FLORIDA DEPARTMENT OF TRANSPORTATION

STRUCTURES DESIGN OFFICE

STANDARD DRAWINGS

1990 EDITION

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

FLORIDA DEPARTMENT OF TRANSPORTATION

STRUCTURES DESIGN OFFICE

STANDARDS

1990

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. An asterisk (*) adjacent to an Index Number designates a drawing not yet available at time of printing.
4. Comments and or questions concerning these Standards shall be directed (preferably in writing) to: Angelo J. Garcia.

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

FLORIDA DEPARTMENT OF TRANSPORTATION

STRUCTURES DESIGN OFFICE

PREFACE

These Standard Drawings were produced with the use of our Computer Aided Design and Drafting (CADD) equipment.

The drawings herein depict common structural components or elements suitable for standardization. Whenever possible the drawings were developed to full completion, that is they are ready for insertion in the Contract Documents. These drawings are commonly referred to as "Standards" (Index Number).

Some other drawings are not fully developed and should, therefore, be completed by the designer prior to their inclusion in the Contract Documents. These drawing are commonly referred to as "Semi-Standards" (S-Index Number).

Some occasions may arise where the designer will need to alter a "Standard" drawing to suit a particular design. In this event the designer may proceed as follows:

1.- Produce a new project specific drawing using the "Standard" as a guide, or :

2.- Obtain a reproducible copy of the "Standard" and perform the needed modifications on the reproducible copy. At this time, the drawing will cease to be a "Standard" and the original index number and initials (designers and others) shall be deleted, or :

3.- Show the modifications on a separate sheet and provide cross-reference notes stating that the "Standard" is subject to modifications shown on another sheet.

It should be clearly understood that any modification to a "Standard" transfers the responsibility for that drawing to the designer, in total, and requires his seal and signature.

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

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	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.: 1-001

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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

INSTRUCTIONAL NOTES

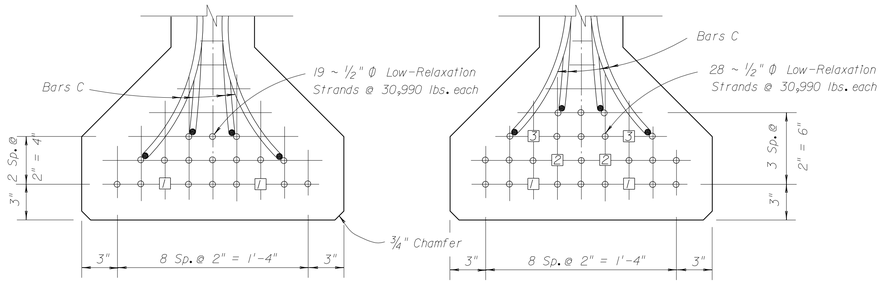
GENERAL: This instructional Drawing has been prepared for use with prestressed beam Semi-Standard Drawings Nos. S-102 thru S-106, S-111, S-112 and S-113 and depicts only those portions of the Semi-Standards that would normally require design input for completion of the drawings. The Semi-Standards must be used in conjunction with the appropriate "TYPICAL NOTES AND DETAILS" sheet(s) (Standard Drawing Nos. 100, 101 and 110); however, a single Standard Drawing may suffice for many Semi-Standards. When completed, the Semi-Standards used in conjunction with the appropriate Standard drawings, provide sufficient information to the Contractor to permit beam fabrication from the design plans without requiring a formal Shop Drawing submittal subject to compliance with the requirements of the Specifications. The following list describes the Standard Drawings and the appropriate Semi-Standards to which they relate:

Standard Drawing No.	Use with Semi-Standard Drawings 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: This example drawing shows the data required to complete a Type III beam detail sheet for a hypothetical grade separation structure to be constructed on a due North bearing, a +1.50% tangent grade, a 25°00'00" Rt. skew, end spans of 52'-0" and two (2) interior spans of 75'-6". Beams "B1B" thru "B4B" are exterior beams and Beams "B1A" thru "B4A" are interior beams for spans 1 thru 4. Site conditions dictate special bearing locations at the end of the bridge. The method of showing the following listed information is noteworthy:

1. The debonded strand locations and debonding lengths.
2. The locations and placement of Bars C in the bottom flange.
3. The beam and skew.
4. The beam and bevel.
5. The designation of plates on exterior beams.
6. The use of stirrup spacing "S6" and the corresponding dimension "V" to show the special "make-up" dimension and to show how even and odd numbers of stirrup spacings (i.e., the end and interior span beams, respectively) can be handled.
7. The use of double lines of referenced, selected data to describe differences in end of beam geometry.

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.



STRAND PATTERNS AND DEBONDING SCHEDULE

(Showing treatment of Bars C in Bottom flange)

NOTE: ○ - Indicates fully bonded strands.

□ - Indicates referenced pair of strands to be debonded the length shown, measured from the centerline of bearing.

TABLE OF BEAM VARIABLES

BEAM ID. *	CONCRETE PROPERTIES: CLASS	STRENGTHS: REL. (f'ci)	STRENGTHS: 28-DAY (f'c)	STND PTRN TYPE	PLAN VIEW CASE	END ELEV COND.	BRG. PLATE CASE	END OF BEAM AND BEARING DIMENSIONS: ANGLE Ø	DIM P	DIM J	DIM K
B1A	IV	4,000	5,500	(1)	3	2	-	65° 00' 00"	11/16"	6½"	11"
B1B	IV	4,000	5,500	(1)	3	2	3	65° 00' 00"	11/16"	6½"	11"
B2A, B3A	IV	4,200	5,500	(2)	3	2	-	65° 00' 00"	11/16"	6½"	11"
B2B, B3B	IV	4,200	5,500	(2)	3	2	3	65° 00' 00"	11/16"	6½"	11"
B4A	(S)	IV	4,000	5,500	(1)	3	2	-	65° 00' 00"	11/16"	6½"	11"
	(N)									7	11½"
B4B	(S)	IV	4,000	5,500	(1)	3	2	3	65° 00' 00"	11/16"	6½"	11"
	(N)									7	11½"

BEAM ID. *	BEAM DIMENSIONS: DIM L	DIM R	DIM V	NUMBER OF SPACES FOR STIRRUP BARS K: S1	S2	S3	S4	S5	S6	DIAPHRAGM INSERT LOCATIONS: DIM X1	DIM X2	DIM Y	NS/FS (8): #1	#2
B1A	51'-2¾"	⅝"	10⅞"	25	4	4	4	3	1	-	-	-	-	-
B1B	51'-2¾"	⅝"	10⅞"	25	4	4	4	3	1	-	-	-	-	-
B2A, B3A	74'-9¼"	1⅛"	5⅛"	37	7	6	5	5	½	-	-	-	-	-
B2B, B3B	74'-9¼"	1⅛"	5⅛"	37	7	6	5	5	½	-	-	-	-	-
B4A	51'-2¾"	⅝"	10⅞"	25	4	4	4	3	1	-	-	-	-	-
B4B	51'-2¾"	⅝"	10⅞"	25	4	4	4	3	1	-	-	-	-	-

BEAM ID. *	REINFORCING STEEL: TYPE OF (9) REINF.	C: C	C: APPROX. LENGTH	K: NO. REQ'D	N: LENGTH
B1A	Black	10'-0"	23'-2"	83	51'-8"
B1B	Black	10'-0"	23'-2"	83	51'-8"
B2A, B3A	Black	11'-6"	26'-1"	122	75'-2"
B2B, B3B	Black	11'-6"	26'-1"	122	75'-2"
B4A	Black	10'-0"	23'-2"	83	51'-8"
B4B	Black	10'-0"	23'-2"	83	51'-8"

* (S) and (N) refer to the South and North ends, respectively, of Beams in Span No. 4.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90		

	NAMES	DATES
DRAWN BY	JSP	3-90
CHECKED BY	·	·
DESIGNED BY	REN	3-90
CHECKED BY	·	·
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

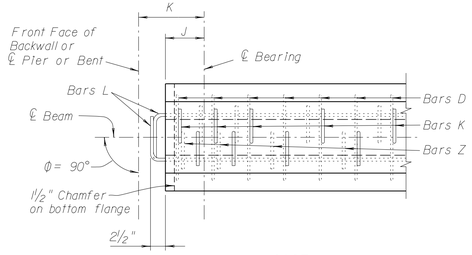
PROJECT NAME:

DRAWING NO.: 1 of 1

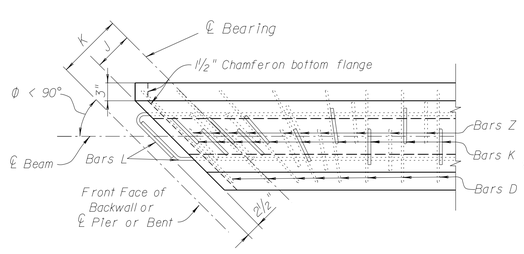
INDEX NO.: 1-099

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

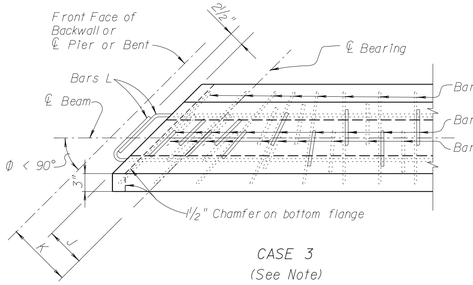
FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.	.	.	.



CASE 1



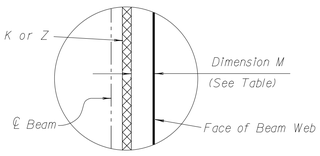
CASE 2
(See Note)



CASE 3
(See Note)

PLAN ENDS OF BEAMS

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 an axis parallel to 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 be adjusted to miss welded studs for bearing plates. See also "End Elevations of Beams", this sheet.



SECTION THRU BEAM WEB
(Showing Cover on Stirrups)

TABLE OF DIMENSIONS M	
BEAM TYPE	DIMENSION M
II	2"
III	2½"
IV	3"

GENERAL 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 at least as large as that provided by the stranding shown on these sheets.
3. The ultimate strength of the structure with the proposed stranding is at least equal to the ultimate strength of the original design.
4. The proposed stranding complies in all respects with the Department's Structures Design Guidelines.

FINISH: 3" on each of the top outside edges of beams shall have a smooth finish. The remaining 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 only a Construction Submittal is required. If each and every condition can not be met, then a formal shop drawing submittal is required.

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 3 ft. from the ends of the beam.

STORAGE AND TRANSPORTATION: Beams shall be stored on adequate dunnage and supported during transit within 18" from ends of beam.

STRAND EXTENSION: All strands shall extend 2½" 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 Grade 60.

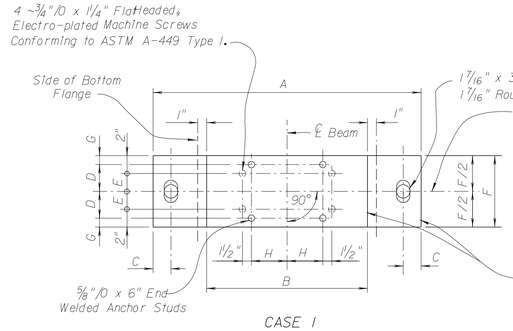
BEARING PADS: The cost of installing bearing pads shall be included in the contract unit price of prestressed beams. The composite neoprene pads may or may not be furnished to the contractor by FDOT. See the General Notes for the bridge, or the Bid Item Notes, for additional information regarding who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

MISCELLANEOUS: Bearing plates, anchor bolts, nuts and washers shall be hot dip galvanized in accordance with requirements of A.S.T.M. Specification A123 or A153. Bearing plates shall conform to A.S.T.M. Specification A709, Grade 36. Anchor bolts shall conform to A709, Grade 36 or A307. The cost of bearing plates, anchor bolts, nuts, washers, premoulded expansion material at bearings and inserts for diaphragm tie bars shall be included in the contract unit prices for prestressed beams.

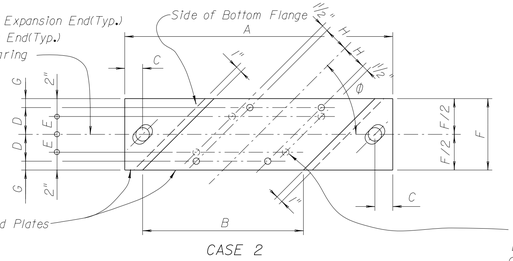
NOTES: Work this sheet with individual beam sheets, Type II, III and IV only.

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 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 ½ inch (±) until the vertical position is attained.



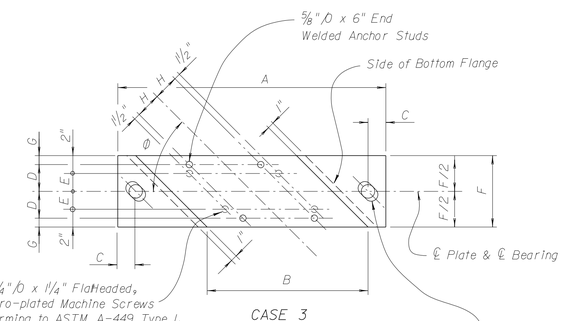
CASE 1



CASE 2

BEARING PLATE DETAILS

NOTE: Bearing Plates required on Beams only as scheduled in the Table of Beam Variables.

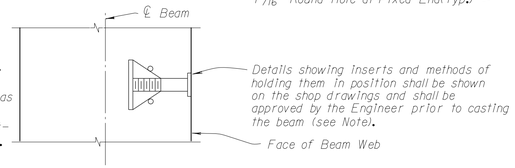


CASE 3

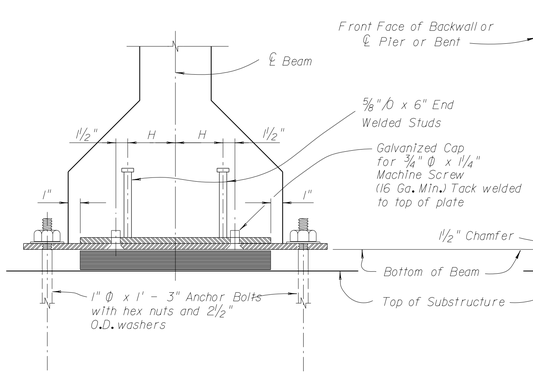
TABLE OF BEARING PLATE DIMENSIONS								
BEAM TYPE	DIMENSIONS (INCHES)							
	A	B	C	D	E	F	G	H
II	B+2C+(6/SINϕ)	16/SIN ϕ	2+0.7B(COSϕ)	3	2½	9	1½	3
III		20/SIN ϕ			2	8	1	5
IV		24/SIN ϕ			3	10	2	7

NOTE: Insert shall be 1"ϕ, zinc-electroplated, ferrule wing nut, UNC threads, 1/0 minimum gage wire, not more than 4" in depth and shall have a minimum ultimate tensile strength of 11,400 lbs. in 4,000 p.s.i. concrete.

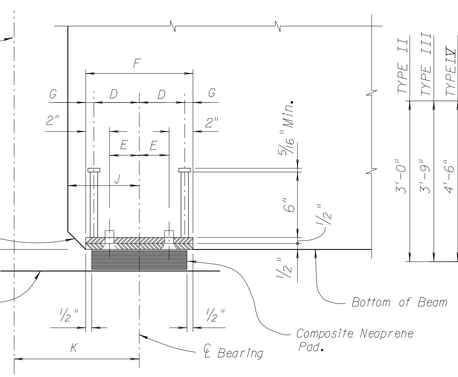
NOTE: If inserts are needed on both sides (faces) of beam webs an assembly as long as the thickness of the beam web, consisting of two (2) Ferrule inserts attached by two (2) or more struts may be utilized. The connecting struts shall have a minimum ultimate tensile strength of 22,800 lbs.



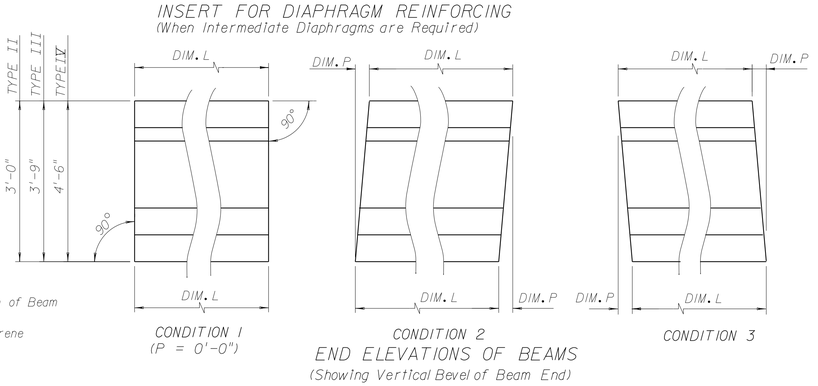
SECTION THRU BEAM WEB AT INSERT FOR DIAPHRAGM REINFORCING
(When Intermediate Diaphragms are Required)



END ELEVATION-SECTION OF BEARING ASSEMBLY
(Perpendicular to ℄ Beam)



SIDE ELEVATION-SECTION OF BEARING ASSEMBLY
(Perpendicular To ℄ Bearing)



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

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			9IR		

	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
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

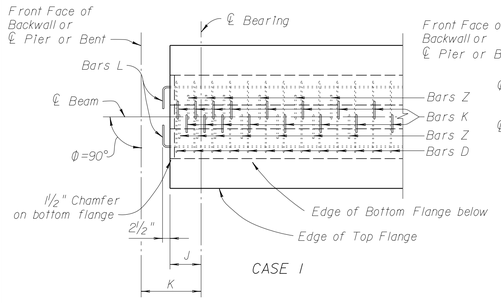
DRAWING NO. 1 of 1

PROJECT NAME: .

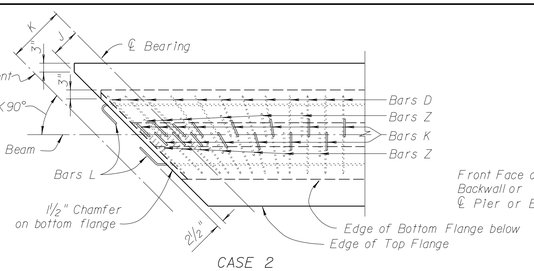
INDEX NO. 100

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

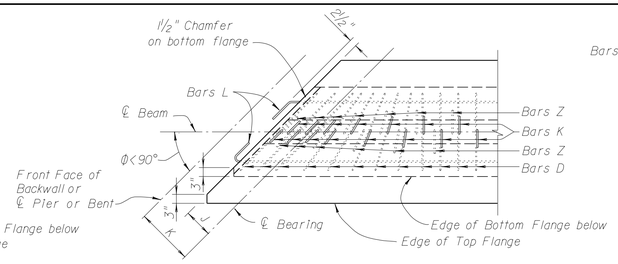
FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.	.	.	.



CASE 1



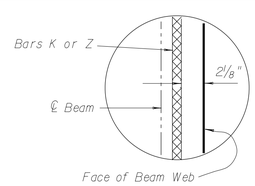
CASE 2
(See Note)



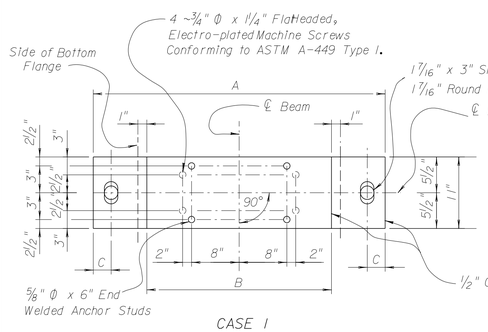
CASE 3
(See Note)

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

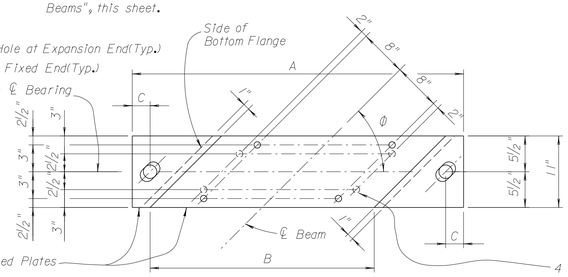
Note: For both Plan Views Case 2 and Case 3, the first Bar Z and the first two Bars K shall be placed parallel to the skewed end of the Beam. The remainder of the Bars Z & K shall be placed so as to transition from an axis parallel to the skewed end to an axis perpendicular to the centerline of the beam. Bars D in the bottom flange shall be rotated along with Bars Z & K. Bar spacing may be adjusted to miss welded studs for bearing plates. See also "End Elevations of Beams", this sheet.



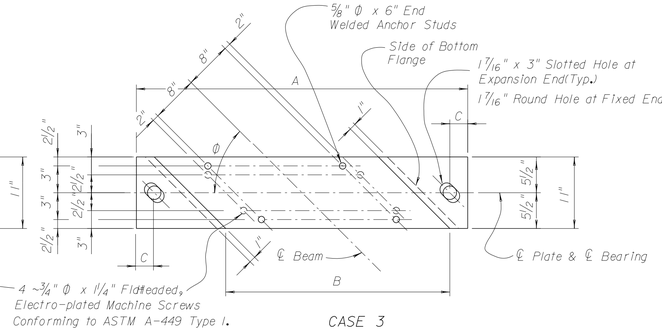
SECTION THRU BEAM WEB
(Showing Cover on Stirrups)



CASE 1



CASE 2



CASE 3

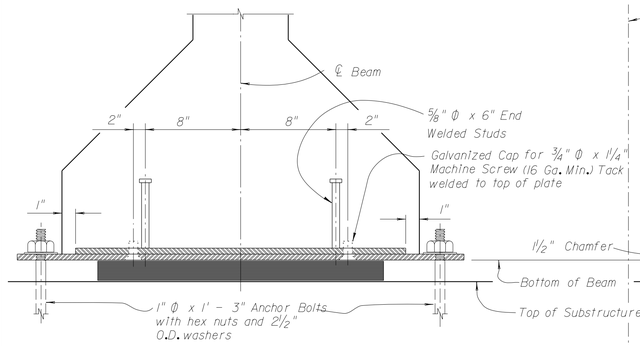
BEARING PLATE DETAILS

NOTE: Bearing Plates required on Beams only as scheduled in the Table of Beam Variables.

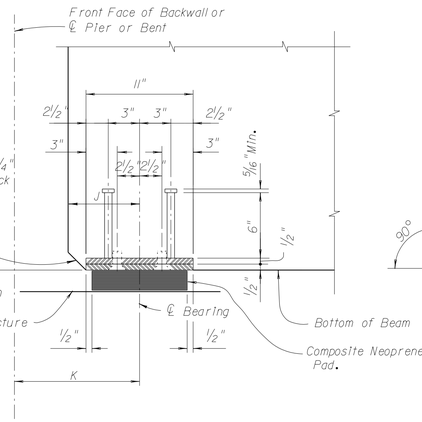
NOTE: Insert shall be 1"Φ, zinc-electroplated, ferrule wing nut, UNC threads, 1/0 minimum gage wire, not more than 4" in depth and shall have a minimum ultimate tensile strength of 11,400 lbs. in 4,000 p.s.i. concrete.

NOTE: If inserts are needed on both sides (faces) of beam webs an assembly as long as the thickness of the beam 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 22,800 lbs.

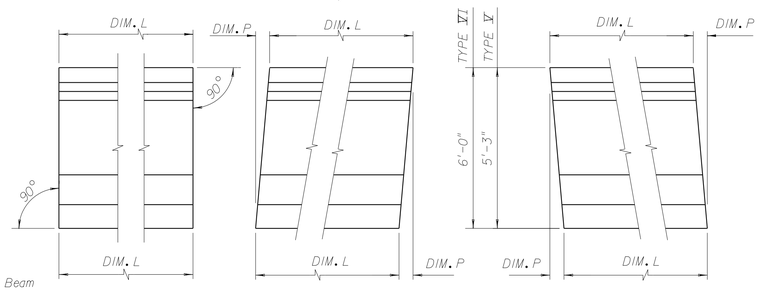
TABLE OF BEARING PLATE DIMENSIONS			
BEAM TYPE	DIMENSIONS (INCHES)		
	A	B	C
V or VI	$B+2C+\left(\frac{6}{SIN\Phi}\right)$	26/SIN Φ	2+0.78(COSΦ)



END ELEVATION-SECTION OF BEARING ASSEMBLY
(Perpendicular to ℄ Beam)



SIDE ELEVATION-SECTION OF BEARING ASSEMBLY
(Perpendicular To ℄ Bearing)

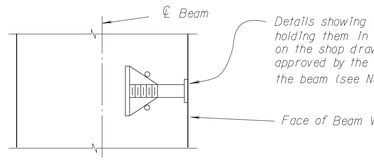


CONDITION 1 (P = 0'-0")

CONDITION 2

CONDITION 3

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



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

GENERAL 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 at least as large as that provided by the stranding shown on these sheets.
3. The ultimate strength of the structure with the proposed stranding is at least equal to the ultimate strength of the original design.
4. The proposed stranding complies in all respects with the Department's Structures Design Guidelines.

FINISH: 3" on each of the top outside edges of beams shall have a smooth finish. The remaining 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 only a Construction Submittal is required. If each and every condition can not be met, then a formal Shop Drawing submittal is required.

STRAND DETENSIONING: Strand detensioning shall be based upon the following prlority, 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 3 ft. from the ends of the beam.

STORAGE AND TRANSPORTATION: Beams shall be stored on adequate dunnage and supported during transit within 18" from ends of beam.

STRAND EXTENSION: All strands shall extend 2½" 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 Grade 60.

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: Bearing plates, anchor bolts, nuts and washers shall be hot dip galvanized in accordance with requirements of A.S.T.M. Specification A123 or A153. Bearing plates shall conform to A.S.T.M. Specification A709, Grade 36. Anchor bolts shall conform to A.S.T.M. A709, Grade 36 or A307. The cost of bearing plates, anchor bolts, nuts, washers, premouided expansion material at bearings and 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 ½ inch (±) until the vertical position is attained.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			9IR		

	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
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

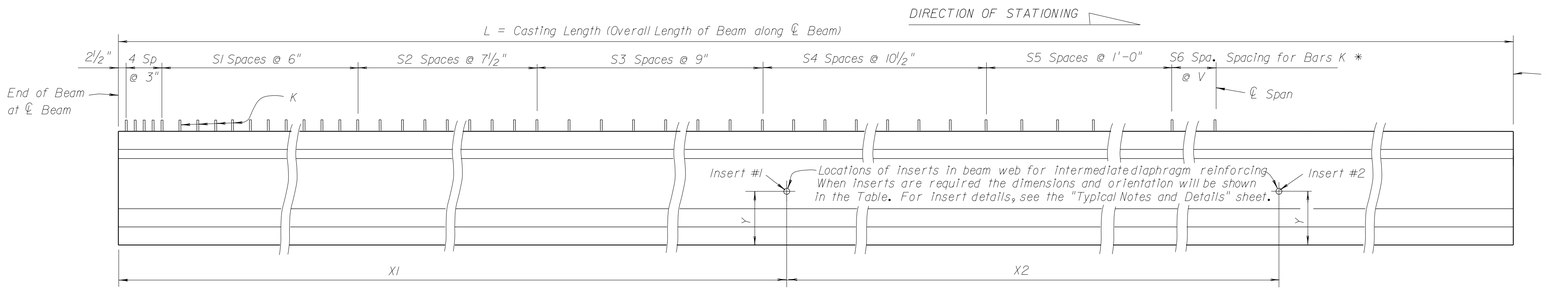
PROJECT NAME:

DRAWING NO.: 1 of 1

INDEX NO.: 101

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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: Spacing of Bars D, K, and Z shown are Measured along centerline of beam.

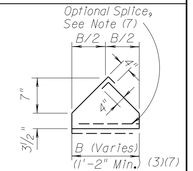
GENERAL NOTES

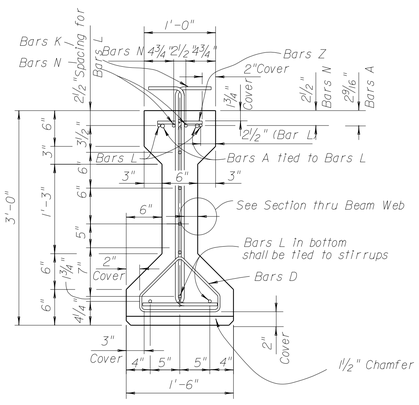
1. Work this sheet with Standard Index No. 100.

BILL OF REINFORCING STEEL FOR ONE BEAM ONLY

MARK	SIZE	NO. REQUIRED	LENGTH (1)
A	5	4	See Table
D (3)(7)	3	20	Varies(4'-2" Min.)
K (3)	4	See Table	4'-3"
L (4)(5)	4	18	3'-11"
N (2)(6)	⅜" Ø Strand	2	See Table
Z (3)	4	16	3'-7"

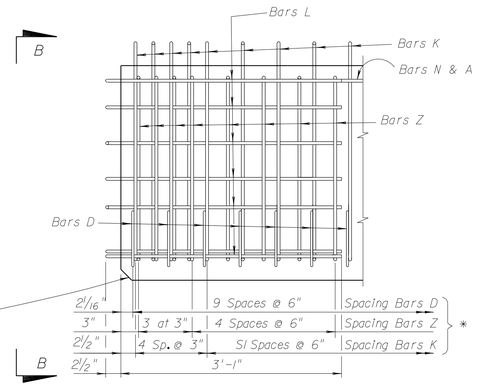
BENDING DIAGRAMS (1)





VIEW B-B

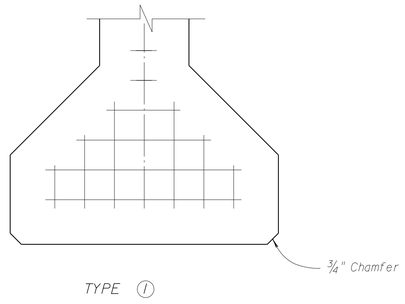
(With strands omitted, see Table for reference to strand pattern.)



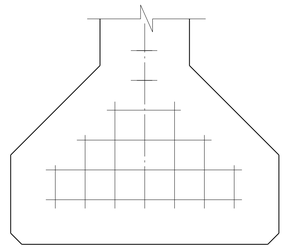
DETAIL AT END OF BEAM

NOTE: Stirrups 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).



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, measured from the centerline of bearing.

NOTES:

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

(2) Black means standard finish and Epoxy means epoxy coated reinforcing steel. Bars N (strand) do not need to be epoxy coated.

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

Bar Size	Pin Diameters
#3	1"
#4	2"

(4) 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".

(5) 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.

(6) Bars N shall be either ASTM A416, Grade 250 or 270, seven-wire strands ⅜" diameter or larger, stressed to 10,000 pounds each.

(7) 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 1'-2" 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 No. 3 Bars.

(8) (NS) means Near Side and (FS) means Far Side, both refering 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.

TABLE OF BEAM VARIABLES

BEAM ID.	CONCRETE PROPERTIES CLASS	STRENGTHS REL. (f'ci)	STRENGTHS 28-DAY (f'c)	STND PTRN TYPE	PLAN VIEW CASE	END ELEV COND.	BRG. PLATE CASE	END OF BEAM AND BEARING DIMENSIONS ANGLE Ø	DIM P	DIM J	DIM K	BEAM DIMENSIONS DIM L	DIM R	DIM V	NUMBER OF SPACES FOR STIRRUP BARS K S1	S2	S3	S4	S5	S6	DIAPHRAGM INSERT LOCATIONS DIM X1	DIM X2	DIM Y	NS/FS (8) #1	#2	REINFORCING STEEL TYPE OF (2) REINF.	A LENGTH	K NO. REQ'D	N LENGTH

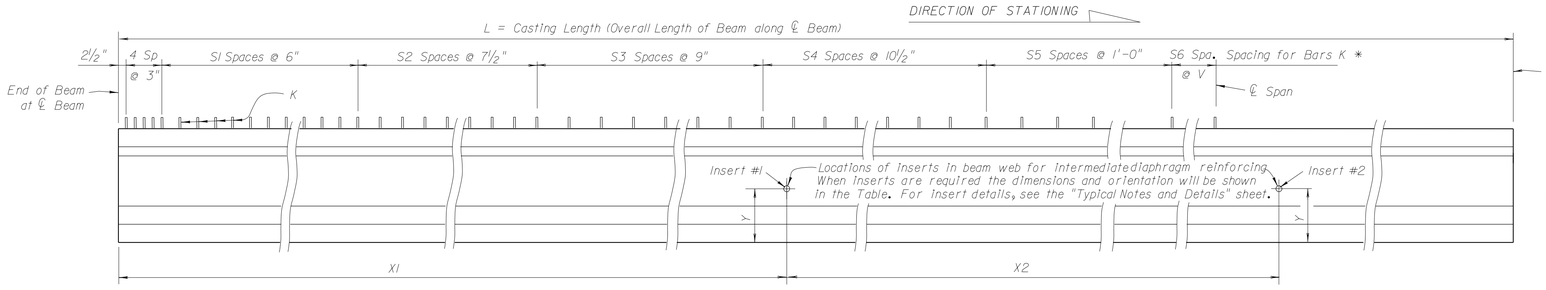
REVISIONS						ENGINEER OF RECORD,	LOGO,	SEAL,	FLORIDA DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN OFFICE	SHEET TITLE,	DRAWING NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION					AASHTO TYPE II BEAMS	1 of 1
			9IR						ROAD NO. .	COUNTY .	PROJECT NO. .
										PROJECT NAME,	INDEX NO.
											S-102

	NAMES	DATES
DRAWN BY	.	.
CHECKED BY	.	.
DESIGNED BY	.	.
CHECKED BY	.	.
APPROVED BY	.	

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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

DIRECTION OF STATIONING



ELEVATION

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

* Note: Spacing of Bars D, K, and Z shown are Measured along centerline of beam.

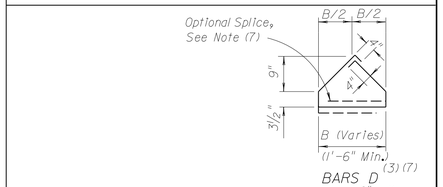
GENERAL NOTES

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

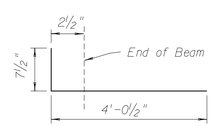
BILL OF REINFORCING STEEL FOR ONE BEAM ONLY

MARK	SIZE	NO. REQUIRED	LENGTH (1)
A	5	4	See Table
D (3)(7)	3	24	Varies(4'-11" Min.
K (3)	4	See Table	5'-2"
L (4)(5)	4	18	4'-8"
N (2)(6)	⅜" Ø Strand	2	See Table
Z	4	18	4'-9"

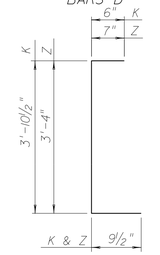
BENDING DIAGRAMS (1)



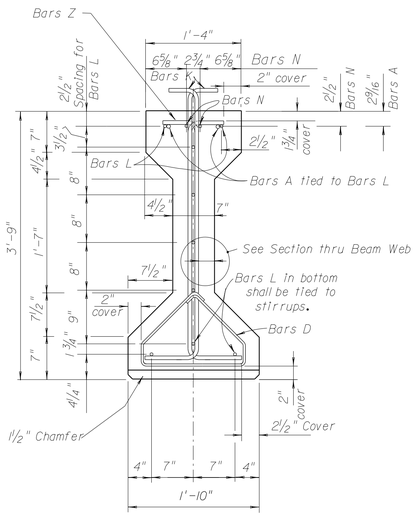
BARS D (3)(7)



BARS L (4)(5)



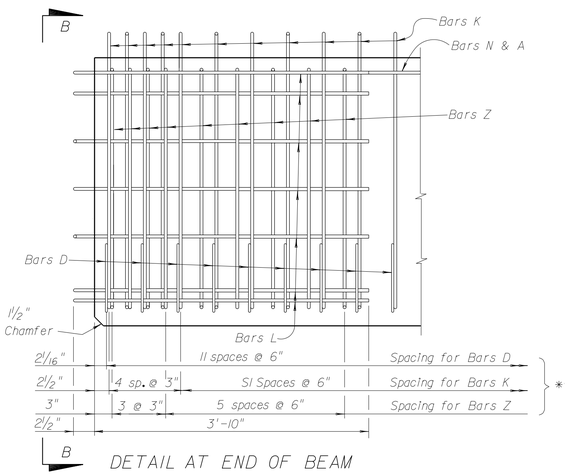
BARS K & Z (3)



VIEW B-B

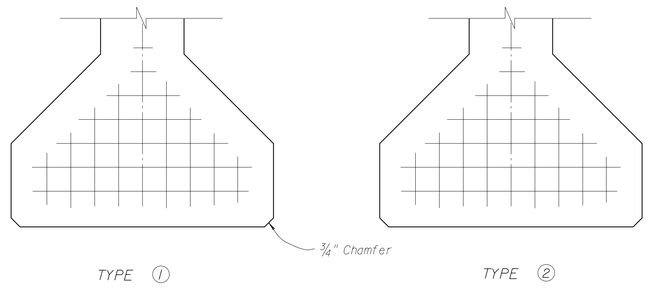
(With strands omitted, see Table for reference to strand pattern.)

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



DETAIL AT END OF BEAM

NOTE: Stirrups 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, measured from the centerline of bearing.

TABLE OF BEAM VARIABLES

BEAM ID.	CONCRETE PROPERTIES CLASS	STRENGTHS REL. (f'ci)	28-DAY (f'c)	STND PTRN TYPE	PLAN VIEW CASE	END ELEV COND.	BRG. PLATE CASE	END OF BEAM AND BEARING DIMENSIONS ANGLE Ø	DIM P	DIM J	DIM K	BEAM DIMENSIONS DIM L	DIM R	DIM V	NUMBER OF SPACES FOR STIRRUP BARS K S1	S2	S3	S4	S5	S6	DIAPHRAGM INSERT LOCATIONS DIM X1	DIM X2	DIM Y	NS/FS (8) #1	#2	REINFORCING STEEL TYPE OF (2) REINF	A LENGTH	K NO. REQ'D	N LENGTH

NOTES:

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

(2) Black means standard finish and Epoxy means epoxy coated reinforcing steel. Bars N (strand) do not need to be epoxy coated.

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

Bar Size	Pin Diameters
#3	1"
#4	2"

(4) 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".

(5) 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.

(6) Bars N shall be either ASTM A416, Grade 250 or 270, seven-wire strands ⅜" diameter or larger, stressed to 10,000 pounds each.

(7) 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 1'-2" 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 No. 3 Bars.

(8) (NS) means Near Side and (FS) means Far Side, both refering 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.

REVISIONS DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			9IR		

	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

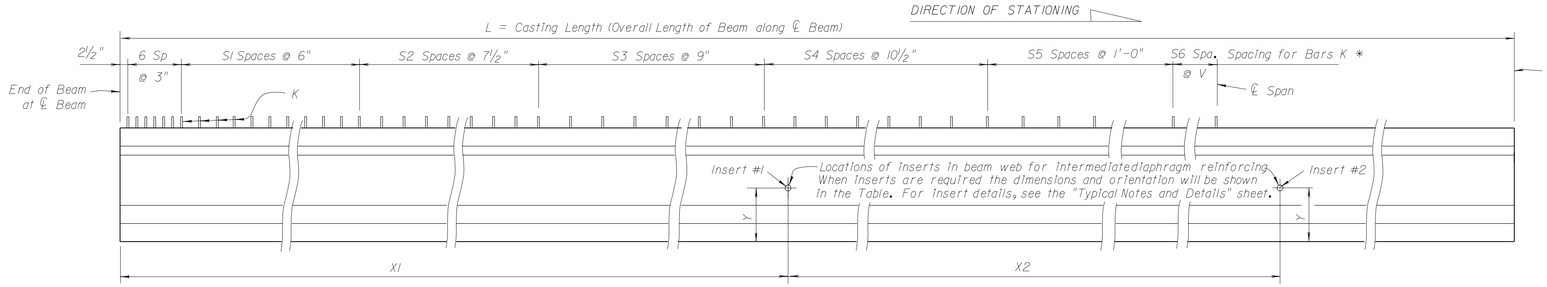
PROJECT NAME:

DRAWING NO. 1 of 1

INDEX NO. S-103

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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



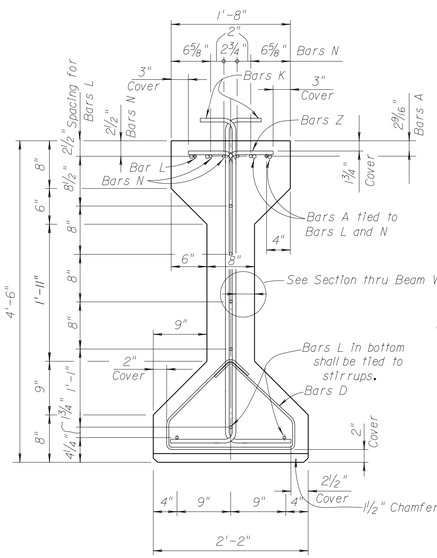
ELEVATION

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

* Note: Spacing of Bars D, K, and Z shown are Measured along centerline of beam.

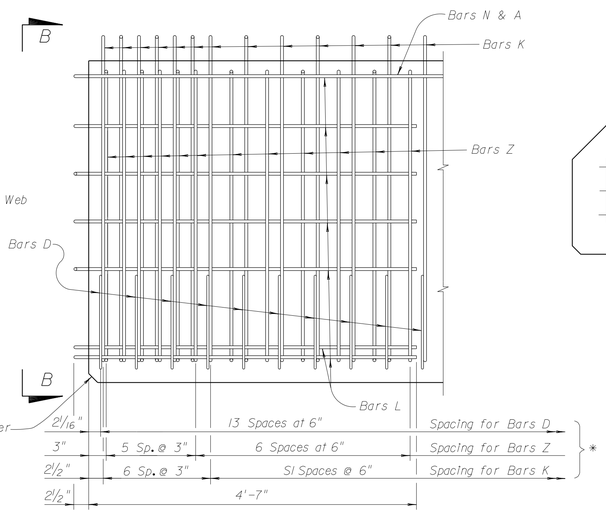
GENERAL NOTES

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



VIEW B-B

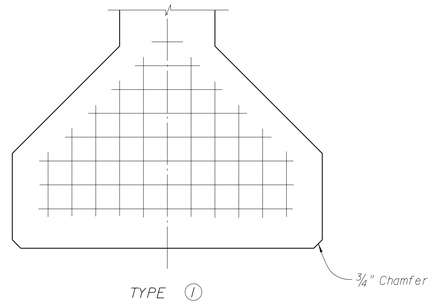
(With strands omitted, see Table for reference to strand pattern.)



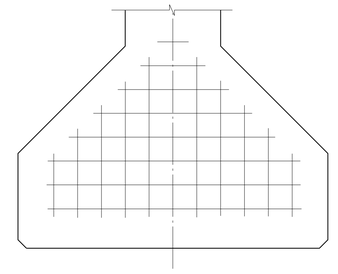
DETAIL AT END OF BEAM

NOTE: Stirrups 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).



TYPE (1)



TYPE (2)

STRAND PATTERNS AND DEBONDING SCHEDULE

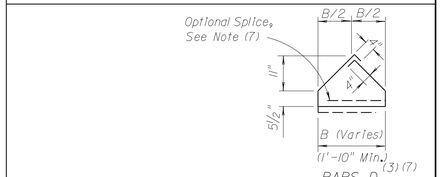
NOTE: ○ -Indicates fully bonded strands.

□ -Indicates referenced pair of strands to be debonded the length shown, measured from the centerline of bearing.

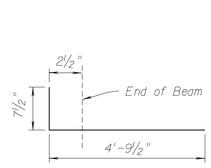
BILL OF REINFORCING STEEL FOR ONE BEAM ONLY

MARK	SIZE	NO. REQUIRED	LENGTH (1)
A	5	8	See Table
D (3)(7)	3	28	Varies(6'-1" Min.
K (3)	4	See Table	6'-1"
L (4)(5)	4	18	5'-5"
N (2)(6)	⅜" Ø Strand	4	See Table
Z	4	24	5'-9"

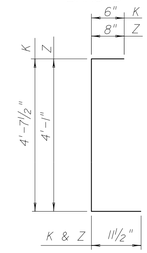
(3) BENDING DIAGRAMS (1)



BARS D (3)(7)



BARS L (4)(5)



BARS K & Z (3)

NOTES:

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

(2) Black means standard finish and Epoxy means epoxy coated reinforcing steel. Bars N (strand) do not need to be epoxy coated.

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

Bar Size	Pin Diameters
#3	1"
#4	2"

(4) 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".

(5) 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.

(6) Bars N shall be either ASTM A416, Grade 250 or 270, seven-wire strands ⅜" diameter or larger, stressed to 10,000 pounds each.

(7) 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 1'-2" 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 No. 3 Bars.

(8) (NS) means Near Side and (FS) means Far Side, both refering 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.

TABLE OF BEAM VARIABLES

BEAM ID.	CONCRETE PROPERTIES CLASS	STRENGTHS REL. (f'ci)	28-DAY (f'c)	STND PTRN TYPE	PLAN VIEW CASE	END ELEV COND.	BRG. PLATE CASE	END OF BEAM AND BEARING DIMENSIONS ANGLE Ø	DIM P	DIM J	DIM K	BEAM DIMENSIONS DIM L	DIM R	DIM V	NUMBER OF SPACES FOR STIRRUP BARS K SI	S2	S3	S4	S5	S6	DIAPHRAGM INSERT LOCATIONS DIM XI	DIM X2	DIM Y	NS/FS (8) #1	#2	TYPE OF (2) REINF.	REINFORCING STEEL A LENGTH	K NO. REQ'D	N LENGTH

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

REVISIONS						
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			9IR		

	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

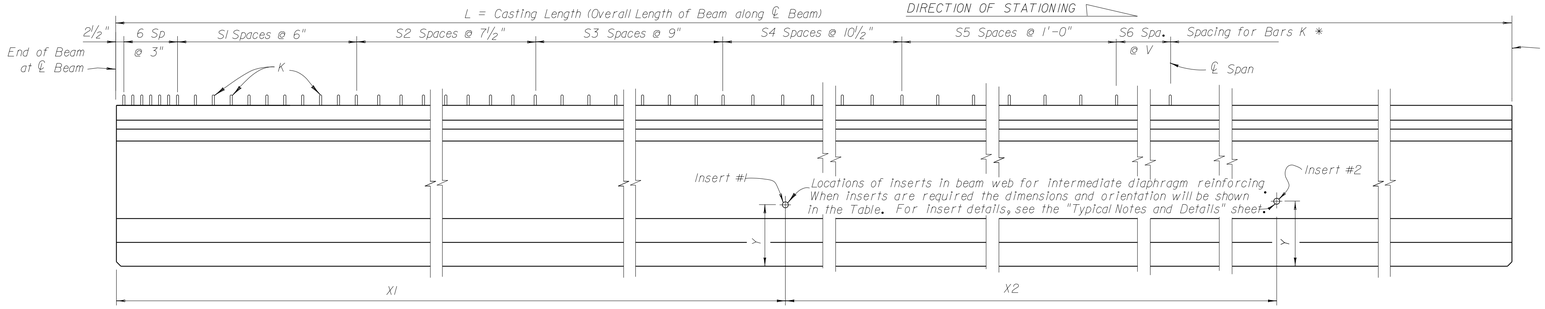
DRAWING NO.: 1 of 1

PROJECT NAME:

INDEX NO.: S-104

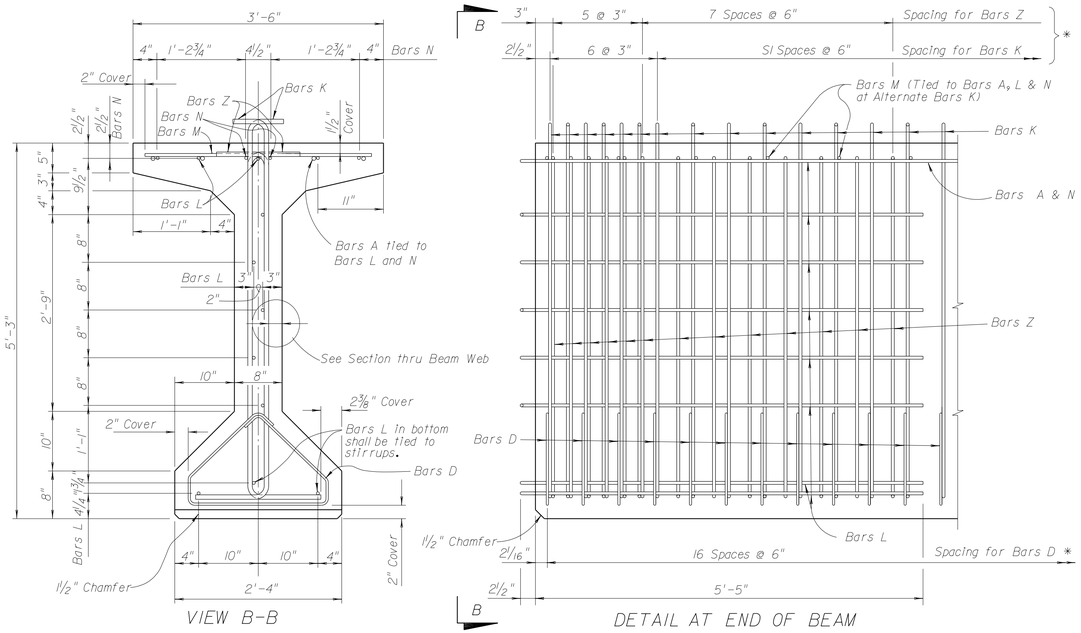
$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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.

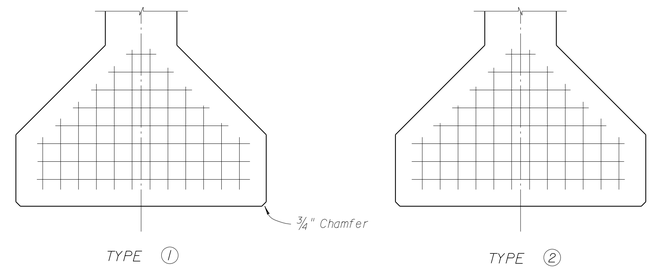
ELEVATION



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

NOTE: Stirrups shall be placed and tied to the top of the fully bonded prestressing strands in the bottom row.

* Note: Spacing of Bars D, K, and Z shown are Measured along centerline of beam.



STRAND PATTERNS AND DEBONDING SCHEDULE

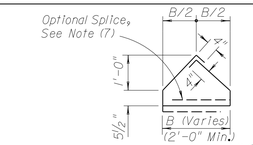
NOTE: ○ - Indicates fully bonded strands.

□ - Indicates referenced pair of strands to be debonded the length shown, measured from the centerline of bearing.

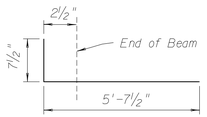
BILL OF REINFORCING STEEL FOR ONE BEAM ONLY

MARK	SIZE	NO. REQUIRED	LENGTH (1)
A	5	8	See Table
D (3)(7)	3	34	Varies 6'-8" Min.
K (3)	4	See Table	7'-0"
L (4)(5)	4	22	6'-3"
M	4	See Table	3'-2"
N (2)(6)	⅜" ℗ Strand	4	See Table
Z (3)	4	26	6'-8"

BENDING DIAGRAMS (1)



BARS D (3)(7)



BARS L (4)(5)

BARS K & Z (3)

NOTES:

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

(2) Black means standard finish and Epoxy means epoxy coated reinforcing steel. Bars N (strand) do not need to be epoxy coated.

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

Bar Size	Pin Diameters
#3	1"
#4	2"

(4) 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".

(5) 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.

(6) Bars N shall be either ASTM A416, Grade 250 or 270, seven-wire strands ⅜" diameter or larger, stressed to 10,000 pounds each.

(7) 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 1'-2" 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 No. 3 Bars.

(8) (NS) means Near Side and (FS) means Far Side, both refering 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.

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

TABLE OF BEAM VARIABLES

BEAM ID.	CONCRETE PROPERTIES CLASS	STRENGTHS REL. (f'ci)	28-DAY (f'c)	STND PTRN TYPE	PLAN VIEW CASE	END ELEV COND.	BRG. PLATE CASE	END OF BEAM AND BEARING DIMENSIONS ANGLE Ø	DIM P	DIM J	DIM K	BEAM DIMENSIONS DIM L	DIM R	DIM V	NUMBER OF SPACES FOR STIRRUP BARS K S1	S2	S3	S4	S5	S6	DIAPHRAGM INSERT LOCATIONS DIM X1	DIM X2	DIM Y	NS/FS (8) #1	#2

TYPE OF (2) REINF.	A LENGTH	N NO. REQ'D	K NO. REQ'D	M LENGTH

REINFORCING STEEL

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			91R		

	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 V BEAMS

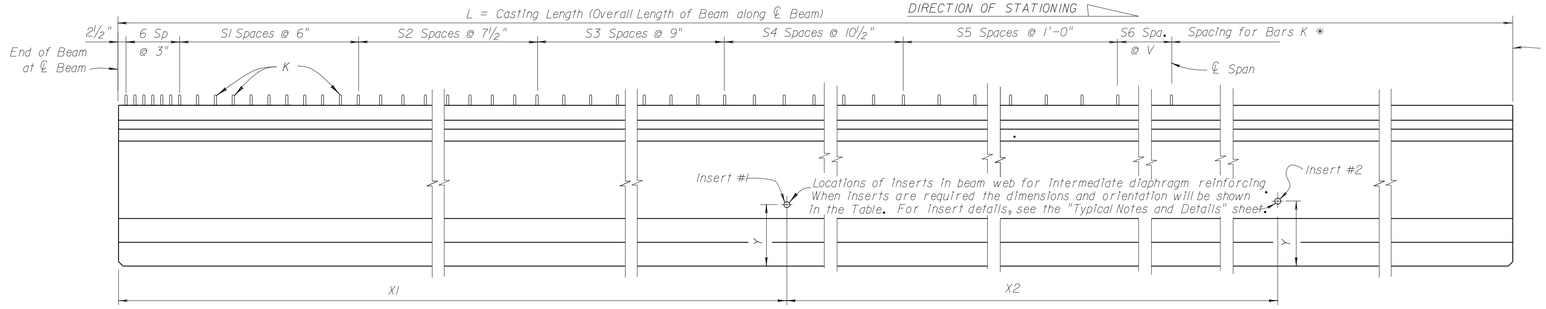
PROJECT NAME,

DRAWING NO. 1 of 1

INDEX NO. S-105

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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.

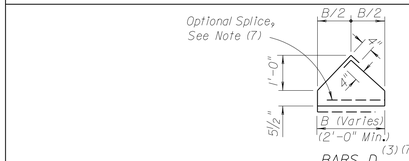
GENERAL NOTES

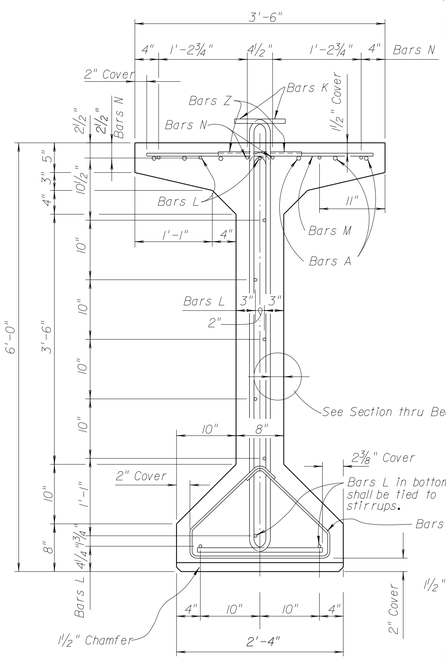
1. Work this sheet with Standard Index No. 101.

BILL OF REINFORCING STEEL FOR ONE BEAM ONLY

MARK	SIZE	NO. REQUIRED	LENGTH (1)
A	5	12	See Table
D (3)(7)	3	38	Varies 6'-8" Min.
K (3)	4	See Table	7'-9"
L (4)(5)	4	22	6'-8"
M	4	See Table	3'-2"
N (2)(6)	⅜" Ø Strand	4	See Table
Z (3)	4	28	7'-5"

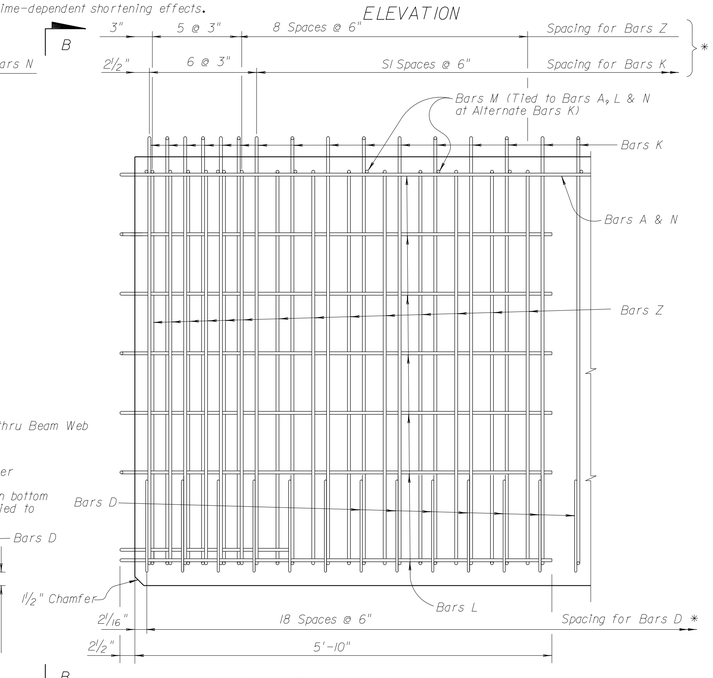
BENDING DIAGRAMS (1)





VIEW B-B

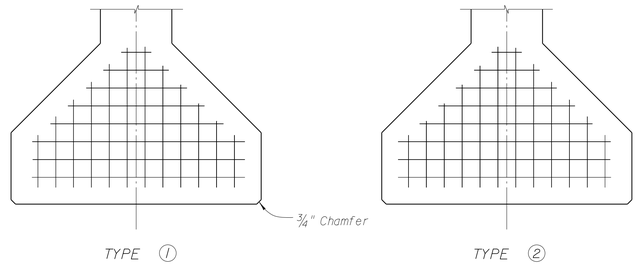
(With strands omitted, see Table for reference to strand pattern)



DETAIL AT END OF BEAM

NOTE: Stirrups shall be placed and tied to the top of the fully bonded prestressing strands in the bottom row.

* Note: Spacing of Bars D, K, and Z shown are Measured along centerline of beam.



STRAND PATTERNS AND DEBONDING SCHEDULE

NOTE: ○ - Indicates fully bonded strands.

□ - Indicates referenced pair of strands to be debonded the length shown, measured from the centerline of bearing.

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

TABLE OF BEAM VARIABLES

BEAM ID.	CONCRETE PROPERTIES: CLASS	STRENGTHS: REL. (f'ci)	STRENGTHS: 28-DAY (f'c)	STND PTRN TYPE	PLAN VIEW CASE	END ELEV COND.	BRG. PLATE CASE	END OF BEAM AND BEARING DIMENSIONS: ANGLE Ø	DIM P	DIM J	DIM K	BEAM DIMENSIONS: DIM L	DIM R	DIM V	NUMBER OF SPACES FOR STIRRUP BARS K: S1	S2	S3	S4	S5	S6	DIAPHRAGM INSERT LOCATIONS: DIM X1	DIM X2	DIM Y	NS/FS (8) #1	NS/FS (8) #2	REINFORCING STEEL: TYPE OF (2) REINF.	A LENGTH	K NO. REQ'D	M NO. REQ'D	N LENGTH

NOTE: 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".

NOTES:

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

(2) Black means standard finish and Epoxy means epoxy coated reinforcing steel. Bars N (strand) do not need to be epoxy coated.

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

Bar Size	Pin Diameters
#3	1"
#4	2"

(4) 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".

(5) 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.

(6) Bars N shall be either ASTM A416, Grade 250 or 270, seven-wire strands ⅜" diameter or larger, stressed to 10,000 pounds each.

(7) 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 1'-2" 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 No. 3 Bars.

(8) (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.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			91R		

	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

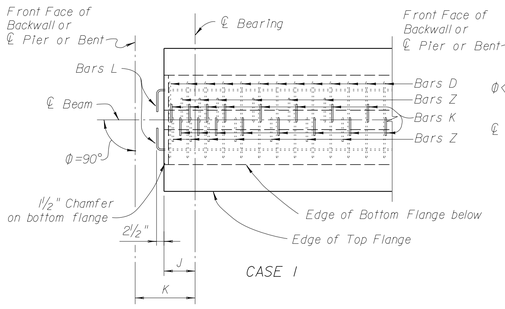
PROJECT NAME:

DRAWING NO.: 1 of 1

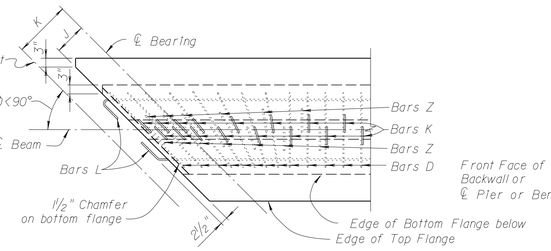
INDEX NO.: S-106

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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

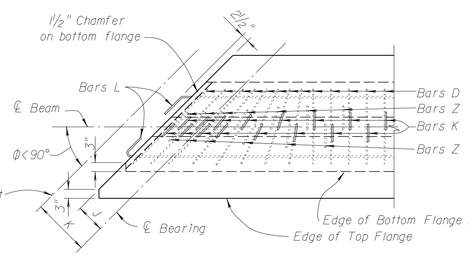


CASE 1

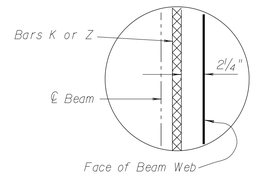


CASE 2
(See Note)

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

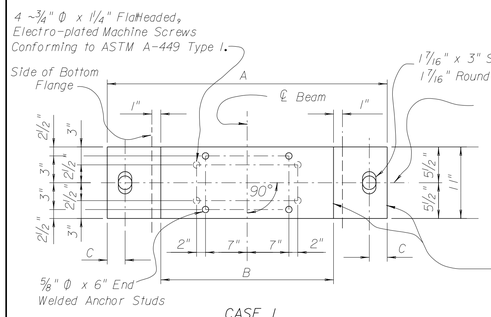


CASE 3
(See Note)

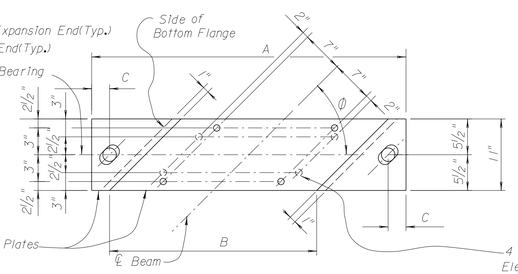


SECTION THRU BEAM WEB
(Showing Cover on Stirrups)

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 an axis parallel to 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 be adjusted to miss welded studs for bearing plates. See also "End Elevations of Beams", this sheet.

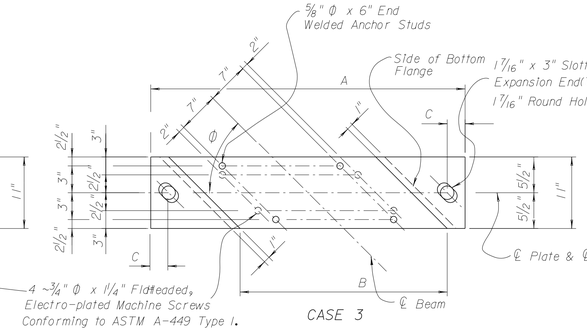


CASE 1

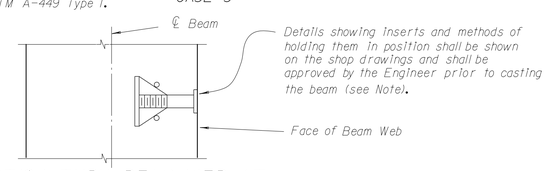


CASE 2

BEARING PLATE DETAILS
NOTE: Bearing Plates required on Beams only as scheduled in the Table of Beam Variables.



CASE 3



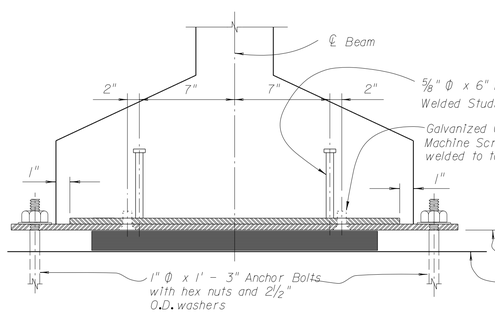
SECTION THRU BEAM WEB AT INSERT FOR DIAPHRAGM REINFORCING
(When Intermediate Diaphragms are Required)

NOTE: Insert shall be 1"Ø, zinc-electroplated, ferrule wing nut, UNC threads, 1/0 minimum gage wire, not more than 4" in depth and shall have a minimum ultimate tensile strength of 11,400 lbs. in 4,000 p.s.i. concrete.

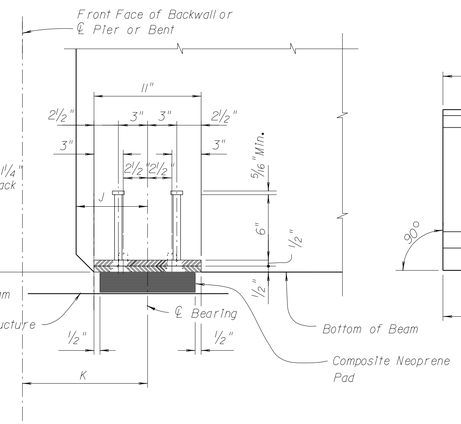
NOTE: If inserts are needed on both sides (faces) of beam webs an assembly as long as the thickness of the beam web, consisting of two (2) ferrule inserts attached by two (2) or more struts may be utilized. The connecting struts shall have a minimum ultimate tensile strength of 22,800 lbs.

TABLE OF BEARING PLATE DIMENSIONS

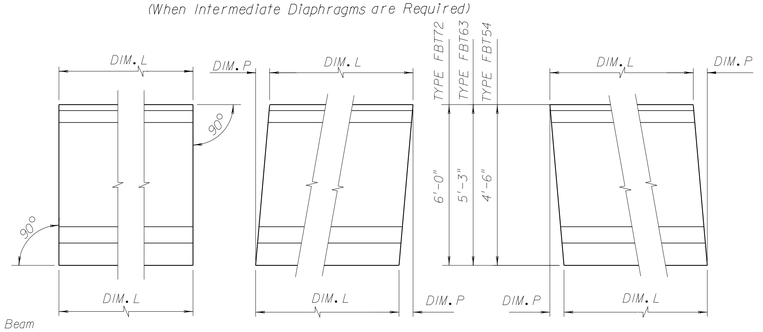
BEAM TYPE	DIMENSIONS (INCHES)		
	A	B	C
FBT54 FBT63 FBT72	$B+2C+\left(\frac{6}{\sin\emptyset}\right)$	$26/\sin\emptyset$	$2+0.78(\cos\emptyset)$



END ELEVATION-SECTION OF BEARING ASSEMBLY
(Perpendicular to ℄ Beam)



SIDE ELEVATION-SECTION OF BEARING ASSEMBLY
(Perpendicular To ℄ Bearing)



CONDITION 1 (P = 0'-0")

CONDITION 2

CONDITION 3

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

GENERAL 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 at least as large as that provided by the stranding shown on these sheets.
3. The ultimate strength of the structure with the proposed stranding is at least equal to the ultimate strength of the original design.
4. The proposed stranding complies in all respects with the Department's Structures Design Guidelines.

FINISH: 3" on each of the top outside edges of beams shall have a smooth finish. The remaining 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 roughenedsurface for bonding. All beams shall receive a Class 3 surface finish.

SUBMITTALS: The Specifications stipulate the conditions for which only a Construction Submittal is required. If each and every condition can not be met, then a formal Shop Drawing Submittal is required.

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 3 ft. from the ends of the beam.

STORAGE AND TRANSPORTATION: Beams shall be stored on adequate dunnage and supported during transit within 18" from ends of beam.

STRAND EXTENSION: All strands shall extend 2½" 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 Grade 60.

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: Bearing plates, anchor bolts, nuts and washers shall be hot dip galvanized in accordance with requirements of A.S.T.M. Specification A123 or A153. Bearing plates shall conform to A.S.T.M. Specification A709, Grade 36. Anchor bolts shall conform to A.S.T.M. A709, Grade 36 or to A307. The cost of bearing plates, anchor bolts, nuts, washers, premoulded expansion material at bearings and 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 "Ø"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 ½ inch (±) until the vertical position is attained.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			9IR		

	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
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

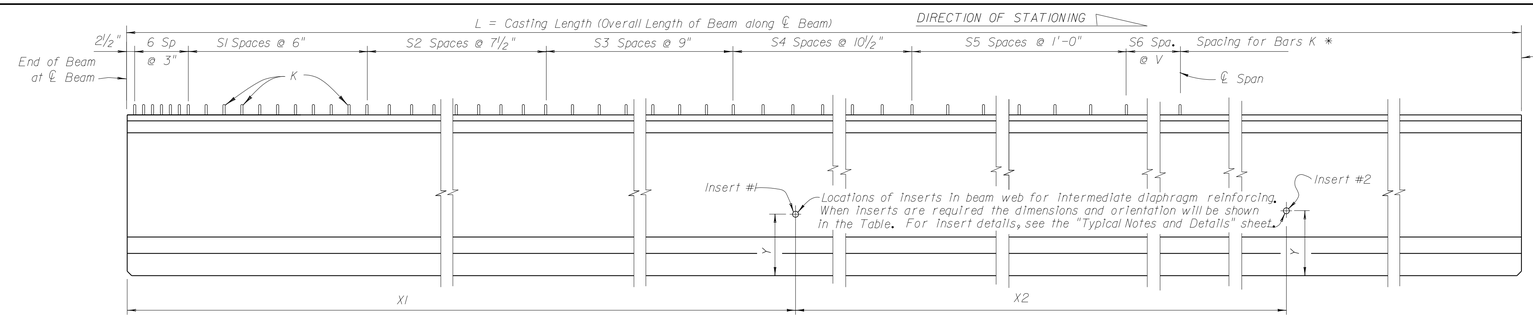
PROJECT NAME:

DRAWING NO. 1 of 1

INDEX NO. 110

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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.

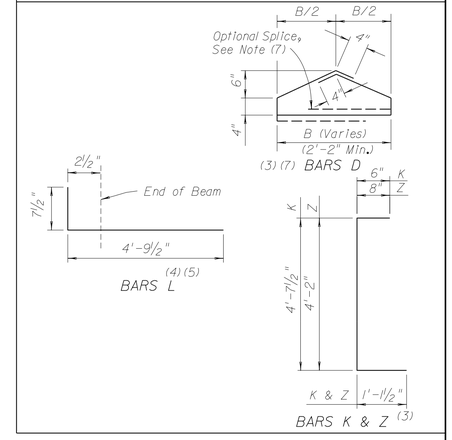
GENERAL NOTES

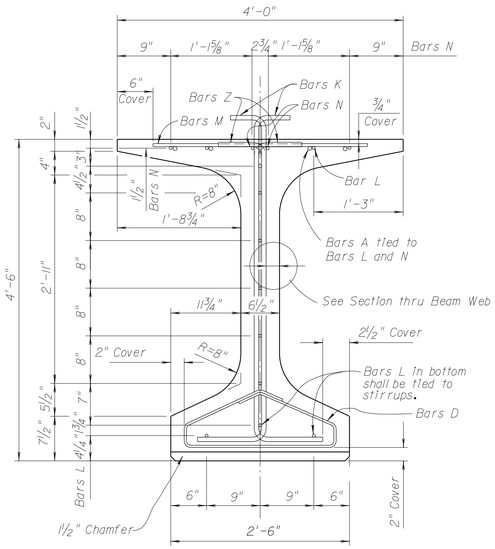
1. Work this sheet with Standard Index No. 110.

BILL OF REINFORCING STEEL FOR ONE BEAM ONLY

MARK	SIZE	NO. REQUIRED	LENGTH (1)
A	5	8	See Table
D (3)(7)	3	30	Varies 5'-11" Min
K (3)	4	See Table	6'-3"
L (4)(5)	4	22	5'-5"
M	4	See Table	3'-0"
N (2)(6)	⅜" Ø Strand	4	See Table
Z (3)	4	24	6'-0"

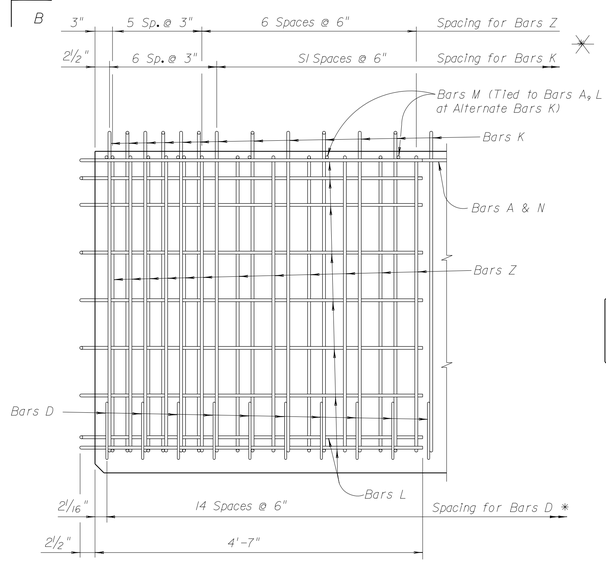
BENDING DIAGRAMS (1)





VIEW B-B

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

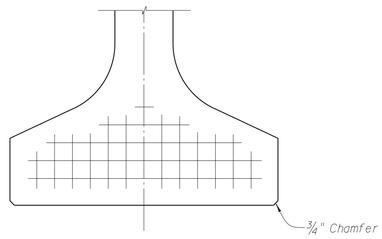


DETAIL AT END OF BEAM

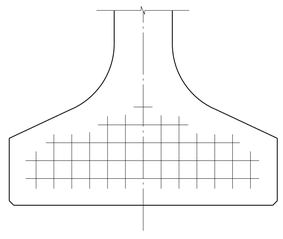
NOTE: Stirrups shall be placed and tied to the top of the fully bonded prestressing strands in the bottom row.

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

* Note: Spacing of Bars D, K, and Z shown are Measured along centerline of beam.



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, measured from the centerline of bearing.

TABLE OF BEAM VARIABLES

BEAM ID.	CONCRETE PROPERTIES STRENGTHS CLASS	REL. (f'ci)	28-DAY (f'c)	STND PTRN TYPE	PLAN VIEW CASE	END ELEV COND.	BRG. PLATE CASE	END OF BEAM AND BEARING DIMENSIONS ANGLE Ø	DIM P	DIM J	DIM K	BEAM DIMENSIONS DIM L	DIM R	DIM V	NUMBER OF SPACES FOR STIRRUP BARS K S1	S2	S3	S4	S5	S6	DIAPHRAGM INSERT LOCATIONS DIM X1	DIM X2	DIM Y	NS/FS (8) #1	#2	REINFORCING STEEL TYPE OF (2) REINF.	A LENGTH	K NO. REQ'D	M NO. REQ'D	N LENGTH

NOTES:

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

(2) Black means standard finish and Epoxy means epoxy coated reinforcing steel. Bars N (strand) do not need to be epoxy coated.

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

Bar Size	Pin Diameters
#3	1"
#4	2"

(4) 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".

(5) 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.

(6) Bars N shall be either ASTM A416, Grade 250 or 270, seven-wire strands ⅜" or ⅝" diameter or larger, stressed to 10,000 pounds each.

(7) 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 1'-2" 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 No. 3 Bars.

(8) (NS) means Near Side and (FS) means Far Side, both refering 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.

REVISIONS							NAMES	DATES
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DRAWN BY	.	.
			9IR			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

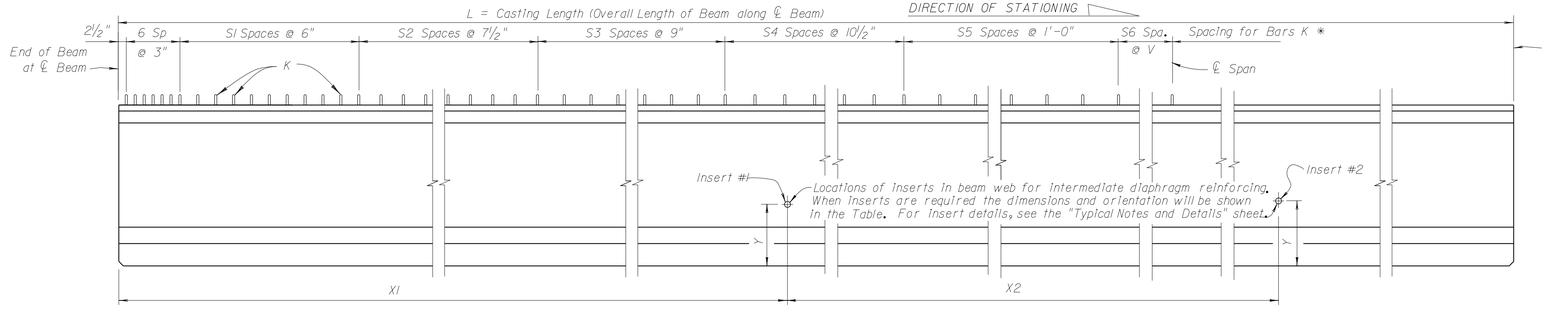
DRAWING NO.: 1 of 1

PROJECT NAME:

INDEX NO.: S-111

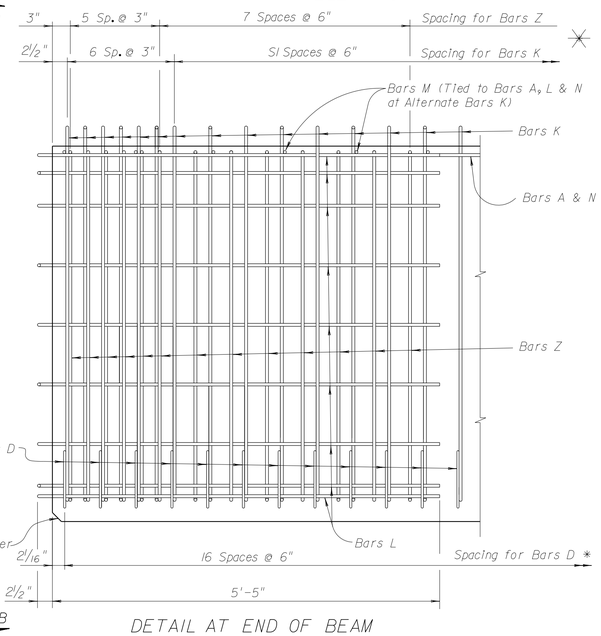
$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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



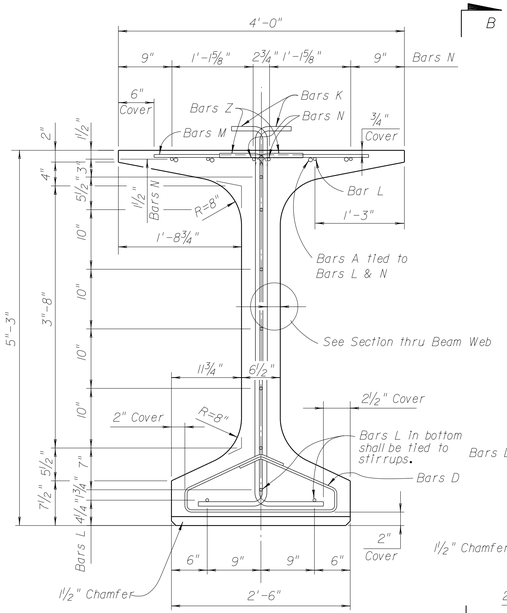
NOTE: Dimension R has been included in the lengths(L) of beams to compensate for elastic and time-dependent shortening effects.

ELEVATION



DETAIL AT END OF BEAM

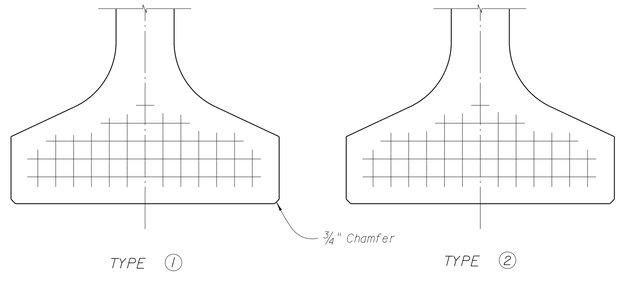
NOTE: Stirrups shall be placed and tied to the top of the fully bonded prestressing strands in the bottom row.



VIEW B-B

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

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



* Note: Spacing of Bars D, K, and Z shown are Measured along centerline of beam.

STRAND PATTERNS AND DEBONDING SCHEDULE

NOTE: ○ - Indicates fully bonded strands.

□ - Indicates referenced pair of strands to be debonded the length shown, measured from the centerline of bearing.

GENERAL NOTES

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

BILL OF REINFORCING STEEL FOR ONE BEAM ONLY

MARK	SIZE	NO. REQUIRED	LENGTH (1)
A	5	8	See Table
D (3)(7)	3	34	Varies 5'-11" Min.
K (3)	4	See Table	7'-0"
L (4)(5)	4	22	6'-3"
M	4	See Table	3'-0"
N (2)(6)	⅜" Ø Strand	4	See Table
Z (3)	4	26	6'-9"

BENDING DIAGRAMS (1)

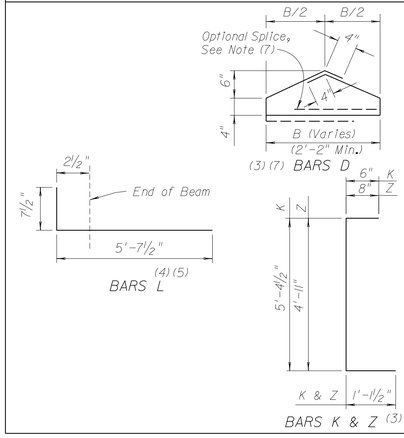


TABLE OF BEAM VARIABLES

BEAM ID.	CONCRETE PROPERTIES CLASS	STRENGTHS REL. (f'ci)	STRENGTHS 28-DAY (f'c)	STND PTRN TYPE	PLAN VIEW CASE	END ELEV COND.	BRG. PLATE CASE	END OF BEAM AND BEARING DIMENSIONS ANGLE Ø	DIM P	DIM J	DIM K	BEAM DIMENSIONS DIM L	DIM R	DIM V	NUMBER OF SPACES FOR STIRRUP BARS K SI	S2	S3	S4	S5	S6	DIAPHRAGM INSERT LOCATIONS DIM X1	DIM X2	DIM Y	NS/FS (8) #1	#2	REINFORCING STEEL TYPE OF (2) REINF.	A LENGTH	K NO. REQ'D	M NO. REQ'D	N LENGTH

NOTES:

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

(2) Black means standard finish and Epoxy means epoxy coated reinforcing steel. Bars N (strand) do not need to be epoxy coated.

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

Bar Size	Pin Diameters
#3	1"
#4	2"

(4) 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".

(5) 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.

(6) Bars N shall be either ASTM A416, Grade 250 or 270, seven-wire strands ⅜" diameter or larger, stressed to 10,000 pounds each.

(7) 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 1'-2" 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 No. 3 Bars.

(8) (NS) means Near Side and (FS) means Far Side, both refering 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.

REVISIONS DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			9IR		

	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

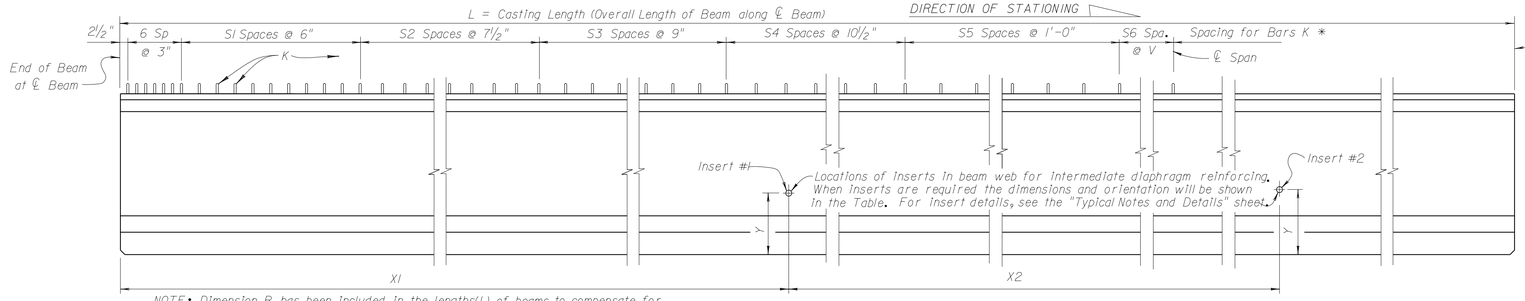
DRAWING NO.: 1 of 1

PROJECT NAME:

INDEX NO.: S-112

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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

GENERAL NOTES

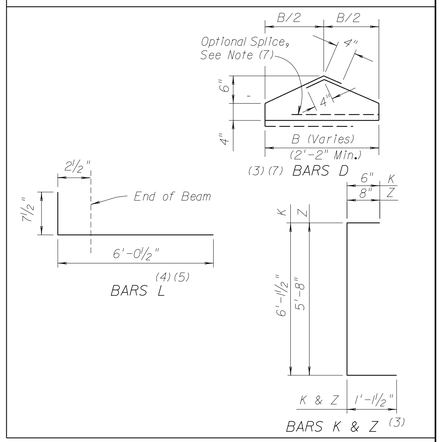
1. Work this sheet with Standard Index No. 110.

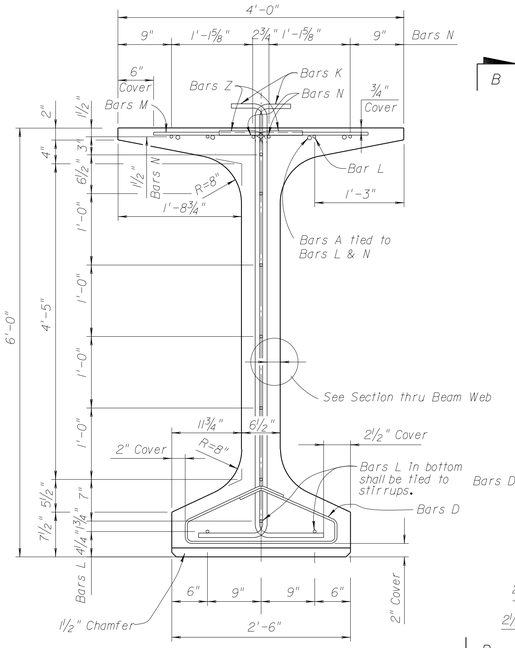
* Note: Spacing of Bars D, K, M and Z shown are Measured along centerline of beam.

BILL OF REINFORCING STEEL FOR ONE BEAM ONLY

MARK	SIZE	NO. REQUIRED	LENGTH (1)
A	5	8	See Table
D (3)(7)	3	38	Varies 5'-11" Min
K (3)	4	See Table	7'-9"
L (4)(5)	4	22	6'-8"
M	4	See Table	3'-0"
N (2)(6)	⅞" Ø Strand	4	See Table
Z (3)	4	28	7'-6"

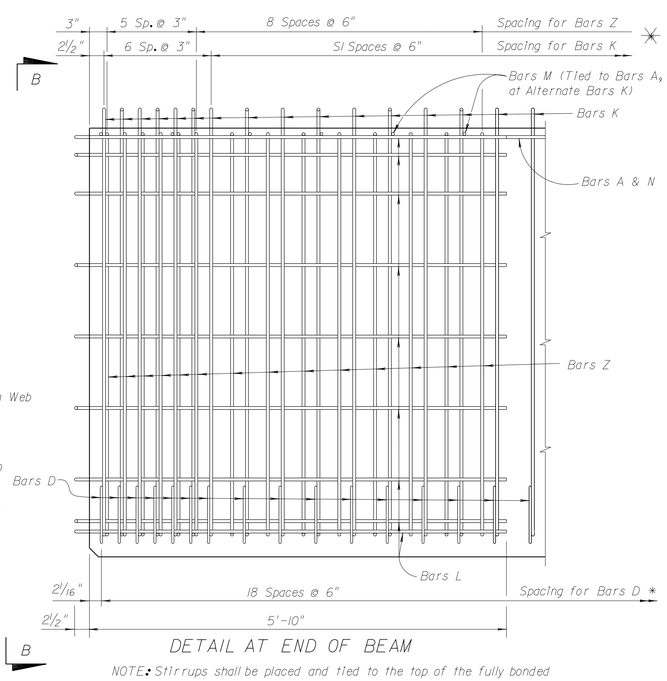
BENDING DIAGRAMS (1)





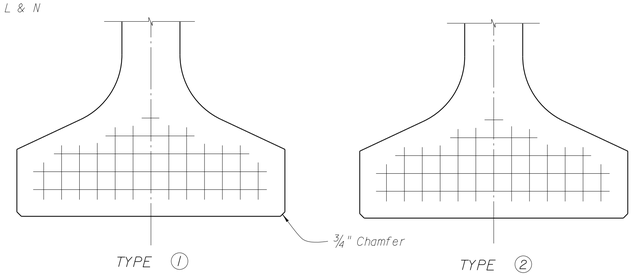
VIEW B-B

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



DETAIL AT END OF BEAM

NOTE: Stirrups 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, measured from the centerline of bearing.

