



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

May 5, 2014

MEMO TO: Jon Nance, PE, Deputy Chief Engineer
Kevin Lacy, PE, State Traffic Engineer
Ricky Greene, Jr., PE, Director of Field Support
Mike Bruff, PE, Manager, Transportation Planning Branch
Roadway Design Unit Regional Managers
Richard Hancock, PE, Manager, Project Development & Environmental Analysis

FROM: Debbie Barbour, PE *Debbie Barbour*
Director of Preconstruction

SUBJECT: "Typical" Highway Cross Sections

The comprehensive planning and design "typical" highway cross sections have been updated in response to the Strategic Transportation Investments Law (House Bill 817) and are also consistent with SPOTOnline (used for Project Prioritization), NCDOT's GIS-based Web Application for providing automated, near real-time prioritization scores and project costs. This guidance establishes design elements that emphasize safety, mobility, complete streets, and accessibility for multiple modes of travel. These "typical" highway cross sections should be used as guidelines for comprehensive transportation planning, project planning and project design activities. The specific and final cross section details and right of way limits for projects will be established through the preparation of the National Environmental Policy Act (NEPA) documentation and through final design preparation.

Please provide this information to your Unit staff, Division staff, and to others as appropriate for their information and immediate implementation. This guidance is intended for State Transportation Improvement Program (STIP) projects and other applicable projects. If you have any questions, please contact one of the Roadway Design Unit Regional Managers, Glenn Mumford, PE, Roger Thomas, PE, or Doug Taylor, PE at 919-707-6200.

DMB/mb

Attachments

cc w/attachments: Mike Holder, PE
Susan Pullium
Rodger Rochelle, PE
Calvin Leggett, PE
Terry Gibson, PE

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WEBSITE: WWW.NCDOT.GOV

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

MEMO ("Typical" Highway Cross Sections)

Page 2

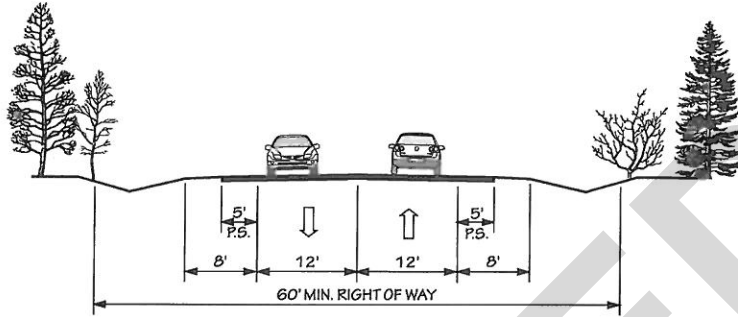
May 5, 2014

Division Engineers
Don Voelker
Tom Childrey
Debbie Collins
Lauren Blackburn
Ron Hancock, PE
Division Design Engineers

ARCHIVED
FOR REFERENCE ONLY

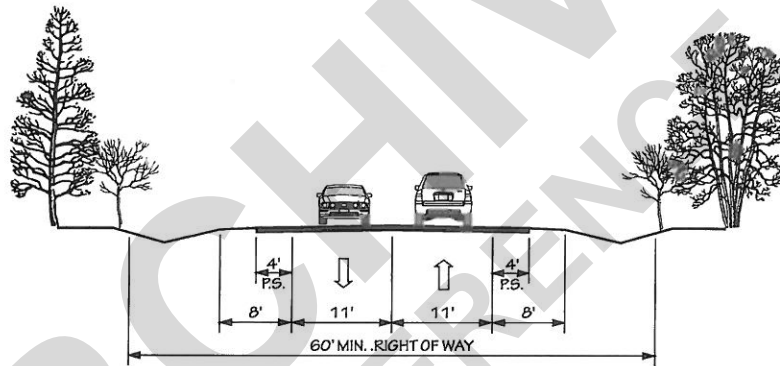
"TYPICAL" HIGHWAY CROSS SECTIONS

2A



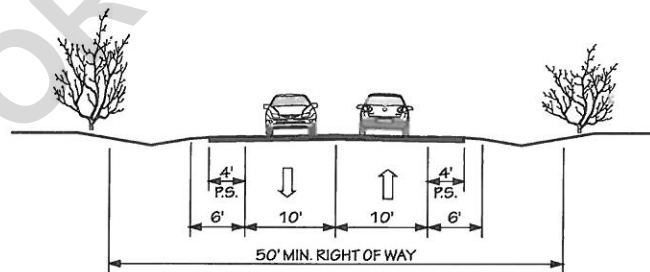
2 LANE UNDIVIDED WITH PAVED SHOULDERS
POSTED SPEED 55 MPH

2B



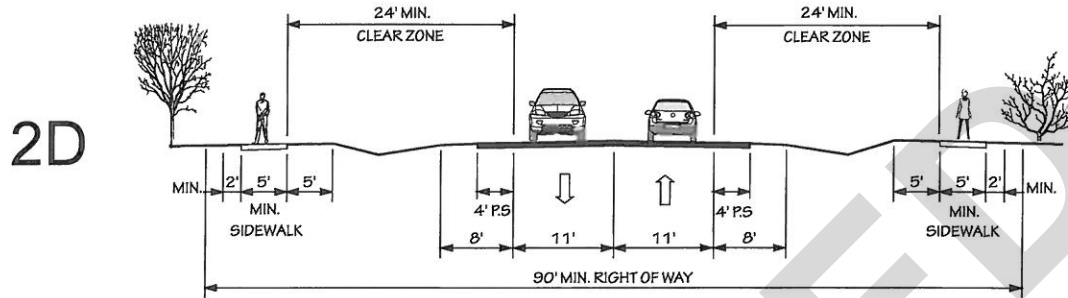
2 LANES UNDIVIDED
POSTED SPEED 45 MPH OR LESS

