FLORIDA
LAWTON CHILES
GOVERNOR

DEPARTMENT OF TRANSPORTATION
605 Suwannee Street, Tallahassee Florida 32399-0450

BEN G WATTS
SECRETARY

MEMORANDUM

DATE: August 12, 1993

TO: Plans Preparation Manual Owners

FROM: Linda Seigle, Documents and Training

COPIES:

SUBJECT: **REVISIONS TO THE 1989 PLANS PREPARATION MANUAL**

Enclosed are the revisions to the Plans Preparation Manual that were reviewed by the District Design Engineers in their August 1993 meeting The revisions, which will be effective on October 1, 1993, were approved with recommended editorial changes These changes were incorporated into the revisions The major revisions made are as follows

- Volume I, Chapter 2 and Chapter 8 were revised to incorporate current bicycle criteria This replaces Design Bulletin 93-3
- Volume I, Chapter 11 was completely rewritten to address NPDES/SWPPP requirements This replaces Design Bulletin 93-1, however plans already in production which have the SWPPP narrative completed as a plan sheet rather than as part of the Specifications do not have to be revised
- Volume I, Chapter 15 and Volume II, Chapter 23 had pages reprinted to correct pagination errors in previous printings No revisions were made

All revised sheets were reprinted

LS ls

Attachments

PLANS PREPARATION MANUAL REVISIONS

VOLUME I

Chapter 2, Pages 6-10

Section 2 2 3, Wide Curb Lanes was deleted Sections 2 2 4 - 2 2 6 were revised to incorporate current bicycle lane criteria and were renumbered Please renumber Section 2 2 7 on page 12 to 2 2 6 Pages 6, 7 and 10 were left blank to avoid reprinting the entire chapter

Chapter 8, Page 1

Deleted the second sentence in the second paragraph This sentence was duplicated on page 5

Chapter 8, Pages 5-6

Revised to update bicycle criteria

Chapter 11

Chapter was rewritten to cover Storm Water Pollution Prevention Plans

Chapter 15, Page 19

Reprinted to correct pagination error

VOLUME II

Chapter 23, Page 1

Reprinted to correct pagination error

ROADWAY PLANS PREPARATION MANUAL

VOLUME II

PLANS PREPARATION AND ASSEMBLY

Florida Department of Transportation

DOCUMENT NO. 625-000-101-B
ROADWAY DESIGN OFFICE
TALLAHASSEE, FLORIDA
1989

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VOLUME II

PLANS PREPARATION AND ASSEMBLY

INTRODUCTION

The Plans Preparation and Assembly Manual is part of a two volume set of criteria guidelines, standards and techniques used to develop roadway plans for the Florida Department of Transportation.

This volume has been prepared to aid in the development of a set of roadway plans. The first two chapters of this volume are introductory in nature. Following these, there is a chapter for each plan sheet, describing the purpose of the sheet and providing specific instructions on its preparation. Exhibits of sample sheets follow each chapter. A complete glossary can be found at the back of this volume. This volume is specifically written for Computer Aided Drafting and Design (CADD) procedures. If plans are prepared by manual methods, the same information is to be shown using good drafting standards and practices. Reproduction Quality of all plans must be considered during their preparation. The drafting quality and lettering size must be adequate to be read when reduced in size by 50%

In addition to this volume, the DOT's CADD Roadway Standards and Guidelines provides information specifically applicable to CADD. The DOT CADD manual, in conjunction with this volume, provides requirements, techniques, standards and guidelines necessary to prepare and assemble a set of roadway plans. The technician should also have the Roadway and Traffic Design Standards available during the preparation of roadway plans.

Volume I of this manual, "Design Criteria and Process," provides directions on the criteria to be applied to roadway design and the process to be followed in developing a highway project from beginning to completion of design. Volumes I and II, collectively, make up the Roadway Plans Preparation Manual.

CHAPTER 1

PRODUCTION OF PLANS

1.1 General

The readability and quality of plans is highly dependent upon the choice of appropriate drafting materials, the utilization of correct drafting techniques and the reproduction processes that are employed. Therefore, these techniques and material choices are of paramount importance for they dictate the degree of success achieved.

It is the responsibility of the technician and drafter to ensure the accuracy, timeliness, legibility and neatness of the plans.

1.2 Legibility Guidelines

Normally, all letters and figures should be readable from either the bottom or right edge of the sheet. The guide for reading is as follows:

(1) Horizontal Line: Read left to right
(2) Vertical Line: Read bottom to top
(3) Diagonals: Read left to right

Abbreviations may be used where they save time and space. Abbreviations must be clear and easily understood. A list of standard abbreviations is given in the booklet of Roadway and Traffic Design Standards - Index 001.

Any object which is drafted repeatedly should be symbolized Symbols are necessary to reduce drafting time, increase legibility, and conserve space

Standard symbols for Roadway Design are shown in the booklet of Roadway and Traffic Design Standards - Index 002 and in the Roadway CADD Manual

Bearings should be shown on plans to the nearest second, station pluses to the nearest one hundredth (0 01), coordinates to the nearest one thousandth (0 001), percent of grade to the nearest one thousandth (0 001), surface elevations on paved surfaces to the nearest one hundredth (0 01) and ground elevations to the nearest one tenth (0 1)

Aerial photo sheets are not to be used in plans If there are existing plans in which they are included, they must be original sheets No 2nd generation copies of photo sheets are to be used Aerial photo images should not be so dark as to obscure the drafting Xerographic prints of aerial photo sheets shall be reviewed to ensure legibility If the photocopies are too dark, the aerials should be remade In areas where the photo image may block the drafted image, the photo image must be removed from the back of the sheet (Make sure the emulsion is removed behind all notes so areas will not be burned out) Black ink must be used on aerial photo sheets, both in the plan and profile portion No lead or grease pencils are to be used No colored ink is to be used

Reverse sepias are not to be used as final plan sheets

1.3 <u>Material</u>

Polyester film (mylar) shall be a highly translucent, 3 mil minimum thickness, with black imagery Translucent paper (Vellums) shall be 16 or 17 lb (medium weight) or 0027" thickness, 100% white rag, fine or medium toothed with 50% transparency

CADD prepared mylar shall be tested for ink durability, if laser or electrostatic plotters are utilized

CADD prepared mylar shall be tested for ink durability, if laser or electrostatic plotters are utilized

CADD prepared plan sheets may also be 20 lb opaque paper or 18 lb semi-translucent paper

1.4 Base Sheet Format

All final plan sheets except CADD-prepared plans shall be 24 inches by 35 or 36 inches The border shall be 1 1/2 inch from the top and bottom edge, 1/2 inch from the right edge, and 2 1/2 or 3 1/2 inches from the left edge Two 1/4" holes on 12" centers shall be punched 6" from the top and bottom and 1/2" (to center of hole) from the left edge The viewing area for all sheet formats shall be 21" X 32"

Final plots and xerographic signed and sealed prints of CADD prepared plans may be plotted to true scale on 11" X 17" bond

1 4 1 Title Block

All sheet formats, except the key sheet, shall have a standard title block at the bottom of the sheet The title block shall provide for the listing of sheet revisions, the name and logo of the design consultant (if applicable), and the sheet title The title block may also provide for the date and initials of the designer, the checker, the drafter (CADD operator) and the supervising engineer, FDOT title, approval signature (responsible professional engineer, in-house or consultant) and date Initials shall be mechanically produced by CADD Signing and sealing requirements are discussed in greater detail in Volume I of this manual

A block shall be provided in the upper right corner to show the project and sheet numbers. For a complete illustration of the sheet format with a title block, see the Exhibits at the end of the chapters

For alternate title block formats, see Exhibit II-1-A

1.5 Plan Sheet Formats

The following is a description of the various plan sheet formats and their use. The CADD Manual contains descriptions of the CADD cells that contain these formats, and their use.

Key Sheet:

Material - Mylar or vellum
Format - See Chapter 3
Use - Key Sheet

Plan and Profile

Material - Mylar or vellum
Format - The top half for the plan, the bottom half profile grid format (See Chapter 10)
Use - Plan and Profile, Utilities, Selective Clearing and Grubbing, Traffic Control Sheets, Lateral Ditch or Outfall Ditch Sheet

Profile (Also used as a Cross Section Sheet):

Material - Mylar or vellum
Format - Cross Section grid format (See Chapter 18)
Use - Roadway Cross Sections, Special Profiles, Superelevation Diagrams (if needed), and Drainage Structure Sheet

Plan:

Material - Mylar or vellum
Format - Border with the project number and sheet number box in the upper right hand corner of the sheet and the signature/revision/title block along the bottom. For base sheet format, see Chapter 9. Use - Typical Sections, Summary of Quantities, Summary of Drainage Structures, Special Details, Design Data, Roadway Soil Survey Sheets, Curve and Coordinate Data Sheet, Interchange Drainage Map, Project Layout, Traffic Control Sheets, Roadway Lighting Sheet, Signing and Pavement Marking and Signalization Sheet.

Bridge Hydraulic Recommendation Sheet:

Material - Mylar
Format - Plan format with 'boxes' (see chapter 5)
Use - Bridge Hydraulic Recommendation Sheet

~~For safe storage purposes, the first and last sheets in a plans set of reproducibles shall be mylar sheets.~~

Drainage Map

Material - mylar or vellum
Format - Top portion profile grid, bottom portion plan (see chapter 5)
Use - Drainage Map

1.6 Material Purchasing

1.6.1 Partial List of Vendors and Products

Statewide Vendor	Roll Mylar	Roll Vellum	Bond Paper
Anderson Reprographics	-	-	-
Bruning	X	X	X
Dietzgen	X	X	X
K & E	X	X	X
Teledyne Post	X	X	X
United Paper Co.	X	X	X
Triangle Reprographics	X	X	X

1.6.2 Partial List of Vendors

Anderson Reprographics
250 Park Street
Jacksonville, FL 32204
1-800-356-4271

AM International
Bruning Division
7151 Lake Eleanor Drive
Orlando, FL 32809
(407) 855-7121

Dietzgen Corporation
4268 L.B. McLeod Road
Orlando, FL 32811
1-800-228-5244

Dietzgen Corporation (for Panhandle area west of Tallahassee)
4920 Lewis Road
Stone Mountain, GA 30083
1-800-241-6663

K & E Company
1604 Sligh Blvd.
Orlando, FL 32806
1-800-552-6733
1-800-552-6734 (FAX)

Teledyne Post
4210 L.B. McLeod Road
Suite 109
Orlando, FL 32811
(407) 841-1034

Triangle Reprographics
417 West Gore Street
Orlando, FL 32806
1-800-432-6866

United Paper Company
1090 King Georges Post Road
Suite 507
Edison, NJ 08837
1-800-526-2364
1-201-417-0897(FAX)

1.7 Preparation of Letter Plans (8.5" x 14") - General

The Letter Plan preparation procedure as described in this chapter is approved for use on both State funded and Federal Aid participating projects Projects such as Resurfacing, Intersection Improvements, Sidewalk Construction, Signal Installations, and Guardrail Construction are all candidates for this format

This method is not an attempt to reduce the amount of construction information in the plans but to accurately describe the project in a form that is more convenient for reproducing, handling and storing The main intent of the Letter Plan format is to reduce the amount of drafting that is normally done with a standard set of plans It is not intended to compromise good engineering practices All criteria, engineering responsibility and documentation normally required are applicable to Letter Plans

The designer must carefully consider the scope of work to determine how much detail is required If a controlled survey is not needed the project is a candidate for letter plans preparation Original and final cross sections will not be required on these projects when the pay item Regular Excavation - Lump Sum is used Items to be considered in determining whether letter plans can be used are

1. Project limits and location of items of work can be located using mile post or straight line diagram
2. Project is being designed to 3-R criteria
3. Existing typicals are reasonably consistent throughout the project
4. If Utility adjustments are a consideration on the project, the designer will need to be sure that sufficient data is available to allow the Utility to be relocated or adjusted
5. There are no Right of Way requirements on the project
6. No change in the horizontal or vertical alignment
7. No major special ditches on the project

8 No major intersection modifications

9 No mitigation requirements for the project

10 All normal resurfacing, widening, base course, etc items and work shall be according to the Standard specifications

Letter size typical sections, detailed sketches, and tabulations of quantities may still be needed in the plans to accurately describe the project The various components of a set of letter plans are discussed below.

1 7 1 Scope of work

Since plan/profile sheets are not used a detailed scope of work narrative is required It should include any drainage work, signal work, signing, and pavement marking work that will be required The scope does not necessarily need to be a detailed description of the work but should outline each major operation

1 7 2 Typical Section

Letter plans, like standard plans, are required to have a typical section For many projects a detailed description can be used in place of a drawing Cross slopes, proposed pavement widths, ditch slopes, and grassing limits can often be described sufficiently without a drawing of a standard section The design speed is also required for each Typical

Along with the typical section the plans are also required to contain the proposed pavement design This can be done in the same manner as standard size plans The pavement design shall show thicknesses and/or options for base, structural course, leveling course, and friction course It shall also include proposed milling depths

1 7 3 Detailed Drawings

On some Letter Plan projects detailed drawings will be needed to show dimensions of certain pavement areas or other special construction information When details are used they should be legible and free of extraneous information Too much text on this size sheet can make it difficult to read

1 7 4 Summary of Quantities

In order to document quantity calculations a tabulation may be required in the plans All tabulations shall be clear and concise Space shall be provided for both plan and final quantity Good judgement should be used in determining if a tabulation of a specific item is truly needed for this type of project

1 7 5 Traffic Control Plan

Selecting the letter plan format does not exempt the project from having a well documented traffic control plan Phasing descriptions, sketches, general notes, and typical sections should still be utilized when construction warrants it

1.8 Letter Plan Format

The preparation of a set of letter plans should follow the guidelines as shown below

1. Use legal size (8 5" x 14") for all sheets
2. The F A project number and W P I number shall be shown on the Key Sheet Show the state project number on all sheets
3. Space must be provided on the Key Sheet for the designer/Project Manager and approval by the responsible professional engineer
4. All railroad crossings shall be shown on the Key Sheet in accordance with chapter 3 10 of Volume II of this manual
5. If the project is designed with R-R-R standards this should be noted on the Key Sheet
6. All sheets including pay item sheets are to be numbered sheet 1 of __, sheet 2 of __, etc Signing and pavement marking sheets are to be numbered consecutively with the rest of the plans
7. The standard governing specifications note used on all plans must be shown on letter plans The Roadway and Traffic Design Standards booklet shall be referenced in the plans also
8. All summary of pay item sheets are to be inserted directly behind the Key Sheet Trim the "green bar" computer sheets to proper size, do not reduce by xeroxing
9. Revisions to letter plans shall be documented in the same manner as standard size plans Space should be provided on each sheet for a revision log

CHAPTER 2

SEQUENCE OF PLANS PREPARATION

2.1 General

The contract plans set and the specifications are the key documents on which the contractor bases his bid for a construction project. These documents are also used in the construction of the project. Hence, it is imperative that the contract plans and specifications set forth the work to be done in a clear and concise manner to avoid misinterpretation.

The set of plans depicting in detail the desired construction work is known as the "Contract Plans Set". This set consists of all sheets pertaining to roadway design, together with "Component Plan Sets." The component plan sets are comprised of:

- Signing and pavement marking plans
- Signalization plans
- Highway lighting plans
- Landscape plans
- Utility contract plans
- Architectural plans
- Structural plans

The contract plans set should be prepared systematically, undergoing various stages of review and revision to ensure technically correct and clear plans.

2.2 Data Collection and Presentation

Data required for a roadway design project may be obtained from field survey, aerial survey, preliminary engineering reports, plats and utility as-builts. These data are then compiled, reduced and used for roadway design, which in turn, is produced in the form of plan sheets for actual construction.

Initial data required for the production of plans are:

Existing Topography
Existing Utilities
Existing Drainage Structures
Existing Ground Elevations and Profiles
Existing R/W
Preliminary Soils and Foundation Data
Preliminary Horizontal Geometrics
Preliminary Vertical Geometrics
Proposed Typical Sections

2.2.1 Existing Topography and Field Data

Existing topography shows the existing characteristics of the project site. This also includes the existing utilities and drainage structures within the limits of the project.

All data pertaining to topography, horizontal location of existing utilities and drainage structures shall be shown on the plan portion of the plan - profile sheets.

Existing ground line along the baseline of survey, vertical location of major existing utilities (refer Chapter 5 Vol. I) and utility structures shall be shown on the profile portion of the plan - profile sheets.

2.2.2 Proposed Typical Section

Typical sections show the design elements of a roadway in the form of cross sections. Pavement design data should be shown, if available. For some projects typical sections are approved prior to the start of design, for others, typical sections are developed by the design engineer and submitted for approval.

2.2.3 Preliminary Geometrics

The design engineer sets the preliminary horizontal and vertical geometrics for a project and provides the production personnel with information to be produced on plans.

Horizontal geometrics consist of the roadway construction centerline and its bearings, curve data, angles at street intersections, pavement widths, taper lengths, left turn lanes, etc., and is plotted on the plan portion of the plan - profile sheets.

Vertical geometrics show the vertical curves and grades of the roadway along the profile grade line. The existing groundline along the baseline of survey and the proposed profile grade line shall be plotted on the profile portion of the plan - profile sheets.

2.2.4 Cross Sections

Information required for drafting existing cross sections is obtained from survey data. Proposed cross sections are compiled from typical sections and proposed vertical geometry. These templates are then superimposed at specified intervals on the existing cross sections to depict "cut" or "fill" along the project. Locations of existing utilities within construction limits shall also be shown in the cross sections.

2.3 Phase Submittals

The remainder of this chapter outlines, in detail, the sequence of contract plans preparation and assembly, the review process and the information required to be presented on the various plan sheets at the various phases of submission on a project

The submittal phases are as follows

SUBMITTAL PHASES

- Phase I
- Phase II
- Phase III
- Phase IV

Minor projects shall have a minimum of two phase reviews

Figure 2 1 summarizes the requirements for each submittal No phase is complete until all review comments have been resolved and documented

Prior to submitting the plans for a formal DOT Phase review, the design organization (in-house or consultant) shall conduct a "Quality Control" (Q C) review to ensure technically correct and complete plans Any revisions or corrections noted during the Q C review shall be incorporated into the plans before submittal for the formal Phase review

FIGURE 2 1

SUMMARY OF PHASE SUBMITTALS

PLAN SHEETS	PHASE I	PHASE II	PHASE III	PHASE IV
Key Sheet	P	P	C	F
Summary of Pay Items		P	C	F
Drainage Map	P	P	C	F
Interchange Drainage Map	P	P	C	F
Typical Section	P	C	C	F
Summary of Quantities and Box Culvert Data			C	F
Summary Drainage Structures		P	C	F
Project Layout	P	C	C	F
Roadway Plan-Profile	P	P	C	F
Special Profile	P	P	C	F
Back-of-Sidewalk Profile	P	C	C	F
Interchange Layout	P	P	C	F
Ramp Terminal Details		P	C	F
Intersection Layout/Detail	P	P	C	F
Drainage Structures		P	C	F
Lateral Ditch Plan/Profile		P	C	F
Lateral Ditch Cross Section		P	C	F
Cross Section Pattern Sheet		P	C	F
Borrow Pit Soil Survey		P	C	F
Roadway Soil Survey		P	C	F
Cross Sections	P	P	C	F
Traffic Control Plans	P	P	C	F
Utility Contract Plan-Profile		P	C	F
Utility Adjustment		P	C	F
Selective Clearing and Grubbing		P	C	F
Roadway Structural Plans		P	C	F
Signing and Marking Plans		P	C	F
Signalization Plans		P	C	F
Roadway Lighting Plans		P	C	F
Landscape Plans	P	P	C	F
Computation Book*			C	F
Contract Time Estimate*		P	F	F

Status Key
P - Preliminary
C - Complete but subject to change
F - Final

*Computation Book and Contract Time Estimate must accompany submittal to the Construction Office for a biddability review at Phase III (See Vol I, Chapters 13 & 15)

2.4 Phase I Plans Submittal

A plans checking team will perform a formal checking of the design plans submitted for the formal phase review The plans will be checked for completeness and conformance to DOT Standards and criteria The technical accuracy required for the design is the designer's responsibility A "marked up" set of the plans and/or comments shall be returned to the design team for incorporation of the comments into the plans When the review comments have been resolved and documented, the plans are ready to proceed to the next phase of completion

A conceptual plan which outlines the proposed drainage design to be developed, should accompany the Phase I plan submittal

2.5 Requirements for Phase I Submittal

The following elements are required for a Phase I set of plans

2 5 1 KEY SHEET (Chapter 3)

Location Map

Begin and end project station with begin milepost

Begin and end bridge and bridge culvert stations

All applicable project numbers

Exceptions

Equations

County Name

State Road Number

Length of project box

North arrow and scale

Consultant's name (for consultant prepared projects)

Approval signature lines

Location of project on map

Railroad crossing (if applicable)

Revision box

Standards date

Project Manager's Name

2.5.2 DRAINAGE MAP: (Chapter 5)

PLAN VIEW

North arrow and scale
Drainage divides and ground elevations
Drainage areas and flow direction arrows
Begin and end stations of project, bridge and exceptions
Equations
High water information as required
Existing structures and pipes with relevant information
Preliminary horizontal alignment
Section, township, range lines
Street names
State, Federal, county highway numbers (as appropriate)

PROFILE VIEW

Horizontal scale
Vertical scale
Begin and end stations of project, bridges and exceptions
Equations
Preliminary profile grade and existing ground line

2.5.3 INTERCHANGE DRAINAGE MAP: (Chapter 5)

North arrow and scale
Preliminary interchange configuration
Preliminary interchange drainage with drainage areas and flow direction arrows
Ramp baselines with nomenclature
Stationing along baselines
Begin and end bridge stationing
R/W lines

2.5.4 TYPICAL SECTIONS: (Chapter 6)

Mainline and crossroad typicals
Special details (bifurcated sections, high fills, etc.)
Standard Notes
Traffic data

2.5.5 PROJECT LAYOUT: (Chapter 9)

Plan-profile sheet sequence (mainline and crossroads)
Reference points

2.5.6 PLAN AND PROFILE: (Chapter 10)

PLAN VIEW

North arrow and scale
Baseline of survey
Centerline of construction (if different from the baseline of survey)
Curve data (including superelevation)
Begin and end stations for the project, bridges, bridge culverts and exceptions
Equations
Existing topography including utilities
Preliminary horizontal geometrics
Proposed R/W lines (if available)
Reference points (if project layout sheet not included in plans set)

PROFILE VIEW

Scale
Appropriate existing utilities
Bench mark information
Existing ground line with elevations at each end of sheet
Preliminary profile grade line
Equations
Begin and End Stations for the Project, bridges, bridge culverts and exceptions.

2.5.7 SPECIAL PROFILE: (Chapter 11)

Scale
Ramp profile worksheet including nose sections
Existing ground line of cross-street
Proposed grade line of cross-street

2.5.8 BACK-OF-SIDEWALK PROFILE (Worksheet): (Chapter 12)

Scale
Begin and end project stations
Begin and end sidewalk stations
Cross-street locations and elevations
Drainage flow direction arrows
Mainline equations
Final back-of-sidewalk profile grades and vertical curve information
Building floor elevations with offset distance left and right
Existing driveway locations and details
Superelevation details
Gradeline notation: Specifically the numeric difference relative to roadway profile gradeline

2.5.9 INTERCHANGE DETAIL: (Chapter 13)

North arrow and scale
Preliminary configuration and geometrics
Proposed bridge limits
R/W lines
Schematic of traffic flow and volumes

2.5.10 INTERSECTION LAYOUT: (Chapter 13)

North arrow and scale
Existing topography (if applicable)
Proposed R/W limits
Length of turn lanes
Taper lengths
Geometric dimensions (radii, offsets, widths)
Existing Utilities

2.5.11 CROSS SECTIONS· (Chapter 18)

Scale
Existing ground line
Existing survey baseline elevations
Station numbers
Baseline of survey labeled
Existing utilities
Proposed template with profile grade elevations along mainline and cross-streets as necessary

2.5.12 TRAFFIC CONTROL SHEETS: (Chapter 19)

Project specific

2.6 Phase II Plans Submittal

A plans checking team will perform a formal checking of the design plans submitted for the formal phase review The plans will be checked for completeness and conformance to DOT Standards and criteria and a constructability review shall be performed by Construction The technical accuracy required for the design is the designer's responsibility A "marked up" set of the plans and/or review comments shall be returned to the designer for incorporation of the review comments into the plans When all review comments have been resolved and documented by the designer, the plans are ready to proceed to the next phase of completion

Drainage tabulations should accompany the Phase II plan submittal Although not finalized, the tabulations should be complete and comprehensive

2.7 Requirements for Phase II Submittal

The following elements are required for a Phase II set of plans

2 7 1 KEY SHEET (Chapter 3)

Index of sheets

Contract plans and component plans list

Date of governing specifications

2 7 2 SUMMARY OF PAY ITEMS (Chapter 4)

Item numbers with descriptions

2 7 3 DRAINAGE MAP (Chapter 5)

PLAN VIEW

Proposed structures with structure numbers
Proposed storm sewer pipes
Flood data (if applicable - may be shown in either plan or profile)
Flow arrows along proposed ditches
Retention/Detention ponds and area size
Cross drains with pipe sizes and structure numbers
Bridges/bridge culverts with begin and end stations
Standard alternate materials note (may be shown in profile portion)

PROFILE VIEW

Ditch gradients including DPI's
Final roadway profile grade line
Mainline structures with structure numbers and pipes
Mainline storm sewer pipes
Mainline flow line elevations
Cross drains with pipe sizes, structure numbers and flow line elevation
Bridge, Bridge Culvert

2 7 4 INTERCHANGE DRAINAGE MAP (Chapter 5)

Final geometrics including P C and P T
Proposed structures with structure numbers
Proposed storm sewer pipes
Special ditches with DPI and elevation

2.7.5 TYPICAL SECTIONS: (Chapter 6)

Pavement Design

2.7.6 PROJECT LAYOUT: (Chapter 9)

Complete

2.7.7 PLAN AND PROFILE: (Chapter 10)

PLAN VIEW

Final geometrics and dimensions including radii, station pluses, widths, taper/transition lengths
Curb return numbers, station ties and elevations
Proposed drainage structures with structure numbers
Proposed storm sewer pipes including size
Proposed side drain pipe requirements (including size) for access and crossroads
Proposed R/W lines
General notes (if project layout sheet not included) may be shown in profile portion

PROFILE VIEW

Final profile grades and vertical curve data
Mainline drainage structures with structure numbers
Mainline storm sewer pipes
Proposed special ditches
Cross drains with structure number, size and flow line elevations
Ditch gradients with DPI station and elevation
Non-standard superelevation transition details
High water elevations

2.7.8 SPECIAL PROFILE: (Chapter 11)

Final ramp profile grades including nose sections
Final intersection profile grades
Curb return profiles (if applicable)
Preliminary access and frontage road profiles
(Note: Projects may contain one or more types of special profiles.)
Non-Standard Superelevation Diagram

2.7.9 BACK-OF-SIDEWALK PROFILE: (Chapter 12)

Complete

2.7.10 INTERCHANGE LAYOUT: (Chapter 13)

Curve data including superelevation and design speed
Coordinate data
Fence location
Access and/or frontage roads with dimensions and R/W

2.7.11 RAMP TERMINAL DETAILS: (Chapter 13)

Preliminary geometrics
Radii, transition/taper lengths

2 7 12 INTERSECTION LAYOUT (Chapter 13)

Final geometrics including dimensions, radii, offsets, station pluses and taper/transition lengths

Limits of proposed construction along side roads

Storm sewer pipes including sizes

Cross drains with structure numbers and pipe sizes

Applicable notes

2 7 13 DRAINAGE STRUCTURES (Chapter 14)

Vertical and horizontal scale

Roadway template with profile grade elevation

Drainage structures with numbers in numerical order, type, size, location and flowline elevations

Underground utilities

Special sections at conflict points

R/W lines (at critical locations)

Storm sewer construction notes

Flow arrows

Structure numbers and location station along right side of sheet

Applicable notes

2 7 14 OUTFALL/LATERAL DITCH SYSTEM (Chapter 15)

PLAN VIEW

North arrow and scale

Existing topography, drainage structures (if any), utilities

Roadway centerline

Existing and/or survey ditch centerline

Proposed ditch centerline with stationing

Begin and end ditch stations

Equations (if any)

Ditch centerline intersection stations (if any)

Ditch PI stations with deflection angle left or right

Bearings of ditch and mainline centerlines

R/W lines

Proposed drainage structures with structure numbers

Proposed storm sewer pipes (if any)

PROFILE VIEW

Bench mark information

Scale

Existing ground line

Proposed ditch profile with grades

Begin and end ditch stations

High water elevations

Existing Utilities

Proposed drainage structures with structure numbers

Proposed storm sewer pipes (if any) with size

Overland flow or overtopping elevations

Typical section can be placed in either plan or profile

2.7.15 LATERAL DITCH CROSS SECTIONS: (Chapter 15)

Horizontal and vertical scale
Existing ground line
Station numbers
Survey centerline and elevation
Proposed template with ditch bottom elevation
R/W
Begin and end ditch stations
Begin and end excavation stations
Earthwork quantities
Total earthwork quantity in cubic yard (C.Y.)
Existing utilities

2.7.16 CROSS SECTION PATTERN SHEET: (Chapter 13)

North arrow and scale
Interchange layout
Access and frontage roads
Mainline and ramp stationing
Begin and end bridge stations
Ramp baselines with nomenclature and stationing
Cross section location lines

2.7.17 BORROW PIT SOIL SURVEY: (Chapter 17)
Soil data
Project specific

2.7.18 ROADWAY SOIL SURVEY: (Chapter 17)
Soil data
Project specific

2.7.19 CROSS SECTIONS: (Chapter 18)

Proposed template with profile grade elevation
R/W
Begin and end stationing for project, construction and earthwork, bridge and bridge culvert
Special ditch bottom elevations
Equivalent stations for ramps and mainline
Mainline equation stations
Soil borings
Water table
Extent of unsuitable material

2.7.20 TRAFFIC CONTROL SHEETS: (Chapter 19)

Preliminary traffic control plan
Detour plan
Phasing plan
R/W - existing and additional if required
Existing Utilities

2.7.21 UTILITY ADJUSTMENT: (Chapter 20)

All existing utilities highlighted

2.7.22 UTILITY CONTRACT PLANS: (Chapter 27)

Key Sheet
Mainline plan-profile
Proposed utility horizontal and vertical locations

KEY SHEET

W P I Number
State Project Number
Federal Aid Project Number
State Road Number
County Name
FDOT Project Manager's Name
Begin/End Stations
Begin/End Exceptions
Station Equations
Roadway and Traffic Design Standards Date
Engineer of Record

PLAN SHEETS

North arrow
Scale
Basic Roadway Geometrics
Begin/End Stations
Begin/End Exceptions
Conflicting utilities, lighting or drainage
Pavement markings
Sign locations
Applicable pay items

KEY SHEET

W P I Number

State Project Number

Federal Aid Project Number

State Road Number

County Name

FDOT Project Manager's Name

Begin/End Stations

Begin/End Exceptions

Station Equations

Roadway and Traffic Design Standards Date

Engineer of Record

PLAN SHEET

North arrow

Scale

Basic Roadway Geometrics

Begin/End Stations

Begin/End Equations

Station Equations

Conflicting utilities, lighting or drainage

Signal Pole Location

Type and location of loops

Type and location of signal heads

Pedestrian Signal

Location of Stop Bars

Location of Pedestrian Crosswalks

Sheet Title

Applicable pay items

KEY SHEET

W P I and State and Federal Aid Project Numbers
State Road Number
County Name
FDOT Project Manager's Name
Begin/End Stations and Exceptions
Station Equations
Roadway and Traffic Design Standards Date
Engineer of Record

POLE DATA AND LEGEND SHEET

Each pole by number with location, arm length, mounting height and luminaire wattage noted
Design value for light intensities and uniformity ratios shown
Legend and Sheet title

PLAN SHEETS

North arrow and scale
Basic Roadway Geometrics
Begin/End Stations and Equations
Station Equations
Conflicting utilities, lighting or drainage
Sheet title
Applicable pay items
Pole symbols shown at correct station location and approximate offset

2 7 26 LANDSCAPE PLANS (Chapter 26)

KEY SHEET

STANDARD DETAIL SHEET

Applicable standard details

PLAN SHEETS

Roadway and sidewalk plan

Plant placement by symbol

Legend for plant symbols

IRRIGATION PLAN (if applicable)

Type of system

Location and size of pipes

Type and location of heads

SPECIFICATIONS PLAN SHEET

Project specific

2 7 27 SELECTIVE CLEARING AND GRUBBING (Chapter 21)

Limits by station and dimension of selective clearing and grubbing

2 7 28 ROADWAY STRUCTURAL PLANS (Chapter 22)

Project specific

MECHANICALLY STABILIZED EARTH (MSE) WALLS

Project Specific

2.8 Phase III Plans Submittal

The only other remaining work to be done will be to comply with comments received as a result of the review The Work Zone Traffic Control items paid for on a 'per day' basis shall be estimated by the design organization and included in the Phase III submittal The DOT construction department will make a bidability review and will establish construction duration as a part of the phase III review This information shall be included in the phase III review comments transmitted back to the design organization The estimated pay items for Work Zone Traffic Control shall be revised as necessary based on the established construction duration

All plan sheets and computation books are complete and the WPA system has been updated Final drainage tabulations shall also be furnished for review

A plans checking team will perform a formal checking of the design plans submitted for the formal phase review The plans will be checked for completeness and conformance to DOT standards and criteria The technical accuracy required for the design is the designer's responsibility A "marked up" set of the plans and/or review comments shall be returned to the designer for incorporation of the comments into the plans When the review comments have been resolved and documented by the designer, the plans are ready to proceed to completion

2.9 Phase IV Plans Submittal

After all corrections noted in the Phase III submittal are complete and the cost estimate is complete, the plans are considered complete Volume I of this manual contains instructions for the final plans submittal

CHAPTER 3

KEY SHEET

3.1 General

This is the first sheet in the plans set It contains general information concerning the project and the plans themselves Section 4 of the DOT CADD manual - Plans Procedures - contains the formatted sheet with information common to all projects Levels and fonts for additional data can also be found in the CADD manual

For complete illustrations of key sheets, see Exhibits II-3-A thru F

3.2 Project Data

All general project data are shown on the key sheet in the following manner

3 2 1 Project Number, County Name and Road Number

These are in the form of a title in large heavy letters They are positioned above the location map (see Exhibit II-3-A)

Where Federal funds are involved, the words "Federal Funds" are to be placed to the right of the state project number, within brackets

Projects that are independently prepared but are to be let in the same construction contract shall have the additional project numbers noted on the key sheet

3 2 2 Work Program Item Number and Fiscal Year

The work program item number shall be placed adjacent to the sheet number box in the top right corner The construction fiscal year that is to be entered in the fiscal year box is the second year in the fiscal year, i e , enter 90 for fiscal year beginning July 1989 and ending June 1990

3 2 3 Length of Project Box

Lengths of roadway, bridges, bridge culverts, exceptions, and net and gross lengths of the project shall be shown in a box in the center of the sheet below the location map The net length of the project is computed by taking the total length of roadway and bridges in feet and converting it to miles, dropping all decimals past a thousandth of a mile, without rounding off The roadway and bridge mileage shall then be rounded so that their total equals the net length The survey line should be used to compute the length of the project unless the construction line is substantially different in length (100' or more), or the survey line is outside the right-of-way, or the survey line bridge length is different from the construction line bridge length The use of the survey line will generally result in less equations on the key map If divided highways have significantly different lengths for the left and right roadways, the project length shall be based on the longest roadway A note stating which roadway was used shall be placed adjacent to the project length box

The Begin Project' and `End Project' stations are the basis for computing the length Begin and end construction stations are not to be used in computing the length of the project

A length of project box is not required on component key sheets

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[1] Roadway length = End Project - Begin Project - Exceptions - Bridges
Net Length = End Project - Begin Project - Exceptions + Bridges
Gross Length = End Project - Begin Project

3.3. Project Location Map

This map is placed in the center of the sheet and consists of a reproduced portion of one or more maps showing the project location The map may be a county or other appropriate map "Clippings" of digitized county maps are available upon request, from the District CADD manager by supplying him with the lower left and upper right-corner coordinates of the required area The coordinates shall be on the State Plane coordinate system For consultant prepared plans, the Consultant Project Manager shall request the District Project Manager, who in turn shall request the District CADD manager for the map "clipping" The map clippings shall be made available to the consultant on a tape or diskette for a fee

The intent of the location map is to provide enough information so that the project location is easily understood This may make it necessary to show the Section, Township, Range and County lines together with Section, Township and Range numbers to make the location clear City and urban limits should be shown where applicable The mile post, correct to three decimal places, shall be shown under the begin project station

Streets shall be designated by name and State road number or U S Highway number, if appropriate The name of the next incorporated city to which these roads lead shall be placed at the edge of the map Roads and topography shall be indicated by standard symbols as shown in the Roadway and Traffic Design Standards booklet - Index No 002

Project location shall be shown by a heavy solid line of substantial width It is sometimes advantageous to show station numbers at regular intervals, particularly with city street projects The begin and end of projects, any station equations, begin and end of proposed bridges along the state project, bridge culverts and exceptions shall be stationed and flagged

When several projects are covered by the same set of plans, the beginning and end of each project shall be indicated clearly by the project number and stationing The beginning of each project shall also be indicated by a mile post correct to three decimal places

The scale of the location map should be chosen so that it will not interfere with other features on the key sheet A common error is to position the location map on the sheet and then discover that insufficient space remains for the index of sheets, project title or the length of project box

A location map is not required on component key sheets

3.4 North Arrow and Scale

The north arrow shall be placed on either side of the location map, preferably to the right The map scale shall be shown directly below the north arrow The scale shall be indicated by using a bar scale 1" long with "ticks" at each end The scale distance shall be shown between the ticks The map shall be oriented so that the arrow will be either toward the top of the sheet or to the right

3.5 Plans in Contract Plans Set

A listing of plans included in the contract plans set shall be shown in the upper left corner The order of listing shall be roadway, signing and pavement marking, signalization, lighting, landscape, architectural, and structure If the summary of pay items, box culvert data, and flood data sheets are included as computer outputs rather than the plan sheets, they should be listed before the roadway component

If sheets covering items such as signing and pavement markings, signalization, lighting and landscape are numbered consecutively with roadway plans, they are not required to be shown as separate contract plans set components

3.6 Index of Sheets and Standard Index Reference

A complete index of roadway plan sheets shall be placed on the left side of the key sheet under the heading When projects contain plan components, each plan set shall have an index of sheets on its respective key sheets The date of the governing Roadway and Traffic Design Standards shall be inserted in a note at the lower left corner of the key sheet

Roadway plan sheets shall be assembled as follows

Sequence of Plans Assembly

Key Sheet
* Summary of Pay Items
* Box Culvert Data Sheet
Drainage Map (optional)
Interchange Drainage Map
Typical Section
Summary of Quantities
Summary of Drainage Structures
Project Layout (optional)
Roadway Plan-Profiles
Special Profiles
Back-of-Sidewalk Profiles (optional)
Interchange Layout
Ramp Terminal Details
Intersection Layout/Detail
Drainage Structures (optional)
Outfall/Lateral Ditch Plan-Profiles
Outfall/Lateral Ditch Cross Sections
Special Details
Cross Section Pattern Sheet
Borrow Pit Soil Survey
Roadway Soil Survey
Cross Sections
Traffic Control Sheets
Utility Contract Plan-Profiles
Utility Adjustments
Selective Clearing and Grubbing

* Represents computer output transfered to a graphics design file and placed on a normally formatted plan sheet

Signing and Marking Plans (when included as part of roadway plans)

Signalization Plans (when included as part of roadway plans)

Roadway Lighting Plans (when included as part of roadway plans)

Landscape Plans (when included as part of Roadway plans)

Roadway Structural Plans

NOTE. Contract/Construction Plans set may or may not contain all of the above listed sheets

3.7 Engineers Approval and Consultant's Name

3 7 1 Engineers Approval

For in-house and consultant prepared plans, the responsible Professional Engineer's name, registration number and approval date shall be included on the right side of the sheet For specific instructions on signing and sealing plans, see Volume I, Chapter 19

3 7 2 Consultant's Name

For plans prepared by a consulting firm, the name and address of the firm shall be shown on the right side of the sheet with the responsible registered, Professional Engineer's name below it

The DOT Project Manager's/Coordinator's name shall be shown below the length of project box for consultant and DOT prepared plans For key sheets where length of project is not required, the DOT Project Manager's name shall be shown in the same relative location on the sheet

If shop drawings are anticipated for a project, the name(s) and address of the Engineer(s) of Record shall be shown on the right side of the sheet

If shop drawings are anticipated for a project, the name(s) and address of the Engineer(s) of Record shall be shown on the right side of the sheet

3.8 Governing Specifications

The date of the governing specifications shall be inserted in a note at the lower right corner of the key sheet The supplement note available in the CADD cell library shall be added

3.9 State Map

A small scale state map shall be shown at the upper right portion of the key sheet The location of the project shall be indicated thereon

3.10 Railroad Crossing

When the project involves a railroad crossing which falls within the limits of an exception, a sketch shall be shown on the key sheet showing the station of crossing, railroad company name and DOT/AAR National Inventory Crossing Number A location sketch on the key sheet is not required on any project containing plan - profile sheets that cover crossing locations A sketch should be included on the key sheet for resurfacing projects

3.11 Revision Dates

The lead key sheet (usually roadway) shall show a complete record of all plans revisions This record shall list the component (such as roadway structures, signing and pavement marking), the sheet numbers involved and the revision date This record shall be shown directly below the reference to the Roadway and Traffic Design Standards

A revision box shall be shown on the right side of each component key sheet which shall contain a record of all revisions particular to that sheet It shall list the revision date the initials of the person responsible for the revision and a brief description of the change

3.12 R-R-R Projects

If applicable, a note stating that the plans were prepared according to R-R-R criteria shall be shown on the right side of the sheet

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA.

THIS CONTRACT PLAN SET INCLUDES

ROADWAY PLANS
SUMMARY OF PAY ITEMS (03 SHEETS)
BOX CULVERT DATA SHEETS (02 SHEETS)
SIGNING AND PAVEMENT MARKING PLANS
SIGNALIZATION PLANS
ROADWAY LIGHTING PLANS
LANDSCAPE PLANS
ARCHITECTURAL PLANS
STRUCTURE PLANS

CONTRACT/CONSTRUCTION PLAN SET MAY OR MAY NOT CONTAIN ALL OF THE LISTED COMPONENTS/SHEETS

A DETAILED INDEX APPEARS ON THE KEY SHEET OF EACH COMPONENT SET OF PLANS

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
STATE HIGHWAY

STATE PROJECT NO. 00000-3501 (FEDERAL FUNDS)
AND STATE PROJECT NO. 00000-3502
LEON COUNTY

STATE ROAD NO. 200

W P I NO 1111111
W P I NO 0000000

00 | 1

LOCATION OF PROJECTS

INDEX OF ROADWAY PLANS

SHEET NO	SHEET DESCRIPTION
1	KEY SHEET
2	DRAINAGE MAP
3 4	TYPICAL SECTIONS
5	TYPICAL SECTION DETAILS
6	SUMMARY OF QUANTITIES
7 8	SUMMARY OF DRAINAGE STRUCTURES
9	PROJECT LAYOUT
10 14	ROADWAY PLAN PROFILES
15 16	SPECIAL PROFILES
17	INTERSECTION LAYOUT/DETAIL
18 24	DRAINAGE STRUCTURES
25	LATERAL DITCH PLAN PROFILES
26	LATERAL DITCH CROSS SECTIONS
27	SPECIAL DETAILS
28	ROADWAY SOIL SURVEY
29 39	CROSS SECTIONS
40 44	TRAFFIC CONTROL SHEETS
45 49	UTILITY ADJUSTMENTS
50 54	SELECTIVE CLEARING AND GRUBBING
55	APPROACH SLAB

END STATE PROJECT
NO 00000 3501
STA 272 00 00

END BRIDGE
STA 271 13 50

BEGIN BRIDGE
STA 268 93 50

END EXCEPTION
STA 147 52 00

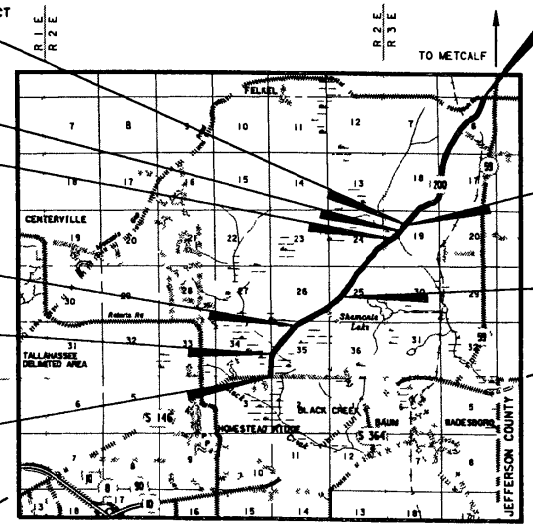
BEGIN EXCEPTION
STA 121 12 00

BEGIN STATE PROJECT
NO 00000 3501
STA 100 00 00
M P NO 131 637

END STATE PROJECT
NO 00000 3502
STA 490 69 50

BEGIN STATE PROJECT
NO 00000 3502
STA 272 00 00
M P NO 134 895

EQUATION
STA 200 32 00 BK
STA 200 29 50 AH



1 MILE

ROADWAY PLANS
ENGINEER OF RECORD

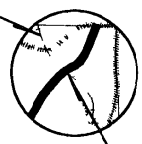
NAME(S) AND ADDRESS(ES) OF THE ENGINEER(S) OF RECORD WHEN REVIEW OF SHOP DRAWING REQUIRED

PLANS PREPARED BY :

NAME AND ADDRESS OF THE CONSULTANT FIRM WHEN THE PLANS ARE PREPARED BY A CONSULTANT

A LOCATION SKETCH ON THE KEY SHT IS NOT REQUIRED ON ANY PROJECT CONTAINING PLAN PROFILE SHEETS THAT COVER RR CROSSING LOCATIONS

RR CROSSING NO 628323 W
M P NO CSX 1029 85
CSX INC RR



℄ S R 200
STA 460 59 90

THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH AND ARE GOVERNED BY THE STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION, ROADWAY AND TRAFFIC DESIGN STANDARDS (BOOKLET DATED JANUARY 1992).

REVISIONS
ROADWAY SHEETS 1 6 7 & 13 (REVISED 02 26 92)
SIGNING AND PAVEMENT MARKING SHEETS 52 & 53 (REVISED 1 4 90)
SIGNALIZATION SHEETS T1 & T2 (REVISED 11 14 90)
ROADWAY SHEETS 14 & 33 (REVISED 12 03 90)

NAME OF DOT PROJECT MANAGER OR COORDINATOR AS APPROPRIATE

NOTE: THESE PROJECTS TO BE LET TO CONTRACT WITH STATE PROJECT NO 00000 6501 AND STATE PROJECT NO 00000 6502 (UTILITY PLANS)

NOTE: THIS PROJECT WAS DESIGNED TO MEET FDOT R R R CRITERIA

ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN REDUCED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

GOVERNING SPECIFICATIONS: STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS, DATED 1991 AND SUPPLEMENTS THERETO IF NOTED IN THE SPECIAL PROVISIONS FOR THIS PROJECT

RECYCLED PAPER

LENGTH OF PROJECT

	00000-3501		00000-3502		TOTAL	
	LINEAR FT.	MILES	LINEAR FT	MILES	LINEAR FT	MILES
ROADWAY	14342 50	2 716	21869 50	4 141	36212 00	6 858
BRIDGES	220 00	0 041	0 00	0 000	220 00	0 041
NET LENGTH OF PROJ.	14562 50	2 758	21869 50	4 141	36432 00	6 899
EXCEPTIONS	2640 00	0 500	0 00	0 000	2640 00	0 500
GROSS LENGTH OF PROJ.	17202 50	3 258	21869 50	4 141	39072 00	7 399

REVISIONS

DATE	BY	DESCRIPTION
11 90	WEC	REVISED SEQUENCE OF CONTRACT PLANS
02 92	JDH	REMOVED F A NUMBER

ROADWAY PLANS
APPROVED BY: _____
DATE: _____
P.E. NO: _____

FDOT PROJECT MANAGER :

EX II-3-A

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA.

W P I NO 0000000

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CONTRACT PLAN SET INFORMATION NOT REQUIRED WHEN THE INFORMATION IS SHOWN ON THE LEAD KEY SHEET OF THE PLAN SET

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED

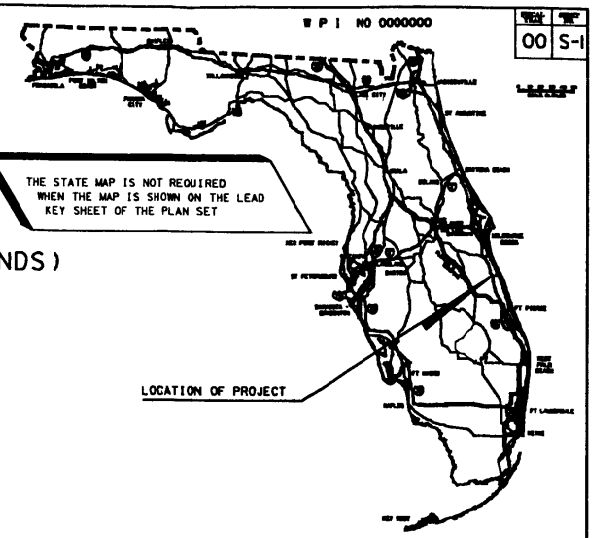
STATE HIGHWAY

STATE PROJECT NO. 00000-0000 (FEDERAL FUNDS)

INDIAN RIVER COUNTY

STATE ROAD NO. 000

THE STATE MAP IS NOT REQUIRED WHEN THE MAP IS SHOWN ON THE LEAD KEY SHEET OF THE PLAN SET



LOCATION OF PROJECT

INDEX OF SIGNING AND PAVEMENT MARKING PLANS

SHEET NO	SHEET DESCRIPTION
S 1	KEY SHEET
S 2	TABULATION OF QUANTITIES
S 3	GENERAL NOTES
S 4 S 14	PLAN SHEETS
S 15	PAVEMENT MARKING DETAILS S R 00
S 16	GUIDE SIGN DETAIL
S 17	SIGN CROSS SECTIONS

SIGNING AND PAVEMENT MARKING PLANS

SIGNING AND PAVEMENT MARKING PLANS ENGINEER OF RECORD

NAME(S) AND ADDRESS(ES) OF THE ENGINEER(S) OF RECORD WHEN REVIEW OF SHOP DRAWINGS REQUIRED

PLANS PREPARED BY :

NAME AND ADDRESS OF THE CONSULTANT FIRM WHEN THE PLANS ARE PREPARED BY A CONSULTANT

THE LOCATION MAP IS NOT REQUIRED WHEN THE MAP IS SHOWN ON THE LEAD KEY SHEET OF THE PLAN SET

NOTE THIS PROJECT TO BE LET TO CONTRACT WITH STATE PROJECT NO 00000 0000

THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH AND ARE GOVERNED BY THE STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS (BOOKLET DATED JANUARY 1992)

ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN REDUCED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

GOVERNING SPECIFICATIONS: STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS, DATED 1991 AND SUPPLEMENTS THERETO IF NOTED IN THE SPECIAL PROVISIONS FOR THIS PROJECT

LENGTH OF PROJECT INFORMATION IS NOT REQUIRED FOR INTERSECTIONS INTERCHANGES AND SIMILAR SITES OR WHEN INFORMATION IS SHOWN ON LEAD KEY SHEET OF PLAN SET

REVISION BLOCK INFORMATION IS REQUIRED WHEN THE INFORMATION IS REVISED ON THE KEY SHEET OF SIGNING & PAVEMENT MARKING PLANS

REVISION INFORMATION IS NOT REQUIRED WHEN SHOWN ON THE LEAD KEY SHEET OF THE PLAN SET

NAME OF DOT PROJECT MANAGER OR COORDINATOR AS APPROPRIATE

REVISIONS

DATE	BY	DESCRIPTION
02 92	JDH	REMOVED F A NUMBER

SIGNING AND PAVEMENT MARKING PLANS APPROVED BY _____

DATE: _____

P.E. NO.: _____

FDOT PROJECT MANAGER :

EX II-3-B

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA.

W P I NO 0000000

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CONTRACT PLAN SET INFORMATION NOT REQUIRED WHEN THE INFORMATION IS SHOWN ON THE LEAD KEY SHEET OF THE PLAN SET

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED

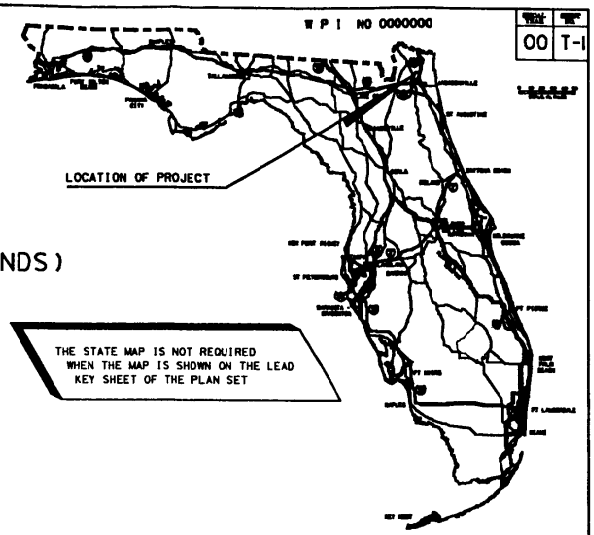
STATE HIGHWAY

STATE PROJECT NO. 00000-0000 (FEDERAL FUNDS)

DUVAL COUNTY

STATE ROAD NO. 0

LOCATION OF PROJECT



THE STATE MAP IS NOT REQUIRED WHEN THE MAP IS SHOWN ON THE LEAD KEY SHEET OF THE PLAN SET

INDEX OF SIGNALIZATION PLANS

SHEET NO	SHEET DESCRIPTION
T 1	KEY SHEET
T 2	TABULATION OF QUANTITIES
T 3	GENERAL NOTES
T 4 T 6	SIGNALIZATION PLAN SHEETS

SIGNALIZATION PLANS

SIGNALIZATION PLANS ENGINEER OF RECORD

NAME(S) AND ADDRESS(ES) OF THE ENGINEER(S) OF RECORD WHEN REVIEW OF SHOP DRAWINGS REQUIRED

THE LOCATION MAP IS NOT REQUIRED WHEN THE MAP IS SHOWN ON THE LEAD KEY SHEET OF THE PLAN SET

PLANS PREPARED BY :

NAME AND ADDRESS OF THE CONSULTANT FIRM WHEN THE PLANS ARE PREPARED BY A CONSULTANT

NOTE THIS PROJECT TO BE LET TO CONTRACT WITH STATE PROJECT NO 00000 0000

THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH AND ARE GOVERNED BY THE STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION, ROADWAY AND TRAFFIC DESIGN STANDARDS (BOOKLET DATED JANUARY 1992)

ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN REDUCED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

GOVERNING SPECIFICATIONS: STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS, DATED 19__ AND SUPPLEMENTS THERETO IF NOTED IN THE SPECIAL PROVISIONS FOR THIS PROJECT

LENGTH OF PROJECT INFORMATION IS NOT REQUIRED FOR INTERSECTIONS INTERCHANGES AND SIMILAR SITES OR WHEN INFORMATION IS SHOWN ON LEAD KEY SHEET OF PLAN SET

REVISION BLOCK INFORMATION IS REQUIRED WHEN THE INFORMATION IS REVISED ON THE KEY SHEET OF SIGNALIZATION PLANS

REVISION INFORMATION IS NOT REQUIRED WHEN SHOWN ON THE LEAD KEY SHEET OF THE PLAN SET

NAME OF DOT PROJECT MANAGER OR COORDINATOR AS APPROPRIATE

REVISIONS

DATE	BY	DESCRIPTION
09 90	WEC	ADDED SHEET T 6 TO INDEX OF PLANS
02 92	JPS	ADDED (FEDERAL FUNDS) TO STATE PROJECT NO

SIGNALIZATION PLANS APPROVED BY: _____

DATE: _____

P.E. NO.: _____

FDOT PROJECT MANAGER :

EX II-3-C

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA.

W P I NO 0000000

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CONTRACT PLAN SET INFORMATION NOT REQUIRED WHEN THE INFORMATION IS SHOWN ON THE LEAD KEY SHEET OF THE PLAN SET

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED

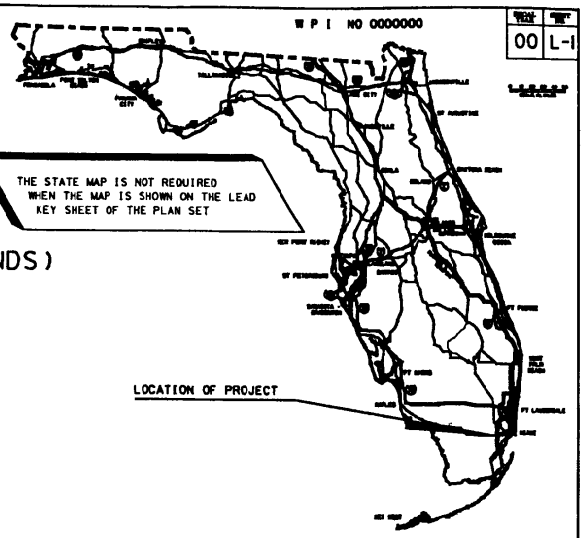
STATE HIGHWAY

STATE PROJECT NO. 00000-0000 (FEDERAL FUNDS)

DADE COUNTY

STATE ROAD NO. 00

THE STATE MAP IS NOT REQUIRED WHEN THE MAP IS SHOWN ON THE LEAD KEY SHEET OF THE PLAN SET



LOCATION OF PROJECT

INDEX OF LIGHTING PLANS

SHEET NO	SHEET DESCRIPTION
L 1	KEY SHEET
L 2	TABULATION OF QUANTITIES
L 3	POLE DATA AND LEGEND SHEET
L 4	PLAN SHEETS
L 5	HIGHMAST POLE FOUNDATIONS
L 6 & L 7	BORING DATA

LIGHTING PLANS

LIGHTING PLANS ENGINEER OF RECORD

NAME(S) AND ADDRESS(ES) OF THE ENGINEER(S) OF RECORD WHEN REVIEW OF SHOP DRAWINGS REQUIRED

THE LOCATION MAP IS NOT REQUIRED WHEN THE MAP IS SHOWN ON THE LEAD KEY SHEET OF THE PLAN SET

PLANS PREPARED BY :

NAME AND ADDRESS OF THE CONSULTANT FIRM WHEN THE PLANS ARE PREPARED BY A CONSULTANT

NOTE THIS PROJECT TO BE LET TO CONTRACT WITH STATE PROJECT NO 00000 0000

THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH AND ARE GOVERNED BY THE STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS (BOOKLET DATED JANUARY 1992)

LENGTH OF PROJECT INFORMATION IS NOT REQUIRED FOR INTERSECTIONS INTERCHANGES AND SIMILAR SITES OR WHEN INFORMATION IS SHOWN ON LEAD KEY SHEET OF PLAN SET

REVISION BLOCK INFORMATION IS REQUIRED WHEN THE INFORMATION IS REVISED ON THE KEY SHEET OF LIGHTING PLANS

ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN REDUCED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

GOVERNING SPECIFICATIONS: STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS, DATED 1991 AND SUPPLEMENTS THERETO IF NOTED IN THE SPECIAL PROVISIONS FOR THIS PROJECT

REVISION INFORMATION IS NOT REQUIRED WHEN SHOWN ON THE LEAD KEY SHEET OF THE PLAN SET

NAME OF DOT PROJECT MANAGER OR COORDINATOR AS APPROPRIATE

REVISIONS

DATE	BY	DESCRIPTION
10 90	LTB	CHANGED FA PROJ NO
02 92	JPS	REMOVED F A NUMBER
		ADDED (FEDERAL FUNDS)

LIGHTING PLANS APPROVED BY: _____

DATE: _____

P.E. NO.: _____

FDOT PROJECT MANAGER :

EX II-3-D

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA.

W P I NO 0000000

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CONTRACT PLAN SET INFORMATION NOT REQUIRED WHEN THE INFORMATION IS SHOWN ON THE LEAD KEY SHEET OF THE PLAN SET

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

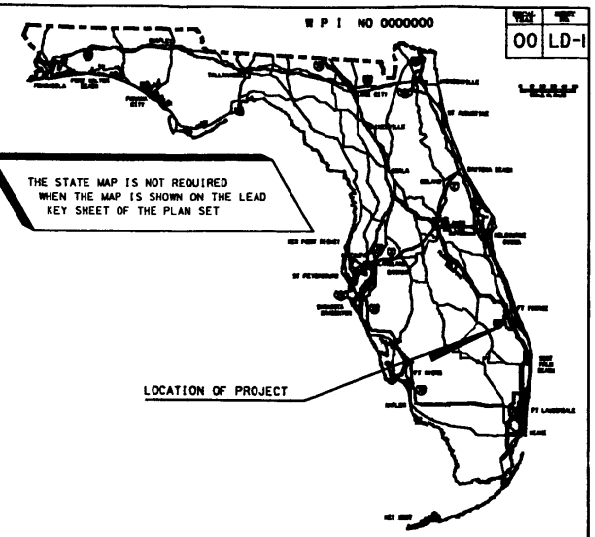
PLANS OF PROPOSED

STATE HIGHWAY

STATE PROJECT NO. 00000-0000
PALM BEACH COUNTY

STATE ROAD NO. 000 (UNIVERSITY BLVD.)

THE STATE MAP IS NOT REQUIRED WHEN THE MAP IS SHOWN ON THE LEAD KEY SHEET OF THE PLAN SET



LOCATION OF PROJECT

INDEX OF LANDSCAPE PLANS

SHEET NO	SHEET DESCRIPTION
LD 1	KEY SHEET
LD 2	TABULATION OF QUANTITIES
LD 3	GENERAL NOTES
LD 4 LD 6	PLAN SHEETS
LD 7	STANDARD DETAILS SHEET

LANDSCAPE PLANS

LANDSCAPE PLANS
ENGINEER OF RECORD

NAME(S) AND ADDRESS(ES) OF THE ENGINEER(S) OF RECORD WHEN REVIEW OF SHOP DRAWINGS REQUIRED

THE LOCATION MAP IS NOT REQUIRED WHEN THE MAP IS SHOWN ON THE LEAD KEY SHEET OF THE PLAN SET

PLANS PREPARED BY :

NAME AND ADDRESS OF THE CONSULTANT FIRM WHEN THE PLANS ARE PREPARED BY A CONSULTANT

NOTE THIS PROJECT TO BE LET TO CONTRACT WITH STATE PROJECT NO 00000 0000

THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH AND ARE GOVERNED BY THE STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION, ROADWAY AND TRAFFIC DESIGN STANDARDS (BOOKLET DATED JANUARY 1992)

ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN REDUCED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

GOVERNING SPECIFICATIONS: STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS DATED 1991 AND SUPPLEMENTS THERETO IF NOTED IN THE SPECIAL PROVISIONS FOR THIS PROJECT

LENGTH OF PROJECT INFORMATION IS NOT REQUIRED FOR INTERSECTIONS INTERCHANGES AND SIMILAR SITES OR WHEN INFORMATION IS SHOWN ON LEAD KEY SHEET OF PLAN SET

REVISION BLOCK INFORMATION IS REQUIRED WHEN THE INFORMATION IS REVISED ON THE KEY SHEET OF LANDSCAPE PLANS

REVISION INFORMATION IS NOT REQUIRED WHEN SHOWN ON THE LEAD KEY SHEET OF THE PLAN SET

NAME OF DOT PROJECT MANAGER OR COORDINATOR AS APPROPRIATE

REVISIONS

DATE	BY	DESCRIPTION
08 90	RRR	DELETED PLAN SHEET LD 7 FROM INDEX

LANDSCAPE PLANS
APPROVED BY: _____
DATE: _____
P.E. NO.: _____

FDOT PROJECT MANAGER :

EX II-3-E

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA.

CONTRACT PLAN SET INFORMATION NOT REQUIRED WHEN THE INFORMATION IS SHOWN ON THE LEAD KEY SHEET OF THE PLAN SET

INDEX OF BUILDING CONSTRUCTION PLANS

SHEET NO	SHEET DESCRIPTION
ARCHITECTURAL DRAWINGS	
K 1	KEY SHEET
A 1	SITE PLAN NORTHBOUND
A 2	SITE PLAN SOUTHBOUND
A 3	FOUNDATION PLAN NOTES
A 4	FLOOR PLAN ROOM FINISH SCHEDULE
A 5	ROOF FRAMING PLAN DETAILS
A 6	ELEVATIONS DOOR SCHEDULE AND DETAILS
A 7	WALL SECTIONS AND DETAILS
A 8	WALL SECTIONS AND DETAILS
A 9	1/4" TOILET PLAN AND ELEVATIONS
A 10	STRUCTURAL DETAILS
A 11	FINISH SCHEDULE AND DETAILS
CIVIL DRAWINGS	
C 1	UTILITY SITE PLAN
MECHANICAL DRAWINGS	
U 1	SITE PLAN
U 2	SITE PLAN NORTHBOUND
U 3	SITE PLAN SOUTHBOUND
M 1	SCHEDULES NOTES
M 2	DUCTWORK LEGEND
M 3	H V A C FLOOR PLAN
M 4	CONTROL DIAGRAMS
J 1	JACKING AND BORING DETAILS
ELECTRICAL DRAWINGS	
E 1	SYMBOLS AND ABBREVIATIONS
E 2	LIGHTING PLAN
E 3	POWER PLAN
E 4	SCHEDULES
SUB-SURFACE INVESTIGATION	
B 1	SOIL BORINGS NORTHBOUND
B 2	SOIL BORINGS SOUTHBOUND
PICNIC PAVILIONS	
PP 1	PICNIC PAVILION DETAILS
PP 2	PICNIC PAVILION DETAILS
PP 3	PICNIC PAVILION DETAILS
PP 4	PICNIC PAVILION DETAILS

THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH AND ARE GOVERNED BY THE STANDARD BUILDING CODE

REFERENCE NOTE IS REQUIRED FOR "ROADWAY AND TRAFFIC DESIGN STANDARDS WHEN APPLICABLE INDEXES ARE INCLUDED (GRADING PARKING AND OTHER DETAILS)

REVISION INFORMATION IS NOT REQUIRED WHEN SHOWN ON THE LEAD KEY SHEET OF THE PLAN SET

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
REST AREAS

STATE PROJECT NO. 13000-0000 (FEDERAL FUNDS)
STATE PROJECT NO. 15000-0000 (FEDERAL FUNDS)
MANATEE & PINELLAS COUNTIES

(MANATEE REST AREA SOUTHBOUND)
(PINELLAS REST AREA NORTHBOUND)

BUILDING CONSTRUCTION PLANS

THE LOCATION MAP IS NOT REQUIRED WHEN THE MAP IS SHOWN ON THE LEAD KEY SHEET OF THE PLAN SET

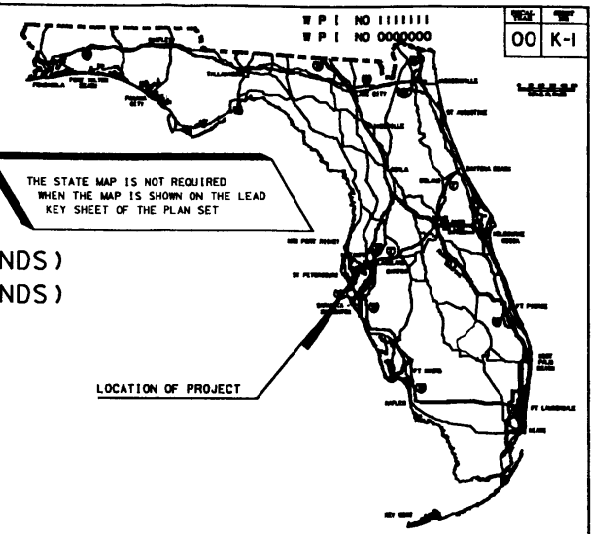
REVISION BLOCK INFORMATION IS REQUIRED WHEN THE INFORMATION IS REVISED ON THE KEY SHEET OF BUILDING CONSTRUCTION PLANS

REVISIONS		
DATE	BY	DESCRIPTION
04 91	JDH	DELETED UTILITY SHEET
02 92	JPS	REMOVED F A NUMBER

W P I NO 1111111
W P I NO 0000000

SHEET	OF
00	K-1

THE STATE MAP IS NOT REQUIRED WHEN THE MAP IS SHOWN ON THE LEAD KEY SHEET OF THE PLAN SET



BUILDING CONSTRUCTION PLANS
ARCHITECT OF RECORD

NAME(S) AND ADDRESS(ES) OF THE ARCHITECT(S) OF RECORD WHEN REVIEW OF SHOP DRAWINGS REQUIRED

PLANS PREPARED BY :

NAME AND ADDRESS OF THE CONSULTANT FIRM WHEN THE PLANS ARE PREPARED BY A CONSULTANT

NOTE THIS PROJECT TO BE LET TO CONTRACT WITH STATE PROJECT NO 00000 0000

ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN REDUCED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

GOVERNING SPECIFICATIONS: STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS DATED 19__ AND SUPPLEMENTS THERETO IF NOTED IN THE SPECIAL PROVISIONS FOR THIS PROJECT

BUILDING CONSTRUCTION PLANS
APPROVED BY: _____
DATE: _____
ARCHITECT NO.: _____

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA.

STATE PROJECT NO. 00000-0000

- JOB IDENTITY NUMBER
- DESIGNATES SYSTEM (TURNPIKE INTERSTATE PRIMARY OR SECONDARY)
- DESIGNATES JOB TYPE
- DESIGNATES SECTION NUMBER (PRIMARY OR SECONDARY)
- DESIGNATES COUNTY (EXCEPT TURNPIKE & STATEWIDE ARCHITECTURAL INSTITUTIONAL)

STATE PROJECT NO. 13120-3521
MANATEE COUNTY

STATE ROAD NO. 70

STATE PRIMARY CONSTRUCTION WITHIN ONE COUNTY OF ONE STATE ROAD

STATE PROJECT NO. 97930-3325
PALM BEACH AND MARTIN COUNTIES

STATE ROAD NO. 91 (FLORIDA'S TURNPIKE)

FLORIDA S TURNPIKE (F A N/A) CONSTRUCTION WITHIN TWO COUNTIES OF ONE STATE ROAD

STATE PROJECT NO. 99007-3519
HILLSBOROUGH COUNTY

ARCHITECTURAL INSTITUTIONAL STATE PRIMARY CONSTRUCTION WITHIN ONE COUNTY (STATE ROAD NO N/A)

FEDERAL AID PROJECT FOR STATE PRIMARY CONSTRUCTION WITHIN ONE COUNTY OF ONE STATE ROAD

STATE PROJECT NO. 31010-3511 (FEDERAL FUNDS)
GILCHRIST COUNTY

STATE ROAD NO. 26

BRIDGE & APPROACHES FEDERAL AID PROJECT STATE SECONDARY CONSTRUCTION WITHIN ONE COUNTY (STATE ROAD NO N/A) DESCRIPTION LOCATION: COUNTY ROAD & NAME

STATE PROJECT NO. 03000-3622 (FEDERAL FUNDS)
COLLIER COUNTY

C.R. 92 (SAN MARCO ROAD)

FEDERAL AID PROJECT WITH STATE PRIMARY CONSTRUCTION AND SEPARATE STATE PRIMARY CONSTRUCTION WITHIN ONE COUNTY OF ONE STATE ROAD

STATE PROJECT NO. 08070-3515 (FEDERAL FUNDS)
AND STATE PROJECT NO. 08070-3517
HERNANDO COUNTY

STATE ROAD NO. 50 (U.S. 98)

INTERSTATE ONE FEDERAL AID PROJECT FOR ONE STATE PRIMARY CONSTRUCTION PROJECT WITHIN ONE COUNTY CONSTRUCTION ALONG STATE ROAD AND INTERSTATE

STATE PROJECT NO. 15170-3427 (FEDERAL FUNDS)
PINELLAS COUNTY

STATE ROAD NO. 55 AND STATE ROAD NO. 93 (I-275)

INTERSTATE ONE FEDERAL AID PROJECT FOR SPLIT FUNDED INTERSTATE CONSTRUCTION WITHIN ONE COUNTY OF ONE STATE ROAD DESCRIPTION LOCATION: INTERSTATE NUMBER

STATE PROJECT NO. 86095-3463 (FEDERAL FUNDS)
STATE PROJECT NO. 86095-3488 (FEDERAL FUNDS)
BROWARD COUNTY

STATE ROAD NO. 862 (I-595)

FEDERAL AID PROJECT WITH STATE SECONDARY CONSTRUCTION AND SEPARATE FEDERAL AID PROJECT WITH STATE SECONDARY CONSTRUCTION DESCRIPTION LOCATION: COUNTY ROAD & NAME

STATE PROJECT NO. 48527-3601 (FEDERAL FUNDS)
STATE PROJECT NO. 48577-3602 (FEDERAL FUNDS)
ESCAMBIA COUNTY

C.R. 95-A (OLD PALAFOX)

FEDERAL AID PROJECT WITH STATE PRIMARY CONSTRUCTION AND SEPARATE FEDERAL AID PROJECT WITH STATE PRIMARY CONSTRUCTION WITHIN ONE COUNTY OF ONE STATE ROAD

STATE PROJECT NO. 90060-3588 (FEDERAL FUNDS)
STATE PROJECT NO. 90060-3509 (FEDERAL FUNDS)
MONROE COUNTY

STATE ROAD NO. 5 (U.S. 1)

PROJECT LOCATION AND DESCRIPTION EXAMPLES

CHAPTER 4

SUMMARY OF PAY ITEMS

4.1 General

The summary of pay items sheet is generated from information input by the designer into the CES system This sheet may be the output generated by the CES system, and placed directly behind the lead key sheet The CES output from all design groups (Roadway, Traffic, Structures, etc) should be numbered consecutively As an alternate, the CES file may be transferred to a graphics design file and placed on a normally formatted plan sheet In all cases, the CES file must be established and kept current with the quantities listed in the plans

4.2 Summary of Pay Items Sheet

The summary of pay items sheet(s) shows all items and estimated quantities for the project, or projects, in a contract Summary of Pay Items (CES Summaries) attached directly behind the first/lead Key Sheet must include

1 all the summaries for all component sets listed

These should be placed in the same order as the contract plans listed on the Key Sheet They should be numbered consecutively and the total should agree with the number shown on the first/lead Key Sheet

Note Only the first/lead Key Sheet for the entire contract should contain reference to Summary of Pay Items (XX sheets) (The XX

refers to the total number of CES sheets for all components and all projects included in the contract)

2 all projects let under this contract.