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

TABLE OF BEAM VARIABLES

BEAM ID.	CONCRETE PROPERTIES CLASS	STRENGTHS REL. (f'ci)	STRENGTHS 28-DAY (f'c)	STND PTRN TYPE	PLAN VIEW CASE	END ELEV COND.	BRG. PLATE CASE	END OF BEAM AND BEARING DIMENSIONS ANGLE Ø	DIM P	DIM J	DIM K	BEAM DIMENSIONS DIM L	DIM R	DIM V	NUMBER OF SPACES FOR STIRRUP BARS K S1	S2	S3	S4	S5	S6	DIAPHRAGM INSERT LOCATIONS DIM X1	DIM X2	DIM Y	NS/FS (8) #1	#2	TYPE OF (2) REINF.	REINFORCING STEEL A LENGTH	K NO. REQ'D	M NO. REQ'D	N LENGTH

REVISIONS DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			9IR		

	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 72 BEAMS

PROJECT NAME: .

DRAWING NO. 1 of 1

INDEX NO. S-113

NOTES:

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

(2) Black means standard finish and Epoxy means epoxy coated reinforcing steel. Bars N (strand) do not need to be epoxy coated.

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

Bar Size	Pin Diameters
#3	1"
#4	2"

(4) 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".

(5) 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.

(6) Bars N shall be either ASTM A416, Grade 250 or 270, seven-wire strands ⅜" diameter or larger, stressed to 10,000 pounds each.

(7) 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 1'-2" 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 No. 3 Bars.

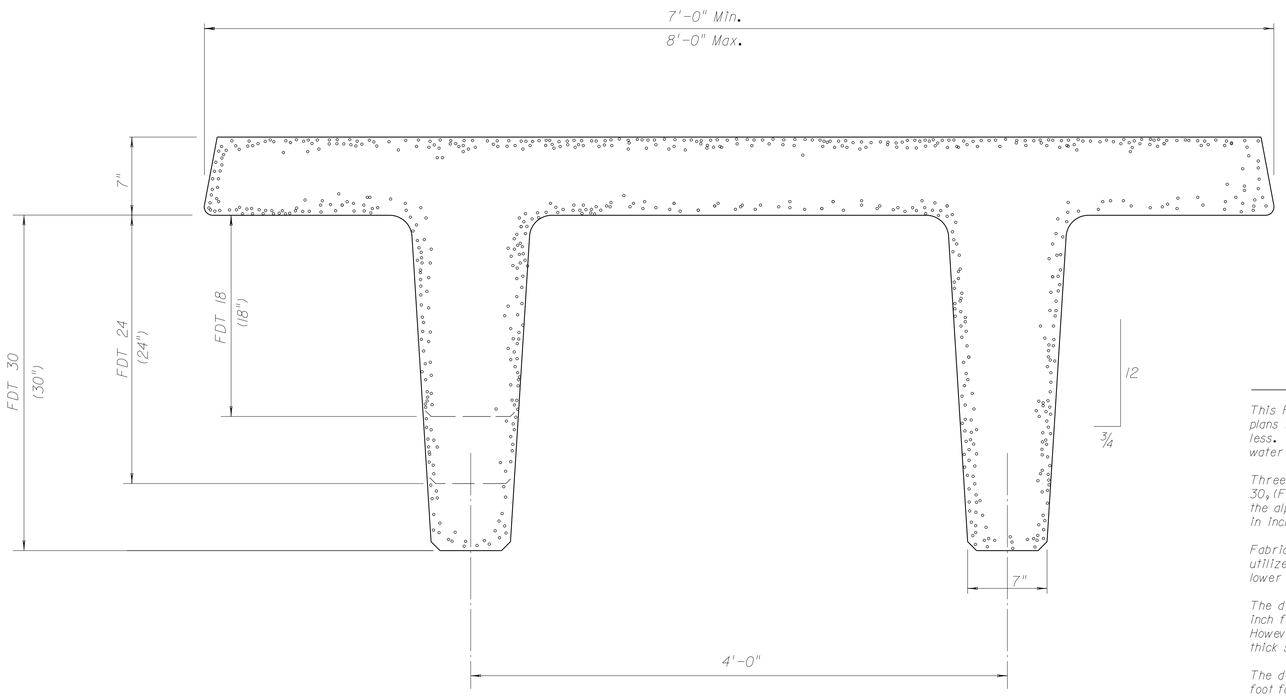
(8) (NS) means Near Side and (FS) means Far Side, both refering to which face of the beam web is to receive the Insert for the dimensioned location. (NS) and (FS) are referenced to the DIRECTION OF STATIONING shown.

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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

FLORIDA DOUBLE - TEE



LIST OF DRAWINGS

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 30, (FDT30), the FDT24, and the FDT18. The numerical portion of the alphanumerical designation corresponds to the depth of the stem in inches.

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 seven (7) inch slab thickness provides one half (0.5) inch for grinding to improve the riding quality of the bridge. However, the designs are based on a six and one half (6.5) inch thick structural flange.

The designs include an allowance for fifteen (15) pounds per square foot for future surfacing.

The width of the flange may vary between seven (7) and eight (8) feet and the normal seven (7) inch thickness may be increased to accommodate a bridge crown (crowned beam).

Only ½" Φ low-relaxation strands and concrete with a 28-day compressive strength of 5,000 psi are used. Strand Patterns are tabulated for Span lengths (℄ to ℄ bearing) ranging between thirty (30) and sixty-one (61) feet.

The Designs provided are applicable for all Enviromental Classifications. Some Details, such as Concrete Class, Protective Treatment of Strands at the end of the Stem, and the requirement of Epoxy Coated Reinforcement depend on the Enviroment. Therefore, the Designer shall include in the General Notes for the Bridge the Enviromental 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 General 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 the Instructional Drawings and show the 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+00.00
End Bridge Sta. 00+60.00
Cross Slope = 0.02
Skew Angle = 0 degrees (Φ = 90°)
Bridge Width = 40'-0" clear roadway
Sidewalks = none

From this information, the design span length is : (60'-2(6.5+1.5)/12) = 58.67 ft (℄ - ℄ bearings). Instructional Drawing I-122 shows that a FDT30 with twenty-eight (28) strands is required. The strand patterns need to be drawn on Semi-standard Drawing S-131. 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 holds 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, 128 & S-131

The Table of Variables should be filled as follows:
Since Bridge Width (o-o) = 40 + 2(8.5/12) = 43'-1"
The Number of beams required = 43.0833/8 = 6, and
W = (43.0833/6) = 7.18'

Note: Neglect the ¼ inch width at the bottom of longitudinal joints. Clear roadway width and overall superstructure width should be denoted as 40'-0"± and 43'-1"±, respectively.

A = (7.18 - 4)1/2 = 1.59'
L = (60'-0") - 3" = 59'-9"
[L - 2(1.75)] ÷ 4.5 = 13; N1 = 14
S1 = [L - 2(1.75)] ÷ 13 = 4.3269'
(L - 28") ÷ 8 = 87; N2 = 88
S2 = (L - 28") ÷ 87 = 7.92" .

TABLE OF VARIABLES

SPAN NO.	BEAM TYPE	NO. OF BEAMS	Φ	DIMENSIONS A	DI	L	W	X	Y	POST-TENSIONING DUCT DATA N1	S1	CONCRETE DATA (PSI) f'c	f'ci	* REINF. STEEL DATA N2	S2	STRAND PATTERN CASE	TYPE ** END	TYPE ** CENTER
1	2	4	90°	1'-7 1/16"	1'-0"	59'-9"	7'-2 1/8"	——	——	14	4'-4"	5000	4100	——	——	2	1	2
1	4	2	90°	1'-7 1/16"	1'-0"	59'-9"	7'-2 1/8"	——	——	14	4'-4"	5000	4100	88	8"±	2	1	2

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90		

	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	

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: FLORIDA DOUBLE-TEE GENERAL INSTRUCTIONS

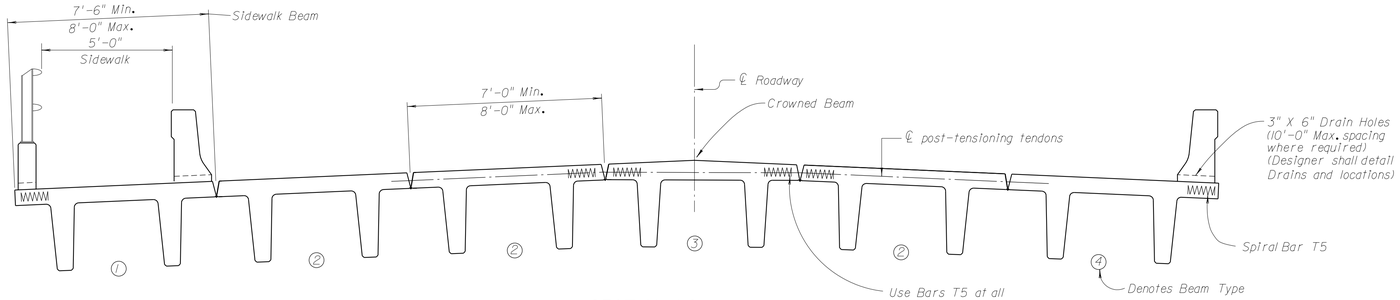
PROJECT NAME: . . .

DRAWING NO. 1 of 1

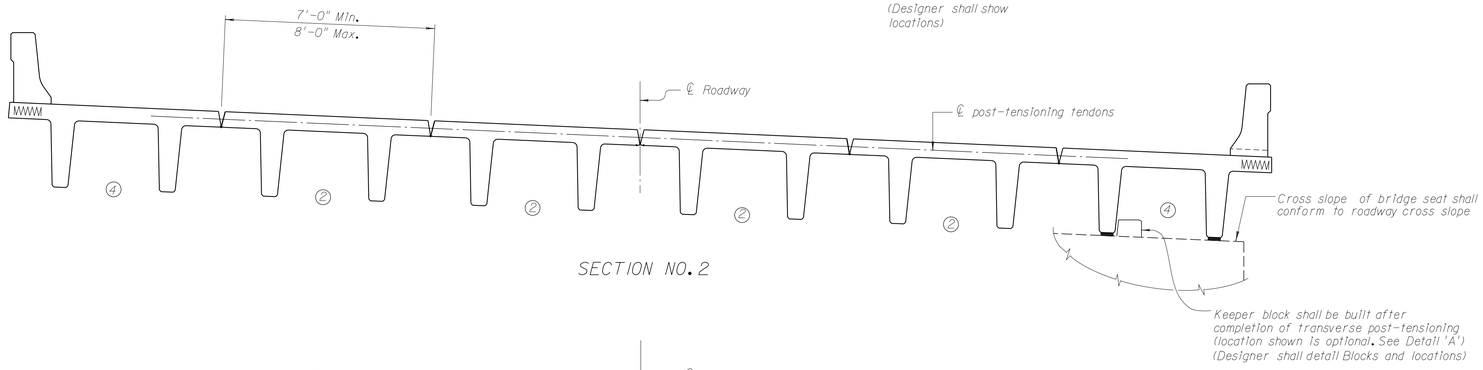
INDEX NO. I-120

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

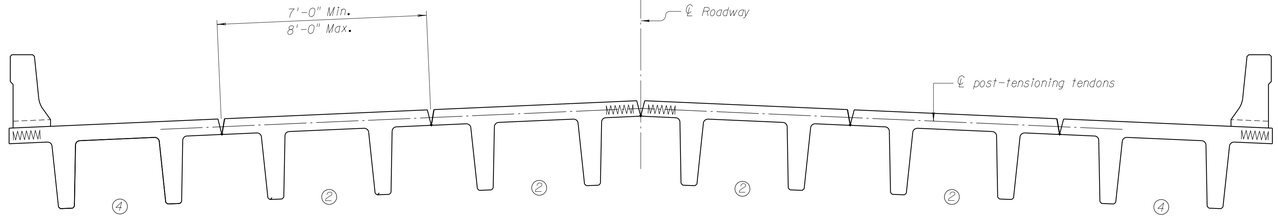
FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.	.	.	.



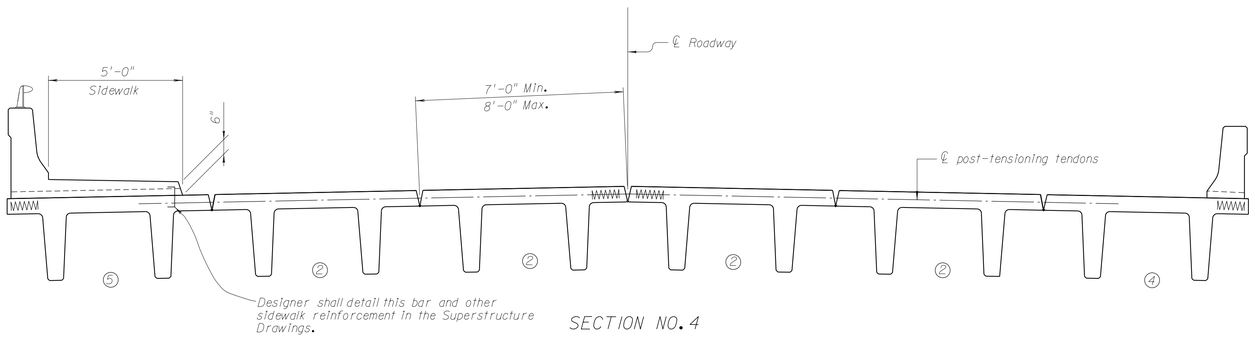
SECTION NO. 1



SECTION NO. 2



SECTION NO. 3



SECTION NO. 4

BRIDGE SECTIONS

NOTES

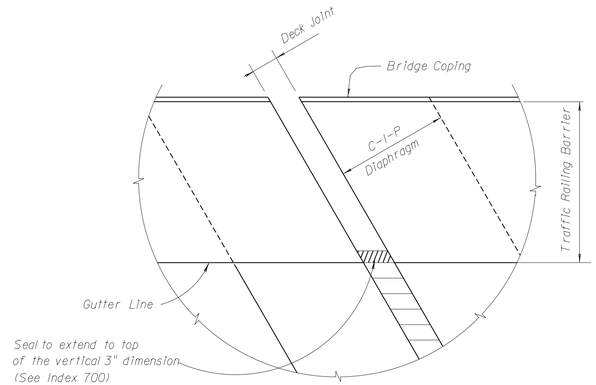
The bridge sections depicted on this sheet show several possible applications of double tee beams.

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.

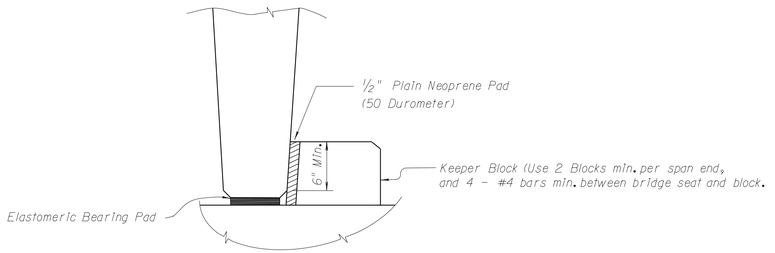
SECTION NO. 3: represents a symmetrical crowned bridge section. The section shown uses an even number of beams. If the number of beams is odd, a crowned beam is required similar to that shown in Section No. 1.

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



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'

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90		

	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:
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.
.	.	.

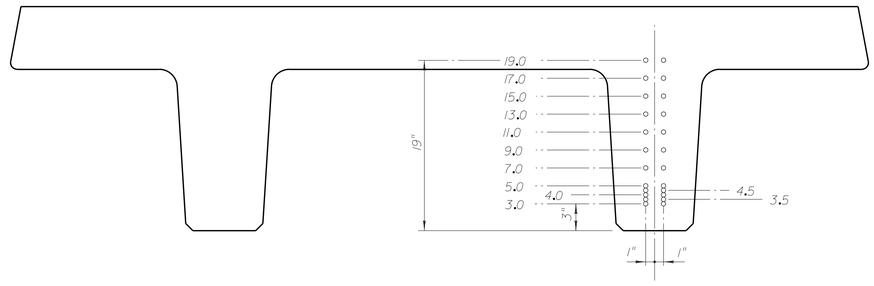
SHEET TITLE:
FLORIDA DOUBLE-TEE BRIDGE SECTIONS

PROJECT NAME: . . .

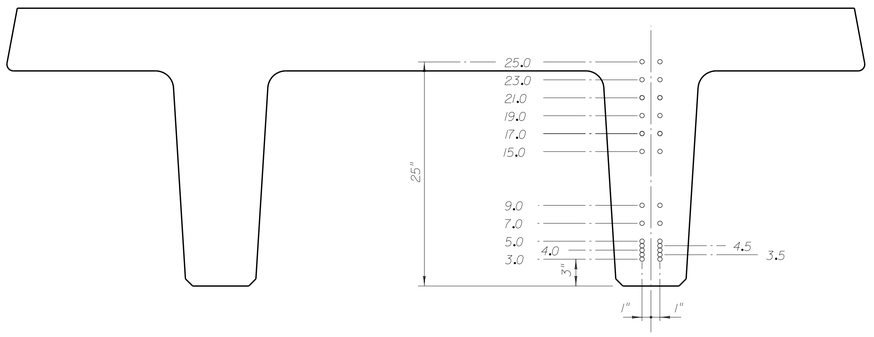
DRAWING NO.: 1 of 1

INDEX NO.: 1-121

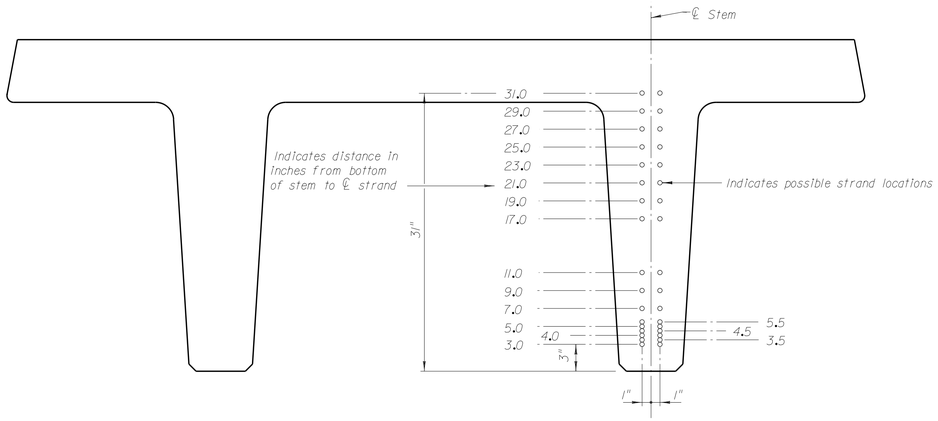
FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.	.	.	.



FDT 18



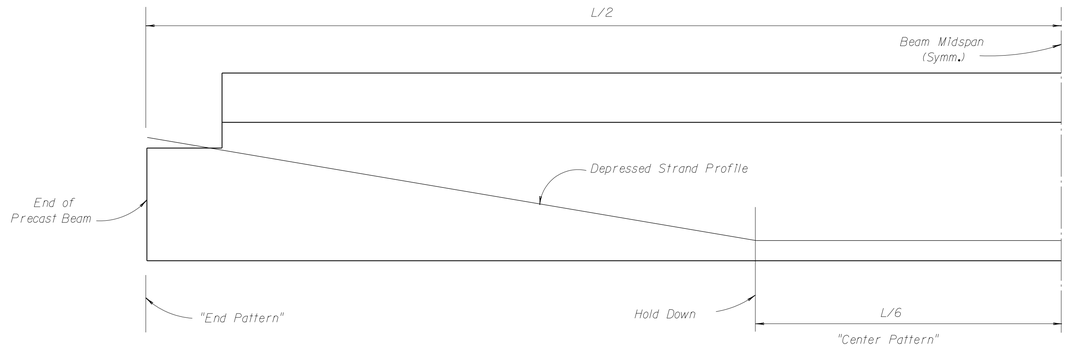
FDT 24



FDT 30

PERMITTED STRAND LOCATIONS

BEAM	℄ TO ℄ BEARINGS	NO. OF ½" Ø LO-LAX STRANDS	CONCRETE STRENGTH (psi) f'c	f'ci	STRAND LOCATION 3.0	3.5	4.0	4.5	5.0	5.5	7.0	9.0	11.0	13.0	15.0	17.0	19.0	21.0	23.0	25.0	27.0	29.0	31.0	PATTERN LOCATION
FDT 18																								
	30' -34'	20	5000	4000	4				4		4	4					4							END
					4				4		4	4					4							CENTER
	34'+-37'	20	5000	4000	4									4	4	4	4							END
					4	4	4	4									4							CENTER
	37'+-39'	24	5000	4100	4								4	4	4	4	4							END
					4	4	4	4						4			4							CENTER
	39'+-40'	24	5000	4200	4								4	4	4	4	4							END
					4	4	4	4				4					4							CENTER
FDT 24																								
	30' -35'	16	5000	4000	4				4		4									4				END
					4				4		4									4				CENTER
	35'+-41'	20	5000	4000	4				4		4	4								4				END
					4				4		4	4								4				CENTER
	41'+-43'	24	5000	4000	4				4		4	4				4				4				END
					4				4		4	4				4				4				CENTER
	43'+-48'	24	5000	4000	4											4	4	4	4	4				END
					4	4	4	4	4											4				CENTER
	48'+-50'	28	5000	4100	4										4	4	4	4	4	4				END
					4	4	4	4	4							4				4				CENTER
FDT 30	30' -40'	16	5000	4000	4				4		4												4	END
					4				4		4												4	CENTER
	40'+-46'	20	5000	4000	4				4		4	4											4	END
					4				4		4	4											4	CENTER
	46'+-51'	24	5000	4000	4				4		4	4	4										4	END
					4				4		4	4	4										4	CENTER
	51'+-54'	24	5000	4000	4														4	4	4	4	4	END
					4	4	4	4	4														4	CENTER
	54'+-59'	28	5000	4100	4													4	4	4	4	4	4	END
					4	4	4	4	4	4													4	CENTER
	59'+-61'	32	5000	4200	4													4	4	4	4	4	4	END
					4	4	4	4	4			4				4							4	CENTER



ELEVATION

PATTERN LOCATION

REVISIONS						
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90		

	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:
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.
.	.	.

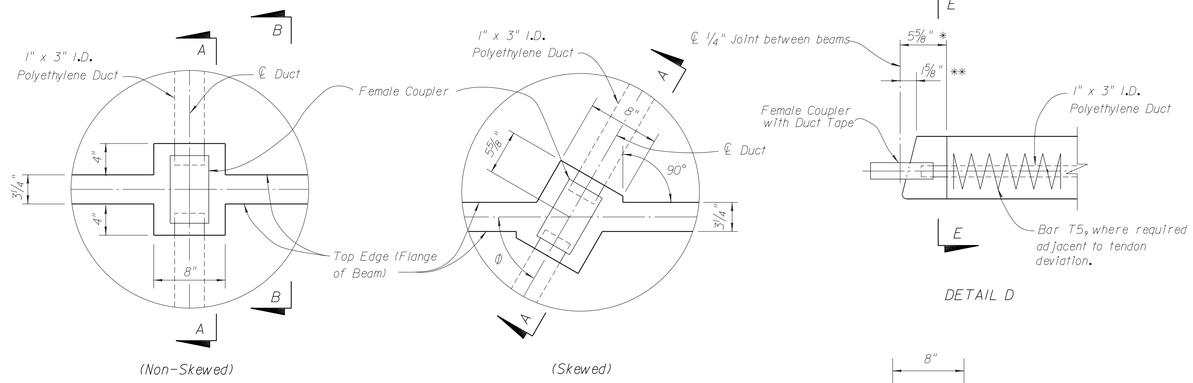
SHEET TITLE: FLORIDA DOUBLE-TEE TABULATED STRAND PATTERNS

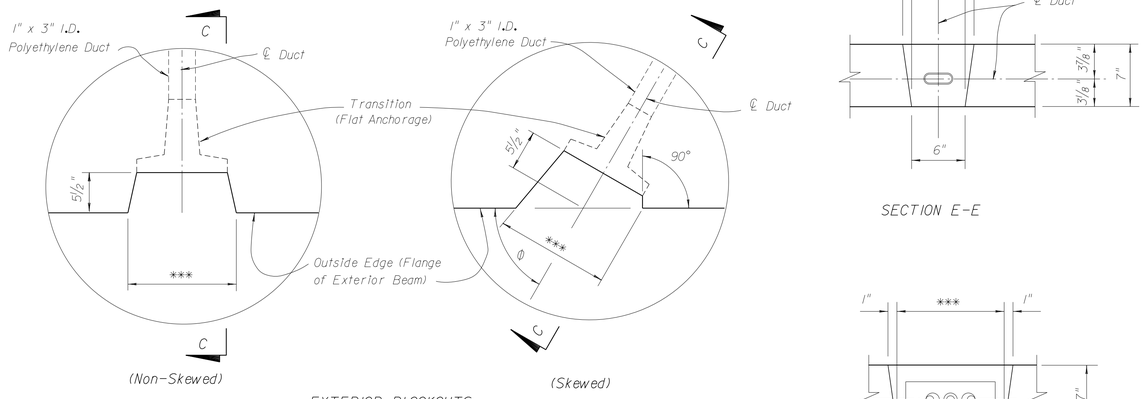
PROJECT NAME: . . .

DRAWING NO. 1 of 1

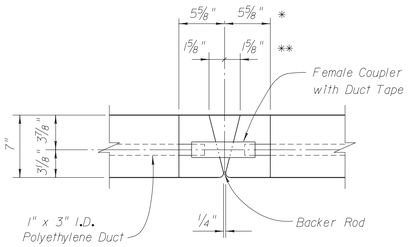
INDEX NO. 1-122

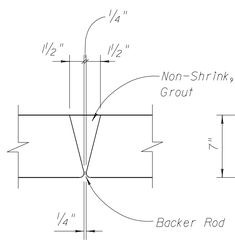
FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.	.	.	.

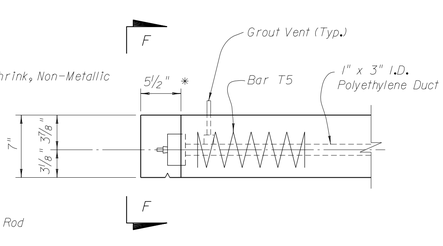




PARTIAL PLAN SHOWING BLOCKOUT DETAILS FOR POST-TENSIONING







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

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, 1989. FDOT Structures Design Guidelines.

Design Loads:
Live Load: HS20-44 Modified for Military loading as required.
Self weight: Based on 150 pcf
Superimposed Dead Load: 140 lbs/L.F.
Future wearing surface: 120 lbs/L.F.
Live Load Distribution of Axle Loads:

Span	Factor
30' - 41'	0.70
41'(+) - 51'	0.69
51'(+) - 61'	0.68

Concrete Class: See General Notes
Epoxy Coated Reinforcement: See General Notes
Environment: See General Notes

Material Properties:
Concrete Strength: Precast Double Tees f'c = 5000 psi
Cast-in-place Diaphragm f'c = 3400 psi.
Reinforcing Steel: ASTM A-615, Grade 60.
Welded Wire Fabric: ASTM A-185 and ASTM A-497.
Prestressing Strands: ½" Ø ASTM A-416, Grade 270, 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 Diapragm 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 ⅛ inch thick to prevent Strand corrosion.

If the Environment is classified as Moderately Aggressive Environment or Extremely Aggressive Environment, use a 1 inch 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 ⅛ inch 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. Bars 5P (in the barrier) shall be tied to Bars 5V.

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. They must be picked up from points located between two (2) and three (3) feet from the ends.

Storage and Transportation: All beams must be stored on adequate dunnage. The beams must be supported no closer than 6 inches to the end nor further than 18 inches 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 A.S.T.M. A-123. 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 tendon shall consist of three (3), ½ inch diameter Low Relaxation Strands conforming to ASTM A-416, Grade 270.

The post-tensioning design assumptions are as follows:
anchor set = 0.375 in.
friction coefficient = 0.0 k/ft
wobble coefficient = 0.0002 k/ft.

The jacking force required before anchor set is 30.99 kips 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 foot. Such a cost shall include all materials required for the fabrication of the precast beams as well as erection of the beams. This unit price also includes the cost of 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:
450-1-118 Prestressed beam (Florida Double-Tee Beam) (FDT18)
450-1-124 Prestressed beam (Florida Double-Tee Beam) (FDT24)
450-1-130 Prestressed beam (Florida Double-Tee Beam) (FDT18)

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90		

	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	

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.
.	.	.

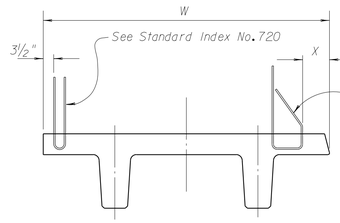
SHEET TITLE:
FLORIDA DOUBLE-TEE MISCELLANEOUS DETAILS AND NOTES

PROJECT NAME: . . .

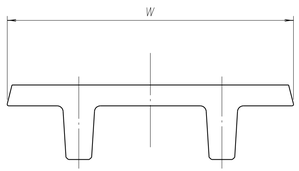
DRAWING NO.
1 of 1

INDEX NO.
123

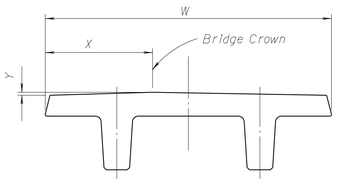
FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.	.	.	.



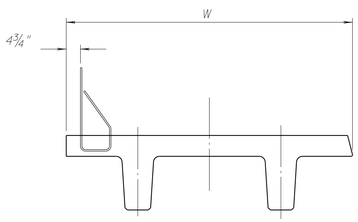
TYPE 1



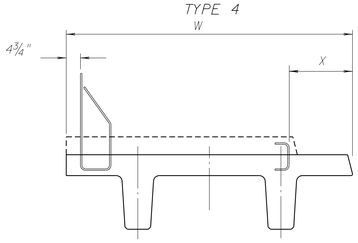
TYPE 2



TYPE 3



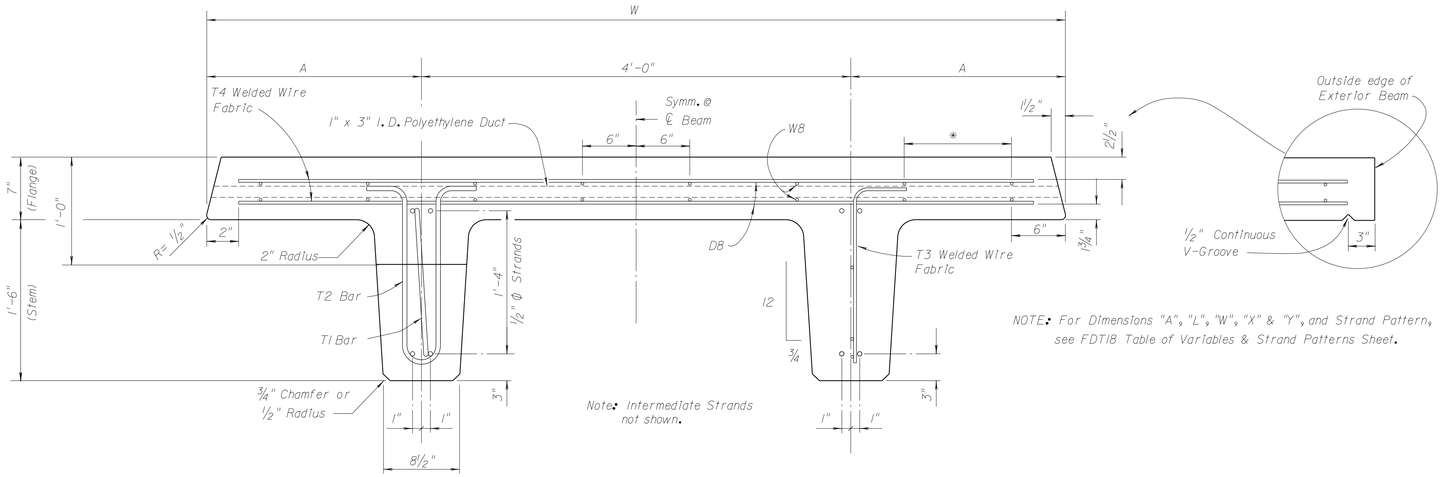
TYPE 4



TYPE 5

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

* Adjust outermost spacing to suit "W", i.e.: Spacing (ft.) = ½(W-6).



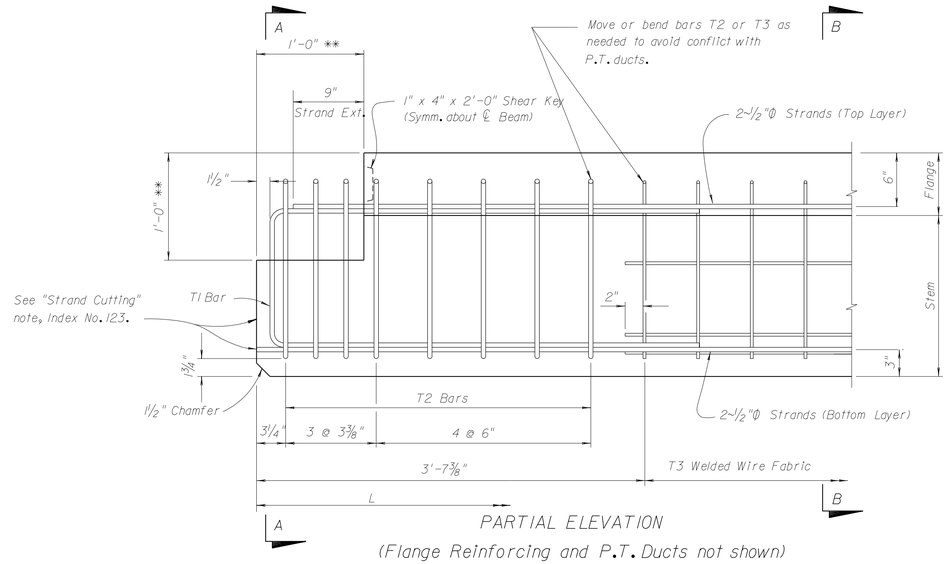
HALF SECTION A-A

HALF SECTION B-B

Note: Intermediate Strands not shown.

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

** Blockout concrete to accept C.I.P. Diaphragm. See Index 127 for orientation of the horizontal 1'-0" dimension.

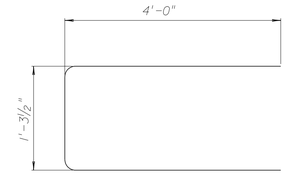


PARTIAL ELEVATION

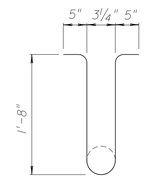
(Flange Reinforcing and P.T. Ducts not shown)

(Intermediate Strands not shown)

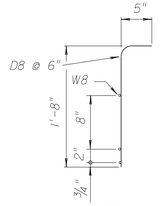
BENDING DIAGRAM



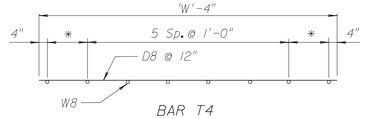
BAR T1
(#3 Bar)



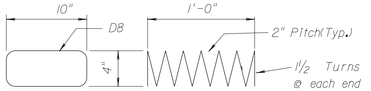
BAR T2
(#4 bar)



BAR T3
(WWF)



BAR T4
(WWF)



END VIEW SIDE VIEW

BAR T5

NOTES:

All bar bends shall be made with a 2" diameter pin unless otherwise noted.
Refer to General Notes for epoxy steel requirements.

The Welded Wire Fabric (T4) shall consist of eight (8) longitudinal W8 wires welded to transverse D8 wires spaced at twelve (12) inches. The W8 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 one (1) foot. Sufficient material to include splices shall be provided. Splices, if needed, shall be 14" Minimum.

The longitudinal W8 wires for the welded wire fabric (T3) do not require splicing.

W8 wires shall comform to ASTM A185.
D8 wires shall conform to ASTM A497.

Bars T5 are required at all P/T anchorage locations, at both sides of beam Type 3, at beam adjacent to Type 3 (side abutting), and at beam Type 2 along the side abutting a bridge crown.

Four (4) Bars 'T1' are required per Beam.
Thirty-two (32) Bars 'T2' are required per Beam.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90		

	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.
.	.	.

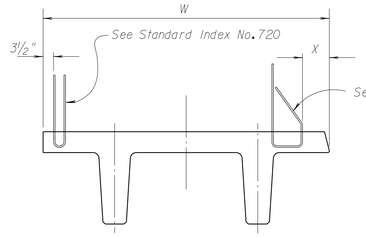
SHEET TITLE: FDT 18 TYPICAL SECTION

PROJECT NAME: . . .

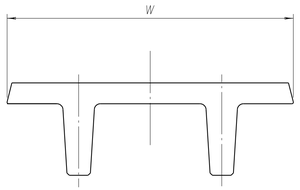
DRAWING NO. 1 of 1

INDEX NO. 124

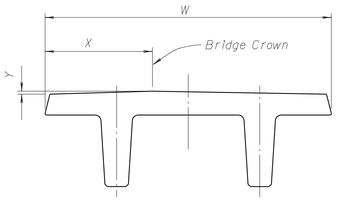
FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.	.	.	.



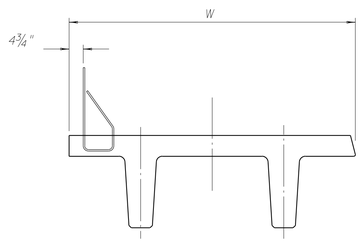
TYPE 1



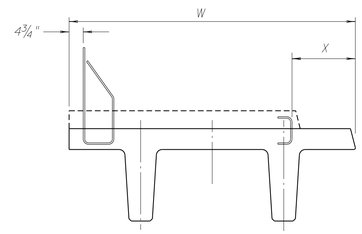
TYPE 2



TYPE 3

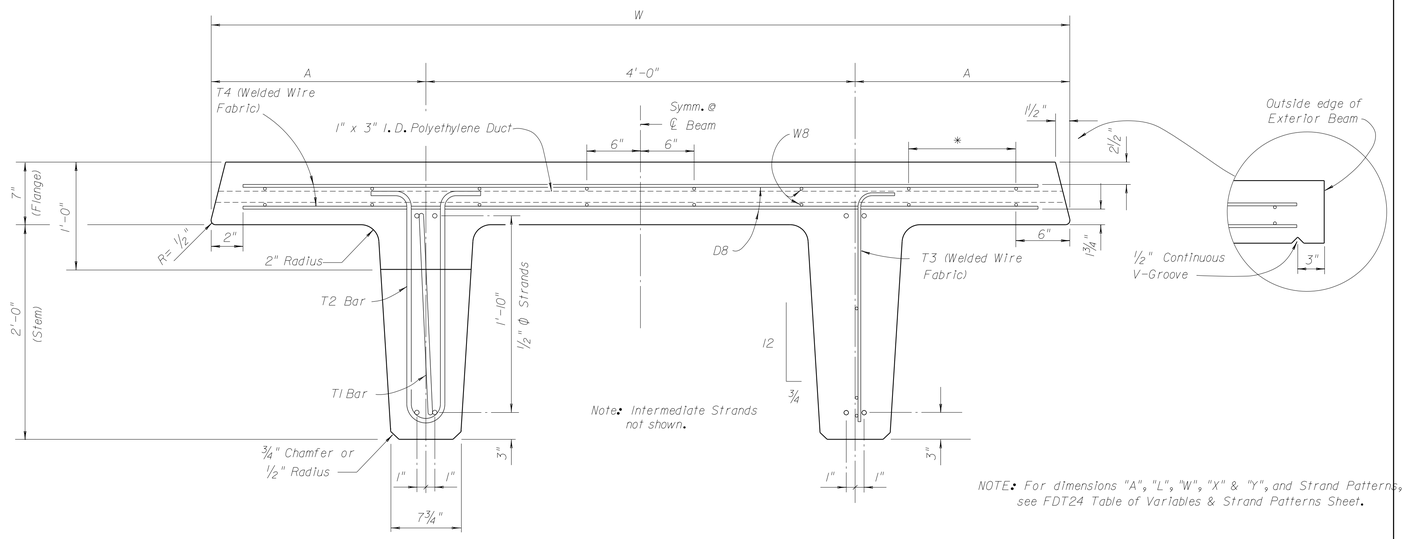


TYPE 4



TYPE 5

* Adjust outermost spacing to suit "W", i.e.: Spacing (ft.) = ½(W-6).



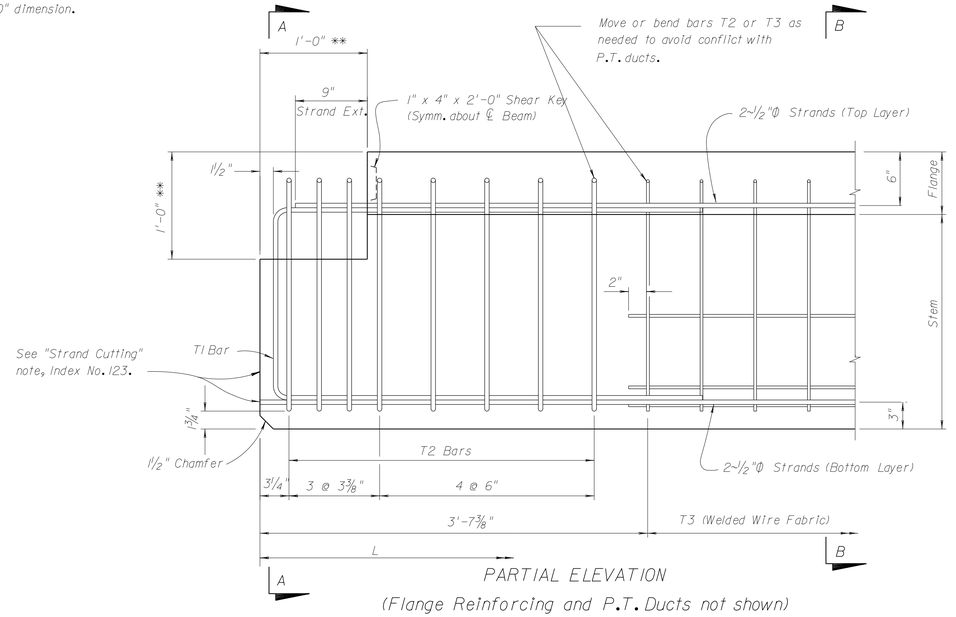
Note: Intermediate Strands not shown.

HALF SECTION A-A

HALF SECTION B-B

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

** Blockout concrete to accept C.I.P. Diaphragm. See Index 127 for orientation of the horizontal 1'-0" dimension.

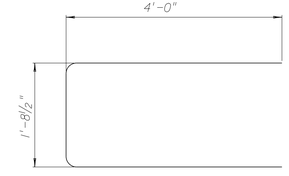


PARTIAL ELEVATION

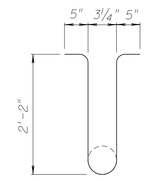
(Flange Reinforcing and P.T. Ducts not shown)

(Intermediate Strands not shown)

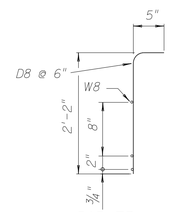
BENDING DIAGRAM



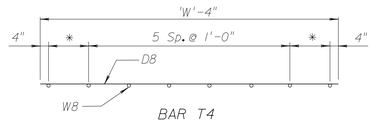
BAR T1
(#3 Bar)



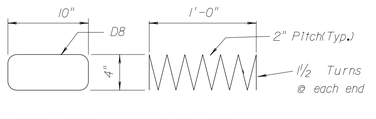
BAR T2
(#4 bar)



BAR T3
(WWF)



BAR T4
(WWF)



END VIEW SIDE VIEW

BAR T5

NOTES:

All bar bends shall be made with a 2" diameter pin unless otherwise noted.

Refer to General Notes for epoxy steel requirement.

The Welded Wire Fabric (T4) shall consist of eight (8) longitudinal W8 wires welded to transverse D8 wires spaced at twelve (12) inches. The W8 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 one (1) foot. Sufficient material to include splices shall be provided. Splices, if needed, shall be 14" Minimum.

The longitudinal W8 wires for the welded wire fabric (T3) do not require splicing.

W8 wires shall comform to ASTM A185.
D8 wires shall conform to ASTM A497.

Bars T5 are required at all P/T anchorage locations, at both sides of beam Type 3, at beam adjacent to Type 3 (side abutting), and at beam Type 2 along the side abutting a bridge crown.

Four (4) Bars 'T1' are required per Beam.
Thirty-two (32) Bars 'T2' are required per Beam.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90		

	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.
.	.	.

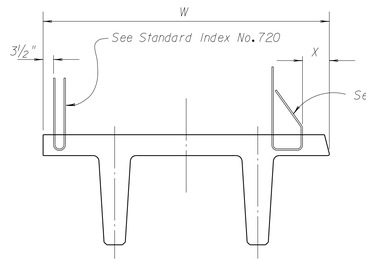
SHEET TITLE:
FDT 24
TYPICAL SECTION

PROJECT NAME:

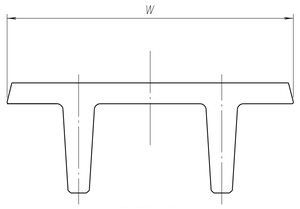
DRAWING NO.
1 of 1

INDEX NO.
125

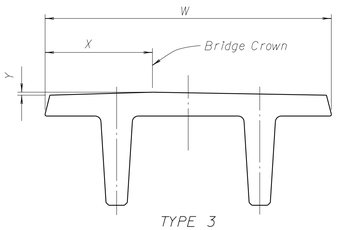
FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.	.	.	.



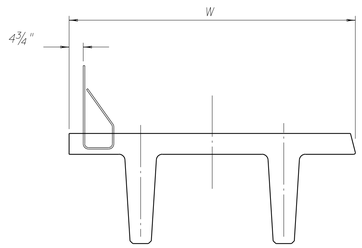
TYPE 1



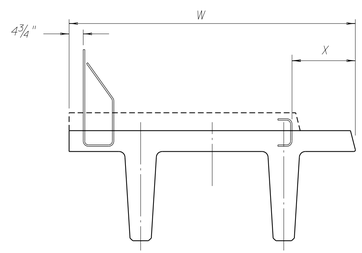
TYPE 2



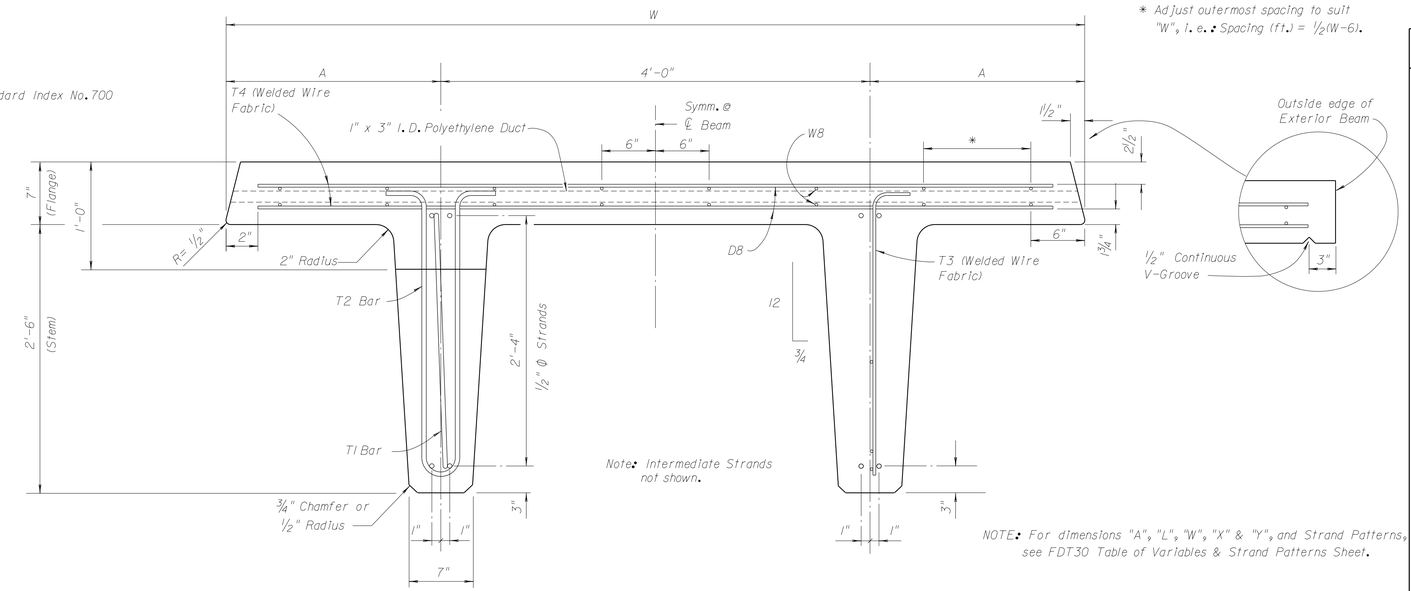
TYPE 3



TYPE 4



TYPE 5



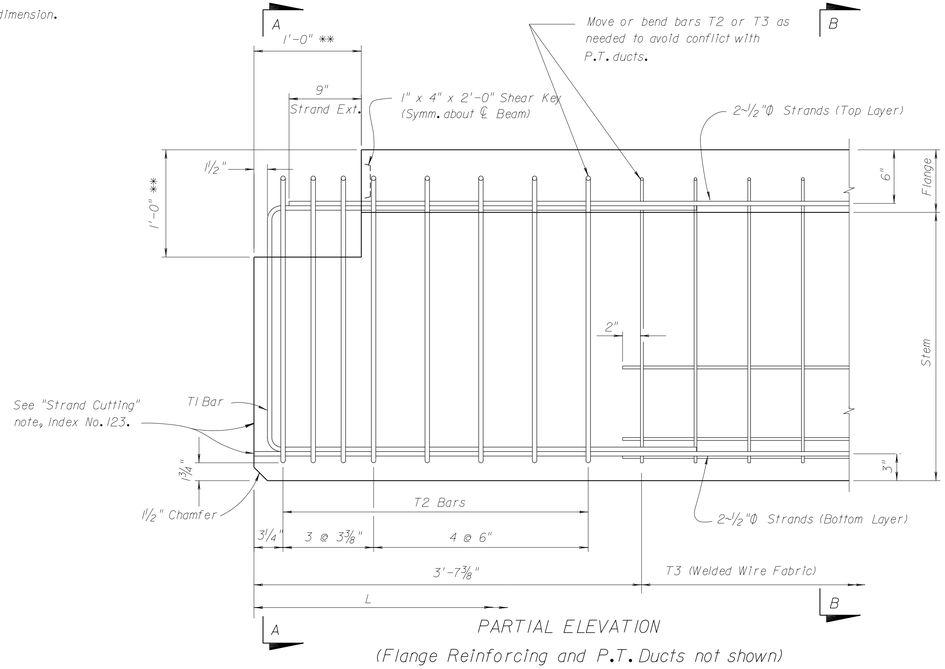
HALF SECTION A-A

HALF SECTION B-B

* Adjust outermost spacing to suit "W", i.e.: Spacing (ft.) = ½(W-6).

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

** Blockout concrete to accept C.I.P. Diaphragm. See Index 127 for orientation of the horizontal 1'-0" dimension.

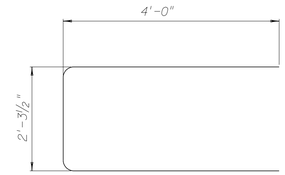


PARTIAL ELEVATION

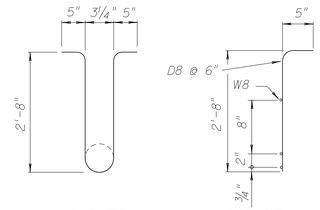
(Flange Reinforcing and P.T. Ducts not shown)

(Intermediate Strands not shown)

BENDING DIAGRAM

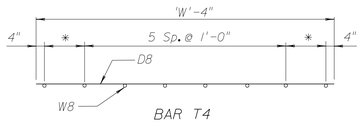


BAR T1
(#3 Bar)

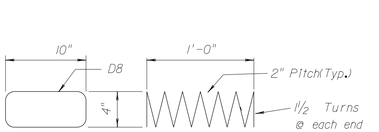


BAR T2
(#4 bar)

BAR T3
(WWF)



BAR T4
(WWF)



END VIEW SIDE VIEW

BAR T5

NOTES:

All bar bends shall be made with a 2" diameter pin unless otherwise noted.
Refer to General Notes for epoxy steel requirement.

The Welded Wire Fabric (T4) shall consist of eight (8) longitudinal W8 wires welded to transverse D8 wires spaced at twelve (12) inches. The W8 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 one (1) foot. Sufficient material to include splices shall be provided. Splices, if needed, shall be 14" Minimum.

The longitudinal W8 wires for the welded wire fabric (T3) do not require splicing.

W8 wires shall comform to ASTM A185.
D8 wires shall conform to ASTM A497.

Bars T5 are required at all P/T anchorage locations, at both sides of beam Type 3, at beam adjacent to Type 3 (side abutting), and at beam Type 2 along the side abutting a bridge crown.

Four (4) Bars 'T1' are required per Beam.
Thirty-two (32) Bars 'T2' are required per Beam.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90		

	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

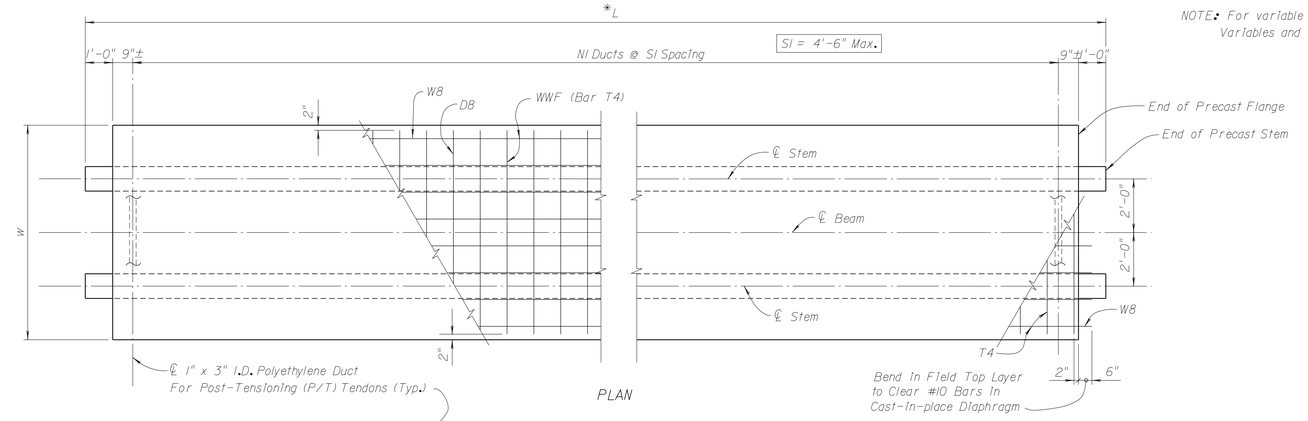
DRAWING NO. 1 of 1

PROJECT NAME: . . .

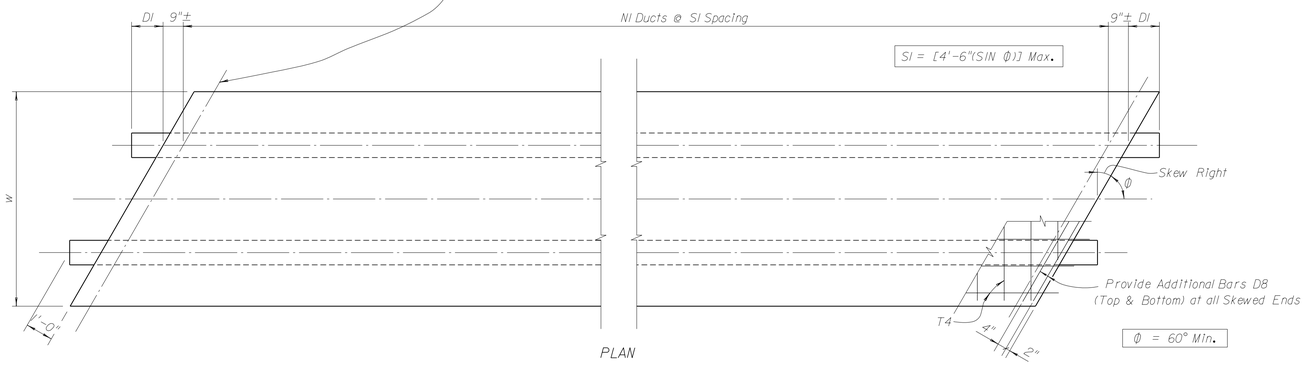
INDEX NO. 126

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

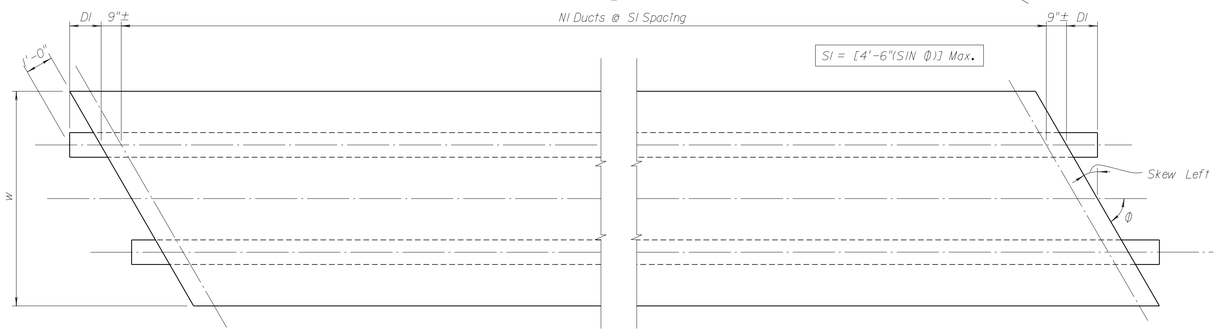
NOTE: For variable dimensions, angles, & numbers, see "Table of Variables and Strand Patterns" Sheet.



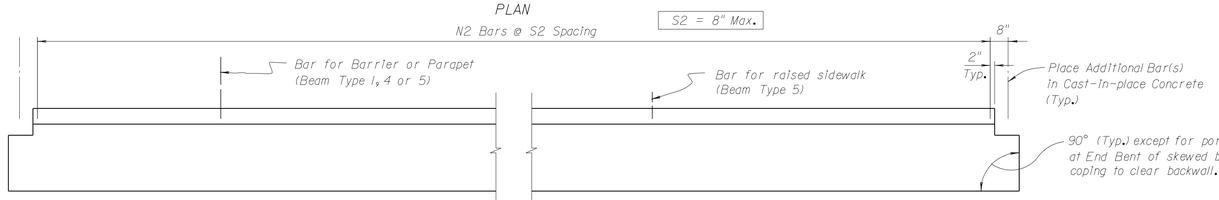
PLAN



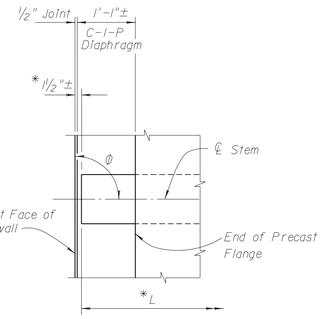
PLAN



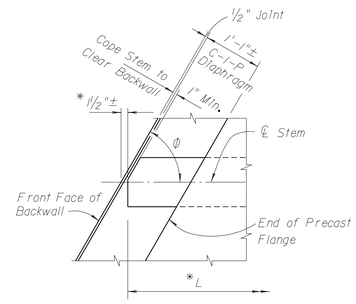
PLAN



ELEVATION
(Bar data applies at Exterior Beam)



STRAIGHT CROSSING



SKEWED CROSSING

PART PLAN AT END BENT

*Dimension applies along bottom of Stem.
L = (Front Face to Front Face of Backwall) - 3"
L = (Front Face of Backwall to ℄ Int. Bent) - 3"
L = (℄ to ℄ Intermediate Bent) - 3"

**℄ Joint may not coincide with ℄ Bent.

STRAIGHT CROSSING

SKEWED CROSSING

PART PLAN AT INTERMEDIATE BENT

Note: b = a
a = ½" @ End Bent
a = 1" @ Int. Bent

DETAIL A

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

Include Quantities In Plans Prepared by Designer.

ITEMS IN BLOCKS ARE FOR DESIGNERS INFORMATION

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90		

	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.
.	.	.

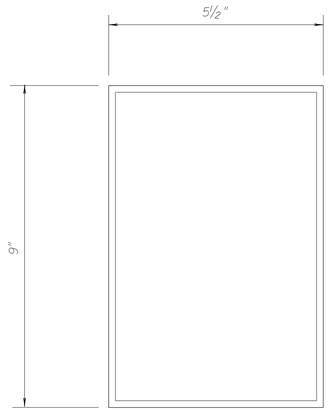
SHEET TITLE: FLORIDA DOUBLE-TEE PLAN, JOINT AND DIAPHRAGM

DRAWING NO. 1 of 1

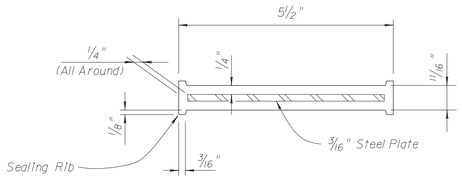
PROJECT NAME: . . .

INDEX NO. 127

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



PLAN



SECTION

NEOPRENE PAD DETAILS

NOTE: Neoprene in all Bearing Pads shall have a Grade 60 hardness. Steel Plates shall conform to AASHTO Designation M251.

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 ⅜inch 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 ¼inch 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. Fill longitudinal keyways between beams with approved non-shrink, non-metallic grout. The grouted keyways shall not be disturbed and shall be wet cured for a period of not less than 72 hours.

   Post-tensioning may start after grout has cured and reached a minimum strength of 4000 psi.
   Each tendon shall consist of three (3) seven-wire ½inch diameter strands. The strands shall meet the requirements of ASTM A-416, Grade 270 and have low relaxation properties. The ends of the strands shall be "color coded" to insure same position at both anchorage plates.

8. Post-tension the centermost (at/or near midspan) tendon first. Then, adjacent tendons on both sides, repeating this sequence until all tendons are stressed.

   If the tendon's path is straight end to end (uncrowned bridge section) the tendons may be stressed from either end.

   If the tendon's path is not straight end to end (crowned bridge section) the tendons shall be stressed from one end, alternating bridge sides, so that every other tendon is stressed from the same side of the bridge.

   The jacking force required for each ½inch strand before anchor set is 30.99 kips.

9. Grout ducts and fill anchorage blockouts with approved non-shrinknon-metallic grout. The grouted tendons shall not be disturbed for a period of 72 hours.

10. Construct end diaphragms.

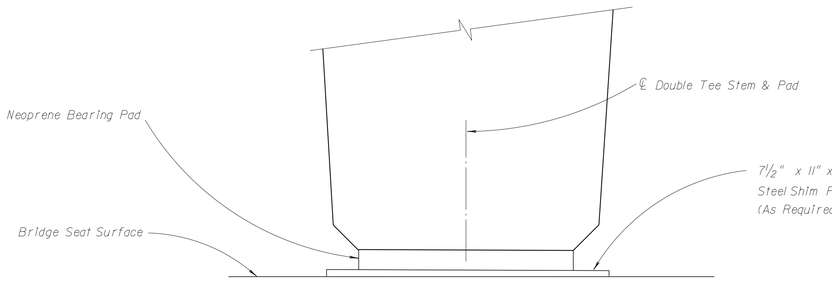
11. Remove lifting devices. Any metal shall be removed to one (1) inch below the surface and the hole in the concrete shall be grouted flush. The Grout used for the patch shall be an approved non-shrink, non-metallic grout. The color of the grout shall match the color of the adjacent concrete surface.

12. Check riding surface in accordance with the specifications and grind areas not in compliance. Depths of grinding shall be limited to ½inch maximum.

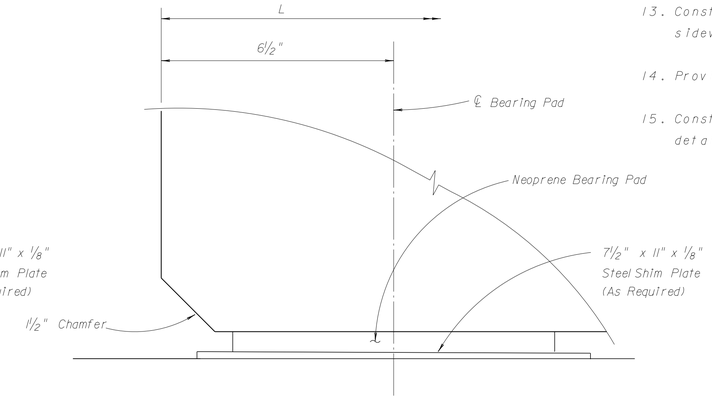
13. Construct all superimposed superstructure items such as barriers, sidewalks, etc.

14. Provide deck grooving in accordance with Section 400-15.

15. Construct transverse deck joints at span ends in accordance with the details.



END ELEVATION
(FDT30 Stem Shown)



SIDE ELEVATION

TYPICAL INSTALLATION
(FDT18, FDT24 & FDT30)

Notes: Steel Shim Plates shall conform to ASTM A36 and shall be hot dip galvanized.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90		

	NAMES	DATES
DRAWN BY	WEH	5-90
CHECKED BY	AJG	6-90
DESIGNED BY	TJB/BR	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:
FLORIDA DOUBLE-TEE
BEARINGS & CONSTRUCTION NOTES

PROJECT NAME:

DRAWING NO.
1 of 1

INDEX NO.
128

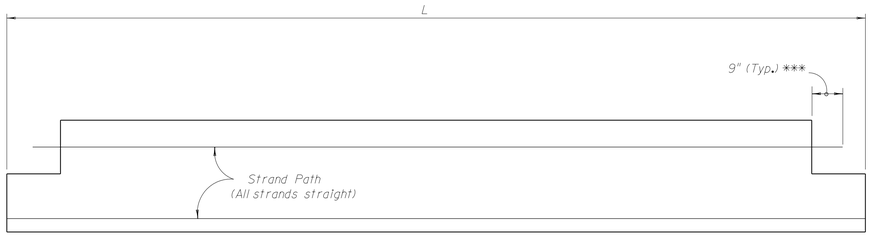
FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.	.	.	.

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

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

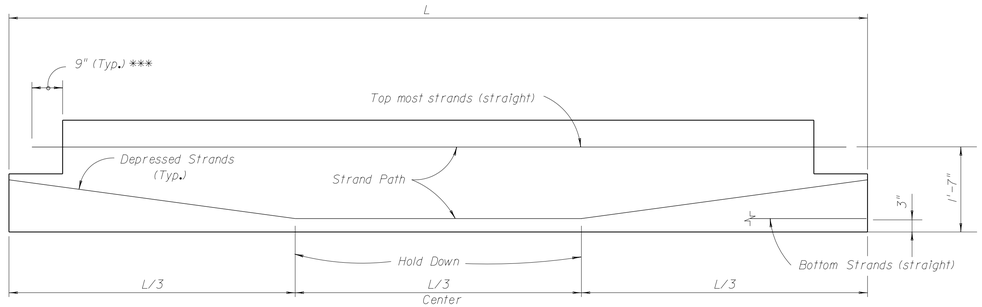
** NOTE: Strand Pattern Type at "End" applies at the extreme end of the beam. The pattern at the "Center" applies between hold down points.

NOTE: All strands shall be ½" Ø Low Relaxation Strands conforming to ASTM A416, Grade 270. 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.



*** Strands terminating within Diaphragm blockout

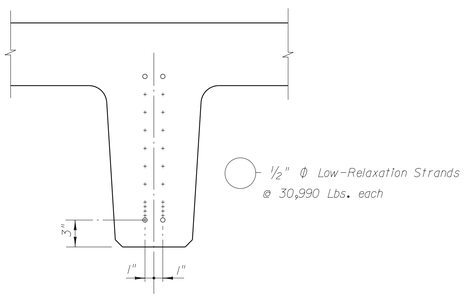
CASE 1



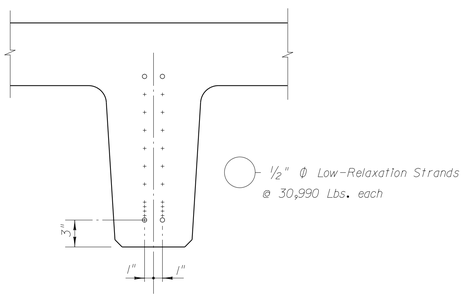
CASE 2

STRAND PATTERN CASE
(Side Elevation)

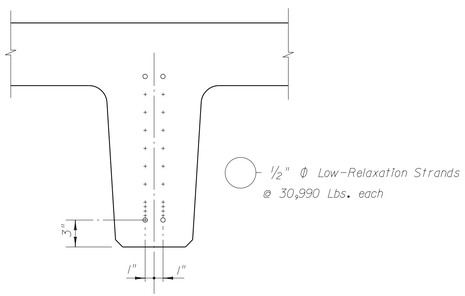
Note to Designer: Show all strands and dimensions within stem, and total number of strands within circle. Also, erase all strand locations (+'s) not used, and this note after completing this drawing.



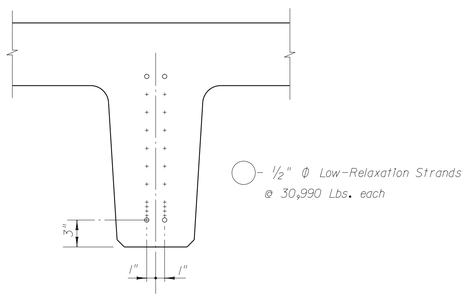
TYPE 1



TYPE 2



TYPE 3



TYPE 4

STRAND PATTERN TYPE

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90		

	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:
FDT 18
TABLE OF VARIABLES & STRAND PATTERNS

PROJECT NAME:

DRAWING NO.
1 of 1

INDEX NO.
S-129

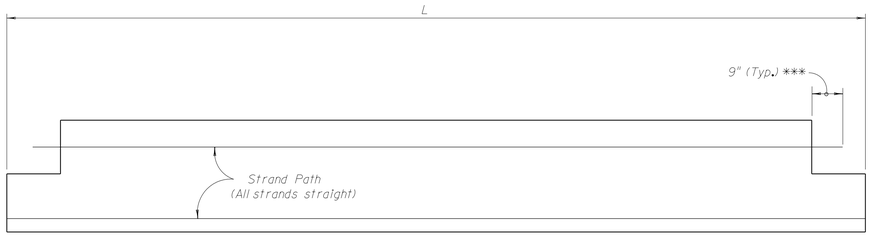
FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.	.	.	.

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

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

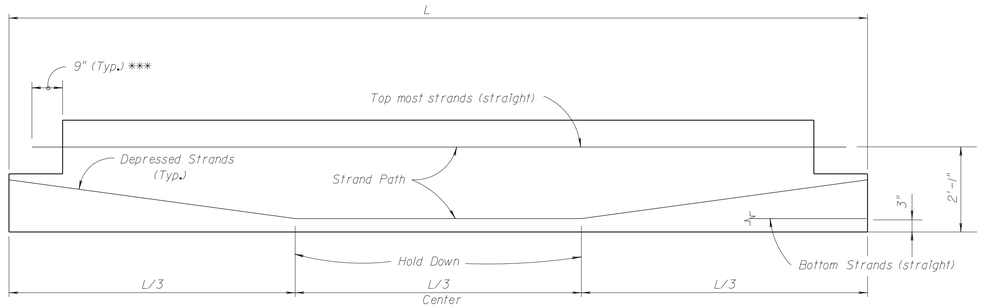
** NOTE: Strand Pattern Type at "End" applies at the extreme end of the beam. The pattern at the "Center" applies between hold down points.

NOTE: All strands shall be ½" Ø Low Relaxation Strands conforming to ASTM A416, Grade 270. 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.



*** Strands terminating within Diaphragm blockout

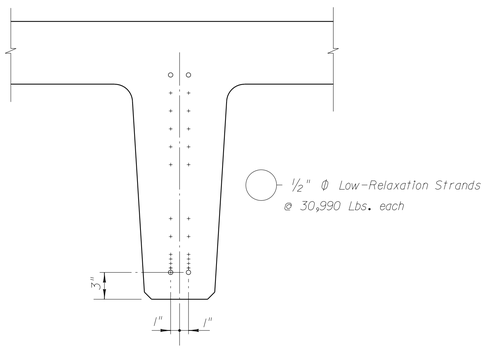
CASE 1



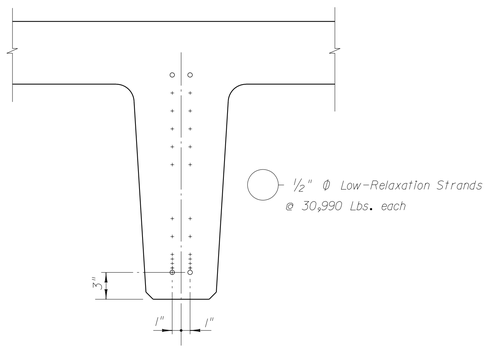
CASE 2

Note to Designer: Show all strands and dimensions within stem, and total number of strands within circle. Also, erase all strand locations (+'s) not used, and this note after completing this drawing.

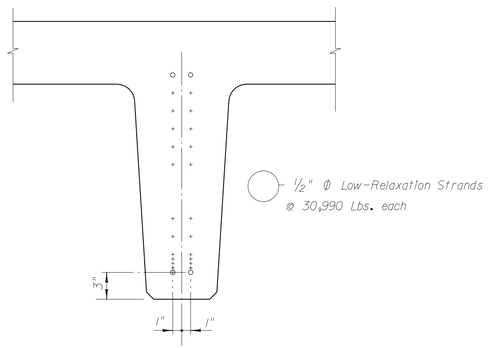
STRAND PATTERN CASE
(Side Elevation)



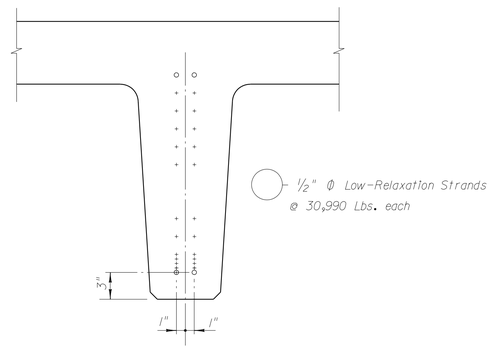
TYPE 1



TYPE 2



TYPE 3



TYPE 4

STRAND PATTERN TYPE

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90		

	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:
FDT 24
TABLE OF VARIABLES & STRAND PATTERNS

PROJECT NAME:

DRAWING NO.
1 of 1

INDEX NO.
S-130

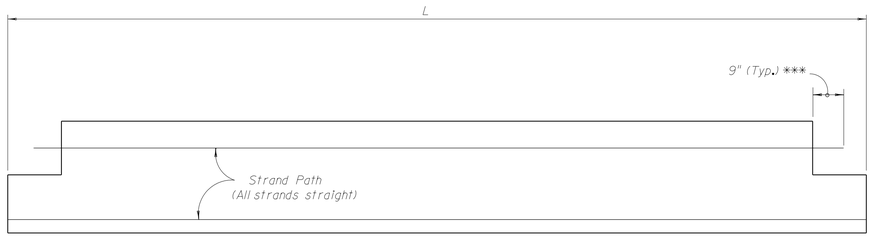
FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.	.	.	.

TABLE OF VARIABLES																	
SPAN NO.	BEAM TYPE	NO. OF BEAMS	Ø	DIMENSIONS						POST-TENSIONING DUCT DATA		CONCRETE DATA (PSI)		* REINF. STEEL DATA		STRAND PATTERN	
				A	DI	L	W	X	Y	NI	SI	f'c	f'ci	N2	S2	CASE	TYPE **
																	END / CENTER

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

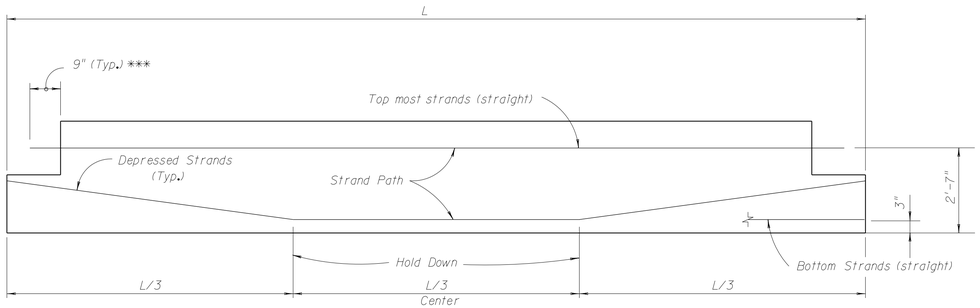
** NOTE: Strand Pattern Type at "End" applies at the extreme end of the beam. The pattern at the "Center" applies between hold down points.

NOTE: All strands shall be ½" Ø Low Relaxation Strands conforming to ASTM A416, Grade 270. 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.



*** Strands terminating within Diaphragm blockout

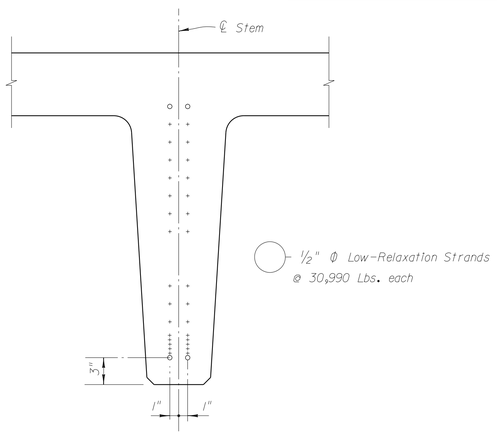
CASE 1



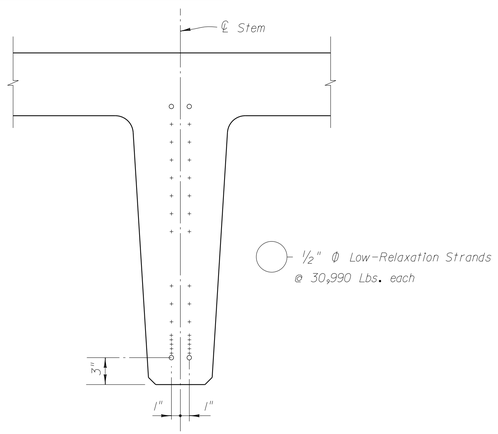
CASE 2

Note to Designer: Show all strands and dimensions within stem, and total number of strands within circle. Also, erase all strand locations (+'s) not used, and this note after completing this drawing.

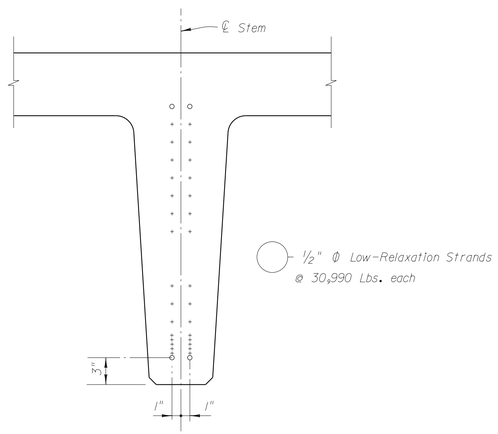
STRAND PATTERN CASE
(Side Elevation)



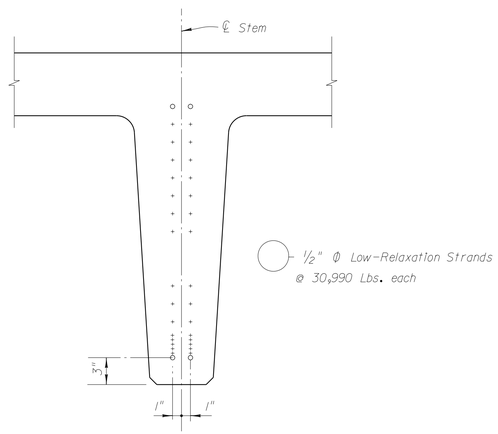
TYPE 1



TYPE 2



TYPE 3



TYPE 4

STRAND PATTERN TYPE

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90		

	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.
.	.	.

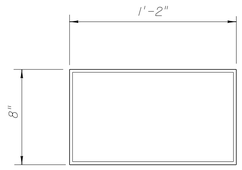
SHEET TITLE: FDT: 30
TABLE OF VARIABLES & STRAND PATTERNS

PROJECT NAME: . . .

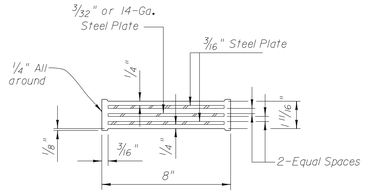
DRAWING NO. 1 of 1

INDEX NO. S-131

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

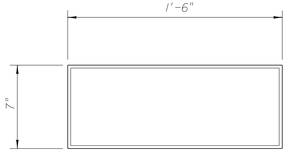


PLAN

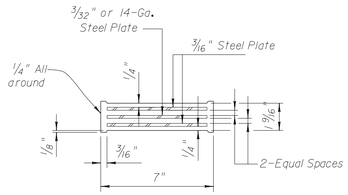


TYPICAL SECTION

COMPOSITE PAD
TYPE II

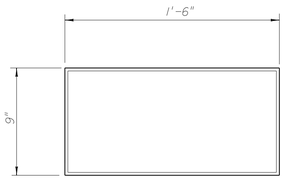


PLAN

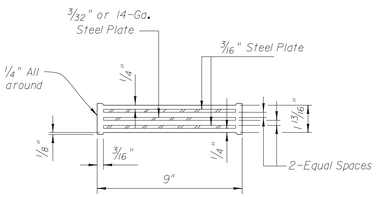


TYPICAL SECTION

COMPOSITE PAD
TYPE III

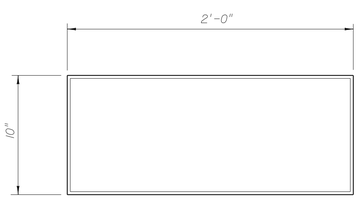


PLAN

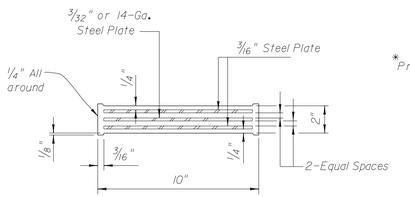


TYPICAL SECTION

COMPOSITE PAD
TYPE IV

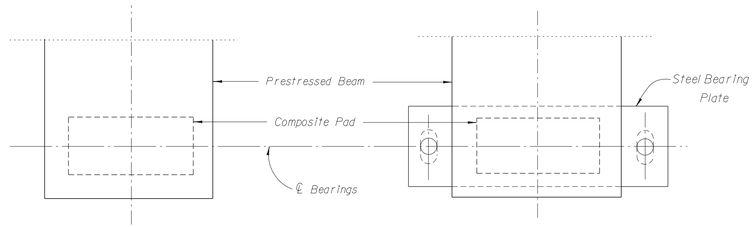


PLAN



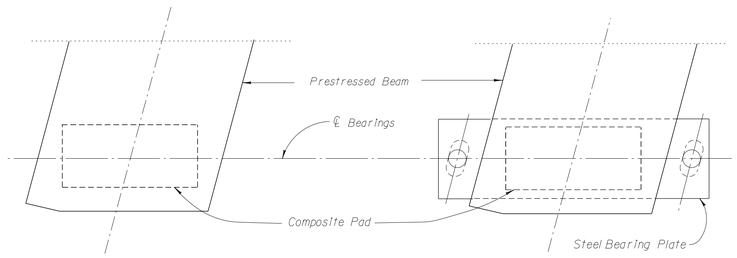
TYPICAL SECTION

COMPOSITE PAD
TYPE V



STRAIGHT BRIDGE

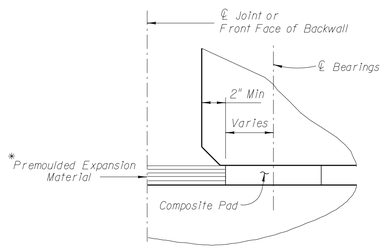
STRAIGHT BRIDGE
(With Bearing ℄)



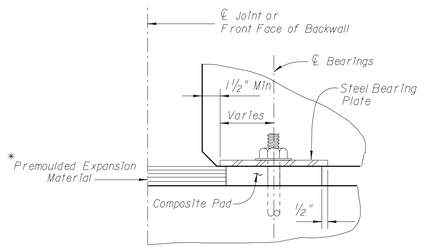
SKEWED BRIDGE

SKEWED BRIDGE
(With Bearing ℄)

PART PLAN



TYPICAL PAD DETAIL



TYPICAL PAD DETAIL
(With Bearing ℄)

PART ELEVATION

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

GENERAL NOTES

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

Steel Plates in composite pads shall conform to AASHTO Specifications M-251.

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.

For Bearing Plate requirements and details, see Beam Sheets.

NOTE TO DESIGNER: Utilization of the standard composite neoprene bearing pads shown on this sheet shall be limited to applications that do not exceed the following values:

PAD TYPE	MAX. REACTION (DL + LL)	MAX. SHEAR DEFLECTION (Δ's)
II	90 Kips	0.60"
III	115 Kips	0.55"
IV	130 Kips	0.67"
V	192 Kips	0.75"

Prestressed Beam applications shall be as follows:

PAD TYPE	BEAM TYPE
II	Type II AASHTO Shape
III	Type III AASHTO Shape
IV	Type IV AASHTO Shape
V	Type V & VI AASHTO Shapes & Florida Bulb-T Shapes

NOTE: The above Maximum Reaction Limitations apply to Prestressed Concrete Beam applications. These Standard Composite Pads may also be utilized as Bearings for other types of beams such as Structural Steel Beams; however, in this event the Designer shall verify that the Design meets the requirements of the AASHTO Specifications.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	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:

STRUCTURES DESIGN 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: COMPOSITE NEOPRENE BEARING PADS

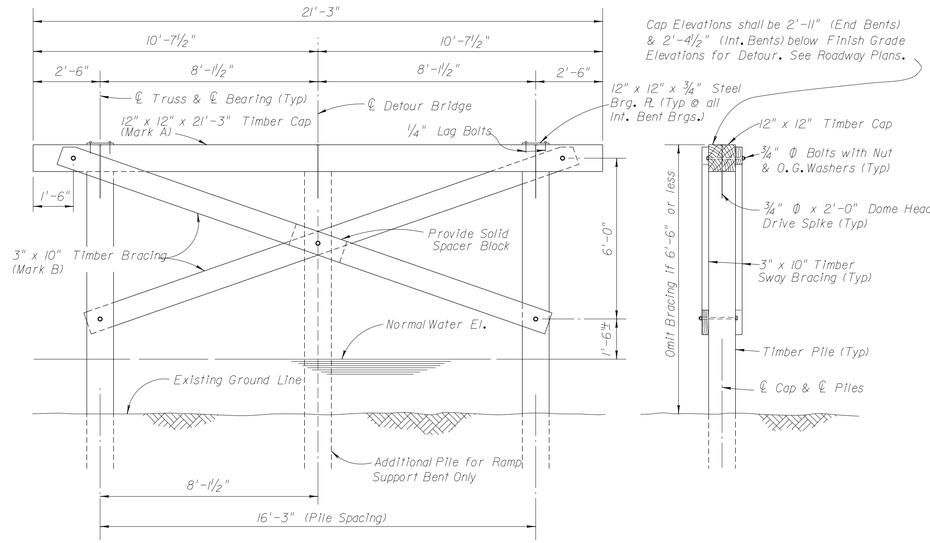
PROJECT NAME:

DRAWING NO. 1 of 1

INDEX NO. 200

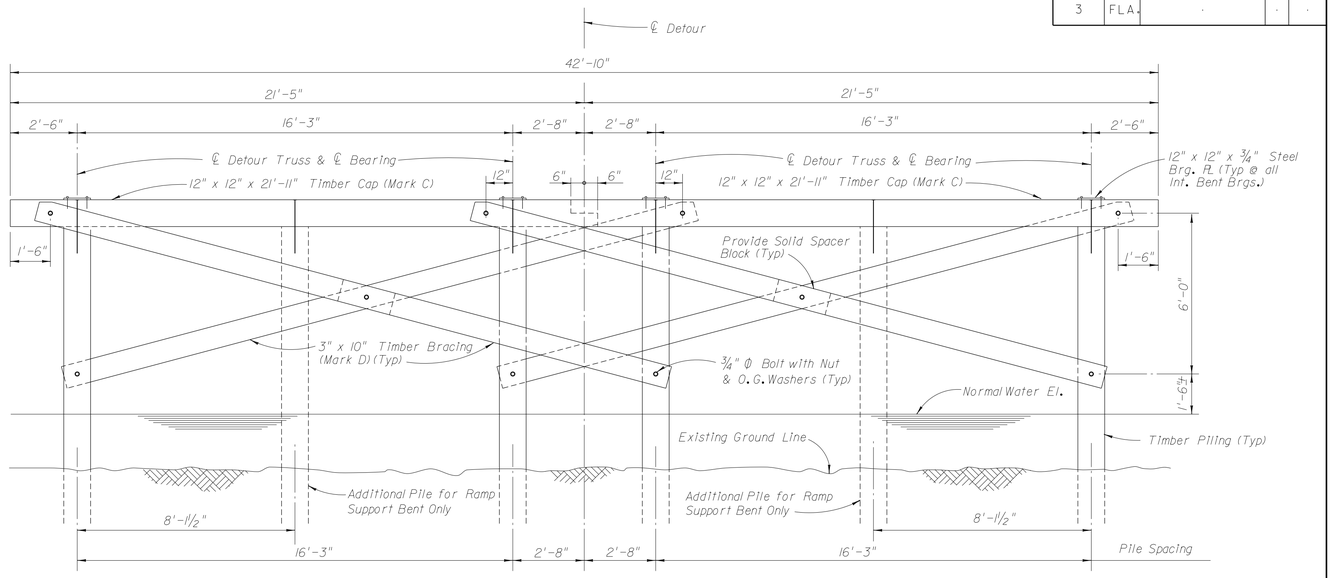
$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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



SINGLE BRIDGE

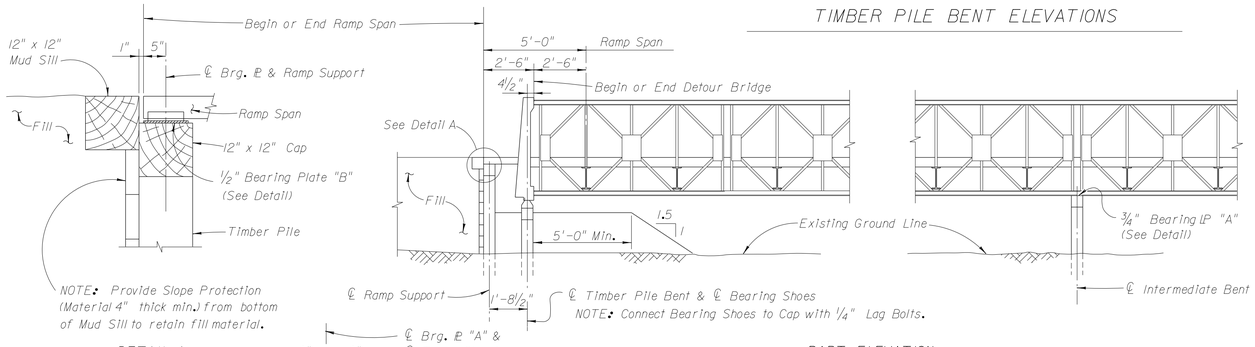
END VIEW



DUAL BRIDGE

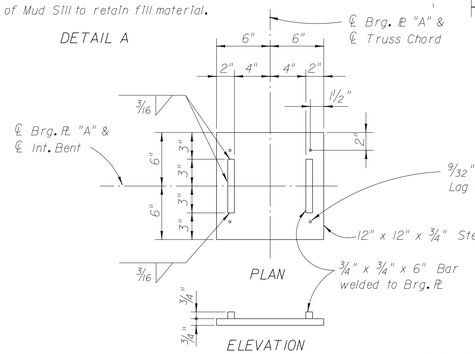
NOTE: 3 Piles are required for Ramp Support Bents for Single Bridge.
6 Piles are required for Ramp Support Bents for Dual Bridge.