2C

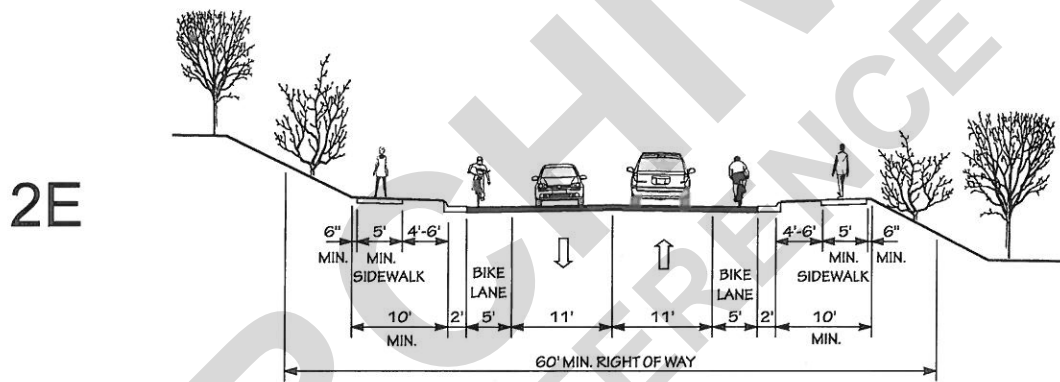


2 LANE UNDIVIDED WITH PAVED SHOULDERS
POSTED SPEED 25 - 35 MPH

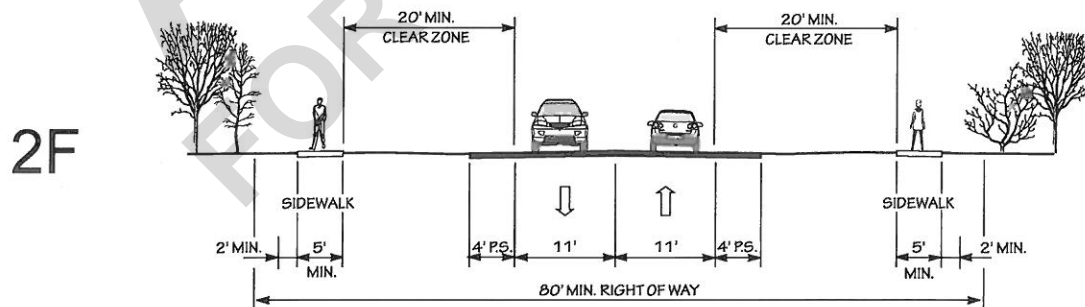
"TYPICAL" HIGHWAY CROSS SECTIONS



**2 LANE UNDIVIDED WITH PAVED SHOULDERS AND SIDEWALKS
POSTED SPEED 25-45 MPH**

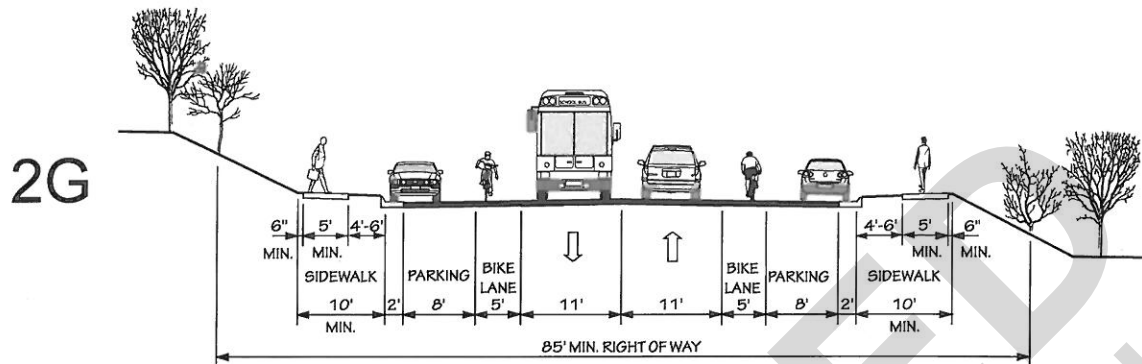


**2 LANE UNDIVIDED WITH CURB & GUTTER, BIKE LANES, AND SIDEWALKS
POSTED SPEED 25-45 MPH**

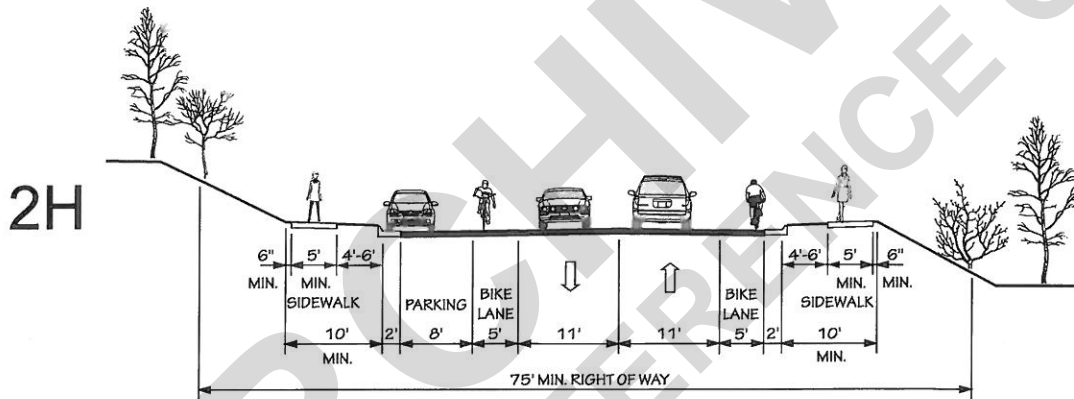


**2 LANE UNDIVIDED WITH PAVED SHOULDERS AND SIDEWALKS
IN CMAA COUNTIES
POSTED SPEED 25-45 MPH**

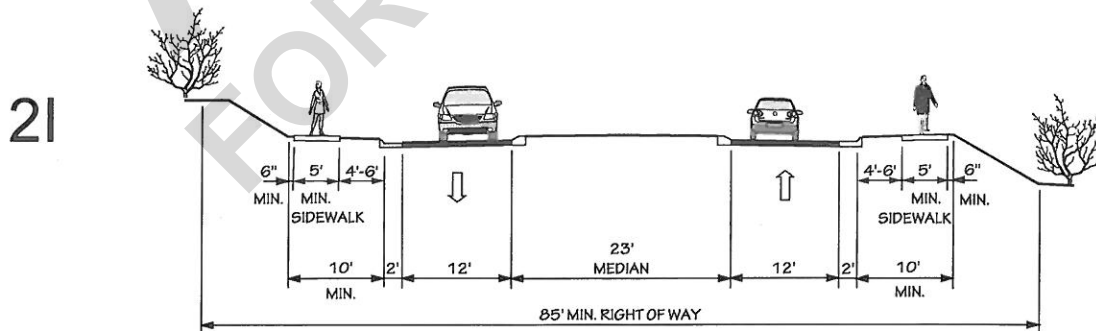
"TYPICAL" HIGHWAY CROSS SECTIONS



2 LANE UNDIVIDED WITH CURB & GUTTER, PARKING BOTH SIDES, BIKE LANES, AND SIDEWALKS
POSTED SPEED 25-45 MPH

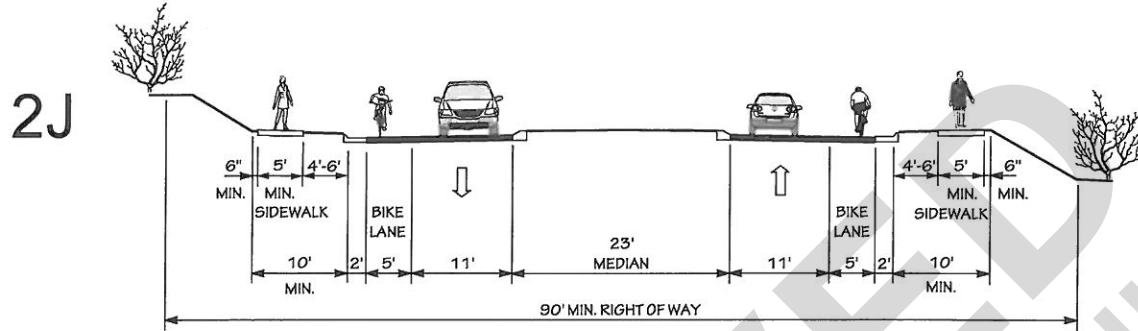


2 LANE UNDIVIDED WITH CURB & GUTTER, PARKING ONE SIDE, BIKE LANES, AND SIDEWALKS
POSTED SPEED 25-45 MPH

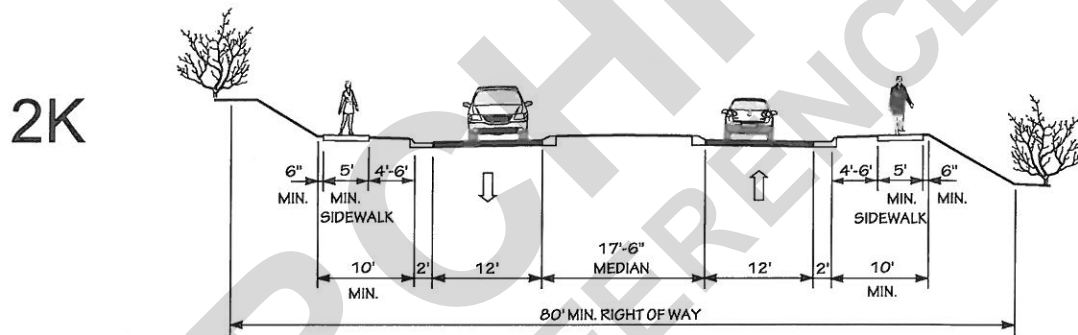


2 LANE DIVIDED (23' RAISED MEDIAN) WITH CURB & GUTTER AND SIDEWALKS
POSTED SPEED 25-45 MPH

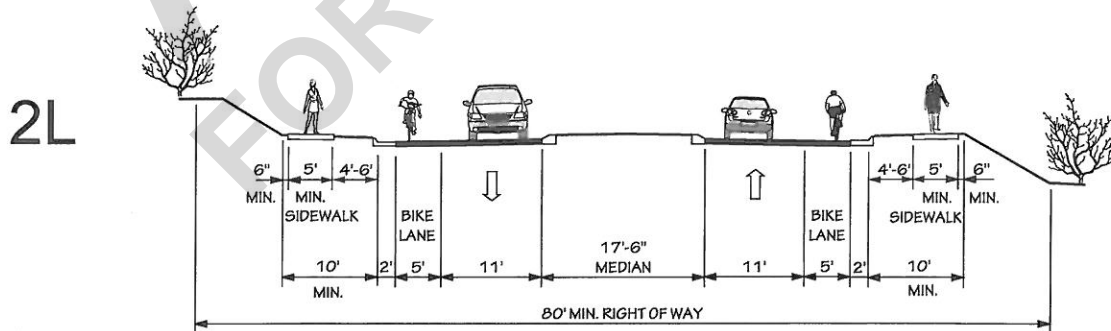
"TYPICAL" HIGHWAY CROSS SECTIONS



2 LANE DIVIDED (23' RAISED MEDIAN) WITH CURB & GUTTER,
BIKE LANES, AND SIDEWALKS
POSTED SPEED 25-45 MPH



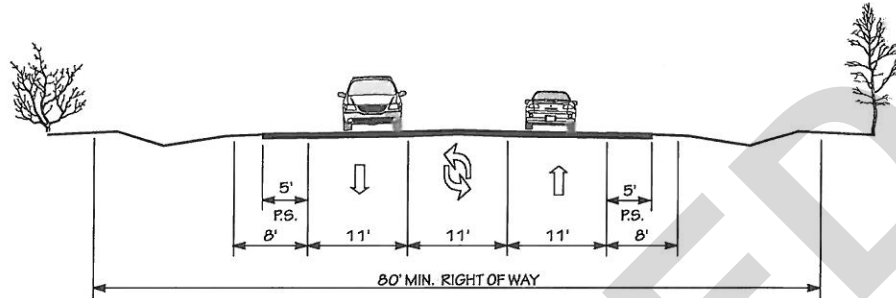
2 LANE DIVIDED (17'-6" RAISED MEDIAN)
WITH CURB & GUTTER AND SIDEWALKS
POSTED SPEED 25-45 MPH



