

# TRAFFIC OPERATIONS STANDARDS



JANUARY 1980

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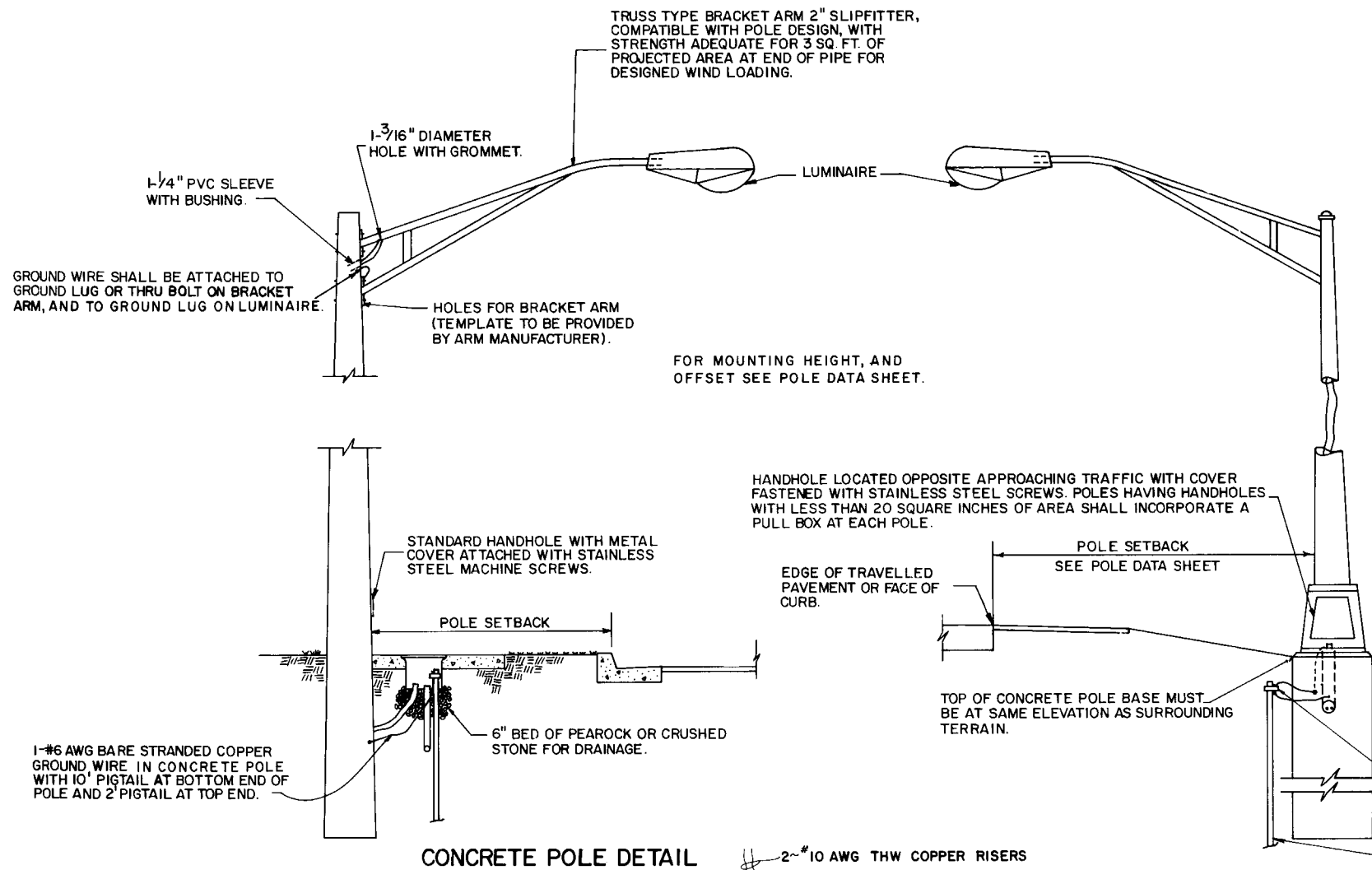
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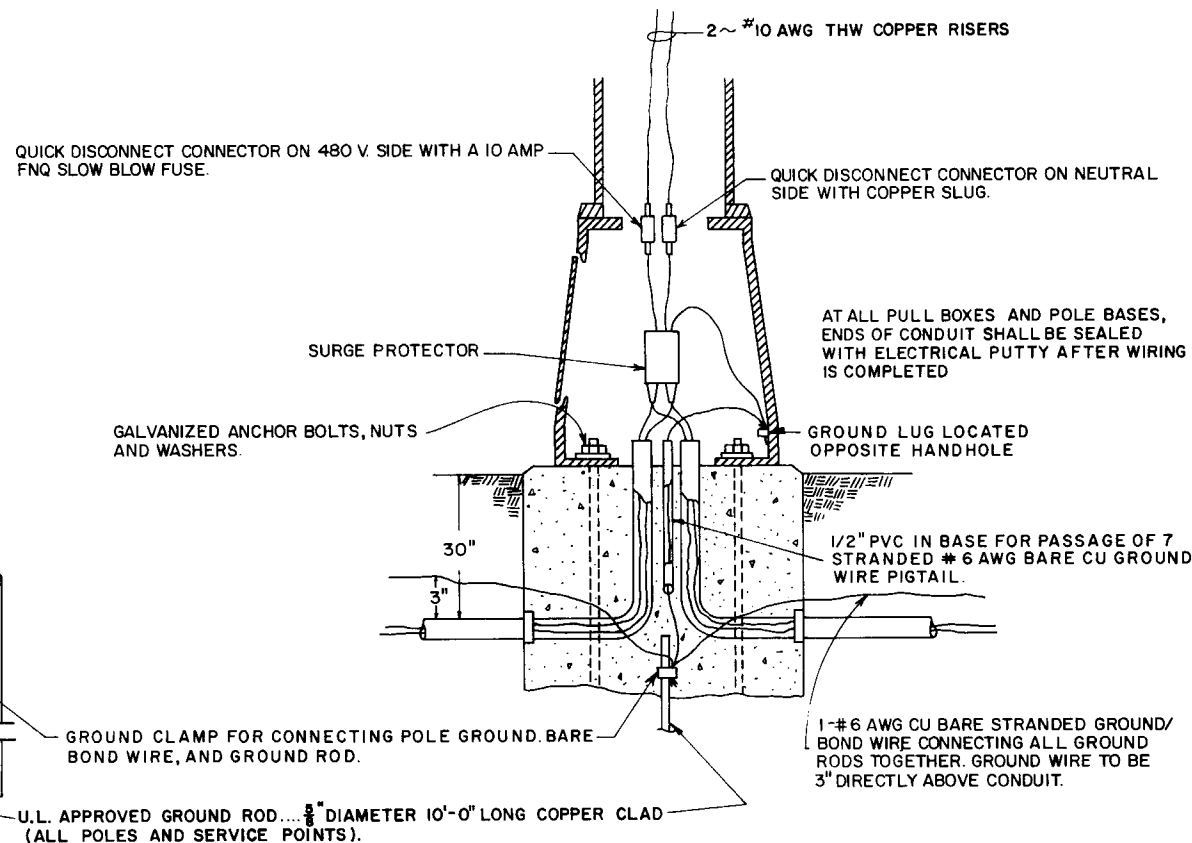
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CONCRETE POLE DETAIL

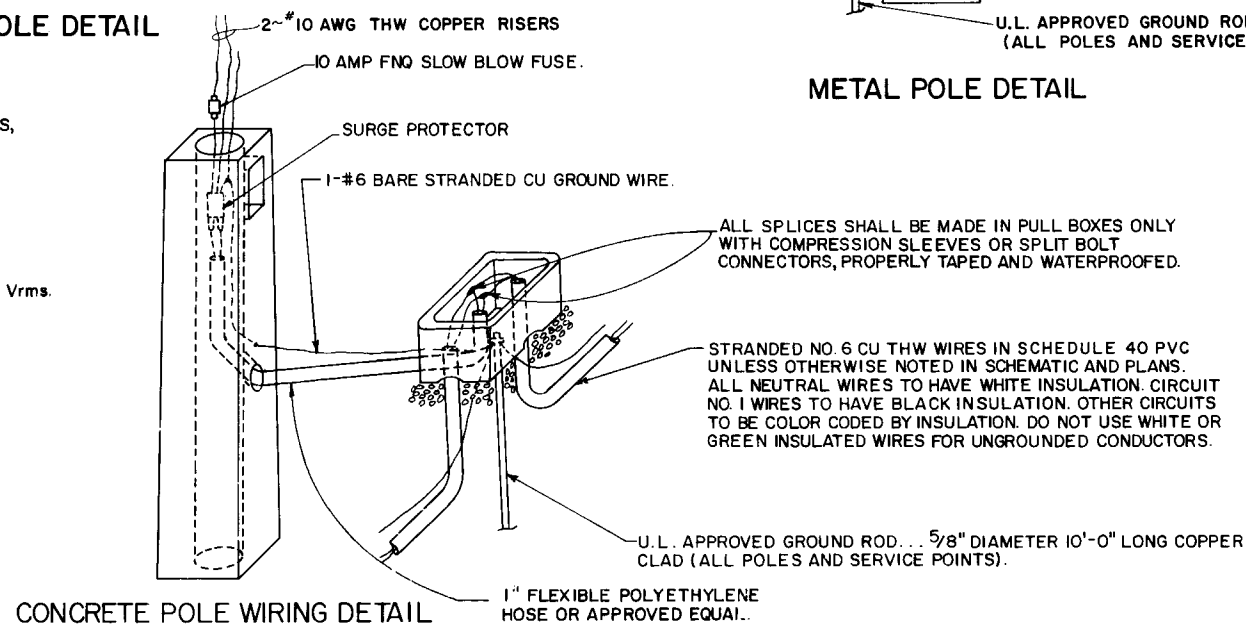
SURGE PROTECTOR SPECIFICATIONS

1. THE UNIT SHALL WITHSTAND A SURGE CURRENT UP TO 20,000 AMPS, AND REPETITIVE SURGES OF 200 AMPS FOR A MINIMUM OF 10,000 OCCURRENCES.
2. THE UNIT SHALL RESPOND IN LESS THAN 50 NANOSECONDS AND WITHIN THIS TIME HAVE A PEAK CLAMPING VOLTAGE BETTER THAN 1,100 Vrms.
3. THE MAXIMUM ALLOWABLE VOLTAGE THAT CAN PASS CONTINUOUSLY THROUGH THE HOT LEG OF THE PROTECTOR MUST BE LESS THAN 550 Vrms.
4. THE CURRENT DRAIN SHALL BE LESS THAN 100 MICROAMPS.
5. THE UNIT SHALL BE INSULATED 600 V. TO GROUND AND SHALL BE WEATHERPROOF.
6. THE UNIT SHALL NOT ALLOW HOLDOVER CURRENT OR CONDUCTION TO GROUND AFTER THE SURGE ENDS.
7. PROTECTION SHALL BE ACHIEVED FOR BOTH THE 480V. AND NEUTRAL CONDUCTORS WITH THE SURGES BEING PASSED TO GROUND AND NOT TO NEUTRAL.
8. THERE SHALL BE NO DISCHARGE LAG IN THE PROTECTION OF THE 480V. CONDUCTOR OVER THE NEUTRAL CONDUCTOR.
9. UNDERWRITERS LABORATORY APPROVAL NOT REQUIRED.



METAL POLE DETAIL

METAL POLE WIRING DETAIL



CONCRETE POLE WIRING DETAIL

APPROVED BY FHWA 11-16-78

FLORIDA DEPARTMENT OF TRANSPORTATION

CONVENTIONAL POLE DETAILS

DATE	REVISIONS	INITIALS	DATES	Recommended for approval by	DRAWING NO.	INDEX NO.
		G. K.	8-78	by <i>G. K. Price</i> Deputy Traffic Operations Engr.	1	OF 1
				Approved by <i>R. E. Magaley</i> State Traffic Operations Engr.		17500
				Supervised by LESTER JONES		

- 1) GROUND RODS SHALL HAVE A RESISTANCE TO GROUND NOT TO EXCEED 25 OHMS. WHERE THE RESISTANCE IS NOT AS LOW AS 25 OHMS, TWO OR MORE GROUND RODS CONNECTED IN PARALLEL SHALL BE USED. CONTRACTOR SHALL HAVE NECESSARY TEST EQUIPMENT (CURRENT CALIBRATION CERTIFICATE REQUIRED) AT FINAL INSPECTION TO INSURE ACCEPTABILITY OF GROUNDING SYSTEM.
- 2) THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES PRIOR TO ANY UNDERGROUND WORK. THE UTILITY COMPANY WILL LOCATE AND IDENTIFY THEIR FACILITIES.
- 3) CONTRACTOR SHALL DETERMINE THE SERVICE REQUIRED DATE FOR THE POWER COMPANY TRANSFORMER INSTALLATION AT THE PRE-CONSTRUCTION CONFERENCE.
- 4) THE POWER COMPANY RESERVES THE RIGHT TO INSTALL THE RISER, SWITCH GEAR AND WEATHERHEAD ON POWER COMPANY POLES AT THE EXPENSE OF THE CONTRACTOR. CONTACT THE POWER COMPANY FOR COST OR FOR AUTHORIZATION FOR AN ALTERNATE PROCEDURE.
- 5) ANY DAMAGED PORTIONS OF GALVANIZED STEEL POLES AND BRACKET ARMS SHALL BE PAINTED IN ACCORDANCE WITH SECTION 562 OF THE STANDARD SPECIFICATIONS.
- 6) POLES, BRACKET ARMS AND FRANGIBLE DEVICES SHALL BE DESIGNED IN ACCORDANCE WITH THE DESIGN CRITERIA, AS INDICATED IN THE PLANS AND USING THE APPLICABLE EQUATIONS FOUND IN "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS" PUBLISHED BY A. A. S. H. T. O. DATED 1975.
- 7) THE LUMINAIRE MANUFACTURER SHALL PLACE A PERMANENT TAG ON THE LUMINAIRE HOUSING ON WHICH IS IMPRINTED THE FOLLOWING INFORMATION: WATTAGE, BALLAST TYPE, LAMP SHOWN ON DESIGN PLANS, LAMP SETTING (POSITION IN LUMINAIRE), IES LIGHT DISTRIBUTION WITH THIS LAMP IN THE POSITION SPECIFIED, INPUT VOLTAGE AND POWER FACTOR. LUMINAIRE PHOTOMETRIC SUBMITTALS REQUIRED.
- 8) BEFORE FINAL ACCEPTANCE, CONTRACTOR SHALL PROVIDE 2 SETS OF FULL SIZE AS BUILT PLANS TO THE MAINTAINING AGENCY.
- 9) CONDUIT ROUTING SHALL BE POLE TO POLE, MAINTAINING POLE SETBACK DISTANCE FROM EDGE OF PAVEMENT. ANY CABLE ROUTING IN LOCATIONS WHERE GUARDRAIL IS PROPOSED SHALL BE 2'-0" IN FRONT OF THE STANDARD GUARDRAIL POSITION.
- 10) POLE POSITIONS AND CONDUIT ROUTING MAY BE ADJUSTED, AS APPROVED BY THE ENGINEER, TO PREVENT CONFLICTS WITH UTILITY AND DRAINAGE STRUCTURES NOT INDICATED, AND PREVENT GUARDRAIL POST CONFLICT WITH UNDERGROUND LIGHTING CIRCUITS.
- 11) WHERE GUARDRAIL IS CONSTRUCTED, THE POLES SHALL BE PLACED A MINIMUM OF 4' BEHIND THE FACE OF GUARDRAIL.
- 12) POLE FOUNDATION INSTALLATIONS SHALL BE BACKFILLED AND COMPACTED TO A FIRM, STABLE CONDITION APPROXIMATELY EQUAL TO THAT OF THE ADJACENT SOIL. THE FILL SHALL CONFORM TO EXISTING GRADE AND FULLY SODDED.

- 13) THE WIRES AT THE POLE HANDHOLE AND PULL BOXES SHALL BE LOOPED UP IN THE POLE AND PULL BOXES WITH SUFFICIENT LENGTH TO COMPLETELY REMOVE CONNECTORS TO THE OUTSIDE OF HANDHOLE AND PULL BOXES TO MAKE CONNECTORS ACCESSIBLE FOR CHANGING FUSES AND TROUBLE SHOOTING THE SYSTEM.
- 14) NEUTRAL WIRES TO HAVE WHITE INSULATION. CIRCUIT NO 1 WIRE TO HAVE BLACK INSULATION. OTHER CIRCUITS TO BE COLOR CODED BY INSULATION. DO NOT USE WHITE OR GREEN INSULATED WIRES FOR UNGROUNDED CONDUCTORS.
- 15) UNLESS OTHERWISE SPECIFIED, ALL CABLE SHALL BE SINGLE CONDUCTOR, 98 PERCENT CONDUCTIVITY STRANDED COPPER, WITH THW INSULATION.
- 16) ALL SPLICES SHALL BE MADE IN PULL BOXES OR THE POLE BASE. NO SPLICES SHALL BE MADE INSIDE THE CONDUIT.
- 17) ALL EXPOSED OR SURFACED MOUNTED CONDUIT SHALL BE RIGID GALVANIZED. THESE EXPOSED RUNS OF CONDUIT SHALL BE PROVIDED WITH EITHER EXPANSION JOINTS OR FLEXIBLE STEEL CONDUIT SECTIONS ADEQUATE TO TAKE CARE OF VIBRATIONS AND THERMAL EXPANSIONS. ALL GALVANIZED CONDUIT SHALL BE GROUNDED.
- 18) ALL CONDUIT THAT WILL REMAIN EMPTY AS SPARES SHALL BE MANDREL TESTED, CLEANED INSIDE AND BOTH ENDS CAPPED. LEAVE THE CORROSION RESISTANT PULL/DRAW WIRE AND PLACE DUCT MARKERS, OR PULL BOXES TO MARK THE LOCATION OF THE ENDS OF THE CONDUIT.
- 19) PULL BOXES SHALL BE LOCATED AT ENDS OF CONDUIT CROSSING ROADWAYS.
- 20) THESE PLANS REPRESENT MINIMUM ACCEPTABLE CRITERIA. THE INSPECTION PER THESE DRAWINGS REPRESENT THE MINIMUM BASE OF ACCEPTANCE.
- 21) ALL MATERIAL, UNLESS OTHERWISE SPECIFIED, SHALL BE UNDERWRITERS LABORATORY APPROVED.
- 22) PRIOR TO ANY EQUIPMENT ORDER, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL, EQUIPMENT SPECIFICATIONS OR DESIGN DATA FOR ALL MATERIAL PROPOSED FOR THE PROJECT AND MUST INCLUDE SPECIFICALLY:
- A) LUMINAIRE PHOTOMETRICS  
B) POLE STRENGTH CALCULATIONS  
C) POLE FRANGIBILITY TEST RESULTS  
D) BOLT SPECIFICATIONS AND BOLT CIRCLE DIAMETER
- 23) SEVEN (7) COPIES OF SHOP DRAWINGS AND DESIGN DATA FOR HIGHWAY LIGHTING EQUIPMENT SHALL BE SUBMITTED TO THE STATE TRAFFIC OPERATIONS ENGINEER AT THE FOLLOWING ADDRESS WITH A COPY OF THE SUBMITTAL LETTER SENT TO THE DEPARTMENTS RESIDENT CONSTRUCTION ENGINEER IN CHARGE OF THE PROJECT.

STATE TRAFFIC OPERATIONS ENGINEER  
DEPARTMENT OF TRANSPORTATION  
HAYDON BURNS BUILDING, ROOM 345  
TALLAHASSEE, FLORIDA 32304

#### BREAKAWAY FEATURE

ALL CONVENTIONAL MOUNTING HEIGHT POLES SHALL BE MOUNTED ON A FRANGIBLE METAL BASE OR SYSTEM OF BREAKAWAY COUPLINGS. IF COUPLINGS ARE USED, ONE COUPLING SHALL BE PROVIDED FOR EACH ANCHOR BOLT CONNECTION. THE ONLY CONTINUOUS CONNECTION OF THE POLE TO THE FOUNDATION AT EACH ANCHOR BOLT SHALL BE PROVIDED BY THE COUPLINGS. THE AREA BETWEEN THE TOP OF THE POLE FOUNDATION AND THE BASE OF THE POLE INCLUDING THE COUPLINGS SHALL BE ENCLOSED WITH A NON-STRUCTURAL ALUMINUM SKIRT.

IF A FRANGIBLE METAL BASE IS USED, IT SHALL BE ONE PIECE AND BE DESIGNED TO BREAKAWAY WITHOUT THE AID OF ANY SLIPPING OR SLIDING SURFACES.

THE DESIGN OF THE BREAKAWAY FEATURE SHALL BE IN ACCORDANCE WITH THE BREAKAWAY PERFORMANCE REQUIREMENTS OF SECTION 7, "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS", A. A. S. H. T. O., COPYRIGHT 1975. THE CONTRACTOR (SUPPLIER) SHALL SUBMIT WITH EQUIPMENT SUBMITTALS, COPIES OF TEST REPORTS AS EVIDENCE THAT THE BREAKAWAY FEATURE HAS UNDERGONE FULL SCALE DYNAMIC TESTING WITH A CHANGE IN MOMENTUM OF 750 POUND-SECONDS OR LESS AND CALCULATIONS TO VERIFY THE DESIGN WILL MEET A. A. S. H. T. O. WIND LOADINGS SPECIFIED IN THE CONTRACT PLANS. NO POLES ARE TO BE INSTALLED PRIOR TO DEPARTMENT APPROVAL OF THE SUBMITTAL DATA.

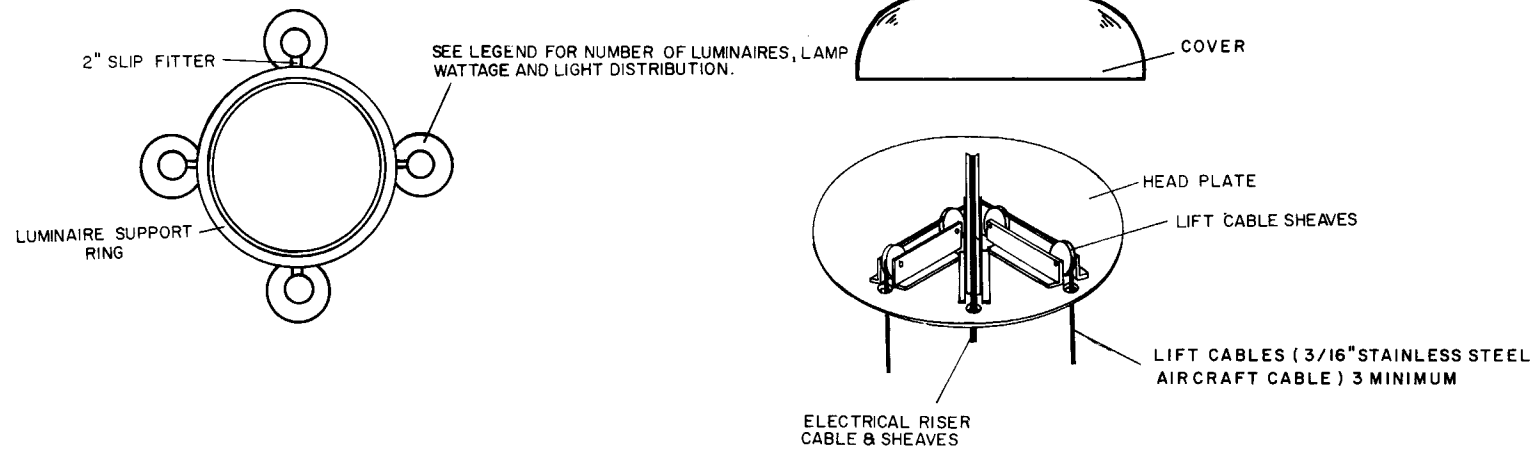
POLES MOUNTED ON BARRIER WALL OR BEHIND BRIDGE RAIL ARE EXEMPT FROM THE ABOVE FRANGIBILITY REQUIREMENTS.

APPROVED BY FHWA IL-16-78

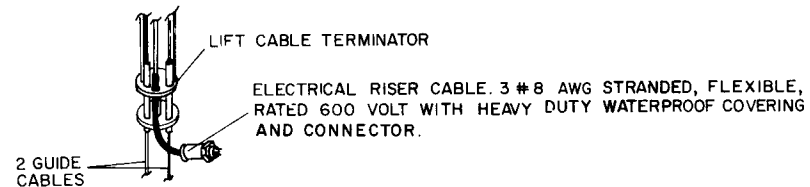
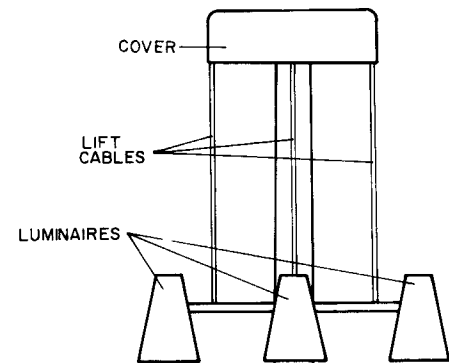
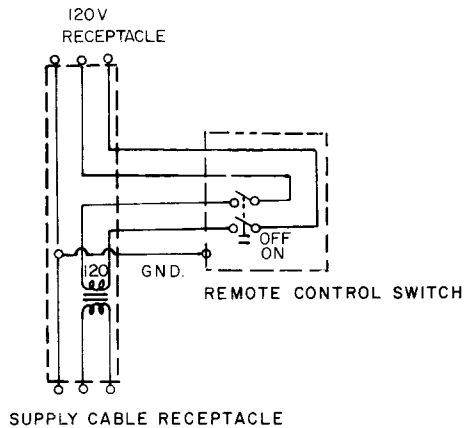
FLORIDA DEPARTMENT OF TRANSPORTATION  
TRAFFIC OPERATIONS  
HIGHWAY LIGHTING GENERAL NOTES

DATE	REVISIONS		INITIALS	DATES	Recommended for approval by <i>D.C. Bruce</i> Deputy Traffic Operations Engr.
		Designed by	G. K.	4-25-78	
		Checked by			Approved by <i>R.E. Maguire</i> State Traffic Operations Engr.
		Quantities by			
		Checked by			
		Supervised by	LESTER JONES		
					DRAWING NO. INDEX NO. 1 OF 1 17501

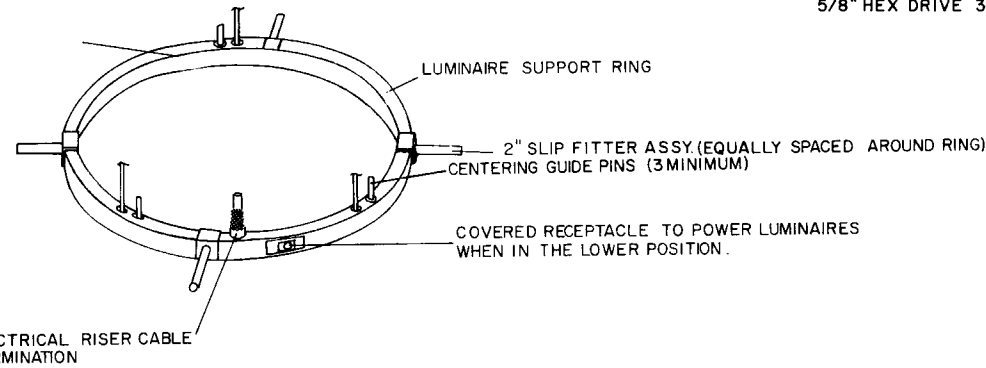




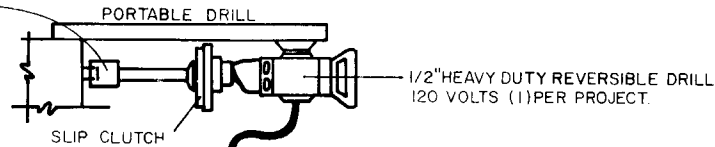
SCHEMATIC OF REMOTE AUXILIARY POWER UNIT



SPRING SUPPORTED CENTERING ARMS PROVIDED TO CENTER THE LUMINAIRE RING.

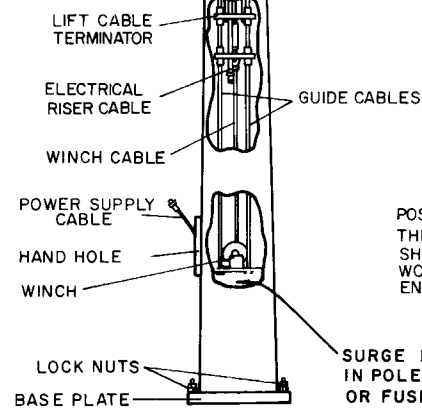
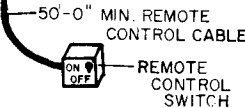


5/8" HEX DRIVE 3/4" ROUND SHAFT

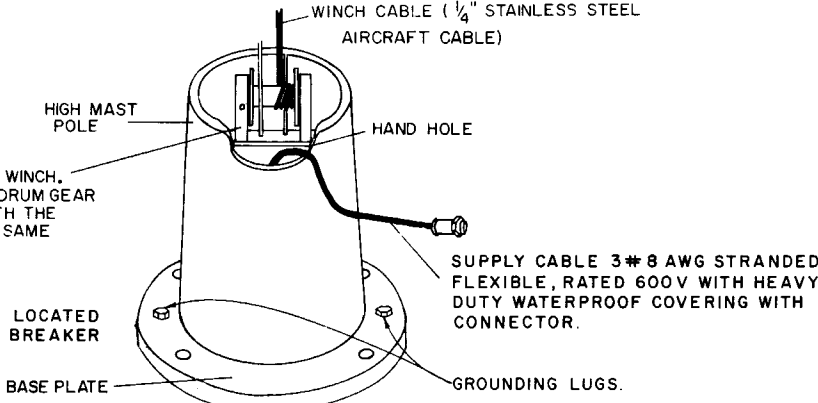


SUPPLY CABLE CONNECTION

1.5 KVA DRY TYPE TRANSFORMER MOUNTED IN N.E.M.A. 3R PORTABLE ENCLOSURE, PROVIDE 120 V. GROUNDED RECEPTACLE FOR ELECTRIC DRILL & RECEPTACLE FOR SUPPLY CABLE. (SEE SCHEMATIC)



POSITIVE DRIVE REVERSIBLE WINCH. THE COMPLETE ENCLOSED DRUM GEAR SHALL DIRECTLY MESH WITH THE WORM GEAR TRAIN, IN THE SAME ENCLOSURE.



SURGE PROTECTOR SHALL BE LOCATED IN POLE WITH EITHER CIRCUIT BREAKER OR FUSE.

APPROVED BY FHWA 11-16-78

FLORIDA DEPARTMENT OF TRANSPORTATION  
TRAFFIC OPERATIONS

HIGHMAST LIGHTING DETAILS

REVISIONS			INITIALS	DATES	Recommended for approval	
DATE	INITIALS	DESCRIPTION	Designed by		by <i>R.C. Price</i>	Deputy Traffic Operations Eng.
			Checked by		Approved by <i>R.L. Magruder</i>	State Traffic Operations Eng.
			Quantities by			
			Checked by			
			Supervised by	LESTER JONES	DRAWING NO.	INDEX NO.
					1 OF 3	17502

LUMINAIRE SPECIFICATIONS

THE REFLECTOR WITH ITS ALUMINUM COVER SHALL BE FIRMLY ATTACHED TO A CAST RING. THIS RING SHALL HAVE KEYHOLE SLOTS IN ITS UPPER SURFACE SUCH THAT THE REFLECTOR/REFRACTOR ASSEMBLY MAY BE READILY ATTACHED TO, OR DETACHED FROM, THE LUMINAIRE BRACKET ENTRY AND LAMP SUPPORT ASSEMBLY WITHOUT COMPLETELY REMOVING THE SUPPORT BOLTS.

EACH LUMINAIRE SHALL CONTAIN AN INTEGRAL CONSTANT WATTAGE AUTO-REGULATOR TYPE BALLAST CONNECTED FOR 480 VOLTS INPUT  $\pm$  10% AND A POWER FACTOR OF MORE THAN 90%. THE LUMINAIRE BALLAST SHALL BE ENCLOSED WITHIN AN ALUMINUM HOUSING WHICH INTEGRALLY ATTACHES TO THE LUMINAIRE BRACKET ENTRY AND LAMP SUPPORT ASSEMBLY. IT SHALL BE READILY REMOVEABLE WITHOUT REMOVING THE LUMINAIRE FROM THE BRACKET ARM.

THE LUMINAIRE SHALL BE ATTACHED TO THE BRACKET ARM BY MEANS OF A BRACKET ENTRY AND LAMP SUPPORT ASSEMBLY. THE ASSEMBLY SHALL INCLUDE A SIDE ENTRY SLIPFITTER DESIGNED FOR TWO (2) INCH PIPE WITH PROVISION FOR 3° ADJUSTMENT FOR LEVELING THE LUMINAIRE. AN ENCLOSED TERMINAL BLOCK SHALL BE INCLUDED SUCH THAT ALL ELECTRICAL CONNECTIONS SHALL BE PROTECTED FROM EXPOSURE TO WEATHER.

ALL ELECTRICAL CONNECTIONS SHALL BE MADE WATERPROOF OR BE MADE INSIDE A WEATHER RESISTANT ENCLOSURE. ALL LUMINAIRES SHALL BE ANSI/IES LIGHT DISTRIBUTION AS INDICATED IN PLANS. EACH LUMINAIRE SHALL BE LABELED WITH A PERMANENT LABEL WHICH STATES THE TYPE OF LAMP, VOLTAGE INPUT, POWER INPUT, POWER FACTOR, BALLAST TYPE, SOCKET POSITION, ANSI/IES LIGHT DISTRIBUTION, AND SUCH OTHER CATALOG INFORMATION THAT A COMPLETE REPLACEMENT CAN BE READILY ORDERED.

THE CONTRACTORS ATTENTION IS DIRECTED TO THOSE PLAN SHEETS DETAILING THE MOUNTING OF LUMINAIRES AT THE POLE TOP. PARTICULAR ATTENTION IS DIRECTED TO ALIGNMENT OF LUMINAIRE LIGHT DISTRIBUTIONS. SPECIAL ATTENTION MUST BE EXERCISED IN THE PHYSICAL ALIGNMENT OF THESE LUMINAIRES TO INSURE THAT THE APPROVED PHOTOMETRIC LAYOUT IS PHYSICALLY PRODUCED AT EACH LIGHTING STANDARD IN THE FIELD. A MARKING SHALL BE PLACED ON THE EXTERNAL FACE OF THE REFRACTOR TO IMPLEMENT VISUAL INSPECTION OF ALIGNMENT. THE MARKING SHALL CORRESPOND TO THE 0° AXIS OF THE REFRACTOR. THE MARKING SHALL CONSIST OF A 1 INCH SQUARE PERMANENT BRIGHT RED IDENTIFICATION LOCATED ON THE REFRACTOR TO BE READILY VIEWED FROM THE GROUND WHILE LEAST AFFECTING THE LUMINAIRES LIGHT DISTRIBUTION. IT IS ANTICIPATED THAT VIEWING WILL BE ACCOMPLISHED BY AN INSPECTOR EMPLOYING FIELD GLASSES. ALTERNATE METHODS OF MARKING WILL BE CONSIDERED FOR APPROVAL PROVIDED THAT EASE IN CONFIRMING REFRACTOR ALIGNMENT IS FACILITATED.

FOOTING

THE HIGH MAST FOUNDATIONS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAILS SHOWN IN THE PLANS.

ANCHOR BOLTS PER MANUFACTURERS SPECIFICATIONS. SUBMITTALS SHALL BE SUPPLIED TO THE LIGHTING ENGINEER PRIOR TO PURCHASE.

ONE LEVELING NUT, ONE HOLD-DOWN NUT, AND ONE LOCKING/JAM NUT SHALL BE SUPPLIED PER ANCHOR BOLT. ALL SMALL METAL PARTS, (NUTS, SCREWS, WASHERS, ETC.) SHALL BE RUSTPROOFED EITHER BY GALVANIZING PER ASTM A-143 OR BY THE NATURE OF THE MATERIAL USED IN THEIR FABRICATION.

LOWERING SYSTEM SPECIFICATIONS

THE LOWERING SYSTEM SHALL CONSIST OF THE FOLLOWING:

- A. HEAD FRAME AND COVER
- B. LUMINAIRE RING
- C. CABLES
- D. WINCH
- E. PORTABLE POWER UNIT (1 PER PROJECT)

THE HEAD FRAME UNIT SHALL RIGIDLY MATE THE TOP OF THE POLE TO THE HEAD FRAME PLATFORM. THIS PLATFORM WITH ITS ASSOCIATED SHEAVES, ETC. SHALL BE COVERED AND RAIN TIGHT. THE HEAD FRAME STRUCTURE SHALL BE ZINC COATED STEEL, ATTACHED TO THE POLE BY MEANS OF A STEEL SLIPFITTER. HEAD FRAME SHALL ENCOMPASS SIX FIVE(5) INCH NOMINAL STEEL CABLE SHEAVES GROOVED TO THE EXACT CABLE DIAMETER, FOR 180° CABLE BEARING SURFACE. THE SHEAVE SHALL BE ZINC ELECTROPLATED TO ASTM 164 AND DIPPED IN YELLOW CHROMATE FOR CORROSION RESISTANCE. BEARINGS AND CABLE KEEPERS SHALL HAVE PERMANENT LUBRICATION. THREE (3) STAINLESS STEEL 7X19 AIRCRAFT CABLES OF 3/16 INCH OR GREATER DIAMETER SHALL BE PROVIDED.

THE POWER RISER CABLE SHALL BE ATTACHED TO THE LUMINAIRE RING WITH A WATERPROOF CONNECTOR CAPABLE OF WITHSTANDING THE PULL OF THE WEIGHT OF THE POWER RISER CABLE. WHERE THE WIRE ROPES ARE REQUIRED TO BEND OVER SHEAVES OR OVER THE WINCH DRUM, THE MAXIMUM WORKING STRESS IN THE OUTER FIBERS OF WIRE ROPE SHALL NOT EXCEED ONE FIFTH (1/5) THE WIRE ROPE MANUFACTURER'S RATED ULTIMATE STRESS. SUBMITTALS MUST BE PROVIDED TO THE STATE LIGHTING ENGINEER WHICH CLEARLY STATE THE WIRE ROPE ULTIMATE STRESS. DRUM DESIGN SHALL CAUSE LEVEL WIND OF WIRE ROPE. THE POWER CORD SHALL TRAVEL ON SHEAVE(S) OR A COMBINATION OF ROLLERS PROVIDING A RADIUS FOR THE CORD OF SIX (6) INCHES OR LARGER. EACH END OF THE SHEAVE(S) OR ROLLERS SHALL HAVE A KEEPER TO PREVENT THE CABLE FROM JUMPING OUT OF THE ROLLER TRACK.

THE HEAD FRAME SHALL ALSO INCLUDE THREE (3) LATCHING DEVICES TO SUPPORT THE LUMINAIRE RING ASSEMBLY WHEN THE LOWERING DEVICE IS NOT IN OPERATION. THE LATCHES SHALL BE ACTUATED BY ALTERNATE RAISING AND LOWERING OF THE HOISTING CABLES. LOCKING OF LUMINAIRE RING SHALL BE SIGNALLED BY INDICATORS VISIBLE FROM GROUND. ALL MOVING PARTS OF THE LATCH MECHANISM SHALL BE SERVICEABLE FROM THE GROUND. EACH OF THE THREE LATCHES SHALL BE STRONG ENOUGH, BY ITSELF, TO SUPPORT TWICE THE WEIGHT OF THE RING AND ALL THE LUMINAIRES. LATCHING MECHANISMS WHICH DEPEND PRIMARILY UPON SPRING OPERATION OR CONTAIN DISSIMILAR METALS ARE NOT ACCEPTABLE. THE LATCHING MECHANISM SHALL NOT REQUIRE ADJUSTMENT AFTER THE ORIGINAL INSTALLATION.

THE LUMINAIRE RING SHALL BE CONSTRUCTED OF A MINIMUM OF 6" X 2" X 7 GAUGE HOT DIPPED GALVANIZED ASTM 386 CLASS "B" STEEL CHANNEL WITH THE APPROPRIATE NUMBER OF TWO (2) INCH STEEL PIPE MOUNTING ARMS. THE LUMINAIRE RING SHALL BE PREWIRED WITH TYPE "W" OR SPECIALLY REINFORCED TYPE "SO" POWER CABLE, WITH SUITABLE CONDUCTOR QUANTITY AND SIZE FOR PROPER OPERATION AND TYPE "ST" DISTRIBUTION WIRING WITH INSULATION SUITABLE FOR AT LEAST 105°C. ALL POWER CABLES SHOULD BE ATTACHED TO THE ALUMINUM WEATHER TIGHT WIRING CHAMBER WITH WEATHER TIGHT CABLE CONNECTORS. A 600 VOLT TERMINAL BLOCK, COMPLETELY PREWIRED SHALL BE INCLUDED IN THE WEATHER TIGHT WIRING CHAMBER. A WEATHER-TIGHT TWIST LOCK POWER INLET SHALL BE PROVIDED ON THE LUMINAIRE RING TO ALLOW TESTING OF THE LUMINAIRE WHILE IN THE LOWERED POSITION. THE POWER INLET SHALL FACE AWAY FROM THE POLE FOR EASY ACCESS.

THE ULTIMATE SUPPORT OF THE LUMINAIRE RING SHALL NOT BE DEPENDENT UPON THE LOWERING AND RAISING CABLES.

THE SYSTEM SHALL BE PROVIDED WITH CIRCUIT-BREAKER SWITCHES AND TWIST LOCK DISCONNECTS IN THE POLE BASE. RAISING SPEED OF LUMINAIRE RING SHALL BE A MINIMUM OF TWELVE (12) FEET PER MINUTE.

THE WINCH SHALL BE A REVERSIBLE WORM GEAR SELF LOCKING TYPE WITH AN INTEGRAL FRICTION DRAG BRAKE TO PREVENT FREESPOOLING. THE WINCH SHALL BE DESIGNED FOR HAND OPERATION OR FOR OPERATION BY MEANS OF A 1/2" HEAVY DUTY REVERSING ELECTRIC DRILL MOTOR, REMOTE CONTROLLED TO ENABLE THE OPERATOR TO STAND FIFTY (50) FEET FROM THE POLE. STAINLESS STEEL 7 X 19 AIRCRAFT CABLES OF 1/4 INCH OR GREATER DIAMETER EQUAL TO MIL-W-5424 SHALL BE SUPPLIED ON THE WINCH. THE WINCH SHALL BE PROVIDED WITH KEEPERS ABOVE THE DRUM TO FORCE THE CABLE AWAY FROM THE ENDS OF THE DRUM FOR SPOOLING. THE DRUM SHALL HAVE A WIRE GUARD TO PREVENT THE CABLE FROM COMING OFF.

THE WINCH SHALL BE MOUNTED IN SUCH A WAY THAT THE CABLE TERMINATOR AND THE RISER CABLE CONNECTOR MAY BE REACHED AND WORKED ON BY A PERSON WITH HIS ARM THROUGH THE HANDHOLE.

ROLLER CONTACT SPRING-LOADED CENTERING ARMS SHALL BE PROVIDED TO CENTER THE LUMINAIRE RING WHILE ASCENDING OR DESCENDING THE POLE. THE ROLLERS FOR THE CENTERING ARM SHALL BE MADE OF A WATER RESISTANT NON-MARKING COMPOSITION MATERIAL. ALL SHAFTS AND WASHERS SHALL BE 304 STAINLESS STEEL. THE SPRING-LOADING MECHANISM SHALL CONSIST OF AN OIL-TEMPERED STEEL COMPRESSION SPRING OVER AN ALUMINUM ROD. THE ROLLERS SHALL BE IN CONTACT WITH THE POLE AT ALL TIMES.

POLE SPECIFICATIONS

THE POLE SHAFT MAY BE JOINTED OR SINGLE PIECE, POLYGON OR ROUND, HIGH STRENGTH STEEL HAVING A MINIMUM YIELD STRENGTH OF 50 KSI. ALL MATERIAL SHALL BE SINGLE THICKNESS STEEL PLATE WITH NO LAMINATIONS. STEEL SHALL BE AS SPECIFIED.

ALL POLES SHALL BE EQUIPPED WITH A REINFORCED HANDHOLE APPROXIMATELY 1.0' ABOVE THE BASE PLATE. THE HANDHOLE SHALL BE TEN (10) INCHES WIDE BY TWENTY (20) INCHES HIGH MINIMUM.

ALL POLES AND HARDWARE WILL BE ADEQUATELY PACKED TO ASSURE PROTECTION TO THE FINISH DURING SHIPPING AND HANDLING, POLES SHALL NOT BE SHIPPED PRE-ASSEMBLED.

DRAWINGS SHALL BE PROVIDED WITH THE EQUIPMENT WHICH SHOW ASSEMBLY SEQUENCE, LIFT POINT, AND RECOMMENDED ERECTION PROCEDURE. A PERMANENT DECAL OR CARD SHALL BE FIXED ON THE INSIDE OF THE HANDHOLE COVER WHICH DESCRIBES THE SEQUENCE FOR LOWERING THE LUMINAIRES AND THE CAUTIONS.

THE PROPORTIONING OF WELD DETAILS AND THE OPERATION OF WELDING SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE AASHTO STANDARD SPECIFICATIONS FOR WELDING OF STRUCTURAL STEEL HIGHWAY BRIDGES, AND THE REFERENCED AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE.

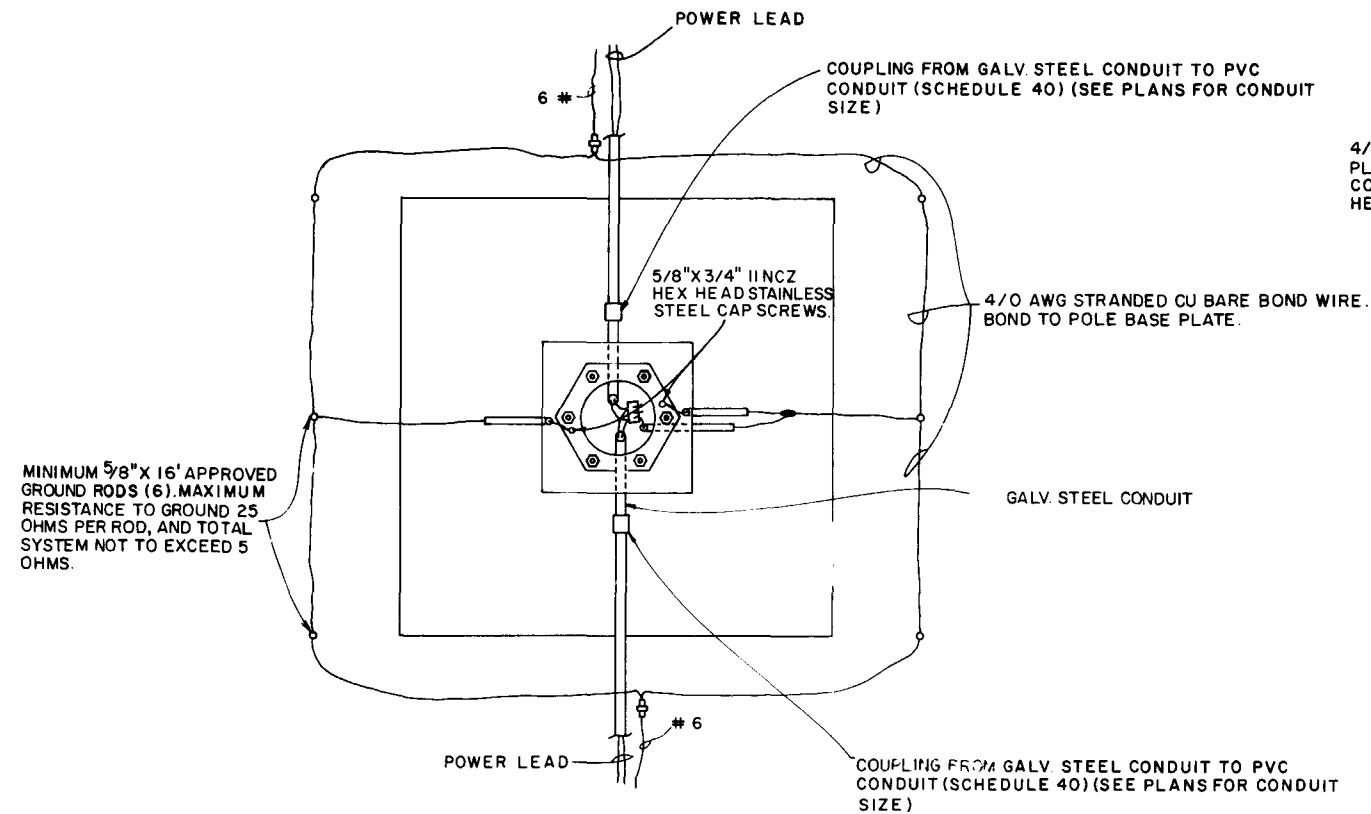
SHOP DRILL TWO (2) 5/8" DIAMETER HOLES 180 DEGREES APART THROUGH TOTAL THICKNESS OF BASE PLATE. TAP TOP OF HOLE FOR 5/8" X 3/4" 11 NCZ STAINLESS STEEL HEXHEAD CAP SCREW.

APPROVED BY FHWA 11-16-78

FLORIDA DEPARTMENT OF TRANSPORTATION  
TRAFFIC OPERATIONS

HIGHMAST LIGHTING DETAILS

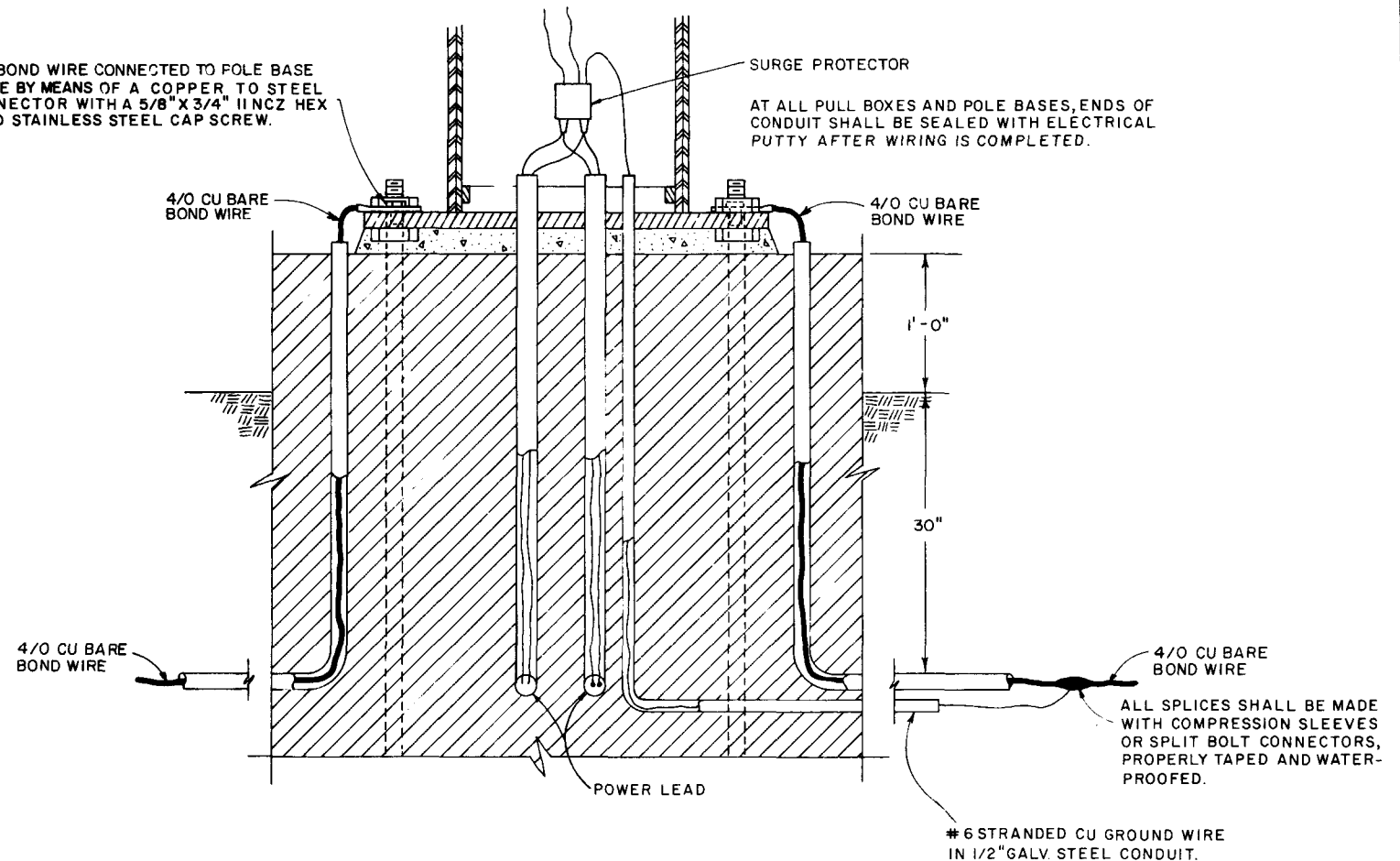
DATE	REVISIONS		INITIALS	DATES	Recommended for approval
		Designed by	G. K.	8-78	by <u>D.C. Price</u> Deputy Traffic Operations Engr.
		Checked by			Approved
		Quantities by			by <u>R.E. Magahaney</u> State Traffic Operations Engr.
		Checked by			
		Supervised by	LESTER JONES		
				DRAWING NO. 2 OF 3	INDEX NO. 17502



4/0 BOND WIRE CONNECTED TO POLE BASE PLATE BY MEANS OF A COPPER TO STEEL CONNECTOR WITH A 5/8" X 3/4" 11NCZ HEX HEAD STAINLESS STEEL CAP SCREW.

SURGE PROTECTOR

AT ALL PULL BOXES AND POLE BASES, ENDS OF CONDUIT SHALL BE SEALED WITH ELECTRICAL PUTTY AFTER WIRING IS COMPLETED.



#### SURGE PROTECTOR SPECIFICATIONS

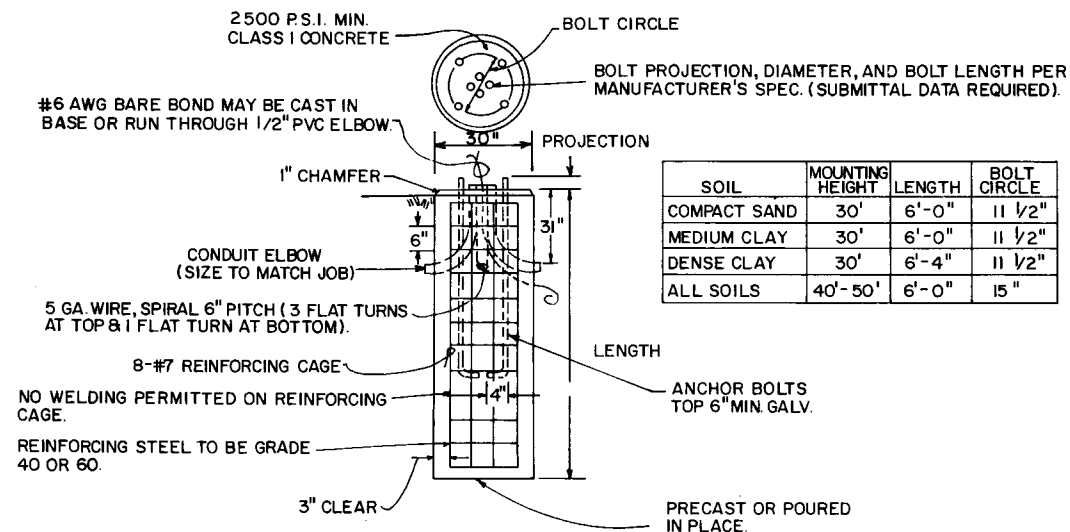
1. THE UNIT SHALL WITHSTAND A SURGE CURRENT UP TO 20,000 AMPS, AND REPETITIVE SURGES OF 200 AMPS FOR A MINIMUM OF 10,000 OCCURRENCES.
2. THE UNIT SHALL RESPOND IN LESS THAN 50 NANOSECONDS AND WITHIN THIS TIME HAVE A PEAK CLAMPING VOLTAGE BETTER THAN 1,100 Vrms.
3. THE MAXIMUM ALLOWABLE VOLTAGE THAT CAN PASS CONTINUOUSLY THROUGH THE HOT LEG OF THE PROTECTOR MUST BE LESS THAN 550 Vrms.
4. THE CURRENT DRAIN SHALL BE LESS THAN 100 MICROAMPS.
5. THE UNIT SHALL BE INSULATED 600 V. TO GROUND AND SHALL BE WEATHERPROOF.
6. THE UNIT SHALL NOT ALLOW HOLDOVER CURRENT OR CONDUCTION TO GROUND AFTER THE SURGE ENDS.
7. PROTECTION SHALL BE ACHIEVED FOR BOTH THE 480V. AND NEUTRAL CONDUCTORS WITH THE SURGES BEING PASSED TO GROUND AND NOT TO NEUTRAL.
8. THERE SHALL BE NO DISCHARGE LAG IN THE PROTECTION OF THE 480 V. CONDUCTOR OVER THE NEUTRAL CONDUCTOR.
9. UNDERWRITERS LABORATORY APPROVAL NOT REQUIRED.

APPROVED BY FHWA 11-16-78

FLORIDA DEPARTMENT OF TRANSPORTATION  
TRAFFIC OPERATIONS

#### HIGHMAST LIGHTING DETAILS

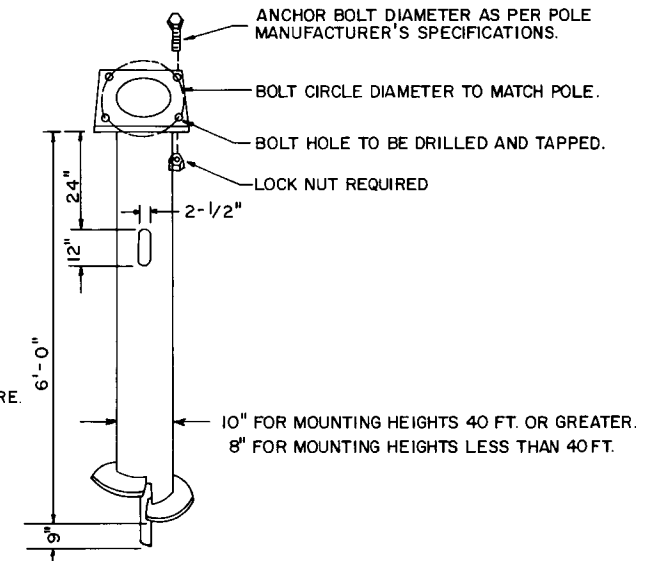
DATE	REVISIONS	INITIALS	DATES	Recommended for approval by <i>D.C. Price</i> Deputy Traffic Operations Engr.
		Designed by G. K.	8-78	
		Checked by		Approved by <i>Ed Magaley</i> State Traffic Operations Engr.
		Quantities by		
		Checked by		
		Supervised by	LESTER JONES	
DRAWING NO. 3 OF 3				INDEX NO. 17502



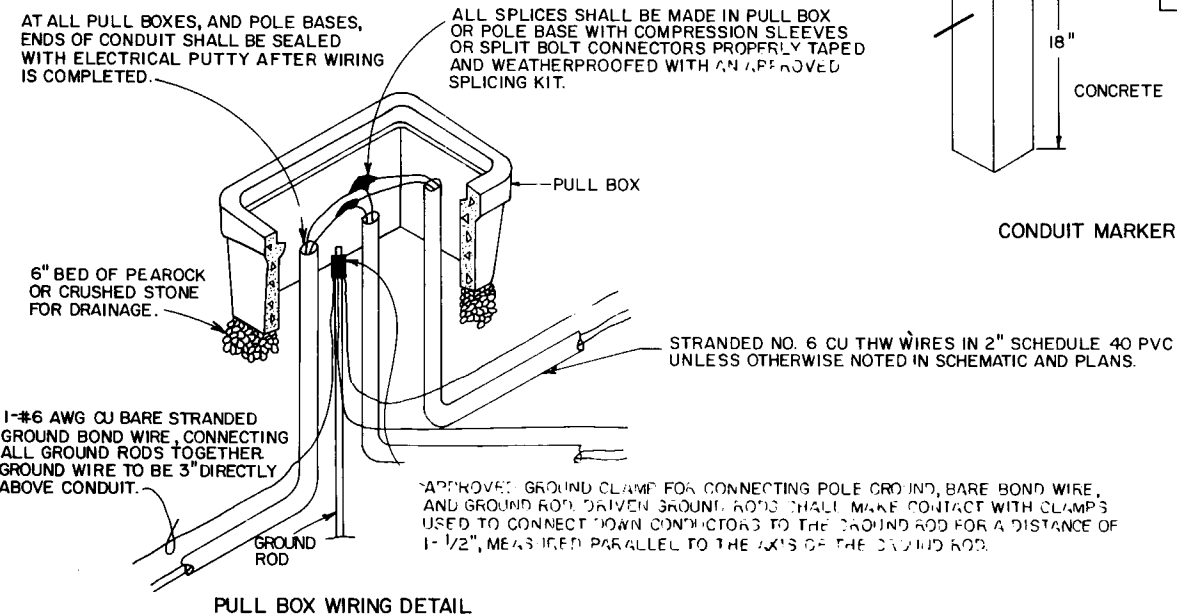
METAL POLE CONCRETE FOUNDATION DETAIL

SCREW TYPE FOUNDATION SPECIFICATIONS

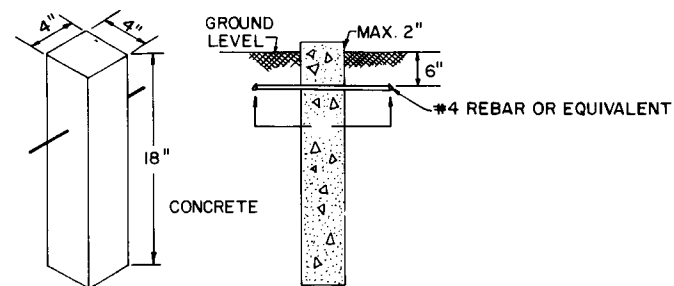
- 1) THE FOUNDATION SHAFT AND BASE PLATE SHALL BE ASTM A-36 STRUCTURAL STEEL, OR BETTER.
- 2) THE ANCHOR BOLTS SHALL BE ASTM A-325, OR BETTER.
- 3) ALL WELDS SHALL BE SUFFICIENT TO WITHSTAND 10,000 FT.-LBS. OF TORQUE, APPLIED ABOUT THE AXIS OF THE FOUNDATION.
- 4) THE FOUNDATION SHALL HAVE A HANDHOLE IN THE BASE PLATE AT LEAST 6" IN DIAMETER.
- 5) THE BASE PLATE SHALL BE NOTCHED TO INDICATE THE ORIENTATION OF THE SHAFT CABLEWAYS.
- 6) DRAINAGE SHALL BE PROVIDED IN THE BOTTOM OF THE FOUNDATION BY MEANS OF AN OPENING OF AT LEAST 3 SQUARE INCHES.
- 7) THE FOUNDATION SHALL BE DESIGNED FOR INSTALLATION USING A RIGHT HAND TURNING MOVEMENT WITH A SLIGHT DOWN PRESSURE. THE MAXIMUM INSTALLATION TORQUE SHALL NOT EXCEED 10,000 FT.-LBS. OR BE LESS THAN 3,500 FT.-LBS.
- 8) THE WHOLE FOUNDATION SHALL BE HOT DIP GALVANIZED AFTER FABRICATION TO ASTM A-123.



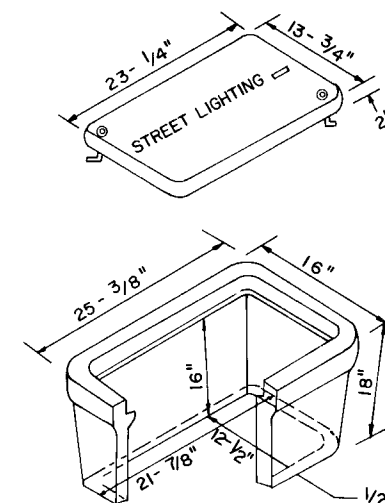
SCREW TYPE FOUNDATION DETAIL



PULL BOX WIRING DETAIL



CONDUIT MARKER DETAIL

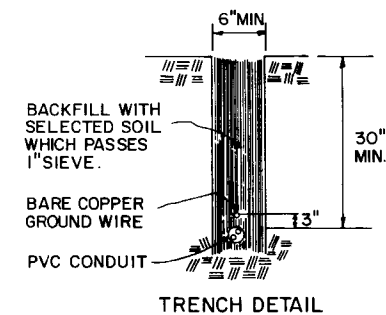


PULL BOX DETAIL

PULL BOX SPECIFICATIONS:

PULL BOX SHALL BE COMPOSED OF REINFORCED PLASTIC MORTAR AND BE DESIGNED AND TESTED TO MEET ASTM D-635 FLAMMABILITY TEST AND ASHO H-10 LOADING 5000# SINGLE AXLE LOAD OVER ANY 10" X 10" AREA. COVER TO BE MARKED "STREET LIGHTING".

BOXES MAY BE NESTED FOR DEEP CONDUIT AND FOR MORE WORKING ROOM.



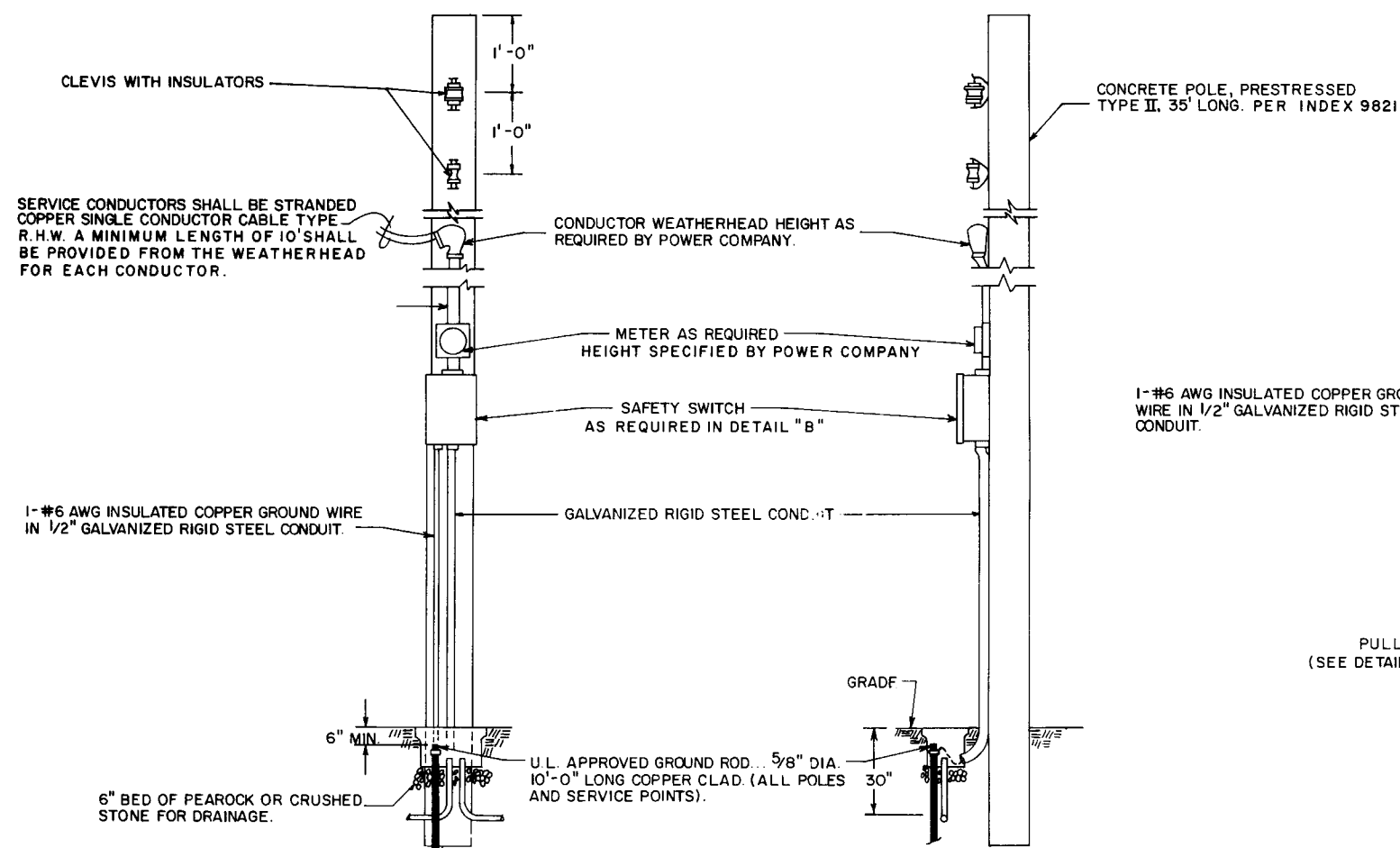
TRENCH DETAIL

APPROVED BY FHWA II-16-78

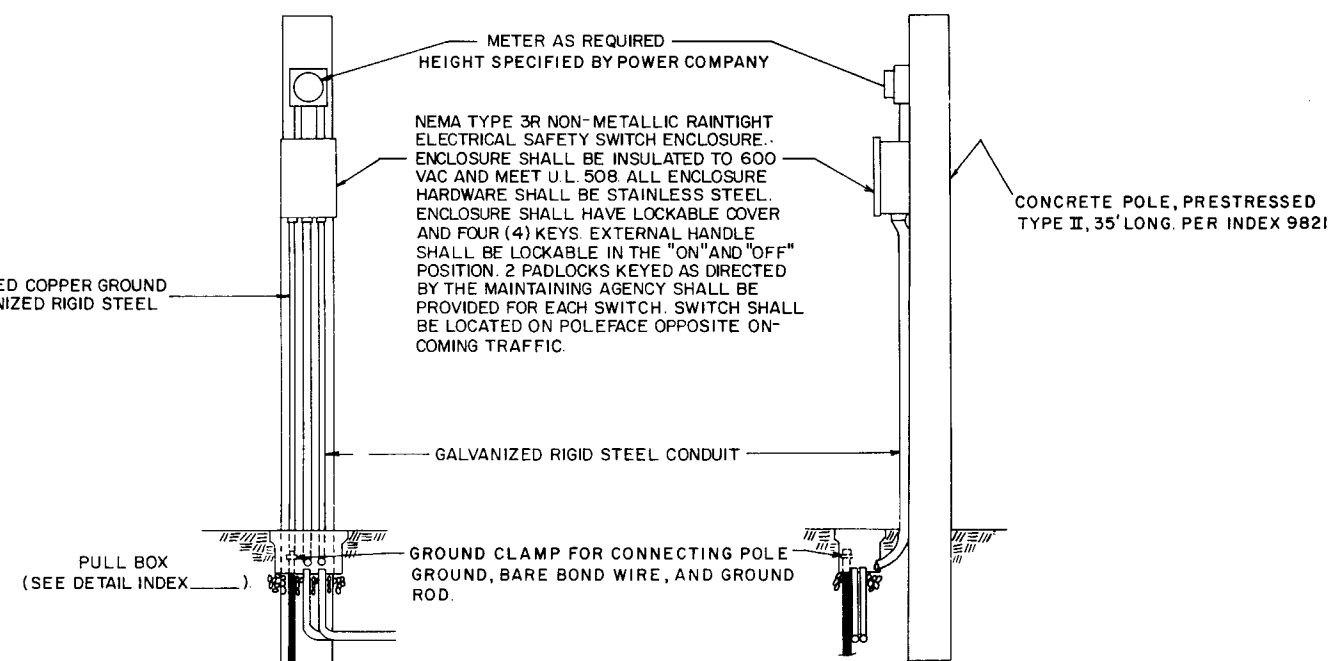
FLORIDA DEPARTMENT OF TRANSPORTATION  
TRAFFIC OPERATIONS

ROADWAY LIGHTING DETAILS

DATE	REVISIONS	INITIALS	DATES	Recommended for approval	DRAWING NO.	INDEX NO.
				by <i>R.C. Price</i> Deputy Traffic Operations Engr.	1 OF 1	17503
				Checked by		
				Quantities by		
				Checked by		
				Supervised by		
				LESTER JONES		



DETAIL "A"  
AERIAL FEED



DETAIL " B "

UNDERGROUND FEED

1. PHOTO ELECTRIC CONTROL AS REQUIRED.
2. ALL NEUTRAL WIRES TO HAVE WHITE INSULATION, CIRCUIT NO. 1 WIRES TO HAVE BLACK INSULATION. OTHER CIRCUITS TO BE COLOR CODED BY INSULATION. DO NOT USE WHITE OR GREEN INSULATED WIRES FOR UNDERGROUND CONDUCTORS.
3. LENGTH OF POLE IN GROUND PER INDEX 9821.

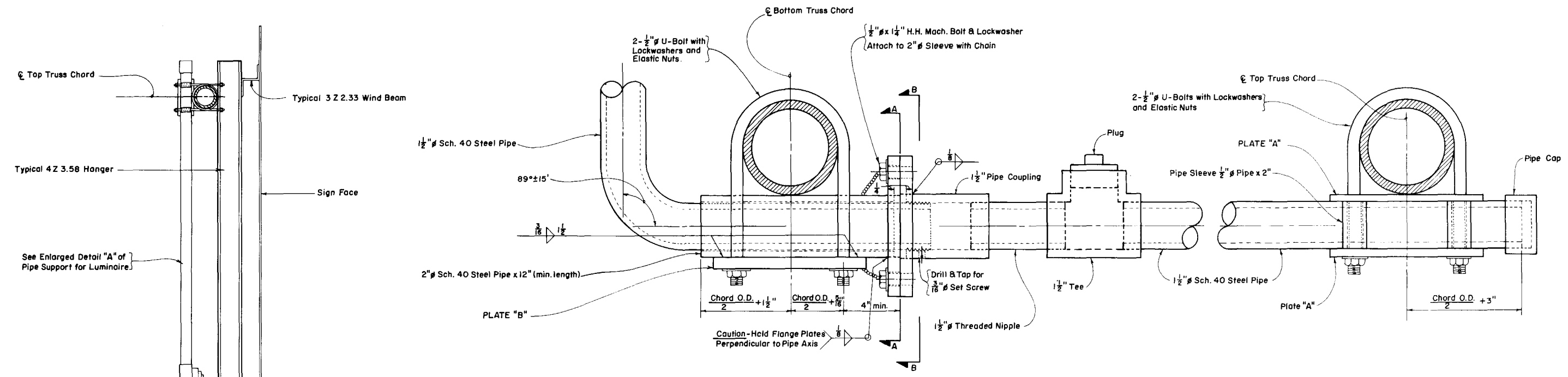
APPROVED BY FHWA 11-16-78

FLORIDA DEPARTMENT OF TRANSPORTATION  
TRAFFIC OPERATIONS

### SERVICE POINT DETAILS

DATE	REVISIONS	INITIALS	DATES	Recommended for approval by <u>DC Price</u>
		Designed by	G. K.	8-78
		Checked by		Deputy Traffic Operations Eng.
		Quantities by		Approved by <u>R.E. Magadey</u>
		Checked by		State Traffic Operations Eng.
		Supervised by	LESTER JONES	
			DRAWING NO.	INDEX NO.
			OF	17504





DETAIL "A"

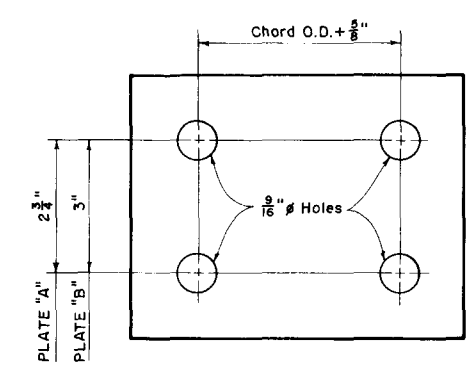
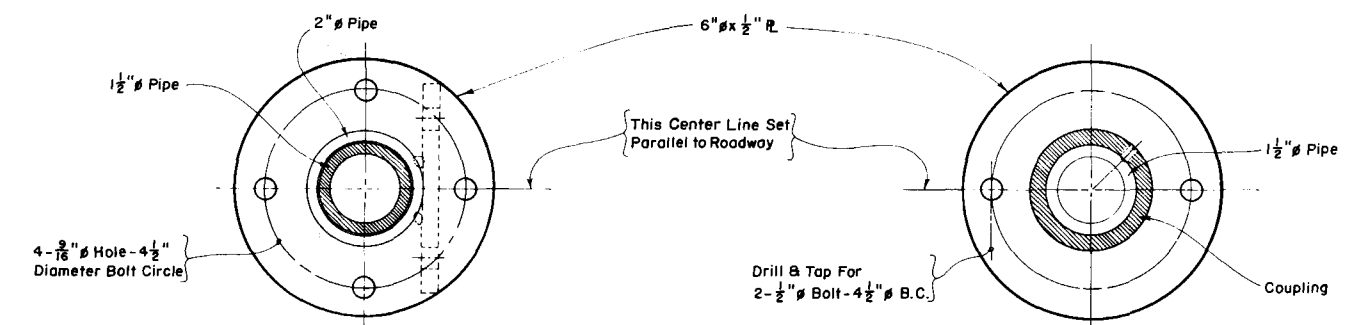


PLATE "A" Chord O.D. + 2 1/2" x 1 1/4" x 4 3/4"  
 PLATE "B" Chord O.D. + 2 1/2" x 3/8" x 5"

NOTES

- 1 - Dimension "A" To Be Established from Typ. and Make of Luminaire to be Purchased and Used on the Project.
- 2 - The Center Lines of Both Flange Plates and the 1/2" Pipe Luminaire Support Arm are to be Set Parallel to the Roadway Before the Set Screw is Seated.
- 3 - Minor Adjustments in the Horizontal Location of the Luminaire Support Arm along the Bottom Chord of the Truss will be allowed so that the Flange Plates will Clear the Truss Web Members.
- 4 - All Steel Pipe shall meet the Strength Requirements of ASTM Specification A-53 Grade "A" or Grade "B". Steel Plates shall meet the Requirements of A-36 and Bolts, Nuts and Washers shall meet the Requirements of ASTM A 307.
- 5 - All Items shall be Hot Dip Galvanized after Fabrication in Accordance with the Requirements of ASTM A123 and/or A153.
- 6 - Luminaire Support Arm shall be free to rotate in a clockwise or counter clockwise direction. When service or maintenance is required for Sign Face or Vertical Face of Truss; Support Arm shall be capable of being locked in a Position 90° from Parallel to the Roadway for Unobstructed Working Clearance.

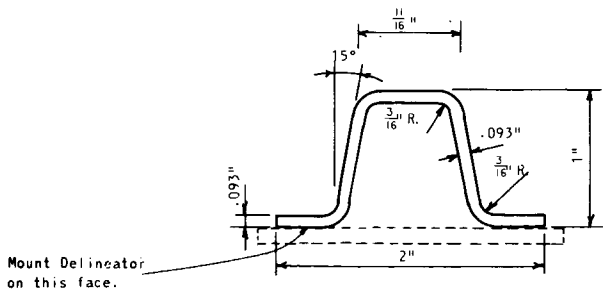
SECTION THROUGH SIGN SUPPORT AT LUMINAIRE



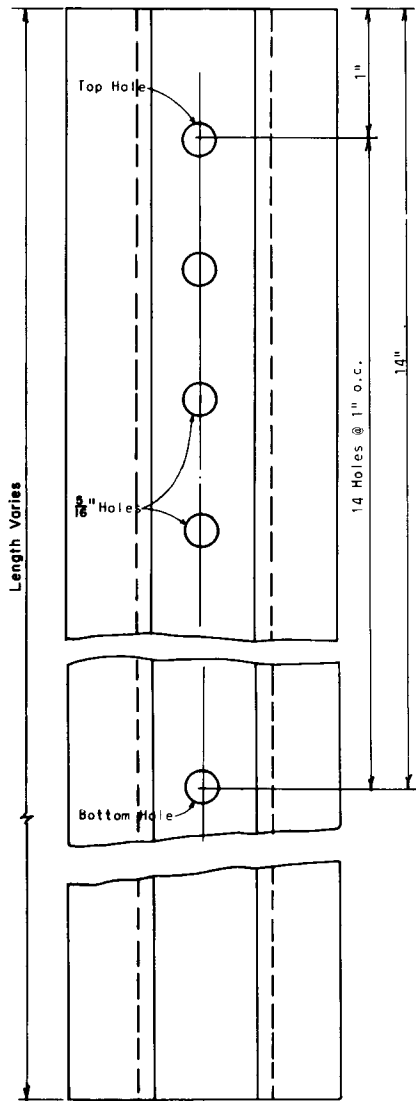
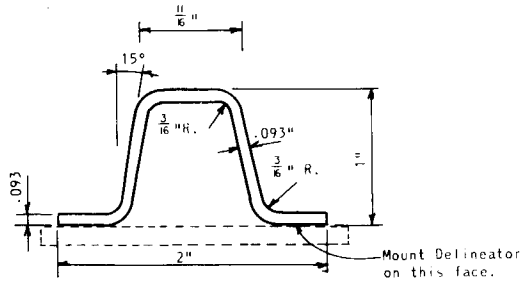
SECTION A-A

SECTION B-B

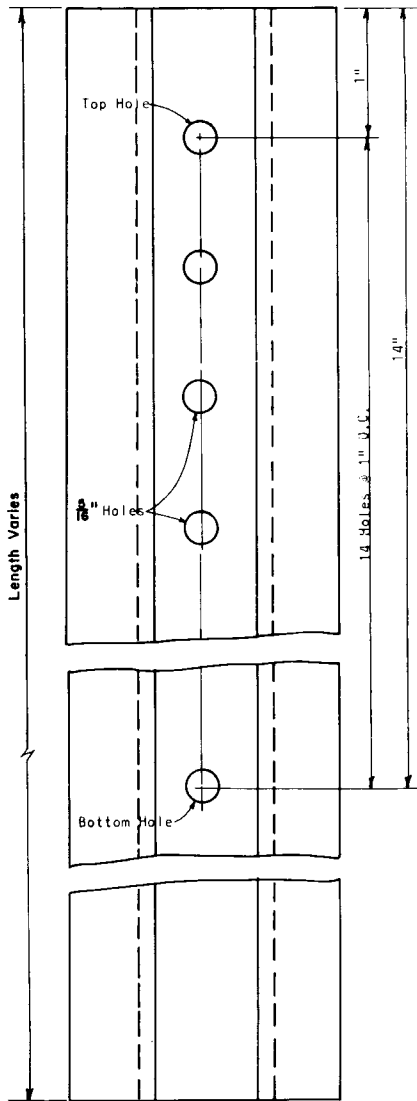
APPROVED BY FHWA 11-16-78					
FLORIDA DEPARTMENT OF TRANSPORTATION					
TRAFFIC OPERATIONS					
EXTERNAL LIGHTING FOR SIGNS (MERCURY VAPOR)					
DATE	REVISIONS	INITIALS	DATES	Recommended for approval by <i>E.C. Price</i> Deputy Traffic Operations Engr.	
10-6-78	Changed Index 12270 to Index 17505	Designed by CK		Approved by <i>R.E. Magaley</i> State Traffic Operations Engr.	
		Checked by CWB			
		Quantities by			
		Checked by			
		Supervised by	AJH	DRAWING NO. 2 OF 2 INDEX NO. 17505	



NOTE: Dimensions shown do not include galvanizing.



GALVANIZED STEEL  
APPROX. WEIGHT PER FOOT=1.0 Lbs.



ALUMINUM  
APPROX. WEIGHT PER FOOT=0.35 lbs.