TIMBER PILE BENT ELEVATIONS

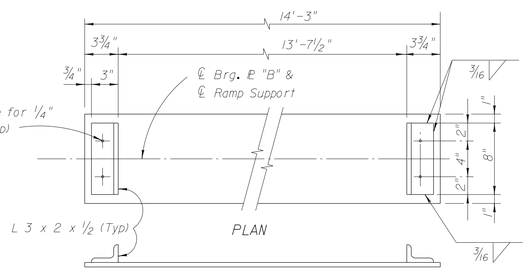


DETAIL A

PART ELEVATION



ELEVATION PLATE "A"



ELEVATION PLATE "B"

BEARING PLATES DETAILS

NOTE: Contractor shall provide all Bearing Plates ("A" & "B")

BILL OF STRUCTURAL TIMBER *

SINGLE BRIDGE							DUAL BRIDGE						
LOCATION	MARK	SIZE	LENGTH	NO. REQ'D.	F.B.M.	TOTAL F.B.M.	LOCATION	MARK	SIZE	LENGTH	NO. REQ'D.	F.B.M.	TOTAL F.B.M.
BENT WITH BRACING	A	12" x 12"	21'-3"	1	255	351	BENT WITH BRACING	C	12" x 12"	21'-11"	2	526	768
	B	3" x 10"	19'-3"	2	96			D	3" x 10"	24'-3"	4	242	
BENT WITHOUT BRACING	A	12" x 12"	21'-3"	1	255	255	BENT WITHOUT BRACING	C	12" x 12"	21'-11"	2	526	526
RAMP SUPPORT	A	12" x 12"	21'-3"	1	255	255	RAMP SUPPORT	C	12" x 12"	21'-11"	2	526	526

*Bill of Structural Timber is for One Bent or One Ramp Support only.

Contractor shall also provide Mud Sill and Slope Protection Material as indicated in Detail A.

GENERAL NOTES

DESIGN LOAD FOR PILES: 20 Tons.

LOADING: H20-44.

STRUCTURAL TIMBER: Timber Piles & Structural Timber may be treated or untreated at the option of the Contractor.

SPAN LENGTH: 30'-0" maximum.

PAYMENT: See Roadway Plans for payment of Detour.

ERECTION: The Contractor shall erect the Detour Bridge in accordance with the Specifications, these plans, and the Acrow Panel Bridge Technical Handbook.

AVAILABILITY: Acrow Panel Bridge components will be available at the Orlando D.O.T. Structural Aluminum Shop. Steel grid bridge flooring will be furnished.

REVISIONS						
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	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: TIMBER BENTS FOR ACROW BRIDGES ONE & TWO LANE SINGLE SINGLE EXTRA WIDE

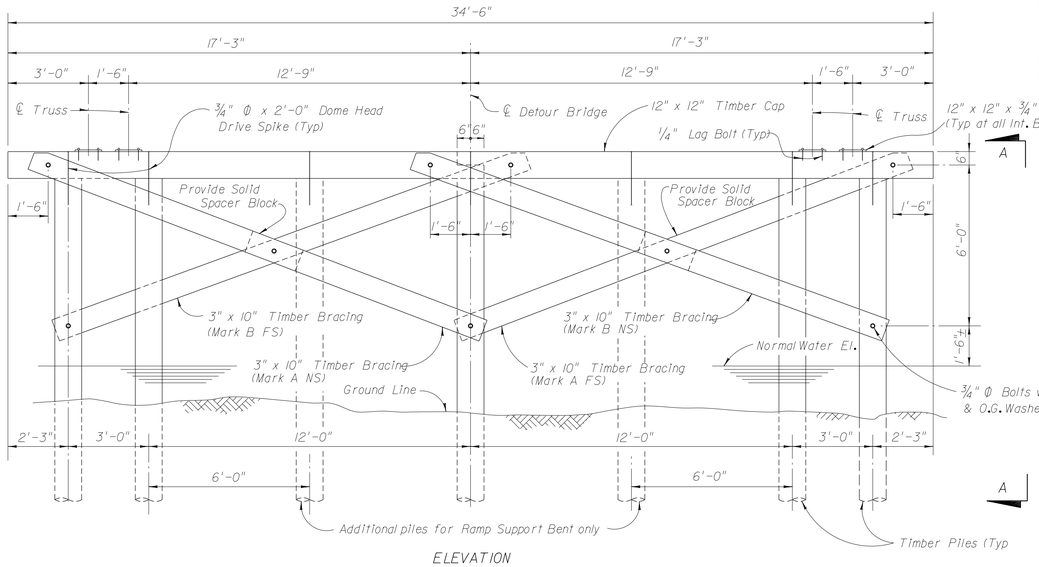
PROJECT NAME:

DRAWING NO. 1 of 1

INDEX NO. S-300

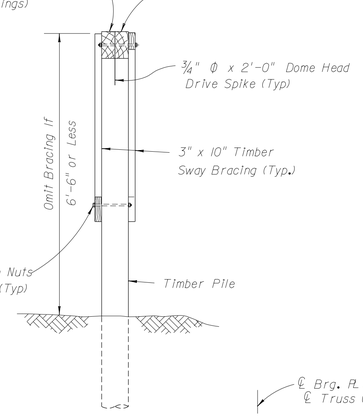
$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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



ELEVATION
(TIMBER PILE BENT)

Cap elevations are approximately 2'-8⅞" (at End Bents) and 2'-4½" (at Int. Bent) below Finish Grade Elevations of detour bridge. See Roadway plans.



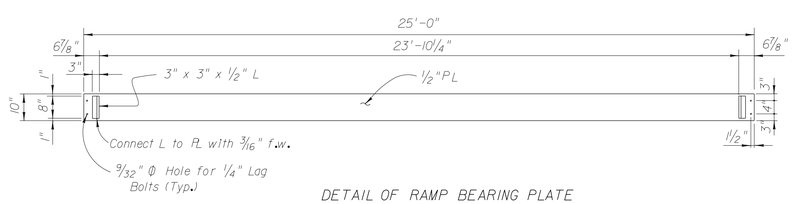
VIEW A-A

BILL OF STRUCTURAL TIMBER *

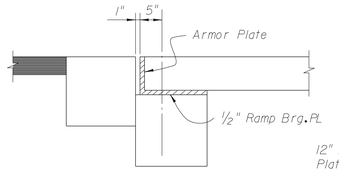
ITEM	SIZE	LENGTH	NO. REQ'D. RAMP SUP.	NO. REQ'D. END BENT	NO. REQ'D. INT. BENT	F.B.M. RAMP SUP.	F.B.M. END BENT	F.B.M. INT. BENT	CUTTING DIMENSIONS
Cap	12" x 12"	17'-9"	4	2	2	852	426	426	16'-9"
Mark A * *	3" x 10"	18'-0"	___	___	2	___	___	90	18'-0" Field cut as required
Mark B * *	3" x 10"	18'-6"	___	___	2	___	___	93	18'-6" Field cut as required
Mark C	4" x 8"	18'-0"	12	___	___	576	___	___	18'-0"
Spacer Blocks * *	10" x 12"	2'-0"	___	___	2	___	___	40	2'-0"
				TOTAL		1,428	426	649	

* Quantities shown are for one Timber Bent only.
* * No bracing required on Bents No.

NOTE: 7 Piles are required for Ramp Support Bents.

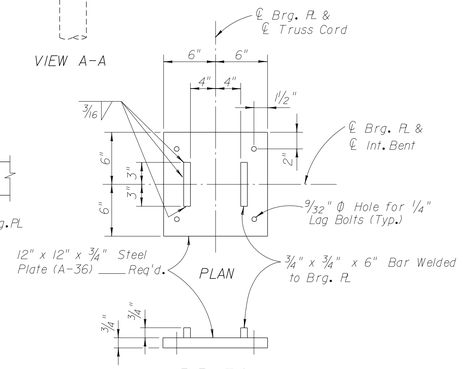


DETAIL OF RAMP BEARING PLATE



DETAIL OF END RAMP

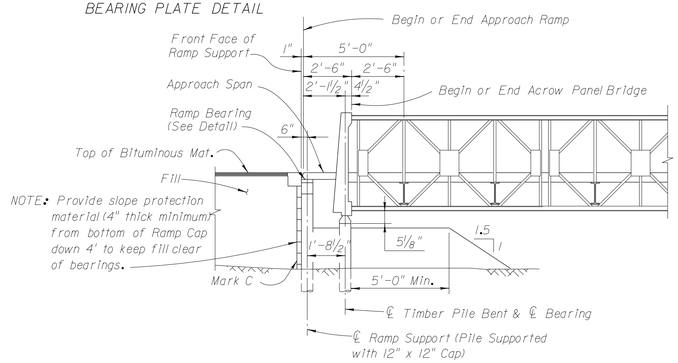
NOTE: Contractor shall provides all Bearing Plates.



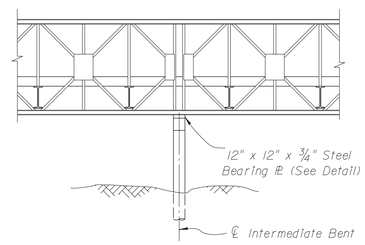
PLAN

ELEVATION

BEARING PLATE DETAIL



DETAIL AT BEGIN OR END BRIDGE



DETAIL AT INTERMEDIATE SUPPORT

GENERAL NOTES

DESIGN LOAD FOR PILES: 20 Tons.

LOADING: H20-44.

STRUCTURAL TIMBER: Timber Piles and Structural Timber may be Treated or Untreated at the option of the Contractor.

SPAN LENGTH: 30'-0" maximum.

PAYMENT: See Roadway Plans for Payment of Detour Bridge.

ERECTION: The Contractor shall erect the Detour Bridge in accordance with the Specifications, these plans and the Acrow Panel Bridge Technical Handbook.

AVAILABILITY: Acrow Panel Bridge components will be available at the Orlando D.O.T. Structural Aluminum Shop. Steel Grid Bridge Flooring will be furnished.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	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:
TIMBER BENTS FOR ACROW BRIDGES
TWO LANE DOUBLE SINGLE DOUBLE WIDE

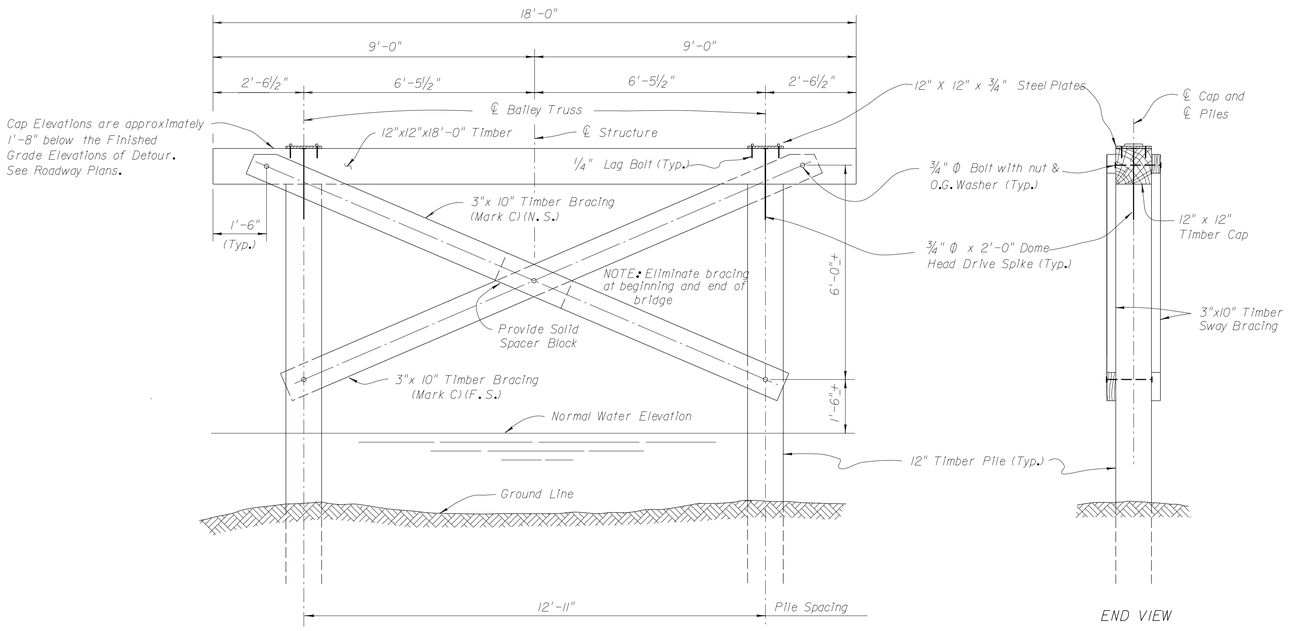
PROJECT NAME:

DRAWING NO.
1 of 1

INDEX NO.
S-301

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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



TIMBER PILE BENT

(For Single Lane Bailey Bridge)

LIST OF STRUCTURAL TIMBER *

ITEM	SIZE	LENGTH	No. REQ'D	F.B.M.	CUTTING DIMENSIONS
CAP	12" x 12"	18'-0"	** 1	216	18'-0", 12"
MARK C	3" x 10"	16'-0"	2	80	16'-0", Field cut as required, 10"
SPACER BLOCK	10" x 12"	2'-0"	1	20	2'-0", 12"
			TOTAL	316	

* Quantities shown are for One Timber Bent only.

** Two (2) additional caps of same size are required for "Mud Sills" for ends of grating approaches on fill.

GENERAL NOTES

DESIGN LOAD FOR PILES: 20 TONS

LOADING: HS20-44

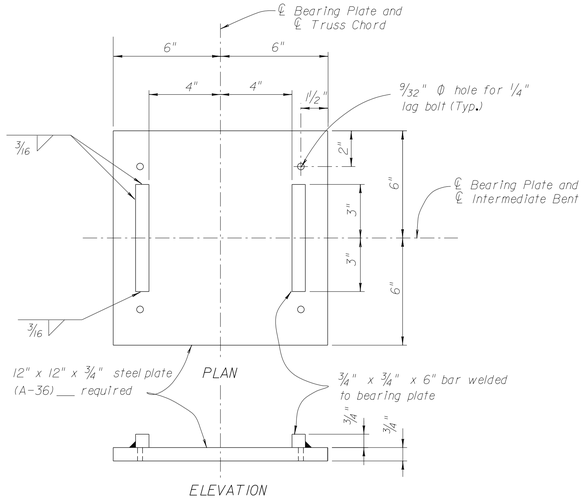
STRUCTURAL TIMBER: Timber piles and structural timber may be treated or untreated at the option of the Contractor.

SPAN LENGTH: 30'-0" Maximum

PAYMENT: See Roadway Plans for payment of detour.

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 and shall be welded to the transom. Welds shall be made and removed with care to avoid damage to the transom.

AVAILABILITY: Contractor shall pickup and return all Bailey Bridge components at the FDOT maintenance yard located in Defuniak Springs, Florida.



NOTE: Contractor shall provided all bearing Plates.

BEARING PLATE DETAILS

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	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: TIMBER BENTS FOR BAILEY BRIDGE ONE LANE SINGLE-SINGLE (TYPE M-1)

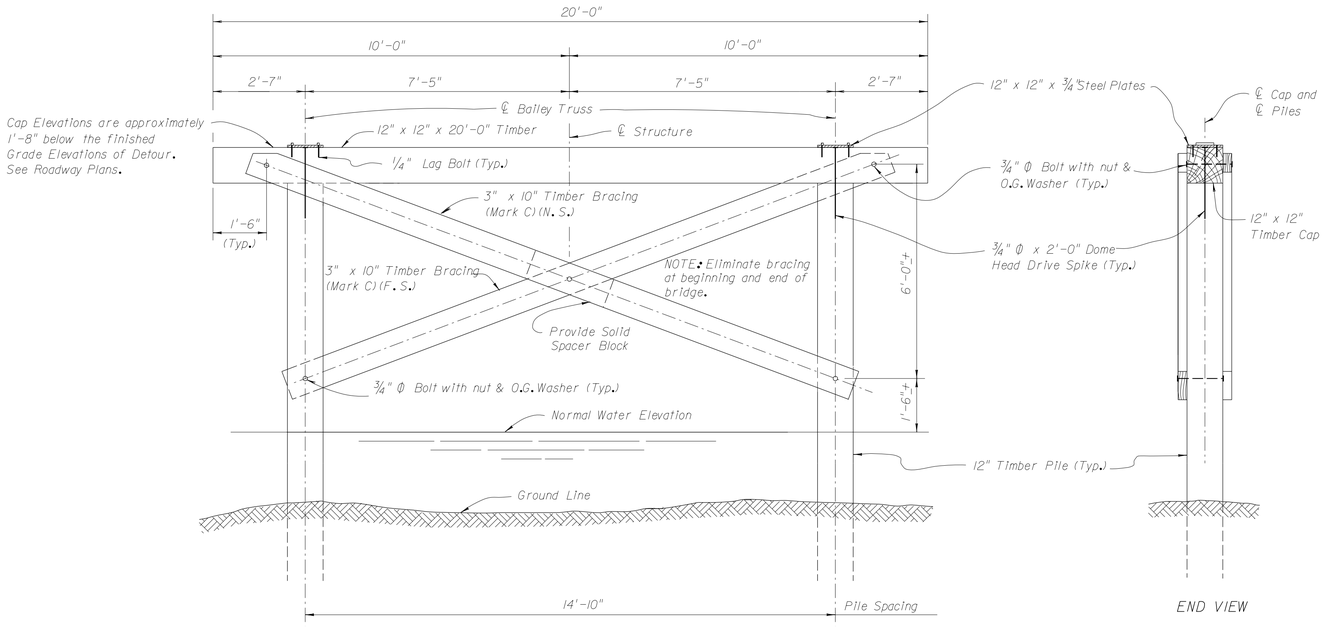
PROJECT NAME:

DRAWING NO.: 1 of 1

INDEX NO.: S-310

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

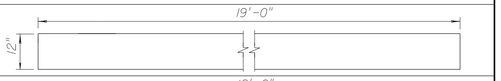
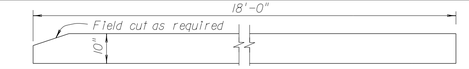
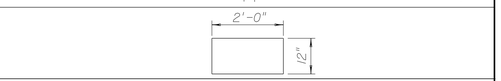
FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.	.	.	.



END VIEW

TIMBER PILE BENT

(For Single Lane Bailey Bridge)

LIST OF STRUCTURAL TIMBER *					
ITEM	SIZE	LENGTH	No. REQ'D	F.B.M.	CUTTING DIMENSIONS
CAP	12" x 12"	20'-0"	** 1	240	
MARK C	3" x 10"	18'-0"	2	90	
SPACER BLOCK	10" x 12"	2'-0"	1	20	
			TOTAL	350	

* Quantities shown are for One Timber Bent only.

** Two (2) additional caps required for mud sills at ends of grating approaches.

GENERAL NOTES

DESIGN LOAD FOR PILES: 20 TONS

LOADING: HS20-44

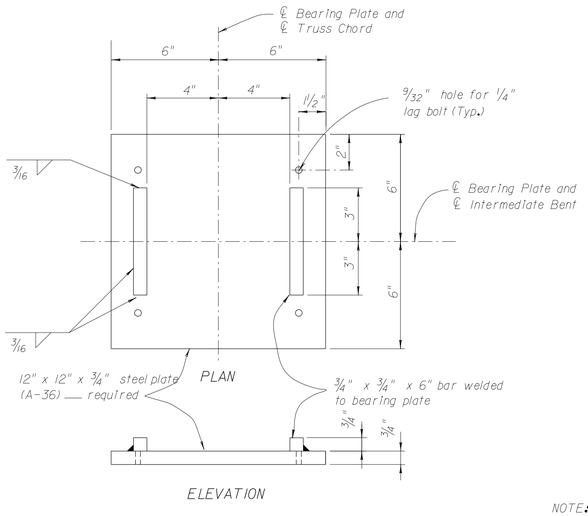
STRUCTURAL TIMBER: Timber piles and structural timber may be treated or untreated at the option of the Contractor.

SPAN LENGTH: 30'-0" Maximum

PAYMENT: See Roadway Plans for payment of detour.

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 and shall be welded to the transom. Welds shall be made and removed with care to avoid damage to the transom.

AVAILABILITY: Contractor shall pickup and return all Bailey Bridge components at the FDOT maintenance yard located in Defuniak Springs, Florida.



ELEVATION

NOTE: Contractor shall provide all Bearing Plates.

BEARING PLATE DETAILS

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	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: TIMBER BENTS FOR BAILEY BRIDGE ONE LANE SINGLE-SINGLE (TYPE M-2)

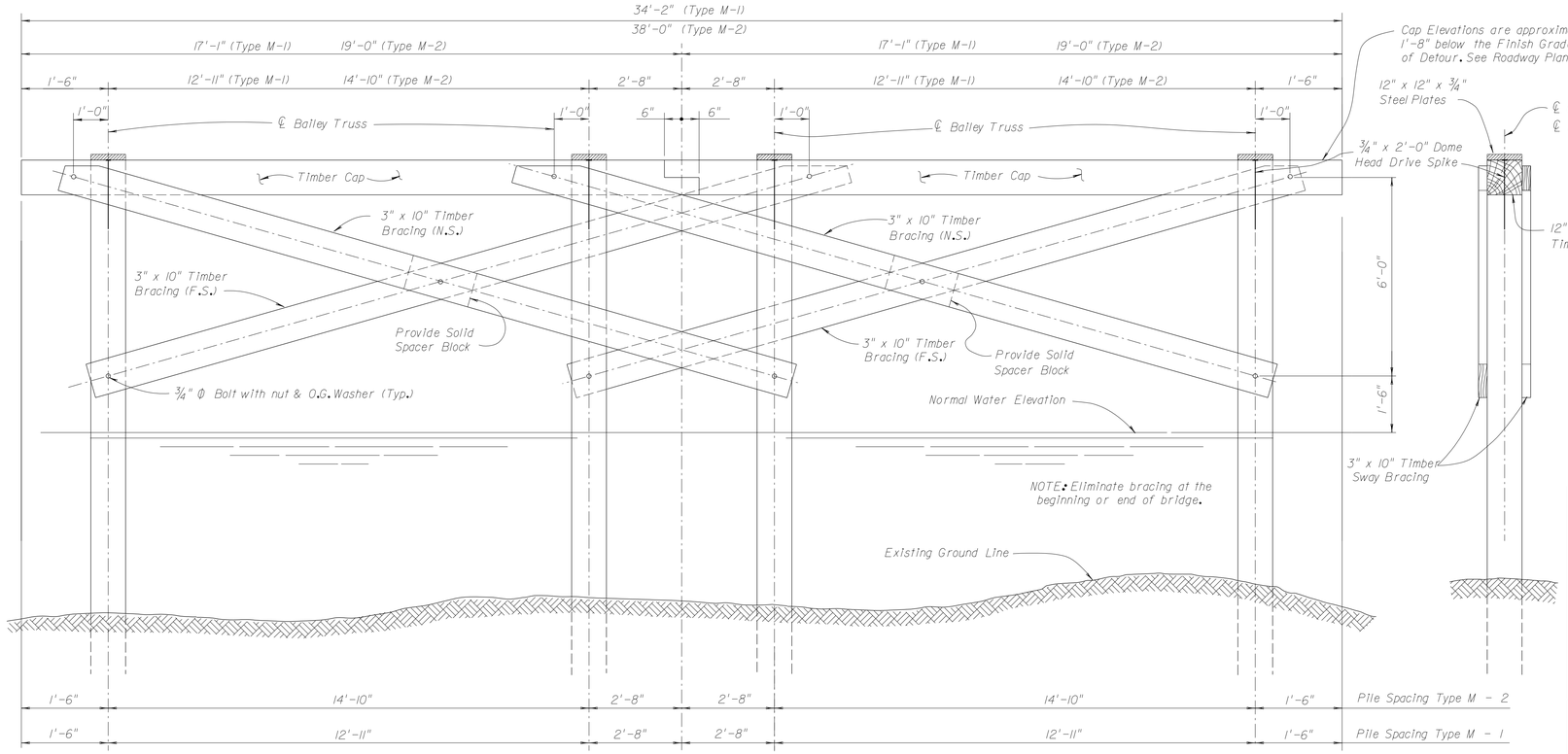
PROJECT NAME.

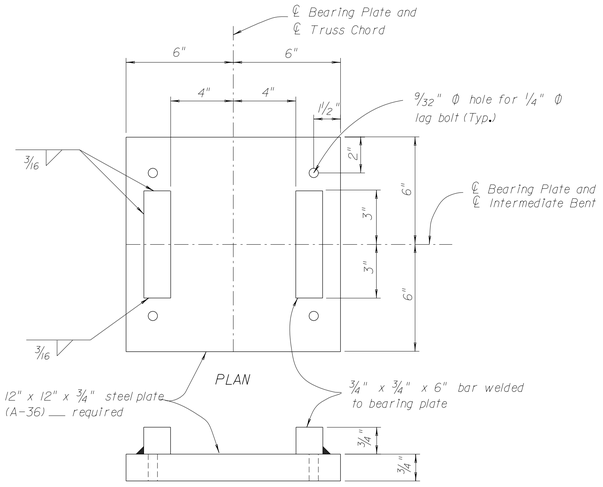
DRAWING NO. 1 of 1

INDEX NO. S-311

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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





BEARING PLATE DETAILS

NOTE: Contractor shall provide all Bearing Plates.

GENERAL NOTES

DESIGN LOAD FOR PILES: 20 TONS

LOADING: HS20-44

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

SPAN LENGTH: 30'-0" Maximum

PAYMENT: See Roadway Plans for payment of detour.

ERECTION: The contractor shall erect the detour bridge in accordance with the specifications, these plans, and the "Bailey Unifiote 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 Bailey Bridge.

AVAILABILITY: Contractor shall pickup and return all Bailey Bridge components at the FDOT maintenance yard located in Defuniak Springs, Florida.

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

LIST OF STRUCTURAL TIMBER

ITEM	SIZE	LENGTH M-1	LENGTH M-2	No. REQ'D	F.B.M. M-1	F.B.M. M-2	CUTTING DIAGRAMS
CAP	12" x 12"	17'-7"	19'-6"	2	422	468	LENGTH, 12", 12", 6"
SWAY BRACING	3" x 10"	22'-1"	24'-0"	4	222	240	LENGTH, Field cut as req'd., 10"
SPACER BLOCK	10" x 12"	2'-0"	2'-0"	2	40	40	2'-0", 12"
				TOTAL	684	748	

NOTE: Quantities are for one bent only.

REVISIONS						
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

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

PROJECT NAME:

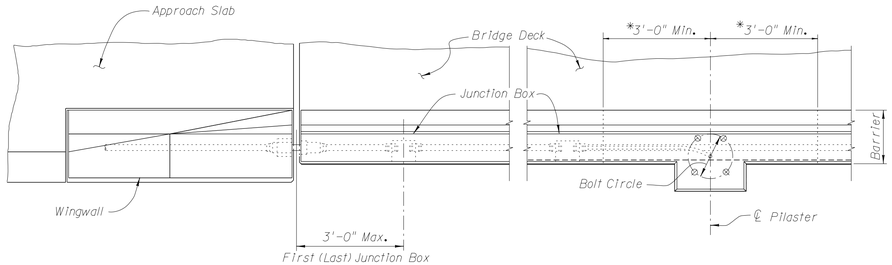
DRAWING NO.: 1 of 1

INDEX NO.: S-312

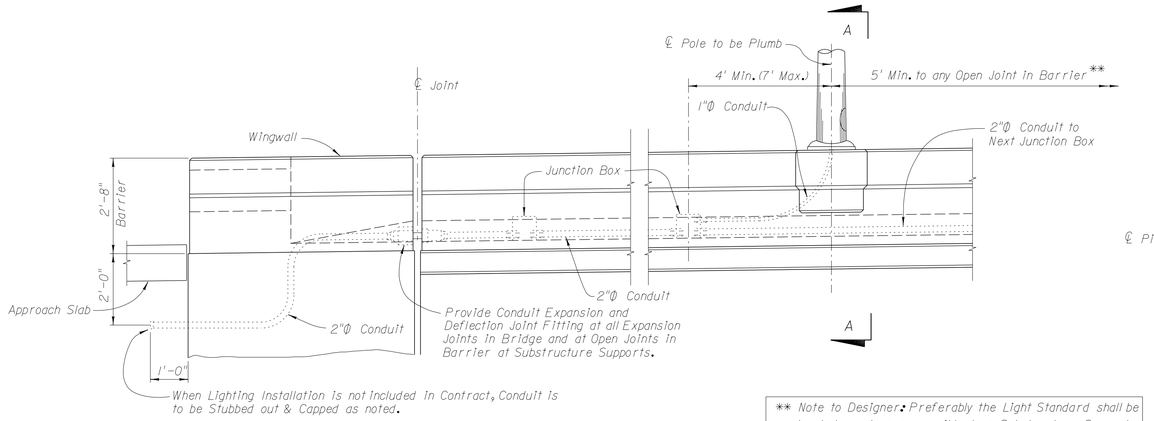
$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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.

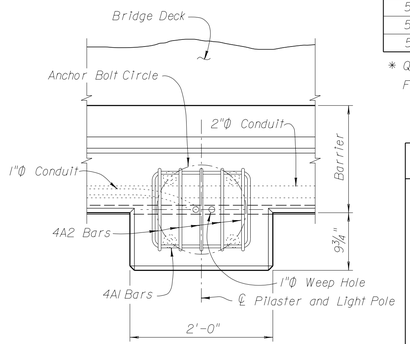


PLAN

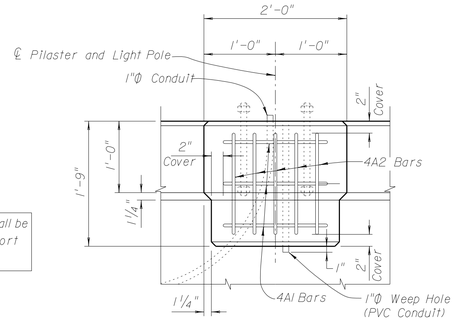


ELEVATION

** Note to Designer: Preferably the Light Standard shall be located as close as possible to a Substructure Support to minimize vibration due to Traffic.



PILASTER PLAN VIEW



VIEW B-B

* Quantities and Bill of Reinforcing Steel are for one Pilaster.
For Details of Bar 5P and 5V, See Traffic Railing Barrier Sheet.

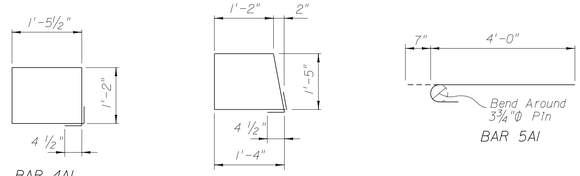
*BILL OF REINFORCING STEEL

MARK	SIZE	NO. REQ'D	LENGTH	BENDING
4A1	4	3	6'-0"	See Diagram
4A2	4	5	6'-1"	" "
5A1	5	22	4'-7"	" "
5P	5	10 Additional		
5V	5	10 Additional		

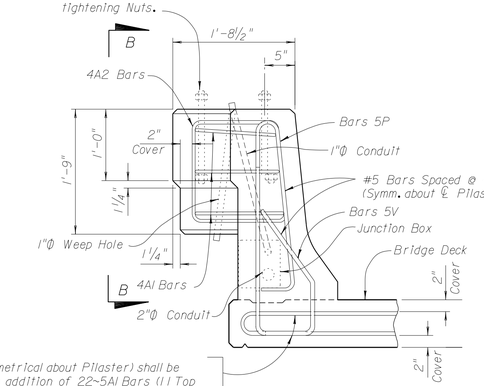
*QUANTITY

Concrete Required : 0.10 C.Y.
Steel Required : 248.76 Lbs.

BAR BENDING DIAGRAMS

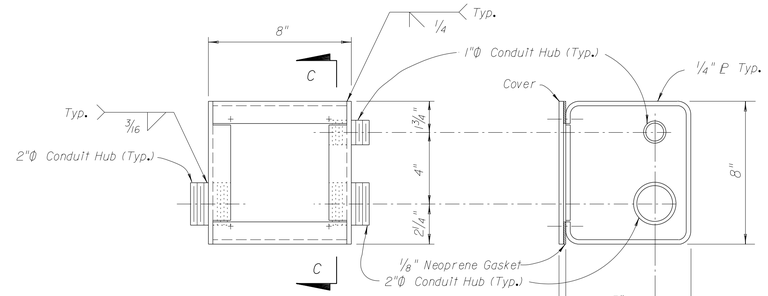


Anchor Bolts provided by Contractor, See Note 4. Nick Threads after tightening Nuts.



The Deck Slab area (symmetrical about Pilaster) shall be be strenghtened with the addition of 22-5A1 Bars (11 Top & 11 Bottom). The Bars shall be located as shown and spaced at Approximately 7" centers; If necessary this additional reinforcement shall be bundled to other Deck reinforcement.

SECTION A-A
(Longitudinal Reinforcement not shown)



FRONT VIEW OF JUNCTION BOX
(Cover removed)

SECTION C-C

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	=	30,000 Ft. Pounds
Transverse Moment	=	6,000 Ft. Pounds
Longitudinal Shear	=	1,000 Pounds
Transverse Shear	=	200 Pounds
Torsion	=	3,000 Ft. Pounds
Axial	=	400 Pounds

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 submited by the Contractor to the Department for Review and Approval showing that these Requirements have been met prior to Construction.

5. Steel for Junction Boxes shall conform with ASTM-A36. The Boxes shall be Hot Dip Galvanized after fabrication. In lieu of Steel Boxes the Contractor may submit for Approval molded P.V.C. Boxes (Schedule 40).

6. Junction Boxes shall be mounted at each end of the Bridge and in the vicinity of each Light Pole in accordance with details on this sheet. For location of additional Junction Boxes, see Roadway Lighting Plans.

7. Bar 5V adjacent to Junction Box shall be spaced at 9" centers to allow box installation.

8. All Conduits shall be Rigid Galvanized Steel or Schedule 40 P.V.C.

9. The Cost of Anchor Bolts shall be included in the Bid Price for Light Poles.

10. PAYMENT: The Cost of all Labor, Concrete and Reinforcing Steel required for the Construction of the Pilasters and all Conduits, Expansion Couplings, Junction Boxes and Miscellaneous hardware required for 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
			90R		

	NAMES	DATES
DRAWN BY	DCP	3-89
CHECKED BY	AJG	3-89
DESIGNED BY	TJB	3-89
CHECKED BY	AJG	3-89
APPROVED BY	AJG	

ENGINEER OF RECORD:

STRUCTURES DESIGN 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: LIGHT POLE PILASTER

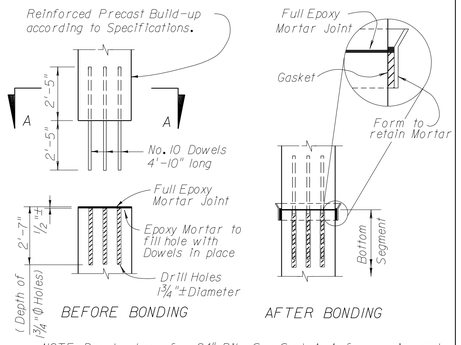
PROJECT NAME:

DRAWING NO. 1 of 1

INDEX NO. 500

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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

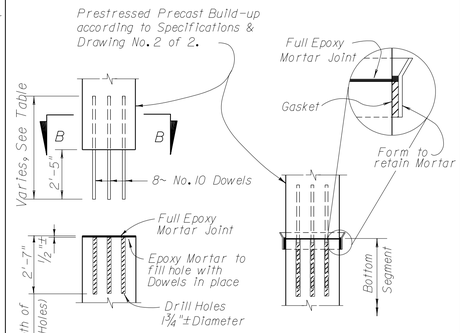


NOTE: Dowels shown for 24" Pile. See Sect. A-A for spacing and number of Dowels for each Pile.

REINFORCED PRECAST SPLICES
(Extensions 2' Min. but less than 5') (Not Drivable)

TABLE OF BONDED SPLICE DATA		
Drivable Splice	Min. Splice Length	No. 10 Dowel Length
YES	10'-0"	7'-5"
NO *	5'-0"	4'-10"

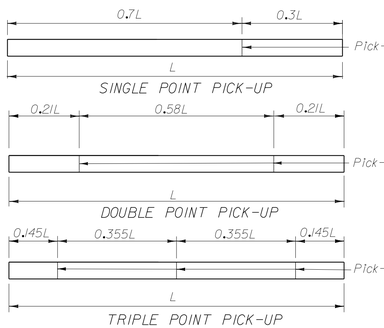
* For Splices less than 5'-0" (not Drivable), use the Reinforced Precast Splice.



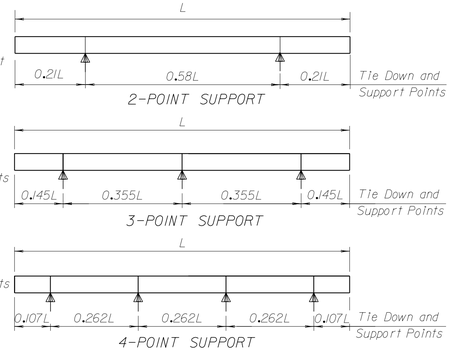
NOTE: Dowels shown for 24" Pile See SECTION B-B for spacing & Number of Dowels for each Pile.

PRESTRESSED PRECAST SPLICES
(Extensions 5' or longer)

DETAILS FOR REINFORCED PRECAST & PRESTRESSED PRECAST PILE SPLICES

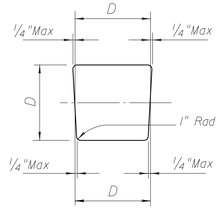


PILE PICK-UP DETAILS

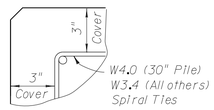


STORAGE AND TRANSPORTATION SUPPORT DETAILS

PILE SIZE	MAX. LENGTH "L" FOR PICK-UP		
	SINGLE POINT	DOUBLE POINT	TRIPLE POINT
12"	50'	70'	L > 70'
14"	55'	75'	L > 75'
18"	60'	90'	L > 90'
20"	65'	95'	L > 95'
24"	70'	100'	L > 100'
30"	90'	125'	L > 125'

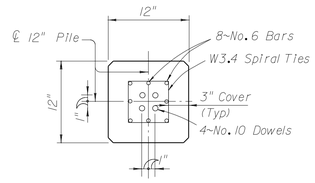


TYPICAL PILE SHAPE FOR MOLD FORMS

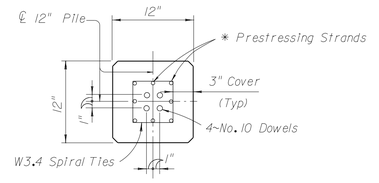


TYPICAL DETAIL SHOWING COVER DIMENSION

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

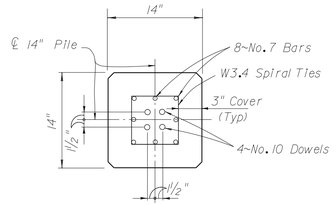


SECTION A-A
(See Reinf. Precast Splice Detail)

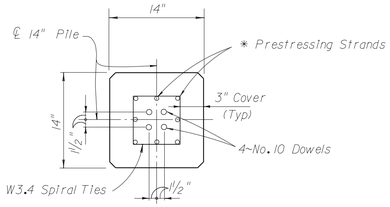


SECTION B-B
(See Prstr. Precast Splice Detail)

12" PILE

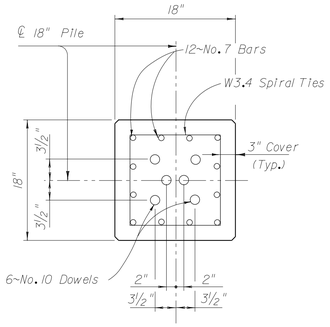


SECTION A-A
(See Reinf. Precast Splice Detail)

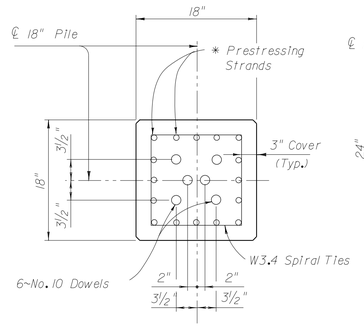


SECTION B-B
(See Prstr. Precast Splice Detail)

14" PILE

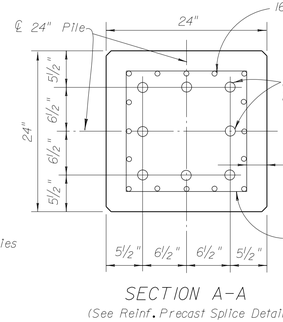


SECTION A-A
(See Reinf. Precast Splice Detail)

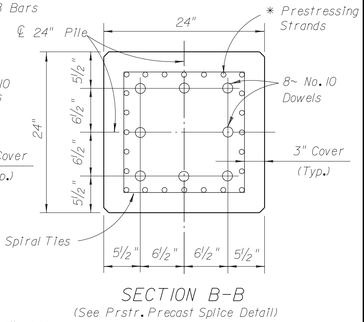


SECTION B-B
(See Prstr. Precast Splice Detail)

18" PILE

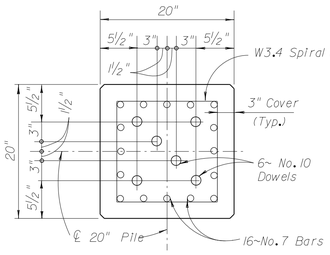


SECTION A-A
(See Reinf. Precast Splice Detail)

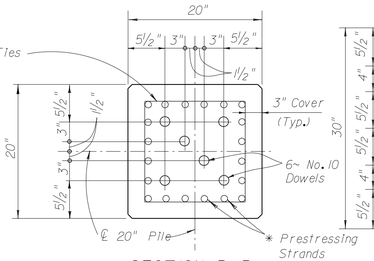


SECTION B-B
(See Prstr. Precast Splice Detail)

24" PILE

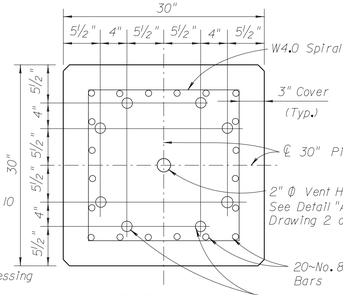


SECTION A-A
(See Reinf. Precast Splice Detail)

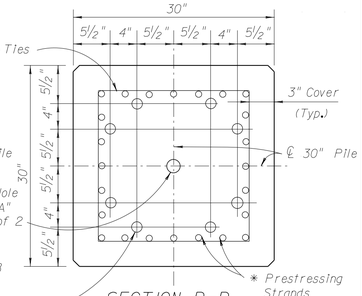


SECTION B-B
(See Prstr. Precast Splice Detail)

20" PILE



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



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

30" 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 steel wire meeting the requirements of ASTM A 82.

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 6,000 p.s.i. minimum at 28 days and 4,000 p.s.i. minimum at transfer of the Prestressing Force.

SPLICED PILES: Piles may be spliced in accordance with Section 455-5.12 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 dunage 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 Grade 60.

STRAND NOMENCLATURE:
S.R. = Stress Relieved Strand
L.R.S. = Low-Relaxation Strand

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			91R		

	NAMES	DATES
DRAWN BY	TGA	1-91
CHECKED BY	AJG	5-91
DESIGNED BY	·	·
CHECKED BY	·	·
APPROVED BY	NICHOLS/AJG	

ENGINEER OF RECORD:

STRUCTURES DESIGN 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:
12", 14", 18", 20", 24", AND 30" PRESTRESSED CONCRETE PILES

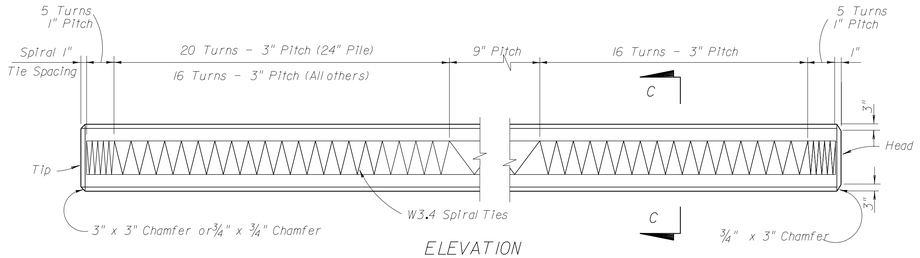
PROJECT NAME:

DRAWING NO.
1 of 2

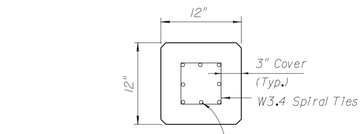
INDEX NO.
600

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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



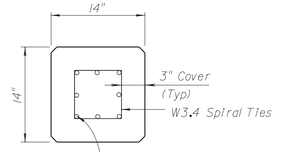
ELEVATION
(All Piles except 30" Piles)



ALTERNATE STRAND PATTERN ***

- 8 ~ 7/16" Ø L.R.S. - As = 0.115in.^{2} - 270K at 21,700# ea.
- 8 ~ 1/2" Ø S.R. - As = 0.144in.^{2} - 250K at 24,100# ea.
- 12 ~ 3/8" Ø L.R.S. - As = 0.085in.^{2} - 270K at 14,800# ea.
- 12 ~ 3/8" Ø S.R. - As = 0.085in.^{2} - 270K at 15,600# ea.

SECTION C-C
12" PILE

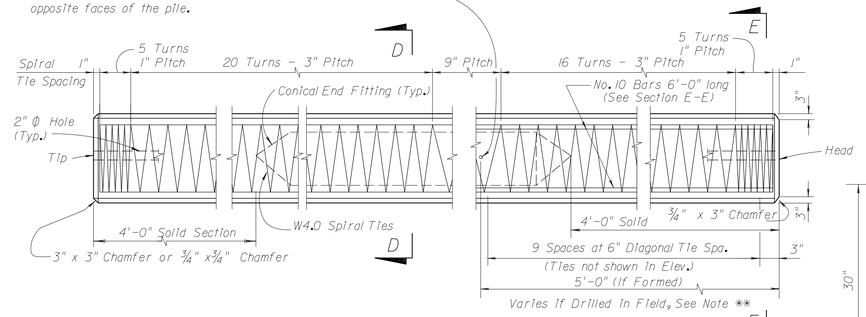


ALTERNATE STRAND PATTERN ***

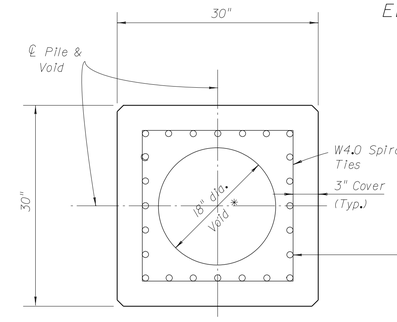
- 8 ~ 1/2" Ø (Spec.)L.R.S. - As = 0.167 in.^{2} - 270K at 30,000# ea.
- 8 ~ 1/2" Ø (Spec.)S.R. - As = 0.167 in.^{2} - 270K at 31,570# ea.
- 8 ~ 1/2" Ø L.R.S. As = 0.153 in.^{2} - 270K at 29,500# ea.
- 12 ~ 7/16" Ø S.R. - As = 0.115 in.^{2} - 270K at 21,200# ea.
- 12 ~ 1/2" Ø S.R. - As = 0.144 in.^{2} - 250K at 22,600# ea.
- 16 ~ 3/8" Ø S.R. - As = 0.085 in.^{2} - 270K at 16,070# ea.

SECTION C-C
14" PILE

Provide one (1) vent hole, 3/4" in diameter (@ ℄ Pile), on two (2) opposite faces of the pile.

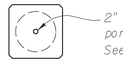


ELEVATION
(30" Piles)



* Omit Void at Ends, see Elevation View

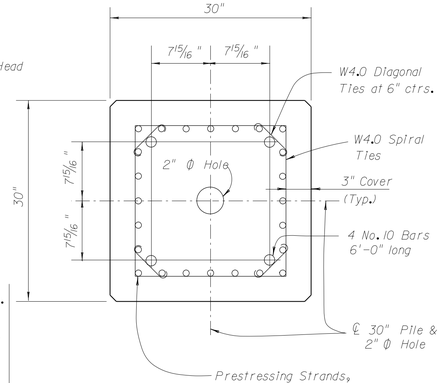
SECTION D-D
30" PILE



DETAIL "A"

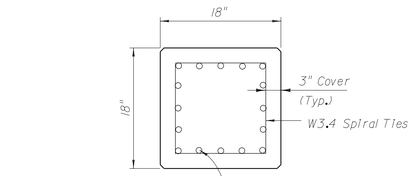
ALTERNATE STRAND PATTERN ***

- 20 ~ 9/16" Ø (Spec.)L.R.S. - As = 0.196 in.^{2} - 270K at 38,600# ea.
- 20 ~ 9/16" Ø L.R.S. - As = 0.192 in.^{2} - 270K at 38,880# ea.
- 24 ~ 1/2" Ø (Spec.)L.R.S. - As = 0.167 in.^{2} - 270K at 32,300# ea.
- 24 ~ 9/16" Ø S.R. - As = 0.192 in.^{2} - 270K at 35,000# ea.
- 24 ~ 9/16" Ø (Spec.)S.R. - As = 0.196 in.^{2} - 270K at 35,200# ea.
- 28 ~ 1/2" Ø L.R.S. - As = 0.153 in.^{2} - 270K at 28,100# ea.
- 28 ~ 1/2" Ø (Spec.)S.R. - As = 0.167 in.^{2} - 270K at 30,200# ea.



SECTION E-E
30" PILE

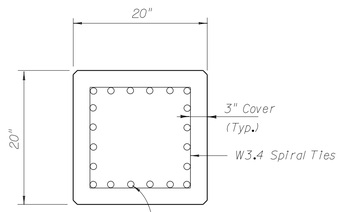
** NOTE:
The 18" Ø Void in the pile shall be positively vented to water or air after the final pile installation. If the 3/4" Ø vents are included in the pile cut-off section, two (2) new holes, 3/4" in diameter , shall be drilled on two (2) opposite faces of the pile below the bottom of substructure elevation. If the pile void can not be vented directly to water or air, then venting shall be provided by the use of a 1" Ø P.V.C. conduit through the 2" Ø hole(s) or the the 18" 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 2" Ø hole(s). See Detail "A".



ALTERNATE STRAND PATTERN ***

- 12 ~ 1/2" Ø (Spec.) L.R.S. - As = 0.167 in.^{2} - 270K at 32,400# ea.
- 12 ~ 9/16" Ø S.R. - As = 0.192 in.^{2} - 270K at 35,100# ea.
- 16 ~ 1/2" Ø S.R. - As = 0.153 in.^{2} - 270K at 26,800# ea.
- 20 ~ 7/16" Ø L.R.S. - As = 0.115 in.^{2} - 270K at 20,000# ea.
- 20 ~ 7/16" Ø S.R. - As = 0.115 in.^{2} - 270K at 21,100# ea.
- 24 ~ 3/8" Ø L.R.S. - As = 0.085 in.^{2} - 270K at 16,300# ea.

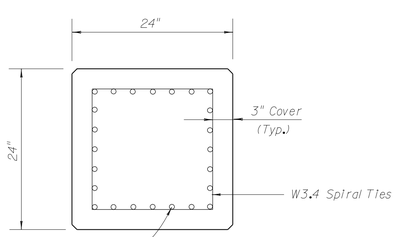
SECTION C-C
18" PILE



ALTERNATE STRAND PATTERN ***

- 16 ~ 1/2" Ø L.R.S. - As = 0.153 in.^{2} - 270K at 30,000# ea.
- 16 ~ 1/2" Ø (Spec.) S.R. - As = 0.167 in.^{2} - 270K at 31,570# ea.
- 20 ~ 1/2" Ø S.R. - As = 0.153 in.^{2} - 270K at 26,500# ea.
- 24 ~ 7/16" Ø L.R.S. - As = 0.115 in.^{2} - 270K at 20,500# ea.
- 24 ~ 7/16" Ø S.R. - As = 0.115 in.^{2} - 270K at 21,740# ea.

SECTION C-C
20" PILE



ALTERNATE STRAND PATTERN ***

- 20 ~ 1/2" Ø (Spec.)L.R.S. - As = 0.167 in.^{2} - 270K at 33,820# ea.
- 20 ~ 9/16" Ø S.R. - As = 0.192 in.^{2} - 270K at 36,290# ea.
- 20 ~ 9/16" Ø (Spec.)S.R. - As = 0.196 in.^{2} - 270K at 37,050# ea.
- 24 ~ 1/2" Ø L.R.S. - As = 0.153 in.^{2} - 270K at 29,000# ea.
- 24 ~ 1/2" Ø (Spec.)S.R. - As = 0.167 in.^{2} - 270K at 31,570# ea.

SECTION C-C
24" 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.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			9IR		

	NAMES	DATES
DRAWN BY	TGA	1-91
CHECKED BY	AJG	5-91
DESIGNED BY	·	·
CHECKED BY	·	·
APPROVED BY	NICHOLS/AJG	

ENGINEER OF RECORD:
STRUCTURES DESIGN 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:
12", 14", 18", 20", 24", AND 30" PRESTRESSED CONCRETE PILES

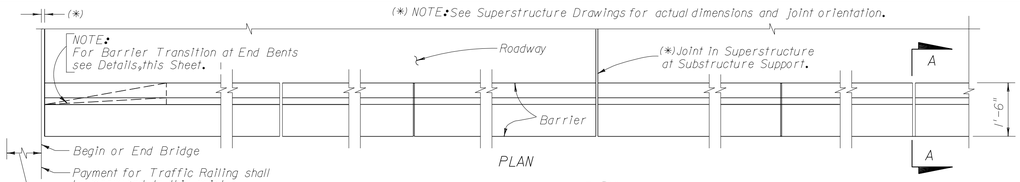
PROJECT NAME:

DRAWING NO.: 2 of 2

INDEX NO.: 600

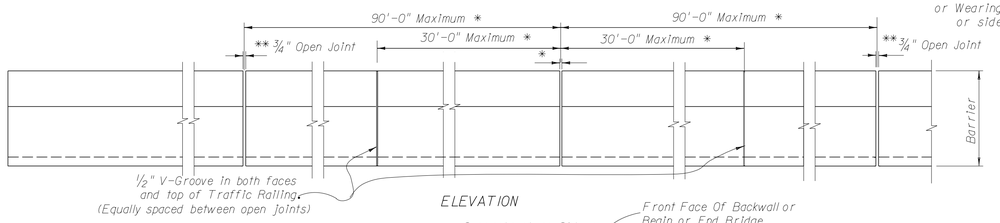
$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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

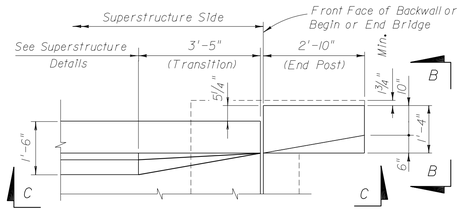


PLAN

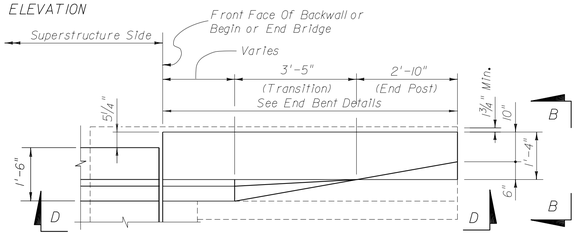
** NOTE: ¾" Open Joints shall be provided at:
1 - Substructure supports where superstructure slab is continuous.
2 - Midspan where span length exceeds 90 feet.
3 - Intermediate locations (equally spaced) between midspan and substructure support where span length exceeds 180 feet.



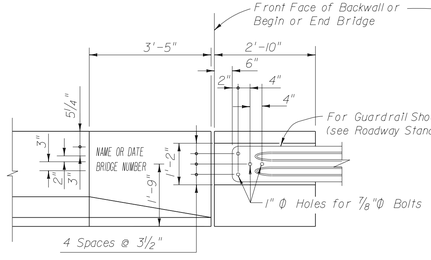
ELEVATION



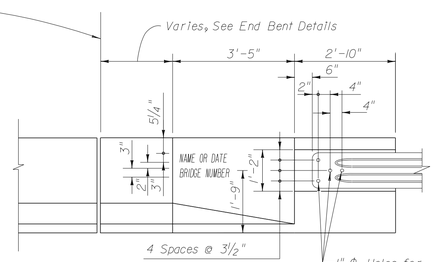
PLAN
(See Note 'A')



PLAN
(See Note 'B')

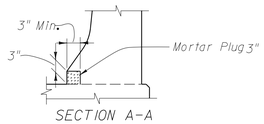


VIEW C-C



VIEW D-D

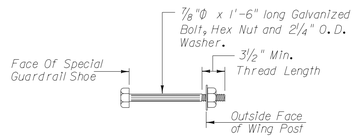
NOTE 'A':
If Barrier Transition is required and the Superstructure Depth (thickness) is 25 inches or less, the Transition shall be provided on the Superstructure side. To accommodate the Transition on the Superstructure the Reinforcement (Bars 5V, 5P & 4S) will need adjusting. The 1'-2" portion of Bars 5V shall be bent to fit and the horizontal 10" portion along the bottom shall be cut at the center.



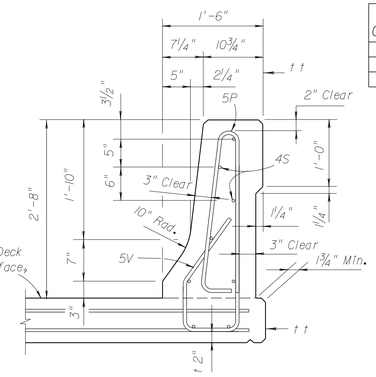
SECTION A-A

NOTE: When open joint in Barrier is not coincident with joint in the superstructure, the lower 3" portion of the open joint shall be plugged by filling with mortar in accordance with Article 400-15.1.

NOTE 'B':
If Barrier Transition is required and the Superstructure Depth (thickness) exceeds 25 inches, the Barrier Transition shall be provided on the End Bent side.



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

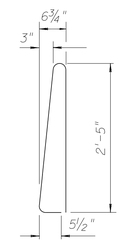


TYPICAL SECTION THRU TRAFFIC RAILING

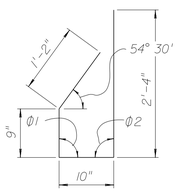
t For Slabs 8" thick or less. If Slab is thicker than 8" or Barrier is located on a Retaining Wall, embed Bar 5V 6".

t t 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 Ø1	LOW GUTTER Ø2	HIGH GUTTER Ø1	HIGH GUTTER Ø2
0.00 to 0.02	90°	90°	90°	90°
0.02+ to 0.06	93°	87°	87°	93°
0.06+ to 0.10	96°	84°	84°	96°

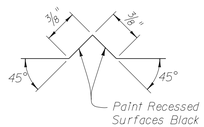


BAR 5P



BAR 5V

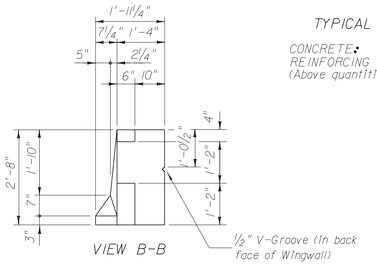
BENDING DIAMETERS



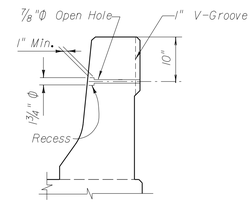
SECTION THRU RECESSED "V" GROOVE TO FORM INSCRIBED LETTERS AND FIGURES

BAR BENDING NOTES

1. All bar dimensions in the bending diagrams are out to out.
2. Bars 5P and 5V shall be bent around a pin diameter = 2½".
3. The 9" and the 2'-4" vertical dimensions shown for bar 5V are based on a bridge slab 8" thick or greater and without raised sidewalk or wearing surface. If the slab thickness is less than 8" 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 an 8" slab with Ø1 = Ø2 = 90°.



VIEW B-B

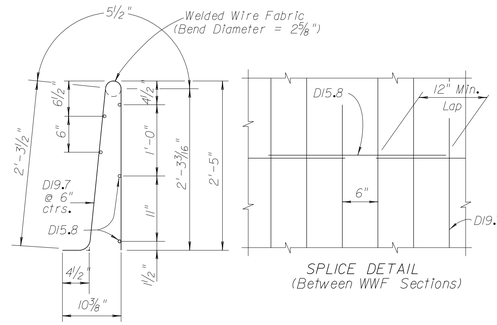


HOLES FOR INCIDENTAL SIGNING

NOTE: Holes and grooves shall be provided for designated Type "C" Single Column Signs (See Signing Plans) and at approximately 500' intervals between designated locations for future signs as directed by the Engineer. The cost of the extra holes and grooves shall be included in the Contract Unit price for Traffic Railing (Barrier). If Signing Plans are not available the Project Engineer should secure necessary information from the District Maintenance or Traffic Operations Office.

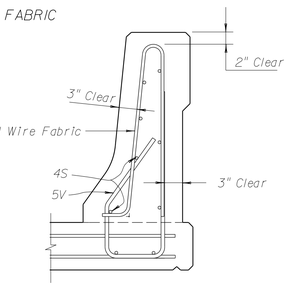
TYPICAL TRAFFIC RAILING QUANTITIES

CONCRETE: 0.1030 C.Y. per linear foot.
REINFORCING STEEL: 20.49 lbs. per linear foot.
(Above quantities are based on 8" slab and 0.02 '/' cross-slope)



SPLICE DETAIL
(Between WWF Sections)

WELDED WIRE FABRIC



ALTERNATE REINFORCING DETAILS

The Contractor may utilize Welded Wire Fabric in lieu of all Bars 5P and Four (4) of the Bars 4S. Welded Wire Fabric shall conform to ASTM A497.

REINFORCING STEEL NOTES

Place longitudinal steel in bottom of slab as shown above to facilitate tying bars 5V. Do not add reinforcing steel for tie purposes.

All vertical reinforcing steel in Traffic Railing shall be No. 5 Bars spaced at 8" c.c. and all longitudinal reinforcing steel shall be No. 4 Bars. At all open joints all reinforcing shall have 2" minimum cover. At all construction joints Bars 4S may be continuous or spliced. All splices in Bars 4S shall be 1'-4" minimum.

TRAFFIC RAILING NOTES

CONCRETE AND REINFORCING STEEL: See General Notes.
PAYMENT: Traffic Railing on Bridges shall be paid for per linear foot (Item No. 400-148-1), 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 100 ft., one marker shall be placed at each end of the bridge. On bridges 100 ft. 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 A.S.T.M. A-153.
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 ¾" open joint and ½" 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 3" in height, as approved by the Engineer, may be used, in lieu of letters and figures formed by ⅜" V-Grooves. V-Grooves shall be formed by preformed letters and figures.

REVISIONS						
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			9IR		

	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
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

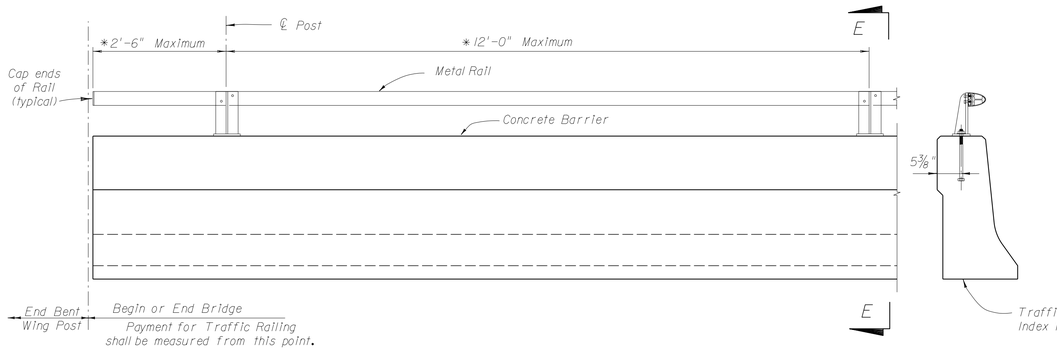
FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.
.	.	.

SHEET TITLE: TRAFFIC RAILING BARRIER
DRAWING NO.: 1 of 1
PROJECT NAME:
INDEX NO.: 700

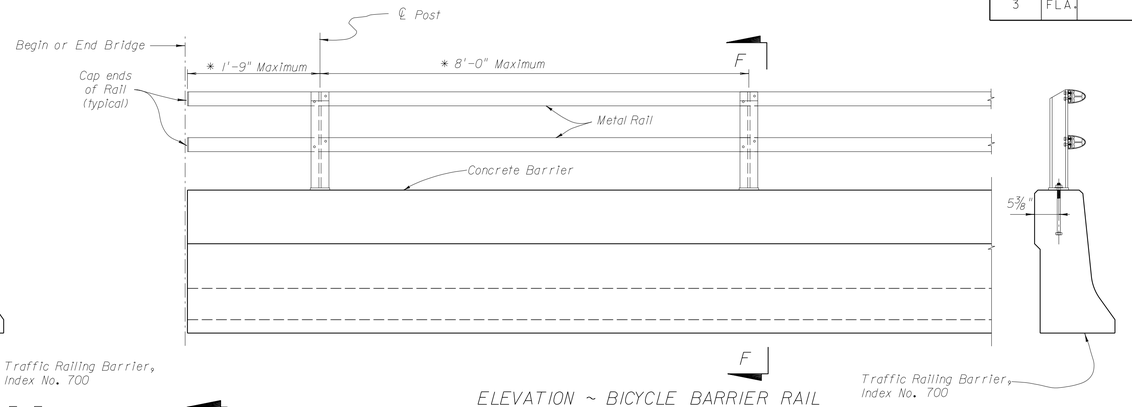
$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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



ELEVATION ~ SIDEWALK BARRIER RAIL

SECTION E-E



ELEVATION ~ BICYCLE BARRIER RAIL

SECTION F-F

NOTES

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

PAYMENT: Traffic Railing (Sidewalk Barrier Type) shall be paid for per linear foot Item No. 400-148-2 and Traffic Railing (Bicycle Barrier Type) shall be paid for per linear foot Item No. 400-148-3. These items shall included 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: A.S.T.M. B221, alloy 6061-T6 or alloy 6351-T5 with welding using filler wire 4043.

RAIL AND RAIL SPLICE: Aluminum: A.S.T.M. B221, alloy 6061-T6 or alloy 6351-T5.

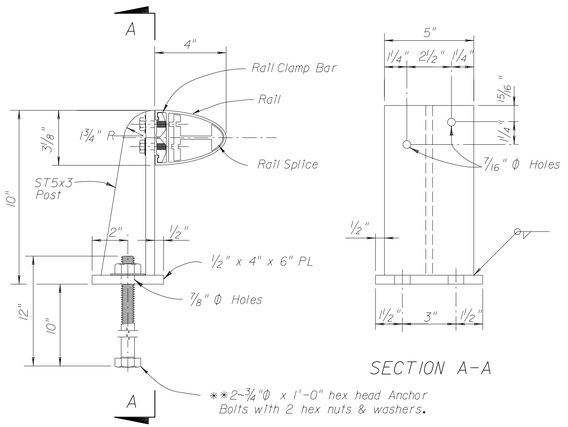
RAIL CLAMP BAR: Aluminum: A.S.T.M. B221, alloy 6061-T6 or alloy 6351-T5.

ANCHOR BOLTS: Anchor bolts shall be in accordance with A.S.T.M. A-36 or A-307. Anchor bolts, Nuts and washers shall be hot-dip galvanized in accordance with A.S.T.M. designation A-153.

RAIL END CAP: A.S.T.M. B-26 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 1/8 " resilent 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.



SECTION THRU RAIL

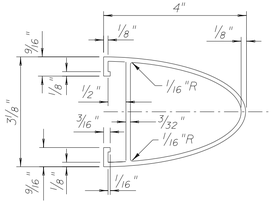
SIDEWALK BARRIER RAIL

SECTION A-A

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

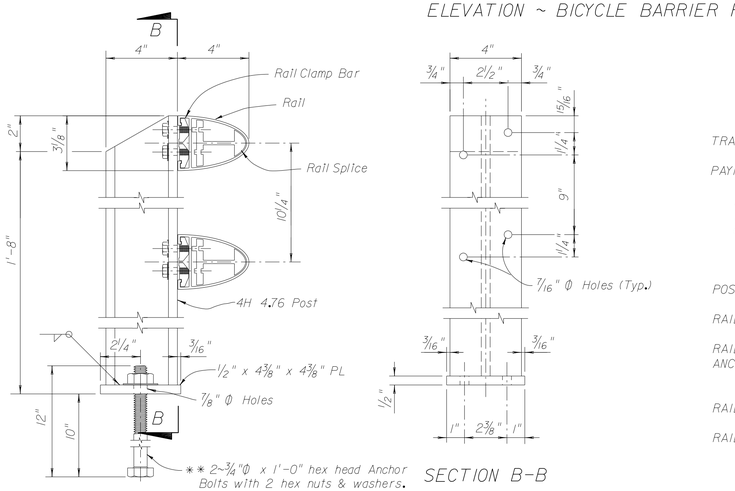
* NOTE: See Superstructure Drawing for actual dimensions.

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



RAIL

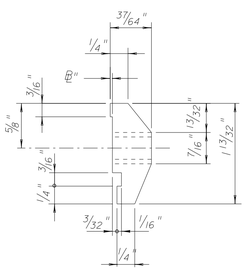
NOTE "A" ~ Rough cut ends and edges of aluminum rails shall be ground or filed smooth to remove all sharp edges, nicks or burrs that would be injurious to the human touch.



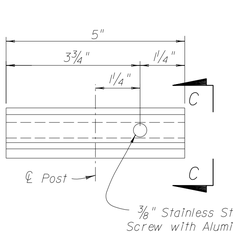
SECTION THRU RAIL

BICYCLE BARRIER RAIL

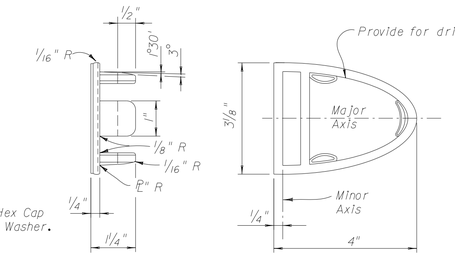
SECTION B-B



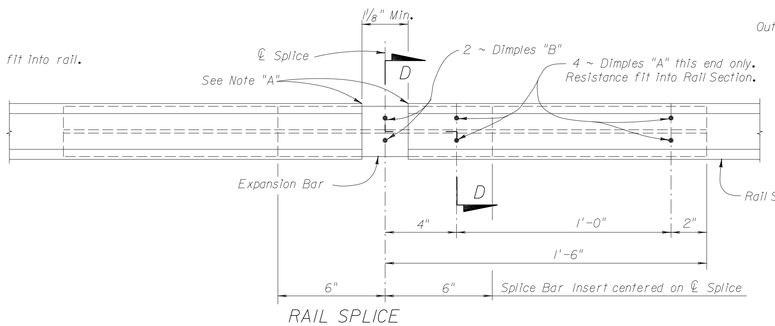
VIEW C-C



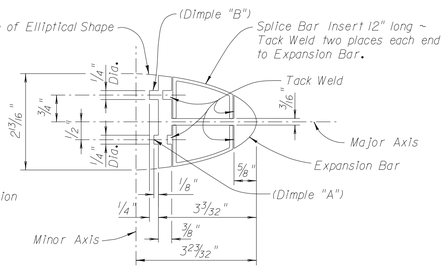
RAIL CLAMP BAR



RAIL END CAP



RAIL SPLICE



SECTION D-D

RAIL COMPONENTS

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	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
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)

DRAWING NO.: 1 of 1

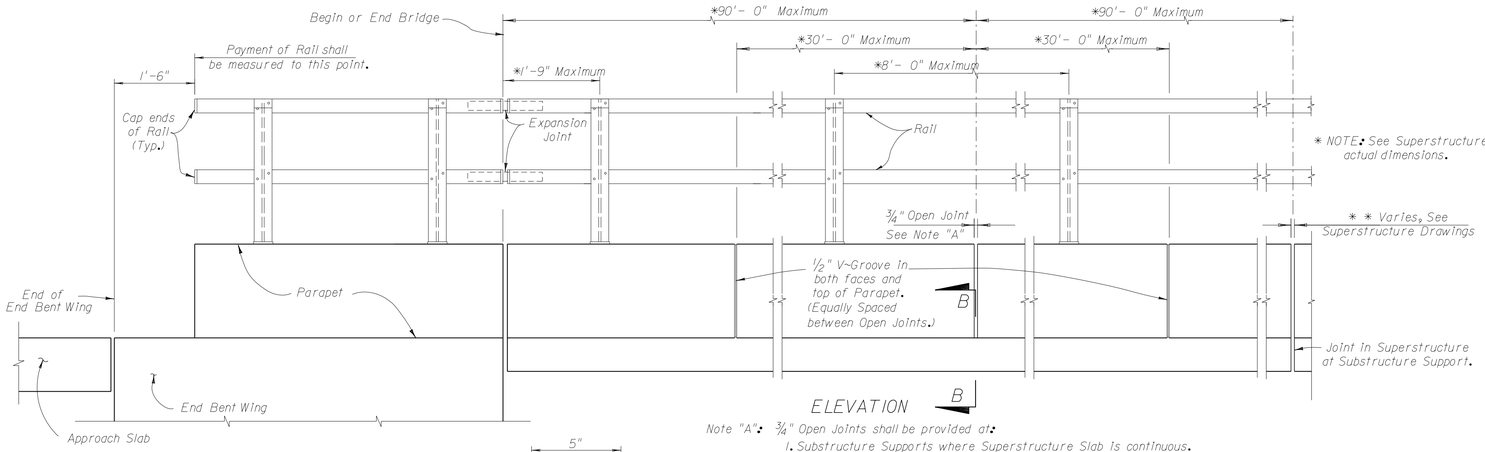
PROJECT NAME:

INDEX NO.: 710

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

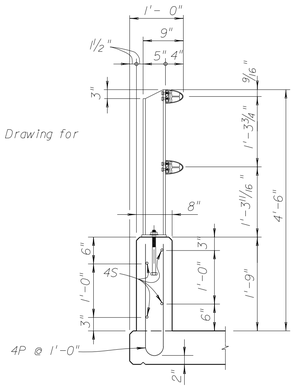
FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.	.	.	.



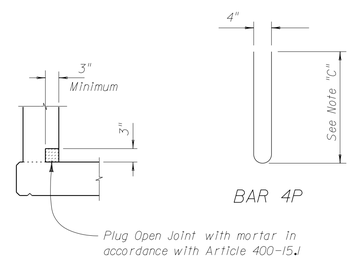
ELEVATION B

Note "A": 3/4" Open Joints shall be provided at:

1. Substructure Supports where Superstructure Slab is continuous.
2. Mid-Span where Span length exceeds 90 feet.
3. Intermediate locations (equally spaced) between Mid-Span and Superstructure Support where Span length exceeds 180 feet.
4. Locations Coinciding with Joints for the Traffic Railing Barrier.



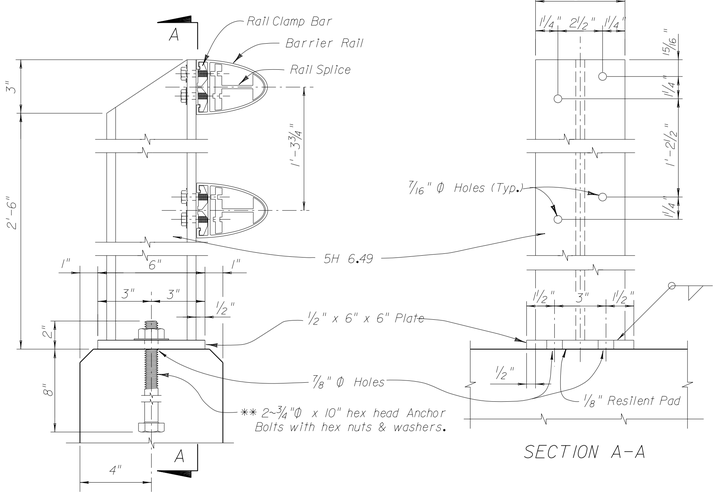
TYPICAL SECTION THRU PARAPET AND RAIL



BAR 4P

SECTION B-B

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

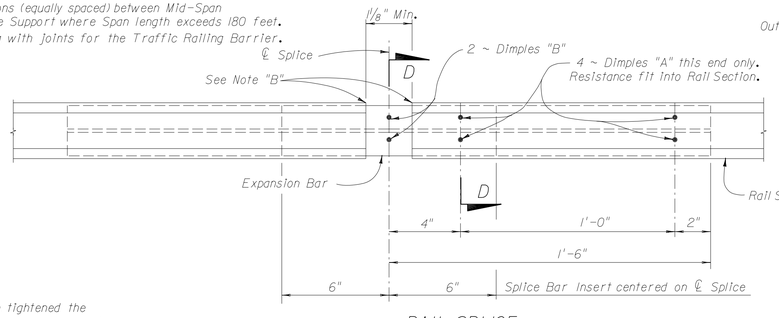


SECTION THRU RAIL

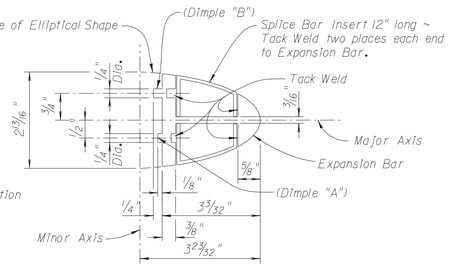
SECTION A-A

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

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

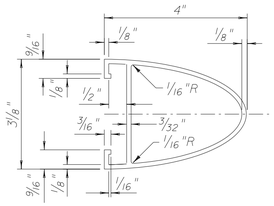


RAIL SPLICE



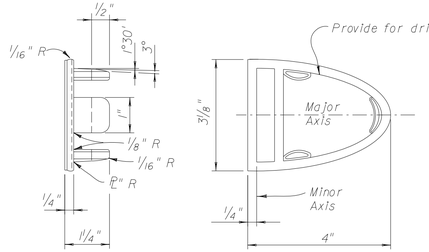
SECTION D-D

RAIL COMPONENTS

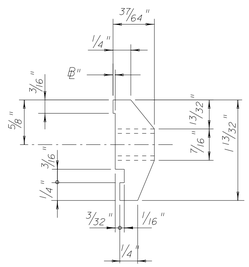


RAIL

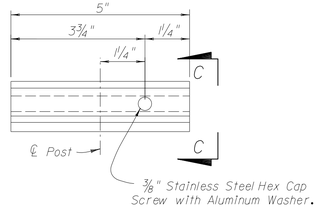
NOTE "B" ~ Rough cut ends and edges of aluminum rails shall be ground or filed smooth to remove all sharp edges, nicks or burrs that would be injurious to the human touch.



RAIL END CAP



VIEW C-C



RAIL CLAMP BAR

NOTES

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 foot and shall be measured along the centerline of the top surface of the rail. 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. 400-5-3.

SPECIFICATIONS FOR BRIDGE RAIL

POST: Fabricated wrought aluminum; A.S.T.M. B221, alloy 6061-T6 or alloy 6351-T5 with welding using filler wire 4043.
RAIL & RAIL SPLICE: Aluminum; A.S.T.M. B221, alloy 6061-T6 or alloy 6351-T-5.
RAIL CLAMP BAR: Aluminum; A.S.T.M. B221, alloy 6061-T6 or alloy 6351-T5.
ANCHOR BOLTS: Anchor Bolts shall be in accordance with A.S.T.M. A-36 or A-307. Anchor Bolts, nuts and washers shall be hot-dip galvanized in accordance with A.S.T.M. Designation A-153.
RAIL END CAP: A.S.T.M.B-26 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 1/8 " thick resilent 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 1/2 times the bridge joint opening.
SHOP DRAWINGS: Complete details and description of materials of the proposed bridge rail shall be submitted by the contractor for the Engineer's approval prior to fabrication.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	NAMES	DATES
DRAWN BY	LFC	12-85
CHECKED BY	RDS	1-86
DESIGNED BY	——	——
CHECKED BY	——	——
APPROVED BY	AJG	

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

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.
.	.	.

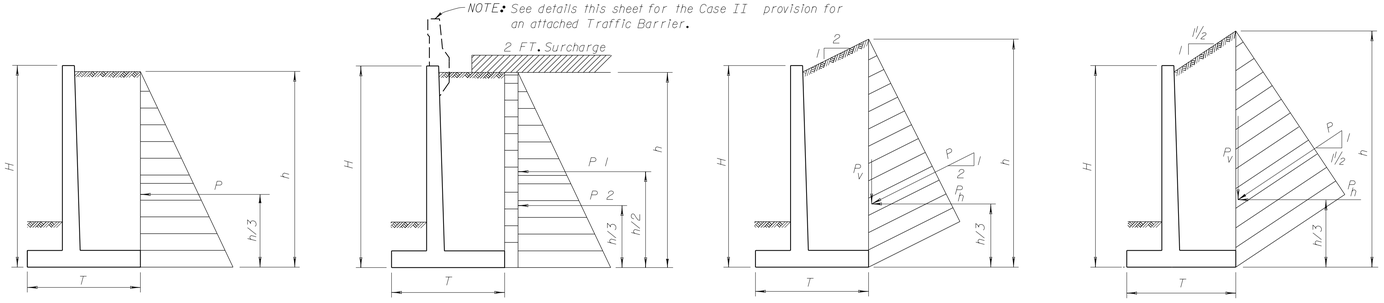
SHEET TITLE: PEDESTRIAN/BICYCLE RAILING

PROJECT NAME:

DRAWING NO. 1 of 1

INDEX NO. 720

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



GENERAL 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.

MAXIMUM CONCRETE STRESSES: (fc = Maximum Working Stress; f'c = Minimum 28 Day Compressive Strength)
Class II Concrete (Retaining Walls) fc = 1360 psi (f'c = 3400 psi)
Class IV Concrete (Retaining Walls) fc = 1360 psi (f'c = 3400psi)

CLASS OF CONCRETE: Retaining walls in a non-corrosive (slightly aggressive) environment shall use Class II Concrete reinforced with uncoated (black) reinforcing steel. Retaining walls in a non-corrosive (moderately aggressive) environment shall use Class IV reinforced with uncoated (black) reinforcing steel. Retaining walls in a corrosive (extremely aggressive) environment shall use Class IV concrete reinforced with epoxy coated reinforcing steel.

REINFORCING STEEL: All reinforcing steel shall be Grade 60 (fs = 24000 psi). Retaining walls located in a corrosive (extremely aggressive) environment shall use epoxy coated reinforcing bars.

ENVIRONMENT: These plans apply to cast-in-place retaining walls located in all environments.

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 as Approved by the Engineer.

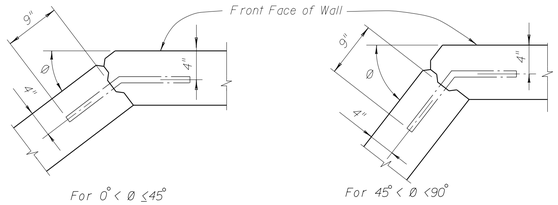
PAYMENT: Retaining walls in a non-corrosive (slightly aggressive) environment shall be paid for at the Contract Unit Price for Class II Concrete (Retaining Walls) (Cu.Yd.) Item No. 400-2-11 and Reinforcing Steel (Retaining Wall) (lbs) Item No. 415-1-3.

Retaining walls in a non-corrosive (moderately aggressive) environment shall be paid for at the Contract Unit Price for Class IV Concrete (Retaining Walls) (Cu.Yd.) Item No. 400-4-11 and Reinforcing Steel (Retaining Wall) (lbs) Item No. 415-1-3.

Retaining walls in a corrosive (extremely aggressive) environment shall be paid for at the Contract Unit Price for Class IV Concrete (Retaining Walls) (Cu.Yd.) Item No. 400-4-11 and Reinforcing Steel (Retaining Wall) (lbs) Item No. 9415-1-3.

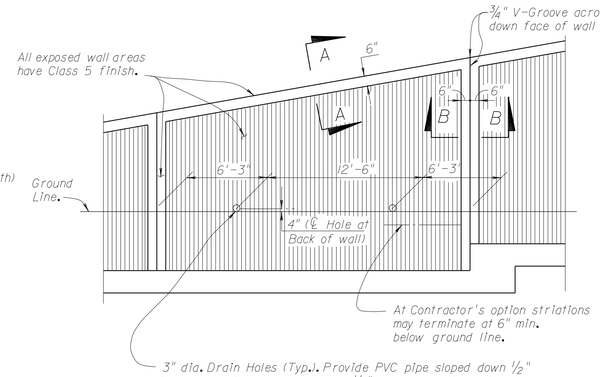
TRAFFIC RAILING BARRIER: For Details see Index No. 700. When Barrier is used with Case II Walls, the Barrier Concrete and Reinforcing Steel shall be Included in the Bid Item Quantities for Concrete Retaining Walls.

QUANTITIES: Concrete and Reinforcing Steel Quantities shall be based upon the average height (H) of each 25'-0" Unit Interpolating between the "PER 25' UNIT" quantities shown on the appropriate case sheet. Quantities for units less than 25'-0" in length shall be computed as the length of the average unit times the "PER LIN. FT" quantity for the average height (H) of the partial unit, interpolating between the quantities shown as applicable.



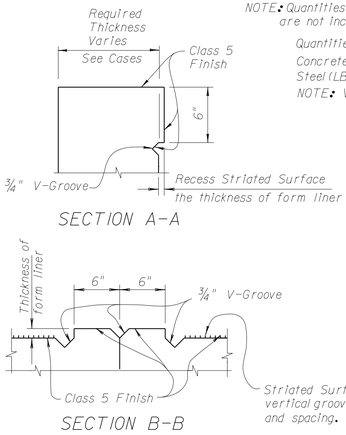
TYPICAL JOINT DETAILS AT CORNERS

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



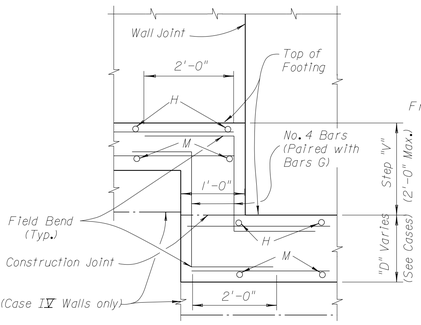
NOTE: Add 0.002(H'-D+12) c.y. of concrete for each 25'-0" unit to the Quantities shown for striated walls, H' is the wall height at midlength of a 25'-0" unit.

ELEVATION OF STRIATED WALL



SECTION A-A

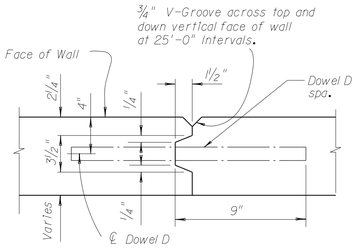
SECTION B-B



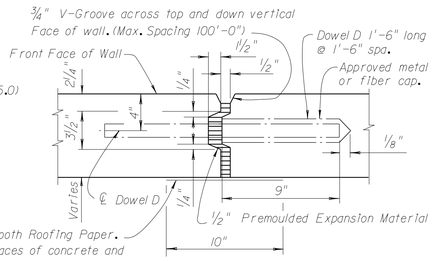
FOOTING STEP DETAIL

NOTE: Quantities for Footing Step are not included in wall Quantities.