2 LANE DIVIDED (17'-6" RAISED MEDIAN)
WITH CURB & GUTTER, BIKE LANES, AND SIDEWALKS
POSTED SPEED 25-45 MPH

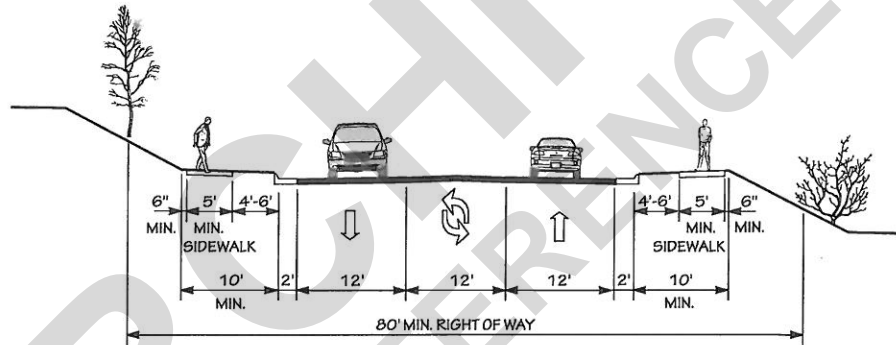
"TYPICAL" HIGHWAY CROSS SECTIONS

3A



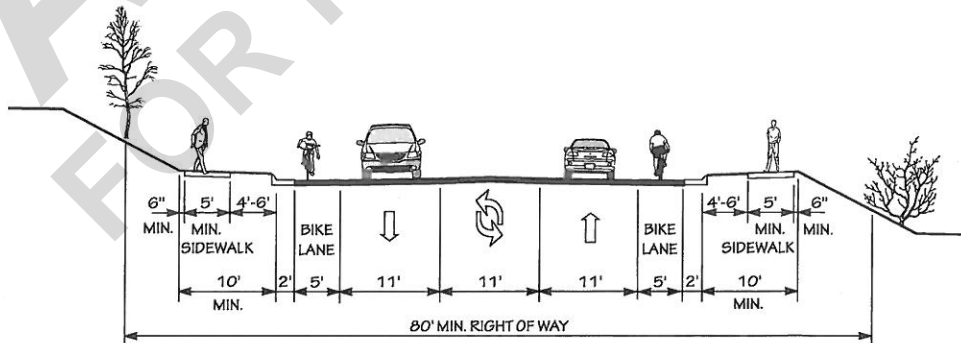
2 LANE WITH TWO WAY LEFT TURN LANE, AND PAVED SHOULDERS
POSTED SPEED 25-55 MPH

3B



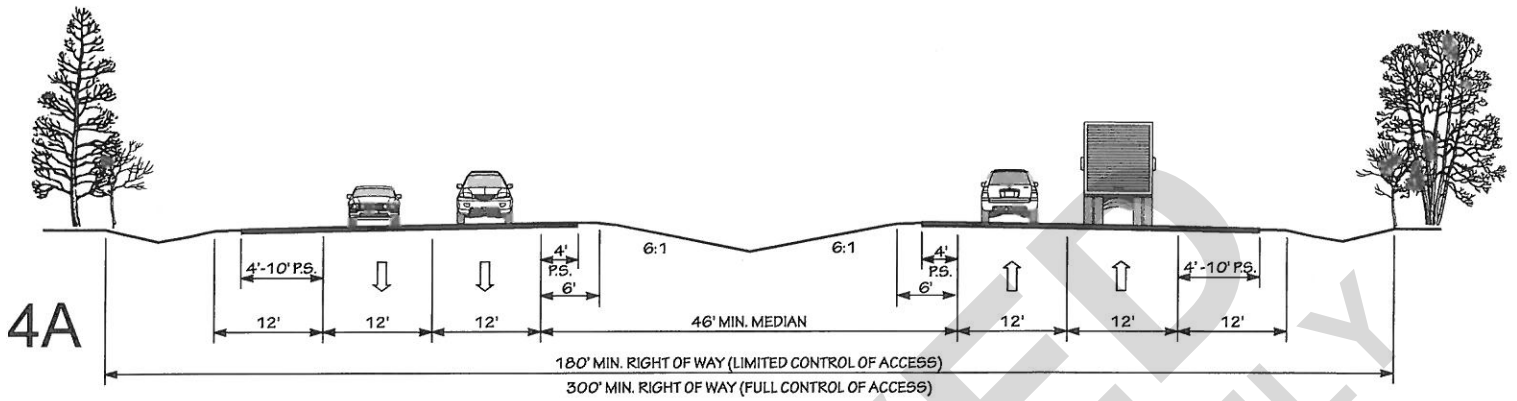
2 LANE WITH TWO WAY LEFT TURN LANE, CURB & GUTTER,
AND SIDEWALKS
POSTED SPEED 25-45 MPH