#### GENERAL NOTES

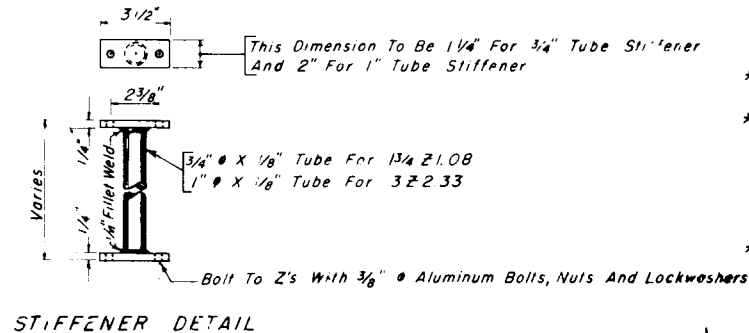
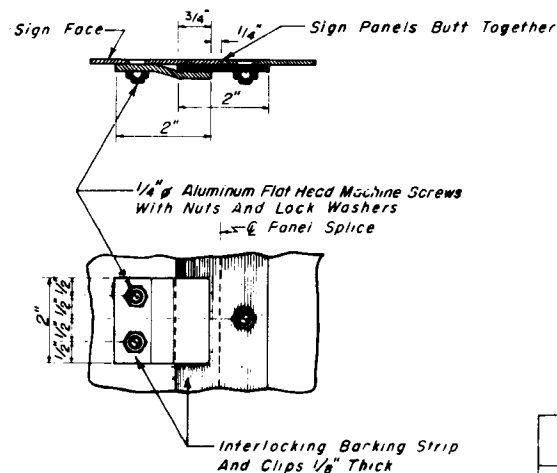
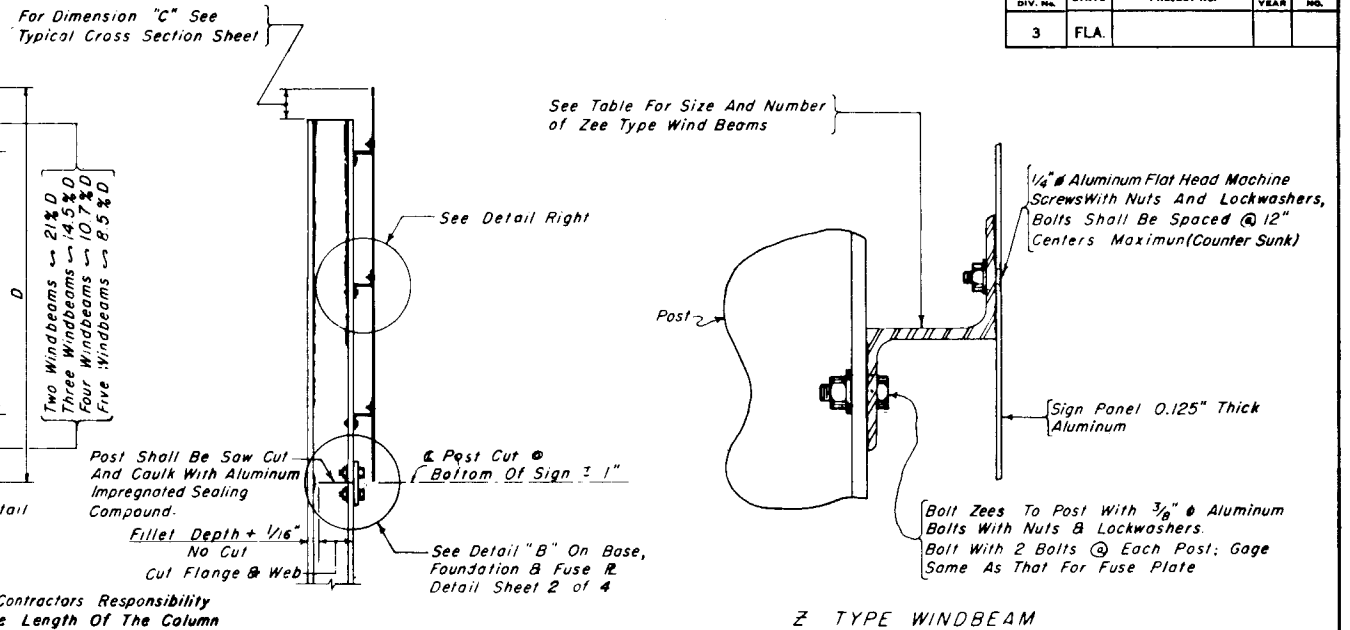
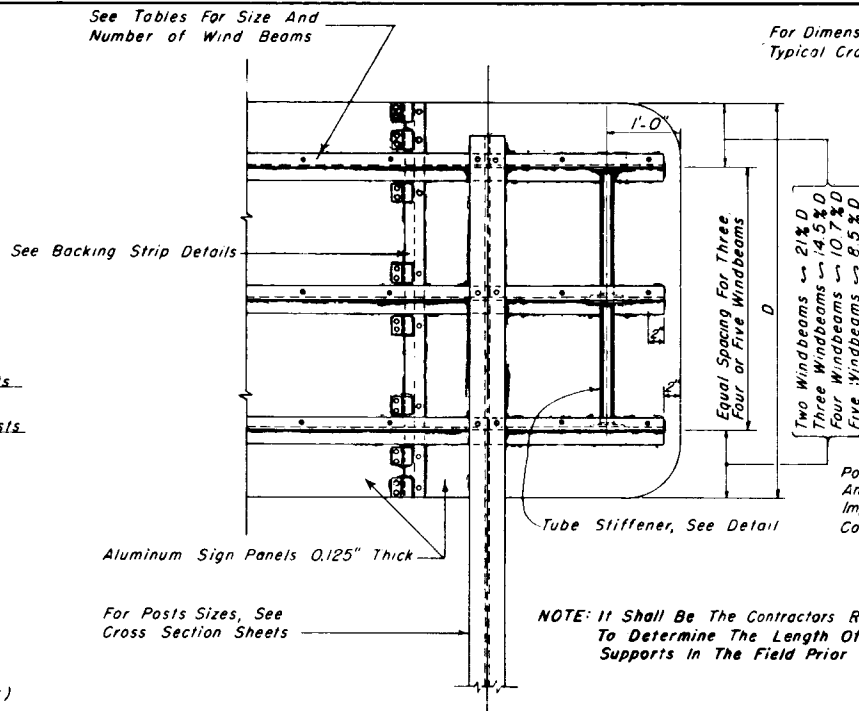
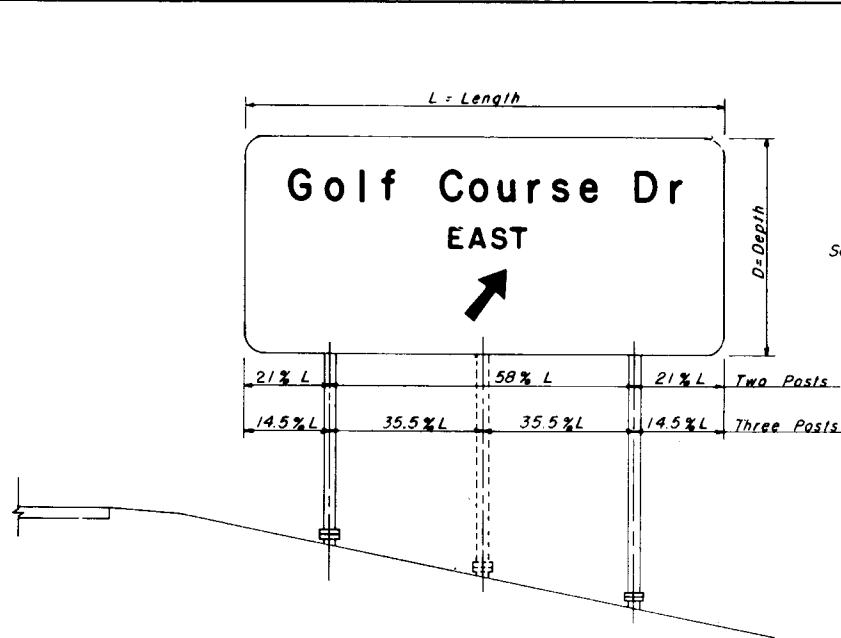
- MATERIALS:**
- STEEL:** A.S.T.M. - A 499 (Hot-Rolled Rail Carbon Steel)  
Galvanized A.S.T.M. - A-123
  - ALUMINUM:** Alloy 6061-T6
  - HOLES:** Holes for 1/4" diameter bolts on one inch centers.
  - TOLERANCES:** Thickness,  $\pm 5\%$ , dimensions,  $\pm \frac{1}{8}"$ .
  - LENGTH:** It shall be the Contractor's responsibility to determine the length of the delineator supports in the field prior to fabrication.
  - MATERIAL STRESSES:** All allowable stresses are in accordance with Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. A.A.S.H.O. 1975.

APPROVED BY FHWA 11/16/78

STATE ROAD DEPARTMENT OF FLORIDA BRIDGE DIVISION			
SIGN POSTS FOR DELINEATORS			
ROAD NO.		COUNTY	
PROJECT NO.		APPROVED BY	
Names		Date	
Detailed by C.E.S.		11-60	
Checked by M.W.R.		11-60	
Quantities by		T.W. Jensen	
Checked by		Assistant State Highway Engineer	
Traced by R.S.C.		6-54	
Drawing No.		Index No.	
1 OF 1		7024	

Date	Description	Date	Description
2-79	Index 17333 Removed	9-63	Revised Calculated Weights
9-79	Rev. Bolt Hole to 5/16", & 1/4"	11-69	Design Spec. Date Revised To: 1960
		8-74	INDEX 17336 ADDED
		5-76	Design Spec. Date Rev. to 1975
		5-77	INDEX 17333 ADDED
		1-78	Steel Note Rev.

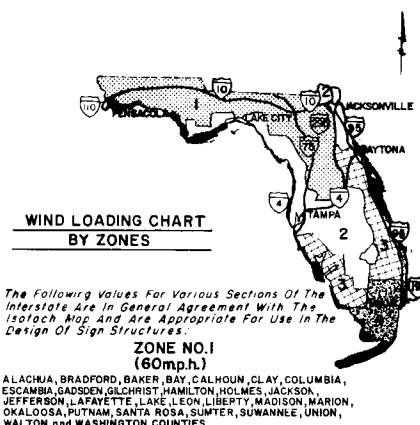




BACKING STRIP DETAIL  
(Maximum Spacing Of Clips 12")

SIZE OF ZEE	LENGTH OF SIGN FOR 2 POSTS	LENGTH OF SIGN FOR 3 POSTS
1 3/4" Z 108	0' ~ 14'-0"	14'-1" ~ 20'-0"
3 Z 2 33	14'-1" ~ 27'-0"	20'-1" ~ 38'-0"
3 Z 3 38	Over 27'	Over 38'

NUMBER OF WIND BEAMS FOR GIVEN DEPTH & WIND		
WIND	NO BEAMS	MAX DEPTH
70	2	9'-0"
70	3	13'-0"
70	4	17'-6"
70	5	22'-3"
80	2	8'-3"
80	3	11'-9"
80	4	15'-9"
80	5	20'-0"
90	2	7'-3"
90	3	10'-6"
90	4	14'-3"
90	5	18'-0"
60	2	10'-3"
60	3	14'-9"
60	4	20'-0"
60	5	25'-3"



*The Following Values For Various Sections Of The Interstate Are In General Agreement With The Isotach Map And Are Appropriate For Use In The Design Of Sign Structures.*

**ZONE NO.1  
(60 m.p.h.)**

ALACHUA, BRADFORD, BAKER, BAY, CALHOUN, CLAY, COLUMBIA, ESCAMBA, GADSDEN, GILCHRIST, HAMILTON, HOLMES, JACKSON, JEFFERSON, LAFAYETTE, LAKE, LEVY, LIBERTY, MADISON, MARION, OKALOOSA, PUTNAM, SANTA ROSA, SUMMIT, SUWANNEE, UNION, WALTON AND WASHINGTON COUNTIES.

**ZONE NO. 2  
(70 m.p.h.)**

CITRUS, DESOTO, DIXIE, DULAC, FLAGLER, FRANKLIN, GLADES, GULF, HARDEE, HENDRY, HERNANDO, HILLSBORO, HILLSBOROUGH, LEVY, NASSAU, OKEECHOBEE, ORANGE, OSCEOLA, PASCO, PINELLAS, POLK, SEMINOLE, ST. JOHNS, TAYLOR and WAKULLA COUNTIES.

**ZONE NO. 3  
(80 m.p.h.)**

BREVARD, CHARLOTTE, COLLIER, INDIAN RIVER, LEE, MANATEE, PALM BEACH, ST. LUCIE and VOLUSIA COUNTIES.

**ZONE NO. 4  
(90 m.p.h.)**

BROWARD, DANDY AND MONROE COUNTIES

*DESIGN SPECIFICATION: Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. A.A.S.H.O. '975.*

*\*SHEETS AND PLATES: Material Used Shall Meet The Requirements of Aluminum Association Alloy 6061-T6 And ASTM Specification B-209. Sheets Are To Be Degreased, Etched, Neutralized And Treated With Alodine 1200, Iridite 14-2, Bonderite 721, or Equal, No Stenciling Permitted on Sheets.*

*\*MATERIALS: All Aluminum Materials Shall Meet The Requirements of The Aluminum Association Alloy 6061-T6 And Also The Following ASTM Specifications For The Following: Sheet And Plates B209; Extruded Tube, Bars, Rods & Shapes B221 And Standard Structural Shapes, B308.*

*WELDING RODS: Aluminum Association Alloy No 5556 Filler Wire*

*TOLERANCE: All Above Materials Shall Be In Keeping With The ASTM Specifications Governing*

*STEEL BOLTS, NUTS & WASHERS: All Steel Bolts, Nuts And Washers Shall Meet The Requirements of ASTM A325 And Shall Be Hot Dipped Galvanized In Accordance With ASTM Specification A-153.*

*\*ALTERNATE MATERIAL: Material used for Sheet and Plate shall also meet the requirements of Aluminum Assoc. Alloy 5154-H38 and A.S.T.M. Specifications B209. Material used for Extruded Bars, Rods, Shapes and Tubes shall also meet the requirements of Aluminum Assoc. Alloy 6351-T5 and A.S.T.M. Specification B221.*

**BASE CONNECTION:** High Strength Bolts in The Base Connection Shall Be Tightened Only To The Torque Shown In The Table. Overtightened Base Connections Will Not Be Accepted.

**ALUMINUM BOLTS, NUTS & LOCKWASHERS:** Aluminum Bolts Shall Meet The Requirements of Aluminum Association Alloy 2024-T4 Or 6061-T6 (ASTM Spec. B-211). The Bolts Shall Have An Anodic Coating of At Least 0.0002" Thick And Be Chromate Sealed. Lockwashers Shall Meet The Requirements of Aluminum Association Alloy 7075-T6 (ASTM Specification B-221). Nuts Shall Meet The Requirements of Aluminum Association Alloy 6262-T9 Or 6061-T6.

**SIGN FACE:** All Sign Face Corners Shall Be Rounded. See Sign Layout Sheet.


**MATERIAL STRESSES:** All Allowable Stresses Are In Accordance With The Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, A.A.S.H.O. 1975, For All Materials Shown In The Plans.

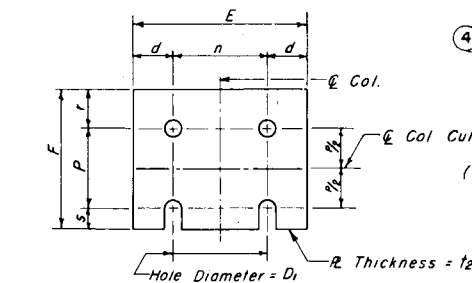
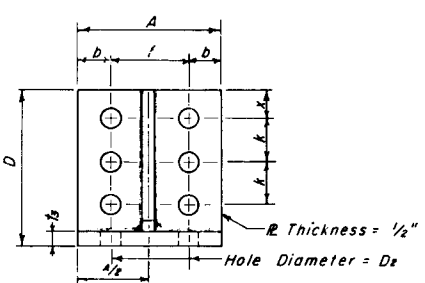
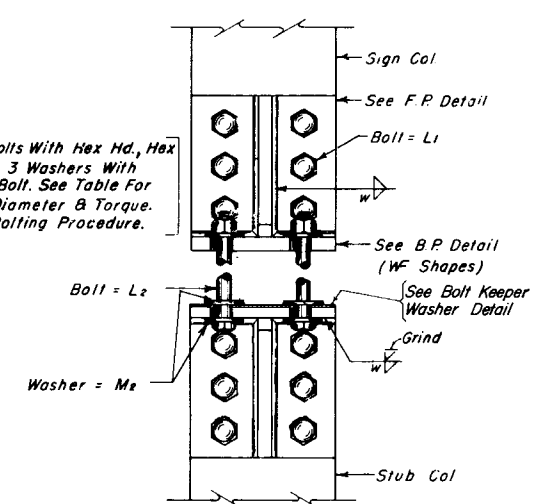
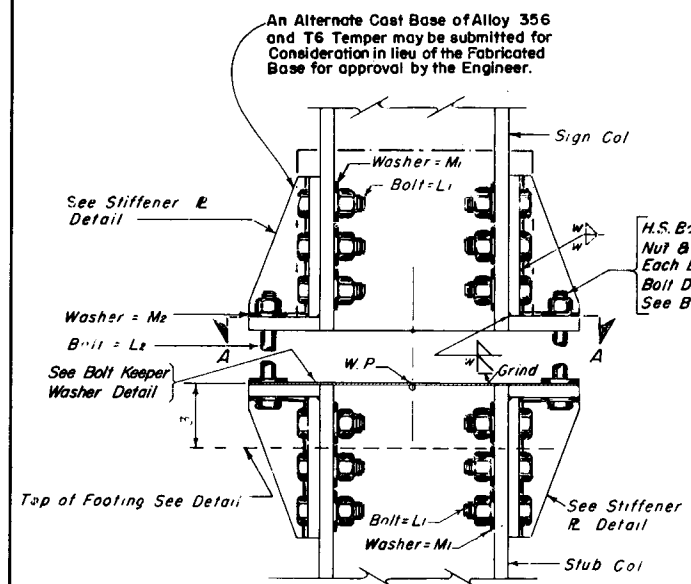
**DESIGN WIND LOAD:** See Wind Loading Chart By Zones For Wind In Miles Per Hour On Flat Sign Area. The Allowable Working Stress Shall Be Increased By 40 % For Combination Dead Load And Wind Load.

**SHOP DRAWINGS:** When Ground Signs Supports are Fabricated in accordance with these Plans, NO SHOP DRAWINGS are Required. In the Event the Column Length Exceeds 2 ft. Above the Length as shown in the Plans, SHOP DRAWINGS WILL BE REQUIRED for Those Signs Only for Approval. However, Shop Drawings for Sign Panels, Messages, Lettering and Quantities shall be Submitted to Traffic Operations for Approval.

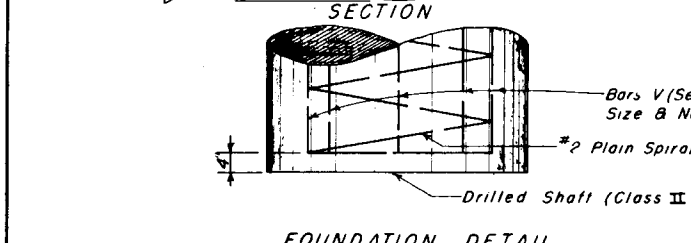
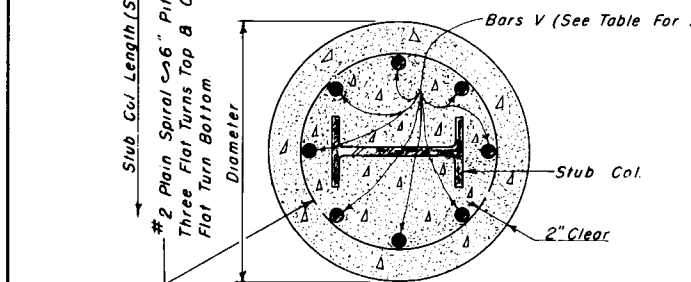
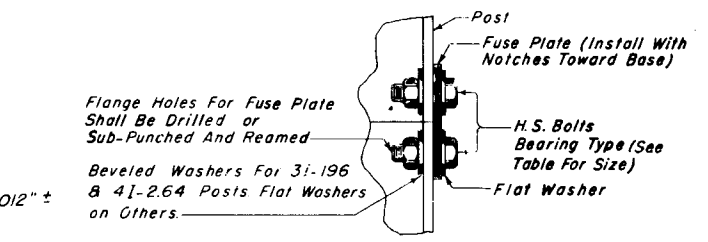
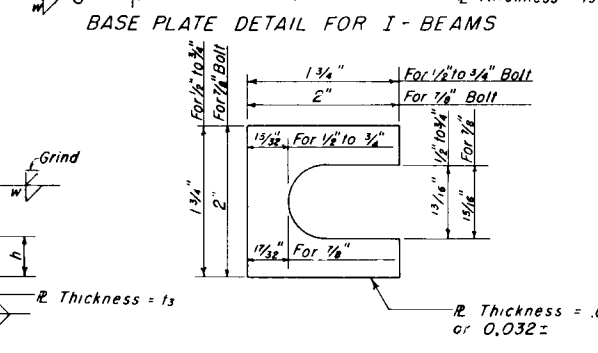
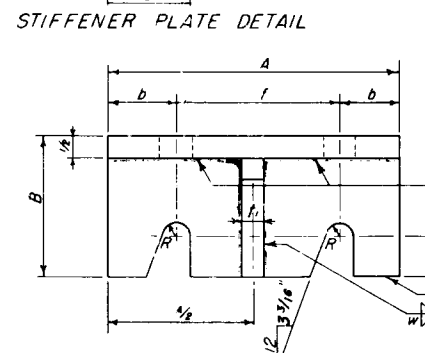
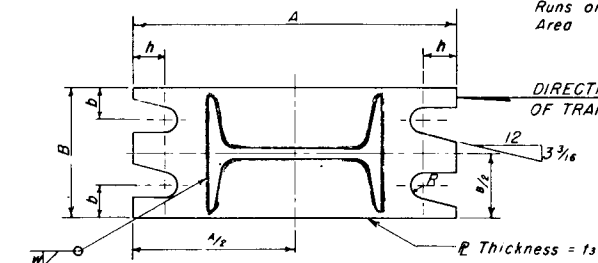
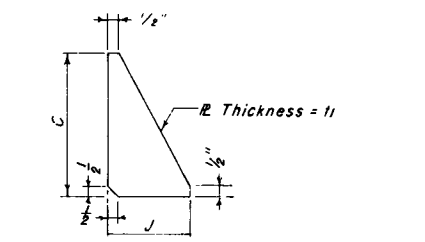
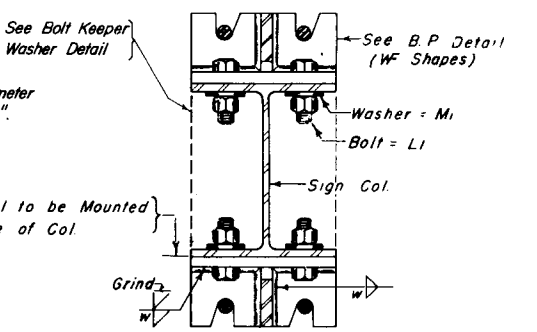
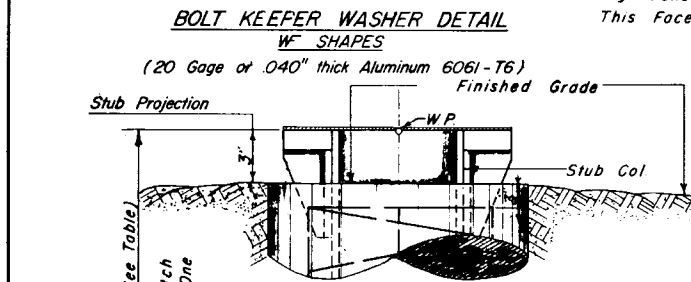
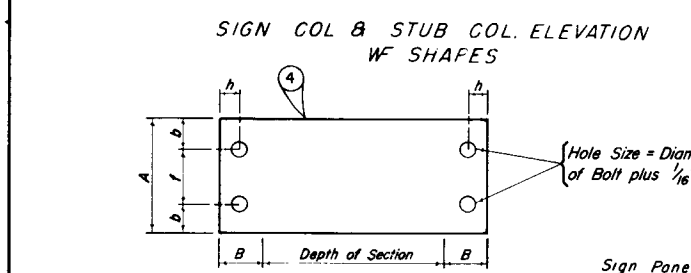
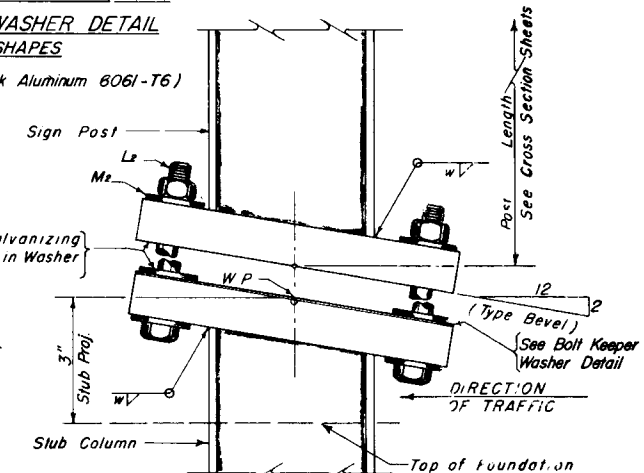
5/8"	19,200	Lbs.
3/4"	28,400	Lbs.
7/8"	36,050	Lbs.
1"	47,250	Lbs.
1 1/8"	56,450	Lbs.
1 1/4"	71,700	Lbs.

12-71	REV. LENGTH OF WIND BEAMS	4-1970	REV. SIZE OF WIND BMS
8-73	Rev. Shop Draw Note		
3-74	Rev. Round HD Bolts to Flat HD Mach. Screws		
1-76	REV. WIND LOADING		
5-76	Design Spec. Date Rev. to 1975		
11-77	Rev. Detail 'B' Note		
11-78	Rev. Design Loads Note		
		REVISONS	
		Date	Descriptions
		6-19-68	1/2 BOLT & WIND PRESSURE REDUCTION NOT REMOVED A.A.S.D. 1968
		3-69	CHANGED WIND LOADING SUMMARY
		10-69	ALT. MATERIAL ALLOY NOTE.

STATE ROAD DEPARTMENT OF FLORIDA BRIDGE DIVISION				
STANDARD ROADSIDE SIGN BREAK-AWAY PANEL DETAIL				
ROAD NO.		COUNTY		PROJECT NO.
	Names	Dates	APPROVED BY	
Designed by	HHJ	1-67	 Assistant State Highway Engineer	
Checked by	C.W.B.	1-67		
Quantified by				
Checked by				
Traced by			Drawing No.	Index No.
			1 of 4	9535



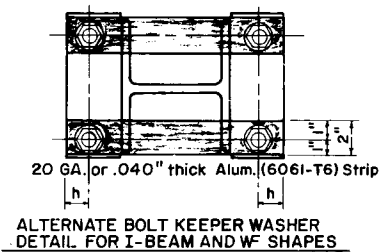
**BOLT KEEPER WASHER DETAIL**  
I-BEAM SHAPES  
(20 Gage or .040" thick Aluminum 6061-T6)



BASE CONNECTION DATA TABLE																			
SECTION	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
3 I 196	7 1/2	3"																	
4 I 264	7 1/2	3"																	
6 W 416	4"	3 3/4"	5"	5 3/4"	2 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"
8 W 590	5 1/4"	3 3/4"	5"	5 3/4"	2 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"
8 W 832	6 1/2"	3 3/4"	6 1/2"	7 1/2"	2 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"
10 W 1141	8"	3 3/4"	8"	8 3/4"	2 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"
12 W 1384	8"	3 3/4"	8 1/2"	9 1/4"	3"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"
12 W 1834	10"	3 3/4"	10"	10 3/4"	3 1/2"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"	3 3/4"

**NOTE**  
Sections Shown Are For Installation On Right Shoulder And In Gore. Plate Slot Bevels Are Opposite Hand From That Shown For Installations In The Median.

- PROCEDURE FOR ASSEMBLY OF BASE CONNECTION: FOR BOLTS L2**
1. Assemble post to stub with bolts and with one flat washer on each bolt between plates.
  2. Shim as required to plumb post (See Shim Detail)
  3. Tighten all bolts the maximum possible with 12" to 15" wrench to bed washers and shims and to clean bolt threads then loosen each bolt in turn and retighten in a systematic order to the prescribed torque (See Table)
  4. Burr threads at junction with nut using a center punch to prevent nut loosening.



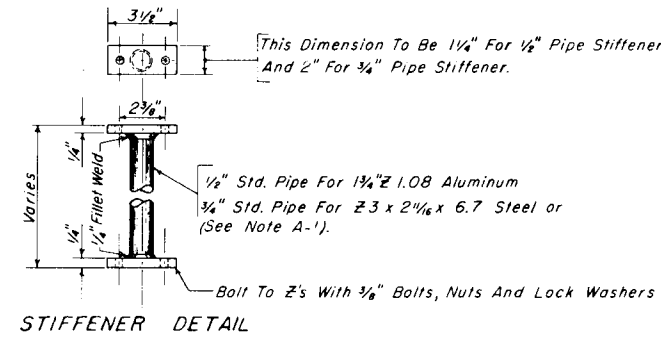
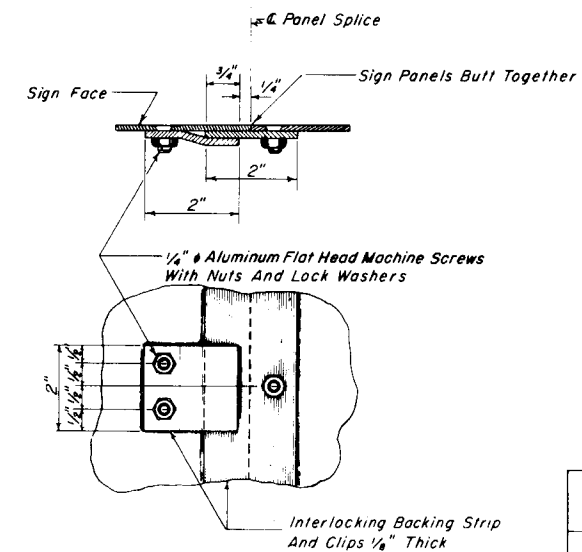
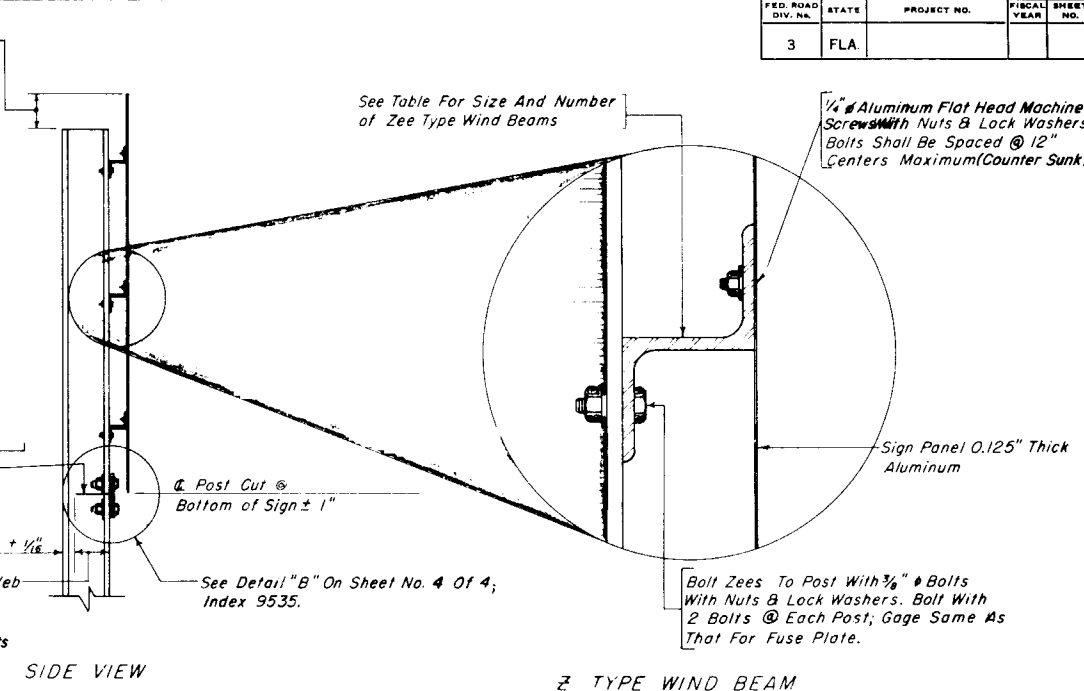
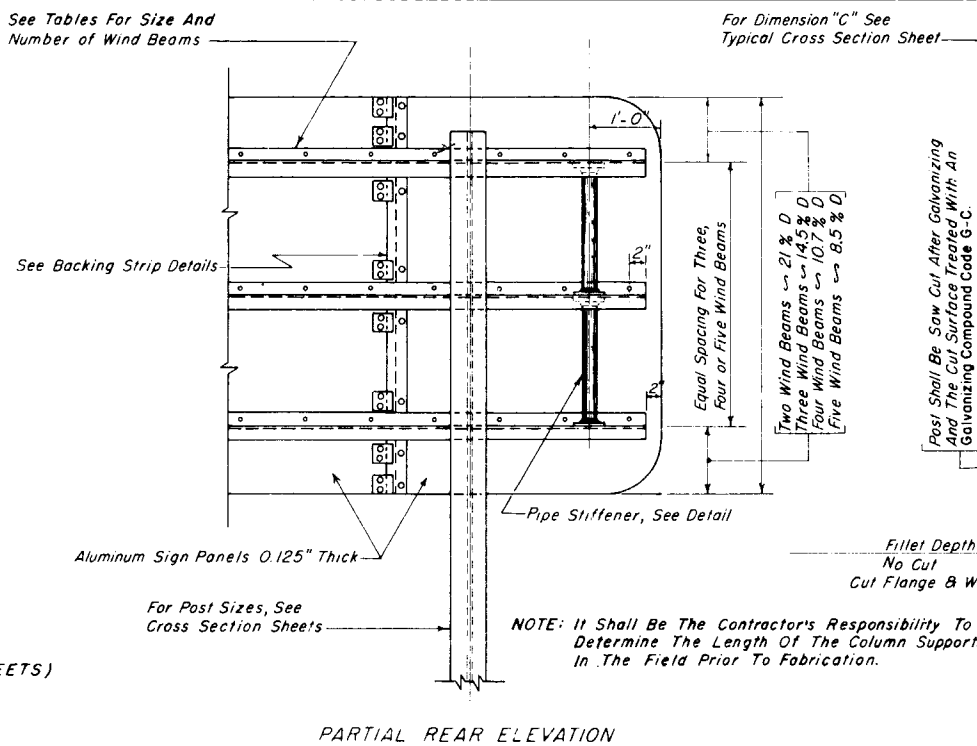
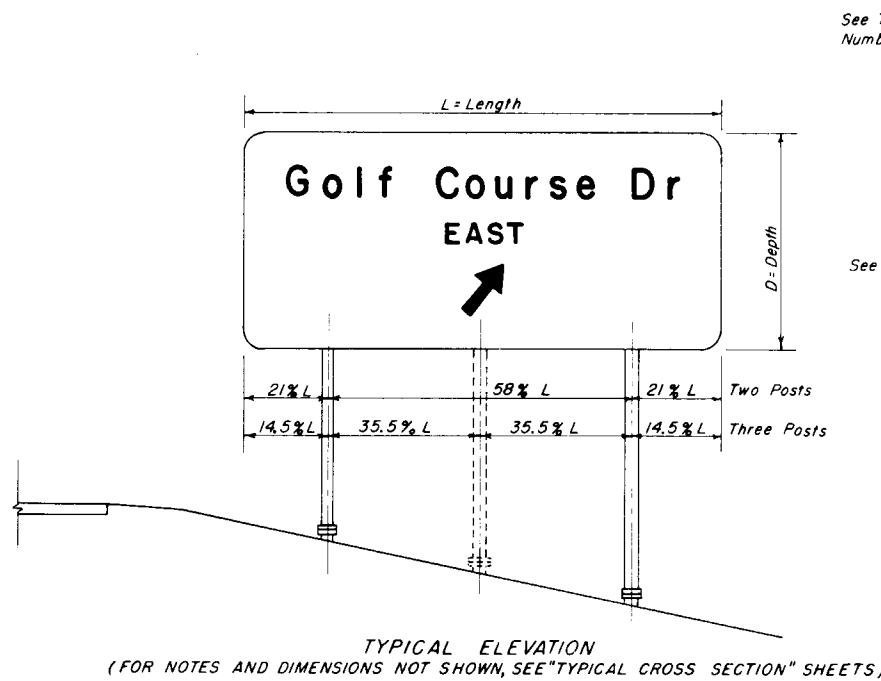
APPROVED BY FHWA 11/16/78  
ALUMINUM BASE, FOUNDATION & FUSE & DETAILS

**STATE ROAD DEPARTMENT OF FLORIDA**  
**BRIDGE DIVISION**

**STANDARD ROADSIDE SIGN**  
**BREAK-AWAY POST DETAILS**

REVISIONS	ROAD NO.	COUNTY	PROJECT NO.
Dates Descriptions 6-19-68 Bolt Size Torque & Dim. 6-22-68 Bolt Keeper Washer Detail Added 6-7-72 TORQUE 6-73 Class I Concrete Added 1-74 Alternate Cast Base Added 8-74 Alternate Bolt Keeper Washer Added 5-76 Design Spec. Date Rev. to 1975	Name Date H.M.J. 1-67 C.W.B. 1-67	APPROVED BY T.W. [Signature] Assistant State Highway Engineer	Drawing No. 2 of 4

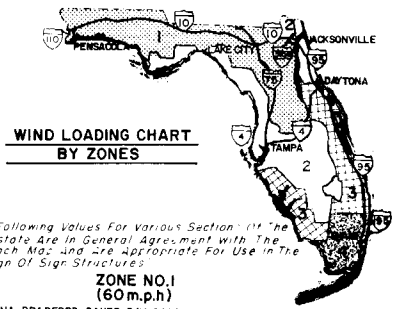
Index No. 9535



NUMBER OF WIND BEAMS FOR GIVEN DEPTH AND WIND		
WIND	NO BEAMS	MAX. DEPTH
70	2	9'-0"
70	3	13'-0"
70	4	17'-6"
70	5	22'-3"
80	2	8'-3"
80	3	11'-9"
80	4	15'-9"
80	5	20'-0"
90	2	7'-3"
90	3	10'-6"
90	4	14'-3"
90	5	18'-0"
60	2	10'-3"
60	3	14'-9"
60	4	20'-0"
60	5	25'-3"

SIZE OF WIND BEAMS		
SIZE OF ZEE	LENGTH OF SIGN FOR 2 POSTS	LENGTH OF SIGN FOR 3 POSTS
* 1 1/4" Z 108	0' - 14'-0"	14'-1" - 20'-0"
Z 3 x 2 1/8 x 6.7	14'-1" - 27'-0"	20'-1" - 38'-0"
Z 3 x 2 1/8 x 9.8	Over 27'	Over 38'

\* NOTE: Aluminum Zee - No Steel Equivalent Available.



The Following Values For Various Sections Of The Interstate Are In General Agreement With The Isotach Map And Are Appropriate For Use In The Design Of Sign Structures.

**ZONE NO. 1 (60 m.p.h.)**  
ALACHUA, BRADFORD, BAKER, BAY, CALHOUN, CLAY, COLUMBIA, ESCAMBIA, GADSDEN, GILCHRIST, HAMILTON, HOLMES, JACKSON, JEFFERSON, LAFAYETTE, LAKE, LEON, LIBERTY, MADISON, MARION, OKALOOSA, PUTNAM, SANTA ROSA, SUMTER, SUWANNEE, UNION, WALTON and WASHINGTON COUNTIES.

**ZONE NO. 2 (70 m.p.h.)**  
CITRUS, DESOTO, DIXIE, DUVAL, FLAGLER, FRANKLIN, GLADES, GULF, HARDEE, HENDRY, HERNANDO, HIGHLANDS, HILLSBOROUGH, LEVY, NASSAU, OKECHOBEE, ORANGE, OSCEOLA, PASCO, PINELLAS, POLK, SEMINOLE, ST. JOHNS, TAYLOR and WAKULLA COUNTIES.

**ZONE NO. 3 (80 m.p.h.)**  
BREVARD, CHARLOTTE, COLLIER, INDIAN RIVER, LEE, MAJESTEE, MARTIN, PALM BEACH, SARASOTA, ST. LUCIE and VOLUSIA COUNTIES.

**ZONE NO. 4 (90 m.p.h.)**  
BROWARD, DADE and MONROE COUNTIES.

**DESIGN SPECIFICATION:** Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. A. A. S.H.O. 1975. — **WELDING** — Latest Edition of A.W.S. Structural Welding Code, Latest A. A. S.H.O. Standard Specifications for Welding of Structural Steel Highway Bridges and FLA. D.O.T. Standard Specifications with Supplement.

**DESIGN LOADS:** See Wind Loading Chart By Zones For Wind In Miles Per Hour On Flat Sign Area. The Allowable Working Stress Shall Be Increased By 40% For Combination Dead Load And Wind Load.

**STRUCTURAL STEEL:** All Structural Steel Shall Meet The Requirements of A.S.T.M. A-36.

**STEEL BOLTS, NUTS AND LOCK WASHERS:** Steel Bolts, Nuts And Lock Washers Shall Meet The Following A.S.T.M. Requirements; High Strength Bolts, Nuts And Washers A.S.T.M. A-325; All Other Steel Bolts, Nuts And Washers, A.S.T.M. A-307.

**GALVANIZING OR METALIZING:** All Steel Shapes, Angles, Tees, Plates, Bolts, Nuts And Washers Shall Be Hot Dip Galvanized Or Metalized After Fabrication. Hot Dip Galvanizing Shall Be In Accordance With The Requirements Of A.S.T.M. A-123 and/or A-153.

**SIGN PANELS:** The Material Used Shall Meet The Requirements of The Aluminum Association Alloy, 6061-T6 And A.S.T.M. Specification B209. The Sheets Are To Be Degreased, Etched, Neutralized And Treated With Alodine 1200, Iridite 14-2, Banderite 721, Or Equal. No Stenciling Permitted On Sheets.

**ALUMINUM BOLTS, NUTS AND LOCK WASHERS:** Aluminum Bolts Shall Meet The Requirements of The Aluminum Association Alloy 2024-T4 or 6061-T6 (A.S.T.M. Specification B-211). The Bolts Shall Have An Anodic Coating of At Least 0.0002" Thick And Be Chromate Sealed. Lock Washers Shall Meet The Requirements of Aluminum Association Alloy 7075-T6 (A.S.T.M. Specification B-221). Nuts Shall Meet The Requirements of Aluminum Association Alloy 6262-T9 or 6061-T6.

**TOLERANCE:** All Above Materials Shall Be In Keeping With The A.S.T.M. Specifications Governing.

**MATERIAL STRESSES:** All Allowable Stresses Are In Accordance With The Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. A. A. S.H.O. 1975, For All Materials Shown In The Plans.

**SHOP DRAWINGS:** See Shop Drawing Note Sheet 1 of 4, 9535.

**BASE CONNECTION:** High Strength Bolts In The Base Connection Shall Be Tightened Only To The Torque Shown In The Table. Overtightened Base Connections Will Not Be Accepted.

**FRICTION FUSE PLATE:** Notched Steel Fuse Plates Shall Conform To The Requirements of A.S.T.M. Specification A-36. All Holes Shall Be Drilled, All Plate Cuts Shall, Preferably, Be Saw Cuts; However, Flame Cutting Will Be Permitted Provided All Edges Are Ground. Metal Projecting Beyond The Plane of The Plate Face Will Not Be Tolerated.

**SIGN FACE:** All Sign Face Corners Shall Be Rounded. See Sign Layout Sheet.

**ALUMINUM MATERIALS:** All Aluminum Materials Other Than Bolts, Nuts And Lock Washers Shall Meet The Requirements of The Aluminum Association Alloy 6061-T6 And Also The Following A.S.T.M. Specifications For The Following; Sheet And Plates B209; Extruded Tube, Bars, Rod And Shapes B221 And Standard Structural Shapes B308.

**FABRICATOR NOTE - IMPORTANT**  
All Friction Fuse Bolts Shall Be Tightened In The Shop Following A Method Approved By The Engineer. Tightening Shall Be To Such Degree As To Obtain The Following Minimum Residual Tension In Each Bolt, (See Table Below).


**NOTE A-1**  
At The Contractors Option, Aluminum Zees And Stiffener May Be Used In Lieu of Structural Steel Zees And Stiffeners. See Drawing No. 1 of 4, Index No. 9535. For Aluminum Zee And Stiffener.

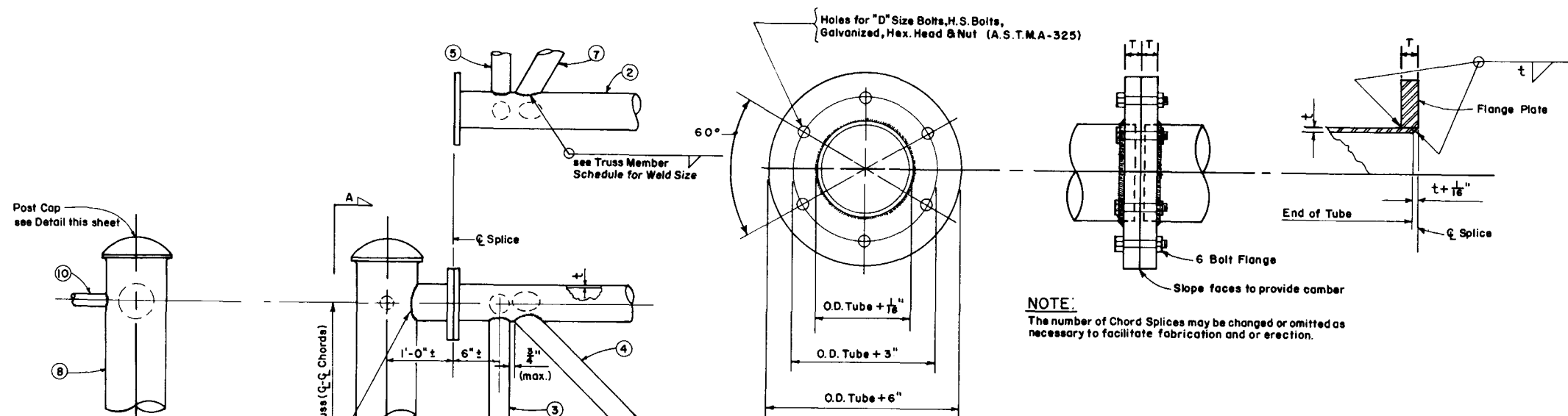
**HIGH STRENGTH BOLTS (A-325)**  
**MINIMUM RESIDUAL TENSION**  
**BOLT SIZE TENSION**

5/8"	19,200 Lbs.
3/4"	28,400 Lbs.
1"	47,250 Lbs.
1 1/8"	56,450 Lbs.
1 1/4"	71,700 Lbs.
1 3/8"	85,450 Lbs.

APPROVED BY FHWA 11/16/78  
STEEL

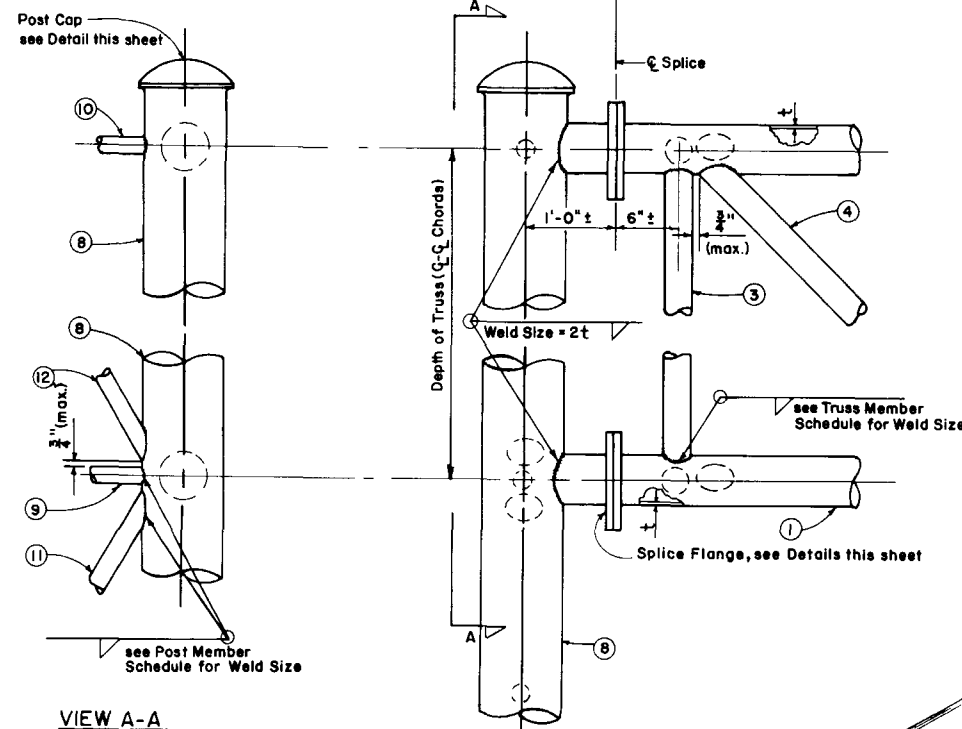
STATE ROAD DEPARTMENT OF FLORIDA BRIDGE DIVISION			
STANDARD ROADSIDE SIGN BREAK-AWAY PANEL DETAIL			
ROAD NO.	COUNTY	PROJECT NO.	
REVISIONS		APPROVED BY	
Dates	Descriptions	Names	Dates
6-19-68	1/2" BOLT & WIND PRESSURE REDUCTION NOTE REMOVED	H.H.U.	1-67
8-73	Rev. Shop Dwg. Note	C.W.B.	1-67
1-74	Rev. Round Hd. Bolt to Flat Hd. Wash. Screws		
1-76	Rev. Wind Loading		
5-76	Design Spec. Date Rev. to 1975		
11-77	Rev. Detail "B" Note		
1-78	Design Spec. Date Rev.		
11-78	Rev. Design Loads Note		
		Drawing No. 3 of 4	
		Index No. 9535	

ROAD NO.		COUNTY	PROJECT NO.	
Names		Dates	APPROVED BY  Assistant State Highway Engineer	
Checked by	H.H.J.	1-67		
Detailed by	C.W.B.	1-67		
Quantities by				
JE	Checked by		Drawing No. 4 of 4	
	Traced by			
				Index No. 9535



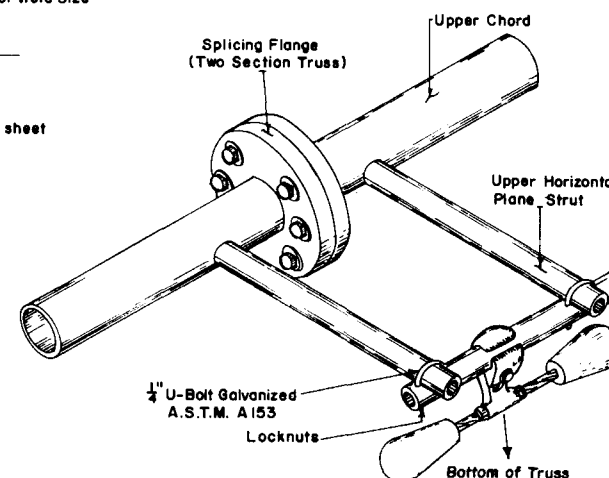
**SPLICE PLATE FLANGE DETAILS**  
Aluminum Alloy 6061-T6 or 5154-H38 or Alloy 356-T7

SPLICE PLATE FLANGE TABLE			
TUBE SIZE	T	BOLT SIZE "D"	
2 3/4" x 1/8" to 6 1/2" x 1/4"	1 1/4"	3/8"	
7" x 1/4" to 9" x 1/4"	1 1/4"	3/4"	
7 1/2" x 5/16" to 9 1/2" x 5/16"	1 1/4"	7/8"	



### GENERAL NOTES

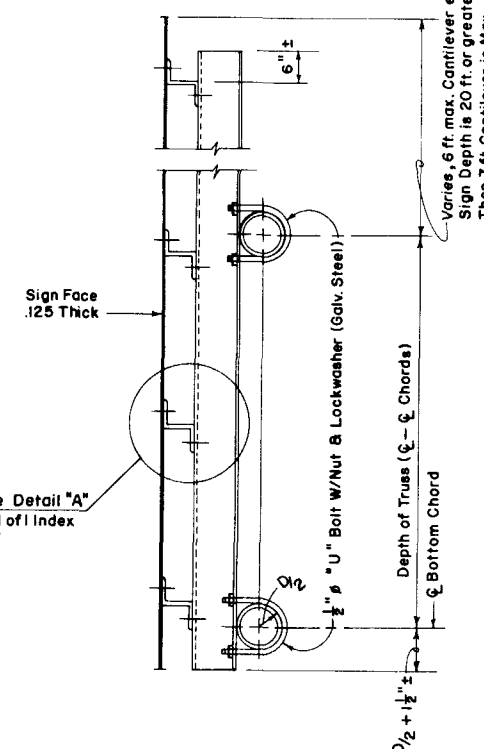
- (1) For "General Notes" Covering Specifications and Materials, see Sheet 1 of 4 Index 9535
- (2) SHOP DRAWINGS: Contractor shall submit complete shop drawings before fabrication for approval.
- (3) COLUMN LENGTHS: It shall be the Contractor's responsibility to determine the length of column supports.



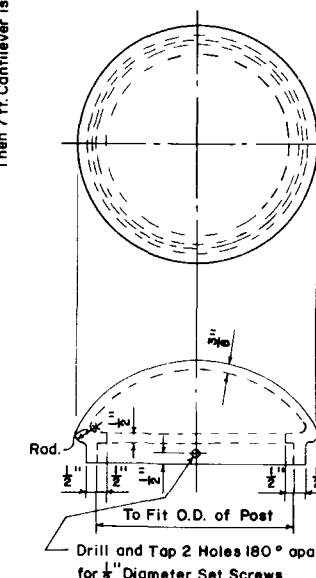
**STOCKBRIDGE-TYPE DAMPER**

Stockbridge-Type Damper Cat. 1708-200.1 damper placed at mid span or at the Contractor's option in lieu of this Stockbridge-Type Damper Sign Panels shall be attached at the time the structure is erected, or a temporary sign panel placed at time of erection or the overhead sign truss shall be wrapped in canvas.

SCHEDULE FILLET WELD SIZE			
TRUSS MEMBERS		POST MEMBERS	
THICKNESS	WELD SIZE	THICKNESS	WELD SIZE
1/8"	3/16"	1/8"	1/4"
3/16"	1/4"	3/16"	3/8"
1/2"	3/8"	1/2"	1"
5/8"	7/8"	5/8"	1 1/2"
3/4"	1"	3/4"	1 3/4"



**DETAIL OF SIGN FACE & TRUSS CONNECTION**  
See Drawing 1 of 1 Index No. 11037



**POST CAP**  
Aluminum Alloy 356-F

APPROVED BY FHWA 11/16/78  
ALUMINUM TRUSSES  
ASSEMBLY DETAILS FOR TYPE A, B or C TRUSS

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION  
STRUCTURES

BRIDGE SPAN TRUSS FOR OVERHEAD SIGNS

REVISIONS		ROAD NO.	COUNTY	PROJECT NO.
Date	Description			
4-72	Upper Col. Strut No. 10 Rev. to No. 9			
5-72	Sign Face & Truss Connection INDEX 11495 ADDED			
8-74				
		DESIGNED BY	HAV	11-71
		CHECKED BY	CWB	11-71
		QUANTITIES BY		
		CHECKED BY		
		SUPERVISOR BY	AJH	
		APPROVED BY		
		DRAWING NO.	1 of 1	10965

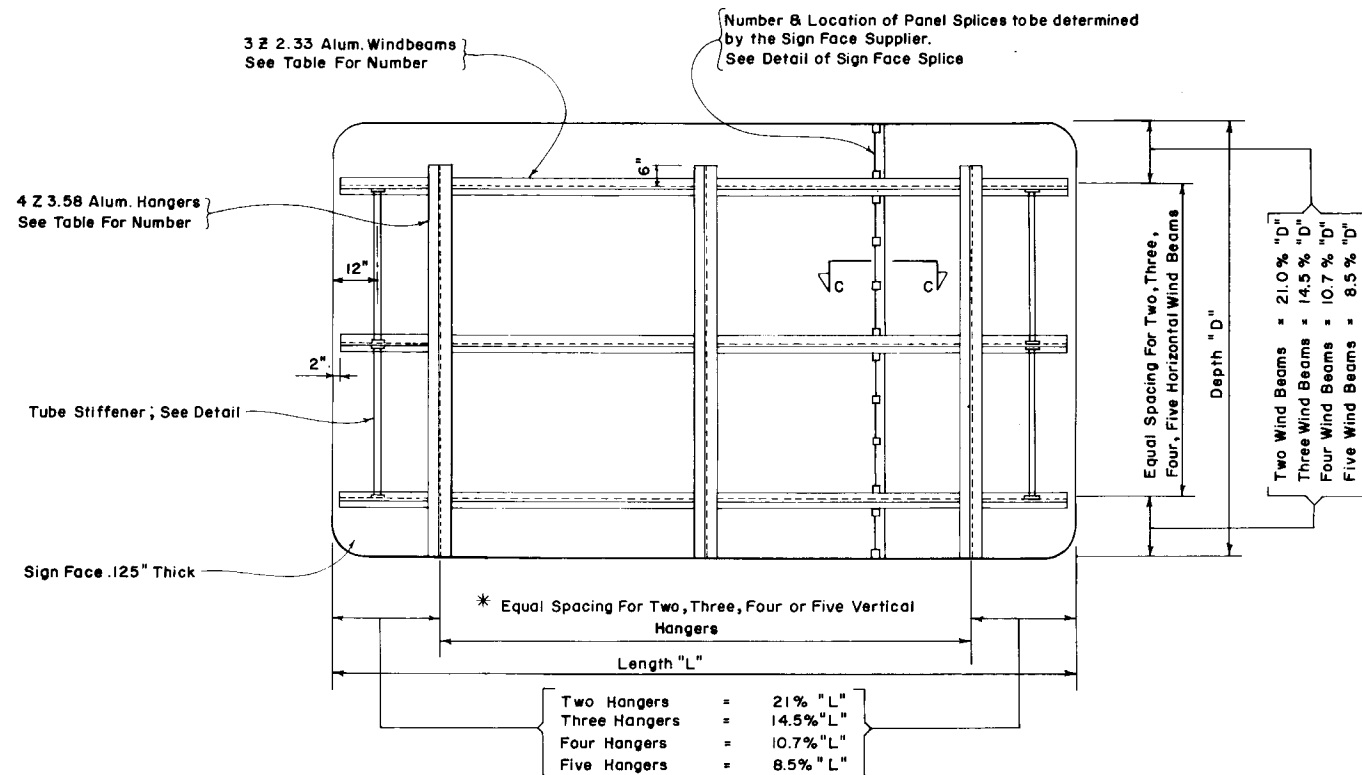
An Alternate Cast Base of Alloy 356 and Heat Treated to T6 Temper may be submitted for consideration in lieu of the Fabricated Base for approval by the Engineer.

See Drawing 1 of 1 Index No. 11926 For detail of Post Base and Anchor Bolts.

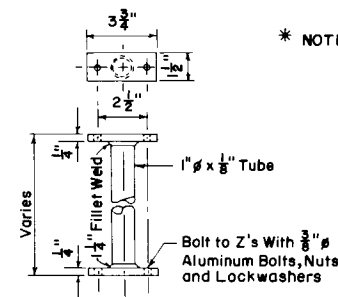
Minimum Grout = Height of Nut

Concrete Footing see Index No. 11201

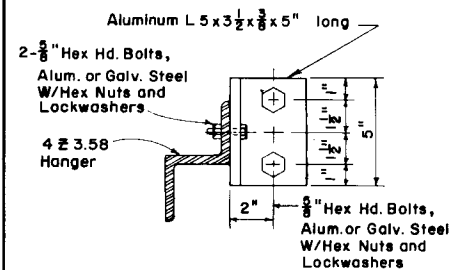
**ELEVATION**



Number of 3 Z 2.33 Horizontal Wind Beams for Sign Depth and Wind			Number of 4 Z 3.58 Vertical Hanger Beams for Sign Length			
WIND M.P.H.	NO. BEAMS	MAX. DEPTH	2 HANGERS	3 HANGERS	4 HANGERS	5 HANGERS
			SIGN LENGTH	SIGN LENGTH	SIGN LENGTH	SIGN LENGTH
110	2	7'-3"	0 - 15'-0"	15'-1" - 30'-0"	30'-1" - 45'-0"	
110	3	10'-6"	0 - 15'-0"	15'-1" - 30'-0"	30'-1" - 45'-0"	
110	4	14'-3"	0 - 13'-0"	13'-1" - 18'-3"	18'-4" - 24'-9"	24'-10" - 31'-4"
110	5	18'-0"	0 - 13'-0"	13'-1" - 18'-3"	18'-4" - 24'-9"	24'-10" - 31'-4"
100	2	8'-3"	0 - 15'-0"	15'-1" - 30'-0"	30'-1" - 45'-0"	
100	3	11'-9"	0 - 15'-0"	15'-1" - 22'-3"	22'-4" - 30'-0"	30'-1" - 38'-0"
100	4	15'-9"	0 - 15'-0"	15'-1" - 22'-3"	22'-4" - 30'-0"	30'-1" - 38'-0"
100	5	20'-0"	0 - 11'-7"	11'-8" - 16'-4"	16'-5" - 22'-2"	22'-3" - 28'-0"
90	2	9'-0"	0 - 15'-0"	15'-1" - 30'-0"	30'-1" - 45'-0"	
90	3	13'-0"	0 - 15'-0"	15'-1" - 27'-3"	27'-4" - 37'-0"	
90	4	17'-6"	0 - 15'-0"	15'-1" - 27'-3"	27'-4" - 37'-0"	
90	5	22'-6"	0 - 14'-3"	14'-4" - 20'-0"	20'-1" - 27'-0"	27'-1" - 34'-3"
80	2	10'-3"	0 - 15'-0"	15'-1" - 30'-0"	30'-1" - 45'-0"	
80	3	14'-9"	0 - 15'-0"	15'-1" - 30'-0"	30'-1" - 45'-0"	
80	4	20'-0"	0 - 15'-0"	15'-1" - 25'-9"	25'-10" - 34'-10"	



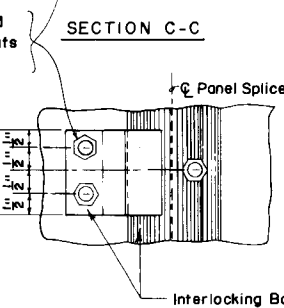
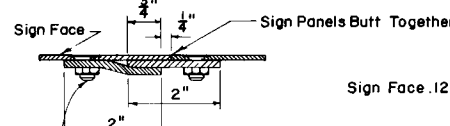
STIFFENER DETAIL



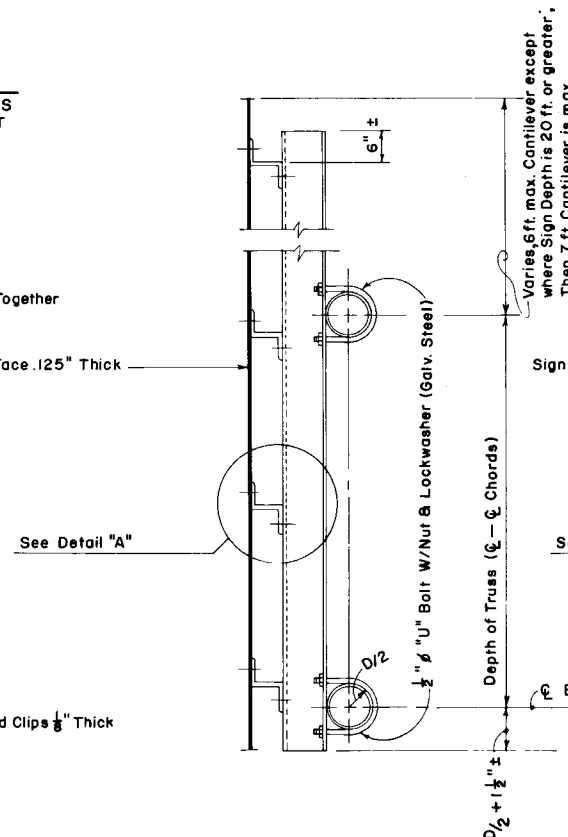
SECTION B-B

NOTE: SPACING OF VERTICAL HANGERS MAY BE VARIED SLIGHTLY OR AS NECESSARY TO CLEAR THE TRUSS STRUTS AND DIAGONALS AT PANEL POINTS.

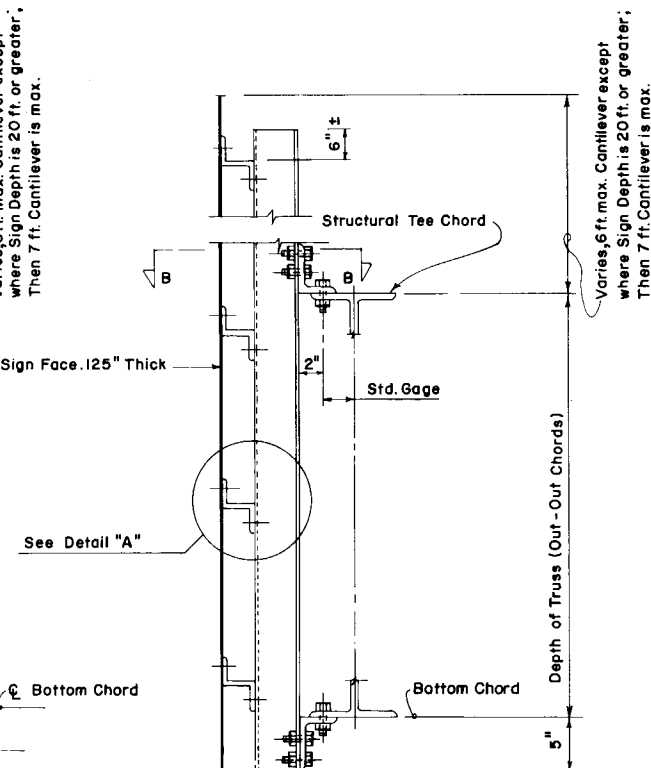
1/4\"/>



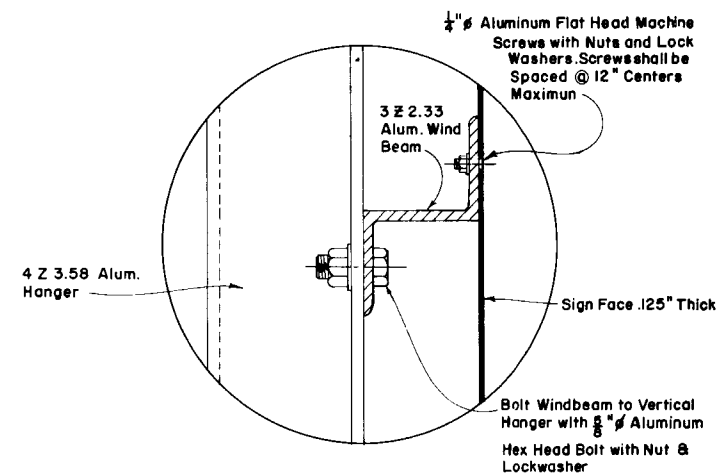
SIGN FACE SPLICE  
(MAX. SPACING OF CLIPS 12")



TYPICAL DETAIL OF SIGN & TRUSS CONNECTION  
FOR ROUND CHORD MEMBERS



TYPICAL DETAIL OF SIGN & TRUSS CONNECTION  
FOR ROLLED STRUCTURAL SHAPES  
(LIGHTING NOT SHOWN)



DETAIL "A"  
(SHOWING ATTACHMENT OF SIGN FACE  
PANEL TO VERTICAL HANGER SUPPORTS)

APPROVED BY FHWA 11/16/78  
DETAILS OF SIGN FACE & TRUSS CONNECTION  
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION  
STRUCTURES  
FOR ALUMINUM & STEEL OVERHEAD SIGN STRUCTURES

REVISIONS		ROAD NO.	COUNTY	PROJECT NO.
Date	Description	Names	Dates	APPROVED BY
3-74	Rev Round HD Bolts to Flat HD Mach Screws	Designed by	C.W.B.	5-72
5-76	REV. WIND LOADING	Checked by	A.J.H.	5-72
1-78	REV. Truss Connection Note	Quantities by		
		Checked by		
		Supervised by		
				1 of 1
				11037

# GENERAL NOTES

(1) For "General Notes" Covering Specification, Materials and Wind Loads; see Sheets 1 of 4 and 3 of 4, Index 9535



BILL OF CONSTANT REINFORCING			
MARK	SIZE	LENGTH	NO. REQ'D.
C	4	3' - 0" + Dim. L	22
D	4	9' - 0"	12
E	4	7' - 0"	13

NOTE: Footing to be placed with longest side (Dim. A) parallel to Roadway.

Vertical Bars C

Bars E

Bars D

Dimension "A"

9'-6"

7'-6"

Dimension "B"

PLAN VIEW

For Column width, see Overhead Sign Truss Design Sheet.

ℓ of Columns (4 Columns)

For Anchor Bolt size, length and placement, see Sheet 1 of 1, Index 11926. See Note 4 of this Sheet.

Ground Line

Bars D

Bars E

1/8" Chamfer

Vertical Bars C

Bars B (See Table)

Bars A (See Table)

Construction Joint Permitted.

3'-6"

11" C"


Dimension

FRONT ELEVATION

END ELEVATION

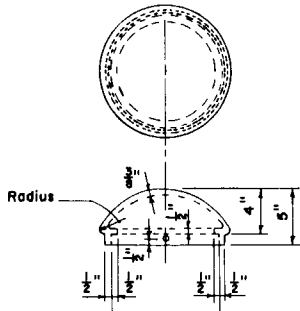
- NOTES:
1. All Reinforcing Steel shall have a 3" Minimum of Concrete Cover and shall be of Grade 60.
  2. All exposed edges to be Chamfered  $\frac{3}{4}"$  unless otherwise shown.
  3. All Concrete shall be Class 11. The Minimum Specified Compressive Strength at 28 days (f'c) shall be **3,400 p.s.i.**
  4. If Contractor elects to furnish a cast base in lieu of D.O.T. Standard Detail, he shall furnish an Anchor Bolt Spacing Plan for field use.

APPROVED BY FHWA 11/16/78  
OVERHEAD CANTILEVER TRUSSES

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION STRUCTURES				
FOOTINGS FOR OVERHEAD SIGN TRUSSES				
ROAD NO.		COUNTY		PROJECT NO.
	Memo	Date	APPROVED BY  Deputy Design Engineer, Structures	
Designed by	D. K. S.	4/73		
Checked by	C. W. B.	4/73		
Quantities by				
Checked by			Drawing No. 2 of 2 Index No. 11, 201	
Supervised by	A. J. H.			

REVISIONS	
Date	Description
7-73	Class II Concrete Added
8-73	Rev. Anchor Bolt Note
8-73	Rev. TITLE
11-73	Rev. Pedestal Dimension & Bill of Constant Reinforcing
11-78	Rev. Concrete Strength

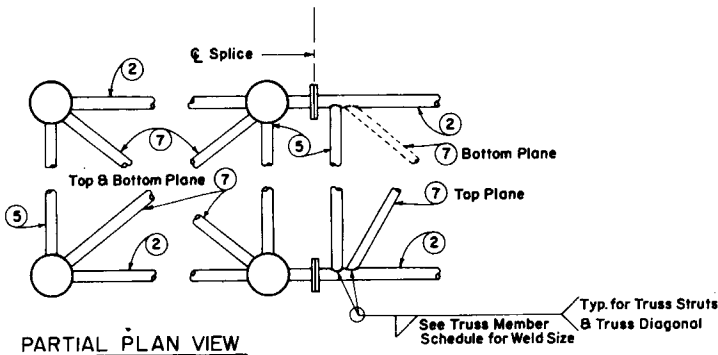




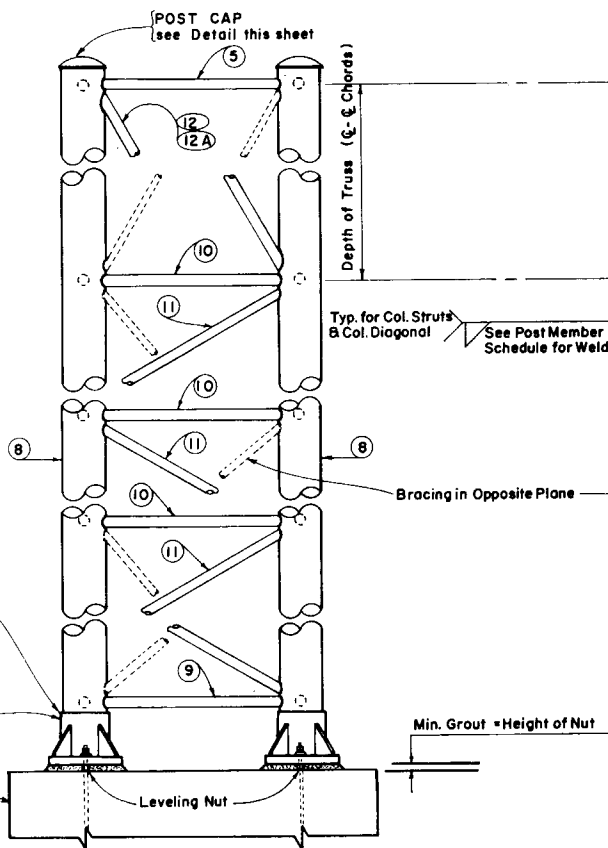
Drill & Tap 2 Holes 180° apart  
for 1/2" Dia. set screws.

POST CAP  
Aluminum Alloy 356-F

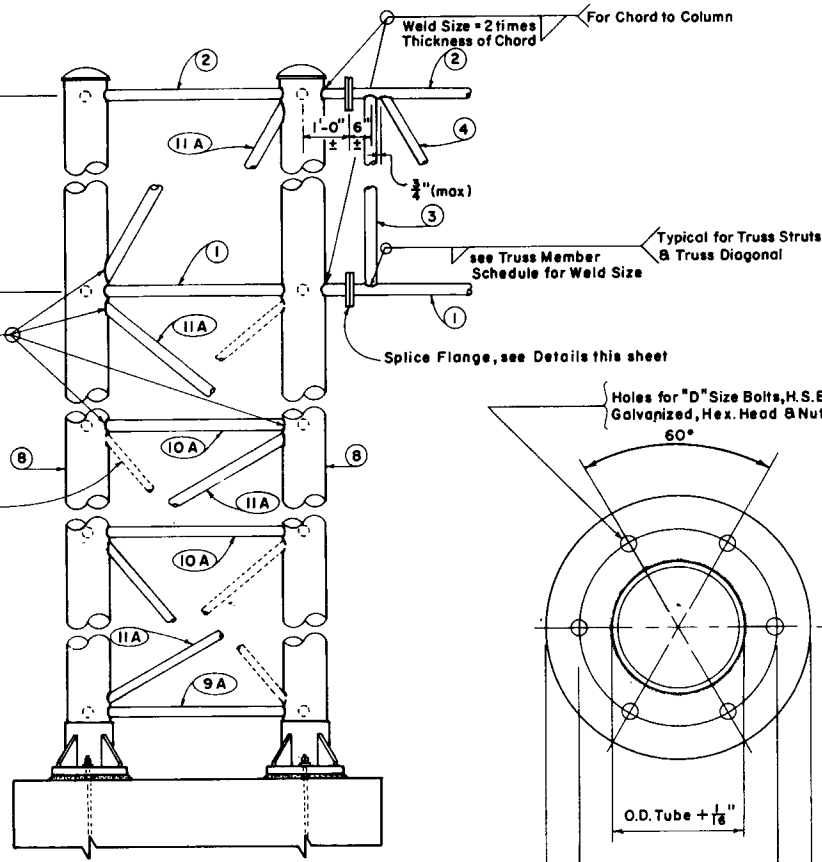
SCHEDULE FILLET WELD SIZE			
TRUSS MEMBERS		POST MEMBERS	
THICKNESS	WELD SIZE	THICKNESS	WELD SIZE
1/8"	3/16"	1/8"	1/4"
3/16"	1/4"	3/16"	5/16"
1/4"	3/8"	1/4"	3/8"
		5/16"	1/2"
		3/4"	3/4"



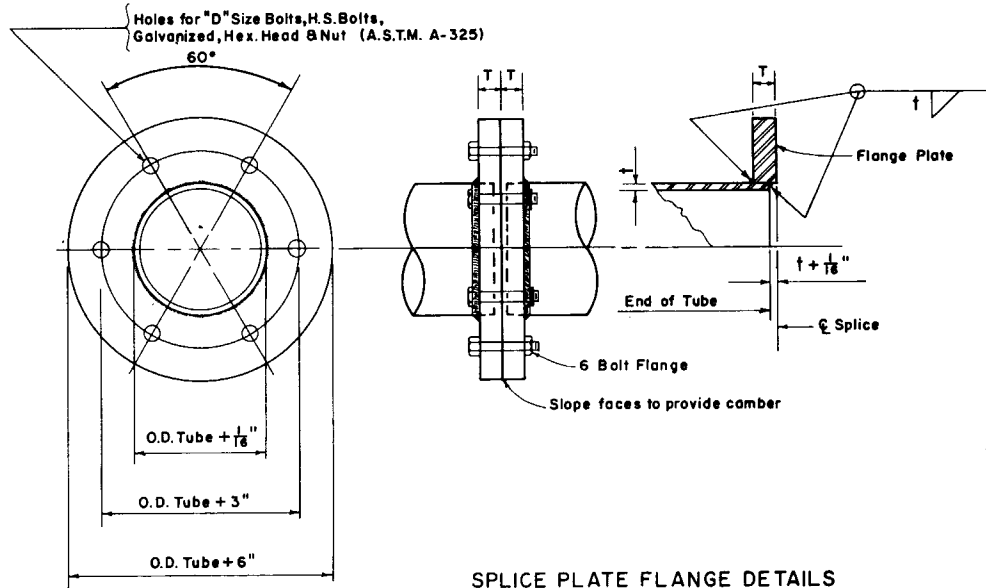
PARTIAL PLAN VIEW



END VIEW



PARTIAL ELEVATION



SPLICE PLATE FLANGE DETAILS  
Aluminum Alloy 6061-T6 or 5154-H38 or Alloy 356-T6

### GENERAL NOTES

- (1) For "General Notes" Covering Specifications and Materials, see Sheet 1 of 4 Index 9535
- (2) SHOP DRAWINGS: Contractor shall submit complete shop drawings before fabrication for approval.
- (3) COLUMN LENGTHS: It shall be the Contractor's responsibility to determine the length of Column Supports.
- (4) DETAIL of SIGN FACE & TRUSS CONNECTION: see Drawing 1 of 1 Index No. 11037

SPLICE PLATE FLANGE TABLE			
TUBE	SIZE	T	BOLT SIZE "D"
2 3/4" x 1/4"	to 6 1/2" x 1/4"	1/4"	5/8" Ø
7" x 1/4"	to 9" x 1/4"	1/4"	3/4" Ø
7 1/2" x 5/16"	to 9 1/2" x 5/16"	1/4"	7/8" Ø

REVISIONS			
Date	Description	By	Check
5-73	DIMENSION S ADDED		
6-76	Bases & Anchor Bolt Details Added		
5-77	Walkway Detail Note Added		
1-78	Walkway Note Removed		

ROAD NO.	COUNTY	PROJECT NO.

DESIGNED BY	CHECKED BY	QUANTITY BY	SUPERVISOR BY
HAV	CWB		AJH

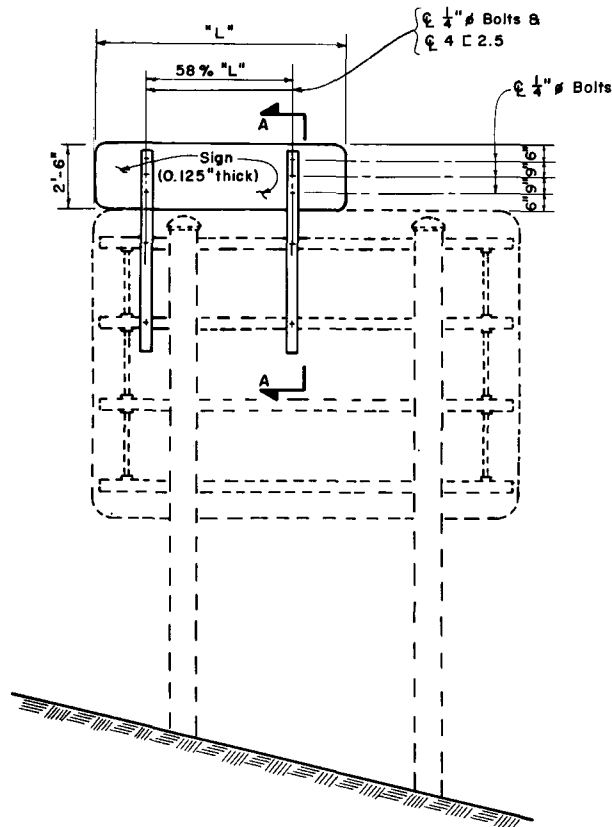
APPROVED BY	DATE	INDEX NO.
T. Allen	3-73	11226

APPROVED BY FHWA NOVEMBER 16, 1978

ALUMINUM CANTILEVER

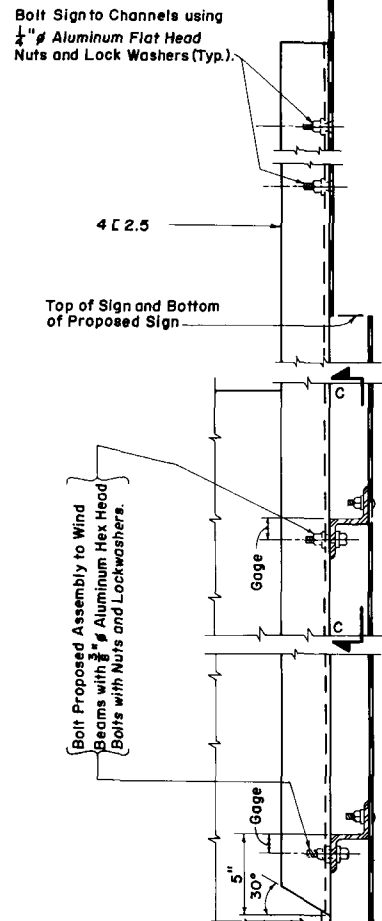
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION  
STRUCTURES

TRUSSES FOR OVERHEAD SIGNS

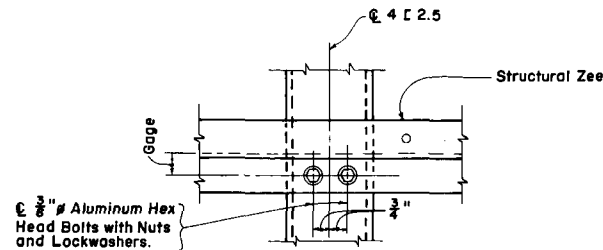


**ELEVATION**  
(Showing Mounting of Proposed Assembly  
to Type "A" or "B" Ground Sign)

NOTE: EXIT NUMBERING PANEL shall be located to the right side for right exits  
and to the left for left exits.



**SECTION A-A**



**SECTION C-C**

### GENERAL NOTES

DESIGN SPECIFICATION: Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. A.A.S.H.O., 1975

SHEETS AND PLATES: Material used shall meet the requirements of Aluminum Association Alloy 6061-T6 and ASTM Specification B-209. Sheets are to be degreased, etched, neutralized and treated with Alodine 1200, Iridite 14-2, Bonderite 721, or equal. No stenciling permitted on Sheets.

MATERIALS: All Aluminum Materials shall meet the requirements of the Aluminum Association Alloy 6061-T6 and also the following ASTM Specifications for the following; Sheet and Plates B-209; Extruded Shapes B-221 and Standard Structural Shapes B-308.

ALUMINUM BOLTS, NUTS & LOCKWASHERS: Aluminum Bolts shall meet the requirements of Aluminum Association Alloy 2024-T4 or 6061-T6 (ASTM Spec. B-211). The Bolts shall have an Anodic Coating of at least 0.0002" thick and be Chromate Sealed. Lockwashers shall meet the requirements of Aluminum Association Alloy 7075-T6 (ASTM Specification B-221). Nuts shall meet the requirement of Aluminum Association Alloy 6262-T9 or 6061-T6.

SIGN FACE: All Sign Face Corners shall be rounded. See Sign Layout Sheet for Dimension "L" and Sign Face Details.

MATERIAL STRESSES: All allowable stresses are in accordance with the Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. A.A.S.H.O., 1975, for all materials shown in the Plans.

OVERHEAD SIGNS: For Details to mount Proposed Assembly to Overhead Signs refer to Details for mounting to Type "A" or "B" Ground Signs.


