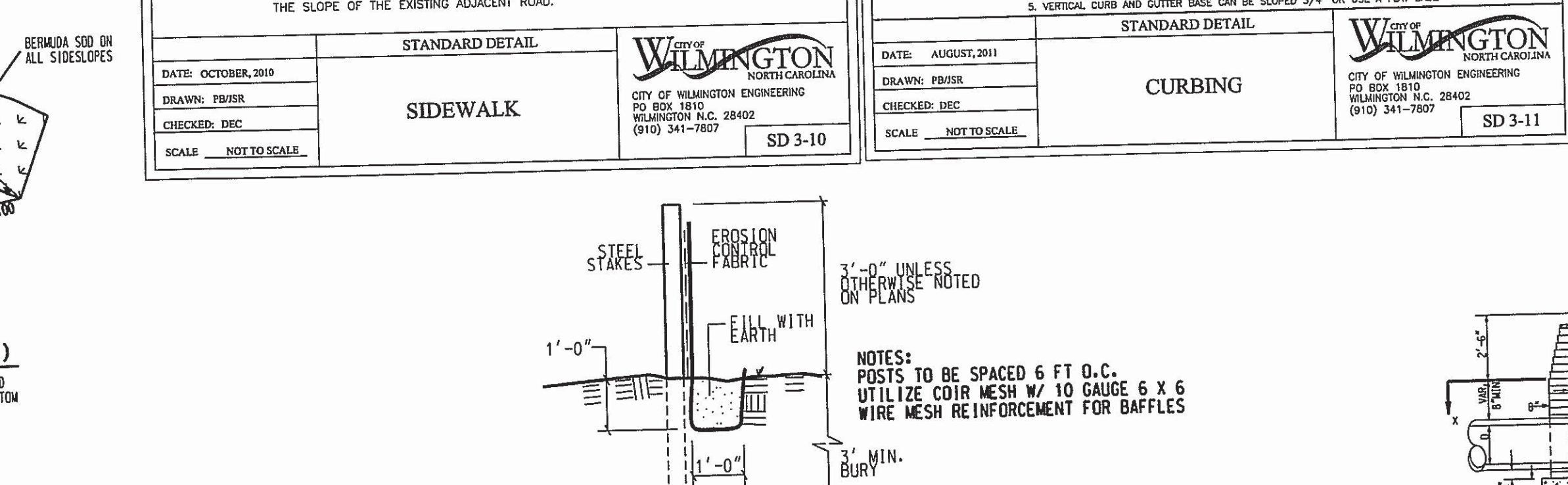
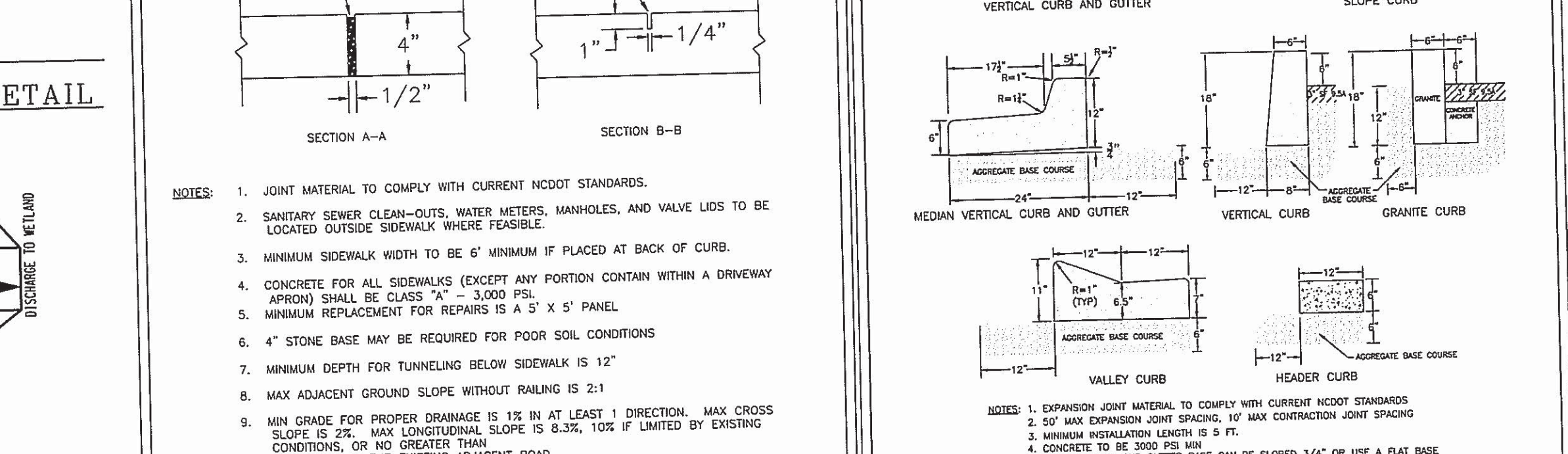
