LEGEND

EXISTING — PROPOSED

TOPOGRAPHIC FEATURES

- TOPO ELEVATIONS BY OTHERS OR AERIAL (16.73, 15.7)
- ELEVATIONS (+16.73, +15.7 / TC 16.35, EP 15.85, P 15.6)
- TOP OF BANK
- SWALE / DITCH
- TOE OF SLOPE
- EDGE OF WATER
- WOODS LINE
- TREE
- EXISTING UTILITY LOCATION & DEPTH
- BENCHMARK
- EDGE OF PAVEMENT
- CURB AND/OR GUTTER
- REVERSED OR TRANSITIONAL GUTTER PAN

UTILITIES

- STORM DRAINAGE
- STORM MANHOLE
- CATCH BASIN
- DROP INLET
- LOW HEAD DROP INLET
- ITEMS TO BE REMOVED
- MATCH PAVEMENT GRADE — P 15.6 MG
- PAVEMENT — EP
- TOP OF CURB — TC
- TOP OF BANK — TB
- SIDE SLOPE — SS
- MATCH EXISTING GRADE — MG
- MATCH EXISTING INVERT — MI
- WATER MAIN — W
- BLOW OFF VALVE
- WATER VALVE
- FIRE HYDRANT
- WATER LINE BEND
- WATER REDUCER
- WATER METER
- WATER METER VAULT
- IRRIGATION SPRINKLER
- SANITARY SEWER — SAN
- SANITARY FORCE MAIN — FM
- SANITARY MANHOLE
- SANITARY CLEANOUT
- FORCEMAIN MANHOLE
- FORCEMAIN VENT
- FORCEMAIN VALVE
- GAS MARKER
- GAS VENT
- GAS CONTROL BOX
- GAS METER
- GAS VALVE
- CATV INTERFACE BOX
- CATV LONG PEDESTAL
- CATV PEDESTAL — CATV
- SATELITE DISH
- CATV SURFACE PLATE
- TELEPHONE INTERFACE BOX
- TELEPHONE MANHOLE
- TELEPHONE PEDESTAL
- FIBER OPTIC MARKER
- ELECTRIC GUY WIRE
- ELECTRIC POWER POLE
- ELECTRIC TRANSFORMER
- ELECTRIC STREET LIGHT
- ELECTRIC PARKING LIGHT

UNDERGROUND UTILITY PAINT MARKINGS

- C — COMMUNICATIONS (ORANGE PAINT)
- E — ELECTRIC (RED PAINT)
- G — GAS (YELLOW PAINT)
- S — GRAVITY SEWER (GREEN PAINT)
- FM — SEWER FORCE MAIN (GREEN PAINT)
- W — WATER (BLUE PAINT)

MISCELLANEOUS

- TRAFFIC BOLLARD
- TRAFFIC SIGN
- MAILBOX
- NEWSPAPER BOX
- FLAG POLE

PROPERTY MARKERS

FOUND — SET

- PIN
- PIN IN CONCRETE
- PIPE
- DRILL HOLE
- DOT MONUMENT

WRIGHTSVILLE BOULEVARD PHASE 1

WATER AND STORMWATER IMPROVEMENTS

KILL DEVIL HILLS - DARE COUNTY, NORTH CAROLINA

FOR THE

TOWN OF KILL DEVIL HILLS

KILL DEVIL HILLS
Birthplace of Aviation
NORTH CAROLINA

Sheet List Table

DATUM NOTE:
VERTICAL DATUM REFERENCE:
NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

HORIZONTAL DATUM REFERENCE:
NORTH CAROLINA COORDINATE SYSTEM OF 1983
NAD 1983 (2001 HARN)

TOPOGRAPHICAL SURVEY INFORMATION:
THE TOPOGRAPHICAL INFORMATION WAS PREPARED BY:
AMERICAN ENGINEERING
830 GREENBRIER CIRCLE , SUITE 110
CHESAPEAKE, VIRGINIA 23320
PHONE: (757) 468-6800
FAX: (757) 468-4966

TOPOGRAPHICAL SURVEY INFORMATION:
THE PLAN DOES NOT GUARANTEE THE EXISTENCE, SIZE, TYPE, LOCATION, ALIGNMENT OR DEPTH OF ANY OR ALL UNDERGROUND UTILITIES OR OTHER FACILITIES. WHERE SURFACE FEATURES (MANHOLES, CATCH BASINS, VALVES, ETC.) ARE UNAVAILABLE OR INCONCLUSIVE, INFORMATION SHOWN MAY BE FROM UTILITY OWNERS RECORDS AND/OR ELECTRIC LINE TRACING, THE RELIABILITY OF WHICH IS UNCERTAIN. THE CONTRACTOR SHALL PERFORM PRIOR TO INSTALLING AFFECTED PIPES, WHATEVER TEST EVACUATION OR OTHER INVESTIGATION IS NECESSARY TO VERIFY LOCATIONS AND CLEARANCE AND SHALL REPORT IMMEDIATELY AND DISCREPANCIES TO AMERICAN ENGINEERING, AT 1-757-468-6800.

Location Map, Scale: 1" = 800'

UNDERGROUND UTILITIES AS MARKED BY "UTILITY LOCATERS"
COMMUNICATIONS (ORANGE PAINT)
ELECTRIC (RED PAINT)
GAS (YELLOW PAINT)
IRRIGATION (PURPLE PAINT)
SEWER (GREEN PAINT)
WATER (BLUE PAINT)

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Remote Ticket Entry
http://nc811.org/remoteticketentry.htm

NOTE:
ALL WATER LINE WORK SHALL BE COMPLETED, TESTED AND ACTIVATED BEFORE ANY STORM DRAINAGE WORK IS BEGUN. WATER LINE ELEVATIONS SHALL BE COORDINATED SO AS NOT TO CONFLICT WITH NEW STORM DRAINAGE PIPES.

APPR. DATE	DATE	#	REVISION

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 057308 03/01/2024 EMILY R. ZELTMANN
Emily R. Zeltmann

WRIGHTSVILLE BOULEVARD PHASE 1
WATER AND STORMWATER IMPROVEMENTS
TOWN OF KILL DEVIL HILLS
DARE COUNTY, NORTH CAROLINA

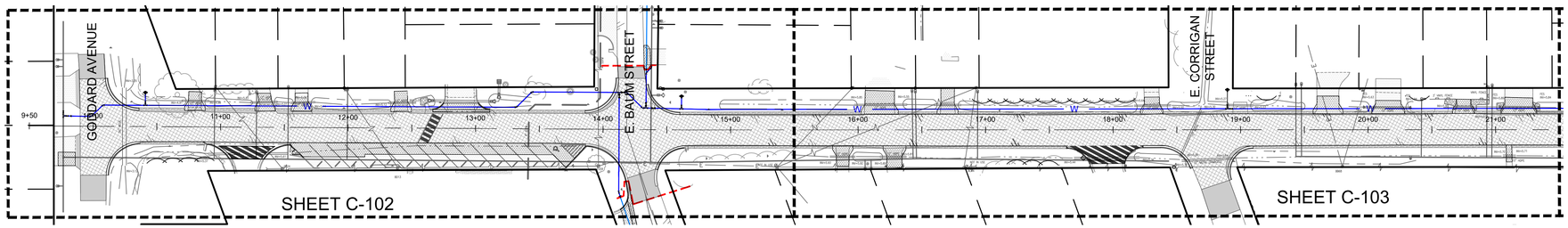
AMERICAN Engineering
American Engineering Associates - Southeast, P.A.
830 Greenbrier Circle | Suite 110
Chesapeake, Virginia 23320 (757) 468 - 6800

Project #	V23026
Drawn by	AE
Submittal Date	03/01/2024
SWaM Certification	715559
NC Firm #	C-3881

SHEET NAME: COVER PH1

SHEET #: G-001

NORTH CAROLINA COORDINATE SYSTEM OF 1983
SOUTH ZONE, NAD 1983
(2001 HARN)



WRIGHTSVILLE BOULEVARD

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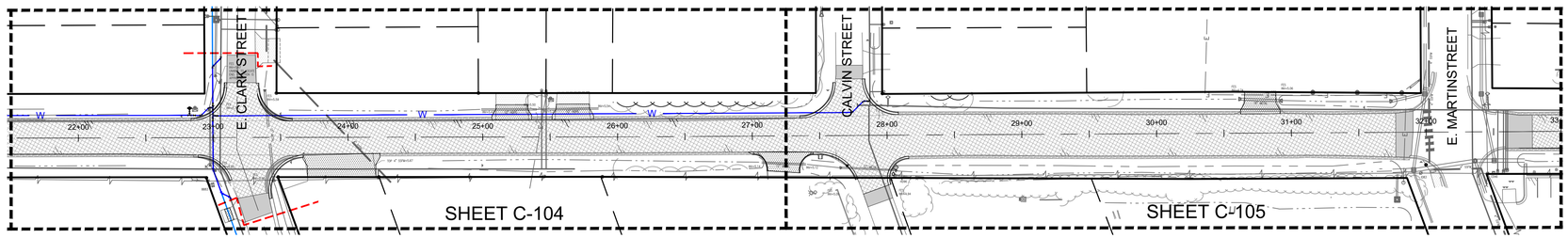

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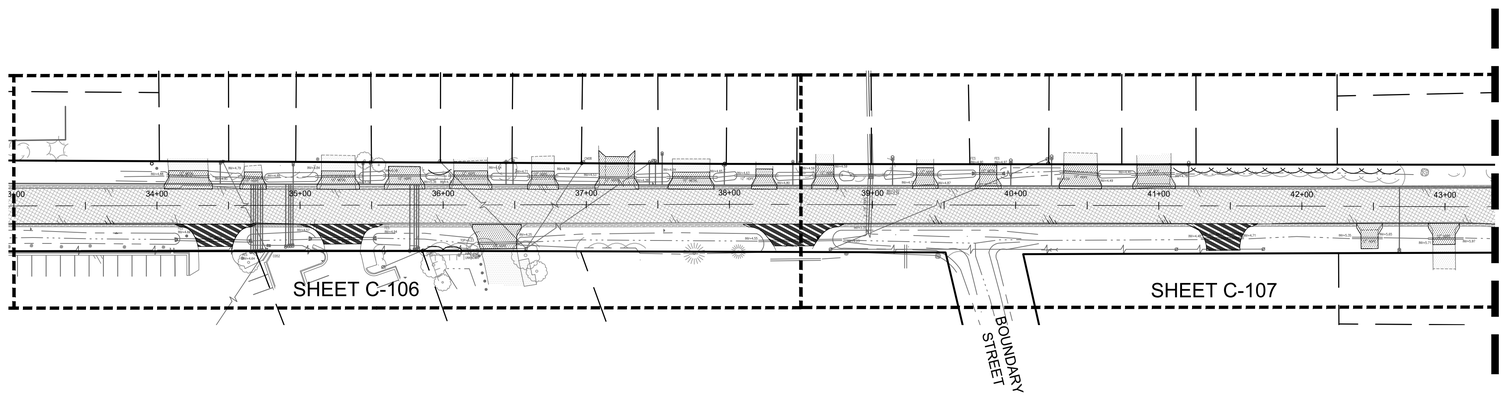
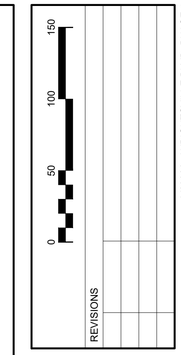


SEE WRIGHTSVILLE BOULEVARD PHASE 2 PLANS FOR CONTINUATION

WRIGHTSVILLE BOULEVARD



V23026 - WRIGHTSVILLE BLVD, PHASE 1

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NORTH CAROLINA PROFESSIONAL SEAL 057308 03/01/2024 ENGINEER EMILY R ZELTMANN

Project #	V23026
Drawn by	AE
Submittal Date	01/08/2024
Scale	AS NOTED
SWaM Certification	715559
VA Firm #	0405001994

WRIGHTSVILLE BOULEVARD PHASE 1

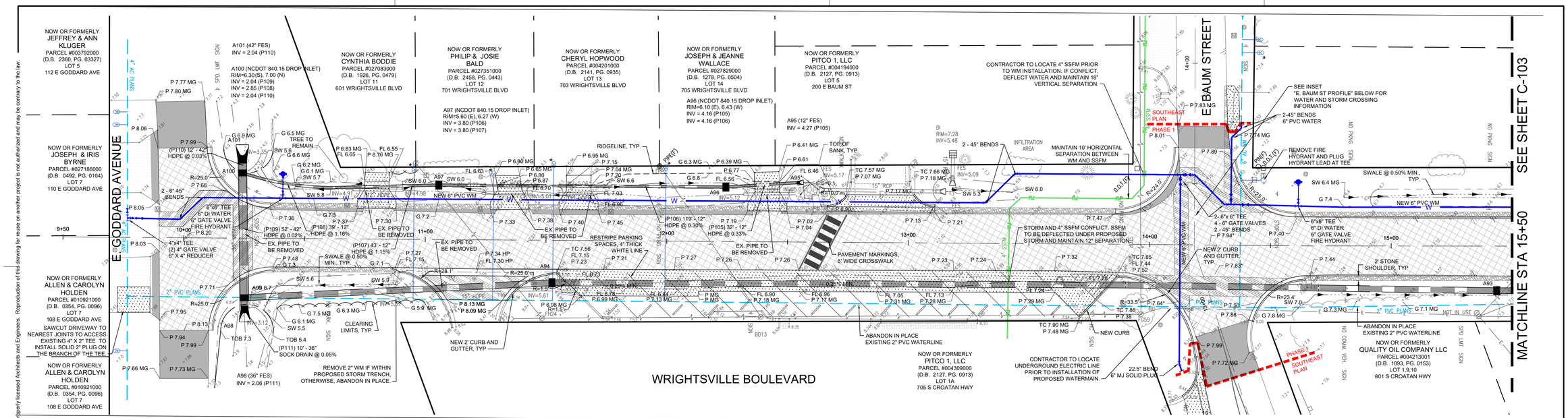
WATER AND STORMWATER IMPROVEMENTS

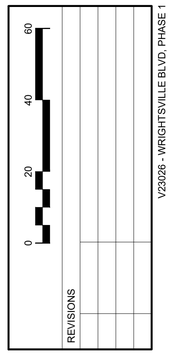
TOWN OF KILL DEVIL HILLS
DARE COUNTY, NORTH CAROLINA

SHEET NAME

PHASE 1 OVERALL PLAN AND SHEET INDEX

SHEET # C-101





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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 057308 03/01/2024 EMILY R ZELTMANN

PAVEMENT LEGEND:

- 3/4" (MIN) EDGE MILLING AND/OR VARIABLE DEPTH MILLING
- 3" PAVEMENT OVERLAY (SEE NOTE FOR DETAILS)
- PAVEMENT PATCH & OVERLAY
- CONCRETE DRIVEWAY PATCH / REPLACEMENT
- NEW ASPHALT PAVEMENT, MILLED BUTT JOINT & TRANSITION OVERLAY, DRIVEWAY FEATHERING (AT DRIVEWAYS)

PAVEMENT OVERLAY NOTE:

PLACE PAVEMENT OVERLAY WITH CONSTANT THICKNESS AND MAINTAIN EXISTING CROSS SLOPE, EXCEPT WHERE PROPOSED GRADES ARE SHOWN ALONG THE ROAD CENTERLINE. WHERE THESE PROPOSED GRADES ARE SHOWN, TRANSITION TO/FROM CONSTANT THICKNESS ALONG ROADWAY 25' IN BOTH DIRECTIONS FROM THE PROPOSED CENTERLINE GRADE, OR AS DIRECTED BY THE ENGINEER.

WRIGHTSVILLE BLVD: 3" PAVEMENT OVERLAY, INSTALLED IN TWO 1 ½ LIFTS (EXCEPT WHERE OTHERWISE NOTED BY AN ASTERISK)

NOTES:

1. DRIVEWAY GRADE CALLOUTS APPEAR ONLY ON THE SHEET FOR THE ROAD TO WHICH THE DRIVEWAY CONNECTS.
2. MAILBOXES SHALL BE REMOVED AND REINSTALLED PER THE MAILBOX RELOCATION DETAIL SHOWN ON SHEET C-501 AS NECESSARY TO INSTALL NEW STONE SHOULDERS, DRIVEWAYS, WATER MAIN AND STORM SYSTEMS.
3. DO NOT SAWCUT STREET PAVEMENT FOR STORM PIPE CROSSINGS UNTIL ALL EXISTING UTILITIES HAVE BEEN LOCATED AND MARKED.
4. PROVIDE CURB WIPEDOWN AT ALL NEW AND MODIFIED CURB RETURNS. TOP OF CURB SHALL TRANSITION FROM 6" HIGH TO 0" HIGH IN FIRST (OR LAST) 1' OF RETURN.
5. ALL NEW OR REPLACED CONCRETE WORK TO BE 4" THICK, EXCEPT 6" THICK WITHIN 3' OF ROAD UNLESS PROTECTED BY A CURB.
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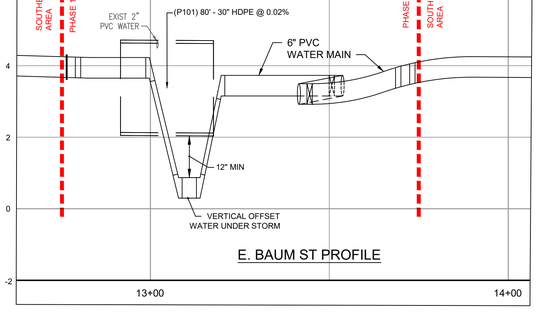
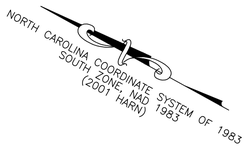
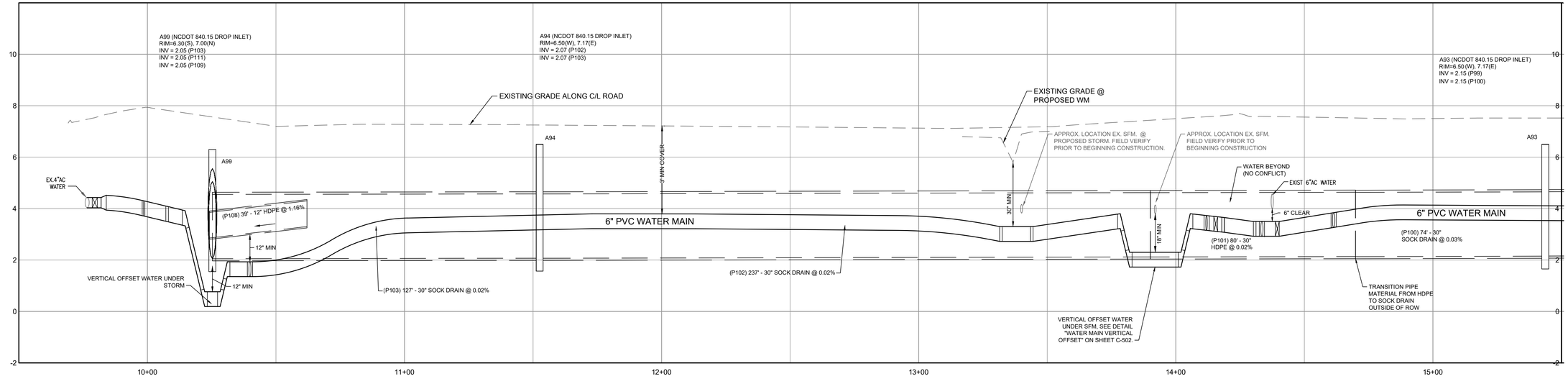




WRIGHTSVILLE BLVD PROFILE



WRIGHTSVILLE BOULEVARD PHASE 1

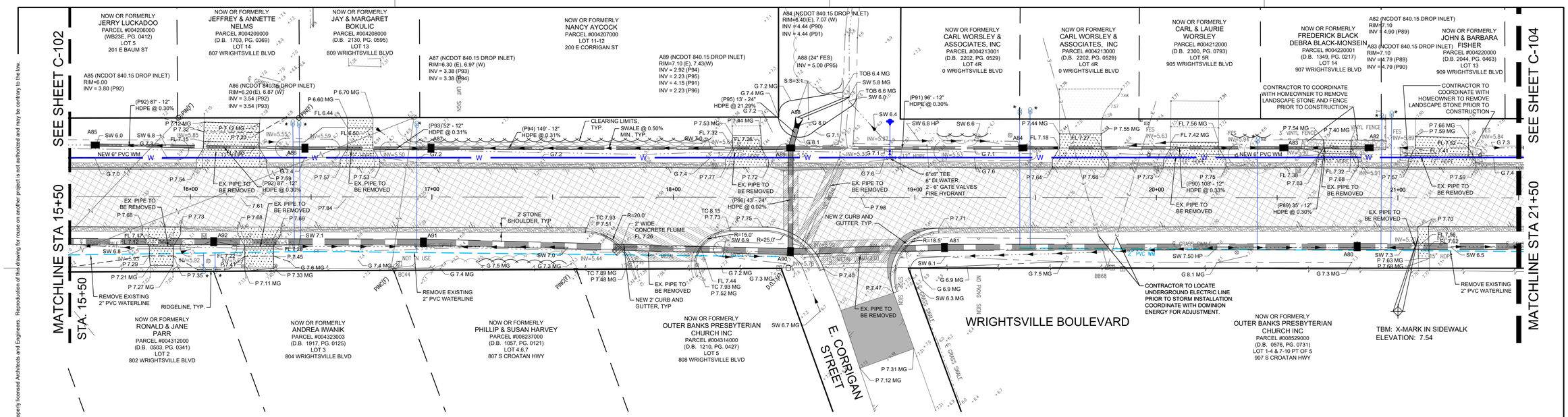
WATER AND STORMWATER IMPROVEMENTS

TOWN OF KILL DEVIL HILLS
DARE COUNTY, NORTH CAROLINA

Project #	V23026
Drawn by	AE
Submittal Date	03/01/2024
Scale	AS NOTED
SWaM Certification	715559
VA Firm #	0405001994