Projects that are let under the same contract should be "strung" together (See the CES Manual on how to string jobs) The lead project should be the first project on the Summary of Pay Items

Summary of pay items notes may be included on this sheet when a normally formatted plan sheet is used, or on the summary of quantities sheet when the computer output is placed directly in the plans For small projects, the two sheets may be combined into one sheet

Summary of pay items sheet <u>without</u> quantities is required at the 60% phase submittal and a complete summary of pay items sheet <u>with</u> quantities is required at the 90% and 100% phase submittals Refer to Volume II, Chapter 2 of the Plans Preparation Manual for "requirements of phase submittals"

00000-0000

SUMMARY OF ROADWAY PAY ITEMS

ALT	SP CC	ITEM NUMBER	ITEM	UNIT	00000-0000 FA PART				QUANTITY TOTAL
	1	101- 1-	MOBILIZATION	LS	1 000				1 000
	1	102- 1-	MAINT OF TRAFFIC	LS	1 000				1 000
	1	102- 3-	COMMERCIAL MATL FOR DRIVEWAY MAINT	CY	121 000				121 000
	2	102- 72-	CONC BARRIER (TEMPORARY)	LF	6387 000				387 000
	2	102- 74- 1	BARRICADE (TEMPORARY)(TYPES I,II,VP & DRUM)	ED	81348 000				8348 000
	2	102- 74- 2	BARRICADE (TEMPORARY)(TYPE III) (6')	ED	1312 000				312 000
	2	102- 75-	CONSTRUCTION SIGNS (TEMP - POST MOUNTED)	ED	18596 000				1596 000
	2	102- 76-	ADVANCE WARNING ARROW PANELS	ED	132 000				132 000
	2	102- 77-	HIGH INTENSITY FLASHING LIGHTS (TEMP - TYPE B)	ED	6679 000				679 000
	2	102- 78-	REFLECTIVE PAVT MARKER (TEMPORARY)	EA	1128 000				128 000
	2	102- 81-	VEHICULAR IMPACT ATTENUATOR (INERTIA) (TEMP)	EA	2 000				2 000
	2	102- 82-	RELOCATE TEMPORARY VEHICULAR IMPACT ATTENUATOR	EA	2 000				2 000
	2	102- 83-	RELOCATE TEMPORARY CONC BARRIER WALL	LF	6387 000				387 000
	2	102- 92- 3	TEMPORARY PAVEMENT MARKING (SKIP)	GM	902				902
	2	102- 92- 4	TEMPORARY PAVEMENT MARKING (SOLID)	NM	16 175				16 175
	2	102- 96-	TEMPORARY REGULATORY SIGNS (POST-MOUNTED)	ED	7572 000				572 000
	1	104- 5-	SANDBAGGING	CY	3 000				3 000
	1	104- 6-	SLOPE DRAINS (TEMPORARY)	LF	30 000				30 000
	1	104- 10-	BALED HAY OR STRAW	TN	19 400				19 400
	2	105- 70-	TRAINEE MANHOURS	MH	4000 000				000 000
	1	110- 2-	CLEARING & GRUBBING	AC	34 206				34 206
	2	110- 7- 1	MAILBOX (F&I) (SINGLE)	EA	52 000				52 000
	1	120- 1-	REGULAR EXCAVATION	CY	64493 000				6493 000
	1	120- 2- 2	BORROW EXCAVATION (TRUCK MEASURE)	CY	36098 000				3098 000
	1	120- 4-	SUBSOIL EXCAVATION	CY	18718 000				1718 000
	1	160- 4-	TYPE B STABILIZATION	SY	85918 000				8918 000
	3	162- 2-	TOPSOIL	SY	28211 000				2211 000
	1	285-705-	OPTIONAL BASE (BASE GROUP 05)	SY	10380 000				1380 000
	1	285-706-	OPTIONAL BASE (BASE GROUP 06)	SY	12443 000				1443 000
	1	285-709-	OPTIONAL BASE (BASE GROUP 09)	SY	72398 000				7398 000
	1	285-716-	OPTIONAL BASE (BASE GROUP 16)	SY	4512 000				512 000
	1	286- 1-	TURNOUT CONSTRUCTION	SY	4132 000				132 000
	1	286- 2-	TURNOUT CONSTRUCTION (ASPHALT)	TN	142 400				142 400
	1	339- 1-	MISC ASPHALT PAVEMENT	TN	301 000				301 000
	1	400- 1- 2	CLASS I CONC (ENDWALLS)	CY	11 840				11 840
	1	400- 1- 11	CLASS I CONC (RETAINING WALLS)	CY	195 300				195 300
	1	400- 2- 1	CLASS II CONC (CULVERTS)	CY	38 970				38 970
	1	400- 2- 11	CLASS II CONC (RETAINING WALLS)	CY	552 000				552 000
	1	415- 1- 1	REINF STEEL (ROADWAY)	LB	4210 000				210 000
	1	415- 1- 3	REINF STEEL (RETAINING WALL)	LB	42805 000				4805 000
	1	425- 1-311	INLETS (CURB) (TYPE P-1) (<10')	EA	49 000				49 000
	1	425- 1-315	INLETS (CURB) (TYPE P-1) (PARTIAL)	EA	2 000				2 000
	1	425- 1-321	INLETS (CURB) (TYPE P-2) (<10')	EA	2 000				2 000
	1	425- 1-351	INLETS (CURB) (TYPE P-5) (<10')	EA	2 000				2 000
	1	425- 1-411	INLETS (CURB) (TYPE J-1) (<10')	EA	7 000				7 000
	1	425- 1-421	INLETS (CURB) (TYPE J-2) (<10')	EA	5 000				5 000
	1	425- 1-471	INLETS (CURB) (TYPE 7) (<10')	EA	4 000				4 000
	1	425- 1-521	INLETS (DT BOT) (TYPE C) (<10')	EA	1 000				1 000
	1	425- 1-541	INLETS (DT BOT) (TYPE D) (<10')	EA	5 000				5 000
	1	425- 1-543	INLETS (DT BOT) (TYPE D) (J BOT ,<10')	EA	2 000				2 000

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA

STATE PROJ NO	SHEET NO.
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SUMMARY OF ROADWAY PAY ITEMS

ASLPTC	ITEM NUMBER	ITEM	UNIT	00000 0000 FA PART				QUANTITY TOTAL
1	101 1	MOBILIZATION	LS	1 000				1 000
1	102 1	MAINT OF TRAFFIC	LS	1 000				1 000
	02 3	COMMERCIAL MATL FOR DRIVEWAY MAINT	CY	121 000				121 000
2	102 72	CONC BARRIER (TEMPORARY)	LF	6387 000				6387 000
2	02 74 1	BARRICADE (TEMPORARY (T PES I II VP & DRUM)	ED	81348 000				81348 000
2	102 74 2	BARRICADE (TEMPORARY)(TYPE III) (6)	ED	1312 000				13 2 000
2	02 75	CONSTRUCTION SIGNS (TEMP POST MOUNTED)	ED	18596 000				18596 000
2	02 76	ADVANCE WARNING ARROW PANELS	ED	32 000				132 000
2	02 77	HIGH INTENSITY FLASHING LIGHTS (TEMP TYPE B)	ED	6679 000				6679 000
2	102 78	REFLECTIVE PAVT MARKER (TEMPORARY)	EA	1128 000				1128 000
2	02 81	VEHICULAR IMPACT ATTENUATOR ((INERTIA) (TEMP)	EA	2 000				2 000
2	102 82	RELOCATE TEMPORARY VEHICULAR IMPACT ATTENUATOR	EA	2 000				2 000
2	02 83	RELOCATE TEMPORARY CONC BARRIER WALL	LF	6387 000				6387 000
2	102 92 3	TEMPORARY PAVEMENT MARKING (SKIP)	GM	902				902
2	02 92 4	TEMPORARY PAVEMENT MARKING (SOLID)	NM	16 175				6 175
2	102 96	TEMPORARY REGULATORY SIGNS (POST MOUNTED)	ED	7572 000				7572 000
1	104 5	SANDBAGGING	CY	3 000				3 000
	104 6	SLOPE DRAINS (TEMPORARY)	LF	30 000				30 000
1	104 10	BALED HAY OR STRAW	TN	19 400				19 400
2	05 70	TRAINEE MANHOURS	MH	4000 000				4000 000
1	110 2	CLEARING & GRUBBING	AC	34 206				34 206
2	0 7 1	MAILBOX (FBI) (SINGLE)	EA	52 000				52 000
1	120 1	REGULAR EXCAVATION	CY	6493 000				6 493 000
1	120 2 2	BORROW EXCAVATION (TRUCK MEASURE)	CY	36098 000				36098 000
	120 4	SUBSOIL EXCAVATION	CY	18716 000				16716 000
1	160 4	TYPE B STABILIZATION	S	859 8 000				85918 000
3	62 2	TOPSOIL	SY	28211 000				282 1 000
	285 705	OPTIONAL BASE (BASE GROUP 05)	SY	10380 000				10380 000
1	285 706	OPTIONAL BASE (BASE GROUP 06)	SY	12443 000				12443 000
1	285 709	OPTIONAL BASE (BASE GROUP 09)	SY	72398 000				72398 000
	285 7 6	OPTIONAL BASE (BASE GROUP 16)	SY	4512 000				45 2 000
	286 1	TURNOUT CONSTRUCTION	SY	4132 000				4 32 000
1	286 2	TURNOUT CONSTRUCTION (ASP ALT)	TN	142 400				142 400
1	339 1	MISC ASPHALT PAVEMENT	TM	301 000				30 000
1	400 1 2	CLASS I CONC (ENDWALLS)	CY	11 840				1 840
1	400 1 11	CLASS I CONC (RETAINING WALLS)	CY	195 300				95 300
1	400 2 1	CLASS II CONC (CULVERTS)	CY	38 970				38 970
1	400 2 11	CLASS II CONC (RETAINING WALLS)	CY	552 000				552 000
1	415 1 1	REINF STEEL (ROADWAY)	LB	4210 000				42 0 000
1	415 1 3	REINF STEEL (RETAINING WALL)	LB	42805 000				42805 000
1	425 1 311	INLETS (CURB) (TYPE P 1) (10)	EA	49 000				49 000
1	425 1 315	INLETS (CURB) (TYPE P 1) (PARTIAL)	EA	2 000				2 000
1	425 1 321	INLETS (CURB) (TYPE P 2) (10)	EA	2 000				2 000
1	425 1 351	INLETS (CURB) (TYPE P 5) (10)	EA	2 000				2 000
1	425 1 411	INLETS (CURB) (TYPE J 1) (10)	EA	7 000				7 000
1	425 1 421	INLETS (CURB) (TYPE J 2) (10)	EA	5 000				5 000
1	425 1 471	INLETS (CURB) (TYPE 7) (10)	EA	4 000				4 000
1	425 1 52	INLETS (DT BOT) (T PE C) (10)	EA	1 000				000
1	425 1 541	INLETS (DT BOT) (TYPE D) (0)	EA	5 000				5 000
1	425 1 545	INLETS (DT BOT) (TYPE D) (J BOT 10)	EA	2 000				2 000

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SUMMARY OF ROADWA PAY ITEMS CONTRACT ITEMS CONTINUED

ASLPTC	ITEM NUMBER	ITEM	UNIT	00000 0000 FA PART				QUANTITY TOTAL
	425 551	INLETS (DT BOT) (TYPE E) (10)	EA	4 000				4 000
	425 1 561	INLETS (DT BOT) (TYPE F) (10)	EA	5 000				5 000
	425 2 1	MANHOLES (P TT (10)	EA	2 000				2 000
	425 2 51	MANHOLES (P TNT) (10)	EA	7 000				7 000
	425 2 81	MAN OLES (J TNT) (10)	EA	8 000				8 000
	425 2 83	MAN OLES (J TNT) (PARTIAL)	EA	2 000				2 000
1	425 3 3	JUNCTION BOXES (P TT) (PARTIAL)	EA	1 000				000
	425 3 71	JUNCTION BOXES (J TNT) (0)	EA	1 000				000
1	430 11 323	CONC PIPE CULV (CLASS III) (15 SS)	LF	529 000				529 000
1	430 11 325	CONC PIPE CULV (CLASS III) (18 SS)	LF	46 7 000				4617 000
	430 1 329	CONC PIPE CULV (CLASS III) (24 SS)	LF	1473 000				1473 000
1	430 333	CONC PIPE CULV (CLASS III) (30 SS)	LF	2393 000				2393 000
1	430 1 338	CONC PIPE CULV (CLASS III) (36 SS)	LF	2446 000				2446 000
1	430 11 340	CONC PIPE CULV (CLASS III) (42 SS)	LF	420 000				420 000
	430 2 243	CORR STEEL PIPE CULV (GAUGE 12) (60 SS)	LF	180 000				80 000
3	430 200 25	FLARED END SECTION (ONCRETE) (18)	EA	1 000				1 000
3	30 200 29	FLARED END SECTION (CONCRETE) (24)	EA	1 000				1 000
3	430 200 33	FLARED END SECTION (CONCRETE) (30)	EA	1 000				000
3	430 982 233	MITERED END SECTION (CONC PIPE ROUND) (30 CD)	EA	2 000				2 000
3	430 982 2 0	MITERED END SECTION (CONC PIPE ROUND) (42 CD)	EA	1 000				1 000
3	30 982 243	MITERED END SECTION (CONC PIPE ROUND) (60 CD)	EA	2 000				2 000
1	440 1 10	UNDERDRAIN TYPE I	LF	12775 000				12775 000
2	500 71	ALUM HANDRAIL	LF	828 000				828 000
1	520 1 7	CONC CURB & GUTTER (TYPE E	LF	11536 440				11536 4 0
	520 0	CONC CURB & GUTTER (TYPE F)	LF	6832 000				16832 000
1	520 5 11	CONC TRAF SEP (TYPE I) (4 WIDE)	LF	1010 000				0 0 000
	520 5 2	CONC TRAF SEP (TYPE I) (6 WIDE)	LF	684 000				68 000
1	522	CONC SIDEPALK (4 THICK)	SY	7 7 000				7171 000
	522 2	CONC SIDEPALK (6 THICK)	SY	994 000				994 000
1	524 1	CONC DITCH PAVT (3)	SY	28 310				24 3 0
2	530 70 1	RIPRAP (BROKEN CONCRETE) (ROADWA)	SY	118 000				118 000
1	536 1	GU RDRAIL (ROADWA	LF	587 500				587 500
1	536 9	END ANCHORAGE ASSEM TYPE IV	EA	2 000				2 000
1	570 2	SEED & MULCH	S	282 000				282 1 000
	570 3	GRASS SEED (PERMANENT T PE)	LB	583 000				583 000
	570 4	MULCH MATL	TN	23 300				23 300
	5 0 5	FERTILIZER	TN	5 400				5 400
1	570 9	WATER FOR GRASS	MG	365 000				365 000
1	570 10	GRASS SEED (QUICK GROWING TYPE)	LB	405 000				405 000
	575 1	SODDING	SY	37 26 000				37 26 000
2	5331 2	TYPE S ASPH CONC(INC BIT)	TN	10 000				0 000
2	5331 72 10	TYPE S ASPH CONC I C BIT)(1	SY	4 29 000				14129 000
2	5331 72 20	TYPE S ASPH CONC(INC BIT)(2)	SY	22823 000				22823 000
2	5331 72 24	T PE S SPH CONC INC BIT)(2 /2	SY	627 5 000				62715 000
2	5331 72 40	TYPE S ASPH CONC(INC BIT)(4	SY	14702 000				14702 000
2	5337 5	ASP CONC FRICTION COURSE(INC BIT))(FC OR 4)	SY	1005 9 000				100519 000

NOTE IDENTIFIES ITEMS NORMALLY REQUIRING SHOP DRAWINGS CONTRACTOR SHALL DETERMINE OTHER ITEMS REQUIRING SHOP DRAWINGS

REVISION

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	B	DESCRIPTION

	NAME	DATE		NAME	DATE
DESIGNED BY			DRAWN BY		
CHECKED BY			CHECKED BY		
SUPERVISED BY					

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
DATE

CONSULTANT LOGO IF HAS PREPARED BY CONSULTANT

Summary of Pay Items

EX II 4-B

CHAPTER 5

DRAINAGE MAP

5.1 General

The drainage map shall be prepared and included in the project file Inclusion of a drainage map in the plans set is optional at the District's discretion

The drainage map shall be prepared on sheet format having a profile format across the upper 5" - 10" portion This area shall be used for plotting the project profile Topography of the project area shall be located in the remaining portion of the sheet For inclusion in the plans set, only digitized topography drainage maps shall be used

If the drainage map is included in the plans set, the presentation of the profile portion is optional, to be prepared at the discretion of the District

The horizontal and vertical scales of the profile should be such that the stations and elevations can be read directly from the grid without the use of a scale The horizontal scale must be the same for both the plan and profile views Recommended scales for various facilities are as follows

Type of Facility	Horizontal Scale	Vertical Scale
Interstate Urban	1" = 200'/400'	1" = 5'/1" = 10'
Interstate & Other Rural	1" = 500'/1,000'	1" = 10'/1" =20'
Municipal & Other	1" = 100'/200'	1" = 5'/1" = 10'

5 1 1 Flood Data Summary Box

The flood data shall be shown on the drainage map either in the plan or in the profile portion If the drainage map is not included in the plans set, then the flood data shall be shown on the summary of quantities sheet or on the first plan - profile sheet

Design, base and overtopping or greatest flood discharge and stage values are required on all federal-aid projects for all cross structures, regardless of size, under the following conditions

1 All new cross structures,
2 All structures that are being modified (extended, new end section, replaced, etc)
3 All structures that have a history of flooding or other hydraulic problems, even if the structure is not to be modified, or
4 Structures that are not being modified but are being impacted by the modification of another structure within the same drainage basin

A "disclaimer" and definitions are required to avoid misuse and possible responsibility for changes in the flood information values over which the DOT has no control

The drainage designer should provide the information required to complete the box An example of a completed box is shown on Exhibit II-5-A-1

5 2 **Plan Portion**

The plan portion shall include the following data

1 Stationing shall be shown every 500 feet for all recommended scales except 1" = 1000 for which stationing shall be shown every 5000 feet Centerline of project with begin and end project stations, station equations, begin and end stations for exceptions and bridge/bridge culverts shall be flagged

2 Physical land features affecting drainage, such as lakes, streams, and swamps shall be clearly labeled by name and direction of flow Past high water elevations and date of occurrence, if available, and present water elevations along with the dates the readings were taken shall be shown

3 Existing road numbers and street names drainage structures, showing type, size, flow line elevations, flow arrows and any other pertinent data shall be shown Refer to Standard Index No 002 for correct symbols for existing drainage facilities In a situation of limited space, all data relating to existing drainage structures and pipes may be compiled in a table format and shown in either the plan or profile portion of the sheet Should the space limitations be such that a table would not fit within the plan or profile view, a supplemental drainage data sheet would be acceptable

4 Drainage divides and information, where applicable, to indicate the overland flow of water shall be shown Drainage areas on maps shall be shown in acres

Inserts shall be used to show areas that are of such magnitude that the boundaries cannot be plotted at the selected scale

5 Proposed drainage structures, pipes, outfall structures and retention/detention pond locations shall be shown and noted by structure number Refer to Standard Index No 002 for correct symbols Arrows shall be shown to indicate direction of flow along proposed ditches

6 Section, Township, Range and county lines shall be indicated for rural projects and when possible, urban projects

7 A north arrow and graphic scale shall be drawn, preferably in the upper right corner

8 When not provided on the supplemental drainage structure sheet, culvert backfill values for pH, resistivity, sulfates and chlorides for the various optional culvert materials shall be shown in either the plan or profile portion See Section 8 2

5 3 Profile Portion

The profile portion, if shown, shall include the following data

1 The recommended vertical scale for rural and urban projects is 1" = 5' in level terrain and 1" = 10' in rolling terrain although a scale of 1" = 20' may sometimes be used for rural projects through rough terrain to avoid numerous profile breaks Profile can be broken for rolling terrain in urban areas However a scale of 1" = 20' should never be used at locations of proposed storm sewer systems

2 Elevation datum shall be shown at each side of the sheet In cases where the 5" profile block is insufficient and excess space is available on the plan portion of the sheet, the profile block may be expanded from a 5" depth to a 8" or 10" depth

3 The existing natural ground shall be plotted with a light, solid line and the existing elevation noted at each end of the profile

4 The proposed profile grade line shall be plotted using a heavy, solid line Percents of grade need not be shown The P C , P I , and P T of vertical curves shall be plotted using their respective standard symbols, however, no data (station, elevation, length of curve) needs be noted Begin and end project bridge and bridge culvert stations, station equations and exceptions shall be flagged and noted Profile grade line elevations shall be shown at begin and end project stations and at the beginning and end of each additional drainage sheet

5 When horizontal and vertical scales permit, all proposed special ditches, except median, shall be plotted and indicated with a heavy broken line (long dashes) and D P I elevations and stations noted

6 Proposed cross drains shall be plotted and identified by structure number Do not attempt to show skew or pipe slope in plotting but merely plot to elevation and location at point of crossing the construction centerline In cases of more than usual slope, the elevation at each end of the structure shall be shown Median drains need not be shown

7 For projects with storm sewer systems only the mainline structure and pipes shall be shown Laterals need not be shown Each structure shall be flagged with its appropriate structure number, and flow line elevations noted for the incoming and outgoing mainline pipes

8 All high waters affecting construction shall be shown (including year) Any high water that is to be lowered shall be so noted and the design high water elevation given A light, broken line shall be drafted at the high water elevation, and the elevation noted

5 4 Interchange Drainage Map

If projects involve interchanges or rest areas, a supplemental drainage map on a 1" = 100 or 1" = 200' scale shall be required, showing only the plan portion on a sheet, without a profile grid The purpose of this detail is to show the small areas needed to calculate pipe sizes for the tabulation of drainage structures within these special areas Should major drains pass through one of these areas, a cross reference note should indicate the proper sheet which reflects the drainage area for that through-structure

5 5 Bridge Hydraulic Recommendation Sheet

A bridge hydraulic recommendation sheet (BHRS) shall be prepared on preformatted sheet for all projects involving bridge culverts connecting bodies of water or bridges spanning a body of water, except for minor bridge widening projects Preformatted sheets can be obtained from the DOT Project Manager/Coordinator or CADD cell library The inclusion of this sheet in the plans set is optional at the discretion of the District When included in the plans the BHRS for bridges shall be placed in the structure plans For bridge culverts it shall be placed in the roadway plans If the BHRS is not included in the plans, sufficient detail to show the location and extent of bottom and slope protection shall be contained in the plans

In addition to the hydraulic design data, plan and profile of the bridge structure, existing topography, site location, and drainage areas shall also be shown The effective area of opening should be shown for existing structures within a reasonable proximity on the same waterway Parallel (dual) bridges may be shown on one sheet, although a second sheet should be used, if necessary, to clearly convey the fit of the bridge to the stream bank When two sheets are used, only the plan and profile information needs to be furnished on the second sheet

A completed Bridge Hydraulic Recommendation Sheet is shown as Exhibit EX II-5-C

5 5 1 Required Information on BHRS

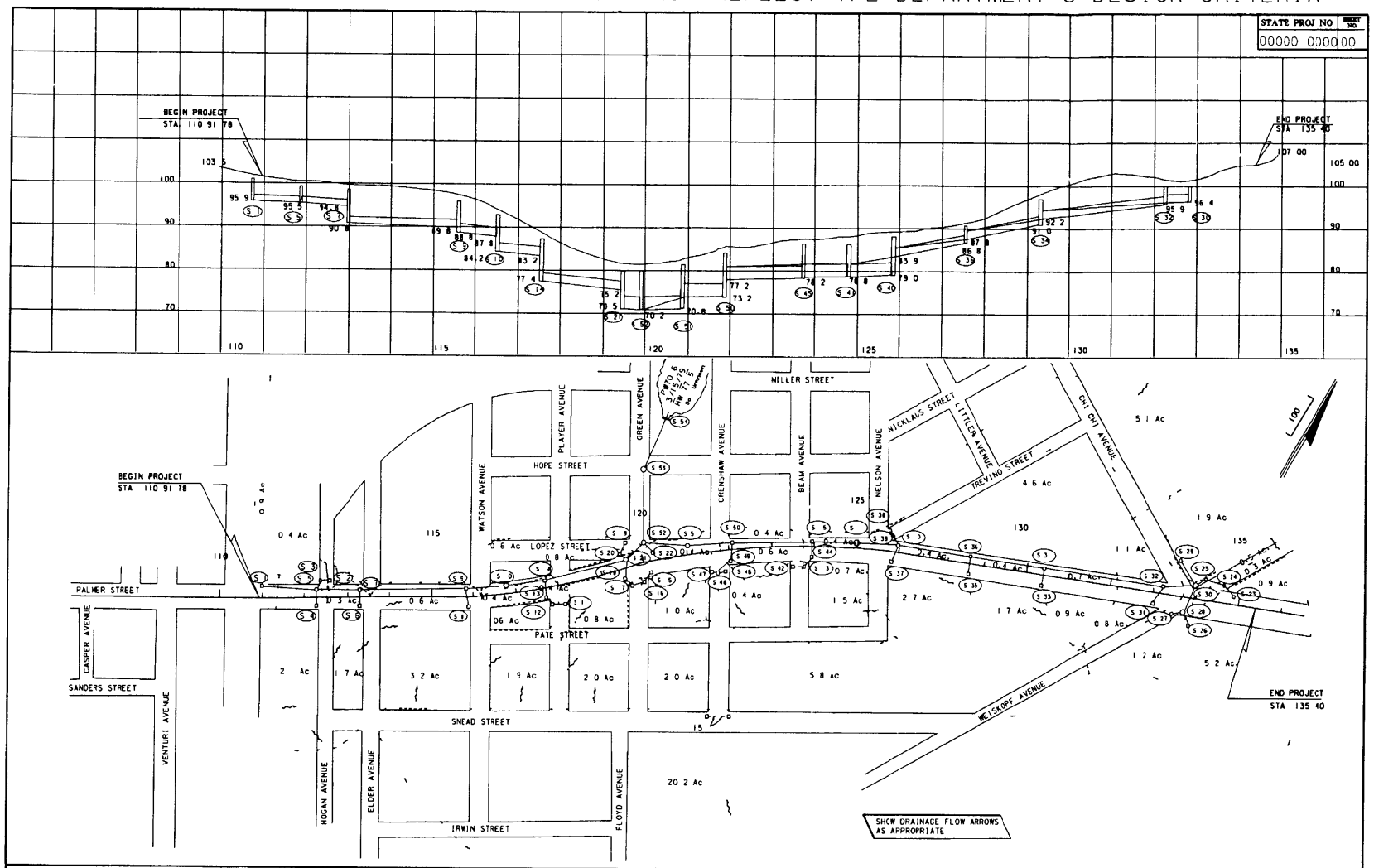
1 Sufficient existing topography and contours shall be shown in the vicinity of the bridge to depict how the structure ties to natural ground Hydraulic and other data on existing structures shall be provided On bridge culverts in some cases such as in level topography with a cut canal, the contours may be omitted

2 High water information shall be shown on the BHRS The elevation measured at the time of the survey with month, day and year should be shown in the profile

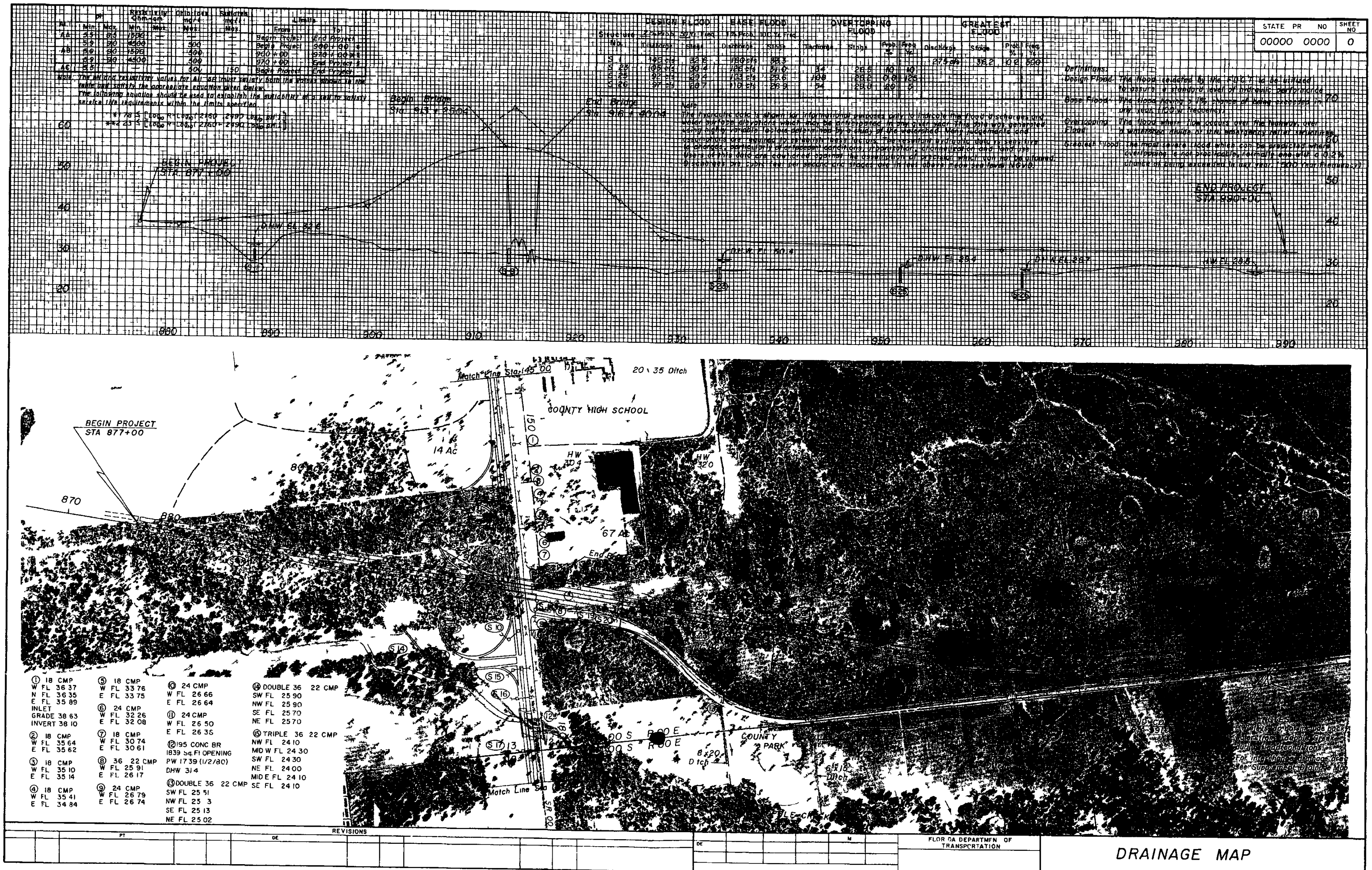
3 The drainage area and location map section should include a map with a north arrow The map shall be of a scale so that the entire drainage area for the proposed structure is shown The drainage area boundaries should be shown using a very heavy broken line with the area in acres or square miles shown within the boundary The proposed structure location should be shown Existing structures over the same water body should be located and numbered and corresponding existing structure information listed in the appropriate columns

4 Proposed bridges shall be shown indicating abutments, slope protection, anticipated scour depths with protective recommendations, if any, and other recommendations

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA



EX 11 5 A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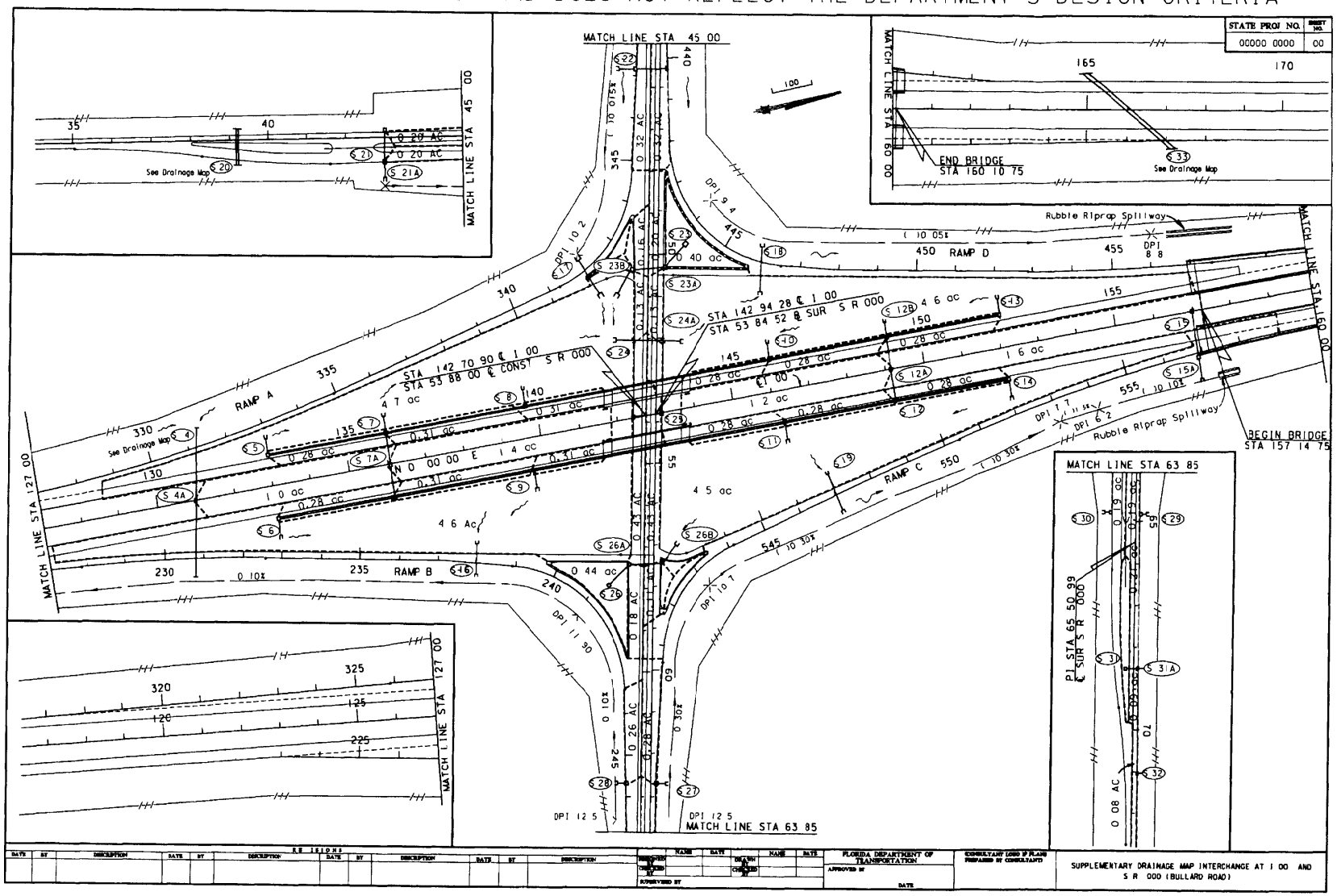
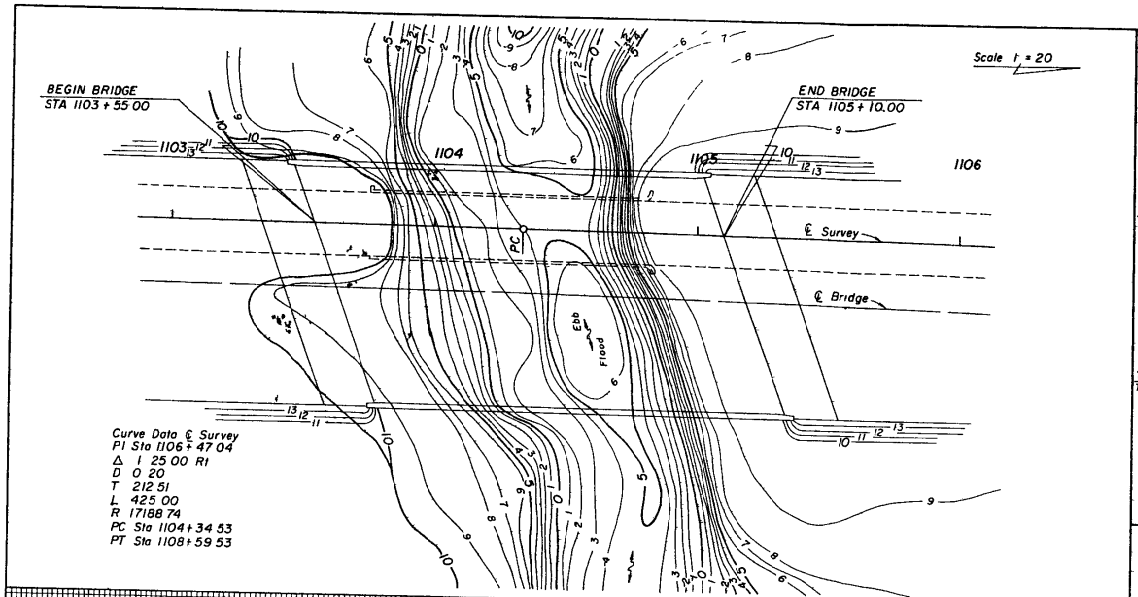
SHEET NO
00000 0000
0
BEGIN PROJECT STA 877+00
END PROJECT STA 990+00
880
890
900
910
920
930
940
950
960
970
980
990
BEGIN PROJECT
STA 877+00
870
880
COUNTY HIGH SCHOOL
14 Ac
67 Ac
20 x 35 Ditch
HW 304
HW 320
COUNTY PARK
Match Line
① 18 CMP
W FL 36 37
N FL 36 35
E FL 35 89
INLET
GRADE 38 63
INVERT 38 10
② 18 CMP
W FL 35 64
E FL 35 62
③ 18 CMP
W FL 35 10
E FL 35 14
④ 18 CMP
W FL 35 41
E FL 34 84
⑤ 18 CMP
W FL 33 76
E FL 33 75
⑥ 24 CMP
W FL 32 26
E FL 32 08
⑦ 18 CMP
W FL 30 74
E FL 30 61
⑧ 36 22 CMP
W FL 25 91
E FL 26 17
⑨ 24 CMP
W FL 26 79
E FL 26 74
⑩ 24 CMP
W FL 26 66
E FL 26 64
⑪ 24 CMP
W FL 26 50
E FL 26 35
⑫ 195 CONC BR
1839 Sq Ft OPENING
PW 17 39 (1/2/80)
DHW 31 4
⑬ DOUBLE 36 22 CMP
SW FL 25 51
NW FL 25 3
SE FL 25 13
NE FL 25 02
⑭ DOUBLE 36 22 CMP
SW FL 25 90
NW FL 25 90
SE FL 25 70
NE FL 25 70
⑮ TRIPLE 36 22 CMP
NW FL 24 10
MID W FL 24 30
SW FL 24 30
NE FL 24 00
MID E FL 24 10
SE FL 24 10
REVISIONS
FLORIDA DEPARTMENT OF TRANSPORTATION
DRAINAGE MAP

EX II 5-A I

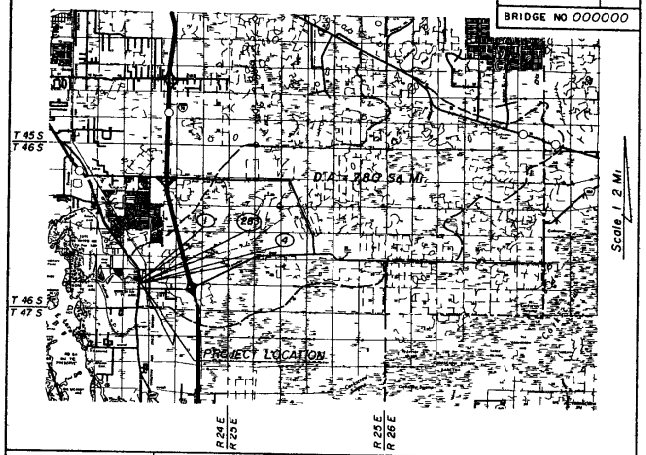
THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA

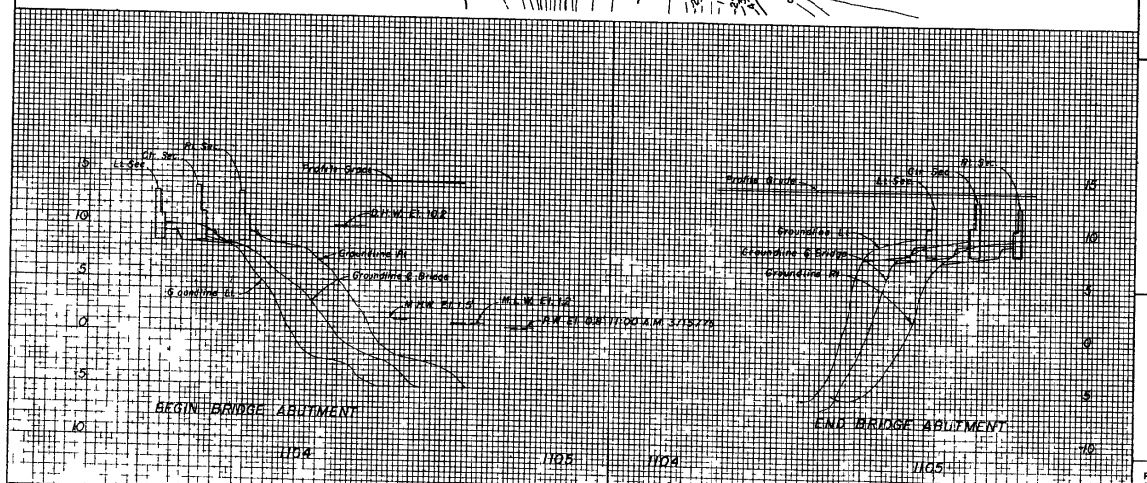


EX II 5 B



STATE PROJ NO	SHEET NO
00000-0000	00
BRIDGE NO 000000	





(REFERENCE)	(1)	(2)	(3)	(4)	ASSUMED CONFIGURATION
FOUNDATION	Timbe Pl	C Pil	Tmbe	C Pil	Pil D Drilled Shaft
OVERALL LENGTH	101'	70'	90'	70'	155'
SPAN LENGTH	4@ 25'±	2@ 35	9@ 10	4@ 17.5±	2 25, 3 35
TYPE CONSTRUCTION	Tmb Sl L Conc	C nc B Sl l	Tmbe	C l	Sl b r Grds S p
AREA OF OPENING @ H W	280 Sq. Ft.	Unk ow	U k ow	Unknown	375 Sq Ft. (Net)
ROADWAY WIDTH	24	Rol d (So th)	Rol d (N rth)	20	—
ELEV LOW MEMBER	7 03	11 88	14 49	Unknow	—

HYDRAULIC DESIGN DATA

NOTE Th syd l d t h w f f m t onol p p ly l d t th fl d d h q d wal f l to h h m y b t pot d l y g y Th d t g l d i g h ghly bl f l d l m d by t dy f th t h d M y; dg m l d ss mpl qul d l t bl h th f t Th lt t hyd i c d l t h q p t l ly t ed t c d t b t on h l t d l d U f th d l t d g t th mptl f p wh h t b tr d

DEFINITIONS

D g Fl d The flood t l d t d d l l f hyd l p f m

B Fl d Th fl d h g 1% h f b g e ed d y y (100 Y F q y)

O pp g Fl d Th fl d wh h fl w th hgh y t h d d d th m g y l d t t e

G l t Fl d Th m t ev fl d wh h b p d l d wh pp g s t p t bl

WATER SURFACE ELEVATIONS N H W (N Tid l) NA M H W 1.50 M L W 1.20

FLOOD DATA	MAX EVENT OF RECORD	DESIGN FLOOD	BASE FLOOD	☐ OVERTOPPING FLOOD ☑ GREATEST FLOOD
STAGE ELEV NGVD (FT)	(2)	10.2	11.12 (.)	11.4
DISCHARGE (CFS)	Unk w	3400	3850	5900
AVERAGE VELOCITY (FPS)	Unk w	3.8	4.0	6.6
EXCEEDANCE PROB (%)	0.25%	2%	1%	0.2%
FREQUENCY (YR)	400Y	50	100	500

HYDRAULIC RECOMMENDATIONS

1 BEGIN BRIDGE STATION 1103+55 ℄ Sur v (Lt Rdwy) END BRIDGE STATION 110 1 10.00 ℄ S (Lt Rdwy) SKEW ANGLE 20 00 Lt
2 CHANNEL SECTION ℄ STATION 1104+40 BOTTOM WIDTH N l l ELEV (1 4.5 SIDE SLOPE 1½ l
3 LIMITS OF CHANNEL EXCAVATION RT N W b N W b
4 CLEARANCE NAVIGATION HORIZ 25 VERT 9.5 ABOVE EL 1 8 (1) DRIFT HORIZ 25 VERT 20 ABOVE EL 10.2
5 SCOUR PREDICTION N g flc t p bl m l ip l d t h l t l f g l h ld l c ed l tl (1) 0 0
6 SLOPE PROTECTION P a l d d d m l p p m b l ll t b fl l
7 DECK DRAINAGE S pp l q d
8 OTHER Sa f q t h ld p f horrel P h ld l b l l d b w MHW d M L W

REMARKS (1) Sa g l d (2) H l d l ge S pl 3 1891 (3) B fl d f m l c l f tw l v e l 1%h l d l q l l f pp . . (1 12 b ed . th C G E ep l A ys 0 f H e P bl ms l C g l l A ge Of Fl d , S pl 29 1961, the 1% f e h w l fl d p d f th g d h g d l ty l l g 1107

REVISIONS						
EB AN ION	DESCRIPTIO	DA	DESCR T ON	SCRIP ON	DR VON	DR WN

LO D O RTMENT OF O AT ON

BRIDGE HYDRAULIC RECOMMENDATIONS

A

EXII 5 C

CHAPTER 6

TYPICAL SECTIONS

6.1 General

Typical sections are detailed cross section depictions of the highway's principal elements that are standard between certain station or milepost limits

Typical sections should show typical conditions only Non-standard conditions that prevail for short distances only should not be shown

When more than one typical section is necessary for a project, the station limits of each section shall be shown below the typical section title Typical section stationing shall cover the entire project Transitions from one typical to another shall be included in the stationing of one or the other typical section

Existing elements that are to be incorporated into the highway's final section are depicted in conjunction with the proposed elements

Typical sections also show the pavement design information for the roadways, ramps and shoulders

The typical sections for a project are either established prior to starting the final design, or are developed by the responsible engineer The DOT CADD Manual's Library of Cells contains a number of typical sections that can be used and adjusted to suit the conditions of a particular project Usually typical sections are not drafted to scale, but the horizontal dimensions should be proportionate

When partial sections are necessary to cover the details, these sections shall be shown near the main typical section to which they apply If space is not available, they may be grouped on a separate sheet

For complete illustrations of typical sections, see Exhibits II-6A thru H

6.2 Mandatory Information

Typical sections for all projects shall include the following data

1 Design speed for each typical section

2 Traffic data (description, date and 2-way ADT)
   a Current year
   b Estimated Opening Year
   c Design year
      New Construction or Reconstruction (including stage construction - 20 years
      Flexible Pavement Overlay (w/o milling) - 8 - 12 years
      Flexible Pavement Overlay (w/ Milling) - 10 - 20 years
      Flexible Pavement Overlay of Concrete Pavement - 8 - 12 years
   d K, D and T factors

Traffic data (ADT) is required to be noted for the current year <u>or</u> the estimated opening year on skid hazard projects only

All traffic data shown shall be consistent with the data used for pavement design

3 Cross Slopes

a Cross slopes of roadway pavement, shoulder surfaces, sidewalks and bridge decks shall be expressed as a decimal part of a foot vertical per foot horizontal These cross slopes shall be rounded to two decimal places, i e , .02, 06 (See Volume I, Section 2 3 1)

b Median and outer slopes shall be shown by ratio, horizontal to vertical, i e , 4 1 , 2 1

c Either feathering details or notes (or both) shall be shown when resurfacing w/o milling in urban curb and gutter sections is specified or when milling depth is less than the overlay thickness

4 Profile grade point shall be flagged

5 The scope of pavement construction shall be described in a clear, precise manner by indicating the LBR requirement and the thickness of the subgrade stabilization, subbase or base, structural course, friction course and shoulder pavement Pavement structure information shall be obtained from the approved pavement design and shall be described in the order of construction, i e starting with bottom layer and ending with friction course

6 Limits of grassing

7 Sidewalk location and width

8 Curb and gutter location and type

9. Template dimensions For widening projects, the existing pavement width shall be shown as a +/- dimension, and the base widening width shall be shown with an asterisk Note 4, page II-6-5 0, shall be shown as near to this noted asterisk as possible

NOTE. For typical sections with varying dimensions, the dimensions shall be clearly indicated on the plan - profile sheets

10. Limits of clearing and grubbing, where applicable

11. R/W, where applicable

6.3 Standard Notes for Typical Section Sheets

Below are standard notes which shall be shown on typical section sheets as applicable

1 "All seeding and seeding and mulch areas are to receive a 6" muck blanket or topsoil treatment "
(Note When muck or topsoil is required under sodded areas, the above note shall say "All grass areas are to receive a 6" muck blanket or topsoil treatment ")

2 "For details and limits of selective clearing and grubbing see ____ "

3 "None of the existing limerock base that is removed is to be used in the construction of the new limerock base "

4 "All of the existing limerock base that is removed is to be incorporated in the stabilized portion of the subgrade "

5 "The contractor shall bid on only one friction course alternate "

6 (Under paved shoulders) "At the contractor's option, this area may be constructed of base material at no additional compensation "

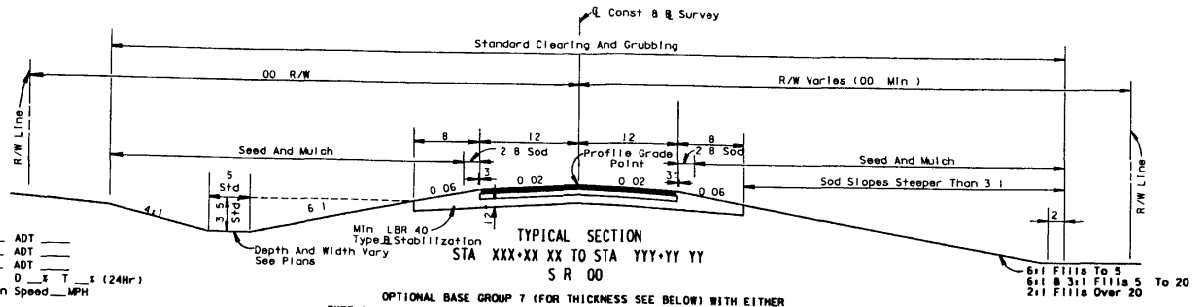
7 "Only one dense graded friction course FC-1 or FC-4 is to be used throughout the limits of the project "

8. (To appear on typical section only when component plans are not included). "It shall be the contractor's responsibility to determine the field location and length of any no-passing zone No-passing zones shall be established in accordance with Section 3B-3, 3B-4, and 3B-5 of the current MUTCD and chapter ~~1~~-6 16 of the Department's Manual on Uniform Traffic Studies The contractor's proposed method of establishing no-passing zones must be approved in advance of construction by the Engineer The cost of establishing the no-passing zones shall be considered as incidental to traffic striping items included in the contract "

9 "Actual width of base widening may vary due to actual existing pavement width Contractor may elect to place uniform width base widening strip at no additional cost "

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA.

STATE PROJ NO.	SHEET NO.
00000 0000	00



TYPICAL SECTION
STA XXX+XX XX TO STA YYY+YY YY
S R 00

2-LANE UNDIVIDED

CURRENT YEAR 19___ ADT ____
ESTIMATED OPENING YEAR 19___ ADT ____
DESIGN YEAR 20___ ADT ____
K __% D __% T __% (24Hr)
Design Speed___MPH

NOTES : FOR TYPICAL SECTION NOTES SEE SECTION 6 3

OPTIONAL BASE GROUP 7 (FOR THICKNESS SEE BELOW) WITH EITHER
TYPE S STRUCTURAL COURSE (1 1/2) AND FRICTION COURSE FC 1 OR FC 4 (1") ALT AA OR
TYPE S STRUCTURAL COURSE (2) AND FRICTION COURSE FC 2 (5/8 ") ALT AB

OPTIONAL BASE COURSES PERMITTED	OPTION CODE
8" LIMEROCK BASE COURSE	994
5" ASPHALT BASE COURSE (TYPE 3)	247

FOR ADDITIONAL DETAILS SEE INDEX NOS 104 281 400 500 505 510 & 513

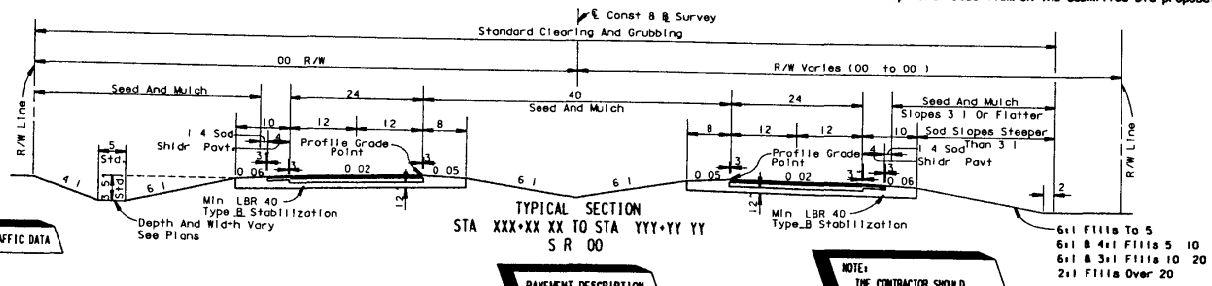
PROJECTED ADT (20 YR)
< 1 600 20 MIN CZ
< 750 14 MIN CZ

6:1 Fills To 5
6:1 & 4:1 Fills 5 10
6:1 & 3:1 Fills 10 20
2:1 Fills Over 20

PROJECTED ADT (20 YR)
> 1 600 30 MIN CZ

NOTE
The Contractor should identify the proposed option on which his initial bid is based by entering the three digit option code to the right side of the item number of optional base item on the submitted bid proposal

NOTE: ALL PAVEMENT DESCRIPTION FOR EXAMPLE ONLY



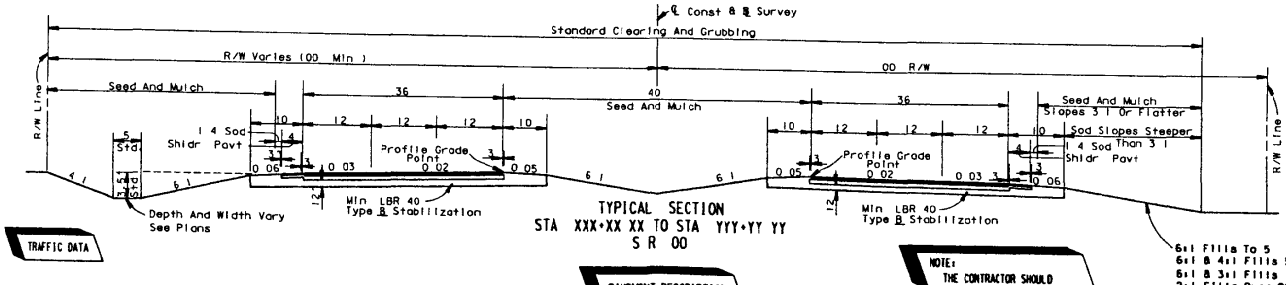
TYPICAL SECTION
STA XXX+XX XX TO STA YYY+YY YY
S R 00

4-LANE DIVIDED

TRAFFIC DATA

PAVEMENT DESCRIPTION

NOTE: THE CONTRACTOR SHOULD



TYPICAL SECTION
STA XXX+XX XX TO STA YYY+YY YY
S R 00

6-LANE DIVIDED

TRAFFIC DATA

PAVEMENT DESCRIPTION

NOTE: THE CONTRACTOR SHOULD

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAME	DATE		NAME	DATE
DESIGNED BY			DRAWN BY		
CHECKED BY			CHECKED BY		
SUPERVISED BY					

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
DATE

CONSULTANT LRFD PLANS PREPARED BY CONSULTANT

-TYPICAL SECTIONS RURAL

FX-11-6-A

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA.

STATE PROJ NO.	SHEET NO.
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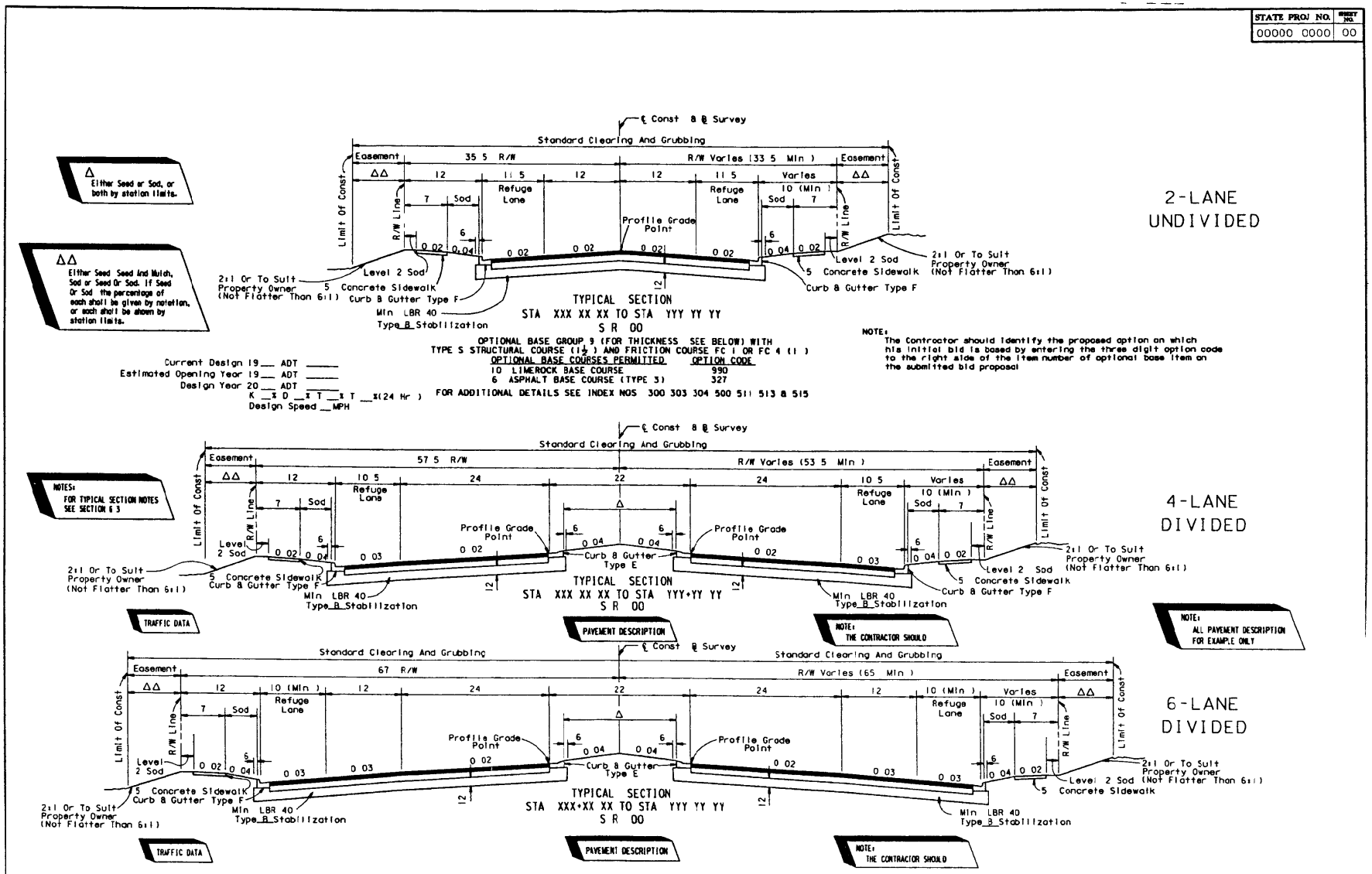


DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

DESIGNED BY / CHECKED BY / SUPERVISED BY — NAME — DATE — DRAWN BY / CHECKED BY — NAME — DATE

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
DATE

CONSULTANT LOGO IF PLANS PREPARED CONSULTANT

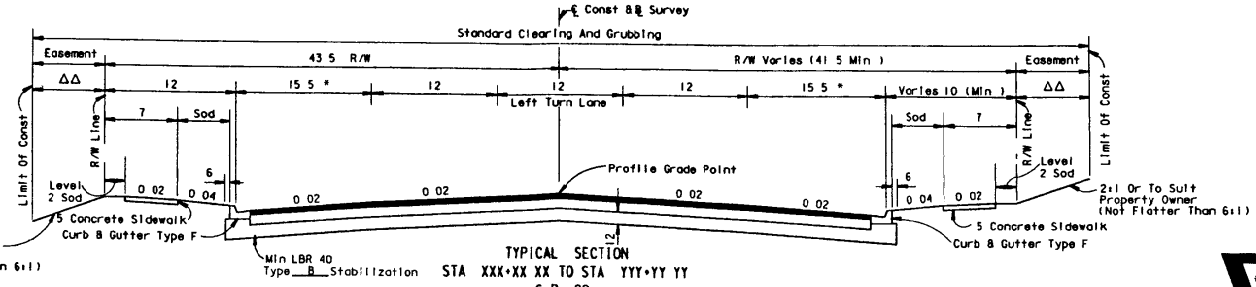
TYPICAL SECTIONS
URBAN WITH REFUGE LANES

EX-II-6-B

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA.

STATE PROJ NO	SHEET NO.
00000-0000	00

4-LANE UNDIVIDED



TYPICAL SECTION
STA XXX+XX XX TO STA YYY+YY YY
S R 00

Δ
Either Seed or Sod, or both by station limits

ΔΔ
Either Seed Seed And Mulch Sod or Seed Or Sod If Seed Or Sod the percentage of each shall be given by notation, or each shall be shown by station limits

* NOTE:
13 5 WHEN BICYCLE FACILITY CRITERIA ARE NOT MET

Current Year 19__ ADT _____
Estimated Opening Year 19__ ADT _____
Design Year 20__ ADT _____
K __% D __% T __% T __%(24 Hr)
Design Speed __MPH

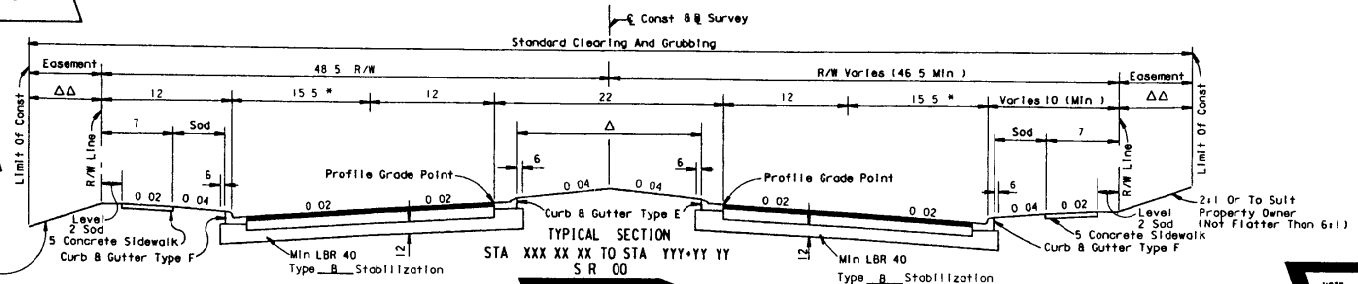
OPTIONAL BASE GROUP 9 (FOR THICKNESS SEE BELOW) WITH EITHER
TYPE S STRUCTURAL COURSE (1 1/2) AND FRICTION COURSE FC 1 OR FC 4 (1) ALT AA OR
TYPE S STRUCTURAL COURSE (2) AND FRICTION COURSE FC 2 (5/8") ALT AB

OPTIONAL BASE COURSES PERMITTED	OPTION CODE
10" LIMEROCK BASE COURSE	990
6" ASPHALT BASE COURSE (TYPE 3)	327

FOR ADDITIONAL DETAILS SEE INDEX NOS 300 303 304 500 511 513 514 & 515

NOTE:
The Contractor should identify the proposed option on which his initial bid is based by entering the three digit option code to the right side of the item number of optional base item on the submitted bid proposal

4-LANE DIVIDED



TYPICAL SECTION
STA XXX XX XX TO STA YYY+YY YY
S R 00

NOTES :
FOR TYPICAL SECTION NOTES SEE SECTION 6 3

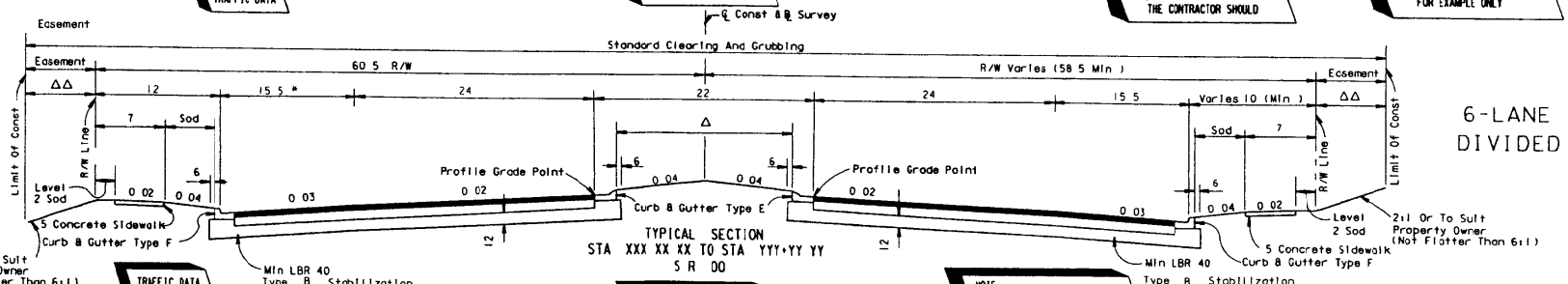
TRAFFIC DATA

PAVEMENT DESCRIPTION

NOTE:
THE CONTRACTOR SHOULD

NOTE:
ALL PAVEMENT DESCRIPTION FOR EXAMPLE ONLY

6-LANE DIVIDED



TYPICAL SECTION
STA XXX XX XX TO STA YYY+YY YY
S R 00

TRAFFIC DATA

PAVEMENT DESCRIPTION

NOTE:
THE CONTRACTOR SHOULD

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

REVISIONS

DESIGNED BY | CHECKED BY | SUPERVISED BY | NAME | DATE | DRAWN BY | CHECKED BY | NAME | DATE

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
DATE

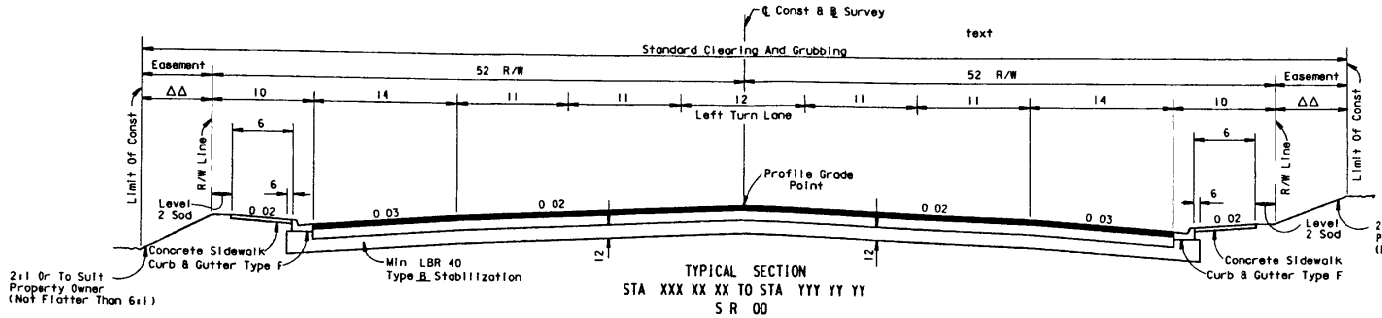
(CONSUL ANT LOGO IF PLANS PREPARED BY CONSULTANT)

TYPICAL SECTIONS
WITHOUT REFUGE LANES

EX 11-6-C

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA.

STATE PROJ NO.	SHEET NO.
00000 0000	00



6-LANE UNDIVIDED

TYPICAL SECTION
STA XXX XX XX TO STA YYY YY YY
S R 00

NOTE:
ALL PAVEMENT DESCRIPTION FOR EXAMPLE ONLY

Current Year 19__ ADT ____
Estimated Opening Year 19__ ADT ____
Design Year 19__ ADT ____
K __% D __% T __%(24 Hr)
Design Speed __MPH

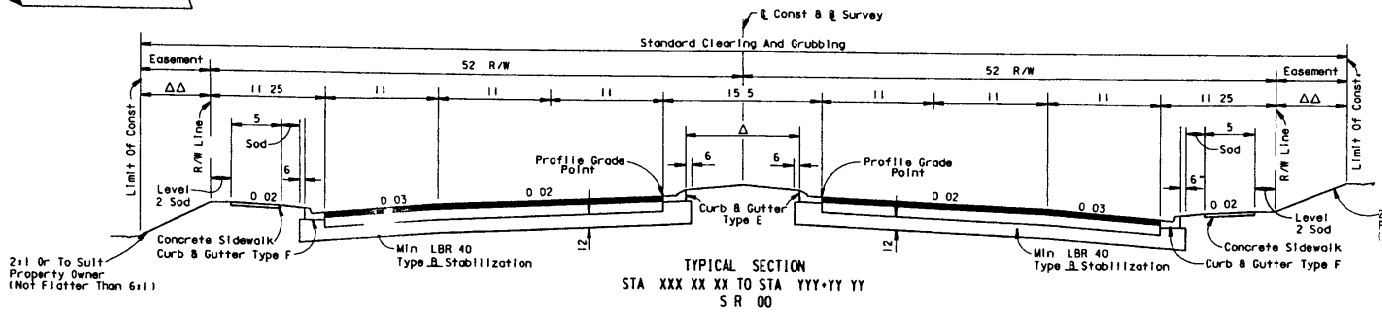
OPTIONAL BASE GROUP 9 (FOR THICKNESS SEE BELOW) WITH EITHER
TYPE S STRUCTURAL COURSE (1 1/2") AND FRICTION COURSE FC 1 OR FC 4 (1") ALT AA OR
TYPE S STRUCTURAL COURSE (2) AND FRICTION COURSE FC 2 (5/8) ALT AB

OPTIONAL BASE COURSES PERMITTED	OPTION CODE
10 LIMEROCK BASE COURSE	990
6 ASPHALT BASE COURSE (TYPE 3)	327

FOR ADDITIONAL DETAILS SEE INDEX NOS 300 303 304 500 511 513 514 & 515

NOTE:
The Contractor should identify the proposed option on which his initial bid is based by entering the three digit option code to the right side of the item number of optional base item on the submitted bid proposal

NOTES:
For Typical Section Notes See Section 6 3



6-LANE DIVIDED

TYPICAL SECTION
STA XXX XX XX TO STA YYY+YY YY
S R 00

Δ
Either Seed or Sod or both by station limits

TRAFFIC DATA

PAVEMENT DESCRIPTION

NOTE:
THE CONTRACTOR SHOULD

ΔΔ
Either Seed Seed And Mulch Sod or Seed Or Sod If Seed Or Sod the percentage of each shall be given by notation or each shall be shown by station limits

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAME	DATE		NAME	DATE
DESIGNED BY			DRAWN BY		
CHECKED BY			CHECKED BY		
SUPERVISED BY					

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
DATE

CONSULTANT NAME & NAME PREPARED BY CONSULTANT

TYPICAL SECTIONS
URBAN MINIMUM REQUIRMENTS

EX-II-6-D

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA.

STATE PROJ NO.	SHEET NO.
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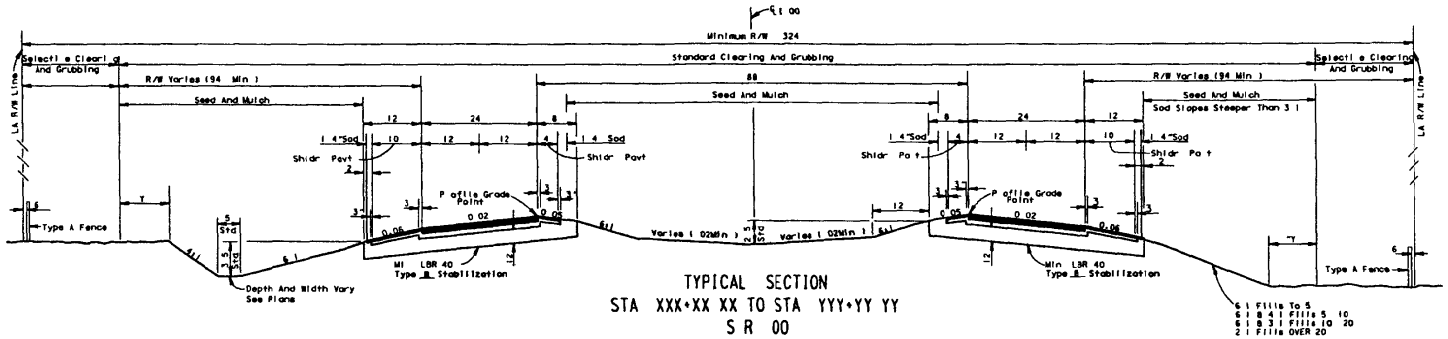


4-LANE

TYPICAL SECTION
STA XXX+XX XX TO STA YYY+YY YY
S R 00

OPTIONAL BASE GROUP 9 (FOR THICKNESS SEE BELOW) WITH
TYPE S STRUCTURAL COURSE (4) AND FRICTION COURSE FC 2 (5/8)

OPTIONAL BASE COURSES PERMITTED	OPTIONAL CODE
10" LIMEROCK BASE COURSE	990
6 ASPHALT BASE COURSE (TYPE 3)	327

"T" __ OR AREA DISTURBED DURING CONSTRUCTION

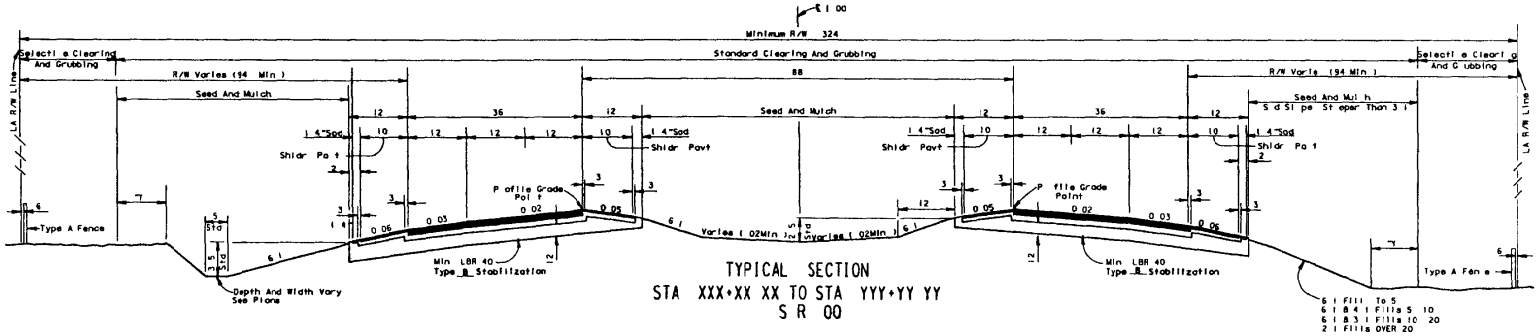
Current Year 19__ ADT ____
Estimated Opening Year 19__ ADT ____
Design Year 19__ ADT ____
K __% D __% T __% T __%(24 Hr)
Design Speed __MPH

FOR ADDITIONAL DETAILS SEE INDEX NOS 104 281 400 450 451 500 505 510 513 514 & 525

NOTES:
FOR TYPICAL SECTION NOTES SEE SECTION 6 3

NOTE:
The Contractor should identify the proposed option on which his initial bid is based by entering the three digit option code to the ight side of the item number of optional base item on the submitted bid proposal

NOTE:
ALL PAVEMENT DESCRIPTION FOR EXAMPLE ONLY



6-LANE

TYPICAL SECTION
STA XXX+XX XX TO STA YYY+YY YY
S R 00

OPTIONAL BASE GROUP 9 (FOR THICKNESS SEE BELOW) WITH
TYPE S STRUCTURAL COURSE (4) AND FRICTION COURSE FC 2 (5/8)

OPTIONAL BASE COURSES PERMITTED	OPTION CODE
10 LIMEROCK BASE COURSE	990
6 ASPHALT BASE COURSE (TYPE 3)	327

"T" __ OR AREA DISTURBED DURING CONSTRUCTION

Current Year 19__ ADT ____
Estimated Opening Year 19__ ADT ____
Design Year 19__ ADT ____
K __% D __% T __% T __%(24 Hr)
Design Speed __MPH

FOR ADDITIONAL DETAILS SEE INDEX NOS 104 281 400 450 452 505 510 513 514 & 525

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

DESIGNED BY / CHECKED BY / SUPERVISED — NAME / DATE — DRAWN BY / CHECKED BY — NAME / DATE

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED
DATE

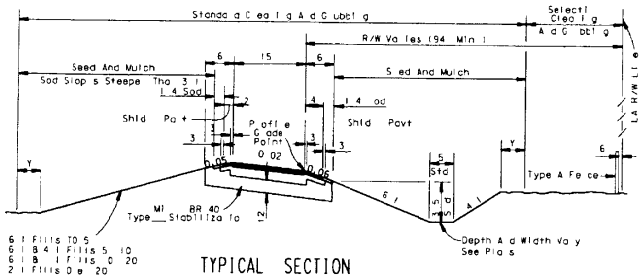
CONSULTANT LOGO & PLANS PREPARED BY CONSULTANTS

TYPICAL SECTION(S) (INTERSTATE)

EX-II-6-E

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA.