APPROVED BY FHWA 11/16/78

INTERCHANGE AND EXIT NUMBERING FOR  
SIGNS WITH HORIZONTAL WIND BEAMS

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION  
STRUCTURES

DETAILS FOR MOUNTING EXIT  
NUMBERING PANELS TO HIGHWAY SIGNS

REVISIONS		ROAD NO.	COUNTY	PROJECT NO.
Dates	Descriptions			
5-76	Design Spec. Date Rev. to 1975 B Removed No. 1 Bracket Structure Details.			
10-78	Rev. 4 C to 2.5			
9-79	Removed Type "C" Elevation & Relocate Exit Numbering Panel			
		Designed by	RDS	7-75
		Checked by	AJH	7-75
		Quantities by		
		Checked by		
		Supervised by		
		APPROVED BY		
		T. Alford, Jr.		
		Deputy Design Engineer, Structures		
		Drawing No.		Index No.
		1 of 1		11671

APPROVED BY FHWA 11/16/78			
SIGN PROFILE & IDENTIFICATION NUMBERS			
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION STRUCTURES			
TYPE "C" SINGLE COLUMN GROUND SIGNS			
ROAD NO.	COUNTY	PROJECT NO.	
Names	Dates	APPROVED BY	
Designed by CK	3-76		
Checked by CWB	3-76		
Quantities by		Deputy Design Engineer, Structures	
Checked by		Drawing No.	Index No.
Supervised by AJH		1061	11860



COL. SIZE	2 x 1/8	2 1/2 x 1/8	3 x 1/8	3 1/2 x 1/8	4 x 1/8	4 x 1/4	4 1/2 x 1/4	5 x 1/4	5 1/2 x 1/4	6 x 1/4	6 1/2 x 1/4	7 x 1/4	7 1/2 x 1/4	8 x 1/4	COL. SIZE	2 x 1/8	2 1/2 x 1/8	3 x 1/8	3 1/2 x 1/8	4 x 1/8	4 x 1/4	4 1/2 x 1/4	5 x 1/4	5 1/2 x 1/4	6 x 1/4	6 1/2 x 1/4	7 x 1/4	7 1/2 x 1/4	8 x 1/4
FOOTING	0 x 2-0	0 x 2-3	0 x 2-6	0 x 3-4	0 x 3-9	1-6 x 2-1	1-6 x 2-5	1-6 x 2-9	1-6 x 3-0	1-6 x 3-3	2-0 x 3-0	2-0 x 3-4	2-0 x 3-6	2-0 x 4-0	FOOTING	0 x 2-0	0 x 2-3	0 x 2-6	0 x 3-4	0 x 3-9	1-6 x 2-1	1-6 x 2-5	1-6 x 2-9	1-6 x 3-0	1-6 x 3-3	2-0 x 3-0	2-0 x 3-4	2-0 x 3-6	2-0 x 4-0
Sign Identification Number	HEIGHT (FT.)														Sign Identification Number	HEIGHT (FT.)													
1	To	10' 10"	13' 13"	16' 16"	25' 25"	28' 28"	30'								53	To	6' 6"	10' 10"	13' 13"	20' 20"	24' 24"	28' 28"	30'						
2	To	8' 8"	13' 13"	15' 15"	23' 23"	27' 27"	30'								54	To	8' 8"	12' 12"	18' 18"	22' 22"	26' 26"	29' 29"	30'						
3	To	6' 6"	10' 10"	16' 16"	20' 20"	24' 24"	27' 27"	30'							55	To	8' 8"	12' 12"	18' 18"	22' 22"	26' 26"	29' 29"	30'						
4	To	12' 12"	14' 14"												56	To	8' 8"	12' 12"	18' 18"	22' 22"	26' 26"	29' 29"	30'						
5	To	14' 14"	18' 18"	21' 21"	29' 29"	30'									57	To	8' 8"	12' 12"	18' 18"	22' 22"	26' 26"	29' 29"	30'						
6	To	10' 10"	14' 14"	17' 17"	25' 25"	29' 29"	30'								58	To	8' 8"	12' 12"	18' 18"	22' 22"	26' 26"	29' 29"	30'						
7	To	7' 7"	10' 10"	16' 16"	20' 20"	24' 24"	28' 28"	30'							59	To	8' 8"	11' 11"	17' 17"	21' 21"	25' 25"	28' 28"	30'						
8	To	6' 6"	13' 13"	14' 14"											60	To	6' 6"	10' 10"	16' 16"	20' 20"	24' 24"	27' 27"	30'						
9	To	10' 10"	14' 14"	17' 17"	25' 25"	29' 29"	30'								61	To	6' 6"	10' 10"	15' 15"	19' 19"	23' 23"	27' 27"	30'						
10	To	6' 6"	10' 10"	13' 13"	20' 20"	24' 24"	28' 28"	30'							62	To	7' 7"	10' 10"	16' 16"	20' 20"	24' 24"	28' 28"	30'						
11	To	7' 7"	10' 10"	16' 16"	20' 20"	24' 24"	28' 28"	30'							63	To	6' 6"	10' 10"	16' 16"	19' 19"	23' 23"	28' 28"	30'						
12	To	11' 11"	13' 13"	15' 15"	19' 19"	23' 23"	26' 26"	29' 29"	30'						64	To	6' 6"	9' 9"	15' 15"	18' 18"	22' 22"	26' 26"	29' 29"	30'					
13	To	9' 9"	13' 13"	19' 19"	23' 23"	27' 27"	30'								65	To	9' 9"	14' 14"	18' 18"	22' 22"	26' 26"	29' 29"	30'						
14	To	9' 9"	13' 13"	19' 19"	23' 23"	27' 27"	30'								66	To	8' 8"	14' 14"	17' 17"	21' 21"	25' 25"	28' 28"	30'						
15	To	7' 7"	11' 11"	16' 16"	20' 20"	24' 24"	28' 28"	30'							67	To	9' 9"	14' 14"	17' 17"	21' 21"	25' 25"	28' 28"	30'						
16	To	7' 7"	11' 11"	16' 16"	20' 20"	24' 24"	28' 28"	30'							68	To	8' 8"	13' 13"	17' 17"	21' 21"	25' 25"	28' 28"	30'						
17	To	6' 6"	12' 12"	14' 14"	18' 18"	22' 22"	26' 26"	28' 28"	30'						69	To	8' 8"	13' 13"	17' 17"	21' 21"	25' 25"	28' 28"	30'						
18	To	11' 11"	12' 12"	15' 15"	19' 19"	23' 23"	27' 27"	30'							70	To	7' 7"	12' 12"	16' 16"	19' 19"	23' 23"	27' 27"	30'						
19	To	9' 9"	12' 12"	13' 13"	17' 17"	21' 21"	24' 24"	27' 27"	30'						71	To	8' 8"	13' 13"	16' 16"	20' 20"	24' 24"	28' 28"	30'						
20	To	6' 6"	9' 9"	12' 12"	13' 13"	16' 16"	20' 20"	23' 23"	27' 27"	29' 29"	30'				72	To	7' 7"	13' 13"	16' 16"	20' 20"	24' 24"	28' 28"	30'						
21	To	8' 8"	13' 13"	17' 17"	21' 21"	25' 25"	28' 28"	30'							73	To	7' 7"	13' 13"	16' 16"	19' 19"	23' 23"	27' 27"	29' 29"	30'					
22	To	7' 7"	12' 12"	16' 16"	19' 19"	23' 23"	27' 27"	30'							74	To	6' 6"	12' 12"	15' 15"	19' 19"	23' 23"	27' 27"	29' 29"	30'					
23	To	8' 8"	13' 13"	17' 17"	21' 21"	25' 25"	28' 28"	30'							75	To	7' 7"	12' 12"	15' 15"	19' 19"	23' 23"	27' 27"	29' 29"	30'					
24	To	7' 7"	12' 12"	16' 16"	19' 19"	23' 23"	27' 27"	30'							76	To	6' 6"	13' 13"	14' 14"	18' 18"	22' 22"	25' 25"	28' 28"	30'					
25	To	8' 8"	12' 12"	18' 18"	22' 22"	26' 26"	29' 29"	30'							77	To	6' 6"	12' 12"	13' 13"	17' 17"	21' 21"	24' 24"	28' 28"	30'					
26	To	8' 8"	11' 11"	17' 17"	21' 21"	25' 25"	28' 28"	30'							78	To	6' 6"	13' 13"	14' 14"	17' 17"	21' 21"	25' 25"	28' 28"	30'					
27	To	7' 7"	11' 11"	16' 16"	20' 20"	24' 24"	28' 28"	30'							79	To	12' 12"	13' 13"	16' 16"	21' 21"	24' 24"	27' 27"	30'						
28	To	7' 7"	10' 10"	16' 16"	20' 20"	24' 24"	28' 28"	30'							80	To	6' 6"	12' 12"	13' 13"	16' 16"	20' 20"	24' 24"	28' 28"	30'					
29	To	6' 6"	10' 10"	16' 16"	19' 19"	23' 23"	28' 28"	30'							81	To	12' 12"	13' 13"	16' 16"	20' 20"	24' 24"	27' 27"	30'						
30	To	6' 6"	9' 9"	15' 15"	19' 19"	23' 23"	27' 27"	29' 29"	30'						82	To	9' 9"	12' 12"	13' 13"	17' 17"	21' 21"	24' 24"	28' 28"	30'					
31	To	7' 7"	13' 13"	16' 16"	20' 20"	24' 24"	28' 28"	30'							83	To	9' 9"	11' 11"	12' 12"	16' 16"	20' 20"	23' 23"	27' 27"	30'					
32	To	7' 7"	12' 12"	15' 15"	19' 19"	23' 23"	27' 27"	29' 29"	30'						84	To	9' 9"	12' 12"	13' 13"	16' 16"	20' 20"	23' 23"	27' 27"	30'					
33	To	8' 8"	13' 13"	17' 17"	21' 21"	25' 25"	28' 28"	30'							85	To	8' 8"	11' 11"	12' 12"	15' 15"	19' 19"	22' 22"	26' 26"	29' 29"	30'				
34	To	7' 7"	12' 12"	16' 16"	19' 19"	23' 23"	27' 27"	30'							86	To	9' 9"	12' 12"	13' 13"	15' 15"	19' 19"	22' 22"	26' 26"	29' 29"	30'				
35	To	7' 7"	12' 12"	16' 16"	20' 20"	24' 24"	27' 27"	30'							87	To	8' 8"	11' 11"	13' 13"	15' 15"	18' 18"	21' 21"	25' 25"	28' 28"	30'				
36	To	6' 6"	12' 12"	15' 15"	19' 19"	23' 23"	27' 27"	29' 29"	30'						88	To	6' 6"	9' 9"	11' 11"	13' 13"	16' 16"	20' 20"	24' 24"	26' 26"	30'				
37	To	10' 10"	12' 12"	14' 14"	18' 18"	21' 21"	25' 25"	28' 28"	30'						89	To	7' 7"	10' 10"	13' 13"	14' 14"	17' 17"	21' 21"	24' 24"	26' 26"	30'				
38	To	9' 9"	12' 12"	13' 13"	16' 16"	20' 20"	23' 23"	27' 27"	30'						90	To	7' 7"	10' 10"	12' 12"	14' 14"	17' 17"	20' 20"	24' 24"	27' 27"	30'				
39	To	8' 8"	11' 11"	12' 12"	15' 15"	19' 19"	22' 22"	26' 26"	29' 29"	30'					91	To	6' 6"	9' 9"	12' 12"	13' 13"	15' 15"	19' 19"	22' 22"	26' 26"	28' 28"	30'			
40	To	7' 7"	10' 10"	12' 12"																									



COL. SIZE	2 x 1/8	2 1/2 x 1/8	3 x 1/8	3 1/2 x 3/16	4 x 3/16	4 x 1/4	4 1/2 x 1/4	5 x 1/4	5 1/2 x 1/4	6 x 1/4	6 1/2 x 1/4	7 x 1/4	7 1/2 x 1/4	8 x 1/4	COL. SIZE	2 x 1/8	2 1/2 x 1/8	3 x 1/8	3 1/2 x 3/16	4 x 3/16	4 x 1/4	4 1/2 x 1/4	5 x 1/4	5 1/2 x 1/4	6 x 1/4	6 1/2 x 1/4	7 x 1/4	7 1/2 x 1/4	8 x 1/4	
FOOTING	0 x 2-0	0 x 2-3	0 x 2-6	0 x 3-4	0 x 3-9	1-6 x 2-1	1-6 x 2-5	1-6 x 2-9	1-6 x 3-0	1-6 x 3-3	2-0 x 3-0	2-0 x 3-4	2-0 x 3-6	2-0 x 4-0	FOOTING	0 x 2-0	0 x 2-3	0 x 2-6	0 x 3-4	0 x 3-9	1-6 x 2-1	1-6 x 2-5	1-6 x 2-9	1-6 x 3-0	1-6 x 3-3	2-0 x 3-0	2-0 x 3-4	2-0 x 3-6	2-0 x 4-0	
Sign Identification Number	HEIGHT (FT.)														Sign Identification Number	HEIGHT (FT.)														
1	To	7'	7'-11"	11'-13"	13'-21"	21'-24"	24'-28"	28'-30"							53		To	8'	8'-11"	11'-17"	17'-20"	20'-24"	24'-27"	27'-30"						
2	To	6'	6'-10"	10'-13"	13'-19"	19'-23"	23'-27"	27'-29"	29'-30"						54		To	6'	6'-9"	9'-15"	15'-18"	18'-22"	22'-25"	25'-28"	28'-30"					
3			To	7'	7'-12"	12'-16"	16'-19"	19'-23"	23'-27"	27'-30"					55		To	6'	6'-9"	9'-14"	14'-18"	18'-21"	21'-25"	25'-29"	29'-30"					
4				To	9'	9'-12"	12'-13"	13'-17"	17'-20"	20'-24"	24'-27"	27'-30"			56		To	6'	6'-9"	9'-15"	15'-18"	18'-22"	22'-25"	25'-28"	28'-30"					
5	To	12'	12'-15"	15'-18"	18'-25"	25'-28"	28'-30"								57		To	6'	6'-9"	9'-15"	15'-18"	18'-22"	22'-25"	25'-28"	28'-30"					
6	To	8'	8'-12"	12'-14"	14'-21"	21'-24"	24'-28"	28'-30"							58		To	6'	6'-9"	9'-14"	14'-18"	18'-21"	21'-25"	25'-28"	28'-30"					
7			To	8'	8'-13"	13'-16"	16'-19"	19'-23"	23'-27"	27'-30"					59		To	6'	6'-9"	9'-14"	14'-17"	17'-21"	21'-24"	24'-28"	28'-30"					
8				To	9'	9'-12"	12'-13"	13'-17"	17'-20"	20'-24"	24'-28"	28'-30"			60			To	7'	7'-12"	12'-16"	16'-19"	19'-23"	23'-27"	27'-30"					
9	To	8'	8'-12"	12'-14"	14'-21"	21'-24"	24'-28"	28'-30"							61			To	7'	7'-13"	13'-15"	15'-19"	19'-22"	22'-26"	26'-29"	29'-30"				
10		To	8'	8'-11"	11'-17"	17'-20"	20'-24"	24'-27"	27'-30"						62			To	8'	8'-13"	13'-16"	16'-19"	19'-23"	23'-27"	27'-30"					
11			To	8'	8'-13"	13'-16"	16'-19"	19'-23"	23'-27"	27'-30"					63			To	7'	7'-13"	13'-16"	16'-19"	19'-23"	23'-26"	26'-30"					
12				To	8'	8'-11"	11'-13"	13'-15"	15'-18"	18'-22"	22'-26"	26'-28"	28'-30"		64			To	7'	7'-14"	14'-15"	15'-18"	18'-22"	22'-25"	25'-29"	29'-30"				
13		To	6'	6'-10"	10'-15"	15'-18"	18'-22"	22'-26"	26'-29"	29'-30"					65			To	6'	6'-12"	12'-14"	14'-17"	17'-21"	21'-25"	25'-28"	28'-30"				
14		To	6'	6'-10"	10'-15"	15'-18"	18'-22"	22'-26"	26'-29"	29'-30"					66			To	6'	6'-13"	13'-14"	14'-17"	17'-20"	20'-24"	24'-28"	28'-30"				
15			To	8'	8'-13"	13'-16"	16'-20"	20'-23"	23'-27"	27'-30"					67			To	6'	6'-13"	13'-14"	14'-17"	17'-21"	21'-24"	24'-28"	28'-30"				
16			To	8'	8'-13"	13'-16"	16'-20"	20'-23"	23'-27"	27'-30"					68			To	6'	6'-12"	12'-13"	13'-17"	17'-20"	20'-24"	24'-27"	27'-30"				
17				To	10'	10'-12"	12'-14"	14'-17"	17'-21"	21'-25"	25'-28"	28'-30"			69			To	6'	6'-12"	12'-13"	13'-16"	16'-20"	20'-24"	24'-28"	28'-30"				
18				To	8'	8'-11"	11'-12"	12'-15"	15'-18"	18'-22"	22'-26"	26'-29"	29'-30"		70				To	11'	11'-12"	12'-15"	15'-19"	19'-22"	22'-27"	27'-29"	29'-30"			
19				To	6'	6'-9"	9'-12"	12'-13"	13'-16"	16'-20"	20'-23"	23'-27"	27'-29"	29'-30"	71			To	6'	6'-12"	12'-13"	13'-16"	16'-20"	20'-23"	23'-27"	27'-30"				
20					To	6'	6'-9"	9'-12"	12'-13"	13'-15"	15'-19"	19'-22"	22'-26"	26'-27"	27'-30"	72				To	11'	11'-13"	13'-15"	15'-19"	19'-23"	23'-27"	27'-30"			
21			To	6'	6'-12"	12'-13"	13'-17"	17'-20"	20'-24"	24'-27"	27'-30"				73				To	11'	11'-13"	13'-15"	15'-19"	19'-22"	22'-26"	26'-29"	29'-30"			
22				To	11'	11'-12"	12'-15"	15'-19"	19'-22"	22'-27"	27'-29"	29'-30"			74				To	10'	10'-12"	12'-14"	14'-18"	18'-22"	22'-26"	26'-29"	29'-30"			
23			To	6'	6'-12"	12'-13"	13'-17"	17'-20"	20'-24"	24'-27"	27'-30"				75				To	11'	11'-12"	12'-15"	15'-18"	18'-22"	22'-26"	26'-29"	29'-30"			
24				To	11'	11'-12"	12'-15"	15'-19"	19'-22"	22'-27"	27'-29"	29'-30"			76				To	10'	10'-13"	13'-14"	14'-17"	17'-21"	21'-25"	25'-28"	28'-30"			
25		To	6'	6'-9"	9'-15"	15'-18"	18'-22"	22'-25"	25'-28"	28'-30"					77				To	9'	9'-12"	12'-13"	13'-16"	16'-20"	20'-24"	24'-28"	28'-30"			
26		To	6'	6'-9"	9'-14"	14'-17"	17'-21"	21'-24"	24'-28"	28'-30"					78				To	9'	9'-12"	12'-13"	13'-17"	17'-20"	20'-24"	24'-28"	28'-30"			
27			To	8'	8'-13"	13'-16"	16'-20"	20'-23"	23'-27"	27'-30"					79				To	9'	9'-11"	11'-12"	12'-16"	16'-20"	20'-24"	24'-27"	27'-30"			
28			To	8'	8'-13"	13'-16"	16'-19"	19'-23"	23'-27"	27'-30"					80				To	9'	9'-12"	12'-13"	13'-16"	16'-19"	19'-23"	23'-27"	27'-29"	29'-30"		
29			To	7'	7'-13"	13'-16"	16'-19"	19'-23"	23'-26"	26'-30"					81				To	9'	9'-11"	11'-12"	12'-16"	16'-19"	19'-23"	23'-27"	27'-30"			
30			To	7'	7'-13"	13'-15"	15'-18"	18'-22"	22'-26"	26'-29"	29'-30"				82				To	7'	7'-10"	10'-12"	12'-13"	13'-16"	16'-20"	20'-24"	24'-27"	27'-29"	29'-30"	
31				To	11'	11'-13"	13'-15"	15'-19"	19'-23"	23'-27"	27'-30"				83				To	6'	6'-9"	9'-12"	12'-13"	13'-15"	15'-19"	19'-22"	22'-26"	26'-28"	28'-30"	
32				To	11'	11'-12"	12'-15"	15'-18"	18'-22"	22'-26"	26'-29"	29'-30"			84				To	7'	7'-9"	9'-12"	12'-13"	13'-16"	16'-19"	19'-23"	23'-26"	26'-28"	28'-30"	
33			To	6'	6'-12"	12'-13"	13'-17"	17'-20"	20'-24"	24'-27"	27'-30"				85				To	6'	6'-8"	8'-11"	11'-12"	12'-15"	15'-18"	18'-21"	21'-25"	25'-27"	27'-30"	
34				To	11'	11'-12"	12'-15"	15'-19"	19'-22"	22'-27"	27'-29"	29'-30"			86				To	6'	6'-9"	9'-11"	11'-13"	13'-15"	15'-18"	18'-21"	21'-25"	25'-28"	28'-30"	
35				To	12'	12'-13"	13'-16"	16'-19"	19'-23"	23'-27"	27'-30"				87				To	8'	8'-10"	10'-13"	13'-14"	14'-17"	17'-21"	21'-24"	24'-28"	28'-30"		
36				To	10'	10'-12"	12'-14"	14'-18"	18'-22"	22'-26"	26'-29"	29'-30"			88				To	6'	6'-9"	9'-11"	11'-12"	12'-16"	16'-19"	19'-23"	23'-26"	26'-28"	28'-30"	
37				To	7'	7'-10"	10'-12"	12'-14"	14'-17"	17'-20"	20'-24"	24'-27"	27'-30"		89				To	7'	7'-10"	10'-13"	13'-14"	14'-16"	16'-20"	20'-23"	23'-27"	27'-28"	28'-30"	
38				To	6'	6'-9"	9'-12"	12'-13"	13'-16"	16'-19"	19'-23"	23'-26"	26'-28"	28'-30"	90				To	7'	7'-10"	10'-12"	12'-13"	13'-16"	16'-19"	19'-23"	23'-27"	27'-28"	28'-30"	
39				To	6'	6'-8"	8'-11"	11'-12"	12'-15"	15'-18"	18'-21"	21'-25"	25'-27"	27'-30"	91				To	6'	6'-8"	8'-11"	11'-12"	12'-15"	15'-18"	18'-21"	21'-24"			

COL. SIZE	2 x 1/8	2 1/2 x 1/8	3 x 1/8	3 1/2 x 3/16	4 x 3/16	4 x 1/4	4 1/2 x 1/4	5 x 1/4	5 1/2 x 1/4	6 x 1/4	6 1/2 x 1/4	7 x 1/4	7 1/2 x 1/4	8 x 1/4	COL. SIZE	2 x 1/8	2 1/2 x 1/8	3 x 1/8	3 1/2 x 3/16	4 x 3/16	4 x 1/4	4 1/2 x 1/4	5 x 1/4	5 1/2 x 1/4	6 x 1/4	6 1/2 x 1/4	7 x 1/4	7 1/2 x 1/4	8 x 1/4		
FOOTING	0 x 2-0	0 x 2-3	0 x 2-6	0 x 3-4	0 x 3-9	1-6 x 2-11	1-6 x 2-5	1-6 x 2-9	1-6 x 3-0	1-6 x 3-3	2-0 x 3-0	2-0 x 3-4	2-0 x 3-6	2-0 x 4-0	FOOTING	0 x 2-0	0 x 2-3	0 x 2-6	0 x 3-4	0 x 3-9	1-6 x 2-11	1-6 x 2-5	1-6 x 2-9	1-6 x 3-0	1-6 x 3-3	2-0 x 3-0	2-0 x 3-4	2-0 x 3-6	2-0 x 4-0		
Sign Identification Number	HEIGHT (FT.)														Sign Identification Number	HEIGHT (FT.)															
1	To 6' 6" 9' 9" 12' 12" 18' 18" 21'															53	To 6' 6" 9' 9" 14' 14" 17'	17' 20' 20" 24' 24" 28' 28" 30													
2	To 8' 8" 11' 11" 16' 16" 19'															54	To 7' 7" 13' 13" 15'	15' 18' 18" 22' 22" 26' 26" 29' 29" 30													
3	To 12' 12" 13'															55	To 7' 7" 14' 14" 15'	15' 18' 18" 21' 21" 25' 25" 29' 29" 30													
4	To 7' 7" 10'															56	To 7' 7" 13' 13" 15'	15' 18' 18" 22' 22" 26' 26" 29' 29" 30													
5	To 10' 10" 14' 14" 15' 15" 22' 22" 24'	24' 28' 28" 30														57	To 7' 7" 13' 13" 15'	15' 18' 18" 22' 22" 26' 26" 29' 29" 30													
6	To 6' 6" 9' 9" 13' 13" 18' 18" 21'	21' 24' 24" 28' 28" 30														58	To 7' 7" 13' 13" 15'	15' 18' 18" 21' 21" 25' 25" 29' 29" 30													
7	To 6' 6" 12' 12" 13'	13' 16' 16" 19' 19" 23' 23" 27' 27" 30														59	To 7' 7" 13' 13" 14'	14' 17' 17" 21' 21" 25' 25" 28' 28" 30													
8	To 7' 7" 10'	10' 13' 13" 14' 14" 17' 17" 20' 20" 24' 24" 28' 28" 30														60	To 12' 12" 13'	13' 16' 16" 19' 19" 23' 23" 27' 27" 30													
9	To 6' 6" 9' 9" 13' 13" 18' 18" 21'	21' 24' 24" 28' 28" 30														61	To 6' 6" 11' 11" 13'	13' 15' 15" 19' 19" 23' 23" 27' 27" 29' 29" 30													
10	To 6' 6" 9' 9" 14' 14" 17'	17' 20' 20" 24' 24" 28' 28" 30														62	To 6' 6" 12' 12" 13'	13' 16' 16" 19' 19" 23' 23" 27' 27" 30													
11	To 6' 6" 12' 12" 13'	13' 16' 16" 19' 19" 23' 23" 27' 27" 30														63	To 12' 12" 13'	13' 16' 16" 19' 19" 23' 23" 27' 27" 30													
12	To 6' 6" 8' 8" 11' 11" 13' 13" 15' 15" 18' 18" 22' 22" 25' 25" 28' 28" 30															64	To 11' 11" 14'	14' 15' 15" 18' 18" 22' 22" 26' 26" 29' 29" 30													
13	To 8' 8" 13' 13" 15'	15' 19' 19" 22' 22" 26' 26" 30														65	To 10' 10" 12'	12' 14' 14" 17' 17" 21' 21" 25' 25" 28' 28" 30													
14	To 8' 8" 13' 13" 15'	15' 19' 19" 22' 22" 26' 26" 30														66	To 10' 10" 13'	13' 14' 14" 17' 17" 21' 21" 24' 24" 28' 28" 30													
15	To 6' 6" 12' 12" 13'	13' 16' 16" 20' 20" 24' 24" 28' 28" 30														67	To 10' 10" 13'	13' 14' 14" 17' 17" 21' 21" 25' 25" 28' 28" 30													
16	To 6' 6" 12' 12" 13'	13' 16' 16" 20' 20" 24' 24" 28' 28" 30														68	To 10' 10" 12'	12' 13' 13" 17' 17" 20' 20" 24' 24" 27' 27" 30													
17	To 8' 8" 10'	10' 12' 12" 14' 14" 18' 18" 21' 21" 25' 25" 27' 27" 30														69	To 9' 9" 12'	12' 13' 13" 16' 16" 20' 20" 24' 24" 28' 28" 30													
18	To 6' 6" 9' 9" 11' 11" 12' 12" 15' 15" 18' 18" 22' 22" 26' 26" 28' 28" 30															70	To 8' 8" 11'	11' 12' 12" 15' 15" 19' 19" 23' 23" 27' 27" 29' 29" 30													
19	To 7' 7" 9' 9" 12' 12" 13' 13" 16' 16" 19' 19" 23' 23" 26' 26" 28' 28" 30															71	To 9' 9" 12'	12' 13' 13" 16' 16" 20' 20" 24' 24" 28' 28" 30													
20	To 6' 6" 9' 9" 12' 12" 13' 13" 15' 15" 18' 18" 21' 21" 24' 24" 27'															72	To 9' 9" 12'	12' 13' 13" 16' 16" 19' 19" 23' 23" 27' 27" 29' 29" 30													
21	To 10' 10" 12'	12' 13' 13" 17' 17" 20' 20" 24' 24" 27' 27" 30														73	To 9' 9" 12'	12' 13' 13" 15' 15" 19' 19" 23' 23" 26' 26" 29' 29" 30													
22	To 8' 8" 11'	11' 12' 12" 15' 15" 19' 19" 23' 23" 27' 27" 29' 29" 30														74	To 8' 8" 11'	11' 12' 12" 15' 15" 18' 18" 22' 22" 26' 26" 28' 28" 30													
23	To 10' 10" 12'	12' 13' 13" 17' 17" 20' 20" 24' 24" 27' 27" 30														75	To 8' 8" 11'	11' 12' 12" 15' 15" 18' 18" 22' 22" 26' 26" 28' 28" 30													
24	To 8' 8" 11'	11' 12' 12" 15' 15" 19' 19" 23' 23" 27' 27" 29' 29" 30														76	To 8' 8" 10'	10' 13' 13" 14' 14" 17' 17" 21' 21" 25' 25" 28' 28" 30													
25	To 7' 7" 13' 13" 15'	15' 18' 18" 22' 22" 26' 26" 29' 29" 30														77	To 7' 7" 10'	10' 12' 12" 13' 13" 16' 16" 20' 20" 23' 23" 27' 27" 29' 29" 30													
26	To 7' 7" 13' 13" 14'	14' 17' 17" 21' 21" 25' 25" 28' 28" 30														78	To 7' 7" 10'	10' 13' 13" 14' 14" 17' 17" 20' 20" 24' 24" 28' 28" 30													
27	To 6' 6" 12' 12" 13'	13' 16' 16" 20' 20" 24' 24" 28' 28" 30														79	To 6' 6" 9' 9" 12' 12" 13' 13" 16' 16" 20' 20" 23' 23" 27' 27" 29' 29" 30														
28	To 6' 6" 12' 12" 13'	13' 16' 16" 19' 19" 23' 23" 27' 27" 30														80	To 7' 7" 9' 9" 12' 12" 13' 13" 16' 16" 19' 19" 23' 23" 27' 27" 29' 29" 30														
29	To 12' 12" 13'	13' 16' 16" 19' 19" 23' 23" 27' 27" 30														81	To 7' 7" 9' 9" 12' 12" 13' 13" 16' 16" 19' 19" 23' 23" 27' 27" 29' 29" 30														
30	To 11' 11" 13'	13' 15' 15" 18' 18" 22' 22" 26' 26" 29' 29" 30														82	To 7' 7" 10' 10" 13' 13" 14' 14" 16' 16" 19' 19" 23' 23" 26' 26" 28' 28" 30														
31	To 9' 9" 12'	12' 13' 13" 16' 16" 19' 19" 23' 23" 27' 27" 29' 29" 30														83	To 6' 6" 9' 9" 12' 12" 13' 13" 15' 15" 18' 18" 22' 22" 25' 25" 27' 27" 30														
32	To 8' 8" 11'	11' 12' 12" 15' 15" 18' 18" 22' 22" 26' 26" 28' 28" 30														84	To 7' 7" 9' 9" 12' 12" 13' 13" 16' 16" 19' 19" 22' 22" 25' 25" 28' 28" 30														
33	To 10' 10" 12'	12' 13' 13" 17' 17" 20' 20" 24' 24" 27' 27" 30														85	To 6' 6" 8' 8" 11' 11" 12' 12" 14' 14" 17' 17" 21' 21" 24' 24" 27' 27" 29'														
34	To 8' 8" 11'	11' 12' 12" 15' 15" 19' 19" 23' 23" 27' 27" 29' 29" 30														86	To 7' 7" 9' 9" 11' 11" 13' 13" 15' 15" 17' 17" 21' 21" 24' 24" 27' 27" 29'														
35	To 9' 9" 12'	12' 13' 13" 16' 16" 20' 20" 24' 24" 27' 27" 30														87	To 6' 6" 8' 8" 11' 11" 13' 13" 14' 14" 17' 17" 20' 20" 23' 23" 26' 26" 28'														
36	To 8' 8" 11'	11' 12' 12" 15' 15" 18' 18" 22' 22" 26' 26" 28' 28" 30														88	To 6' 6" 9' 9" 11' 11" 12' 12" 15' 15" 18' 18" 21' 21" 25' 25" 26'														
37	To 7' 7" 10' 10" 12' 12" 14' 14" 17' 17" 20' 20" 24' 24" 27' 27" 29' 29" 30															89	To 7' 7" 10' 10" 13' 13" 14' 14" 16' 16" 19' 19" 22' 22" 25' 25" 28'														
38	To 7' 7" 9' 9" 12' 12" 13' 13" 15' 15" 19' 19" 22' 22" 25' 25" 27' 27" 30															90	To 7' 7" 10' 10" 12' 12" 13' 13" 16' 16" 19' 19" 22' 22" 25' 25" 27'														
39	To 6' 6" 8' 8" 11' 11" 12' 12" 14' 14" 17' 17" 21' 21" 24' 24" 27' 27" 29'															91	To 6' 6" 8' 8" 11' 11" 12' 12" 14' 14" 17' 17" 20' 20" 23' 23" 26'														
40	To 7' 7" 10' 10" 12' 12" 13' 13" 16' 16" 19' 19" 22' 22" 25' 25" 27'															92	To 6' 6" 8' 8" 11' 11" 12' 12" 14' 14" 17' 17" 20' 20" 23' 23" 26'														
41	To 6' 6" 8' 8" 11' 11" 12' 12" 14' 14" 17' 17" 20' 20" 23' 23" 26'															93	To 6' 6" 8' 8" 11' 11" 12' 12" 13' 13" 15' 15" 17'														
42	To 7' 7" 10' 10" 11' 11" 12' 12" 15' 15" 18' 18" 21' 21" 24'															94	To 7' 7" 9' 9" 12' 12" 14' 14" 16' 16" 19' 19" 22' 22" 26' 26" 29' 29" 30														
43	To 8' 8" 10' 10" 11' 11" 13' 13" 15' 15" 18' 18" 21'															95	To 6' 6" 7' 7" 10' 10" 13' 13" 14' 14" 16' 16" 19' 19" 22' 22" 25' 25" 28'														
44	To 10' 10" 14' 14" 15' 15" 22' 22" 24'	24' 28' 28" 30														96	To 6' 6" 8' 8" 10' 10" 11' 11" 12' 12" 13'														
45	To 6' 6" 9' 9" 12' 12" 18' 18" 20'	20' 24' 24" 27' 27" 30																													
46	To 6' 6" 9' 9" 12' 12" 18' 18" 20'	20' 24' 24" 27' 27" 30																													
47	To 6' 6" 9' 9" 13' 13" 18' 18" 21'	21' 24' 24" 28' 28" 30																													
48	To 8' 8" 11' 11" 16' 16" 19'	19' 22' 22" 26' 26" 29' 29" 30																													
49	To 8' 8" 11' 11" 16' 16" 19'	19' 22' 22" 26' 26" 30																													
50	To 8' 8" 11' 11" 16' 16" 19'	19' 22' 22" 26' 26" 29' 29" 30																													
51	To 7' 7" 10' 10" 15' 15" 18'	18' 22' 22" 25' 25" 29' 29" 30																													
52	To 7' 7" 9' 9" 14' 14" 17'	17' 21' 21" 24' 24" 28' 28" 30																													

SLIP BASE NOTES

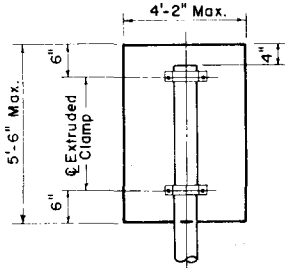
1- Inside Diameter (I.D.) of Sleeve to be no more than 1/16" Larger than Outside Diameter (O.D.) of Column.

2- Sleeve Bolts to be 1/2" dia with Locknuts, Steel A.S.T.M.-A307 Galvanized or Aluminum Assoc. Alloy 2024-T4 or 6061-T6 (ASTM B-211).

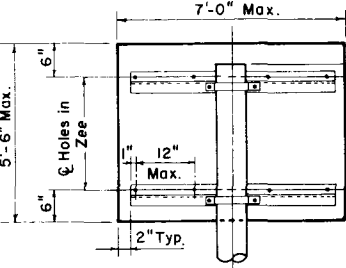
3- Base Bolts, Nuts and Washers to be ASTM-A325 High Strength, Hot Dip Galvanized in Accordance with ASTM-A153.

4- An Alternate Cast Base of Aluminum Alloy 356 and T6 Temper in Lieu of the Fabricated Base may be Submitted for Approval by the Engineer. The Used the Stub will be the Same Size as the Column and will be Bolted to the Casting.

5- Assemble the Slip Base Connection in the Following Manner (a) Connect Column to Sleeve Using Two (2) 1/2" Machine Bolts (b) Assemble Plate Using High Strength Bolts with Three (3) Hardened Washers Per Bolt, One Washer Per Bolt and Two (2) Bolt Keeper Plates Go Between Shim Stock as Required to Plumb the Column (d) Tighten All Bolts The Maximum Possible With a 12" to 15" Wrench to Bed the Washers and Threads. Loosen Each Bolt in Turn and Retighten to the Prescribed Torque (See Table). Bolts Shall be Tightened with Properly Calibrated Wrenches Under Supervision of the Project Engineer (e) Burr Threads at Junction with Nut Using a Center Punch to Prevent Nut Loosening.



SIGN PANEL DETAILS  
TYPE I BRACKET



SIGN PANEL DETAILS  
TYPE II BRACKET

GENERAL NOTES

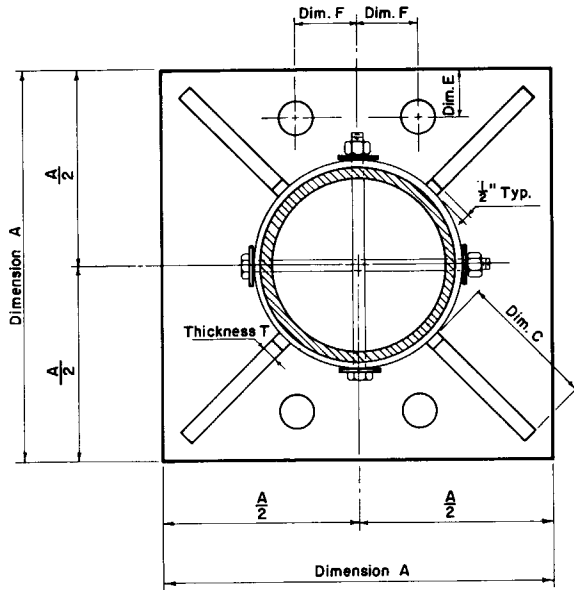
- For Sign Identification Numbers See Sheet Titled "Sign Profile and Identification Numbers". Use the Sign Identification Number and The Required Column Height to Determine The Support Column Size and Footing Size. The Heights Given in the Table are the Maximum Height (From Ground to Bottom of Sign) That A Column Size Can Be Used For. A Particular Sign Profile. If the Required Column Height is Not Listed in the Table, The Sign Will Have to be Supported On Multiple Column Type "A" Breakaway Supports.
- All Columns in the Table Are Aluminum Tube, Given as Outside Diameter Times the Wall Thickness. Size 2 x 1/8 Thru 4 x 3/16 Tube are Frangible Supports and Will Be Driven Into The Ground. 4 x 3/16 Tube is The Maximum Size Frangible Support. Size 4 x 1/4 Thru 8 x 3/4 Are Breakaway Supports and Will Have Poured Concrete Footings and Slip Bases.
- FOOTINGS: Frangible Supports-No Concrete Footing is Required. The Support Column Shall Be Driven Into The Ground To The Depth Indicated. The Portion of The Support Column Which is Driven Into The Ground Shall Be Painted With Cutback Asphalt - Grade RC-70.  
Breakaway Supports -Footings to be Poured Concrete. Size as Shown in Table. The First Dimension Indicates The Diameter of the Footing and the Second Dimension the Depth of the Footing into the Ground. In all Cases the Ground is to be Considered as Undisturbed Earth, Road Material or Properly Compacted Fill.

SLIP BASE DETAILS

COLUMN SIZE	SLEEVE I.D.(MAX)	SLEEVE WALL "T"	SLEEVE HEIGHT	WELD "W"	BASE PLATE LxLxT	RADIUS "R"	BASE BOLT SIZE	BASE BOLT TORQUE FT-lbs	INCH-lbs	HOLE SIZE "A"
4 x 1/4	4 1/16	3/8	6"	5/8	8 x 8 x 3/4	1/32	5/8" ø x 3"	53' #	640' #	1 1/8
4 1/2 x 1/4	4 9/16	3/8	6"	5/8	8 x 8 x 7/8	1/32	5/8" ø x 3 1/4"	53' #	640' #	1 1/8
5 x 1/4	5 1/16	3/8	7"	5/8	8 x 8 x 7/8	1/32	5/8" ø x 3 1/4"	53' #	640' #	1 1/8
5 1/2 x 1/4	5 9/16	3/8	7"	1 1/16	8 1/2 x 8 1/2 x 7/8	1/32	3/4" ø x 3 1/4"	78' #	940' #	1 3/8
6 x 1/4	6 1/16	3/8	8"	1 1/16	9 x 9 x 1	1/32	3/4" ø x 3 1/2"	78' #	940' #	1 3/8
6 1/2 x 1/4	6 9/16	3/8	8"	3/4	9 1/2 x 9 1/2 x 1	1/32	3/4" ø x 3 1/2"	78' #	940' #	1 3/8
7 x 1/4	7 1/16	3/8	9"	3/4	10 x 10 x 1	1/32	3/4" ø x 3 1/2"	78' #	940' #	1 3/8
7 1/2 x 1/4	7 9/16	3/8	9"	3/4	10 1/2 x 10 1/2 x 1	1/32	7/8" ø x 3 3/4"	108' #	1290' #	1 5/8
8 x 1/4	8 1/16	3/8	10"	3/4	11 x 11 x 1	1/32	7/8" ø x 3 3/4"	108' #	1290' #	1 5/8

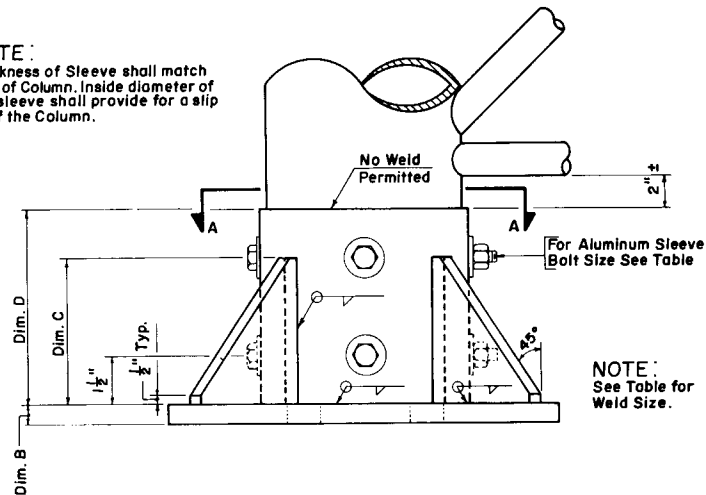
COLUMN SIZE (O.D. x WALL)	PLATE SIZE A	PLATE THICKNESS B	F I N S		FILLET WELD SIZE	SLEEVE HEIGHT DIMENSION D	ANCHOR BOLT LOCATION		ANCHOR BOLT HOLE DIAMETER	ANCHOR BOLT DIAMETER & LENGTH	DIMENSION M (NOMINAL)	SLEEVE BOLT DIAMETER
			THICKNESS T	DIMENSION C			DIMENSION E	DIMENSION F				
12" $\phi$ x $\frac{3}{4}$ "	2'-0"	$\frac{3}{8}$ "	$\frac{1}{4}$ "	9"	$\frac{7}{16}$ "	1'-0"	3"	$3\frac{1}{2}$ "	$2\frac{3}{16}$ "	$2\frac{1}{4}$ " $\phi$ x 6'-6"	$9\frac{3}{4}$ "	$\frac{7}{8}$ "
12" $\phi$ x $\frac{1}{2}$ "	1'-11"	$\frac{1}{4}$ "	$\frac{1}{8}$ "	8"	$\frac{7}{16}$ "	1'-0"	3"	$3\frac{1}{2}$ "	$2\frac{3}{16}$ "	$2\frac{1}{4}$ " $\phi$ x 5'-10"	9"	$\frac{3}{4}$ "
12" $\phi$ x $\frac{3}{8}$ "	1'-10"	$\frac{1}{8}$ "	1"	$7\frac{1}{2}$ "	$\frac{7}{16}$ "	1'-0"	3"	$3\frac{1}{2}$ "	$2\frac{3}{16}$ "	$2\frac{1}{4}$ " $\phi$ x 5'-10"	9"	$\frac{3}{4}$ "
12" $\phi$ x $\frac{1}{4}$ "	1'-9"	1"	1"	$7\frac{1}{2}$ "	$\frac{7}{16}$ "	1'-0"	2"	$3\frac{1}{2}$ "	$2\frac{3}{16}$ "	$1\frac{3}{4}$ " $\phi$ x 5'-1"	$7\frac{3}{4}$ "	$\frac{3}{4}$ "
11" $\phi$ x $\frac{1}{2}$ "	1'-10"	$\frac{1}{8}$ "	1"	8"	$\frac{7}{16}$ "	1'-0"	2"	$3\frac{1}{2}$ "	$2\frac{3}{16}$ "	$2\frac{1}{4}$ " $\phi$ x 5'-10"	9"	$\frac{3}{4}$ "
11" $\phi$ x $\frac{3}{8}$ "	1'-8"	1"	1"	7"	$\frac{7}{16}$ "	1'-0"	2"	$3\frac{1}{4}$ "	$2\frac{3}{16}$ "	$1\frac{3}{4}$ " $\phi$ x 5'-1"	$7\frac{3}{4}$ "	$\frac{3}{4}$ "
11" $\phi$ x $\frac{1}{4}$ "	1'-7"	1"	$\frac{7}{8}$ "	$6\frac{1}{2}$ "	$\frac{3}{8}$ "	1'-0"	2"	$3\frac{1}{4}$ "	$1\frac{1}{16}$ "	$1\frac{1}{2}$ " $\phi$ x 4'-4"	$6\frac{1}{2}$ "	$\frac{3}{4}$ "
10 $\frac{1}{2}$ " $\phi$ x $\frac{1}{2}$ "	1'-9"	1"	1"	$7\frac{1}{2}$ "	$\frac{7}{16}$ "	1'-0"	2"	$3\frac{1}{4}$ "	$2\frac{3}{16}$ "	$1\frac{3}{4}$ " $\phi$ x 5'-1"	$7\frac{3}{4}$ "	$\frac{3}{4}$ "
10 $\frac{1}{2}$ " $\phi$ x $\frac{3}{8}$ "	1'-7"	1"	$\frac{7}{8}$ "	$6\frac{1}{2}$ "	$\frac{7}{16}$ "	1'-0"	2"	$3\frac{1}{4}$ "	$2\frac{3}{16}$ "	$1\frac{3}{4}$ " $\phi$ x 5'-1"	$7\frac{3}{4}$ "	$\frac{3}{4}$ "
10 $\frac{1}{2}$ " $\phi$ x $\frac{1}{4}$ "	1'-6"	$\frac{7}{8}$ "	$\frac{3}{4}$ "	6"	$\frac{3}{8}$ "	11"	2"	3"	$1\frac{1}{16}$ "	$1\frac{1}{2}$ " $\phi$ x 4'-4"	$6\frac{1}{2}$ "	$\frac{3}{4}$ "
10" $\phi$ x $\frac{1}{2}$ "	1'-8"	1"	1"	7"	$\frac{7}{16}$ "	11"	2"	3"	$2\frac{3}{16}$ "	$1\frac{3}{4}$ " $\phi$ x 5'-1"	$7\frac{3}{4}$ "	$\frac{3}{4}$ "
10" $\phi$ x $\frac{3}{8}$ "	1'-7"	1"	$\frac{7}{8}$ "	7"	$\frac{3}{8}$ "	11"	2"	3"	$1\frac{1}{16}$ "	$1\frac{1}{2}$ " $\phi$ x 4'-4"	$6\frac{1}{2}$ "	$\frac{3}{4}$ "
10" $\phi$ x $\frac{1}{4}$ "	1'-6"	$\frac{7}{8}$ "	$\frac{3}{4}$ "	6"	$\frac{3}{8}$ "	11"	2"	3"	$1\frac{1}{16}$ "	$1\frac{3}{8}$ " $\phi$ x 4'-0"	$6\frac{1}{4}$ "	$\frac{3}{4}$ "
9 $\frac{1}{2}$ " $\phi$ x $\frac{1}{2}$ "	1'-7"	1"	$\frac{7}{8}$ "	7"	$\frac{7}{16}$ "	11"	2"	3"	$2\frac{3}{16}$ "	$1\frac{3}{4}$ " $\phi$ x 5'-1"	$7\frac{3}{4}$ "	$\frac{3}{4}$ "
9 $\frac{1}{2}$ " $\phi$ x $\frac{3}{8}$ "	1'-6"	$\frac{7}{8}$ "	$\frac{3}{4}$ "	$6\frac{1}{2}$ "	$\frac{3}{8}$ "	11"	2"	3"	$1\frac{1}{16}$ "	$1\frac{1}{2}$ " $\phi$ x 4'-4"	$6\frac{1}{2}$ "	$\frac{3}{4}$ "
9 $\frac{1}{2}$ " $\phi$ x $\frac{1}{4}$ "	1'-5"	$\frac{7}{8}$ "	$\frac{3}{4}$ "	6"	$\frac{3}{8}$ "	11"	2"	3"	$1\frac{1}{16}$ "	$1\frac{3}{8}$ " $\phi$ x 4'-0"	$6\frac{1}{4}$ "	$\frac{3}{4}$ "
9" $\phi$ x $\frac{1}{2}$ "	1'-7"	1"	$\frac{7}{8}$ "	7"	$\frac{3}{8}$ "	10"	2"	3"	$1\frac{1}{16}$ "	$1\frac{1}{2}$ " $\phi$ x 4'-4"	$6\frac{1}{2}$ "	$\frac{3}{4}$ "
9" $\phi$ x $\frac{3}{8}$ "	1'-6"	$\frac{7}{8}$ "	$\frac{3}{4}$ "	$6\frac{1}{2}$ "	$\frac{3}{8}$ "	10"	2"	3"	$1\frac{1}{16}$ "	$1\frac{3}{8}$ " $\phi$ x 4'-0"	$6\frac{1}{4}$ "	$\frac{3}{4}$ "
9" $\phi$ x $\frac{1}{4}$ "	1'-5"	$\frac{7}{8}$ "	$\frac{3}{4}$ "	6"	$\frac{3}{8}$ "	10"	2"	3"	$1\frac{1}{16}$ "	$1\frac{1}{4}$ " $\phi$ x 3'-8"	$5\frac{3}{4}$ "	$\frac{5}{8}$ "
8 $\frac{1}{2}$ " $\phi$ x $\frac{1}{2}$ "	1'-7"	1"	$\frac{7}{8}$ "	7"	$\frac{3}{8}$ "	10"	2"	3"	$1\frac{1}{16}$ "	$1\frac{1}{2}$ " $\phi$ x 4'-4"	$6\frac{1}{2}$ "	$\frac{3}{4}$ "
8 $\frac{1}{2}$ " $\phi$ x $\frac{3}{8}$ "	1'-6"	$\frac{7}{8}$ "	$\frac{3}{4}$ "	7"	$\frac{3}{8}$ "	10"	2"	3"	$1\frac{1}{16}$ "	$1\frac{3}{8}$ " $\phi$ x 4'-0"	$6\frac{1}{4}$ "	$\frac{3}{4}$ "
8 $\frac{1}{2}$ " $\phi$ x $\frac{1}{4}$ "	1'-4"	$\frac{3}{4}$ "	$\frac{5}{8}$ "	$5\frac{3}{4}$ "	$\frac{3}{8}$ "	10"	2"	$2\frac{1}{2}$ "	$1\frac{1}{16}$ "	$1\frac{1}{4}$ " $\phi$ x 3'-8"	$5\frac{3}{4}$ "	$\frac{5}{8}$ "
8" $\phi$ x $\frac{1}{2}$ "	1'-6"	$\frac{7}{8}$ "	$\frac{3}{4}$ "	7"	$\frac{3}{8}$ "	9 $\frac{1}{2}$ "	2"	3"	$1\frac{1}{16}$ "	$1\frac{3}{8}$ " $\phi$ x 4'-0"	$6\frac{1}{4}$ "	$\frac{3}{4}$ "
8" $\phi$ x $\frac{3}{8}$ "	1'-5"	$\frac{7}{8}$ "	$\frac{3}{4}$ "	6"	$\frac{3}{8}$ "	9 $\frac{1}{2}$ "	2"	$2\frac{1}{2}$ "	$1\frac{1}{16}$ "	$1\frac{1}{4}$ " $\phi$ x 3'-8"	$5\frac{3}{4}$ "	$\frac{5}{8}$ "
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7 $\frac{1}{2}$ " $\phi$ x $\frac{1}{2}$ "	1'-6"	$\frac{7}{8}$ "	$\frac{3}{4}$ "	7"	$\frac{3}{8}$ "	9"	2"	3"	$1\frac{1}{16}$ "	$1\frac{3}{8}$ " $\phi$ x 4'-0"	$6\frac{1}{4}$ "	$\frac{3}{4}$ "
7 $\frac{1}{2}$ " $\phi$ x $\frac{3}{8}$ "	1'-5"	$\frac{7}{8}$ "	$\frac{3}{4}$ "	6"	$\frac{3}{8}$ "	9"	2"	$2\frac{1}{2}$ "	$1\frac{1}{16}$ "	$1\frac{1}{4}$ " $\phi$ x 3'-8"	$5\frac{3}{4}$ "	$\frac{5}{8}$ "
7 $\frac{1}{2}$ " $\phi$ x $\frac{1}{4}$ "	1'-3"	$\frac{3}{4}$ "	$\frac{5}{8}$ "	$5\frac{1}{2}$ "	$\frac{3}{8}$ "	9"	2"	$2\frac{1}{4}$ "	$1\frac{7}{16}$ "	$1\frac{1}{8}$ " $\phi$ x 3'-4"	$5\frac{1}{2}$ "	$\frac{5}{8}$ "
7" $\phi$ x $\frac{1}{2}$ "	1'-5"	$\frac{7}{8}$ "	$\frac{3}{4}$ "	6"	$\frac{3}{8}$ "	9"	2"	$2\frac{1}{2}$ "	$1\frac{1}{16}$ "	$1\frac{1}{4}$ " $\phi$ x 3'-8"	$5\frac{3}{4}$ "	$\frac{5}{8}$ "
7" $\phi$ x $\frac{3}{8}$ "	1'-4"	$\frac{3}{4}$ "	$\frac{5}{8}$ "	$5\frac{3}{4}$ "	$\frac{3}{8}$ "	9"	2"	$2\frac{1}{2}$ "	$1\frac{1}{16}$ "	$1\frac{1}{4}$ " $\phi$ x 3'-8"	$5\frac{3}{4}$ "	$\frac{5}{8}$ "
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6 $\frac{1}{2}$ " $\phi$ x $\frac{1}{2}$ "	1'-4"	$\frac{3}{4}$ "	$\frac{5}{8}$ "	$5\frac{3}{4}$ "	$\frac{3}{8}$ "	8"	2"	$2\frac{1}{2}$ "	$1\frac{1}{16}$ "	$1\frac{1}{4}$ " $\phi$ x 3'-8"	$5\frac{3}{4}$ "	$\frac{5}{8}$ "
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6 $\frac{1}{2}$ " $\phi$ x $\frac{1}{4}$ "	1'-2"	$\frac{5}{8}$ "	$\frac{5}{8}$ "	$5\frac{1}{4}$ "	$\frac{3}{8}$ "	8"	2"	2"	$1\frac{1}{16}$ "	1" $\phi$ x 2'-11"	5"	$\frac{5}{8}$ "
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6" $\phi$ x $\frac{3}{8}$ "	1'-3"	$\frac{3}{4}$ "	$\frac{5}{8}$ "	$5\frac{1}{2}$ "	$\frac{3}{8}$ "	8"	2"	$2\frac{1}{4}$ "	$1\frac{7}{16}$ "	$1\frac{1}{8}$ " $\phi$ x 3'-4"	$5\frac{1}{2}$ "	$\frac{5}{8}$ "
6" $\phi$ x $\frac{1}{4}$ "	1'-2"	$\frac{5}{8}$ "	$\frac{5}{8}$ "	$5\frac{1}{4}$ "	$\frac{3}{8}$ "	8"	2"	2"	$1\frac{1}{16}$ "	1" $\phi$ x 2'-11"	5"	$\frac{5}{8}$ "
5 $\frac{1}{2}$ " $\phi$ x $\frac{1}{2}$ "	1'-3"	$\frac{3}{4}$ "	$\frac{5}{8}$ "	$5\frac{1}{2}$ "	$\frac{3}{8}$ "	7"	2"	2"	$1\frac{7}{16}$ "	$1\frac{1}{8}$ " $\phi$ x 3'-4"	$5\frac{1}{2}$ "	$\frac{5}{8}$ "
5 $\frac{1}{2}$ " $\phi$ x $\frac{1}{4}$ "	1'-1"	$\frac{5}{8}$ "	$\frac{5}{8}$ "	5"	$\frac{3}{8}$ "	7"	$1\frac{3}{4}$ "	$1\frac{3}{4}$ "	$1\frac{3}{16}$ "	$\frac{7}{8}$ " $\phi$ x 2'-7"	$4\frac{3}{4}$ "	$\frac{5}{8}$ "
4 $\frac{3}{4}$ " $\phi$ x $\frac{1}{2}$ "	1'-0"	$\frac{5}{8}$ "	$\frac{5}{8}$ "	$4\frac{3}{4}$ "	$\frac{3}{8}$ "	7"	$1\frac{3}{4}$ "	$1\frac{3}{4}$ "	$1\frac{3}{16}$ "	$\frac{7}{8}$ " $\phi$ x 2'-7"	$4\frac{3}{4}$ "	$\frac{1}{2}$ "
4 $\frac{1}{2}$ " $\phi$ x $\frac{1}{2}$ "	1'-0"	$\frac{1}{2}$ "	$\frac{1}{2}$ "	$4\frac{3}{4}$ "	$\frac{5}{16}$ "	7"	$1\frac{3}{4}$ "	$1\frac{1}{2}$ "	$1\frac{1}{16}$ "	$\frac{3}{4}$ " $\phi$ x 2'-3"	$4\frac{1}{2}$ "	$\frac{1}{2}$ "
4 $\frac{1}{2}$ " $\phi$ x $\frac{1}{4}$ "	1'-0"	$\frac{1}{2}$ "	$\frac{1}{2}$ "	$4\frac{3}{4}$ "	$\frac{5}{16}$ "	7"	$1\frac{3}{4}$ "	$1\frac{1}{2}$ "	$1\frac{1}{16}$ "	$\frac{3}{4}$ " $\phi$ x 2'-3"	$4\frac{1}{2}$ "	$\frac{1}{2}$ "
4" $\phi$ x $\frac{1}{4}$ "	1'-0"	$\frac{1}{2}$ "	$\frac{1}{2}$ "	$4\frac{3}{4}$ "	$\frac{5}{16}$ "	7"	$1\frac{3}{4}$ "	$1\frac{1}{2}$ "	$1\frac{1}{16}$ "	$\frac{3}{4}$ " $\phi$ x 2'-3"	$4\frac{1}{2}$ "	$\frac{1}{2}$ "

NOTE: For Column Size not Tabulated use next Larger Diameter and Wall Thickness.



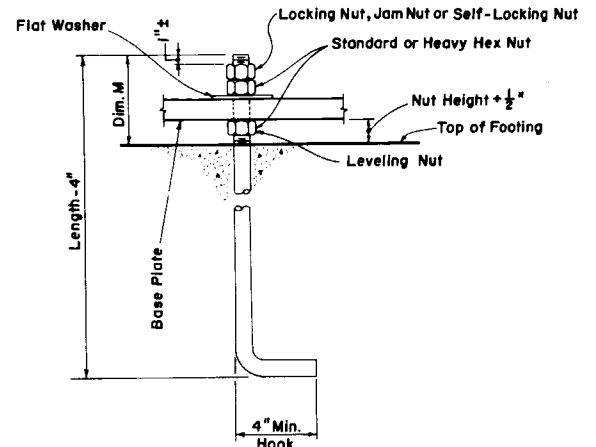
SECTION A-A

NOTE: Thickness of Sleeve shall match that of Column. Inside diameter of the sleeve shall provide for a slip fit of the Column.



ELEVATION

NOTE: See Table for Weld Size.



ANCHOR BOLT DETAIL

### SPECIFICATIONS

**EXTRUDED TUBING:** The material used shall meet the requirements of the Aluminum Association Alloy 6061-T6 and also the A.S.T.M. Specifications B-221.

**WELDING RODS:** Aluminum Association Alloy No. 5556 Filler Wire.

**TOLERANCE:** All above materials shall be in keeping with the A.S.T.M. Specifications.

**ALUMINUM BOLTS, NUTS, AND LOCKWASHERS:** Aluminum Bolts shall meet the requirements of the Aluminum Association Alloy 2024-T4 or 6061-T6 (A.S.T.M. Specification B-211). The Bolts shall have an anodic coating at least 0.0002" thick and Chromate Sealed. Lockwashers shall meet the requirements of the Aluminum Association Alloy 7075-T6 (A.S.T.M. Specification B-221). Nuts shall meet the requirements of the Aluminum Association Alloy 6262-T9 or 6061-T6.

**MATERIAL STRESSES:** All allowable stresses are in accordance with the "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals," A.A.S.H.O., 1975 and approved revisions for all materials shown on the Plans.

**SHEETS AND PLATES:** The material used shall meet the requirements of the Aluminum Association Alloy 6061-T6 and also the A.S.T.M. Specifications B-209.

**SHOP DRAWINGS:** The Contractor shall submit complete Shop Drawings before fabrication for approval by the Engineer.

**STEEL BOLTS, NUTS & LOCKWASHERS:** All Anchor Bolts, Nuts and Lockwashers shall meet the requirements of A.S.T.M. Specification A-307 and shall be hot dip galvanized in accordance with the requirements of A.S.T.M. Specification A-153.

APPROVED BY FHWA 11/16/78

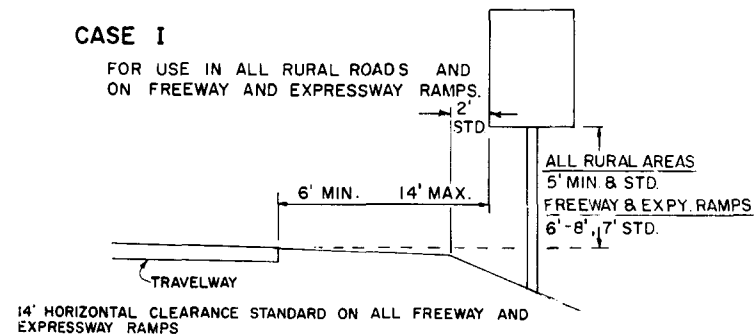
BASES FOR  
OVERHEAD BRIDGE TRUSS  
4 POST CANTILEVER TRUSS  
SINGLE POST CANTILEVER

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION STRUCTURES			
ALUMINUM BASES FOR COLUMN SUPPORTS			
ROAD NO.		COUNTY	PROJECT NO.
DESIGNED BY H A V		DATES 5-76	APPROVED BY T. All
CHECKED BY C W B		DATES 6-76	DEPUTY DESIGN ENGINEER
QUANTITIES BY		DRAWING NO.	INDEX NO.
CHECKED BY		1 of 1	
SUPERVISED BY A J H		11926	



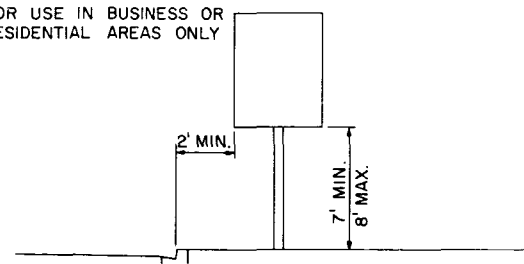
### CASE I

FOR USE IN ALL RURAL ROADS AND ON FREEWAY AND EXPRESSWAY RAMP.



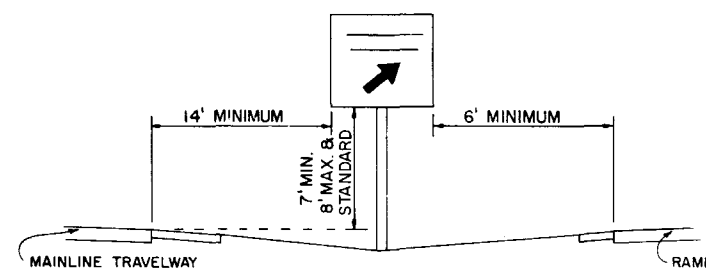
### CASE V

FOR USE IN BUSINESS OR RESIDENTIAL AREAS ONLY



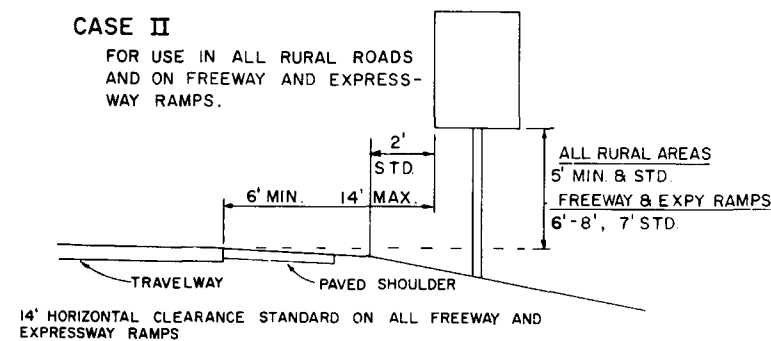
### CASE IX (REST AREA & EXIT GORE SIGNS)

FOR USE ON ALL FREEWAY AND EXPRESSWAY SYSTEMS



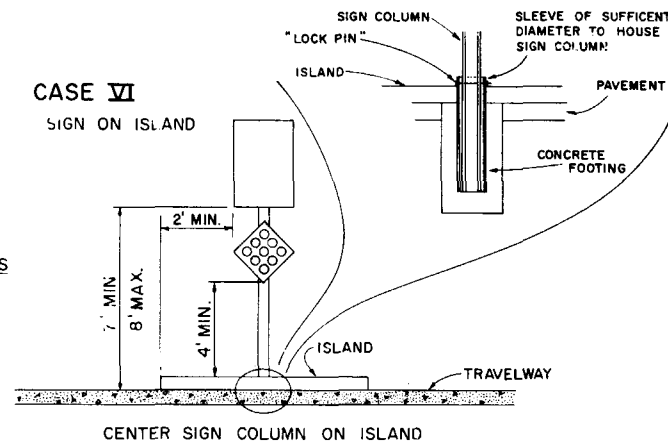
### CASE II

FOR USE IN ALL RURAL ROADS AND ON FREEWAY AND EXPRESSWAY RAMP.



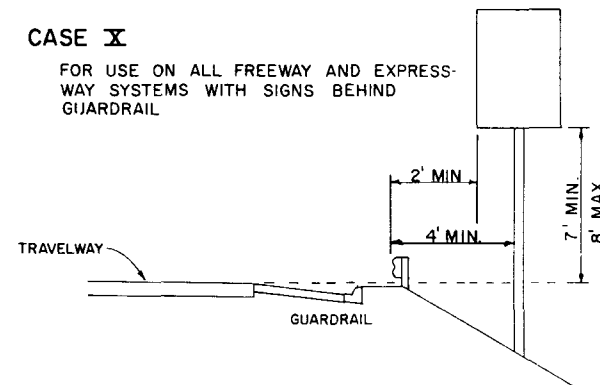
### CASE VI

SIGN ON ISLAND



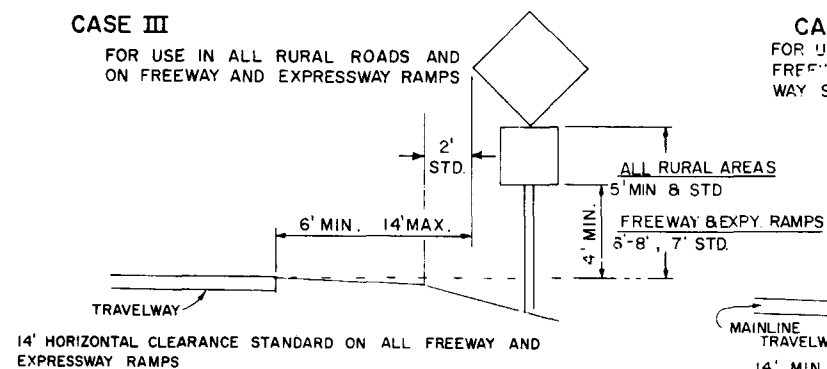
### CASE X

FOR USE ON ALL FREEWAY AND EXPRESSWAY SYSTEMS WITH SIGNS BEHIND GUARDRAIL



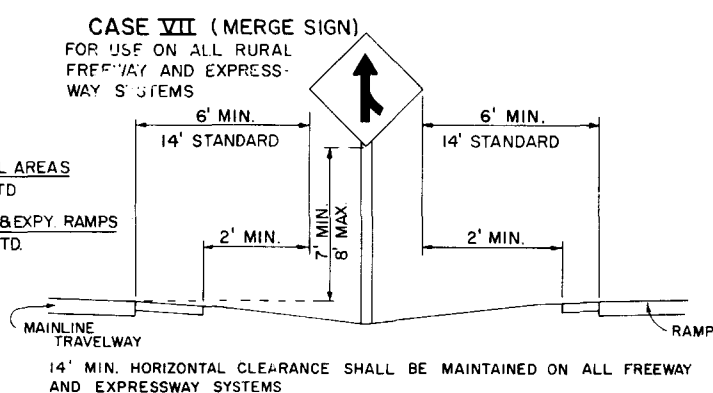
### CASE III

FOR USE IN ALL RURAL ROADS AND ON FREEWAY AND EXPRESSWAY RAMP



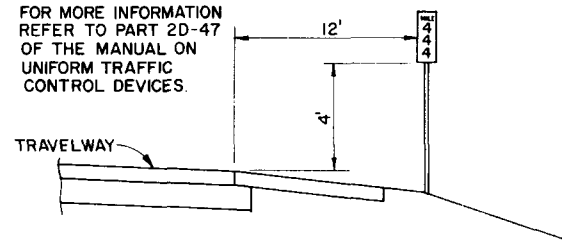
### CASE VII (MERGE SIGN)

FOR USE ON ALL RURAL FREEWAY AND EXPRESSWAY SYSTEMS



### CASE XI (MILE POST MARKER)

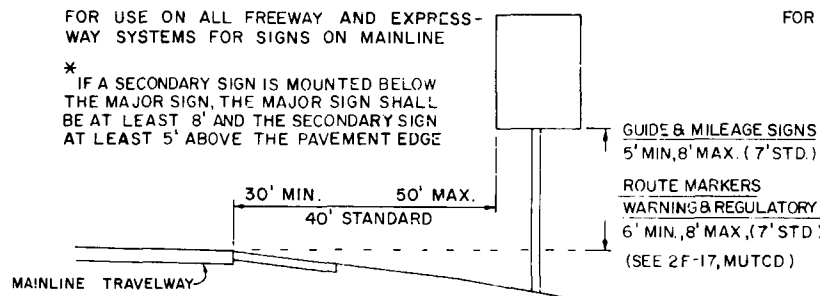
FOR MORE INFORMATION REFER TO PART 2D-47 OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.



### CASE IV

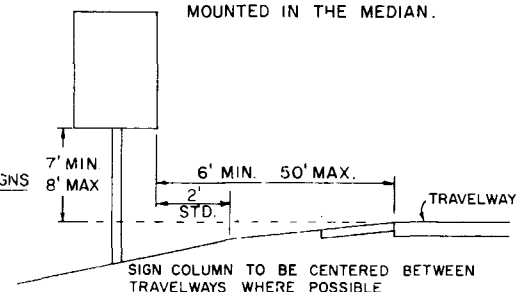
FOR USE ON ALL FREEWAY AND EXPRESSWAY SYSTEMS FOR SIGNS ON MAINLINE

\* IF A SECONDARY SIGN IS MOUNTED BELOW THE MAJOR SIGN, THE MAJOR SIGN SHALL BE AT LEAST 8' AND THE SECONDARY SIGN AT LEAST 5' ABOVE THE PAVEMENT EDGE



### CASE VIII

FOR USE ON ALL FREEWAY AND EXPRESSWAY SYSTEMS FOR SIGNS MOUNTED IN THE MEDIAN.

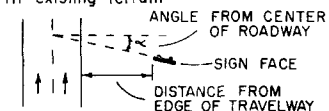


### GENERAL NOTES:

- The various sections shown hereon serve as a guide for use in locating the traffic signs required under various roadside conditions. For size and details of sign construction and footing, refer to the appropriate standard index drawing for roadside sign.
  - It shall be the CONTRACTORS responsibility to verify the length of sign supports in the field prior to fabrication.
  - SIGN DISTANCE FROM EDGE OF ROADWAY
- | SIGN DISTANCE FROM EDGE OF ROADWAY | ANGLE |
|------------------------------------|-------|
| LESS THAN 20'                      | 0°    |
| ≤ 30'                              | 3°    |
| ≤ 40'                              | 4°    |
| ≤ 50'                              | 5°    |
- (SEE ILLUSTRATION)  
Where lanes divide or on curves, sign faces shall be oriented so as to be most effective both day and night, and

to avoid the possibility of specular reflection.

4. Horizontal clearance may be altered in the field by the PROJECT ENGINEER to better fit existing terrain.



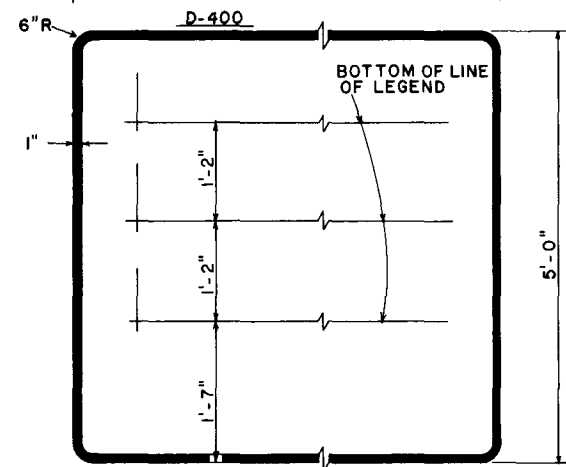
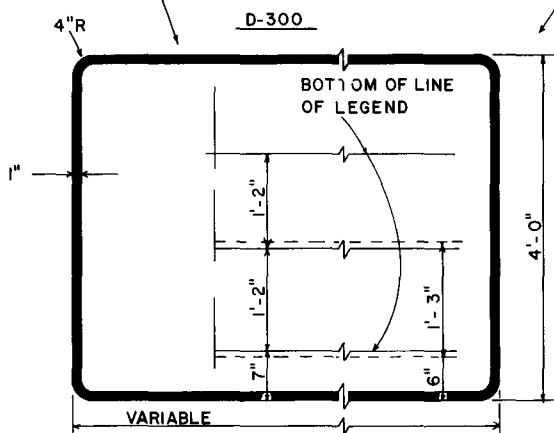
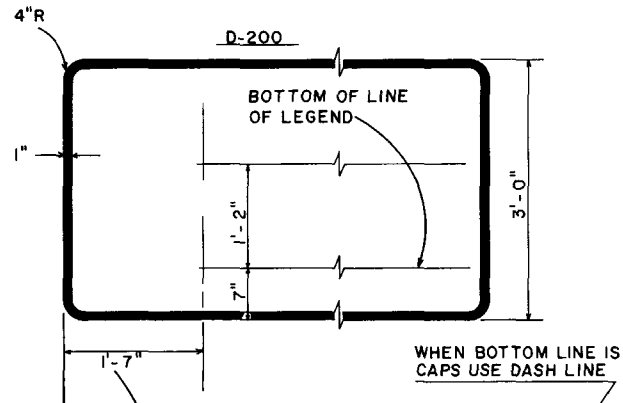
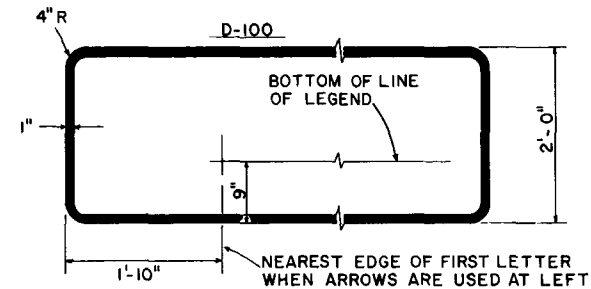
APPROVED BY F.H.W.A 11/16/78

FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS			
TYPICAL SECTIONS FOR ONE COLUMN SIGN PLACEMENT			
DATE	INITIALS	DATES	RECOMMENDED FOR APPROVAL
11/75	WB-KRRM	3-75	BY <i>Larry C. Price</i> 10/31/79 DEPUTY TRAFFIC OPERATIONS ENGR.
1-27-76	WB-KRRM		APPROVED
7-10-78	P.B.		BY <i>R.E. Magder</i> 10/31/79 STATE TRAFFIC OPERATIONS ENGR.
SUPERVISED BY		K.R.	3-75
DRAWING NO.		1 of 1	INDEX NO. 17302

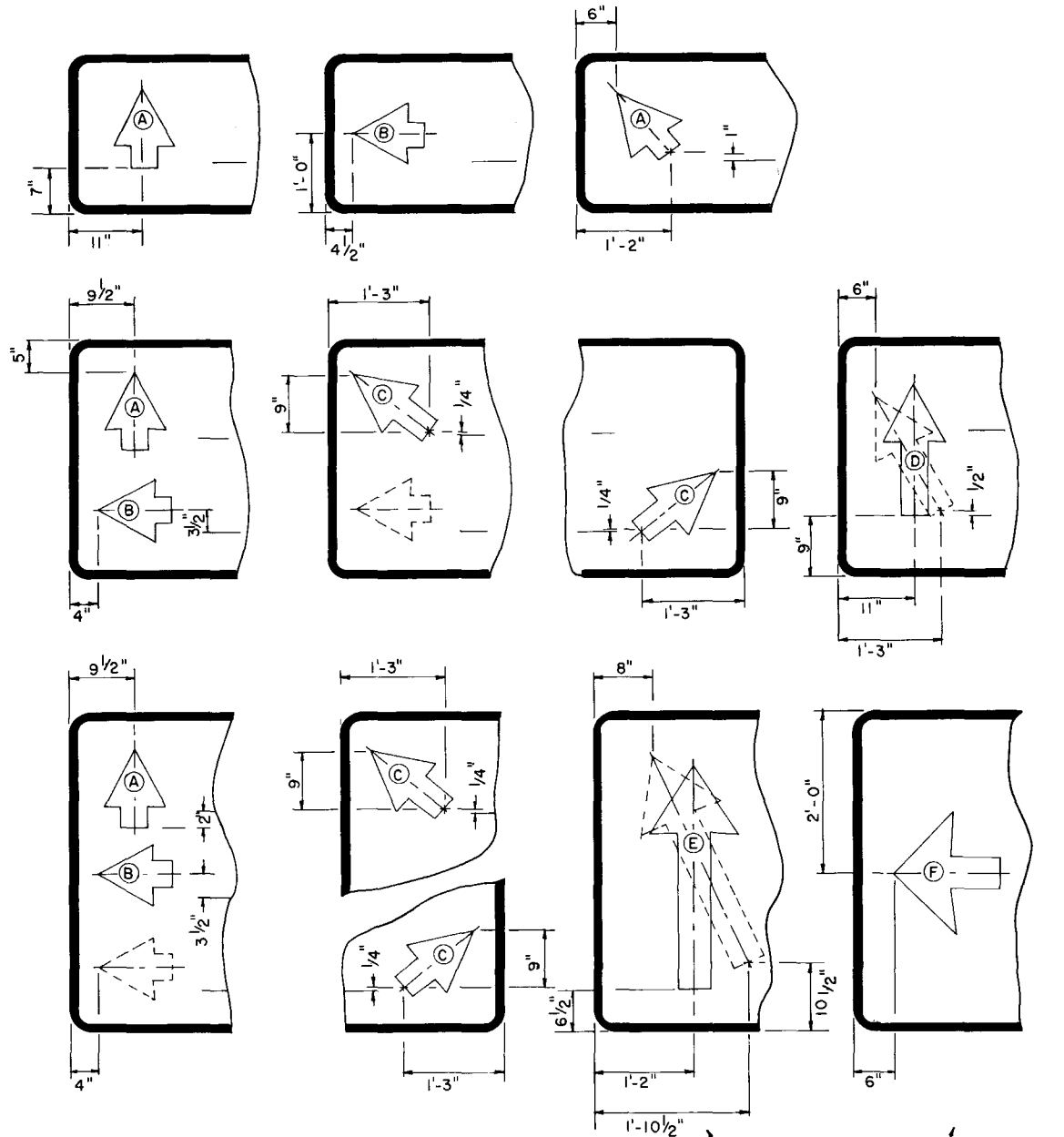
REVISIONS		
DATE	INITIALS	DESCRIPTION
11/75	WB-KRRM	MTG. HT + OTHER CLARIFICATIONS
1-27-76	WB-KRRM	REVISE SPACING
7-10-78	P.B.	REVISED CLEARANCE CASE X

# SIGN SIZES & LEGEND LOCATIONS

(8" UPPER CASE, 6" LOWER CASE LOOP HEIGHT)  
BUREAU OF PUBLIC ROADS



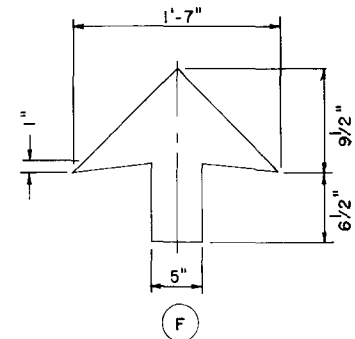
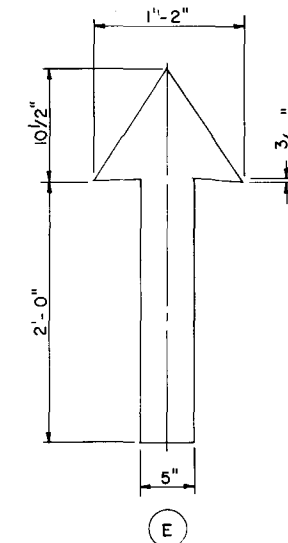
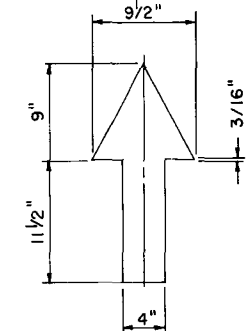
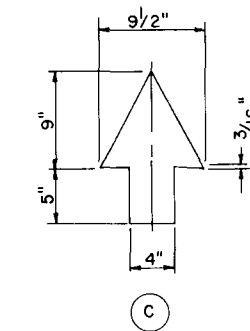
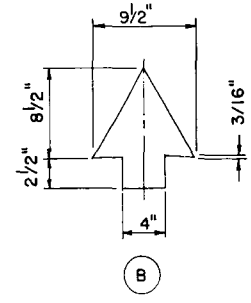
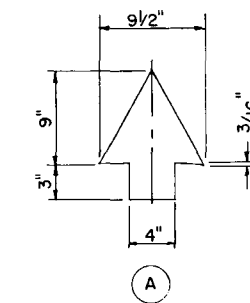
## TYPICAL ARROW LOCATIONS—100-200-300-400



THESE ARROWS ARE TO BE USED WHEN U.S. SHIELD OR FLORIDA SYMBOL IS REQUIRED ON SIGN PANEL.

- (1) WHEN ARROW APPEAR AT LEFT OF MESSAGE, MESSAGE TO BEGIN AS SHOWN.
- (2) A, 9" MIN IS REQUIRED FROM EDGE OF SIGN TO NEAREST EDGE OF FIRST LETTER WHEN ARROWS APPEAR AT RIGHT OF MESSAGE.
- (3) DETAILS OF ARROWS ON ONE END OF PANEL MAY BE USED ON OPPOSITE END ALSO.
- (4) THE LEGEND ON THESE SIGNS MAY BE EITHER DETACHABLE OR SCREENED COPY.
- (5) BACKGROUND OVERALL REFLECTORIZED GREEN, LEGEND AND BORDER WHITE.

STATE PROJ. NO. SHEET NO.



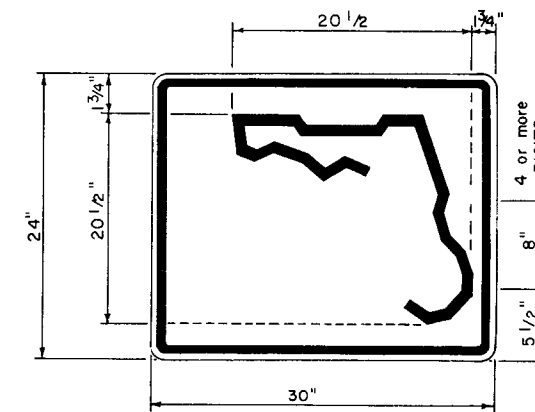
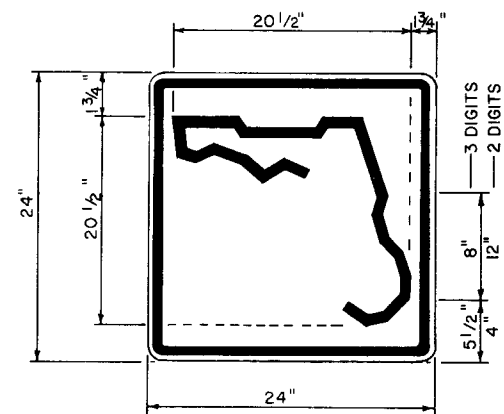
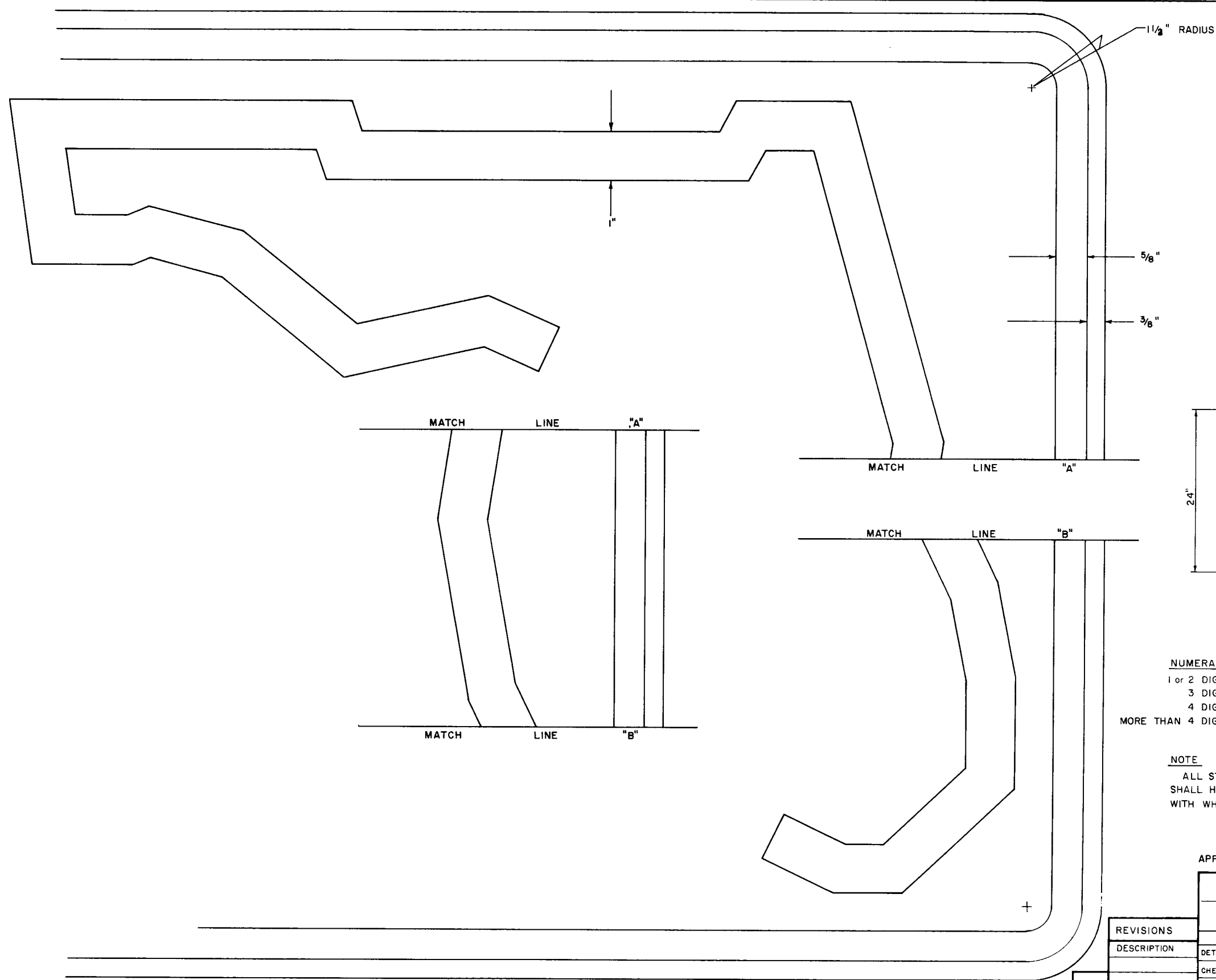
APPROVED BY FHWA 11/16/78

FLORIDA DEPARTMENT OF TRANSPORTATION  
Traffic Operations

### DESTINATION SIGN LAYOUT

REVISIONS		INITIALS	DATES
Dates	Descriptions	Detailed by	T.L. 10-4-76
10-4-76	REDRAFTED	Checked by	K.R. 10-4-76
7-10-78	REVISED NOTE 3 GENERAL REVISIONS.	Quantities by	
		Checked by	
		Supervised by	K.R.

Recommended for approval by *[Signature]*  
Deputy Traffic Operations Engr.  
Approved by *[Signature]*  
State Traffic Operations Engr.  
DRAWING NO. 1 of 1  
INDEX NO. 17307



**NUMERAL SIZE**

- 1 or 2 DIGITS 12" SERIES "C" - 24" x 24"
- 3 DIGITS 8" SERIES "B" - 24" x 24"
- 4 DIGITS 8" SERIES "B" - 24" x 30"
- MORE THAN 4 DIGITS 8" SERIES "B" - 24" x 30"

**NOTE**

ALL STATE ROUTE MARKERS AND AUXILIARIES SHALL HAVE BLACK OPAQUE LEGEND AND BORDER WITH WHITE REFLECTIVE BACKGROUND

APPROVED BY FHWA 11/16/78

FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS			
24" FLORIDA ROUTE MARKER OTHER THAN INTERSTATE			
REVISIONS	INITIALS	DATE	<i>Gary C. Price</i> APPROVED BY <i>R. S. Magade</i> 1/28/77 STATE TRAFFIC OPERATIONS ENGR.
DESCRIPTION	DETAILED BY	G.W.	
	CHECKED BY		
	QUANTITIES BY		
	CHECKED BY		
SUPERVISED BY K. RANSON			DRAWING NO. 1 of 1 INDEX NO. 17309

FLORIDA'S  
TURNPIKE

3" R. TYPICAL

**8 1/8"**

14 1/2"

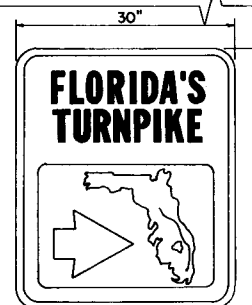
16"

1" TYPICAL

---

30

MATCH LINE SEE SHEET 2 of 2



TYPE "B" ARROW  
(ARROW POSITION AS INDICATED  
ON SIGNING PLANS.)