SHEET NAME
PHASE 1 PLAN & PROFILE STA 9+50-15+50 WRIGHTSVILLE BLVD

SHEET #
C-102



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- 3" PAVEMENT OVERLAY (SEE NOTE FOR DETAILS)
- PAVEMENT PATCH & OVERLAY
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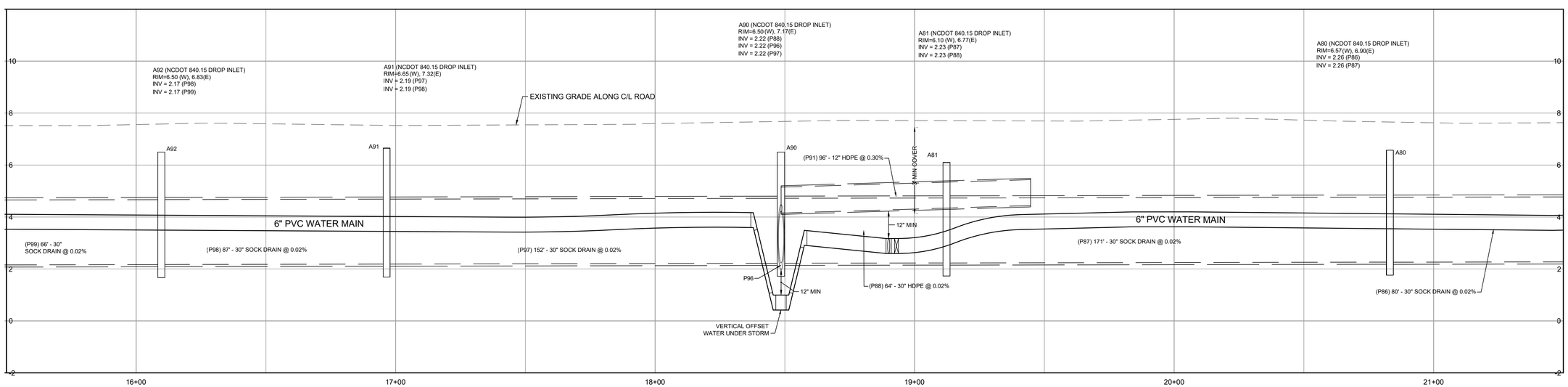
NORTH CAROLINA COORDINATE SYSTEM OF 1983
SOUTH ZONE, NAD 1983 (2007, HARN)

WRIGHTSVILLE BLVD PROFILE



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Chesapeake, Virginia 23320

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 057308 03/01/2024 ENGINEER EMILY R. ZELTMANN

Project #	V23026
Drawn by	AE
Submittal Date	03/01/2024
Scale	AS NOTED
SWaM Certification	715559
VA Firm #	0405001994

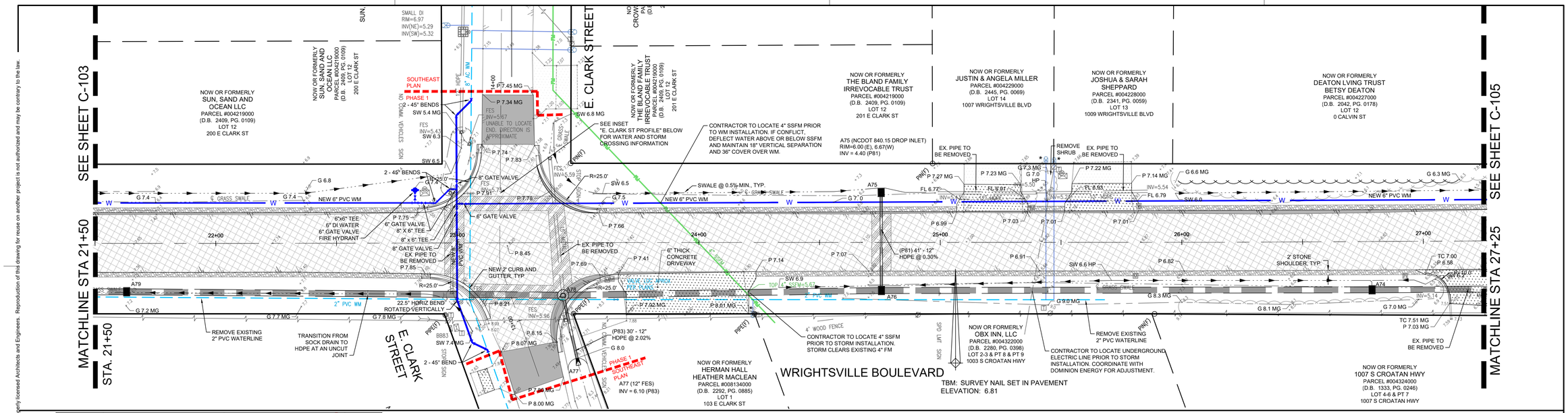
REVISIONS

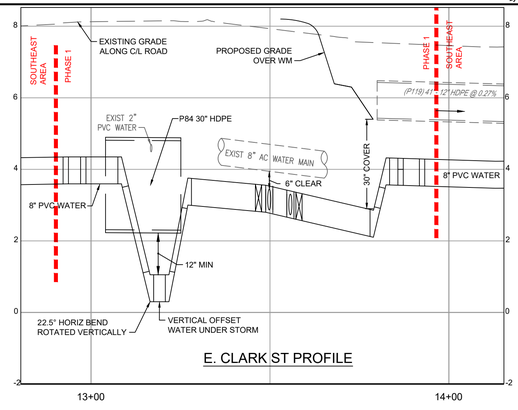
V:\2023\V23026 - WRIGHTSVILLE BLVD, PHASE 1

WRIGHTSVILLE BOULEVARD PHASE 1
WATER AND STORMWATER IMPROVEMENTS
TOWN OF KILL DEVIL HILLS
DARE COUNTY, NORTH CAROLINA

SHEET NAME
PHASE 1 PLAN & PROFILE STA 15+50-21+50 WRIGHTSVILLE BLVD

SHEET #
C-103





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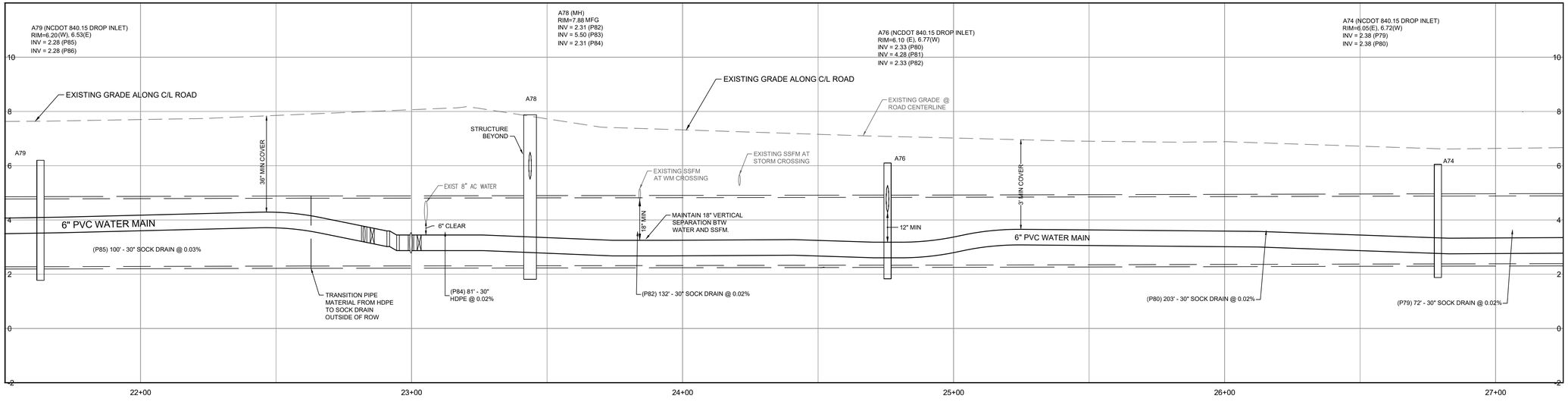

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NORTH CAROLINA COORDINATE SYSTEM OF 1983 SOUTH ZONE, NAD 1983 (2001 HARN)

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 057308 03/01/2024 EMILY R ZELTMANN

Project #	V23026
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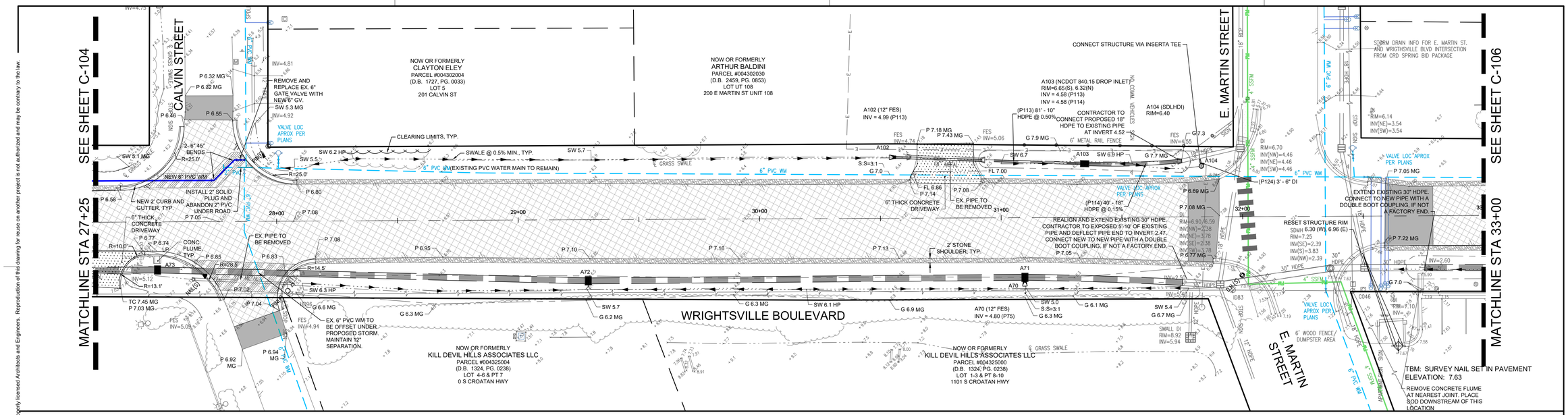
WRIGHTSVILLE BOULEVARD PHASE 1
WATER AND STORMWATER IMPROVEMENTS
TOWN OF KILL DEVIL HILLS
DARE COUNTY, NORTH CAROLINA

SHEET NAME
PHASE 1 PLAN & PROFILE STA 21+50 - 27+25 WRIGHTSVILLE BLVD

SHEET #
C-104



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NOTES:

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2. MAILBOXES SHALL BE REMOVED AND REINSTALLED PER THE MAILBOX RELOCATION DETAIL SHOWN ON SHEET C-501 AS NECESSARY TO INSTALL NEW STONE SHOULDERS, DRIVEWAYS, WATER MAIN AND STORM SYSTEMS.
3. DO NOT SAWCUT STREET PAVEMENT FOR STORM PIPE CROSSINGS UNTIL ALL EXISTING UTILITIES HAVE BEEN LOCATED AND MARKED.
4. PROVIDE CURB WIPEDOWN AT ALL NEW AND MODIFIED CURB RETURNS. TOP OF CURB SHALL TRANSITION FROM 6" HIGH TO 0" HIGH IN FIRST (OR LAST) 1' OF RETURN.
5. ALL NEW OR REPLACED CONCRETE WORK TO BE 4" THICK, EXCEPT 6" THICK WITHIN 3' OF ROAD UNLESS PROTECTED BY A CURB.
6. MANY DI GRATES WILL NEED TO BE TILTED TO BEST SUIT SITE CONDITIONS. PLAN RIM ELEVATION = HIGH SIDE, NEAREST ROAD. LOW SIDE OF GRATE SHALL BE 4" LOWER THAN PLAN GRADE UNLESS OTHERWISE DIRECTED IN FIELD BY THE ENGINEER. NO EXTRA COMPENSATION FOR TILTED GRATE.

WATER SERVICE NOTE:

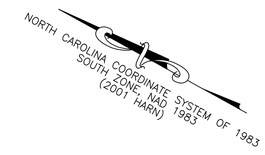
★ REPLACE EXISTING WATER SERVICES 2" AND SMALLER WITH NEW TAP TO MAIN AND SERVICE TUBE UP TO METER (MIN. 3/4" TAP AND SERVICE, REDUCE AT METER AS NECESSARY). SEE WATERLINE SPECIFICATIONS.
LONG SIDE SERVICES SHALL BE IN DRILLED 2" PVC CASING, SEE WATERLINE SPECS.

AC VALVE BOXES, ON ABANDONED AC WM, LOCATED IN PAVEMENT ARE TO BE LEFT IN PLACE AND VALVE BOX TO BE FILLED WITH CONCRETE.

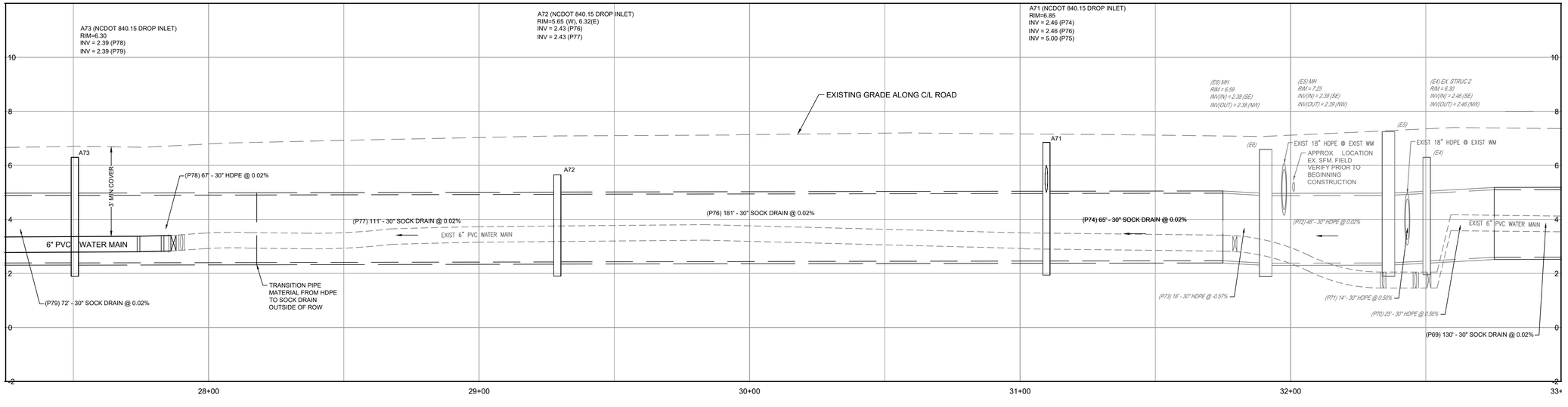
EROSION AND SEDIMENT CONTROL NOTES:

1. SILT FENCE TO BE INSTALLED AS DIRECTED BY ENGINEER.
2. ALL EXISTING AND PROPOSED DROP INLETS WILL HAVE INLET PROTECTION VIA NON-WOVEN GEOTEXTILE UNDER GRATE, SECURED BETWEEN GRATE AND FRAME.
3. CULVERT INLET PROTECTION SHALL BE PROVIDED AT ALL EXISTING AND PROPOSED PIPE ENDS.

PAVING NOTE FOR INTERSECTIONS:
WHERE WRIGHTSVILLE BLVD INTERSECTS E. GODDARD ST, E. BAUM ST, E. CLARK ST, AND E. MARTIN ST, PAVING MACHINE SHALL PULL THROUGH THE INTERSECTION IN THE DIRECTION OF THE SIDE STREETS STATED ABOVE, SO THAT THE SIDE STREET CROWN IS MAINTAINED.



WRIGHTSVILLE BLVD PROFILE



AMERICAN Engineering
American Engineering Associates - Southeast, P.A.
830 Greenbrier Circle | Suite 110
Chesapeake, Virginia 23320 (757) 468 - 6800

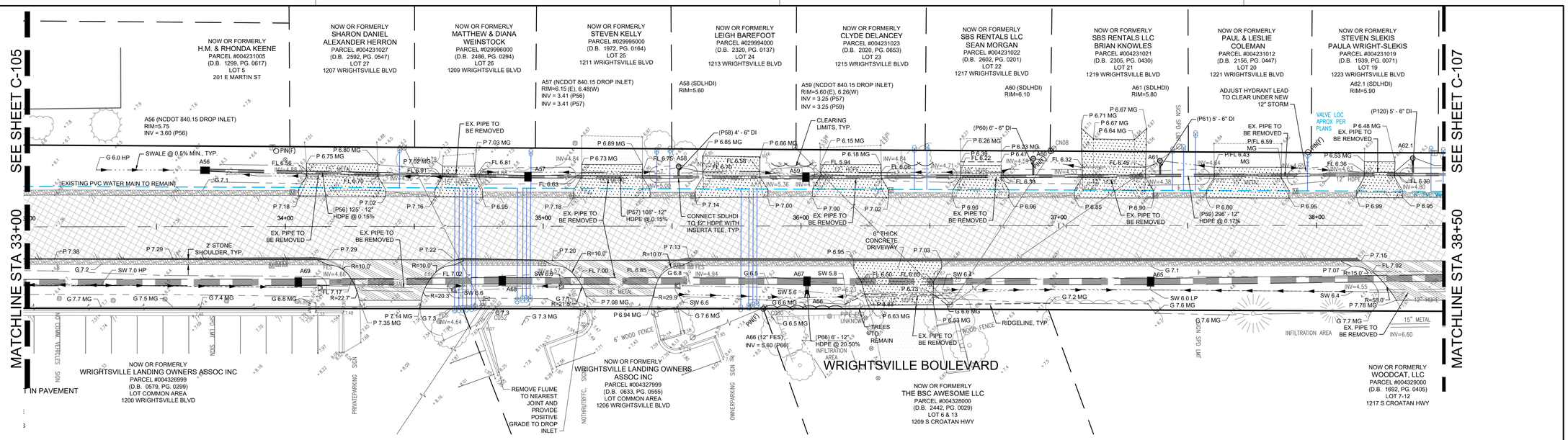
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 057308 03/01/2024 EMILY R. ZELTMANN

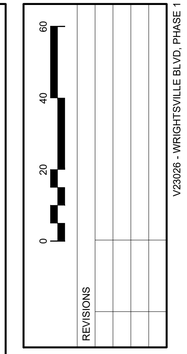
Project #	V23026
Drawn by	AE
Submittal Date	03/01/2024
Scale	AS NOTED
SWaM Certification	715559
VA Firm #	0405001994

WRIGHTSVILLE BOULEVARD PHASE 1
WATER AND STORMWATER IMPROVEMENTS
TOWN OF KILL DEVIL HILLS
DARE COUNTY, NORTH CAROLINA

SHEET NAME
PHASE 1 PLAN & PROFILE STA 27+25 - 33+00 WRIGHTSVILLE BLVD

SHEET #
C-105





PAVEMENT LEGEND:

- 3/4" (MIN) EDGE MILLING AND/OR VARIABLE DEPTH MILLING
- 3" PAVEMENT OVERLAY (SEE NOTE FOR DETAILS)
- PAVEMENT PATCH & OVERLAY
- CONCRETE DRIVEWAY PATCH / REPLACEMENT
- NEW ASPHALT PAVEMENT, MILLED BUTT JOINT & TRANSITION OVERLAY, DRIVEWAY FEATHERING (AT DRIVEWAYS)

PAVEMENT OVERLAY NOTE:
PLACE PAVEMENT OVERLAY WITH CONSTANT THICKNESS AND MAINTAIN EXISTING CROSS SLOPE, EXCEPT WHERE PROPOSED GRADES ARE SHOWN ALONG THE ROAD CENTERLINE. WHERE THESE PROPOSED GRADES ARE SHOWN, TRANSITION TO/FROM CONSTANT THICKNESS ALONG ROADWAY 25' IN BOTH DIRECTIONS FROM THE PROPOSED CENTERLINE GRADE, OR AS DIRECTED BY THE ENGINEER.

WRIGHTSVILLE BLVD: 3" PAVEMENT OVERLAY, INSTALLED IN TWO 1 ½ LIFTS (EXCEPT WHERE OTHERWISE NOTED BY AN ASTERISK)

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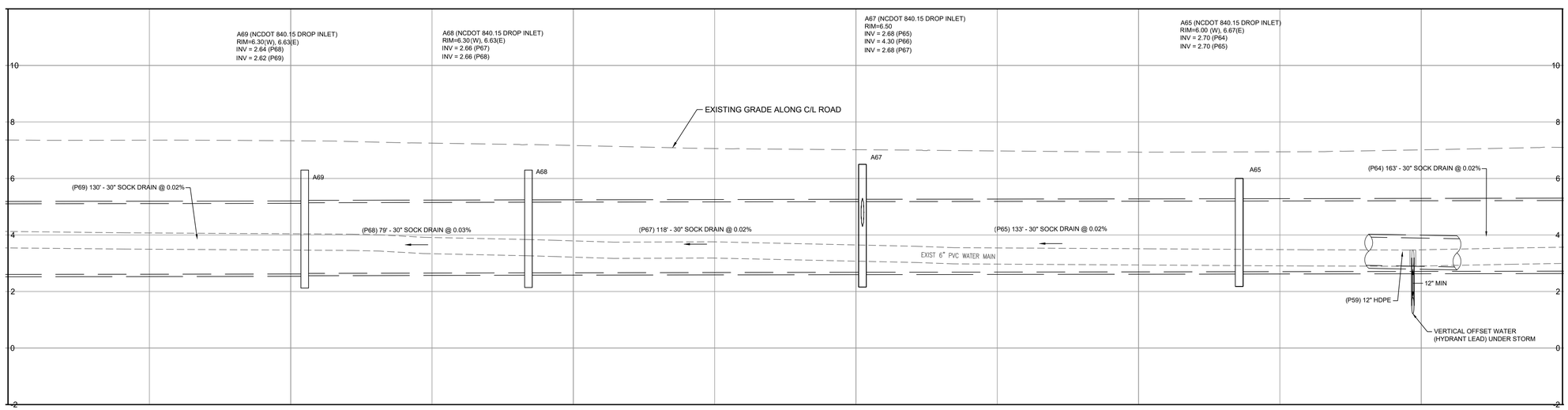
NORTH CAROLINA COORDINATE SYSTEM OF 1983
SOUTH ZONE, NAD 1983
(2001 HARN)

WRIGHTSVILLE BLVD PROFILE



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Project #	V23026
Drawn by	MGH
Submittal Date	03/01/2024
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SWaM Certification	715559
VA Firm #	0405001994

