STRUCTURES DESIGN OFFICE
STANDARD DRAWINGS

NAME OF REGISTRANT ______________________________

FIRM, AGENCY OR
FDOT AFFILIATION
(INCLUDE DISTRICT NO.) ______________________________

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MAILING ADDRESS ______________________________

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TELEPHONE ______________________________

Please remove this sheet from your Standard Drawings Book and complete the requested information so that addenda and revisions may be forwarded as necessary.

Please return to:

Florida Department of Transportation
Structures Design Office
Mail Station 33
605 Suwannee Street
Tallahassee, FL 32399-0450

Approved:

Topic No.: 625-020-300-c
Effective: September 1, 1994

Jerry L Potter

Jerry L. Potter, P.E.
State Structures Design Engineer

STRUCTURES STANDARD DRAWINGS

INTRODUCTION

1.1 PURPOSE

The Standard Drawings are a collection of 11 X 17 prints of Standard, Semi-Standard and Informational drawings assembled to assist the Engineer of Record (EOR) in preparing contract plans for structural elements and/or systems that are included as part of the construction work in Florida Department of Transportation projects. Such elements and/or systems include, but are not necessarily limited to, bridges, overhead sign structures, earth retaining structures and miscellaneous roadway appurtenances. The drawings defined and referenced as Standard Drawings may be used in contract plans with no further input required by the EOR and do not require the signature and seal of the EOR when incorporated as part of the Record Drawings. Semi-Standard drawings are similar to Standard Drawings but do require some input by the EOR to be complete and do require the EOR's signature and seal. Informational Drawings provide direction and assistance to the EOR in the use of the Standard and Semi-Standard Drawings to which they relate and do not become part of the contract drawings.

1.2 AUTHORITY

Section 334.044(2), Florida Statutes.

1.3 GENERAL

The Standard Drawings are presented in 11 x 17 format consisting of drawings, text and figures as necessary to provide engineering standards, criteria and guidelines to be used in the development of engineering drawings of structures for which the Structures Design Office (SDO) has responsibility. The manual is intended to be used in conjunction with the Structures Design Guidelines (Topic No. 625-020-150) and the SDO's Detailing Manual (Topic No. 625-020-200). The manual is presented in two parts, Metric English.

1.4 DISTRIBUTION

The Standard Drawings are available from the following address:

Maps and Publications Sales
Mail Station 12
605 Suwannee Street
Tallahassee, Florida 32399-0450
Tel.: (904) 488-9220.

The Standard Drawings are furnished to Department of Transportation personnel at no charge upon request; however, recipients external to the Department should contact Maps and Publications at the above address regarding their acquisition.

1.5 MANUAL REGISTRATION

Each copy of the Standard Drawings includes a registration form. This form must be completed by the authorized, registered user and returned to the following address in order for the registrant to be assured of obtaining notification of future editions of the manual and/or any intermediate modifications:

Structures Design Office
Mail Station 33
605 Suwannee Street
Tallahassee, Florida 32399-0450
Tel.: (904) 488-6351.

1.6 TECHNICAL QUESTIONS ABOUT USE OF MANUAL

Because the Standard Drawings are distributed by Maps and Publications and not the responsible office, all questions regarding use of the contents of the manual should be directed to the Structures Design Office at the address shown in Article 1.5 above.

1.7 SUGGESTED MODIFICATIONS AND IMPROVEMENTS

All manual users are encouraged to suggest modifications and improvements to the Standard Drawings. The vast majority of modifications to the manual that become necessary are the direct result of changes in specifications, FDOT organization, Federal Highway Administration regulations and AASHTO requirements or as a result of recent experiences in construction, maintenance and research. Many other improvements to the manual, however, have been suggested by users. This has been particularly true with suggestions to improve the clarity of the drawings and to include examples, sketches and details that cover drafting needs not previously addressed in the manual. Suggestions to modify and improve the Standard Drawings should be transmitted in writing to the State Structures Design Engineer at the address included in Article 1.5 above.

1.8 ADOPTION OF REVISIONS

Revisions to the Standard Drawings are made on an "as-needed" basis but not less frequently than once, yearly. Proposed revisions that have been collected by the SDO are included in a "draft" update of the manual which is transmitted for review and comment to each District Structures Design Engineer (DSDE), each Professional Engineer Administrator in the SDO, FHWA and the Offices of Construction and Maintenance. Adoption of the "draft" copy of the manual, with comments, occurs by a majority of the authorized affirmative votes; viz., each DSDE has one (1) vote and the State Structures Design Engineer has two (2) votes. An affirmative vote is a vote in favor of adoption of the "draft" copy either with or without comments.

In the event that wide disparity in the review comments of the "draft" copy were to occur or that a particular review comment was not adopted, the matter will be resolved by these same authorized voters who comprise the Department's statewide SDO/DSDE Technical Advisory Group (TAG) for structures design. In either event, resolution of the "draft" copy comments may occur either during the next scheduled meeting of the TAG or may occur by telephone poll of the DSDE's conducted by the State Structures Design Engineer. Once the "draft" is approved by voter consensus (majority rules), the final editing and printing of the manual occurs and all manual registrants are advised of its availability.

All revisions and updates will be coordinated with the Organization and Procedures Office to ensure conformance with and incorporation into the Department's Standard Operating System.

1.9 EFFECTIVE DATE

Topic No.: 625-020-300-c
Effective: September 1, 1994

The effective date of the Metric manual is September 1, 1994 and that of the new English version is anticipated to be October 1, 1994.

FLORIDA DEPARTMENT OF TRANSPORTATION

STRUCTURES DESIGN OFFICE

STANDARD DRAWINGS

1994 EDITION

TOPIC NO. 625-020-300-c

METRIC

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

STANDARDS
1994

TABLE OF CONTENTS

NOTES:
1. An Index Number beginning with a prefix letter S, i.e. S-102, is used to designate a Semi-Standard sheet.
2. An Index Number beginning with a prefix letter I, i.e. I-122, is used to designate a sheet providing instructions
3. Comments and or questions concerning these Standards shall be directed (preferably in writing) to: Angelo J. Garcia.

RECYCLED PAPER

Mon Aug 15 13:48:44 1994 /usr5/strstand/met/index.dgn

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

PREFACE

The "Drawings" in this document were produced with the use of Computer Aided Design and Drafting equipment, and depict common structural components or elements suitable for standardization. Whenever possible the drawings were developed to full completion and are ready for insertion in the Contract Documents. These fully developed drawings are referred to as "Standard Drawings" and are easily recognized by referring to their Index Numbers, which in this case consist of numerical symbols only.

Besides fully developed "Standard Drawings", this document also contains two (2) other types of drawings. The first type provides incomplete standard details and/or a table of variables, that should be completed by the designer prior to inclusion of the drawing in the Contract Documents. These incomplete drawings are referred to as "Semi-Standard Drawings" and their Index Numbers are preceded by the letter "S".

The Index Numbers for the remaining drawings are preceded by the letter "I". These drawings provide information or instructions to designers and shall not be included in the Contract Documents.

The Engineer of Record (EOR) for a "Standard Drawing" is already shown in the portion of the title block which has been executed. He/She will continue to be the EOR for as long as the drawing(s) remain unaltered. The designer shall complete the remaining portion of the title block; however, completion of the title block is not deemed to be a drawing alteration.

The Engineer of Record for a "Semi-Standard Drawing is the Professional Engineer responsible for the completion of the drawing.

In the event that a designer decides to alter the content of a "Standard Drawing" to suit a particular design, the designer may do one of the following:

1. Produce a new project specific drawing using the "Standard Drawing" as a guide.

2. Delete the name of the EOR and the Index Number, and modify the details/notes in the "Standard Drawing" as required. In this event, the "Standard Drawing" ceases to be a standard and the engineer responsible for the modifications to the "Standard Drawing" becomes the EOR for the modified drawing.

3. If the required modifications are minor, show the modifications on a separate sheet. In this case cross-reference notes shall be provided on the "Standard Drawing" and on the sheet that shows the modifications, and "MOD." (Modified) shall be added to the Index Number.

It should be clearly understood that if modifications to the "Standard Drawings" are required, the work shall be performed under the direct supervision of a Professional Engineer, who then becomes responsible for the altered design.

Again, it must be emphasized that "Standard Drawings" are sheets that require no further work and development; however, the subject treated by the standard might require additional details that have to be prepared by the designer. For example: the user of Indices 300 thru 311 (Bents for Detour Bridge) should prepare additional drawing(s) showing the bridge Plan and Elevation, and other details necessary for its construction; likewise, the user of Indices 800 thru 822 (Retaining Walls), and/or Indices 510 or 511 (Navigation Lights) should prepare additional drawing(s) in order to convey clearly the full extent of the proposed work.

Some drawings include information for the designer, that should be erased as instructed, before the drawings are incorporated in the set of construction plans.

The number indicates the year. If the letter "R" is added, the drawing issued the previous year was revised.

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REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by		
Checked by		
Designed by		
Checked by		
Approved by	AJG	

ENGINEER OF RECORD:

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE: PREFACE

PROJECT NAME:

Drawing No. 1 of 1

Index No. I-001

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

INSTRUCTIONAL NOTES

GENERAL:

The Standard Drawings for prestressed beams depict details and notes that are fully developed. These drawings are ready for inclusion in the contract documents after completing the portion of the title block that provides specific project information.

The Semi-Standard Drawings contain generic details and notes, and require the completion of the Table of Beam Variables and the Strand Patterns and Debonding Schedule detail.

When completed, Semi-Standard Drawings shall be included in the plans in conjunction with the appropriate Standard Drawings. Do not include duplicate Standard Drawings in the same set of bridge drawings.

Standard Drawings and properly completed Semi-Standard Drawings shall provide sufficient information to permit beam fabrication without the necessity of a shop drawings submittal.

The drawings shall be matched as follows:

Standard Index No.	Semi-Standard Index No.
100	S-102, S-103 and/or S-104
101	S-105 and/or S-106
110	S-111, S-112 and/or S-113

EXAMPLE:

The following example shows the data required for completion of a "Semi-Standard" drawing, in this case an AASHTO Type III Beam (Index No. S-103).

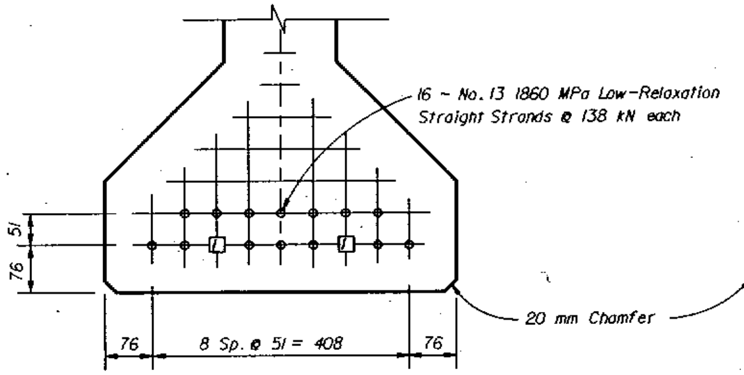
The example assumes a three span bridge designed for the following conditions:

Live Load: MS18
Additional Live Load: 5% (MS18); (NO DIAPHRAGMS)
Future Wearing Surface: Design includes allowance for 720 kN/m^2
Stay-in-Place Metal Forms: Design includes allowance for 1.0 kN/m^2 for non-composite dead load over the projected plan area of the forms due to the weight of metal forms and concrete required to fill the form flutes.
Environment (Superstructure): Slightly Aggressive

Bridge Characteristics:
Length: 56.500 m
Width: 12.950 m (out-to-out)
Clear Roadway: 12.000 m
Superstructure: Three simple spans of prestressed concrete beams with 200 mm composite deck slab
Spans: 16.800 m, 22.900 m, 16.800 m
Sidewalk: None
Horizontal Alignment: Straight
Vertical Alignment: +2.00% Grade
Skew Angle: 15 degrees (Right)

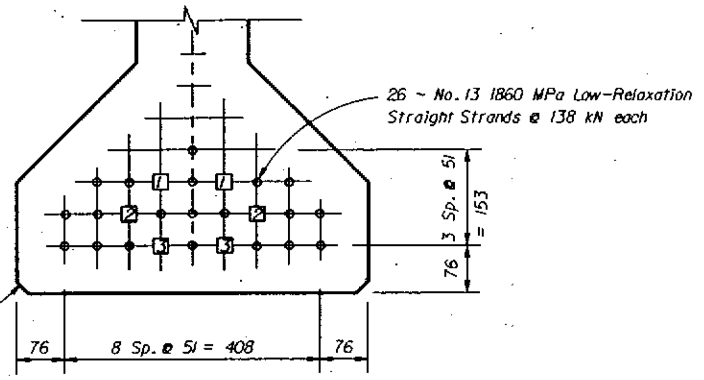
Beam Design:
Beam: Type III
Spacing: 2.775 m. (Spans 1 & 3, 5 Beams)
2.220 m. (Span 2, 6 Beams)
Design Span Length: 16.218 m (Spans 1 & 3); 22.333 m (Span 2)
Dead Load on Composite Section:
Spans 1 & 3: 4.17 kN/m
Span 2: 3.47 kN/m
Dead Load on Non-Composite Section:
Spans 1 & 3: 2.27 kN/m
Span 2: 1.74 kN/m
Additional Instructions: The 200 mm spacing for Bars "K" shall extend to approximately L/4. The length of Bars "A" shall be 3.000 m or 0.15L whichever is larger.

OTHER CONSIDERATIONS: When the actual number of beams or strand patterns exceed those that can be accommodated on a single semi-standard sheet, use additional semi-standard sheets or provide a new drawing showing an expanded "Table of Beam Variables" and any required additional strand patterns. If special conditions require dimensions or details not covered in the Table as provided, add additional columns to the Table as required.



TYPE ①

1 - Debond 1.600 m from ends of beam



TYPE ②

1 - Debond 5.800 m from ends of beam
2 - Debond 2.600 m from ends of beam
3 - Debond 900 mm from ends of beam

STRAND PATTERNS AND DEBONDING SCHEDULE

NOTE: All dimensions are in millimeters (mm), except as noted.

TABLE OF BEAM VARIABLES

REINFORCING STEEL

BEAM ID.	CONCRETE PROPERTIES			STND PTRN TYPE	PLAN VIEW CASE	END ELEV COND.	END OF BEAM AND BEARING DIMENSIONS **				BEAM DIMENSIONS *			NUMBER OF SPACES FOR BARS K				DIAPHRAGM INSERT LOCATIONS*					A	K	N
	CLASS	STRENGTHS																DIM X1	DIM X2	DIM Y	NS/FS (7)		LENGTH*	NO. REQ'D	LENGTH*
		REL. (f'ci)	28-DAY (f'c)				ANGLE Ø	DIM P	DIM J	DIM K	DIM L	DIM R	DIM V	S1	S2	S3	S4				*1	*2			
101 to 105	III	28 MPa	35 MPa	①	3	2	75°00'00"	22 mm	140 mm	255 mm	16.574 m	8 mm	322 mm	19	6	5	1	-	-	-	-	-	3.000 m	69	16.660 m
201 to 206	III	28 MPa	35 MPa	②	3	2	75°00'00"	22 mm	140 mm	255 mm	22.684 m	16 mm	377 mm	27	8	7	1	-	-	-	-	-	3.400 m	93	22.760 m
301 to 305	III	28 MPa	35 MPa	①	3	2	75°00'00"	22 mm	140 mm	255 mm	16.574 m	8 mm	322 mm	19	6	5	1	-	-	-	-	-	3.000 m	69	16.660 m

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REVISIONS

Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	JSP	8-92
Checked by	CBH	8-92
Designed by	AJG	8-92
Checked by	CBH	8-92
Approved by	REN	

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

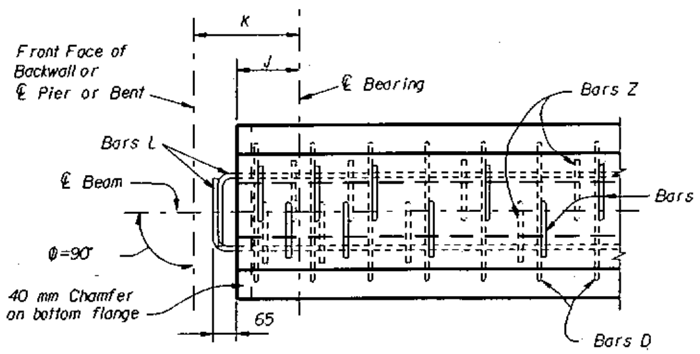
SHEET TITLE:
PRESTRESSED BEAM INSTRUCTIONS

PROJECT NAME:

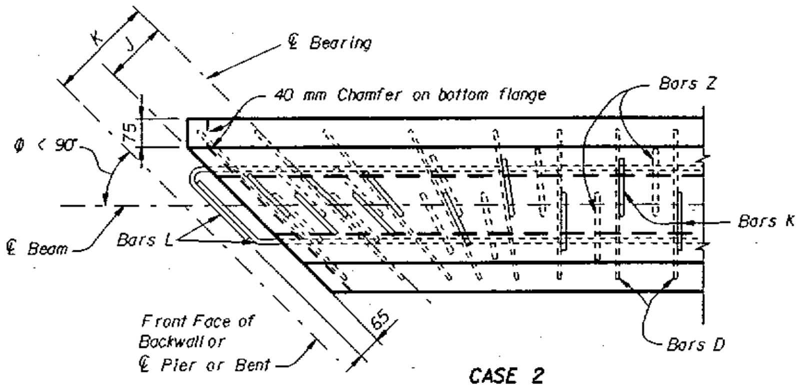
Drawing No.
1 of 1

Index No.
I-099

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

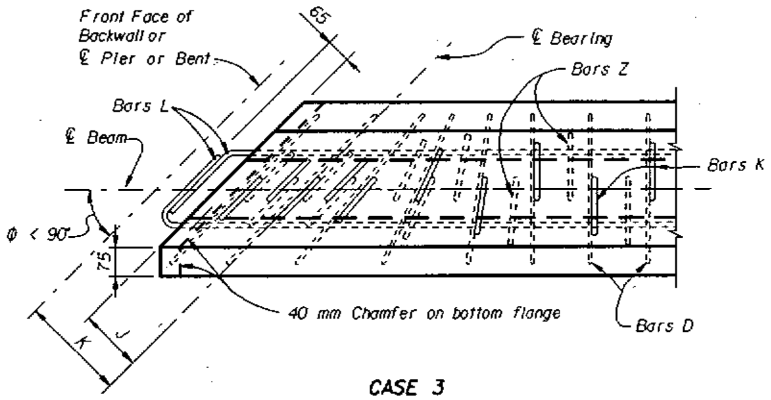


CASE 1



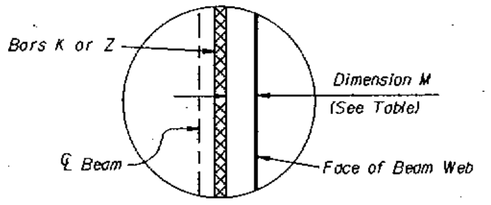
CASE 2
(See Note)

PLAN ENDS OF BEAMS



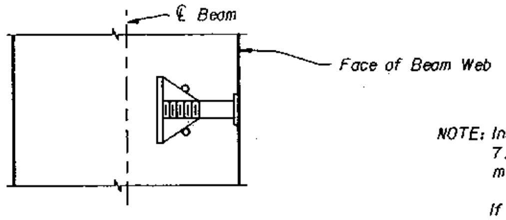
CASE 3
(See Note)

Note: For both Plan Views Case 2 and Case 3, the first Bar Z and the first two Bars K shall be placed parallel to the skewed end of the Beam. The remainder of the Bars Z & K shall be placed so as to transition from the skewed end to an axis perpendicular to the centerline of the beam. Bars D in the bottom flange shall be rotated along with Bars Z & K. Bar spacing may not agree with Beam Sheets.



SECTION THRU BEAM WEB
(Showing Concrete Cover)

TABLE OF DIMENSIONS M	
BEAM TYPE	DIMENSION M
II	50 mm
III	65 mm
IV	75 mm



SECTION THRU BEAM WEB AT INSERT FOR DIAPHRAGM REINFORCING
(When Intermediate Diaphragms are Required)

NOTE: Insert shall be 25.4 mm Φ, zinc-electroplated, ferrule wing nut, UNC threads. 7.77 mm Φ min. wire, not more than 100 mm in depth and shall have a minimum ultimate tensile strength of 50.7 kN in 28 MPa concrete.

If inserts are needed on both sides of web an assembly as long as the the thickness of the web, consisting of two (2) Ferrule inserts attached by two (2) or more struts may be utilized. The connecting struts shall have a minimum ultimate tensile strength of 101.4 kN.

BEAM NOTES

MORTAR LEAKAGE: Any mortar leakage that occurs and stains resulting from leakage shall be removed so that beams have a uniform appearance.

STRANDS: At the option of the Contractor, other types, sizes and/or configurations of strands may be used in lieu of the stranding shown on these sheets. Calculations shall be submitted showing the substitution meets the following requirements:

1. The strands meet all the requirements of ASTM A416 for the grade of strands proposed.
2. The net compressive stress in the concrete due to prestressing acting alone, after all losses, is not less than that provided by the stranding shown on these sheets.
3. The ultimate strength of the structure with the proposed stranding is not less than the ultimate strength of the original design.
4. The proposed stranding complies in all respects with the Department's Structures Design Guidelines.

FINISH: The top surface of the beam shall be rough floated and then scrubbed transversely with a coarse wire brush to remove all laitance and to produce a roughened surface for bonding. All beams shall receive a Class 3 surface finish.

SUBMITTALS: The Specifications stipulate the conditions for which Shop Drawings are not required. If each and every condition cannot be met, then a formal Shop Drawing submittal is required. Supplemental reinforcing provided by the Contractor to facilitate fabrication of prestressed beams do not require Shop Drawings.

STRAND DETENSIONING: Strand detensioning shall be based upon the following priority, from first to last:

1. Top dormant strands (Bars N)
2. Fully bonded strands
3. Partially debonded (shielded) strands

FORMS AND PALLETS: All beams shall be cast on concrete based pallets and in metal forms.

HANDLING: In the handling of beams, they must be maintained in an upright position at all times and must be picked up from points located a maximum distance of 1.000 m from the ends of the beam.

STORAGE AND TRANSPORTATION: Beams shall be stored on adequate dunnage and supported during transit within 500 mm from ends of beam.

STRAND EXTENSION: All strands shall extend 65 mm beyond ends of beams.

CONCRETE: Refer to Table of Beam Variables on the individual beam sheets for the class of concrete, 28-day strength (f'c) and cylinder strength at transfer of the tensioning load (f'ci).

REINFORCING STEEL: All reinforcing steel shall be ASTM A615M Grade 400.

BEARING PADS: The cost of installing bearing pads shall be included in the contract unit price of prestressed beams. The composite neoprene pads may or may not be furnished to the contractor by FDOT. See the General Notes for the bridge, or the Bid Item Notes, for additional information regarding who the pads provider will be.

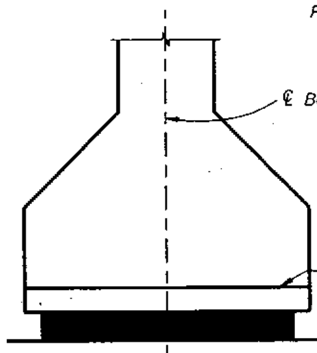
MISCELLANEOUS: The cost of inserts for diaphragm tie bars shall be included in the contract unit prices for prestressed beams.

NOTES: Work this sheet with individual beam sheets, Type II, III and IV only.

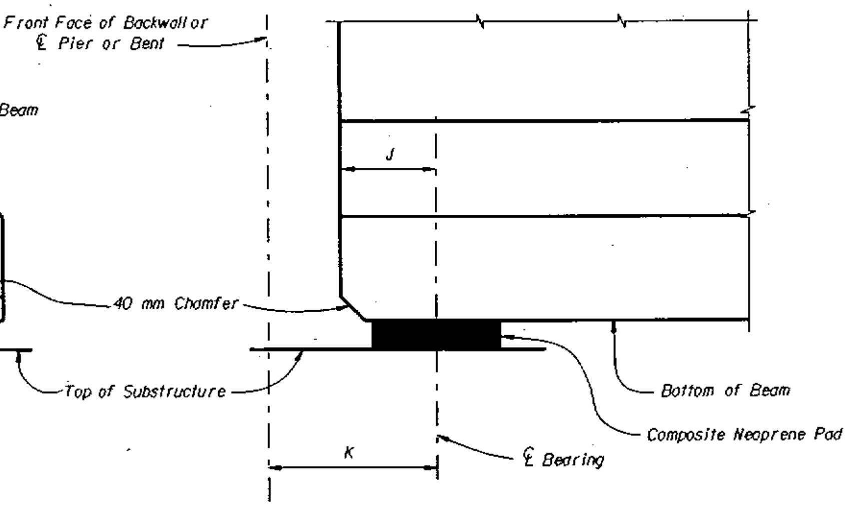
See "TABLE OF BEAM VARIABLES" on individual beam sheets for angle "Φ"s and dimensions "J", "K", "L" and "P".

For beams with vertically bevelled ends, such as conditions 2 & 3, the first Bar K shall be placed parallel to the end bevel. Adjacent Bars Z and K shall be placed so as to transition from the end bevel to a vertical axis. The spacing of Bars K and Z shown shall apply along the top flange of the beam and the spacing along the bottom of the beam shall be adjusted by not more than 15 mm (±) until the vertical position is attained.

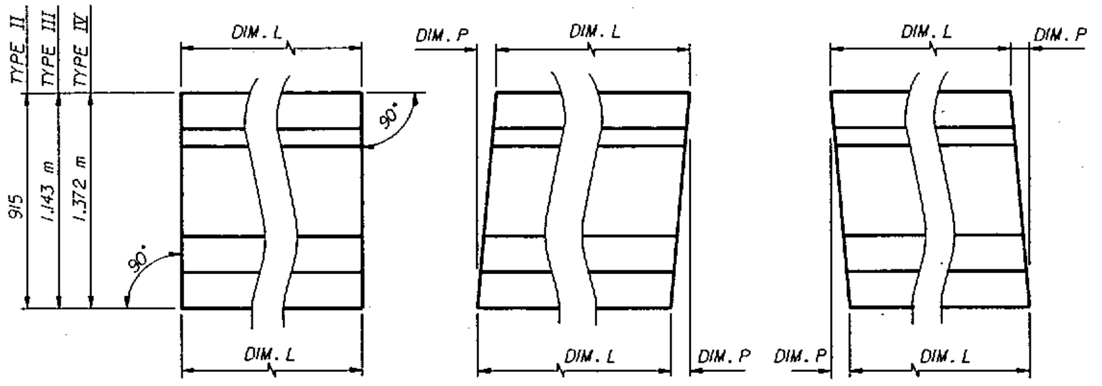
All dimensions are in millimeters (mm), except as noted.



END ELEVATION
(Perpendicular to ℄ Beam)



SIDE ELEVATION
(Perpendicular To ℄ Bearing)



CONDITION 1
(P = 0.0 mm)

CONDITION 2

CONDITION 3

END ELEVATIONS OF BEAMS
(Showing Vertical Bevel of Beam End)

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REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	WEH	1-89
Checked by	DCP	1-89
Designed by	DCP	1-89
Checked by	WEH	1-89
Approved by	REN	

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

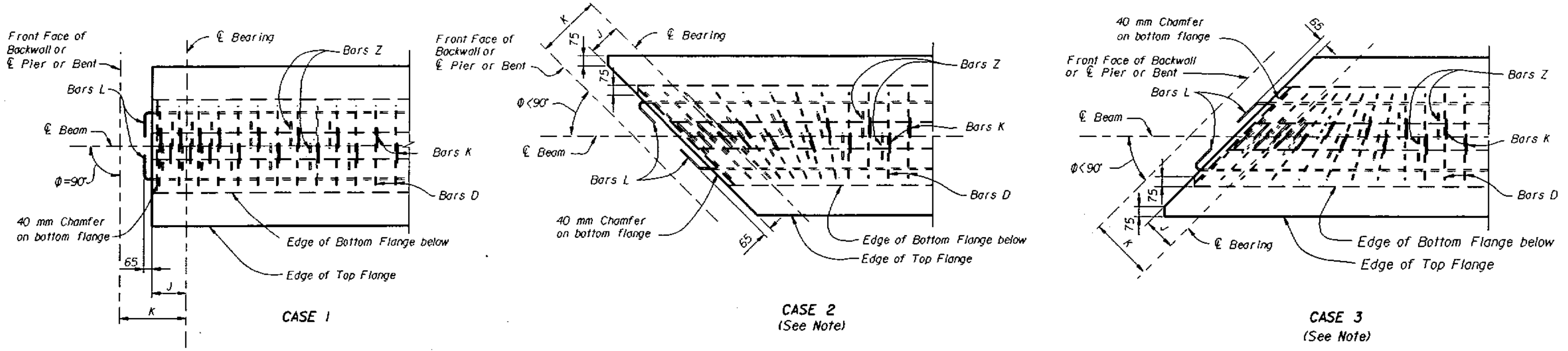
SHEET TITLE:
TYPICAL NOTES AND DETAILS FOR AASHTO TYPE II, III AND IV PRESTRESSED BEAMS

PROJECT NAME:

Drawing No.
1 of 1

Index No.
100

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



CASE 1

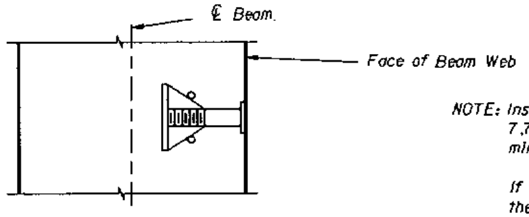
CASE 2
(See Note)

CASE 3
(See Note)

PLAN ENDS OF BEAMS

(Bars M in top flange omitted for clarity.)

Note: For both Plan Views Case 2 and Case 3, the first Bar Z and the first two Bars K shall be placed parallel to the skewed end of the Beam. The remainder of the Bars Z & K shall be placed so as to transition from the skewed end to an axis perpendicular to the centerline of the beam. Bars D in the bottom flange shall be rotated along with Bars Z & K. Bar spacing may not agree with Beam Sheets.

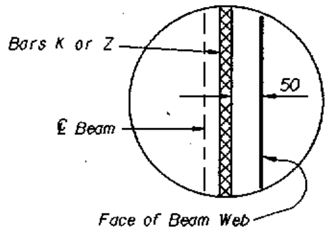


SECTION THRU BEAM WEB AT INSERT FOR DIAPHRAGM REINFORCING

(When Intermediate Diaphragms are Required)

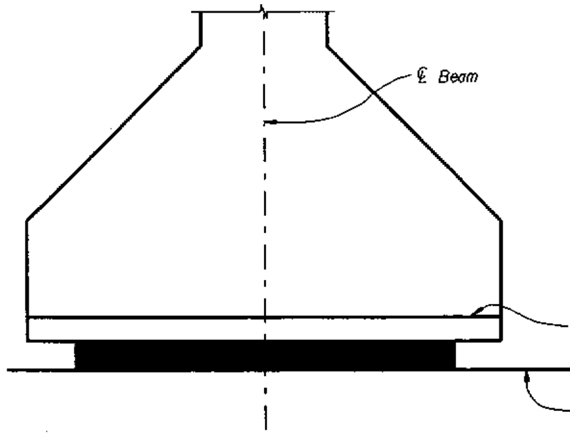
NOTE: Insert shall be 25.4 mm Φ, zinc-electroplated, ferrule wing nut, UNC threads, 7.77 mm Φ minimum wire, not more than 100 mm in depth and shall have a minimum ultimate tensile strength of 50.7 kN in 28 MPa concrete.

If inserts are needed on both sides of web an assembly as long as the thickness of the web, consisting of two (2) ferrule inserts attached by two (2) or more struts may be utilized. The connecting struts shall have a minimum ultimate tensile strength of 101.4 kN.



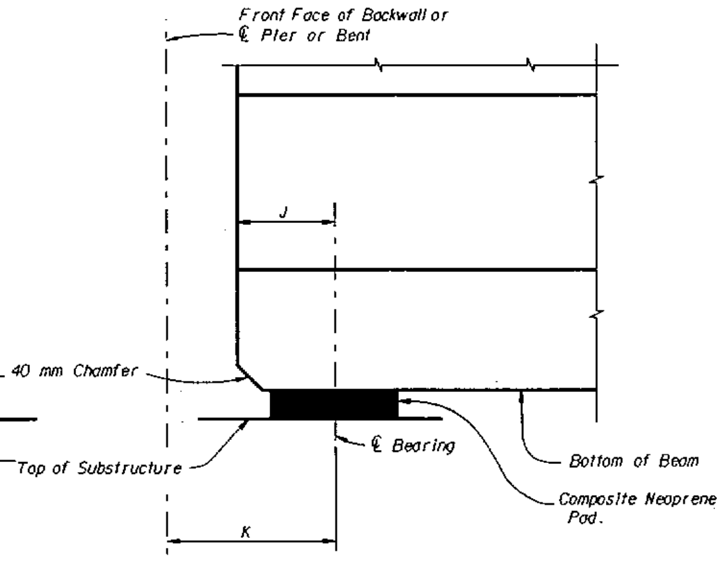
SECTION THRU BEAM WEB

(Showing Concrete Cover)



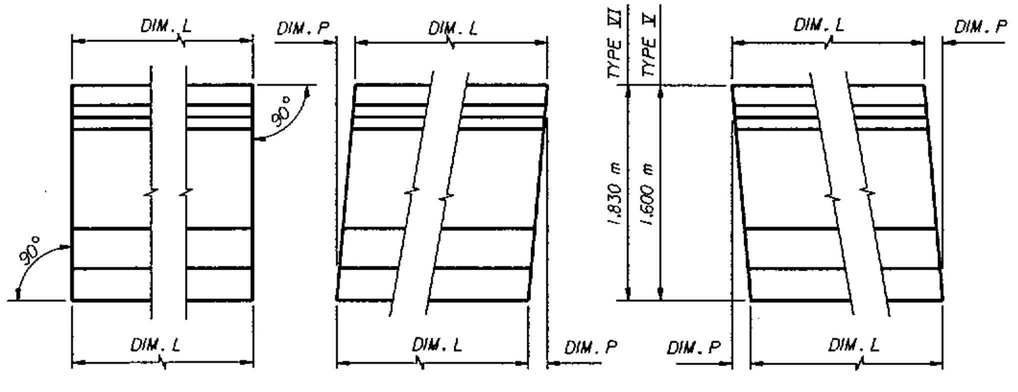
END ELEVATION

(Perpendicular to ℄ Beam)



SIDE ELEVATION

(Perpendicular To ℄ Bearing)



CONDITION 1
(P = 0.0 mm)

CONDITION 2

CONDITION 3

END ELEVATIONS OF BEAMS

(Showing Vertical Bevel of Beam End)

BEAM NOTES

MORTAR LEAKAGE: Any mortar leakage that occurs and stains resulting from leakage shall be removed so that beams have a uniform appearance.

STRANDS: At the option of the Contractor, other types, sizes and/or configurations of strands may be used in lieu of the stranding shown on these sheets. Calculations shall be submitted showing the substitution meets the following requirements:

1. The strands meet all the requirements of ASTM A416 for the grade of strands proposed.
2. The net compressive stress in the concrete due to prestressing acting alone, after all losses, is not less than that provided by the stranding shown on these sheets.
3. The ultimate strength of the structure with the proposed stranding is not less than the ultimate strength of the original design.
4. The proposed stranding complies in all respects with the Department's Structures Design Guidelines.

FINISH: The top surface of the beam shall be rough floated and then scrubbed transversely with a coarse wire brush to remove all laitance and to produce a roughened surface for bonding. All beams shall receive a Class 3 surface finish.

SUBMITTALS: The Specifications stipulate the conditions for which Shop Drawings are not required. If each and every condition cannot be met, then a formal Shop Drawing submittal is required. Supplemental reinforcing provided by the Contractor to facilitate fabrication of prestressed beams do not require Shop Drawings.

STRAND DETENSIONING: Strand detensioning shall be based upon the following priority, from first to last:

1. Top dormant strands (Bars N)
2. Fully bonded strands
3. Partially debonded (shielded) strands

FORMS AND PALLETS: All beams shall be cast on concrete based pallets and in metal forms.

HANDLING: In the handling of beams, they must be maintained in an upright position at all times and must be picked up from points located a maximum distance of 1.000 m from the ends of the beam.

STORAGE AND TRANSPORTATION: Beams shall be stored on adequate dunnage and supported during transit within 500 mm from ends of beam.

STRAND EXTENSION: All strands shall extend 65 mm beyond ends of beams.

CONCRETE: Refer to Table of Beam Variables on the individual beam sheets for the class of concrete, 28-day strength (f'c) and cylinder strength at transfer of the tensioning load (f'ci).

REINFORCING STEEL: All reinforcing steel shall be ASTM A615M Grade 400.

BEARING PADS: The cost of installing bearing pads shall be included in the contract unit price of prestressed beams. The composite neoprene pads may or may not be furnished to the contractor by FDOT. See the General Notes for the bridge, or the Bid Item Notes, for additional information regarding who the pads provider will be.

MISCELLANEOUS: The cost of inserts for diaphragm tie bars shall be included in the contract unit prices for prestressed beams.

NOTES: Work this sheet with individual beam sheets. Type V and VI only.

See "TABLE OF BEAM VARIABLES" on individual beam sheets for angle "Φ"s and dimensions "J", "K", "L", and "P".

For beams with vertically bevelled ends, such as conditions 2 & 3, the first Bar K shall be placed parallel to the end bevel. Adjacent Bars Z and K shall be placed so as to transition from an axis parallel to the end bevel to a vertical axis. The spacing of Bars K and Z shown shall apply along the top flange of the beam and the spacing along the bottom of the beam shall be adjusted by not more than 15 mm (±) until the vertical position is attained.

All dimensions are in millimeters (mm), except as noted.

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REVISIONS

Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	WEH	1-89
Checked by	DCP	1-89
Designed by	DCP	1-89
Checked by	WEH	1-89
Approved by	REN	

ENGINEER OF RECORD:
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605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

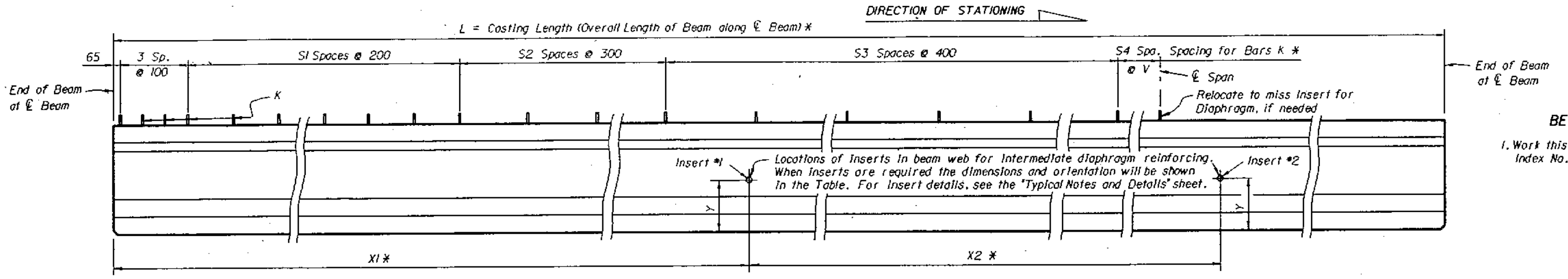
SHEET TITLE:
TYPICAL NOTES AND DETAILS FOR AASHTO TYPE V AND VI PRESTRESSED BEAMS

PROJECT NAME:

Drawing No.
1 of 1

Index No.
101

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



ELEVATION

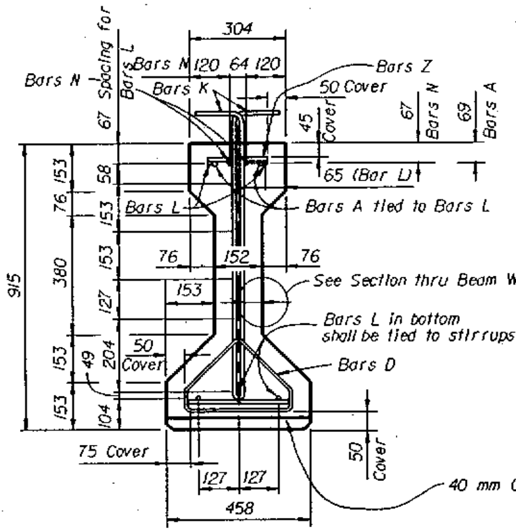
NOTE: Dimension R has been included in the lengths (L) of beams to compensate for elastic and time-dependent shortening effects.

* Note: All longitudinal beam dimensions shown on this sheet with a single asterisk (*) are measured along the top of the beam at the centerline of beam.

** Note: End of beam bearing dimensions "J" and "K" are measured along the bottom of the beam.

BEAM NOTES

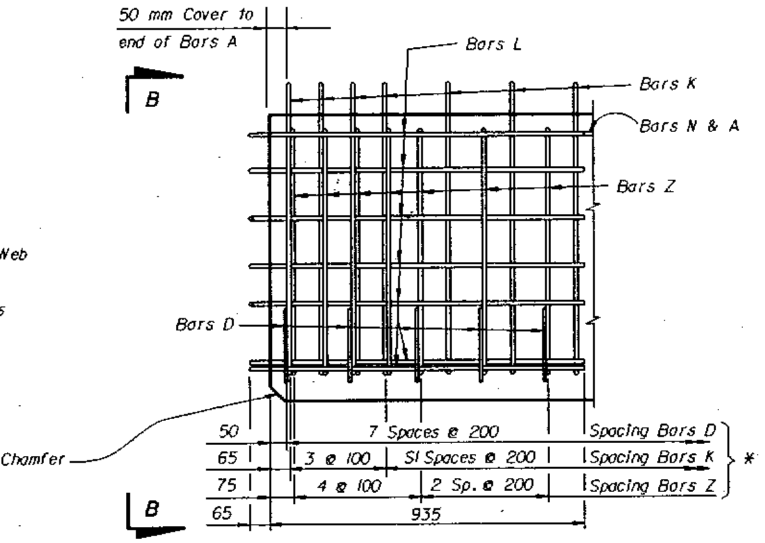
1. Work this sheet with Standard Index No. 100.



VIEW B-B

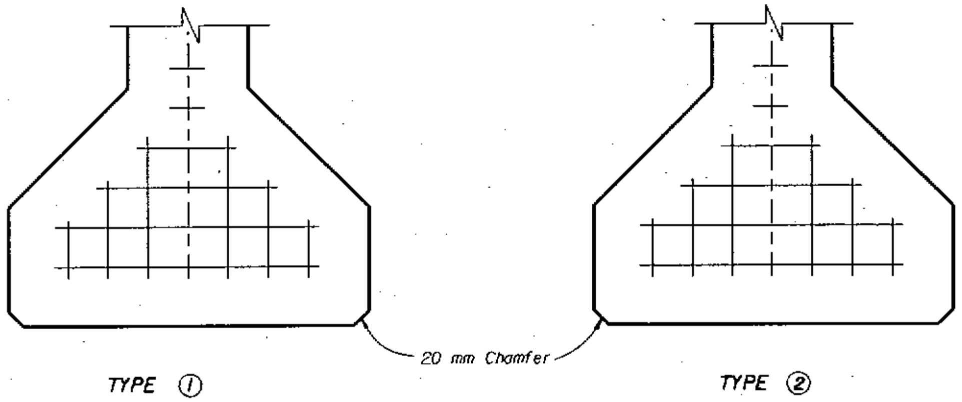
(With strands omitted, see Table for reference to strand pattern.)

NOTE: Place Bars K and Z one (1) each space (alternate).



DETAIL AT END OF BEAM

NOTE: Bars K & Z shall be placed and tied to the top of the fully bonded prestressing strands in the bottom row.



STRAND PATTERNS AND DEBONDING SCHEDULE

NOTE: ○ -Indicates fully bonded strands.
☐ -Indicates referenced pair of strands to be debonded the length shown which is measured from the end of the beam. *

BILL OF REINFORCING STEEL FOR ONE BEAM ONLY

MARK	SIZE	NO. REQUIRED	LENGTH (1)
A	#15M	4	See Table
D (2)(6)	#10M	16	Varies(1.225m Min.)
K (2)	#15M	See Table	1.281 m
L (3)(4)	#10M	18	1.190 m
N (5)	No. 9 Strand	2	See Table
Z (2)	#15M	14	1.090 m

BENDING DIAGRAMS (1)

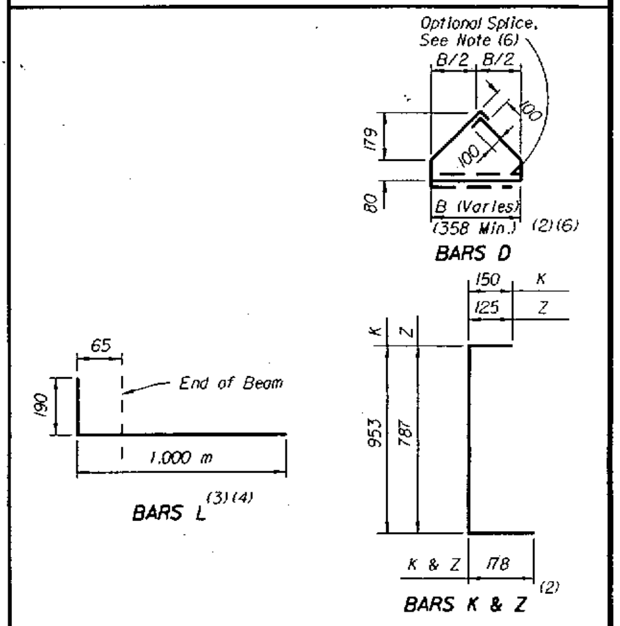


TABLE OF BEAM VARIABLES

BEAM ID.	CONCRETE PROPERTIES			STND PTRN TYPE	PLAN VIEW CASE	END ELEV COND.	END OF BEAM AND BEARING DIMENSIONS **				BEAM DIMENSIONS *			NUMBER OF SPACES FOR STIRRUP BARS K				DIAPHRAGM INSERT LOCATIONS*					REINFORCING STEEL A	K	N
	CLASS	STRENGTHS																			NS/FS (7)				
		REL. (f'ci)	28-DAY (f'c)				ANGLE Ø	DIM P	DIM J	DIM K	DIM L	DIM R	DIM V	S1	S2	S3	S4	DIM X1	DIM X2	DIM Y	#1	#2	LENGTH*	NO. REQ'D	LENGTH*

NOTES:

(1) All bar dimensions are out-to-out.

(2) Bars D,K, and Z shall be bent around pins having the following diameters for respective sizes:

Bar Size	Pin Diameters
#10M	50 mm
#15M	60 mm

(3) Bars L shall be bent prior to the beam leaving the prestressing yard. For treatment of bars L at skewed beam ends, see "Plan Ends of Beams".

(4) Caution should be used with Bars L in the ends of exterior beams to assure that the bent portion of the bar is properly oriented so that the bar will be embedded in the diaphragm concrete.

(5) Bars N shall be either ASTM A416, Grade 1725 or 1860, seven-wire strands size 9 or larger, stressed to 45 kN each.

(6) The minimum Dimension B and length of Bars D shown apply to one-piece Bars D placed perpendicular to the centerline of the beam. Dimension B and the length of Bars D for beams with skewed ends vary with the skew (See "Plan Ends of Beams").

At the Contractor's option, Bars D may be fabricated either as a two-piece bar with a 355 mm lap splice of the bottom legs or may be welded wire fabric, one or two-piece, provided the wire size and spacing furnishes the same steel area as the No. 10M Bars shown.

(7) (NS) means Near Side and (FS) means Far Side, both referring to which face of the beam web is to receive the insert for the dimensioned location. (NS) and (FS) are referenced to the DIRECTION OF STATIONING shown.

(8) CONTRACTOR'S OPTION: Welded deformed wire fabric reinforcement may be used in lieu of Bars D, K, L and Z provided the wire sizes and spacings match those shown on this sheet for these bars.

(9) All Dimensions are in millimeters (mm), except as noted.

Fri Aug 26 09:13:49 1994 g:@strs@pltfiles@s102.snp

REVISIONS

Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by		
Checked by		
Designed by		
Checked by		
Approved by		

ENGINEER OF RECORD:

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

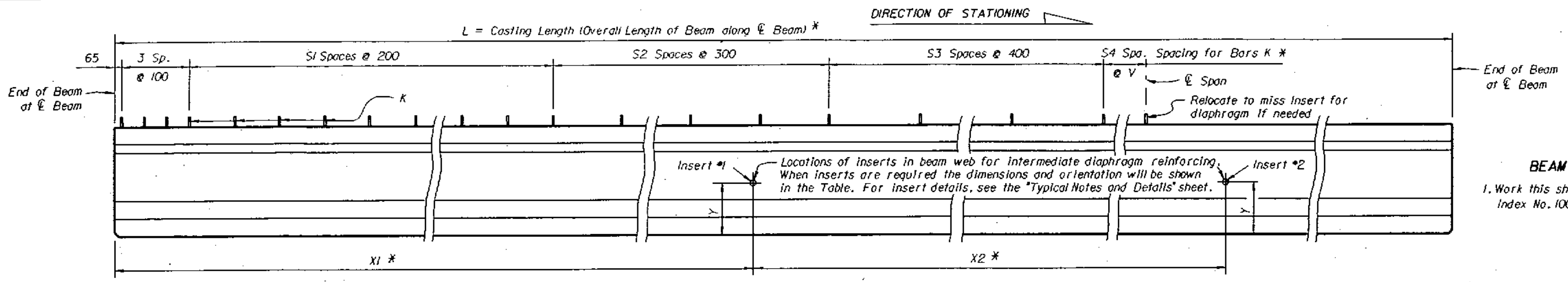
SHEET TITLE:
AASHTO TYPE II BEAMS

PROJECT NAME:

Drawing No.
1 of 1

Index No.
S-102

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



ELEVATION

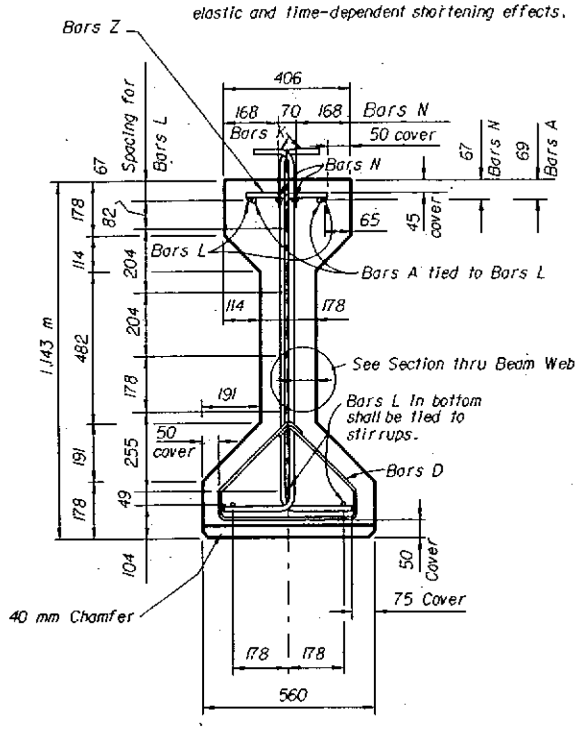
NOTE: Dimension R has been included in the lengths (L) of beams to compensate for elastic and time-dependent shortening effects.

* Note: All longitudinal beam dimensions shown on this sheet with a single asterisk (*) are measured along the top of the beam at the centerline of beam.

** Note: End of beam bearing dimensions "J" and "K" are measured along the bottom of the beam.

BEAM NOTES

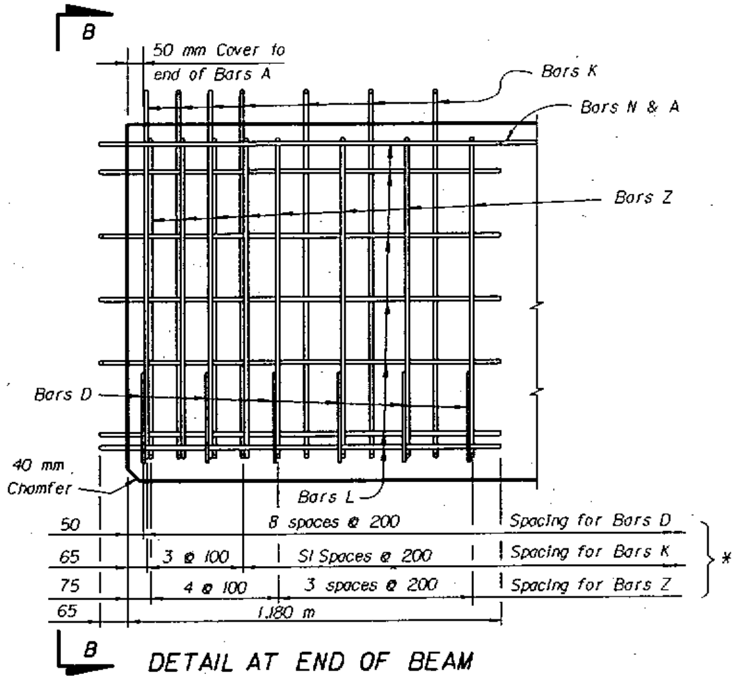
1. Work this sheet with Standard Index No. 100.



VIEW B-B

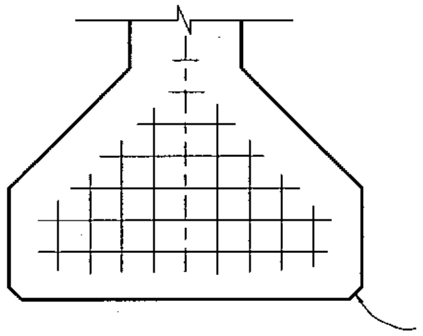
(With strands omitted, see Table for reference to strand pattern.)

NOTE: Place Bars K and Z one (1) each space (alternate).

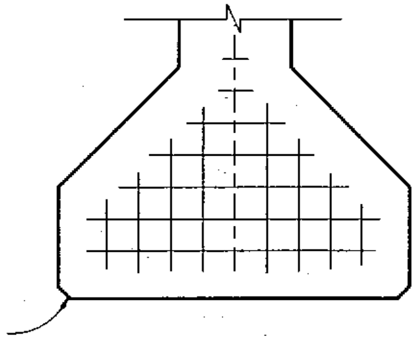


DETAIL AT END OF BEAM

NOTE: Bars K & Z shall be placed and tied to the top of the fully bonded prestressing strands in the bottom row.



TYPE ①



TYPE ②

STRAND PATTERNS AND DEBONDING SCHEDULE

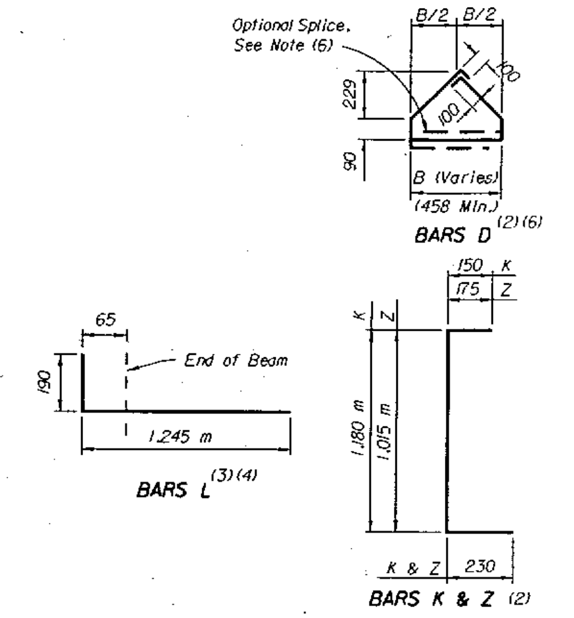
NOTE: ○ -Indicates fully bonded strands.

☐ -Indicates referenced pair of strands to be debonded the length shown which is measured from each end of the beam.

BILL OF REINFORCING STEEL FOR ONE BEAM ONLY

MARK	SIZE	NO. REQUIRED	LENGTH (1)
A	#15M	4	See Table
D (2)(6)	#10M	18	Varies(1.486 m Min.)
K (2)	#15M	See Table	1.560 m
L (3)(4)	#10M	18	1.435 m
N (5)	No. 9 Strand	2	See Table
Z (2)	#15M	16	1.420 m

BENDING DIAGRAMS (1)



NOTES:

(1) All bar dimensions are out-to-out.

(2) Bars D,K, and Z shall be bent around pins having the following diameters: for respective sizes:

Bar Size	Pin Diameters
#10M	50 mm
#15M	60 mm

(3) Bars L shall be bent prior to the beam leaving the prestressing yard. For treatment of bars L at skewed beam ends, see "Plan Ends of Beams".

(4) Caution should be used with Bars L in the ends of exterior beams to assure that the bent portion of the bar is properly oriented so that the bar will be embedded in the diaphragm concrete.

(5) Bars N shall be either ASTM A416, Grade 1725 or 1860, seven-wire strands size No. 9 or larger, stressed to 45 kN each.

(6) The minimum Dimension B and length of Bars D shown apply to one-piece Bars D placed perpendicular to the centerline of the beam. Dimension B and the length of Bars D for beams with skewed ends vary with the skew (See "Plan Ends of Beams").

At the Contractor's option, Bars D may be fabricated either as a two-piece bar with a 360 mm lap splice of the bottom legs or may be welded wire fabric, one or two-piece, provided the wire size and spacing furnishes the same steel area as the No. 10M Bars shown.

(7) (NS) means Near Side and (FS) means Far Side, both referring to which face of the beam web is to receive the insert for the dimensioned location. (NS) and (FS) are referenced to the DIRECTION OF STATIONING shown.

(8) CONTRACTOR'S OPTION: Welded deformed wire fabric reinforcement may be used in lieu of Bars D, K, L and Z provided the wire sizes and spacings match those shown on this sheet for these bars.

(9) All Dimensions are in millimeters (mm), except as noted.

TABLE OF BEAM VARIABLES

BEAM ID.	CONCRETE PROPERTIES			STND PTRN TYPE	PLAN VIEW CASE	END ELEV COND.	END OF BEAM AND BEARING DIMENSIONS **				BEAM DIMENSIONS *			NUMBER OF SPACES FOR BARS K				DIAPHRAGM INSERT LOCATIONS*					REINFORCING STEEL A	K	N
	CLASS	STRENGTHS																			NS/FS (7)				
		REL. (f'ci)	28-DAY (f'c)				ANGLE Ø	DIM P	DIM J	DIM K	DIM L	DIM R	DIM V	S1	S2	S3	S4	DIM X1	DIM X2	DIM Y	#1	#2	LENGTH*	NO. REQ'D	LENGTH*

Fri Aug 26 09:14:56 1994 g@strs@pltfiles@s103.sno

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by		
Checked by		
Designed by		
Checked by		
Approved by		

ENGINEER OF RECORD:

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

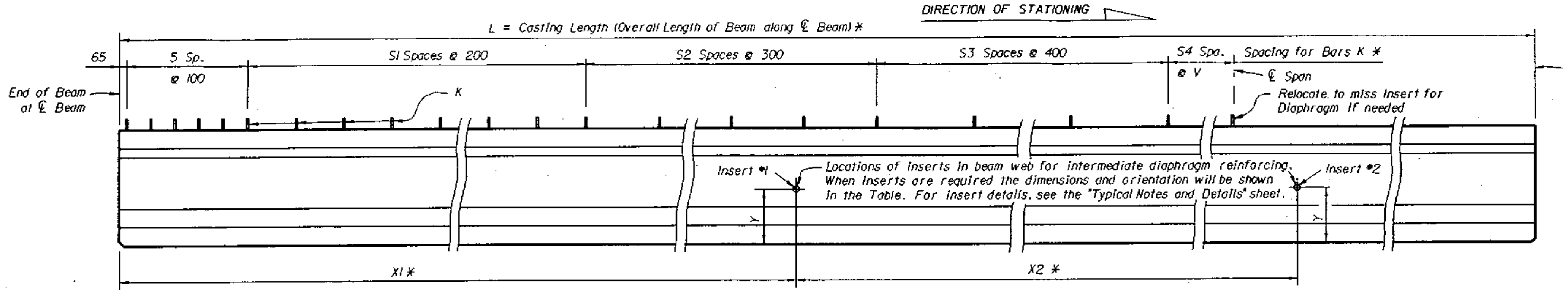
SHEET TITLE: AASHTO TYPE III BEAMS

PROJECT NAME:

Drawing No. 1 of 1

Index No. S-103

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



Locations of inserts in beam web for intermediate diaphragm reinforcing. When inserts are required the dimensions and orientation will be shown in the Table. For insert details, see the "Typical Notes and Details" sheet.

ELEVATION

NOTE: Dimension R has been included in the lengths (L) of beams to compensate for elastic and time-dependent shortening effects.

BEAM NOTES

1. Work this sheet with the Standard Index No. 100.

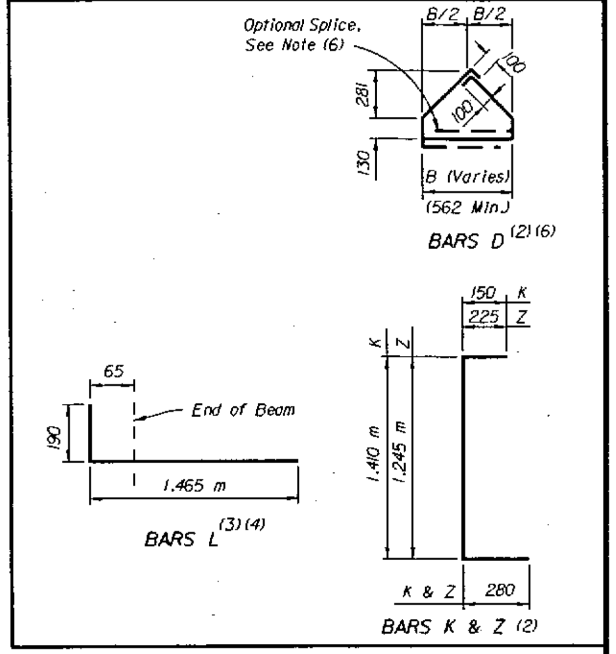
* Note: All longitudinal beam dimensions shown on this sheet with a single asterisk (*) are measured along the top of the beam at the centerline of beam.

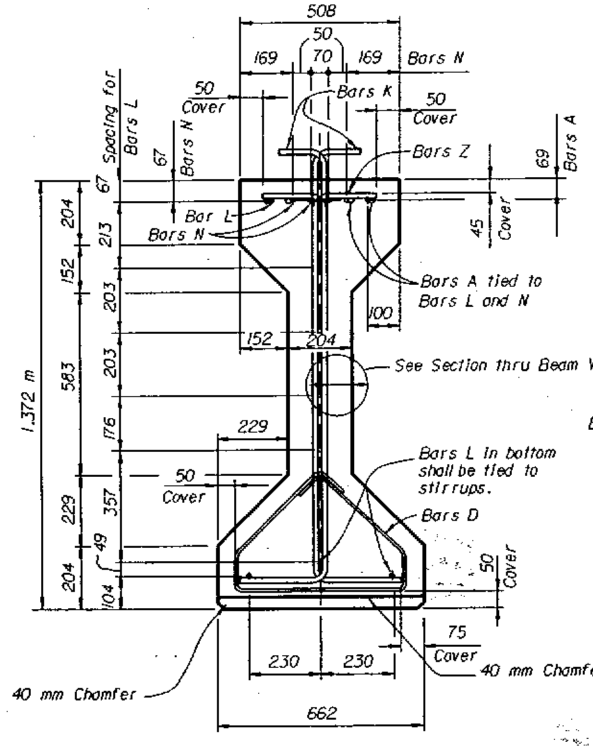
** Note: End of beam bearing dimensions "J" and "K" are measured along the bottom of the beam.

BILL OF REINFORCING STEEL FOR ONE BEAM ONLY

MARK	SIZE	NO. REQUIRED	LENGTH (1)
A	#15M	8	See Table
D (2)(6)	#10M	22	Varies(1.817 m Min.)
K (2)	#15M	See Table	1.840 m
L (3)(4)	#10M	18	1.655 m
N (5)	Size 9 Strand	4	See Table
Z (2)	#15M	18	1.750 m

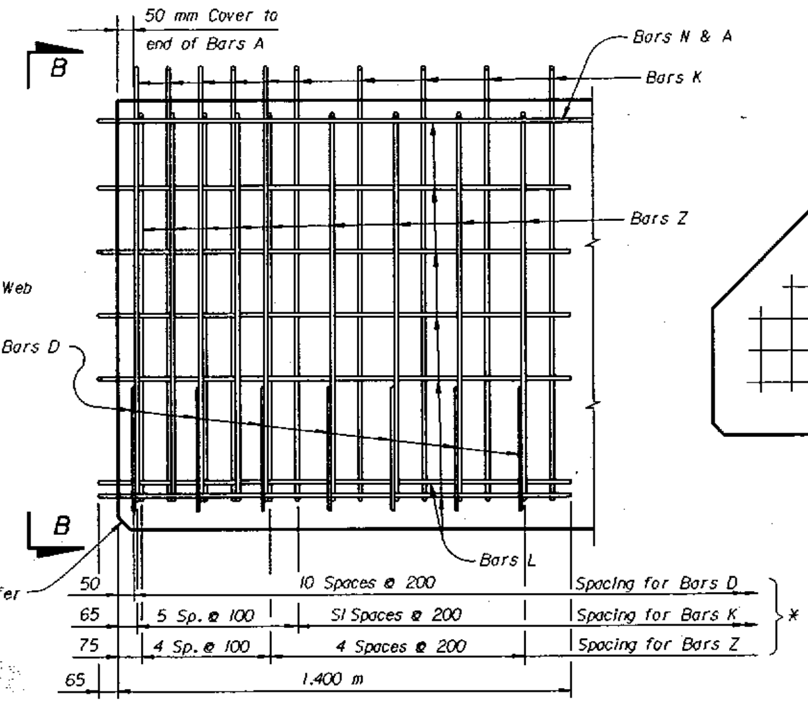
BENDING DIAGRAMS (1)





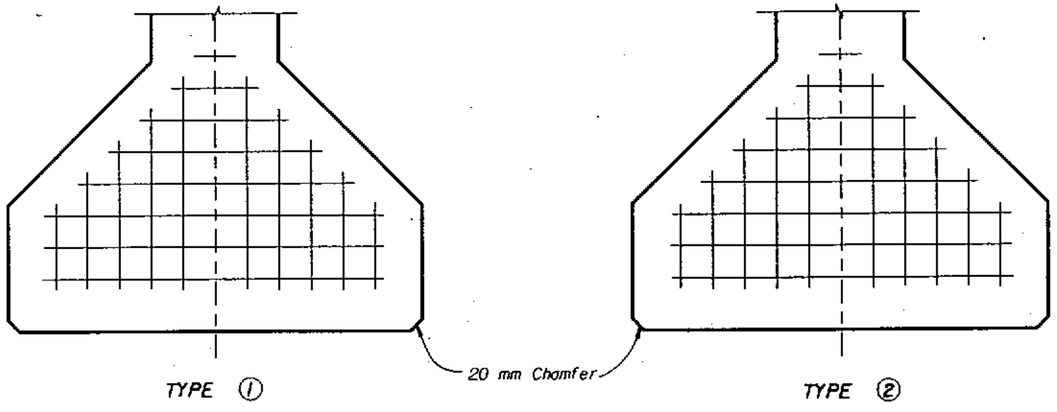
VIEW B-B

(With strands omitted, see Table for reference to strand pattern.)



DETAIL AT END OF BEAM

NOTE: Bars K & Z shall be placed and tied to the top of the fully bonded prestressing strands in the bottom row.



STRAND PATTERNS AND DEBONDING SCHEDULE

NOTE: ○ -Indicates fully bonded strands.
☐ -Indicates referenced pair of strands to be debonded the length shown which is measured from the end of the beam. *

NOTE: Place Bars K and Z one (1) each space (alternate).

TABLE OF BEAM VARIABLES

BEAM ID.	CONCRETE PROPERTIES			STND PTRN TYPE	PLAN VIEW CASE	END ELEV COND.	END OF BEAM AND BEARING DIMENSIONS **				BEAM DIMENSIONS *			NUMBER OF SPACES FOR STIRRUP BARS K				DIAPHRAGM INSERT LOCATIONS*					REINFORCING STEEL A	REINFORCING STEEL K	REINFORCING STEEL N
	CLASS	STRENGTHS (MPa)																DIM X1	DIM X2	DIM Y	NS/FS (7)		LENGTH*	NO. REQ'D	LENGTH*
		REL. (f'ci)	28-DAY (f'c)				ANGLE ∅	DIM P	DIM J	DIM K	DIM L	DIM R	DIM V	S1	S2	S3	S4				#1	#2			

NOTES:

(1) All bar dimensions are out-to-out.

(2) Bars D, K, and Z shall be bent around pins having the following diameters for respective sizes:

Bar Size	Pin Diameters
#10M	50 mm
#15M	60 mm

(3) Bars L shall be bent prior to the beam leaving the prestressing yard. For treatment of bars L at skewed beam ends, see "Plan Ends of Beams".

(4) Caution should be used with Bars L in the ends of exterior beams to assure that the bent portion of the bar is properly oriented so that the bar will be embedded in the diaphragm concrete.

(5) Bars N shall be either ASTM A416, Grade 1725 or 1860, seven-wire strands size 9 or larger, stressed to 45 kN each.

(6) The minimum Dimension B and length of Bars D shown apply to one-piece Bars D placed perpendicular to the centerline of the beam. Dimension B and the length of Bars D for beams with skewed ends vary with the skew (See "Plan Ends of Beams").
At the Contractor's option, Bars D may be fabricated either as a two-piece bar with a 360 mm lap splice of the bottom legs or may be welded wire fabric, one or two-piece, provided the wire size and spacing furnishes the same steel area as the No. 10M Bars shown.

(7) (NS) means Near Side and (FS) means Far Side, both referring to which face of the beam web is to receive the insert for the dimensioned location. (NS) and (FS) are referenced to the DIRECTION OF STATIONING shown.

(8) CONTRACTOR'S OPTION: Welded deformed wire fabric reinforcement may be used in lieu of Bars D, K, L and Z provided the wire sizes and spacings match those shown on this sheet for these bars.

(9) All dimensions are in millimeters (mm), except as noted.

REVISIONS

Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by		
Checked by		
Designed by		
Checked by		
Approved by		

ENGINEER OF RECORD:

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

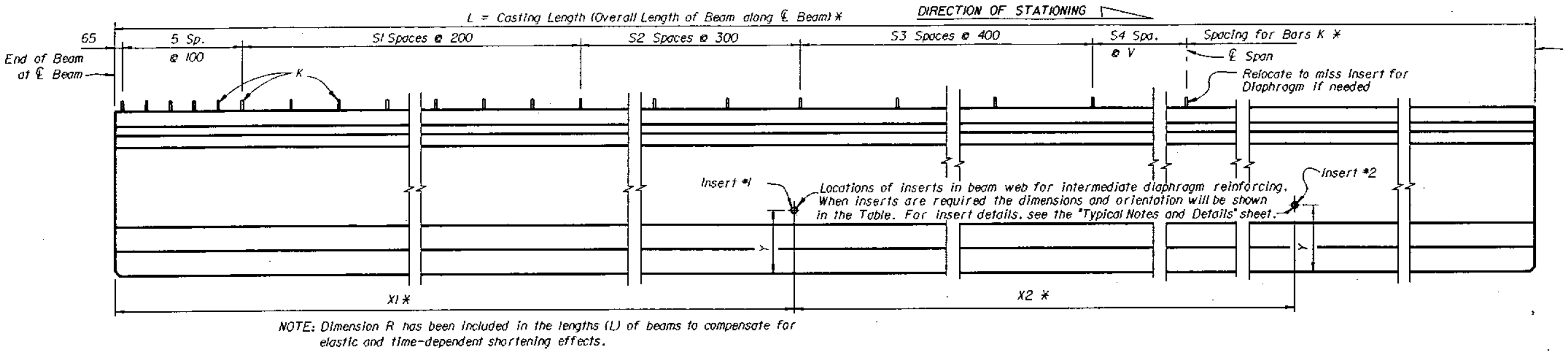
SHEET TITLE:
AASHTO TYPE IV BEAMS

PROJECT NAME:

Drawing No.
1 of 1

Index No.
S-104

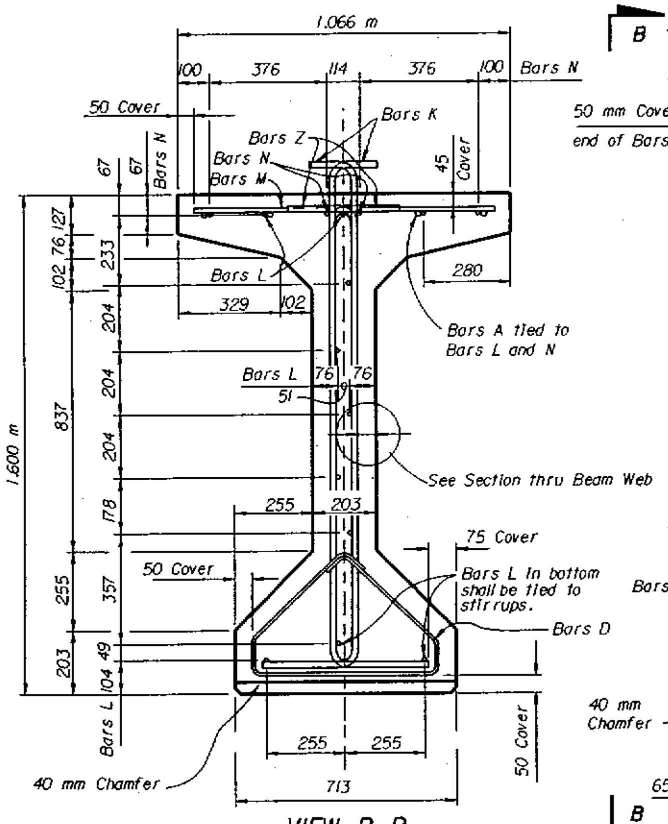
FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



NOTE: Dimension R has been included in the lengths (L) of beams to compensate for elastic and time-dependent shortening effects.

BEAM NOTES

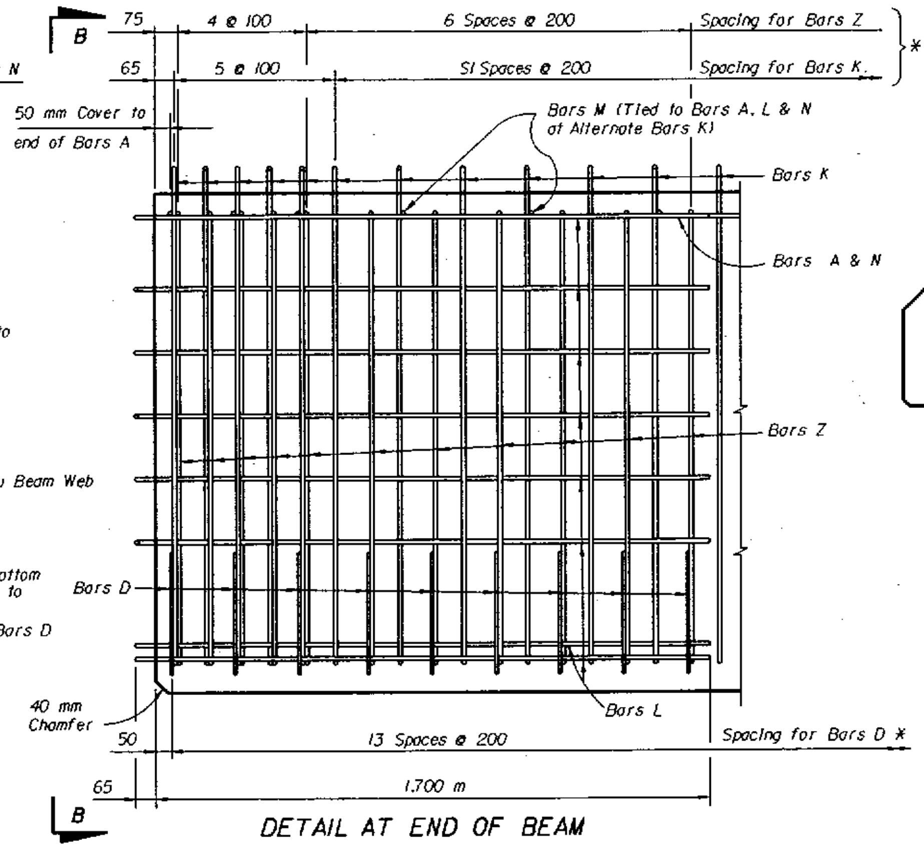
1. Work this sheet with Standard Index No. 101.



VIEW B-B

(With strands omitted, see Table for reference to strand pattern)

NOTE: Place Bars K and Z one (1) each space (alternate).

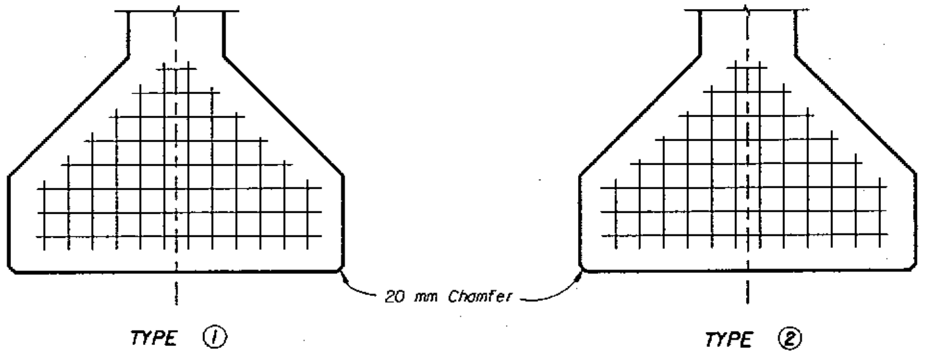


DETAIL AT END OF BEAM

NOTE: Bars K & Z shall be placed and tied to the top of the fully bonded prestressing strands in the bottom row.

✱ Note: All longitudinal beam dimensions shown on this sheet with a single asterisk (✱) are measured along the top of the beam at the centerline of beam.

✱✱ Note: End of beam bearing dimensions "J" and "K" are measured along the bottom of the beam.



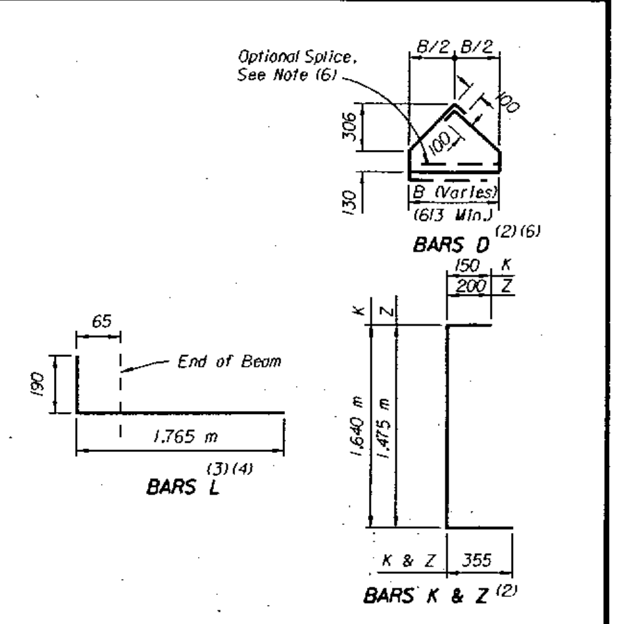
STRAND PATTERNS AND DEBONDING SCHEDULE

NOTE: ○ -Indicates fully bonded strands.
☐ -Indicates referenced pair of strands to be debonded the length shown which is measured from the end of the beam. ✱

BILL OF REINFORCING STEEL FOR ONE BEAM ONLY

MARK	SIZE	NO. REQUIRED	LENGTH (1)
A	#15M	8	See Table
D (2)(6)	#10M	28	Varies (1.940 m Min.)
K (2)	#15M	See Table	2.145 m
L (3)(4)	#10M	22	1.955 m
M	#10M	See Table	967
N (5)	Size 9 Strand	4	See Table
Z (2)	#15M	22	2.030 m

BENDING DIAGRAMS (1)



NOTES:

(1) All bar dimensions are out-to-out.

(2) Bars D, K, and Z shall be bent around pins having the following diameters for respective sizes:

Bar Size	Pin Diameters
#10M	50 mm
#15M	60 mm

(3) Bars L shall be bent prior to the beam leaving the prestressing yard. For treatment of bars L at skewed beam ends, see "Plan Ends of Beams".

(4) Caution should be used with Bars L in the ends of exterior beams to assure that the bent portion of the bar is properly oriented so that the bar will be embedded in the diaphragm concrete.

(5) Bars N shall be either ASTM A416, Grade 1725 or 1860, seven-wire strands size 9 or larger, stressed to 45 kN each.

(6) The minimum Dimension B and length of Bars D shown apply to one-piece Bars D placed perpendicular to the centerline of the beam. Dimension B and the length of Bars D for beams with skewed ends vary with the skew (See "Plan Ends of Beams").
At the Contractor's option, Bars D may be fabricated either as a two-piece bar with a 360 mm lap splice of the bottom legs or may be welded wire fabric, one or two-piece, provided the wire size and spacing furnishes the same steel area as the No. 10M Bars shown.

(7) (NS) means Near Side and (FS) means Far Side, both referring to which face of the beam web is to receive the insert for the dimensioned location. (NS) and (FS) are referenced to the DIRECTION OF STATIONING shown.

(8) CONTRACTOR'S OPTION: Welded deformed wire fabric reinforcement may be used in lieu of Bars D, K, L and Z provided the wire sizes and spacings match those shown on this sheet for these bars.

(9) All Dimensions are in millimeters (mm), except as noted.

TABLE OF BEAM VARIABLES

BEAM ID.	CONCRETE PROPERTIES			STND PTRN TYPE	PLAN VIEW CASE	END ELEV COND.	END OF BEAM AND BEARING DIMENSIONS ✱✱				BEAM DIMENSIONS ✱			NUMBER OF SPACES FOR STIRRUP BARS K				DIAPHRAGM INSERT LOCATIONS ✱					REINFORCING STEEL			
	CLASS	STRENGTHS (MPa)																			NS/FS (7)		A	K	M	N
		REL. (f'ci)	28-DAY (f'c)				ANGLE Ø	DIM P	DIM J	DIM K	DIM L	DIM R	DIM V	S1	S2	S3	S4	DIM X1	DIM X2	DIM Y	#1	#2	LENGTH✱	NO. REQ'D	NO. REQ'D	LENGTH✱

REVISIONS							Names	Dates
Date	By	Description	Date	By	Description	Drawn by		
			94R			Checked by		
						Designed by		
						Checked by		
						Approved by		

ENGINEER OF RECORD:

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE:
AASHTO TYPE V BEAMS

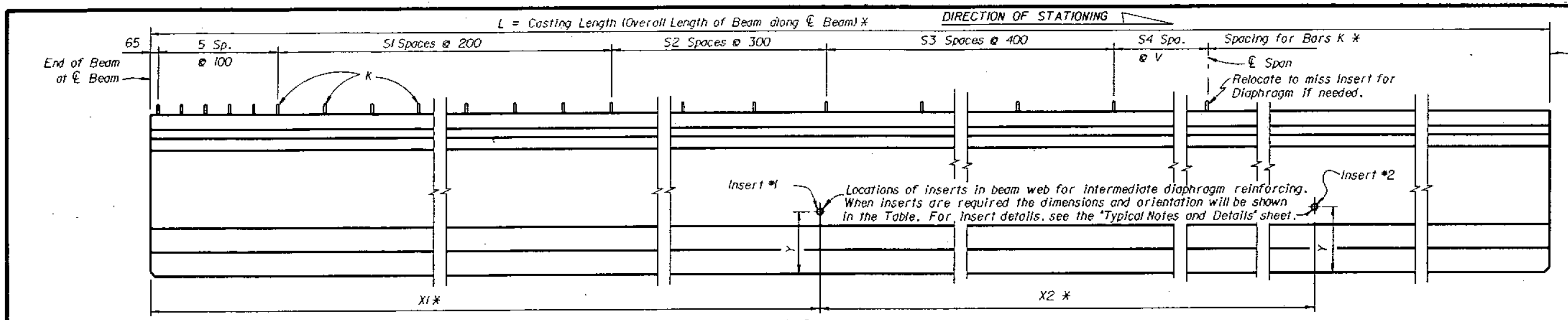
PROJECT NAME:

Drawing No.
1 of 1

Index No.
S-105

Thu Aug 25 15:45:15 1994 gd@strs@plotfiles@s105.snp

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



NOTE: Dimension R has been included in the lengths (L) of beams to compensate for elastic and time-dependent shortening effects.

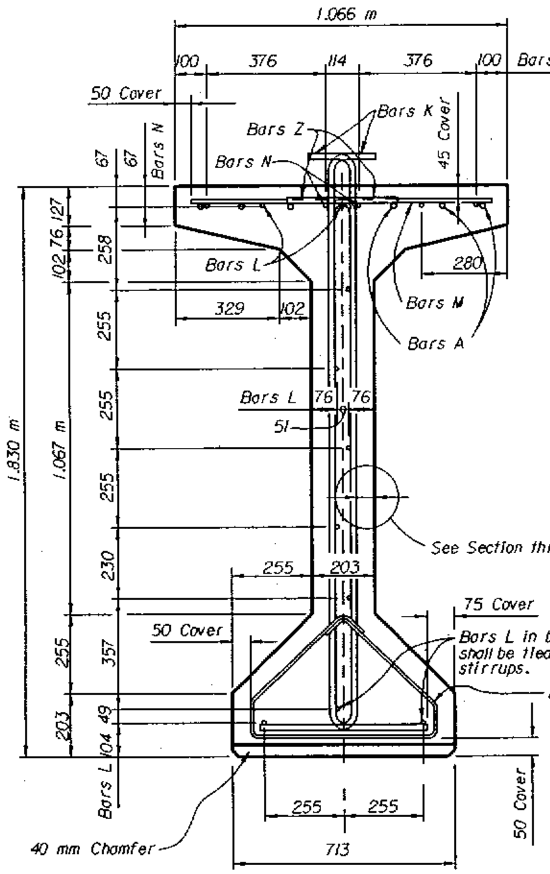
ELEVATION

BEAM NOTES

1. Work this sheet with Standard Index No. 101.

✱ Note: All longitudinal beam dimensions shown on this sheet with a single asterisk (✱) are measured along the top of the beam at the centerline of beam.

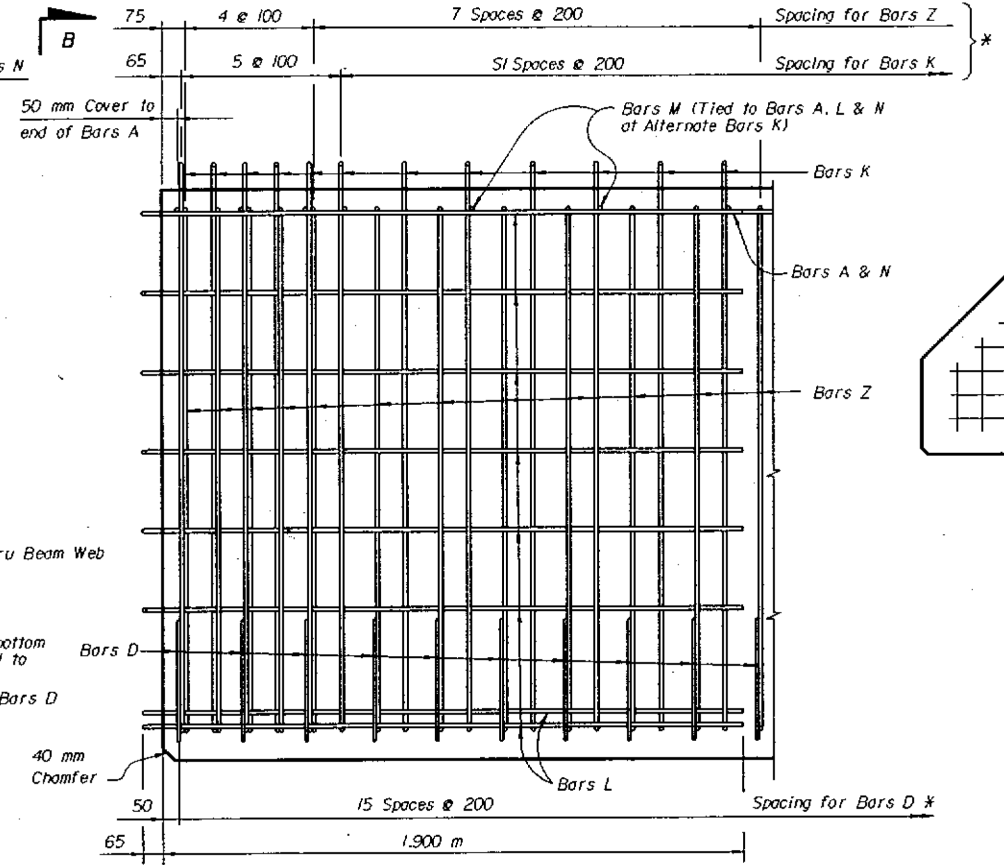
✱✱ Note: End of beam bearing dimensions 'J' and 'K' are measured along the bottom of the beam.



VIEW B-B

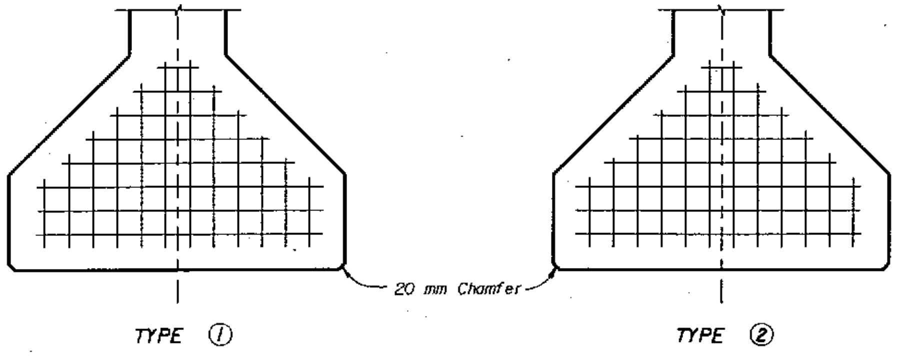
(With strands omitted, see Table for reference to strand pattern)

NOTE: Place Bars K and Z one (1) each space (alternate).



DETAIL AT END OF BEAM

NOTE: Bars K & Z shall be placed and tied to the top of the fully bonded prestressing strands in the bottom row.



STRAND PATTERNS AND DEBONDING SCHEDULE

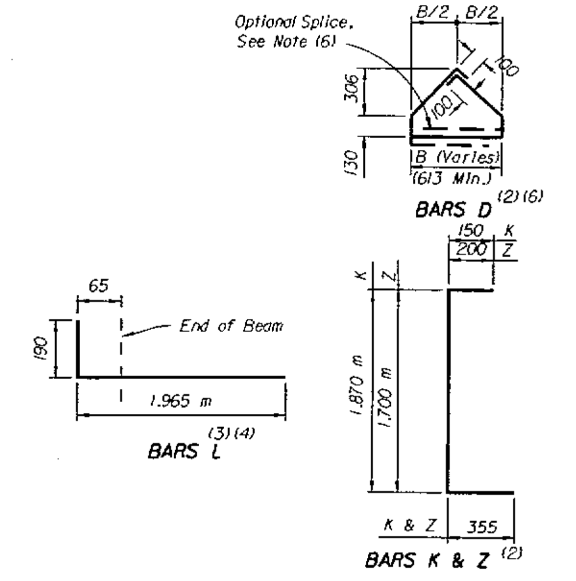
NOTE: ○ -Indicates fully bonded strands.

☐ -Indicates referenced pair of strands to be debonded the length shown which is measured from the end of the beam. ✱

BILL OF REINFORCING STEEL FOR ONE BEAM ONLY

MARK	SIZE	NO. REQUIRED	LENGTH (1)
A	#15M	12	See Table
D (2)(6)	#10M	32	Varies (1.940 m Min.)
K (2)	#15M	See Table	2.375 m
L (3)(4)	#10M	22	2.155 m
M	#10M	See Table	966
N (5)	Size 9 Strand	4	See Table
Z (2)	#15M	24	2.255 m

BENDING DIAGRAMS (1)



NOTES:

(1) All bar dimensions are out-to-out.

(2) Bars D, K, and Z shall be bent around pins having the following diameters for respective sizes:

Bar Size	Pin Diameters
#10M	50 mm
#15M	60 mm

(3) Bars L shall be bent prior to the beam leaving the prestressing yard. For treatment of bars L at skewed beam ends, see 'Plan Ends of Beams'.

(4) Caution should be used with Bars L in the ends of exterior beams to assure that the bent portion of the bar is properly oriented so that the bar will be embedded in the diaphragm concrete.

(5) Bars N shall be either ASTM A416, Grade 1725 or 1860, seven-wire strands size 9 or larger, stressed to 45 kN each.

(6) The minimum Dimension B and length of Bars D shown apply to one-piece Bars D placed perpendicular to the centerline of the beam. Dimension B and the length of Bars D for beams with skewed ends vary with the skew (See 'Plan Ends of Beams').
At the Contractor's option, Bars D may be fabricated either as a two-piece bar with a 360 mm lap splice of the bottom legs or may be welded wire fabric, one or two-piece, provided the wire size and spacing furnishes the same steel area as the No. 10M Bars shown.

(7) (NS) means Near Side and (FS) means Far Side, both referring to which face of the beam web is to receive the insert for the dimensioned location. (NS) and (FS) are referenced to the DIRECTION OF STATIONING shown.

(8) CONTRACTOR'S OPTION: Welded deformed wire fabric reinforcement may be used in lieu of Bars D, K, L and Z provided the wire sizes and spacings match those shown on this sheet for these bars.

(9) All Dimensions are in millimeters (mm), except as noted.

TABLE OF BEAM VARIABLES

BEAM ID.	CONCRETE PROPERTIES			STND PTRN TYPE	PLAN VIEW CASE	END ELEV COND.	END OF BEAM AND BEARING DIMENSIONS ✱✱				BEAM DIMENSIONS ✱			NUMBER OF SPACES FOR STIRRUP BARS K				DIAPHRAGM INSERT LOCATIONS✱					REINFORCING STEEL A	K	M	N
	CLASS	STRENGTHS (MPa)																			NS/FS (7)					
		REL. (f'ci)	28-DAY (f'c)				ANGLE Φ	DIM P	DIM J	DIM K	DIM L	DIM R	DIM V	S1	S2	S3	S4	DIM X1	DIM X2	DIM Y	#1	#2	LENGTH✱	NO. REQ'D	NO. REQ'D	LENGTH✱

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REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by		
Checked by		
Designed by		
Checked by		
Approved by		

ENGINEER OF RECORD:

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

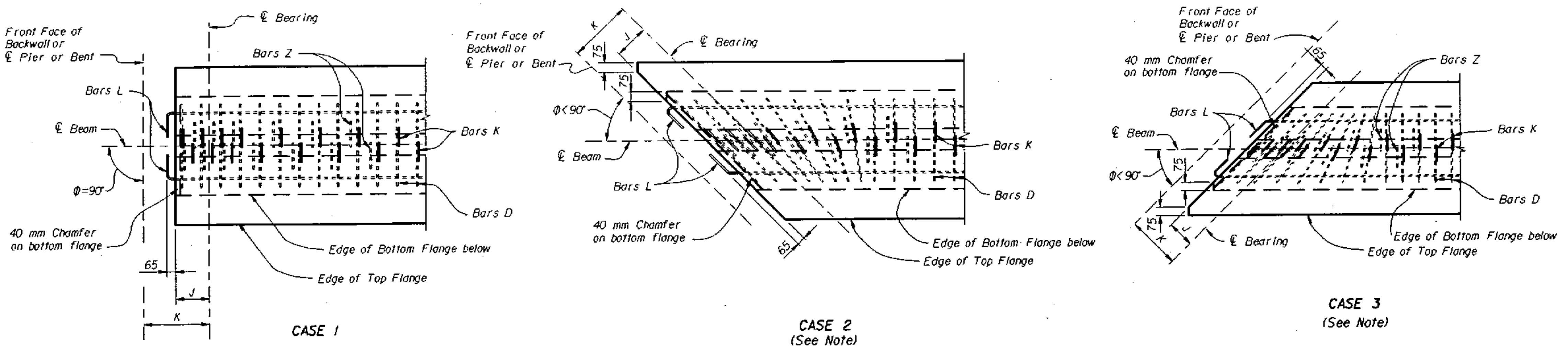
SHEET TITLE:
AASHTO TYPE VI BEAMS

PROJECT NAME:

Drawing No.
1 of 1

Index No.
S-106

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



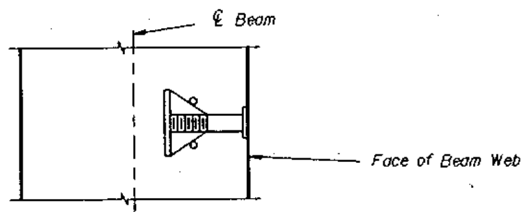
CASE 1

CASE 2
(See Note)

CASE 3
(See Note)

PLAN ENDS OF BEAMS
(Bars M in top flange omitted for clarity.)

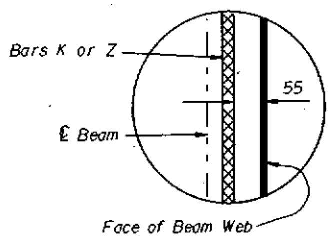
NOTE: For both Plan Views Case 2 and Case 3, the first Bar Z and the first two Bars K shall be placed parallel to the skewed end of the Beam. The remainder of the Bars Z & K shall be placed so as to transition from the skewed end to an axis perpendicular to the centerline of the beam. Bars D in the bottom flange shall be rotated along with Bars Z & K. Bar spacing may not agree with Beam sheets.



SECTION THRU BEAM WEB AT INSERT FOR DIAPHRAGM REINFORCING
(When Intermediate Diaphragms are Required)

NOTE: Insert shall be 25.4 mm Φ, zinc-electroplated, ferrule wing nut, UNC threads, 7.77 mm Φ min. wire, not more than 100 mm in depth and shall have a minimum ultimate tensile strength of 50.7 kN in 28 MPa concrete.

NOTE: If inserts are needed on both sides of web an assembly as long as the thickness of the web, consisting of two (2) ferrule inserts attached by two (2) or more struts may be utilized. The connecting struts shall have a minimum ultimate tensile strength of 101.4 kN.



SECTION THRU BEAM WEB
(Showing Cover on Stirrups)

BEAM NOTES

MORTAR LEAKAGE: Any mortar leakage that occurs and stains resulting from leakage shall be removed so that beams have a uniform appearance.

STRANDS: At the option of the Contractor, other types, sizes and/or configurations of strands may be used in lieu of the stranding shown on these sheets. Calculations shall be submitted showing the substitution meets the following requirements:

1. The strands meet all the requirements of ASTM A416 for the grade of strands proposed.
2. The net compressive stress in the concrete due to prestressing acting alone, after all losses, is not less than that provided by the stranding shown on these sheets.
3. The ultimate strength of the structure with the proposed stranding is not less than the ultimate strength of the original design.
4. The proposed stranding complies in all respects with the Department's Structures Design Guidelines.

FINISH: The top surface of the beam shall be rough floated and then scrubbed transversely with a coarse wire brush to remove all laitance and to produce a roughened surface for bonding. All beams shall receive a Class 3 surface finish.

SUBMITTALS: The Specifications stipulate the conditions for which Shop Drawings are not required. If each and every condition cannot be met, then a formal Shop Drawing submittal is required. Supplemental reinforcing provided by the Contractor to facilitate fabrication of prestressed beams do not require Shop Drawings

STRAND DETENSIONING: Strand detensioning shall be based upon the following priority, from first to last:

1. Top dormant strands (Bars N)
2. Fully bonded strands
3. Partially debonded (shielded) strands

FORMS AND PALLETS: All beams shall be cast on concrete based pallets and in metal forms.

HANDLING: In the handling of beams, they must be maintained in an upright position at all times and must be picked up from points located a maximum distance of 1.000 m from the ends of the beam.

STORAGE AND TRANSPORTATION: Beams shall be stored on adequate dunnage and supported during transit within 500 mm from ends of beam.

STRAND EXTENSION: All strands shall extend 65 mm beyond ends of beams.

CONCRETE: Refer to Table of Beam Variables on the individual beam sheets for the class of concrete, 28-day strength (f'c) and cylinder strength at transfer of the tensioning load (f'ci).

REINFORCING STEEL: All reinforcing steel shall be ASTM A615M Grade 400.

BEARING PADS: The cost of installing bearing pads shall be included in the contract unit price of prestressed beams. The composite neoprene pads may or may not be furnished to the contractor by FDOT. See the General Notes for the bridge, or the Bid Item Notes, for additional information regarding who the pads provider will be.

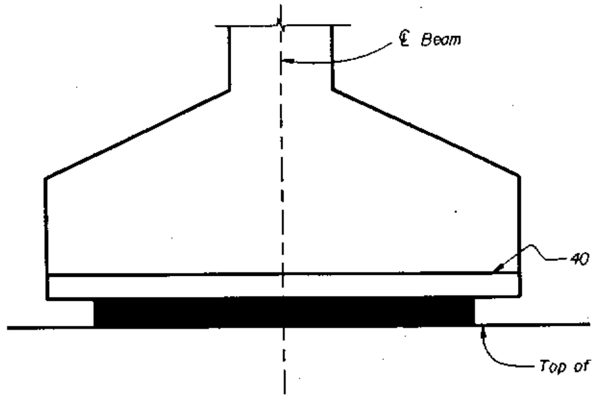
MISCELLANEOUS: The cost of inserts for diaphragm tie bars shall be included in the contract unit prices for prestressed beams.

NOTES: Work this sheet with individual beam sheets, Bulb-T 54, 63 & 72.

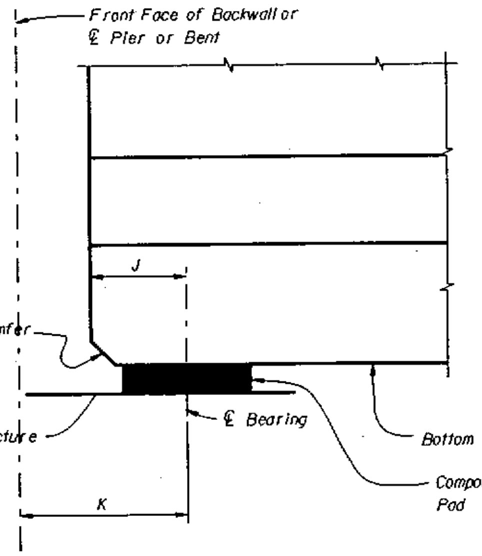
See "TABLE OF BEAM VARIABLES" on individual beam sheets for angle "Φ"s and dimensions "J", "K", "L", and "P".

For beams with vertically bevelled ends, such as conditions 2 & 3, the first Bar K shall be placed parallel to the end bevel. Adjacent Bars Z and K shall be placed so as to transition from the end bevel to a vertical axis. The spacing of Bars K and Z shown shall apply along the top flange of the beam and the spacing along the bottom of the beam shall be adjusted by not more than 15 mm (±) until the vertical position is attained.

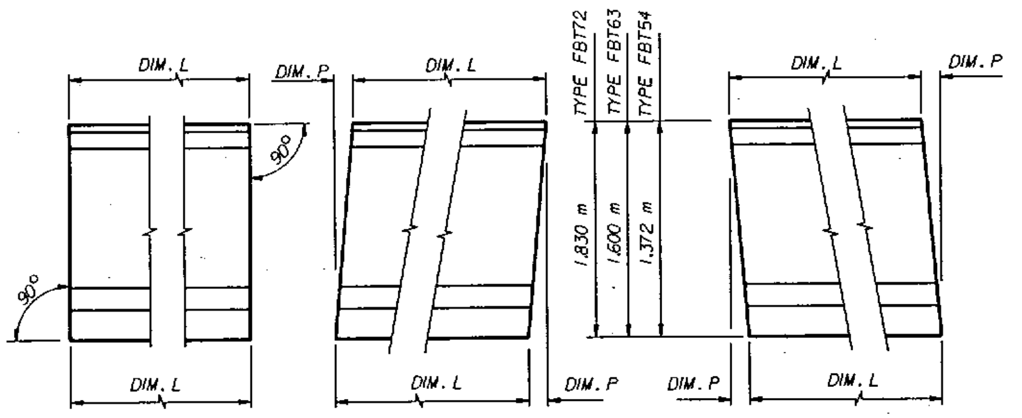
All dimensions are in millimeters (mm), except as noted.