GREEN REFLECTORIZED BACKGROUND WITH  
WHITE REFLECTORIZED LEGEND AND BORDER.

SIGN LAYOUT AS INDICATED ON SHEETS 1 & 2 OF 2

ARROW VERTICAL 

ARROW 45° LEFT

ARROW 45° RIGHT 

ARROW LEFT 

ARROW RIGHT 

NO ARROW

APPROVED BY FHWA 11/16/78

FLORIDA DEPARTMENT OF TRANSPORTATION  
TRAFFIC OPERATIONS

DETAIL LAYOUT OF TYPE C SIGN  
FLORIDA'S TURNPIKE TRAILBLAZER

REVISIONS			FLORIDA'S TURNPIKE TRAILBLAZER		
DATE	INITIALS	DESCRIPTION	DETAILED BY	INITIALS	DATES
7-10-78	P.B.	GENERAL REVISIONS	CHECKED BY		
			QUANTITIES BY		
			CHECKED BY		
			SUPERVISED BY		

RECOMMENDED FOR APPROVAL	
BY	<i>Sp. Price</i>
	DEPUTY TRAFFIC OPERATIONS ENGR.
APPROVED	
BY	<i>P.E. Magadey</i>
	STATE TRAFFIC OPERATIONS ENGR.
DRAWING NO.	INDEX NO.
1 of 2	17313

		INITIALS		DATES		RECOMMENDED FOR APPROVAL	
DETAILED BY						BY <u>D.P. Price</u>	
CHECKED BY						DEPUTY TRAFFIC OPERATIONS ENGR.	
QUANTITIES BY						APPROVED	
CHECKED BY						BY <u>R.E. Magales</u>	
SUPERVISED BY						STATE TRAFFIC OPERATIONS ENGR.	
				DRAWING NO.		INDEX NO.	
				1 of 2		17313	

MATCH LINE SEE SHEET 1 of 2

STATE PROJ. NO. SHEET NO.

20"

1 7/8"

WHITE (REFLECTORIZED)

WHITE (REFLECTORIZED)

GREEN (REFLECTORIZED)

WHITE (REFLECTORIZED)

1/4"

1" TYPICAL

GREEN (REFLECTORIZED)

1 7/8"

3" R TYPICAL

1 7/8"

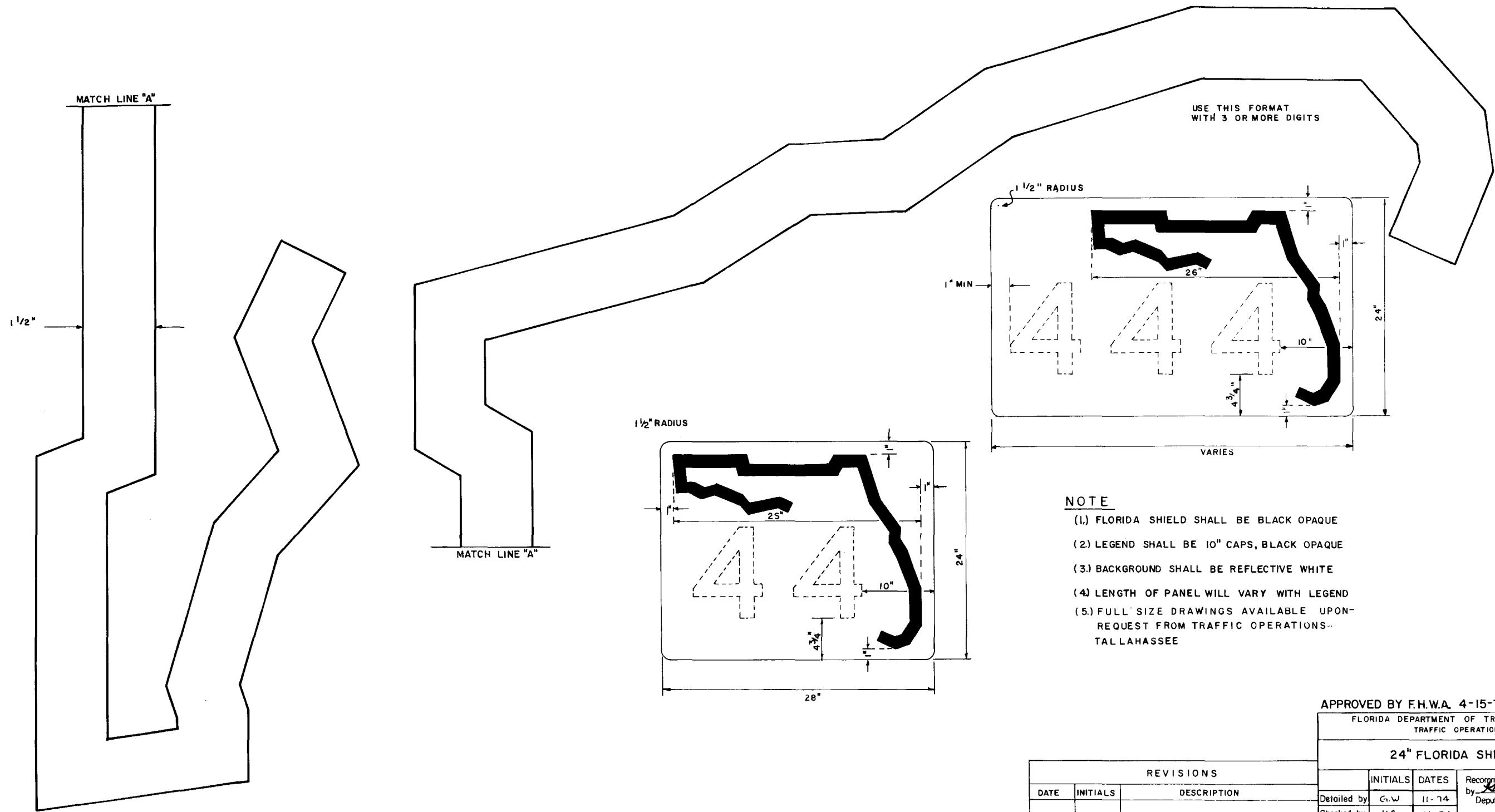
APPROVED BY FHWA 11/16/78

FLORIDA DEPARTMENT OF TRANSPORTATION  
TRAFFIC OPERATIONS

DETAIL LAYOUT OF TYPE C SIGN  
FLORIDA'S TURNPIKE TRAILBLAZER

REVISIONS		
DATE	INITIALS	DESCRIPTION

	INITIALS	DATES	RECOMMENDED FOR APPROVAL
DETAILED BY	M.F.M.	4-75	BY <i>DL Price</i>
CHECKED BY	K.R.	4-75	DEPUTY TRAFFIC OPERATIONS ENGR.
QUANTITIES BY			APPROVED
CHECKED BY			BY <i>L. Magaley</i>
SUPERVISED BY	K.R.	4-75	STATE TRAFFIC OPERATIONS ENGR.
DRAWING NO.	2 of 2	INDEX NO.	17313



#### NOTE

- (1) FLORIDA SHIELD SHALL BE BLACK OPAQUE
- (2) LEGEND SHALL BE 10" CAPS, BLACK OPAQUE
- (3) BACKGROUND SHALL BE REFLECTIVE WHITE
- (4) LENGTH OF PANEL WILL VARY WITH LEGEND
- (5) FULL SIZE DRAWINGS AVAILABLE UPON REQUEST FROM TRAFFIC OPERATIONS--TALLAHASSEE

APPROVED BY F.H.W.A. 4-15-75

FLORIDA DEPARTMENT OF TRANSPORTATION  
TRAFFIC OPERATIONS

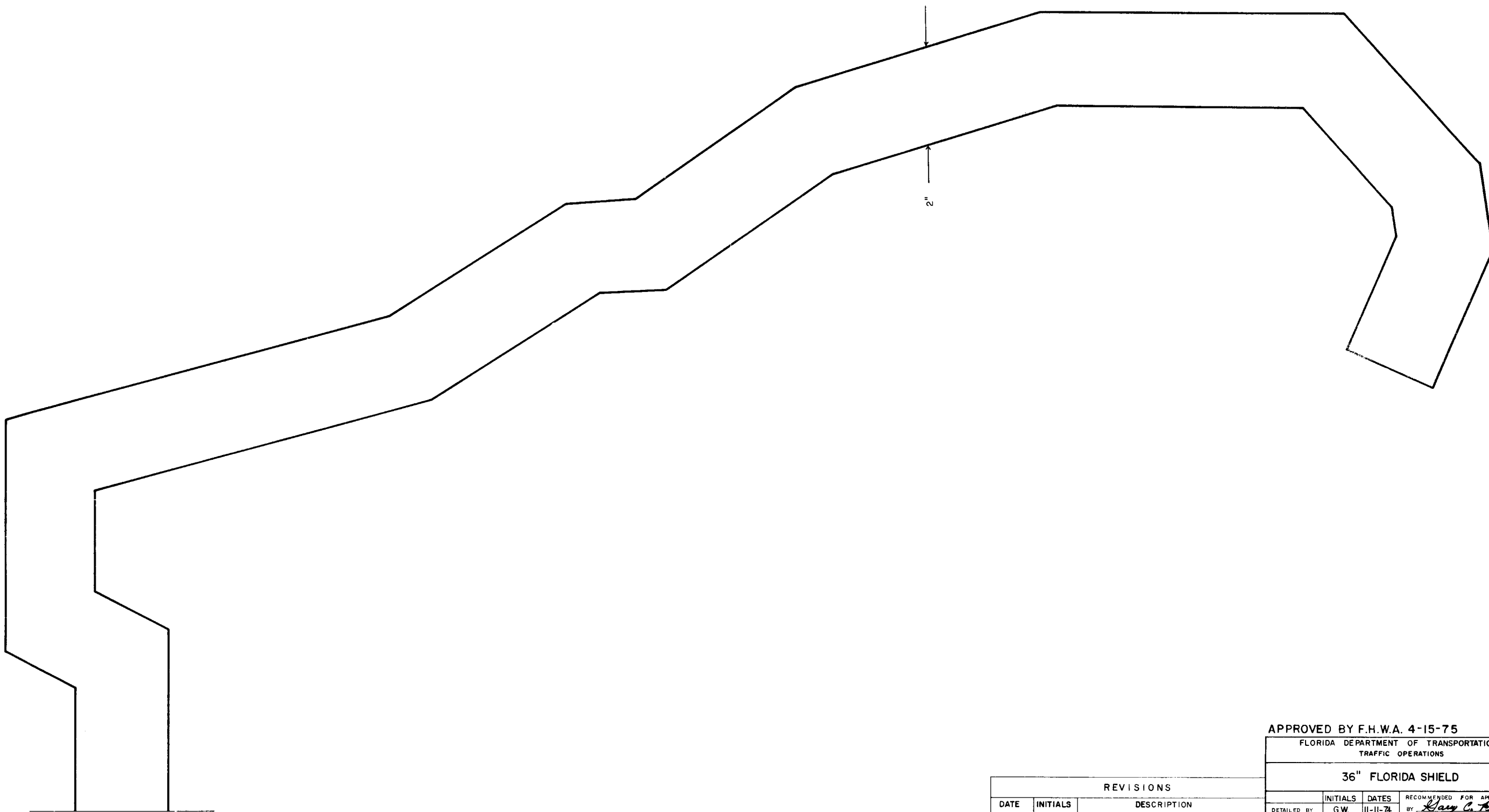
#### 24" FLORIDA SHIELD

REVISIONS			INITIALS	DATES	Recommended for approval by <i>Larry C. Luce</i> Deputy Traffic Operations Engr.
DATE	INITIALS	DESCRIPTION			
			Detailed by G.W.	11-74	Approved by <i>R. S. Magada</i> 10/24/75 State Traffic Operations Engr.
			Checked by K.R.	11-74	
			Quantities by		
			Checked by		
			Supervised by K.R.	11-74	
			DRAWING NO. 1 of 1	INDEX NO. 17315	



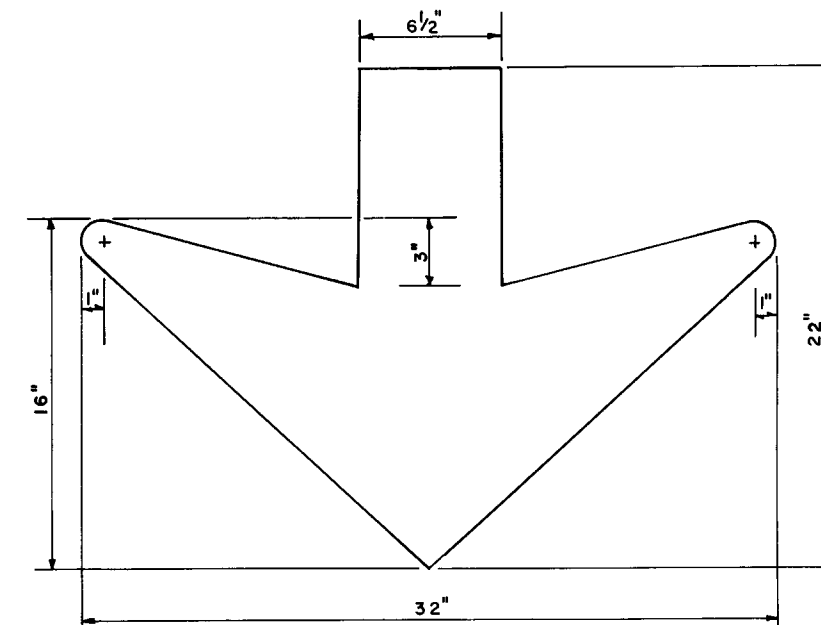
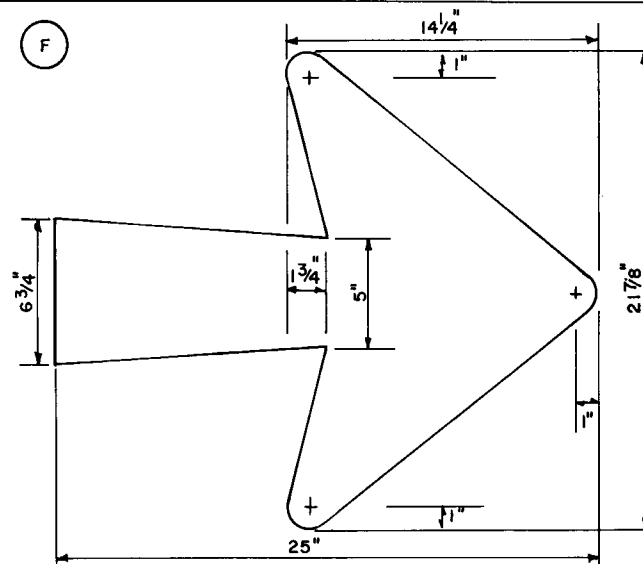
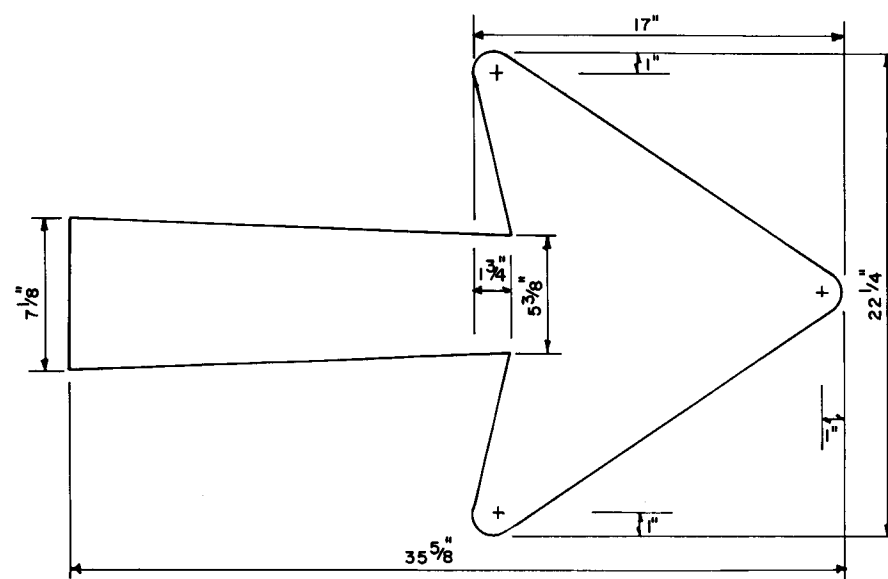
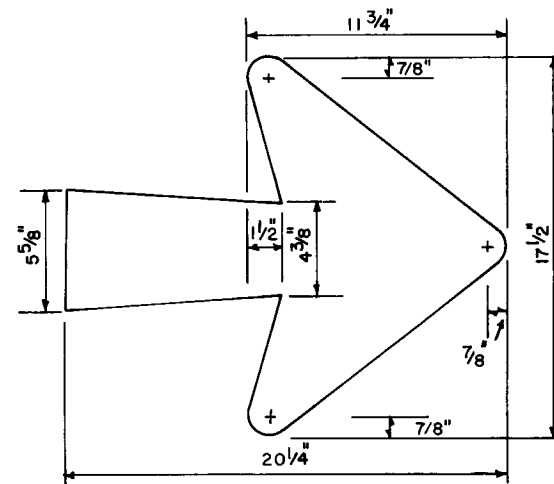
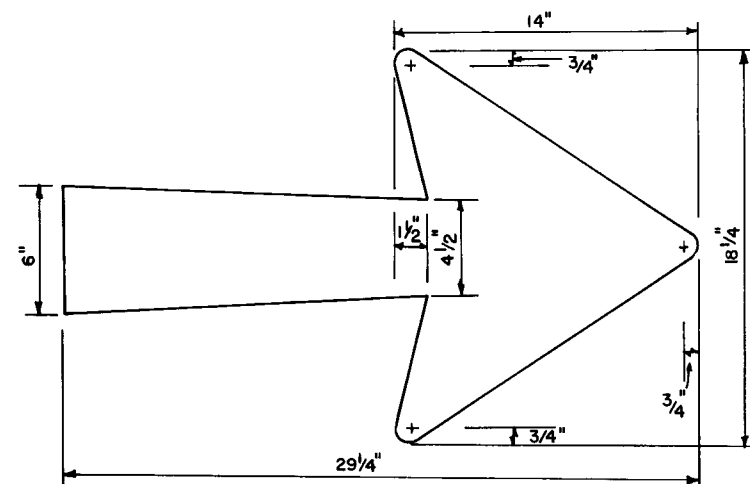
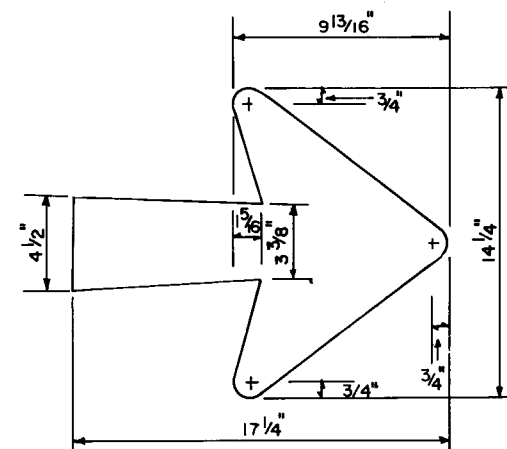
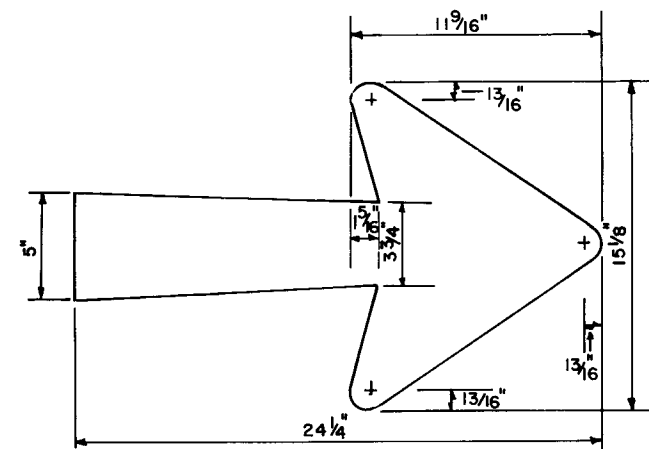






REVISIONS		
DATE	INITIALS	DESCRIPTION

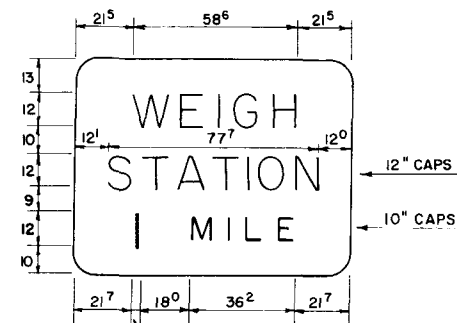
APPROVED BY F.H.W.A. 4-15-75			
FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS			
36" FLORIDA SHIELD			
	INITIALS	DATES	RECOMMENDED FOR APPROVAL
DETAILED BY	G.W.	11-11-74	BY <i>Harry C. Ruiz</i>
CHECKED BY	K.R.	11-74	DEPUTY TRAFFIC OPERATIONS ENGR.
QUANTITIES BY			APPROVED
CHECKED BY			BY <i>R. S. Magada</i> 10/11/74
SUPERVISED BY	K.R.	11-74	STATE TRAFFIC OPERATIONS ENGR.
DRAWING NO.		INDEX NO.	
2 of 2		17317	



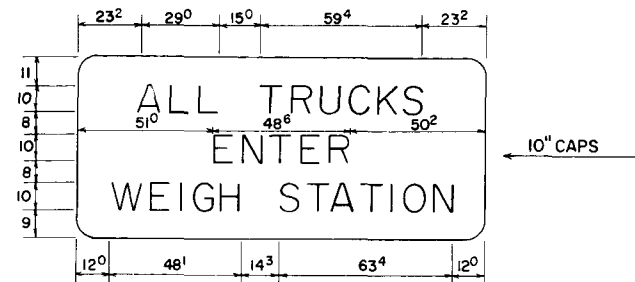
FED. ROAD DIV. No.	STATE	PROJECT No.	FISCAL YEAR	SHEET No.
3	FLA.			

			APPROVED BY FHWA II/16/78		
			FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS		
			ARROW LAYOUTS FOR GROUND AND OVERHEAD SIGNS		
REVISIONS			INITIALS	DATES	RECOMMENDED FOR APPROVAL
DATE	INITIALS	DESCRIPTION	DETAILED BY	K.G.G.	4-25-62
6-7-66		INDEX NO. CHANGE 7326 TO 17320	CHECKED BY		
7-10-78	P B	CHANGED TITLE BLOCK & GENERAL REVISION	QUANTITIES BY		
			CHECKED BY		
			SUPERVISED BY		
			TRACED BY	K.G.G.	4-25-62
			BY <i>[Signature]</i> DEPUTY TRAFFIC OPERATIONS ENGR.		
			APPROVED BY <i>[Signature]</i> STATE TRAFFIC OPERATIONS ENGR.		
			DRAWING NO. INDEX NO. 1 OF 1 17320		

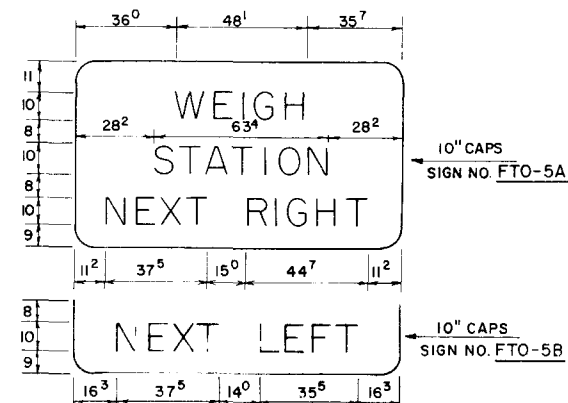
## FOR FREEWAY USE



SIGN NO. FTO-3  
8'-6" X 6'-6"  
2" BORDER - 9" RAD.



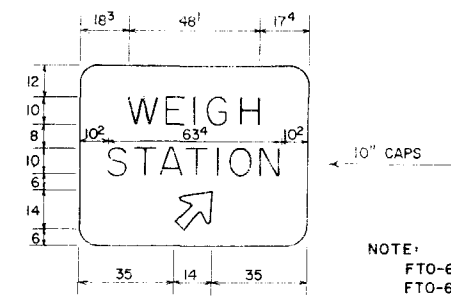
SIGN NO. FTO-4  
12'-6" X 5'-6"  
2" BORDER - 9" RAD.



SIGN NO. FTO-5A

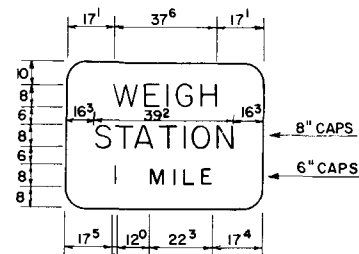
SIGN NO. FTO-5B

10'-0" X 5'-6"  
2" BOR - 9" RAD.

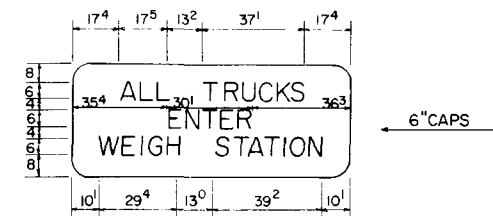


SIGN NO. FTO-6  
7'-0" X 5'-6"  
2" BORDER - 6" RAD.

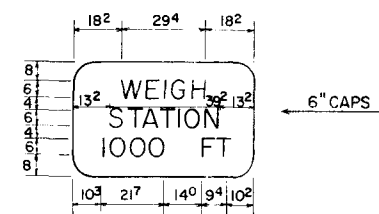
NOTE:  
FTO-6A -- RIGHT ARROW  
FTO-6B -- LEFT ARROW



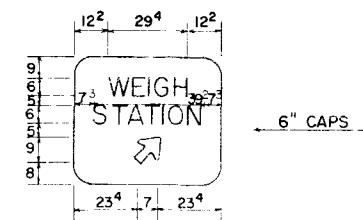
SIGN NO. FTO-7  
6'-0" X 4'-6"  
2" BORDER - 6" RAD.



SIGN NO. FTO-8  
8'-6" X 3'-6"  
2" BORDER - 6" RAD.



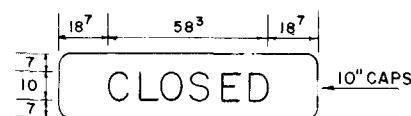
SIGN NO. FTO-9  
5'-6" X 3'-6"  
2" BORDER - 6" RAD.



SIGN NO. FTO-10  
4'-6" X 4'-0"  
2" BORDER - 6" RAD.

NOTE:  
FTO-10A -- RIGHT ARROW  
FTO-10B -- LEFT ARROW

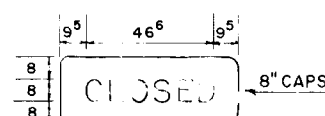
## FOR OTHER THAN FREEWAY USE



SIGN NO. FTO-11  
8'-0" X 2'-0"  
2" BOR. 3" RAD.

NOTE

SIGN NO. 13 TO BE USED WITH SIGNS NO. 3A, 3B, 11A AND 11B.



SIGN NO. FTO-12  
5'-6" X 2'-0"  
2" BOR. 3" RAD.

NOTE

SIGN NO. 14 TO BE USED WITH SIGN NO. 7

NOTE:

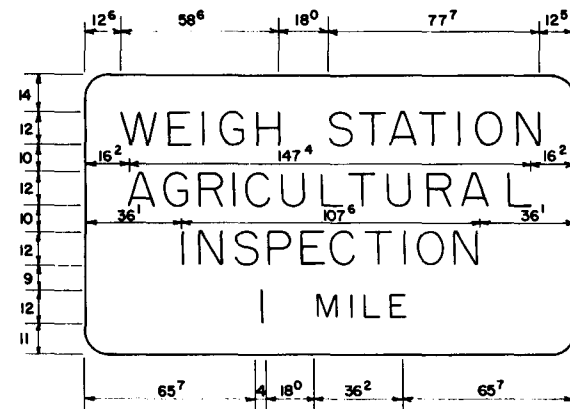
ALL SIGNS TO HAVE GREEN REFLECTORIZED BACKGROUND  
WITH WHITE LEGEND AND BORDER  
EXCEPT SIGNS NOS. 2 & 6  
WHICH SHALL HAVE WHITE BACKGROUND  
WITH BLACK LEGEND AND BORDER

ALL DIMENSIONS SHOWN ARE IN  
INCHES AND EIGHTHS

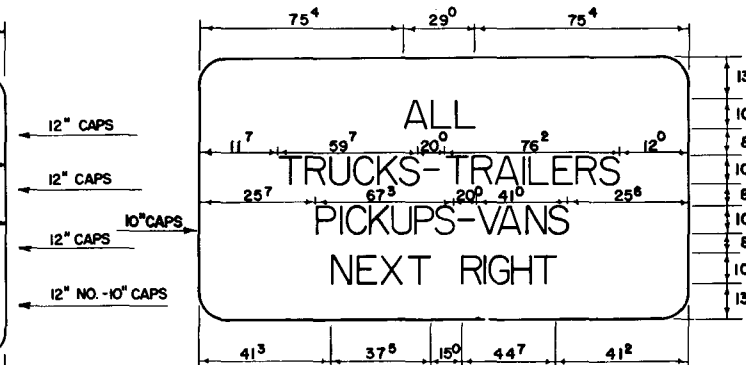
APPROVED BY F.H.W.A. 7-31-75

FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS			
TYPICAL SIGNING FOR TRUCK WEIGH AND INSPECTION STATIONS			
DATE	INITIALS	DATES	RECOMMENDED FOR APPROVAL
DETAILED BY	M.F.M.	1-75	BY <i>Ronald E. Magada</i> DEPUTY TRAFFIC OPERATIONS ENGR.
CHECKED BY	K.R.	1-75	APPROVED
QUANTITIES BY			BY <i>[Signature]</i> STATE TRAFFIC OPERATIONS ENGR.
CHECKED BY			
SUPERVISED BY	K.R.	1-75	DRAWING NO. 1 of 3 INDEX NO. 17328

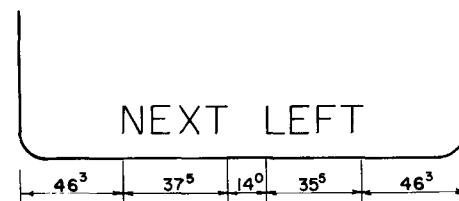
REVISIONS		
DATE	INITIALS	DESCRIPTION



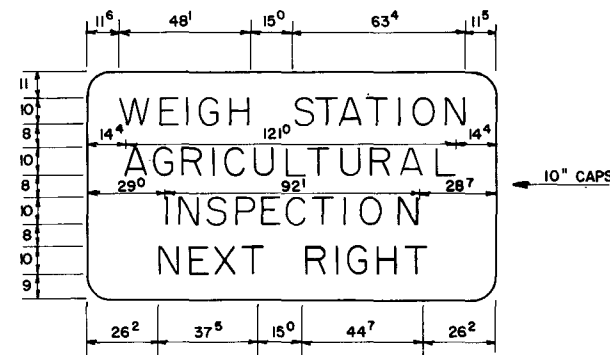
SIGN NO. FTO-13  
15'-0" X 8'-6"  
2" BORDER - 9" RAD.



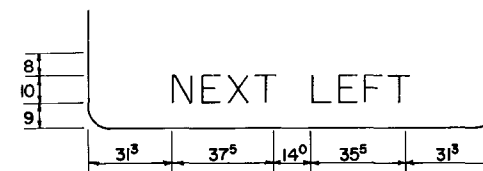
SIGN NO. FTO-14A  
15'-0" X 7'-0"  
2" BORDER - 9" RAD.



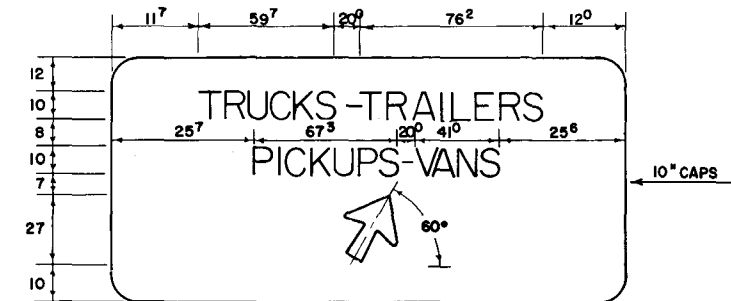
SIGN NO. FTO-14B  
15'-0" X 7'-6"  
2" BORDER - 9" RAD.



SIGN NO. FTO-15A  
12'-6" X 7'-0"  
2" BORDER - 9" RAD.



SIGN NO. FTO-15B  
12'-6" X 7'-0"  
2" BORDER - 9" RAD.



SIGN NO. FTO-16  
15'-0" X 7'-0"  
2" BORDER - 9" RAD.

NOTE

ALL SIGNS SHALL HAVE GREEN REFLECTORIZED BACKGROUND WITH WHITE LEGEND AND BORDER, EXCEPT SIGNS 10A & 10B WHICH SHALL HAVE A WHITE BACKGROUND WITH BLACK LEGEND AND BORDER.

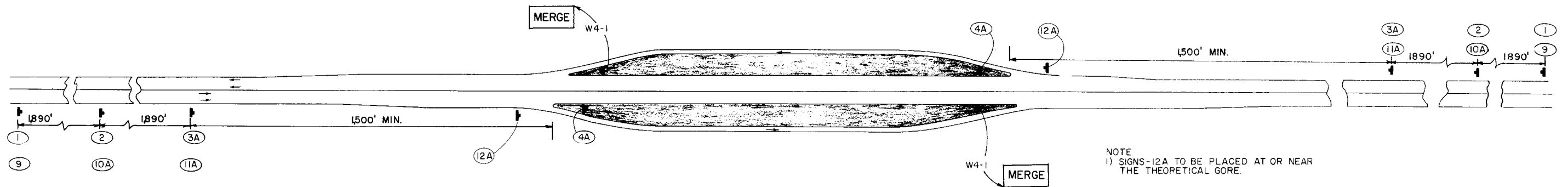
ALL DIMENSIONS SHOWN ARE IN INCHES AND EIGHTHS

APPROVED BY F.H.W.A. 7-3-75

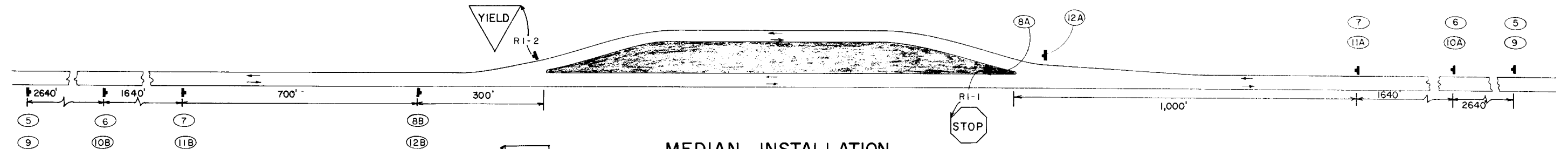
FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS			
TYPICAL SIGNING FOR TRUCK WEIGH AND INSPECTION STATIONS			
DATE	INITIALS	DATES	RECOMMENDED FOR APPROVAL
10-15-79	K.R.	1-75	BY <i>Ronald E. Magada</i> DEPUTY TRAFFIC OPERATIONS ENGR.
CHECKED BY	K.R.	1-75	APPROVED
QUANTITIES BY			BY <i>E. J. [Signature]</i> 7/25/75
CHECKED BY			STATE TRAFFIC OPERATIONS ENGR.
SUPERVISED BY	K.R.	1-75	DRAWING NO. 2 of 3 INDEX NO. 17328

REVISIONS		
DATE	INITIALS	DESCRIPTION
10-15-79	K.R.	REVISED SIGN NOS. 10A & 12

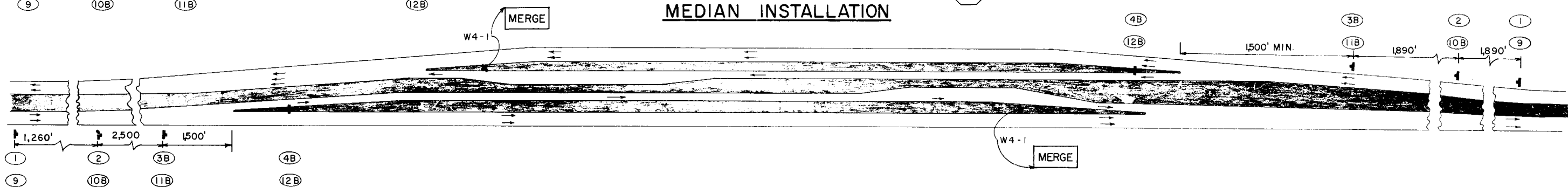
### 4-LANE DIVIDED INSTALLATION



### 2-LANE INSTALLATION



### MEDIAN INSTALLATION

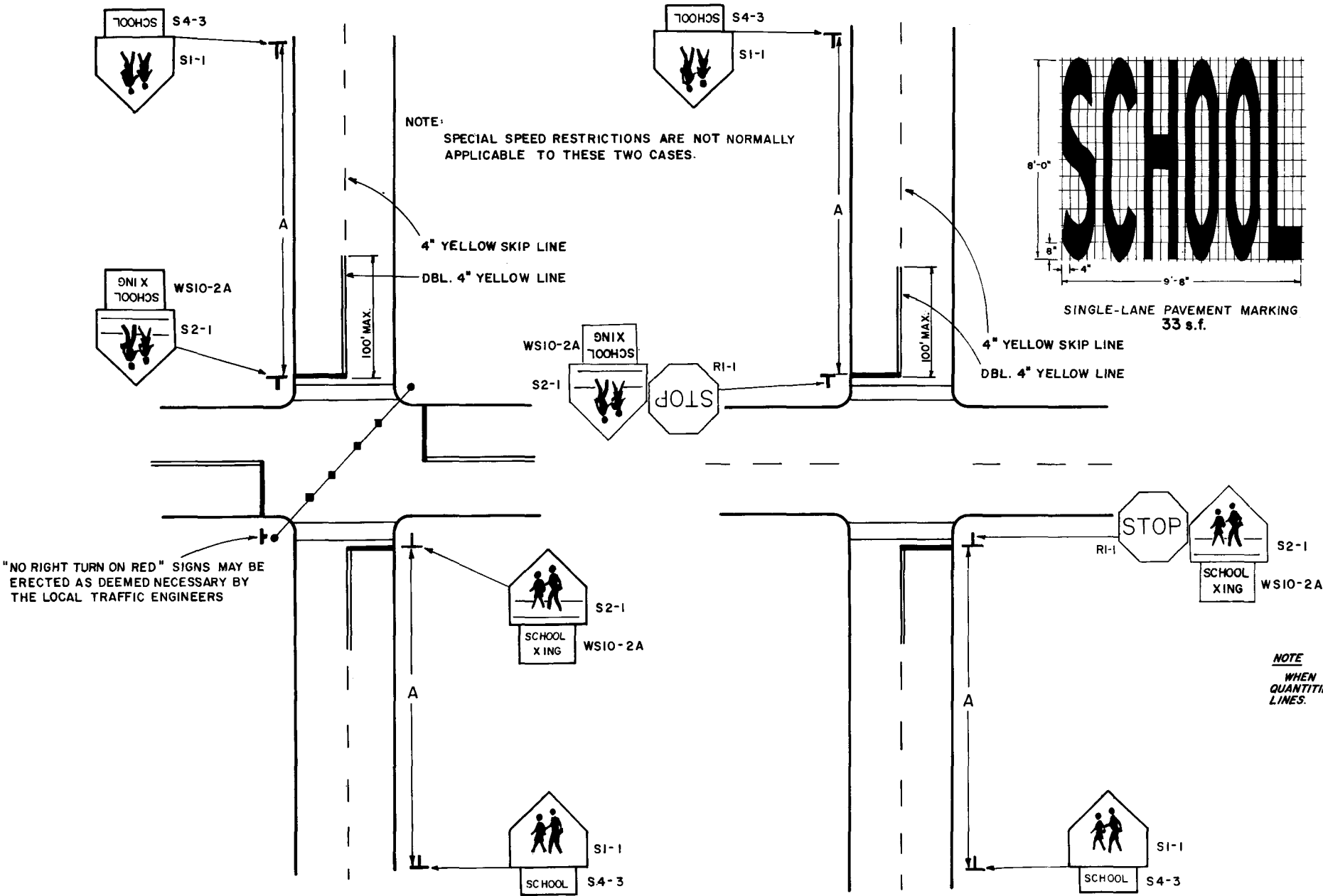


APPROVED BY F.H.W.A. 7-31-75

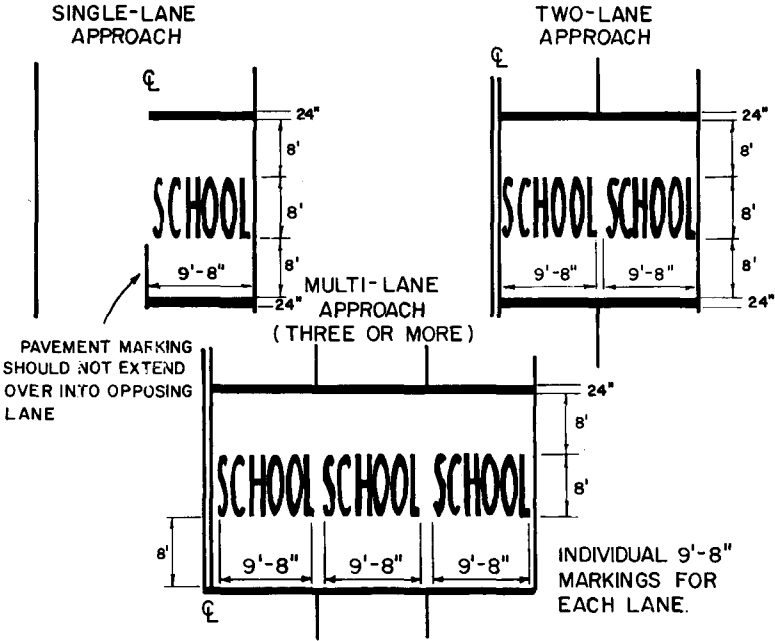
FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS			
TYPICAL SIGNING FOR TRUCK WEIGH AND INSPECTION STATIONS			
RECOMMENDED FOR APPROVAL	INITIALS	DATES	BY
DETAILED BY	M.F.M.	1-75	BY <i>Darryl C. Ruiz</i> 11/31/79 DEPUTY TRAFFIC OPERATIONS ENGR
CHECKED BY	K.R.	1-75	APPROVED
QUANTITIES BY			BY <i>R. Magadey</i> 10/31/79 STATE TRAFFIC OPERATIONS ENGR
CHECKED BY			
SUPERVISED BY	K.R.	1-75	DRAWING NO. 3 OF 3 INDEX NO. 17328

REVISIONS		
DATE	INITIALS	DESCRIPTION
10-15-79	M.C.	REVISE SIGN LOCATIONS

APPROACH SPEED (MPH)	DISTANCE A
25 TO 35	275 FT.
36 TO 45	350 FT.
46 TO 55	500 FT.



### PAVEMENT MARKINGS



**NOTE**  
SIGNS ERECTED AT THE SIDE OF THE ROAD IN RURAL DISTRICTS SHALL BE MOUNTED AT A HEIGHT OF AT LEAST 5 FEET, MEASURED FROM THE BOTTOM OF THE SIGN TO THE LEVEL OF THE ROADWAY EDGE. IN BUSINESS, COMMERCIAL AND RESIDENTIAL DISTRICTS WHERE PARKING AND / OR PEDESTRIAN MOVEMENT IS LIKELY TO OCCUR OR WHERE THERE ARE OTHER OBSTRUCTIONS TO VIEW, THE CLEARANCE TO THE BOTTOM OF THE SIGN SHALL BE AT LEAST 7 FEET.

**NOTE**  
ALL SCHOOL SIGNS SHALL BE REFLECTORIZED

SEE SHEETS 5 AND 7 FOR DETAILED SIGN PANEL DESIGNS

APPROVED BY FHWA 11/16/78

FLORIDA DEPARTMENT OF TRANSPORTATION  
TRAFFIC OPERATIONS

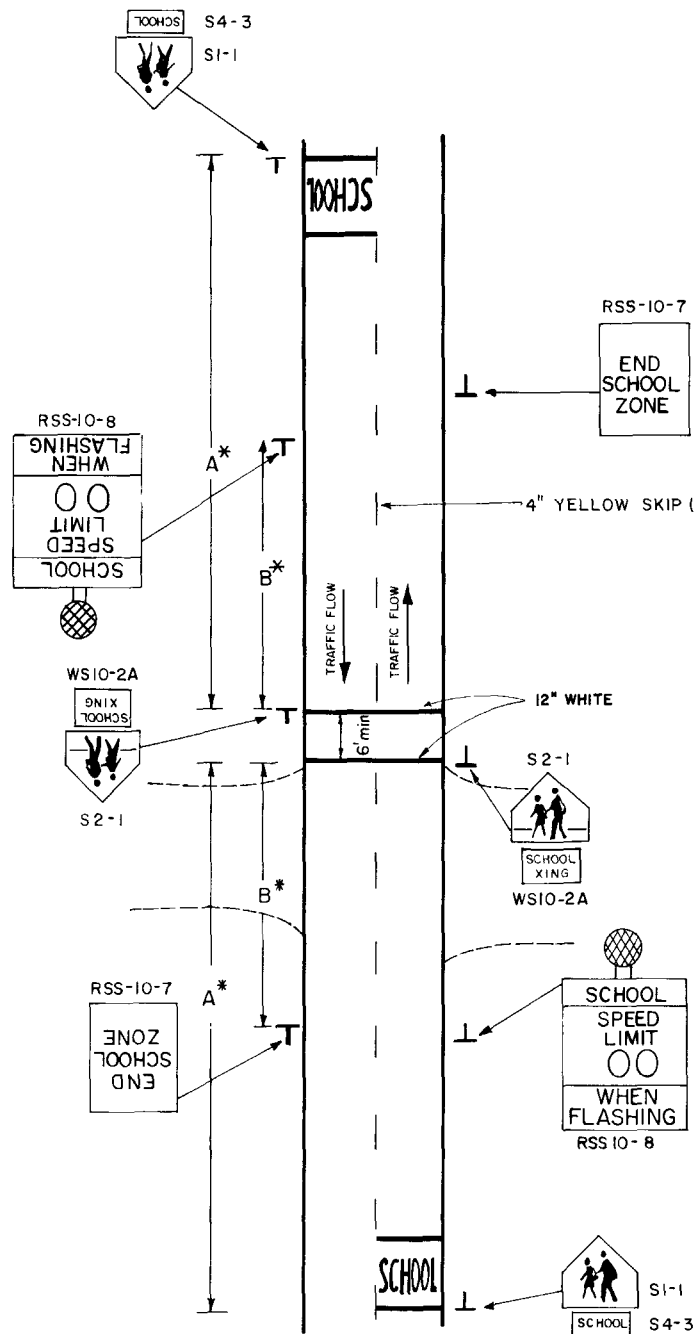
SCHOOL SIGNS & MARKINGS

REVISIONS				INITIALS	DATES	Approved by <u>R.E. Magaly</u> State Traffic Operation Engr. DRAWING NO. 1 of 9 INDEX NO. 17344
DATE	BY	DESCRIPTION	Detailed by	CEJ	7-76	
9-78	SWR	Added note, & Changed size of transverse lines	Checked by	KR	7-76	
9-79	JMC	Deleted Fla. Statute No.	Quantities by			
			Checked by			
			Supervised by	REM		

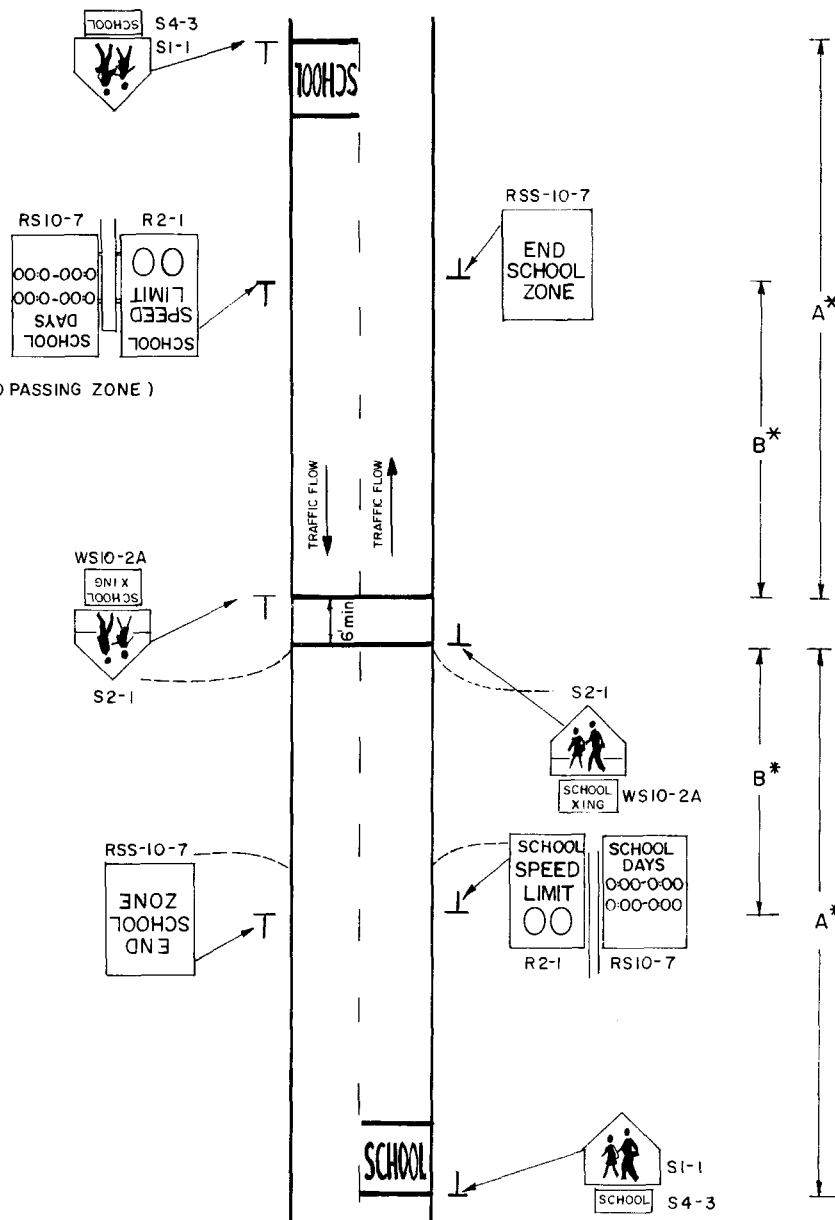
Approved by *R.E. Magala, Jr.*  
State Traffic Operations Engr.  
DRAWING NO. 1 of 9  
INDEX NO. 17344

APPROACH SPEED MPH	SUGGESTED DISTANCE IN FEET	
	A	B
25 TO 35	275	50
36 TO 45	350	65
46 TO 55	500	80

A & B DISTANCES SHALL BE INCREASED BY ADDING THE INTERSECTING STREET WIDTH (CURB RETURNS INCLUDED) TO DIMENSIONS GIVEN IN TABLE ABOVE.

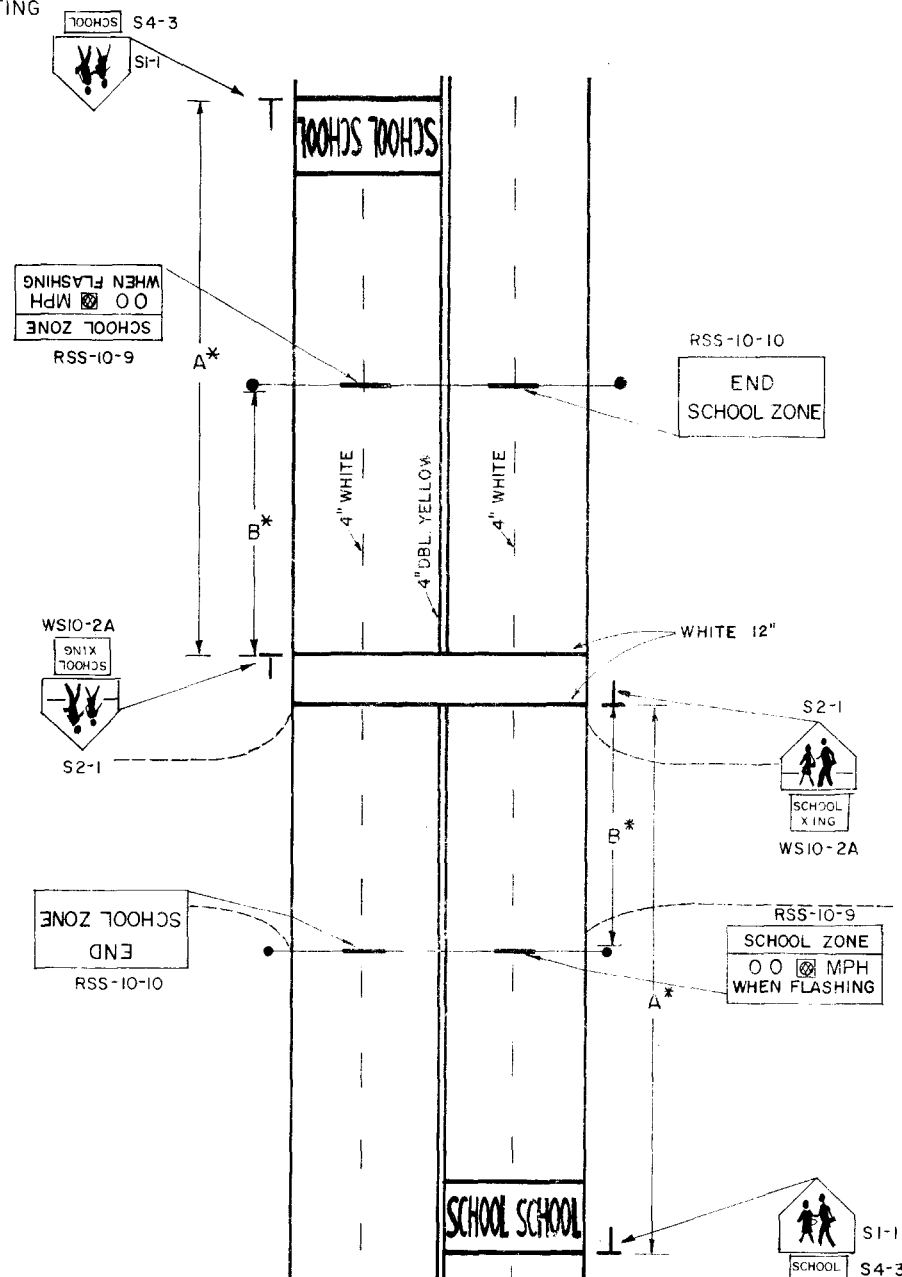


3. TRAFFIC CONTROL DEVICES WITH FLASHING BEACON FOR REDUCED SPEED ZONE AT A SCHOOL CROSSWALK (2 LANES - 2 WAY TRAFFIC) (MIDBLOCK OR ON THRU STREET AT AN INTERSECTION)



4. TRAFFIC CONTROL DEVICES FOR A REDUCED SPEED ZONE AT A SCHOOL CROSSWALK (NO FLASHING BEACON) (2 LANES - 2 WAY TRAFFIC) (MIDBLOCK OR ON THRU STREET AT AN INTERSECTION)

5. TRAFFIC CONTROL DEVICES FOR A REDUCED SPEED ZONE AT A SCHOOL CROSSWALK WITH OVERHEAD FLASHING BEACON SPEED LIMIT SIGNS (4 LANES UNDIVIDED - 2 WAY TRAFFIC) (MIDBLOCK OR ON THRU STREET AT AN INTERSECTION)



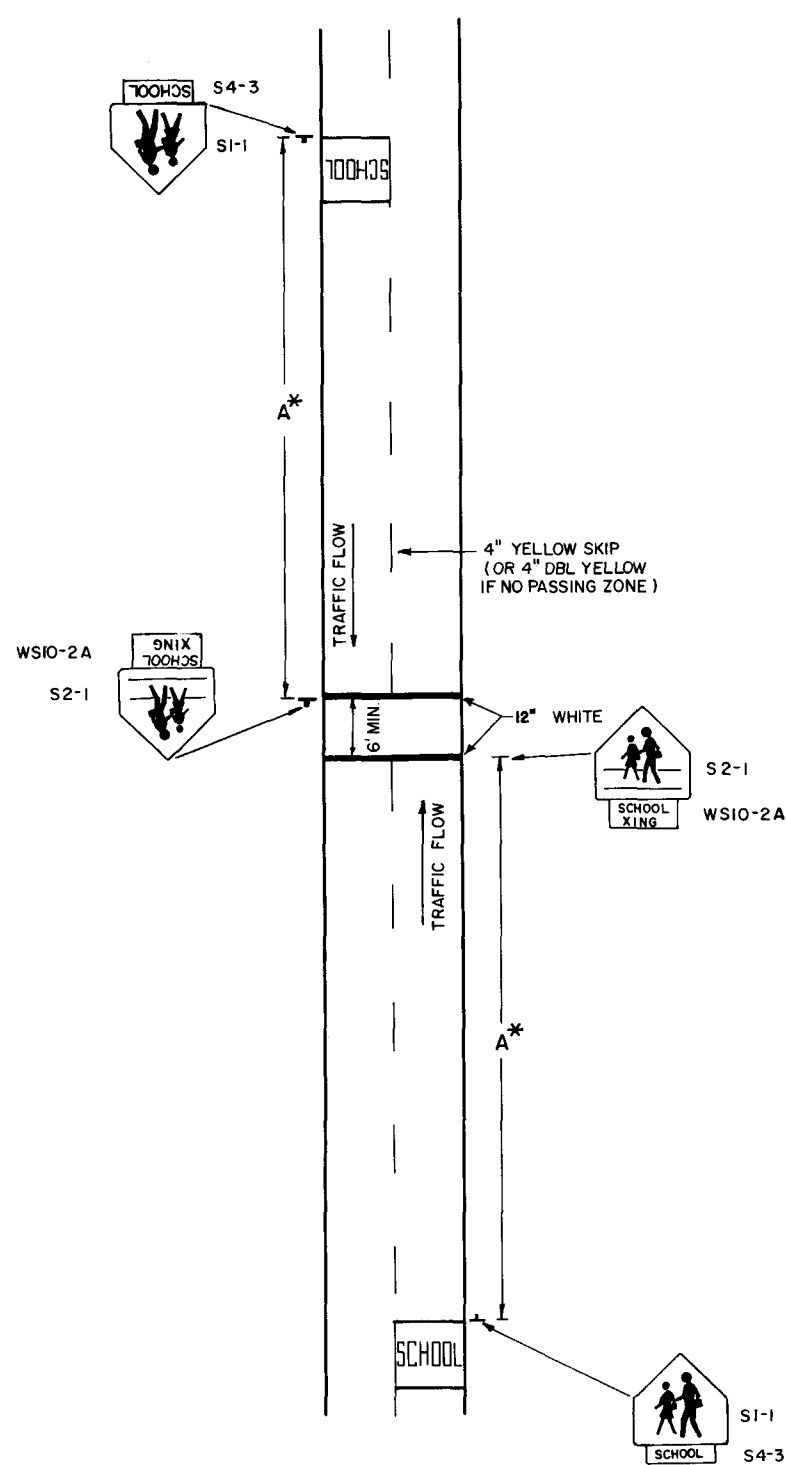
APPROVED BY FHWA 11-16-78

FLORIDA DEPARTMENT OF TRANSPORTATION  
TRAFFIC OPERATIONS

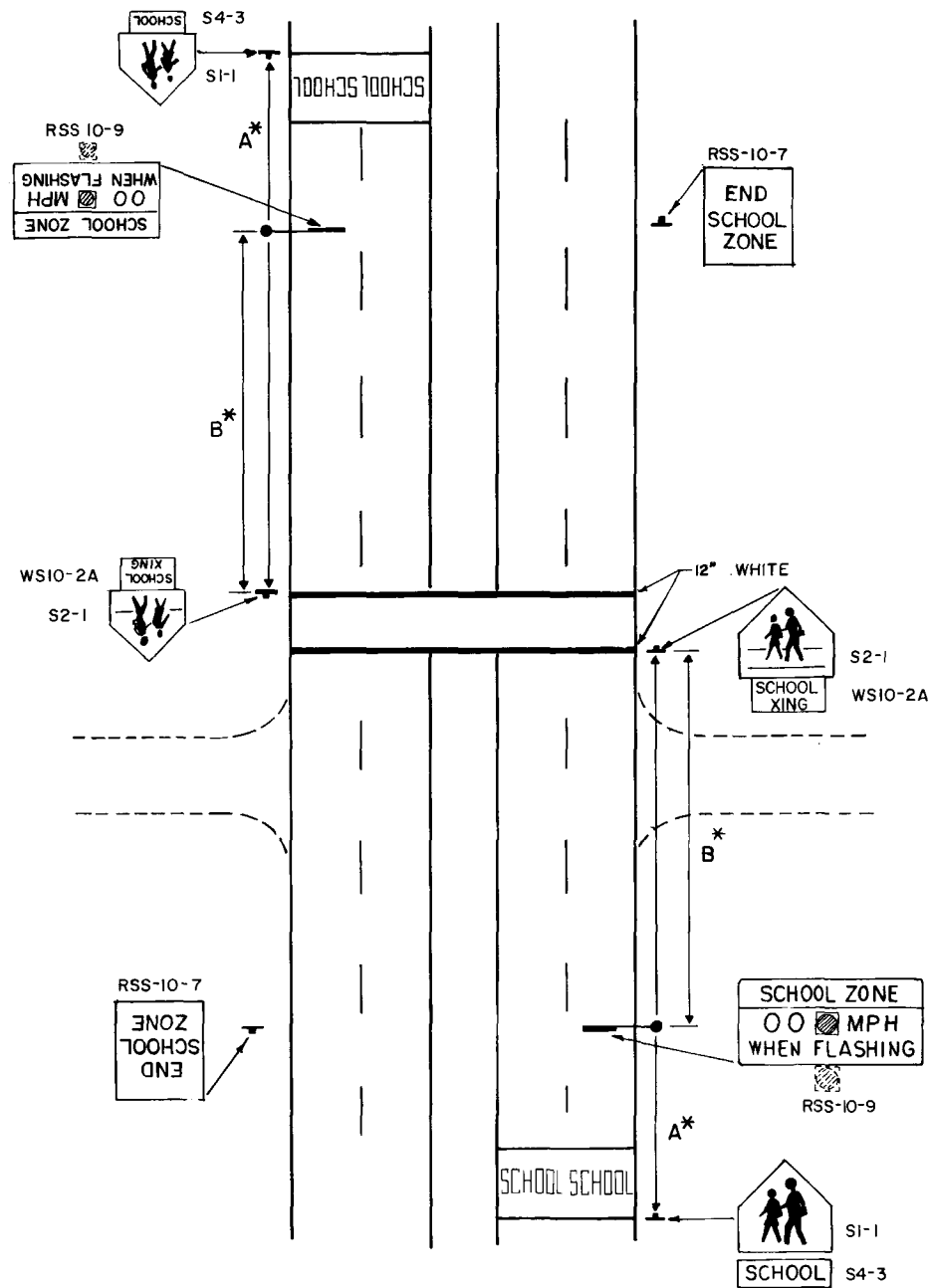
SCHOOL SIGNS & MARKINGS

REVISIONS			INITIALS	DATES
DATE	BY	DESCRIPTION	Designed by	CEJ 7-76
9-76	S.W.R.	Changed crosswalk dimensions	Checked by	KR 7-76
9-79	J.M.C.	Deleted Florida Statute	Quantities by	
			Checked by	
			Supervised by	REM

Approved by *R.E. Magaday 7/15/76*  
State Traffic Operations Engr.  
DRAWING NO. 2 of 3  
INDEX NO. 17344



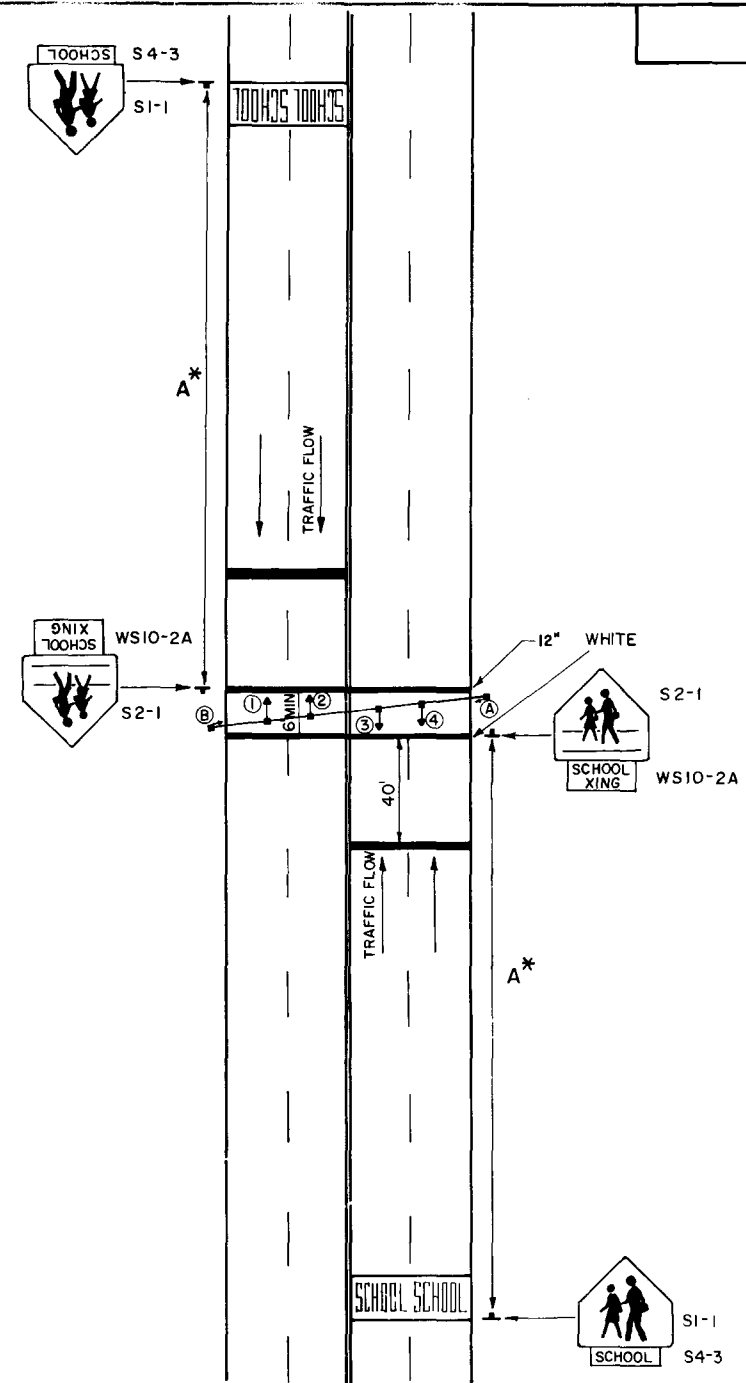
6. TRAFFIC CONTROL DEVICES FOR A SCHOOL CROSSWALK WITHOUT A SPEED REDUCTION (2 LANES - 2 WAY TRAFFIC)



7. TRAFFIC CONTROL DEVICES FOR A REDUCED SPEED ZONE AT A SCHOOL CROSSWALK WITH OVERHEAD FLASHING BEACON SPEED LIMIT SIGNS (4 LANES DIVIDED - 2 WAY TRAFFIC)

APPROACH SPEED MPH	SUGGESTED DISTANCE IN FEET	
	A	B
25 TO 35	275	50
36 TO 45	350	65
46 TO 55	500	80

A\* & B\* DISTANCES SHALL BE INCREASED BY ADDING THE INTERSECTING STREET WIDTH (CURB RETURNS INCLUDED) TO DIMENSIONS GIVEN IN TABLE.



8. TRAFFIC CONTROL DEVICES FOR SIGNALIZED MIDBLOCK SCHOOL CROSSWALK

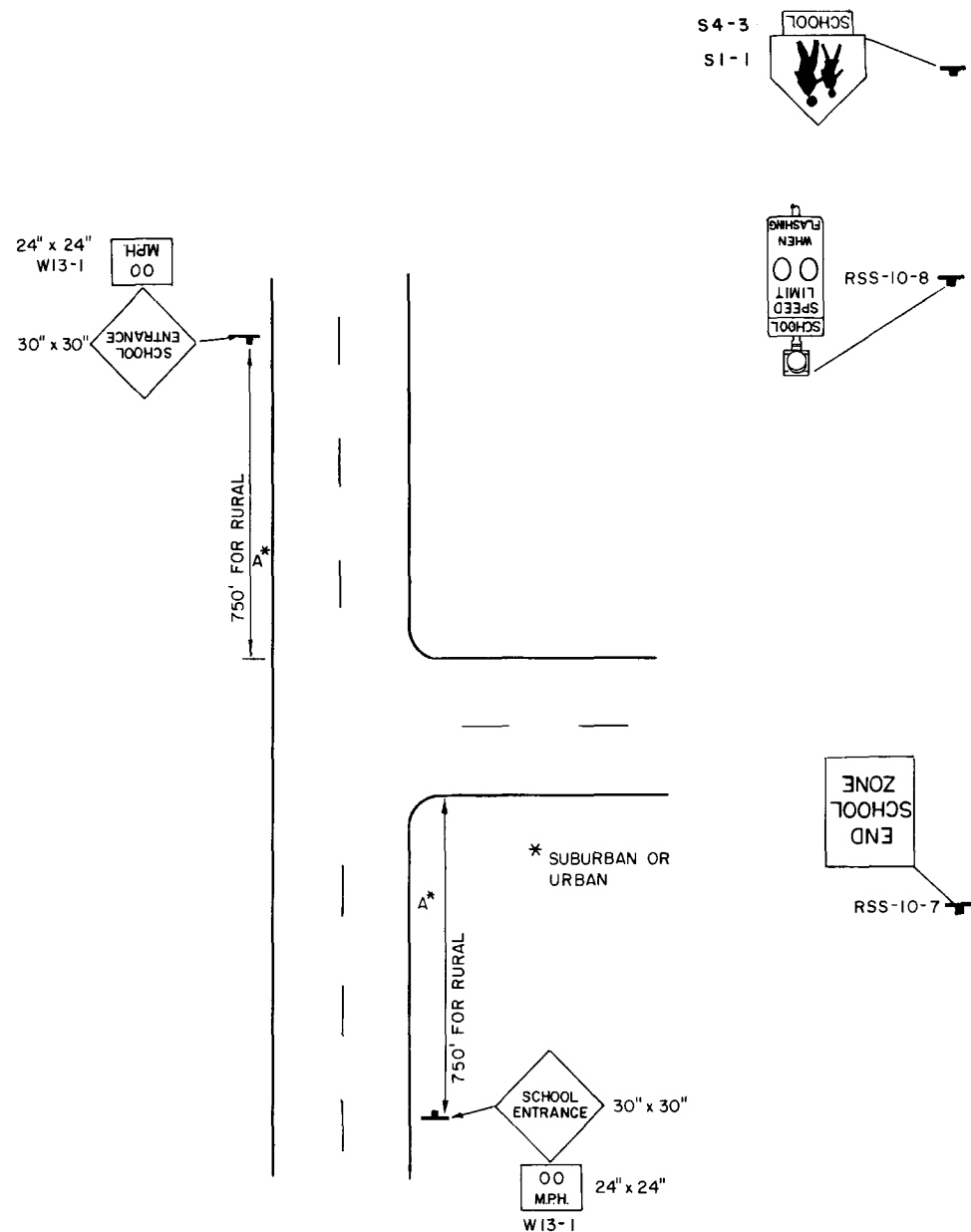
APPROVED BY FHWA 11-16-78

FLORIDA DEPARTMENT OF TRANSPORTATION  
Traffic Operations

SCHOOL SIGNS & MARKINGS

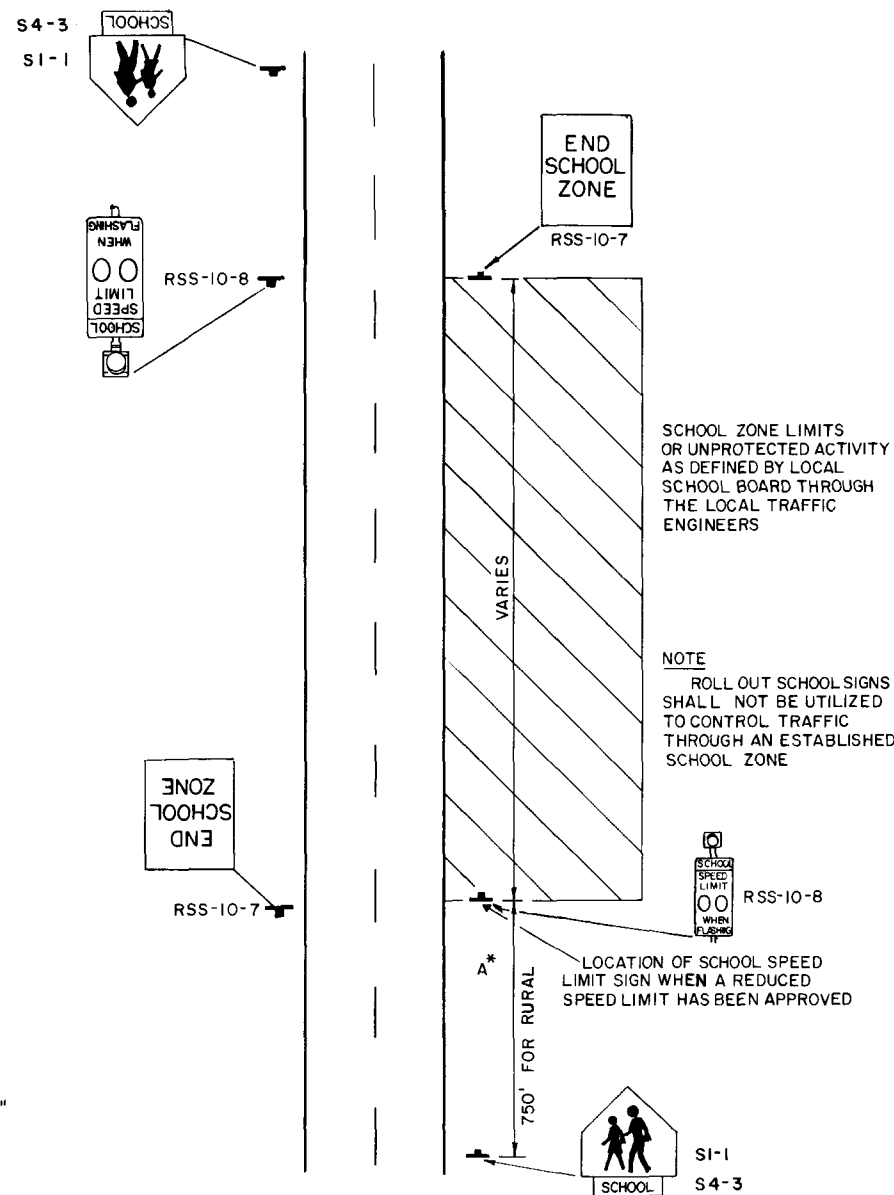
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DATE	BY	DESCRIPTION	Detailed by	CEJ	7-76	
7-10	FB	REVISED PAVEMENT ON	Checked by	KR	7-76	
9-78	SWR	Changed crosswalk dimensions	Quantities by			
9-79	JMC	Deleted Florida Statute	Checked by			
			Supervised by	REM		
			Approved by <i>R.E. Magarvey 7/24/76</i>			
			State Traffic Operations Engr			
			DRAWING NO.		INDEX NO.	
			3 OF 9		17344	



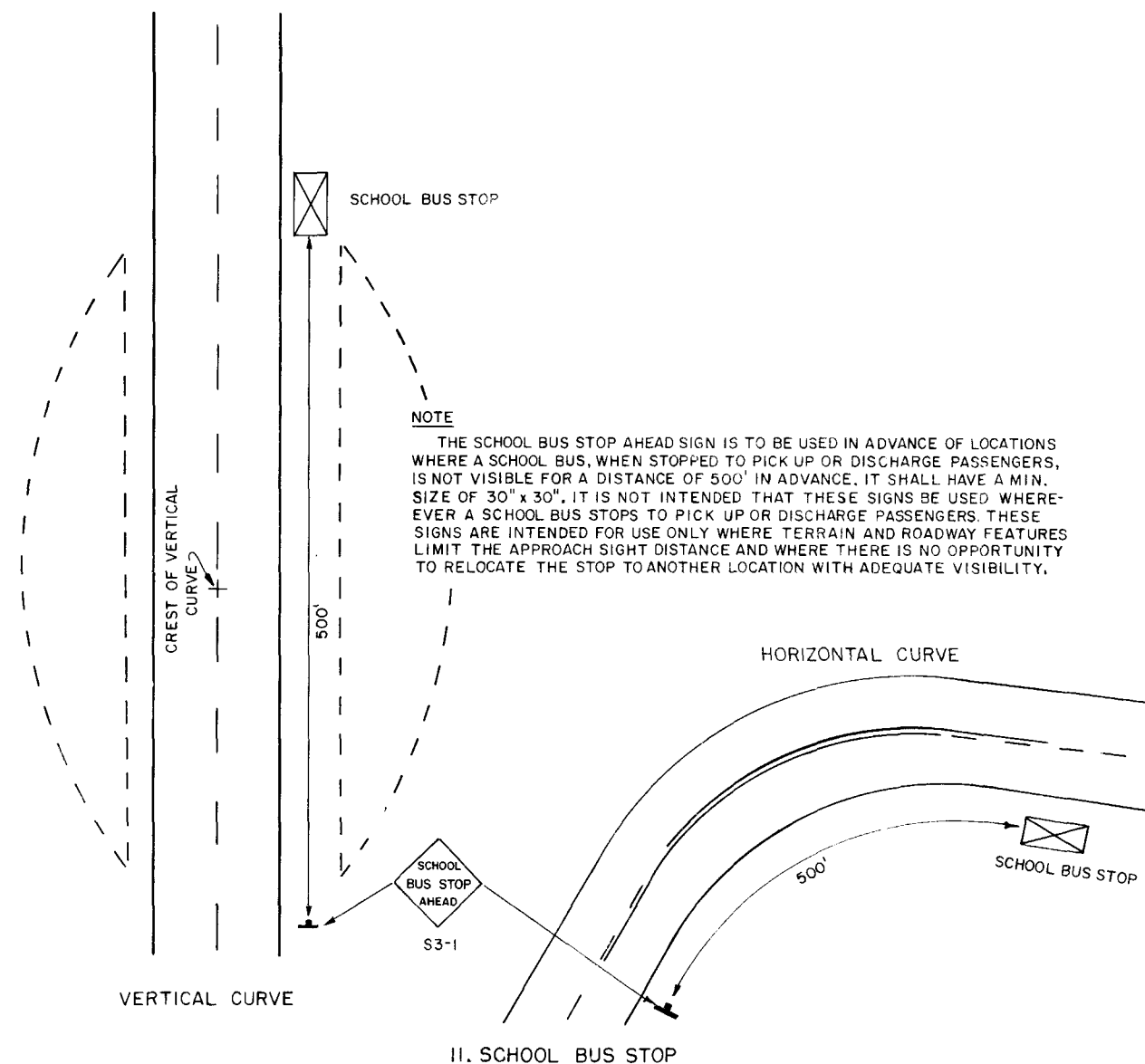


9. TRAFFIC CONTROL DEVICES AT SCHOOL ENTRANCES WHERE THERE ARE LITTLE OR NO WALKING STUDENTS

These Signs Are Intended For Use Only At Those Few Locations Where The School Entrance Is Not Evident To The Motorist, And Must Be Approved In Advance By The Responsible Traffic Engineering Authority.



10. TRAFFIC CONTROL DEVICES FOR A TYPICAL SCHOOL ZONE FRONTING THE SCHOOL PROPERTY



APPROVED BY FHWA II-16-78

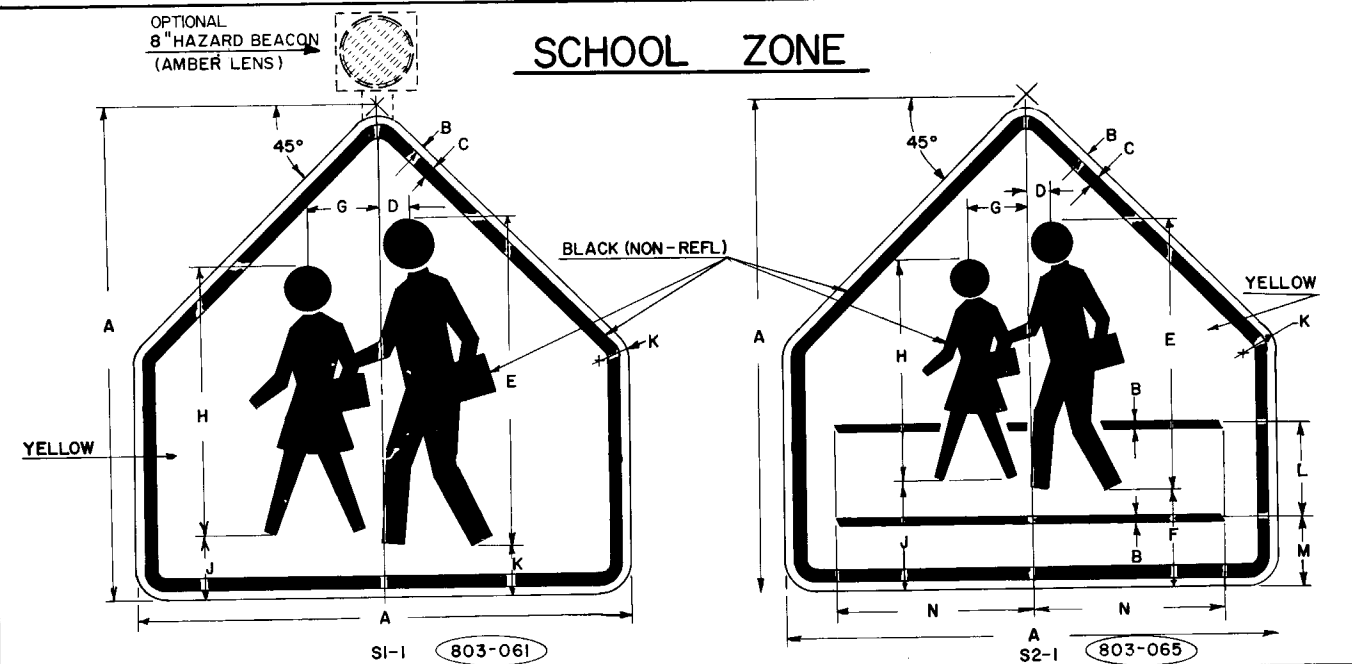
FLORIDA DEPARTMENT OF TRANSPORTATION  
Traffic Operations

SCHOOL SIGNS & MARKINGS

REVISIONS			INITIALS	DATES
DATE	BY	DESCRIPTION	Detailed by	CEJ 7-76
9-5-79	JMC	Deletred Florida Statute	Checked by	KR 7-76
			Quantities by	
			Checked by	
			Supervised by	REM

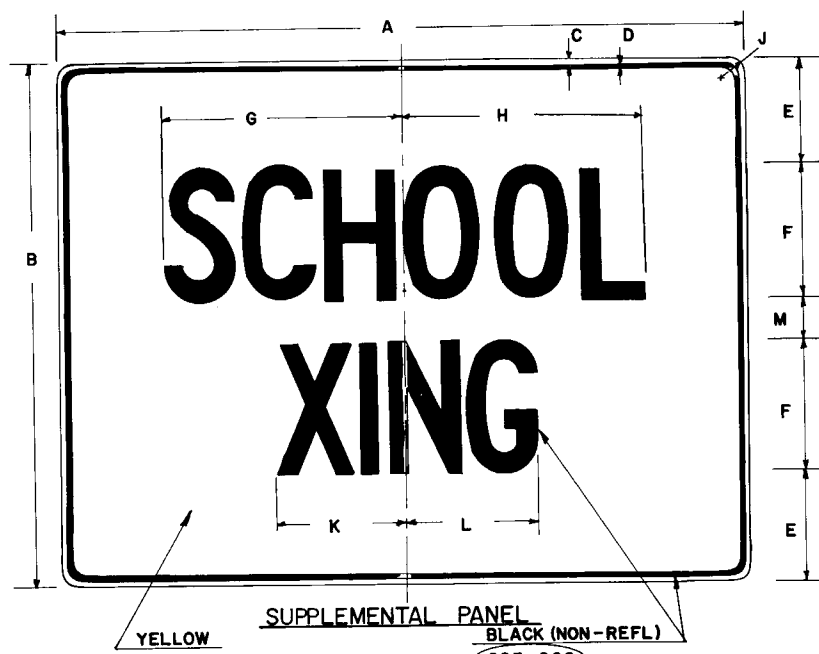
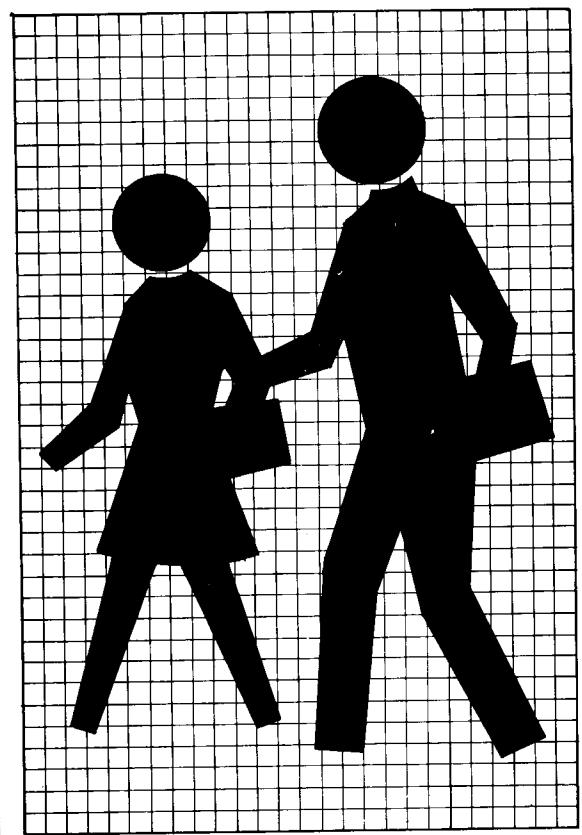
Approved by *R.E. Magaley*  
State Traffic Operations Engr.