3C

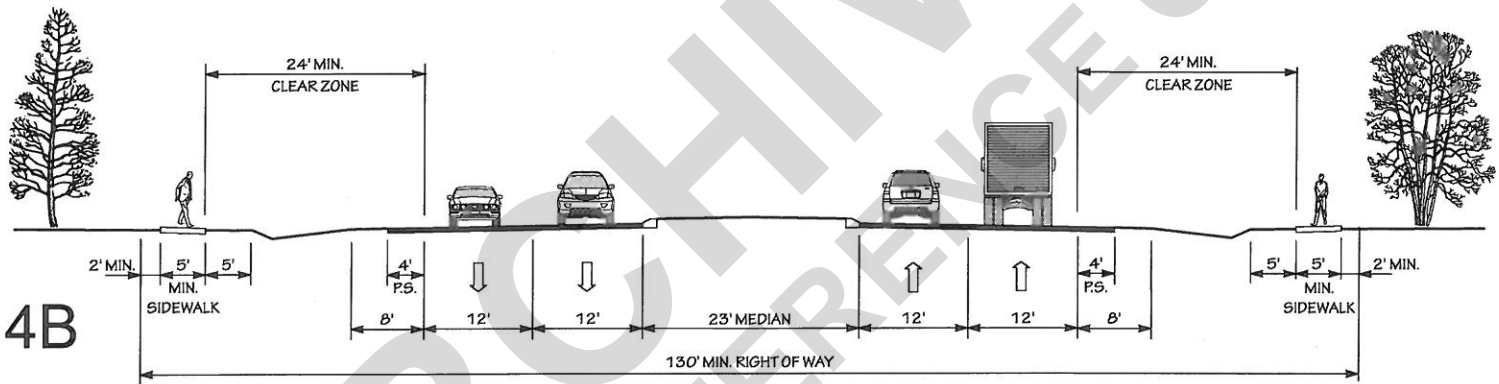


2 LANE WITH TWO WAY LEFT TURN LANE, CURB & GUTTER,
BIKE LANES, AND SIDEWALKS
POSTED SPEED 25-45 MPH

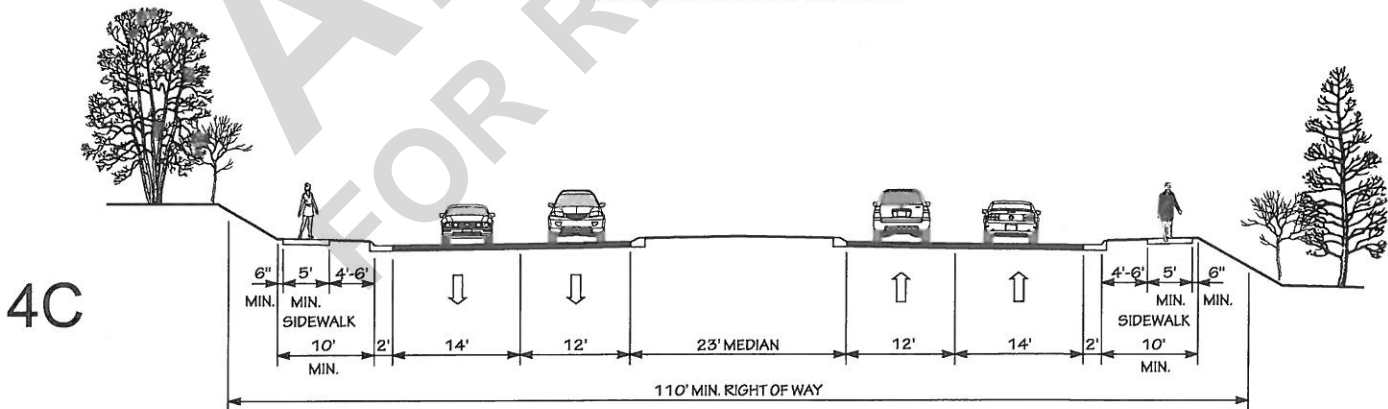
"TYPICAL" HIGHWAY CROSS SECTIONS



4 LANE DIVIDED (46' DEPRESSED MEDIAN) WITH PAVED SHOULDERS
POSTED SPEED 45-70 MPH

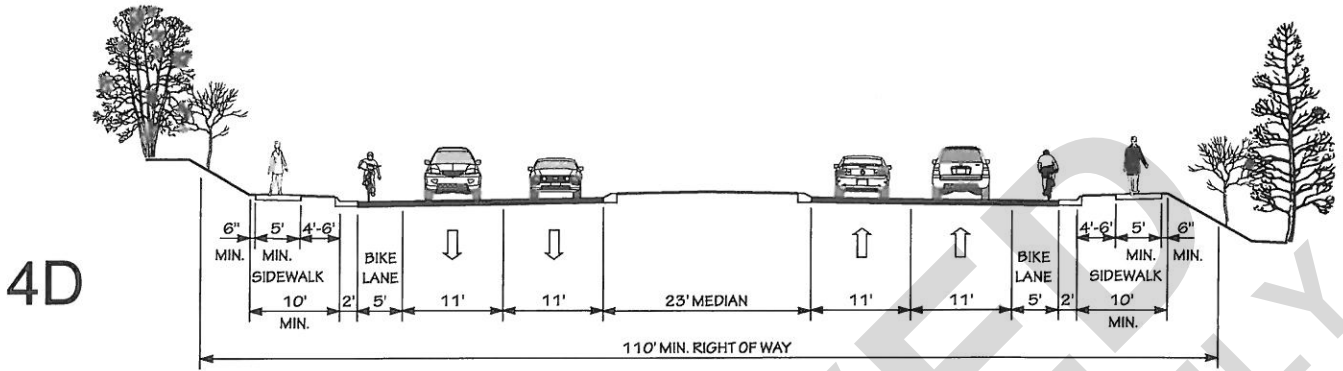


4 LANE DIVIDED (23' RAISED MEDIAN) WITH PAVED SHOULDERS
AND SIDEWALKS
POSTED SPEED 35-55 MPH

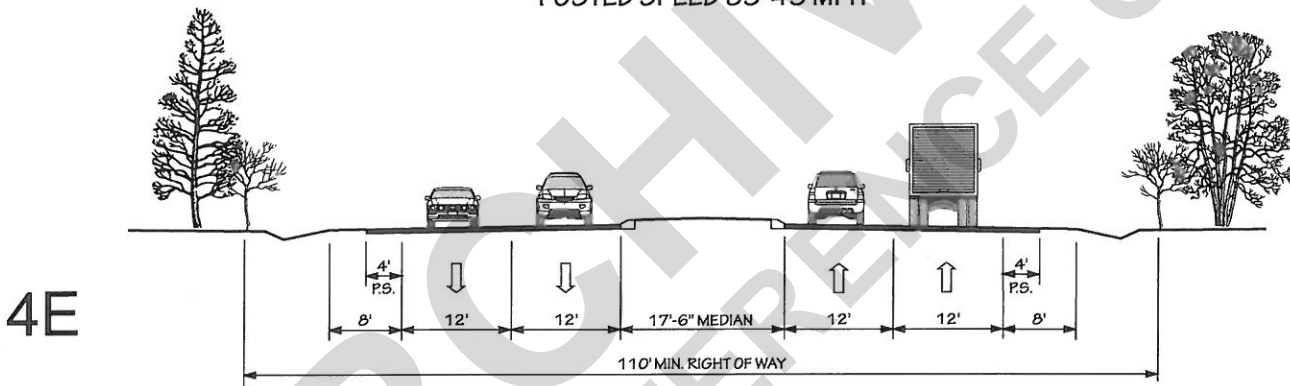


4 LANE DIVIDED (23' RAISED MEDIAN) WITH CURB & GUTTER,
WIDE OUTSIDE LANES, AND SIDEWALKS
POSTED SPEED 35-45 MPH

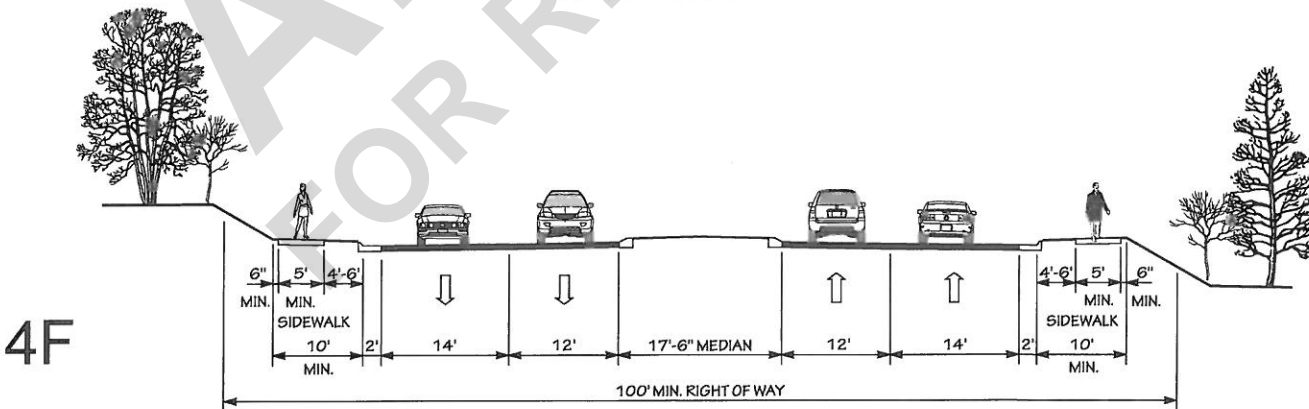
"TYPICAL" HIGHWAY CROSS SECTIONS



4D
 4 LANE DIVIDED (23' RAISED MEDIAN) WITH CURB & GUTTER,
 WIDE OUTSIDE LANES, BIKE LANES, AND SIDEWALKS
 POSTED SPEED 35-45 MPH

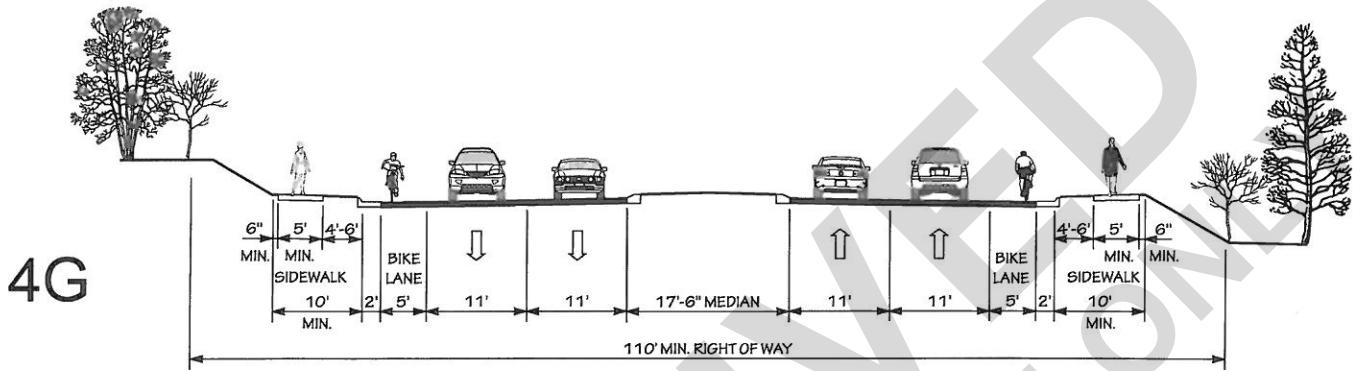


4E
 4 LANE DIVIDED (17'-6" RAISED MEDIAN) WITH
 PAVED SHOULDERS AND SIDEWALKS
 POSTED SPEED 35-55 MPH



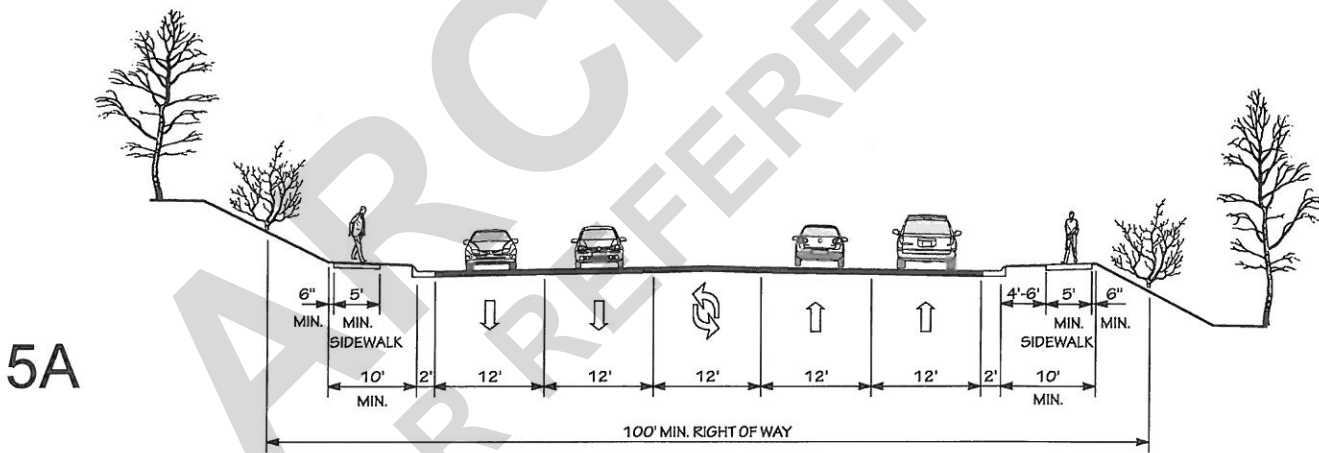
4F
 4 LANE DIVIDED (17'-6" RAISED MEDIAN) WITH CURB & GUTTER,
 WIDE OUTSIDE LANES, AND SIDEWALKS
 POSTED SPEED 35-45 MPH