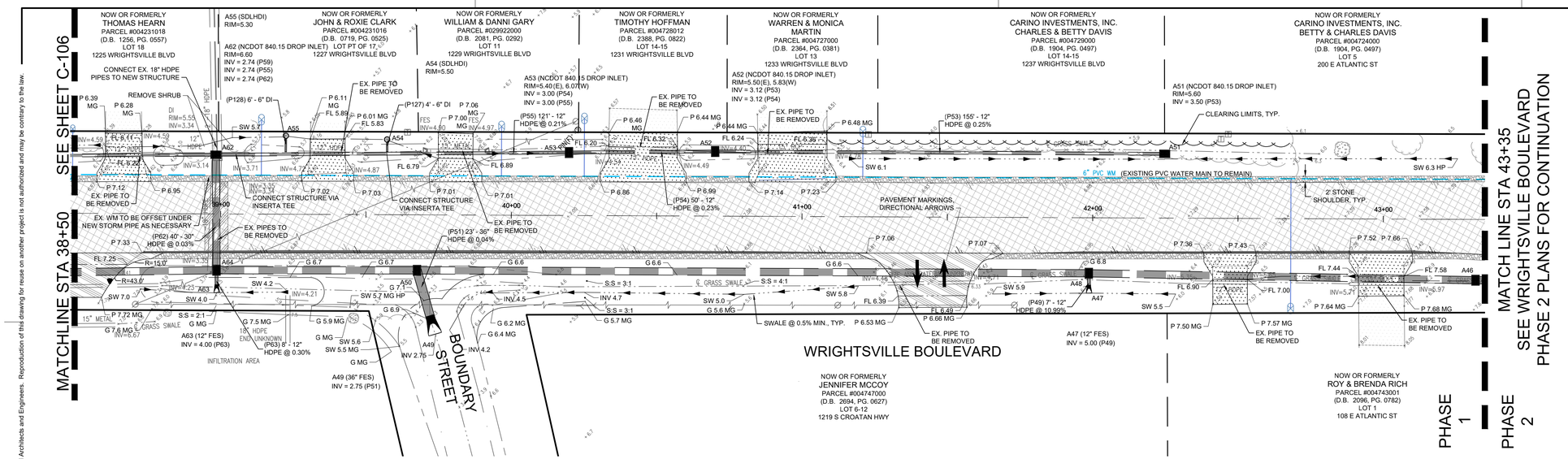
WRIGHTSVILLE BOULEVARD PHASE 1

WATER AND STORMWATER IMPROVEMENTS

TOWN OF KILL DEVIL HILLS
DARE COUNTY, NORTH CAROLINA

SHEET NAME
PH 1 - PLAN - PROFILE STA 33+00 - 38+50 WRIGHTSVILLE BOULEVARD

SHEET #
C-106



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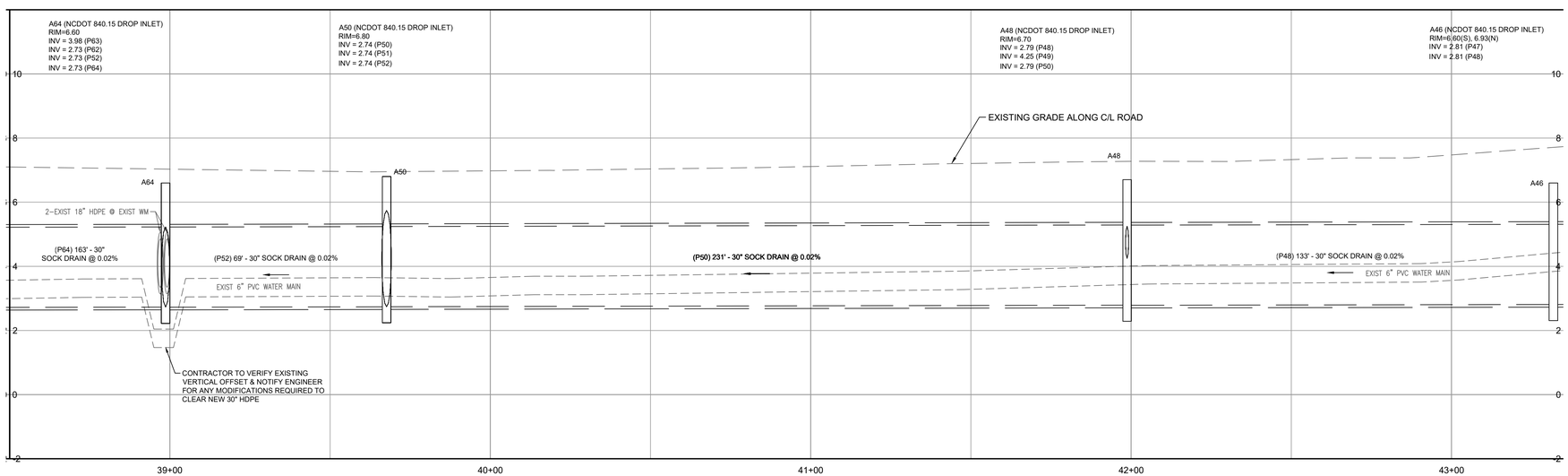
NORTH CAROLINA COORDINATE SYSTEM OF 1983 SOUTH ZONE (2007 NAD 1983 HARN)

WRIGHTSVILLE BLVD PROFILE



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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 057308 03/01/2024 EMILY R. ZELTMANN

Project #	V23026
Drawn by	AE
Submittal Date	03/01/2024
Scale	AS NOTED
SWaM Certification	715559
VA Firm #	0405001994

REVISIONS

V23026 - WRIGHTSVILLE BLVD, PHASE 1

WRIGHTSVILLE BOULEVARD PHASE 1
WATER AND STORMWATER IMPROVEMENTS
TOWN OF KILL DEVIL HILLS
DARE COUNTY, NORTH CAROLINA

SHEET NAME
PHASE 1 PLAN & PROFILE STA 38+50 - 43+35 WRIGHTSVILLE BLVD

SHEET #
C-107

NOW OR FORMERLY
PARCEL #003791000
(D.B. 2609, PG. 0543)
LOT 4
114 E GODDARD AVE

NOW OR FORMERLY
JEFFREY & ANN KLUGER
PARCEL #003792000
(D.B. 2360, PG. 03327)
LOT 5
112 E GODDARD AVE

NOW OR FORMERLY
JOSEPH & IRIS BYRNE
PARCEL #027186000
(D.B. 0492, PG. 0104)
LOT 7
110 E GODDARD AVE

NOW OR FORMERLY
ALLEN & CAROLYN HOLDEN
PARCEL #010921000
(D.B. 0354, PG. 0096)
LOT 7
108 E GODDARD AVE

NOW OR FORMERLY
ALLEN & CAROLYN HOLDEN
PARCEL #010921000
(D.B. 0354, PG. 0096)
LOT 7
108 E GODDARD AVE

E. GODDARD AVENUE

NOW OR FORMERLY
CYNTHIA BODDIE
PARCEL #027083000
(D.B. 1926, PG. 0479)
LOT 11
601 WRIGHTSVILLE BLVD

NOW OR FORMERLY
PHILIP & JOSIE BALD
PARCEL #027351000
(D.B. 2458, PG. 0443)
LOT 12
701 WRIGHTSVILLE BLVD

NOW OR FORMERLY
CHERYL HOPWOOD
PARCEL #004201000
(D.B. 2141, PG. 0935)
LOT 13
703 WRIGHTSVILLE BLVD

NOW OR FORMERLY
JOSEPH & JEANNE WALLACE
PARCEL #027829000
(D.B. 1278, PG. 0504)
LOT 14
705 WRIGHTSVILLE BLVD

NOW OR FORMERLY
PITCO 1, LLC
PARCEL #004194000
(D.B. 2127, PG. 0913)
LOT 5
200 E BAUM ST

E. BAUM STREET

NORTH CAROLINA COORDINATE SYSTEM OF 1983
SOUTH ZONE, NAD 1983
(2001 HARN)

REMOVE EXISTING 12" HDPE PIPE

REMOVE EXISTING 12" HDPE PIPE

REMOVE AND REPLACE EXISTING CURB AND GUTTER. SEE PLAN AND PROFILE SHEET FOR LIMITS OF DEMO.

REMOVE 36" METAL PIPE

REMOVE EXISTING 15" RCP PIPE

INFILTRATION AREA

REMOVE AND REPLACE EXISTING CURB AND GUTTER. SEE PLAN AND PROFILE SHEET FOR LIMITS OF DEMO.

NOT IN USE

WRIGHTSVILLE BOULEVARD

NOW OR FORMERLY
PITCO 1, LLC
PARCEL #004309000
(D.B. 2127, PG. 0913)
LOT 1A
705 S CROATAN HWY

NOW OR FORMERLY
QUALITY OIL COMPANY LLC
PARCEL #004213001
(D.B. 1093, PG. 0153)
LOT 1,9,10
801 S CROATAN HWY

MATCHLINE - STA 15+50

EROSION AND SEDIMENT CONTROL NOTES:

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NORTH CAROLINA COORDINATE SYSTEM OF 1983
SOUTH ZONE, NAD 1983
(2001 HARN)

NOW OR FORMERLY
JERRY LUCKADOO
PARCEL #004206000
(WB23E, PG. 0412)
LOT 5
201 E BAUM ST

NOW OR FORMERLY
JEFFREY & ANNETTE NELMS
PARCEL #004209000
(D.B. 1703, PG. 0369)
LOT 14
807 WRIGHTSVILLE BLVD

NOW OR FORMERLY
JAY & MARGARET BOKULIC
PARCEL #004208000
(D.B. 2130, PG. 0595)
LOT 13
809 WRIGHTSVILLE BLVD

NOW OR FORMERLY
NANCY AYCOCK
PARCEL #004207000
LOT 11-12
200 E CORRIGAN ST

E. CORRIGAN STREET

NOW OR FORMERLY
CARL WORSLEY & ASSOCIATES, INC
PARCEL #004213001
(D.B. 2202, PG. 0529)
LOT 4R
0 WRIGHTSVILLE BLVD

NOW OR FORMERLY
CARL WORSLEY & ASSOCIATES, INC
PARCEL #004213000
(D.B. 2202, PG. 0529)
LOT 4R
0 WRIGHTSVILLE BLVD

NOW OR FORMERLY
CARL & LAURIE WORSLEY
PARCEL #004212000
(D.B. 2300, PG. 0793)
LOT 5R
905 WRIGHTSVILLE BLVD

NOW OR FORMERLY
FREDERICK BLACK
DEBRA BLACK-MONSEIN
PARCEL #004220001
(D.B. 1349, PG. 0217)
LOT 14
907 WRIGHTSVILLE BLVD

NOW OR FORMERLY
JOHN & BARBARA FISHER
PARCEL #004220000
(D.B. 2044, PG. 0463)
LOT 13
909 WRIGHTSVILLE BLVD

REMOVE EXISTING 12" HDPE PIPE

REMOVE EXISTING 12" HDPE PIPE

REMOVE EXISTING 12" HDPE PIPE

REMOVE AND REPLACE EXISTING CURB AND GUTTER. SEE PLANS AND PROFILE SHEETS FOR DEMO EXTENTS.

REMOVE CONCRETE FLATWORK. NOT TO BE REPLACED.

REMOVE EXISTING 12" HDPE PIPE AND FES

REMOVE EXISTING 12" HDPE PIPE

REMOVE EXISTING 15" METAL PIPE

NOT IN USE

MATCHLINE - STA 15+50

MATCHLINE - STA 21+50 SEE SHEET 109

NOW OR FORMERLY
RONALD & JANE PARR
PARCEL #004312000
(D.B. 0503, PG. 0341)
LOT 2
802 WRIGHTSVILLE BLVD

NOW OR FORMERLY
ANDREA IWANIK
PARCEL #004323003
(D.B. 1917, PG. 0125)
LOT 3
804 WRIGHTSVILLE BLVD

NOW OR FORMERLY
PHILLIP & SUSAN HARVEY
PARCEL #008237000
(D.B. 1057, PG. 0121)
LOT 4,6,7
807 S CROATAN HWY

NOW OR FORMERLY
OUTER BANKS PRESBYTERIAN CHURCH INC
PARCEL #004314000
(D.B. 1210, PG. 0427)
LOT 5
808 WRIGHTSVILLE BLVD

NOW OR FORMERLY
OUTER BANKS PRESBYTERIAN CHURCH INC
PARCEL #008529000
(D.B. 0576, PG. 0731)
LOT 1-4 & 7-10 PT OF 5
907 S CROATAN HWY

TBM: X-MARK IN SIDEWALK
ELEVATION: 7.54

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WRIGHTSVILLE BOULEVARD PHASE 1

WATER AND STORMWATER IMPROVEMENTS

TOWN OF KILL DEVIL HILLS
DARE COUNTY, NORTH CAROLINA

SHEET NAME
PHASE 1 EXISTING CONDITIONS

SHEET # C-108

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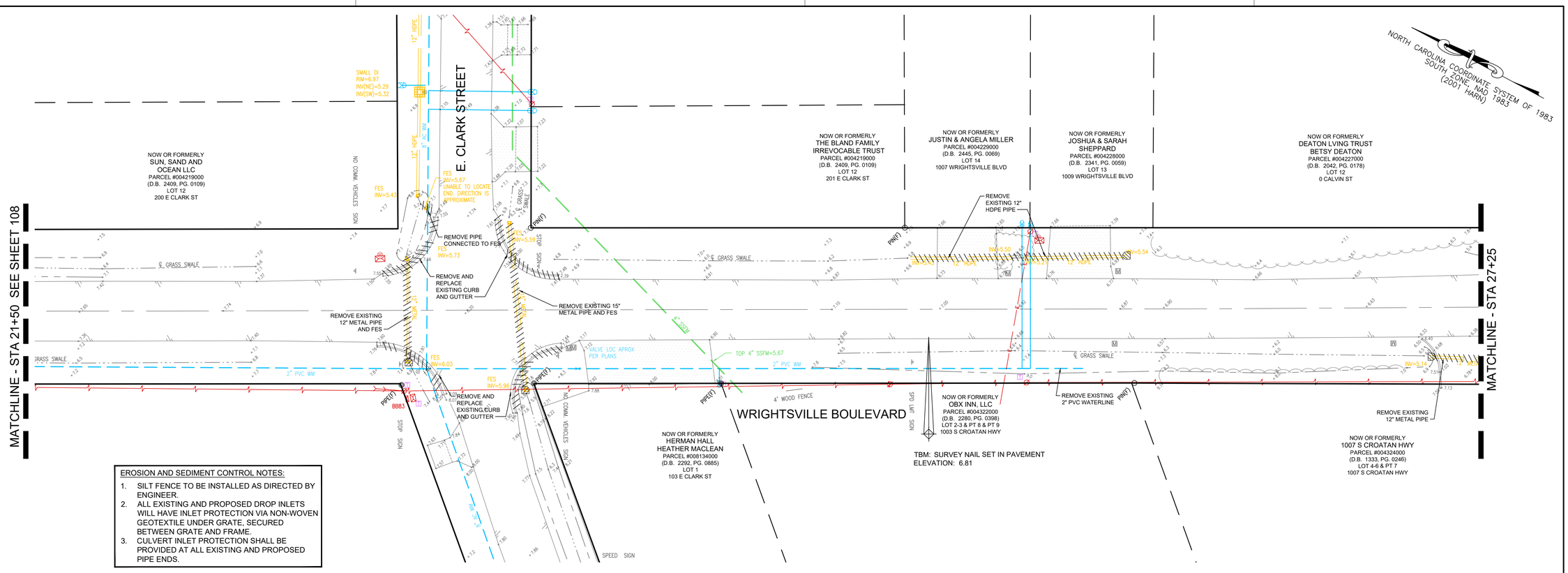

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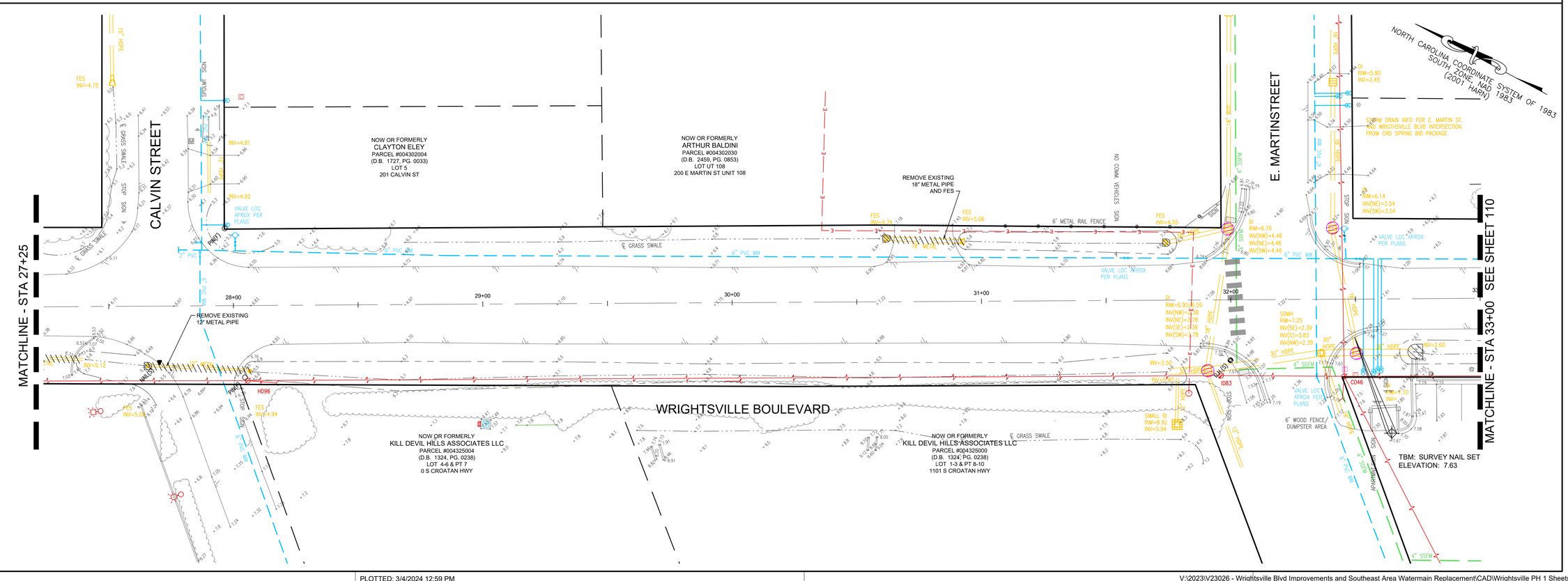

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WRIGHTSVILLE BOULEVARD PHASE 1
WATER AND STORMWATER IMPROVEMENTS
TOWN OF KILL DEVIL HILLS
DARE COUNTY, NORTH CAROLINA

SHEET NAME
PHASE 1 EXISTING CONDITIONS

SHEET # C-109

REVISIONS

V:\2023\V23026 - Wrightsville Blvd Improvements and Southeast Area Watermain Replacement\CAD\Wrightsville PH 1 Sheets\G-001 - PH 1 -EXIST COND.dwg

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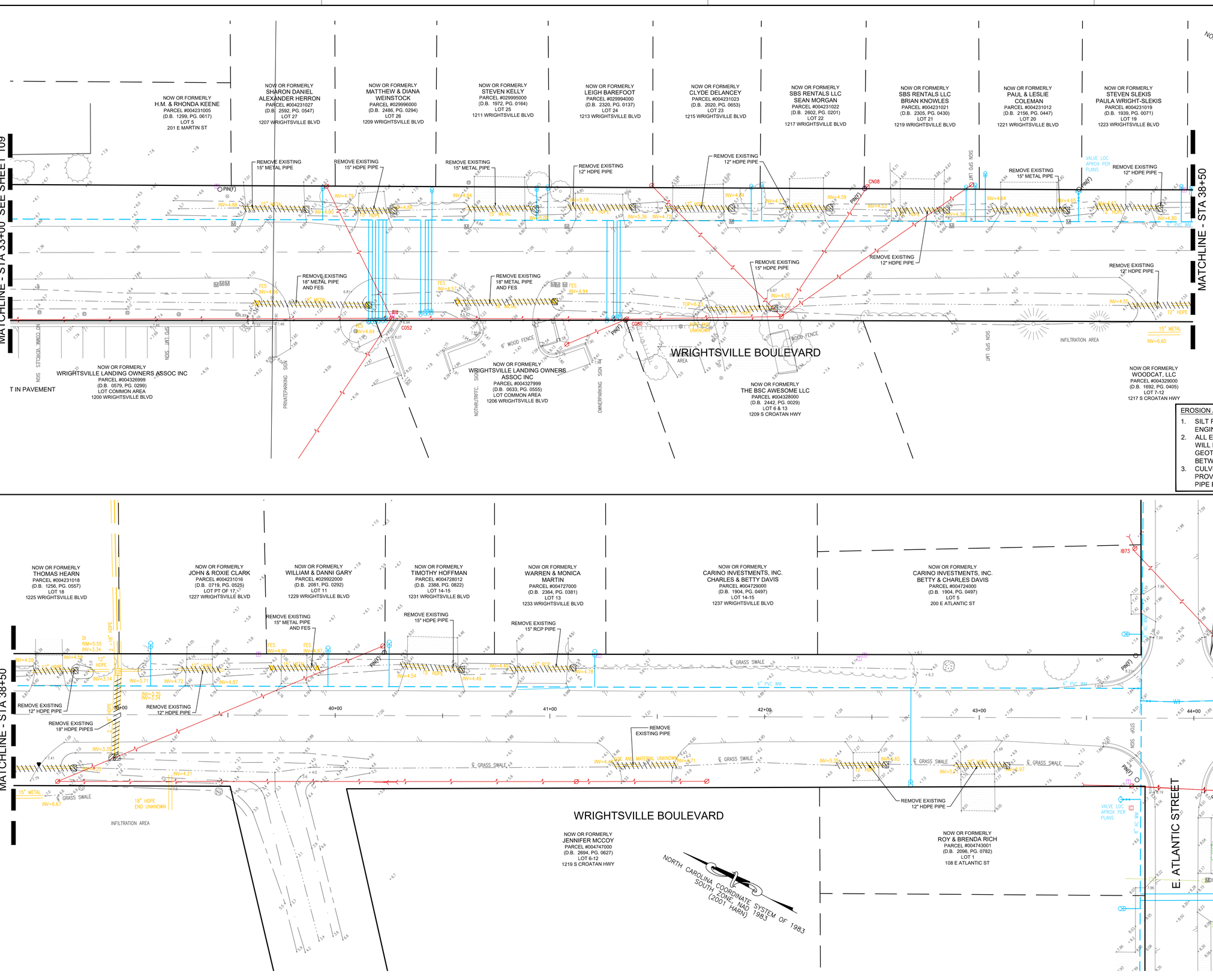
V23026 - WRIGHTSVILLE BLVD, PHASE 1



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V:\2023\V23026 - WRIGHTSVILLE BLVD, PHASE 1

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WRIGHTSVILLE BOULEVARD PHASE 1

WATER AND STORMWATER IMPROVEMENTS

TOWN OF KILL DEVIL HILLS
DARE COUNTY, NORTH CAROLINA

SHEET NAME

PHASE 1 EXISTING CONDITIONS

SHEET # C-110

GENERAL NOTES:

1. The safety of the general public and of the contractor's workers is of paramount concern on this project. The contractor and all subcontractors shall read carefully and comply with the provisions set forth in the Contract Documents, including, but not limited to Article 4 of the General Conditions.

2. The horizontal and vertical location and size of the existing underground utilities shown on the plans is approximate only, with the exception of locations where existing water mains & sanitary sewer force mains were test-pitted by Town forces. The contractor is responsible for contacting the utility owner and "NC One-call" to verify the location and size of all utilities prior to commencing construction activities. Contractors shall take all necessary precautions with the various utilities to protect the health and safety of his crews and the general public. See also Section 3.01, Paragraph A of the Technical Specifications. Hand-digging to verify depth of existing utilities is required for utilities of all depths, even for those installed to non-standard, excessively shallow depths.