STATE PROJ. NO.	SHEET NO.
00000 0000	000



TYPICAL SECTION

(SINGLE LANE RAMP)

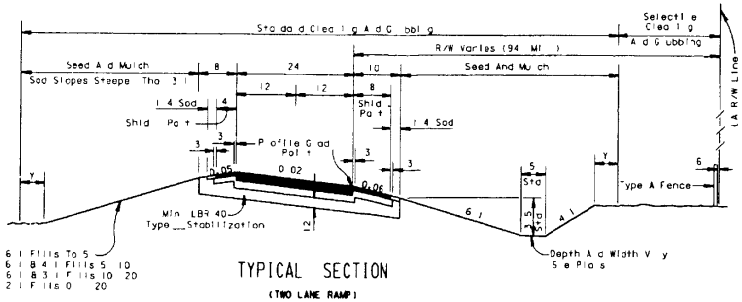
STA XXX+XX XX ℄ RAMP TO
STA YYY+YY YY ℄ RAMP

OPTIONAL BASE GROUP 9 (FOR THICKNESS SEE BELOW) WITH TYPE S STRUCTURAL COURSE (2") AND FRICTION COURSE FC 2 (5/8")

OPTIONAL BASE COURSES PERMITTED	OPTION CODE
10" LIMEROCK BASE COURSE	990
9" ASPHALT BASE COURSE (TYPE 1)	325
6" ASPHALT BASE COURSE (TYPE 3)	327

NOTE

THE CONTRACTOR SHOULD IDENTIFY THE PROPOSED OPTION ON WHICH HIS INITIAL BID IS BASED ON BY ENTERING THE THREE DIGIT OPTION CODE TO THE RIGHT SIDE OF THE ITEM NUMBER OF OPTIONAL BASE ITEM ON THE SUBMITTED BID PROPOSAL



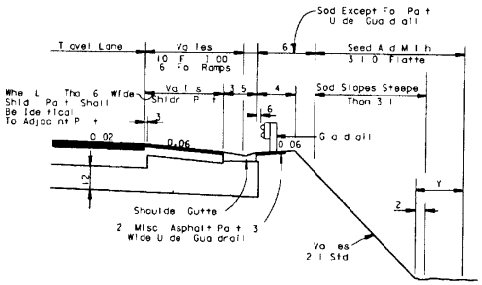
TYPICAL SECTION

(TWO LANE RAMP)

STA XXX+XX XX ℄ RAMP TO
STA YYY+YY YY ℄ RAMP

OPTIONAL BASE GROUP 9 (FOR THICKNESS SEE BELOW) WITH TYPE S STRUCTURAL COURSE (2") AND FRICTION COURSE FC 2 (5/8")

OPTIONAL BASE COURSES PERMITTED	OPTION CODE
10" LIMEROCK BASE COURSE	990
9" ASPHALT BASE COURSE (TYPE 1)	325
6" ASPHALT BASE COURSE (TYPE 3)	327



TYPICAL SECTION

SHOULDER PAVEMENT AND SHOULDER GUTTER

ROADWAY SHOULDERS

OPTIONAL BASE GROUP 1 (FOR THICKNESS SEE BELOW) WITH TYPE S STRUCTURAL COURSE (VARIABLE THICKNESS 1 1/2" AVG. OUTSIDE SHOULDER) AND FRICTION COURSE FC 2 (5/8")

OPTIONAL BASE COURSES PERMITTED	OPTION CODE
4" LIMEROCK BASE COURSE	001
4" ASPHALT BASE COURSE (TYPE 1)	005
4" ASPHALT BASE COURSE (TYPE 2)	006
4" ASPHALT BASE COURSE (TYPE 3)	007
4" SAND ASPHALT HOT MIX	014
4 1/2" BANK RUN SHELL BASE	004

* FOR SHOULDER WIDTH GREATER THAN 4 FEET 1 1/2" AVERAGE THICKNESS

RAMP SHOULDER

OPTIONAL BASE GROUP 1 (FOR THICKNESS SEE BELOW) WITH TYPE S STRUCTURAL COURSE (2" OUT SIDE AND INSIDE SHOULDER) AND FRICTIONAL COURSE FC 2 (5/8")

OPTIONAL BASE COURSES PERMITTED	OPTION CODE
4" LIMEROCK BASE COURSE	001
4" ASPHALT BASE COURSE (TYPE 1)	005
4" ASPHALT BASE COURSE (TYPE 2)	006
4" ASPHALT BASE COURSE (TYPE 3)	007
4" SAND ASPHALT HOT MIX	014
4 1/2" BANK RUN SHELL BASE	004

NOTE:
ALL PAVEMENT DESCRIPTION FOR EXAMPLE ONLY

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

NAME	DATE	NAME	DATE
DESIGNED BY		DRAWN BY	
CHECKED BY		CHECKED BY	
SUPERVISED BY			

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
DATE

CONSULTANT NAME & PLANS PREPARED BY CONSULTANT

TYPICAL SECTION(S)
INTERSTATE RAMPS

EX 11 6 F

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA.

STATE PROJ NO.	SHEET NO.
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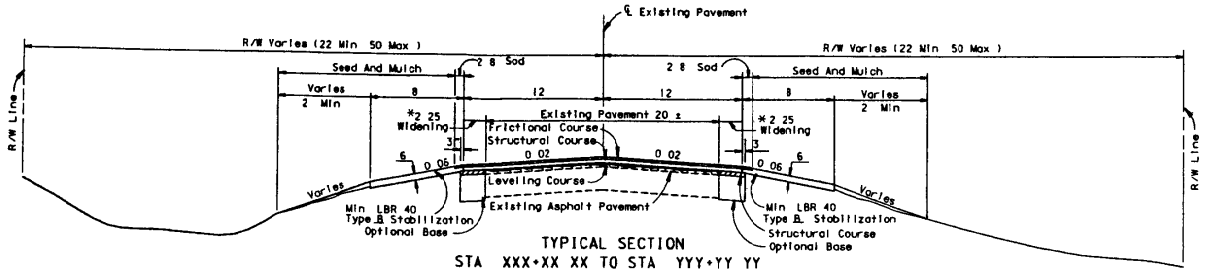


2-LANE UNDIVIDED

TYPICAL SECTION
STA XXX+XX XX TO STA YYY+YY YY

Current Year 19___ ADT___
Estimated Opening year 19___ ADT___
Design Year 20___ ADT___
K __% D __% T __% T __%(24 Hr)
Design Speed___MPH

RESURFACING
TYPE S LEVELING COURSE (75 LBS/SY AVG) WITH EITHER
TYPE S STRUCTURAL COURSE (150 LBS/SY) AND FRICTION COURSE FC 1 OR FC 4 (1) ALT AA OR
TYPE S STRUCTURAL COURSE (200 LBS/SY) AND FRICTION COURSE FC 2 (5/8) ALT AB

WIDENING
OPTIONAL BASE GROUP 11 (FOR THICKNESS SEE BELOW) WITH EITHER
TYPE S STRUCTURAL COURSE (350 LBS/SY) AND FRICTION COURSE FC 1 OR FC 4 (1) ALT AA OR
TYPE S STRUCTURAL COURSE (400 LBS/SY) AND FRICTION COURSE FC 2 (5/8) ALT AB

OPTIONAL BASE COURSES PERMITTED	OPTION CODE
11 1/2 LIMEROCK BASE COURSE	987
7 ASPHALT BASE COURSE (TYPE 3)	407

FOR ADDITIONAL DETAILS SEE INDEX NOS 105 280 400 510 514 8 516

*NOTE:
Actual width of base widening may vary due to actual existing pavement width Contractor may elect to place uniform width base widening strip at no additional cost

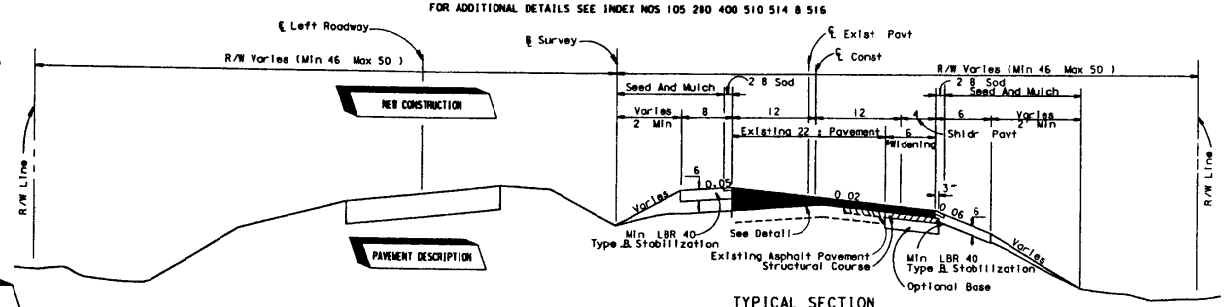
NOTE:
The Contractor should identify the proposed option on which his initial bid is based by entering the three digit option code to the right side of the item number of optional base item on the submitted bid proposal

NOTE: FOR TYPICAL SECTION NOTES SEE SECTION 6 3

NEW CONSTRUCTION

PAVEMENT DESCRIPTION

TRAFFIC DATA



4-LANE DIVIDED

TYPICAL SECTION
STA XXX+XX XX TO STA YYY YY YY

RESURFACING
TYPE S OVERBUILD COURSE (275 LBS/SY AVG INSIDE LANE) AND
LEVELING COURSE (75 LBS/SY AVG) WITH EITHER
TYPE S STRUCTURAL COURSE (150 LBS/SY) AND FRICTION COURSE FC 1 OR FC 4 (1) ALT AA OR
TYPE S STRUCTURAL COURSE (200 LBS/SY) AND FRICTION COURSE FC 2 (5/8) ALT AB

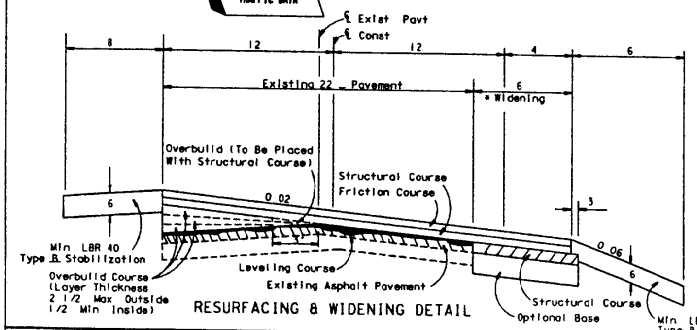
WIDENING
OPTIONAL BASE GROUP 11 (FOR THICKNESS SEE BELOW) WITH EITHER
TYPE S STRUCTURAL COURSE (350 LBS/SY) AND FRICTION COURSE FC 1 OR FC 4 (1) ALT AA OR
TYPE S STRUCTURAL COURSE (400 LBS/SY) AND FRICTION COURSE FC 2 (5/8) ALT AB

OPTIONAL BASE COURSES PERMITTED	OPTION CODE
11 1/2 LIMEROCK BASE COURSE	987
7 ASPHALT BASE COURSE (TYPE 3)	407

FOR ADDITIONAL DETAILS SEE INDEX NOS 105 280 400 510 514 515 8 516

NOTE:
ALL PAVEMENT DESCRIPTION FOR EXAMPLE ONLY

NOTE:
THE CONTRACTOR SHOULD



RESURFACING & WIDENING DETAIL

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAME	DATE		NAME	DATE
DESIGNED BY			DRAWN BY		
CHECKED BY			CHECKED BY		
SUPERVISED BY					

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
DATE

CONSULTANT LOGO IF PLANS PREPARED BY CONSULTANT

TYPICAL SECTION
RURAL WIDENING AND RESURFACING

EX-II-6-G

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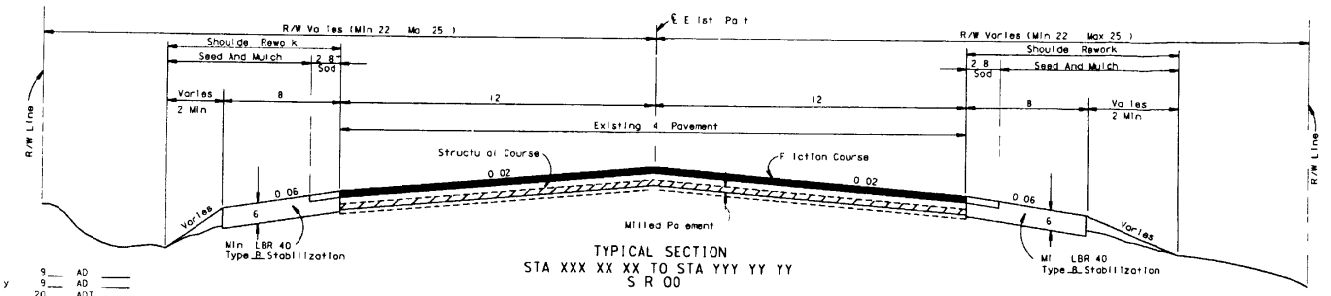


2-LANE UNDIVIDED

Cu e t Yea
Estimated op I q y
D sig Yea

9___ AD ___
9___ AD ___
20___ ADT ___
K___ D___% T___% ___% 24)
Des g Spe d___MPH

TYPICAL SECTION
STA XXX XX XX TO STA YYY YY YY
S R 00

MILLING

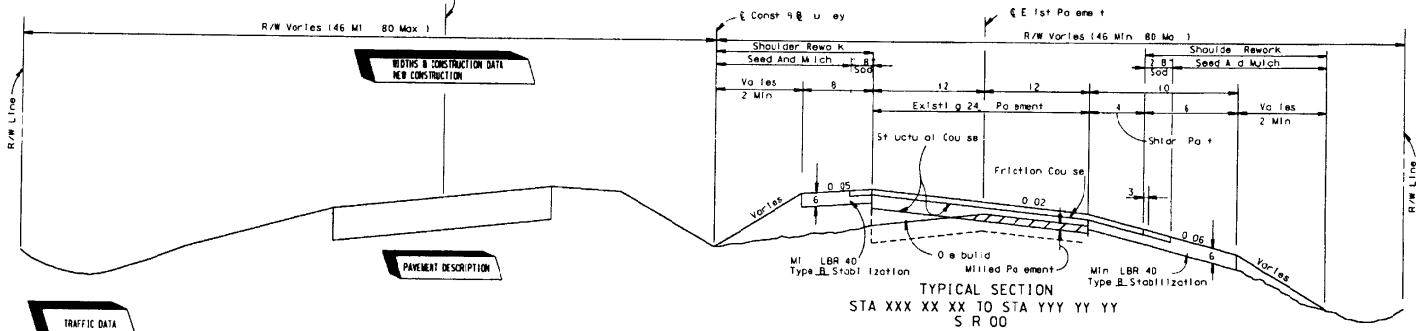
MILL EXISTING ASPHALTIC CONCRETE PAVEMENT (2 AVERAGE DEPTH)

RESURFACING

TYPE S STRUCTURAL COURSE (150 LBS/SY) AND FRICTION COURSE FC 1 OR FC 4 (1) ALT AA OR
TYPE S STRUCTURAL COURSE (200 LBS/SY) AND FRICTION COURSE FC 2 (5/8) ALT AB

FOR ADDITIONAL DETAILS SEE INDEX NOS 105 280 400 510 514 8 516

CENTERLINE LEFT ROADWAY



4-LANE DIVIDED

WIDTHS & CONSTRUCTION DATA NEW CONSTRUCTION

PAVEMENT DESCRIPTION

TRAFFIC DATA

TYPICAL SECTION
STA XXX XX XX TO STA YYY YY YY
S R 00

MILLING AND OVERBUILD

MILL OUTER EXISTING ASPHALTIC CONCRETE PAVEMENT (2 AVERAGE DEPTH) AND OVERBUILD
INNER EXISTING ASPHALTIC CONCRETE WITH TYPE S ASPHALTIC CONCRETE (125 LBS/SY AVG)

RESURFACING

TYPE S STRUCTURAL COURSE (150 LBS/SY) AND FRICTION COURSE FC 1 OR FC 4 (1) ALT AA OR
TYPE S STRUCTURAL COURSE (200 LBS/SY) AND FRICTION COURSE FC 2 (5/8) ALT AB

SHOULDER PAVEMENT

OPTIONAL BASE GROUP 16 (FOR THICKNESS SEE BELOW) WITH
TYPE S ASPHALTIC CONCRETE (100 LBS/SY) AND ASPHALTIC
CONCRETE FRICTION COURSE FC 1 OR FC 4 (1) ALT AA OR
FC 2 (5/8) ALT AB

OPTIONAL BASE COURSES PERMITTED		OPTION CODE
4 LIMEROCK BASE COURSE		981
3 ASPHALTIC BASE COURSE	(TYPE 1)	604
3 ASPHALTIC BASE COURSE	(TYPE 2)	605
3 ASPHALTIC BASE COURSE	(TYPE 3)	606

FOR ADDITIONAL DETAILS SEE INDEX NOS 105 280 400 510 514 8 516

NOTES FOR TYPICAL SECTION SEE SEE SECTION 6 3

NOTE ALL PAVEMENT DESCRIPTION FOR EXAMPLE ONLY

NOTE THE CONTRACTOR SHOULD

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

REVISIONS

NAME	DATE	NAME	DATE
DESIGNED BY		DRAWN BY	
CHECKED BY		CHECKED BY	
SUPERVISED BY			

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED
DATE

CONSULTANT LOGO IF PLANS PREPARED BY CONSULTANT(S)

TYPICAL SECTION
RURAL MILLING AND RESURFACING

EX-II-6 H

CHAPTER 7

SUMMARY OF QUANTITIES

7.1 General

The summmary of quantities shows individual summaries of guardrail, fence, turnouts, sodding, ditch pavement, side drains, mitered end sections, underdrains, and earthwork when applicable. The tabulation shall show widths, lengths and area in the plan quantity column. The final quantity column is reserved for construction and final estimates. As noted in Chapter 4, the necessary pay items and the estimated quantities shall be shown on the summary of pay items sheet.

For a complete illustration of summary of quantities see Exhibit II-7-A.

7.2 Item Quantity "Boxes" and Format

The various "boxes" used for each type of summary are contained in the cell library, found in the DOT CADD manual. The arrangement of these "boxes" on the sheet is dependent on the number used and the size each one must be to contain all of the necessary information. Aesthetics should be considered.

Standard notes, listed in Section 7.4, shall be shown under the appropriate box.

Applicable pay item notes, listed in Section 7.5, may also be included on this sheet.

On contracts with multiple project numbers or federal aid and non-federal aid quantities, provisions shall be made to tabulate and summarize their respective quantities.

7.3 Box Culvert Data Sheet

Box culvert data sheets are obtained by computer design of the box culvert. Only the hard copy of data sheets showing concrete and steel quantities shall be included in the construction plans. Station numbers shall be inserted for cross reference. This sheet may be the output for concrete and steel quantities generated by the box culvert program, and placed behind the CES computer summary of pay items. As an alternate, the concrete and steel output files may be transferred to a graphics design file and placed on a normally formatted plan sheet.

7.4 Standard Notes for Summary of Quantities Sheet

Below are standard notes which should be used on the summary of quantities sheet, as applicable

1 (Under Summary of Earthwork) "Earthwork has been calculated using the ___ base option If another option is constructed, there shall be no revision to the earthwork quantities for which payment is made by plan quantity "

2 (Under Summary of Earthwork) "Estimated _____ C Y of unclassified material to be displaced by the storm sewer (or drainage structure) system not included in quantities shown above "

7.5 Pay Item Notes

1	110-3	(To be used when maintenance indicates a desire for the salvageable material) All salvageable material as determined by the project engineer is to be stockpiled within the right-of-way for removal by DOT forces
2	120-2-1	To be furnished by the contractor from areas provided by him Measurement shall be based on the measurement of the borrow pit At the contractor's option, measurement may be based on loose truck volume, in which case payment will be made on ___% of the truck measured quantity
3	145- 74, 145- 75	The geogrid alternate bid shall be the alternate built No substitution of other company's geogrid shall be allowed
4	285-7aa-bbb	(To be used when a minor portion of the project is restricted to black base only) The quantities shown and price bid for Optional Base includes the construction of ___ S Y ABC-3 (Min Marshall Stability 1000) between Sta _____ to Sta _____ as shown on the plans and/or as directed by the engineer

5	331-2	Includes removal of existing raised reflective pavement markers prior to starting operations Included (or includes ___ tons) for adjustment of connections to existing drives, streets, etc as directed by the Engineer
6	400-1-15	Included (or Includes _____ CY) for miscellaneous construction as directed by the Project Engineer
7	536-73	<u>(To be used only when material is to become the property of DOT)</u> Existing guardrail to be dismantled and stockpiled within the right-of-way in areas designated by the Project Engineer for removal by DOT maintenance forces
8	538-1	This is to include furnishing and installing __ panels, ___ regular posts and ___ special posts which have been determined to be non-salvageable Additional posts and panels determined to be non-salvageable during resetting shall be paid for under Section 538-5 of the standard specifications
9	570-5	Based on ___ applications

FLORIDA DEPARTMENT OF TRANSPORTATION

BOX CULVERT AND WINGWALL DESIGN

VERSION NO 2 1

PROJECT NUMBER 00000-0000

LOCATION DESCRIPTION STA 000+00 00
ENVIRONMENT SLIGHTLY AGGRESSIVE, USE CLASS II CONCRETE

MATERIAL PROPERTIES

STEEL YIELD STRENGTH = 60000 PSI
CONCRETE 28 DAY STRENGTH = 3400 PSI

CONCRETE COVER FOR REINFORCING BARS

BARREL EXTERIOR COVER TOP SLAB = 0 17 FT , BOTTOM SLAB = 0 17 FT , WALL = 0 17 FT
BARREL INTERIOR COVER ALL LOCATIONS = 0 17 FT
WINGWALL ALL LOCATIONS = 0 17 FT

PROPERTIES OF ELEMENTS

BARREL NO OF BARREL(S) = 1, SPAN = 10 00 FT , HEIGHT = 6 50 FT , DEPTH OF FILL = 7 14 FT
LENGTH AT BOX CENTER LINE = 83 00 FT , LEFT SIDE SKEW ANGLE = 0 DEGREE, WIDTH = 11 50 FT
RIGHT SIDE SKEW ANGLE = 0 DEGREE, WIDTH = 11 50 FT
THICKNESS TOP SLAB = 0 83 FT , BOTTOM SLAB = 0 88 FT , EXTERIOR WALL = 0 75 FT , INTERIOR WALL = 0 00 FT

WINGWALL:NO OF WINGWALL(S) BOTH LEFT AND RIGHT SIDES NO OF HEADWALL(S) BOTH LEFT AND RIGHT SIDES

TOP BEVEL = 0 50 FT , SIDE BEVEL = 0 50 FT ,
WALL HEIGHT = 8 33 FT , FOOTING WIDTH = 5 25 FT , HEEL DIMENSION = 3 08 FT
TOE DIMENSION = 1 33 FT , WALL THICKNESS = 0 83 FT , FOOTING THICKNESS = 0 67 FT
TOE PRESSURE =1209 LB/SQ FT

SKEW ANGLE : LEFT FRONT = 0 DEGREE, LEFT BACK = 180 DEGREE,
RIGHT FRONT = 0 DEGREE, RIGHT BACK = 180 DEGREE
LENGTH = 15 00 FT * (0 00 FT **), FRONT TIP HEIGHT = 8 333 FT
WALL = 3 781 C Y , FOOTING = 2 577 C Y
TOTAL = 6 358 C Y

TOTAL WINGWALL LENGTH WITH BARREL WIDTH LEFT = 41 50 FT , RIGHT = 41 50 FT

CONCRETE QUANTITIES

BARREL : POUR 1 (BOTTOM SLAB) = 0 382 C Y /FT , POUR 2 (WALLS) = 0 343 C Y /FT , POUR 3 (TOP SLAB) = 0 365 C Y /FT
POUR 4 (HEADWALL(S)) = 1 065 C Y TOTAL (EXCLUDE HEADWALL) = 1 090 C Y /FT

WINGWALL· POUR 1 (FOOTING***) = 11 918 C Y , POUR 2 (WALLS) = 15 123 C Y , TOTAL = 27 041 C Y

TOTAL CONCRETE QUANTITIES

BARREL = 91 515 C Y , WINGWALL = 27 041 C Y , TOTAL = 118 556 C Y

* SKEWED WINGWALL LENGTH MEASURED ON CENTER LINE FROM CONSTRUCTION JOINT
** DISTANCE FROM OUTSIDE EDGE OF BARREL EXTERIOR WALL TO CONSTRUCTION JOINT ON CENTER LINE OF WINGWALL
*** INCLUDE TOE AND KEY AT BARREL ENDS

FLORIDA DEPARTMENT OF TRANSPORTATION

BOX CULVERT AND WINGWALL DESIGN

VERSION NO 2 1

PROJECT NUMBER 00000-0000

LOCATION DESCRIPTION : STA 000+00 00
ENVIRONMENT : SLIGHTLY AGGRESSIVE, USE CLASS II CONCRETE

STEEL QUANTITIES AND BAR SCHEDULE

BARREL QUANTITIES

LOCATION	BAR	NUMBER	SETS	SIZE	SPACING	TYPE	LENGTH	WEIGHT	B LENGTH	C LENGTH	D LENGTH
TOP SLAB	A100	166		5	0 500	1	11- 2	1933			
BOT SLAB	A200	133		6	0 625	1	11- 2	2231			
CORNER (TOP)	A1	308		4	0 542	10	4- 5	909	2- 1	2- 4	
CORNER (BOTTOM)	A2	308		4	0 542	10	4- 5	909	2- 1	2- 4	
EXTERIOR WALL (INSIDE)	B1	308		4	0 542	1	7-10	1612			
EXTERIOR WALL (OUTSIDE)	B2	308		4	0 542	1	5- 8	1166			
LONGITUDINAL	C1	120	(3)	4	1 500	1	28- 8	2298			
HEADWALL BOTH SIDES	G1	4	(1)	4	SEE INDEX	1	11- 2	30			
HEADWALL BOTH SIDES	P	24		4	1 000	11	3- 7	57	0-11	1- 6	1- 2

PER FOOT BARREL STEEL QUANTITY 132 LBS /FOOT
TOTAL BARREL STEEL QUANTITY 11145 LBS

WINGWALL QUANTITIES

LOCATION	BAR	NUMBER	SETS	SIZE	SPACING	TYPE	LENGTH	WEIGHT	B LENGTH	C LENGTH
STEM	F	48		5	1 208	10	10- 5	520	1- 9	8- 8
STEM	J	48		4	1 208	1	8- 8	276		
STEM	K	48		4	1 500	1	14- 8	472		
FOOTING	KF	16		4	SEE INDEX	1	14- 8	156		
FOOTING	L	52		4	1 208	1	4-10	168		
FOOTING LEFT SIDE	M1	2	(1)	4	SEE INDEX	1	41- 2	55		
FOOTING RIGHT SIDE	M2	2	(1)	4	SEE INDEX	1	41- 2	55		
STEM TO BARREL DOWELS	N **	36		6	1 000	10	6- 0	324	3- 0	3- 0
FOOTING SPILLWAY	R	24		4	1 000	1	2- 7	41		

PER FOOT WINGWALL STEEL QUANTITY 29 LBS /FOOT
TOTAL WINGWALL STEEL QUANTITY 2067 LBS

* LENGTH IS THE SUM OF BAR LENGTH AT BEGINNING/TOP AND ENDING/BOTTOM OF WINGWALL, NUMBER OF BAR IS THE AMOUNT REQUIRED FOR THIS SUMMATION OF LENGTH B AND C LENGTH IS FOR THE FIRST BAR OF WINGWALL CLOSE TO THE JOINT OF WINGWALL AND BARREL
** FOR SKEWED WINGS BEND BARS N TO ACCOMODATE SKEW, PROVIDE FOR 3 FT OF BAR IN THE WINGWALL AND HEADWALL

TOTAL STEEL QUANTITIES

BARREL	11145 LBS
WINGWALL	2067 LBS
TOTAL	13212 LBS

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STATE PROJ NO	SHEET NO.
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FLORIDA DEP RTMENT OF TRANSPORT TION

BOX CULVERT AND WINGWALL DESIGN — VERSION 0 2

PROJECT NUMBER 00000 0000 — LOCATION DESCRIPTION 650 00 LT — ENVIRONMENT SLIGHTLY AGGRESSIVE USE CLASS II CONCRETE

MATERIAL PROPERTIES — CONCRETE COVER FOR REINFORCING BARS

STEEL YIELD STRENGT	40000 PSI	BARREL E TERIOR COVER	TOP SLAB	0 17 FT	BOTTOM SLAB	0 7 FT	WALL	0 17 FT
CONCRETE 28 DAY STRENCTH	3400 PSI	BARREL INTERIOR COVER	ALL LOCATIONS	0 1 FT			ALL LOC TIONS	0 17 FT
		WINGWALL						

PROPERTIES OF ELEMENTS

BARREL	NO OF B RRELS	2	SP N	6 00 FT					
	LENGTH T BOX CENTER LINE			19 50 FT		EIC T	3 00 FT	DEPT OF FILL	5 00 FT
					LEFT SIDE SKEW NGLE		0 DEGREE	WIDT	14 25 FT
					RIGHT SIDE SKEW NGLE		0 DEGREE	WIDT	4 25 FT
	THICKNESS TOP SLAB	0 75 FT	BOTTOM SLAB	0 75 FT	EXTERIOR WALL	0 75 FT	INTERIOR WALL	0 75 FT	

WINGWALL NO OF WINGWALL(S) BOTH LEFT AND RIGHT SIDES — NO OF HE DWALL(S) BOTH LEFT AND RIGHT SIDES

TOP BEVEL	0 50 FT	SIDE BEVEL	0 50 FT		
WALL HEIGHT	4 75 F	FOOTING WIDT	3 92 FT	EEL DIMENSION	2 2 FT
TOE DIMENSION	0 75 FT	WALL THICKNESS	0 75 FT	FOO ING IC ESS	0 58 FT
TOE PRESSURE	6 LB 50 FT				
SKEW ANGLE		LEFT FRONT	0 DEGREE	LEFT BAC	80 DEGREE
		RIGHT FRO T	0 DEGREE	RIG T B C	80 DEGREE
LENGTH	10 00 FT	0 00 FT		FRONT TIP HEIG T	4 750 FT
WALL	1 273 C Y			FOOTING	286 C Y
				TOTAL	2 559 C

TOTAL WINGWALL LENGTH WITH BARREL WIDTH — LEFT 34 25 FT — RIGHT 34 25 FT

CONCRETE QUANTITIES

BARREL	POUR (BOTTOM SLAB)	0 410 C /FT	OUR 2 (WALLS)	0 222 C Y FT	POUR 3 TOP SL B	0 4 2 C /FT
	POUR 4 (HEADWALL(S)	0 000 C Y			TOTAL E CLUDE HEADWALL)	044 C /FT
WINGWALL	POUR (FOOTING	6 727 C Y	POUR 2 (W LLS	5 093 C	TOTAL	1 820 C

TOTAL CONCRETE QUA TITIES

BARREL	20 353 C Y	WINGWALL	11 820 C Y	TOTAL 32 172 C Y

SKEWED WINGWALL LENGTH MEASURED ON CENTER LINE FROM CONSTRUCTION JOINT
DISTANCE FROM OUTSIDE EDGE OF BARREL EXTERIOR WALL TO CONSTRUCTION JOINT ON CENTER LINE OF WINGWALL
INCLUDE TOE AND KEY AT BARREL ENDS

FLORICA DEP RTMENT OF TRANSPORTATION

BOX CUL ER ND WINGWALL DESIG — VERSION NO 2 1

PROJECT NUMBER 00000 0000 — LOCATION DESCRI TIO 650 00 LT — E VIRO ME T SLIGHTLY AGGRESSIVE USE CLASS II CONCRETE

STEEL QU NTITIES ND BAR SCHEDU.E

BARREL QU NTITIES

LOCATION	BAR	NUMBER	SETS	SIZE	SPACI G	T PE	LEN TH	WEIG T	B LENGTH	C LENGTH	D LENGTH
TOP SLAB	A 00	2	4		0 833	1	13	223			
BOT SLAB	A200	25			0 792	1	13	232			
TOP SLAB	300	12	4		667	1	3 1	112			
TOP SLAB	B300	2	4		667		3 8	29			
BOT SLAB	400	12	4		583	1	3 1	112			
BOT SLAB	B400	13			1 583	1	3 8	32			
CORNER (TOP)		4	4		0 9 7	10	6	132	1 11	2 7	
CORNER (BOTTOM)	2	4	4		0 9 7	0	6	132	1	2 7	
EXTERIOR WALL (1 SIDE)	B	4	4		0 917		4 2	22			
INTERIOR WALL	B3	4	4		0 9 7	1	2	122			
LONGITUDINAL	C	52			500	1	19 2	646			
E DWALL LEFT SIDE	C		5		SEE INDEX	1	3	58			
HE DWALL RIGHT SIDE	C2		) 5		SEE INDEX	1	3 1	58			
E DWALL RIGHT SIDE	P	30			000	1	3 5	68	0 11	1 5	1

P R FOOT BARREL STEEL QUANTITY 99 LBS /FOOT
TO AL BARREL STEEL QUANTITY 2098 LBS

INGWALL QU NTITIES

LOCATION	BAR	NUMBER	SETS	SIZE	SP CING	TYPE	LENGTH	WEIGHT	B LE GT	C LENGTH
STEM	F	2			1 458	10	6 1	96	1 2	4 1
S EM		24	4		458	1	1	80		
STEM	K	24	4		1 500	1	9 8	156		
FOOTING	KF	6	4		SEE INDE		9 8	04		
FOOTING	L	28	4		1 58		3 7	68		
FOOTING LEFT SIDE	M	2	) 4		SEE INDEX		33 1	45		
FOOTING RIGHT SIDE	M2	2	11 4		SEE INDE		33 11	5		
STE TO B RREL DOWELS		20	6		000	0	6 0	180	3 0	3 0
FOOTI G SPILLW Y	R	28	4		000		2 1	39		

PER FOOT WINGWALL STEEL QUANTITY 5 LBS /FOOT
TOTAL WINGWALL STEEL QU NTITY 813 LBS

ENGTH IS T E SUM OF BAR LENGT AT BEGINNING TOP D
END G/BOTTOM OF WINGWALL NUMBER OF BAR IS THE AMOUNT REQUIRED
FOR THIS SUMM TION OF LENGTH B AND C LENGTH IS FOR THE FIRST
BAR OF WINGWALL CLOSE TO HE JOINT OF WINGWALL AND BARREL
FOR S EWED WINGS BEND BARS N TO ACCOMODATE SKEW
PRO IDE FOR 3 FT OF BAR IN THE WINGW LL ND EADW LL

TOTAL STEEL QUANTITIES

BARREL	2098 LBS
WINGWALL	8 3 LBS
TOTAL	29 1 LBS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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NAME	DATE	NAME	DATE
DESIGNED BY		DRAWN BY	
CHECKED BY		CHECKED BY	
SUPERVISED BY			

FLORIDA DEPARTMENT OF TRANSPORTATION

APPROVED

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CONSULTANT LOGO F PLANS PREPARED BY CONSULTANTS

BOX CULVERT

EX II-7 B

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STATE PROJ NO	SHEET
00000 0000	00

SUMMARY OF SIDEDRAIN PIPE AND MITERED END SECTIONS

LOCATION STA TO STA		SIDE	SIZE	PIPES P LF	PIPES F LF	SECTIONS P EA	SECTIONS F EA
S R 00							
130 45	131 25	Lt	24	80		2	
131 86	132 69	Lt	24	83		2	
133 02	133 67	Lt	24	65		2	
S 44 (00 th S)		Lt	18	84		2	
S 45 (00 th St)		Rt	18	76		2	
S 46 (00 th St)		Lt	18	64		2	
TOTALS							

Description	Quantity	P	F
18 Pipe	221 LF		
8 MES	6 EA		
24 Pipe	221 LF		
24 MES	6 EA		

Not Turnout and laterals are t be onstructed t actions d lgned by the Engineer I accordance lth inde No 5 5

SUMMARY OF SODDING

LOCATION STA TO STA		SIDE	P L	P W	P SY	F L	F W	F SY
NB 1 00								
570 00	604 84	Med	3484	4	774			
570 00	585 00	R	1500	1 4	333			
587 57	592 00	Rt	443	1 4	98			
592 00	602 47	Rt	047	56 3	6578			
603 82	605 0	Rt	8	60 2	789			
607 35	6 3 00	Rt	565	62 6	3933			
607 14	650 00	Med	4286	4	952			
613 00	622 47	Rt	947	1 4	210			
624 00	650 00	Rt	2600	4	578			
SB 1 00								
570 00	604 84	Med	3486	1 4	774			
5 0 00	583 13	Lt	12 3	1 4	292			
584 34	592 50	Lt	8 6	1 4	81			
586 50	598 85	L	235	4	52			
600 32	604 30	Lt	398	60 3	2667			
606 50	613 00	Lt	650	51 76	4244			
607 14	650 00	Med	4286	1 4	953			
6 8 50	620 94	Lt	244	1 4	54			
624 34	650 00	Lt	2566	1 4	570			
Ramp A								
82 99	108 24	Lt	2525	2 8	962			
99 89	108 60	R	87	1 4	34			
Ramp B								
885 11	893 00	Lt	789		175			
897 00	900 32	Lt	300	59 3	977			
Ramp C								
785 48	802 50	Lt	1702	19 9	3589			
785 48	803 82	Rt	1834	21 8	4445			
Ramp D								
5 00	33 90	Rt	3390	2 8	857			
7 99	33 35	Lt	2576	3 6	905			
Drainage Structures					322			
Paved Ditches					104			
TOTAL					37,507			

Note The limits of sodding indicated are approximate and or to be adjusted where necessary as directed by the Engineer to provide for continuity f construction or to suit the actual equipment

SUMMARY OF GUARDRAIL

LOCATION STA TO STA		SIDE	GUARDRAIL P LF	GUARDRAIL F LF	END ANCHORAGE TYPE II P EA	TYPE II F EA	TYPE IV P EA	TYPE IV F EA
NB 1 00								
592 00	601 00	R	900					
602 95 5	604 33	Med	37 5					
607 62	6 2 97 5	R	35 5					
603 81 98	604 57 5	Rt	75 5					
SB 1 00								
600 34 5	603 84 5	L	350					
606 97 5	6 2 97 5	L	600					
607 20	608 57 5	Med	137 5					
S R 00								
171 81 3	75 06 3	Med	650				1	
Ramp A								
896 94 7	900 32 2		337 5				1	
Ramp B								
796 94 48	803 81 94	Rt	687 5				1	
797 00	80 00	L	400					
TOTAL			4811		2		9	

Not Guardrail limit and locations long the project may be varied based on actual project conditions time f construction

SUMMARY OF DITCH PAVEMENT AND SODDING

LOCATION STA TO STA		SIDE	RIPRAP CY P	RIPRAP CY F	CONCRETE CY P	CONCRETE CY F	SODDING CY P	SODDING CY F
6 3 00		Lt	24					
613 35		Rt	24					
S 12	195 00	L			28		7	
S 2	8 00	L			37		10	
S 25	58 00	L R			26		41	
S 21	25 00	Lt			39		9	
S 3	405 00	Lt			28		8	
S 33	188 12	Lt			57		8	
S 44	0 42	Rt			16		6	
S 5	0 40	Lt			5		5	
TOTAL			50		346		104	

Not Stationing shown above is approximate Exact locations to be determined by the Engineer during construction

SUMMARY OF EARTHWORK

DESCRIPTION	P CY	F CY
Roadway Excavation (A 2 A 3 Material)	44 8223	
Roadway Excavation (A 8 Muck)	340	
Total Roadway Excavation	45 163	
Embankment	1 063 932	
Subsoil Excavation (A 8 Material)	15 626	
Subsoil Excavation (A 2 A 3 Mat I II)	3 261	
Total Subsoil	8 887	

There is no separate payment for roadway or ditch or channel excavation Any suitable material may be used at the department's discretion accordance with Index No 505 at the option of the contractor

NOTE
EARTHWORK FOR AN EMBANKMENT PROJECT IS SHOWN IN THE EXAMPLE SUMMARY THE SUMMARY OF EARTHWORK AND NOTES FOR BORROW PROJECT TO BE SHOWN ON THIS SHEET

NOTE
NOTES TO BE SHOWN ARE LISTED IN SECTION 7 4

SUMMARY OF FENCE

STATION	LEFT P	LEFT F	RIGHT P	RIGHT F	TYPE	PULL & END POST P	PULL & END POST F	CORNER POST P	CORNER POST F

NOTE
PAY ITEM NOTES TO BE SHOWN ARE LISTED IN SECTION 7 4

DATE		DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

REVISIONS

	NAME	DATE		NAME	DATE
DESIGNED BY			DRAWN BY		
CHECKED BY			CHECKED BY		
SUPERVISED					

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED
DATE

CONSULTANT LOGO IF PLANS PREPARED BY CONSUL ANTS

SUMMARY OF QUANTITIES

CHAPTER 8

SUMMARY OF DRAINAGE STRUCTURES

8.1 General

The summary of drainage structures sheet shows the location, size, length, number and type of drainage structures used in a project The sheet format is available in the CADD cell library Specific levels and fonts which shall be used are also explained in the DOT CADD Manual Provision shall be made to show both the plan and final quantities

For a complete illustration of the summary of drainage structures sheet, see Exhibit II-8-A thru C

8.2 Sheet Setup and Data

A summary of drainage structures shall be prepared and included in the plans The structures shall be listed by structure numbers in numerical order Location of each structure shall be identified by station along the construction centerline (Exhibit II-8-A)

For cross drains, the summary of drainage structures shall be tabulated by structure number, providing the station, size, length and incidental quantities appropriate for the material detailed in the plans Optional culvert material will usually be provided and a supplemental tabulation form shall be prepared and included Information for the optional pipe materials, which will be shown by struture number on the form, includes design service life (DSL), size, length, flow line elevations, thickness or class, corrugation requirements if necessary, and protective coatings if any The optional material which was plotted and used to establish the pay quanities shall be identified A table giving maximum and minimum backfill soil value shall be provided (Exhibits II-8-B and II-8-C) The general notes shown on Exhibit II-8-B are required when optional culvert materials are provided

For storm sewer, the summary of drainage structures shall be tabulated by structure number, providing station, location, size, length, type, and incidental quanities Usually, only one culvert material will be designed for a storm sewer If optional materials are designed, a sheet supplemental to the summary of drainage structures sheet shall be provided

Various drainage elements shall be shown in columns This information shall be obtained from drainage structure sheets or plan - profile Sheets The order in which the elements are listed should be as follows

- Pipe Sizes for
  - Cross Drains
  - Storm Sewer
  - Gutter Drain
- Curb Inlets
- Manholes
- Ditch Bottom Inlets
- Gutter Inlets
- Flared End Sections
- Mitered End Sections
- Sod
- Class of Concrete
- Reinforcing Steel
- Rip Rap

The "Type" column shall be used to specify the type of structure, the outgoing pipe and the end treatment of that pipe if applicable

The remarks column shall contain all special notes pertaining to the structure

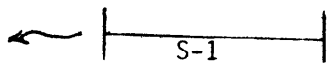
The "F" line is for construction to document the final quantity and should be left blank by the designer

On smaller projects the summary of quantities and the summary of drainage structures may be combined on one sheet

It is recommended that structure numbers be established using the convention shown in the exhibits and described below

1 For simple cross-drains, one structure number is appropriate for the inlet and outlet treatments and the pipe

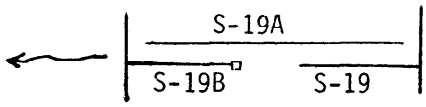
Example #1 (cross drain w/o median inlet)



2 For complex cross drains, it is suggested that the first and all intermediate structure numbers identify the hydraulically upper end treatment and pipe The last structure number should identify the hydraulically upper end treatment, pipe and hydraulically lower end treatment

Example #3 (double pipe CD & median inlet)

S-19 endwall & pipe
S-19A pipe only (barrel # 2)
S-19B inlet, pipe & endwall



THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFIECT THE DEPARTMENT'S DESIGN CRITERIA

STATE PROJ NO	SHEET NO.
00000 0000	00

	St No.	Index Number	Station Location	Type	No.	Size (In)	Length (Ft)	C os D I Optional Type 5	18	24	30	48	60	RCP Cross Drain Class III 30	RCP Storm Sewer Class III 15	18	24	30	36	42	[illegible] 15	Curb Inlets P1 10	P2 10	J1 10	J2 10	MH J INT 10	Ditch Bottom Inlet A 10	AJ 10	B 10	D 10	Gutter Inlet 10	S 10	Flared End Section 15	18	30	Mitered End Section 18	24	Sod SY	Class I Conc CY	Class II Conc CY	Reinf Steel Lbs	Sand Cem Riprap CY	REMARKS
P	1	280	482 48	Pipe	1	42	12													12																							Const. Concrete Jacket
P	2	280	482 60	Pipe	1	42	258													258																							Const. Collar
P	3	200,210	482 60	Inlet, Pipe	1	15	89								89							1																					
P	4	200,210	485 19	I let, Pipe	1	36	178												178					1																			
P	5	200,2 0	485 60	I let, Pipe	1	15	93								93								1																				
P	6	200,201	487 03	MH, Pipe	1	36	97												97							1																	Alt A, Brick Only, Confl t MH
P	7	200,210	488 08	Inlet, Pipe	1	30	181											181							1																		Mod Height
P	8	250,281	488 08	EW, Pipe	1	18	11									11																						39	1.56				
P	9	200,210	490 00	Inlet, Pipe	1	24	300										300					1																					Mod Height
P	10	200,210	490 00	Inlet, Pipe	1	18	51									51						1																					
P	11	272	1490 10 ℄ Leg A	MES, Pipe	1	18	75									75																				1		25					
P	12	258	493 00	EW	1	24																																26				2 4	
P	13	270	503 00	FES, Pipe	1	30	154							154																					2			32					
P	14	220,250,281	5 00 Ramp A	EW, Pipe, Inlet	1	30	72				72																					1						39	3 26				
P	14A	250,281	5 00 Ramp A	Pipe, EW	1	30	50				50																											39	3 26				
P	15	220,261,281	15 00 Ramp A	I let Pipe, EW	1	15	21														21										1							17	1 64		68		
P	16	250,280,28	514 00	EW, Pipe	2	48	158					316																										266	21 70				Const Collar Pipe Ahead
P	17	231	514 14	I let, Pipe	1	18	8		8																													9					
P	18	232,270	519 00	I let, Pipe, FES	1	18	178		178																					1				1				11					
P	19	200,230,251	529 00	EW Pipe Inl t	1	60	100						100															1										112		13.88	834		Alt B
P	19A	251	529 00	Pipe, EW	1	60	98						98																									112		13 88	834		
P	19B		529 00	Pipe	1	60	201						201																														
P	20	273 280	529 20	MES Pipe	1	24	40			40																											1	11					Const. Collar
P	21	231 272	540 00	MES, Pipe, I let	1	18	86		86																				1							1		25					
P	22	230,270,281	560 00	FES, Pipe, I let	1	15	87	87																			1						1					11					
P	23	230,270,281	581 00	I I t, Pipe, FES	1	15	89	89																			1											11					
SUB TOTALS							P (Plan Quantity)																																				
							F (Final Quantity)																																				
TOTALS							P (Plan Quantity)	176	272	40	122	316	399	154	182	137	300	181	275	270	21	3	1	1	1	1	2	1	2	1			2		2	2		812	31 42	27 76	1736	2 4	
							F (Final Quantity)																																				

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

DESIGNED BY | CHECKED BY | SUPERVISED BY

FLORIDA DEPARTMENT OF TRANSPORTATION

APPROVED BY | DATE

(CONSULTANT LOGO IF PLANS PREPARED BY CONSULTANT)

SUMMARY OF DRAINAGE STRUCTURES

EX II-8-A

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA

STATE PROJ NO	SHEET NO
00000 0000	00

GENERAL NOTES

1 The Contractor shall bid on the structures and optional pipe material plotted in the plans and the optional pipe material indicated as plotted on this sheet

2 The Contractor may use any of the optional pipe materials tabulated for a given structure however payment will be made only under the pay item number number that applies to the material indicated under plotted on this sheet and the associated quantities appropriate for the plotted material

3 Adjustment to the bid quantities prices and payment will not be allowed due to increase or decrease in structure size shape length width depth or accessory construction necessary to accommodate the use of an optional pipe material other than the plotted option likewise there will be no added or reduced compensation for structure alterations required to relieve utility conflicts which arise from the use of an optional material other than the plotted option

4 Adjustment to the bid quantities prices and payment will not be allowed due to increased or decreased excavation bedding borrow backfilling compaction special installation requirements or disposal of excess materials due to use of any of the pipe optional materials Likewise adjustment in the quantities prices and payment will not be allowed due to differences in end treatment size or types pipe length alternate jointing and connecting materials saddles cradles filter fabrics shoring or similar features due to the use of an optional material other than the plotted option

5 If adjustments are required due to plan errors or omissions or authorized field changes the plotted material and not the material elected by the Contractor would be used to establish new pay quantities

6 The Contractor shall verify that backfill from sources outside the limits covered by the soil survey have values which satisfy both the minimum and maximum limits shown in the table and when combined as indicated provide the design service life (DSL) shown for the structure

a) For steel pipe the pH and resistivity values must be considered in combination (Figure II 2)
b) For aluminum pipe the pH and resistivity values must be considered in combination (Section II 3 1 & Table II 3)
c) For concrete pipe the pH chloride and sulfate values must be considered in combination (Figure II 1)

Figure reference is to the Department s Drainage Manual 1987 Edition Volume 2 Chapter II

BACKFILL SOIL VALUES

Material Option	Design Service Life	pH min	pH max	Resistivity Ohm Cm min	Resistivity Ohm Cm max	Chloride mg/L max	Sulfates mg/L max
Steel	100	5.0	9.0	1500			
	50	5 0	9 0	1500			
Aluminum	100	5.5	8.5	1500			
	50	5.5	8 5	500			
	50	5 0 to 5 5	8 5 to 9 0	1500			
Concrete	100	5 5	9 0			2000	1500
	50	4 5	9 0			22000	10000

Str No	DSL	SIZE (INCHES)	LENGTH (FEET)	PLOTTED	MATERIAL & THICKNESS	F L	F L	AS BUILT	REMARKS
14	100	30	72	x	RCP Class III	6 0	5 9		
		36	71		CAP 16 ga 3 1	6 0	5 9		
		30	72		CSP Type I R 14 ga B t Coat	6 0	5 9		
		36	71		CSP 14 ga	6 0	5 9		
14A	100	30	50	x	RCP Class III	5 9	5 8		
		36	49		CAP 16 ga 3 1	5 9	5 8		
		30	50		CSP Type I R 14 ga B t Coat	5 9	5 8		
		36	49		CSP 14 ga	5 9	5 8		
16	100	36	159		RCP Class II	9 6	9 4		Dbl P pe
		48	158		CAP 3 1 16 ga	9 6	9 4		Dbl P pe
		36	159		CSP Type I R 14 ga B t Coat	9 6	9 4		Dbl P pe
		48	158	x	CSP 14 ga B t Coat	9 6	9 4		Dbl P pe
17	50	18	8		RCP Class II	11 8	10 8		Med an Dra n
		18	8		CAP 16 ga	11 8	10 8		
		18	8		CSP Type I R 14 ga B t Coat	11 8	10 8		
		18	8	x	CSP 14 ga B t Coat	11 8	10 8		
18	50	18	178	x	RCP Class II	12 5	11 0		
		18	178		CAP 16 ga	12 5	11 0		
		18	178		CSP Type I R 14 ga B t Coat	12 5	11 0		
		18	178		CSP 14 ga B t Coat	12 5	11 0		
19	100	48	116		RCP Cla s III	9 5	9 4		Use Index 250 Dbl 48 Endwall
		60	100		CAP 16 ga 3 1	9 5	9 4		
		48	116		CSP Type I R 14 ga B t Coat	9 5	9 4		Use Inde 250, Dbl 48 Endwall
		60	100	x	CSP 3 1 14 ga B t Coat	9 5	9 4		
19A	100	48	111		RCP Class III	9 4	9 3		Use Inde 250, Dbl 48 Endwall
		60	98		CAP 16 ga 3 1	9 4	9 3		
		48	111		CSP Type I R 14 ga B t Coat	9 4	9 3		Use Index 250 Dbl 48 Endwall
		60	98	x	CSP 3 1 14 ga B t Coat	9 4	9 3		
19B	100	48	231		RCP Class III	9 5	9 3		
		60	202		CAP 16 ga 3 1	9 5	9 3		
		48	231		CSP Type I R 14 ga B t Coat	9 5	9 3		
		60	202	x	CSP 3 1 14 ga B t Coat	9 5	9 3		
20	50	24	40	x	RCP Class II	14 9	11 3		Const Collar
		24	40		CAP 16 ga	14 9	11 3		Const Collar or fabr cated Tee f tt ng
		24	40		CSP Type I R 14 ga B t Coat	14 9	11 3		Const Collar or fabr cated Tee f tt ng
		24	40		CSP 14 ga B t Coat	14 9	11 3		Const Collar or fabr cated Tee f tt ng
21	50	18	84	x	RCP Class II	15 9	15 2		
		28 20	85		CAPA 14 ga	15 9	15 2		
		18	84		CSP Type I R 14 ga B t Coat	15 9	15 2		
		28 20	85		CSPA 14 ga B t Coat	15 9	15 2		
22	100	15	87	x	RCP Class II	17 0	16 9		
		18	87		CAP 16 ga	17 0	16 9		
		15	87		CSP Type I R 14 ga B t Coat	17 0	16 9		
		18	87		CSP 14 ga B t Coat	17 0	16 9		
23	100	15	89	x	RCP Class II	16 2	15 0		
		15	89		CAP 16 ga	16 2	15 0		
		15	89		CSP Type I R 14 ga B t Coat	16 2	15 0		
		15	89		CSP 14 ga B t Coat	16 2	15 0		

THIS SHEET USED TO TABULATE OPTIONAL STORM SEWER AND/OR CROSS DRAIN PIPE MATERIALS CROSS DRAIN EXAMPLE SHOWN

DATE	B	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	D TE	B	DESCRIPTION

REVISED BY — CHECKED BY — SUPERVISED — NAME — TE — DRAWN BY — CHECKED BY — NAME — DATE

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED F
DATE

CONSULTANT LOGO IF PLANS PREPARED BY CONSULTANT

CROSS DRAIN OPTIONAL MATERIALS TABULATION

Sheet x of x

STATE PROJ NO	SHEET NO.
00000 0000	00

Str. No	DSL	SIZE (INCHES)	LENGTH (FEET)	PLOTTED	MATERIAL & THICKNESS	F L	F L	AS BUILT	REMARKS

Str. No	DSL	SIZE (INCHES)	LENGTH (FEET)	PLOTTED	MATERIAL & THICKNESS	F L	F L	AS BUILT	REMARKS

THIS SHEET USED TO TABULATE OPTIONAL STORM SEWER AND/OR CROSS DRAIN PIPE MATERIALS

REVISION											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAME	TR		NAME	DATE
DESIGNED BY			DRAWN BY		
CHECKED BY			CHECKED BY		
SUPERVISED B					

FLORIDA DEPARTMENT OF TRANSPORTATION

APPROVED

DATE

CONSULTANT LOGO IF PLANS PREPARED BY CONSULTANT

Sheet x of x

EX 11 8 C

CHAPTER 9

PROJECT LAYOUT

9.1 General

The project layout sheet (or sheets) shows the horizontal alignment and plan - profile sheet sequence and numbering for the project. This is an optional sheet, to be included in the plans set at the discretion of the District Office. The project layout sheet can prove to be of great advantage for large or complicated projects involving large interchanges with a number of diverging routes. If included in the plans set, this sheet should also show all survey reference points and list all general notes applicable to the project.

The layout sheet shall be prepared on a standard plan format. Scale shall be such that clarity and legibility are preserved even if the plans are reduced to half size. North arrow and graphic scale shall be shown at a point of maximum visibility on the sheet. For large, complicated projects, more than one sheet may be required to clearly depict all required information. Appropriate match lines shall be shown if more than one sheet is required.

9.2 Alignment Sheet Sequence

Complete project alignment with centerline of construction shall be shown. Edge of pavements shall be shown if scale permits. Outlines of the plan, or plan - profile sheets shall be superimposed on the alignment to depict the sheet sequence with relation to the alignment stationing. Match lines and match line stations shall be shown on the plans, or plan - profile sheet outline with sheet numbers shown in the upper, right-hand corner. The order of plan/plan - profile sheet numbering shall be as follows:

Mainline (for widely separated roadways, the right roadway in the direction of stationing takes precedence, see Exhibit II-9-A).
Crossroads
Ramps
Frontage roads
Access roads

Beginning and ending stations for project, construction and ramps shall be flagged and labeled.

9.3 Survey Reference Points

Survey reference points should be shown on the project layout sheet just beneath the alignment sheet sequence plan Baseline survey and reference points with all ties shall be clearly indicated Complete length of survey baseline between two consecutive reference points need not be shown Each reference point shall be clearly labeled and numbered, with the numbering beginning at the first reference point within the limits of the project and progressing in the direction of stationing Usually, reference points need not be drawn to any particular scale, but distances and angles shown shall be proportionate Care should be taken to ensure that clarity and legibility are maintained on half size plans

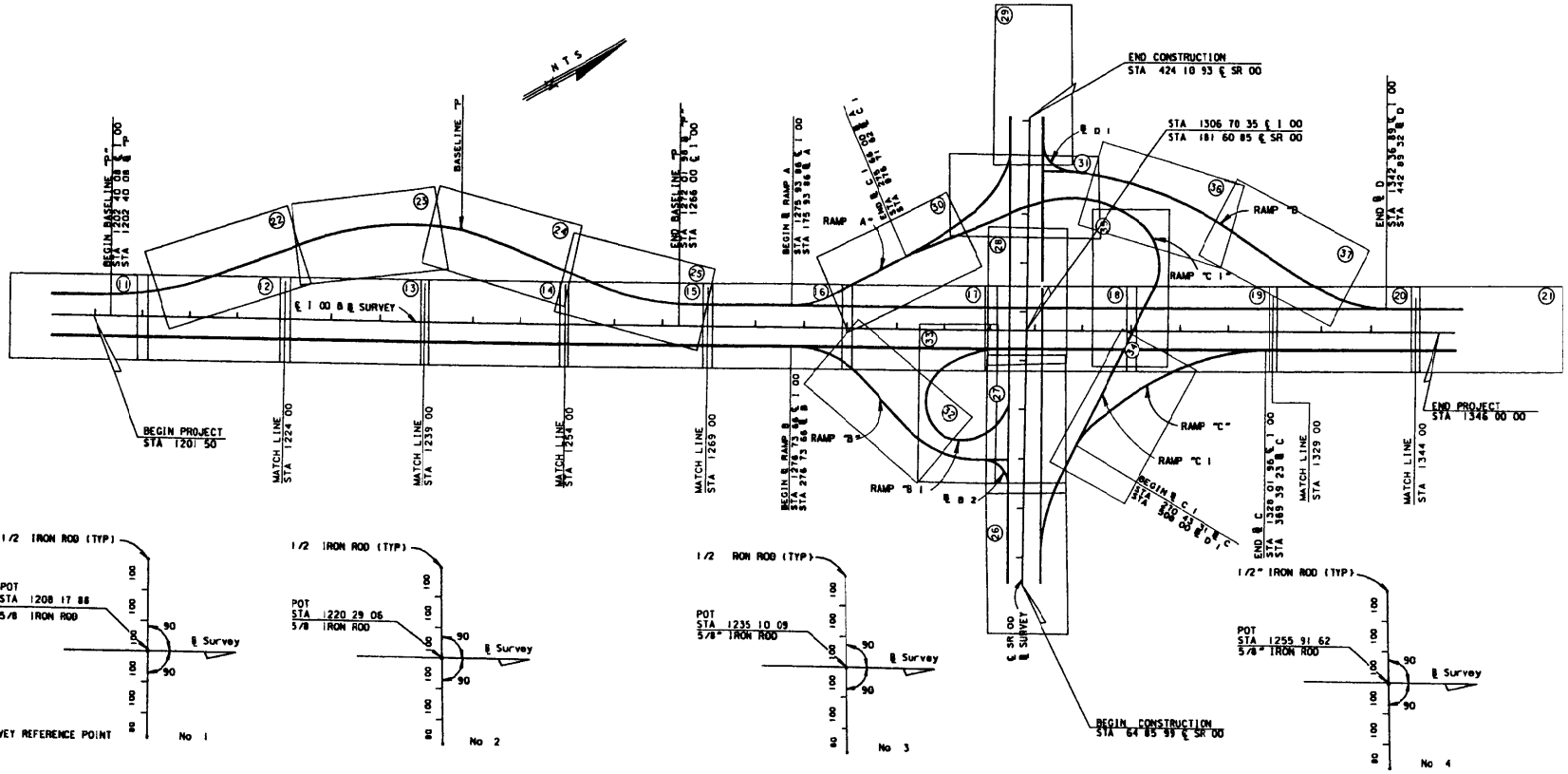
9.4 General Notes

When the layout sheet is included in the plans set, applicable general notes should be included on the layout sheet instead of the plan-profile sheet to help simplify the plan-profile sheets

For a list of general notes, refer to Section 10 4 of Roadway Plan and Profile Chapter 10 of this Volume

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA.

STATE PROJ NO	SHEET NO
00000 0000	000



GENERAL NOTES:

(FOR A LIST OF GENERAL NOTES SEE SECTION 10 4)

SURVEY REFERENCE POINT SYMBOL ⊕

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAME	DATE		NAME	DATE
DESIGNED BY			DRAWN BY		
CHECKED BY			CHECKED BY		
SUPERVISED BY					

FLORIDA DEPARTMENT OF TRANSPORTATION

APPROVED BY

DATE

CONSULTANT LOGO IF PLANS PREPARED BY CONSULTANT(S)

PROJECT LAYOUT

CHAPTER 10
ROADWAY PLAN AND PROFILE

10.1 General

The plan-profile sheet shows the project's complete horizontal and vertical alignments Various roadway elements such as pavement width, medians, paved shoulders, curbs, drainage elements, tapers, turn provisions, and intersecting roadways, are also shown on this sheet

Roadway plan-profiles shall be prepared on standard plan-profile format Scales used should be such that the sheet is legible when reduced to half size Standard scales for rural construction are 1" = 100′ in the plan and 1" = 100′ horizontally and 1" = 10′ vertically in the profile Scales for urban construction are usually 1" = 20′ in the plan and 1" = 20′ horizontally and 1" = 2′ vertically in the profile To provide additional clarity, scales other than these standards may be used, such as, 1" = 50′ horizontally and 1" = 5′ vertically The scale shall be shown graphically along the north arrow The north arrow shall be placed on the plan portion at a point of maximum visibility The usual position is near the top right corner of the plan portion

For CADD produced plans (i e , originals are 11" X 17"), plotting should be done at a horizontal true scale of 1" = 40′ for urban jobs For rural jobs, the true scale could be from 1" = 80′ to 1" = 200′ horizontally, depending on project specific details

CADD Roadway Standards and Guidelines explains in detail the production of the plan-profile sheet

If a project layout sheet is not included in the plans set, then provision shall be made on the first plan-profile sheet to show applicable general notes Refer to Section 10 4 for a list of general notes

10.2 Roadway Plan Portion

10.2.1 Centerline

The centerline of construction should be centered in the plan portion of the sheet, with stationing running from left to right. When horizontal curves are involved, the centerline shall be positioned on the sheet such as to avoid breaks or match lines.

A "tick" mark shall be placed on the upper side of the centerline at every station. "Tick" marks at every 5" (true scale) shall be 0.2" long and the station number should be shown above the "tick" mark, usually outside of the R/W lines. The remaining "tick" marks at every 1" (true scale) shall be 0.1" long with no station numbers shown. Station numbers may be shown inside the R/W.

Thirty stations per sheet should be shown when the horizontal scale is 1" = 100′ and if a scale of 1" = 20′ is used, six stations per sheet should be shown. Each sheet shall begin and end with a whole station and shall begin on an even 10 station for a scale of 1"=100′. The first and last plan-profile sheets may be exceptions.

In cases where the construction centerline does not coincide with the survey baseline, the construction centerline shall be identified with complete alignment data and ties to the survey baseline. However, the construction centerline may not be shown when it is uniformly offset from the survey baseline for the entire length of the project, and is shown on the typical sections. All station equations shall be included. These include equations occurring on the survey baseline and those equating survey baseline and construction centerline.

10.2.2 Horizontal Curves

P.C. and P.T. points of horizontal curves shall be indicated by small circles. Short radial lines shall be drawn from these points and identified. P.I.'s shall be noted by the use of a small triangle with a short section of tangent on either side. In cases where the curve extends over more than one sheet, the curve data shall be repeated on each sheet showing the curve.

Complete curve data shall be shown for each horizontal curve using the following format:

CURVE DATA

P.I. Station
Δ (Delta Angle with Direction)
D (Degree of Curvature)
T (Tangent Length)
L (Length of Curve)
R (Radius Length)
P.C. Station
P.T. Station
e (Superelevation Rate)

10.2.3 Existing Topography

All existing topography shall be shown. Existing roads, streets, drives, buildings, underground and overhead utilities, walls, curbs, pavements, fences, railroads, bridges, drainage structures and similar items shall be drafted and labeled. Streams, ponds, lakes, wooded areas, ditches and all other physical features shall also be shown. Existing curbs, sidewalks, pipes, etc. shall be drafted using a light broken line; existing pavement edges shall be shown by a different broken line pattern (longer dashes). All existing utilities shall be shown on the plan and noted by an appropriate symbol (see Index 002 for standard symbols). If the type of utility pipe is unknown it should be labeled as such. Existing gasoline storage tanks within limits of topographical survey shall be located and illustrated by broken lines on the plan.

10 2 4 Reference Data

Bearings, in the direction of stationing, shall be shown for all tangent sections

Station equivalencies, angles with mainline centerline and/or bearings in the direction of stationing of the crossroad shall be shown for all roads and streets intersecting or crossing the project

All the survey reference points shall be shown (if layout sheet is not included in plans set) at locations removed from the centerline

If Section lines or city limits are encountered within the limits of the project, then the intersection shall be tied by station and angle/bearings to the baseline of survey

10 2 5 Construction and Project Limits

The project's proposed construction limits shall be indicated in the plans The limits to be flagged and stationed are

1 Begin and end of project, and begin and end of construction where construction limits are other than project limits If plans cover more than one project, the limits of each shall be clearly identified by station and project number Limits identification shall be shown both in plan and in profile

It is the responsibility of the designer to set the project and construction limits If the plans cover more than one project or are part of a corridor improvement, the project limits should be at the beginning of the full typical sections, with any construction (transitions, etc) outside these limits being within the construction limits Examples of types of work that may fall within construction limits but outside project limits are feathering, friction course, guardrail, drainage work and signing and marking work For other projects the designer may wish to set project limits at the limits of major construction, i e begin project at the beginning of a transition

2 The limits of project breakdown necessary for separation of length and quantities for federal-aid and non-federal-aid projects

3 The limits of each type of construction classification where more than one type is involved, such as, resurfacing, bridging, widening, and milling

4 The begin and end of exceptions and equations

10 2 6 Drainage Structures and Bridges

Proposed cross drain pipes and culverts shall be indicated in the plan by a symbol and identified by a drainage structure number only Box culverts (single or multiple) of 20' total span or more between inside faces of end supports, measured along the center of the roadway, shall be designated as bridge culverts and shall be identified by both a bridge number and a drainage structure number The beginning and ending stations (outside wall to outside wall) shall be flagged

Proposed bridges and approach slabs shall be shown by simple outline Bridges shall be identified by bridge number and their beginning and ending stations noted by station flags The beginning and ending stations of approach slabs shall be noted by station pluses (plus station)

A short section of lateral ditch centerline shall be shown, when appropriate, on the roadway plan - profile sheet, together with a note referring to lateral ditch sheets for ditch details

The proposed drainage system is indicated by drafting storm sewer pipes with a single line, and the outline of inlets, manholes and junction boxes The pipe size between structures shall be given Structure numbers shall be provided for inlets, manholes, junction boxes and special structures When drainage structure sheets are included in the plans, no further information shall be noted When drainage structures are not included in the plans, a complete description of the pipes and drainage structures shall be shown

When plans are prepared utilizing optional pipe materials, the most logical option, as specified by the drainage engineer, shall be the pipe size shown, and the "Optional Cross-Drain Tabulation Sheet", shall be prepared If the tabulation sheet is not prepared, a complete description of all pipe options shall be shown on the plan-profile sheet

10 2 7 Plan Layout

1 Right-of-way lines shall be shown Right-of-way shall be dimensioned only if the applicable typical section shows a varying dimension from the baseline or centerline Dimensions of the R/W line shall be from the centerline or baseline, if survey and construction lines are parallel, otherwise it shall be dimensioned from the construction centerline

2 The showing of detailed information regarding crossovers or intersections should be avoided when they are of a type which can be handled by a standard detail Crossover and intersections shall be identified by station location

3 At locations along the alignment where travelway dimensions change, or begin to change, the station and dimensions of the travelway shall be shown For rural projects the edges of pavement may not be shown in the plan if shown in typical section projects

4 Curb, curb and gutter, traffic separators, sidewalks, curb cut ramps, retaining walls, etc shall be shown

5 Stations of return points, shall be shown in tabular form (see Exhibit II-10-A) or shown on the plan, unless shown on the intersection details Offsets shall also be shown, if not governed by a typical

6 Station of radius points of traffic separator or median curb at median openings shall be shown in the plan Elevation of these points shall also be shown if not shown in the intersection details sheet or unobtainable in plans

7 Control radii for traffic turns that set median nose locations shall be indicated, unless shown on the intersection detail sheet

8 Station of end of curb and gutter at side street intersections, (when end is not at a return point) shall be shown with proposed gutter grade elevation of these points No station needs to be shown for driveways when the curb and gutter on the returns is terminated five feet back of the sidewalk or the right-of-way line, since the point of termination is set by the back of sidewalks or project right-of-way

9 Limits of pavement and grading at side street intersections shall be indicated

10 When incidental construction extends beyond the right-of-way lines, construction easements or restoration agreements may be required and should be shown on the plan sheets

11 All utilities shall be shown in the plan Elevations of utilities greater than 4 inches in diameter shall be flagged in the plan view All major utilities that have been field verified shall be labeled in accordance with the following symbols

V_v = Verified Vertical Location
V_h = Verified Horizontal Location
V_{vh} = Verified Vertical Elevation and Horizontal Location

12 All traffic monitoring sites on or within 0 5 mile of the project shall be identified with the following notation

Traffic Monitoring Site Number (XXXX)
Roadway Identifying Number (RCI Section #) Milepost (XX.XXX)
Site includes vehicle detectors in roadway and pedestal mounted cabinet, buried cable, and solar power unit on right-of-way.

10.3 Roadway Profile Portion

10 3 1 General Data

The horizontal scale for the profile portion of the sheet shall be the same as that used for the plan portion Station limits of the profile shall correspond to those of the plan of each sheet Station numbers shall be placed across the bottom of the sheet just above the title block The full station number should be shown every five inches, regardless of scale, and the first and last stations on a sheet Single digit numbers may be shown for other stations A general guideline for horizontal and vertical scale is the vertical scale should be 10% of the horizontal scale

Vertical elevation datum selected shall be such that the profile will not crowd either the upper or lower limits of the profile format Elevation datum shall be shown on both the left and right sides of the sheet

The existing groundline profile shall be drafted using a light dashed line The location of the groundline profile shall be identified Existing groundline elevations shall be noted vertically, just above the station numbers at each end of the sheet only

High water elevations shall be shown by use of a light broken line (long dashes) at the high water elevation, with the elevation and the year of the indicated high water identified If high water is to be lowered, the design high water elevation shall be stated

Bench mark data shall normally be given just below the upper margin of the profile portion However, if space permits, it may be placed in the plan portion just above the upper profile margin at the appropriate corresponding station Refer to Exhibit II-10-A for correct format

Station equations and exceptions shall be shown Begin and End stations of project, construction, bridge and bridge culverts shall also be shown

10 3 2 Vertical Curves

The proposed profile grade shall be shown by a heavy solid line Vertical curve P C 's and P T 's shall be indicated by small circles and P I 's by a small triangle with short sections of tangent drafted with a light line on each side Percents of grade to 3 significant decimal places shall be shown on the tangent line (zeros need not be shown) Vertical lines shall be extended from the P C and P T points and a dimension line placed between these lines indicating the length of the vertical curve The P C and P T stations and elevations shall be indicated on the vertical lines

For vertical curves, the profile grade elevations shall be given on even stations and, where appropriate, at 20′ or 50′ intervals The elevations shall be placed between the dimension line and the grade line The curve length, dimension and the profile grade elevations shall be placed above the grade line for sag vertical curves and below the grade line for crest vertical curves The dimensions and elevations shall be placed reasonably near the grade line whenever possible The P I station and elevation shall be noted, lettered vertically above the P I symbol for crest curves and below for sag curves

The profile grade elevation of the beginning and ending station of each sheet shall be shown vertically just above the grade line, except when the beginning or ending station on the sheet is on a vertical curve

10 3 3 Grades

Percents of grades to 3 decimal places shall be indicated for each tangent section on every sheet (trailing zeros need not be shown) When two tangent grades intersect and no vertical curve is required the P I station and elevation shall be labeled vertically, using the same criteria as for vertical curves

10 3 4 Superelevation

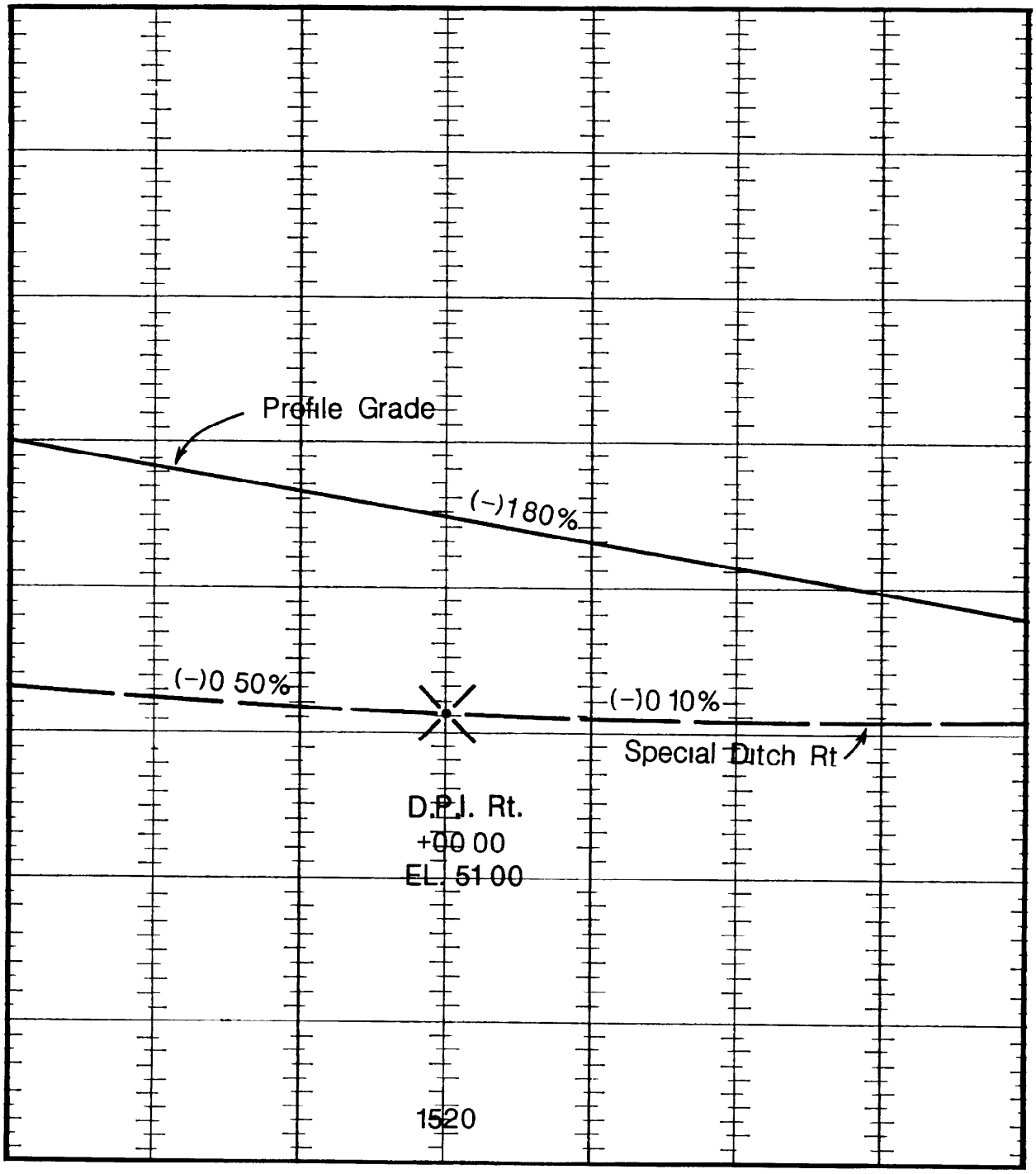
For non-standard superelevated sections of the project, the begin and end superelevation stations should be indicated on the profile with a note "For Superelevation details see sheet __" (special profiles sheet)

10 3 5 Drainage Features

For rural construction projects, special ditches shall be indicated in the profile with a medium light broken line (long dashes) Percent of ditch grade and a beginning or ending ditch P I with symbol (see figure 10 1), and elevation and station plus shall be shown For multi-lane divided projects, three special ditch grades (right and left roadway ditches and median ditch) sometimes occur at the same location In such cases it may be advantageous to show the median ditch at a convenient location on the sheet with a separate elevation datum

FIG. 10.1

DITCH POINT INTERSECTION (D.P.I.)