Quantities per Step
Concrete (C.Y.) = (0.037)(V)(T)
Steel (LBS.) = (0.89)(T + 1.5)(V + 5.0)
NOTE: V & T in feet

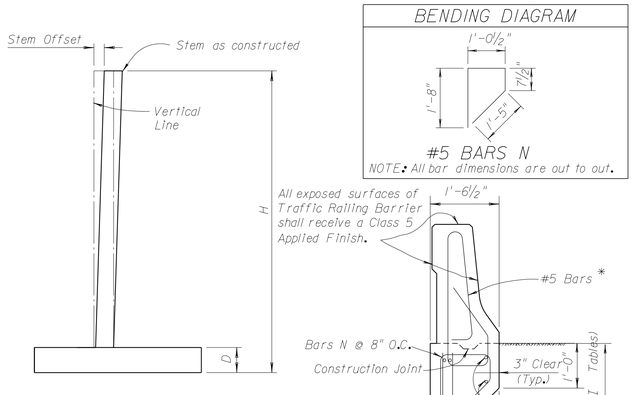


CONSTRUCTION JOINT DETAIL



EXPANSION JOINT DETAIL

NOTE: Key to stop 6" from top of wall. Joint across top of wall to be a straight line. Extend V-Groove down back of wall to 6" min. below ground.



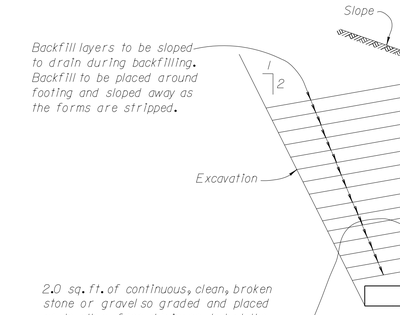
STEM OFFSET VALUES

STEM OFFSET
(H-D) < 12: Offset = 1/16(H-D)
(H-D) > 12: Offset = 1/8(H-D-6)

Note: Offset in inches
Maximum Offset = 2½"
H & D in feet.

BARRIER DETAIL AT TOP OF CASE II WALL

* NOTE: See Sheet 1 of 1 Index 700 for Bars.



TYPICAL BACKFILL DETAIL

NOTE: Where Concrete Gutter is Required, Gutter shall be constructed according to Roadway Standards (Index 280 sheet 2 of 4). Payments shall be made under Item No. 524-1-1 Concrete Ditch Pavement (3" thick) per Sq. Yd. For limits of Concrete Gutter see Roadway Plans.

NOTE: Lug at top of Wall requires an additional 0.98 and 0.72 c.y. of Concrete for each 25'-0" Unit of Case II Wall for 9" and 11" minimum stem widths, respectively; and an additional 218 lbs. of Reinforcing Steel per 25'-0" Unit of Case II Wall for the 38 - No. 5 Bars N and 2 - No. 4 Bars G shown.

NOTE: The Base and Front Face of the Footing shall be poured against undisturbed material.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	NAMES	DATES
DRAWN BY	M.I.	3/87
CHECKED BY	M.P.	3/87
DESIGNED BY	W.E.H.	9/81
CHECKED BY	T.D.H.	9/81
APPROVED BY	A.S.M.	

ENGINEER OF RECORD:
STRUCTURES DESIGN 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

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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

RETAINING WALL DATA

WALL DIMENSIONS / REINFORCING STEEL SCHEDULE

H	B	D	T	BARS A SIZE	BARS A NO.	BARS A LENGTH	BARS D* SIZE	BARS D* NO.	BARS D* LENGTH	BARS F SIZE	BARS F NO.	BARS F LENGTH
594	8"	11"	3'-1"	595			596	4	1'-6"	597	17	4'-7"
7	10"	11"	3'-6"				6	5	1'-6"	4	17	5'-7"
8	1'-0"	11"	4'-0"				6	5	1'-6"	4	17	6'-7"
9	1'-2"	11"	4'-6"				6	6	1'-6"	4	17	7'-7"
10	1'-3"	11"	5'-2"				6	7	1'-6"	4	17	8'-7"
11	1'-6"	11"	5'-11"				6	7	1'-6"	4	17	9'-7"
12	1'-9"	1'-0"	6'-9"				6	8	1'-6"	4	17	10'-6"
13	2'-0"	1'-0"	7'-8"				6	9	1'-6"	4	17	11'-6"
14	2'-3"	1'-0"	8'-8"				6	9	1'-6"	4	17	12'-6"
15	2'-6"	1'-0"	9'-7"	5	19	13'-6"	6	10	1'-6"	4	17	13'-6"
16	2'-10"	1'-0"	10'-8"	5	17	14'-6"	6	10	1'-6"	4	17	14'-6"
17	3'-1"	1'-2"	11'-11"	5	19	15'-4"	6	11	1'-6"	4	17	15'-4"
18	3'-6"	1'-2"	12'-9"	5	17	16'-4"	6	12	1'-6"	4	17	16'-4"
19	3'-10"	1'-2"	14'-0"	5	19	17'-4"	6	12	1'-6"	4	17	17'-4"
20	4'-2"	1'-2"	15'-0"	6	17	18'-4"	6	13	1'-6"	4	17	18'-4"

H	BARS G SIZE	BARS G NO.	BARS G LENGTH	BARS H SIZE	BARS H NO.	BARS H SPACING	BARS H LENGTH
6	598	14	24'-6"	599	18	1'-5"	2'-7"
7	4	16	24'-6"	4	18	1'-5"	3'-0"
8	4	18	24'-6"	4	18	1'-5"	3'-6"
9	4	20	24'-6"	4	19	1'-4"	4'-0"
10	4	22	24'-6"	4	28	11"	4'-8"
11	4	24	24'-6"	4	43	7"	5'-5"
12	4	26	24'-6"	4	38	8"	6'-3"
13	4	28	24'-6"	4	50	6"	7'-2"
14	4	30	24'-6"	4	60	5"	8'-2"
15	4	34	24'-6"	5	50	6"	9'-1"
16	4	38	24'-6"	6	43	7"	10'-2"
17	4	40	24'-6"	6	43	7"	11'-5"
18	4	42	24'-6"	6	50	6"	12'-3"
19	4	44	24'-6"	6	60	5"	13'-6"
20	4	46	24'-6"	7	43	7"	14'-6"

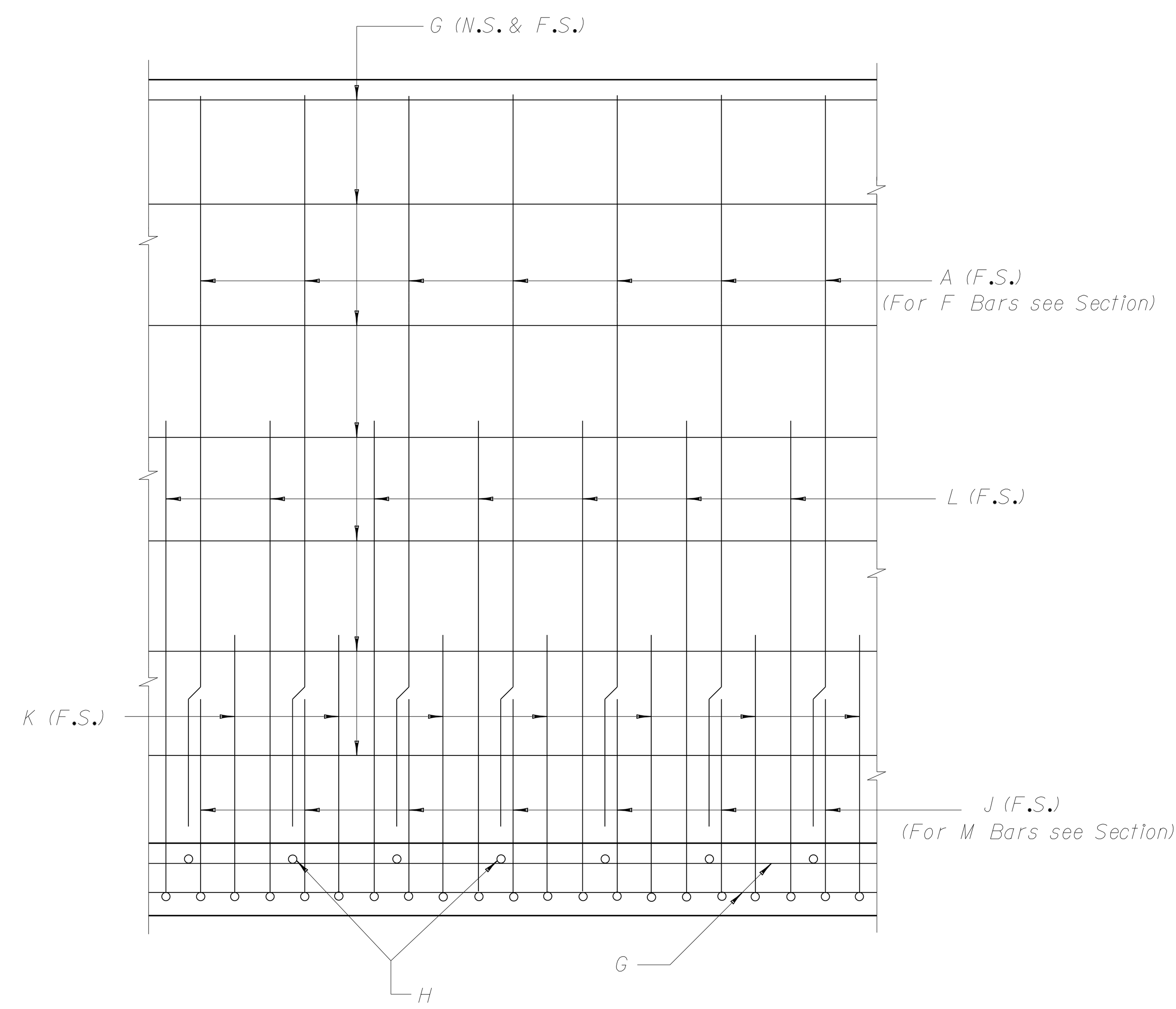
H	BARS J SIZE	BARS J NO.	BARS J SPACING	BARS J a	BARS J b	BARS J LENGTH
6	600	25	1'-0"	5'-5"	1'-1"	6'-6"
7	4	25	1'-0"	6'-5"	1'-3"	7'-8"
8	4	25	1'-0"	7'-5"	1'-6"	8'-11"
9	4	28	11"	8'-5"	1'-8"	10'-1"
10	4	28	11"	9'-5"	1'-9"	11'-2"
11	4	30	10"	10'-5"	2'-1"	12'-6"
12	4	38	8"	11'-5"	2'-4"	13'-9"
13	4	38	8"	12'-5"	2'-9"	15'-2"
14	4	50	6"	13'-5"	3'-1"	16'-6"
15	5	19	1'-4"	3'-8"	3'-4"	7'-0"
16	5	17	1'-6"	2'-10"	3'-8"	6'-6"
17	5	19	1'-4"	3'-0"	4'-0"	7'-0"
18	6	17	1'-6"	4'-4"	4'-5"	8'-9"
19	6	19	1'-4"	3'-5"	4'-10"	8'-3"
20	7	17	1'-6"	3'-5"	5'-2"	8'-7"

H	BARS K SIZE	BARS K NO.	BARS K SPACING	BARS K a	BARS K b	BARS K LENGTH	BARS L SIZE	BARS L NO.	BARS L SPACING	BARS L a	BARS L b	BARS L LENGTH
6	601						602					
7												
8												
9												
10												
11												
12												
13												
14												
15	5	18	1'-4"	10'-9"	3'-4"	14'-1"						
16	5	16	1'-6"	5'-2"	3'-8"	8'-10"	5	16	1'-6"	14'-9"	3'-8"	18'-5"
17	5	18	1'-4"	5'-8"	4'-0"	9'-8"	5	18	1'-4"	13'-11"	4'-0"	17'-11"
18	6	16	1'-6"	5'-11"	4'-5"	10'-4"	6	16	1'-6"	14'-11"	4'-5"	19'-4"
19	6	18	1'-4"	6'-4"	4'-10"	11'-2"	6	18	1'-4"	15'-4"	4'-10"	20'-2"
20	6	16	1'-6"	6'-4"	5'-2"	11'-6"	6	16	1'-6"	16'-4"	5'-2"	21'-6"

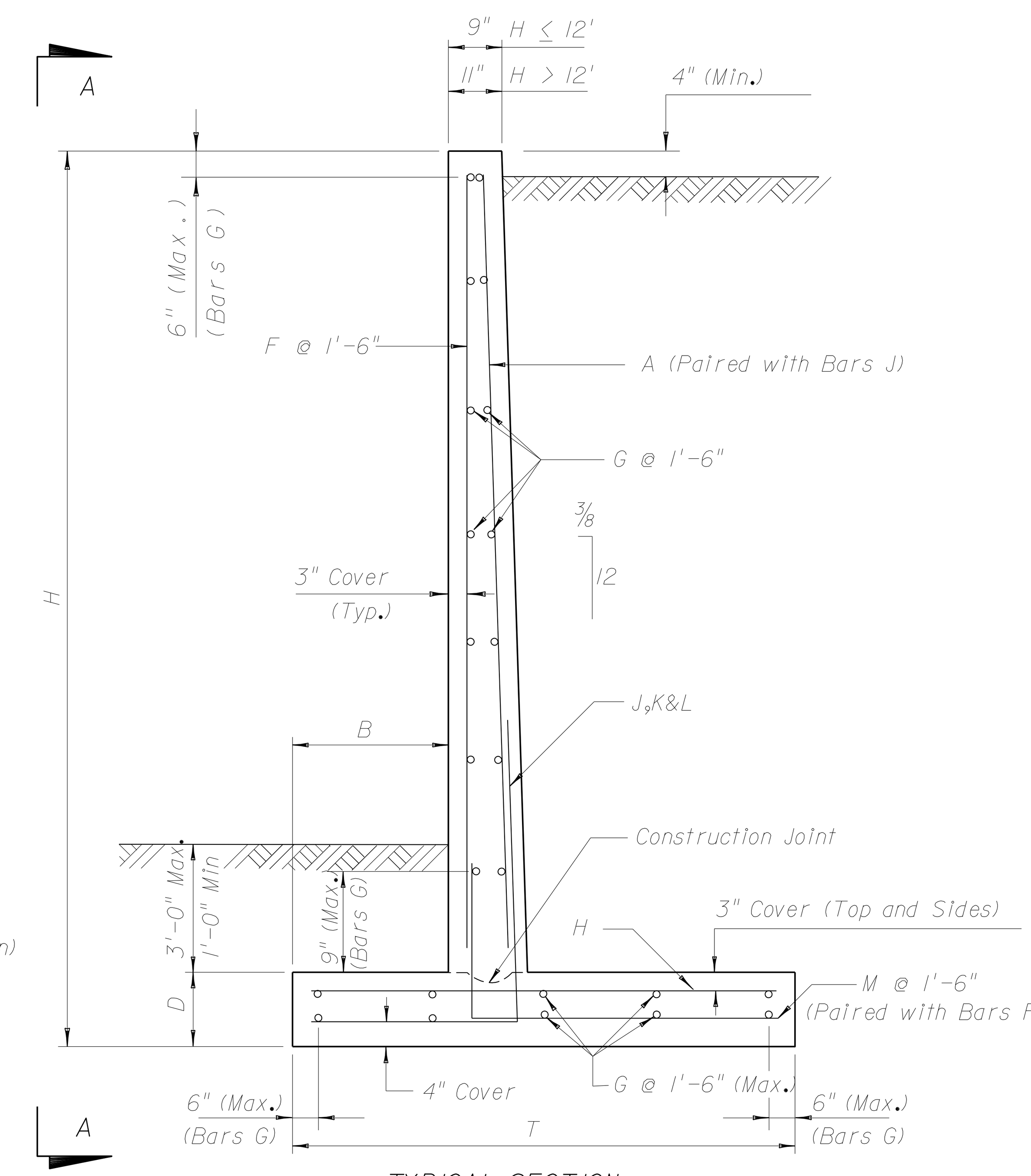
BARS M SIZE	BARS M NO.	BARS M C	BARS M LENGTH	H
603	17	1'-11"	4'-1"	6
4	17	2'-2"	4'-4"	7
4	17	2'-6"	4'-8"	8
4	17	2'-10"	5'-0"	9
4	17	3'-5"	5'-7"	10
4	17	3'-11"	6'-1"	11
4	17	4'-6"	6'-8"	12
4	17	5'-2"	7'-4"	13
4	17	5'-11"	8'-1"	14
4	17	6'-7"	8'-9"	15
4	17	7'-4"	9'-6"	16
4	17	8'-4"	10'-6"	17
4	17	8'-9"	10'-11"	18
4	17	9'-8"	11'-10"	19
4	17	10'-4"	12'-6"	20

QUANTITIES

H	CONCRETE / 25' UNIT C.Y.	STEEL / 25' UNIT LBS.	CONCRETE PER LIN.FT. C.Y.	STEEL PER LIN.FT. LBS.
604	6.52	478	0.26	19
7	7.73	549	0.31	21
8	9.04	624	0.36	24
9	10.38	723	0.42	28
10	11.89	832	0.48	33
11	13.50	995	0.54	39
12	15.64	1150	0.63	46
13	19.37	1316	0.77	52
14	21.50	1628	0.86	65
15	23.59	1975	0.94	79
16	25.86	2402	1.03	96
17	29.94	2670	1.20	106
18	32.16	3169	1.29	126
19	34.86	3721	1.39	148
20	37.32	3966	1.49	158



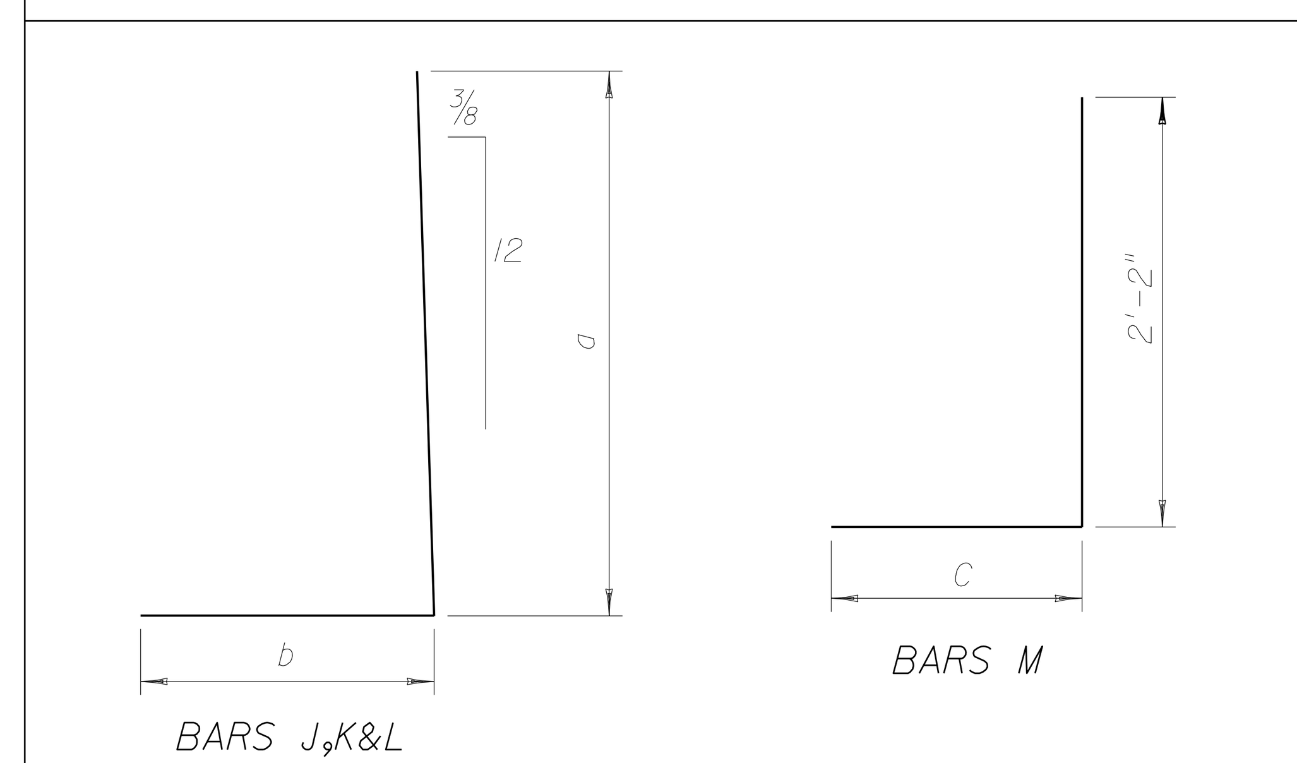
VIEW A-A



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 a 25' 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. Bars F and M are No. 4 Bars. Bars J are as shown.

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

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

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	NAMES	DATES
DRAWN BY	M.I.	3/87
CHECKED BY	M.P.	3/87
DESIGNED BY	C.W.	6/85
CHECKED BY	R.N.	6/85
APPROVED BY	A.G.M.	

ENGINEER OF RECORD:
STRUCTURES DESIGN 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 (2.0 KIPS/SQ.FT. MAX. BEARING PRESSURE) 6 FT. TO 20 FT. HEIGHT

PROJECT NAME:

DRAWING NO. 1 of 1

INDEX NO. 801

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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

RETAINING WALL DATA

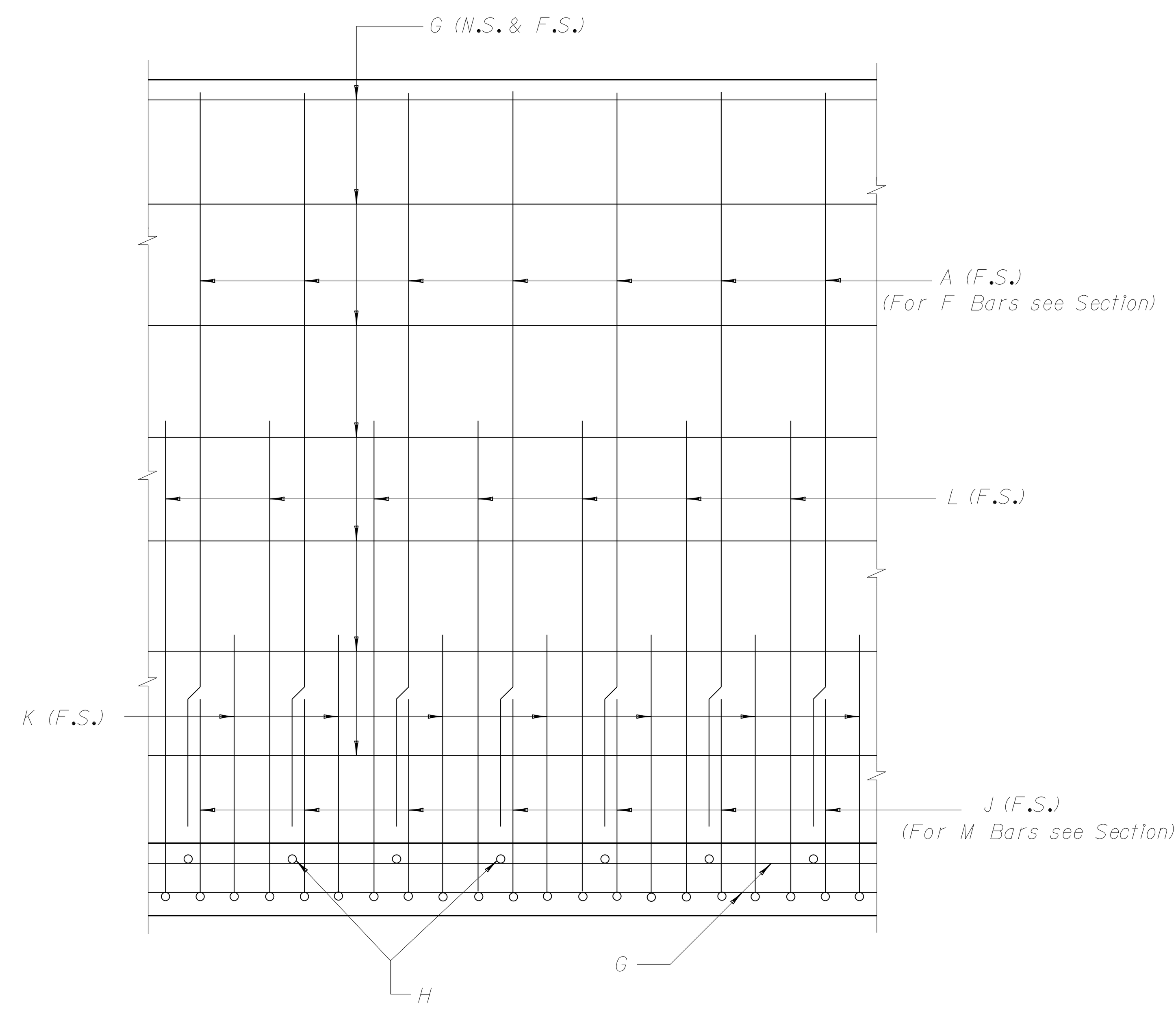
WALL DIMENSIONS / REINFORCING STEEL SCHEDULE

H	B	D	T	BARS A SIZE	BARS A NO.	BARS A LENGTH	BARS D* SIZE	BARS D* NO.	BARS D* LENGTH	BARS F SIZE	BARS F NO.	BARS F LENGTH	BARS G SIZE	BARS G NO.	BARS G LENGTH	BARS H SIZE	BARS H NO.	BARS H SPACING	BARS H LENGTH
801	8"	11"	3'-1"	802			803	4	1'-6"	804	17	4'-7"	805	14	24'-6"	806	18	1'-5"	2'-7"
7	10"	11"	3'-6"				6	5	1'-6"	4	17	5'-7"	4	16	24'-6"	4	18	1'-5"	3'-0"
8	1'-0"	11"	4'-0"				6	5	1'-6"	4	17	6'-7"	4	18	24'-6"	4	18	1'-5"	3'-6"
9	1'-2"	11"	4'-6"				6	6	1'-6"	4	17	7'-7"	4	20	24'-6"	4	19	1'-4"	4'-0"
10	1'-3"	11"	4'-11"				6	7	1'-6"	4	17	8'-7"	4	22	24'-6"	4	28	11"	4'-5"
11	1'-4"	11"	5'-6"				6	7	1'-6"	4	17	9'-7"	4	24	24'-6"	4	43	7"	5'-0"
12	1'-6"	1'-0"	5'-11"				6	8	1'-6"	4	17	10'-6"	4	26	24'-6"	4	38	8"	5'-5"
13	1'-7"	1'-0"	6'-3"				6	9	1'-6"	4	17	11'-6"	4	28	24'-6"	4	50	6"	5'-9"
14	1'-9"	1'-0"	6'-10"				6	9	1'-6"	4	17	12'-6"	4	30	24'-6"	4	60	5"	6'-4"
15	1'-10"	1'-0"	7'-4"	5	19	13'-6"	6	10	1'-6"	4	17	13'-6"	4	32	24'-6"	5	50	6"	6'-10"
16	2'-1"	1'-0"	8'-2"	5	17	14'-6"	6	10	1'-6"	4	17	14'-6"	4	32	24'-6"	6	43	7"	7'-8"
17	2'-3"	1'-2"	9'-0"	5	19	15'-4"	6	11	1'-6"	4	17	15'-4"	4	34	24'-6"	6	43	7"	8'-6"
18	2'-7"	1'-2"	9'-8"	5	17	16'-4"	6	12	1'-6"	4	17	16'-4"	4	38	24'-6"	6	50	6"	9'-2"
19	2'-9"	1'-2"	10'-7"	5	19	17'-4"	6	12	1'-6"	4	17	17'-4"	4	40	24'-6"	7	43	7"	10'-1"
20	3'-1"	1'-2"	11'-5"	6	17	18'-4"	6	13	1'-6"	4	17	18'-4"	4	42	24'-6"	7	50	6"	10'-11"
21	3'-4"	1'-5"	12'-4"	6	17	19'-1"	6	14	1'-6"	4	17	19'-1"	4	46	24'-6"	7	43	7"	11'-10"
22	3'-7"	1'-5"	13'-9"	6	19	20'-1"	6	14	1'-6"	4	17	20'-1"	4	48	24'-6"	7	50	6"	13'-3"
23	3'-10"	1'-5"	14'-2"	6	17	21'-1"	6	15	1'-6"	4	17	21'-1"	4	50	24'-6"	8	43	7"	13'-8"
24	4'-2"	1'-5"	15'-0"	6	19	22'-1"	6	16	1'-6"	4	17	22'-1"	4	54	24'-6"	8	50	6"	14'-6"
25	4'-5"	1'-5"	16'-4"	6	17	23'-1"	6	16	1'-6"	4	17	23'-1"	4	56	24'-6"	9	50	6"	15'-10"
26	4'-11"	1'-8"	17'-1"	6	19	23'-10"	6	17	1'-6"	4	17	23'-10"	4	58	24'-6"	9	43	7"	16'-7"
27	5'-3"	1'-8"	18'-0"	6	17	24'-10"	6	18	1'-6"	4	17	24'-10"	4	62	24'-6"	9	43	7"	17'-6"
28	5'-7"	1'-8"	18'-9"	7	19	25'-10"	6	18	1'-6"	4	17	25'-10"	4	62	24'-6"	9	50	6"	18'-3"
29	6'-0"	1'-8"	19'-6"	8	17	26'-10"	6	19	1'-6"	4	17	26'-10"	4	66	24'-6"	9	60	5"	19'-0"
30	6'-5"	1'-8"	20'-3"	8	19	27'-10"	6	20	1'-6"	4	17	27'-10"	4	68	24'-6"	10	43	7"	19'-9"

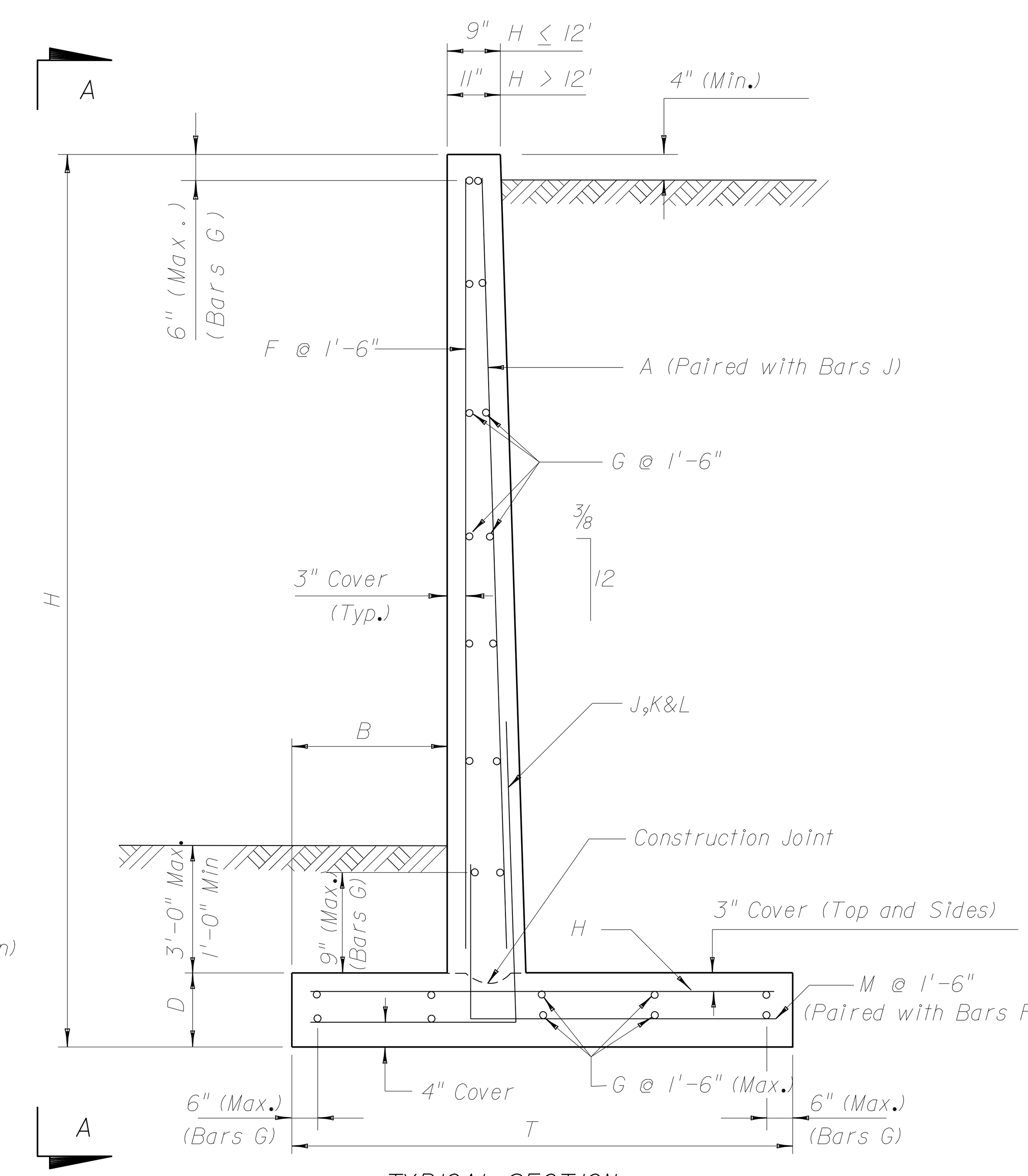
BARS J SIZE	BARS J NO.	BARS J SPACING	BARS J a	BARS J b	BARS J LENGTH	BARS K SIZE	BARS K NO.	BARS K SPACING	BARS K a	BARS K b	BARS K LENGTH	BARS L SIZE	BARS L NO.	BARS L SPACING	BARS L a	BARS L b	BARS L LENGTH	BARS M SIZE	BARS M NO.	BARS M C	BARS M LENGTH	H
807	25	1'-0"	5'-5"	1'-1"	6'-6"	808						809						810	17	1'-11"	4'-1"	6
4	25	1'-0"	6'-5"	1'-3"	7'-8"													4	17	2'-2"	4'-4"	7
4	25	1'-0"	7'-5"	1'-6"	8'-11"													4	17	2'-6"	4'-8"	8
4	28	11"	8'-5"	1'-8"	10'-1"													4	17	2'-10"	5'-0"	9
4	28	11"	9'-5"	1'-9"	11'-2"													4	17	3'-2"	5'-4"	10
4	30	10"	10'-5"	1'-11"	12'-4"													4	17	3'-8"	5'-10"	11
4	38	8"	11'-5"	2'-1"	13'-6"													4	17	3'-11"	6'-1"	12
4	38	8"	12'-5"	2'-4"	14'-9"													4	17	4'-2"	6'-4"	13
4	50	6"	13'-5"	2'-7"	16'-0"													4	17	4'-7"	6'-9"	14
5	19	1'-4"	3'-8"	2'-8"	6'-4"	5	18	1'-4"	10'-9"	2'-8"	13'-5"							4	17	5'-0"	7'-2"	15
5	17	1'-6"	2'-10"	2'-11"	5'-9"	5	16	1'-6"	5'-2"	2'-11"	8'-1"	5	16	1'-6"	14'-9"	2'-11"	17'-8"	4	17	5'-7"	7'-9"	16
5	19	1'-4"	3'-0"	3'-2"	6'-2"	5	18	1'-4"	5'-8"	3'-2"	8'-10"	5	18	1'-4"	13'-11"	3'-2"	17'-1"	4	17	6'-3"	8'-5"	17
6	17	1'-6"	4'-4"	3'-6"	7'-10"	6	16	1'-6"	5'-11"	3'-6"	9'-5"	6	16	1'-6"	14'-11"	3'-6"	18'-5"	4	17	6'-7"	8'-9"	18
6	19	1'-4"	3'-5"	3'-9"	7'-2"	6	18	1'-4"	6'-4"	3'-9"	10'-1"	6	18	1'-4"	15'-4"	3'-9"	19'-1"	4	17	7'-4"	9'-6"	19
7	17	1'-6"	3'-5"	4'-1"	7'-6"	7	16	1'-6"	6'-4"	4'-1"	10'-5"	7	16	1'-6"	16'-4"	4'-1"	20'-5"	4	17	7'-10"	10'-0"	20
7	17	1'-6"	5'-2"	4'-4"	9'-6"	7	16	1'-6"	7'-2"	4'-4"	11'-6"	7	16	1'-6"	11'-2"	4'-4"	15'-6"	4	17	8'-6"	10'-8"	21
7	19	1'-4"	4'-7"	4'-8"	9'-3"	7	18	1'-4"	8'-2"	4'-8"	12'-10"	7	18	1'-4"	12'-2"	4'-8"	16'-10"	4	17	9'-8"	11'-10"	22
8	17	1'-6"	5'-10"	4'-11"	10'-9"	8	16	1'-6"	8'-10"	4'-11"	13'-9"	8	16	1'-6"	13'-2"	4'-11"	18'-1"	4	17	9'-10"	12'-0"	23
8	19	1'-4"	5'-10"	5'-3"	11'-1"	8	18	1'-4"	9'-10"	5'-3"	15'-1"	8	18	1'-4"	14'-2"	5'-3"	19'-5"	4	17	10'-4"	12'-6"	24
9	17	1'-6"	6'-11"	5'-7"	12'-6"	9	16	1'-6"	10'-6"	5'-7"	16'-1"	9	16	1'-6"	17'-6"	5'-7"	23'-1"	4	17	11'-5"	13'-7"	25
9	19	1'-4"	7'-5"	6'-1"	13'-6"	9	18	1'-4"	11'-4"	6'-1"	17'-5"	9	18	1'-4"	18'-3"	6'-1"	24'-4"	4	17	11'-8"	13'-10"	26
10	17	1'-6"	7'-11"	6'-6"	14'-5"	10	16	1'-6"	11'-9"	6'-6"	18'-3"	10	16	1'-6"	18'-9"	6'-6"	25'-3"	4	17	12'-3"	14'-5"	27
10	19	1'-4"	8'-5"	6'-10"	15'-3"	10	18	1'-4"	12'-3"	6'-10"	19'-1"	10	18	1'-4"	19'-9"	6'-10"	26'-7"	4	17	12'-8"	14'-10"	28
11	17	1'-6"	8'-11"	7'-3"	16'-2"	11	16	1'-6"	12'-9"	7'-3"	20'-0"	11	16	1'-6"	20'-9"	7'-3"	28'-0"	4	17	13'-0"	15'-2"	29
11	19	1'-4"	9'-5"	7'-9"	17'-2"	11	18	1'-4"	13'-0"	7'-9"	20'-9"	11	18	1'-4"	21'-9"	7'-9"	29'-6"	4	17	13'-4"	15'-6"	30

QUANTITIES

H	CONCRETE / 25' UNIT C.Y.	STEEL / 25' UNIT LBS.	CONCRETE PER LIN.FT. C.Y.	STEEL PER LIN.FT. LBS.
801	6.52	476	0.26	19
7	7.73	549	0.31	21
8	9.04	624	0.36	24
9	10.38	723	0.42	28
10	11.67	825	0.47	33
11	13.14	974	0.53	38
12	14.87	1112	0.59	44
13	18.06	1247	0.72	49
14	19.81	1518	0.79	60
15	21.51	1782	0.86	71
16	23.55	2082	0.94	83
17	26.79	2312	1.07	92
18	28.83	2780	1.15	111
19	31.17	3209	1.25	128
20	33.45	3891	1.34	155
21	38.35	3862	1.53	154
22	41.64	4557	1.67	182
23	43.64	5183	1.75	207
24	46.22	6082	1.85	243
25	49.49	7503	1.98	300
26	55.58	7952	2.22	318
27	58.56	8743	2.34	349
28	61.32	10406	2.45	416
29	64.10	12234	2.56	489
30	66.91	13254	2.68	530



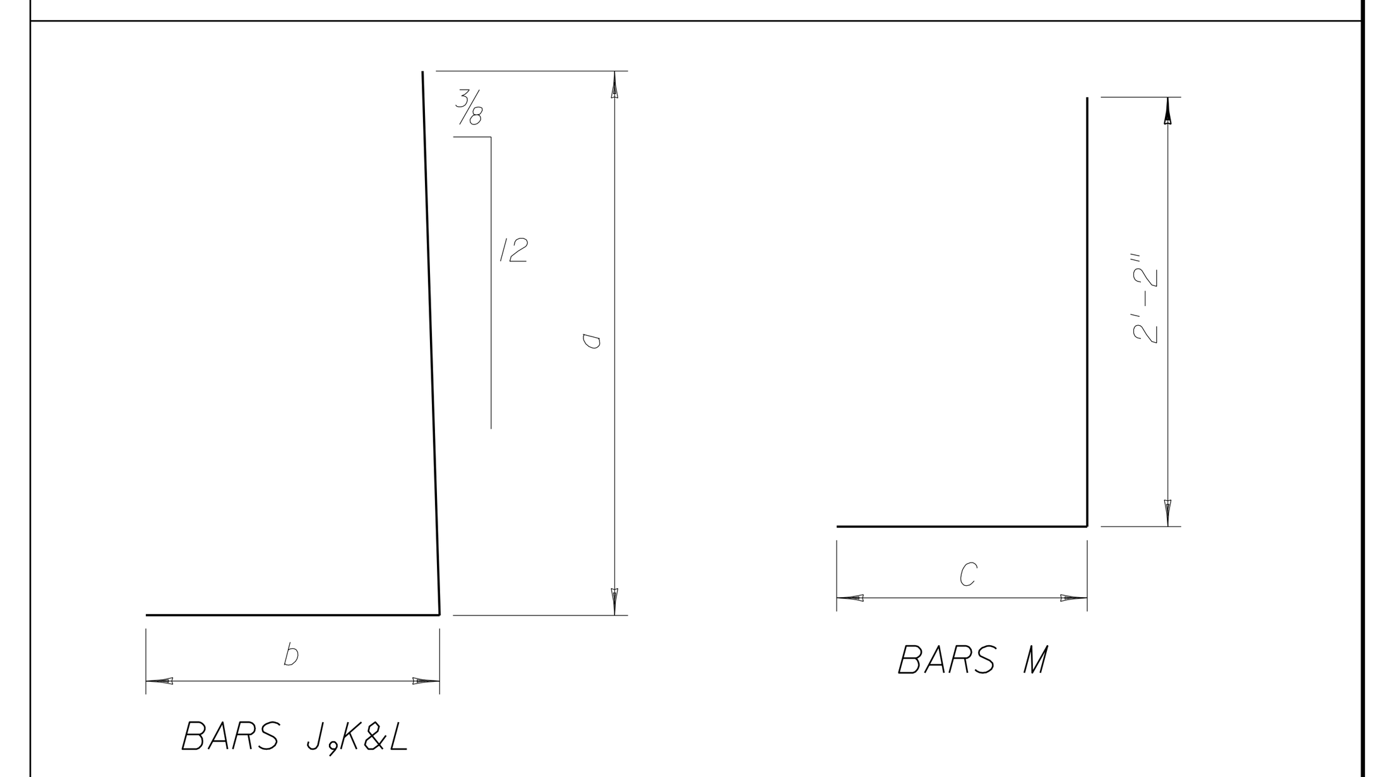
VIEW A-A



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 a 25' 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. Bars F and M are No. 4 Bars. Bars J are as shown.

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

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

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	NAMES	DATES
DRAWN BY	M.J.	3/87
CHECKED BY	M.P.	3/87
DESIGNED BY	-	-
CHECKED BY	-	-
APPROVED BY	A.G.M.	

ENGINEER OF RECORD:
STRUCTURES DESIGN 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 (3.0 KIPS/SQ.FT. MAX. BEARING PRESSURE) 6 FT. TO 30 FT. HEIGHT

PROJECT NAME:

DRAWING NO. 1 of 1

INDEX NO. 802

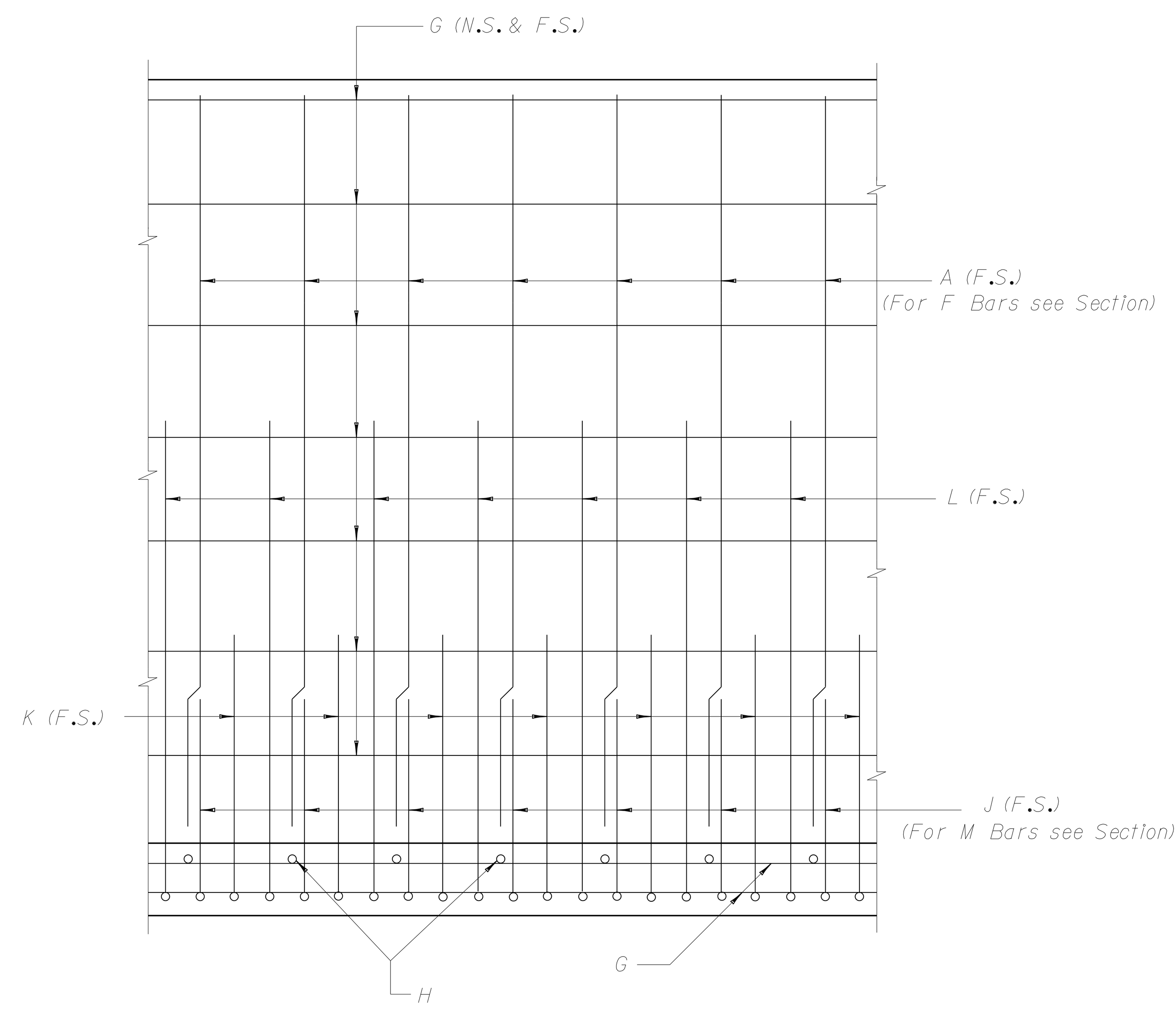
$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

RETAINING WALL DATA

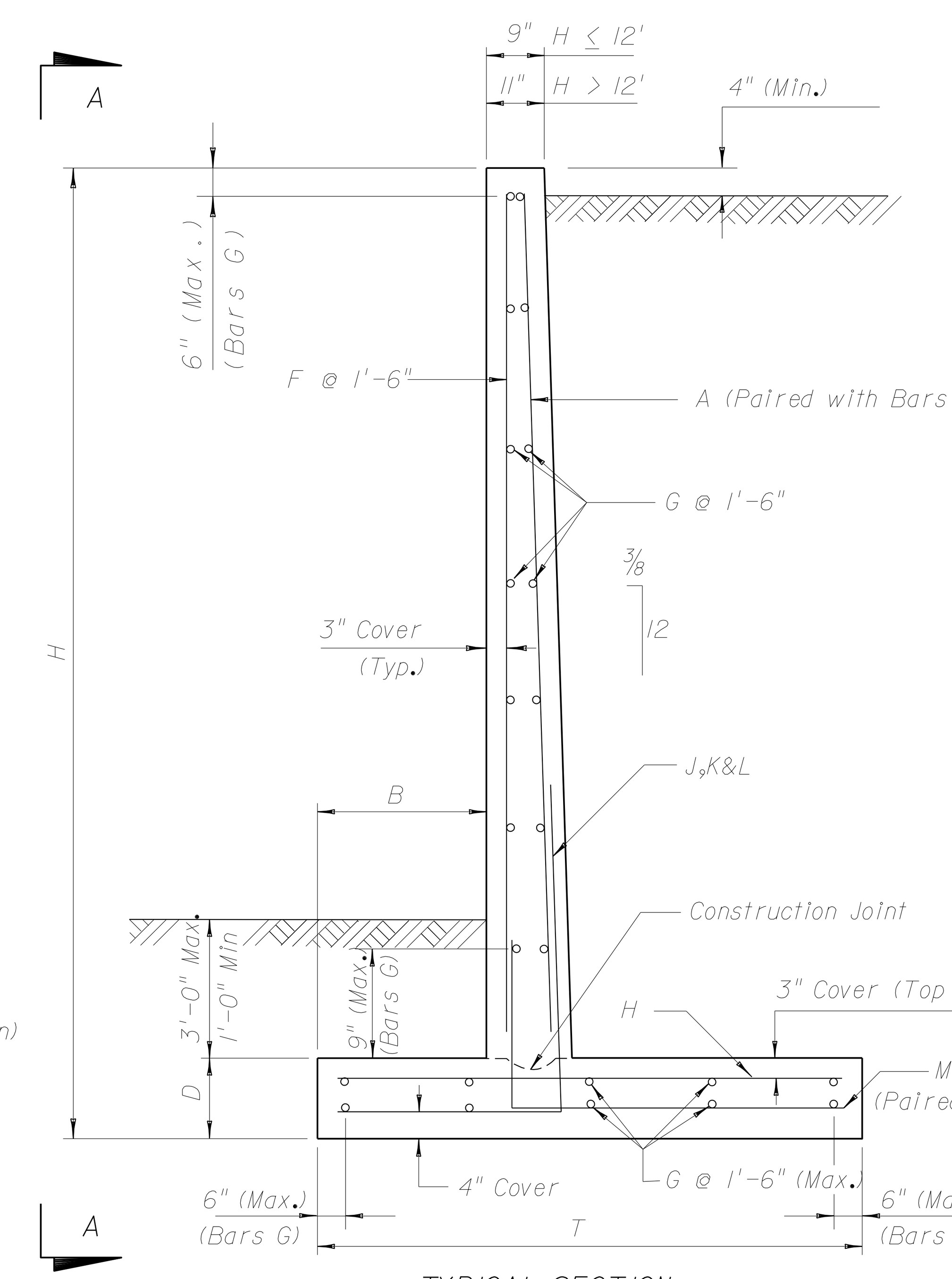
WALL DIMENSIONS				REINFORCING STEEL SCHEDULE																																						
H	B	D	T	BARS A			BARS D *			BARS F			BARS G			BARS H				BARS J						BARS K						BARS L						BARS M				H
				SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	C	LENGTH	
6	8"	11"	3'- 1"	202			6	4	1'- 6"	4	17	4'- 7"	4	14	24'- 6"	4	18	1'- 5"	2'- 7"	4	25	1'- 0"	5'- 5"	1'- 1"	6'- 6"	208						209						4	17	1'-11"	4'- 1"	6
7	10"	11"	3'- 6"				6	5	1'- 6"	4	17	5'- 7"	4	16	24'- 6"	4	18	1'- 5"	3'- 0"	4	25	1'- 0"	6'- 5"	1'- 3"	7'- 8"													4	17	2'- 2"	4'- 4"	7
8	1'- 0"	11"	4'- 0"				6	5	1'- 6"	4	17	6'- 7"	4	18	24'- 6"	4	18	1'- 5"	3'- 6"	4	25	1'- 0"	7'- 5"	1'- 6"	8'-11"													4	17	2'- 6"	4'- 8"	8
9	1'- 2"	11"	4'- 6"				6	6	1'- 6"	4	17	7'- 7"	4	20	24'- 6"	4	19	1'- 4"	4'- 0"	4	28	11"	8'- 5"	1'- 8"	10'- 1"													4	17	2'-10"	5'- 0"	9
10	1'- 3"	11"	4'-11"				6	7	1'- 6"	4	17	8'- 7"	4	22	24'- 6"	4	28	11"	4'- 5"	4	28	11"	9'- 5"	1'- 9"	11'- 2"													4	17	3'- 2"	5'- 4"	10
11	1'- 4"	11"	5'- 6"				6	7	1'- 6"	4	17	9'- 7"	4	24	24'- 6"	4	43	7"	5'- 0"	4	30	10"	10'- 5"	1'-11"	12'- 4"													4	17	3'- 8"	5'-10"	11
12	1'- 6"	1'- 0"	5'-11"				6	8	1'- 6"	4	17	10'- 6"	4	26	24'- 6"	4	38	8"	5'- 5"	4	38	8"	11'- 5"	2'- 1"	13'- 6"													4	17	3'-11"	6'- 1"	12
13	1'- 7"	1'- 0"	6'- 3"				6	9	1'- 6"	4	17	11'- 6"	4	28	24'- 6"	4	50	6"	5'- 9"	4	38	8"	12'- 5"	2'- 4"	14'- 9"													4	17	4'- 2"	6'- 4"	13
14	1'- 9"	1'- 0"	6'-10"				6	9	1'- 6"	4	17	12'- 6"	4	30	24'- 6"	4	60	5"	6'- 4"	4	50	6"	13'- 5"	2'- 7"	16'- 0"													4	17	4'- 7"	6'- 9"	14
15	1'-10"	1'- 0"	7'- 4"	5	19	13'- 6"	6	10	1'- 6"	4	17	13'- 6"	4	32	24'- 6"	5	50	6"	6'-10"	5	19	1'- 4"	3'- 8"	2'- 8"	6'- 4"	5	18	1'- 4"	10'- 9"	2'- 7"	13'- 4"							4	17	5'- 0"	7'- 2"	15
16	2'- 0"	1'- 0"	7'- 8"	5	17	14'- 6"	6	10	1'- 6"	4	17	14'- 6"	4	32	24'- 6"	6	43	7"	7'- 2"	5	17	1'- 6"	2'-10"	3'- 0"	5'-10"	5	16	1'- 6"	5'- 2"	2'-10"	8'- 0"	5	16	1'- 6"	14'- 9"	2'-10"	17'- 7"	4	17	5'- 2"	7'- 4"	16
17	2'- 0"	1'- 2"	8'- 2"	5	19	15'- 4"	6	11	1'- 6"	4	17	15'- 4"	4	36	24'- 6"	6	43	7"	7'- 8"	5	19	1'- 4"	3'- 0"	2'-11"	5'-11"	5	18	1'- 4"	5'- 8"	2'-11"	8'- 7"	5	18	1'- 4"	13'-11"	2'-11"	16'-10"	4	17	5'- 8"	7'-10"	17
18	2'- 3"	1'- 2"	8'- 9"	5	17	16'- 4"	6	12	1'- 6"	4	17	16'- 4"	4	38	24'- 6"	6	50	6"	8'- 3"	6	17	1'- 6"	4'- 4"	3'- 2"	7'- 6"	6	16	1'- 6"	5'-11"	3'- 2"	9'- 1"	6	16	1'- 6"	14'-11"	3'- 2"	18'- 1"	4	17	6'- 0"	8'- 2"	18
19	2'- 4"	1'- 2"	9'- 2"	5	19	17'- 4"	6	12	1'- 6"	4	17	17'- 4"	4	38	24'- 6"	7	43	7"	8'- 8"	6	19	1'- 4"	3'- 5"	3'- 4"	6'- 9"	6	18	1'- 4"	6'- 4"	3'- 4"	9'- 8"	6	18	1'- 4"	15'- 4"	3'- 4"	18'- 8"	4	17	6'- 4"	8'- 6"	19
20	2'- 6"	1'- 2"	9'- 8"	6	17	18'- 4"	6	13	1'- 6"	4	17	18'- 4"	4	42	24'- 6"	7	43	7"	9'- 2"	7	17	1'- 6"	3'- 5"	3'- 6"	6'-11"	7	16	1'- 6"	6'- 4"	3'- 6"	9'-10"	7	16	1'- 6"	16'- 4"	3'- 6"	19'-10"	4	17	6'- 8"	8'-10"	20
21	2'- 8"	1'- 5"	10'- 4"	6	17	19'- 1"	6	14	1'- 6"	4	17	19'- 1"	4	44	24'- 6"	7	43	7"	9'-10"	7	17	1'- 6"	5'- 2"	3'- 8"	8'-10"	7	16	1'- 6"	7'- 2"	3'- 8"	10'-10"	7	16	1'- 6"	11'- 2"	3'- 8"	14'-10"	4	17	7'- 2"	9'- 4"	21
22	2'-11"	1'- 5"	11'- 0"	6	19	20'- 1"	6	14	1'- 6"	4	17	20'- 1"	4	44	24'- 6"	7	50	6"	10'- 6"	7	19	1'- 4"	4'- 7"	4'- 0"	8'- 7"	7	18	1'- 4"	8'- 2"	4'- 0"	12'- 2"	7	18	1'- 4"	12'- 2"	4'- 0"	16'- 2"	4	17	7'- 7"	9'- 9"	22
23	3'- 1"	1'- 5"	11'-10"	6	17	21'- 1"	6	15	1'- 6"	4	17	21'- 1"	4	48	24'- 6"	8	50	6"	11'- 4"	8	17	1'- 6"	5'-10"	4'- 2"	10'- 0"	8	16	1'- 6"	8'-10"	4'- 2"	13'- 0"	8	16	1'- 6"	13'- 2"	4'- 2"	17'- 4"	4	17	8'- 3"	10'- 5"	23
24	3'- 5"	1'- 5"	12'- 7"	6	19	22'- 1"	6	16	1'- 6"	4	17	22'- 1"	4	50	24'- 6"	8	50	6"	12'- 1"	8	19	1'- 4"	5'-10"	4'- 6"	10'- 4"	8	18	1'- 4"	9'-10"	4'- 6"	14'- 4"	8	18	1'- 4"	14'- 2"	4'- 6"	18'- 8"	4	17	8'- 8"	10'-10"	24
25	3'- 7"	1'- 5"	13'- 6"	6	17	23'- 1"	6	16	1'- 6"	4	17	23'- 1"	4	52	24'- 6"	9	50	6"	13'- 0"	9	17	1'- 6"	6'-11"	4'- 9"	11'- 8"	9	16	1'- 6"	10'- 6"	4'- 9"	15'- 3"	9	16	1'- 6"	17'- 6"	4'- 9"	22'- 3"	4	17	9'- 5"	11'- 7"	25
26	4'- 0"	1'- 8"	14'- 2"	6	19	23'-10"	6	17	1'- 6"	4	17	23'-10"	4	54	24'- 6"	9	43	7"	13'- 8"	9	19	1'- 4"	7'- 5"	5'- 2"	12'- 7"	9	18	1'- 4"	11'- 4"	5'- 2"	16'- 6"	9	18	1'- 4"	18'- 3"	5'- 2"	23'- 5"	4	17	9'- 8"	11'-10"	26
27	4'- 3"	1'- 8"	15'- 0"	6	17	24'-10"	6	18	1'- 6"	4	17	24'-10"	4	58	24'- 6"	9	50	6"	14'- 6"	10	17	1'- 6"	7'-11"	5'- 6"	13'- 5"	10	16	1'- 6"	11'- 9"	5'- 6"	17'- 3"	10	16	1'- 6"	18'- 9"	5'- 6"	24'- 3"	4	17	10'- 3"	12'- 5"	27
28	4'- 7"	1'- 8"	15'- 9"	7	19	25'-10"	6	18	1'- 6"	4	17	25'-10"	4	58	24'- 6"	9	50	6"	15'- 3"	10	19	1'- 4"	8'- 5"	5'-10"	14'- 3"	10	18	1'- 4"	12'- 3"	5'-10"	18'- 1"	10	18	1'- 4"	19'- 9"	5'-10"	25'- 7"	4	17	10'- 8"	12'-10"	28
29	4'-11"	1'- 8"	16'- 5"	8	17	26'-10"	6	19	1'- 6"	4	17	26'-10"	4	62	24'- 6"	9	60	5"	15'-11"	11	17	1'- 6"	8'-11"	6'- 2"	15'- 1"	11	16	1'- 6"	12'- 9"	6'- 2"	18'-11"	11	16	1'- 6"	20'- 9"	6'- 2"	26'-11"	4	17	11'- 0"	13'- 2"	29
30	5'- 4"	1'- 8"	17'- 2"	8	19	27'-10"	6	20	1'- 6"	4	17	27'-10"	4	64	24'- 6"	10	50	6"	16'- 8"	11	19	1'- 4"	9'- 5"	6'- 8"	16'- 1"	11	18	1'- 4"	13'- 0"	6'- 8"	19'- 8"	11	18	1'- 4"	21'- 9"	6'- 8"	28'- 5"	4	17	11'- 4"	13'- 6"	30

QUANTITIES

H	CONCRETE / 25' UNIT	STEEL / 25' UNIT	CONCRETE PER LIN.FT.	STEEL PER LIN.FT.
	C.Y.	LBS.	C.Y.	LBS.
6	6.52	476	0.26	19
7	7.73	549	0.31	21
8	9.04	624	0.36	24
9	10.38	723	0.42	28
10	11.67	825	0.47	33
11	13.14	974	0.53	38
12	14.87	1112	0.59	44
13	18.06	1247	0.72	49
14	19.81	1518	0.79	60
15	21.51	1780	0.86	71
16	23.09	2044	0.92	81
17	25.89	2270	1.04	90
18	27.84	2680	1.11	107
19	29.64	3006	1.19	120
20	31.56	3509	1.26	140
21	35.72	3572	1.43	142
22	38.03	4112	1.52	164
23	40.58	4978	1.62	199
24	43.05	5581	1.72	223
25	45.77	6794	1.83	271
26	51.08	7266	2.04	290
27	53.94	8350	2.16	334
28	56.69	9571	2.27	382
29	59.34	11235	2.37	449
30	62.15	12781	2.49	511



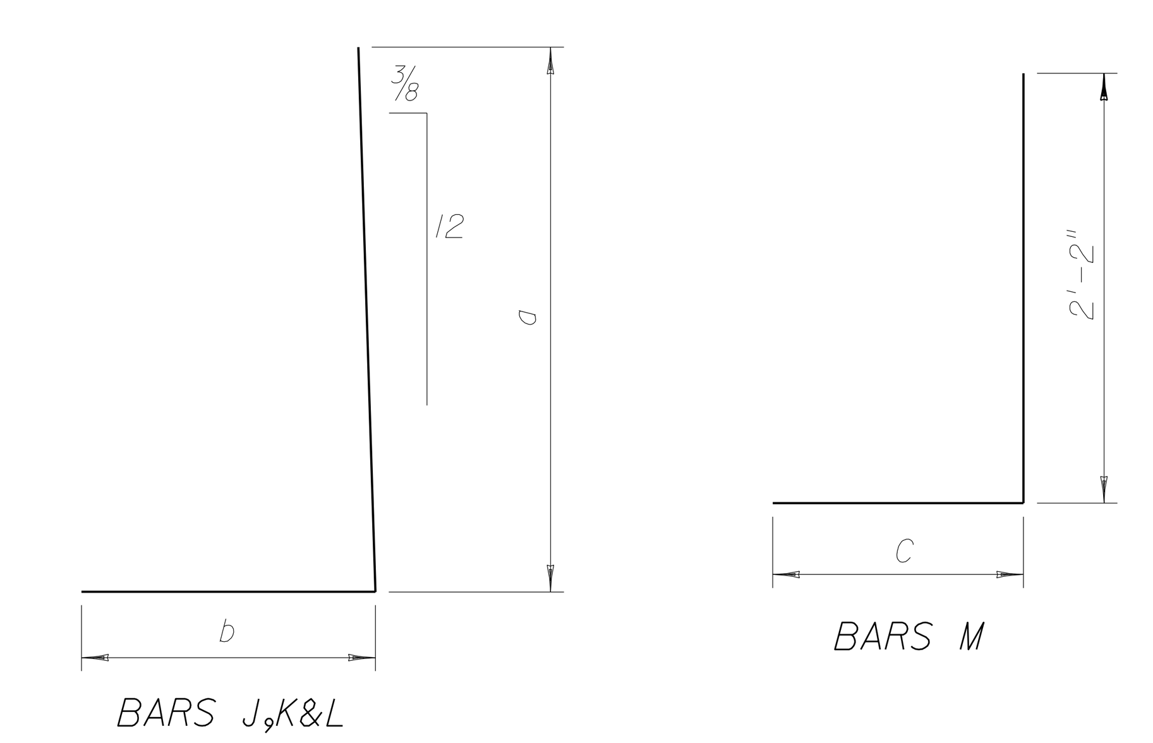
VIEW A-A



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 a 25' 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. Bars F and M are No. 4 Bars. Bars J are as shown.

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

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

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	NAMES	DATES
DRAWN BY	M.J.	3/87
CHECKED BY	M.P.	3/87
DESIGNED BY	-	-
CHECKED BY	-	-
APPROVED BY	A.G.M.	

ENGINEER OF RECORD:
STRUCTURES DESIGN 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 (4.0 KIPS/SQ.FT. MAX. BEARING PRESSURE)
6 FT. TO 30 FT. HEIGHT

PROJECT NAME:

DRAWING NO. 1 of 1

INDEX NO. 803

RETAINING WALL DATA

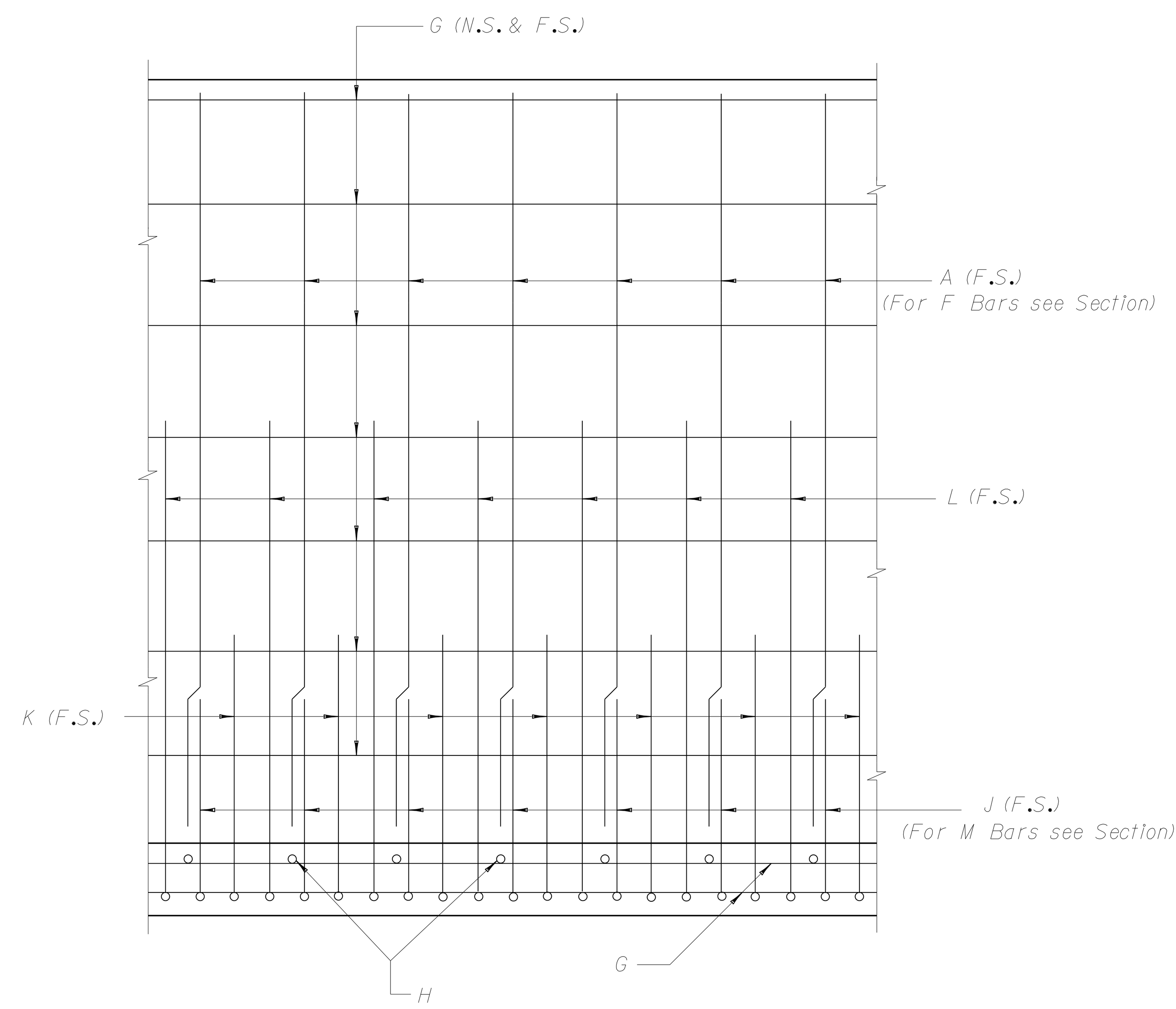
REINFORCING STEEL SCHEDULE

H	B	D	T	BARS A SIZE	BARS A NO.	BARS A LENGTH	BARS D* SIZE	BARS D* NO.	BARS D* LENGTH	BARS F SIZE	BARS F NO.	BARS F LENGTH	BARS G SIZE	BARS G NO.	BARS G LENGTH	BARS H SIZE	BARS H NO.	BARS H SPACING	BARS H LENGTH
201	8"	11"	3'- 1"	202			203	4	1'- 6"	204	17	4'- 7"	205	14	24'- 6"	206	18	1'- 5"	2'- 7"
7	10"	11"	3'- 6"				6	5	1'- 6"	4	17	5'- 7"	4	16	24'- 6"	4	18	1'- 5"	3'- 0"
8	1'- 0"	11"	4'- 0"				6	5	1'- 6"	4	17	6'- 7"	4	18	24'- 6"	4	18	1'- 5"	3'- 6"
9	1'- 2"	11"	4'- 6"				6	6	1'- 6"	4	17	7'- 7"	4	20	24'- 6"	4	19	1'- 4"	4'- 0"
10	1'- 3"	11"	4'-11"				6	7	1'- 6"	4	17	8'- 7"	4	22	24'- 6"	4	28	11"	4'- 5"
11	1'- 4"	11"	5'- 6"				6	7	1'- 6"	4	17	9'- 7"	4	24	24'- 6"	4	43	7"	5'- 0"
12	1'- 6"	1'- 0"	5'-11"				6	8	1'- 6"	4	17	10'- 6"	4	26	24'- 6"	4	38	8"	5'- 5"
13	1'- 7"	1'- 0"	6'- 3"				6	9	1'- 6"	4	17	11'- 6"	4	28	24'- 6"	4	50	6"	5'- 9"
14	1'- 9"	1'- 0"	6'-10"				6	9	1'- 6"	4	17	12'- 6"	4	30	24'- 6"	4	60	5"	6'- 4"
15	1'-10"	1'- 0"	7'- 4"	5	19	13'- 6"	6	10	1'- 6"	4	17	13'- 6"	4	32	24'- 6"	5	50	6"	6'-10"
16	2'- 0"	1'- 0"	7'- 8"	5	17	14'- 6"	6	10	1'- 6"	4	17	14'- 6"	4	32	24'- 6"	6	43	7"	7'- 2"
17	2'- 0"	1'- 2"	8'- 2"	5	19	15'- 4"	6	11	1'- 6"	4	17	15'- 4"	4	36	24'- 6"	6	43	7"	7'- 8"
18	2'- 3"	1'- 2"	8'- 9"	5	17	16'- 4"	6	12	1'- 6"	4	17	16'- 4"	4	38	24'- 6"	6	50	6"	8'- 3"
19	2'- 4"	1'- 2"	9'- 2"	5	19	17'- 4"	6	12	1'- 6"	4	17	17'- 4"	4	38	24'- 6"	7	43	7"	8'- 8"
20	2'- 6"	1'- 2"	9'- 8"	6	17	18'- 4"	6	13	1'- 6"	4	17	18'- 4"	4	42	24'- 6"	7	43	7"	9'- 2"
21	2'- 7"	1'- 5"	10'- 1"	6	17	19'- 1"	6	14	1'- 6"	4	17	19'- 1"	4	44	24'- 6"	7	43	7"	9'- 7"
22	2'-10"	1'- 5"	10'- 7"	6	19	20'- 1"	6	14	1'- 6"	4	17	20'- 1"	4	44	24'- 6"	7	50	6"	10'- 1"
23	2'-10"	1'- 5"	11'- 0"	6	17	21'- 1"	6	15	1'- 6"	4	17	21'- 1"	4	46	24'- 6"	8	50	6"	10'- 6"
24	3'- 1"	1'- 5"	11'- 6"	6	19	22'- 1"	6	16	1'- 6"	4	17	22'- 1"	4	50	24'- 6"	8	50	6"	11'- 0"
25	3'- 1"	1'- 5"	12'- 0"	6	17	23'- 1"	6	16	1'- 6"	4	17	23'- 1"	4	50	24'- 6"	9	50	6"	11'- 6"
26	3'- 5"	1'- 8"	12'- 6"	6	19	23'-10"	6	17	1'- 6"	4	17	23'-10"	4	52	24'- 6"	9	43	7"	12'- 0"
27	3'- 8"	1'- 8"	13'- 2"	6	17	24'-10"	6	18	1'- 6"	4	17	24'-10"	4	56	24'- 6"	9	50	6"	12'- 8"
28	4'- 0"	1'- 8"	13'- 9"	7	19	25'-10"	6	18	1'- 6"	4	17	25'-10"	4	56	24'- 6"	9	50	6"	13'- 3"
29	4'- 3"	1'- 8"	14'- 5"	8	17	26'-10"	6	19	1'- 6"	4	17	26'-10"	4	60	24'- 6"	10	50	6"	13'-11"
30	4'- 8"	1'- 8"	15'- 1"	8	19	27'-10"	6	20	1'- 6"	4	17	27'-10"	4	62	24'- 6"	10	50	6"	14'- 7"

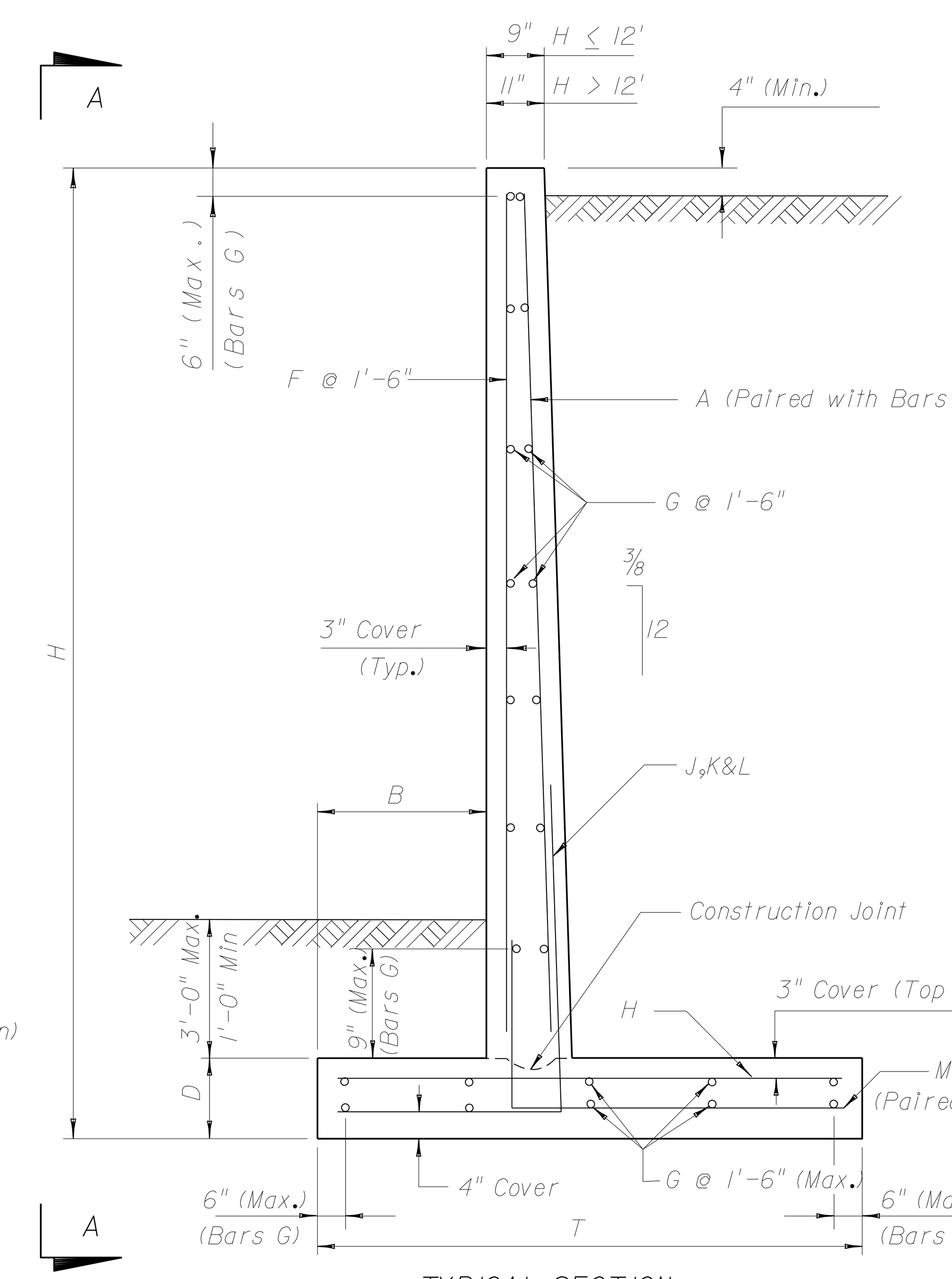
BARS J SIZE	BARS J NO.	BARS J SPACING	BARS J a	BARS J b	BARS J LENGTH	BARS K SIZE	BARS K NO.	BARS K SPACING	BARS K a	BARS K b	BARS K LENGTH	BARS L SIZE	BARS L NO.	BARS L SPACING	BARS L a	BARS L b	BARS L LENGTH	BARS M SIZE	BARS M NO.	BARS M C	BARS M LENGTH	H
207	25	1'- 0"	5'- 5"	1'- 1"	6'- 6"	208						209						210	17	1'-11"	4'- 1"	6
4	25	1'- 0"	6'- 5"	1'- 3"	7'- 8"													4	17	2'- 2"	4'- 4"	7
4	25	1'- 0"	7'- 5"	1'- 6"	8'-11"													4	17	2'- 6"	4'- 8"	8
4	28	11"	8'- 5"	1'- 8"	10'- 1"													4	17	2'-10"	5'- 0"	9
4	28	11"	9'- 5"	1'- 9"	11'- 2"													4	17	3'- 2"	5'- 4"	10
4	30	10"	10'- 5"	1'-11"	12'- 4"													4	17	3'- 8"	5'-10"	11
4	38	8"	11'- 5"	2'- 1"	13'- 6"													4	17	3'-11"	6'- 1"	12
4	38	8"	12'- 5"	2'- 4"	14'- 9"													4	17	4'- 2"	6'- 4"	13
4	50	6"	13'- 5"	2'- 7"	16'- 0"													4	17	4'- 7"	6'- 9"	14
5	19	1'- 4"	3'- 8"	2'- 8"	6'- 4"	5	18	1'- 4"	10'- 9"	2'- 7"	13'- 4"							4	17	5'- 0"	7'- 2"	15
5	17	1'- 6"	2'-10"	2'-10"	5'- 8"	5	16	1'- 6"	5'- 2"	2'-10"	8'- 0"	5	16	1'- 6"	14'- 9"	2'-10"	17'- 7"	4	17	5'- 2"	7'- 4"	16
5	19	1'- 4"	3'- 0"	2'-11"	5'-11"	5	18	1'- 4"	5'- 8"	2'-11"	8'- 7"	5	18	1'- 4"	13'-11"	2'-11"	16'-10"	4	17	5'- 8"	7'-10"	17
6	17	1'- 6"	4'- 4"	3'- 2"	7'- 6"	6	16	1'- 6"	5'-11"	3'- 2"	9'- 1"	6	16	1'- 6"	14'-11"	3'- 2"	18'- 1"	4	17	6'- 0"	8'- 2"	18
6	19	1'- 4"	3'- 5"	3'- 4"	6'- 9"	6	18	1'- 4"	6'- 4"	3'- 4"	9'- 8"	6	18	1'- 4"	15'- 4"	3'- 4"	18'- 8"	4	17	6'- 4"	8'- 6"	19
7	17	1'- 6"	3'- 5"	3'- 6"	6'-11"	7	16	1'- 6"	6'- 4"	3'- 6"	9'-10"	7	16	1'- 6"	16'- 4"	3'- 6"	19'-10"	4	17	6'- 8"	8'-10"	20
7	17	1'- 6"	5'- 2"	3'- 7"	8'- 9"	7	16	1'- 6"	7'- 2"	3'- 7"	10'- 9"	7	16	1'- 6"	11'- 2"	3'- 7"	14'- 9"	4	17	7'- 0"	9'- 2"	21
7	19	1'- 4"	4'- 7"	3'-11"	8'- 6"	7	18	1'- 4"	8'- 2"	3'-11"	12'- 1"	8	18	1'- 4"	12'- 2"	3'-11"	16'- 1"	4	17	7'- 3"	9'- 5"	22
8	17	1'- 6"	5'-10"	3'-11"	9'- 9"	8	16	1'- 6"	8'-10"	3'-11"	12'- 9"	8	16	1'- 6"	13'- 2"	3'-11"	17'- 1"	4	17	7'- 8"	9'-10"	23
8	19	1'- 4"	5'-10"	4'- 2"	10'- 0"	8	18	1'- 4"	9'-10"	4'- 2"	14'- 0"	8	18	1'- 4"	14'- 2"	4'- 2"	18'- 4"	4	17	7'-11"	10'- 1"	24
9	17	1'- 6"	6'-11"	4'- 3"	11'- 2"	9	16	1'- 6"	10'- 6"	4'- 3"	14'- 9"	9	16	1'- 6"	17'- 6"	4'- 3"	21'- 9"	4	17	8'- 5"	10'- 7"	25
9	19	1'- 4"	7'- 5"	4'- 7"	12'- 0"	9	18	1'- 4"	11'- 4"	4'- 7"	15'-11"	9	18	1'- 4"	18'- 3"	4'- 7"	22'-10"	4	17	8'- 7"	10'- 9"	26
10	17	1'- 6"	7'-11"	4'-11"	12'-10"	10	16	1'- 6"	11'- 9"	4'-11"	16'- 8"	10	16	1'- 6"	18'- 9"	4'-11"	23'- 8"	4	17	9'- 0"	11'- 2"	27
10	19	1'- 4"	8'- 5"	5'- 3"	13'- 8"	10	18	1'- 4"	12'- 3"	5'- 3"	17'- 6"	10	18	1'- 4"	19'- 9"	5'- 3"	25'- 0"	4	17	9'- 3"	11'- 5"	28
11	17	1'- 6"	8'-11"	5'- 6"	14'- 5"	11	16	1'- 6"	12'- 9"	5'- 6"	18'- 3"	11	16	1'- 6"	20'- 9"	5'- 6"	26'- 3"	4	17	9'- 8"	11'-10"	29
11	19	1'- 4"	9'- 5"	6'- 0"	15'- 5"	11	18	1'- 4"	13'- 0"	6'- 0"	19'- 0"	11	18	1'- 4"	21'- 9"	6'- 0"	27'- 9"	4	17	9'-11"	12'- 1"	30

QUANTITIES

H	CONCRETE / 25' UNIT C.Y.	STEEL / 25' UNIT LBS.	CONCRETE PER LIN.FT. C.Y.	STEEL PER LIN.FT. LBS.
201	6.52	476	0.26	19
7	7.73	549	0.31	21
8	9.04	624	0.36	24
9	10.38	723	0.42	28
10	11.67	825	0.47	33
11	13.14	977	0.53	39
12	14.87	1112	0.59	44
13	18.06	1247	0.72	49
14	19.81	1518	0.79	60
15	21.51	1780	0.86	71
16	23.09	2041	0.92	81
17	25.89	2270	1.04	90
18	27.84	2680	1.11	107
19	29.64	3006	1.19	120
20	31.56	3509	1.26	140
21	35.40	3540	1.42	141
22	37.48	4237	1.50	169
23	39.49	4794	1.58	191
24	41.63	5379	1.67	215
25	43.80	6412	1.75	256
26	48.51	6863	1.94	274
27	51.11	7868	2.04	314
28	53.60	9044	2.14	361
29	56.26	10760	2.25	430
30	58.94	12089	2.36	483



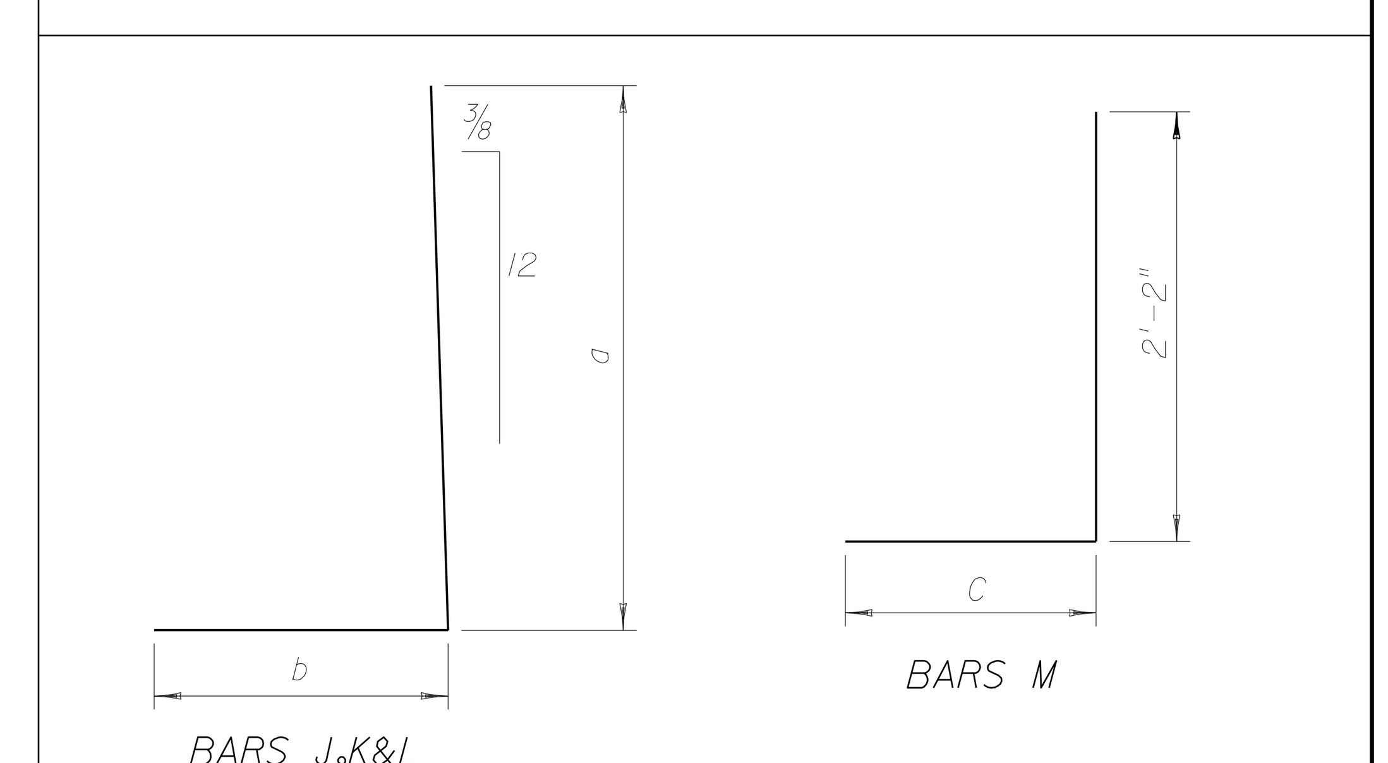
VIEW A-A



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 a 25' 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. Bars F and M are No. 4 Bars. Bars J are as shown.

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

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

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	NAMES	DATES
DRAWN BY	M.J.	3/87
CHECKED BY	M.P.	3/87
DESIGNED BY	-	-
CHECKED BY	-	-
APPROVED BY	A.G.M.	