3. The proposed alignment of the new pipelines and structures may be adjusted in the field to minimize conflicts with existing structures, utilities, etc. The Town must approve all alignment changes. Adjustments of structure tops or rims, from those indicated on the plans, may also be required. See Section 3.08, subparagraph B.4 of the Technical Specifications.

4. Contractor shall temporarily remove existing signs, mail boxes, fences, storm sewer pipe and other structures as required for the installation of the utility. Items shall be reinstalled to their original condition. Traffic control signage shall be replaced as soon as work proceeds past their location. In no case shall traffic control signs be taken out of service overnight. All mail boxes are to be replaced daily; include cost in the cost of the work necessitationg mailbox removal.

5. Contractor shall support existing power poles, fences, culverts, pavement, curbing and other structures during construction; damaged items shall be repaired to their condition before work began, or better. All such supporting, protecting and repair shall be at no additional cost.

6. Removal of concrete driveways needed to install the new line will begin at the edge of the street (except where clearly shown otherwise) and extend back as indicated on these drawings for each driveway; generally, the indicated limit of removal is at an existing joint. Where Contractor finds it necessary to extend cut and removal farther back than indicated, and the Town and Engineer approve the additional removal, the additional area of cut and replacement shall be without additional compensation. If such additional cut would leave a section of driveway less than 2' long back to the next existing joint or crack, the additional cut shall be extended to that existing joint or crack rather than leave the existing less than 2' section in place. Where the limits of removal do not coincide with an existing joint, the entire width of the driveway shall be sawcut. Replaced concrete drives shall be 6" thick for the first 3' adjacent to the roadway and then may taper to 4" thick. Asphalt drive repairs shall be to the same standard as street pavement repairs as shown on the project details. Contractor shall finish new driveway to match existing. Contractor will photograph all driveways, pavement conditions in areas of work, and well point discharge locations **prior to beginning work** in order to document all pre-existing conditions. Contractor shall provide electronic copy of photographs to Town prior to construction. See also Roadside Restoration Notes, this sheet.

7. Contractor shall install Inlet Protection and Silt Fence as shown in Plan to protect drainage facilities and prevent migration of sediment-laden runoff onto private property. If Contractor elects to have a project-specific "yard" or staging area within or near the project area, he shall prepare and submit for approval to the Engineer and Erosion and Sediment Control Plan, which shall include as a minimum the following:
   a. A Temporary Gravel Construction Entrance/Exit as detailed on Sheet C-504.
   b. Silt Barrier Fence for Inlet Protection as detailed on Sheet C-504 to protect any storm drainage drop inlets in the vicinity.
   c. Gravel Inlet Sediment Filter inlet protection as detailed on Sheet C-504 to protect any curb inlets in the vicinity.
   d. Appropriate and effective perimeter protection to protect any sediment-laden runoff from the area from migrating onto adjacent property or entering any ditch or swale. This may be in the form of Silt Fence as detailed on Sheet C-504 or the preservation of an undisturbed, vegetated filter strip not less than 10' in width, or a combination, as deemed effective by the Engineer.

8. There will be no direct payments for replacement of storm drainage lines and/or structures disturbed during construction. The cost of replacement, including the provision of new material where needed, shall be included in the other various unit prices of the contract. The existing pipe and structures may be re-used if they have not been damaged during construction and are otherwise structurally sound. The Town, or its designated representative, shall make final determination as to whether or not a section of pipe or structure is suitable to re-use.

9. Contractor is responsible for all required traffic control including appropriate signage for temporary detours in accordance with NCDOT and MUTCD standards.

10. Prior to any planned water outages the contractor shall notify all affected businesses 48 hours in advance. Contractor shall distribute door hangers approved by the Town for notification of planned water outage. A Town of Kill Devil Hills Department of Public Services staff member shall accompany contractor for all notifications at affected properties. Contractor shall notify the Engineer 7 days in advance of any planned water outages. The Kill Devil Hills Fire Department shall be notified if fire hydrants are affected by the outage.

11. Well point discharge water may be released only at locations approved by the Engineer or other Town official. No discharge permitted on private property or where there is no drainage swale, ditch or pipe. Contractor shall extend discharge hose as needed to reach approved release site without additional compensation. Pre-approved sites include the existing stormwater manholes, and at each new MH as it is constructed, provided that the mortar has fully set so as not to be damaged by hose discharge.

12. All work is to be conducted within the street right of way as shown. Contractor shall assure that no improvement installed as part of this project is on private property. No work or other Contractor activity, storage, etc. shall be conducted on private property, or public property outside the street right of way, except with express written permission of the property owner as provided in the Contract Documents.

13. If any existing water lines are offset in the proposed work, the existing pipe may be Asbestos-Cement (AC) pipe. The contractor shall verify pipe, material and size prior to ordering fittings.

14. AC pipe shall be cut with a chain cutter. Pipe ends shall be cleaned as necessary with a hand saw using the wet method. Only properly trained and certified personnel may work on AC pipe.

15. Thrust restraint in the form of concrete and Romac grip rings (or approved equal) shall be used at all tees, bends, and fittings. Thrust blocks shall be used behind Fire Hydrants.

16. Contractor shall assure that no Fire Hydrant or other Water Main appurtenance, or portion of same, is on private property.

17. Existing pipe, structures, frames and/or grates, fittings and other materials to be removed in performing the work shall be removed with care and delivered to the Town's yard or other facility as directed by the Town's representative, unless said representative advises contractor in writing that such materials are not wanted, in which case they may be salvaged by the contractor or shall be disposed of properly.

18. Stub that receives flow shall have a female/bell factory end. Stub that discharges flow shall have a male/spigot factory end.

ROADSIDE RESTORATION NOTES:

Except where otherwise directed by the Engineer or the Owner, the contractor shall restore the roadside area subject to the following:

1. Driveways shall be replaced in accordance with General Note 6 on this sheet and details provided elsewhere in these Drawings, and in the Technical Specifications. In addition, driveways, and portions of driveways, being removed and replaced with this work shall have a positively-graded flowline established where feasible. Generally, it shall be considered feasible to establish such a flowline unless the driveway (or portion) has a strong (>2%) slope toward the street. The Engineer or his representative will, upon Contractor's request, provide guidance in establishing flowline grades.

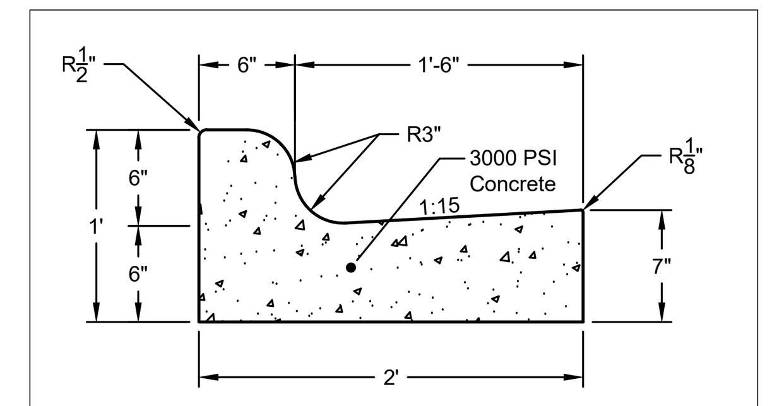
2. The formwork for all driveways and entrances shall be inspected and approved by the Engineer or his representative, or by Town staff, before placement of driveway materials.

3. Except where waived by the Engineer or his representative, or by Town staff, earthen areas between driveways shall be graded to form a swale, see details on this sheet. Unless otherwise noted on the drawings, the grade of such swale shall be established by connecting the grades of the driveway flowlines described above, but lowered by 2" as an allowance for the natural buildup of turf. Generally, the requirement to establish such swales shall not be waived except in cases where the prevailing grade in the vicinity of the work makes it impossible to attain a swale without excessive cuts or excessively steep side slopes. The removal and disposal of any excess material generated by establishment of such swales shall be incidental to the work.

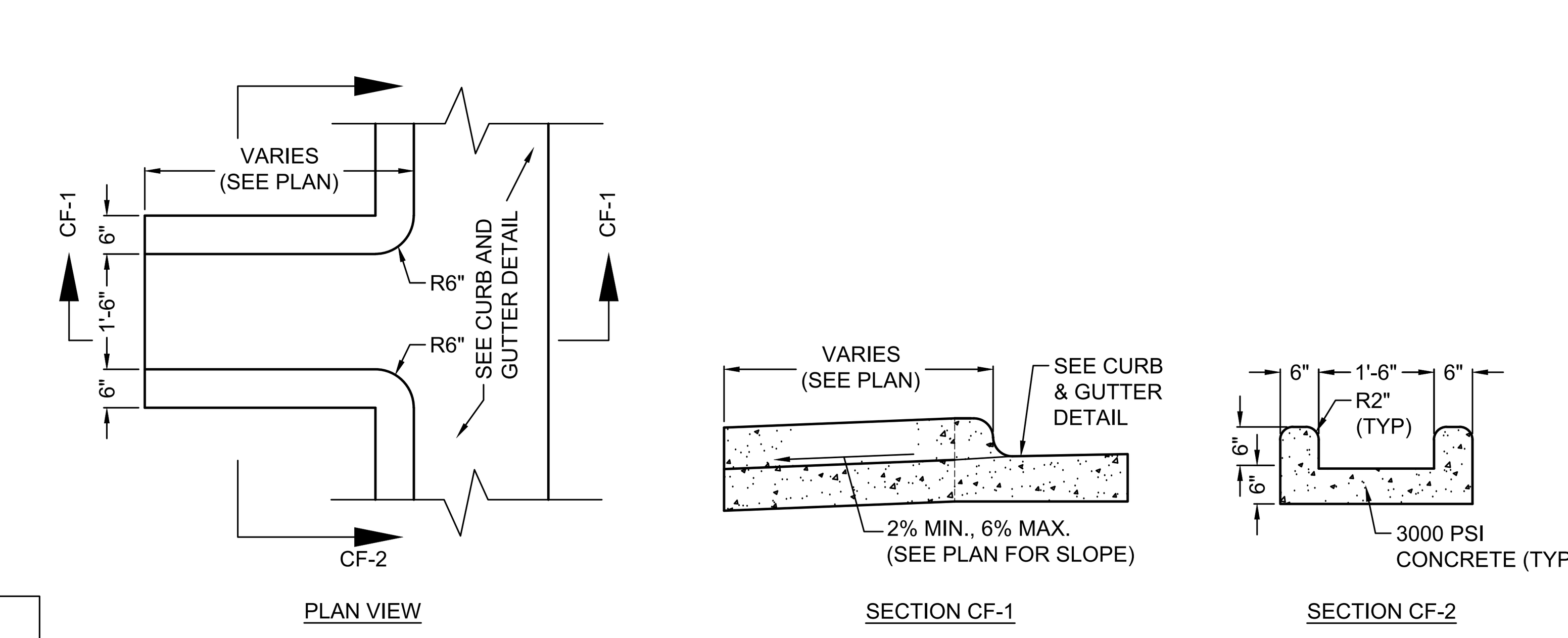
4. Generally, where adjacent property owners have plantings, landscape materials, ornamental objects, etc. within the right of way, those items will be removed by such owners in response to notice by the Town. Any remaining items not removed shall generally be deemed abandoned by their owner and shall be removed as necessary to enable installation of the work, and disposed of in a lawful manner. In case of any doubt as to the status of any such item, Contractor shall ask the Engineer or Owner's representative for a determination.

5. All roadside areas which are disturbed by the Contractor's work, but which are not to be replaced with concrete, asphalt or other hard surface, shall have turf established in accordance with the provisions of these Drawings and the other Contract Documents.

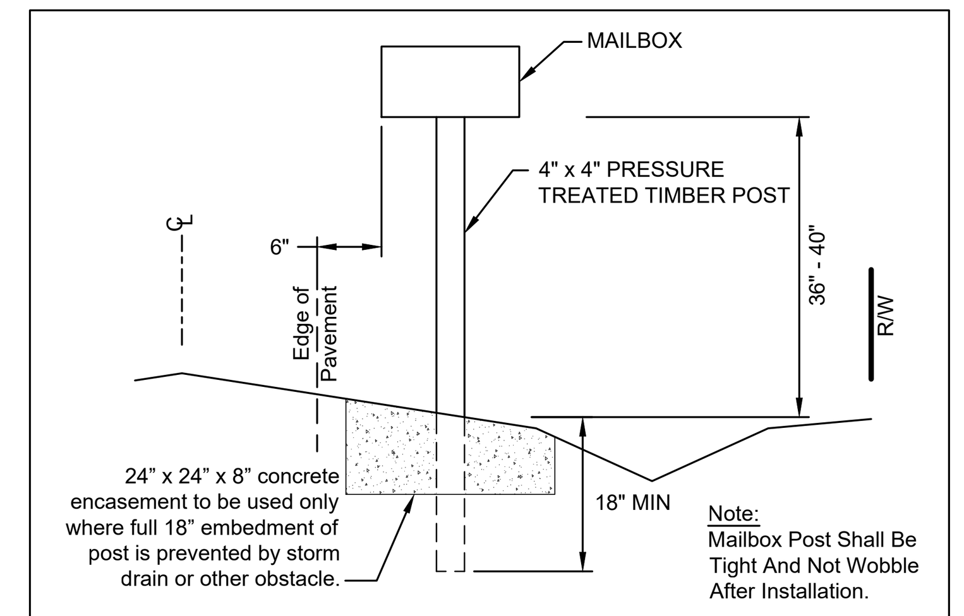
6. The Contractor shall use great care to avoid damage to the pavement of existing roadways, paved shoulders, driveways and bike/multipurpose lanes. Such care may include the selection of the type of equipment (wheeled or tracked, type of track, etc.) used, the placement of protective materials over such surfaces, and/or other measures. Contractor shall be responsible for all damage caused during construction. Cracked or otherwise damaged concrete pavement shall be cut out and replaced, with finish matching as nearly as practical, to the extent set by the representative of the Engineer or Owner. Cracked, scarred, gouged or damaged asphalt surfaces shall be repaired or replaced if, in the determination of the Engineer, the damage is more than superficial or cosmetic. Generally, scars or gouges deeper than 1/16" will not be deemed superficial or cosmetic. The method of repair or replacement shall be submitted to the Engineer for consideration and approval.



2' CURB AND GUTTER
(MOD. NCDOT 846.01)
(N.T.S)

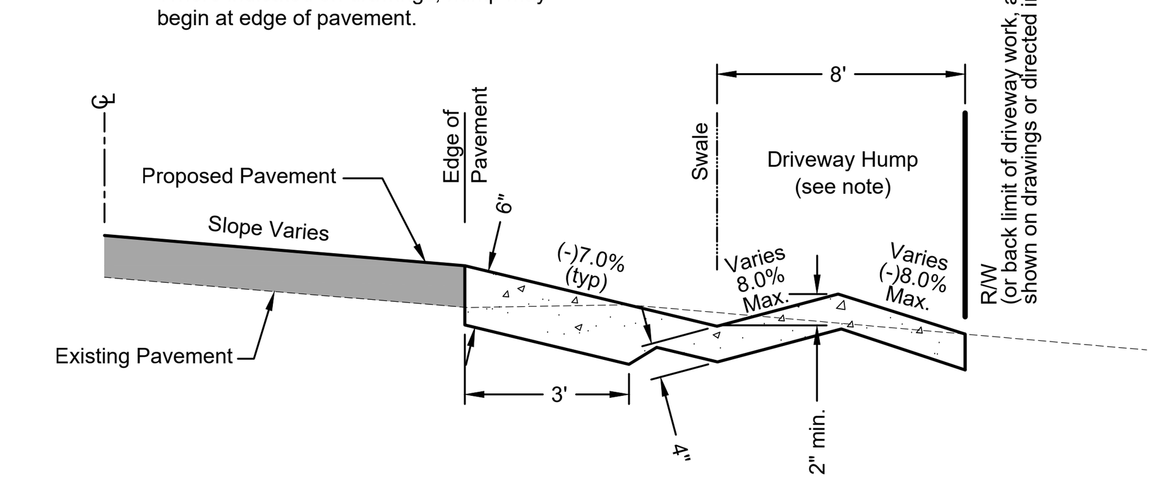


CONCRETE FLUME DETAIL
NOT TO SCALE

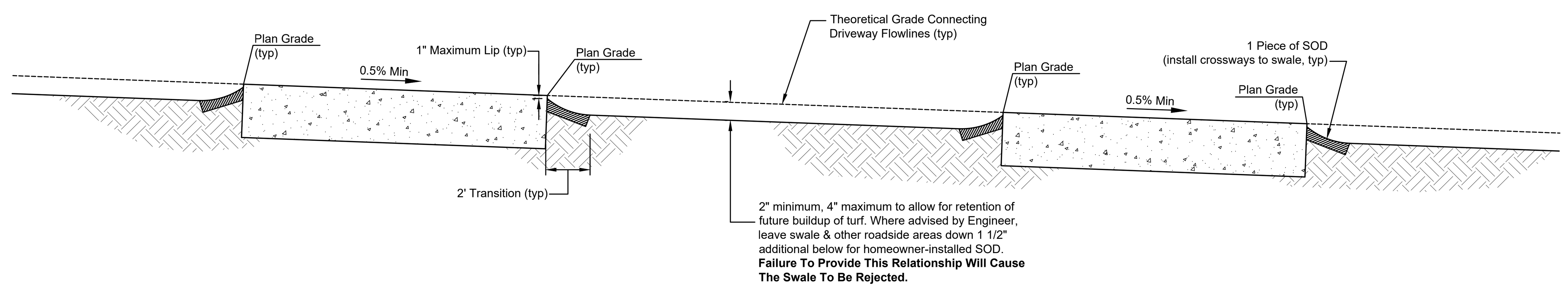


MAILBOX RELOCATION DETAIL
N.T.S.

Driveway Hump Note:
To prevent stormwater from road from going beyond R/W line. 8' length and location of ridge may vary based on grade requirements. Don't exceed 8% without approval from Engineer or Town Rep.
Alternate:
Where indicated on drawings, hump may begin at edge of pavement.

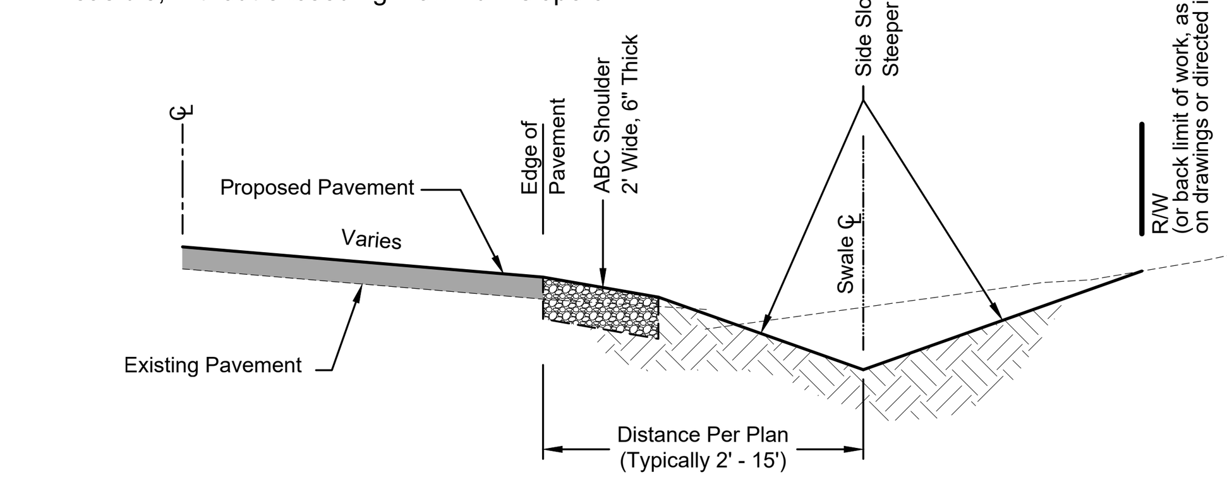


SECTION E-E (SECTION @ DRIVEWAY) WITH DRIVEWAY HUMP
N.T.S.

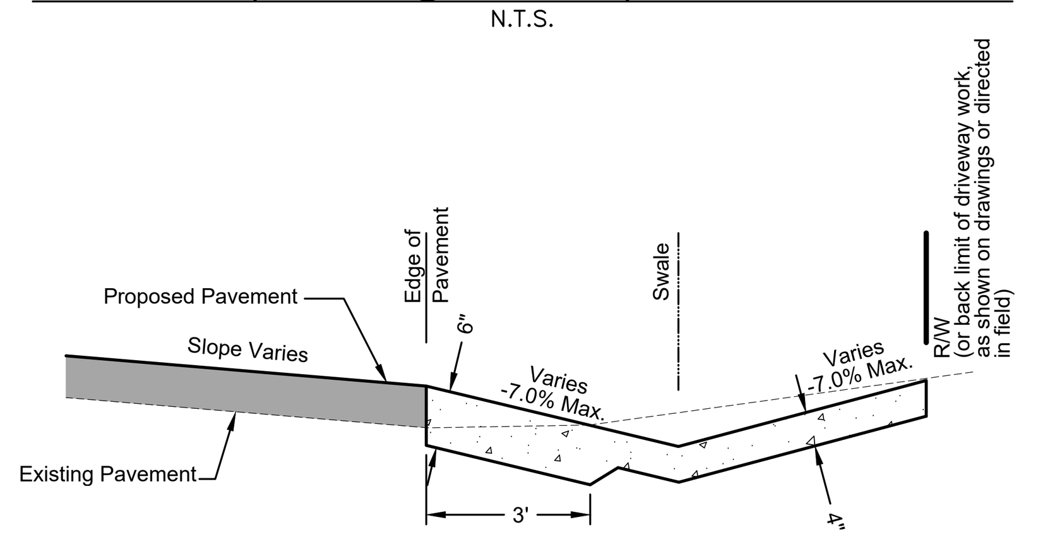


Section F-F
N.T.S.