"TYPICAL" HIGHWAY CROSS SECTIONS



4G

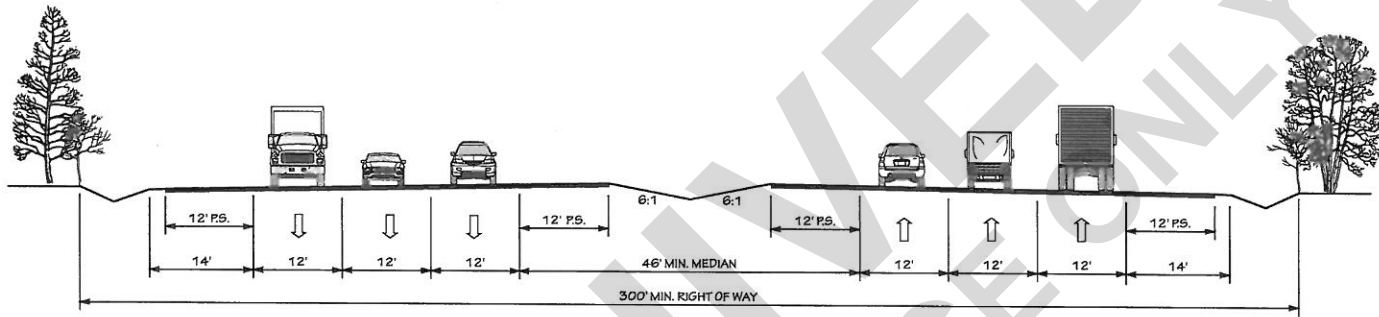
4 LANE DIVIDED (17'-6" RAISED MEDIAN) WITH CURB & GUTTER,
BIKE LANES, AND SIDEWALKS
POSTED SPEED 35-45 MPH



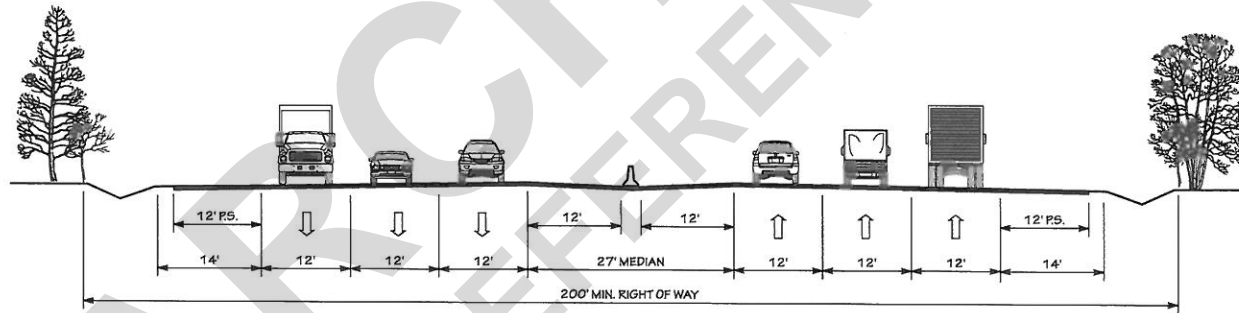
5A

4 LANE WITH TWO WAY LEFT TURN LANE, CURB & GUTTER,
AND SIDEWALKS
POSTED SPEED 35-45 MPH

"TYPICAL" HIGHWAY CROSS SECTIONS

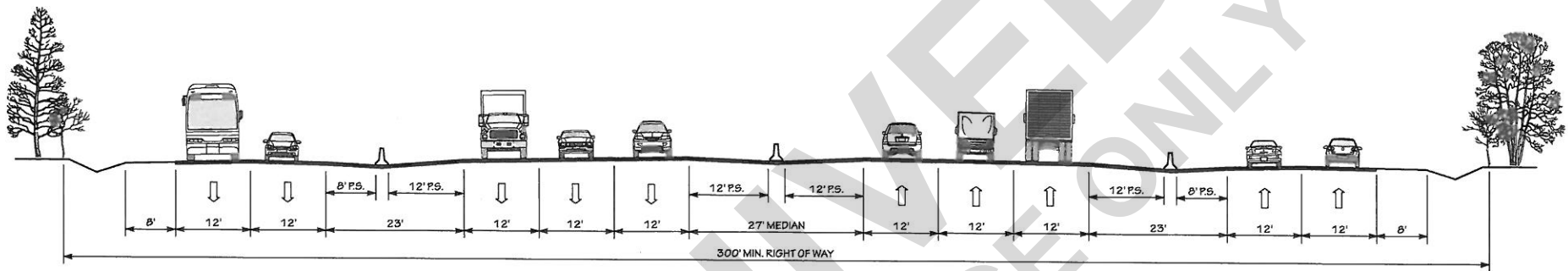


6A 6 LANE DIVIDED (46' DEPRESSED MEDIAN) WITH PAVED SHOULDERS
POSTED SPEED 45-70 MPH



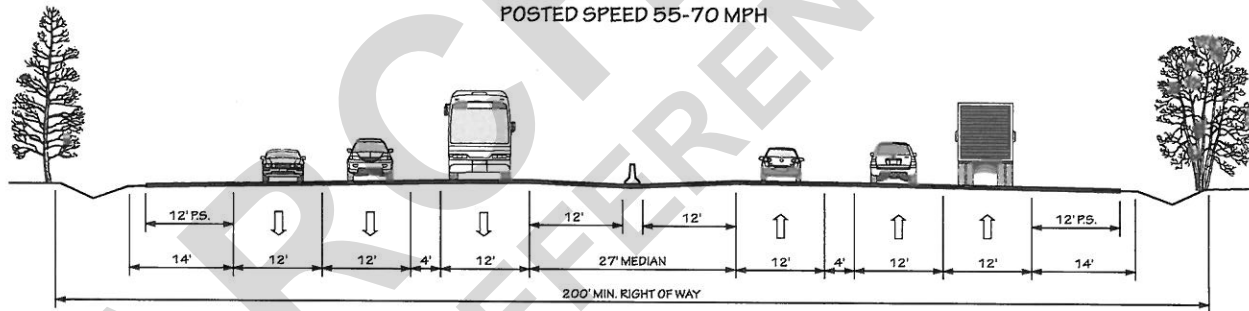
6B 6 LANE DIVIDED (27' MEDIAN WITH JERSEY BARRIER)
WITH PAVED SHOULDERS
POSTED SPEED 55-70 MPH

"TYPICAL" HIGHWAY CROSS SECTIONS



6C

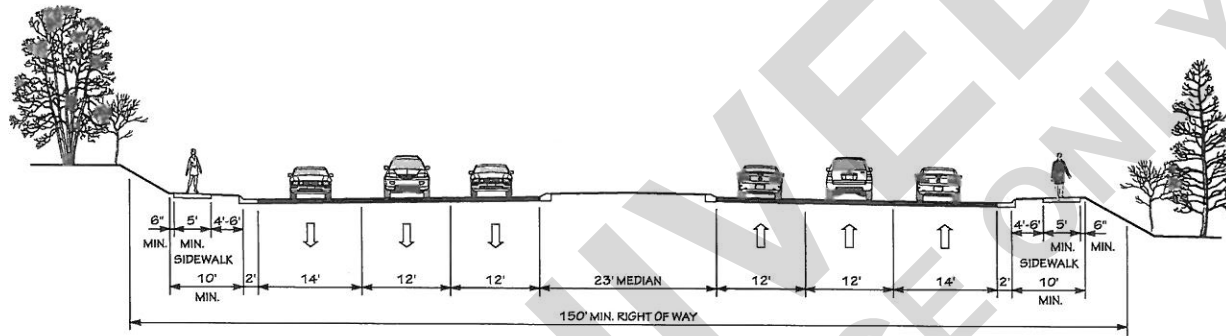
6 LANE FREEWAY (27' MEDIAN WITH JERSEY BARRIER) WITH PAVED SHOULDERS AND 2 LANE ONE-WAY SERVICE ROADS EACH SIDE
POSTED SPEED 55-70 MPH