END ELEVATION
(Perpendicular to ℄ Beam)



SIDE ELEVATION
(Perpendicular To ℄ Bearing)



CONDITION 1
(P = 0.0 mm)

CONDITION 2

CONDITION 3

END ELEVATIONS OF BEAMS
(Showing Vertical Bevel of Beam End)

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	WEH	1-89
Checked by	DCP	1-89
Designed by	DCP	1-89
Checked by	WEH	1-89
Approved by	REN	

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE: TYPICAL NOTES AND DETAILS FOR FLORIDA BULB-T 54, 63 & 72 PRESTRESSED BEAMS

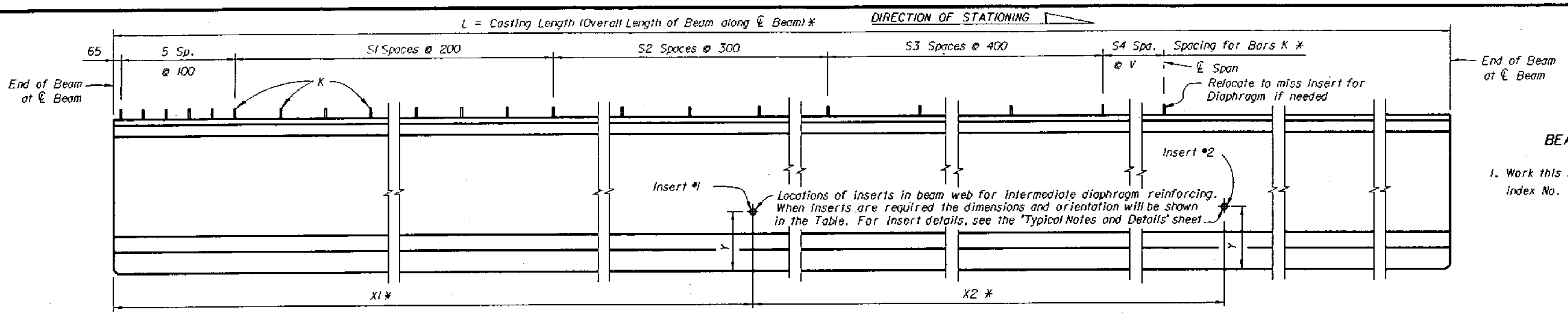
PROJECT NAME:

Drawing No. 1 of 1

Index No. 110

Fri Aug 26 10:48:35 1994 g:\strs\pltfiles\110.snp

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



NOTE: Dimension R has been included in the lengths (L) of beams to compensate for elastic and time-dependent shortening effects.

BEAM NOTES

1. Work this sheet with Standard Index No. 110.

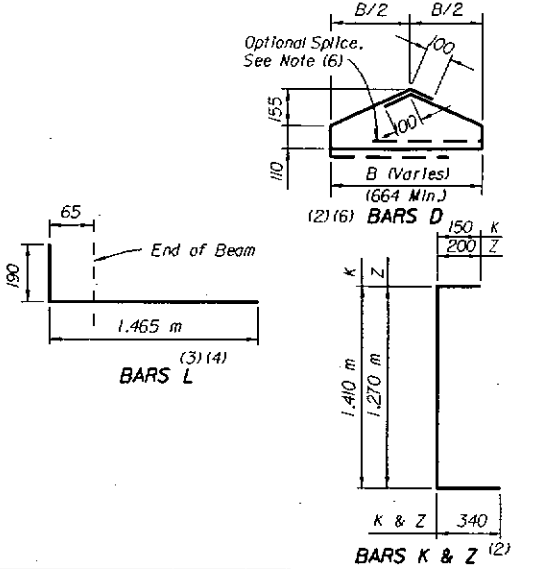
* NOTE: All longitudinal beam dimensions shown on this sheet with a single asterisk (*) are measured along the top of the beam at the centerline of beam.

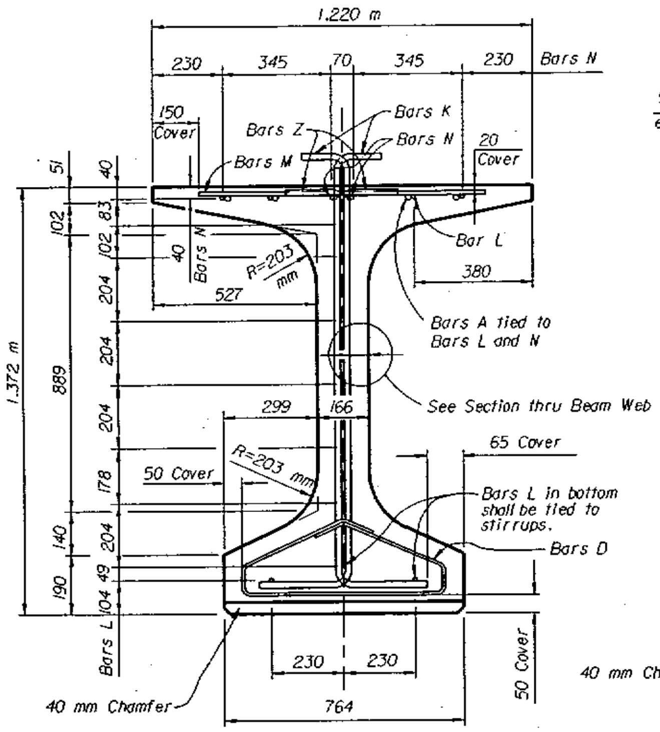
** NOTE: End of beam bearing dimensions "J" and "K" are measured along the bottom of the beam.

BILL OF REINFORCING STEEL FOR ONE BEAM ONLY

MARK	SIZE	NO. REQUIRED	LENGTH (1)
A	#15M	8	See Table
D (2)(6)	#10M	22	Varies 1.815 m Min.
K (2)	#15M	See Table	1.900 m
L (3)(4)	#10M	22	1.655 m
M	#10M	See Table	920
N (5)	Size 9 Strand	4	See Table
Z (2)	#15M	18	1.810 m

BENDING DIAGRAMS (1)

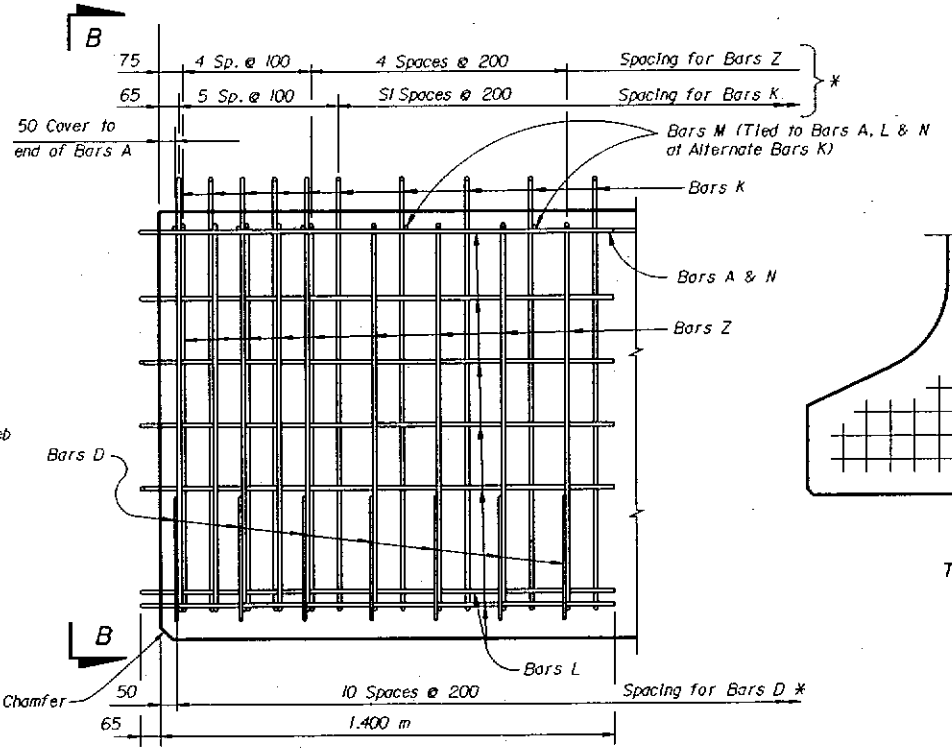




VIEW B-B

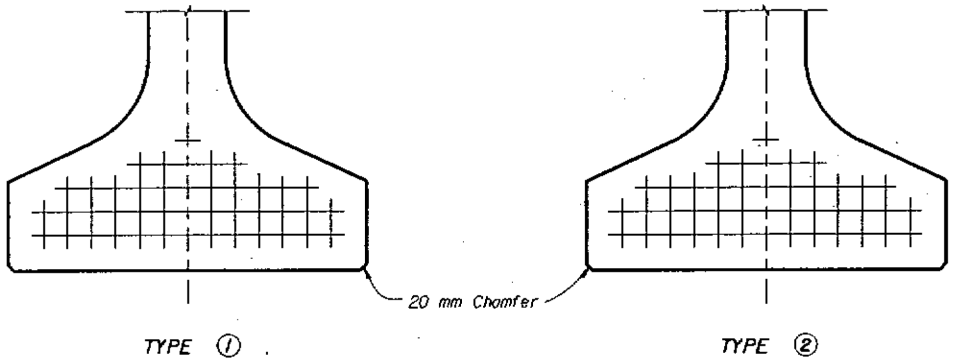
(With strands omitted, see Table for reference to strand pattern)

NOTE: Place Bars K and Z one (1) each space (alternate).



DETAIL AT END OF BEAM

NOTE: Bars K & Z shall be placed and tied to the top of the fully bonded prestressing strands in the bottom row.



STRAND PATTERNS AND DEBONDING SCHEDULE

NOTE: ○ -Indicates fully bonded strands.

☐ -Indicates referenced pair of strands to be debonded the length shown which is measured from the end of the beam. *

NOTES:

(1) All bar dimensions are out-to-out.

(2) Bars D,K, and Z shall be bent around pins having the following diameters for respective sizes:

Bar Size	Pin Diameters
#10M	50 mm
#15M	60 mm

(3) Bars L shall be bent prior to the beam leaving the prestressing yard. For treatment of bars L at skewed beam ends, see "Plan Ends of Beams".

(4) Caution should be used with Bars L in the ends of exterior beams to assure that the bent portion of the bar is properly oriented so that the bar will be embedded in the diaphragm concrete.

(5) Bars N shall be either ASTM A416, Grade 1725 or 1860, seven-wire strands size 9 diameter or larger, stressed to 45 kN each.

(6) The minimum Dimension B and length of Bars D shown apply to one-piece Bars D placed perpendicular to the centerline of the beam. Dimension B and the length of Bars D for beams with skewed ends vary with the skew (See "Plan Ends of Beams").

At the Contractor's option, Bars D may be fabricated either as a two-piece bar with a 360 mm lap splice of the bottom legs or may be welded wire fabric, one or two-piece, provided the wire size and spacing furnishes the same steel area as the No. 10M Bars shown.

(7) (NS) means Near Side and (FS) means Far Side, both referring to which face of the beam web is to receive the insert for the dimensioned location. (NS) and (FS) are referenced to the DIRECTION OF STATIONING shown.

(8) CONTRACTOR'S OPTION: Welded deformed wire fabric reinforcement may be used in lieu of Bars D, K, L and Z provided the wire sizes and spacings match those shown on this sheet for these bars.

(9) All dimensions are in millimeters (mm), except as shown.

TABLE OF BEAM VARIABLES / REINFORCING STEEL

BEAM ID.	CONCRETE PROPERTIES			STND PTRN TYPE	PLAN VIEW CASE	END ELEV COND.	END OF BEAM AND BEARING DIMENSIONS **				BEAM DIMENSIONS *			NUMBER OF SPACES FOR STIRRUP BARS K				DIAPHRAGM INSERT LOCATIONS*					A	K	M	N
	CLASS	STRENGTHS (MPa)					ANGLE Φ	DIM P	DIM J	DIM K	DIM L	DIM R	DIM V	S1	S2	S3	S4	DIM X1	DIM X2	DIM Y	NS/FS (7)		LENGTH*	NO. REQ'D	NO. REQ'D	LENGTH*
		REL. (f'ci)	28-DAY (f'c)																		#1	#2				

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Thu Aug 25 13:57:21 1994

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by		
Checked by		
Designed by		
Checked by		
Approved by		

ENGINEER OF RECORD:

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

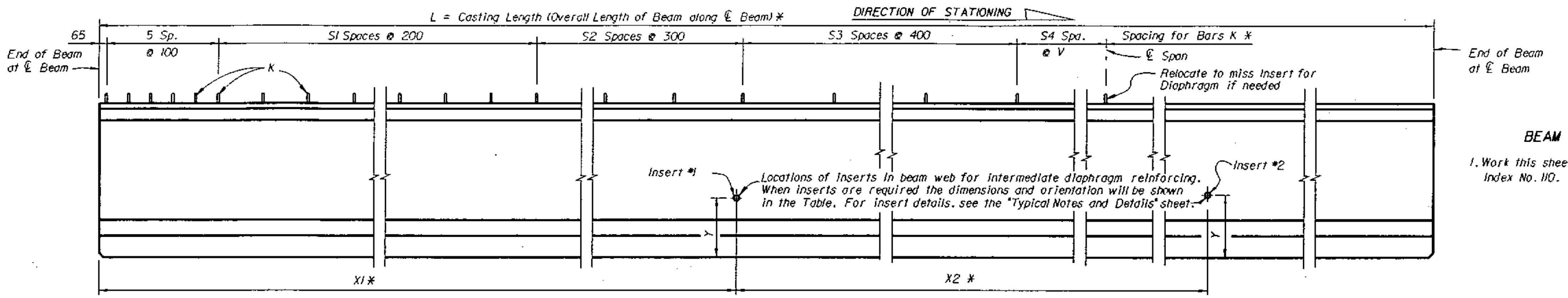
SHEET TITLE:
FLORIDA BULB-T 54 BEAMS

PROJECT NAME:

Drawing No.
1 of 1

Index No.
S-111

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



NOTE: Dimension R has been included in the lengths (L) of beams to compensate for elastic and time-dependent shortening effects.

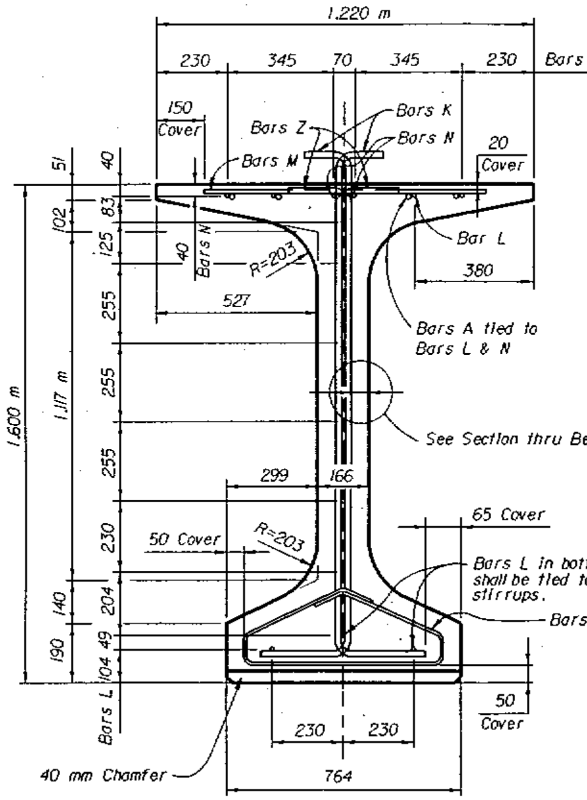
ELEVATION

BEAM NOTES

1. Work this sheet with Standard Index No. 110.

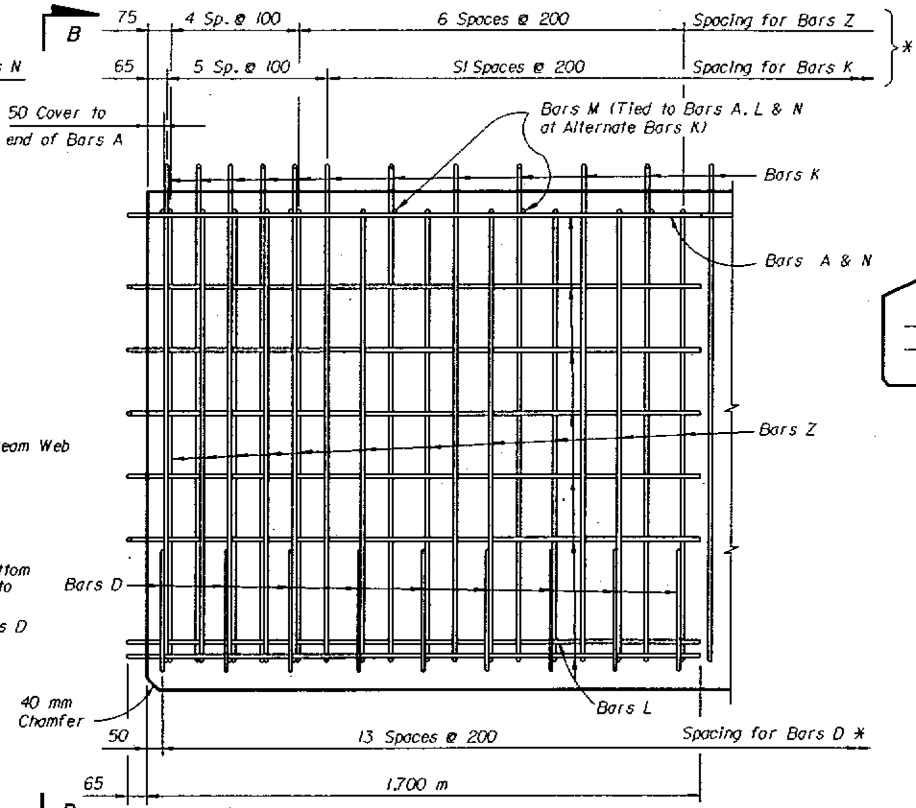
✱ NOTE: All longitudinal beam dimensions shown on this sheet with a single asterisk (✱) are measured along the top of the beam at the centerline of beam.

✱✱ NOTE: End of beam bearing dimensions "J" and "K" are measured along the bottom of the beam.



VIEW B-B

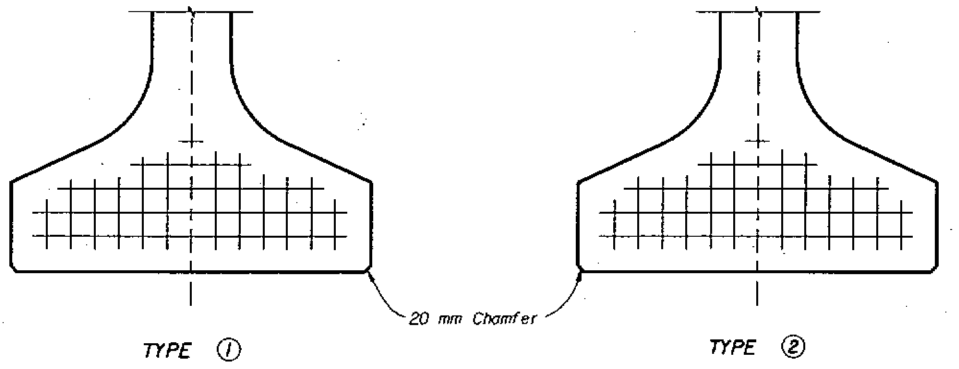
(With strands omitted, see Table for reference to strand pattern)



DETAIL AT END OF BEAM

NOTE: Bars K & Z shall be placed and tied to the top of the fully bonded prestressing strands in the bottom row.

NOTE: Place Bars K and Z one (1) each space (alternate).



STRAND PATTERNS AND DEBONDING SCHEDULE

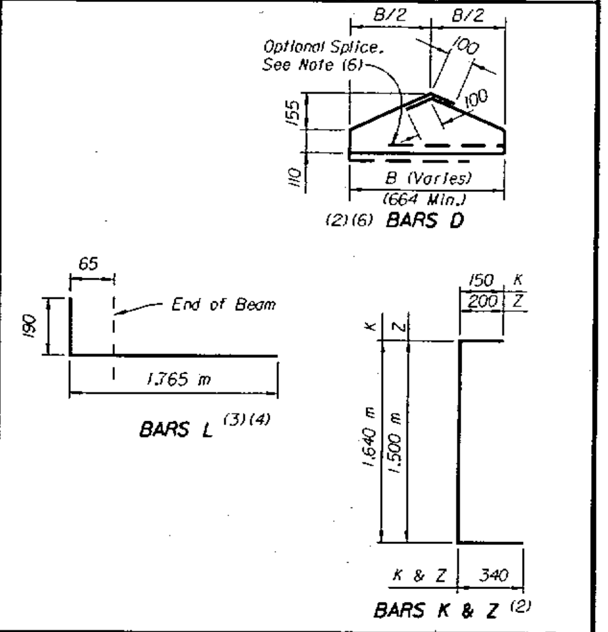
NOTE: ○ -Indicates fully bonded strands.

☐ -Indicates referenced pair of strands to be debonded the length shown which is measured from the end of the beam. ✱

BILL OF REINFORCING STEEL FOR ONE BEAM ONLY

MARK	SIZE	NO. REQUIRED	LENGTH (1)
A	#15M	8	See Table
D (2)(6)	#10M	28	Varies 1.815m Min.
K (2)	#15M	See Table	2.130 m
L (3)(4)	#10M	22	1.955 m
M	#10M	See Table	920
N (5)	Size 9 Strand	4	See Table
Z (2)	#15M	22	2.040 m

BENDING DIAGRAMS (1)



NOTES:

(1) All bar dimensions are out-to-out.

(2) Bars D,K, and Z shall be bent around pins having the following diameters for respective sizes:

Bar Size	Pin Diameters
#10M	50 mm
#15M	60 mm

(3) Bars L shall be bent prior to the beam leaving the prestressing yard. , For treatment of bars L at skewed beam ends, see "Plan Ends of Beams".

(4) Caution should be used with Bars L in the ends of exterior beams to assure that the bent portion of the bar is properly oriented so that the bar will be embedded in the diaphragm concrete.

(5) Bars N shall be either ASTM A416, Grade 1725 or 1860, seven-wire strands size 9 or larger, stressed to 45 kn each.

(6) The minimum Dimension B and length of Bars D shown apply to one-piece Bars D placed perpendicular to the centerline of the beam. Dimension B and the length of Bars D for beams with skewed ends vary with the skew (See "Plan Ends of Beams").

At the Contractor's option, Bars D may be fabricated either as a two-piece bar with a 360 mm lap splice of the bottom legs or may be welded wire fabric, one or two-piece, provided the wire size and spacing furnishes the same steel area as the No. 10M Bars shown.

(7) (NS) means Near Side and (FS) means Far Side, both referring to which face of the beam web is to receive the insert for the dimensioned location. (NS) and (FS) are referenced to the DIRECTION OF STATIONING shown.

(8) CONTRACTOR'S OPTION: Welded deformed wire fabric reinforcement may be used in lieu of Bars D, K, L and Z provided the wire sizes and spacings match those shown on this sheet for these bars.

(9) All Dimensions are in millimeters (mm), except as noted.

TABLE OF BEAM VARIABLES / REINFORCING STEEL

BEAM ID.	CONCRETE PROPERTIES			STND PTRN TYPE	PLAN VIEW CASE	END ELEV COND.	END OF BEAM AND BEARING DIMENSIONS ✱✱				BEAM DIMENSIONS ✱			NUMBER OF SPACES FOR STIRRUP BARS K				DIAPHRAGM INSERT LOCATIONS ✱					A	K	M	N
	CLASS	STRENGTHS (MPa)																DIM X1	DIM X2	DIM Y	NS/FS (7)					
		REL. (f'ci)	28-DAY (f'c)				ANGLE ϕ	DIM P	DIM J	DIM K	DIM L	DIM R	DIM V	S1	S2	S3	S4				#1	#2	LENGTH✱	NO. REQ'D	NO. REQ'D	LENGTH✱

g@str\s@pltfiles@sil2.snp Thu Aug 25 14:11:56 1994

REVISIONS

Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by		
Checked by		
Designed by		
Checked by		
Approved by		

ENGINEER OF RECORD:

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

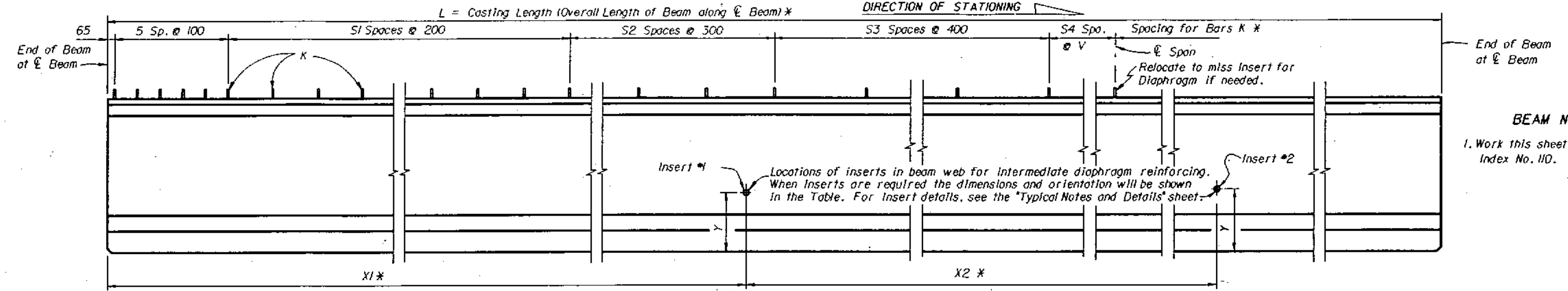
SHEET TITLE:
FLORIDA BULB-T 63 BEAMS

PROJECT NAME:

Drawing No.
1 of 1

Index No.
S-112

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



NOTE: Dimension R has been included in the lengths (L) of beams to compensate for elastic and time-dependent shortening effects.

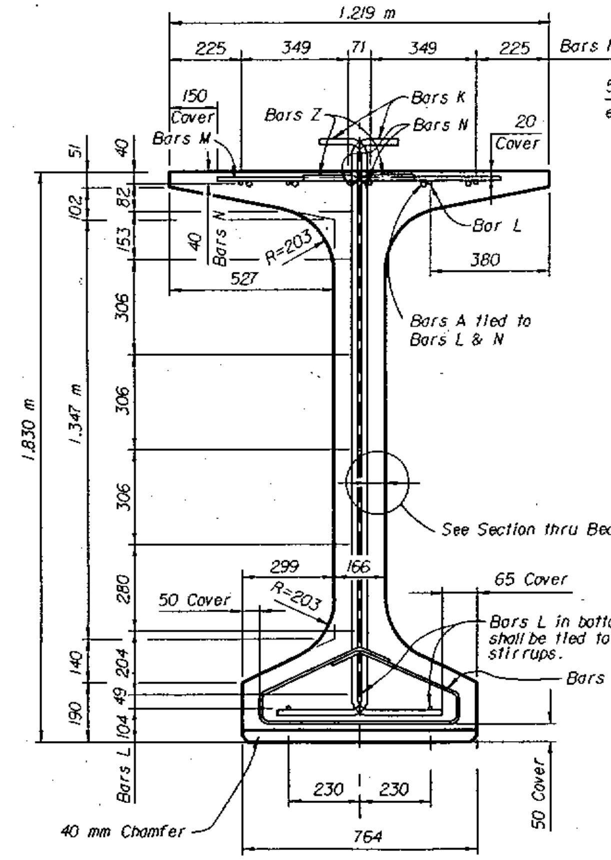
ELEVATION

BEAM NOTES

1. Work this sheet with Standard Index No. 110.

* NOTE: All longitudinal beam dimensions shown on this sheet with a single asterisk (*) are measured along the top of the beam at the centerline of beam.

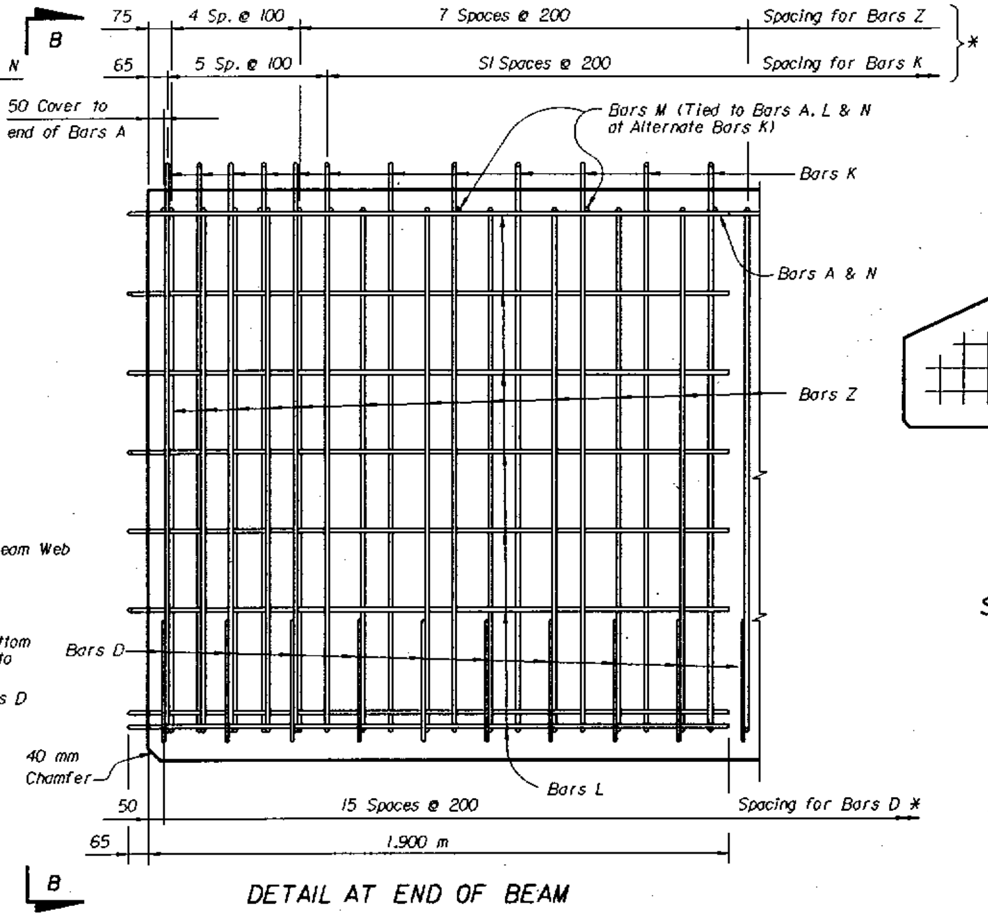
** NOTE: End of beam bearing dimensions "J" and "K" are measured along the bottom of the beam.



VIEW B-B

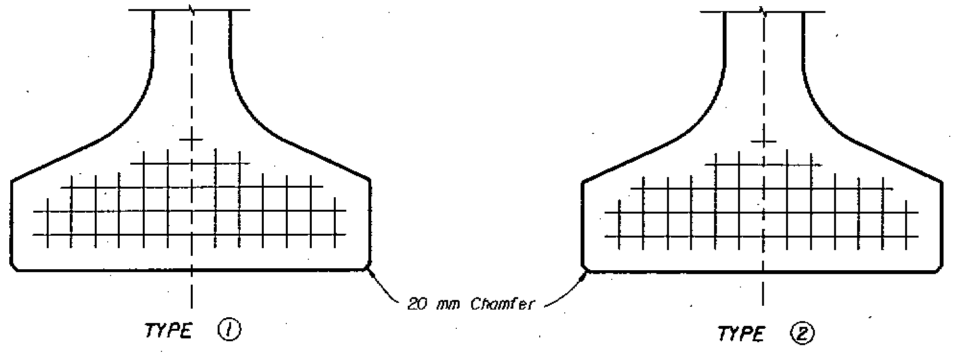
(With strands omitted, see Table for reference to strand pattern)

NOTE: Place Bars K and Z one (1) each space (alternate).



DETAIL AT END OF BEAM

NOTE: Bars K & Z shall be placed and tied to the top of the fully bonded prestressing strands in the bottom row.



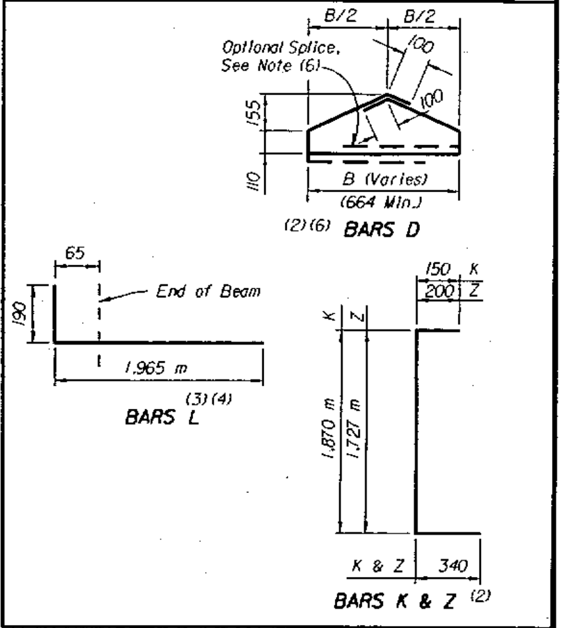
STRAND PATTERNS AND DEBONDING SCHEDULE

NOTE: ○ -Indicates fully bonded strands.
☐ -Indicates referenced pair of strands to be debonded the length shown which is measured from the end of the beam.*

BILL OF REINFORCING STEEL FOR ONE BEAM ONLY

MARK	SIZE	NO. REQUIRED	LENGTH (1)
A	#15M	8	See Table
D (2)(6)	#10M	32	Varies 1.815m Min.
K (2)	#15M	See Table	2.360 m
L (3)(4)	#10M	22	2.155 m
M	#10M	See Table	920
N (5)	Size 9 Strand	4	See Table
Z (2)	#15M	24	2.267 m

BENDING DIAGRAMS (1)



NOTES:

(1) All bar dimensions are out-to-out.

(2) Bars D, K, and Z shall be bent around pins having the following diameters for respective sizes:

Bar Size	Pin Diameters
#10M	50 mm
#15M	60 mm

(3) Bars L shall be bent prior to the beam leaving the prestressing yard. For treatment of Bars L at skewed beam ends, see "Plan Ends of Beams".

(4) Caution should be used with Bars L in the ends of exterior beams to assure that the bent portion of the bar is properly oriented so that the bar will be embedded in the diaphragm concrete.

(5) Bars N shall be either ASTM A416, Grade 1725 or 1860, seven-wire strands size 9 or larger, stressed to 45 kn each.

(6) The minimum Dimension B and length of Bars D shown apply to one-piece Bars D placed perpendicular to the centerline of the beam. Dimension B and the length of Bars D for beams with skewed ends vary with the skew (See "Plan Ends of Beams").
At the Contractor's option, Bars D may be fabricated either as a two-piece bar with a 360 mm lap splice of the bottom legs or may be welded wire fabric, one or two-piece, provided the wire size and spacing furnishes the same steel area as the No. 10M Bars shown.

(7) (NS) means Near Side and (FS) means Far Side, both referring to which face of the beam web is to receive the Insert for the dimensioned location. (NS) and (FS) are referenced to the DIRECTION OF STATIONING shown.

(8) CONTRACTOR'S OPTION: Welded deformed wire fabric reinforcement may be used in lieu of Bars D, K, L and Z provided the wire sizes and spacings match those shown on this sheet for these bars.

(9) All Dimensions are in millimeters (mm), except as noted.

TABLE OF BEAM VARIABLES																							REINFORCING STEEL			
BEAM ID.	CONCRETE PROPERTIES			STND PTRN TYPE	PLAN VIEW CASE	END ELEV COND.	END OF BEAM AND BEARING DIMENSIONS **				BEAM DIMENSIONS *			NUMBER OF SPACES FOR STIRRUP BARS K				DIAPHRAGM INSERT LOCATIONS*					A	K	M	N
	CLASS	STRENGTHS (MPa)																DIM X1	DIM X2	DIM Y	NS/FS (7)		LENGTH*	NO. REQ'D	NO. REQ'D	LENGTH*
		REL. (f'ci)	28-DAY (f'c)				ANGLE Φ	DIM P	DIM J	DIM K	DIM L	DIM R	DIM V	S1	S2	S3	S4				#1	#2				

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by		
Checked by		
Designed by		
Checked by		
Approved by		

ENGINEER OF RECORD:

LOGO:

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FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE:
FLORIDA BULB-T 72 BEAMS

PROJECT NAME:

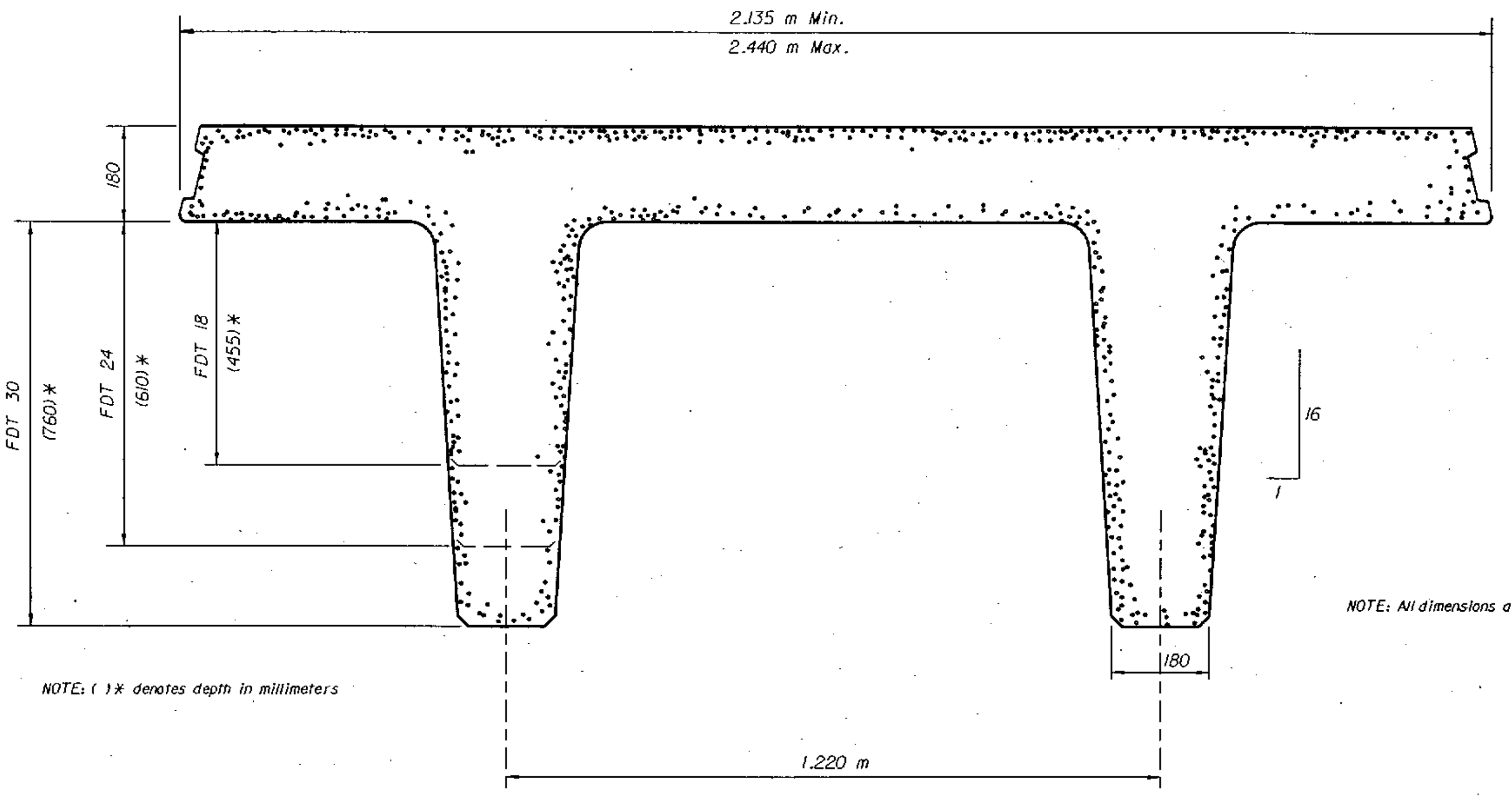
Drawing No.
1 of 1

Index No.
S-113

Fri Aug 26 09:17:03 1994 g0strs0pltfiles0s113.snp

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

FLORIDA DOUBLE - TEE



NOTE: ( )* denotes depth in millimeters

NOTE: All dimensions are in millimeters (mm), except as noted.

LIST OF DRAWINGS

Index No.	
I-120	Florida Double-Tee General Instructions
I-121	Florida Double-Tee Bridge Sections
I-122	Florida Double-Tee Tabulated Strand Patterns
123	Florida Double-Tee Notes and Miscellaneous Details (2 Sheets)
124	FDT18 Typical Section
125	FDT24 Typical Section
126	FDT30 Typical Section
127	Florida Double-Tee Plan, Joint and Diaphragm
S-128	FDT18 Table of Variables and Strand Patterns
S-129	FDT24 Table of Variables and Strand Patterns
S-130	FDT30 Table of Variables and Strand Patterns

DOUBLE-TEE GENERAL INSTRUCTIONS

This FDOT Standard is intended for use in preparing construction plans for bridges on straight alignment and skew angles 30° or less. The standard is also limited to simply supported spans, over water or railroad tracks.

Three different cross-sections are provided: the Florida Double-Tee FDT18, the FDT24, and the FDT30.

Fabricators may acquire a set of forms for the FDT30 beam, and utilize these to fabricate the other sections by blocking out the lower portion of the stems.

The detailed 180 mm slab (flange) thickness provides 15 mm for grinding to improve the riding quality of the bridge if needed. Therefore, the designs should be based on a 165 mm thick structural flange.

The width of the flange may vary as shown and the 180 mm thickness may be increased to accommodate a bridge crown (crowned beam).

Designs using No. 13 (1860 MPa) low-relaxation strands and concrete with a 28-day compressive strength of 35 MPa are tabulated on Index I-122. The designs include allowances of 720 N/m² for future surfacing and 1.0 kN/m² for railing barriers.

The Designs provided are applicable for all Environmental Classifications. Some Details, such as Concrete Class and Protective Treatment of Strands at the end of the Stem depend on the Environment. Therefore, the Designer shall include in the General Notes for the Bridge the Environmental Classification and call for all applicable dependent requirements.

Three types of drawings are included: Instructional Drawings, Semi-standard Drawings, and the Standard Drawings. The Instructional Drawings are provided to assist designers in preparing the contract drawings. These drawings help explain how the Semi-standard Drawings should be completed, provide required design information, and list the Standard Drawings that should be included in the contract set.

In most applications, the drawings provided in this standard (and other standards) when supplemented by a Plan view of the superstructure and a typical section thru the bridge should suffice in defining the bridge superstructure. In all cases, however, the designer is responsible for providing additional drawings necessary to complete the superstructure drawings, and for designing and detailing substructure units and other bridge components.

INSTRUCTIONAL DRAWINGS:

The Instructional Drawings show the three (3) double-tee cross-sections, typical bridge sections, strand pattern designs, and provide general instructions.

STANDARD DRAWINGS:

The Standard Drawings are complete except for the title blocks. Only the applicable FDT standard drawings shall be included in the contract drawings. The Standard Drawings provide Double-Tee Notes, Construction Notes, Neoprene Pad details and general standard details for the beams.

SEMI-STANDARD DRAWINGS:

The Semi-standard Drawings are incomplete drawings. These drawings must be completed by the designer to suit the particular design. A Table of Beam Variables is provided in the Semi-standard Drawings. The designer shall complete the Table by providing all applicable information. The designer shall obtain strand patterns from Index I-122 or from his own calculations and show patterns in the strand pattern grids provided.

DOUBLE-TEE DESIGN EXAMPLE:

As a design example a single span bridge is designed using the instructional drawings, standard drawings and semi-standard drawings. The following information is provided for the bridge:

Begin Bridge: Sta. 00+00.000
End Bridge: Sta. 00+18.000
Cross Slope: 2 %
Skew Angle: 0 degrees (Ø = 90°)
Bridge Width: 12.0 m clear roadway
Sidewalks: none

From this information, the design span length is : (18-2(170+40)/1000) = 17.580 m (℄ - ℄ bearings). Instructional Drawing I-122 shows that a FDT30 with twenty-eight (28) strands is required. The strand patterns should be drawn on Semi-standard Drawing S-130. The strand pattern Case 2 applies. The strand patterns Types 1 and 2 also apply. The strand pattern at the end should be drawn in the section, for Type 1, and the pattern between hold downs (center) should be drawn in the section of the stem for Type 2. The total number of strands required, in this case 28, should be written within the circles.

The Bridge Plans shall include the following drawings:
Index No. 123, 126, 127, & S-130

The Table of Variables should be filled as follows:

Since Bridge Width (o-o) = 12 + 2(475/1000) = 12.950 m
The Number of tees required = 12950/2440 = 6, and
W = (12.950/6) = 2.158 m

Note: Neglect the 6 mm gap between beams.
Clear roadway width and overall superstructure width should be denoted as 12.000 m and 12.950 m, respectively.

A = (2158 - 1220) 0.5 = 469 mm
L = 18.000 - 0.080 = 17.920 m
[L - 2(0.530)] / 1.370 = 13; THEREFORE,
N1 = 14
S1 = [L - 2(0.530)] / 13 = 1.297 m
(L - 0.700) / 0.200 = 86; THEREFORE,
N2 = 87
S2 = (L - 0.700) / 86 = 200 mm

TABLE OF VARIABLES

SPAN NO.	BEAM TYPE	NO. OF BEAMS	Ø	DIMENSIONS						POST-TENSIONING DUCT DATA		CONCRETE DATA (MPa)		REINF. STEEL DATA		STRAND PATTERN		
																CASE	TYPE	
				A	D1	L	W	X	Y	N1	S1	f'c	f'ci	N2	S2		END	CENTER
1	2	4	90°	469	—	17.920 m	2.158 m	—	—	14	1.297 m	35	29	—	—	2	1	2
1	4	2	90°	469	—	17.920 m	2.158 m	—	—	14	1.297 m	35	29	87	200	2	1	2

REVISIONS

Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	DCP	6-90
Checked by	AJG	6-90
Designed by	AJG	6-90
Checked by	TJB	6-90
Approved by	AJG	

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FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.
COUNTY
PROJECT NO.

SHEET TITLE:
FLORIDA DOUBLE-TEE
GENERAL INSTRUCTIONS

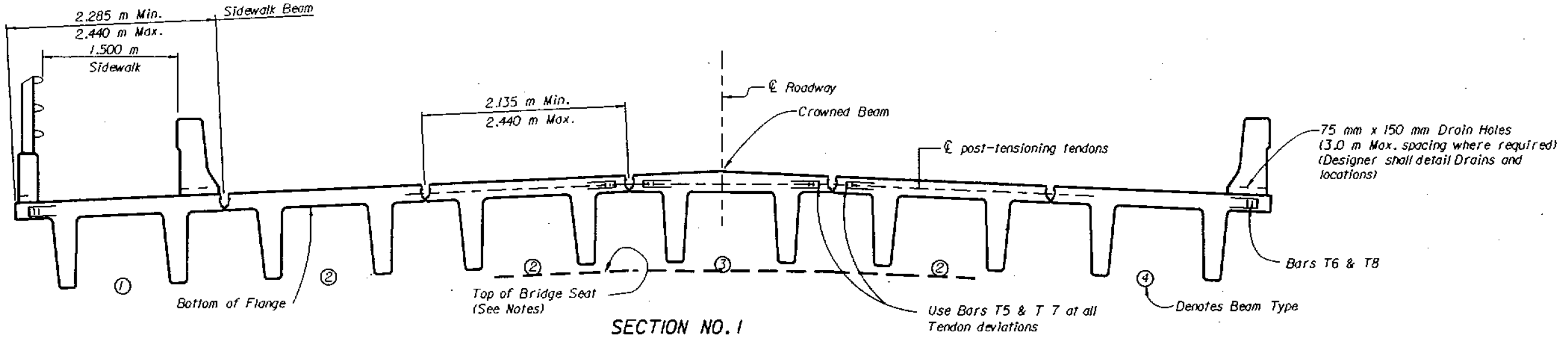
PROJECT NAME:

Drawing No.
1 of 1

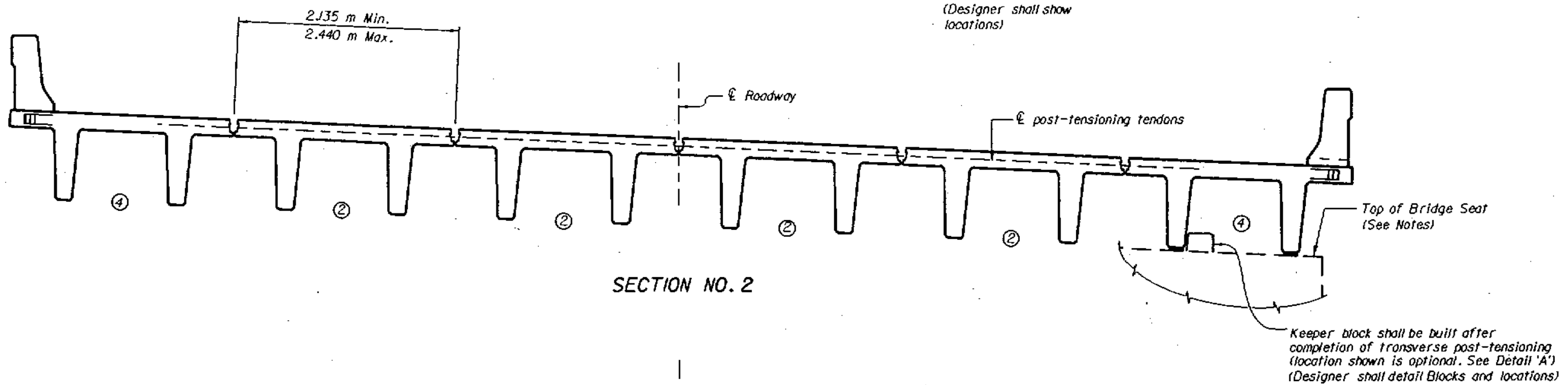
Index No.
I-120

Thu Aug 25 16:21:02 1994 /usr5/strstand/met/i120.dgn

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



SECTION NO. 1



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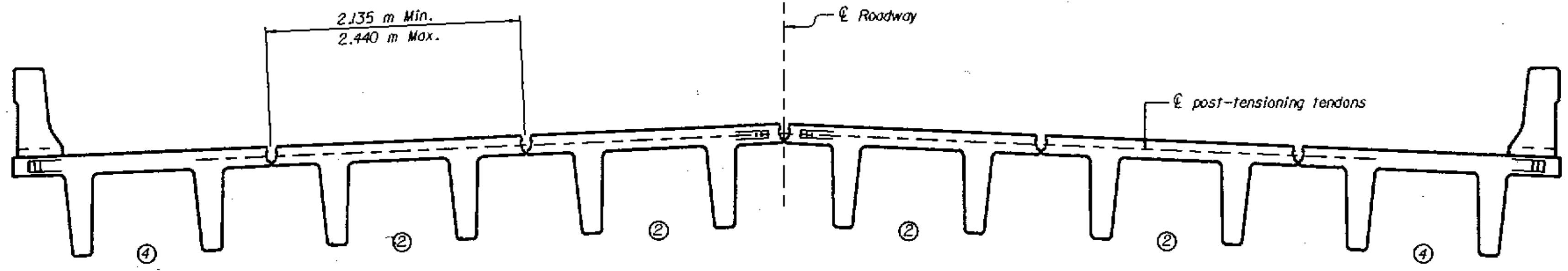
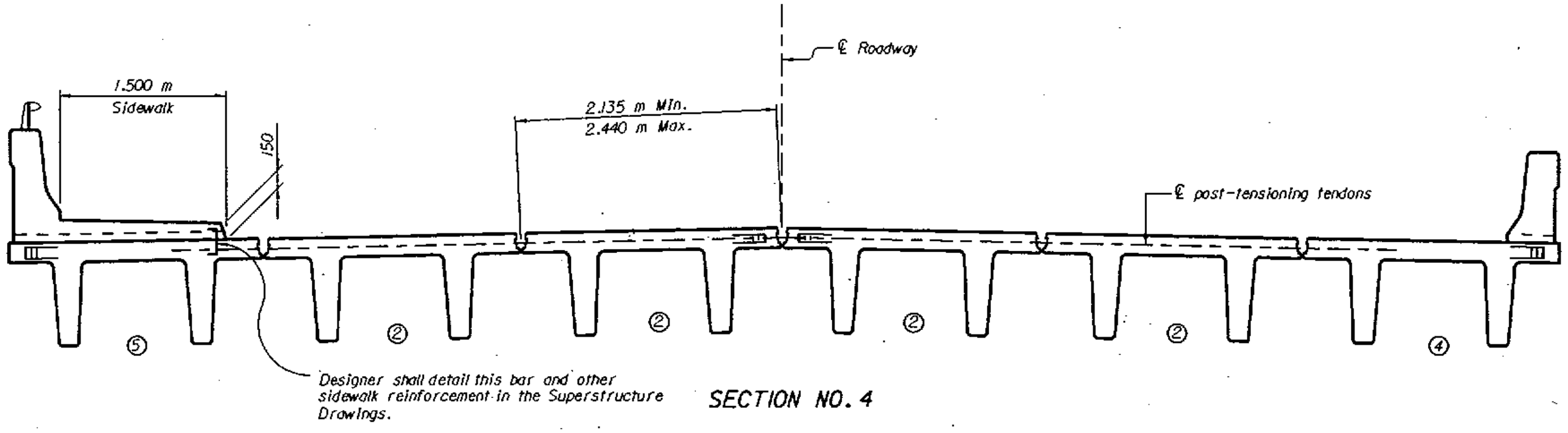


SECTION NO. 3



SECTION NO. 4

BRIDGE SECTIONS

NOTES

The bridge sections depicted on this sheet show several possible applications of double tee beams.

SECTION NO. 1: shows a non-symmetrical bridge section with crowned and sidewalk beams. These beams require additional detailing. The width of the sidewalk beam is sized to accommodate traffic railing reinforcement.

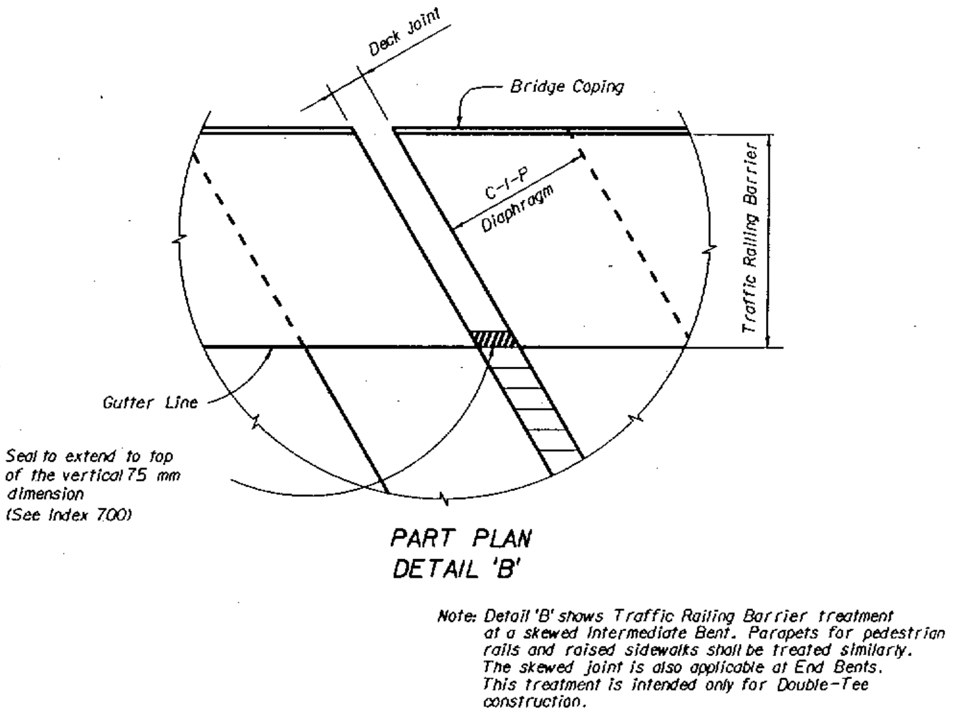
SECTION NO. 2: represents a symmetrical bridge section with constant cross slope.

SECTION NO. 3: represents a symmetrical crowned bridge section. The section shown uses an even number of beams. If the number of beams is odd, a crowned beam is required similar to that shown in Section No. 1.

SECTION NO. 4: represents a variation of SECTION NO. 1. In this case, the sidewalk is raised above the traffic riding surface.

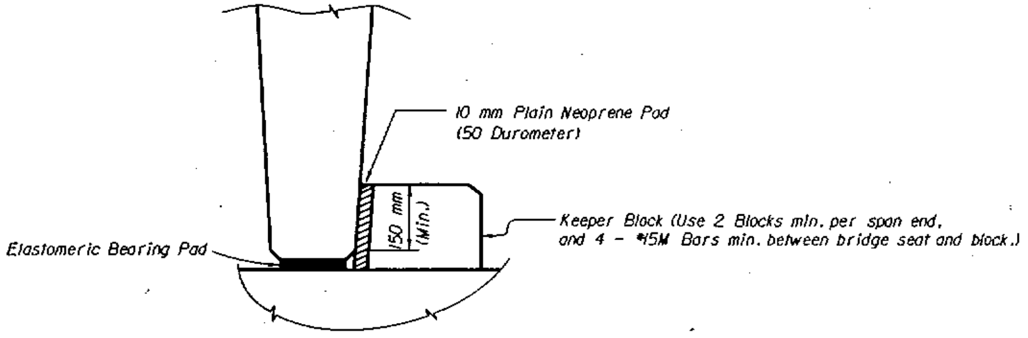
Normally, the cross slope of bridge seat is parallel to the bottom of the beam flange.

All Dimensions are in millimeters (mm), except as noted.



PART PLAN
DETAIL 'B'

Note: Detail 'B' shows Traffic Railing Barrier treatment at a skewed Intermediate Bent. Parapets for pedestrian rails and raised sidewalks shall be treated similarly. The skewed joint is also applicable at End Bents. This treatment is intended only for Double-Tee construction.



DETAIL 'A'

/usr5/strstand/met/1121.dgn Thu Aug 25 16:21:43 1994

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	WEH	6-90
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Designed by	TJB	6-90
Checked by	AJG	6-90
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STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

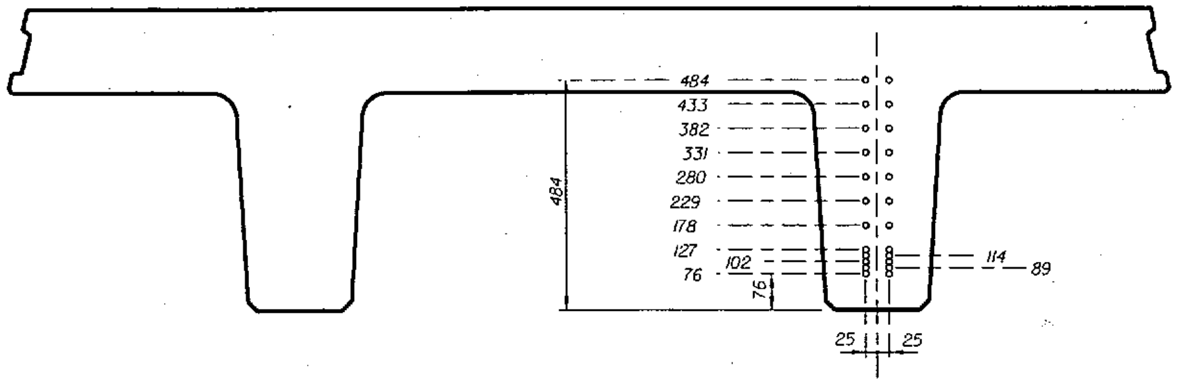
SHEET TITLE:
FLORIDA DOUBLE-TEE
BRIDGE SECTIONS

PROJECT NAME:

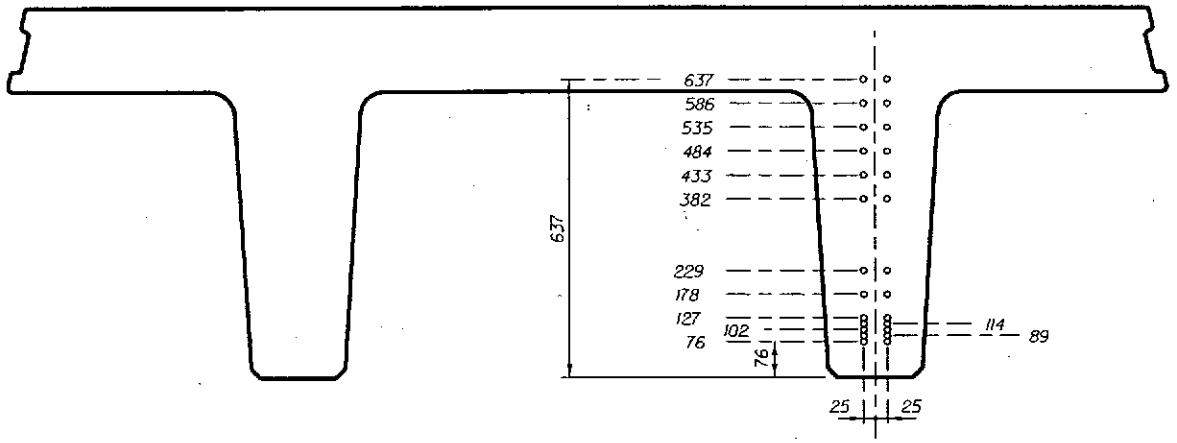
Drawing No.
1 of 1

Index No.
1-121

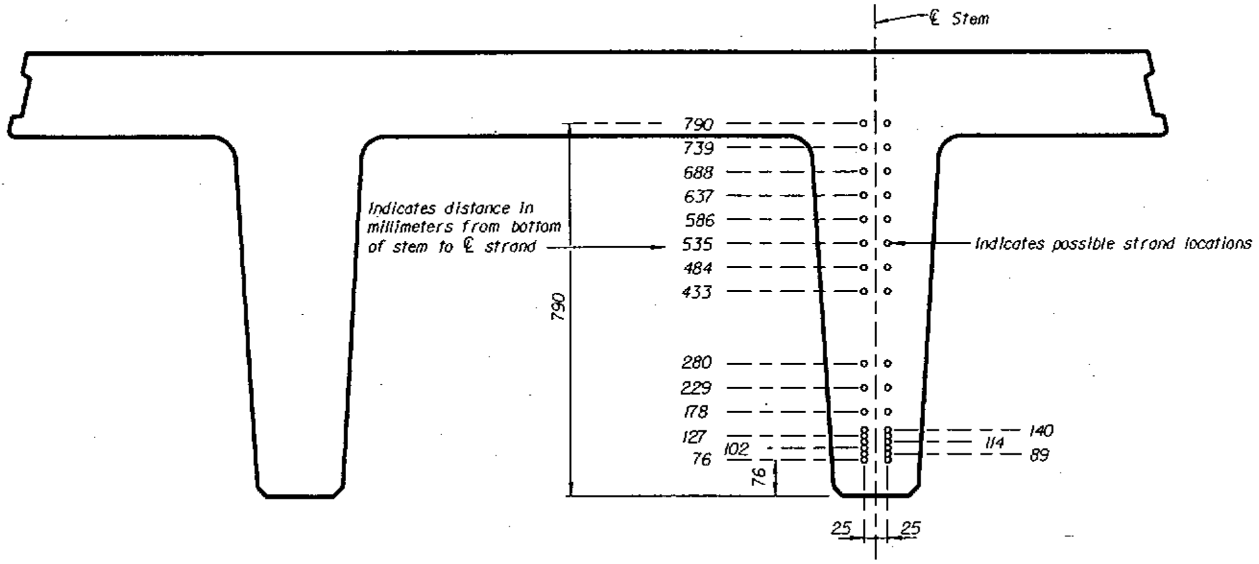
FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



FDT 18



FDT 24



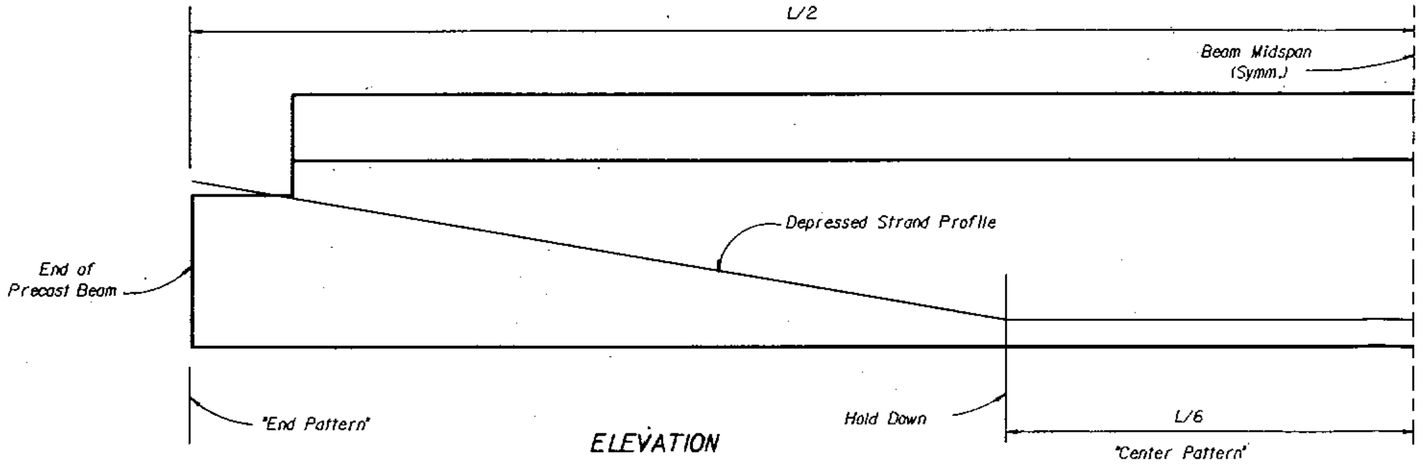
FDT 30

P E R M I T T E D S T R A N D L O C A T I O N S

BEAM	℄ TO ℄ BEARINGS (m)	NO. OF No. 13 LOW-RELAX. STRANDS	CONCRETE * STRENGTH (MPa)		STRAND LOCATION																			PATTERN LOCATION
			f'c	f'ci	76	89	102	114	127	140	178	229	280	331	382	433	484	535	586	637	688	739	790	
FDT 18																								
	9.1-10.3	20	35	28	4				4		4	4					4							END
					4				4		4	4					4							CENTER
	10.3-11.3	20	35	28	4									4	4	4	4							END
					4	4	4	4									4							CENTER
	11.3-11.9	24	35	29	4								4	4	4	4	4							END
					4	4	4	4						4			4							CENTER
	11.9-12.2	24	35	29	4								4	4	4	4	4							END
					4	4	4	4				4					4							CENTER
FDT 24																								
	9.1-10.6	16	35	28	4				4		4									4				END
					4				4		4									4				CENTER
	10.6-12.5	20	35	28	4				4		4	4								4				END
					4				4		4	4								4				CENTER
	12.5-13.1	24	35	28	4				4		4	4				4				4				END
					4				4		4	4				4				4				CENTER
	13.1-14.6	24	35	28	4											4	4	4	4	4				END
					4	4	4	4	4											4				CENTER
	14.6-15.2	28	35	29	4										4	4	4	4	4	4				END
					4	4	4	4	4							4				4				CENTER
FDT 30	9.1-12.2	16	35	28	4				4		4												4	END
					4				4		4												4	CENTER
	12.2-14.0	20	35	28	4				4		4	4											4	END
					4				4		4	4											4	CENTER
	14.0-15.5	24	35	28	4				4		4	4	4										4	END
					4				4		4	4	4										4	CENTER
	15.5-16.5	24	35	28	4														4	4	4	4	4	END
					4	4	4	4	4														4	CENTER
	16.5-18.0	28	35	29	4													4	4	4	4	4	4	END
					4	4	4	4	4	4													4	CENTER
	18.0-18.6	32	35	29	4												4	4	4	4	4	4	4	END
					4	4	4	4	4			4				4							4	CENTER

* NOTE: Designs are based on f'c = 35 MPa min.; If the environment is moderately aggressive or extremely aggressive use f'c = 38 MPa in the "TABLE OF VARIABLES".

NOTE: All dimensions are in millimeters (mm), except as noted.



ELEVATION

PATTERN LOCATION

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	WEH	6-90
Checked by	AJG	6-90
Designed by	TJB	6-90
Checked by	AJG	6-90
Approved by	AJG	

ENGINEER OF RECORD:
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LOGO:

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FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.
COUNTY
PROJECT NO.

SHEET TITLE:
FLORIDA DOUBLE-TEE
TABULATED STRAND PATTERNS

PROJECT NAME:

Drawing No.
1 of 1

Index No.
I-122

Thu Aug 25 16:22:18 1994 /usr5/strstand/met/1122.dgn

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

DOUBLE-TEE NOTES

General Specifications: Florida Department of Transportation Standard Specifications for Road and Bridge Construction current edition with approved Supplements thereto.

Design Specifications: American Association of State Highway and Transportation Officials (AASHTO) Standard Specifications for Highway Bridges, current edition with approved revisions thereto. FDOT Structures Design Guidelines.

Design Loads:
Live Load: MS18 Modified for Military loading as required.
Self weight (concrete): Based on 2400 kg per cubic meter
Superimposed Dead Load: See General Notes
Future wearing surface: 720 N/m^2
Live Load Distribution of Axle Loads:

Span (m)	Factor
9.1 - 12.5	0.70
12.5(+) - 15.5	0.69
15.5(+) - 18.6	0.68

Concrete Class: See General Notes
Environment: See General Notes

Material Properties:
Concrete Strength: Precast Double Tees f'c = See Table of Variables
C-I-P Diaphragms f'c = See General Notes
Reinforcing Steel: ASTM A615M, Grade 400.
Welded Wire Fabric: ASTM A185 and ASTM A497.
Prestressing and Post-Tensioning Strands: No. 13 ASTM A416, Grade 1860, Low Relax.

Strand Detensioning: Detensioning shall be performed after the concrete has reached the required release strength f'ci (See Table of Variables). The strands shall be detensioned in a sequence that keeps the maximum eccentricity about the vertical axis of the stem to one (1) strand, and the difference between the number of strands between stems to a maximum of two (2). The transfer of stresses shall be done in accordance with the specifications.

Strand Cutting: If the Environment of the Superstructure is classified as Slightly Aggressive Environment, the strands below Diaphragm Blockout shall be cut flush with the Concrete Surface of the Stem, and the exposed Stem surface shall be coated with an approved Epoxy Mortar 3 mm thick to prevent Strand corrosion.

If the Environment is classified as Moderately Aggressive Environment or Extremely Aggressive Environment, use a 25 mm deep recess around Strand or Strand group. The Strands shall be cut flush with the bottom of the formed recess and immediately after cutting Strands, the recess shall be filled with an approved Mortar under pressure. After the Mortar has cured, the exposed Stem surface shall be coated with an approved Epoxy Mortar 3 mm thick.

Bars for Barrier or Railing : The spacing of the bars may be adjusted to clear the post-tensioning blockouts. However, the number of bars shall not be reduced. The Contractor shall show the proposed spacing for the bars on the shop drawings.

Camber: Camber is the amount of rise that occurs at midspan of the beam due to the prestressing force. The camber will increase due to creep during storage unless precautions are taken. Therefore, the contractor shall avoid the development of additional differential camber between beams, for any span, during storage by loading or other approved methods.

Surface Finish: The tops of all precast units shall be finished smooth by floating and brooming. All other surfaces of the beam shall receive a Class 3 Surface Finish. The edges of the top surface of the units shall be finished by use of a small radius tool.

Mortar Leakage: Any mortar leakage that occurs and stains resulting from leakage shall be removed so that all beams have a uniform appearance.

Forms and Pallets: All beams shall be cast on concrete based pallets and in metal forms.

Handling: Prestressed beams must be maintained in an upright position. The beams must be picked up from points located between 600 mm and 1.0 m from the ends.

Storage and Transportation: All beams must be stored on adequate dunnage. The beams must be supported no closer than 150 mm from the end nor further than 450 mm from the end.

Marking: Each beam shall be marked showing bridge number, casting date, and identification letters and numbers. Markings shall be made on the face of the stem near the end, so located that the marking will be exposed after the end diaphragms have been cast. Outside beams shall be marked on an inside face of the stem. All markings shall be stencilled and clearly legible.

Shim Plates: Shim plates for bearings shall be hot dip galvanized in accordance with requirements of ASTM A123. The contractor shall have an adequate number of shim plates available at the job site for use if required.

Diaphragm: The diaphragms shall be cast-in-place after the transverse post-tensioning has been completed. The cost of materials and labor required for the construction of diaphragms shall be included in the cost of concrete and reinforcing steel for the superstructure.

Neoprene Bearing Pad: Composite Neoprene Bearing Pads shall be provided in accordance with details in this standard and the Department's specifications. The pads are considered to be incidental to the cost of the precast double-tee beams; therefore, no separate payment will be made.

Post-Tensioning: The work and materials required for post-tensioning shall conform to the special provisions. This work is considered to be incidental to the cost of the precast double-tee beams; therefore, no separate payment will be made.

Each post-tensioning tendon shall consist of three (3) No. 13 strands.

The post-tensioning design assumptions are as follows:
anchor set = 10 mm
friction coefficient = 0.0
wobble coefficient = 0.00066/m

The jacking force required before anchor set is 138.0 kN for each strand.

Ducts, couples, transitions (trumpets) shall be fabricated from virgin high density polyethylene. The ducts shall be flat corrugated ducts in accordance with the plans. During casting of the beams, the ducts shall be held in proper alignment by a rigid mandrel sufficient to prevent displacement. Ducts shall have a grouting vent at each anchorage. Duct splices shall be watertight.

Exterior blockouts shall be filled with an approved non-shrink, non-metallic grout after completion of the post-tensioning operation. Prior to grouting blockouts, all concrete surfaces in contact with the grout shall be roughened, and the metallic anchorage devices and strands shall be cleaned to the satisfaction of the engineer; and immediately before grouting, the blockout concrete surfaces and anchorage devices shall be coated with an approved bonding compound.

Shop Drawings: Shop drawings for double-tee beams shall show a complete detensioning schedule so as to minimize tension in the concrete during release of the strands. Detailed concrete stresses during each stressing operation of detensioning shall be submitted with the Shop Drawings. Shop Drawings shall show complete details of the beams including reinforcing steel. The contractor shall also include in the shop drawings the post-tensioning information required by the special provisions.

Payment: The cost of Double-Tee Beams shall be paid for at the unit price per linear meter and shall include all materials required for the fabrication of the precast beams as well as erection of the beams. The unit price shall also include the cost of all incidental materials and work such as: neoprene bearing pads, shim plates, transverse post-tensioning (including hardware), and grouting. Payment shall be made on the quantity complete in place and accepted. Grinding of the top surface, if needed, to provide a smooth riding surface is also considered to be incidental work. Final pay lengths shall be the plan quantity which is based on the casting lengths (Ls) of the beams.
Pay Item numbers are as follows:
2450-1-118 Prestressed Beam (Florida Double-Tee Beam) (FDT18)
2450-1-124 Prestressed Beam (Florida Double-Tee Beam) (FDT24)
2450-1-130 Prestressed Beam (Florida Double-Tee Beam) (FDT30)

CONSTRUCTION NOTES

Each double-tee beam is designed to bear equally on four bearing pads. Shimming and/or grinding under one or more pads may be necessary to obtain proper bearing. The contractor shall adhere to the following installation sequence during erection of the beams:

1. Mark theoretical pad locations (outlines) on the bridge seats for the centermost beam. Place pads on the marked locations and erect this beam first. Pad locations shall be adjusted if necessary, to center the pads under stems.

   Determine the need for shims and grinding by performing the following tests:
   a) Check the bearings. If contact between stem and pad is not apparent, shimming at the low bearing and/or grinding at the adjacent high bearing is required. Grinding of the concrete bridge seat shall be limited to 10 mm maximum.
   b) If there is contact between stem and pad but the sealing ribs around the pad perimeter (top and bottom) are not compressed by at least 6 mm total, insert a shim plate between the low bridge seat and the pad. As an option, the contractor may grind the adjacent high bearing in accordance with a) above.
2. Check carefully the location (position, alignment, etc.) of the erected beam before proceeding with the erection of the other beams.
3. Erect adjacent beams by repeating steps 1 and 2 above. Post-tensioning ducts must line up and pads must be centered under stems.
4. After erection of all beams, a final check of their positions shall be done prior to proceeding with additional work.
5. Insert backer rods in keyways between beams.
6. Join post-tensioning ducts as detailed in the plans. The couplers at the joints shall be securely wrapped with duct tape to prevent grout penetration into the ducts during grouting of the keyways. DO NOT install P.T. strands at this time.
7. Place a longitudinal No. 10M Bar in each keyway as shown in the plans, and fill the longitudinal keyways with approved non-shrink, non-metallic grout. The Contractor shall include with the shop drawings a letter from the grout manufacturer certifying that the proposed grout is proper for its intended use. The letter shall also include recommendations for surface preparation and for mixing, placing and curing of the grout.

   The precast concrete surfaces shall be prepared, and the grout shall be mixed, placed and cured in strict adherence to the manufacturer's recommendations. However, the total curing period shall be at least 72 hours.

   Post-tensioning may start after grout has cured at least 48 hours and reached a minimum strength of 28 MPa.

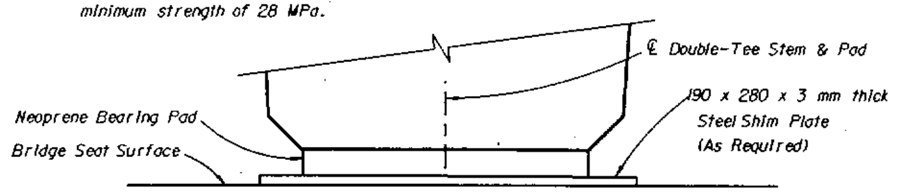
   The grouted keyways shall not be disturbed by vehicular traffic or heavy construction activities prior to completion of post-tensioning and total curing.
8. Install tendons in the ducts. Each tendon shall consist of three (3) seven-wire No. 13 strands. The strands shall meet the requirements of ASTM A416, Grade 1860 and have low relaxation properties. The ends of the three (3) strands shall be "color coded" to insure same position at both anchorage plates.

   Post-tension the midspan or the two (2) centermost tendons first. Then every other tendon on both sides in a sequence that keeps the maximum eccentricity about midspan to one (1) tendon. Then post-tension the previously skipped tendons beginning with the two (2) centermost (near midspan) on both sides in a sequence that keeps the maximum eccentricity about midspan to one (1) tendon, until all tendons are stressed.

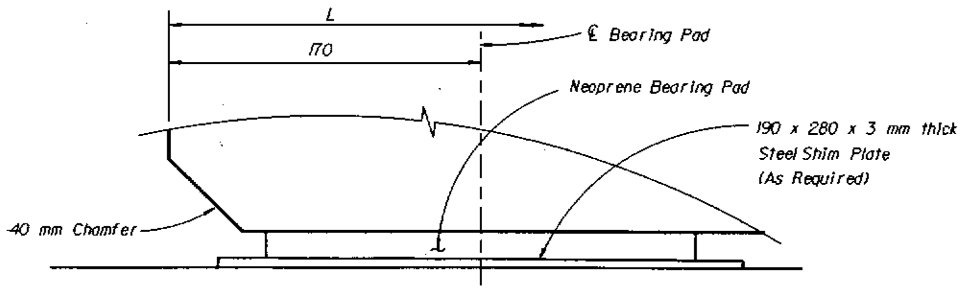
   If the tendon's path is straight end-to-end (uncrowned bridge section) and the bridge is not skewed in excess of 15°, the tendons may be stressed from either end.

   If the tendon's path is not straight end-to-end and/or the bridge is skewed in excess of 15°, the strands shall be stressed from one end, alternating bridge sides, so that every other tendon is stressed from the same side of the bridge.
9. Grout ducts and fill anchorage blockouts with approved non-shrink, non-metallic grout. The grouted tendons shall not be disturbed by vehicular traffic or heavy loads for a period of at least 72 hours.
10. Construct end diaphragms.
11. Remove lifting devices. Any metal shall be removed to 25 mm below the surface and the hole in the concrete shall be grouted flush. The Grout used for the patch shall be an approved non-shrink, non-metallic grout. The color of the grout shall match the color of the adjacent concrete surface.
12. Check riding surface in accordance with the specifications and grind areas not in compliance. Depths of grinding shall be limited to 15 mm maximum.
13. Construct all superimposed superstructure items such as barriers, sidewalks, etc.
14. Provide deck grooving in accordance with Section 400-15 of the Standard Specifications.
15. Construct transverse deck joints at span ends in accordance with the details. Use an approved Silicon Joint Sealer.

Note: Steel Shim Plates shall conform to ASTM A36M and shall be hot dip galvanized.



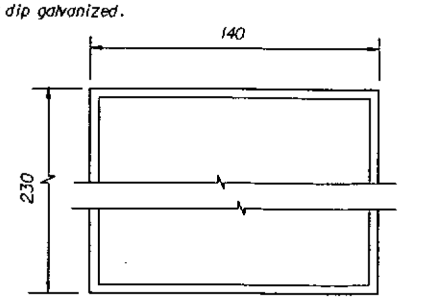
END ELEVATION
(FDT30 Stem Shown)



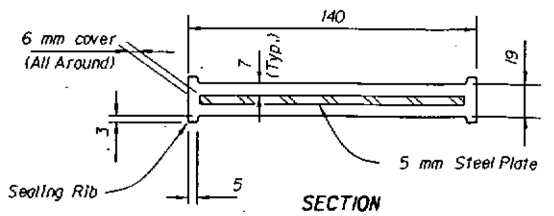
SIDE ELEVATION

TYPICAL INSTALLATION
(FDT18, FDT24 & FDT30)

NOTE: All dimensions are in millimeters (mm), except as noted.



PLAN



SECTION

NEOPRENE PAD DETAILS
(FDT18, FDT24 & FDT30)

NOTE: Neoprene in all Bearing Pads shall have a 60 hardness. Steel Plates shall conform to ASTM A570M Grade 36 or A36M.

REVISIONS

Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	DCP/JSP	6-90
Checked by	AJG	6-90
Designed by	AJG	6-90
Checked by	TJB	6-90
Approved by	AJG	

ENGINEER OF RECORD:
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FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE: FLORIDA DOUBLE-TEE NOTES AND MISCELLANEOUS DETAILS

PROJECT NAME:

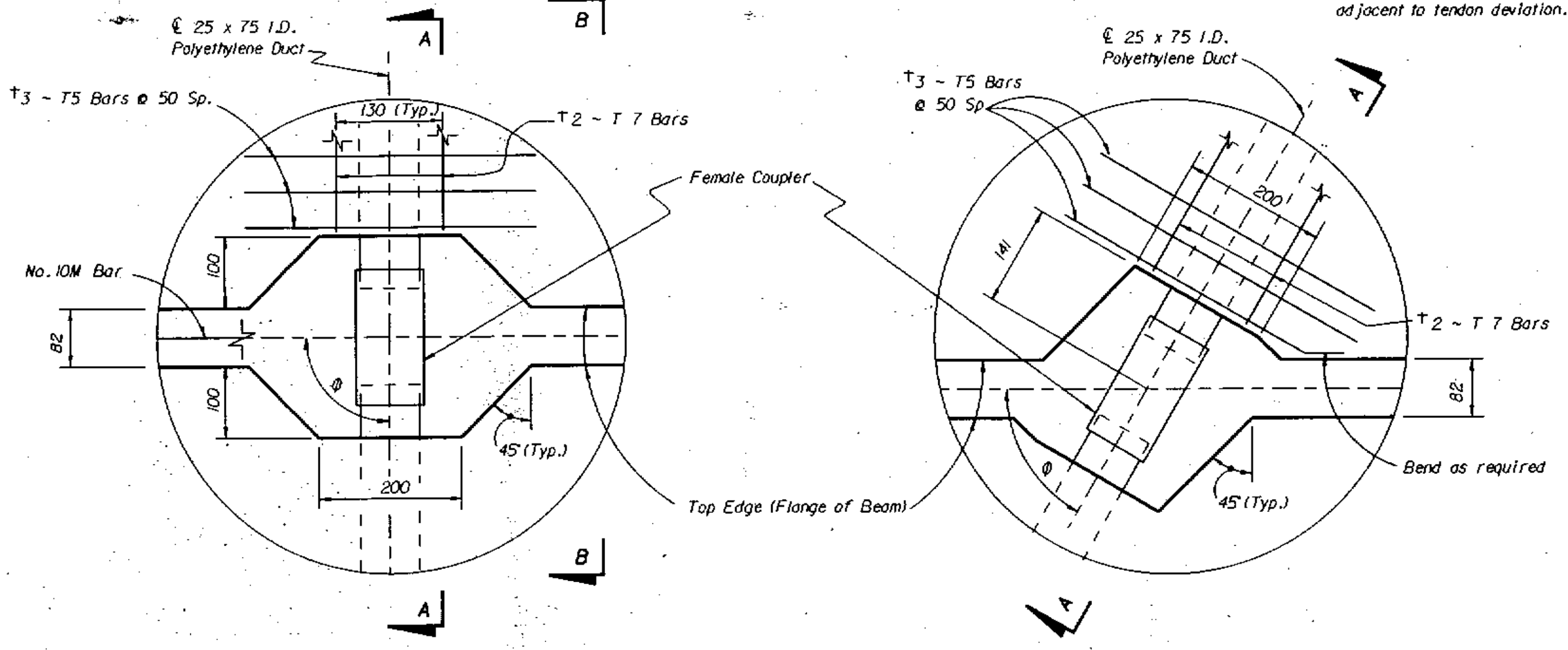
Drawing No. 1 of 2

Index No. 123

Fri Aug 26 09:10:34 1994 g:0strs0pltfiles0123.snp

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

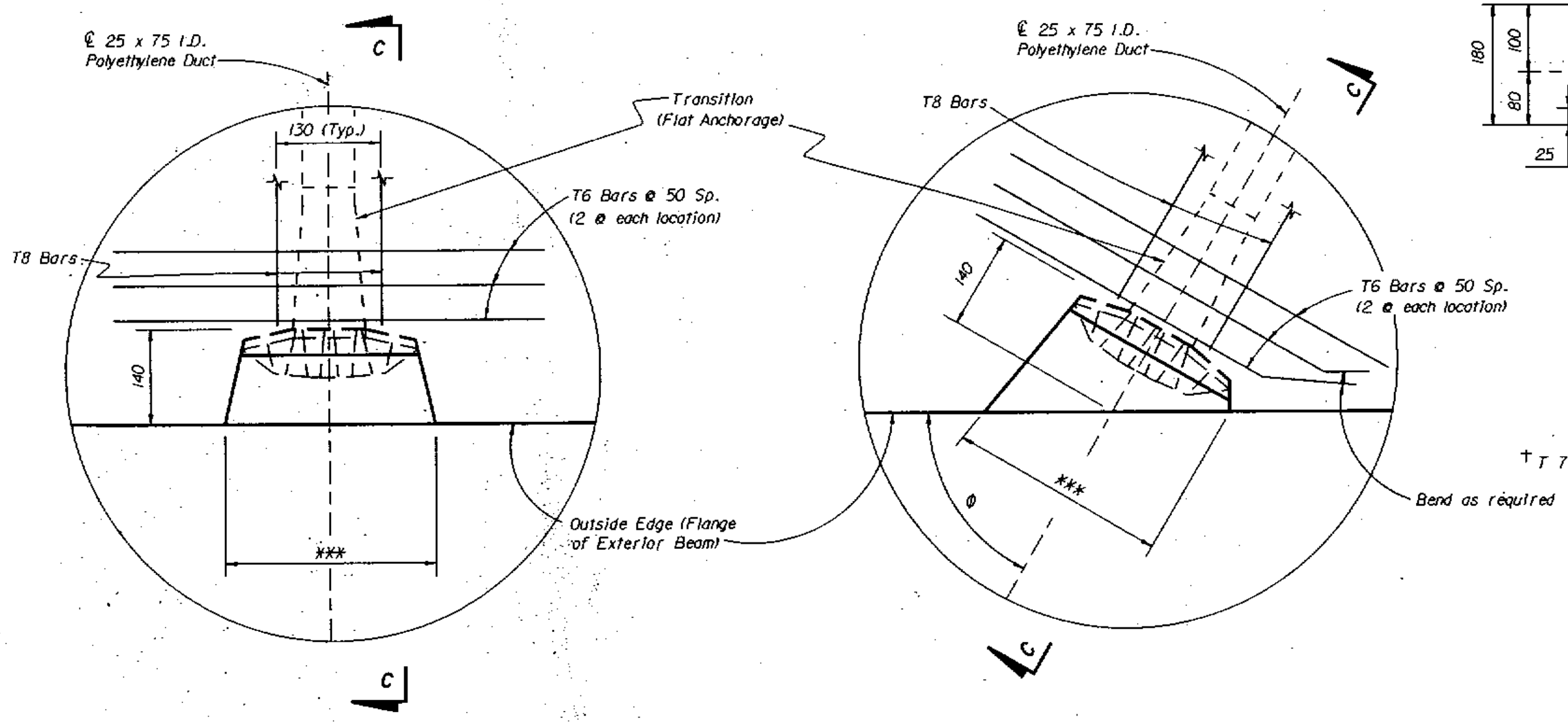
†Note: Bars T5 and T 7 are required only adjacent to tendon deviation.



(Non-Skewed)
φ = 90°

INTERIOR BLOCKOUTS

(Skewed)
φ ≥ 60°



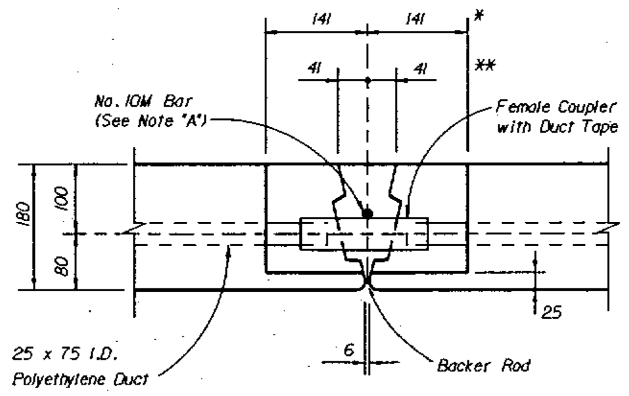
(Non-Skewed)
φ = 90°

EXTERIOR BLOCKOUTS

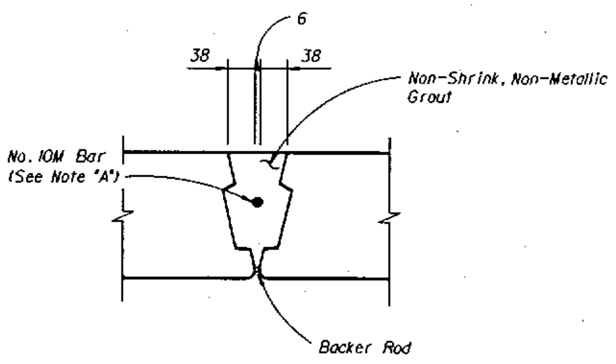
(Skewed)
φ ≥ 60°

PARTIAL PLAN SHOWING BLOCKOUT DETAILS FOR POST-TENSIONING

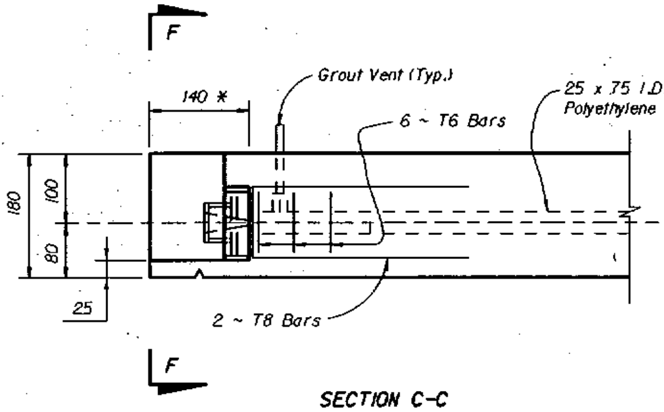
(Note: Blockout the top 155 mm of the flange thickness only.)



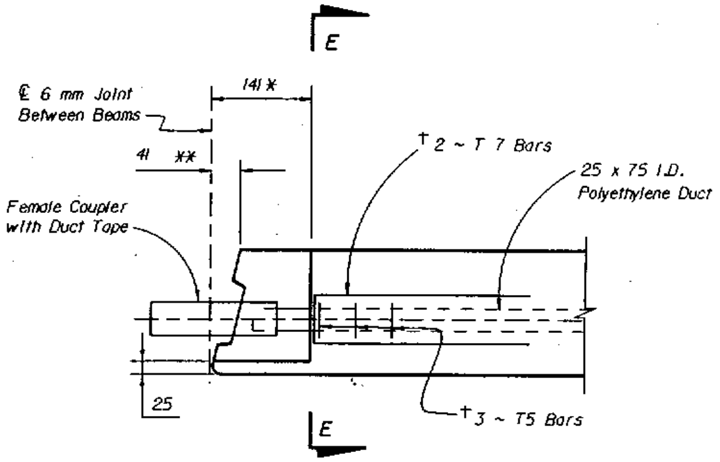
SECTION A-A
(See also Detail D)



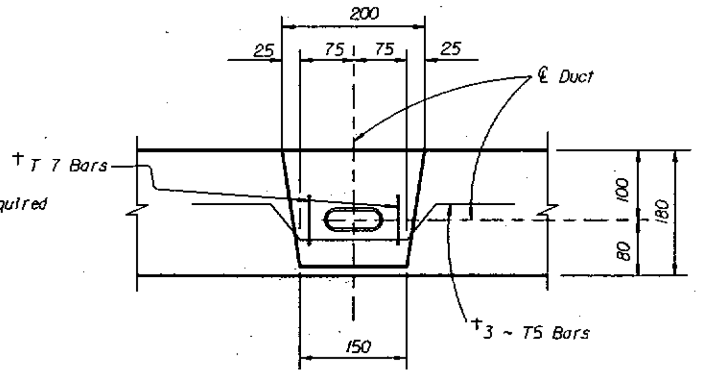
SECTION B-B



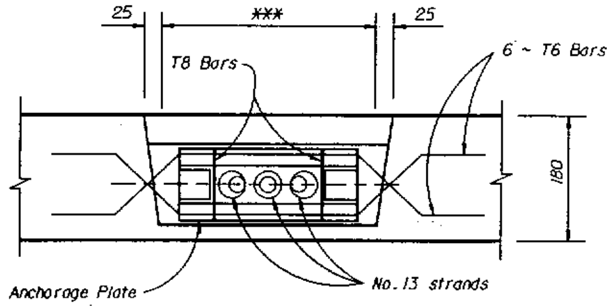
SECTION C-C



DETAIL D



SECTION E-E



VIEW F-F

NOTE: All dimensions are in millimeters (mm), except as noted.

NOTE "A": Place one full length No. 10M Bar along ℄ Keyway. The bar shall be securely tied to the ducts. Lap 300 mm min. at splice.

* Along ℄ Duct at skewed blockouts.
** Perpendicular to Flange.
*** Dimensions to suit Anchorage device.

Mon Aug 15 13:26:39 1994 /usr5/strstand/met/123.dgn

REVISIONS

Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	DCP/JSP	6-90
Checked by	AJG	6-90
Designed by	AJG	6-90
Checked by	TJB	6-90
Approved by	AJG	

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FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

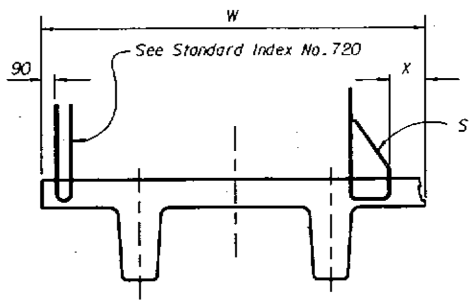
SHEET TITLE:
FLORIDA DOUBLE-TEE NOTES
AND MISCELLANEOUS DETAILS

PROJECT NAME:

Drawing No.
2 of 2

Index No.
123

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



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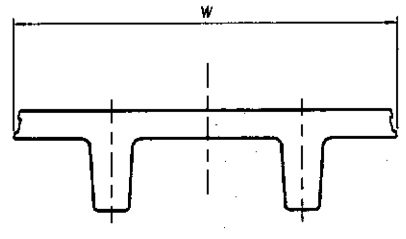

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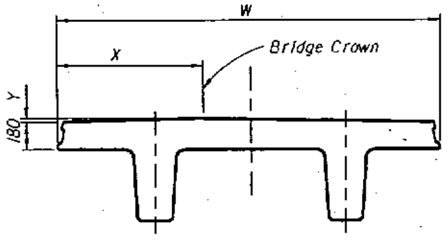

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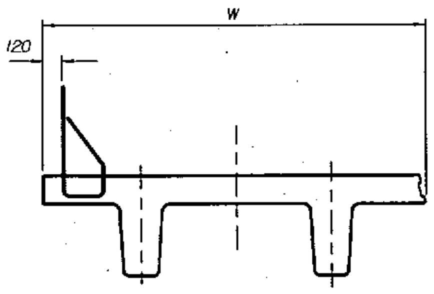

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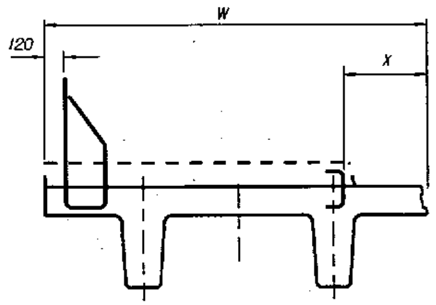
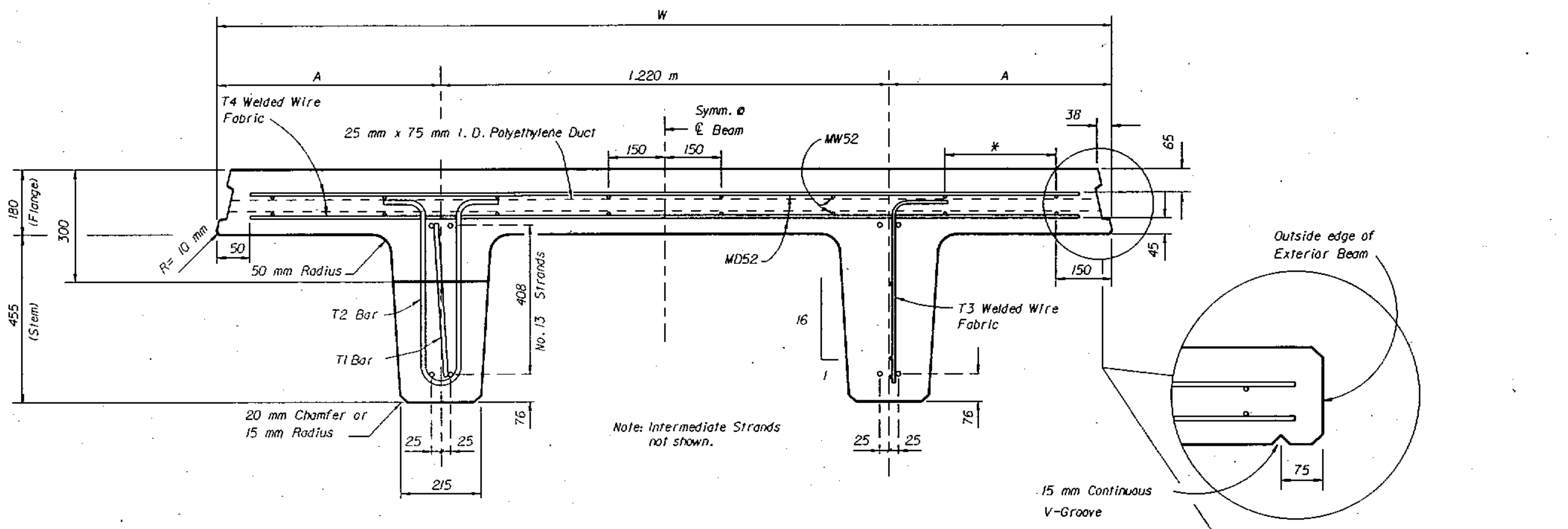


TYPE 5

NOTE: Reinforcement for Barrier Transition shall be provided in accordance with NOTE 'A' of Standard Index No. 700.

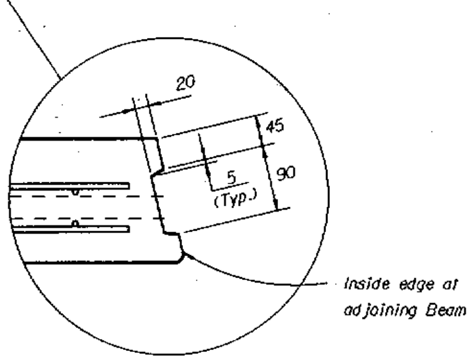
NOTE: For Dimensions "A", "L", "W", "X" & "Y", and Strand Pattern, see FDT18 Table of Variables & Strand Patterns Sheet.

✱ Adjust outermost spacing to suit "W", i. e.: Spacing = ½(W-1,800).

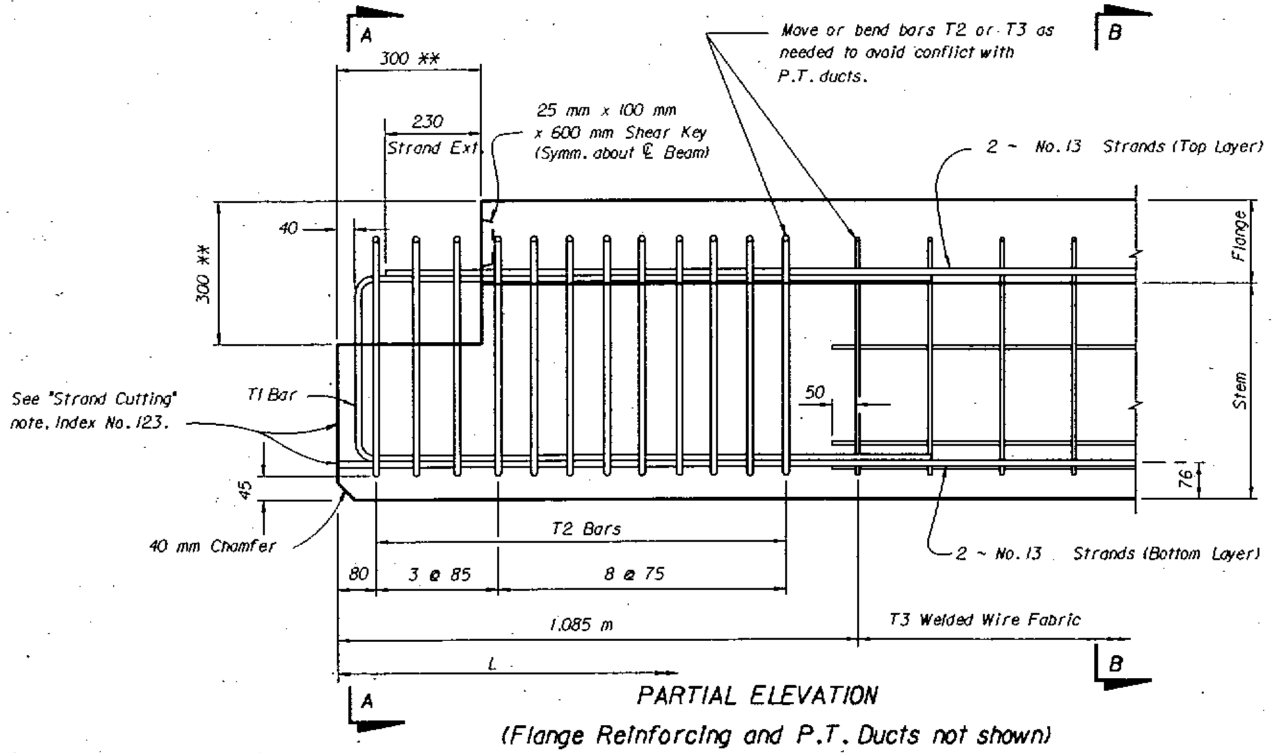


HALF SECTION A-A

HALF SECTION B-B



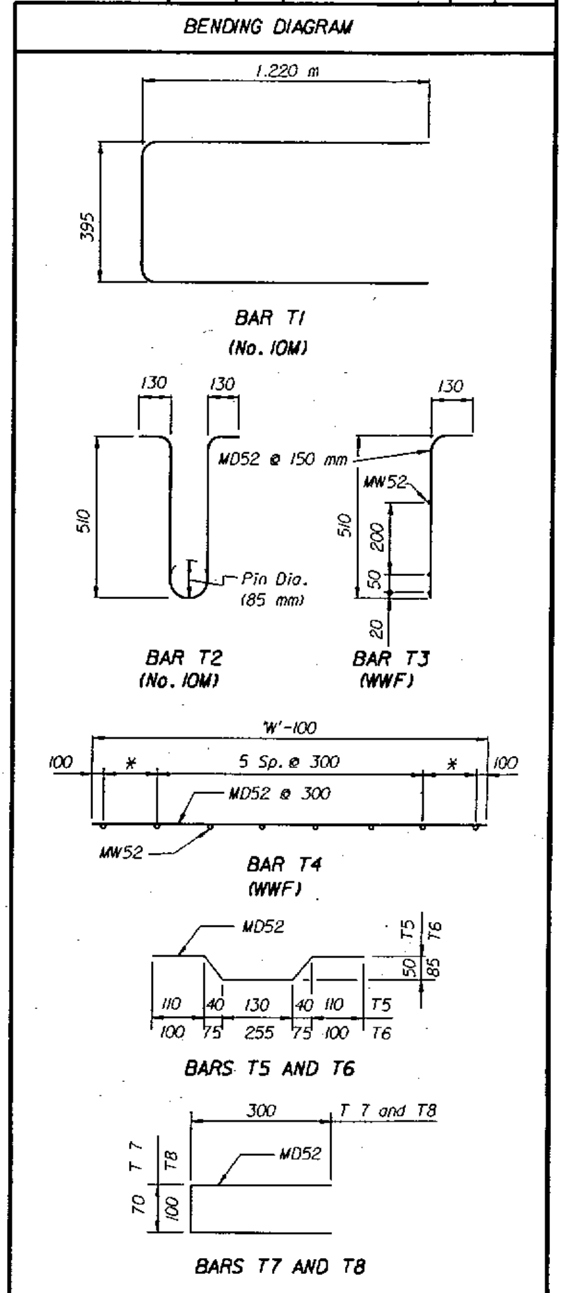
✱✱ Blockout concrete to accept C. I. P. Diaphragm. See Index 127 for orientation of the horizontal 300 mm dimension.