Uniform ditches of non-standard depth should be indicated by a dimension line in the lower portion of the grid and noted as a special ditch with location and depth or they should be indicated by flagging the DPIs at each end with station elevation and side Standard depth ditches are not shown

Special gutter grades shall be shown in profile for cases where the gutter grades are not controlled by the typical section and "special profiles" are not included in the plans set

Prolongations of gutter profile grades across street intersections shall be included on plan - profile sheets if an inlet is not provided before the intersection

Storm sewer pipe, inlets and manholes along the main line shall be shown Pipes shall be noted by size If drainage structure sheets are included in the plans, proposed structures may be shown by structure number only Proposed drainage structures shall be drafted with a medium heavy line The grate elevation and flow line elevations shall be shown for all pipes entering and leaving the structure If drainage structure sheets are not included in the plans, sufficient information to construct the structure should be given

Proposed cross drain pipes and culverts shall be plotted in section with a heavy solid line The section shall be shown at the correct location and elevation of the proposed structure crossing the centerline of construction If drainage structures are drawn, cross drains shall be identified by structure number only If optional materials are provided, only the structure number is shown and the optional material cross drain tabulation sheet is provided Bridges and bridge culverts shall be noted as such and their beginning and ending stations shown

For road/railroad under bridge situations, the cross-section template of the road/railroad under the bridge shall be shown at the appropriate location in profile

All major underground utilities[1] located in the field shall be shown to scale in profile and labeled in accordance with the following symbols

v_v = Verified Vertical Elevation

v_h = Verified Horizontal Location

V_{vh} = Verified Vertical Elevation and Horizontal Location

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[1] Note "Major Utilities" are defined as water mains (4" or larger), all gas lines except service lines, telephone ducts (50 pair or larger), sanitary lines (all gravity flow mains), sanitary force mains (4" or larger) and electric power cable (all buried electric transmission cables - not service lines)

10.4 General Notes for Plan - Profile Sheets

General notes for the project shall be placed on the left portion of the first plan-profile sheet if a layout sheet is not included in the plans set, otherwise, they shall be included on the layout sheet

List of General Notes·

1 Buildings to be removed by others, unless otherwise noted

2 Existing drainage structures within construction limits shall be removed (or remain) unless otherwise noted

3 If there are no utility adjustment sheets in the plans, the following notes shall be included in the general notes

a The location of the utilities shown in the plans are approximate only The exact location shall be determined by the Contractor during construction

b For utility adjustment symbols, see Index No 002

c Utilities are to be adjusted by others as directed by the Engineer

d Utility Owners (Note Should have names and emergency phone numbers)

Companies Telephone Nos

4 If there are no drainage structure sheets in the plans, the following notes shall be included in the general notes, if applicable

a Special attention is directed to the fact that portions of some drainage structures extend into the stabilized portion of the road bed and extreme caution will be necessary in stabilization operations at these location

b To be used when optional materials are provided)

(Some) (All) _____ of the drainage structures have optional culvert materials One of the optional materials has been used as the basis of the pay quanities All optional materials are described, and design infomation has been provided in the tabulation of optional <u>cross drain</u> (and/or storm sewer) pipe culvert materials

5 Any public land corner within the limits of construction is to be protected If a corner monument is in danger of being destroyed and has not been properly referenced, the project engineer should notify the district location surveyor without delay by telephone

6 Existing driveways within the limits of this project have been evaluated for conformance with FAC Rule 14-97 003(1)(b) Those that are in substantial conformance with the rule and that are to remain at their existing location, are not shown on the plans but are to be reconstructed in conformance to standards Those that are to be relocated or closed are detailed on the plans

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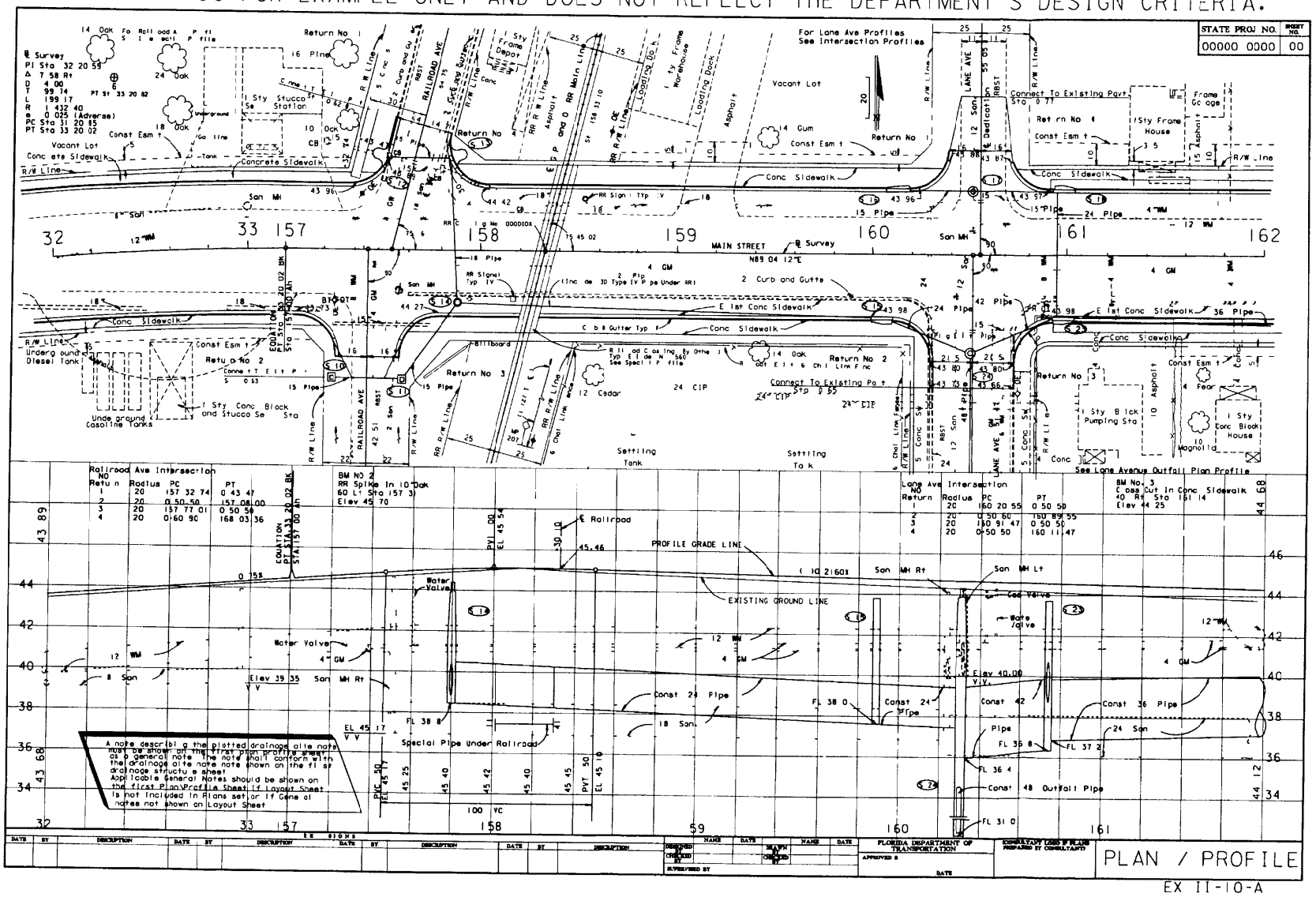

EX II-10-A

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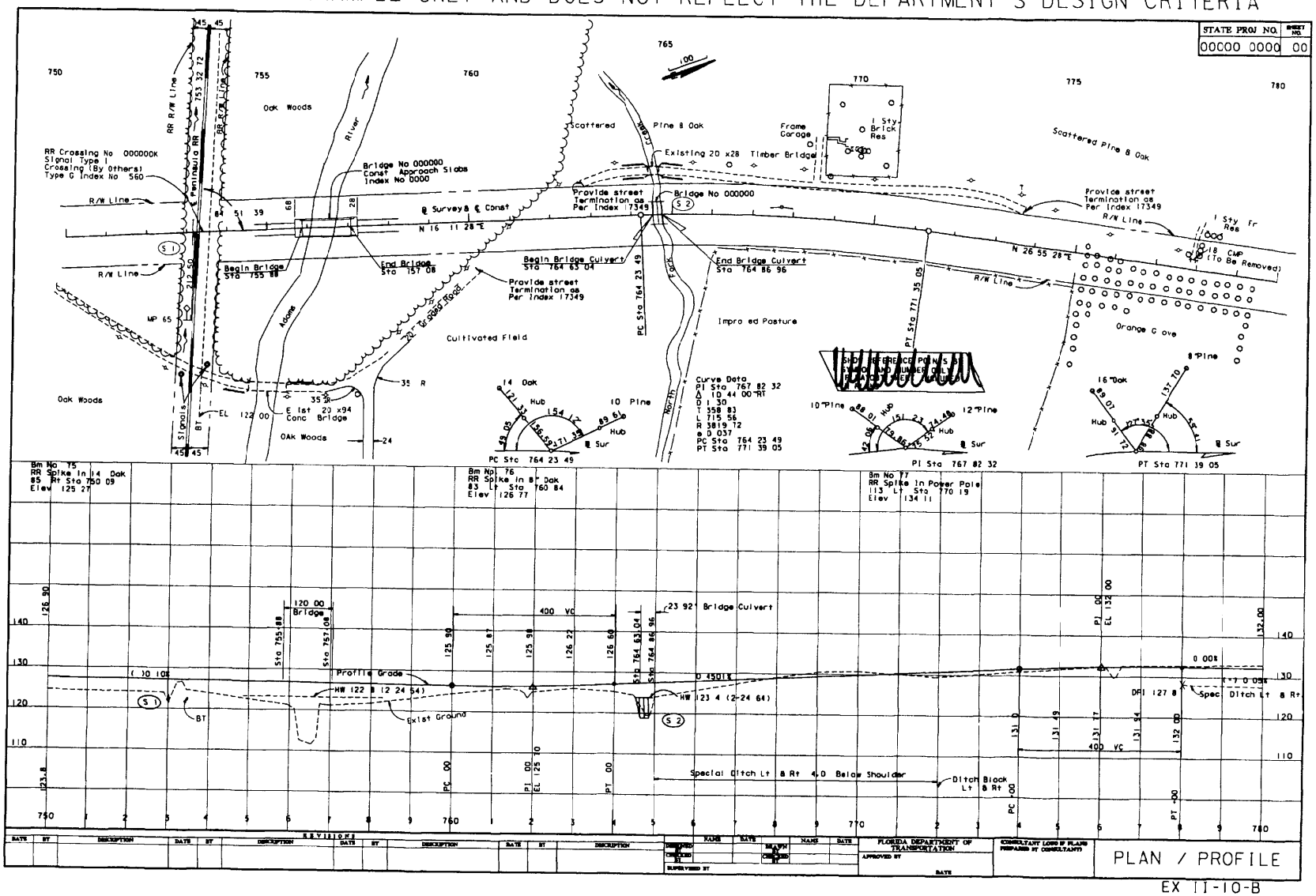

EX II-10-B

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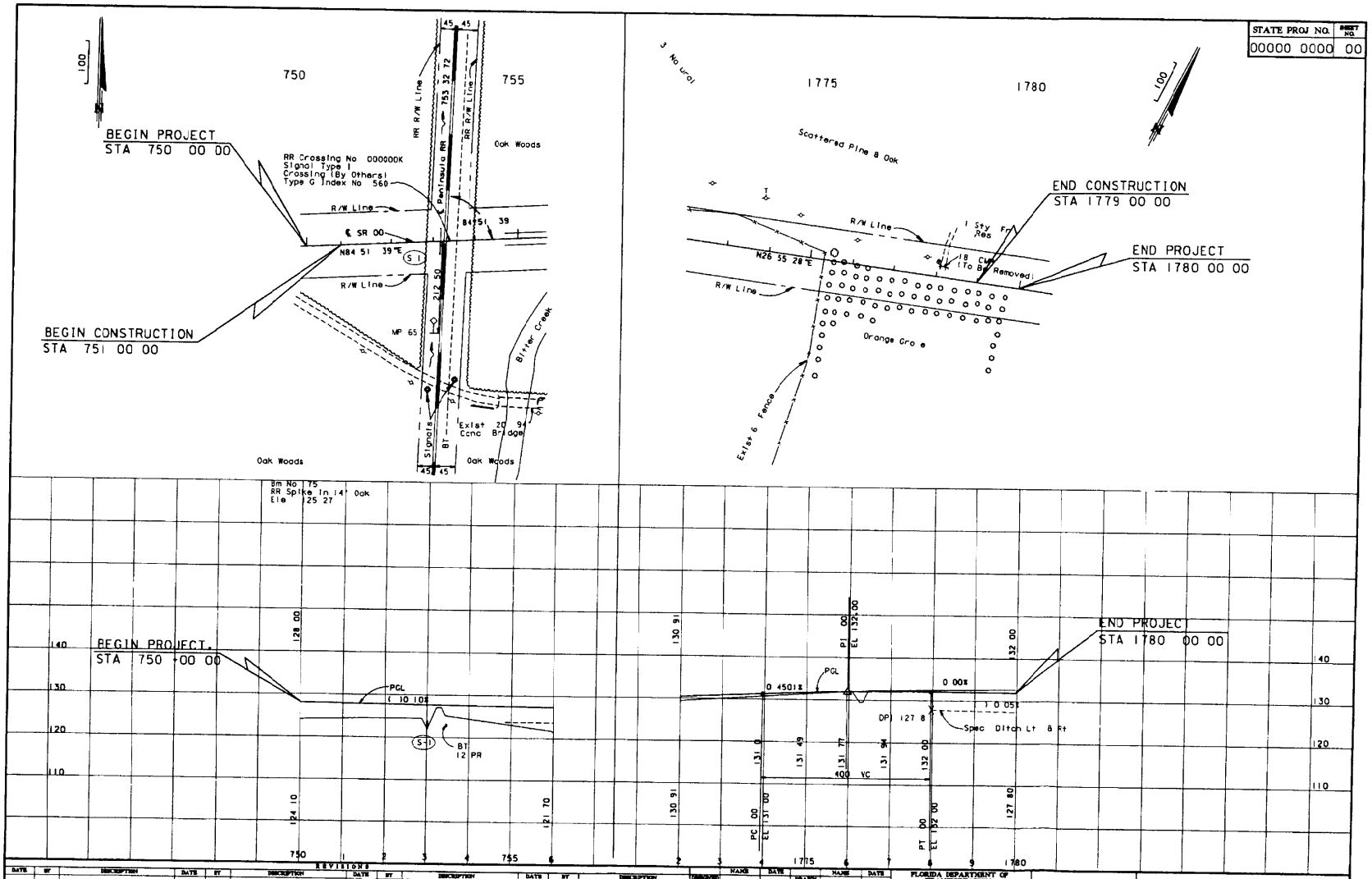

EX II 10 C

CHAPTER 11

SPECIAL PROFILES

11.1 General

The special profiles sheet shows profile of pavement edges or gutter flowline at street intersections, ramp termini, curb returns, railroad crossings and roadway sections requiring special superelevation details. These areas require special analysis and design to ensure a safe, efficient, water free, and smooth roadway system. The special profiles sheet shall show details at close intervals and at a scale large enough to clearly identify all construction details within these areas.

11.2 Intersections

In addition to normal profile grade lines, supplemental profiles and sections at intersections may be necessary to define edge of pavement profiles. Sections showing pavement surface elevations shall be shown for nose points and other critical locations. It is important to develop accurate profiles and sections at locations of curbed channelization to ensure proper drainage.

When plan - profile format is used for intersection details, the profile's horizontal scale shall be the same as that for the plan portion. A vertical scale of 1" = 1' for the profile portion is recommended as it enables intermediate elevations to be determined from the profile with reasonable accuracy. The existing ground line and/or curb line may be shown by a light broken line.

For intersections detailed on separate plan format, the profile and sections shall be shown on standard cross section format.

For street intersections of municipal projects, a scale of 1" = 10' horizontal, and 1" = 1' vertical is recommended.

11.3 Curb Returns

Curb return profiles show the profiles of the gutter flowline from the PC to the PT point of the return at an intersection.

Curb return profiles shall be shown on standard cross section format. They shall be included in the plans set if the required information cannot clearly be shown on the plan - profile sheet or intersection detail sheet, or if extreme grades are involved rendering the standard curb return profiles (Index 303) inadequate. Standard scale used should be 1"=20' horizontally and 1"=2' vertically. Other scales may be used provided all construction details are clearly and legibly shown, when the plans are reduced to half size. Each return profile shall be identified and its PC and PT stations shown. Elevations should be shown at 20' intervals and low and high spots shall be identified by location and elevation.

11.4 Ramps

Ramp profile grades shall be developed along the baseline of each ramp. A profile of the edge of the pavement opposite the baseline shall also be shown. These profiles shall be shown on standard cross section format. Data required to be shown shall be similar to that required for roadway profile. (Chapter 10).

Recommended scales for ramp profiles are 1"-10′ horizontally and 1" = 1′ vertically, or 1"=50′ horizontally and 1"=1′ or 2′ vertically.

Sections at nose points are required. They may be shown using a scale of 1"=10′ horizontally and 1"=1′ vertically.

11.5 Spline Grade

Intersections of ramp pavement with mainline pavement and other sections of pavement within special superelevated zones need special attention, not only during the design phase of the project, but also during the construction phase. Hence, all construction details pertaining to these areas should be clearly and accurately shown in the plans. Spline grade shows the interconnection and interrelation of the edges of pavement with the mainline edge of pavement. This profile proves to be valuable especially if the mainline pavement is superelevated or within the superelevation transition zone.

Spline grade shall show the elevations at a minimum of 20′ and a maximum of 100′ intervals of the outer edge of mainline pavement and inner and outer edges of the ramp pavement at the nose areas. Grades of the three pavement edges shall be shown on a standard cross section format; recommended scales: 1"=10′ horizontally, 1"=1′ vertically or 1"=20′ horizontally and 1"=2′ vertically. Grades of each pavement edge shall be joined by smooth spline or simple curve. The three grade profiles shall be clearly labeled and all equality stations indicated. Nose stations shall be flagged and labeled. Scale shall be indicated in close proximity of the profile and shall be clearly visible.

11.6 Superelevation

For projects involving simple curves, no superelevation diagram shall be required as it is covered in the Roadway and Traffic Design Standards. For projects involving reverse curves, or compound curves or any other situation requiring special superelevation not covered in the standards, the superelevation diagram shall be shown in the plans. Complete profile grade line and right and left edges of pavement within the superelevation zone shall be shown on the cross section format. A scale of 1"=10' horizontally and 1"=1' vertically is recommended for clarity. The begin and end superelevation stations shall be labelled and indicated by a solid vertical line of medium weight at the appropriate station. A horizontal dimension line shall be utilized to indicate a section in full superelevation.

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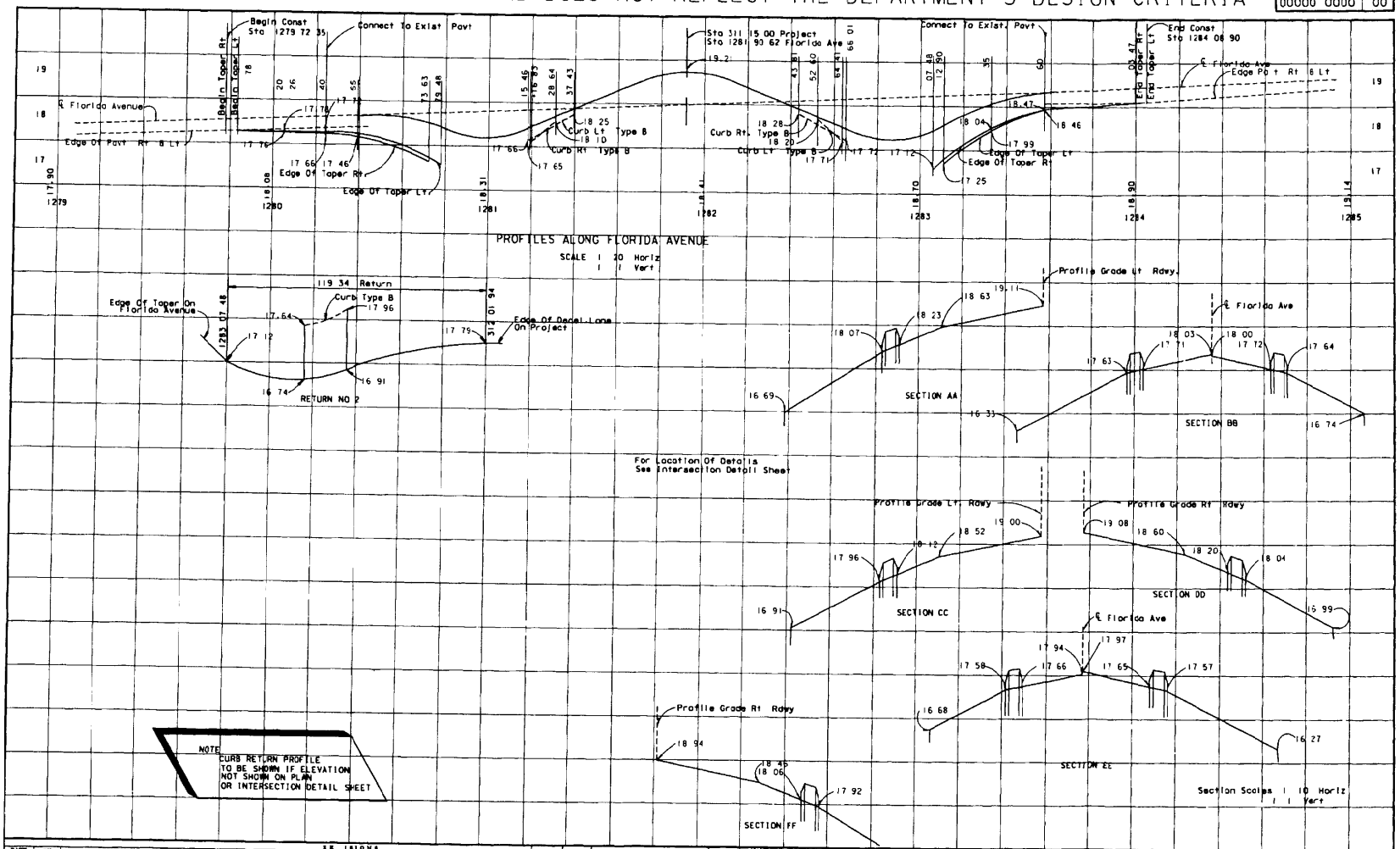

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAME	DATE		NAME	DATE
DESIGNED BY			DRAWN BY		
CHECKED BY			CHECKED BY		
SUPERVISED					

FLORIDA DEPARTMENT OF TRANSPORTATION

APPROVED BY

DATE

CONSULTANT NAME & PLANS PREPARED IN CONSULTANT

INTERCHANGE PROFILES & SECTIONS
FLORIDA AVENUE

EX 11-11-A

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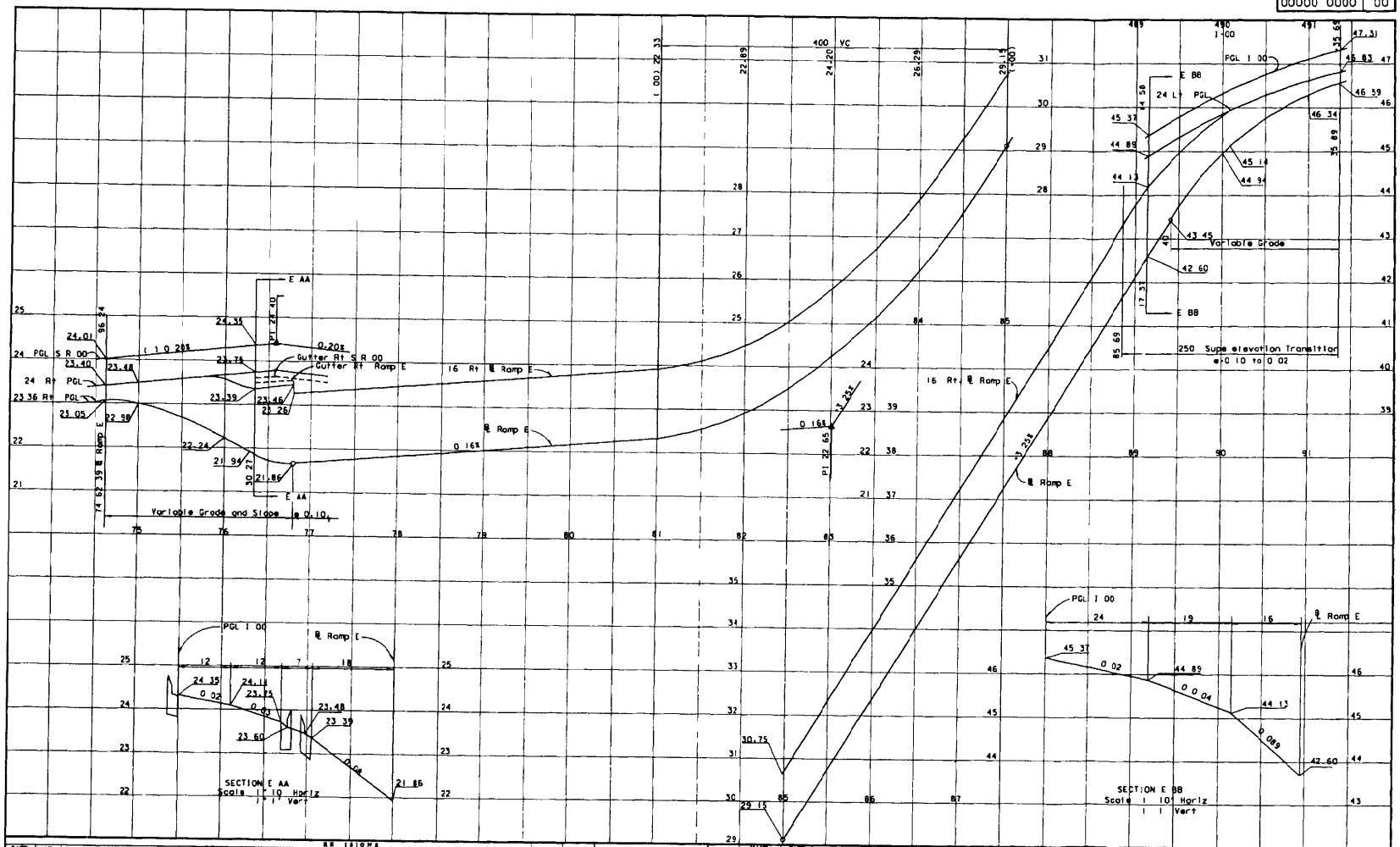

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

REVISIONS

NAME	DATE		NAME	DATE
DESIGNED BY		DRAWN BY		
CHECKED BY		CHECKED BY		
SUPERVISED BY				

FLORIDA DEPARTMENT OF TRANSPORTATION

APPROVED BY

DATE

CONSULTANT LOGO IF PLANS PREPARED BY CONSULTANT

INTERCHANGE I 00 AND S R 00
PROFILES ALONG RAMP E

EX II-11-B

CHAPTER 12

BACK-OF-SIDEWALK PROFILES

12.1 General

Back-of-sidewalk/right of way line profiles are used to establish the profile grade and hence play an important role in plan preparation, especially if the project site is located in a built-up urban area. Profiles help determine the constructability of the project within the right-of-way without excessive disturbance or rework of adjoining properties. Back-of-sidewalk profiles are also used for checking of storm water trapped behind the sidewalks and as a major input for establishing centerline grade profiles. Grades shown on this sheet are at the back of the proposed sidewalk, and grades shown on plan - profile sheets are centerline grade profiles.

The inclusion of the back-of-sidewalk profiles in the plans set is optional - at the discretion of the District Office, but work sheets must be submitted with phase reviews.

12.2 Required Information

Profiles for use in establishing back-of-sidewalk grades consist of profiles along the outside edge of each sidewalk, drafted against the same elevation datum. The profiles shall be drafted with light broken lines, using different line patterns and labels to distinguish between the right and left sidewalk profiles.

The standard scale is 1" = 100′ horizontally and 1" = 5′ vertically. This combination works well for projects having few locations where back-of-sidewalk grades would be critical. For clarity, it may be advantageous to use a vertical scale of 1" = 2′ and a horizontal scale of 1′ = 50′ or 1" = 20′ for projects located in business and commercial areas. Elevation datum shall be shown on both sides of the sheet with station numbers below the profile. If a horizontal scale of 1" = 100′ is used, full station numbers shall be shown at each even ten stations and single digit numbers at the remaining stations. For other horizontal scales, full station numbers shall be given at each station.

Percents of grade for the sidewalk profile, P.I. stations and elevations shall be shown. Vertical curves, if any, shall be dimensioned. Elevations along vertical curves are not required.
Begin and End project and sidewalk stations shall be flagged and labeled. Mainline station equations within the limits of the sidewalk profile shall also be flagged and labeled.

Limits of existing pavement, such as parking areas and service station drives, which should be matched as closely as possible, shall be identified on all sidewalk profiles. The centerline for each intersecting street and driveway shall be indicated with a vertical line at the proper station and the street name and station noted. Intersecting streets and driveways on the right shall be shown below the profile, and those on the left above the profile.

At locations of significant drainage, arrows shall be drawn at each station to indicate the slope of ground at the outer edges of the sidewalk.

Drainage arrows shall be placed below the profile line for the right profile and above the profile line for the left profile. Arrows pointing outwards from the profile indicate drainage away from the project.

Floor elevations for buildings shall be indicated by a horizontal line drawn at the floor elevation between the building limits. The numeric elevation shall be shown, as well as the offset (distance and side) from centerline of project to face of building. Entrances to buildings, elevations of top of existing utilities, and water table elevation may be shown when appropriate. Stations and elevations of intersecting side streets shall also be shown.

The difference in elevation between the profile grade and back-of-sidewalk profile grade shall be noted on the sheet. Superelevation notes, if applicable, shall also be noted on the sheet.

12.3 Sheet Set Up

Back-of-sidewalk profiles shall be prepared on standard cross section format. For simple projects which do not involve many cross streets or driveways, the sheet may be sectioned horizontally to maximize usage. Stationing shall progress from left to right and top to bottom. Match lines shall be at even stations. Care should be taken to preserve clarity and legibility even when the plans are reduced to half scale. For normal projects, the profiles shall be drafted as shown in Exhibit II-12-A.

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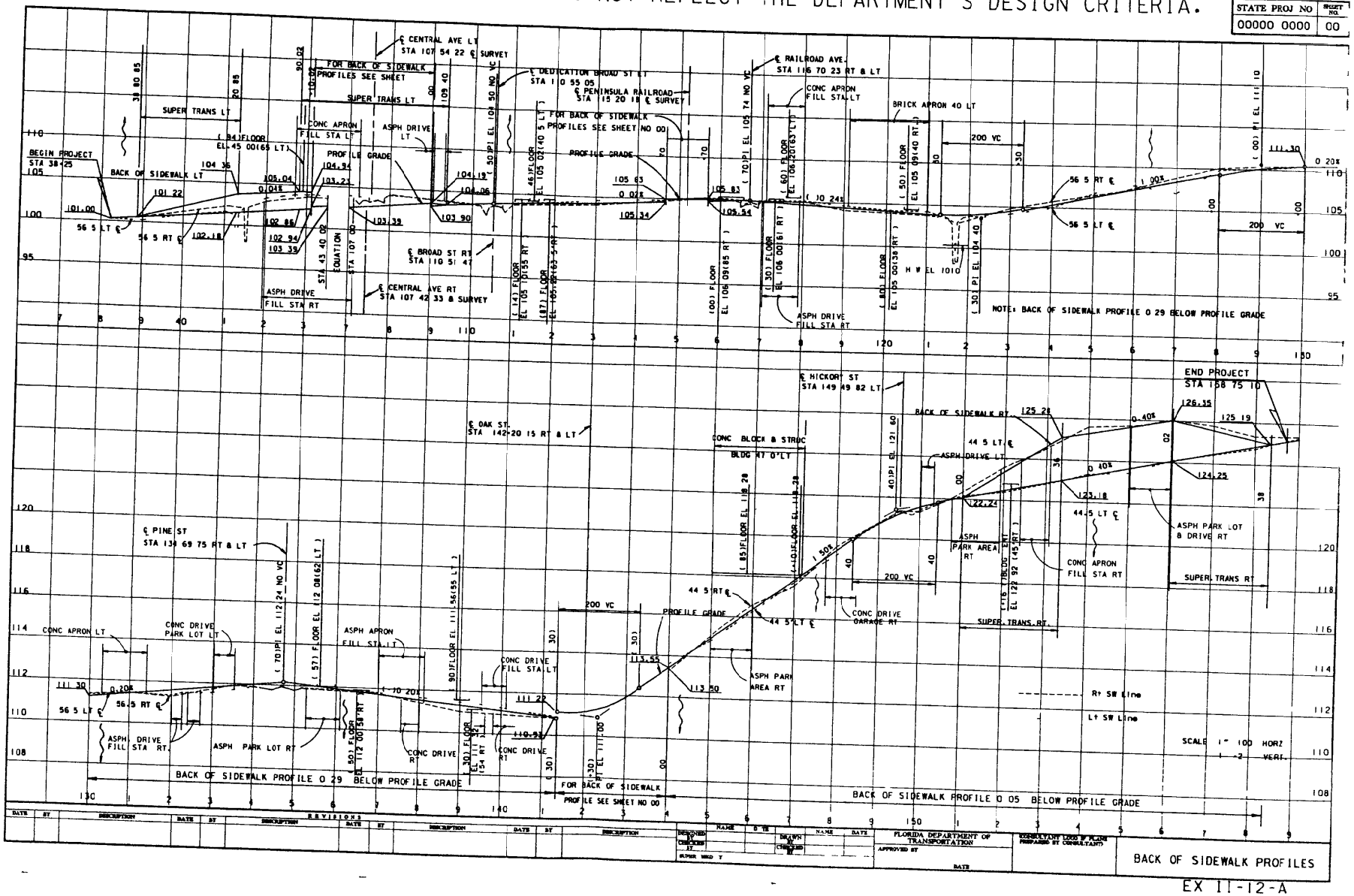


EX II-12-A

CHAPTER 13

INTERSECTION AND INTERCHANGE DETAILS/LAYOUTS

13.1 General

These sheets provide layouts and details for intersections and interchanges involving turning and weaving movements of vehicular traffic. For a safe and efficient roadway system, these areas must be designed with special attention to channelization, turning movements, signalization, drainage and vertical alignment. The various design details shall be shown explicitly for accurate construction.

Intersection/interchange layout sheets shall show all necessary details of channelization, tapers, turn lanes, special drainage, grading, and radii. The sheets shall be prepared on a standard plan format using a scale large enough to show details clearly and legibly, at both full and half size.

13.2 Intersections

Intersection details shall be shown on separate plan sheet format if they cannot be shown clearly on the plan - profile sheet format.

In cases of simple, non-signalized intersections covering relatively small areas, regular plan - profile format may be used. The intersection layout shall be placed, using an appropriate scale, in the plan portion and the necessary profile grades in the profile portion.

For larger, more complicated intersections involving channelization, signalization or long connections, the layout shall be placed on a standard plan format using match lines when more than one sheet is required. The profiles shall be presented separately on a standard cross section format. (See Chapter 11 - Special Profiles).

Existing topography need not be shown on these details if it is shown elsewhere in the plans. Information given is generally the same as in the plan portion. Pavement edges, curb and gutter, channelizing and median curbs, drainage structures, pavement dimensions, radii and appropriate notes shall be included.

All intersection layouts shall be dimensioned, stationed adequately, and shall include all pertinent construction notes and alignment data. Design speed data shall be given when appropriate. A north arrow and graphic scale shall be shown at a point of maximum visibility on the plan.

The scale used shall be sufficient to cover all necessary details, preferably 1"=20'. The scale shall not be smaller than 1" = 40'. Widths of turning lanes and turning paths shall be checked for possible encroachments or conflicts.

13.3 Interchanges

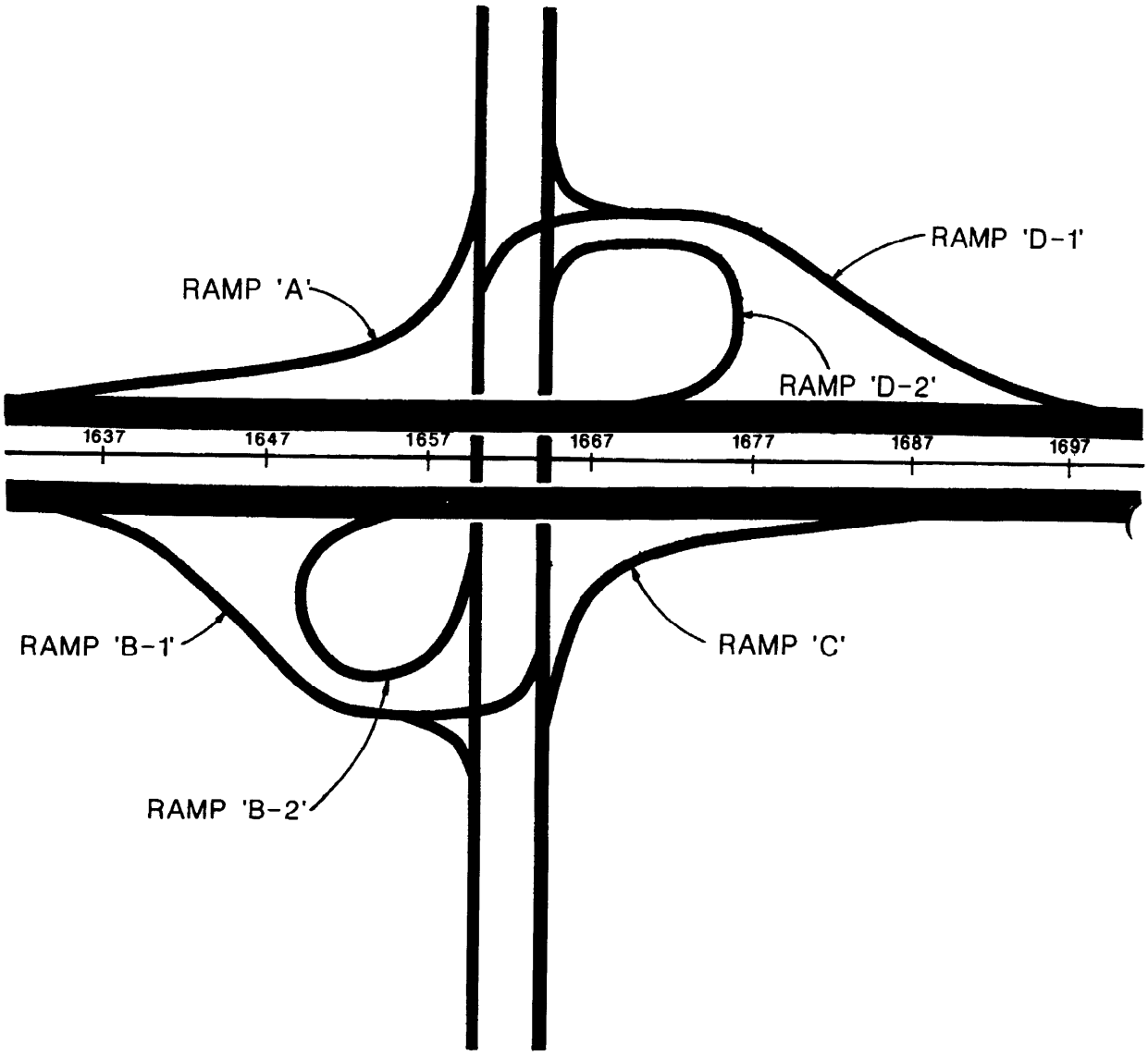
13.3.1 Geometric Layout

Interchange layouts shall be prepared on a standard plan format. The entire interchange shall be placed on one sheet when possible, using a scale of 1" = 200'. In cases of large cloverleaf or directional interchanges, more than one sheet may be required. Appropriate match lines shall be shown. Layouts shall be dimensioned and completely stationed, with all alignment data and construction notes included. All curves shall be assigned a number and curve data presented in a tabular form. It is preferred that the tabular curve and coordinate data be placed on the same sheet as the interchange layout.

Interchange ramps shall be identified by the use of letters or a combination of letters and numbers. The recommended practice for assigning ramp names is as follows:

> Ramps in the first left quadrant along mainline stationing should be assigned first. Name assignments shall progress in an counterclockwise direction around the interchange (See Figure 13.1). For projects with two or more interchanges, continue name assignements with the next letter and in same counter clockwise direction noted above.
>
> Ramp baselines are usually located on the right edge of the pavement with relation to the direction of traffic, and shall be clearly indicated. Stationing of ramps should be in the same direction as the project.

FIG. 13.1


RAMP 'D-1'
RAMP 'A'
RAMP 'D-2'
1637
1647
1657
1667
1677
1687
1697
RAMP 'B-1'
RAMP 'C'
RAMP 'B-2'

A topographic worksheet for all interchanges is required and will be considered as the preliminary layout of the interchange. This worksheet shall be prepared on a standard plan format on a scale of 1" = 200'. The following information shall be shown:

1. All topography, such as existing roads, property lines, utilities, houses, and driveways, etc.
2. Preliminary interchange geometrics and proposed right-of-way limits.
3. Drainage right-of-way.
4. Proposed reconstruction of the crossroad, and all access roads and frontage roads within the interchange.
5. Frontage roads should be assigned a unique alpha or numeric designation to avoid confusion with ramp nomenclature.
6. Contours, unless the terrain is relatively flat.
7. Traffic diagram with ADT, DHV, K, D and T values.
8. The length of speed change lanes.
9. Design speed for ramps and crossroads.
10. Proposed bridge limits.
11. Pavement transitions.
12. Limits of construction along the crossroad.

The final plans set shall include the following interchange sheets:

1. Interchange geometric layout.
2. Interchange drainage map.
3. Interchange topographic map.
4. Interchange cross section pattern sheet.
5. Ramp terminal details.
6. Ramp cross sections.

13.3.2 Ramp Terminal Details

Details of ramp terminals with mainline and crossroads shall be shown on separate plan sheets. The scale used shall not be smaller than 1" = 40'. Standard scale 1"=20' is preferred. Complete details of the terminal shall be shown including:

- Curve data
- Station equality to mainline or crossroad at critical ramp locations
- Turning radii, taper/transition lengths, curb/curb and gutter (if any)
- Channelization (if any)
- Ramp and crossroad intersection station and angle
- Median nose data (if any)
- Limits of construction
- R/W
- Limited Access R/W and fence location
- Drainage structures
- Spot elevations (as needed)
- Roadway dimensions
- Station pluses and offsets

13.3.3 Cross Section Pattern Sheet

The cross section pattern sheet shows the entire interchange layout including frontage and access roads, if any, with location and extent of proposed cross sections. This is of special importance for projects involving new interchanges located in rural, undeveloped areas. Information to be shown shall include:

- North arrow and scale
- Interchange layout
- Access and frontage roads (if any)
- Centerline construction and baseline survey
- Ramp base lines
- Stationing along mainline, crossroads, ramps, access and frontage roads
- P.C. and P.T. points by symbol
- Bridge outline
- Cross section pattern

This sheet shall be prepared on a standard plan format. The scale shall be such that the complete interchange is shown on one plan sheet, with care taken to ensure clarity and legibility if the plans are reduced to half size. Normal scale is 1" = 200'. North arrow and graphic scale shall be located at a point of maximum visibility.

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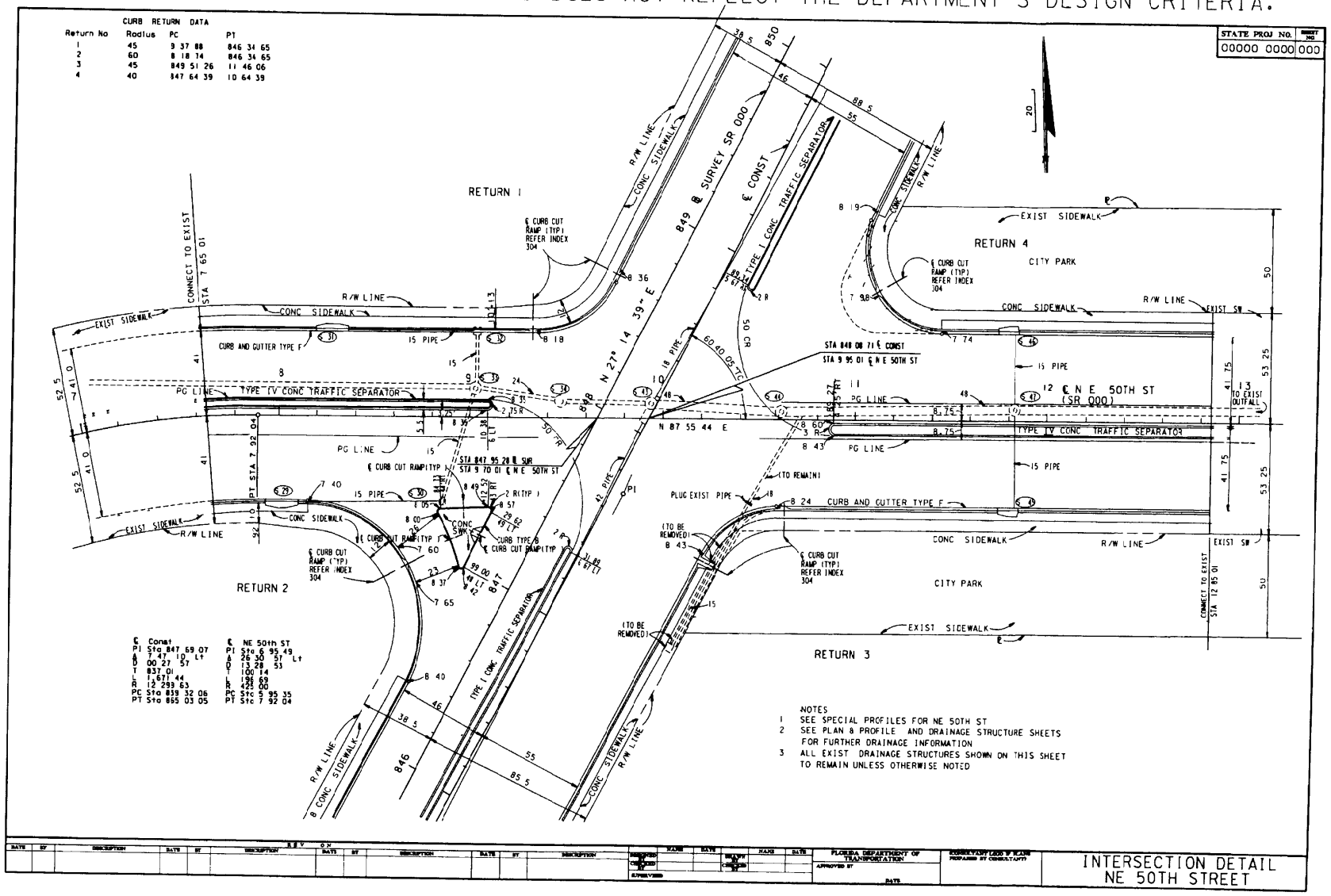

EX 11-13-A

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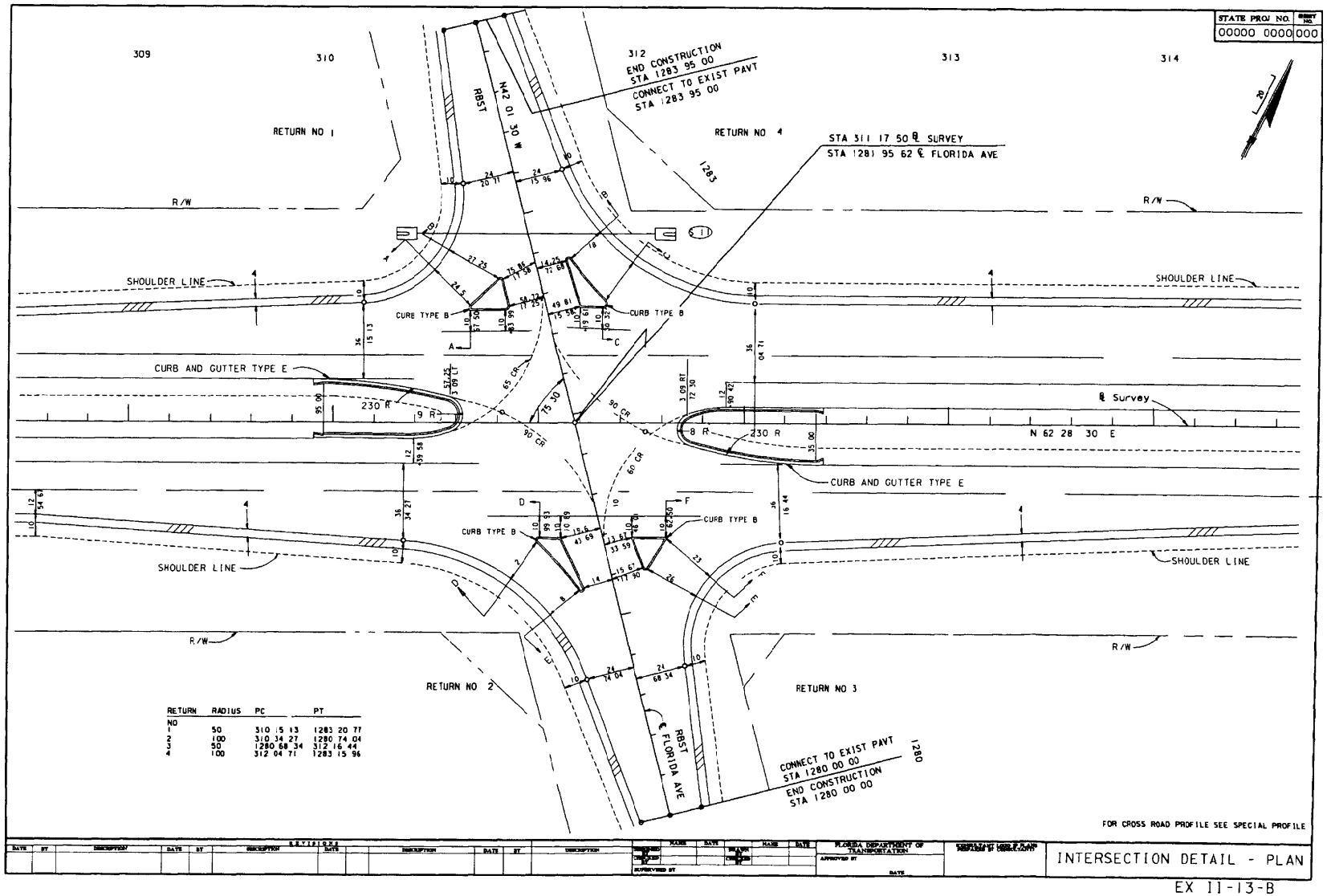

EX 11-13-B

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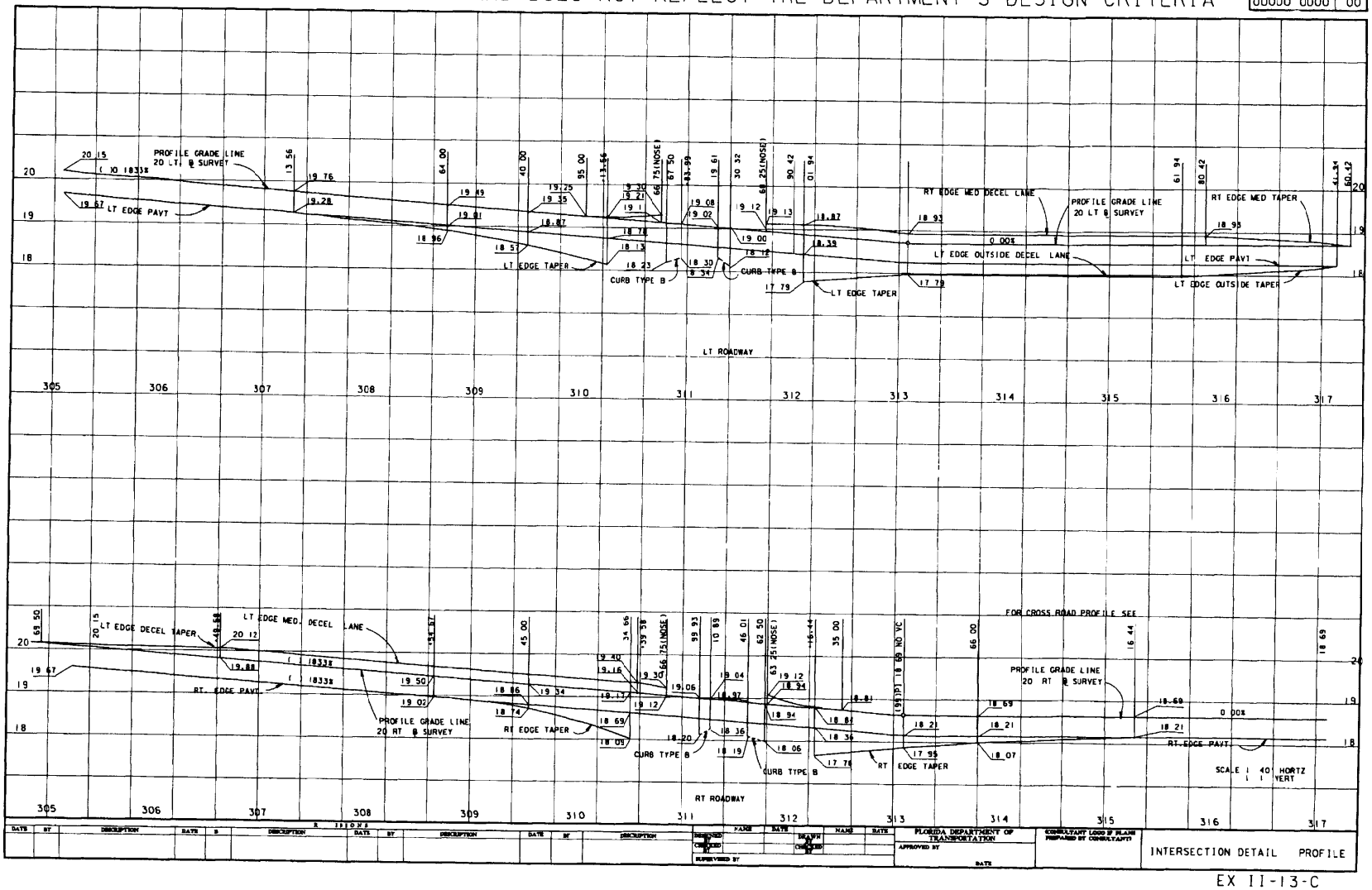

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INTERSECTION DETAIL PROFILE

EX II-13-C

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CURVE AND COORDINATE DATA

NO	LINE	PC STA.	PI STA.	PT STA	Δ	D	T	L	R	e	DESIGN SPEED	PC NORTH	PC EAST	PI NORTH	PI EAST	PT NORTH	PT EAST	CENTER NORTH	CENTER EAST
1	℄ SURVEY	9 95.56	5+50 00	21 02 91	7 22'57"	0 10' 00"	554.44	1107 35	8594.37	.026	70	885948.973	335499 551	1146415 467	335799.205	1186839 59	336156 315	1181314 081	312730 604
5	℄ I																		
6	℄ I																		
7	℄ A1																		
8	℄ B																		
9	℄ B																		
10	℄ B1																		
11	℄ C																		
12	℄ C																		
13	℄ C1																		
14	℄ D																		
15	℄ D																		
16	℄ FJOLA																		
17	℄ FJOLA																		
18	℄ FJOLA																		
19	℄ FJOLA																		
20	℄ FJOLA																		
20	℄ FJOLA																		
22	℄ RIOLB																		
23	℄ RIOLB																		
24	℄ NBLRDWY																		

EXAMPLE

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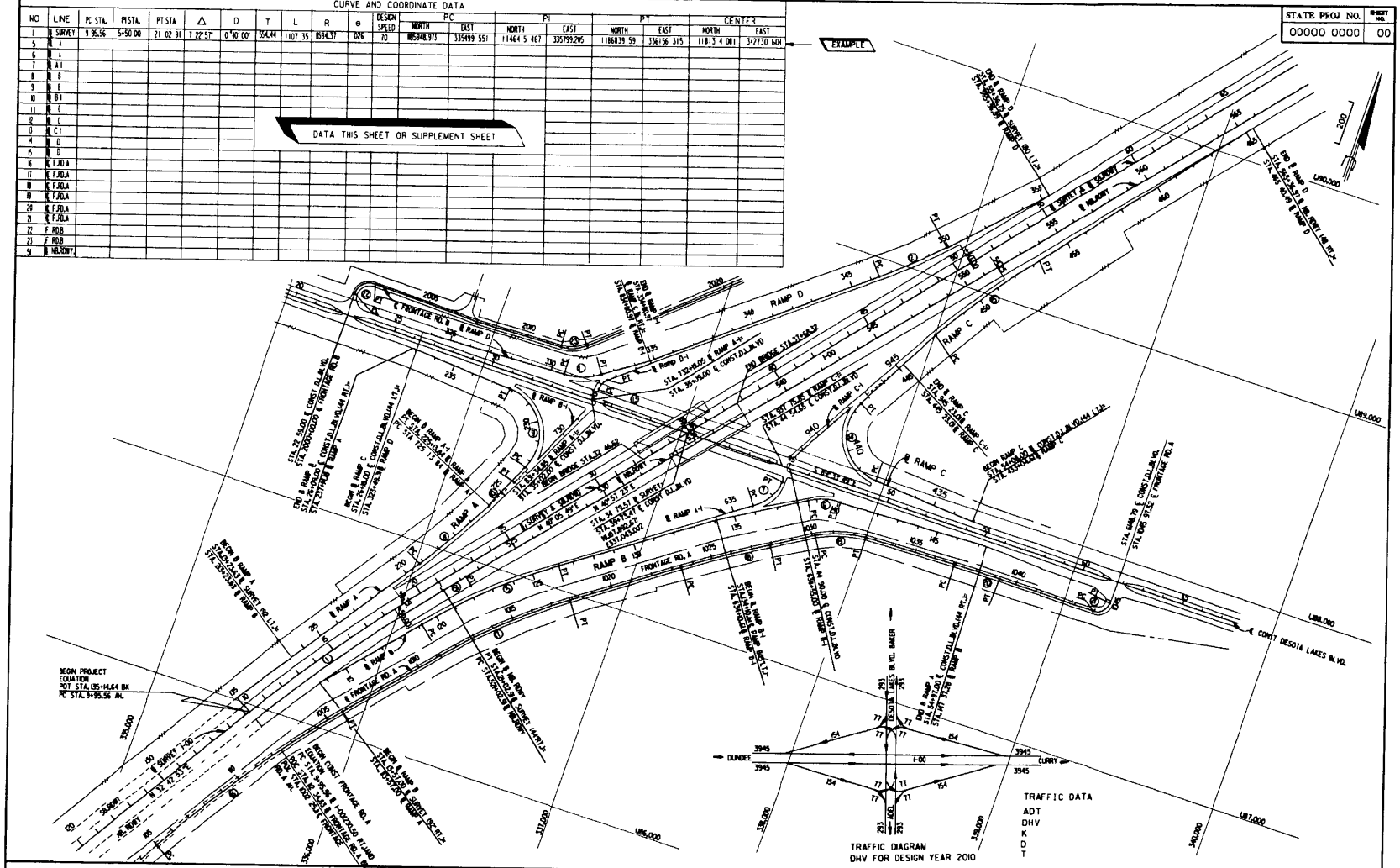

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INTERCHANGE LAYOUT
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EX II 13 D

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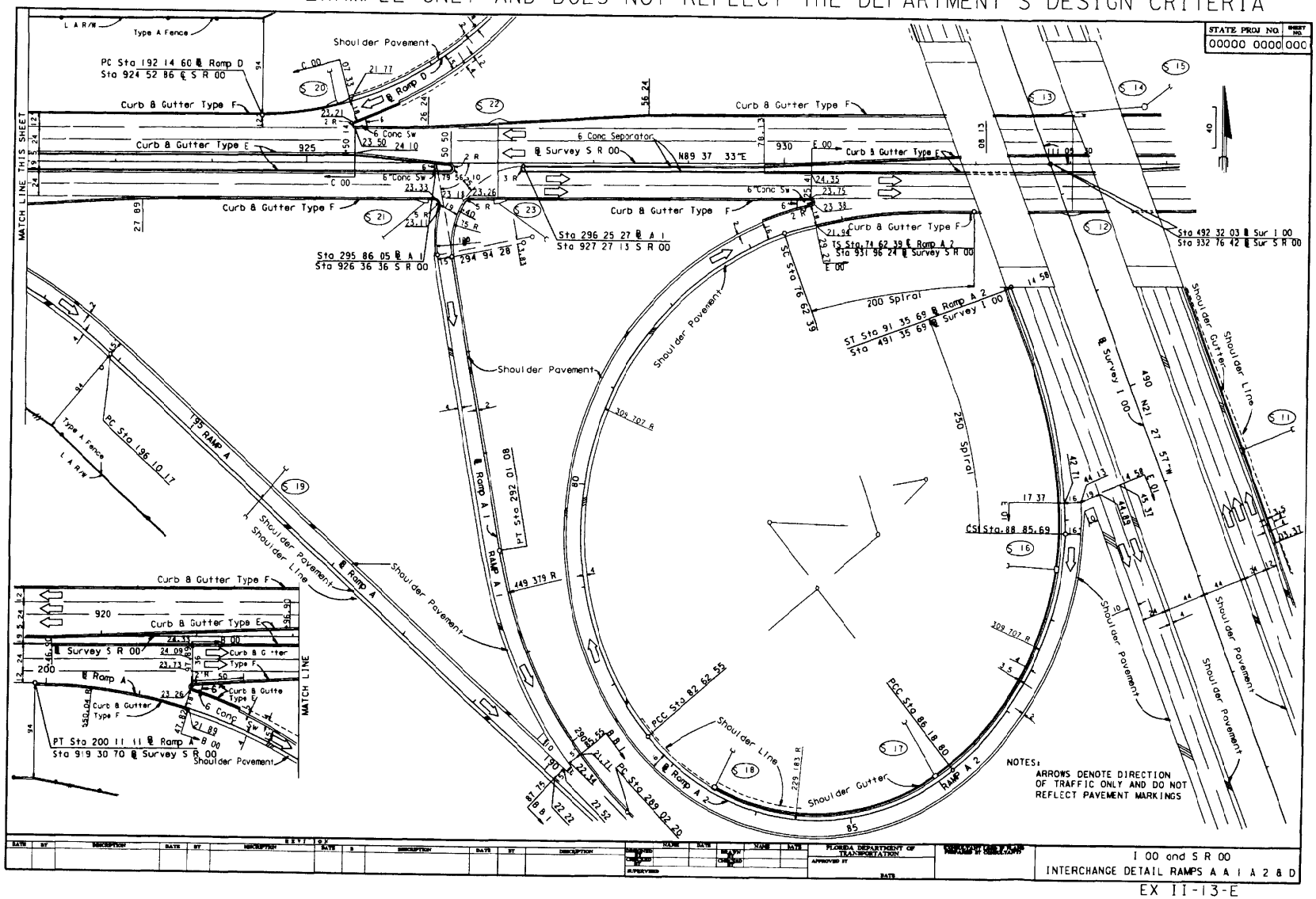

EX II-13-E

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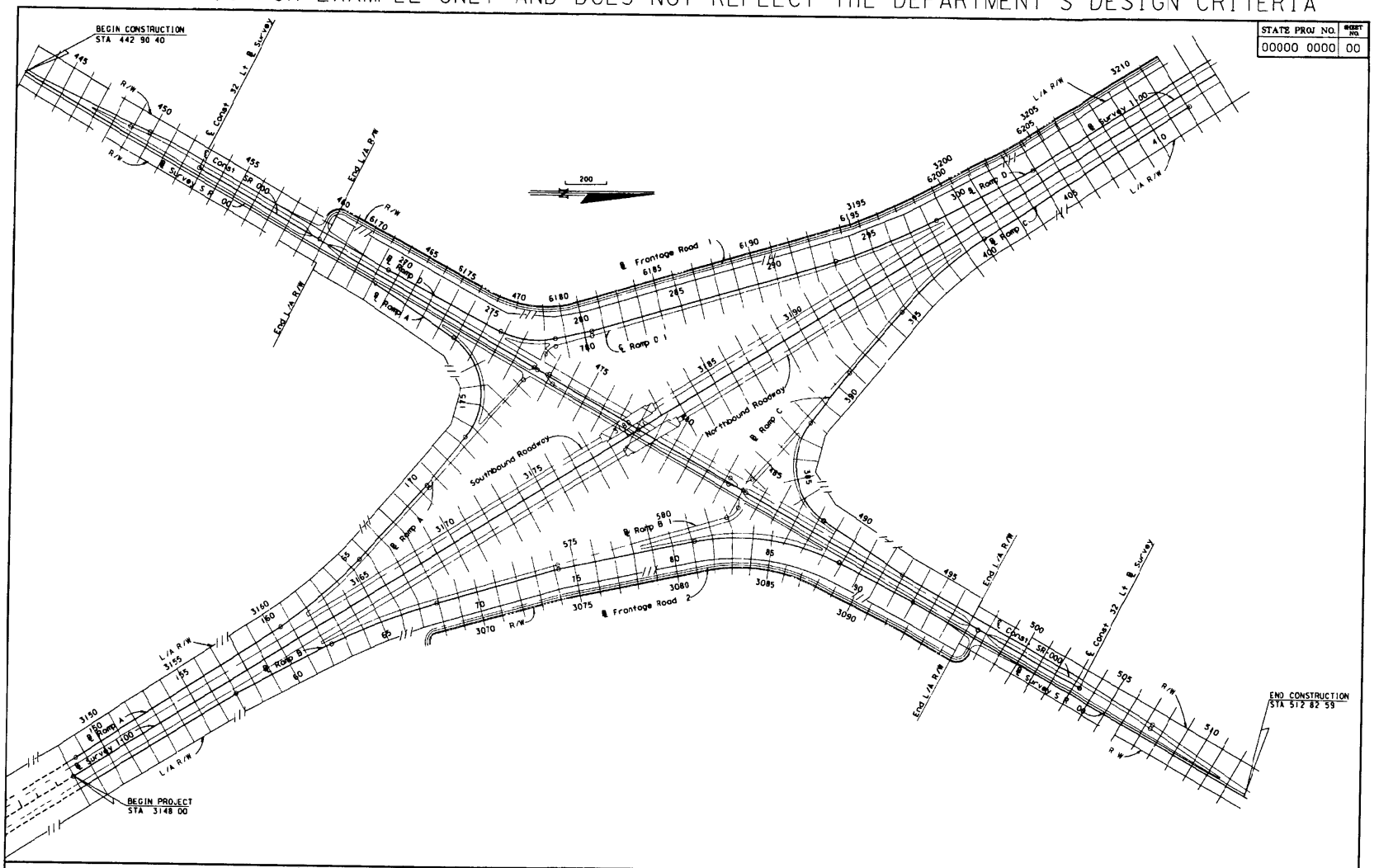

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CROSS SECTION PATTERN

EX-11-13-F

DRAINAGE STRUCTURES

14.1 General

Drainage structure sheets show all the drainage structures, their location, cross section, flowline elevations of all weirs or slots, top of grates, culverts and top of manhole elevations, and similar data Drainage structure sheets also show the vertical relationships of the entire drainage system During the process of drafting the drainage structures, potential conflicts with existing or proposed utilities shall be identified and resolved early, thereby avoiding costly time delays during the construction phases

The inclusion of the drainage structure sheets in the plans set is a District option Most projects require the plotting of drainage structures to avoid utility conflicts One of the following options shall be required for each structure on a project A mix of these options can be used on a single project

1) All drainage structures can be plotted and included in the plan set Necessary excavation for structure construction should be included on structure sheets

2) A "Typical Drainage Structure Sheet" may be prepared, and included in the plans set if the construction details can be shown in tabular form This sheet shall show the typical cross section for the various types of drainage structures and their structure numbers, types, sizes, flow line elevations, flow lengths, end treatments and locations in tabular form (See Exhibit II-14-G) Only drainage structures with potential conflicts should be drawn and included in the plan set A work sheet may be required to show cross sections at all structure locations Worksheets should be prepared to show drainage structures at potential conflicts

3) No drainage structures shall be plotted Information concerning structures shall be shown in the plan view A work sheet should be prepared which should show the cross sections at all structure locations All information pertaining to drainage structures and the drainage system shall be available elsewhere in the plans package for this option When optional culvert materials are provided, the required information must be plotted or tabulated elsewhere

4) Drainage Structures may be plotted on the cross section sheets when only cross structures are to be constructed or modified

14.2 Required Information

The existing ground line for rural projects shall be drafted with a light solid line at the location of the structure, with the existing elevation placed immediately below the groundline at the survey baseline No existing structures shall be shown except those to be incorporated into the proposed drainage system or otherwise modified These shall be drafted using a medium broken line, and their flowline elevations noted Where storm sewers run laterally or diagonally across the project, the drawing should show the pipe cover

Roadway template and proposed structures shall be drafted using a heavy solid line, with the proposed profile grade elevation shown above the grade point The structure shall be located by station and offset to the centerline of construction Flowline information shall be provided at each structure and at each culvert end Structures are to be plotted in detail according to the applicable Index, with walls, grates, tops, pipes, etc shown

Sections for skewed cross drains shall be drafted along the centerline of the structure For these structures, clear zone distances shall be measured at right angles to the project centerline and noted on the sheet

All structure locations should be checked and right-of-way shown where the right-of-way may have potential impact on construction of a structure

For each drainage structure which does not have options, all necessary information shall be shown by note, including, as appropriate size, length, class or gauge (thickness), corrugation size restriction, protective coatings, end treatments and flow lines The note shall be placed as close to the structure as possible, preferably below the plotted structure Elevations shall be given for manhole tops, and ditch bottom inlet grates and slots Grate elevations for shoulder gutter and curb and gutter inlets shall be shown if not controlled by typical section

For drainage structures which have material options, the Optional Cross Drain Material Tabulation sheet should be used, and only the structure number with size and length of the selected option shall be shown Elevations shall be given appropriate for the option shown

Alternate "G" or other special grate treatment shall be included with the inlet note Additional details, such as special bedding, shall be indicated Flow direction arrows shall be shown

If existing structures are to be plugged and abandoned, they shall be shown with an appropriate note

Applicable notes are to be shown on the first drainage structure sheet These notes are listed in the Design Aids section of the Basis of Estimates Manual and are shown on the exhibits in this chapter

14.3 Utility Conflicts

All major underground utilities shall be plotted in conjunction with the structures so that conflicts may be detected during design, and to alert construction forces of close conflicts

Utilities that have been positively verified should be noted and plotted to scale in the appropriate locations on the Drainage Structure Sheets, Cross Section Sheets and bridge foundation plans These utilities should be labeled with the following symbols

V_v = Verified Vertical Location

V_h = Verified Horizontal Location

V_{vh} = Verified Vertically and Horizontally

14 4 Sheet Set Up

Structures should be drafted as sections along the centerline of the structure They should be drafted on a standard cross section format with the sections spaced sufficiently apart to avoid overlapping of structures or notes Beginning at the bottom of the sheet the sections should be shown successively by stations and should be numbered sequentially from the beginning to the end of the project The structure number and location station should be shown near the right border of the sheet If a structure must be shown out of order a note shall be placed in the correct sequence, referring to the sheet where the structure is shown The scale shall be the same as that used for roadway cross sections with the centerline of construction placed near the center of the sheet

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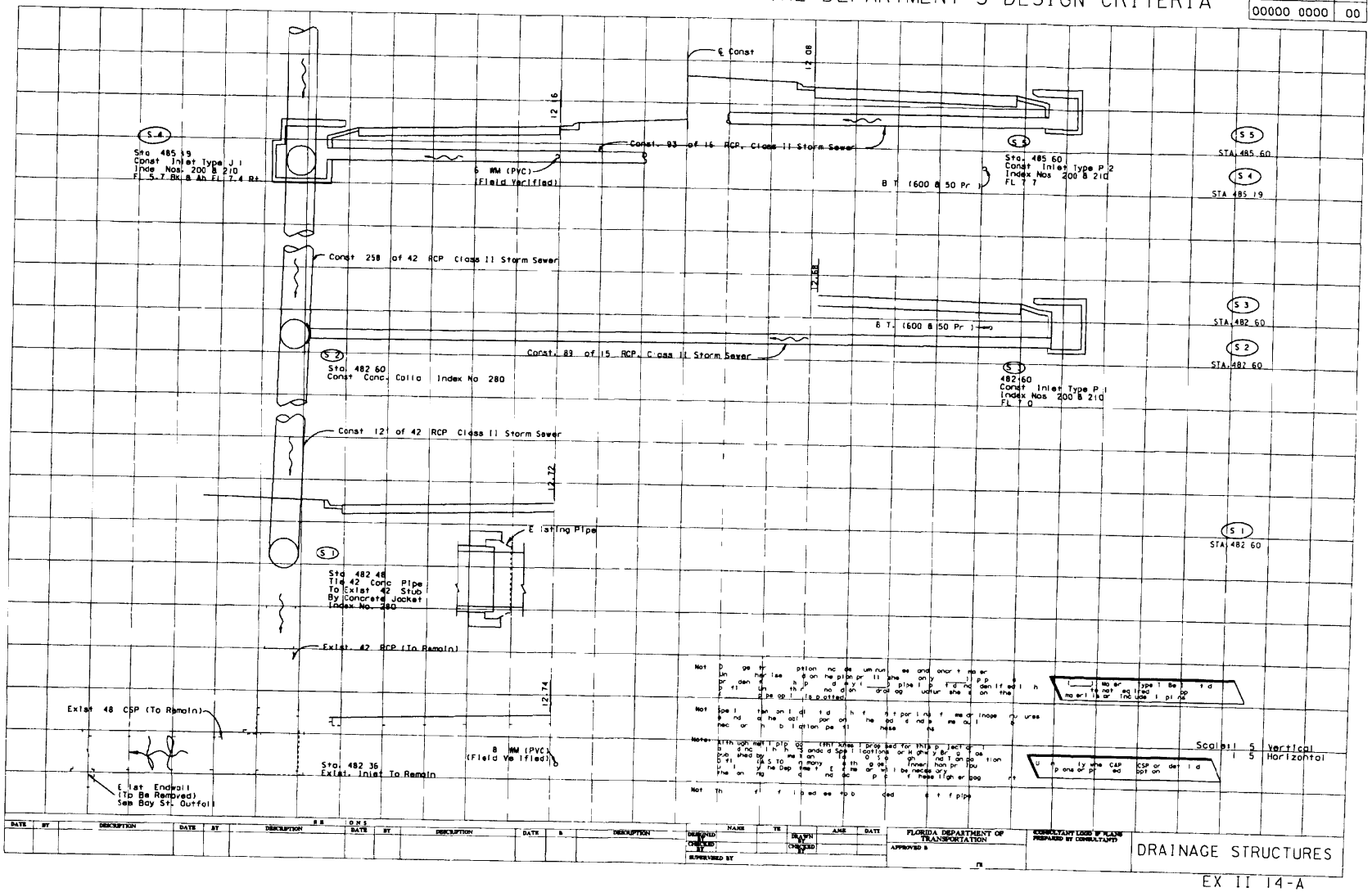