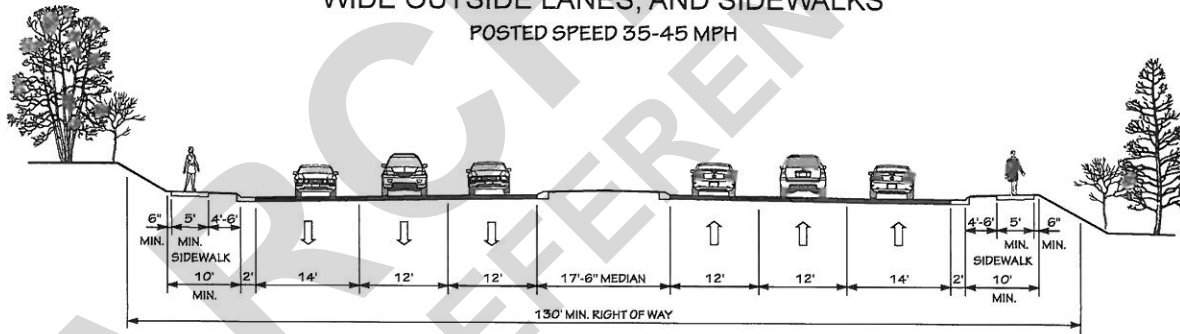
6D

6 LANE FREEWAY (4 GENERAL PURPOSE LANES, 2 MANAGED LANES, AND 27' MEDIAN WITH JERSEY BARRIER) WITH PAVED SHOULDERS
POSTED SPEED 55-70 MPH

"TYPICAL" HIGHWAY CROSS SECTIONS



6E 6 LANE DIVIDED (23' RAISED MEDIAN) WITH CURB & GUTTER,
WIDE OUTSIDE LANES, AND SIDEWALKS
POSTED SPEED 35-45 MPH



6F 6 LANE DIVIDED (17'-6" RAISED MEDIAN) WITH CURB & GUTTER,
WIDE OUTSIDE LANES, AND SIDEWALKS
POSTED SPEED 35-45 MPH

CAMA COUNTIES

Beaufort

Bertie

Brunswick

Camden

Carteret

Chowan

Craven

Currituck

Dare

Gates

Hertford

Hyde

New Hanover

Onslow

Pamlico

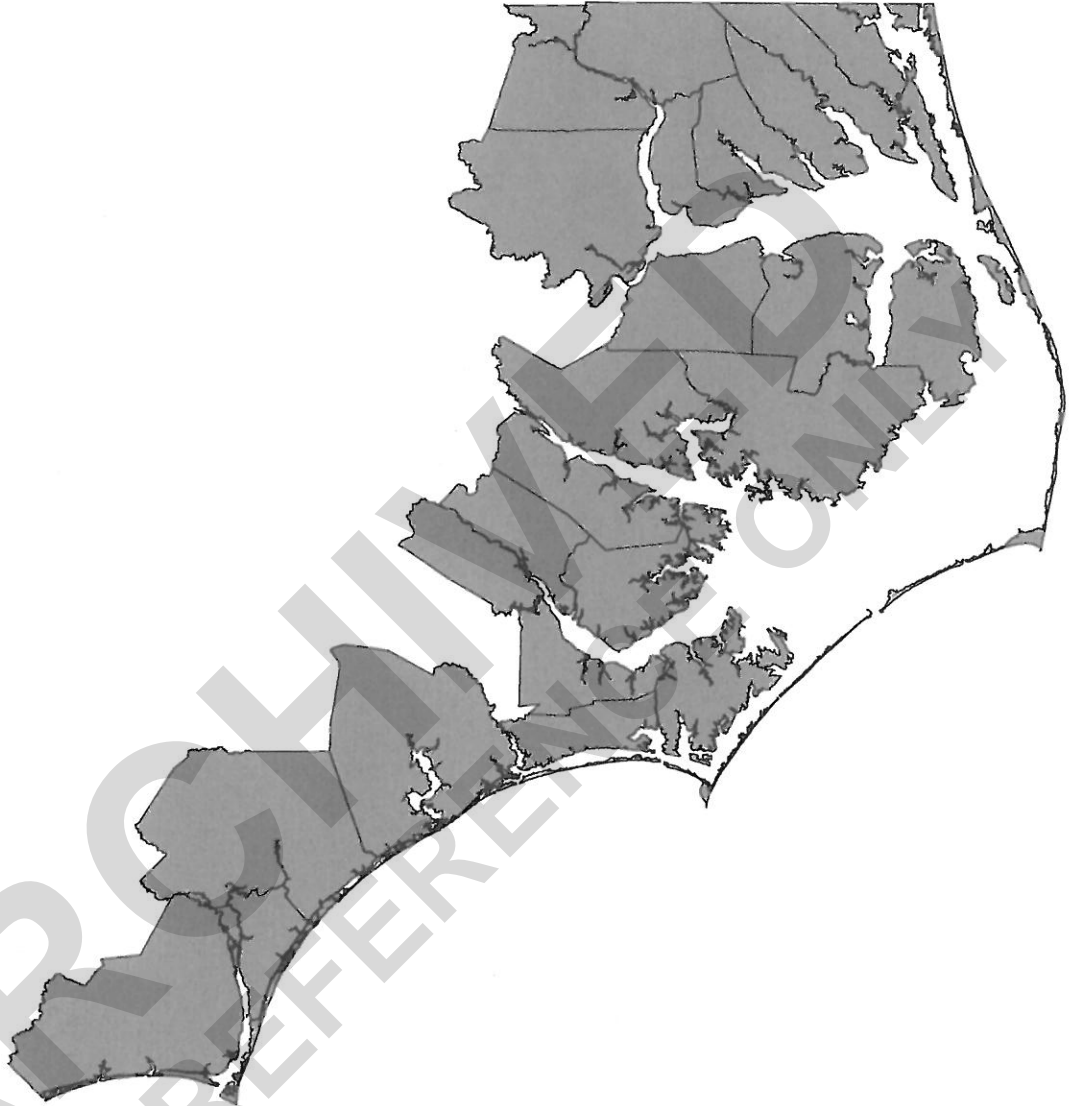
Pasquotank

Pender

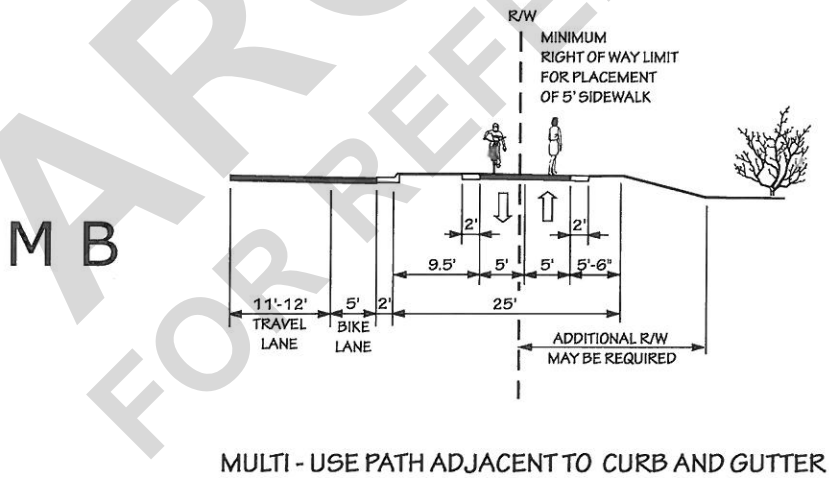
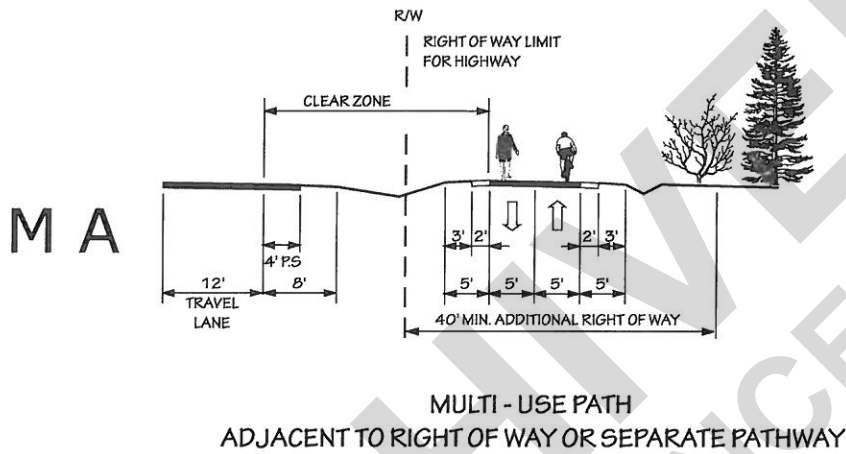
Perquimans