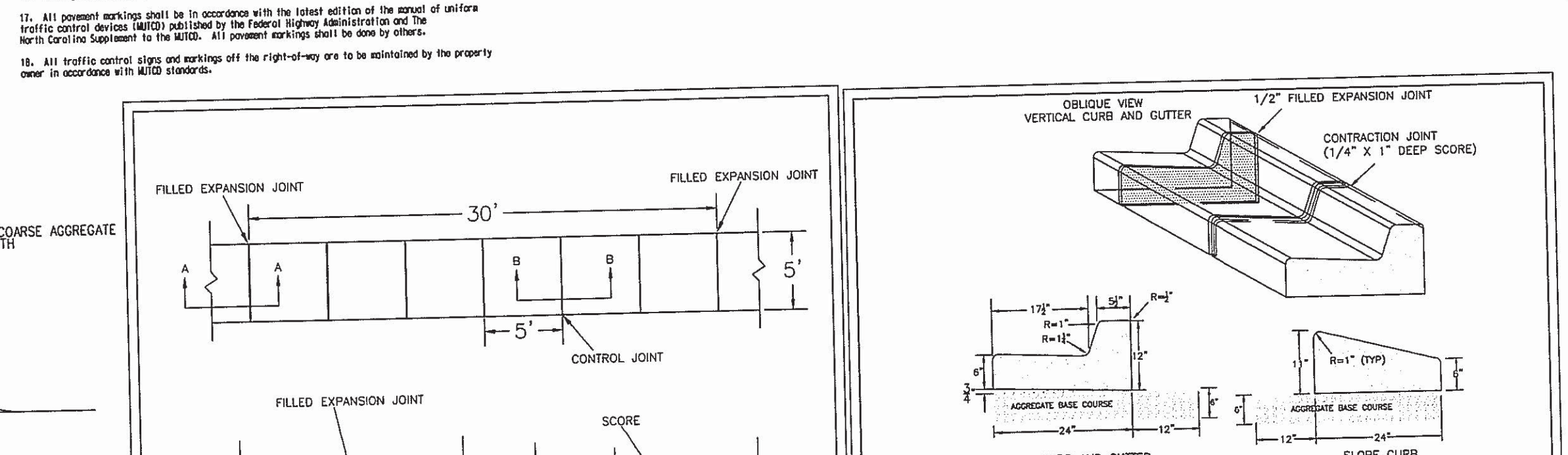