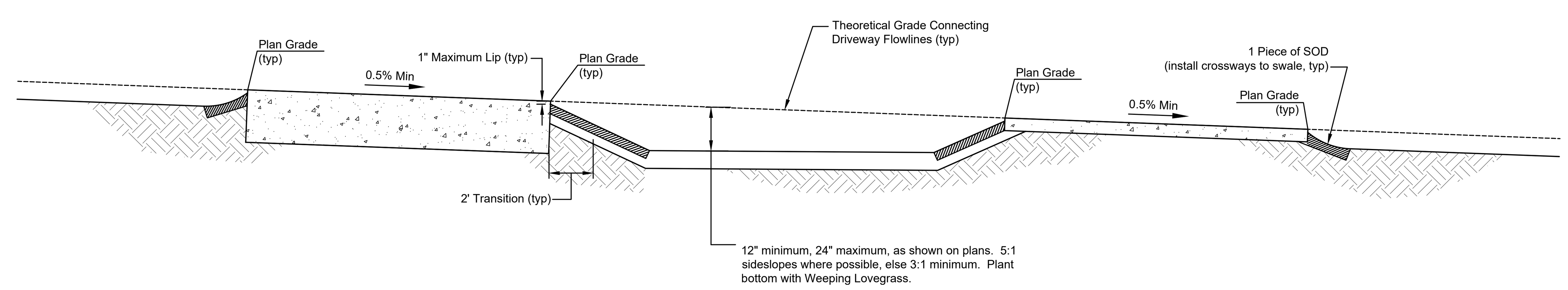
*Minimize disturbed area during swale construction, leaving existing vegetation where feasible, without exceeding maximum slope of 4:1.



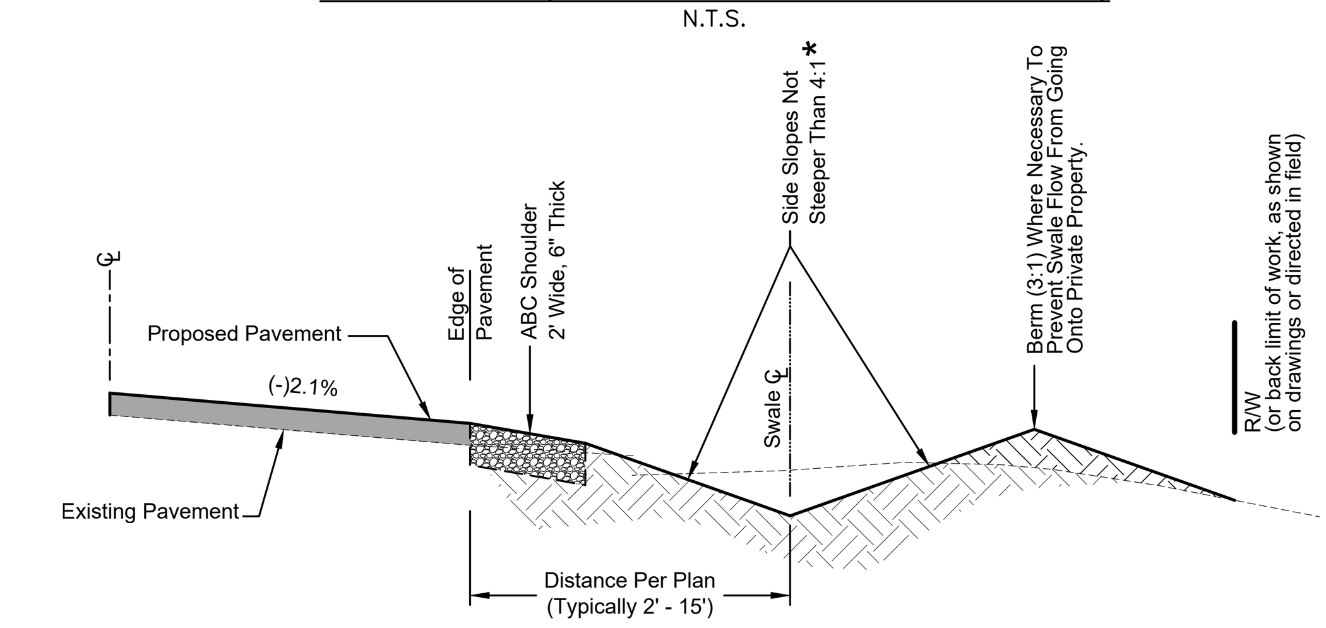
SECTION G-G (SECTION THRU ROADSIDE SWALE)
N.T.S.



SECTION E-E (SECTION @ DRIVEWAY)
N.T.S.



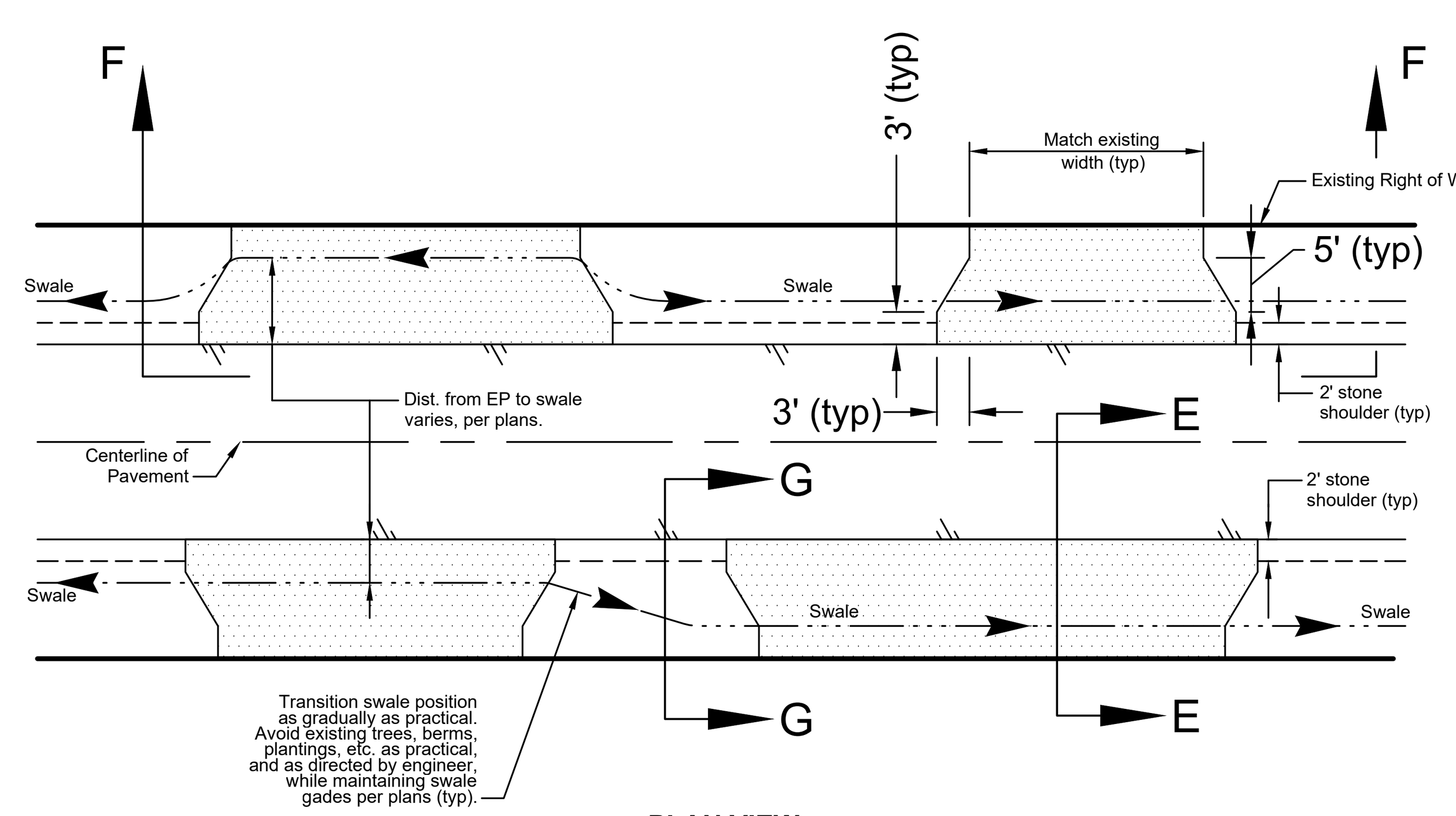
SECTION F-F WITH DESIGNATED INFILTRATION AREA
N.T.S.



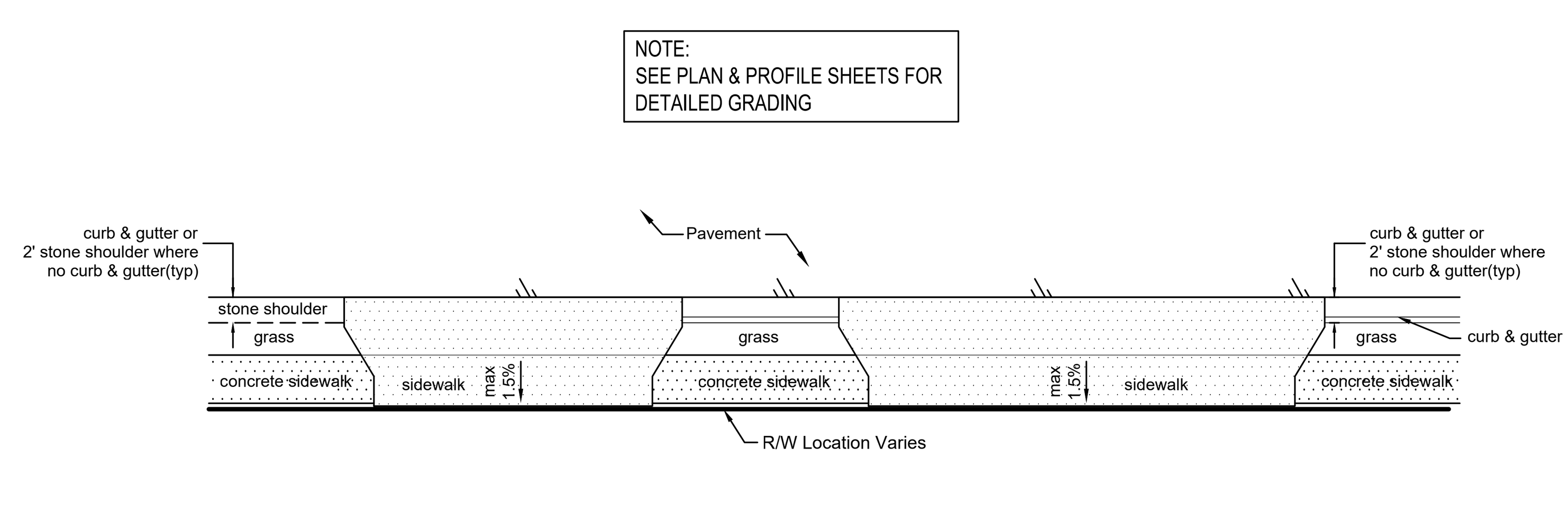
SECTION G-G (SECTION THRU ROADSIDE SWALE, ADJ. TO LOW LOT)
N.T.S.

NOTES:

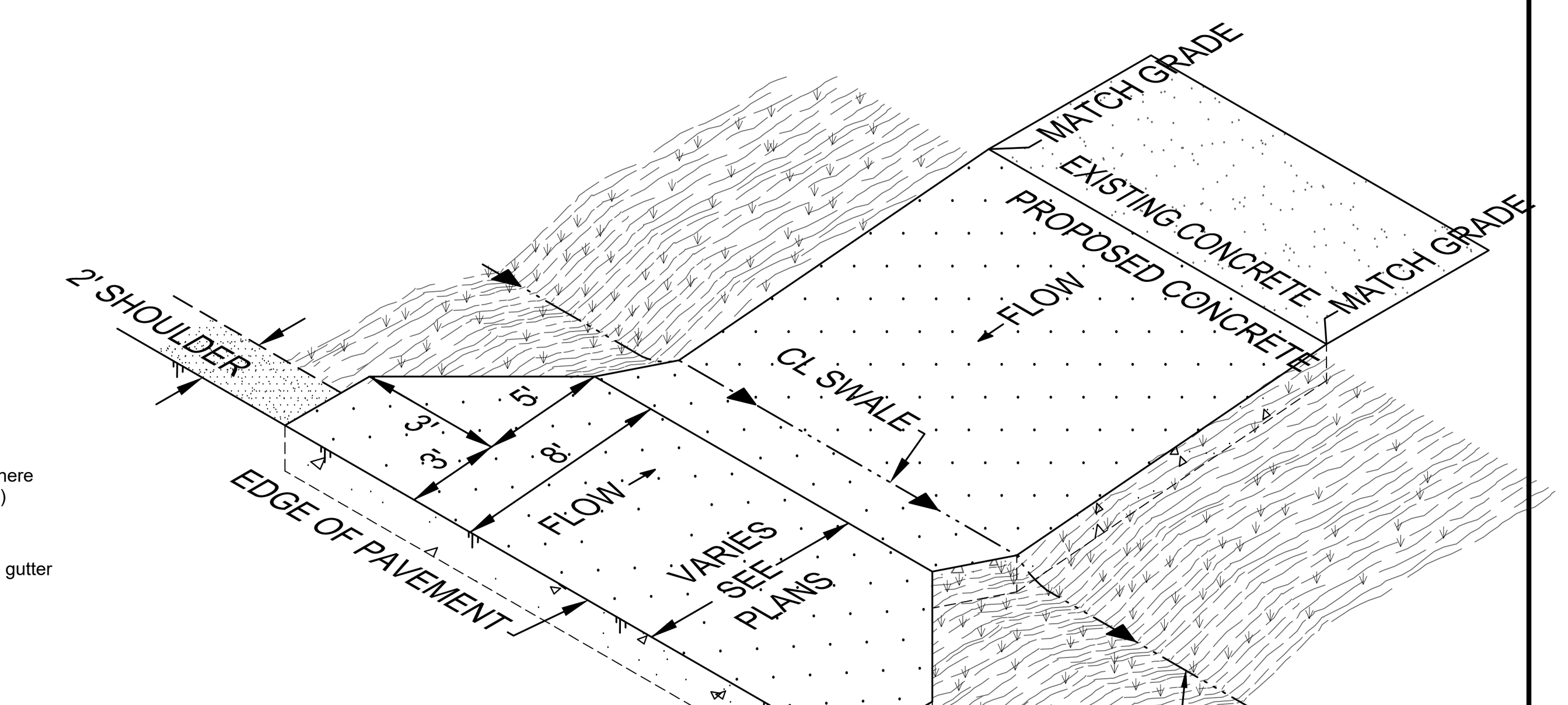
1. CENTERLINE OF DRIVEWAY SWALE SHALL BE A MINIMUM OF 2" LOWER THAN PROPOSED EP GRADE OR EXISTING DRIVEWAY MATCH GRADE ELEVATION.
2. ALL NEW DRIVEWAYS, WHERE NONE EXIST OF CONCRETE OR ASPHALT, SHALL BE CONCRETE AND EXTEND FROM THE ROAD SURFACE TO THE TOWN RIGHT OF WAY. CONCRETE DRIVEWAYS SHALL BE A MINIMUM OF TEN FEET (10') IN WIDTH AND FOUR INCHES (4") IN DEPTH, EXCEPT FOR THE FIRST THREE FEET (3') ADJACENT TO THE PAVED ROAD SURFACE WHICH SHALL BE SIX INCHES (6") IN DEPTH, 3,000 PSI CONCRETE. ASPHALT SHALL BE TWO INCHES (2") IN DEPTH WITH FOUR INCHES (4") OF ABC. WIDTHS OR LENGTHS EXCEEDING THESE SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER EXCEPT WHERE AN EXISTING CONCRETE OR ASPHALT DRIVEWAY IS WIDER THAN TEN FEET (10'), IT SHALL BE REPLACED IN KIND.
3. AT RIGHT OF WAY LINE, LONGITUDINAL SLOPE OF DRIVEWAY SHALL BE TOWARD THE STREET, NEVER TOWARD THE DWELLING.
4. FORM AND PLACE DRIVEWAYS WITH SWALES AT PLAN GRADE, BY SURVEY.
5. DRIVEWAYS NOT WITHIN REASONABLE TOLERANCE, AS DETERMINED BY ENGINEER, OF PLAN GRADE WILL BE REJECTED.
6. IN ALL CASES, DRIVEWAY SWALES SHALL HAVE A STRAIGHT, CONTINUOUS FALL ACROSS ENTIRE DRIVEWAY. SWALES WITH PONDING DEEPER THAN ¼" IMMEDIATELY AFTER RAIN AND/OR FLOW STOPS WILL BE REJECTED.
7. WHERE FIELD CONDITIONS ARE FOUND WHICH APPEAR TO MAKE COMPLIANCE WITH DESIGN GRADES AND THESE STANDARDS IMPOSSIBLE, OR WHICH APPEAR TO RESULT IN EXCESSIVE OR INAPPROPRIATE SLOPES, CONTACT ENGINEER IMMEDIATELY.
8. ALL DRIVEWAYS SHALL BE BROOM - FINISHED EXCEPT EXISTING EXPOSED AGGREGATE SHALL BE PATCHED OR REPLACED, AS APPLICABLE, WITH EXPOSED AGGREGATE.



PLAN VIEW
N.T.S.



PLAN VIEW
N.T.S.



ISOMETRIC VIEW
N.T.S.

ENTRANCE / ROADSIDE SWALE DETAILS

ENTRANCE WITH SIDEWALK DETAIL

V23026 - WRIGHTSVILLE BLVD, PHASE 1

REVISIONS

AMERICAN Engineering
American Engineering Associates - Southeast, P.A.
830 Greenbrier Circle | Suite 110
Chesapeake, Virginia 23320 (757) 468 - 6800

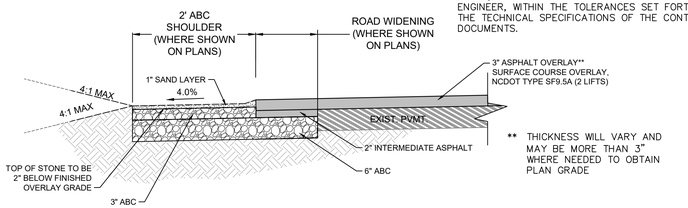
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 057308 03/01/2024 EMILY R. ZELTMANN

Project #	V23026
Drawn by	MGH
Submittal Date	03/01/2024
Scale	AS NOTED
SWaM Certification	715559
VA Firm #	0405001994

WRIGHTSVILLE BOULEVARD PHASE 1
WATER AND STORMWATER IMPROVEMENTS
TOWN OF KILL DEVIL HILLS
DARE COUNTY, NORTH CAROLINA

SHEET NAME
DETAILS

SHEET #
C-501

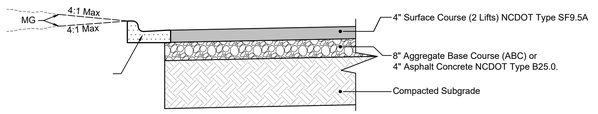


WHERE PROPOSED CENTERLINE ELEVATIONS ARE NOT INDICATED, THE NOMINAL 3" OVERLAY SHALL BE PLACED SO AS TO OBTAIN A 2% MIN. CROSS SLOPE, EXCEPT WHERE OTHERWISE DIRECTED BY ENGINEER, WITHIN THE TOLERANCES SET FORTH IN THE TECHNICAL SPECIFICATIONS OF THE CONTRACT DOCUMENTS.

** THICKNESS WILL VARY AND MAY BE MORE THAN 3" WHERE NEEDED TO OBTAIN PLAN GRADE

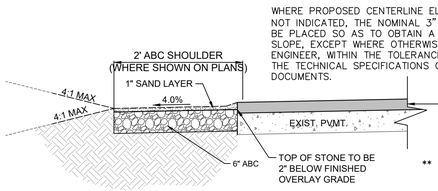
PAVEMENT WIDENING ADJACENT TO STONE SHOULDER

NOT TO SCALE



PAVEMENT WIDENING ADJACENT TO CURB AND GUTTER

NOT TO SCALE

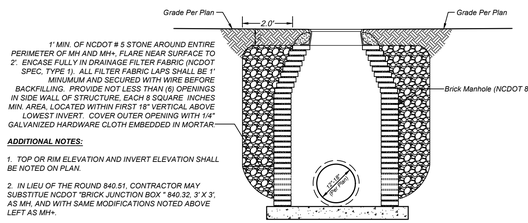


WHERE PROPOSED CENTERLINE ELEVATIONS ARE NOT INDICATED, THE NOMINAL 3" OVERLAY SHALL BE PLACED SO AS TO OBTAIN A 2% MIN. CROSS SLOPE, EXCEPT WHERE OTHERWISE DIRECTED BY ENGINEER, WITHIN THE TOLERANCES SET FORTH IN THE TECHNICAL SPECIFICATIONS OF THE CONTRACT DOCUMENTS.

** THICKNESS WILL VARY AND MAY BE MORE THAN 3" WHERE NEEDED TO OBTAIN PLAN GRADE

PAVEMENT OVERLAY DETAIL

NOT TO SCALE



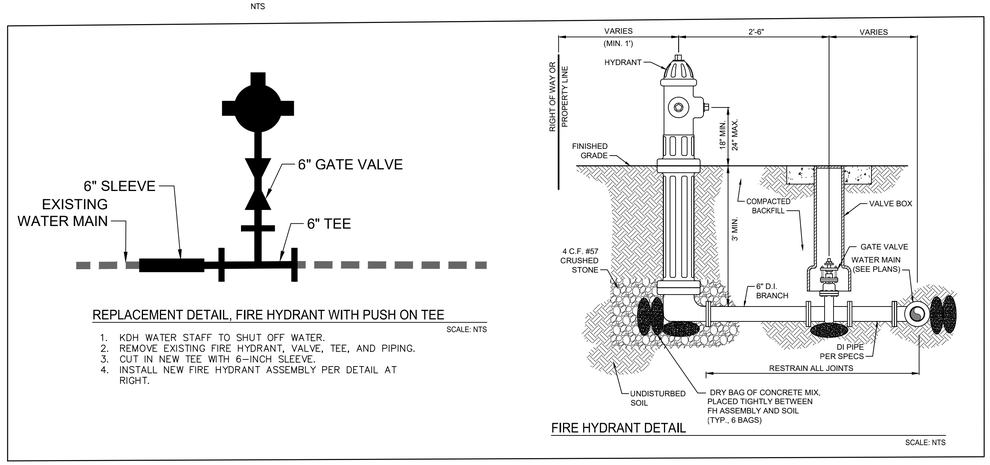
ADDITIONAL NOTES:

1. TOP OR RIM ELEVATION AND INVERT ELEVATION SHALL BE NOTED ON PLAN.

2. IN LIEU OF THE ROUND 840.51, CONTRACTOR MAY SUBSTITUE NCDOT "BRICK JUNCTION BOX " 840.32, 3' X 3', AS MH, AND WITH SAME MODIFICATIONS NOTED ABOVE LEFT AS MH+.

MANHOLE PLUS (MH +)

NTS



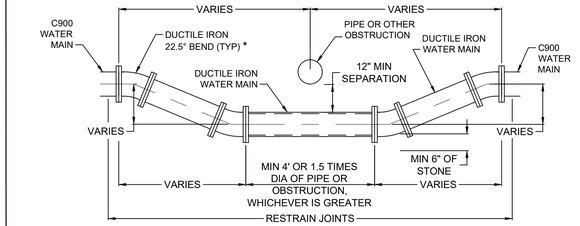
REPLACEMENT DETAIL, FIRE HYDRANT WITH PUSH ON TEE

SCALE: NTS

1. KDH WATER STAFF TO SHUT OFF WATER.
2. REMOVE EXISTING FIRE HYDRANT, VALVE, TEE, AND PIPING.
3. CUT IN NEW TEE WITH 6-INCH SLEEVE.
4. INSTALL NEW FIRE HYDRANT ASSEMBLY PER DETAIL AT RIGHT.