ENGINEER OF RECORD:
STRUCTURES DESIGN 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 (5.0 KIPS/SQ. FT. MAX. BEARING PRESSURE) 6 FT. TO 30 FT. HEIGHT

PROJECT NAME:

DRAWING NO. 1 of 1

INDEX NO. 804

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

RETAINING WALL DATA

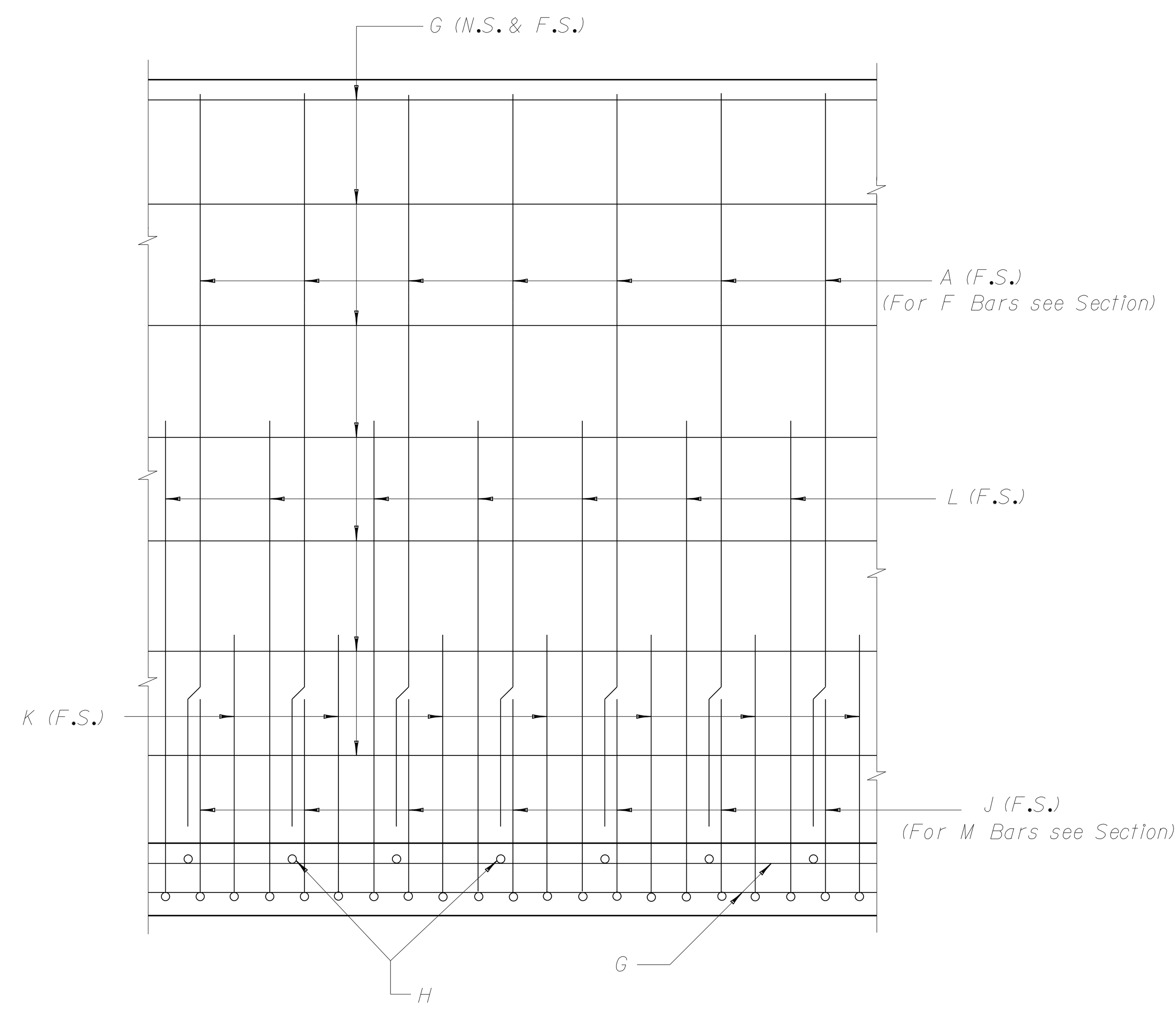
WALL DIMENSIONS / REINFORCING STEEL SCHEDULE

H	B	D	T	BARS A SIZE	BARS A NO.	BARS A LENGTH	BARS D* SIZE	BARS D* NO.	BARS D* LENGTH	BARS F SIZE	BARS F NO.	BARS F LENGTH	BARS G SIZE	BARS G NO.	BARS G LENGTH	BARS H SIZE	BARS H NO.	BARS H SPACING	BARS H LENGTH
201/6	8"	11"	3'- 1"	202			203/6	4	1'- 6"	204/4	17	4'- 7"	205/4	14	24'- 6"	206/4	18	1'- 5"	2'- 7"
7	10"	11"	3'- 6"				6	5	1'- 6"	4	17	5'- 7"	4	16	24'- 6"	4	18	1'- 5"	3'- 0"
8	1'- 0"	11"	4'- 0"				6	5	1'- 6"	4	17	6'- 7"	4	18	24'- 6"	4	18	1'- 5"	3'- 6"
9	1'- 2"	11"	4'- 6"				6	6	1'- 6"	4	17	7'- 7"	4	20	24'- 6"	4	19	1'- 4"	4'- 0"
10	1'- 3"	11"	4'-11"				6	7	1'- 6"	4	17	8'- 7"	4	22	24'- 6"	4	28	11"	4'- 5"
11	1'- 4"	11"	5'- 6"				6	7	1'- 6"	4	17	9'- 7"	4	24	24'- 6"	4	43	7"	5'- 0"
12	1'- 6"	1'- 0"	5'-11"				6	8	1'- 6"	4	17	10'- 6"	4	26	24'- 6"	4	38	8"	5'- 5"
13	1'- 7"	1'- 0"	6'- 3"				6	9	1'- 6"	4	17	11'- 6"	4	28	24'- 6"	4	50	6"	5'- 9"
14	1'- 9"	1'- 0"	6'-10"				6	9	1'- 6"	4	17	12'- 6"	4	30	24'- 6"	4	60	5"	6'- 4"
15	1'-10"	1'- 0"	7'- 4"	5	19	13'- 6"	6	10	1'- 6"	4	17	13'- 6"	4	32	24'- 6"	5	50	6"	6'-10"
16	2'- 0"	1'- 0"	7'- 8"	5	17	14'- 6"	6	10	1'- 6"	4	17	14'- 6"	4	32	24'- 6"	6	43	7"	7'- 2"
17	2'- 0"	1'- 2"	8'- 2"	5	19	15'- 4"	6	11	1'- 6"	4	17	15'- 4"	4	36	24'- 6"	6	43	7"	7'- 8"
18	2'- 3"	1'- 2"	8'- 9"	5	17	16'- 4"	6	12	1'- 6"	4	17	16'- 4"	4	38	24'- 6"	6	50	6"	8'- 3"
19	2'- 4"	1'- 2"	9'- 2"	5	19	17'- 4"	6	12	1'- 6"	4	17	17'- 4"	4	38	24'- 6"	7	43	7"	8'- 8"
20	2'- 6"	1'- 2"	9'- 8"	6	17	18'- 4"	6	13	1'- 6"	4	17	18'- 4"	4	42	24'- 6"	7	43	7"	9'- 2"
21	2'- 7"	1'- 5"	10'- 1"	6	17	19'- 1"	6	14	1'- 6"	4	17	19'- 1"	4	44	24'- 6"	7	43	7"	9'- 7"
22	2'-10"	1'- 5"	10'- 7"	6	19	20'- 1"	6	14	1'- 6"	4	17	20'- 1"	4	44	24'- 6"	7	50	6"	10'- 1"
23	2'-10"	1'- 5"	11'- 0"	6	17	21'- 1"	6	15	1'- 6"	4	17	21'- 1"	4	46	24'- 6"	8	50	6"	10'- 6"
24	3'- 1"	1'- 5"	11'- 6"	6	19	22'- 1"	6	16	1'- 6"	4	17	22'- 1"	4	50	24'- 6"	8	50	6"	11'- 0"
25	3'- 1"	1'- 5"	12'- 0"	6	17	23'- 1"	6	16	1'- 6"	4	17	23'- 1"	4	50	24'- 6"	9	50	6"	11'- 6"
26	3'- 5"	1'- 8"	12'- 6"	6	19	23'-10"	6	17	1'- 6"	4	17	23'-10"	4	52	24'- 6"	9	43	7"	12'- 0"
27	3'- 7"	1'- 8"	12'-11"	6	17	24'-10"	6	18	1'- 6"	4	17	24'-10"	4	56	24'- 6"	9	50	6"	12'- 5"
28	3'-10"	1'- 8"	13'- 5"	7	19	25'-10"	6	18	1'- 6"	4	17	25'-10"	4	56	24'- 6"	9	50	6"	12'-11"
29	4'- 1"	1'- 8"	13'- 9"	8	17	26'-10"	6	19	1'- 6"	4	17	26'-10"	4	58	24'- 6"	10	50	6"	13'- 3"
30	4'- 5"	1'- 8"	14'- 6"	8	19	27'-10"	6	20	1'- 6"	4	17	27'-10"	4	62	24'- 6"	10	50	6"	14'- 0"

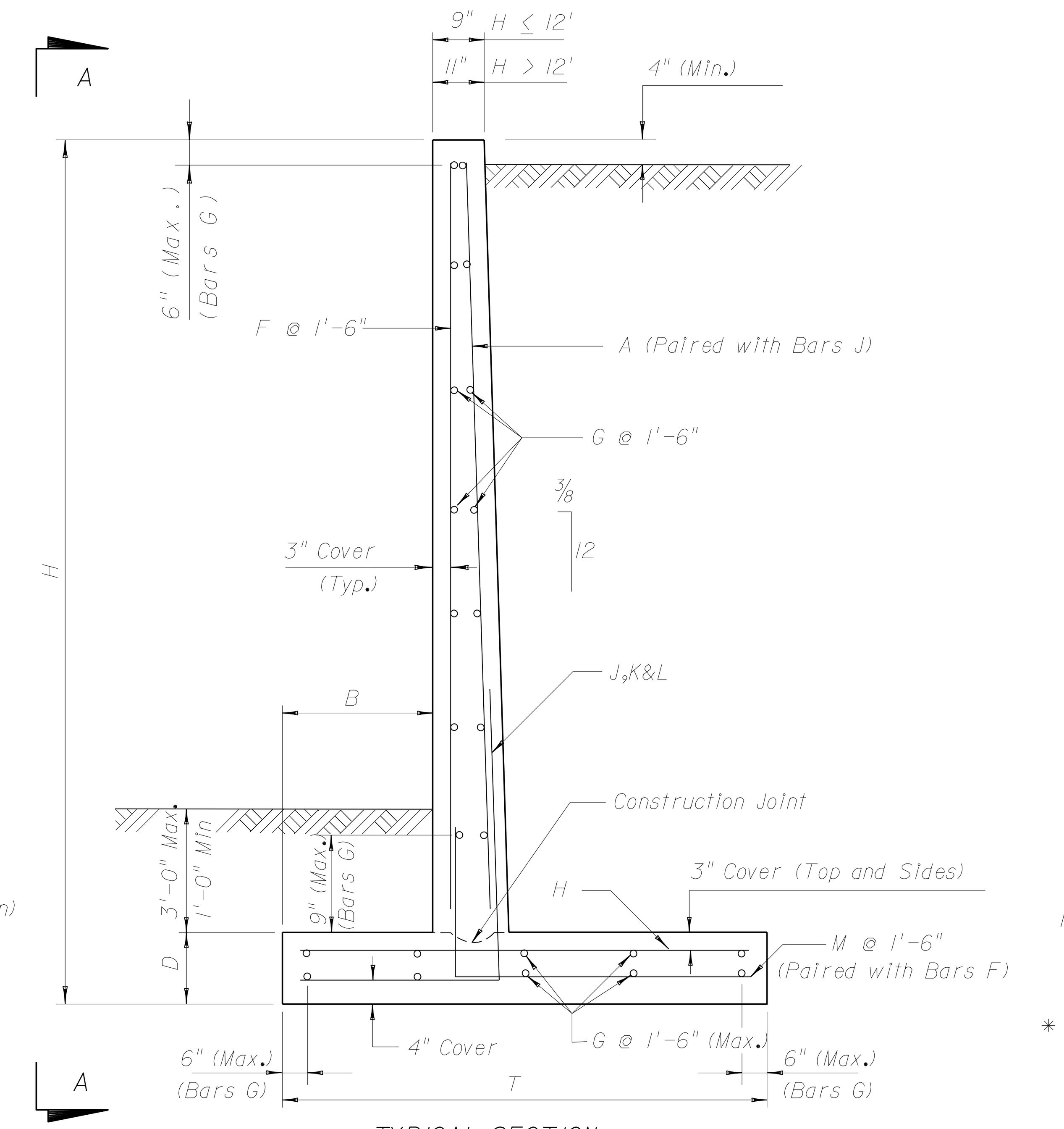
BARS J SIZE	BARS J NO.	BARS J SPACING	BARS J a	BARS J b	BARS J LENGTH	BARS K SIZE	BARS K NO.	BARS K SPACING	BARS K a	BARS K b	BARS K LENGTH	BARS L SIZE	BARS L NO.	BARS L SPACING	BARS L a	BARS L b	BARS L LENGTH	BARS M SIZE	BARS M NO.	BARS M C	BARS M LENGTH	H
207/4	26	1'- 0"	5'- 5"	1'- 1"	6'- 6"	208						209						210/4	17	1'-11"	4'- 1"	6
4	26	1'- 0"	6'- 5"	1'- 3"	7'- 8"													4	17	2'- 2"	4'- 4"	7
4	26	1'- 0"	7'- 5"	1'- 6"	8'-11"													4	17	2'- 6"	4'- 8"	8
4	28	11"	8'- 5"	1'- 8"	10'- 1"													4	17	2'-10"	5'- 0"	9
4	28	11"	9'- 5"	1'- 9"	11'- 2"													4	17	3'- 2"	5'- 4"	10
4	30	10"	10'- 5"	1'-11"	12'- 4"													4	17	3'- 8"	5'-10"	11
4	38	8"	11'- 5"	2'- 1"	13'- 6"													4	17	3'-11"	6'- 1"	12
4	38	8"	12'- 5"	2'- 4"	14'- 9"													4	17	4'- 2"	6'- 4"	13
4	50	6"	13'- 5"	2'- 7"	16'- 0"													4	17	4'- 7"	6'- 9"	14
5	19	1'- 4"	2"-10"	2'- 8"	5'- 6"	5	18	1'- 4"	10'- 9"	2'- 7"	13'- 4"							4	17	5'- 0"	7'- 2"	15
5	17	1'- 6"	2'-10"	2'-10"	5'- 8"	5	16	1'- 6"	5'- 2"	2'-10"	8'- 0"	5	16	1'- 6"	14'- 9"	2'-10"	17'- 7"	4	17	5'- 2"	7'- 4"	16
5	19	1'- 4"	3'- 0"	2'-11"	5'-11"	5	18	1'- 4"	5'- 8"	2'-11"	8'- 7"	5	18	1'- 4"	13'-11"	2'-11"	16'-10"	4	17	5'- 8"	7'-10"	17
6	17	1'- 6"	4'- 4"	3'- 2"	7'- 6"	6	16	1'- 6"	5'-11"	3'- 2"	9'- 1"	6	16	1'- 6"	14'-11"	3'- 2"	18'- 1"	4	17	6'- 0"	8'- 2"	18
6	19	1'- 4"	3'- 5"	3'- 4"	6'- 9"	6	18	1'- 4"	6'- 4"	3'- 4"	9'- 8"	6	18	1'- 4"	15'- 4"	3'- 4"	18'- 8"	4	17	6'- 4"	8'- 6"	19
7	17	1'- 6"	3'- 5"	3'- 6"	6'-11"	7	16	1'- 6"	6'- 4"	3'- 6"	9'-10"	7	16	1'- 6"	16'- 4"	3'- 6"	19'-10"	4	17	6'- 8"	8'-10"	20
7	17	1'- 6"	5'- 2"	3'- 7"	8'- 9"	7	16	1'- 6"	7'- 2"	3'- 7"	10'- 9"	7	16	1'- 6"	11'- 2"	3'- 7"	14'- 9"	4	17	7'- 0"	9'- 2"	21
7	19	1'- 4"	4'- 7"	3'-11"	8'- 6"	7	18	1'- 4"	8'- 2"	3'-11"	12'- 1"	7	18	1'- 4"	12'- 2"	3'-11"	16'- 1"	4	17	7'- 3"	9'- 5"	22
8	17	1'- 6"	5'-10"	3'-11"	9'- 9"	8	16	1'- 6"	8'-10"	3'-11"	12'- 9"	8	16	1'- 6"	13'- 2"	3'-11"	17'- 1"	4	17	7'- 8"	9'-10"	23
8	19	1'- 4"	5'-10"	4'- 2"	10'- 0"	8	18	1'- 4"	9'-10"	4'- 2"	14'- 0"	8	18	1'- 4"	14'- 2"	4'- 2"	18'- 4"	4	17	7'-11"	10'- 1"	24
9	17	1'- 6"	6'-11"	4'- 3"	11'- 2"	9	16	1'- 6"	10'- 6"	4'- 3"	14'- 9"	9	16	1'- 6"	17'- 6"	4'- 3"	21'- 9"	4	17	8'- 5"	10'- 7"	25
9	19	1'- 4"	7'- 5"	4'- 7"	12'- 0"	9	18	1'- 4"	11'- 4"	4'- 7"	15'-11"	9	18	1'- 4"	18'- 3"	4'- 7"	22'-10"	4	17	8'- 7"	10'- 9"	26
10	17	1'- 6"	7'-11"	4'-10"	12'- 9"	10	16	1'- 6"	11'- 9"	4'-10"	16'- 7"	10	16	1'- 6"	18'- 9"	4'-10"	23'- 7"	4	17	8'-10"	11'- 0"	27
10	19	1'- 4"	8'- 5"	5'- 1"	13'- 6"	10	18	1'- 4"	12'- 3"	5'- 1"	17'- 4"	10	18	1'- 4"	20'- 3"	5'- 1"	25'- 4"	4	17	9'- 1"	11'- 3"	28
11	17	1'- 6"	8'-11"	5'- 4"	14'- 3"	11	16	1'- 6"	12'- 9"	5'- 4"	18'- 1"	11	16	1'- 6"	20'- 9"	5'- 4"	26'- 1"	4	17	9'- 2"	11'- 4"	29
11	19	1'- 4"	9'- 5"	5'- 9"	15'- 2"	11	18	1'- 4"	13'- 0"	5'- 9"	18'- 9"	11	18	1'- 4"	21'- 9"	5'- 9"	27'- 6"	4	17	9'- 7"	11'- 9"	30

QUANTITIES

H	CONCRETE / 25' UNIT C.Y.	STEEL / 25' UNIT LBS.	CONCRETE PER LIN.FT. C.Y.	STEEL PER LIN.FT. LBS.
201/6	6.52	480	0.26	19
7	7.73	554	0.31	22
8	9.04	630	0.36	25
9	10.38	723	0.42	28
10	11.67	825	0.47	33
11	13.14	974	0.53	38
12	14.87	1112	0.59	44
13	18.06	1247	0.72	49
14	19.81	1518	0.79	60
15	21.51	1780	0.86	71
16	23.09	2041	0.92	81
17	25.89	2270	1.04	90
18	27.84	2680	1.11	107
19	29.64	3006	1.19	120
20	31.56	3509	1.26	140
21	35.40	3540	1.42	141
22	37.48	4056	1.50	162
23	39.49	4794	1.58	191
24	41.63	5379	1.67	215
25	43.80	6412	1.75	256
26	48.51	6863	1.94	274
27	50.72	7806	2.03	312
28	53.09	8985	2.12	359
29	55.23	10535	2.21	421
30	58.04	11887	2.32	475



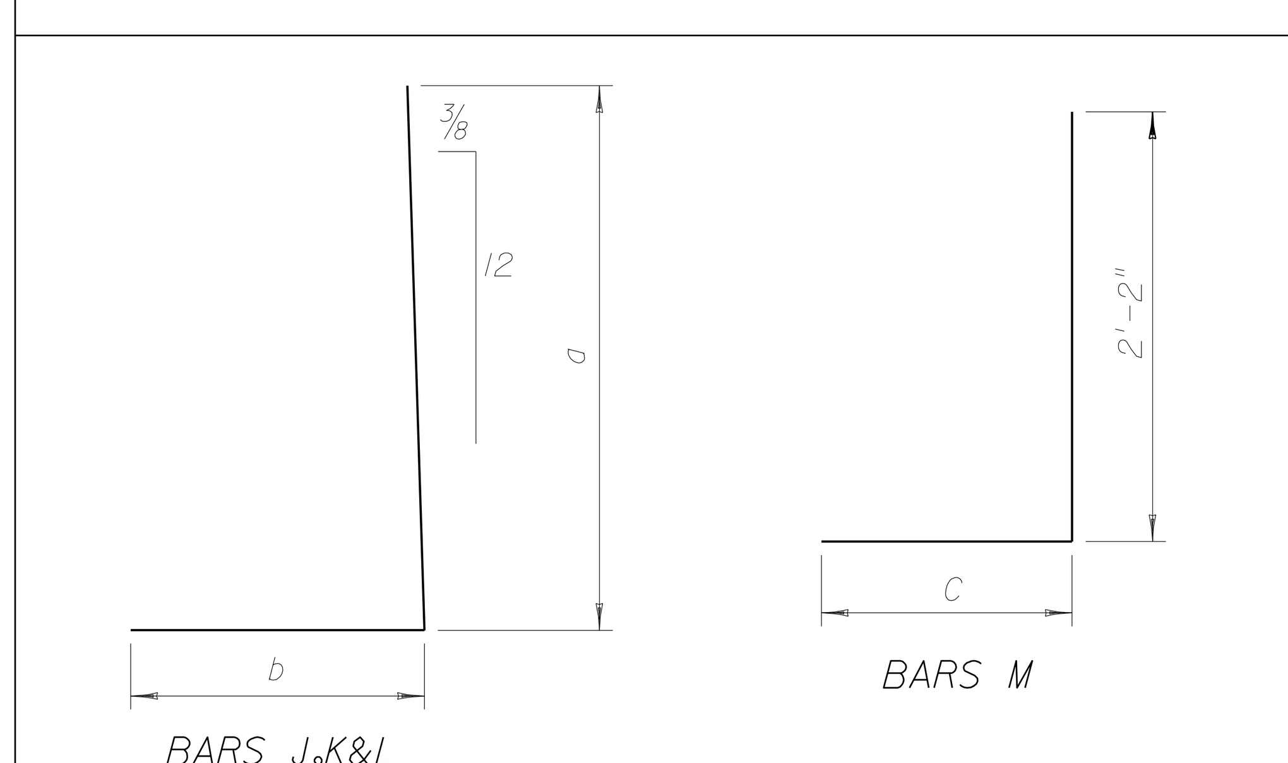
VIEW A-A



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 a 25' Unit shall be equally spaced at each end of the Unit.

BENDING DIAGRAM



BARS J,K&L

BARS M

NOTE: All bar dimensions are out to out.

NOTE: Bars M are paired with Bars F and Bars A are paired with Bars J. Bars F and M are No. 4 Bars. Bars J are as shown.

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

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

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	NAMES	DATES
DRAWN BY	M.J.	3/87
CHECKED BY	M.P.	3/87
DESIGNED BY	-	-
CHECKED BY	-	-
APPROVED BY	A.G.M.	

ENGINEER OF RECORD:
STRUCTURES DESIGN 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 (6.0 KIPS/SQ.FT. MAX. BEARING PRESSURE) 6 FT. TO 30 FT. HEIGHT

PROJECT NAME:

DRAWING NO. 1 of 1

INDEX NO. 805

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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

RETAINING WALL DATA

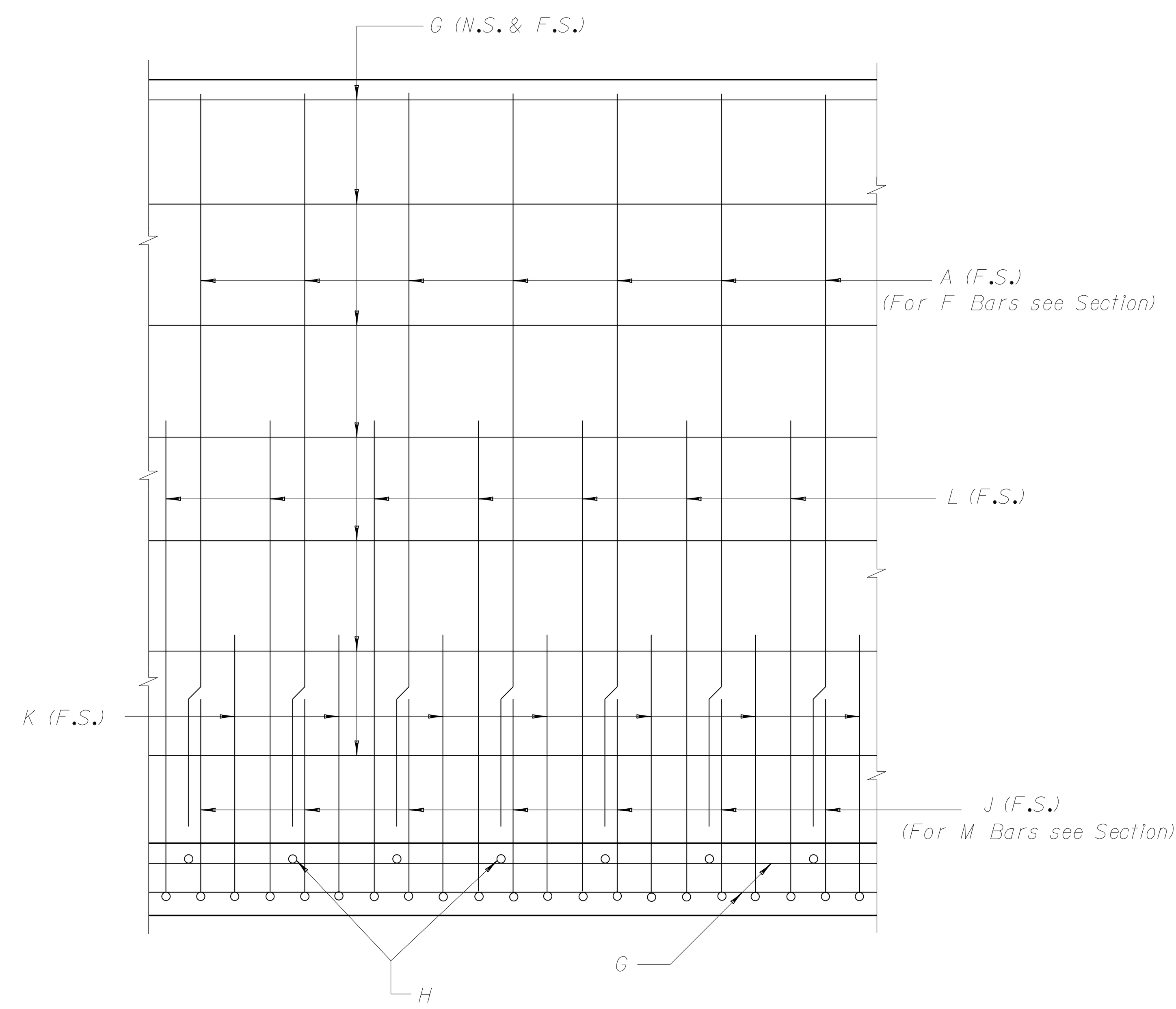
REINFORCING STEEL SCHEDULE

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
6	1'-1"	11"	4'-3"				6	4	1'-6"	4	17	4'-7"	4	16	24'-6"	4	18	1'-5"	3'-9"
7	1'-2"	11"	4'-10"				6	5	1'-6"	4	17	5'-7"	4	18	24'-6"	4	19	1'-4"	4'-4"
8	1'-4"	11"	5'-3"				6	5	1'-6"	4	17	6'-7"	4	20	24'-6"	4	28	11"	4'-9"
9	1'-7"	11"	5'-9"				6	6	1'-6"	4	17	7'-7"	4	22	24'-6"	4	34	9"	5'-3"
10	1'-8"	11"	6'-4"				6	7	1'-6"	4	17	8'-7"	4	24	24'-6"	4	50	6"	5'-10"
11	1'-10"	11"	7'-2"				6	7	1'-6"	4	17	9'-7"	4	26	24'-6"	5	43	7"	6'-8"
12	2'-2"	1'-0"	8'-2"				6	8	1'-6"	4	17	10'-6"	4	30	24'-6"	5	38	8"	7'-8"
13	2'-6"	1'-0"	9'-0"				6	9	1'-6"	4	17	11'-6"	4	32	24'-6"	5	50	6"	8'-6"
14	2'-9"	1'-0"	10'-1"				6	9	1'-6"	4	17	12'-6"	4	34	24'-6"	6	38	8"	9'-7"
15	3'-0"	1'-0"	11'-3"	5	20	13'-6"	6	10	1'-6"	4	17	13'-6"	4	38	24'-6"	6	50	6"	10'-9"
16	3'-4"	1'-0"	12'-3"	6	17	14'-6"	6	10	1'-6"	4	17	14'-6"	4	38	24'-6"	6	60	5"	11'-9"
17	3'-8"	1'-2"	13'-8"	6	19	15'-4"	6	11	1'-6"	4	17	15'-4"	4	42	24'-6"	6	60	5"	13'-2"
18	4'-0"	1'-2"	14'-7"	6	17	16'-4"	6	12	1'-6"	4	17	16'-4"	4	46	24'-6"	8	38	8"	14'-1"
19	4'-4"	1'-2"	15'-10"	6	19	17'-4"	6	12	1'-6"	4	17	17'-4"	4	48	24'-6"	8	43	7"	15'-4"
20	4'-9"	1'-2"	16'-11"	6	17	18'-4"	6	13	1'-6"	4	17	18'-4"	4	50	24'-6"	8	50	6"	16'-5"

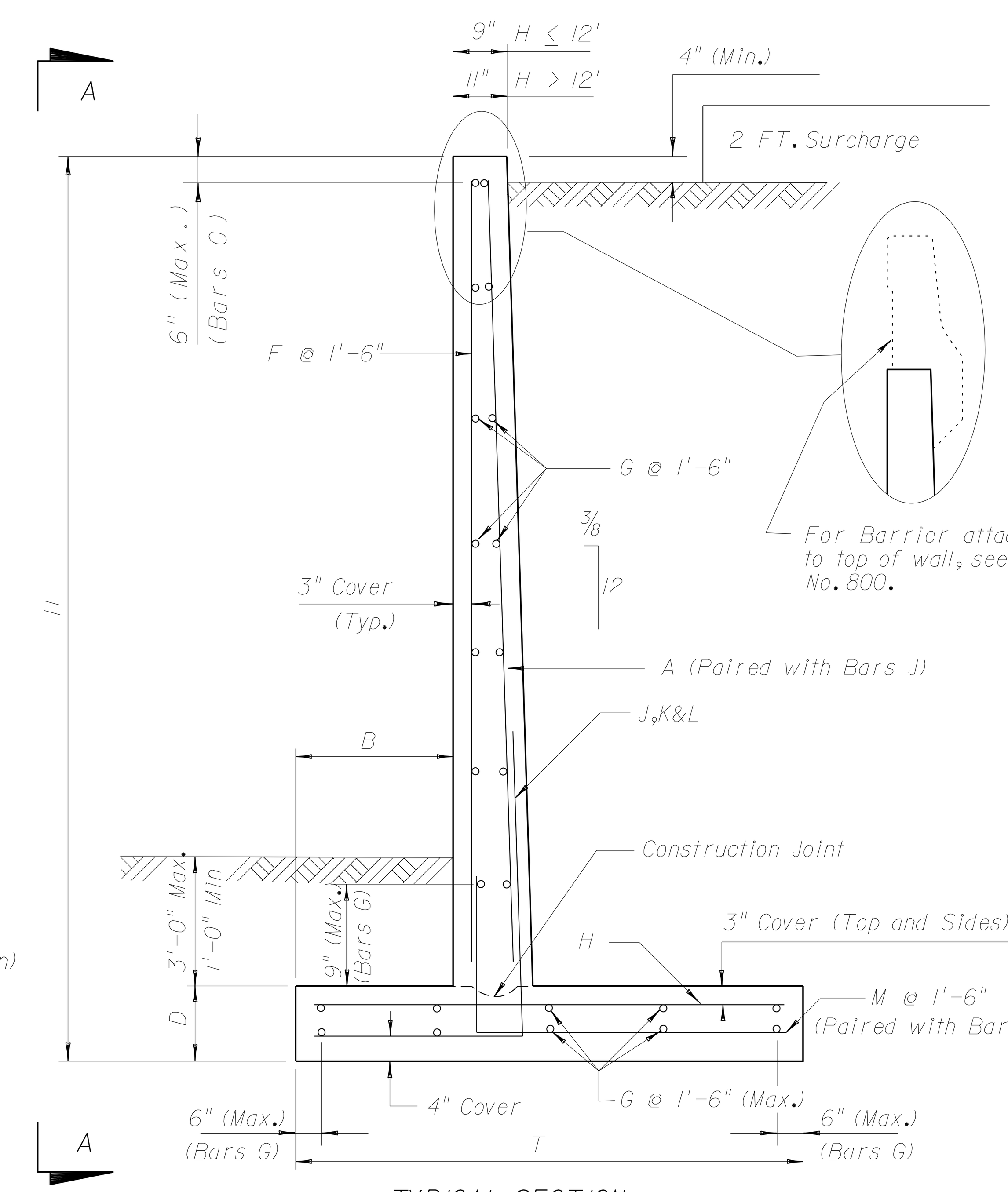
	BARS J						BARS K						BARS L						BARS M				
H	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	C	LENGTH	H
6	5	28	11"	5'-5"	1'-6"	6'-11"													4	17	2'-8"	4'-10"	6
7	5	30	10"	6'-5"	1'-7"	8'-0"													4	17	3'-2"	5'-4"	7
8	5	34	9"	7'-5"	1'-9"	9'-2"													4	17	3'-5"	5'-7"	8
9	5	34	9"	8'-5"	2'-1"	10'-6"													4	17	3'-8"	5'-10"	9
10	5	38	8"	9'-5"	2'-2"	11'-7"													4	17	4'-2"	6'-4"	10
11	5	43	7"	10'-5"	2'-5"	12'-10"													4	17	4'-10"	7'-0"	11
12	5	23	1'-1"	11'-5"	2'-9"	14'-2"	5	22	1'-1"	9'-8"	2'-9"	12'-5"							4	17	5'-6"	7'-8"	12
13	5	23	1'-1"	12'-5"	3'-3"	15'-8"	5	22	1'-1"	9'-0"	3'-3"	12'-3"							4	17	6'-0"	8'-2"	13
14	5	25	1'-0"	13'-5"	3'-7"	17'-0"	5	24	1'-0"	9'-0"	3'-7"	12'-7"							4	17	6'-10"	9'-0"	14
15	5	20	1'-3"	3'-8"	3'-10"	7'-6"	5	19	1'-3"	12'-2"	3'-10"	16'-0"	5	19	1'-3"	8'-0"	4'-2"	12'-2"	4	17	7'-9"	9'-11"	15
16	6	17	1'-6"	3'-3"	4'-2"	7'-5"	6	16	1'-6"	3'-2"	4'-2"	7'-4"	6	16	1'-6"	9'-3"	4'-7"	13'-10"	4	17	8'-5"	10'-7"	16
17	6	19	1'-4"	4'-1"	4'-7"	8'-8"	6	18	1'-4"	3'-4"	4'-7"	7'-11"	6	18	1'-4"	9'-3"	4'-11"	14'-2"	4	17	9'-6"	11'-8"	17
18	7	17	1'-6"	4'-4"	4'-11"	9'-3"	7	16	1'-6"	3'-4"	4'-11"	8'-3"	7	16	1'-6"	7'-11"	5'-0"	12'-11"	4	17	10'-1"	12'-3"	18
19	7	19	1'-4"	5'-2"	5'-4"	10'-6"	7	18	1'-4"	4'-11"	5'-4"	10'-3"	7	18	1'-4"	8'-11"	5'-4"	14'-3"	4	17	11'-0"	13'-2"	19
20	8	17	1'-6"	4'-4"	5'-9"	10'-1"	8	16	1'-6"	4'-11"	5'-9"	10'-8"	8	16	1'-6"	9'-11"	5'-9"	15'-8"	4	17	11'-8"	13'-10"	20

QUANTITIES

H	CONCRETE / 25' UNIT	STEEL / 25' UNIT	CONCRETE PER LIN.FT.	STEEL PER LIN.FT.
	C.Y.	LBS.	C.Y.	LBS.
6	7.51	624	0.30	24
7	8.86	735	0.35	29
8	10.10	890	0.40	35
9	11.44	1017	0.46	40
10	12.88	1231	0.52	49
11	14.56	1504	0.58	60
12	16.95	1647	0.68	65
13	20.60	1867	0.82	74
14	22.82	2126	0.91	85
15	25.14	2707	1.01	108
16	27.33	3046	1.09	121
17	31.83	3478	1.27	139
18	34.14	3961	1.37	158
19	36.84	4723	1.47	188
20	39.39	5455	1.58	218



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 a 25' 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. Bars F and M are No. 4 Bars. Bars J are as shown.

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

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

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	NAMES	DATES
DRAWN BY	M.I.	3/87
CHECKED BY	M.P.	3/87
DESIGNED BY	-	-
CHECKED BY	-	-
APPROVED BY	A.G.M.	

ENGINEER OF RECORD:
STRUCTURES DESIGN 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 (2.0 KIPS/SQ.FT.MAX.BEARING PRESSURE) 6 FT. TO 20 FT. HEIGHT

PROJECT NAME:

DRAWING NO. 1 of 1

INDEX NO. 806

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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

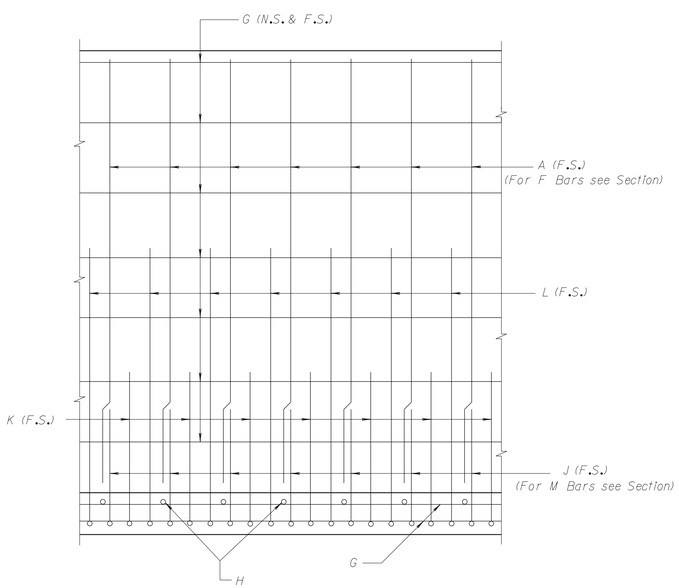
RETAINING WALL DATA

WALL DIMENSIONS / REINFORCING STEEL SCHEDULE

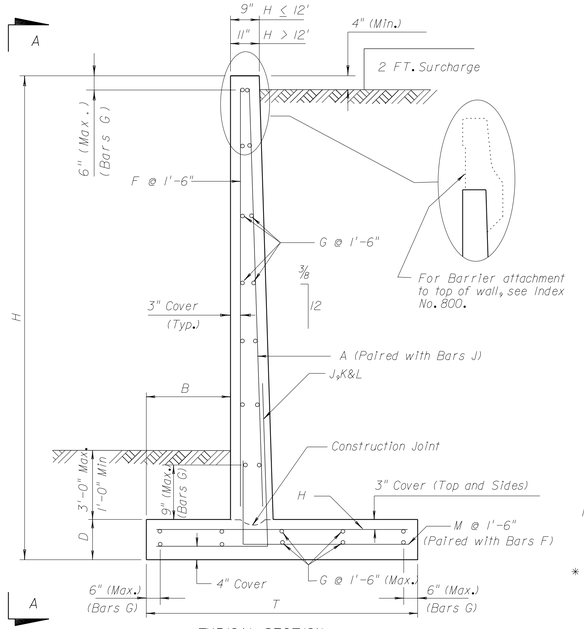
H	B	D	T	BARS A SIZE	BARS A NO.	BARS A LENGTH	BARS D * SIZE	BARS D NO.	BARS D LENGTH	BARS F SIZE	BARS F NO.	BARS F LENGTH	BARS G SIZE	BARS G NO.	BARS G LENGTH	BARS H SIZE	BARS H NO.	BARS H SPACING	BARS H LENGTH	BARS J SIZE	BARS J NO.	BARS J SPACING	BARS J a	BARS J b	BARS J LENGTH	BARS K SIZE	BARS K NO.	BARS K SPACING	BARS K a	BARS K b	BARS K LENGTH	BARS L SIZE	BARS L NO.	BARS L SPACING	BARS L a	BARS L b	BARS L LENGTH	BARS M SIZE	BARS M NO.	BARS M C	BARS M LENGTH	H
#6	1'-1"	1'-4"	3'-3"	#02			#03	4	1'-6"	#04	17	4'-7"	#05	16	24'-6"	#06	18	1'-5"	3'-9"	#07	28	11"	5'-5"	1'-6"	6'-11"	#08						#09						#40	17	2'-8"	4'-10"	6
7	1'-2"	1'-4"	3'-10"				6	5	1'-6"	4	17	5'-7"	4	18	24'-6"	4	19	1'-4"	4'-4"	5	30	10"	6'-5"	1'-7"	8'-0"													4	17	3'-2"	5'-4"	7
8	1'-4"	1'-5"	3'-3"				6	5	1'-6"	4	17	6'-7"	4	20	24'-6"	4	28	11"	4'-9"	5	34	9"	7'-5"	1'-9"	9'-2"													4	17	3'-5"	5'-7"	8
9	1'-7"	1'-5"	3'-9"				6	7	1'-6"	4	17	7'-7"	4	22	24'-6"	4	34	9"	5'-3"	5	34	9"	8'-5"	2'-1"	10'-6"													4	17	3'-8"	5'-10"	9
10	1'-7"	1'-6"	3'-3"				6	7	1'-6"	4	17	8'-7"	4	24	24'-6"	4	50	6"	5'-9"	5	38	8"	9'-5"	2'-1"	11'-6"													4	17	4'-2"	6'-4"	10
11	1'-8"	1'-6"	3'-8"				6	7	1'-6"	4	17	9'-7"	4	26	24'-6"	5	43	7"	6'-2"	5	48	7"	10'-5"	2'-3"	12'-8"													4	17	4'-6"	6'-8"	11
12	1'-11"	1'-0"	7'-1"				6	8	1'-6"	4	17	10'-6"	4	28	24'-6"	5	38	8"	6'-7"	5	23	1'-1"	11'-5"	2'-6"	13'-11"	5	22	1'-1"	9'-8"	2'-6"	12'-2"						4	17	4'-8"	6'-10"	12
13	2'-0"	1'-0"	7'-7"				6	9	1'-6"	4	17	11'-6"	4	30	24'-6"	5	50	6"	7'-1"	5	23	1'-1"	12'-5"	2'-9"	15'-2"	5	22	1'-1"	9'-0"	2'-9"	11'-9"						4	17	5'-1"	7'-3"	13
14	2'-1"	1'-0"	8'-1"				6	9	1'-6"	4	17	12'-6"	4	32	24'-6"	6	43	7"	7'-7"	5	25	1'-0"	13'-5"	2'-11"	16'-4"	5	24	1'-0"	9'-0"	2'-11"	11'-11"						4	17	5'-6"	7'-8"	14
15	2'-3"	1'-0"	8'-7"	5	20	13'-6"	6	10	1'-6"	4	17	13'-6"	4	34	24'-6"	6	50	6"	8'-1"	5	20	1'-3"	3'-8"	3'-1"	6'-9"	5	19	1'-3"	12'-2"	3'-1"	15'-3"	5	19	1'-3"	8'-0"	3'-1"	11'-1"	4	17	5'-10"	8'-0"	15
16	2'-6"	1'-0"	9'-4"	6	17	14'-6"	6	10	1'-6"	4	17	14'-6"	4	34	24'-6"	7	50	6"	8'-10"	6	17	1'-6"	3'-3"	3'-3"	6'-6"	6	16	1'-6"	3'-2"	3'-3"	4'-12"	6	16	1'-6"	9'-3"	3'-3"	4'-12"	4	17	6'-4"	8'-6"	16
17	2'-8"	1'-2"	10'-3"	6	19	15'-4"	6	11	1'-6"	4	17	15'-4"	4	38	24'-6"	7	43	7"	9'-9"	6	19	1'-4"	4'-1"	3'-7"	7'-8"	6	18	1'-4"	3'-4"	3'-7"	6'-11"	6	18	1'-4"	9'-3"	3'-7"	12'-10"	4	17	7'-1"	9'-3"	17
18	3'-0"	1'-2"	11'-1"	6	17	16'-4"	6	12	1'-6"	4	17	16'-4"	4	42	24'-6"	7	50	6"	10'-7"	7	17	1'-6"	4'-4"	3'-11"	8'-3"	7	16	1'-6"	3'-4"	3'-11"	7'-3"	7	16	1'-6"	7'-11"	3'-11"	11'-10"	4	17	7'-7"	9'-9"	18
19	3'-3"	1'-2"	12'-0"	6	19	17'-4"	6	12	1'-6"	4	17	17'-4"	4	42	24'-6"	8	50	6"	11'-6"	7	19	1'-4"	5'-2"	4'-3"	9'-5"	7	18	1'-4"	4'-11"	4'-3"	9'-2"	7	18	1'-4"	8'-11"	4'-3"	13'-2"	4	17	8'-3"	10'-5"	19
20	3'-6"	1'-2"	12'-9"	6	17	18'-4"	6	13	1'-6"	4	17	18'-4"	4	46	24'-6"	8	60	5"	12'-3"	8	17	1'-6"	4'-4"	4'-6"	8'-10"	8	16	1'-6"	4'-11"	4'-6"	9'-5"	8	16	1'-6"	9'-11"	4'-6"	14'-5"	4	17	8'-9"	10'-11"	20
21	3'-9"	1'-5"	13'-11"	6	17	19'-1"	6	14	1'-6"	4	17	19'-1"	4	48	24'-6"	8	50	6"	13'-5"	8	17	1'-6"	5'-8"	4'-9"	10'-5"	8	16	1'-6"	6'-10"	4'-9"	11'-7"	8	16	1'-6"	11'-10"	4'-9"	16'-7"	4	17	9'-8"	11'-10"	21
22	4'-1"	1'-5"	14'-10"	7	17	20'-1"	6	14	1'-6"	4	17	20'-1"	4	50	24'-6"	8	50	6"	14'-4"	9	17	1'-6"	5'-8"	5'-2"	10'-10"	9	16	1'-6"	5'-7"	5'-2"	10'-9"	9	16	1'-6"	10'-10"	5'-2"	16'-0"	4	17	10'-3"	12'-5"	22
23	4'-4"	1'-5"	15'-10"	7	17	21'-1"	6	15	1'-6"	4	17	21'-1"	4	54	24'-6"	9	50	6"	15'-4"	9	17	1'-6"	6'-11"	5'-5"	12'-4"	9	16	1'-6"	7'-6"	5'-5"	12'-11"	9	16	1'-6"	13'-6"	5'-5"	18'-11"	4	17	11'-0"	13'-2"	23
24	4'-8"	1'-5"	16'-10"	7	20	22'-1"	6	16	1'-6"	4	17	22'-1"	4	56	24'-6"	9	60	5"	16'-4"	9	20	1'-3"	6'-11"	5'-9"	12'-8"	9	19	1'-3"	7'-7"	5'-9"	13'-4"	9	19	1'-3"	13'-6"	5'-9"	19'-3"	4	17	11'-8"	13'-10"	24
25	4'-11"	1'-5"	18'-1"	7	17	23'-1"	6	16	1'-6"	4	17	23'-1"	4	58	24'-6"	10	50	6"	17'-7"	10	17	1'-6"	8'-6"	6'-1"	14'-7"	10	16	1'-6"	9'-5"	6'-1"	15'-6"	10	16	1'-6"	15'-6"	6'-1"	21'-7"	4	17	12'-8"	14'-10"	25
26	5'-5"	1'-8"	18'-10"	7	19	23'-10"	6	17	1'-6"	4	17	23'-10"	4	62	24'-6"	10	43	7"	18'-4"	10	19	1'-4"	9'-0"	6'-7"	15'-7"	10	18	1'-4"	9'-5"	6'-7"	16'-0"	10	18	1'-4"	17'-6"	6'-7"	24'-1"	4	17	12'-11"	15'-1"	26
27	5'-9"	1'-8"	19'-9"	8	17	24'-10"	6	18	1'-6"	4	17	24'-10"	4	64	24'-6"	10	50	6"	19'-3"	11	17	1'-6"	9'-6"	7'-0"	16'-6"	11	16	1'-6"	10'-0"	7'-0"	17'-0"	11	16	1'-6"	18'-0"	7'-0"	25'-0"	4	17	13'-6"	15'-8"	27
28	6'-2"	1'-8"	20'-7"	8	19	25'-10"	6	18	1'-6"	4	17	25'-10"	4	66	24'-6"	10	50	6"	20'-1"	11	19	1'-4"	10'-0"	7'-5"	17'-5"	11	18	1'-4"	10'-0"	7'-5"	17'-5"	11	18	1'-4"	18'-0"	7'-5"	25'-5"	4	17	13'-11"	16'-1"	28
29	6'-7"	1'-8"	21'-5"	8	20	26'-10"	6	19	1'-6"	4	17	26'-10"	4	68	24'-6"	10	60	5"	20'-11"	11	20	1'-3"	10'-6"	7'-10"	18'-4"	11	19	1'-3"	11'-6"	7'-10"	19'-4"	11	19	1'-3"	19'-6"	7'-10"	27'-4"	4	17	14'-4"	16'-6"	29
30	7'-1"	1'-8"	22'-0"	8	22	27'-10"	6	20	1'-6"	4	17	27'-10"	4	72	24'-6"	11	50	6"	21'-6"	11	22	1'-2"	11'-0"	8'-5"	19'-5"	11	21	1'-2"	11'-6"	8'-5"	19'-11"	11	21	1'-2"	19'-6"	8'-5"	27'-11"	4	17	14'-5"	16'-7"	30

QUANTITIES

H	CONCRETE / 25' UNIT C.Y.	STEEL / 25' UNIT LBS.	CONCRETE PER LIN.FT. C.Y.	STEEL PER LIN.FT. LBS.
#6	7.51	624	0.30	24
7	8.86	735	0.35	29
8	10.10	890	0.40	35
9	11.44	1019	0.46	40
10	12.81	1225	0.51	49
11	14.13	1536	0.57	61
12	15.95	1547	0.64	61
13	19.29	1727	0.77	69
14	20.96	1986	0.84	79
15	22.67	2374	0.91	94
16	24.63	2739	0.99	109
17	28.14	2954	1.13	118
18	30.36	3422	1.21	136
19	32.70	4246	1.31	169
20	34.89	4963	1.40	198
21	40.42	5130	1.62	205
22	43.06	5911	1.72	236
23	45.83	7090	1.83	283
24	48.63	8561	1.95	342
25	51.78	9620	2.07	384
26	58.28	10191	2.33	407
27	61.27	11877	2.45	475
28	64.15	13082	2.57	523
29	67.06	15139	2.68	605
30	69.61	16680	2.78	667



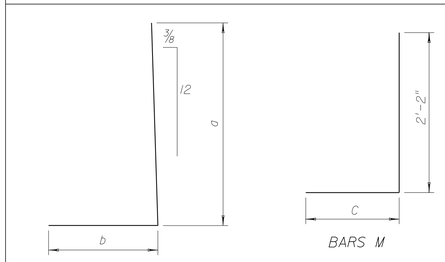
VIEW A-A



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 a 25' 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. Bars F and M are No. 4 Bars. Bars J are as shown.

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

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

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	NAMES	DATES
DRAWN BY	M.I.	3/87
CHECKED BY	M.P.	3/87
DESIGNED BY	.	.
CHECKED BY	.	.
APPROVED BY	A.G.M.	

ENGINEER OF RECORD:

STRUCTURES DESIGN 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 (3.0 KIPS/SQ.FT. MAX. BEARING PRESSURE)
6 FT. TO 30 FT. HEIGHT

PROJECT NAME:

DRAWING NO.
1 of 1

INDEX NO.
807

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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

RETAINING WALL DATA

WALL DIMENSIONS / REINFORCING STEEL SCHEDULE

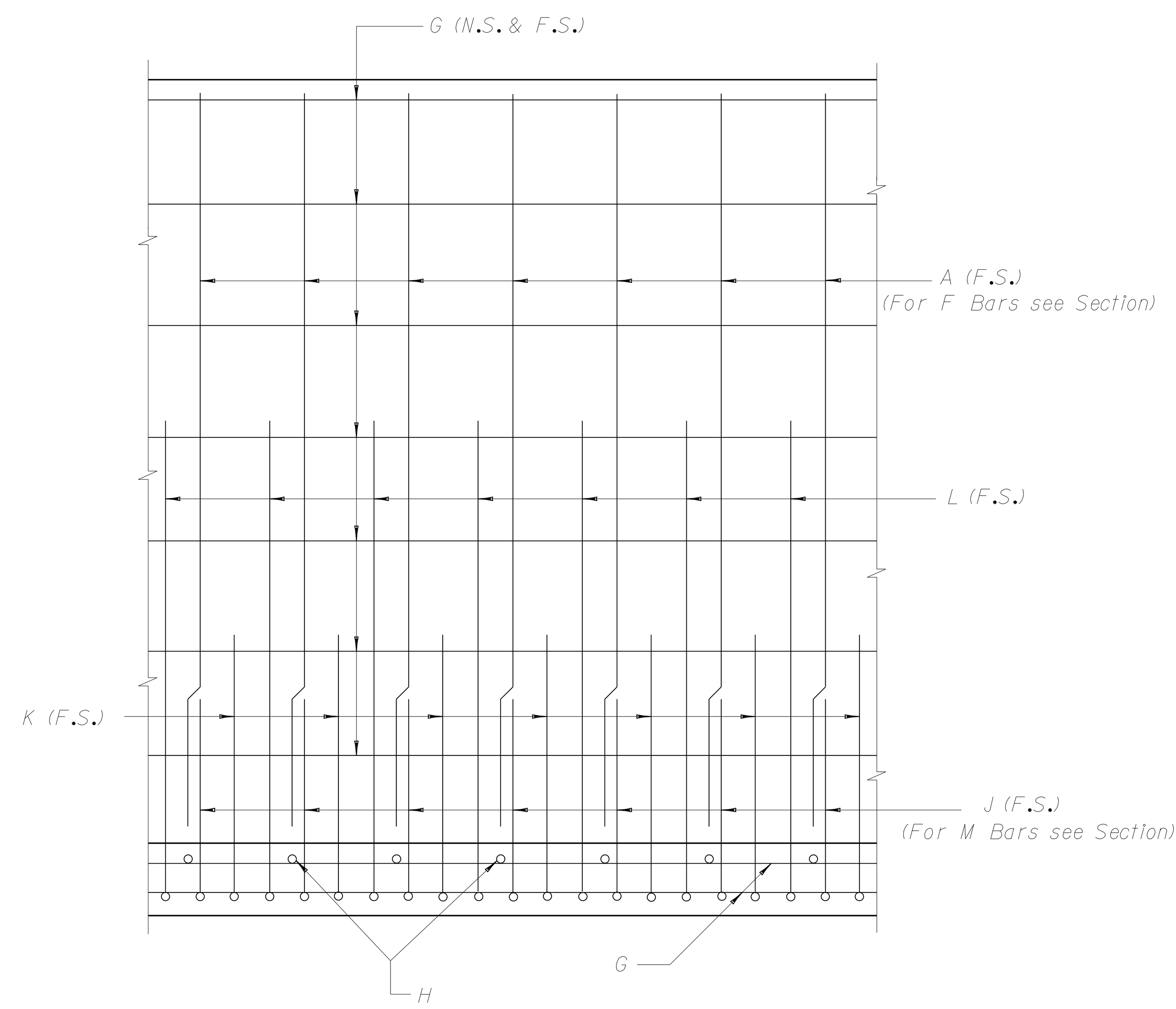
H	B	D	T	BARS A SIZE	BARS A NO.	BARS A LENGTH	BARS D* SIZE	BARS D* NO.	BARS D* LENGTH	BARS F SIZE	BARS F NO.	BARS F LENGTH	BARS G SIZE	BARS G NO.	BARS G LENGTH
6	1'- 1"	11"	4'- 3"				6	4	1'- 6"	4	17	4'- 7"	4	16	24'- 6"
7	1'- 2"	11"	4'-10"				6	5	1'- 6"	4	17	5'- 7"	4	18	24'- 6"
8	1'- 4"	11"	5'- 3"				6	5	1'- 6"	4	17	6'- 7"	4	20	24'- 6"
9	1'- 7"	11"	5'- 9"				6	6	1'- 6"	4	17	7'- 7"	4	22	24'- 6"
10	1'- 7"	11"	6'- 3"				6	7	1'- 6"	4	17	8'- 7"	4	24	24'- 6"
11	1'- 8"	11"	6'- 8"				6	7	1'- 6"	4	17	9'- 7"	4	26	24'- 6"
12	1'-11"	1'- 0"	7'- 1"				6	8	1'- 6"	4	17	10'- 6"	4	28	24'- 6"
13	2'- 0"	1'- 0"	7'- 7"				6	9	1'- 6"	4	17	11'- 6"	4	30	24'- 6"
14	2'- 1"	1'- 0"	8'- 1"				6	9	1'- 6"	4	17	12'- 6"	4	32	24'- 6"
15	2'- 3"	1'- 0"	8'- 7"	5	20	13'- 6"	6	10	1'- 6"	4	17	13'- 6"	4	34	24'- 6"
16	2'- 5"	1'- 0"	9'- 1"	6	17	14'- 6"	6	10	1'- 6"	4	17	14'- 6"	4	34	24'- 6"
17	2'- 5"	1'- 2"	9'- 7"	6	19	15'- 4"	6	11	1'- 6"	4	17	15'- 4"	4	38	24'- 6"
18	2'- 8"	1'- 2"	10'- 0"	6	17	16'- 4"	6	12	1'- 6"	4	17	16'- 4"	4	40	24'- 6"
19	2'- 9"	1'- 2"	10'- 7"	6	19	17'- 4"	6	12	1'- 6"	4	17	17'- 4"	4	40	24'- 6"
20	2'-11"	1'- 2"	11'- 1"	6	17	18'- 4"	6	13	1'- 6"	4	17	18'- 4"	4	44	24'- 6"
21	3'- 1"	1'- 5"	11'- 9"	6	17	19'- 1"	6	14	1'- 6"	4	17	19'- 1"	4	46	24'- 6"
22	3'- 4"	1'- 5"	12'- 5"	7	17	20'- 1"	6	14	1'- 6"	4	17	20'- 1"	4	46	24'- 6"
23	3'- 6"	1'- 5"	13'- 3"	7	17	21'- 1"	6	15	1'- 6"	4	17	21'- 1"	4	50	24'- 6"
24	3'-10"	1'- 5"	13'-11"	7	20	22'- 1"	6	16	1'- 6"	4	17	22'- 1"	4	52	24'- 6"
25	4'- 0"	1'- 5"	14'-11"	7	17	23'- 1"	6	16	1'- 6"	4	17	23'- 1"	4	54	24'- 6"
26	4'- 5"	1'- 8"	15'- 8"	7	19	23'-10"	6	17	1'- 6"	4	17	23'-10"	4	58	24'- 6"
27	4'- 9"	1'- 8"	16'- 5"	8	17	24'-10"	6	18	1'- 6"	4	17	24'-10"	4	60	24'- 6"
28	5'- 1"	1'- 8"	17'- 3"	8	19	25'-10"	6	18	1'- 6"	4	17	25'-10"	4	62	24'- 6"
29	5'- 5"	1'- 8"	17'-11"	8	20	26'-10"	6	19	1'- 6"	4	17	26'-10"	4	64	24'- 6"
30	5'-11"	1'- 8"	18'- 8"	8	22	27'-10"	6	20	1'- 6"	4	17	27'-10"	4	68	24'- 6"

H	BARS H SIZE	BARS H NO.	BARS H SPACING	BARS H LENGTH	BARS J SIZE	BARS J NO.	BARS J SPACING	BARS J a	BARS J b	BARS J LENGTH
6	4	18	1'- 5"	3'- 9"	5	28	11"	5'- 5"	1'- 6"	6'-11"
7	4	19	1'- 4"	4'- 4"	5	30	10"	6'- 5"	1'- 7"	8'- 0"
8	4	28	11"	4'- 9"	5	34	9"	7'- 5"	1'- 9"	9'- 2"
9	4	34	9"	5'- 3"	5	34	9"	8'- 5"	2'- 1"	10'- 6"
10	4	50	6"	5'- 9"	5	38	8"	9'- 5"	2'- 1"	11'- 6"
11	5	43	7"	6'- 2"	5	48	7"	10'- 5"	2'- 3"	12'- 8"
12	5	38	8"	6'- 7"	5	23	1'- 1"	11'- 5"	2'- 6"	13'-11"
13	5	50	6"	7'- 1"	5	23	1'- 1"	12'- 5"	2'- 9"	15'- 2"
14	6	43	7"	7'- 7"	5	25	1'- 0"	13'- 5"	2'-11"	16'- 4"
15	6	50	6"	8'- 1"	5	20	1'- 3"	3'- 8"	3'- 1"	6'- 9"
16	7	50	6"	8'- 7"	6	17	1'- 6"	3'- 3"	3'- 3"	6'- 6"
17	7	43	7"	9'- 1"	6	19	1'- 4"	4'- 1"	3'- 4"	7'- 5"
18	7	50	6"	9'- 6"	7	17	1'- 6"	4'- 4"	3'- 7"	7'-11"
19	8	50	6"	10'- 1"	7	19	1'- 4"	5'- 2"	3'- 9"	8'-11"
20	8	60	5"	10'- 7"	8	17	1'- 6"	4'- 4"	3'-11"	8'- 3"
21	8	50	6"	11'- 3"	8	17	1'- 6"	5'- 8"	4'- 1"	9'- 9"
22	8	50	6"	11'-11"	9	17	1'- 6"	5'- 8"	4'- 5"	10'- 1"
23	9	50	6"	12'- 9"	9	17	1'- 6"	6'-11"	4'- 7"	11'- 6"
24	9	60	5"	13'- 5"	9	20	1'- 3"	6'-11"	4'-11"	11'-10"
25	9	50	6"	14'- 5"	10	17	1'- 6"	8'- 6"	5'- 2"	13'- 8"
26	9	60	5"	15'- 2"	10	19	1'- 4"	9'- 0"	5'- 7"	14'- 7"
27	10	50	6"	15'-11"	11	17	1'- 6"	9'- 6"	6'- 0"	15'- 6"
28	10	50	6"	16'- 9"	11	19	1'- 4"	10'- 0"	6'- 4"	16'- 4"
29	11	50	6"	17'- 5"	11	20	1'- 3"	10'- 6"	6'- 8"	17'- 2"
30	11	50	6"	18'- 2"	11	22	1'- 2"	11'- 0"	7'- 3"	18'- 3"

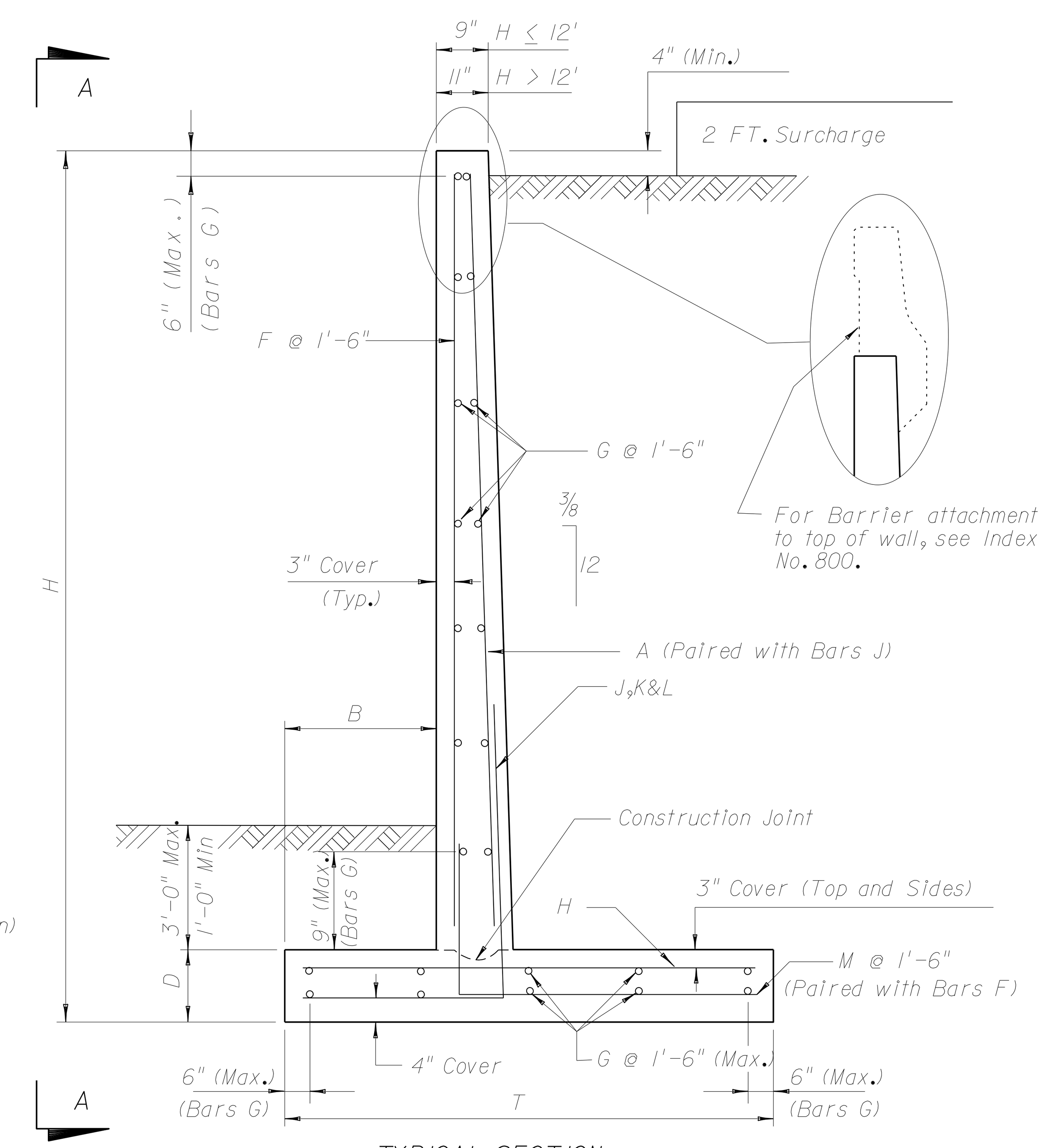
H	BARS K SIZE	BARS K NO.	BARS K SPACING	BARS K a	BARS K b	BARS K LENGTH	BARS L SIZE	BARS L NO.	BARS L SPACING	BARS L a	BARS L b	BARS L LENGTH	BARS M SIZE	BARS M NO.	BARS M C	BARS M LENGTH	H
6													4	17	2'- 8"	4'-10"	6
7													4	17	3'- 2"	5'- 4"	7
8													4	17	3'- 5"	5'- 7"	8
9													4	17	3'- 8"	5'-10"	9
10													4	17	4'- 2"	6'- 4"	10
11													4	17	4'- 6"	6'- 8"	11
12	5	22	1'- 1"	9'- 8"	2'- 6"	12'- 2"							4	17	4'- 8"	6'-10"	12
13	5	22	1'- 1"	9'- 0"	2'- 9"	11'- 9"							4	17	5'- 1"	7'- 3"	13
14	5	24	1'- 0"	9'- 0"	2'-11"	11'-11"							4	17	5'- 6"	7'- 8"	14
15	5	19	1'- 3"	12'- 2"	3'- 1"	15'- 3"	5	19	1'- 3"	8'- 0"	3'- 1"	11'- 1"	4	17	5'-10"	8'- 0"	15
16	6	16	1'- 6"	3'- 2"	3'- 3"	6'- 5"	6	16	1'- 6"	9'- 3"	3'- 3"	12'- 6"	4	17	6'- 2"	8'- 4"	16
17	6	18	1'- 4"	3'- 4"	3'- 4"	6'- 8"	6	18	1'- 4"	9'- 3"	3'- 4"	12'- 7"	4	17	6'- 8"	8'-10"	17
18	7	16	1'- 6"	3'- 4"	3'- 7"	6'-11"	7	16	1'- 6"	7'-11"	3'- 7"	11'- 6"	4	17	6'-10"	9'- 0"	18
19	7	18	1'- 4"	4'-11"	3'- 9"	8'- 8"	7	18	1'- 4"	8'-11"	3'- 9"	12'- 8"	4	17	7'- 4"	9'- 6"	19
20	8	16	1'- 6"	4'-11"	3'-11"	8'-10"	8	16	1'- 6"	9'-11"	3'-11"	13'-10"	4	17	7'- 8"	9'-10"	20
21	8	16	1'- 6"	6'-10"	4'- 1"	10'-11"	8	16	1'- 6"	11'-10"	4'- 1"	15'-11"	4	17	8'- 2"	10'- 4"	21
22	9	16	1'- 6"	5'- 7"	4'- 5"	10'- 0"	9	16	1'- 6"	10'-10"	4'- 5"	15'- 3"	4	17	8'- 7"	10'- 9"	22
23	9	16	1'- 6"	7'- 6"	4'- 7"	12'- 1"	9	16	1'- 6"	13'- 6"	4'- 7"	18'- 1"	4	17	9'- 3"	11'- 5"	23
24	9	19	1'- 3"	7'- 6"	4'-11"	12'- 5"	9	19	1'- 3"	13'- 6"	4'-11"	18'- 5"	4	17	9'- 7"	11'- 9"	24
25	10	16	1'- 6"	9'- 5"	5'- 2"	14'- 7"	10	16	1'- 6"	15'- 6"	5'- 2"	20'- 8"	4	17	10'- 5"	12'- 7"	25
26	10	18	1'- 4"	9'- 5"	5'- 7"	15'- 0"	10	18	1'- 4"	15'- 6"	5'- 7"	21'- 1"	4	17	10'- 9"	12'-11"	26
27	11	16	1'- 6"	10'- 0"	6'- 0"	16'- 0"	11	16	1'- 6"	18'- 0"	6'- 0"	24'- 0"	4	17	11'- 2"	13'- 4"	27
28	11	18	1'- 4"	10'- 0"	6'- 4"	16'- 4"	11	18	1'- 4"	18'- 0"	6'- 4"	24'- 4"	4	17	11'- 8"	13'-10"	28
29	11	19	1'- 3"	11'- 6"	6'- 8"	18'- 2"	11	19	1'- 3"	19'- 6"	6'- 8"	26'- 2"	4	17	12'- 0"	14'- 2"	29
30	11	21	1'- 2"	11'- 6"	7'- 3"	18'- 9"	11	21	1'- 2"	19'- 6"	7'- 3"	26'- 9"	4	17	12'- 3"	14'- 5"	30

QUANTITIES

H	CONCRETE / 25' UNIT C.Y.	STEEL / 25' UNIT LBS.	CONCRETE PER LIN.FT. C.Y.	STEEL PER LIN.FT. LBS.
6	7.51	624	0.30	24
7	8.86	735	0.35	29
8	10.10	890	0.40	35
9	11.44	1017	0.46	40
10	12.81	1225	0.51	49
11	14.13	1536	0.57	61
12	15.95	1547	0.64	61
13	19.29	1727	0.77	69
14	20.96	1986	0.84	79
15	22.67	2374	0.91	94
16	24.40	2706	0.98	108
17	27.42	2889	1.10	115
18	29.19	3234	1.17	129
19	31.17	3958	1.25	158
20	33.09	4575	1.32	183
21	37.58	4696	1.50	187
22	39.89	5379	1.60	215
23	42.44	6427	1.70	257
24	44.80	7707	1.79	308
25	47.63	8004	1.91	320
26	53.40	9411	2.14	376
27	56.12	10807	2.24	432
28	59.00	11957	2.36	478
29	61.66	13914	2.47	556
30	64.47	15308	2.58	612



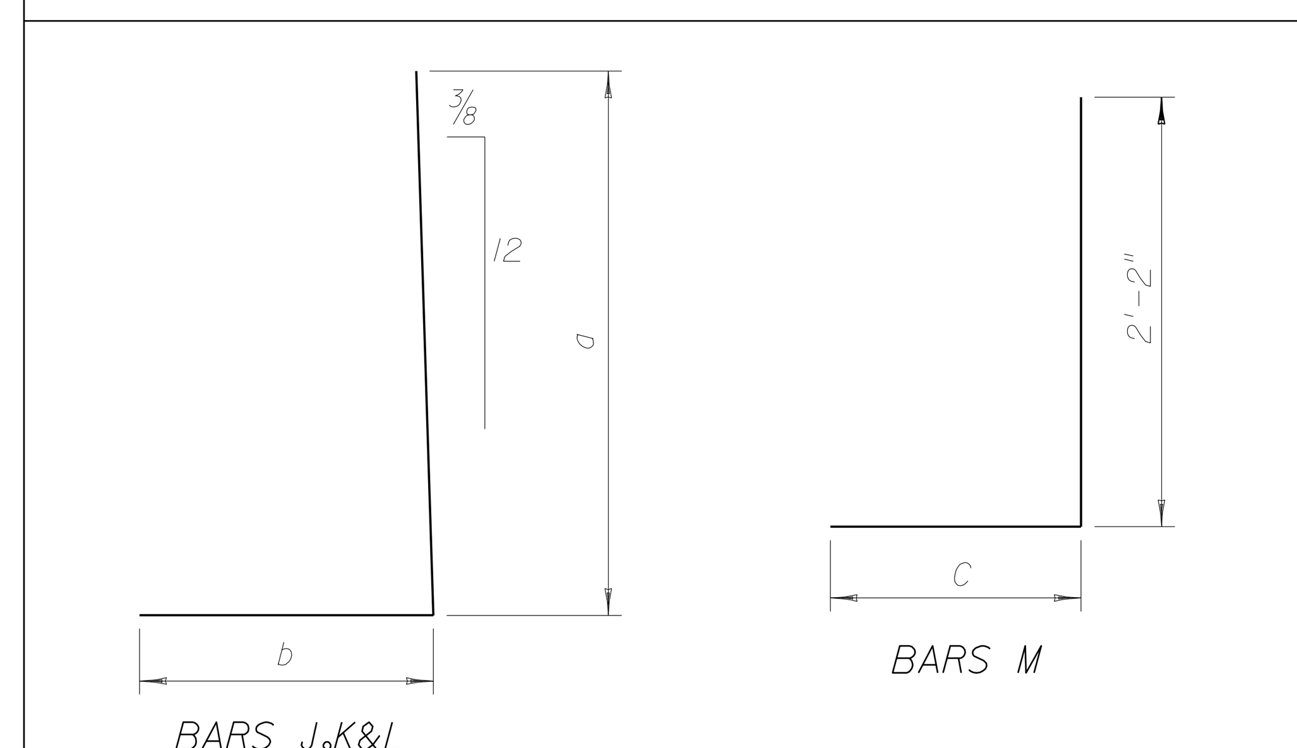
VIEW A-A



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 a 25' 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. Bars F and M are No. 4 Bars. Bars J are as shown.

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

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

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	NAMES	DATES
DRAWN BY	M.J.	3/87
CHECKED BY	M.P.	3/87
DESIGNED BY	-	-
CHECKED BY	-	-
APPROVED BY	A.G.M.	

ENGINEER OF RECORD:
STRUCTURES DESIGN 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 (4.0 KIPS/SQ.FT. MAX. BEARING PRESSURE) 6 FT. TO 30 FT. HEIGHT

PROJECT NAME:

DRAWING NO. 1 of 1

INDEX NO. 808

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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

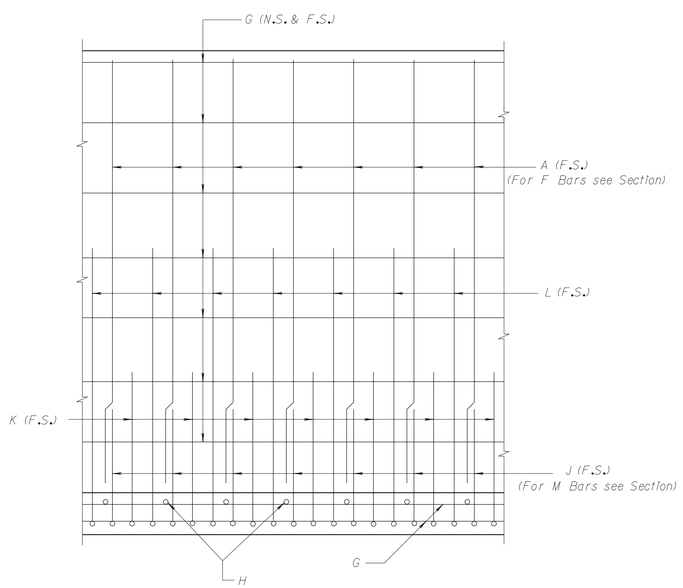
RETAINING WALL DATA

WALL DIMENSIONS / REINFORCING STEEL SCHEDULE

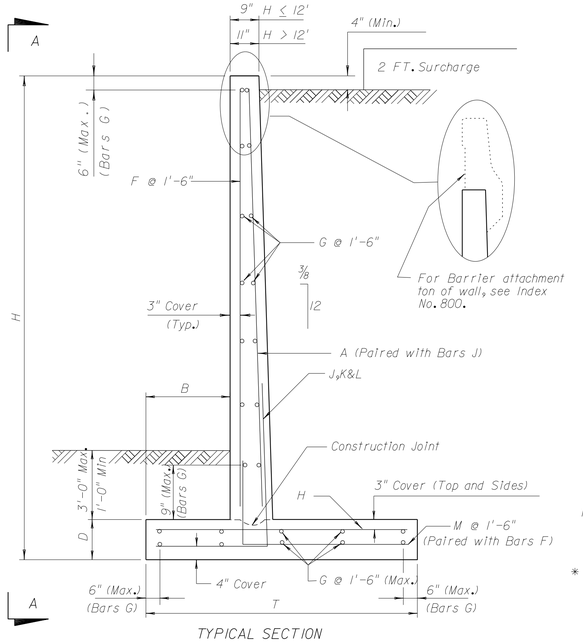
H	B	D	T	BARS A SIZE	BARS A NO.	BARS A LENGTH	BARS D* SIZE	BARS D NO.	BARS D LENGTH	BARS F SIZE	BARS F NO.	BARS F LENGTH	BARS G SIZE	BARS G NO.	BARS G LENGTH	BARS H SIZE	BARS H NO.	BARS H SPACING	BARS H LENGTH	BARS J SIZE	BARS J NO.	BARS J SPACING	BARS J a	BARS J b	BARS J LENGTH	BARS K SIZE	BARS K NO.	BARS K SPACING	BARS K a	BARS K b	BARS K LENGTH	BARS L SIZE	BARS L NO.	BARS L SPACING	BARS L a	BARS L b	BARS L LENGTH	BARS M SIZE	BARS M NO.	BARS M C	BARS M LENGTH	H
#6	1'-1"	11"	4'-3"	#02			#03	4	1'-6"	#04	17	4'-7"	#05	16	24'-6"	#06	18	1'-5"	3'-9"	#07	28	11"	5'-5"	1'-6"	6'-11"	#08						#09						#40	17	2'-8"	4'-10"	6
7	1'-2"	11"	4'-10"				6	5	1'-6"	4	17	5'-7"	4	18	24'-6"	4	19	1'-4"	4'-4"	5	30	10"	6'-5"	1'-7"	8'-0"												4	17	3'-2"	5'-4"	7
8	1'-4"	11"	5'-3"				6	5	1'-6"	4	17	6'-7"	4	20	24'-6"	4	28	11"	4'-9"	5	34	9"	7'-5"	1'-9"	9'-2"												4	17	3'-5"	5'-7"	8
9	1'-7"	11"	5'-9"				6	6	1'-6"	4	17	7'-7"	4	22	24'-6"	4	34	9"	5'-3"	5	34	9"	8'-5"	2'-1"	10'-6"												4	17	3'-8"	5'-10"	9
10	1'-7"	11"	6'-3"				6	7	1'-6"	4	17	8'-7"	4	24	24'-6"	4	50	6"	5'-9"	5	38	8"	9'-5"	2'-1"	11'-6"												4	17	4'-2"	6'-4"	10
11	1'-8"	11"	6'-8"				6	7	1'-6"	4	17	9'-7"	4	26	24'-6"	5	43	7"	6'-2"	5	48	7"	10'-5"	2'-3"	12'-8"												4	17	4'-6"	6'-8"	11
12	1'-11"	1'-0"	7'-1"				6	8	1'-6"	4	17	10'-6"	4	28	24'-6"	5	38	8"	6'-7"	5	23	1'-1"	11'-5"	2'-6"	13'-11"	5	22	1'-1"	9'-8"	2'-6"	12'-2"						4	17	4'-8"	6'-10"	12
13	2'-0"	1'-0"	7'-7"				6	9	1'-6"	4	17	11'-6"	4	30	24'-6"	5	50	6"	7'-1"	5	23	1'-4"	12'-5"	2'-9"	15'-2"	5	22	1'-1"	9'-0"	2'-9"	11'-9"						4	17	5'-1"	7'-3"	13
14	2'-1"	1'-0"	8'-1"				6	9	1'-6"	4	17	12'-5"	4	32	24'-6"	6	43	7"	7'-7"	5	25	1'-3"	13'-5"	2'-11"	16'-4"	5	24	1'-0"	9'-0"	2'-11"	11'-11"						4	17	5'-6"	7'-8"	14
15	2'-3"	1'-0"	8'-7"	5	20	13'-6"	6	10	1'-6"	4	17	13'-6"	4	34	24'-6"	6	50	6"	8'-1"	5	20	1'-3"	3'-8"	3'-1"	6'-9"	5	19	1'-3"	12'-2"	3'-1"	15'-3"	5	19	1'-3"	8'-0"	3'-1"	11'-1"	4	17	5'-10"	8'-0"	15
16	2'-5"	1'-0"	9'-1"	6	17	14'-6"	6	10	1'-6"	4	17	14'-6"	4	34	24'-6"	7	50	6"	8'-7"	6	17	1'-6"	3'-3"	3'-3"	6'-6"	6	16	1'-6"	3'-2"	3'-3"	6'-5"	6	16	1'-6"	9'-3"	3'-3"	12'-6"	4	17	6'-2"	8'-4"	16
17	2'-5"	1'-2"	9'-7"	6	19	15'-4"	6	11	1'-6"	4	17	15'-4"	4	38	24'-6"	7	43	7"	9'-1"	6	19	1'-4"	4'-1"	3'-4"	7'-5"	6	18	1'-4"	3'-4"	3'-4"	6'-8"	6	18	1'-4"	9'-3"	3'-4"	12'-7"	4	17	6'-8"	8'-10"	17
18	2'-8"	1'-2"	10'-0"	6	17	16'-4"	6	12	1'-6"	4	17	16'-4"	4	40	24'-6"	7	50	6"	9'-6"	7	17	1'-6"	4'-4"	3'-7"	7'-11"	7	16	1'-6"	3'-4"	3'-7"	6'-11"	7	16	1'-6"	7'-11"	3'-7"	11'-6"	4	17	6'-10"	9'-0"	18
19	2'-9"	1'-2"	10'-7"	6	19	17'-4"	6	12	1'-6"	4	17	17'-4"	4	40	24'-6"	8	50	6"	10'-1"	7	19	1'-4"	5'-2"	3'-9"	8'-11"	7	18	1'-4"	4'-11"	3'-9"	8'-8"	7	18	1'-4"	8'-11"	3'-9"	12'-8"	4	17	7'-4"	9'-6"	19
20	2'-11"	1'-2"	11'-1"	6	17	18'-4"	6	13	1'-6"	4	17	18'-4"	4	44	24'-6"	8	60	5"	10'-7"	8	17	1'-6"	4'-4"	3'-11"	8'-10"	8	16	1'-6"	4'-11"	3'-11"	8'-10"	8	16	1'-6"	9'-11"	3'-11"	13'-10"	4	17	7'-8"	9'-10"	20
21	3'-0"	1'-5"	11'-5"	6	17	19'-1"	6	14	1'-6"	4	17	19'-1"	4	46	24'-6"	8	50	6"	10'-11"	8	17	1'-6"	5'-8"	4'-0"	9'-8"	8	16	1'-6"	6'-10"	4'-0"	10'-10"	8	16	1'-6"	11'-10"	4'-0"	15'-10"	4	17	7'-11"	10'-1"	21
22	3'-2"	1'-5"	11'-10"	7	17	20'-1"	6	14	1'-6"	4	17	20'-1"	4	46	24'-6"	8	50	6"	11'-4"	9	17	1'-6"	5'-8"	4'-3"	9'-11"	9	16	1'-6"	5'-7"	4'-3"	9'-10"	9	16	1'-6"	10'-10"	4'-3"	15'-1"	4	17	8'-2"	10'-4"	22
23	3'-3"	1'-5"	12'-5"	7	17	21'-1"	6	15	1'-6"	4	17	21'-1"	4	48	24'-6"	9	50	6"	11'-11"	9	17	1'-6"	6'-11"	4'-4"	11'-3"	9	16	1'-6"	7'-6"	4'-4"	11'-10"	9	16	1'-6"	13'-6"	4'-4"	17'-10"	4	17	8'-8"	10'-10"	23
24	3'-6"	1'-5"	12'-10"	7	20	22'-1"	6	16	1'-6"	4	17	22'-1"	4	52	24'-6"	9	60	5"	12'-4"	9	20	1'-3"	6'-11"	4'-7"	11'-6"	9	19	1'-3"	7'-6"	4'-7"	12'-1"	9	20	1'-3"	13'-6"	4'-7"	18'-1"	4	17	8'-10"	11'-0"	24
25	3'-6"	1'-5"	13'-5"	7	17	23'-1"	6	16	1'-6"	4	17	23'-1"	4	52	24'-6"	10	50	6"	12'-11"	10	17	1'-6"	8'-6"	4'-8"	13'-2"	10	16	1'-6"	9'-5"	4'-8"	14'-1"	10	16	1'-6"	15'-6"	4'-8"	20'-2"	4	17	9'-5"	11'-7"	25
26	3'-10"	1'-8"	13'-9"	7	19	23'-10"	6	17	1'-6"	4	17	23'-10"	4	54	24'-6"	10	43	7"	13'-3"	10	19	1'-4"	9'-0"	5'-0"	14'-0"	10	18	1'-4"	9'-5"	5'-0"	14'-5"	10	18	1'-4"	15'-6"	5'-0"	20'-6"	4	17	9'-5"	11'-7"	26
27	4'-1"	1'-8"	14'-6"	8	17	24'-10"	6	18	1'-6"	4	17	24'-10"	4	58	24'-6"	10	50	6"	14'-0"	11	17	1'-6"	9'-6"	5'-4"	14'-10"	11	16	1'-6"	10'-0"	5'-4"	15'-4"	11	16	1'-6"	18'-0"	5'-4"	23'-4"	4	17	9'-11"	12'-1"	27
28	4'-5"	1'-8"	15'-3"	8	19	25'-10"	6	18	1'-6"	4	17	25'-10"	4	58	24'-6"	10	50	6"	14'-8"	11	19	1'-4"	10'-0"	5'-8"	15'-8"	11	18	1'-4"	10'-0"	5'-8"	15'-8"	11	18	1'-4"	18'-0"	5'-8"	23'-8"	4	17	10'-4"	12'-6"	28
29	4'-9"	1'-8"	15'-11"	8	20	26'-10"	6	19	1'-6"	4	17	26'-10"	4	62	24'-6"	11	50	6"	15'-5"	11	20	1'-4"	10'-6"	6'-0"	16'-6"	11	19	1'-3"	11'-6"	6'-0"	17'-6"	11	18	1'-4"	19'-6"	6'-0"	25'-6"	4	17	10'-8"	12'-10"	29
30	5'-2"	1'-8"	16'-8"	8	22	27'-10"	6	20	1'-6"	4	17	27'-10"	4	64	24'-6"	11	50	6"	16'-2"	11	22	1'-2"	11'-0"	6'-6"	17'-6"	11	21	1'-2"	11'-6"	6'-6"	18'-0"	11	21	1'-2"	19'-6"	6'-6"	26'-0"	4	17	11'-0"	13'-2"	30

QUANTITIES

H	CONCRETE / 25' UNIT C.Y.	STEEL / 25' UNIT LBS.	CONCRETE PER LIN.FT. C.Y.	STEEL PER LIN.FT. LBS.
#6	7.51	624	0.30	24
7	8.86	735	0.35	29
8	10.10	890	0.40	35
9	11.44	1017	0.46	40
10	12.81	1225	0.51	49
11	14.13	1536	0.57	61
12	15.95	1547	0.64	61
13	19.29	1727	0.77	69
14	20.96	1986	0.84	79
15	22.67	2374	0.91	94
16	24.40	2706	0.98	108
17	27.42	2889	1.10	115
18	29.19	3234	1.17	129
19	31.17	3958	1.25	158
20	33.09	4575	1.32	183
21	37.15	4641	1.49	185
22	39.12	5269	1.56	210
23	41.35	6204	1.65	248
24	43.38	7473	1.74	298
25	45.66	8183	1.83	327
26	50.44	8550	2.02	342
27	53.16	10175	2.13	407
28	55.92	11234	2.24	449
29	58.57	12994	2.34	519
30	61.38	14442	2.46	577



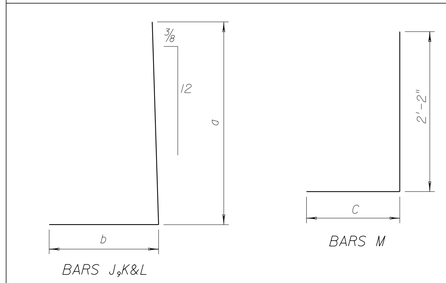
VIEW A-A



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 a 25' 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. Bars F and M are No. 4 Bars. Bars J are as shown.

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

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

REVISIONS						
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	NAMES	DATES
DRAWN BY	M.I.	3/87
CHECKED BY	M.P.	3/87
DESIGNED BY	.	.
CHECKED BY	.	.
APPROVED BY	A.G.M.	