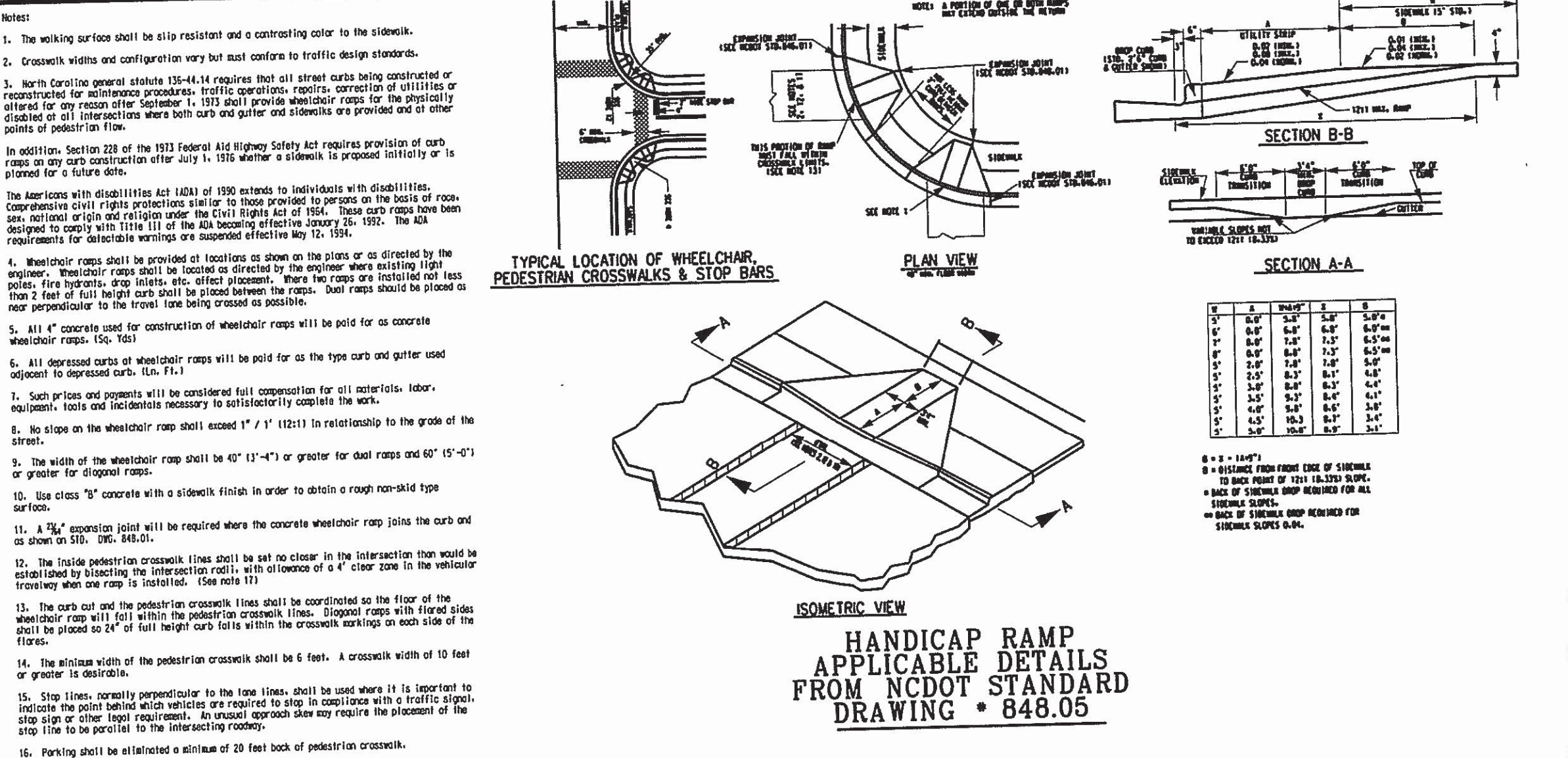
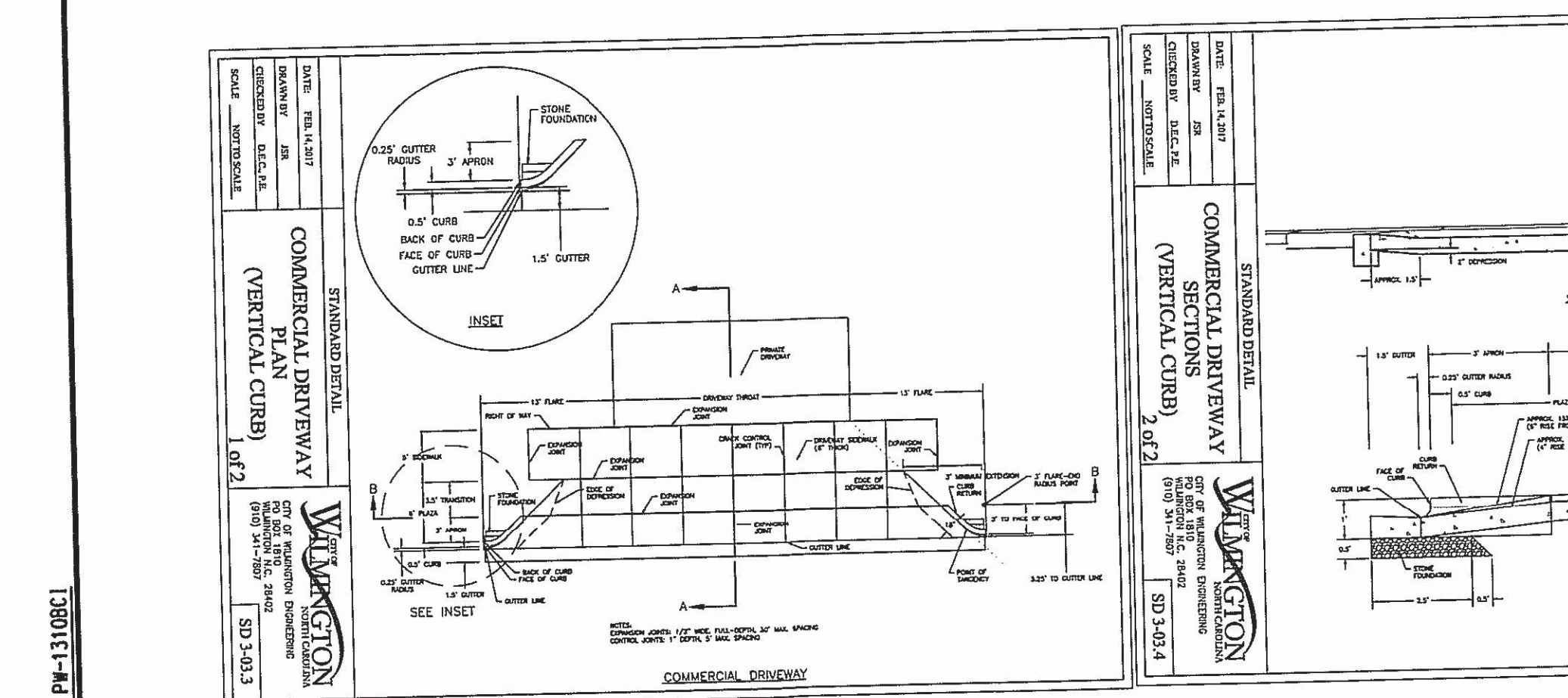