EX II 14-A

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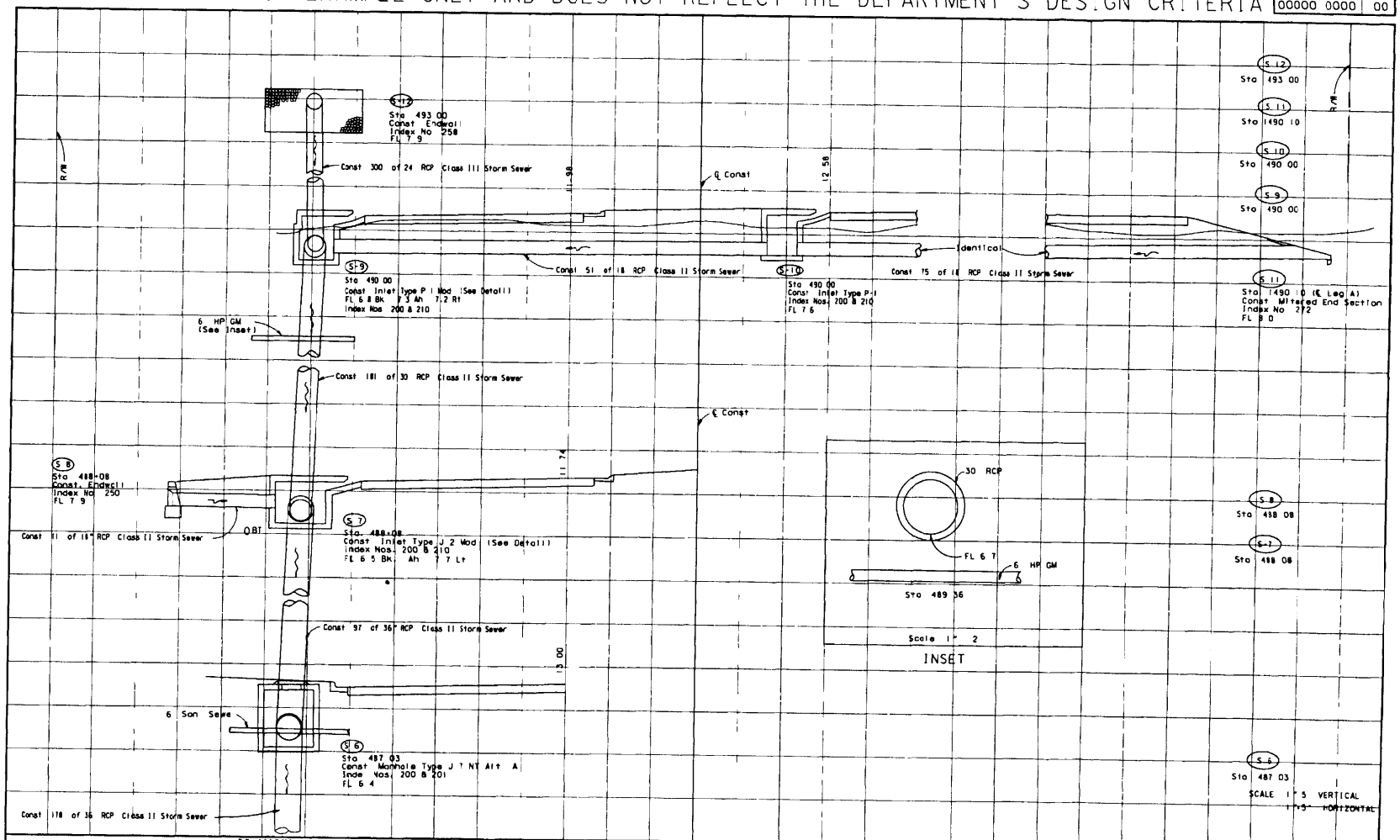

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DRAINAGE STRUCTURES

EX II-14-B

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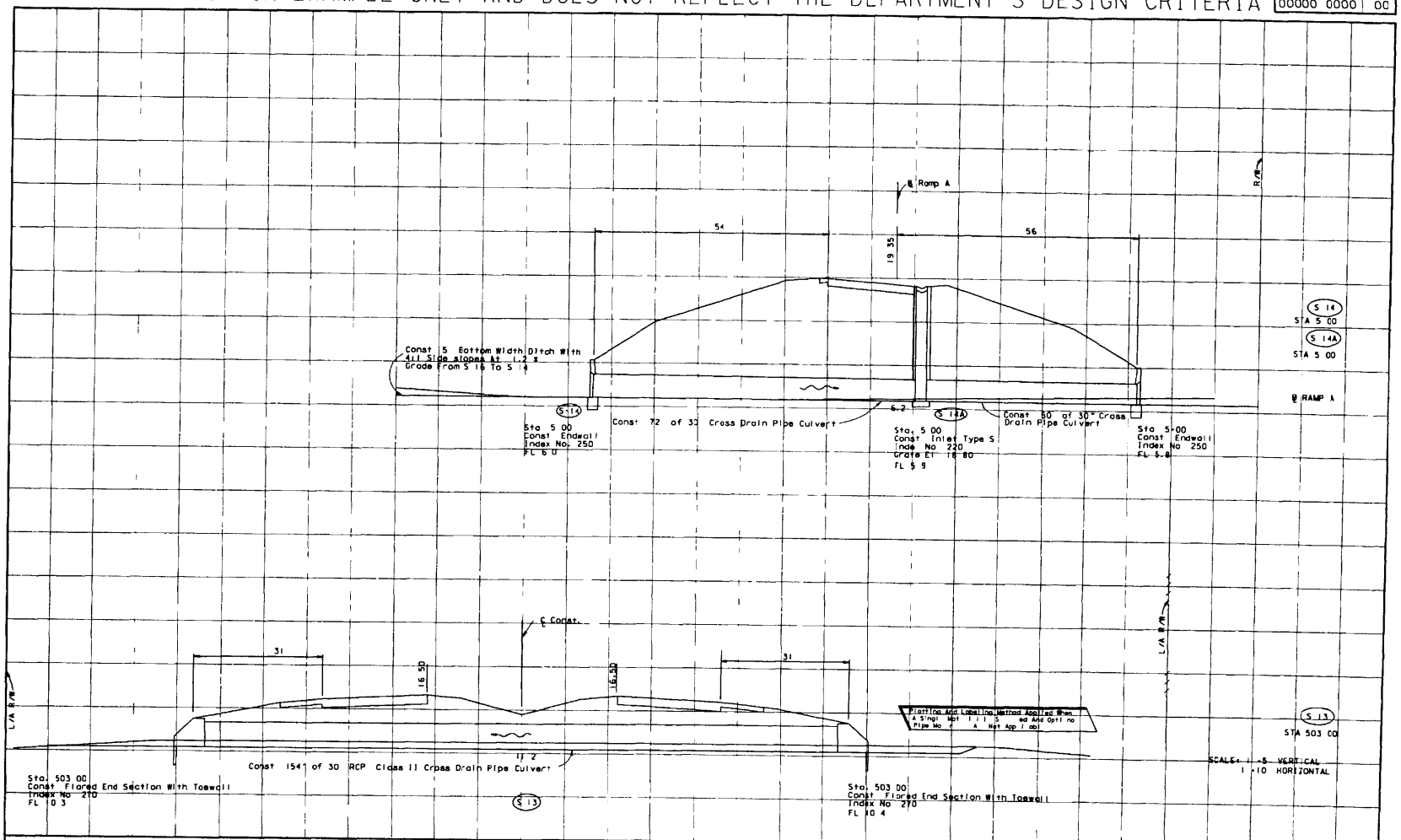

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DRAINAGE STRUCTURES

EX II-14-C

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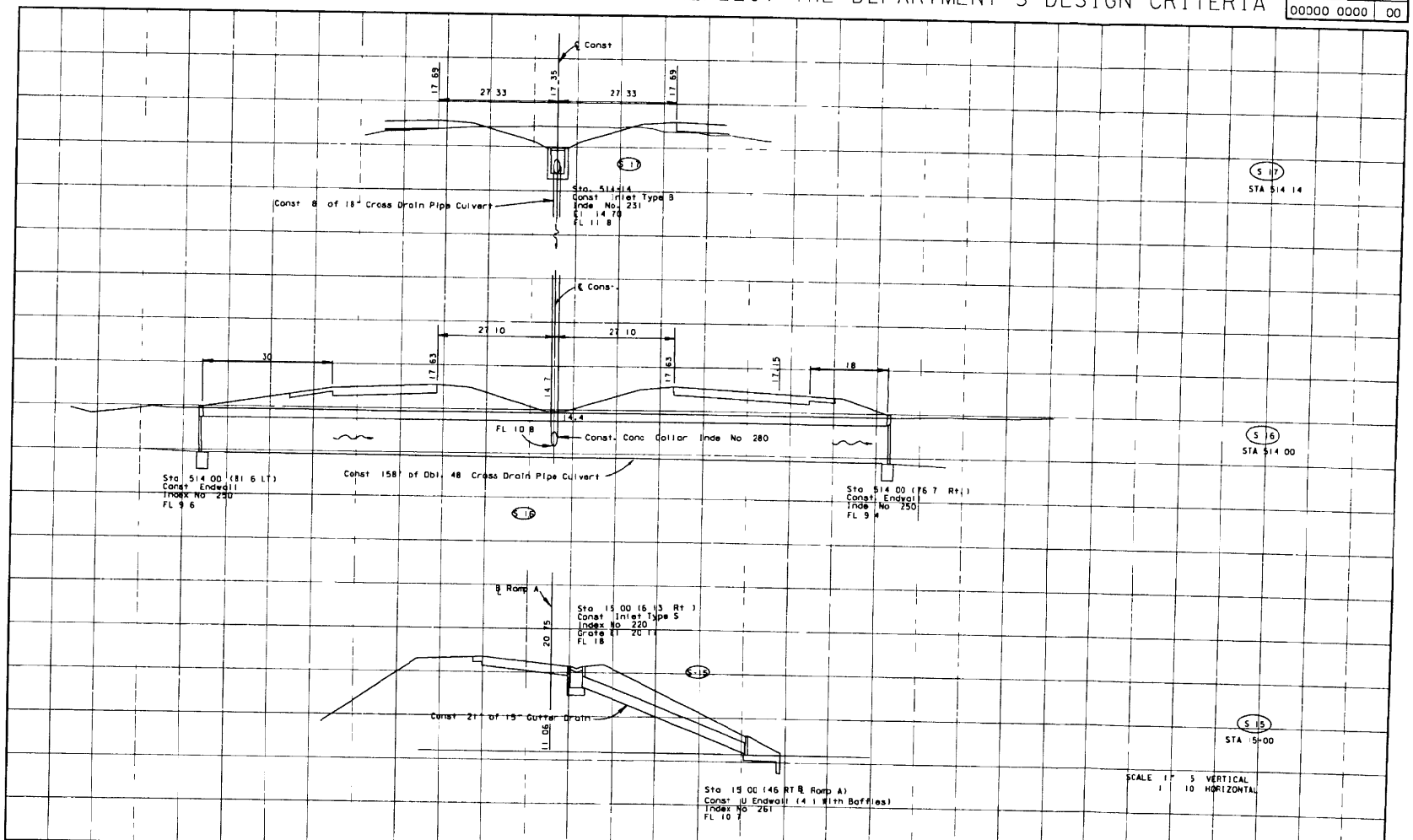

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DRAINAGE STRUCTURES

EX 11-14-D

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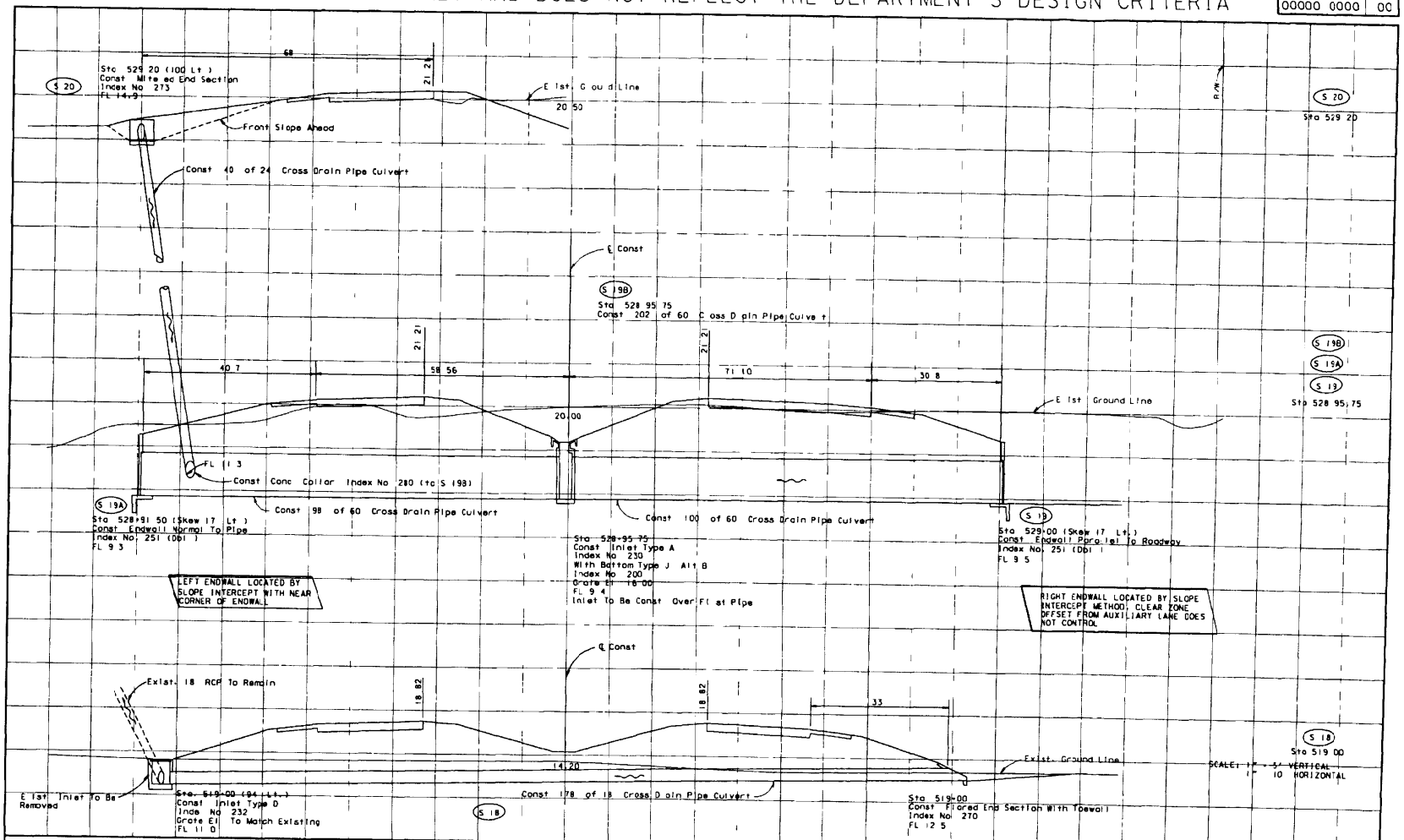

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DRAINAGE STRUCTURES

EX II 14-E

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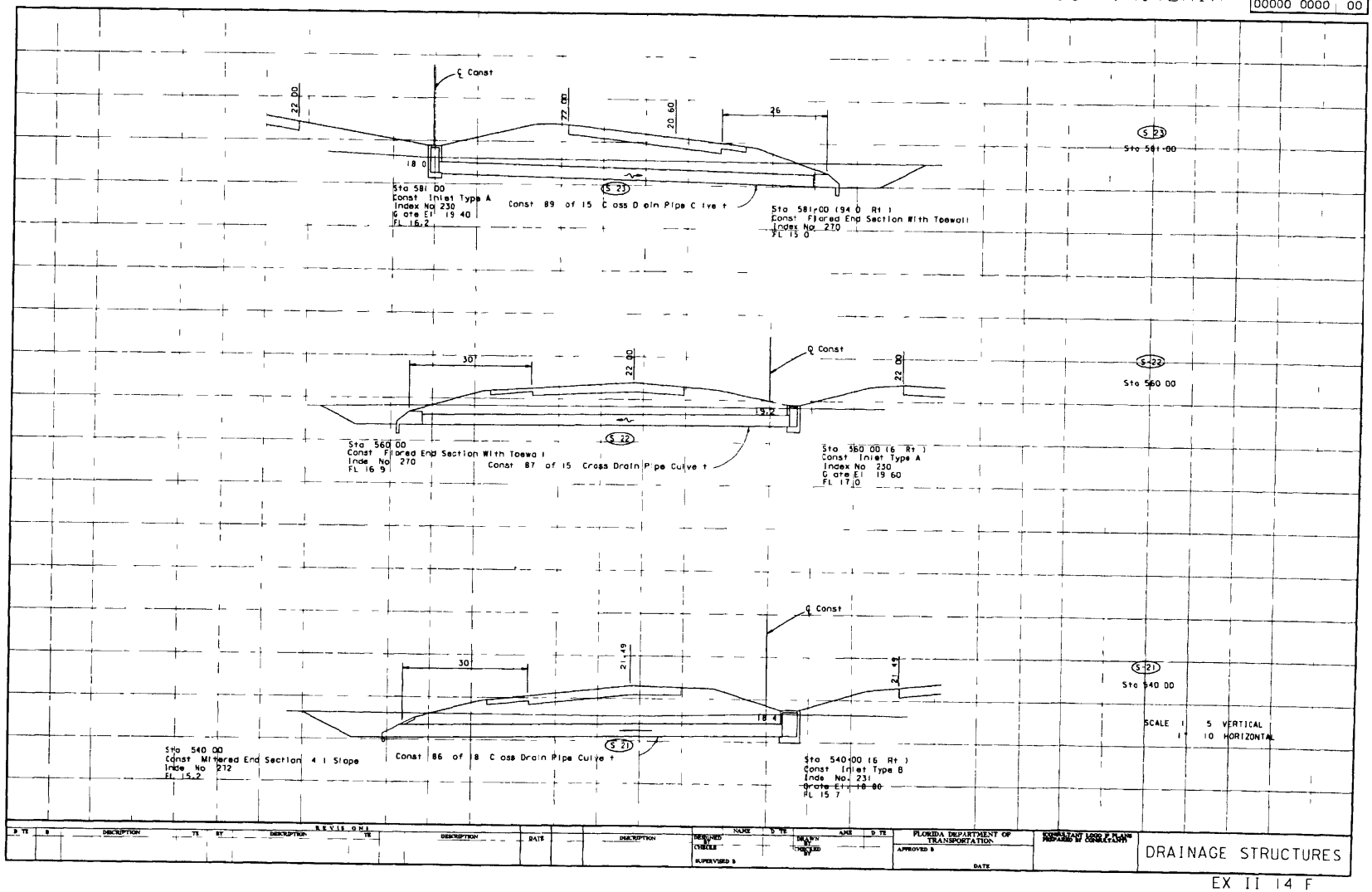

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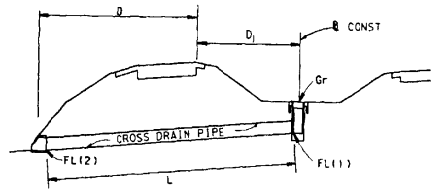
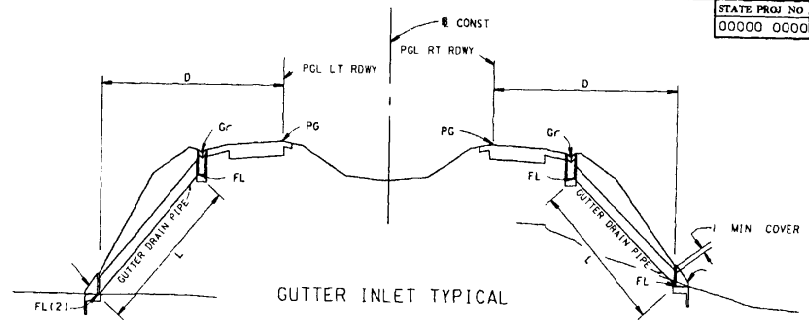


MEDIAN INLET TYPICAL



GUTTER INLET TYPICAL

MEDIAN INLETS

STR NO	STA	INLET TYPE	INLET INDEX	SLOT TYPE	SLOT DEPTH OR ELEV	SLOT LOC	PIPE TYPE	PIPE SIZE	PIPE LENGTH	ENDWALL TYPE	ENDWALL INDEX	OFFSET D	OFFSET D_1	ELEV GR	ELEV FL(1)	ELEV FL(2)
1	1172+00	A	230				OPT	18	108	FES	270	72 2	44	14 64	11 6	11 4
2	1186+00	B	231				OPT	24	104	FES	270	68 3	44	14 81	11 8	11 6
3	1200+00	A	230				OPT	18	104	FES	270	68 2	44	14 88	11 9	11 7
4	1213+00	A	230				OPT	18	104	FES	270	67 8	44	14 98	12 0	11 8
6	1235+00	B	231				OPT	24	100	FES	270	63 4	44	15 90	12 9	12 7
11	1250+00	A	230				OPT	18	98	FES	270	62 2	44	16 69	13 7	13 5
12	1263+00	A	230				OPT	18	104	FES	270	66 6	44	15 34	12 7	12 1
14	1289+00	A	230				OPT	18	106	FES	270	69 9	44	17 82	14 8	14 6
20	1321+00	A	230				OPT	18	102	FES	270	66 1	44	15 43	12 4	12 2
22	1343+00	A	230				OPT	18	114	FES	270	76 7	44	20 72	17 7	17 5
27	1350+00	A	230				OPT	18	112	FES	270	74 5	44	20 07	17 1	16 9
29	1370+00 RAMP A	A	230				OPT	15	102	MES	272	65 0	44	15 69	12 7	12 5
32	1101 55 MAIN ST	E	232	T	STD	BK AHD	OPT	18	85	MES	272	52 0	22	14 72	10 7	10 5
33	1110 MAIN ST	E	232	NT	1'	BK	OPT	24	73	MES	272	104 0	22	13 85	10 1	9 9
34	1110 MAIN ST	C	232	NT	7' 1.0	BK AHD	OPT	15	55	MES	272	76 0	22	15 70	11 0	10 9

GUTTER DRAIN INLETS

STR NO	STA	SIDE	TYPE S INLET INDEX 220 GRATE TYPE	ALT GRG EL	GR EL	FL EL	PIPE SIZE	PIPE LENGTH	ENDWALL TYPE	ENDWALL INDEX	ENDWALL SIZE	ENDWALL SLOPE	ENDWALL BAFFLES	ENDWALL F L	ENDWALL D
7	1241+95	RT	PAR BAR	NO	24 45	23 30	20 8	15	34	U	261	15	2 1	YES	14 1	67 1
8	1241 95	LT	PAR BAR	NO	24 69	23 30	20 8	15	36	U	261	15	2 1	YES	13 4	69 9
9	1244+05	RT	PAR BAR	NO	24 45	23 30	20 8	15	32	U	261	15	4 1	YES	14 5	65 9
10	1244+05	LT	PAR BAR	NO	24 69	23 30	20 8	15	34	U	261	15	4 1	YES	14 4	66 9
15	1293+95	RT	PAR BAR	NO	24 55	23 40	20 9	15	44	U	261	15	2 1	YES	12 5	78 2
16	1294+95	LT	PAR BAR	NO	24 80	23 41	20 9	15	40	M	261	15	2 1	YES	12 5	72 9
17	1296+05	RT	PAR BAR	NO	24 55	23 40	20 9	15	44	M	261	15	2 1	YES	12 5	78 2
18	1296+05	LT	PAR BAR	NO	24 80	23 41	20 9	15	40	M	261	15	2 1	YES	12 5	72 9
23	434+95	RT	RECT	NO	24 95	23 80	21 3	15	40	M	261	15	2 1	YES	12 3	74 0
24	434+95	LT	RECT	NO	25 19	23 80	21 3	15	40	M	261	15	2 1	YES	12 8	73 2
25	437+05	RT	RECT	NO	24 95	23 80	21 3	15	38	M	261	15	2 1	YES	13 3	71 0
26	437+05	LT	RECT	NO	25 19	23 80	21 3	15	38	M	261	15	2 1	YES	13 3	71 7
30	1387 14	RT	PAR BAR	NO	39 08	37 93	35 4	15	60	M	261	15	2 1	YES	13 5	83 1
31	1387+14	LT	PAR BAR	NO	39 08	37 69	35 2	15	58	M	261	15	2 1	YES	13 5	82 6

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TYPICAL DRAINAGE STRUCTURES

EX-11 14 G

CHAPTER 15

OUTFALL/LATERAL DITCH SYSTEM

15.1 General

A lateral ditch is one that runs more or less perpendicular to the centerline of roadway. The purpose of the ditch is to provide drainage to or from areas which lie outside of the immediate project limits ~~that~~ by which are involved by the proposed roadway project. The lateral ditch plan and profile sheets shall provide the necessary details for the construction of the ditch.

"Outfall" is the term used for the conveyance of storm water (by ditch, pipe or other means) from a stormwater collection or cross drain to a stormwater management system such as a retention or detention area, or to a receiving system. The receiving system can be a ditch or a drainage canal with Retention/Detention pond.

Lateral ditch plans and profiles shall be prepared on a standard plan - profile format using a horizontal scale of 1" = 100'. However, if storm sewer construction is proposed for a portion of the ditch, a scale of 1" = 20', 40'or 50' may be used.

Data presentation in the plan portion shall be so oriented that the ditch or outfall centerline is parallel to the long side of the sheet and the project centerline runs from the bottom to the top.

Lateral ditch cross sections are included in the plans set to show details of the lateral ditch within the project limits. This sheet also shows the right-of-way required for the ditch, the extent of clearing and grubbing required and the amount of earthwork. Lateral ditch cross sections are prepared on a standard profile format.

15.2 Plan Portion

15.2.1 Lateral Ditch

Centerlines of the ditch and roadway shall be plotted and stationed in a manner similar to that described in Chapter 10-Roadway Plan and Profile. Ditch alignment data and topography shall be shown in the plan portion. Bearings and curve points for the project centerline shall also be shown. The north arrow and graphic scale shall be placed at the proper location on the sheet (refer to Chapter 10).

15.2.2 Outfall

The drainage system below the portion shown elsewhere on the plans, but at least the last section leading to the outfall structure shall be shown in plan with complete data. The location of the outfall structure shall be clearly shown in the plans and shall be identified by station.

15.3 Profile Portion

15 3 1 Lateral Ditch

The profile portion shall be prepared in the same manner as the profile portion of the roadway plan - profile sheets (Chapter 10) Existing ground line profiles, high water elevations, underground utilities, bench mark information and elevation datum shall be shown as described for roadway plan-profiles

For projects where the ditch survey baseline does not follow the flow line of the existing ditch or channel, the existing channel profile shall be shown with a broken line and identified

If lateral ditch cross sections are not included in the plans, the limits and quantities of proposed ditch excavation shall be shown by a dimension line above the ditch profile

If storm sewer construction is proposed along a lateral ditch, all of the proposed structures should be drafted as drainage structures or in the profile showing flow line, structure numbers, pipe or culvert sizes, and utilities (if applicable)

At locations of probable overland flow, natural ground or overtopping elevations shall be shown by a broken line and labeled

15 3 2 Outfall

The discharge end of the drainage system leading to the outfall structure shall be shown in profile when drainage structure sheets are not included in the plans Flow elevations, flow arrows, pipe or ditch slopes, separate lateral ditch outfalls, pipe outfalls, structures with their numbers or DPIs etc of the last section before the outfall shall be shown in profile The outfall structure shall be shown by a heavy solid line and its station location flagged and labelled The normal and high water elevations of the receiving system shall be indicated and labelled

15.4 Typical Section

A typical section showing width of proposed clearing and grubbing, right-of-way, ditch bottom width and side slopes shall be shown on the lateral ditch plan and profile sheet This section may not be to any particular scale, but shall be dimensionally proportionate If the width of clearing and grubbing is variable for a project, then the various widths and their respective station limits shall be noted below the typical section

15.5 Ditch Cross Sections

Lateral ditch cross sections shall be prepared in a manner almost identical to that of roadway cross sections (Chapter 18) The standard scale, generally, shall be 1" = 5', vertical and horizontal Regardless of the horizontal scale used, the vertical scale shall always be 1" = 5'

Ditch rights-of-way are usually narrow, and often it is possible to place two or more columns of ditch cross sections on one sheet They shall be drafted exactly as the roadway cross sections with the stationing progressing from the bottom of the sheet to the top, and from left to right

Usually, soil surveys are made along the lateral ditch only when a large amount of material is expected to be excavated and if suitable material is to be used in the roadway Excavation shall be tabulated whether the material is classified or unclassified

All other points mentioned in "Roadway Cross Sections" (Chapter 18) shall be applicable equally to lateral ditch cross sections

15.6 Retention or Detention Pond

The retention or detention pond, including the outlet structure, is usually the end point of the drainage system for a particular project. The retention/detention pond detail sheet shall show the pond in plan view, cross sections of the pond, side slopes, fence locations, right-of-way, pond drainage structures (if any) with their locations and cross sections and any other necessary data pertaining to the pond.

The pond location shall be shown by station and offset to the centerline of construction of the project. Side slopes, base dimensions and bottom and top elevations of the pond shall be shown in plan. The pond cross sections shall show the bottom width and elevation, side slopes, normal water depth, if applicable, design highwater and overtopping elevations and soil borings. A minimum of two (2) cross sections, taken in directions perpendicular to each other, shall be shown. Refer to Exhibit II-15-A.

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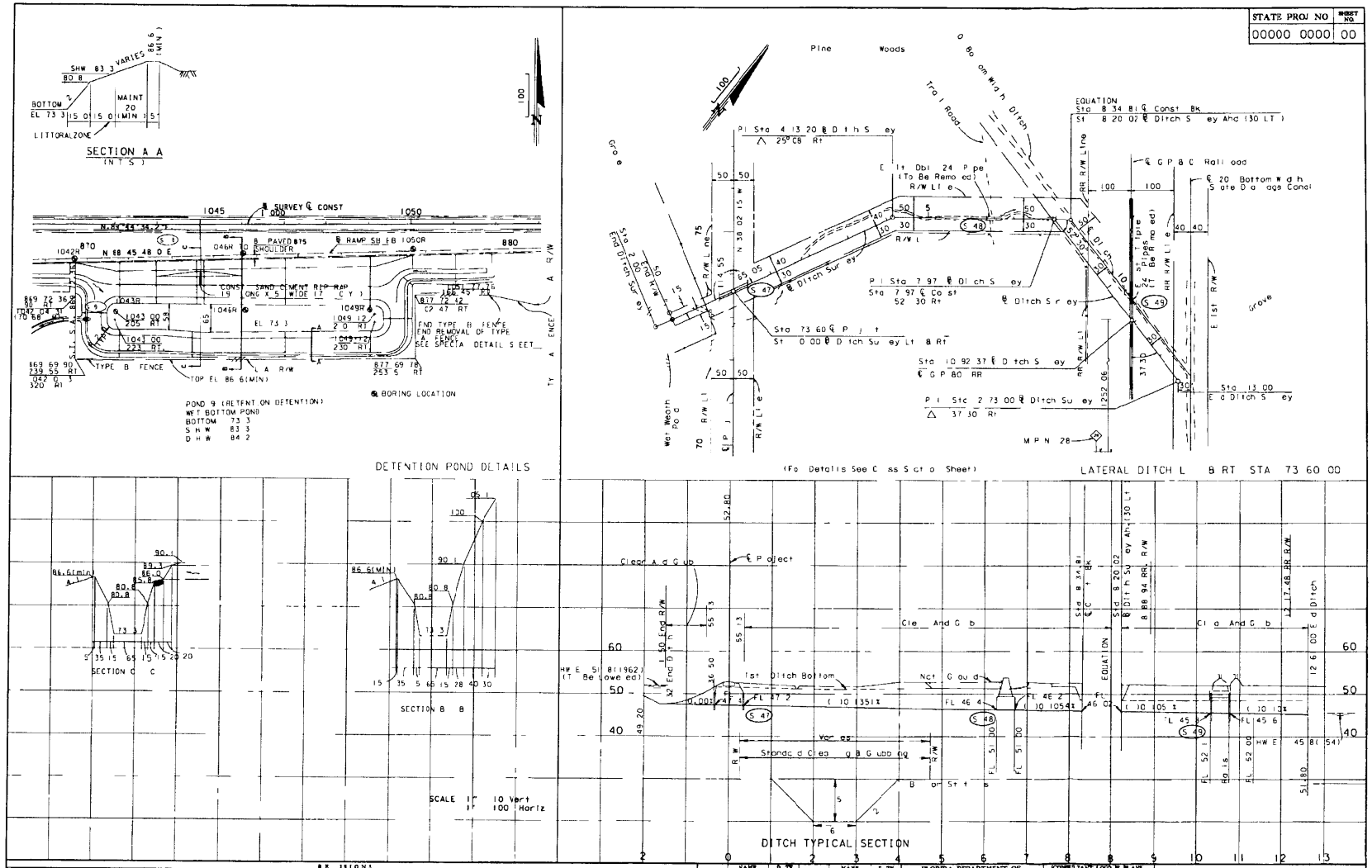

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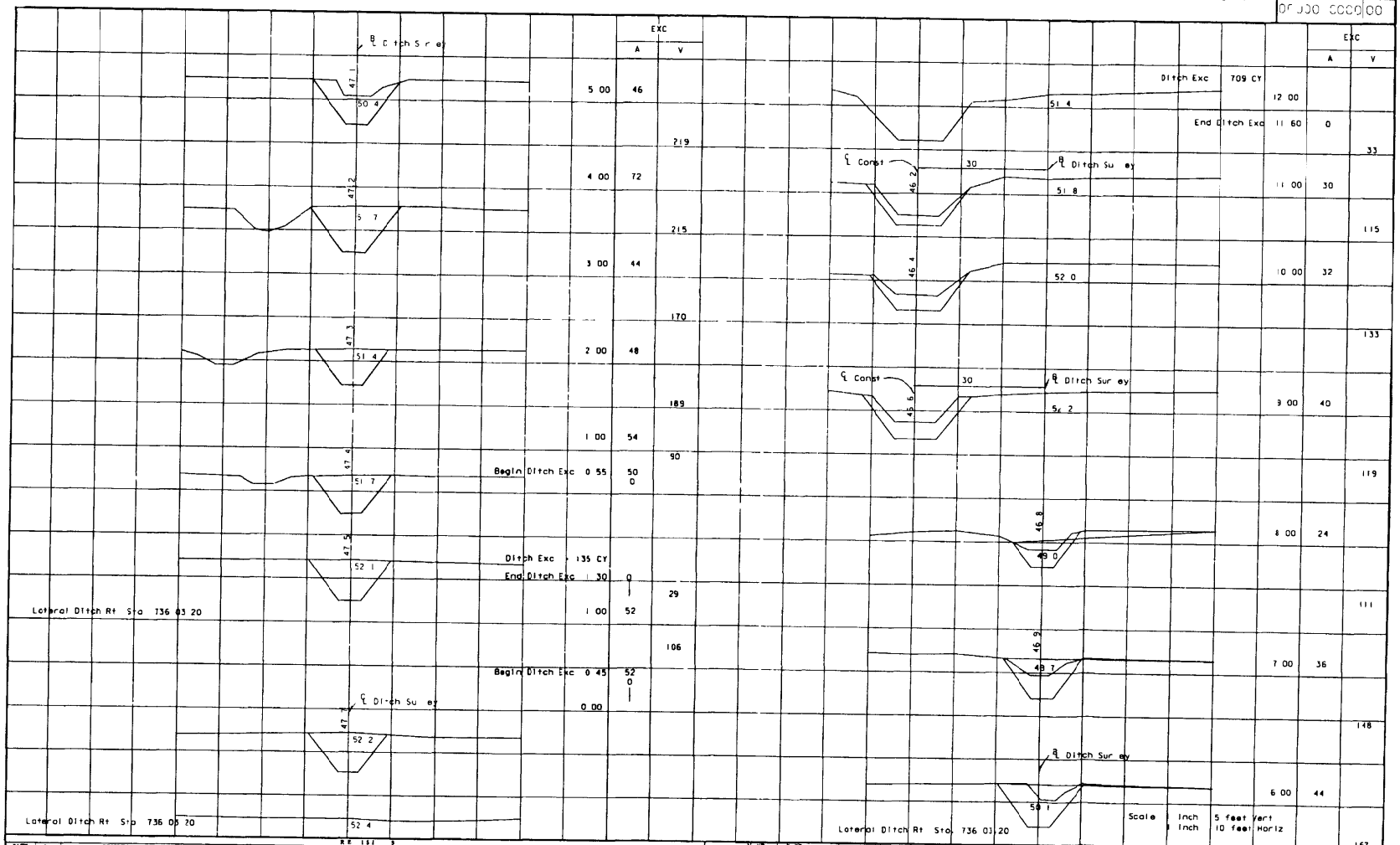

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CHECKED BY

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVE BY
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CONSULTANT LOGO IF PLAN PREPARED BY CONSULTANT

CROSS SECTIONS

LATERAL DITCH RT & LT STA 736 03 20

EX-II-15-B

CHAPTER 16

SPECIAL DETAILS

16.1 General

Special details sheets are usually included in the plans set if the project involves areas which require special attention to some construction elements. Construction details that are not covered in the Roadway and Traffic Design Standards booklet or elsewhere in the plans set shall be shown on the special details sheet. Crash cushion details shall also be shown on this sheet. This sheet shall be prepared on a standard plan format. Any convenient scale may be used, provided the information shown is clear and legible at half size reduction of plans. Details shown shall be clear, legible, labelled, complete in all respects and should be adequately cross-referenced to the plans in the plans set.

CHAPTER 17

SOIL SURVEY

17.1 General

The soil survey sheet, essentially a soil test analysis sheet, depicts the various types of soils encountered within the limits of the project. This sheet also shows the classification, mechanical properties and recommended usage of those soils. Soils having identical characteristics shall be assigned to the same stratum and group for identification and recommendation purposes. The test analysis sheet shall be signed by the responsible Engineer, (the District Materials Engineer for in-house projects, and a Registered Professional Engineer for consultant prepared plans).

17. 2 Roadway Soil Survey

17.2.1 Method of Compilation and Presentation

Upon completion of the proposed typical section, and after placing alignment, proposed grades and existing utilities on the plan - profile sheets and preliminary sections, prints of these sheets shall be utilized by the appropriate soil survey group (District Materials Engineer for in-house projects and a Soils and Foundation Engineer for consultant prepared plans) for determining the location and depth of borings for the sampling of soils for testing and classifications. These classification and test results, including pH, resistivity, sulfides and chlorides shall be shown on the test analysis sheet. Date and weather conditions at the time of sampling shall also be shown. Refer to Exhibit EX-II-17-A for an example of soil survey sheet.

After completion of soils testing, the boring data shall be shown on cross sections by columns approximately 0.4" wide below the ground line at test sample locations. Stratum limits and numbers shall be shown inside the column. This information shall be transmitted to the appropriate responsible materials engineer for verification. One hard copy of the soils information, including cross sections with soils information, shall be retained in the Soils Engineer's Record.

17.3 Borrow Pit Soil Survey

The borrow pit soil survey shall be included in the roadway plans set only if the borrow material is to be provided to the contractor by DOT. This sheet is similar to the roadway soil survey sheet and shows the location of test holes, various strata encountered, soil properties, classification and recommended usage.

The location of the borrow pit with respect to the project centerline shall be clearly shown. The survey baseline for the borrow pit shall be tied to the project centerline by station and angle. Begin and end borrow pit baseline stations shall be flagged and labelled. The borrow pit shall be completely dimensioned with all internal angles shown clearly. Boring locations shall be indicated and labelled. The north arrow and graphic scale shall be shown at a point of maximum visibility in close proximity to the borrow pit location map. Benchmark information with elevation shall be shown. Complete information with respect to Section, Township, Range and county shall be shown together with the borrow pit number. A description of the soils strata encountered shall also be shown.

The various strata encountered at each boring location shall be placed on a standard cross section format by columns of approximately 0.4" wide. The recommended vertical scale is 1"=5'. Strata shall be identified by number and water table elevation indicated by symbol at the appropriate elevation.

A complete soils analysis report and recommended usage shall be shown including date of survey and date(s) of analysis/test.

For complete sheet set up, see Exhibit II-17-B.

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STATE PROJ NO	SHEET NO.
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Laboratory No _____
Project No _____
Road No _____
County _____
Submitted By _____

Date Of Survey _____
Survey Made By _____
Survey Begin Sta _____
End Sta _____

Date Sampled _____
Sampled By _____
Date Tested _____

REPORT OF TESTS OF MATERIALS FROM ROADWAY FOR USE IN EMBANKMENT AND SUBGRADE

Stratum Number	% Pass 10 Mesh	% Pass 40 Mesh	% Pass 60 Mesh	% Pass 200 Mesh	Liquid Limit	Plastic Index	Group	Description	PH	Resistivity OHM CM	Chlorides mg/l	Sulfates mg/l
1	100	96	83	4	N P	N P	A 3	Grey and Brown Sand course poorly graded subrounded	6 2	13000	15	
2	99	91	71	11	N P	N P	A 2 4	Comp Fill (Orange & Brown Sand w tr Clay & Iron Rock) course well graded subrounded	6 5	10500	10	
3	NO SAMPLE SUBMITTED						A 8	Muck		(Not Suitable)		
4	93	88	73	5	N P	N P	A 3	Sand Asphalt over Sand Shell & Clay Base Course well graded subrounded	6 8	11250	8	
5	NO SAMPLE SUBMITTED							Surface Treatment over Sand Asphalt		(Not Available)		

EMBANKMENT AND SUBGRADE MATERIAL

The materia from Strata No 1 & 2 appears satisfactory for use in embankment
The material from Stratum No 3 is muck and is not suitable for use in the embankment subgrade cs pipe backfill or as a stabilizer under any conditions
The material from Stratum No 4 is Sand Asphalt over Sand Shell & Clay Base
The material from Stratum No 5 is Surface Treatment over Sand Asphalt

WEATHER CLEAR

∇ . WATER TABLE ENCOUNTERED

DESCRIPTION OF STRATA		
NO	1 -	GRAY & BROWN SAND
NO	2 -	COMP FILL (ORANGE & BROWN SAND W/Tr CLAY & IRON ROCK)
NO	3 -	MUCK
NO	4 -	SAND ASPHALT OVER SAND, SHELL & CLAY BASE
NO	5 -	SURFACE TREATMENT OVER SAND ASPHALT

REVISIONS: DATE | BY | DESCRIPTION

DESIGNED BY | CHECKED BY | SUPERVISED BY | NAME | DATE

DRAWN BY | CHECKED BY | NAME | DATE

FLORIDA DEPARTMENT OF TRANSPORTATION
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SOIL SURVEY

EX II-17-A

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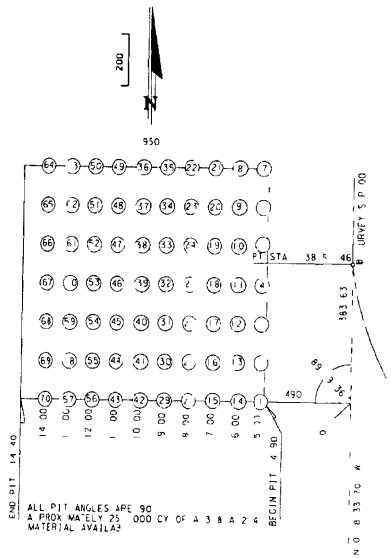

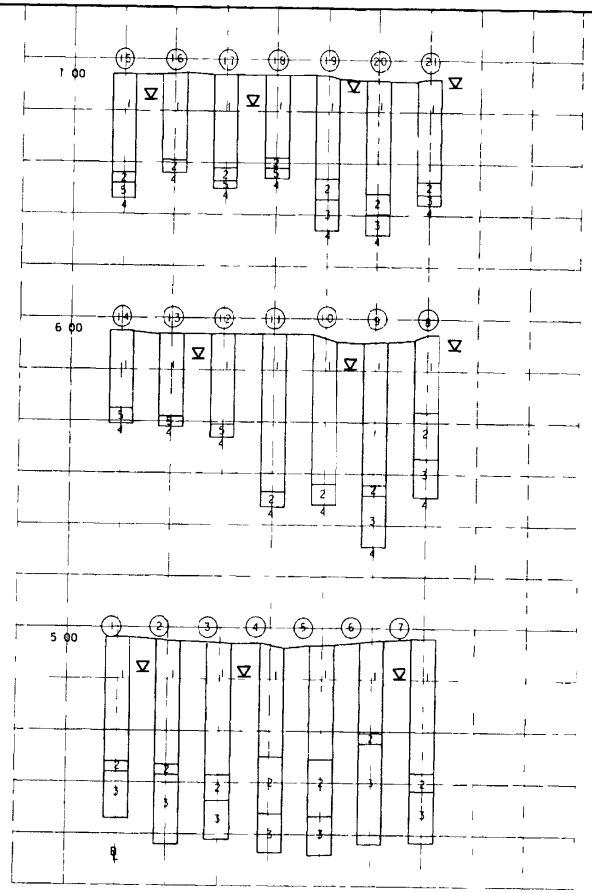

CLEARING AND GRUBBING LIGHT S PJB NE 1/4 APPROX 3 25 A

BORROW PIT No B P 00 00
SECTION 000000 00000 ROAD No S R 00
COUNTY APPLE
TWP 00 S R 00 E NE1/4 SEC 00

DESCRIPTION OF STRATA
NO 1 GREY & BROWN SANC W/TR SILT
NO 2 GREY SILTY CLAYEY SAND
NO 3 WHITE TO GREY SANDY SILT W/SHELL AND LIMEROCK
NO 4 ROCK (REFUSAL)
NO 5 GREY & BROWN SILTY LIMEY CLAY

SUBMITTED B
DISTR C
URVEYED B
DATE SURVE D

BORROW PIT NO 00 00 CROSS SECTIONS 1 100 HORIZONTAL
1 5 VERTICAL

abo ato y 00
P ojec Nc 0000 0000
oad No S R 10 (1 00)
bmit ed B

Date Sampled 2/11 14/80
Sampled By Adams Betts Cole
Date Tested 3/10 21 80
4/7 11/80

REPORT OF TESTS OF MATERIAL FROM BP 00 00 FOR USE IN EMBANKMENT AND SUBGRADE

REPORT OF TESTS OF MATERIAL FROM BP 00 00 FOR USE IN EMBANKMENT AND SUBGRADE

EMBANKMENT AND SUBGRADE MATERIAL

T mate ia om i a m No app a s satisfa t y fo u f th mba kme t

Th mate al om S a m No 2 appe s sat f to y fo f th emb kme t
do e the a e tab e sti g a g co st ctfo Ho e e e t e e ca f n shoulc
be f lig d l h thl m e l s l t l k ly to et in e c ss mots e
a ma be d f c l to y

h mat a om N 3 s ot s t sfac o y f e l the s bg cde u d
c o H hl mat l may be ed the mban me t sections abo e
t l e l d l g st u o b t sha o be plg d ith n < feet
he bat f p ops d p e e t o ba a u th l d 505 (S B l)

T mc e l St F N 4 l B r (R fusa)

T ma l S N 5 t tisfa o y fo us l the s bg de unde
c cc d lc s Ho e may be a l th mp kme t he sed l acco da e
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See Be o

F V l) RE OMMEN IA J f t se of St at m No 3 A 4 Mate al)

CHARACTERISTICS

W e ess als a d lb g o the ma e lal may be ul ble a d diffl lt to ompact
W we the ate a e y p ad es a 0 ck o df es l ng in l ss of bec ing
cacab l es

CONDITIONS FOR PLACEMENT IN FILLS

U l d 505 with e f l g est l t ns

(1) thl mate a n l be pl c laye s t l ss hc 2 o greater tran 4 thick
th 3 t a ay s of A mate lal at l ss tha 2 thick a d sho d b shaped
o ar b a a h o ts d s opes to p e ent ent opre t f t th the embankment
ne hc ld o b p aced l thin 4 of a y f ont slope as it highly o t e

REVISED R MMENDAT N FOR THE USE OF St um No 5 A 7 M t l)

CHARACTERISTICS

Th s mate a may t l e ces l e moistu e a d be ifflc t to d y With e ces l e
mc stu e and b at p ts mate al may be u t o l a d diffl lt to comp ct

CONDITIONS FOR PLACEMENT IN FILLS

U l d 505 th h fol l g rest l t ons
Th ma al h ld b p aced n ye s o t l s th n 2 no g eater tha 4 hick
d te not laye s o A 3 te a ot es tha 2 t ck a d should b shaped
t j al to d the ts de slope o p e t e t apme t of wo e th l th mp kme t

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DATE

CONSULTANT LOGO IF PLANS PREPARED CONSULTANT

BORROW PIT SOIL SURVEY

EX-II-17-B

CHAPTER 18

ROADWAY CROSS SECTIONS

18.1 General

Cross sections depict the existing ground conditions, including all manmade features, as sections perpendicular to the respective stations along a survey baseline or construction centerline baseline The proposed cross-sectional outline of the new facility with all its functional elements is also shown on cross sections Standard cross section sheets shall be used for showing roadway cross sections The recommended scale is 1" = 5' vertical The horizontal scale shall be such that the entire roadway R/W is shown on the sheet, but shall not be smaller than 1" = 20' horizontal If the entire R/W cannot be shown on one sheet, more sheets may be utilized and appropriate match lines shall be shown with referenced sheet numbers The scale shall be shown at the bottom right corner of the sheet above the title box

18.2 Required Information

Existing ground lines shall be shown with a light solid line The existing ground line elevation at the centerline shall be noted just below the ground line at the centerline The station number of the section shall be indicated in heavy numerals opposite the ground line on the right side of the sheet and location base line of survey indicated along the top and bottom of the sheet Lines parallel to the baseline of survey should show station equivalencies to the base line of survey

The surface of existing construction such as pavements, curbs, and sidewalks, shall be shown using a solid line The bottom of the pavement, curbs and sidewalks, shall be shown by a light broken line

Existing parallel underground utilities which lie within the horizontal limits of the project shall be shown along with verification notation for those locations which have been verified Utilities that have been verified should be labeled as shown in Section II-14 3 (page II-14-5 0) Small distribution or service lines need not be drafted

Soil data and water table shall be shown on cross sections as described in Section 17 2 1 of this volume Limits of unsuitable material shall also be shown

The proposed roadway template shall be shown using a heavy solid line Proposed profile grade elevation shall be placed vertically or at an angle to the horizontal, just above the profile grade line Special ditch elevations shall also be shown

Station equations shall be shown, even though a cross section may not be plotted at that point For ramp cross sections equivalent mainline stations shall also be shown

The right-of-way limits shall be symbolically shown for each cross section

The begin and end stations for project, construction, exceptions, bridge/bridge culvert and the toe of slope under the bridge shall be shown

The beginning and ending earthwork stations shall be shown On projects with grade separations, intersections interchanges, etc , the earthwork shall be totaled on the last cross section sheet for each of the above and noted as to the station in which the earthwork is included on the project cross sections Earthwork quantities for suitable material shall be indicated in the appropriate columns on the right side of the sheet, quantities for all other materials should be indicated in appropriate columns on the left side of the sheet Earthwork summaries shall be shown on the last cross section sheet of each roadway, ramp, etc The grand total shall be shown on the last cross section sheet of the plans set

The order of assembling the cross sections in the plans set shall be

Mainline
Side streets
Ramps

18.3 Sheet Set Up

Cross sections shall be shown on a standard cross section format with stations increasing from the bottom to the top of the sheet Usually, only one column of sections shall be placed on a sheet

Sections shall be centered on the sheet with the survey baseline or the construction centerline placed vertically in the center In cases where additional lanes are to be constructed adjacent to existing lanes, centering the sections will depend upon the location of the survey line and the side on which the new construction is to be placed Sections shall be oriented such that the complete ultimate section will be approximately centered on the sheet When the centerlines of construction and survey are not parallel, the distance between the two at each cross section shall be shown

As many sections as possible shall be placed on a sheet with sections being spaced to avoid overlapping The soil profile should be checked for possible unsuitable material below existing ground which may cause overlapping of sections

Profile grade elevations shall be shown and may be written vertically or at an angle to the horizontal

When right-of-way is narrow enough and a horizontal scale of 1" = 10' is used, two columns of cross sections may be placed on a sheet Cross section placing progresses from the left to the right as well as from the bottom to the top of the sheet The sheet shall be set up to provide earthwork columns for each column of sections Usually, access roads and lateral ditches can be plotted in this manner

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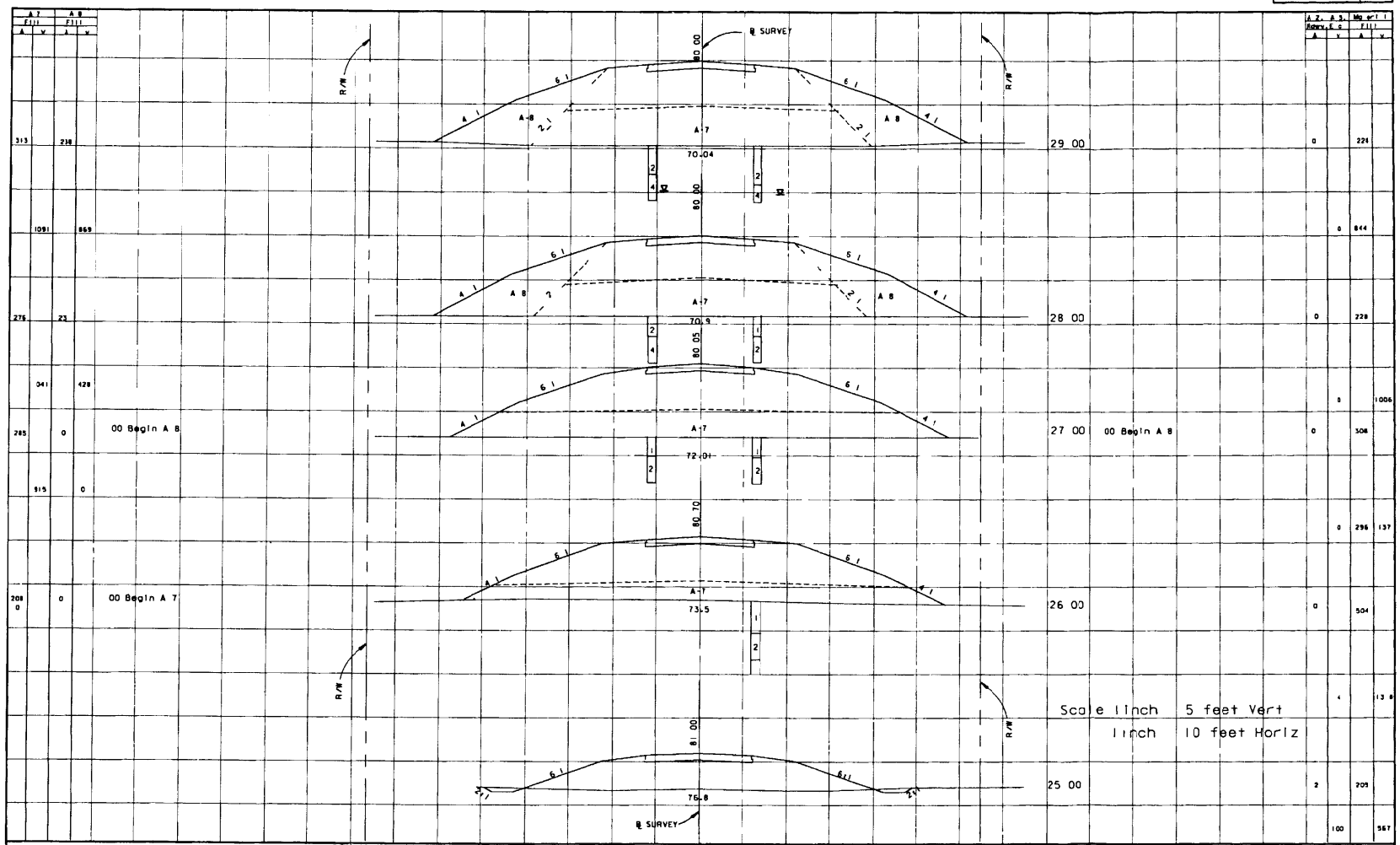

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CROSS SECTIONS

EX-II-18-A

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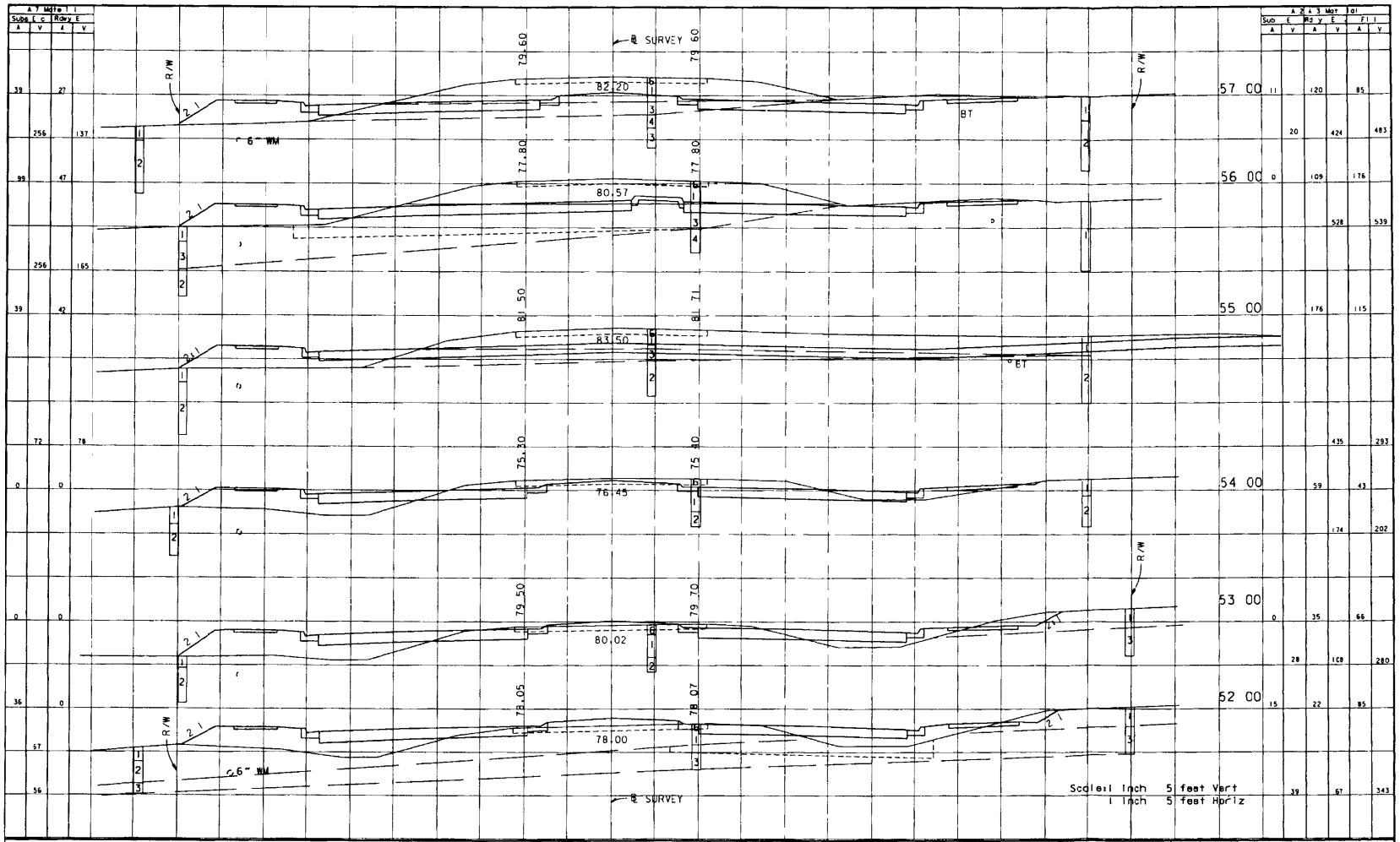

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CROSS SECTIONS

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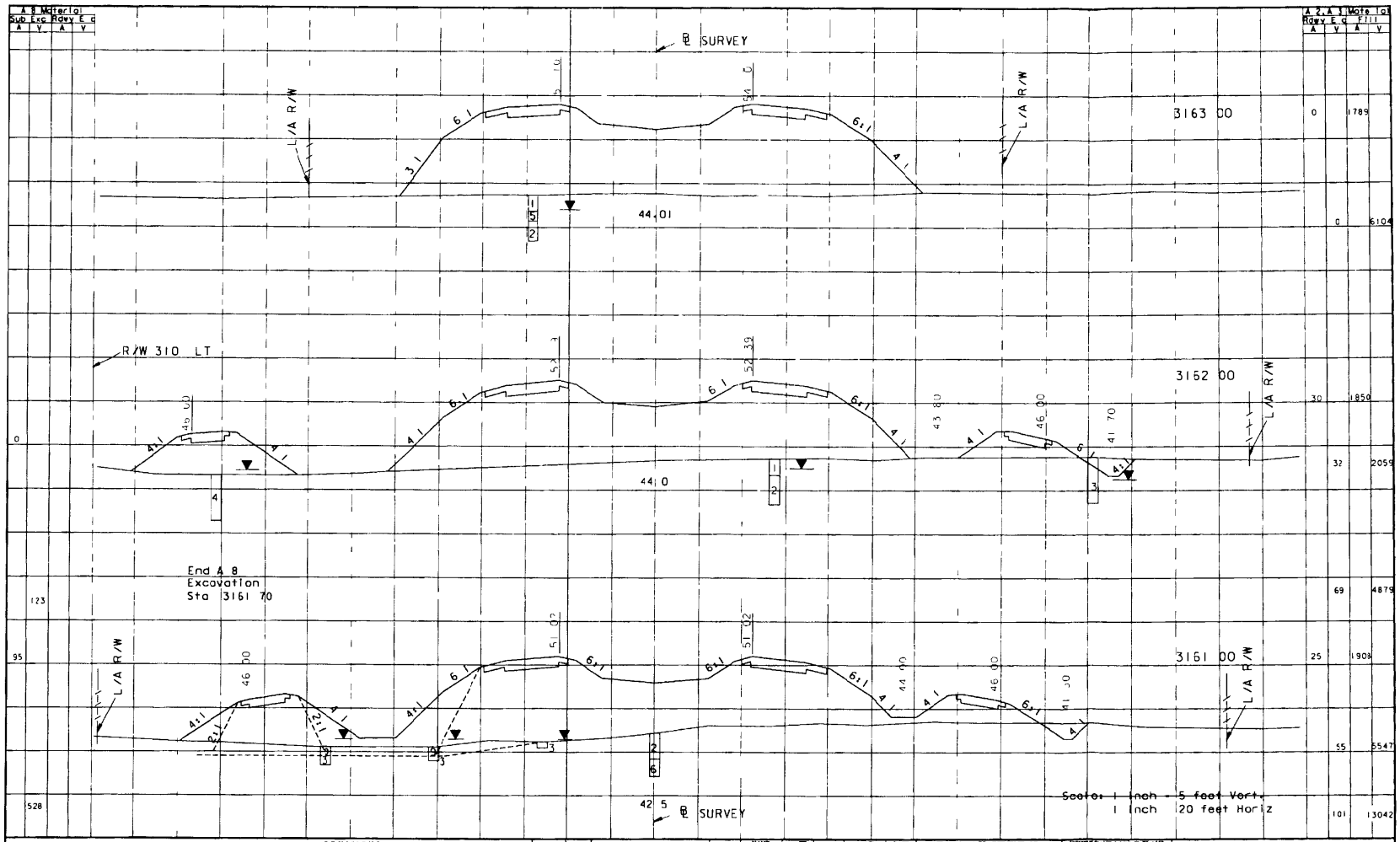

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CROSS SECTIONS

EX II 18-C

CHAPTER 19

TRAFFIC CONTROL SHEETS

19.1 General

The need to improve the capacity of and to rehabilitate Florida's highways has greatly increased the frequency of highway construction taking place immediately adjacent to or under traffic. The exposure of both the travelling public and construction and inspection personnel, to conflicts that may become hazardous is tremendous. In addition to the safety issue, the potential delays to the public as traffic is interrupted by construction can be significant. As a result, the Florida DOT places a great deal of emphasis upon ensuring that traffic can be accommodated through construction zones with minimum delay and exposure to unsafe conditions.

A Traffic Control Plan (TCP) accompanies the plans and specifications for a construction project. The TCP documents the considerations and investigations made in the development of a comprehensive plan for accommodating traffic through construction work zones.

A TCP describes all actions to be taken to minimize traffic impacts, such as design of the project itself, contract specifications, actions to be taken by DOT personnel and traffic control sheets. It is important to understand that the traffic control sheets which are part of the construction plans are the result of the TCP, and as such, are a part of a comprehensive effort to minimize impacts on traffic.

19.2 Required Information

Specific traffic control sheets shall be prepared using information from the plan - profile sheets and interchange and intersection layout sheets, if necessary. The plans shall show the following details:

- Centerline, pavement edge, curb lines, shoulders, lane configurations, intersections, and access openings.

- Locations of construction signs (including variable message signs), advance warning arrow panels, portable concrete barriers, crash cushions, temporary signals, flaggers and all regulatory speed signs.

- Sign faces with leader lines connecting the sign face to the appropriate location, including temporary modifications to permanent signs.

- Location and legends of permanent signs with appropriate notes for their dispositions. (e.g. "To Be Removed" etc.)

- Dimensioned locations of channelizing devices, with notes indicating the type, spacing and lane taper lengths required.

- Pavement markings to be removed and required temporary markings.

  Locations of existing utilities that may conflict with construction necessary for traffic control.

- Notes referencing Roadway and Traffic Design Standard Series 600 as applicable, and any others necessary to clarify the plan. Special notes might include instructions for the use of service patrols, police and highway advisory radio.

Plan sheets shall be prepared for each phase of traffic control during construction and each major traffic pattern that will be used during each phase (for example, in the case of night work, the daytime and nighttime traffic patterns shall be shown for a particular traffic phase.)

The traffic control sheets shall use relevant existing or proposed roadway features for the phase being illustrated. Data shall be transferred from the appropriate CADD levels of the plan - profile sheets. Appropriate CADD library cells shall be used for sign faces and standard notes.

19.3 Format and Scale

The plan sheets shall be prepared on standard plan sheets. The scale shall be such that all details are clear and legible at half-size reduction of plans. However, the scale shall not be smaller than 1"=100'. For simple, uncomplicated projects, or sections of a project, it may be possible to "stack" two plans on one sheet, one below the other. Clarity and legibility shall be preserved in all cases.

A north arrow and graphic scale shall be shown at a point of maximum visibility on the sheet. If two plans are "stacked" on one sheet, then each plan portion shall contain a north arrow and graphic scale.

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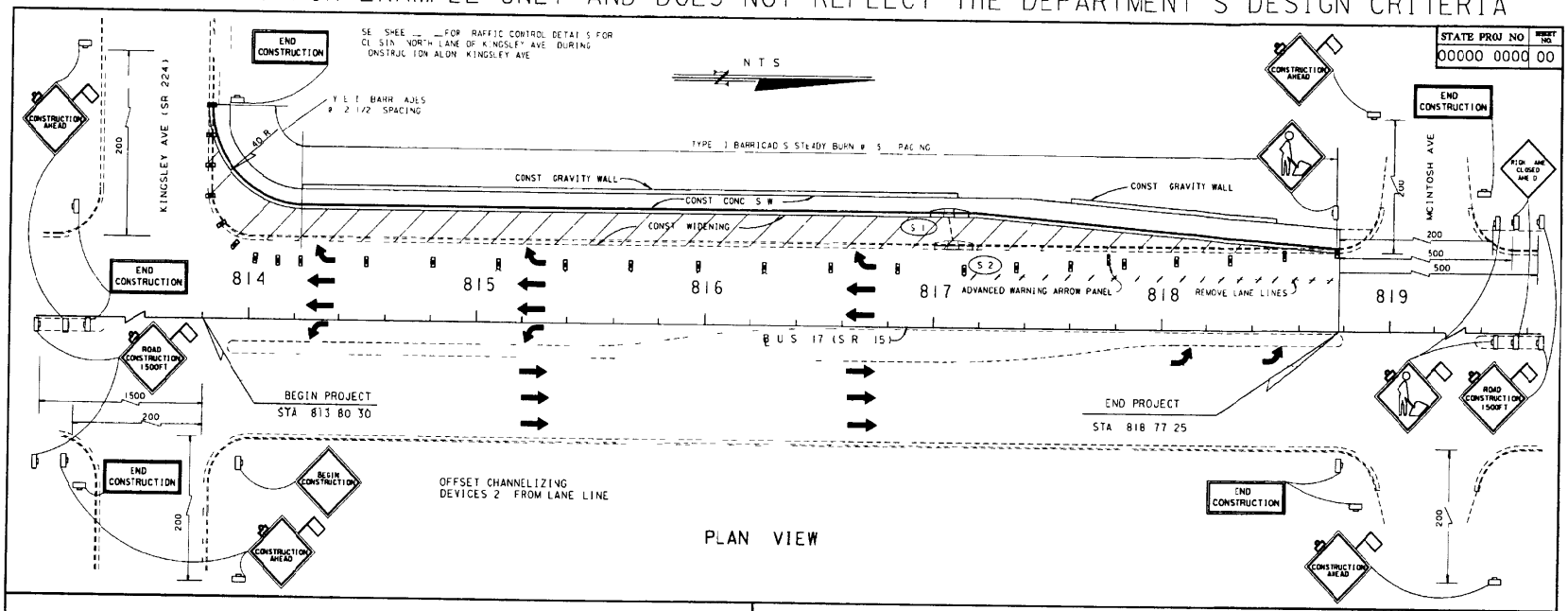

PHASING

PHASE 1

CLEAR AND GRUB AREA NECESSARY TO CONSTRUCT NEW CURB AND GUTTER AND DRAINAGE STRUCTURE S 2 LEAVE EXISTING CURB AND GUTTER IN PLACE AFTER NEW CURB AND GUTTER IS IN PLACE COMPLETE CLEARING AND GRUBBING OPERATIONS INCLUDING REMOVAL OF THE EXISTING SIDEWALK AND THE EXISTING CURB AND GUTTER CONSTRUCT THE PIPE CONNECTING S 1 AND S 2 AND BEGIN BASE EXCAVATION ONLY THAT EXCAVATION FOR BASE WIDENING THAT CAN BE BACKFILLED BY THE END OF THE WORK DAY WILL BE EXCAVATED NO OPEN TRENCH WILL BE ALLOWED TO REMAIN AFTER WORK ENDS FOR THE DAY SPEED THROUGH THE WORKZONE SHALL BE RESTRICTED TO 30 M P H

PHASE 2

UPON COMPLETION OF THE BASE OPERATIONS STRUCTURAL COURSE WILL BE PLACED FOLLOWED BY THE FRICTION COURSE AND THE STRIPING

GENERAL NOTES

1 NO WORK SHALL BE DONE REQUIRING A LANE CLOSURE BETWEEN THE HOURS OF 6 00 A M THRU 8 00 A M AND 4 00 P M THRU 6 30 P M

2 NO WORK WILL BE DONE DURING THE FOLLOWING PERIODS
MIDNIGHT THURSDAY BEFORE TO MIDNIGHT MONDAY AFTER EASTER SUNDAY
MIDNIGHT JULY 2 TO MIDNIGHT JULY 5
MIDNIGHT DECEMBER 20 TO MIDNIGHT JANUARY 3
THANKSGIVING (TUESDAY MIDNIGHT PRIOR THROUGH SUNDAY MIDNIGHT AFTER)

SPECIAL EVENTS SUCH AS
MIDNIGHT WEDNESDAY BEFORE TO MIDNIGHT SUNDAY AFTER THE FLORIDA GEORGIA GAME
GATOR BOWL GAME (TWO DAYS PRIOR TO THROUGH ONE DAY AFTER)
T P C GOLF TOURNAMENT (MIDNIGHT TUESDAY BEFORE TO MIDNIGHT MONDAY AFTER)

ETC AND ANY EMERGENCIES DEEMED NECESSARY BY LOCAL LAW ENFORCEMENT AUTHORITIES OR RESIDENT ENGINEER

3 MAINTENANCE OF TRAFFIC SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES PART VI WORK ZONE TRAFFIC CONTROL

4 AN OFF DUTY LAW ENFORCEMENT OFFICER WITH A MARKED LAW ENFORCEMENT VEHICLE WILL BE REQUIRED FOR EACH LANE CLOSURE

5 DESIGN SPEED IS 30 M P H

6 ARROW DENOTE DIRECTION OF TRAFFIC ONLY AND DO NOT REFLECT PAVEMENT MARKINGS

7 FOR GENERAL TRAFFIC CONTROL ZONE REQUIREMENTS AND ADDITIONAL INFORMATION REFER TO INDEX NO 600

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TRAFFIC CONTROL PLAN

EX-II-19-A

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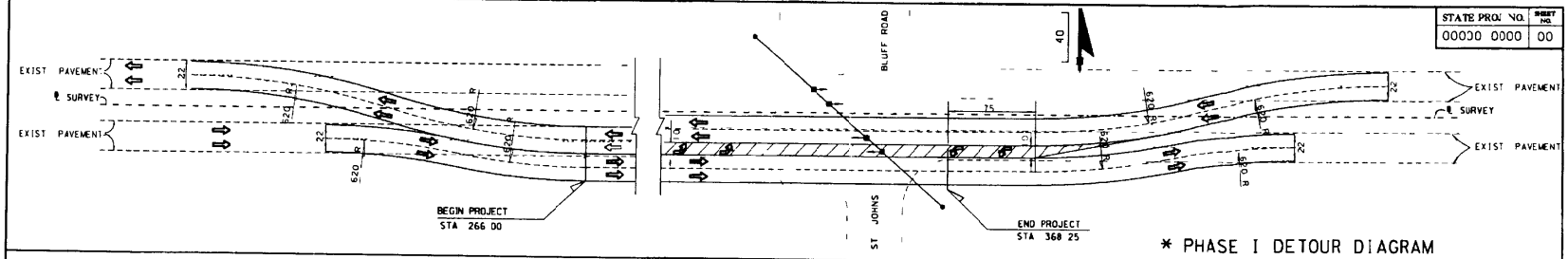
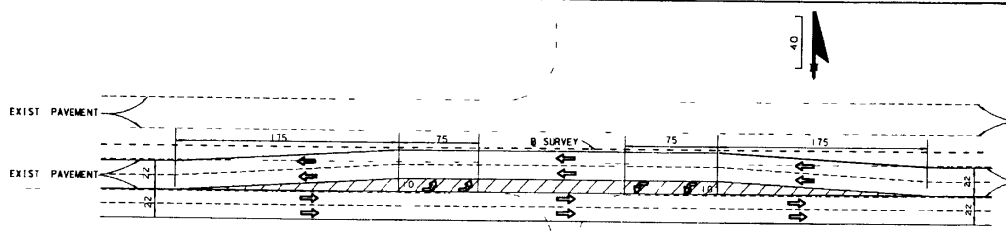


* PHASE I DETOUR DIAGRAM



SIDE STREETS

BARKLEY DRIVE
EVE DRIVE EAST
PEACH DRIVE
FOREST BLVD
ANNISTON ROAD
LEON DRIVE
DE SALVO DRIVE
CORTEZ DRIVE
FOR APPLICATION SIGNS SEE SHEET

PHASING

PHASE I

(A) REMOVE EXISTING SIDE DRAIN CONSTRUCT DITCH EXCAVATION AND INSTALL SIDE DRAIN WITH MITERED END SECTIONS ACCORDING TO PLAN SPECIFICATIONS
(B) CONSTRUCT TEMPORARY PIPE EXTENSIONS TO THE SOUTH END OF EXISTING CROSS DRAINS CONSTRUCT TEMPORARY DETOUR AS SHOWN IN SKETCH
(C) CLOSE WESTBOUND LANES AND REROUTE TRAFFIC THRU TEMPORARY DETOUR
(D) COVER WEST BOUND SIGNAL HEADS AND REPHASE EAST BOUND SIGNAL HEADS TO SERVE TRAFFIC IN BOTH DIRECTIONS

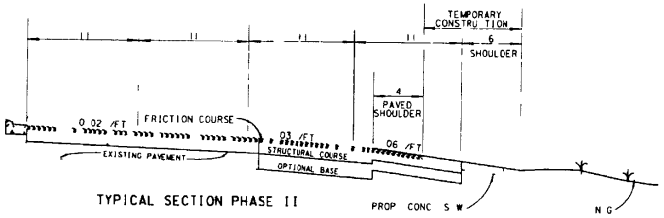
PHASE II

(A) EXCAVATE MUCK AND REPLACE CROSSDRAINS UP TO CENTERLINE OF SURVEY COMPLETE WIDENING OF WESTBOUND LANES PERFORM MILLING AND RESURFACING OPERATIONS
(B) CONSTRUCT 4 OF TEMPORARY PAVEMENT ADJACENT TO THE PAVED SHOULDER (STRIPE WESTBOUND ROADWAY PERMANENT AND TEMPORARY FOR FOUR (4) LANES) + TYPICAL SECTION THIS SHEET
(C) CLOSE THE EASTBOUND LANES AND REDIRECT TRAFFIC TO THE WESTBOUND LANES
(D) COVER EAST BOUND SIGNAL HEADS AND REPHASE WEST BOUND SIGNAL HEADS TO SERVE TRAFFIC IN BOTH DIRECTIONS

PHASE III

(A) COMPLETE CONSTRUCTION OF EASTBOUND LANES ACCORDING TO PLAN SPECIFICATIONS
(B) CLOSE THE DETOUR AND REDIRECT TRAFFIC ONTO THE PERMANENT ROADWAY
(C) REMOVE TEMPORARY PAVEMENT ADJACENT TO WESTBOUND LANE AND CONSTRUCT SIDEWALK
(D) REPHASE SIGNAL HEADS FOR NORMAL TRAFFIC

DETAIL OF DETOUR AT SIDE STREETS



TYPICAL SECTION PHASE II

TEMPORARY CONSTRUCTION
(PHASE I AND PHASE II)

DESIGN SPEED 35 M P H

OPTIONAL BASE GROUP 04 (FOR THICKNESS SEE BELOW) WITH TYPE S ASPHALTIC CONCRETE (1 1/2 THICK)

OPTIONAL BASE COURSES PERMITTED	OPTION CODE
6 LIMEROCK BASE COURSE	985
5 ASPHALT BASE COURSE (TYPE 1)	125
4 ASPHALT BASE COURSE (TYPE 2)	126
4 ASPHALT BASE COURSE (TYPE 3)	127

NOTE FOR PERMANENT CONSTRUCTION SEE TYPICAL SECTIONS T C Z AND SPECIAL DETOUR QUANTITIES SHOWN ON SHEET

GENERAL NOTES

1 MAINTAIN FOUR LANES OF TWO WAY TRAFFIC AT ALL TIMES

2 ALL SIGNING PAVEMENT MARKINGS BARRICADES AND WARNING LIGHTS NECESSARY FOR MAINTENANCE OF TRAFFIC SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES

3 THE TEMPORARY DETOUR FOR PHASE II CONSTRUCTION WILL BE IDENTICAL TO THE PHASE I DIAGRAM

4 SANDBAGGING MAY BE NECESSARY IN AREAS WHERE CROSSDRAINS ARE TO BE TEMPORARILY EXTENDED THE COST OF PLACING REMOVING AND DISPOSING OF SANDBAGGING WILL BE INCLUDED IN THE BID PRICE FOR TEMPORARY DETOURS

5 EXACT LIMITS OF SANDBAGGING TO BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION

6 ARROWS DENOTE DIRECTION OF TRAFFIC ONLY AND DO NOT REFLECT PAVEMENT MARKINGS

7 REGULATORY SPEED OF 35 M P H SHALL BE POSTED WITHIN THE LIMITS OF THE WORK ZONE FOR PHASE I PHASE II

8 FOR GENERAL T C Z REQUIREMENTS AND ADDITIONAL INFORMATION REFER TO INDEX NO 600

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	DESCRIPTION	DATE	DESCRIPTION

REVISIONS

	NAME	DATE		NAME	DATE
DESIGNED BY			DRAWN BY		
CHECKED BY			LIMITED BY		
SUPERVISED BY					

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
DATE

CONSULTANT LOGO IF PLANS PREPARED BY CONSULTANT

TRAFFIC CONTROL PLAN PHASING

CHAPTER 20

UTILITY ADJUSTMENT

20.1 General

The purpose of utility adjustment sheets is to provide coordination between the contractor and the affected utility companies These sheets show the contractor the approximate locations of existing, proposed and relocated utilities, and thus aids the contractor in avoiding possible conflicts or damage to the utilities involved

20.2 Required Information

Locations of all existing utilities within the project limits shall be shown on the plans prior to the Phase I submittal Each of the utility companies shall be provided by DOT, a set of plans at the Phase II submittal The utility companies shall verify or show by marking up the prints, the location of their respective utilities Information shown on these marked up prints shall be used by the roadway design office to prepare utility adjustment sheets All proposed and relocated utilities shall be clearly shown on the plan by a heavy solid line and standard utility symbol and labelled (see Standard Index #002) Disposition of all existing utilities shall be clearly indicated for example "To Be Removed", "To Be Adjusted", "To Be Relocated", etc All proposed utilities shall be appropriately labelled Applicable general notes shall also be shown on the first utility adjustment sheet

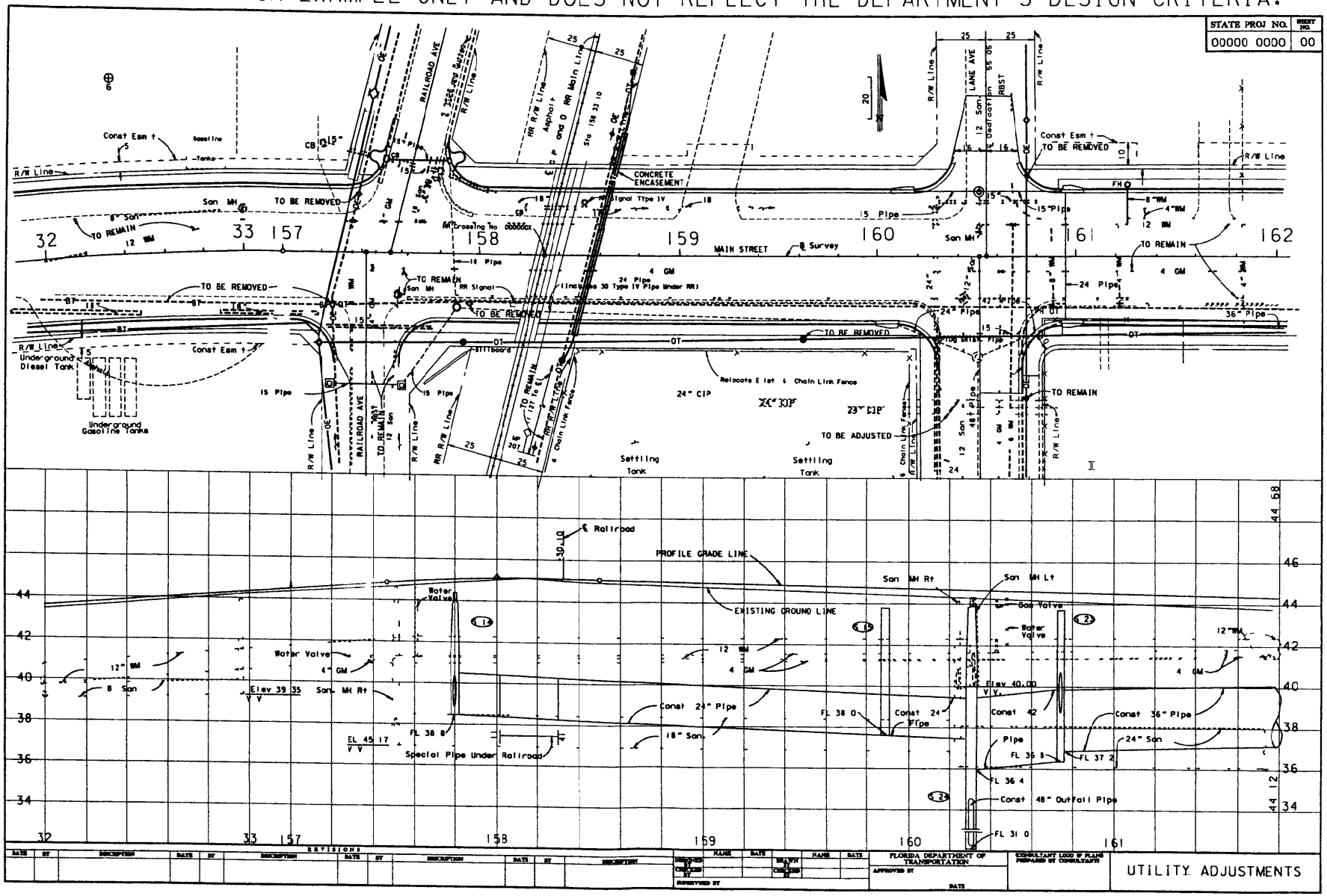
20.3 Sheet Format and Scale

The utility adjustment sheets shall be prepared on the same format and base information as that of the plan - profile sheets. Levels, fonts and line weights shall be in accordance with CADD Roadway Standards and Guidelines Scale shall be the same as that used for the plan - profile sheets.