PARTIAL ELEVATION

(Flange Reinforcing and P.T. Ducts not shown)

(Intermediate Strands not shown)



NOTES:

All bar bends shall be made with a 50 mm diameter pin unless otherwise noted.

The Welded Wire Fabric (T4) shall consist of eight (8) longitudinal MW52 wires welded to transverse MD52 wires spaced at 300 mm. The MW52 wires shall be spaced as shown above and their length, in the finished beam, shall be equal to the length of the precast flange plus 300 mm. Sufficient material to include splices shall be provided. Splices, if needed, shall be 360 mm minimum.

The longitudinal MW52 wires for the welded wire fabric (T3) do not require splicing.

MW52 wires shall comform to ASTM A185.
MD52 wires shall conform to ASTM A497.

Six (6) Bars 'T6' and two (2) Bars 'T8' are required at each P/T anchorage location.

Three (3) Bars 'T5' and two (2) Bars 'T 7' are required at each P/T duct location where the tendon's path deviates from a straight course.

Four (4) Bars 'T1' are required per Beam.
Forty-eight (48) Bars 'T2' are required per Beam.

NOTE: All dimensions are in millimeters (mm), except as noted.

/usr5/strstand/met/124.dgn

Mon Aug 15 13:27:59 1994

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	DCP	6-90
Checked by	AJG	6-90
Designed by	TJB	6-90
Checked by	AJG	6-90
Approved by	AJG	

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FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

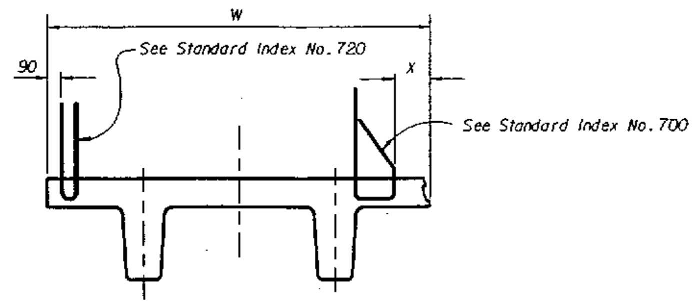
SHEET TITLE:
FDT 18
TYPICAL SECTION

PROJECT NAME:

Drawing No.
1 of 1

Index No.
124

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



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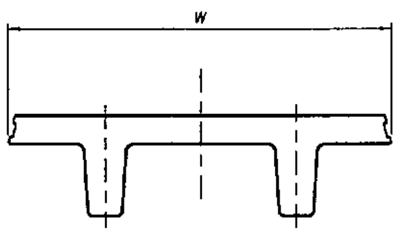

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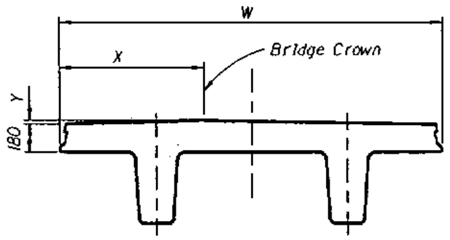

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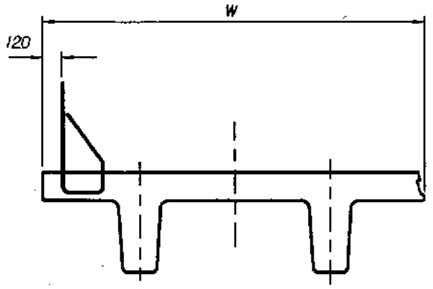

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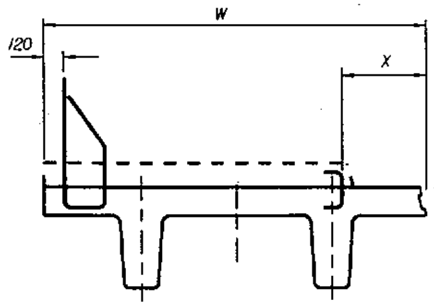
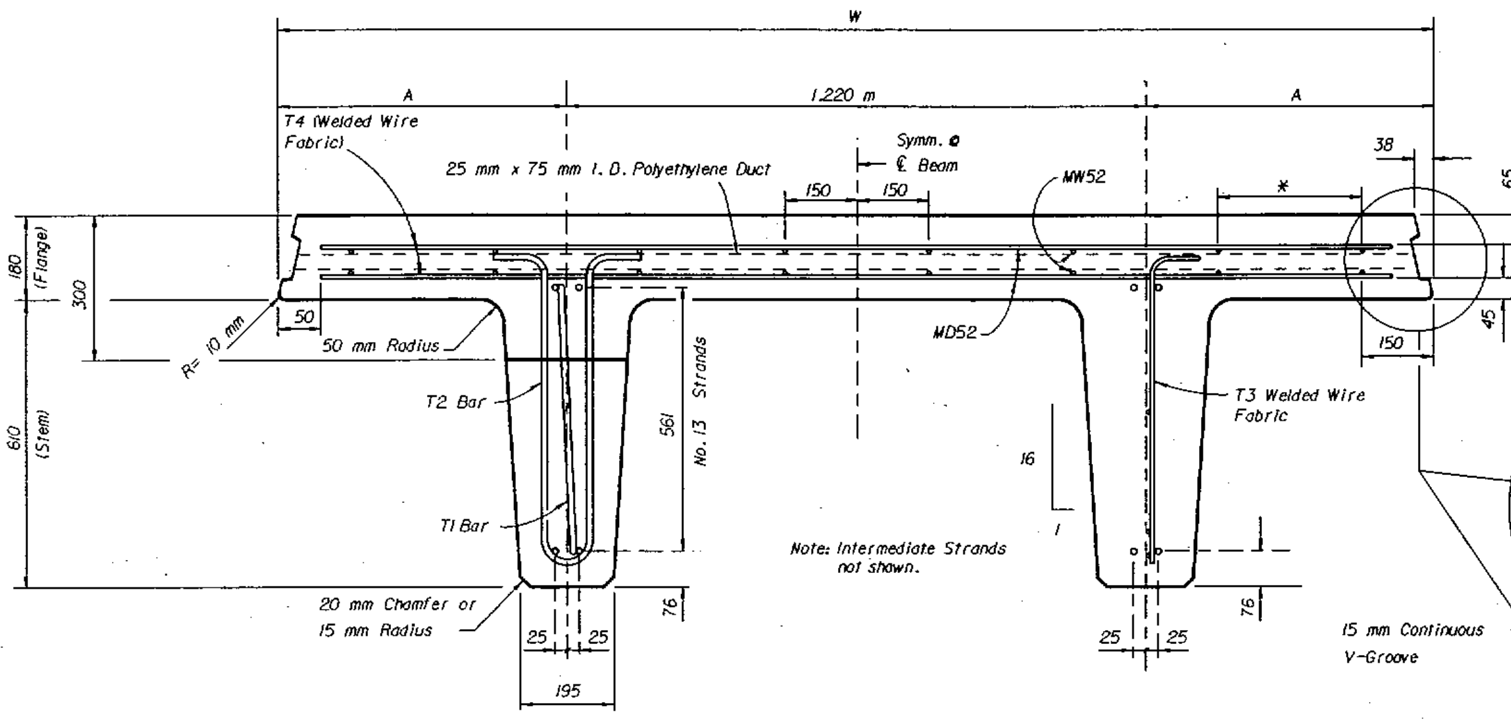


TYPE 5

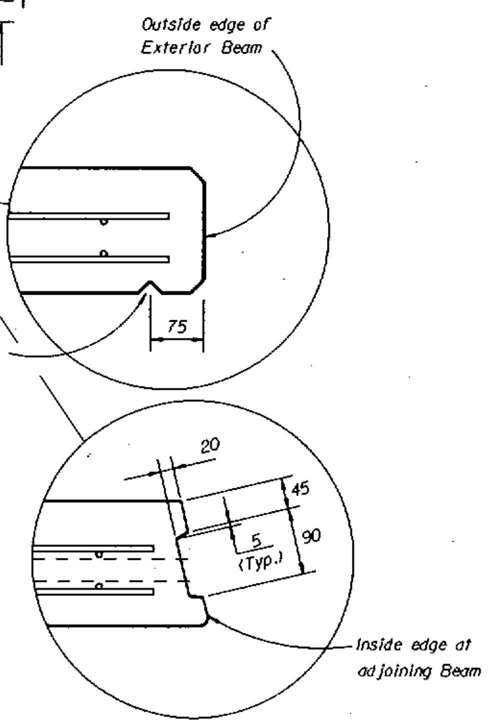
NOTE: For dimensions "A", "L", "W", "X" & "Y", and Strand Patterns, see FDT24 Table of Variables & Strand Patterns Sheet.

∗ Adjust outermost spacing to suit "W", i. e.: Spacing = ½(W-1.800).

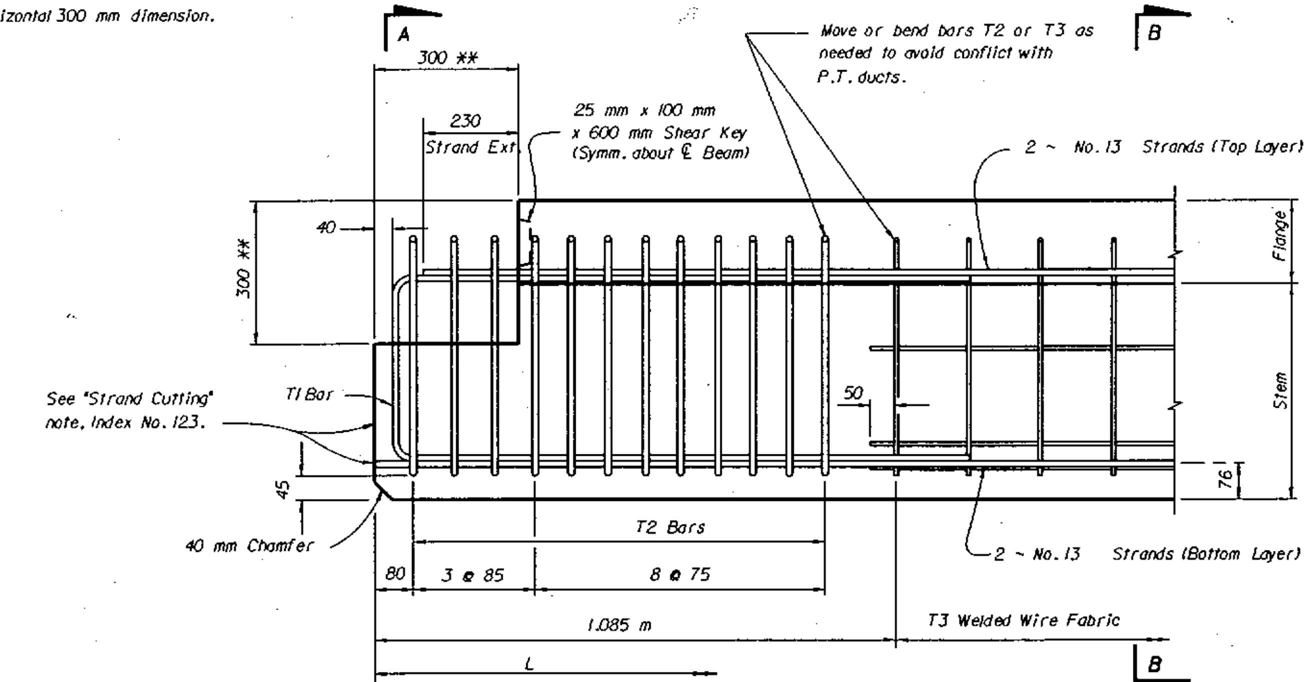


HALF SECTION A-A

HALF SECTION B-B



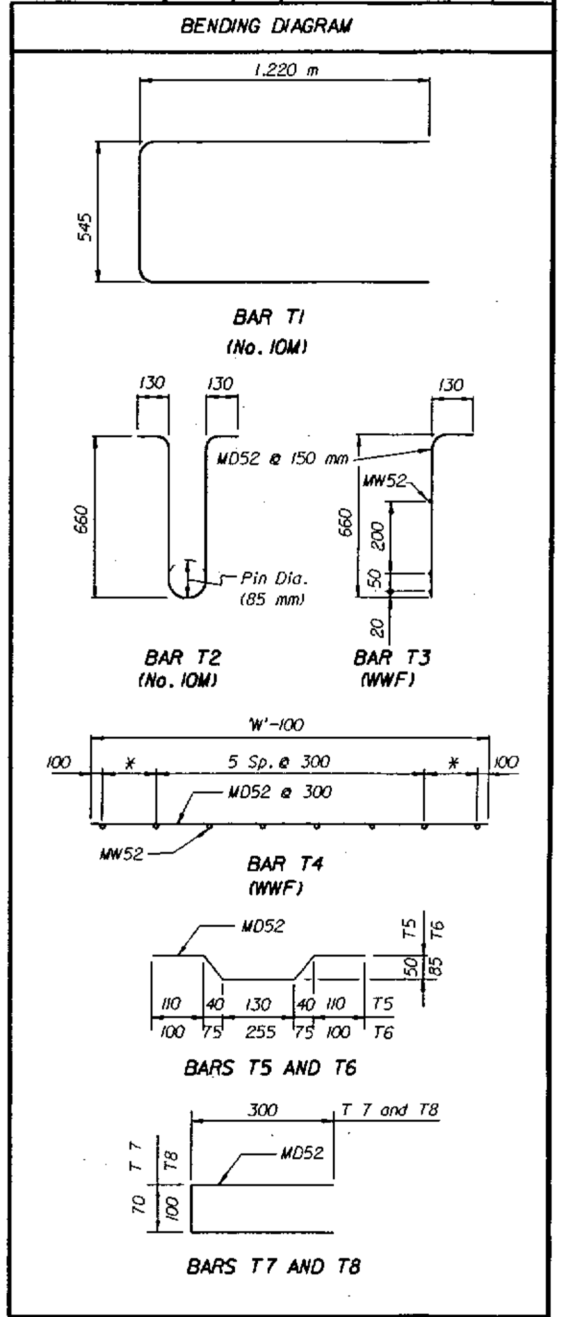
∗∗ Blockout concrete to accept C. I. P. Diaphragm. See Index 127 for orientation of the horizontal 300 mm dimension.



PARTIAL ELEVATION

(Flange Reinforcing and P.T. Ducts not shown)

(Intermediate Strands not shown)



NOTES:

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Four (4) Bars 'T1' are required per Beam.
Forty-eight (48) Bars 'T2' are required per Beam.

NOTE: All dimensions are in millimeters (mm), except as noted.

/usr5/strstand/met/125.dgn
Mon Aug 15 13:29:12 1994

REVISIONS

Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	DCP	6-90
Checked by	AJG	6-90
Designed by	TJB	6-90
Checked by	AJG	6-90
Approved by	AJG	

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STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

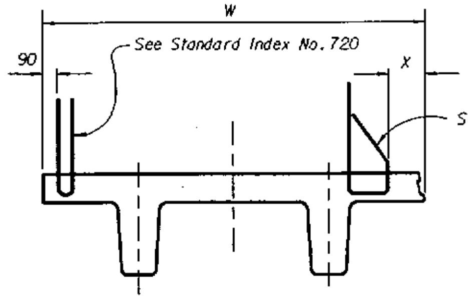
SHEET TITLE:
FDT 24
TYPICAL SECTION

PROJECT NAME:

Drawing No.
1 of 1

Index No.
125

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



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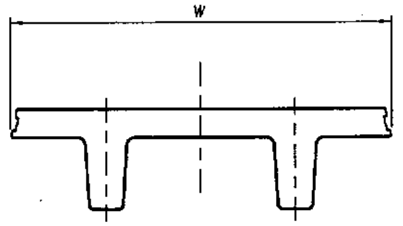

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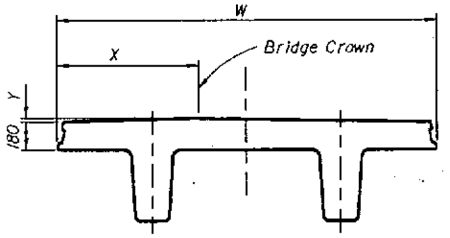

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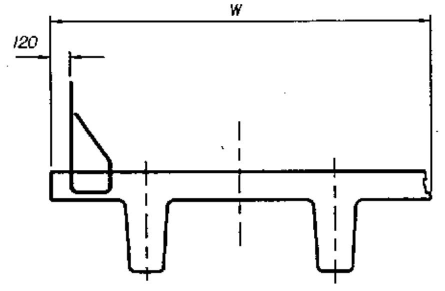

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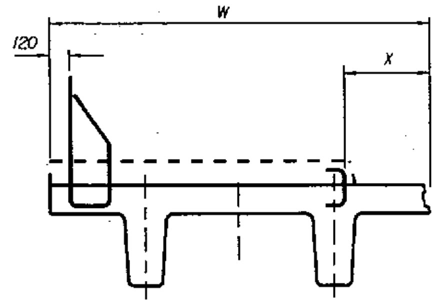
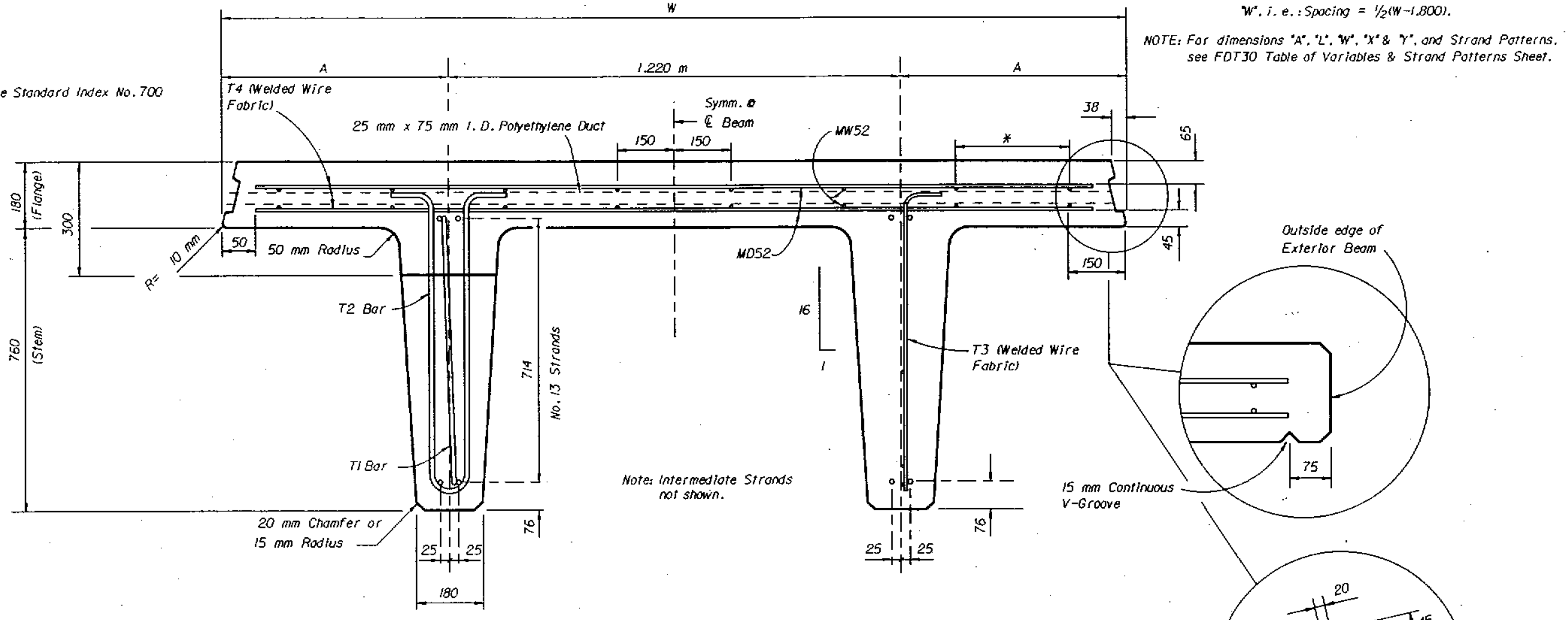


TYPE 5

* Adjust outermost spacing to suit 'W', i. e.: Spacing = ½(W-1.800).

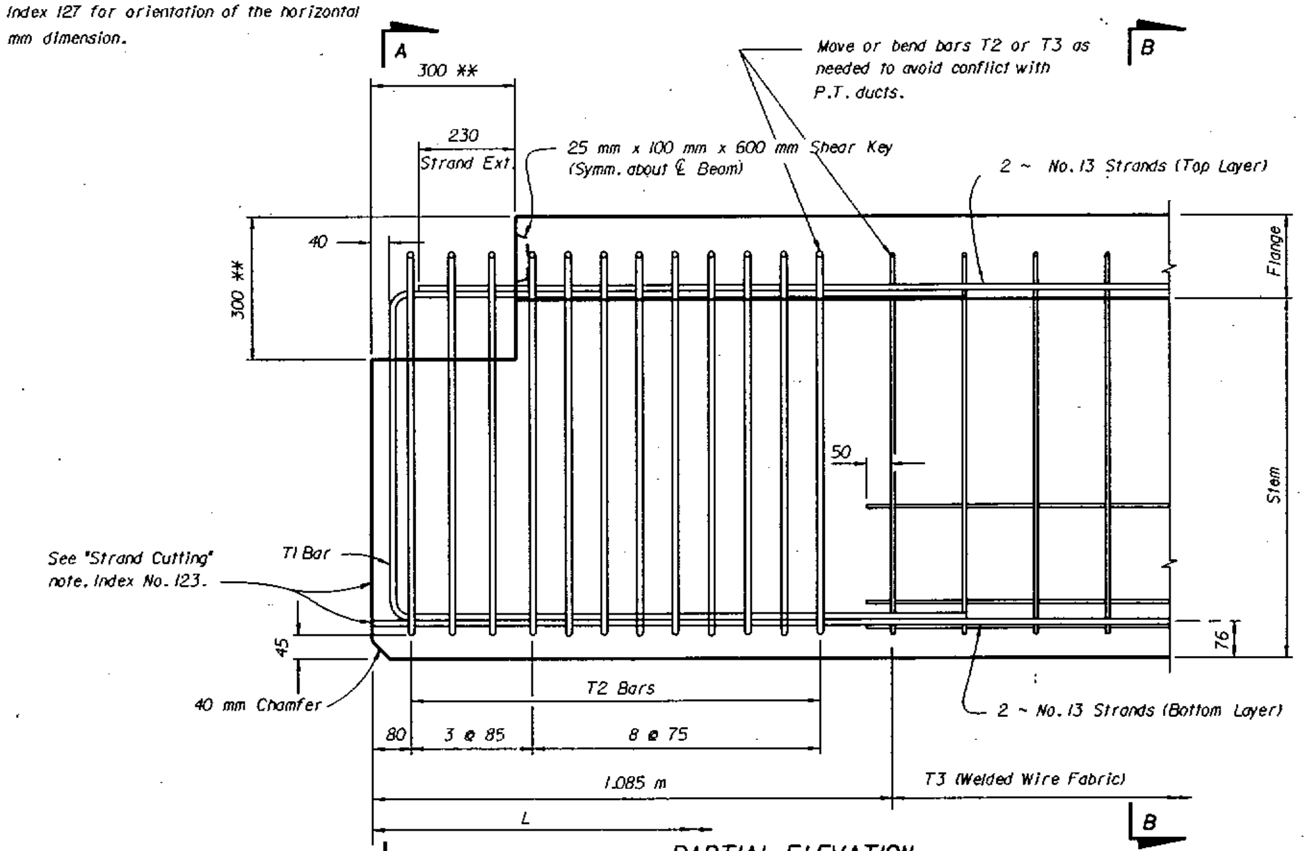
NOTE: For dimensions 'A', 'L', 'W', 'X' & 'Y', and Strand Patterns, see FDT30 Table of Variables & Strand Patterns Sheet.



HALF SECTION A-A

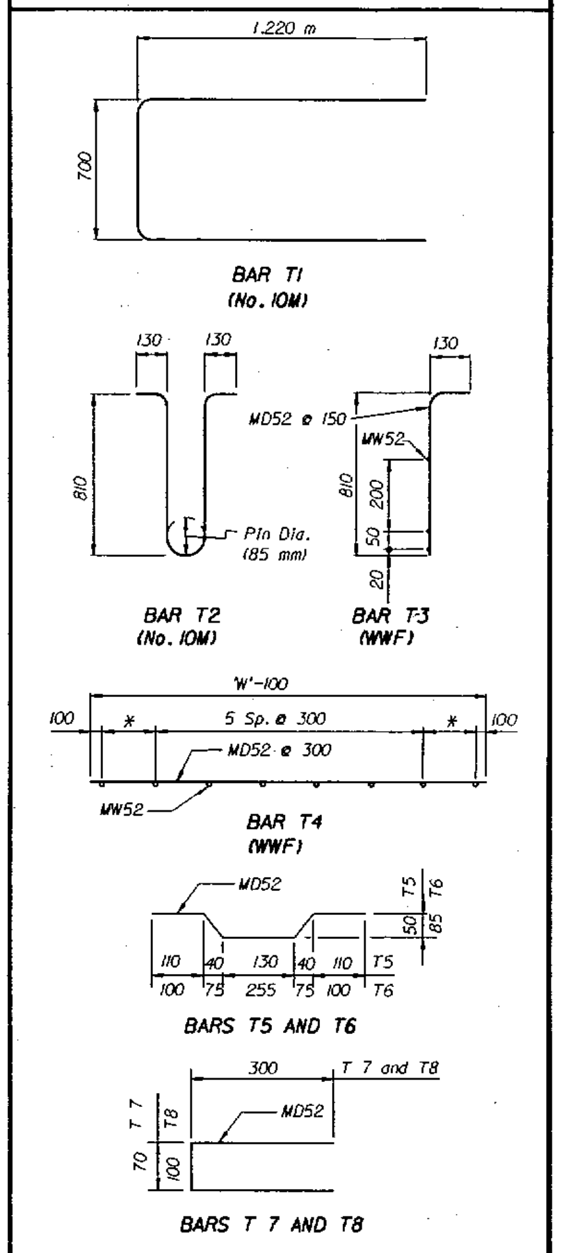
HALF SECTION B-B

** Blockout concrete to accept C.I.P. Diaphragm. See Index 127 for orientation of the horizontal 300 mm dimension.



PARTIAL ELEVATION
(Flange Reinforcing and P.T. Ducts not shown)
(Intermediate Strands not shown)

BENDING DIAGRAM



NOTES:

All bar bends shall be made with a 50 mm diameter pin unless otherwise noted.

The Welded Wire Fabric (T4) shall consist of eight (8) longitudinal MW52 wires welded to transverse MD52 wires spaced at twelve (300) mm. The MW52 wires shall be spaced as shown above and their length, in the finished beam, shall be equal to the length of the precast flange plus 300 mm. Sufficient material to include splices shall be provided. Splices, if needed, shall be 360 mm minimum.

The longitudinal MW52 wires for the welded wire fabric (T3) do not require splicing.

MW52 wires shall comform to ASTM A185.
MD52 wires shall conform to ASTM A497.

Six (6) Bars 'T6' and two (2) Bars 'T8' are required at each P/T anchorage location.
Three (3) Bars 'T5' and two (2) Bars 'T 7' are required at each P/T duct location where the tendon's path deviates from a straight course.

Four (4) Bars 'T1' are required per Beam.
Forty-eight (48) Bars 'T2' are required per Beam.

NOTE: All dimensions are in millimeters (mm), except as noted.

/usr5/strstand/met/126.dgn

Mon Aug 15 13:29:54 1994

REVISIONS

Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	DCP	6-90
Checked by	AJG	6-90
Designed by	TJB	6-90
Checked by	AJG	6-90
Approved by	AJG	

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE:
FDT 30
TYPICAL SECTION

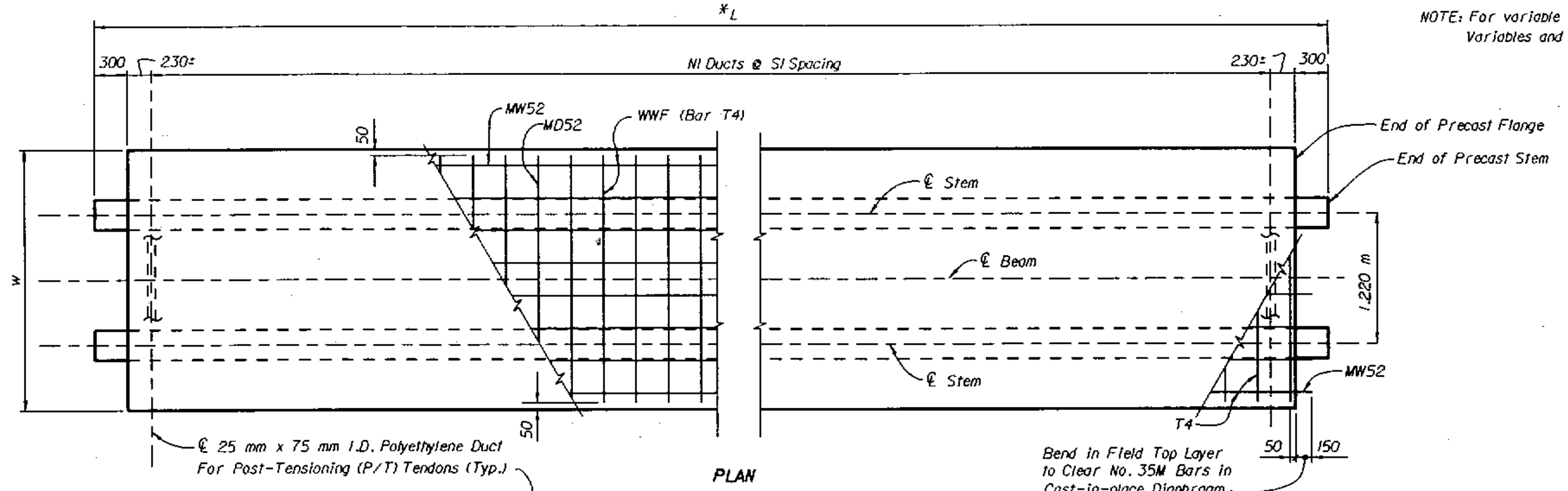
PROJECT NAME:

Drawing No.
1 of 1

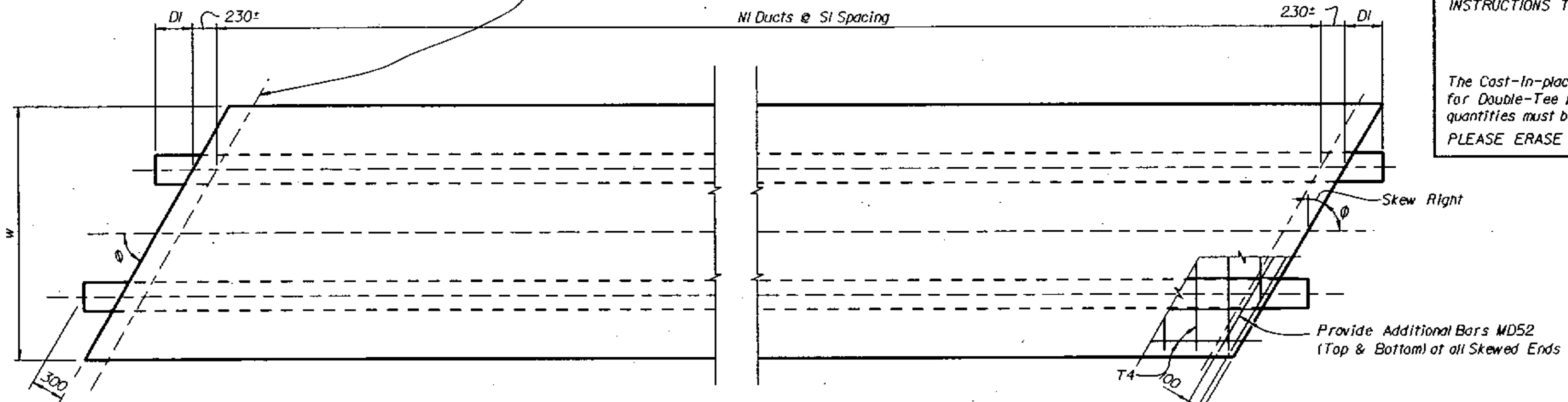
Index No.
126

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

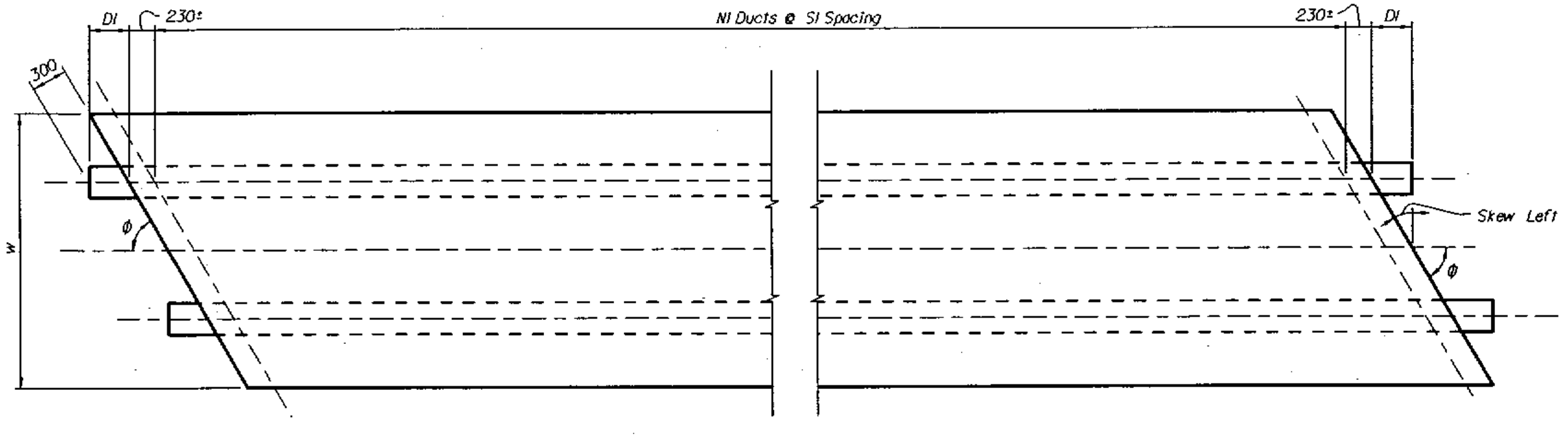
NOTE: For variable dimensions, angles, & numbers, see "Table of Variables and Strand Patterns" Sheet.



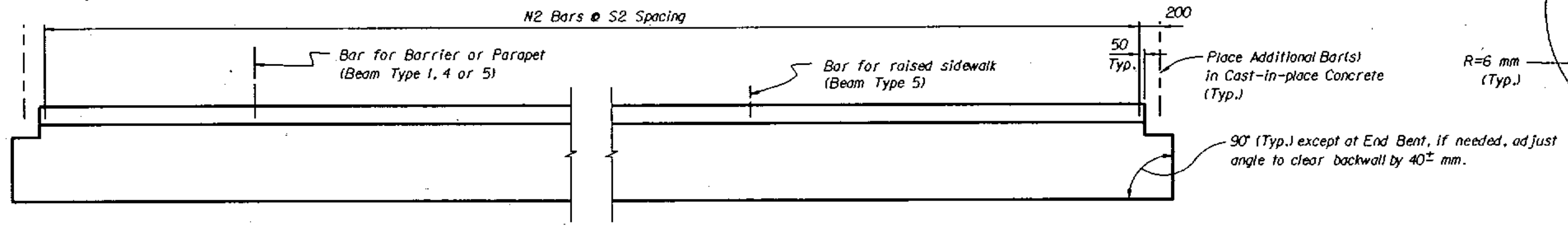
PLAN



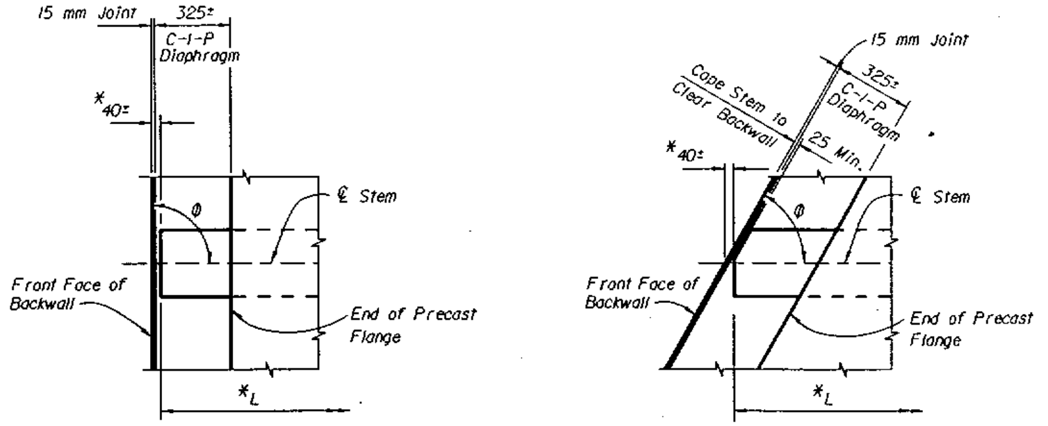
PLAN



PLAN



ELEVATION
(Bar Data Applies at Exterior Beam)



STRAIGHT CROSSING

SKEWED CROSSING

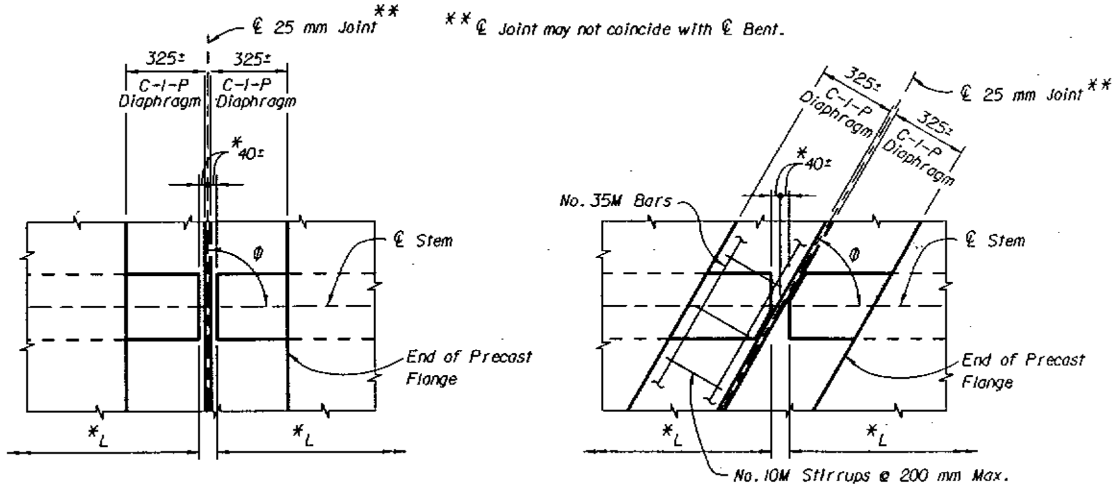
PART PLAN AT END BENT

INSTRUCTIONS TO DESIGNER:
S1(in meters) ≤ 1.370 (SIN Φ)
S2 ≤ 200 mm
Φ = ≥ 60°

The Cast-in-place diaphragms are not included in the bid price for Double-Tee beams; therefore, the required concrete and steel quantities must be shown in the plans prepared by the designer.
PLEASE ERASE THIS NOTE WHEN COMPLETING THIS DRAWING.

*Dimension applies along bottom of Stem.
L = (Front Face to Front Face of Backwall) - 80 mm
L = (Front Face of Backwall to ℄ Int. Bent) - 80 mm
L = (℄ to ℄ Intermediate Bent) - 80 mm

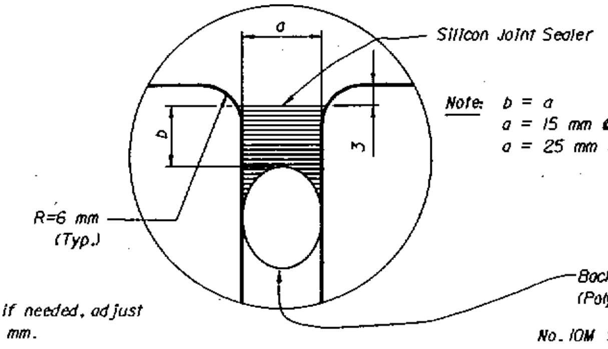
** ℄ Joint may not coincide with ℄ Bent.



STRAIGHT CROSSING

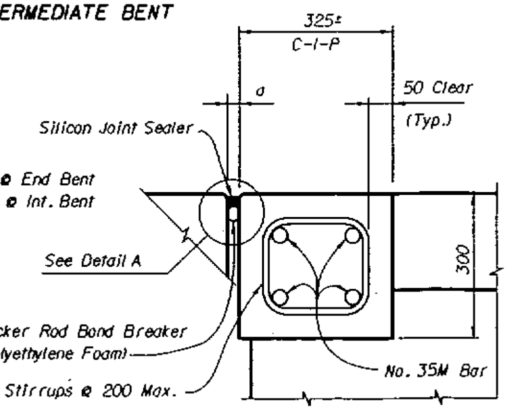
SKEWED CROSSING

PART PLAN AT INTERMEDIATE BENT



Note: b = a
a = 15 mm @ End Bent
a = 25 mm @ Int. Bent

DETAIL A



SECTION THRU C-I-P DIAPHRAGM
(Reinforcement in Precast Beam not shown)

Note: All dimensions are in millimeters (mm), except as noted.

Mon Aug 15 13:31:12 1994
/usr5/strstand/met/127.dgn

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	DCP	6-90
Checked by	AJG	6-90
Designed by	TJB	6-90
Checked by	AJG	6-90
Approved by	AJG	

ENGINEER OF RECORD:
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605 Suwannee Street, MS 33
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LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE:
FLORIDA DOUBLE-TEE
PLAN, JOINT AND DIAPHRAGM

PROJECT NAME:

Drawing No.
1 of 1

Index No.
127

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

TABLE OF VARIABLES

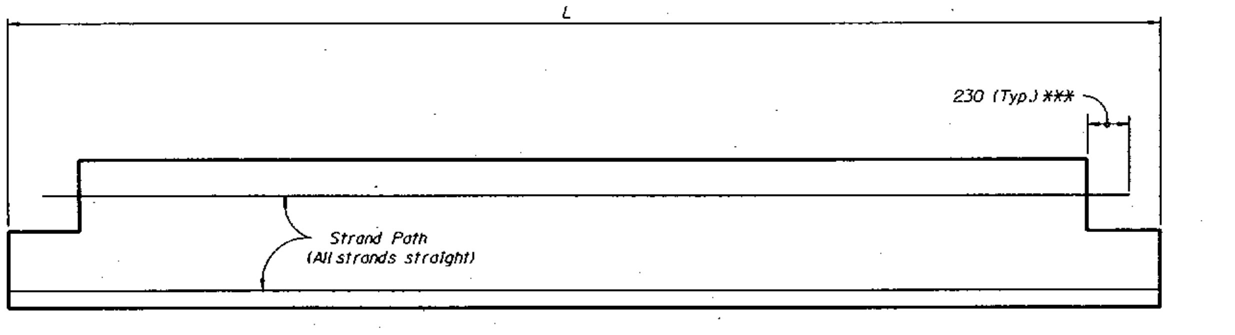
SPAN NO.	BEAM TYPE	NO. OF BEAMS	Φ	DIMENSIONS						POST-TENSIONING DUCT DATA		CONCRETE DATA (MPa)		* REINF. STEEL DATA		STRAND PATTERN		
																CASE	TYPE * *	
				A	D1	L	W	X	Y	N1	S1	f'c	f'ci	N2	S2		END	CENTER

* NOTE: Reinf. Steel Data refers to reinforcement for superimposed cast-in-place elements such as Barriers, etc.

** NOTE: Strand Pattern Type at "End" applies at the extreme end of the beam. The pattern at the "Center" applies between hold down points.

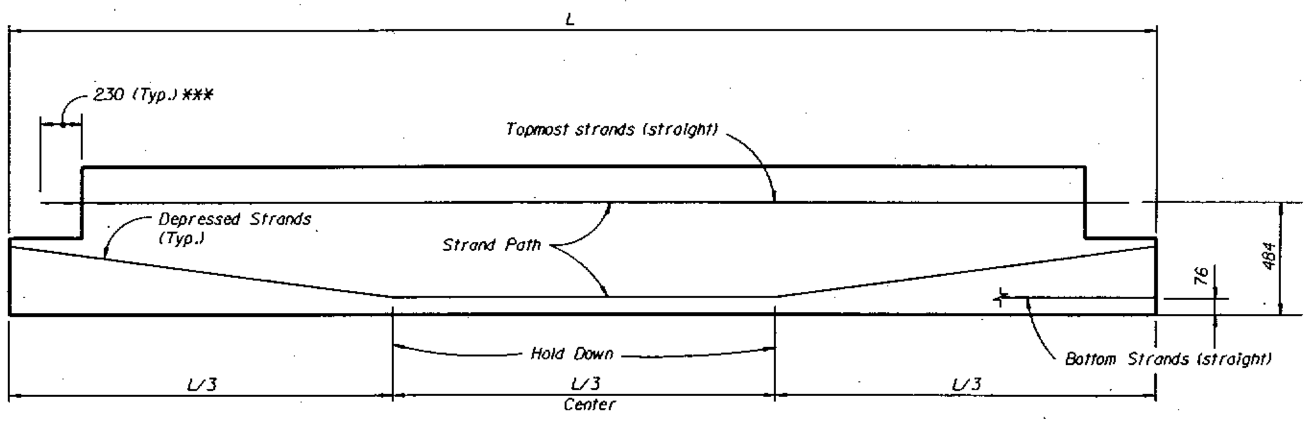
NOTE: All strands shall be No. 13 Low Relaxation Strands conforming to ASTM A416, Grade 1860. Dimension "L" applies along bottom of Stem. This dimension requires no correction for elastic and time-dependent shortening effects; however, at End Bents of skewed bridges the stem end may require coping to clear backwall. See Index 127.

All dimensions are in millimeters (mm), except as noted.



*** Strands terminating within Diaphragm blockout

CASE 1



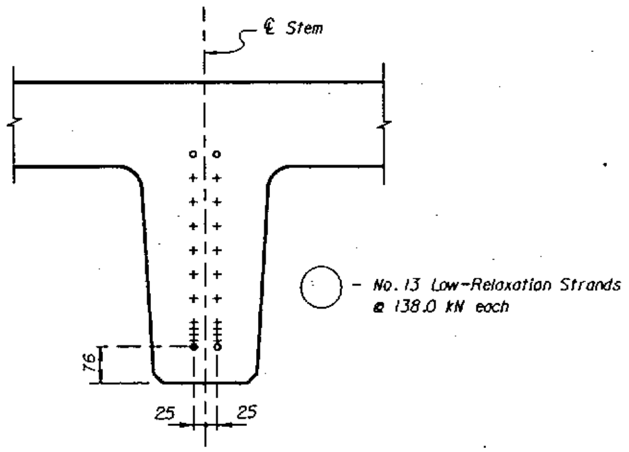
CASE 2

STRAND PATTERN CASE
(Side Elevation)

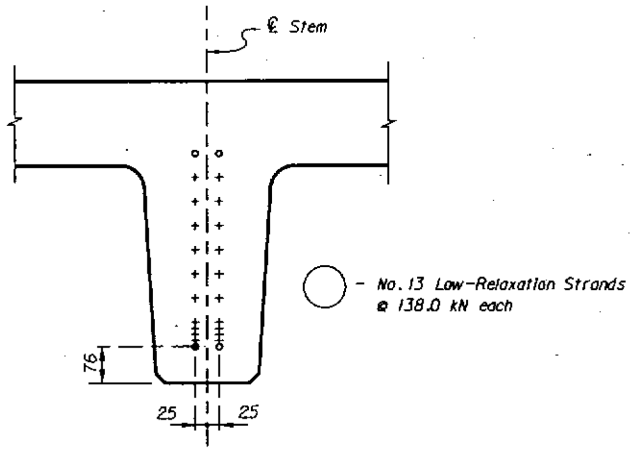
INSTRUCTIONS TO DESIGNER:

Show all strands Within the stem at the indicated locations, and provide dimensions. Delete locations (+'s) not used. Show the total number of strands within circle.

PLEASE ERASE THIS NOTE WHEN COMPLETING THIS DRAWING.



TYPE 1



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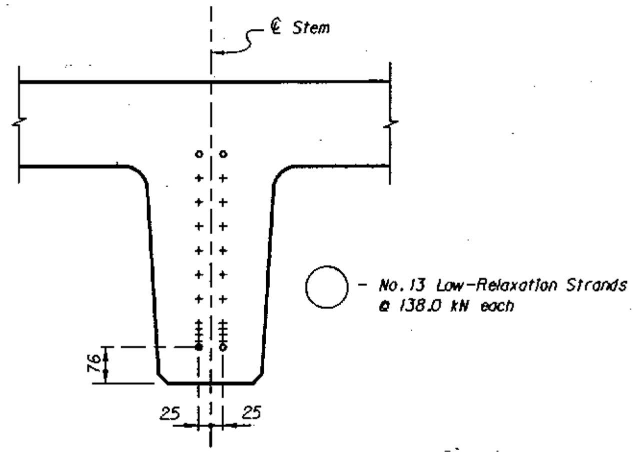

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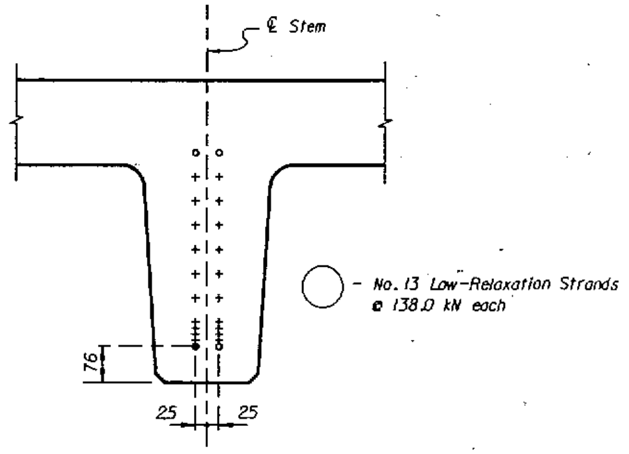

TYPE 4

STRAND PATTERN TYPE

/usr5/strstand/met/s128.dgn

Mon Aug 15 13:55:34 1994

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
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Checked by		
Approved by		

ENGINEER OF RECORD:

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FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE:
FDT 18
TABLE OF VARIABLES AND
STRAND PATTERNS

PROJECT NAME:

Drawing No.
1 of 1

Index No.
S-128

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

TABLE OF VARIABLES

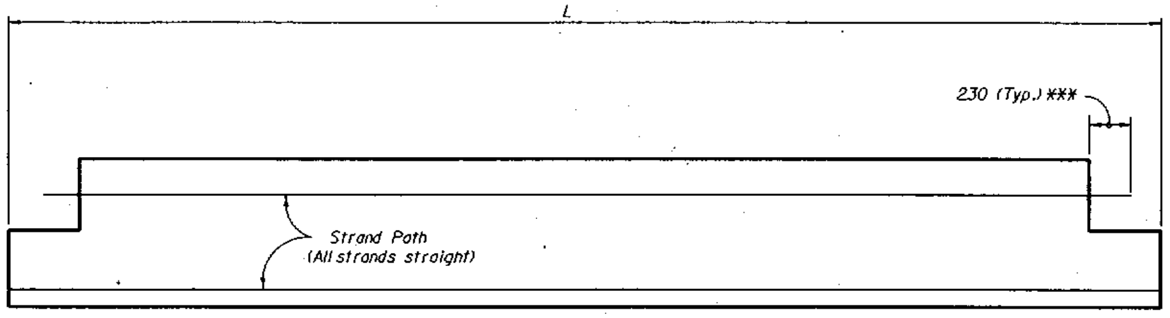
SPAN NO.	BEAM TYPE	NO. OF BEAMS	Ø	DIMENSIONS						POST-TENSIONING DUCT DATA		CONCRETE DATA (MPa)		* REINF. STEEL DATA		STRAND PATTERN		
																CASE	TYPE * *	
				A	D1	L	W	X	Y	N1	S1	f 'c	f 'ci	N2	S2		END	CENTER

* NOTE: Reinf. Steel Data refers to reinforcement for superimposed cast-in-place elements such as Barriers, etc.

** NOTE: Strand Pattern Type at "End" applies at the extreme end of the beam. The pattern at the "Center" applies between hold down points.

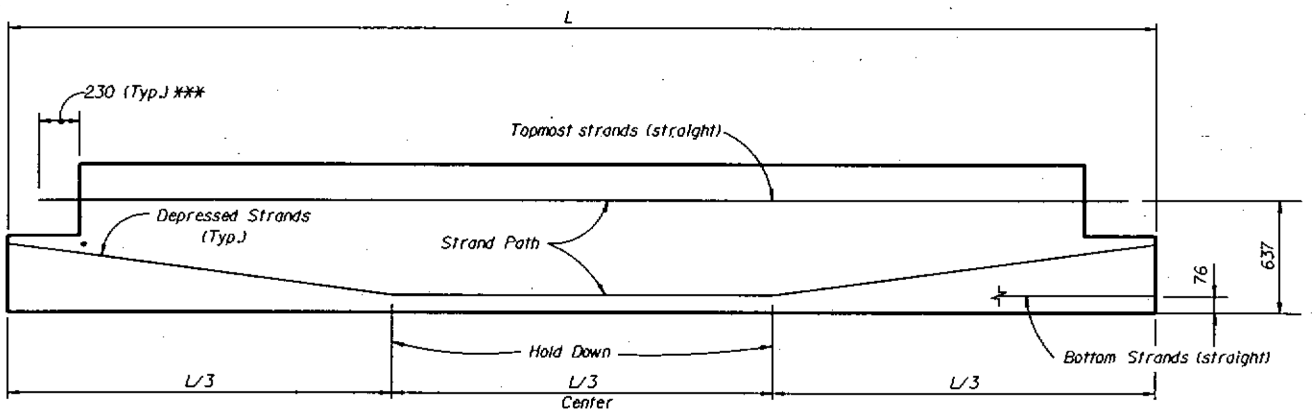
NOTE: All strands shall be No. 13 Low Relaxation Strands conforming to ASTM A416, Grade 1860. Dimension "L" applies along bottom of Stem. This dimension requires no correction for elastic and time-dependent shortening effects; however, at End Bents of skewed bridges the stem end may require coping to clear backwall. See Index 127.

All dimensions are in millimeters (mm), except as noted.



CASE I

*** Strands terminating within Diaphragm blockout



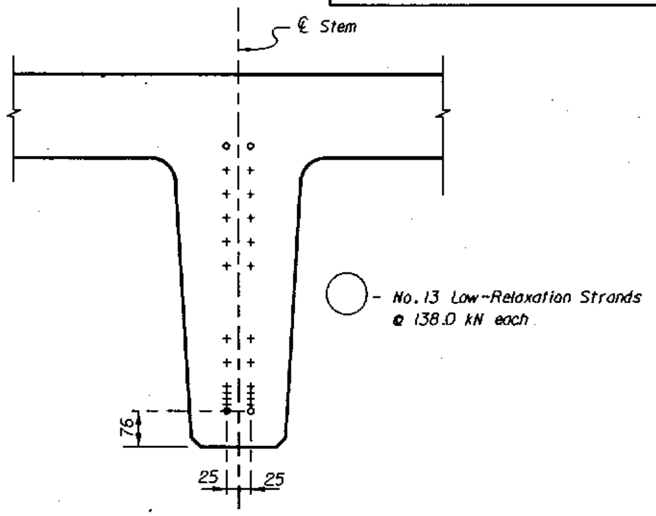
CASE 2

INSTRUCTIONS TO DESIGNER:

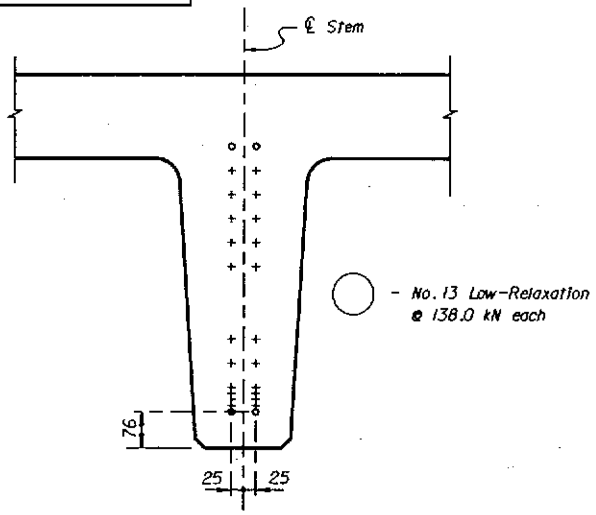
Show all strands within the stem at the indicated locations, and provide dimensions. Delete locations (+'s) not used. Show the total number of strands within circle.

PLEASE ERASE THIS NOTE WHEN COMPLETING THIS DRAWING.

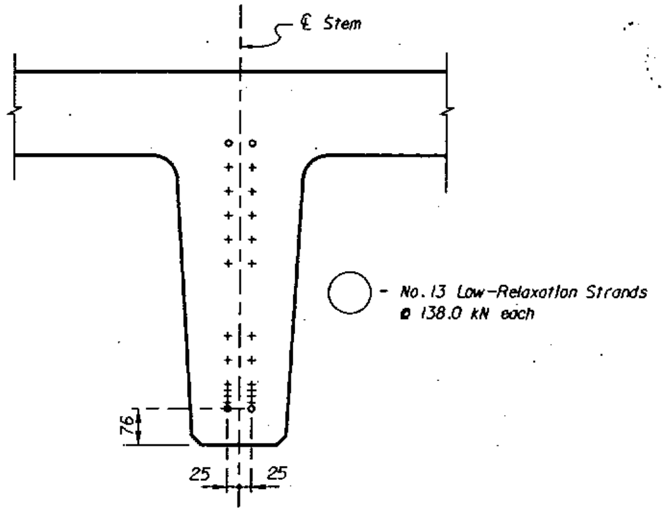
STRAND PATTERN CASE
(Side Elevation)



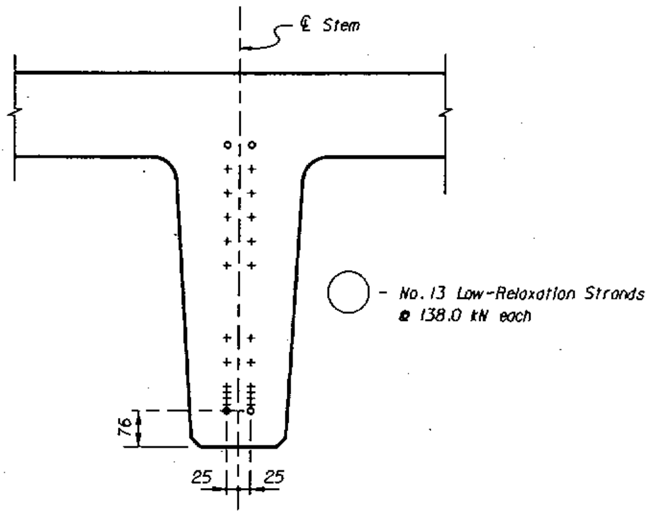
TYPE 1



TYPE 2



TYPE 3



TYPE 4

STRAND PATTERN TYPE

/usr5/strstand/met/st29.dgn
Mon Aug 15 13:56:06 1994

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by		
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Designed by		
Checked by		
Approved by		

ENGINEER OF RECORD:

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE:
FDT 24
TABLE OF VARIABLES AND
STRAND PATTERNS

PROJECT NAME:

Drawing No.
1 of 1

Index No.
S-129

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

TABLE OF VARIABLES

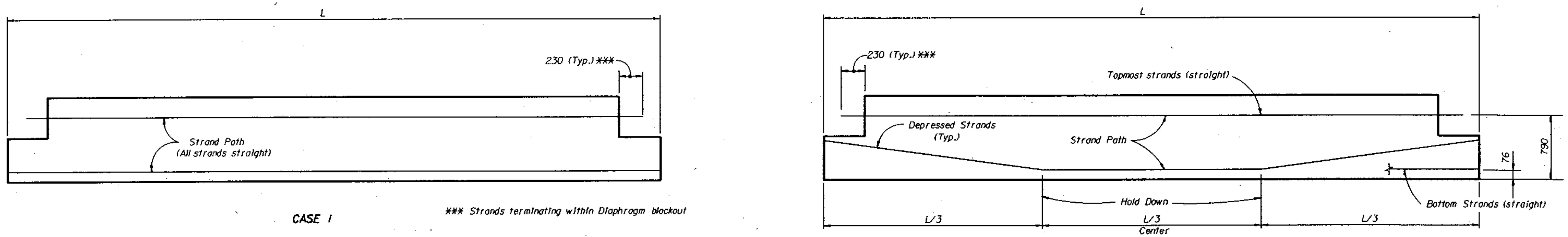
SPAN NO.	BEAM TYPE	NO. OF BEAMS	Ø	DIMENSIONS						POST-TENSIONING DUCT DATA		CONCRETE DATA (MPa)		* REINF. STEEL DATA		STRAND PATTERN		
																CASE	TYPE * *	
				A	D1	L	W	X	Y	N1	S1	f 'c	f 'ci	N2	S2		END	CENTER

* NOTE: Reinf. Steel Data refers to reinforcement for superimposed cast-in-place elements such as Barriers, etc.

** NOTE: Strand Pattern Type at "End" applies at the extreme end of the beam. The pattern at the "Center" applies between hold down points.

NOTE: All strands shall be No. 13 Low Relaxation Strands conforming to ASTM A416, Grade 1860. Dimension "L" applies along bottom of Stem. This dimension requires no correction for elastic and time-dependent shortening effects; however, at End Bents of skewed bridges the stem end may require coping to clear backwall. See Index 127.

All dimensions are in millimeters (mm), except as noted.



CASE 1

*** Strands terminating within Diaphragm blockout

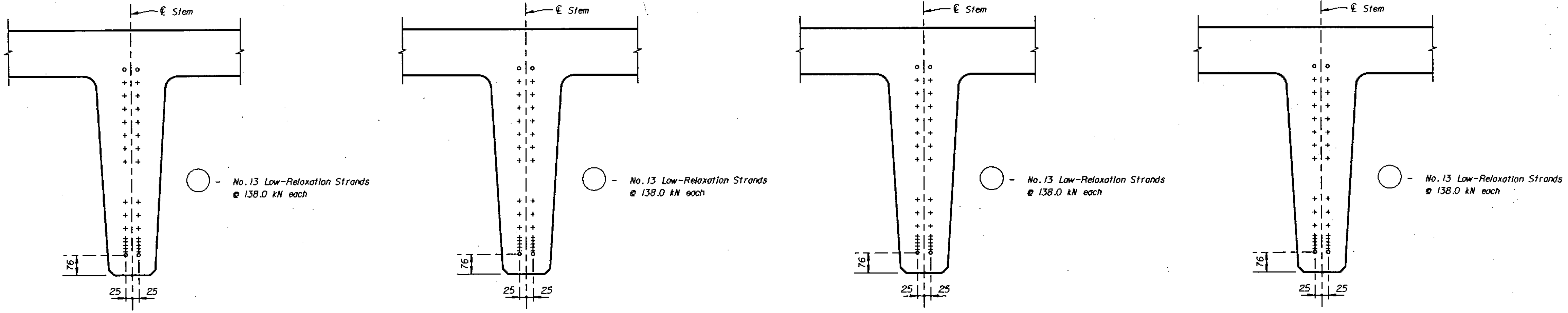
CASE 2

INSTRUCTIONS TO DESIGNER:

Show all strands within the stem at the indicated locations, and provide dimensions. Delete locations (+'s) not used. Show the total number of strands within circle.

PLEASE ERASE THIS NOTE WHEN COMPLETING THIS DRAWING.

STRAND PATTERN CASE
(Side Elevation)



TYPE 1

TYPE 2

TYPE 3

TYPE 4

STRAND PATTERN TYPE

Tue Aug 16 14:42:41 1994 g0strs0pltfiles0s130.sno

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by		
Checked by		
Designed by		
Checked by		
Approved by		

ENGINEER OF RECORD:

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STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

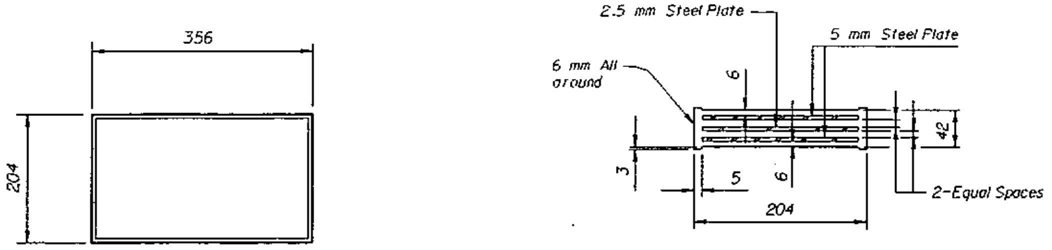
SHEET TITLE:
FDT 30
TABLE OF VARIABLES AND
STRAND PATTERNS

PROJECT NAME:

Drawing No.
1 of 1

Index No.
S-130

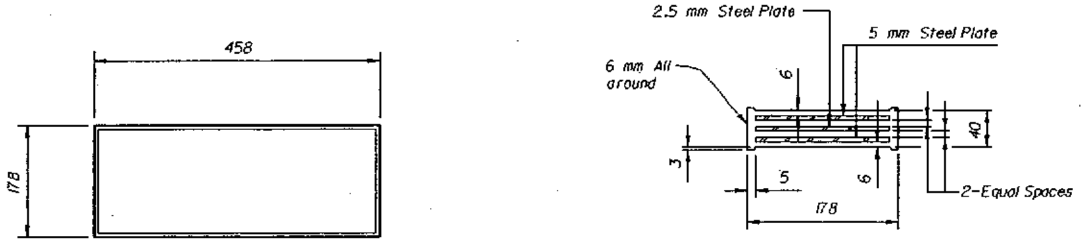
FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



PLAN

TYPICAL SECTION

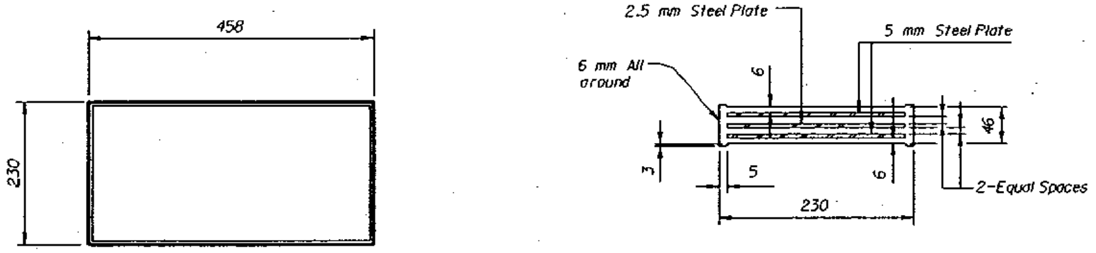
COMPOSITE PAD
TYPE II



PLAN

TYPICAL SECTION

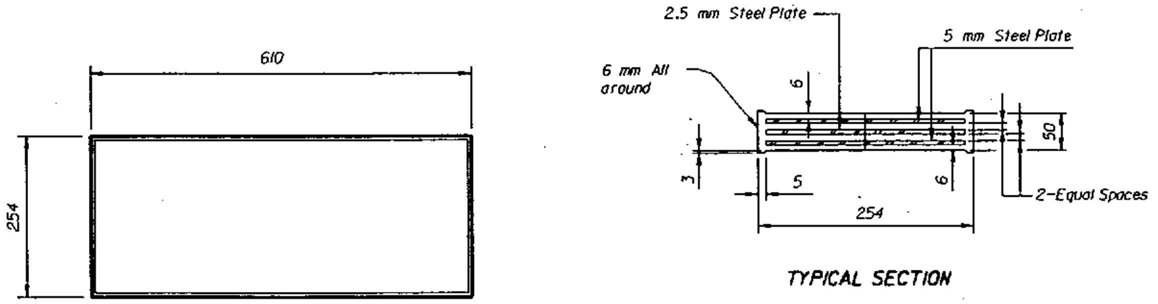
COMPOSITE PAD
TYPE III



PLAN

TYPICAL SECTION

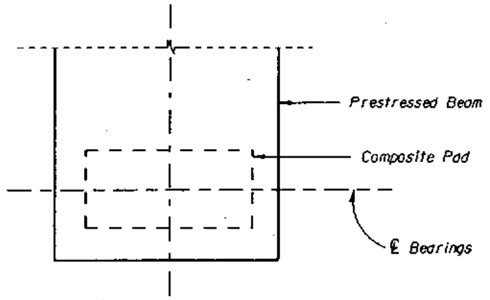
COMPOSITE PAD
TYPE IV



PLAN

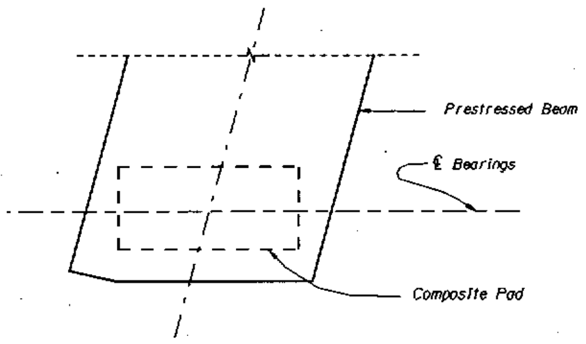
TYPICAL SECTION

COMPOSITE PAD
TYPE V



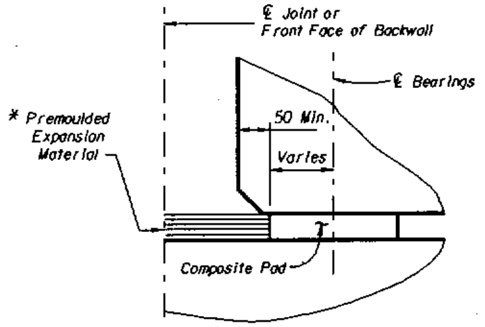
STRAIGHT BRIDGE

PART PLAN



SKEWED BRIDGE

PART PLAN



TYPICAL PAD DETAIL

PART ELEVATION

* Premoulded Expansion Material is required for Cast-In-Place Beam Extension.

BEARING PAD NOTES

Neoprene in all Bearing Pads shall have a Grade 50 durometer hardness.

Steel Plates in composite pads shall conform to ASTM A36M or ASTM A570M Grade 250.

Variations in pad dimensions will be allowed provided revised pads will meet the current specifications and are approved by the Engineer.

Bearing seat shall be finished parallel to the bottom of Beam.

NOTE: All dimensions are in millimeters (mm), except as noted.

INSTRUCTIONS TO DESIGNER:

The bearing pads shown shall be utilized as follows:

PAD TYPE	BEAM TYPE	MAX. REACTION (DL + LL) .	SHEAR DEFLECTION MAX.
II	II (AASHTO)	400 kN	15 mm
III	III (AASHTO)	512 kN	14 mm
IV	IV (AASHTO)	578 kN	17 mm
V	V & VI (AASHTO) AND FLORIDA BULB-T	854 kN	19 mm

The pads may also be utilized for steel beams provided, of course, that the designer verify the design.

PLEASE ERASE THIS NOTE WHEN COMPLETING THIS DRAWING

g:\strs\pltfiles\200.snp
Wed Aug 24 13:13:27 1994

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	HRF	11-85
Checked by	RDS	1-86
Designed by	BR	2-89
Checked by	TJB	2-89
Approved by	AJG	

ENGINEER OF RECORD:
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605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE:
COMPOSITE NEOPRENE BEARING PADS

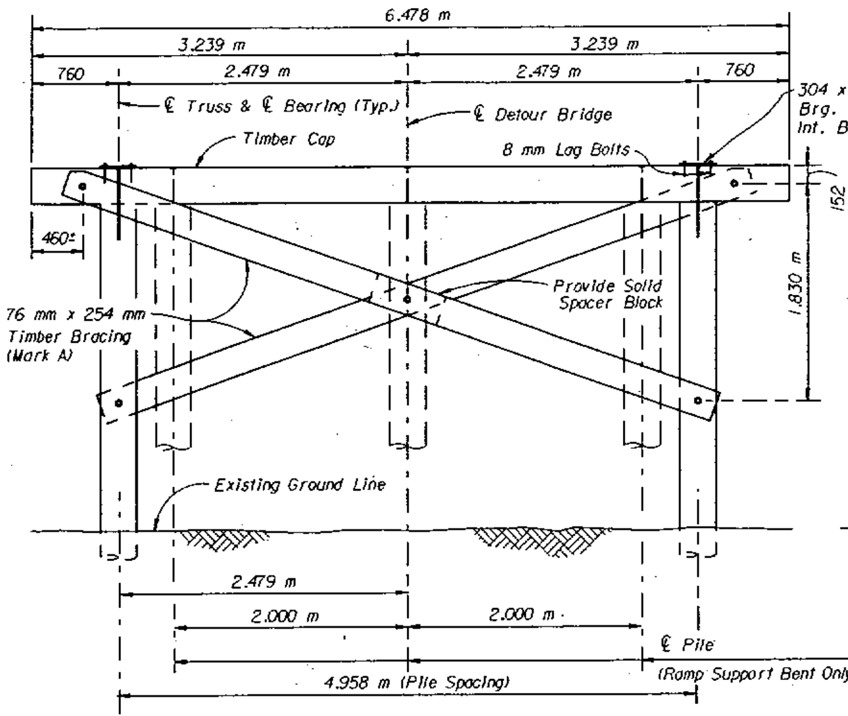
PROJECT NAME:

Drawing No.
1 of 1

Index No.
200

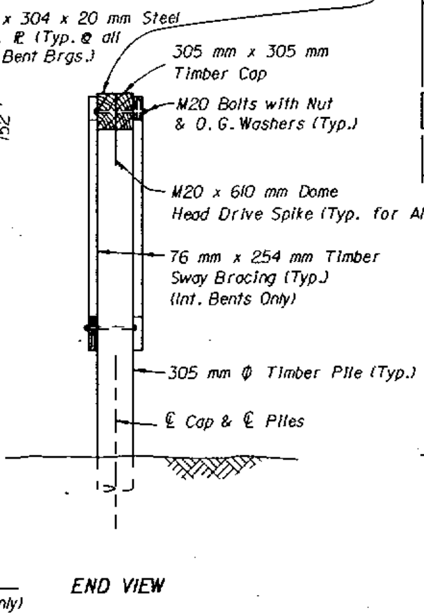
FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

Cap elevations are approximately 146 mm (at Ramp Support), 835 mm (End Bents) and 724 mm (Int. Bents) below Finish Grade Elevations for Detour. See Roadway Plans.

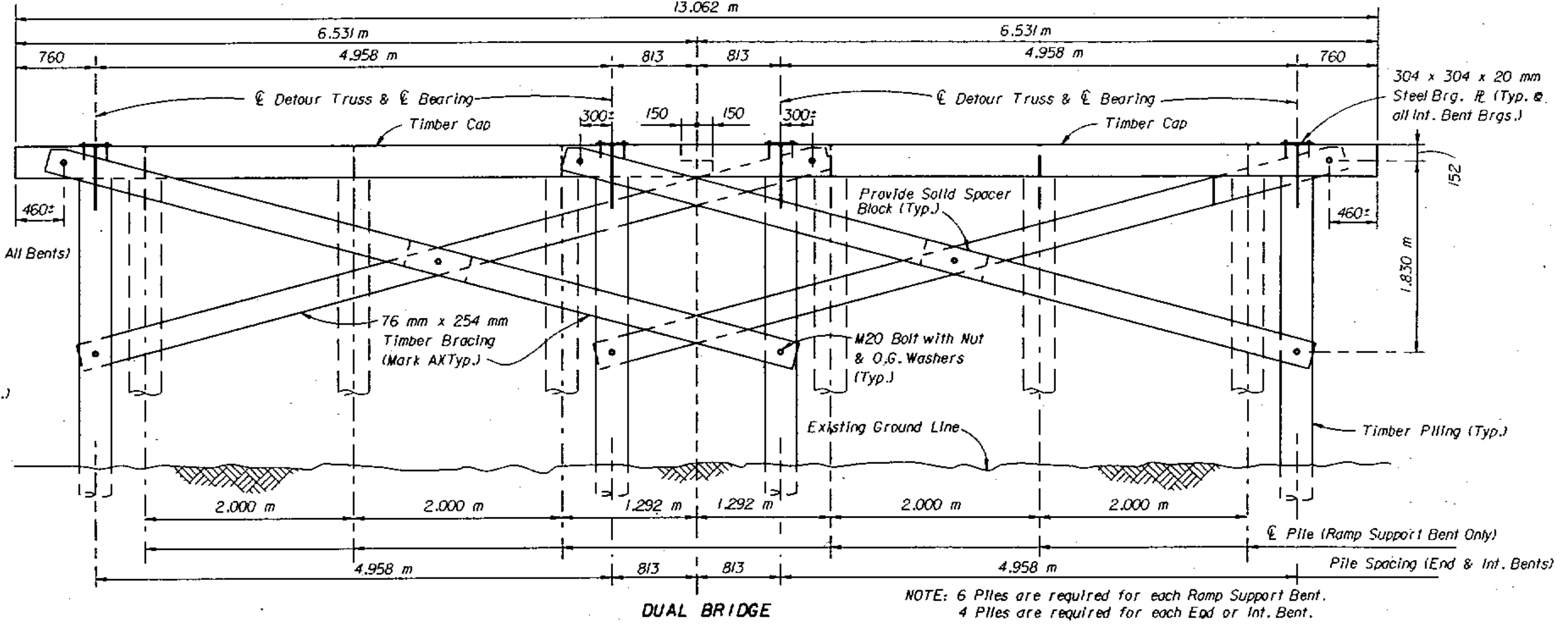


SINGLE BRIDGE

NOTE: 3 Piles are required for each Ramp Support Bent.
2 Piles are required for each End or Int. Bent.



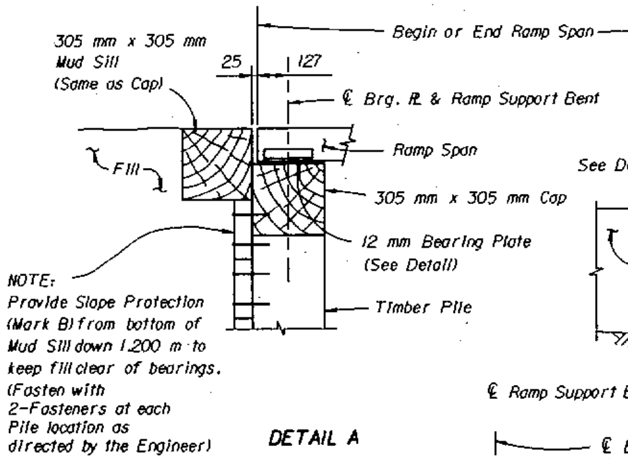
END VIEW



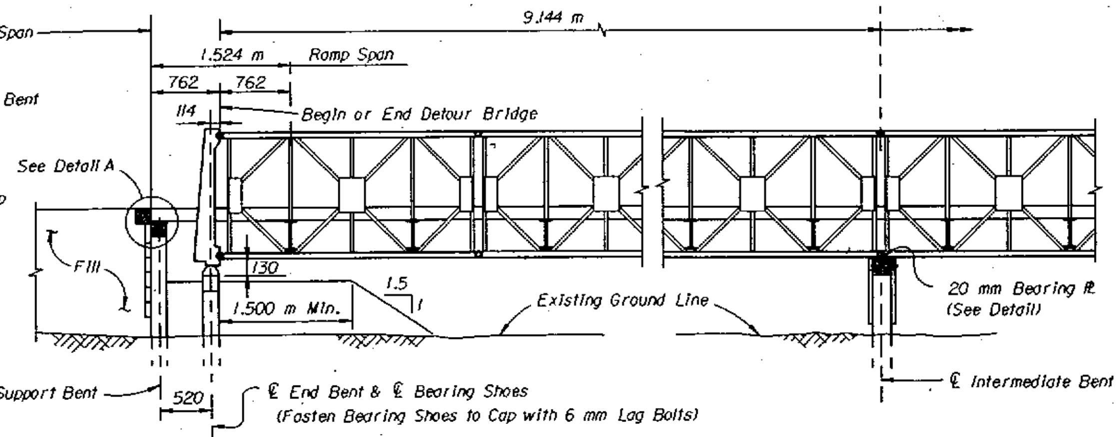
DUAL BRIDGE

NOTE: 6 Piles are required for each Ramp Support Bent.
4 Piles are required for each End or Int. Bent.

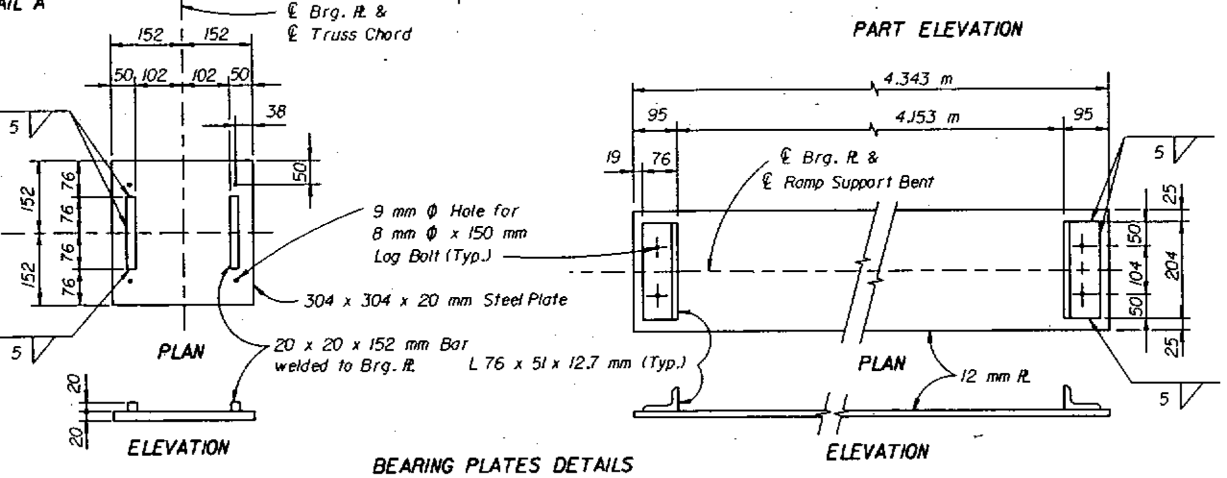
TIMBER PILE BENT ELEVATIONS



DETAIL A



PART ELEVATION



NOTE: Structural Steel provided by Contractor shall conform to ASTM A36M.

BEARING PLATES DETAILS

NOTE: Contractor shall provide all Bearing Plates.

NOTE: Fasteners not included as Acrow bridge components shall be provided by contractor, shall conform to ASTM A307 and shall be galvanized per ASTM A153.

INSTRUCTIONS TO DESIGNER: Tall Bents and/or scour conditions may require additional piles or bracing or different kind of piles: therefore, the stability of the proposed bent shall be checked before implementing the design on this standard drawing. Also, if piling longer than 15 m is required, timber piling shall not be used unless authorized by the District Structures Engineer. PLEASE, ERASE THIS NOTE WHEN COMPLETING THIS DRAWING.

NOTE : All dimensions are in millimeters (mm), except as noted.

LIST OF STRUCTURAL TIMBER ✱

ITEM	SIZE	LENGTH	SINGLE BRIDGE						LENGTH	DUAL BRIDGE					
			NO. REQ'D.			CUBIC METERS				NO. REQ'D.			CUBIC METERS		
			RAMP SUP.	END BENT	INT. BENT	RAMP SUP.	END BENT	INT. BENT		RAMP SUP.	END BENT	INT. BENT	RAMP SUP.	END BENT	INT. BENT
CAP & MUD SILL	305 x 305	6.478 m	2	1	1	1.205	0.603	0.603	6.681 m	4	2	2	2.486	1.243	1.243
MARK A	76 x 254	5.870 m	—	—	2	—	—	0.227	7.430 m	—	—	4	—	—	0.574
MARK B	100 x 200	6.500 m	6	—	—	0.780	—	—	6.700 m	12	—	—	1.608	—	—
SPACER BLOCKS	254 x 305	600	—	—	1	—	—	0.047	600	—	—	2	—	—	0.093
		TOTAL				1.985	0.603	0.877	TOTAL				4.094	1.243	1.910

✱ Quantities shown are for one bent only.

NOTES

DESIGN LOAD FOR PILES: 180 kN

LOADING: M18

STRUCTURAL TIMBER: Timber piles and structural timber may be treated or untreated at the option of the contractor. The contractor shall provide all structural timber and piles.

SPAN LENGTH: 9.144 m Maximum

PAYMENT: See Roadway Plans

ERECTION: The contractor shall erect the detour bridge in accordance with the specifications, these plans, and the "Acrow Panel Bridge Technical Handbook". Steel Grid bridge flooring will be furnished. The steel grid bridge flooring shall be brought into full contact with each transom and then securely fastened at each transom. The Engineer shall approve final assembly of Acrow Bridge components prior to placing traffic on the bridge.

AVAILABILITY: Contractor shall pick-up and return all Acrow Bridge components at the FDOT Structures Shop at 2590 Camp Road, Oviedo, Florida 32765.

DAMAGE: Contractor shall be responsible for damage to the Acrow Bridge components which occurs while in his possession. FDOT inspection of Acrow Bridge components will be upon return of the components to the above FDOT Structures Shop.

WIDE LOAD SIGNS: Contractor shall erect wide load signs (Maximum Width Load 3.350 m) at each end of the detour bridge and approaching intersections. Payment shall be included in the Contract Bid Price for detour. Contractor shall contact F.D.O.T. Road Use Permits Engineer in writing, informing him of the beginning and ending dates the detour will be in use. This information should be addressed to: Road Use Permits Engineer, Florida Department of Transportation, Mail Station 62, 605 Suwannee Street, Tallahassee, Florida 32399-0450.

ADDITIONAL INFORMATION: For additional information refer to the Special Provisions.

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	JSP/SHM	4-94
Checked by	JMD	4-94
Designed by		
Checked by		
Approved by	AJG	

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE:
TIMBER BENTS FOR ACROW BRIDGE
(ONE & TWO LANE SINGLE SINGLE EXTRA WIDE)

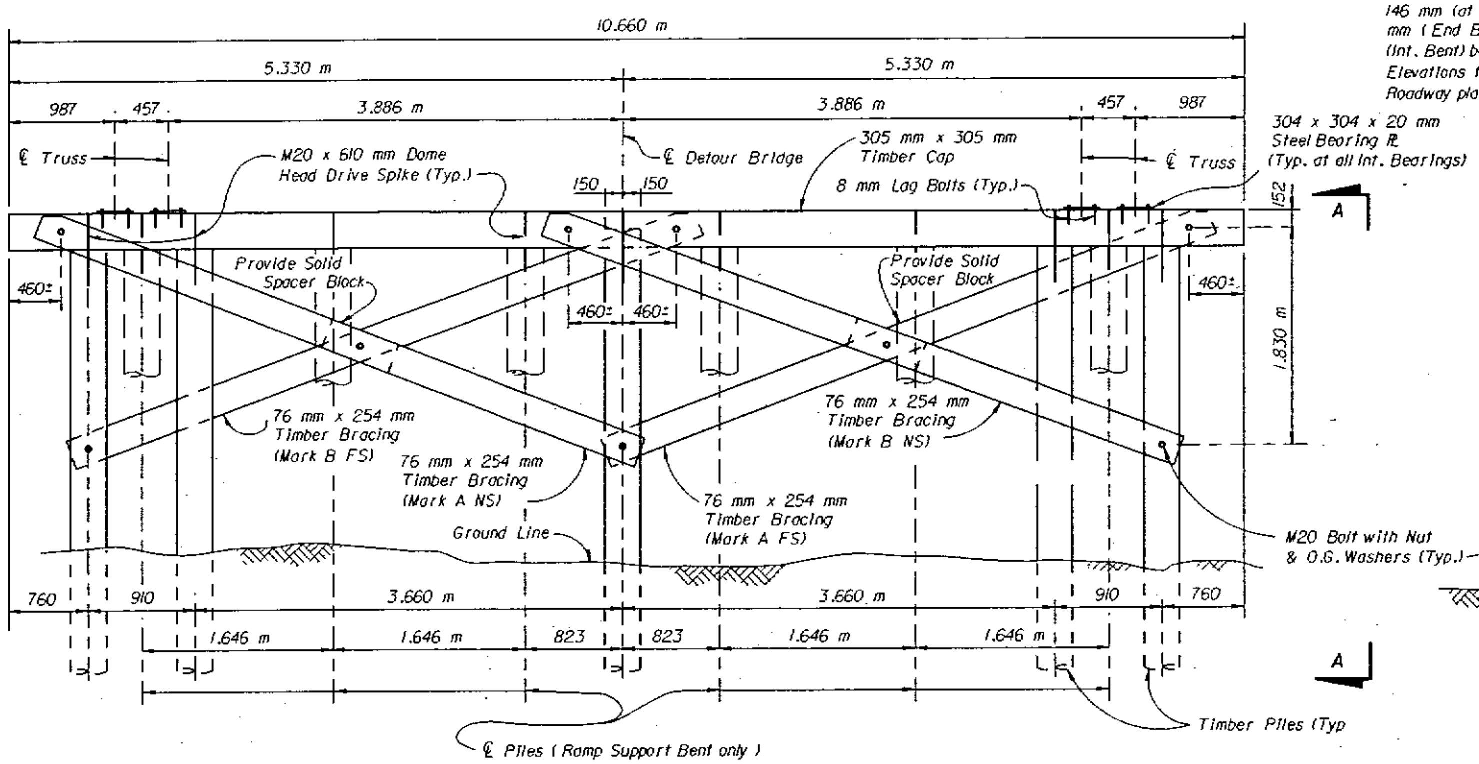
PROJECT NAME:

Drawing No.
1 of 1

Index No.
300

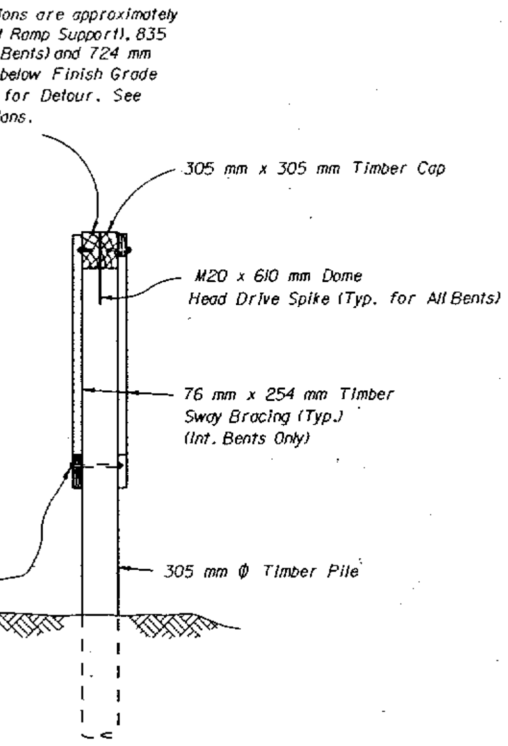
Fri Aug 19 08:10:52 1994 g@strs@pltfiles@300.snp

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



ELEVATION
(TIMBER PILE BENT)

NOTE: 6 Piles are required for each Ramp Support Bent and 5 Piles are required for each End or Int. Bent.



VIEW A-A

LIST OF STRUCTURAL TIMBER *

ITEM	SIZE	LENGTH	NO. REQ'D.			CUBIC METERS		
			RAMP SUP.	END BENT	INT. BENT	RAMP SUP.	END BENT	INT. BENT
CAP & MUD SILL	305 x 305	5.480 m	4	2	2	2.039	1.020	1.020
MARK A	76 x 254	5.500 m	—	—	2	—	—	0.212
MARK B	76 x 254	5.650 m	—	—	2	—	—	0.218
MARK C	100 x 200	5.500 m	12	—	—	1.320	—	—
SPACER BLOCKS	254 x 305	600	—	—	2	—	—	0.093
					TOTAL	3.359	1.020	1.543

* Quantities shown are for one bent only.

NOTES

DESIGN LOAD FOR PILES: 180 kN

LOADING: MIB

STRUCTURAL TIMBER: Timber piles and structural timber may be treated or untreated at the option of the contractor. The contractor shall provide all structural timber and piles.

SPAN LENGTH: 9.144 m Maximum

PAYMENT: See Roadway Plans

ERECTION: The contractor shall erect the detour bridge in accordance with the specifications, these plans, and the "Acrow Panel Bridge Technical Handbook". Steel Grid bridge flooring will be furnished. The steel grid bridge flooring shall be brought into full contact with each transom and then securely fastened at each transom. The Engineer shall approve final assembly of Acrow Bridge components prior to placing traffic on the bridge.

AVAILABILITY: Contractor shall pick-up and return all Acrow Bridge components at the FDOT Structures Shop at 2590 Camp Road, Oviedo, Florida 32765.

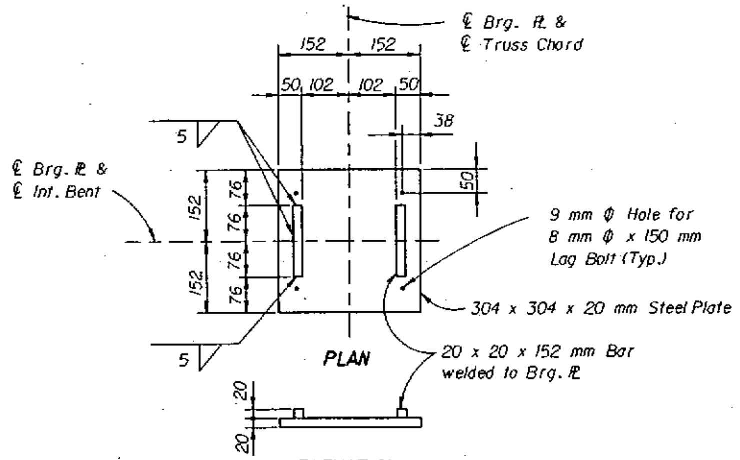
DAMAGE: Contractor shall be responsible for damage to the Acrow Bridge components which occurs while in his possession. FDOT Inspection of Acrow Bridge components will be upon return of the components to the above FDOT Structures Shop.

WIDE LOAD SIGNS: Contractor shall erect wide load signs (Maximum Width Load 3.350 m) at each end of the detour bridge and approaching intersections. Payment shall be included in the Contract Bid Price for detour. Contractor shall contact F.D.O.T. Road Use Permits Engineer in writing, informing him of the beginning and ending dates the detour will be in use. This information should be addressed to: Road Use Permits Engineer, Florida Department of Transportation, Mail Station 62, 605 Suwannee Street, Tallahassee, Florida 32399-0450.

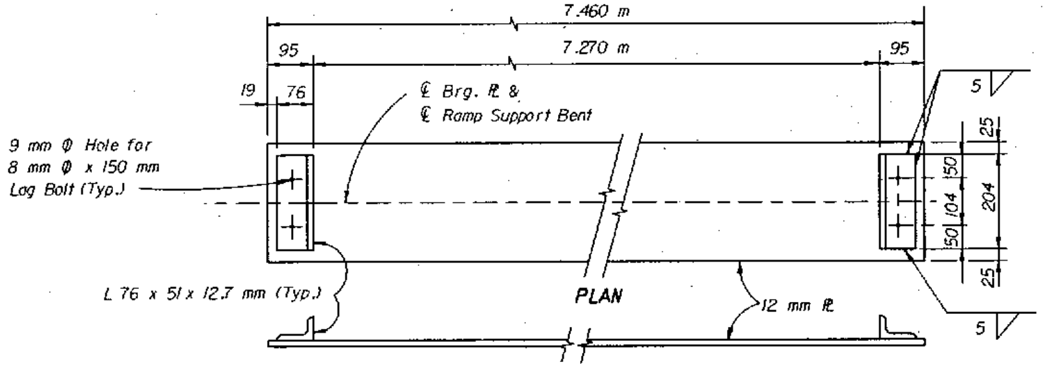
ADDITIONAL INFORMATION: For additional information refer to the Special Provisions.

NOTE: All dimensions are in millimeters (mm), except as noted.

INSTRUCTIONS TO DESIGNER: Tall Bents and/or scour conditions may require additional piles or bracing or different kind of piles; therefore, the stability of the proposed bent shall be checked before implementing the design on this standard drawing. Also, if piling longer than 15 m is required, timber piling shall not be used unless authorized by the District Structures Engineer. PLEASE, ERASE THIS NOTE WHEN COMPLETING THIS DRAWING.

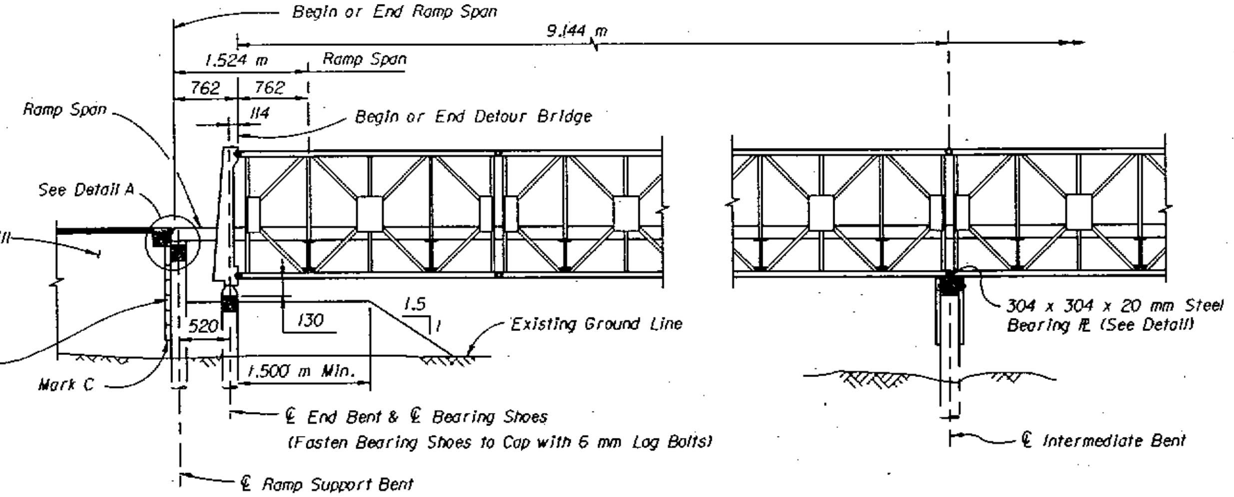


BEARING PLATE DETAIL



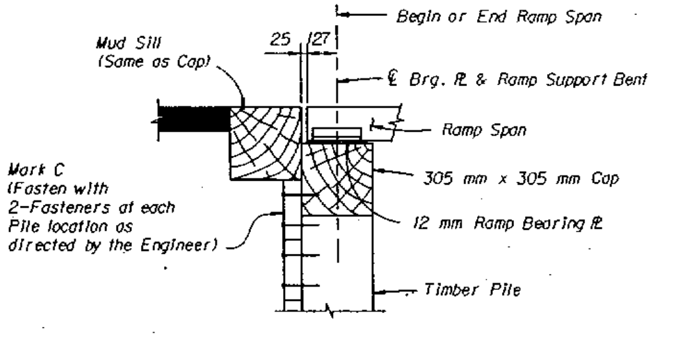
ELEVATION

DETAIL OF RAMP BEARING PLATE



NOTE: Provide slope protection material (Mark C) from bottom of Mud Sill down 1.200 m to keep fill clear of bearings.

PART ELEVATION



DETAIL A

NOTE: Contractor shall provide all Bearing Plates. Structural Steel provided by Contractor shall conform to ASTM A36M.

NOTE: Fasteners not included as Acrow bridge components shall be provided by Contractor, shall conform to ASTM A307 and shall be galvanized per ASTM A153.

g0str6@pltfiles@301.snp

Fri Aug 19 08:12:27 1994

REVISIONS

Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	JSP/SHM	4-94
Checked by	JMD	4-94
Designed by		
Checked by		
Approved by	AJG	

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

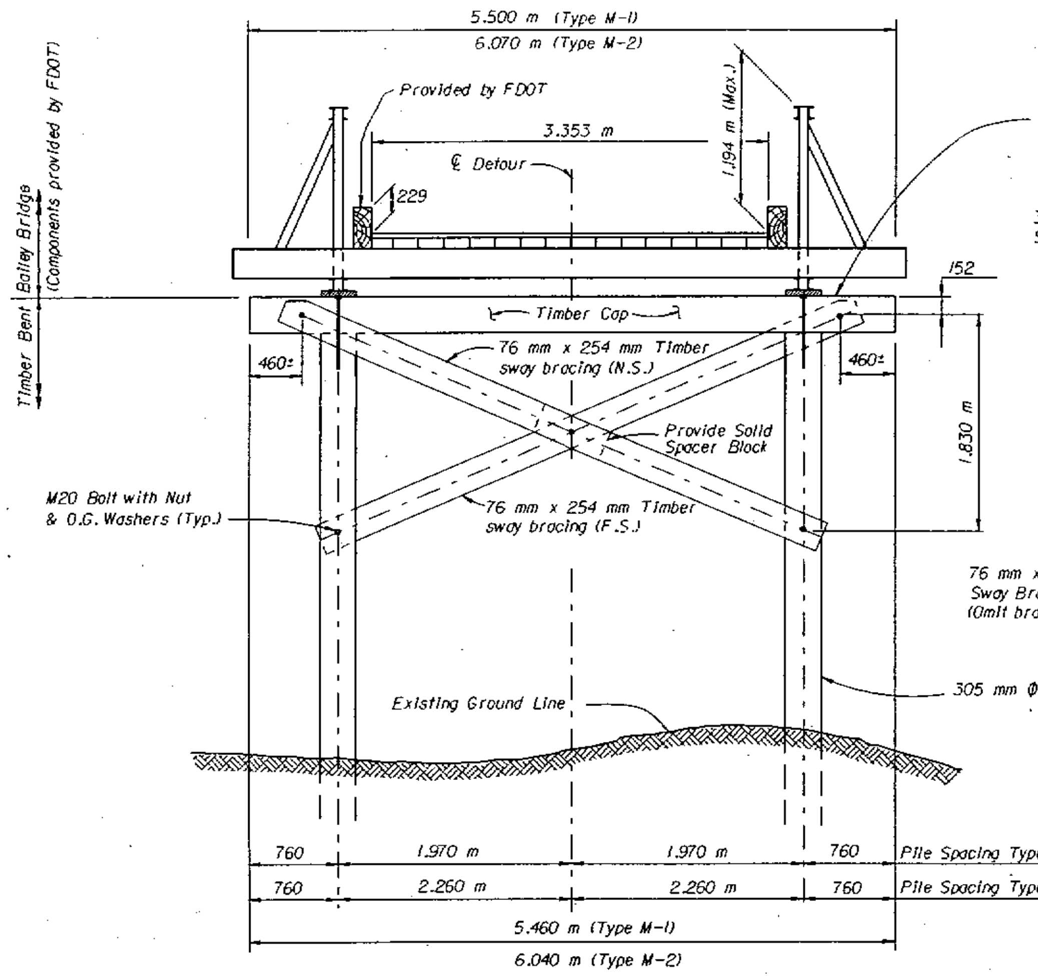
SHEET TITLE:
TIMBER BENTS FOR ACROW BRIDGE
(TWO LANE DOUBLE SINGLE DOUBLE WIDE)

PROJECT NAME:

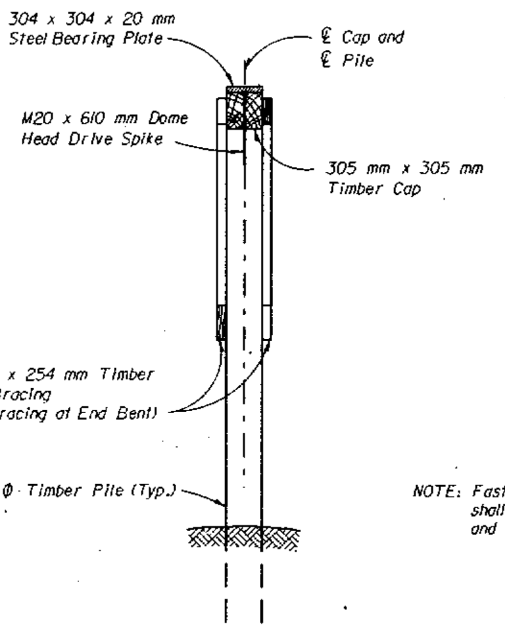
Drawing No.
1 of 1

Index No.
301

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



Typical Section



END VIEW
(Bent Only)

NOTE: Fasteners not included as Bailey bridge components shall be provided by contractor, shall conform to ASTM A307 and shall be galvanized per ASTM A153.