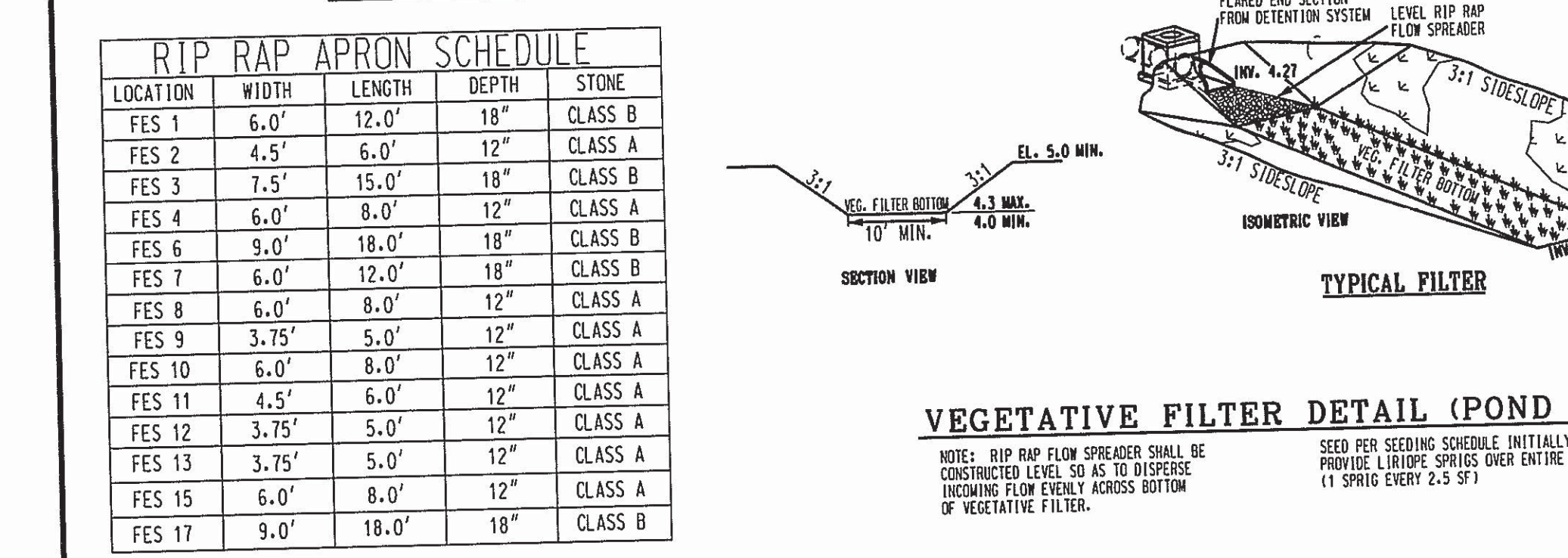