The utility adjustment sheets shall show the following base information as a minimum

(1) Baseline and/or Centerline of survey,
(2) Curb and gutter or edge of pavement,
(3) Drainage structures (existing and proposed),
(4) Right-of-way lines,
(5) Station numbers,
(6) Street names,
(7) Disposition of existing utilities, and
(8) Location of proposed utilities

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA.



CHAPTER 21

SELECTIVE CLEARING AND GRUBBING

21.1 General

Selective clearing and grubbing plans show the extent and type of clearing operation required within the project right-of-way limits. This information may be shown on the plan - profile sheet, if no substantial clutter of the sheet results. Otherwise, selective clearing and grubbing shall be shown on a separate plan sheet.

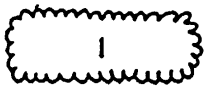
21.2 Required Information and Sheet Set Up

When separate selective clearing and grubbing sheets are required, they shall be shown on a standard plan format. Complete existing topography shall be shown together with centerline of construction with stationing, R/W lines and limits of construction. The type of selective clearing and grubbing operation to be performed shall be clearly shown by symbol (refer to Section 21.3 for symbols and notes). A north arrow and graphic scale shall be placed at a point of maximum visibility on the sheet. Any convenient scale may be used provided clarity and legibility are preserved at half size reduction of plans. However, it is recommended that the selective clearing and grubbing plans be prepared at the same scale as the roadway plan - profile sheets.

Appropriate match lines shall be used when necessary.

For a complete illustration of a selective clearing and grubbing sheet, see Exhibit II-21-A.

21.3 Standard Symbols and Notes



Designates areas to remain natural. No clearing or grubbing in these areas. No equipment shall enter these areas.

Designates areas where trees and stumps over 3" caliper shall be cut flush with the ground or removed, and all undergrowth is to remain natural. No equipment shall enter these areas that would in any way damage the plant material to remain.

Designates areas where trees of 3" caliper or greater are to remain and all undergrowth is to be removed, only rubber tire equipment shall enter these areas, and remaining trees shall be protected from root and trunk damage.

Designates areas where the type and extent of clearing and grubbing shall be determined by the Engineer according to field conditions.

Designates areas that shall remain natural, when, in the opinion of the Engineer, adequate and desirable natural vegetation or grass exists. Where this type vegetation does not exist, only harrowing, disking, leveling, and/or clean-up shall be undertaken, to a degree sufficient to prepare the area for grassing operations.

All other areas not included in one of the above categories, or those designated by the Typical Sections, shall be "standard clearing and grubbing".

Where unforeseen site conditions exist, adjustments or exceptions may be made to the above procedure at the direction of the Engineer.

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA.

STATE PROJ NO	SHEET NO.
00000 0000	00

SELECTIVE CLEARING GENERAL NOTES

1 — DESIGNATES AREAS TO REMAIN NATURAL NO CLEARING OR GRUBBING IN THESE AREAS NO EQUIPMENT SHALL ENTER THESE AREAS

2 — DESIGNATES AREAS WHERE TREES AND STUMPS OVER 3 CALIPER SHALL BE CUT FLUSH WITH THE GROUND OR REMOVED AND ALL UNDERGROWTH IS TO REMAIN NATURAL NO EQUIPMENT SHALL ENTER THESE AREAS THAT WOULD IN ANY WAY DAMAGE THE PLANT MATERIAL TC REMAIN

3 — DESIGNATES AREAS WHERE TREES OF 3 CALIPER OR GREATER ARE TO REMAIN AND ALL UNDERGROWTH IS TO BE REMOVED ONLY RUBBER TIRE EQUIPMENT SHALL ENTER THESE AREAS AND REMAINING TREES SHALL BE PROTECTED FROM ROOT AND TRUNK DAMAGE

4 — DESIGNATES AREAS WHERE THE TYPE AND EXTENT OF CLEARING AND GRUBBING SHALL BE DETERMINED BY THE ENGINEER ACCORDING TO FIELD CONDITIIONS

5 — DESIGNATES AREAS THAT SHALL REMAIN NATURAL WHEN IN THE OPINION OF THE ENGINEER ADEQUATE AND DESIRABLE NATURAL VEGETATION OR GRASS EXISTS WHERE THIS TYPE VEGETATION DOES NOT EXIST ONLY HARROWING DISKING LEVELING AND/OR CLEAN UP SHALL BE UNDERTAKEN TO A DEGREE SUFFICIENT TO PREPARE THE AREA FOR GRASSING OPERATIONS

ALL OTHER AREAS NOT INCLUDED IN ONE OF THE ABOVE CATAGORIES OR THOSE DESIGNATED BY THE TYPICAL SECTIONS SHALL BE STANDARD CLEARING AND GRUBBING

WHERE UNFORSEEN SITE CONDITIONS EXIST ADJUSTMENTS OR EXCEPTIONS MAY BE MADE TO THE ABOVE PROCEDURE AT THE DIRECTION OF THE ENGINEER

TOPSOIL MUCK BLANKET GENERAL NOTES

STOCKPILING OF TOPSOIL AND/OR MUCK IS TO BE DONE ONLY IN AREAS REQUIRING STANDARD CLEARING AND GRUBBING AND /OR AREAS DESIGNATED AS TYPE 5 (SEE SELECTIVE CLEARING GENERAL NOTES)

TYPE 4 AREAS MAY BE USED FOR STOCKPILING OF MUCK ONLY WHERE SUCH AREAS HAVE BEEN CLEARED AT THE DIRECTION OF THE ENGINEER DURING CONSTRUCTION OPERATIONS

SUFFICIENT AREA HAS BEEN DESIGNATED SO THAT ALL STOCKPILING MAY BE DONE IN ACCORDANCE WITH THE REQUIREMENTS LISTED ABOVE

EXPLANATION OF SYMBOLS

SOIL INFORMATION DETAIL

F S — SOIL TEXTURE

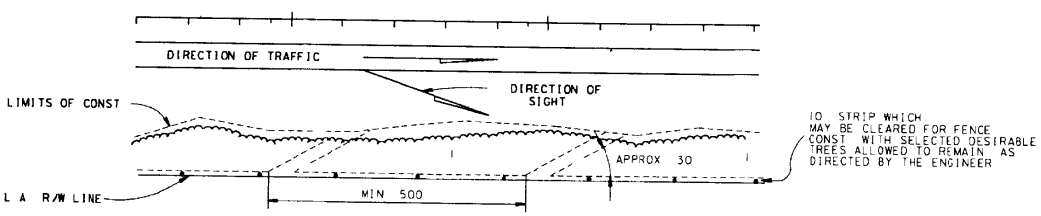
1 2% — PER CENT ORGANIC

5 1 — pH

SOIL TEXTURE ABBREVIATIONS

DETAIL OF EXCEPTION

(APPLIES TO ALL TYPES OF SELECTIVE CLEARING)



AT THE DIRECTION OF THE ENGINEER DIAGONAL PATHS MAY BE CUT IN AREAS TO REMAIN NATURAL AS SHOWN ABOVE FOR THE REMOVAL OF TIMBER AND STUMPS FROM THE AREA CLEARED FOR FENCE CONSTRUCTION

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE		DESCRIPTION

	NAME	DATE		NAME	DATE
DESIGNED BY			DRAWN BY		
CHECKED BY			CHECKED BY		
SUPERVISED BY					

FLORIDA DEPARTMENT OF TRANSPORTATION

APPROVED BY

DATE

SUPPLEMENTAL GRADING PLANS PROPOSED BY CONSULTANT

SELECTIVE CLEARING AND GRUBBING

EX-11-21-A

CHAPTER 22

ROADWAY STRUCTURAL PLANS

22.1 General

Roadway Structural Plans may include any of the Category I structural details required in the roadway contract when there are not any bridges on the project Box culvert plans, highmast lighting supports, traffic mast arm supports, signal strain poles, rest area structures or buildings, barrier walls (traffic or sound), retaining walls and toll facilities are all structural details that may need to be included in the roadway plans set

For detailed guidelines on structural plans, submittals and responsibilities, the reader is referred to the Structures Design Guidelines (Topic 625-020-101) by the Structures Design Office

22.2 Approach Slabs

All of the approach slab details sheets are included in the roadway plans set when the project contains bridges These sheets shall be prepared by the responsible professional engineer and the record set copy shall be signed and sealed by that engineer The Roadway Design Engineer or Project Manager/Coordinator shall be responsible for including the appropriate pay items for the approach slab in the Summary of Pay Items and the CES

22.3 Retaining Walls (C.I.P., Proprietary, Temporary)

When cast in place retaining walls other than standard gravity walls are required, complete design and construction details, including pay items and quantities are required in the final construction plans The same is true for steel or concrete sheet piles for either permanent or temporary retaining walls

22 3 1 Mechanically Stabilized Earth (MSE) or proprietary walls are handled somewhat differently, but the details are still to be a part of the roadway plans package Detailed control plans are developed and sent to all appropriate FDOT prequalified proprietary wall companies at the preliminary plans stage for their use in preparing a competitive bid The control plans will include all preapproved wall companies standard details The control plan sheets will be included in the contract set of final roadway plans

22 3 2 Control Plan Details

1 Plan and Elevation Sheet
   - a horizontal and vertical alignment
   - b limits of wall
   - c utility locations
   - d plan view of wall
   - e elevation view of wall (showing existing and proposed ground lines, elevations at top of wall, wall embedment, beginning and end of wall stations and maximum elevation of top of leveling pad
   - f boring locations
   - g quantity (pay area of wall)
   - h table showing soil reinforcement length vs wall height (for external stability)

i general notes

j in-situ soil characteristics

k design parameters - safety factors

l sections through wall showing offset control point, pay area, ditches, sidewalks and other unusual features

2 Soil Profile Sheet

3 General Details showing wall/end bent cap interface, barrier and coping to wall interface, pile, inlet and pipe conflicts with soil reinforcement

22 3 3 Geotechnical Requirements

The success of this method of producing and letting wall plans is highly dependent on complete, accurate and informative control plans The importance of the geotechnical engineers role in this scheme cannot be emphasized enough The geotechnical engineer's responsibilities include

1 Borings

2 Soils Report

3 Wall Type Recommendation

4 If MSE wall, reinforcement length vs wall height for external stability This information is to be included in the control plans

5 Review of internal stability design as provided by the wall companies

A computer program "Re-STAB6 EXE" has been written by Jon Foshee, FDOT District 5 Assistant Geotechnical Engineer This program is in accordance with FHWA Reinforced Soil Structures Vol 1, FHWA RD-89-043, and is used to analyse the wall for external stability It provides factors of safety for sliding, overturning, and bearing capacity for a given reinforcement length The global stability can be analyzed by FHWA PC STAB6 and the settlement can be determined by conventional methods The reinforcement lengths for external stability shall be shown in a table on the control plans

22 3 4 Bidding Procedure

FDOT projects with MSE walls are bid as alternates The control plans, including preapproved standard proprietary wall details, comprise the contract plans Each proprietary wall is assigned a unique bid item number Notes on the plans instruct the contractor to bid only one alternate, and the alternate he bids shall be the alternate constructed

3	FLA		W 1

RETAINING WALL GENERAL NOTES

1. Area of retaining wall to be used for payment shall be the area bounded by the top of Traffic Railing Barrier (or top of coping in areas without traffic barrier) the proposed final ground line or finished top of concrete slope pavement at the front face of wall and the begin and end wall limits as shown on control plans

   Proprietary Retaining Walls and Traffic Railing Barrier shall be paid for at the contract unit price per square foot of retaining wall under Pay Item No 528-70 Alt AA Reinforced Earth Wall or Pay Item No 545-70 Alt AB Retained Earth Wall

   The cost of all foundations fill material and excavation (required specifically for wall construction outside of roadway cross section emplate) and walls below the proposed final ground line shall be ncluded in the unit cost for Retaining Walls Pay Item No 528-70 Alt AA or 545-70 Alt AB

   The cost of installation of utility foundations (light poles on oprietary walls) and accomodations for drainage structures shall be included in the unit cost for Retaining Walls Pay Item No 528-70 Alt AA or 545-70 Alt AB

   The wall alternate bid shall be the alternate built No substitution of other companies walls shall be allowed

2. Panel surface treatment shall be a 2 raised finish similar to Reinforced Earth s Type I

3. Traffic Railing Barrier (or coping in areas without Traffic Railing Barrier) on top of retaining wall shall have a Class 5 Applied Finish Coating

4. Piles within the Reinforced Earth Wall and Retained Earth Wall Volume shall be driven prior to the construction of the retaining wall

5. Walls shall be designed for the following:

   Maximum Allowable Bearing Pressure = 4000 psf
   Anticipated Settlements are between 1½ and 2½ the majority of which should occur during placement of backfill material

Overturning	Min F.S = 2.0
Sliding	Min F.S = 1.5
Bearing Capacity	Min F.S = 2.5
Overall Stability	Min F.S = 1.5
Pullout	Min F.S = 1.5

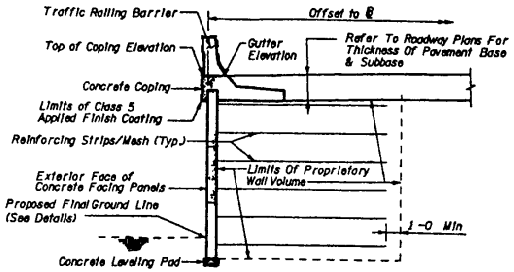
   (Allowable Deformation = 0.75 in.)

	Reinforced Soil & Random Backfill	Sandy Material Above Muck	Muck	Sandy Material Below Muck
Unit Weight	105 PCF @ 95% AASHTO T-180	105 PCF	80 PCF	105 PCF
Cohesion	0	0	250 PCF	0
Internal Friction	30°	30°	0	30°

   If the unit weight of the fill proposed by the Contractor differs from the above the Project Engineer shall contact both the District Geotechnical Engineer and Wall Designer for a possible redesign

6. Top of Reinforced Earth Wall and Retained Earth Wall leveling pad shall be a minimum of 1'-6" below the proposed final ground line unless noted otherwise

7. Proposed Final Ground Line elevations shown for the purpose of determining Top of Wall Footing Embedment Depths only For final grading of ground line see Roadway Plans

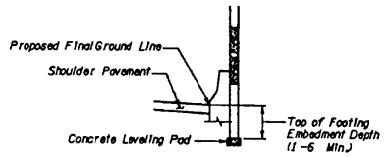


PROPRIETARY RETAINING WALL
WITH TRAFFIC RAILING BARRIER
TYPICAL WALL SECTION
(N.T.S.)

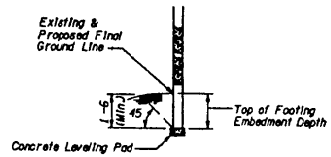
INDEX OF PROPRIETARY WALL CONTROL DRAWINGS

SHEET NO	TITLE
W-1	GENERAL NOTES AND SECTIONS
W-2	PROPRIETARY WALL 1 PLAN AND ELEVATION
W-3	PROPRIETARY WALL 3 PLAN AND ELEVATION
W-4	PROPRIETARY WALL 4 PLAN AND ELEVATION
W-5	PROPRIETARY WALL 5 PLAN AND ELEVATION
W-6	PROPRIETARY WALL ELEVATIONS
W-7	PROPRIETARY WALL ELEVATIONS
W-8	TYPICAL PROPRIETARY WALL DETAILS

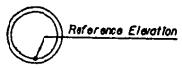
NOTE:
Proprietary Wall 2 will be not be built at this time and has not been included in this set of plans



AT BARRIER WALL

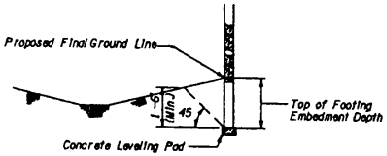


AT EXISTING GROUNDLINE



NOTE:
See Roadway plans for complete drainage details

DRAINAGE PIPE DETAIL



AT DRAINAGE DITCH

PROPOSED GROUNDLINE DETAILS

ESTIMATED QUANTITIES *		
Wall 1	A	
	B	
	C	
	Total Wall 1	
Wall 3	A	
	B	
	C	
	Total Wall 3	
Wall 4	A	
	B	
	C	
	Total Wall 4	
Wall 5	A	
	B	
	C	
	Total Wall 5	
	TOTAL	

* See Retaining Wall General Note 1

REQUIRED MINIMUM STRAP LENGTHS FOR EXTERNAL STABILITY

Wall Height (Ft.)	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Minimum Strap Length	5	5	5	5	5	6	6	6	7	7	8	8	9	9	10	10	11	11	11	12	12	12

Straps lengths provided in table are the minimum strap length which will ensure external stability of wall Strap lengths may increase due to internal stability requirements of proprietary wall system Refer to Retaining Wall General Notes for internal stability requirements Wall height shown is the distance measured from the Top of Coping elevation to the Proposed Final Ground Line

REVISIONS					
Date	By	Description	Date	By	Description

	Name	Date
Drawn by		4-91
Checked by		4-91
Designed by		4-91
Checked by		4-91
Approved by		

ENGINEER OF RECORD | LOGO: | SEAL

ROAD NO.	COUNTY	PROJECT NO.

WALL NO.
PROPRIETARY WALL CONTROL DRAWINGS
GENERAL NOTES AND SECTIONS

PROJECT NAME

Drawing No.

Index No.

EX-II-22-A

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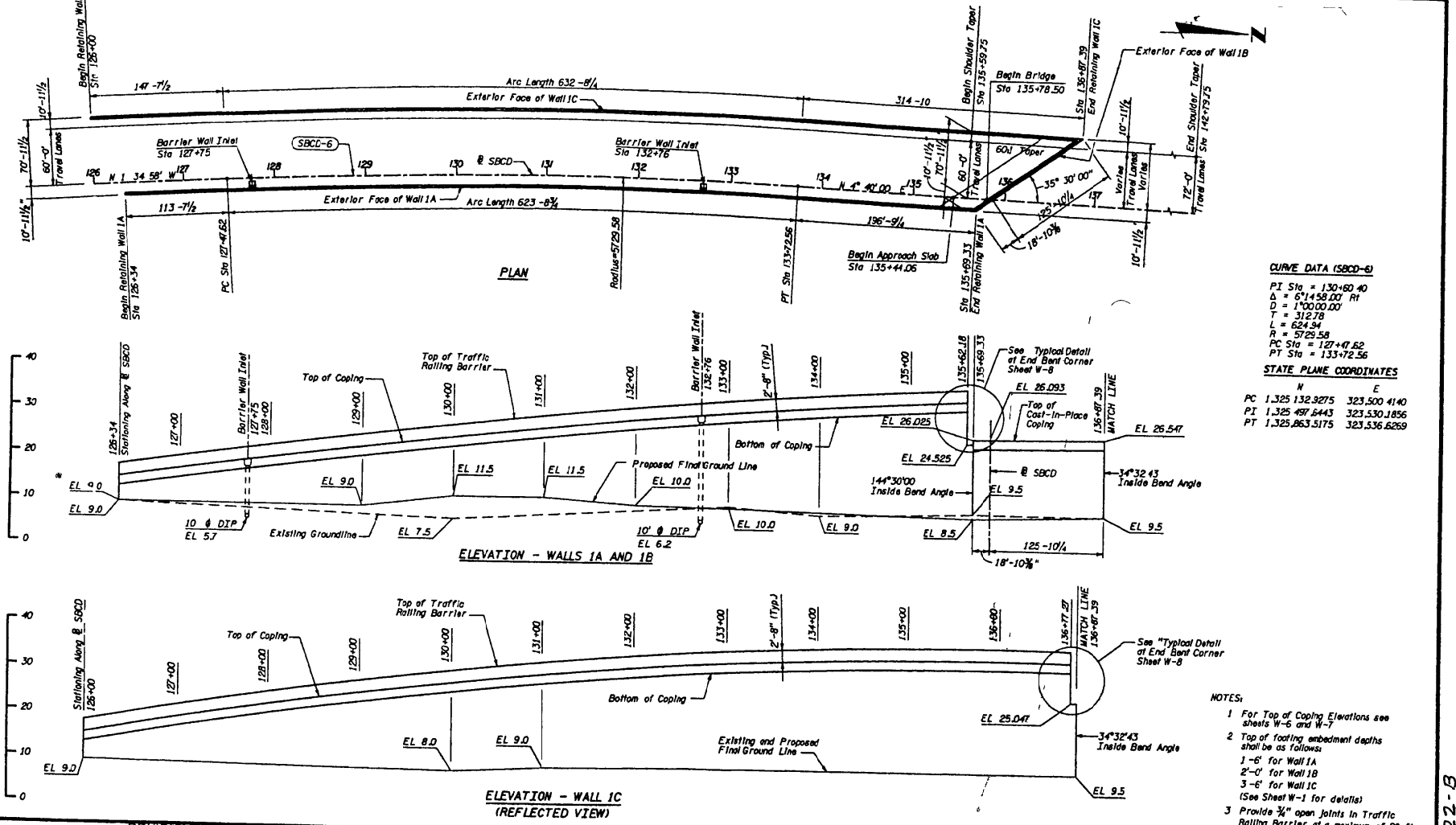
REF-HDSA1(M0.20)BORDFDOT.DGN

OS1(0400201020WGN.DGN
04 JUN 1991 17:53



CURVE DATA (SBCD-6)

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Δ = 6°14'59.00" Rt
D = 1°00'00.00"
T = 312.78
L = 624.94
R = 5729.58
PC Sta = 127+47.62
PT Sta = 133+72.56

STATE PLANE COORDINATES

	N	E
PC	1,325,132.3275	323,500.4140
PI	1,325,497.6443	323,530.1856
PT	1,325,863.5175	323,536.6269

NOTES:

1. For Top of Coping Elevations see sheets W-6 and W-7
2. Top of footing embedment depths shall be as follows:
   1 -6' for Wall 1A
   2'-0' for Wall 1B
   3 -6' for Wall 1C
   (See Sheet W-1 for details)
3. Provide ¾" open joints in Traffic Railing Barrier at a maximum of 90 ft intervals

REVISIONS					
Date	By	Description	Date	By	Description

	Name	Date
Drawn by		4-91
Checked by		4-91
Designed by		4-91
Checked by		4-91
Approved by		

ENGINEER OF RECORD

LOGO:

SEAL

ROAD NO. | COUNTY | PROJECT NO.

SHEET TITLE: RETAINING WALL NO 1

PROJECT NAME

Drawing No.

Index No.

3 FLA W 2

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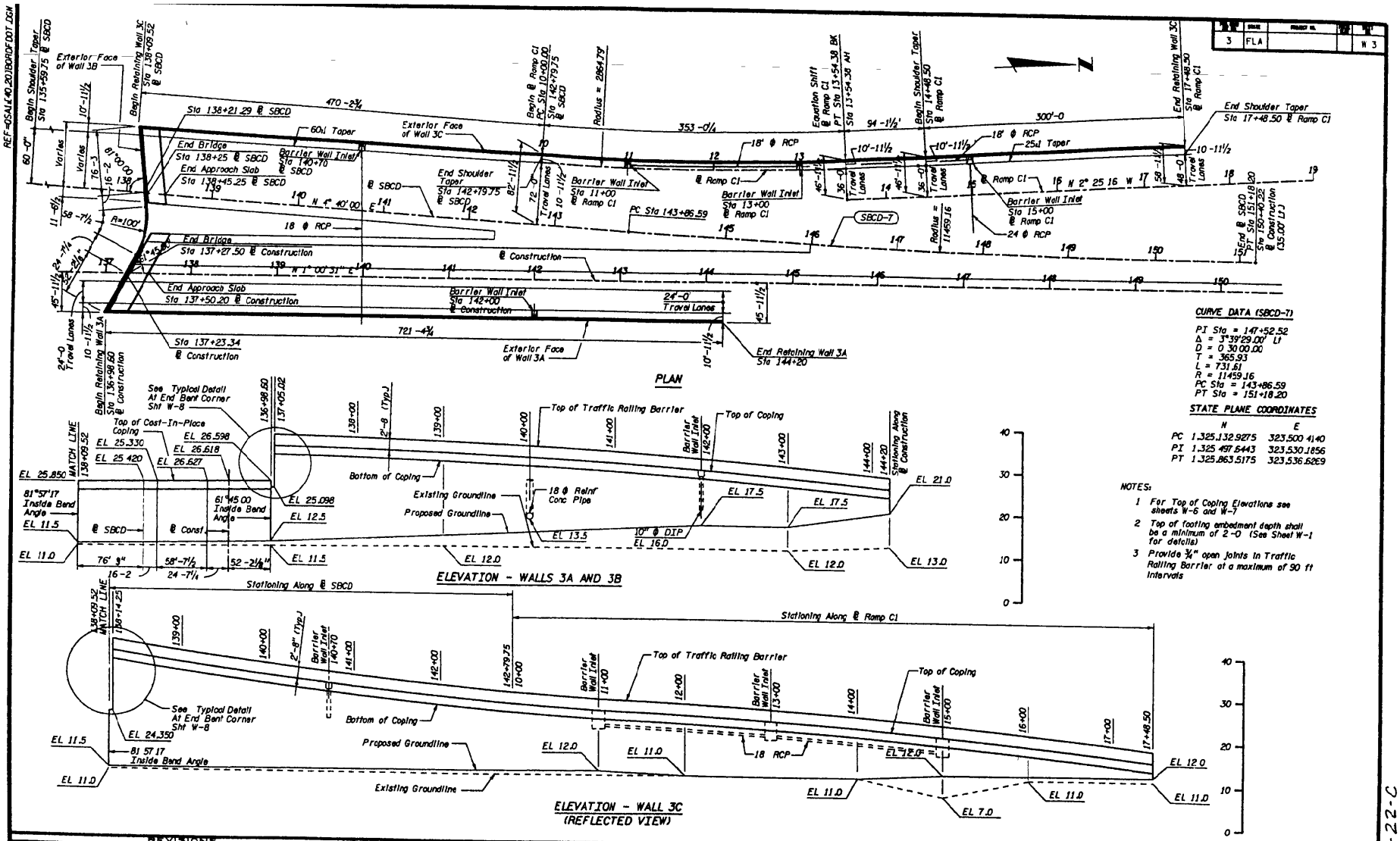
04 APR 1991 17:34

EX-II-22-B



CURVE DATA (SBCD-7)

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D = 0°30'00.00"
T = 365.93
L = 731.61
R = 11459.16
PC Sta = 143+86.59
PT Sta = 151+18.20

STATE PLANE COORDINATES

	N	E
PC	1,325,132.9275	323,500.4140
PI	1,325,497.6443	323,530.1856
PT	1,325,863.5175	323,536.6269

NOTES:

1. For Top of Coping Elevations see sheets W-6 and W-7
2. Top of footing embedment depth shall be a minimum of 2'-0" (See Sheet W-1 for details)
3. Provide ¾" open joints in Traffic Railing Barrier at a maximum of 90 ft intervals

REVISIONS					
Date	By	Description	Date	By	Description

	Names	Dates
Drawn by		4-91
Checked by		4-91
Designed by		4-91
Checked by		4-91
Approved by		

ENGINEER OF RECORD | LOGO | SEAL

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE: RETAINING WALL NO 3

Drawing No.

Index No.

3	FLA			W 3

EX-II-22-C

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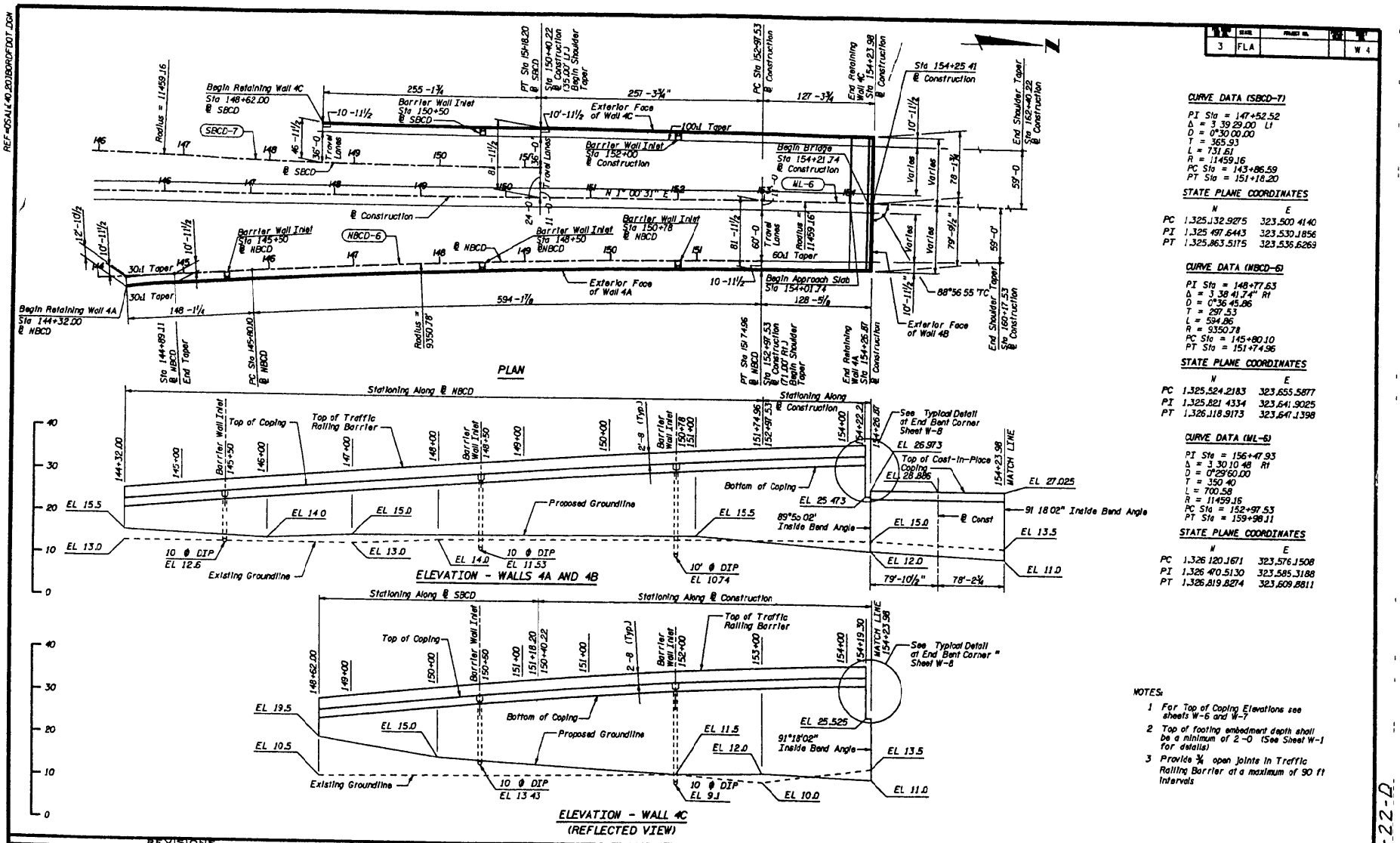
DSIal8480204828WRW3.DGN
04 JUN 1991 17:54



CURVE DATA (SBCD-7)

PI Sta = 147+52.52
Δ = 3°39'29.00" LT
D = 0°30'00.00"
T = 365.93
L = 731.61
R = 11459.16
PC Sta = 143+86.59
PT Sta = 151+18.20

STATE PLANE COORDINATES

	N	E
PC	1,325,132.9275	323,500.4140
PI	1,325,497.6443	323,530.1856
PT	1,325,863.5175	323,536.6269

CURVE DATA (NBCD-6)

PI Sta = 148+77.63
Δ = 3°38'41.74" RT
D = 0°36'45.86"
T = 297.53
L = 594.86
R = 9350.78
PC Sta = 145+80.10
PT Sta = 151+74.96

STATE PLANE COORDINATES

	N	E
PC	1,325,524.2183	323,655.5877
PI	1,325,821.4334	323,641.9025
PT	1,326,118.9173	323,647.1398

CURVE DATA (WL-6)

PI Sta = 156+47.93
Δ = 3°30'10.48" RT
D = 0°29'60.00"
T = 350.40
L = 700.58
R = 11459.16
PC Sta = 152+97.53
PT Sta = 159+98.11

STATE PLANE COORDINATES

	N	E
PC	1,326,120.1671	323,576.1508
PI	1,326,470.5130	323,585.3188
PT	1,326,819.8274	323,609.8811

NOTES:

1. For Top of Coping Elevations see sheets W-6 and W-7
2. Top of footing embedment depth shall be a minimum of 2'-0" (See Sheet W-1 for details)
3. Provide ¾" open joints in Traffic Railing Barrier at a maximum of 90 ft intervals

REVISIONS					
Date	By	Description	Date	By	Description

	Name	Date
Drawn by		4-91
Checked by		4-91
Designed by		4-91
Checked by		4-91
Approved by		

ENGINEER OF RECORD

LOGO

SEAL:

ROAD NO. | COUNTY | PROJECT NO.

SHEET TITLE: RETAINING WALL NO 4

PROJECT TITLE

Drawing No.

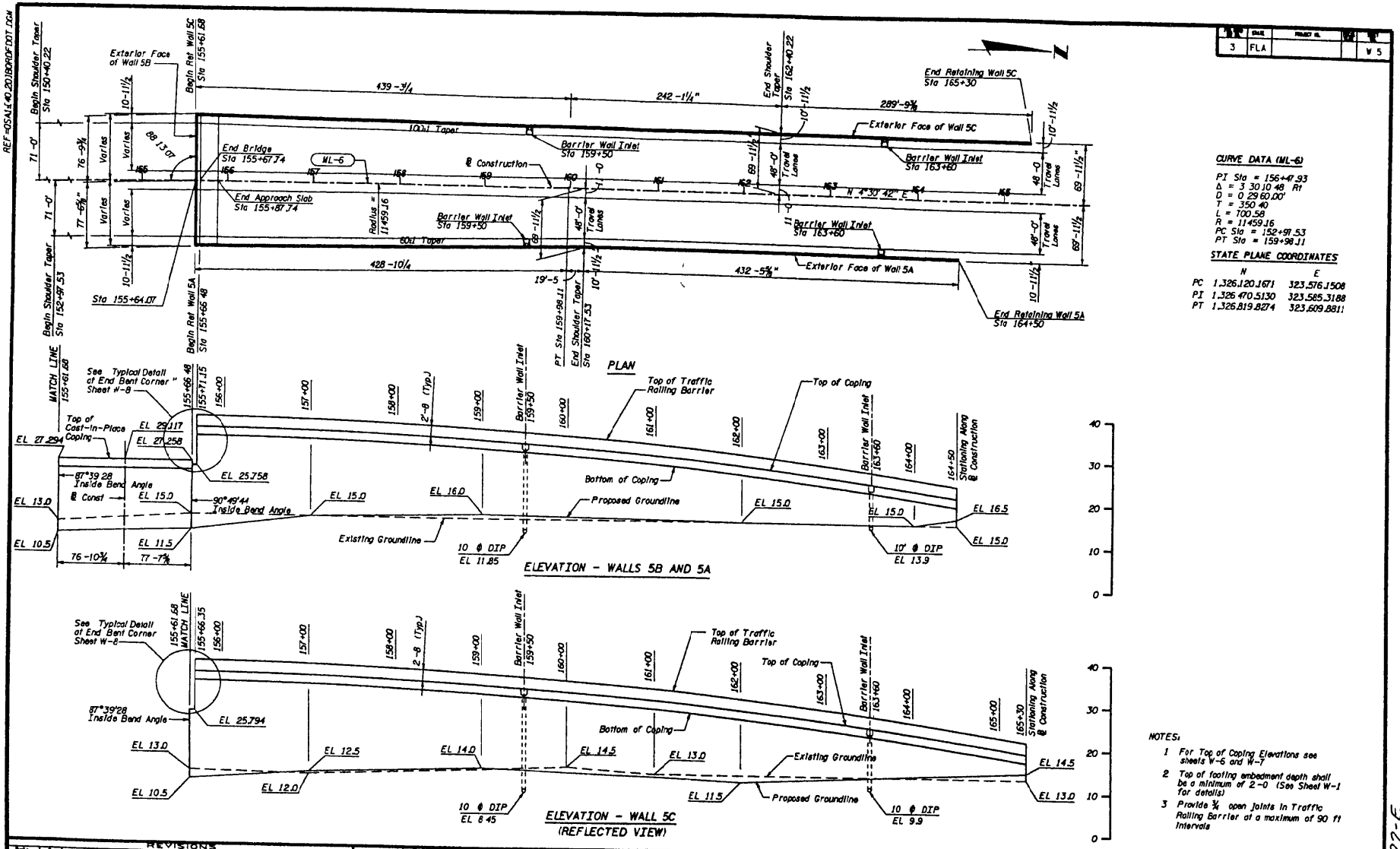
Index No.

3 | FLA | W 4

EX-II-22-D

REF=DSAI4_____MW_DATA.DGN
REF=DSAI4\40\20\BORDFDOT.DGN

OSIX\040020\020WRW4.DGN



CURVE DATA (ML-6)

PI Sta = 156+47.93
Δ = 3 30 10 48 Rt
D = 0 29 60.00'
T = 350.40
L = 700.58
R = 11459.16
PC Sta = 152+97.53
PT Sta = 159+98.11

STATE PLANE COORDINATES

	N	E
PC	1,326,120.1671	323,576.1508
PI	1,326,470.5130	323,585.3188
PT	1,326,819.8274	323,609.8811

NOTES:

1. For Top of Coping Elevations see sheets W-6 and W-7
2. Top of footing embedment depth shall be a minimum of 2'-0 (See Sheet W-1 for details)
3. Provide ¾ open joints in Traffic Railing Barrier at a maximum of 90 ft intervals

REVISIONS					
Date	By	Description	Date	By	Description

	Scales	Dates
Drawn by		1-91
Checked by		1-91
Designed by		1-91
Checked by		1-91
Approved by		

ENGINEER OF RECORD:

LOGO:

SEAL:

ROAD NO. | COUNTY | PROJECT NO.

SHEET TITLE: RETAINING WALL NO 5

PROJECT NAME:

Drawing No.

Index No.

3 | FLA | W 5

REF=DSALK40.201BORDFDT.DGN

OSIK848B2D148B28WRW5.DGN
04 JUN 1991 17:35

EX-II-22-E

REF=05A14 ...0JW_DATA.DGN
REF=05A14(#0.20)BORDFDOT.DGN

SHEET	SHEET	PROJECT NO.		
3	FLA			W 6

WALL Nos 1C AND 1A

@ SBCD Station	Wall 1C Offset @ SBCD (ft.)	Top of Coping Elevation @ Wall 1C (ft.)	Wall 1A Offset @ SBCD (ft.)	Top of Coping Elevation @ Wall 1A (ft.)
126 00 00	70 958	15 012	10 958	13 960
126 25 00	70 958	15 575	10 958	14 358
126 34 00	70 958	15 790	10 958	14 513
126 50 00	70 958	16 186	10 958	14 804
126 75 00	70 958	16 842	10 958	15 296
127 00 00	70 958	17 546	10 958	15 835
127 25 00	70 958	18 297	10 958	16 421
127 50 00	70 958	19 095	10 958	17 054
127 75 00	70 958	19 939	10 958	17 733
128 00 00	70 958	20 830	10 958	18 460
128 25 00	70 958	21 745	10 958	19 210
128 50 00	70 958	22 660	10 958	19 960
128 75 00	70 958	23 410	10 958	20 710
129 00 00	70 958	24 160	10 958	21 460
129 25 00	70 958	24 899	10 958	22 199
129 50 00	70 958	25 617	10 958	22 917
129 75 00	70 958	26 313	10 958	23 613
130 00 00	70 958	26 987	10 958	24 287
130 25 00	70 958	27 640	10 958	24 940
130 50 00	70 958	28 272	10 958	25 572
130 75 00	70 958	28 882	10 958	26 182
131 00 00	70 958	29 470	10 958	26 770
131 25 00	70 958	30 037	10 958	27 337
131 50 00	70 958	30 582	10 958	27 882
131 75 00	70 958	31 105	10 958	28 405
132 00 00	70 958	31 607	10 958	28 907
132 25 00	70 958	32 088	10 958	29 388
132 50 00	70 958	32 547	10 958	29 847
132 75 00	70 958	32 817	10 958	30 284
133 00 00	70 958	33 066	10 958	30 700
133 25 00	70 958	33 294	10 958	31 094
133 50 00	70 958	33 500	10 958	31 466
133 75 00	70 958	33 684	10 958	31 817
134 00 00	70 958	33 847	10 958	32 147
134 25 00	70 958	33 988	10 958	32 455
134 50 00	70 958	34 108	10 958	32 855
134 75 00	70 958	34 206	10 958	33 261
135 00 00	70 958	34 283	10 958	33 646
135 25 00	70 958	34 338	10 958	34 009
135 50 00	70 958	34 371	10 958	34 257
135 59 75	70 958	34 378	10 958	34 338
135 62 18	70 999	34 379	10 958	34 420
135 69 33	71 118	34 379	10 958	
135 75 00	71 213	34 383		
136 00 00	71 630	34 371		
136 25 00	72 046	34 336		
136 50 00	72 463	34 277		
136 75 00	72 880	34 194		
136 77 21	72 918	34 194		
136 87 39	73 086			

WALL No 3C

@ SBCD Station	Wall 3C Offset @ SBCD (ft.)	@ Ramp C1 Station	Wall 3C Offset @ Ramp C1 (ft.)	Top of Coping Elevation @ Wall 3C (ft.)
138 09 52	75 122			
138 14 25	75 201			33 579
138 25 00	75 380			33 556
138 50 00	75 796			33 489
138 75 00	76 213			33 400
139 00 00	76 630			32 941
139 25 00	77 046			32 457
139 50 00	77 463			32 299
139 75 00	77 880			32 120
140 00 00	78 296			31 919
140 25 00	78 713			31 696
140 50 00	79 130			31 452
140 75 00	79 546			31 187
141 00 00	79 963			30 900
141 25 00	80 380			30 591
141 50 00	80 796			30 261
141 75 00	81 213			29 909
142 00 00	81 630			29 535
142 25 00	82 046			29 140
142 50 00	82 463			28 724
142 75 00	82 880			28 285
142 79 75	82 958			28 050
		10 00 00	10 958	27 560
		10 25 00	10 958	27 00
		10 50 00	10 958	26 48
		10 75 00	10 958	25 93
		11 00 00	10 958	25 36
		11 25 00	10 958	24 870
		11 50 00	10 958	24 200
		11 75 00	10 958	23 740
		12 00 00	10 958	23 430
		12 25 00	10 958	23 180
		12 50 00	10 958	23 000
		12 75 00	10 958	22 820
		13 00 00	10 958	22 630
		13 25 00	10 958	22 550
		13 50 00	10 958	22 550
		BK 13 54 38	10 958	22 540
		AH 13 54 38	46 958	22 470
		13 75 00	46 958	22 400
		14 00 00	46 958	22 327
		14 25 00	46 958	22 097
		14 48 50	46 958	22 079
		14 50 00	47 019	21 807
		14 71 50	47 879	21 758
		14 75 00	48 019	21 383
		15 00 00	49 019	20 954
		15 25 00	50 019	20 470
		15 50 00	51 019	19 932
		15 75 00	52 019	19 340
		16 00 00	53 019	18 694
		16 25 00	54 019	18 015
		16 50 00	55 019	17 341
		16 75 00	56 019	16 668
		17 00 00	57 019	15 994
		17 25 00	58 019	15 360
		17 48 50	58 958	

WALL No 3A

@ Const Station	Wall 3A Offset @ Const (ft.)	Top of Coping Elevation @ Wall 3A (ft.)
136 98 60	45 958	
137 05 02	45 958	34 920
137 25 00	45 958	34 910
137 31 00	45 958	34 904
137 50 00	45 958	34 802
137 75 00	45 958	34 650
138 00 00	45 958	34 477
138 25 00	45 958	34 284
138 31 00	45 958	34 234
138 50 00	45 958	34 145
138 75 00	45 958	34 010
139 00 00	45 958	33 853
139 25 00	45 958	33 676
139 50 00	45 958	33 478
139 75 00	45 958	33 260
140 00 00	45 958	33 020
140 25 00	45 958	32 760
140 50 00	45 958	32 478
140 75 00	45 958	32 176
141 00 00	45 958	31 853
141 25 00	45 958	31 510
141 50 00	45 958	31 145
141 75 00	45 958	30 760
142 00 00	45 958	30 353
142 25 00	45 958	29 926
142 50 00	45 958	29 478
142 75 00	45 958	29 010
143 00 00	45 958	28 520
143 25 00	45 958	28 042
143 50 00	45 958	27 508
143 75 00	45 958	27 217
144 00 00	45 958	26 870
144 20 00	45 958	26 624

NOTES:

1 Offsets are given to exterior face of proprietary wall(see Sheet W-1 for detail)

2 Top of Coping Elevation detail shown on Sheet W-1

3 For existing and proposed ground elevations for all walls and elevations for Walls 1B and 3B through 5B see Sheets W-2 through W-5

REVISIONS					
Date	By	Description	Date	By	Description

	Names	Dates
Drawn by		4-91
Checked by		4-91
Designed by		4-91
Checked by		4-91
Approved by		

ENGINEER OF RECORD:

LOGO

SEAL

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE: PROPRIETARY WALL ELEVATIONS

PROJECT NAME

Drawing No.

Index No.

EX-D-22-E

OSLC(84020)4020WPVE1.DG
04 JUN 1991 17:32

REF=DSALE%0.20W_DATA.DGN
REF=DSALE%0.20TBDPROFDOT.DGN

WALL No 4C

@ SBCD Station	@ Const Station	Wall 4C Offset @ SBCD (ft.)	Wall 4C Offset @ Const (ft.)	Top of Coping Elevation @ Wall 4C (ft.)
148 62 00		46 958		25 910
148 75 00		46 958		26 100
149 00 00		46 958		26 510
149 25 00		46 958		26 980
149 50 00		46 958		27 420
149 75 00		46 958		27 930
150 00 00		46 958		28 470
150 25 00		46 958		29 020
150 50 00		46 958		29 520
150 75 00		46 958		30 000
151 00 00		46 958		30 490
151 18 20		46 958		30 787
	150 40 22		81 958	30 968
	150 50 00		81 861	31 415
	150 75 00		81 611	31 842
	151 00 00		81 361	32 246
	151 25 00		81 194	32 482
	151 40 22		80 958	32 618
	151 50 00		80 861	32 950
	151 75 00		80 611	33 260
	152 00 00		80 361	33 549
	152 25 00		80 111	33 816
	152 50 00		79 861	34 062
	152 75 00		79 611	34 286
	153 00 00		79 361	34 489
	153 25 00		79 111	34 670
	153 50 00		78 861	34 830
	153 75 00		78 611	34 968
	154 00 00		78 361	35 060
	154 19 30		78 168	
	154 23 98		78 121	

WALL No 4A

@ NBCD Station	@ Const Station	Wall 4A Offset @ NBCD (ft.)	Wall 4A Offset @ Const (ft.)	Top of Coping Elevation @ Wall 4A (ft.)
144 32 00		12 862		22 720
144 50 00		12 262		23 010
144 75 00		11 429		23 380
145 00 00		10 958		23 770
45 25 00		10 958		24 060
145 50 00		10 958		24 370
145 75 00		10 958		24 650
146 00 00		10 958		24 940
146 25 00		10 958		25 210
146 50 00		10 958		25 520
146 75 00		10 958		25 900
147 00 00		10 958		26 320
147 25 00		10 958		26 790
147 50 00		10 958		27 270
147 75 00		10 958		27 810
148 00 00		10 958		28 400
148 25 00		10 958		28 920
48 50 00		10 958		29 430
148 75 00		10 958		29 930
149 00 00		10 958		30 400
149 25 00		10 958		30 840
149 50 00		10 958		31 250
149 75 00		10 958		31 650
150 00 00		10 958		32 050
150 25 00		10 958		32 400
150 50 00		10 958		32 700
150 75 00		10 958		33 040
151 00 00		10 958		33 300
151 25 00		10 958		33 600
151 50 00		10 958		33 850
151 74 96		10 958		34 068
	152 97 53		81 958	34 092
	153 00 00		81 918	34 329
	153 25 00		81 501	34 545
	153 50 00		81 084	34 739
	153 75 00		80 668	34 911
	154 00 00		80 251	35 020
	154 22 21		79 881	
	154 26 87		79 803	

WALL Nos 5C AND 5A

@ Const Station	Wall 5C Offset @ Const (ft.)	Top of Coping Elevation @ Wall 5C (ft.)	Wall 5A Offset @ Const (ft.)	Top of Coping Elevation @ Wall 5A (ft.)
155 61 68	76 744			
155 66 35	76 697	35 340	77 478	35 317
155 66 48	76 696	35 343	77 476	
155 71 15	76 649	35 337	77 398	35 315
155 75 00	76 611	35 334	77 334	35 312
156 00 00	76 361	35 300	76 918	35 283
156 25 00	76 111	35 245	76 501	35 233
156 50 00	75 861	35 168	76 084	35 161
156 75 00	75 611	35 070	75 668	35 068
157 00 00	75 361	34 950	75 251	34 953
157 25 00	75 111	34 809	74 834	34 817
157 50 00	74 861	34 646	74 418	34 659
157 75 00	74 611	34 462	74 001	34 480
158 00 00	74 361	34 256	73 584	34 279
158 25 00	74 111	34 029	73 168	34 057
158 50 00	73 861	33 780	72 751	33 813
158 75 00	73 611	33 510	72 334	33 548
159 00 00	73 361	33 218	71 918	33 261
159 25 00	73 111	32 905	71 501	32 953
159 50 00	72 861	32 570	71 084	32 623
159 75 00	72 611	32 214	70 668	32 272
160 00 00	72 361	31 836	70 251	31 899
160 17 53	72 269	31 558	69 958	31 625
160 25 00	72 111	31 437	69 958	31 501
160 50 00	71 861	31 016	69 958	31 073
160 75 00	71 611	30 574	69 958	30 623
161 00 00	71 361	30 110	69 958	30 152
161 25 00	71 111	29 625	69 958	29 659
161 50 00	70 861	29 118	69 958	29 145
161 75 00	70 611	28 590	69 958	28 609
162 00 00	70 361	28 040	69 958	28 052
162 25 00	70 111	27 469	69 958	27 473
162 40 22	69 958	27 110	69 958	27 110
162 50 00	69 958	26 873	69 958	26 873
162 75 00	69 958	26 251	69 958	26 251
163 00 00	69 958	25 608	69 958	25 608
163 25 00	69 958	24 943	69 958	24 943
163 50 00	69 958	24 257	69 958	24 257
163 75 00	69 958	23 549	69 958	23 549
164 00 00	69 958	22 820	69 958	22 820
164 25 00	69 958	22 080	69 958	22 080
164 50 00	69 958	21 340	69 958	21 340
164 75 00	69 958	20 600		
165 00 00	69 958	19 879		
165 25 00	69 958	19 195		
165 30 00	69 958	19 063		

NOTES:

1. Offsets are given to exterior face of proprietary wall (see Sheet W-1 for detail)
2. Top of Coping Elevation detail shown on Sheet W-1
3. For existing and proposed ground elevations for all walls and elevations for Walls 1B and 3B through 5B see Sheets W-2 through W-5

SHEET	SHEETS	PROJECT NO.		
3	FLA			W 7

REVISIONS

Date	By	Description	Date	By	Description

	Name	Date
Drawn by		4-91
Checked by		4-91
Designed by		4-91
Checked by		4-91
Approved by		

ENGINEER OF RECORD:

LOGO:

SEAL

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE: PROPRIETARY WALL ELEVATIONS

PROJECT NAME:

Drawing No.

Index No.

EX-II-22-G

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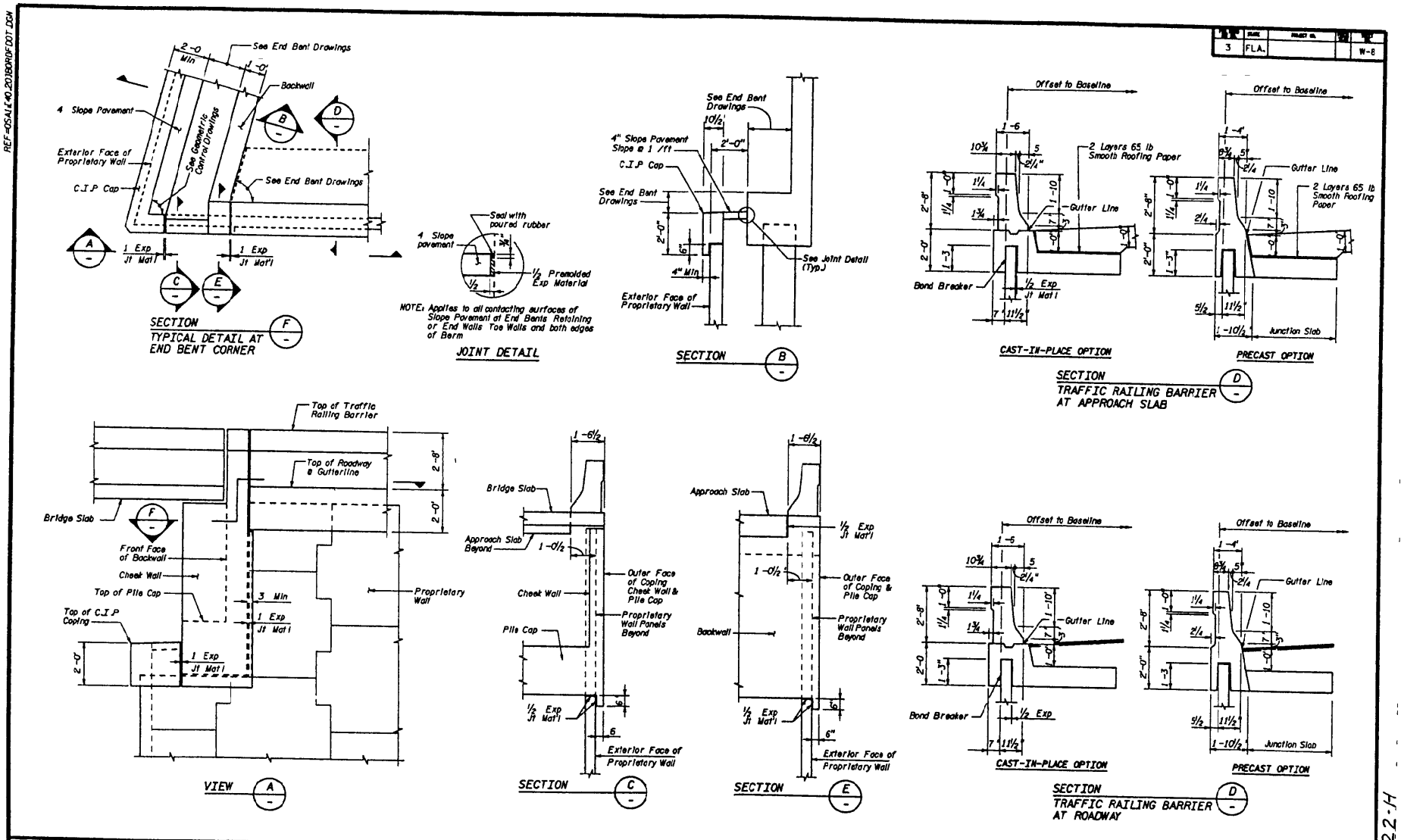

REVISIONS

Date	By	Description	Date	By	Description

	Names	Dates
Drawn by		4-91
Checked by		4-91
Designed by		4-91
Checked by		4-91
Approved by		

ENGINEER OF RECORD:

LOGO:

SEAL

ROAD NO. | COUNTY | PROJECT NO.

SHEET TITLE: TYPICAL PROPRIETARY WALL DETAILS

Drawing No.

PROJECT NAME:

Index No.

EX-II-22-H

REF=OSA1(40,20)BORDFDOT.DGN

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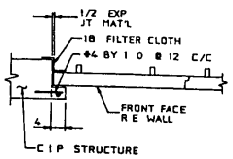
04 JUN 1991 17:53

FEDERAL AID NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA			



DETAIL @ C.I.P. STRUCTURE
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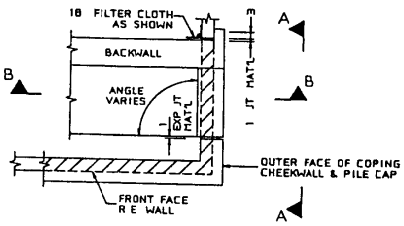

PLAN VIEW @ BEND (TYP.)
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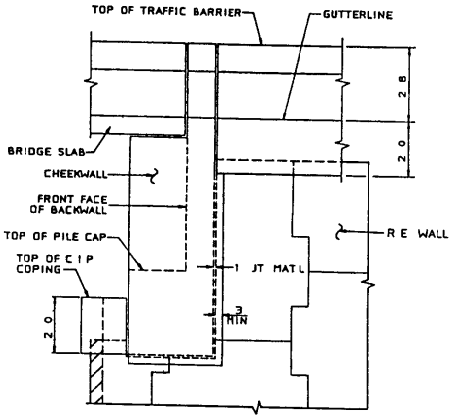
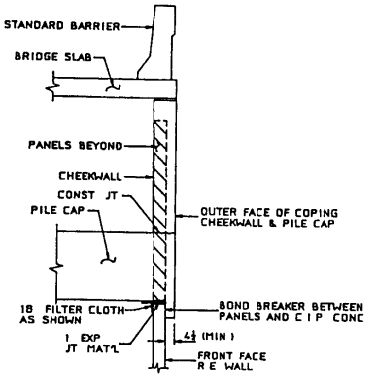


VIEW A-A
NO SCALE



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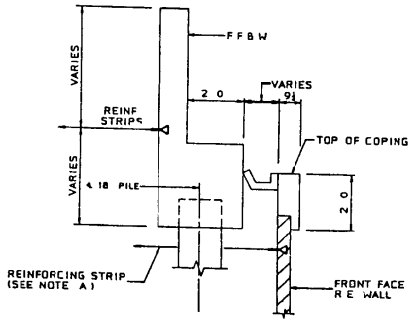
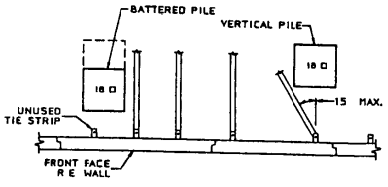


SECTION THRU ABUTMENT
SCALE 1/2 1'-0



PILE/REINF. STRIP LAYOUT DETAIL
SCALE 1/2 = 1 0

NOTE A :

IN CASES WHERE THE 15 SKEW IS EXCEEDED ADDITIONAL STRIP CONNECTIONS OR LENGTH WILL BE PROVIDED
EACH PROJECT WILL BE ANALYZED INDIVIDUALLY

T a w ng ontains in ormation p op et ry to The R forced E nh Comp y nd being l n ed for se of only onnection with th project nd the formation onta ned he wn not be t ansmit ed to ny other org tion unless specifically thor ed in w t ng by The Reinior ed E Comp y The R nior ed E h Comp y ect ssw lic se he Uni ed S unde p ed ed In Hanv Vid nd the fu n hing of this dr w ng dee at on pr or mplied se nd th Vid i pa nt

REVISIONS							
Da	By	No	Description	Da	By	No	Description

The design ont ned on these drawing is based on information provided by the owner On the basis of this I m ion the R inior ed E nh Company a de igned and is esponsible for the internal stability of the st uctur only E ie nal labil ty including found ion and slope stability s the respon bility of the owner

	Name	Date
Drawn By		
Checked By		
Designed By		
Checked By		
Engineering Manager		

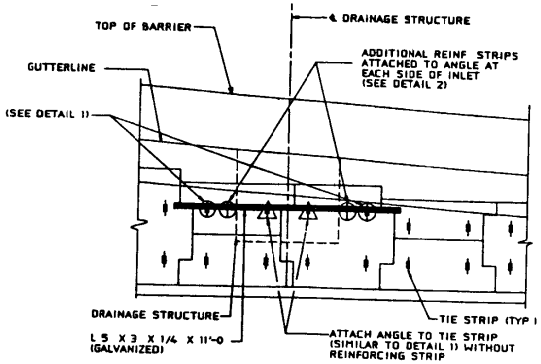
The Reinforced Earth Company
reinforced earth
REINFORCED EARTH IS THE REGISTERED TRADE MARK OF THE REINFORCED EARTH COMPANY

CERTIFIED WITH RESPECT TO INTERNAL STABILITY OF REINFORCED EARTH STRUCTURES ONLY

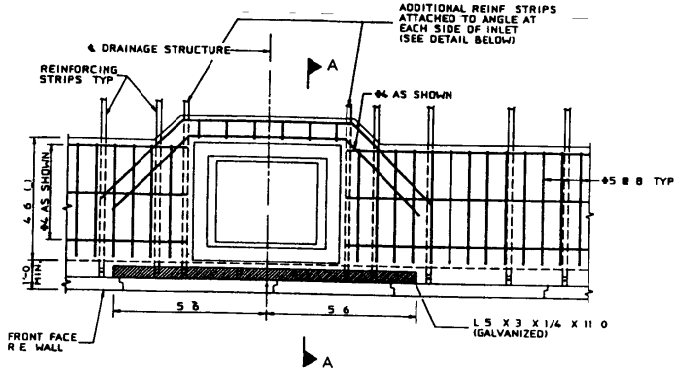
PROJECT STATUS			Rev ion No
PRELIMINARY FOR REVIEW Date	PRELIMINARY FOR BIDDING Date	FINAL FOR CONSTRUCTION Date	Sc le
FLORIDA DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN OFFICE	Sheet T tle REINFORCED EARTH STANDARD DETAILS		Drawing No
ROAD NO / COUNTY / PROJECT NO	P oject Name		REC Proj No

I-22-EX-3

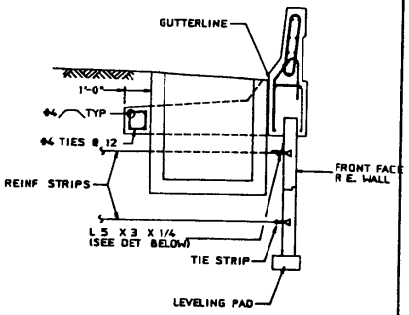
FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA			



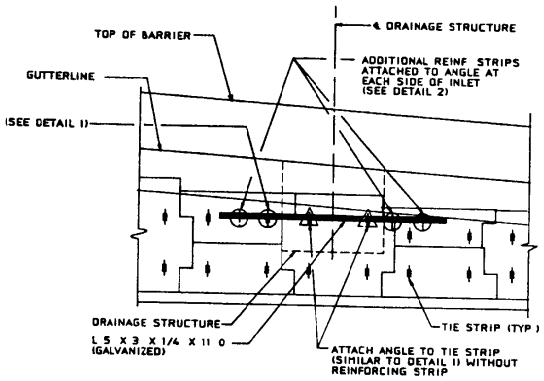
BARRIER INLET DETAIL
SCALE 3/8 = 1 0



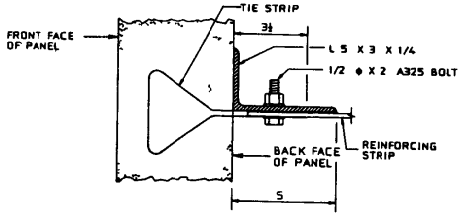
PLAN - JUNCTION SLAB @ INLET
SCALE 1/2 1 0



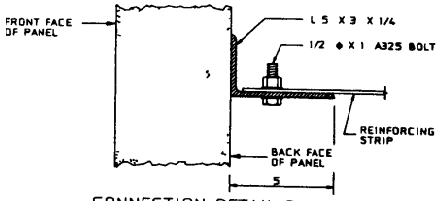
SECTION "A-A"
SCALE 1/2 = 1'-0



BARRIER INLET DETAIL
SCALE 3/8 = 1-0

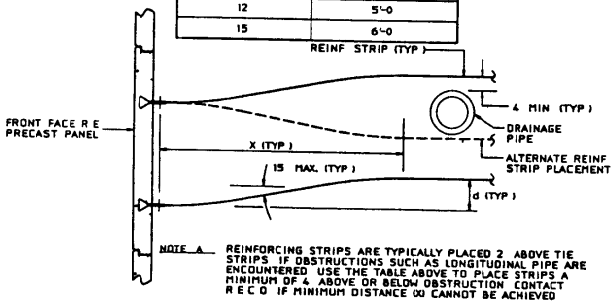


CONNECTION DETAIL 1
SCALE 3/8 = 1



CONNECTION DETAIL 2
SALE 3/8 = 1

ADDITIONAL DEPTH (d) OF R S REQUIRED	RECOMMENDED MINIMUM DISTANCE DD TO ACHIEVE SMOOTH BEND
2	2'-3
4	2 7"
6	3'-3
9	4'-0
12	5'-0
15	6'-0



NOTE A — REINFORCING STRIPS ARE TYPICALLY PLACED 2 ABOVE TIE STRIPS IF OBSTRUCTIONS SUCH AS LONGITUDINAL PIPE ARE ENCOUNTERED USE THE TABLE ABOVE TO PLACE STRIPS A MINIMUM OF 4 ABOVE OR BELOW OBSTRUCTION CONTACT R E C O IF MINIMUM DISTANCE DD CANNOT BE ACHIEVED

NOTE B — IN THOSE CASES WITH DRAINAGE PIPES WHERE DISTANCE DD CANNOT BE ACHIEVED ADDITIONAL STRIP CONNECTIONS WILL BE PROVIDED THIS WILL BE ANALYZED ON A CASE BY CASE BASIS

REINFORCING STRIP TRANSITION DETAIL
N T S

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REVISIONS							
Date	By	No.	Description	Date	By	No.	Description

	Name	Date
Drawn by		
Checked by		
Designed by		
Checked by		
Engineering Manager		

The Reinforced Earth Company

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FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

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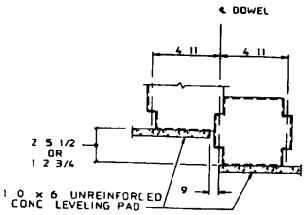
Project Name:

Revision No.
Scale
Drawing No.
RECo Proj. No.

EX-II-22-J

FED ROAD DIV NO	STATE	PROJECT NO	FISCAL YEAR	SHEET NO
3	FLA			

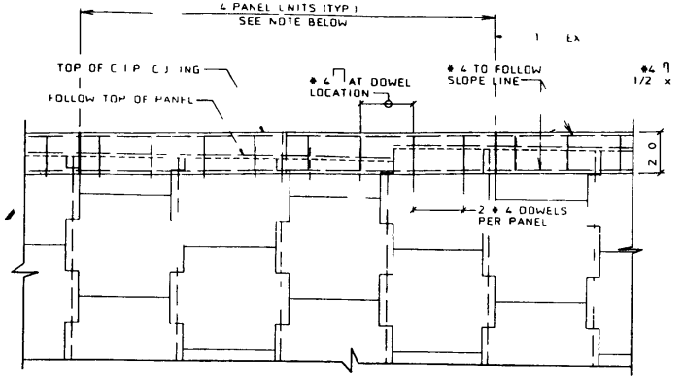


NOTE

LEVELING PAD MUST BE POURED TO THE DESIGN ELEVATIONS AS SHOWN ON THE WALL ELEVATION VIEWS THE ALLOWABLE ELEVATION TOLERANCES ARE 0 01 ( ) AND 0 02 ( ) PRECAST PANEL JOINT FILLER MATERIAL IS NOT PERMITTED BETWEEN PRECAST PANEL AND LEVELING PAD UNLESS AUTHORIZED IN WRITING BY THE REINFORCED EARTH COMPANY

TYPICAL LEVELING PAD STEP DETAIL

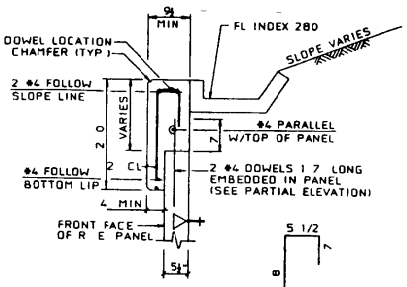
SCALE 1/4 1 0



NOTE EXPANSION JOINTS IN C I P COPING SHALL BE AT 4 ANEL INTERVALS COPING JOINTS MUST COINCIDE WITH F E JOINTS ON FRONT FACE AND SHALL BE PERPENDI SLOPE LIN E REINFORCING STEEL SHALL BE STOPP SHORT OF E HER SIDE OF THE EXPANSION JOIN T CONTRACTION JOINTS SHALL BE PLACED IN M DDLE ON 4 PANEL UNIT TO COINCIDE WITH PANE JOINT

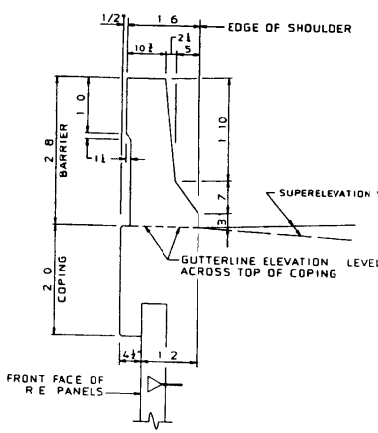
C.I.P. COPING PARTIAL ELEVATION

SCALE 3/8 1 0



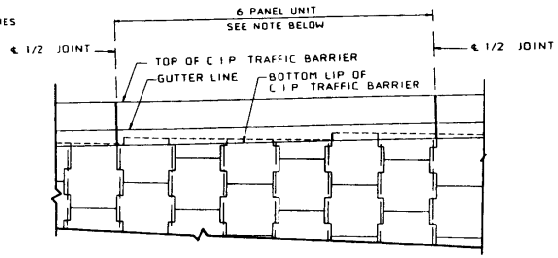
C.I.P. CONC. COPING DETAIL

SCALE 1 1 0



C I P TRAFFIC BARRIER LAYOUT (TYP)

SCALE 1 1 0

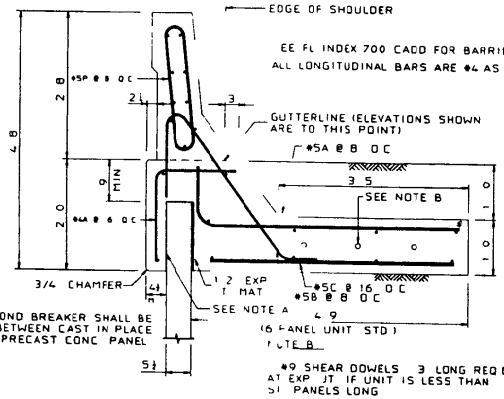


NOTE

AL JOINTS SHALL BE LOCATED AS SHOWN ON WALL ELEVATIONS AND MUST COINCIDE WITH PANEL JOINT ON FRONT FACE WHERE BOTTOM OF LIP INTERSECTS WITH PANEL JOINT

C.I.P. TRAFFIC BARRIER PARTIAL ELEVATION

SCALE 3/16 1 0



NOTE A

POSITIVE BOND BREAKER SHALL BE PROVIDED BETWEEN CAST IN PLACE CONC AND PRECAST CONC PANEL

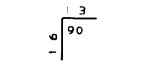
#9 SHEAR DOWELS 3 LONG REQ D AT EXP JT IF UNIT IS LESS THAN 5 PANELS LONG

EE FL INDEX 700 CADD FOR BARRIER DIMENSIONS

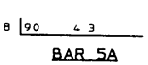
ALL LONGITUDINAL BARS ARE #4 AS SHOWN

C.I.P. CONCRETE TRAFFIC BARRIER REINFORCEMENT

SCALE 1 1 0

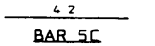


BAR 4A

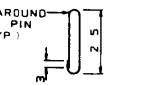


BAR 5A

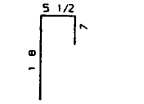
BAR 5B



BAR 5C



BAR 5P



BAR BEND

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REVISIONS

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	Name	Date
Drawn By		
Checked By		
Designed By		
Checked By		
Engineering Manager		

The Reinforced Earth Company

reinforced earth

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ROAD NO.	COUNTY	PROJECT NO.