ENGINEER OF RECORD:
STRUCTURES DESIGN 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 (5.0 & 6.0 KIPS/SQ. FT. MAX. BEARING PRESSURE) 6 FT. TO 30 FT. HEIGHT

PROJECT NAME:

DRAWING NO.: 1 of 1

INDEX NO.: 809

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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

RETAINING WALL DATA

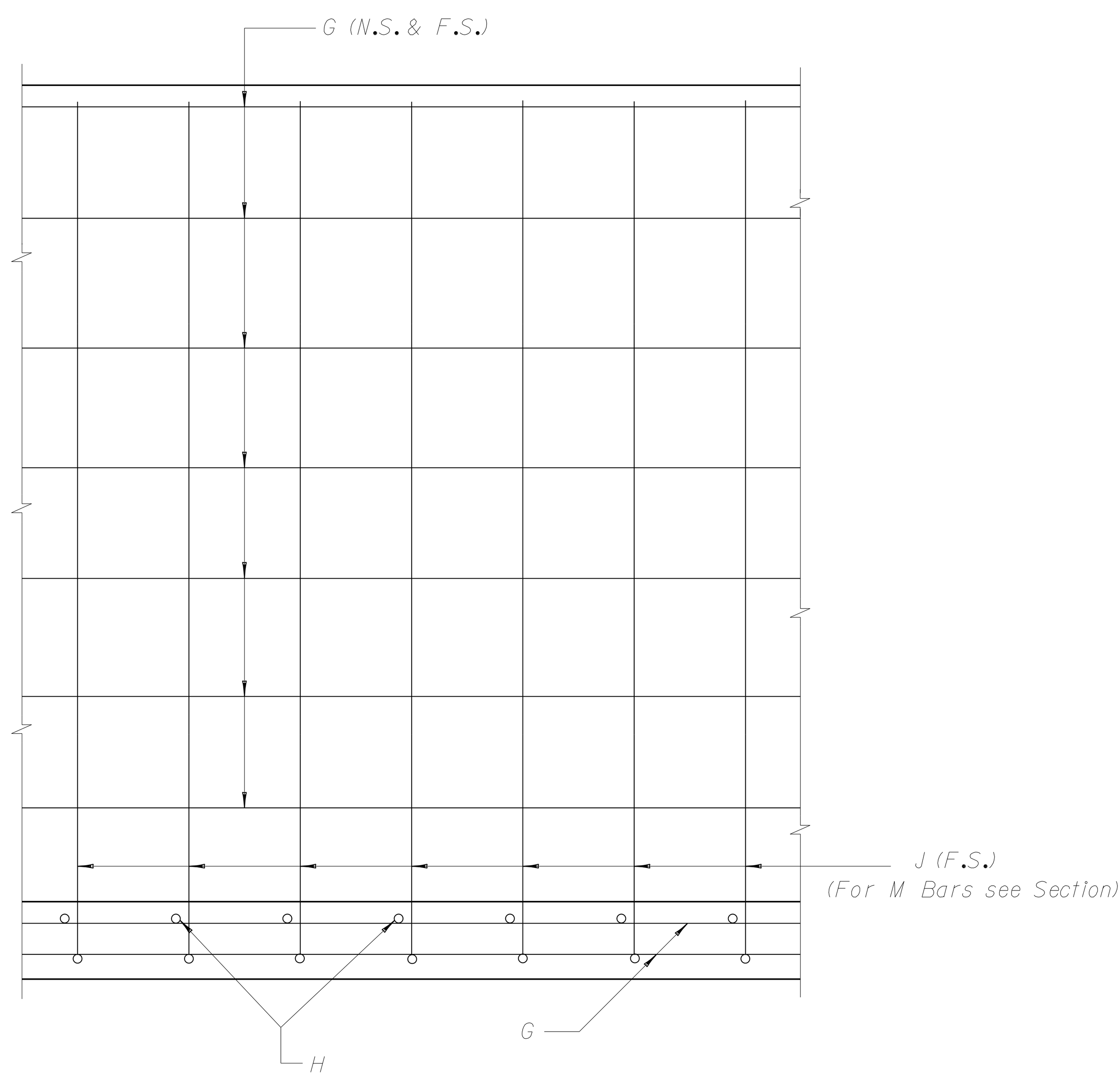
WALL DIMENSIONS / REINFORCING STEEL SCHEDULE

H	B	D	T	BARS A SIZE	BARS A NO.	BARS A LENGTH	BARS D* SIZE	BARS D* NO.	BARS D* LENGTH	BARS F SIZE	BARS F NO.	BARS F LENGTH	BARS G SIZE	BARS G NO.	BARS G LENGTH	BARS H SIZE	BARS H NO.	BARS H SPACING	BARS H LENGTH	H
6	8"	11"	2'-10"				6	4	1'-6"	4	17	4'-7"	4	14	24'-6"	4	18	1'-5"	2'-4"	6
7	10"	11"	3'-6"				6	5	1'-6"	4	17	5'-7"	4	16	24'-6"	4	18	1'-5"	3'-0"	7
8	1'-1"	11"	4'-3"	NOT			6	5	1'-6"	4	17	6'-7"	4	18	24'-6"	4	18	1'-5"	3'-9"	8
9	1'-4"	11"	5'-0"	REQUIRED			6	6	1'-6"	4	17	7'-7"	4	20	24'-6"	4	18	1'-5"	4'-6"	9
10	1'-7"	11"	6'-1"	THIS			6	7	1'-6"	4	17	8'-7"	4	24	24'-6"	4	22	1'-2"	5'-7"	10
11	1'-10"	11"	7'-2"	SHEET			6	7	1'-6"	4	17	9'-7"	4	26	24'-6"	4	28	11"	6'-8"	11
12	2'-3"	1'-0"	8'-3"				6	8	1'-6"	4	17	10'-6"	4	28	24'-6"	4	25	1'-0"	7'-9"	12
13	2'-6"	1'-0"	9'-3"				6	9	1'-6"	4	17	11'-6"	4	32	24'-6"	4	28	11"	8'-9"	13
14	2'-10"	1'-0"	10'-4"				6	9	1'-6"	4	17	12'-6"	4	34	24'-6"	4	30	10"	9'-10"	14
15	3'-2"	1'-0"	11'-7"				6	10	1'-6"	4	17	13'-6"	4	38	24'-6"	5	34	9"	11'-1"	15

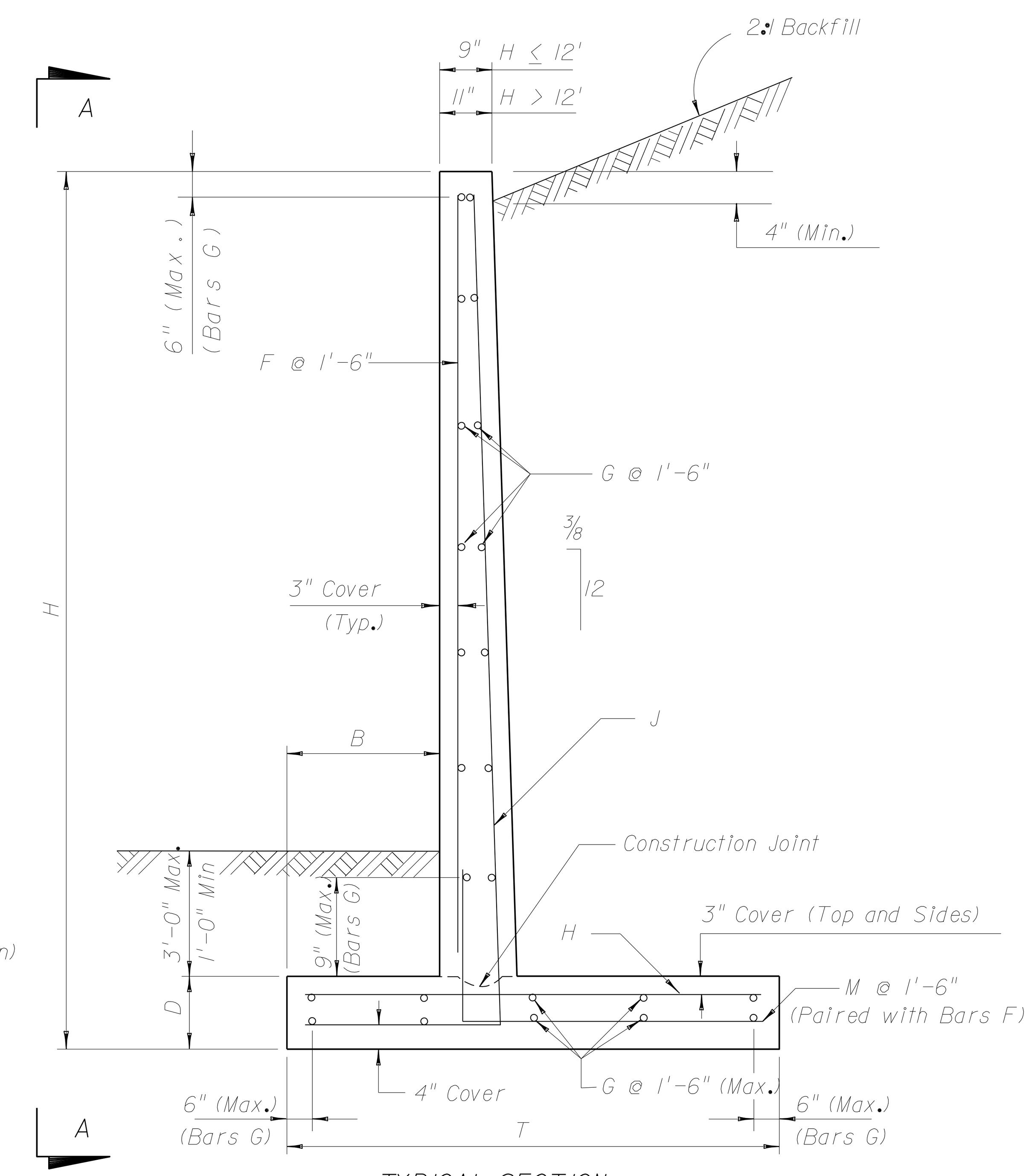
H	BARS J SIZE	BARS J NO.	BARS J SPACING	BARS J a	BARS J b	BARS J LENGTH	BARS K SIZE	BARS K NO.	BARS K SPACING	BARS K a	BARS K b	BARS K LENGTH	BARS L SIZE	BARS L NO.	BARS L SPACING	BARS L a	BARS L b	BARS L LENGTH	BARS M SIZE	BARS M NO.	BARS M C	BARS M LENGTH	H
6	4	25	1'-0"	5'-5"	1'-1"	6'-6"													4	17	1'-8"	3'-10"	6
7	4	25	1'-0"	6'-5"	1'-3"	7'-8"													4	17	2'-2"	4'-4"	7
8	4	25	1'-0"	7'-5"	1'-6"	8'-11"				NOT						NOT			4	17	2'-8"	4'-10"	8
9	4	28	11"	8'-5"	1'-10"	10'-3"				REQUIRED						REQUIRED			4	17	3'-2"	5'-4"	9
10	4	30	10"	9'-5"	2'-1"	11'-6"				THIS						THIS			4	17	4'-0"	6'-2"	10
11	5	25	1'-0"	10'-5"	2'-5"	12'-10"				SHEET						SHEET			4	17	4'-10"	7'-0"	11
12	5	34	9"	11'-5"	2'-10"	14'-3"													4	17	5'-6"	7'-8"	12
13	5	34	9"	12'-5"	3'-4"	15'-9"													4	17	6'-3"	8'-5"	13
14	5	43	7"	13'-5"	3'-8"	17'-1"													4	17	7'-0"	9'-2"	14
15	5	50	6"	14'-5"	4'-0"	18'-5"													4	17	7'-11"	10'-1"	15

QUANTITIES

H	CONCRETE / 25' UNIT C.Y.	STEEL / 25' UNIT LBS.	CONCRETE PER LIN.FT. C.Y.	STEEL PER LIN.FT. LBS.
6	6.31	470	0.25	18
7	7.73	549	0.31	21
8	9.25	629	0.37	25
9	10.80	733	0.43	29
10	12.66	888	0.51	35
11	14.56	1088	0.58	43
12	17.03	1317	0.68	52
13	20.83	1489	0.83	59
14	23.05	1782	0.92	71
15	25.44	2265	1.02	90



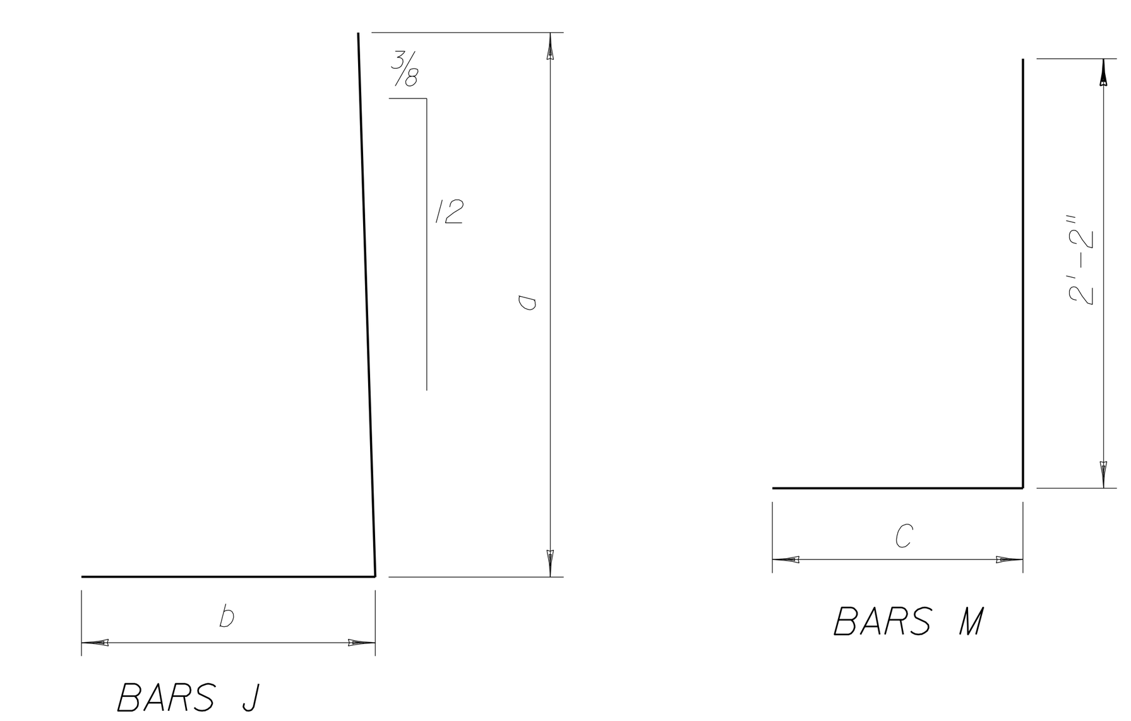
VIEW A-A



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 a 25' 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. Bars F and M are No. 4 Bars. Bars J are as shown.

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

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

REVISIONS DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	NAMES	DATES
DRAWN BY	M.J.	3/87
CHECKED BY	M.P.	3/87
DESIGNED BY	-	-
CHECKED BY	-	-
APPROVED BY	A.G.M.	

ENGINEER OF RECORD:
STRUCTURES DESIGN 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 (2.0 KIPS/SQ.FT. MAX. BEARING PRESSURE) 6 FT. TO 15 FT. HEIGHT

PROJECT NAME:

DRAWING NO. 1 of 1

INDEX NO. 810

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

RETAINING WALL DATA

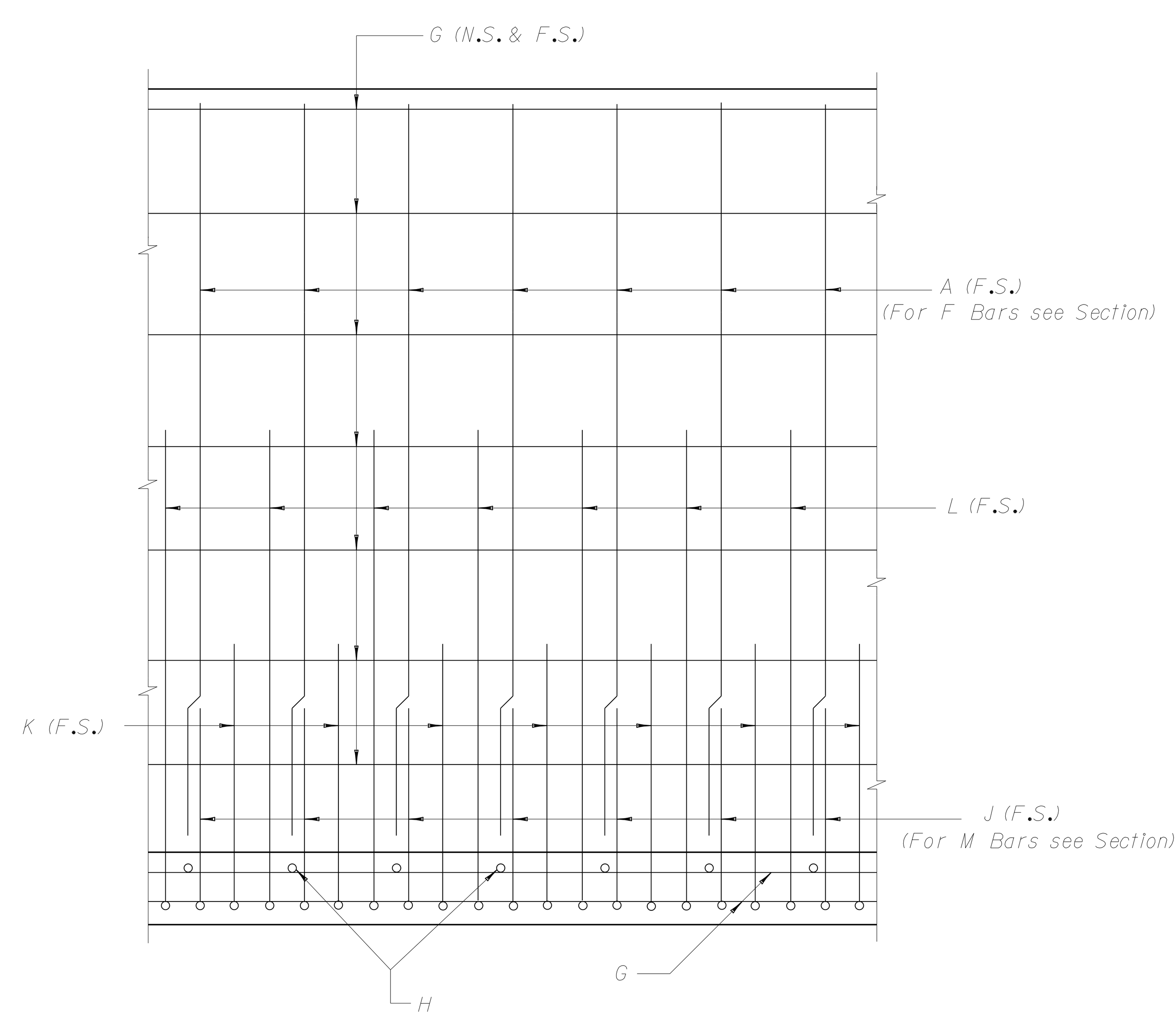
WALL DIMENSIONS / REINFORCING STEEL SCHEDULE

H	B	D	T	BARS A SIZE	BARS A NO.	BARS A LENGTH	BARS D* SIZE	BARS D* NO.	BARS D* LENGTH	BARS F SIZE	BARS F NO.	BARS F LENGTH	BARS G SIZE	BARS G NO.	BARS G LENGTH	BARS H SIZE	BARS H NO.	BARS H SPACING	BARS H LENGTH
6	8"	11"	2'-10"				6	4	1'- 6"	4	17	4'- 7"	4	14	24'- 6"	4	18	1'- 5"	2'- 4"
7	9"	11"	3'- 5"				6	5	1'- 6"	4	17	5'- 7"	4	16	24'- 6"	4	18	1'- 5"	2'-11"
8	11"	11"	3'-11"				6	5	1'- 6"	4	17	6'- 7"	4	18	24'- 6"	4	18	1'- 5"	3'- 5"
9	1'- 2"	11"	4'- 4"				6	6	1'- 6"	4	17	7'- 7"	4	20	24'- 6"	4	18	1'- 5"	3'-10"
10	1'- 4"	11"	5'- 3"				6	7	1'- 6"	4	17	8'- 7"	4	22	24'- 6"	4	25	1'- 0"	4'- 9"
11	1'- 7"	11"	6'- 2"				6	7	1'- 6"	4	17	9'- 7"	4	24	24'- 6"	4	34	9"	5'- 8"
12	1'-10"	1'- 0"	7'- 0"				6	8	1'- 6"	4	17	10'- 6"	4	26	24'- 6"	4	30	10"	6'- 6"
13	2'- 1"	1'- 0"	7'-11"				6	9	1'- 6"	4	17	11'- 6"	4	30	24'- 6"	4	34	9"	7'- 5"
14	2'- 4"	1'- 0"	8'-11"				6	9	1'- 6"	4	17	12'- 6"	4	32	24'- 6"	4	30	10"	8'- 5"
15	2'- 8"	1'- 0"	9'-11"				6	10	1'- 6"	4	17	13'- 6"	4	34	24'- 6"	5	34	9"	9'- 5"
16	3'- 0"	1'- 0"	11'- 0"	5	20	14'- 6"	6	10	1'- 6"	4	17	14'- 6"	4	36	24'- 6"	5	38	8"	10'- 6"
17	3'- 5"	1'- 2"	12'- 2"	6	17	15'- 4"	6	11	1'- 6"	4	17	15'- 4"	4	40	24'- 6"	5	30	10"	11'- 8"
18	3'- 8"	1'- 2"	13'- 8"	6	20	16'- 4"	6	12	1'- 6"	4	17	16'- 4"	4	44	24'- 6"	5	34	9"	13'- 2"
19	4'- 2"	1'- 8"	14'- 7"	6	17	16'-10"	6	12	1'- 6"	4	17	16'-10"	4	46	24'- 6"	5	30	10"	14'- 1"
20	4'- 8"	1'- 8"	15'- 3"	6	19	17'-10"	6	13	1'- 6"	4	17	17'-10"	4	48	24'- 6"	5	30	10"	14'- 9"

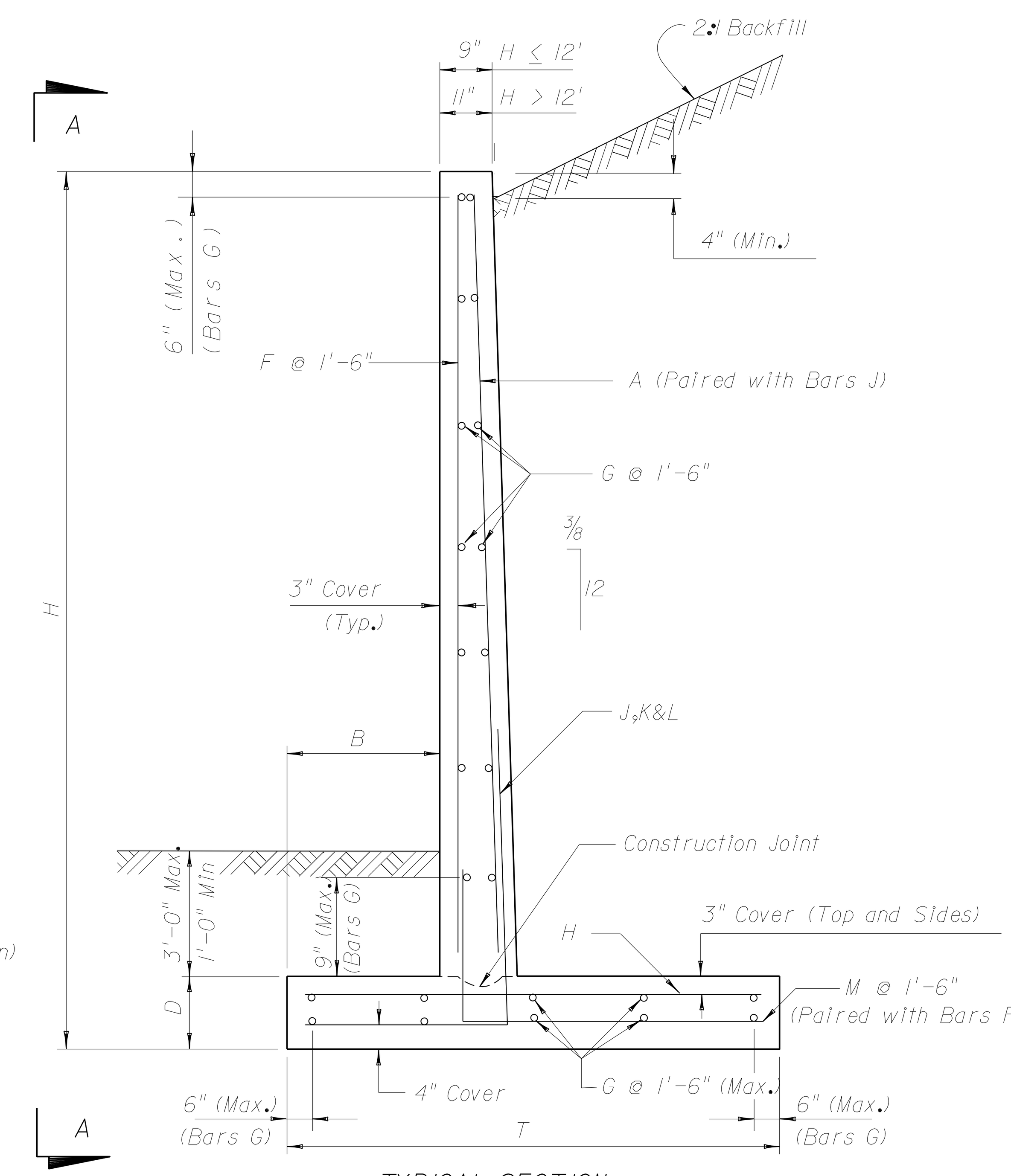
H	BARS J SIZE	BARS J NO.	BARS J SPACING	BARS J a	BARS J b	BARS J LENGTH	BARS K SIZE	BARS K NO.	BARS K SPACING	BARS K a	BARS K b	BARS K LENGTH	BARS L SIZE	BARS L NO.	BARS L SPACING	BARS L a	BARS L b	BARS L LENGTH	BARS M SIZE	BARS M NO.	BARS M C	BARS M LENGTH	H
6	4	25	1'- 0"	5'- 5"	1'- 1"	6'- 6"													4	17	1'- 8"	3'-10"	6
7	4	25	1'- 0"	6'- 5"	1'- 2"	7'- 7"													4	17	2'- 2"	4'- 4"	7
8	4	25	1'- 0"	7'- 5"	1'- 4"	8'- 9"													4	17	2'- 6"	4'- 8"	8
9	4	28	11"	8'- 5"	1'- 8"	10'- 1"													4	17	2'- 8"	4'-10"	9
10	4	30	10"	9'- 5"	1'-10"	11'- 3"													4	17	3'- 5"	5'- 7"	10
11	5	25	1'- 0"	10'- 5"	2'- 2"	12'- 7"													4	17	4'- 1"	6'- 3"	11
12	5	34	9"	11'- 5"	2'- 5"	13'-10"													4	17	4'- 8"	6'-10"	12
13	5	34	9"	12'- 5"	2'-10"	15'- 3"													4	17	5'- 4"	7'- 6"	13
14	5	43	7"	13'- 5"	3'- 2"	16'- 7"													4	17	6'- 1"	8'- 3"	14
15	5	25	1'- 0"	14'- 5"	3'- 6"	17'-11"	5	24	1'- 0"	5'- 9"	3'- 6"	9'- 3"							4	17	6'- 9"	8'-11"	15
16	5	20	1'- 3"	2'-10"	3'-10"	6'- 8"	5	19	1'- 3"	4'- 9"	3'-10"	8'- 7"	5	19	1'- 3"	10'- 9"	3'-10"	14'- 7"	4	17	7'- 6"	9'- 8"	16
17	6	17	1'- 6"	3'- 5"	4'- 4"	7'- 9"	6	16	1'- 6"	5'- 4"	4'- 4"	9'- 8"	6	16	1'- 6"	8'- 4"	4'- 4"	12'- 8"	4	17	8'- 3"	10'- 5"	17
18	6	20	1'- 3"	3'- 5"	4'- 7"	8'- 0"	6	19	1'- 3"	5'- 4"	4'- 7"	9'-11"	6	19	1'- 3"	8'- 4"	4'- 7"	12'-11"	4	17	9'- 6"	11'- 8"	18
19	7	17	1'- 6"	4'-10"	5'- 2"	10'- 0"	6	16	1'- 6"	6'- 5"	5'- 2"	11'- 7"	7	16	1'- 6"	10'- 5"	5'- 2"	15'- 7"	4	17	9'-11"	12'- 1"	19
20	7	19	1'- 4"	4'-10"	5'- 8"	10'- 6"	7	18	1'- 4"	7'- 5"	5'- 8"	13'- 1"	7	18	1'- 4"	11'- 5"	5'- 8"	17'- 1"	4	17	10'- 1"	12'- 3"	20

QUANTITIES

H	CONCRETE / 25' UNIT C.Y.	STEEL / 25' UNIT LBS.	CONCRETE PER LIN.FT. C.Y.	STEEL PER LIN.FT. LBS.
6	6.31	470	0.25	18
7	7.66	547	0.31	21
8	8.97	620	0.36	24
9	10.24	716	0.41	28
10	11.96	841	0.48	33
11	13.71	1045	0.55	41
12	15.87	1261	0.63	50
13	19.60	1436	0.78	57
14	21.74	1692	0.87	67
15	23.90	1866	0.96	74
16	26.17	2202	1.05	88
17	30.21	2463	1.21	98
18	33.15	2914	1.33	116
19	41.56	3114	1.66	124
20	43.96	3644	1.76	145



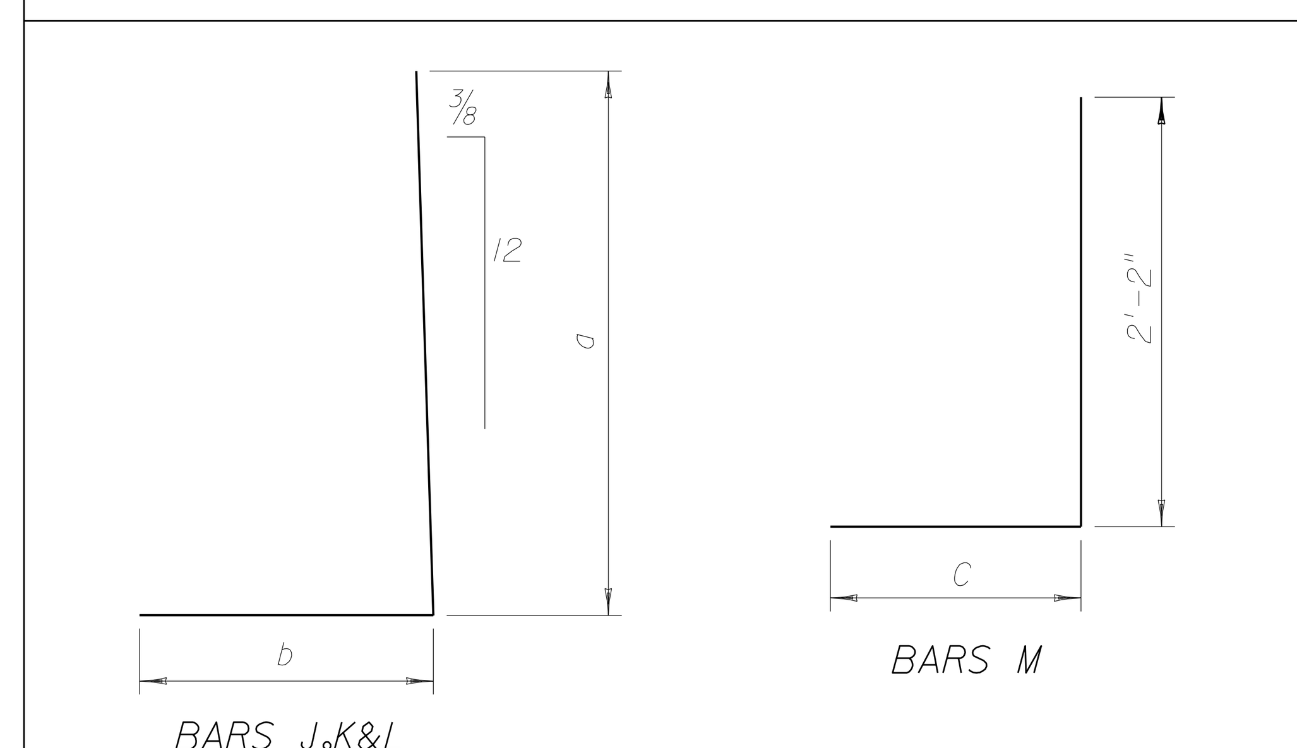
VIEW A-A



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 a 25' 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. Bars F and M are No. 4 Bars. Bars J are as shown.

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

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

REVISIONS DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	NAMES	DATES
DRAWN BY	M.J.	6/85
CHECKED BY	M.P.	6/85
DESIGNED BY	-	-
CHECKED BY	-	-
APPROVED BY	A.G.M.	

ENGINEER OF RECORD:
STRUCTURES DESIGN 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 (2.5 KIPS/SQ.FT. MAX. BEARING PRESSURE) 6 FT. TO 20 FT. HEIGHT

PROJECT NAME:

DRAWING NO. 1 of 1

INDEX NO. 811

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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

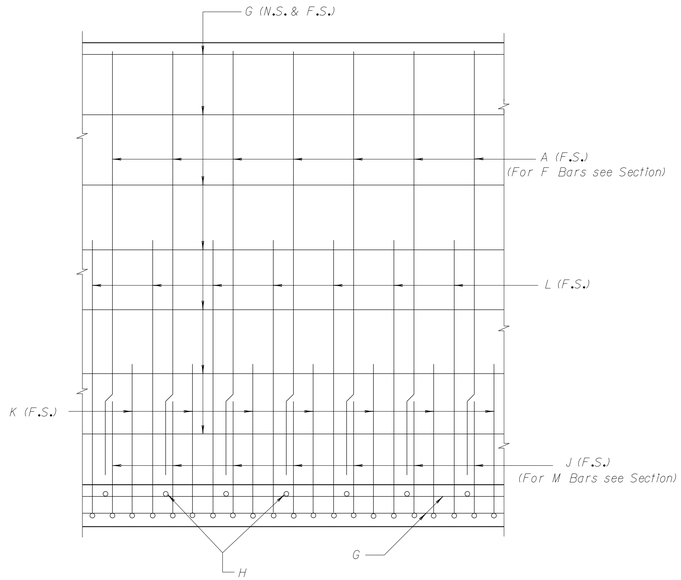
RETAINING WALL DATA

WALL DIMENSIONS / REINFORCING STEEL SCHEDULE

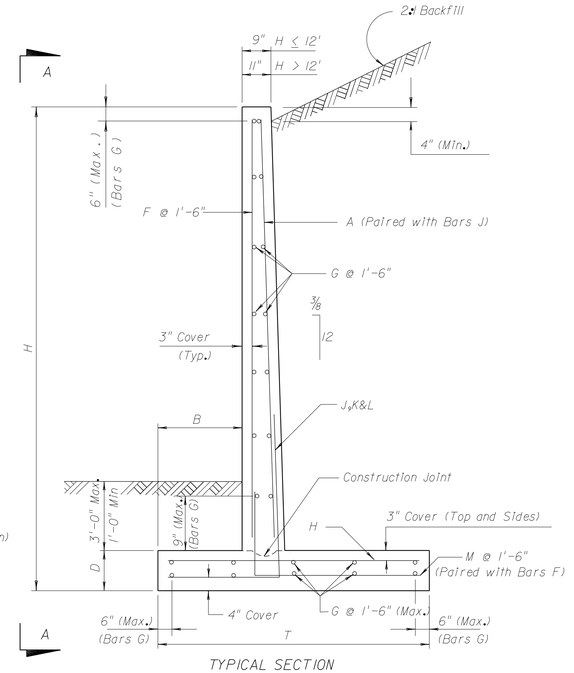
H	B	D	T	BARS A SIZE	BARS A NO.	BARS A LENGTH	BARS D* SIZE	BARS D NO.	BARS D LENGTH	BARS F SIZE	BARS F NO.	BARS F LENGTH	BARS G SIZE	BARS G NO.	BARS G LENGTH	BARS H SIZE	BARS H NO.	BARS H SPACING	BARS H LENGTH	BARS J SIZE	BARS J NO.	BARS J SPACING	BARS J a	BARS J b	BARS J LENGTH	BARS K SIZE	BARS K NO.	BARS K SPACING	BARS K a	BARS K b	BARS K LENGTH	BARS L SIZE	BARS L NO.	BARS L SPACING	BARS L a	BARS L b	BARS L LENGTH	BARS M SIZE	BARS M NO.	BARS M C	BARS M LENGTH	H
#62	8"	11"	2'-10"	#13			#64	4	1'-6"	#45	17	4'-7"	#46	14	24'-6"	#47	18	1'-5"	2'-4"	#48	25	1'-0"	5'-5"	1'-1"	6'-6"	#19						#20						#21	17	1'-8"	3'-10"	6
7	9"	11"	3'-5"				6	5	1'-6"	4	17	5'-7"	4	16	24'-6"	4	18	1'-5"	2'-11"	4	25	1'-0"	6'-5"	1'-2"	7'-7"													4	17	2'-2"	4'-4"	7
8	11"	11"	3'-11"				6	5	1'-6"	4	17	6'-7"	4	16	24'-6"	4	18	1'-5"	3'-5"	4	25	1'-0"	7'-5"	1'-4"	8'-9"													4	17	2'-6"	4'-8"	8
9	1'-2"	11"	4'-4"				6	6	1'-6"	4	17	7'-7"	4	20	24'-6"	4	18	1'-5"	3'-10"	4	28	11"	8'-5"	1'-8"	10'-1"													4	17	2'-8"	4'-10"	9
10	1'-2"	11"	4'-10"				6	7	1'-6"	4	17	8'-7"	4	22	24'-6"	4	25	1'-0"	4'-4"	4	30	10"	9'-5"	1'-8"	11'-1"													4	17	3'-2"	5'-4"	10
11	1'-4"	11"	5'-6"				6	7	1'-6"	4	17	9'-7"	4	22	24'-6"	4	38	8"	5'-0"	5	25	1'-0"	10'-5"	1'-11"	12'-4"													4	17	3'-8"	5'-10"	11
12	1'-7"	1'-0"	5'-3"				6	8	1'-6"	4	17	10'-5"	4	26	24'-6"	4	34	9"	5'-9"	5	34	9"	11'-5"	2'-2"	13'-7"													4	17	4'-2"	6'-4"	12
13	1'-10"	1'-0"	6'-11"				6	9	1'-6"	4	17	11'-6"	4	28	24'-6"	4	38	8"	6'-5"	5	34	9"	12'-5"	2'-7"	15'-0"													4	17	4'-7"	6'-9"	13
14	2'-1"	1'-0"	7'-11"				6	9	1'-6"	4	17	12'-6"	4	30	24'-6"	4	34	9"	7'-5"	5	43	7"	13'-5"	2'-11"	16'-4"													4	17	5'-4"	7'-6"	14
15	2'-4"	1'-0"	8'-10"				6	10	1'-6"	4	17	13'-6"	4	34	24'-6"	5	38	8"	8'-4"	5	25	1'-0"	14'-5"	3'-2"	17'-7"	5	24	1'-0"	5'-9"	3'-2"	8'-11"							4	17	6'-0"	8'-2"	15
16	2'-7"	1'-0"	9'-10"	5	20	14'-6"	6	11	1'-6"	4	17	14'-6"	4	36	24'-6"	5	43	7"	9'-4"	5	20	1'-3"	2'-10"	3'-5"	6'-3"	5	19	1'-3"	4'-9"	3'-5"	8'-2"	5	20	1'-3"	10'-9"	3'-5"	14'-2"	4	17	6'-9"	8'-11"	16
17	2'-11"	1'-2"	10'-9"	6	17	15'-4"	6	11	1'-6"	4	17	15'-4"	4	38	24'-6"	5	38	8"	10'-3"	6	17	1'-6"	3'-5"	3'-10"	7'-3"	6	16	1'-6"	5'-4"	3'-10"	9'-2"	6	16	1'-6"	8'-4"	3'-10"	12'-2"	4	17	7'-4"	9'-6"	17
18	3'-2"	1'-2"	11'-11"	6	20	16'-4"	6	12	1'-6"	4	17	16'-4"	4	42	24'-6"	5	50	6"	11'-5"	6	20	1'-3"	3'-5"	4'-1"	7'-6"	6	19	1'-3"	5'-4"	4'-1"	9'-5"	6	20	1'-3"	8'-4"	4'-1"	12'-5"	4	17	8'-3"	10'-5"	18
19	3'-8"	1'-8"	12'-10"	6	17	16'-10"	6	12	1'-6"	4	17	16'-10"	4	42	24'-6"	5	30	10"	12'-4"	7	17	1'-6"	4'-10"	4'-8"	9'-6"	7	16	1'-6"	6'-5"	4'-8"	11'-1"	7	16	1'-6"	10'-5"	4'-8"	15'-1"	4	17	8'-8"	10'-10"	19
20	4'-1"	1'-8"	13'-6"	6	19	17'-10"	6	13	1'-6"	4	17	17'-10"	4	46	24'-6"	5	34	9"	13'-0"	7	19	1'-4"	4'-10"	5'-1"	9'-11"	7	18	1'-4"	7'-5"	5'-1"	12'-6"	7	18	1'-4"	11'-5"	5'-1"	16'-6"	4	17	8'-11"	11'-1"	20
21	4'-6"	1'-8"	14'-5"	6	17	18'-10"	6	14	1'-6"	4	17	18'-10"	4	48	24'-6"	5	38	8"	13'-11"	8	17	1'-6"	5'-11"	5'-6"	11'-5"	8	16	1'-6"	9'-1"	5'-6"	14'-7"	8	16	1'-6"	13'-1"	5'-6"	18'-7"	4	17	9'-5"	11'-7"	21
22	4'-11"	1'-8"	15'-2"	6	19	19'-10"	6	14	1'-6"	4	17	19'-10"	4	50	24'-6"	5	43	7"	14'-8"	8	19	1'-4"	6'-1"	6'-0"	12'-1"	8	18	1'-4"	9'-1"	6'-0"	15'-1"	8	18	1'-4"	14'-1"	6'-0"	20'-1"	4	17	9'-9"	11'-11"	22
23	5'-6"	2'-2"	16'-3"	6	20	20'-4"	6	15	1'-6"	4	17	20'-4"	4	54	24'-6"	5	43	7"	15'-9"	8	20	1'-3"	6'-7"	6'-7"	13'-2"	8	19	1'-3"	9'-7"	6'-7"	16'-2"	8	20	1'-3"	14'-7"	6'-7"	21'-2"	4	17	10'-3"	12'-5"	23
24	5'-11"	2'-2"	17'-0"	6	19	21'-4"	6	15	1'-6"	4	17	21'-4"	4	54	24'-6"	5	43	7"	16'-6"	9	19	1'-4"	7'-8"	7'-0"	14'-8"	9	18	1'-4"	10'-3"	7'-0"	17'-3"	9	18	1'-4"	16'-3"	7'-0"	23'-3"	4	17	10'-7"	12'-9"	24
25	6'-4"	2'-2"	17'-11"	6	20	22'-4"	6	16	1'-6"	4	17	22'-4"	4	58	24'-6"	5	43	7"	17'-5"	9	20	1'-3"	7'-8"	7'-6"	15'-2"	9	19	1'-3"	11'-3"	7'-6"	18'-9"	9	20	1'-3"	17'-3"	7'-6"	24'-9"	4	17	11'-1"	13'-3"	25

QUANTITIES

H	CONCRETE / 25' UNIT C.Y.	STEEL / 25' UNIT LBS.	CONCRETE PER LIN.FT. C.Y.	STEEL PER LIN.FT. LBS.
#62	6.31	470	0.25	18
7	7.66	547	0.31	21
8	8.97	588	0.36	23
9	10.24	716	0.41	28
10	11.60	828	0.46	33
11	13.14	999	0.53	39
12	15.18	1246	0.61	49
13	18.67	1380	0.75	55
14	20.81	1639	0.83	65
15	22.90	1836	0.92	73
16	25.09	2188	1.00	87
17	28.68	2424	1.15	96
18	31.26	2971	1.25	118
19	38.86	3030	1.55	121
20	41.26	3532	1.65	141
21	44.07	4130	1.76	165
22	46.65	4737	1.87	189
23	56.56	5286	2.26	211
24	59.53	6108	2.38	244
25	62.87	6766	2.51	270



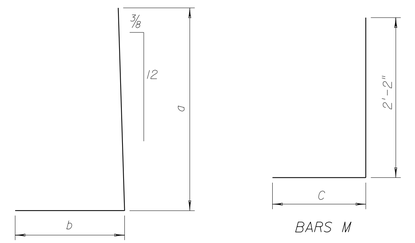
VIEW A-A



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 a 25' 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. Bars F and M are No. 4 Bars. Bars J are as shown.

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

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

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	NAMES	DATES
DRAWN BY	M.I.	3/87
CHECKED BY	M.P.	3/87
DESIGNED BY	.	.
CHECKED BY	.	.
APPROVED BY	A.S.M.	

ENGINEER OF RECORD:
STRUCTURES DESIGN 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 (3.0 KIPS/SQ.FT. MAX. BEARING PRESSURE) 6 FT. TO 25 FT. HEIGHT

PROJECT NAME:

DRAWING NO. 1 of 1

INDEX NO. 812

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

RETAINING WALL DATA

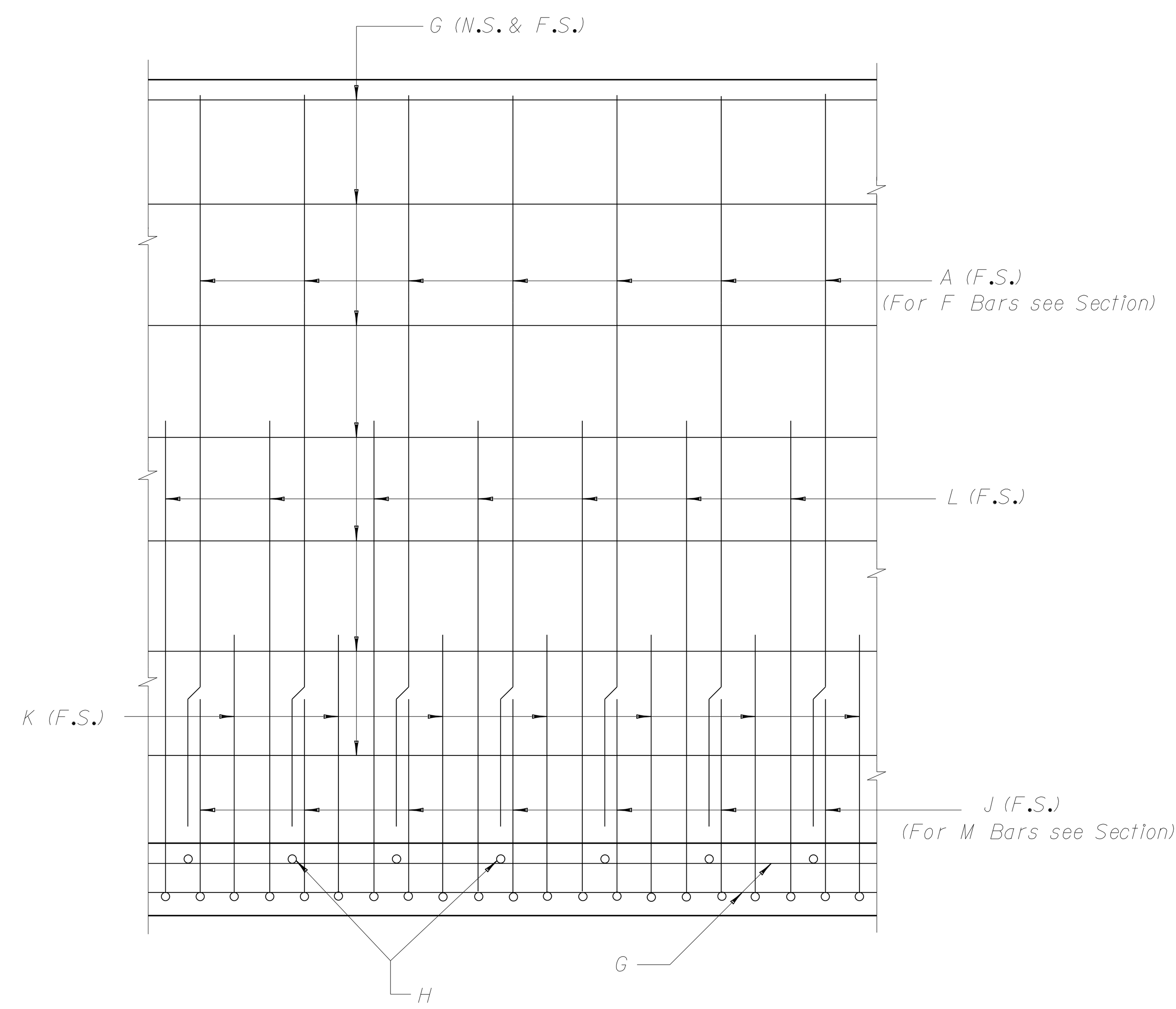
REINFORCING STEEL SCHEDULE

H	WALL DIMENSIONS B	D	T	BARS A SIZE	NO.	LENGTH	BARS D * SIZE	NO.	LENGTH	BARS F SIZE	NO.	LENGTH	BARS G SIZE	NO.	LENGTH	BARS H SIZE	NO.	SPACING	LENGTH
6	8"	11"	2'-10"				6	4	1'-6"	4	17	4'-7"	4	14	24'-6"	4	18	1'-5"	2'-4"
7	9"	11"	3'-5"				6	5	1'-6"	4	17	5'-7"	4	16	24'-6"	4	18	1'-5"	2'-11"
8	11"	11"	3'-11"				6	5	1'-6"	4	17	6'-7"	4	16	24'-6"	4	18	1'-5"	3'-5"
9	1'-2"	11"	4'-4"				6	6	1'-6"	4	17	7'-7"	4	20	24'-6"	4	18	1'-5"	3'-10"
10	1'-2"	11"	4'-10"				6	7	1'-6"	4	17	8'-7"	4	22	24'-6"	4	28	11"	4'-4"
11	1'-4"	11"	5'-6"				6	7	1'-6"	4	17	9'-7"	4	22	24'-6"	4	38	8"	5'-0"
12	1'-6"	1'-0"	5'-9"				6	8	1'-6"	4	17	10'-6"	4	26	24'-6"	4	34	9"	5'-3"
13	1'-8"	1'-0"	6'-4"				6	9	1'-6"	4	17	11'-6"	4	28	24'-6"	4	43	7"	5'-10"
14	1'-10"	1'-0"	7'-1"				6	9	1'-6"	4	17	12'-6"	4	30	24'-6"	4	50	6"	6'-7"
15	2'-1"	1'-0"	8'-0"				6	10	1'-6"	4	17	13'-6"	4	32	24'-6"	5	43	7"	7'-6"
16	2'-4"	1'-0"	8'-10"	5	20	14'-6"	6	11	1'-6"	4	17	14'-6"	4	36	24'-6"	5	50	6"	8'-4"
17	2'-7"	1'-2"	9'-8"	6	17	15'-4"	6	11	1'-6"	4	17	15'-4"	4	36	24'-6"	5	50	6"	9'-2"
18	2'-10"	1'-2"	10'-10"	6	20	16'-4"	6	12	1'-6"	4	17	16'-4"	4	40	24'-6"	5	60	5"	10'-4"
19	3'-3"	1'-8"	11'-6"	6	17	16'-10"	6	12	1'-6"	4	17	16'-10"	4	40	24'-6"	5	38	8"	11'-0"
20	3'-8"	1'-8"	12'-3"	6	19	17'-10"	6	13	1'-6"	4	17	17'-10"	4	44	24'-6"	5	38	8"	11'-9"
21	4'-1"	1'-8"	13'-0"	6	17	18'-10"	6	14	1'-6"	4	17	18'-10"	4	46	24'-6"	5	43	7"	12'-6"
22	4'-6"	1'-8"	13'-10"	6	19	19'-10"	6	14	1'-6"	4	17	19'-10"	4	48	24'-6"	5	50	6"	13'-4"
23	4'-11"	2'-2"	14'-9"	6	20	20'-4"	6	15	1'-6"	4	17	20'-4"	4	52	24'-6"	5	43	7"	14'-3"
24	5'-4"	2'-2"	15'-7"	6	19	21'-4"	6	15	1'-6"	4	17	21'-4"	4	52	24'-6"	5	43	7"	15'-1"
25	5'-9"	2'-2"	16'-5"	6	20	22'-4"	6	16	1'-6"	4	17	22'-4"	4	56	24'-6"	5	50	6"	15'-11"
26	6'-2"	2'-2"	17'-3"	7	20	23'-4"	6	17	1'-6"	4	17	23'-4"	4	58	24'-6"	5	50	6"	16'-9"
27	6'-8"	2'-8"	18'-4"	7	20	23'-10"	6	17	1'-6"	4	17	23'-10"	4	60	24'-6"	5	60	5"	17'-10"
28	7'-1"	2'-8"	19'-2"	8	19	24'-10"	6	18	1'-6"	4	17	24'-10"	4	64	24'-6"	5	60	5"	18'-8"
29	7'-6"	2'-8"	20'-0"	8	20	25'-10"	6	18	1'-6"	4	17	25'-10"	4	64	24'-6"	5	60	5"	19'-6"
30	8'-1"	3'-2"	21'-3"	8	17	26'-4"	6	19	1'-6"	4	17	26'-4"	4	68	24'-6"	6	50	6"	20'-9"

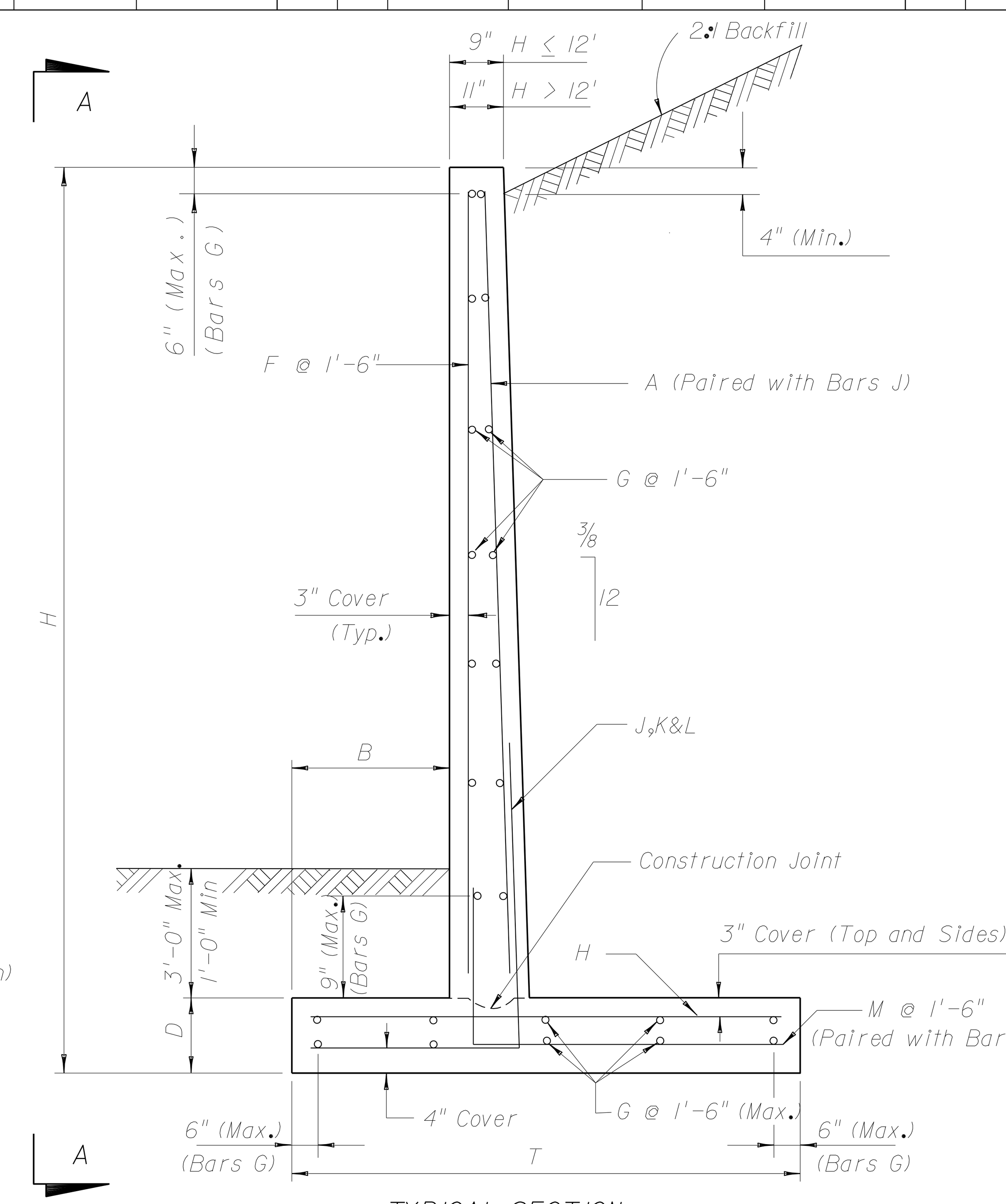
BARS J SIZE	NO.	SPACING	a	b	LENGTH	BARS K SIZE	NO.	SPACING	a	b	LENGTH	BARS L SIZE	NO.	SPACING	a	b	LENGTH	BARS M SIZE	NO.	C	LENGTH	H
4	25	1'-0"	5'-5"	1'-1"	6'-6"													4	17	1'-8"	3'-10"	6
4	25	1'-0"	6'-5"	1'-2"	7'-7"													4	17	2'-2"	4'-4"	7
4	25	1'-0"	7'-5"	1'-4"	8'-9"													4	17	2'-6"	4'-8"	8
4	28	11"	8'-5"	1'-8"	10'-1"													4	17	2'-8"	4'-10"	9
4	30	10"	9'-5"	1'-8"	11'-1"													4	17	3'-2"	5'-4"	10
5	25	1'-0"	10'-5"	1'-11"	12'-4"													4	17	3'-8"	5'-10"	11
5	34	9"	11'-5"	2'-1"	13'-6"													4	17	3'-9"	5'-11"	12
5	34	9"	12'-5"	2'-5"	14'-10"													4	17	4'-2"	6'-4"	13
5	43	7"	13'-5"	2'-8"	16'-1"													4	17	4'-9"	6'-11"	14
5	25	1'-0"	14'-5"	2'-11"	17'-4"	5	24	1'-0"	5'-9"	2'-11"	8'-8"							4	17	5'-5"	7'-7"	15
5	20	1'-3"	2'-10"	3'-2"	6'-0"	5	19	1'-3"	4'-9"	3'-2"	7'-11"	5	19	1'-3"	10'-9"	3'-2"	13'-11"	4	17	6'-0"	8'-2"	16
6	17	1'-6"	3'-5"	3'-6"	6'-11"	6	16	1'-6"	5'-4"	3'-6"	8'-10"	6	16	1'-6"	8'-4"	3'-6"	11'-10"	4	17	6'-7"	8'-9"	17
6	20	1'-3"	3'-5"	3'-9"	7'-2"	6	19	1'-3"	5'-4"	3'-9"	9'-1"	6	19	1'-3"	8'-4"	3'-9"	12'-1"	4	17	7'-6"	9'-8"	18
7	17	1'-6"	4'-10"	4'-3"	9'-1"	7	16	1'-6"	6'-5"	4'-3"	10'-8"	7	16	1'-6"	10'-5"	4'-3"	14'-8"	4	17	7'-9"	9'-11"	19
7	19	1'-4"	4'-10"	4'-8"	9'-6"	7	18	1'-4"	7'-5"	4'-8"	12'-1"	7	18	1'-4"	11'-5"	4'-8"	16'-1"	4	17	8'-1"	10'-3"	20
8	17	1'-6"	5'-11"	5'-1"	11'-0"	8	16	1'-6"	9'-1"	5'-1"	14'-2"	8	16	1'-6"	13'-1"	5'-1"	18'-2"	4	17	8'-5"	10'-7"	21
8	19	1'-4"	6'-1"	5'-7"	11'-8"	8	18	1'-4"	9'-1"	5'-7"	14'-8"	8	18	1'-4"	14'-1"	5'-7"	19'-8"	4	17	8'-10"	11'-0"	22
8	20	1'-3"	6'-7"	6'-0"	12'-7"	8	19	1'-3"	9'-7"	6'-0"	15'-7"	8	19	1'-3"	14'-7"	6'-0"	20'-7"	4	17	9'-4"	11'-6"	23
9	19	1'-4"	7'-8"	6'-5"	14'-1"	9	18	1'-4"	11'-3"	6'-5"	17'-8"	9	18	1'-4"	16'-3"	6'-5"	22'-8"	4	17	9'-9"	11'-11"	24
9	20	1'-3"	7'-8"	6'-11"	14'-7"	9	19	1'-3"	11'-3"	6'-11"	18'-2"	9	19	1'-3"	17'-3"	6'-11"	24'-2"	4	17	10'-2"	12'-4"	25
9	20	1'-3"	8'-2"	7'-4"	15'-6"	9	19	1'-3"	12'-3"	7'-4"	19'-7"	9	19	1'-3"	18'-3"	7'-4"	25'-7"	4	17	10'-7"	12'-9"	26
9	20	1'-3"	8'-8"	7'-11"	16'-7"	9	19	1'-3"	12'-9"	7'-11"	20'-8"	9	19	1'-3"	18'-9"	7'-11"	26'-8"	4	17	11'-2"	13'-4"	27
10	19	1'-4"	9'-2"	8'-4"	17'-6"	10	18	1'-4"	13'-9"	8'-4"	22'-1"	10	18	1'-4"	19'-9"	8'-4"	28'-1"	4	17	11'-7"	13'-9"	28
10	20	1'-3"	9'-8"	8'-9"	18'-5"	10	19	1'-3"	14'-9"	8'-9"	23'-6"	10	19	1'-3"	20'-9"	8'-9"	29'-6"	4	17	12'-0"	14'-2"	29
11	17	1'-6"	10'-2"	9'-5"	19'-7"	11	16	1'-6"	15'-3"	9'-5"	24'-8"	11	16	1'-6"	21'-3"	9'-5"	30'-8"	4	17	12'-8"	14'-10"	30

QUANTITIES

H	CONCRETE / 25' UNIT C.Y.	STEEL / 25' UNIT LBS.	CONCRETE PER LIN.FT. C.Y.	STEEL PER LIN.FT. LBS.
6	6.31	470	0.25	18
7	7.66	547	0.31	21
8	8.97	588	0.36	23
9	10.24	716	0.41	28
10	11.60	837	0.46	33
11	13.14	999	0.53	39
12	14.71	1227	0.59	49
13	18.13	1374	0.73	54
14	20.04	1672	0.80	66
15	22.13	1790	0.89	71
16	24.17	2166	0.97	86
17	27.51	2430	1.10	97
18	30.09	2933	1.20	117
19	36.81	2995	1.47	119
20	39.33	3448	1.57	137
21	41.88	4040	1.68	161
22	44.59	4670	1.78	186
23	53.55	5002	2.14	200
24	56.69	5925	2.27	237
25	59.86	6573	2.39	262
26	63.05	7201	2.52	288
27	74.49	7718	2.98	308
28	78.11	9270	3.12	370
29	81.77	10060	3.27	402
30	95.50	10849	3.82	433



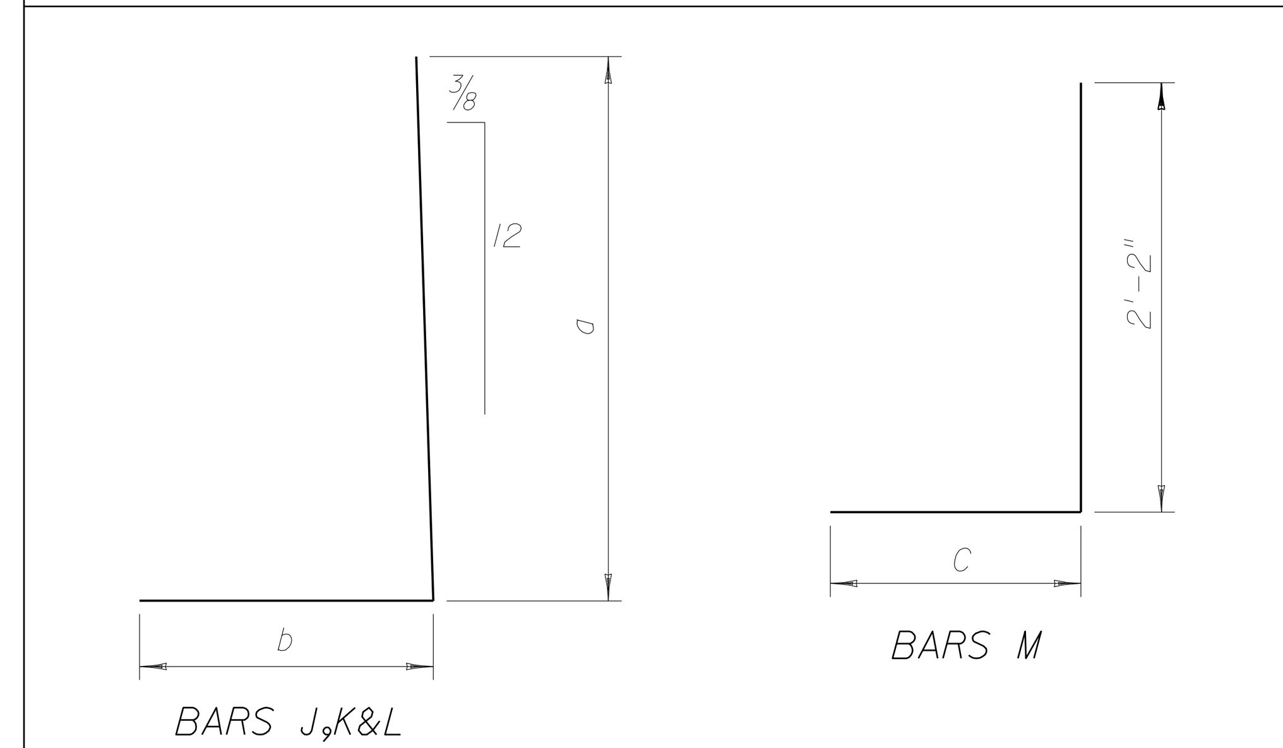
VIEW A-A



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 a 25' 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. Bars F and M are No.4 Bars. Bars J are as shown.

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

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

REVISIONS DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	NAMES	DATES
DRAWN BY	M.J.	3/87
CHECKED BY	M.P.	3/87
DESIGNED BY	-	-
CHECKED BY	-	-
APPROVED BY	A.G.M.	

ENGINEER OF RECORD:

STRUCTURES DESIGN 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 (3.5 KIPS/SQ.FT.MAX.BEARING PRESSURE) 6 FT. TO 30 FT. HEIGHT

PROJECT NAME:

DRAWING NO. 1 of 1

INDEX NO. 813

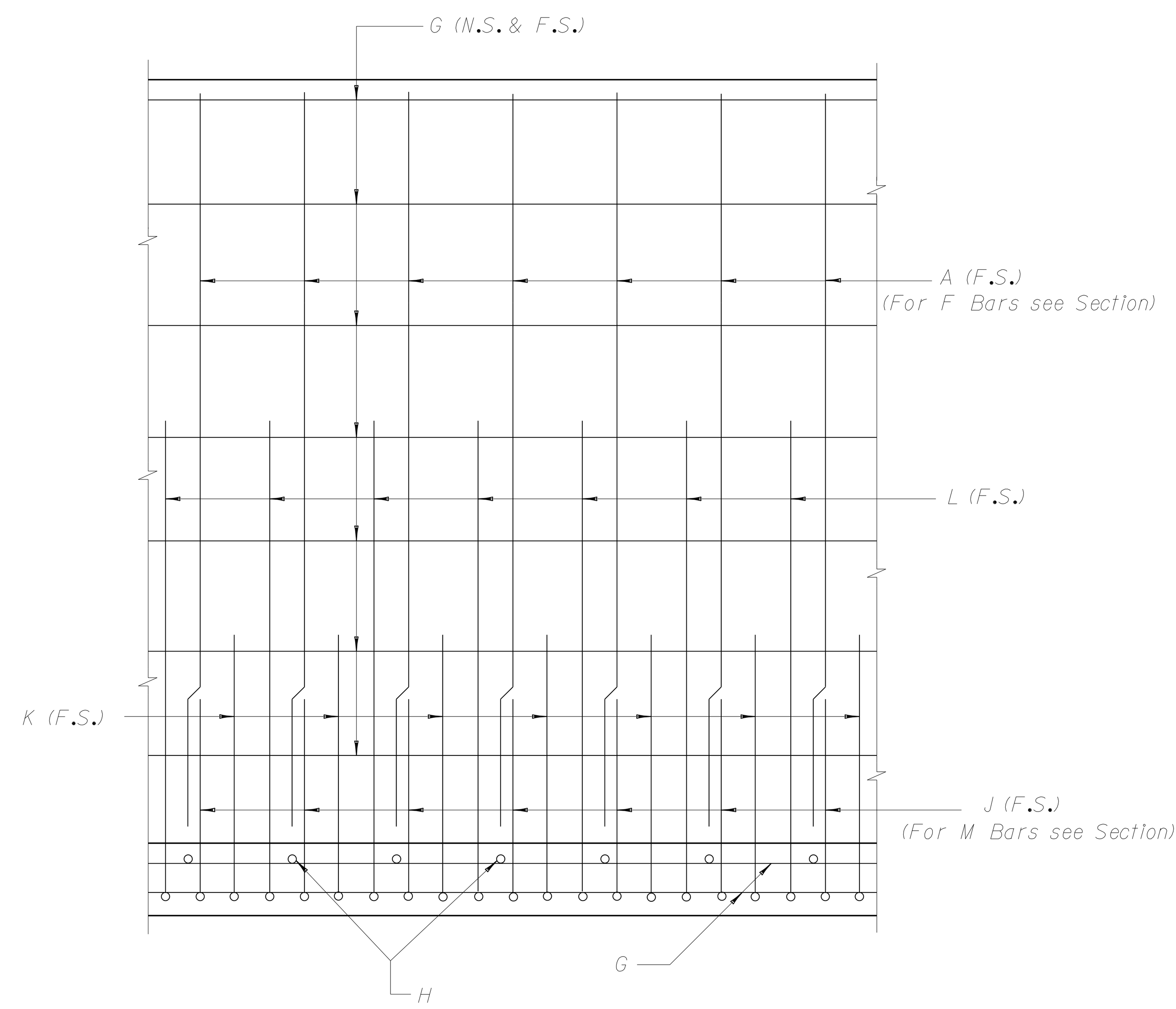
FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.	-	-	-

RETAINING WALL DATA

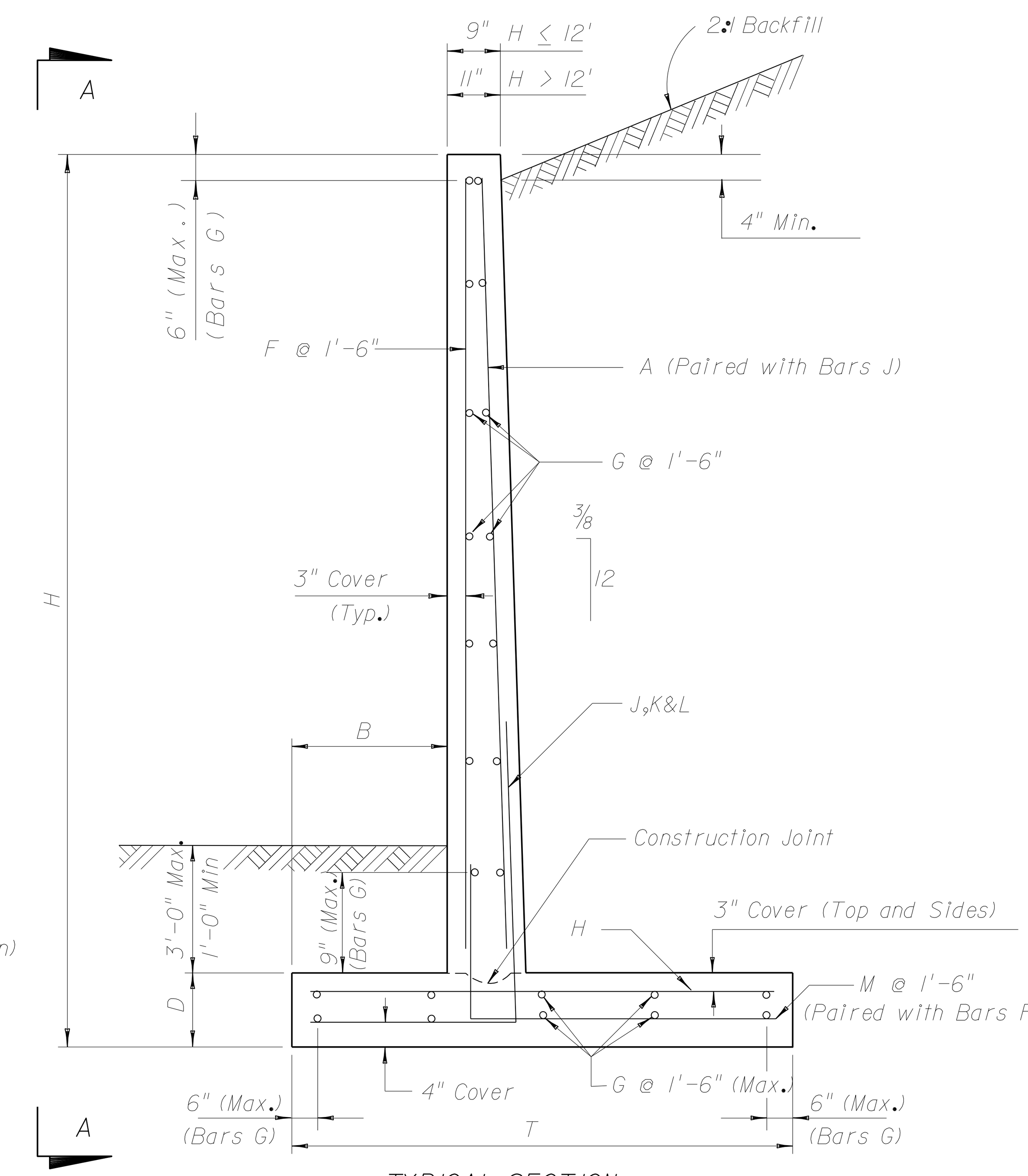
WALL DIMENSIONS				REINFORCING STEEL SCHEDULE																																				
H	B	D	T	BARS A			BARS D*			BARS F			BARS G			BARS H				BARS J						BARS K						BARS L						BARS M				H
				SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	C	LENGTH	
6	8"	11"	2'-10"	#24			6	4	1'-6"	4	17	4'-7"	4	14	24'-6"	4	18	1'-5"	2'-4"	4	25	1'-0"	5'-5"	1'-1"	6'-6"	#30						#31						4	17	1'-8"	3'-10"	6
7	9"	11"	3'-5"				6	5	1'-6"	4	17	5'-7"	4	16	24'-6"	4	18	1'-5"	2'-11"	4	25	1'-0"	6'-5"	1'-2"	7'-7"													4	17	2'-2"	4'-4"	7
8	11"	11"	3'-11"				6	5	1'-6"	4	17	6'-7"	4	16	24'-6"	4	18	1'-5"	3'-4"	4	25	1'-0"	7'-5"	1'-4"	8'-9"													4	17	2'-6"	4'-8"	8
9	1'-2"	11"	4'-4"				6	6	1'-6"	4	17	7'-7"	4	20	24'-6"	4	18	1'-5"	3'-10"	4	28	11"	8'-5"	1'-8"	10'-1"													4	17	2'-8"	4'-10"	9
10	1'-2"	11"	4'-10"				6	7	1'-6"	4	17	8'-7"	4	22	24'-6"	4	25	1'-0"	4'-4"	4	30	10"	9'-5"	1'-8"	11'-1"													4	17	3'-2"	5'-4"	10
11	1'-4"	11"	5'-4"				6	7	1'-6"	4	17	9'-7"	4	22	24'-6"	4	34	9"	4'-10"	5	25	1'-0"	10'-5"	1'-11"	12'-4"													4	17	3'-6"	5'-8"	11
12	1'-6"	1'-0"	5'-9"				6	8	1'-6"	4	17	10'-6"	4	26	24'-6"	4	34	9"	5'-3"	5	34	9"	11'-5"	2'-1"	13'-6"													4	17	3'-9"	5'-11"	12
13	1'-7"	1'-0"	6'-3"				6	9	1'-6"	4	17	11'-6"	4	28	24'-6"	4	43	7"	5'-9"	5	34	9"	12'-5"	2'-4"	14'-9"													4	17	4'-2"	6'-4"	13
14	1'-8"	1'-0"	6'-9"				6	9	1'-6"	4	17	12'-6"	4	28	24'-6"	4	60	5"	6'-3"	5	43	7"	13'-5"	2'-6"	15'-11"													4	17	4'-7"	6'-9"	14
15	1'-10"	1'-0"	7'-4"				6	10	1'-6"	4	17	13'-6"	4	32	24'-6"	5	43	7"	6'-10"	5	25	1'-0"	14'-5"	2'-8"	17'-1"	5	24	1'-0"	5'-9"	2'-8"	8'-5"							4	17	5'-0"	7'-2"	15
16	2'-1"	1'-0"	8'-2"	5	20	14'-6"	6	11	1'-6"	4	17	14'-6"	4	34	24'-6"	5	60	5"	7'-8"	5	20	1'-3"	2'-10"	2'-11"	5'-9"	5	19	1'-3"	4'-9"	2'-11"	7'-8"	5	19	1'-3"	10'-9"	2'-11"	13'-8"	4	17	5'-7"	7'-9"	16
17	2'-4"	1'-2"	8'-10"	6	17	15'-4"	6	11	1'-6"	4	17	15'-4"	4	36	24'-6"	5	50	6"	8'-4"	6	17	1'-6"	3'-5"	3'-3"	6'-8"	6	16	1'-6"	5'-4"	3'-3"	8'-7"	6	16	1'-6"	8'-4"	3'-3"	11'-7"	4	17	6'-0"	8'-2"	17
18	2'-6"	1'-2"	9'-10"	6	20	16'-4"	6	12	1'-6"	4	17	16'-4"	4	38	24'-6"	5	60	5"	9'-4"	6	20	1'-3"	3'-5"	3'-5"	6'-10"	6	19	1'-3"	5'-4"	3'-5"	8'-9"	6	19	1'-3"	8'-4"	3'-5"	11'-9"	4	17	6'-10"	9'-0"	18
19	2'-11"	1'-8"	10'-8"	6	17	16'-10"	6	12	1'-6"	4	17	16'-10"	4	40	24'-6"	5	38	8"	10'-2"	7	17	1'-6"	4'-10"	3'-11"	8'-9"	7	16	1'-6"	6'-5"	3'-11"	10'-4"	7	16	1'-6"	10'-5"	3'-11"	14'-4"	4	17	7'-3"	9'-5"	19
20	3'-4"	1'-8"	11'-3"	6	19	17'-10"	6	13	1'-6"	4	17	17'-10"	4	42	24'-6"	5	43	7"	10'-9"	7	19	1'-4"	4'-10"	4'-3"	9'-1"	7	18	1'-4"	7'-5"	4'-3"	11'-8"	7	18	1'-4"	11'-5"	4'-3"	15'-8"	4	17	7'-5"	9'-7"	20
21	3'-8"	1'-8"	12'-0"	6	17	18'-10"	6	14	1'-6"	4	17	18'-10"	4	46	24'-6"	5	50	6"	11'-6"	8	17	1'-6"	5'-11"	4'-8"	10'-7"	8	16	1'-6"	9'-1"	4'-8"	13'-9"	8	16	1'-6"	13'-1"	4'-8"	17'-9"	4	17	7'-10"	10'-0"	21
22	4'-1"	1'-8"	12'-8"	6	19	19'-10"	6	14	1'-6"	4	17	19'-10"	4	46	24'-6"	5	60	5"	12'-2"	8	19	1'-4"	6'-1"	5'-2"	11'-3"	8	18	1'-4"	9'-1"	5'-2"	14'-3"	8	18	1'-4"	14'-1"	5'-2"	19'-3"	4	17	8'-1"	10'-3"	22
23	4'-6"	2'-2"	13'-8"	6	20	20'-4"	6	15	1'-6"	4	17	20'-4"	4	50	24'-6"	5	43	7"	13'-2"	8	20	1'-3"	6'-7"	5'-7"	12'-2"	8	19	1'-3"	9'-7"	5'-7"	15'-2"	8	19	1'-3"	14'-7"	5'-7"	20'-2"	4	17	8'-8"	10'-10"	23
24	4'-11"	2'-2"	14'-4"	6	19	21'-4"	6	15	1'-6"	4	17	21'-4"	4	50	24'-6"	5	50	6"	13'-10"	9	19	1'-4"	7'-8"	6'-0"	13'-8"	9	18	1'-4"	11'-3"	6'-0"	17'-3"	9	18	1'-4"	16'-3"	6'-0"	22'-3"	4	17	8'-11"	11'-1"	24
25	5'-4"	2'-2"	15'-3"	6	20	22'-4"	6	16	1'-6"	4	17	22'-4"	4	54	24'-6"	5	50	6"	14'-9"	9	20	1'-3"	7'-8"	6'-6"	14'-2"	9	19	1'-3"	11'-3"	6'-6"	17'-9"	9	19	1'-3"	17'-3"	6'-6"	23'-9"	4	17	9'-5"	11'-7"	25
26	5'-8"	2'-2"	16'-0"	7	20	23'-4"	6	17	1'-6"	4	17	23'-4"	4	56	24'-6"	5	60	5"	15'-6"	9	20	1'-3"	8'-2"	6'-10"	15'-0"	9	19	1'-3"	12'-3"	6'-10"	19'-1"	9	19	1'-3"	18'-3"	6'-10"	25'-1"	4	17	9'-10"	12'-0"	26
27	6'-1"	2'-8"	17'-0"	7	20	23'-10"	6	17	1'-6"	4	17	23'-10"	4	58	24'-6"	5	60	5"	16'-6"	9	20	1'-3"	8'-8"	7'-4"	16'-0"	9	19	1'-3"	12'-9"	7'-4"	20'-1"	9	19	1'-3"	18'-9"	7'-4"	26'-1"	4	17	10'-5"	12'-7"	27
28	6'-6"	2'-8"	17'-9"	8	19	24'-10"	6	18	1'-6"	4	17	24'-10"	4	62	24'-6"	5	60	5"	17'-3"	10	19	1'-4"	9'-2"	7'-9"	16'-11"	10	18	1'-4"	13'-9"	7'-9"	21'-6"	10	18	1'-4"	19'-9"	7'-9"	27'-6"	4	17	10'-9"	12'-11"	28
29	6'-11"	2'-8"	18'-7"	8	20	25'-10"	6	18	1'-6"	4	17	25'-10"	4	62	24'-6"	5	60	5"	18'-1"	10	20	1'-3"	9'-8"	8'-2"	17'-10"	10	19	1'-3"	14'-9"	8'-2"	22'-11"	10	19	1'-3"	20'-9"	8'-2"	28'-11"	4	17	11'-2"	13'-4"	29
30	7'-5"	3'-2"	19'-8"	8	17	26'-4"	6	19	1'-6"	4	17	26'-4"	4	66	24'-6"	6	50	6"	19'-2"	11	17	1'-6"	10'-2"	8'-9"	18'-11"	11	16	1'-6"	15'-3"	8'-9"	24'-0"	11	16	1'-6"	21'-3"	8'-9"	30'-0"	4	17	11'-9"	13'-11"	30

QUANTITIES

H	CONCRETE / 25' UNIT	STEEL / 25' UNIT	CONCRETE PER LIN.FT.	STEEL PER LIN.FT.
	C.Y.	LBS.	C.Y.	LBS.
6	6.31	470	0.25	18
7	7.66	547	0.31	21
8	8.97	587	0.36	23
9	10.24	716	0.41	28
10	11.60	828	0.46	33
11	13.00	980	0.52	39
12	14.71	1227	0.59	49
13	18.06	1369	0.72	54
14	19.73	1661	0.79	66
15	21.51	1745	0.86	69
16	23.55	2158	0.94	86
17	26.61	2361	1.06	94
18	29.01	2801	1.16	112
19	35.52	2923	1.42	116
20	37.78	3377	1.51	135
21	40.34	4018	1.61	160
22	42.79	4634	1.71	185
23	51.38	4849	2.06	193
24	54.18	5850	2.17	234
25	57.52	6389	2.30	255
26	60.55	7153	2.42	286
27	71.20	7478	2.85	299
28	74.61	9001	2.98	360
29	78.27	9783	3.13	391
30	90.86	10513	3.63	420



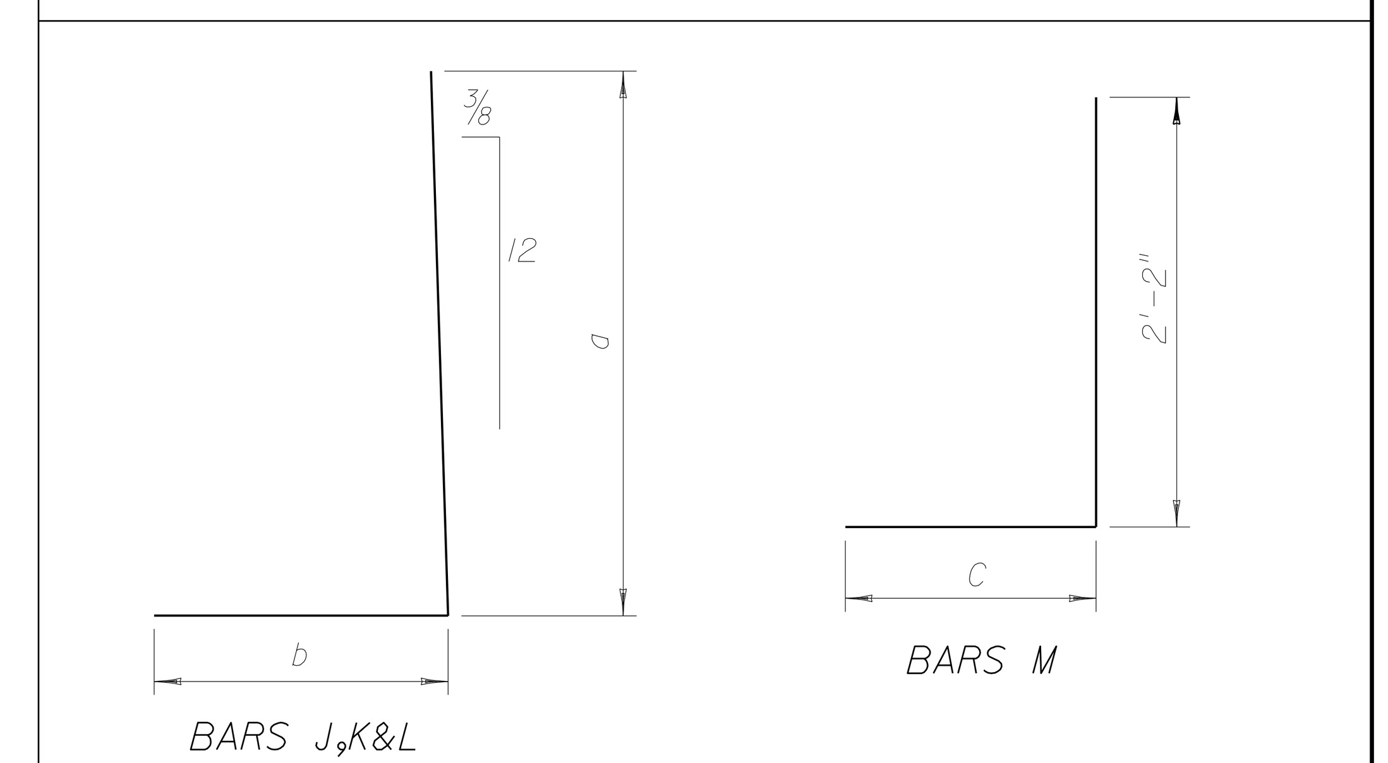
VIEW A-A



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 a 25' 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. Bars F and M are No.4 Bars. Bars J are as shown.

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

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

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	NAMES	DATES
DRAWN BY	M.J.	3/87
CHECKED BY	M.P.	3/87
DESIGNED BY	-	-
CHECKED BY	-	-
APPROVED BY	A.G.M.	