FIRE HYDRANT DETAIL

SCALE: NTS



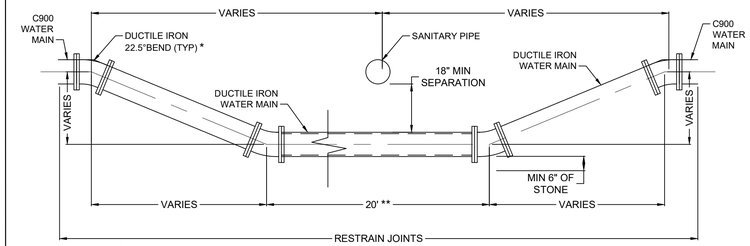
* 45° BENDS MAY BE SUBSTITUED AS WARRANTED IN THE FIELD BY FIELD CONSTRUCTION REPRESENTATIVE

RESTRAINED JOINTS
THRUST RESTRAINT SHALL BE ACCOMPLISHED USING JOINT RESTRAINT DEVICES, AS SET FORTH IN THE WATER LINE SPECIFICATIONS.

RESTRAIN ALL SIDE STREET TIE-INS (ENTIRE LENGTH + 1ST JOINT OF EXISTING PIPE.)

WATER MAIN VERTICAL OFFSET DETAIL (UNDER STORM & NON-SANITARY OBSTRUCTIONS)

NOT TO SCALE



* 45° BENDS MAY BE SUBSTITUED AS WARRANTED IN THE FIELD BY FIELD CONSTRUCTION REPRESENTATIVE

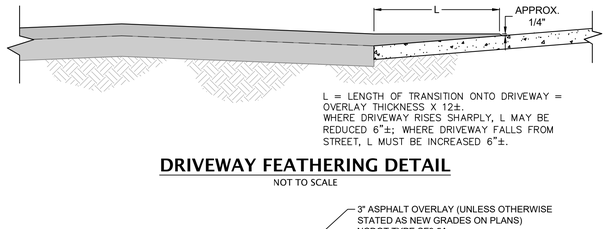
** OFFSET PIPE SHALL BE CONSTRUCTED OF FERROUS MATERIAL AND WITH JOINTS THAT ARE EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10' ON EACH SIDE OF THE POINT OF CROSSING

RESTRAINED JOINTS
THRUST RESTRAINT SHALL BE ACCOMPLISHED USING JOINT RESTRAINT DEVICES, AS SET FORTH IN THE WATER LINE SPECIFICATIONS.

RESTRAIN ALL SIDE STREET TIE-INS (ENTIRE LENGTH + 1ST JOINT OF EXISTING PIPE.)

WATER MAIN VERTICAL OFFSET DETAIL (UNDER SANITARY OBSTRUCTIONS)

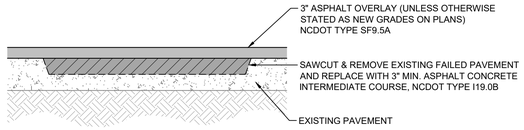
NOT TO SCALE



L = LENGTH OF TRANSITION ONTO DRIVEWAY = OVERLAY THICKNESS X 12±. WHERE DRIVEWAY RISES SHARPLY, L MAY BE REDUCED 6"±; WHERE DRIVEWAY FALLS FROM STREET, L MUST BE INCREASED 6"±.

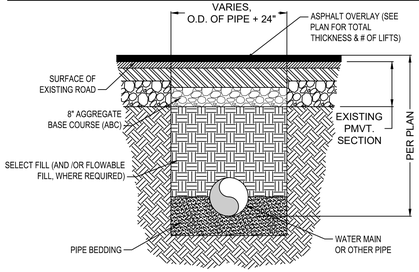
DRIVEWAY FEATHERING DETAIL

NOT TO SCALE



SPOT PATCH REPAIR DETAIL (WHERE NOTED ON PLAN OR DIRECTED BY ENGINEER)

NOT TO SCALE

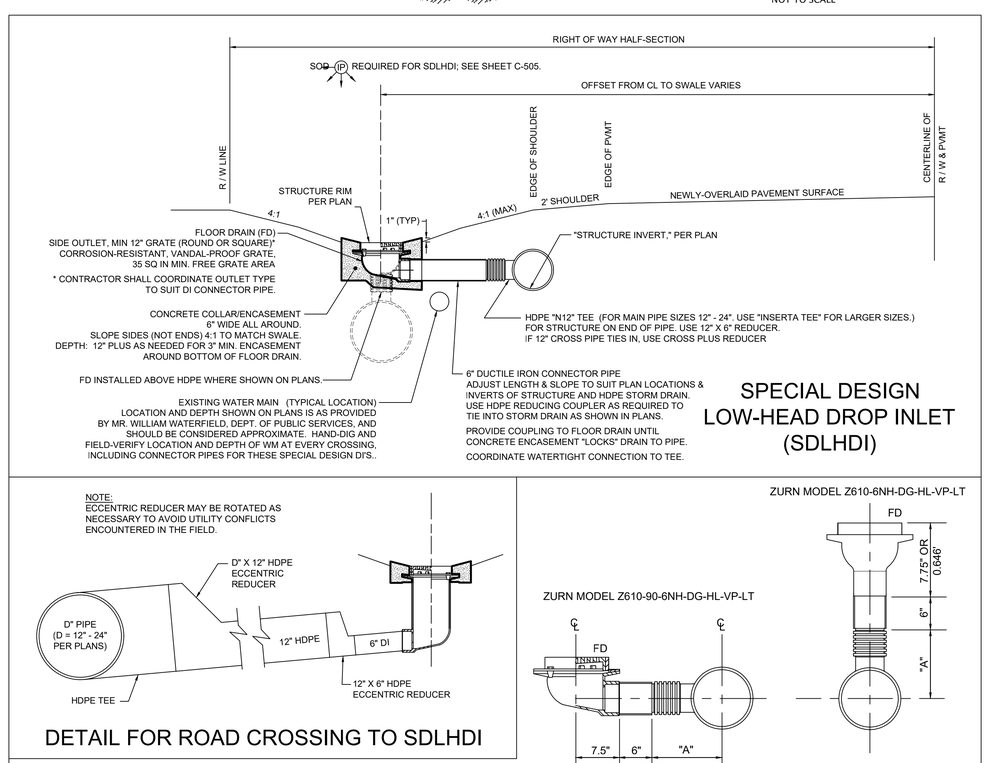


PAVEMENT PATCH NOTES:

1. KDH STANDARD ROAD PAVEMENT SECTION = 4" ASPHALT (2 LIFTS) 8" ABC
2. PAVEMENT PATCH SECTION SHALL BE 1" ASPHALT **PLUS** THE GREATER OF: KDH STANDARD ROAD PAVEMENT SECTION (1 ABOVE) **OR** EXISTING PAVEMENT SECTION + ASPHALT OVERLAY.
3. IN PAVEMENT PATCH SECTION & KDH STANDARD PAVEMENT SECTION, 2" OF ABC MAY BE REPLACED BY 1" OF ASPHALT.
4. ALL BUT TOP 3" OF PAVEMENT PATCH SHALL BE B25.0 BASE ASPHALT OR I19.0B ASPHALT UNLESS SURFACE MIX ASPHALT IS APPROVED BY THE ENGINEER.
5. PLACEMENT OF ABC ABOVE SELECT FILL, UP TO SURFACE OF EXISTING ROAD, SHALL BE PLANNED SO THAT WHEN EXCESS ABC IS DUG OUT FOR ASPHALT, REMAINING ABC + PATCH ASPHALT MEETS THICKNESS REQUIREMENTS FOR PATCH SECTION.

PAVEMENT PATCH DETAIL

NOT TO SCALE



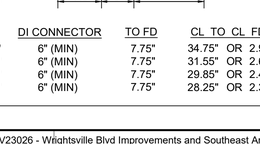
SPECIAL DESIGN LOW-HEAD DROP INLET (SDLHDI)

NOTE:
ECCENTRIC REDUCER MAY BE ROTATED AS NECESSARY TO AVOID UTILITY CONFLICTS ENCOUNTERED IN THE FIELD.

DETAIL FOR ROAD CROSSING TO SDLHDI

ZURN MODEL Z610-6NH-DG-HL-VP-LT

ZURN MODEL Z610-90-6NH-DG-HL-VP-LT



TEE SIZE	"A"	DI CONNECTOR	TO FD	CL TO CL FD	INVERT TO RIM FD
24" X 6" TEE	21.0"	6" (MIN)	7.75"	34.75" OR 2.90'	46.75" OR 3.90'
18" X 6" TEE	17.8"	6" (MIN)	7.75"	31.55" OR 2.63'	40.55" OR 3.38'
15" X 6" TEE	16.1"	6" (MIN)	7.75"	29.85" OR 2.49'	37.35" OR 3.11'
12" X 6" TEE	14.5"	6" (MIN)	7.75"	28.25" OR 2.35'	34.25" OR 2.85'

AMERICAN Engineering
American Engineering Associates - Southeast, P.A.
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Chesapeake, Virginia 23320 (757) 468 - 6800

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 057308 03/01/2024 EMILY R. ZELTMANN

Project #	V23026
Drawn by	MGH
Submittal Date	03/01/2024
Scale	AS NOTED
SWaM Certification	715559
VA Firm #	0405001994

WRIGHTSVILLE BOULEVARD PHASE 1

WATER AND STORMWATER IMPROVEMENTS

TOWN OF KILL DEVIL HILLS
DARE COUNTY, NORTH CAROLINA

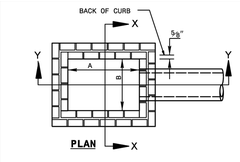
SHEET NAME
DETAILS

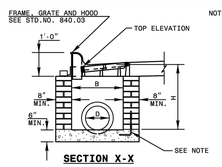
SHEET #
C-502

REVISIONS

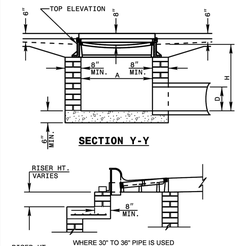
0 20 40 60

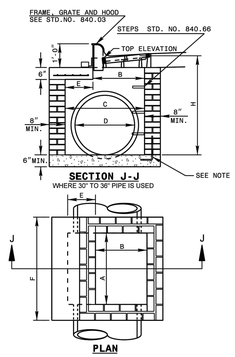
V23026 - WRIGHTSVILLE BLVD, PHASE 1

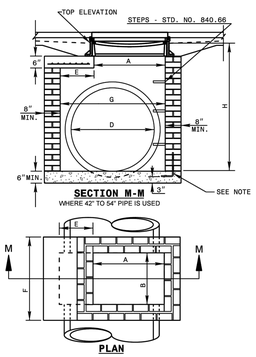




NOTES: MORTAR JOINTS ½" +/- ⅛" THICK.
USE CLASS "B" CONCRETE THROUGHOUT.
USE FORMS FOR CONSTRUCTION OF THE BOTTOM SLAB.
DEDUCT FOR PIPE(S) FROM TOTAL CU. YDS. OF BRICK MASONRY.
USE #4 BAR DOWELS AT 12" CENTERS FOR ALL PIPE SIZES.
PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.
USE BRICK OR CONCRETE BLOCK WHICH COMPLIES WITH THE REQUIREMENTS OF SECTION 840 OF THE STANDARD SPECIFICATIONS.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
FOR 8'-0" IN HEIGHT OR LESS, USE 8" WALL; OVER 8'-0" IN HEIGHT, USE 12" WALL TO 6'-0" FROM TOP OF WALL AND 8" WALL FOR THE REMAINING 6'-0". QUANTITES TO BE ADJUSTED ACCORDINGLY.
CONSTRUCT WITH PIPE CROWNS MATCHING.
CHAMFER ALL EXPOSED CORNERS 1".
DRAWING NOT TO SCALE.



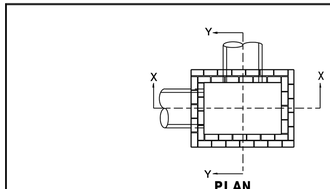




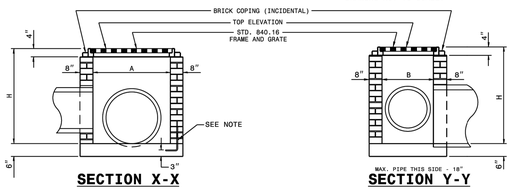
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.
1-18

ROADWAY STANDARD DRAWING FOR
BRICK CATCH BASIN
12" THRU 54" PIPE

SHEET 1 OF 2
840.01



GENERAL NOTES:
MORTAR JOINTS ½" +/- ⅛" THICK.
USE CLASS "B" CONCRETE THROUGHOUT.
USE FORMS FOR CONSTRUCTION OF THE BOTTOM SLAB.
USE #4 BAR DOWELS AT 12" CENTERS.
DEDUCT FOR PIPE(S) FROM TOTAL CU. YDS. OF BRICK MASONRY.
PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
USE BRICK OR CONCRETE BLOCK WHICH COMPLIES WITH THE REQUIREMENTS OF SECTION 840 OF THE STANDARD SPECIFICATIONS.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
FOR 8'-0" IN HEIGHT OR LESS, USE 8" WALL; OVER 8'-0" IN HEIGHT, USE 12" WALL TO 6'-0" FROM TOP OF WALL AND 8" WALL FOR THE REMAINING 6'-0". QUANTITES TO BE ADJUSTED ACCORDINGLY.
CONSTRUCT WITH PIPE CROWNS MATCHING.
SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES.
DO NOT USE BRICK MASONRY DROP INLET IN LOCATIONS SUBJECT TO TRAFFIC.
CHAMFER ALL EXPOSED CORNERS 1".
DRAWING NOT TO SCALE.



DIMENSIONS AND QUANTITIES FOR DROP INLET(BASED ON MIN. HEIGHT, H)

DIMENSIONS OF BOX & PIPE				CUBIC YARDS CONCRETE	CUBIC YARDS BRICK MASONRY		DEDUCTIONS FOR ONE PIPE	
PIPE D	SPAN A	WIDTH B	MIN. HEIGHT H	BOTTOM SLAB	WALL PER FOOT HT.	TOTAL BRICK MASONRY FOR MIN. HEIGHT, H	C.S.	R.C.
12"	3'-0"	2'-0"	2'-0"	0.268	0.313	0.522	0.020	0.032
15"			2'-3"	0.268	0.313	0.600	0.031	0.047
18"			2'-6"	0.268	0.313	0.678	0.044	0.065
24"			3'-0"	0.268	0.313	0.835	0.078	0.113
30"	3'-0"	2'-0"	3'-6"	0.268	0.313	0.991	0.122	0.170

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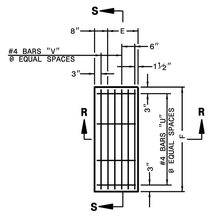
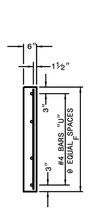
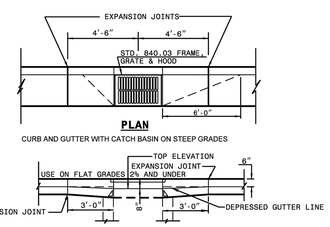
1-18

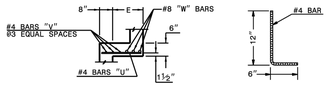
ROADWAY STANDARD DRAWING FOR
BRICK DROP INLET
12" THRU 30" PIPE

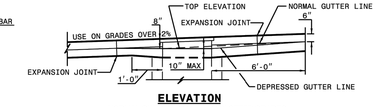
SHEET 1 OF 1
840.15











MINIMUM DIMENSIONS AND QUANTITIES FOR BRICK CATCH BASIN(BASED ON MIN. HEIGHT, H, WITH NO RISER)*

DIMENSIONS OF BOX AND PIPE						TOP SLAB DIMENSIONS		BARS-U		BARS-V		BARS-W			CU.YDS. CONC. IN BOX			BRICK MASONRY		DEDUCTIONS ONE PIPE	
PIPE D	SPAN A	WIDTH B	WIDTH C	SPAN G	MIN. HEIGHT H	E	F	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	TOTAL LBS.	TOP SLAB	BOTTOM SLAB	TOTAL CONC.	BRICK MSNRY IN WALLS	TOTAL BRICK AND CONCRETE	C.M.	R.C.
12"	3'-0"	2'-2"	--	--	2'-9"	--	--	--	--	--	--	--	--	--	--	0.281	0.281	0.883	1.164	0.020	0.042
15"	3'-0"	2'-2"			3'-0"											0.281	0.281	0.963	1.244	0.031	0.047
18"	3'-0"	2'-2"			3'-3"											0.281	0.281	1.043	1.324	0.044	0.055
24"	3'-0"	2'-2"			3'-9"											0.281	0.281	1.204	1.485	0.078	0.121
30"	3'-0"	2'-2"	3'-4"		4'-3"	1'-2"	4'-4"	4	1'-6"	3	4'-1"	3	4'-1"	45	0.147	0.374	0.521	1.606	2.217	0.122	0.184
36"	3'-0"	2'-2"	3'-10"		4'-9"	1'-8"	4'-4"	4	2'-0"	4	4'-1"	3	4'-1"	49	0.187	0.415	0.602	1.914	2.516	0.176	0.261
42"	3'-0"	2'-2"		4'-5"	5'-3"	1'-5"	3'-6"	4	1'-9"	3	3'-3"	3	3'-3"	38	0.135	0.373	0.508	2.152	2.660	0.240	0.371
48"	3'-0"	2'-2"		5'-0"	5'-9"	2'-0"	3'-6"	4	2'-6"	4	3'-3"	3	3'-3"	41	0.173	0.410	0.583	2.415	2.998	0.313	0.477
54"	3'-0"	2'-2"		5'-7"	6'-3"	2'-7"	3'-6"	4	3'-0"	6	3'-3"	3	3'-3"	47	0.211	0.448	0.659	2.806	3.465	0.396	0.595

* RISER HAS .321 CUBIC YARDS OF BRICK MASONRY PER FOOT HEIGHT

STATE OF NORTH CAROLINA
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RALEIGH, N.C.
1-18

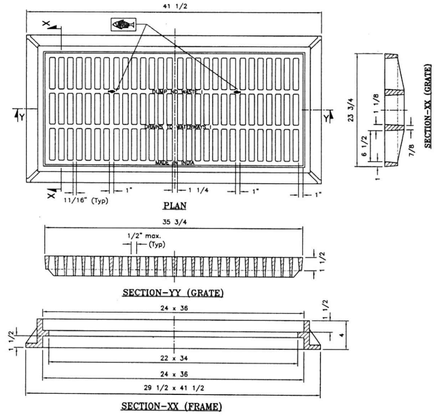
ROADWAY STANDARD DRAWING FOR
BRICK CATCH BASIN
12" THRU 54" PIPE

SHEET 2 OF 2
840.01

CAPITOL FOUNDRY OF VA, INC.

2856 CRUSADER CIRCLE
VIRGINIA BEACH, VA 23453
PHONE: (757) 427-9431
FAX: (757) 427-9308
www.capitolfoundry.net

ALSO AVAILABLE IN
2-1/2" TALL STD FRAME

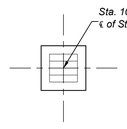


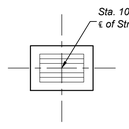
'ADA' COMPLIANT 24" X 36" X 4" TALL GRATE & REVERSIBLE FRAME

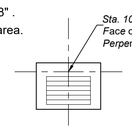
MATERIAL SPEC: ASTM A-48 CLASS 35B	ITEM #CB-2436*SH-PED

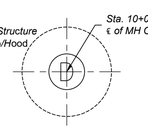
PEDESTRIAN / BIKE SAFE GRATE

1. Nominal Size 24" x 36" x 4".
2. Traffic (HS20) Rated.
3. No Opening Wider Than 5/8" .
4. Openings ≥ 35% of Grate area.









STORM STRUCTURE STATION AND OFFSET REFERENCE CHART

AMERICAN Engineering
American Engineering Associates - Southeast, P.A.
830 Greenbrier Circle | Suite 110 (757) 468 - 6800
Chesapeake, Virginia 23320

NORTH CAROLINA PROFESSIONAL SEAL 057308 03/01/2024 ENGINEER EMILY R ZELTMANN

Project #	V23026
Drawn by	MGH
Submittal Date	03/01/2024
Scale	AS NOTED
SWaM Certification	715559
VA Firm #	0405001994

WRIGHTSVILLE BOULEVARD PHASE 1
WATER AND STORMWATER IMPROVEMENTS
TOWN OF KILL DEVIL HILLS
DARE COUNTY, NORTH CAROLINA

SHEET NAME
DETAILS

SHEET #
C-503

REVISIONS

V23026 - WRIGHTSVILLE BLVD, PHASE 1

SOIL EROSION AND SEDIMENTATION CONTROL NOTES:

1. PROPOSED AREA TO BE DISTURBED CONSISTS OF AREA WITHIN R/W OF THE FOLLOWING STREETS:
   WRIGHTSVILLE BLVD, FROM E. GODDARD AVE TO E. ATLANTIC ST.
2. AFTER ACCEPTANCE OF ALL PROJECT WORK, AND FULL ESTABLISHMENT OF PERMANENT VEGETATION, CONTINUED MAINTENANCE OF PERMANENT VEGETATION SHALL BE THE RESPONSIBILITY OF OWNER.
3. PROVIDE A GROUND COVER (TEMPORARY OR PERMANENT) ON EXPOSED SLOPES, FOLLOWING COMPLETION OF ANY PHASE OF GRADING; AND, A PERMANENT GROUND COVER FOR ALL DISTURBED AREAS WITHIN THE TIME FRAMES SET FORTH IN THE GROUND STABILIZATION TIME REQUIREMENTS PROVISIONS ON THIS SHEET. IF SAID ACTIVITIES OCCUR OUTSIDE TEMPORARY VEGETATION SEEDING DATES (APRIL 1 THRU SEPT 30) THE TEMPORARY VEGETATION SEEDING SPECIFICATIONS SHALL BE FOLLOWED FOR PLANTING UNTIL THE NEXT APPROPRIATE PERMANENT SEEDING PERIOD, AT WHICH TIME PERMANENT VEGETATION SHALL BE ESTABLISHED ACCORDING TO PERMANENT VEGETATION SEEDING SPECIFICATIONS (SEE PERM AND TEMP SEEDING SPECIFICATIONS THIS SHEET).
4. IF EXCESSIVE WIND EROSION OR STORM WATER RUNOFF EROSION DEVELOPS DURING TIME OF CONSTRUCTION IN ANY LOCATION ON THE PROJECT SITE, ADDITIONAL SAND OR SILT FENCING SHALL BE INSTALLED AS DIRECTED BY THE ENGINEER OR LOCAL GOVERNING OFFICIAL SO AS TO PREVENT DAMAGE TO ADJACENT PROPERTY. SEE SAND AND FENCE DETAIL THIS SHEET.
5. SOIL EROSION AND SEDIMENTATION CONTROLS TO BE INSPECTED, MAINTAINED AND REPAIRED AS NECESSARY UNTIL PERMANENT VEGETATION OR OTHER EFFECTIVE STABILIZATION IS ESTABLISHED.