DRAWING NO. 4 OF 9  
INDEX NO. 17344

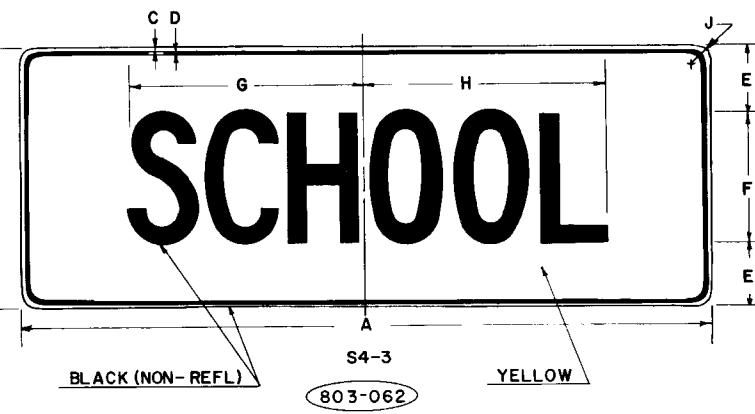
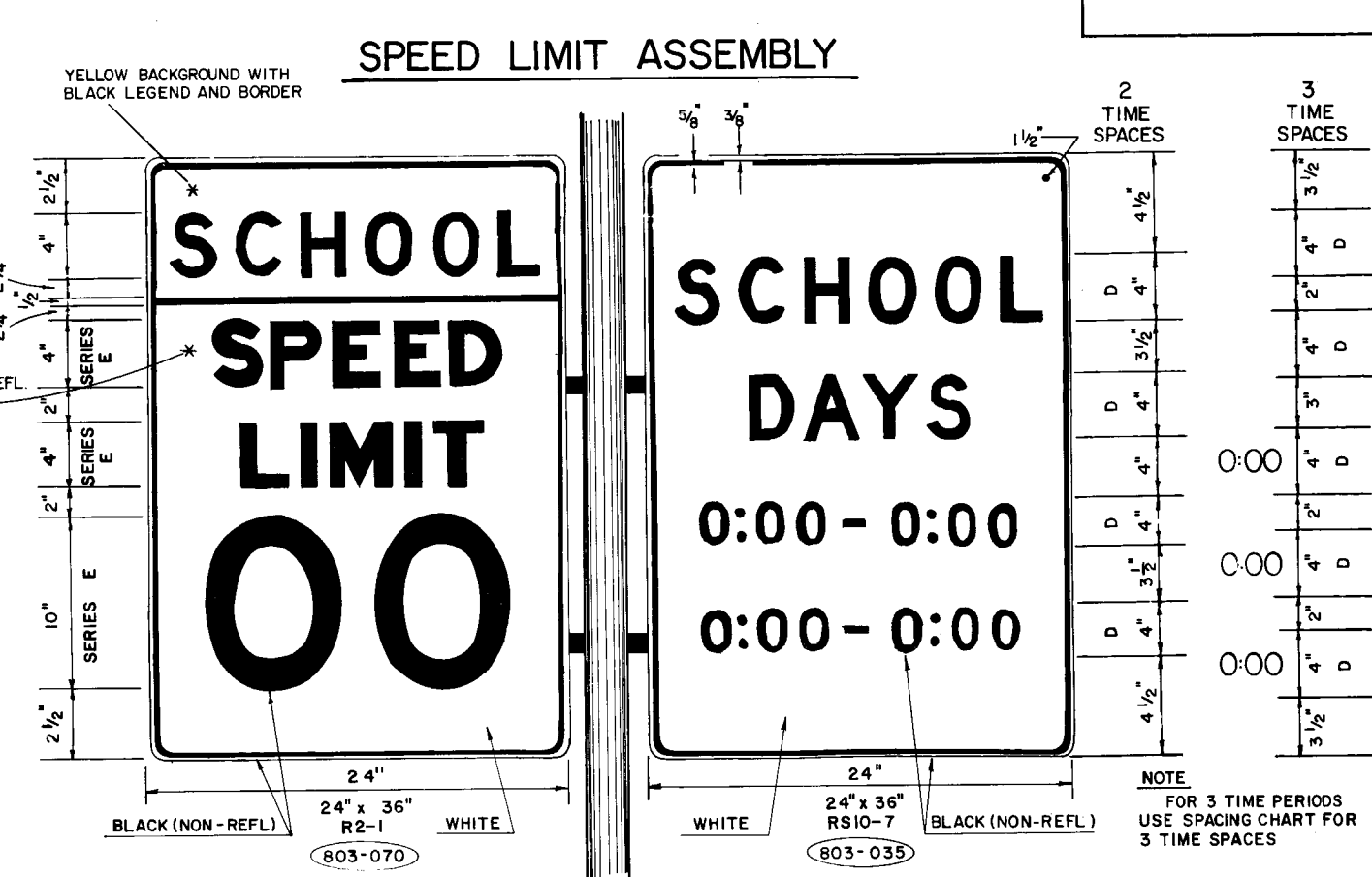


SIGN	DIMENSIONS (INCHES)										
	A	B	C	D	E	F	G	H	J	K	
STD. & MIN.	30	1/2	3/4	2	20	3	4 1/2	16 1/2	3 3/4	1 7/8	
EXPWY	36	5/8	7/8	2 1/2	24	3 1/2	5 3/8	20	4 1/2	2 1/4	
SPECIAL	48	3/4	1 1/4	3 1/4	32	5	7 1/4	26 1/2	6	3	

SIGN	DIMENSIONS (INCHES)													
	A	B	C	D	E	F	G	H	J	K	L	M	N	
STD. & MIN.	30	1/2	3/4	1 1/4	16 1/2	6	3 3/4	13 1/2	6 1/2	1 7/8	5 3/4	4	12	
EXPWY	36	5/8	7/8	1 1/2	19 3/4	7 1/4	4 1/2	16 1/4	7 13/16	2 1/4	6 7/8	4 3/4	14 3/8	
SPECIAL	48	3/4	1 1/4	2	26 1/2	9 1/2	6	21 1/2	10 3/8	3	9 1/4	6 1/2	19 1/4	



SIGN	DIMENSIONS (INCHES)												
	A	B	C	D	E	F	G	H	J	K	L	M	
MIN.	24	18	3/8	5/8	4	4"D"	10	10 1/4	1 1/2	5 5/16	5 1/4	2	
STD.	36	24	5/8	7/8	4 1/2	6"D"	15	15 3/8	2 1/4	8	8	3	
SPECIAL	48	30	3/4	1 1/4	5	8"D"	20	20 1/2	3	11 1/16	11 1/16	4	



SIGN	DIMENSIONS (INCHES)									
	A	B	C	D	E	F	G	H	J	
MIN. & STD.	24	8	3/8	5/8	2	4"D"	10	10 1/4	1 1/2	
EXPWY	36	12	5/8	7/8	3	6"D"	15	15 3/8	2 1/4	
SPECIAL	48	16	3/4	1 1/4	4	8"D"	20	20 1/2	3	

**NOTE**  
ALL SIGNS SHALL BE REFLECTORIZED

**NOTE**  
STANDARD SIZE SIGNS SHOULD BE USED WHENEVER POSSIBLE. MINIMUM SIZES MAY BE USED ONLY ON LOW VOLUME, LOW SPEED (LESS THAN 35 M.P.H.) STREETS. SPECIAL SIZES SHOULD BE USED ON EXPRESSWAY FACILITIES WHERE SPECIAL EMPHASIS IS NEEDED.

**SPEED LIMIT**  
THE VALUE OF THE ACTUAL SCHOOL ZONE SPEED LIMIT SHALL BE DETERMINED BY THE DISTRICT TRAFFIC OPERATIONS ENGINEER IN COOPERATION WITH LOCAL SCHOOL SUPERINTENDENTS, IN NO CASE SHALL IT BE LESS THAN THE 15 M.P.H. MINIMUM SET BY LAW.

000-000 MAINTENANCE PART NUMBER

APPROVED BY FHWA 11-16-78

FLORIDA DEPARTMENT OF TRANSPORTATION  
TRAFFIC OPERATIONS

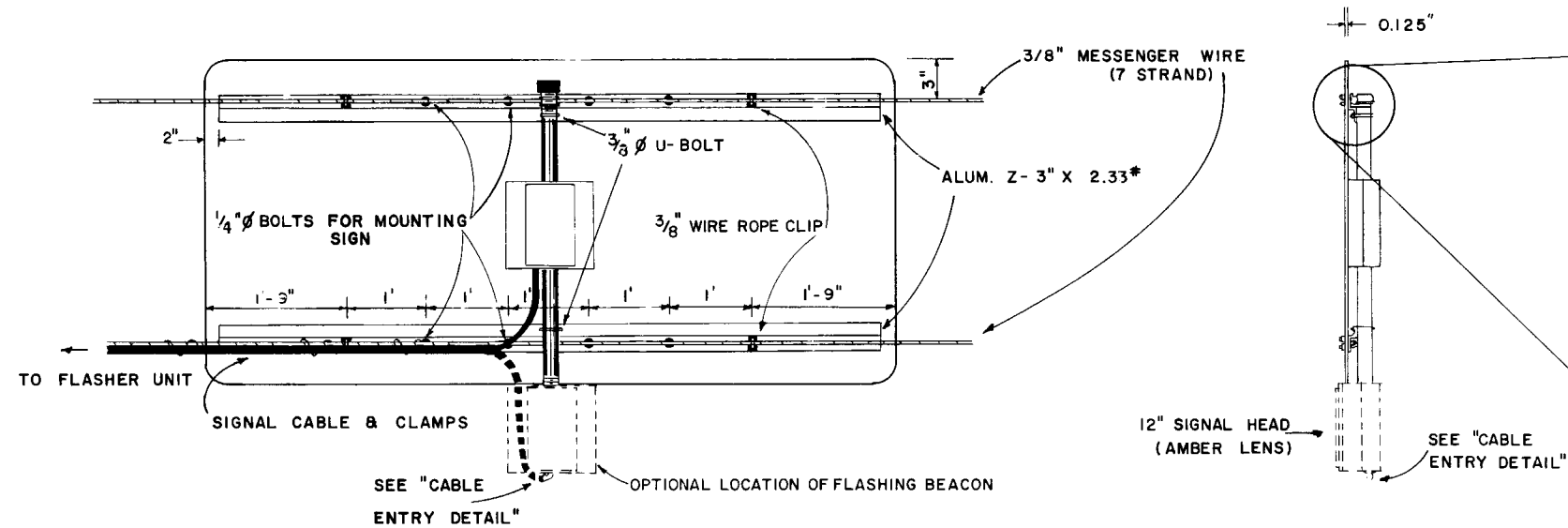
SCHOOL SIGNS & MARKINGS

DATE	BY	DESCRIPTION	INITIALS	DATES
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9-5-79	JMC	Deleted Florida Statute	KR	7-76
QUANTITIES BY				
CHECKED BY				
SUPERVISED BY			REM	

APPROVED BY *R.E. Magaley* 7/8/76

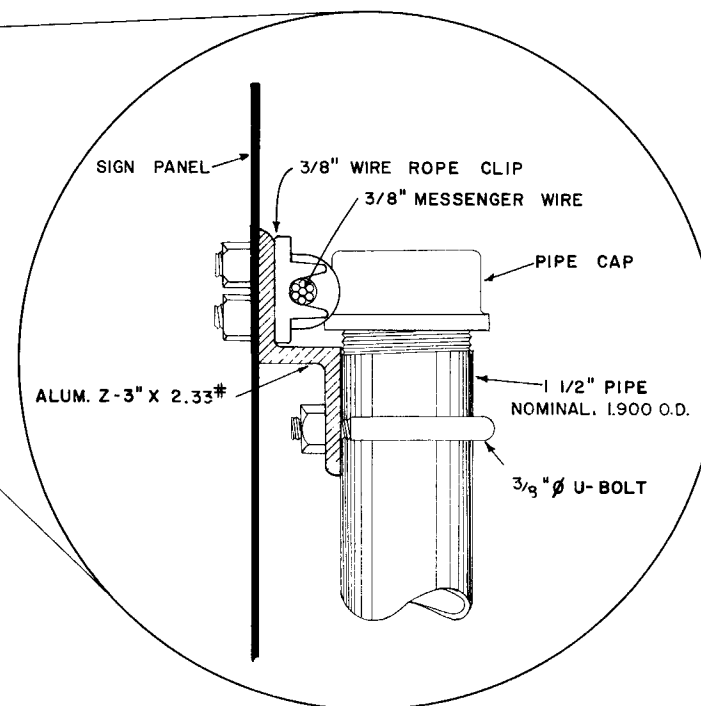
STATE TRAFFIC OPERATIONS ENGR.

DRAWING NO. 5 of 9 INDEX NO. 17344

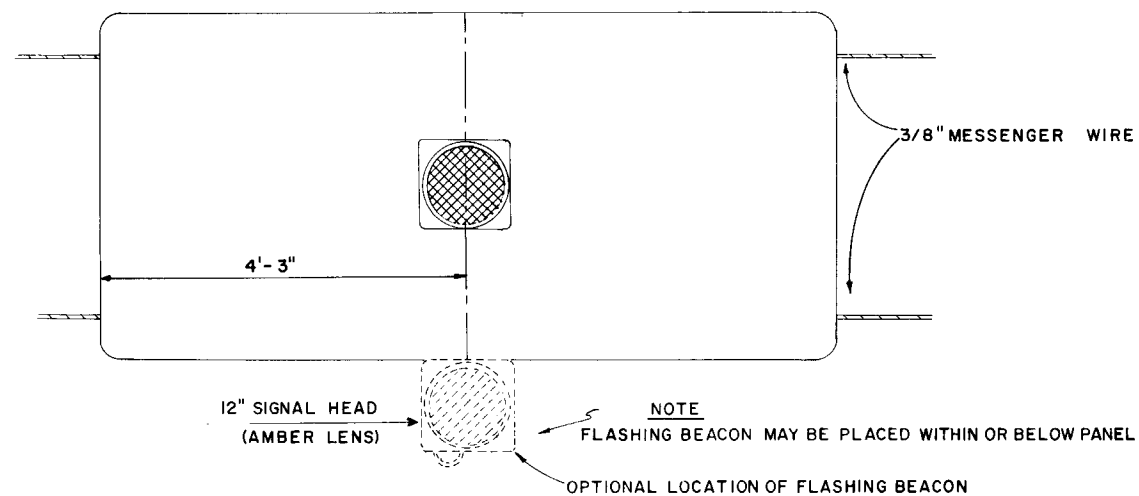


REAR VIEW

FLASHER UNIT AND CABINET TO BE PLACED ON THE STRAIN POLE SUPPORTING OVERHEAD SIGN ASSEMBLY OR ON SERVICE POLE

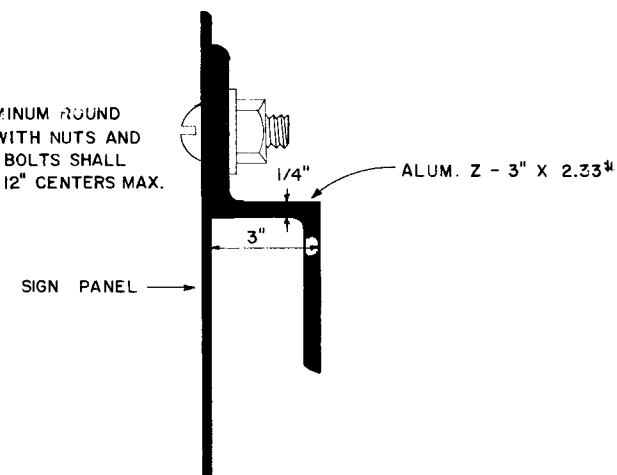


SUSPENSION DETAIL

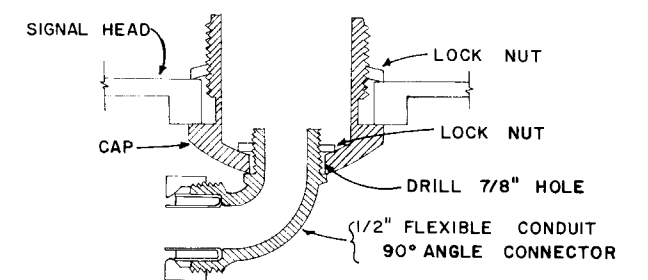


FRONT VIEW

1/4" Ø ALUMINUM ROUND HEAD BOLTS WITH NUTS AND LOCKWASHERS, BOLTS SHALL BE SPACED @ 12" CENTERS MAX.



Z SECTION DETAIL



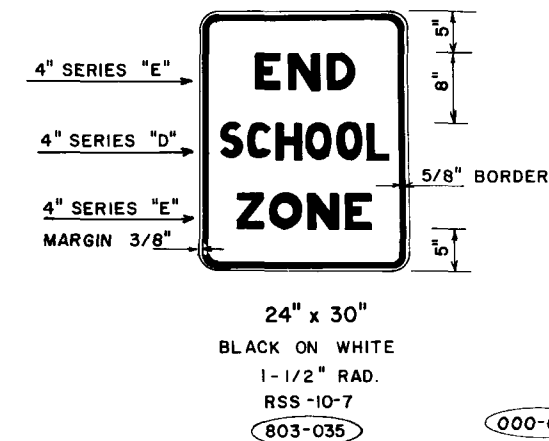
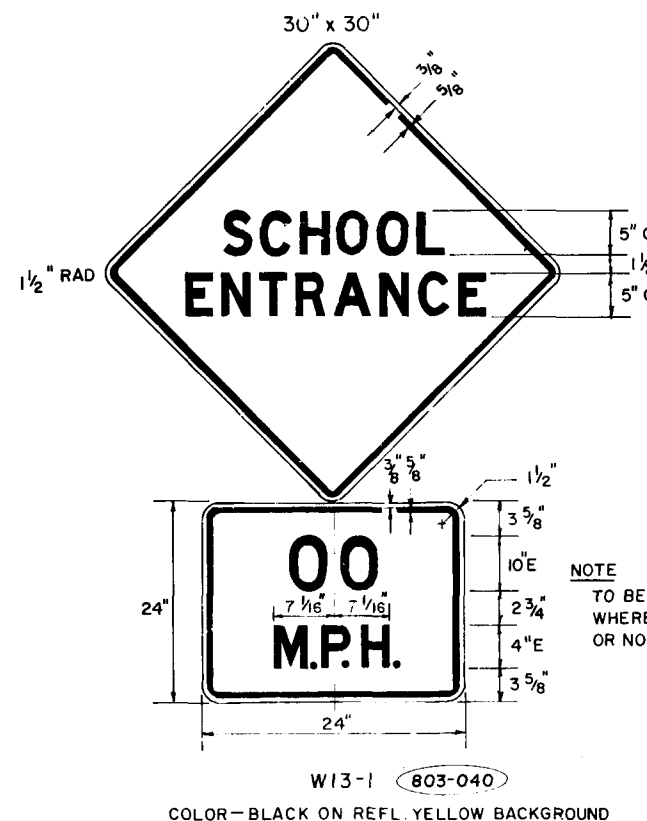
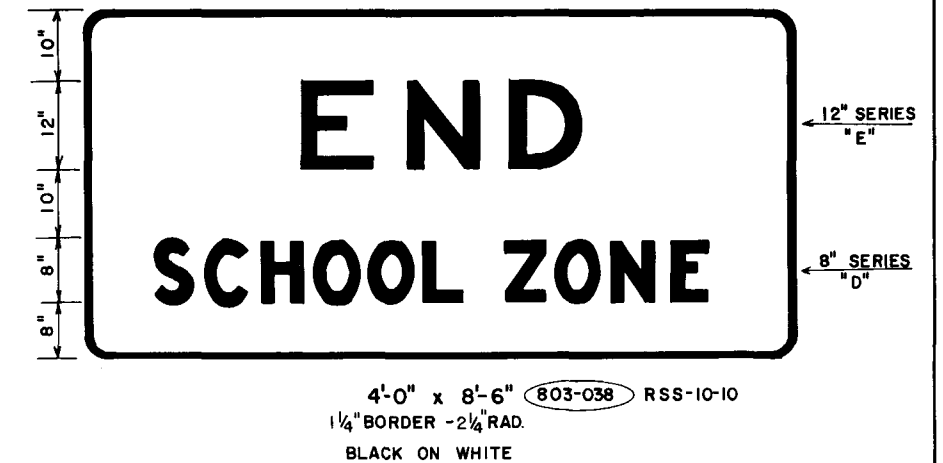
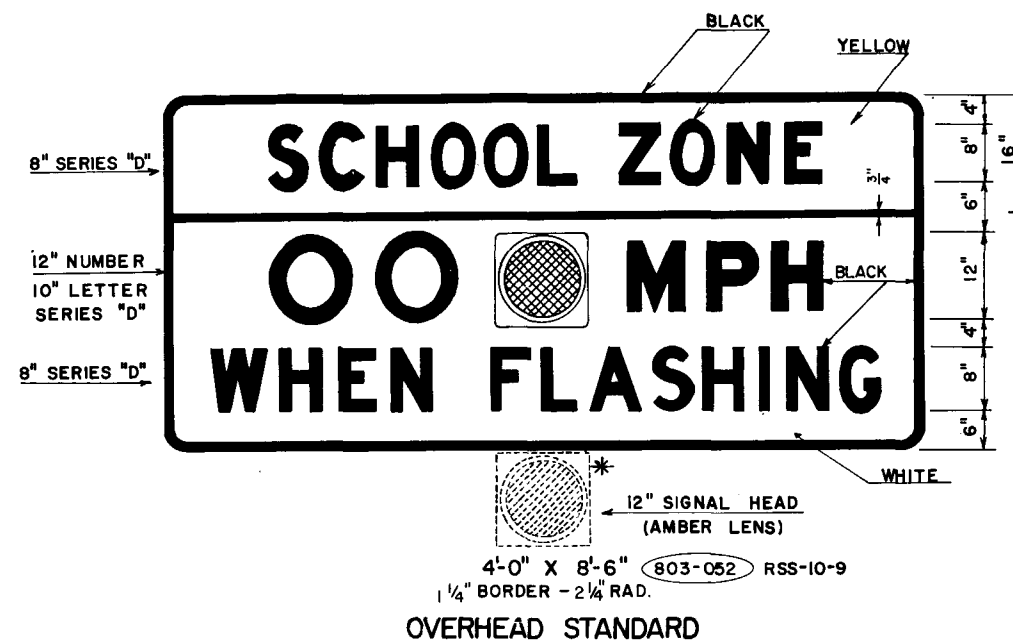
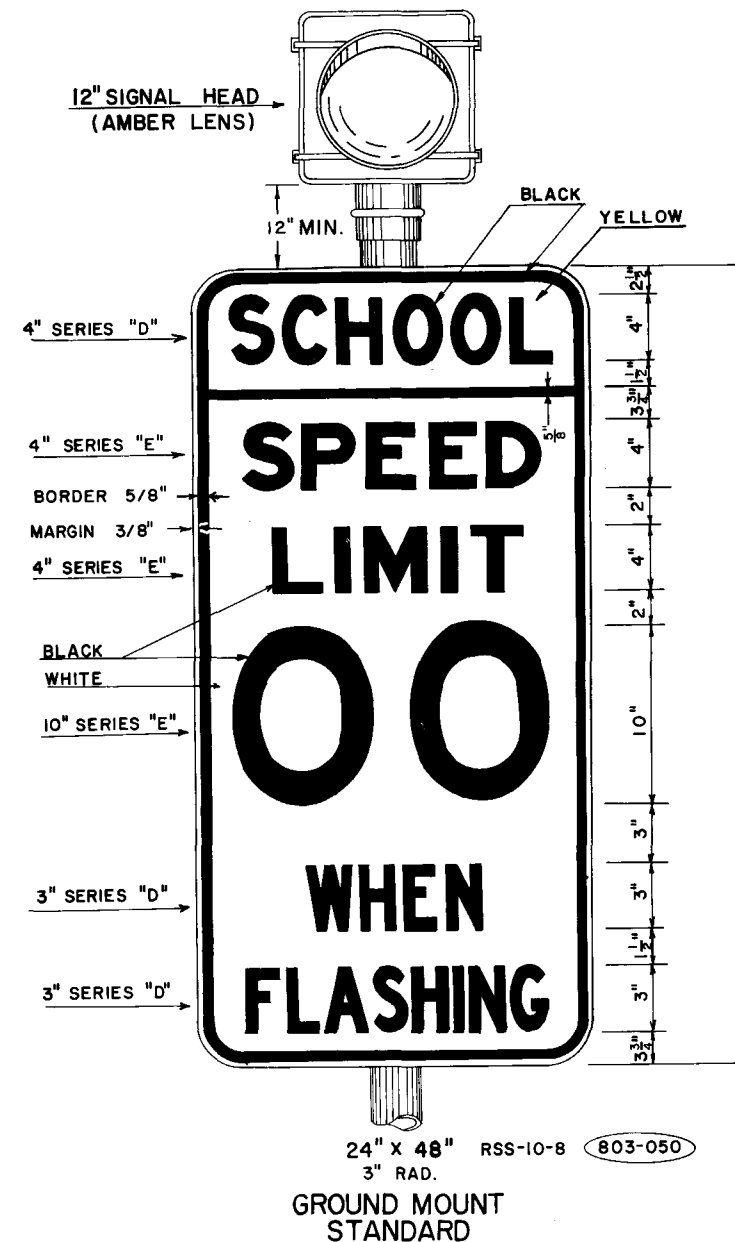
CABLE ENTRY DETAIL

APPROVED BY FHWA 11-16-78

FLORIDA DEPARTMENT OF TRANSPORTATION  
TRAFFIC OPERATIONS

SCHOOL SIGNS & MARKINGS

REVISIONS			INITIALS	DATES
DATE	BY	DESCRIPTION	DETAILED BY	7-76
9-79	J.M.C.	Deleted Florida Statute	C.F.J.	7-76
			CHECKED BY	7-76
			QUANTITIES BY	
			CHECKED BY	
			SUPERVISED BY	REM
			APPROVED BY	1/24/76
			STATE TRAFFIC OPERATIONS ENGR.	
			DRAWING NO.	6 of 9
			INDEX NO.	17344



**NOTE**

EXISTING SCHOOL SPEED LIMIT SIGNS (GROUND MOUNT)  
UTILIZING A SINGLE 8" MIN. SIZE BEACON OR TWO 6" MIN. SIZE BEACONS  
INSIDE THE SIGN BORDER ARE CONSIDERED AS MEETING THE STANDARD.  
HOWEVER REPLACEMENT OR UPGRADING OF THESE SCHOOL SPEED LIMIT  
SIGNS SHALL CONFORM TO THE ABOVE STANDARD.

NUMERICAL SPEED LIMIT DISPLAYED SHALL BE THE LIMIT ESTABLISHED BY APPROPRIATE REGULATORY AUTHORITIES.

**NOTE**

TO BE USED AT SCHOOLS  
WHERE THERE ARE LITTLE  
OR NO WALKING STUDENTS.

REVISION		
DATE	INITIALS	DESCRIPTION
9-5-79	J.M.C.	Deleted Florida Statute

### NOTE

ALL SIGNS SHALL BE REFLECTORIZED

APPROVED BY FHWA 11-16-78

FLORIDA DEPARTMENT OF TRANSPORTATION  
TRAFFIC OPERATIONS

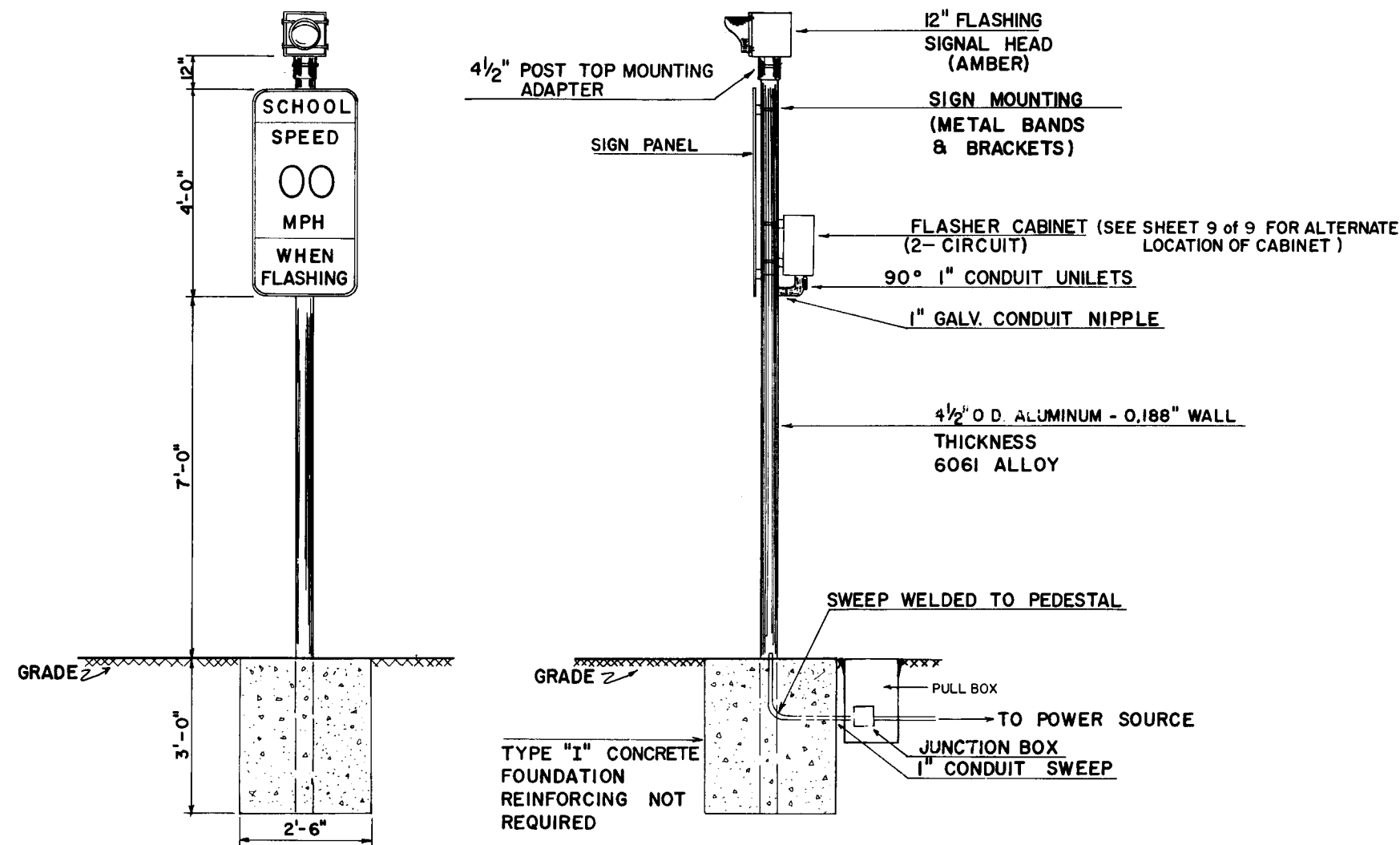
## SCHOOL SIGNS & MARKINGS

	INITIALS	DATES	
DETAILED BY	CEJ	7-76	
CHECKED BY	KR	7-76	
QUANTITIES BY			
CHECKED BY			
SUPERVISED BY	REM		

APPROVED  
 BY *RE Magaly 7/6/76*  
 STATE TRAFFIC OPERATIONS ENGR.

DRAWING NO. INDEX NO.  
 7.65 9 17244

# DETAIL FOR GROUND MOUNT SCHOOL SPEED LIMIT SIGN



## FLASHING BEACON SIGN ASSEMBLY PAY ITEM NUMBERS

700-90 FLASHING BEACON SIGN ( ) ASSEMBLY

700-90-1 (GROUND MOUNT)

700-90-2 (OVERHEAD MOUNT)

THE ABOVE ITEMS INCLUDE THE COST OF ALL MATERIALS, LABOR, EQUIPMENT AND OTHER MISCELLANEOUS EXPENSES REQUIRED TO FURNISH AND INSTALL A COMPLETE FLASHING BEACON SIGN ASSEMBLY OF THE TYPE SPECIFIED

A FLASHING BEACON SIGN ASSEMBLY INCLUDES ALL SIGNS & BEACONS MOUNTED ON A SUPPORTING STRUCTURE, INCLUDING THE COMPLETE STRUCTURE, STRUCTURE FOUNDATIONS AND MISCELLANEOUS HARDWARE & ELECTRICAL CONNECTIONS. THE ASSEMBLY DOES NOT INCLUDE THE SIGN CONTROLLER & CABINET, TIME CLOCKS, ELECTRICAL POWER SERVICE ASSEMBLY, OR ANY CONDUIT, CABLE OR PULL BOXES BEYOND THE SIGN STRUCTURE FOUNDATION.

## GENERAL NOTES FOR FLASHING BEACON INSTALLATIONS

1. IT SHALL BE THE RESPONSIBILITY OF THE ENGINEER, BASED UPON SOIL CONDITIONS, TO DETERMINE IF CONCRETE FOUNDATIONS ARE REQUIRED. (COST OF CONCRETE FOUNDATION TO BE INCLUDED IN BID ITEM PROVIDED)
2. IF A CONCRETE FOUNDATION IS NOT REQUIRED, METHOD OF STABILIZATION IS TO BE DETERMINED BY THE ENGINEER AND AN APPROVED ANTI-TWIST DEVICE SHALL BE PROVIDED AND INSTALLED ON THE POST BELOW GRADE (COST OF DEVICE TO BE INCLUDED IN BID ITEM 700-90-1)
3. ONE (1) FLASHER UNIT AND CABINET TO BE USED WITH EACH SCHOOL ZONE UNLESS OTHERWISE PROVIDED ON THE INSTALLATIONS PLAN.
4. FLASHER-2 CIRCUIT-10 AMPERES EACH CIRCUIT. SOLID STATE DESIGN FOR PLUG-IN MOUNTING IN A WEATHER PROOF, VENTILATED ALUMINUM CABINET.
5. CABINET SHALL BE EQUIPPED WITH JACK PANEL, TERMINAL AND FUSE BLOCK, AND SHALL BE OF SUFFICIENT SIZE TO HOUSE ALL RELATED EQUIPMENT.
6. CABINET SHALL BE FURNISHED WITH A CYLINDER LOCK AND TWO (2) KEYS.
7. TIME CLOCK TO BE 7 DAYS, 24 HOUR DIAL WITH DAY OMIT ON ANY COMBINATION OF DAYS. TIME CLOCK TO BE SETTABLE IN 5 MINUTE INCREMENTS. MINIMUM ON AND OFF TIMES SETTABLE TO 15 MINUTES. A MINIMUM OF 4 ON-OFF CYCLES PER DAY AND A 10 HOUR RESERVE SPRING IS REQUIRED.

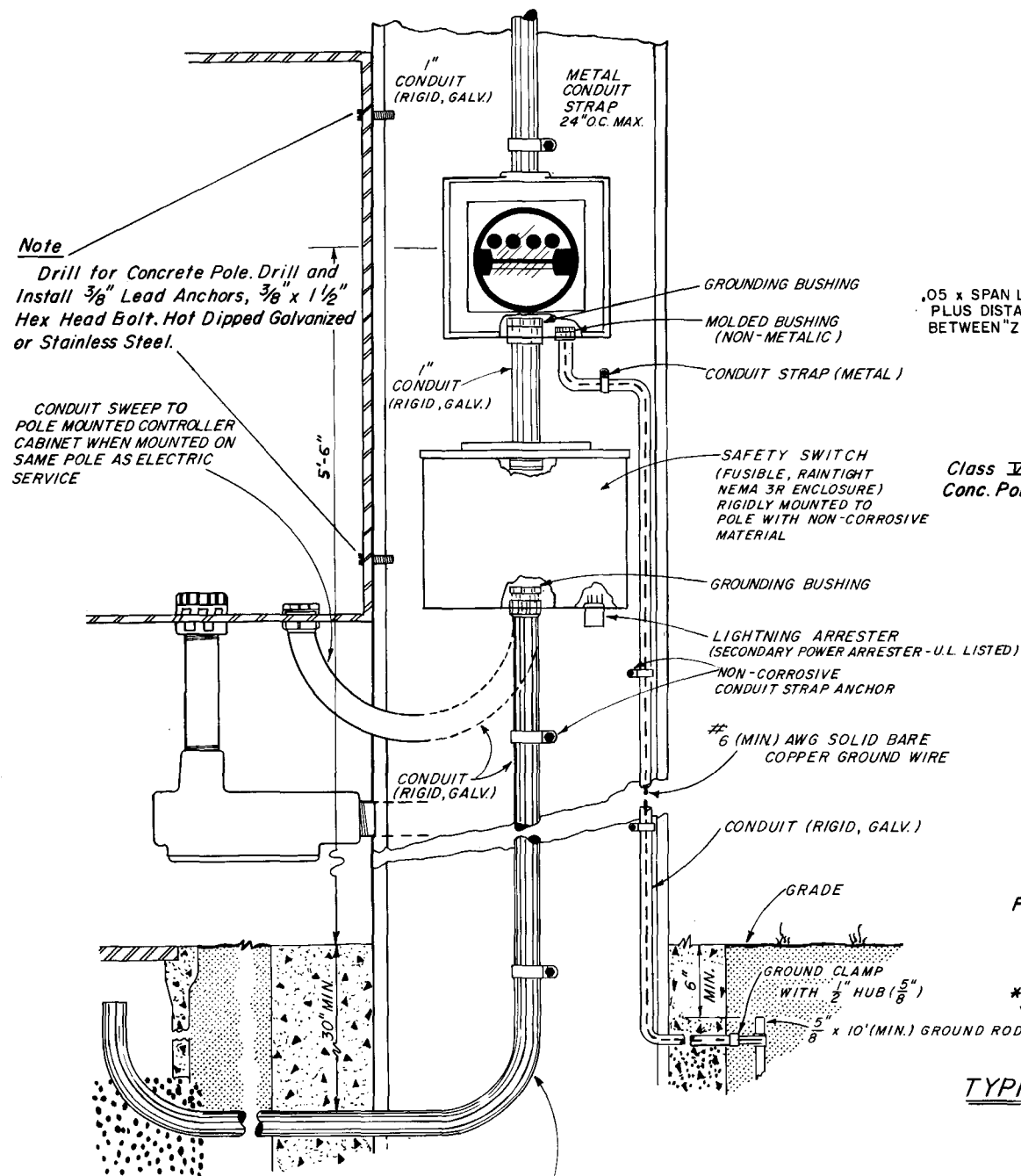
APPROVED BY FHWA 11-16-78

FLORIDA DEPARTMENT OF TRANSPORTATION  
TRAFFIC OPERATIONS

## SCHOOL SIGNS & MARKINGS

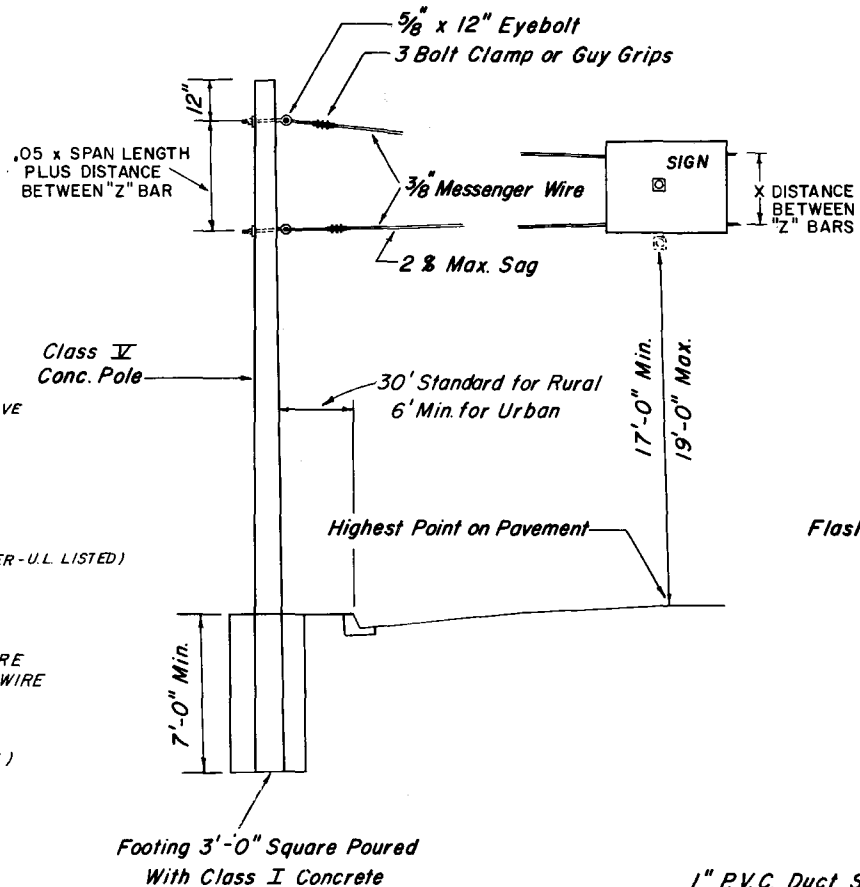
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DATE	BY	DESCRIPTION	DETAILED BY	7-76
9-79	J.M.C.	Deleted Florida Statute	C.E.J.	7-76
			CHECKED BY	7-76
			QUANTITIES BY	
			CHECKED BY	
			SUPERVISED BY	REM
			DRAWING NO.	INDEX NO.
			8 of 9	17344

APPROVED  
BY *R.E. Magadley* 7/24/76  
STATE TRAFFIC OPERATIONS ENGR.



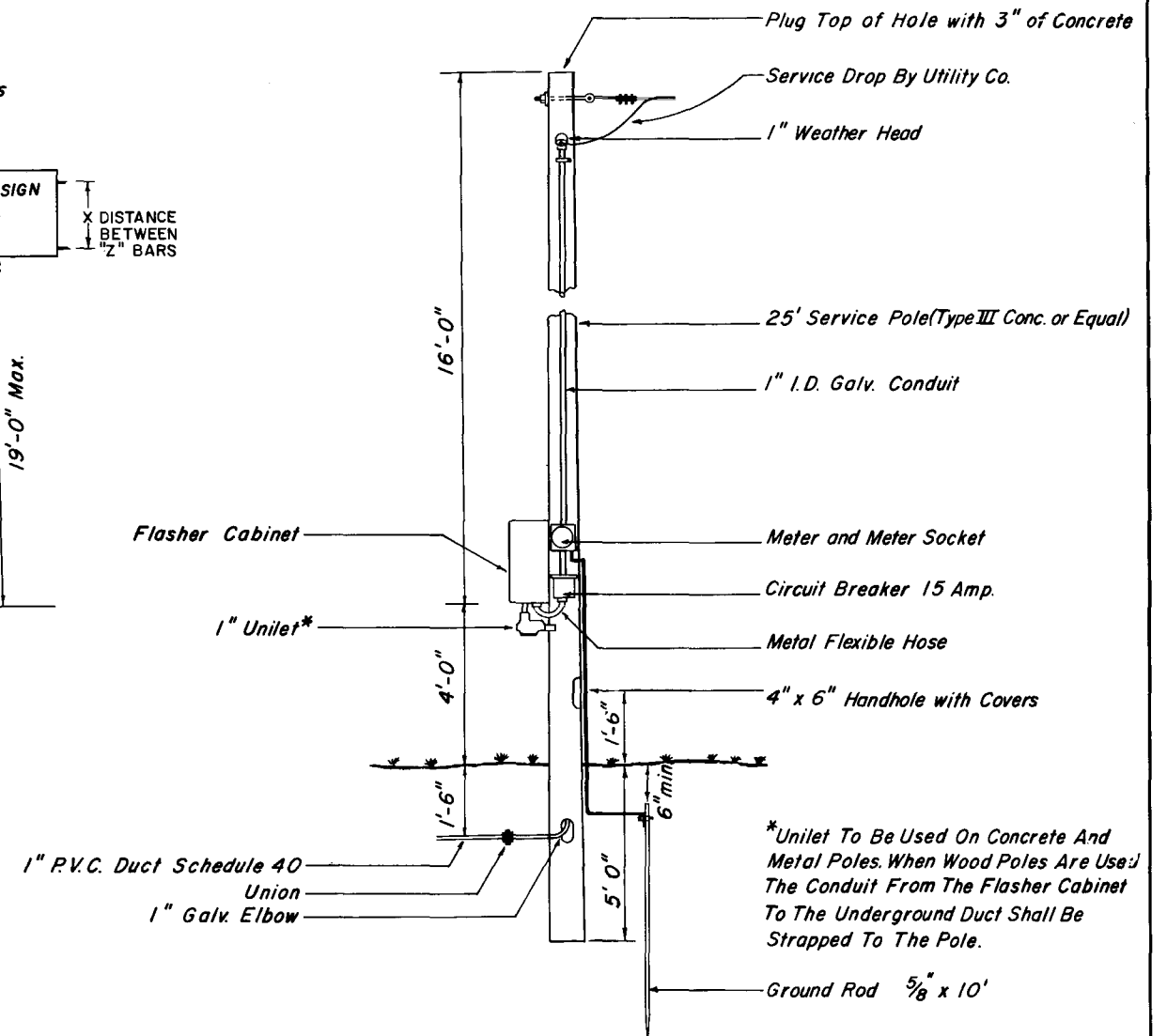
Conduit Sweep To Base Mounted Controller Cabinet, Or Pole Mounted Controller Cabinet When Mounted On Separate Pole From Electric Service

### SERVICE DETAIL



\*S = Span Length

### TYPICAL INSTALLATION DETAIL



\*Unilet To Be Used On Concrete And Metal Poles. When Wood Poles Are Used The Conduit From The Flasher Cabinet To The Underground Duct Shall Be Strapped To The Pole.

### TYPICAL SERVICE POLE WITH CABINET

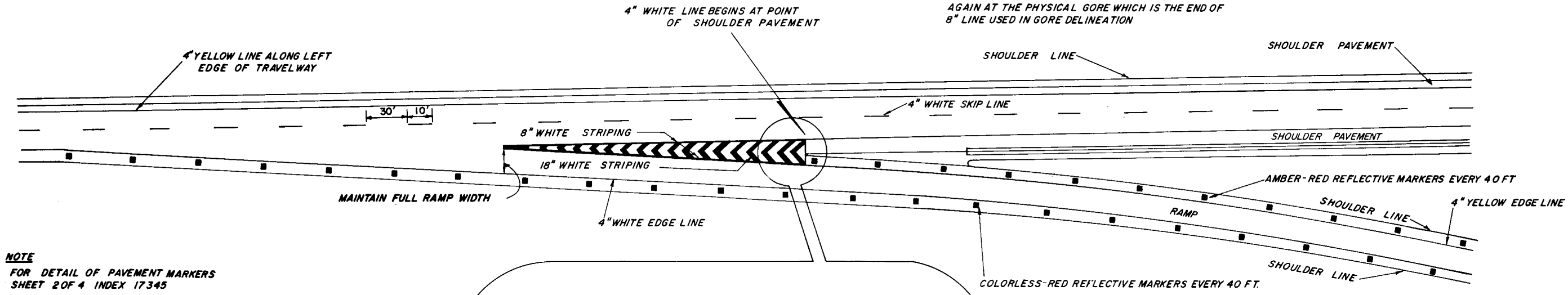
APPROVED BY FHWA 11-16-78

FLORIDA DEPARTMENT OF TRANSPORTATION  
Traffic Operations

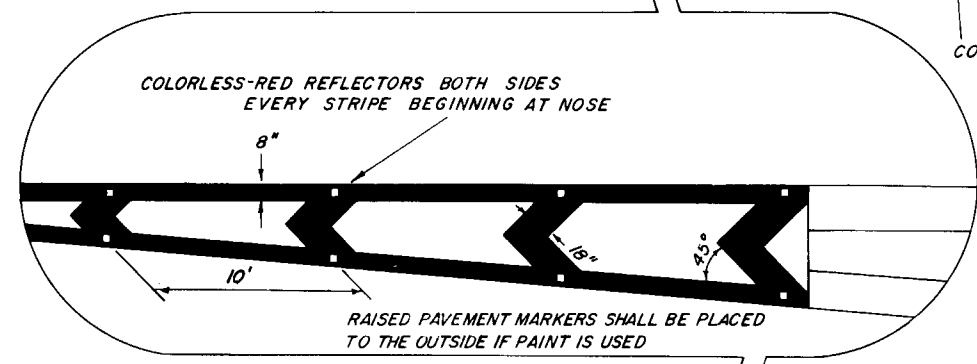
SCHOOL SIGNS & MARKINGS

REVISIONS				INITIALS	DATES		
DATE	BY	DESCRIPTION	Detailed by	CEJ	7-76		
9-79	J.M.C.	Deleted Florida Statute	Checked by	KR	7-76		
			Quantities by			Approved by <i>R.E. Magaby 7/6/76</i>	
			Checked by			State Traffic Operations Engr.	
			Supervised by	REM		DRAWING NO.	INDEX NO.
						9 OF 9	17344

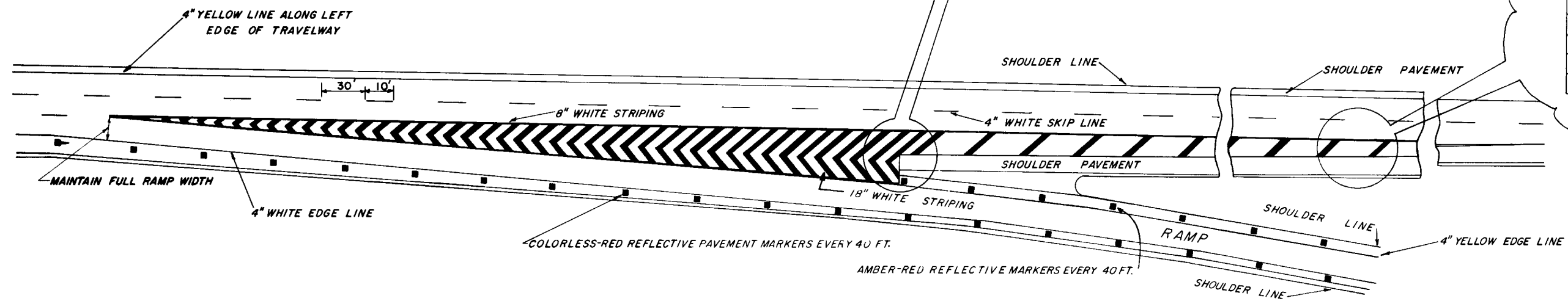
MARKINGS FOR LEFT OFF-RAMPS  
 THE LEFT EDGE LINE (YELLOW) WILL BE CONTINUOUS FROM THE MAIN LINE DOWN THE RAMP TO CROSS ROAD  
 THE MAIN LINE LEFT EDGE LINE (YELLOW) WILL START AGAIN AT THE PHYSICAL GORE WHICH IS THE END OF 8" LINE USED IN GORE DELINEATION



**NOTE**  
 FOR DETAIL OF PAVEMENT MARKERS  
 SHEET 2 OF 4 INDEX 17345

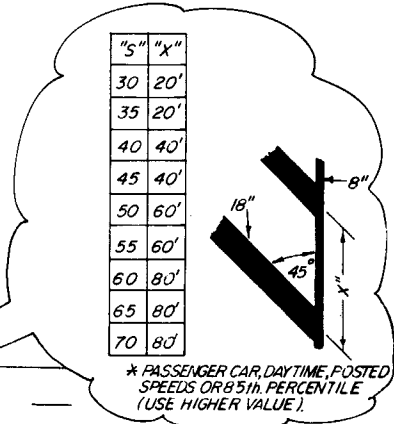


NORMAL TAPERED EXIT  
 (TWO THRU LANES)



**NOTE**  
 WHERE ANY LANE, AUXILIARY OR OTHER, WHICH HAS BEEN PROVIDED AS AN ESCAPE AREA, AND IS LESS THAN 1500 FT. BEYOND THE NOSE OF THE GORE, IT SHOULD BE STRIPED AS AN EXIT ONLY AS SHOWN IN LOWER DETAIL.

NORMAL TAPERED EXIT ONLY  
 (TWO THRU LANES-THREE APPROACH LANES)



REVISIONS		
DATE	INITIALS	DESCRIPTIONS
7-12-78	PB	REVISED NOTES & TITLE BLOCK

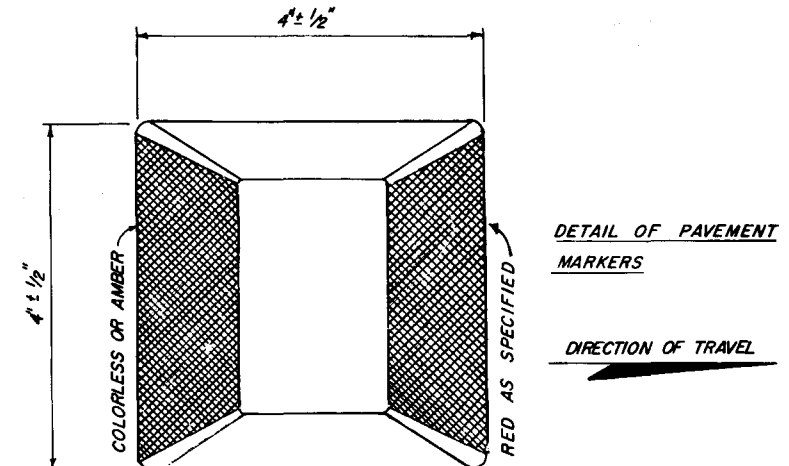
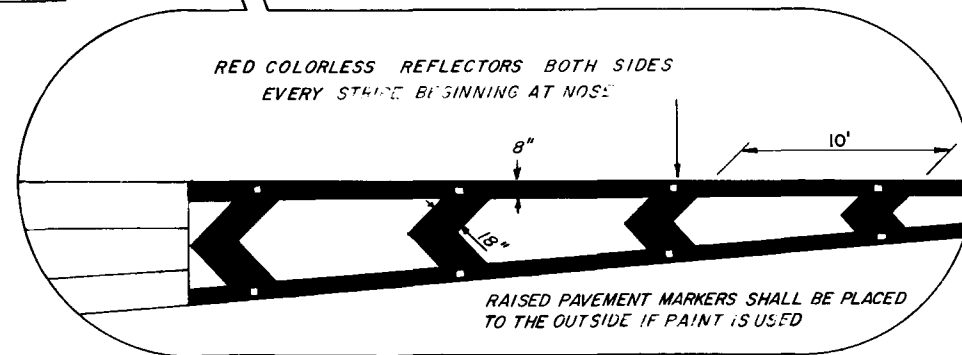
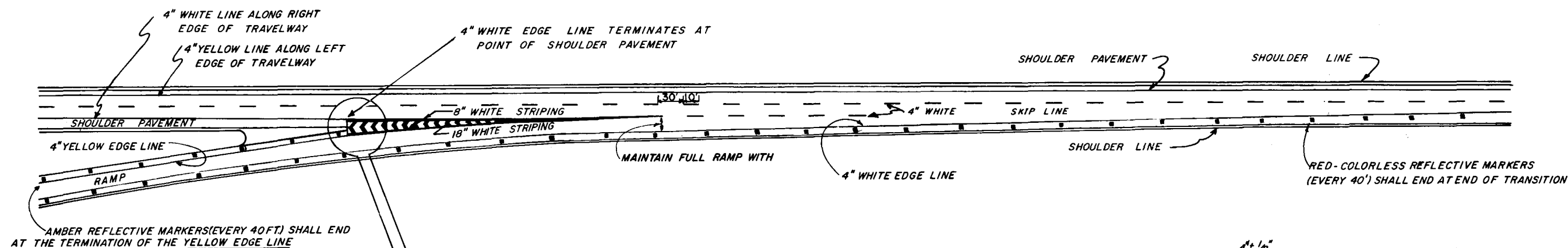
APPROVED BY FHWA 11-16-78

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION  
 TRAFFIC OPERATIONS

**INTERCHANGE MARKINGS**

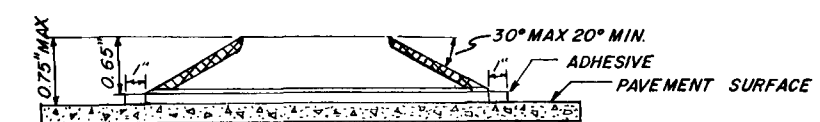
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DETAILED BY		DEPUTY TRAFFIC OPERATIONS ENGR.
CHECKED BY		APPROVED
QUANTITIES BY		BY <i>[Signature]</i>
CHECKED BY		STATE TRAFFIC OPERATIONS ENGR.
SUPERVISED BY		Drawing No. 1 OF 4 Index No. 17345

# TWO THRU LANES



PLAN

DIRECTION OF TRAVEL



PROFILE

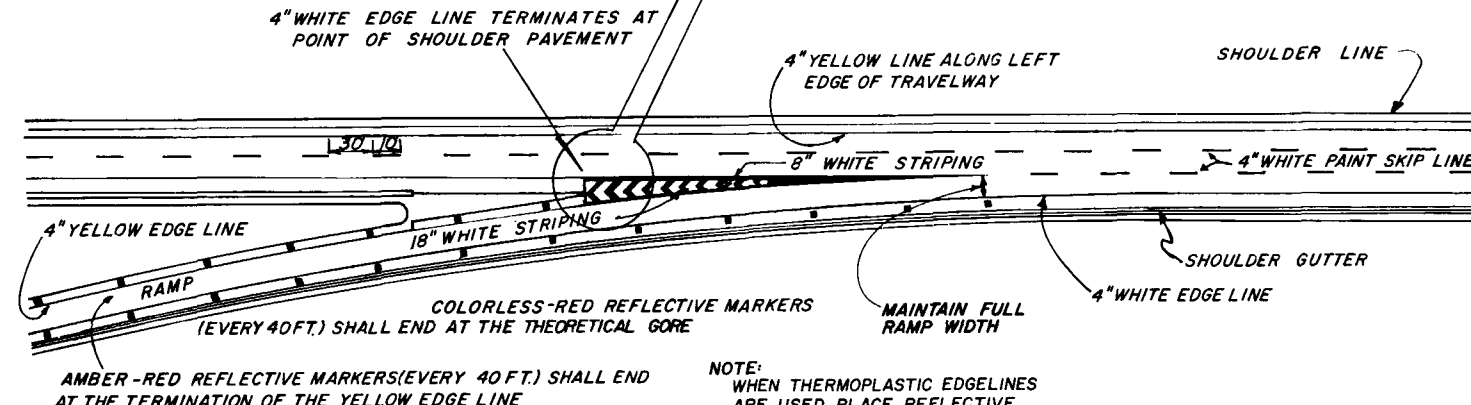
APPROVED BY FHWA 11-16-78

FLORIDA DEPARTMENT OF TRANSPORTATION  
TRAFFIC OPERATIONS

## INTERCHANGE MARKINGS

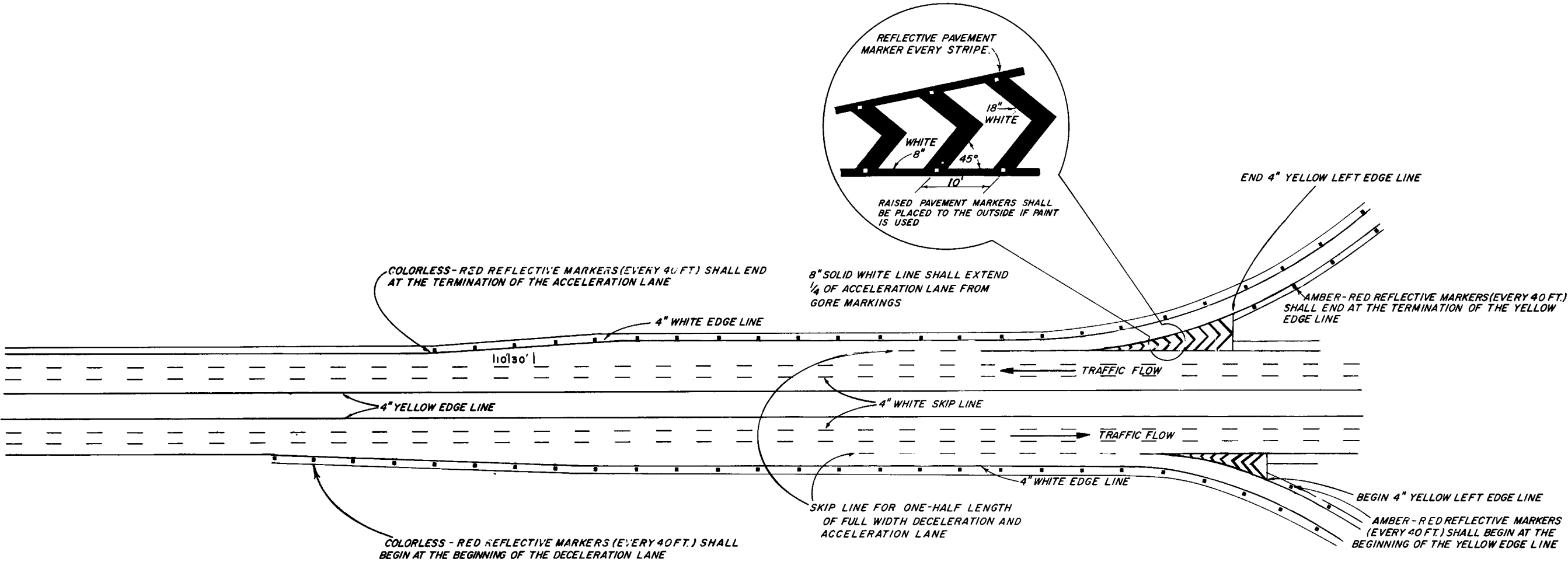
REVISIONS			INITIALS DATES		RECOMMENDED FOR APPROVAL
DATE	INITIALS	DESCRIPTIONS	DETAILED BY	DATES	
7-11-78	PB	REVISED NOTES & CHANGED TITLE BLOCK	CHECKED BY		BY DEPUTY TRAFFIC OPERATIONS ENGR.
9-7-79	J.M.C.	REVISED 10 FT. DIMENSION	QUANTITIES BY		
			CHECKED BY	K.R.	APPROVED BY
			SUPERVISED BY		STATE TRAFFIC OPERATIONS ENGR.
					DRAWING NO. 2 OF 4
					INDEX NO. 17345

# TWO THRU LANES - WITH ADDED LANE



NOTE:  
WHEN THERMOPLASTIC EDGELINES ARE USED PLACE REFLECTIVE PAVEMENT MARKERS ON THERMOPLASTIC EDGELINES.





PARALLEL ACCELERATION AND DECELERATION LANE

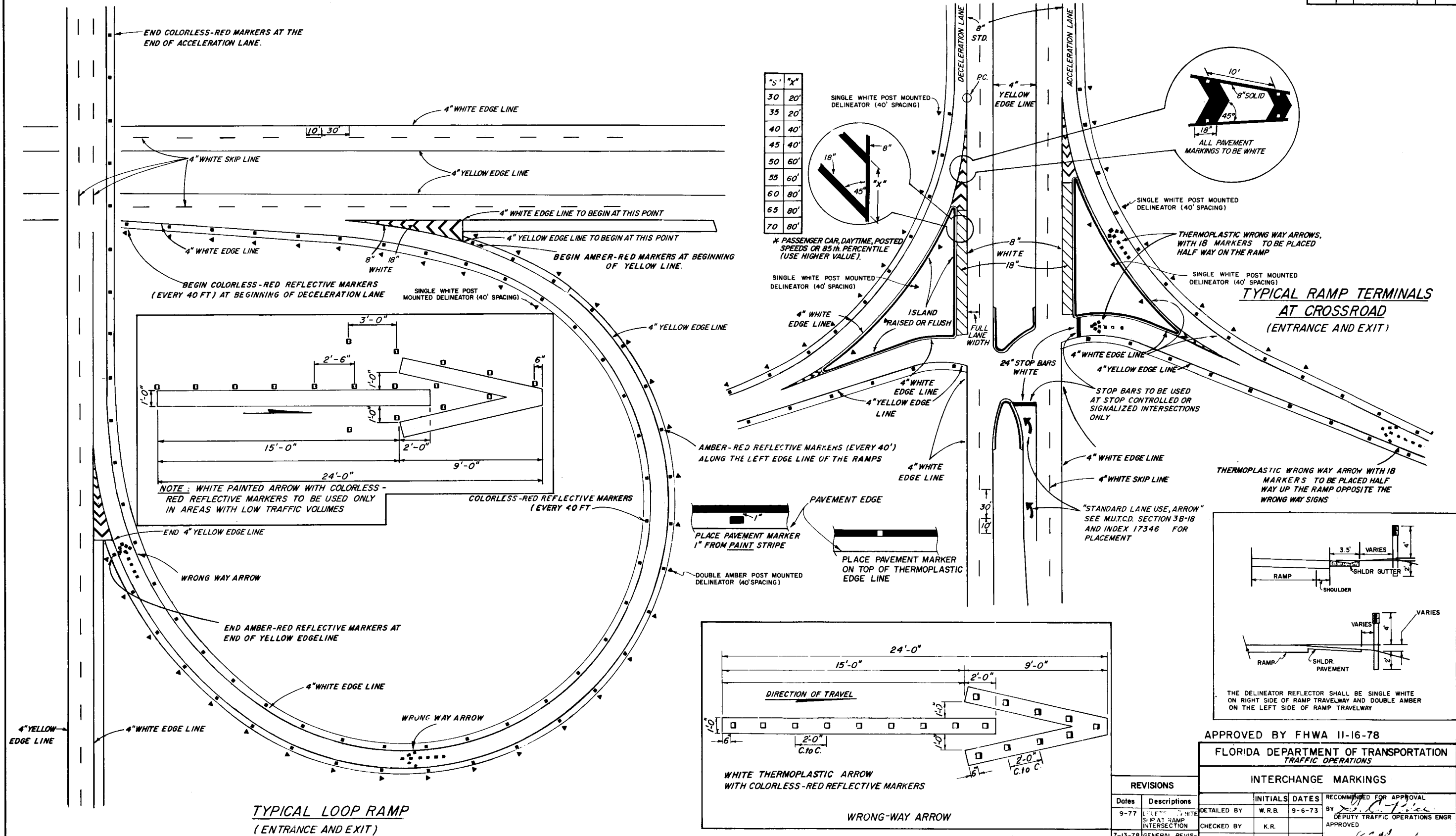
REVISIONS		
DATE	INITIALS	DESCRIPTIONS
7-11-78	PB	REVISED NOTES & TITLE BLOCK
9-7-79	J.M.C.	REVISED 10ft. DIMENSION

APPROVED BY FHWA 11-16-78

FLORIDA DEPARTMENT OF TRANSPORTATION  
TRAFFIC OPERATIONS

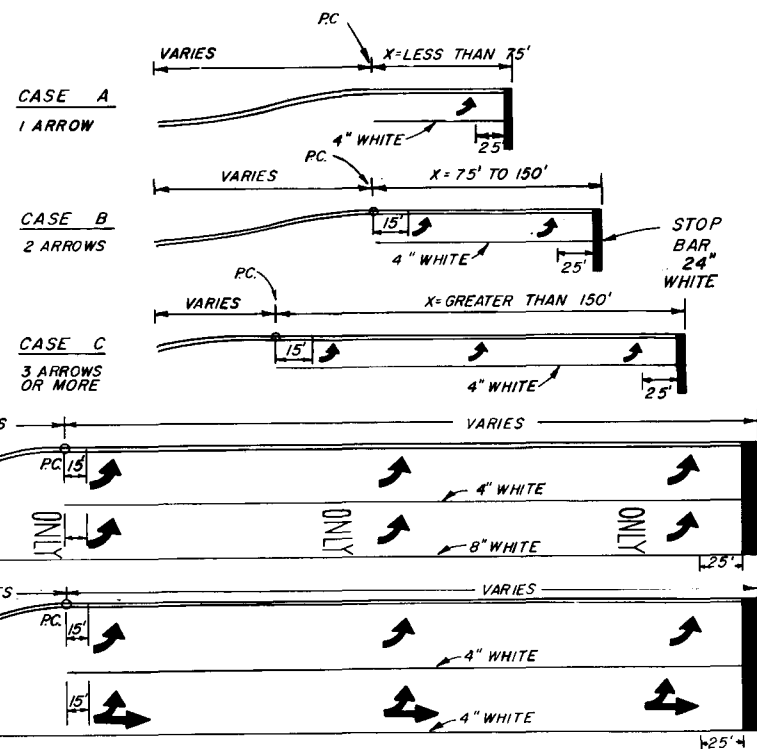
INTERCHANGE MARKINGS

INITIALS	DATES	RECOMMENDED FOR APPROVAL
DETAILED BY W.R.B.	9-6-73	BY <i>[Signature]</i>
CHECKED BY K.R.		DEPUTY TRAFFIC OPERATIONS ENGINEER
QUANTITIES BY		APPROVED
CHECKED BY		BY <i>[Signature]</i>
SUPERVISED BY		STATE TRAFFIC OPERATIONS ENGINEER
		DRAWING NO. 3 OF 4 INDEX NO. 17345



REVISONS		INTERCHANGE			MARKINGS	
Dates	Descriptions		INITIALS	DATES	RECOMMENDED FOR APPROVAL	
9-77	LEFT TURN LANE SIPAT RAMP INTERSECTION	DETAILED BY	W.R.B.	9-6-73	BY <i>W.R.B.</i> DEPUTY TRAFFIC OPERATIONS ENGR APPROVED	
7-13-78 P.B.	GENERAL REVISIONS.	CHECKED BY	K.R.		BY <i>W.R.B.</i> STATE TRAFFIC OPERATIONS ENGR.	
9-7-79	REVISED Xfl. DIMENSION	QUANTITIES BY			DRAWING NO. <i>17345</i> INDEX NO.	
		CHECKED BY			4 OF 4 17345.	
		SUPERVISED BY				

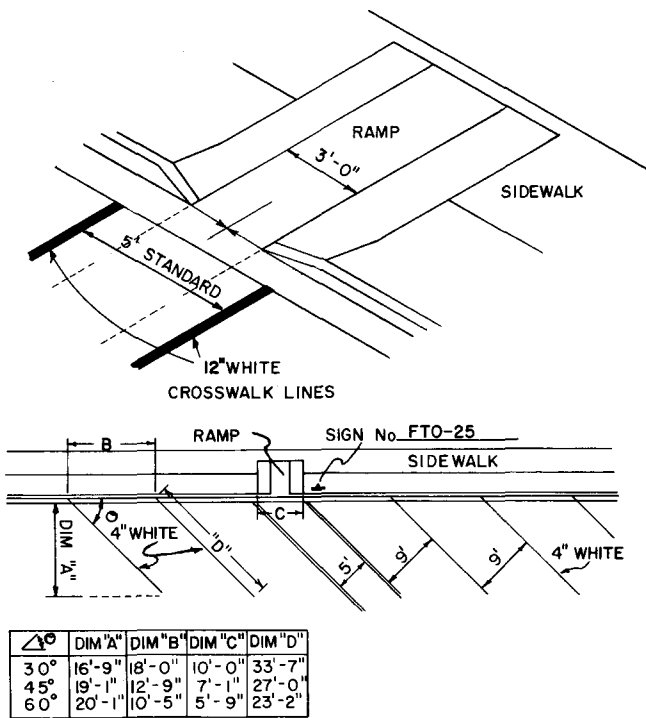




**NOTE:**  
YELLOW LEFT TURN EDGE MARKING MAY BE USED ADJACENT TO RAISED CURB OR GRASS MEDIANS IF LANE USE IS NOT READILY APPARENT TO DRIVERS APPROACHING A LEFT TURN STORAGE LANE.

ARROWS SHOULD BE EVENLY SPACED BETWEEN FIRST AND LAST ARROW

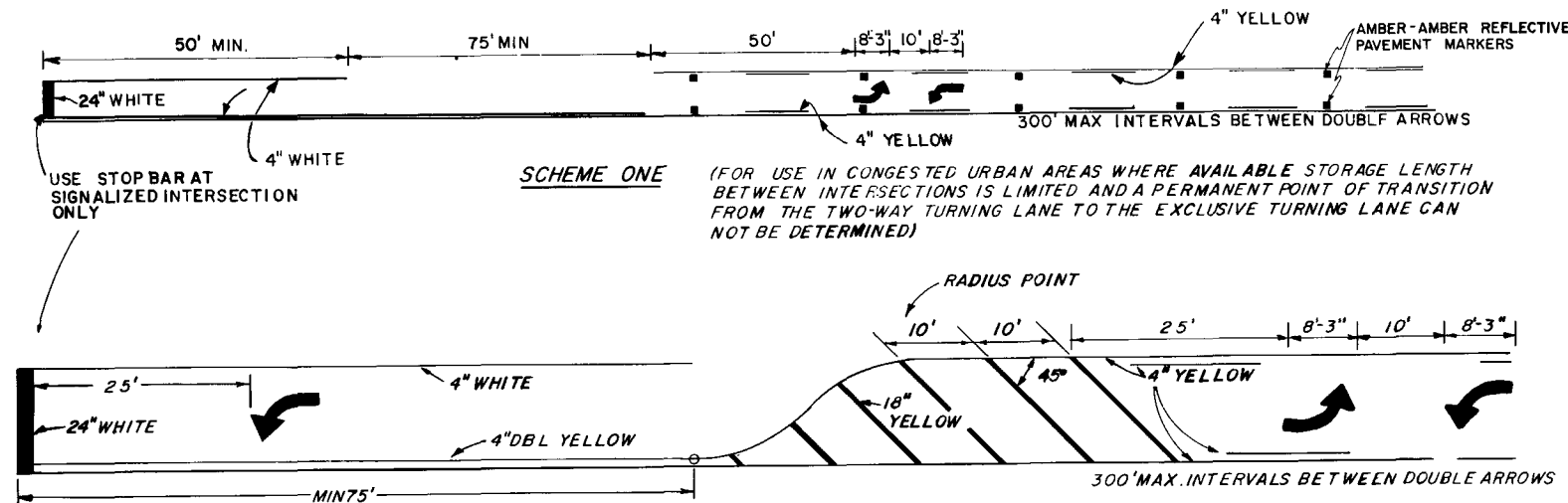
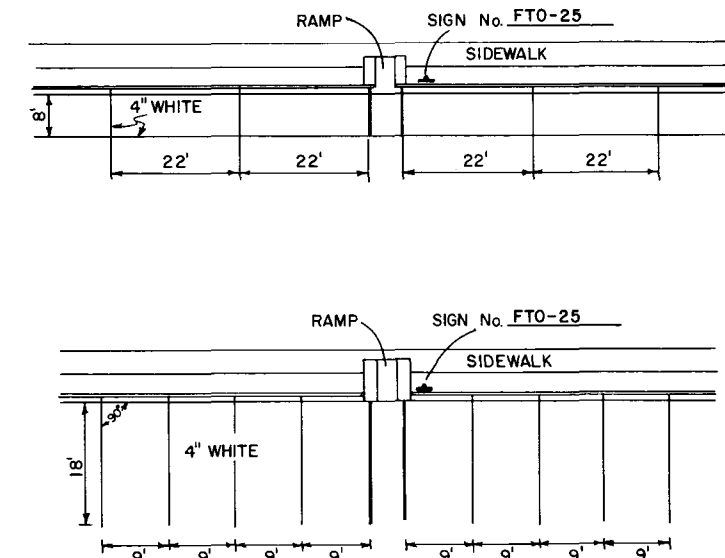
**PAINTED LEFT TURN STORAGE LANE(S) DETAILS FOR STOP CONTROLLED OR SIGNALIZED INTERSECTIONS**



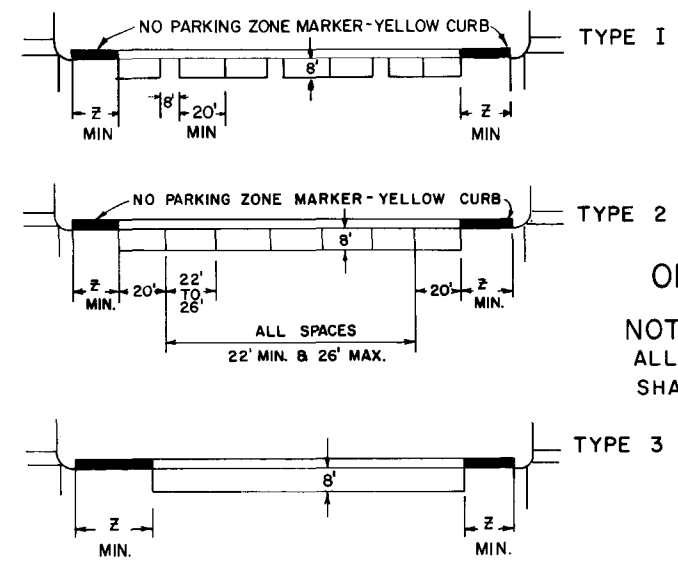
ANGLE	DIM "A"	DIM "B"	DIM "C"	DIM "D"
30°	16'-9"	18'-0"	10'-0"	33'-7"
45°	19'-1"	12'-9"	7'-1"	27'-0"
60°	20'-1"	10'-5"	5'-9"	23'-2"

**NOTE:**  
CRITERIA FOR PAVEMENT MARKINGS ONLY, NOT WHEELCHAIR RAMP LOCATIONS. FOR RAMP CRITERIA SEE ROADWAY DESIGN INDEX PCR-01

**PAVEMENT MARKING FOR WHEELCHAIR RAMPS IN PARKING ZONES**



**TWO WAY LEFT TURN LANE (WITH SINGLE LANE LEFT TURN CHANNELIZATION)**



PARKING RESTRICTION DISTANCE TABLE	
SPEED LIMIT	Z
30 MPH OR LESS	30 FT
35 MPH OR MORE	50 FT

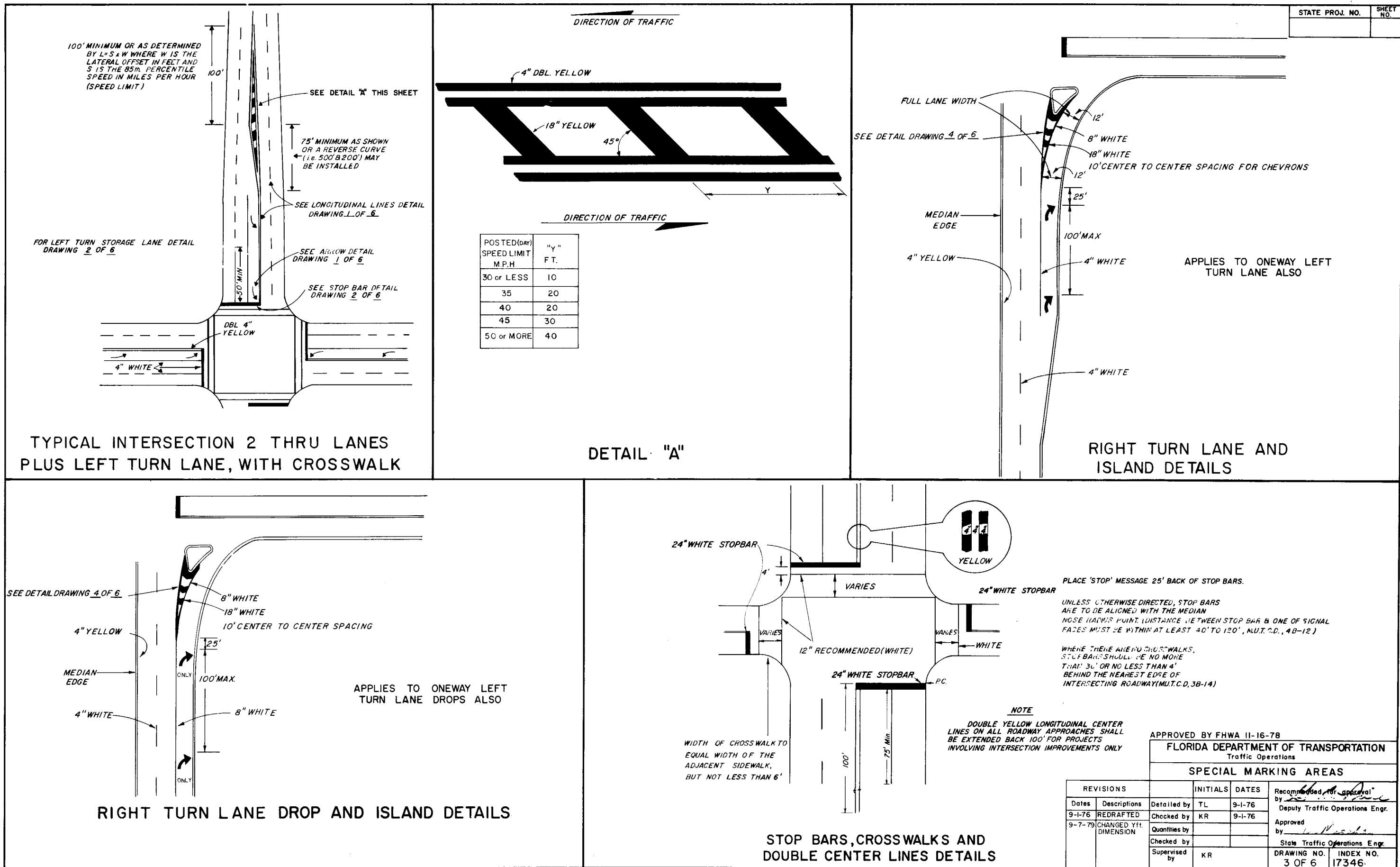
**ON STREET PARKING**

**NOTE:**  
ALL PARKING AND REFUGE LANE MARKINGS SHALL BE 4" WHITE

**Note:**  
For mid-block driveway clearance from parking stall to the drop curb shall be 20' min.

APPROVED BY FHWA II-16-78  
**FLORIDA DEPARTMENT OF TRANSPORTATION**  
Traffic Operations

REVISIONS			INITIALS	DATES	Recommended for approval by _____ Deputy Traffic Operations Engr.
Dates	Descriptions	Detailed by	TL	9-1-76	
9-1-76	Redrafted	Checked by	K R	9-1-76	Approved by _____ State Traffic Operations Engr.
9-7-79	Added Note	Quantities by			
9-7-79	Changed Dimension	Checked by			DRAWING NO. 2 OF 6 INDEX NO. 17346
		Supervised by			



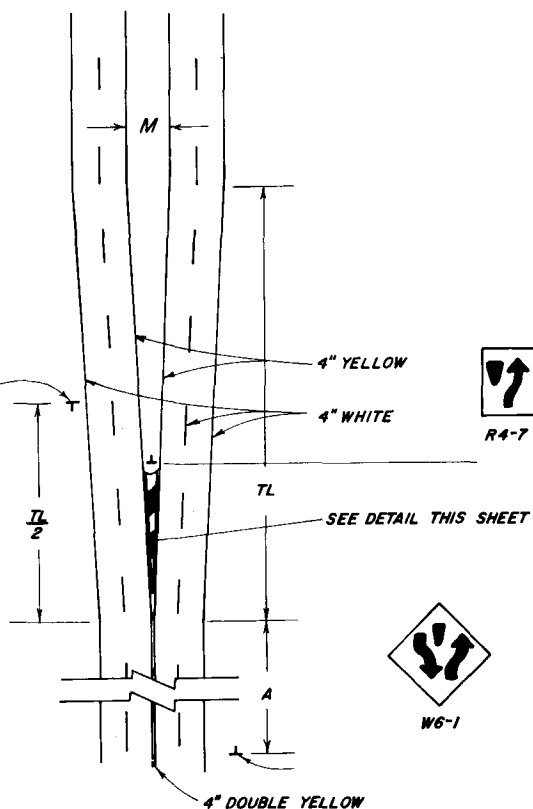
**TAPER LENGTH EQUATION**

$$TL = \frac{M}{2} \times S$$

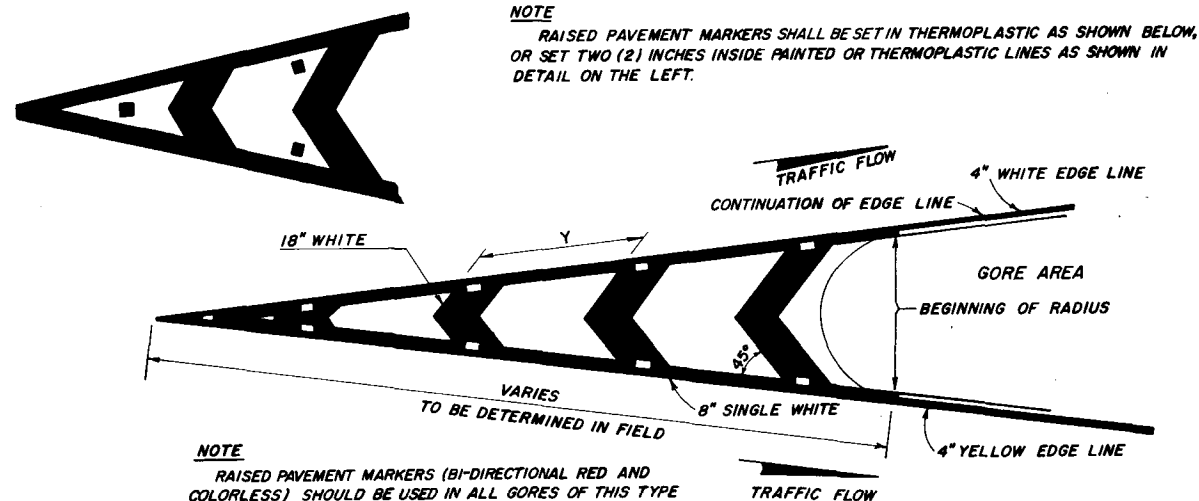
TL = TAPER LENGTH (ft.)  
M = MEDIAN WIDTH (ft.)  
S = SPEED (M.P.H.)



SPEED m.p.h.	A in ft.
70	600
60	475
50	350
40	275
30	200
URBAN 50 MIN.	