ENGINEER OF RECORD:
STRUCTURES DESIGN 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 (4.0 KIPS/SQ.FT. MAX. BEARING PRESSURE) 6 FT. TO 30 FT. HEIGHT

PROJECT NAME:

DRAWING NO. 1 of 1

INDEX NO. 814

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

RETAINING WALL DATA

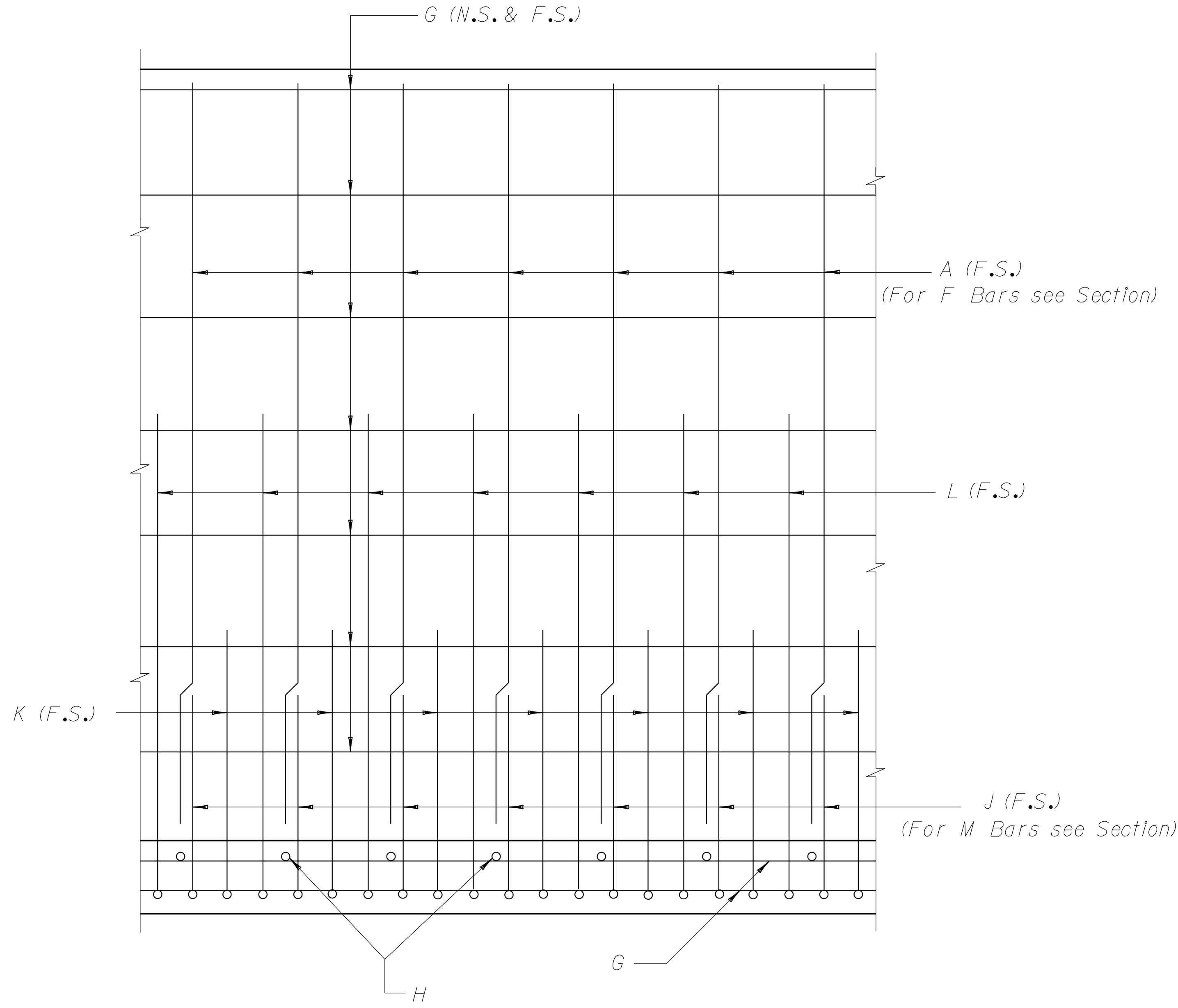
WALL DIMENSIONS / REINFORCING STEEL SCHEDULE

H	B	D	T	BARS A SIZE	BARS A NO.	BARS A LENGTH	BARS D* SIZE	BARS D* NO.	BARS D* LENGTH	BARS F SIZE	BARS F NO.	BARS F LENGTH	BARS G SIZE	BARS G NO.	BARS G LENGTH	BARS H SIZE	BARS H NO.	BARS H SPACING	BARS H LENGTH
6	8"	11"	2'-10"				6	4	1'-6"	4	17	4'-7"	4	14	24'-6"	4	18	1'-5"	2'-4"
7	9"	11"	3'-5"				6	5	1'-6"	4	17	5'-7"	4	16	24'-6"	4	18	1'-5"	2'-11"
8	11"	11"	3'-11"				6	5	1'-6"	4	17	6'-7"	4	16	24'-6"	4	18	1'-5"	3'-4"
9	1'-2"	11"	4'-4"				6	6	1'-6"	4	17	7'-7"	4	20	24'-6"	4	18	1'-5"	3'-10"
10	1'-2"	11"	4'-10"				6	7	1'-6"	4	17	8'-7"	4	22	24'-6"	4	28	11"	4'-4"
11	1'-4"	11"	5'-4"				6	7	1'-6"	4	17	9'-7"	4	22	24'-6"	4	34	9"	4'-10"
12	1'-6"	1'-0"	5'-9"				6	8	1'-6"	4	17	10'-6"	4	26	24'-6"	4	34	9"	5'-3"
13	1'-7"	1'-0"	6'-3"				6	9	1'-6"	4	17	11'-6"	4	28	24'-6"	4	43	7"	5'-9"
14	1'-8"	1'-0"	6'-9"				6	9	1'-6"	4	17	12'-6"	4	28	24'-6"	4	60	5"	6'-3"
15	1'-10"	1'-0"	7'-2"				6	10	1'-6"	4	17	13'-6"	4	32	24'-6"	5	43	7"	6'-8"
16	1'-11"	1'-0"	7'-7"	5	20	14'-6"	6	11	1'-6"	4	17	14'-6"	4	34	24'-6"	5	60	5"	7'-1"
17	2'-2"	1'-2"	8'-4"	6	17	15'-4"	6	11	1'-6"	4	17	15'-4"	4	34	24'-6"	5	50	6"	7'-10"
18	2'-4"	1'-2"	9'-2"	6	20	16'-4"	6	12	1'-6"	4	17	16'-4"	4	38	24'-6"	5	60	5"	8'-8"
19	2'-9"	1'-8"	9'-11"	6	17	16'-10"	6	12	1'-6"	4	17	16'-10"	4	38	24'-6"	5	43	7"	9'-5"
20	3'-1"	1'-8"	10'-7"	6	19	17'-10"	6	13	1'-6"	4	17	17'-10"	4	42	24'-6"	5	50	6"	10'-1"
21	3'-5"	1'-8"	11'-1"	6	17	18'-10"	6	14	1'-6"	4	17	18'-10"	4	44	24'-6"	5	50	6"	10'-7"
22	3'-9"	1'-8"	11'-11"	6	19	19'-10"	6	14	1'-6"	4	17	19'-10"	4	46	24'-6"	5	60	5"	11'-5"
23	4'-2"	2'-2"	12'-9"	6	20	20'-4"	6	15	1'-6"	4	17	20'-4"	4	48	24'-6"	5	50	6"	12'-3"
24	4'-7"	2'-2"	13'-6"	6	19	21'-4"	6	15	1'-6"	4	17	21'-4"	4	50	24'-6"	5	50	6"	13'-0"
25	4'-11"	2'-2"	14'-2"	6	20	22'-4"	6	16	1'-6"	4	17	22'-4"	4	52	24'-6"	5	60	5"	13'-8"
26	5'-3"	2'-2"	15'-0"	7	21	23'-4"	6	17	1'-6"	4	17	23'-4"	4	56	24'-6"	5	60	5"	14'-6"
27	5'-8"	2'-8"	15'-10"	7	21	23'-10"	6	17	1'-6"	4	17	23'-10"	4	56	24'-6"	5	60	5"	15'-4"
28	6'-1"	2'-8"	16'-8"	8	19	24'-10"	6	18	1'-6"	4	17	24'-10"	4	60	24'-6"	5	60	5"	16'-2"
29	6'-5"	2'-8"	17'-6"	8	20	25'-10"	6	18	1'-6"	4	17	25'-10"	4	60	24'-6"	5	60	5"	17'-0"
30	6'-11"	3'-2"	18'-5"	8	17	26'-4"	6	19	1'-6"	4	17	26'-4"	4	64	24'-6"	6	50	6"	17'-11"

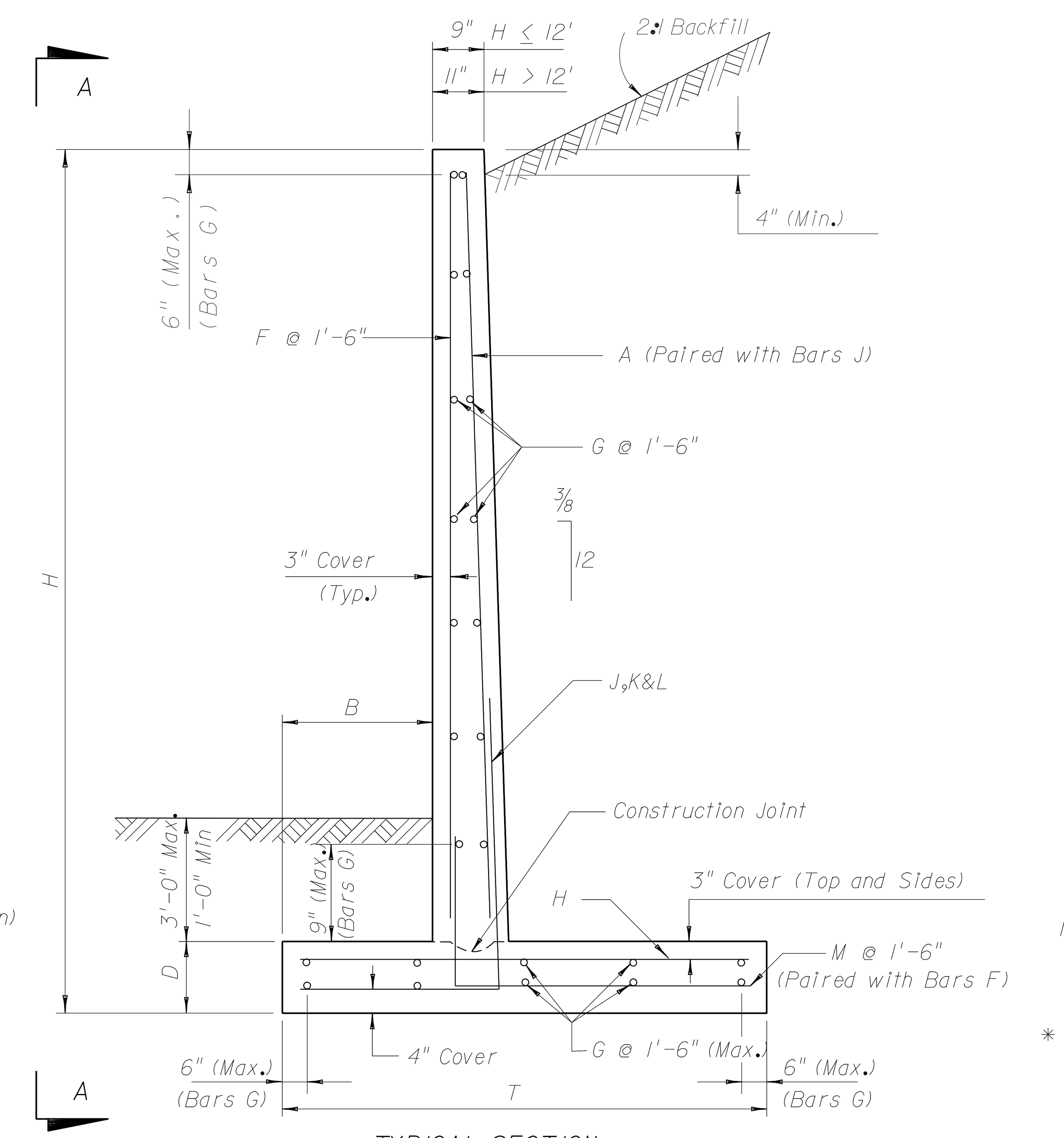
BARS J SIZE	BARS J NO.	BARS J SPACING	BARS J a	BARS J b	BARS J LENGTH	BARS K SIZE	BARS K NO.	BARS K SPACING	BARS K a	BARS K b	BARS K LENGTH	BARS L SIZE	BARS L NO.	BARS L SPACING	BARS L a	BARS L b	BARS L LENGTH	BARS M SIZE	BARS M NO.	BARS M C	BARS M LENGTH	H
4	25	1'-0"	5'-5"	1'-1"	6'-6"													4	17	1'-8"	3'-10"	6
4	25	1'-0"	6'-5"	1'-2"	7'-7"													4	17	2'-2"	4'-4"	7
4	25	1'-0"	7'-5"	1'-4"	8'-9"													4	17	2'-6"	4'-8"	8
4	28	11"	8'-5"	1'-8"	10'-1"													4	17	2'-8"	4'-10"	9
4	30	10"	9'-5"	1'-8"	11'-1"													4	17	3'-2"	5'-4"	10
5	25	1'-0"	10'-5"	1'-11"	12'-4"													4	17	3'-6"	5'-8"	11
5	34	9"	11'-5"	2'-1"	13'-6"													4	17	3'-9"	5'-11"	12
5	34	9"	12'-5"	2'-4"	14'-9"													4	17	4'-2"	6'-4"	13
5	43	7"	13'-5"	2'-6"	15'-11"													4	17	4'-7"	6'-9"	14
5	25	1'-0"	14'-5"	2'-8"	17'-1"	5	24	1'-0"	5'-9"	2'-8"	8'-5"							4	17	4'-10"	7'-0"	15
5	20	1'-3"	2'-10"	2'-9"	5'-7"	5	19	1'-3"	4'-9"	2'-9"	7'-6"	5	19	1'-3"	10'-9"	2'-9"	13'-6"	4	17	5'-2"	7'-4"	16
6	17	1'-6"	3'-5"	3'-1"	6'-6"	6	16	1'-6"	5'-4"	3'-1"	8'-5"	6	16	1'-6"	8'-4"	3'-1"	11'-5"	4	17	5'-8"	7'-10"	17
6	20	1'-3"	3'-5"	3'-3"	6'-8"	6	19	1'-3"	5'-4"	3'-3"	8'-7"	6	19	1'-3"	8'-4"	3'-3"	11'-7"	4	17	6'-4"	8'-6"	18
7	17	1'-6"	4'-10"	3'-9"	8'-7"	7	16	1'-6"	6'-5"	3'-9"	10'-2"	7	16	1'-6"	10'-5"	3'-9"	14'-2"	4	17	6'-8"	8'-10"	19
7	19	1'-4"	4'-10"	4'-1"	8'-11"	7	18	1'-4"	7'-5"	4'-1"	11'-6"	7	18	1'-4"	11'-5"	4'-1"	15'-6"	4	17	7'-0"	9'-2"	20
8	17	1'-6"	5'-11"	4'-5"	10'-4"	8	16	1'-6"	9'-1"	4'-5"	13'-6"	8	16	1'-6"	13'-1"	4'-5"	17'-6"	4	17	7'-2"	9'-4"	21
8	19	1'-4"	6'-1"	4'-10"	10'-11"	8	18	1'-4"	9'-1"	4'-10"	13'-11"	8	18	1'-4"	14'-1"	4'-10"	18'-11"	4	17	7'-8"	9'-10"	22
8	20	1'-3"	6'-7"	5'-3"	11'-10"	8	19	1'-3"	9'-7"	5'-3"	14'-10"	8	19	1'-3"	14'-7"	5'-3"	19'-10"	4	17	8'-1"	10'-3"	23
9	19	1'-4"	7'-8"	5'-8"	13'-4"	9	18	1'-4"	11'-3"	5'-8"	16'-11"	9	18	1'-4"	16'-3"	5'-8"	21'-11"	4	17	8'-5"	10'-7"	24
9	20	1'-3"	7'-8"	6'-1"	13'-9"	9	19	1'-3"	11'-3"	6'-1"	17'-4"	9	19	1'-3"	17'-3"	6'-1"	23'-4"	4	17	8'-9"	10'-11"	25
9	20	1'-3"	8'-2"	6'-5"	14'-7"	9	19	1'-3"	12'-3"	6'-5"	18'-8"	9	19	1'-3"	18'-3"	6'-5"	24'-8"	4	17	9'-3"	11'-5"	26
9	20	1'-3"	8'-8"	6'-11"	15'-7"	9	19	1'-3"	12'-9"	6'-11"	19'-8"	9	19	1'-3"	18'-9"	6'-11"	25'-8"	4	17	9'-8"	11'-10"	27
10	19	1'-4"	9'-2"	7'-4"	16'-6"	10	18	1'-4"	13'-9"	7'-4"	21'-1"	10	18	1'-4"	19'-9"	7'-4"	27'-1"	4	17	10'-1"	12'-3"	28
10	20	1'-3"	9'-8"	7'-8"	17'-4"	10	19	1'-3"	14'-9"	7'-8"	22'-5"	10	19	1'-3"	20'-9"	7'-8"	28'-5"	4	17	10'-7"	12'-9"	29
11	17	1'-6"	10'-2"	8'-3"	18'-5"	11	16	1'-6"	15'-3"	8'-3"	23'-6"	11	16	1'-6"	21'-3"	8'-3"	29'-6"	4	17	11'-0"	13'-2"	30

QUANTITIES

H	CONCRETE / 25' UNIT C.Y.	STEEL / 25' UNIT LBS.	CONCRETE PER LIN.FT. C.Y.	STEEL PER LIN.FT. LBS.
6	6.31	470	0.25	18
7	7.66	547	0.31	21
8	8.97	587	0.36	23
9	10.24	716	0.41	28
10	11.60	837	0.46	33
11	13.00	980	0.52	39
12	14.71	1227	0.59	49
13	18.06	1369	0.72	54
14	19.73	1706	0.79	68
15	21.35	1734	0.85	69
16	23.01	2107	0.92	84
17	26.07	2286	1.04	91
18	28.29	2739	1.13	109
19	34.36	2886	1.37	115
20	36.76	3397	1.47	135
21	38.92	3897	1.56	155
22	41.63	4533	1.67	181
23	49.54	4806	1.98	192
24	52.51	5739	2.10	229
25	55.34	6352	2.21	254
26	58.54	7049	2.34	281
27	68.31	7330	2.73	293
28	71.94	8794	2.88	351
29	75.59	9551	3.02	382
30	87.19	10248	3.49	409



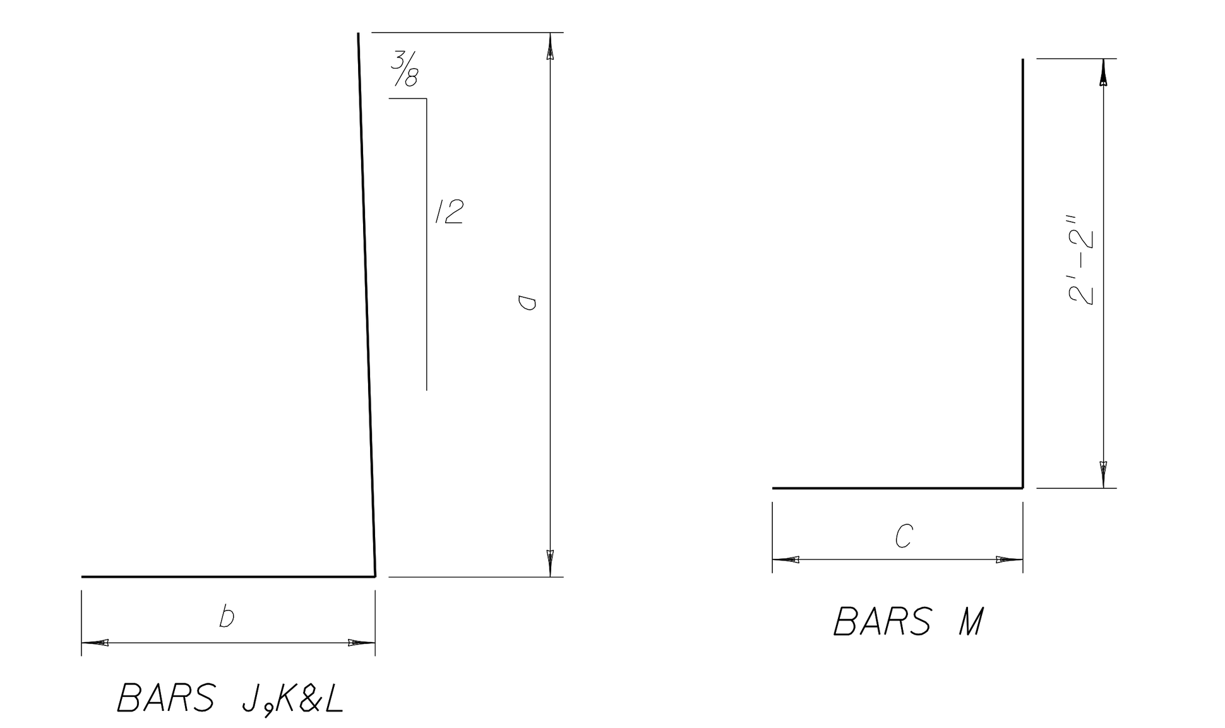
VIEW A-A



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 a 25' 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. Bars F and M are No.4 Bars. Bars J are as shown.

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

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

REVISIONS DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	NAMES	DATES
DRAWN BY	M.J.	3/87
CHECKED BY	M.P.	3/87
DESIGNED BY	-	-
CHECKED BY	-	-
APPROVED BY	A.G.M.	

ENGINEER OF RECORD: -

LOGO: -

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.
-	-	-

SHEET TITLE: CASE III (4.5 KIPS/SQ.FT. MAX. BEARING PRESSURE) 6 FT. TO 30 FT. HEIGHT

PROJECT NAME:

DRAWING NO. 1 of 1

INDEX NO. 815

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

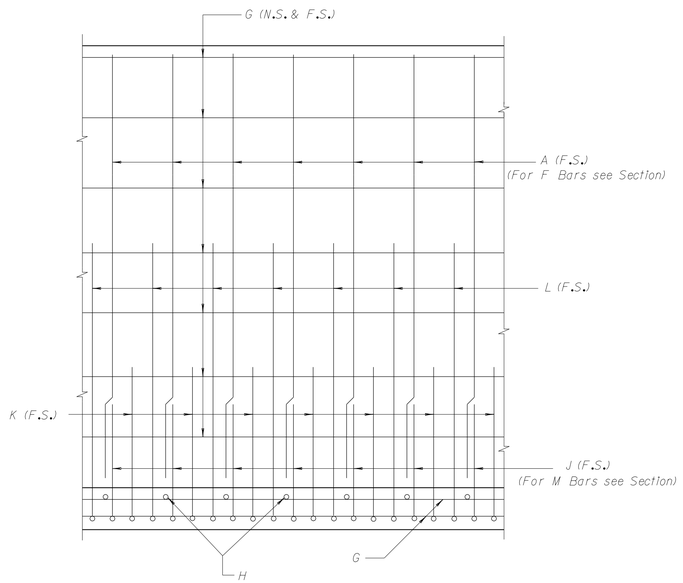
RETAINING WALL DATA

WALL DIMENSIONS / REINFORCING STEEL SCHEDULE

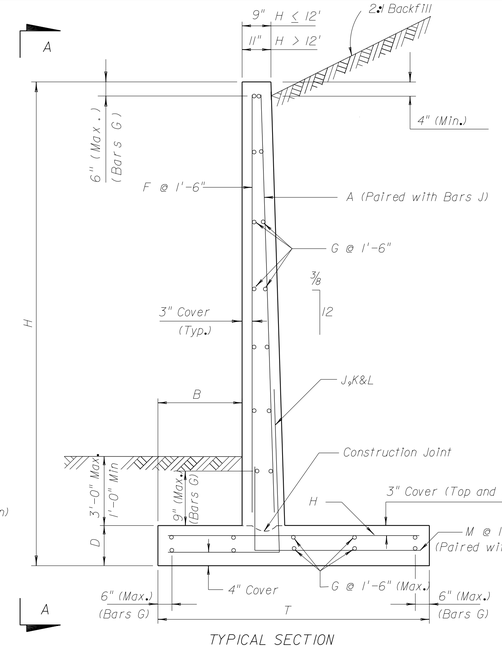
H	B	D	T	BARS A SIZE	BARS A NO.	BARS A LENGTH	BARS D* SIZE	BARS D NO.	BARS D LENGTH	BARS F SIZE	BARS F NO.	BARS F LENGTH	BARS G SIZE	BARS G NO.	BARS G LENGTH	BARS H SIZE	BARS H NO.	BARS H SPACING	BARS H LENGTH	BARS J SIZE	BARS J NO.	BARS J SPACING	BARS J a	BARS J b	BARS J LENGTH	BARS K SIZE	BARS K NO.	BARS K SPACING	BARS K a	BARS K b	BARS K LENGTH	BARS L SIZE	BARS L NO.	BARS L SPACING	BARS L a	BARS L b	BARS L LENGTH	BARS M SIZE	BARS M NO.	BARS M C	BARS M LENGTH	H
6	8"	11"	2'-10"				6	4	1'-6"	4	17	4'-7"	4	14	24'-6"	4	18	1'-5"	2'-4"	4	25	1'-0"	5'-5"	1'-1"	6'-6"													4	17	1'-8"	3'-10"	6
7	9"	11"	3'-5"				6	5	1'-6"	4	17	5'-7"	4	16	24'-6"	4	18	1'-5"	2'-11"	4	25	1'-0"	6'-5"	1'-2"	7'-7"													4	17	2'-2"	4'-4"	7
8	11"	11"	3'-11"				6	5	1'-6"	4	17	6'-7"	4	16	24'-6"	4	18	1'-5"	3'-5"	4	25	1'-0"	7'-5"	1'-4"	8'-9"													4	17	2'-6"	4'-8"	8
9	1'-2"	11"	4'-4"				6	6	1'-6"	4	17	7'-7"	4	20	24'-6"	4	18	1'-5"	3'-10"	4	28	11"	8'-5"	1'-8"	10'-1"													4	17	2'-8"	4'-10"	9
10	1'-2"	11"	4'-10"				6	7	1'-6"	4	17	8'-7"	4	22	24'-6"	4	28	11"	4'-4"	4	30	10"	9'-5"	1'-8"	11'-1"													4	17	3'-2"	5'-4"	10
11	1'-4"	11"	5'-4"				6	7	1'-6"	4	17	9'-7"	4	22	24'-6"	4	38	8"	4'-10"	5	25	1'-0"	10'-5"	1'-11"	12'-4"													4	17	3'-6"	5'-8"	11
12	1'-6"	1'-0"	5'-9"				6	8	1'-6"	4	17	10'-6"	4	26	24'-6"	4	34	9"	5'-3"	5	34	9"	11'-5"	2'-1"	13'-6"													4	17	3'-9"	5'-11"	12
13	1'-7"	1'-0"	6'-3"				6	9	1'-6"	4	17	11'-6"	4	28	24'-6"	4	43	7"	5'-9"	5	34	9"	12'-5"	2'-4"	14'-9"													4	17	4'-2"	6'-4"	13
14	1'-8"	1'-0"	6'-9"				6	9	1'-6"	4	17	12'-6"	4	28	24'-6"	4	60	5"	6'-3"	5	43	7"	13'-5"	2'-6"	15'-11"													4	17	4'-7"	6'-9"	14
15	1'-10"	1'-0"	7'-2"				6	10	1'-6"	4	17	13'-6"	4	32	24'-6"	5	43	7"	6'-8"	5	25	1'-0"	14'-5"	2'-8"	17'-1"	5	24	1'-0"	5'-9"	2'-8"	8'-5"							4	17	4'-10"	7'-0"	15
16	1'-11"	1'-0"	7'-7"	5	20	14'-6"	6	10	1'-6"	4	17	14'-6"	4	34	24'-6"	5	60	5"	7'-1"	5	20	1'-3"	2'-10"	2'-9"	5'-7"	5	19	1'-3"	4'-9"	2'-9"	7'-6"	5	19	1'-3"	10'-9"	2'-9"	13'-6"	4	17	5'-2"	7'-4"	16
17	2'-2"	1'-2"	8'-2"	6	17	15'-4"	6	11	1'-6"	4	17	15'-4"	4	34	24'-6"	5	50	6"	7'-8"	6	17	1'-6"	3'-5"	3'-1"	6'-6"	6	16	1'-6"	5'-4"	3'-1"	8'-5"	6	16	1'-6"	8'-4"	3'-1"	11'-5"	4	17	5'-6"	7'-8"	17
18	2'-2"	1'-2"	8'-9"	6	20	16'-4"	6	11	1'-6"	4	17	16'-4"	4	38	24'-6"	6	50	6"	8'-3"	6	20	1'-3"	3'-5"	3'-1"	6'-6"	6	19	1'-3"	5'-4"	3'-1"	8'-5"	6	19	1'-3"	8'-4"	3'-1"	11'-5"	4	17	6'-1"	8'-3"	18
19	2'-6"	1'-8"	9'-4"	6	17	16'-10"	6	12	1'-6"	4	17	16'-10"	4	38	24'-6"	6	30	10"	8'-10"	7	17	1'-6"	4'-10"	3'-6"	8'-4"	7	16	1'-6"	6'-5"	3'-6"	9'-11"	7	16	1'-6"	10'-5"	3'-6"	13'-11"	4	17	6'-4"	8'-6"	19
20	2'-10"	1'-8"	9'-11"	6	19	17'-10"	6	12	1'-6"	4	17	17'-10"	4	40	24'-6"	6	34	9"	9'-5"	7	19	1'-4"	4'-10"	3'-10"	8'-8"	7	18	1'-4"	7'-5"	3'-10"	11'-3"	7	18	1'-4"	11'-5"	3'-10"	15'-3"	4	17	6'-7"	8'-9"	20
21	3'-2"	1'-8"	10'-7"	6	17	18'-10"	6	13	1'-6"	4	17	18'-10"	4	44	24'-6"	6	38	8"	10'-1"	8	17	1'-6"	5'-11"	4'-2"	10'-1"	8	16	1'-6"	9'-1"	4'-2"	13'-3"	8	16	1'-6"	13'-1"	4'-2"	17'-3"	4	17	6'-11"	9'-1"	21
22	3'-6"	1'-8"	11'-2"	6	19	19'-10"	6	14	1'-6"	4	17	19'-10"	4	44	24'-6"	6	43	7"	10'-8"	8	19	1'-4"	6'-1"	4'-7"	10'-8"	8	18	1'-4"	9'-1"	4'-7"	13'-8"	8	18	1'-4"	14'-1"	4'-7"	18'-8"	4	17	7'-2"	9'-4"	22
23	3'-11"	2'-2"	11'-11"	6	20	20'-4"	6	14	1'-6"	4	17	20'-4"	4	48	24'-6"	6	34	9"	11'-5"	8	20	1'-3"	6'-7"	5'-0"	11'-7"	8	19	1'-3"	9'-7"	5'-0"	14'-7"	8	19	1'-3"	14'-7"	5'-0"	19'-7"	4	17	7'-6"	9'-8"	23
24	4'-3"	2'-2"	12'-7"	6	19	21'-4"	6	15	1'-6"	4	17	21'-4"	4	48	24'-6"	6	38	8"	12'-1"	9	19	1'-4"	7'-8"	5'-4"	13'-0"	9	18	1'-4"	11'-3"	5'-4"	16'-7"	9	18	1'-4"	16'-3"	5'-4"	21'-7"	4	17	7'-10"	10'-0"	24
25	4'-7"	2'-2"	13'-3"	6	20	22'-4"	6	15	1'-6"	4	17	22'-4"	4	52	24'-6"	6	43	7"	12'-9"	9	20	1'-3"	7'-8"	5'-9"	13'-5"	9	19	1'-3"	11'-3"	5'-9"	17'-0"	9	19	1'-3"	17'-3"	5'-9"	23'-0"	4	17	8'-2"	10'-4"	25
26	4'-11"	2'-2"	14'-1"	7	20	23'-4"	6	17	1'-6"	4	17	23'-4"	4	54	24'-6"	6	43	7"	13'-7"	9	20	1'-3"	8'-2"	6'-1"	14'-3"	9	19	1'-3"	12'-3"	6'-1"	18'-4"	9	19	1'-3"	18'-3"	6'-1"	24'-4"	4	17	8'-8"	10'-10"	26
27	5'-4"	2'-8"	15'-0"	7	20	23'-10"	6	17	1'-6"	4	17	23'-10"	4	56	24'-6"	6	38	8"	14'-6"	9	20	1'-3"	8'-8"	6'-7"	15'-3"	9	19	1'-3"	12'-9"	6'-7"	19'-4"	9	19	1'-3"	18'-9"	6'-7"	25'-4"	4	17	9'-2"	11'-4"	27
28	5'-8"	2'-8"	15'-8"	8	19	24'-10"	6	18	1'-6"	4	17	24'-10"	4	58	24'-6"	6	43	7"	15'-2"	10	19	1'-4"	9'-2"	6'-11"	16'-1"	10	18	1'-4"	13'-9"	6'-11"	20'-8"	10	18	1'-4"	19'-9"	6'-11"	26'-8"	4	17	9'-6"	11'-8"	28
29	6'-0"	2'-8"	16'-7"	8	20	25'-10"	6	18	1'-6"	4	17	25'-10"	4	60	24'-6"	6	43	7"	16'-1"	10	20	1'-3"	9'-8"	7'-3"	16'-11"	10	19	1'-3"	14'-9"	7'-3"	22'-0"	10	19	1'-3"	20'-9"	7'-3"	28'-0"	4	17	10'-1"	12'-3"	29
30	6'-6"	3'-2"	17'-5"	8	17	26'-4"	6	19	1'-6"	4	17	26'-4"	4	62	24'-6"	6	50	6"	16'-11"	11	17	1'-6"	10'-2"	7'-10"	18'-0"	11	16	1'-6"	15'-3"	7'-10"	23'-1"	11	16	1'-6"	21'-3"	7'-10"	29'-1"	4	17	10'-5"	12'-7"	30

QUANTITIES

H	CONCRETE / 25' UNIT C.Y.	STEEL / 25' UNIT LBS.	CONCRETE PER LIN.FT. C.Y.	STEEL PER LIN.FT. LBS.
6	6.31	470	0.25	18
7	7.66	539	0.31	21
8	8.97	588	0.36	23
9	10.24	716	0.41	28
10	11.60	837	0.46	33
11	13.00	993	0.52	39
12	14.71	1227	0.59	49
13	18.06	1369	0.72	54
14	19.73	1661	0.79	66
15	21.35	1734	0.85	69
16	23.01	2105	0.92	84
17	25.89	2276	1.04	91
18	27.84	2797	1.11	111
19	33.46	2833	1.34	113
20	35.73	3284	1.43	131
21	38.15	3883	1.53	155
22	40.47	4432	1.62	177
23	47.87	4703	1.91	188
24	50.67	5649	2.03	225
25	53.50	6246	2.14	249
26	56.70	6855	2.27	274
27	66.26	7078	2.65	283
28	69.47	8624	2.78	344
29	73.33	9416	2.93	376
30	84.26	10025	3.37	401



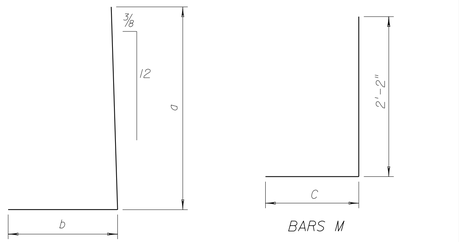
VIEW A-A



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 a 25' 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. Bars F and M are No. 4 Bars. Bars J are as shown.

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

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

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	NAMES	DATES
DRAWN BY	M.I.	3/87
CHECKED BY	M.P.	3/87
DESIGNED BY	.	.
CHECKED BY	.	.
APPROVED BY	A.G.M.	

ENGINEER OF RECORD:

STRUCTURES DESIGN 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 (5.0 KIPS/SQ FT MAX BEARING PRESSURE) 6 FT. TO 30 FT. HEIGHT

PROJECT NAME:

DRAWING NO.: 1 of 1

INDEX NO.: 816

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

RETAINING WALL DATA

WALL DIMENSIONS / REINFORCING STEEL SCHEDULE (Bars A – H)

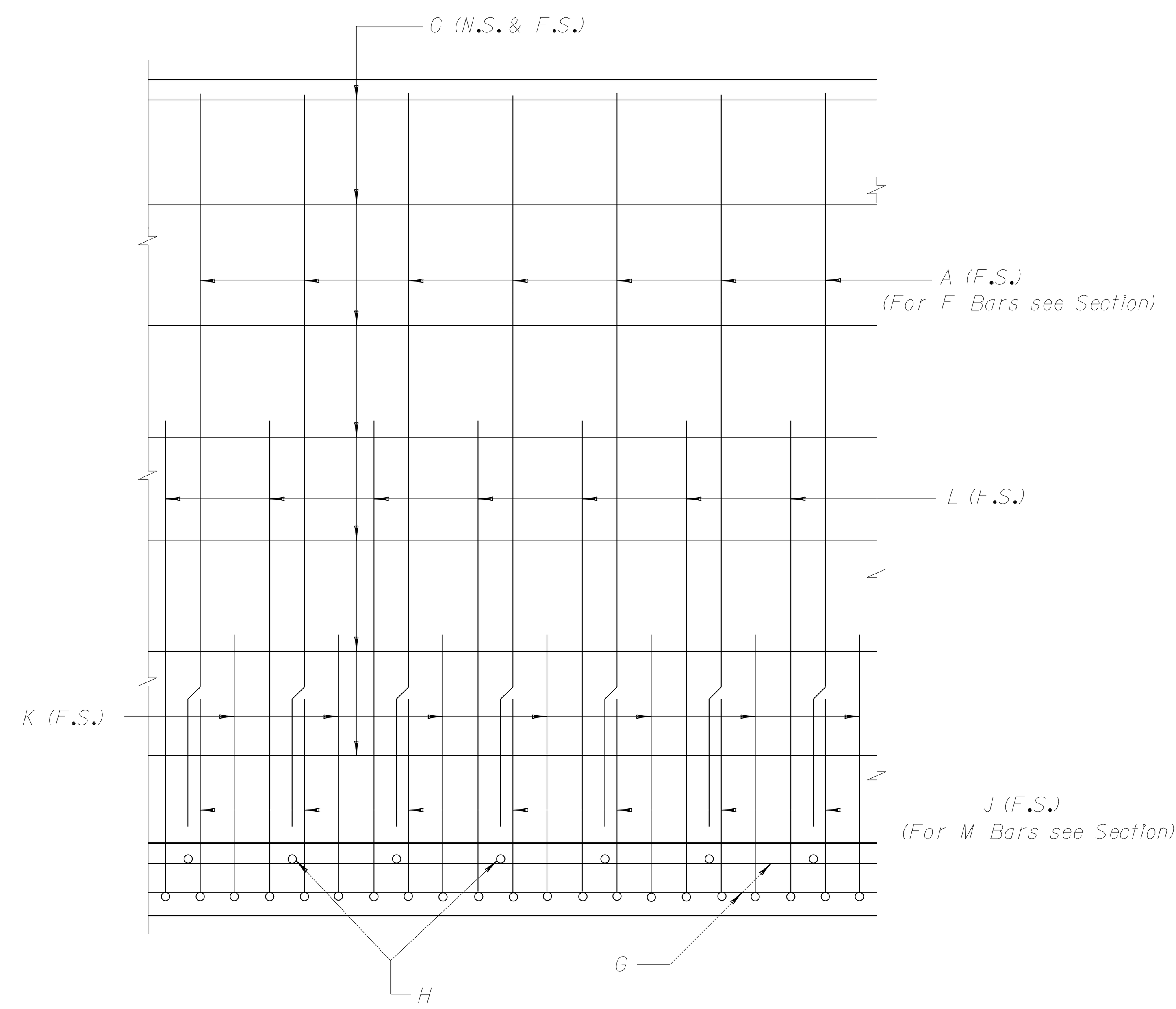
H	B	D	T	BARS A SIZE	BARS A NO.	BARS A LENGTH	BARS D* SIZE	BARS D* NO.	BARS D* LENGTH	BARS F SIZE	BARS F NO.	BARS F LENGTH	BARS G SIZE	BARS G NO.	BARS G LENGTH	BARS H SIZE	BARS H NO.	BARS H SPACING	BARS H LENGTH
6	8"	11"	2'-10"				6	4	1'-6"	4	17	4'-7"	4	14	24'-6"	4	18	1'-5"	2'-4"
7	9"	11"	3'-5"				6	5	1'-6"	4	17	5'-7"	4	16	24'-6"	4	18	1'-5"	2'-11"
8	11"	11"	3'-11"				6	5	1'-6"	4	17	6'-7"	4	16	24'-6"	4	18	1'-5"	3'-5"
9	1'-2"	11"	4'-4"				6	6	1'-6"	4	17	7'-7"	4	20	24'-6"	4	18	1'-5"	3'-10"
10	1'-2"	11"	4'-10"				6	7	1'-6"	4	17	8'-7"	4	22	24'-6"	4	28	11"	4'-4"
11	1'-4"	11"	5'-4"				6	7	1'-6"	4	17	9'-7"	4	22	24'-6"	4	38	8"	4'-10"
12	1'-6"	1'-0"	5'-9"				6	8	1'-6"	4	17	10'-6"	4	26	24'-6"	4	34	9"	5'-3"
13	1'-7"	1'-0"	6'-3"				6	9	1'-6"	4	17	11'-6"	4	28	24'-6"	4	43	7"	5'-9"
14	1'-8"	1'-0"	6'-9"				6	9	1'-6"	4	17	12'-6"	4	28	24'-6"	4	60	5"	6'-3"
15	1'-10"	1'-0"	7'-2"				6	10	1'-6"	4	17	13'-6"	4	32	24'-6"	5	43	7"	6'-8"
16	1'-11"	1'-0"	7'-7"	5	20	14'-6"	6	11	1'-6"	4	17	14'-6"	4	34	24'-6"	5	60	5"	7'-1"
17	2'-2"	1'-2"	8'-2"	6	17	15'-4"	6	11	1'-6"	4	17	15'-4"	4	34	24'-6"	5	50	6"	7'-8"
18	2'-2"	1'-2"	8'-9"	6	20	16'-4"	6	12	1'-6"	4	17	16'-4"	4	38	24'-6"	6	50	6"	8'-3"
19	2'-5"	1'-8"	9'-0"	6	17	16'-10"	6	12	1'-6"	4	17	16'-10"	4	38	24'-6"	5	43	7"	8'-6"
20	2'-9"	1'-8"	9'-6"	6	19	17'-10"	6	13	1'-6"	4	17	17'-10"	4	40	24'-6"	5	50	6"	9'-0"
21	3'-0"	1'-8"	9'-11"	6	17	18'-10"	6	14	1'-6"	4	17	18'-10"	4	42	24'-6"	5	60	5"	9'-5"
22	3'-4"	1'-8"	10'-7"	6	19	19'-10"	6	14	1'-6"	4	17	19'-10"	4	44	24'-6"	6	43	7"	10'-1"
23	3'-8"	2'-2"	11'-3"	6	20	20'-4"	6	15	1'-6"	4	17	20'-4"	4	46	24'-6"	5	50	6"	10'-9"
24	4'-0"	2'-2"	11'-11"	6	19	21'-4"	6	15	1'-6"	4	17	21'-4"	4	48	24'-6"	5	60	5"	11'-5"
25	4'-4"	2'-2"	12'-7"	6	20	22'-4"	6	16	1'-6"	4	17	22'-4"	4	50	24'-6"	6	43	7"	12'-1"
26	4'-7"	2'-2"	13'-5"	7	20	23'-4"	6	17	1'-6"	4	17	23'-4"	4	54	24'-6"	6	50	6"	12'-11"
27	5'-0"	2'-8"	14'-2"	7	20	23'-10"	6	17	1'-6"	4	17	23'-10"	4	54	24'-6"	6	38	8"	13'-8"
28	5'-4"	2'-8"	14'-10"	8	19	24'-10"	6	18	1'-6"	4	17	24'-10"	4	58	24'-6"	6	43	7"	14'-4"
29	5'-8"	2'-8"	15'-8"	8	20	25'-10"	6	18	1'-6"	4	17	25'-10"	4	58	24'-6"	6	50	6"	15'-2"
30	6'-1"	3'-2"	16'-5"	8	17	26'-4"	6	19	1'-6"	4	17	26'-4"	4	62	24'-6"	6	50	6"	15'-11"

REINFORCING STEEL SCHEDULE (Bars J – M)

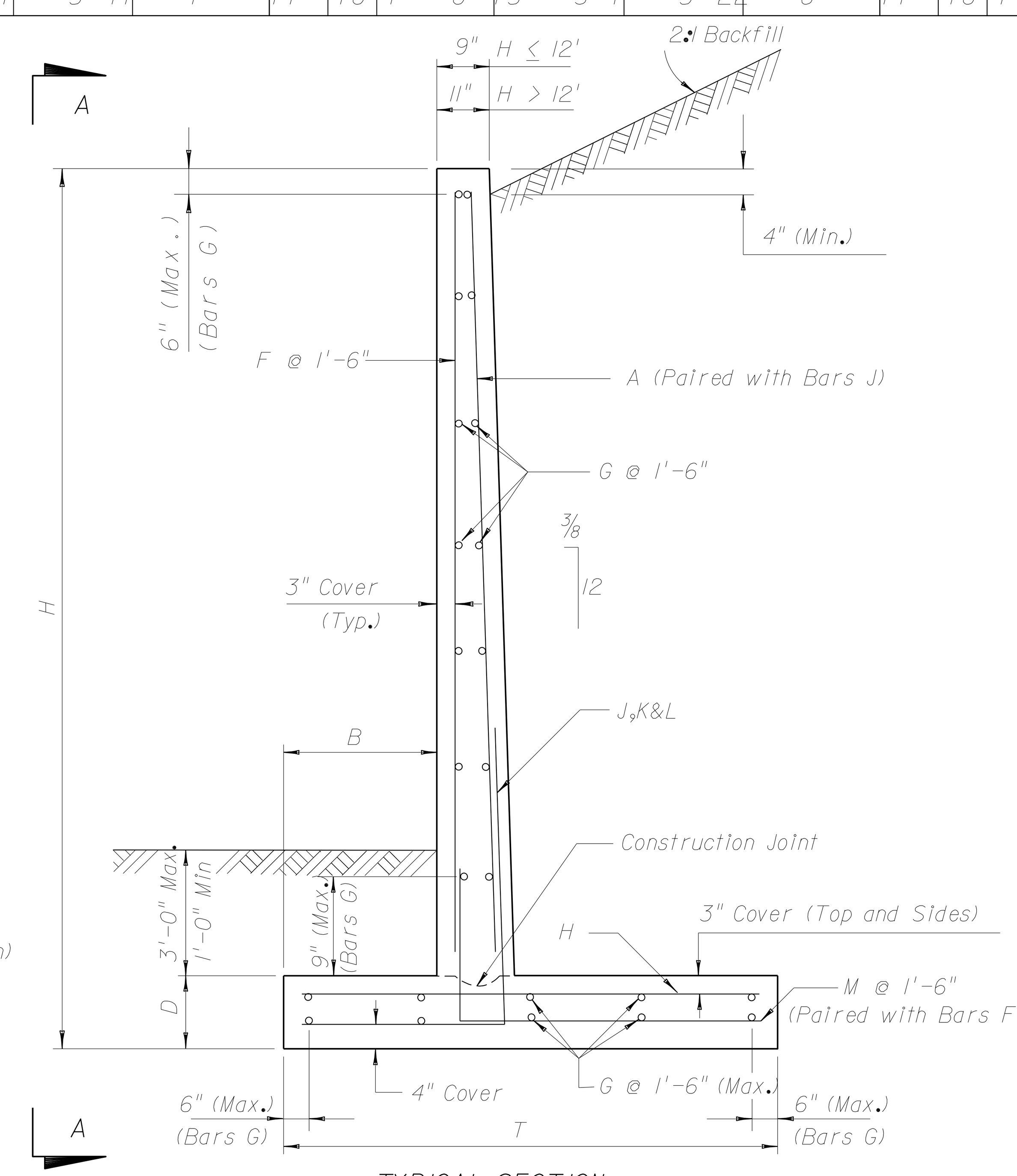
H	BARS J SIZE	BARS J NO.	BARS J SPACING	BARS J a	BARS J b	BARS J LENGTH	BARS K SIZE	BARS K NO.	BARS K SPACING	BARS K a	BARS K b	BARS K LENGTH	BARS L SIZE	BARS L NO.	BARS L SPACING	BARS L a	BARS L b	BARS L LENGTH	BARS M SIZE	BARS M NO.	BARS M C	BARS M LENGTH	H
6	4	25	1'-0"	5'-5"	1'-1"	6'-6"													4	17	1'-8"	3'-10"	6
7	4	25	1'-0"	6'-5"	1'-2"	7'-7"													4	17	2'-2"	4'-4"	7
8	4	25	1'-0"	7'-5"	1'-4"	8'-9"													4	17	2'-6"	4'-8"	8
9	4	28	11"	8'-5"	1'-8"	10'-1"													4	17	2'-8"	4'-10"	9
10	4	30	10"	9'-5"	1'-8"	11'-1"													4	17	3'-2"	5'-4"	10
11	5	25	1'-0"	10'-5"	1'-11"	12'-4"													4	17	3'-6"	5'-8"	11
12	5	34	9"	11'-5"	2'-1"	13'-6"													4	17	3'-9"	5'-11"	12
13	5	34	9"	12'-5"	2'-4"	14'-9"													4	17	4'-2"	6'-4"	13
14	5	43	7"	13'-5"	2'-6"	15'-11"													4	17	4'-7"	6'-9"	14
15	5	25	1'-0"	14'-5"	2'-8"	17'-1"	5	24	1'-0"	5'-9"	2'-8"	8'-5"							4	17	4'-10"	7'-0"	15
16	5	20	1'-3"	2'-10"	2'-9"	5'-7"	5	19	1'-3"	4'-9"	2'-9"	7'-6"	5	19	1'-3"	10'-9"	2'-9"	13'-6"	4	17	5'-2"	7'-4"	16
17	6	17	1'-6"	3'-5"	3'-1"	6'-6"	6	16	1'-6"	5'-4"	3'-1"	8'-5"	6	16	1'-6"	8'-4"	3'-1"	11'-5"	4	17	5'-6"	7'-8"	17
18	6	20	1'-3"	3'-5"	3'-1"	6'-6"	6	19	1'-3"	5'-4"	3'-1"	8'-5"	6	19	1'-3"	8'-4"	3'-1"	11'-5"	4	17	6'-1"	8'-3"	18
19	7	17	1'-6"	4'-10"	3'-5"	8'-3"	7	16	1'-6"	6'-5"	3'-5"	9'-10"	7	16	1'-6"	10'-5"	3'-5"	13'-10"	4	17	6'-1"	8'-3"	19
20	7	19	1'-4"	4'-10"	3'-9"	8'-7"	7	18	1'-4"	7'-5"	3'-9"	11'-2"	7	18	1'-4"	11'-5"	3'-9"	15'-2"	4	17	6'-3"	8'-5"	20
21	8	17	1'-6"	5'-11"	4'-0"	9'-11"	8	16	1'-6"	9'-1"	4'-0"	13'-1"	8	16	1'-6"	13'-1"	4'-0"	17'-1"	4	17	6'-5"	8'-7"	21
22	8	19	1'-4"	6'-1"	4'-5"	10'-6"	8	18	1'-4"	9'-1"	4'-5"	13'-6"	8	18	1'-4"	14'-1"	4'-5"	18'-6"	4	17	6'-9"	8'-11"	22
23	8	20	1'-3"	6'-7"	4'-9"	11'-4"	8	19	1'-3"	9'-7"	4'-9"	14'-4"	8	19	1'-3"	14'-7"	4'-9"	19'-4"	4	17	7'-1"	9'-3"	23
24	9	19	1'-4"	7'-8"	5'-1"	12'-9"	9	18	1'-4"	11'-3"	5'-1"	16'-4"	9	18	1'-4"	16'-3"	5'-2"	21'-5"	4	17	7'-5"	9'-7"	24
25	9	20	1'-3"	7'-8"	5'-6"	13'-2"	9	19	1'-3"	11'-3"	5'-6"	16'-9"	9	19	1'-3"	17'-3"	5'-6"	22'-9"	4	17	7'-9"	9'-11"	25
26	9	20	1'-3"	8'-2"	5'-9"	13'-11"	9	19	1'-3"	12'-3"	5'-9"	18'-0"	9	19	1'-3"	18'-3"	5'-9"	24'-0"	4	17	8'-4"	10'-6"	26
27	9	20	1'-3"	8'-8"	6'-3"	14'-11"	9	19	1'-3"	12'-9"	6'-3"	19'-0"	9	19	1'-3"	18'-9"	6'-3"	25'-0"	4	17	8'-8"	10'-10"	27
28	10	19	1'-4"	9'-2"	6'-7"	15'-9"	10	18	1'-4"	13'-9"	6'-7"	20'-4"	10	18	1'-4"	19'-9"	6'-7"	26'-4"	4	17	9'-0"	11'-2"	28
29	10	20	1'-3"	9'-8"	6'-11"	16'-7"	10	19	1'-3"	14'-9"	6'-11"	21'-8"	10	19	1'-3"	20'-9"	6'-11"	27'-8"	4	17	9'-6"	11'-8"	29
30	11	17	1'-6"	10'-2"	7'-5"	17'-7"	11	16	1'-6"	15'-3"	7'-5"	22'-8"	11	16	1'-6"	21'-3"	7'-5"	28'-8"	4	17	9'-10"	12'-0"	30

QUANTITIES

H	CONCRETE / 25' UNIT C.Y.	STEEL / 25' UNIT LBS.	CONCRETE PER LIN.FT. C.Y.	STEEL PER LIN.FT. LBS.
6	6.31	470	0.25	18
7	7.66	547	0.31	21
8	8.97	588	0.36	23
9	10.24	716	0.41	28
10	11.60	837	0.46	33
11	13.00	993	0.52	39
12	14.71	1227	0.59	49
13	18.06	1369	0.72	54
14	19.73	1661	0.79	66
15	21.35	1734	0.85	69
16	23.01	2107	0.92	84
17	25.89	2276	1.04	91
18	27.84	2799	1.11	111
19	32.95	2805	1.32	112
20	35.08	3262	1.40	130
21	37.12	3839	1.48	153
22	39.57	4365	1.58	174
23	46.53	4607	1.86	184
24	49.33	5632	1.97	225
25	52.17	6118	2.09	244
26	55.36	6889	2.21	275
27	64.20	6926	2.57	277
28	67.41	8486	2.70	339
29	71.07	9394	2.84	375
30	81.33	9835	3.25	393



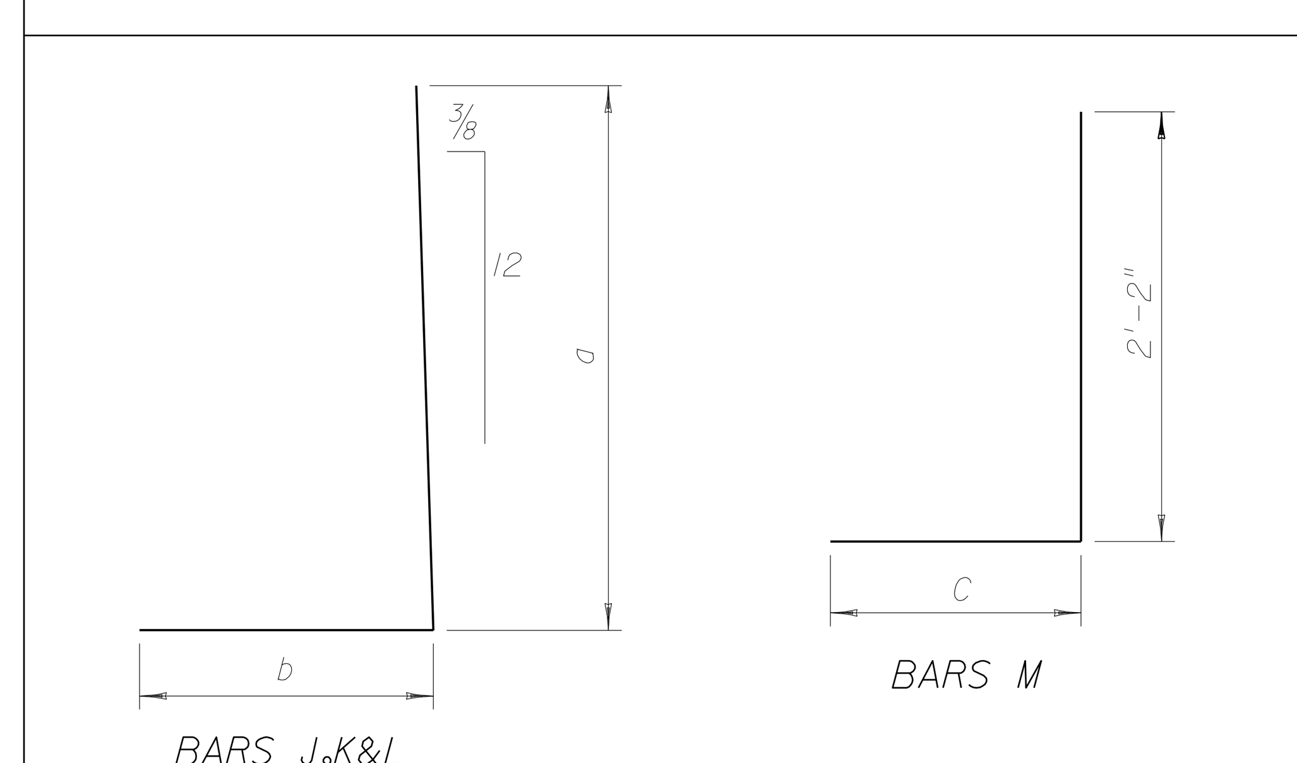
VIEW A-A



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 a 25' 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. Bars F and M are No. 4 Bars. Bars J are as shown.

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

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

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	NAMES	DATES
DRAWN BY	M.J.	3/87
CHECKED BY	M.P.	3/87
DESIGNED BY	-	-
CHECKED BY	-	-
APPROVED BY	A.G.M.	

ENGINEER OF RECORD:
STRUCTURES DESIGN 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 (5.5 KIPS/SQ.FT. MAX. BEARING PRESSURE) 6 FT. TO 30 FT. HEIGHT

PROJECT NAME:

DRAWING NO. 1 of 1

INDEX NO. 817

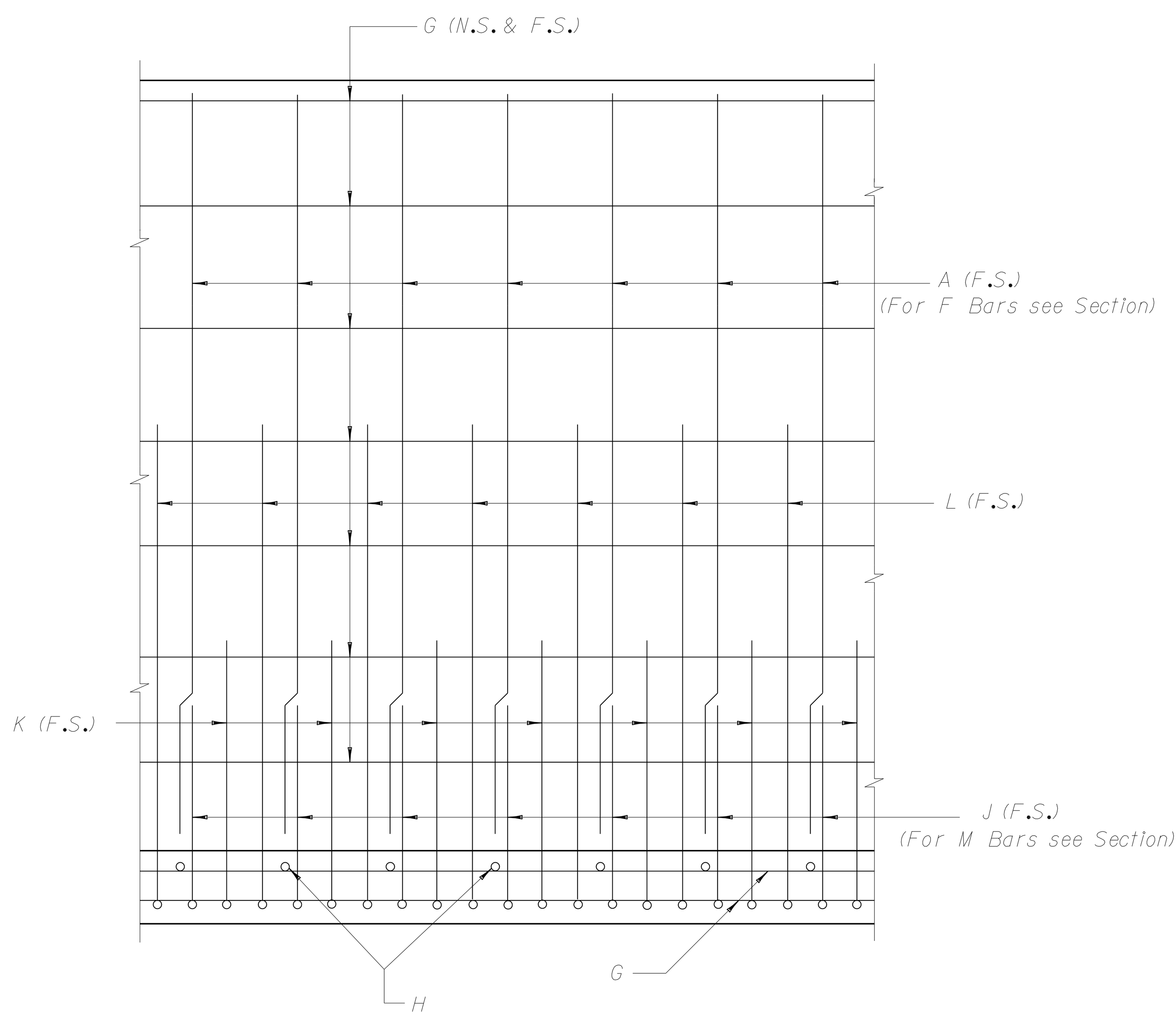
RETAINING WALL DATA

WALL DIMENSIONS				REINFORCING STEEL SCHEDULE																
				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
6	8"	11"	2'-10"				6	4	1'- 6"	4	17	4'- 7"	4	14	24'- 6"	4	18	1'- 5"	2'- 4"
7	9"	11"	3'- 5"				6	4	1'- 6"	4	17	5'- 7"	4	16	24'- 6"	4	18	1'- 5"	2'-11"
8	11"	11"	3'-10"				6	5	1'- 6"	4	17	6'- 7"	4	18	24'- 6"	4	18	1'- 5"	3'- 4"
9	1'- 2"	11"	4'- 4"				6	6	1'- 6"	4	17	7'- 7"	4	20	24'- 6"	4	18	1'- 5"	3'-10"
10	1'- 2"	11"	4'-10"				6	6	1'- 6"	4	17	8'- 7"	4	22	24'- 6"	4	28	11"	4'- 4"
11	1'- 4"	11"	5'- 4"				6	7	1'- 6"	4	17	9'- 7"	4	22	24'- 6"	4	34	9"	4'-10"
12	1'- 6"	1'- 0"	5'- 9"				6	8	1'- 6"	4	17	10'- 6"	4	26	24'- 6"	4	34	9"	5'- 3"
13	1'- 7"	1'- 0"	6'- 3"				6	8	1'- 6"	4	17	11'- 6"	4	28	24'- 6"	4	43	7"	5'- 9"
14	1'- 8"	1'- 0"	6'- 9"				6	9	1'- 6"	4	17	12'- 6"	4	28	24'- 6"	4	61	5"	6'- 3"
15	1'-10"	1'- 0"	7'- 2"				6	10	1'- 6"	4	17	13'- 6"	4	32	24'- 6"	5	43	7"	6'- 8"
16	1'-11"	1'- 0"	7'- 8"	5	21	14'- 6"	6	10	1'- 6"	4	17	14'- 6"	4	34	24'- 6"	5	61	5"	7'- 2"
17	2'- 2"	1'- 2"	8'- 2"	6	17	15'- 4"	6	11	1'- 6"	4	17	15'- 4"	4	36	24'- 6"	5	51	6"	7'- 8"
18	2'- 2"	1'- 2"	8'- 9"	6	21	16'- 4"	6	12	1'- 6"	4	17	16'- 4"	4	38	24'- 6"	6	51	6"	8'- 3"
19	2'- 5"	1'- 8"	9'- 0"	6	17	16'-10"	6	12	1'- 6"	4	17	16'-10"	4	40	24'- 6"	5	43	7"	8'- 6"
20	2'- 9"	1'- 8"	9'- 6"	6	19	17'-10"	6	13	1'- 6"	4	17	17'-10"	4	44	24'- 6"	6	34	9"	9'- 0"
21	3'- 0"	1'- 8"	9'-11"	6	17	18'-10"	6	13	1'- 6"	4	17	18'-10"	4	44	24'- 6"	6	38	8"	9'- 5"
22	3'- 3"	1'- 8"	10'- 4"	6	19	19'-10"	6	14	1'- 6"	4	17	19'-10"	4	46	24'- 6"	6	43	7"	9'-10"
23	3'- 6"	2'- 2"	10'-10"	6	21	20'- 4"	6	15	1'- 6"	4	17	20'- 4"	4	48	24'- 6"	6	34	9"	10'- 4"
24	3'- 9"	2'- 2"	11'- 5"	6	19	21'- 4"	6	15	1'- 6"	4	17	21'- 4"	4	50	24'- 6"	5	61	5"	10'-11"
25	4'- 1"	2'- 2"	12'- 0"	6	21	22'- 4"	6	16	1'- 6"	4	17	22'- 4"	4	50	24'- 6"	5	61	5"	11'- 6"
26	4'- 4"	2'- 2"	12'- 9"	7	21	23'- 4"	6	17	1'- 6"	4	17	23'- 4"	4	54	24'- 6"	7	34	9"	12'- 3"
27	4'- 9"	2'- 8"	13'- 6"	7	21	23'-10"	6	17	1'- 6"	4	17	23'-10"	4	56	24'- 6"	6	38	8"	13'- 0"
28	5'- 1"	2'- 8"	14'- 3"	8	19	24'-10"	6	18	1'- 6"	4	17	24'-10"	4	58	24'- 6"	7	31	10"	13'- 9"
29	5'- 5"	2'- 8"	14'-11"	8	21	25'-10"	6	19	1'- 6"	4	17	25'-10"	4	62	24'- 6"	6	51	6"	14'- 5"
30	5'- 9"	3'- 2"	15'- 9"	8	17	26'- 4"	6	19	1'- 6"	4	17	26'- 4"	4	62	24'- 6"	6	51	6"	15'- 3"

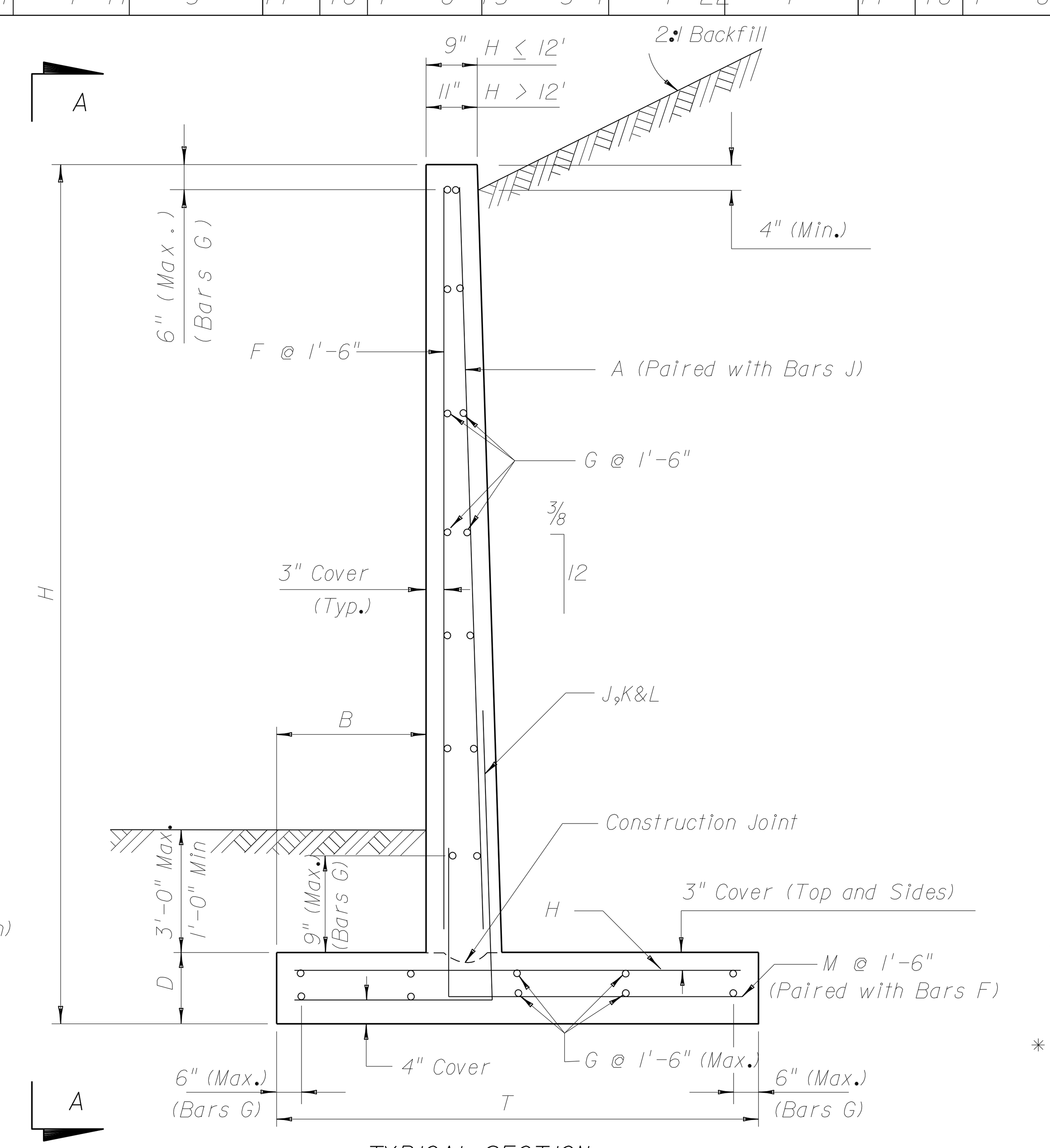
BARS J						BARS K						BARS L						BARS M				
SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	C	LENGTH	H
4	26	1'- 0"	5'- 5"	1'- 1"	6'- 6"													4	17	1'- 8"	3'-10"	6
4	26	1'- 0"	6'- 5"	1'- 3"	7'- 8"													4	17	2'- 2"	4'- 4"	7
4	26	1'- 0"	7'- 5"	1'- 5"	8'-10"													4	17	2'- 5"	4'- 7"	8
4	28	11"	8'- 5"	1'- 8"	10'- 1"													4	17	2'- 8"	4'-10"	9
4	31	10"	9'- 5"	1'- 9"	11'- 2"													4	17	3'- 2"	5'- 4"	10
5	26	1'- 0"	10'- 5"	1'-11"	12'- 4"													4	17	3'- 6"	5'- 8"	11
5	34	9"	11'- 5"	2'- 1"	13'- 6"													4	17	3'- 9"	5'-11"	12
5	34	9"	12'- 5"	2'- 5"	14'-10"													4	17	4'- 2"	6'- 4"	13
5	43	7"	13'- 5"	2'- 6"	15'-11"													4	17	4'- 7"	6'- 9"	14
5	26	1'- 0"	14'- 5"	2'- 9"	17'- 2"	5	25	1'- 0"	5'- 9"	2'- 9"	8'- 6"							4	17	4'-10"	7'- 0"	15
5	21	1'- 3"	2'-10"	2'-10"	5'- 8"	5	20	1'- 3"	4'- 9"	2'-10"	7'- 7"	5	20	1'- 3"	10'- 9"	2'-10"	13'- 7"	4	17	5'- 3"	7'- 5"	16
6	17	1'- 6"	3'- 5"	3'- 1"	6'- 6"	6	16	1'- 6"	5'- 4"	3'- 1"	8'- 5"	6	16	1'- 6"	8'- 4"	3'- 1"	11'- 5"	4	17	5'- 6"	7'- 8"	17
6	21	1'- 3"	3'- 5"	3'- 2"	6'- 7"	6	20	1'- 3"	5'- 4"	3'- 2"	8'- 6"	6	20	1'- 3"	8'- 4"	3'- 2"	11'- 6"	4	17	6'- 1"	8'- 3"	18
7	17	1'- 6"	4'-10"	3'- 5"	8'- 3"	7	16	1'- 6"	6'- 5"	3'- 5"	9'-10"	7	16	1'- 6"	10'- 5"	3'- 5"	13'-10"	4	17	6'- 1"	8'- 3"	19
7	19	1'- 4"	4'-10"	3'- 9"	8'- 7"	7	18	1'- 4"	7'- 5"	3'- 9"	11'- 2"	7	18	1'- 4"	11'- 5"	3'- 9"	15'- 2"	4	17	6'- 3"	8'- 5"	20
8	17	1'- 6"	5'-11"	4'- 1"	10'- 0"	8	16	1'- 6"	9'- 1"	4'- 1"	13'- 2"	8	16	1'- 6"	13'- 1"	4'- 1"	17'- 2"	4	17	6'- 5"	8'- 7"	21
8	19	1'- 4"	6'- 7"	4'- 4"	10'-11"	8	18	1'- 4"	9'- 1"	4'- 4"	13'- 5"	8	18	1'- 4"	14'- 1"	4'- 4"	18'- 5"	4	17	6'- 7"	8'- 9"	22
8	21	1'- 3"	6'- 7"	4'- 8"	11'- 3"	8	20	1'- 3"	9'- 7"	4'- 8"	14'- 3"	8	20	1'- 3"	14'- 7"	4'- 8"	19'- 3"	4	17	6'-10"	9'- 0"	23
9	19	1'- 4"	7'- 8"	4'-11"	12'- 7"	9	18	1'- 4"	10'- 3"	4'-11"	15'- 2"	9	18	1'- 4"	16'- 3"	4'-11"	21'- 2"	4	17	7'- 2"	9'- 4"	24
9	21	1'- 3"	7'- 8"	5'- 3"	12'-11"	9	20	1'- 3"	11'- 3"	5'- 3"	16'- 6"	9	20	1'- 3"	17'- 3"	5'- 3"	22'- 6"	4	17	7'- 5"	9'- 7"	25
9	21	1'- 3"	8'- 2"	5'- 7"	13'- 9"	9	20	1'- 3"	12'- 3"	5'- 7"	17'-10"	9	20	1'- 3"	18'- 3"	5'- 7"	23'-10"	4	17	7'-11"	10'- 1"	26
9	21	1'- 3"	8'- 8"	6'- 0"	14'- 8"	9	20	1'- 3"	12'- 9"	6'- 0"	18'- 9"	9	20	1'- 3"	18'- 9"	6'- 0"	24'- 9"	4	17	8'- 3"	10'- 5"	27
10	19	1'- 4"	9'- 2"	6'- 4"	15'- 6"	10	18	1'- 4"	13'- 9"	6'- 4"	20'- 1"	10	18	1'- 4"	19'- 9"	6'- 4"	26'- 1"	4	17	8'- 8"	10'-10"	28
10	21	1'- 3"	9'- 8"	6'- 9"	16'- 5"	10	20	1'- 3"	14'- 9"	6'- 9"	21'- 6"	10	20	1'- 3"	20'- 9"	6'- 9"	27'- 6"	4	17	9'- 0"	11'- 2"	29
11	17	1'- 6"	10'- 2"	7'- 1"	17'- 3"	11	16	1'- 6"	15'- 3"	7'- 1"	22'- 4"	11	16	1'- 6"	21'- 3"	7'- 1"	28'- 4"	4	17	9'- 6"	11'- 8"	30

QUANTITIES

H	CONCRETE / 25' UNIT	STEEL / 25' UNIT	CONCRETE PER LIN.FT.	STEEL PER LIN.FT.
	C.Y.	LBS.	C.Y.	LBS.
6	6.31	477	0.25	19
7	7.66	554	0.31	22
8	8.90	629	0.36	25
9	10.24	719	0.41	28
10	11.60	847	0.46	33
11	13.00	997	0.52	39
12	14.71	1233	0.59	49
13	18.06	1375	0.72	55
14	19.73	1673	0.79	66
15	21.35	1769	0.85	70
16	23.09	2167	0.92	86
17	25.89	2317	1.04	92
18	27.84	2883	1.11	115
19	32.95	2838	1.32	113
20	35.08	3318	1.40	132
21	37.12	3828	1.48	153
22	39.19	4393	1.57	175
23	45.70	4741	1.83	189
24	48.33	5540	1.93	221
25	51.00	6227	2.04	249
26	54.03	6969	2.16	278
27	62.55	7113	2.50	284
28	65.97	8368	2.64	334
29	69.21	9730	2.77	389
30	79.37	9717	3.17	388



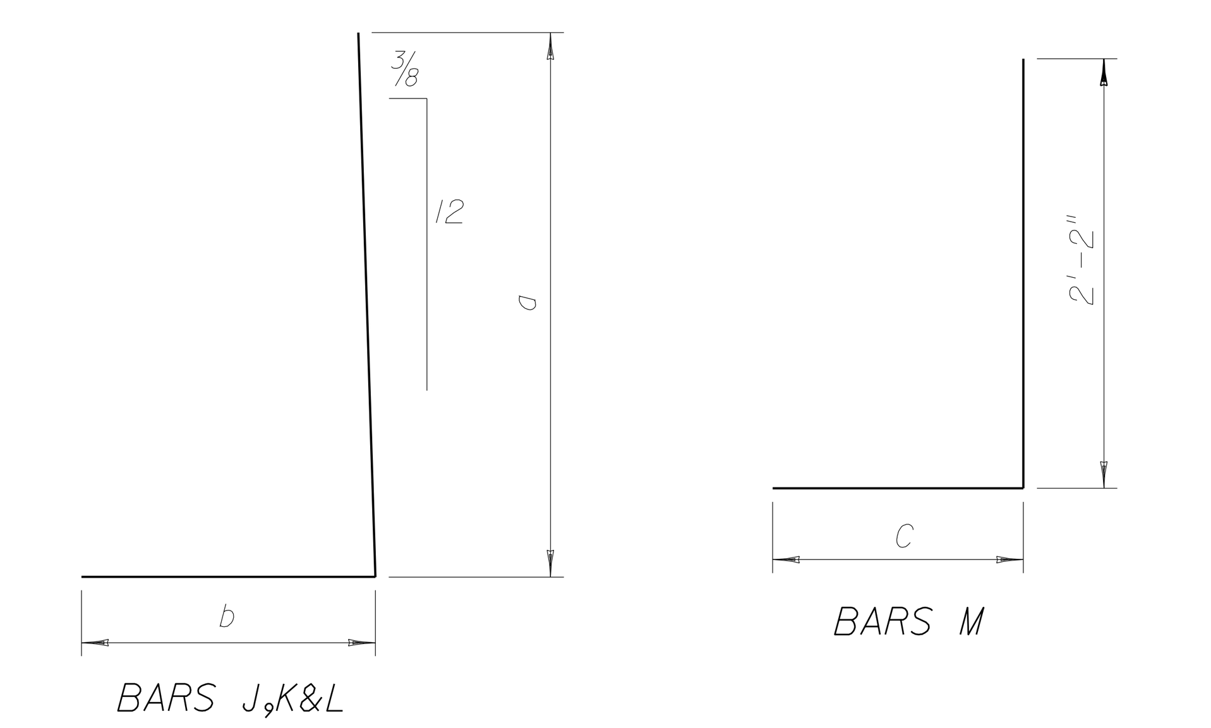
VIEW A-A



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 a 25' 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. Bars F and M are No. 4 Bars. Bars J are as shown.

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

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

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	NAMES	DATES
DRAWN BY	M.J.	3/87
CHECKED BY	M.P.	3/87
DESIGNED BY	-	-
CHECKED BY	-	-
APPROVED BY	A.G.M.	

ENGINEER OF RECORD:
STRUCTURES DESIGN 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 (6.0 KIPS/SQ.FT. MAX. BEARING PRESSURE) 6 FT. TO 30 FT. HEIGHT

PROJECT NAME:

DRAWING NO. 1 of 1

INDEX NO. 818

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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

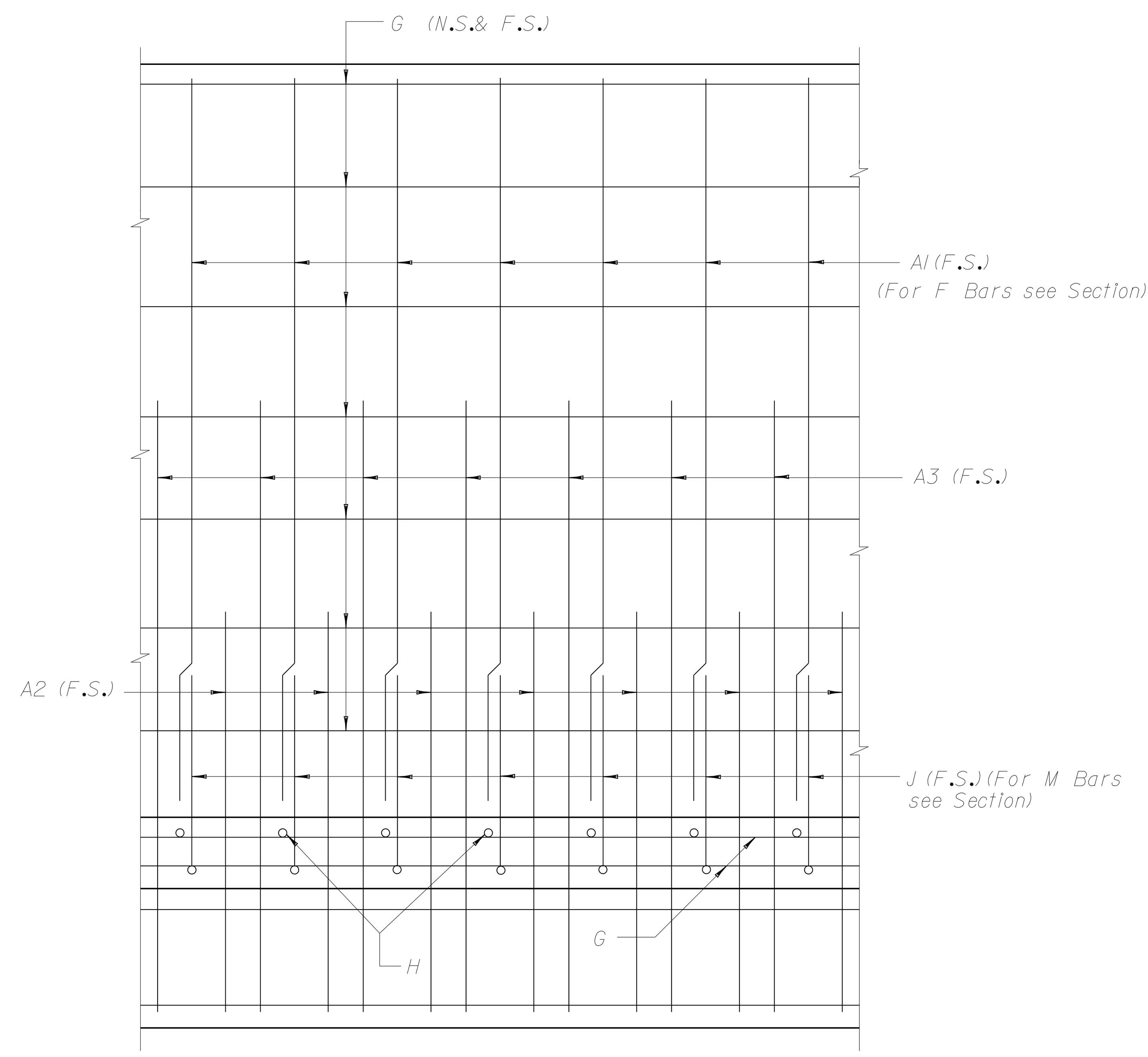
RETAINING WALL DATA

WALL DIMENSIONS				SHEAR KEY DIMENSIONS			REINFORCING STEEL SCHEDULE										
							BARS A1			BARS A2				BARS A3			
H	B	D	T	E	F	G	SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	LENGTH
6	10"	11"	3'-11"														
7	1'- 3"	11"	4'- 8"														
8	1'- 3"	1'- 0"	5'- 4"														
9	1'- 8"	1'- 0"	6'- 3"	1'- 0"	1'- 0"	2'- 1"				4	19	1'- 3"	5'- 8"				
10	2'- 3"	1'- 2"	8'- 3"	1'- 0"	1'- 0"	2'- 8"				4	27	11"	4'-11"				
11	3'- 0"	1'- 2"	10'- 6"	1'- 0"	1'- 0"	3'- 6"				5	22	1'- 1"	5'-11"				
12	3'- 6"	1'- 5"	11'- 6"	1'- 0"	1'- 0"	4'- 0"				5	27	11"	6'- 9"				
13	4'- 0"	1'- 5"	13'- 3"	1'- 0"	1'- 0"	4'- 8"				5	27	11"	7'- 1"				
14	5'- 0"	1'- 8"	16'- 3"	1'- 0"	1'- 0"	5'- 9"				6	24	1'- 0"	7'- 6"				
15	7'- 0"	1'- 8"	22'- 3"	1'- 0"	1'- 0"	7'- 9"	5	20	12'-10"	6	19	1'- 3"	7'-10"	6	19	1'- 3"	10'-10"

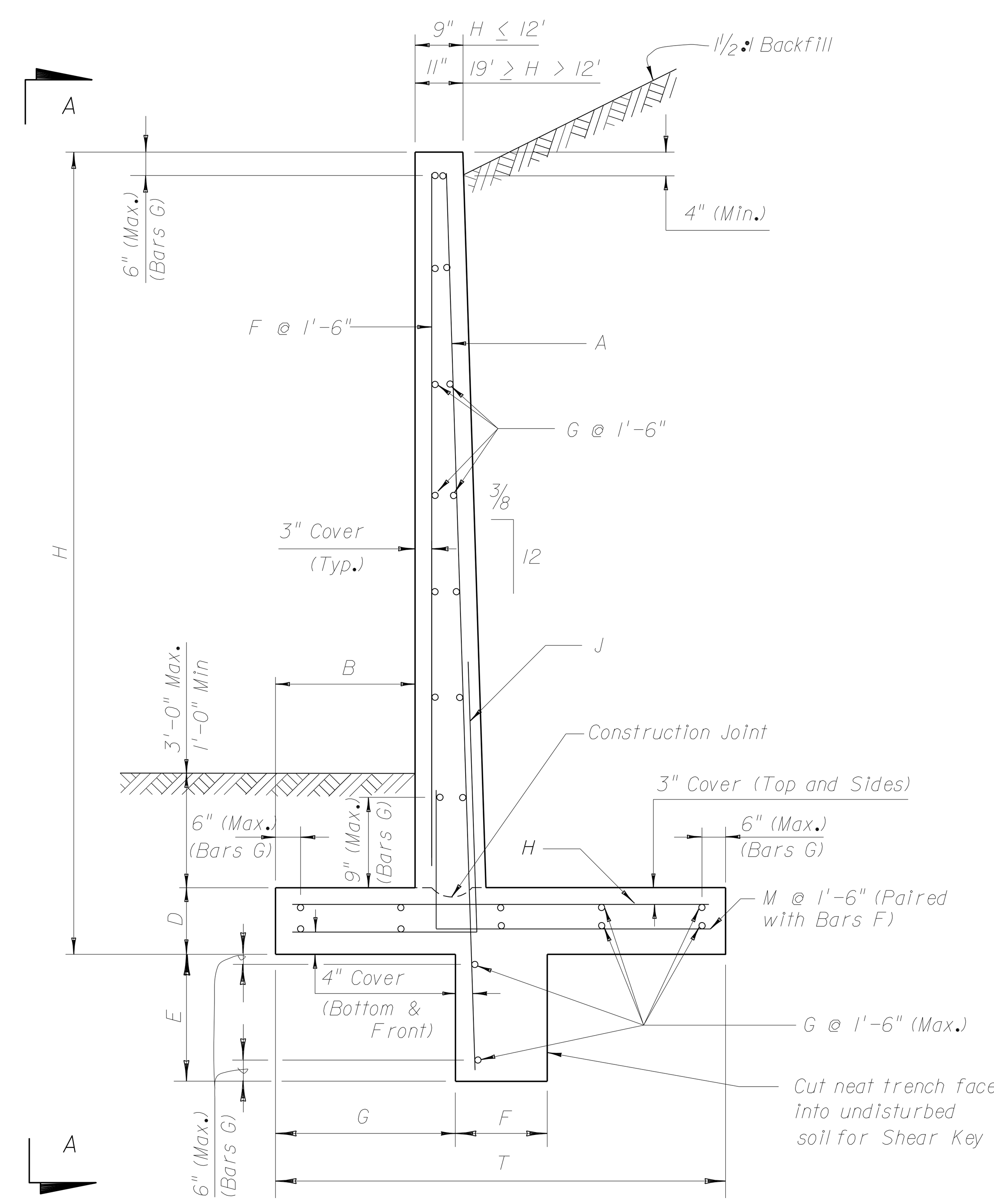
REINFORCING STEEL SCHEDULE (cont.)																								
	BARS D			BARS F			BARS G			BARS H				BARS J						BARS M				
H	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	C	LENGTH	H
6	6	4	1'- 6"	4	17	4'- 7"	4	14	24'- 6"	4	18	1'- 5"	3'- 5"	4	25	1'- 0"	5'- 5"	1'- 3"	6'- 8"	4	17	2'- 7"	4'-11"	6
7	6	5	1'- 6"	4	17	5'- 7"	4	18	24'- 6"	4	18	1'- 5"	4'- 2"	4	25	1'- 0"	6'- 5"	1'- 8"	8'- 1"	4	17	2'-11"	5'- 3"	7
8	6	5	1'- 6"	4	17	6'- 6"	4	18	24'- 6"	4	23	1'- 1"	4'-10"	4	28	11"	7'- 5"	1'- 8"	9'- 1"	4	17	3'- 7"	5'-11"	8
9	6	6	1'- 6"	4	17	7'- 6"	4	24	24'- 6"	4	23	1'- 1"	5'- 9"	4	20	1'- 3"	8'- 5"	2'- 2"	10'- 7"	4	17	4'- 1"	6'- 5"	9
10	6	7	1'- 6"	4	17	8'- 4"	4	28	24'- 6"	4	30	10"	7'- 9"	4	28	11"	9'- 5"	2'- 9"	12'- 2"	4	17	5'- 6"	7'-10"	10
11	6	7	1'- 6"	4	17	9'- 4"	4	32	24'- 6"	4	30	10"	10'- 0"	5	23	1'- 1"	10'- 5"	3'- 7"	14'- 0"	4	17	7'- 0"	9'- 4"	11
12	6	8	1'- 6"	4	17	10'- 1"	4	34	24'- 6"	5	25	1'- 0"	11'- 0"	5	28	11"	11'- 5"	4'- 1"	15'- 6"	4	17	7'- 6"	10'- 4"	12
13	6	8	1'- 6"	4	17	11'- 1"	4	38	24'- 6"	5	25	1'- 0"	12'- 9"	5	28	11"	12'- 5"	4'- 9"	17'- 2"	4	17	8'- 9"	11'- 7"	13
14	6	9	1'- 6"	4	17	11'-10"	4	44	24'- 6"	5	30	10"	15'- 9"	6	26	1'- 0"	13'- 5"	5'-10"	19'- 3"	4	17	10'- 9"	13'- 7"	14
15	6	10	1'- 6"	4	17	12'-10"	4	54	24'- 6"	7	34	9"	21'- 9"	6	20	1'- 3"	3'-11"	7'-10"	11'- 9"	4	17	14'- 9"	17'- 7"	15

QUANTITIES

H	CONCRETE / 25' UNIT	STEEL / 25' UNIT	CONCRETE PER LIN.FT.	STEEL PER LIN.FT.
	C.Y.	LBS.	C.Y.	LBS.
6	7.23	498	0.29	19
7	8.72	613	0.35	24
8	10.51	691	0.42	27
9	13.19	865	0.53	34
10	17.10	1129	0.68	45
11	20.50	1423	0.82	56
12	24.98	1735	1.00	69
13	30.08	1930	1.20	77
14	38.67	2543	1.55	101
15	49.15	3916	1.97	156



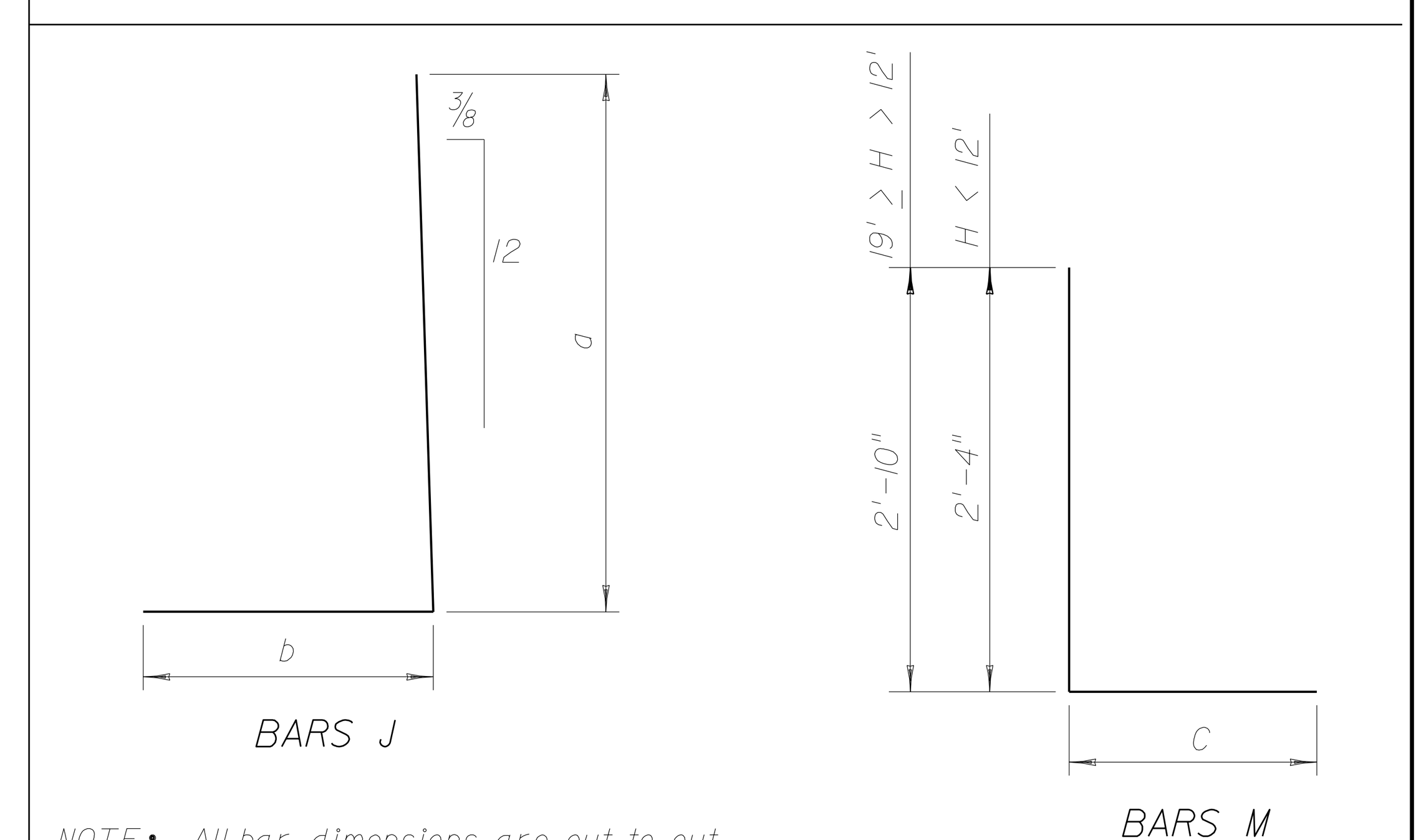
VIEW A-A



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 a 25' Unit shall be equally spaced at each end of the Unit.