CONSTRUCTION SCHEDULE

1. OBTAIN PLAN APPROVAL AND OTHER APPLICABLE PERMITS. NOTIFY ALL UTILITY COMPANIES (BY CONTRACTOR) AND PROPERTY OWNERS (BY OWNER).
2. FLAG AND / OR ROUGH STAKE WORK LIMITS.
3. HOLD PRE-CONSTRUCTION CONFERENCE (OWNER, CONTRACTOR, ENGINEER, AND APPROPRIATE GOVERNMENT OFFICIALS) AT LEAST ONE WEEK PRIOR TO START OF CONSTRUCTION ACTIVITIES.
4. INSTALL SILT FENCE AS NEEDED.
5. COMPLETE CLEARING AND GRUBBING PROCEDURES.
6. INSTALL WATER IMPROVEMENTS.
7. INSTALL STORM DRAINAGE PIPES AND STRUCTURES. INSTALL INLET PROTECTION ON NEW STRUCTURES. CUT DRIVEWAYS TO SUIT PIPE AND SWALE INSTALLATION.
8. INSTALL NEW ROADSIDE SWALES BY CUTTING, OR BY PARTIALLY FILLING EXISTING DITCHES, AS APPROPRIATE. LEAVE SWALES 2" TO 4" LOW (PER SECTION F-F, SHEET C-501) AS ALLOWANCE FOR SEDIMENT DEPOSITION.
9. REPLACE DRIVEWAYS AS SHOWN.
10. INSTALL OVERLAY FOR ROADWAYS .FINE-GRADE SWALE AREAS. SEED AND MULCH ALL DISTURBED AREAS.
11. ALL EROSION & SEDIMENTATION CONTROL PRACTICES WILL BE INSPECTED WEEKLY AND AFTER HEAVY RAINFALL EVENTS, NEEDED REPAIRS WILL BE MADE IMMEDIATELY.
12. ONCE PROJECT AREA IS FULLY STABILIZED, REMOVE EROSION AND SEDIMENT CONTROL MEASURES.

GROUND STABILIZATION TIME REQUIREMENTS

FROM THE NC DENR/DWQ
GENERAL PERMIT - NCG 010000
TO DISCHARGE STORMWATER UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
FOR
CONSTRUCTION ACTIVITIES

SECTION II.B. - STORMWATER POLLUTION PREVENTION REQUIREMENTS IN THE NC CONSTRUCTION GENERAL PERMIT

GROUND STABILIZATION

A) SOIL STABILIZATION SHALL BE ACHIEVED ON ANY AREA OF A SITE WHERE LAND-DISTURBING ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED ACCORDING TO THE FOLLOWING SCHEDULE:

I) ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3: 1) SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS SOON AS PRACTICABLE BUT IN ANY EVENT WITHIN 7 CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY.

II) ALL OTHER DISTURBED AREAS SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS SOON AS PRACTICABLE BUT IN ANY EVENT WITHIN 14 CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY.

B) CONDITIONS - IN MEETING THE STABILIZATION REQUIREMENTS ABOVE, THE FOLLOWING CONDITIONS OR EXEMPTIONS SHALL APPLY:

I) EXTENSIONS OF TIME MAY BE APPROVED BY THE PERMITTING AUTHORITY BASED ON WEATHER OR OTHER SITE-SPECIFIC CONDITIONS THAT MAKE COMPLIANCE IMPRACTICABLE.

II) ALL SLOPES 50' IN LENGTH OR GREATER SHALL APPLY THE GROUND COVER WITHIN 7 DAYS EXCEPT WHEN THE SLOPE IS FLATTER THAN 4: 1. SLOPES LESS THAN 50' SHALL APPLY GROUND COVER WITHIN 14 DAYS EXCEPT WHEN SLOPES ARE STEEPER THAN 3: 1, THE 7 DAY-REQUIREMENT APPLIES.

III) ANY SLOPED AREA FLATTER THAN 4: 1 SHALL BE EXEMPT FROM THE 7-DAY GROUND COVER REQUIREMENT.

IV) SLOPES 10' OR LESS IN LENGTH SHALL BE EXEMPT FROM THE 7-DAY GROUND COVER REQUIREMENT EXCEPT WHEN THE SLOPE IS STEEPER THAN 2: 1.

V) ALTHOUGH STABILIZATION IS USUALLY SPECIFIED AS GROUND COVER, OTHER METHODS, SUCH AS CHEMICAL STABILIZATION, MAY BE ALLOWED ON A CASE-BY-CASE BASIS.

VI) FOR PORTIONS OF PROJECTS WITHIN THE SEDIMENT CONTROL COMMISSION-DEFINED "HIGH QUALITY WATER ZONE" (I5A NCAC 04A. 0105) , STABILIZATION WITH GROUND COVER SHALL BE ACHIEVED AS SOON AS PRACTICABLE BUT IN ANY EVENT ON ALL AREAS OF THE SITE WITHIN 7 CALENDAR DAYS FROM THE LAST LAND DISTURBING ACT.

vii) PORTIONS OF A SITE THAT ARE LOWER IN ELEVATION THAN ADJACENT DISCHARGE LOCATIONS AND ARE NOT EXPECTED TO DISCHARGE DURING CONSTRUCTION MAY BE EXEMPT FROM THE TEMPORARY GROUND COVER REQUIREMENTS IF IDENTIFIED ON THE APPROVED E&SC PLAN OR ADDED BY THE PERMITTING AUTHORITY.

STAGING AREAS

A CONSTRUCTION ENTRANCE SHALL BE INSTALLED AT ALL STAGING / STORAGE AREAS THAT WILL HAVE CONSTRUCTION VEHICLES ENTERING / EXITING ALL PAVED STREETS.

SEEDING SPECIFICATIONS

PERMANENT VEGETATION		TEMPORARY VEGETATION	
SEEDING DATES: APRIL 1 - SEPTEMBER 30		SEEDING DATES: OCTOBER 1 - MARCH 31	
SEED MIXTURE	APPLICATION RATES / ACRE	SEED MIXTURE	APPLICATION RATES / ACRE
BAHIA	50 LBS	RYE GRAIN	175 LBS
COMMON BERMUDA (UN HULLED)	50 LBS	FERTILIZER	10-10-10 @ 1,000 LB/ACRE
GERMAN MILLETT	15 LBS	MULCH	APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.
FESCUE	20 LBS		
FERTILIZER	26-13-13 @ 500 LB/ACRE		
MULCH	APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.		

GENERAL:
FERTILIZER:
RATES SHOWN ARE GENERAL RECOMMENDATIONS. FREQUENCY AND AMOUNT OF FERTILIZATION CAN BEST BE DETERMINED THROUGH SITE SPECIFIC SOIL TESTING.
MAINTENANCE:
SATISFACTORY STABILIZATION AND EROSION CONTROL REQUIRES A COMPLETE VEGETATIVE COVER. EVEN SMALL BREACHES IN VEGETATIVE COVER CAN EXPAND RAPIDLY AND, IF LEFT UNATTENDED, CAN ALLOW SERIOUS SOIL LOSS FROM AN OTHERWISE STABLE SURFACE. A SINGLE HEAVY RAIN IS OFTEN SUFFICIENT TO GREATLY ENLARGE BARE SPOTS, AND THE LONGER REPAIRS ARE DELAYED, THE MORE COSTLY THEY BECOME. PROMPT ACTION WILL KEEP SEDIMENT LOSS AND REPAIR COST DOWN. NEW SEEDLINGS SHOULD BE INSPECTED FREQUENTLY AND MAINTENANCE PERFORMED AS NEEDED. IF RILLS AND GULLIES DEVELOP, THEY MUST BE FILLED IN RE-SEEDED, AND MULCHED AS SOON AS POSSIBLE. DIVERSIONS MAY BE NEEDED UNTIL NEW PLANTS TAKE HOLD.

MAINTENANCE REQUIREMENTS EXTEND BEYOND THE SEEDING PHASE.
(UNTIL FULL COMPLETION IS DECLARED)

WEAK OR DAMAGED SPOTS MUST BE RE- LIMED, FERTILIZED, MULCHED, AND RE SEEDED AS PROMPTLY AS POSSIBLE. REFERTILIZATION AND/OR WATERING MAY BE NEEDED TO FULLY ESTABLISH VEGETATIVE COVER.

(XX) E & S MEASURES, EXCEPT WHERE OTHERWISE NOTED, ARE TO BE INSTALLED BEFORE WORK BEGINS AND MAINTAINED UNTIL WORKSITE IS FULLY STABILIZED.

(XX)2 MEASURE REQUIRED DURING PHASE 1 ONLY.

MEASURE NOT TO BE PROVIDED UNTIL PHASE 2.

6

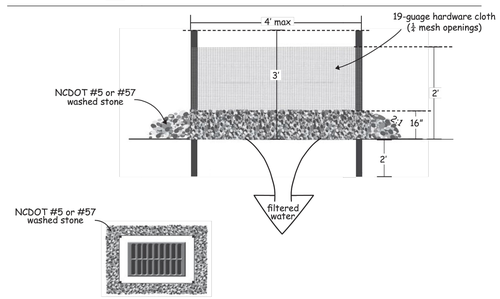


Figure 6.51a Hardware cloth and gravel inlet protection

Construction Specifications

1. Uniformly grade a shallow depression approaching the inlet.
2. Drive 5-foot steel posts 2 feet into the ground surrounding the inlet. Space posts evenly around the perimeter of the inlet, a maximum of 4 feet apart.
3. Surround the posts with wire mesh hardware cloth. Secure the wire mesh to the steel posts at the top, middle, and bottom. Placing a 2-foot flap of the wire mesh under the gravel for anchoring is recommended.
4. Place clean gravel (NC DOT #5 or #57 stone) on a 2:1 slope with a height of 16 inches around the wire, and smooth to an even grade.
5. Once the contributing drainage area has been stabilized, remove accumulated sediment, and establish final grading elevations.
6. Compact the area properly and stabilized it with groundcover.

Maintenance Inspect inlets at least weekly and after each significant (½ inch or greater) rainfall event. Clear the mesh wire of any debris or other objects to provide adequate flow for subsequent rains. Take care not to damage or undercut the wire mesh during sediment removal. Replace stone as needed.

References
Inlet Protection
6.52, Block and Gravel Inlet Protection
6.54, Rock Doughnut Inlet Protection

North Carolina Department of Transportation
Standard Specifications for Roads and Structures

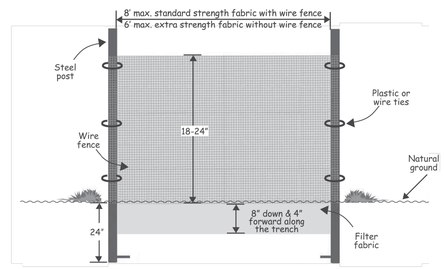
6.51.2 Rev. 6/06

HARDWARE CLOTH AND GRAVEL INLET PROTECTION

SCALE: NTS

SF

Practice Standards and Specifications



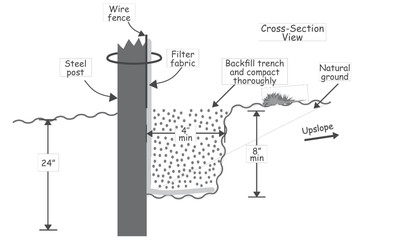


Figure 6.62a Installation detail of a sediment fence.

Rev. 5/13 6.62.5

SEDIMENT FENCE (SILT FENCE)

SCALE: NTS

Practice Standards and Specifications

6.06

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT

Definition A graveled area or pad located at points where vehicles enter and leave a construction site.

Purpose To provide a buffer area where vehicles can drop their mud and sediment to avoid transporting it onto public roads, to control erosion from surface runoff, and to help control dust.

Conditions Where Practice Applies Wherever traffic will be leaving a construction site and moving directly onto a public road or other paved off-site area. Construction plans should limit traffic to properly constructed entrances.

Design Criteria **Aggregate Size**—Use 2-3 inch washed stone.

Dimensions of gravel pad—
Thickness: 6 inches minimum
Width: 12-feet minimum or full width at all points of the vehicular entrance and exit area, whichever is greater
Length: 50-feet minimum

Location—Locate construction entrances and exits to limit sediment from leaving the site and to provide for maximum utility by all construction vehicles (Figure 6.06a). Avoid steep grades, and entrances at curves in public roads.

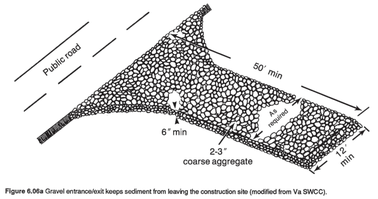


Figure 6.06a Gravel entrance/exit keeps sediment from leaving the construction site (modified from Va SWCC).

6.06.1

CONSTRUCTION ENTRANCE

SCALE: NTS

6

Washing—If conditions at the site are such that most of the mud and sediment are not removed by vehicles traveling over the gravel, the tires should be washed. Washing should be done on an area stabilized with crushed stone that drains into a sediment trap or other suitable disposal area. A wash rack may also be used to make washing more convenient and effective.

Construction Specifications

1. Clear the entrance and exit area of all vegetation, roots, and other objectionable material and properly grade it.
2. Place the gravel to the specific grade and dimensions shown on the plans, and smooth it.
3. Provide drainage to carry water to a sediment trap or other suitable outlet.
4. Use geotextile fabrics because they improve stability of the foundation in locations subject to seepage or high water table.

Maintenance Maintain the gravel pad in a condition to prevent mud or sediment from leaving the construction site. This may require periodic topdressing with 2-inch stone. After each rainfall, inspect any structure used to trap sediment and clean it out as necessary. Immediately remove all objectionable materials spilled, washed, or tracked onto public roadways.

References *Runoff Conveyance Measures*
6.30, Grass-lined Channels

Sediment Traps and Barriers
6.60, Temporary Sediment Trap

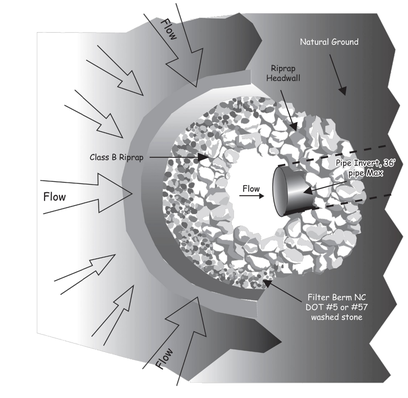
6.06.2

CONSTRUCTION ENTRANCE NOTES

SCALE: NTS

6.06.2

6



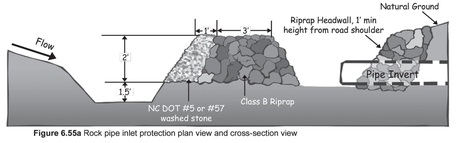


Figure 6.55a Rock pipe inlet protection plan view and cross-section view

6.55.2 Rev. 6/06

ROCK PIPE INLET PROTECTION

SCALE: NTS

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NORTH CAROLINA PROFESSIONAL SEAL 057308 03/01/2024 ENGINEER EMILY R. ZELTMANN

REVISIONS

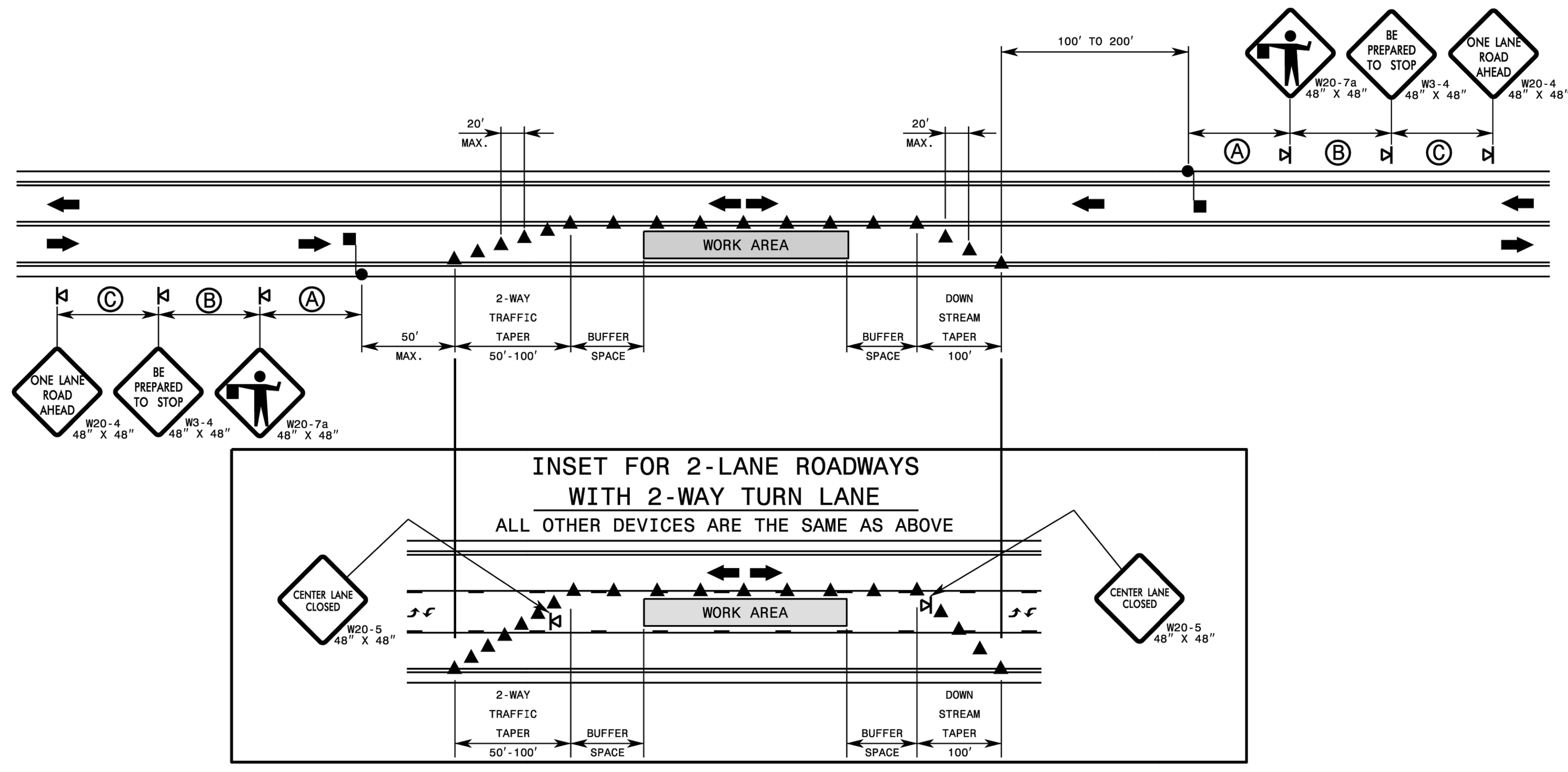
V23026 - WRIGHTSVILLE BLVD, PHASE 1

Project #	V23026
Drawn by	MGH
Submittal Date	03/01/2024
Scale	AS NOTED
SWaM Certification	715559
VA Firm #	0405001994

WRIGHTSVILLE BOULEVARD PHASE 1
WATER AND STORMWATER IMPROVEMENTS
TOWN OF KILL DEVIL HILLS
DARE COUNTY, NORTH CAROLINA

SHEET NAME
E AND S NOTES & DETAILS

SHEET #
C-504



GENERAL NOTES FOR FLAGGING OPERATIONS

1- REFER TO RSD. 1101.11, SHEETS 1 & 4, FOR "L" DISTANCE AND SIGN SPACING.
2- INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC.
3- REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
4- PLACE CONES THRU THE WORK AREA AT THE MAXIMUM SPACING EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.
5- EXTEND LANE CLOSURES AT THE BUFFER SPACE SUCH THAT STOPPING SIGHT DISTANCE IS PROVIDED TO THE FLAGGER (REFER TO RSD. 1101.11, SHEET 2).
6- DO NOT STOP TRAFFIC IN ANY ONE DIRECTION FOR MORE THAN 5 MINUTES AT A TIME.
7- DRUMS OR SKINNY DRUMS MAY BE USED IN LIEU OF CONES. REFER TO RSD. 1180.01 FOR SKINNY DRUM REQUIREMENTS.
8- USE FLAGGERS TO CONTROL TRAFFIC AT INTERSECTIONS AFFECTED BY THE LANE CLOSURE. SUPPLEMENT FLAGGERS LOCATED AT INTERSECTIONS WITH FLAGGER AHEAD SIGNS (W20-7a) PLACED APPROXIMATELY 250 FT. IN ADVANCE OF THE FLAGGER. FOR SIGNALIZED INTERSECTIONS PLACE SIGNALS IN THE FLASH MODE AND USE LAW ENFORCEMENT.
9- REFER TO THE CURRENT MUTCD FOR FLAGGER CONTROL, REQUIREMENTS, AND PROCEDURES.
10- DO NOT EXCEED A 1 MILE LANE CLOSURE LENGTH UNLESS OTHERWISE SHOWN IN THE TMP OR AS DIRECTED BY THE ENGINEER.
11- IF VEHICLE QUEUES WILL REACH WITHIN 15' OF EITHER SIDE OF ACTIVE RAILROAD TRACKS, PROVIDE A UNIFORMED LAW ENFORCEMENT OFFICER OR FLAGGER TO PREVENT VEHICLES FROM STOPPING WITHIN THE GRADE CROSSING. PROVIDE OFFICER OR FLAGGER EVEN IF AUTOMATIC WARNING MEASURES ALREADY EXIST.

GENERAL NOTES FOR PILOT CAR OPERATIONS

1- USE PILOT CARS WHEN DIRECTED BY THE ENGINEER.
2- IF ROADWAY WIDTH IS LESS THAN 22 FEET (EOP TO EOP), CONES MAY NOT BE REQUIRED ALONG WORK AREA, AND AT THE DISCRETION OF THE ENGINEER, CONES MAY BE OMITTED ALONG THE WORK AREA IF USING A PILOT CAR.
3- CONES ARE ALWAYS REQUIRED IN THE UPSTREAM AND DOWNSTREAM TAPERS.
4- MOUNT SIGN G20-4 "PILOT CAR FOLLOW ME" AT A CONSPICUOUS POSITION ON THE REAR OF THE PILOT VEHICLE.
5- DO NOT INSTALL MORE THAN ONE (1) MILE OF LANE CLOSURE, MEASURED FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE.
6- ADVISE RESIDENTS AND BUSINESSES WITHIN THE LANE CLOSURE LIMITS ABOUT METHODS OF SAFE EGRESS AND INGRESS FROM DRIVEWAYS DURING FLAGGING AND PILOT CAR OPERATIONS.