**BEGINNING OF A DIVIDED HIGHWAY**



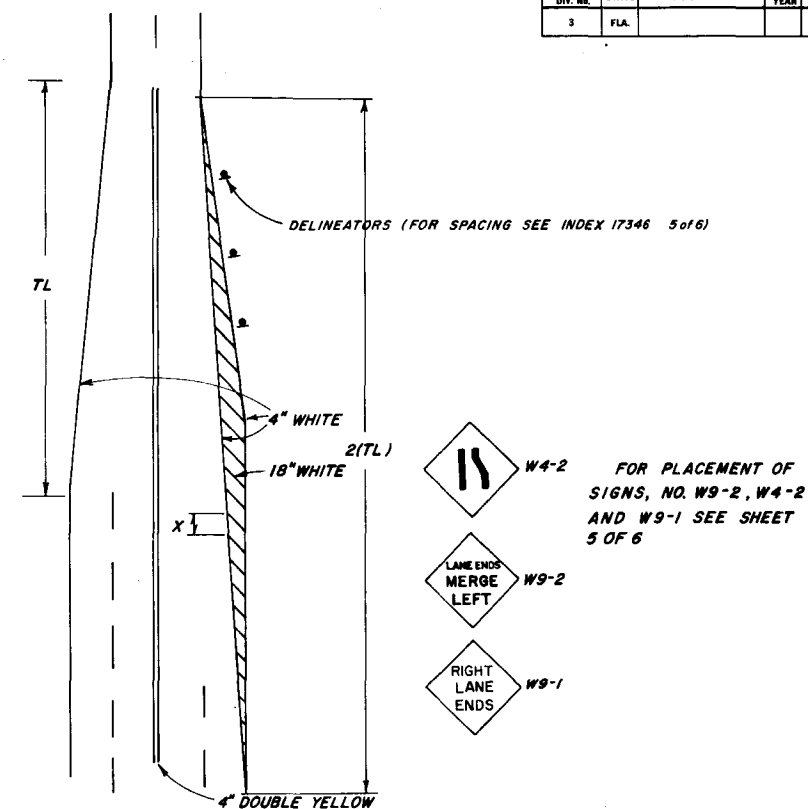
**PAVEMENT MARKINGS FOR TRAFFIC CHANNELIZATION AT GORE**  
(TRAFFIC FLOWS IN SAME DIRECTION)

POSTED (DAY) SPEED LIMIT M.P.H.	"X" FT.
25 OR LESS	10
30	20
35	20
40	40
45	40
50	60
55	60
60 OR MORE	80

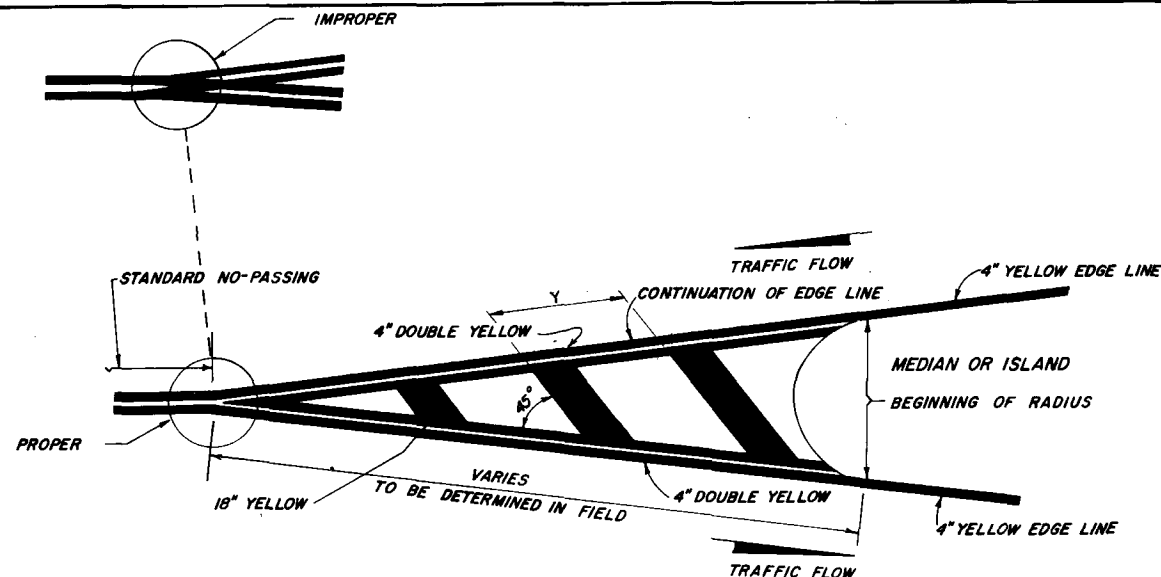
**TAPER LENGTH EQUATION**

$$TL = 12S$$

TL = TAPER LENGTH (ft.)  
S = SPEED (m.p.h.)



**4-LANE-2-LANE TRANSITION-NO MEDIAN**



POSTED (DAY) SPEED LIMIT M.P.H.	"Y" FT.
30 OR LESS	10
35	20
40	20
45	30
50 OR MORE	40

**PAVEMENT MARKING FOR TRAFFIC SEPARATION**  
(TRAFFIC FLOWS IN OPPOSITE DIRECTION)

APPROVED BY FHWA II-16-78  
FLORIDA DEPARTMENT OF TRANSPORTATION  
Traffic Operations

**SPECIAL MARKING AREAS**

REVISIONS	INITIALS	DATES	Recommended for approval by
Dates	Descriptions	Detailed by	Deputy Traffic Operations Engr.
8-19-78	Redrafted	Checked by	Approved by
		Quantities by	State Traffic Operations Engr.
		Checked by	DRAWING NO. 4 OF 6
		Supervised by	INDEX NO. 17346



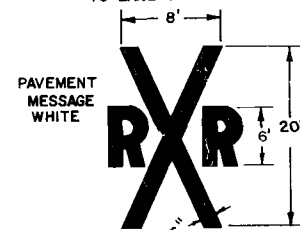
SPEED mph	A in ft
55	425
50	350
40	275
30	200
URBAN	50 MIN.

"A" VALUE IS BASED ON  
A.A.S.H.O. MIN. S.S.D.

DO NOT  
STOP  
ON  
TRACKS

FOR USE NEAR  
SIGNALIZED INTERSECTION

WIDTH MAY VARY ACCORDING  
TO LANE WIDTH



89 s.f. \*

\* DOES NOT INCLUDE 2' BARS.

- NOTES
1. WHEN COMPUTING PAVEMENT MESSAGES, QUANTITIES DO NOT INCLUDE TRANSVERSE LINES.
  2. WHEN DYNAMIC DEVICES ARE NOT PRESENT OR ARE TO BE INSTALLED, THE CROSSBUCK SHALL BE LOCATED AT THE FUTURE LOCATION OF THE RR GATE OR SIGNAL AND GATE IN ACCORDANCE WITH INDEX 17882.

## RAILROAD CROSSING AT 2-LANE ROADWAY

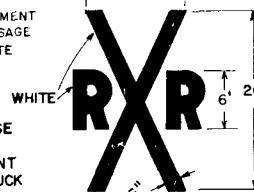
SPEED mph	A in ft
55	425
50	350
40	275
30	200
URBAN	50 MIN.

A VALUE IS BASED  
ON A.A.S.H.O. MIN.  
S.S.D.

ON PHYSICALLY DIVIDED  
FACILITIES ADDITIONAL  
PROTECTION DEVICES MAY  
BE INSTALLED IN THE MEDIAN.  
SEE STANDARD INDEX 17882

WIDTH MAY VARY ACCORDING  
TO LANE WIDTH

PAVEMENT  
MESSAGE  
WHITE



89 s.f. \*

\* DOES NOT INCLUDE 2' BARS.

- NOTES
1. WHEN COMPUTING PAVEMENT MESSAGES, QUANTITIES DO NOT INCLUDE TRANSVERSE LINES.
  2. WHEN DYNAMIC DEVICES ARE NOT PRESENT OR ARE TO BE INSTALLED, THE CROSSBUCK SHALL BE LOCATED AT THE FUTURE LOCATION OF THE RR GATE OR SIGNAL AND GATE IN ACCORDANCE WITH INDEX 17882.

## RAILROAD CROSSING AT 4-LANE ROADWAY

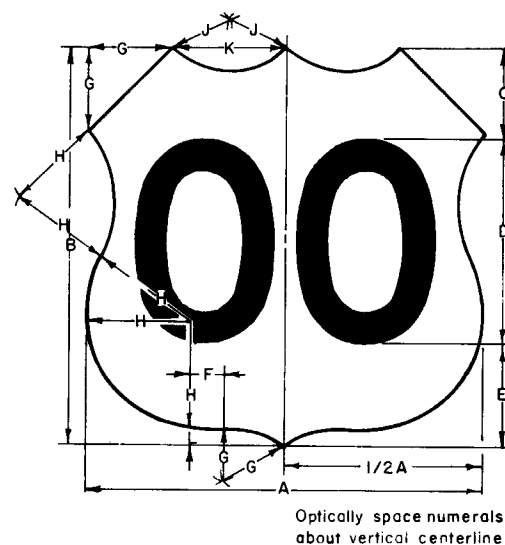
APPROVED BY FHWA 11-16-78

FLORIDA DEPARTMENT OF TRANSPORTATION  
Traffic Operations

SPECIAL MARKING AREAS

REVISIONS			INITIALS	DATES	Recommended for approval by <i>[Signature]</i>
Dates	Descriptions	Detailed by	TL	9-1-76	Deputy Traffic Operations Engr.
8-16-78	REDRAFTED	Checked by	K.R	9-1-76	Approved by <i>[Signature]</i>
8-27-79	PAVT. MARKING REMOVED	Quantities by			State Traffic Operations Engr.
		Checked by			
		Supervised by	K R		
				DRAWING NO.	INDEX N.
				6 OF 6	17346

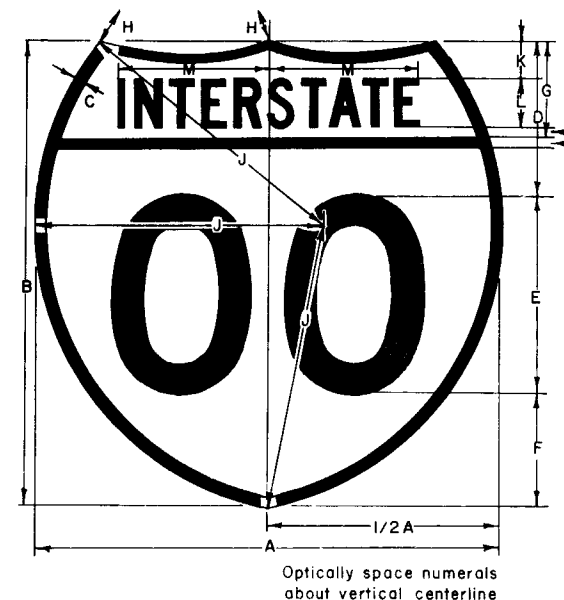




MI-4U.S.ROUTE MARKER FOR GUIDE SIGN USE

SIGN	DIMENSIONS (INCHES)										
	A	B	C	D	E	F	G	H	J	K	L
1,2-digits	24	24	5-1/2	12D	6-1/2	1	5	7	5	7	2
1,2-digits	36	36	8-1/4	18D	9-3/4	1-1/2	7-1/2	10-1/2	7-1/2	10-1/2	3
1,2-digits	48	48	11	24D	13	2	10	14	10	14	4
3-digits	30	24	5-1/2	12D	6-1/2	4	5	7	9	10	2
3-digits	45	36	8-1/4	18D	9-3/4	5-1/2	7-1/2	10-1/2	13-1/2	15	3
3-digits	60	48	11	24D	13	8	10	14	18	20	4

COLORS  
LEGEND - BLACK (NON-REFL.)  
BACKGROUND-WHITE (REFL.)



MI-I-INTERSTATE SHIELD FOR GUIDE SIGN USE

SIGN	DIMENSIONS (INCHES)											
	A	B	C	D	E	F	G	H	J	K	L	M
1,2 digits	24	24	1/2	6-1/2	12D	5-1/2	5	15	15	2	2-1/2C	7-13/16
1,2 digits	36	36	3/4	9-3/4	18D	8-1/4	7-1/2	22-1/2	22-1/2	3	3-3/4C	11-11/16
1,2 digits	48	48	1	13	24D	11	10	30	30	4	5C	15-9/16
3 digits	30	24	1/2	6-1/2	12D	5-1/2	5	24	17	2	2-1/2C	7-13/16
3 digits	45	36	3/4	9-3/4	18D	8-1/4	7-1/2	36	25-1/2	3	3-3/4C	11-11/16
3 digits	60	48	1	13	24D	11	10	48	34	4	5C	15-9/16

COLORS	
LEGEND	WHITE (REFL)
TOP	RED (REFL)
BOTTOM	BLUE (REFL)

WHITE (REFL)		Approved by FHWA 7-18-74	
RED (REFL)		FLORIDA DEPARTMENT OF TRANSPORTATION	
BLUE (REFL)		TRAFFIC OPERATIONS	
SHIELDS FOR USE ON GUIDE SIGNS			
ROAD NO.		COUNTY	
REVISIONS		INITIALS	DATES
Dates	Descriptions	Designed by	Recommended for approval by <u>Larry C. Price</u> Deputy Traffic Operations Engr.
		Checked by	Approved by <u>E. E. Magada</u> 10/14/74 State Traffic Operations Engr.
		Quantities by	
		Checked by	
		Supervised by	DRAWING NO. INDEX NO. OF 17347

3/8" ALUMINUM (ASTM B211) OR STAINLESS  
STEEL (ASTM A320) BUTTON HEAD BOLT  
WITH NUT AND WASHER

.125" ALUMINUM  
MINIMUM

4.5" ALUMINUM TUBE  
0.188" WALL THICKNESS

CASE I... REFLECTOR SHALL HAVE A YELLOW REFLECTIVE BACKGROUND, AND YELLOW REFLECTIVE BUTTONS. (SIGN SHOP #812-170)

CASE II... REFLECTOR SHALL HAVE A RED REFLECTIVE BACKGROUND AND RED REFLECTIVE BUTTONS. (SIGN SHOP #812-171)

REFLECTIVE BUTTONS SHALL HAVE A  
3" MINIMUM DIAMETER

NO CONCRETE FOOTING IS REQUIRED FOR REFLECTOR SUPPORTS. SUPPORTS SHALL BE DRIVEN 3' INTO THE GROUND.

W14-1

SIGN	DIMENSIONS (INCHES)											
	A	B	C	D	E	F	G	H	J	K	L	
MIN.	24	3/8	5/8	5 D	1	2	8-1/4	8-9/16	5-5/8	6-1/4	1-1/2	
STD.	30	1/2	3/4	6 D	1-1/2	2-1/2	9-3/4	10-1/4	6-3/4	7-1/2	1-7/8	
SPECIAL	36	5/8	7/8	7 D	2	3	11-3/8	11-5/16	7-7/8	8-3/4	2-1/8	

## COLORS

LEGEND - BLACK (NON-REFL.  
BACKGROUND - YELLOW (R

YELLOW REFLECTORS  
CASE I

WI-

W 14

### NEW REFLECTORS CASE I

CASE I  
YELLOW REFLECTORS

CASE II  
REFLECTORS

W14-

SUPPLEMENTAL SIGN, WITH  
DISTANCE PANEL, TO BE  
USED AS NEEDED

## REVISIONS

DATE	INITIALS	DESCRIPTION
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DATE	INITIALS	SECURITY NO.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466
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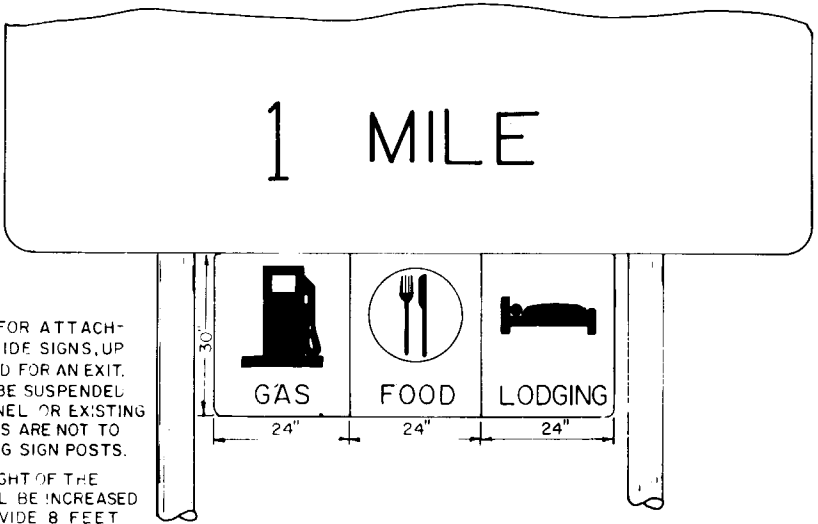
[illegible]

APPROVED BY F.H.W.A. 4-11-75

FLORIDA DEPARTMENT OF TRANSPORTATION  
TRAFFIC OPERATIONS

## TRAFFIC CONTROLS FOR STREET TERMINATIONS

	INITIALS	DATES	RECOMMENDED FOR APPROVAL
DETAILED BY	GW	11-4-74	BY <i>Ray C. Hays</i> DEPUTY TRAFFIC OPERATIONS ENGR.
CHECKED BY			APPROVED
QUANTITIES BY			BY <i>R. S. Magada 10/2/74</i> STATE TRAFFIC OPERATIONS ENGR.
CHECKED BY	KR	11-4-74	DRAWING NO. INDEX NO.
SUPERVISED BY	KR	11-4-74	1 of 1 17349

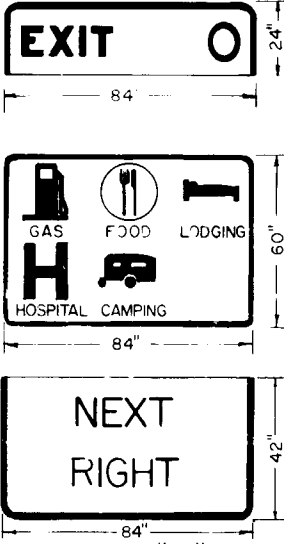


**NOTE**

WHEN APPROVED FOR ATTACHMENT TO THE ADVANCE GUIDE SIGNS, UP TO 3 SERVICES MAY BE USED FOR AN EXIT. THE SYMBOL SIGNS SHALL BE SUSPENDED FROM THE GUIDE SIGN PANEL OR EXISTING WIND BEAMS. SYMBOL SIGNS ARE NOT TO BE CONNECTED TO EXISTING SIGN POSTS.

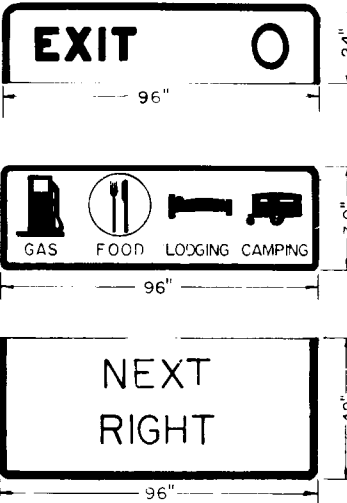
THE MOUNTING HEIGHT OF THE ADVANCE GUIDE SIGN SHALL BE INCREASED WHERE NECESSARY TO PROVIDE 8 FEET BETWEEN THE LEVEL OF THE PAVEMENT EDGE AND THE BOTTOM OF THE GUIDE SIGN, PRIOR TO MOUNTING THE SUPPLEMENTARY PANEL.

DETAIL "A"  
(1 TO 3 SYMBOLS ON SEPARATE PANELS)



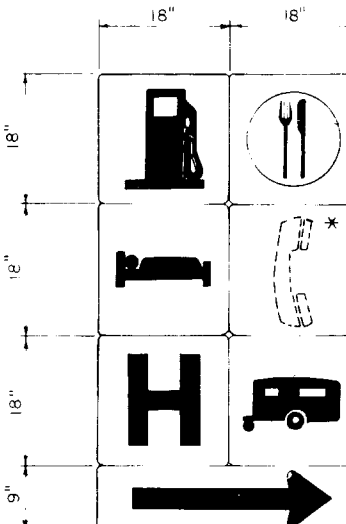
10" SERIES  
"E" LETTERS

DETAIL "B"  
(4 TO 6 SYMBOLS)



10" SERIES  
"E" LETTERS

DETAIL "C"  
( 4 SYMBOLS)



**NOTES:**

1. SIGNS SHALL BE LOCATED ON THE SIDE OF THE RAMP FOR SERVICES IN THAT PARTICULAR DIRECTION. IF THERE ARE SERVICES IN BOTH DIRECTIONS, THEN SIGNS SHALL BE INSTALLED ON BOTH SIDES.
2. RAMP MOUNTED SIGNS SHALL BE INSTALLED TO AVOID CONFLICT WITH EXISTING SIGNS AND IN NO CASE SHOULD THEY BE PLACED WITHIN 100' OF ANOTHER SIGN.
3. SINGLE PANEL ARROW SIZE WILL BE 18"x9".
4. DUAL PANEL ARROW SIZE WILL BE 36"x9".

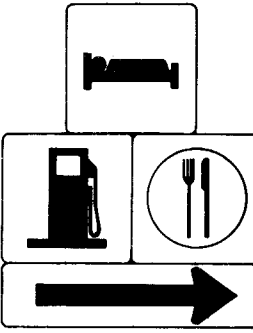
DETAIL "D"  
( EACH SYMBOL ON SEPARATE PANEL )

**GENERAL NOTES**

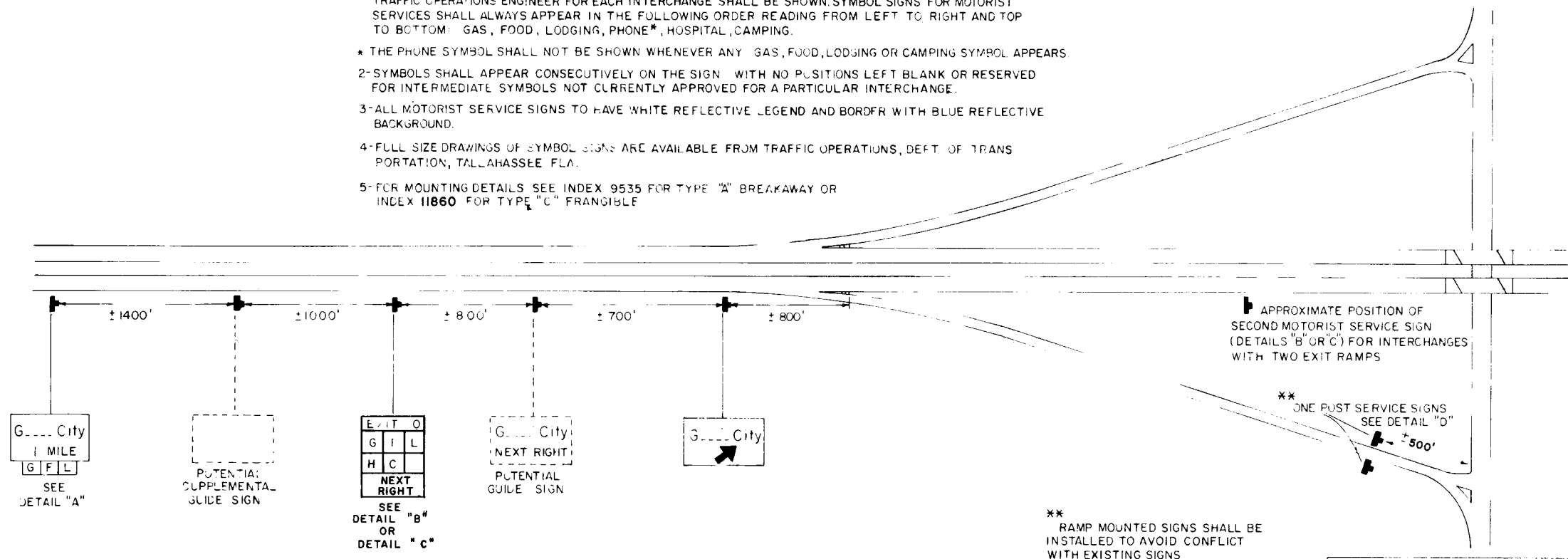
- 1- ONLY THOSE SERVICES MEETING CRITERIA ESTABLISHED BY THE DEPARTMENT AND APPROVED BY THE STATE TRAFFIC OPERATIONS ENGINEER FOR EACH INTERCHANGE SHALL BE SHOWN. SYMBOL SIGNS FOR MOTORIST SERVICES SHALL ALWAYS APPEAR IN THE FOLLOWING ORDER READING FROM LEFT TO RIGHT AND TOP TO BOTTOM: GAS, FOOD, LODGING, PHONE\*, HOSPITAL, CAMPING.
- \* THE PHONE SYMBOL SHALL NOT BE SHOWN WHENEVER ANY GAS, FOOD, LODGING OR CAMPING SYMBOL APPEARS.
- 2- SYMBOLS SHALL APPEAR CONSECUTIVELY ON THE SIGN WITH NO POSITIONS LEFT BLANK OR RESERVED FOR INTERMEDIATE SYMBOLS NOT CURRENTLY APPROVED FOR A PARTICULAR INTERCHANGE.
- 3- ALL MOTORIST SERVICE SIGNS TO HAVE WHITE REFLECTIVE LEGEND AND BORDER WITH BLUE REFLECTIVE BACKGROUND.
- 4- FULL SIZE DRAWINGS OF SYMBOL SIGNS ARE AVAILABLE FROM TRAFFIC OPERATIONS, DEPT. OF TRANSPORTATION, TALLAHASSEE, FLA.
- 5- FOR MOUNTING DETAILS SEE INDEX 9535 FOR TYPE "A" BREAKAWAY OR INDEX 11860 FOR TYPE "C" FRANGIBLE

**NOTE**

FOR ATTACHMENT DETAILS TO ADVANCE GUIDE SIGN SEE INDEX NO. 11671

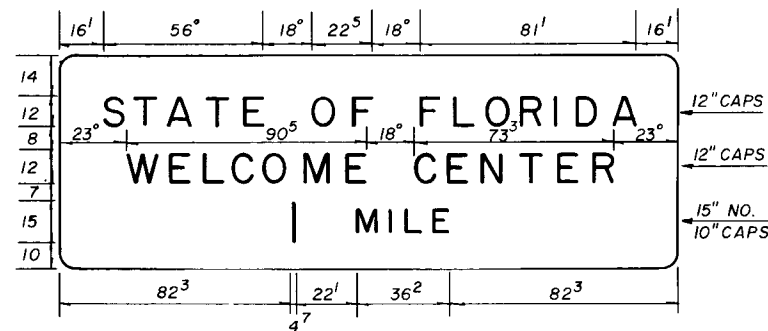


WHEN AN ODD NUMBER OF SYMBOL PANELS ARE USED THE TOP PANEL SHALL BE CENTERED

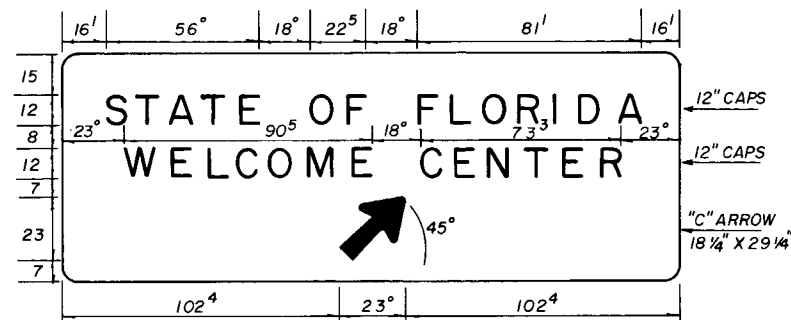


REVISIONS		
DATE	INITIALS	DESCRIPTION
8-30-76	TL	RELOCATED SERVICE SIGNS
9-27-76	TL	RELOCATED SIGN & ADD NOTE (Detail "D")
10-4-79	K.H.	ADDED NOTES AND DETAIL

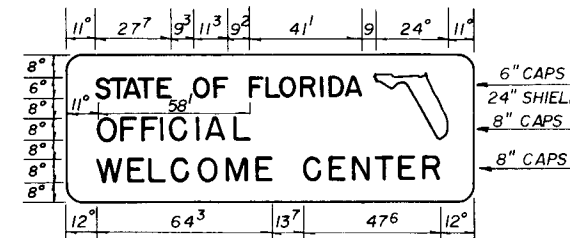
APPROVED BY FHWA 11-16-78			
FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS			
SIGNING FOR MOTORIST SERVICES			
DETAILED BY	INITIALS	DATES	RECOMMENDED FOR APPROVAL BY
WB	WB	3-76	DEPUTY TRAFFIC OPERATIONS ENGR
CHECKED BY			APPROVED BY
KR	KR	3-76	DEPUTY TRAFFIC OPERATIONS ENGR
SUPERVISED BY			
DRAWING NO	INDEX NO		
1 of 1	17350		



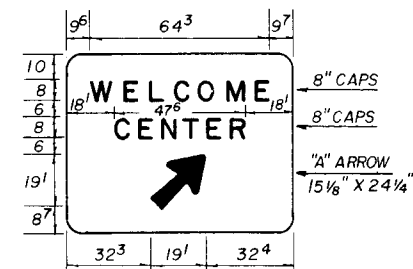
SIGN NO. FTO-17  
6'-6" x 19'-0"  
3" BOR. 9" RAD.  
BLUE REFL. BACKGROUND  
WHITE REFL. LEGEND &  
BORDER



SIGN NO. FTO-18  
7'-0" x 19'-0"  
3" BOR. 9" RAD.  
BLUE REFL. BACKGROUND  
WHITE REFL. LEGEND &  
BORDER



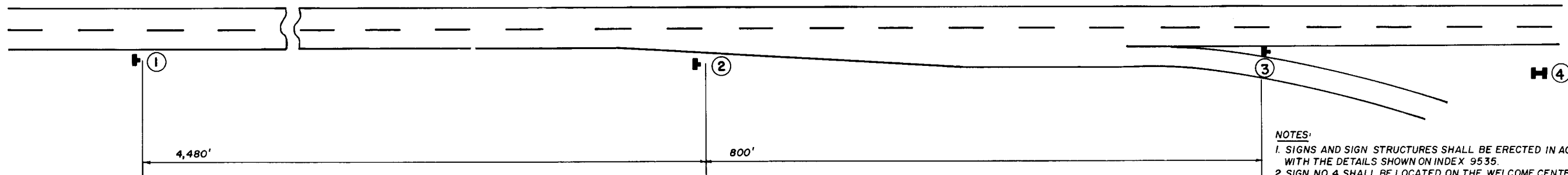
SIGN NO. FTO-19  
4'-6" x 12'-6"  
2" BOR. 9" RAD.  
BLUE REFL. BACKGROUND  
WHITE REFL. LEGEND & BORDER  
ORANGE REFL. STATE SILHOUETTE  
(SIGN NO. 4 TO BE PAID FOR WITH FUNDS  
OTHER THAN D.O.T.)



SIGN NO. FTO-20  
5'-6" x 7'-0"  
2" BOR. 9" RAD.  
BLUE REFL. BACKGROUND  
WHITE REFL. LEGEND &  
BORDER

NOTE

DISTANCE MESSAGE OF 1/2 MILE MAY BE USED TO KEEP  
THIS SIGN WITHIN THE STATE LINE.

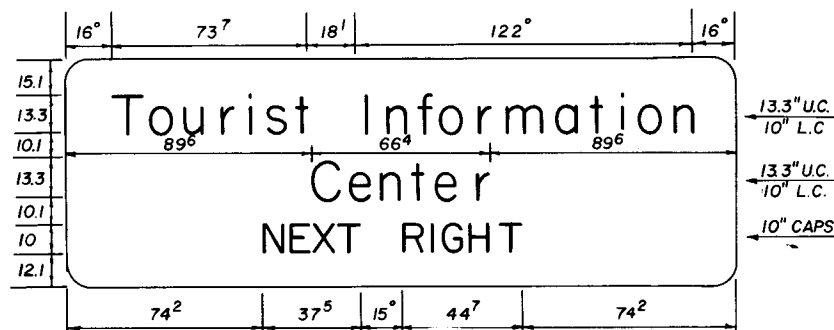


NOTES:

1. SIGNS AND SIGN STRUCTURES SHALL BE ERECTED IN ACCORDANCE WITH THE DETAILS SHOWN ON INDEX 9535.
2. SIGN NO. 4 SHALL BE LOCATED ON THE WELCOME CENTER GROUNDS IN PROXIMITY TO THE BUILDING AND AS FAR FROM THE MAIN LINE ROADWAYS AS POSSIBLE (2 SIGNS BACK TO BACK).
3. SIGN NO. 1, 2, 3 SHALL BE LOCATED ON LIMITED ACCESS HIGHWAYS ONLY.
4. DETAIL OF FLORIDA SYMBOL IS AVAILABLE ON REQUEST FROM TRAFFIC OPERATIONS OFFICE OF D.O.T.

NOTE:

ROADWAY NOT DRAWN TO SCALE  
DISTANCES SHOWN ARE APPROPRIATE  
FOR ADEQUATE DRIVER COMMUNICATION  
BUT MAY BE ALTERED SLIGHTLY IF FIELD  
CONDITIONS REQUIRE.



SIGN NO. FTO-21  
7'-0" x 20'-6"  
3" BOR. 9" RAD.

NOTE: SIGN SHALL HAVE BLUE REFLECTORIZED BACKGROUND WITH WHITE REFLECTORIZED  
LEGEND & BORDER. SIGN NO. 5 SHALL BE USED AS A SUPPLEMENTAL GUIDE SIGN AT  
INTERCHANGES WHICH HAVE A TOURIST INFORMATION CENTER APPROVED FOR SUCH  
SIGNING (LOCATE HALF-WAY BETWEEN NORMAL GUIDE SIGNS)

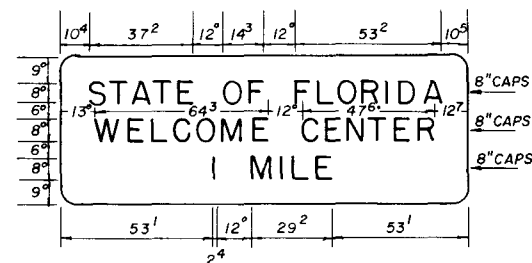
APPROVED BY F.H.W.A. 8-1-75

FLORIDA DEPARTMENT OF TRANSPORTATION  
TRAFFIC OPERATIONS

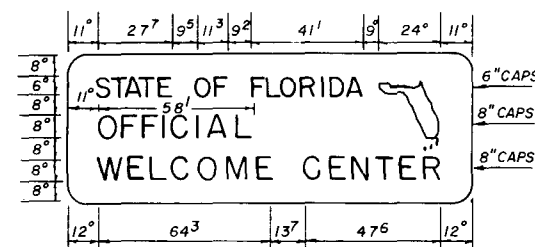
FOR LIMITED ACCESS HIGHWAYS

REVISIONS		
DATE	INITIALS	DESCRIPTION

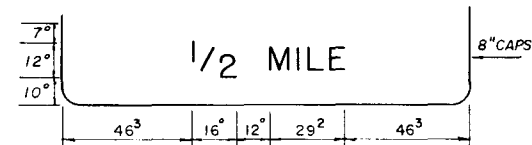
TYPICAL WELCOME CENTER SIGNING			
	INITIALS	DATES	RECOMMENDED FOR APPROVAL
DETAILED BY	W.B.	6-75	BY <i>R.E. Magaley</i> 7/6/75 DEPUTY TRAFFIC OPERATIONS ENGR
CHECKED BY			APPROVED
QUANTITIES BY			BY <i>E. J. Wenz</i> 7/6/75
CHECKED BY			STATE TRAFFIC OPERATIONS ENGR
SUPERVISED BY	K.R.	6-75	DRAWING NO. 1 OF 2 INDEX NO. 17351



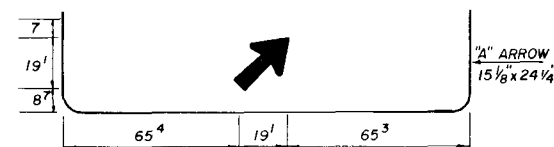
SIGN NO. FTO-22A  
4'-6" x 12'-6"  
2" BOR.-9" RAD.  
BLUE REFL. BACKGROUND  
WHITE REFL. LEGEND & BORDER



SIGN NO. FTO-23  
4'-6" x 12'-6"  
2" BOR.-9" RAD.  
BLUE REFL. BACKGROUND  
WHITE REFL. LEGEND & BORDER  
ORANGE REFL. STATE SILHOUETTE  
(SIGN NO. 4 TO BE PAID FOR WITH FUNDS  
OTHER THAN D.O.T.)



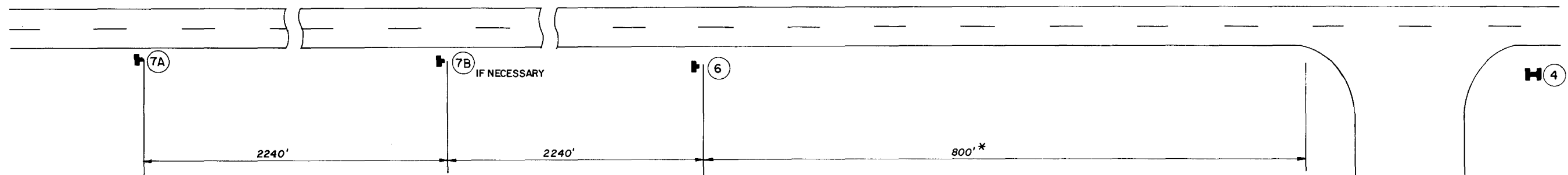
SIGN NO. FTO-22B  
5'-0" x 12'-6"  
2" BOR.-9" RAD.



SIGN NO. FTO-24  
5'-6" x 12'-6"  
2" BOR.-9" RAD.

NOTES

- (1) SIGNS AND SIGN STRUCTURES SHALL BE ERECTED IN ACCORDANCE WITH THE DETAILS SHOWN ON INDEX 9535.
- (2) SIGN NO. 4 SHALL BE LOCATED ON THE WELCOME CENTER GROUNDS IN PROXIMITY TO THE BUILDING AND AS FAR FROM THE MAIN LINE ROADWAYS AS POSSIBLE (2 SIGNS BACK TO BACK)
- (3) DETAIL OF FLORIDA SYMBOL IS AVAILABLE ON REQUEST FROM TRAFFIC OPERATIONS OFFICE OF D.O.T.



NOTE  
ROADWAY NOT DRAWN TO SCALE

\* 800' MAXIMUM FOR RURAL CONDITIONS  
50' MINIMUM FOR CONGESTED AREAS

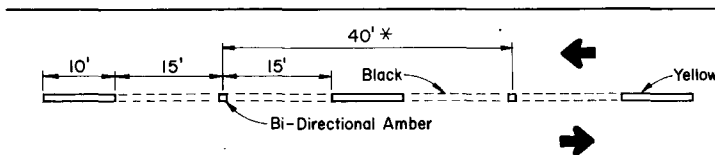
NOTE  
EITHER ONE BUT NOT BOTH OF SIGNS 7A OR 7B  
SHOULD BE USED DEPENDING ON SPEED, ROADSIDE  
DEVELOPMENT & GEOMETRIC CONDITIONS.

APPROVED BY FHWA 11-16-78  
FOR PRIMARY HIGHWAYS

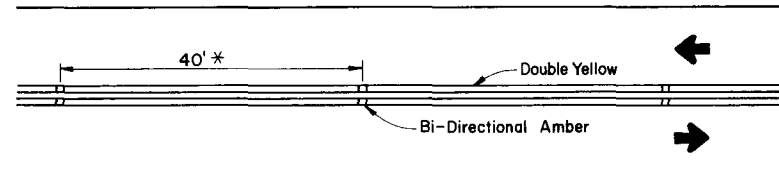
FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS			
TYPICAL WELCOME CENTER SIGNING			
DATE	INITIALS	DATES	RECOMMENDED FOR APPROVAL
DETAILED BY	W.B.	6-75	BY <i>R.E. Magadan</i> 7/6/75 DEPUTY TRAFFIC OPERATIONS ENGR.
CHECKED BY			APPROVED
QUANTITIES BY			BY <i>R.E. Magadan</i> 7/6/75 STATE TRAFFIC OPERATIONS ENGR.
CHECKED BY			
SUPERVISED BY	K.R.	6-75	DRAWING NO. INDEX NO. 2 OF 2 17351

REVISIONS		
DATE	INITIALS	DESCRIPTION

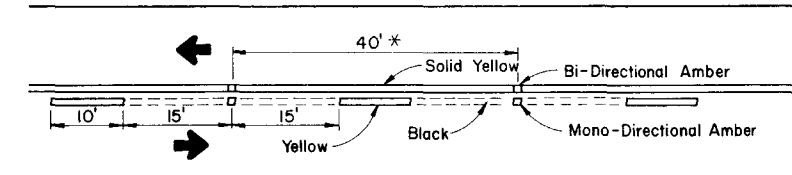
### Alternating Skip Line



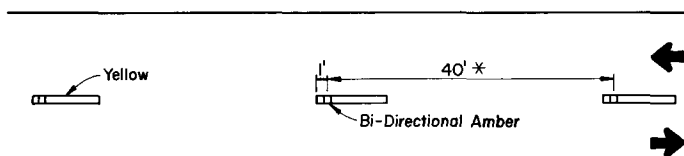
**Double Solid Line**



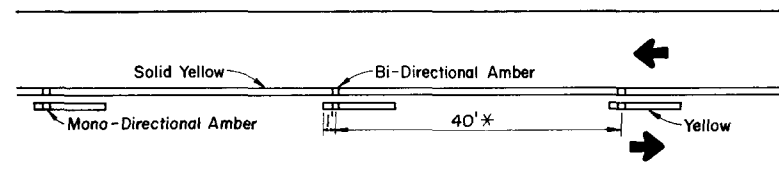
**Solid Line With Alternating Skip**



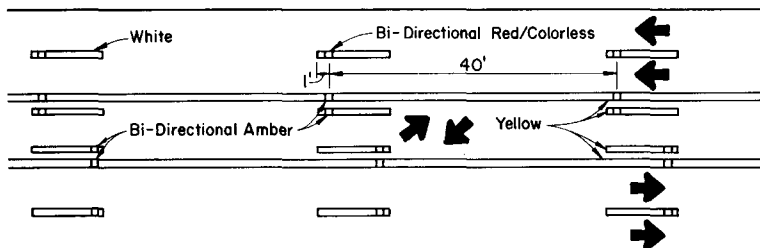
**Skip Line**



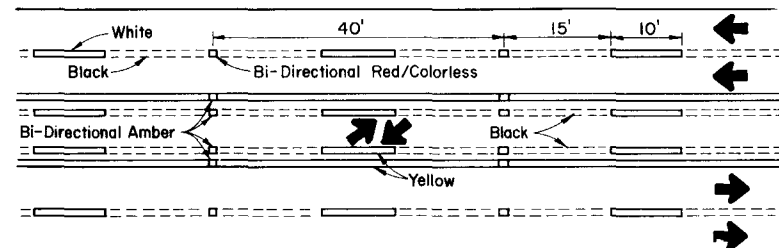
**Solid Line With Skip**



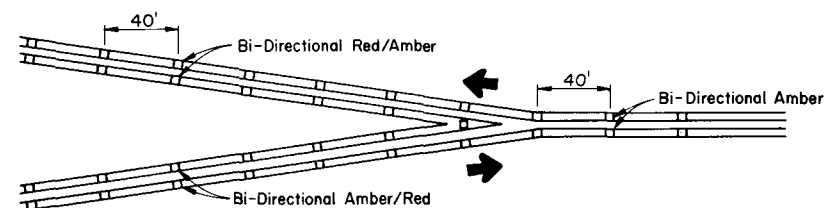
### Skip Line With Two Way Left Turn Lane



### Alternating Skip Line With Two Way Left Turn Lane



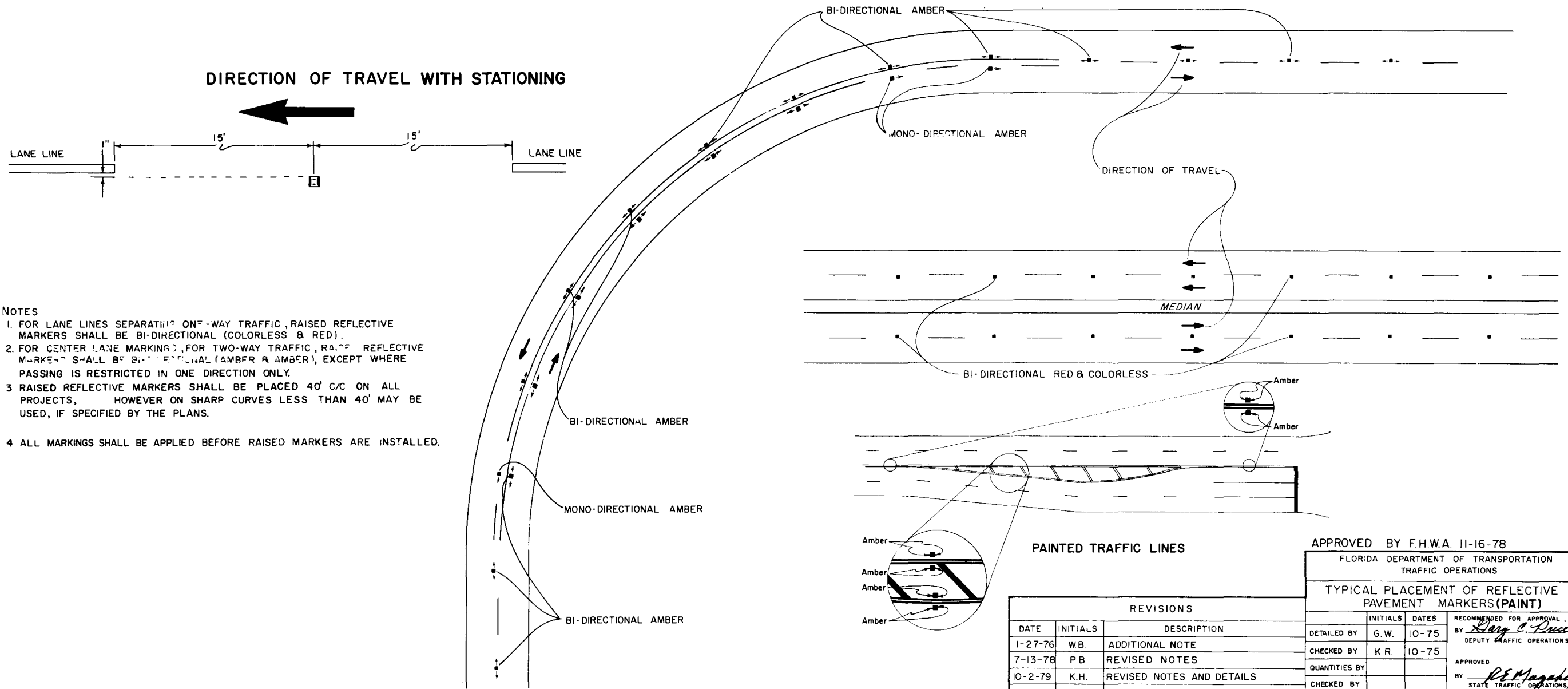
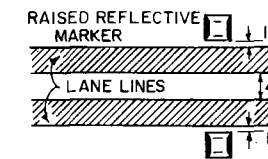
Note:  
Reflective Pavement Markers shall be placed 40' c/c on all projects, however on sharp curves less than 40' may be used, if specified by the plans.



## THERMOPLASTIC TRAFFIC LINES

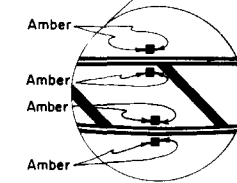
[illegible]

FLORIDA DEPARTMENT OF TRANSPORTATION			
TRAFFIC OPERATIONS			
TYPICAL PLACEMENT OF REFLECTIVE PAVEMENT MARKERS (THERMOPLASTIC)			
	INITIALS	DATES	RECOMMENDED FOR APPROVAL
DETAILED BY	K.H.	10-79	BY <u>Darryl C. Price</u> DEPUTY TRAFFIC OPERATIONS ENGR.
CHECKED BY	K.R.	10-79	APPROVED
QUANTITIES BY			BY <u>St. Magalen 10/31/79</u> STATE TRAFFIC OPERATIONS ENGR.
CHECKED BY			Drawing No. <u>17352</u> Index No.
SUPERVISED BY			1 of 2



- NOTES
1. FOR LANE LINES SEPARATING ONE-WAY TRAFFIC, RAISED REFLECTIVE MARKERS SHALL BE BI-DIRECTIONAL (COLORLESS & RED).
  2. FOR CENTER LANE MARKINGS, FOR TWO-WAY TRAFFIC, RAISED REFLECTIVE MARKERS SHALL BE BI-DIRECTIONAL (AMBER & AMBER), EXCEPT WHERE PASSING IS RESTRICTED IN ONE DIRECTION ONLY.
  3. RAISED REFLECTIVE MARKERS SHALL BE PLACED 40' C/C ON ALL PROJECTS, HOWEVER ON SHARP CURVES LESS THAN 40' MAY BE USED, IF SPECIFIED BY THE PLANS.
  4. ALL MARKINGS SHALL BE APPLIED BEFORE RAISED MARKERS ARE INSTALLED.

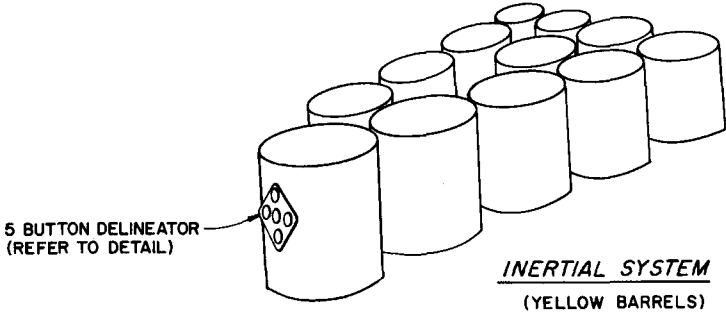
#### PAINTED TRAFFIC LINES



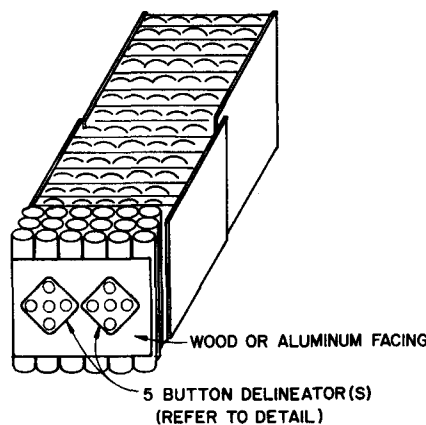
REVISIONS		
DATE	INITIALS	DESCRIPTION
1-27-76	WB.	ADDITIONAL NOTE
7-13-78	P.B.	REVISED NOTES
10-2-79	K.H.	REVISED NOTES AND DETAILS

APPROVED BY F.H.W.A. 11-16-78

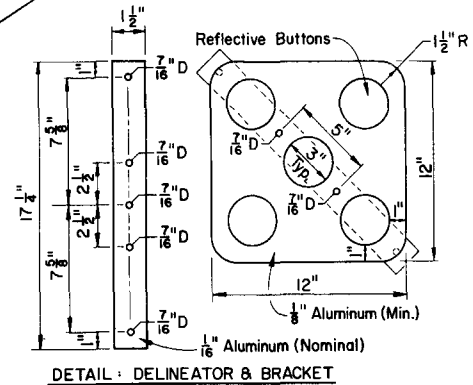
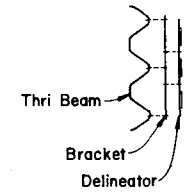
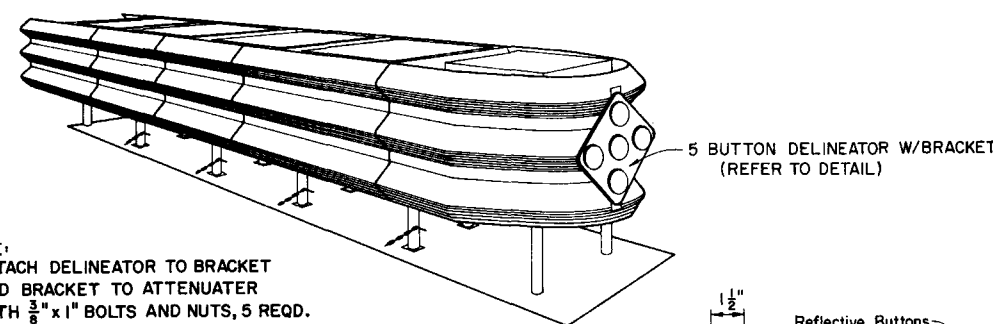
FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS		
TYPICAL PLACEMENT OF REFLECTIVE PAVEMENT MARKERS (PAINT)		
INITIALS	DATES	RECOMMENDED FOR APPROVAL
DETAILED BY G.W.	10-75	BY <i>Dary C. Price</i> DEPUTY TRAFFIC OPERATIONS ENGR.
CHECKED BY K.R.	10-75	APPROVED BY <i>P.E. Magady</i> 10/11/75 STATE TRAFFIC OPERATIONS ENGR.
QUANTITIES BY		
CHECKED BY		
SUPERVISED BY K.R.	10-75	DRAWING NO. 2 of 2 INDEX NO. 17352



NOTES:  
1. DELINEATOR(S) SHALL BE ATTACHED TO SUITABLE WOOD OR ALUMINUM FACING WHICH IS FIRMLY ATTACHED TO THE ATTENUATOR.  
2. USE SINGLE DELINEATOR WHEN FACING IS LESS THAN 30" WIDE. USE DOUBLE DELINEATORS WHEN FACING IS GREATER THAN 30" WIDE.



NOTE:  
ATTACH DELINEATOR TO BRACKET AND BRACKET TO ATTENUATOR WITH  $\frac{3}{8}$ " x 1" BOLTS AND NUTS, 5 REQD.



APPROVED BY F.H.W.A. 11-16-78

FLORIDA DEPARTMENT OF TRANSPORTATION  
TRAFFIC OPERATIONS

MARKINGS FOR  
ATTENUATION SYSTEMS

REVISIONS		
DATE	INITIALS	DESCRIPTIONS
7-14-78	P.B.	REVISED TITLE BLOCK
10-15-79	K.H.	CELLULAR CONCRETE & STEEL DRUM DELETED, G-R-E-A-T UNIT AND DETAIL ADDED

INITIALS	DATES	RECOMMENDED FOR APPROVAL
DETAILED BY		BY
CHECKED BY		DEPUTY TRAFFIC OPERATIONS ENGR.
QUANTITIES BY		APPROVED
CHECKED BY		BY
SUPERVISED BY		STATE TRAFFIC OPERATIONS ENGR.
		Drawing No. Index No.
		1 of 1 17353







FTO-26

- Notes:
1. All letters are 1.5" Series "C".
  2. Top sign shall have a reflectorized blue background with white reflectorized legend & border.
  3. Bottom sign shall have a reflectorized white background with black opaque legend & border.

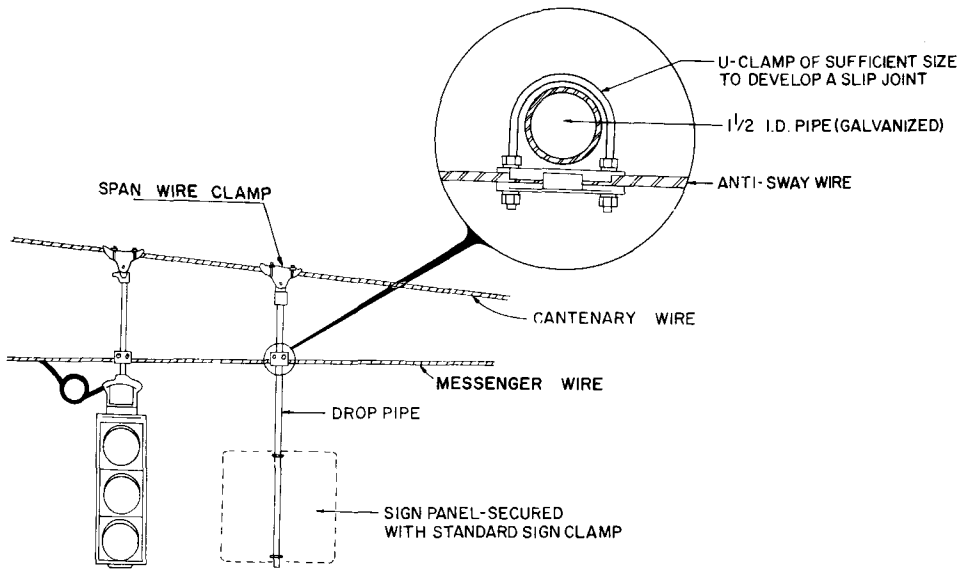


FTO-25

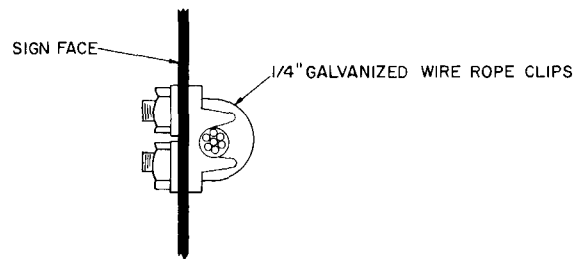
- Notes:
1. All letters are 1" Series "C".
  2. Top portion of sign shall have a reflectorized blue background with white reflectorized legend & border.
  3. Bottom portion of sign shall have a reflectorized white background with black opaque legend & border.

FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS				
SPECIAL SIGN DETAIL				
	INITIALS	DATES	RECOMMENDED FOR APPROVAL	
DETAILED BY	K.H.	10-79	BY <i>Darryl C. Davis</i> DEPUTY TRAFFIC OPERATIONS ENGR.	
CHECKED BY	K.R.	10-79	APPROVED	
QUANTITIES BY			BY <i>PL Magallon</i> STATE TRAFFIC OPERATIONS ENGR.	
CHECKED BY			Drawing No. Index No.	
SUPERVISED BY			2 of 2	17355

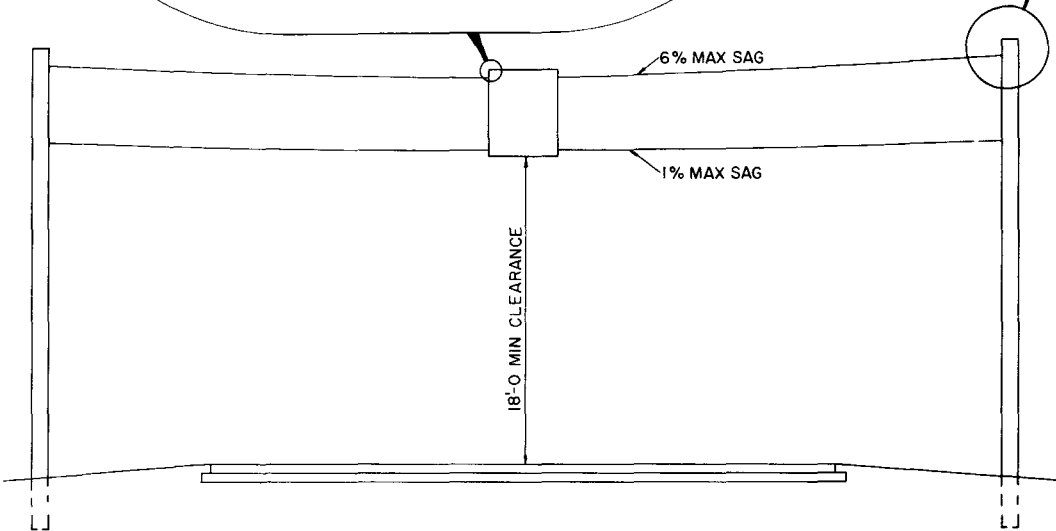
REVISIONS		
DATE	INITIALS	DESCRIPTIONS



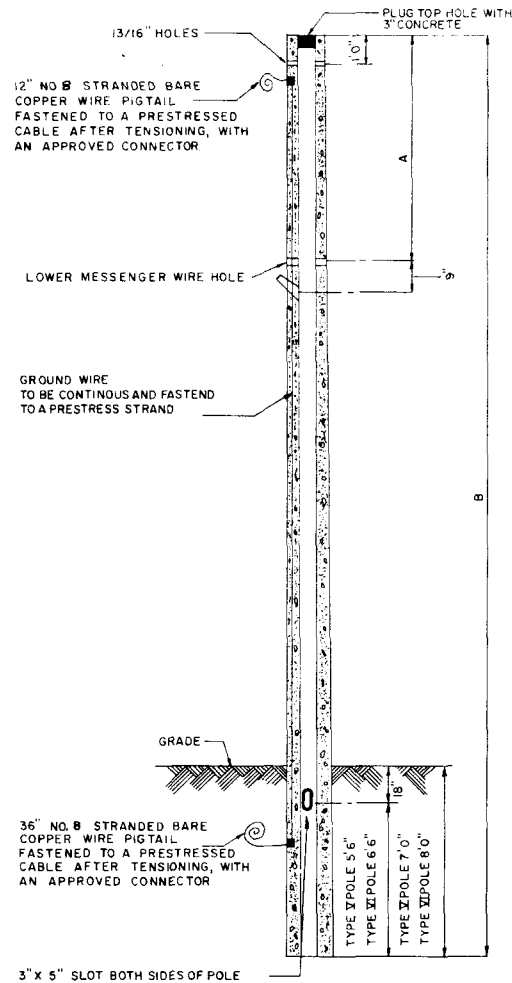
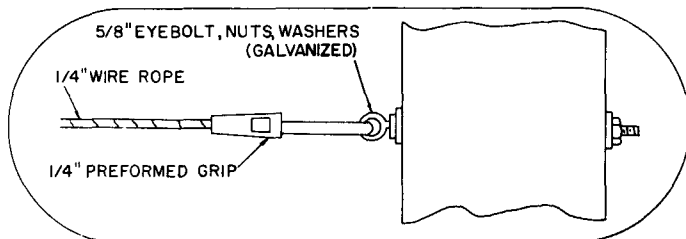
TYPICAL INSTALLATION/SIGN PANEL TO DOUBLE SIGNAL SPAN WIRE



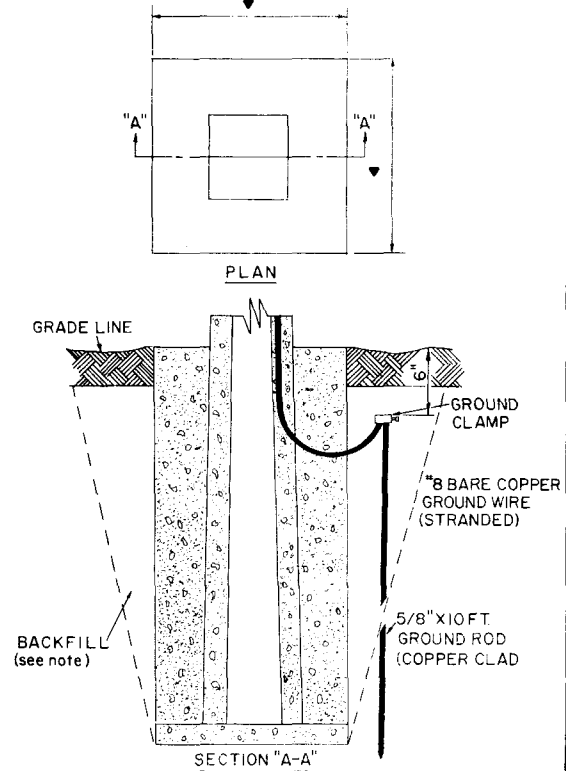
SIGN CLAMP DETAIL



TYPICAL SPAN WIRE INSTALLATION



CONCRETE POLE DETAIL



- ▼ TYPE V POLE - 3'
- ▼ TYPE VI POLE - 3.5'
- ▼ TYPE VII POLE - 3.5'

FOUNDATION DETAIL

#### FOUNDATION NOTE:

##### EXCAVATION & BACKFILL:

EXCAVATION AND BACKFILL FOR THE FOOTINGS SHALL BE IN ACCORDANCE WITH ARTICLES 125-4 AND 125-8.2 WITH THE EXCEPTION OF THE BACKFILL IN LIEU OF THE REQUIREMENTS FOR OBTAINING THE SPECIFIED DENSITY, MAY BE HAND TAMPED IN FOUR INCH MAXIMUM LAYERS OR MACHINE TAMPED IN SIX INCH MAXIMUM LAYERS. THE MATERIAL SHOULD BE NEITHER DRY NOR SATURATED. AT THE CONTRACTOR'S OPTION BACKFILLING MAY BE DONE WITH POURED CONCRETE.

##### CONCRETE:

FOOTING TO BE POURED WITH CLASS "I" CONCRETE (SECTION 345).

##### FORMS:

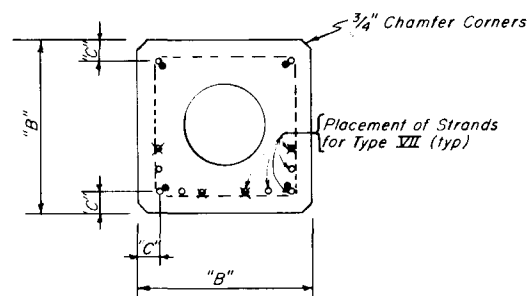
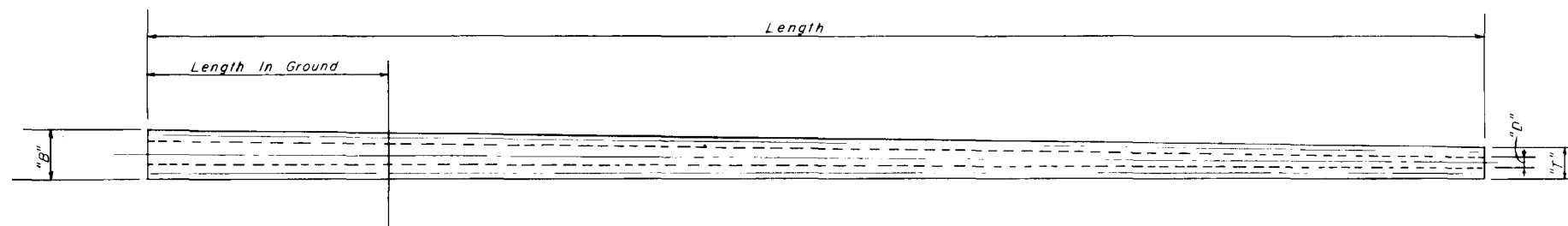
SHALL BE IN ACCORDANCE WITH ARTICLE 700-8.3 (IF THE FOOTING IS POURED IN AN OVERSIZE HOLE, THE CONCRETE IN THE TOP SIX INCHES SHALL BE PLACED IN A FORM. ALL EXPOSED SURFACES SHALL BE TROWELED TO A SMOOTH FINISH).

APPROVED BY FHWA 11-16-78

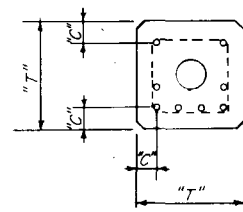
FLORIDA DEPARTMENT OF TRANSPORTATION  
Traffic Operations

#### SPAN WIRE MOUNTING DETAILS

REVISIONS		INITIALS	DATES	Recommended for approval by
Dates	Descriptions			
		Detailed by	T.L.	12-14-76
		Checked by	K.R.	12-14-76
		Quantities by		
		Checked by		
		Supervised by	K.R.	
				Approved by
				State Traffic Operations Engr.
				DRAWING NO. INDEX NO.
				1 OF 1 17356

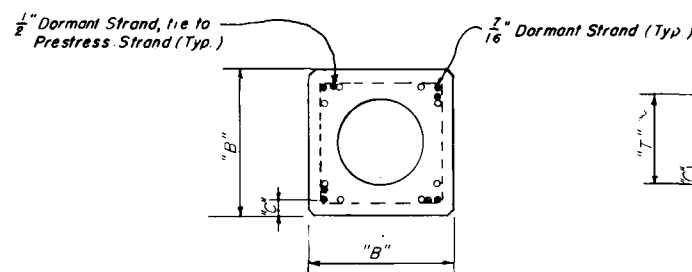


SECTION AT BOTTOM

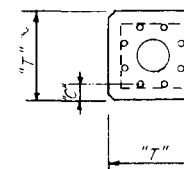


SECTION AT TOP

TYPICAL SECTION FOR TYPE V, VI and VII  
(STRANDS ECCENTRICALLY PLACED)

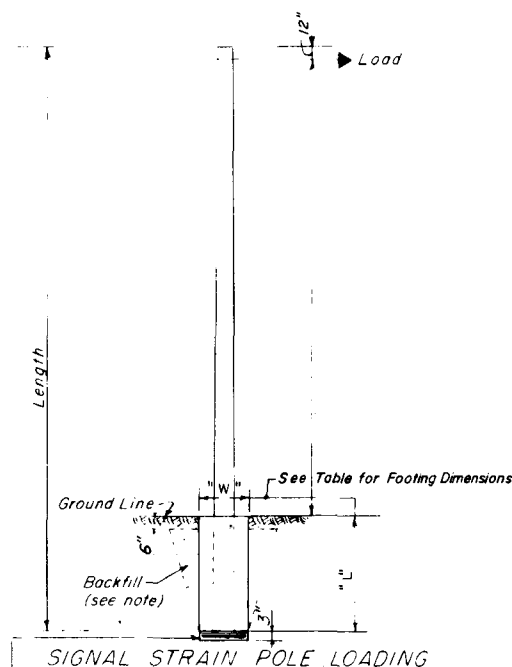


SECTION AT BOTTOM



SECTION AT TOP

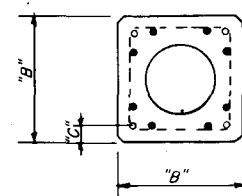
TYPICAL SECTION FOR TYPE IV  
(STRANDS SYMMETRICALLY PLACED)



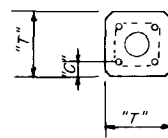
SIGNAL STRAIN POLE LOADING

At The Option of The Contractor a 3" Precast Leveling Pad may be Used.

TYPE	DESIGNATION	SIZE AT TOP "T"	SIZE AT BOTTOM "B"	OUTSIDE POLE TAPER	HOLE DIA. "D" AT TOP	MANDREL DETAIL	STRAND TAPER "C"	NO. OF STRANDS	SIZE * and TYPE STRAND	LOAD WITH NO CRACKING	MINIMUM ULTIMATE LOAD CAPACITY	APPLICATION OF LOAD	f <sub>c</sub>	f <sub>c</sub>	FOOTING DIMENSIONS "W" x "L"	SHIELDING (From Top)	SHEAR REINFORCING (From Bottom)	DORMANT STRANDS
SIGNAL STRAIN POLES	VII	14" Sq.	Size at Top + (Lg. x Taper)	.16"/Ft.	2.87" Ø (Per Mandrel Detail)	Per Pres. MFG	Min. Cover 1" of Conc.	12	1/2" Ø Strands 270 K	7000 #	10,000 ± # (Min.)	12 Inches From Top	6000psi	4000psi	3'x3'x9.0'	Shield 2 at 10' Shield 2 at 26'	3 Wire @ 3" @ 9' up 5 Ga Spiral @ 6" Remainder	4 - 1/2" Ø Tie to Corner
	VI	13" Sq.	Size at Top + (Lg. x Taper)	.16"/Ft.	3" ± Ø (Per Mandrel Detail)	Per Pres. MFG	Min. Cover 1" of Conc.	8	1/2" Ø Strands 250 K	5000 #	7500 ± # (Min.)	12 Inches From Top	6000psi	4000psi	3'x3'x8.0'	Shield 2 at 12'	3 Wire @ 3" @ 9' up 5 Ga Spiral @ 6" Remainder	4 - 1/2" Ø Tie to Corner
	V	10" Sq.	Size at Top + (Lg. x Taper)	.16"/Ft.	2.87" ± Ø (Per Mandrel Detail)	Per Pres. MFG	Min. Cover 1" of Conc.	8	1/2" Ø Strands 250 K	3500 #	6000 ± # (Min.)	12 Inches From Top	6000psi	4000psi	3'x3'x7.0'	Shield 2 at 6' Shield 2 at 2'	3 Wire @ 3" @ 10' up 5 Ga Spiral @ 6" Remainder	4 - 1/2" Ø Tie to Corner
	IV	8.25" Sq.	Size at Top + (Lg. x Taper)	.16"/Ft.	3" ± Ø (Per Mandrel Detail)	Per Pres. MFG	Min. Cover 1" of Conc.	8	1/2" Ø ASTM 250 K	1850 #	3000 ± # (Min.)	12 Inches From Top	6000psi	4000psi	3'x3'x6.0'	Shield 2 at 6' Shield 2 at 2'	5 Ga Spiral @ 6"	4 - 7/16" Ø Ea Cor R 4 - 1/2" Ø Tie To Press
LIGHT POLES	II	6" Sq.	Size at Top + (Lg. x Taper)	.16"/Ft.	2" Ø (Per Mandrel Detail)	Per Pres. MFG	Min. Cover 1" of Conc.	4	7/16" Ø A.S.T.M. 250 K	900 #	1200 ± # (Min.)	2 Feet From Top	6000psi	4000psi	3'x3'x6.0'		9 Ga Spiral @ 6"	8 - 1/16" Ø
	III	6" Sq.	Size at Top + (Lg. x Taper)	.16"/Ft.	2" Ø (Per Mandrel Detail)	Per Pres. MFG	Min. Cover 1" of Conc.	4	1/2" Ø A.S.T.M. 250 K	1200 #	2000 ± # (Min.)	2 Feet From Top	6000psi	4000psi	3'x3'x6.0'		5 Ga. @ 9"	4 - 1/2" 15" - Long



SECTION AT BOTTOM



SECTION AT TOP

TYPICAL SECTION FOR TYPE II  
(STRANDS SYMMETRICALLY PLACED)

\* Steel strand used to prestress the Concrete shall not be tensioned above 70% of the rated ultimate strength.

#### SYMBOLS

- Placement of Prestressed Strands
- ✕ Placement of Prestressed Strands for Type VII
- Placement of Dormant Strands

#### FOOTING NOTES:

##### EXCAVATION AND BACKFILL

Excavation and Backfill for the Footings shall be in accordance with section 125-8.2 with the exception that for the Backfill, in lieu of the requirements for obtaining the specified density. The Backfill may be handtamped in four inch maximum layers or machine tamped in six inch maximum layers. The material should be neither dry nor saturated. At the Contractor's option Backfilling may be done with poured concrete.

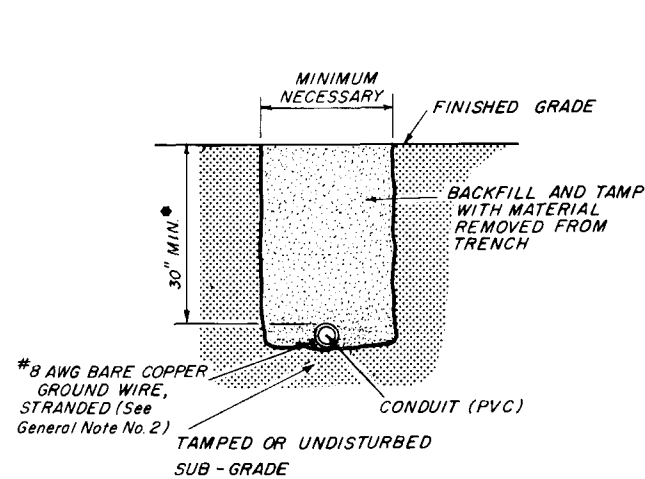
FORMS: Shall be in accordance with Article 700-8.3

#### SIGNAL STRAIN POLES & LIGHT POLE

STATE ROAD DEPARTMENT OF FLORIDA  
STRUCTURES DIVISION

PRESTRESSED CONCRETE POLES

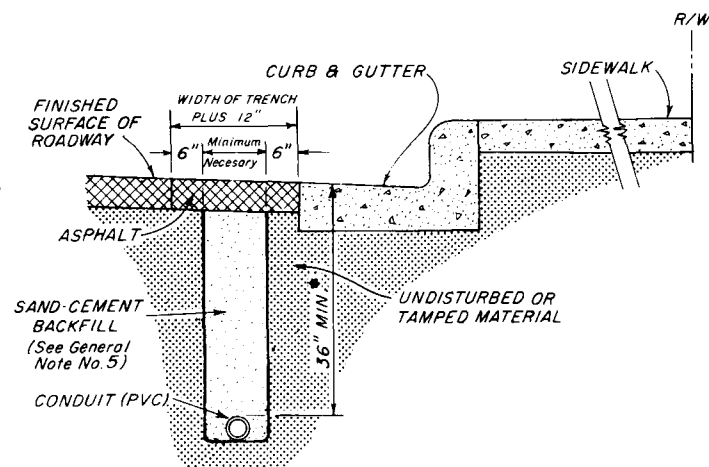
REVISIONS	ROAD NO.	COUNTY	PROJECT NO.
Dates: 10-68 Description: Revised Pole Footing 10-68 Added: Leveling Pad Option 05-69 Added: 6" Round Light Pole 02-70 Revised Footing Dimension 08-71 250K in Line 270K 03-78 Revised Light Poles	Names: C. W. B. Checked by: A. J. H.	Dates: 5-15-68 5-27-68	APPROVED BY: <i>T. O'Brien</i> Engineer of Structures Drawing No. 1 of 1 9821



**FIGURE - A**

FOR USE IN AREAS NOT EXPOSED TO VEHICULAR TRAFFIC AND UNDER DRIVEWAYS

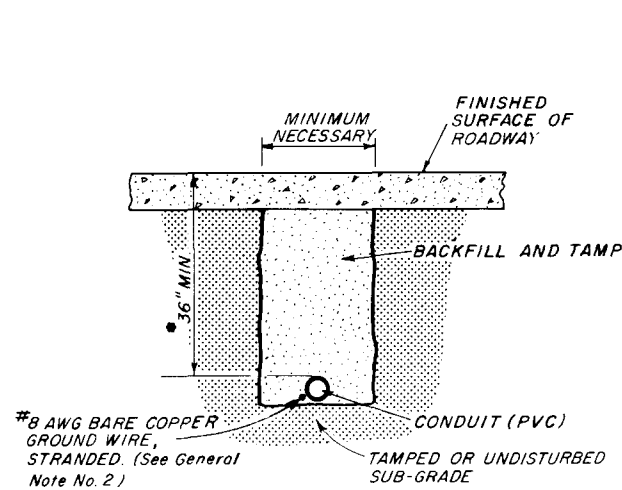
• MAY BE ADJUSTED IN FIELD DUE TO FIELD CONDITIONS UPON APPROVAL OF PROJECT ENGINEER.



**FIGURE - B**

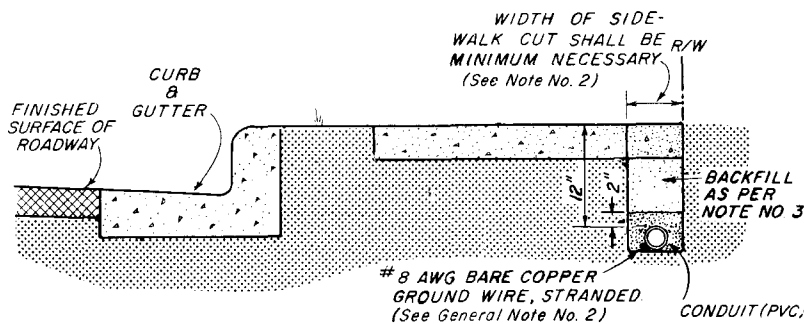
FOR USE IN ASPHALT ROADWAY ADJACENT TO GUTTER WHEN PLACEMENT OUTSIDE OF THE PAVEMENT IS NOT FEASIBLE.

- NOTE:
1. TRENCH NOT TO BE OPEN MORE THAN 250' AT A TIME WHEN CONSTRUCTION AREA IS SUBJECT TO VEHICULAR OR PEDESTRIAN TRAFFIC.
  2. ASPHALT TO BE SAWCUT AND REMOVED TO LEAVE NEAT LINES ON BOTH SIDES OF THE 12" PAVEMENT CUT.



**FIGURE - D**

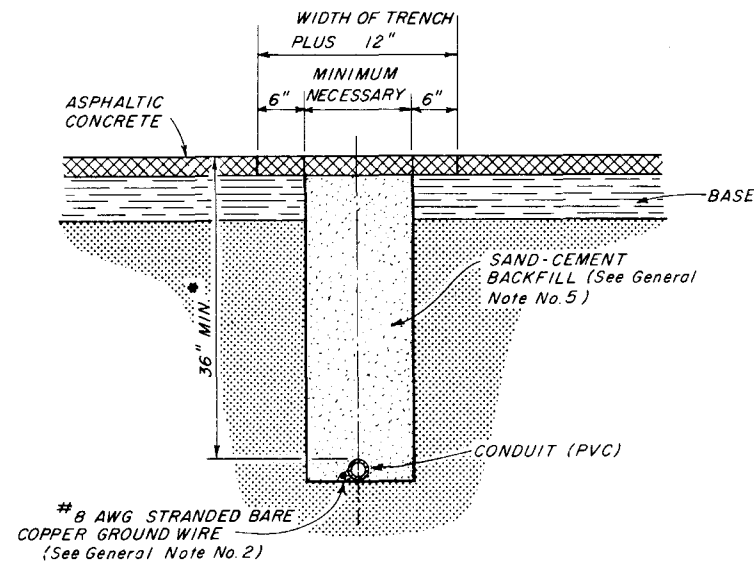
FOR USE INSTALLING CONDUIT UNDER A NEW ROADWAY PRIOR TO INSTALLATION OF CURBS, BASE AND PAVEMENT



**FIGURE - E**

FOR USE IN INSTALLING CONDUIT UNDER SIDEWALK

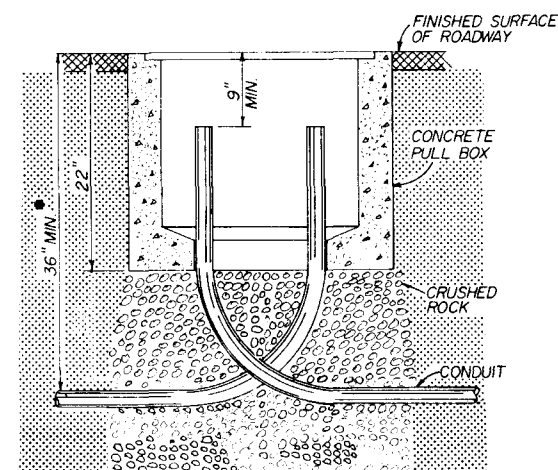
- NOTE:
1. SIDEWALK PATCHES TO MATCH EXISTING JOINTS.
  2. ENTIRE SIDEWALK SLAB MUST BE REPLACED WHEN SPECIFIED IN THE PLANS.
  3. BACKFILL AND TAMP WITH MATERIAL FROM TRENCH EXCEPT AT DRIVEWAYS. AT DRIVEWAYS, BACKFILL A LENGTH OF TRENCH WITHIN THE DRIVEWAY ENTIRELY WITH CLASS I CONCRETE.



**FIGURE - C**

FOR USE IN INSTALLING CONDUIT UNDER EXISTING ASPHALT PAVEMENT NOT ADJACENT TO GUTTER WHEN JACKING IS NOT FEASIBLE

- NOTE:
1. RIGID CONDUIT MUST BE USED WHEN JACKING UNDER EXISTING PAVEMENT AT 3 FT. MINIMUM DEPTH.
  2. ASPHALT TO BE SAWCUT AT THE EDGES OF THE TRENCH.



**FIGURE - F**

CONDUIT ENTRY IN TRAFFIC TYPE PULL BOX

REVISIONS				INITIALS				DATES		Recommended for approval	
DATE	INITIALS	DESCRIPTION		Designed by	CG	2-26-75		by Larry C. Price		Deputy Traffic Operations Eng.	
4-6-76	CG	ADDITION TO GENERAL NOTE NO. 6 NOTE NO. 3 OF FIGURE E REVISED		Checked by	RK	2-26-75		Approved 10/1/77		Approved by E. S. Magala	
6-11-76	CJ	NOTE ADDED, REVISED GENERAL NOTES 1 & 2, REVISED TITLE BLOCK		Quantities by				State Traffic Operations Eng.			
10-31-79	J.M.C.	CHANGED AND REVISED NOTES 2 & 3, DELETED ITEM NO. 4 AND GROUND ROD IN PULL BOX		Checked by							
				Supervised by	RVK			DRAWING NO.		INDEX NO.	
								1 OF 2		17721	

**GENERAL NOTES**

1. A NO. 12 AWG PULL WIRE SHALL BE INSTALLED IN ALL CONDUITS WHICH ARE PROVIDED FOR FUTURE USE. AT LEAST 2 FT. OF PULL WIRE SHALL BE ACCESSIBLE AT EACH CONDUIT TERMINATION.
2. THE BARE COPPER GROUND WIRE IS REQUIRED WITHIN EACH INTERSECTION BUT IS NOT REQUIRED BETWEEN SEPARATE INTERSECTIONS.
3. RECOMMENDED STANDARD CLEARANCE BETWEEN UNDERGROUND CONTROL CABLE OR ELECTRICAL SERVICE CABLE AND ANOTHER APPROXIMATELY PARALLEL UNDERGROUND ELECTRICAL SERVICE CABLE IS FOUR (4) FEET.
4. WHEN EARTH BACKFILL AND TAMPING IS CALLED FOR ON THESE DETAILS, IT SHALL BE ACCOMPLISHED IN APPROXIMATELY 12 INCH LAYERS WITH EACH LAYER TAMPED TO DENSITY EQUAL TO OR GREATER THAN THE ADJACENT SOIL.
5. COMMERCIALLY AVAILABLE SAND CEMENT (APPROXIMATELY 10:1 MIX RATIO) SHALL BE USED TO BACKFILL TRENCHES IN EXISTING PAVEMENT. A SUFFICIENT AMOUNT OF WATER SHOULD BE ADDED TO THE MIX TO MAKE IT FLUID SO THAT NO TAMPING OR VIBRATING IS REQUIRED (6 TO 8 INCH SLUMP SUGGESTED). ALL PAVEMENT AND SIDEWALKS SHALL BE SAWCUT WHEN TRENCHING.
7. RIGID CONDUIT USED WHEN JACKING SHOULD BE LEFT AS A SLEEVE FOR PVC CONDUIT.