Tyrrell

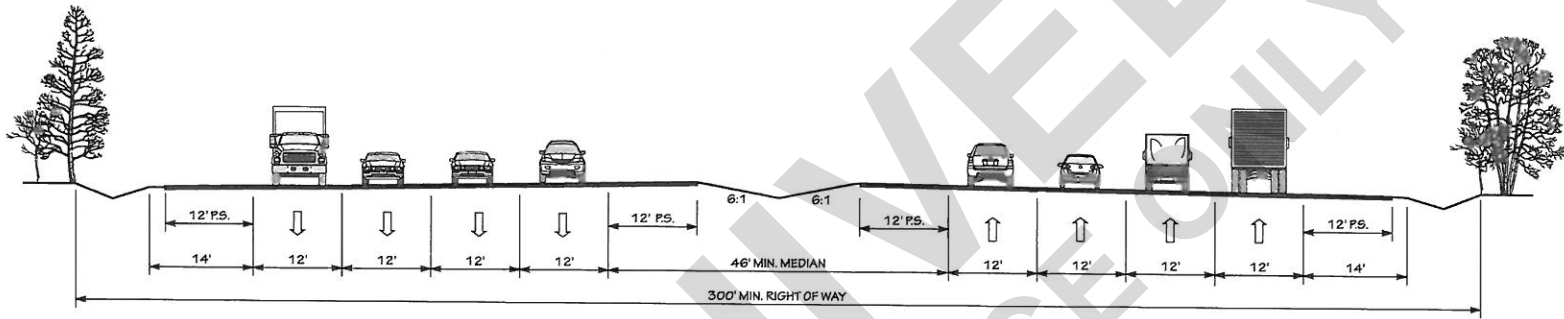
Washington



"TYPICAL" HIGHWAY CROSS SECTIONS



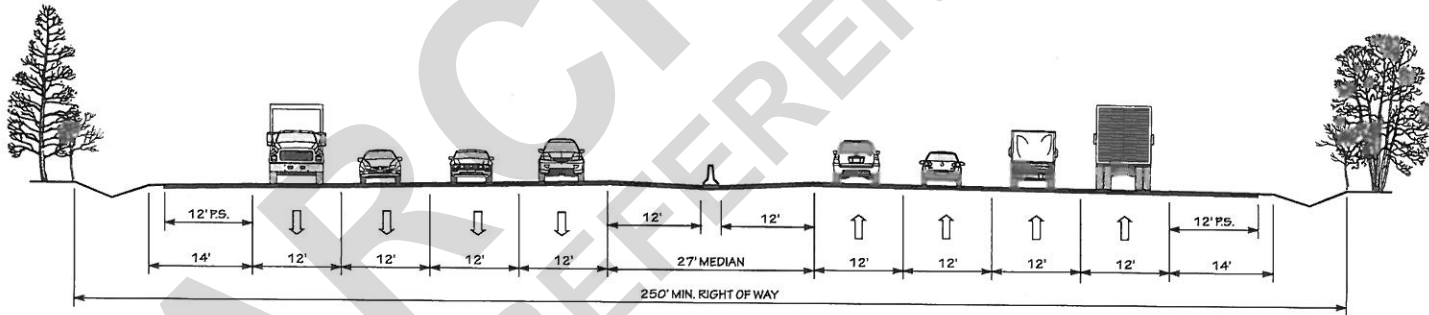
"TYPICAL" HIGHWAY CROSS SECTIONS



8A

8 LANE DIVIDED (46' DEPRESSED MEDIAN) WITH PAVED SHOULDERS

POSTED SPEED 45-70 MPH

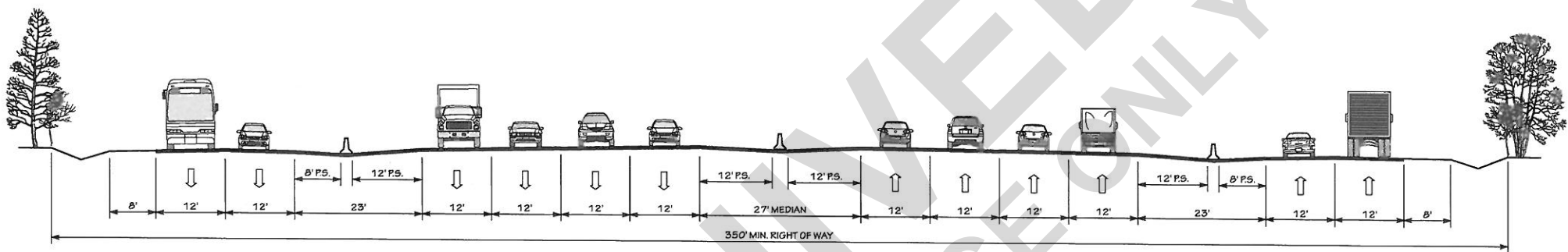


8B

8 LANE DIVIDED (27' MEDIAN WITH JERSEY BARRIER)
WITH PAVED SHOULDERS

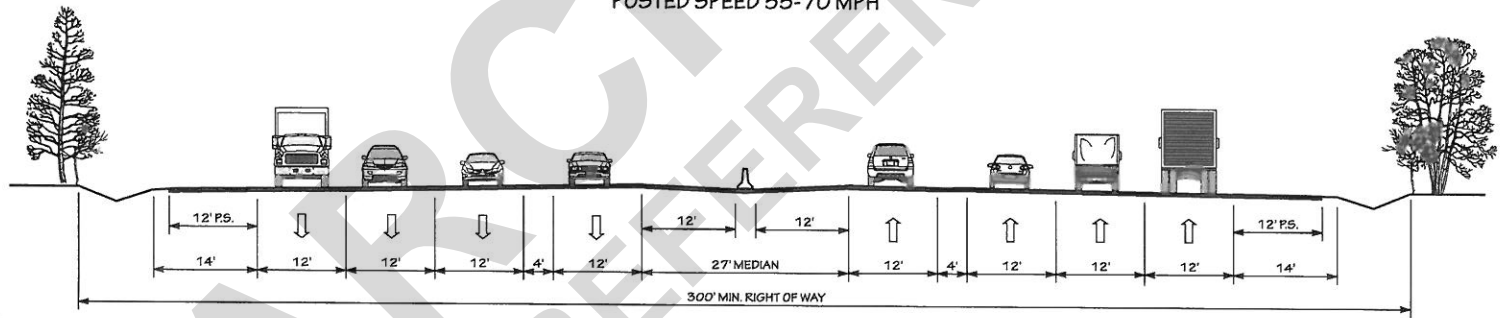
POSTED SPEED 55-70 MPH

"TYPICAL" HIGHWAY CROSS SECTIONS



8C

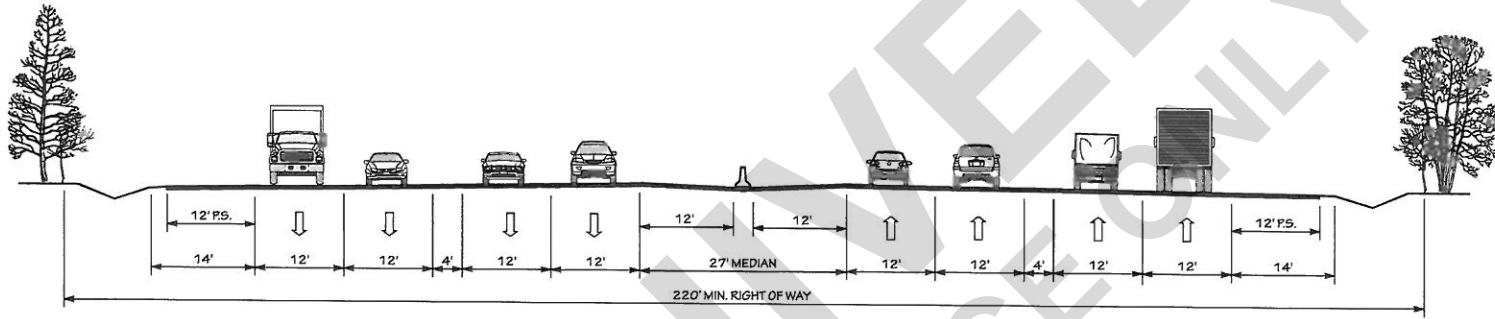
8 LANE FREEWAY (27' MEDIAN WITH JERSEY BARRIER) WITH PAVED SHOULDERS AND 2 LANE ONE-WAY SERVICE ROADS EACH SIDE
POSTED SPEED 55-70 MPH



8D

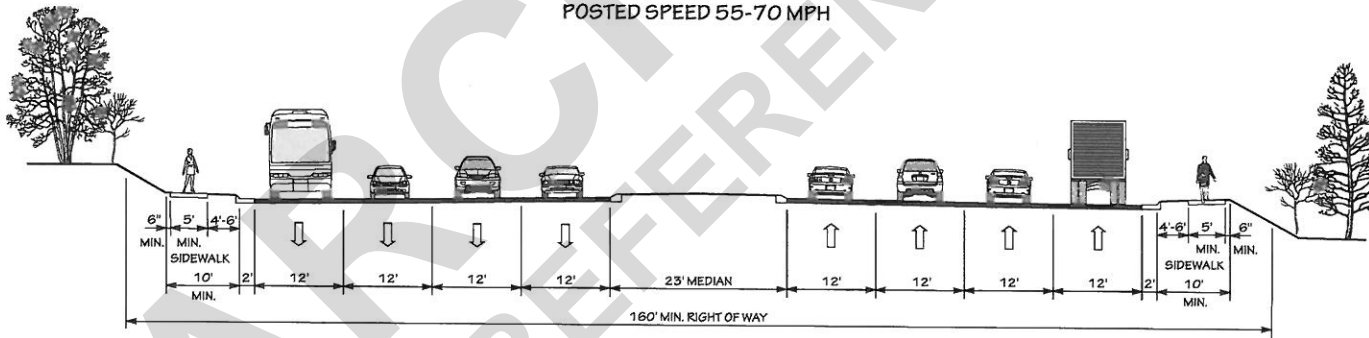
8 LANE FREEWAY (6 GENERAL PURPOSE LANES, 2 MANAGED LANES, AND 27' MEDIAN WITH JERSEY BARRIER) WITH PAVED SHOULDERS
POSTED SPEED 55-70 MPH