LEGEND
- FLAGGER
- CONE
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW

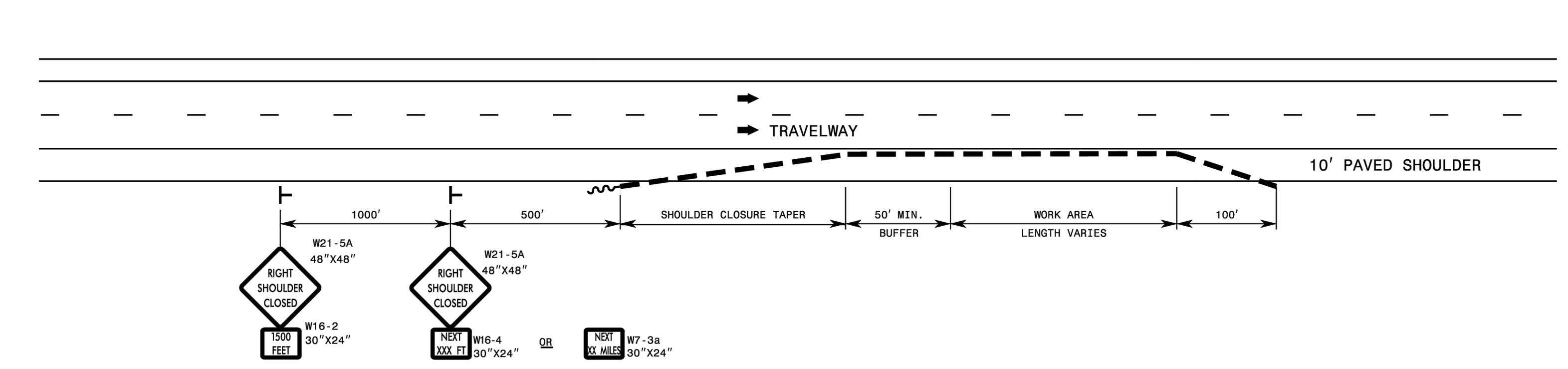
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-18

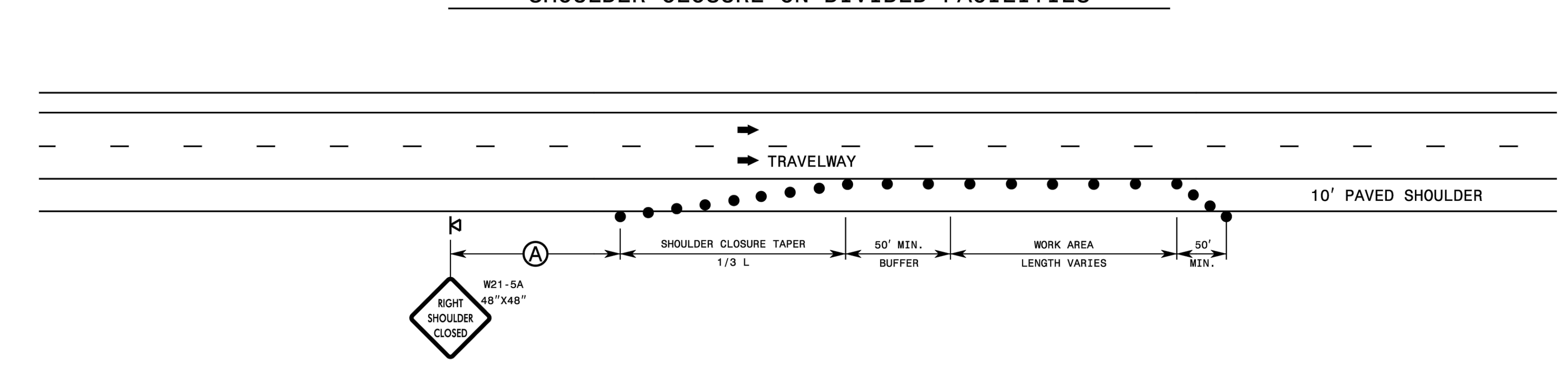
ROADWAY STANDARD DRAWING FOR
TEMPORARY LANE CLOSURES
2-LANE, 2-WAY ROADWAY-1 LANE CLOSED

SHEET 1 OF 14
1101.02

SHOULDER CLOSURE ON CONTROLLED ACCESS FACILITIES



SHOULDER CLOSURE ON DIVIDED FACILITIES



GENERAL NOTES

1- PLACE SHOULDER CLOSURE SIGNS ON THE SAME SIDE AS THE SHOULDER THAT IS CLOSED.
2- PLACE DRUMS IN THE SHOULDER TAPER AT THE MAXIMUM SPACING EQUAL IN FEET TO THE POSTED SPEED LIMIT. THE MAXIMUM SPACING OF DRUMS ALONG THE WORK AREA IS EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.
3- USE STATIONARY SIGNS FOR OPERATIONS IN EFFECT LONGER THAN 3 DAYS.
4- REFER TO RSD. 1101.11, SHEETS 1, 3 & 4, FOR "L" DISTANCE, BARRIER FLARE RATES, AND SIGN SPACING.

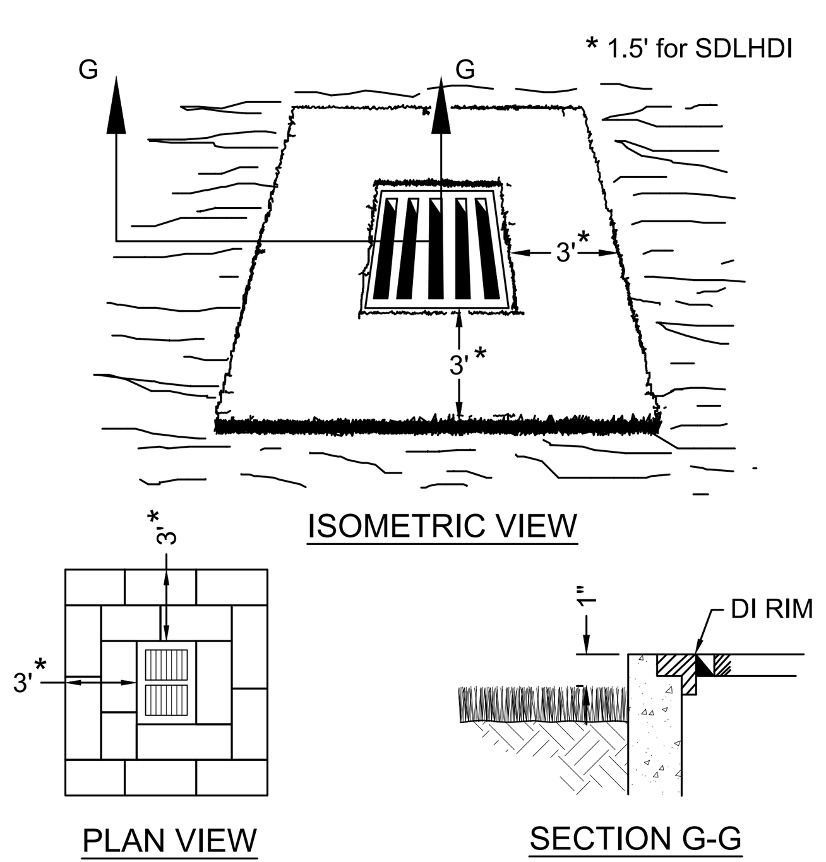
LEGEND
- DRUM
- STATIONARY SIGN
- PORTABLE SIGN
- PORTABLE CONCRETE BARRIER
- DIRECTION OF TRAFFIC FLOW
- TEMPORARY CRASH CUSHION

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

1-18

ROADWAY STANDARD DRAWING FOR
TEMPORARY SHOULDER CLOSURES

SHEET 1 OF 1
1101.04



ALTERNATE SOD INLET PROTECTION
DROP INLET & SDLHDI SEDIMENT FILTER

6

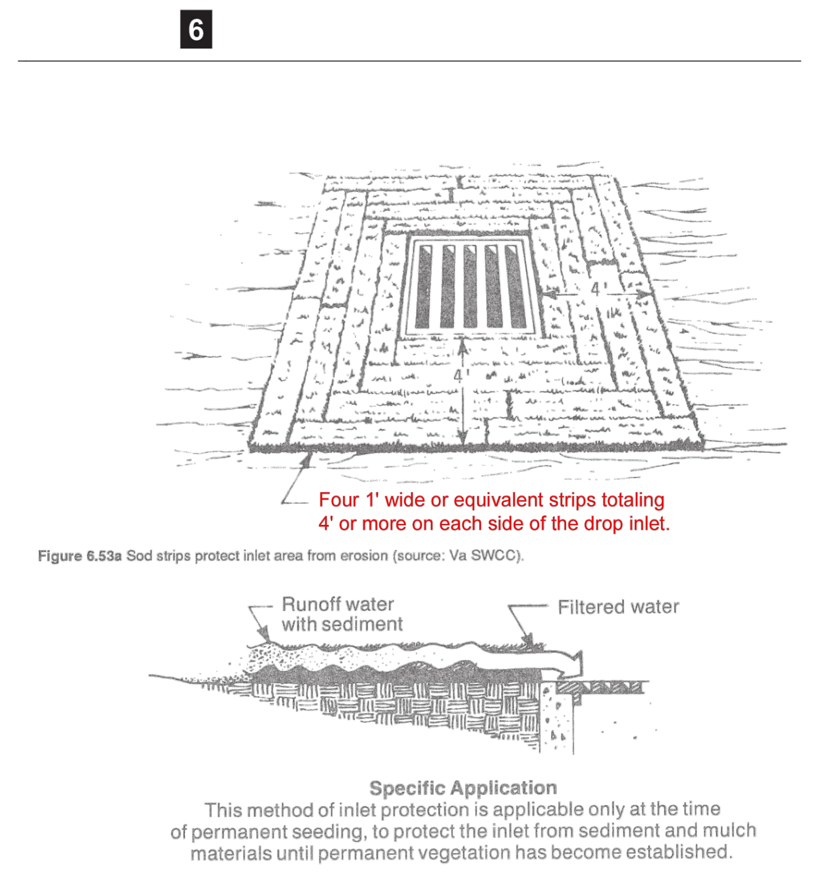


Figure 6.53a Sod strips protect inlet area from erosion (source: Va SWCC).

Figure 6.53b Sod drop inlet sediment filter (source: Va SWCC)

INLET PROTECTION

SCALE: NTS

6.53.2

CIP

Practice Standards and Specifications

6.55

ROCK PIPE INLET PROTECTION

Definition A horseshoe shaped rock dam structure at a pipe inlet with a sediment storage area around the outside perimeter of the structure.

Purpose To prevent sediment from entering, accumulating in and being transferred by a culvert or storm drainage system prior to stabilization of the disturbed drainage area. This practice allows early use of the storm drainage system.

Conditions Where Practice Applies Rock pipe inlet protection may be used at pipes with a maximum diameter of 36 inches. This inlet protection may be used to supplement additional sediment traps or basins at the pipe outlet, or used in combination with an excavated sediment storage area to serve as a temporary sediment trap. Pipe inlet protection should be provided to protect the storm drainage system and downstream areas from sedimentation until permanent stabilization of the disturbed drainage area.

Do not install this measure in an intermittent or perennial stream.

Planning Considerations When construction on a project reaches a stage where culverts and other storm drainage structures are installed and many areas are brought to the desired grade, there is a need to protect the points where runoff can leave the site through culverts or storm drains. Similar to drop and curb inlets, culverts receiving runoff from disturbed areas can convey large amounts of sediment to lakes or streams. Even if the pipe discharges into a sediment trap or basin, the pipe or pipe system itself may clog with sediment.

Design Criteria When used in combination with an excavated sediment storage area to serve as a temporary sediment trap, the design criteria for temporary sediment traps must be satisfied. The maximum drainage area should be 5 acres, and 3600 cubic feet of sediment storage per acre of disturbed drainage area should be provided.

The minimum stone height should be 2 feet, with side slopes no steeper than 2:1. The stone "horseshoe" around the pipe inlet should be constructed of Class B or Class I riprap, with a minimum crest width of 3 feet. The outside face of the riprap should be coved with a 12-inch thick layer of #5 or #57 washed stone.

In preparing plans for rock pipe inlet protection, it is important to protect the embankment over the pipe from overtopping. The top of the stone should be a minimum of 1 foot below the top of the fill over the pipe. The stone should tie into the fill on both sides of the pipe. The inside toe of the stone should be no closer than 2 feet from the culvert opening to allow passage of high flows.

The sediment storage area should be excavated upstream of the rock pipe inlet protection, with a minimum depth of 18 inches below grade.

Rev. 6/06 6.55.1

ROCK PIPE INLET PROTECTION NOTES

Rev. 6/06 6.55.1
SCALE: NTS

Practice Standards and Specifications

Construction Specifications

1. Clear the area of all debris that might hinder excavation and disposal of spoil.

2. Install the Class B or Class I riprap in a semi-circle around the pipe inlet. The stone should be built up higher on each end where it ties into the embankment. The minimum crest width of the riprap should be 3 feet, with a minimum bottom width of 11 feet. The minimum height should be 2 feet, but also 1 foot lower than the shoulder of the embankment or diversions.

3. A 1 foot thick layer of NC DOT #5 or #57 stone should be placed on the outside slope of the riprap.

4. The sediment storage area should be excavated around the outside of the stone horseshoe 18 inches below natural grade.

5. When the contributing drainage area has been stabilized, fill depression and establish final grading elevations, compact area properly, and stabilize with ground cover.

Maintenance Inspect rock pipe inlet protection at least weekly and after each significant (½ inch or greater) rainfall event and repair immediately. Remove sediment and restore the sediment storage area to its original dimensions when the sediment has accumulated to one-half the design depth of the trap. Place the sediment that is removed in the designated disposal area and replace the contaminated part of the gravel facing.

Check the structure for damage. Any riprap displaced from the stone horseshoe must be replaced immediately.

After all the sediment-producing areas have been permanently stabilized, remove the structure and all the unstable sediment. Smooth the area to blend with the adjoining areas and provide permanent ground cover (*Surface Stabilization*).

References

Inlet protection
6.52, Block and Gravel Inlet Protection (Temporary)

Sediment Trap and Barriers
6.60, Temporary Sediment Trap

Surface Stabilization
6.15, Riprap

North Carolina Department of Transportation
Erosion & Sedimentation Guidelines for Division Maintenance Operation, 1993.

Virginia Erosion and Sediment Control Handbook. 1992. STD & SPEC 3.08, Culvert Inlet Protection. pages III-46 - III-51 (Culvert Inlets Sediment Trap).

Rev. 6/06 6.55.3

ROCK PIPE INLET PROTECTION NOTES

Rev. 6/06 6.55.3
SCALE: NTS

Practice Standards and Specifications

6.53 IP

SOD DROP INLET PROTECTION

Definition A permanent grass sod filter area around a storm drain drop inlet in a stabilized, well-vegetated area.

Purpose To limit sediment from entering storm drainage systems as a permanent protection measure.

Conditions Where Practice Applies Where the drainage area of the drop inlet has been permanently seeded and mulched, and the immediate surrounding area is to remain in dense vegetation. This practice is well suited for lawns adjacent to large buildings.

Design Criteria Keep velocity of design flow over the sod area at all points less than 5 ft/sec.

Place sod to form a turf mat completely covering the soil surface for a minimum distance of 4 feet from each side of the drop inlet where runoff will enter.

Maintain the slope of the sodded area no greater than 4:1.

Keep the drainage area no greater than 2 acres; maintain this area undisturbed or stabilize it.

Construction Specifications

1. Bring the area to be sodded to final grade elevation with top soil. Add fertilizer and lime, and install sod according to Practice 6.12, *Sodding*.

2. Lay all sod strips perpendicular to the direction of flows.

3. Keep the width of the sod at least 4 ft in the direction of flows.

4. Stagger sod strips so that adjacent strip ends are not aligned.

Maintenance During the first 4 weeks, water sod as often as necessary to maintain moist soil to a minimum depth of 2 inches.

Maintain grass height at least 2 inches with no more than one-third the shoot height (grass leaf) removed in any mowing.

Apply fertilizer as necessary to maintain the desired growth and sod density. Add lime as needed to maintain the proper pH.

References
Surface Stabilization
6.12, Sodding

6.53.1

INLET PROTECTION

SCALE: NTS 6.53.1

Practice Standards and Specifications

Construction Specifications

1. Clear the area of all debris that might hinder excavation and disposal of spoil.

2. Install the Class B or Class I riprap in a semi-circle around the pipe inlet. The stone should be built up higher on each end where it ties into the embankment. The minimum crest width of the riprap should be 3 feet, with a minimum bottom width of 11 feet. The minimum height should be 2 feet, but also 1 foot lower than the shoulder of the embankment or diversions.

3. A 1 foot thick layer of NC DOT #5 or #57 stone should be placed on the outside slope of the riprap.

4. The sediment storage area should be excavated around the outside of the stone horseshoe 18 inches below natural grade.

5. When the contributing drainage area has been stabilized, fill depression and establish final grading elevations, compact area properly, and stabilize with ground cover.

Maintenance Inspect rock pipe inlet protection at least weekly and after each significant (½ inch or greater) rainfall event and repair immediately. Remove sediment and restore the sediment storage area to its original dimensions when the sediment has accumulated to one-half the design depth of the trap. Place the sediment that is removed in the designated disposal area and replace the contaminated part of the gravel facing.

Check the structure for damage. Any riprap displaced from the stone horseshoe must be replaced immediately.

After all the sediment-producing areas have been permanently stabilized, remove the structure and all the unstable sediment. Smooth the area to blend with the adjoining areas and provide permanent ground cover (*Surface Stabilization*).

References

Inlet protection
6.52, Block and Gravel Inlet Protection (Temporary)

Sediment Trap and Barriers
6.60, Temporary Sediment Trap

Surface Stabilization
6.15, Riprap

North Carolina Department of Transportation
Erosion & Sedimentation Guidelines for Division Maintenance Operation, 1993.

Virginia Erosion and Sediment Control Handbook. 1992. STD & SPEC 3.08, Culvert Inlet Protection. pages III-46 - III-51 (Culvert Inlets Sediment Trap).

ROCK PIPE INLET PROTECTION NOTES 6.55.3

SCALE: NTS

V23026 - WRIGHTSVILLE BLVD, PHASE 1

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NORTH CAROLINA PROFESSIONAL SEAL 057308 ENGINEER EMILY R. ZELTMANN 03/01/2024

Project #	V23026
Drawn by	MGH
Submittal Date	03/01/2024
Scale	AS NOTED
SWaM Certification	715559
VA Firm #	0405001994

WRIGHTSVILLE BOULEVARD PHASE 1
WATER AND STORMWATER IMPROVEMENTS
TOWN OF KILL DEVIL HILLS
DARE COUNTY, NORTH CAROLINA

SHEET NAME
E AND S & TRAFFIC CONTROL DETAILS

SHEET #
C-505

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

SECTION E: GROUND STABILIZATION

Required Ground Stabilization Timeframes

Site Area Description	Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
• Temporary grass seed covered with straw or other mulches and tackifiers • Hydroseeding • Rolled erosion control products with or without temporary grass seed • Appropriately applied straw or other mulch • Plastic sheeting	• Permanent grass seed covered with straw or other mulches and tackifiers • Geotextile fabrics such as permanent soil reinforcement matting • Hydroseeding • Shrubs or other permanent plantings covered with mulch • Uniform and evenly distributed ground cover sufficient to restrain erosion • Structural methods such as concrete, asphalt or retaining walls • Rolled erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

1. Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
2. Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
3. Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
4. Provide ponding area for containment of treated Stormwater before discharging offsite.
5. Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

EQUIPMENT AND VEHICLE MAINTENANCE

1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the problem has been corrected.
6. Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, sized and placed appropriately for the needs of site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

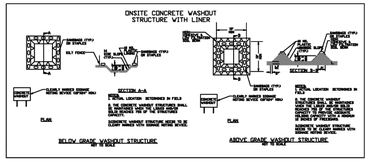
PORTABLE TOILETS

1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

EARTHEN STOCKPILE MANAGEMENT

1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.

NORTH CAROLINA Environmental Quality



CONCRETE WASHOUTS

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

HERBICIDES, PESTICIDES AND RODENTICIDES

1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
3. Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

HAZARDOUS AND TOXIC WASTE

1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01/19

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those un-attended days (anc this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDCs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solkds or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a streams has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

Item to Document	Documentation Requirements
(a) Each E&SC measure has been installed and does not significantly deviate from the locations, dimensions and relative elevctions shown on the approved E&SC plan.	Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC plan. This documentation is required upon the initial installation of the E&SC measures or if the E&SC measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC plan.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&SC measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC measures.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

2. Additional Documentation to be Kept on Site

In addition to the E&SC plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

(a) This General Permit as well as the Certificate of Coverage, after it is received.

(b) Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

3. Documentation to be Retained for Three Years

All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that Must be Reported

Permittees shall report the following occurrences:

(a) Visible sediment deposition in a stream or wetland.

(b) Oil spills if:
- They are 25 gallons or more,
- They are less than 25 gallons but cannot be cleaned up within 24 hours,
- They cause sheen on surface waters (regardless of volume), or
- They are within 100 feet of surface waters (regardless of volume).

(c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.

(d) Anticipated bypasses and unanticipated bypasses.

(e) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0368.

Occurrence	Reporting Timeframes [After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• ***Within 24 hours,*** an oral or electronic notification. • ***Within 7 calendar days,*** a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	• ***Within 24 hours,*** an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	• ***A report at least ten days before the date of the bypass, if possible.*** The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	• ***Within 24 hours,*** an oral or electronic notification. • ***Within 7 calendar days,*** a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment[40 CFR 122.41(l)(7)]	• ***Within 24 hours,*** an oral or electronic notification. • ***Within 7 calendar days,*** a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6). • Division staff may waive the requirement for a written report on a case-by-case basis.

PART II, SECTION G, ITEM (4)
DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

(a) The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,
(b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,
(c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,
(d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,
(e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
(f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

NORTH CAROLINA Environmental Quality

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

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Project #	V23026
Drawn by	MGH
Submittal Date	03/01/2024
Scale	AS NOTED
SWaM Certification	715559
VA Firm #	0405001994

WRIGHTSVILLE BOULEVARD PHASE 1
WATER AND STORMWATER IMPROVEMENTS
TOWN OF KILL DEVIL HILLS
DARE COUNTY, NORTH CAROLINA

SHEET NAME
E AND S NCG01

SHEET # C-506

V23026 - WRIGHTSVILLE BLVD, PHASE 1