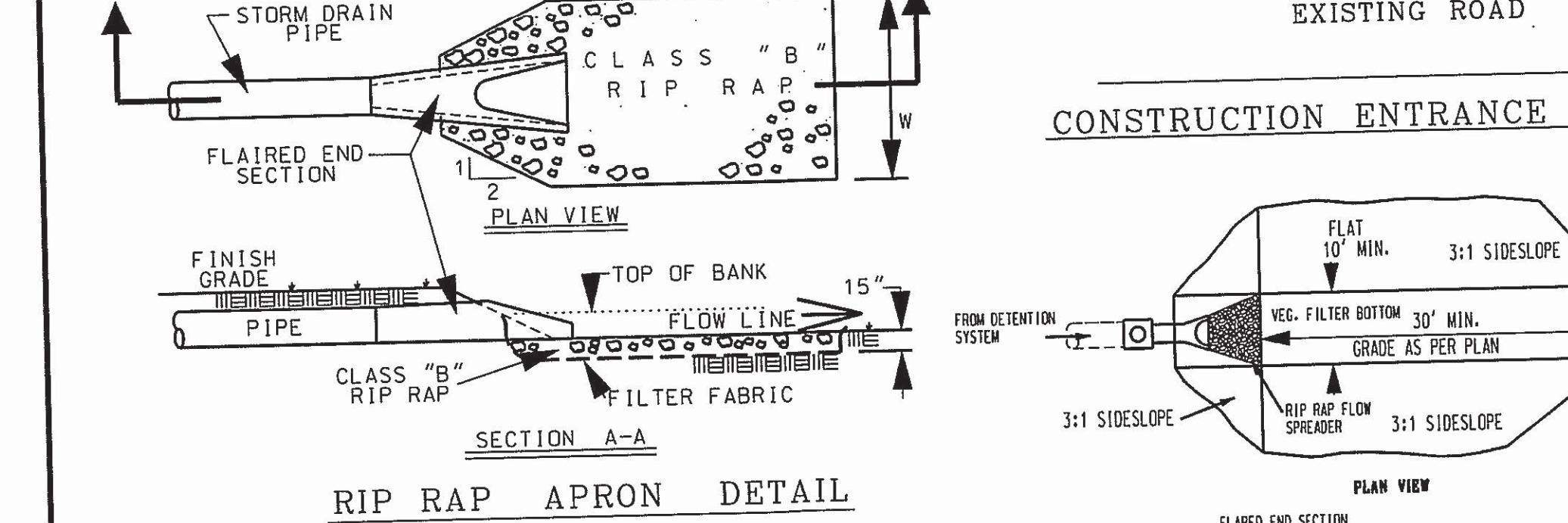
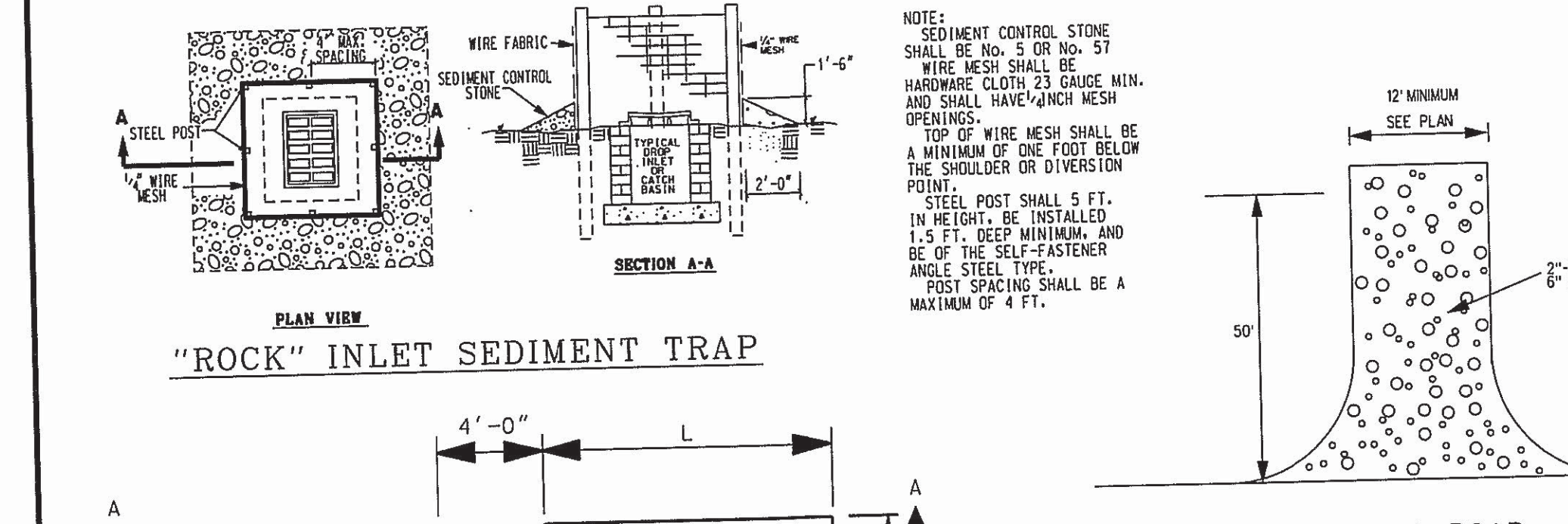