BENDING DIAGRAM



NOTE: All bar dimensions are out to out.

NOTE: Bars M Paired with Bars F and Bars A1 Paired with Bars J. Bars F and M are No.4 Bars. Bars J are as shown.

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

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

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	NAMES	DATES
DRAWN BY	M.J.	3/87
CHECKED BY	M.P.	3/87
DESIGNED BY	-	-
CHECKED BY	-	-
APPROVED BY	A.G.M.	

ENGINEER OF RECORD:
STRUCTURES DESIGN 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 (3.0 KIPS/SQ FT MAX BEARING PRESSURE) 6 FT. TO 15 FT. HEIGHT

PROJECT NAME:

DRAWING NO.: 1 of 1

INDEX NO.: 819

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

RETAINING WALL DATA

WALL DIMENSIONS / SHEAR KEY DIMENSIONS / REINFORCING STEEL SCHEDULE (BARS A1, A2, A3)

H	B	D	T	E	F	G	A1 SIZE	A1 NO.	A1 LENGTH	A2 SIZE	A2 NO.	A2 SPACING	A2 LENGTH	A3 SIZE	A3 NO.	A3 SPACING	A3 LENGTH
6	10"	11"	3'-11"														
7	1'-3"	11"	4'-8"														
8	1'-3"	1'-0"	5'-4"														
9	1'-6"	1'-0"	5'-10"	1'-0"	1'-0"	1'-11"				4	19	1'-3"	5'-8"				
10	1'-8"	1'-2"	6'-7"	1'-0"	1'-0"	2'-1"				4	27	11"	4'-11"				
11	1'-10"	1'-2"	7'-5"	1'-0"	1'-0"	2'-4"				5	22	1'-1"	5'-11"				
12	2'-3"	1'-5"	9'-3"	1'-0"	1'-0"	2'-9"				5	27	11"	6'-9"				
13	3'-0"	1'-5"	10'-9"	1'-0"	1'-0"	3'-8"				5	27	11"	7'-1"				
14	3'-6"	1'-8"	11'-9"	1'-3"	1'-1"	4'-3"				6	24	1'-0"	7'-6"				
15	4'-0"	1'-8"	13'-3"	1'-7"	1'-3"	4'-9"	5	20	12'-10"	6	19	1'-3"	7'-10"	6	19	1'-3"	10'-10"
16	4'-6"	2'-2"	14'-9"	1'-4"	1'-1"	5'-4"	5	17	13'-4"	6	16	1'-6"	8'-4"	6	16	1'-6"	12'-4"
17	5'-6"	2'-8"	17'-9"	10"	1'-0"	6'-4"	5	19	13'-10"	6	18	1'-4"	9'-10"	6	18	1'-4"	12'-10"
18	6'-6"	2'-8"	20'-10"	1'-0"	1'-0"	7'-4"	5	17	14'-10"	6	16	1'-6"	10'-10"	6	16	1'-6"	13'-10"
19	7'-6"	2'-8"	23'-10"	1'-1"	1'-0"	8'-5"	5	17	15'-10"	8	16	1'-6"	12'-6"	8	16	1'-6"	19'-6"

REINFORCING STEEL SCHEDULE (BARS D, F, G, H)

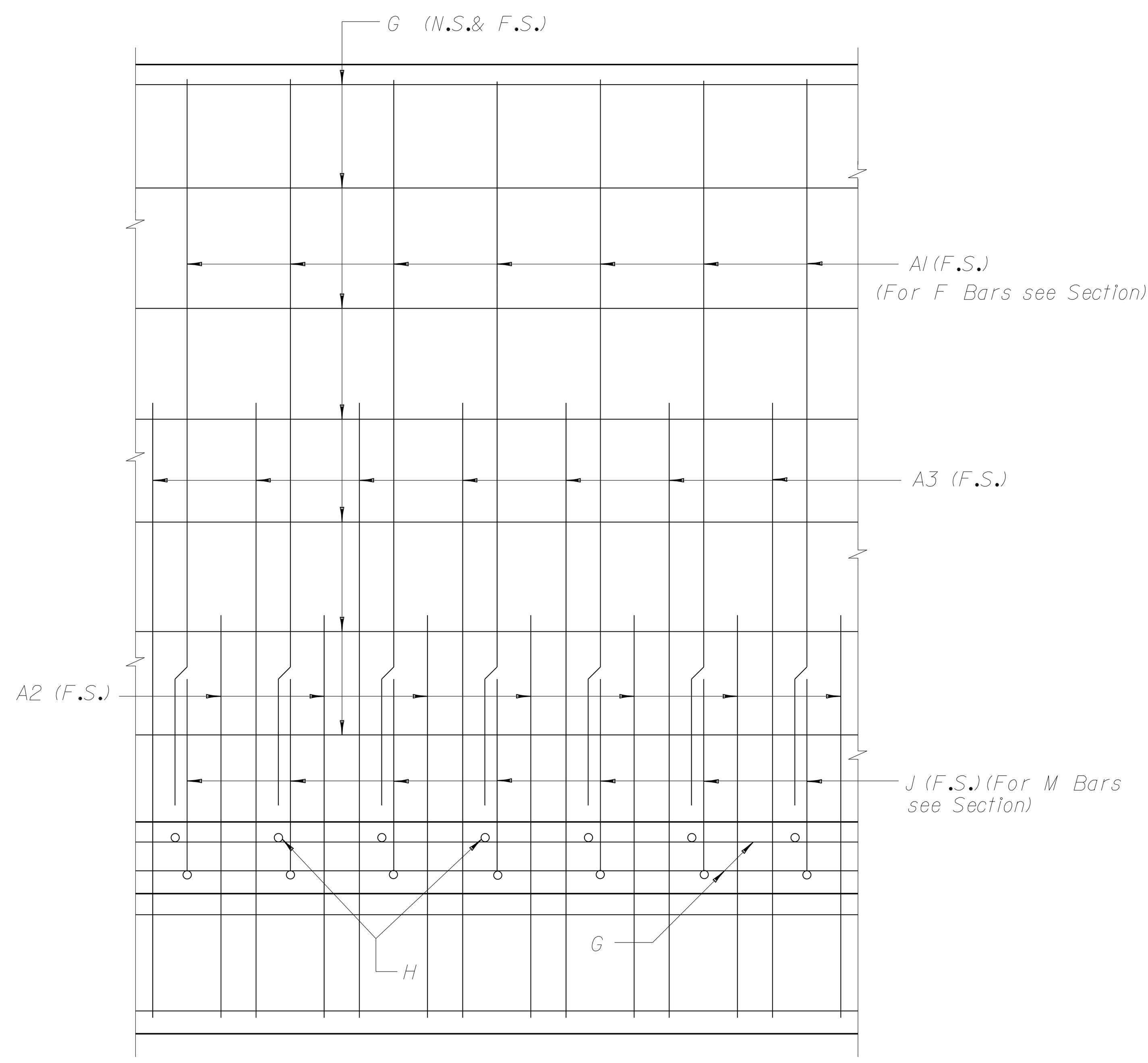
H	D SIZE	D NO.	D LENGTH	F SIZE	F NO.	F LENGTH	G SIZE	G NO.	G LENGTH	H SIZE	H NO.	H SPACING	H LENGTH
6	6	4	1'-6"	4	17	4'-7"	4	14	24'-6"	4	18	1'-5"	3'-5"
7	6	5	1'-6"	4	17	5'-7"	4	18	24'-6"	4	18	1'-5"	4'-2"
8	6	5	1'-6"	4	17	6'-6"	4	18	24'-6"	4	23	1'-1"	4'-10"
9	6	6	1'-6"	4	17	7'-6"	4	24	24'-6"	4	23	1'-1"	5'-4"
10	6	7	1'-6"	4	17	8'-4"	4	26	24'-6"	4	30	10"	6'-1"
11	6	7	1'-6"	4	17	9'-4"	4	28	24'-6"	5	25	1'-0"	6'-11"
12	6	8	1'-6"	4	17	10'-1"	4	32	24'-6"	5	25	1'-0"	8'-9"
13	6	8	1'-6"	4	17	11'-1"	4	34	24'-6"	5	25	1'-0"	10'-3"
14	6	9	1'-6"	4	17	11'-10"	4	38	24'-6"	5	34	9"	11'-3"
15	6	10	1'-6"	4	17	12'-10"	4	42	24'-6"	5	34	9"	12'-9"
16	6	10	1'-6"	4	17	13'-4"	4	44	24'-6"	5	43	7"	14'-3"
17	6	10	1'-6"	4	17	13'-10"	4	48	24'-6"	5	60	5"	17'-3"
18	6	11	1'-6"	4	17	14'-10"	4	54	24'-6"	5	60	5"	20'-4"
19	6	12	1'-6"	4	17	15'-10"	4	60	24'-6"	5	60	5"	23'-4"

REINFORCING STEEL SCHEDULE (BARS J, M)

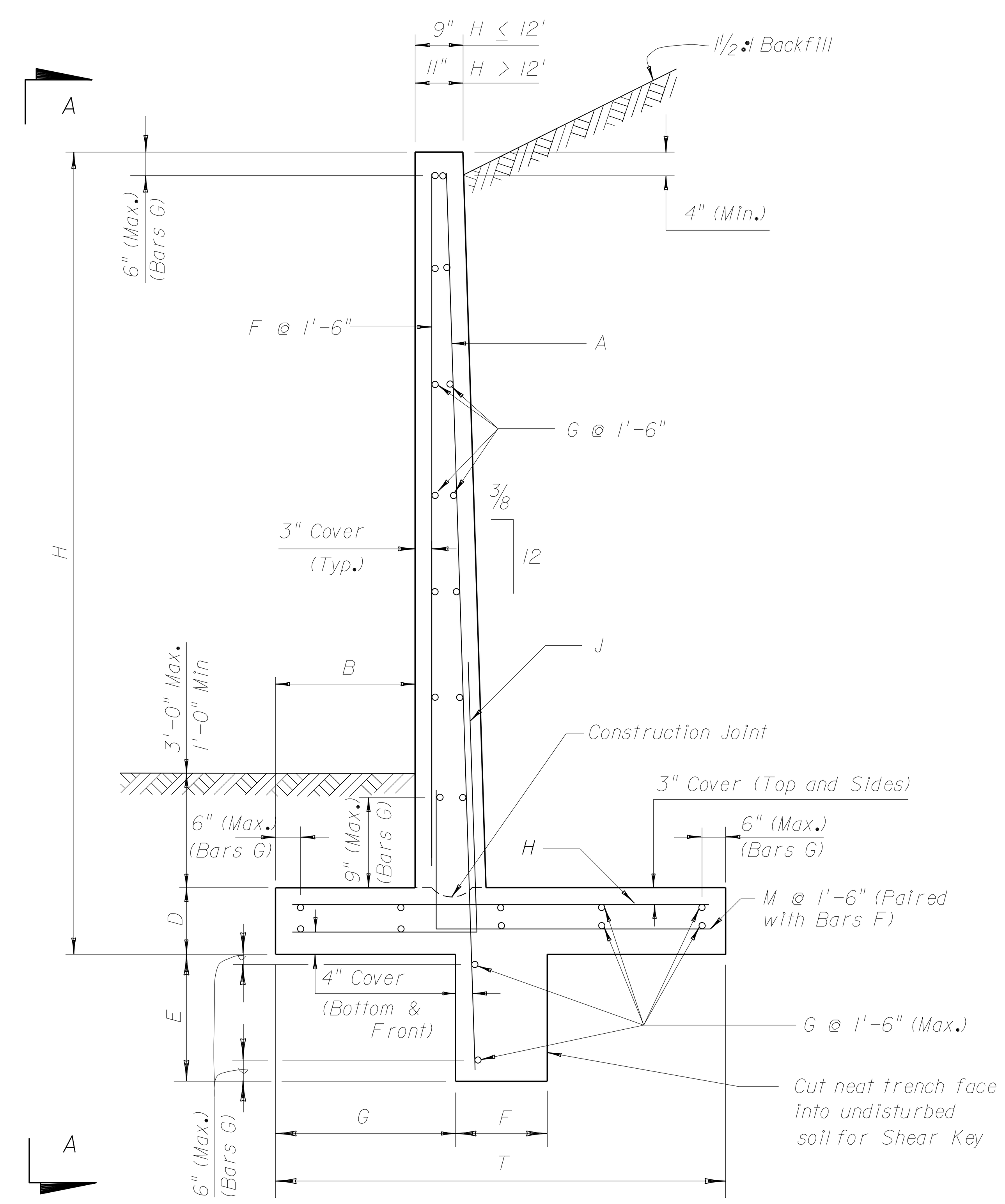
J SIZE	J NO.	J SPACING	a	b	J LENGTH	M SIZE	M NO.	C	M LENGTH	H
4	25	1'-0"	5'-5"	1'-3"	6'-8"	4	17	2'-7"	4'-11"	6
4	25	1'-0"	6'-5"	1'-8"	8'-1"	4	17	2'-11"	5'-3"	7
4	28	11"	7'-5"	1'-8"	9'-1"	4	17	3'-7"	5'-11"	8
4	20	1'-3"	8'-5"	2'-0"	10'-5"	4	17	3'-10"	6'-2"	9
4	28	11"	9'-5"	2'-2"	11'-7"	4	17	4'-5"	6'-9"	10
5	23	1'-1"	10'-5"	2'-5"	12'-10"	4	17	5'-1"	7'-5"	11
5	28	11"	11'-5"	2'-10"	14'-3"	4	17	6'-6"	9'-4"	12
5	28	11"	12'-5"	3'-9"	16'-2"	4	17	7'-3"	10'-1"	13
6	25	1'-0"	13'-5"	4'-4"	17'-9"	4	17	7'-9"	10'-7"	14
6	20	1'-3"	3'-11"	4'-10"	8'-9"	4	17	8'-9"	11'-7"	15
7	17	1'-6"	5'-4"	5'-4"	10'-8"	4	17	9'-9"	13'-7"	16
7	19	1'-4"	7'-1"	6'-5"	13'-6"	4	17	11'-9"	15'-7"	17
8	17	1'-6"	8'-9"	7'-5"	16'-2"	4	17	13'-10"	17'-8"	18
9	17	1'-6"	8'-2"	8'-6"	16'-8"	4	17	15'-10"	19'-8"	19

QUANTITIES

H	CONCRETE / 25' UNIT (C.Y.)	STEEL / 25' UNIT (LBS.)	CONCRETE PER LIN.FT. (C.Y.)	STEEL PER LIN.FT. (LBS.)
6	7.23	498	0.29	19
7	8.72	613	0.35	24
8	10.51	691	0.42	27
9	12.81	854	0.51	34
10	15.30	1039	0.61	41
11	17.17	1288	0.69	51
12	22.03	1596	0.88	63
13	26.80	1761	1.07	70
14	32.06	2232	1.28	89
15	36.17	2502	1.45	100
16	45.44	2791	1.82	111
17	59.74	3632	2.39	145
18	68.78	4139	2.75	165
19	77.57	5483	3.10	219



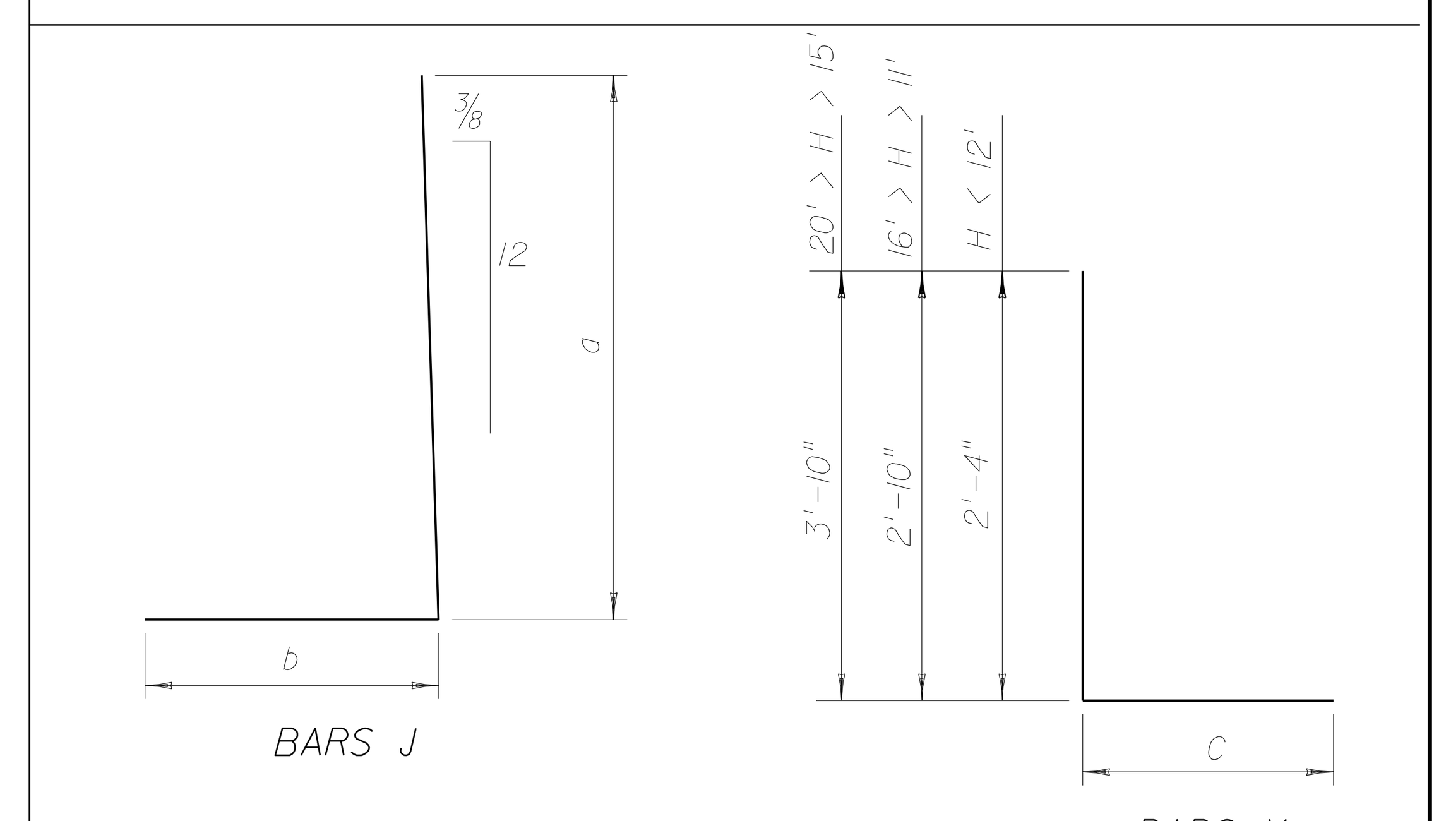
VIEW A-A



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 a 25' Unit shall be equally spaced at each end of the Unit.

BENDING DIAGRAM



NOTE: All bar dimensions are out to out.

NOTE:
Bars M Paired with Bars F and Bars A1 Paired with Bars J. Bars F and M are No.4 Bars. Bars J are as shown.

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

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

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	NAMES	DATES
DRAWN BY	M.J.	3/87
CHECKED BY	M.P.	3/87
DESIGNED BY	-	-
CHECKED BY	-	-
APPROVED BY	A.G.M.	

ENGINEER OF RECORD:
STRUCTURES DESIGN 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 (4.0 KIPS/SQ FT MAX BEARING PRESSURE) 6 FT. TO 19 FT. HEIGHT

PROJECT NAME:

DRAWING NO.: 1 of 1

INDEX NO.: 820

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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

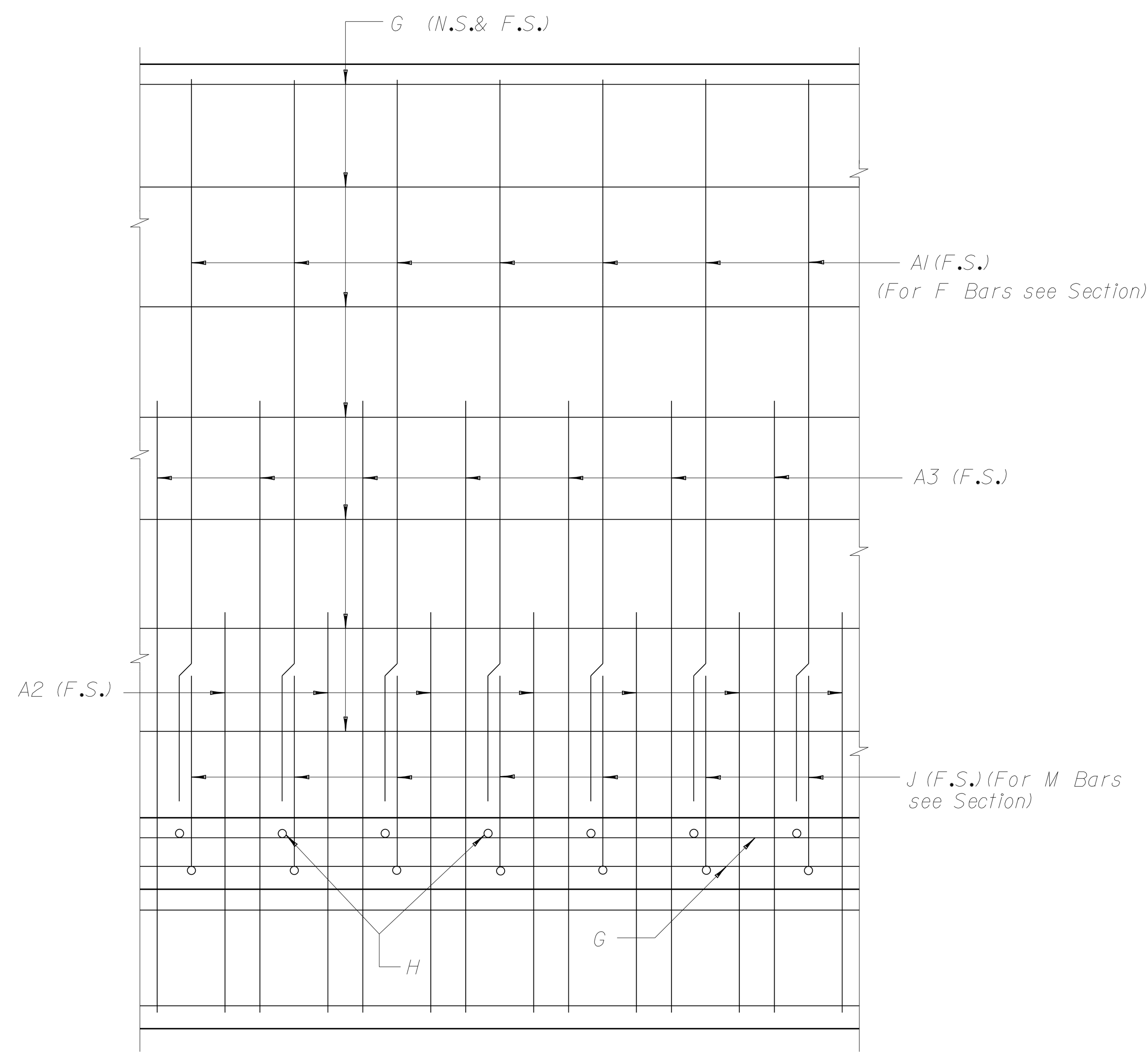
RETAINING WALL DATA

	WALL DIMENSIONS			SHEAR KEY DIMENSIONS			REINFORCING STEEL SCHEDULE																
							BARS A1			BARS A2				BARS A3				BARS D			BARS F		
H	B	D	T	E	F	G	SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH
6	10"	11"	3'-11"															6	4	1'-6"	4	17	4'-7"
7	1'-3"	11"	4'-8"															6	5	1'-6"	4	17	5'-7"
8	1'-3"	1'-0"	5'-4"															6	5	1'-6"	4	17	6'-6"
9	1'-6"	1'-0"	5'-10"	1'-0"	1'-0"	1'-11"				4	19	1'-3"	5'-8"					6	6	1'-6"	4	17	7'-6"
10	1'-8"	1'-2"	6'-7"	1'-0"	1'-0"	2'-1"				4	27	11"	4'-11"					6	7	1'-6"	4	17	8'-4"
11	1'-10"	1'-2"	7'-1"	1'-0"	1'-0"	2'-4"				5	22	1'-1"	5'-11"					6	7	1'-6"	4	17	9'-4"
12	2'-0"	1'-5"	8'-0"	1'-3"	1'-2"	2'-6"				5	27	11"	6'-9"					6	8	1'-6"	4	17	10'-1"
13	2'-3"	1'-5"	8'-6"	1'-5"	1'-2"	2'-11"				5	27	11"	7'-1"					6	8	1'-6"	4	17	11'-1"
14	2'-6"	1'-8"	9'-9"	1'-6"	1'-3"	3'-3"				6	24	1'-0"	7'-6"					6	9	1'-6"	4	17	11'-10"
15	3'-0"	1'-8"	10'-9"	1'-10"	1'-3"	3'-9"	5	20	12'-10"	6	19	1'-3"	7'-10"	6	19	1'-3"	10'-10"	6	10	1'-6"	4	17	12'-10"
16	3'-6"	2'-2"	11'-9"	1'-9"	1'-3"	4'-4"	5	17	13'-4"	6	16	1'-6"	8'-4"	6	16	1'-6"	12'-4"	6	10	1'-6"	4	17	13'-4"
17	4'-0"	2'-8"	13'-3"	1'-4"	1'-4"	4'-10"	5	19	13'-10"	6	18	1'-4"	9'-10"	6	18	1'-4"	12'-10"	6	10	1'-6"	4	17	13'-10"
18	4'-6"	2'-8"	14'-10"	1'-9"	1'-4"	5'-4"	5	17	14'-10"	6	16	1'-6"	10'-10"	6	16	1'-6"	13'-10"	6	11	1'-6"	4	17	14'-10"
19	5'-0"	2'-8"	16'-4"	2'-0"	1'-6"	5'-11"	5	17	15'-10"	8	16	1'-6"	12'-6"	8	16	1'-6"	19'-6"	6	12	1'-6"	4	17	15'-10"
20	5'-6"	2'-11"	18'-1"	2'-0"	1'-6"	6'-7"	6	17	16'-7"	8	16	1'-6"	12'-0"	8	16	1'-6"	16'-0"	6	12	1'-6"	4	17	16'-7"
21	6'-6"	2'-11"	21'-1"	2'-2"	1'-6"	7'-7"	6	19	17'-7"	8	18	1'-4"	13'-4"	8	18	1'-4"	17'-4"	6	13	1'-6"	4	17	17'-7"
22	7'-0"	2'-11"	22'-7"	2'-6"	1'-6"	8'-2"	6	17	18'-7"	9	16	1'-6"	14'-4"	9	16	1'-6"	19'-4"	6	13	1'-6"	4	17	18'-7"
23	8'-0"	3'-2"	25'-8"	2'-6"	1'-8"	9'-2"	7	19	19'-4"	10	18	1'-4"	15'-8"	10	18	1'-4"	20'-8"	6	14	1'-6"	4	17	19'-4"

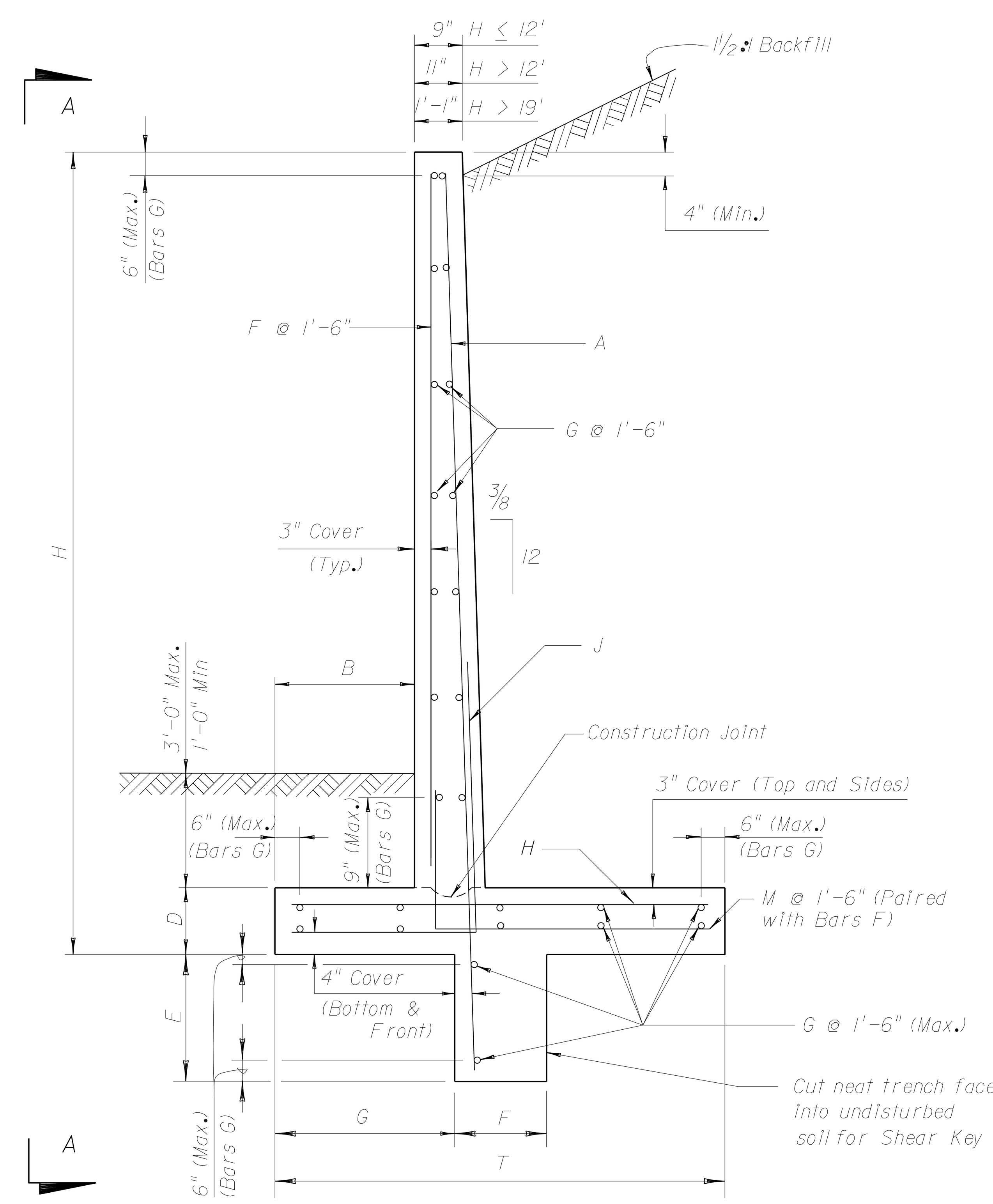
H	BARS G			BARS H				BARS J						BARS M				H
	SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	C	LENGTH	
6	4	14	24'-6"	4	18	1'-5"	3'-5"	4	25	1'-0"	5'-5"	1'-3"	6'-8"	4	17	2'-7"	4'-11"	6
7	4	18	24'-6"	4	18	1'-5"	4'-2"	4	25	1'-0"	6'-5"	1'-8"	8'-1"	4	17	2'-11"	5'-3"	7
8	4	18	24'-6"	4	23	1'-1"	4'-10"	4	28	11"	7'-5"	1'-8"	9'-1"	4	17	3'-7"	5'-11"	8
9	4	24	24'-6"	4	23	1'-1"	5'-4"	4	20	1'-3"	8'-5"	2'-0"	10'-5"	4	17	3'-10"	6'-2"	9
10	4	26	24'-6"	4	30	10"	6'-1"	4	28	11"	9'-5"	2'-2"	11'-7"	4	17	4'-5"	6'-9"	10
11	4	28	24'-6"	5	25	1'-0"	6'-7"	5	23	1'-1"	10'-5"	2'-5"	12'-10"	4	17	4'-9"	7'-1"	11
12	4	30	24'-6"	5	25	1'-0"	7'-6"	5	28	11"	11'-5"	2'-7"	14'-0"	4	17	5'-6"	8'-4"	12
13	4	30	24'-6"	5	28	11"	8'-0"	5	28	11"	12'-5"	3'-0"	15'-5"	4	17	5'-9"	8'-7"	13
14	4	34	24'-6"	6	22	1'-2"	9'-3"	6	25	1'-0"	13'-5"	3'-4"	16'-9"	4	17	6'-9"	9'-7"	14
15	4	38	24'-6"	6	23	1'-1"	10'-3"	6	20	1'-3"	3'-11"	3'-10"	7'-9"	4	17	7'-3"	10'-1"	15
16	4	40	24'-6"	6	30	10"	11'-3"	7	17	1'-6"	5'-4"	4'-4"	9'-8"	4	17	7'-9"	11'-7"	16
17	4	42	24'-6"	7	30	10"	12'-9"	7	19	1'-4"	7'-1"	4'-11"	12'-0"	4	17	8'-9"	12'-7"	17
18	4	44	24'-6"	7	30	10"	14'-4"	8	17	1'-6"	8'-9"	5'-5"	14'-2"	4	17	9'-10"	13'-8"	18
19	4	50	24'-6"	7	30	10"	15'-10"	9	17	1'-6"	8'-1"	6'-0"	14'-1"	4	17	10'-10"	14'-8"	19
20	4	52	24'-6"	8	25	1'-0"	17'-7"	9	17	1'-6"	8'-5"	6'-8"	15'-1"	4	17	12'-1"	16'-5"	20
21	4	58	24'-6"	8	25	1'-0"	20'-7"	9	19	1'-4"	8'-5"	7'-8"	16'-1"	4	17	14'-1"	18'-5"	21
22	4	60	24'-6"	8	25	1'-0"	22'-1"	10	17	1'-6"	10'-3"	8'-3"	18'-6"	4	17	15'-1"	19'-5"	22
23	4	66	24'-6"	8	28	11"	25'-2"	10	19	1'-4"	10'-3"	9'-3"	19'-6"	4	17	17'-2"	21'-6"	23

QUANTITIES

H	CONCRETE / 25' UNIT	STEEL / 25' UNIT	CONCRETE PER LIN.FT.	STEEL PER LIN.FT.
	C.Y.	LBS.	C.Y.	LBS.
6	7.23	498	0.29	19
7	8.72	648	0.35	25
8	10.51	691	0.42	27
9	12.81	854	0.51	34
10	15.30	1039	0.61	41
11	16.81	1275	0.67	51
12	20.81	1512	0.83	60
13	24.45	1615	0.98	64
14	29.45	2024	1.18	80
15	32.60	2291	1.30	91
16	40.11	2536	1.60	101
17	49.50	3144	1.98	125
18	55.20	3446	2.21	137
19	60.83	4624	2.43	184
20	72.97	4917	2.92	196
21	82.82	5775	3.31	231
22	88.87	6576	3.55	263
23	104.70	8616	4.19	344



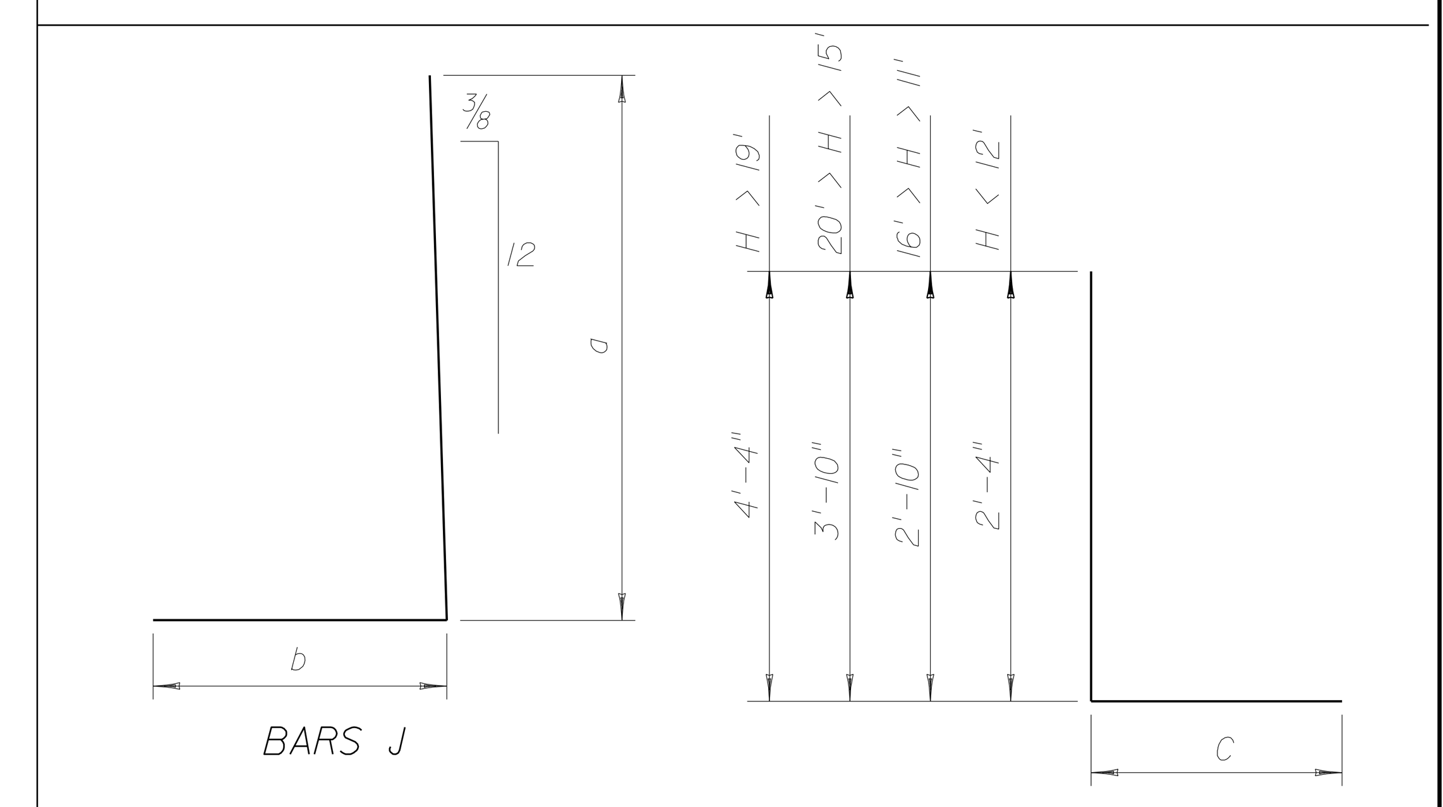
VIEW A-A



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 a 25' Unit shall be equally spaced at each end of the Unit.

BENDING DIAGRAM



NOTE: All bar dimensions are out to out.

NOTE:
Bars M Paired with Bars F and Bars A1 Paired with Bars J. Bars F and M are No.4 Bars. Bars J are as shown.

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

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

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	NAMES	DATES
DRAWN BY	M.P.	3/87
CHECKED BY	M.J.	3/87
DESIGNED BY	-	-
CHECKED BY	-	-
APPROVED BY	A.G.M.	

ENGINEER OF RECORD:
STRUCTURES DESIGN 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 (5.0 KIPS/SQ FT MAX BEARING PRESSURE) 6 FT. TO 23 FT. HEIGHT

PROJECT NAME:

DRAWING NO.: 1 of 1

INDEX NO.: 821

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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

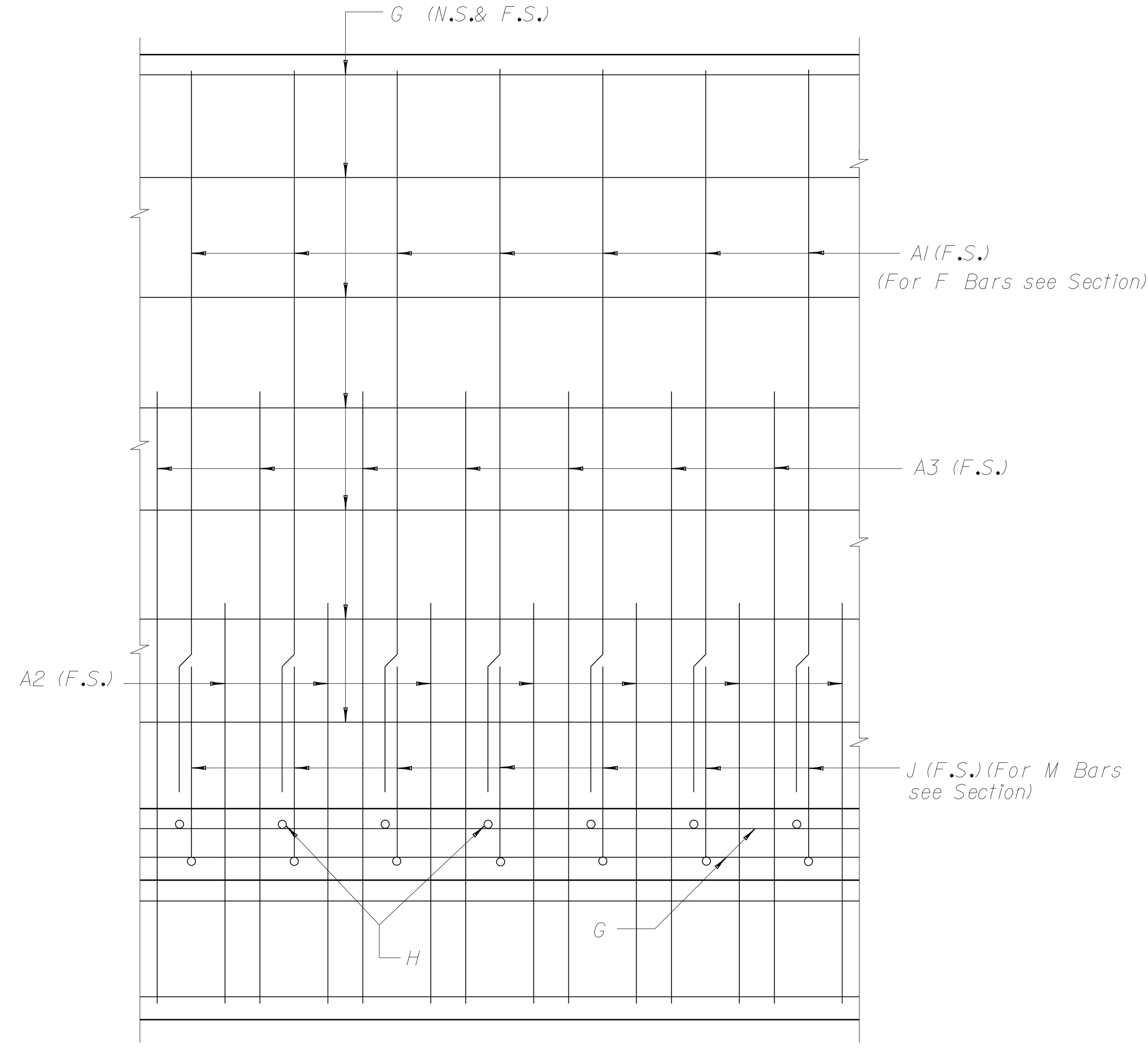
RETAINING WALL DATA

WALL DIMENSIONS				SHEAR KEY DIMENSIONS			REINFORCING STEEL SCHEDULE										
							BARS A1			BARS A2				BARS A3			
H	B	D	T	E	F	G	SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	LENGTH
6	10"	11"	3'-11"														
7	1'-3"	11"	4'-8"														
8	1'-3"	1'-0"	5'-4"														
9	1'-6"	1'-0"	5'-10"	1'-0"	1'-0"	1'-11"				4	19	1'-3"	5'-8"				
10	1'-8"	1'-2"	6'-7"	1'-0"	1'-0"	2'-1"				4	27	11"	4'-11"				
11	1'-10"	1'-2"	7'-1"	1'-0"	1'-0"	2'-4"				5	22	1'-1"	5'-11"				
12	2'-0"	1'-5"	8'-0"	1'-3"	1'-2"	2'-6"				5	27	11"	6'-9"				
13	2'-3"	1'-5"	8'-6"	1'-5"	1'-2"	2'-11"				6	27	11"	7'-1"				
14	2'-3"	1'-8"	9'-6"	1'-6"	1'-1"	3'-0"				6	24	1'-0"	7'-6"				
15	2'-6"	1'-8"	9'-9"	2'-0"	1'-3"	3'-3"	5	20	12'-10"	6	19	1'-3"	7'-10"	6	19	1'-3"	10'-10"
16	3'-0"	2'-2"	10'-9"	1'-9"	1'-3"	3'-10"	5	17	13'-4"	6	16	1'-6"	8'-4"	6	16	1'-6"	12'-4"
17	3'-6"	2'-8"	11'-9"	1'-6"	1'-2"	4'-4"	5	19	13'-10"	6	18	1'-4"	9'-10"	6	18	1'-4"	12'-10"
18	3'-6"	2'-8"	12'-10"	2'-0"	1'-3"	4'-4"	5	17	14'-10"	6	16	1'-6"	10'-10"	6	16	1'-6"	13'-10"
19	4'-0"	2'-8"	13'-4"	2'-4"	1'-4"	4'-11"	5	17	15'-10"	8	16	1'-6"	12'-6"	8	16	1'-6"	19'-6"
20	4'-6"	2'-11"	15'-1"	2'-3"	1'-4"	5'-7"	6	17	16'-7"	8	16	1'-6"	12'-0"	8	16	1'-6"	16'-0"
21	5'-0"	2'-11"	16'-7"	2'-8"	1'-6"	6'-1"	6	19	17'-7"	8	18	1'-4"	13'-4"	8	18	1'-4"	17'-4"
22	5'-6"	2'-11"	18'-1"	3'-0"	1'-7"	6'-8"	6	17	18'-7"	9	16	1'-6"	14'-4"	9	16	1'-6"	19'-4"
23	6'-0"	3'-2"	19'-8"	3'-0"	1'-6"	7'-2"	7	19	19'-4"	10	18	1'-4"	15'-8"	10	18	1'-4"	20'-8"
24	6'-6"	3'-2"	21'-2"	3'-4"	1'-7"	7'-9"	7	17	20'-4"	10	16	1'-6"	15'-11"	10	16	1'-6"	21'-11"
25	7'-6"	3'-2"	24'-2"	3'-6"	1'-7"	8'-9"	7	20	21'-4"	10	10	1'-3"	17'-2"	10	19	1'-3"	21'-2"
26	8'-0"	3'-5"	25'-9"	3'-7"	1'-7"	9'-3"	7	20	22'-1"	11	19	1'-3"	16'-11"	11	19	1'-3"	25'-5"

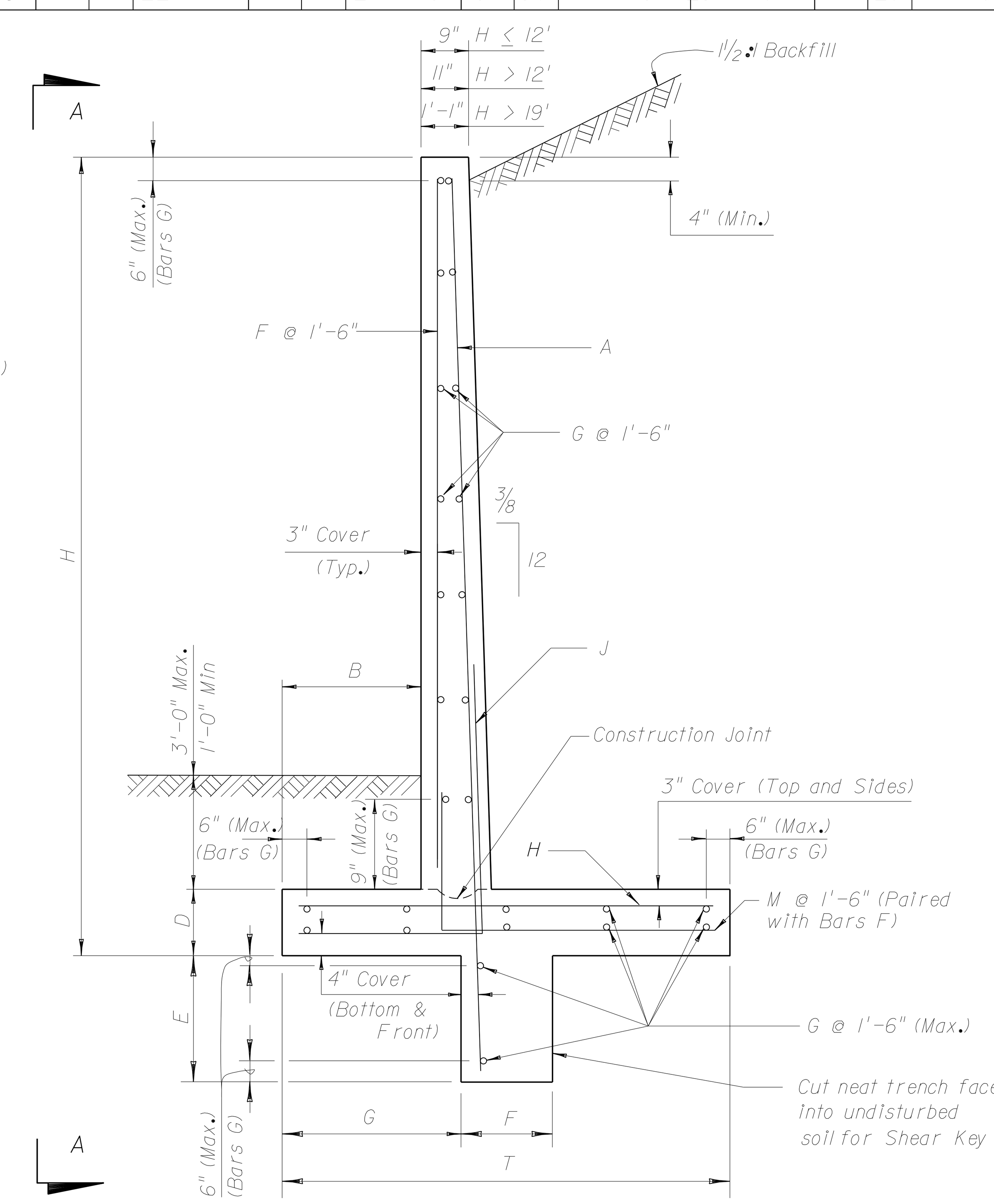
BARS D			BARS F			BARS G			BARS H				BARS J						BARS M				
SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	LENGTH	SIZE	NO.	SPACING	LENGTH	SIZE	NO.	SPACING	a	b	LENGTH	SIZE	NO.	C	LENGTH	H
6	4	1'-6"	4	17	4'-7"	4	14	24'-6"	4	18	1'-5"	3'-5"	4	25	1'-0"	5'-5"	1'-3"	6'-8"	4	17	2'-7"	4'-11"	6
6	5	1'-6"	4	17	5'-7"	4	18	24'-6"	4	18	1'-5"	4'-2"	4	25	1'-0"	6'-5"	1'-8"	8'-1"	4	17	2'-11"	5'-3"	7
6	5	1'-6"	4	17	6'-6"	4	18	24'-6"	4	23	1'-1"	4'-10"	4	28	11"	7'-5"	1'-8"	9'-1"	4	17	3'-7"	5'-11"	8
6	6	1'-6"	4	17	7'-6"	4	24	24'-6"	4	23	1'-1"	5'-4"	4	20	1'-3"	8'-5"	2'-0"	10'-5"	4	17	3'-10"	6'-2"	9
6	7	1'-6"	4	17	8'-4"	4	26	24'-6"	4	30	10"	6'-1"	4	28	11"	9'-5"	2'-2"	11'-7"	4	17	4'-5"	6'-9"	10
6	7	1'-6"	4	17	9'-4"	4	28	24'-6"	4	25	1'-0"	6'-7"	5	23	1'-1"	10'-5"	2'-5"	12'-10"	4	17	4'-9"	7'-1"	11
6	8	1'-6"	4	17	10'-1"	4	30	24'-6"	4	25	1'-0"	7'-6"	5	28	11"	11'-5"	2'-7"	14'-0"	4	17	5'-6"	8'-4"	12
6	8	1'-6"	4	17	11'-1"	4	30	24'-6"	4	28	11"	8'-0"	5	28	11"	12'-5"	3'-0"	15'-5"	4	17	5'-9"	8'-7"	13
6	9	1'-6"	4	17	11'-10"	4	34	24'-6"	5	34	9"	9'-0"	6	25	1'-0"	13'-5"	3'-1"	16'-6"	4	17	6'-9"	9'-7"	14
6	10	1'-6"	4	17	12'-10"	4	36	24'-6"	5	38	8"	9'-3"	6	20	1'-3"	3'-11"	3'-4"	7'-3"	4	17	6'-9"	9'-7"	15
6	10	1'-6"	4	17	13'-4"	4	38	24'-6"	5	43	7"	10'-3"	7	17	1'-6"	5'-4"	3'-10"	9'-2"	4	17	7'-3"	11'-1"	16
6	10	1'-6"	4	17	13'-10"	4	40	24'-6"	5	60	5"	11'-3"	7	19	1'-4"	7'-1"	4'-5"	11'-6"	4	17	7'-9"	11'-7"	17
6	11	1'-6"	4	17	14'-10"	4	42	24'-6"	5	60	5"	12'-4"	8	17	1'-6"	8'-9"	4'-5"	13'-2"	4	17	8'-10"	12'-8"	18
6	12	1'-6"	4	17	15'-10"	4	44	24'-6"	5	60	5"	12'-10"	9	17	1'-6"	8'-1"	5'-0"	13'-1"	4	17	8'-10"	12'-8"	19
6	12	1'-6"	4	17	16'-7"	4	46	24'-6"	6	43	7"	14'-7"	9	17	1'-6"	8'-5"	5'-8"	14'-1"	4	17	10'-1"	14'-5"	20
6	13	1'-6"	4	17	17'-7"	4	53	24'-6"	6	43	7"	16'-1"	9	19	1'-4"	8'-5"	6'-2"	14'-7"	4	17	11'-1"	15'-5"	21
6	13	1'-6"	4	17	18'-7"	4	55	24'-6"	6	43	7"	17'-7"	10	17	1'-6"	10'-3"	6'-9"	17'-0"	4	17	12'-1"	16'-5"	22
6	14	1'-6"	4	17	19'-4"	4	57	24'-6"	6	50	6"	19'-2"	10	19	1'-4"	10'-3"	7'-3"	17'-6"	4	17	13'-2"	17'-6"	23
6	15	1'-6"	4	17	20'-4"	4	61	24'-6"	6	50	6"	20'-8"	11	17	1'-6"	11'-11"	7'-9"	19'-8"	4	17	14'-2"	18'-6"	24
6	15	1'-6"	4	17	21'-4"	4	64	24'-6"	6	50	6"	23'-8"	11	20	1'-3"	11'-11"	8'-10"	20'-9"	4	17	16'-2"	20'-6"	25
6	16	1'-6"	4	17	22'-1"	4	71	24'-6"	6	50	6"	25'-3"	11	20	1'-3"	11'-11"	9'-4"	21'-3"	4	17	17'-3"	21'-7"	26

QUANTITIES

H	CONCRETE / 25' UNIT	STEEL / 25' UNIT	CONCRETE PER LIN.FT.	STEEL PER LIN.FT.
	C.Y.	LBS.	C.Y.	LBS.
6	7.23	498	0.29	19
7	8.72	613	0.35	24
8	10.51	691	0.42	27
9	12.81	854	0.51	34
10	15.30	1039	0.61	41
11	16.81	1214	0.67	48
12	20.81	1442	0.83	57
13	24.45	1619	0.98	64
14	28.83	2029	1.15	81
15	31.25	2251	1.25	90
16	38.10	2433	1.52	97
17	45.77	3003	1.83	120
18	50.42	3249	2.02	129
19	53.53	4277	2.14	171
20	64.87	4507	2.59	180
21	71.36	5227	2.85	209
22	77.64	6012	3.11	240
23	87.42	7817	3.50	312
24	94.13	8112	3.77	324
25	104.79	8879	4.19	355
26	116.75	11024	4.67	440



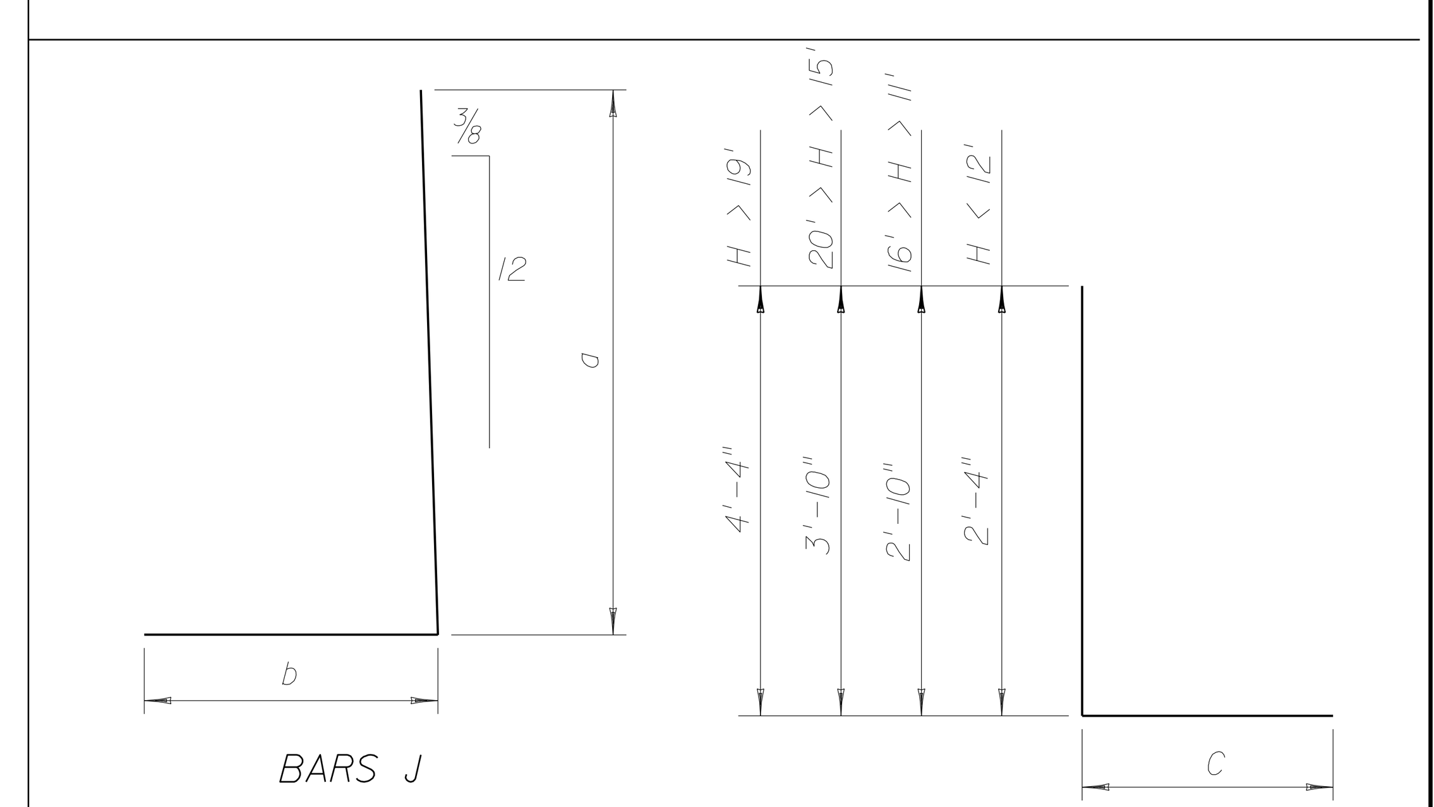
VIEW A-A



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 a 25' Unit shall be equally spaced at each end of the Unit.

BENDING DIAGRAM



NOTE: All bar dimensions are out to out.

NOTE:
Bars M Paired with Bars F and Bars A1 Paired with Bars J. Bars F and M are No.4 Bars. Bars J are as shown.

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

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

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	NAMES	DATES
DRAWN BY	M.J.	3/87
CHECKED BY	M.P.	3/87
DESIGNED BY	-	-
CHECKED BY	-	-
APPROVED BY	A.G.M.	

ENGINEER OF RECORD:
STRUCTURES DESIGN 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 (6.0 KIPS/SQ FT MAX BEARING PRESSURE) 6 FT. TO 26 FT. HEIGHT

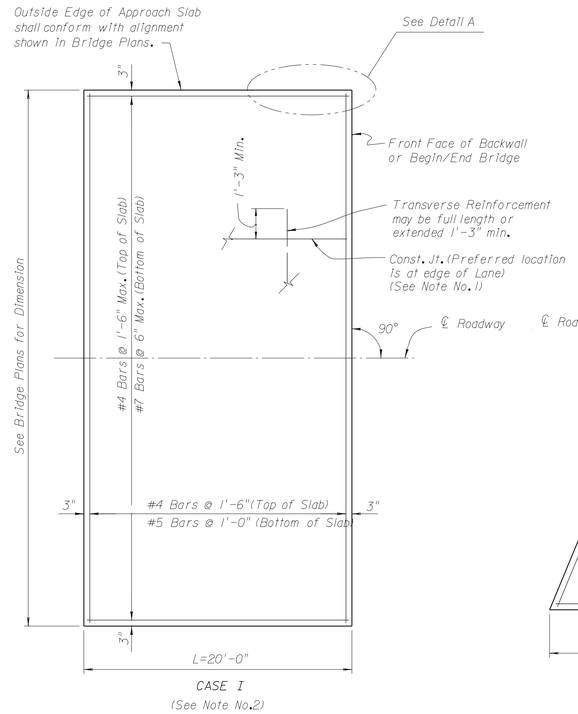
PROJECT NAME:

DRAWING NO. 1 of 1

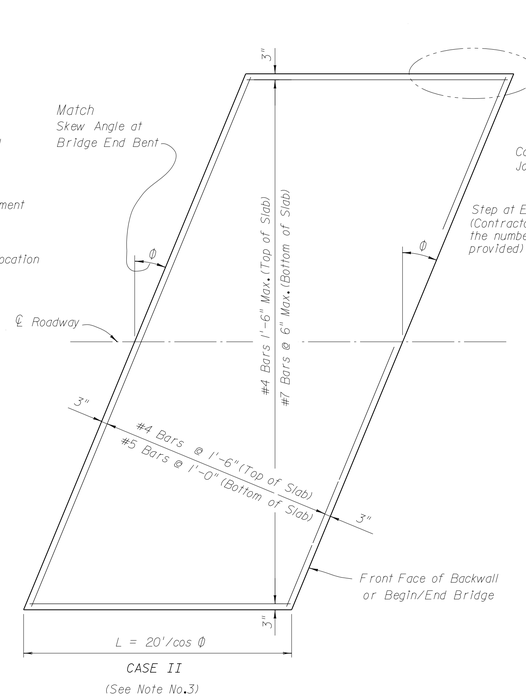
INDEX NO. 822

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$$

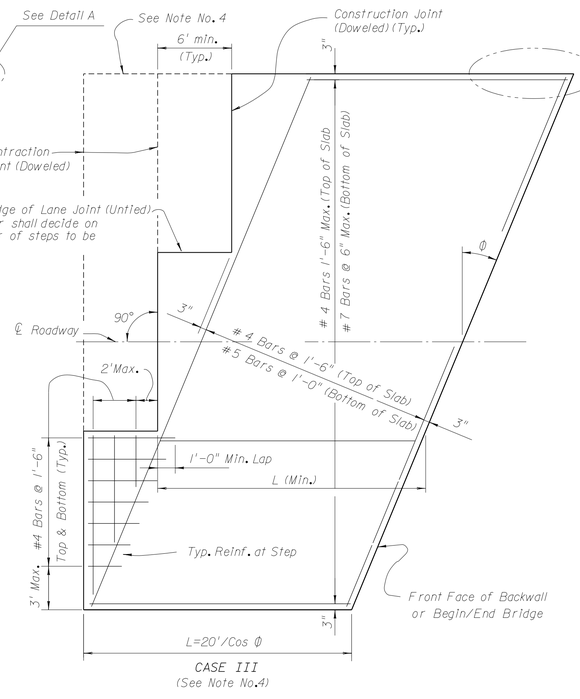
FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.	.	.	.



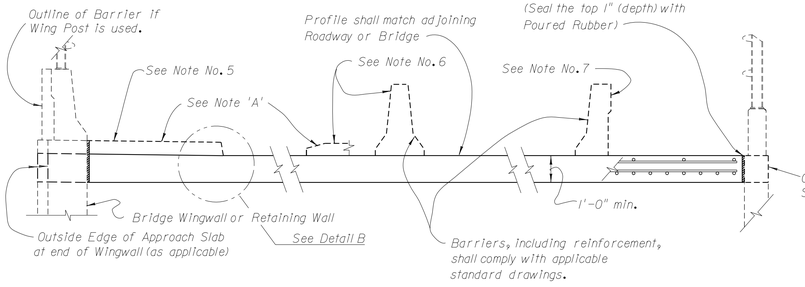
CASE I
(See Note No.2)



CASE II
(See Note No.3)

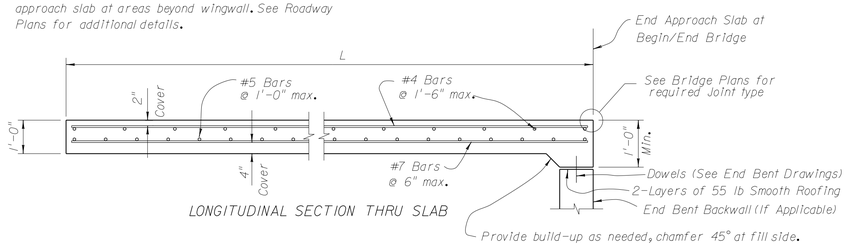


CASE III
(See Note No.4)

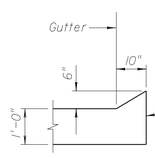


TRANSVERSE SECTION

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.

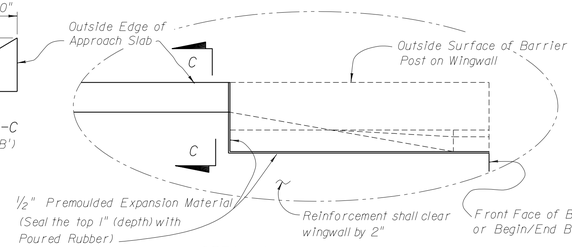


LONGITUDINAL SECTION THRU SLAB

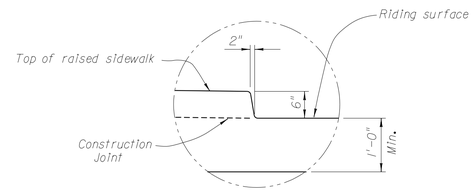


SECTION C-C
(See Note 'B')

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.



DETAIL A
(Part Plan)



DETAIL B

GENERAL NOTES

GENERAL SPECIFICATIONS: Florida Department of Transportation Standard Specifications for Road & Bridge Construction (1991) and Supplements thereto.

DESIGN SPECIFICATIONS: Designed in accordance with the 1989 edition of the AASHTO Specifications for Highway Bridges and Approved Revisions.

DESIGN LOADING: HS 20-44

CONCRETE STRESSES: Class II: f'c = 3400 psi (If environment is slightly aggressive). Class IV: f'c = 3400 psi (If environment is moderately or extremely aggressive). (See Bridge Plans for Environment Classification).

REINFORCING STEEL: Reinforcing Steel shall be Grade 60 (epoxy coated if the environment is extremely aggressive).

SURFACE TREATMENT: The top of the approach slab shall be given the same treatment as the bridge deck.

SUBBASE: The subbase shall consist of the same material shown in the Roadway Plans, and shall be placed parallel to the bottom of the Approach Slab.

PAYMENT: Payment shall be made under: Item No. 360-1 Concrete Approach Slab-each. The work shall comply with the details on this sheet, the Bridge and Roadway Plans, and Section 360. The bid price for approach Slab shall include all items placed on the slab, such as sidewalks, barriers, raised median etc., unless otherwise noted in the Bridge or Roadway Plans. Grooving of the Approach Slab riding surface is a Bridge Pay Item, See Bridge Plans.

Note No. 1: If a longitudinal joint is necessary or allowed by the Engineer, the transverse steel shall be extended as shown.

Note No. 2: Case I indicates an approach slab adjacent to a nonskewed bridge. Unless otherwise indicated, all details shown apply to Cases II and III also.

Note No. 3: Case II indicates an approach slab between a flexible roadway approach pavement and a skewed bridge.

Note No. 4: Case III indicates an approach slab between a rigid roadway approach pavement and a skewed bridge. The Contractor may at his option construct the entire approach slab trapezoidal or provide steps as shown. If steps are selected, the interface (transverse) between the approach slab and roadway pavement, and extension of this interface across the roadway pavement shall be doweled (contraction joint) in accordance with Index No. 305 (Roadway Standards).

Note No. 5: If the bridge or roadway plans indicate a raised sidewalk, this shall be provided on the approach slab.

Note No. 6: If the bridge or roadway plans indicate a barrier wall or a raised median, this shall be provided on the approach slab.

Note No. 7: If the bridge or roadway plans indicate a traffic railing (barrier), this shall be provided on the approach slab. If guardrail connection is required the barrier shall be transitioned as indicated on the standard drawings.

* ESTIMATED QUANTITIES

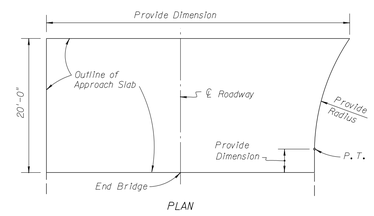
ITEM	UNIT	QUANTITY
Concrete	C.Y.	0.333
Reinforcing Steel	LB.	54.200

* Quantities shown are per square yard (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.

(NOT-IN-CONTRACT)
INSTRUCTIONS TO DESIGNER

Besides providing the plan area (s.y.) of approach slabs in the Bridge Plans, please define slab boundaries, i.e.:



PLAN

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
			90R		

	NAMES	DATES
DRAWN BY	SHM	2-89
CHECKED BY	AJG	2-89
DESIGNED BY	AJG	3-89
CHECKED BY	TJB	3-89
APPROVED BY	AJG	

ENGINEER OF RECORD:
STRUCTURES DESIGN 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

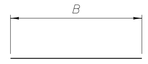
PROJECT NAME:

DRAWING NO.: 1 of 1

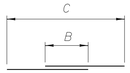
INDEX NO.: 900

$$$$$$SYTIME$$$$$$ $$$$$$$DGNSPECIFICATION$$$$$$$

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

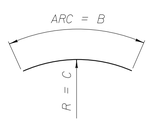


TYPE 1

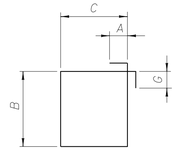


No. of Laps = N

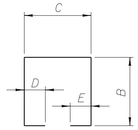
TYPE 2



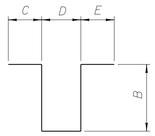
TYPE 3



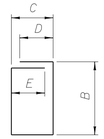
TYPE 4



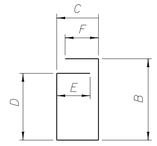
TYPE 5



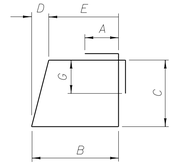
TYPE 6



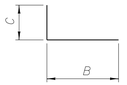
TYPE 7



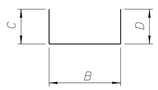
TYPE 8



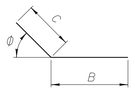
TYPE 9



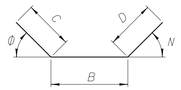
TYPE 10



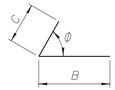
TYPE 11



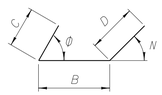
TYPE 12



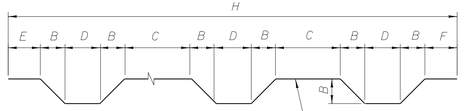
TYPE 13



TYPE 14

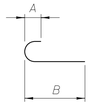


TYPE 15

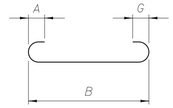


TYPE 16

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

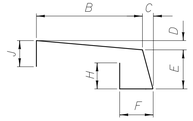


TYPE 17

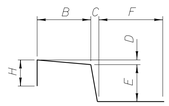


TYPE 18

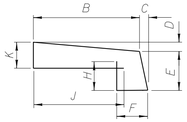
NOTE: Type 17 Bars used in Superstructures shall be tilted to obtain Minimum cover.



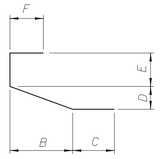
TYPE 19



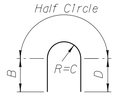
TYPE 20



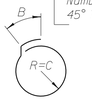
TYPE 21



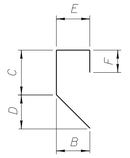
TYPE 22



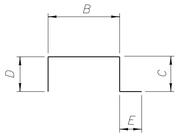
TYPE 23



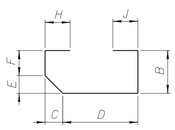
TYPE 24



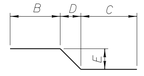
TYPE 25



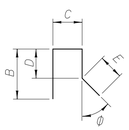
TYPE 26



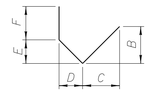
TYPE 27



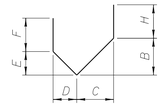
TYPE 28



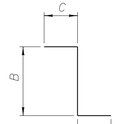
TYPE 29



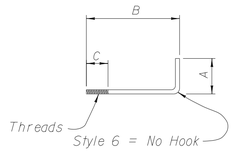
TYPE 30



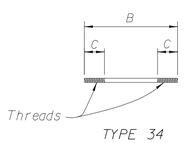
TYPE 31



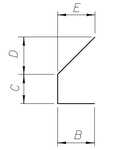
TYPE 32



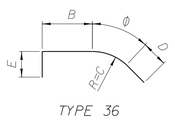
TYPE 33



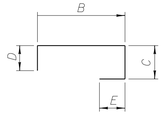
TYPE 34



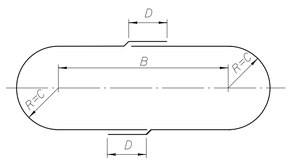
TYPE 35



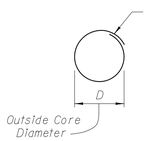
TYPE 36



TYPE 37

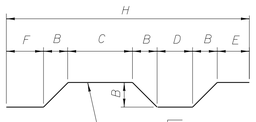


TYPE 38



TYPE 39

C = Pitch
B = Overall Height
Φ = Spirals shall be made of grade 60 billet steel using either plain or deformed bars A.S.T.M. A-615 or Cold drawn steel wire A.S.T.M. A-82.
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.)



TYPE 40

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

TYPE 41

TYPE 42

TYPE 43

NOTE: For Bar Dimensions See REINFORCING BAR LIST Sheet.

HOOK DETAILS

180°

90°

RECOMMENDED END HOOKS
ALL GRADES
D = 6d for #3 thru #8
D = 8d for #9, #10 and #11
D = 10d for #14 and #18

BAR SIZE	180° HOOKS		90° HOOKS
	A OR G	J	A OR G
#3	5"	3"	6"
#4	6"	4"	8"
#5	7"	5"	10"
#6	8"	6"	1'-0"
#7	10"	7"	1'-2"
#8	11"	8"	1'-4"
#9	1'-3"	11¾"	1'-7"
#10	1'-5"	1'-1¼"	1'-10"
#11	1'-7"	1'-2¾"	2'-0"
#14	2'-3"	1'-9¾"	2'-7"
#18	3'-0"	2'-4½"	3'-5"
STYLE	1		3

90°

135°

STIRRUPS
(TIES SIMILAR)

RECOMMENDED STIRRUP & TIE HOOK DIMENSIONS

BAR SIZE	D (IN.)	90° HOOKS	135° HOOKS	
		HOOK A or G	HOOK A or G	APPROX. H
#3	1½"	4"	4"	2½"
#4	2"	4½"	4½"	3"
#5	2½"	6"	5½"	3¾"
#6	4½"	1'-0"	7¾"	4½"
#7	5½"	1'-2"	9"	5¼"
#8	6"	1'-4"	10¼"	6"
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 out to out.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAMES	DATES
DRAWN BY	SHM	2-89
CHECKED BY	AJG	2-89
DESIGNED BY	AJG	3-89
CHECKED BY	TJB	3-89
APPROVED BY	AJG	

ENGINEER OF RECORD:

STRUCTURES DESIGN 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: STANDARD BAR BENDING DETAILS

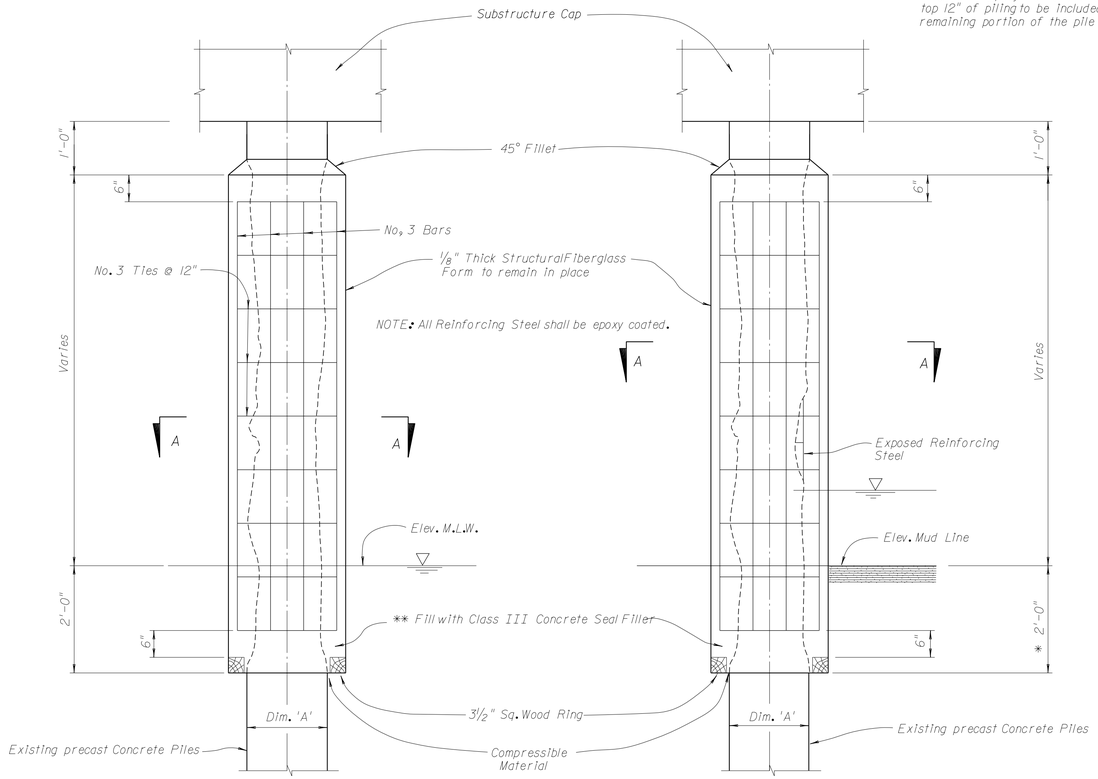
PROJECT NAME:

DRAWING NO. 1 of 1

INDEX NO. 1300

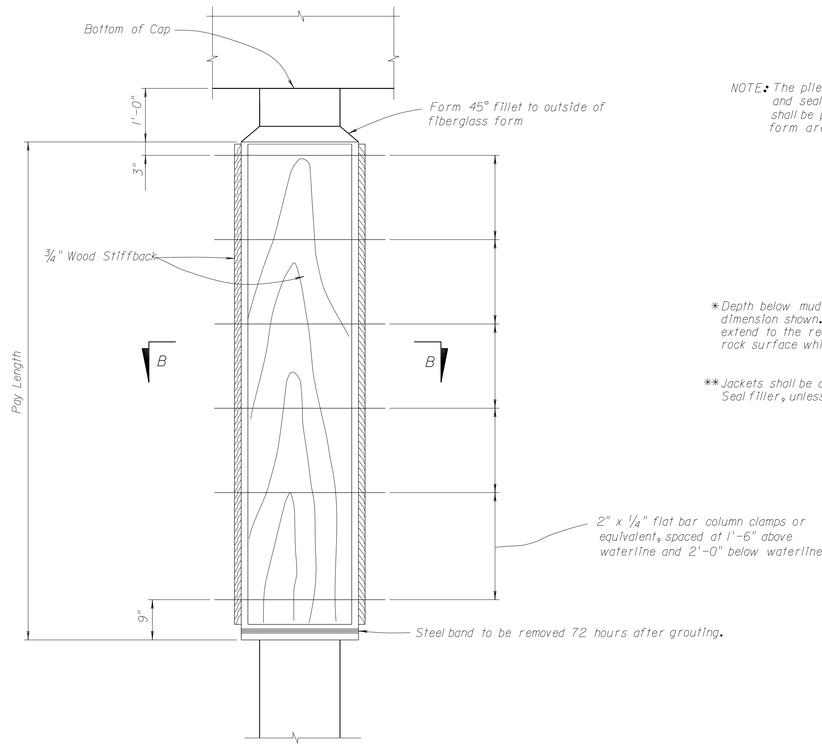
FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.	.	.	.

NOTE: The top 12" of piling shall be restored to the original lines with Epoxy Mortar. The cost of treatment of top 12" of piling to be included in the cost of the remaining portion of the pile jacket.



NOTE: An external band shall be drawn against the wood ring seal during placement of Seal Concrete.

INTEGRAL PILE JACKET TYPE "A"



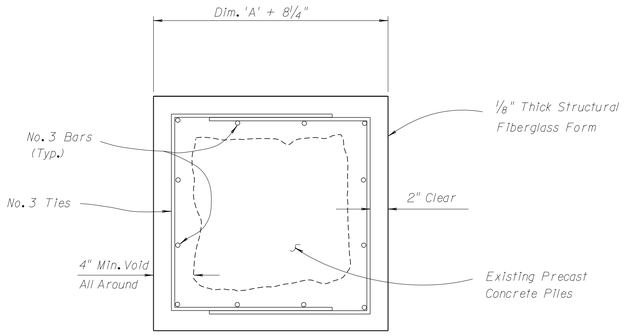
INTEGRAL PILE JACKET TYPE "B"

CONSTRUCTION METHOD DETAIL

NOTE: The pile shall be thoroughly cleaned prior to installing and sealing the fiberglass form. Filler material shall be placed after all sections of the fiberglass form are installed and sealed.

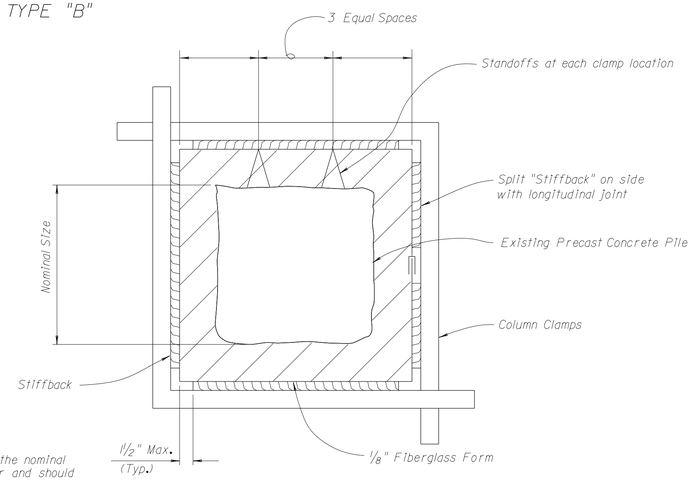
* Depth below mud line unless rock is encountered within the dimension shown. When rock is encountered the jacket shall extend to the required depth below the mud line or to the rock surface whichever is less.

** Jackets shall be dewatered before placing Class III Concrete Seal filler, unless another method is presented and approved.

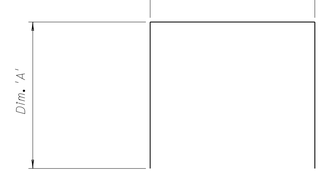


SECTION A-A

NOTE: Jacket size shown in the Summary of Quantities indicates the nominal size of the pile to be jacketed. Actual pile size may be irregular and should be verified in the field by the contractor.



SECTION B-B



NO. 3 BAR TIES

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAMES	DATES
DRAWN BY	WEH	1-87
CHECKED BY	RCB	1-87
DESIGNED BY	.	.
CHECKED BY	.	.
APPROVED BY	RCB	

ENGINEER OF RECORD:

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.
.	.	.

SHEET TITLE: INTEGRAL PILE JACKETS

PROJECT NAME:

DRAWING NO. 1 of 1

INDEX NO. 1400

$STAMP$