Project Name:

Revision No.

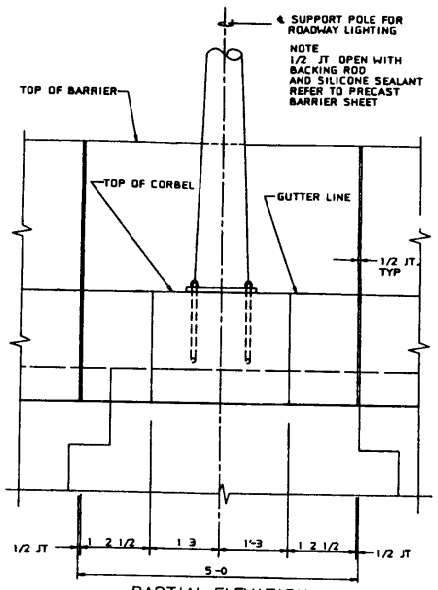
Scale

Drawing No.

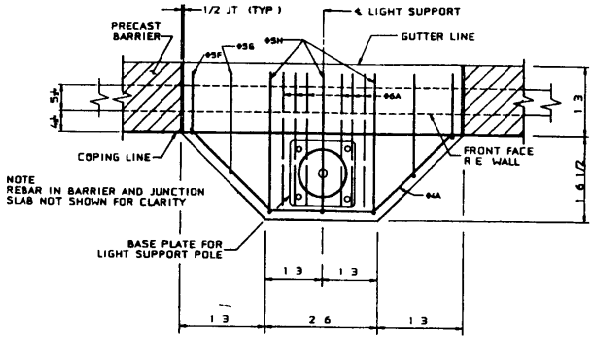
REEco Proj. No.

EX-17-22-K

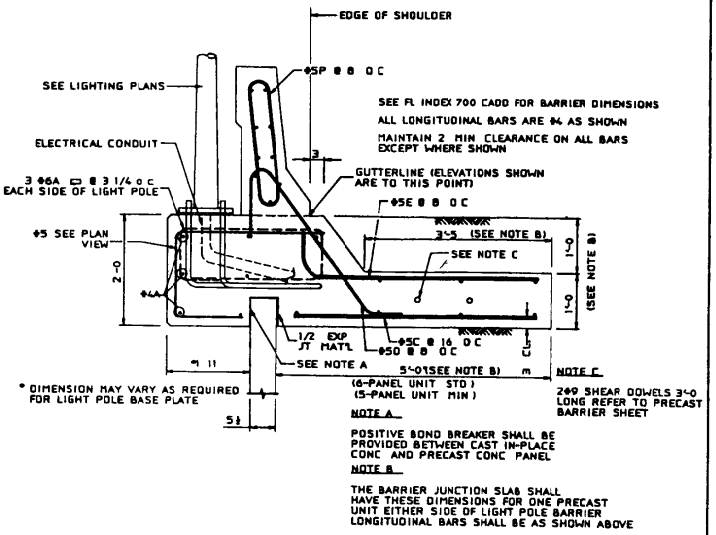
FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA			



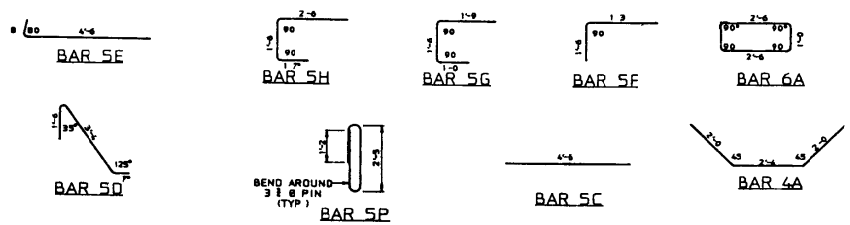
PARTIAL ELEVATION
SCALE 1"=1'-0



PLAN
SCALE 1 1-0



BARRIER DETAIL @ LIGHT POLE
SCALE 1 = 1 - 0



BAR BENDING DETAILS
NTS

REBAR SCHEDULE	
MARK	QTY
4A	3
5C	3
5D	7
5E	3
5F	2
5G	2
5H	3
5P	7
6A	6

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Checked by		
Designed by		
Checked by		
Engineering Manager		

The Reinforced Earth Company

reinforced earth

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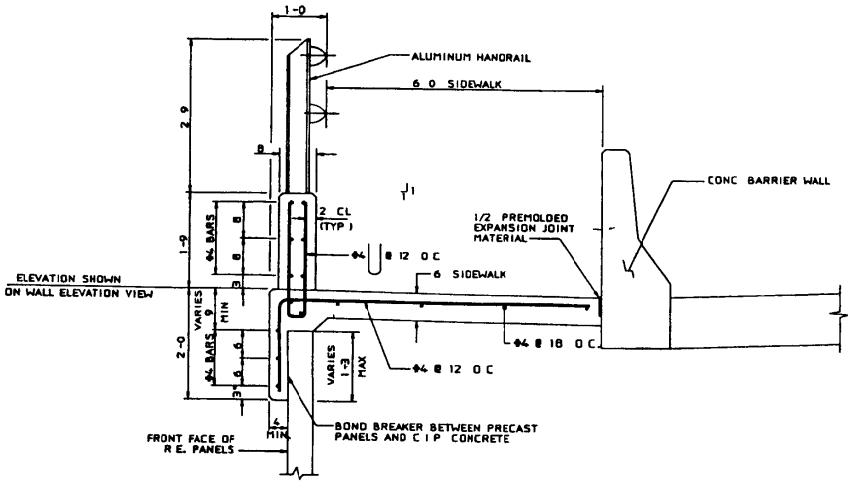
Project Name:

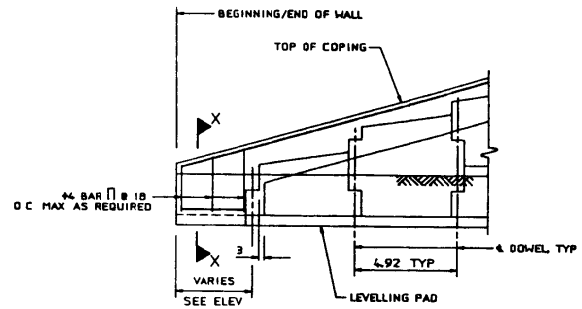
Revision No.
Scale
Drawing No.
RECo Proj. No.

FX-II-22-7

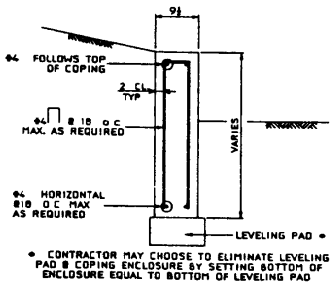
FL Index Sh No	STATE	PROJECT NO	FISCAL YEAR	SHEET NO
3	FLA			



C.I.P PARAPET DETAIL
SCALE 1 = 1 0



COPING ENCLOSURE DETAIL
SCALE 3/8 = 1'-0



* CONTRACTOR MAY CHOOSE TO ELIMINATE LEVELING PAD & COPING ENCLOSURE BY SETTING BOTTOM OF ENCLOSURE EQUAL TO BOTTOM OF LEVELING PAD

SECTION X-X
NO SCALE

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Checked by		
Designed by		
Checked by		
Engineering Manager		

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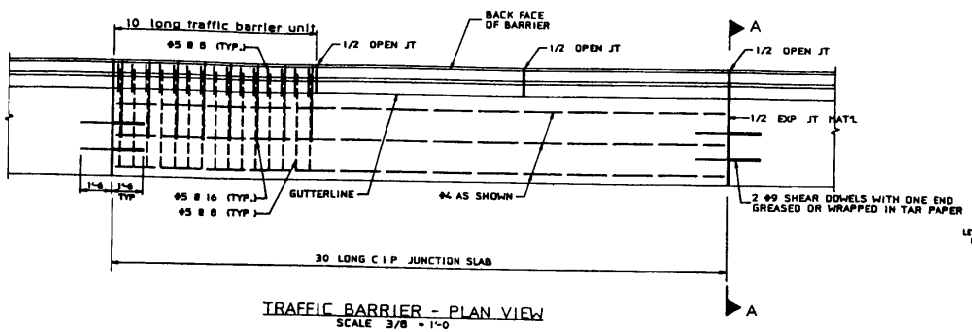
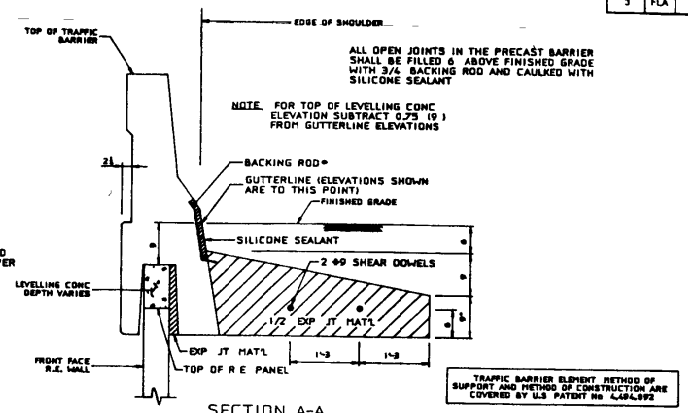
Revision No.
Scale
Drawing No
RECo Proj No

I-X-11-22-N

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA			

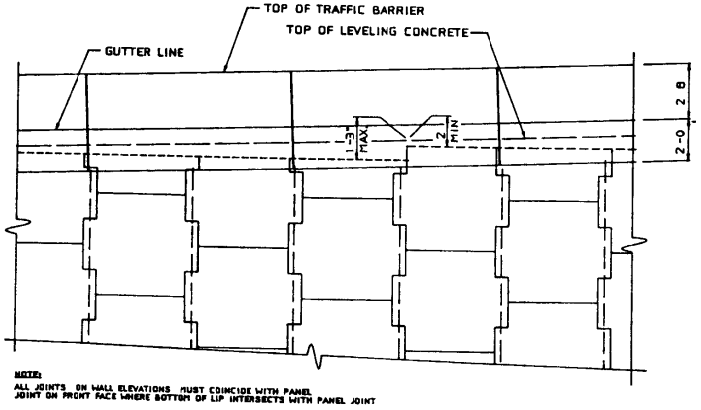


TRAFFIC BARRIER - PLAN VIEW
SCALE 3/8 = 1'-0



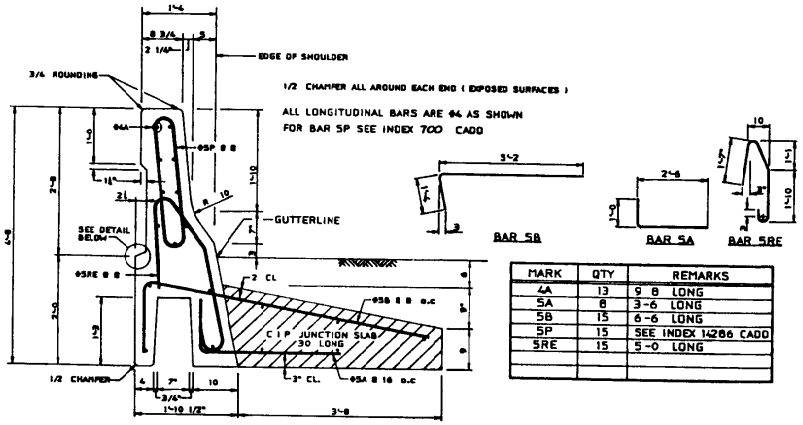
TRAFFIC BARRIER ELEMENT, METHOD OF SUPPORT AND METHOD OF CONSTRUCTION ARE COVERED BY U.S. PATENT No. 4,494,892

SECTION A-A
PRECAST TRAFFIC BARRIER
SCALE 1" = 1'-0



NOTE:
ALL JOINTS ON WALL ELEVATIONS MUST COINCIDE WITH PANEL JOINT ON FRONT FACE WHERE BOTTOM OF LIP INTERSECTS WITH PANEL JOINT

PRECAST TRAFFIC BARRIER
PARTIAL ELEVATION
SCALE 3/8 = 1'-0



MARK	QTY	REMARKS
4A	13	9'-8" LONG
5A	8	3'-6" LONG
5B	15	6'-6" LONG
5P	15	SEE INDEX 14286 CADD
5RE	15	5'-0" LONG

TRAFFIC BARRIER REINFORCEMENT
SCALE 1" = 1'-0

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Checked by		
Designed by		
Checked by		
Engineering Manager		

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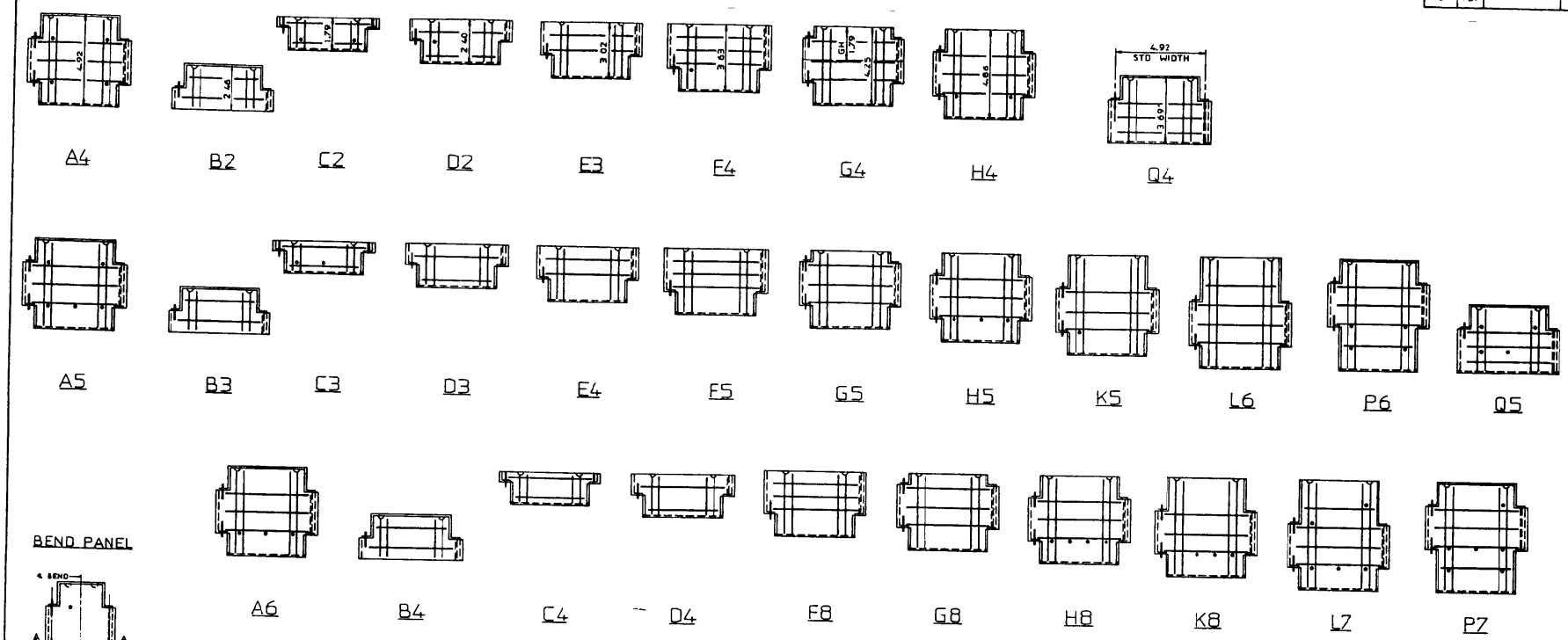
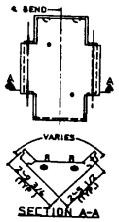
Sheet Title
Project Name
Revision No.
Scale
Drawing No.
RECo Proj. No.

FY-11-22-N1

FL ROAD DIV NO	STATE	PROJECT NO	FISCAL YEAR	SHEET NO
3	FLA			

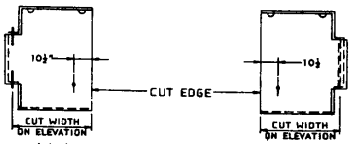


BEND PANEL

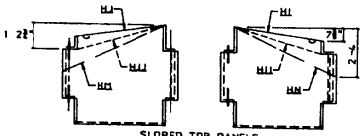


AB4 *

LEFT & RIGHT CUT PANELS



AL4 * AR4 *



SLOPED TOP PANELS
H PANEL USED FOR ILLUSTRATION ONLY

HJ4 H14

ALL PANELS ARE SHOWN BACK FACE VIEW
(SEE SHT FOR STANDARD PANEL DETAILS)
ALL VERTICAL BARS ARE #3 AS SHOWN
ALL HORIZONTAL BARS ARE #4 AS SHOWN
* TIE STRIP LOCATION

* NOTE A PANEL SHOWN FOR ILLUSTRATION ONLY

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REVISIONS							
Date	By	No	Description	Date	By	No	Description

	Name	Date
Drawn by		
Checked by		
Designed by		
Checked by		
Engineering Manager		

The Reinforced Earth Company

reinforced earth

REINFORCED EARTH IS THE REGISTERED TRADE MARK OF THE REINFORCED EARTH COMPANY

CERTIFIED WITH RESPECT TO INTERNAL STABILITY OF REINFORCED EARTH STRUCTURES ONLY

PROJECT STATUS

PRELIMINARY FOR REVIEW — Date

PRELIMINARY FOR BIDDING — Date

FINAL FOR CONSTRUCTION — Date

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

Sheet Title: REINFORCED EARTH STANDARD DETAILS

ROAD NO	COUNTY	PROJECT NO

Project Name:

Revision No

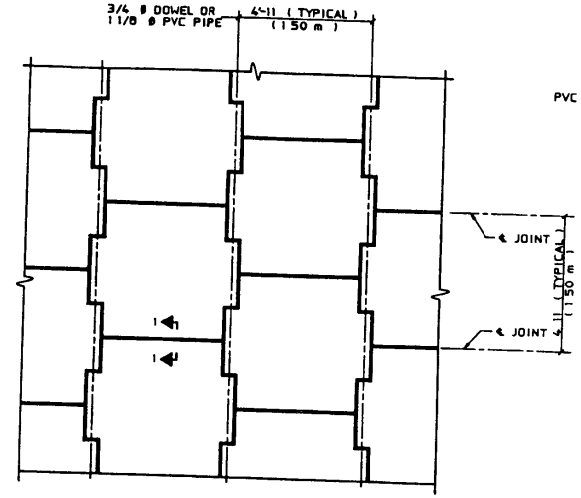
Scale

Drawing No

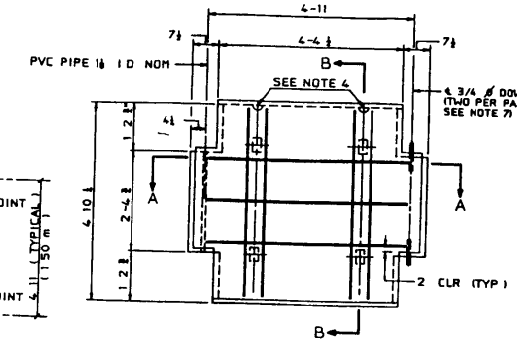
RECo Proj No

EX-II-22-0

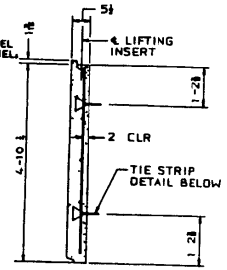
FR. FLOW SH. NO.	STATE	PROJECT NO	FISCAL YEAR	SHEET NO
3	FLA			



TYPICAL PANEL LAYOUT
PARTIAL ELEVATION - FRONT FACE
SCALE 1/2 = 1-0



PANEL TYPE A
(WITH R4 REINFORCEMENT)
FRONT VIEW



SECTION B-B
SCALE 3/4 = 1-0

PANEL THICKNESS	REINFORCEMENT DESIGNATION	PANEL REINFORCEMENT A_s (IN²)	MAXIMUM ALLOWABLE HORIZONTAL STRESS AT FACING (KSI)
5½	R4	0 44 VERTICAL 0 58 HORIZONTAL	1 19
	R6	0 66 VERTICAL 0.78 HORIZONTAL	1 46
	R7	1 18 VERTICAL 1.77 HORIZONTAL	2 58

NOTES:

1 REINFORCING STEEL TO BE A615 GRADE 60

2 3/8 x 3/8 CHAMFER SHALL BE PROVIDED ON ALL EXPOSED EDGES (FRONT FACE ONLY)

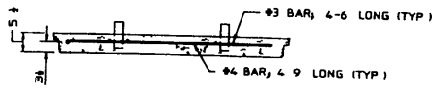
3 ALL PANEL TYPES AND OTHER RELATED ELEMENTS WILL BE DETAILED ON SHOP DRAWINGS

4 ALL PANELS SHALL HAVE TWO LIFTING INSERTS OF ONE TON CAPACITY EACH

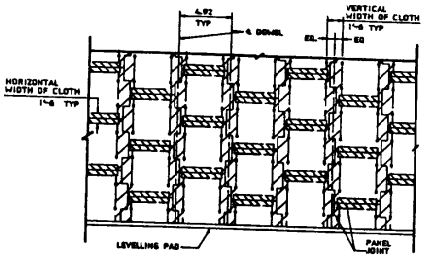
5 PANEL DESIGN THICKNESS IS 5½ QUANTITY OF CONCRETE WILL INCREASE TO ACCOMMODATE ANY ARCHITECTURAL SURFACE FINISH THAT MAY BE SPECIFIED

6 ACTUAL PANEL REINFORCEMENT FOR ALL PANEL TYPES IS DESIGNATED ON THE WALL ELEVATION DRAWINGS R4 ILLUSTRATED FOR INFORMATION ONLY

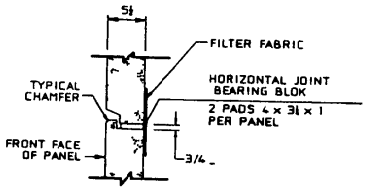
7 EACH 3/4 ø DOWEL SHALL HAVE MIN LENGTH OF 10 DOWELS SHALL BE PVC ROD A SINGLE FULL LENGTH DOWEL MAY BE USED AT THE DISCRETION OF THE MANUFACTURER



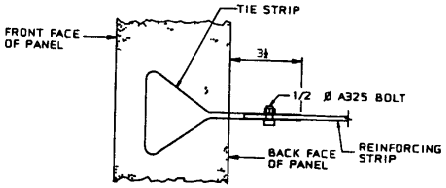
SECTION A-A
SCALE 3/4 = 1-0



NOTE:
STRIPS OF FILTER CLOTH SHALL BE PLACED ON BACK FACE OF PANEL OVER PANEL JOINTS FILTER CLOTH SHALL BE ADHERED TO BACK FACE OF PANELS USING AN ADHESIVE COMPOUND SUPPLIED BY THE REINFORCED EARTH COMPANY



SECTION 1-1
NO SCALE



CONNECTION DETAIL
NO SCALE

The drawing contains information proprietary to The Reinforced Earth Company and is being furnished for the use of _____ only in connection with this project and the information contained herein is not to be transmitted to any other organization unless specifically authorized in writing by The Reinforced Earth Company The Reinforced Earth Company is exclusive licensee in the United States under patents issued to Henri Vidal and the furnishing of this drawing does not constitute an express or implied license under the Vidal patents.

REVISIONS

Date	By	No	Description	Date	By	No	Description

The design contained on these drawings is based on information provided by the owner On the basis of this information the Reinforced Earth Company has designed and is responsible for the internal stability of the structure only, External stability including foundation and slope stability is the responsibility of the owner

	Name	Date
Drawn by		
Checked by		
Designed by		
Checked by		
Engineering Manager		

The Reinforced Earth Company

reinforced earth

"REINFORCED EARTH" IS THE REGISTERED TRADE MARK OF THE REINFORCED EARTH COMPANY

CERTIFIED WITH RESPECT TO INTERNAL STABILITY OF REINFORCED EARTH STRUCTURES ONLY

PROJECT STATUS

PRELIMINARY FOR REVIEW Date | PRELIMINARY FOR BIDDING Date | FINAL FOR CONSTRUCTION Date

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

Sheet Title: REINFORCED EARTH STANDARD DETAILS

ROAD NO	COUNTY	PROJECT NO

Project Name:

Revision No.
Scale
Drawing No.
RECo Proj No.

EX-II-22-P

CHAPTER 23

SIGNING AND PAVEMENT MARKING PLANS

23.1 General

Signing and pavement marking plans are usually a component set of plans Projects with minor or typical signing and pavement markings may include these features on sheets in the roadway plan set or detailed on roadway sheets When prepared as component plans they shall be assembled as a separate plans set complete with a key sheet, tabulation of quantities and all other signing and marking sheets The sheets shall be numbered consecutively with the sheet numbers prefixed by the letter S

23.2 Key Sheet

The key sheet is the first sheet in the set and shall be prepared on a standard key sheet format as mentioned in Chapter 3 of this volume Contract plans set information shall not be required on this sheet when it is shown on the lead key sheet A complete index of signing and pavement marking plans shall be shown on the left side of the sheet The date of the governing Roadway and Traffic Design Standards shall be inserted in a note at the lower left corner of the key sheet Location map and length of project box need not be shown if this information is shown on the lead key sheet of the plans set Other project data, approval signatures, consultant's name and DOT Project Manager/Coordinator's name shall be shown as described in Chapter 3 of this volume

23.3 Tabulation of Quantities and Standard Notes

The tabulation of quantities sheet shall be prepared on the standard plan format and shall show quantities, standard sign numbers, pay item numbers and size of sign if not shown in plan for all bid items The sheet shall be set up as shown in Exhibit II-23-A. Bid items shall be listed in numerical order and quantities shall be tabulated per sheet. Provision shall be made to show the original and final quantities Standard notes referring to item numbers shall also be shown on this sheet

On contracts with multiple project numbers or federal aid and non-federal aid quantities, provisions shall be made to tabulate and summarize their respective quantities

23.4 General Notes

All general notes pertaining to signing and pavement marking may be shown on a separate plan format sheet, if necessary

23.5 Plan Sheets

23 5 1 Format and Scale

The plan sheets shall be prepared on a standard plan format The scale shall be such that all details are clear and legible at half size reduction of plans The scale shall meet the requirements of Section 10 1 of this volume For simple, uncomplicated projects, or sections of a project, it may be possible to "stack" two plans on one sheet, one below the other Clarity and legibility shall be preserved in all cases Refer to Exhibit Ex-II-23-D for an example of signing and pavement marking plan

A north arrow and graphic scale shall be shown at a point of maximum visibility on the sheet If two plans are "stacked" on one sheet, then each plan portion shall contain a north arrow and graphic scale

23 5 2 Required Information

The basic information pertaining to roadway geometrics and project limits required on the signing and pavement marking plan sheets is the same as that required on the plan portion of the plan - profile sheets (Chapter 10) Topography and construction details need not be shown. Utilities, drainage, lighting, sidewalks, driveways, etc shall be checked for conflicts Only those that may may cause conflicts with sign placement shall be shown

All pavement markings shall be clearly shown and labelled with their widths, color and spacing specified Either the begin and end pavement marking stations, with offset or the begin pavement marking station with offset and the total length of roadway for pavement marking shall be shown The location of raised pavement markers and delineators shall be indicated by specifying the type, color, spacing, and limits of application by stations All regulatory, warning and directional signs shall be shown at the proper locations Each sign face shall be shown in close proximity to its respective sign with a leader line connecting the sign location and signface Each sign face shall be oriented on the plan sheet to be read as viewed from the direction of travel along the roadway The location of all signs shall be indicated by station or milepost The Pay Item Number and standard sign designation, or assigned number if non-standard, shall be shown for each sign

Any signs to be mounted on signal span wires should be shown and listed on the signalization plan for illustration and placement purposes Sign details should be included on the signing plans

Begin and end stations shall be shown

23.6 Guide Sign Worksheet

The sign face, with the complete message layout with legend spacing (vertical and horizontal), margins, border widths and corner radii shall be shown on the guide sign worksheet. This sheet should be prepared on the standard plan sheet format to any convenient scale that will preserve clarity and legibility at half-size reduction of plans. For multi-support roadside signs, cross sections may not be included in the plans set, but the pole data shall be tabulated on the guide sign worksheet. Ex-II-23-F is an example of Guide Sign Work Sheet.

23.7 Overhead Sign Cross Section and Support Structure

The sign cross section sheet shows the location of overhead sign(s) in cross section. A standard profile format should be utilized. The cross section of the roadway at the sign location shall be shown and fully dimensioned. (See Exhibit II-23-E). The recommended scale for the cross section is 1" = 5' horizontally and vertically.

For overhead signs, the support truss and columns and foundations should be designed by the contractor from information shown on the sign cross section sheet.

23.8 Typical Pavement Marking Sheet

For simple, uncomplicated projects, or sections of a project, it may be possible to show signing and pavement marking plan details schematically using straight line diagrams and typical markings plan sheets. All regulatory, warning and directional signs shall be properly identified and shown at their graphic location on the straight line diagram. Pavement markings shall be shown and labelled on a typical marking plan. (see Exhibit II-23-C).

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA.

STATE PROJ NO.	SHEET NO.
00000-0000	S 0

TABULATION OF QUANTITIES

BID ITEM NO	DESCRIPTION	UNIT	S 4 PLAN	S 4 FINAL	S 5 PLAN	S 5 FINAL	S 6 PLAN	S 6 FINAL	S 7 PLAN	S 7 FINAL	S 8 PLAN	S 8 FINAL	S 9 PLAN	S 9 FINAL	S 10 PLAN	S 10 FINAL	S 11 PLAN	S 11 FINAL	S 12 PLAN	S 12 FINAL	S 13 PLAN	S 13 FINAL	TOTAL THIS SHEET PLAN	TOTAL THIS SHEET FINAL	GRAND TOTAL PLAN	GRAND TOTAL FINAL	REF SHEET
700 1 3	R1 1 (30)	AS					2		1		1		1				1						6				
700 1 12	R4 7 (30 X24)	AS	2				1		1		2				2				2				2				
700 1 13	R3 9B (36"X24)	AS	1				1		1														9				
700 1 15	M4 6 (12"X24) R3 9B (36"X24")	AS	1																				1				
700 1 17	W4 2 (48)	AS																									
	W9 2 (48")	AS																									
	W9 1 (48")	AS																									
700 1 18	SIGN 800	AS					1																2				
	SIGN 801	AS	1																				1				
700 1 30	SIGN 802	AS							1														1				
700 73 1	REMOVE EXISTING SIGN (ONE POST)	AS	2		1		3		4		1		1				2				2		16				
706 1 12	REFLECTIVE PAVEMENT MARKER MONO DIRECTIONAL /COLORLESS	EA	3				17		3																		
	REFLECTIVE PAVEMENT MARKER COLORLESS/RED	EA	10																								
	REFLECTIVE PAVEMENT MARKER AMBER/AMBER	EA	49		72		74		64		72		72		88		68		66		78		736				
	REFLECTIVE PAVEMENT MARKER MONO DIRECTIONAL /AMBER	EA																									
	REFLECTIVE PAVEMENT MARKER AMBER/RED	EA																									
706 74	REMOVAL OF EXISTING PAVEMENT MARKERS	EA																									
710 11	REMOVE EXISTING MARKINGS PAINT	SF																									
711 1	SKIP TRAFFIC STRIPE 10 OF 4" WHITE THERMOPLASTIC 30 SKIP	GM																									
	SKIP TRAFFIC STRIPE 10 OF 4" YELLOW THERMOPLASTIC 30 SKIP	GM	017		25		14		17		246		25		15		214		25		25		2 042				
	SKIP TRAFFIC STRIPE 6 OF 4 WHITE THERMOPLASTIC 10 SKIP	GM																									
	SKIP TRAFFIC STRIPE 6 OF 4 YELLOW THERMOPLASTIC 10 SKIP	GM	016				027		027								035										
711 3	PAVEMENT MESSAGES THERMOPLASTIC RXR (89 SF)	EA											1		1								2				
	PAVEMENT MESSAGES THERMOPLASTIC MERGE (36 SF)	EA																									
	PAVEMENT MESSAGES THERMOPLASTIC SCHOOL (33 SF)	EA																									
711 4	DIRECTIONAL ARROWS THERMOPLASTIC THRU ARROW NON INTERSTATE (12 SF)	EA																									
	DIRECTIONAL ARROWS THERMOPLASTIC THRU AND TURN COMBINATION (29 SF)	EA																									
	DIRECTIONAL ARROWS THERMOPLASTIC RIGHT OR LEFT TURN (16 SF)	EA	1		5		8		5		4		6		2		6				5		42				
	DIRECTIONAL ARROWS THERMOPLASTIC INTERSTATE RAMP ARROW (35 SF)	EA																									
711 5	GUIDE LINES 2 OF 4" WHITE THERMOPLASTIC 4 SKIP	LF																									
711 6 81	SOLID TRAFFIC STRIPE 8" WHITE THERMOPLASTIC ISLAND AND GORE MARKINGS	LF																									
711 6 121	SOLID TRAFFIC STRIPE 12" WHITE THERMOPLASTIC PEDESTRIAN AND SCHOOL CROSSINGS	LF																									
711 6 181	SOLID TRAFFIC STRIPE 18" WHITE THERMOPLASTIC CROSSHATCH	LF	50																								
	SOLID TRAFFIC STRIPE 18 YELLOW THERMOPLASTIC CROSSHATCH	LF	90																								
711 6 241	SOLID TRAFFIC STRIPE 24" WHITE THERMOPLASTIC STOP BAR	LF	21		22		127		63		12		12		168								308				
	SOLID TRAFFIC STRIPE 24" WHITE THERMOPLASTIC RAILROAD BANDS	LF											22		22		24				22						
	SOLID TRAFFIC STRIPE 24" WHITE THERMOPLASTIC SCHOOL BANDS	LF																					369				
711 7	REMOVE EXISTING MARKINGS THERMOPLASTIC	SF																									
711 8 41	SOLID TRAFFIC STRIPE 4" WHITE THERMOPLASTIC	NM	22		236		216		222		228		234		25		216		25		221		5 293				
	SOLID TRAFFIC STRIPE 4" YELLOW THERMOPLASTIC	NM	256		288		377		294		284		288		347		290		25		326						

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAME	DATE		NAME	DATE
DESIGNED BY			MAPPED BY		
CHECKED BY			CHECKED BY		
SUPERVISED BY					

FLORIDA DEPARTMENT OF TRANSPORTATION

APPROVED BY

DATE

CONSULTANT LOGO IF PLANS PREPARED BY CONSULTANTS

SHEET 1 OF 2

TABULATION OF QUANTITIES

EX 11 23 A

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA

STATE PROJ NO.	SHEET NO.
00000 0000	S 0

TABULATION OF QUANTITIES

BID ITEM NO	DESCRIPTION	UNIT	SHEET NUMBERS S 14 PLAN	S 14 FINAL	S 15 PLAN	S 15 FINAL	S 16 PLAN	S 16 FINAL	S 17 PLAN	S 17 FINAL	S 18 PLAN	S 18 FINAL	S 19 PLAN	S 19 FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	TOTAL THIS SHEET PLAN	TOTAL THIS SHEET FINAL	GRAND TOTAL PLAN	GRAND TOTAL FINAL	REF SHEET
700 1 3	R1 1 (30"X30)	AS					1																1		7		
700 1 12	R4 7 (30"X24)	AS							1														1		3		
700 1 13	R3 9B (36"X24)	AS	2						1														3		12		
700 1 15	W4 6 (12"X24) R3 9B (36 X24)	AS							1														1		2		
700 1 17	W4 2 (48)	AS									1																
	W9 2 (48)	AS									2												5		5		
	W9 1 (48)	AS											2														
700 1 18	SIGN 800	AS																							2		
	SIGN 801	AS																									
700 1 30	SIGN 802	AS																							1		
700 73 1	REMOVE EXISTING SIGN (ONE POST)	AS					1		1		1		3										6		22		
706 1 12	REFLECTIVE PAVEMENT MARKER MONO DIRECTIONAL /COLORLESS	EA							3		10																
	REFLECTIVE PAVEMENT MARKER COLORLESS/RED	EA																									
	REFLECTIVE PAVEMENT MARKER AMBER/AMBER	EA	66		66		72		112		16		1		1								345		1081		
	REFLECTIVE PAVEMENT MARKER MONO DIRECTIONAL /AMBER	EA																									
	REFLECTIVE PAVEMENT MARKER AMBER/RED	EA																									
706 74	REMOVAL OF EXISTING PAVEMENT MARKERS	EA																									
710 11	REMOVE EXISTING MARKINGS PAINT	SF																									
711 1	SKIP TRAFFIC STRIPE 10 OF 4 WHITE THERMOPLASTIC 30 SKIP	GM									076																
	SKIP TRAFFIC STRIPE 10 OF 4 YELLOW THERMOPLASTIC 30 SKIP	GM	25		25		25		053														9		2 942		
	SKIP TRAFFIC STRIPE 6 OF 4 WHITE THERMOPLASTIC 10 SKIP	GM																									
	SKIP TRAFFIC STRIPE 6 OF 4 YELLOW THERMOPLASTIC 10 SKIP	GM							021																		
711 3	PAVEMENT MESSAGES THERMOPLASTIC RXR (89 SF)	EA																									
	PAVEMENT MESSAGES THERMOPLASTIC ONLY (22 SF)	EA									2												2		4		
	PAVEMENT MESSAGES THERMOPLASTIC SCHOOL (33 SF)	EA																									
711 4	DIRECTIONAL ARROWS THERMOPLASTIC THRU ARROW NON INTERSTATE (12 SF)	EA									2																
	DIRECTIONAL ARROWS THERMOPLASTIC THRU AND TURN COMBINATION (29 SF)	EA																					21		63		
	DIRECTIONAL ARROWS THERMOPLASTIC RIGHT OR LEFT TURN (16 SF)	EA	6		4		6		3																		
	DIRECTIONAL ARROWS THERMOPLASTIC INTERSTATE RAMP ARROW (35 SF)	EA																									
711 5	GUIDE LINES 2 OF 4 WHITE THERMOPLASTIC 4 SKIP	LF																									
711 6 81	SOLID TRAFFIC STRIPE 8 WHITE THERMOPLASTIC ISLAND AND GORE MARKINGS	LF																									
711 6 121	SOLID TRAFFIC STRIPE 12 WHITE THERMOPLASTIC PEDESTRIAN AND SCHOOL CROSSINGS	LF																									
711 6 181	SOLID TRAFFIC STRIPE 18 WHITE THERMOPLASTIC CROSSHATCH	LF																					492		800		
	SOLID TRAFFIC STRIPE 18 YELLOW THERMOPLASTIC CROSSHATCH	LF							460		32																
711 6 241	SOLID TRAFFIC STRIPE 24 WHITE THERMOPLASTIC STOP BAR	LF					10																				
	SOLID TRAFFIC STRIPE 24 WHITE THERMOPLASTIC RAILROAD BANDS	LF																					10		379		
	SOLID TRAFFIC STRIPE 24 WHITE THERMOPLASTIC SCHOOL BANDS	LF																									
711 7	REMOVE EXISTING MARKINGS THERMOPLASTIC	SF																									
711 8 41	SOLID TRAFFIC STRIPE 4 WHITE THERMOPLASTIC	NM	25		25		239		252		121												2 438		7 731		
	SOLID TRAFFIC STRIPE 4 YELLOW THERMOPLASTIC	NM	25		25		288		381		157																

NOTES 1 BID ITEM NO 711 8 41 INCLUDES 0 221 NM LENGTH OF DOUBLE YELLOW

SHEET 2 OF 2

DATE	DESCRIPTION	DATE	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	Y	DESCRIPTION

REV S O

	NAME	DATE		AMS	DATE
DESIGNED BY			DRAWN BY		
CHECKED BY			CHECKED BY		
SUPERVISED BY					

FLORIDA DEPARTMENT OF TRANSPORTATION

APPROVED BY

DATE

CONSULTANT NAME OF PLANS PREPARED BY CORPS. APPT

TABULATION OF QUANTITIES

EX II-23-B

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA

STATE PROJ NO	SHEET NO.
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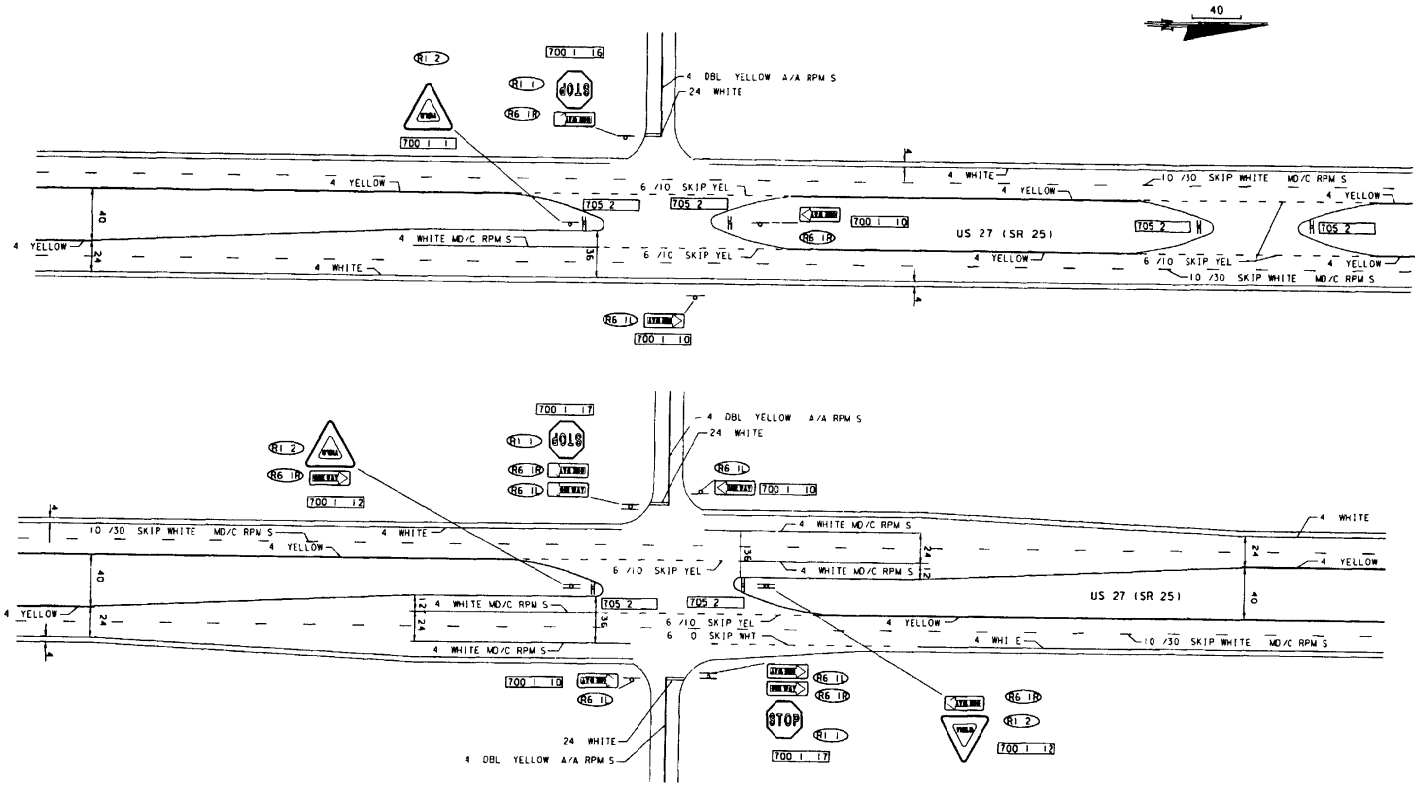


DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

DESIGNED BY / CHECKED BY / SUPERVISED BY — DRAWN BY / CHECKED BY — FLORIDA DEPARTMENT OF TRANSPORTATION — APPROVED BY — DATE

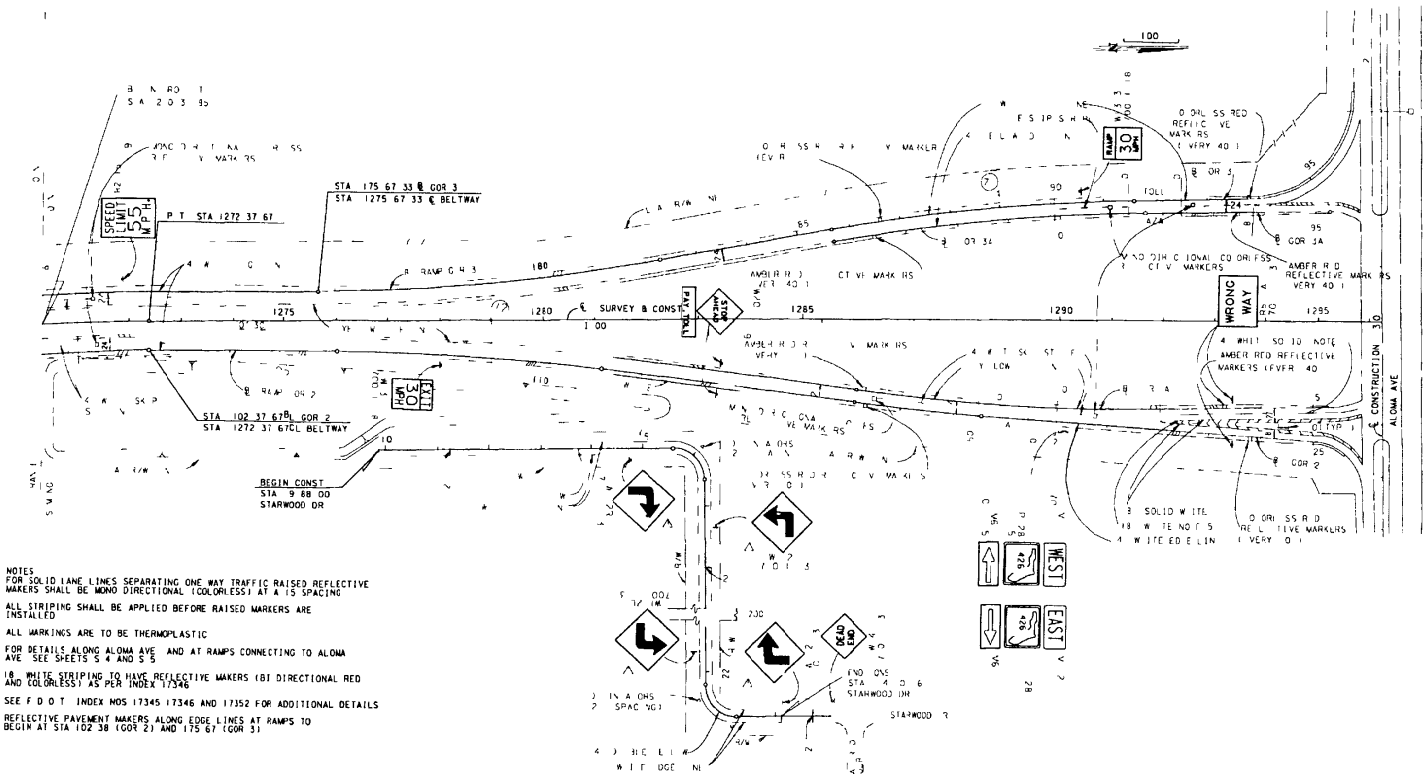
CONSULTANT LOGO IF PLANS PREPARED BY CONSULTANT

TYPICAL MARKINGS

EX II-23-C

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA

STATE PROJ NO	SHEET
00000 0000	S 0



NOTES

1 FOR SOLID LANE LINES SEPARATING ONE WAY TRAFFIC RAISED REFLECTIVE MAKERS SHALL BE MONO DIRECTIONAL (COLORLESS) AT A 15 SPACING

2 ALL STRIPING SHALL BE APPLIED BEFORE RAISED MARKERS ARE INSTALLED

3 ALL MARKINGS ARE TO BE THERMOPLASTIC

4 FOR DETAILS ALONG ALOMA AVE AND AT RAMPS CONNECTING TO ALOMA AVE SEE SHEETS S 4 AND S 5

5 18 WHITE STRIPING TO HAVE REFLECTIVE MAKERS (BI DIRECTIONAL RED AND COLORLESS) AS PER INDEX 17346

6 SEE F D O T INDEX NOS 17345 17346 AND 17352 FOR ADDITIONAL DETAILS

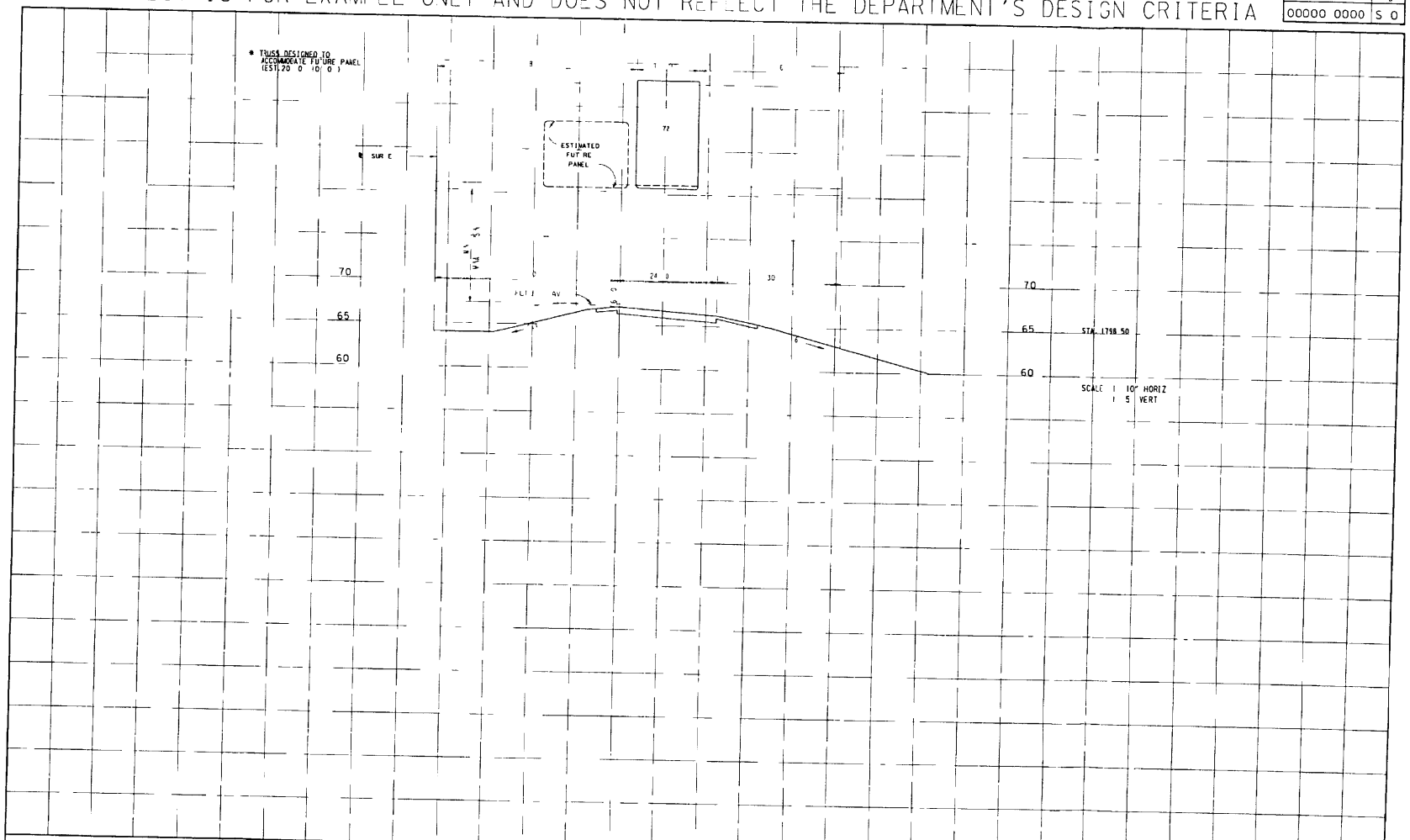
7 REFLECTIVE PAVEMENT MAKERS ALONG EDGE LINES AT RAMPS TO BEGIN AT STA 102 38 (GOR 2) AND 175 67 (GOR 3)

TE	DESCRIPTION	DATE	DESCRIPTION	TE	DESCRIPTION	DATE	DESCRIPTION	DESIGNED BY / CHECKED BY / SUPERVISED BY	AME	TE	ME	DATE	FLORIDA DEPARTMENT OF TRANSPORTATION / APPROVED / TE	CONSULTANT LOGO IF PLANS PREP CONSULTANT	SIGNING AND MARKING

EX-II-23-D

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA

STATE PROJ NO	SHEET
00000 0000	S 0



DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

DESIGNED BY NAME TR
CHECKED BY
SUPERVISED
DRAWN BY NAME TR
CHECKED BY

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY TR

CONSULTANT LOGO IF PLAN PREPARED BY CONSUL ANT

SIGN DETAIL

EX II-23-E

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA

STATE PROJ NO	SHEET
00000 0000	00

SIGN NUMBER 81 BACKGROUND
WIDTH 6 6 TYPE REFLECTIVE
HEIGHT 1 0 COLOR GREEN
BORDER WIDTH 2 LEGEND & BORDER
BORDER RADII 9 TYPE REFLECTIVE
SHIELD SIZE 36 X45 COLOR WHITE
QUANTITY REQ D 1
ARROW SIZE 22 1/4 X 35 5/8

EXIT 81
47
Ft White
Lake City
15 CAPS
16 U C
12 LOOPS
60
700 1 65

CLEARANCE FROM EDGE OF TRAVELWAY	COLUMN SIZE ALUM	COLUMN SIZE STEEL	COLUMN LENGTH A	COLUMN LENGTH B

COPY 1 6 K
SPACE
COPY 2 4 94 F N I T
SPACE
COPY -2 2 -3 24 L E I T Ø
SPACE
COPY
SPACE
COPY
SPACE

SIGN NUMBER 82A BACKGROUND
WIDTH 17 0 TYPE REFLECTIVE
HEIGHT 8 6 COLOR GREEN
BORDER WIDTH 2 LEGEND & BORDER
BORDER RADII TYPE REFLECTIVE
SHIELD SIZE 36 36 COLOR WHITE
QUANTITY REQ D
ARROW SIZE 22 1 4 X 35 5/8

EXIT 82
90
Lake City
15 CAPS
16 U C
12 LOOPS
60
700 1 58

CLEARANCE FROM EDGE OF TRAVELWAY	COLUMN SIZE ALUM	COLUMN SIZE STEEL	COLUMN LENGTH A	COLUMN LENGTH B

COPY 9 0
SPACE
COPY 12 36 126 L O K E C I T Y Ø
SPACE
COPY 18 54 24 49 16 22 18
SPACE
COPY
SPACE
COPY
SPACE

WIDTH HORIZONTAL SPACING (ALL DIMENSIONS ARE IN INCHES AND EIGHTHS OF AN INCH)
END DIMENSIONS INCLUDE BORDER WIDTH AND MARGIN OTHER DIMENSIONS ARE WIDTH OF CHARACTER PLUS SPACE TO FOLLOWING CHARACTER EXCEPT LAST CHARACTER OF EACH WORD WHICH IS THE WIDTH OF CHARACTER ONLY

SIGN NUMBER 82B BACKGROUND
WIDTH 17 0 TYPE REFLECTIVE
HEIGHT 11 0 COLOR GREEN
BORDER WIDTH 2 LEGEND & BORDER
BORDER RADII 9 TYPE REFLECTIVE
SHIELD SIZE 36 X36 COLOR WHITE
QUANTITY REQ D 1
ARROW SIZE 22 1/4 X 35 5/8

EXIT 82
90
Lake City
Live Oak
15 CAPS
16 U
1 LOOPS
60
700 1 67

CLEARANCE FROM EDGE OF TRAVELWAY	COLUMN SIZE ALUM	COLUMN SIZE STEEL	COLUMN LENGTH	COLUMN LENGTH B

COPY 9 0
SPACE
COPY 66 36 102 L I V E O A K
SPACE
COPY 24 48 24 44 63 L A K E C I T Y Ø
SPACE
COPY 18 54 24 49 16 22 18
SPACE
COPY
SPACE
COPY
SPACE

SIGN NUMBER 84A & 84B BACKGROUND
WIDTH 21 6 TYPE REFLECTIVE
HEIGHT 11 0 COLOR GREEN
BORDER WIDTH 2 LEGEND & BORDER
BORDER RADII 9 TYPE REFLECTIVE
SHIELD COLOR WHITE
SIZE 36 X 56 /8 QUANTITY REQ D 1
ARROW SIZE 22 /8 X 25

EXIT 84
136
White Springs
Live Oak
45
15 CAPS
16 U C
12 LOOPS
700 1 78

CLEARANCE FROM EDGE OF RAVELWAY	COLUMN SIZE ALUM	COLUMN SIZE STEEL	COLUMN LENGTH A	COLUMN LENGTH B

COPY 1 3 6
SPACE
COPY 69 56 102 W h i t e S p r i n g s Ø
SPACE
COPY 18 67 24 95 14 20 18 L I V E O A K
SPACE
COPY 37 48 24 44 104
SPACE
COPY
SPACE

TR	BY	DESCRIPTION	DATE	DESCRIPTION	DATE	DESCRIPTION	DATE	DESCRIPTION

DESIGNED BY / CHECKED BY / SUPERVISED — AMT — TY — DRAWN BY / CHECKED BY — AMT — DATE

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED
TR

CONSULTANT LOGO IF PLANS PREPARED BY CONSULTANT?

GUIDE SIGN WORK SHEET

EX 11-23 F

CHAPTER 24

SIGNALIZATION PLANS

24.1 General

Traffic Signal Plans are usually a component set of plans Projects with minor or typical signalization may include these features on sheets in the roadway plan set or on the roadway sheets When prepared as component plans they shall be assembled as a separate plans set complete with a key sheet, tabulation of quantities and all other relevant signal sheets The sheets shall be numbered consecutively with the sheet numbers prefixed by the letter T.

The signalization plans show the complete construction details, electrical circuit, signal phasing and other relevant data

24.2 Key Sheet

The key sheet is the first sheet in the component plans set and shall be prepared as described in Chapter 3 of this volume However, the location map, length of project box and contract plans set information need not be shown if it is shown on the lead key sheet The index of signal plans shall be shown on the left of the sheet The date of the governing Roadway and Traffic Design Standards shall be inserted in a note below the Index of Plan Sheets Other data shall be shown as described in Chapter 3 of this volume

24.3 Tabulation of Quantities and Standard Notes

The tabulation of quantities sheet lists the item numbers, description and quantity of materials and type of work (i e , type signal equipment, and labor) This sheet shall be placed behind the key sheet in plans assembly

The tabulation of quantities sheet shall be set up as shown in Exhibit II-24-A Bid item numbers shall be listed in numerical order Provisions shall be made to show the original and final quantities per sheet Pay item footnotes and general notes that refer to item numbers, description of work to be performed and quantity estimates shall also be shown on this sheet

If space is limited, notes may be shown on the general notes sheet

On contracts with multiple project numbers, or federal-aid and non-federal-aid quantities, provisions shall be made to tabulate and summarize their respective quantities

24.4 General Notes

The general note sheet lists special signal design information such as controller operations, item number descriptions, loop installations, signal heads, signal poles, interconnect cable, maintenance of traffic and computer interface that is generally not covered in the FDOT Standard Specification Supplement or Special Provisions This sheet shall be placed behind the Tabulations of Quantities in the plans assembly On minor projects, general notes may be combined with the Tabulations of Quantities Sheet

The general note sheet shall be set up as shown in Exhibit II-23-B Bid number descriptions shall be listed in numerical order

24.5 Plan Sheets

24 5 1 Format and Scale

Signalization plans shall be prepared on standard plan format at a scale large enough to show all details clearly and legibly at half size reduction of plans Usually, the complete intersection shall be shown on one plan sheet However, for large intersections more sheets may be used with appropriate match lines The standard scale is 1" = 20' A north arrow and graphic scale shall be shown at a point of maximum visibility on the sheet Refer to Exhibit Ex-II-24-B for an example of signalization plans

24 5 2 Required Information

The basic information requirements include roadway geometrics, street names, construction stationing or mileposts curb-and-gutter, drainage inlets, sidewalks and right-of-way lines as similarly required on the plan portion of the roadway plan - profile sheets Only those underground and overhead utilities, and roadway lighting structures that may cause construction conflicts with signal components shall be shown All locations should be checked for potential conflicts

The plan sheet shall also show

Signal head locations with directional arrows and movements
(movements 2 and 6 shall be the major streets)
Details of signal head in tabular form with pay item numbers
Phasing diagram/signal operating plan
(NOTE If the SOP conforms to the Standard Index #17870, then the reference to the index is all that is required For all other operating plans, the plan shall be shown)
Signal controller timing chart

Loop detectors

Electrical service location

Location of signal poles (ground elevation and elevation of roadway crown)

Signal wire signs

Pedestrian signals

Turning radii

Median nose locations

Location of "stop bars" and pedestrian crosswalks

Coordination unit-timing chart

Lane lines with directional arrows

All equipment shown on the plan shall be clearly labelled and their respective item numbers and quantity indicated

A separate signalization plan shall be prepared for each signalized intersection involved in the construction project

Any span wire mounted signs shall be coordinated with the appropriate signing and pavement marking plans to avoid duplication

The sign details for signs must be included on the signalization plans, if signing and marking are not included in the plans package

24.6 Pole Schedule

The pole schedule sheet tabulates the pole design data The pole schedule shall be prepared on standard plan format and shall be set up as shown in Exhibit II-24-B This sheet shall be placed behind the signal plan sheets in the plans assembly

This sheet shall provide a listing of each pole number The following information shall be given for each pole

Location Number
Pole Number
Pole Type
Pole Dimensions
Item Number
Quantity
Joint Use Pole Details, if applicable

24.7 Interconnect/Communication Plan

The interconnect/communication plan is required when signal equipment is being coordinated with other signal installations or with a computerized system The interconnect/communication plan shows pictorially the placement of interconnect/communication cable, either underground or aerial, and tabulates all related interconnect quantities The Interconnect/Communication plan sheet shall indicate all signal poles, service poles, and/or joint-use poles to which interconnect/communication cable will be attached

The interconnect/communication plan shall be prepared on standard plan format and shall be set up as shown in Exhibit II-24-C

Unless otherwise approved, the prefered scale of the interconnect/communication plan shall be 1"=40' for underground cable and 1"-100' for aerial cable For simple projects, or sections of a project, "stacking" two plans on one sheet is generally permitted if clarity and legibility are maintained

A north arrow and graphic scale shall be shown at a point of maximum visibility on the sheet If two plans are "stacked" on one sheet, then each plan portion shall contain a north arrow and graphic scale

The basic plan information requirements include roadway schematic showing cross streets and driveways, cable information, pole location, pole number, utility pole identification number, bid item number and quantity

24.7 Interconnect/Communication Plan

The Interconnect/Communication plan is required when signal equipment is being coordinated with other signal installations or with a computerized system. The Interconnect/Communication plan shows pictorially the placement of interconnect/communication cable, either underground or aerial, and tabulates all related interconnect quantities. The Interconnect/Communication plan sheet shall indicate all signal poles, service poles, and/or joint-use poles to which interconnect/communication cable will be attached.

The interconnect/communication plan shall be prepared on standard plan format and shall be set up as shown in Exhibit II-24-C.

Unless otherwise approved, the prefered scale of the interconnect/communication plan shall be 1"=40' for underground cable and 1"-100' for aerial cable. For simple projects, or sections of a project, "stacking" two plans on one sheet is generally permitted if clarity and legibility are maintained.

A north arrow and graphic scale shall be shown at a point of maximum visibility on the sheet. If two plans are "stacked" on one sheet, then each plan portion shall contain a north arrow and graphic scale.

The basic plan information requirements include roadway schematic showing cross streets and driveways, cable information, pole location, pole number, utility pole identification number, bid item number and quantity.

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA

STATE PROJ NO	SHEET NO.
00000 0000	00

TABULATION OF QUANTITIES

BID ITEM NO	DESCRIPTION	UNIT	SHEET NUMBERS T 4 ORIG	T 4 FINAL	ORIG	FINAL	ORIG	FINAL	ORIG	FINAL	ORIG	FINAL	ORIG	FINAL	ORIG	FINAL	ORIG	FINAL	ORIG	FINAL	ORIG	FINAL	ORIG	FINAL	ORIG	FINAL	TOTAL THIS SHEET ORIG	TOTAL THIS SHEET FINAL	GRAND TOTAL ORIG	GRAND TOTAL FINAL	REFERENCE SHEET
620 1 1	GROUNDING ELECTRODE	LF	170																								170		170		
630 1 12*	CONDUIT UNDERGROUND	LF	200																								200		200		
630 1 13*	CONDUIT UNDER PAVEMENT	LF	328																								328		328		
632 7 1	SIGNAL CABLE	PI	1																								1		1		
634 4 112	SPAN WIRE ASSEMBLY	PI	1																								1		1		
635 1 11	PULL BOXES	EA	5																								5		5		
635 1 12	ELECTRIC POWER SERVICE ABOVE GROUND	AS	1																								1		1		
641 16 46	CONCRETE STRAIN POLES (TYPE VII)	EA	2																								2		2		
650 1 131	TRAFFIC SIGNAL 12 (3 SECT 1 WAY)	AS	6																								6		6		
650 1 132	TRAFFIC SIGNAL 12 (3 SECT 2 WAY)	AS	5																								5		5		
653 111	PEDESTRAIN SIGNALS (12 INCANDESCENT) 1 WAY	AS	8																								8		8		
659 101	SIGNAL HEAD AUXILIARIES (BACK PLATE 3 SECTION)	EA	10																								10		10		
659 107	SIGNAL HEAD AUXILIARIES (ALUMINUM PEDESTAL)	EA	2																								2		2		
660 1 101	VEHICLE DETECTOR(LOOP TYPE)AMPLIFIER WITH HARNESS	EA	8																								8		8		
660 2 101	VEHICLE DETECTOR(LOOP TYPE)SAW CUTS AND LEAD INS	EA	20																								20		20		
665 11	PEDESTRIAN DETECTOR POLE OR CABINET MOUNTED	EA	4																								4		4		
665 13	PEDESTRIAN DETECTOR DETECTOR WITH SIGN ONLY	EA	4																								4		4		
670 113	CONTROLLER SOLID STATE (ACTUATED) INCL CABINET	AS	1																								1		1		
690 10	REMOVE TRAFFIC SIGNAL HEAD ASSEMBLY	EA	5																								5		5		
690 30	REMOVE POLES	EA	2																								2		2		
690 50	REMOVE CONTROLLER ASSEMBLY	EA	1																								1		1		
690 60	REMOVE VEHICLE DETECTOR ASSEMBLY	EA	1																								1		1		
690 80	REMOVE SPAN WIRE ASSEMBLY	EA	1																								1		1		
690 90	REMOVE CABLE AND CONDUIT	PI	1																								1		1		
690 100	REMOVE MISCELLANEOUS SIGNAL EQUIPMENT	PI	1																								1		1		

* MEASURED AS LENGTH OF TRENCH FOR MULTIPLE RUNS

DATE | DESCRIPTION | DATE | BY | DESCRIPTION | DATE | DESCRIPTION | DESIGNED / CHECKED / SUPERVISED | NAME | DATE | DRAWN / CHECKED | NAME | DATE

FLORIDA DEPARTMENT OF TRANSPORTATION — APPROVED — DATE

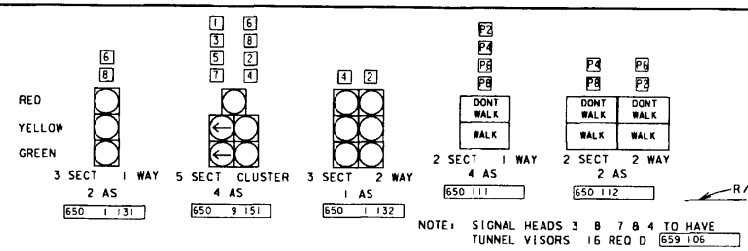
CONSULTANT LOGO IF PLANS PREPARED BY CONSULTANT

TABULATION OF QUANTITIES
TRAFFIC SIGNALS

EX II 24 A

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA

STATE PROJ NO.	SHEET NO.
00000 0000	T 0



SIGNAL HEAD DETAILS

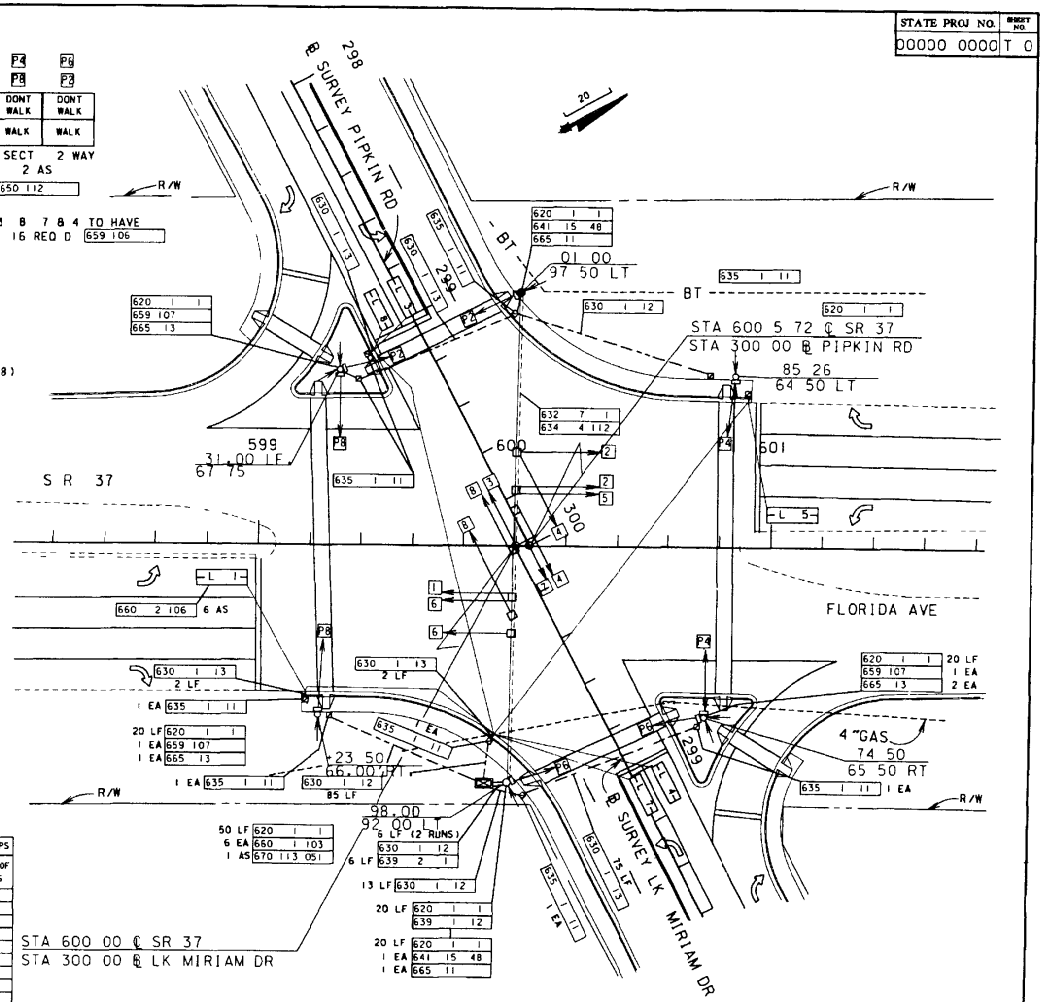
CONTROLLER OPERATIONS

1 MAJOR STREET IS S R 37 (FLORIDA AVE) AND PHASE 3 (MOVEMENTS 2 8 6) AND MINOR STREET IS PIPKIN RD /LK MIRIAM DR PHASE 6 (MOVEMENTS 4 8 8)

2 STANDARD SIGNAL OPERATING PLAN NO 10 WITH THE FOLLOWING:

(A) COORDINATION ON PHASE 3 (MOVEMENTS 2 8 6) TIME BASE

(B) CONCURRENT/ACTUATED PEDESTRIANS FOR MOVEMENT 2 (P2) MOVEMENT 4 (P4) MOVEMENT 6 (P6) AND MOVEMENT 8 (P8)



CONTROLLER TIMINGS									
TIMING FUNCTION		1	2	3	4	5	6	7	8
MOVEMENT NO		1	2	3	4	5	6	7	8
TIMING FUNCTION	MIN GRN (INT	7	17	7	7	7	17	7	7
	EXT (PASS)	3	3	3	3	3	3	3	3
	MAX GRN I	20	35	15	40	20	35	15	40
	MAX GRN II	-	-				-		
	YELLOW CLR	4	4	4	4	4	4	4	4
	ALL RED CLR	-	1 5		1 5		1 5		1 5
	PED WALK	-	6		12		6		12
	PED CLR	-	12		24		12		24
	RECALL	-	MIN				MIN		

DETECTORS FOR LOOPS		
LOOP	NO OF LOOPS	NO OF DETS
L 1	1	1
L 3	1	1
L 4	1	1
L 5	1	1
L 7	1	1
L 8	1	1
L		
L		
L		
L		

S R 37 (FLORIDA AVE) AT PIPKIN RD / LK MIRIAM DR

DATE	Y	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	B	DESCRIPTION	DATE	BY	DESCRIPTION

REVISION

DESIGNED BY / CHECKED BY / SUPERVISED BY — NAME — DATE — DRAWN BY / CHECKED BY — NAME — DATE

FLORIDA DEPARTMENT OF TRANSPORTATION

APPROVED BY — DATE

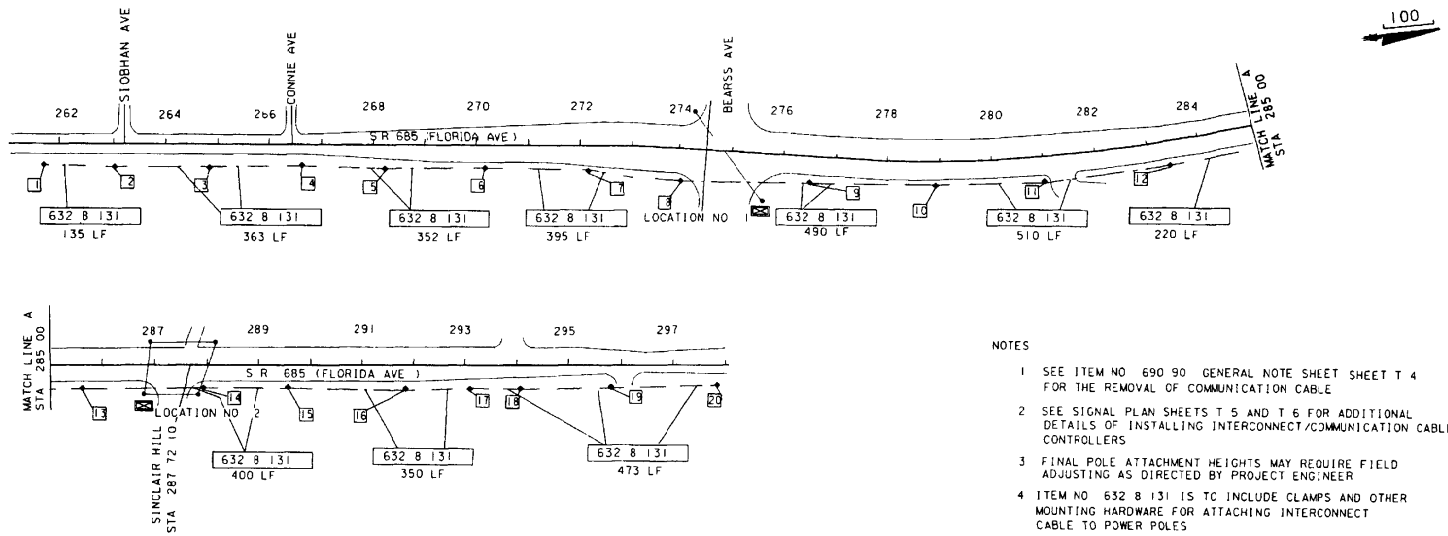
CONSULTANT USED IF PLANS PREPARED BY CONSULTANT

SIGNALIZATION PLANS

EX II-24-B

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA

STATE PROJ NO	SHEET NO.
00000 C000	T 0



NOTES

1 SEE ITEM NO 690 90 GENERAL NOTE SHEET SHEET T 4 FOR THE REMOVAL OF COMMUNICATION CABLE

2 SEE SIGNAL PLAN SHEETS T 5 AND T 6 FOR ADDITIONAL DETAILS OF INSTALLING INTERCONNECT/COMMUNICATION CABLE TO CONTROLLERS

3 FINAL POLE ATTACHMENT HEIGHTS MAY REQUIRE FIELD ADJUSTING AS DIRECTED BY PROJECT ENGINEER

4 ITEM NO 632 8 131 IS TO INCLUDE CLAMPS AND OTHER MOUNTING HARDWARE FOR ATTACHING INTERCONNECT CABLE TO POWER POLES

INTERCONNECT POLE IDENTIFICATION LISTING

POLE NO	SIDE OF CORRIDOR STREET	OWNER	POLE ID	USE	MATERIAL	DISTANCE FROM PRECEDING POLE	SPECIAL REMARKS	INTERCONNECT TIE IN
1	EAST	TECO	25179 46443	POWER	STEEL	N/A		18 20
2	EAST	TECO	25179 46444	POWER	STEEL	145		18 20
3	EAST	TECO	25179 46445	POWER	STEEL	180		18 20
4	EAST	TECO	25179 46446	POWER	STEEL	183		18 20
5	EAST	TECO	25179 46447	POWER	STEEL	157		18 20
6	EAST	TECO	25179 46448	POWER	STEEL	200		18 20
7	EAST	TECO	25179 46449	POWER	STEEL	202		18 20
8	EAST	TECO	25179 46501	POWER	STEEL	191		18 20
9	SE CORNER BEARSS AVE	TECO	25179 46502	POWER	STEEL	243	POWER TO RAISE SERVICE	18 20
10	NE CORNER BEARSS AVE	TECO	25179 46520	POWER	STEEL	243		18 20

INTERCONNECT POLE IDENTIFICATION LISTING

POLE NO.	SIDE OF CORRIDOR STREET	OWNER	POLE ID	USE	MATERIAL	DISTANCE FROM PRECEDING POLE	SPECIAL REMARKS	INTERCONNECT TIE IN
11	SE CORNER BUS ENT	TECO	25178 46544	POWER	STEEL	209		18 20
12	EAST	TECO	25173 46568	POWER	STEEL	240		18 20
13	EAST	TECO	25166 46589	POWER	STEEL	222		18 20
14	NE CORNER SINCLAIR HILLS	TECO	25160 46602	POWER	STEEL	242	POWER TO RAISE CC 2	18 20
15	EAST	TECO	25160 46603	POWER	STEEL	165		18 20
16	EAST	TECO	25151 46649	POWER	STEEL	224		18 20
17	EAST	TECO	25151 46651	POWER	STEEL	130		18 20
18	EAST	TECO	25151 46652	POWER	STEEL	95		18 20
19	EAST	TECO	25151 46653	POWER	STEEL	132	POWER TO RAISE CC 1	18 20
20	EAST	TECO	25151 46654	POWER	STEEL	198		18 20

REVISION

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE		DESCRIPTION

DESIGNED BY / CHECKED BY / SUPERVISED BY — NAME — DATE — DRAWN BY / CHECKED BY — NAME — DATE

FLORIDA DEPARTMENT OF TRANSPORTATION

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DATE

CONSULTANT LOGO IF PLANS PREPARED BY CONSULTANT

INTERCONNECT/COMMUNICATION CABLE PLAN

EX II-24-C

CHAPTER 25

HIGHWAY LIGHTING

25.1 General

Highway Lighting Plans are usually a component set of plans Projects with minor or typical highway lighting may include these features on sheets in the roadway plan set or detailed on the roadway plans When prepared as component plans they shall be assembled as a separate plans set complete with a key sheet, tabulation of quantities and all other relevant highway lighting sheets The sheets shall be numbered consecutively with the sheet numbers prefixed by the letter L The lighting plans shall show the complete construction details, electrical circuit, pole data, conduits, service points, luminaires, foundations, boring details and other relevant data

A complete set of highway lighting plans shall include the following sheets

Key Sheet
Tabulation of Quantities
Pole Data and Legend Sheet
Plans Sheet or Layout Sheet
Foundation Details (High Mast)
Boring Data Sheets (High Mast)

25.2 Key Sheet

The key sheet is the first sheet in the component plans set and shall be prepared as described in Chapter 3 of this manual The location map, length of project box and contract plans set information need not be shown if it is shown on the lead (usually roadway) key sheet Index of highway lighting plans shall be shown on the left of the sheet The date of the governing Roadway and Traffic Design Standards shall be inserted in a note below the Index of Plan Sheets Other data shall be shown as described in Chapter 3 of this volume

25.3 Tabulation of Quantities and Standard Notes

The tabulation of quantities sheet lists the item numbers, description and quantity of materials and type of work (i e , type, equipment, and labor) This sheet shall be placed behind the key sheet in plans assembly

The tabulation of quantities sheet shall be set up as shown in Exhibit II-25-A Bid item numbers shall be listed in numerical order Provisions shall be made to show the original and final quantities per sheet Pay item footnotes and standard notes that refer to item numbers, description of work to be performed and quantity estimates shall also be shown on this sheet General notes shall be shown on a separate plan format sheet

On contracts with multiple project numbers, or federal-aid and non-federal-aid quantities, provisions shall be made to tabulate and summarize their respective quantities

25.4 Pole Data and Legend Sheet

The pole data sheet provides a great deal of information and shall be prepared on a standard plan format and shall be set up as shown in Exhibit II-25-B.