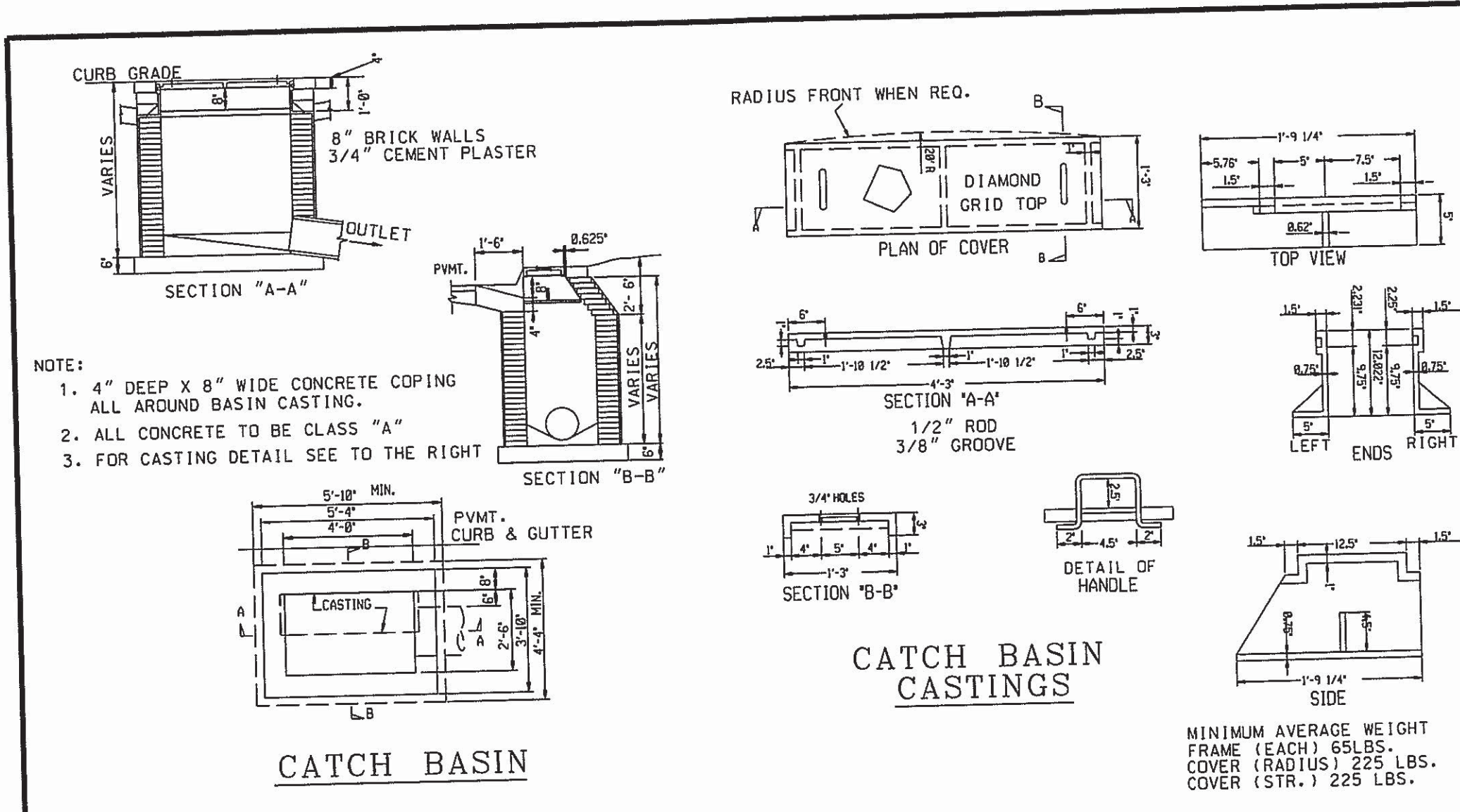
THE MARSHES