APPROVED BY FHWA, APRIL 15, 1975

FLORIDA DEPARTMENT OF TRANSPORTATION  
TRAFFIC OPERATIONS

CONDUIT INSTALLATION DETAILS

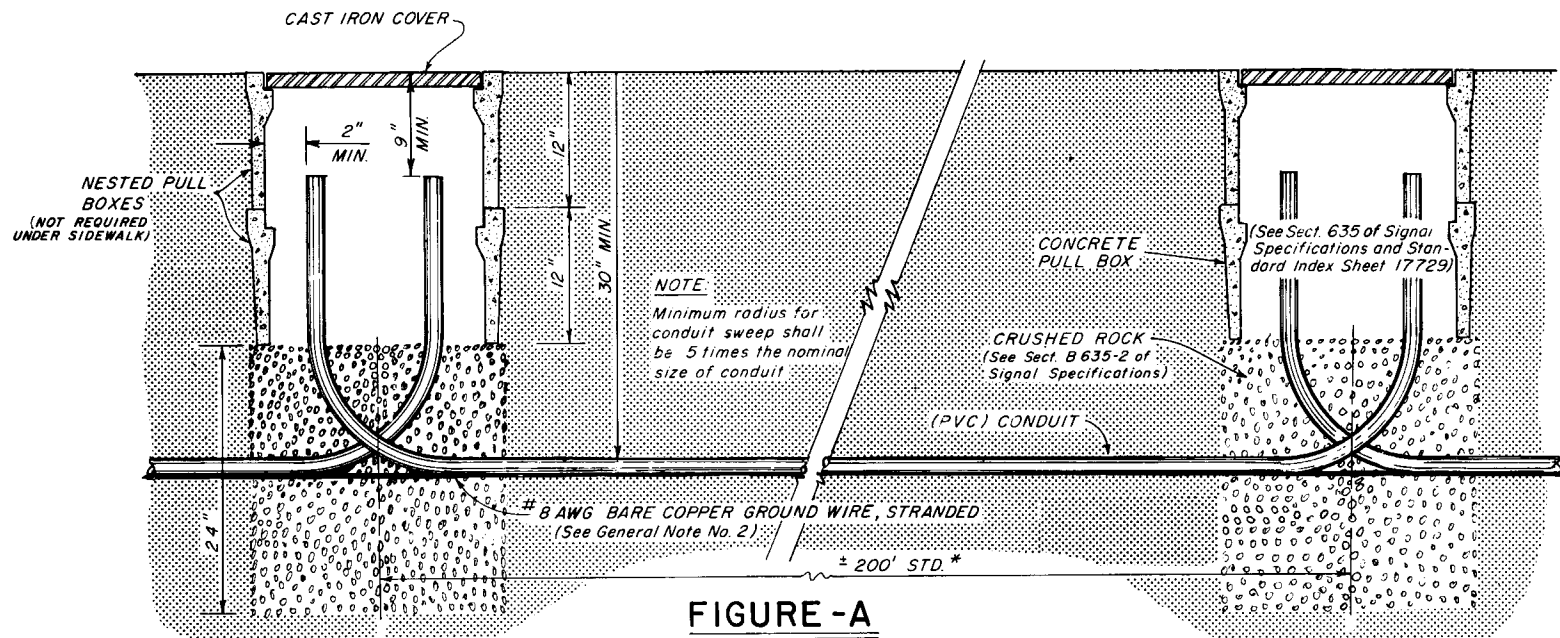


FIGURE - A

PULL BOX SPACING, CONDUIT ENTRY AND GROUNDING DETAIL

\* PULL BOX SPACING SHOULD BE ADJUSTED IN THE FIELD TO AVOID PLACING BOXES IN DRIVEWAYS OR CROSS STREETS.

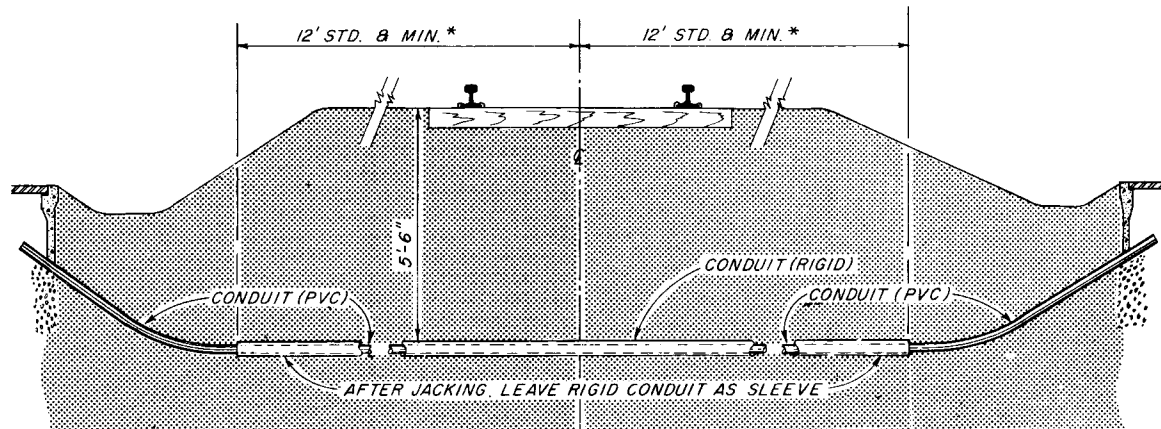


FIGURE - B

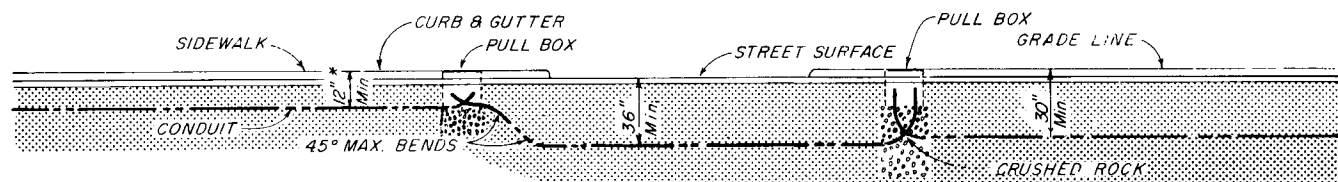
FOR USE UNDER RAILROADS

NOTE:

1. PVC CONDUIT TO CONTAIN 6 AWG INSULATED COPPER GROUND WIRE (TW)
2. A PULL BOX IS REQUIRED ON EACH SIDE OF THE RAILROAD, 12' TO 30' FROM THE OUTSIDE TRACK.



PLAN



SECTION

\* SEE FIGURE "A" OR FIGURE "E", SHEET 1, FOR MINIMUM DEPTH UNDER SIDEWALKS OR OTHER AREAS NOT EXPOSED TO VEHICULAR TRAFFIC.

NOTE:  
ONE RUN OF CONDUIT (BETWEEN PULL BOXES) SHALL NOT CONTAIN MORE THAN 360° OF BEND INCLUDING PULL BOX BENDS.

UNDER SIDEWALK

UNDER ROADWAY

UNDER NON TRAFFIC BEARING SURFACE

FIGURE - C

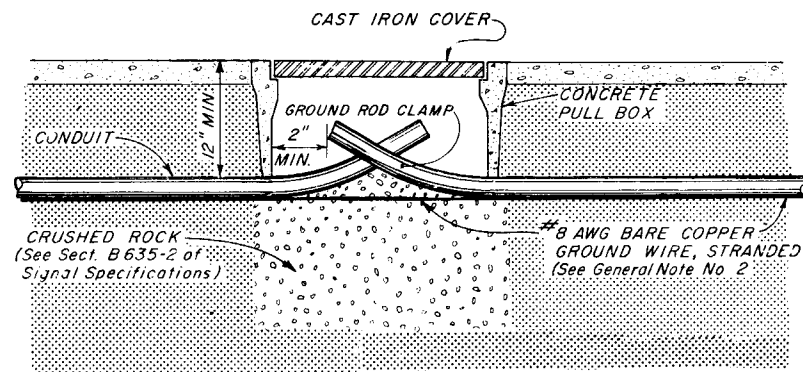


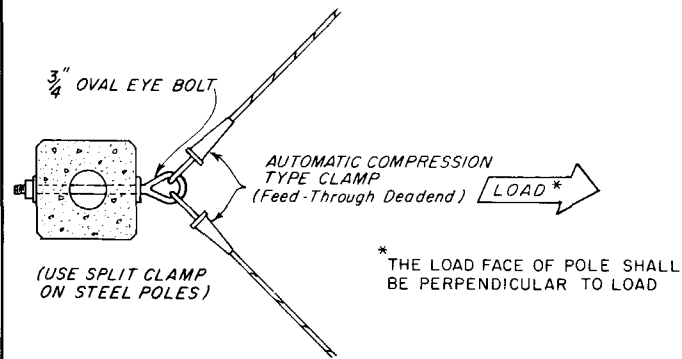
FIGURE - D

PULL BOX ENTRY OF CONDUIT UNDER SIDEWALKS

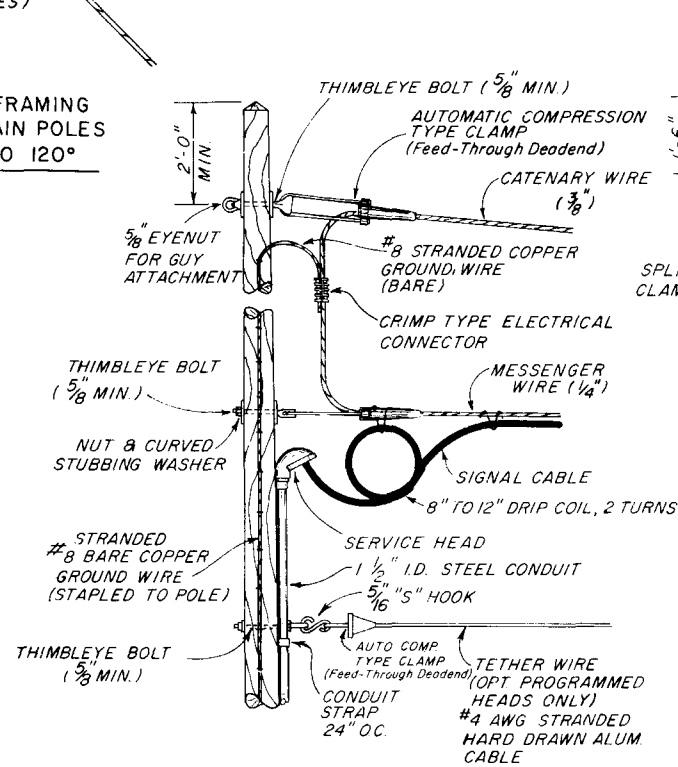
APPROVED BY FHWA, APRIL 15, 1975			
FLORIDA DEPARTMENT OF TRANSPORTATION			
TRAFFIC OPERATIONS			
CONDUIT INSTALLATION DETAILS			
REVISIONS		INITIALS	DATES
DATE	INITIALS	DESCRIPTION	
8-11-76	CJ	ADDED PAY ITEM NUMBERS TO FIGURE C, REVISED TITLE BLOCK	Designed by CG 2-26-75
10-31-79	J.M.C.	DELETED GROUND ROD IN PULL BOX	Checked by RK 2-26-75
			Quantities by
			Checked by
			Supervised by
		R.V.K.	Recommended for approval by Gary C. Price, Deputy Traffic Operations Eng.
			Approved by 10/31/79, State Traffic Operations Eng.
		DRAWING NO.	INDEX NO.
		2 OF 2	17721

NOTE

1. DISTANCE BETWEEN CATENARY WIRE AND MESSENGER WIRE ATTACHMENT LOCATION ON POLE IS 6% BUT NOT LESS THAN 5% OF SPAN, PLUS 1 FT.
2. METAL COLLARS MAY BE USED INSTEAD OF EYEBOLTS WHEN ATTACHING SPAN WIRES TO CONCRETE STRAIN POLES.
3. EVERY POLE SHALL BE A GROUNDING POINT FOR SPAN WIRE ASSEMBLY.
4. POLE AND POLE FOUNDATION DETAILS ARE SHOWN FOR THE PURPOSE OF SHOWING GROUNDING AND CABLE ROUTINGS. REFER TO POLE SCHEDULE SHEET FOR THE SPECIFIC POLE AND POLE FOUNDATION DESIGN DETAILS.
5. TO BE INSTALLED AS PER SECTION B620-2 & B620-3 OF THE STANDARD SPECIFICATIONS.
6. THE SERVICE HEAD HOLE FOR JOINT USE POLES MAY BE DRILLED BY THE UTILITY COMPANY AT AN ANGLE OF 90° BUT NOT LESS THAN 45° TO THE FACE OF THE POLE.



METHOD OF FRAMING CORNER STRAIN POLES ANGLES 10° TO 120°



WOOD POLE

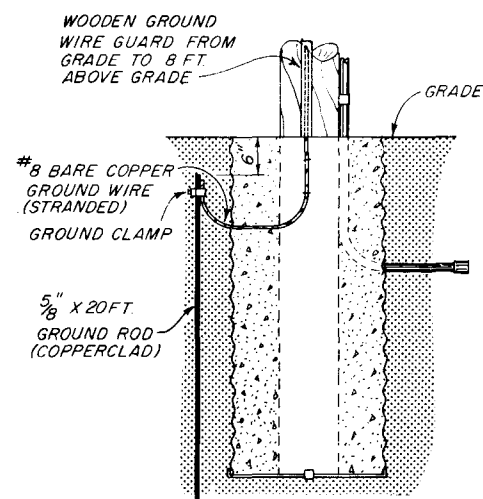
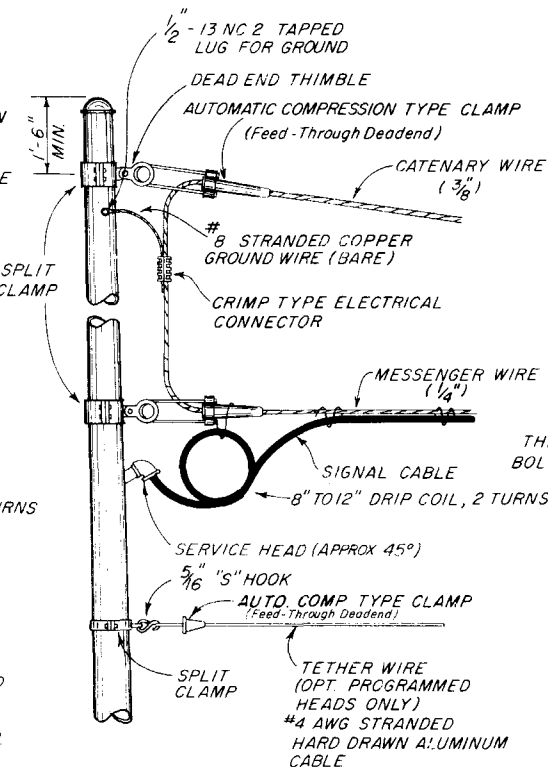


FIGURE - A



METAL POLE

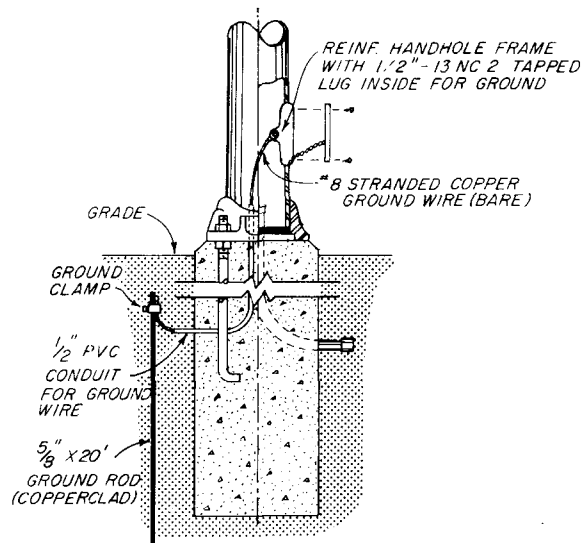
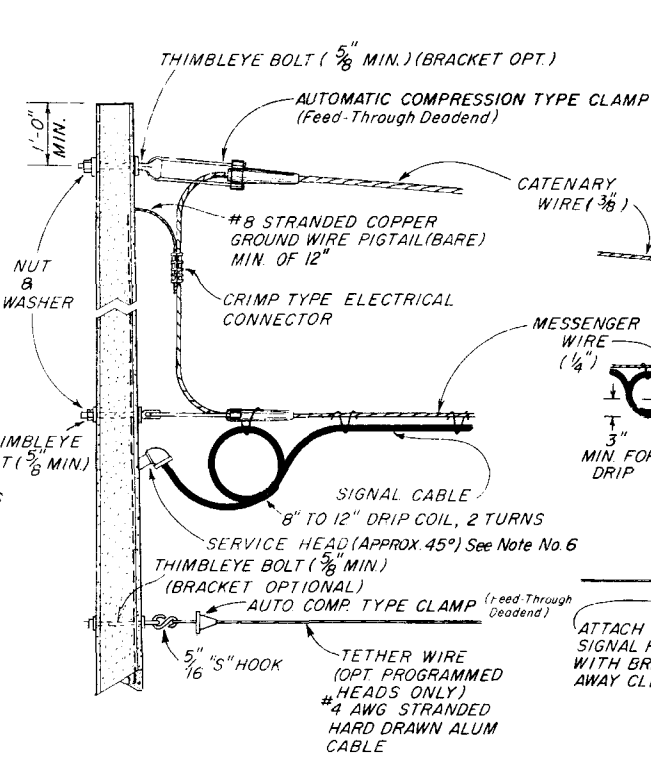


FIGURE - B



CONCRETE POLE

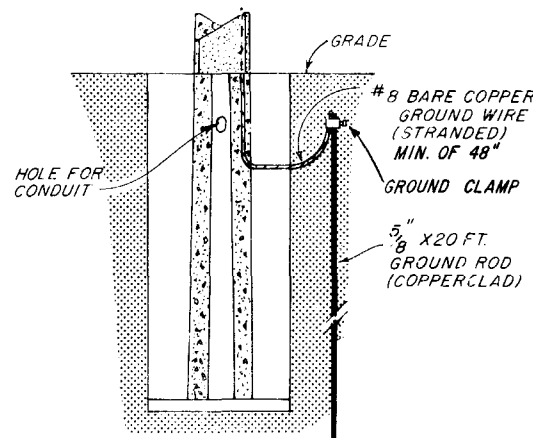


FIGURE - C

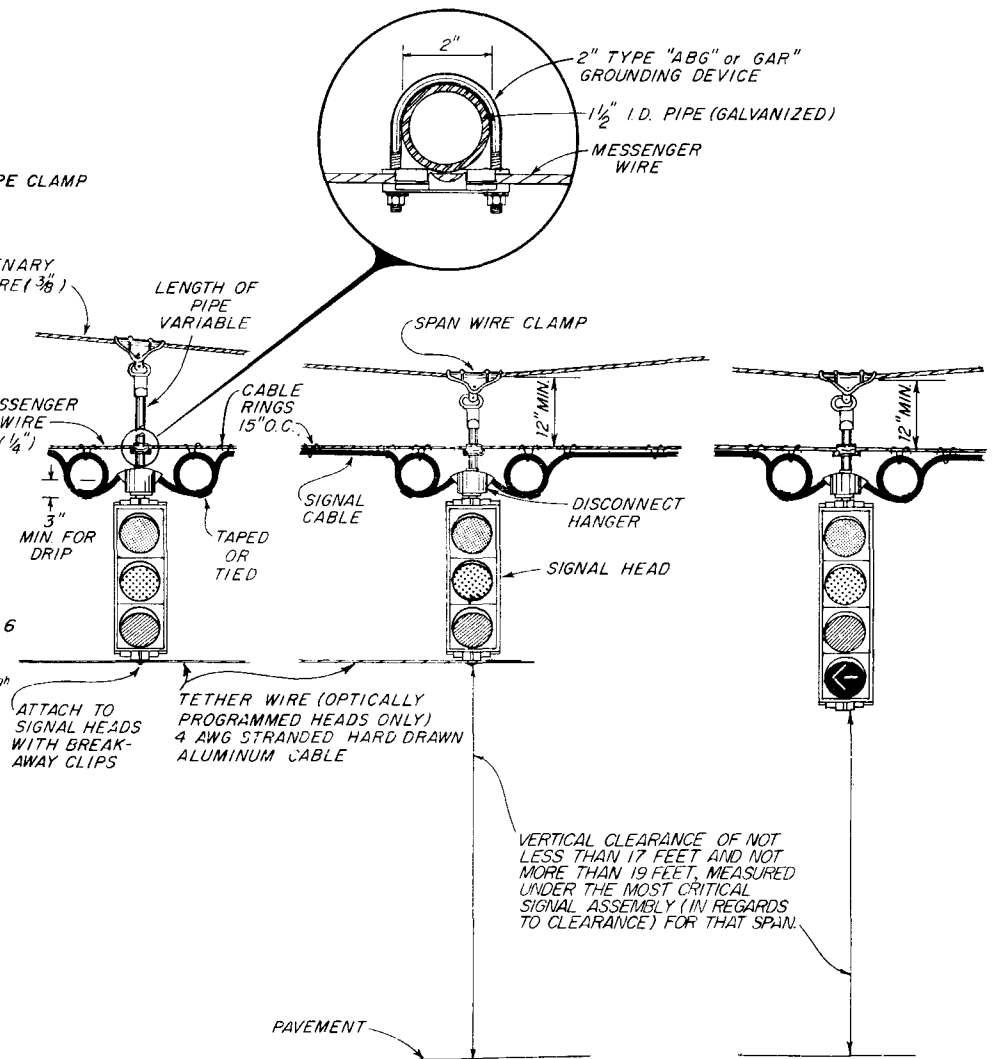
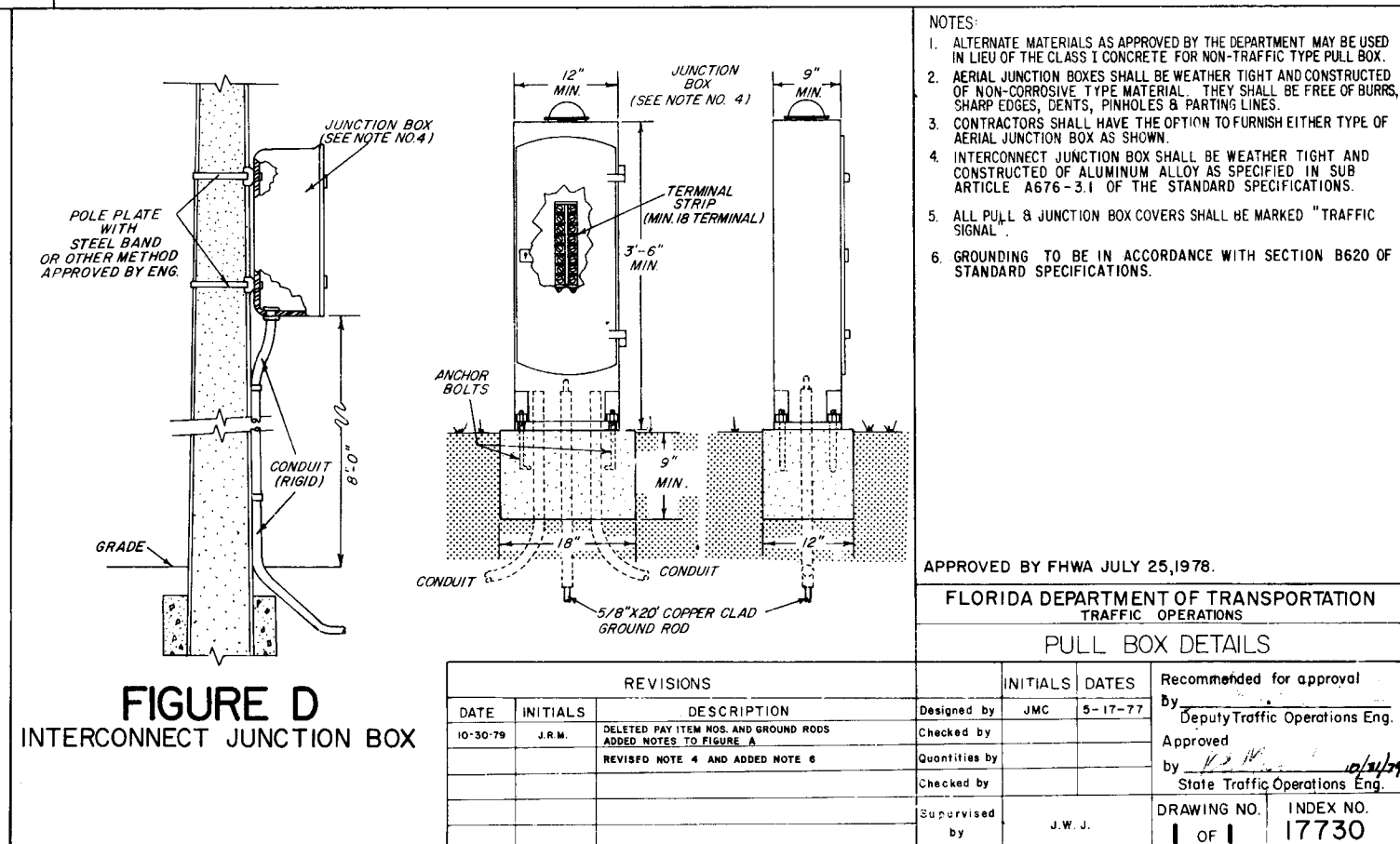
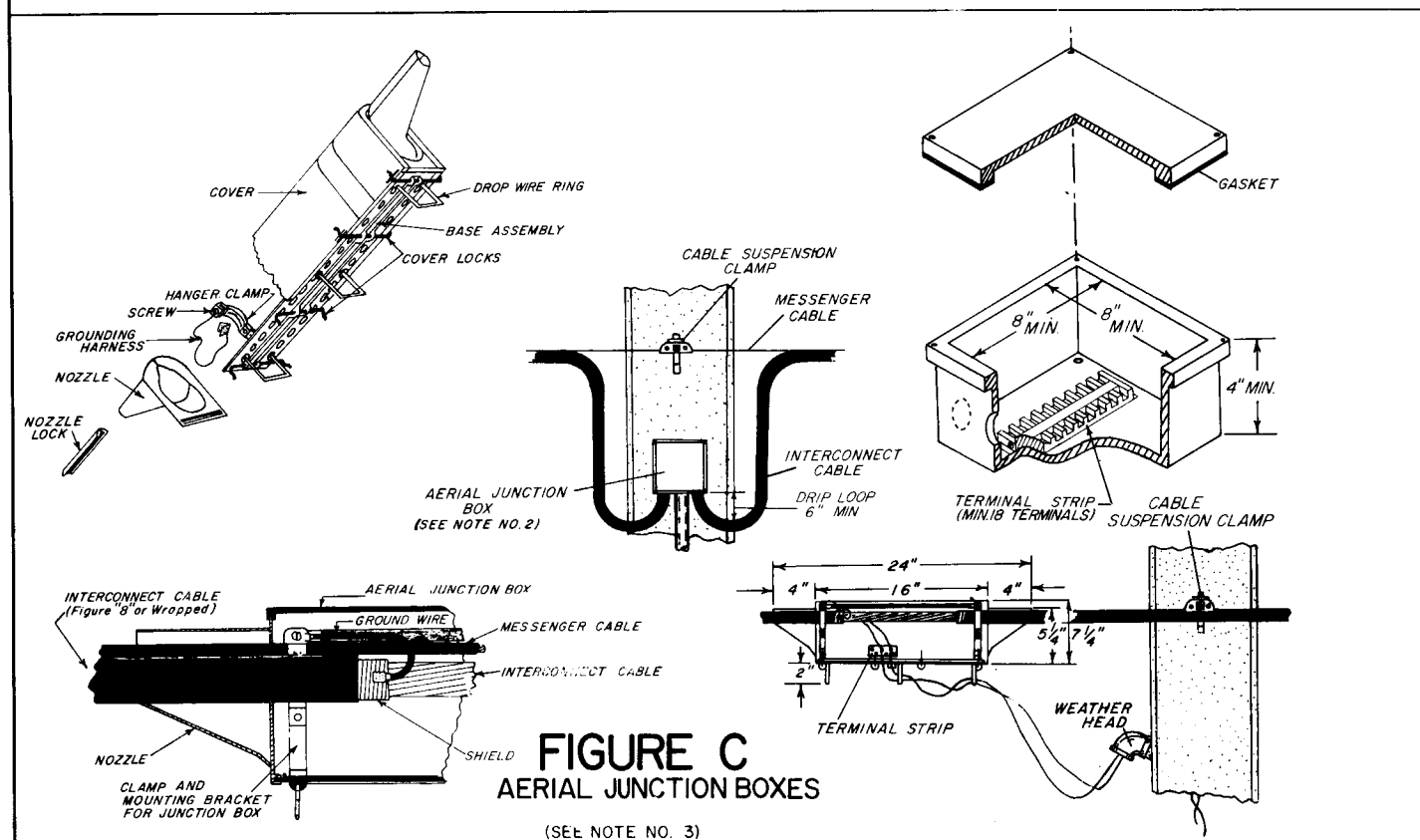
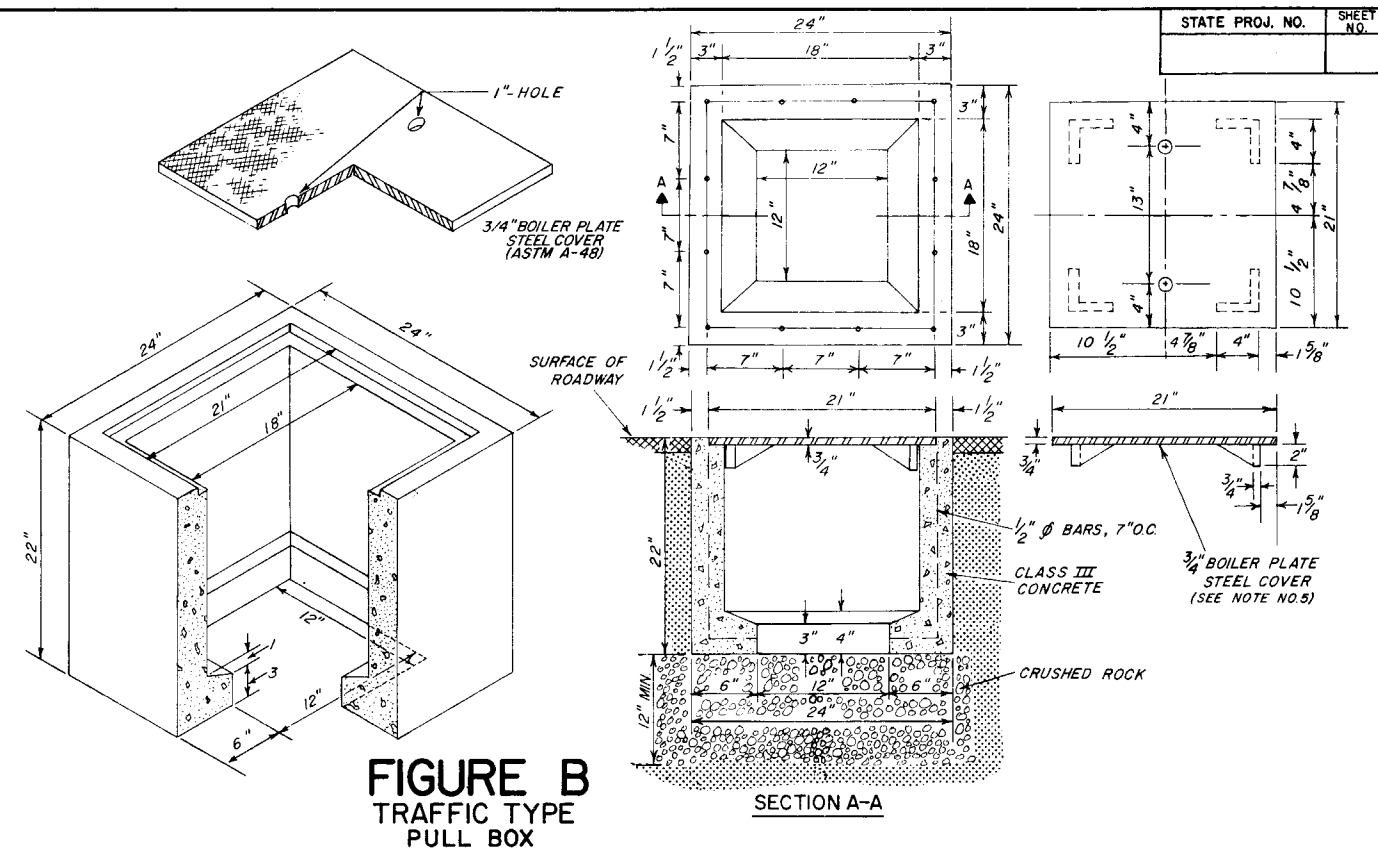
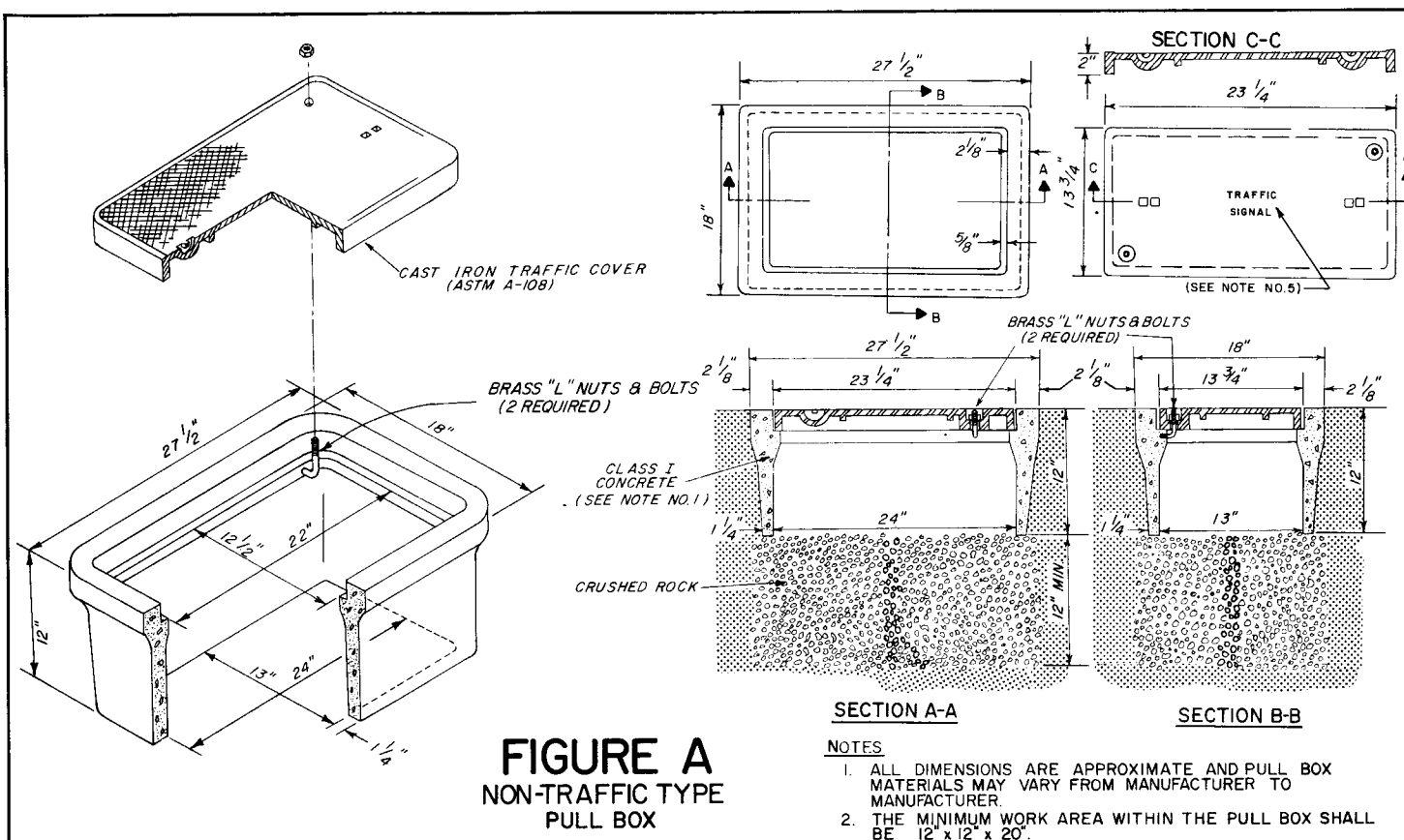


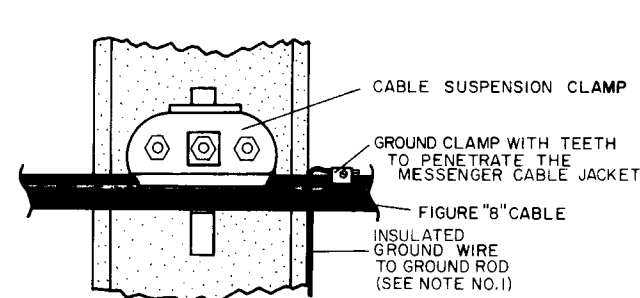
FIGURE - D

REVISIONS				APPROVED BY FHWA APRIL 2, 1975			
FLORIDA DEPARTMENT OF TRANSPORTATION				TRAFFIC OPERATIONS			
SIGNAL CABLE & SPAN WIRE INSTALLATION DETAILS							
DATE	INITIALS	DESCRIPTION	INITIALS	DATES	Recommended for approval		
5-14-75	CG	SLIP JOINT FOR DROP PIPE REDESIGNED, DRIP COIL TO 2 TURNS, NOTE NO. 4 REVERSED	Designed by	CG	2/28/75	by <i>Larry C. Price</i>	
6-16-75	CJ	ADDED 4 SERVICE HEAD AND VERTICAL CLEARANCE NOTE, CHANGED SLIP JOINT DETAIL TO RIGID CLAMP, CHANGED (PROPRIETARY DIMENSION) (FIGURE-D)	Checked by	RK	2/28/75	Deputy Traffic Operations Engr.	
10-30-79	J.M.C.	ADDED NOTE 5 AND 6, REVISED GROUND ROD LENGTH ADDED APPROX. 45" TO SERVICE HEAD	Quantities by			Approved by <i>R. Magallon 10/31/79</i>	
			Checked by			State Traffic Operations Engr.	
			Supervised by	RVK	DRAWING NO.	INDEX NO.	
					1 OF 1	17727	

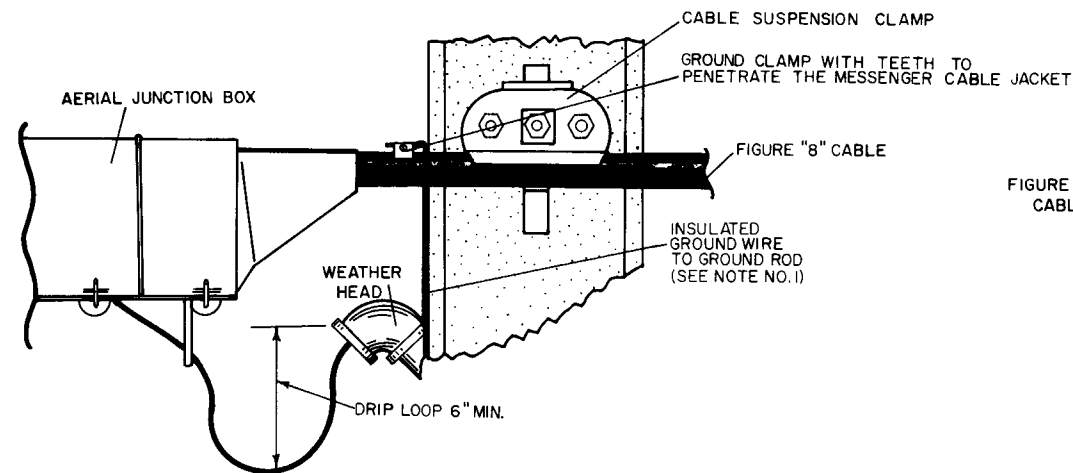


REVISIONS				INITIALS	DATES	Recommended for approval	
DATE	INITIALS	DESCRIPTION	Designed by	JMC	5-17-77	By	Deputy Traffic Operations Eng.
10-30-79	J.R.M.	DELETED PAY ITEM NOS. AND GROUND RODS ADDED NOTES TO FIGURE A	Checked by			Approved	
		REVISED NOTE 4 AND ADDED NOTE 6	Quantities by			by	10/24/79 State Traffic Operations Eng.
			Checked by			DRAWING NO.	INDEX NO.
			Supervised by	J.W.J.		1 OF 1	17730

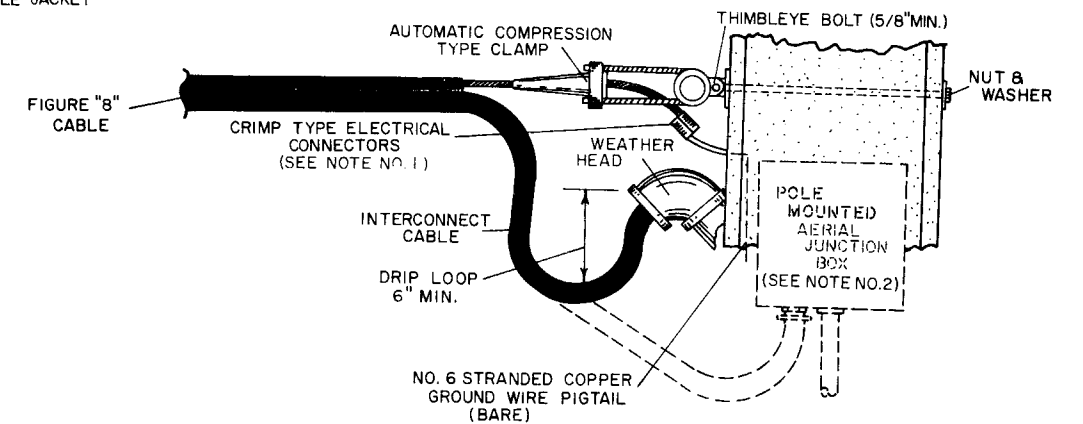




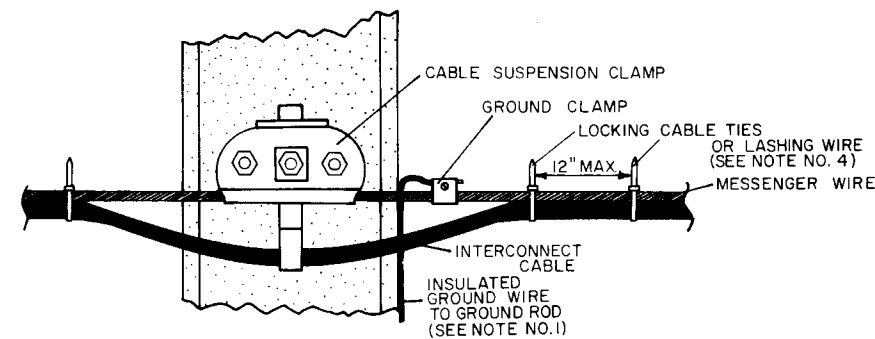
**FIGURE A**  
CONTINUATION DETAIL  
AERIAL INTERCONNECT FIGURE "8"



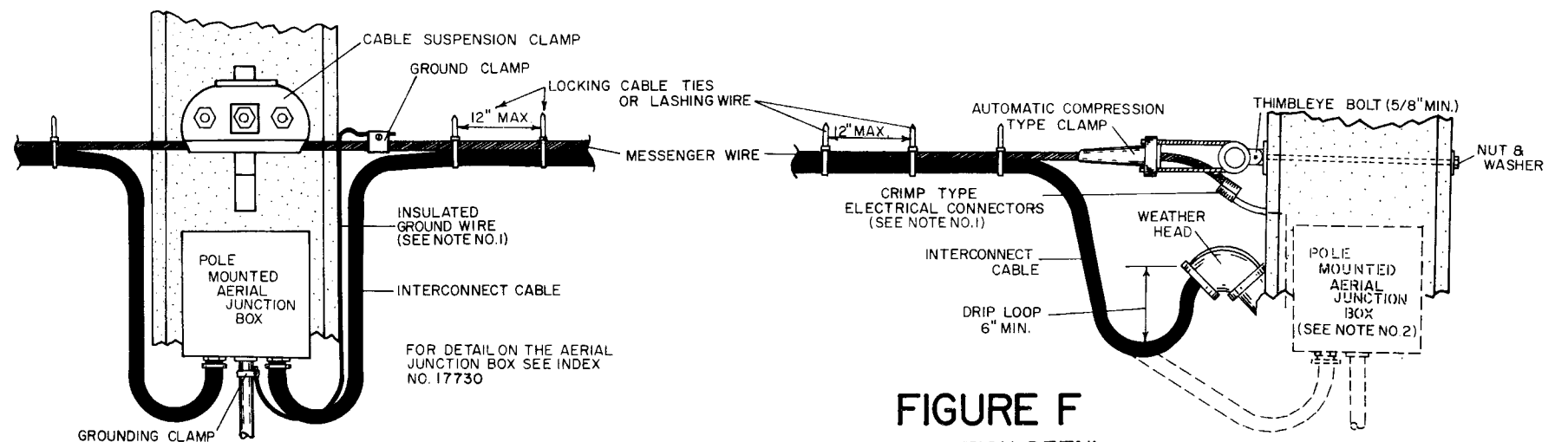
**FIGURE B**  
CABLE DROP DETAIL  
AERIAL INTERCONNECT FIGURE "8"



**FIGURE C**  
TERMINATION DETAIL  
AERIAL INTERCONNECT FIGURE "8"



**FIGURE D**  
CONTINUATION DETAIL  
AERIAL INTERCONNECT MESSENGER WIRE WITH  
CLAMPS



**FIGURE E**  
CABLE DROP DETAIL  
AERIAL INTERCONNECT MESSENGER WIRE WITH  
CLAMPS

**FIGURE F**  
TERMINATION DETAIL  
AERIAL INTERCONNECT MESSENGER WIRE WITH  
CLAMPS

**NOTES:**

1. WHERE POLES HAVE AN INTEGRAL GROUNDING SYSTEM, THEN GROUNDING OF THE MESSENGER CABLE SHOULD BE ATTACHED TO THE POLE GROUNDING SYSTEM. WHERE RIGID CONDUIT EXIST ON POLE THEN MESSENGER GROUND SHOULD BE CONNECTED TO THE RIGID CONDUIT TO PROVIDE FOR GROUND CONTINUITY.
2. TERMINATION OF THE AERIAL SUPPORTED INTERCONNECT CABLE MAY BE ACCOMPLISHED BY TWO MEANS: (1) INTERCONNECT CABLE MAY BE STRIPPED FROM MESSENGER WIRE TO A LENGTH SUFFICIENT TO EXTEND FROM MESSENGER WIRE TO CONTROLLER CABINET OR (2) THROUGH USE OF AN INTERMEDIATE AERIAL JUNCTION BOX.
3. ALL CONNECTORS TO JUNCTION BOXES SHALL BE WATERTIGHT. CONNECTORS SHOULD BE OF NON-CORROSIVE TYPE METAL.
4. LOCKING CABLE TIES OR LASHING WIRE WHEN USED SHALL BE PLACED NO FURTHER THAN ONE(1) FOOT APART.
5. PAYMENT FOR EACH TYPE OF INTERCONNECT CABLE SHALL INCLUDE THE CABLE, SUPPORTING WIRE, SUPPORT CLAMP, GROUND WIRE, GROUND ROD WHEN NOT EXISTING, AND MISCELLANEOUS MATERIALS REQUIRED FOR COMPLETE INSTALLATION. PAYMENT FOR JUNCTION BOXES SHALL BE PAID UNDER SEPARATE PAY ITEM.

APPROVED BY FHWA JULY 25, 1978.

FLORIDA DEPARTMENT OF TRANSPORTATION  
TRAFFIC OPERATIONS

AERIAL INTERCONNECT

REVISIONS			INITIALS	DATES	Recommended for approval	
DATE	INITIALS	DESCRIPTION	Designed by	J.M.C.	8-15-77	by <u>[Signature]</u> Deputy Traffic Operations Eng.
10-30-79	J.M.C.	DELETED PAY ITEM NOS.	Checked by			Approved
			Quantities by			by <u>[Signature]</u> State Traffic Operations Eng.
			Checked by			
			Supervised by	J.W.J.		DRAWING NO. INDEX NO.
						OF   17733



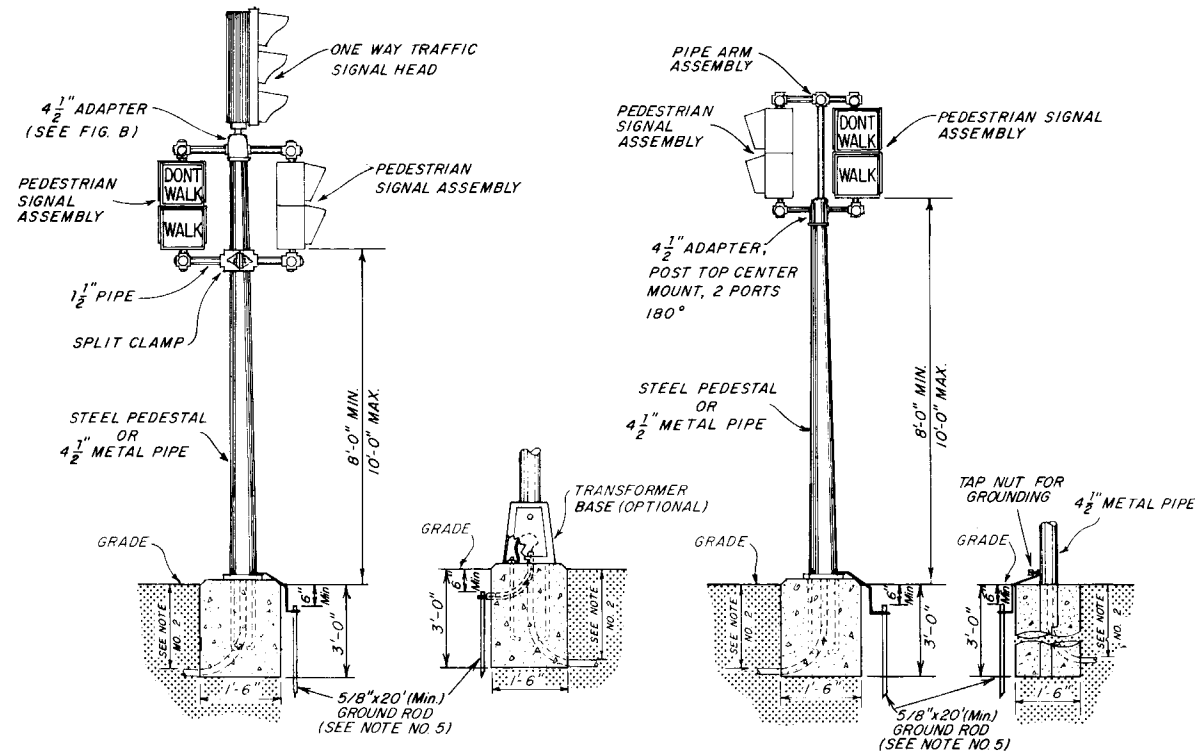


FIGURE A

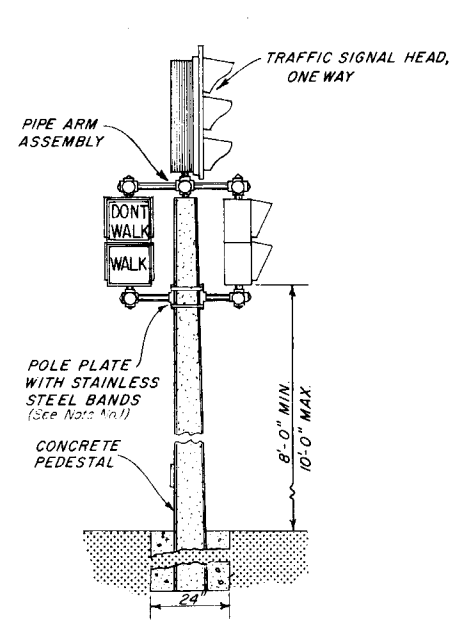


FIGURE B

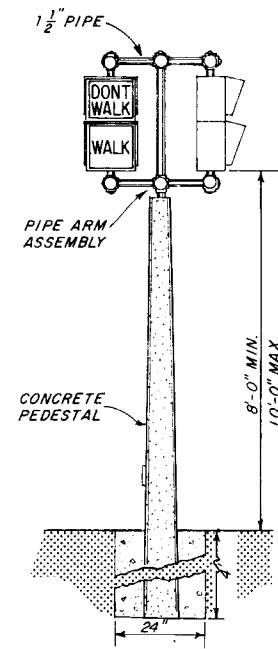


FIGURE C

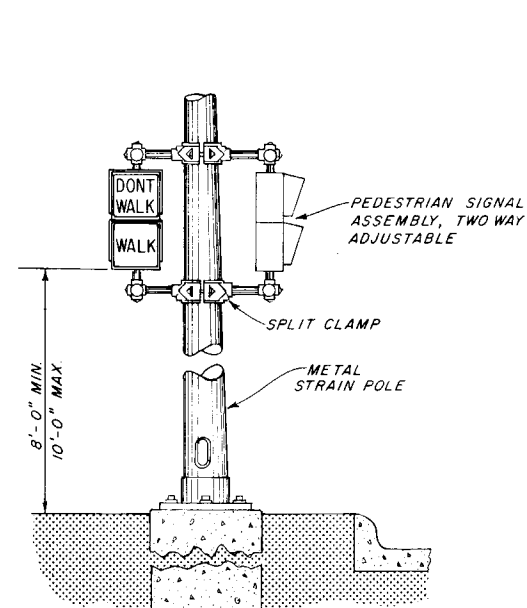


FIGURE D

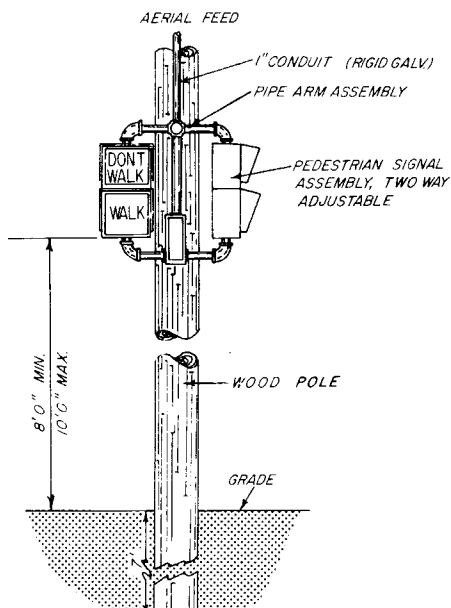
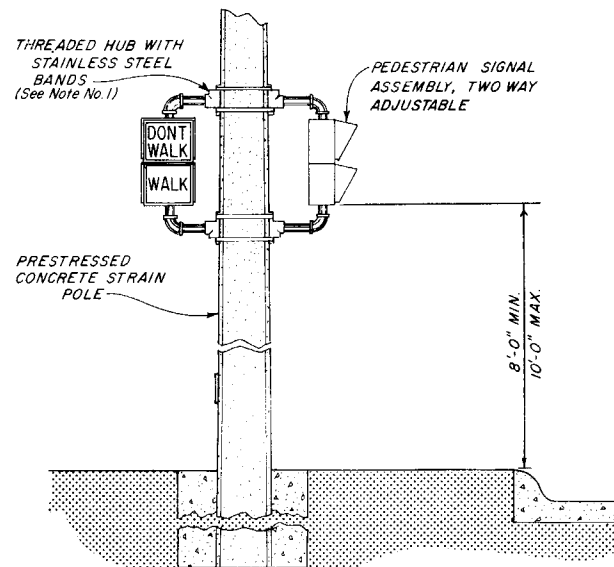


FIGURE E



NOTES:

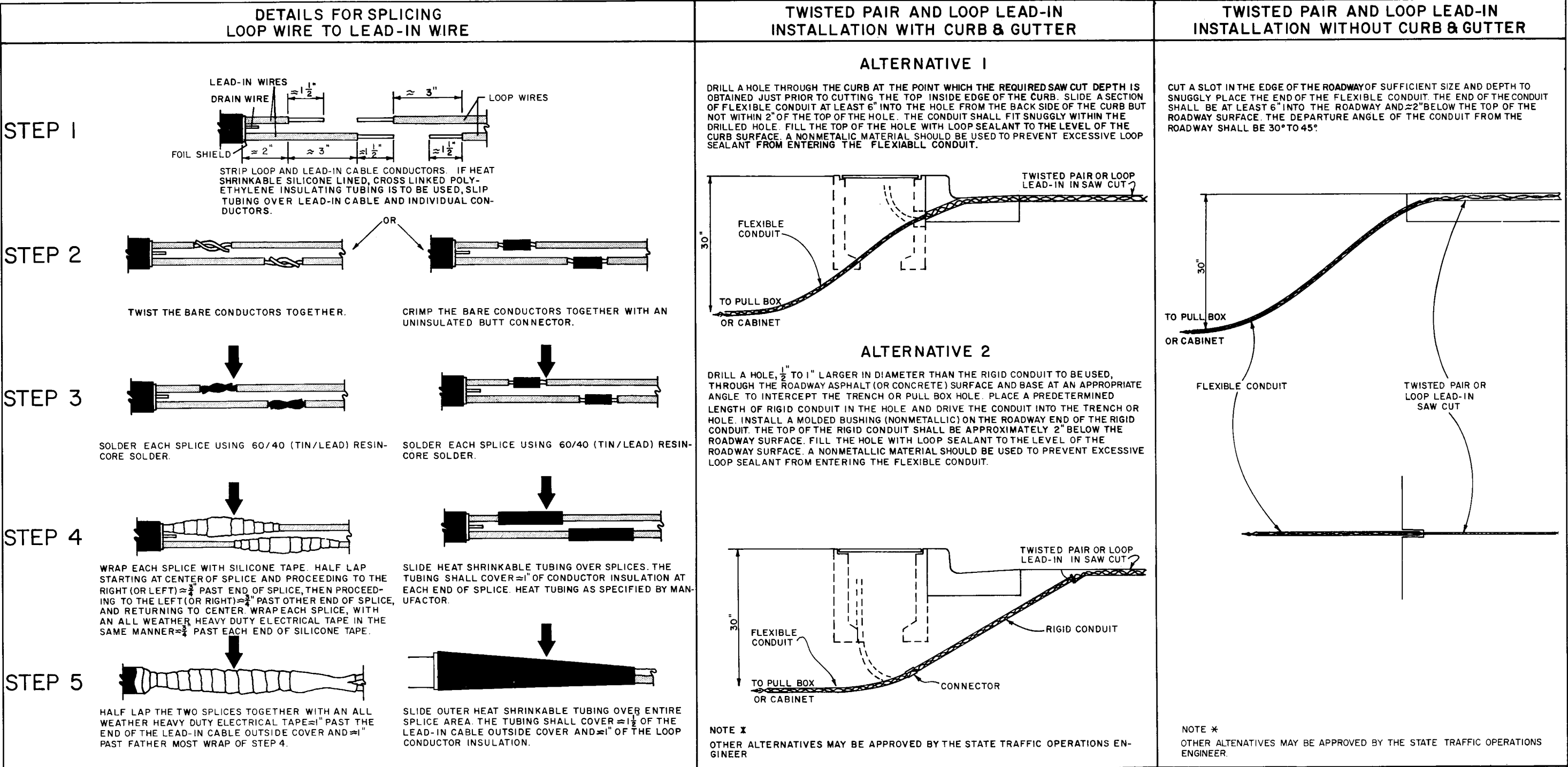
1. AS AN OPTION, THE PROJECT ENGINEER MAY ALLOW PEDESTAL SIGNALS TO BE INSTALLED ON CONCRETE POLE AND PEDESTALS WITH THE USE OF LEAD ANCHORS. IN THIS CASE CARE SHOULD BE TAKEN.
2. ALL REQUIREMENTS OF THIS INDEX SHALL BE APPLICABLE WHEN EVER A 1-SECTION HEAD IS UTILIZED IN LIEU OF THE 2-SECTION.
3. DEPTH AND SWEEP OF CONDUIT SHALL BE IN ACCORDANCE WITH FLORIDA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS AND STANDARD INDEX NO. 17721.
4. HOLES DRILLED OR PUNCHED IN METAL POLE OR PEDESTALS SHALL BE THOROUGHLY REAMED, CLEANED OF ALL BURRS AND COVERED WITH TWO COATS OF ZINC RICH PAINT. GROMMETS OR WIRING GUIDES SHALL BE INSTALLED IN HOLES.
5. GROUNDING TO BE IN ACCORDANCE WITH SECTION B620 OF STANDARD SPECIFICATIONS.

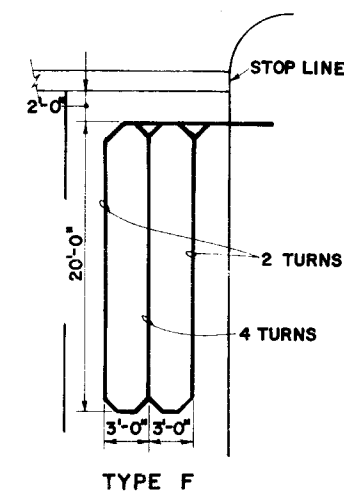
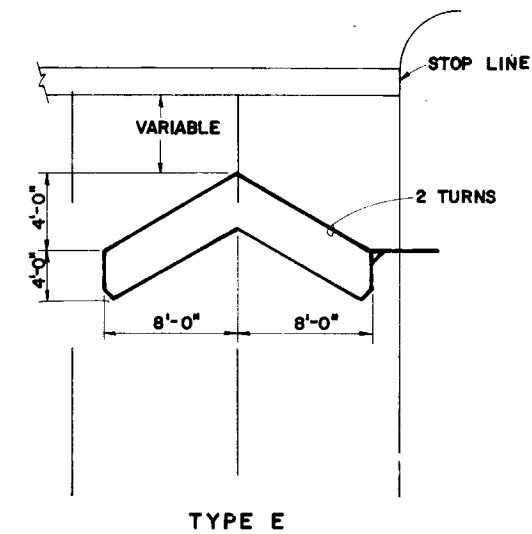
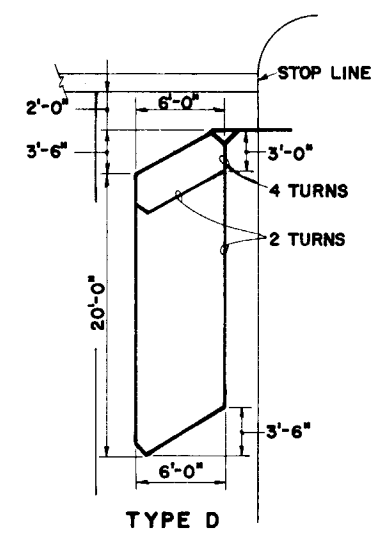
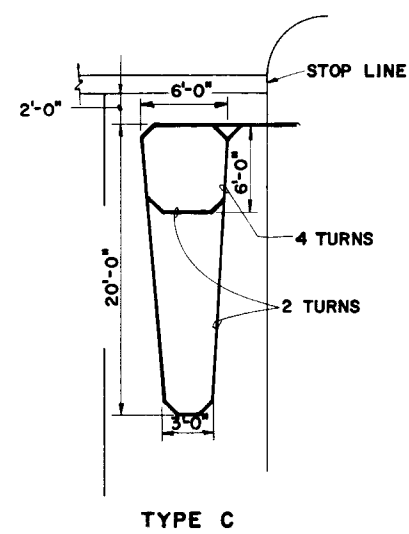
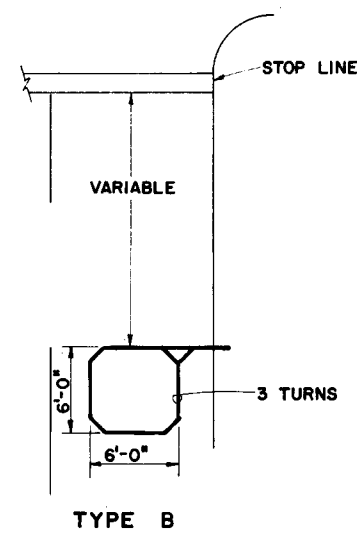
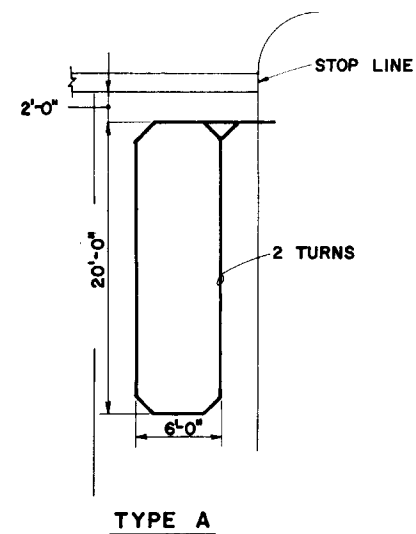
APPROVED BY FHWA JULY 25, 1978.

FLORIDA DEPARTMENT OF TRANSPORTATION  
TRAFFIC OPERATIONS

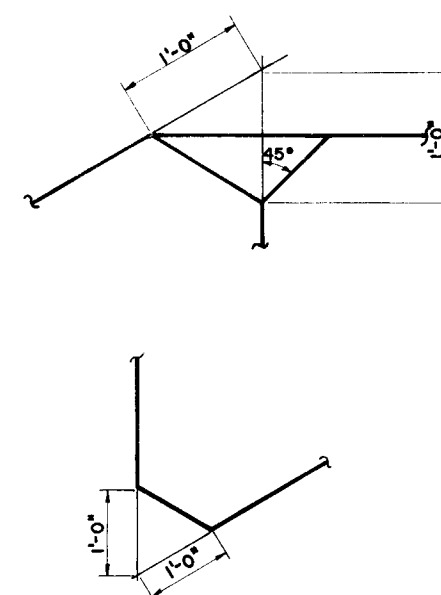
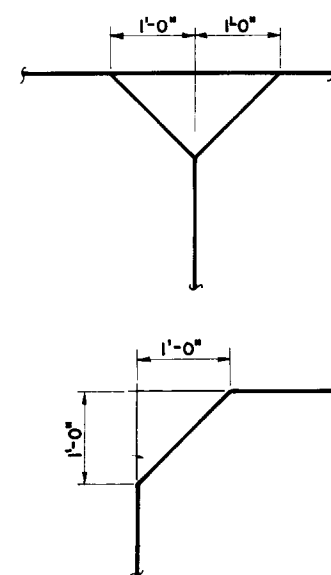
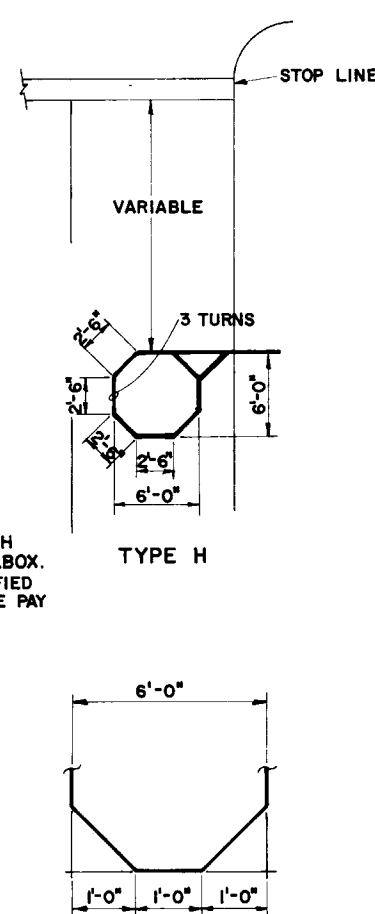
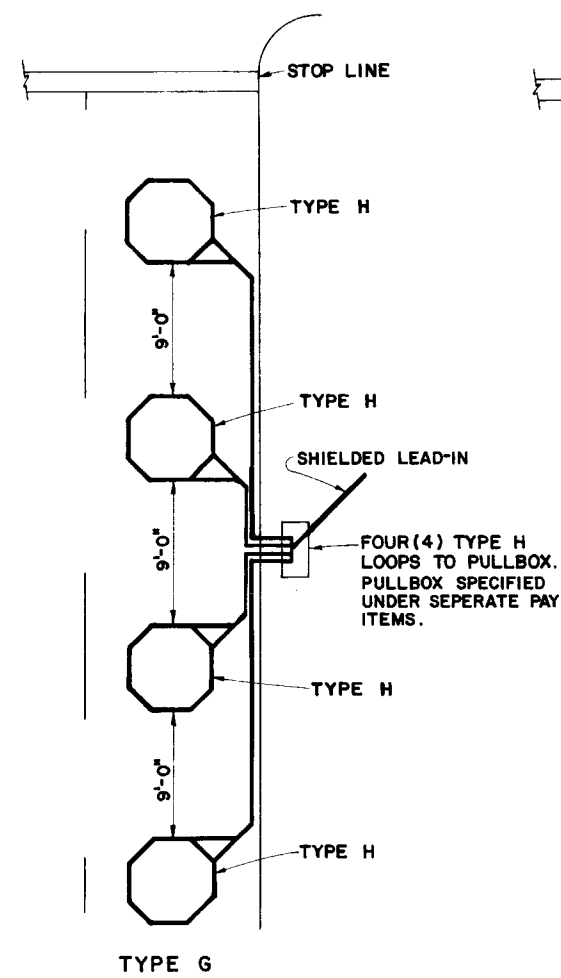
PEDESTRIAN CONTROL SIGNALS INSTALLATION DETAILS

REVISIONS			INITIALS	DATES	Recommended for approval	
DATE	INITIALS	DESCRIPTION	Designed by		by	
10-30-79	J.R.M.	ADDED GROUND RODS AND NOTE 5	Checked by	J.M.C.	Deputy Traffic Operations Engr.	
			Quantities by		Approved	
			Checked by		by	10/31/79
			Supervised by	J.J.	State Traffic Operations Engr.	
			DRAWING NO.		INDEX NO.	
			1 OF 1		17764	



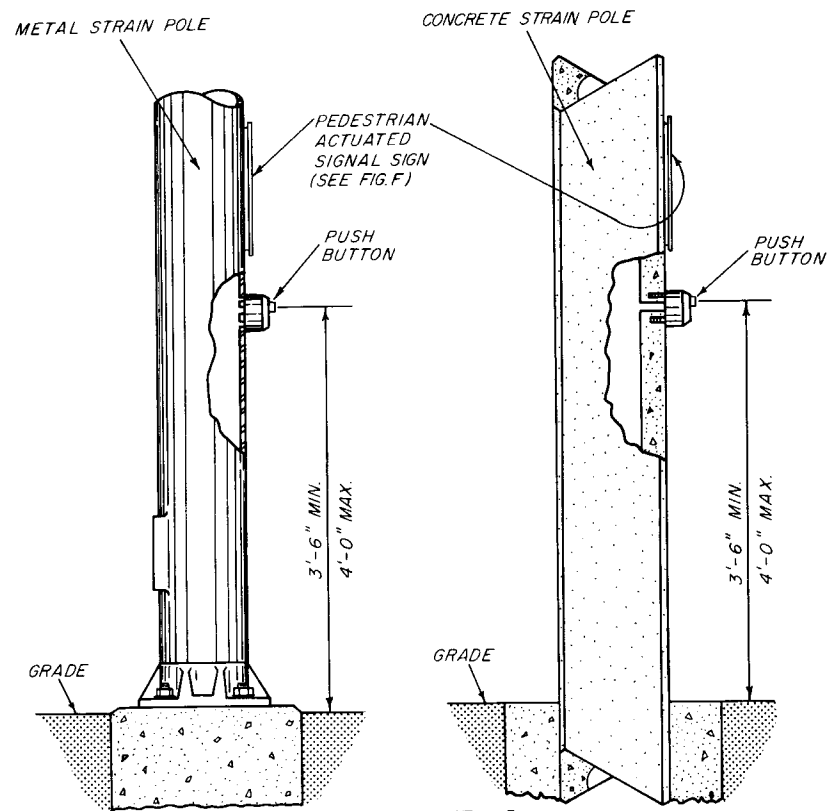


## STANDARD VEHICLE LOOP TYPES

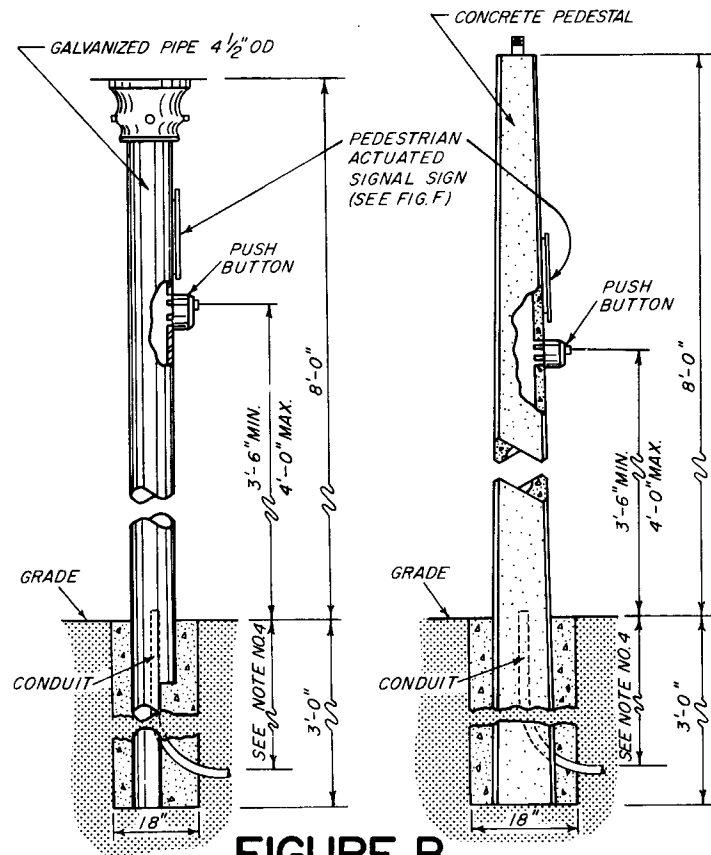


- NOTES:**
1. THE "NUMBER OF TURNS" INDICATED AT THE SPECIFIED POINT ON THE LOOP REFERS TO THE NUMBER OF PASSES OF LOOP WIRES WHICH ARE PLACED IN THE SAW CUT IN FORMING THE COMPLETE LOOP.
  2. LOOP TYPES OR DETAILS NOT DRAWN TO SCALE.
  3. LOOP TYPES ARE CENTERED IN A SINGLE LANE EXCEPT TYPE E WHICH IS CENTERED IN TWO LANES.

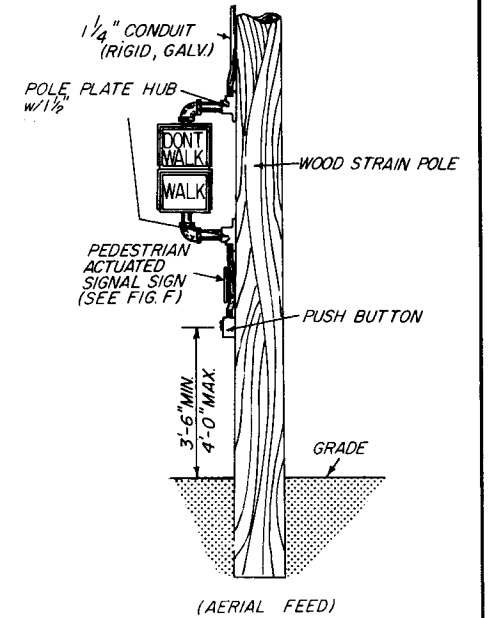
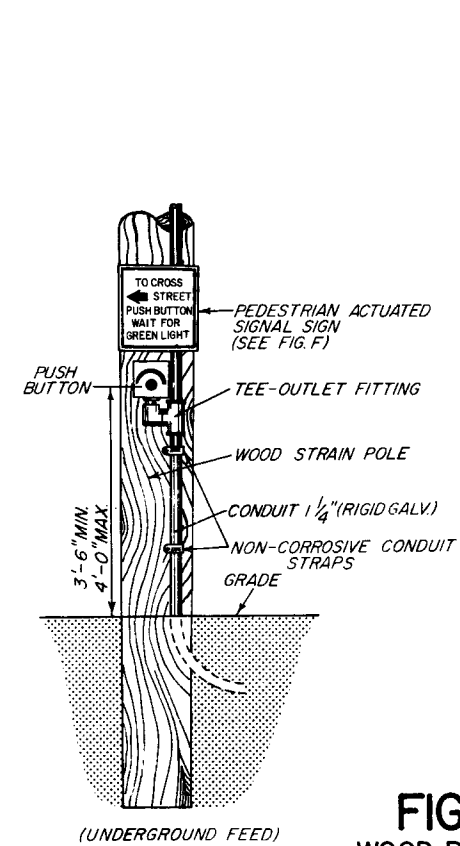
FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS			
VEHICLE LOOP INSTALLATION DETAILS			
	INITIALS	DATES	Recommended for approval by <u>Larry C. Price</u> Deputy Traffic Operations Eng
Designed by			Approved by <u>KE Magady 10/14/79</u> State Traffic Operations Eng
Checked by			
Quantities by			
Checked by			
Supervised by			DRAWING NO. 2 of 2
			INDEX NO. 17781



**FIGURE A**  
POLE MOUNTED  
DETECTOR STATION



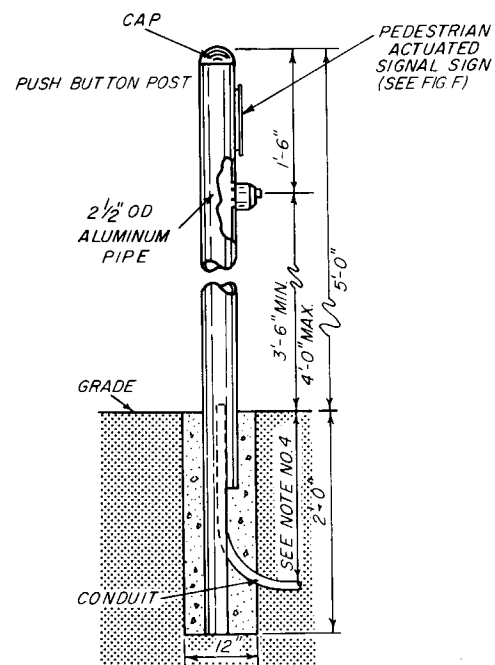
**FIGURE B**  
PEDESTAL STATION  
DETECTOR STATION



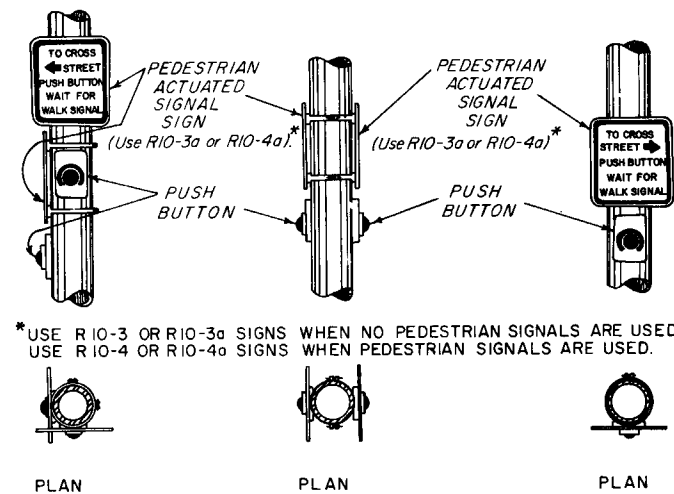
**FIGURE C**  
WOOD POLE MOUNTED  
DETECTOR STATION

#### NOTES

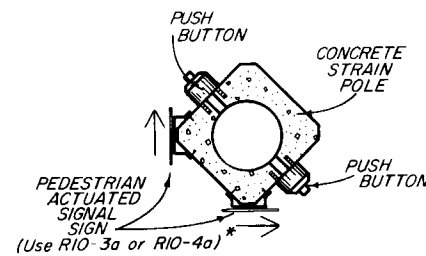
- SIGNS (RIO-3a & RIO-4a) SHALL BE MOUNTED ABOVE DETECTORS, EXPLAINING THEIR PURPOSE AND USE.
- THE POSITIONING OF PEDESTRIAN PUSH BUTTON SHOULD CLEARLY INDICATE WHICH CROSSWALK SIGNAL IS ACTUATED BY EACH PUSH BUTTON.
- PUSH BUTTONS AND SIGNS ARE TO BE MOUNTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS.
- DEPTH OF CONDUIT SHALL BE IN ACCORDANCE WITH SECTION 630 AND STANDARD INDEX 17721.
- THE NEUTRAL RETURN CONDUCTOR FOR PEDESTRIAN DETECTORS SHALL NOT BE USED AS A NEUTRAL RETURN FOR ANY OTHER DEVICE.
- GROUNDING TO BE IN ACCORDANCE WITH SECTION B620 OF STANDARD SPECIFICATIONS.



**FIGURE D**  
POST DETECTOR STATION  
DETECTOR STATION



**FIGURE E**

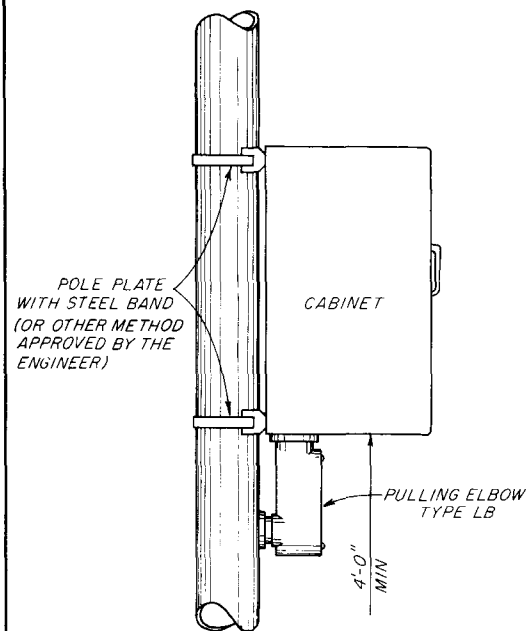


**FIGURE F**

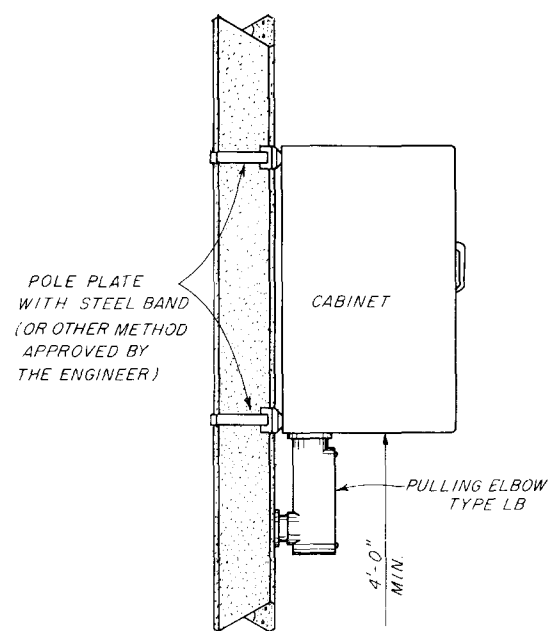
APPROVED BY FHWA JULY 25, 1978.

#### FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS PEDESTRIAN DETECTOR ASSEMBLY INSTALLATION DETAILS

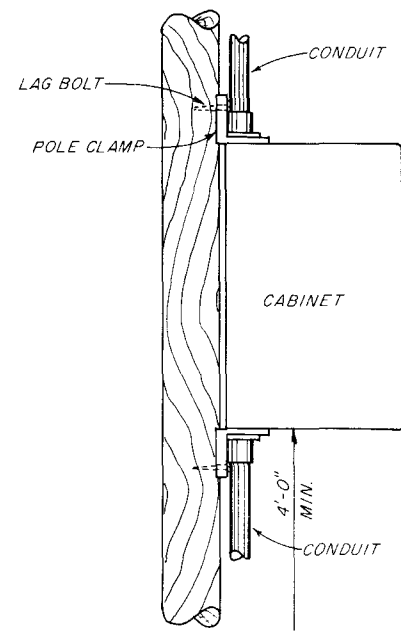
REVISIONS			INITIALS	DATES	Recommended for approval by <u>Harry C. Price</u> Deputy Traffic Operations Eng.	
DATE	INITIALS	DESCRIPTION	Designed by	J.M.C.		7-13-77
10-31-79	J.M.C.	DELETED ITEM NO. 8 ADDED FIGURE F	Checked by		Approved by <u>R.S. Magedoff</u> 10/24/77 State Traffic Operations Eng.	
			Quantities by			
			Checked by			
			Supervised by	J. J.	DRAWING NO. 1 OF 1	INDEX NO. 17784



METAL POLE

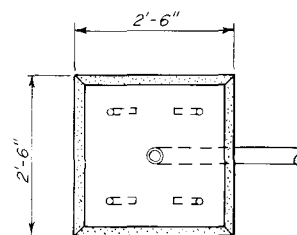


CONCRETE POLE

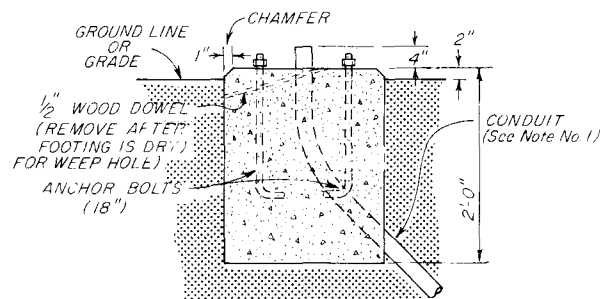


WOOD POLE

POLE MOUNT

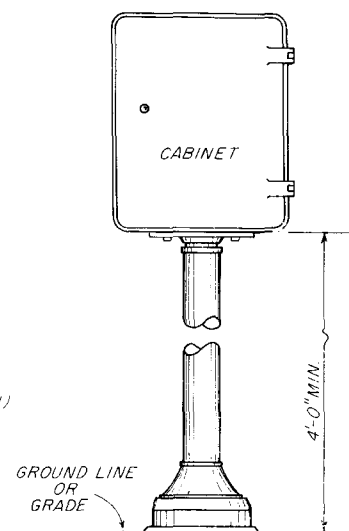


PLAN



CONCRETE FOOTING FOR PEDESTALS

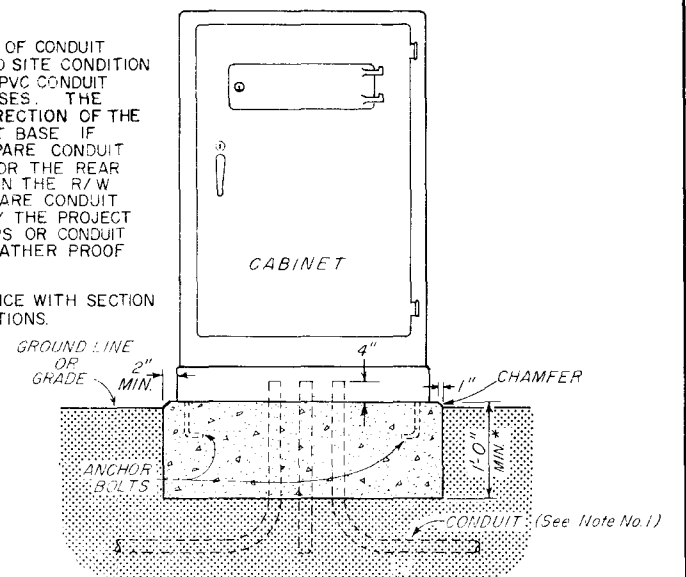
PEDESTAL MOUNT



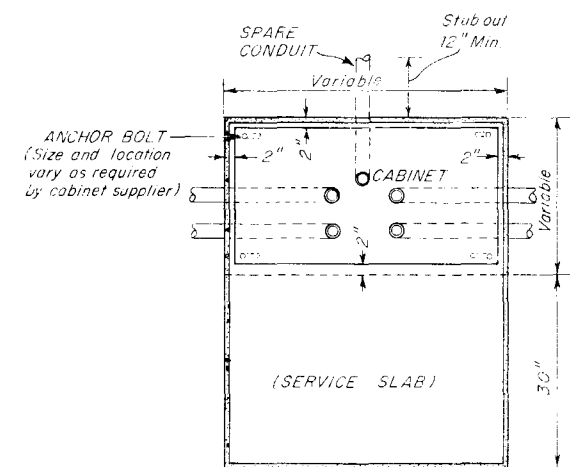
FRONT VIEW

NOTES

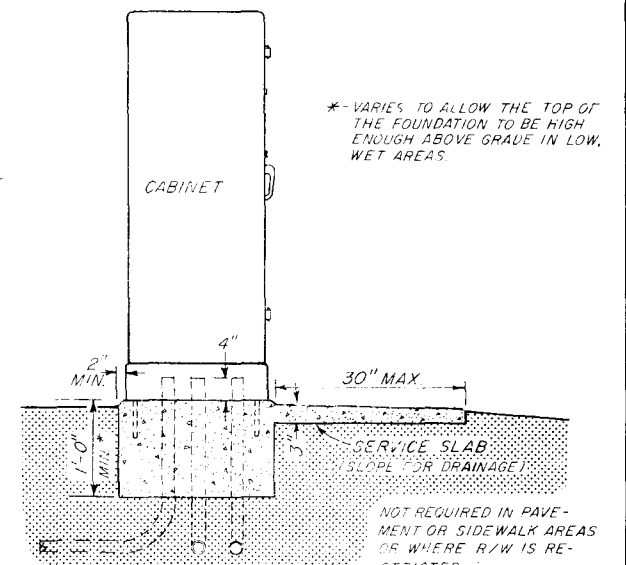
1. NUMBER, SIZE AND ORIENTATION OF CONDUIT SWEEP WILL VARY ACCORDING TO SITE CONDITION OR LOCATIONS. ONE SPARE 2" PVC CONDUIT SHALL BE PROVIDED IN ALL BASES. THE SPARE SHALL EXIT IN THE DIRECTION OF THE CENTER REAR OF THE CABINET BASE IF OBSTRUCTIONS PREVENT THE SPARE CONDUIT FROM EXITING TO THE REAR, OR THE REAR OF THE CABINET IS LOCATED ON THE R/W LINE, A SIDE EXIT OF THE SPARE CONDUIT WILL HAVE TO BE APPROVED BY THE PROJECT ENGINEER. ALL SPARE SWEEPS OR CONDUIT SHALL BE CAPPED WITH A WEATHER PROOF FITTING.
2. GROUNDING TO BE IN ACCORDANCE WITH SECTION B620 OF STANDARD SPECIFICATIONS.