LIST OF STRUCTURAL TIMBER *

ITEM	SIZE	LENGTH		NO. REQ'D.	CUBIC METERS		CUBIC METERS	
					TYPE M-1		TYPE M-2	
		M-1	M-2		End Bent	Int. Bent	End Bent	Int. Bent
CAP	305 x 305	5.460 m	6.040 m	1	0.508	0.508	0.562	0.562
SWAY BRACING	76 x 254	4.920 m	5.460 m	2	—	0.190	—	0.211
SPACER BLOCK	254 x 305	600	600	1	—	0.046	—	0.046
				TOTAL	0.508	0.744	0.562	0.819

* Quantities are for one bent only.

NOTES

DESIGN LOAD FOR PILES: 180 kN

LOADING: M18

STRUCTURAL TIMBER: Timber piles and structural timber may be treated or untreated at the option of the contractor. The contractor shall provide all structural timber and piles.

SPAN LENGTH: 9.144 m Maximum

PAYMENT: See Roadway Plans

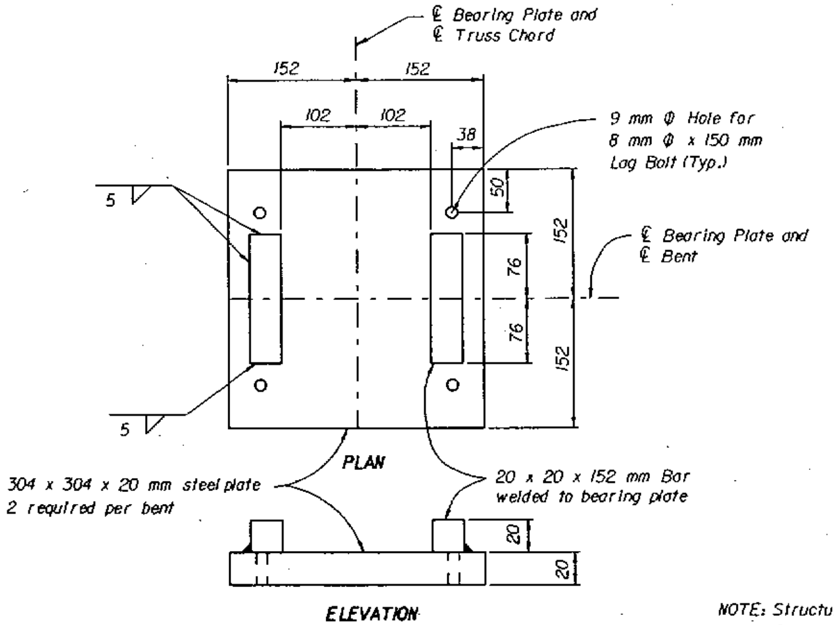
ERECTION: The contractor shall erect the detour bridge in accordance with the specifications, these plans, and the "Bailey Uniflote Handbook". Steel grid bridge flooring will be furnished in lieu of Bailey Bridge flooring. Steel grid bridge flooring shall be brought into full contact with each transom and then securely fastened at each transom. The Engineer shall approve final assembly of Bailey Bridge components prior to placing traffic on the bridge.

AVAILABILITY: Contractor shall pick-up and return all Bailey Bridge components at the FDOT maintenance yard located at No. 1 Park Street, Defuniak Springs, Florida 32433.

DAMAGE: Contractor shall be responsible for damage to the Bailey Bridge components which occurs while in his possession. FDOT inspection of Bailey Bridge components will be upon return of the components to the FDOT maintenance yard.

DETOUR BRIDGE TYPE: The contractor shall be responsible for contacting the District Structures Engineer prior to driving piles or purchasing timber to determine if a Type M-1 or a Type M-2 Bailey Bridge will be furnished for this project.

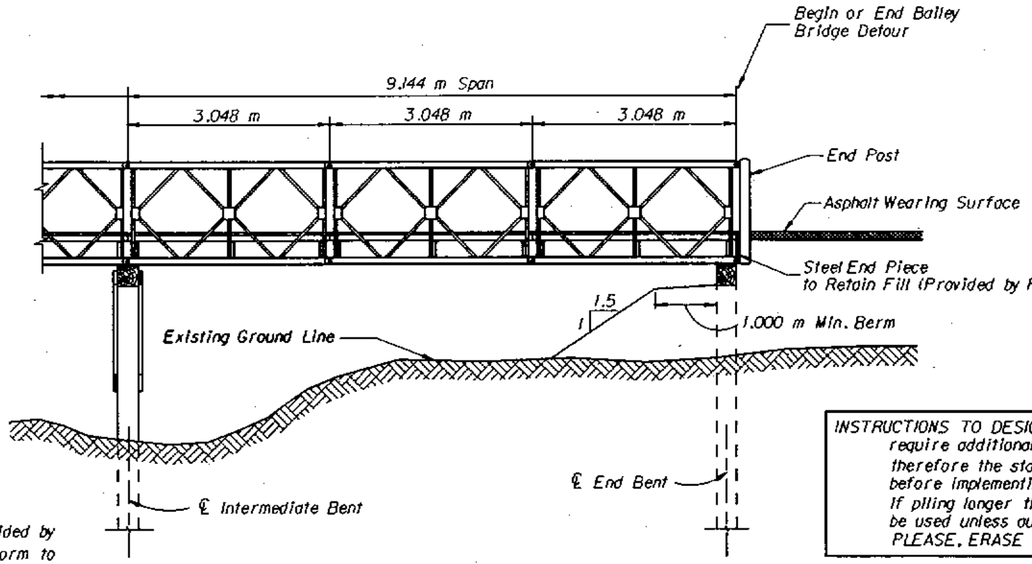
WIDE LOAD SIGNS: Contractor shall erect wide load signs (Maximum Width Load 3.350 m) at each end of the detour bridge and approaching intersections. Payment shall be included in the Contract Bid Price for detour. Contractor shall contact F.D.O.T. Road Use Permits Engineer in writing, informing him of the beginning and ending dates the detour will be in use. This information should be addressed to: Road Use Permits Engineer, Florida Department of Transportation, Mail Station 62, 605 Suwannee Street, Tallahassee, Florida 32399-0450.



BEARING PLATE DETAILS

NOTE: Contractor shall provide all Bearing Plates.

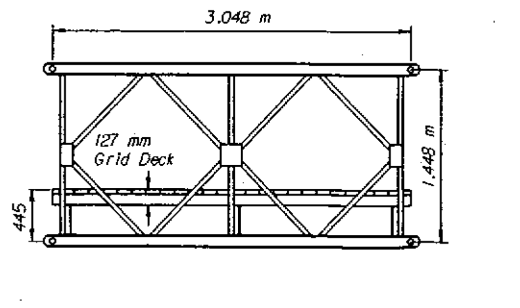
NOTE: Structural Steel provided by Contractor shall conform to ASTM A36M.



PART ELEVATION
(One 9.144 m Span)

INSTRUCTIONS TO DESIGNER: Tall Bents and/or scour conditions may require additional piles or bracing or different kind of piles; therefore the stability of the proposed bent shall be checked before implementing the design on this standard drawing. Also, if piling longer than 15 m is required, timber piling shall not be used unless authorized by the District Structures Engineer. PLEASE, ERASE THIS NOTE WHEN COMPLETING THIS DRAWING.

NOTE : All dimensions are in millimeters (mm), except as noted.



ELEVATION
(One 3.048 m Unit)

REVISIONS							
Date	By	Description	Date	By	Description		
			94R				

	Names	Dates
Drawn by	JSP/SHM	4-94
Checked by	JMD	4-94
Designed by		
Checked by		
Approved by	AJG	

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE:
TIMBER BENTS FOR BAILEY BRIDGE
(ONE LANE SINGLE SINGLE) (TYPE M-1 OR M-2)

PROJECT NAME:

Drawing No.
1 of 1

Index No.
310

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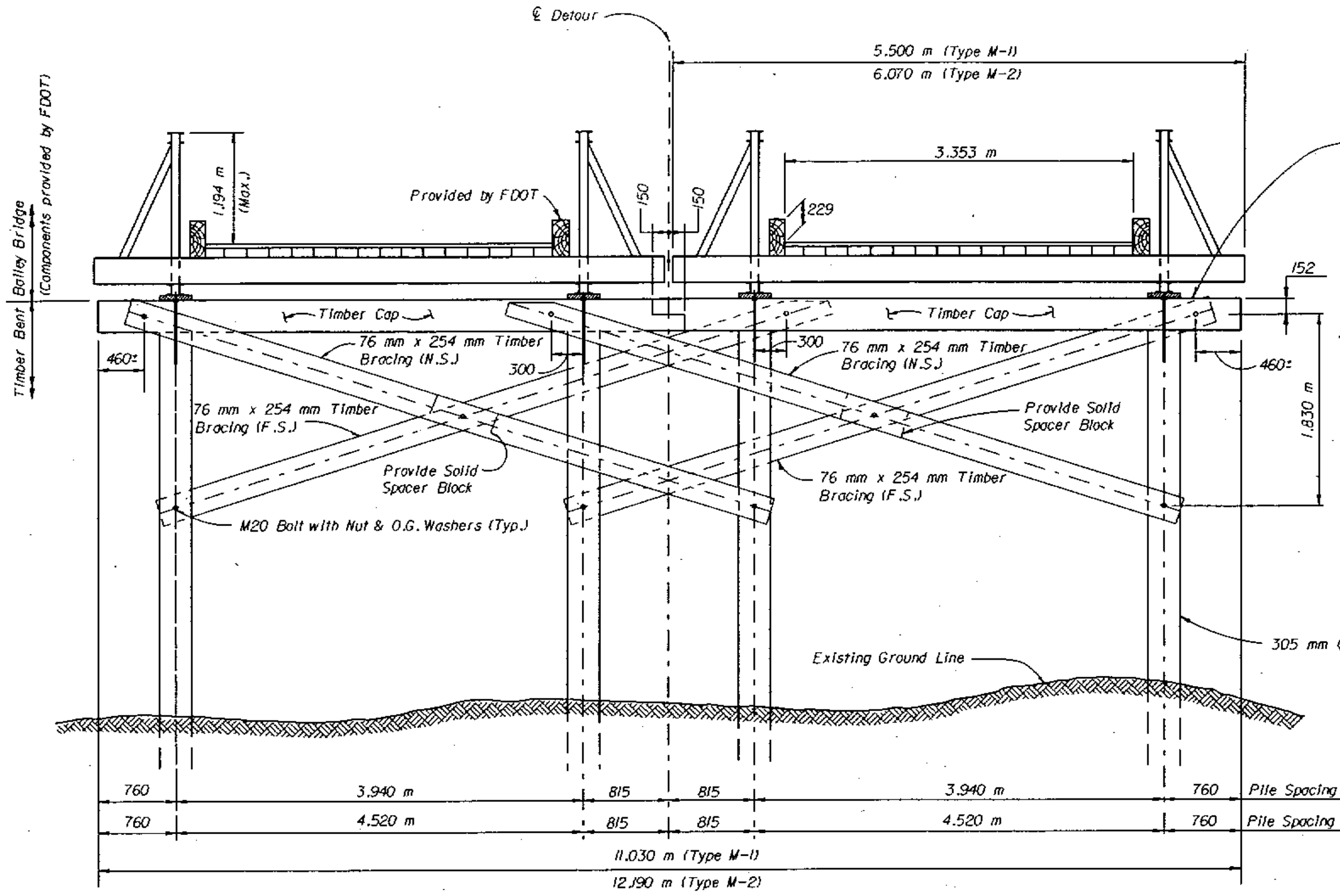
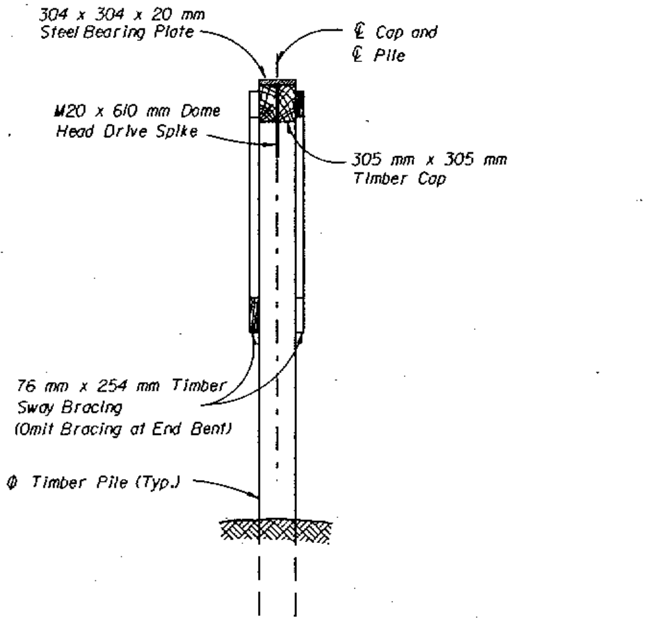
Fri Aug 19 08:14:13 1994

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



Typical Section



END VIEW
(Bent Only)

NOTE: Fasteners not included as Bailey bridge components shall be provided by contractor, shall conform to ASTM A307 and shall be galvanized per ASTM A153.

ITEM	SIZE	LENGTH		NO. REQ'D.	CUBIC METERS		CUBIC METERS	
					TYPE M-1		TYPE M-2	
		M-1	M-2		End Bent	Int. Bent	End Bent	Int. Bent
CAP	305 x 305	5.665 m	6.245 m	2	1.054	1.054	1.162	1.162
SWAY BRACING	76 x 254	6.550 m	7.010 m	4	—	0.506	—	0.541
SPACER BLOCK	254 x 305	600	600	2	—	0.093	—	0.093
				TOTAL	1.054	1.653	1.162	1.796

LIST OF STRUCTURAL TIMBER *

* NOTE: Quantities are for one bent only.

NOTES

DESIGN LOAD FOR PILES: 180 kN

LOADING: M18

STRUCTURAL TIMBER: Timber piles and structural timber may be treated or untreated at the option of the contractor. The contractor shall provide all structural timber and piles.

SPAN LENGTH: 9.144 m Maximum

PAYMENT: See Roadway Plans

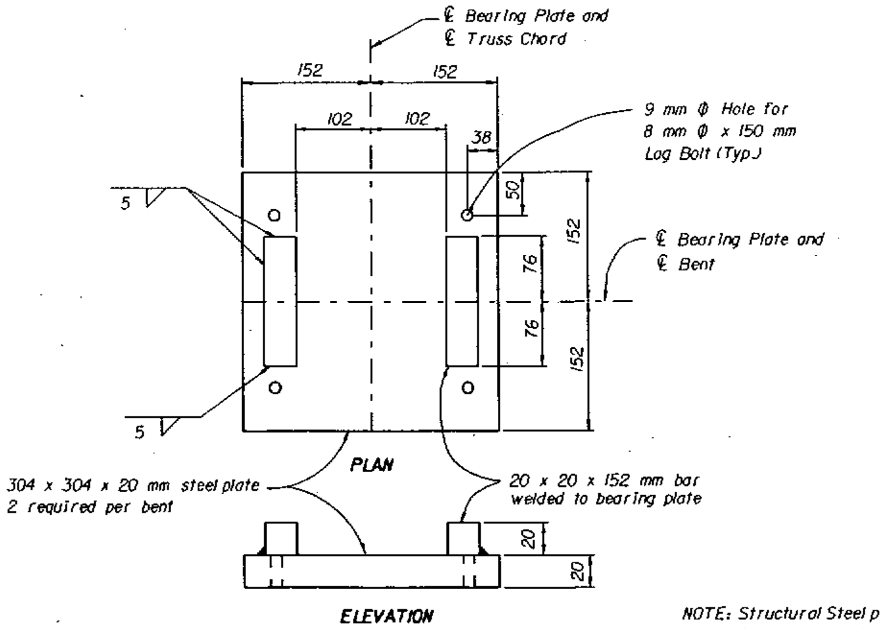
ERECTION: The contractor shall erect the detour bridge in accordance with the specifications, these plans, and the "Bailey Uniflote Handbook". Steel grid bridge flooring will be furnished in lieu of Bailey Bridge flooring. Steel grid bridge flooring shall be brought into full contact with each transom and then securely fastened at each transom. The Engineer shall approve final assembly of Bailey Bridge components prior to placing traffic on the bridge.

AVAILABILITY: Contractor shall pick-up and return all Bailey Bridge components at the FDOT maintenance yard located at No. 1 Park Street, Defuniak Springs, Florida 32433.

DAMAGE: Contractor shall be responsible for damage to the Bailey Bridge components which occurs while in his possession. FDOT Inspection of Bailey Bridge components will be upon return of the components to the FDOT maintenance yard.

DETOUR BRIDGE TYPE: The contractor shall be responsible for contacting the District Structures Engineer prior to driving piles or purchasing timber to determine if a Type M-1 or a Type M-2 Bailey Bridge will be furnished for this project.

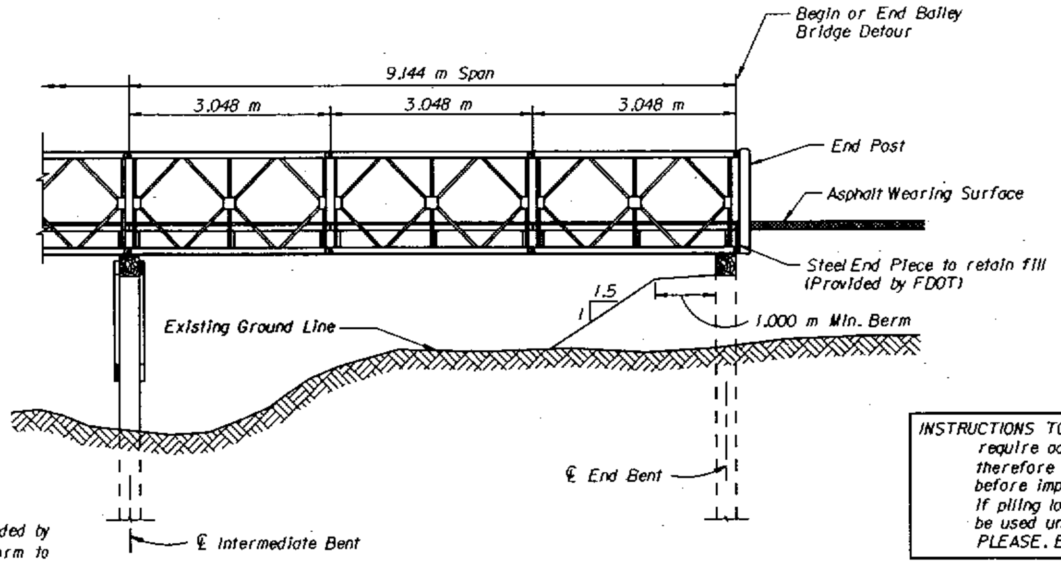
WIDE LOAD SIGNS: Contractor shall erect wide load signs (Maximum Width Load 3.350 m) at each end of the detour bridge and approaching intersections. Payment shall be included in the Contract Bid Price for detour. Contractor shall contact F.D.O.T. Road Use Permits Engineer in writing, informing him of the beginning and ending dates the detour will be in use. This information should be addressed to: Road Use Permits Engineer, Florida Department of Transportation, Mail Station 62, 605 Suwannee Street, Tallahassee, Florida 32399-0450.



BEARING PLATE DETAILS

NOTE: Contractor shall provide all Bearing Plates.

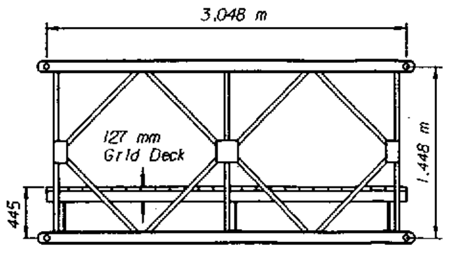
NOTE: Structural Steel provided by Contractor shall conform to ASTM A36M.



PART ELEVATION
(One 9.144 m Span)

INSTRUCTIONS TO DESIGNER: Tall Bents and/or scour conditions may require additional piles or bracing or different kind of piles; therefore the stability of the proposed bent shall be checked before implementing the design on this standard drawing. Also, if piling longer than 15 m is required, timber piling shall not be used unless authorized by the District Structures Engineer. PLEASE. ERASE THIS NOTE WHEN COMPLETING THIS DRAWING.

NOTE : All dimensions are in millimeters (mm), except as noted.



ELEVATION
(One 3.048 m Unit)

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Fri Aug 19 08:15:31 1994

REVISIONS							
Date	By	Description	Date	By	Description		
			94R				

	Names	Dates
Drawn by	JSP/SHM	4-94
Checked by	JMD	4-94
Designed by		
Checked by		
Approved by	AJG	

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE:
TIMBER BENTS FOR BAILEY BRIDGE
(TWO LANES SINGLE SINGLE) (TYPE M-1 OR M-2)

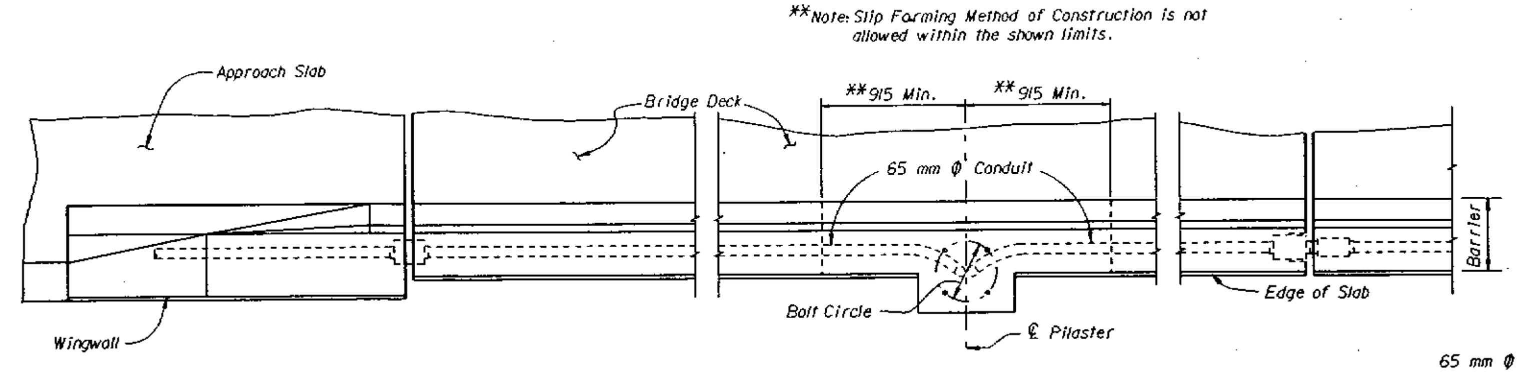
PROJECT NAME:

Drawing No.
1 of 1

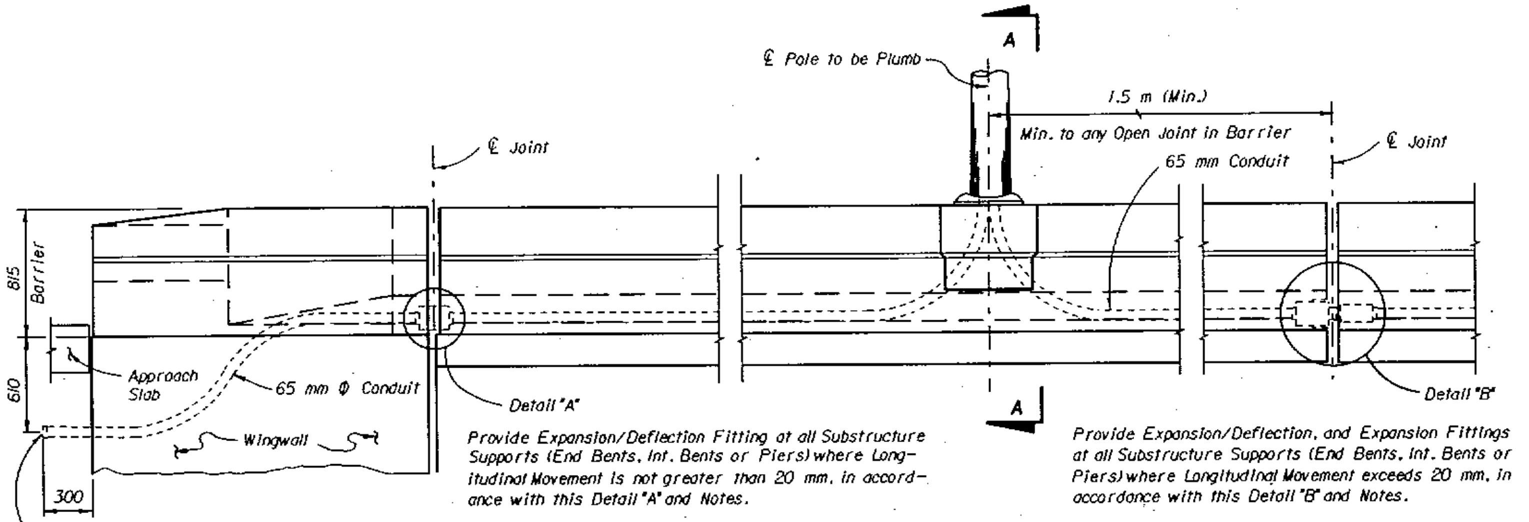
Index No.
311

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

**Note: Slip Forming Method of Construction is not allowed within the shown limits.



PLAN

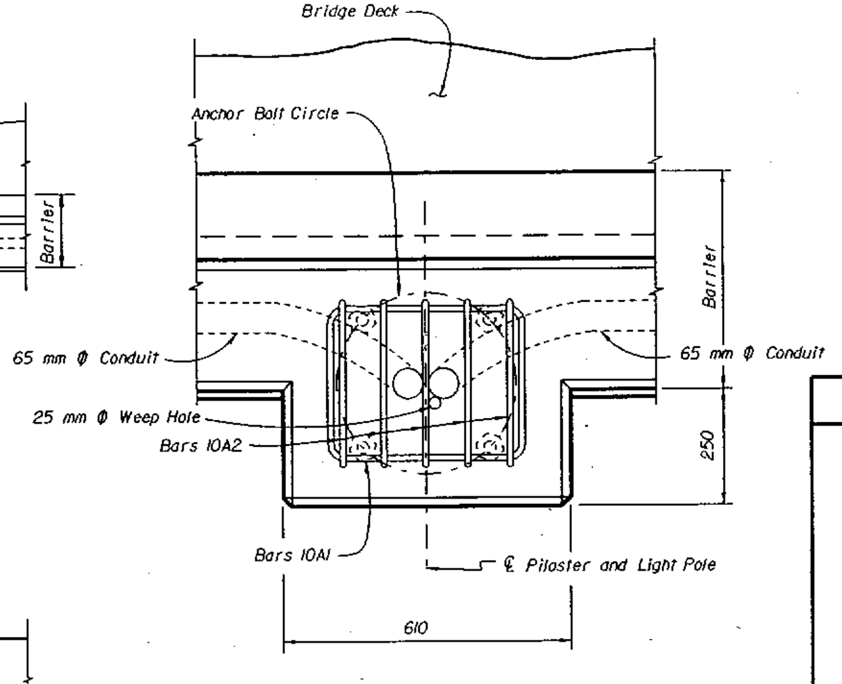


Provide Expansion/Deflection Fitting at all Substructure Supports (End Bents, Int. Bents or Piers) where Longitudinal Movement is not greater than 20 mm, in accordance with this Detail "A" and Notes.

Provide Expansion/Deflection, and Expansion Fittings at all Substructure Supports (End Bents, Int. Bents or Piers) where Longitudinal Movement exceeds 20 mm, in accordance with this Detail "B" and Notes.

When Lighting Installation is not included in Contract, Conduit is to be Stubbed out & Capped as noted.

ELEVATION



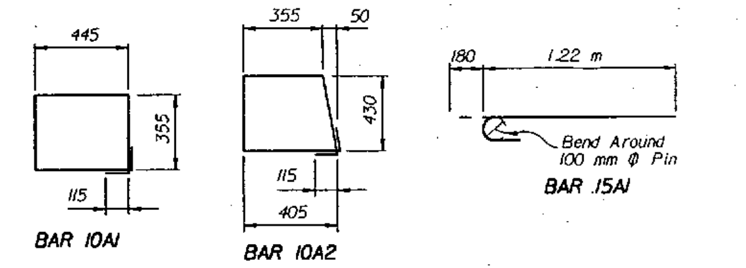
PILASTER PLAN VIEW

*BILL OF REINFORCING STEEL

MARK	SIZE	NO. REQ'D	LENGTH	BENDING
10A1	*10M	3	1.830 m	See Diagram
10A2	*10M	5	1.850 m	" "
15A1	*15M	22	1.400 m	" "
15P	*15M	10 Additional		
15V	*15M	10 Additional		

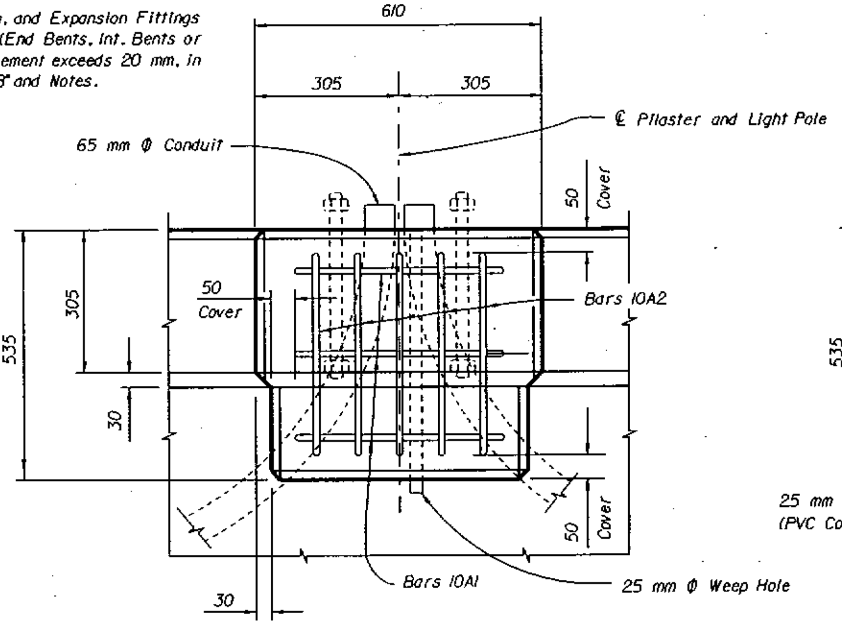
* Quantities and Bill of Reinforcing Steel are for one Pilaster.
Concrete Quantity Required: 0.076 m^3
Steel Quantity Required: 112.84 kg
For Details of Bars 15P and 15V, See Traffic Railing Barrier Sheet (Index 700).

BAR BENDING DIAGRAMS

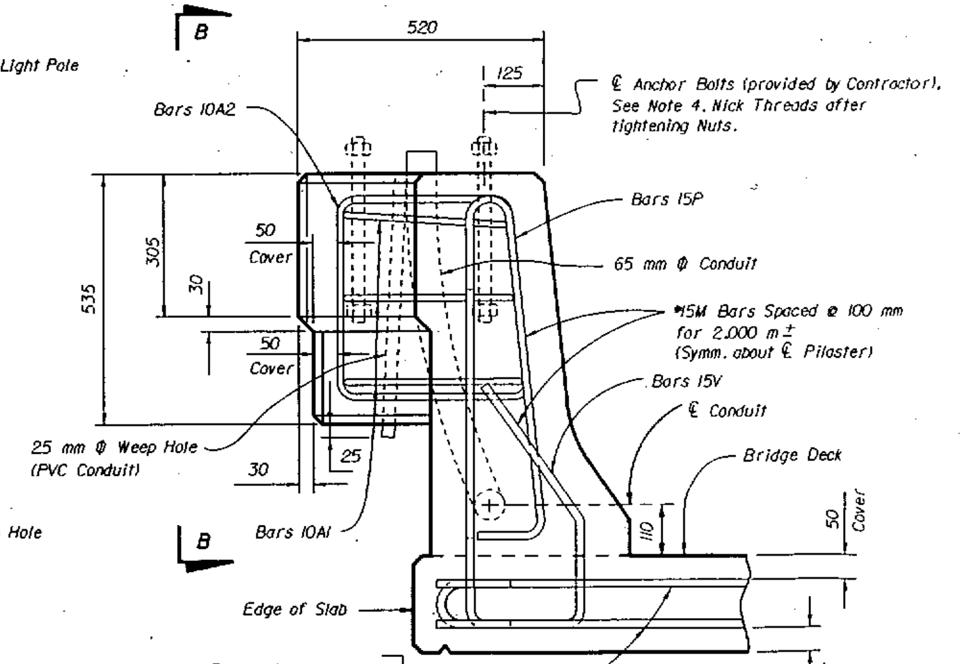


All Dimensions are out-to-out.

INSTRUCTIONS TO DESIGNER:
In order to minimize vibration of the poles due to traffic, locate pilasters near substructure supports.
PLEASE ERASE THIS NOTE WHEN COMPLETING THIS DRAWING



VIEW B-B



The Deck Slab area (symmetrical about Pilaster) shall be strengthened with the addition of 22 ~ 15A1 Bars (11 Top & 11 Bottom). The Bars shall be located as shown and spaced at approximately 180 mm centers.

SECTION A-A
(Longitudinal Reinforcement not shown)

NOTE: All dimensions are in millimeters (mm), except as noted.

NOTES

1. Additional Concrete and Reinforcing Steel required for the Construction of the Pilaster shall meet the same requirements as that of the Traffic Railing.
2. Top of Pilaster shall be finished to a truly level area.
3. Light Pole Pilaster and adjacent Traffic Rail Barrier and Superstructure Slab area shown on this sheet, are designed to resist Working Loads (in any direction) from the Light Pole applied at the top of the Pilaster as follows:
   - Longitudinal Moment = 40.7 kN · m
   - Transverse Moment = 8.1 kN · m
   - Longitudinal Shear = 4.4 kN
   - Transverse Shear = 0.9 kN
   - Torsion = 4.1 kN · m
   - Axial = 1.8 kN

   If the Light Pole provided applies Loads that are in excess of those shown above, the Contractor shall redesign the Pilaster and submit his Design to the Department for Review. The Contractor's Redesign shall be Prepared, Signed and Sealed by a Professional Engineer Registered in the State of Florida, and Qualified to perform the work.
4. The Contractor is responsible for providing Anchor Bolts that Effectively transmit the Light Pole Loads to the Pilaster and that fit the Reinforcing cage. Calculations Signed and Sealed by a Professional Engineer Registered in the State of Florida shall be submitted by the Contractor to the Department for Review and Approval showing that these Requirements have been met prior to Construction.
5. All Conduits shall be Rigid Galvanized Steel or Schedule 40 P.V.C. Bends in conduit shall be made using a radius not less than 270 mm.
6. Ends of Conduits shall be sealed in accordance with Article 630-3.4.
7. The Cost of Anchor Bolts shall be included in the Bid Price for Light Poles.
8. All Expansion/Deflection and Expansion Fittings shall be Metallic as provided by the following Manufacturers: Crouse-Hinds, Appleton, O. Z., or approved equal. If PVC conduits are provided, adapters to connect Non-Metallic to Metallic Conduit or Fitting shall also be provided as needed.
9. All Fittings shall be installed in accordance with the Manufacturer's instructions. As a minimum, an Expansion/Deflection Fitting shall be provided at each Open Joint in the Barrier at a Substructure (End Bent, Int. Bent or Pier) Support (See Detail "A"), and if the Longitudinal Joint Movement exceeds 20 mm, a suitable Expansion Fitting shall also be provided in series with the Expansion/Deflection Fitting (See Detail "B").
10. An Annular Open Space between the Concrete and the Expansion/Deflection Fitting shall be provided to assure proper fitting operation, and if necessary the Contractor may bend or adjust Reinforcement in the Traffic Barrier to allow Fitting installation.
11. PAYMENT: The cost of all Labor, Concrete and Reinforcing Steel required for the Construction of the Pilasters, and all Conduits, Fittings, Couplings, and all Miscellaneous Hardware required for the completion of the Electrical Installation within the limits shown on this sheet, shall be included in the Contractor's Bid Price for the Traffic Railing Barrier.

REVISIONS

Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	DCP/JSP	3-89
Checked by	AJG	3-89
Designed by	TJB	3-89
Checked by	AJG	3-89
Approved by	AJG	

ENGINEER OF RECORD:
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605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

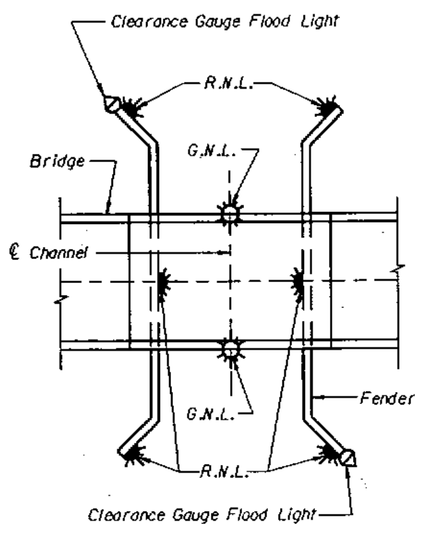
SHEET TITLE:
LIGHT POLE PILASTER
PROJECT NAME:

Drawing No.
1 of 1
Index No.
500

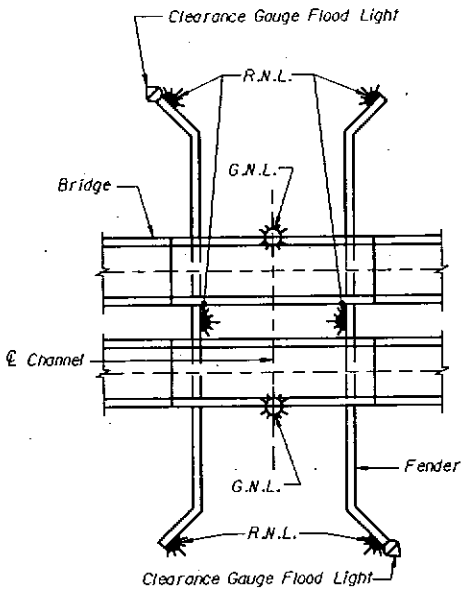
Thu Aug 25 16:16:16 1994 /usr5/strstand/met/500.dgn

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

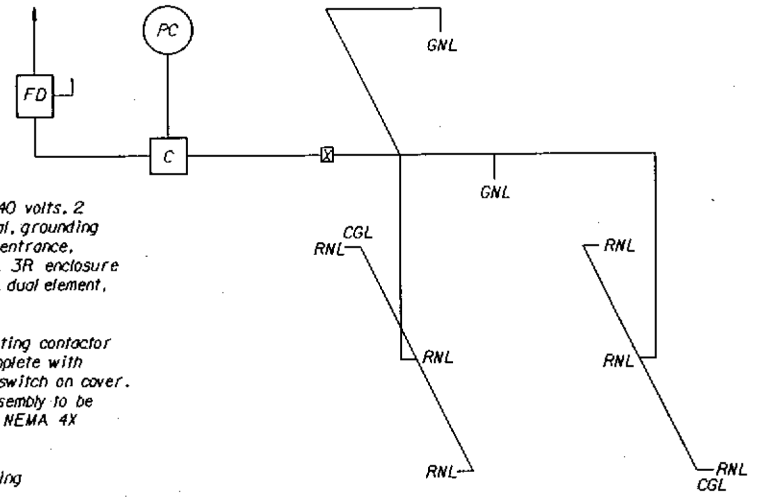
Note: See Fender System Drawings for actual configuration and location of fenders.



NAVIGATION LIGHT SYSTEM
SINGLE BRIDGE



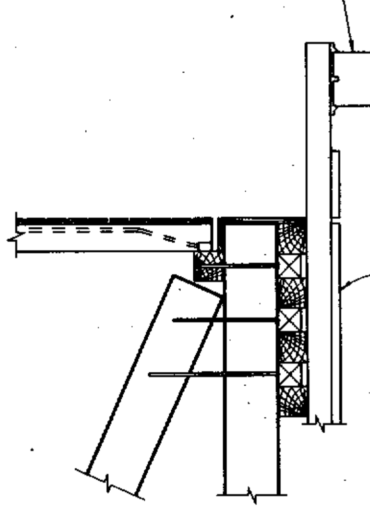
NAVIGATION LIGHT SYSTEM
DUAL BRIDGE



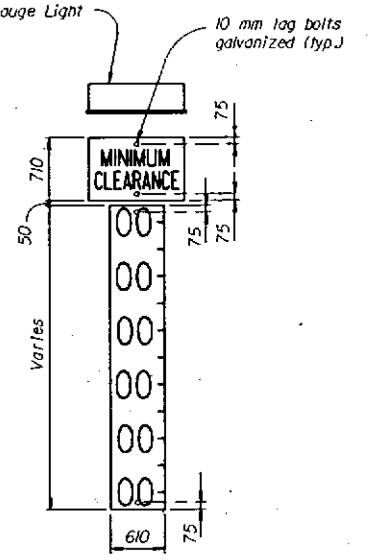
FD	Heavy duty, 30 ampere, 240 volts, 2 pole, 3 wire, solid neutral, grounding kit, suitable for service entrance, fused disconnect in NEMA 3R enclosure complete with 30 ampere, dual element, time delay fuses.
C	Two pole, 30 ampere, lighting contactor in NEMA 1 enclosure. Complete with Hand-Off-Auto selector switch on cover. The lighting contactor assembly to be installed in a padlockable NEMA 4X enclosure.
PC	Photocell control for lighting contactor.
RNL	Red Navigation Light
GNL	Green Navigation Light
CGL	Clearance Gauge Light
X	Step down transformer (Use if voltage is over 120 volts; at no time shall there be more than 120 volts on the fender).

TYPICAL LAYOUT OF NAVIGATION LIGHTS

New Navigation light to be mounted on top of new gauge timber as shown in the typical navigational lighting system on opposite corners of fender system.



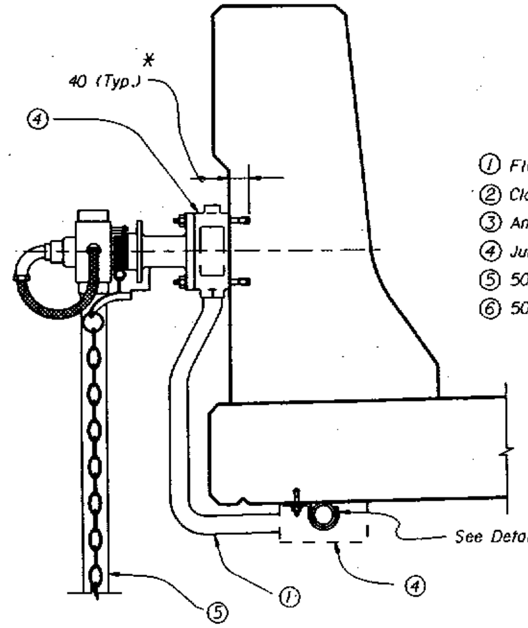
GAUGE LIGHT



CLEARANCE GAUGE DETAILS

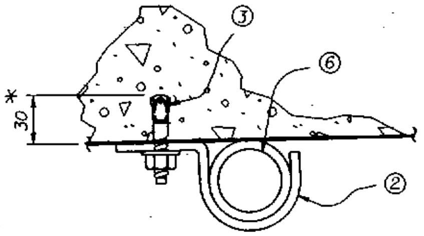
Numbered clearance gauge to be furnished by the Dept. of Transportation. Contractor shall verify in field that the clearance of the bridge agrees with readings of target. If not, the target shall be reset.

NOTE: All dimensions are in millimeters (mm), unless otherwise noted.

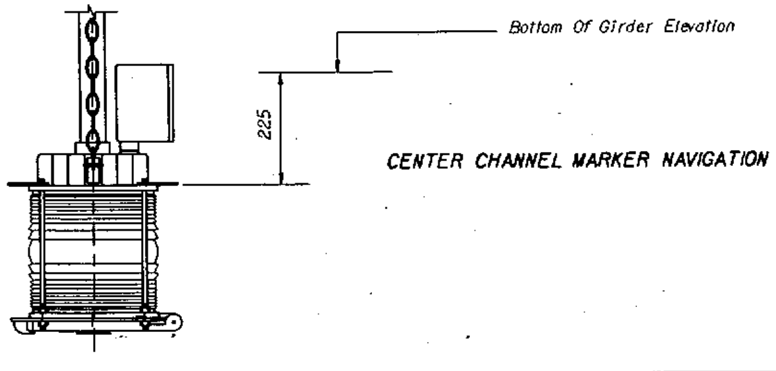


① Flexible Conduit
② Clamp (Conduit Support)
③ Anchor Bolt
④ Junction Box (If Required)
⑤ 50 mm Φ Pipe (Stainless Steel)
⑥ 50 mm Φ Conduit

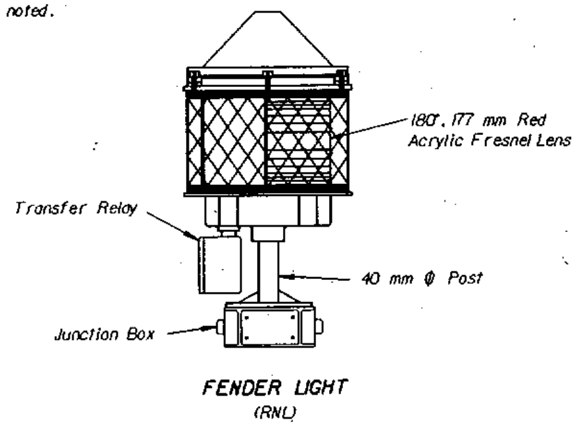
* Depth of Bolt Embedment



DETAIL 'A'



CENTER CHANNEL MARKER NAVIGATION LIGHT



FENDER LIGHT
(RNL)

CLEARANCE GAUGE LIGHT: The angle of illumination of the light shall be 15° to 30° depending on the fixture contour. Provide high power factor ballast using a 35 watt high pressure sodium lamp. The fixture enclosure shall be NEMA 3R cast aluminum housing with epoxy finish enamel. The light shall be rated for 110 volts.

GREEN NAVIGATION LIGHT (Center Channel Light): The fixture shall be 360°, 177 mm standard marine fresnel type. The fixture shall be equipped with a pivot mount and retrieval chain, so that when the base is mounted outside of the bridge barrier, the light can be serviced by reaching over the barrier from inside the bridge. The hanger stem shall be long enough so that the light can be seen from either side when the lantern is in the lowered position. The fixture shall be latchable in the down position.

RED NAVIGATION LIGHT (Fender Light): The fixture shall be 180°, 177 mm standard marine fresnel type, vandalproof with tamper-resistant fasteners. The fixture shall be mounted on a stainless steel post with stainless steel fittings at a height of 610 mm above the fender. Provide the fixture with an integral marine junction box.

NOTES

GENERAL: The Navigation Light System shall comply with the latest edition of the Code of Federal Regulations: Navigation and Navigable Waters, CFR 33 Part 118, Bridge Lighting and Other Signals. The installation shall comply with the latest edition of the National Electrical Code (NEC).

CONDUIT: Conduit shall be made from UV-resistant Polyvinyl Chloride (PVC), schedule 80, conforming with Underwriters Laboratories (UL) Section 651, NEC Section 347, and the National Electric Manufacturers Association (NEMA) TC-2.

FLEXIBLE CONDUIT: Liquidtight UV resistant flexible conduit shall be used to accomplish difficult bends, offsets, and for connection to fixtures. Liquidtight flexible conduit shall be supported every 1 meter maximum.

MOUNTING HARDWARE: All supporting hardware shall be manufactured from 300 series stainless steel. Conduit supports shall be provided every 1.5 meters maximum. Fasteners for concrete mounting shall be stud type expansion anchor bolts with single piece wedge, suitable for dynamic loading (vibration due to traffic). Fasteners for Conduit Support and Junction Boxes shall be 6.35 mm Φ, and shall provide minimum allowable working loads of 1.3 kN (Tension) and 2.6 kN (Shear). Fasteners for Center Channel Lights shall be 9.53 mm Φ, and shall provide minimum allowable working loads of 2.2 kN (Tension) and 4.4 kN (Shear). The fasteners shall be installed in drilled holes per manufacturer's recommendations. All other fasteners shall comply with the recommendations of the manufacturer of the equipment to be mounted.

THERMAL EXPANSION: Flexible couplings shall be installed at all substructure supports. Flexible coupling shall be forged brass with bronze braid covering and flexible brass inner core. The flexible coupling shall be able to accommodate a minimum movement equal to 1.5 times the maximum movement of the bridge joint, but not less than 40 mm.

JUNCTION BOXES: All junction and pull boxes shall be NEMA 4X (non-metallic) and shall be surface-mounted with stainless steel hardware. As a minimum, one box shall be located at one end of the Flexible Coupling, located at each substructure support.

CONDUCTORS:

DISTANCE (meters)	VOLTS	CONDUCTOR	TRANSFORMER
0 - 150	120 or 240	#10 AWG	N/A
150 - 300	240	#10 AWG	N/A
300 - 600	480	#10 AWG	2 KVA
600 - 1500	480	#8 AWG	2 KVA
1500 - 3000	480	#6 AWG	2 KVA
over 3000	480	#6 AWG	2 KVA

FIXTURES: All fixtures shall have a dual lamp and transfer relay with an indicating light to signal when the primary light burns out.

LAMPS: 100 watts, 32,000 hour @ 110 volts, extended life.

Thu Aug 25 16:17:12 1994 /usr5/strstand/met/510.dgn

REVISIONS

Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	SHM	3-94
Checked by	NRK	3-94
Designed by	—	—
Checked by	—	—
Approved by	AFR/AJG	

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
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LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO. | COUNTY | PROJECT NO.

SHEET TITLE: NAVIGATION LIGHT SYSTEM DETAILS
(FIXED BRIDGES)

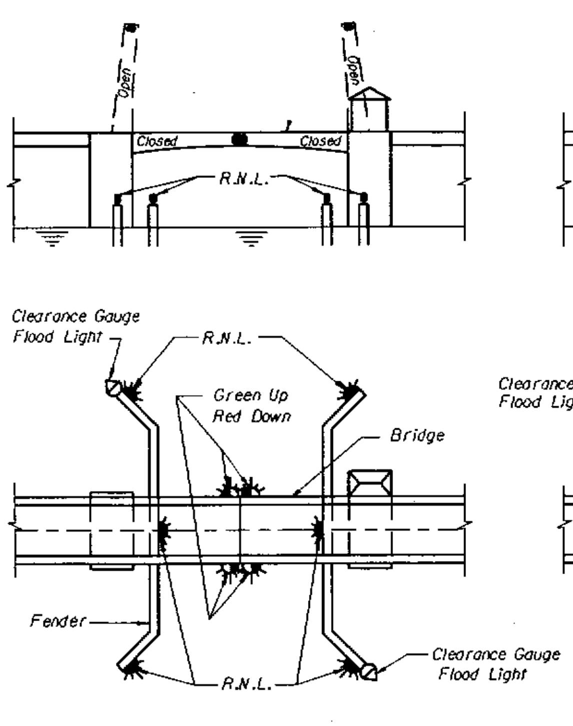
PROJECT NAME:

Drawing No.
1 of 1

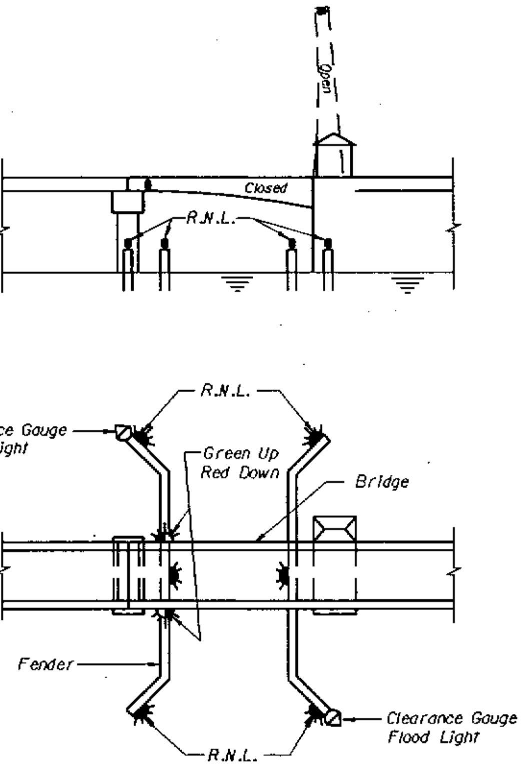
Index No.
510

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

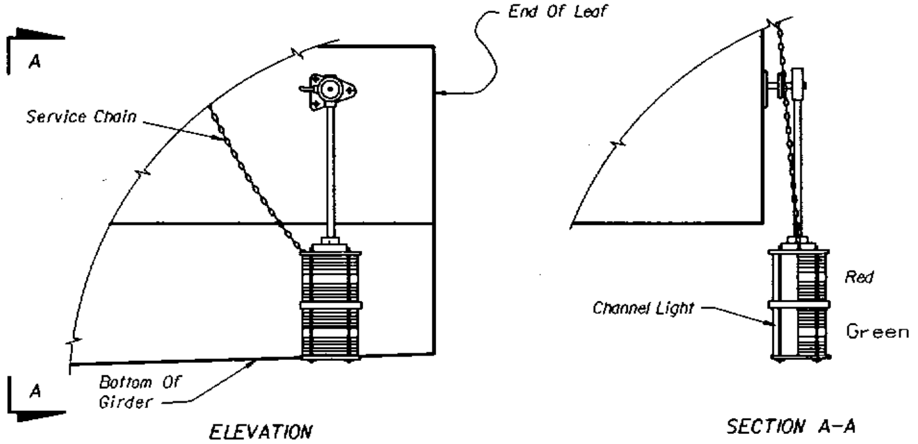
NOTE: See Fender System Drawings & Control House Drawings for their actual configuration & location.



NAVIGATION LIGHT SYSTEM
DOUBLE LEAF - SINGLE BRIDGE



NAVIGATION LIGHT SYSTEM
SINGLE LEAF - SINGLE BRIDGE

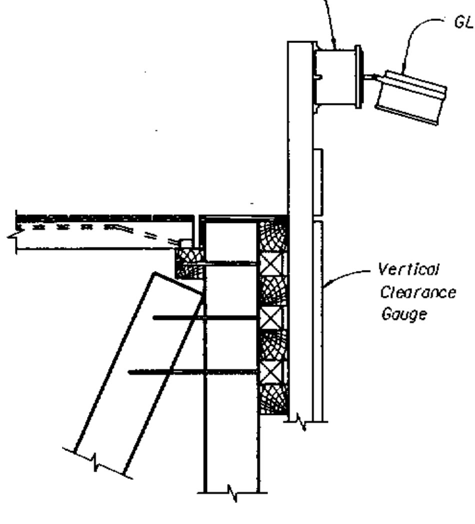


ELEVATION

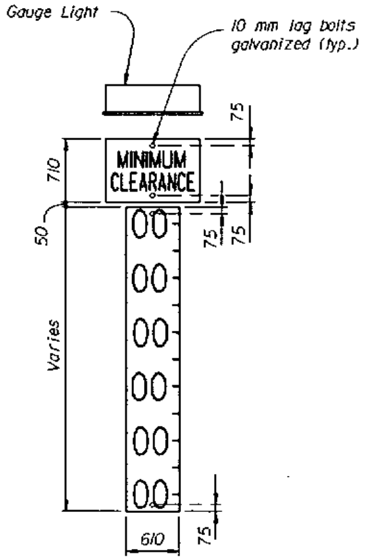
SECTION A-A

TYPICAL VERTICAL CLEARANCE LANTERN

New Navigaton light to be mounted on top of new gauge timber as shown in the typical navigational lighting system on opposite corners of fender system.



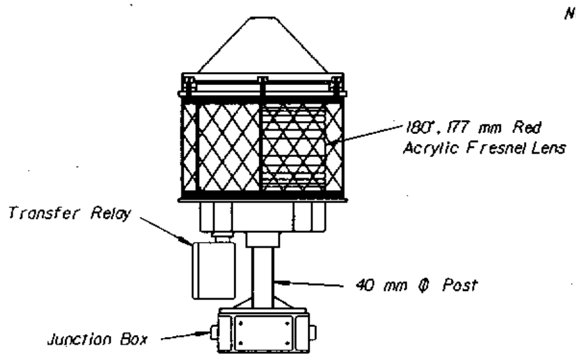
GAUGE LIGHT



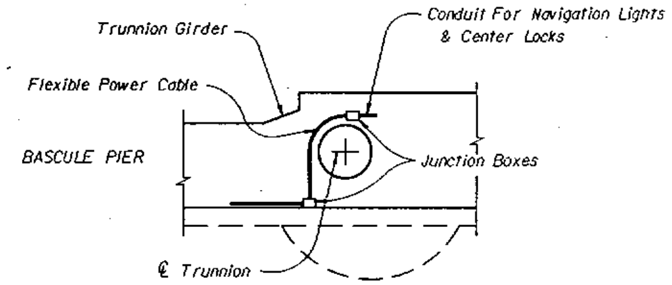
CLEARANCE GAUGE DETAILS

Numbered clearance gauge to be furnished by the Dept. of Transportation. Contractor shall verify in field that the clearance of the bridge agrees with readings of target. If not, the target will be reset.

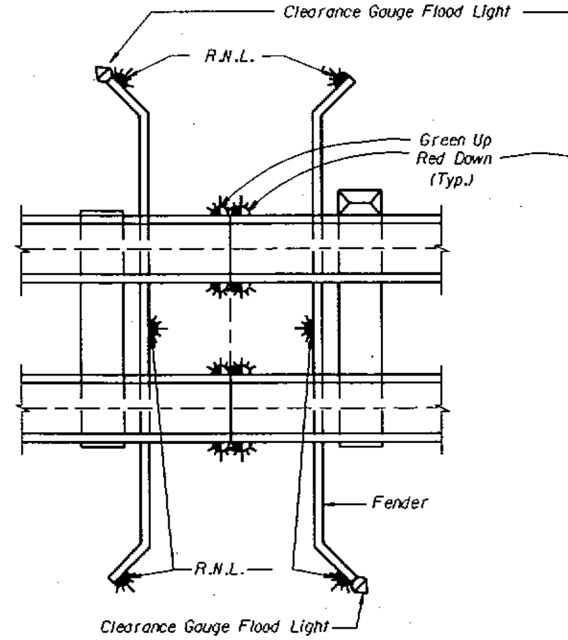
NOTE: All dimensions are in millimeters (mm), unless otherwise noted.



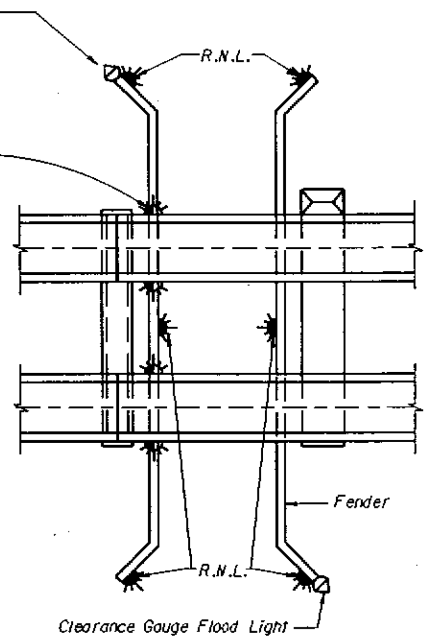
FENDER LIGHT
(RNL)



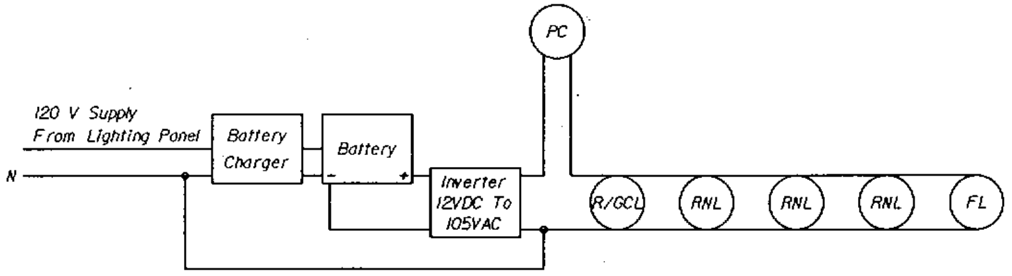
BASCULE BRIDGE FLEXIBLE
CABLE ARRANGEMENT



NAVIGATION LIGHT SYSTEM
DOUBLE LEAF - DUAL BRIDGES



NAVIGATION LIGHT SYSTEM
SINGLE LEAF - DUAL BRIDGES



1. Output voltage shall be adjustable between 100 & 115 volts.
2. Battery shall be sized for 12 hours of full, continuous load.
3. Inverter shall be sized for 2 times the calculated load.
4. Battery charger shall be rated to fully recharge batteries in 12 hours.
5. Equip each navigation light with a lamp-out indicator.

R/GCL - Red/Green Channel Light
FL - Clearance Gauge Floodlight
RNL - Red Navigation light
PC - Photocell

TYPICAL LAYOUT OF NAVIGATION LIGHTS

NOTES

GENERAL: The Navigation Light System shall comply with the latest edition of the Code of Federal Regulations: Navigation and Navigable Waters, CFR 33 Part 118, Bridge Lighting and Other Signals. The installation shall comply with the latest edition of the National Electrical Code (NEC).

FIXTURES: All fixtures shall have a dual lamp and tranfer relay with an indicating light to signal when the primary light burns out.

LAMPS: 100 watts, 32,000 hour @ 110 volts, extended life.

RED/GREEN NAVIGATION LIGHT (Channel Light): The fixture shall be: RED 180°, GREEN 180°, 177 mm standard marine fresnel type. The fixture shall be equipped with a pivot mount and retrieval chain so that when the base is mounted outside of the handrail post, the light can be serviced by reaching over the handrail from inside the bridge. The hanger stem shall be long enough so that the light does not extend below the bottom flange of the main girder.

RED NAVIGATION LIGHT (Fender Light): The fixture shall be 180°, 177 mm standard marine fresnel type, vandalproof with tamper-resistant fasteners. The fixture shall be mounted on a stainless steel post with stainless steel fittings at a height of 610 mm above the fender. Provide the fixture with an integral marine junction box.

CLEARANCE GAUGE LIGHT: The angle of illumination of the light shall be 15° to 30° depending on the fixture contour. Provide high power factor ballast using a 35 watt high pressure sodium lamp. The fixture enclosure shall be NEMA 3R cast aluminum housing with epoxy finish enamel. The light shall be rated for 110 volts.

Thu Aug 25 16:28:09 1994 /usr5/strstand/met/511.dgn

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	SHM	3-94
Checked by	NRK	3-94
Designed by	—	—
Checked by	—	—
Approved by	AFR/AJG	

ENGINEER OF RECORD:
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SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

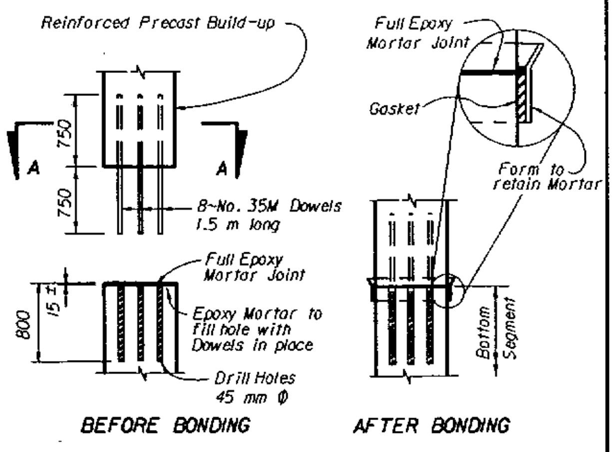
SHEET TITLE:
NAVIGATION LIGHT SYSTEM DETAILS
(BASCULE BRIDGES)

PROJECT NAME:

Drawing No.
1 of 1

Index No.
511

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



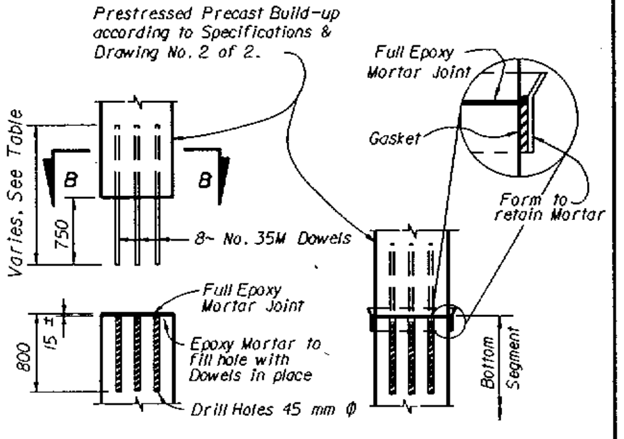
NOTE: Dowels shown for 610 Pile. See Sect. A-A for spacing and number of Dowels for each Pile.

REINFORCED PRECAST SPLICES
(Extensions 610 mm Min. but less than 1.525 m) (Not Drivable)

NOTE: The reinforced precast Build-up shall conform with the Specificatons and Section A-A. Spiral ties pitch shall be 150 mm Max.

TABLE OF BONDED SPLICE DATA		
Drivable Splice	Min. Splice Length	No. 35M Dowel Length
YES	3.050 m	2.3 m
NO *	1.525 m	1.5 m

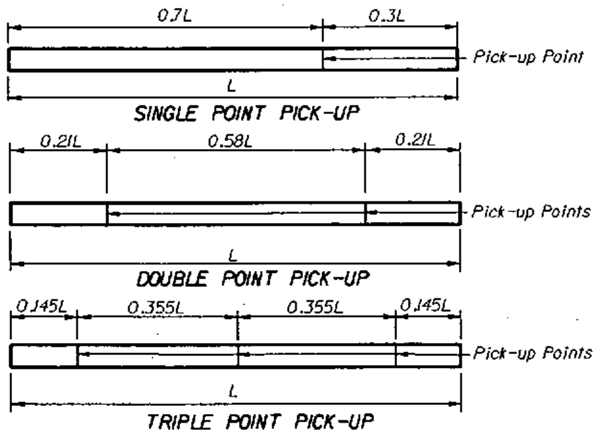
* For Splices less than 1.525 m (not Drivable), use the Reinforced Precast Splice.



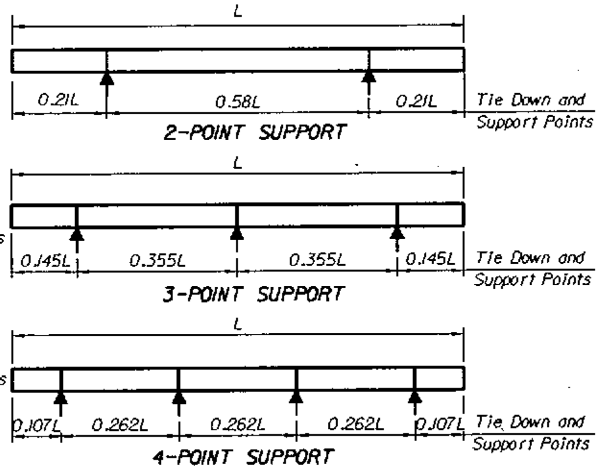
NOTE: Dowels shown for 610 Pile. See SECTION B-B for spacing & Number of Dowels for each Pile.

PRESTRESSED PRECAST SPLICES
(Extensions 1.525 m or longer)

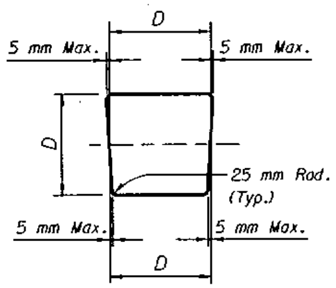
DETAILS FOR REINFORCED PRECAST & PRESTRESSED PRECAST PILE SPLICES



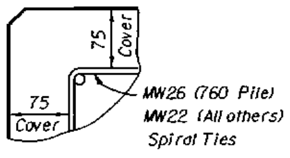
PILE PICK-UP DETAILS



STORAGE AND TRANSPORTATION SUPPORT DETAILS



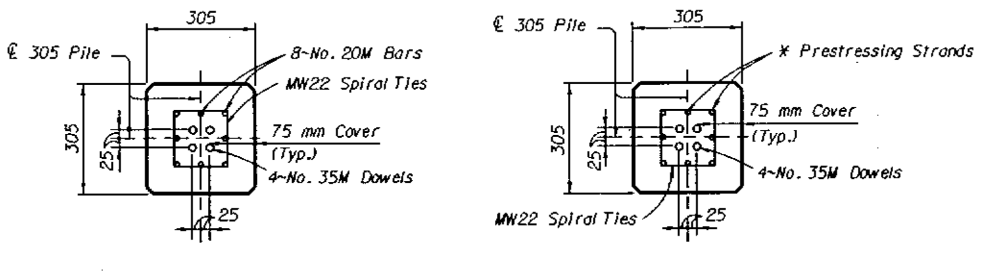
TYPICAL PILE SHAPE FOR MOLD FORMS



TYPICAL DETAIL SHOWING COVER DIMENSION

PILE SIZE	MAX. LENGTH "L" (METERS) FOR PICK-UP		
	SINGLE POINT	DOUBLE POINT	TRIPLE POINT
305	15	21	L > 21
355	17	23	L > 23
455	18	27	L > 27
510	20	29	L > 29
610	21	30	L > 30
760	27	38	L > 38

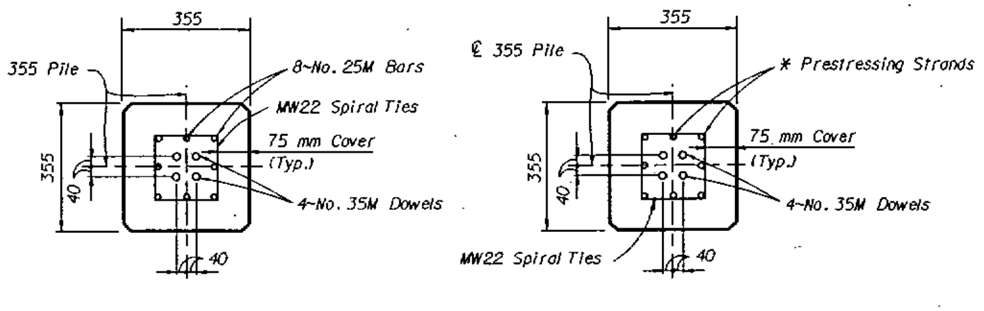
* For actual prestressing strand pattern, see Drawing 2 of 2.



SECTION A-A
(See Reinf. Precast Splice Detail)

SECTION B-B
(See Prstr. Precast Splice Detail)

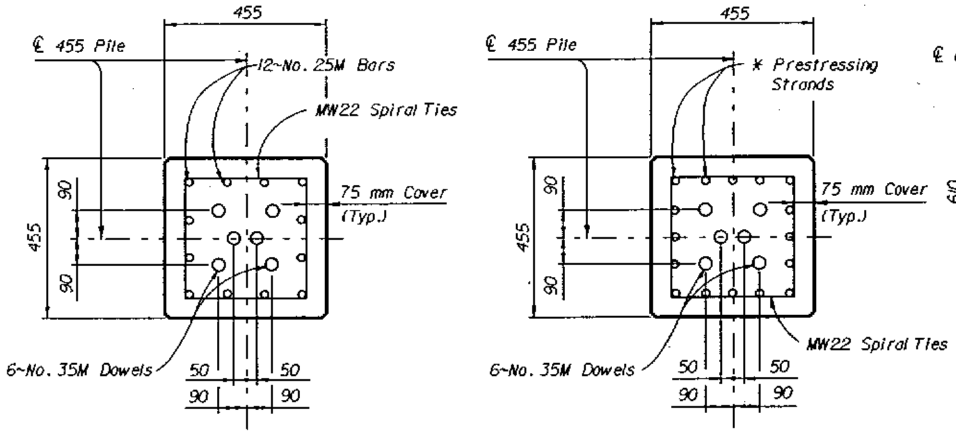
305 PILE



SECTION A-A
(See Reinf. Precast Splice Detail)

SECTION B-B
(See Prstr. Precast Splice Detail)

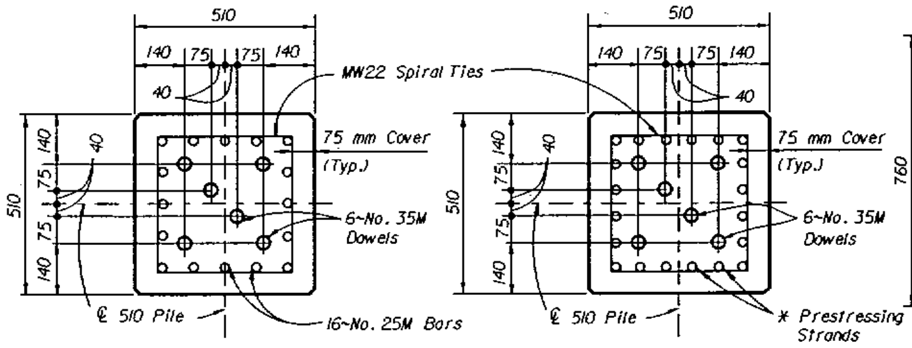
355 PILE



SECTION A-A
(See Reinf. Precast Splice Detail)

SECTION B-B
(See Prstr. Precast Splice Detail)

455 PILE



SECTION A-A
(See Reinf. Precast Splice Detail)

SECTION B-B
(See Prstr. Precast Splice Detail)

510 PILE

PILE NOTES

SPIRAL TIES: Each wrap of spirals shall be tied to at least two corner strands or bars. One turn required for spiral splices. Spirals shall be manufactured from cold-drawn steelwire meeting the requirements of ASTM A82.

PILE CUT OFF: Piles required to be cut off shall be sawcut at the pile cut off elevation shown on the plans with an abrasive saw. Unless otherwise noted on the plans, the cut shall be made to the depth into the pile necessary to cleanly cut through the prestressing strands.

CONCRETE CLASS: Concrete for all piles shall be Class Ⅴ (Special). Class Ⅴ (Special) Concrete shall conform to all requirements for Class Ⅴ Concrete except for the 28-day strength as noted below.

CONCRETE STRENGTH: The cylinder strength shall be 41 MPa minimum at 28 days and 28 MPa minimum at transfer of the Prestressing Force.

SPLICED PILES: Piles may be spliced in accordance with Section 455-5J2 of the standard specifications. Precast buildups shall be prestressed or reinforced according to pile details for the "head" section of the pile shown on this Standard. Drivable spliced piles may be driven after splice is two days old.

PICK-UP POINTS: Piles shall be marked at the pick-up points to indicate proper points for attaching handling lines.

STORAGE AND TRANSPORTATION: Piles shall be supported on adequate dunnage both in the precasting yard and at the jobsite and shall be supported and tied down during transit in accordance with the following schedule:

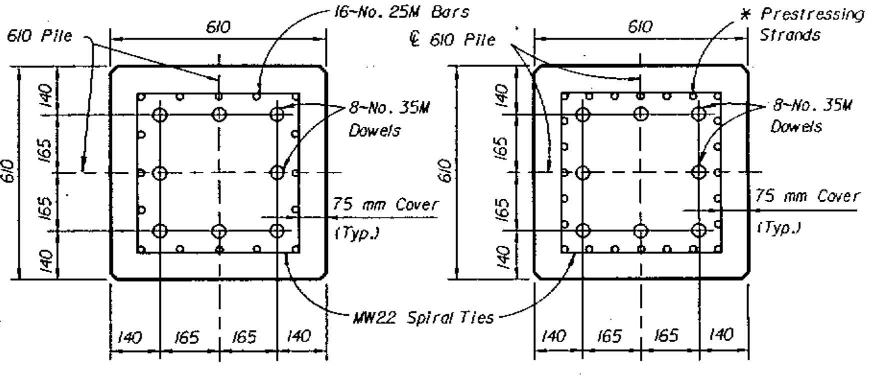
Type Pickup Required by Pile Length	Type Storage and Transportation Support Detail
Single or Double	2,3 or 4 Point Support
Triple	3 or 4 Point Support

REINFORCING STEEL: All Reinforcing Steel except spiral ties shall be ASTM A615M, Grade 400.

STRAND NOMENCLATURE:

S.R. = Stress Relieved Strand
L.R.S. = Low-Relaxation Strand
No. 13 (Spec.): $A_s = 107.74$ mm ^{2}
No. 14 (Spec.): $A_s = 126.45$ mm ^{2}

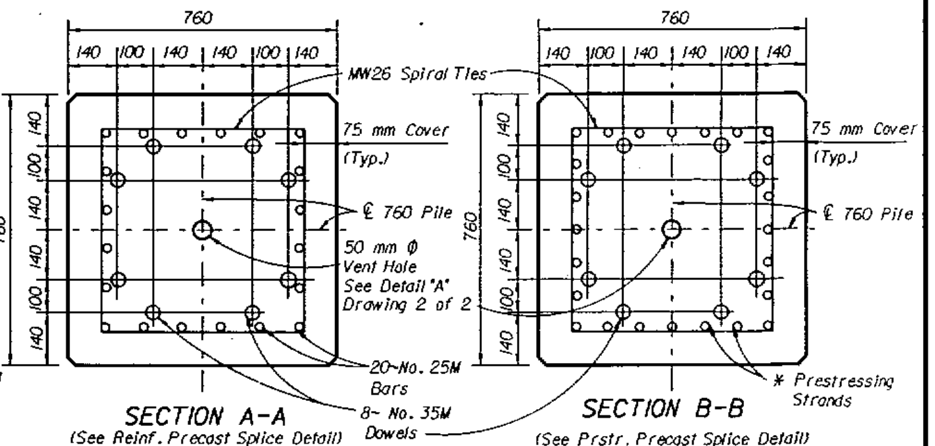
NOTE: All dimensions are in millimeters (mm), except as noted.



SECTION A-A
(See Reinf. Precast Splice Detail)

SECTION B-B
(See Prstr. Precast Splice Detail)

610 PILE



SECTION A-A
(See Reinf. Precast Splice Detail)

SECTION B-B
(See Prstr. Precast Splice Detail)

760 PILE

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	TGA	1-91
Checked by	AJG	5-91
Designed by		
Checked by		
Approved by	NICHOLS/AJG	

ENGINEER OF RECORD:

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LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE:
305, 355, 455, 510, 610 AND 760
PRESTRESSED CONCRETE PILES

PROJECT NAME:

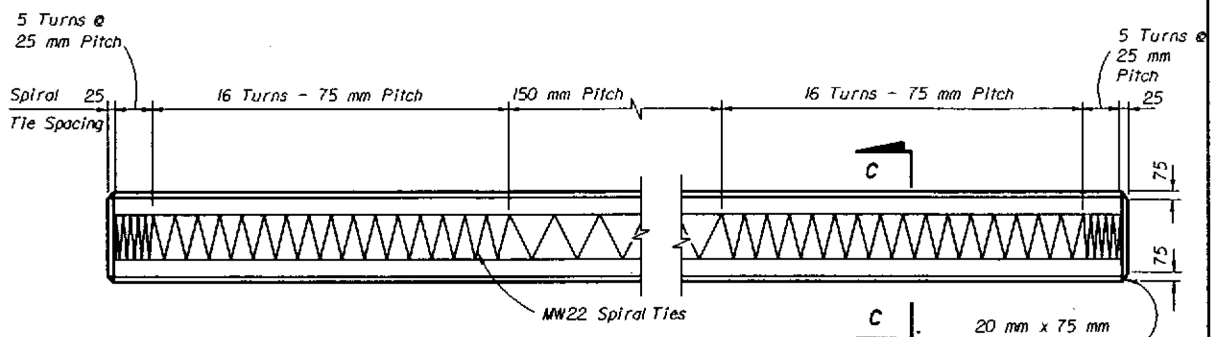
Drawing No.
1 of 2

Index No.
600

/usr5/stfstand/met/600.dgn

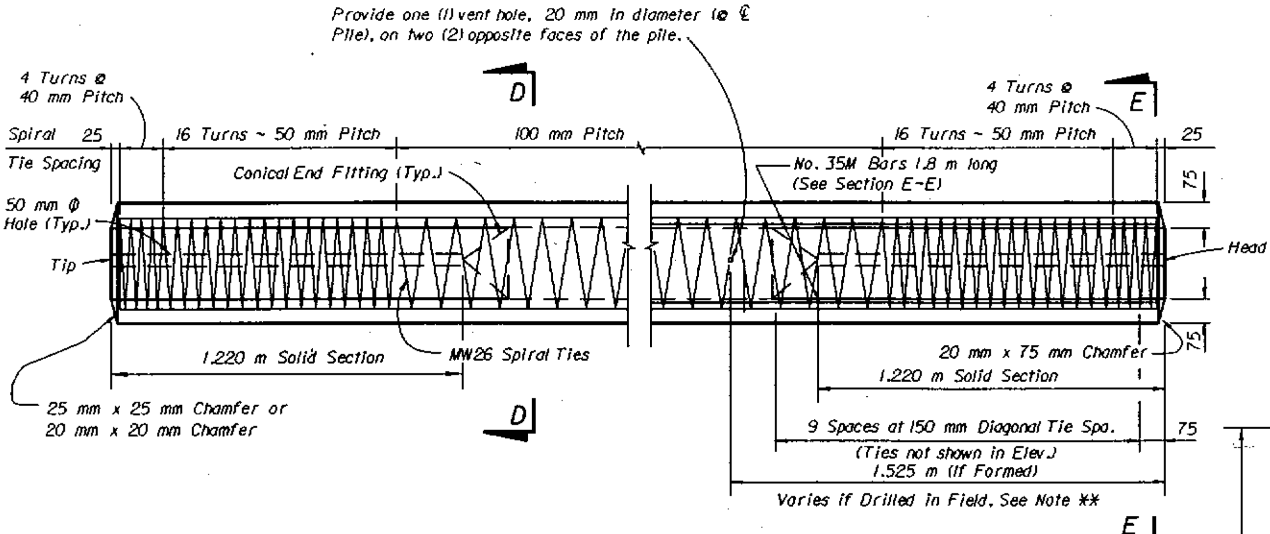
Mon Aug 15 13:37:47 1994

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



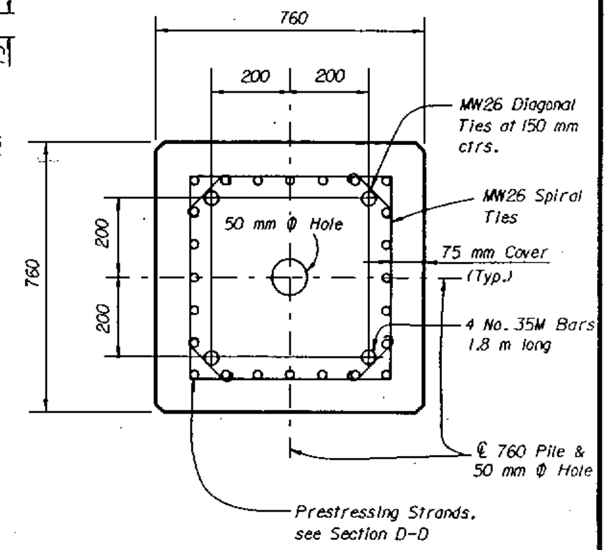
ELEVATION

(All Piles except 760 Piles)



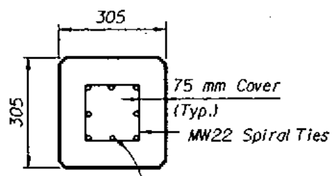
ELEVATION

(760 Piles)



SECTION E-E

760 PILE

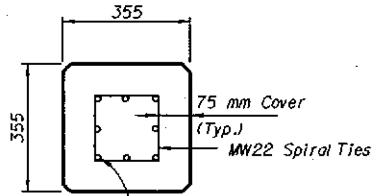


ALTERNATE STRAND PATTERN ***

- 8 ~ No. 11, Grade 1860 LRS at 96.5 kN each
- 8 ~ No. 13, Grade 1725 SR at 107.2 kN each
- 12 ~ No. 9, Grade 1860 LRS at 65.8 kN each
- 12 ~ No. 9, Grade 1860 SR at 69.4 kN each

SECTION C-C

305 PILE

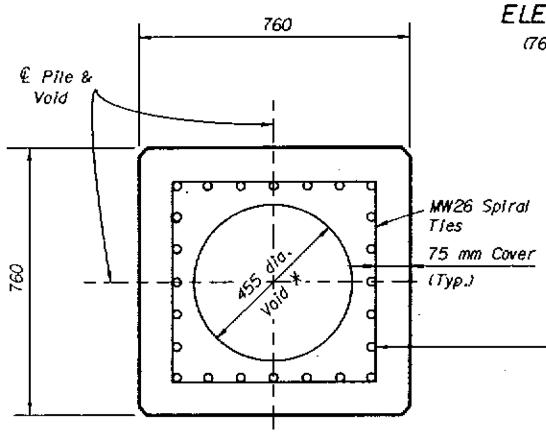


ALTERNATE STRAND PATTERN ***

- 8 ~ No. 13, Grade 1860 (Spec.) LRS at 133.4 kN each
- 8 ~ No. 13, Grade 1860 (Spec.) SR at 140.4 kN each
- 8 ~ No. 13, Grade 1860 LRS at 131.2 kN each
- 12 ~ No. 11, Grade 1860 SR at 94.3 kN each
- 12 ~ No. 13, Grade 1725 SR at 100.5 kN each
- 16 ~ No. 9, Grade 1860 SR at 71.5 kN each

SECTION C-C

355 PILE



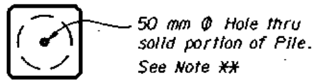
ALTERNATE STRAND PATTERN ***

- 20 ~ No. 14, Grade 1860 (Spec.) LRS at 171.7 kN each
- 20 ~ No. 14, Grade 1860 LRS at 172.9 kN each
- 24 ~ No. 13, Grade 1860 (Spec.) LRS at 143.7 kN each
- 24 ~ No. 14, Grade 1860 SR at 155.7 kN each
- 24 ~ No. 14, Grade 1860 (Spec.) SR at 156.6 kN each
- 28 ~ No. 13, Grade 1860 LRS at 125.0 kN each
- 28 ~ No. 13, Grade 1860 (Spec.) SR at 134.3 kN each

* Omit Void at Ends, see Elevation View

SECTION D-D

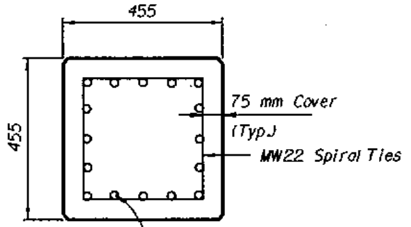
760 PILE



DETAIL 'A'

** NOTE:

The 455 mm Ø Void in the pile shall be positively vented to water or air after the final pile installation. If the 20 mm Ø vents are included in the pile cut-off section, two (2) new holes, 20 mm in diameter , shall be drilled on two (2) opposite faces of the pile below the bottom of substructure elevation. If the pile void can not be vented directly to water or air, then venting shall be provided by the use of a 25 mm Ø P.V.C. conduit through the 50 mm Ø hole(s) or the 455 mm Ø void to the outside. This might involve venting through a substructure cap or column. Voids between segments of spliced piles shall be connected by 50 mm Ø hole(s). See Detail "A".

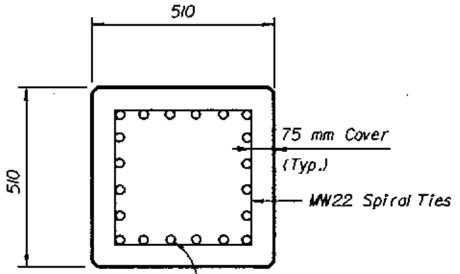


ALTERNATE STRAND PATTERN ***

- 12 ~ No. 13, Grade 1860 (Spec.) LRS at 144.1 kN each
- 12 ~ No. 14, Grade 1860 SR at 156.1 kN each
- 16 ~ No. 13, Grade 1860 SR at 119.2 kN each
- 20 ~ No. 11, Grade 1860 LRS at 89.0 kN each
- 20 ~ No. 11, Grade 1860 SR at 93.9 kN each
- 24 ~ No. 9, Grade 1860 LRS at 72.5 kN each.

SECTION C-C

455 PILE

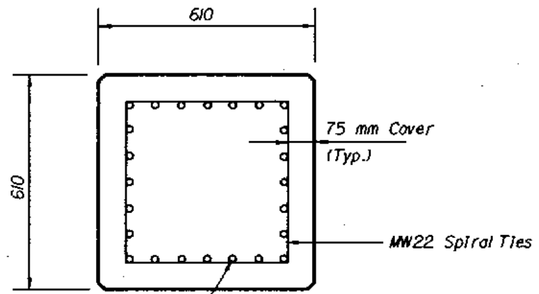


ALTERNATE STRAND PATTERN ***

- 16 ~ No. 13, Grade 1860 LRS at 133.4 kN each
- 16 ~ No. 13, Grade 1860 (Spec.) SR at 140.4 kN each
- 20 ~ No. 13, Grade 1860 SR at 117.9 kN each
- 24 ~ No. 11, Grade 1860 LRS at 91.2 kN each
- 24 ~ No. 11, Grade 1860 SR at 96.7 kN each

SECTION C-C

510 PILE



ALTERNATE STRAND PATTERN ***

- 20 ~ No. 13, Grade 1860 (Spec.) LRS at 150.4 kN each
- 20 ~ No. 14, Grade 1860 SR at 161.4 kN each
- 20 ~ No. 14, Grade 1860 (Spec.) SR at 164.8 kN each
- 24 ~ No. 13, Grade 1860 LRS at 129.0 kN each
- 24 ~ No. 13, Grade 1860 (Spec.) SR at 140.4 kN each

SECTION C-C

610 PILE

*** NOTE:

Any of the given Alternate Strand Patterns may be utilized. The strands shall be located as follows : place one strand at each corner and place the remaining strands equally spaced between the corner strands.
The Total strand pattern shall be concentric with the nominal concrete section of the pile.

NOTE:

CONTRACTOR OPTION: The 760 mm pile may be cast SOLID by omitting the 455 mm void, the 50 mm holes, and the 20 mm vent holes. In this event, the Contractor shall submit for approval calculations and a proposed strand configuration that provide net prestressing after losses equal to 6.89 MPa.

NOTE: All dimensions are in millimeters (mm), except as noted.

/usr5/strstand/met/600.dgn

Mon Aug 15 13:38:42 1994

REVISIONS

Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	TGA	1-91
Checked by	AJG	5-91
Designed by		
Checked by		
Approved by	NICHOLS/AJG	

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FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE:
305, 355, 455, 510, 610 AND 760
PRESTRESSED CONCRETE PILES

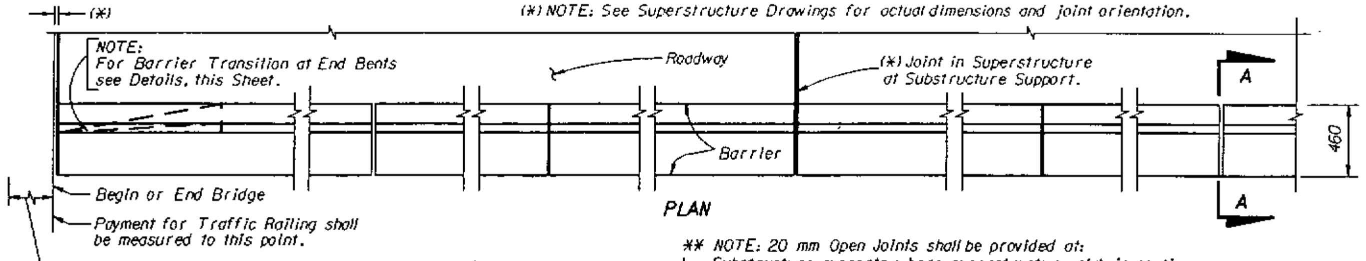
PROJECT NAME:

Drawing No.
2 of 2

Index No.
600

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

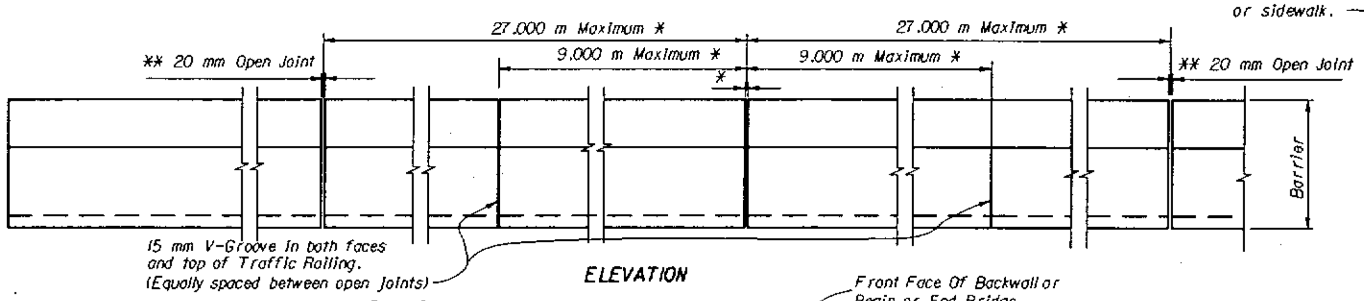
(*) NOTE: See Superstructure Drawings for actual dimensions and joint orientation.



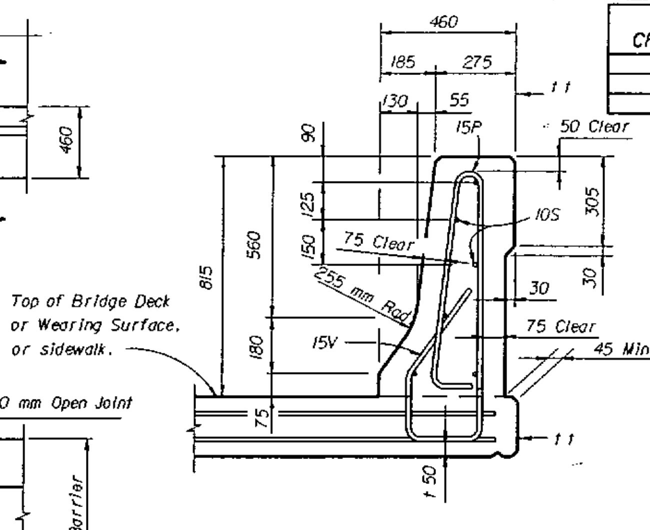
PLAN

End Bent Wing Post shall be paid for at the Contract Unit Price for Concrete (Substructure) and Reinforcing Steel (Substructure).

** NOTE: 20 mm Open Joints shall be provided at:
1 - Substructure supports where superstructure slab is continuous.
2 - Midspan where span length exceeds 27.000 meters.
3 - Intermediate locations (equally spaced) between midspan and substructure support where span length exceeds 54.000 meters.



ELEVATION

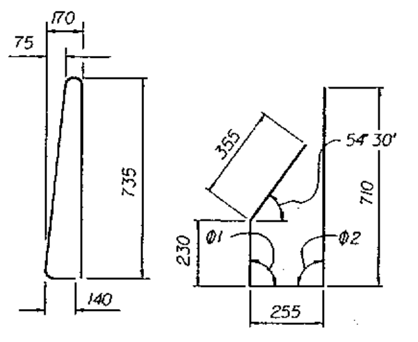


TYPICAL SECTION THRU TRAFFIC RAILING

† For Slabs 200 mm thick or less. If Slab is thicker than 200 mm or Barrier is located on a Retaining Wall, embed Bar 15V 155 mm.

† † Where Barriers of adjacent bridges are to be built back to back, the outside vertical plane of the Barrier and Slab may coincide if so shown on the Superstructure Plans.

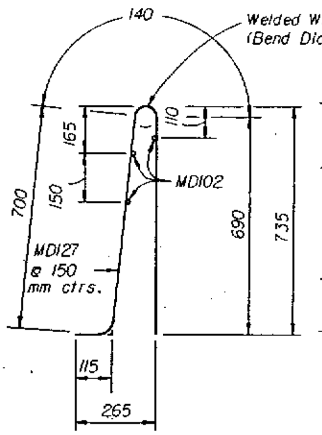
ROADWAY CROSS-SLOPE	LOW GUTTER		HIGH GUTTER	
	Ø1	Ø2	Ø1	Ø2
0% to 2%	90°	90°	90°	90°
2%+ to 6%	93°	87°	87°	93°
6%+ to 10%	96°	84°	84°	96°



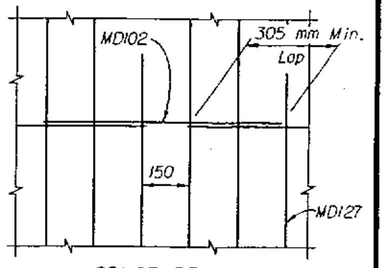
BAR 15P
(No. 15M)

BAR 15V
(No. 15M)

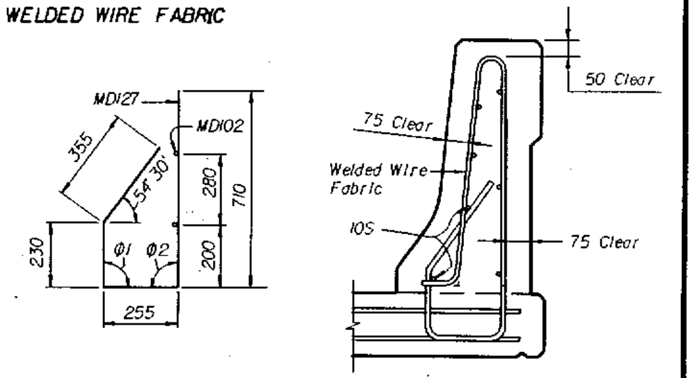
BENDING DIAGRAMS



WELDED WIRE FABRIC



SPLICE DETAIL
(Between WWF Sections)

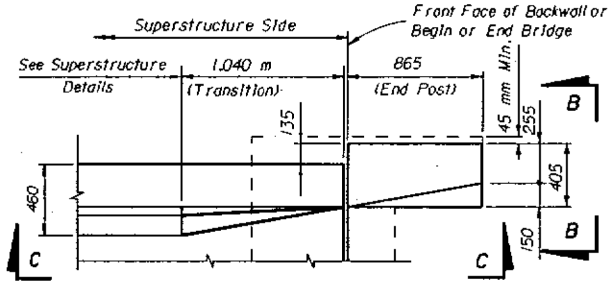


ALTERNATE REINFORCING DETAILS

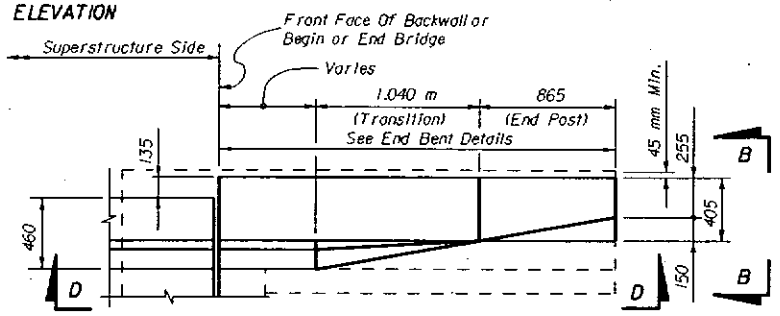
The Contractor may utilize Welded Wire Fabric in lieu of all Bars 15P and 15V and Four (4) of the Bars 10S. Welded Wire Fabric shall conform to ASTM A497.

BAR BENDING NOTES

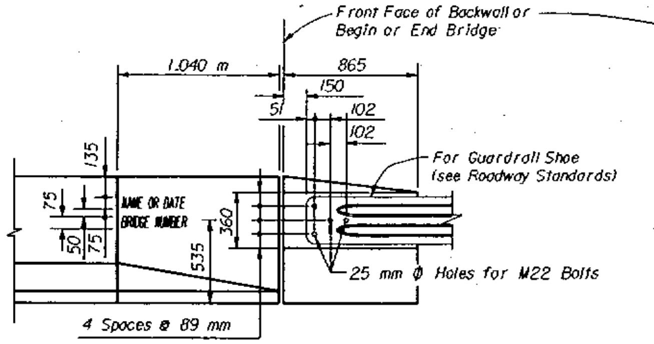
1. All bar dimensions in the bending diagrams are out to out.
2. Bars 15P and 15V shall be bent around a pin diameter = 65 mm.
3. The 230 mm and the 710 mm vertical dimensions shown for Bar 15V are based on a bridge slab 200 mm thick or greater and without raised sidewalk or wearing surface. If the slab thickness is less than 200 mm decrease these dimensions by an amount equal to the difference in the thicknesses: and if a wearing surface or a raised sidewalk is to be provided, increase the dimensions by an amount equal to the wearing surface thickness or sidewalk thickness.
4. Reinforcement for Barrier on Retaining Wall shall be the same as detailed above for a 200 mm slab with Ø1 = Ø2 = 90°.



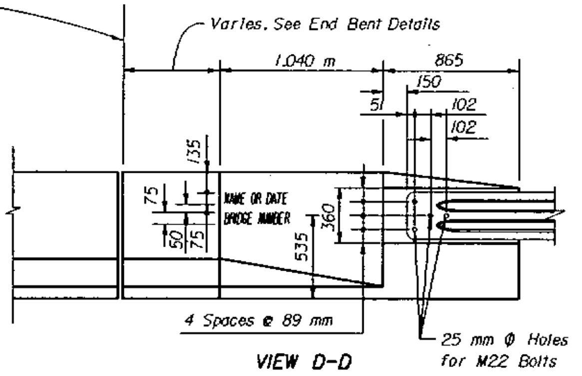
PLAN
(See Note 'A')



PLAN
(See Note 'B')



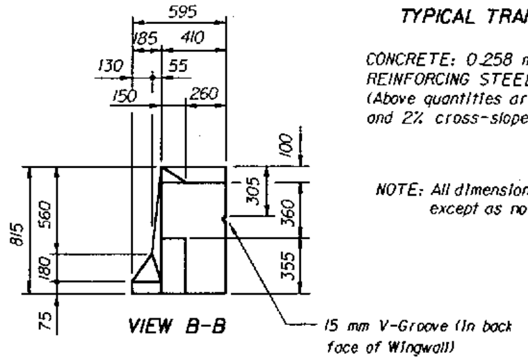
VIEW C-C



VIEW D-D

NOTE 'A':
If Barrier Transition is required and the Superstructure Depth (thickness) is 635 millimeters or less, the Transition shall be provided on the Superstructure side. To accommodate the Transition on the Superstructure the Reinforcement (Bars 15V, 15P & 10S) will need adjusting. The 355 mm portion of Bars 15V shall be bent to fit and the horizontal 255 mm portion along the bottom shall be cut at the center.

NOTE 'B':
If Barrier Transition is required and the Superstructure Depth (thickness) exceeds 635 millimeters, the Barrier Transition shall be provided on the End Bent side.



VIEW B-B

TYPICAL TRAFFIC RAILING QUANTITIES

CONCRETE: 0.258 m^3 per meter.
REINFORCING STEEL: 29.67 kg per meter.
(Above quantities are based on 200 mm slab and 2% cross-slope).

NOTE: All dimensions are in millimeters (mm), except as noted.

REINFORCING STEEL NOTES

Place longitudinal steel in bottom of slab as shown above to facilitate tying bars 15V. Do not add reinforcing steel for tie purposes.

All vertical reinforcing steel in Traffic Railing shall be No. 15M Bars spaced at 200 mm c.c. and all longitudinal reinforcing steel shall be No. 10M Bars. At all open joints all reinforcing shall have 50 mm minimum cover. At all construction joints Bars 10S (No. 10M) may be continuous or spliced. All splices in Bars 10S shall be 405 mm minimum.

TRAFFIC RAILING NOTES

CONCRETE AND REINFORCING STEEL: See General Notes.

PAYMENT: Traffic Railing on Bridges shall be paid for per linear meter (Item No. 2400-148-1), which shall include all Concrete and Reinforcing Steel. Traffic Railing shall be measured along the centerline of the top surface of the concrete barrier.

MARKERS: Markers recording the elevation shall be placed on top of the Traffic Railing at End Bents. On bridges longer than 30.0 m, one marker shall be placed at each end of the bridge. On bridges 30.0 m or less, one marker shall be placed at one end of the bridge only. Markers are to be furnished by the Florida Department of Transportation and installed by the Contractor. The cost of installing the markers shall be included in the Contract Unit Price for Traffic Railing (Barrier).

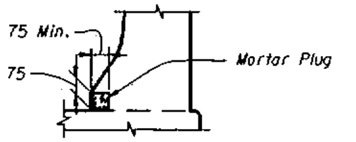
TRAFFIC RAIL CONSTRUCTION: The contractor may construct the railing by the use of stationary removable forms or by the use of slip forms without altering the rail dimensions shown above.

SUPERELEVATED BRIDGES: At the option of the Contractor, Traffic Railing and End Bent Wing Posts on superelevated bridges, may be constructed perpendicular to the roadway surface. The cost of modifications shall be at the Contractor's expense.

BOLTS: Bolts, Nuts, and Washers shall be hot dip galvanized in accordance with ASTM A153.

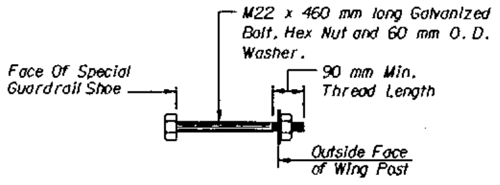
RETAINING WALL: If the Barrier is to be provided on a retaining wall, the Barrier Section shall be as shown above. Other details such as transition for guardrail attachment, maximum spacing of 20 mm open joint and 15 mm V-Groove shall also apply. See Wall Plans for Payment.

NAME AND BRIDGE NUMBER: The Name and Bridge Number to be placed on the Traffic Railing shall be seen on the driver's right when approaching bridge. The date is to be placed on the driver's left when approaching the bridge. The date shall be the year the bridge is constructed. Black plastic letters and figures 75 mm in height, as approved by the Engineer, may be used in lieu of letters and figures formed by 10 mm V-Grooves. V-Grooves shall be formed by preformed letters and figures.