PHASE 3

WILMINGTON TOWNSHIP CITY OF WILMINGTON NORTH CAROLINA	
OWNER: RIVERS EDGE I, LLC	DESIGNED: JHF
ADDRESS: 1224 PEMBROKE JONES DRIVE WILMINGTON, NC 28045	DRAWN: JHF
PHONE: (910) 619-8814	APPROVED: JHF
STROUD ENGINEERING, P.A.	
102 SUITE D CINEMA DRIVE WILMINGTON, NC 28403 (910) 815-0775	
DATE: 6/10/20	SCALE: 1" = 20'
SHEET 5A OF 9	

NORTH CAROLINA PROFESSIONAL SEAL 28403 ENGINEER JAMES H. FENTRESS, JR.

JAMES H. FENTRESS, JR., P.E.
 DATE: 6/10/20



PROJECT NO.: PW-1310BC1
DRAWING NAME: F2 MASTER/DGN/PW-318/BARNARDET.DGN

PERMANENT SEEDING TABLE 1

Seeding Dates	Recommended Planting	Rate (lb/ac)
Feb. 15 - Apr. 1	Tall Fescue Mixture	see table 2
Apr. 1 - Nov. 1	Hybrid Bermudagrass	see table 2
Apr. 1 - Jul. 15	Common Bermudagrass	see table 2
Mar. 1 - Jul. 1	Centipedegrass	see table 2

PERMANENT SEEDING TABLE 2a-LOW MAINTENANCE MIXTURES

Site Description	Recommended Planting	Rate (lb/ac)
Well to poorly drained soils	Tall Fescue Mixture Panicum Bahiagrass Kobe Lespedeza	80 40 50
Dry to well drained soils	Common Bermudagrass Kobe Lespedeza German Millet	50 30 10
Swales	Common Bermudagrass	40-80

PERMANENT SEEDING TABLE 2b-HIGH MAINTENANCE MIXTURES

Site Description	Recommended Planting	Rate (lb/ac)
Well to poorly drained soils	Tall Fescue Mixture Rye Grain	200 25
Dry to well drained soils	Hybrid Bermudagrass	50
Well drained sandy loam to sand, loams.	Centipedegrass	10-20

TEMPORARY SEEDING TABLE

Seeding Dates	Recommended Planting	Rate (lb/ac)
Dec. 1 - Apr. 15	Kobe Lespedeza with Rye Grain	50 120
Apr. 15 - Aug. 15	German Millet	40
Aug. 15 - Dec. 1	Rye Grain	120

CONSTRUCTION SEQUENCE PHASE 1

- INSTALL SEDIMENT CONTROL MEASURES.
- CLEAR AND GRADE AREA OF POND AND SWALES.
- CLEAR & GRUB REMAINDER OF SITE.
- INSTALL UNDERGROUND UTILITIES IN PHASE 1 AND MULTIFAMILY.
- CONSTRUCT BUILDINGS
- INSTALL CURB, GUTTER AND PAVE
- PROVIDE 100% VEGETATIVE COVER OF ALL DISTURBED SOILS