This sheet shall provide a listing of each pole by pole number. The following information shall also be given for each pole:

Circuit Number
Roadway Station and Offset
Arm Length
Luminaire Wattage
Mounting Height

The design values for light intensities and uniformity ratios shall be shown together with a legend and description of the symbols used on the plan sheets.

25.5 Plan Sheets

25.5.1 Format and Scale

The plan sheets shall be prepared on a standard plan format. The scale shall be such that all details are clear and legible at half-size reduction of plans. However, the scale shall not be smaller than 1" = 100'. For simple, uncomplicated projects, or for narrow sections of a project, it may be possible to "stack" two plans on one sheet, one below the other. Clarity and legibility shall be preserved in all cases.

A north arrow and graphic scale shall be shown at a point of maximum visibility on the sheet. If two plans are "stacked" on one sheet, then each plan portion shall contain a north arrow and graphic scale.

25.5.2 Required Information

The basic information pertaining to roadway geometrics and project limits required on the highway lighting plan sheets is the same as that required on the plan portion of the plan - profile sheets. Topography and construction details need not be shown. Utilities, drainage, signal structures, sidewalks, driveways, etc. shall be checked for conflicts. Only those that may cause conflicts shall be shown.

The lighting design or lighting layout shall be shown on the plan format. This shall be accomplished by symbols which represent poles, conduits and service points. The symbols used shall be unique for a particular item and shall be used throughout the plans. A flag or note shall be used to identify conduit runs with conductor size or numbers different than that shown on the pole data sheet legend.

The symbols for poles shall be shown at the correct baseline station and the approximate offset from the roadway noted.

The poles shall be flagged and specific information for each pole shall be shown. The pole number, baseline station, circuit number and offset from baseline (for high mast) shall be shown.

The service point locations shall be shown on the plan sheets as determined through utility negotiations. Design Standard 17504 provides details for the service point. The service point shall be shown at the location where it is to be installed. The following information is not covered on the standard and must be shown on the plan sheet:

Description--voltages, phases, etc.

example: 240/480 Volt, 3 wire, Overhead

Breaker sizes--The main breaker size and the number of branch circuits and the breaker size of each.

25.6 Foundations and Boring Detail Sheets

The foundation design and the details for the height of conventional poles are shown in the Roadway and Traffic Design Standards and need not be shown in the lighting plans. Foundations for high mast poles are designed by the responsible Structural Engineer's office.

Plans showing the foundation details and boring data for high mast poles shall be included in the lighting plans.

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA.

STATE PROJ NO	SHEET NO.
00000 0000	L 0

TABULATION OF QUANTITIES

BID ITEM NO	DESCRIPTION	UNIT	SHEET NUMBERS L 4 PLAN	L 4 FINAL	L 5 PLAN	L 5 FINAL	L 6 PLAN	L 6 FINAL	L 7 PLAN	L 7 FINAL	L 8 PLAN	L 8 FINAL	L 9 PLAN	L 9 FINAL	L 10 PLAN	L 10 FINAL	L 11 PLAN	L 11 FINAL	L 12 PLAN	L 12 FINAL	L 13 PLAN	L 13 FINAL	L 14 PLAN	L 14 FINAL	L 15 PLAN	L 15 FINAL	TOTAL THIS SHEET PLAN	TOTAL THIS SHEET FINAL	GRAND TOTAL PLAN	GRAND TOTAL FINAL	REF SHEET
620 1 1	GROUND ELECTRODE	LF	40		110		50		50		100		50		20		60		140		150		140		130		1040		1040		
715 1 113	CONDUCTOR (INSULATED) (NO 6)	LF	2272		2776		2549		2631		3156		2373		1008		2961		5256		5318		5240		4288		39828		39828		
715 1 123	CONDUCTOR (BARE) (NO 6)	LF	1136		1209		1275		1316		1344		1187		504		1481		2386		2314		2431		1980		18563		18563		
715 2 113	CONDUIT (UNDERGROUND)(PVC SCH 40)(1 1/4)	LF	990		1151		1055		1253		954		1022		480		1348		2112		2085		2108		1836		16394		16394		
715 2 213	CONDUIT (UNDER PAVT)(PVC SCH 40)(1 1/4)	LF	92		0		159		0		326		108		0		62		160		119		207		50		1283		1283		
715 2 435	CONDUIT (JACKED)(RIGID GAL STEEL)(2)	LF	0		114		0		0		132		0		0		0		154		219		120		104		843		843		
715 411 140	LIGHTING POLE COMPLETE (SINGLE ARM)(ALUM)	EA	4		7		5		5		6		5		2		6		10		11		10		11		82		82		
715 414 140	LIGHTING POLE COMPLETE (DBL ARM)(ALUM)	EA	0		0		0		0		0		0		0		0		0		0		0		0		0		0		
715 7 12	LOAD CENTER (PRIMARY VOLTAGE)	EA	0		0		0		0		1		0		0		0		0		0		0		0		1		1		
715 14 11	PULL BOX (ROADSIDE)	EA	0		4		0		0		2		0		0		0		4		4		4		2		20		20		

REVISIONS																							
DATE	B	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE		DESCRIPTION	DESIGNED BY / CHECKED BY / SUPERVISED BY	NAME	DATE	DRAWN BY / CHECKED BY	NAME	DATE	FLORIDA DEPARTMENT OF TRANSPORTATION APPROVED BY DATE	CONSULTANT LOGO IF PLANS PREPARED BY CONSULTANT	TABULATION OF QUANTITIES

EX 11-25-A

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA.

STATE PROJ NO.	SHEET NO.
00000 0000	L 0

POLE DATA

POLE NO	CKT	STATION	DISTRIBUTION OR AWG	LUM	MH	POLE SETBACK & NOTES
1	A 1	204 60	15	250	40	18
2	A 2	205 80	15	250	40	20
3	A 1	207 00	15	250	40	18
4	A 2	208 20	15	250	40	20
5	A 1	209+40	15	250	40	18
6	A 2	210 60	15	250	40	20
7	A 1	211+80	15	250	40	18
8	A 2	213 00	15	250	40	20
9	A 1	214 20	15	250	40	18
10	A 2	215 40	15	250	40	20
11	A 1	216 60	15	250	40	18
12	A 2	217 80	15	250	40	20
13	A 1	219 00	15	250	40	18
14	A 2	220 20	15	250	40	20
15	A 1	221 40	15	250	40	18 SETBACK
16	A 2	222 60	15	250	40	20
17	A 1	223 80	15	250	40	18
18	A 2	225 00	15	250	40	20
19	A 3	226+20	15	250	40	18
20	A 4	227 40	15	250	40	20
21	A 3	228 60	15	250	40	18
22	A 4	229 80	15	250	40	20
23	A 3	231 00	15	250	40	18
24	A 4	232 20	15	250	40	20
25	A 3	233 40	15	250	40	18
26	A 4	234 60	15	250	40	18
27	A 3	235 80	15	250	40	18
28	A 4	237 00	15	250	40	20
29	A 3	238 20	15	250	40	18
30	A 4	239 40	15	250	40	20
31	A 3	240 60	15	250	40	18
32	A 4	241 80	15	250	40	20
33	A 4	243 00	15	250	40	18
34	A 4	244 20	15	250	40	20
35	A 3	245 40	15	250	40	14 OFFSET
36	A 4	246 60	15	250	40	20
37	A 3	247 80	15	250	40	18
38	B 1	249 00	15	250	40	
39	B 3	250 20	15	250	40	20 SETBACK
40	B 2	251 40	15	250	40	5 BK CURB
41	B 3	252 60	15	250	40	20
42	B 2	253 80	15		40	5 BK CURB
43	B 3	255 00	15	250	40	20
44	B 2	256 20	15	250	40	5 BK CURB
45	B 5	257 40	15	250	40	5 BK CURB
46	B 4	258 60	15	250	40	5 BK CURB

CONVENTIONAL LIGHTING DESIGN CRITERIA

AVERAGE INITIAL INTENSITY 1 0 F C
UNIFORMITY RATIO AVG/MIN 3/1 TO 4/1
MAX/MIN LESS THAN 10/1
WIND SPEED 80 M P H

LEGEND

SYMBOL	DESCRIPTION
	250 WATT HIGH PRESSURE SODIUM LUMINAIRE DESIGNED FOR MEDIUM CUTOFF TYPE III DISTRIBUTION INTEGRAL MAGNETIC REGULATOR TYPE BALLAST WIRED FOR 480 VOLT OPERATION MOUNTING HEIGHT 40
	1 1/4 RIGID GALVANIZED STEEL CONDUIT AT ROADWAY CROSSINGS WITH CONDUCTORS AS SHOWN ON PLAN SHEETS EXTEND CONDUIT BEYOND EDGE OF PROPOSED PAVEMENT TO PULL BOXES RUN TW GREEN INSULATED BOND INSIDE CONDUIT
	1 1/4 SCHEDULE 40 P V C CONDUIT WITH AWG THW CONDUCTORS INSIDE (CONDUCTOR SIZE SHOWN ON PLAN SHEETS) AND 1 6 AWG BARE BOND (COPPER) RUN OUTSIDE AND ABOVE CONDUIT UNLESS OTHERWISE NOTED ON PLANS
	FOR DISTRIBUTION POINT SEE INDEX 17504 OF ROADWAY AND TRAFFIC DESIGN STANDARDS (BOOKLET DATED JANUARY 19)
	FOR PULL BOX SEE INDEX 17503 OF ROADWAY AND TRAFFIC DESIGN STANDARDS (BOOKLET DATED JANUARY 19) PULL BOXES ARE REQUIRED AT BOTH ENDS OF CONDUIT AT ROADWAY CROSSINGS AND AS NECESSARY FOR COMPLETION OF THE PROJECT

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

DESIGNED BY	NAME	DATE	DRAWN BY	NAME	DATE
CHECKED BY			CHECKED BY		
SUPERVISED BY					

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
DATE

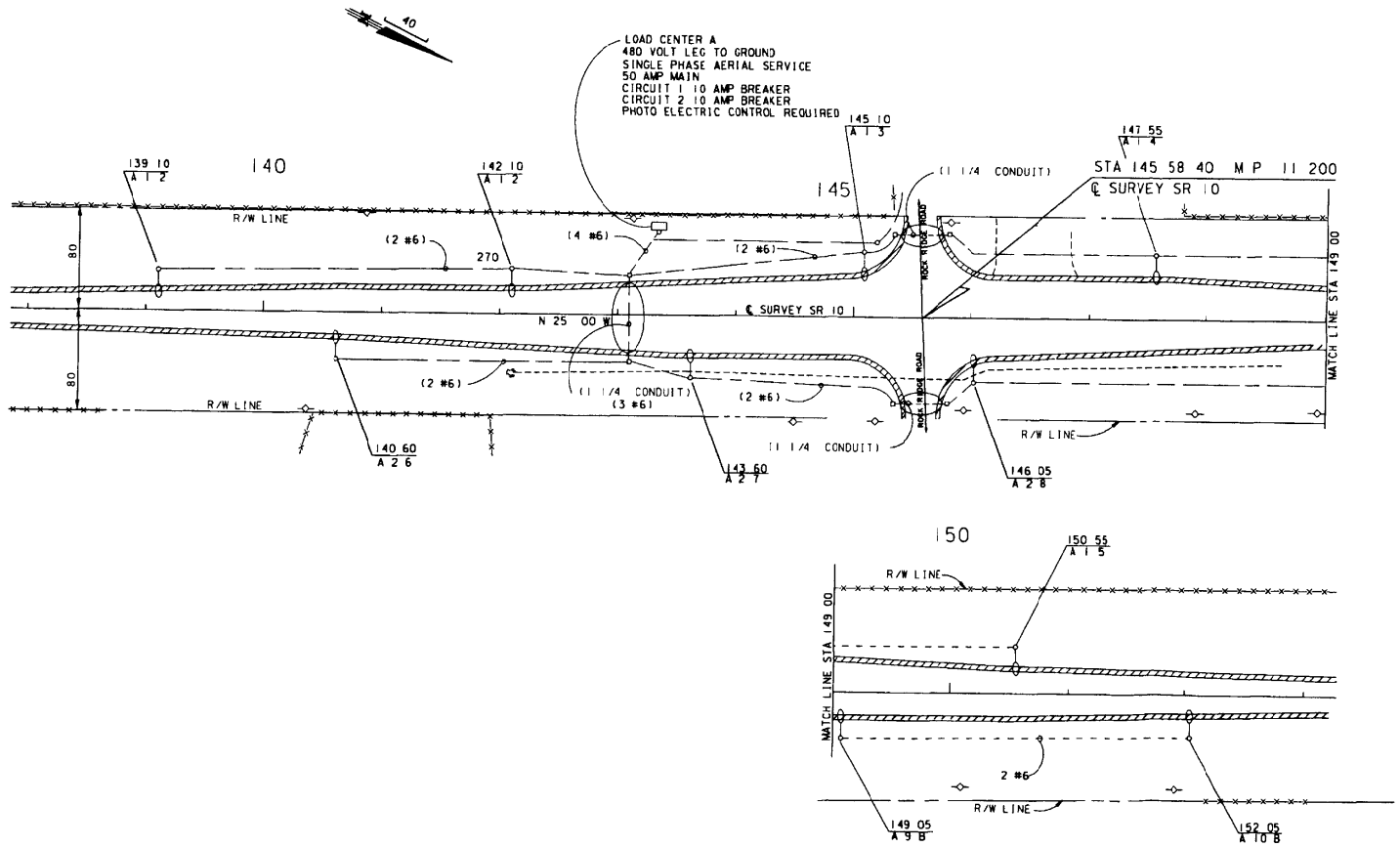
CONSULTANT WORK PLANS
PERFORMED BY ADDRESS

POLE DATA & LEGEND

EX II-25-B

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA

STATE PROJ NO	SHEET NO.
00000 0000	L 0



DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	DESCRIPTION	DATE	BY	DESCRIPTION

NAME	DATE	NAME	DATE
DESIGNED BY		DRAWN BY	
CHECKED BY		CHECKED BY	
SUPERVISED BY			

FLORIDA DEPARTMENT OF TRANSPORTATION

APPROVED BY

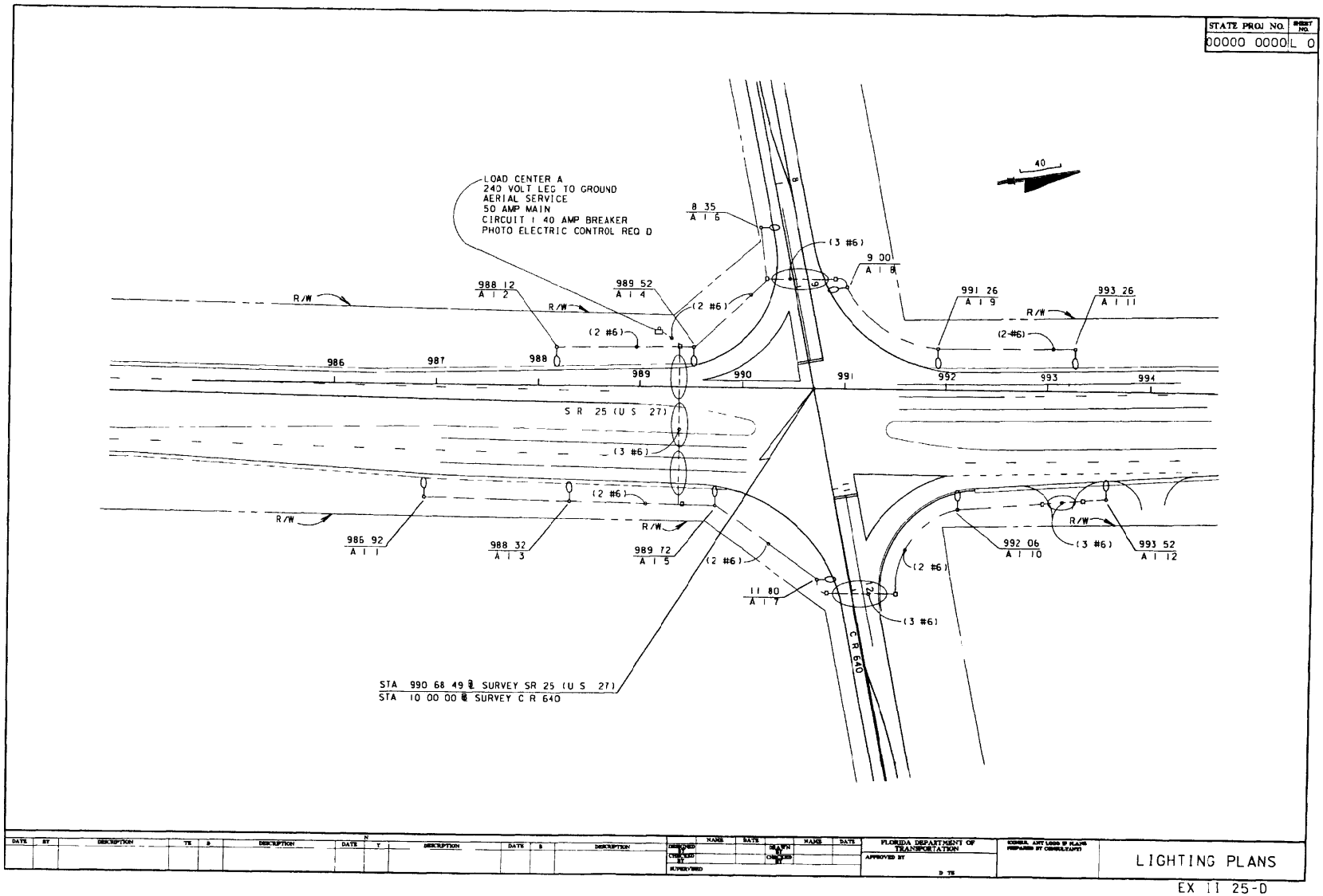
DATE

CONSUL ANT LOGO IF PLANS PREPARED BY CONSUL ANT

LIGHTING PLANS

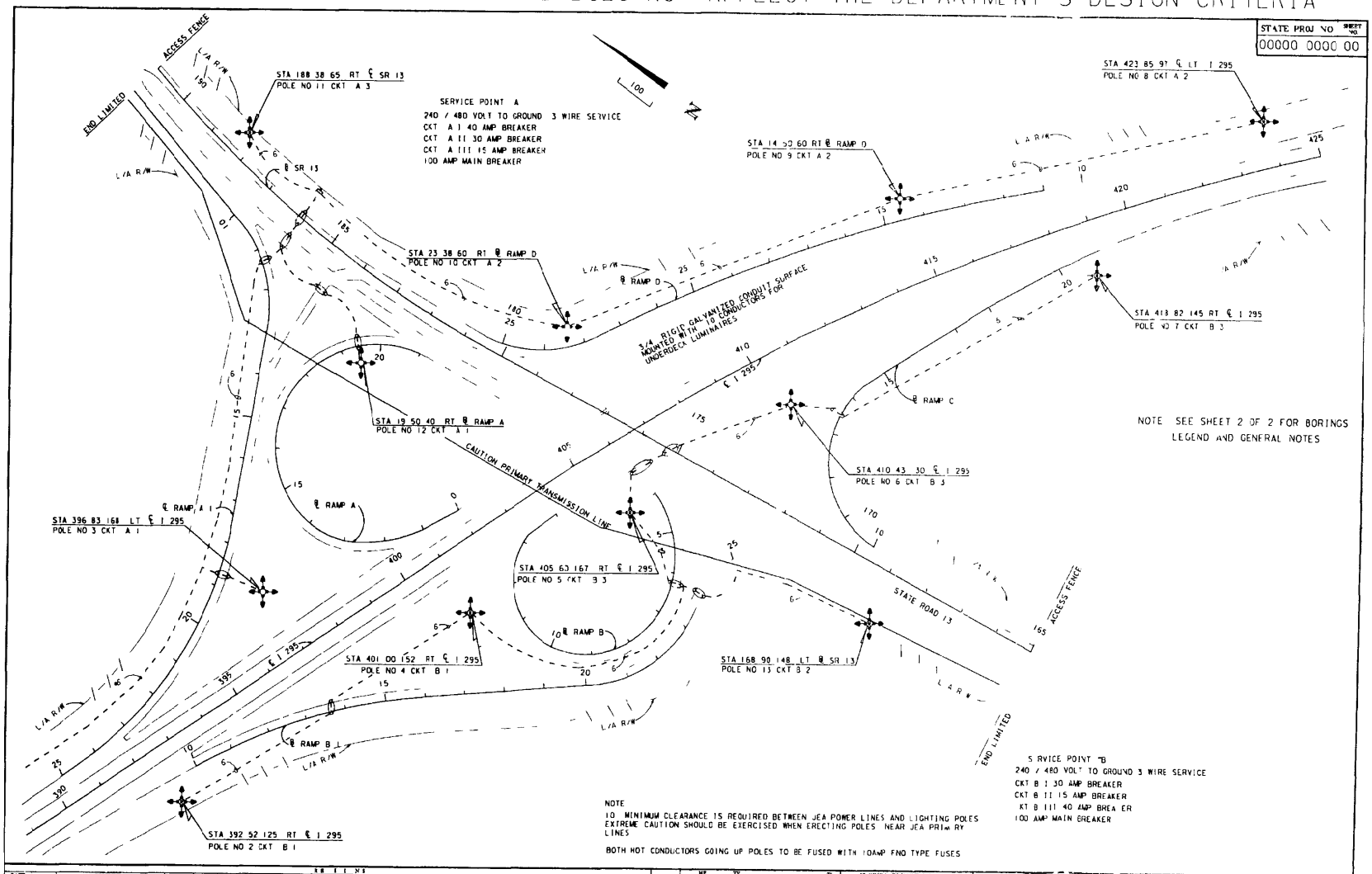
EX II-25-C

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA



EX II 25-D

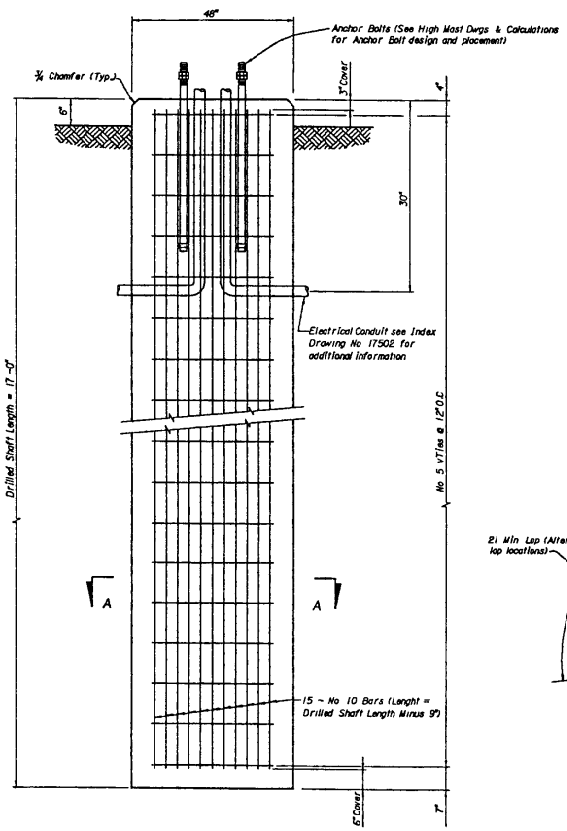
THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA



THIS EXIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA

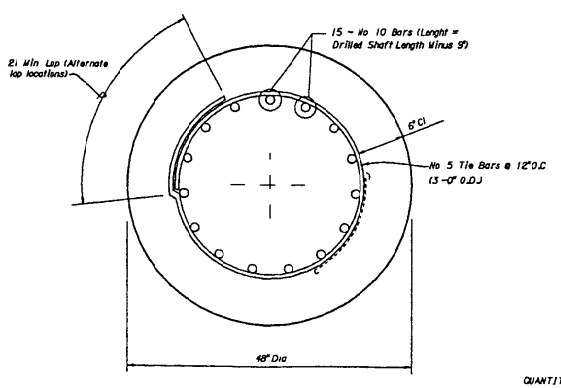
$$$$$$$PRFSPECIFICATION$$$$$$$ 12 SEP 1990 10:00 ST1(120105)HIMASTPOL.DGN 1

FED. ROAD DIV. NO.	ST TE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA	00000-0000		L-0



DRILLED SHAFT

10 - REQUIRED



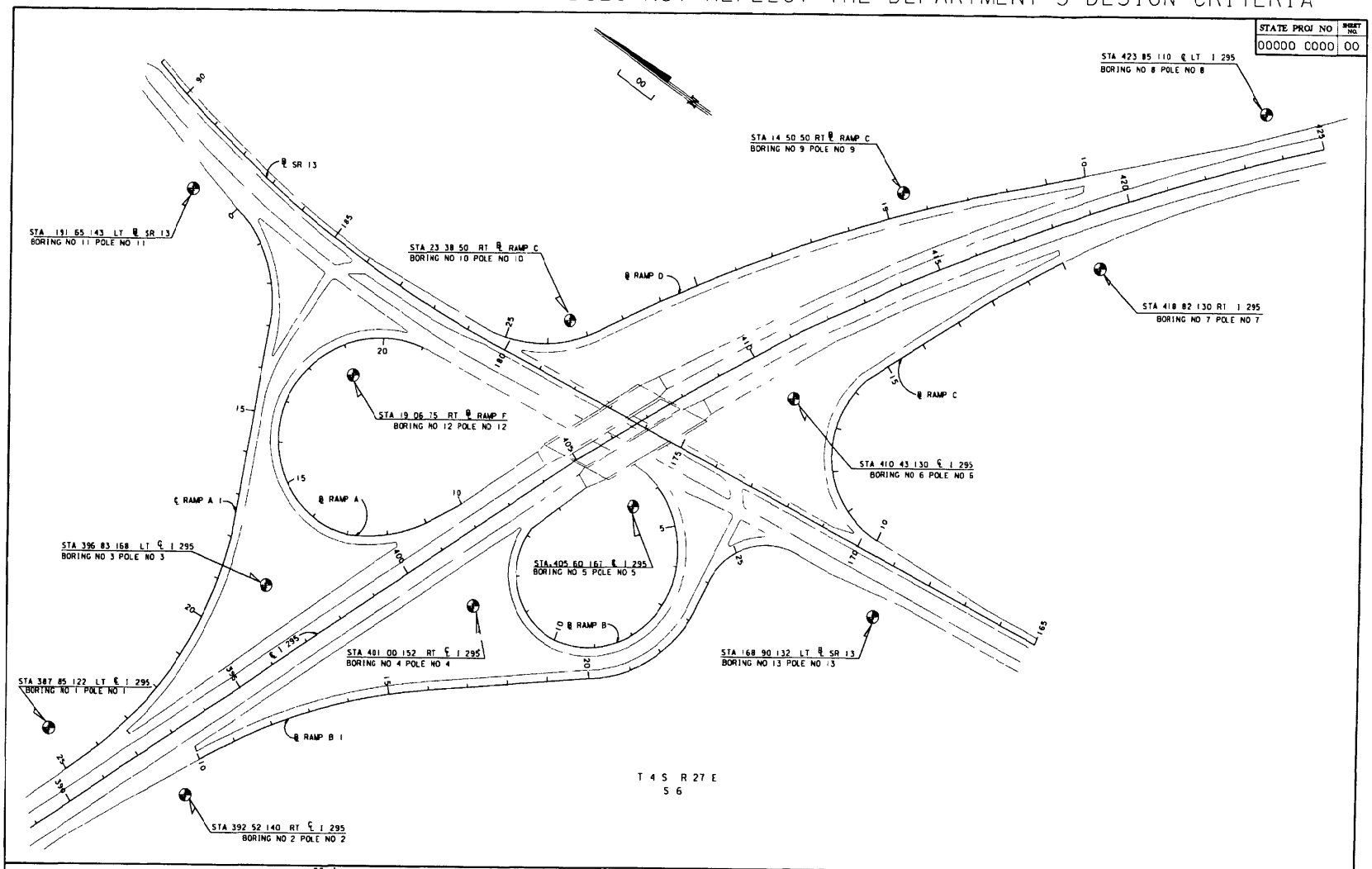
SECTION A-A

GENERAL SPECIFICATIONS	Florida Department of Transportation Standard Specifications for Road and Bridge Construction Dated 1986 and Supplements thereto if noted in the Special Provisions for this Project
DESIGN SPECIFICATIONS.	Design in Accordance with the 1985 edition of the A.A.S.H.T.O Standard Specifications for Highway Bridges and Standard Specifications for Structural Supports for Highway Signs Luminaires and Traffic Signals(1985) with Approved Revisions
DESIGN LOADING	Basic Wind Velocity of 80 M.P.H on 120 ft High Mast Luminaire
MATERIAL STRESSES:	All allowable stresses are in accordance with current A.A.S.H.T.O Standard Specifications for all the materials shown in the Plans
CONCRETE:	Class III fc =5,000 p.s.i @ 28 Days
REINFORCING STEEL:	Reinforcing Steel Shall be Grade 60
ANCHOR BOLTS	For number diameter length and bolt circle placement of Anchor Bolts; See Approved Specifications and Drawings Anchor Bolts shall be Designed to effectively transmit the required forces to the Drilled Shaft and shall be Galvanized in accordance with ASTM A153 except that anchor bolts fabricated of a Material having a yield strength greater than 80,000 p.s.i shall have an Electroplated Zinc Coating SC3 Type II Applied in Accordance with ASTM B633
	The Contractor shall be Responsible for Assuring that the Anchor Bolts Fit within the Reinforcing Cage of the Drilled Shaft
	The Contractor may increase the Drilled Shaft Foundation Diameter and Maintain 6" Concrete Coverage if Required by the High Mast Pole Design At No Additional Cost to the Department of Transportation
DESIGN REACTIONS:	The Drilled Shaft is Designed for the following Reactions Applied by the Pole to the Top of the Drilled Shaft MOMENT=2,900 in-Kips AXIL LOAD=4.58 Kips HORIZONTAL LOAD=3.7 kips
	If the Contractor Furnishes a Pole Which Produces Greater Reactions Under the Design Loading than the Values Given Above The Contractor shall Redesign the Drilled Shaft Submitting the Necessary Drawings and Calculations Signed and Sealed by a Professional Engineer Registered in the State of Florida to the Department for Review and Approval

QUANTITIES: Class III Concrete = 4654 C.Y Per Lin Ft of Drilled Shaft Length
Reinforcing Steel = 76 10 Lbs Per Lin Ft of Drilled Shaft Length

REVISIONS							Name	Dates	ENGINEER OF RECORD	LOGO	SEAL	FLORIDA DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN OFFICE	SHEET TITLE: HIGH MAST POLE FOUNDATIONS	Drawing No.
Dat	By	Description	Dc	By	Description	Drawn by						ROAD NO. / COUNTY / PROJECT NO.	PROJECT NAME:	Index No.
						Checked by								
						Designed by								
						Checked by								
						Approved by								

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA



DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	TR	BY	DESCRIPTION	TR	BY	DESCRIPTION

REVISIONS

	NAME	DATE		NAME	DATE
DESIGNED BY			DRAWN BY		
CHECKED BY			CHECKED BY		
SUPERVISED BY					

FLORIDA DEPARTMENT OF TRANSPORTATION

APPROVED BY

D TR

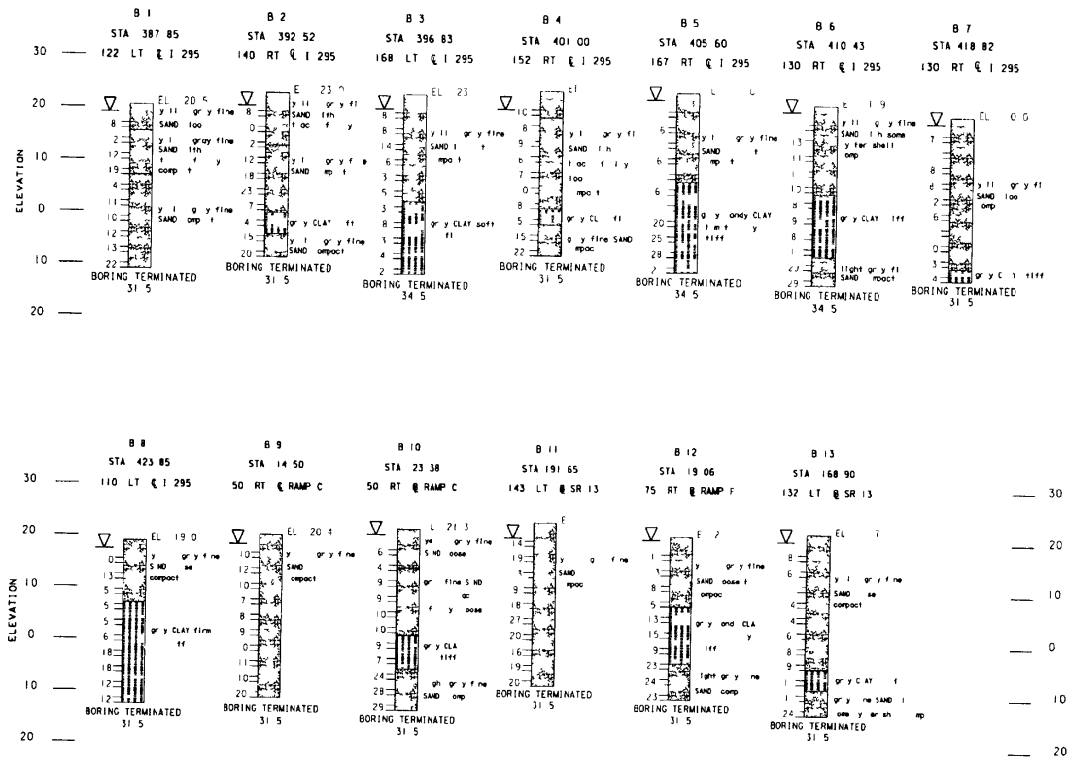
CONSULTANT LOGO IF PLANS PREPARED BY CONSULTANT

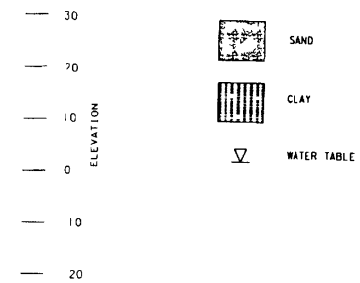
BORING LOCATIONS

EX 11-25-G

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA.

STATE PROJ NO	SHEET NO.
00000 0000	00





THIS AREA IS MODERAATELY CORROSIVE

SPOON I side diamete I 3/8
Outside diameter 2

HAMMER Weight 140 lbs
Avg drop 30

NOTE Numbe s to left of bori g indicate on spoon fo 12 penet atio (nless other ise noted)

All depths a e gi en i di tan belo e isting ground (unles otherwise noted)

Soil desc iptions and penet ation alues shown o this sheet are fc the bo ings shown in the plan view ONLY and a e not to be co t ed as a g arantee of soil co ditio s othe than at e act locatio s d illed If the e a e any doubts as to the p e alit g subsurface conditions It is incumbent upon the indi idual aisi g the question to pe fo m his own subsurface in estigation

PROFILE

SCALE: 1 10 0

DATE	BY	DESCRIPTION	DATE	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	DESCRIPTION

REVISION

DESIGNED BY / CHECKED BY / SUPERVISED BY — NAME — DATE — DRAWN BY / CHECKED BY — NAME — DATE

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY
DATE

CONSULTANT LOGO IF PLANS PREPARED BY CONSUL ANTS

BORING DATA
HIGH MAST LIGHTING

EX-II-25-H

CHAPTER 26

HIGHWAY LANDSCAPE

26.1 General

Highway landscaping plans are usually a component set of plans. Projects with minor or typical landscaping may include these features on sheets in the roadway plans set or detailed on roadway plans. When prepared as a component set they shall include a key sheet, tabulation of quantities sheet, planting details and notes sheet, and other relevant plan sheets as outlined in this chapter. Sheets shall be numbered ~~consecutively~~ consecutively with the sheet number prefixed by the letters LD.

26.2 Key Sheet

The key sheet is the first sheet in the set and shall be prepared on a standard key sheet format as mentioned in Chapter 3 of this volume. Contract plans set information shall not be required on this sheet when it is shown on the lead key sheet (usually roadway). Location map and length of project box need not be shown if this information is shown on the lead key sheet of the plans set. Other project data, approval signatures and consultant names shall be shown as described in Chapter 3 of this volume.

Responsible Landscape Architect's approval signature and seal shall be included in appropriate locations on the landscaping plans.

26.3 Tabulation of Quantities

The tabulation of quantities sheet shall be prepared on a standard plan format and shall show all bid items, the breakdown of plants or materials within each bid item as applicable, the quantities of each, and the total quantities for all bid items. Bid items shall be listed in numerical order. Plant quantities may be tabulated by sheet either on this or on a separate sheet of "Quantities by Sheet". Notes referring to specific bid items or plant materials should be shown on this sheet. Notes of a more general nature may be shown on this sheet or on the Planting Details and Notes sheet. This sheet or a similar sheet should also be utilized to tabulate the materials required for the construction of sprinkler irrigation systems. This sheet should be set up similar to that shown in Exhibit II-26-A.

On contracts with multiple project numbers or federal aid and non-federal aid quantities, provisions shall be made to tabulate and summarize their respective quantities.

26.4 Standard Details and Notes

This sheet should be included in all landscape plan sets and show all standard details which are applicable to the project. General notes and additional landscaping and/or sprinkler irrigation detail drawings may also be shown on this sheet. The following note should appear on this or the tabulation of quantities sheet:

> "The locations of plants, as shown in these plans, are approximate. The final locations may be adjusted to accommodate unforeseen field conditions, to comply with safety setback criteria, to avoid creating unsafe sight conditions, or as otherwise directed or approved by the Engineer."

26.5 Plan Sheets

26.5.1 Format and Scale

The various plan sheets shall be prepared on a standard plan format. The scale shall be such that all details are clear and legible at half-size reduction of plans. However, the scale shall not be smaller than 1" = 100'. For simple, uncomplicated projects, or narrow sections of a project, it may be possible to "stack" two plans on one sheet, one below the other. Clarity and legibility shall be preserved in all cases.

A north arrow and scale shall be shown, as applicable, at a point of maximum visibility on the sheet. If two plans are "stacked" on one sheet, then each plan portion shall contain a north arrow and scale.

26.5.2 Plan Sheets

Base information required on the plan sheets is as follows:

Project Centerline
Edge of Pavement (edge of driving lanes)
Drainage Structures
Guardrails
Right-of-way and/or Limited Access Fence Line
Sidewalks or other planned or existing structures
Overhead and Underground Utility Locations, if known
Limits of Clear Zone should be plotted or safety setback distances noted frequently on each plan sheet

Plants shall be identified by their common name and quantity, either individually or in groups. Abbreviations of plant names are acceptable, if properly identified on the tabulation of quantities sheet.

For an example of a landscaping plan sheet, see Exhibit II-26-C.

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA

STATE PROJ NO.	SHEET NO.
00000 0000	000

TABULATION OF QUANTITES

ITEM	SIZE	UNIT	QUANTITY				TOTAL QUANT
			15190 3461	15190 3460	15190 3459	15190 3458	
Mobilization		LS	1	1	1	1	1
Maintenance of T affic		LS	1	1	1	1	1
Water for Plant Establishment		MG	2,167 5	1,448 4	2,643 9	2 596 1	8,155 9
Wildflower Seed		LB	35 6		8	9	52 6
Staki g and Guying (T ees)		EA	38				38
Staking and G ying (Palms)		EA	159	72	91	143	465
Shrubs	1 Gal Can or Large	PL	7,548	7,115	12 683	9 955	37 301
Russelon Olive (Elaeagnus pungens)	15 to 18 Ht		1 386	5 315	5 880	5 000	17 581
P lmerose Jasmine (Jasminum mesnyi)	12 to 15 Sp		1 680	1 000	2,555	1 970	7,205
Wax My tle (Myrica cerife a)	15 to 18 Ht		4,482	800	4,248	2 985	12 515
Shrubs	5 Gal Can or Large	PL	2,697	670	1 445	2,005	6 817
Oleander (Nerium oleander)	24 Ht (See Note)		2,697	670	1 445	2 005	6,817
Trees	5 Gal Can or Larger	PL	2 875	1 374	2 547	3,020	9,816
Florida Red Maple (Ace r rrrum Red Sun	5 Ht 3 C T		86	23	21	26	156
Loblolly Bay (Gordo la lasianthus)	6 Ht		35	10		5	50
Slash Pine (Pinus elliottii Imp o ed)	24 36 Ht (See Note)		2,629	1 323	2 500	2,943	9 395
Bald Cypress (Ta odium distichum)	6 Ht		125	18	26	46	215
T ees	15 Gal Can or Larger	PL	50				50
Laurel Oak (Que cus laurifolia)	10 Ht 5 C T		50				50
Single Trunk Palms	8 to 20 C T		177	90	109	175	551
Cabbage Palm (Sabal Palmetto)	8 C T		7	7	4	6	24
Cabbage Palm (Sabal Palmetto)	12 C T		32	27	24	38	121
Cabbage Palm (Sabal Palmetto)	16 C T		68	39	44	76	226
Cabbage Palm (Sabal Palmetto)	20 C T		70	18	37	55	180
Single Trunk Palms	21 C T and La ge	PL	35	6	12	16	69
Cabbage Palm (Sabal Palmetto)	24 C T		35	6	12	16	69

GENERAL NOTES

1 No shrub or tree is to be planted within ten feet (10) of the R/W limits or within ten feet (10) from the back of guardrail

2 No substitutes on varieties listed will be allowed except Live Oak (Quercus Virginana) shall be substitued for Laurel Oak in "Trees 15 gal can or larger "

3 Plants shall be watered as necessary or within 24 hours after notification by the Engineer

4 Plant locations may be adjusted by the Engineer due to unforseen on site conditions

ABBREVIATIONS

C T Clear Trunk
Ht Height
O C On Center
Sp Spread

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

R.B. 18 10 N.B.

DESIGNED BY | CHECKED BY | SUPERVISED BY | DRAWN BY | CHECKED BY

NAME | DATE | NAME | DATE

FLORIDA DEPARTMENT OF TRANSPORTATION

APPROVED BY

DATE

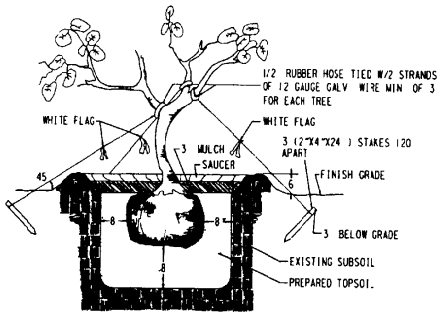
CONSULTANT USE OF PLANS PROHIBITED BY CONSULTANTS

TABULATION OF QUANTITIES
LANDSCAPE PLANS

EX 11-26-A

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA.

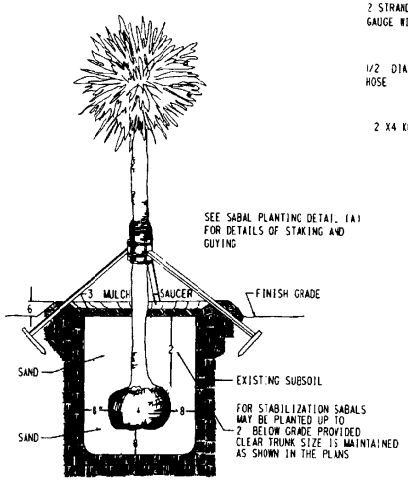
STATE PROJ NO	SHEET NO.
0C000 00	00



TREES LARGER THAN 3 1/2 CALIPER

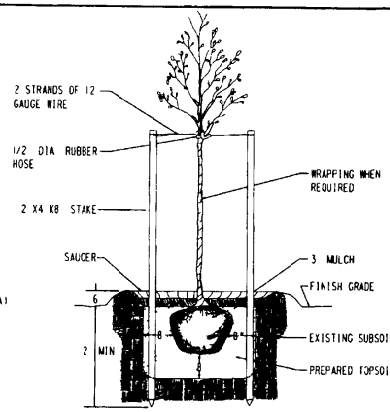
TREE PLANTING DETAIL (A)

(WITH STAKING AND GUYING)
NO SCALE



SABAL PLANTING DETAIL (B)

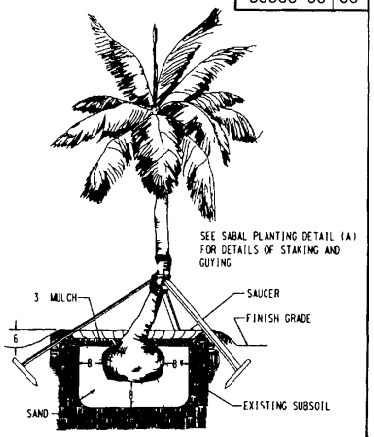
(WITH STAKING AND GUYING)
NO SCALE



TREES FROM 2 3 1/2 CALIPER

TREE PLANTING DETAIL (B)

(WITH STAKING AND GUYING)
NO SCALE

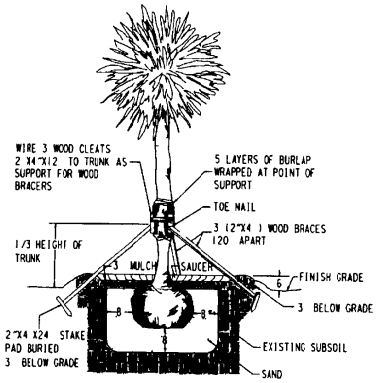


COCONUT PLANTING DETAIL

(WITH STAKING AND GUYING)
NO SCALE

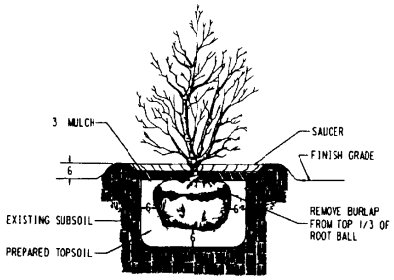
NOTES

PALMS TO BE STAKED ONLY AT THE DIRECTION OF THE ENGINEER



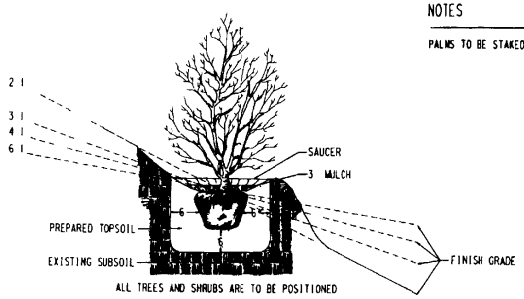
SABAL PLANTING DETAIL (A)

(WITH STAKING AND GUYING)
NO SCALE



SHRUB PLANTING DETAIL

NO SCALE



ALL TREES AND SHRUBS ARE TO BE POSITIONED VERTICALLY REGARDLESS OF THE SLOPE OF THE GROUND IN WHICH THEY ARE PLANTED WATER RINGS ARE TO BE CONSTRUCTED AT RIGHT ANGLES TO THE TREE OR SHRUB OR IN THE POSITION WHICH WILL MOST EFFECTIVELY SERVE THE PURPOSE OF RETAINING WATER AT THE BASE OF THE PLANT

SLOPE PLANTING DETAIL

NO SCALE

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

REVISIONS

DESIGNED BY | CHECKED BY | SUPERVISED BY | NAME | DATE | DRAWN BY | CHECKED BY | NAME | DATE

FLORIDA DEPARTMENT OF TRANSPORTATION

APPROVED BY

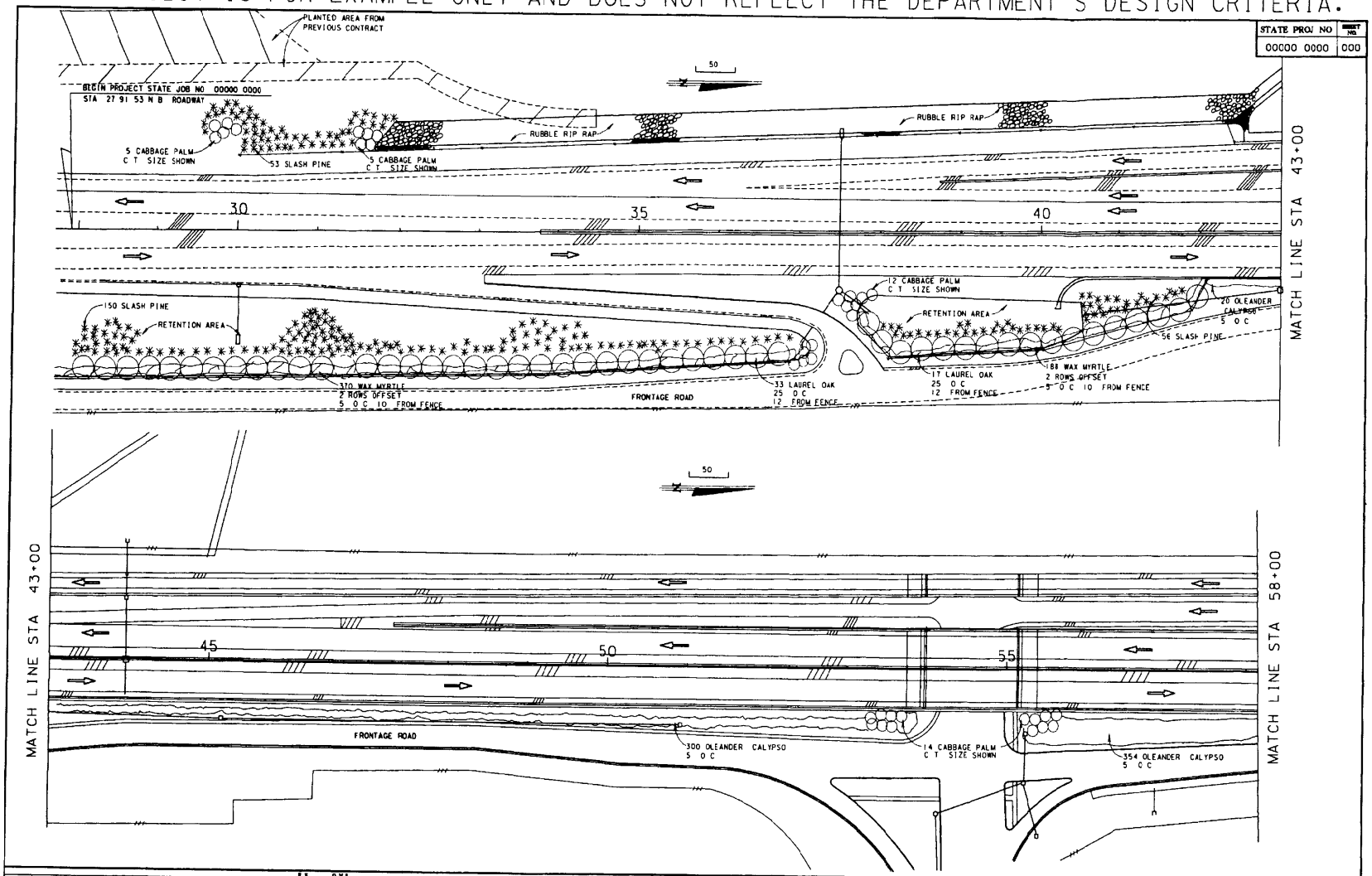
DATE

CONSULTANT LOGO PLACE PREPARED BY CONSULTANT

I-000 LANDSCAPE PLAN
PLANTING DETAIL

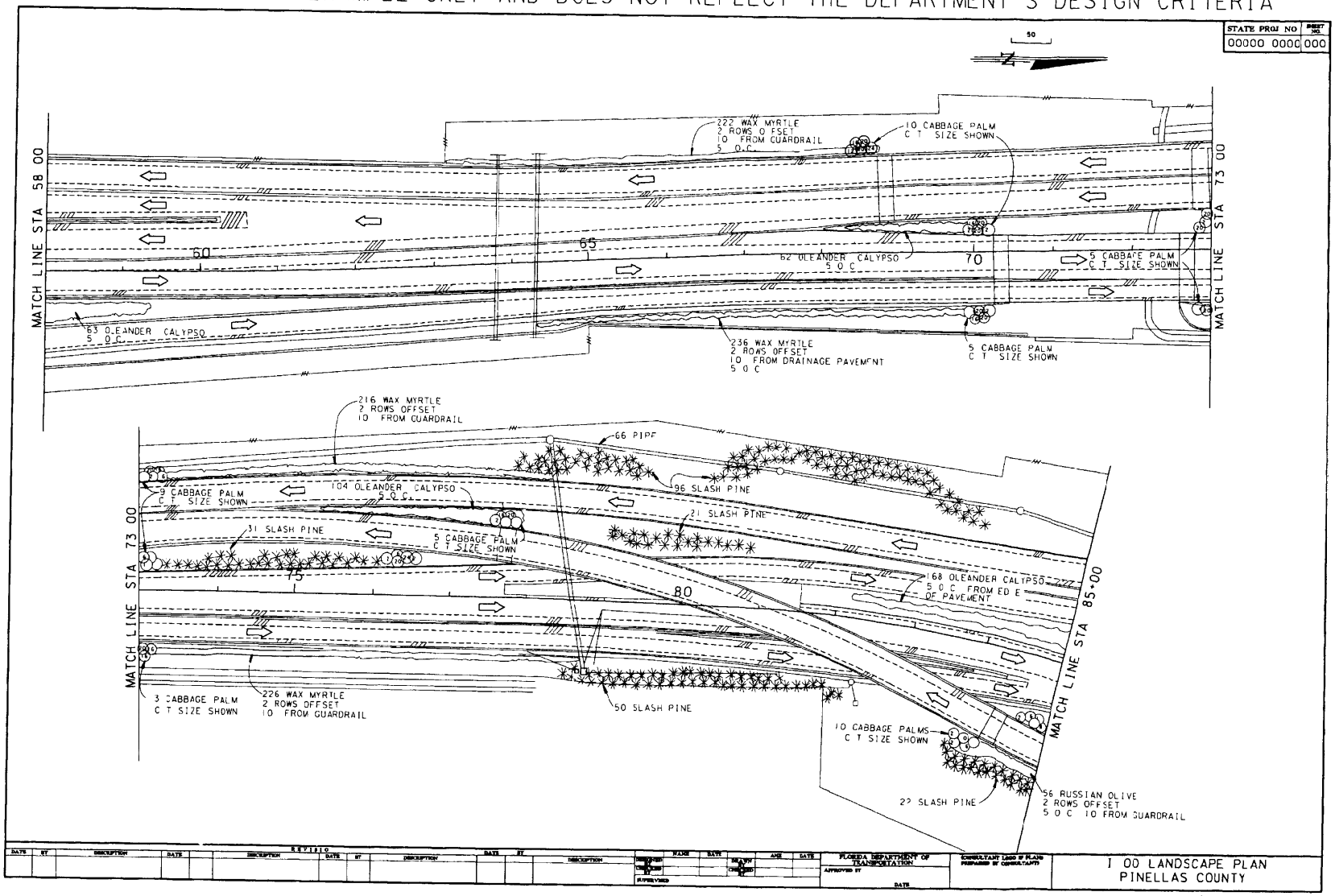
EX II-26-B

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA.



EX II-26-C

THIS EXHIBIT IS FOR EXAMPLE ONLY AND DOES NOT REFLECT THE DEPARTMENT'S DESIGN CRITERIA



EX II 26 D

CHAPTER 27

UTILITY CONTRACT PLANS

27.1 General

Most utility adjustment work is performed by the utility owner In some cases the highway contractor is required to construct or relocate utilities for the project In such cases utility plans shall be prepared as a separate plan component, complete with key sheet and summary of pay items

27.2 Key Sheet

The key sheet, which shall be the first sheet in the set, shall be prepared on a standard key sheet format as described in Chapter 3 of this volume Contract plan set information, location map and length of project box shall not be required if it is shown on the lead key sheet (usually roadway) An index of plan sheets shall be shown on the left side of the sheet The date of the governing Roadway and Traffic Design Standards shall be inserted in a note below the Index of Plan Sheets The job number shown shall be the 6000 series to indicate utility work All other data shall be as described in Chapter 3 of this volume

27.3 Summary of Quantities, Standard Notes and Summary of Pay Items

The summary of quantities sheet shall be prepared on standard plan sheets and should show any quantities tabulated for location, size, etc Standard notes referring to item numbers shall also be shown on this sheet or on plan sheets if no summary of quantities sheet is included

Summary of pay item sheets are to be prepared the same as noted in Chapter 4

27.4 Plan Sheets

Utility plans shall show full construction details for all utilities to be relocated or constructed by the contractor Plan and profile sheet format should be utilized Project information shown shall be similar to that described in Chapter 10 Utilities to be relocated or constructed shall be shown by a heavy solid line in plan and profile The scale used should be the same as that used for the plan-profile sheets

APPENDIX A

GLOSSARY OF TERMS

AADT	Average Annual Daily Traffic.
ADE	Area Design Engineer
ADT (two way)	Average Daily Traffic.
Approach Slab	A section of a roadway adjacent to, and at the end of a bridge, requiring special design and construction considerations.
Arterial	A general term denoting a highway primarily for through traffic, usually on a continuous route.
A-2 or A-3 Material	Materials consisting of sands deficient in coarse materials and soil binder.
A-8 Material	A national classification of a type of unsuitable material.
Base course	The layer or layers of specified or selected material of design thickness placed on a subbase or subgrade to support a structural course.
Baseline	An accurately measured line from which the position of other points may be determined, or on which a survey may be based.

Benchmark	A relatively permanent object, natural or artificial, bearing a marked point whose elevation above or below an adopted datum is known.
BHRS	Bridge Hydraulic Recommendation Sheet.
Bifurcated Section	A section of a divided roadway separated by a very wide area of natural ground.
Border Width	A term usually used in conjunction with urban roadway cross section denoting the width of cross section from the face of curb to the right-of-way.
Borrow or Borrow Material	Material excavated from designated areas for use as 'fill'.
Borrow Pit	An excavation site outside the limits of a roadway for producing material necessary for roadway construction.
Bridge Culvert	Culverts whose dimensions exceed a 20' distance measured along project centerline between the inside faces of exterior walls..
Bulkage	Increase in soil volume due to manipulation.
CADD	Computer Aided Design and Drafting.

Catagorical Exclusion:	Projects that may be excluded from the Environmental Impact Process due to the type of work involved - example resurfacing projects.
Centerline	The axis along the middle of a road or other facility from which features can be conveniently measured.
CES	Cost Estimating System - The Department's program for estimating construction costs for projects.
Channelization	Usage of traffic islands and other devices to direct traffic into definite paths.
Clear zone	A traversable and unobstructed roadside area available for errant vehicles to safely regain control.
Clearing and Grubbing	Process of clearing the roadway construction site of unwanted features.
Collector	A general term denoting a roadway that links neighborhoods or areas of homogeneous land use with arterial streets.
Compound Curve	A curve consisting of two or more arcs of different radii curving in the same direction and having a common point.

Contract	A legal document stating the terms and conditions of an agreement between the Department and a private company to provide a service.
Contract Time	Number of calendar days allowed for completion of the contract, including authorized time extensions.
Contractor	An individual or company that undertakes to provide service specified in contract documents.
Control Radius	Radius by which a turning vehicle can maneuver with the least amount of difficulty.
Crest Vertical Curve	A convex parabolic curve providing a smooth transition between two grades.
Cross Slopes	Lateral slope given to the pavement to provide adequate drainage.
Cross Drain	A drainage structure utilized to convey water from one side of the roadway to the other, including median drains and culverts under intersecting streets.
Crown Line	The inside top of a culvert.
Culverts	A round or special shaped pipe or box used to convey water, especially under roadways or other facilities.

Curb Returns	The curved portion of the curb at which driveways and cross roads intersect with a roadway.
Cut	That portion of a road site where the formation has been excavated below ground level.
Datum	A known or measured point, line or plane to which others may be referred for vertical or horizontal control.
Delineator	Reflector units capable of clearly reflecting light under normal atmospheric conditions from a distance of 1000 feet when illuminated by the upper beam of standard automobile lights.
Design Speed	A speed determined for design and correlation of the physical features of a highway that influence vehicle operation.
Design Exception	Approved deviation from AASHTO or Department criteria.
Detention Area, Basins, and Pond	Drainage basins specially constructed and used to retard stormwater, discharging at a controlled rate for a specific period of time.
DHV	Design Hourly Volume - the traffic volume on which the functional design of a highway is based.

DPI	Ditch Point of Intersection of ditch grades.
Drainage Areas	The portion of the land surface which drains to a specific point, including paved areas, roofs and unpaved land.
Drainage Divides	The area of higher ground separating drainage areas or basins.
Driver Expectancy	A condition whereby drivers are conditioned, by encounters with repetitive features, to expect a certain driving environment. When that environment is provided, driver reaction is very predictable. When expectancy is violated, drivers may react slowly or improperly.
DHW	Design High Water elevation.
Earthwork	The excavation and filling required to construct embankment.
EIS	Environmental Impact Statement
Embankment	The constructed earth fill and excavation built to carry a road.
ESAL	Equivalent single axle load.
Esthetics	Visual impact of the roadway environment on drivers and other vehicle occupants.

Excavation	Removal of all materials of whatever nature to complete earthen cuts, ditching, sub-excavation and borrow pits.
Exceptions	Those portions of the roadway within the project limits that are excluded.
Fill	A portion of the proposed cross section which falls above the existing groundline and indicating volume of fill.
Flow Line	The inside low point or lowest line of water flow in an open gutter, swale, ditch or other drainage element.
Freeway	An expressway with fully controlled access - the highest type of arterial highway.
Friction Course	The top layer of an asphalt pavement to provide resistance to skidding, traffic abrasions and the disintegrating effects of climate.
Functional Classification	Classification of highways by design types based on the major geometric features.
F.A.	Federal Aid - used in conjunction with projects having Federal Aid funds.
Geometrics	Visible elements of a roadway, such as alignment, grades, sight distances, widths, slopes, etc.

Grade	A rate of rise or fall on any length, with respect to horizontal.
G.M.	Gross Mile.
High mast	Free standing poles or towers of height 80′ or more utilized for highway lighting to provide uniform, and glare free, light distribution over large areas of highway.
30th Highest Hourly Volume	The hourly volume that is exceed by 29 hourly volumes during a designated year.
Imagery	Visible representation of characters, line drawings and symbols.
K, D and T Values	K: Ratio of DHV to ADT. D: Directional distribution of DHV expressed as a percentage. T: Percentage of trucks, inclusive of light delivery, expressed as percentage of DHV.
Lane Taper	Divergence of lane edge for the purpose of adding or dropping lanes.
Lane Transition	Lateral shift of a travel lane.
Lateral Ditch	A ditch which runs more or less perpendicular to the centerline of roadway.

LBR	Limerock Bearing Ratio - specifies load bearing capacity of the material, as related to that of limerock.
Level of Service:	A qualitative rating of the effectiveness of a highway in serving traffic, measured in terms of operating conditions.
Leveling Course	One or more layers of asphalt mix used to restore a distorted existing pavement to a uniform cross section and an acceptable level of rideability.
Limited Access R/W	The Right-of-Way wherein the right of owners or occupants of abutting land, or other persons to access a highway facility is limited to designated points, such as interchanges.
May	Permissive condition.
MUTCD	Manual of Uniform Traffic Control Devices.
MUTS	Manual on Uniform Traffic Studies.
Mylar	Polyester film used as reproducible drafting media.
National Sign Code	Code numbers assigned to standard road signs.
N.M.	Net mile.

Overbuild	Multiple layers of asphalt mix used to build up one side of an existing crown to provide a uniform cross-slope.
Overland Flow	Diffused surface flow of water.
Overlay	The construction of a structural course and, if necessary, leveling course and overbuild course, to increase the source life and improve the rideability of an existing pavement.
Overtopping Elevation	Elevation at or above which water will flow over a structure, the highway grade or a drainage divide.
Pavement Design	Description of the types and thicknesses of various layers constituting a pavement structure.
Pay Item Number	Number assigned by the Department to construction components for pay purposes.
PC Station	Point of Curvature Station - The station at the beginning of a horizontal curve.
PD & E Study	Project Development and Environmental Study.

Photogrammetry	Photographic process of topographic mapping using stereographic plotters.
PID	Plans In District.
PI Station	Station of the Point of Intersection of two tangents.
Plans	The approved plans, including reproductions thereof, showing the location, character, dimensions and details of the work to be done.
Posted Speed	Regulatory speed limit established in accordance with department policy and posted on the roadway.
Profile Grade Line	A longitudinal line which controls the vertical geometry of the project, usually the inside edge of a divided highway or the centerline of an undivided highway.
Profile Grade Point	A specific point along the Profile Grade Line.
PS & E	Plans, Specifications and Estimate.
PT Station	Point of Tangent Station - station at the termination of a horizontal curve and at the beginning of the tangent.

Quality Assurance	Is all planned and systematic actions necessary to provide adequate direction so that all resulting design products can meet predetermined requirements. This includes the establishment of design policies, procedures, standards, guidelines, training and monitoring for compliance.
Quality Control	Following established design policies, procedures, standards and guidelines in the preparation of all design products. This includes the checking and review of individual designs for compliance and good engineering practice.
Ramp	That portion of the traveled way connecting two roadways at a grade separated intersection.
Range	An area of 36 square miles enclosed between nationally established survey lines running north-south, six miles apart, and township lines.
Recovery Area	See "Clear Zone".
Reference Points	One of several fixed objects for which measurements are made to enable a point to be accurately located.

Resurfacing	A supplemental or replacement surface placed on an existing pavement to improve its surface or increase its strength.
Retention Area, Basin or Pond	A drainage facility designed to retain runoff without a direct outlet discharge structure.
Returns	That extension of the roadway which allows entrance and exit to sidestreets, parking lots, etc.
Reverse Curve	A combination of two horizontal curves in opposite directions with a common tangent.
3R	Resurfacing, Restoration, Rehabilitation of a roadway.
R/W	The areas, existing or acquired by permanent easement, for highway purposes.
Sag Vertical Curve	A concave parabolic curve providing a smooth transition between two grades.
Section Lines	Established survey grid lines enclosing approximately a one mile square area of land.
Shall	Mandatory condition.
Shop Drawings	Detailed drawings of elements requiring special fabrication.

Should	Advisory condition.
Shoulder	The portion of the roadway contiguous with the traveled way and used for lateral support of base and surface courses, emergencies and safe recovery of errant vehicles.
Shrinkage	Reduction in volume of soil mass.
Sidedrain	A drainage structure placed more or less parallel to the centerline of a roadway for conveyance of water under driveways, and other such obstructions.
Soil Survey	The exploring and recording of soil types and conditions.
Special Ditch	Roadside ditch whose dimensions do not conform to those shown on the typical section.
Special Provisions	Special directions, provisions or requirements peculiar to the project under consideration and not otherwise thoroughly or satisfactorily detailed or set forth in the specifications.
Specifications	Document containing the directions, provisions, requirements and stipulations relating to the method and manner of performing the work.

Speed Change Lanes	Special lanes provided for the use of accelerating or decelerating vehicles.
Station Equations	Station along an alignment where the numerical continuity is broken.
Storm Sewer or Storm Drain	Pipe system or portion thereof used to collect or convey storm water runoff.
Stabilizing	Process by which the subbase is brought up to a bearing value sufficient to support the base.
Structural Course	One or more layers of asphalt mix placed to provide the major structural component of the pavement or to increase the service life of an existing pavement.
Subbase	The layer or layers of specified or selected material of designated thickness placed on a subgrade to support the basecourse.
Subgrade	The top surface of a roadbed upon which the pavement structure and shoulders are constructed.

Superelevation	A tilt given to a road at a horizontal curve to counteract the effect of centrifugal force.
Superelevation Transition	Transition of a cross section from normal cross slope to full superelevated cross slope, or vice versa.
Surface Course	One or more layers of a pavement structure designed to accommodate traffic load.
Survey Reference Points	Same as reference point.
Template	The sum of elements of widths, depths and cross slopes which define the roadway cross section.
Topography	Representation, on a plan, of the existing physical features in an area.
Township	An area of 36 square miles enclosed between nationally established survey lines running east-west, six miles apart, and range lines.
Travelway	The portion of the roadway for the movement of vehicles, exclusive of shoulders and auxiliary lanes.

Traversable	Crashworthy roadside conditions that would allow an errant vehicle to regain control without serious damage.
Turning Radius	Outside wheel path of a turning vehicle.
Typical Section	Shows the design elements for the cross section of a proposed roadway.
Underdrains	A subsurface drainage system.
Unsuitable Material	Types of dirt that are classified unsuitable for roadway construction.
Value Engineering	An analysis of materials, processes and products in which functions are related to costs and from which a selection may be made for the purpose of achieving the required function at the lowest overall cost consistent with the requirements for performance reliability and maintainability.
Vellum	Translucent paper used as reproducible drafting media.
Vertical Curve	A parabolic curve used to give smooth transition between tangent grade-change.

Weaving Movement	The crossing of traffic streams moving in the same general direction, accomplished by merging and diverging.
W.P.I. Number	Work Program Item number (assigned by the Department).

VOLUME II

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