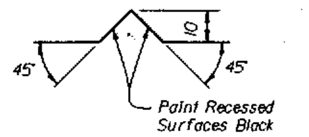
SECTION A-A

NOTE: When open joint in Barrier is not coincident with joint in the superstructure, the lower 75 mm portion of the open joint shall be plugged by filling with mortar in accordance with Article 400-15 J.



BOLT DETAIL

NOTE: The Cost of Bolts is to be included in the Contract Unit Price for Guardrail



SECTION THRU RECESSED "V" GROOVE
TO FORM INSCRIBED LETTERS
AND FIGURES

Thu Aug 18 09:30:11 1994 g:0strs0pltfiles0700.snp

REVISIONS

Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	WEH	2-89
Checked by	AJG	2-89
Designed by	—	—
Checked by	—	—
Approved by	AJG	

ENGINEER OF RECORD:

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LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

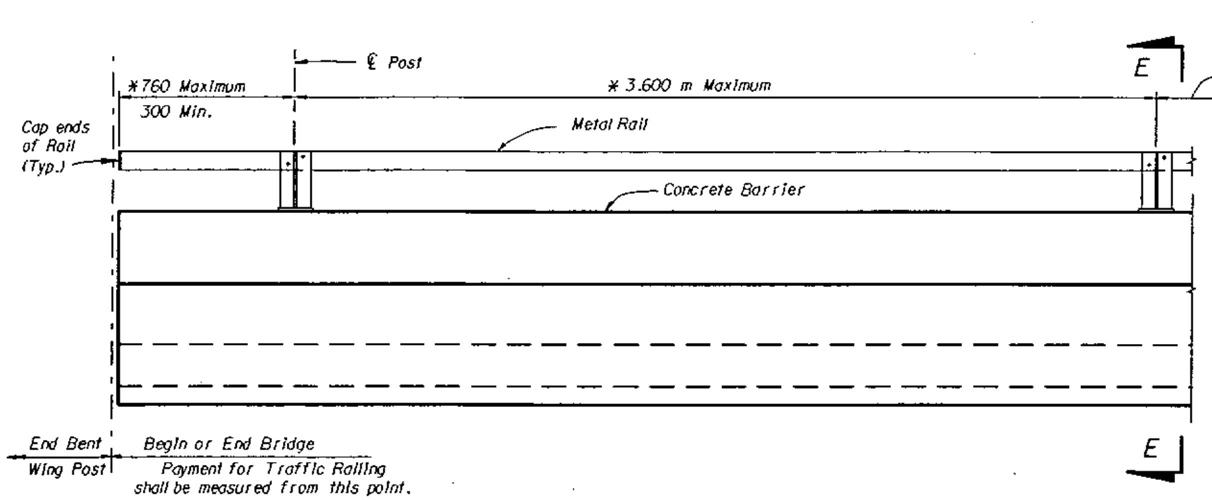
SHEET TITLE:
TRAFFIC RAILING BARRIER

Drawing No.
1 of 1

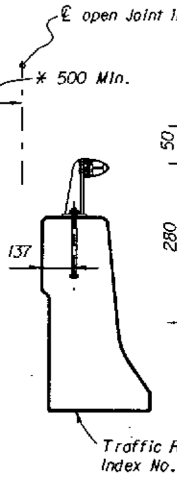
PROJECT NAME:

Index No.
700

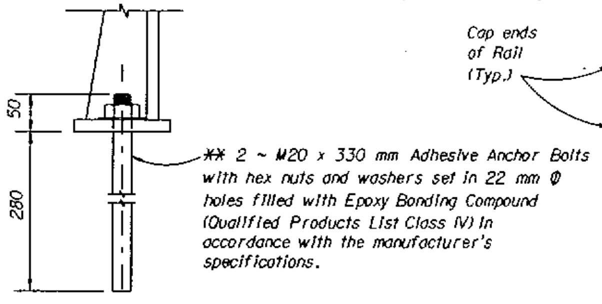
FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



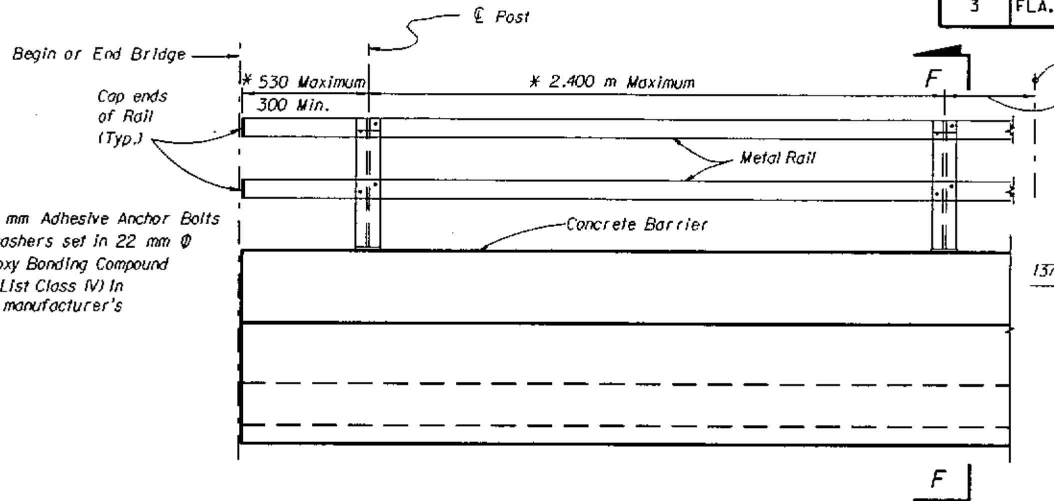
ELEVATION ~ SIDEWALK BARRIER RAIL



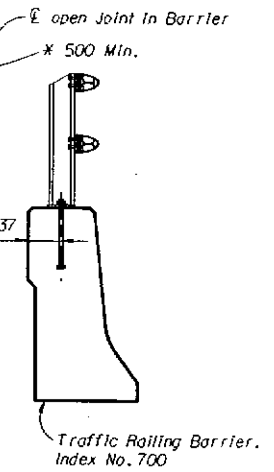
SECTION E-E



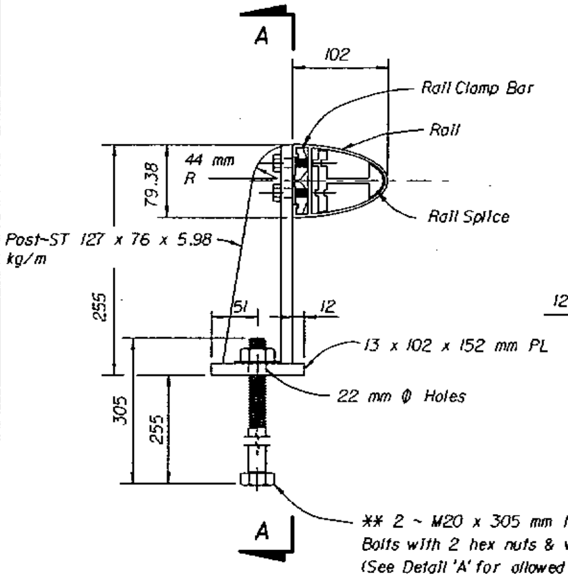
DETAIL 'A'



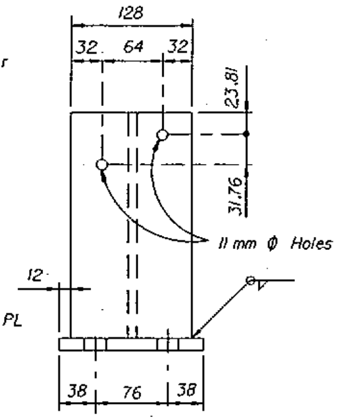
ELEVATION ~ BICYCLE BARRIER RAIL



SECTION F-F



SECTION THRU RAIL



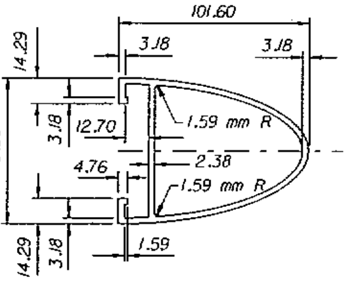
SECTION A-A

SIDEWALK BARRIER RAIL

** NOTE: After nuts have been tightened the threads shall be nicked to prevent removal of nuts.

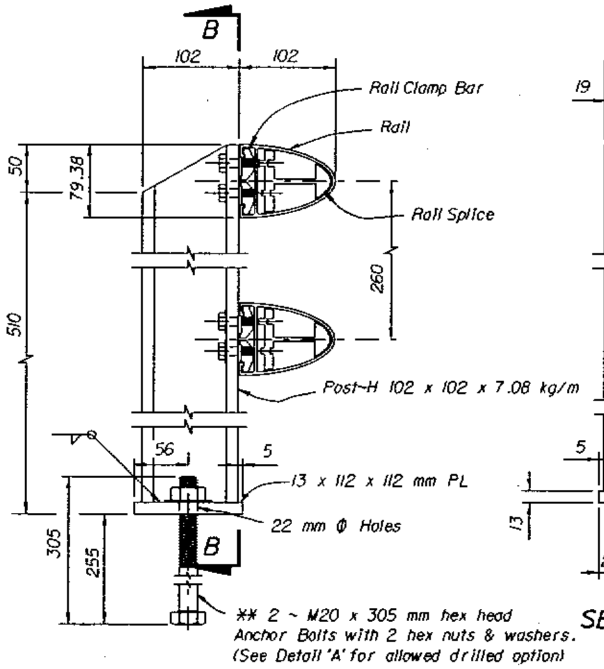
* NOTE: See Superstructure Drawing for actual dimensions.

NOTE: Rail shall be continuous over a minimum of three posts before splicing.



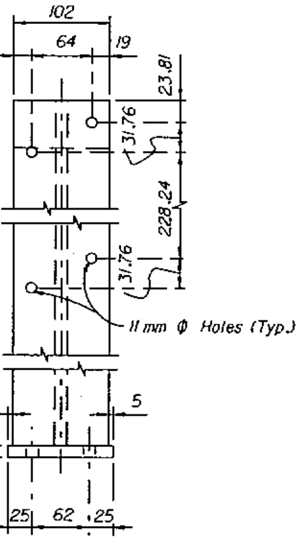
RAIL

NOTE "A" ~ Rough cut ends and edges of aluminum rails shall be ground or filed smooth to remove all sharp edges, nicks or burrs that would be injurious to the human touch.



SECTION THRU RAIL

BICYCLE BARRIER RAIL



SECTION B-B

NOTES

NOTE: The Railing shown on this drawing conforms with the requirements of the American with Disabilities Act (ADA), provided that the gradient does not exceed 5%.

TRAFFIC RAILING BARRIER: For details of Traffic Railing Barrier, See Index 700 .

PAYMENT: Traffic Railing (Sidewalk Barrier Type) shall be paid for per linear meter Item No. 2400-148-2 and Traffic Railing (Bicycle Barrier Type) shall be paid for per linear meter Item No. 2400-148-3. These Items shall include all Metal Rail, Concrete and Reinforcing Steel. Railing shall be measured along the centerline of the top surface of the concrete barrier.

SPECIFICATIONS FOR METAL RAIL

POST: Fabricated wrought aluminum: ASTM B221, alloy 6061-T6 or alloy 6351-T5 with welding using filler wire 4043.

RAIL,AND RAIL SPLICE: Aluminum: ASTM B221, alloy 6061-T6 or alloy 6351-T5.

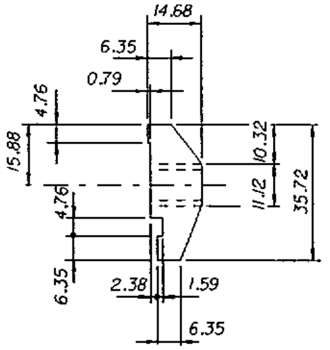
RAIL CLAMP BAR: Aluminum: ASTM B221, alloy 6061-T6 or alloy 6351-T5.

ANCHOR BOLTS: Anchor bolts shall be in accordance with ASTM A36M or ASTM F568, Class 4.6. Anchor bolts. Nuts and washers shall be hot-dip galvanized in accordance with ASTM designation A153.

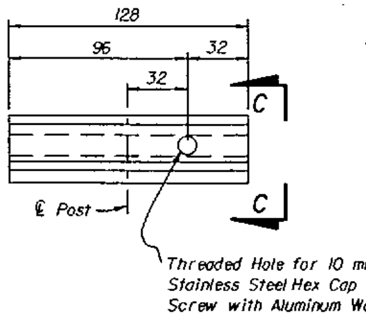
RAIL END CAP: ASTM B26 sand cast aluminum alloy, SG 70A-F(Aluminum Association alloy designation A-356-F).

RAIL INSTALLATION: Rail Post shall be normal to Profile Grade. Post shall be seated on 3 mm thick resilient pads in accordance with Article 932-2.1. The dimension shall be the same as the post base. Rail expansion joint shall occur in the panel between posts on either side of Bridge expansion joint. Rail expansion joint shall be similar to rail splice with provision for movement equal to 1.5 times the bridge joint opening.

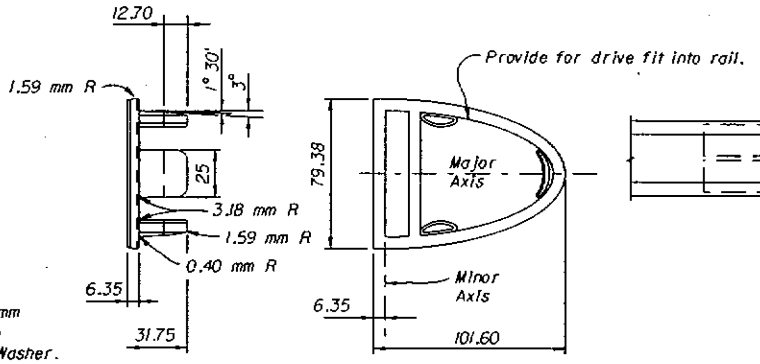
SHOP DRAWINGS: Complete details and description of materials of the proposed metal rail shall be submitted by the contractor for the Engineer's approval prior to fabrication.



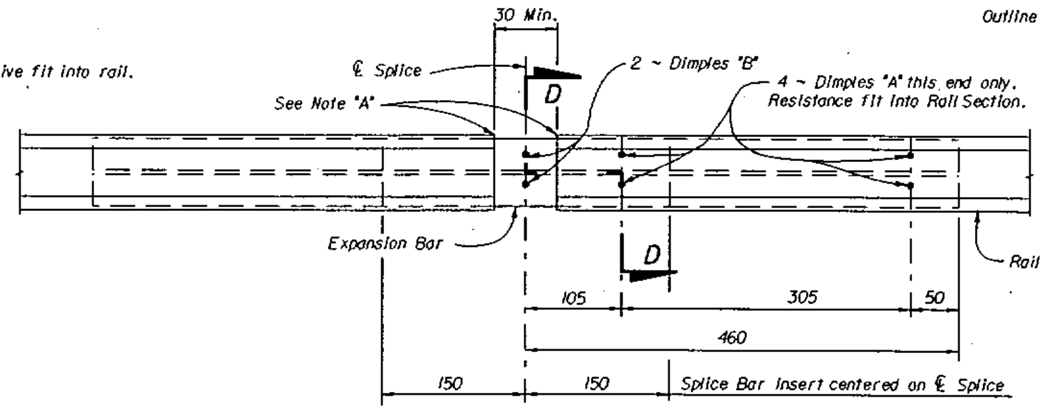
VIEW C-C



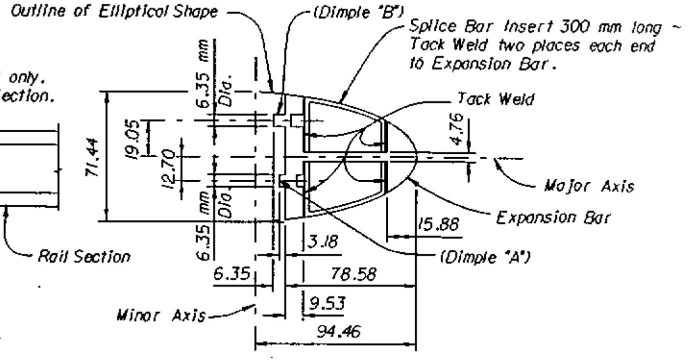
RAIL CLAMP BAR



RAIL END CAP



RAIL SPLICE



SECTION D-D

RAIL COMPONENTS

NOTE : All dimensions are in millimeters (mm), except as noted.

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Mon Aug 15 14:03:19 1994

REVISIONS

Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	WEH	2-89
Checked by	AJG	2-89
Designed by	——	——
Checked by	——	——
Approved by	AJG	

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

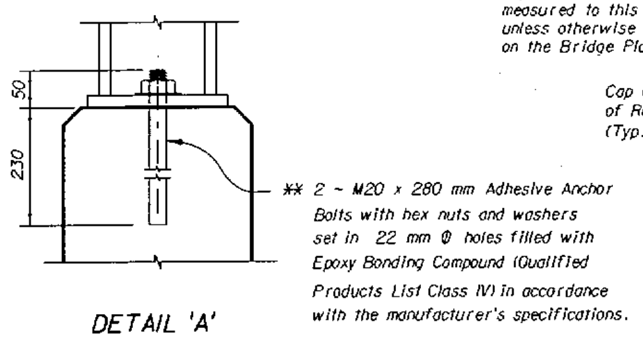
SHEET TITLE:
TRAFFIC RAILING
(SIDEWALK TYPE AND BICYCLE TYPE)

PROJECT NAME:

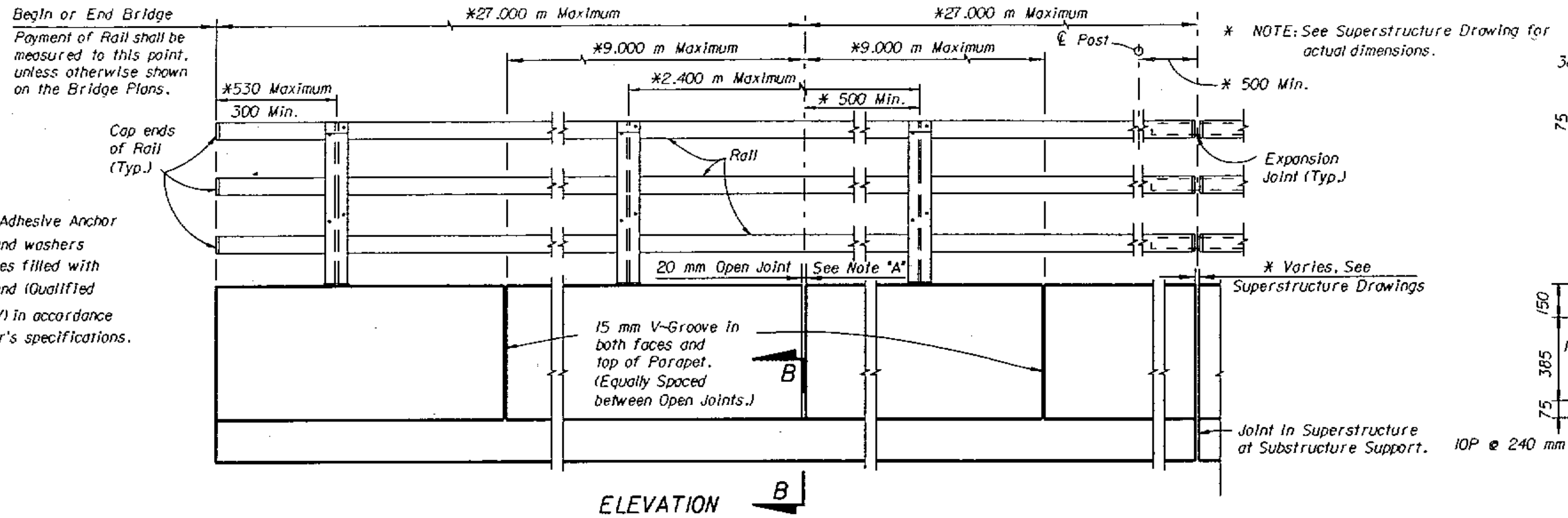
Drawing No.
1 of 1

Index No.
710

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



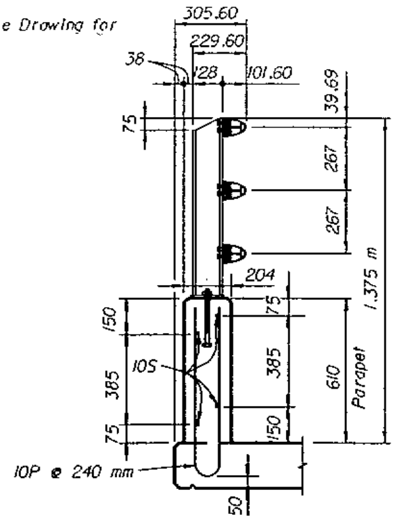
DETAIL 'A'



ELEVATION

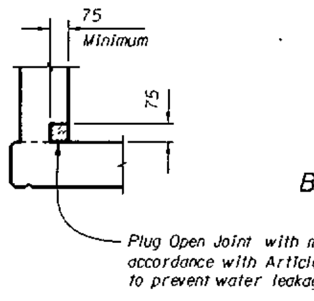
Note "A": 20 mm Open Joints shall be provided at:

1. Substructure Supports where Superstructure Slab is continuous.
2. Mid-Span where Span length exceeds 27.000 meters.
3. Intermediate locations (equally spaced) between Mid-Span and Superstructure Support where Span length exceeds 54.000 meters.
4. Locations Coinciding with joints for the Traffic Railing Barrier.

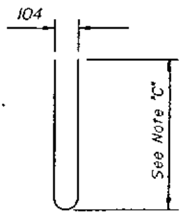


TYPICAL SECTION THRU PARAPET AND RAIL

Note: Bars 10P and 10S are No. 10M Bars.

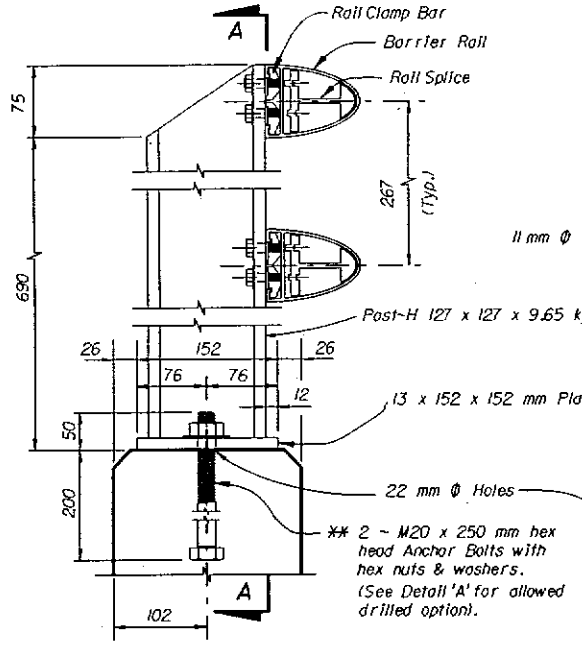


SECTION B-B



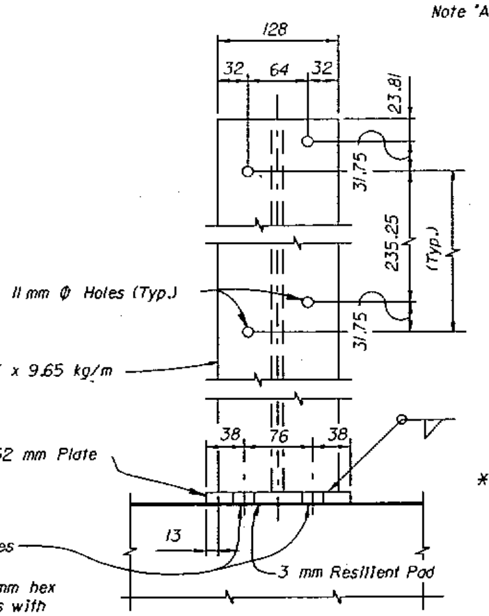
BAR 10P

Note "C": Designer shall fully detail reinforcement in Parapet in the Superstructure Drawings and include concrete and reinforcing steel in the Superstructure quantities.



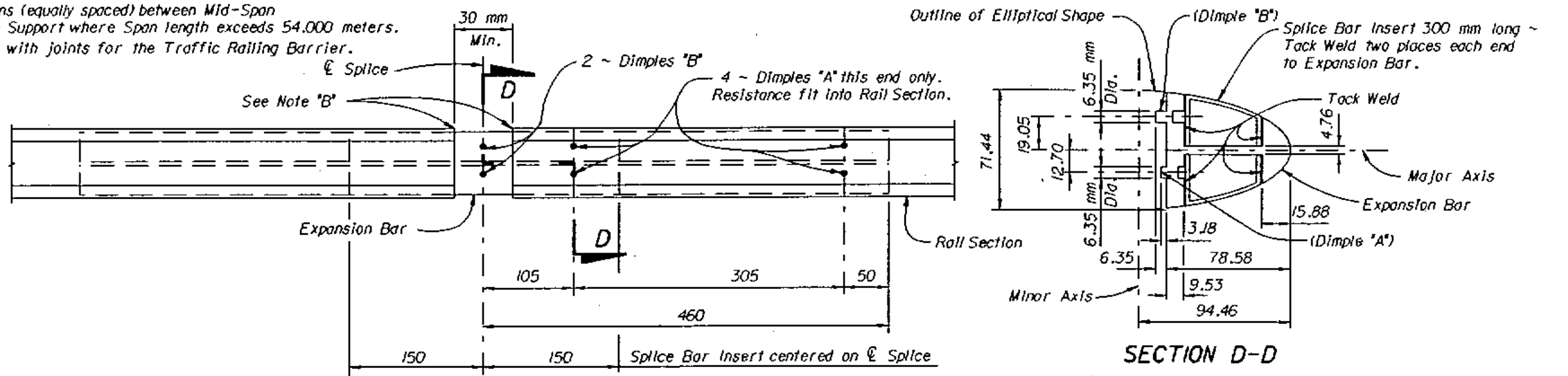
SECTION THRU RAIL

(Bottom rail element not shown)



SECTION A-A

** NOTE: After nuts have been tightened the threads shall be nicked to prevent removal of nuts.

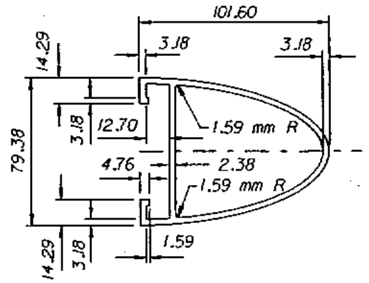


RAIL SPLICE

SECTION D-D

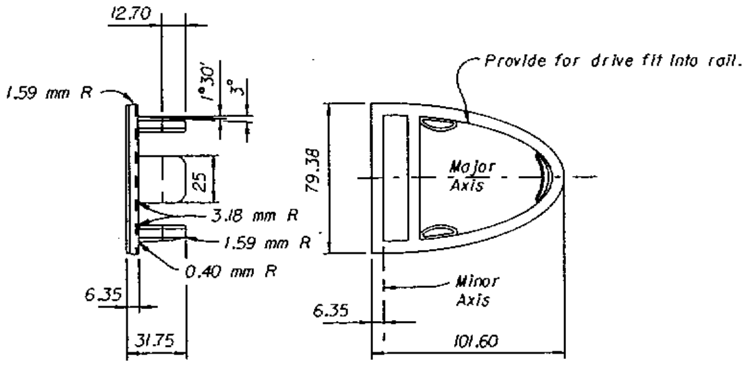
RAIL COMPONENTS

NOTE: Rail shall be continuous over a minimum of three posts before splicing.

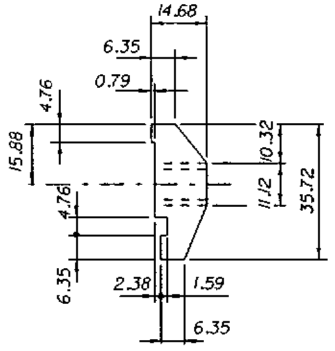


RAIL

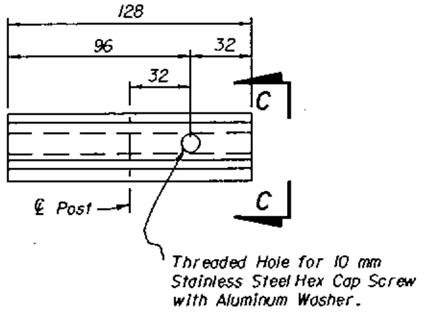
NOTE "B" ~ Rough cut ends and edges of aluminum rails shall be ground or filed smooth to remove all sharp edges, nicks or burrs that would be injurious to the human touch.



RAIL END CAP



VIEW C-C



RAIL CLAMP BAR

NOTES

NOTE: The Railing shown on this drawing conforms with the requirements of the American with Disabilities Act (ADA), provided that the gradient does not exceed 5%.

PAYMENT: The cost of all materials in Parapet shall be included in Concrete (Superstructure) and Reinforcing Steel (Superstructure). Aluminum Rail shall be paid for per linear meter and shall be measured along the centerline of the top surface of the parapet. Payment includes Anchor Bolts, Nuts, Resilient Pads, and all incidental materials and labor required to complete the installation. Payment for the rail shall be made under Item No. 2400-5-3.

SPECIFICATIONS FOR BRIDGE RAIL

POST: Fabricated wrought aluminum: ASTM B221, alloy 6061-T6 or alloy 6351-T5 with welding using filler wire 4043.
RAIL & RAIL SPLICE: Aluminum: ASTM B221, alloy 6061-T6 or alloy 6351-T-5.
RAIL CLAMP BAR: Aluminum: ASTM B221, alloy 6061-T6 or alloy 6351-T5.
ANCHOR BOLTS: Anchor Bolts shall be in accordance with ASTM A36M or F568. Class 4.6. Anchor Bolts, nuts and washers shall be hot-dip galvanized in accordance with ASTM Designation A153.
RAIL END CAP: ASTM B26 sand cast aluminum alloy, SG 70A-F (Aluminum Association alloy designation A-356-F).
RAIL INSTALLATION: Rail Post shall be normal to Profile Grade. Posts shall be seated on 3 mm thick resilient pads in accordance with Article 932-2.1. The dimension shall be the same as the post base. Rail expansion joints shall occur in the panel between posts on either side of Bridge expansion joints. Rail expansion joints shall be similar to rail splices with provision for movement equal to 1.5 times the bridge joint opening.
SHOP DRAWINGS: Complete details and description of materials of the proposed

NOTE : All dimensions are in millimeters (mm), except as noted.

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Fri Aug 26 14:28:49 1994

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	LFC	12-85
Checked by	RDS	1-86
Designed by	—	—
Checked by	—	—
Approved by	AJG	

ENGINEER OF RECORD:
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Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

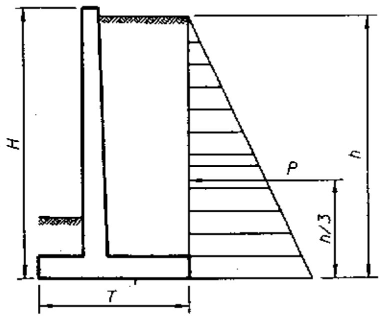
SHEET TITLE:
PEDESTRIAN/BICYCLE RAILING

PROJECT NAME:

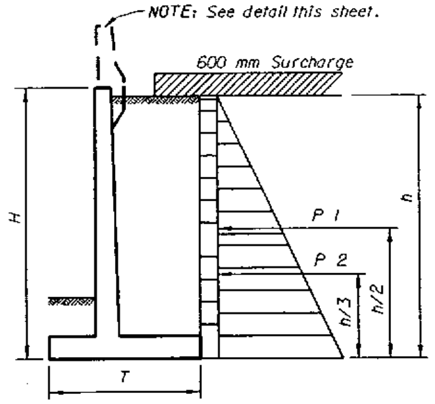
Drawing No.
1 of 1

Index No.
720

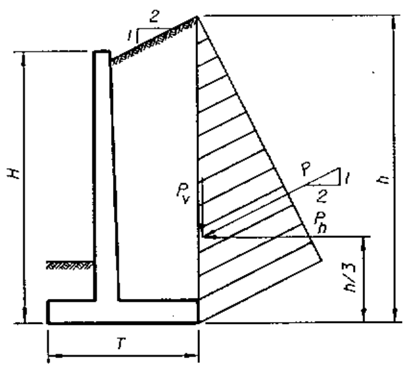
FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



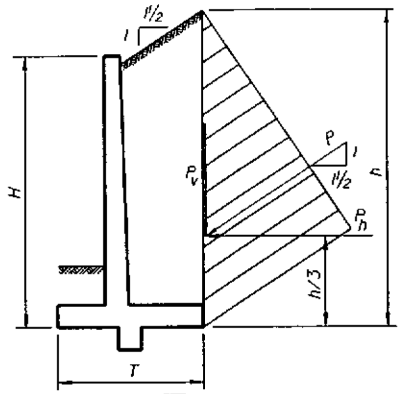
CASE I



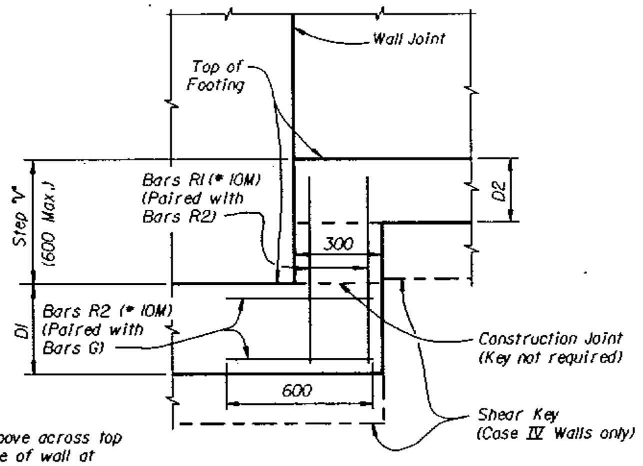
CASE II



CASE III



CASE IV

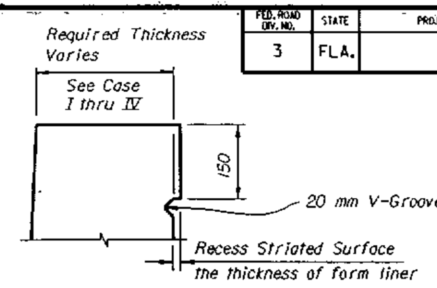


DETAIL "B"

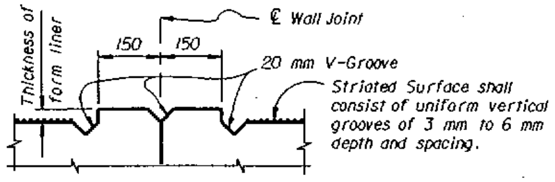
(Showing Bars R only)

Concrete and Steel Quantities per Step:
Concrete (cubic meter) = T (V+ D1 − D2 X0.3)/1,000,000
T, V, D1 & D2 in mm.

Steel (kg) = 0.785 ((No. of Bars R1)(Bar Length in meters)
+ 0.600 (No. of Bars R2))



SECTION A-A



SECTION B-B

NOTES

GENERAL SPECIFICATIONS: Florida Department of Transportation Standard Specifications for Road and Bridge Construction. Current Edition with Approved Supplements thereto.

DESIGN SPECIFICATIONS: American Association of State Highway and Transportation Officials (AASHTO) Standard Specifications for Highway Bridges. Current Edition with Approved Revisions thereto.

MATERIAL STRESSES: All allowable stresses are in accordance with current AASHTO Standard Specifications for all the materials shown in the plans.

CONCRETE: Concrete shall be Class II (f'c = 23 MPa) if environment is classified as slightly aggressive. or Class IV (f'c = 38 Mpa) if environment is classified as moderately or extremely aggressive.

REINFORCING STEEL: All reinforcing steel shall conform to ASTM A615M Grade 400.

SURFACE FINISH: A Class 5 Applied Finish Coating shall be applied to the top of the wall and the exposed face above the ground line.

RUSTICATION: Alternate Architectural Treatments may be substituted for the Striated Pattern shown when Approved by the Engineer. Concrete required by Architectural Treatment is not included in the quantities.

TRAFFIC RAILING BARRIER: For details of Barrier, see Structures Standard Index No. 700.

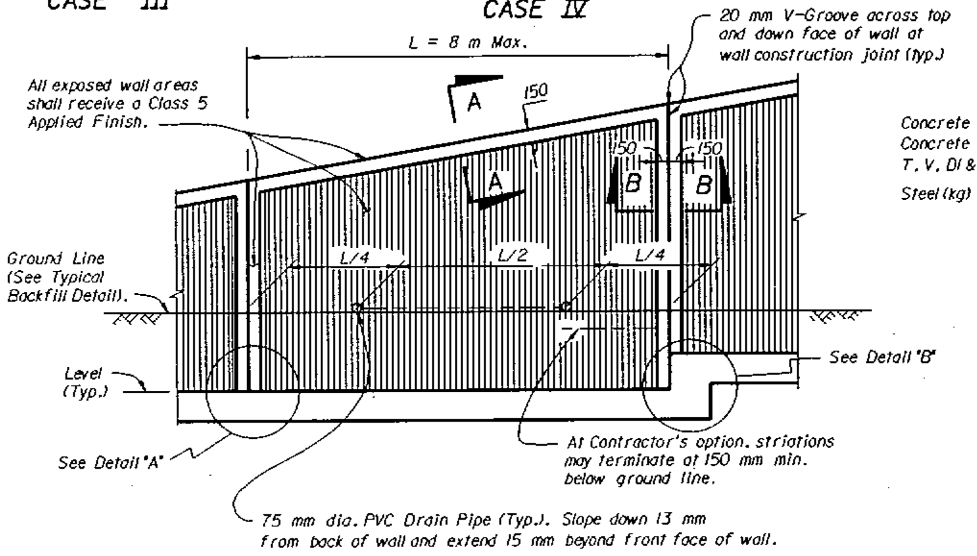
QUANTITIES: Concrete and Reinforcing Steel Quantities shall be based on the average height (H) and actual length of each unit. The quantities shall be calculated by interpolating, if necessary, between values given for the length of the "PER 8 m Unit" and "PER LIN. METER". Quantities for a unit less than 8 m long shall be based on the actual unit length, i. e.: actual unit length x "PER LIN. METER" quantity. Additional quantities for footings as required by Details "A" and "B", Traffic Railing Barrier, and Lug at top of wall to accept Barrier shall be added to the Wall Quantities.

PAYMENT: Retaining walls in a slightly aggressive environment shall be paid for at the contract unit price for Class II Concrete (Retaining Walls) (Cu. Meter) and Reinforcing Steel (Retaining Wall) (kg).

Retaining walls in moderately or extremely aggressive environment shall be paid for at the contract unit price for Class IV Concrete (Retaining Walls) (Cu. Meter) and Reinforcing Steel (Retaining Wall) (kg).

N. S. indicates Near Side.
F. S. indicates Far Side.

NOTE: All dimensions are in millimeters (mm) unless otherwise noted.



20 mm V-Groove across top and down face of wall at wall construction joint (typ.)

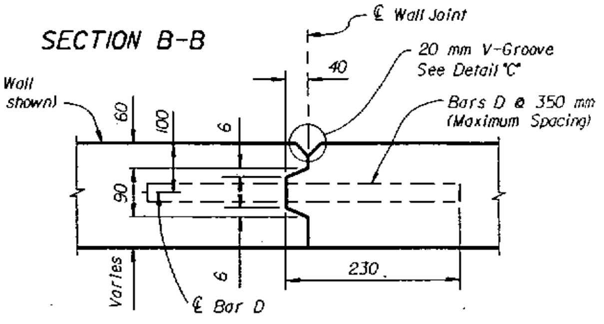
All exposed wall areas shall receive a Class 5 Applied Finish.

Ground Line (See Typical Backfill Detail).

At Contractor's option, striations may terminate at 150 mm min. below ground line.

75 mm dia. PVC Drain Pipe (Typ.). Slope down 13 mm from back of wall and extend 15 mm beyond front face of wall.

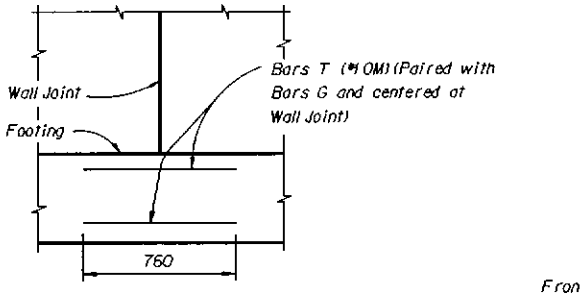
FRONT ELEVATION



CONSTRUCTION JOINT DETAIL

(Spaced at 8 m Maximum)

NOTE: Key to stop 150 mm from top of wall. Joint across top of wall to be a straight line. Extend V-Groove down back of wall to 150 mm min. below ground.

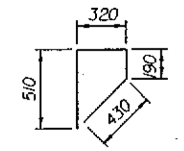


DETAIL "A"

(Showing Bars T only)

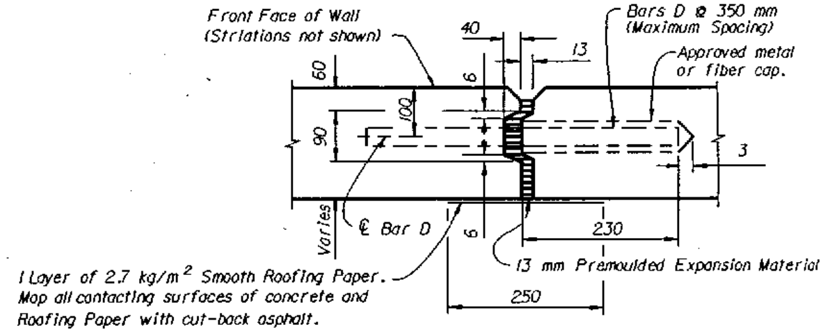
Steel Quantity per Joint (kg):
0.6 (No. Bars T)

BENDING DIAGRAM



Bars N (#15M)

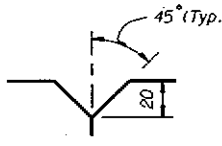
NOTE: All bar dimensions are out-to-out.



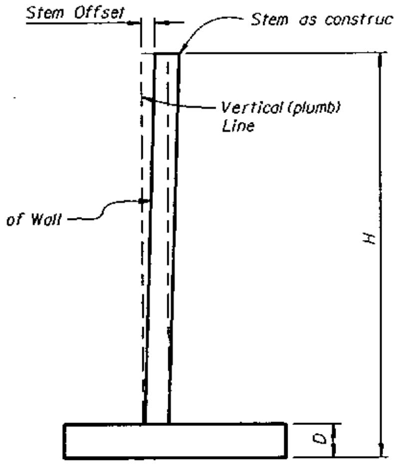
1 Layer of 2.7 kg/m² Smooth Roofing Paper. Mop all contacting surfaces of concrete and Roofing Paper with cut-back asphalt.

EXPANSION JOINT DETAIL

(Every Fourth Wall Joint)



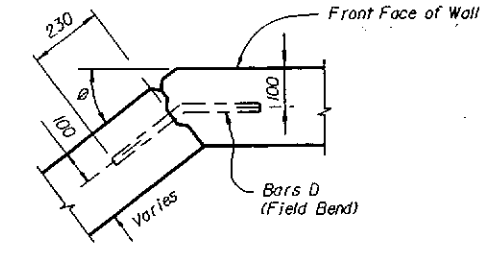
DETAIL "C"



STEM OFFSET VALUES

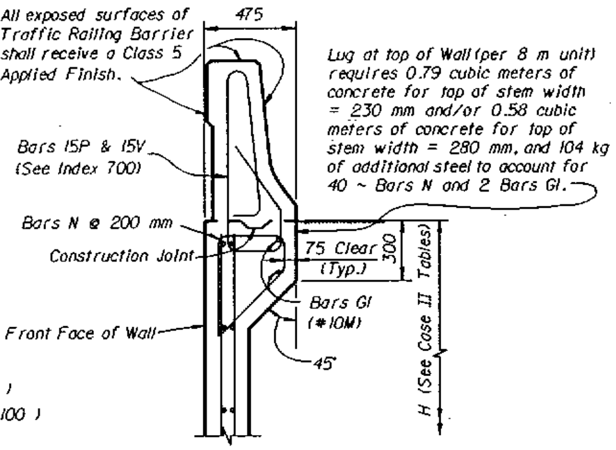
STEM OFFSET
(H−D) < 3700 mm (Offset = (H−D)/200)
(H−D) > 3700 mm (Offset = (H−D−1850)/100)

Note: Offset, H & D in mm.
Maximum Offset = 65 mm.



TYPICAL JOINT DETAIL AT CORNER

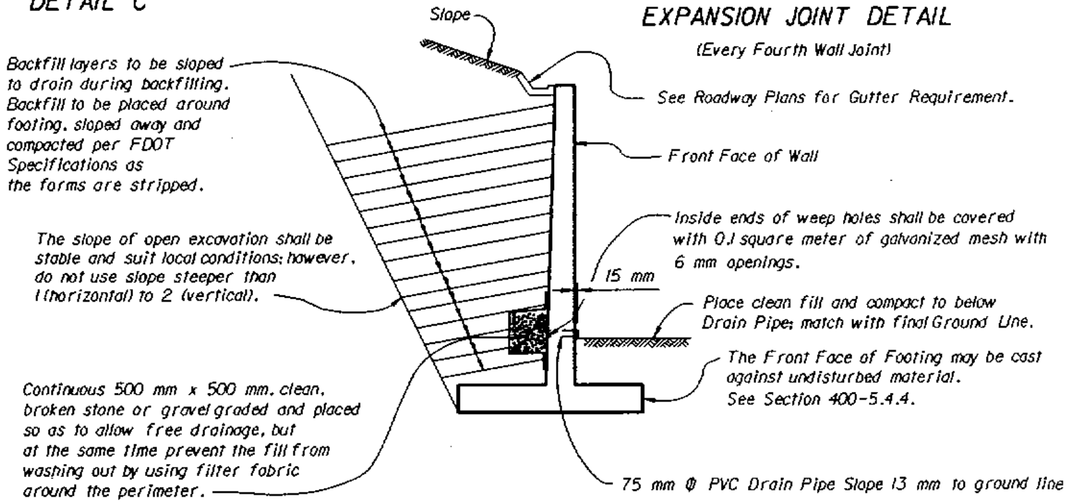
NOTE : See "Construction Joint Detail" For Notes and Details not shown



All exposed surfaces of Traffic Railing Barrier shall receive a Class 5 Applied Finish.

Lug at top of Wall (per 8 m unit) requires 0.79 cubic meters of concrete for top of stem width = 230 mm and/or 0.58 cubic meters of concrete for top of stem width = 280 mm, and 104 kg of additional steel to account for 40 ~ Bars N and 2 Bars G1.

BARRIER ON CASE II WALL



Backfill layers to be sloped to drain during backfilling. Backfill to be placed around footing, sloped away and compacted per FDOT Specifications as the forms are stripped.

The slope of open excavation shall be stable and suit local conditions; however, do not use slope steeper than 1 (horizontal) to 2 (vertical).

Continuous 500 mm x 500 mm, clean, broken stone or gravel graded and placed so as to allow free drainage, but at the same time prevent the fill from washing out by using filter fabric around the perimeter.

See Roadway Plans for Gutter Requirement.

Front Face of Wall

Inside ends of weep holes shall be covered with 0.1 square meter of galvanized mesh with 6 mm openings.

Place clean fill and compact to below Drain Pipe; match with final Ground Line.

The Front Face of Footing may be cast against undisturbed material. See Section 400-5.4.4.

75 mm Ø PVC Drain Pipe Slope 13 mm to ground line

TYPICAL BACKFILL DETAIL

/usr5/strstand/met/800.dgn
Thu Aug 25 16:18:15 1994

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	SHM	12/93
Checked by	JMD/NRK	12/93
Designed by	JMD/NRK	12/93
Checked by	JMD/NRK	12/93
Approved by	AJG	

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE:
CANTILEVER RETAINING WALLS
GENERAL NOTES AND DETAILS

PROJECT NAME:

Drawing No.
1 of 1

Index No.
800

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

* NOTE: Wall Dimension "H" is given in meters (m). All other dimensions, lengths and spacings are given in millimeters (mm).

** NOTE: For placement details of Bars D see Standard Index No. 800.

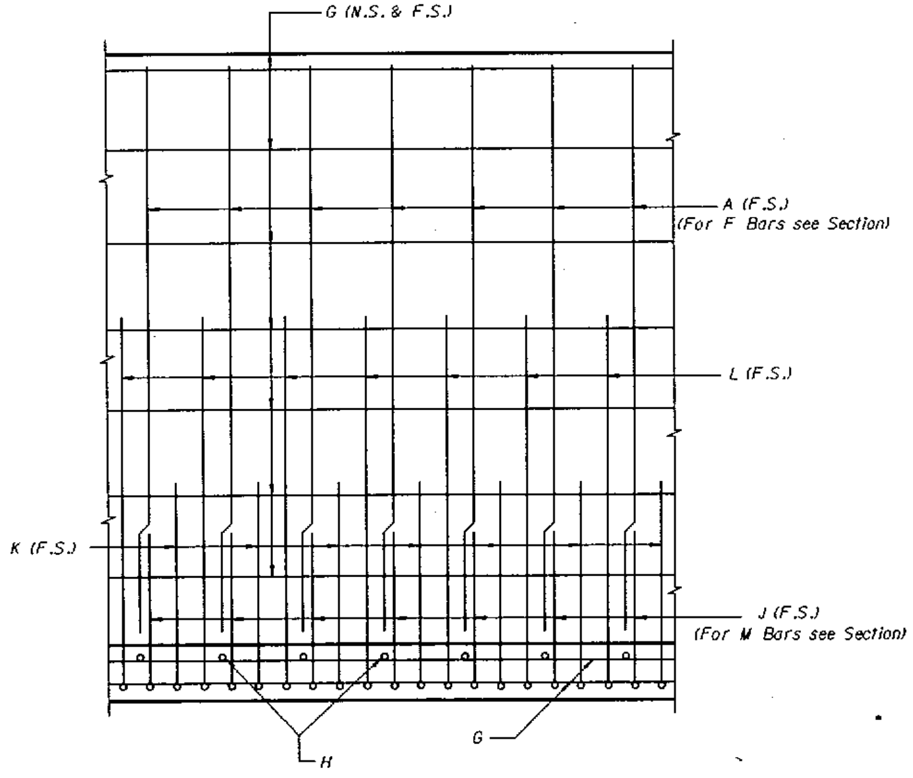
NOTE: The spacings shown are the maximum values allowed by design. These values shall be used for wall units shorter than 8 meters long. Units 8 meters long shall utilize the number of bars tabulated at equal spacings.

* RETAINING WALL DATA

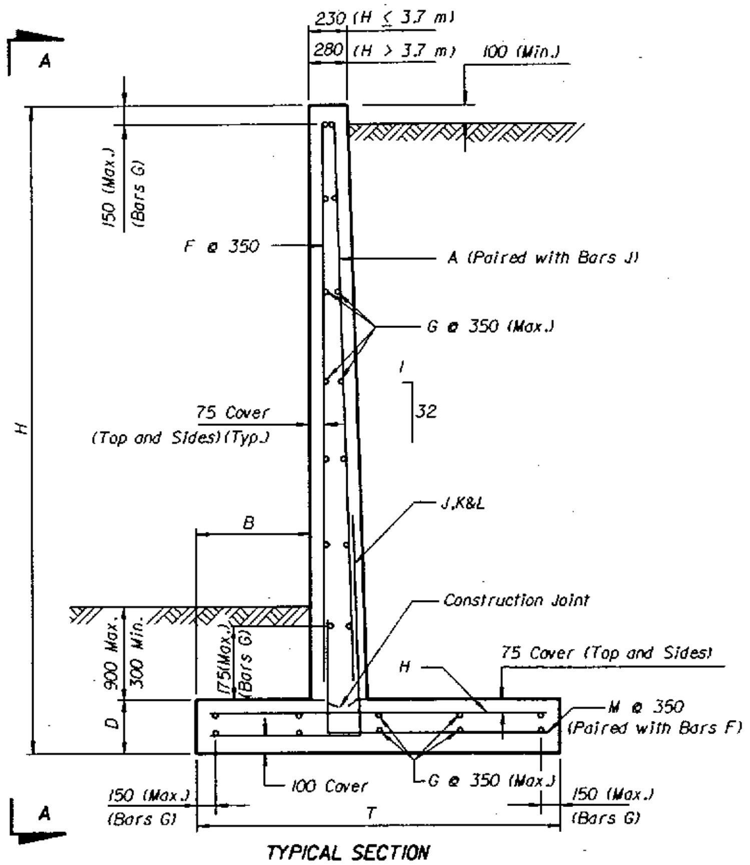
WALL DIMENSIONS				REINFORCING STEEL SCHEDULE																																						
H	B	D	T	BARS A			** BARS D			BARS F			BARS G			BARS H				BARS J						BARS K						BARS L						BARS M				H
				SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	C	LENGTH	
1.8	205	280	940				20M	4	460	10M	24	1425	10M	16	7850	10M	25	335	790	10M	35	235	1625	340	1965													10M	24	585	1205	1.8
2.1	255	280	1065				20M	5	460	10M	24	1725	10M	20	7850	10M	25	335	915	10M	35	235	1925	400	2325													10M	24	660	1280	2.1
2.4	305	280	1220				20M	6	460	10M	24	2025	10M	22	7850	10M	25	335	1070	10M	35	235	2225	455	2680													10M	24	765	1385	2.4
2.7	355	280	1370				20M	6	460	10M	24	2325	10M	24	7850	10M	26	315	1220	10M	38	215	2525	515	3040													10M	24	865	1485	2.7
3.0	380	280	1575				20M	7	460	10M	24	2625	10M	26	7850	10M	38	215	1425	10M	38	215	2825	550	3375													10M	24	1045	1665	3.0
3.4	455	280	1805				20M	8	460	10M	24	3025	10M	30	7850	15M	31	265	1655	15M	22	380	3225	640	3865													10M	24	1200	1820	3.4
3.7	535	305	2055				20M	9	460	10M	24	3300	10M	32	7850	10M	52	155	1905	15M	27	305	3525	730	4255													10M	24	1370	1990	3.7
4.0	610	305	2335				20M	10	460	10M	24	3600	10M	36	7850	15M	36	225	2185	15M	27	305	3825	860	4685													10M	24	1575	2195	4.0
4.3	685	305	2640				20M	11	460	10M	24	3900	10M	40	7850	15M	43	190	2490	15M	36	225	4125	945	5070													10M	24	1805	2425	4.3
4.6	760	305	2920	15M	22	4200	20M	12	460	10M	24	4200	10M	44	7850	20M	37	220	2770	15M	22	390	1120	1030	2150	15M	21	390	3275	1030	4305							10M	24	2010	2630	4.6
4.9	865	305	3250	15M	19	4500	20M	13	460	10M	24	4500	10M	48	7850	20M	45	180	3100	15M	19	440	865	1145	2010	15M	18	440	1575	1145	2720	15M	18	440	4495	1145	5640	10M	24	2235	2855	4.9
5.2	940	355	3630	15M	22	4750	20M	13	460	10M	24	4750	10M	50	7850	20M	45	180	3480	15M	22	390	915	1230	2145	15M	21	390	1725	1230	2955	15M	21	390	4240	1230	5470	10M	24	2540	3160	5.2
5.5	1065	355	3885	15M	19	5050	20M	14	460	10M	24	5050	10M	54	7850	20M	52	155	3735	20M	19	450	1320	1365	2685	20M	18	450	1805	1365	3170	20M	18	450	4545	1365	5910	10M	24	2670	3290	5.5
5.8	1170	355	4265	15M	21	5350	20M	15	460	10M	24	5350	10M	58	7850	25M	38	215	4115	20M	21	410	1040	1480	2520	20M	20	410	1930	1480	3410	20M	20	410	4675	1480	6155	10M	24	2945	3565	5.8
6.1	1270	355	4570	20M	20	5650	20M	16	460	10M	24	5650	10M	62	7850	25M	37	220	4420	20M	20	430	1040	1590	2630	20M	19	430	1930	1590	3520	20M	19	430	4980	1590	6570	10M	24	3150	3770	6.1

QUANTITIES

H	PER 8 m UNIT		PER LIN. METER	
	CONCRETE m^3	STEEL kg	CONCRETE m^3	STEEL kg
1.8	5.19	222	0.65	28
2.1	6.15	267	0.77	33
2.4	7.20	301	0.90	38
2.7	8.25	342	1.03	43
3.0	9.46	392	1.18	49
3.4	11.00	499	1.38	62
3.7	12.70	565	1.59	71
4.0	15.68	664	1.96	83
4.3	17.39	832	2.17	104
4.6	19.05	1015	2.38	127
4.9	20.86	1207	2.61	151
5.2	24.10	1356	3.01	169
5.5	25.87	1618	3.23	202
5.8	28.02	1907	3.50	238
6.1	29.97	2060	3.75	258



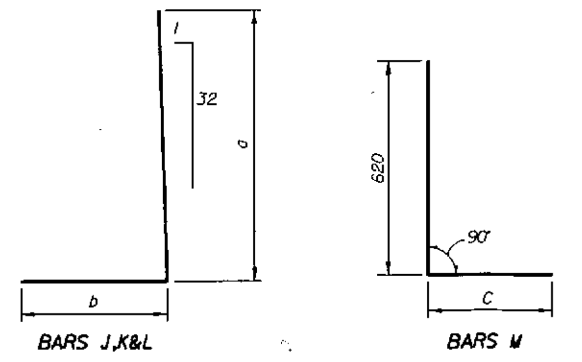
VIEW A-A



TYPICAL SECTION

NOTE:
To accommodate the variable height of a wall unit, vertical bars may be field cut to fit and the number of horizontal Bars G required by the highest wall dimension within an 8 m unit shall be equally spaced at each end of the unit.

BENDING DIAGRAM



NOTE: All bar dimensions are out to out.

NOTE: Bars M are paired with Bars F and Bars A are paired with Bars J.

NOTE: Work this Drawing with Standard Index No. 800.

NOTE: All dimensions are in millimeters unless otherwise noted.

/usr5/strstand/met/801.dgn

Mon Aug 15 11:44:56 1994

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	SHM	12/93
Checked by	JMD/NRK	12/93
Designed by	JMD	12/93
Checked by	NRK	12/93
Approved by	AJG	

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE: CASE I (96 kPa MAX. BEARING PRESSURE) 1.8 m TO 6.1 m HEIGHT

PROJECT NAME:

Drawing No. 1 of 1

Index No. 801

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

* NOTE: Wall Dimension 'H' is given in meters (m). All other dimensions, lengths and spacings are given in millimeters (mm).

** NOTE: For placement details of Bars D see Standard Index No. 800.

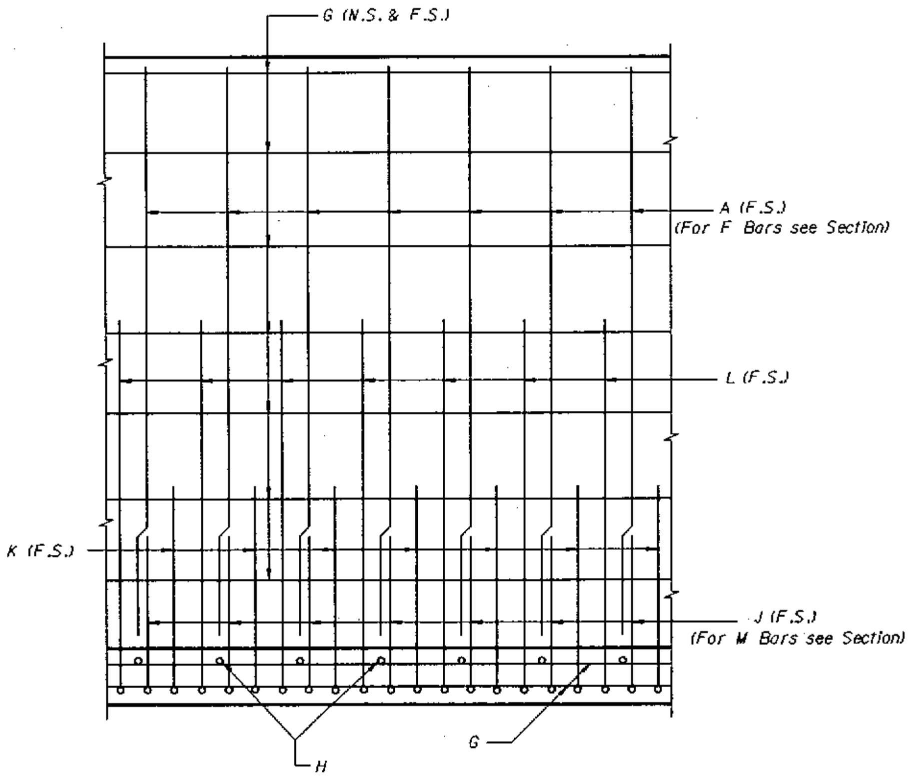
NOTE: The spacings shown are the maximum values allowed by design. These values shall be used for wall units shorter than 8 meters long. Units 8 meters long shall utilize the number of bars tabulated at equal spacings.

* RETAINING WALL DATA

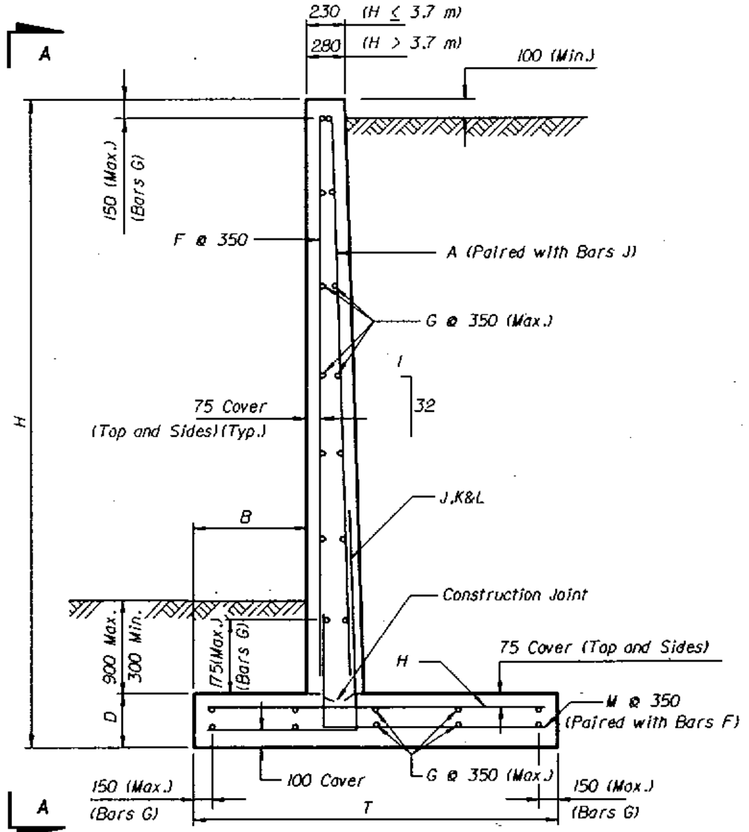
WALL DIMENSIONS				REINFORCING STEEL SCHEDULE																																						
H	B	D	T	BARS A			** BARS D			BARS F			BARS G			BARS H				BARS J						BARS K						BARS L						BARS M				H
				SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	C	LENGTH	
1.8	205	280	940				20M	4	460	10M	24	1425	10M	16	7850	10M	25	335	790	10M	35	235	1625	340	1965													10M	24	585	1205	1.8
2.1	255	280	1065				20M	5	460	10M	24	1725	10M	20	7850	10M	25	335	915	10M	35	235	1925	400	2325													10M	24	660	1280	2.1
2.4	305	280	1220				20M	6	460	10M	24	2025	10M	22	7850	10M	25	335	1070	10M	35	235	2225	455	2680													10M	24	765	1385	2.4
2.7	355	280	1370				20M	6	460	10M	24	2325	10M	24	7850	10M	26	315	1220	10M	38	215	2525	515	3040													10M	24	865	1485	2.7
3.0	380	280	1500				20M	7	460	10M	24	2625	10M	26	7850	10M	38	215	1350	10M	38	215	2825	550	3375													10M	24	970	1590	3.0
3.4	405	280	1675				20M	8	460	10M	24	3025	10M	28	7850	15M	31	265	1525	15M	22	380	3225	590	3815													10M	24	1120	1740	3.4
3.7	455	305	1805				20M	9	460	10M	24	3300	10M	32	7850	10M	52	155	1655	15M	27	305	3525	650	4175													10M	24	1200	1820	3.7
4.0	485	305	1905				20M	10	460	10M	24	3600	10M	34	7850	15M	36	225	1755	15M	27	305	3825	735	4560													10M	24	1270	1890	4.0
4.3	535	305	2085				20M	11	460	10M	24	3900	10M	38	7850	15M	43	190	1935	15M	36	225	4125	795	4920													10M	24	1400	2020	4.3
4.6	560	305	2235	15M	22	4200	20M	12	460	10M	24	4200	10M	40	7850	20M	37	220	2085	15M	22	390	1120	830	1950	15M	21	390	3275	830	4105							10M	24	1525	2145	4.6
4.9	635	305	2490	15M	19	4500	20M	13	460	10M	24	4500	10M	44	7850	20M	45	180	2340	15M	19	440	865	915	1780	15M	18	440	1575	915	2490	15M	18	440	4495	915	5410	10M	24	1705	2325	4.9
5.2	685	355	2745	15M	22	4750	20M	13	460	10M	24	4750	10M	44	7850	20M	45	180	2595	15M	22	390	915	975	1890	15M	21	390	1725	975	2700	15M	21	390	4240	975	5215	10M	24	1910	2530	5.2
5.5	785	355	2945	15M	19	5050	20M	14	460	10M	24	5050	10M	48	7850	20M	52	155	2795	20M	19	450	1320	1085	2405	20M	18	450	1805	1085	2890	20M	18	450	4545	1085	5630	10M	24	2010	2630	5.5
5.8	840	355	3225	15M	21	5350	20M	15	460	10M	24	5350	10M	52	7850	25M	37	220	3075	20M	21	410	1040	1150	2190	20M	20	410	1930	1150	3080	20M	20	410	4675	1150	5825	10M	24	2235	2855	5.8
6.1	940	355	3480	20M	23	5650	20M	16	460	10M	24	5650	10M	56	7850	25M	43	190	3330	20M	23	370	1040	1260	2300	20M	22	370	1930	1260	3190	20M	22	370	4980	1260	6240	10M	24	2390	3010	6.1
6.4	1015	430	3760	20M	23	5875	20M	17	460	10M	24	5875	10M	58	7850	25M	37	220	3610	20M	23	370	1575	1340	2915	20M	22	370	2185	1340	3525	20M	22	370	3405	1340	4745	10M	24	2595	3365	6.4
6.7	1090	430	4190	20M	25	6175	20M	17	460	10M	24	6175	10M	62	7850	25M	43	190	4040	20M	25	330	1395	1425	2820	20M	24	330	2490	1425	3915	20M	24	330	3710	1425	5135	10M	24	2950	3720	6.7
7.0	1170	430	4320	20M	19	6475	20M	18	460	10M	24	6475	10M	64	7850	25M	48	170	4170	25M	19	440	1780	1515	3295	25M	18	440	2690	1515	4205	25M	18	440	4015	1515	5530	10M	24	3000	3770	7.0
7.3	1270	430	4570	20M	22	6775	20M	19	460	10M	24	6775	10M	68	7850	30M	41	200	4420	25M	22	390	1780	1625	3405	25M	21	390	2995	1625	4620	25M	21	390	4320	1625	5945	10M	24	3150	3920	7.3
7.6	1345	430	4980	20M	19	7075	20M	20	460	10M	24	7075	10M	72	7850	30M	50	160	4830	30M	19	450	2110	1710	3820	30M	18	450	3200	1710	4910	30M	18	450	5335	1710	7045	10M	24	3485	4255	7.6
7.9	1500	510	5205	20M	20	7295	20M	21	460	10M	24	7295	10M	74	7850	30M	44	185	5055	30M	20	425	2260	1875	4135	30M	19	425	3455	1875	5330	30M	19	425	5565	1875	7440	10M	24	3555	4325	7.9
8.2	1600	510	5485	20M	22	7595	20M	21	460	10M	24	7595	10M	76	7850	30M	44	185	5335	30M	22	385	2415	1985	4400	30M	21	385	3580	1985	5565	30M	21	385	5715	1985	7700	10M	24	3735	4505	8.2
8.5	1700	510	5715	20M	25	7895	20M	22	460	10M	24	7895	10M	80	7850	30M	50	160	5565	30M	25	330	2565	2095	4660	30M	24	330	3735	2095	5830	30M	24	330	6020	2095	8115	10M	24	3865	4635	8.5
8.8	1830	510	5945	25M	19	8195	20M	23	460	10M	24	8195	10M	84	7850	35M	43	190	5795	35M	19	435	2720	2230	4950	35M	18	435	3885	2230	6115	35M	18	435	6325	2230	8555	10M	24	3965	4735	8.8
9.1	1955	510	6170	25M	22	8495	20M	24	460	10M	24	8495	10M	86	7850	35M	39	210	6020	35M	22	390	2870	2365	5235	35M	21	390	3960	2365	6325	35M	21	390	6630	2365	8995	10M	24	4065	4835	9.1

QUANTITIES

H	PER 8 m UNIT		PER UN. METER	
	CONCRETE m^3	STEEL kg	CONCRETE m^3	STEEL kg
1.8	5.19	222	0.65	28
2.1	6.15	267	0.77	33
2.4	7.20	301	0.90	38
2.7	8.25	342	1.03	43
3.0	9.29	388	1.16	49
3.4	10.71	477	1.34	60
3.7	12.09	548	1.51	68
4.0	14.63	616	1.83	77
4.3	16.03	766	2.00	96
4.6	17.38	908	2.17	114
4.9	19.01	1072	2.38	134
5.2	21.58	1188	2.70	148
5.5	23.20	1417	2.90	177
5.8	25.06	1642	3.13	205
6.1	26.88	2007	3.36	251
6.4	30.76	1979	3.85	247
6.7	33.37	2310	4.17	289
7.0	34.97	2615	4.37	327
7.3	37.01	3152	4.63	394
7.6	39.62	3903	4.95	488
7.9	44.62	4051	5.58	506
8.2	47.00	4465	5.87	558
8.5	49.19	5225	6.15	653
8.8	51.42	6164	6.43	770
9.1	53.64	6813	6.70	852



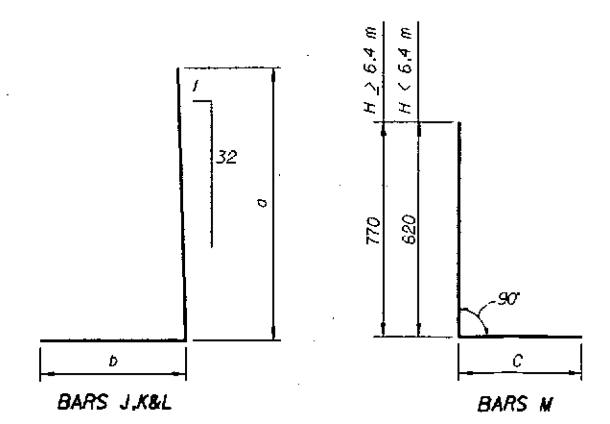
VIEW A-A



TYPICAL SECTION

NOTE:
To accommodate the variable height of a wall unit, vertical bars may be field cut to fit and the number of horizontal Bars G required by the highest wall dimension within an 8 m unit shall be equally spaced at each end of the unit.

BENDING DIAGRAM



NOTE: All bar dimensions are out to out.

NOTE: Bars M are paired with Bars F and Bars A are paired with Bars J.

NOTE: Work this Drawing with Standard Index No. 800.

NOTE: All dimensions are in millimeters unless otherwise noted.

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	SHM	12/93
Checked by	JMD/NRK	12/93
Designed by	JMD	12/93
Checked by	NRK	12/93
Approved by	AJG	

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE:
CASE I (144 kPa MAX. BEARING PRESSURE) 1.8 m TO 9.1 m HEIGHT

PROJECT NAME:

Drawing No.
1 of 1

Index No.
802

Mon Aug 15 11:45:39 1994 /usr5/strstand/met/802.dgn

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

* NOTE: Wall Dimension "H" is given in meters (m). All other dimensions, lengths and spacings are given in millimeters (mm).

** NOTE: For placement details of Bars D see Standard Index No. 800.

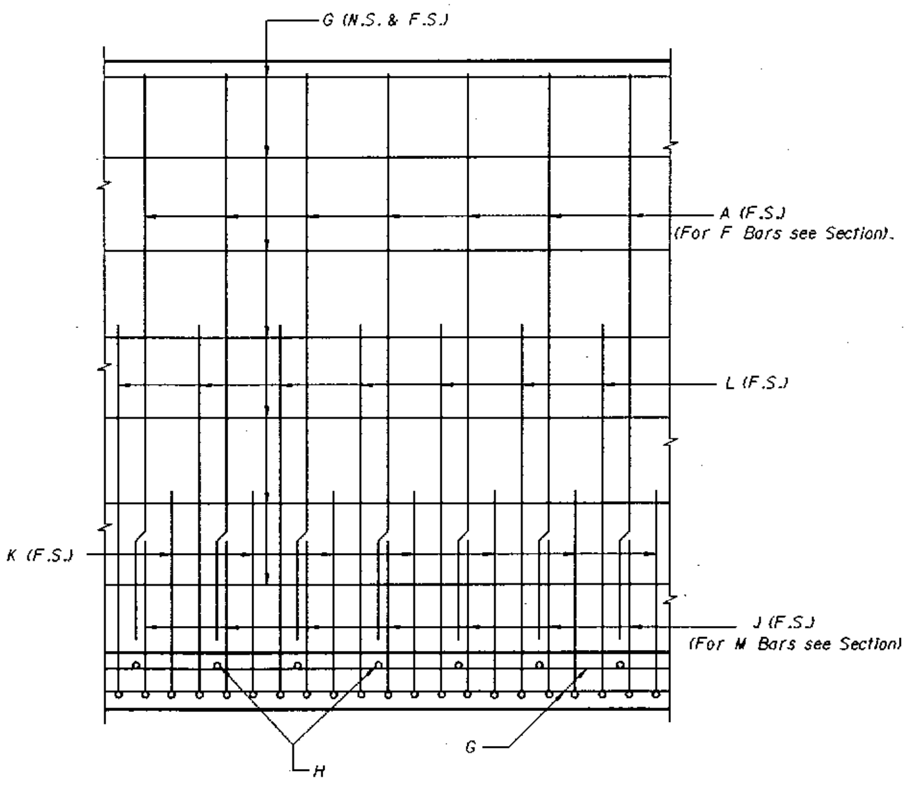
NOTE: The spacings shown are the maximum values allowed by design. These values shall be used for wall units shorter than 8 meters long. Units 8 meters long shall utilize the number of bars tabulated at equal spacings.

* RETAINING WALL DATA

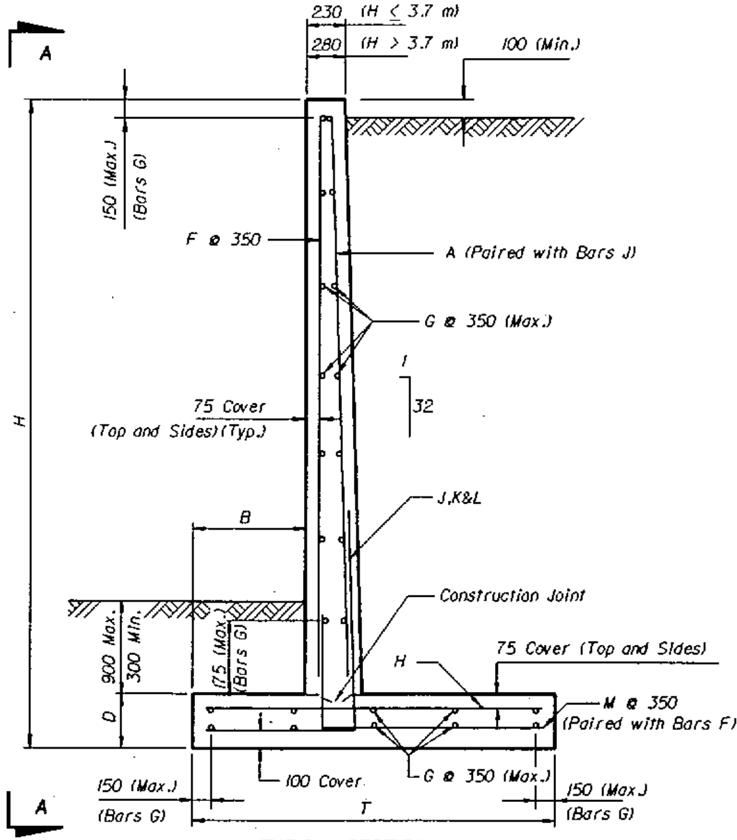
WALL DIMENSIONS				REINFORCING STEEL SCHEDULE																																						
H	B	D	T	BARS A			** BARS D			BARS F			BARS G			BARS H				BARS J						BARS K						BARS L						BARS M				H
				SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	C	LENGTH	
1.8	205	280	940				20M	4	460	10M	24	1425	10M	16	7850	10M	25	335	790	10M	35	235	1625	340	1965													10M	24	585	1205	1.8
2.1	255	280	1065				20M	5	460	10M	24	1725	10M	20	7850	10M	25	335	915	10M	35	235	1925	400	2325													10M	24	660	1280	2.1
2.4	305	280	1220				20M	6	460	10M	24	2025	10M	22	7850	10M	25	335	1070	10M	35	235	2225	455	2680													10M	24	765	1385	2.4
2.7	355	280	1370				20M	6	460	10M	24	2325	10M	24	7850	10M	26	315	1220	10M	38	215	2525	515	3040													10M	24	865	1485	2.7
3.0	380	280	1500				20M	7	460	10M	24	2625	10M	26	7850	10M	38	215	1350	10M	38	215	2825	550	3375													10M	24	970	1590	3.0
3.4	405	280	1675				20M	8	460	10M	24	3025	10M	28	7850	15M	31	265	1525	15M	22	380	3225	590	3815													10M	24	1120	1740	3.4
3.7	455	305	1805				20M	9	460	10M	24	3300	10M	32	7850	10M	52	155	1655	15M	27	305	3525	650	4175													10M	24	1200	1820	3.7
4.0	485	305	1905				20M	10	460	10M	24	3600	10M	34	7850	15M	36	225	1755	15M	27	305	3825	735	4560													10M	24	1270	1890	4.0
4.3	535	305	2085				20M	11	460	10M	24	3900	10M	38	7850	15M	43	190	1935	15M	36	225	4125	795	4920													10M	24	1400	2020	4.3
4.6	560	305	2235	15M	22	4200	20M	12	460	10M	24	4200	10M	40	7850	20M	37	220	2085	15M	22	390	1120	830	1950	15M	21	390	3275	830	4105							10M	24	1525	2145	4.6
4.9	610	305	2335	15M	19	4500	20M	13	460	10M	24	4500	10M	42	7850	20M	45	180	2185	15M	19	440	865	890	1755	15M	18	440	1575	890	2465	15M	18	440	4495	890	5385	10M	24	1575	2195	4.9
5.2	610	355	2490	15M	22	4750	20M	13	460	10M	24	4750	10M	44	7850	20M	45	180	2340	15M	22	390	915	900	1815	15M	21	390	1725	900	2625	15M	21	390	4240	900	5140	10M	24	1730	2350	5.2
5.5	685	355	2665	15M	19	5050	20M	14	460	10M	24	5050	10M	46	7850	20M	52	155	2515	20M	19	450	1320	985	2305	20M	18	450	1805	985	2790	20M	18	450	4545	985	5530	10M	24	1830	2450	5.5
5.8	710	355	2795	15M	21	5350	20M	15	460	10M	24	5350	10M	50	7850	25M	37	220	2645	20M	21	410	1040	1020	2060	20M	20	410	1930	1020	2950	20M	20	410	4675	1020	5695	10M	24	1935	2555	5.8
6.1	760	355	2945	20M	23	5650	20M	16	460	10M	24	5650	10M	52	7850	25M	37	220	2795	20M	23	370	1040	1080	2120	20M	22	370	1930	1080	3010	20M	22	370	4980	1080	6060	10M	24	2035	2655	6.1
6.4	815	430	3150	20M	23	5875	20M	17	460	10M	24	5875	10M	56	7850	25M	37	220	3000	20M	23	370	1575	1140	2715	20M	22	370	2185	1140	3325	20M	22	370	3405	1140	4545	10M	24	2185	2955	6.4
6.7	890	430	3355	20M	25	6175	20M	17	460	10M	24	6175	10M	56	7850	25M	43	190	3205	20M	25	330	1395	1225	2620	20M	24	330	2490	1225	3715	20M	24	330	3710	1225	4935	10M	24	2315	3085	6.7
7.0	940	430	3605	20M	19	6475	20M	18	460	10M	24	6475	10M	60	7850	30M	41	200	3455	25M	19	440	1780	1285	3065	25M	18	440	2690	1285	3975	25M	18	440	4015	1285	5300	10M	24	2515	3285	7.0
7.3	1040	430	3835	20M	22	6775	20M	19	460	10M	24	6775	10M	64	7850	30M	41	200	3685	25M	22	390	1780	1395	3175	25M	21	390	2995	1395	4390	25M	21	390	4320	1395	5715	10M	24	2645	3415	7.3
7.6	1090	430	4115	20M	19	7075	20M	20	460	10M	24	7075	10M	66	7850	30M	50	160	3965	30M	19	450	2110	1455	3565	30M	18	450	3200	1455	4655	30M	18	450	5335	1455	6790	10M	24	2875	3645	7.6
7.9	1220	510	4320	20M	20	7295	20M	21	460	10M	24	7295	10M	70	7850	30M	44	185	4170	30M	20	425	2260	1595	3855	30M	19	425	3455	1595	5050	30M	19	425	5565	1595	7160	10M	24	2950	3720	7.9
8.2	1295	510	4570	20M	22	7595	20M	21	460	10M	24	7595	10M	72	7850	30M	50	160	4420	30M	22	385	2415	1680	4095	30M	21	385	3580	1680	5260	30M	21	385	5715	1680	7395	10M	24	3125	3895	8.2
8.5	1395	510	4800	20M	25	7895	20M	22	460	10M	24	7895	10M	74	7850	30M	50	160	4650	30M	25	330	2565	1790	4355	30M	24	330	3735	1790	5525	30M	24	330	6020	1790	7810	10M	24	3255	4025	8.5
8.8	1500	510	5005	25M	19	8195	20M	23	460	10M	24	8195	10M	78	7850	35M	43	190	4855	35M	19	435	2720	1900	4620	35M	18	435	3885	1900	5785	35M	18	435	6325	1900	8225	10M	24	3355	4125	8.8
9.1	1625	510	5230	25M	22	8495	20M	24	460	10M	24	8495	10M	82	7850	35M	45	180	5080	35M	22	390	2870	2035	4905	35M	21	390	3960	2035	5995	35M	21	390	6630	2035	8665	10M	24	3455	4225	9.1

QUANTITIES

H	PER 8 m UNIT		PER LIN. METER	
	CONCRETE m^3	STEEL kg	CONCRETE m^3	STEEL kg
1.8	5.19	222	0.65	28
2.1	6.15	267	0.77	33
2.4	7.20	301	0.90	38
2.7	8.25	342	1.03	43
3.0	9.29	388	1.16	49
3.4	10.71	477	1.34	60
3.7	12.09	548	1.51	68
4.0	14.63	616	1.83	77
4.3	16.03	766	2.00	96
4.6	17.38	908	2.17	114
4.9	18.63	1039	2.33	130
5.2	20.86	1150	2.61	144
5.5	22.40	1354	2.80	169
5.8	23.84	1543	2.98	193
6.1	25.36	1791	3.17	224
6.4	28.66	1838	3.58	230
6.7	30.50	2085	3.81	261
7.0	32.51	2525	4.06	316
7.3	34.48	2895	4.31	362
7.6	36.64	3540	4.58	443
7.9	41.01	3712	5.13	464
8.2	43.26	4246	5.41	531
8.5	45.46	4803	5.68	600
8.8	47.58	5656	5.95	707
9.1	49.80	6562	6.23	820



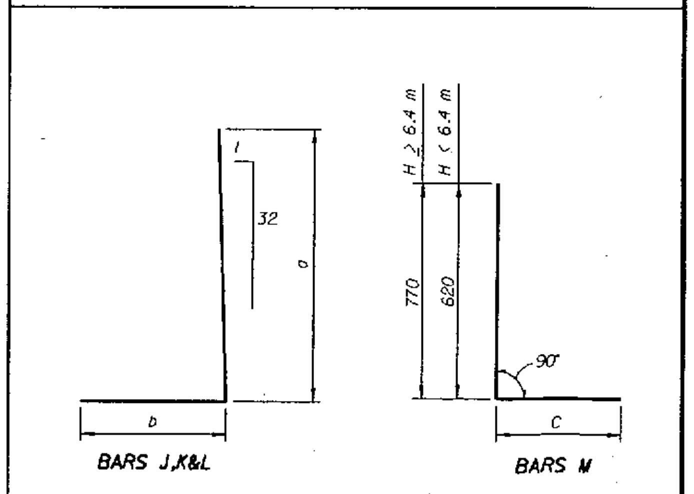
VIEW A-A



TYPICAL SECTION

NOTE:
To accommodate the variable height of a wall unit, vertical bars may be field cut to fit and the number of horizontal Bars G required by the highest wall dimension within an 8 m unit shall be equally spaced at each end of the unit.

BENDING DIAGRAM



NOTE: All bar dimensions are out to out.

NOTE: Bars M are paired with Bars F and Bars A are paired with Bars J.

NOTE: Work this Drawing with Standard Index No. 800.

NOTE: All dimensions are in millimeters unless otherwise noted.

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	SHM	12/93
Checked by	JMD/NRK	12/93
Designed by	JMD	12/93
Checked by	NRK	12/93
Approved by	AJG	

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE:
CASE I (192 kPa MAX. BEARING PRESSURE) 1.8 m TO 9.1 m HEIGHT

PROJECT NAME:

Drawing No.
1 of 1

Index No.
803

/usr5/strstand/met/803.dgn

Mon Aug 15 11:46:18 1994

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

* NOTE: Wall Dimension "H" is given in meters (m). All other dimensions, lengths and spacings are given in millimeters (mm).

** NOTE: For placement details of Bars D see Standard Index No. 800.

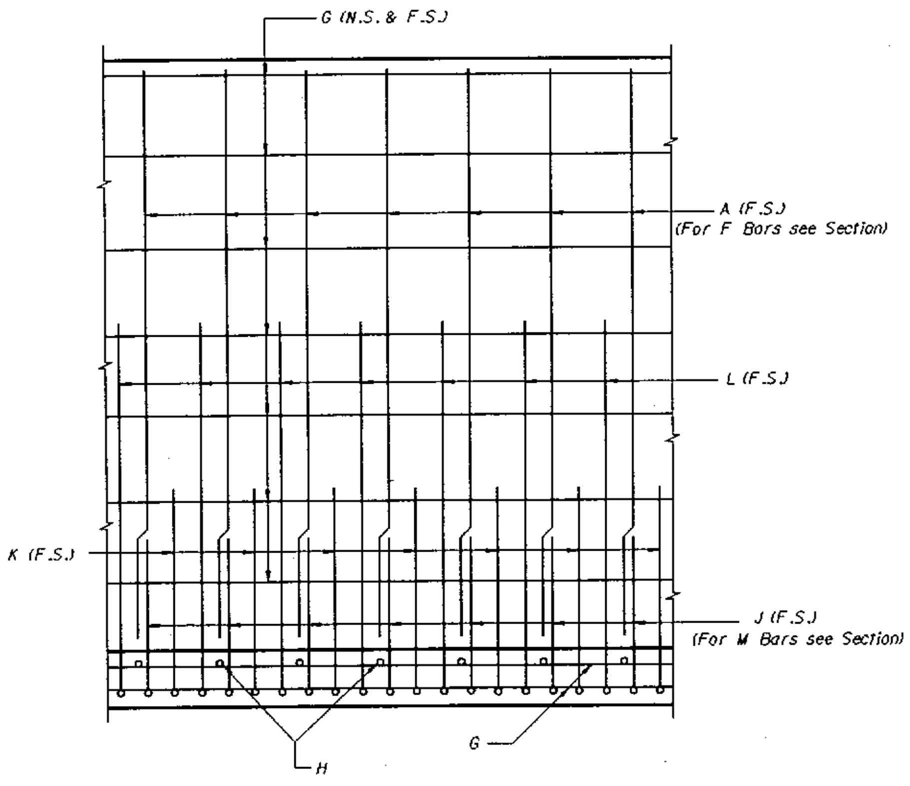
NOTE: The spacings shown are the maximum values allowed by design. These values shall be used for wall units shorter than 8 meters long. Units 8 meters long shall utilize the number of bars tabulated at equal spacings.

* RETAINING WALL DATA

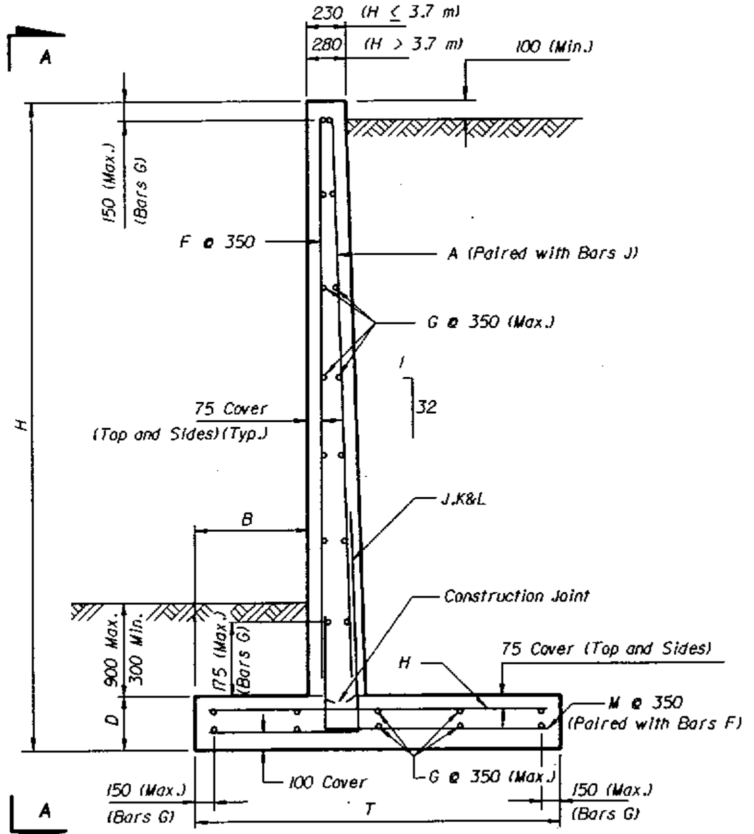
WALL DIMENSIONS				REINFORCING STEEL SCHEDULE																																						
H	B	D	T	BARS A			** BARS D			BARS F			BARS G			BARS H				BARS J						BARS K						BARS L						BARS M				H
				SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	C	LENGTH	
1.8	205	280	940				20M	4	460	10M	24	1425	10M	16	7850	10M	25	335	790	10M	35	235	1625	340	1965													10M	24	585	1205	1.8
2.1	255	280	1065				20M	5	460	10M	24	1725	10M	20	7850	10M	25	335	915	10M	35	235	1925	400	2325													10M	24	660	1280	2.1
2.4	305	280	1220				20M	6	460	10M	24	2025	10M	22	7850	10M	25	335	1070	10M	35	235	2225	455	2680													10M	24	765	1385	2.4
2.7	355	280	1370				20M	6	460	10M	24	2325	10M	24	7850	10M	26	315	1220	10M	38	215	2525	515	3040													10M	24	865	1485	2.7
3.0	380	280	1500				20M	7	460	10M	24	2625	10M	26	7850	10M	38	215	1350	10M	38	215	2825	550	3375													10M	24	970	1590	3.0
3.4	405	280	1675				20M	8	460	10M	24	3025	10M	28	7850	15M	31	265	1525	15M	22	380	3225	590	3815													10M	24	1120	1740	3.4
3.7	455	305	1805				20M	9	460	10M	24	3300	10M	32	7850	10M	52	155	1655	15M	27	305	3525	650	4175													10M	24	1200	1820	3.7
4.0	485	305	1905				20M	10	460	10M	24	3600	10M	34	7850	15M	36	225	1755	15M	27	305	3825	735	4560													10M	24	1270	1890	4.0
4.3	535	305	2085				20M	11	460	10M	24	3900	10M	38	7850	15M	43	190	1935	15M	36	225	4125	795	4920													10M	24	1400	2020	4.3
4.6	560	305	2235	15M	22	4200	20M	12	460	10M	24	4200	10M	40	7850	20M	37	220	2085	15M	22	390	1120	830	1950	15M	21	390	3275	830	4105							10M	24	1525	2145	4.6
4.9	610	305	2335	15M	19	4500	20M	13	460	10M	24	4500	10M	42	7850	20M	45	180	2185	15M	19	440	865	890	1755	15M	18	440	1575	890	2465	15M	18	440	4495	890	5385	10M	24	1575	2195	4.9
5.2	610	355	2490	15M	22	4750	20M	13	460	10M	24	4750	10M	44	7850	20M	45	180	2340	15M	22	390	915	900	1815	15M	21	390	1725	900	2625	15M	21	390	4240	900	5140	10M	24	1730	2350	5.2
5.5	685	355	2665	15M	19	5050	20M	14	460	10M	24	5050	10M	46	7850	20M	52	155	2515	20M	19	450	1320	985	2305	20M	18	450	1805	985	2790	20M	18	450	4545	985	5530	10M	24	1830	2450	5.5
5.8	710	355	2795	15M	21	5350	20M	15	460	10M	24	5350	10M	50	7850	25M	37	220	2645	20M	21	410	1040	1020	2060	20M	20	410	1930	1020	2950	20M	20	410	4675	1020	5695	10M	24	1935	2555	5.8
6.1	760	355	2945	20M	23	5650	20M	16	460	10M	24	5650	10M	52	7850	25M	37	220	2795	20M	23	370	1040	1080	2120	20M	22	370	1930	1080	3010	20M	22	370	4980	1080	6060	10M	24	2035	2655	6.1
6.4	785	430	3075	20M	23	5875	20M	17	460	10M	24	5875	10M	54	7850	25M	37	220	2925	20M	23	370	1575	1110	2685	20M	22	370	2185	1110	3295	20M	22	370	3405	1110	4515	10M	24	2140	2910	6.4
6.7	865	430	3225	20M	25	6175	20M	17	460	10M	24	6175	10M	56	7850	25M	43	190	3075	20M	25	330	1395	1200	2595	20M	24	330	2490	1200	3690	20M	24	330	3710	1200	4910	10M	24	2210	2980	6.7
7.0	865	430	3355	20M	19	6475	20M	18	460	10M	24	6475	10M	58	7850	30M	41	200	3205	25M	19	440	1780	1210	2990	25M	18	440	2690	1210	3900	25M	18	440	4015	1210	5225	10M	24	2340	3110	7.0
7.3	940	430	3505	20M	22	6775	20M	19	460	10M	24	6775	10M	62	7850	30M	41	200	3355	25M	22	390	1780	1295	3075	25M	21	390	2995	1295	4290	25M	21	390	4320	1295	5615	10M	24	2415	3185	7.3
7.6	940	430	3660	20M	19	7075	20M	20	460	10M	24	7075	10M	64	7850	30M	50	160	3510	30M	19	450	2110	1305	3415	30M	18	450	3200	1305	4505	30M	18	450	5335	1305	6640	10M	24	2570	3340	7.6
7.9	1040	510	3810	20M	20	7295	20M	21	460	10M	24	7295	10M	66	7850	30M	44	185	3660	30M	20	425	2260	1415	3675	30M	19	425	3455	1415	4870	30M	19	425	5565	1415	6980	10M	24	2620	3390	7.9
8.2	1120	510	4015	20M	22	7595	20M	21	460	10M	24	7595	10M	68	7850	30M	50	160	3865	30M	22	385	2415	1505	3920	30M	21	385	3580	1505	5085	30M	21	385	5715	1505	7220	10M	24	2745	3515	8.2
8.5	1220	510	4190	20M	25	7895	20M	22	460	10M	24	7895	10M	72	7850	30M	50	160	4040	30M	25	330	2565	1615	4180	30M	24	330	3735	1615	5350	30M	24	330	6020	1615	7635	10M	24	2820	3590	8.5
8.8	1295	510	4395	25M	19	8195	20M	23	460	10M	24	8195	10M	74	7850	35M	45	180	4245	35M	19	435	2720	1695	4415	35M	18	435	3885	1695	5580	35M	18	435	6325	1695	8020	10M	24	2950	3720	8.8
9.1	1420	510	4595	25M	22	8495	20M	24	460	10M	24	8495	10M	78	7850	35M	45	180	4445	35M	22	390	2870	1830	4700	35M	21	390	3960	1830	5790	35M	21	390	6630	1830	8460	10M	24	3025	3795	9.1

QUANTITIES

H	PER 8 m UNIT		PER LIN. METER	
	CONCRETE m^3	STEEL kg	CONCRETE m^3	STEEL kg
1.8	5.19	222	0.65	28
2.1	6.15	267	0.77	33
2.4	7.20	301	0.90	38
2.7	8.25	342	1.03	43
3.0	9.29	388	1.16	49
3.4	10.71	477	1.34	60
3.7	12.09	548	1.51	68
4.0	14.63	616	1.83	77
4.3	16.03	766	2.00	96
4.6	17.38	908	2.17	114
4.9	18.63	1039	2.33	130
5.2	20.86	1150	2.61	144
5.5	22.40	1354	2.80	169
5.8	23.84	1543	2.98	193
6.1	25.36	1791	3.17	224
6.4	28.41	1810	3.55	226
6.7	30.05	2057	3.76	257
7.0	31.65	2437	3.96	305
7.3	33.35	2779	4.17	347
7.6	35.08	3352	4.38	419
7.9	38.92	3500	4.87	437
8.2	41.00	4000	5.12	500
8.5	42.97	4545	5.37	568
8.8	45.09	5396	5.64	674
9.1	47.21	6202	5.90	775



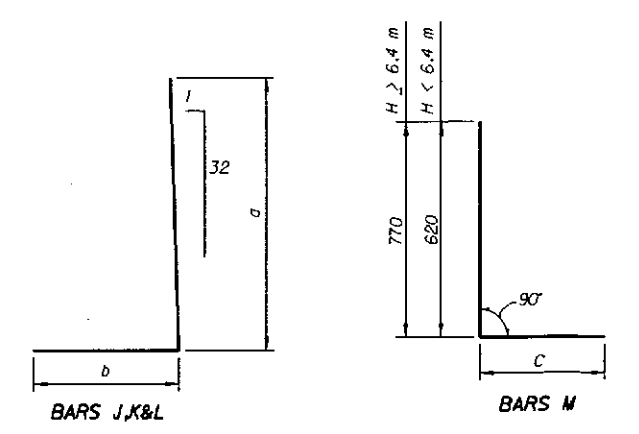
VIEW A-A



TYPICAL SECTION

NOTE:
To accommodate the variable height of a wall unit, vertical bars may be field cut to fit and the number of horizontal Bars G required by the highest wall dimension within an 8 m unit shall be equally spaced at each end of the unit.

BENDING DIAGRAM



NOTE: All bar dimensions are out to out.

NOTE: Bars M are paired with Bars F and Bars A are paired with Bars J.

NOTE: Work this Drawing with Standard Index No. 800.

NOTE: All dimensions are in millimeters unless otherwise noted.

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	SHM	12/93
Checked by	JMD/NRK	12/93
Designed by	JMD	12/93
Checked by	NRK	12/93
Approved by	AJG	

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE: CASE I (239 kPa MAX. BEARING PRESSURE) 1.8 m TO 9.1 m HEIGHT

PROJECT NAME:

Drawing No. 1 of 1

Index No. 804

Mon Aug 15 11:47:01 1994 /usr5/strstand/met/804.dgn

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

* NOTE: Wall Dimension 'H' is given in meters (m). All other dimensions, lengths and spacings are given in millimeters (mm).

** NOTE: For placement details of Bars D see Standard Index No. 800.

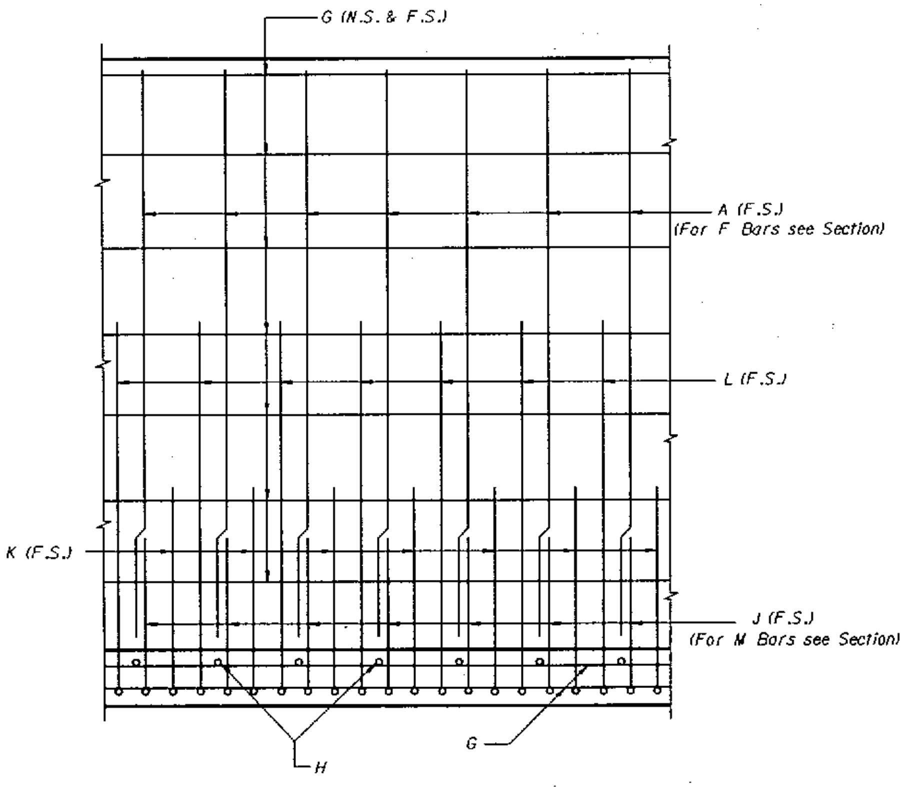
NOTE: The spacings shown are the maximum values allowed by design. These values shall be used for wall units shorter than 8 meters long. Units 8 meters long shall utilize the number of bars tabulated at equal spacings.