"TYPICAL" HIGHWAY CROSS SECTIONS



8E

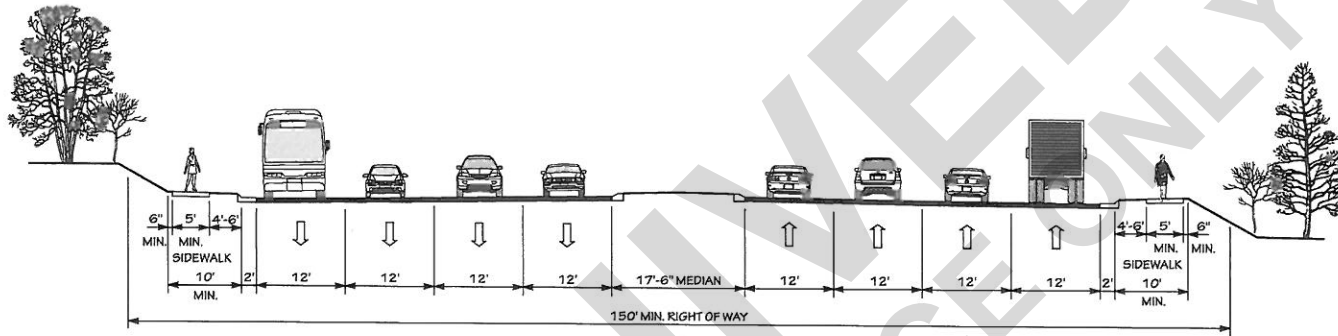
8 LANE FREEWAY (4 GENERAL PURPOSE LANES, 4 MANAGED LANES, AND 27' MEDIAN WITH JERSEY BARRIER) WITH PAVED SHOULDERS
POSTED SPEED 55-70 MPH



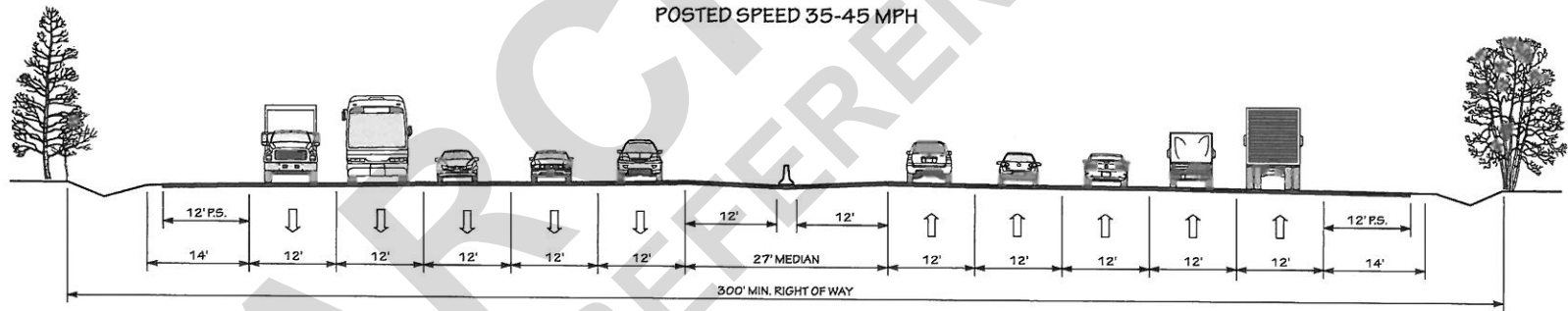
8F

8 LANE DIVIDED (23' RAISED MEDIAN) WITH CURB & GUTTER, AND SIDEWALKS
POSTED SPEED 35-45 MPH

"TYPICAL" HIGHWAY CROSS SECTIONS

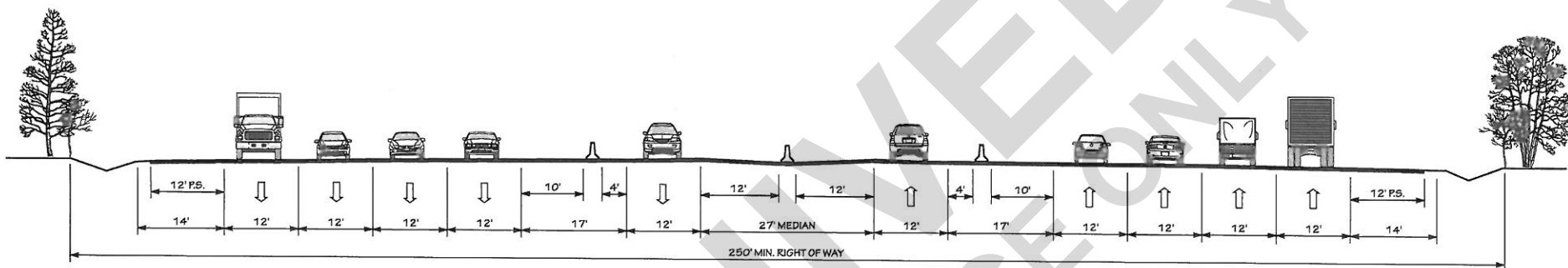


8G 8 LANE DIVIDED (17'-6" RAISED MEDIAN) WITH CURB & GUTTER, AND SIDEWALKS
POSTED SPEED 35-45 MPH

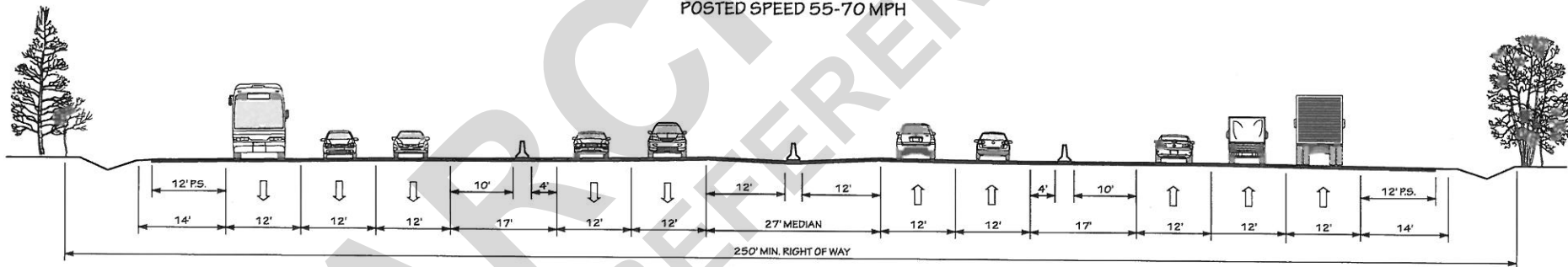


10A 10 LANE DIVIDED (27' MEDIAN WITH JERSEY BARRIER) WITH PAVED SHOULDERS
POSTED SPEED 55-70 MPH

"TYPICAL" HIGHWAY CROSS SECTIONS

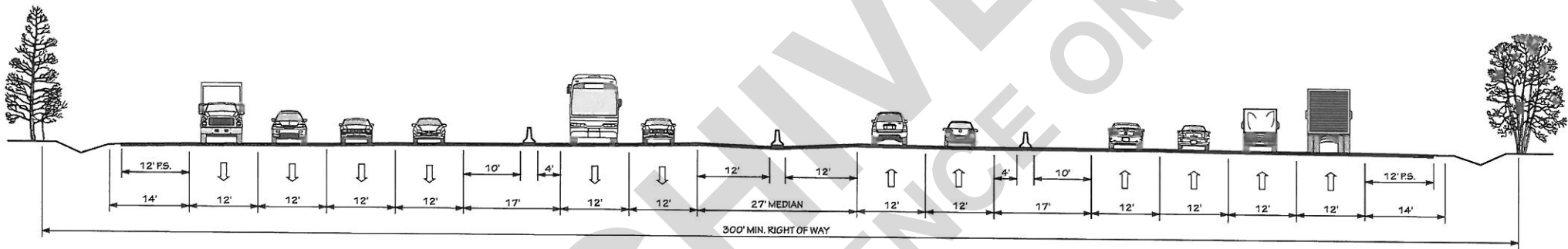


10B 10 LANE FREEWAY (8 GENERAL PURPOSE LANES, 2 MANAGED LANES, AND 27' MEDIAN WITH JERSEY BARRIER) WITH PAVED SHOULDERS
POSTED SPEED 55-70 MPH



10C 10 LANE FREEWAY (6 GENERAL PURPOSE LANES, 4 MANAGED LANES, AND 27' MEDIAN WITH JERSEY BARRIER) WITH PAVED SHOULDERS
POSTED SPEED 55-70 MPH

"TYPICAL" HIGHWAY CROSS SECTIONS



12A 12 LANE FREEWAY (8 GENERAL PURPOSE LANES, 4 MANAGED LANES, AND 27' MEDIAN WITH JERSEY BARRIER) WITH PAVED SHOULDERS
 POSTED SPEED 55-70 MPH