EROSION & SEDIMENT CONTROL MAINTENANCE PLAN

- All erosion and sediment control measures will be checked for stability and operation following every runoff-producing rainfall, but in no case, less than once every week and within 24 hours of every half inch rainfall.
- All points of egress will have construction entrances that will be periodically top-dressed with an additional 2 inches of #4 stone to maintain proper depth. They will be maintained in a condition to prevent mud or sediment from leaving the site. Immediately remove objectionable material spilled, washed or tracked onto the construction entrance or roadways.
- Sediment will be removed from hardware cloth and gravel inlet protection, block and gravel inlet protection, rock doughnut inlet protection and rock pipe inlet protection when the designed storage capacity has been half filled with sediment. Rock will be cleaned or replaced when the sediment pool no longer drains as designed. Silt racks will be emptied once a week and after every rain event. Swales must be temporarily dewatered and rocks once a week and after every rain event.
- Diversion ditches will be cleaned out immediately to remove sediment or obstructions from the flow area. The diversion ridges will also be repaired. Swales must be temporarily stabilized within 21 calendar days of cease of any phase of activity associated with a swale.
- Sediment will be removed from behind the sediment fence when it becomes half filled. The stake spacing will be 8 feet max., with the use of extra strength fabric, without wire backing. Stake spacing will be 8 feet max., with the use of extra strength fabric, without wire backing. If rock filters are designed at low points in the sediment fence the rock will be repaired or replaced if it becomes half full of sediment, no longer drains as designed or is damaged. Sediment will be removed from sediment traps when the designed storage capacity has been half filled with sediment. The rock will be cleaned or replaced when the sediment pool no longer drains or when the rock is dislodged. Baffles will be repaired or replaced if they collapse, tear, decompose or become ineffective. They will be replaced promptly. Sediment will be removed when deposits reach half the height of the 1" baffles. Floating sediments will be inspected weekly and will be kept clean.
- All needed areas will be fertilized, reseeded as necessary and mulched according to specifications in the vegetative plan to maintain a vigorous, dense vegetative cover. All slopes will be stabilized within 21 calendar days. All other areas will be stabilized within 15 working days.
- Floculants will be used to address turbidity issues. The pumps, tanks, hoses and injection systems will be checked for problems or turbid discharges daily.

COASTAL PLAIN SITE STABILIZATION SCHEDULE

- Fertilize and lime per recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.
- Incorporate lime/fertilizer 4-6 inches.
- Roughen steep slopes by tracked machinery.
- Select species based on season. Refer to tables.
- Broadcast seeds evenly and cover by raking or dragging a chain. Firm soil by rolling.
- Apply straw mulch at a rate 1-2 tons per acre. Anchor straw by raking with asphalt, netting, or a disk with blades set nearly straight can be used as a mulch anchoring tool.
- Refer to tables for fertilization and mulch immediately following erosion or other damage.

SOD INSTALLATION

- Fertilize and lime per recommendations of soil tests or apply 100 lb/1,000 sf ground agricultural limestone and 25 lb/1,000 sf fertilizer. In the fall, use 10-10-10. In the spring, use 5-10-10.
- Incorporate lime/fertilizer 4-6 inches.
- Rake or harrow to achieve a smooth final grade.
- Roll to achieve a smooth, firm surface on which to lay the sod.
- Lightly rake and irrigate top layer of soil just prior to installation.
- Lay sod in a staggered, brick-like pattern with the longest dimension perpendicular to the slope. Avoid gaps. Use a knife to fit irregular shapes.
- Roll sod lightly after installation to ensure good sod to soil contact.
- Irrigate initially to wet soil to a depth of 4". Keep soil moist for 2-3 weeks thereafter or until sod has taken root.

Notes: For seeding outside of recommended dates and/or for temporary stabilization, refer to temporary seeding table.

For highly erosive areas or as directed by an engineer, sod shall be provided.

STORMWATER MANAGEMENT PLAN APPROVED

CITY OF WILMINGTON
ENGINEERING DEPARTMENT
DATE 12-14-17 PERMIT # 200302923
SIGNED [Signature]

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

Approved Construction Plan

Planning [Signature] Date 12/17/17
Public Utilities [Signature]
Traffic [Signature] 12-18-19
Fire [Signature] 12-19-19

REVISIONS

J/H/F	NO.	DATE	DESCRIPTION
J/H/F	1	4/28/03	FILTER DETAIL
J/H/F	2	5/16/17	UPDATE DETAILS

CITY STANDARD ROADWAY DETAILS

THE MARSHES PHASES 3, 4 & 5

WILMINGTON TOWNSHIP CITY OF WILMINGTON NORTH CAROLINA

OWNER: RIVERS EDGE I, LLC
ADDRESS: 1224 PEMBROKE JONES DRIVE WILMINGTON, NC 28045
PHONE: (910) 819-8814

DESIGNED: CPS
DRAWN: CPS
APPROVED: JHF
DATE: 11/14/02
SCALE: NTS
SHEET 6 OF 9