* RETAINING WALL DATA

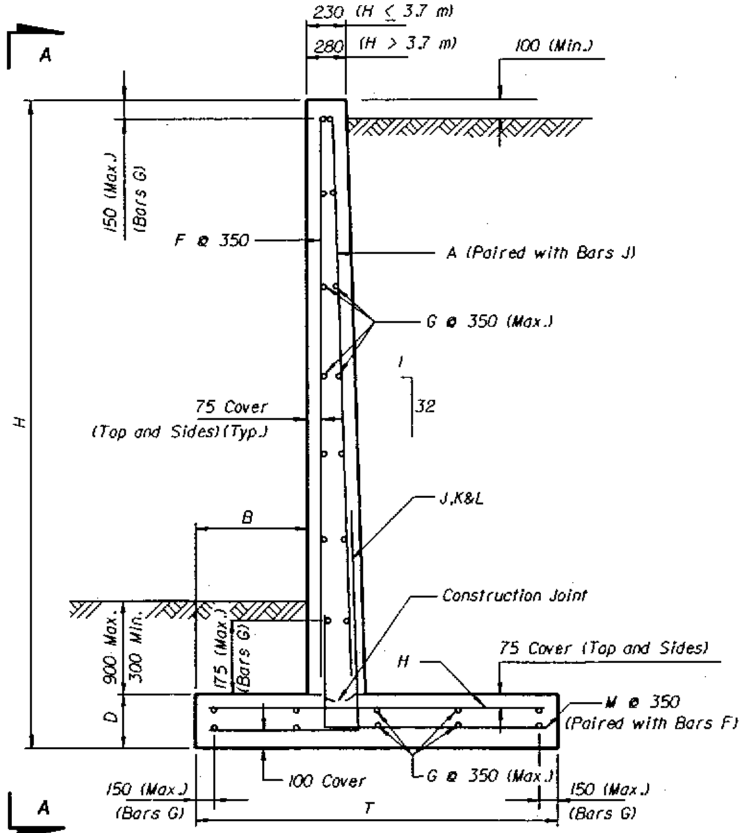
WALL DIMENSIONS				REINFORCING STEEL SCHEDULE																																						
H	B	D	T	BARS A			**BARS D			BARS F			BARS G			BARS H				BARS J						BARS K						BARS L						BARS M				H
				SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	C	LENGTH	
1.8	205	280	940				20M	4	460	10M	24	1425	10M	16	7850	10M	25	335	790	10M	35	235	1625	340	1965													10M	24	585	1205	1.8
2.1	255	280	1065				20M	5	460	10M	24	1725	10M	20	7850	10M	25	335	915	10M	35	235	1925	400	2325													10M	24	660	1280	2.1
2.4	305	280	1220				20M	6	460	10M	24	2025	10M	22	7850	10M	25	335	1070	10M	35	235	2225	455	2680													10M	24	765	1385	2.4
2.7	355	280	1370				20M	6	460	10M	24	2325	10M	24	7850	10M	26	315	1220	10M	38	215	2525	515	3040													10M	24	865	1485	2.7
3.0	380	280	1500				20M	7	460	10M	24	2625	10M	26	7850	10M	38	215	1350	10M	38	215	2825	550	3375													10M	24	970	1590	3.0
3.4	405	280	1675				20M	8	460	10M	24	3025	10M	28	7850	15M	31	265	1525	15M	22	380	3225	590	3815													10M	24	1120	1740	3.4
3.7	455	305	1805				20M	9	460	10M	24	3300	10M	32	7850	10M	52	155	1655	15M	27	305	3525	650	4175													10M	24	1200	1820	3.7
4.0	485	305	1905				20M	10	460	10M	24	3600	10M	34	7850	15M	36	225	1755	15M	27	305	3825	735	4560													10M	24	1270	1890	4.0
4.3	535	305	2085				20M	11	460	10M	24	3900	10M	38	7850	15M	43	190	1935	15M	36	225	4125	795	4920													10M	24	1400	2020	4.3
4.6	560	305	2235	15M	22	4200	20M	12	460	10M	24	4200	10M	40	7850	20M	37	220	2085	15M	22	390	1120	830	1950	15M	21	390	3275	830	4105							10M	24	1525	2145	4.6
4.9	610	305	2335	15M	19	4500	20M	13	460	10M	24	4500	10M	42	7850	20M	45	180	2185	15M	19	440	865	890	1755	15M	18	440	1575	890	2465	15M	18	440	4495	890	5385	10M	24	1575	2195	4.9
5.2	610	355	2490	15M	22	4750	20M	13	460	10M	24	4750	10M	44	7850	20M	45	180	2340	15M	22	390	915	900	1815	15M	21	390	1725	900	2625	15M	21	390	4240	900	5140	10M	24	1730	2350	5.2
5.5	685	355	2665	15M	19	5050	20M	14	460	10M	24	5050	10M	46	7850	20M	52	155	2515	20M	19	450	1320	985	2305	20M	18	450	1805	985	2790	20M	18	450	4545	985	5530	10M	24	1830	2450	5.5
5.8	710	355	2795	15M	21	5350	20M	15	460	10M	24	5350	10M	50	7850	25M	37	220	2645	20M	21	410	1040	1020	2060	20M	20	410	1930	1020	2950	20M	20	410	4675	1020	5695	10M	24	1935	2555	5.8
6.1	760	355	2945	20M	23	5650	20M	16	460	10M	24	5650	10M	52	7850	25M	37	220	2795	20M	23	370	1040	1080	2120	20M	22	370	1930	1080	3010	20M	22	370	4980	1080	6060	10M	24	2035	2655	6.1
6.4	785	430	3075	20M	23	5875	20M	17	460	10M	24	5875	10M	54	7850	25M	37	220	2925	20M	23	370	1575	1110	2685	20M	22	370	2185	1110	3295	20M	22	370	3405	1110	4515	10M	24	2140	2910	6.4
6.7	865	430	3225	20M	25	6175	20M	17	460	10M	24	6175	10M	56	7850	25M	43	190	3075	20M	25	330	1395	1200	2595	20M	24	330	2490	1200	3690	20M	24	330	3710	1200	4910	10M	24	2210	2980	6.7
7.0	865	430	3355	20M	19	6475	20M	18	460	10M	24	6475	10M	58	7850	30M	41	200	3205	25M	19	440	1780	1210	2990	25M	18	440	2690	1210	3900	25M	18	440	4015	1210	5225	10M	24	2340	3110	7.0
7.3	940	430	3505	20M	22	6775	20M	19	460	10M	24	6775	10M	62	7850	30M	41	200	3355	25M	22	390	1780	1295	3075	25M	21	390	2995	1295	4290	25M	21	390	4320	1295	5615	10M	24	2415	3185	7.3
7.6	940	430	3660	20M	19	7075	20M	20	460	10M	24	7075	10M	64	7850	30M	50	160	3510	30M	19	450	2110	1305	3415	30M	18	450	3200	1305	4505	30M	18	450	5335	1305	6640	10M	24	2570	3340	7.6
7.9	1040	510	3810	20M	20	7295	20M	21	460	10M	24	7295	10M	66	7850	30M	44	185	3660	30M	20	425	2260	1415	3675	30M	19	425	3455	1415	4870	30M	19	425	5565	1415	6980	10M	24	2620	3390	7.9
8.2	1090	510	3935	20M	22	7595	20M	21	460	10M	24	7595	10M	68	7850	30M	50	160	3785	30M	22	385	2415	1475	3890	30M	21	385	3580	1475	5055	30M	21	385	5715	1475	7190	10M	24	2695	3465	8.2
8.5	1170	510	4090	20M	25	7895	20M	22	460	10M	24	7895	10M	70	7850	30M	50	160	3940	30M	25	330	2565	1565	4130	30M	24	330	3735	1565	5300	30M	24	330	6020	1565	7585	10M	24	2770	3540	8.5
8.8	1245	510	4190	25M	19	8195	20M	23	460	10M	24	8195	10M	74	7850	35M	45	180	4040	35M	19	435	2720	1645	4365	35M	18	435	3885	1645	5530	35M	18	435	6325	1645	7970	10M	24	2795	3565	8.8
9.1	1345	510	4420	25M	22	8495	20M	24	460	10M	24	8495	10M	76	7850	35M	45	180	4270	35M	22	390	2870	1755	4625	35M	21	390	3960	1755	5715	35M	21	390	6630	1755	8385	10M	24	2925	3695	9.1

QUANTITIES

H	PER 8 m UNIT		PER UN. METER	
	CONCRETE m^3	STEEL kg	CONCRETE m^3	STEEL kg
1.8	5.19	222	0.65	28
2.1	6.15	267	0.77	33
2.4	7.20	301	0.90	38
2.7	8.25	342	1.03	43
3.0	9.29	388	1.16	49
3.4	10.71	477	1.34	60
3.7	12.09	548	1.51	68
4.0	14.63	616	1.83	77
4.3	16.03	766	2.00	96
4.6	17.38	908	2.17	114
4.9	18.63	1039	2.33	130
5.2	20.86	1150	2.61	144
5.5	22.40	1354	2.80	169
5.8	23.84	1543	2.98	193
6.1	25.36	1791	3.17	224
6.4	28.41	1810	3.55	226
6.7	30.05	2057	3.76	257
7.0	31.65	2437	3.96	305
7.3	33.35	2779	4.17	347
7.6	35.08	3352	4.38	419
7.9	38.92	3500	4.87	437
8.2	40.67	3966	5.08	496
8.5	42.56	4484	5.32	561
8.8	44.26	5299	5.53	662
9.1	46.50	6088	5.81	761



VIEW A-A

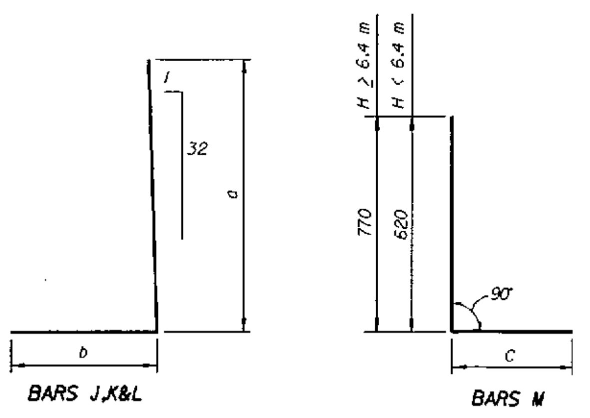


TYPICAL SECTION

NOTE:

To accommodate the variable height of a wall unit, vertical bars may be field cut to fit and the number of horizontal Bars G required by the highest wall dimension within an 8 m unit shall be equally spaced at each end of the unit.

BENDING DIAGRAM



NOTE: All bar dimensions are out to out.

NOTE: Bars M are paired with Bars F and Bars A are paired with Bars J.

NOTE: Work this Drawing with Standard Index No. 800.

NOTE: All dimensions are in millimeters unless otherwise noted.

/usr5/strstand/met/805.dgn

Mon Aug 15 11:47:42 1994

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	SHM	12/93
Checked by	JMD/NRK	12/93
Designed by	JMD	12/93
Checked by	NRK	12/93
Approved by	AJG	

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE: CASE I (287 kPa MAX. BEARING PRESSURE) 1.8 m TO 9.1 m HEIGHT

PROJECT NAME:

Drawing No. 1 of 1

Index No. 805

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

* NOTE: Wall Dimension 'H' is given in meters (m). All other dimensions, lengths and spacings are given in millimeters (mm).

* * NOTE: For placement details of Bars D see Standard Index No. 800.

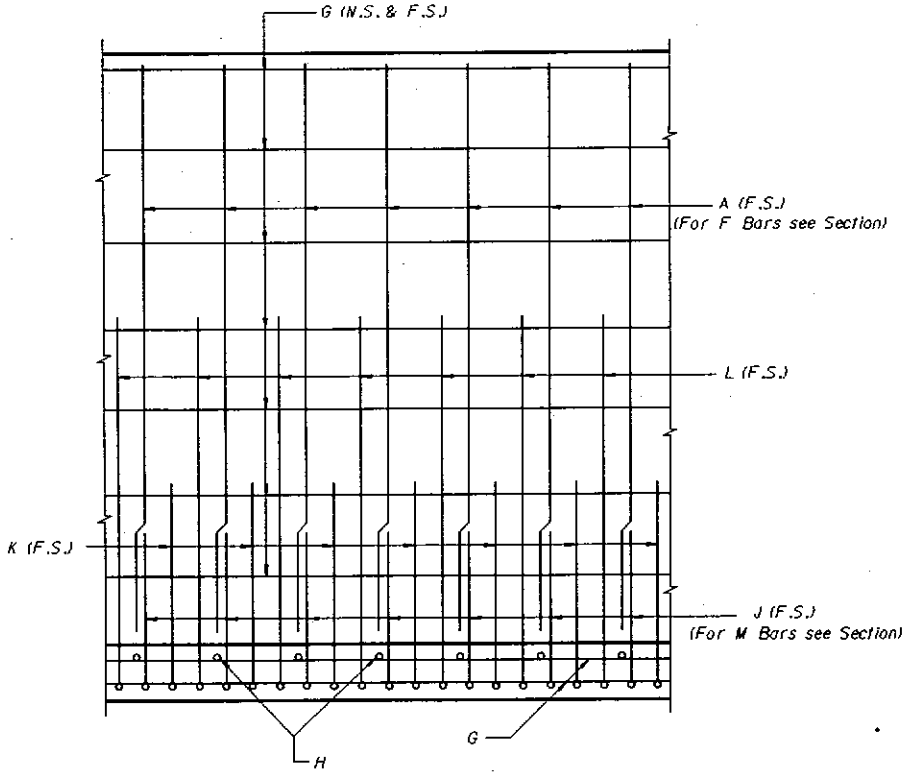
NOTE: The spacings shown are the maximum values allowed by design. These values shall be used for wall units shorter than 8 meters long. Units 8 meters long shall utilize the number of bars tabulated at equal spacings.

* RETAINING WALL DATA

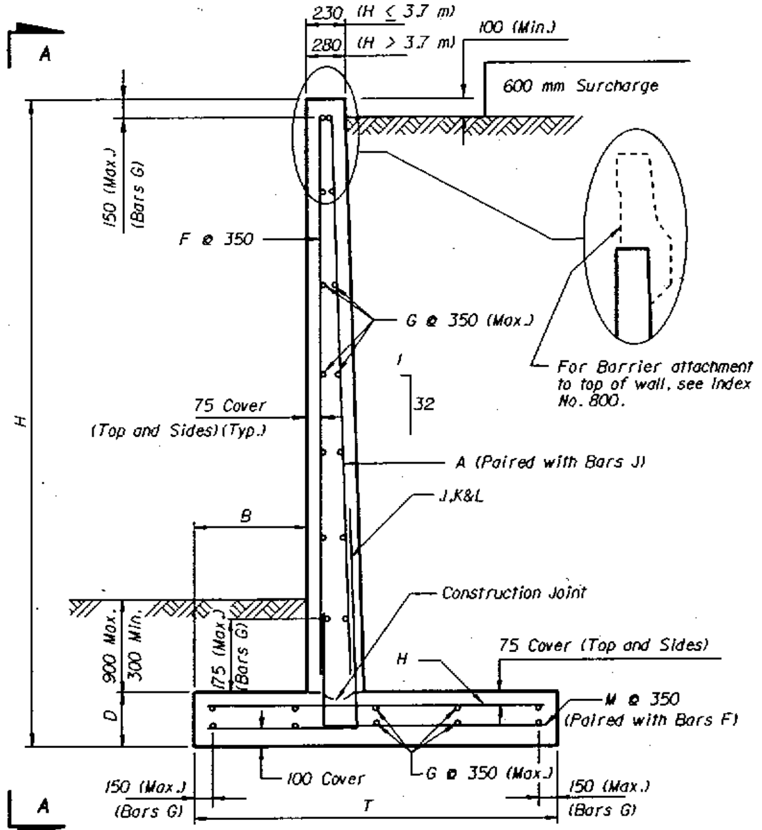
WALL DIMENSIONS				REINFORCING STEEL SCHEDULE																																					
H	B	D	T	BARS A			** BARS D			BARS F			BARS G			BARS H				BARS J						BARS K						BARS L						BARS M				H
				SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	C	LENGTH	
1.8	330	280	1295				20M	4	460	10M	24	1425	10M	18	7850	10M	25	335	1145	15M	30	270	1625	465	2090													10M	24	815	1435	1.8
2.1	355	280	1475				20M	5	460	10M	24	1725	10M	22	7850	10M	26	315	1325	15M	33	245	1925	500	2425													10M	24	970	1590	2.1
2.4	405	280	1600				20M	6	460	10M	24	2025	10M	24	7850	10M	38	215	1450	15M	37	220	2225	555	2780													10M	24	1045	1665	2.4
2.7	485	280	1755				20M	6	460	10M	24	2325	10M	26	7850	10M	46	175	1605	15M	37	220	2525	645	3170													10M	24	1120	1740	2.7
3.0	510	280	1930				20M	7	460	10M	24	2625	10M	28	7850	15M	36	225	1780	15M	42	195	2825	680	3505													10M	24	1270	1890	3.0
3.4	560	280	2185				20M	8	460	10M	24	3025	10M	32	7850	15M	48	170	2035	15M	48	170	3225	745	3970													10M	24	1475	2095	3.4
3.7	660	305	2490				20M	9	460	10M	24	3300	10M	36	7850	15M	42	195	2340	15M	26	315	3525	855	4380	15M	25	315	2945	855	3800							10M	24	1680	2300	3.7
4.0	760	305	2745				20M	10	460	10M	24	3600	10M	38	7850	20M	37	220	2595	15M	26	315	3825	1010	4835	15M	25	315	2745	1010	3755							10M	24	1835	2455	4.0
4.3	840	305	3075				20M	11	460	10M	24	3900	10M	42	7850	20M	39	210	2925	15M	28	295	4125	1100	5225	15M	27	295	2745	1100	3845							10M	24	2085	2705	4.3
4.6	915	305	3430	15M	23	4200	20M	12	460	10M	24	4200	10M	46	7850	20M	52	155	3280	15M	23	365	1120	1185	2305	15M	22	365	3710	1185	4895	15M	22	365	2440	1185	3625	10M	24	2365	2985	4.6
4.9	1015	305	3735	20M	19	4500	20M	13	460	10M	24	4500	10M	50	7850	25M	38	215	3585	20M	19	450	990	1295	2285	20M	18	450	965	1295	2260	20M	18	450	2820	1295	4115	10M	24	2570	3190	4.9
5.2	1120	355	4165	20M	20	4750	20M	13	460	10M	24	4750	10M	54	7850	25M	38	215	4015	20M	20	415	1245	1410	2655	20M	19	415	1015	1410	2425	20M	19	415	2820	1410	4230	10M	24	2895	3515	5.2
5.5	1220	355	4445	20M	23	5050	20M	14	460	10M	24	5050	10M	56	7850	25M	42	195	4295	20M	23	370	1320	1520	2840	20M	22	370	1015	1520	2535	20M	22	370	2415	1520	3935	10M	24	3075	3695	5.5
5.8	1320	355	4825	20M	25	5350	20M	15	460	10M	24	5350	10M	60	7850	25M	48	170	4675	20M	25	330	1575	1630	3205	20M	24	330	1500	1630	3130	20M	24	330	2720	1630	4350	10M	24	3355	3975	5.8
6.1	1450	355	5155	20M	19	5650	20M	16	460	10M	24	5650	10M	64	7850	30M	41	200	5005	25M	19	440	1320	1770	3090	25M	18	440	1500	1770	3270	25M	18	440	3025	1770	4795	10M	24	3555	4175	6.1

QUANTITIES

H	PER 8 m UNIT		PER LIN. METER	
	CONCRETE m^3	STEEL kg	CONCRETE m^3	STEEL kg
1.8	5.99	290	0.75	36
2.1	7.07	356	0.88	45
2.4	8.05	429	1.01	54
2.7	9.12	485	1.14	61
3.0	10.25	597	1.28	75
3.4	11.85	755	1.48	94
3.7	13.76	819	1.72	102
4.0	16.68	930	2.09	116
4.3	18.45	1056	2.31	132
4.6	20.30	1363	2.54	170
4.9	22.05	1544	2.76	193
5.2	25.62	1748	3.20	218
5.5	27.46	1995	3.43	249
5.8	29.61	2369	3.70	296
6.1	31.63	2777	3.95	347



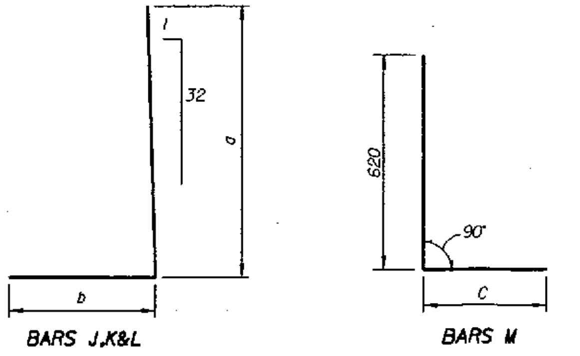
VIEW A-A



TYPICAL SECTION

NOTE:
To accommodate the variable height of a wall unit, vertical bars may be field cut to fit and the number of horizontal Bars G required by the highest wall dimension within an 8 m unit shall be equally spaced at each end of the unit.

BENDING DIAGRAM



NOTE: All bar dimensions are out to out.

NOTE: Bars M are paired with Bars F and Bars A are paired with Bars J.

NOTE: Work this Drawing with Standard Index No. 800.

NOTE: All dimensions are in millimeters unless otherwise noted.

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	SHM	12/93
Checked by	JMD/NRK	12/93
Designed by	JMD	12/93
Checked by	NRK	12/93
Approved by	AJG	

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE: CASE II (96 kPa MAX. BEARING PRESSURE) 1.8 m TO 6.1 m HEIGHT

PROJECT NAME:

Drawing No. 1 of 1

Index No. 806

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

* NOTE: Wall Dimension "H" is given in meters (m). All other dimensions, lengths and spacings are given in millimeters (mm).

** NOTE: For placement details of Bars D see Standard Index No. 800.

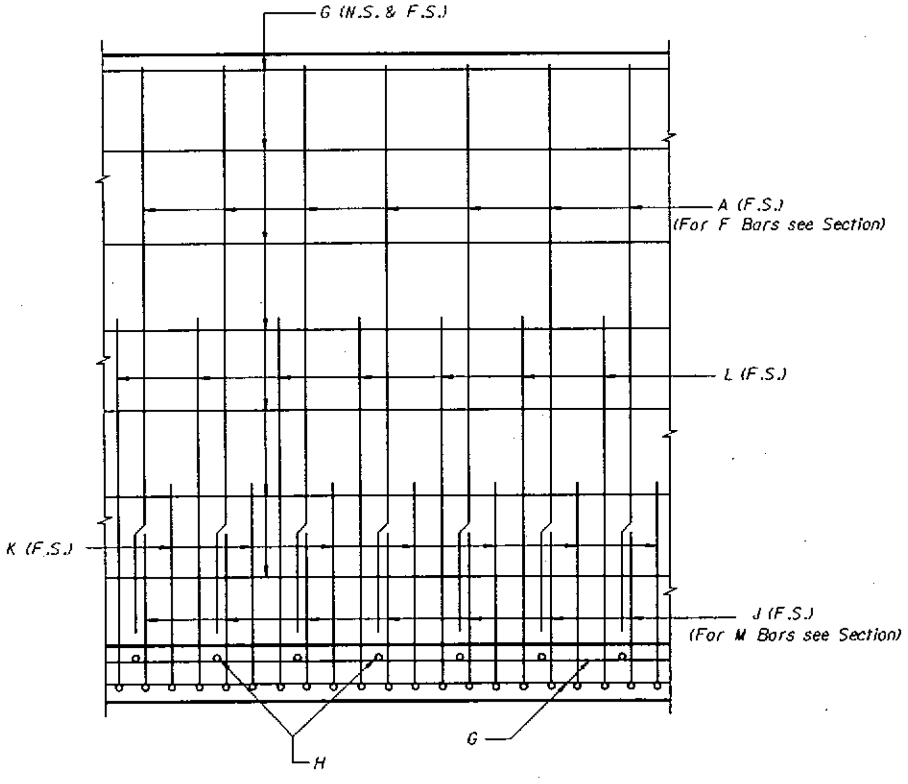
NOTE: The spacings shown are the maximum values allowed by design. These values shall be used for wall units shorter than 8 meters long. Units 8 meters long shall utilize the number of bars tabulated at equal spacings.

* RETAINING WALL DATA

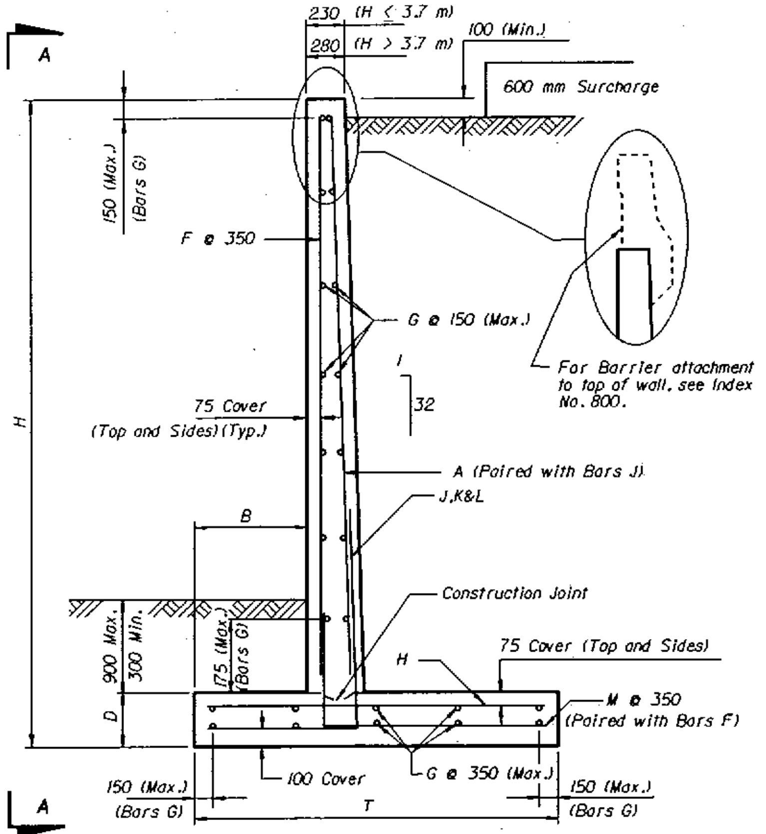
WALL DIMENSIONS				REINFORCING STEEL SCHEDULE																																						
H	B	D	T	BARS A			**BARS D			BARS F			BARS G			BARS H				BARS J						BARS K						BARS L						BARS M				H
				SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	C	LENGTH	
1.8	330	280	1295				20M	4	460	10M	24	1425	10M	18	7850	10M	25	335	1145	15M	30	270	1625	465	2090													10M	24	815	1435	1.8
2.1	355	280	1475				20M	5	460	10M	24	1725	10M	22	7850	10M	26	315	1325	15M	33	245	1925	500	2425													10M	24	970	1590	2.1
2.4	405	280	1600				20M	6	460	10M	24	2025	10M	24	7850	10M	38	215	1450	15M	37	220	2225	555	2780													10M	24	1045	1665	2.4
2.7	485	280	1755				20M	6	460	10M	24	2325	10M	26	7850	10M	46	175	1605	15M	37	220	2525	645	3170													10M	24	1120	1740	2.7
3.0	485	280	1905				20M	7	460	10M	24	2625	10M	28	7850	15M	36	225	1755	15M	42	195	2825	655	3480													10M	24	1270	1890	3.0
3.4	510	280	2030				20M	8	460	10M	24	3025	10M	30	7850	15M	48	170	1880	15M	48	170	3225	695	3920													10M	24	1370	1990	3.4
3.7	585	305	2160				20M	9	460	10M	24	3300	10M	34	7850	15M	42	195	2010	15M	26	315	3525	780	4305	15M	25	315	2945	780	3725							10M	24	1425	2045	3.7
4.0	610	305	2310				20M	10	460	10M	24	3600	10M	36	7850	20M	37	220	2160	15M	26	315	3825	860	4685	15M	25	315	2745	860	3605							10M	24	1550	2170	4.0
4.3	635	305	2465				20M	11	460	10M	24	3900	10M	40	7850	20M	45	180	2315	15M	28	295	4125	895	5020	15M	27	295	2745	895	3640							10M	24	1680	2300	4.3
4.6	685	305	2615	15M	23	4200	20M	12	460	10M	24	4200	10M	42	7850	20M	52	155	2465	15M	23	365	1120	955	2075	15M	22	365	3710	955	4665	15M	22	365	2440	955	3395	10M	24	1780	2400	4.6
4.9	760	305	2845	20M	19	4500	20M	13	460	10M	24	4500	10M	46	7850	25M	43	190	2695	20M	19	450	990	1040	2030	20M	18	450	965	1040	2005	20M	18	450	2820	1040	3860	10M	24	1935	2555	4.9
5.2	815	355	3125	20M	20	4750	20M	13	460	10M	24	4750	10M	48	7850	25M	37	220	2975	20M	20	415	1245	1105	2350	20M	19	415	1015	1105	2120	20M	19	415	2820	1105	3925	10M	24	2160	2780	5.2
5.5	915	355	3380	20M	23	5050	20M	14	460	10M	24	5050	10M	50	7850	25M	43	190	3230	20M	23	370	1320	1215	2535	20M	22	370	1015	1215	2230	20M	22	370	2415	1215	3630	10M	24	2315	2935	5.5
5.8	990	355	3660	20M	25	5350	20M	15	460	10M	24	5350	10M	54	7850	30M	41	200	3510	20M	25	330	1575	1300	2875	20M	24	330	1500	1300	2800	20M	24	330	2720	1300	4020	10M	24	2520	3140	5.8
6.1	1065	355	3885	20M	19	5650	20M	16	460	10M	24	5650	10M	58	7850	30M	48	170	3735	25M	19	440	1320	1385	2705	25M	18	440	1500	1385	2885	25M	18	440	3025	1385	4410	10M	24	2670	3290	6.1
6.4	1145	430	4240	20M	19	5875	20M	17	460	10M	24	5875	10M	62	7850	30M	41	200	4090	25M	19	440	1725	1470	3195	25M	18	440	2085	1470	3555	25M	18	440	3605	1470	5075	10M	24	2945	3715	6.4
6.7	1245	430	4520	20M	19	6175	20M	17	460	10M	24	6175	10M	64	7850	30M	41	200	4370	30M	19	450	1725	1580	3305	30M	18	450	1700	1580	3280	30M	18	450	3300	1580	4880	10M	24	3125	3895	6.7
7.0	1320	430	4825	20M	19	6475	20M	18	460	10M	24	6475	10M	66	7850	30M	50	160	4675	30M	19	450	2110	1665	3775	30M	18	450	2285	1665	3950	30M	18	450	4115	1665	5780	10M	24	3355	4125	7.0
7.3	1420	430	5130	20M	22	6775	20M	19	460	10M	24	6775	10M	70	7850	35M	43	190	4980	30M	22	380	2110	1775	3885	30M	21	380	2310	1775	4085	30M	21	380	4115	1775	5890	10M	24	3560	4330	7.3
7.6	1500	430	5510	20M	22	7075	20M	20	460	10M	24	7075	10M	74	7850	35M	45	180	5360	30M	22	375	2590	1865	4455	30M	21	375	2870	1865	4735	30M	21	375	4725	1865	6590	10M	24	3860	4630	7.6
7.9	1650	510	5740	20M	25	7295	20M	21	460	10M	24	7295	10M	78	7850	35M	39	210	5590	30M	25	330	2745	2025	4770	30M	24	330	2870	2025	4895	30M	24	330	5335	2025	7360	10M	24	3940	4710	7.9
8.2	1755	510	6020	25M	19	7595	20M	21	460	10M	24	7595	10M	80	7850	35M	45	180	5870	35M	19	435	2895	2140	5035	35M	18	435	3050	2140	5190	35M	18	435	5485	2140	7625	10M	24	4115	4885	8.2
8.5	1880	510	6275	25M	22	7895	20M	22	460	10M	24	7895	10M	84	7850	35M	45	180	6125	35M	22	390	3050	2275	5325	35M	21	390	3050	2275	5325	35M	21	390	5485	2275	7760	10M	24	4245	5015	8.5
8.8	2005	510	6530	25M	23	8195	20M	23	460	10M	24	8195	10M	86	7850	35M	54	150	6380	35M	23	365	3200	2405	5605	35M	22	365	3505	2405	5910	35M	22	365	5945	2405	8350	10M	24	4375	5145	8.8
9.1	2160	510	6705	25M	24	8495	20M	24	460	10M	24	8495	10M	90	7850	35M	56	145	6555	35M	24	340	3355	2570	5925	35M	23	340	3505	2570	6075	35M	23	340	5945	2570	8515	10M	24	4395	5165	9.1

QUANTITIES

H	PER 8 m UNIT		PER LIN. METER	
	CONCRETE m^3	STEEL kg	CONCRETE m^3	STEEL kg
1.8	5.99	290	0.75	36
2.1	7.07	356	0.88	45
2.4	8.05	429	1.01	54
2.7	9.12	485	1.14	61
3.0	10.20	594	1.27	74
3.4	11.50	725	1.44	91
3.7	12.96	774	1.62	97
4.0	15.62	862	1.95	108
4.3	16.96	995	2.12	124
4.6	18.31	1203	2.29	150
4.9	19.87	1426	2.48	178
5.2	22.66	1489	2.83	186
5.5	24.43	1733	3.05	217
5.8	26.30	2169	3.29	271
6.1	28.03	2498	3.50	312
6.4	32.41	2613	4.05	327
6.7	34.51	3015	4.31	377
7.0	36.71	3556	4.59	445
7.3	38.94	4313	4.87	539
7.6	41.44	4803	5.18	600
7.9	46.80	5141	5.85	643
8.2	49.18	5952	6.15	744
8.5	51.48	6706	6.43	838
8.8	53.80	7724	6.73	966
9.1	55.82	8269	6.98	1034



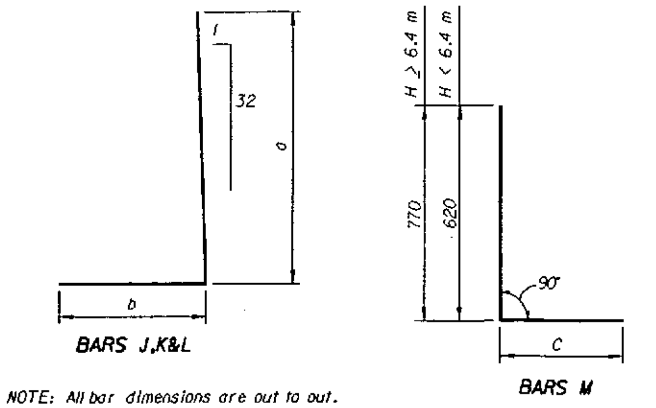
VIEW A-A



TYPICAL SECTION

NOTE:
To accommodate the variable height of a wall unit, vertical bars may be field cut to fit and the number of horizontal Bars G required by the highest wall dimension within an 8 m unit shall be equally spaced at each end of the unit.

BENDING DIAGRAM



NOTE: All bar dimensions are out to out.

NOTE: Bars M are paired with Bars F and Bars A are paired with Bars J.

NOTE: Work this Drawing with Standard Index No. 800.

NOTE: All dimensions are in millimeters unless otherwise noted.

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	SHM	12/93
Checked by	JMD/NRK	12/93
Designed by	JMD	12/93
Checked by	NRK	12/93
Approved by	AJG	

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE:
CASE II (144 kPa MAX. BEARING PRESSURE) 1.8 m TO 9.1 m HEIGHT

PROJECT NAME:

Drawing No.
1 of 1

Index No.
807

Mon Aug 15 11:49:03 1994 /usr5/strstand/met/807.dgn

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

* NOTE: Wall Dimension 'H' is given in meters (m). All other dimensions, lengths and spacings are given in millimeters (mm).

** NOTE: For placement details of Bars D see Standard Index No. 800.

NOTE: The spacings shown are the maximum values allowed by design. These values shall be used for wall units shorter than 8 meters long. Units 8 meters long shall utilize the number of bars tabulated at equal spacings.

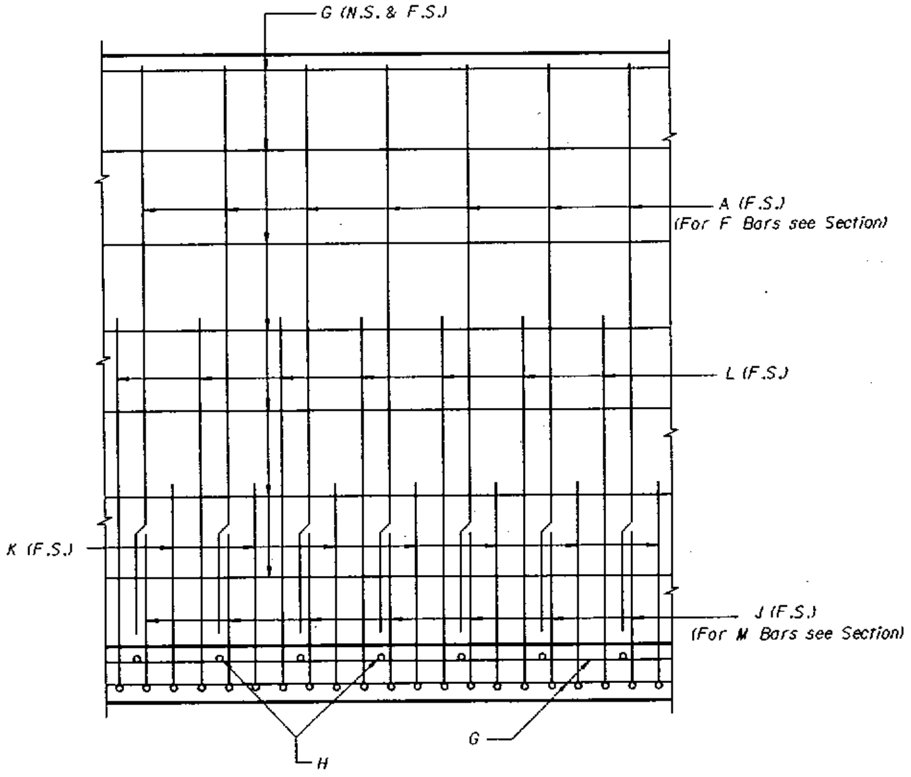
* RETAINING WALL DATA

WALL DIMENSIONS				REINFORCING STEEL SCHEDULE															
H	B	D	T	BARS A			** BARS D			BARS F			BARS G			BARS H			
				SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH
1.8	330	280	1295				20M	4	460	10M	24	1425	10M	18	7850	10M	25	335	1145
2.1	355	280	1475				20M	5	460	10M	24	1725	10M	22	7850	10M	26	315	1325
2.4	405	280	1600				20M	6	460	10M	24	2025	10M	24	7850	10M	38	215	1450
2.7	485	280	1755				20M	6	460	10M	24	2325	10M	26	7850	10M	46	175	1605
3.0	485	280	1905				20M	7	460	10M	24	2625	10M	28	7850	15M	36	225	1755
3.4	510	280	2030				20M	8	460	10M	24	3025	10M	30	7850	15M	48	170	1880
3.7	585	305	2160				20M	9	460	10M	24	3300	10M	34	7850	15M	42	195	2010
4.0	610	305	2310				20M	10	460	10M	24	3600	10M	36	7850	20M	37	220	2160
4.3	635	305	2465				20M	11	460	10M	24	3900	10M	40	7850	20M	45	180	2315
4.6	685	305	2615	15M	23	4200	20M	12	460	10M	24	4200	10M	42	7850	20M	52	155	2465
4.9	735	305	2770	20M	19	4500	20M	13	460	10M	24	4500	10M	46	7850	25M	43	190	2620
5.2	735	355	2920	20M	20	4750	20M	13	460	10M	24	4750	10M	46	7850	25M	37	220	2770
5.5	815	355	3050	20M	23	5050	20M	14	460	10M	24	5050	10M	48	7850	25M	43	190	2900
5.8	840	355	3225	20M	25	5350	20M	15	460	10M	24	5350	10M	52	7850	30M	41	200	3075
6.1	890	355	3380	20M	19	5650	20M	16	460	10M	24	5650	10M	54	7850	30M	48	170	3230
6.4	940	430	3580	20M	19	5875	20M	17	460	10M	24	5875	10M	58	7850	30M	41	200	3430
6.7	1015	430	3785	20M	19	6175	20M	17	460	10M	24	6175	10M	58	7850	30M	41	200	3635
7.0	1065	430	4040	20M	19	6475	20M	18	460	10M	24	6475	10M	62	7850	30M	50	160	3890
7.3	1170	430	4240	20M	22	6775	20M	19	460	10M	24	6775	10M	66	7850	35M	43	190	4090
7.6	1220	430	4545	20M	22	7075	20M	20	460	10M	24	7075	10M	70	7850	30M	50	160	4395
7.9	1345	510	4775	20M	25	7295	20M	21	460	10M	24	7295	10M	72	7850	35M	43	190	4625
8.2	1450	510	5005	25M	19	7595	20M	21	460	10M	24	7595	10M	74	7850	35M	45	180	4855
8.5	1550	510	5260	25M	22	7895	20M	22	460	10M	24	7895	10M	78	7850	35M	45	180	5110
8.8	1650	510	5460	25M	23	8195	20M	23	460	10M	24	8195	10M	80	7850	35M	56	145	5310
9.1	1805	510	5690	25M	24	8495	20M	24	460	10M	24	8495	10M	84	7850	35M	56	145	5540

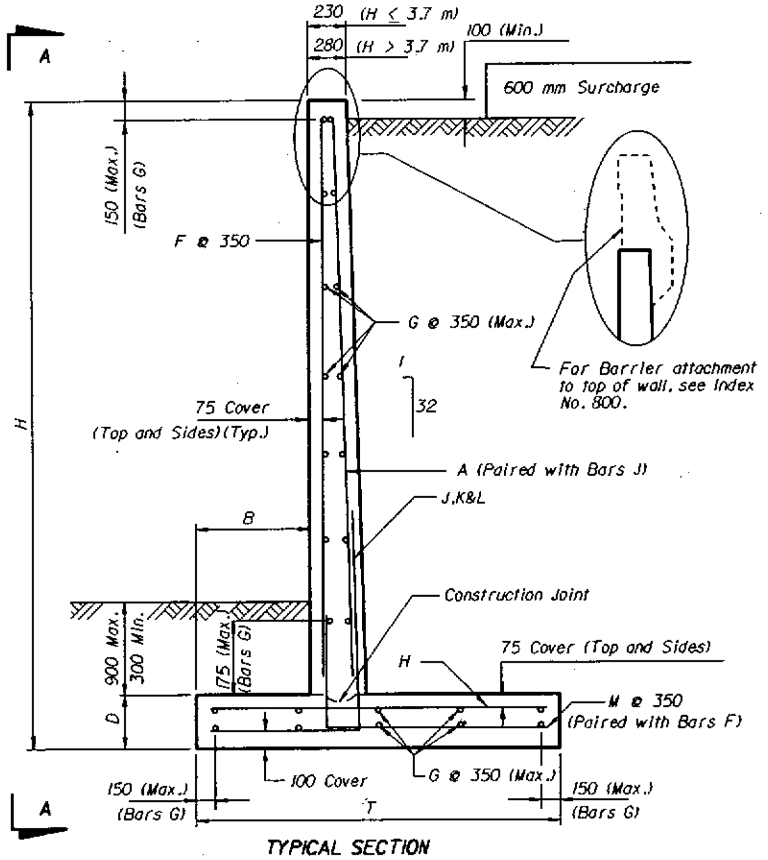
H	BARS J						BARS K						BARS L						BARS M				H
	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	C	LENGTH	
1.8	15M	30	270	1625	465	2090													10M	24	815	1435	1.8
2.1	15M	33	245	1925	500	2425													10M	24	970	1590	2.1
2.4	15M	37	220	2225	555	2780													10M	24	1045	1665	2.4
2.7	15M	37	220	2525	645	3170													10M	24	1120	1740	2.7
3.0	15M	42	195	2825	655	3480													10M	24	1270	1890	3.0
3.4	15M	48	170	3225	695	3920													10M	24	1370	1990	3.4
3.7	15M	26	315	3525	780	4305	15M	25	315	2945	780	3725							10M	24	1425	2045	3.7
4.0	15M	26	315	3825	860	4685	15M	25	315	2745	860	3605							10M	24	1550	2170	4.0
4.3	15M	28	295	4125	895	5020	15M	27	295	2745	895	3640							10M	24	1680	2300	4.3
4.6	15M	23	365	1120	955	2075	15M	22	365	3710	955	4665	15M	22	365	2440	955	3395	10M	24	1780	2400	4.6
4.9	20M	19	450	990	1015	2005	20M	18	450	965	1015	1980	20M	18	450	2820	1015	3835	10M	24	1885	2505	4.9
5.2	20M	20	415	1245	1025	2270	20M	19	415	1015	1025	2040	20M	19	415	2820	1025	3845	10M	24	2035	2655	5.2
5.5	20M	23	370	1320	1115	2435	20M	22	370	1015	1115	2130	20M	22	370	2415	1115	3530	10M	24	2085	2705	5.5
5.8	20M	25	330	1575	1150	2725	20M	24	330	1500	1150	2650	20M	24	330	2720	1150	3870	10M	24	2235	2855	5.8
6.1	25M	19	440	1320	1210	2530	25M	18	440	1500	1210	2710	25M	18	440	3025	1210	4235	10M	24	2340	2960	6.1
6.4	25M	19	440	1725	1265	2990	25M	18	440	2085	1265	3350	25M	18	440	3605	1265	4870	10M	24	2490	3260	6.4
6.7	30M	19	450	1725	1350	3075	30M	18	450	1700	1350	3050	30M	18	450	3300	1350	4650	10M	24	2620	3390	6.7
7.0	30M	19	450	2110	1410	3520	30M	18	450	2285	1410	3695	30M	18	450	4115	1410	5525	10M	24	2825	3595	7.0
7.3	30M	22	380	2110	1525	3635	30M	21	380	2285	1525	3810	30M	21	380	4115	1525	5640	10M	24	2920	3690	7.3
7.6	30M	22	375	2590	1585	4175	30M	21	375	2870	1585	4455	30M	21	375	4725	1585	6310	10M	24	3175	3945	7.6
7.9	30M	25	330	2745	1720	4465	30M	24	330	2870	1720	4590	30M	24	330	4725	1720	6445	10M	24	3280	4050	7.9
8.2	35M	19	435	2895	1835	4730	35M	18	435	3050	1835	4885	35M	18	435	5485	1835	7320	10M	24	3405	4175	8.2
8.5	35M	22	390	3050	1945	4995	35M	21	390	3050	1945	4995	35M	21	390	5485	1945	7430	10M	24	3560	4330	8.5
8.8	35M	23	365	3200	2050	5250	35M	22	365	3505	2050	5555	35M	22	365	5945	2050	7995	10M	24	3660	4430	8.8
9.1	35M	24	340	3355	2215	5570	35M	23	340	3505	2215	5720	35M	23	340	5945	2215	8160	10M	24	3735	4505	9.1

QUANTITIES

H	PER 8 m UNIT		PER LIN. METER	
	CONCRETE m^3	STEEL kg	CONCRETE m^3	STEEL kg
1.8	5.99	290	0.75	36
2.1	7.07	356	0.88	45
2.4	8.05	429	1.01	54
2.7	9.12	485	1.14	61
3.0	10.20	594	1.27	74
3.4	11.50	725	1.44	91
3.7	12.96	774	1.62	97
4.0	15.62	862	1.95	108
4.3	16.96	995	2.12	124
4.6	18.31	1203	2.29	150
4.9	19.69	1409	2.46	176
5.2	22.08	1433	2.76	179
5.5	23.50	1645	2.94	206
5.8	25.06	2028	3.13	253
6.1	26.59	2296	3.32	287
6.4	30.14	2387	3.77	298
6.7	31.98	2734	4.00	342
7.0	34.01	3229	4.25	404
7.3	35.87	3886	4.48	486
7.6	38.12	3981	4.77	498
7.9	42.86	4739	5.36	592
8.2	45.04	5411	5.63	676
8.5	47.34	6132	5.92	766
8.8	49.44	7117	6.18	890
9.1	51.68	7579	6.46	947



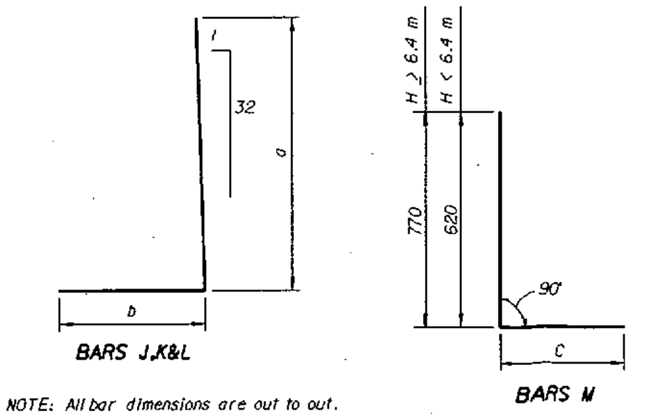
VIEW A-A



TYPICAL SECTION

NOTE:
To accommodate the variable height of a wall unit, vertical bars may be field cut to fit and the number of horizontal Bars G required by the highest wall dimension within an 8 m unit shall be equally spaced at each end of the unit.

BENDING DIAGRAM



NOTE: All bar dimensions are out to out.

NOTE: Bars M are paired with Bars F and Bars A are paired with Bars J.

NOTE: Work this Drawing with Standard Index No. 800.

NOTE: All dimensions are in millimeters unless otherwise noted.

Mon Aug 15 11:49:44 1994 /usr5/strstand/met/808.dgn

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	SHM	12/93
Checked by	JMD/NRK	12/93
Designed by	JMD	12/93
Checked by	NRK	12/93
Approved by	AJG	

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE: CASE II (192 kPa MAX. BEARING PRESSURE) 1.8 m TO 9.1 m HEIGHT

PROJECT NAME:

Drawing No. 1 of 1

Index No. 808

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

* NOTE: Wall Dimension 'H' is given in meters (m). All other dimensions, lengths and spacings are given in millimeters (mm).

** NOTE: For placement details of Bars D see Standard Index No. 800.

NOTE: The spacings shown are the maximum values allowed by design. These values shall be used for wall units shorter than 8 meters long. Units 8 meters long shall utilize the number of bars tabulated at equal spacings.

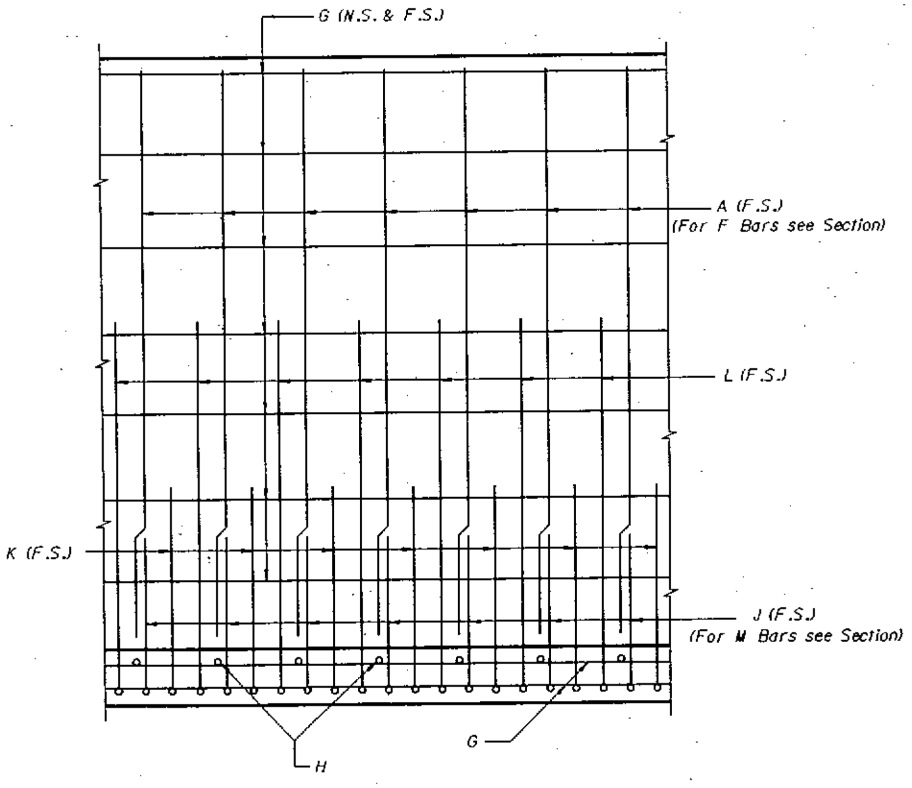
* RETAINING WALL DATA

REINFORCING STEEL SCHEDULE

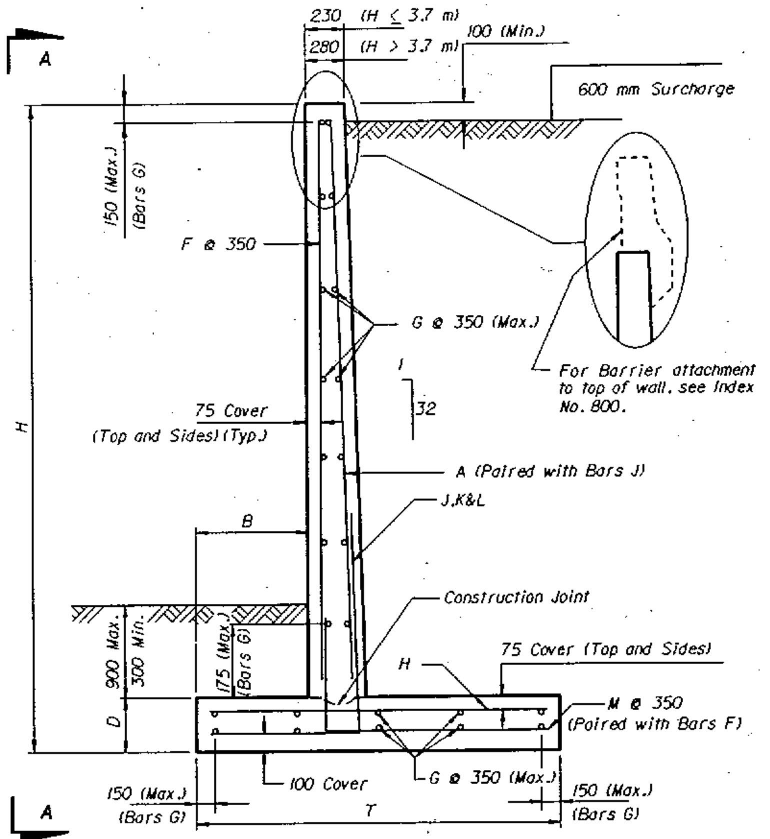
WALL DIMENSIONS				BARS A			** BARS D			BARS F			BARS G			BARS H				BARS J.						BARS K						BARS L						BARS M				
H	B	D	T	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	C	LENGTH	H
1.8	330	280	1295				20M	4	460	10M	24	1425	10M	18	7850	10M	25	335	1145	15M	30	270	1625	465	2090													10M	24	815	1435	1.8
2.1	355	280	1475				20M	5	460	10M	24	1725	10M	22	7850	10M	26	315	1325	15M	33	245	1925	500	2425													10M	24	970	1590	2.1
2.4	405	280	1600				20M	6	460	10M	24	2025	10M	24	7850	10M	38	215	1450	15M	37	220	2225	555	2780													10M	24	1045	1665	2.4
2.7	485	280	1755				20M	6	460	10M	24	2325	10M	26	7850	10M	46	175	1605	15M	37	220	2525	645	3170													10M	24	1120	1740	2.7
3.0	485	280	1905				20M	7	460	10M	24	2625	10M	28	7850	15M	36	225	1755	15M	42	195	2825	655	3480													10M	24	1270	1890	3.0
3.4	510	280	2030				20M	8	460	10M	24	3025	10M	30	7850	15M	48	170	1880	15M	48	170	3225	695	3920													10M	24	1370	1990	3.4
3.7	585	305	2160				20M	9	460	10M	24	3300	10M	34	7850	15M	42	195	2010	15M	26	315	3525	780	4305	15M	25	315	2945	780	3725							10M	24	1425	2045	3.7
4.0	610	305	2310				20M	10	460	10M	24	3600	10M	36	7850	20M	37	220	2160	15M	26	315	3825	860	4685	15M	25	315	2745	860	3605							10M	24	1550	2170	4.0
4.3	635	305	2465				20M	11	460	10M	24	3900	10M	40	7850	20M	45	180	2315	15M	28	295	4125	895	5020	15M	27	295	2745	895	3640							10M	24	1680	2300	4.3
4.6	685	305	2615	15M	23	4200	20M	12	460	10M	24	4200	10M	42	7850	20M	52	155	2465	15M	23	365	1120	955	2075	15M	22	365	3710	955	4665	15M	22	365	2440	955	3395	10M	24	1780	2400	4.6
4.9	735	305	2770	20M	19	4500	20M	13	460	10M	24	4500	10M	46	7850	25M	43	190	2620	20M	19	450	990	1015	2005	20M	18	450	965	1015	1980	20M	18	450	2820	1015	3835	10M	24	1885	2505	4.9
5.2	735	355	2920	20M	20	4750	20M	13	460	10M	24	4750	10M	46	7850	25M	37	220	2770	20M	20	415	1245	1025	2270	20M	19	415	1015	1025	2040	20M	19	415	2820	1025	3845	10M	24	2035	2655	5.2
5.5	815	355	3050	20M	23	5050	20M	14	460	10M	24	5050	10M	48	7850	25M	43	190	2900	20M	23	370	1320	1115	2435	20M	22	370	1015	1115	2130	20M	22	370	2415	1115	3530	10M	24	2085	2705	5.5
5.8	840	355	3225	20M	25	5350	20M	15	460	10M	24	5350	10M	52	7850	30M	41	200	3075	20M	25	330	1575	1150	2725	20M	24	330	1500	1150	2650	20M	24	330	2720	1150	3870	10M	24	2235	2855	5.8
6.1	890	355	3380	20M	19	5650	20M	16	460	10M	24	5650	10M	54	7850	30M	48	170	3230	25M	19	440	1320	1210	2530	25M	18	440	1500	1210	2710	25M	18	440	3025	1210	4235	10M	24	2340	2960	6.1
6.4	915	430	3480	20M	19	5875	20M	17	460	10M	24	5875	10M	58	7850	30M	41	200	3330	25M	19	440	1725	1240	2965	25M	18	440	2085	1240	3325	25M	18	440	3605	1240	4845	10M	24	2415	3185	6.4
6.7	965	430	3605	20M	19	6175	20M	17	460	10M	24	6175	10M	58	7850	30M	41	200	3455	30M	19	450	1725	1300	3025	30M	18	450	1700	1300	3000	30M	18	450	3300	1300	4600	10M	24	2490	3260	6.7
7.0	990	430	3785	20M	19	6475	20M	18	460	10M	24	6475	10M	60	7850	30M	50	160	3635	30M	19	450	2110	1335	3445	30M	18	450	2285	1335	3620	30M	18	450	4115	1335	5450	10M	24	2645	3415	7.0
7.3	1065	430	3910	20M	22	6775	20M	19	460	10M	24	6775	10M	64	7850	35M	43	190	3760	30M	22	380	2110	1420	3530	30M	21	380	2285	1420	3705	30M	21	380	4115	1420	5535	10M	24	2695	3465	7.3
7.6	1065	430	4090	20M	22	7075	20M	20	460	10M	24	7075	10M	66	7850	35M	45	180	3940	30M	22	375	2590	1430	4020	30M	21	375	2870	1430	4300	30M	21	375	4725	1430	6155	10M	24	2875	3645	7.6
7.9	1170	510	4190	20M	25	7295	20M	21	460	10M	24	7295	10M	70	7850	35M	39	210	4040	30M	25	330	2745	1545	4290	30M	24	330	2870	1545	4415	30M	24	330	4725	1545	6270	10M	24	2870	3640	7.9
8.2	1245	510	4420	25M	19	7595	20M	21	460	10M	24	7595	10M	70	7850	35M	45	180	4270	35M	19	435	2895	1630	4525	35M	18	435	3050	1630	4680	35M	18	435	5485	1630	7115	10M	24	3025	3795	8.2
8.5	1345	510	4650	25M	22	7895	20M	22	460	10M	24	7895	10M	74	7850	35M	45	180	4500	35M	22	390	3050	1740	4790	35M	21	390	3050	1740	4790	35M	21	390	5485	1740	7225	10M	24	3155	3925	8.5
8.8	1450	510	4850	25M	23	8195	20M	23	460	10M	24	8195	10M	76	7850	35M	56	145	4700	35M	23	365	3200	1850	5050	35M	22	365	3505	1850	5355	35M	22	365	5945	1850	7795	10M	24	3250	4020	8.8
9.1	1575	510	5080	25M	24	8495	20M	24	460	10M	24	8495	10M	80	7850	35M	56	145	4930	35M	24	340	3355	1985	5340	35M	23	340	3505	1985	5490	35M	23	340	5945	1985	7930	10M	24	3355	4125	9.1

QUANTITIES

H	PER 8 m UNIT		PER LIN. METER	
	CONCRETE m^3	STEEL kg	CONCRETE m^3	STEEL kg
1.8	5.99	290	0.75	36
2.1	7.07	356	0.88	45
2.4	8.05	429	1.01	54
2.7	9.12	485	1.14	61
3.0	10.2	594	1.27	74
3.4	11.5	725	1.44	91
3.7	12.96	774	1.62	97
4.0	15.62	862	1.95	108
4.3	16.96	995	2.12	124
4.6	18.31	1203	2.29	150
4.9	19.69	1409	2.46	176
5.2	22.08	1433	2.76	179
5.5	23.5	1645	2.94	206
5.8	25.06	2028	3.13	253
6.1	26.59	2296	3.32	287
6.4	29.8	2358	3.72	295
6.7	31.36	2676	3.92	334
7.0	33.13	3120	4.14	390
7.3	34.74	3721	4.34	465
7.6	36.56	4081	4.57	510
7.9	40.48	4324	5.06	541
8.2	42.65	5084	5.33	636
8.5	44.85	5781	5.61	723
8.8	46.95	6711	5.87	839
9.1	49.19	7152	6.15	894



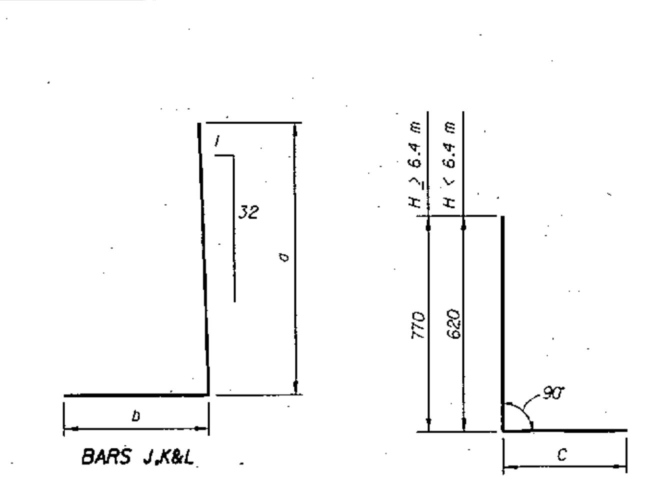
VIEW A-A



TYPICAL SECTION

NOTE:
To accommodate the variable height of a wall unit, vertical bars may be field cut to fit and the number of horizontal Bars G required by the highest wall dimension within an 8 m unit shall be equally spaced at each end of the unit.

BENDING DIAGRAM



NOTE: All bar dimensions are out to out.

NOTE: Bars M are paired with Bars F and Bars A are paired with Bars J.

NOTE: Work this Drawing with Standard Index No. 800.

NOTE: All dimensions are in millimeters unless otherwise noted.

/usr5/strstand/met/809.dgn

Mon Aug 15 11:50:26 1994

REVISIONS

Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	SHM	12/93
Checked by	JMD/NRK	12/93
Designed by	JMD	12/93
Checked by	NRK	12/93
Approved by	AJG	

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE:
CASE II (239 & 287 kPa MAX. BEARING PRESSURE) 1.8 m TO 9.1 m HEIGHT

PROJECT NAME:

Drawing No.
1 of 1

Index No.
809

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

* NOTE: Wall Dimension "H" is given in meters (m). All other dimensions, lengths and spacings are given in millimeters (mm).

** NOTE: For placement details of Bars D see Standard Index No. 800.

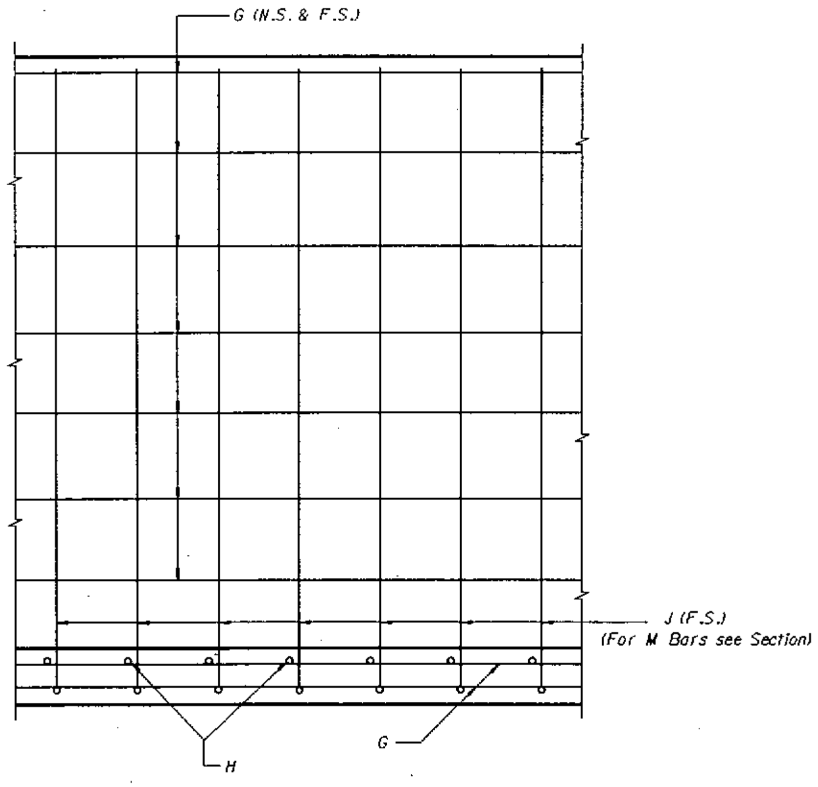
NOTE: The spacings shown are the maximum values allowed by design. These values shall be used for wall units shorter than 8 meters long. Units 8 meters long shall utilize the number of bars tabulated at equal spacings.

* RETAINING WALL DATA

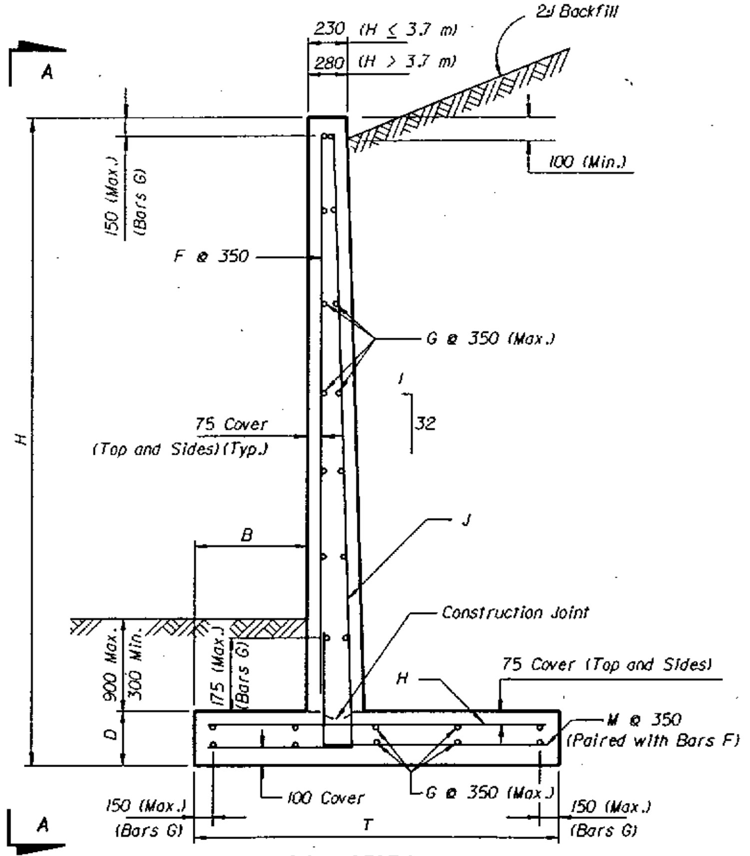
WALL DIMENSIONS				REINFORCING STEEL SCHEDULE																																						
				BARS A			**BARS D			BARS F			BARS G			BARS H				BARS J						BARS K						BARS L						BARS M				
H	B	D	T	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	C	LENGTH	H
1.8	205	280	865		NOT REQUIRED THIS SHEET		20M	4	460	10M	24	1425	10M	16	7850	10M	25	335	715	10M	35	235	1625	340	1965				NOT REQUIRED THIS SHEET						NOT REQUIRED THIS SHEET			10M	24	510	1130	1.8
2.1	255	280	1065				20M	5	460	10M	24	1725	10M	20	7850	10M	25	335	915	10M	35	235	1925	400	2325													10M	24	660	1280	2.1
2.4	330	280	1295				20M	6	460	10M	24	2025	10M	22	7850	10M	25	335	1145	10M	35	235	2225	480	2705													10M	24	815	1435	2.4
2.7	405	280	1525				20M	6	460	10M	24	2325	10M	24	7850	10M	25	335	1375	10M	38	215	2525	565	3090													10M	24	970	1590	2.7
3.0	485	280	1855				20M	7	460	10M	24	2625	10M	28	7850	10M	30	275	1705	10M	42	195	2825	655	3480													10M	24	1220	1840	3.0
3.4	560	280	2185				20M	8	460	10M	24	3025	10M	32	7850	10M	38	215	2035	15M	28	295	3225	745	3970													10M	24	1475	2095	3.4
3.7	685	305	2515				20M	9	460	10M	24	3300	10M	36	7850	10M	35	235	2365	15M	37	220	3525	880	4405													10M	24	1680	2300	3.7
4.0	760	305	2820				20M	10	460	10M	24	3600	10M	40	7850	10M	38	215	2670	15M	37	220	3825	1010	4835													10M	24	1910	2530	4.0
4.3	865	305	3150				20M	11	460	10M	24	3900	10M	44	7850	10M	42	195	3000	15M	48	170	4125	1125	5250													10M	24	2135	2755	4.3
4.6	965	305	3530				20M	12	460	10M	24	4200	10M	48	7850	15M	37	220	3380	20M	37	220	4425	1235	5660													10M	24	2415	3035	4.6

QUANTITIES

H	PER 8 m UNIT		PER LIN. METER	
	CONCRETE m^3	STEEL kg	CONCRETE m^3	STEEL kg
1.8	5.02	219	0.63	27
2.1	6.15	267	0.77	33
2.4	7.36	304	0.92	38
2.7	8.60	347	1.08	43
3.0	10.08	419	1.26	52
3.4	11.85	537	1.48	67
3.7	13.82	658	1.73	82
4.0	16.86	733	2.11	92
4.3	18.63	903	2.33	113
4.6	20.54	1135	2.57	142



VIEW A-A

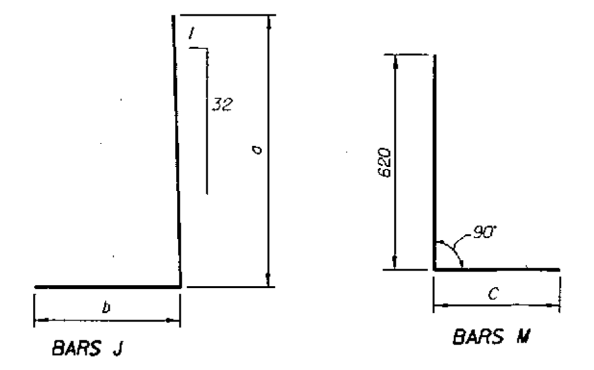


TYPICAL SECTION

NOTE:

To accommodate the variable height of a wall unit, vertical bars may be field cut to fit and the number of horizontal Bars G required by the highest wall dimension within an 8 m unit shall be equally spaced at each end of the unit.

BENDING DIAGRAM



NOTE: All bar dimensions are out to out.

NOTE: Bars M are paired with Bars F and Bars A are paired with Bars J.

NOTE: Work this Drawing with Standard Index No. 800.

NOTE: All dimensions are in millimeters unless otherwise noted.

Mon Aug 15 11:51:09 1994 /usr5/strstand/met/810.dgn

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	SHM	12/93
Checked by	JMD/NRK	12/93
Designed by	JMD	12/93
Checked by	NRK	12/93
Approved by	AJG	

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE:
CASE III (96 kPa MAX. BEARING PRESSURE) 1.8 m TO 4.6 m HEIGHT

PROJECT NAME:

Drawing No.
1 of 1

Index No.
810

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

* NOTE: Wall Dimension "H" is given in meters (m). All other dimensions, lengths and spacings are given in millimeters (mm).

** NOTE: For placement details of Bars D see Standard Index No. 800.

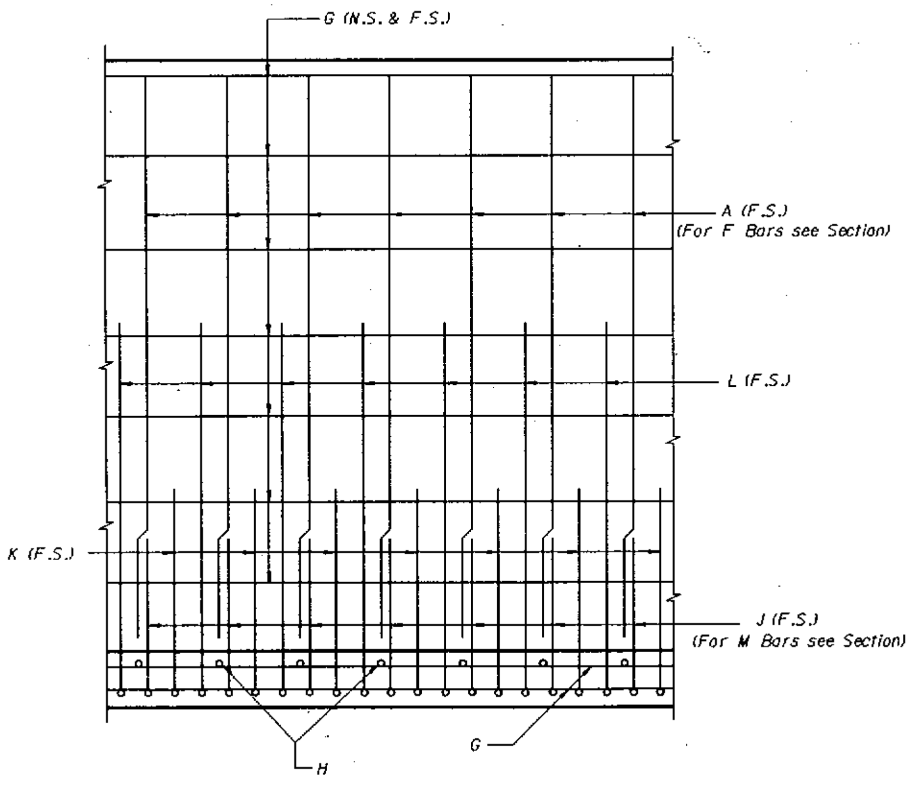
NOTE: The spacings shown are the maximum values allowed by design. These values shall be used for wall units shorter than 8 meters long. Units 8 meters long shall utilize the number of bars tabulated at equal spacings.

* RETAINING WALL DATA

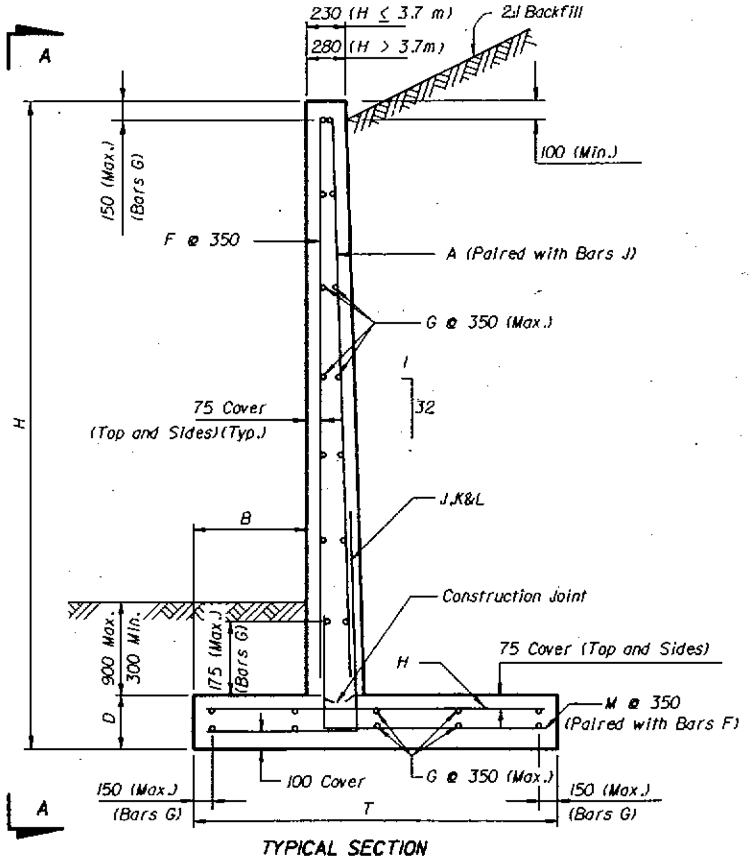
WALL DIMENSIONS				REINFORCING STEEL SCHEDULE																																						
H	B	D	T	BARS A			**BARS D			BARS F			BARS G			BARS H				BARS J						BARS K						BARS L						BARS M				H
				SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	C	LENGTH	
1.8	205	280	865				20M	4	460	10M	24	1425	10M	16	7850	10M	25	335	715	10M	35	235	1625	340	1965													10M	24	510	1130	1.8
2.1	230	280	1040				20M	5	460	10M	24	1725	10M	20	7850	10M	25	335	890	10M	35	235	1925	375	2300													10M	24	660	1280	2.1
2.4	280	280	1195				20M	6	460	10M	24	2025	10M	22	7850	10M	25	335	1045	10M	35	235	2225	430	2655													10M	24	765	1385	2.4
2.7	355	280	1320				20M	6	460	10M	24	2325	10M	22	7850	10M	25	335	1170	10M	38	215	2525	515	3040													10M	24	815	1435	2.7
3.0	405	280	1600				20M	7	460	10M	24	2625	10M	26	7850	10M	35	235	1450	10M	42	195	2825	575	3400													10M	24	1045	1665	3.0
3.4	485	280	1880				20M	8	460	10M	24	3025	10M	30	7850	10M	46	175	1730	15M	28	295	3225	670	3895													10M	24	1245	1865	3.4
3.7	560	305	2135				20M	9	460	10M	24	3300	10M	34	7850	10M	42	195	1985	15M	37	220	3525	755	4280													10M	24	1425	2045	3.7
4.0	635	305	2415				20M	10	460	10M	24	3600	10M	38	7850	10M	46	175	2265	15M	37	220	3825	885	4710													10M	24	1630	2250	4.0
4.3	710	305	2720				20M	11	460	10M	24	3900	10M	40	7850	10M	42	195	2570	15M	48	170	4125	970	5095													10M	24	1860	2480	4.3
4.6	815	305	3025				20M	12	460	10M	24	4200	10M	44	7850	15M	37	220	2875	15M	28	295	4425	1085	5510	15M	27	295	1755	1085	2840							10M	24	2060	2680	4.6
4.9	915	305	3355	15M	23	4500	20M	13	460	10M	24	4500	10M	48	7850	15M	42	195	3205	15M	23	365	865	1195	2060	15M	22	365	1450	1195	2645	15M	22	365	3275	1195	4470	10M	24	2290	2910	4.9
5.2	1040	355	3710	20M	19	4750	20M	13	460	10M	24	4750	10M	50	7850	15M	33	245	3560	20M	19	450	1040	1330	2370	20M	18	450	1625	1330	2955	20M	18	450	2540	1330	3870	10M	24	2520	3140	5.2
5.5	1120	355	4165	20M	22	5050	20M	14	460	10M	24	5050	10M	56	7850	15M	37	220	4015	20M	22	390	1040	1420	2460	20M	21	390	1625	1420	3045	20M	21	390	2540	1420	3960	10M	24	2895	3515	5.5
5.8	1270	510	4445	20M	23	5195	20M	15	460	10M	24	5195	10M	58	7850	15M	33	245	4295	20M	23	370	1475	1580	3055	20M	22	370	1955	1580	3535	20M	22	370	3175	1580	4755	10M	24	3025	3795	5.8
6.1	1420	510	4650	20M	25	5495	20M	15	460	10M	24	5495	10M	60	7850	15M	33	245	4500	20M	25	330	1475	1740	3215	20M	24	330	2260	1740	4000	20M	24	330	3480	1740	5220	10M	24	3080	3850	6.1

QUANTITIES

H	PER 8 m UNIT		PER UN. METER	
	CONCRETE m^3	STEEL kg	CONCRETE m^3	STEEL kg
1.8	5.02	219	0.63	27
2.1	6.09	266	0.76	33
2.4	7.14	300	0.89	37
2.7	8.14	327	1.02	41
3.0	9.51	401	1.19	50
3.4	11.17	519	1.40	65
3.7	12.90	634	1.61	79
4.0	15.88	711	1.98	89
4.3	17.58	847	2.20	106
4.6	19.31	943	2.41	118
4.9	21.12	1143	2.64	143
5.2	24.32	1263	3.04	158
5.5	26.66	1490	3.33	186
5.8	33.48	1642	4.19	205
6.1	35.40	1829	4.42	229



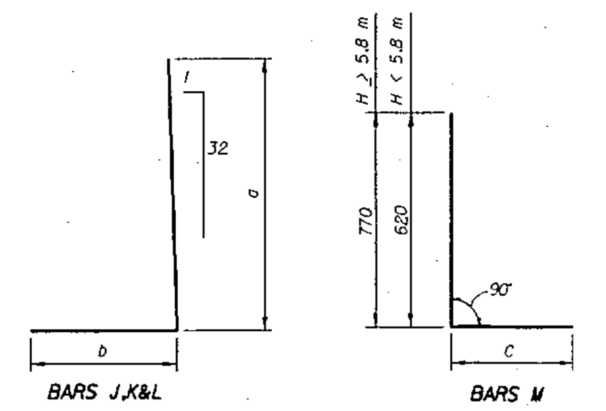
VIEW A-A



TYPICAL SECTION

NOTE:
To accommodate the variable height of a wall unit, vertical bars may be field cut to fit and the number of horizontal Bars G required by the highest wall dimension within an 8 m unit shall be equally spaced at each end of the unit.

BENDING DIAGRAM



NOTE: All bar dimensions are out to out.

NOTE: Bars M are paired with Bars F and Bars A are paired with Bars J.

NOTE: Work this Drawing with Standard Index No. 800.

NOTE: All dimensions are in millimeters unless otherwise noted.

REVISIONS

Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	SHM	12/93
Checked by	JMD/NRK	12/93
Designed by	JMD	12/93
Checked by	NRK	12/93
Approved by	AJG	

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE:
CASE III (120 kPa MAX. BEARING PRESSURE) 1.8 m TO 6.1 m HEIGHT

PROJECT NAME:

Drawing No.
1 of 1

Index No.
811

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

* NOTE: Wall Dimension "H" is given in meters (m). All other dimensions, lengths and spacings are given in millimeters (mm).

** NOTE: For placement details of Bars D see Standard Index No. 800.

NOTE: The spacings shown are the maximum values allowed by design. These values shall be used for wall units shorter than 8 meters long. Units 8 meters long shall utilize the number of bars tabulated at equal spacings.

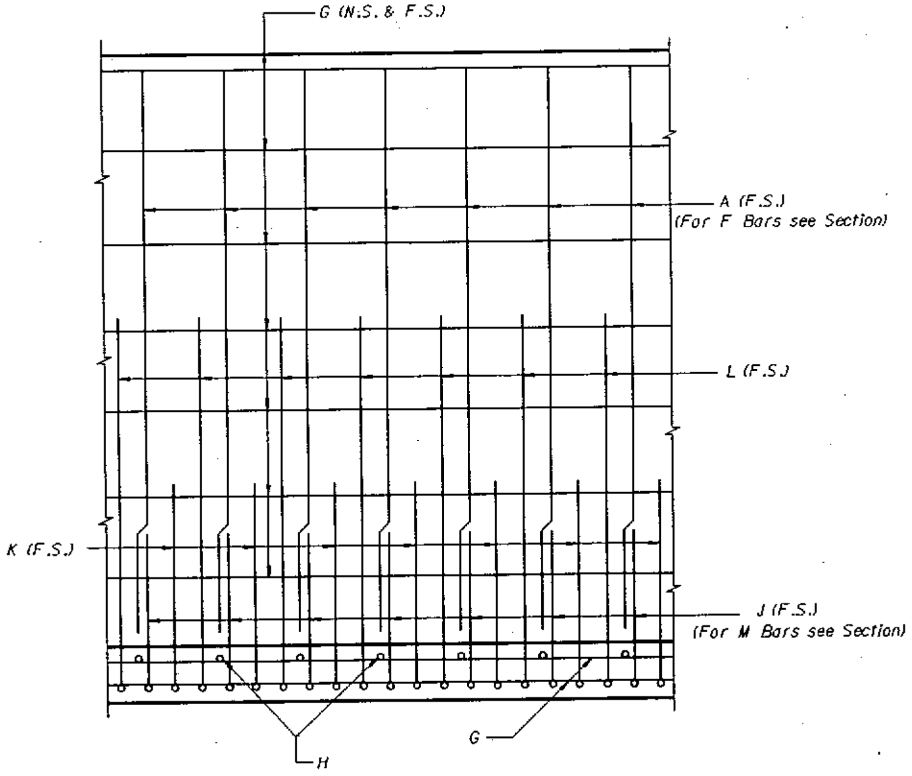
* RETAINING WALL DATA

REINFORCING STEEL SCHEDULE

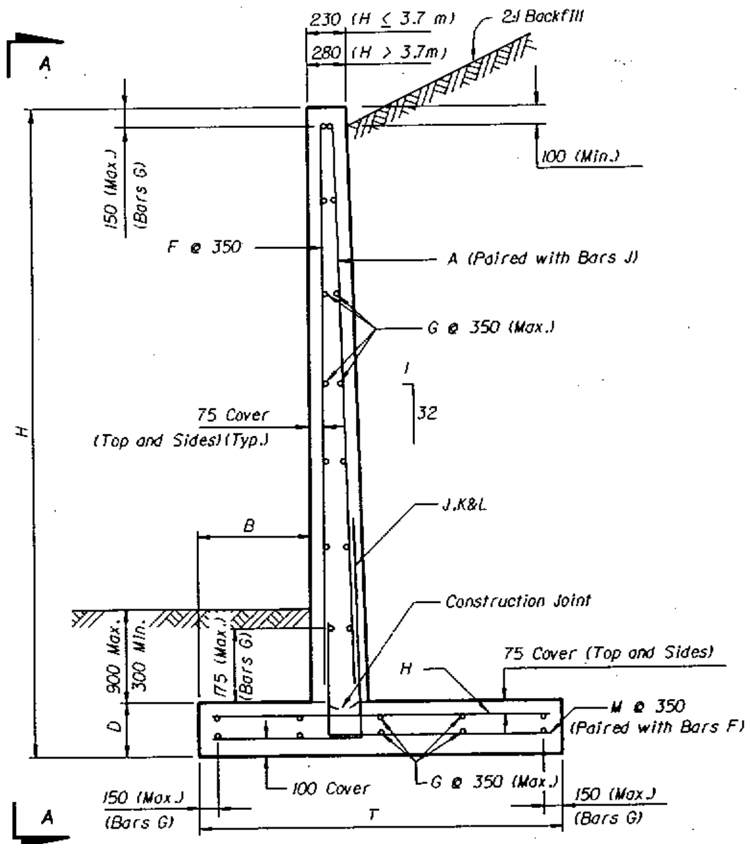
WALL DIMENSIONS				BARS A			**BARS D			BARS F			BARS G			BARS H			
H	B	D	T	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH
1.8	205	280	865				20M	4	460	10M	24	1425	10M	16	7850	10M	25	335	715
2.1	230	280	1040				20M	5	460	10M	24	1725	10M	20	7850	10M	25	335	890
2.4	280	280	1195				20M	6	460	10M	24	2025	10M	22	7850	10M	25	335	1045
2.7	355	280	1320				20M	6	460	10M	24	2325	10M	22	7850	10M	25	335	1170
3.0	355	280	1475				20M	7	460	10M	24	2625	10M	26	7850	10M	35	235	1325
3.4	405	280	1675				20M	8	460	10M	24	3025	10M	28	7850	10M	52	155	1525
3.7	485	305	1905				20M	9	460	10M	24	3300	10M	32	7850	10M	46	175	1755
4.0	560	305	2110				20M	10	460	10M	24	3600	10M	36	7850	10M	52	155	1960
4.3	635	305	2415				20M	11	460	10M	24	3900	10M	40	7850	10M	46	175	2265
4.6	710	305	2690				20M	12	460	10M	24	4200	10M	42	7850	15M	42	195	2540
4.9	785	305	2995	15M	23	4500	20M	13	460	10M	24	4500	10M	46	7850	15M	48	170	2845
5.2	890	355	3275	20M	19	4750	20M	13	460	10M	24	4750	10M	48	7850	15M	42	195	3125
5.5	965	355	3630	20M	22	5050	20M	14	460	10M	24	5050	10M	52	7850	20M	37	220	3480
5.8	1120	510	3910	20M	23	5195	20M	15	460	10M	24	5195	10M	56	7850	15M	33	245	3760
6.1	1245	510	4115	20M	25	5495	20M	15	460	10M	24	5495	10M	56	7850	15M	37	220	3965
6.4	1370	510	4395	20M	19	5795	20M	16	460	10M	24	5795	10M	60	7850	15M	42	195	4245
6.7	1500	510	4625	20M	22	6095	20M	17	460	10M	24	6095	10M	64	7850	15M	48	170	4475
7.0	1675	660	4955	20M	23	6245	20M	18	460	10M	24	6245	10M	68	7850	15M	48	170	4805
7.3	1805	660	5180	20M	20	6545	20M	18	460	10M	24	6545	10M	68	7850	15M	48	170	5030
7.6	1930	660	5460	20M	21	6845	20M	19	460	10M	24	6845	10M	72	7850	15M	48	170	5310

	BARS J						BARS K						BARS L						BARS M				H
H	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	C	LENGTH	
1.8	10M	35	235	1625	340	1965													10M	24	510	1130	1.8
2.1	10M	35	235	1925	375	2300													10M	24	660	1280	2.1
2.4	10M	35	235	2225	430	2655													10M	24	765	1385	2.4
2.7	10M	38	215	2525	515	3040													10M	24	815	1435	2.7
3.0	10M	42	195	2825	525	3350													10M	24	970	1590	3.0
3.4	15M	28	295	3225	590	3815													10M	24	1120	1740	3.4
3.7	15M	37	220	3525	680	4205													10M	24	1270	1890	3.7
4.0	15M	37	220	3825	810	4635													10M	24	1400	2020	4.0
4.3	15M	48	170	4125	895	5020													10M	24	1630	2250	4.3
4.6	15M	28	295	4425	980	5405	15M	27	295	1755	980	2735							10M	24	1830	2450	4.6
4.9	15M	23	365	865	1065	1930	15M	22	365	1450	1065	2515	15M	22	365	3275	1065	4340	10M	24	2060	2680	4.9
5.2	20M	19	450	1040	1180	2220	20M	18	450	1625	1180	2805	20M	18	450	2540	1180	3720	10M	24	2235	2855	5.2
5.5	20M	22	390	1040	1265	2305	20M	21	390	1625	1265	2890	20M	21	390	2540	1265	3805	10M	24	2515	3135	5.5
5.8	20M	23	370	1475	1430	2905	20M	22	370	1955	1430	3385	20M	22	370	3175	1430	4605	10M	24	2640	3410	5.8
6.1	20M	25	330	1475	1565	3040	20M	24	330	2260	1565	3825	20M	24	330	3480	1565	5045	10M	24	2720	3490	6.1
6.4	25M	19	440	1805	1695	3500	25M	18	440	2770	1695	4465	25M	18	440	3990	1695	5685	10M	24	2875	3645	6.4
6.7	25M	22	390	1855	1835	3690	25M	21	390	2770	1835	4605	25M	21	390	4295	1835	6130	10M	24	2975	3745	6.7
7.0	25M	23	365	2005	2020	4025	25M	22	365	2920	2020	4940	25M	22	365	4445	2020	6465	10M	24	3130	4210	7.0
7.3	30M	20	425	2335	2160	4495	30M	19	425	3125	2160	5285	30M	19	425	4955	2160	7115	10M	24	3225	4305	7.3
7.6	30M	21	400	2335	2295	4630	30M	20	400	3430	2295	5725	30M	20	400	5260	2295	7555	10M	24	3380	4460	7.6

QUANTITIES				
H	PER 8 m UNIT		PER LIN. METER	
	CONCRETE m^3	STEEL kg	CONCRETE m^3	STEEL kg
1.8	5.02	219	0.63	27
2.1	6.09	266	0.76	33
2.4	7.14	300	0.89	37
2.7	8.14	327	1.02	41
3.0	9.23	394	1.15	49
3.4	10.71	501	1.34	63
3.7	12.34	612	1.54	77
4.0	15.13	688	1.89	86
4.3	16.84	834	2.10	104
4.6	18.49	918	2.31	115
4.9	20.24	1116	2.53	140
5.2	23.09	1248	2.89	156
5.5	25.14	1505	3.14	188
5.8	31.30	1571	3.91	196
6.1	33.22	1765	4.15	221
6.4	35.46	2082	4.43	260
6.7	37.53	2454	4.69	307
7.0	45.39	2684	5.67	335
7.3	47.74	3119	5.97	390
7.6	50.39	3409	6.30	426



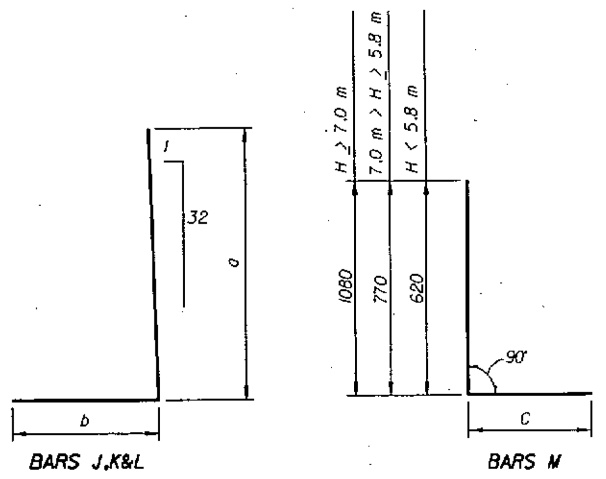
VIEW A-A



TYPICAL SECTION

NOTE:
To accommodate the variable height of a wall unit, vertical bars may be field cut to fit and the number of horizontal Bars G required by the highest wall dimension within an 8 m unit shall be equally spaced at each end of the unit.

BENDING DIAGRAM



NOTE: All bar dimensions are out to out.

NOTE: Bars M are paired with Bars F and Bars A are paired with Bars J.

NOTE: Work this Drawing with Standard Index No. 800.

NOTE: All dimensions are in millimeters unless otherwise noted.

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	SHM	12/93
Checked by	JMD/NRK	12/93
Designed by	JMD	12/93
Checked by	NRK	12/93
Approved by	AJG	

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE: CASE III (144 kPa MAX. BEARING PRESSURE) 1.8 m TO 7.6 m HEIGHT

PROJECT NAME:

Drawing No. 1 of 1

Index No. 812

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

* NOTE: Wall Dimension "H" is given in meters (m). All other dimensions, lengths and spacings are given in millimeters (mm).

** NOTE: For placement details of Bars D see Standard Index No. 800.

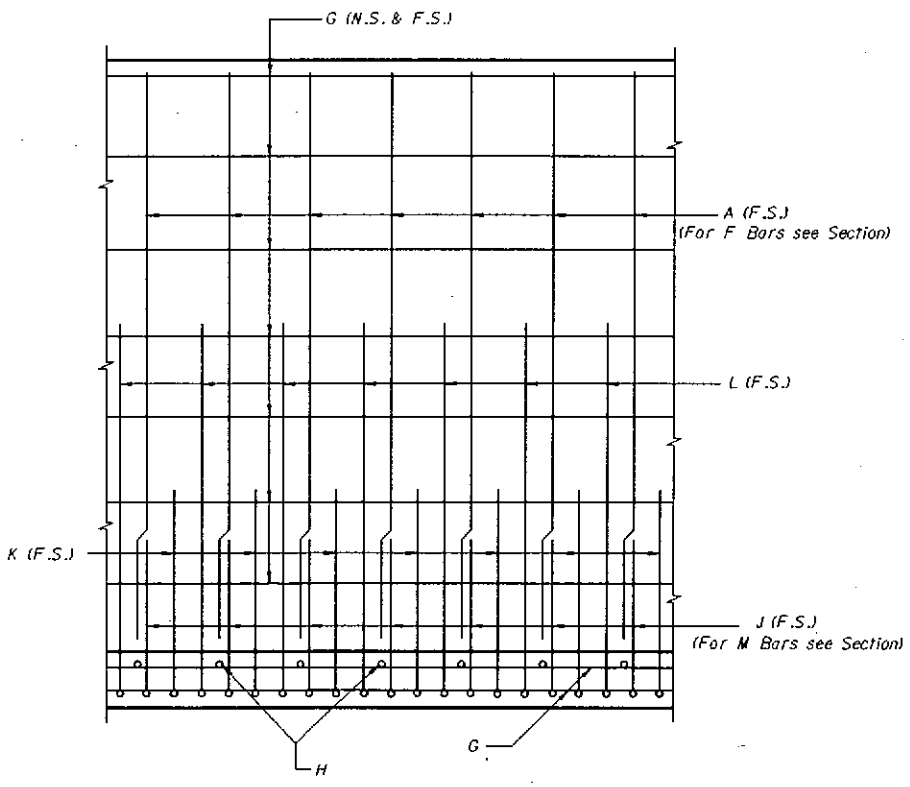
NOTE: The spacings shown are the maximum values allowed by design. These values shall be used for wall units shorter than 8 meters long. Units 8 meters long shall utilize the number of bars tabulated at equal spacings.

* RETAINING WALL DATA

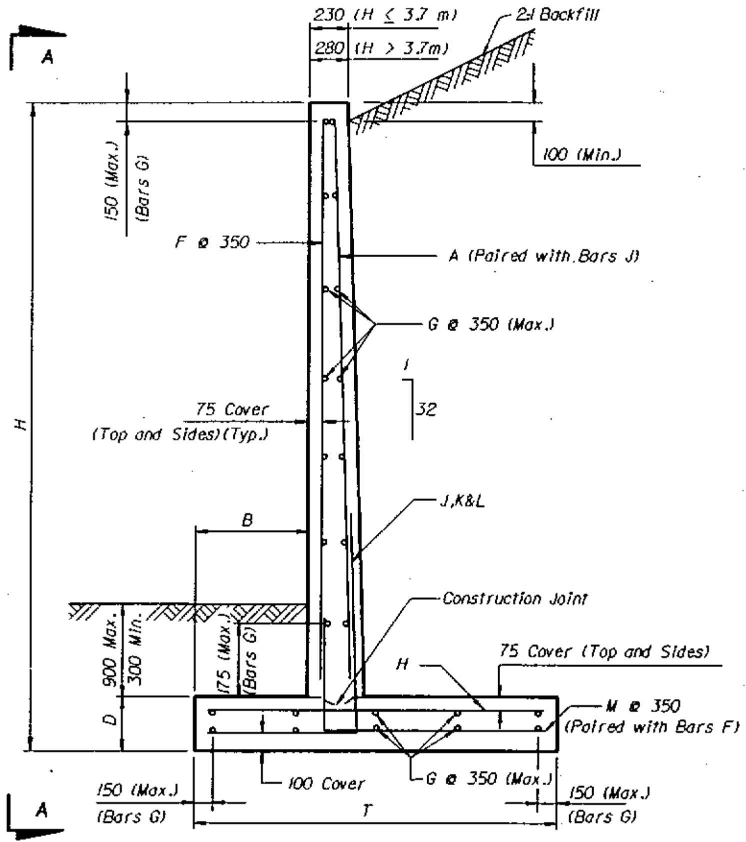
WALL DIMENSIONS				REINFORCING STEEL SCHEDULE																																						
H	B	D	T	BARS A			**BARS D			BARS F			BARS G			BARS H				BARS J						BARS K						BARS L						BARS M				H
				SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	C	LENGTH	
1.8	205	280	865				20M	4	460	10M	24	1425	10M	16	7850	10M	25	335	715	10M	35	235	1625	340	1965													10M	24	510	1130	1.8
2.1	230	280	1040				20M	5	460	10M	24	1725	10M	20	7850	10M	25	335	890	10M	35	235	1925	375	2300													10M	24	660	1280	2.1
2.4	280	280	1195				20M	6	460	10M	24	2025	10M	22	7850	10M	25	335	1045	10M	35	235	2225	430	2655													10M	24	765	1385	2.4
2.7	355	280	1320				20M	6	460	10M	24	2325	10M	22	7850	10M	25	335	1170	10M	38	215	2525	515	3040													10M	24	815	1435	2.7
3.0	355	280	1475				20M	7	460	10M	24	2625	10M	26	7850	10M	38	215	1325	10M	42	195	2825	525	3350													10M	24	970	1590	3.0
3.4	405	280	1675				20M	8	460	10M	24	3025	10M	28	7850	10M	52	155	1525	15M	28	295	3225	590	3815													10M	24	1120	1740	3.4
3.7	455	305	1755				20M	9	460	10M	24	3300	10M	32	7850	10M	46	175	1605	15M	37	220	3525	650	4175													10M	24	1150	1770	3.7
4.0	510	305	1930				20M	10	460	10M	24	3600	10M	34	7850	15M	31	265	1780	15M	37	220	3825	760	4585													10M	24	1270	1890	4.0
4.3	560	305	2160				20M	11	460	10M	24	3900	10M	38	7850	15M	36	225	2010	15M	48	170	4125	820	4945													10M	24	1450	2070	4.3
4.6	635	305	2440				20M	12	460	10M	24	4200	10M	42	7850	15M	48	170	2290	15M	28	295	4425	905	5330	15M	27	295	1755	905	2660							10M	24	1655	2275	4.6
4.9	710	305	2690	15M	23	4500	20M	13	460	10M	24	4500	10M	44	7850	20M	37	220	2540	15M	23	365	865	990	1855	15M	22	365	1450	990	2440	15M	22	365	3275	990	4265	10M	24	1830	2450	4.9
5.2	785	355	2945	20M	19	4750	20M	13	460	10M	24	4750	10M	46	7850	20M	37	220	2795	20M	19	450	1040	1075	2115	20M	18	450	1625	1075	2700	20M	18	450	2540	1075	3615	10M	24	2010	2630	5.2
5.5	865	355	3300	20M	22	5050	20M	14	460	10M	24	5050	10M	50	7850	20M	44	185	3150	20M	22	390	1040	1165	2205	20M	21	390	1625	1165	2790	20M	21	390	2540	1165	3705	10M	24	2285	2905	5.5
5.8	990	510	3505	20M	23	5195	20M	15	460	10M	24	5195	10M	54	7850	15M	42	195	3355	20M	23	370	1475	1300	2775	20M	22	370	1955	1300	3255	20M	22	370	3175	1300	4475	10M	24	2365	3135	5.8
6.1	1120	510	3735	20M	25	5495	20M	15	460	10M	24	5495	10M	54	7850	15M	42	195	3585	20M	25	330	1475	1440	2915	20M	24	330	2260	1440	3700	20M	24	330	3480	1440	4920	10M	24	2465	3235	6.1
6.4	1245	510	3960	20M	19	5795	20M	16	460	10M	24	5795	10M	58	7850	15M	48	170	3810	25M	19	440	1805	1570	3375	25M	18	440	2770	1570	4340	25M	18	440	3990	1570	5560	10M	24	2565	3335	6.4
6.7	1370	510	4215	20M	22	6095	20M	17	460	10M	24	6095	10M	62	7850	20M	37	220	4065	25M	22	390	1855	1705	3560	25M	21	390	2770	1705	4475	25M	21	390	4295	1705	6000	10M	24	2695	3465	6.7
7.0	1500	660	4495	20M	23	6245	20M	18	460	10M	24	6245	10M	64	7850	15M	48	170	4345	25M	23	365	2005	1845	3850	25M	22	365	2920	1845	4765	25M	22	365	4445	1845	6290	10M	24	2845	3925	7.0
7.3	1625	660	4750	20M	20	6545	20M	18	460	10M	24	6545	10M	66	7850	15M	48	170	4600	30M	20	425	2335	1980	4315	30M	19	425	3430	1980	5410	30M	19	425	4955	1980	6935	10M	24	2975	4055	7.3
7.6	1755	660	5005	20M	21	6845	20M	19	460	10M	24	6845	10M	70	7850	20M	37	220	4855	30M	21	400	2335	2120	4455	30M	20	400	3430	2120	5550	30M	20	400	5260	2120	7380	10M	24	3100	4180	7.6
7.9	1880	660	5260	20M	22	7145	20M	20	460	10M	24	7145	10M	74	7850	20M	37	220	5110	30M	22	380	2490	2255	4745	30M	21	380	3735	2255	5990	30M	21	380	5565	2255	7820	10M	24	3230	4310	7.9
8.2	2030	815	5590	20M	22	7290	20M	21	460	10M	24	7290	10M	78	7850	20M	44	185	5440	30M	22	380	2640	2415	5055	30M	21	380	3885	2415	6300	30M	21	380	5715	2415	8130	10M	24	3410	4490	8.2
8.5	2160	815	5840	25M	24	7590	20M	21	460	10M	24	7590	10M	78	7850	20M	44	185	5690	30M	24	345	2795	2555	5350	30M	23	345	4190	2555	6745	30M	23	345	6020	2555	8575	10M	24	3530	4610	8.5
8.8	2285	815	6095	25M	26	7890	20M	22	460	10M	24	7890	10M	82	7850	20M	44	185	5945	30M	26	320	2945	2685	5630	30M	25	320	4495	2685	7180	30M	25	320	6325	2685	9010	10M	24	3660	4740	8.8
9.1	2465	965	6475	25M	19	8040	20M	23	460	10M	24	8040	10M	86	7850	20M	52	155	6325	35M	19	435	3100	2875	5975	35M	18	435	4650	2875	7525	35M	18	435	6475	2875	9350	10M	24	3860	5090	9.1

QUANTITIES

H	PER 8 m UNIT		PER LIN. METER	
	CONCRETE m^3	STEEL kg	CONCRETE m^3	STEEL kg
1.8	5.02	219	0.63	27
2.1	6.09	266	0.76	33
2.4	7.14	300	0.89	37
2.7	8.14	327	1.02	41
3.0	9.23	397	1.15	50
3.4	10.71	501	1.34	63
3.7	11.97	603	1.50	75
4.0	14.69	677	1.84	85
4.3	16.21	845	2.03	106
4.6	17.88	913	2.24	114
4.9	19.50	1098	2.44	137
5.2	22.15	1255	2.77	157
5.5	24.21	1496	3.03	187
5.8	29.65	1559	3.71	195
6.1	31.67	1732	3.96	217
6.4	33.69	2044	4.21	256
6.7	35.85	2421	4.48	303
7.0	42.96	2573	5.37	322
7.3	45.46	3044	5.68	380
7.6	47.99	3356	6.00	419
7.9	50.54	3676	6.32	459
8.2	59.81	3943	7.48	493
8.5	62.67	4679	7.83	585
8.8	65.60	5216	8.20	652
9.1	76.48	5451	9.56	681



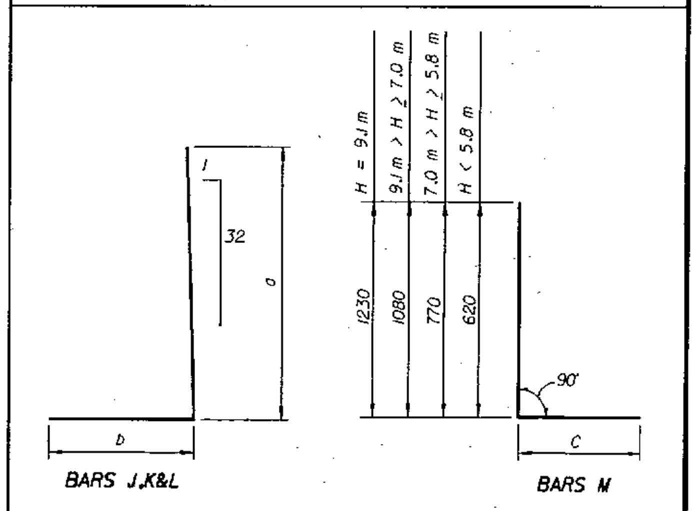
VIEW A-A



TYPICAL SECTION

NOTE:
- To accommodate the variable height of a wall unit, vertical bars may be field cut to fit and the number of horizontal Bars G required by the highest wall dimension within an 8 m unit shall be equally spaced at each end of the unit.