FRONT VIEW



PLAN

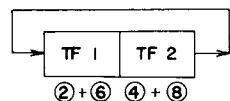


SIDE VIEW

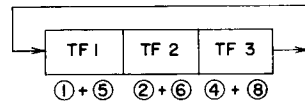
BASE MOUNT

APPROVED BY FHWA JUNE 11, 1975			
FLORIDA DEPARTMENT OF TRANSPORTATION			
TRAFFIC OPERATIONS			
CABINET INSTALLATION DETAILS			
DATE	INITIALS	DATES	Recommended for approval
10-30-79	J.R.M.	5-6-75	by <i>Larry C. Ruce</i> Deputy Traffic Operations Engr.
			Approved
			by <i>R.E. Magaley</i> 10/24/79 State Traffic Operations Engr.
			DRAWING NO. INDEX NO.
			1 OF 1 17841

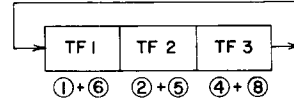
REVISIONS		
DATE	INITIALS	DESCRIPTION
10-30-79	J.R.M.	REVISED NOTE 1 AND 2



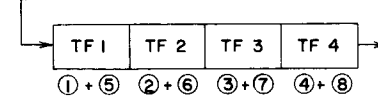
SOP 1



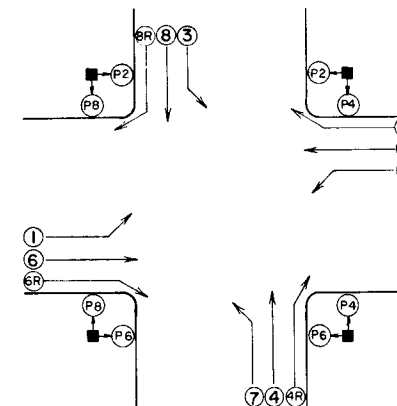
SOP 2



SOP 3










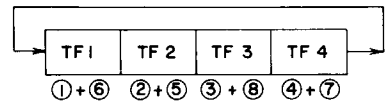
SOP 4



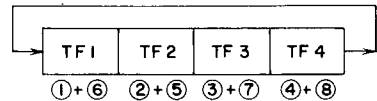
SIGNALIZED INTERSECTION  
Vehicle Movements & Signal Head Number  
Assignments Are Not Directionally Oriented  
But Shall Maintain Their Relative Orientation  
About The Intersection (I.E. Movements 7 and  
4 Are Always To The Right Of Movements 1  
And 6 Etc.)

LEGEND

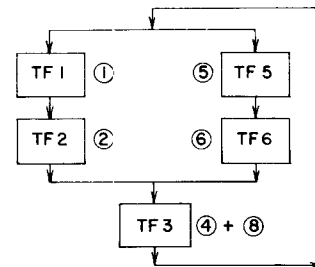
- |   |                             |
|---|-----------------------------|
|  | Vehicle Movement Number     |
|  | Pedestrian Movement Number  |
|  | Timing Function Number      |
|  | Phase Number                |
|  | Green Arrow (Left or Right) |
|  | Red Arrow                   |
|  | Yellow Arrow                |



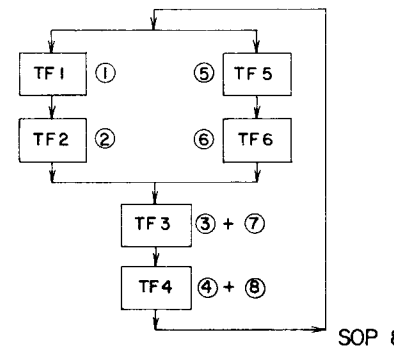
SOP 5



SOP 6



SOP 7



SOP 8



### SIGNAL CLEARANCE TABLE

(Blank Indicates No Clearance Required)

To \ From		SIGNAL INDICATIONS							
		R	<del>R</del>	G	<del>G</del>	<del>G</del> *	<del>G</del>	WALK	DON'T WALK
SIGNAL INDICATIONS	R			Y	Y	<del>Y</del>	Y		
	<del>R</del>			Y	Y	<del>Y</del>	Y		
	G				Y	<del>Y</del>			
	<del>G</del>								
	<del>G</del> *								
	<del>G</del>								
	WALK								
	DON T WALK							Flash DON'T WALK	

\* CLEARANCE INDICATION WHEN YELLOW ARROW IS USED.

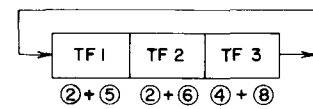
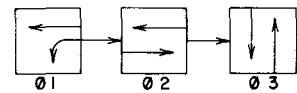
[illegible]

**FLORIDA DEPARTMENT OF TRANSPORTATION**  
TRAFFIC OPERATIONS

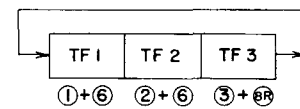
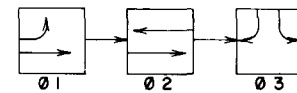
## STANDARD SIGNAL OPERATING PLANS

	INITIALS	DATES	Recommended for approval by <u>Larry C. Price</u>
Drawn by	J.M.C.	4-26-79	Deputy Traffic Operations Eng.
Checked by	J.W.J.		Approved by <u>P. Magady 10/21/79</u>
			State Traffic Operations Eng.
			DRAWING NO. INDEX NO.
			1 OF 2 17870

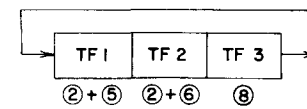
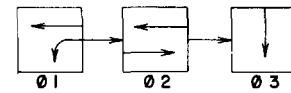




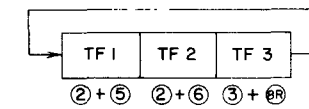
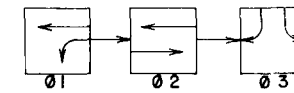
SOP 11



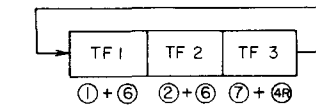
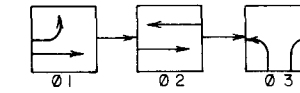
SOP 12



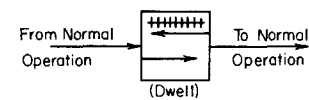
SOP 13  
(ONE-WAY STREET INTERSECTION)



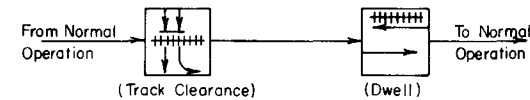
SOP 14  
(DIAMOND INTERCHANGE OPERATION)



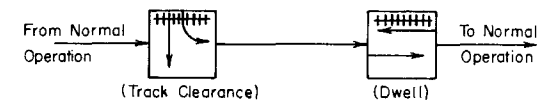
**SOP 15**  
(DIAMOND INTERCHANGE OPERATION)



POP I



POP 2

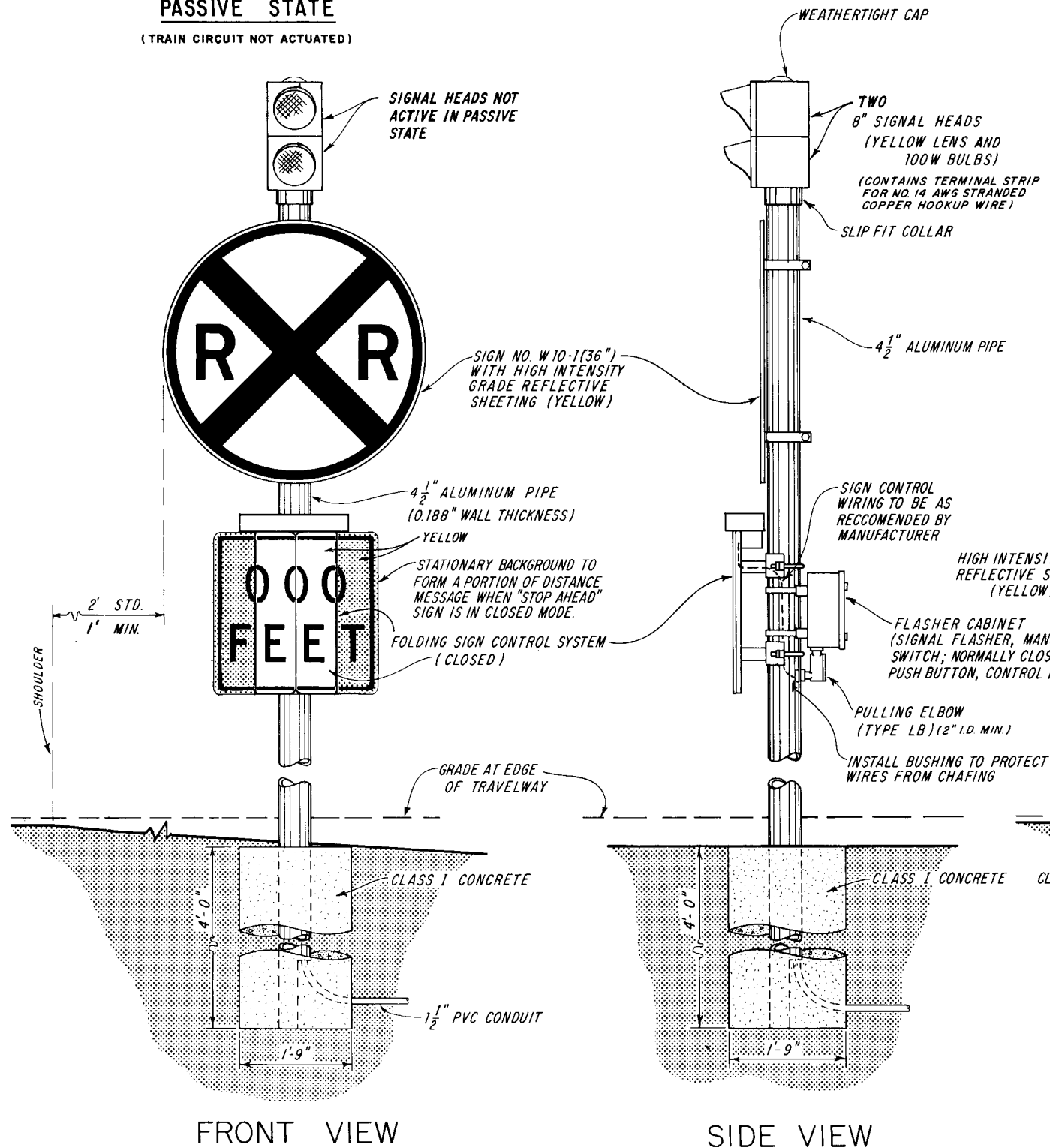


POP 3

REVISIONS				INITIALS		DATES		DRAWING NO.		INDEX NO.	
DATE	INITIALS	DESCRIPTION	Drawn by	J.M.C.	9-28-79	Recommended for approval by <u>Larry C. Puse</u> Deputy Traffic Operations Eng.		2 OF 2		17870	
			Checked by	J.W.J.		Approved by <u>R.L. Magady 10/21/79</u> State Traffic Operations Eng.					

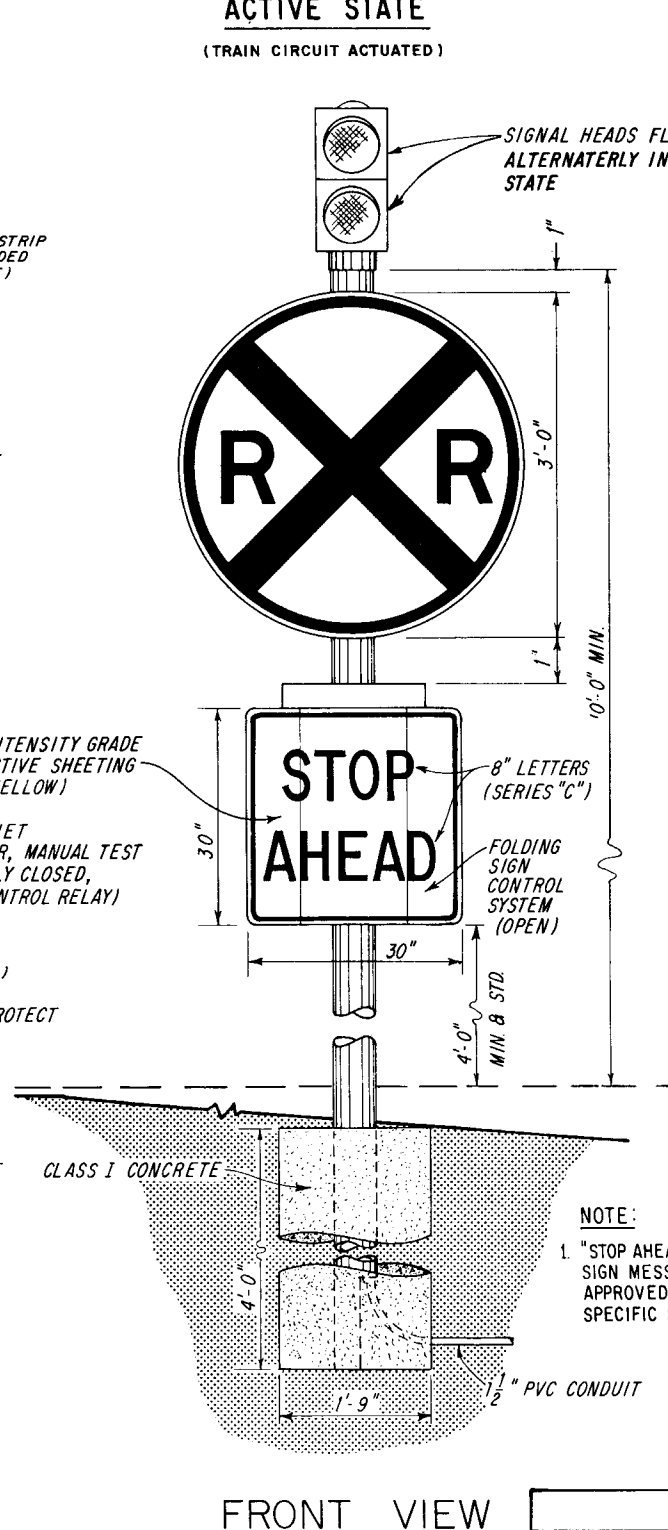
## PASSIVE STATE

(TRAIN CIRCUIT NOT ACTUATED)



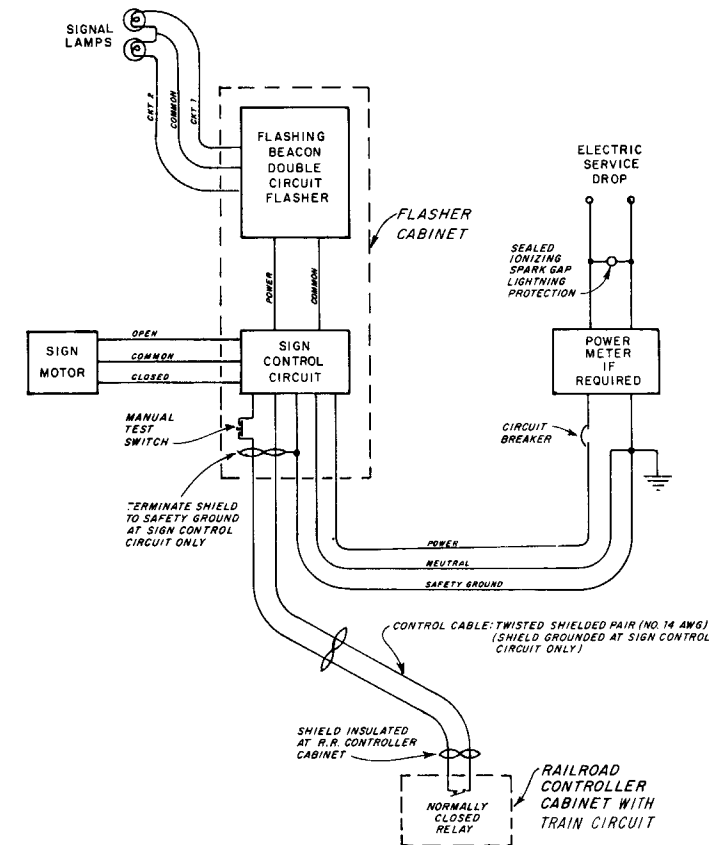
## ACTIVE STATE

(TRAIN CIRCUIT ACTUATED)



### NOTE:

- "STOP AHEAD" IS STANDARD AND PREFERRED SIGN MESSAGE. ANOTHER MESSAGE MAY BE APPROVED WHEN APPROPRIATE FOR SPECIFIC SITUATIONS.



APPROVED BY FHWA FEBRUARY 24, 1975

FLORIDA DEPARTMENT OF TRANSPORTATION  
TRAFFIC OPERATIONS

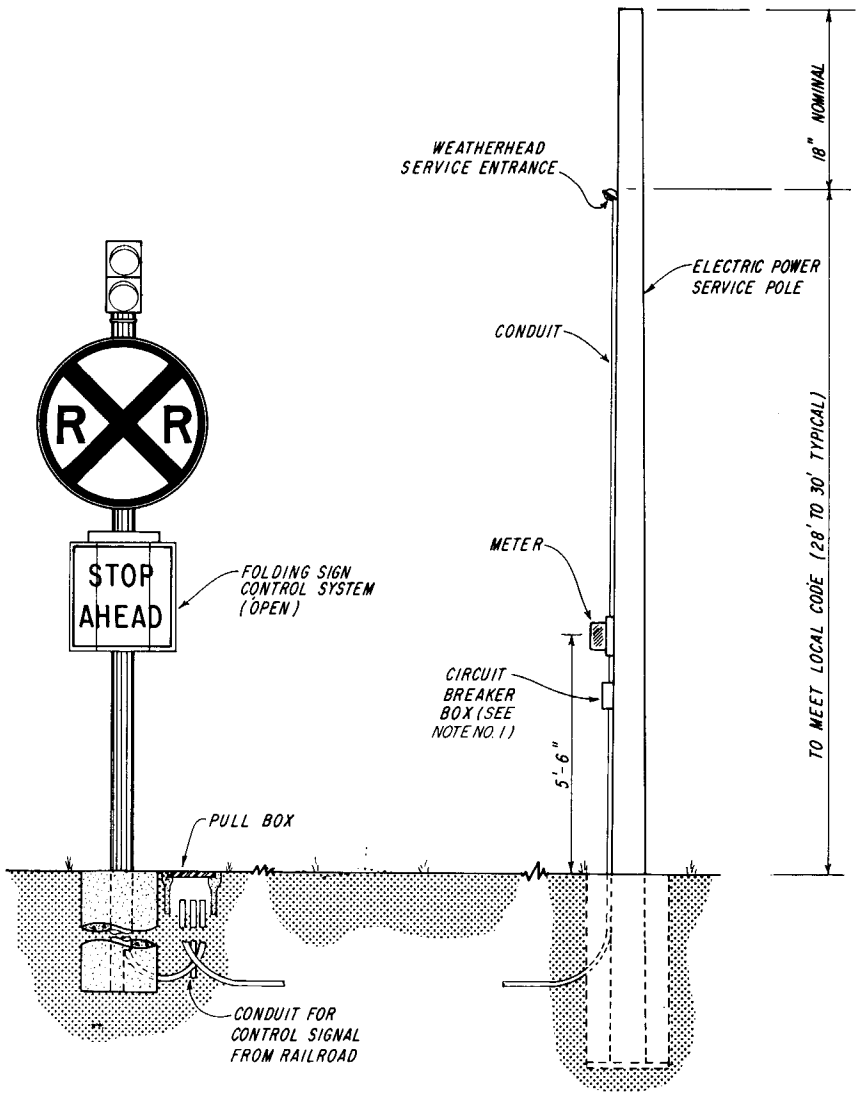
ADVANCE WARNING FOR R.R. CROSSING

REVISIONS			INITIALS	DATES	Recommended for approval by <i>Greg C. Pucci</i> Deputy Traffic Operations Engr.
DATE	INITIALS	DESCRIPTION			
8/28/78	J.M.C.	DELETED NOTE NO. 2	Designed by	CG	12/12/75
10/30/79	J.R.W.	DELETED DUPLICATED NOTES AND CLARIFIED OTHER NOTES	Checked by	REM-RVK	12/12/75
			Quantities by		
			Checked by		
			Supervised by	REM	
			DRAWING NO. 1 OF 2		INDEX NO. 17881

FHWA  
11-16-78

NOTES:

1. BOTTOM OF CIRCUIT BREAKER BOX TO BE 7' ABOVE GRADE WHEN NO METER IS USED.
2. SEE STANDARD INDEX NO. 17882, "GRADE CROSSING WARNING DEVICES", FOR DESIGN AND PLACEMENT OF GRADE CROSSING WARNING DEVICES, AND FOR PAVEMENT MARKINGS IN ADVANCE OF RAILROAD GRADE CROSSING.



TYPICAL POWER SERVICE

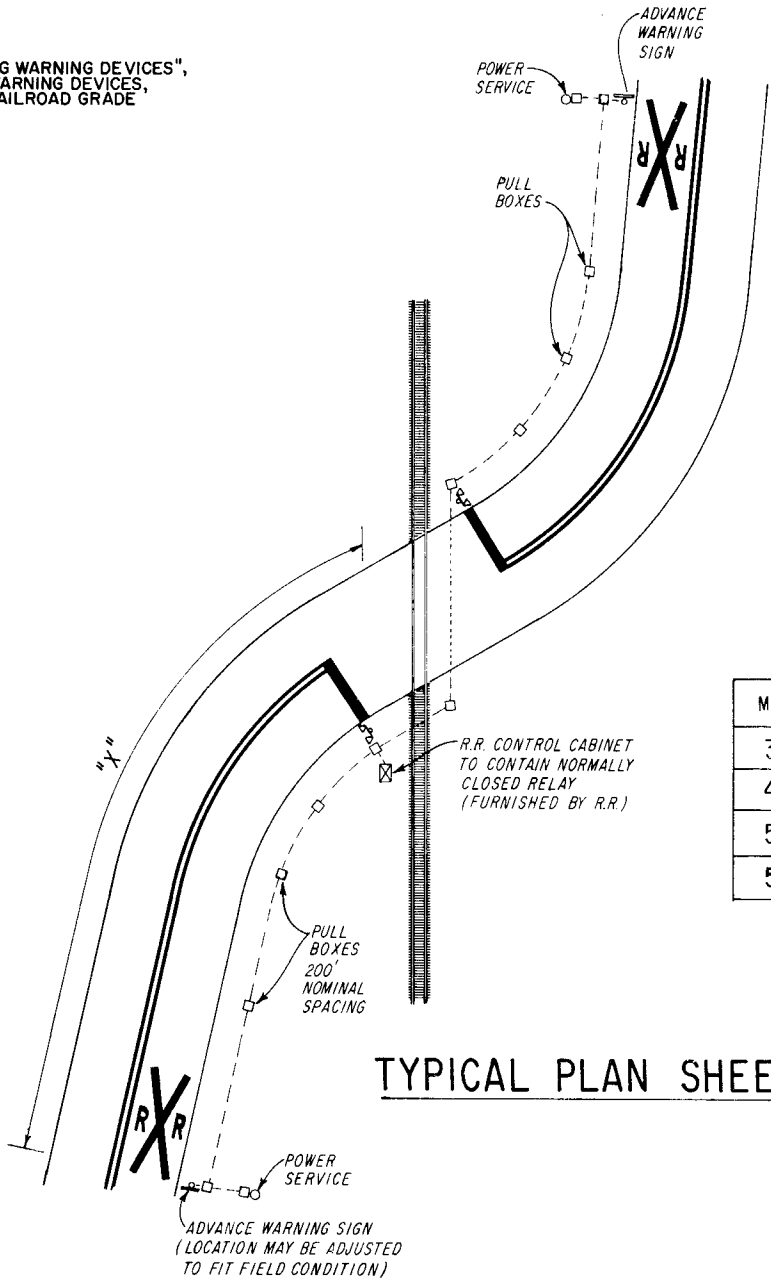


TABLE OF DIMENSION "X"

MPH	"X" (FEET)	
	DESIRABLE	MINIMUM
30	200	200
40	300	275
50	450	350
55	550	425

TYPICAL PLAN SHEET

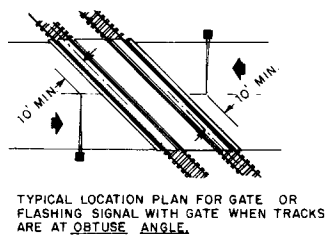
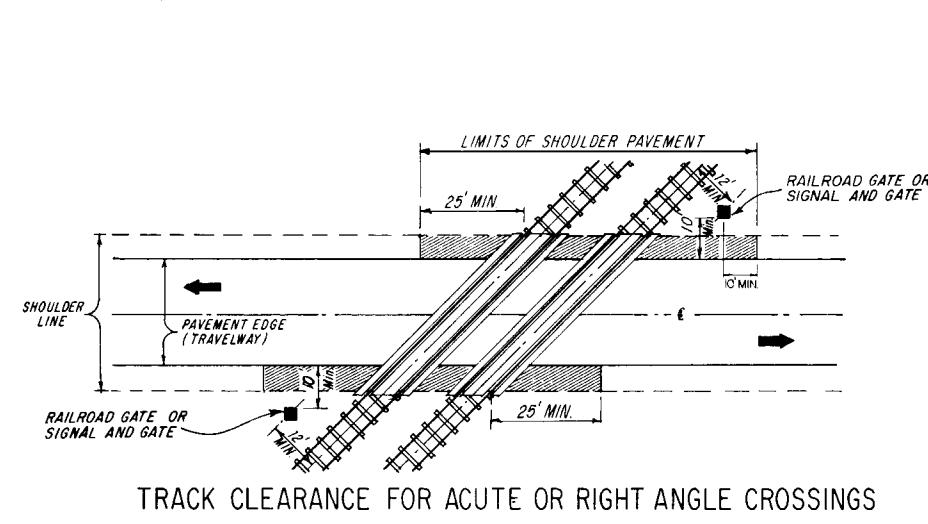
APPROVED BY FHWA FEBRUARY 24, 1976

FLORIDA DEPARTMENT OF TRANSPORTATION  
TRAFFIC OPERATIONS

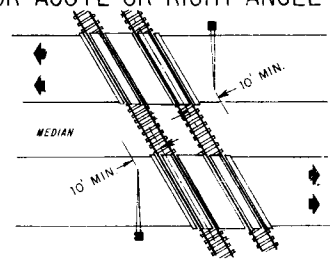
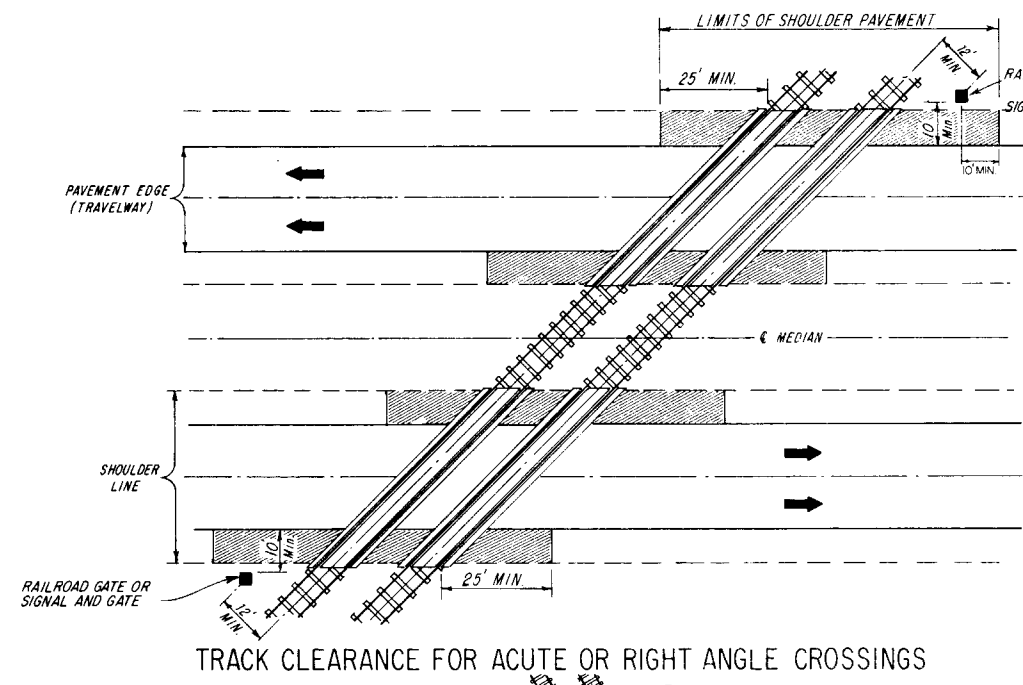
ADVANCE WARNING FOR R.R. CROSSING

REVISIONS			INITIALS	DATES	Recommended for approval by <i>Dary C. Rice</i> Deputy Traffic Operations Engr.
DATE	INITIALS	DESCRIPTION	Designed by	CG	12/15/75
8-27-78	J.M.C.	ADDED GENERAL NOTES 1, 2. REALIGN STOP BARS.	Checked by	REM · RVK	12/16/75
		REVISED MOUNTING HEIGHT ON R/R CROSSING SIGN.	Quantities by		
10-30-79	J.R.M.	REVISED TABLE OF DIMENSION. REALIGN GONG BELLS	Checked by		
		DELETED DUPLICATED NOTES	Supervised by	REM	
					DRAWING NO. 2 OF 2
					INDEX NO. 17881

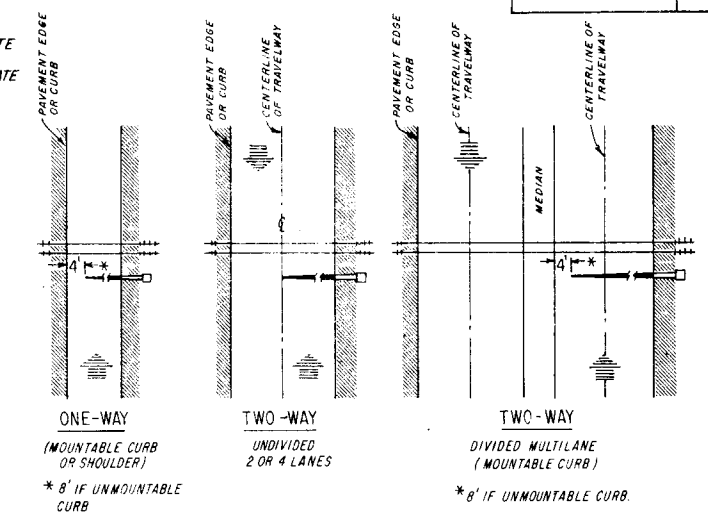
FHWA  
11-16-78



NOTE:  
IT IS INTENDED THAT THE FULL SHOULDER WIDTH OF THE EXISTING ROADWAY BE PAVED. WHERE AN EXISTING SHOULDER IS SUBSTANTIALLY SUBSTANDARD FOR THE FACILITY INVOLVED, THE SHOULDER WIDTH SHOULD BE UPGRADED TO MEET CURRENT STANDARDS.



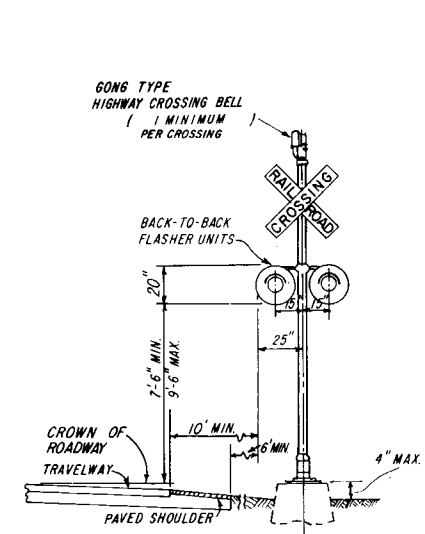
TYPICAL LOCATION PLAN FOR GATE OR FLASHING SIGNAL WITH GATE WHEN TRACKS ARE AT OBTUSE ANGLE.



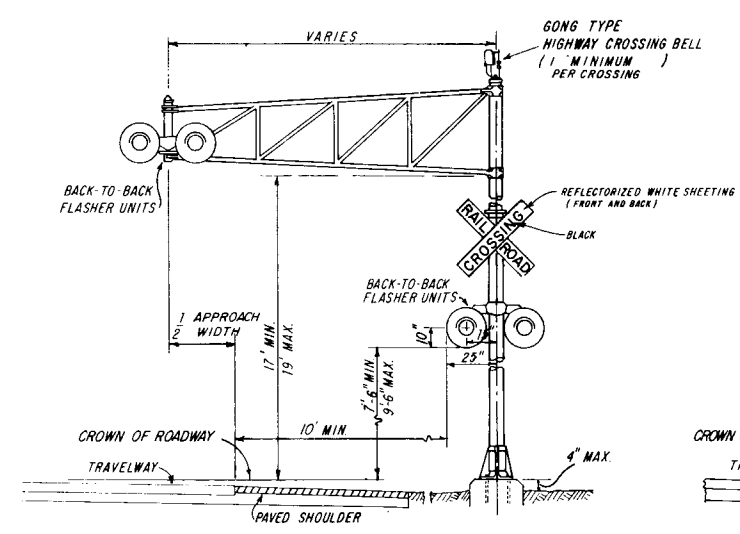
NOTE:  
ARROWS DENOTE DIRECTION OF TRAVEL, NOT LANE INDICATION

FIGURE 1  
GATE LENGTH REQUIREMENTS

## SIGNAL PLACEMENT AT RAILROAD CROSSING (2-LANE DESIGN)

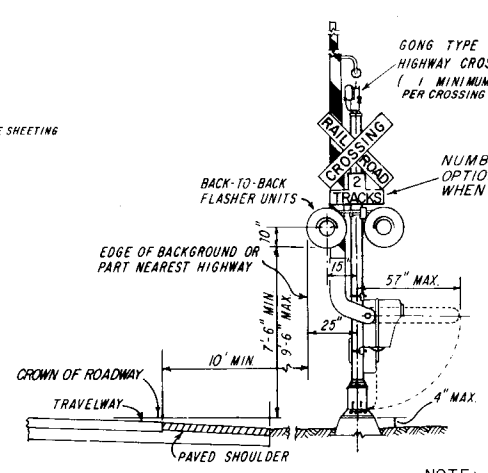


TYPE I

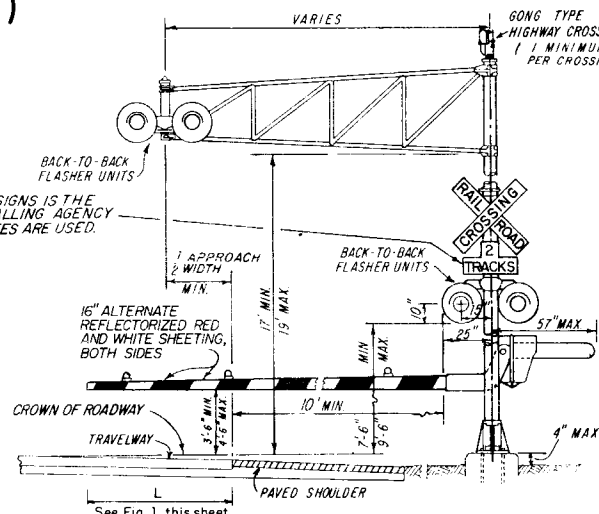


TYPE II

## SIGNAL PLACEMENT AT RAILROAD CROSSING (4-LANE DESIGN)



TYPE III



TYPE IV

NOTE:  
TWO SEPARATE FOUNDATIONS MAY BE REQUIRED (ONE FOR SIGNALS, ONE FOR GATE), DEPENDING ON TYPE OF EQUIPMENT USED.

### GENERAL NOTES

- NO GUARDRAIL IS PROPOSED FOR SIGNALS; HOWEVER, SOME FORM OF IMPACT ATTENUATION DEVICE MAY BE SPECIFIED FOR CERTAIN LOCATIONS.
- ADVANCE FLASHER TO BE INSTALLED WHEN AND IF CALLED FOR IN PLANS OR SPECIFICATIONS.
- TOP OF FOUNDATION SHALL BE NO GREATER THAN 4" ABOVE FINISHED SHOULDER GRADE.
- TYPE OF TRAFFIC CONTROL DEVICES
  - FLASHING SIGNALS
  - FLASHING SIGNALS WITH CANTILEVER
  - FLASHING SIGNALS WITH GATE
  - FLASHING SIGNALS WITH CANTILEVER & GATE
  - GATE
- CLASS OF TRAFFIC CONTROL DEVICES
  - FLASHING SIGNALS-ONE TRACK
  - FLASHING SIGNALS-MULTIPLE TRACKS
  - FLASHING SIGNALS AND GATES-ONE TRACK
  - FLASHING SIGNALS AND GATES-MULTIPLE TRACKS
- SIX LANE GRADE CROSSINGS ARE SPECIAL CONDITIONS. PLACEMENT OF RAILROAD TRAFFIC CONTROL DEVICES ARE NOT COVERED UNDER THIS INDEX.

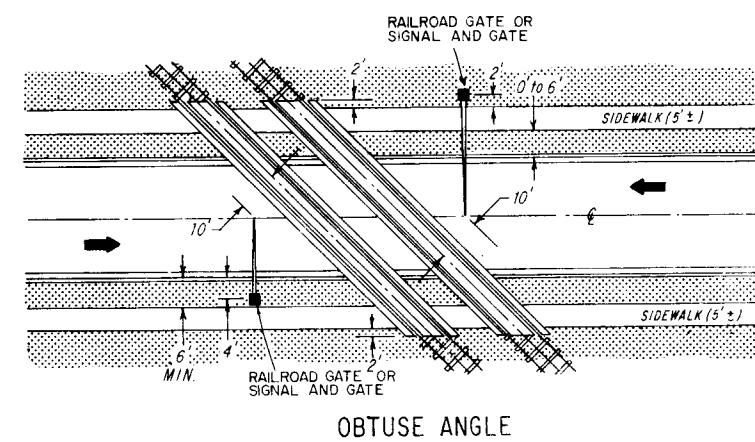
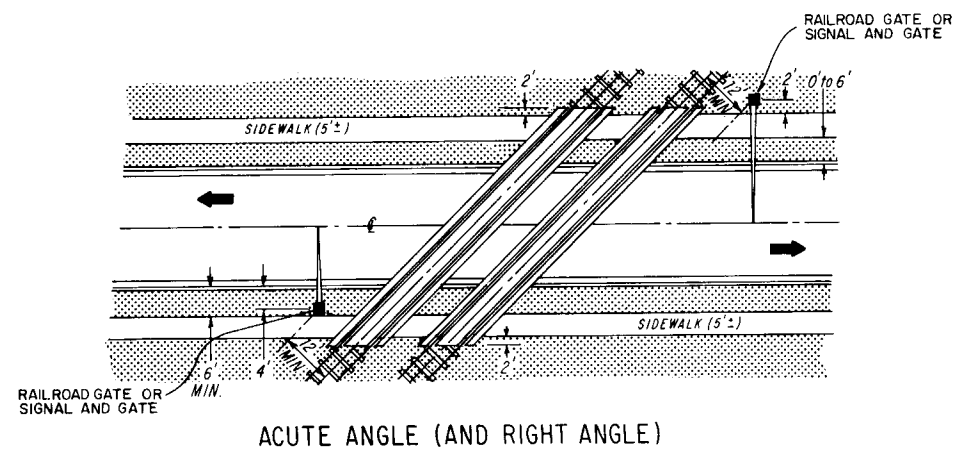
APPROVED BY FHWA JULY 29, 1976

### FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS RAILROAD GRADE CROSSING TRAFFIC CONTROL DEVICES

REVISIONS		
DATE	INITIALS	DESCRIPTION
7-19-77	J.J.	ADDED GONG TYPE HIGHWAY CROSSING BELL
11-9-77	J.J.	ADDED SHEET 3043 TO INDEX
8-27-78	J.M.C.	REVISED NOTE 3, ADDED NOTE TO NO. OF TRACKS SIGNS
10-31-79	J.M.C.	REVISED TYPE II & IV OVERHEAD SIGNAL PLACEMENT TO 1/2 APPROACH WIDTH. ADDED GATES TO RAILROAD & SIGNAL AND REVISED NOTE ON TYPICAL LOCATIONS AND NOTE 3.

Designed by	CG	4-8-76
Checked by	RM	4-8-76
Quantities by		
Checked by		
Supervised by	REM	
Recommended for approval by <i>Larry C. Pua</i> Deputy Traffic Operations Engr		Approved by <i>R.E. Magale, 10/15/79</i> State Traffic Operations Engr.
DRAWING NO.	INDEX NO.	
1 OF 3	17882	

FHWA  
8-24-77  
FHWA  
11-22-77  
FHWA  
11-18-78

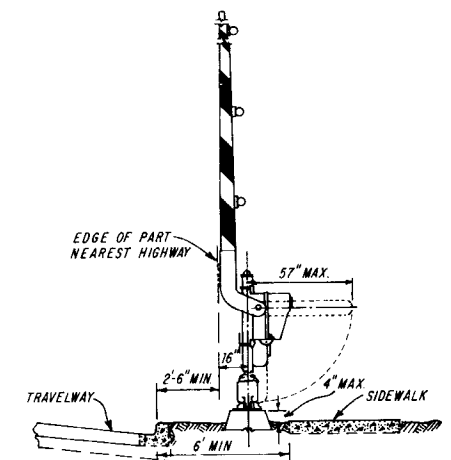
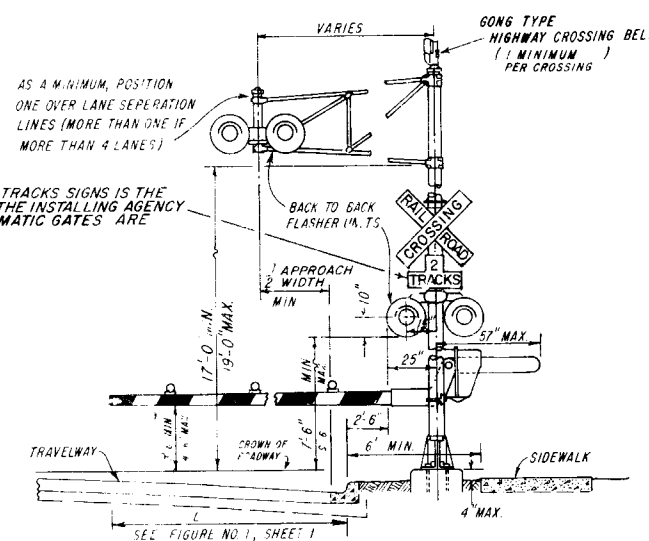
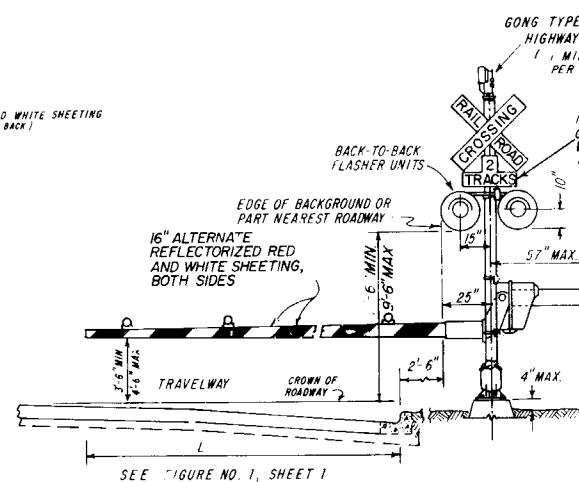
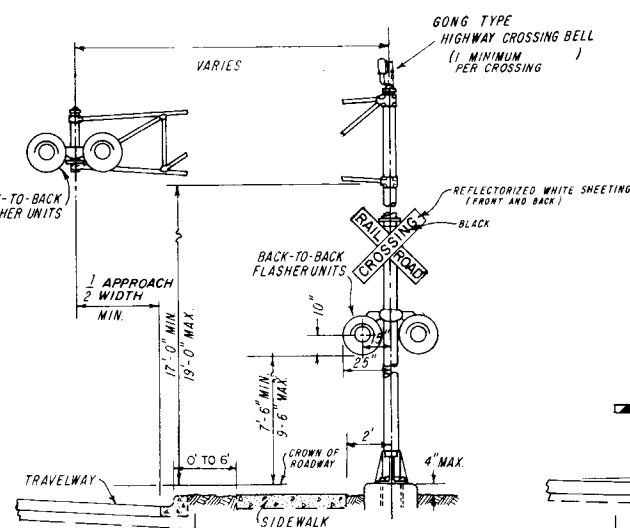
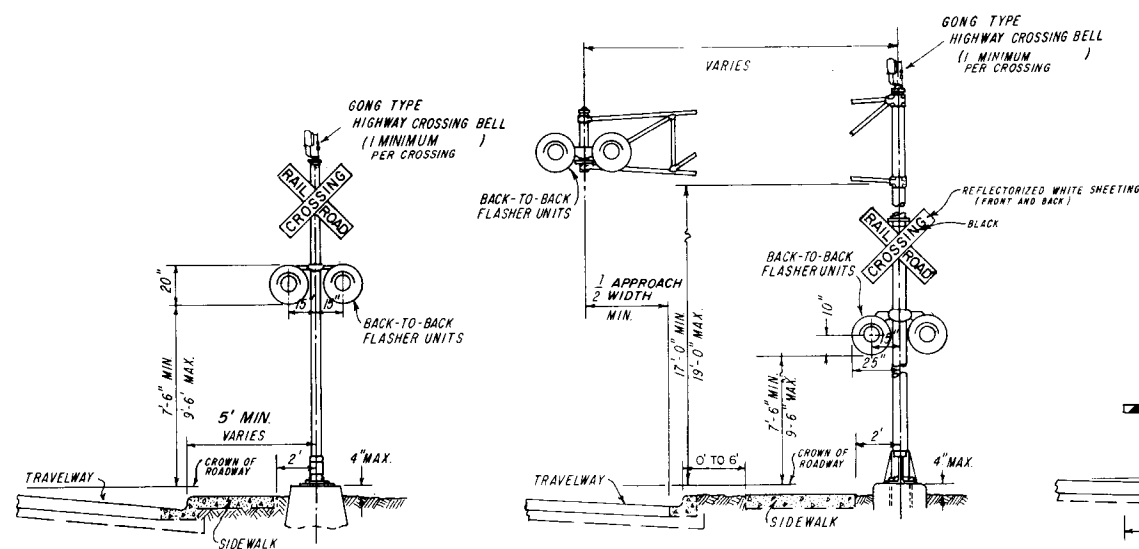


### SIGNAL PLACEMENT AT RAILROAD CROSSING (2 LANES, CURB & GUTTER)

### SIGNAL PLACEMENT AT RAILROAD CROSSING (2 LANES, CURB & GUTTER)

GENERAL NOTES

7. THE LOCATION OF FLASHING SIGNALS AND STOP LINES SHALL BE ESTABLISHED BASED ON FUTURE (OR PRESENT) INSTALLATION OF GATES WITH APPROPRIATE TRACK CLEARANCES.
8. WHERE PLANS CALL FOR RAILROAD TRAFFIC CONTROL DEVICES TO BE INSTALLED IN CURBED MEDIANS, THE MINIMUM MEDIAN WIDTH SHALL BE 10 FEET.
9. LOCATION OF RAILROAD TRAFFIC CONTROL DEVICE IS BASED ON THE DISTANCE AVAILABLE BETWEEN FACE OF CURB & SIDEWALK.
  - 0' TO 6' - LOCATE DEVICE OUTSIDE SIDEWALK.
  - OVER 6' - LOCATE DEVICE BETWEEN FACE OF CURB AND SIDEWALK.
10. STOP LINE TO BE PERPENDICULAR TO EDGE OF ROADWAY, APPROX. 15' FROM NEAREST RAIL; OR 8' FROM AND PARALLEL TO GATE WHEN PRESENT.



APPROVED BY FHWA JULY 29, 1976

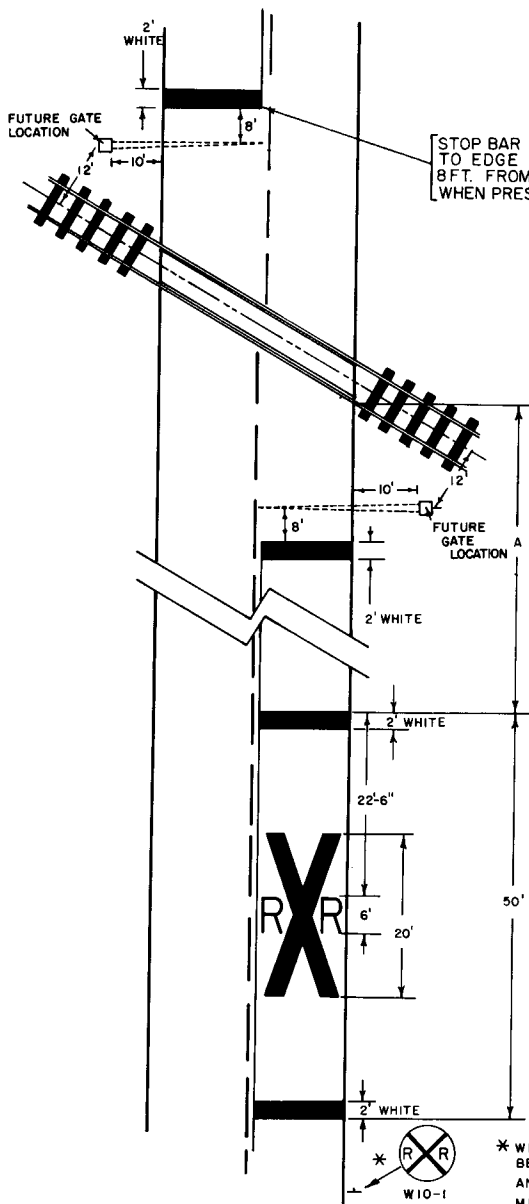
APPROVED BY FHWA JULY 25, 1975

FLORIDA DEPARTMENT OF TRANSPORTATION  
TRAFFIC OPERATIONS

RAILROAD GRADE CROSSING TRAFFIC CONTROL DEVICES

REVISIONS			INITIALS	DATES	Recommended for approval	
DATE	INITIALS	DESCRIPTION	Designed by	CG	4 - 8 - 76	by <u>Larry C. Puccio</u> Deputy Traffic Operations Eng.
7-19-77	J. J.	ADDED GONG TYPE HIGHWAY CROSSING BELL	Checked by	RM	4 - 8 - 76	Approved
11-9-77	J. J.	ADDED SHEET 3043 TO INDEX	Quantities by			by <u>RE Magadey</u> State Traffic Operations Eng.
8-27-78	J. M. C.	REVISED NOTES 7 & 8 AND ADDED NOTE TO NUMBER OF TRACKS SIGNS	Checked by			
		REVISED TYPE II & III OVERHEAD SIGNAL PLACEMENT TO 1/2 APPROACH WIDTH	Supervised by	REM		DRAWING NO. INDEX NO.
10-31-79	J. M. C.	REVISED NOTES 7-10 SIGNALS, RATE TO CROSSING AND ADDED RAILROAD GATES & SIGNALS				2 OF 3 17882

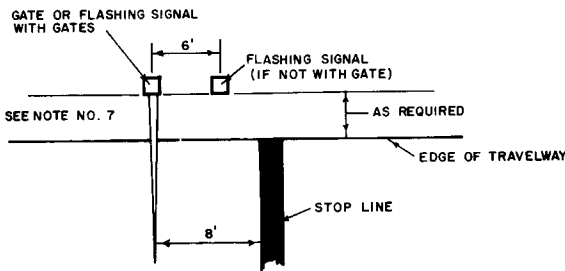
# RAILROAD CROSSING AT TWO (2)-LANE ROADWAY



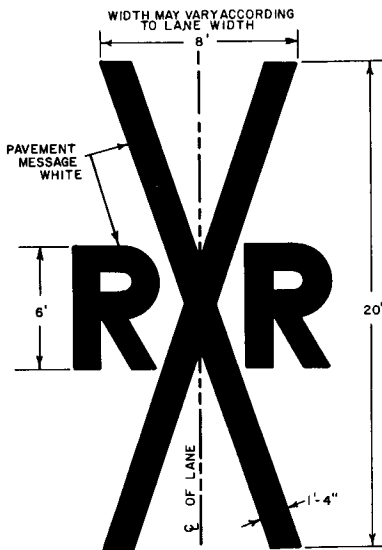
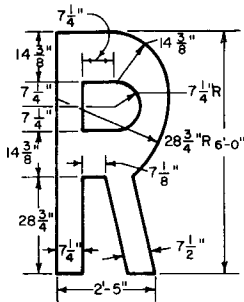
SPEED M.P.H.	"A" IN FT.
55	425
50	350
40	275
30	200
URBAN	50 MIN.

"A" VALUE IS BASED ON A.A.S.H.O. MIN SSD.

\* WHERE STREET INTERSECTIONS OCCUR BETWEEN THE R.R. PAVEMENT MESSAGE & THE TRACKS AN ADDITIONAL W10-1 & AN ADDITIONAL PAVEMENT MESSAGE SHOULD BE USED.



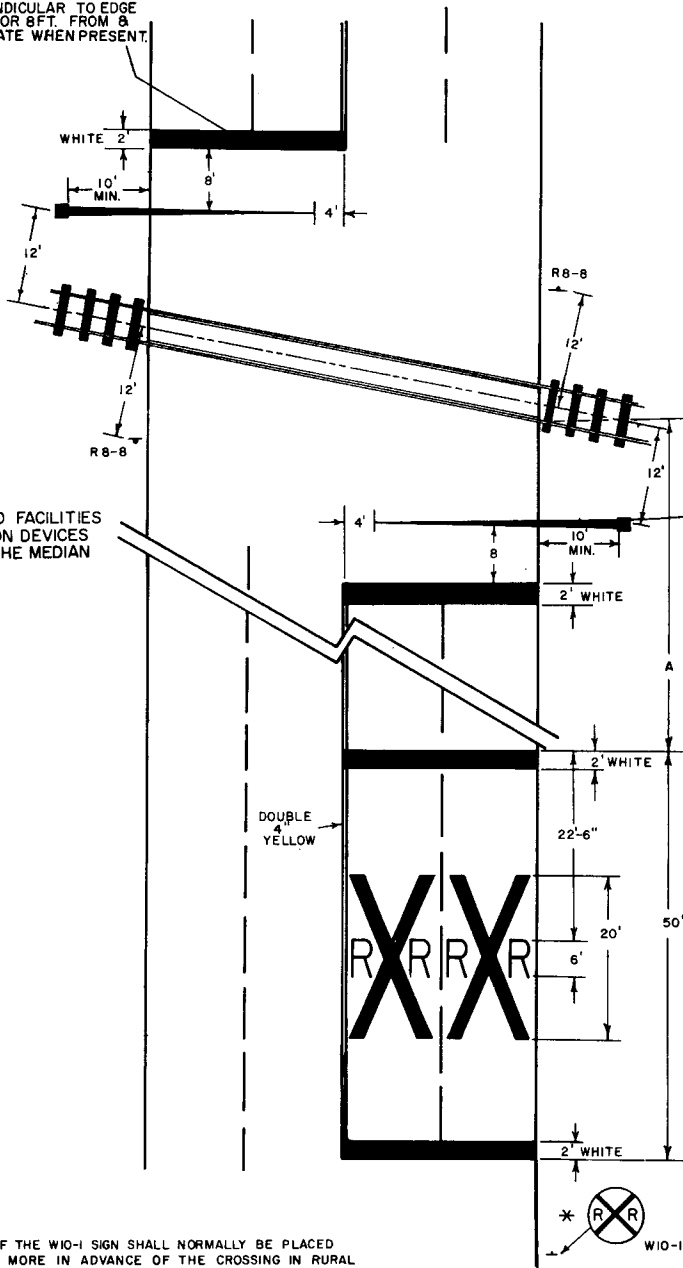
RELATIVE LOCATION OF CROSSING TRAFFIC CONTROL DEVICES



# RAILROAD CROSSING AT MULTI-LANE ROADWAY

STOP BAR PERPENDICULAR TO EDGE OF TRAVEL WAY OR 8 FT. FROM & PARALLEL TO GATE WHEN PRESENT.

ON PHYSICALLY DIVIDED FACILITIES ADDITIONAL PROTECTION DEVICES MAY BE INSTALLED IN THE MEDIAN



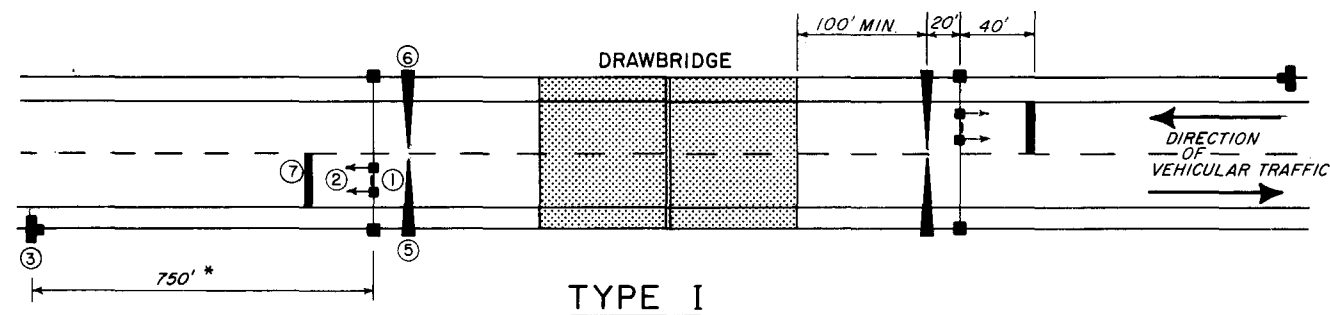
\* PLACEMENT OF THE W10-1 SIGN SHALL NORMALLY BE PLACED 750 FEET OR MORE IN ADVANCE OF THE CROSSING IN RURAL AREAS AND 250 FEET IN ADVANCE OF THE CROSSING IN URBAN AREAS EXCEPT THAT IN A RESIDENTIAL OR BUSINESS DISTRICT, WHERE LOW SPEEDS ARE PREVALENT, THE SIGN MAY BE PLACED A MINIMUM DISTANCE OF 100 FEET FROM THE CROSSING. IF THERE IS A STREET INTERSECTION WITHIN 100 FEET AN ADDITIONAL SIGN OR SIGNS MAY BE PLACED TO WARN TRAFFIC APPROACHING THE CROSSING FROM EACH INTERSECTED STREET.

## FLORIDA DEPARTMENT OF TRANSPORTATION TRAFFIC OPERATIONS

### RAILROAD GRADE CROSSING TRAFFIC CONTROL DEVICES

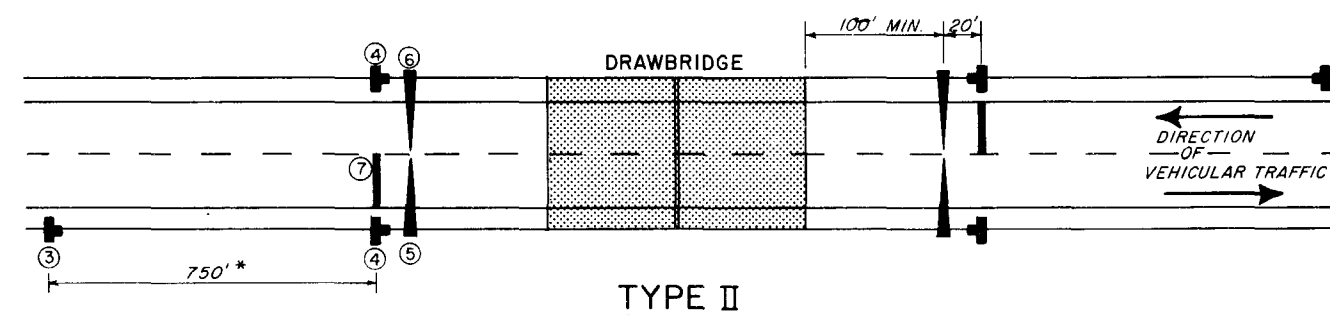
REVISIONS			INITIALS	DATES	Recommended for approval by <i>W.C.C.</i> Deputy Traffic Operations Eng.
DATE	INITIALS	DESCRIPTION	Designed by	J.M.C.	10/26/77
11-9-77	J.J.	ADDED TO INDEX	Checked by		
8-27-78	J.M.C.	REALIGN STOP BARS & RELOCATE SIGN R8-8.	Quantities by		
		RELOCATE SIGN & ADDED NOTE TO W10-1	Checked by		
			Supervised by	W.C.C.	
					Approved by <i>R.E. Magallon</i> State Traffic Operations Eng.
					DRAWING NO. 3 OF 3
					INDEX NO. 17882

FWHA  
11-22-77  
FWHA  
11-16-78



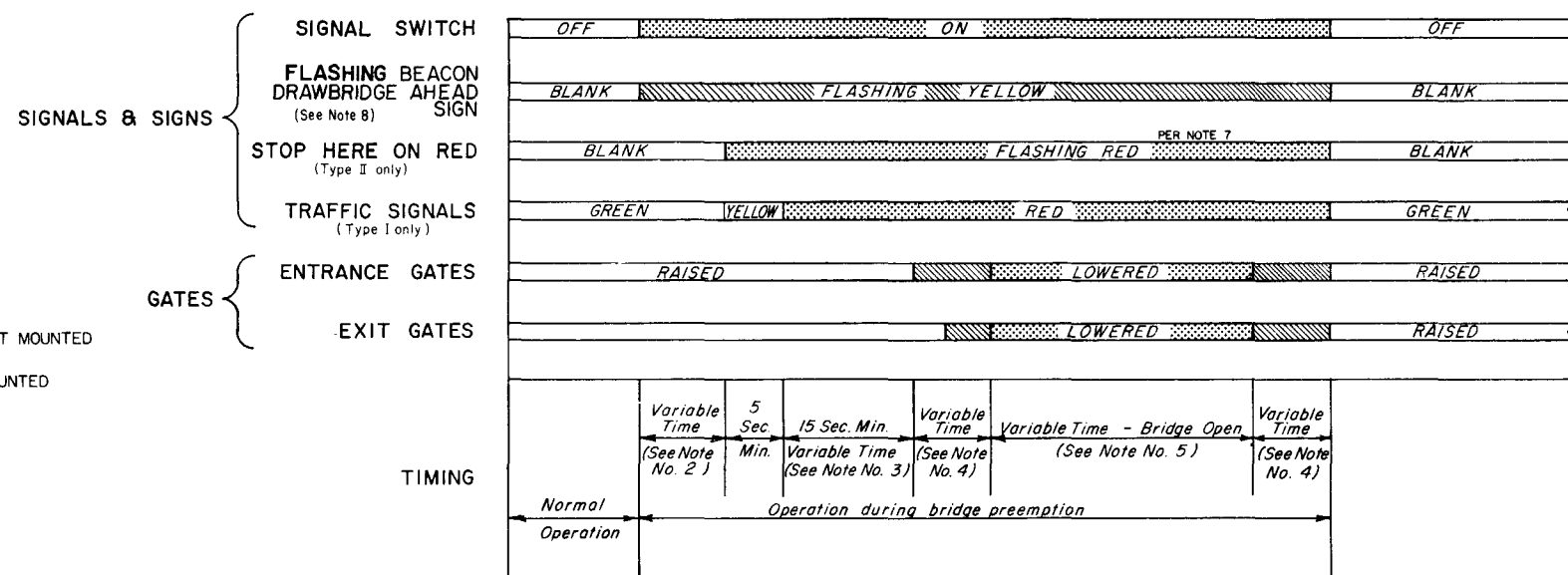
TO BE USED WHERE BRIDGE OPERATORS ARE FULL TIME OR ON A DAILY BASIS

\* FIELD CONDITIONS MAY REQUIRE ADJUSTMENT OF THIS STANDARD DISTANCE.



TO BE USED WHERE TYPE I IS NOT APPLICABLE (USUALLY WHEN THE BRIDGE OPERATOR IS "ON CALL")

### SEQUENCE CHART



PAYMENT FOR SIGNAL AND GATE ASSEMBLIES TO BE PAID FOR UNDER ITEM NOS.:

712-70-ABC MOVEABLE BRIDGE SIGNAL ("TYPE") ASSEMBLY

A OPERATION TO BE PERFORMED

- 1 FURNISH & INSTALL
- 2 FURNISH
- 3 INSTALL

B INSTALLATION TYPE

- 1 (TYPE I)
- 2 (TYPE II)

C NUMBER OF TOTAL LANES TO BE SIGNALIZED

- 1 TWO LANES
- 2 THREE LANES

712-71-AB MOVEABLE BRIDGE GATE ("CLASS") ASSEMBLY

A OPERATION TO BE PERFORMED

- 1 FURNISH & INSTALL
- 2 FURNISH
- 3 INSTALL

B CLASS GATE AS DESIGNATED BY NUMBER OF APPROACH LANES

- 1 (CLASS I) ONE LANE
- 2 (CLASS II) TWO LANES
- 3 (CLASS III) THREE LANES

### NOTES:

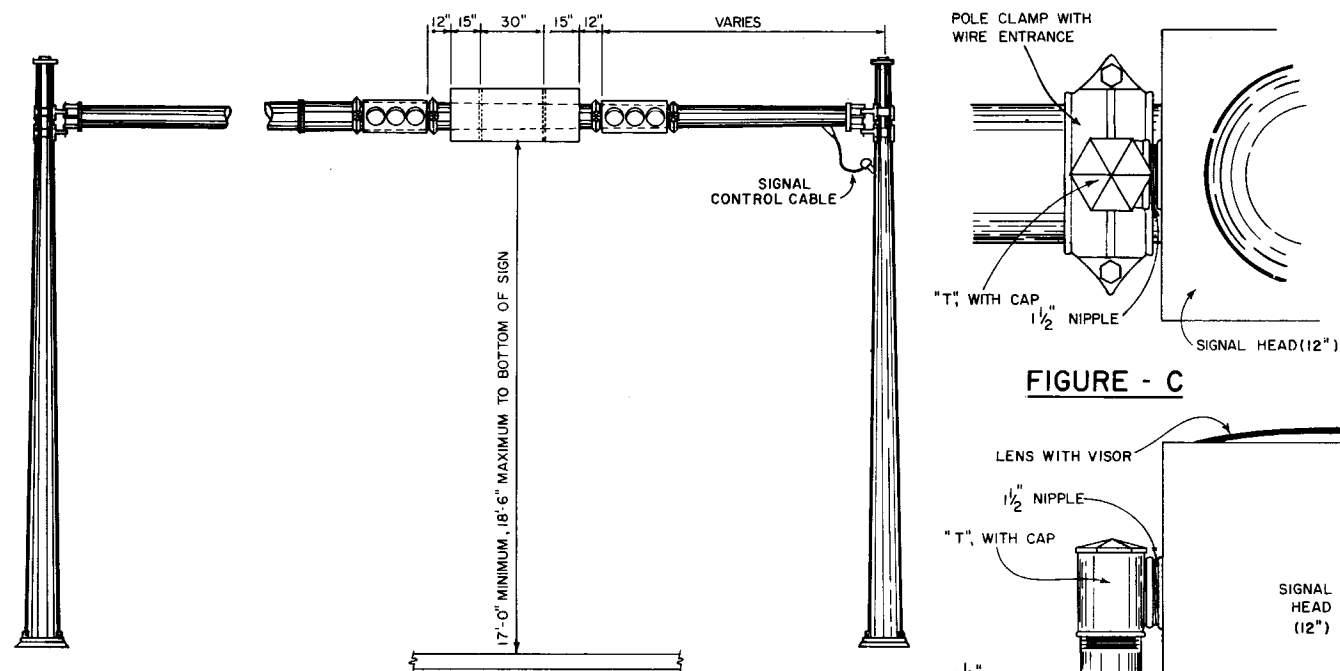
1. "STOP HERE ON RED" is omitted in Type I operation and "TRAFFIC SIGNALS" are omitted in Type II operation.
2. The time between beginning of flashing yellow on "Drawbridge Ahead" sign and the clearance of traffic signal to red, or beginning of flashing red, should not be less than the travel time of a passenger car, from the sign location to the stop line, traveling at the 85 percentile approach speed.
3. Beginning of operation of drawbridge gates shall not be less than 15 seconds after steady red or 20 seconds after flashing red (Actual time may be determined by the bridge tender).
4. Time of gate lowering and raising is dependant upon gate type.
5. Time of bridge opening is determined by the bridge tender.
6. Each gate shall be operated by a separate switch.
7. On each approach (Type II), all four red signals shall be on the same two circuit flasher, with the two top signals on one circuit, and the two bottom signals on the alternately flashing circuit.
8. A drawbridge ahead sign is required for both types of signal operation, However a flashing beacon shall be added to the sign when physical conditions prevent a driver traveling at the 85% approach speed from having a continous view of at least one signal indication for approximately 10 secs.
9. Requirements on Gate Installation Are Contained In Section 4E-13 through 4E-17 of the Manual on Uniform Traffic Control Devices as revised by Official Rulings, Volume VII Ruling sg 67

APPROVED BY FHWA JUNE 11, 1975

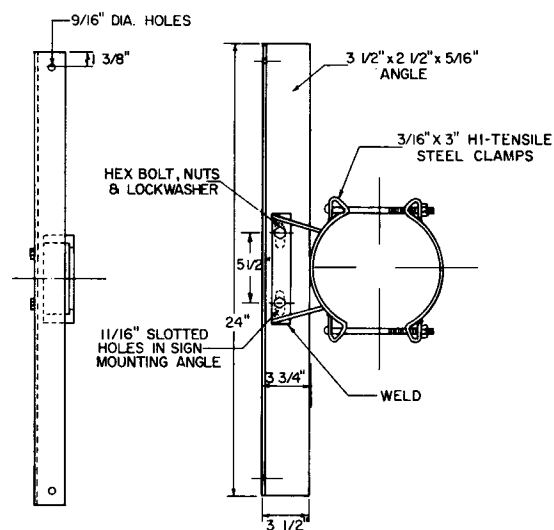
FLORIDA DEPARTMENT OF TRANSPORTATION  
TRAFFIC OPERATIONS

TRAFFIC CONTROL DEVICES FOR  
MOVEABLE SPAN BRIDGE SIGNALS

REVISIONS			INITIALS	DATES	Recommended for approval by
DATE	INITIALS	DESCRIPTION	Designed by	CG	4-7-75
7-20-76	CEJ	ADDED ITEM 7 TO LEGEND AND PLAN AND ADDED PAYMENT FOR SIGNAL AND GATE ASSEMBLIES & REVISED TITLE BLOCK	Checked by	RK	4-7-75
10-6-78	J.M.C	ADDED NOTES 8 & 9.	Quantities by		
			Checked by		
			Supervised by	RVK	
			DRAWING NO.		INDEX NO.
			1 OF 3		17890

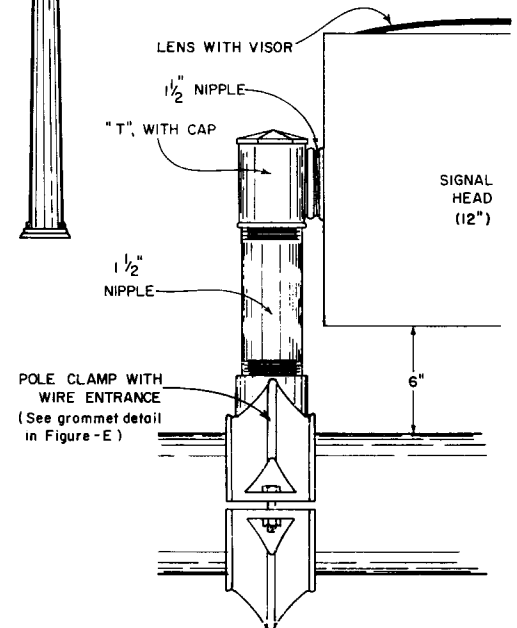


**FIGURE - A**  
MONOTUBE SUPPORT MOUNTING

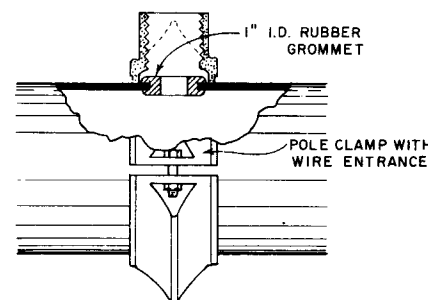


**SIGN PANEL MOUNTING ASSEMBLY**

**FIGURE - B**

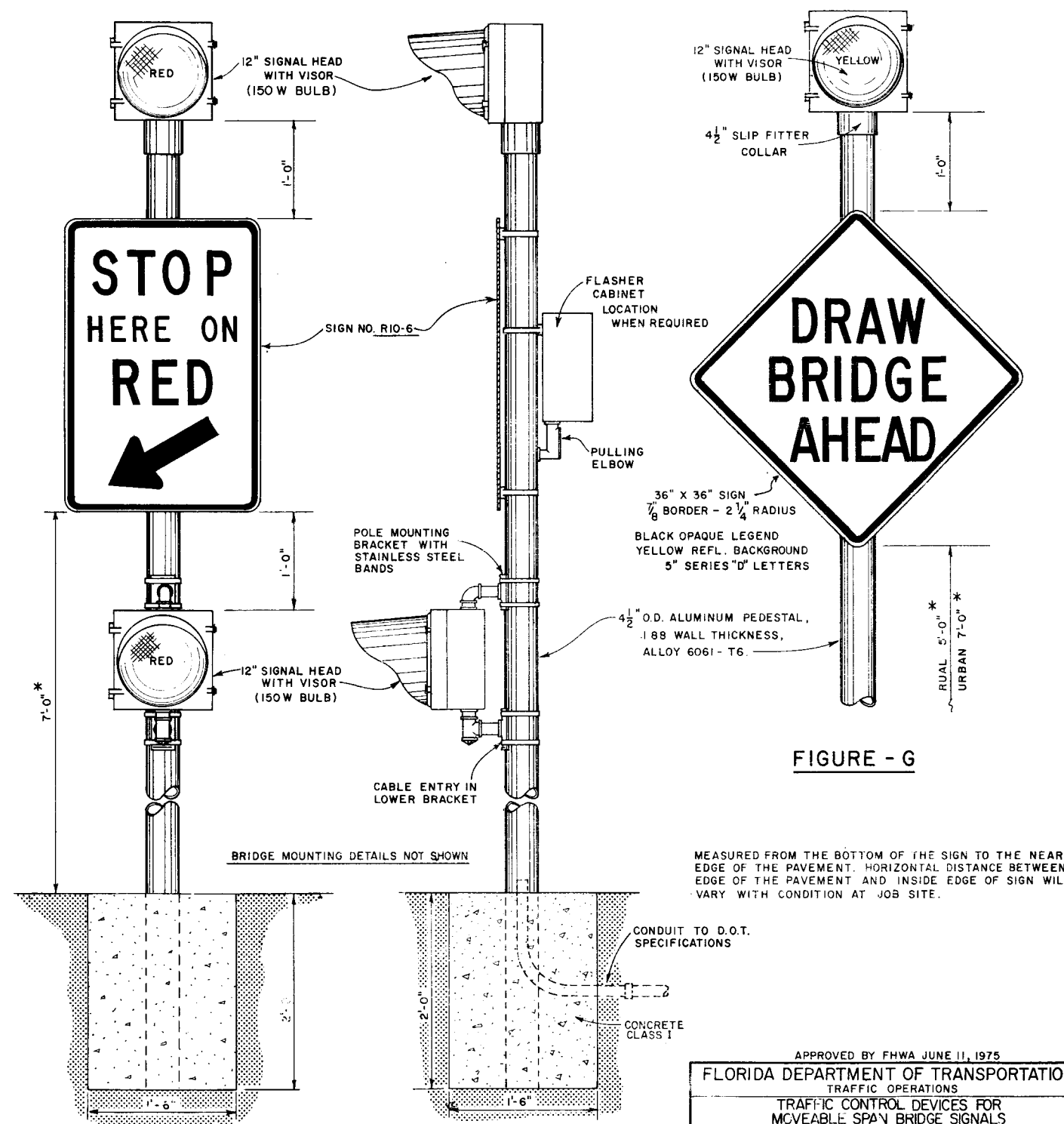


**FIGURE - D**



**FIGURE - E**

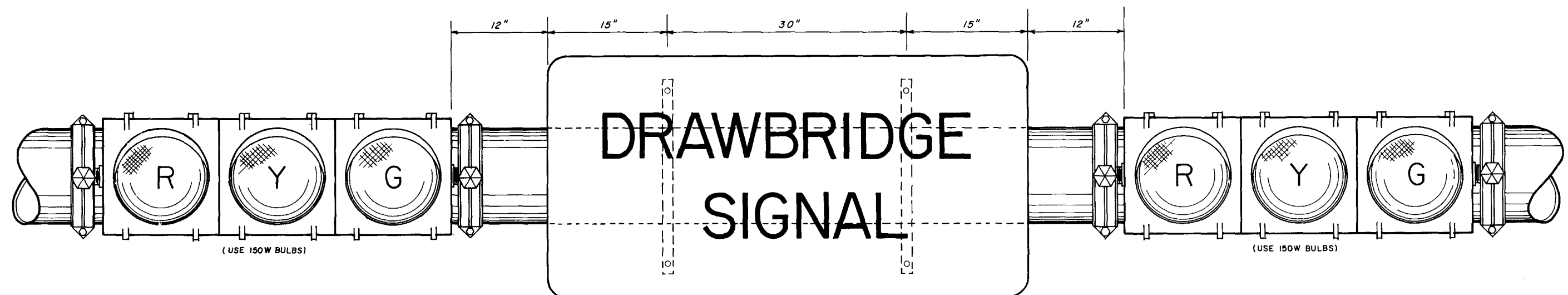
**SIGNAL HEAD MOUNTING ASSEMBLY**



**FIGURE - F**

APPROVED BY FHWA JUNE 11, 1975			
FLORIDA DEPARTMENT OF TRANSPORTATION			
TRAFFIC OPERATIONS			
TRAFFIC CONTROL DEVICES FOR			
MOVEABLE SPAN BRIDGE SIGNALS			
Designed by	CG	4-7-75	Recommended for approval by <i>Darryl C. Price</i> Deputy Traffic Operations Eng.
Checked by	RK	4-7-75	Approved by <i>R.E. Magaley</i> State Traffic Operations Engr.
Quantities by			
Checked by			
Supervised by	RVK		
DRAWING NO.	2 OF 3	INDEX NO.	17890



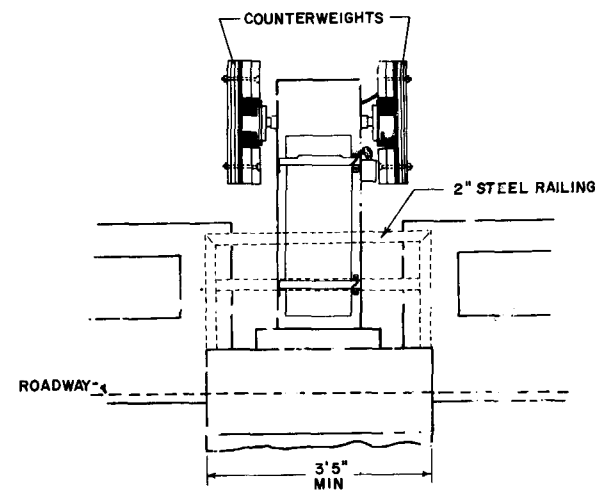
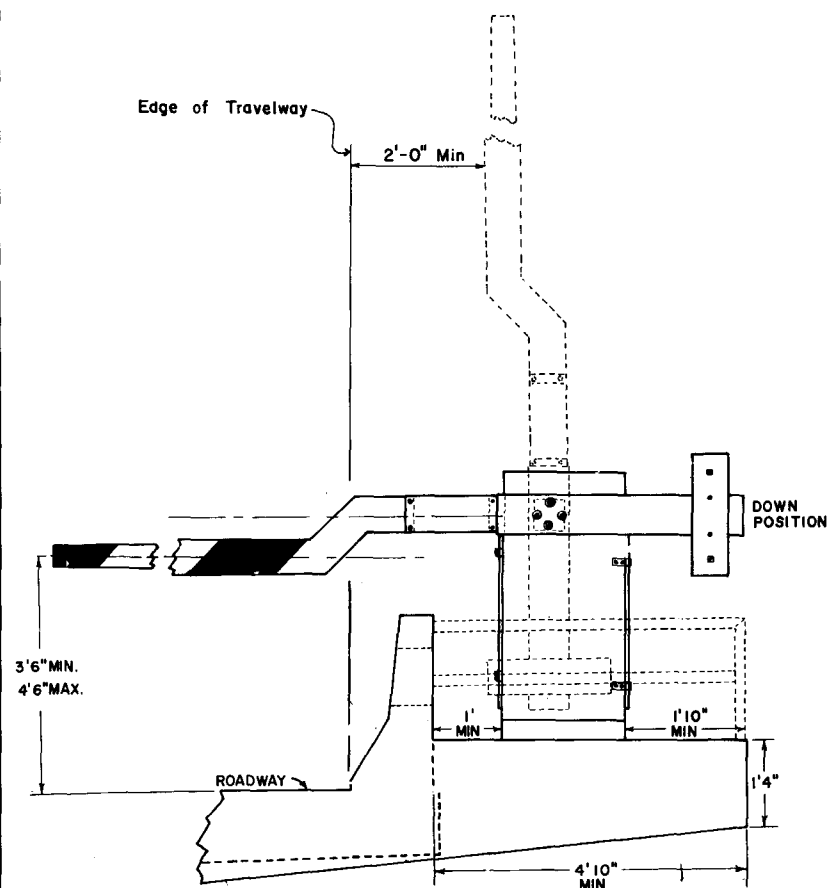


2'-6" X 5'-0"  
2" BORDER - 4" RADIUS  
6" SERIES "D" LETTERS

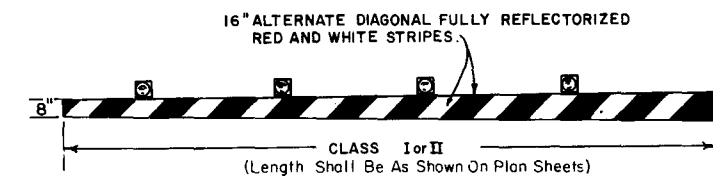
BLACK OPAQUE LEGEND AND BORDER ON REFLECTORIZED YELLOW BACKGROUND

TO BE USED WITH TYPE I OPERATION, AS SHOWN  
ON PREVIOUS SHEET

MONOTUBE SUPPORT MOUNTING



GATE & ARM DETAIL



12 Volt Flashing Red Lights Shall Be Mounted Atop Gate Arm And Shall Operate In The Flashing Mode Only When Gate Arm Is In The Lowered Position Or In The Process Of Being Lowered. The Number Of Lights Shall Vary According To Length Of The Gate Arm.

APPROVED BY FHWA JUNE 11, 1975

FLORIDA DEPARTMENT OF TRANSPORTATION  
TRAFFIC OPERATIONS

TRAFFIC CONTROL DEVICES FOR  
MOVEABLE SPAN BRIDGE SIGNALS

REVISIONS				INITIALS	DATES	Recommended for approval
DATE	INITIALS	DESCRIPTION	Designed by	J. M. C.		by <i>Darryl C. Puce</i>
12/22/75	JG	DELETED NOTE "AVAILABLE GAINESVILLE WAREHOUSE"	Checked by			Deputy Traffic Operations Eng.
7-20-76	CEJ	ADDED CLASS I & CLASS II TITLE AND REVISE TITLE BLOCK	Quantities by			Approved by <i>R. E. Magala</i>
10-6-78	J. M. C.	REVISED GATE ARM DETAIL.	Checked by			State Traffic Operations Engr.
10-30-79	JJ	Added Cl. from Travelway And 12 V. Lights to Arm	Supervised by			

DRAWING NO. INDEX NO.  
3 OF 3 17890