BENDING DIAGRAM



NOTE: All bar dimensions are out to out.

NOTE: Bars M are paired with Bars F and Bars A are paired with Bars J.

NOTE: Work this Drawing with Standard Index No. 800.

NOTE: All dimensions are in millimeters unless otherwise noted.

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	SHM	12/93
Checked by	JMD/NRK	12/93
Designed by	JMD	12/93
Checked by	NRK	12/93
Approved by	AJG	

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE:
CASE III (168 kPa MAX. BEARING PRESSURE) 1.8 m TO 9.1 m HEIGHT

PROJECT NAME:

Drawing No.
1 of 1

Index No.
813

Mon Aug 15 11:53:04 1994 /usr5/strstand/met/813.dgn

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

* NOTE: Wall Dimension "H" is given in meters (m). All other dimensions, lengths and spacings are given in millimeters (mm).

** NOTE: For placement details of Bars D see Standard Index No. 800.

NOTE: The spacings shown are the maximum values allowed by design. These values shall be used for wall units shorter than 8 meters long. Units 8 meters long shall utilize the number of bars tabulated at equal spacings.

* RETAINING WALL DATA

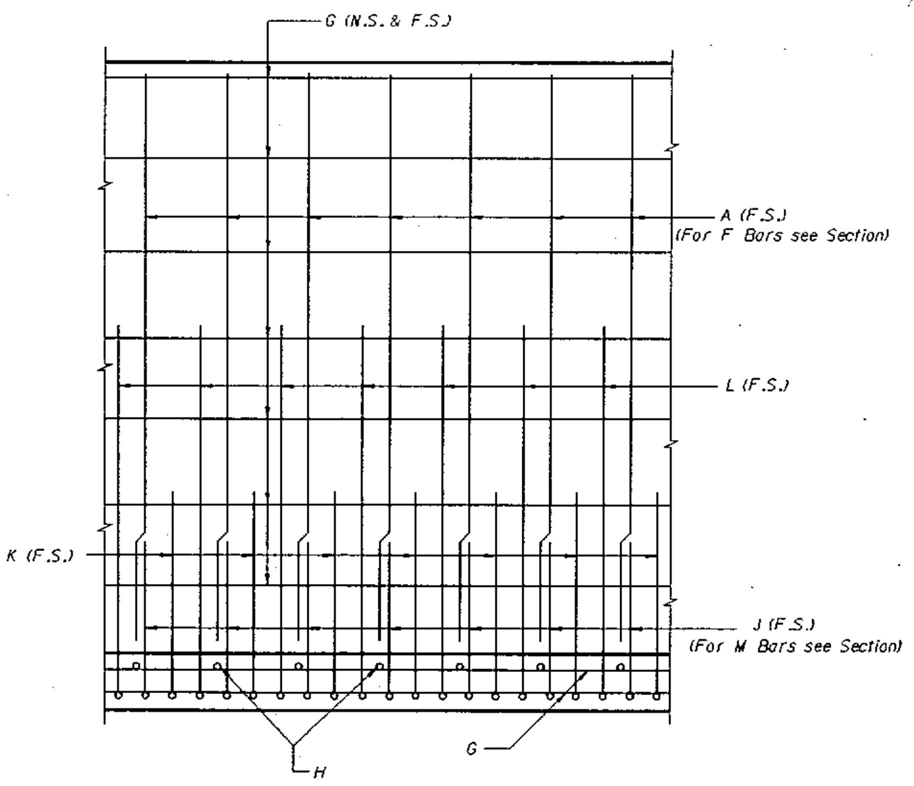
REINFORCING STEEL SCHEDULE

WALL DIMENSIONS				BARS A			** BARS D			BARS F			BARS G			BARS H				BARS J.					
H	B	D	T	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH
1.8	205	280	865				20M	4	460	10M	24	1425	10M	16	7850	10M	25	335	715	10M	35	235	1625	340	1965
2.1	230	280	1040				20M	5	460	10M	24	1725	10M	20	7850	10M	25	335	890	10M	35	235	1925	375	2300
2.4	280	280	1195				20M	6	460	10M	24	2025	10M	22	7850	10M	25	335	1045	10M	35	235	2225	430	2655
2.7	355	280	1320				20M	6	460	10M	24	2325	10M	22	7850	10M	25	335	1170	10M	38	215	2525	515	3040
3.0	355	280	1475				20M	7	460	10M	24	2625	10M	26	7850	10M	35	235	1325	10M	42	195	2825	525	3350
3.4	405	280	1625				20M	8	460	10M	24	3025	10M	28	7850	10M	46	175	1475	15M	28	295	3225	590	3815
3.7	455	305	1755				20M	9	460	10M	24	3300	10M	32	7850	10M	46	175	1605	15M	37	220	3525	650	4175
4.0	485	305	1905				20M	10	460	10M	24	3600	10M	34	7850	15M	31	265	1755	15M	37	220	3825	735	4560
4.3	510	305	2055				20M	11	460	10M	24	3900	10M	36	7850	15M	43	190	1905	15M	48	170	4125	770	4895
4.6	560	305	2235				20M	12	460	10M	24	4200	10M	40	7850	15M	48	170	2085	15M	28	295	4425	830	5255
4.9	635	305	2490	15M	23	4500	20M	13	460	10M	24	4500	10M	44	7850	20M	44	185	2340	15M	23	365	865	915	1780
5.2	710	355	2690	20M	19	4750	20M	13	460	10M	24	4750	10M	44	7850	20M	37	220	2540	20M	19	450	1040	1000	2040
5.5	760	355	2995	20M	22	5050	20M	14	460	10M	24	5050	10M	48	7850	20M	44	185	2845	20M	22	390	1040	1060	2100
5.8	890	510	3250	20M	23	5195	20M	15	460	10M	24	5195	10M	52	7850	15M	42	195	3100	20M	23	370	1475	1200	2675
6.1	1015	510	3430	20M	25	5495	20M	15	460	10M	24	5495	10M	52	7850	15M	48	170	3280	20M	25	330	1475	1335	2810
6.4	1120	510	3660	20M	19	5795	20M	16	460	10M	24	5795	10M	56	7850	20M	37	220	3510	25M	19	440	1805	1445	3250
6.7	1245	510	3860	20M	22	6095	20M	17	460	10M	24	6095	10M	60	7850	20M	44	185	3710	25M	22	390	1855	1580	3435
7.0	1370	660	4165	20M	23	6245	20M	18	460	10M	24	6245	10M	64	7850	15M	48	170	4015	25M	23	365	2005	1715	3720
7.3	1500	660	4370	20M	20	6545	20M	18	460	10M	24	6545	10M	64	7850	20M	37	220	4220	30M	20	425	2335	1855	4190
7.6	1625	660	4650	20M	21	6845	20M	19	460	10M	24	6845	10M	68	7850	20M	37	220	4500	30M	21	400	2335	1990	4325
7.9	1725	660	4875	20M	22	7145	20M	20	460	10M	24	7145	10M	72	7850	20M	44	185	4725	30M	22	380	2490	2100	4590
8.2	1855	815	5180	20M	22	7290	20M	21	460	10M	24	7290	10M	74	7850	20M	44	185	5030	30M	22	380	2640	2240	4880
8.5	1980	815	5410	25M	24	7590	20M	21	460	10M	24	7590	10M	76	7850	20M	44	185	5260	30M	24	345	2795	2375	5170
8.8	2110	815	5665	25M	26	7890	20M	22	460	10M	24	7890	10M	80	7850	20M	44	185	5515	30M	26	320	2945	2510	5455
9.1	2260	965	5995	25M	19	8040	20M	23	460	10M	24	8040	10M	84	7850	20M	52	155	5845	35M	19	435	3100	2670	5770

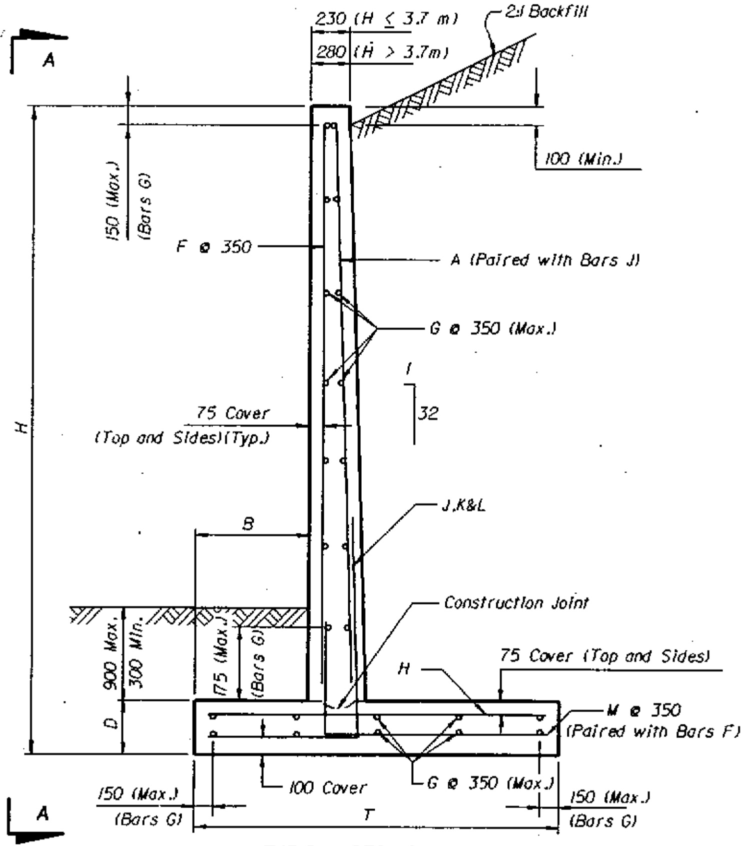
	BARS K						BARS L						BARS M				H
H	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	C	LENGTH	
1.8													10M	24	510	1130	1.8
2.1													10M	24	660	1280	2.1
2.4													10M	24	765	1385	2.4
2.7													10M	24	815	1435	2.7
3.0													10M	24	970	1590	3.0
3.4													10M	24	1070	1690	3.4
3.7													10M	24	1150	1770	3.7
4.0													10M	24	1270	1890	4.0
4.3													10M	24	1395	2015	4.3
4.6	15M	27	295	1755	830	2585							10M	24	1525	2145	4.6
4.9	15M	22	365	1450	915	2365	15M	22	365	3275	915	4190	10M	24	1705	2325	4.9
5.2	20M	18	450	1625	1000	2625	20M	18	450	2540	1000	3540	10M	24	1830	2450	5.2
5.5	20M	21	390	1625	1060	2685	20M	21	390	2540	1060	3600	10M	24	2085	2705	5.5
5.8	20M	22	370	1955	1200	3155	20M	22	370	3175	1200	4375	10M	24	2210	2980	5.8
6.1	20M	24	330	2260	1335	3595	20M	24	330	3480	1335	4815	10M	24	2265	3035	6.1
6.4	25M	18	440	2770	1445	4215	25M	18	440	3990	1445	5435	10M	24	2390	3160	6.4
6.7	25M	21	390	2770	1580	4350	25M	21	390	4295	1580	5875	10M	24	2465	3235	6.7
7.0	25M	22	365	2920	1715	4635	25M	22	365	4445	1715	6160	10M	24	2645	3725	7.0
7.3	30M	19	425	3430	1855	5285	30M	19	425	4955	1855	6810	10M	24	2720	3800	7.3
7.6	30M	20	400	3430	1990	5420	30M	20	400	5260	1990	7250	10M	24	2875	3955	7.6
7.9	30M	21	380	3735	2100	5835	30M	21	380	5565	2100	7665	10M	24	3000	4080	7.9
8.2	30M	21	380	3885	2240	6125	30M	21	380	5715	2240	7955	10M	24	3175	4255	8.2
8.5	30M	23	345	4190	2375	6565	30M	23	345	6020	2375	8395	10M	24	3280	4360	8.5
8.8	30M	25	320	4495	2510	7005	30M	25	320	6325	2510	8835	10M	24	3405	4485	8.8
9.1	35M	18	435	4650	2670	7320	35M	18	435	6475	2670	9145	10M	24	3585	4815	9.1

QUANTITIES

H	PER 8 m UNIT		PER LIN. METER	
	CONCRETE m^3	STEEL kg	CONCRETE m^3	STEEL kg
1.8	5.02	219	0.63	27
2.1	6.09	266	0.76	33
2.4	7.14	300	0.89	37
2.7	8.14	327	1.02	41
3.0	9.23	394	1.15	49
3.4	10.60	491	1.32	61
3.7	11.97	603	1.50	75
4.0	14.63	674	1.83	84
4.3	15.96	843	1.99	105
4.6	17.38	877	2.17	110
4.9	19.01	1109	2.38	139
5.2	21.43	1207	2.68	151
5.5	23.34	1433	2.92	179
5.8	28.61	1511	3.58	189
6.1	30.42	1709	3.80	214
6.4	32.46	2020	4.06	253
6.7	34.40	2403	4.30	300
7.0	41.22	2510	5.15	314
7.3	43.46	3008	5.43	376
7.6	46.12	3265	5.76	408
7.9	48.51	3649	6.06	456
8.2	57.13	3809	7.14	476
8.5	59.87	4548	7.48	569
8.8	62.79	5081	7.85	635
9.1	72.78	5287	9.10	661



VIEW A-A

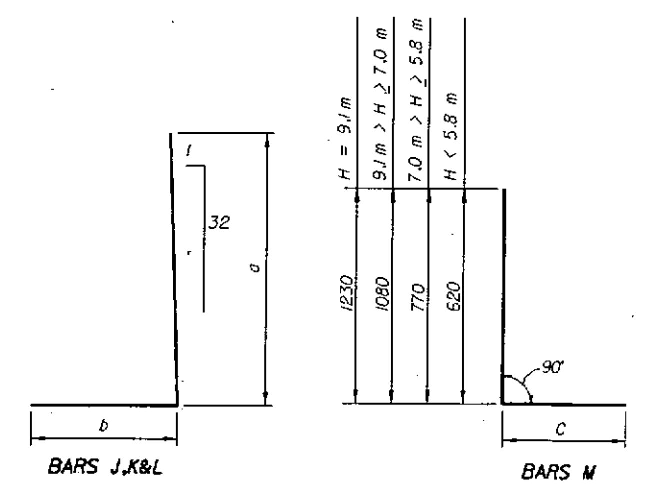


TYPICAL SECTION

NOTE:

To accommodate the variable height of a wall unit, vertical bars may be field cut to fit and the number of horizontal Bars G required by the highest wall dimension within an 8 m unit shall be equally spaced at each end of the unit.

BENDING DIAGRAM



NOTE: All bar dimensions are out to out.

NOTE: Bars M are paired with Bars F and Bars A are paired with Bars J.

NOTE: Work this Drawing with Standard Index No. 800.

NOTE: All dimensions are in millimeters unless otherwise noted.

REVISIONS

Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	SHM	12/93
Checked by	JMD/NRK	12/93
Designed by	JMD	12/93
Checked by	NRK	12/93
Approved by	AJG	

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE:
CASE III (192 kPa MAX. BEARING PRESSURE) 1.8 m TO 9.1 m HEIGHT

PROJECT NAME:

Drawing No.
1 of 1

Index No.
814

Mon Aug 15 11:53:54 1994 /usr5/strstand/met/814.dgn

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

* NOTE: Wall Dimension 'H' is given in meters (m). All other dimensions, lengths and spacings are given in millimeters (mm).

** NOTE: For placement details of Bars D see Standard Index No. 800.

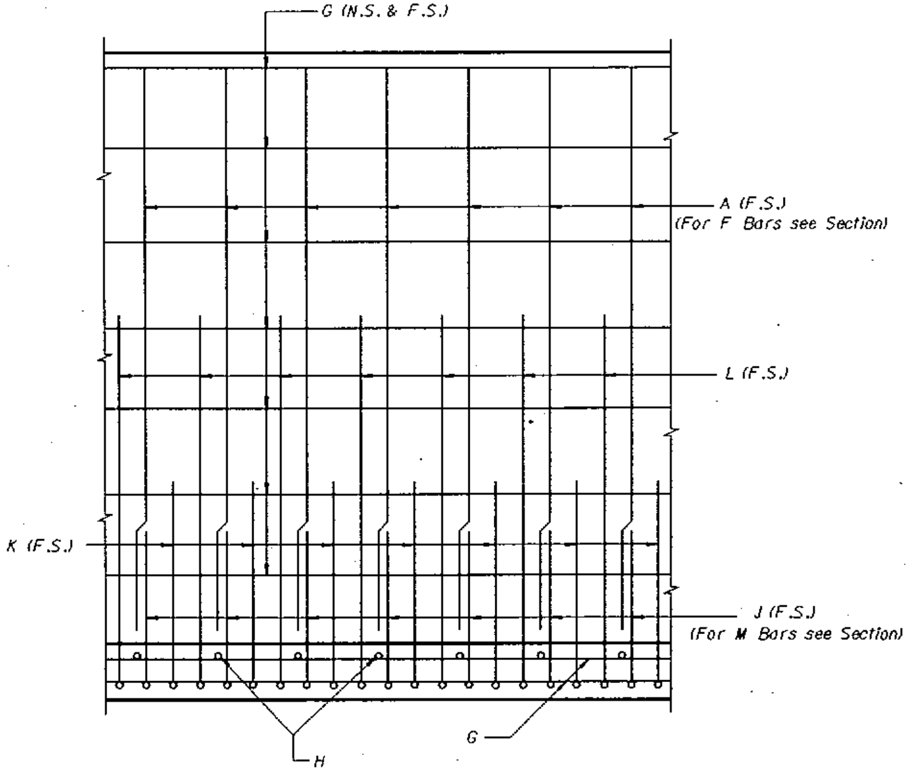
NOTE: The spacings shown are the maximum values allowed by design. These values shall be used for wall units shorter than 8 meters long. Units 8 meters long shall utilize the number of bars tabulated at equal spacings.

* RETAINING WALL DATA

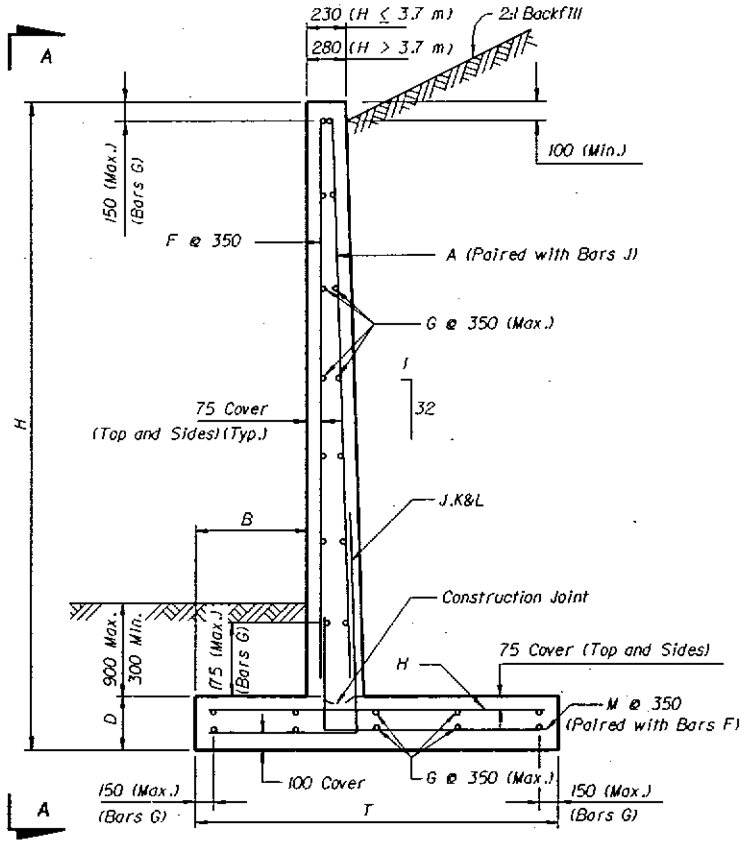
WALL DIMENSIONS				REINFORCING STEEL SCHEDULE																																						
H	B	D	T	BARS A			**BARS D			BARS F			BARS G			BARS H				BARS J						BARS K						BARS L						BARS M				H
				SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	C	LENGTH	
1.8	205	280	865				20M	4	460	10M	24	1425	10M	16	7850	10M	25	335	715	10M	35	235	1625	340	1965													10M	24	510	1130	1.8
2.1	230	280	1040				20M	5	460	10M	24	1725	10M	20	7850	10M	25	335	890	10M	35	235	1925	375	2300													10M	24	660	1280	2.1
2.4	280	280	1195				20M	6	460	10M	24	2025	10M	22	7850	10M	25	335	1045	10M	35	235	2225	430	2655													10M	24	765	1385	2.4
2.7	355	280	1320				20M	6	460	10M	24	2325	10M	22	7850	10M	25	335	1170	10M	38	215	2525	515	3040													10M	24	815	1435	2.7
3.0	355	280	1475				20M	7	460	10M	24	2625	10M	26	7850	10M	38	215	1325	10M	42	195	2825	525	3350													10M	24	970	1590	3.0
3.4	405	280	1625				20M	8	460	10M	24	3025	10M	28	7850	10M	46	175	1475	15M	28	295	3225	590	3815													10M	24	1070	1690	3.4
3.7	455	305	1755				20M	9	460	10M	24	3300	10M	32	7850	10M	46	175	1605	15M	37	220	3525	650	4175													10M	24	1150	1770	3.7
4.0	485	305	1905				20M	10	460	10M	24	3600	10M	34	7850	15M	31	265	1755	15M	37	220	3825	735	4560													10M	24	1270	1890	4.0
4.3	510	305	2055				20M	11	460	10M	24	3900	10M	36	7850	15M	43	190	1905	15M	48	170	4125	770	4895													10M	24	1395	2015	4.3
4.6	560	305	2185				20M	12	460	10M	24	4200	10M	40	7850	15M	48	170	2035	15M	28	295	4425	830	5255	15M	27	295	1755	830	2585							10M	24	1475	2095	4.6
4.9	585	305	2310	15M	23	4500	20M	13	460	10M	24	4500	10M	42	7850	20M	44	185	2160	15M	23	365	865	865	1730	15M	22	365	1450	865	2315	15M	22	365	3275	865	4140	10M	24	1575	2195	4.9
5.2	660	355	2540	20M	19	4750	20M	13	460	10M	24	4750	10M	44	7850	20M	37	220	2390	20M	19	450	1040	950	1990	20M	18	450	1625	950	2575	20M	18	450	2540	950	3490	10M	24	1730	2350	5.2
5.5	710	355	2795	20M	22	5050	20M	14	460	10M	24	5050	10M	48	7850	20M	44	185	2645	20M	22	390	1040	1010	2050	20M	21	390	1625	1010	2635	20M	21	390	2540	1010	3550	10M	24	1935	2555	5.5
5.8	840	510	3025	20M	23	5195	20M	15	460	10M	24	5195	10M	50	7850	15M	48	170	2875	20M	23	370	1475	1150	2625	20M	22	370	1955	1150	3105	20M	22	370	3175	1150	4325	10M	24	2035	2805	5.8
6.1	940	510	3225	20M	25	5495	20M	15	460	10M	24	5495	10M	52	7850	20M	37	220	3075	20M	25	330	1475	1260	2735	20M	24	330	2260	1260	3520	20M	24	330	3480	1260	4740	10M	24	2135	2905	6.1
6.4	1040	510	3380	20M	19	5795	20M	16	460	10M	24	5795	10M	54	7850	20M	37	220	3230	25M	19	440	1805	1365	3170	25M	18	440	2770	1365	4135	25M	18	440	3990	1365	5355	10M	24	2190	2960	6.4
6.7	1145	510	3630	20M	22	6095	20M	17	460	10M	24	6095	10M	58	7850	20M	44	185	3480	25M	22	390	1855	1480	3335	25M	21	390	2770	1480	4250	25M	21	390	4295	1480	5775	10M	24	2335	3105	6.7
7.0	1270	660	3885	20M	23	6245	20M	18	460	10M	24	6245	10M	62	7850	20M	37	220	3735	25M	23	365	2005	1615	3620	25M	22	365	2920	1615	4535	25M	22	365	4445	1615	6060	10M	24	2465	3545	7.0
7.3	1395	660	4115	20M	20	6545	20M	18	460	10M	24	6545	10M	62	7850	20M	37	220	3965	30M	20	425	2335	1750	4085	30M	19	425	3430	1750	5180	30M	19	425	4955	1750	6705	10M	24	2570	3650	7.3
7.6	1500	660	4320	20M	21	6845	20M	19	460	10M	24	6845	10M	66	7850	20M	44	185	4170	30M	21	400	2335	1865	4200	30M	20	400	3430	1865	5295	30M	20	400	5260	1865	7125	10M	24	2670	3750	7.6
7.9	1600	660	4570	20M	22	7145	20M	20	460	10M	24	7145	10M	70	7850	20M	44	185	4420	30M	22	380	2490	1975	4465	30M	21	380	3735	1975	5710	30M	21	380	5565	1975	7540	10M	24	2820	3900	7.9
8.2	1725	815	4825	20M	22	7290	20M	21	460	10M	24	7290	10M	72	7850	20M	44	185	4675	30M	22	380	2640	2110	4750	30M	21	380	3885	2110	5995	30M	21	380	5715	2110	7825	10M	24	2950	4030	8.2
8.5	1855	815	5080	25M	24	7590	20M	21	460	10M	24	7590	10M	74	7850	20M	44	185	4930	30M	24	345	2795	2250	5045	30M	23	345	4190	2250	6440	30M	23	345	6020	2250	8270	10M	24	3075	4155	8.5
8.8	1955	815	5335	25M	26	7890	20M	22	460	10M	24	7890	10M	78	7850	20M	44	185	5185	30M	26	320	2945	2355	5300	30M	25	320	4495	2355	6850	30M	25	320	6325	2355	8680	10M	24	3230	4310	8.8
9.1	2110	965	5615	25M	19	8040	20M	23	460	10M	24	8040	10M	82	7850	20M	52	155	5465	35M	19	435	3100	2520	5620	35M	18	435	4650	2520	7170	35M	18	435	6475	2520	8995	10M	24	3355	4585	9.1

QUANTITIES

H	PER 8 m UNIT		PER LIN. METER	
	CONCRETE m^3	STEEL kg	CONCRETE m^3	STEEL kg
1.8	5.02	219	0.63	27
2.1	6.09	266	0.76	33
2.4	7.14	300	0.89	37
2.7	8.14	327	1.02	41
3.0	9.23	397	1.15	50
3.4	10.60	491	1.32	61
3.7	11.97	603	1.50	75
4.0	14.63	674	1.83	84
4.3	15.96	843	1.99	105
4.6	17.26	872	2.16	109
4.9	18.57	1071	2.32	134
5.2	21.00	1186	2.63	148
5.5	22.77	1402	2.85	175
5.8	27.69	1500	3.46	188
6.1	29.59	1714	3.70	214
6.4	31.32	1962	3.92	245
6.7	33.47	2340	4.18	292
7.0	39.74	2491	4.97	311
7.3	42.11	2937	5.26	367
7.6	44.38	3247	5.55	406
7.9	46.90	3558	5.86	445
8.2	54.82	3710	6.85	464
8.5	57.72	4450	7.21	556
8.8	60.64	4967	7.58	621
9.1	69.84	5159	8.73	645



VIEW A-A

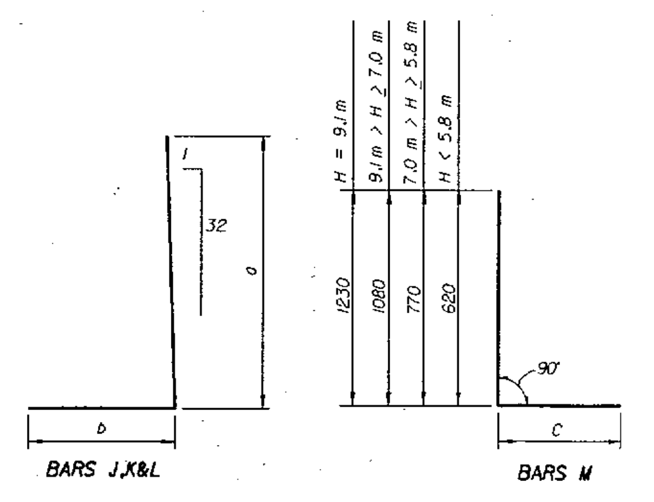


TYPICAL SECTION

NOTE:

To accommodate the variable height of a wall unit, vertical bars may be field cut to fit and the number of horizontal Bars G required by the highest wall dimension within an 8 m unit shall be equally spaced at each end of the unit.

BENDING DIAGRAM



NOTE: All bar dimensions are out to out.

NOTE: Bars M are paired with Bars F and Bars A are paired with Bars J.

NOTE: Work this Drawing with Standard Index No. 800.

NOTE: All dimensions are in millimeters unless otherwise noted.

Mon Aug 15 11:54:36 1994 /usr5/strstand/met/815.dgn

REVISIONS

Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	SHM	12/93
Checked by	JMD/NRK	12/93
Designed by	JMD	12/93
Checked by	NRK	12/93
Approved by	AJG	

ENGINEER OF RECORD:

STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE:
CASE III (215 kPa MAX. BEARING PRESSURE) 1.8 m TO 9.1 m HEIGHT

PROJECT NAME:

Drawing No.
1 of 1

Index No.
815

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

* NOTE: Wall Dimension 'H' is given in meters (m). All other dimensions, lengths and spacings are given in millimeters (mm).

** NOTE: For placement details of Bars D see Standard Index No. 800.

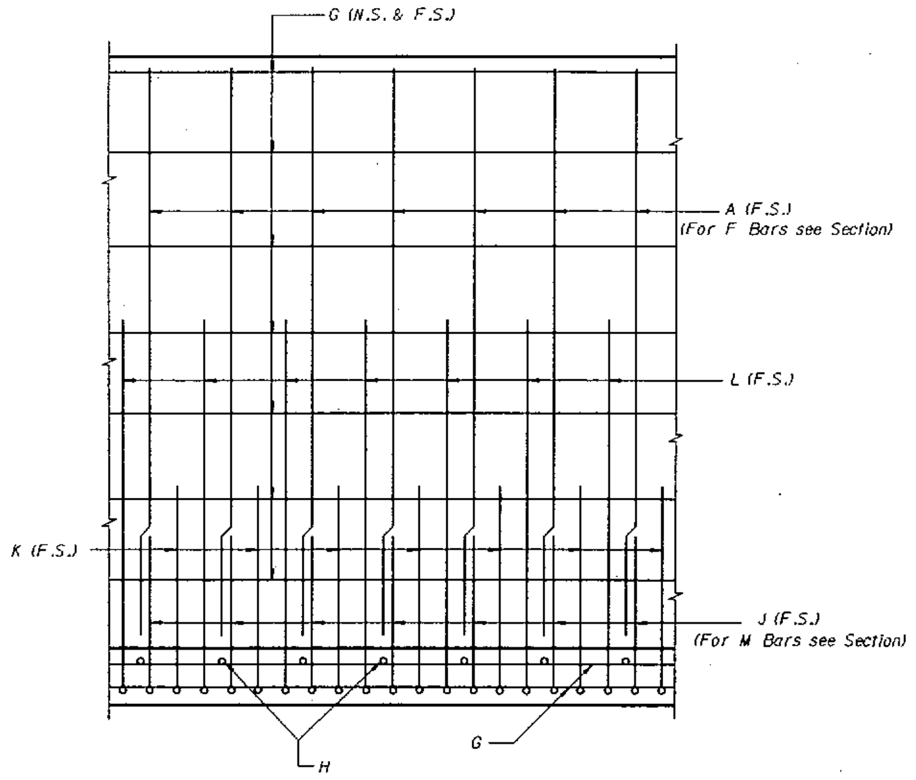
NOTE: The spacings shown are the maximum values allowed by design. These values shall be used for wall units shorter than 8 meters long. Units 8 meters long shall utilize the number of bars tabulated at equal spacings.

* RETAINING WALL DATA

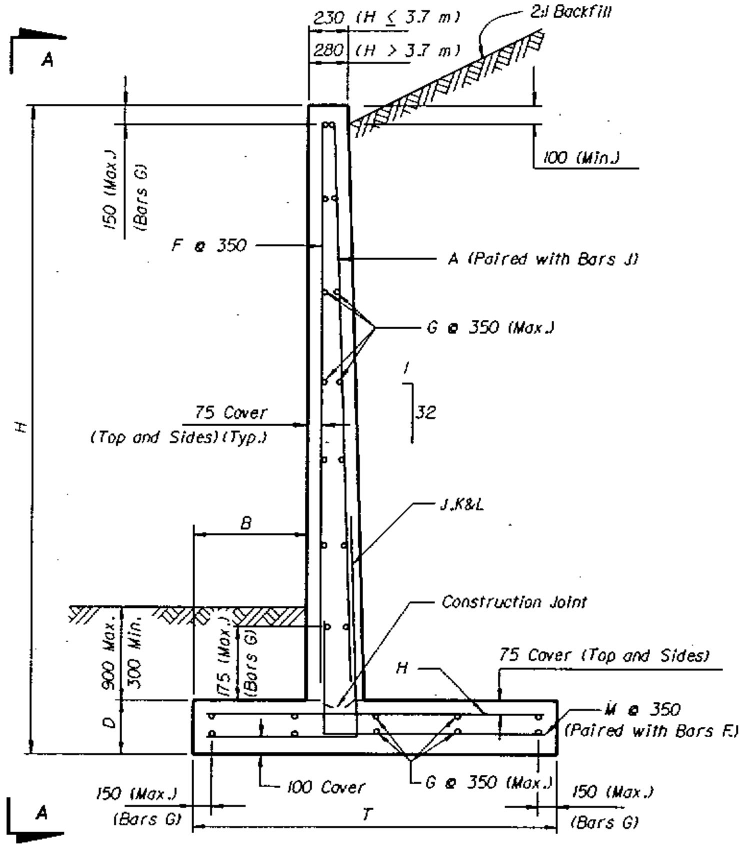
WALL DIMENSIONS				REINFORCING STEEL SCHEDULE																																						
H	B	D	T	BARS A			** BARS D			BARS F			BARS G			BARS H				BARS J						BARS K						BARS L						BARS M				H
				SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	C	LENGTH	
1.8	205	280	865				20M	4	460	10M	24	1425	10M	16	7850	10M	25	335	715	10M	35	235	1625	340	1965													10M	24	510	1130	1.8
2.1	230	280	1040				20M	5	460	10M	24	1725	10M	20	7850	10M	25	335	890	10M	35	235	1925	375	2300													10M	24	660	1280	2.1
2.4	280	280	1195				20M	6	460	10M	24	2025	10M	22	7850	10M	25	335	1045	10M	35	235	2225	430	2655													10M	24	765	1385	2.4
2.7	355	280	1320				20M	6	460	10M	24	2325	10M	22	7850	10M	25	335	1170	10M	38	215	2525	515	3040													10M	24	815	1435	2.7
3.0	355	280	1475				20M	7	460	10M	24	2625	10M	26	7850	10M	38	215	1325	10M	42	195	2825	525	3350													10M	24	970	1590	3.0
3.4	405	280	1625				20M	8	460	10M	24	3025	10M	28	7850	10M	52	155	1475	15M	28	295	3225	590	3815													10M	24	1070	1690	3.4
3.7	455	305	1755				20M	9	460	10M	24	3300	10M	32	7850	10M	46	175	1605	15M	37	220	3525	650	4175													10M	24	1150	1770	3.7
4.0	485	305	1905				20M	10	460	10M	24	3600	10M	34	7850	15M	31	265	1755	15M	37	220	3825	735	4560													10M	24	1270	1890	4.0
4.3	510	305	2055				20M	11	460	10M	24	3900	10M	36	7850	15M	43	190	1905	15M	48	170	4125	770	4895													10M	24	1395	2015	4.3
4.6	560	305	2185				20M	12	460	10M	24	4200	10M	40	7850	15M	48	170	2035	15M	28	295	4425	830	5255	15M	27	295	1755	830	2585							10M	24	1475	2095	4.6
4.9	585	305	2310	15M	23	4500	20M	13	460	10M	24	4500	10M	42	7850	20M	44	185	2160	15M	23	365	865	865	1730	15M	22	365	1450	865	2315	15M	22	365	3275	865	4140	10M	24	1575	2195	4.9
5.2	660	355	2490	20M	19	4750	20M	13	460	10M	24	4750	10M	44	7850	20M	37	220	2340	20M	19	450	1040	950	1990	20M	18	450	1625	950	2575	20M	18	450	2540	950	3490	10M	24	1680	2300	5.2
5.5	660	355	2665	20M	22	5050	20M	14	460	10M	24	5050	10M	46	7850	20M	52	155	2515	20M	22	390	1040	960	2000	20M	21	390	1625	960	2585	20M	21	390	2540	960	3500	10M	24	1855	2475	5.5
5.8	760	510	2845	20M	23	5195	20M	15	460	10M	24	5195	10M	50	7850	20M	32	260	2695	20M	23	370	1475	1070	2545	20M	22	370	1955	1070	3025	20M	22	370	3175	1070	4245	10M	24	1935	2705	5.8
6.1	865	510	3025	20M	25	5495	20M	15	460	10M	24	5495	10M	50	7850	20M	35	235	2875	20M	25	330	1475	1185	2660	20M	24	330	2260	1185	3445	20M	24	330	3480	1185	4665	10M	24	2010	2780	6.1
6.4	965	510	3225	20M	19	5795	20M	16	460	10M	24	5795	10M	54	7850	20M	39	210	3075	25M	19	440	1805	1290	3095	25M	18	440	2770	1290	4060	25M	18	440	3990	1290	5280	10M	24	2110	2880	6.4
6.7	1065	510	3405	20M	22	6095	20M	17	460	10M	24	6095	10M	56	7850	20M	45	180	3255	25M	22	390	1855	1400	3255	25M	21	390	2770	1400	4170	25M	21	390	4295	1400	5695	10M	24	2190	2960	6.7
7.0	1195	660	3630	20M	23	6245	20M	18	460	10M	24	6245	10M	60	7850	20M	35	235	3480	25M	23	365	2005	1540	3545	25M	22	365	2920	1540	4460	25M	22	365	4445	1540	5985	10M	24	2285	3365	7.0
7.3	1295	660	3835	20M	20	6545	20M	18	460	10M	24	6545	10M	62	7850	20M	39	210	3685	30M	20	425	2335	1650	3985	30M	19	425	3430	1650	5080	30M	19	425	4955	1650	6605	10M	24	2390	3470	7.3
7.6	1395	660	4040	20M	21	6845	20M	19	460	10M	24	6845	10M	64	7850	20M	45	180	3890	30M	21	400	2335	1760	4095	30M	20	400	3430	1760	5190	30M	20	400	5260	1760	7020	10M	24	2495	3575	7.6
7.9	1500	660	4295	20M	22	7145	20M	20	460	10M	24	7145	10M	68	7850	20M	45	180	4145	30M	22	380	2490	1875	4365	30M	21	380	3735	1875	5610	30M	21	380	5565	1875	7440	10M	24	2645	3725	7.9
8.2	1625	815	4570	20M	22	7290	20M	21	460	10M	24	7290	10M	72	7850	20M	39	210	4420	30M	22	380	2640	2010	4650	30M	21	380	3885	2010	5895	30M	21	380	5715	2010	7725	10M	24	2795	3875	8.2
8.5	1725	815	4775	25M	24	7590	20M	21	460	10M	24	7590	10M	72	7850	20M	45	180	4625	30M	24	345	2795	2120	4915	30M	23	345	4190	2120	6310	30M	23	345	6020	2120	8140	10M	24	2900	3980	8.5
8.8	1830	815	5055	25M	26	7890	20M	22	460	10M	24	7890	10M	76	7850	20M	45	180	4905	30M	26	320	2945	2230	5175	30M	25	320	4495	2230	6725	30M	25	320	6325	2230	8555	10M	24	3075	4155	8.8
9.1	1980	965	5310	25M	19	8040	20M	23	460	10M	24	8040	10M	80	7850	20M	52	155	5160	35M	19	435	3100	2390	5490	35M	18	435	4650	2390	7040	35M	18	435	6475	2390	8865	10M	24	3180	4410	9.1

QUANTITIES

H	PER 8 m UNIT		PER LIN. METER	
	CONCRETE m^3	STEEL kg	CONCRETE m^3	STEEL kg
1.8	5.02	219	0.63	27
2.1	6.09	266	0.76	33
2.4	7.14	300	0.89	37
2.7	8.14	327	1.02	41
3.0	9.23	397	1.15	50
3.4	10.60	498	1.32	62
3.7	11.97	603	1.50	75
4.0	14.63	674	1.83	84
4.3	15.96	843	1.99	105
4.6	17.26	872	2.16	109
4.9	18.57	1071	2.32	134
5.2	20.86	1180	2.61	148
5.5	22.40	1414	2.80	177
5.8	26.96	1472	3.37	184
6.1	28.77	1656	3.60	207
6.4	30.69	1946	3.84	243
6.7	32.55	2289	4.07	286
7.0	38.39	2417	4.80	302
7.3	40.63	2895	5.08	362
7.6	42.90	3176	5.36	397
7.9	45.45	3488	5.68	436
8.2	53.16	3594	6.64	449
8.5	55.73	4364	6.97	545
8.8	58.82	4882	7.35	610
9.1	67.49	5050	8.44	631



VIEW A-A

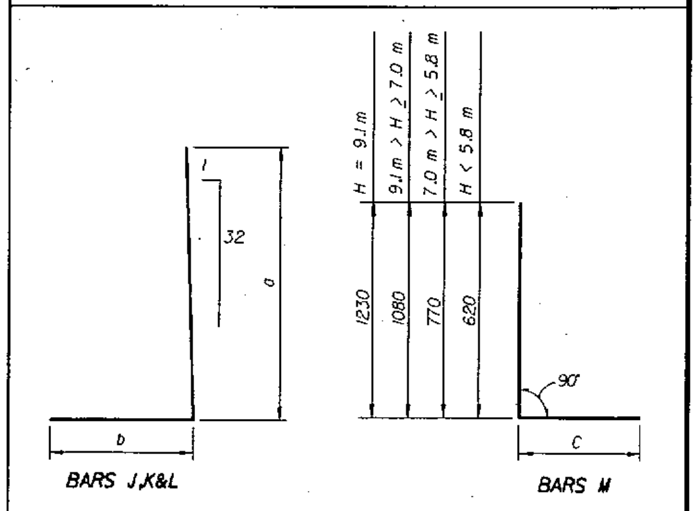


TYPICAL SECTION

NOTE:

To accommodate the variable height of a wall unit, vertical bars may be field cut to fit and the number of horizontal Bars G required by the highest wall dimension within an 8 m unit shall be equally spaced at each end of the unit.

BENDING DIAGRAM



NOTE: All bar dimensions are out to out.

NOTE: Bars M are paired with Bars F and Bars A are paired with Bars J.

NOTE: Work this Drawing with Standard Index No. 800.

NOTE: All dimensions are in millimeters unless otherwise noted.

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	SHM	12/93
Checked by	JMD/NRK	12/93
Designed by	JMD	12/93
Checked by	NRK	12/93
Approved by	AJG	

ENGINEER OF RECORD:

STRUCTURES DESIGN OFFICE

CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE:

CASE III (239 kPa MAX. BEARING PRESSURE) 1.8 m TO 9.1 m HEIGHT

PROJECT NAME:

Drawing No. 1 of 1

Index No. 816

/usr5/strstand/met/816.dgn

Mon Aug 15 11:55:19 1994

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

* NOTE: Wall Dimension 'H' is given in meters (m). All other dimensions, lengths and spacings are given in millimeters (mm).

* * NOTE: For placement details of Bars D see Standard Index No. 800.

NOTE: The spacings shown are the maximum values allowed by design. These values shall be used for wall units shorter than 8 meters long. Units 8 meters long shall utilize the number of bars tabulated at equal spacings.

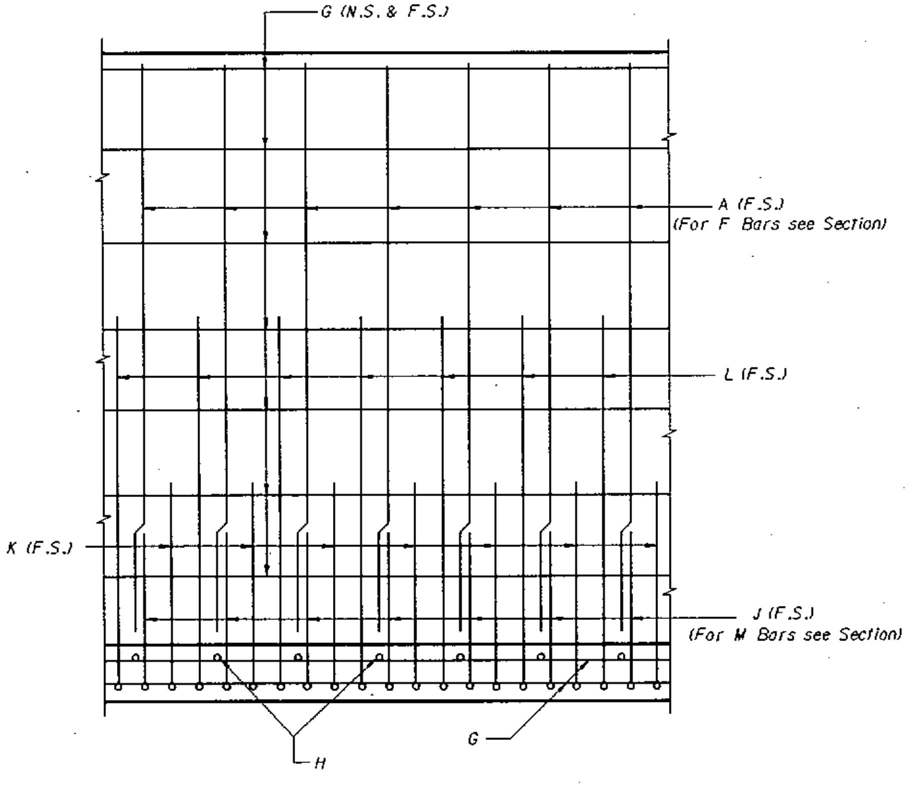
* RETAINING WALL DATA

WALL DIMENSIONS — REINFORCING STEEL SCHEDULE

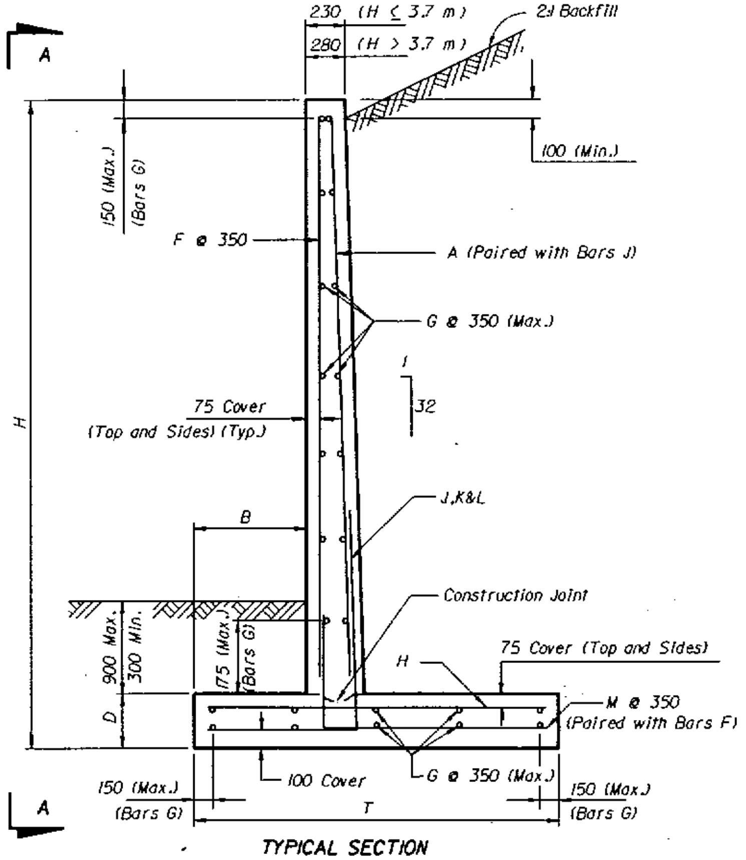
H	B	D	T	BARS A			* *BARS D			BARS F			BARS G			BARS H				BARS J						BARS K						BARS L						BARS M				H
				SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	C	LENGTH	
1.8	205	280	865				20M	4	460	10M	24	1425	10M	16	7850	10M	25	335	715	10M	35	235	1625	340	1965													10M	24	510	1130	1.8
2.1	230	280	1040				20M	5	460	10M	24	1725	10M	20	7850	10M	25	335	890	10M	35	235	1925	375	2300													10M	24	660	1280	2.1
2.4	280	280	1195				20M	6	460	10M	24	2025	10M	22	7850	10M	25	335	1045	10M	35	235	2225	430	2655													10M	24	765	1385	2.4
2.7	355	280	1320				20M	6	460	10M	24	2325	10M	22	7850	10M	25	335	1170	10M	38	215	2525	515	3040													10M	24	815	1435	2.7
3.0	355	280	1475				20M	7	460	10M	24	2625	10M	26	7850	10M	38	215	1325	10M	42	195	2825	525	3350													10M	24	970	1590	3.0
3.4	405	280	1625				20M	8	460	10M	24	3025	10M	28	7850	10M	52	155	1475	15M	28	295	3225	590	3815													10M	24	1070	1690	3.4
3.7	455	305	1755				20M	9	460	10M	24	3300	10M	32	7850	10M	46	175	1605	15M	37	220	3525	650	4175													10M	24	1150	1770	3.7
4.0	485	305	1905				20M	10	460	10M	24	3600	10M	34	7850	15M	31	265	1755	15M	37	220	3825	735	4560													10M	24	1270	1890	4.0
4.3	510	305	2055				20M	11	460	10M	24	3900	10M	36	7850	15M	43	190	1905	15M	48	170	4125	770	4895													10M	24	1395	2015	4.3
4.6	560	305	2185				20M	12	460	10M	24	4200	10M	40	7850	15M	48	170	2035	15M	28	295	4425	830	5255	15M	27	295	1755	830	2585							10M	24	1475	2095	4.6
4.9	585	305	2310	15M	23	4500	20M	13	460	10M	24	4500	10M	42	7850	20M	44	185	2160	15M	23	365	865	865	1730	15M	22	365	1450	865	2315	15M	22	365	3275	865	4140	10M	24	1575	2195	4.9
5.2	660	355	2490	20M	19	4750	20M	13	460	10M	24	4750	10M	44	7850	20M	37	220	2340	20M	19	450	1040	950	1990	20M	18	450	1625	950	2575	20M	18	450	2540	950	3490	10M	24	1680	2300	5.2
5.5	660	355	2665	20M	22	5050	20M	14	460	10M	24	5050	10M	46	7850	20M	52	155	2515	20M	22	390	1040	960	2000	20M	21	390	1625	960	2585	20M	21	390	2540	960	3500	10M	24	1855	2475	5.5
5.8	735	510	2745	20M	23	5195	20M	15	460	10M	24	5195	10M	48	7850	15M	48	170	2595	20M	23	370	1475	1045	2520	20M	22	370	1955	1045	3000	20M	22	370	3175	1045	4220	10M	24	1860	2630	5.8
6.1	840	510	2895	20M	25	5495	20M	15	460	10M	24	5495	10M	50	7850	20M	37	220	2745	20M	25	330	1475	1160	2635	20M	24	330	2260	1160	3420	20M	24	330	3480	1160	4640	10M	24	1905	2675	6.1
6.4	915	510	3025	20M	19	5795	20M	16	460	10M	24	5795	10M	52	7850	20M	44	185	2875	25M	19	440	1805	1240	3045	25M	18	440	2770	1240	4010	25M	18	440	3990	1240	5230	10M	24	1960	2730	6.4
6.7	1015	510	3225	20M	22	6095	20M	17	460	10M	24	6095	10M	56	7850	20M	45	180	3075	25M	22	390	1855	1350	3205	25M	21	390	2770	1350	4120	25M	21	390	4295	1350	5645	10M	24	2060	2830	6.7
7.0	1120	660	3430	20M	23	6245	20M	18	460	10M	24	6245	10M	58	7850	20M	37	220	3280	25M	23	365	2005	1465	3470	25M	22	365	2920	1465	4385	25M	22	365	4445	1465	5910	10M	24	2160	3240	7.0
7.3	1220	660	3630	20M	20	6545	20M	18	460	10M	24	6545	10M	60	7850	20M	44	185	3480	30M	20	425	2335	1575	3910	30M	19	425	3430	1575	5005	30M	19	425	4955	1575	6530	10M	24	2260	3340	7.3
7.6	1320	660	3835	20M	21	6845	20M	19	460	10M	24	6845	10M	64	7850	20M	45	180	3685	30M	21	400	2335	1685	4020	30M	20	400	3430	1685	5115	30M	20	400	5260	1685	6945	10M	24	2365	3445	7.6
7.9	1395	660	4090	20M	22	7145	20M	20	460	10M	24	7145	10M	66	7850	20M	52	155	3940	30M	22	380	2490	1770	4260	30M	21	380	3735	1770	5505	30M	21	380	5565	1770	7335	10M	24	2545	3625	7.9
8.2	1525	815	4320	20M	22	7290	20M	21	460	10M	24	7290	10M	70	7850	20M	39	210	4170	30M	22	380	2640	1910	4550	30M	21	380	3885	1910	5795	30M	21	380	5715	1910	7625	10M	24	2645	3725	8.2
8.5	1625	815	4520	25M	24	7590	20M	21	460	10M	24	7590	10M	72	7850	20M	45	180	4370	30M	24	345	2795	2020	4815	30M	23	345	4190	2020	6210	30M	23	345	6020	2020	8040	10M	24	2745	3825	8.5
8.8	1725	815	4775	25M	26	7890	20M	22	460	10M	24	7890	10M	74	7850	20M	52	155	4625	30M	26	320	2945	2125	5070	30M	25	320	4495	2125	6620	30M	25	320	6325	2125	8450	10M	24	2900	3980	8.8
9.1	1855	965	5005	25M	19	8040	20M	23	460	10M	24	8040	10M	78	7850	20M	52	155	4855	35M	19	435	3100	2265	5365	35M	18	435	4650	2265	6915	35M	18	435	6475	2265	8740	10M	24	3000	4230	9.1

QUANTITIES

H	PER 8 m UNIT		PER LIN. METER	
	CONCRETE m^3	STEEL kg	CONCRETE m^3	STEEL kg
1.8	5.02	219	0.63	27
2.1	6.09	266	0.76	33
2.4	7.14	300	0.89	37
2.7	8.14	327	1.02	41
3.0	9.23	397	1.15	50
3.4	10.60	498	1.32	62
3.7	11.97	603	1.50	75
4.0	14.63	674	1.83	84
4.3	15.96	843	1.99	105
4.6	17.26	872	2.16	109
4.9	18.57	1071	2.32	134
5.2	20.86	1180	2.61	148
5.5	22.40	1414	2.80	177
5.8	26.55	1447	3.32	181
6.1	28.24	1652	3.53	206
6.4	29.87	1935	3.73	242
6.7	31.81	2255	3.98	282
7.0	37.34	2382	4.67	298
7.3	39.55	2878	4.94	360
7.6	41.81	3127	5.23	391
7.9	44.37	3480	5.55	435
8.2	51.53	3521	6.44	440
8.5	54.07	4295	6.76	537
8.8	56.99	4869	7.12	609
9.1	65.13	4943	8.14	618



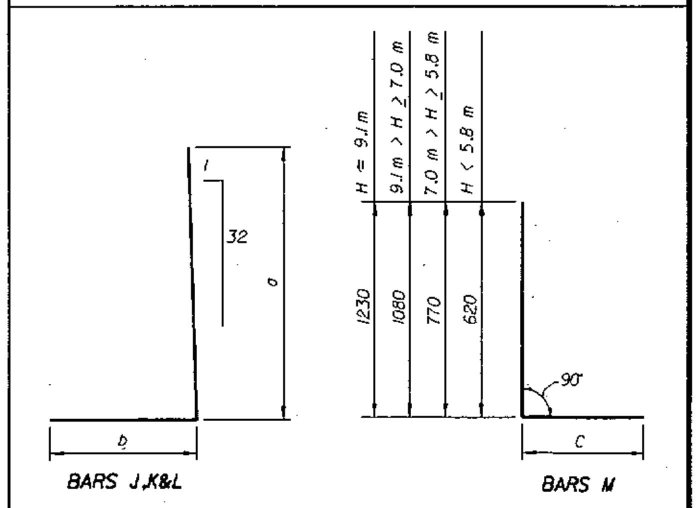
VIEW A-A



TYPICAL SECTION

NOTE:
To accommodate the variable height of a wall unit, vertical bars may be field cut to fit and the number of horizontal Bars G required by the highest wall dimension within an 8 m unit shall be equally spaced at each end of the unit.

BENDING DIAGRAM



NOTE: All bar dimensions are out to out.

NOTE: Bars M are paired with Bars F and Bars A are paired with Bars J.

NOTE: Work this Drawing with Standard Index No. 800.

NOTE: All dimensions are in millimeters unless otherwise noted.

/usr5/strstand/met/817.dgn

Mon Aug 15 11:56:01 1994

REVISIONS

Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	SHM	12/93
Checked by	JMD/NRK	12/93
Designed by	JMD	12/93
Checked by	NRK	12/93
Approved by	AJG	

ENGINEER OF RECORD:

STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE:
CASE III (263 kPa MAX. BEARING PRESSURE) 1.8 m TO 9.1 m HEIGHT

PROJECT NAME:

Drawing No.
1 of 1

Index No.
817

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

* NOTE: Wall Dimension 'H' is given in meters (m). All other dimensions, lengths and spacings are given in millimeters (mm).

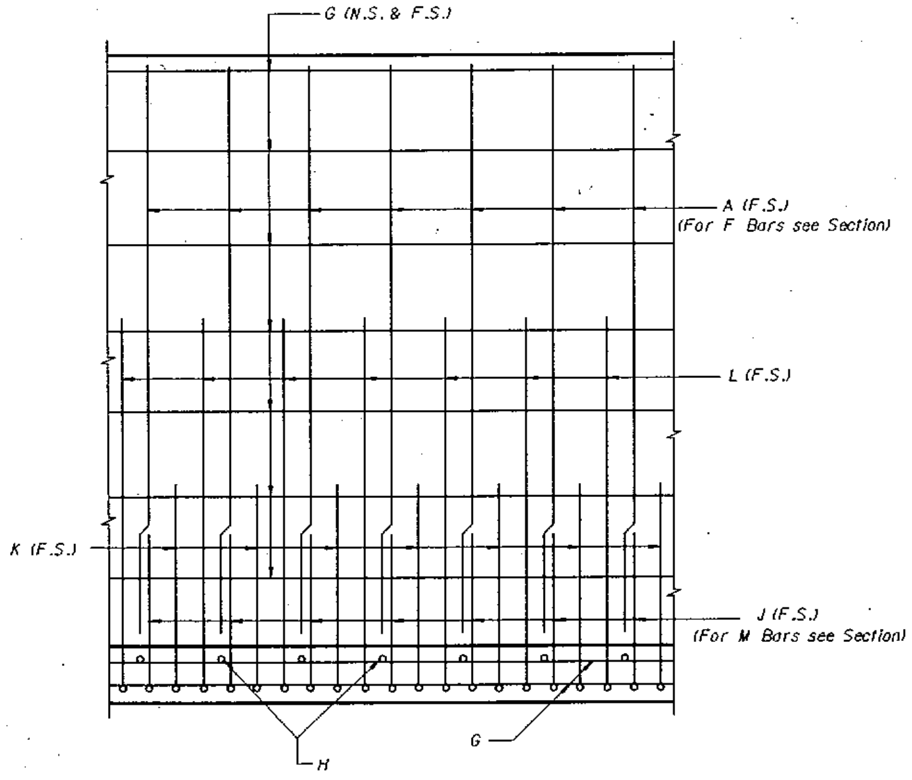
** NOTE: For placement details of Bars D see Standard Index No. 800.

NOTE: The spacings shown are the maximum values allowed by design. These values shall be used for wall units shorter than 8 meters long. Units 8 meters long shall utilize the number of bars tabulated at equal spacings.

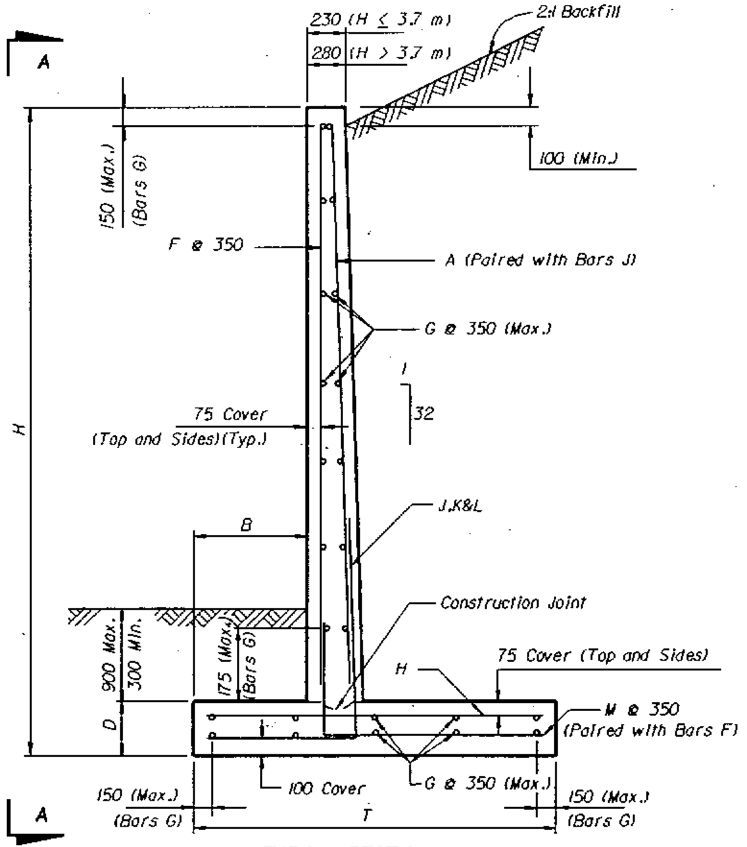
* RETAINING WALL DATA

WALL DIMENSIONS				REINFORCING STEEL SCHEDULE																																						H
H	B	D	T	BARS A			** BARS D			BARS F			BARS G			BARS H				BARS J						BARS K						BARS L						BARS M				
				SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	C	LENGTH	
1.8	205	280	865				20M	4	460	10M	24	1425	10M	16	7850	10M	25	335	715	10M	35	235	1625	340	1965													10M	24	510	1130	1.8
2.1	230	280	1040				20M	5	460	10M	24	1725	10M	20	7850	10M	25	335	890	10M	35	235	1925	375	2300													10M	24	660	1280	2.1
2.4	280	280	1170				20M	6	460	10M	24	2025	10M	22	7850	10M	25	335	1020	10M	35	235	2225	430	2655													10M	24	740	1360	2.4
2.7	355	280	1320				20M	6	460	10M	24	2325	10M	22	7850	10M	25	335	1170	10M	38	215	2525	515	3040													10M	24	815	1435	2.7
3.0	355	280	1475				20M	7	460	10M	24	2625	10M	26	7850	10M	38	215	1325	10M	42	195	2825	525	3350													10M	24	970	1590	3.0
3.4	405	280	1625				20M	8	460	10M	24	3025	10M	28	7850	10M	46	175	1475	15M	28	295	3225	590	3815													10M	24	1070	1690	3.4
3.7	455	305	1755				20M	9	460	10M	24	3300	10M	32	7850	10M	46	175	1605	15M	37	220	3525	650	4175													10M	24	1150	1770	3.7
4.0	485	305	1905				20M	10	460	10M	24	3600	10M	34	7850	15M	31	265	1755	15M	37	220	3825	735	4560													10M	24	1270	1890	4.0
4.3	510	305	2055				20M	11	460	10M	24	3900	10M	36	7850	15M	43	190	1905	15M	48	170	4125	770	4895													10M	24	1395	2015	4.3
4.6	560	305	2185				20M	12	460	10M	24	4200	10M	40	7850	15M	48	170	2035	15M	28	295	4425	830	5255	15M	27	295	1755	830	2585							10M	24	1475	2095	4.6
4.9	585	305	2335	15M	23	4500	20M	13	460	10M	24	4500	10M	42	7850	20M	44	185	2185	15M	23	365	865	865	1730	15M	22	365	1450	865	2315	15M	22	365	3275	865	4140	10M	24	1600	2220	4.9
5.2	660	355	2490	20M	19	4750	20M	13	460	10M	24	4750	10M	44	7850	20M	37	220	2340	20M	19	450	1040	950	1990	20M	18	450	1625	950	2575	20M	18	450	2540	950	3490	10M	24	1680	2300	5.2
5.5	660	355	2665	20M	22	5050	20M	14	460	10M	24	5050	10M	46	7850	20M	52	155	2515	20M	22	390	1040	960	2000	20M	21	390	1625	960	2585	20M	21	390	2540	960	3500	10M	24	1855	2475	5.5
5.8	735	510	2745	20M	23	5195	20M	15	460	10M	24	5195	10M	48	7850	15M	48	170	2595	20M	23	370	1475	1045	2520	20M	22	370	1955	1045	3000	20M	22	370	3175	1045	4220	10M	24	1860	2630	5.8
6.1	840	510	2895	20M	25	5495	20M	15	460	10M	24	5495	10M	50	7850	20M	35	235	2745	20M	25	330	1475	1160	2635	20M	24	330	2260	1160	3420	20M	24	330	3480	1160	4640	10M	24	1905	2675	6.1
6.4	915	510	3025	20M	19	5795	20M	16	460	10M	24	5795	10M	52	7850	20M	39	210	2875	25M	19	440	1805	1240	3045	25M	18	440	2770	1240	4010	25M	18	440	3990	1240	5230	10M	24	1960	2730	6.4
6.7	990	510	3150	20M	22	6095	20M	17	460	10M	24	6095	10M	56	7850	20M	45	180	3000	25M	22	390	2005	1325	3330	25M	21	390	2770	1325	4095	25M	21	390	4295	1325	5620	10M	24	2010	2780	6.7
7.0	1065	660	3300	20M	23	6245	20M	18	460	10M	24	6245	10M	58	7850	20M	35	235	3150	25M	23	365	2005	1410	3415	25M	22	365	2920	1410	4330	25M	22	365	4445	1410	5855	10M	24	2085	3165	7.0
7.3	1145	660	3480	20M	20	6545	20M	18	460	10M	24	6545	10M	60	7850	20M	44	185	3330	30M	20	425	2335	1500	3835	30M	19	425	3125	1500	4625	30M	19	425	4955	1500	6455	10M	24	2185	3265	7.3
7.6	1245	660	3660	20M	21	6845	20M	19	460	10M	24	6845	10M	62	7850	20M	44	185	3510	30M	21	400	2335	1610	3945	30M	20	400	3430	1610	5040	30M	20	400	5260	1610	6870	10M	24	2265	3345	7.6
7.9	1320	660	3885	20M	22	7145	20M	20	460	10M	24	7145	10M	66	7850	20M	48	170	3735	30M	22	380	2490	1695	4185	30M	21	380	3735	1695	5430	30M	21	380	5565	1695	7260	10M	24	2415	3495	7.9
8.2	1450	815	4115	20M	22	7290	20M	21	460	10M	24	7290	10M	68	7850	20M	39	210	3965	30M	22	380	2640	1835	4475	30M	21	380	3885	1835	5720	30M	21	380	5715	1835	7550	10M	24	2515	3595	8.2
8.5	1550	815	4345	25M	24	7590	20M	21	460	10M	24	7590	10M	70	7850	20M	43	190	4195	30M	24	345	2795	1945	4740	30M	23	345	4190	1945	6135	30M	23	345	6020	1945	7965	10M	24	2645	3725	8.5
8.8	1650	815	4545	25M	26	7890	20M	22	460	10M	24	7890	10M	74	7850	20M	52	155	4395	30M	26	320	2945	2050	4995	30M	25	320	4495	2050	6545	30M	25	320	6325	2050	8375	10M	24	2745	3825	8.8
9.1	1755	965	4800	25M	19	8040	20M	23	460	10M	24	8040	10M	76	7850	20M	52	155	4650	35M	19	435	3100	2165	5265	35M	18	435	4650	2165	6815	35M	18	435	6475	2165	8640	10M	24	2895	4125	9.1

QUANTITIES				
H	PER 8 m UNIT		PER LIN. METER	
	CONCRETE m^3	STEEL kg	CONCRETE m^3	STEEL kg
1.8	5.02	219	0.63	27
2.1	6.09	266	0.76	33
2.4	7.08	299	0.89	37
2.7	8.14	327	1.02	41
3.0	9.23	397	1.15	50
3.4	10.60	491	1.32	61
3.7	11.97	603	1.50	75
4.0	14.63	674	1.83	84
4.3	15.96	843	1.99	105
4.6	17.26	872	2.16	109
4.9	18.63	1074	2.33	134
5.2	20.86	1180	2.61	148
5.5	22.40	1414	2.80	177
5.8	26.55	1447	3.32	181
6.1	28.24	1639	3.53	205
6.4	29.87	1901	3.73	238
6.7	31.51	2252	3.94	282
7.0	36.65	2340	4.58	292
7.3	38.76	2805	4.84	351
7.6	40.89	3061	5.11	383
7.9	43.28	3391	5.41	424
8.2	50.19	3461	6.27	433
8.5	52.93	4214	6.62	527
8.8	55.49	4807	6.94	601
9.1	63.55	4860	7.94	608



VIEW A-A

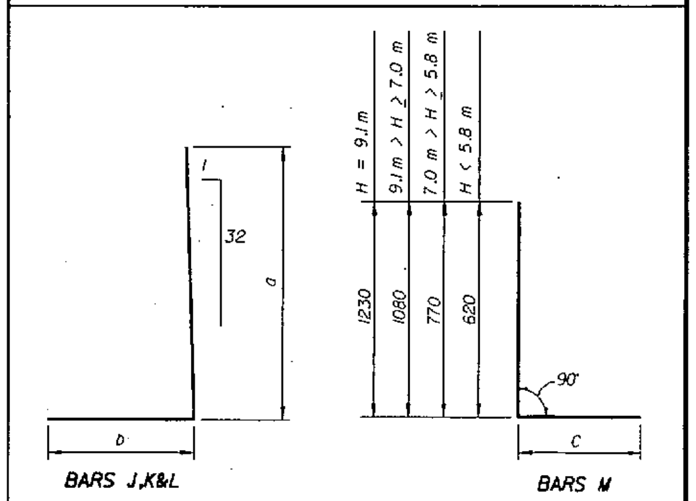


TYPICAL SECTION

NOTE:

To accommodate the variable height of a wall unit, vertical bars may be field cut to fit and the number of horizontal Bars G required by the highest wall dimension within an 8 m unit shall be equally spaced at each end of the unit.

BENDING DIAGRAM



NOTE: All bar dimensions are out to out.

NOTE: Bars M are paired with Bars F and Bars A are paired with Bars J.

NOTE: Work this Drawing with Standard Index No. 800.

NOTE: All dimensions are in millimeters unless otherwise noted.

/usr5/strstand/met/818.dgn

Mon Aug 15 11:56:47 1994

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	SHM	12/93
Checked by	JMD/NRK	12/93
Designed by	JMD	12/93
Checked by	NRK	12/93
Approved by	AJG	

ENGINEER OF RECORD:

STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE:

CASE III (287 kPa MAX. BEARING PRESSURE) 1.8 m TO 9.1 m HEIGHT

PROJECT NAME:

Drawing No.
1 of 1

Index No.
818

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

* NOTE: Wall Dimension "H" is given in meters (m). All other dimensions, lengths and spacings are given in millimeters (mm).

* * NOTE: For placement details of Bars D see Standard Index No. 800.

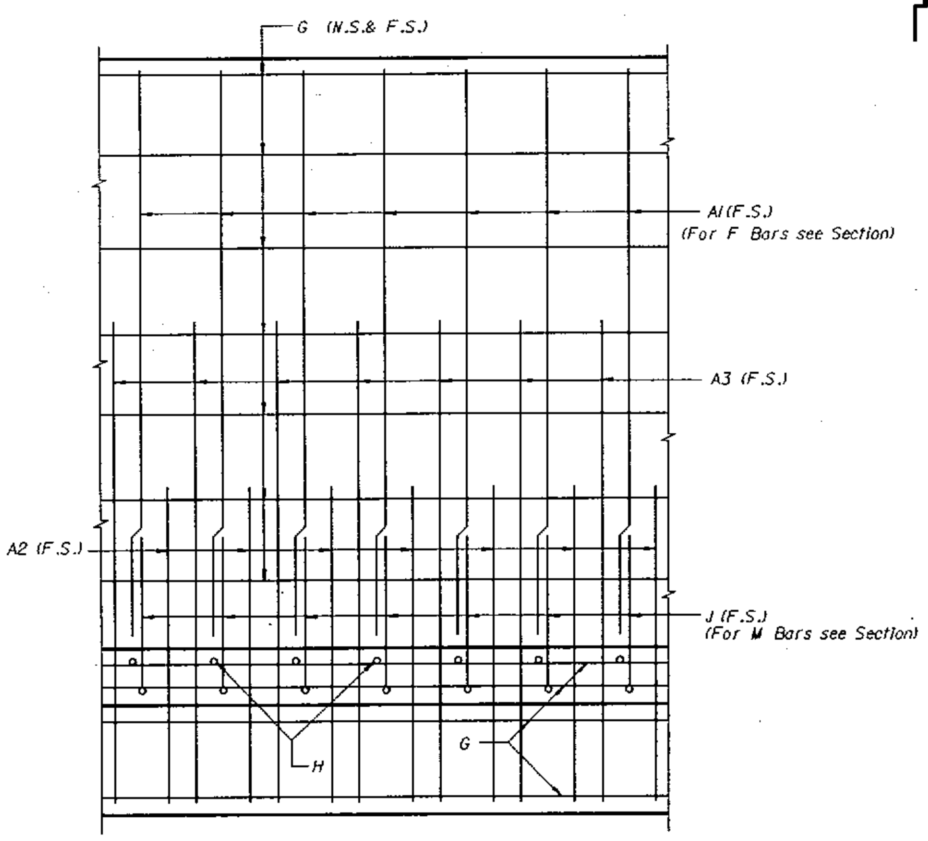
NOTE: The spacings shown are the maximum values allowed by design. These values shall be used for wall units shorter than 8 meters long. Units 8 meters long shall utilize the number of bars tabulated at equal spacings.

* RETAINING WALL DATA

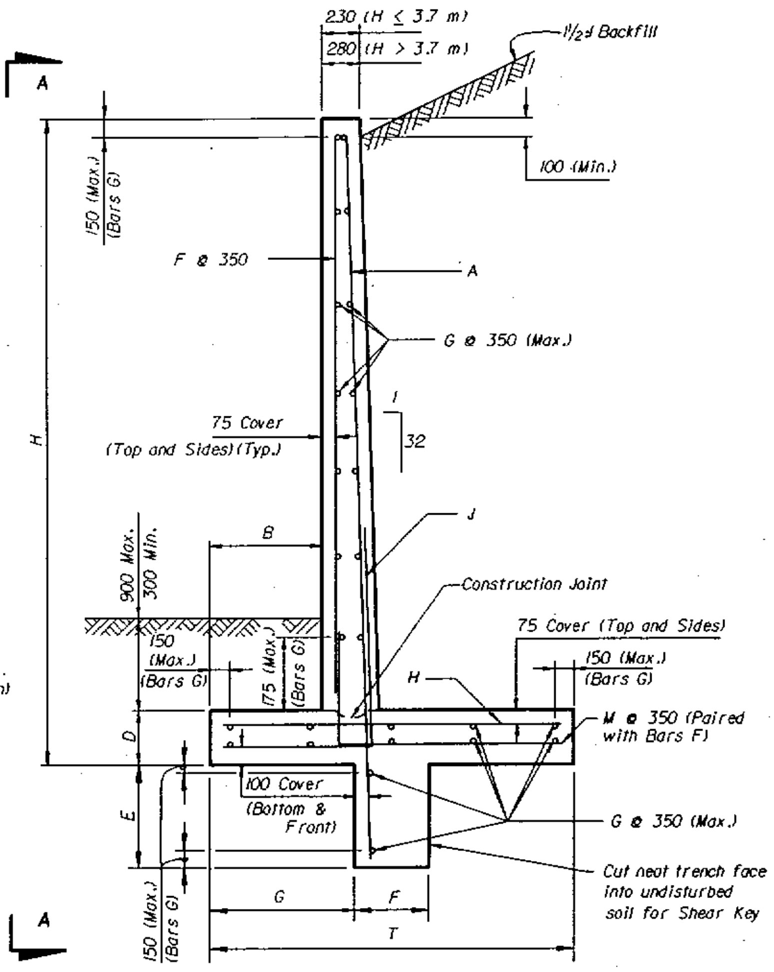
WALL DIMENSIONS				SHEAR KEY DIMENSIONS			REINFORCING STEEL SCHEDULE																																		
H	B	D	T	E	F	G	BARS A1			BARS A2				BARS A3				**BARS D			BARS F			BARS G			BARS H				BARS J						BARS M				H
							SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	C	LENGTH	
1.8	255	280	1195															20M	4	460	10M	24	1425	10M	18	7850	10M	25	335	1045	10M	35	235	1625	390	2015	10M	24	790	1410	1.8
2.1	380	280	1420															20M	5	460	10M	24	1725	10M	22	7850	10M	25	335	1270	10M	35	235	1925	525	2450	10M	24	890	1510	2.1
2.4	380	305	1625															20M	6	460	10M	24	2000	10M	24	7850	10M	32	255	1475	10M	38	215	2225	530	2755	10M	24	1095	1715	2.4
2.7	510	305	1905	305	305	635				10M	27	295	1725					20M	6	460	10M	24	2300	10M	28	7850	10M	32	255	1755	10M	28	295	2525	670	3195	10M	24	1245	1865	2.7
3.0	685	355	2515	305	305	815				10M	37	215	1500					20M	7	460	10M	24	2550	10M	34	7850	10M	42	195	2365	10M	38	215	2825	855	3680	10M	24	1680	2300	3.0
3.4	915	355	3200	305	305	1065				15M	25	320	1805					20M	8	460	10M	24	2950	10M	40	7850	10M	42	195	3050	15M	26	320	3225	1100	4325	10M	24	2135	2755	3.4
3.7	1065	430	3505	305	305	1220				15M	29	270	2055					20M	9	460	10M	24	3175	10M	44	7850	15M	28	295	3355	15M	30	270	3525	1260	4785	10M	24	2290	3060	3.7
4.0	1220	430	4040	305	305	1420				15M	29	270	2160					20M	10	460	10M	24	3475	10M	48	7850	15M	28	295	3890	15M	30	270	3825	1470	5295	10M	24	2670	3440	4.0
4.3	1525	510	4955	305	305	1755				20M	25	315	2285					20M	10	460	10M	24	3695	10M	54	7850	15M	33	245	4805	20M	26	315	4125	1785	5910	10M	24	3280	4050	4.3
4.6	2135	510	6780	305	305	2360	15M	22	3995	20M	21	385	2390	20M	21	385	3300	20M	11	460	10M	24	3995	10M	66	7850	20M	48	170	6630	20M	22	385	1195	2405	3600	10M	24	4495	5265	4.6

QUANTITIES

H	PER 8 m UNIT		PER LIN. METER	
	CONCRETE m^3	STEEL kg	CONCRETE m^3	STEEL kg
1.8	5.76	245	0.72	31
2.1	6.94	294	0.87	37
2.4	8.37	342	1.05	43
2.7	10.52	408	1.31	51
3.0	13.63	540	1.70	67
3.4	16.59	711	2.07	89
3.7	20.15	865	2.52	108
4.0	24.23	956	3.03	119
4.3	31.25	1235	3.91	154
4.6	39.66	1948	4.96	244



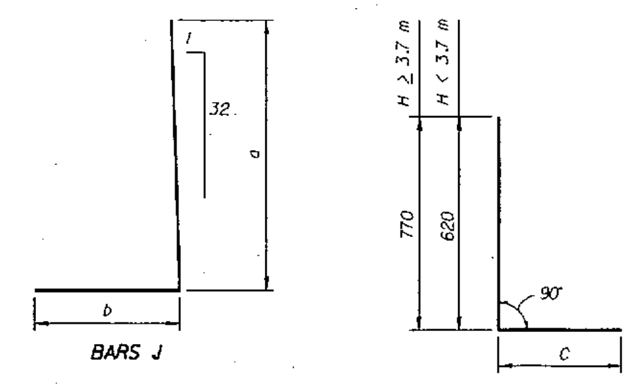
VIEW A-A



TYPICAL SECTION

NOTE:
To accommodate the variable height of a wall unit, vertical bars may be field cut to fit and the number of horizontal Bars G required by the highest wall dimension within an 8 m unit shall be equally spaced at each end of the unit.

BENDING DIAGRAM



NOTE: All bar dimensions are out to out.

NOTE: Bars M are paired with Bars F and Bars A1 are paired with Bars J.

NOTE: Work this Drawing with Standard Index No. 800.

NOTE: All dimensions are in millimeters unless otherwise noted.

REVISIONS

Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	SHM	12/93
Checked by	JMD/NRK	12/93
Designed by	JMD	12/93
Checked by	NRK	12/93
Approved by	AJG	

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE: CASE IV (144 kPa MAX. BEARING PRESSURE) 1.8 m TO 4.6 m HEIGHT

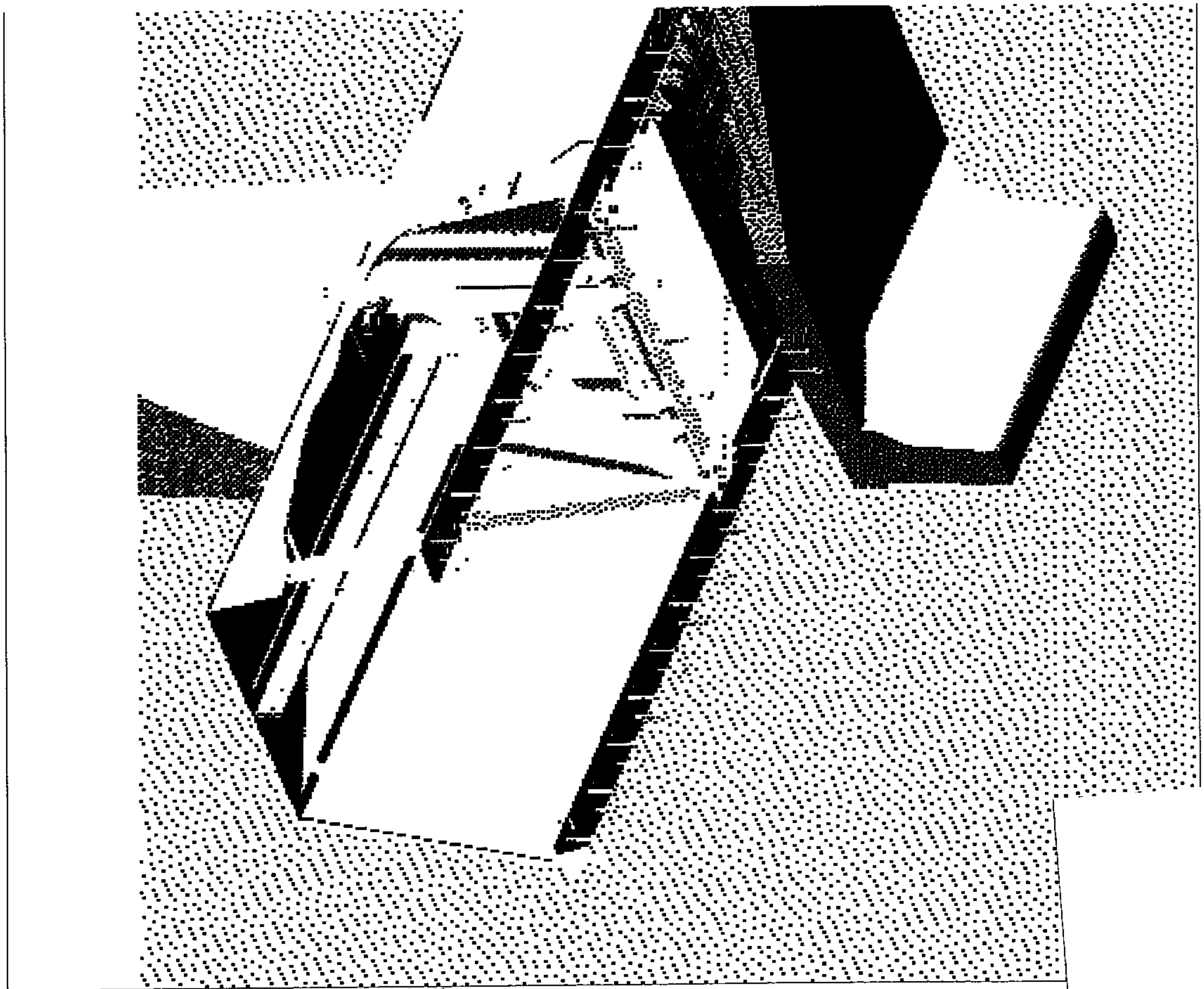
PROJECT NAME:

Drawing No. 1 of 1

Index No. 819

/usr5/strstand/met/819.dgn

Mon Aug 15 11:57:29 1994



c:\usr5\sthtb\3d\testbox.dgn May. 25, 1995 17:04:22

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

* NOTE: Wall Dimension 'H' is given in meters (m). All other dimensions, lengths and spacings are given in millimeters (mm).

* * NOTE: For placement details of Bars D see Standard Index No. 800.

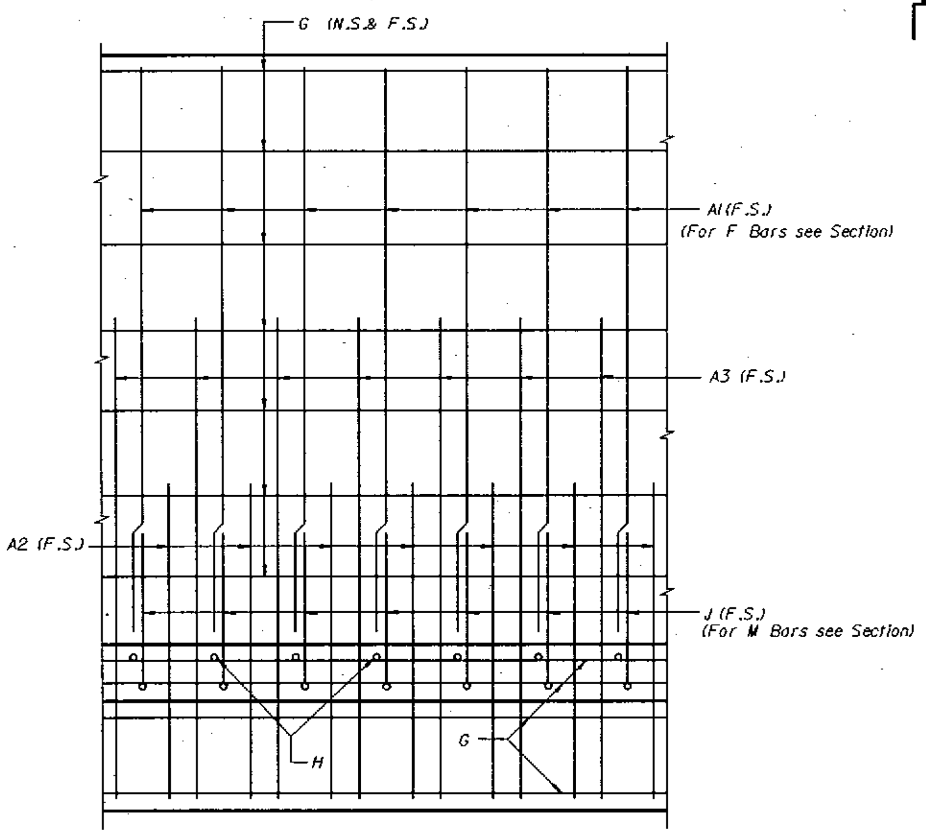
NOTE: The spacings shown are the maximum values allowed by design. These values shall be used for wall units shorter than 8 meters long. Units 8 meters long shall utilize the number of bars tabulated at equal spacings.

* RETAINING WALL DATA

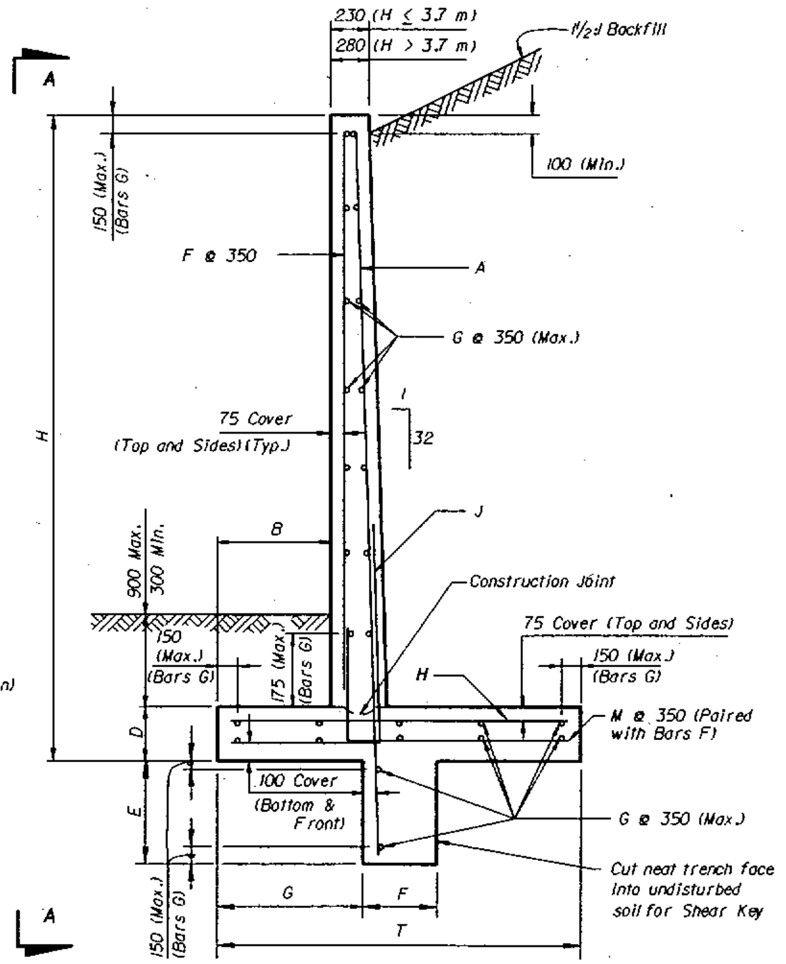
WALL DIMENSIONS				SHEAR KEY DIMENSIONS			REINFORCING STEEL SCHEDULE																																		
							BARS A1			BARS A2				BARS A3				** BARS D			BARS F			BARS G			BARS H				BARS J						BARS M				
H	B	D	T	E	F	G	SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	C	LENGTH	H
1.8	255	280	1195															20M	4	460	10M	24	1425	10M	18	7850	10M	25	335	1045	10M	35	235	1625	390	2015	10M	24	790	1410	1.8
2.1	380	280	1420															20M	5	460	10M	24	1725	10M	22	7850	10M	25	335	1270	10M	35	235	1925	525	2450	10M	24	890	1510	2.1
2.4	380	305	1625															20M	6	460	10M	24	2000	10M	24	7850	10M	32	255	1475	10M	38	215	2225	530	2755	10M	24	1095	1715	2.4
2.7	455	305	1780	305	305	585				10M	27	295	1725					20M	6	460	10M	24	2300	10M	28	7850	10M	32	255	1630	10M	28	295	2525	615	3140	10M	24	1175	1795	2.7
3.0	510	355	2005	305	305	635				10M	37	215	1500					20M	7	460	10M	24	2550	10M	30	7850	10M	42	195	1855	10M	38	215	2825	680	3505	10M	24	1345	1965	3.0
3.4	560	355	2260	305	305	710				15M	25	320	1805					20M	8	460	10M	24	2950	10M	34	7850	15M	28	295	2110	15M	26	320	3225	745	3970	10M	24	1550	2170	3.4
3.7	685	430	2820	305	305	840				15M	29	270	2055					20M	9	460	10M	24	3175	10M	40	7850	15M	28	295	2670	15M	30	270	3525	880	4405	10M	24	1985	2755	3.7
4.0	915	430	3275	305	305	1120				15M	29	270	2160					20M	10	460	10M	24	3475	10M	44	7850	15M	28	295	3125	15M	30	270	3825	1165	4990	10M	24	2210	2980	4.0
4.3	1065	510	3580	380	330	1295				20M	25	315	2285					20M	10	460	10M	24	3695	10M	46	7850	15M	37	220	3430	20M	26	315	4125	1325	5450	10M	24	2365	3135	4.3
4.6	1220	510	4040	485	380	1450	15M	22	3995	20M	21	385	2390	20M	21	385	3300	20M	11	460	10M	24	3995	10M	50	7850	15M	37	220	3890	20M	22	385	1195	1490	2685	10M	24	2670	3440	4.6
4.9	1370	660	4495	405	330	1625	15M	20	4145	20M	19	425	2540	20M	19	425	3760	20M	12	460	10M	24	4145	10M	54	7850	15M	48	170	4345	20M	20	425	1625	1650	3275	10M	24	2975	4055	4.9
5.2	1675	815	5410	255	305	1930	15M	22	4290	20M	21	375	2995	20M	21	375	3910	20M	12	460	10M	24	4290	10M	60	7850	20M	44	185	5260	20M	22	375	2160	1965	4125	10M	24	3585	4665	5.2
5.5	1980	815	6350	305	305	2235	15M	19	4590	20M	18	450	3300	20M	18	450	4215	20M	13	460	10M	24	4590	10M	68	7850	20M	44	185	6200	25M	19	450	2665	2280	4945	10M	24	4220	5300	5.5
5.8	2285	815	7265	330	305	2565	15M	19	4890	25M	18	450	3810	25M	18	450	5945	20M	14	460	10M	24	4890	10M	74	7850	20M	44	185	7115	30M	19	450	2490	2595	5085	10M	24	4830	5910	5.8

QUANTITIES

H	PER 8 m UNIT		PER LIN. METER	
	CONCRETE m^3	STEEL kg	CONCRETE m^3	STEEL kg
1.8	5.76	245	0.72	31
2.1	6.94	294	0.87	37
2.4	8.37	344	1.05	43
2.7	10.21	403	1.28	50
3.0	12.18	487	1.52	61
3.4	13.92	640	1.74	80
3.7	17.80	786	2.22	98
4.0	21.60	874	2.70	109
4.3	25.89	1090	3.24	136
4.6	29.21	1244	3.65	156
4.9	36.55	1394	4.57	174
5.2	48.12	1800	6.02	225
5.5	55.38	2086	6.92	261
5.8	62.45	2778	7.81	347



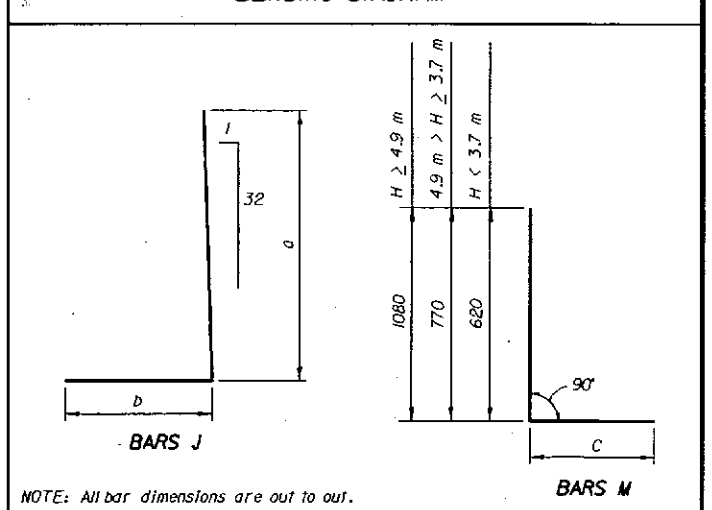
VIEW A-A



TYPICAL SECTION

NOTE:
To accommodate the variable height of a wall unit, vertical bars may be field cut to fit and the number of horizontal Bars G required by the highest wall dimension within an 8 m unit shall be equally spaced at each end of the unit.

BENDING DIAGRAM



NOTE: All bar dimensions are out to out.

NOTE: Bars M are paired with Bars F and Bars A1 are paired with Bars J.

NOTE: Work this Drawing with Standard Index No. 800.

NOTE: All dimensions are in millimeters unless otherwise noted.

/usr5/strstand/met/820.dgn

Mon Aug 15 11:58:03 1994

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	SHM	12/93
Checked by	JMD/NRK	12/93
Designed by	JMD	12/93
Checked by	NRK	12/93
Approved by	AJG	

ENGINEER OF RECORD:

STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE:
CASE IV (192 kPa MAX. BEARING PRESSURE) 1.8 m TO 5.8 m HEIGHT

PROJECT NAME:

Drawing No.
1 of 1

Index No.
820

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

* NOTE: Wall Dimension "H" is given in meters (m). All other dimensions, lengths and spacings are given in millimeters (mm).

* * NOTE: For placement details of Bars D see Standard Index No. 800.

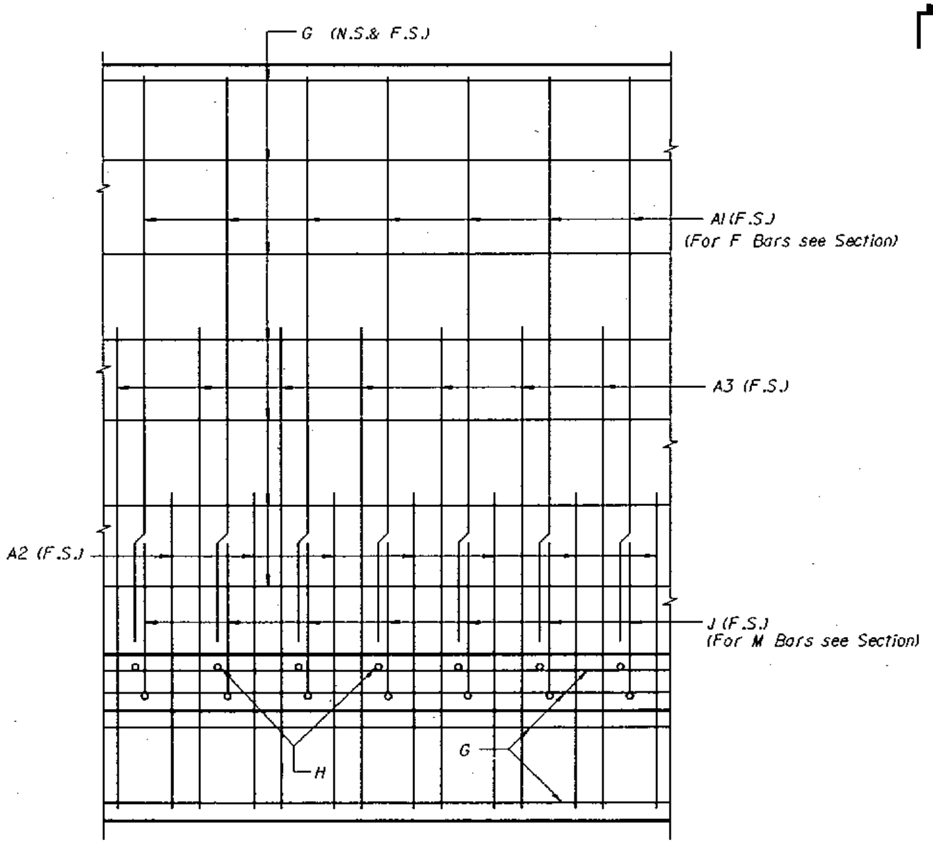
NOTE: The spacings shown are the maximum values allowed by design. These values shall be used for wall units shorter than 8 meters long. Units 8 meters long shall utilize the number of bars tabulated at equal spacings.

* RETAINING WALL DATA

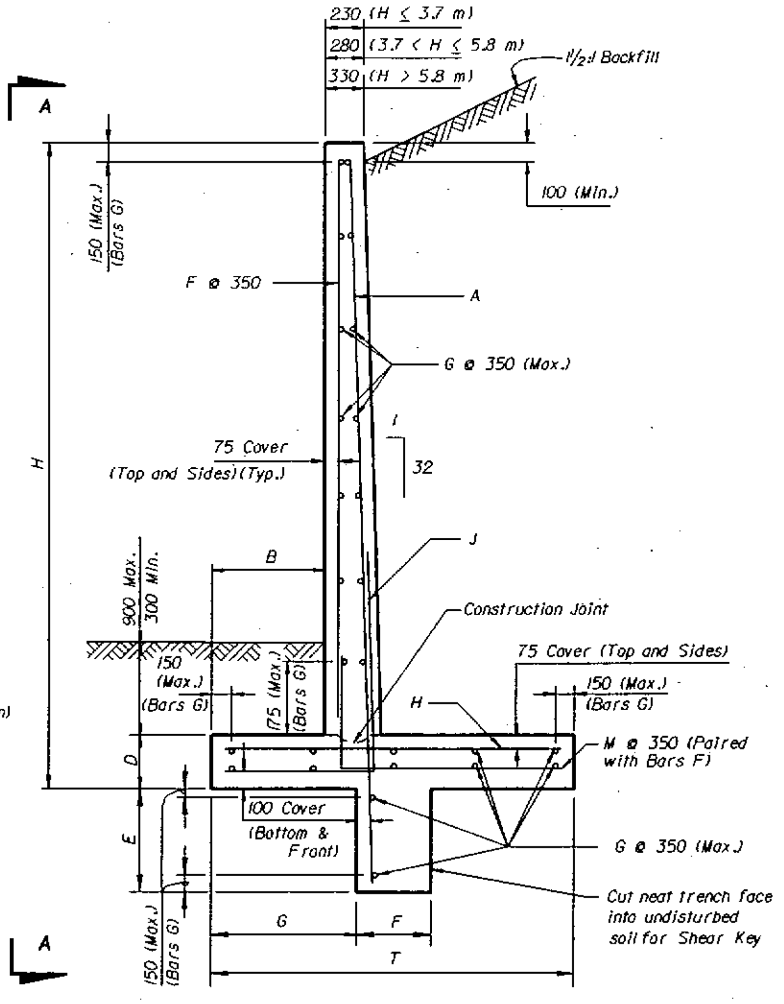
WALL DIMENSIONS				SHEAR KEY DIMENSIONS			REINFORCING STEEL SCHEDULE																																		
H	B	D	T	E	F	G	BARS A1			BARS A2				BARS A3				**BARS D			BARS F			BARS G			BARS H				BARS J						BARS M				H
							SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	C	LENGTH	
1.8	255	280	1195															20M	4	460	10M	24	1425	10M	18	7850	10M	25	335	1045	10M	35	235	1625	390	2015	10M	24	790	1410	1.8
2.1	380	280	1420															20M	5	460	10M	24	1725	10M	22	7850	10M	25	335	1270	10M	35	235	1925	525	2450	10M	24	890	1510	2.1
2.4	380	305	1625															20M	6	460	10M	24	2000	10M	24	7850	10M	32	255	1475	10M	38	215	2225	530	2755	10M	24	1095	1715	2.4
2.7	455	305	1780	305	305	585				10M	27	295	1725					20M	6	460	10M	24	2300	10M	28	7850	10M	32	255	1630	10M	28	295	2525	615	3140	10M	24	1175	1795	2.7
3.0	510	355	2005	305	305	635				10M	37	215	1500					20M	7	460	10M	24	2550	10M	30	7850	10M	42	195	1855	10M	38	215	2825	680	3505	10M	24	1345	1965	3.0
3.4	560	355	2160	305	305	710				15M	25	320	1805					20M	8	460	10M	24	2950	10M	34	7850	15M	28	295	2010	15M	26	320	3225	745	3970	10M	24	1450	2070	3.4
3.7	610	430	2440	380	355	760				15M	29	270	2055					20M	9	460	10M	24	3175	10M	38	7850	15M	28	295	2290	15M	30	270	3525	805	4330	10M	24	1680	2450	3.7
4.0	685	430	2590	430	355	890				15M	29	270	2160					20M	10	460	10M	24	3475	10M	40	7850	15M	30	270	2440	15M	30	270	3825	935	4760	10M	24	1755	2525	4.0
4.3	760	510	2970	455	380	990				20M	25	315	2285					20M	10	460	10M	24	3695	10M	42	7850	20M	23	365	2820	20M	26	315	4125	1020	5145	10M	24	2060	2830	4.3
4.6	915	510	3275	560	380	1145	15M	22	3995	20M	21	385	2390	20M	21	385	3300	20M	11	460	10M	24	3995	10M	46	7850	20M	24	340	3125	20M	22	385	1195	1185	2380	10M	24	2210	2980	4.6
4.9	1065	660	3580	535	380	1320	15M	20	4145	20M	19	425	2540	20M	19	425	3760	20M	12	460	10M	24	4145	10M	50	7850	20M	32	260	3430	20M	20	425	1625	1345	2970	10M	24	2365	3445	4.9
5.2	1220	815	4040	405	405	1475	15M	22	4290	20M	21	375	2995	20M	21	375	3910	20M	12	460	10M	24	4290	10M	52	7850	20M	43	190	3890	20M	22	375	2160	1510	3670	10M	24	2670	3750	5.2
5.5	1370	815	4520	535	405	1625	15M	19	4590	20M	18	450	3300	20M	18	450	4215	20M	13	460	10M	24	4590	10M	58	7850	20M	43	190	4370	25M	19	450	2665	1670	4335	10M	24	3000	4080	5.5
5.8	1525	815	4980	610	455	1805	15M	19	4890	25M	18	450	3810	25M	18	450	5945	20M	14	460	10M	24	4890	10M	62	7850	20M	43	190	4830	30M	19	450	2465	1835	4300	10M	24	3305	4385	5.8
6.1	1675	890	5510	610	455	2005	20M	19	5115	25M	18	450	3660	25M	18	450	4875	20M	14	460	10M	24	5115	10M	64	7850	25M	28	290	5360	30M	19	450	2565	2045	4610	10M	24	3685	4915	6.1
6.4	1980	890	6425	660	455	2310	20M	21	5415	25M	20	405	4065	25M	20	405	5285	20M	15	460	10M	24	5415	10M	73	7850	25M	28	290	6275	30M	21	405	2565	2355	4920	10M	24	4295	5525	6.4
6.7	2135	890	6885	760	455	2490	20M	19	5715	30M	18	445	4370	30M	18	445	5895	20M	16	460	10M	24	5715	10M	77	7850	25M	28	290	6735	30M	19	445	3125	2520	5645	10M	24	4600	5830	6.7
7.0	2440	965	7825	760	510	2795	20M	25	5940	30M	24	330	4775	30M	24	330	6300	20M	17	460	10M	24	5940	10M	85	7850	25M	31	265	7675	30M	25	330	3125	2835	5960	10M	24	5235	6465	7.0

QUANTITIES

H	PER 8 m UNIT		PER LIN. METER	
	CONCRETE m^3	STEEL kg	CONCRETE m^3	STEEL kg
1.8	5.76	245	0.72	31
2.1	6.94	294	0.87	37
2.4	8.37	344	1.05	43
2.7	10.21	403	1.28	50
3.0	12.18	487	1.52	61
3.4	13.64	634	1.71	79
3.7	16.83	748	2.10	93
4.0	19.72	808	2.47	101
4.3	23.79	995	2.97	124
4.6	26.32	1146	3.29	143
4.9	32.27	1274	4.03	159
5.2	39.88	1558	4.98	195
5.5	44.44	1756	5.56	219
5.8	48.96	2345	6.12	293
6.1	58.60	2500	7.32	313
6.4	66.49	2931	8.31	366
6.7	71.35	3310	8.92	414
7.0	83.99	4338	10.50	542



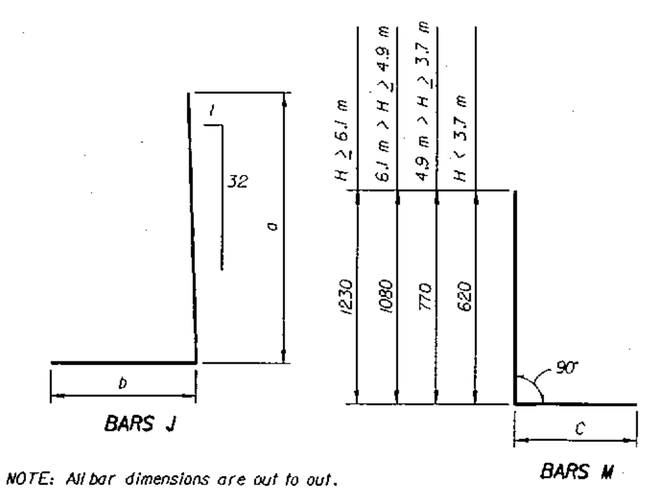
VIEW A-A



TYPICAL SECTION

NOTE:
To accommodate the variable height of a wall unit, vertical bars may be field cut to fit and the number of horizontal Bars G required by the highest wall dimension within an 8 m unit shall be equally spaced at each end of the unit.

BENDING DIAGRAM



NOTE: All bar dimensions are out to out.

NOTE: Bars M are paired with Bars F and Bars A1 are paired with Bars J.

NOTE: Work this Drawing with Standard Index No. 800.

NOTE: All dimensions are in millimeters unless otherwise noted.

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	SHM	12/93
Checked by	JMD/NRK	12/93
Designed by	JMD	12/93
Checked by	NRK	12/93
Approved by	AJG	

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE:
CASE IV (239 kPa MAX. BEARING PRESSURE) 1.8 m TO 7.0 m HEIGHT

PROJECT NAME:

Drawing No.
1 of 1

Index No.
821

/usr5/strstand/met/821.dgn
Mon Aug 15 11:58:54 1994

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

* NOTE: Wall Dimension "H" is given in meters (m). All other dimensions, lengths and spacings are given in millimeters (mm).

* * NOTE: For placement details of Bars D see Standard Index No. 800.

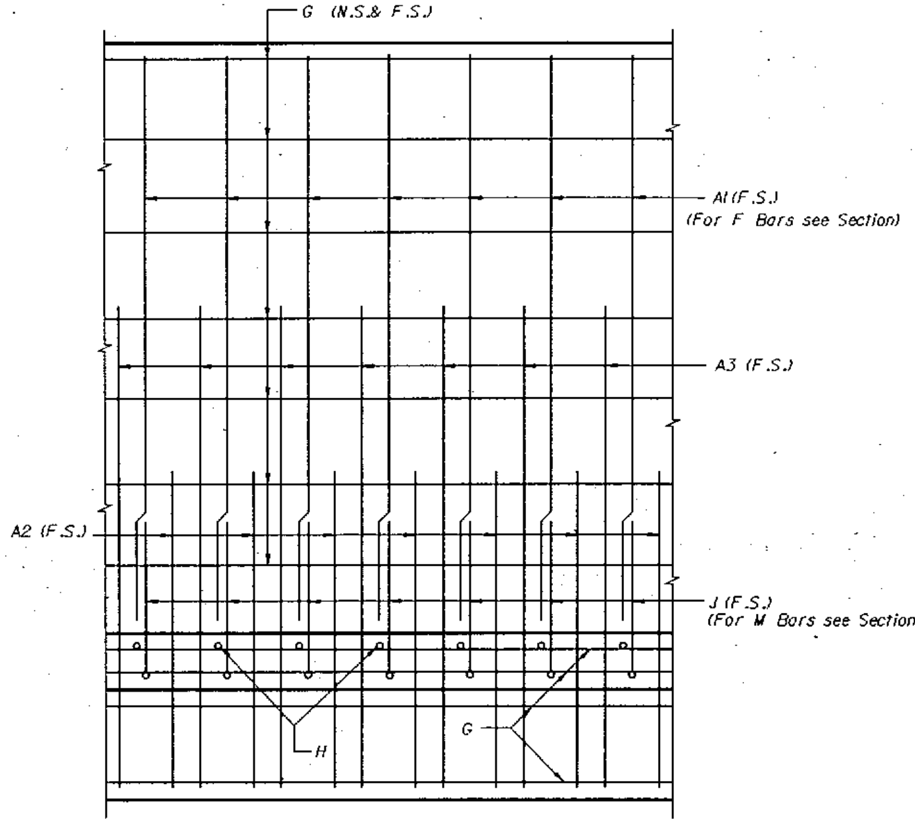
NOTE: The spacings shown are the maximum values allowed by design. These values shall be used for wall units shorter than 8 meters long. Units 8 meters long shall utilize the number of bars tabulated at equal spacings.

* RETAINING WALL DATA

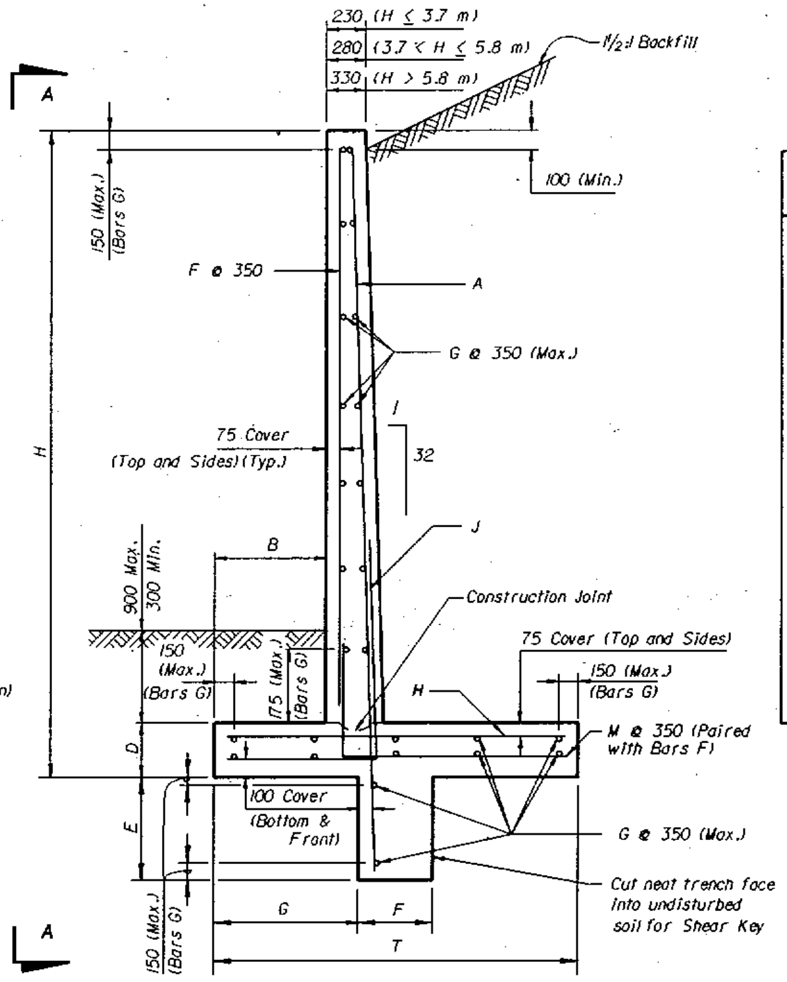
WALL DIMENSIONS				SHEAR KEY DIMENSIONS			REINFORCING STEEL SCHEDULE																																		
H	B	D	T	E	F	G	BARS A1			BARS A2				BARS A3				** BARS D			BARS F			BARS G			BARS H				BARS J						BARS M				H
							SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	C	LENGTH	
1.8	255	280	1195															20M	4	460	10M	24	1425	10M	18	7850	10M	25	335	1045	10M	35	235	1625	390	2015	10M	24	790	1410	1.8
2.1	380	280	1420															20M	5	460	10M	24	1725	10M	22	7850	10M	25	335	1270	10M	35	235	1925	525	2450	10M	24	890	1510	2.1
2.4	380	305	1625															20M	6	460	10M	24	2000	10M	24	7850	10M	32	255	1475	10M	38	215	2225	530	2755	10M	24	1095	1715	2.4
2.7	455	305	1780	305	305	585				10M	27	295	1725					20M	6	460	10M	24	2300	10M	28	7850	10M	32	255	1630	10M	28	295	2525	615	3140	10M	24	1175	1795	2.7
3.0	510	355	2005	305	305	635				10M	37	215	1500					20M	7	460	10M	24	2550	10M	30	7850	10M	42	195	1855	10M	38	215	2825	680	3505	10M	24	1345	1965	3.0
3.4	560	355	2160	305	305	710				15M	25	320	1805					20M	8	460	10M	24	2950	10M	34	7850	10M	35	235	2010	15M	26	320	3225	745	3970	10M	24	1450	2070	3.4
3.7	610	430	2440	380	355	760				15M	29	270	2055					20M	9	460	10M	24	3175	10M	38	7850	10M	35	235	2290	15M	30	270	3525	805	4330	10M	24	1680	2450	3.7
4.0	685	430	2590	430	355	890				20M	29	270	2160					20M	10	460	10M	24	3475	10M	40	7850	10M	38	215	2440	15M	30	270	3825	935	4760	10M	24	1755	2525	4.0
4.3	685	510	2895	455	330	915				20M	25	315	2285					20M	10	460	10M	24	3695	10M	42	7850	15M	37	220	2745	20M	26	315	4125	945	5070	10M	24	2060	2830	4.3
4.6	760	510	2970	610	380	990	15M	22	3995	20M	21	385	2390	20M	21	385	3300	20M	11	460	10M	24	3995	10M	44	7850	15M	42	195	2820	20M	22	385	1195	1030	2225	10M	24	2060	2830	4.6
4.9	915	660	3275	535	380	1170	15M	20	4145	20M	19	425	2540	20M	19	425	3760	20M	12	460	10M	24	4145	10M	48	7850	15M	48	170	3125	20M	20	425	1625	1195	2820	10M	24	2210	3290	4.9
5.2	1065	815	3580	455	355	1320	15M	22	4290	20M	21	375	2995	20M	21	375	3910	20M	12	460	10M	24	4290	10M	50	7850	20M	44	185	3430	20M	22	375	2160	1355	3515	10M	24	2365	3445	5.2
5.5	1065	815	3910	610	380	1320	15M	19	4590	20M	18	450	3300	20M	18	450	4215	20M	13	460	10M	24	4590	10M	54	7850	20M	44	185	3760	25M	19	450	2665	1365	4030	10M	24	2695	3775	5.5
5.8	1220	815	4065	710	405	1500	15M	19	4890	25M	18	450	3810	25M	18	450	5945	20M	14	460	10M	24	4890	10M	57	7850	20M	44	185	3915	30M	19	450	2465	1530	3995	10M	24	2695	3775	5.8
6.1	1370	890	4595	685	405	1700	20M	19	5115	25M	18	450	3660	25M	18	450	4875	20M	14	460	10M	24	5115	10M	61	7850	20M	45	180	4445	30M	19	450	2565	1740	4305	10M	24	3075	4305	6.1
6.4	1525	890	5055	815	455	1855	20M	21	5415	25M	20	405	4065	25M	20	405	5285	20M	15	460	10M	24	5415	10M	65	7850	20M	45	180	4905	30M	21	405	2565	1900	4465	10M	24	3380	4610	6.4
6.7	1675	890	5510	915	485	2030	20M	19	5715	30M	18	445	4370	30M	18	445	5895	20M	16	460	10M	24	5715	10M	69	7850	20M	45	180	5360	30M	19	445	3125	2060	5185	10M	24	3685	4915	6.7
7.0	1830	965	5995	915	455	2185	20M	25	5940	30M	24	330	4775	30M	24	330	6300	20M	17	460	10M	24	5940	10M	75	7850	20M	52	155	5845	30M	25	330	3125	2225	5350	10M	24	4015	5245	7.0
7.3	1980	965	6450	1015	485	2360	20M	21	6240	30M	20	395	4850	30M	20	395	6680	20M	18	460	10M	24	6240	10M	80	7850	20M	52	155	6300	35M	21	395	3630	2385	6015	10M	24	4320	5550	7.3
7.6	2285	965	7365	1065	485	2665	20M	25	6540	30M	24	330	5230	30M	24	330	6450	20M	18	460	10M	24	6540	10M	86	7850	20M	52	155	7215	35M	25	330	3630	2700	6330	10M	24	4930	6160	7.6
7.9	2440	1040	7850	1090	485	2820	20M	24	6765	35M	23	355	5155	35M	23	355	7745	20M	19	460	10M	24	6765	10M	90	7850	20M	52	155	7700	35M	24	355	3630	2865	6495	10M	24	5260	6560	7.9

QUANTITIES

	PER 8 m UNIT		PER LIN. METER	
H	CONCRETE m^3	STEEL kg	CONCRETE m^3	STEEL kg
1.8	5.76	245	0.72	31
2.1	6.94	294	0.87	37
2.4	8.37	344	1.05	43
2.7	10.21	403	1.28	50
3.0	12.18	487	1.52	61
3.4	13.64	601	1.71	75
3.7	16.83	710	2.10	89
4.0	19.72	815	2.47	102
4.3	23.30	997	2.91	125
4.6	25.22	1132	3.15	142
4.9	30.66	1229	3.83	154
5.2	36.86	1494	4.61	187
5.5	40.59	1650	5.07	206
5.8	43.08	2187	5.38	273
6.1	52.08	2321	6.51	290
6.4	57.30	2642	7.16	330
6.7	62.34	3023	7.79	378
7.0	70.10	3952	8.76	494
7.3	75.47	4073	9.43	509
7.6	84.01	4839	10.50	605
7.9	93.53	5704	11.69	713



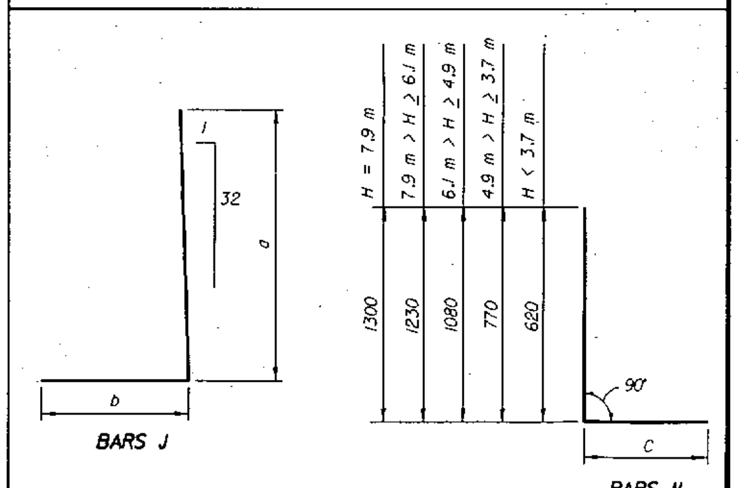
VIEW A-A



TYPICAL SECTION

NOTE:
To accommodate the variable height of a wall unit, vertical bars may be field cut to fit and the number of horizontal Bars G required by the highest wall dimension within an 8 m unit shall be equally spaced at each end of the unit.

BENDING DIAGRAM



NOTE: All bar dimensions are out to out.

NOTE: Bars M are paired with Bars F and Bars A1 are paired with Bars J.

NOTE: Work this Drawing with Standard Index No. 800.

NOTE: All dimensions are in millimeters unless otherwise noted.

/usr5/strstand/met/822.dgn

Mon Aug 15 11:59:37 1994

REVISIONS

Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	SHM	12/93
Checked by	JMD/NRK	12/93
Designed by	JMD	12/93
Checked by	NRK	12/93
Approved by	AJG	

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

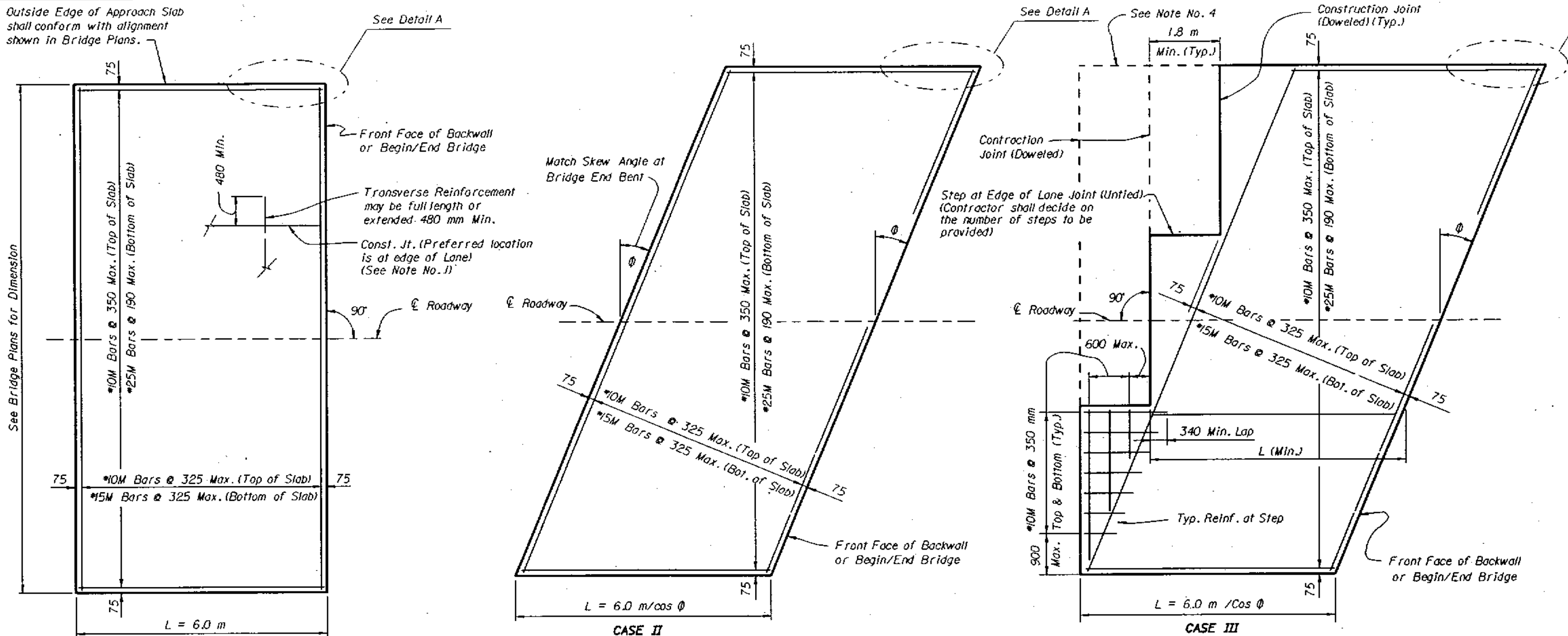
SHEET TITLE:
CASE IV (287 kPa MAX. BEARING PRESSURE) 1.8 m TO 7.9 m HEIGHT

PROJECT NAME:

Drawing No.
1 of 1

Index No.
822

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

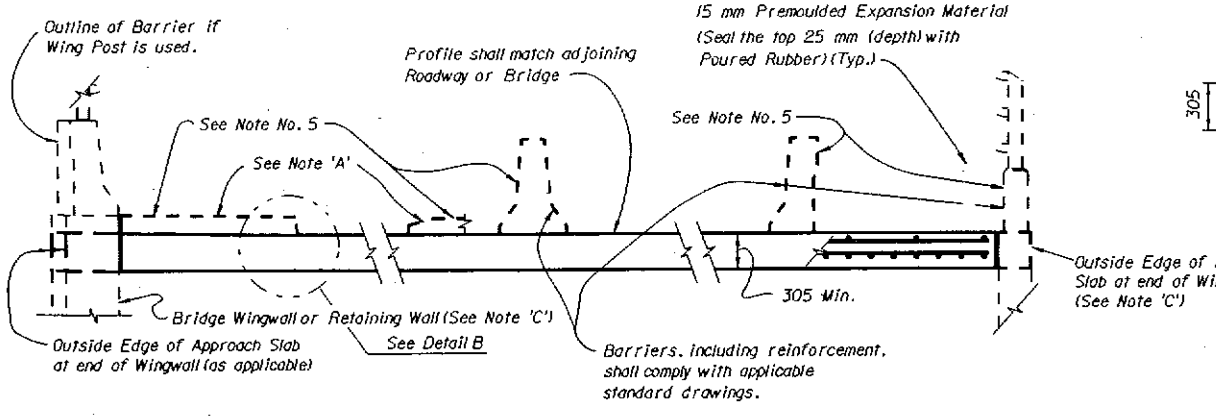


CASE I
(See Note No. 2)

CASE II
(See Note No.3)

CASE III
(See Note No. 4)

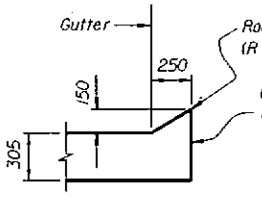
DIMENSIONS: All dimensions are in millimeters (mm), except as noted.



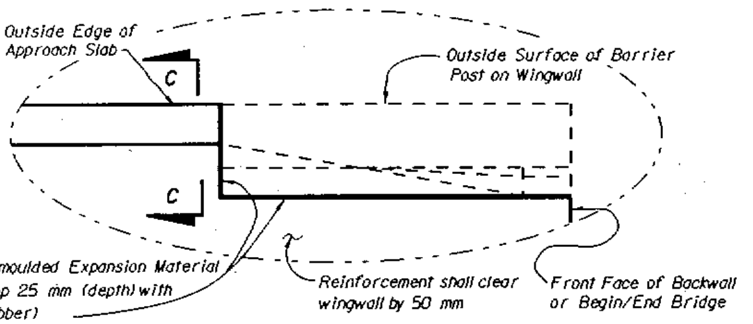
TRANSVERSE SECTION

Note 'A':
Raised Sidewalks and raised median shall be built using plain (unreinforced) concrete. The sidewalk width shall be extended to the outside edge of approach slab at areas beyond wingwall. See Roadway Plans for additional details.

Note 'C': If Wingwall/Retaining Wall is not used, mount railing system on Approach Slab.

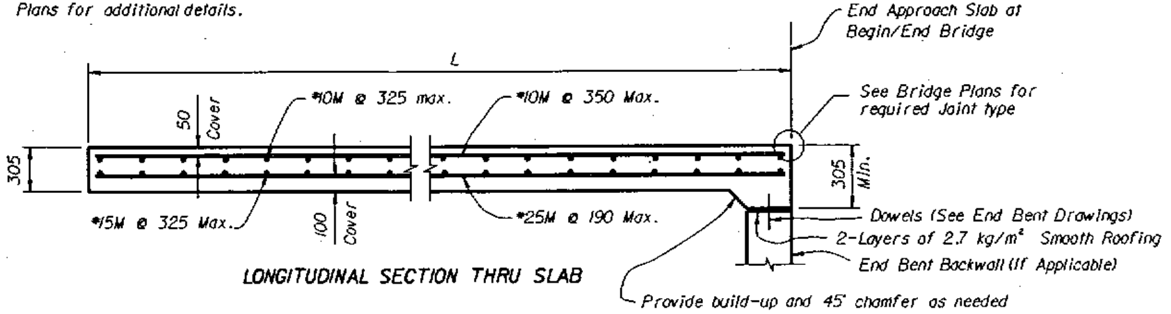


SECTION C-C
(See Note 'B')

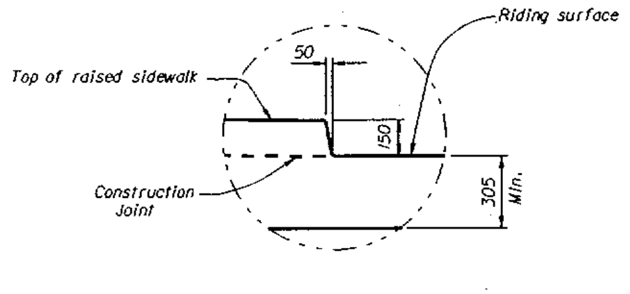


DETAIL A
(Part Plan)

Note 'B':
Detail shown on Section C-C applies beyond Wing Post for Traffic Railing Barrier along the edge of the Bridge. This detail does not apply at raised sidewalk.



LONGITUDINAL SECTION THRU SLAB



DETAIL B

GENERAL NOTES

GENERAL SPECIFICATIONS: Florida Department of Transportation Standard Specifications for Road & Bridge Construction, current edition and Supplements thereto.

DESIGN SPECIFICATIONS: Standard Specifications for Highway Bridges (AASHTO), current edition and approved revisions.

DESIGN LOADING: MS18

CONCRETE: Class II (Bridge Deck). All environments.

REINFORCING STEEL: ASTM A615M, Grade 400.

SURFACE TREATMENT: Same as Bridge. Grooving of the riding surface is a Bridge Pay Item, See Bridge Plans. If the work does not involve grooving of the bridge, then the riding surface of the approach slab shall be grooved in accordance with Section 400-15.2.5 of the Standard Specifications, and payment shall be included in the bid price for Concrete Approach Slabs.

PAYMENT: Payment shall be made under: Item No. 2360-1, Concrete Approach Slab - Each. The work shall comply with details on this sheet, Section 360 of the Standard Specifications, Bridge Plans, and Roadway Plans. The bid price and payment shall be full compensation for all work and materials specified. And, unless otherwise noted in the Plans, the bid price shall include all items that are placed on the slab, such as: sidewalks, raised median, barriers, etc.

NOTE No. 1: When a longitudinal joint is necessary or allowed by the Engineer, the transverse steel shall be extended as shown.

NOTE No. 2: The plan view for case CASE I applies when the skew angle = 0. Relevant details also apply to cases II and III.

NOTE No. 3: The plan view for CASE II applies where the skew angle ≠ 0, and the roadway pavement is flexible. The slab as shown is skewed to the right; a left skew shall be treated similarly.

NOTE No. 4: The plan view for case III, applies where the skew angle at the bridge end ≠ 0 and the roadway pavement is rigid (concrete). The slab is skewed at the bridge end and normal at the roadway end. The slab as shown is skewed to the right; a left skew shall be treated similarly. The slab may be constructed with steps as shown or without steps. In either case, the shown reinforcement shall be utilized, and Dowels shall be provided in accordance with Indices 305 and 306 (Roadway and Traffic Design Standards).

NOTE No. 5: If the Bridge or Roadway Plans indicate a raised sidewalk(s) and/or any type of railing on the approach slab, these shall be provided as shown.

* ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY
Concrete	m^3	0.305
Reinforcing Steel	kg	30.1

* Quantities shown are per square meter (plan area), and do not include items placed on the slab such as : sidewalks, raised median and barriers.

NOTE: Total area of Approach Slab is given in the Bridge Plans.

INSTRUCTIONS TO DESIGNER:

The geometry of the slab(s) shall be fully defined. If the outlines provided on this standard drawing are not adequate for this purpose, then the geometry should be defined on the "Plan and Elevation" sheet for the bridge, or on a separate sheet if necessary.

PLEASE ERASE THIS NOTE WHEN COMPLETING THIS DRAWING

/usr5/strstand/met/900.dgn
Mon Aug 15 12:00:20 1994

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	JSP	4-94
Checked by	JMD	4-94
Designed by	JMD	4-94
Checked by	AJG	4-94
Approved by	AJG	

ENGINEER OF RECORD:

STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

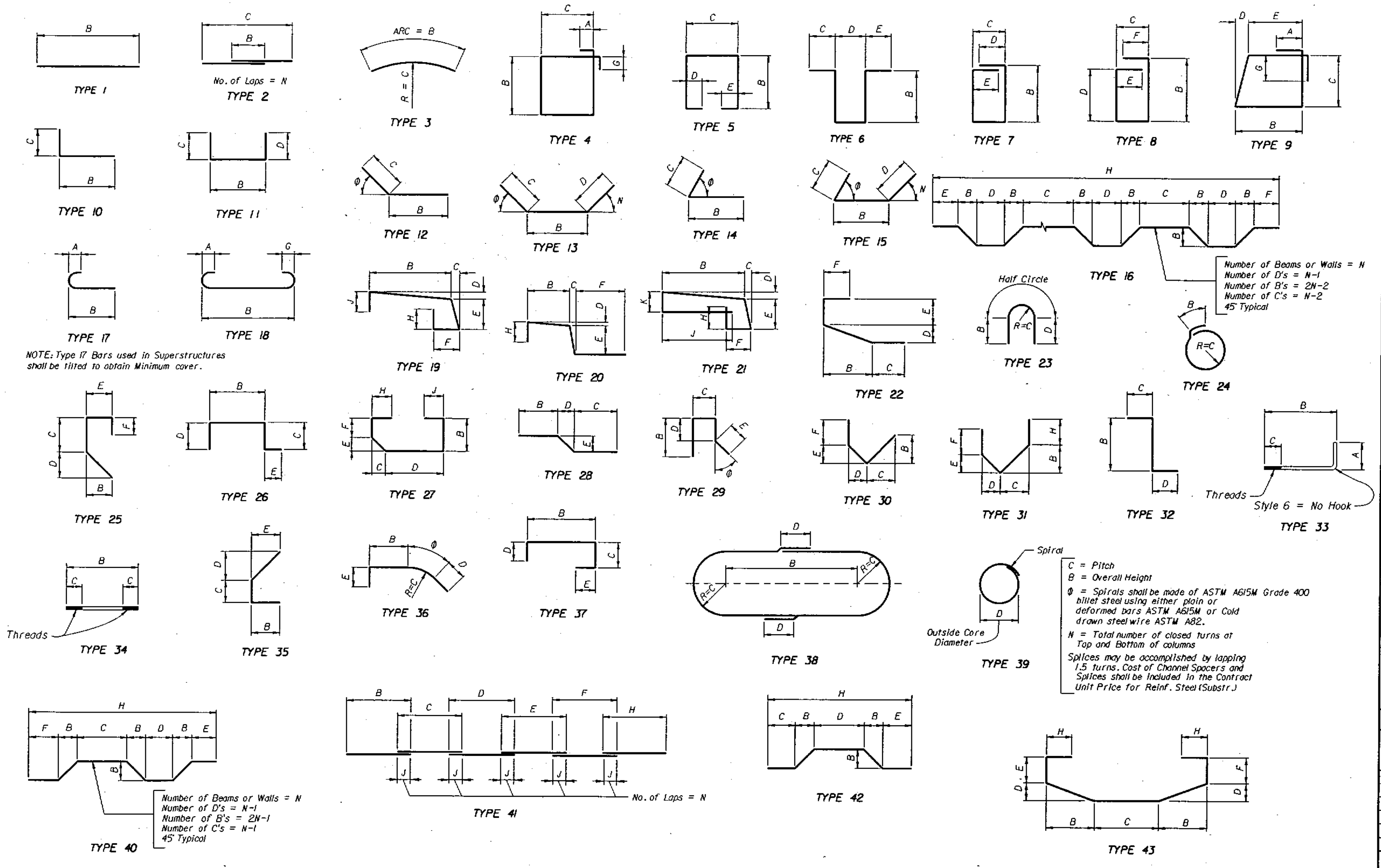
SHEET TITLE: APPROACH SLABS

PROJECT NAME:

Drawing No. 1 of 1

Index No. 900

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



Number of Beams or Walls = N
Number of D's = N-1
Number of B's = 2N-2
Number of C's = N-2
45° Typical

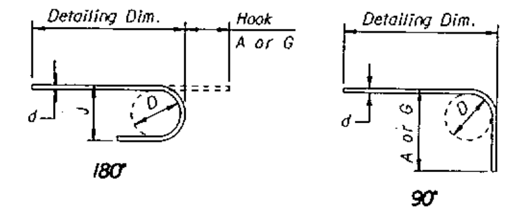
NOTE: Type 17 Bars used in Superstructures shall be tilted to obtain Minimum cover.

C = Pitch
B = Overall Height
Ø = Spirals shall be made of ASTM A615M Grade 400 billet steel using either plain or deformed bars ASTM A615M or Cold drawn steel wire ASTM A82.
N = Total number of closed turns at Top and Bottom of columns
Splices may be accomplished by lapping 1.5 turns. Cost of Channel Spacers and Splices shall be included in the Contract Unit Price for Reinf. Steel (Substr.)

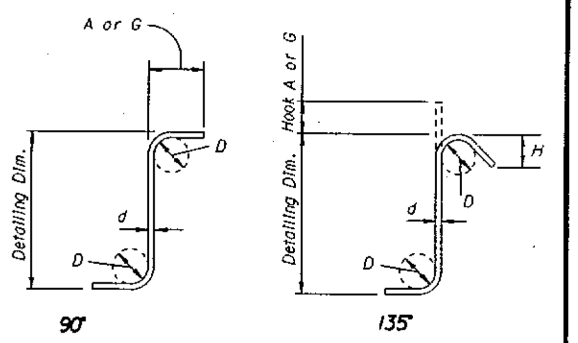
Number of Beams or Walls = N
Number of D's = N-1
Number of B's = 2N-1
Number of C's = N-1
45° Typical

NOTE: For Bar Dimensions See REINFORCING BAR LIST Sheet.

HOOK DETAILS



BAR SIZE	D	180° HOOKS		90° HOOKS
		A OR G	J	A OR G
*10M	70	140	90	180
*15M	100	180	130	260
*20M	120	220	160	320
*25M	150	280	200	400
*30M	240	400	300	500
*35M	290	460	360	600
*45M	440	660	520	780
*55M	560	860	680	1020
STYLE		1		3



STIRRUPS
(TIES SIMILAR)

RECOMMENDED STIRRUP & TIE HOOK DIMENSIONS

BAR SIZE	D	90° HOOKS	135° HOOKS	
		HOOK A or G	HOOK A or G	APPROX. H
*10M	50	100	100	70
*15M	60	140	140	90
*20M	120	310	200	120
*25M	150	400	260	150
STYLE		4	5	

STYLE 6 = NO HOOK

Hook Styles Detailed on this sheet are for Illustration Only.

Actual Hook Style for any particular bar will be shown under A or G Heading on REINFORCING BAR LIST sheet.

All dimensions are in millimeters (mm), except as noted.

All Dimensions are out-to-out.

/usr5/strstand/met/1300.dgn

Mon Aug 15 11:38:24 1994

REVISIONS					
Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	JSP	11-93
Checked by	AJG	11-93
Designed by		
Checked by		
Approved by	AJG	

ENGINEER OF RECORD:
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LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

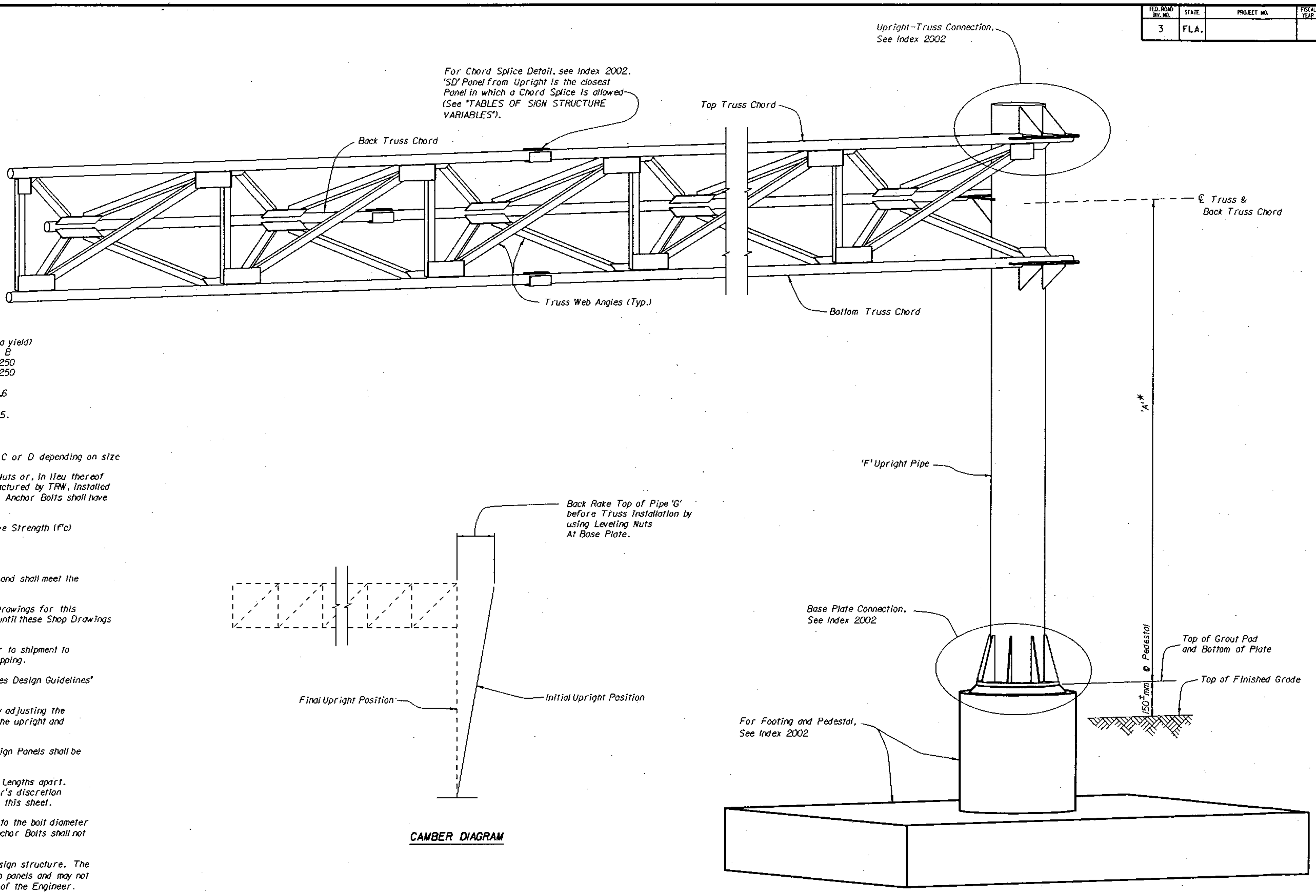
SHEET TITLE:
STANDARD BAR BENDING DETAILS

PROJECT NAME:

Drawing No.
1 of 1

Index No.
1300

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



CAMBER DIAGRAM

ISOMETRIC VIEW

* NOTE: Contractor shall verify these Dimensions
Prior to Fabrication of Upright.

CANTILEVER SIGN STRUCTURE NOTES

1) Sign Structure Materials shall be as follows:
Upright & Chords (Steel Pipe) -> API-5L-X42 (289 MPa yield)
or ASTM A500 Grade B
Webs and Splices (Steel Angles) -> ASTM A709M, Grade 250
Steel Plates -> ASTM A709M, Grade 250
Weld Metal -> E70XX
Bolts (except Anchor Bolts) -> ASTM F568, Class 4.6

2) Steel Anchor Bolts & Nuts shall be AASHTO M314-90 Grade 55.

3) All Steel items shall be Galvanized as follows:
Structural Shapes and Plates -> ASTM A123
All Nuts, Bolts and Washers -> ASTM A153 Class C or D depending on size

4) All Bolts, except Anchor Bolts, shall have Single Self-Locking Nuts or, in lieu thereof regular nuts with a galvanized 'Palnut' locking nut manufactured by TRW, installed in accordance with the manufacturer's recommendations. Anchor Bolts shall have Double nuts.

5) Concrete shall be Class II with a Minimum 28-day Compressive Strength (f'c) of 23 MPa for all environmental classifications.

6) Reinforcing Steel shall be ASTM A615M Grade 400.

7) Grout shall have a Minimum Compressive Strength of 35 MPa and shall meet the requirements of Special Provision Section 934.

8) Alternate Designs for this Structure are not allowed. Shop Drawings for this Structure are required and Fabrication shall not begin until these Shop Drawings are approved.

9) The Structure must be assembled after Galvanizing and prior to shipment to the site to assure fit up. It may be disassembled for shipping.

10) The Design Wind Speed is in Conformance with the "Structures Design Guidelines" (current edition) with a 30 percent Gust Factor.

11) Provide the back rake as indicated on the Camber Diagram by adjusting the leveling nuts beneath the base plate after placement of the upright and prior to installation of the Truss.

12) See Elevation Drawing for size and location of sign panel. Sign Panels shall be Aluminum.

13) Splices shall be located a minimum distance of 2 Truss Panel Lengths apart. The number and location of Splices are at the Contractor's discretion except for the limitation noted on the Isometric View on this sheet.

14) Except for Anchor Bolts, all bolt hole diameters shall be equal to the bolt diameter plus 2 mm, prior to galvanizing. Hole diameters for Anchor Bolts shall not exceed the bolt diameter plus 13 mm.

15) The soil above the footing contributes to the stability of the sign structure. The soil must be in place prior to the installation of the sign panels and may not be removed or reduced in height without prior approval of the Engineer.

16) The foundation for the Sign Structure shall be constructed in accordance with Section 455 of the Department's Specifications except that, no payment for the foundation shall be made under section 455. The cost of providing the foundation shall be included in the pay item for providing the completed Sign Structure.

NOTE: Work this Standard with Structures Standard Index Nos. 2002, 2003 & S-2004.

NOTE: See 'TABLES OF SIGN STRUCTURE VARIABLES' for referenced dimensions, sizes and quantities.

NOTE: See Roadway Index Drawing 17505 for information on fabrication and installation of lighting.

/usr5/strstand/met/2001.dgn
Mon Aug 15 13:32:31 1994

REVISIONS

Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	WEH	3-90
Checked by	MHA	3-90
Designed by	MHA	3-90
Checked by	REN	3-90
Approved by	REN	

ENGINEER OF RECORD:
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LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

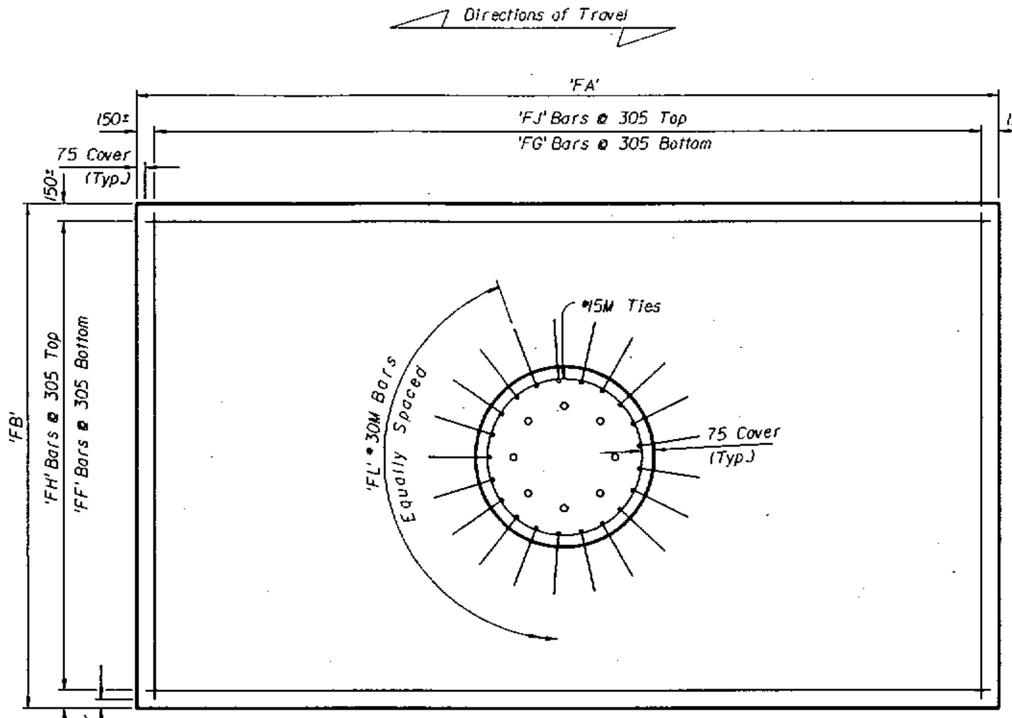
SHEET TITLE:
CANTILEVER SIGN STRUCTURE
NOTES, CAMBER, ISOMETRIC VIEW

PROJECT NAME:

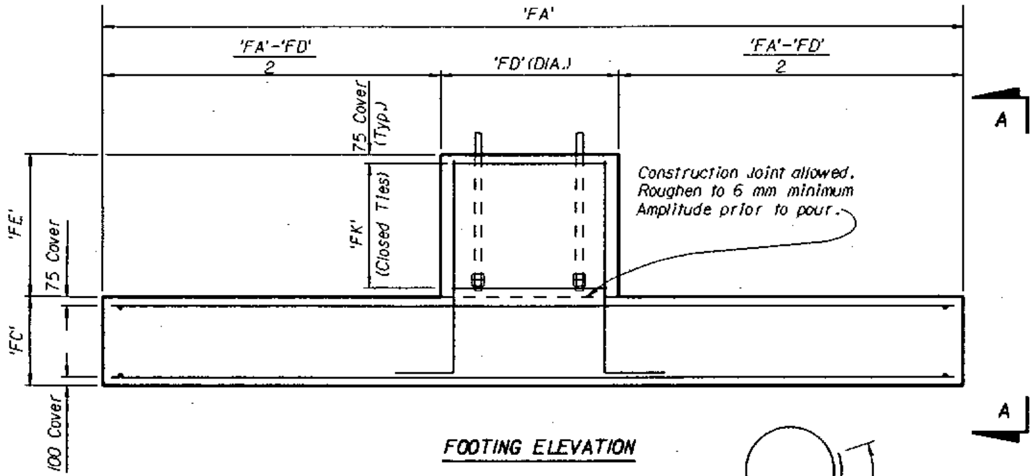
Drawing No.
1 of 1

Index No.
2001

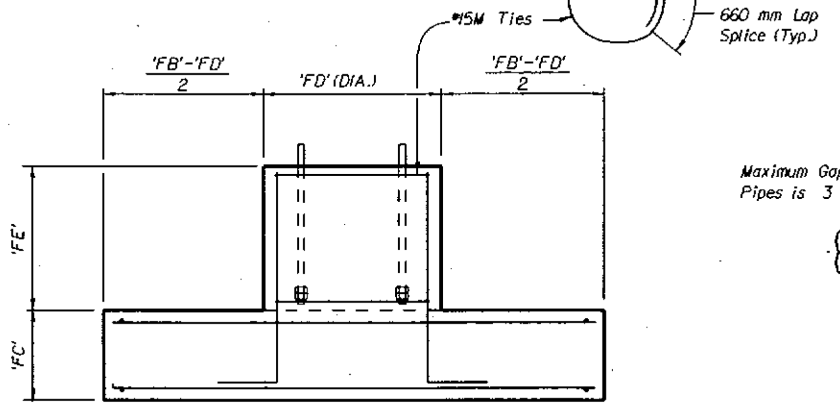
FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



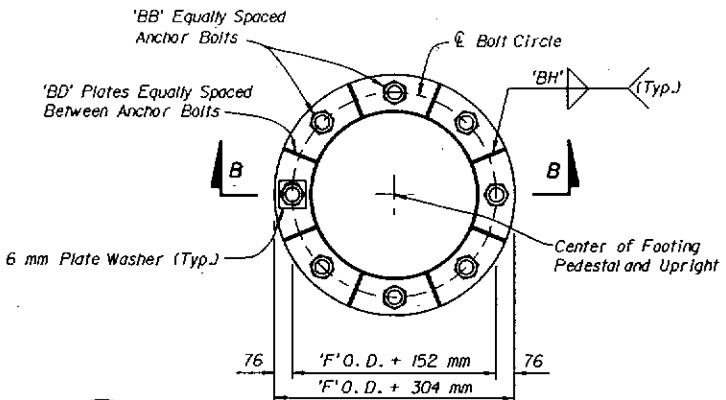
FOOTING PLAN



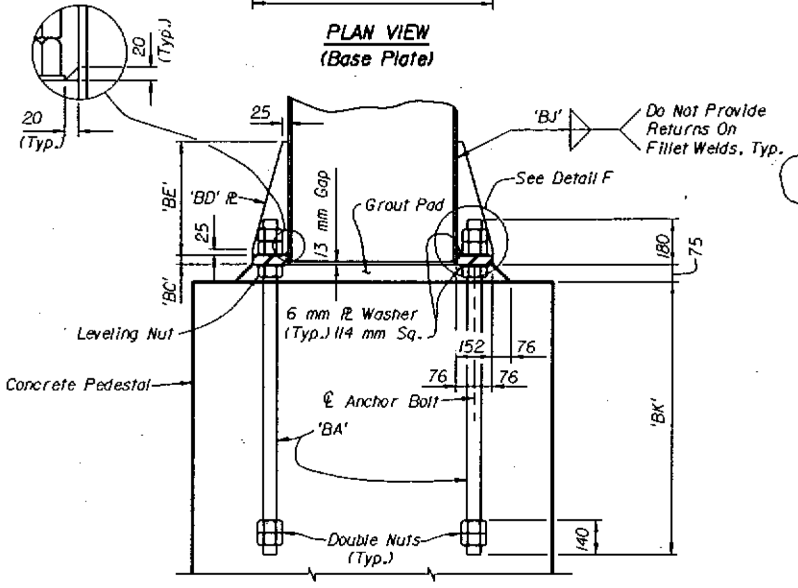
FOOTING ELEVATION



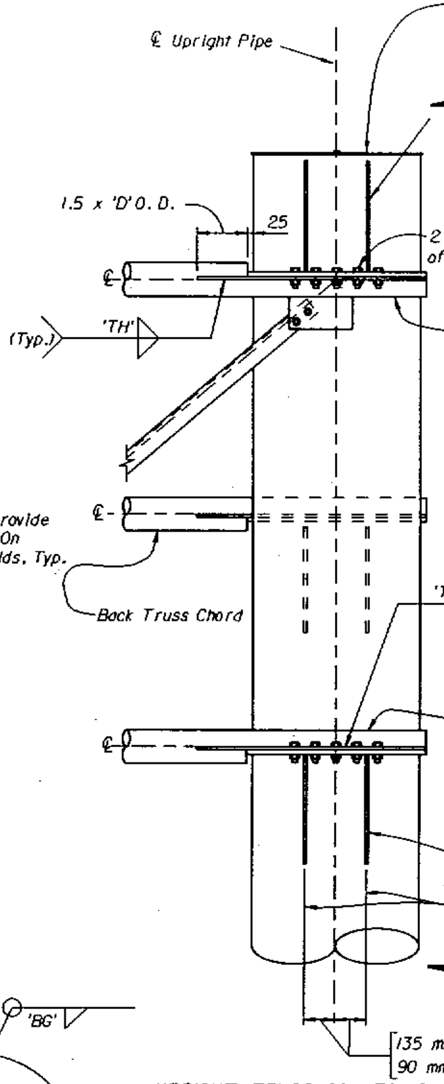
VIEW A-A



PLAN VIEW (Base Plate)

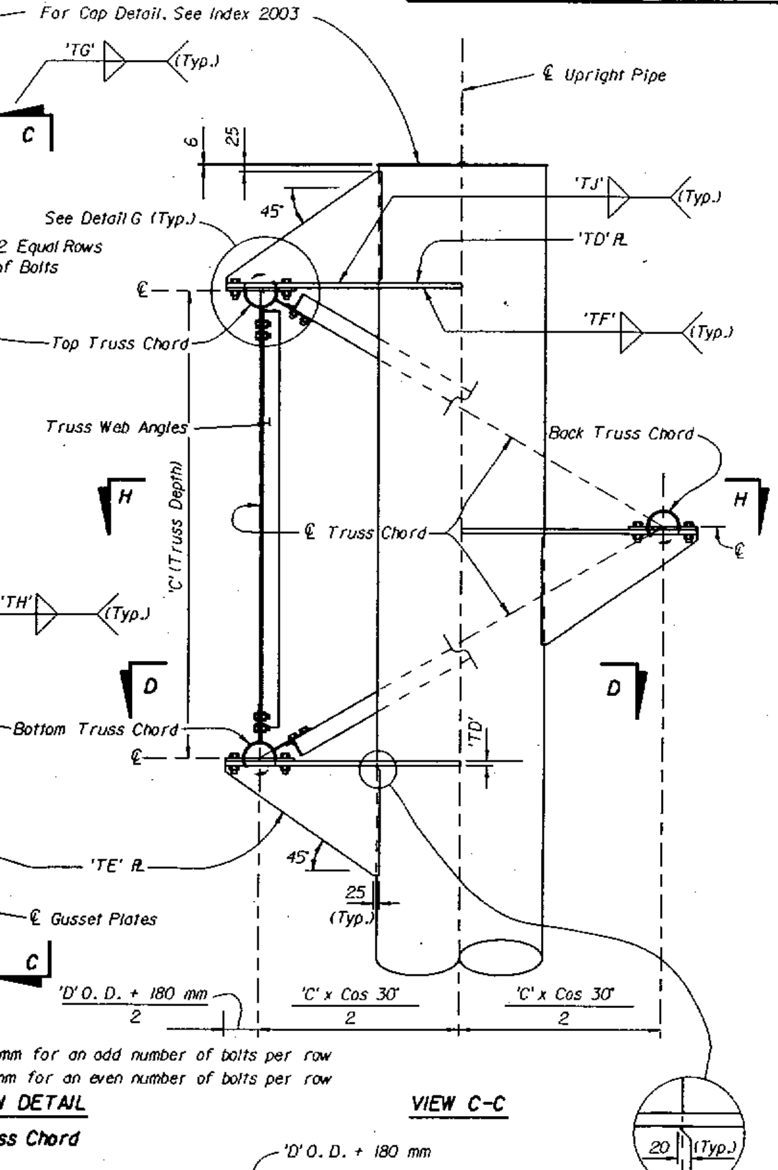


SECTION B-B

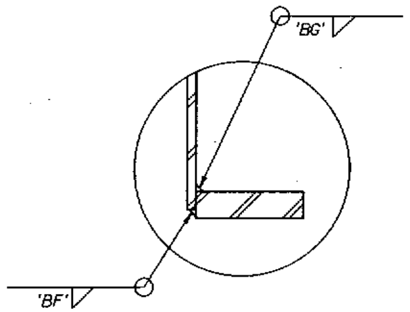


UPRIGHT-TRUSS CONNECTION DETAIL

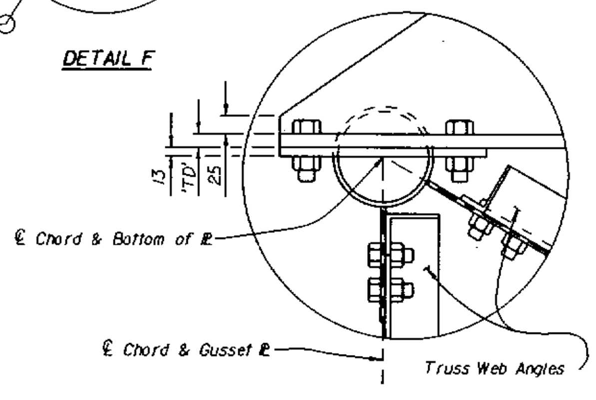
(Web Members from back Truss Chord omitted for clarity)



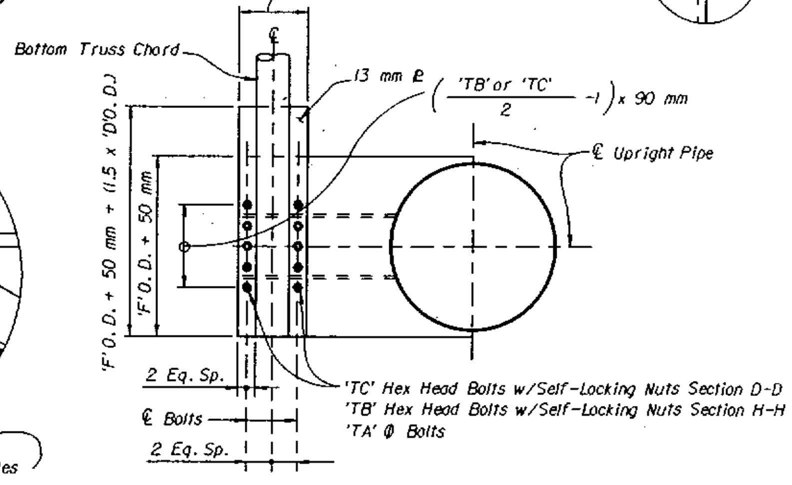
VIEW C-C



DETAIL F

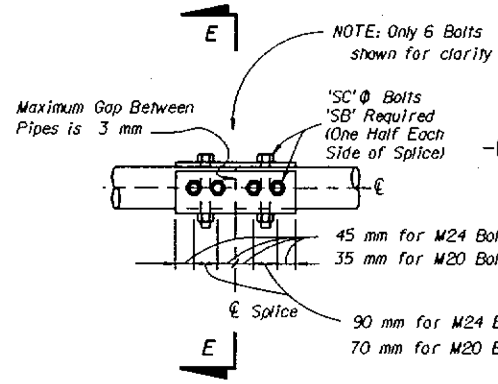


DETAIL G

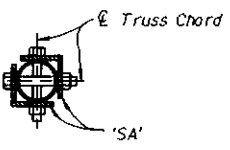


SECTION D-D, SECTION H-H SIMILAR

(With Gusset Plate & Angles omitted for clarity)



SPLICE CONNECTION DETAIL



SECTION E-E

NOTE: All dimensions are in millimeters (mm), except as noted.
NOTE: Work this Standard with Standard Index Nos. 2001, 2003 & S-2004.
NOTE: See 'TABLE OF SIGN STRUCTURE VARIABLES' for referenced dimensions, sizes and quantities.

/usr5/strstand/met/2002.dgn
Mon Aug 15 11:40:08 1994

REVISIONS

Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	REB	7-89
Checked by	MHA	7-89
Designed by	MHA	7-89
Checked by	REN	7-89
Approved by	REN	

ENGINEER OF RECORD:
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LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

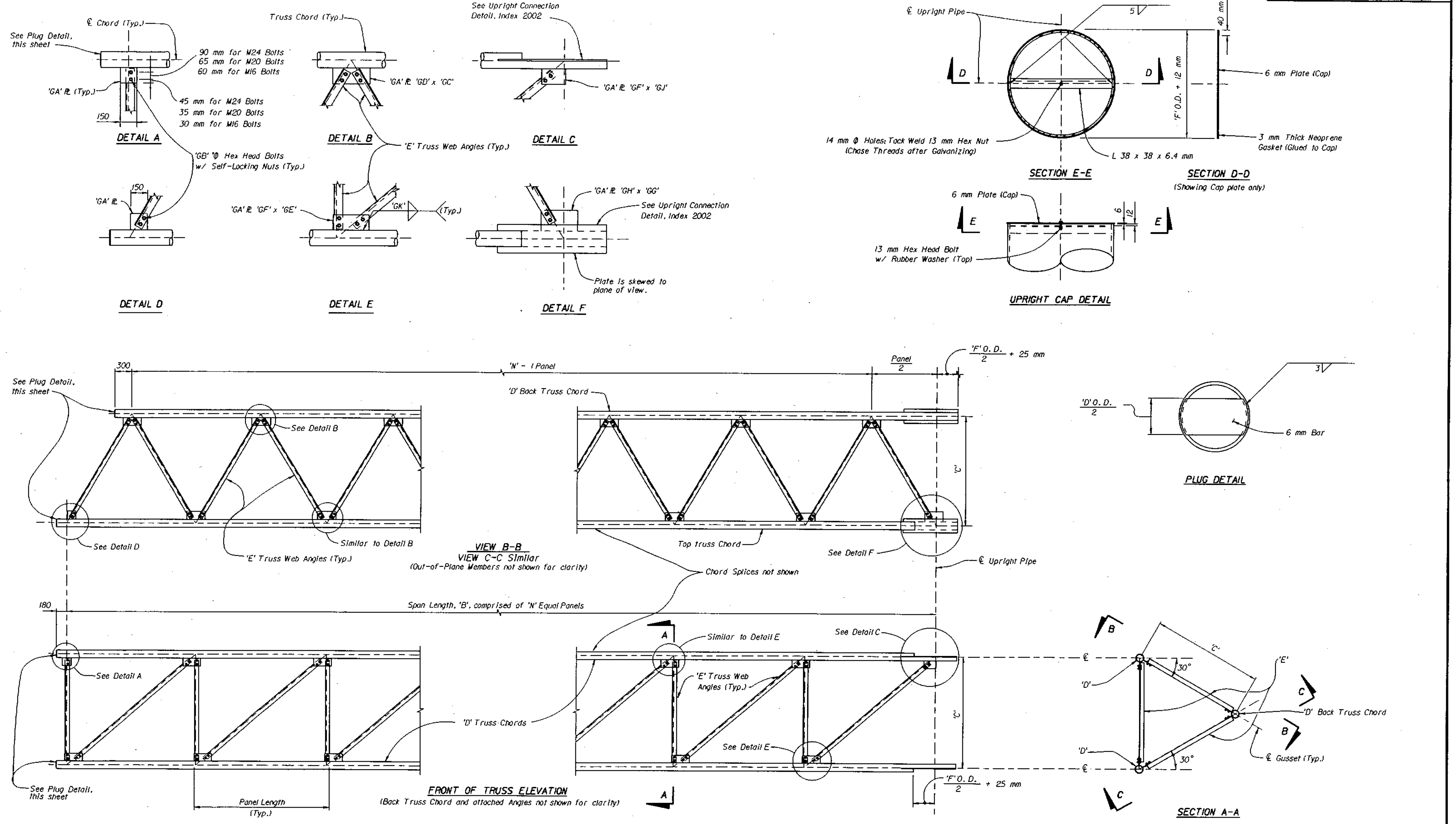
SHEET TITLE:
CANTILEVER SIGN STRUCTURE
CONNECTION DETAILS

PROJECT NAME:

Drawing No.
1 of 1

Index No.
2002

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



NOTE: All dimensions are in millimeters (mm), except as noted.

NOTE: Work this Standard with Standard Index Nos. 2001, 2002 & S-2004.

NOTE: See 'TABLES OF SIGN STRUCTURE VARIABLES' for referenced dimensions, sizes and quantities.

REVISIONS

Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	REB	8-89
Checked by	MHA	8-89
Designed by	MHA	8-89
Checked by	REN	8-89
Approved by	REN	

ENGINEER OF RECORD:
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LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE:
CANTILEVER SIGN STRUCTURE
TRUSS ELEVATION

PROJECT NAME:

Drawing No.
1 of 1

Index No.
2003

Mon Aug 15 11:40:55 1994

/usr5/strstand/met/2003.dgn

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

TABLE OF SIGN STRUCTURE VARIABLES

SIGN NO.	STATION	DIMENSIONS			NO. OF PANELS	MEMBER SIZES			BACKRAKE	GUSSET PLATES										TRUSS CONNECTION									SPLICE			
		A	B	C	N	D (CHORD)	E (WEB)	F (UPRIGHT)	G	GA	GB	GC	GD	GE	GF	GG	GH	GJ	GK	TA	TB	TC	TD	TE	TF	TG	TH	TJ	SA	SB	SC	SD

TABLE OF SIGN STRUCTURE VARIABLES (CONT.)

SIGN NO.	BASE CONNECTION									ANCHOR BOLT EMBEDMENT	FOOTING DIMENSIONS					FOOTING REINFORCING				PEDESTAL REINFORCING	
	BA	BB	BC	BD	BE	BF	BG	BH	BJ	BK	FA	FB	FC	FD	FE	FF	FG	FH	FJ	FK	FL

DESIGN WIND SPEED:

FOUNDATION NOTES:

NOTE: Work this Semi-Standard with Standard Index Nos. 2001, 2002 & 2003.

Mon Aug 15 13:57:11 1994 /usr5/strstand/me1/s2004.dgn

REVISIONS					
Date	By	Description	Date	By	Description
			94		

	Names	Dates
Drawn by		
Checked by		
Designed by		
Checked by		
Approved by		

ENGINEER OF RECORD:

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

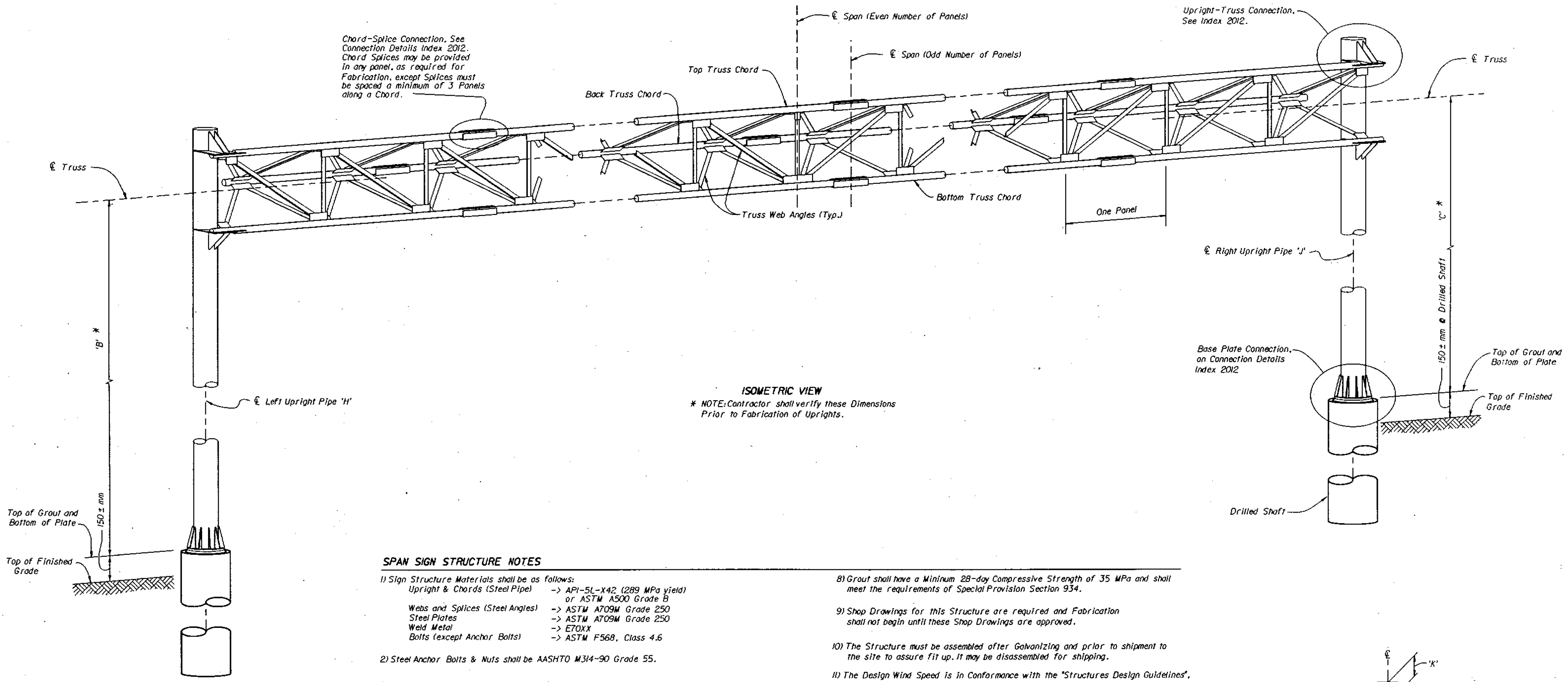
SHEET TITLE:
TABLES OF SIGN STRUCTURE VARIABLES

PROJECT NAME:

Drawing No.
1 of 1

Index No.
S-2004

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



ISOMETRIC VIEW

* NOTE: Contractor shall verify these Dimensions Prior to Fabrication of Uprights.

SPAN SIGN STRUCTURE NOTES

1) Sign Structure Materials shall be as follows:

Upright & Chords (Steel Pipe)	-> API-5L-X42 (289 MPa yield) or ASTM A500 Grade B
Webs and Splices (Steel Angles)	-> ASTM A709M Grade 250
Steel Plates	-> ASTM A709M Grade 250
Weld Metal	-> E70XX
Bolts (except Anchor Bolts)	-> ASTM F568, Class 4.6

2) Steel Anchor Bolts & Nuts shall be AASHTO M314-90 Grade 55.

3) All Steel items shall be Galvanized as follows:

Structural Shapes and Plates	-> ASTM A123
All Nuts, Bolts and Washers	-> ASTM A153 Class C or D depending on size

4) All Bolts, except Anchor Bolts, shall have Single Self-Locking Nuts or, in lieu thereof, regular nuts with a galvanized 'Palnut' locking nut manufactured by TRW, installed in accordance with the manufacturer's recommendations. Anchor Bolts shall have Double nuts.

5) Concrete shall be Class IV (Drilled Shaft) with a minimum 28-day Compressive Strength (f'c) of 28 MPa for all environmental classifications.

6) Reinforcing Steel shall be ASTM A615M Grade 400.

7) Alternate Designs for this Structure are not allowed.

8) Grout shall have a Mininum 28-day Compressive Strength of 35 MPa and shall meet the requirements of Special Provision Section 934.

9) Shop Drawings for this Structure are required and Fabrication shall not begin until these Shop Drawings are approved.

10) The Structure must be assembled after Galvanizing and prior to shipment to the site to assure fit up. It may be disassembled for shipping.

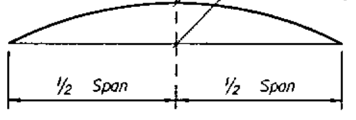
11) The Design Wind Speed is in Conformance with the "Structures Design Guidelines", (current edition), Chapter 21, with a 30 percent Gust Factor.

12) Provide a Parabolic Camber with the Maximum Upward Deflection as called for on the Camber Diagram. Indicate on the Shop Drawings the Method to be used to provide the required Camber.

12) See Elevation Drawing for size and location of sign panel. Sign Panel shall be Aluminum.

14) Except for Anchor bolts, all bolt hole diameters shall be equal to the bolt diameter plus 2 mm, prior to galvanizing. Hole diameters for Anchor bolts shall not exceed the bolt diameter plus 13 mm.

15) The foundation for the Sign Structure shall be constructed in accordance with Section 455 of the Department's Specifications except that, no payment for the foundation shall be made under Section 455. The cost of providing the foundation shall be included in the pay item for providing the completed Sign Structure.



CAMBER DIAGRAM

NOTE: See Roadway Index Drawing 17505 for information on Fabrication and Installation of lighting.

NOTE: Work this Standard with Structures Standard Index Nos. 2012, 2013, and S-2014.

NOTE: See 'Tables Of Sign Structure Variables' for referenced dimensions, sizes and quantities.

/usr5/strstand/met/2011.dgn

Mon Aug 15 13:33:13 1994

REVISIONS

Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	DCP	6-89
Checked by	MHA	6-89
Designed by	MHA	6-89
Checked by	REN	6-89
Approved by	REN	

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LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

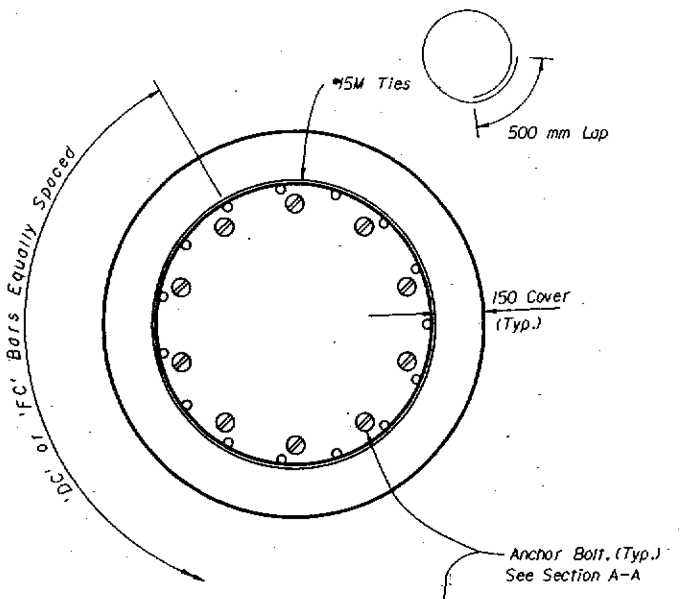
SHEET TITLE:
SPAN SIGN STRUCTURE
NOTES, CAMBER, ISOMETRIC VIEW

PROJECT NAME:

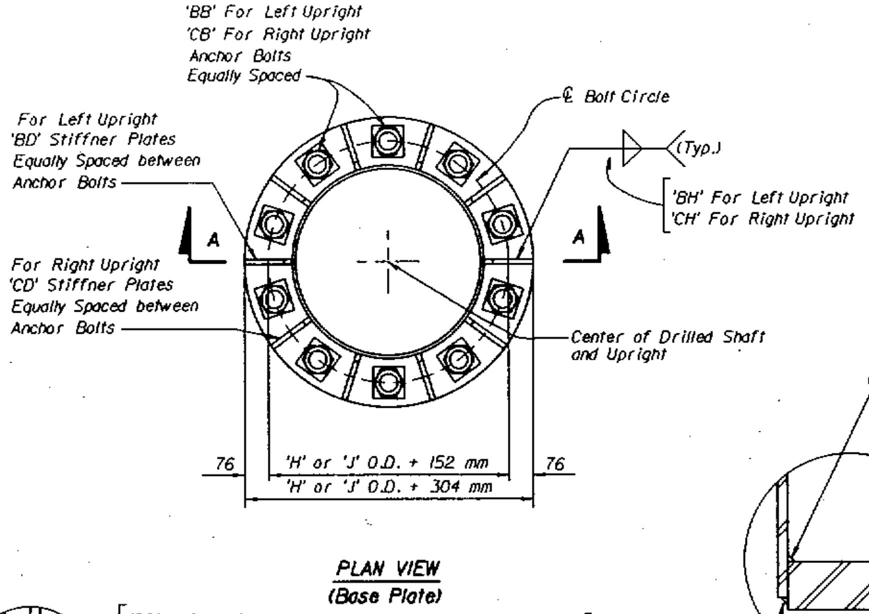
Drawing No.
1 of 1

Index No.
2011

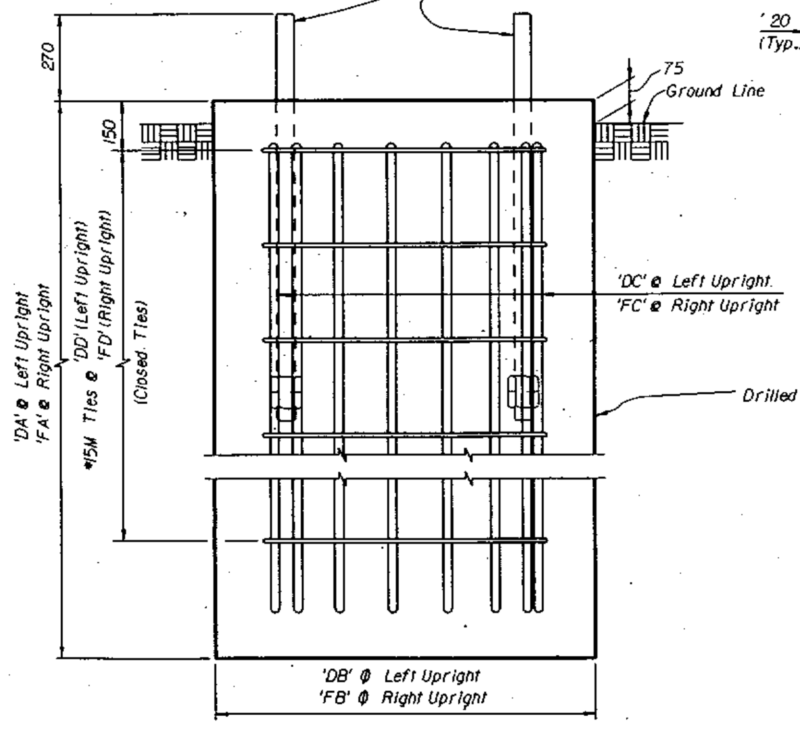
FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



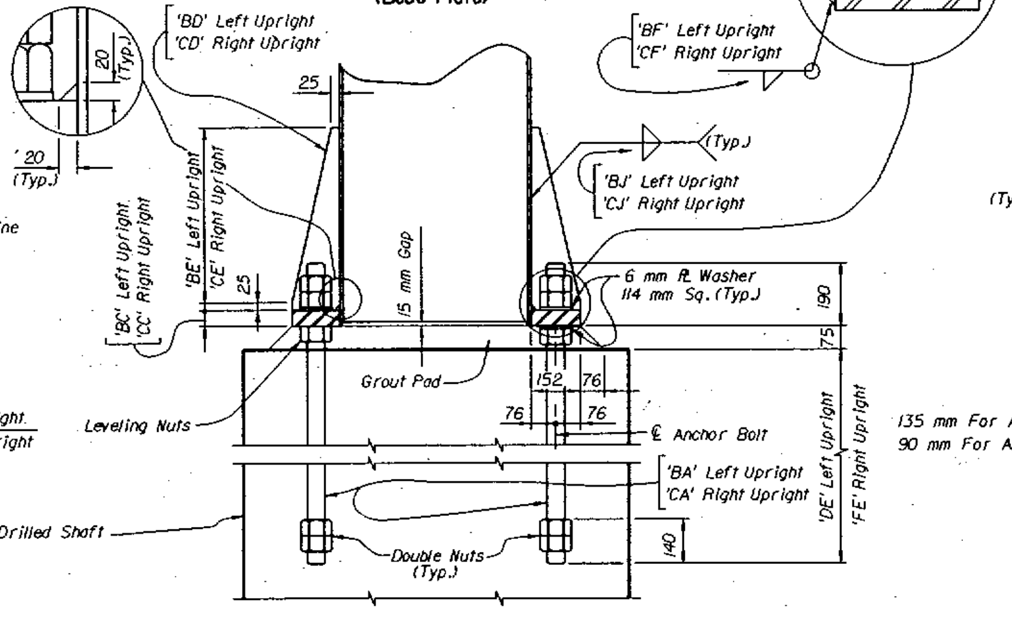
PLAN VIEW



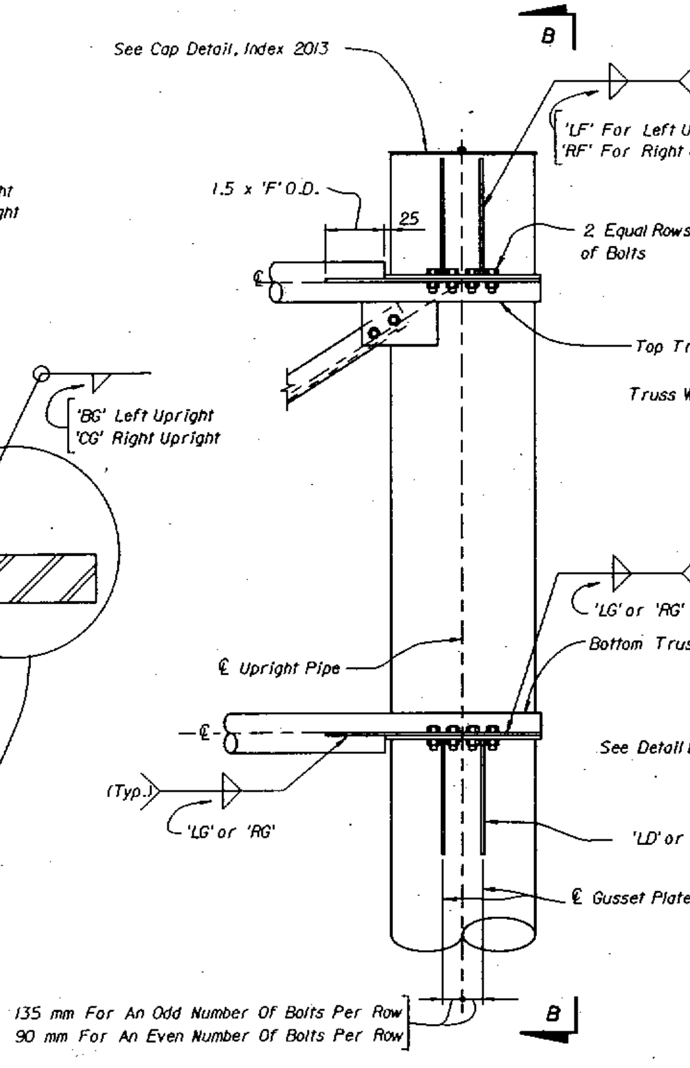
PLAN VIEW (Base Plate)



ELEVATION



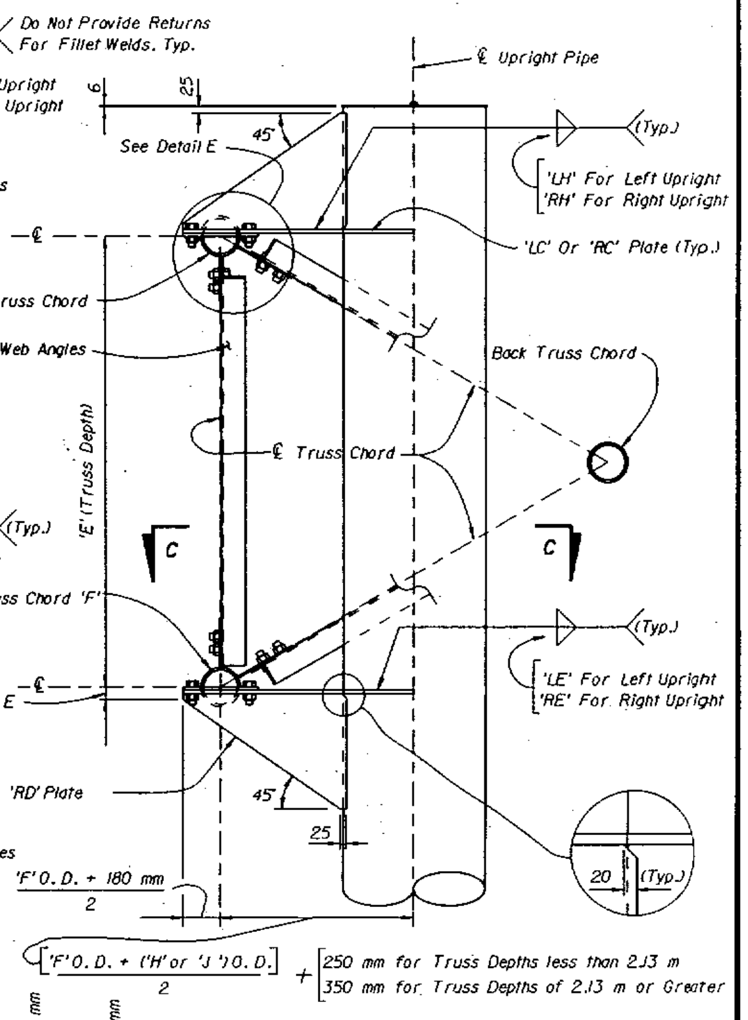
SECTION A-A



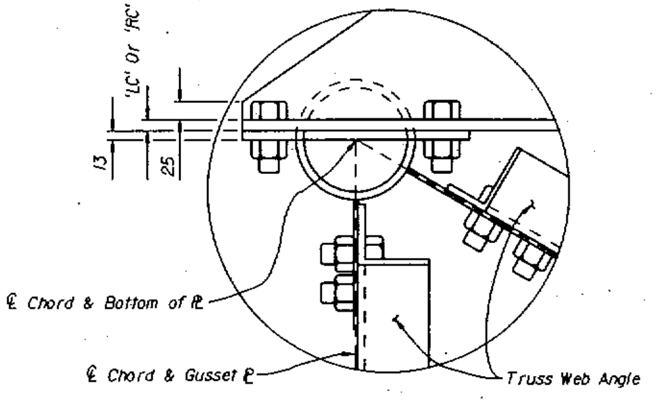
RIGHT UPRIGHT-TRUSS CONNECTION DETAIL

(LEFT UPRIGHT -TRUSS CONNECTION SIMILAR)

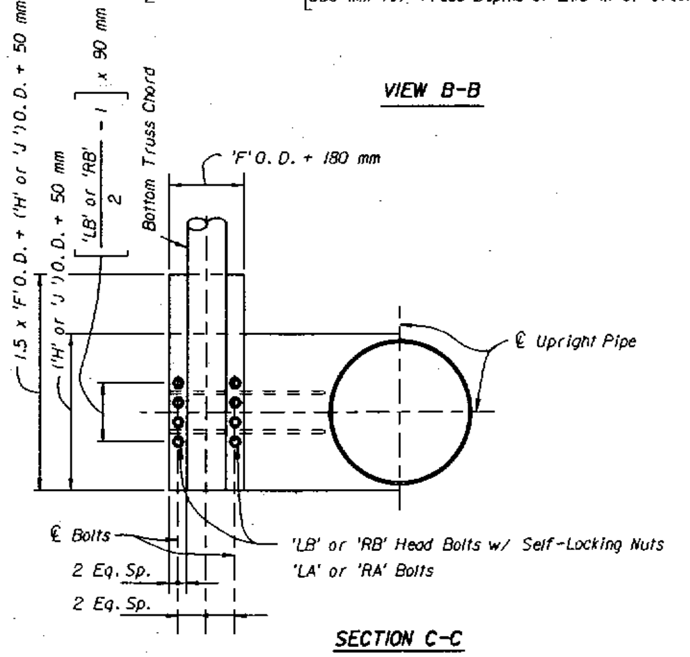
Web Members From Back Truss Chord Omitted For Clarity



VIEW B-B

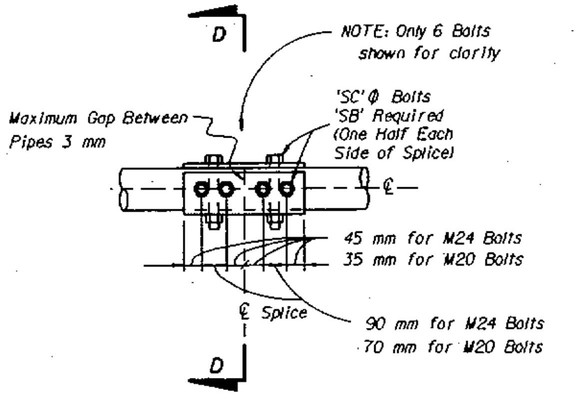


DETAIL E

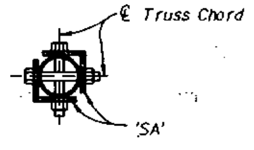


SECTION C-C

(With Gusset Plate and Angles omitted for clarity)



SPLICE CONNECTION DETAIL



SECTION D-D

NOTE: All dimensions are in millimeters (mm), except as noted.

NOTE: Work this Standard with Standard Index Nos. 2011, 2013 and S-2014.

NOTE: See 'Tables Of Sign Structure Variables' for referenced dimensions, sizes and quantities.

REVISIONS

Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	REB	6-89
Checked by	MHA	6-89
Designed by	MHA	6-89
Checked by		
Approved by	REN	

ENGINEER OF RECORD:
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605 Suwannee Street, MS 33
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LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE:
SPAN SIGN STRUCTURE
CONNECTION DETAILS

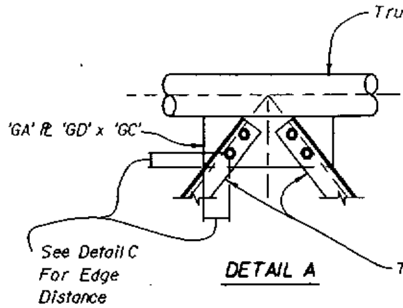
PROJECT NAME:

Drawing No.
1 of 1

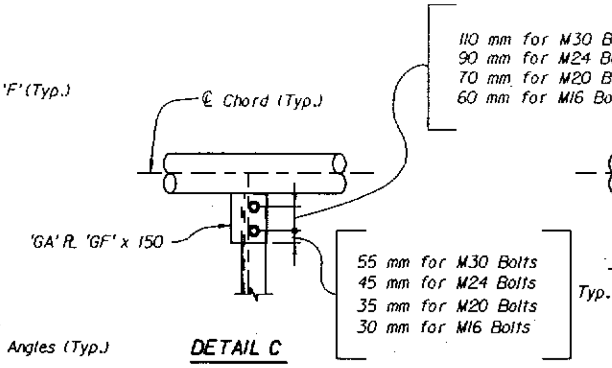
Index No.
2012

/usr5/strstand/met/2012.dgn
Mon Aug 15 13:34:00 1994

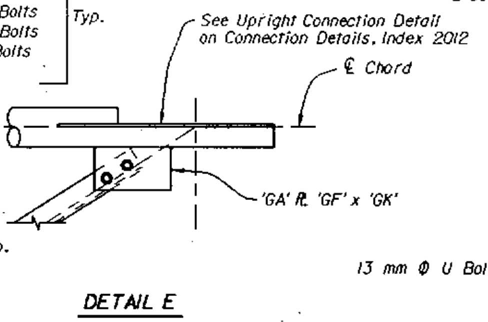
FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			



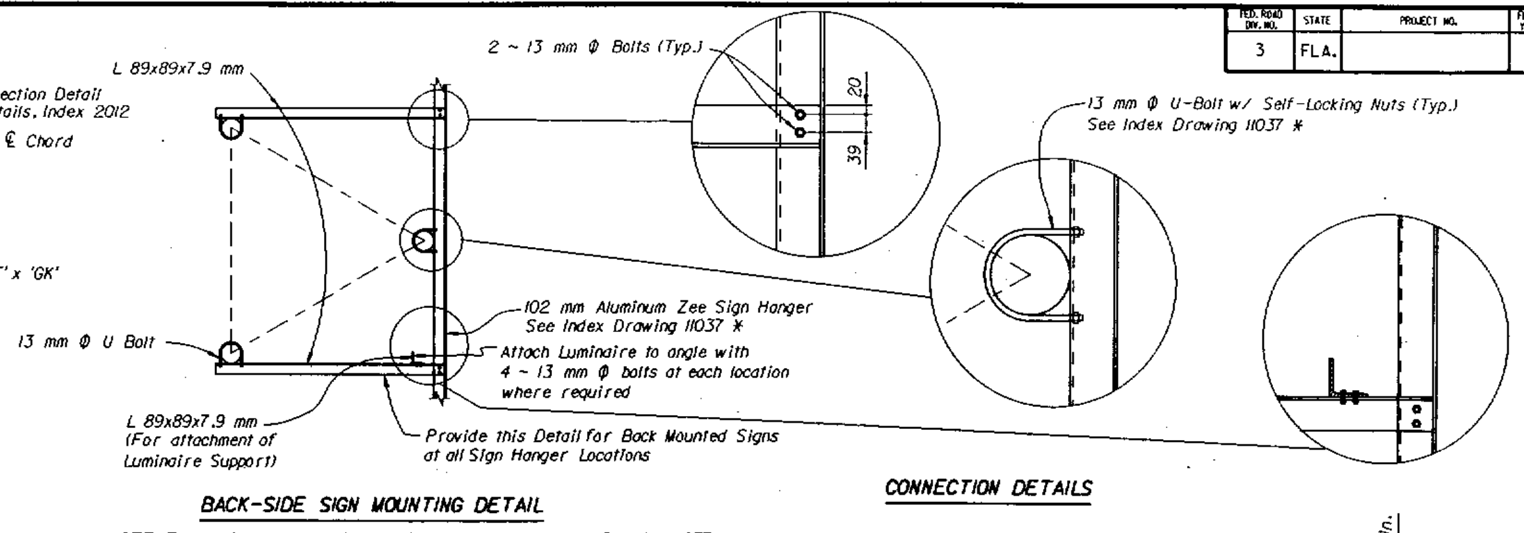
DETAIL A



DETAIL C



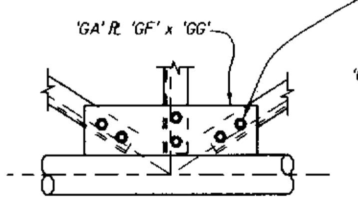
DETAIL E



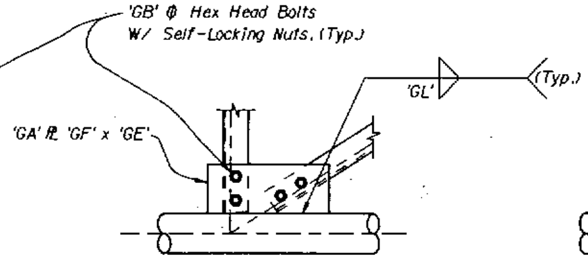
BACK-SIDE SIGN MOUNTING DETAIL

CONNECTION DETAILS

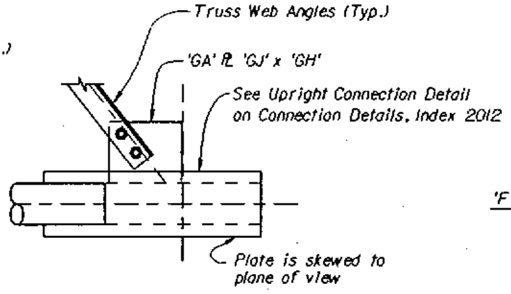
NOTE: Front-side mounted sign details are shown on Index Drawing 11037. *



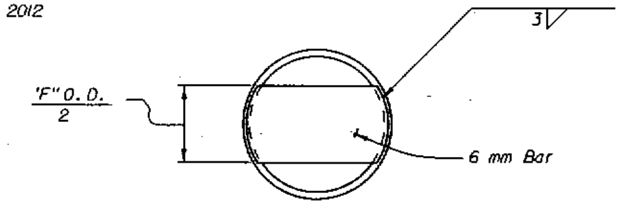
DETAIL B



DETAIL D

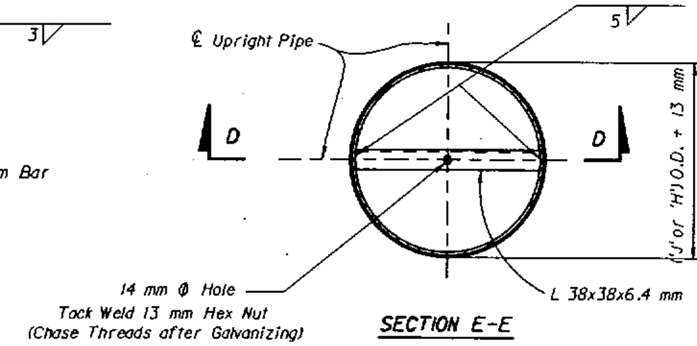


DETAIL F

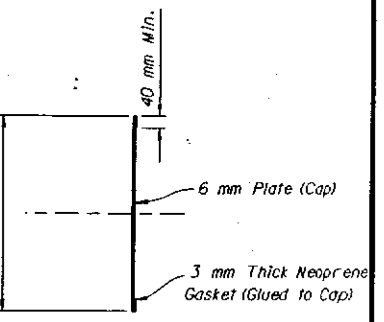


PLUG DETAIL

(Each end of Back Truss Chord)

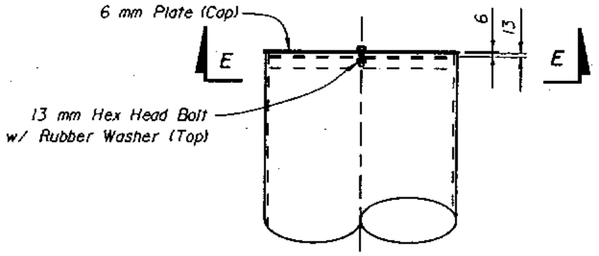


SECTION E-E

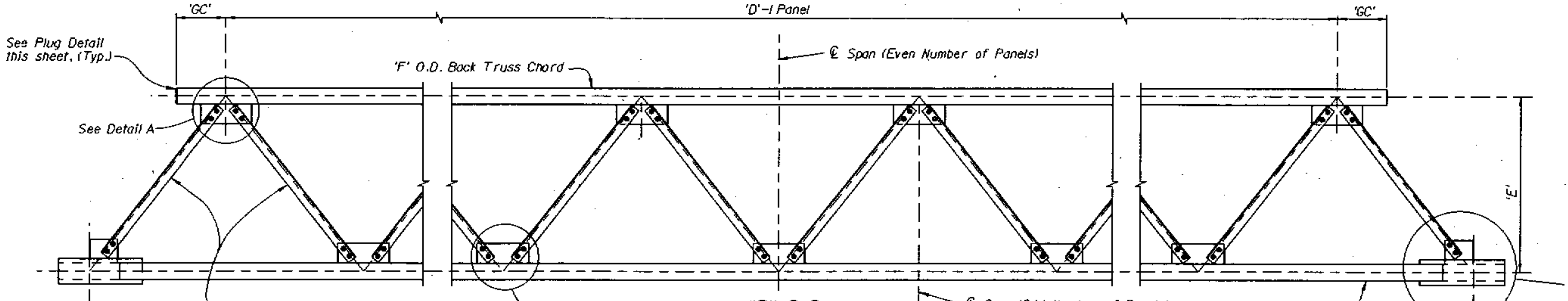


SECTION D-D

(Showing Cap plate only)



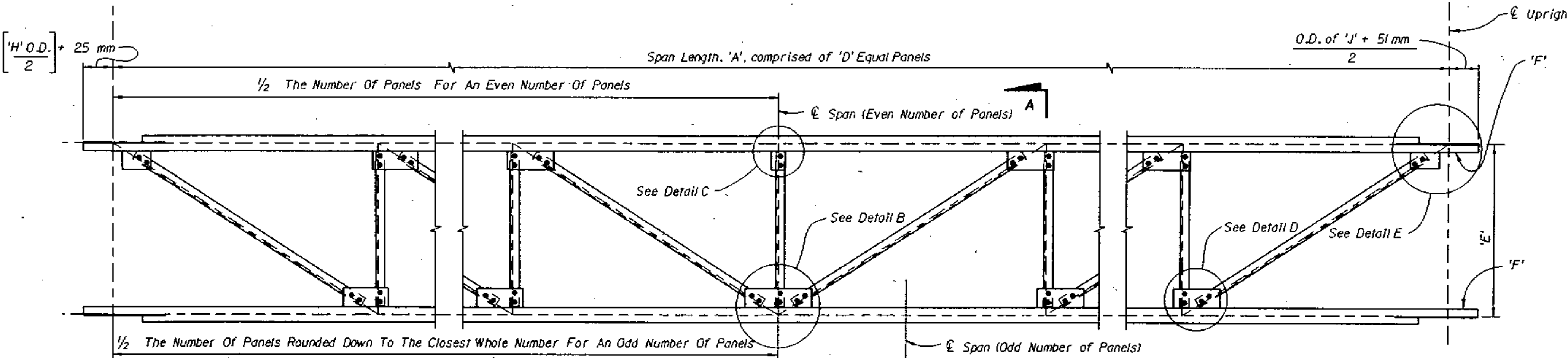
UPRIGHT CAP DETAIL



VIEW B-B

VIEW C-C Similar

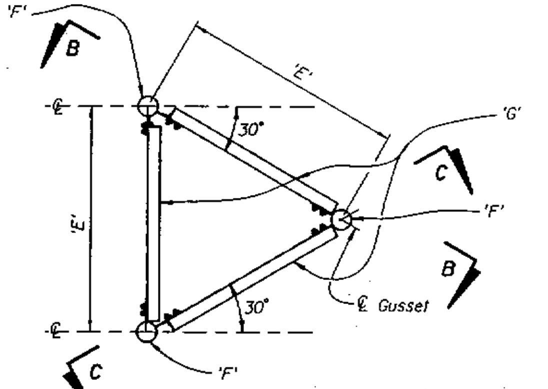
(Out-of-Plane Members not shown for clarity)



FRONT OF TRUSS ELEVATION

A

(Back Truss Chord and attached Angles not shown for clarity)



SECTION A-A

NOTE: All dimensions are in millimeters (mm), except as noted.

* NOTE: See Roadway Index Drawing 11037.

NOTE: Work this Standard with Standard Index Nos. 2011, 2012 and S-2014.

NOTE: See 'Tables Of Sign Structure Variables' for referenced dimensions, sizes and quantities.

/usr5/strstand/met/2013.dgn

Mon Aug 15 11:41:38 1994

REVISIONS

Date	By	Description	Date	By	Description
			94R		

	Names	Dates
Drawn by	REB	6-89
Checked by	MHA	6-89
Designed by	MHA	6-89
Checked by	REN	6-89
Approved by	REN	

ENGINEER OF RECORD:

STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE:

SPAN SIGN STRUCTURE
TRUSS ELEVATION

PROJECT NAME:

Drawing No. 1 of 1

Index No. 2013

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			

TABLE OF SIGN STRUCTURE VARIABLES

SIGN NO.	STATION	DIMENSIONS			NO. OF PANELS	MEMBER SIZES						GUSSET PLATES										
		A	B	C	D	E (WEB)	F (CHORD)	G (WEB)	H (LEFT UPRIGHT)	J (RIGHT UPRIGHT)	K (CAMBER)	GA	GB	GC	GD	GE	GF	GG	GH	GJ	GK	GL

TABLE OF SIGN STRUCTURE VARIABLES (CONT.)

SIGN NO.	LEFT TRUSS CONNECTION								RIGHT TRUSS CONNECTION								SPLICE		
	LA	LB	LC	LD	LE	LF	LG	LH	RA	RB	RC	RD	RE	RF	RG	RH	SA	SB	SC

DESIGN WIND SPEED:

FOUNDATION NOTES:

TABLE OF SIGN STRUCTURE VARIABLES (CONT.)

SIGN NO.	LEFT BASE CONNECTION									RIGHT BASE CONNECTION									LEFT DRILLED SHAFT					RIGHT DRILLED SHAFT				
	BA	BB	BC	BD	BE	BF	BG	BH	BJ	CA	CB	CC	CD	CE	CF	CG	CH	CJ	DA	DB	DC	DD	DE	FA	FB	FC	FD	FE

NOTE: Work this Semi-Standard With Standard Index Nos. 2011, 2012, & 2013.

/usr5/str/stand/met/s2014.dgn

Mon Aug 15 13:57:41 1994

REVISIONS					
Date	By	Description	Date	By	Description
			94		

	Names	Dates
Drawn by		
Checked by		
Designed by		
Checked by		
Approved by		

ENGINEER OF RECORD:

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.

SHEET TITLE: TABLES OF SIGN STRUCTURE VARIABLES

PROJECT NAME:

Drawing No. 1 of 1

Index No. S-2014